



NASA SP-7039 (04)

Section 2

Indexes

NASA

NON-NEASAL-NEF  
COPY

PATENT  
ABSTRACTS  
BIBLIOGRAPHY

A CONTINUING BIBLIOGRAPHY  
(CUMULATIVE ISSUE)

Section 2 • Indexes

JANUARY 1974

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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**NASA SP-7039 (04)**

**Section 2**

**Indexes**

**NASA**

**PATENT  
ABSTRACTS  
BIBLIOGRAPHY**

**A CONTINUING BIBLIOGRAPHY  
(CUMULATIVE ISSUE)**

**Section 2 • Indexes**

Indexes for the annotated references to NASA-owned inventions covered by U.S. patents and applications for patent that were announced in *Scientific and Technical Aerospace Reports (STAR)* between May 1969 and December 1973. This issue supersedes all previous Index Sections.



*Scientific and Technical Information Office*

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**

1974  
Washington, D.C.

This Supplement is available from the National Technical Information Service (NTIS), Springfield, Virginia 22151, for \$4.50 . For copies mailed to addresses outside the United States, add \$2.50 per copy for handling and postage.

# INTRODUCTION

Several thousand inventions result each year from the aeronautical and space research supported by the National Aeronautics and Space Administration. The inventions having important use in government programs or significant commercial potential are usually patented by NASA. These inventions cover practically all fields of technology and include many that have useful and valuable commercial application.

NASA inventions best serve the interests of the United States when their benefits are available to the public. In many instances, the granting of nonexclusive or exclusive licenses for the practice of these inventions may assist in the accomplishment of this objective. This bibliography is published as a service to companies, firms, and individuals seeking new, licensable products for the commercial market.

The *NASA Patent Abstracts Bibliography (NASA PAB)* is a semiannual NASA publication containing comprehensive abstracts and indexes of NASA-owned inventions covered by U.S. patents and applications for patent. The 2594 citations included in this Cumulative Issue were originally published in NASA's *Scientific and Technical Aerospace Reports (STAR)* during the period from May 1969 through December 1973. For the convenience of the user, each issue of *NASA PAB* has a separately bound Abstract Section and Index Section.

## ABSTRACT SECTION (SECTION 1)

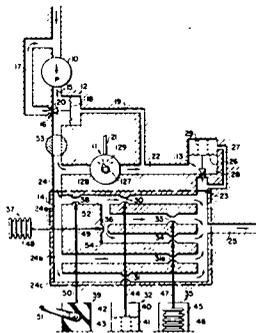
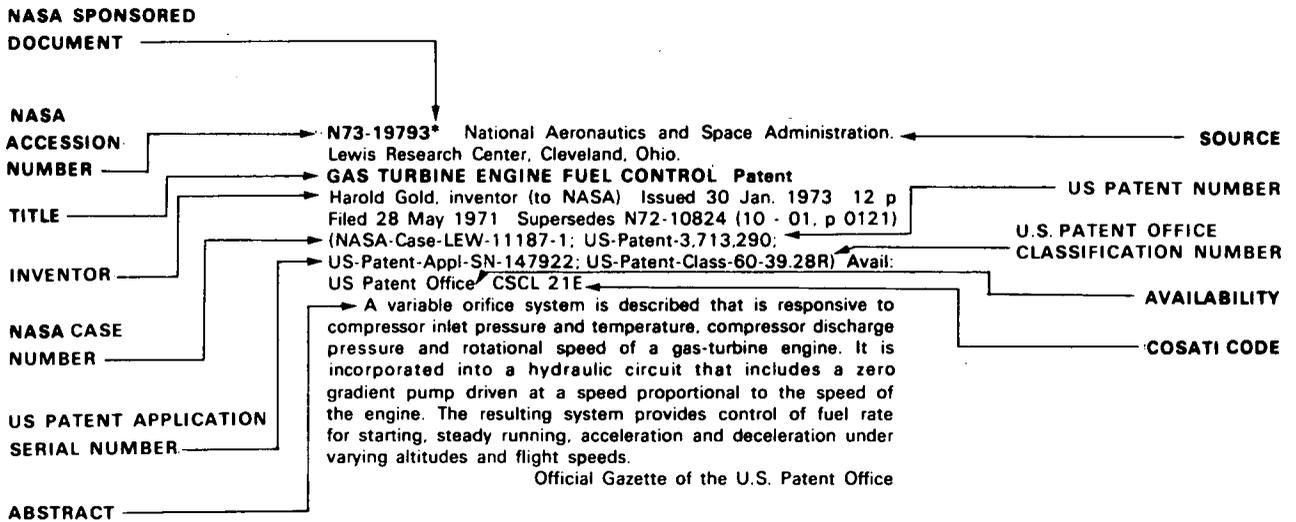
The Abstract Section is divided into 34 subject categories (See Table of Contents for scope note of each category) under which are grouped appropriate NASA inventions. Each entry in the Abstract Section consists of a STAR citation accompanied by an abstract and a key illustration taken from the patent or application for patent drawing. Entries are arranged in subject category in order of the ascending NASA Accession Number originally assigned in STAR to the invention. The range of NASA Accession Numbers within each issue is printed on the inside front cover.

*Abstract Citation Data Elements:* Each of the abstract citations has several data elements useful for identification and indexing purposes, as follows:

- NASA Accession Number
- NASA Case Number
- Inventor's Name
- Title of Invention
- U.S. Patent Application Serial Number
- U.S. Patent Number (for issued patents only)
- U.S. Patent Office Classification Number(s)  
(for issued patents only)

These data elements appear in the citation of the abstract as depicted in the Typical Citation and Abstract reproduced below and are also used in the several indexes.

## TYPICAL CITATION AND ABSTRACT FROM *PATENT ABSTRACTS BIBLIOGRAPHY*



**KEY ILLUSTRATION**

## INDEX SECTION (SECTION 2)

The Index Section is divided into five indexes which are cross-indexed and are useful in locating a single invention or groups of inventions.

Each of the five indexes utilizes basic data elements: (1) Subject Category Number, (2) NASA Accession Number, and (3) NASA Case Number, in addition to other specific index terms.

**Subject Index:** Lists all inventions according to appropriate alphabetized technical term and indicates the related NASA Case Number, the Subject Category Number, and the NASA Accession Number.

**Inventor Index:** Lists all inventions according to alphabetized names of inventors and indicates the related NASA Case Number, the Subject Category Number, and the NASA Accession Number.

**Source Index:** Lists all inventions according to alphabetized source of invention (i.e., name of contractor or government installation where invention was made) and indicates the related NASA Case Number, the Subject Category Number, and the NASA Accession Number.

**Number Index:** Lists inventions in order of ascending (1) NASA Case Number, (2) U.S. Patent Application Serial Number, (3) U.S. Patent Classification Number, and (4) U.S. Patent Number and indicates the related Subject Category Number and the NASA Accession Number.

**Accession Number Index:** Lists all inventions in order of ascending NASA Accession Number and indicates the related Subject Category Number, the NASA Case Number, the U.S. Patent Application Serial Number, the U.S. Patent Classification Number, and the U.S. Patent Number.

## HOW TO USE THIS PUBLICATION TO IDENTIFY NASA INVENTIONS

To identify one or more NASA inventions within a specific technical field or subject, several techniques are possible when using the flexibility incorporated into the NASA PAB.

(1) *Using Subject Category:* To identify all NASA inventions in any one of the 34 subject categories in this issue of NASA PAB, select the desired Subject Category in the Abstract Section and find the inventions abstracted thereunder. The abstracts are arranged in each Subject Category in order of the ascending Accession Number originally assigned in STAR to each invention.

(2) *Using Subject Index:* To identify all NASA inventions listed under a desired technical subject index term, (A) turn to the cumulative Subject Index in the Index Section and find the invention(s) listed under the desired technical subject term. (B) Note the indicated

NASA Accession Number(s) and the Subject Category Number(s). (C) Using the indicated NASA Accession Number(s), turn to the Accession Number Index to find the NASA Patent Case Number, the U.S. Patent Application Serial Number, the U.S. Patent Number, if issued, and the U.S. Patent Classification Number(s), if assigned. (D) To find the abstract of the invention, (i) use the indicated Subject Category Number for the associated NASA Accession Number to locate the desired Subject Category in the Abstract Section, (ii) turn to the designated Subject Category in the Abstract Section, and (iii) use the associated NASA Accession Number to locate the invention within the Subject Category.

(3) *Using Patent Classification Numbers:* To identify all inventions covered by issued NASA patents (does not include applications for patent) within a desired Patent Office Classification, (A) turn to the Patent Classification Number in the Number Index of Section 2 and find the associated invention(s), and (B) follow the instructions outlined in (2) (B), (C), and (D) above.

# PUBLIC AVAILABILITY OF COPIES OF PATENTS AND PATENT APPLICATIONS

Copies of U.S. patents may be purchased directly from the U.S. Patent Office, Washington, D.C. 20231, for fifty cents a copy.

Copies of pending NASA applications for patent abstracted in NASA PAB are sold by the National Technical Information Service, Springfield, Virginia 22151, at the price shown in the citation. Microfiche are sold at the established unit price of \$1.45. When ordering copies of an application for patent from NTIS, the U.S. Patent Application Serial Number listed in the index or shown in the citation for each abstract should be used to identify the desired application for patent.

## **LICENSES FOR COMMERCIAL USE: INQUIRIES AND APPLICATIONS FOR LICENSE**

NASA inventions, abstracted in NASA PAB, are available for nonexclusive or exclusive licensing in accordance with the NASA Patent Licensing Regulations. It is significant that all licenses for NASA inventions shall be by express written instruments and that no license will be granted or implied in a NASA invention except as provided in the NASA Patent Licensing Regulations.

Inquiries concerning the NASA Patent Licensing Program or the availability of licenses for the commercial use of NASA-owned inventions covered by U.S. patents or pending applications for patent should be forwarded to the NASA Patent Counsel of the NASA installation having cognizance of the specific invention, or the Assistant General Counsel for Patent Matters, Code GP, National Aeronautics and Space Administration, Washington, D.C. 20546. Inquiries should refer to the NASA Case Number, the Title of the Invention, and the U.S. Patent Number or the U.S. Application Serial Number assigned to the invention as shown in NASA PAB.

The NASA Patent Counsel having cognizance of the invention is determined by the first three letters or prefix of the NASA Case Number assigned to the invention. The addresses of NASA Patent Counsels are listed alongside the NASA Case Number prefix letters in the following table. Formal application of license must be submitted on the NASA Form, Application for NASA Patent License, which is available upon request from any NASA Patent Counsel.

**NASA Case  
Number Pre-  
fix Letters**

**Address of Cognizant  
NASA Patent Counsel**

ARC-xxxxx  
XAR-xxxxx

Ames Research Center  
Mail Code: 200-11A  
Moffett Field, California 94035

ERC-xxxxx  
XER-xxxxx  
HQN-xxxxx  
XHQ-xxxxx

NASA Headquarters  
Mail Code: GP  
Washington, D.C. 20546

GSC-xxxxx  
XGS-xxxxx

Goddard Space Flight Center  
Mail Code: 204  
Greenbelt, Maryland 20771

KSC-xxxxx  
XKS-xxxxx

John F. Kennedy Space Center  
Mail Code: AD-PAT  
Kennedy Space Center, Florida 32899

LAR-xxxxx  
XLA-xxxxx

Langley Research Center  
Mail Code: 456  
Langley Station  
Hampton, Virginia 23365

LEW-xxxxx  
XLE-xxxxx

Lewis Research Center  
Mail Code: 500-113  
21000 Brookpark Road  
Cleveland, Ohio 44135

MSC-xxxxx  
XMS-xxxxx

Lyndon B. Johnson Space Center  
Mail Code: AM  
Houston, Texas 77058

MFS-xxxxx  
XMF-xxxxx

George C. Marshall Space Flight Center  
Mail Code: A&IPS-PAT  
Huntsville, Alabama 35812

NPO-xxxxx  
XNP-xxxxx  
FRC-xxxxx  
XFR-xxxxx  
WOO-xxxxx

NASA Pasadena Office  
Mail Code: 180-601  
4800 Oak Grove Drive  
Pasadena, California 91103

## **NASA PATENT LICENSING REGULATIONS**

The NASA Domestic Patent Licensing Regulations (14 C.F.R. 1245.2) are reproduced on the following pages. Selected NASA inventions are also available for licensing in countries other than the United States in accordance with the NASA Foreign Patent Licensing Regulation (14 C.F.R. 1245.4), a copy of which is available from any NASA Patent Counsel.

# PATENT LICENSING REGULATIONS

## Title 14—AERONAUTICS AND SPACE

### Chapter V—National Aeronautics and Space Administration

#### PART 1245—PATENTS

##### Subpart 2—Patent Licensing Regulations

1. Subpart 2 is revised in its entirety as follows:

Sec.	
1245.200	Scope of subpart.
1245.201	Definitions.
1245.202	Basic considerations.
1245.203	Licenses for practical application of inventions.
1245.204	Other licenses.
1245.205	Publication of NASA inventions available for license.
1245.206	Application for nonexclusive license.
1245.207	Application for exclusive license.
1245.208	Processing applications for license.
1245.209	Royalties and fees.
1245.210	Reports.
1245.211	Revocation of licenses.
1245.212	Appeals.
1245.213	Litigation.
1245.214	Address of communications.

**AUTHORITY:** The provisions of this Subpart 2 issued under 42 U.S.C. 2457, 2473(b) (3).

##### § 1245.200 Scope of subpart.

This Subpart 2 prescribes the terms, conditions, and procedures for licensing inventions covered by U.S. patents and patent applications for which the Administrator of the National Aeronautics and Space Administration holds title on behalf of the United States.

##### § 1245.201 Definitions.

For the purpose of this subpart, the following definitions apply:

(a) "Invention" means an invention covered by a U.S. patent or patent application for which the Administrator of NASA holds title on behalf of the United States and which is designated by the Administration as appropriate for the grant of license(s) in accordance with this subpart.

(b) "To practice an invention" means to make or have made, use or have used, sell or have sold, or otherwise dispose of according to law any machine, article of manufacture or composition of matter physically embodying the invention, or to use or have used the process or method comprising the invention.

(c) "Practical application" means the manufacture in the case of a composition of matter or product, the use in the case of a process, or the operation in the case of a machine, under such conditions as to establish that the invention is being utilized and that its benefits are reasonably accessible to the public.

(d) "Special invention" means any invention designated by the NASA Assistant General Counsel for Patent Matters to be subject to short-form licensing procedures. An invention may be designated as a special invention when a determination is made that:

(1) Practical application has occurred and is likely to continue for the life of

the patent and for which an exclusive license is not in force, or

(2) The public interest would be served by the expeditious granting of a nonexclusive license for practice of the invention by the public.

(e) The "Administrator" means the Administrator of the National Aeronautics and Space Administration, or his designee.

(f) "Government" means the Government of the United States of America.

(g) The "Inventions and Contributions Board" means the NASA Inventions and Contributions Board established by the Administrator of NASA within the Administration in accordance with section 305 of the National Aeronautics and Space Act of 1958 as amended (42 U.S.C. 2457).

##### § 1245.202 Basic considerations.

(a) Much of the new technology resulting from NASA sponsored research and development in aeronautical and space activities has application in other fields. NASA has special authority and responsibility under the National Aeronautics and Space Act of 1958, as amended (42 U.S.C. 2451), to provide for the widest practical dissemination and utilization of this new technology. In addition, NASA has been given unique requirements to protect the inventions resulting from NASA activities and to promulgate licensing regulations to encourage commercial use of these inventions.

(b) NASA-owned inventions will best serve the interests of the United States when they are brought to practical application in the shortest time possible. Although NASA encourages the non-exclusive licensing of its inventions to promote competition and achieve their widest possible utilization, the commercial development of certain inventions calls for a substantial capital investment which private manufacturers may be unwilling to risk under a nonexclusive license. It is the policy of NASA to seek exclusive licensees when such licenses will provide the necessary incentive to the licensee to achieve early practical application of the invention.

(c) The Administrator, in determining whether to grant an exclusive license, will evaluate all relevant information submitted by applicants and all other persons and will consider the necessity for further technical and market development of the invention, the capabilities of prospective licensees, their proposed plans to undertake the required investment and development, the impact on competitors, and the benefits of the license to the Government and to the public. Preference for exclusive license shall be given to U.S. citizens or companies who intend to manufacture or use, in the case of a process, the invention in the United States of America, its territories and possessions. Consideration may also be given to assisting small businesses and minority business enterprises, as well as economically depressed, low income and labor surplus areas.

(d) All licenses for inventions shall

be by express written instruments. No license shall be granted either expressly or by implication, for a NASA invention except as provided for in §§ 1245.203 and 1245.204 and in any existing or future treaty or agreement between the United States and any foreign government.

(e) Licenses for inventions covered by NASA-owned foreign patents and patent applications shall be granted in accordance with the NASA Foreign Patent Licensing Regulations (§ 1245.4).

##### § 1245.203 Licenses for practical application of inventions.

(a) *General.* As an incentive to encourage practical application of inventions, licenses will be granted to responsible applicants according to the circumstances and conditions set forth in this section.

(b) *Nonexclusive licenses.* (1) Each invention will be made available to responsible applicants for nonexclusive, revocable licensing in accordance with § 1245.206, consistent with the provisions of any existing exclusive license.

(2) The duration of the license shall be for a period as specified in the license.

(3) The license shall require the licensee to achieve the practical application of the invention and to then practice the invention for the duration of the license.

(4) The license may be granted for all or less than all fields of use of the invention and throughout the United States of America, its territories and possessions, Puerto Rico, and the District of Columbia, or in any lesser geographic portion thereof.

(5) The license shall extend to the subsidiaries and affiliates of the licensee and shall be nonassignable without approval of the Administrator, NASA, except to the successor of that part of the licensee's business to which the invention pertains.

(c) *Short-form nonexclusive licenses.* A nonexclusive, revocable license for a special invention, as defined in § 1245.201 (d), shall be granted upon written request, to any applicant by the Patent Counsel of the NASA installation having cognizance of the invention.

(d) *Exclusive licenses.* (1) A limited exclusive license may be granted on an invention available for such licensing provided that:

(i) The Administrator has determined that: (a) The invention has not been brought to practical application by a nonexclusive licensee in the fields of use or in the geographical locations covered by the application for the exclusive license, (b) practical application of the invention in the fields of use or geographical locations covered by the application for the exclusive license is not likely to be achieved expeditiously by the further funding of the invention by the Government or under a nonexclusive license requested by any applicant pursuant to these regulations, and (c) the exclusive license will provide the necessary incentive to the licensee to achieve the practical application of the invention; and

(ii) Either a notice pursuant to

## PATENT LICENSING REGULATIONS

§ 1245.205 Listing the invention as available for licensing has been published in the FEDERAL REGISTER for at least 9 months; or a patent covering the invention has been issued for at least 6 months. However, a limited exclusive license may be granted prior to the periods specified above if the Administrator determines that the public interest will best be served by the earlier grant of an exclusive license.

(2) The license may be granted for all or less than all fields of use of the invention, and throughout the United States of America, its territories and possessions, Puerto Rico, and the District of Columbia, or in any lesser geographic portion thereof.

(3) The exclusive period of the license shall be negotiated, but shall be for less than the terminal portion of the patent, and shall be related to the period necessary to provide a reasonable incentive to invest the necessary risk capital.

(4) The license shall require the licensee to practice the invention within a period specified in the license and then to achieve practical application of the invention.

(5) The license shall require the licensee to expend a specified minimum sum of money and/or to take other specified actions, within indicated period(s) after the effective date of the license, in an effort to achieve practical application of the invention.

(6) The license shall be subject to at least an irrevocable royalty-free right of the Government of the United States to practice and have practiced the invention throughout the world by or on behalf of the Government of the United States and on behalf of any foreign government pursuant to any existing or future treaty or agreement with the United States.

(7) The license may reserve to the Administrator, NASA, under the following circumstances, the right to require the granting of a sublicense to responsible applicant(s) on terms that are considered reasonable by the Administrator, taking into consideration the current royalty rates under similar patents and other pertinent facts: (i) To the extent that the invention is required for public use by Government regulation, or (ii) as may be necessary to fulfill health or safety needs, or (iii) for other purposes stipulated in the license.

(8) The license shall be nontransferable except to the successor of that part of the licensee's business to which the invention pertains.

(9) Subject to the approval of the Administrator, the licensee may grant sublicenses under the license. Each sublicense granted by an exclusive licensee shall make reference to and shall provide that the sublicense is subject to the terms of the exclusive license including the rights retained by the Government under the exclusive license. A copy of each sublicense shall be furnished to the Administrator.

(10) The license may be subject to such other reservations as may be in the public interest.

### § 1245.204 Other licenses.

(a) *License to contractor.* There is

hereby granted to the contractor reporting an invention made in the performance of work under a contract of NASA in the manner specified in section 305(a)

(1) or (2) of the National Aeronautics and Space Act of 1958 as amended (42 U.S.C. 2457(a) (1) or (2)), a revocable, nonexclusive, royalty-free license for the practice of such invention, together with the right to grant sublicenses of the same scope to the extent the contractor was legally obligated to do so at the time the contract was awarded. Such license and right is nontransferable except to the successor of that part of the contractor's business to which the invention pertains.

(b) *Miscellaneous licenses.* Subject to any outstanding licenses, nothing in this subpart 2 shall preclude the Administrator from granting other licenses for inventions, when he determines that do so would provide for an equitable distribution of rights. The following exemplify circumstances wherein such licenses may be granted:

(1) In consideration of the settlement of an interference;

(2) In consideration of a release of a claim of infringement; or

(3) In exchange for or as part of the consideration for a license under adversely held patent(s).

§ 1245.205 Publication of NASA inventions available for license.

(a) A notice will be periodically published in the FEDERAL REGISTER listing inventions available for licensing. Abstracts of the inventions will also be published in the NASA Scientific and Technical Aerospace Reports (STAR) and other NASA publications.

(b) Copies of pending patent applications for inventions abstracted in STAR may be purchased from the National Technical Information Service, Springfield, Va. 22151.

§ 1245.206 Application for nonexclusive license.

(a) *Submission of application.* An application for nonexclusive license under § 1245.203(b) or a short-form nonexclusive license for special inventions under § 1245.203(c) shall be addressed to the NASA Patent Counsel of the NASA Installation having cognizance over the NASA invention for which a license is desired or to the NASA Assistant General Counsel for Patent Matters.

(b) *Contents of an application for nonexclusive license.* An application for nonexclusive license under § 1245.203(b) shall include:

(1) Identification of invention for which license is desired, including the NASA patent case number, patent application serial number of patent number, title and date, if known;

(2) Name and address of the person, company or organization applying for license and whether the applicant is a U.S. citizen or a U.S. corporation;

(3) Name and address of representative of applicant to whom correspondence should be sent;

(4) Nature and type of applicant's business;

(5) Number of employees;

(6) Purpose for which license is desired;

(7) A statement that contains the applicant's best knowledge of the extent to which the invention is being practiced by private industry and the Government;

(8) A description of applicant's capability and plan to undertake the development and marketing required to achieve the practical application of the invention, including the geographical location where the applicant plans to manufacture or use, in the case of a process, the invention; and

(9) A statement indicating the minimum term of years the applicant desires to be licensed.

(c) *Contents of an application for a short-form nonexclusive license.* An application for a short-form nonexclusive license under § 1245.203(c) for a special invention shall include:

(1) Identification of invention for which license is desired, including the NASA patent case number, patent application serial number or patent number, title and date, if known;

(2) Name and address of company or organization applying for license; and

(3) Name and address of representative of applicant to whom correspondence should be sent.

§ 1245.207 Application for exclusive license.

(a) *Submission of application.* An application for exclusive license under § 1245.203(d) may be submitted to NASA at any time. An application for exclusive license shall be addressed to the NASA Assistant General Counsel for Patent Matters.

(b) *Contents of an application for exclusive license.* In addition to the requirements set forth in § 1245.206(b), the application for an exclusive license shall include:

(1) Applicant's status, if any, in any one or more of the following categories:

(i) Small business firm;

(ii) Minority business enterprise;

(iii) Location in a surplus labor area;

(iv) Location in a low-income urban area; and

(v) Location in an area designed by the Government as economically depressed.

(2) A statement indicating the time, expenditure, and other acts which the applicant considers necessary to achieve practical application of the invention, and the applicant's offer to invest that sum and to perform such acts if the license is granted;

(3) A statement whether the applicant would be willing to accept a license for all or less than all fields of use of the invention throughout the United States of America, its territories and possessions, Puerto Rico, and the District of Columbia, or in any lesser geographic portion thereof.

(4) A statement indicating the amount of royalty fees or other consideration, if any, the applicant would be willing to pay the Government for the exclusive license; and

(5) Any other facts which the applicant believes to show it to be in the interests of the United States of America for the Administrator to grant an exclusive license rather than a nonexclusive li-

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cense and that such an exclusive license should be granted to the applicant.

### § 1245.208 Processing applications for license.

(a) *Initial review.* Applications for nonexclusive and exclusive licenses under §§ 1245.206 and 1245.207 will be reviewed by the Patent Counsel of the NASA installation having cognizance for the invention and the NASA Assistant General Counsel for Patent Matters, to determine the conformity and appropriateness of the application for license and the availability of the specific invention for the license requested. The Assistant General Counsel for Patent Matters will forward all applications for license conforming to §§ 1245.206(b) and 1245.207(b) to the NASA Inventions and Contributions Board when the invention is available for consideration of the requested license. Prior to forwarding applications for exclusive licenses to the Inventions and Contributions Board, notice in writing will be given to each nonexclusive licensee for the specific invention advising of the receipt of the application for the exclusive license and providing each nonexclusive licensee with a 30-day period for submitting either evidence that practical application of the invention has occurred or is about to occur or, an application for an exclusive license for the invention.

(b) *Recommendations of Inventions and Contributions Board.* The Inventions and Contributions Board shall, in accordance with the basic considerations set forth in §§ 1245.202 and 1245.203, evaluate all applications for license forwarded by the Assistant General Counsel for Patent Matters. Based upon the facts presented to the Inventions and Contributions Board in the application and any other facts in its possession, the Inventions and Contributions Board shall recommend to the Administrator: (1) Whether a nonexclusive or exclusive license should be granted, (2) the identity of the licensee, and (3) any special terms or conditions of the license.

(c) *Determination of Administrator and grant of nonexclusive licenses.* The Administrator shall review the recommendations of the Inventions and Contributions Board and shall determine whether to grant the nonexclusive license as recommended by the Board. If the Administrator determines to grant the license, the license will be granted upon the negotiation of the appropriate terms and conditions of the Office of General Counsel.

(d) *Determination of Administrator and grant of exclusive licenses—(1) Notice.* If the Administrator determines that the best interest of the United States will be served by the granting of an exclusive license in accordance with the basic considerations set forth in §§ 1245.202 and 1245.203, a notice shall be published in the FEDERAL REGISTER announcing the intent to grant the exclusive license, the identification of the invention, special terms or conditions of the proposed license, and a statement that NASA will grant the exclusive license unless within 30 days of the publication of such notice the Inventions and Contributions Board receives in writing

any of the following together with supporting documentation:

(i) A statement from any person setting forth reasons why it would not be in the best interest of the United States to grant the proposed exclusive license; or

(ii) An application for a nonexclusive license under such invention, in accordance with § 1245.206(b), in which applicant states that he has already brought or is likely to bring the invention to practical application within a reasonable period.

The Inventions and Contributions Board shall, upon receipt of a written request within the 30 days' notice period, grant an extension of 30 days for the submission of the documents designated above.

(2) *Recommendation of Inventions and Contributions Board.* Upon the expiration of the period required by subparagraph (1) of this paragraph, the Board shall review all written responses to the notice and shall then recommend to the Administrator whether to grant the exclusive license as the Board initially recommended or whether a different form of license, if any, should instead be granted.

(3) *Grant of exclusive licenses.* The Administrator shall review the Board's recommendation and shall determine if the interest of the United States would best be served by the grant of an exclusive license as recommended by the Board. If the Administrator determines to grant the exclusive license, the license will be granted upon the negotiation of the appropriate terms and conditions by the Office of General Counsel.

### § 1245.209 Royalties and fees.

(a) Normally, a nonexclusive license for the practical application of an invention granted to a U.S. citizen or company will not require the payment of royalties; however, NASA may require other consideration.

(b) An exclusive license for an invention may require the payment of royalties, fees or other consideration when the licensing circumstances and the basic considerations in § 1245.202, considered together, indicate that it is in the public interest to do so.

### § 1245.210 Reports.

A license shall require the licensee to submit periodic reports of his efforts to work the invention. The reports shall contain information within his knowledge, or which he may acquire under normal business practice, pertaining to the commercial use that is being made of the invention and such other information which the Administrator may determine pertinent to the licensing program and which is specified in the license.

### § 1245.211 Revocation of licenses.

(a) Any license granted pursuant to § 1245.203 may be revoked, either in part or in its entirety, by the Administrator if in his opinion the licensee at any time shall fail to use adequate efforts to bring to or achieve practical application of the invention in accordance with the terms of the license, or if the licensee at any

time shall default in making any report required by the license, or shall make any false report, or shall commit any breach of any covenant or agreement therein contained, and shall fail to remedy any such default, false report, or breach within 30 days after written notice, or if the patent is deemed unenforceable either by the Attorney General or a final decision of a U.S. court.

(b) Any license granted pursuant to § 1245.204(a) may be revoked, either in part or in its entirety, by the Administrator if in his opinion such revocation is necessary to achieve the earliest practical application of the invention pursuant to an application for exclusive license submitted in accordance with § 1245.207, or the licensee at any time shall breach any covenant or agreement contained in the license, and shall fail to remedy any such breach within 30 days after written notice thereof.

(c) Before revoking any license granted pursuant to this Subpart 2 for any cause, there will be furnished to the licensee a written notice of intention to revoke the license, and the licensee will be allowed 30 days after such notice in which to appeal and request a hearing before the Inventions and Contributions Board on the question of revocation. After a hearing, the Inventions and Contributions Board shall transmit to the Administrator the record of proceedings, its findings of fact, and its recommendation whether the license should be revoked either in part or in its entirety. The Administrator shall review the recommendation of the Board and determine whether to revoke the license in part or in its entirety. Revocation of a license shall include revocation of all sublicenses which have been granted.

### § 1245.212 Appeals.

Any person desiring to file an appeal pursuant to § 1245.211(c) shall address the appeal to Chairman, Inventions and Contributions Board. Any person filing an appeal shall be afforded an opportunity to be heard before the Inventions and Contributions Board, and to offer evidence in support of his appeal. The procedures to be followed in any such matter shall be determined by the Administrator. The Board shall make findings of fact and recommendations with respect to disposition of the appeal. The decision on the appeal shall be made by the Administrator, and such decision shall be final and conclusive, except on questions of law, unless determined by a court of competent jurisdiction to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence.

### § 1245.213 Litigation.

An exclusive licensee shall be granted the right to sue at his own expense any party who infringes the rights set forth in his license and covered by the licensed patent. The licensee may join the Government, upon consent of the Attorney General, as a party complainant in such suit, but without expense to the Government and the licensee shall pay costs and any final judgment or decree that may be rendered against the Govern-

## PATENT LICENSING REGULATIONS

ment in such suit. The Government shall also have an absolute right to intervene in any such suit at its own expense. The licensee shall be obligated to promptly furnish to the Government, upon request, copies of all pleadings and other papers filed in any such suit and of evidence adduced in proceedings relating to the licensed patent including, but not limited to, negotiations for settlement and agreements settling claims by a licensee based on the licensed patent, and all other books, documents, papers, and

records pertaining to such suit. If, as a result of any such litigation, the patent shall be declared invalid, the licensee shall have the right to surrender his license and be relieved from any further obligation thereunder.

### § 1245.214 Address of communications.

(a) Communications to the Assistant General Counsel for Patent Matters in accordance with §§ 1245.206 and 1245.207 and requests for information concerning licenses for NASA inventions should be

addressed to the Assistant General Counsel for Patent Matters, Code GP, National Aeronautics and Space Administration, Washington, D.C. 20546.

(b) Communications to the Inventions and Contributions Board in accordance with §§ 1245.208, 1245.211, and 1245.212 should be addressed to Chairman, Inventions and Contributions Board, National Aeronautics and Space Administration, Washington, D.C. 20546.

*Effective date.* The regulations set forth in this subpart 2 are effective April 1, 1972.

JAMES C. FLETCHER,  
Administrator.

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### Subject Categories

*Abstracts in the bibliography are grouped under the following categories:*

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| <b>01 Aerodynamics</b> 1  |             |
| Includes aerodynamics of bodies, combinations, internal flow in ducts and turbomachinery; wings, rotors, and control surfaces. For applications see: 02 Aircraft and 32 Space Vehicles. For related information see also: 12 Fluid Mechanics; and 33 Thermodynamics and Combustion.   |             |
| <b>02 Aircraft</b> 3  |             |
| Includes fixed-wing airplanes, helicopters, gliders, balloons, ornithopters, etc.; and specific types of complete aircraft (e.g., ground effect machines, STOL, and VTOL); flight tests; operating problems (e.g., sonic boom); safety and safety devices; economics; and stability and control. For basic research see: 01 Aerodynamics. For related information see also: 31 Space Vehicles; and 32 Structural Mechanics. |             |
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| <b>04 Biosciences</b> 43  |             |
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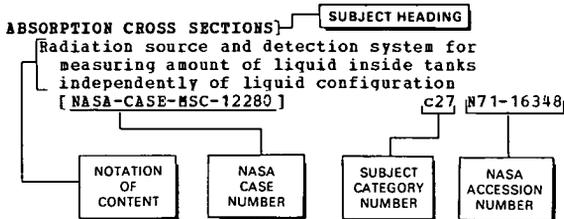
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Typical Subject Index Listing



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[NASA-CASE-XLA-00806] c02 N70-34858
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[NASA-CASE-XLA-03691] c31 N71-15674
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[NASA-CASE-XLA-10450] c28 N71-21493
- Variable geometry rotor system for direct control over wake vortex  
[NASA-CASE-LAR-10557] c02 N72-11018
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[NASA-CASE-LEW-11402-1] c28 N72-20770
- Development of auxiliary lifting system to provide ferry capability for entry vehicles  
[NASA-CASE-LAR-10574-1] c11 N73-13257
- Design of aircraft with rotatable wing for producing high speed aerodynamic configuration  
[NASA-CASE-ARC-10470-2] c02 N73-30018
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[NASA-CASE-XLA-00892] c33 N71-17897
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 [NASA-CASE-XMF-04163] c02 N71-23007  
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 [NASA-CASE-MSC-13281] c31 N72-18859
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 [NASA-CASE-XAC-00042] c14 N70-34816
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 [NASA-CASE-MFS-20829] c12 N72-21310  
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 [NASA-CASE-NPO-10109] c03 N71-11049  
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- AEROSPACE ENVIRONMENTS**  
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- [NASA-CASE-XAC-08972] c02 N71-20570  
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- [NASA-CASE-XAC-10019] c15 N71-23809  
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- [NASA-CASE-ARC-10470-1] c02 N73-26005  
Aircraft configuration for reducing effects of nose-down pitching moments due to high lift forces, loss of trim lift, and engine-out yawing moments
- [NASA-CASE-LAR-11252-1] c02 N73-26007  
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[NASA-CASE-XLA-05828] c01 N71-13411  
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[NASA-CASE-XMF-01452] c15 N70-41371  
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[NASA-CASE-XLE-05033] c15 N71-23810
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Laser beam projector for continuous, precise alignment between target, laser generator, and astronomical telescope during tracking  
[NASA-CASE-NPO-11087] c23 N71-29125  
Star image motion compensator using telescope for maintaining fixed images  
[NASA-CASE-LAR-10523-1] c14 N72-22444
- ATMOSPHERIC COMPOSITION**  
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[NASA-CASE-NPO-11373] c13 N72-25323  
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[NASA-CASE-HQN-10037-1] c14 N73-27376
- ATMOSPHERIC ENTRY**  
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[NASA-CASE-XAC-02058] c02 N71-16087  
Development of method for measuring electron density gradients of plasma sheath around space vehicle during atmospheric entry  
[NASA-CASE-XLA-06232] c25 N71-20563  
Orbital and entry tracking accessory mounted on global map to provide range requirements for reentry vehicles to any landing site  
[NASA-CASE-LAR-10626-1] c14 N72-21416
- ATMOSPHERIC ENTRY SIMULATION**  
Crossed-field plasma accelerator for laboratory simulation of atmospheric reentry conditions  
[NASA-CASE-XLA-00675] c25 N70-33267  
Wind tunnel method for simulating flow fields around blunt vehicles entering planetary atmospheres without involving high temperatures  
[NASA-CASE-LAR-11138] c12 N71-20436
- ATMOSPHERIC PHYSICS**  
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[NASA-CASE-KSC-10730-1] c14 N73-32318
- ATMOSPHERIC RADIATION**  
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[NASA-CASE-ERC-10276] c14 N73-26432
- ATMOSPHERIC TURBULENCE**  
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## ATTACHMENT

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[NASA-CASE-NPO-11418-1] c14 N73-13420

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Analog spatial maneuver computer with three output angles for obtaining desired spatial attitude  
[NASA-CASE-GSC-10880-1] c08 N72-11172  
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[NASA-CASE-XMS-12158-1] c31 N69-27499  
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[NASA-CASE-XFR-00181] c21 N70-33279  
Sensing method and device for determining orientation of space vehicle or satellite by using particle traps  
[NASA-CASE-XGS-00466] c21 N70-34297  
Attitude and propellant flow control system for liquid propellant rocket vehicles  
[NASA-CASE-IMF-00185] c21 N70-34539  
Spacecraft attitude control system using solar and earth sensors, gyroscopes, and jet actuators  
[NASA-CASE-XNP-00465] c21 N70-35395  
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[NASA-CASE-XLA-00281] c21 N70-36943  
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[NASA-CASE-XNP-00676] c15 N70-38996  
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[NASA-CASE-XAC-01404] c05 N70-41581  
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[NASA-CASE-XMS-02977] c11 N71-10746  
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[NASA-CASE-XNP-03914] c21 N71-10771  
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[NASA-CASE-LAR-10774] c10 N71-13545  
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[NASA-CASE-XLA-05464] c21 N71-14132  
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[NASA-CASE-XGS-04393] c21 N71-14159  
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[NASA-CASE-IMF-01598] c21 N71-15583  
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[NASA-CASE-XGS-03431] c21 N71-15642  
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[NASA-CASE-XAC-02405] c09 N71-16089  
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[NASA-CASE-XLE-03583] c31 N71-17629  
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[NASA-CASE-XLA-00793] c21 N71-22880

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[NASA-CASE-XGS-01654] c31 N71-24750  
Development of voice operated controller for controlling reaction jets of spacecraft  
[NASA-CASE-XLA-04063] c31 N71-33160

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[NASA-CASE-NPO-00465] c21 N70-35395

**ATTITUDE INDICATORS**  
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[NASA-CASE-XNP-00438] c21 N70-35089  
Hand controller operable about three respectively perpendicular axes and capable of actuating signal generators for attitude control devices  
[NASA-CASE-XMS-07487] c15 N71-23255  
Combined optical attitude and altitude indicating instrument for use in aircraft or spacecraft  
[NASA-CASE-XLA-01907] c14 N71-23268  
High resolution attitude sensor for sensing spacecraft attitude relative to light source  
[NASA-CASE-LAR-10586-1] c14 N73-11406  
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[NASA-CASE-ERC-10392] c21 N73-14692

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Dynamic precession damping of spin-stabilized vehicles by using rate gyroscope and angular accelerometer  
[NASA-CASE-XLA-01989] c21 N70-34295  
Attitude stabilizer for nonguided missile or vehicle with respect to trajectory  
[NASA-CASE-ARC-10134] c30 N72-17873  
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[NASA-CASE-ARC-10716-1] c31 N73-32784

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Audio equipment for removing impulse noise from audio signals  
[NASA-CASE-NPO-11631] c10 N73-12244

**AUDIO FREQUENCIES**  
High efficiency transformerless amplitude modulator coupled to RF power amplifier  
[NASA-CASE-GSC-10668-1] c07 N71-28430  
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[NASA-CASE-NPO-11147] c14 N72-27408

**AUDITORY PERCEPTION**  
Development of auditory display of two-dimensional patterns to assist blind persons in pattern identification  
[NASA-CASE-HQN-10832-1] c14 N73-12456

**AUDITORY SIGNALS**  
Audio signal processing system for noise surge elimination at low amplitude audio input  
[NASA-CASE-MSC-12223-1] c07 N71-26181  
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[NASA-CASE-NPO-11631] c10 N73-12244

**AUDITORY STIMULI**  
Development of auditory display of two-dimensional patterns to assist blind persons in pattern identification  
[NASA-CASE-HQN-10832-1] c14 N73-12456

**AUSTENITIC STAINLESS STEELS**  
Flame sprayed intermetallic coating for producing oxidation corrosion and erosion resistant low alloy austenitic stainless steel for use in automobile internal combustion engines  
[NASA-CASE-LEW-11267-2] c15 N72-28502  
Intermetallic chromium containing nickel aluminate for high temperature corrosion protection of stainless steels  
[NASA-CASE-LEW-11267-1] c17 N73-32414

**AUTOCORRELATION**  
Linear three-tap feedback shift register  
[NASA-CASE-NPO-10351] c08 N71-12503  
Circuitry for developing autocorrelation function continuously within signal receiving period  
[NASA-CASE-XNP-00746] c07 N71-21476

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AXIAL FLOW TURBINES

**AUTOMATIC CONTROL**

Automatic control of voltage supply to direct current motor  
 [NASA-CASE-XMS-04215-1] c09 N69-39987

Electro-optical/computer system for aligning large structural members and maintaining correct position  
 [NASA-CASE-XNP-02029] c14 N70-41955

Pulsed energy power system for application of combustible gases to turbine controlling ac voltage generator  
 [NASA-CASE-MSC-13112] c03 N71-11057

Automatic balancing device for use on frictionless supported attitude-controlled test platforms  
 [NASA-CASE-LAR-10774] c10 N71-13545

Computer controlled apparatus for maintaining welding torch angle and velocity during seam tracking  
 [NASA-CASE-XMF-03287] c15 N71-15607

Fluid leakage detection system with automatic monitoring capability  
 [NASA-CASE-LAR-10323-1] c12 N71-17573

Light sensitive control system for automatically opening and closing dome of solar optical telescope  
 [NASA-CASE-MSC-10966] c14 N71-19568

Welding torch with automatic speed controller using speed sensing wheel and closed servo system  
 [NASA-CASE-XMF-01730] c15 N71-23050

Microwave waveguide switch with rotor position control  
 [NASA-CASE-XNP-06507] c09 N71-23548

Automatically reciprocating, high pressure pump for use in spacecraft cryogenic propellants  
 [NASA-CASE-XNP-04731] c15 N71-24042

Automatic controlled thermal fatigue testing apparatus  
 [NASA-CASE-XLA-02059] c33 N71-24276

Automatically charging battery of electric storage cells  
 [NASA-CASE-XNP-04758] c03 N71-24605

Electric motor control system with pulse width modulation for providing automatic null seeking servo  
 [NASA-CASE-XMF-05195] c10 N71-24861

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 [NASA-CASE-NPO-10625] c09 N71-26182

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 [NASA-CASE-XMS-06497] c14 N71-26244

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 [NASA-CASE-XNP-09451] c06 N71-26754

Automatic control device for regulating inlet water temperature of liquid cooled spacesuit  
 [NASA-CASE-MSC-13917-1] c05 N72-15098

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 [NASA-CASE-NPO-11210] c11 N72-20244

Digitally controlled random noise vibration testing  
 [NASA-CASE-NPO-11612] c11 N72-20251

Plotter device for automatically drawing equipotential lines on sheet of resistance paper  
 [NASA-CASE-NPO-11134] c09 N72-21246

Automatic shunting of ion thruster magnetic field when thruster is not operating  
 [NASA-CASE-LEW-10835-1] c28 N72-22771

Automated system for monitoring oxidative metabolites of aromatic amines  
 [NASA-CASE-ARC-10469-1] c06 N72-31145

Automatic temperature control for liquid cooled space suit  
 [NASA-CASE-ARC-10599-1] c05 N73-26071

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 [NASA-CASE-MFS-22039-1] c14 N73-30428

Speed control system for dc motor equipped with brushless Hall effect device  
 [NASA-CASE-MFS-20207-1] c09 N73-32107

**AUTOMATIC CONTROL VALVES**

Control system for maintaining liquid nitrogen level in cryogenic reservoir

[NASA-CASE-XLA-09714] c03 N70-35700

Ambient atmospheric pressure sensing device for determining altitude of flight vehicles  
 [NASA-CASE-XLA-00128] c15 N70-37925

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 [NASA-CASE-MSC-12116-1] c15 N71-17648

Semitoroidal diaphragm cavitating flow control valve  
 [NASA-CASE-XNP-09704] c12 N71-18615

Reliability of automatic refilling valving device for cryogenic liquid systems  
 [NASA-CASE-NPO-11177] c15 N72-17453

**AUTOMATIC FREQUENCY CONTROL**

System for phase locking onto carrier frequency signal located within receiver bandpass  
 [NASA-CASE-XGS-04994] c09 N69-21543

Audio signal processing system for noise surge elimination at low amplitude audio input  
 [NASA-CASE-MSC-12223-1] c07 N71-26181

Automatic frequency control device for providing frequency reference for voltage controlled oscillator  
 [NASA-CASE-KSC-10393] c09 N72-21247

Self-tuning electronic filter for maintaining constant bandwidth and center frequency gain  
 [NASA-CASE-ARC-10264-1] c09 N73-20231

**AUTOMATIC GAIN CONTROL**

Automatic gain control amplifier system  
 [NASA-CASE-XMS-05307] c09 N69-24330

Automatic measuring and recording of gain and zero drift characteristics of electronic amplifier  
 [NASA-CASE-XMS-05562-1] c09 N69-39986

Self-tuning electronic filter for maintaining constant bandwidth and center frequency gain  
 [NASA-CASE-ARC-10264-1] c09 N73-20231

**AUTOMATIC TEST EQUIPMENT**

Automatic pair feeding device for controlled feeding of test animals  
 [NASA-CASE-ARC-10302-1] c04 N72-21052

Air conditioning system and automatic distribution device for distributing air flow from opposite directions in supply duct  
 [NASA-CASE-GSC-11445-1] c15 N72-28503

Automated visual sensitivity tester for determining visual field sensitivity and blind spot size  
 [NASA-CASE-ARC-10329-1] c05 N73-26072

**AUTOMOBILES**

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 [NASA-CASE-ARC-10519-1] c05 N72-31117

**AXES (REFERENCE LINES)**

Test fixture for measuring moment of inertia of irregularly shaped body with multiple axes  
 [NASA-CASE-XGS-01023] c14 N71-22992

Mechanism for restraining universal joints to prevent separation while allowing bending, angulation, and lateral offset in any position about axis  
 [NASA-CASE-XNP-02278] c15 N71-28951

**AXES OF ROTATION**

Unitary three-axis controller for flight vehicles within or outside atmosphere  
 [NASA-CASE-XPR-00181] c21 N70-33279

Proportional controller for regulating aircraft or spacecraft motion about three axes  
 [NASA-CASE-XAC-03392] c03 N70-41954

Electrical and electromechanical trigonometric computation assembly and space vehicle guidance system for aligning perpendicular axes of two sets of three-axes coordinate references  
 [NASA-CASE-XMF-00684] c21 N71-21688

Hand controller operable about three respectively perpendicular axes and capable of actuating signal generators for attitude control devices  
 [NASA-CASE-XMS-07487] c15 N71-23255

**AXIAL COMPRESSION LOADS**

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 [NASA-CASE-MSC-15626-1] c14 N72-25411

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 [NASA-CASE-XLE-00170] c15 N70-36412

**AXIAL LOADS**

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Multistage, multiple reentry, single rotor, axial flow turbine  
[NASA-CASE-XLE-00085] c28 N70-39895

**AXIAL LOADS**  
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[NASA-CASE-XMF-01371] c15 N70-41829

**AZIMUTH**  
Tracking mount for laser telescope employed in tracking large rockets and space vehicles to give information regarding azimuth and elevation  
[NASA-CASE-MFS-14017] c14 N71-26627  
Measurement of relative azimuth bearing using laser source for projecting collimated beam  
[NASA-CASE-GSC-11262-1] c16 N72-21503

**AZINES**  
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[NASA-CASE-XMF-08656] c06 N71-11242  
High temperature and ultraviolet stability properties of poly(diarylsiloxy)arylazine  
[NASA-CASE-ARC-10592-1] c18 N73-29554

**AZO COMPOUNDS**  
Molding process using imidazopyrrolone polymer  
[NASA-CASE-LAR-10547-1] c15 N72-22505

**B**

**BACKGROUND NOISE**  
Electronic background suppression field scanning sensor for detecting point source targets  
[NASA-CASE-XGS-05211] c07 N69-39980

**BACKSCATTERING**  
Apparatus for measuring backscatter and transmission characteristics of sample segment of large spherical passive satellites  
[NASA-CASE-XGS-02608] c07 N70-41678  
Mossbauer spectrometer with high efficiencies in both transmission and backscattering techniques  
[NASA-CASE-LAR-11155-1] c14 N73-13433

**BACKUPS**  
Flexible backup bar for welding awkwardly shaped structures  
[NASA-CASE-XMF-00722] c15 N70-40204

**BACTERIA**  
Decontamination of petroleum products with honey  
[NASA-CASE-XNP-03835] c06 N71-23499  
Lyophilized spore dispenser for production of finely divided monoparticulate cloud of bacterial spores  
[NASA-CASE-LAR-10544-1] c15 N72-21477  
Portable tester for monitoring bacterial contamination by adenosine triphosphate light reaction  
[NASA-CASE-GSC-10879-1] c14 N72-25413  
Enzymatic luminescent bioassay method for determining bacterial levels in urine  
[NASA-CASE-GSC-11092-2] c04 N73-27052

**BACTERIOLOGY**  
Detection of bacteria in biological fluids and foods  
[NASA-CASE-GSC-11533-1] c14 N73-13435

**BAFFLES**  
Light radiation direction indicator with baffle of two parallel grids  
[NASA-CASE-XNP-03930] c14 N69-24331  
Light baffle with oblate hemispheroid surface and shading flange  
[NASA-CASE-NPO-10337] c14 N71-15604  
Flexible ring slosh damping baffle for spacecraft fuel tank  
[NASA-CASE-LAR-10317-1] c32 N71-16103  
Submerged fuel tank baffles to prevent sloshing in liquid propellant rocket flight  
[NASA-CASE-XLA-04665] c32 N71-16106  
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[NASA-CASE-KSC-10639] c15 N73-26472

**BAGS**  
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[NASA-CASE-XMS-06761] c05 N69-23192

**BALANCE**  
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[NASA-CASE-XAC-00648] c14 N70-40400

**BALANCING**  
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[NASA-CASE-LAR-10774] c10 N71-13545

Force balanced throttle valve for fuel control in rocket engines  
[NASA-CASE-NPO-10808] c15 N71-27432  
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[NASA-CASE-LAR-10348-1] c11 N73-12264

**BALL BEARINGS**  
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[NASA-CASE-XLA-00013] c15 N71-29136  
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[NASA-CASE-LEW-10856-1] c15 N72-22490  
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[NASA-CASE-LEW-11087-1] c15 N73-30458

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[NASA-CASE-MSC-12393-1] c02 N73-26006

**BALLASTS (IMPEDANCES)**  
Apparatus for ballasting high frequency transistors  
[NASA-CASE-XGS-05003] c09 N69-24318

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[NASA-CASE-XLA-06824-2] c02 N71-11037  
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[NASA-CASE-XGS-03351] c31 N71-16081  
Development of Mylar enclosure for maintaining temperature of balloon-borne batteries and electronic modules  
[NASA-CASE-GSC-11620-1] c14 N72-33379  
System for controlling torque buildup in suspension of gondola connected to balloon by parachute shroud lines  
[NASA-CASE-GSC-11077-1] c02 N73-13008

**BALLS**  
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[NASA-CASE-XFR-04104] c03 N70-42073

**BANDPASS FILTERS**  
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[NASA-CASE-XGS-02816] c07 N69-24323  
Phase locked demodulator with bandwidth switching amplifier circuit  
[NASA-CASE-XNP-01107] c10 N71-28859  
Signal to noise ratio determination circuit using bandpass limiter  
[NASA-CASE-GSC-11239-1] c10 N73-25241  
Selective bandpass resonators using bandstop resonator pairs for microwave frequency operation  
[NASA-CASE-GSC-10990-1] c09 N73-26195

**BANDWIDTH**  
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[NASA-CASE-XMS-06740-1] c07 N71-26579  
Self-tuning electronic filter for maintaining constant bandwidth and center frequency gain  
[NASA-CASE-ARC-10264-1] c09 N73-20231

**BARIUM**  
Chemical release system for barium free atoms and barium ions  
[NASA-CASE-LAR-10670-2] c13 N72-29425  
Chemical system for releasing barium to create ion clouds in upper atmosphere and interplanetary space  
[NASA-CASE-LAR-10670-1] c06 N73-30097

**BARIUM COMPOUNDS**  
Improved cathode containing barium carbonate block and heated tungsten screen for electron bombardment ion thruster  
[NASA-CASE-XLE-07087] c06 N69-39889

**BARIUM FLUORIDES**  
Production of barium fluoride-calcium fluoride composite lubricant for bearings or seals  
[NASA-CASE-XLE-08511-2] c18 N71-16105

**BARIUM TITANATES**  
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[NASA-CASE-ERC-10307] c08 N72-21198

**BARRIER LAYERS**  
Thin film metal-insulator-metal photovoltaic light detector with trapezoidal barrier  
[NASA-CASE-NPO-11432-2] c14 N72-28442

- BARRIERS**  
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[NASA-CASE-NPO-11856-1] c16 N72-25490
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[NASA-CASE-XLA-01995] c18 N71-23047
- BATTERY CHARGERS**  
Battery charging system with cell to cell voltage balance  
[NASA-CASE-XGS-05432] c03 N71-19438  
Alkaline-type coulometer cell for primary charge control in secondary battery recharge circuits  
[NASA-CASE-XGS-05434] c03 N71-20491  
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[NASA-CASE-GSC-10487-1] c03 N71-24719
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[NASA-CASE-XLA-07424] c14 N71-18482
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Rotary bead dropper and selector for testing micrometeorite transducers  
[NASA-CASE-XGS-03304] c09 N71-22988
- BEAM LEADS**  
Beam lead integrated circuit package and method for preparing lead frame array  
[NASA-CASE-MFS-21374] c10 N72-21274
- BEAM SPLITTERS**  
Optical range finder using reflective first surfaces mirror and transmitting beam splitter  
[NASA-CASE-MSC-12105-1] c14 N72-21409
- BEAM SWITCHING**  
Using electron beam switching for brushless motor commutation  
[NASA-CASE-XGS-01451] c09 N71-10677  
Antenna array at focal plane of reflector with coupling network for beam switching  
[NASA-CASE-GSC-10220-1] c07 N71-27233  
Dish antenna having switching beamwidth with truncated concave ellipsoid subreflector  
[NASA-CASE-GSC-11760-1] c09 N73-32116
- BEAM WAVEGUIDES**  
Laser machining device with dielectric functioning as beam waveguide for mechanical and medical applications  
[NASA-CASE-HQN-10541-2] c15 N71-27135  
Optical communication system with gas filled waveguide for laser beam transmission  
[NASA-CASE-HQN-10541-4] c16 N71-27183  
Laser beam projector for continuous, precise alignment between target, laser generator, and astronomical telescope during tracking  
[NASA-CASE-NPO-11087] c23 N71-29125
- BEAMS (RADIATION)**  
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[NASA-CASE-ERC-10020] c16 N71-26154  
Method and system for transmitting and distributing optical frequency radiation  
[NASA-CASE-HQN-10541-3] c23 N72-23695
- BEARING (DIRECTION)**  
Light radiation direction indicator with baffle of two parallel grids  
[NASA-CASE-XNP-03930] c14 N69-24331  
Solar radiation direction detector and device for compensating degradation of photocells  
[NASA-CASE-XLA-00183] c14 N70-40239  
Michelson interferometer with photodetector for optical direction sensing  
[NASA-CASE-NPO-10320] c14 N71-17655  
Omnidirectional liquid filled accelerometer design with liquid and housing temperature compensation  
[NASA-CASE-HQN-10780] c14 N71-30265
- BEARINGS**  
Metal alloy bearing materials for space applications  
[NASA-CASE-XLE-05033] c15 N71-23810  
Low friction bearing and lock mechanism for two-axis gimbal carrying satellite payload  
[NASA-CASE-GSC-10556-1] c31 N71-26537
- Magnetic bearing with diverse magnetic sources coupled to same air gap via different low magnetic reluctance paths for use with permanent magnets  
[NASA-CASE-GSC-11079-1] c21 N71-28461  
Shock absorber for supporting bearings subjected to omnidirectional shock loading in high gravity environments  
[NASA-CASE-NPO-10626] c15 N72-15465  
Measuring device for bearing preload using spring washers  
[NASA-CASE-MFS-20434] c11 N72-25288  
Low mass rolling element bearing with lightweight core and hollow center  
[NASA-CASE-LEW-11087-3] c15 N73-20534
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[NASA-CASE-XFR-00811] c15 N70-36901
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Multichannel photoionization chamber for measuring absorption, photoionization yield, and coefficients of gases  
[NASA-CASE-ERC-10044-1] c14 N71-27090
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[NASA-CASE-XNP-03835] c06 N71-23499
- BELLOWS**  
Compact bellows spirometer for high speed and high altitude space travel  
[NASA-CASE-XAR-01547] c05 N69-21473  
Electrical connection for printed circuits on common board, using bellows principle in rivet  
[NASA-CASE-XNP-05082] c15 N70-41960  
Flexible bellows joint shielding sleeve for propellant transfer pipelines  
[NASA-CASE-XNP-01855] c15 N71-28937
- BELTS**  
Apparatus for manufacturing polyester drive belts  
[NASA-CASE-NPO-13205-1] c15 N73-31442
- BENDING**  
Method and apparatus for bowing of instrument panels to improve radio frequency shielded enclosure  
[NASA-CASE-XMF-09422] c07 N71-19436  
Development of systems for automatically and continually suppressing or attenuating bending motion in elastic bodies  
[NASA-CASE-XAC-05632] c32 N71-23971  
Elbow forming in jacketed pipes while maintaining separation between core shape and jacket pipes  
[NASA-CASE-XNP-10475] c15 N71-24679  
Device for bending metal ribbon or wire  
[NASA-CASE-XLA-05966] c15 N72-12408
- BENDING DIAGRAMS**  
Charged particle analyzer with periodically varying voltage applied across electrostatic deflection members  
[NASA-CASE-XAC-05506-1] c24 N71-16095
- BENDING FATIGUE**  
Apparatus for testing metallic and nonmetallic beams or rods by bending at high temperatures in vacuum or inert atmosphere  
[NASA-CASE-XLE-01300] c15 N70-41993  
Cryostat for flexure fatigue testing of composite materials  
[NASA-CASE-XMF-02964] c14 N71-17659
- BENDING MOMENTS**  
Launch pad missile release system with bending moment change rate reduction in thrust distribution structure at liftoff  
[NASA-CASE-XMF-03198] c30 N70-40353
- BENDING VIBRATION**  
Mercury filled pendulum damper for controlling bending vibration induced by wind effects  
[NASA-CASE-LAR-10274-1] c14 N71-17626
- BENZENE**  
Para-benzoquinone dioxime and concentrated mineral acid processed to yield intumescent or fire resistant, heat insulating materials  
[NASA-CASE-ARC-10304-1] c18 N73-26572
- BERYLLIUM ALLOYS**  
Development of fluoride coating to prevent oxidation of beryllium surfaces at elevated temperatures  
[NASA-CASE-LEW-10327] c17 N71-33408
- BIHETALS**  
Nonmagnetic thermal motor for magnetometer movement

**BINARY CODES**

{ NASA-CASE-XAR-03786 } c09 N69-21313  
 Design and development of linear actuator based  
 on bimetallic spring expansion  
 { NASA-CASE-NPO-10637 } c15 N72-12409  
 Application of spiral, bimetallic strip to  
 create circular motion on mechanical shaft by  
 changing strip temperature  
 { NASA-CASE-NPO-11283 } c09 N72-25260  
 Development of thermal compensating structure  
 which maintains uniform length with changes in  
 temperature  
 { NASA-CASE-MFS-20433 } c15 N72-28496

**BINARY CODES**

Time division relay synchronizer with master  
 sync pulse for activating binary counter to  
 produce signal identifying time slot for station  
 { NASA-CASE-GSC-10373-1 } c07 N71-19773  
 Logic circuit for generating multibit binary  
 code word in parallel  
 { NASA-CASE-XNP-04623 } c10 N71-26103  
 Design and development of encoder/decoder system  
 to generate binary code which is function of  
 outputs of plurality of bistable elements  
 { NASA-CASE-NPO-10342 } c10 N71-33407  
 Binary coded sequential acquisition ranging  
 system for distance measurements  
 { NASA-CASE-NPO-11194 } c08 N72-25209

**BINARY DATA**

Nondestructive interrogating and state changing  
 circuit for binary magnetic storage elements  
 { NASA-CASE-XGS-00174 } c08 N70-34743  
 Logic circuit to ripple add and subtract binary  
 counters for spaceborne computers  
 { NASA-CASE-XGS-04766 } c08 N71-18602  
 Describing circuit for obtaining sum of squares  
 of numbers  
 { NASA-CASE-XGS-04765 } c08 N71-18693  
 Digital synchronizer for extracting binary data  
 in receiver of PSK/PCH communication system  
 { NASA-CASE-NPO-10851 } c07 N71-24613  
 Phase modulation of tone and binary signals on  
 carrier waves in communication systems  
 { NASA-CASE-GSC-11743-1 } c07 N73-27107

**BINARY DIGITS**

Logarithmic converter for compressing 19-digit  
 binary input number to 8-digit output  
 { NASA-CASE-XLA-00471 } c08 N70-34778  
 Circuit diagram and operation of full binary adder  
 { NASA-CASE-XGS-00689 } c08 N70-34787  
 Binary number sorter for arranging numbers in  
 order of magnitude  
 { NASA-CASE-NPO-10112 } c08 N71-12502  
 Binary sequence detector with few memory  
 elements and minimized logic circuit complexity  
 { NASA-CASE-XNP-05415 } c08 N71-12505  
 Cathode ray tube system for displaying ones and  
 zeros in binary wave train  
 { NASA-CASE-XGS-04987 } c08 N71-20571  
 Characteristics of comparator circuits for  
 comparison of binary numbers in information  
 processing system  
 { NASA-CASE-XNP-04819 } c08 N71-23295  
 Digital converter for scaling binary number to  
 binary coded decimal number of higher multiple  
 { NASA-CASE-KSC-10595 } c08 N73-12176  
 Binary concatenated coding system to measure,  
 count, and record numerical information using  
 minimized number of digits  
 { NASA-CASE-MSC-14082-1 } c08 N73-16163  
 Family of m-ary linear feedback shift register  
 with binary logic  
 { NASA-CASE-NPO-11868 } c10 N73-20254

**BINARY TO DECIMAL CONVERTERS**

Binary to binary-coded decimal converter using  
 single set of logic circuits notwithstanding  
 number of shift register decades  
 { NASA-CASE-XNP-00432 } c08 N70-35423  
 Design and operation of high speed binary to  
 decimal conversion system  
 { NASA-CASE-XGS-01230 } c08 N71-19544  
 Binary to decimal decoder logic circuit design  
 with feedback control and display device  
 { NASA-CASE-XNP-06167 } c08 N71-24890  
 High speed direct binary to binary coded decimal  
 converter for use in PCM telemetry systems  
 { NASA-CASE-KSC-10326 } c08 N72-21197

**BINDERS (MATERIALS)**

Bonded solid lubricant coatings of calcium  
 fluoride and binder for high temperature

**SUBJECT INDEX**

stability  
 { NASA-CASE-XMS-00259 } c18 N70-36400

**BIOASSAY**  
 Spectrophotofluorometer with 3-dimensional  
 display to identify fluorescence spectra of  
 carcinogenic and noncarcinogenic hydrocarbons  
 { NASA-CASE-XGS-01231 } c14 N70-41676  
 Bioassay of flavin coenzymes  
 { NASA-CASE-GSC-10565-1 } c06 N72-25149  
 Enzymatic luminescent bioassay method for  
 determining bacterial levels in urine  
 { NASA-CASE-GSC-11092-2 } c04 N73-27052

**BIOELECTRIC POTENTIAL**  
 Electrochemically reversible silver-silver  
 chloride electrode for detecting bioelectric  
 potential differences generated by human  
 muscles and organs  
 { NASA-CASE-XMS-02872 } c05 N69-21925  
 Manufacturing process for making perspiration  
 resistant-stress resistant biopotential  
 electrode  
 { NASA-CASE-MSC-90153-2 } c05 N72-25120

**BIOELECTRICITY**  
 Development and characteristics of electrodes in  
 which poisoning by organic molecules is  
 prevented by ion selective electrolytic  
 deposition of hydrophilic protein colloid  
 { NASA-CASE-XMS-04213-1 } c09 N71-26002  
 Elastomeric extensometer for measuring surface  
 area changes of human body caused by body  
 expansion and contraction  
 { NASA-CASE-MFS-21049-1 } c14 N73-11405

**BIOENGINEERING**  
 Isolated dc amplifier for bioelectric measurements  
 { NASA-CASE-ARC-10596-1 } c09 N72-27233

**BIOINSTRUMENTATION**  
 Temperature compensated solid state differential  
 amplifier with application in  
 bioinstrumentation circuits  
 { NASA-CASE-XAC-00435 } c09 N70-35440  
 Electrode attached to helmets for detecting low  
 level signals from skin of living creatures  
 { NASA-CASE-ARC-10043-1 } c05 N71-11193  
 Characteristics of pressed disc electrode for  
 biological measurements  
 { NASA-CASE-XMS-04212-1 } c05 N71-12346  
 Development of apparatus and method for  
 quantitatively measuring brain activity as  
 automatic indication of sleep state and level  
 of consciousness  
 { NASA-CASE-MSC-13282-1 } c05 N71-24729  
 Development and characteristics of electrodes in  
 which poisoning by organic molecules is  
 prevented by ion selective electrolytic  
 deposition of hydrophilic protein colloid  
 { NASA-CASE-XMS-04213-1 } c09 N71-26002  
 Ultrasonic biomedical system for measuring and  
 recording movements of organs such as heart  
 valves  
 { NASA-CASE-ARC-10597-1 } c05 N72-31116

**BIOLUMINESCENCE**  
 Detection instrument for light emitted from ATP  
 biochemical reaction  
 { NASA-CASE-XGS-05534 } c23 N71-16355  
 Describing method for lyophilization of  
 luciferase containing mixtures for use in life  
 detection reactions  
 { NASA-CASE-XGS-05532 } c06 N71-17705

**BIOMEDICAL DATA**  
 Silicon radiation detecting probe design for in  
 vivo biomedical use  
 { NASA-CASE-XMS-01177 } c05 N71-19440

**BIOMETRICS**  
 Characteristics of pressed disc electrode for  
 biological measurements  
 { NASA-CASE-XMS-04212-1 } c05 N71-12346  
 Compressible electrolyte saturated sponge  
 electrode for biomedical applications  
 { NASA-CASE-MSC-13648 } c05 N72-27103  
 Ultrasonic biomedical system for measuring and  
 recording movements of organs such as heart  
 valves  
 { NASA-CASE-ARC-10597-1 } c05 N72-31116  
 Transducer for converting arterial pulse wave  
 into electric signals  
 { NASA-CASE-GSC-11531-1 } c05 N73-11097

**BIOTELEMETRY**  
 Communication system for transmitting biomedical  
 information obtained from patient in moving

## SUBJECT INDEX

## BOOMS (EQUIPMENT)

- ambulance to hospital for diagnosis  
[NASA-CASE-FRC-10031] c05 N70-20717
- Biotelemetry apparatus with dual voltage  
generators for implanting in animals  
[NASA-CASE-XAC-05706] c05 N71-12342
- Multichannel medical monitoring system to  
measure physiological parameters from display  
device at remote control station  
[NASA-CASE-MS-C-14180-1] c05 N73-22045
- BIREFRINGENCE**  
Automatic polarimeter capable of measuring  
transient birefringence changes in  
electro-optic materials  
[NASA-CASE-XNP-08883] c23 N71-16101
- BISTABLE CIRCUITS**  
Bistable multivibrator circuits operating at  
high speed and low power dissipation  
[NASA-CASE-XGS-00823] c10 N71-15910
- BIT SYNCHRONIZATION**  
Telemetry data unit to form multibit words for  
use between demodulator and computer  
[NASA-CASE-XNP-09225] c09 N69-24333
- Bit synchronization system using digital data  
transition tracking phased locked loop  
[NASA-CASE-NPO-10844] c07 N72-20140
- Pulse code modulated signal synchronizer with  
three loop circuits  
[NASA-CASE-MS-C-12462-1] c07 N72-28165
- Bit synchronization of PCM communications  
signal, without separate synchronization  
channel by digital correlation  
[NASA-CASE-NPO-11302-1] c07 N73-13149
- BITERNARY CODE**  
Encoders designed to generate comma free  
biorthogonal Reed-Muller type code comprising  
conversion of 64 6-bit words into 64 32-bit  
data for communication purposes  
[NASA-CASE-NPO-10595] c10 N71-25917
- BITS**  
Logic circuit for generating multibit binary  
code word in parallel  
[NASA-CASE-XNP-04623] c10 N71-26103
- MOD 2 sequential function generator for multibit  
sequence, with two-bit shift register for each  
pair of bits  
[NASA-CASE-NPO-10636] c08 N72-25210
- BLACK BODY RADIATION**  
Development of black-body source calibration  
furnace  
[NASA-CASE-XLE-01399] c33 N71-15625
- Black body cavity radiometer with thermal  
resistance wire bridge circuit  
[NASA-CASE-XNP-08961] c14 N71-24809
- Black body radiometer design with temperature  
sensing and cavity heat source cone winding  
[NASA-CASE-XNP-09701] c14 N71-26475
- Black body radiometer having isothermally  
surrounded cavity for ultraviolet, visible,  
and infrared radiation  
[NASA-CASE-NPO-10810] c14 N71-27323
- BLADE TIPS**  
Modification and improvement of turbine blades  
for maximum cooling efficiency  
[NASA-CASE-XLE-00092] c15 N70-33264
- BLADES (CUTTERS)**  
Piston in bore cutter for severing parachute  
control lines and sealing cable hole to  
prevent water leakage into load  
[NASA-CASE-XMS-04072] c15 N70-42017
- BLAST LOADS**  
Development of apparatus for detonating  
explosive devices in order to determine forces  
generated and detonation propagation rate  
[NASA-CASE-LAR-10800-1] c33 N72-27959
- BLOOD PRESSURE**  
Blood pressure measuring system for separately  
recording dc and ac pressure signals of  
Korotkoff sounds  
[NASA-CASE-XMS-06061] c05 N71-23317
- Initial systole and diastolic notch detecting  
circuitry for monitoring arterial pressure pulse  
[NASA-CASE-LEW-11581-1] c05 N73-18139
- BLUFF BODIES**  
Bluff-shaped annular configuration for  
supersonic decelerator for reentry vehicles  
[NASA-CASE-XLE-00222] c02 N70-37939
- BLUNT BODIES**  
Wind tunnel method for simulating flow fields  
around blunt vehicles entering planetary  
atmospheres without involving high temperatures  
[NASA-CASE-LAR-11138] c12 N71-20436
- BODIES OF REVOLUTION**  
Conforming polisher for aspheric surfaces of  
revolution with inflatable tube  
[NASA-CASE-XGS-02884] c15 N71-22705
- Test fixture for measuring moment of inertia of  
irregularly shaped body with multiple axes  
[NASA-CASE-XGS-01023] c14 N71-22992
- BODY FLUIDS**  
Computer controlled infusion pump for time  
varying input of calcium into physiological  
systems  
[NASA-CASE-ARC-10447-1] c05 N73-14092
- BODY KINEMATICS**  
Space suit with improved waist and torso movement  
[NASA-CASE-ARC-10275-1] c05 N72-22092
- BODY MEASUREMENT (BIOLOGY)**  
Elastomer loaded with metal particles for  
elastic biomedical electrodes  
[NASA-CASE-ARC-10268-1] c09 N70-12620
- Biomedical system for measuring volume and  
volume variations of human body under zero  
gravity conditions  
[NASA-CASE-MS-C-13972-1] c05 N72-20105
- Ingestible miniaturized telemetry device for  
deep body temperature measurements on humans  
and animals  
[NASA-CASE-ARC-10583-1] c05 N73-14093
- BODY TEMPERATURE**  
Thermoregulating with cooling flow pipe network  
for humans  
[NASA-CASE-XMS-10269] c05 N71-24147
- BODY VOLUME (BIOLOGY)**  
Biomedical system for measuring volume and  
volume variations of human body under zero  
gravity conditions  
[NASA-CASE-MS-C-13972-1] c05 N72-20105
- BOILERS**  
Vapor generating boiler system for turbine motor  
[NASA-CASE-XLE-00785] c33 N71-16104
- Shell-side liquid metal boiler employing tube  
and shell heat exchanger  
[NASA-CASE-NPO-10831] c33 N72-20915
- BOLOMETERS**  
High impedance alternating current sensing  
transformer device between two bolometers for  
measuring insertion loss of test component  
[NASA-CASE-XNP-01193] c10 N71-16057
- Thin film capacitive bolometer and capacitance  
temperature interchange sensor  
[NASA-CASE-NPO-10607] c09 N71-27232
- BOLTS**  
Patent data on gas actuated bolt disconnect  
assembly  
[NASA-CASE-XLA-00326] c03 N70-34667
- Bolt-latch mechanism for releasing despin  
weights from space vehicle  
[NASA-CASE-XLA-00679] c15 N70-38601
- Gage for quality control of sealing surfaces of  
threaded boss  
[NASA-CASE-XMF-04966] c14 N71-17658
- Split nut and bolt separation device  
[NASA-CASE-XNP-06914] c15 N71-21489
- Device for securing together structural members  
with axially stretched bolt and nut  
[NASA-CASE-GSC-11149-1] c15 N73-30457
- BONDING**  
Silver chloride use in technique for fusion  
bonding of graphite to silver, glass,  
ceramics, and certain other metals  
[NASA-CASE-XGS-00963] c15 N69-39735
- Reduction of peak shear stress in bonded joint  
[NASA-CASE-LAR-10900-1] c15 N73-16499
- High temperature bonding of sapphire to sapphire  
by eutectic Al<sub>2</sub>O<sub>3</sub> and ZrO<sub>2</sub> mixture to form  
sapphire rubidium maser cell  
[NASA-CASE-GSC-11577-1] c15 N73-19467
- BONES**  
Ultrasonic bone densitometer for measuring  
calcium content of bone structures  
[NASA-CASE-MFS-20994-1] c05 N73-30090
- BOOMS (EQUIPMENT)**  
Unfolding boom assembly with knuckle joints for  
positioning equipment for spacecraft  
[NASA-CASE-XGS-00938] c32 N70-41367
- Collapsible antenna boom and coaxial  
transmission line having inflatable inner tube  
[NASA-CASE-MFS-20068] c07 N71-27191

**BOOSTER RECOVERY**

**SUBJECT INDEX**

- Extendable, self-deploying boom apparatus  
[NASA-CASE-GSC-10566-1] c15 N72-18477
- Design and characteristics of mechanically  
extended and telescoping boom on crane assembly  
[NASA-CASE-NPO-11118] c03 N72-25021
- BOOSTER RECOVERY**
- Techniques for recovery of multistage rocket  
vehicles by providing lifting surfaces on  
individual sections  
[NASA-CASE-XMP-00389] c31 N70-34176
- Recoverable, reusable single stage booster  
capable of injecting large payloads into  
circular earth orbit  
[NASA-CASE-XMF-01973] c31 N70-41588
- BOOSTER ROCKET ENGINES**
- Segmented back-up bar for butt welding large  
tubular structures such as rocket booster  
bodies or tanks  
[NASA-CASE-XMF-00640] c15 N70-39924
- Recoverable, reusable single stage booster  
capable of injecting large payloads into  
circular earth orbit  
[NASA-CASE-XMF-01973] c31 N70-41588
- BORING MACHINES**
- Automatic controlled drive mechanism for  
portable boring bar  
[NASA-CASE-XLA-03661] c15 N71-33518
- BORON CARBIDES**
- Catalyst for increased growth of boron carbide  
crystal whiskers  
[NASA-CASE-XHO-03903] c15 N69-21922
- BOUNDARY LAYER CONTROL**
- Double hinged flap for boundary layer control  
over trailing edges of wings  
[NASA-CASE-XLA-01290] c02 N70-42016
- BOUNDARY LAYER SEPARATION**
- Tertiary flow injection system for thrust  
vectoring of propulsive nozzle flow  
[NASA-CASE-MFS-20831] c28 N71-29153
- BOUNDARY LAYERS**
- Flow meter for measuring stagnation pressure in  
boundary layer around high speed flight vehicle  
[NASA-CASE-XFR-02007] c12 N71-24692
- Development of thermocouple instrument for  
measuring temperature of wall heated by  
flowing fluid without disturbing boundary layer  
[NASA-CASE-XLE-05230] c14 N72-27410
- BOXES (CONTAINERS)**
- Sealed storage container for channel carriers  
with mounted miniature electronic components  
[NASA-CASE-MFS-20075] c09 N71-26133
- BRAKES (FOR ARRESTING MOTION)**
- Energy dissipating shock absorbing system for  
land payload recovery or vehicle braking  
[NASA-CASE-XLA-00754] c15 N70-34850
- Automatic braking device for rapidly  
transferring humans or materials from elevated  
location  
[NASA-CASE-XKS-07814] c15 N71-27067
- Sprag solenoid brake with cylindrical chamber  
[NASA-CASE-MFS-21846-1] c15 N73-23552
- BRAKING**
- Direct current electromotive system for  
regenerative braking of electric motor  
[NASA-CASE-XMF-01096] c10 N71-16030
- Linear magnetic braking system with nonuniformly  
wrapped primary coil producing constant  
braking force on secondary coil  
[NASA-CASE-XLE-05079] c15 N71-17652
- Anemometer with braking mechanism to prevent  
rotation of wind driven elements  
[NASA-CASE-XMF-05224] c14 N71-23726
- BRAZING**
- Anti-wettable materials brazing processes using  
titanium and zirconium for surface pretreatment  
[NASA-CASE-XMS-03537] c15 N69-21471
- Application techniques for protecting materials  
during salt bath brazing  
[NASA-CASE-XLE-00046] c15 N70-33311
- Joining aluminum to stainless steel by bonding  
aluminum coatings onto titanium coated  
stainless steel and brazing aluminum to  
aluminum/titanium coated steel  
[NASA-CASE-MFS-07369] c15 N71-20443
- Brazing alloy adapted for brazing corrosion  
resistant steel to refractory metals, also for  
brazing refractory metals to other refractory  
metals  
[NASA-CASE-XNP-03063] c17 N71-23365
- Electric resistance spot welding and brazing for  
producing metal bonds with superior mechanical  
and structural characteristics  
[NASA-CASE-LAR-11072-1] c15 N73-20535
- BREATHING APPARATUS**
- Three-port transfer valve with one port open  
continuously suitable for manned space flight  
[NASA-CASE-XAC-01158] c15 N71-23051
- BRICKS**
- Development of construction block in form of  
container folded from flat sheet and filled  
with solid material for architectural purposes  
[NASA-CASE-MSC-12233-2] c32 N73-13921
- BRIGHTNESS**
- Modulating and controlling intensity of light  
beam from high temperature source by  
servocontrolled rotated rotating cylinders  
[NASA-CASE-XMS-04300] c09 N71-19479
- BRIGHTNESS DISCRIMINATION**
- Video signal processing system for sampling  
video brightness levels  
[NASA-CASE-NPO-10140] c07 N71-24742
- Automated visual sensitivity tester for  
determining visual field sensitivity and blind  
spot size  
[NASA-CASE-ARC-10329-1] c05 N73-26072
- BROADBAND**
- Broadband chokes and absorbers to reduce  
spurious radiation patterns of antenna array  
caused by support structures  
[NASA-CASE-XMS-05303] c07 N69-27462
- Flexible monopole antenna with broad bandwidth  
and low voltage standing wave ratio  
[NASA-CASE-MSC-12101] c09 N71-18720
- Broadband frequency discriminator with resistive  
captive inductive networks  
[NASA-CASE-NPO-10096] c07 N71-24583
- Broadband microwave waveguide window to  
compensate dielectric material filling  
[NASA-CASE-XNP-08880] c09 N71-24808
- Comb type traveling wave maser amplifier for  
improved high gain broadband output  
[NASA-CASE-NPO-10548] c16 N71-24831
- Wideband voltage controlled oscillator with high  
phase stability  
[NASA-CASE-XLA-03893] c10 N71-27271
- Multimode antenna feed system for microwave and  
broadband communication  
[NASA-CASE-GSC-11046-1] c07 N73-28013
- BROADBAND AMPLIFIERS**
- Solid state broadband stable power amplifier  
[NASA-CASE-XNP-10854] c10 N71-26331
- Broadband distribution amplifier with  
complementary pair transistor output stages  
[NASA-CASE-NPO-10003] c10 N71-26415
- BRUSHES**
- Fabrication of sintered impurity semiconductor  
brushes for electrical energy transfer  
[NASA-CASE-XMF-01016] c26 N71-17818
- BUBBLES**
- High-voltage isolator design for injecting  
hydrogen bubbles into liquid metal feed lines  
to interrupt electrical continuity  
[NASA-CASE-NPO-11075] c09 N71-34208
- BUCKLING**
- Miniature vibration isolator utilizing elastic  
tubing material  
[NASA-CASE-XLA-01019] c15 N70-40156
- Test equipment to prevent buckling of small  
diameter specimens during compression tests  
[NASA-CASE-LAR-10440-1] c14 N73-32323
- BUFFER STORAGE**
- Data handling based on source significance,  
storage availability, and data received from  
source  
[NASA-CASE-XNP-04162-1] c08 N70-34675
- Data acquisition and processing system with  
buffer storage and timing device for magnetic  
tape recording of PCM data and timing  
information  
[NASA-CASE-NPO-12107] c08 N71-27255
- Digital to analog converter with parallel  
input/output memory device  
[NASA-CASE-KSC-10397] c08 N72-25206
- BUILDINGS**
- Apparatus and method of assembling building  
blocks by folding pre-cut flat sheets of  
material during on-site construction  
[NASA-CASE-MSC-12233-1] c15 N72-25454

## BULKHEADS

Liquid propellant tank design with semitoroidal bulkhead  
[NASA-CASE-XMF-01899] c31 N70-41948

## BUOYANCY

Inflatable radar reflector unit - lightweight, highly reflective to electromagnetic radiation, and adaptable for erection and deployment with minimum effort and time  
[NASA-CASE-XMS-00893] c07 N70-40063

## BURNING RATE

Pressurized gas injection for burning rate control of solid propellants  
[NASA-CASE-XLE-03494] c27 N71-21819  
Development of apparatus for testing burning rate and flammability of materials  
[NASA-CASE-XMS-09690] c33 N72-25913

## BURNOUT

Spherical solid propellant rocket engine having abrupt burnout  
[NASA-CASE-XHQ-01897] c28 N70-35381

## BUTT JOINTS

Channel-type shell construction for rocket engines and related configurations  
[NASA-CASE-XLE-00144] c28 N70-34860  
Segmented back-up bar for butt welding large tubular structures such as rocket booster bodies or tanks  
[NASA-CASE-XMF-00640] c15 N70-39924

## BUTTERFLY VALVES

Flexible inflatable seal for butterfly valves  
[NASA-CASE-XLE-00101] c15 N70-33376

## BYPASSES

Low power drain transistor feedback circuit  
[NASA-CASE-XGS-04999] c09 N69-24317  
Helical coaxial resonator RF filter  
[NASA-CASE-XGS-02816] c07 N69-24323  
Current regulating voltage divider design with load current shunting  
[NASA-CASE-MFS-20935] c09 N71-34212  
Electrical interconnection of unilluminated solar cells in solar battery array  
[NASA-CASE-GSC-10344-1] c03 N72-27053

## C

## CABLE FORCE RECORDERS

Design and characteristics of device for showing amount of cable payed out from winch and load imposed  
[NASA-CASE-MSC-12052-1] c15 N71-24599

## CABLES

Cable guide and restraint device for reefing tubes in uniform manner  
[NASA-CASE-LAR-10129-1] c15 N73-25512

## CABLES (ROPES)

High voltage cable for use in high intensity ionizing radiation fields  
[NASA-CASE-XNP-00738] c09 N70-38201  
Force separation rigid tethering device using cables  
[NASA-CASE-XLA-02332] c32 N71-17609  
Support for flexible conductor cable between drawers or racks holding electronic equipment and cabinet assembly housing drawers or racks  
[NASA-CASE-XMF-07587] c15 N71-18701  
Design and construction of satellite appendage tie-down cord  
[NASA-CASE-XGS-02554] c31 N71-21064  
Quick attach mechanism for moving or stationary wires, ropes, or cables  
[NASA-CASE-XFF-05421] c15 N71-22994  
Flexible cable that can be made rigid  
[NASA-CASE-MSC-13512-1] c15 N72-22485  
Guide member for stabilizing cable of open shaft elevator  
[NASA-CASE-KSC-10513] c15 N72-25453

## CALCIUM

Computer controlled infusion pump for time varying input of calcium into physiological systems  
[NASA-CASE-ARC-10447-1] c05 N73-14092  
Ultrasonic bone densitometer for measuring calcium content of bone structures  
[NASA-CASE-MFS-20994-1] c05 N73-30090

## CALCIUM FLUORIDES

Bonded-solid-lubricant coatings of calcium fluoride and binder for high temperature stability

[NASA-CASE-XMS-00259] c18 N70-36400  
Production of barium fluoride-calcium fluoride composite lubricant for bearings or seals  
[NASA-CASE-XLE-08511-2] c18 N71-16105

## CALCIUM PHOSPHATES

Process for preparing calcium phosphate salts for tooth repair  
[NASA-CASE-ERC-10338] c04 N72-33072

## CALIBRATING

Development and characteristics of self-calibrating displacement transducer for measuring magnitude and frequency of displacement of bodies  
[NASA-CASE-XLA-00781] c09 N71-22999  
Combination pressure transducer-calibrator assembly for measuring fluid  
[NASA-CASE-XNP-01660] c14 N71-23036  
Control system for pressure balance device used in calibrating pressure gauges  
[NASA-CASE-XMF-04134] c14 N71-23755  
Phonocardiogram simulator producing electrical voltage waves to control amplitude and duration between simulated sounds  
[NASA-CASE-XKS-10804] c05 N71-24606  
Calibrator for measuring and modulating a demodulating laser outputs  
[NASA-CASE-XLA-03410] c16 N71-25914  
Plastic sphere for radar tracking and calibration  
[NASA-CASE-XLA-11154] c07 N72-21117  
Compact calibration assembly for ultrahigh vacuum system  
[NASA-CASE-LAR-10862-1] c14 N72-28460  
Design of system for calibrating pressure transducers.  
[NASA-CASE-LAR-10910-1] c14 N72-28462  
Calibration of vacuum gauges for measuring total and partial pressures in ultrahigh vacuum region  
[NASA-CASE-XGS-07752] c14 N73-30390

## CALORIMETERS

Development and characteristics of calorimeter with integral heat sink for maintenance of constant temperature  
[NASA-CASE-XMF-04208] c33 N71-29051  
Calorimeter for measuring thermal output of nickel cadmium batteries  
[NASA-CASE-GSC-11434-1] c14 N72-27430

## CAMERA SHUTTERS

Electrically operated rotary shutter for television camera aboard spacecraft  
[NASA-CASE-XNP-00637] c14 N70-40273  
Magnetically opened diaphragm design with camera shutter and expansion tube applications  
[NASA-CASE-XLA-03660] c15 N71-21060  
Development and characteristics of cyclically operable, optical shutter for use as focal plane shutter for transmitting single radiation pulses  
[NASA-CASE-NPO-10758] c14 N73-14427  
Development of rotary solenoid shutter drive assembly and inertia damper for use with cameras mounted in satellites  
[NASA-CASE-GSC-11560-1] c09 N73-26198

## CAMERAS

Mechanism for measuring nanosecond time differences between luminous events using streak camera  
[NASA-CASE-XLA-01987] c23 N71-23976  
Camera adapter design for image magnification including lens and illuminator  
[NASA-CASE-XMF-03844-1] c14 N71-26474  
Longitudinal film gate and lock mechanism for securing film in motion picture cameras under vibration and high acceleration loads  
[NASA-CASE-LAR-10686] c14 N71-28935  
Design and characteristics of laser camera system with diffusion filter of small particles with average diameter larger than wavelength of laser light  
[NASA-CASE-NPO-10417] c16 N71-33410  
Optical scanner with linear housing and rotating camera  
[NASA-CASE-NPO-11002] c14 N72-22441  
Apparatus for on-film optical recording of camera lens aperture and focus setting  
[NASA-CASE-MSC-12363-1] c14 N73-26431  
Integration of spectrometer capability with imagery function of facsimile cameras for use on planetary landers  
[NASA-CASE-LAR-11207-1] c14 N73-28496

## CANARD CONFIGURATIONS

## SUBJECT INDEX

- Mechanical exposure interlock device for preventing film overexposure in oscilloscope camera  
[NASA-CASE-LAR-10319-1] c14 N73-32322
- CANARD CONFIGURATIONS**  
Thrust and attitude control apparatus using jet nozzle in movable canard surface or fin configuration  
[NASA-CASE-XLE-03583] c31 N71-17629
- CANS**  
Design and characteristics of device for closing canisters under high vacuum conditions  
[NASA-CASE-XLA-01446] c15 N71-21528  
Extrusion can for extruding ceramics under heat and pressure  
[NASA-CASE-NPO-10812] c15 N73-13464
- CANTILEVER BEAMS**  
Pneumatic cantilever beams and platform for space erectable structure  
[NASA-CASE-XLA-01731] c32 N71-21045
- CANTILEVER MEMBERS**  
Deployable cantilever support for deploying solar cell arrays aboard spacecraft and reducing transient loading  
[NASA-CASE-NPO-10883] c31 N72-22874
- CAPACITANCE**  
Capacitance measuring device for determining flare accuracy on tapered tubes  
[NASA-CASE-XKS-03495] c14 N69-39785  
Device for measuring two orthogonal components of force with gallium flotation of measuring target for use in vacuum environments  
[NASA-CASE-XAC-04885] c14 N71-23790  
Thin film capacitive bolometer and capacitance temperature interchange sensor  
[NASA-CASE-NPO-10607] c09 N71-27232  
Capacitive tank gauging device for monitoring one constituent of two phase fluid by sensing dielectric constant  
[NASA-CASE-MFS-21629] c14 N72-22442  
Circuit with differential amplifier for synthesizing capacitance multiplier with microminiaturized feedback components  
[NASA-CASE-NPO-11948-1] c10 N73-15255
- CAPACITANCE SWITCHES**  
Electric discharge apparatus for electrohydraulic explosive forming  
[NASA-CASE-XMF-00375] c15 N70-34249  
Extra-long monostable multivibrator employing bistable semiconductor switch to allow charging of timing circuit  
[NASA-CASE-XGS-00381] c09 N70-34819  
Feedback integrating circuit with grounded capacitor for signal processing  
[NASA-CASE-XAC-10607] c10 N71-23669
- CAPACITORS**  
Temperature sensitive capacitor device for detecting very low intensity infrared radiation  
[NASA-CASE-XNP-09750] c14 N69-39937  
Energy source with tantalum capacitors in parallel and miniature silver oxide button cells for initiating pyrotechnic devices on spacecraft and rocket vehicles  
[NASA-CASE-LAR-10367-1] c03 N70-26817  
Electrical power system for space flight vehicles operating over extended periods  
[NASA-CASE-XMF-00517] c03 N70-34157  
Capacitor for measuring density of compressible fluid in liquid, gas, or liquid and gas phases  
[NASA-CASE-XLE-00143] c14 N70-36618  
Capacitor sandwich structure containing metal sheets of known thickness for counting penetration rates of meteoroids  
[NASA-CASE-XLE-01246] c14 N71-10797  
Capacitor fabrication by solidifying mixture of ferromagnetic metal particles, nonferromagnetic particles, and dielectric material  
[NASA-CASE-LEW-10364-1] c09 N71-13522
- Mechanism for measuring nanosecond time differences between luminous events using streak camera  
[NASA-CASE-XLA-01987] c23 N71-23976  
Circuit for monitoring power supply by ripple current indication  
[NASA-CASE-KSC-10162] c09 N72-11225  
Thermodielectric radiometer using polymer film as capacitor  
[NASA-CASE-ARC-10138-1] c14 N72-24477
- Material compositions and processes for developing dielectric thick films used in microcircuit capacitors  
[NASA-CASE-LAR-10294-1] c26 N72-28762  
Micrometeoroid analyzer using arrays of interconnected capacitors and ion detector  
[NASA-CASE-ARC-10443-1] c14 N73-20477  
Insulated electrode for electrocardiographic recording without paste electrolyte  
[NASA-CASE-MSC-14339-1] c05 N73-21151  
Integrated microcircuits and complementary four-phase logic system  
[NASA-CASE-MSC-14240-1] c10 N73-21240
- CAPILLARY FLOW**  
Capillary radiator for carrying heat transfer liquid in planetary spacecraft structures  
[NASA-CASE-XLE-03307] c33 N71-14035  
Lubrication for bearings by capillary action from oil reservoir of porous material  
[NASA-CASE-XNP-03972] c15 N71-23048  
Soldering device particularly suited to making high quality wiring joints for aerospace engineering utilizing capillary attraction to regulate flow of solder  
[NASA-CASE-XLA-08911] c15 N71-27214
- CAPILLARY TUBES**  
Tubular flow restrictor for gas flow control in pipeline  
[NASA-CASE-NPO-10117] c15 N71-15608  
Development of liquid separating system using capillary device connected to flexible bladder storage chamber  
[NASA-CASE-XMS-13052] c14 N71-20427  
Interrupter switching device utilizing electrodes and mercury filled capillary tubes in which current flow vaporizes mercury as circuit breaker  
[NASA-CASE-XNP-02251] c12 N71-20896
- CARBAZOLES**  
Method of producing output voltage from photovoltaic cell using poly-N-vinyl carbazole complexed with iodine  
[NASA-CASE-NPO-10373] c03 N71-18698
- CARBOHYDRATES**  
Decontamination of petroleum products with honey  
[NASA-CASE-XNP-03835] c06 N71-23499
- CARBON ARCS**  
Water cooled contactors for holding rotating carbon arc anode  
[NASA-CASE-XMS-03700] c15 N69-24266
- CARBON COMPOUNDS**  
Vapor deposited laminated nitride-silicon coating for corrosion prevention of carbonaceous surfaces  
[NASA-CASE-XLA-00284] c15 N71-16075
- CARBON DIOXIDE**  
Carbon dioxide purge systems to prevent condensation in spaces between cryogenic fuel tanks and hypersonic vehicle skin  
[NASA-CASE-XLA-01967] c31 N70-42015  
Catalyst cartridge for use in carbon dioxide reduction system utilizing Bosch catalytic reaction  
[NASA-CASE-LAR-10551-1] c06 N72-21099  
Fast response miniature carbon dioxide detector with no moving parts for measuring concentration in any atmosphere  
[NASA-CASE-MSC-13332-1] c14 N72-21408
- CARBON DIOXIDE LASERS**  
Repetitively pulsed wavelength selective carbon dioxide laser  
[NASA-CASE-ERC-10178] c16 N71-24832  
Performance of ac power supply developed for CO2 laser system  
[NASA-CASE-GSC-11222-1] c16 N73-32391
- CARBONATES**  
Chemical and physical properties of synthetic polyurethane polymer prepared by reacting hydroxy carbonate with organic diisocyanate  
[NASA-CASE-MFS-10512] c06 N73-30099
- CARBOXYL GROUP**  
Carboxyl terminated polyester prepolymers and foams produced from prepolymers and materials  
[NASA-CASE-NPO-10596] c06 N71-25929
- CARBOXYLIC ACIDS**  
Stable polyimide synthesis from mixtures of monomeric diamines and polycarboxylic acid esters  
[NASA-CASE-LEW-11325-1] c06 N73-27980

- Fluorinated esters of polycarboxylic acid and lubricating compositions for use at extreme temperature  
[NASA-CASE-MFS-21040-1] c06 N73-30098
- CARCINOGENS**  
Spectrophotofluorometer with 3-dimensional display to identify fluorescence spectra of carcinogenic and noncarcinogenic hydrocarbons  
[NASA-CASE-XGS-01231] c14 N70-41676
- CARDIOGRAPHY**  
Digital cardiometer incorporating circuit for measuring heartbeat rate of subject over predetermined portion of one minute also converting rate to beats per minute  
[NASA-CASE-XMS-02399] c05 N71-22896
- CARDIOLOGY**  
Development of instantaneous reading tachometer for measuring electrocardiogram signal rate  
[NASA-CASE-MFS-20418] c14 N73-24473
- CARDIOTACHOMETERS**  
Cardiometer for instantaneous heart rate measurement  
[NASA-CASE-MFS-20284] c05 N72-22098
- CARDIOVASCULAR SYSTEM**  
Conditioning suit for normal function of astronaut cardiovascular system in gravity environment  
[NASA-CASE-XLA-02898] c05 N71-20268
- Ear oximeter for monitoring blood oxygenation and pressure, pulse rate, and pressure pulse curve, using dc and ac amplifiers  
[NASA-CASE-XAC-05422] c04 N71-23185
- CARRIER FREQUENCIES**  
Demodulator for simultaneous demodulation of two modulating ac signal carriers close in frequency  
[NASA-CASE-XMF-01160] c07 N71-11298
- Carrier-type transducer with carrier modulation  
[NASA-CASE-NUC-10107-1] c09 N72-21254
- Automatic carrier acquisition system for phase locked loop receiver  
[NASA-CASE-NPO-11628-1] c07 N73-30113
- CARRIER WAVES**  
Variable frequency subcarrier oscillator with temperature compensation  
[NASA-CASE-XNP-03916] c09 N71-28810
- Phase modulation of tone and binary signals on carrier waves in communication systems  
[NASA-CASE-GSC-11743-1] c07 N73-27107
- CARRIERS**  
Sealed storage container for channel carriers with mounted miniature electronic components  
[NASA-CASE-MFS-20075] c09 N71-26133
- CARTESIAN COORDINATES**  
Design and development of random function tracer for obtaining coordinates of points on contour maps  
[NASA-CASE-XLA-01401] c15 N71-21179
- CARTRIDGES**  
Tape cartridge with high capacity storage of endless-loop magnetic tape  
[NASA-CASE-XGS-00769] c14 N70-41647
- Endless loop tape transport mechanism for driving and tensioning recording medium in magnetic tape recorder  
[NASA-CASE-XGS-01223] c07 N71-10609
- Catalyst cartridge for use in carbon dioxide reduction system utilizing Bosch catalytic reaction  
[NASA-CASE-LAR-10551-1] c06 N72-21099
- CASCADE CONTROL**  
Reversible ring counter using cascaded single silicon controlled rectifier stages  
[NASA-CASE-XGS-01473] c09 N71-10673
- Synchronous dc direct-drive system comprising multiple-loop hybrid control system controlling load directly connected to actuator  
[NASA-CASE-GSC-10065-1] c10 N71-27136
- Multiloop RC active filter network with low parameter sensitivity and low amplifier gain  
[NASA-CASE-ARC-10192] c09 N72-21245
- CASES (CONTAINERS)**  
Nonmagnetic hermetically sealed battery case made of epoxy resin and woven glass tape for use with electrochemical cells in spacecraft  
[NASA-CASE-XGS-00886] c03 N71-11053
- Radioactive isotope capsule container design for atmospheric reentry protection and heat transmission to spacecraft  
[NASA-CASE-LEW-11227-1] c33 N71-35153
- CASSEGRAIN ANTENNAS**  
Cassegrain antenna subreflector flange for suppressing ground noise and increasing antenna transmitting efficiency  
[NASA-CASE-XNP-00683] c09 N70-35425
- Design and operation of multi-feed cone Cassegrain antenna  
[NASA-CASE-NPO-10539] c07 N71-11285
- Synchronous detection system for detecting weak radio astronomical signals  
[NASA-CASE-XNP-09832] c30 N71-23723
- Low loss dichroic plate for passing radiation within selected frequency band for Cassegrain antenna feed  
[NASA-CASE-NPO-13171-1] c07 N73-12150
- Dual frequency feed systems for Cassegrainian antennas  
[NASA-CASE-NPO-13091-1] c09 N73-12214
- CASTING**  
Hydraulic apparatus for casting and molding of liquid polymers  
[NASA-CASE-XNP-07659] c06 N71-22975
- CATALYSIS**  
Unit for generating thrust from catalytic decomposition of hydrogen peroxide, for high altitude aircraft or spacecraft reaction control  
[NASA-CASE-XMS-00583] c28 N70-38504
- Catalyst cartridge for use in carbon dioxide reduction system utilizing Bosch catalytic reaction  
[NASA-CASE-LAR-10551-1] c06 N72-21099
- CATALYSTS**  
Catalyst for increased growth of boron carbide crystal whiskers  
[NASA-CASE-XHQ-03903] c15 N69-21922
- Catalyst bed element removing tool  
[NASA-CASE-XFR-00811] c15 N70-36901
- Catalyst bed ignition system for hydrazine propellants  
[NASA-CASE-XNP-00876] c28 N70-41311
- Development of device for detecting hydrogen in ambient environments  
[NASA-CASE-MFS-11537] c14 N71-20442
- CATHETERIZATION**  
Transducer circuit design with single coaxial cable for input and output connections including incorporation into miniaturized catheter transducer  
[NASA-CASE-ARC-10132-1] c09 N71-24597
- CATHODE RAY TUBES**  
Cathode ray oscilloscope for analyzing electrical waveforms representing amplitude distribution of time function  
[NASA-CASE-XNP-01383] c09 N71-10659
- Cathode ray tube system for displaying ones and zeros in binary wave train  
[NASA-CASE-XGS-04987] c08 N71-20571
- Indexing mechanism for cathode array substitution in electron beam tube  
[NASA-CASE-NPO-10625] c09 N71-26182
- Color television system utilizing single gun current sensitive color cathode ray tube  
[NASA-CASE-ERC-10098] c09 N71-28618
- Digital video system for displaying image and alphanumeric data on cathode ray tube  
[NASA-CASE-NPO-11342] c09 N72-25248
- Switching circuit for control of cathode ray tube beam with fast rise time for output signal  
[NASA-CASE-KSC-10647-1] c10 N72-31273
- Situational display system of cathode ray tubes to assist pilot in aircraft control  
[NASA-CASE-ERC-10350] c14 N73-20474
- CATHODES**  
Encapsulated heater forming hollow body for cathode used in ion thruster  
[NASA-CASE-LEW-10814-1] c28 N70-35422
- Electronic cathodes for use in electron bombardment ion thrusters  
[NASA-CASE-XLE-04561] c09 N71-23190
- Design and characteristics of heat activated electric cell with anode made from one or more alkali metals and cathode made from oxidizing material  
[NASA-CASE-LEW-11358] c03 N71-26084
- Design and characteristics of electric storage battery with wedge-shaped contour negative plates to prevent malfunctions due to shape-change phenomenon  
[NASA-CASE-NPO-10720-1] c03 N72-22048

- Characteristics of ion rocket engine with combination keeper electrode and electron baffle  
[NASA-CASE-NPO-11880] c28 N73-24783
- CATIONS**  
Water insoluble, cationic permselective membrane  
[NASA-CASE-NPO-11091] c18 N72-22567
- CAVITATION FLOW**  
Semitoroidal diaphragm cavitating flow control valve  
[NASA-CASE-XNP-09704] c12 N71-18615
- CAVITIES**  
Black body radiometer having isothermally surrounded cavity for ultraviolet, visible, and infrared radiation  
[NASA-CASE-NPO-10810] c14 N71-27323  
Method for coating through-holes in ceramic substrates used in fabricating miniaturized electronic circuits  
[NASA-CASE-XMF-05999] c15 N71-29032  
Low mass rolling element bearing with lightweight core and hollow center  
[NASA-CASE-LEW-11087-3] c15 N73-20534  
Soil burrowing mole apparatus  
[NASA-CASE-XNP-07169] c15 N73-32362
- CAVITY RESONATORS**  
Helical coaxial resonator RF filter  
[NASA-CASE-XGS-02816] c07 N69-24323  
Semiconductor in resonant cavity for improving signal to noise ratio of communication receiver  
[NASA-CASE-MSC-12259-1] c07 N70-12616  
Thermally sensitive tuning probe for nullifying detuning effects in microwave cavity resonator of amplifier  
[NASA-CASE-XNP-00449] c14 N70-35220  
Holder for high frequency crystal resonators  
[NASA-CASE-XNP-03637] c15 N71-21311  
Cavity resonator for hydrogen maser  
[NASA-CASE-HQN-10790-1] c16 N72-25491  
Superconductive resonant cavity for improved signal to noise ratio in communication signal  
[NASA-CASE-MSC-12259-2] c07 N72-33146  
Infrared tunable dye laser with nonlinear wavelength mixing crystal in optical cavity  
[NASA-CASE-ARC-10463-1] c09 N73-32111
- CELESTIAL BODIES**  
Device for determining relative angular position of spacecraft and radiating celestial body  
[NASA-CASE-GSC-11444-1] c14 N73-28490
- CELESTIAL NAVIGATION**  
Development of star intensity measuring system which minimizes effects of outside interference  
[NASA-CASE-XNP-06510] c14 N71-23797
- CELL ANODES**  
Heat activated emf cells with aluminum anode  
[NASA-CASE-LEW-11359] c03 N71-28579  
Heat activated cell with aluminum anode  
[NASA-CASE-LEW-11359-2] c03 N72-20034
- CELL CATHODES**  
Cathodes made of sintered metal oxide and polymer matrix, for silver cadmium and silver zinc batteries  
[NASA-CASE-NPO-11157] c15 N70-22275
- CELLS**  
Separation cell with permeable membranes for fluid mixture component separation  
[NASA-CASE-XMS-02952] c18 N71-20742
- CENTRIFUGES**  
Centrifuge mounted motion simulator with elevator mechanism  
[NASA-CASE-XAC-00399] c11 N70-34815  
Liquid-gaseous centrifugal separator for weightlessness environment  
[NASA-CASE-XLA-00415] c15 N71-16079  
Centrifugal separator using lyophobic filter  
[NASA-CASE-LAR-10194-1] c12 N72-11293
- CERAMIC BONDING**  
Plasma spraying gun for forming diffusion bonded metal or ceramic coatings on substrates  
[NASA-CASE-XLE-01604-2] c15 N71-15610  
Method of forming ceramic to metal seals impervious to gaseous and liquid mercury at high temperature  
[NASA-CASE-XNP-01263-2] c15 N71-26312
- CERAMIC COATINGS**  
Evaporating crucible of tantalum-tungsten foil, nickel alumina bonding agent, and ceramic coating  
[NASA-CASE-XLA-03105] c15 N69-27483
- Unfired-ceramic, highly reflective composite insulation for large launch vehicles  
[NASA-CASE-XMF-01030] c18 N70-41583
- Unfired ceramic insulation for protection from radiant heating environments  
[NASA-CASE-MFS-14253] c33 N71-24858
- Cermet for nuclear fuel constructed by pressing metal coated ceramic particles in die at temperature to cause bonding of metal coatings, and tested for thermal stability  
[NASA-CASE-LEW-10219-1] c18 N71-28729
- CERAMIC NUCLEAR FUELS**  
Cermet for nuclear fuel constructed by pressing metal coated ceramic particles in die at temperature to cause bonding of metal coatings, and tested for thermal stability  
[NASA-CASE-LEW-10219-1] c18 N71-28729
- CERAMICS**  
Transpiration cooled turbine blade made from metallic or ceramic wires  
[NASA-CASE-XLE-00020] c15 N70-33226  
Characteristics of foamed-in-place ceramic refractory insulating material and method of fabrication  
[NASA-CASE-XGS-02435] c18 N71-22998  
Process for fiberizing ceramic materials with high fusion temperatures and tensile strength  
[NASA-CASE-XNP-00597] c18 N71-23088  
Method for coating through-holes in ceramic substrates used in fabricating miniaturized electronic circuits  
[NASA-CASE-XMF-05999] c15 N71-29032  
Extrusion can for extruding ceramics under heat and pressure  
[NASA-CASE-NPO-10812] c15 N73-13464  
Thermal shock resistant hafnia ceramic materials  
[NASA-CASE-LAR-10894-1] c18 N73-14584
- CERMETS**  
Freeze casting of metal ceramic and refractory compound powders into plastic slips  
[NASA-CASE-XLE-00106] c15 N71-16076  
Cermet for nuclear fuel constructed by pressing metal coated ceramic particles in die at temperature to cause bonding of metal coatings, and tested for thermal stability  
[NASA-CASE-LEW-10219-1] c18 N71-28729  
Development of method for fabricating cermets and analysis of various compositions to show electrical and physical properties  
[NASA-CASE-NPO-13120-1] c18 N73-23629
- CESIUM**  
Heated tungsten filter for removing oxygen impurities from cesium  
[NASA-CASE-XNP-04262-2] c17 N71-26773  
Production of iodine isotope by high energy bombardment of cesium heat pipe causing spallation reaction  
[NASA-CASE-LEW-11390-2] c24 N73-20763
- CESIUM DIODES**  
Oxygen-doped tantalum emitter for thermionic devices such as cesium vapor diodes  
[NASA-CASE-NPO-11138] c03 N70-34646  
Thermionic cesium diode converter with cavity emitters  
[NASA-CASE-NPO-10412] c09 N71-28421
- CESIUM ENGINES**  
Variable thrust ion engine using thermal decomposition of solid cesium compound to produce propulsive vapor  
[NASA-CASE-XMF-00923] c28 N70-36802  
Method for producing porous tungsten plates for ionizing cesium compounds for propulsion of ion engines  
[NASA-CASE-XLE-00455] c28 N70-38197
- CHANNEL FLOW**  
Fabrication method for lightweight regeneratively cooled combustion chamber of channel construction  
[NASA-CASE-XLE-00150] c28 N70-41818  
Heated element sensor for fluid flow detection in thermal conductive conduit with adaptive means to determine flow rate and direction  
[NASA-CASE-MSC-12084-1] c12 N71-17569
- CHANNELS (DATA TRANSMISSION)**  
Error correction circuitry for binary signal channels  
[NASA-CASE-XNP-03263] c09 N71-18843  
Helical recorder for multiple channel recording  
[NASA-CASE-GSC-10614-1] c09 N72-11224

## CHARGE DISTRIBUTION

Operation of vidicon tube for scanning spatial charge density pattern  
[NASA-CASE-XNP-06028] c09 N71-23189

## CHARGE TRANSFER

Electronic counter circuit utilizing magnetic core and low power consumption  
[NASA-CASE-XNP-08836] c09 N71-12515

## CHARGED PARTICLES

Method of forming thin window drifted silicon charged particle detector  
[NASA-CASE-XLE-00808] c24 N71-10560

Charged particle analyzer with periodically varying voltage applied across electrostatic deflection members  
[NASA-CASE-XAC-05506-1] c24 N71-16095

Electrostatic charged particle collector containing stacked electrodes for microwave tube  
[NASA-CASE-LEW-11192-1] c09 N73-13208

## CHARGING

Development of device for simulating charge and discharge cycle of battery in synchronous orbit  
[NASA-CASE-GSC-11211-1] c03 N72-25020

## CHARRING

Sensor device with switches for measuring surface recession of charring and noncharring ablaters  
[NASA-CASE-XLA-01781] c14 N69-39975

Ablation sensor for measuring char layer recession rate using electric wires  
[NASA-CASE-XLA-01794] c33 N71-21586

## CHECKOUT

Digital computer system for automatic prelaunch checkout of spacecraft  
[NASA-CASE-XKS-08012-2] c31 N71-15566

## CHELATES

Ammonium perchlorate composite propellant with organic Cu/II/ chelate catalytic additive  
[NASA-CASE-LAR-10173-1] c27 N71-14090

## CHEMICAL ANALYSIS

Analytical test apparatus and method for determining oxygen content in alkali liquid metal  
[NASA-CASE-XLE-01997] c06 N71-23527

Automated fluid chemical analyzer for microchemical analysis of small quantities of liquids by use of selected reagents and analyzer units  
[NASA-CASE-XNP-09451] c06 N71-26754

Method for determining presence and type of OH in MgO  
[NASA-CASE-NPO-10774] c06 N72-17095

Development and characteristics of injection system for use with gas chromatograph  
[NASA-CASE-ARC-10344-1] c14 N72-21433

Micrometeoroid analyzer using arrays of interconnected capacitors and ion detector  
[NASA-CASE-ARC-10443-1] c14 N73-20477

## CHEMICAL AUXILIARY POWER UNITS

Development and characteristics of ion-exchange membrane and electrode assembly for fuel cells or electrolysis cells  
[NASA-CASE-XMS-02063] c03 N71-29044

## CHEMICAL COMPOSITION

Rubber composition for expulsion bladders and diaphragms for use with hydrazine  
[NASA-CASE-NPO-11433] c18 N71-31140

Phototropic composition of matter with sensitivity to ultraviolet light and usable for producing positive photographic images  
[NASA-CASE-XGS-03736] c14 N72-22443

## CHEMICAL COMPOUNDS

Ultraviolet chromatographic detector for quantitative and qualitative analysis of compounds  
[NASA-CASE-HQN-10756-1] c14 N72-25428

## CHEMICAL ELEMENTS

Remote handling device for mixing or analyzing dangerous chemicals  
[NASA-CASE-LAR-10634-1] c15 N72-21476

## CHEMICAL LASERS

Chemical lasers using low or zero gravity chemical reactions  
[NASA-CASE-MSC-10986-2] c16 N72-25489

## CHEMICAL MACHINING

Reusable masking boot for chemical machining operations  
[NASA-CASE-XNP-02092] c15 N70-42033

## CHEMICAL PROPERTIES

Method for producing alternating ether-siloxane copolymers with stable properties when exposed to elevated temperatures and UV radiation  
[NASA-CASE-XMF-02584] c06 N71-20905

Chemical and physical properties of synthetic polyurethane polymer prepared by reacting hydroxy carbonate with organic diisocyanate  
[NASA-CASE-MFS-10512] c06 N73-30099

Chemical and elastic properties of fluorinated polyurethanes  
[NASA-CASE-NPO-10767-1] c06 N73-33076

## CHEMICAL REACTIONS

Fire retardant polyisocyanurate foam with high temperature resistance  
[NASA-CASE-ARC-10280-1] c18 N70-34695

Process for interfacial polymerization of pyromellitic dianhydride and tetraamino benzene  
[NASA-CASE-XLA-03104] c06 N71-11235

Synthesis of polymeric schiff bases by schiff-base exchange reactions  
[NASA-CASE-XMF-08651] c06 N71-11236

Preparation of ordered poly(arylenesiloxane)/polymers  
[NASA-CASE-XMF-10753] c06 N71-11237

Synthesis and chemical properties of imidazopyrrolone/imide copolymers  
[NASA-CASE-XLA-08802] c06 N71-11238

Composition and process for improving definition of resin masks used in chemical etching  
[NASA-CASE-XGS-04993] c14 N71-17574

Preparation of inorganic solid film lubricants with long wear life and stability in aerospace environments  
[NASA-CASE-XMF-03988] c15 N71-21403

Synthesis of high purity dianilinosilanes  
[NASA-CASE-XMF-06409] c06 N71-23230

Synthesis of aromatic diamines and dialdehyde polymers using Schiff base  
[NASA-CASE-XMF-03074] c06 N71-24740

Chemical synthesis of hydroxy terminated perfluoro ethers as intermediates for highly fluorinated polyurethane resins  
[NASA-CASE-NPO-10768] c06 N71-27254

Chemical synthesis of thermally stable organometallic polymers with divalent metal ion and tetraphenylphosphonitrilic units  
[NASA-CASE-HQN-10364] c06 N71-27363

Apparatus and process for volumetrically dispensing reagent quantities of volatile chemicals for small batch reactions  
[NASA-CASE-NPO-10070] c15 N71-27372

Infusible polymer production from reaction of polyfunctional epoxy resins with polyfunctional aziridine compounds  
[NASA-CASE-NPO-10701] c06 N71-28620

Process for preparing high molecular weight polyaryloxysilanes from lower molecular weight forms  
[NASA-CASE-XMF-08674] c06 N71-28807

Organometallic compounds of niobium and tantalum useful for film deposition  
[NASA-CASE-XNP-04023] c06 N71-28808

Description of method for making homogeneous foamed materials in weightless environment using materials having different physical properties  
[NASA-CASE-XMF-09902] c15 N72-11387

Method to produce high purity copper fluoride by heating copper hydroxyfluoride powder and subjecting to flowing fluorine gas  
[NASA-CASE-LEW-10794-1] c06 N72-17093

Pumping and metering dual piston system and monitor for reaction chamber constituents  
[NASA-CASE-GSC-10218-1] c15 N72-21465

Chemical lasers using low or zero gravity chemical reactions  
[NASA-CASE-MSC-10986-2] c16 N72-25489

Development of apparatus for producing metal powder particles of controlled size  
[NASA-CASE-XLE-06461-2] c17 N72-28535

Chemical release system for barium free atoms and barium ions  
[NASA-CASE-LAR-10670-2] c13 N72-29425

Chemical spot tests for identification of titanium and titanium alloys used in aerospace vehicles  
[NASA-CASE-LAR-10539-1] c17 N73-12547

- Self-cycling fluid heater for heating continuous fluid stream to ultrahigh temperatures to facilitate chemical reactions  
[NASA-CASE-MSC-15567-1] c33 N73-16918
- Chemical process for production of polyisobutylene compounds and application as solid rocket propellant binder  
[NASA-CASE-NPO-10893] c27 N73-22710
- Preparation of stable polyurethane polymer by reacting polymer with diisocyanate  
[NASA-CASE-MFS-10506] c06 N73-30100
- Preparation of polyurethane polymer by reacting hydroxy polyformal with organic diisocyanate  
[NASA-CASE-MFS-10509] c06 N73-30103
- Utilization of lithium p-lithiphenoxide to prepare star polymers  
[NASA-CASE-NPO-10998-1] c06 N73-32029
- CHEMICAL TESTS**
- Chemical spot tests for identification of titanium and titanium alloys used in aerospace vehicles  
[NASA-CASE-LAR-10539-1] c17 N73-12547
- Chemical spot test for identifying magnesium or magnesium alloys used in aerospace applications  
[NASA-CASE-LAR-10953-1] c17 N73-27446
- CHLORINATION**
- Chlorine generator for purifying water in life support systems of manned spacecraft  
[NASA-CASE-XLA-08913] c14 N71-28933
- CHOKES**
- Current dependent variable inductance for input filter chokes of ac or dc power supplies  
[NASA-CASE-ERC-10139] c09 N72-17154
- CHROMATOGRAPHY**
- Self-scanning chromatographic-fluorographic drug detector with optical readout system  
[NASA-CASE-ARC-10633-1] c05 N73-22048
- CINEMATOGRAPHY**
- High speed photo-optical time recorder for indicating time at exposure of each frame of high speed movie camera film  
[NASA-CASE-KSC-10294] c14 N72-18411
- CIRCUIT BOARDS**
- Electrical feedthrough connection for printed circuit boards  
[NASA-CASE-XMF-01483] c14 N69-27431
- Electric connector for printed cable to printed cable or to printed board  
[NASA-CASE-XMF-00369] c09 N70-36494
- Electrical connection for printed circuits on common board, using bellows principle in rivet  
[NASA-CASE-XNP-05082] c15 N70-41960
- Electrical spot terminal assembly for printed circuit boards  
[NASA-CASE-NPO-10034] c15 N71-17685
- Development and characteristics of polyimide impregnated laminates with fiberglass cloth backing for application as printed circuit boards  
[NASA-CASE-MFS-20408] c18 N73-12604
- Device for bending leads projecting from printed circuit boards  
[NASA-CASE-MFS-22133-1] c15 N73-18473
- Techniques for packaging and mounting printed circuit boards  
[NASA-CASE-MFS-21919-1] c10 N73-25243
- Viscoelastic shock absorbing mount for electrical circuit board  
[NASA-CASE-NPO-13253-1] c15 N73-31445
- CIRCUIT BREAKERS**
- Transistorized current-limiting voltage regulator for use between unregulated voltage source and load  
[NASA-CASE-MSC-11824-1] c09 N70-35574
- Interrupter switching device utilizing electrodes and mercury filled capillary tubes in which current flow vaporizes mercury as circuit breaker  
[NASA-CASE-XNP-02251] c12 N71-20896
- Single electrical circuit component combining diode, fuse, and blown indicator with elongated tube of heat resistant transparent material  
[NASA-CASE-XKS-03381] c09 N71-22796
- Electrical circuit selection device for simulating stage separation of flight vehicle  
[NASA-CASE-XKS-04631] c10 N71-23663
- Electromagnetic braking arrangement for controlling rotor rotation in electric motor  
[NASA-CASE-XNP-06936] c15 N71-24695
- Relay circuit breaker with magnetic latching to provide conductive and nonconductive paths for current devices  
[NASA-CASE-MSC-11277] c09 N71-29008
- CIRCUIT DIAGRAMS**
- Excitation and detection circuitry for flux responsive magnetic head  
[NASA-CASE-XNP-04183] c09 N69-24329
- Impedance transformation device for signal mixing  
[NASA-CASE-XGS-01110] c07 N69-24334
- Design of transistorized ring counter circuit with special steering and tripping circuits  
[NASA-CASE-XGS-03095] c09 N69-27463
- Solid state switching circuit design to increase current capacity of low rated relay contacts  
[NASA-CASE-XNP-09228] c09 N69-27500
- Extra-long monostable multivibrator employing bistable semiconductor switch to allow charging of timing circuit  
[NASA-CASE-XGS-00381] c09 N70-34819
- Constant current source having two matched transistors  
[NASA-CASE-NPO-10733] c09 N70-35631
- Frequency shift keyed demodulator - circuit diagrams  
[NASA-CASE-XGS-02889] c07 N71-11282
- Difference indicating circuit used in conjunction with device measuring gravitational fields  
[NASA-CASE-XNP-08274] c10 N71-13537
- High voltage transistor circuit  
[NASA-CASE-XNP-06937] c09 N71-19516
- Control of fusion welding through use of thermocouple wire  
[NASA-CASE-MFS-06674] c15 N71-20393
- Circuitry for developing autocorrelation function continuously within signal receiving period  
[NASA-CASE-XNP-00746] c07 N71-21476
- Single electrical circuit component combining diode, fuse, and blown indicator with elongated tube of heat resistant transparent material  
[NASA-CASE-XKS-03381] c09 N71-22796
- Design and development of buck-boost voltage regulator circuit with additive or subtractive alternating current impressed on variable direct current source voltage  
[NASA-CASE-GSC-10735-1] c10 N71-26085
- Design of active RC network capable of operating at high Q values with reduced sensitivity to gain amplification and number of passive components  
[NASA-CASE-ARC-10042-2] c10 N72-11256
- Precision surface cutter for screen circuit negatives and other microcircuits  
[NASA-CASE-XLA-09843] c15 N72-27485
- Control circuit for nuclear thermionic converter power source for spacecraft  
[NASA-CASE-NPO-13114-1] c22 N73-13656
- CIRCUIT PROTECTION**
- Use of silicon controlled rectifier shorting circuit to protect thermoelectric generator source from thermal destruction  
[NASA-CASE-XGS-04808] c03 N69-25146
- Spark gap type protective circuit for fast sensing and removal of overvoltage conditions  
[NASA-CASE-XAC-08981] c09 N69-39897
- Development of in-line fuse device for protection of electric circuits from excessive currents and voltages  
[NASA-CASE-MSC-12135-1] c09 N71-12526
- Overcurrent protecting circuit for push-pull transistor amplifiers  
[NASA-CASE-MSC-12033-1] c09 N71-13531
- Solder coating process for printed copper circuit protection  
[NASA-CASE-XMF-01599] c09 N71-20705
- Power supply with overload protection for series stage transistor  
[NASA-CASE-XMS-00913] c10 N71-23543
- Selective plating of etched circuits without removing previous plating  
[NASA-CASE-XGS-03120] c15 N71-24047
- Circuit design for failure sensing and protecting low voltage electric generator and power transmission networks  
[NASA-CASE-GSC-10114-1] c10 N71-27366

- Sensing circuit for instantaneous reaction to power overloads  
[NASA-CASE-GSC-10667-1] c10 N71-33129
- Current protection equipment for saturable core transformers  
[NASA-CASE-ERC-10075-2] c09 N72-22196
- Development of process for forming insulating layer between two electrical conductor or semiconductor materials  
[NASA-CASE-LEW-10489-1] c15 N72-25447
- Overvoltage protection network for electrical equipment  
[NASA-CASE-ARC-10197-1] c09 N73-29124
- CIRCUITS**
- Distribution of currents to circuits using electrical adaptor  
[NASA-CASE-XLA-01288] c09 N69-21470
- Nondestructive interrogating and state changing circuit for binary magnetic storage elements  
[NASA-CASE-XGS-00174] c08 N70-34743
- Electronic circuit system for controlling electric motor speed  
[NASA-CASE-XMF-01129] c09 N70-38712
- Starting circuit design for initiating and maintaining arcs in vapor lamps  
[NASA-CASE-XNP-01058] c09 N71-12540
- Voltage drift compensation circuit for analog-to-digital converter  
[NASA-CASE-XNP-04780] c08 N71-19687
- High voltage divider system for attenuating high voltages to convenient levels suitable for introduction to measuring circuits  
[NASA-CASE-XLE-02008] c09 N71-21583
- Neutralization of magnetic fields produced by thin waferlike circuit elements in space vehicles  
[NASA-CASE-XGS-03390] c03 N71-23187
- Circuits for controlling reversible dc motor  
[NASA-CASE-XNP-07477] c09 N71-26092
- Device for rapid adjustment and maintenance of temperature in electronic components  
[NASA-CASE-XNP-02792] c14 N71-28958
- Pulse generating circuit for operation at very high duty cycles and repetition rates  
[NASA-CASE-XNP-00745] c10 N71-28960
- Development of electric circuit for production of different pulse width signals  
[NASA-CASE-XLA-07788] c09 N71-29139
- Sensing circuit for instantaneous reaction to power overloads  
[NASA-CASE-GSC-10667-1] c10 N71-33129
- Electronic signal-handling circuit with constant input impedance  
[NASA-CASE-ARC-10348-1] c10 N72-10205
- Pulsed excitation voltage circuit for strain gage bridge transducers  
[NASA-CASE-FRC-10036] c09 N72-22200
- Development of thermal to electric power conversion system using solid state switches of electrical currents to load for Seebeck effect compensation  
[NASA-CASE-NPO-11388] c03 N72-23048
- Inductive-capacitive loops as load insensitive power converters  
[NASA-CASE-ERC-10268] c09 N72-25252
- Fail-safe multiple transformer circuit configuration  
[NASA-CASE-NPO-11078] c09 N72-25262
- Precision surface cutter for screen circuit negatives and other microcircuits  
[NASA-CASE-XLA-09843] c15 N72-27485
- Bridge-type gain control circuit  
[NASA-CASE-GSC-10786-1] c10 N72-28241
- Active tuned circuits for microelectronic construction  
[NASA-CASE-GSC-11340-1] c10 N72-33230
- Temperature corrected circuit for gyroscope or accelerometer of digital rebalance type  
[NASA-CASE-NPO-13044-1] c14 N73-13436
- Thermochromic compositions for detecting heat levels in electronic circuits and devices  
[NASA-CASE-NPO-10764-1] c14 N73-14428
- Initial systole and diastolic notch detecting circuitry for monitoring arterial pressure pulse  
[NASA-CASE-LEW-11581-1] c05 N73-18139
- Electrodeless lamp circuit driven by induction  
[NASA-CASE-MFS-21214-1] c09 N73-30181
- CIRCULAR CONES**
- Optical apparatus for visual detection of roundness-and-regularity-of-cone-surfaces
- [NASA-CASE-XMF-00462] c14 N70-34298
- CIRCULAR CYLINDERS**
- Modulating and controlling intensity of light beam from high temperature source by servocontrolled rotating cylinders  
[NASA-CASE-XMS-04300] c09 N71-19479
- CIRCULAR POLARIZATION**
- Left and right hand circular electromagnetic polarization excitation by phase shifter and hybrid networks  
[NASA-CASE-GSC-10021-1] c09 N71-24595
- Planar array circularly polarized antenna with wall slot excitation  
[NASA-CASE-NPO-10301] c07 N72-11148
- Circularly polarized antenna with linearly polarized pair of elements  
[NASA-CASE-ERC-10214] c09 N72-31235
- CIRCULAR TUBES**
- Process for molding long thin-wall tubular bodies from thermosetting plastic molding compounds  
[NASA-CASE-LAR-10782-1] c15 N72-21487
- CIRCULATORS (PHASE SHIFT CIRCUITS)**
- Development of electromagnetic wave transmission line circulator and application to parametric amplifier circuits  
[NASA-CASE-XNP-02140] c09 N71-23097
- CLADDING**
- Two step process for cladding nuclear fuels with tungsten  
[NASA-CASE-XNP-03704] c15 N71-17695
- CLAMPING CIRCUITS**
- Clamped amplifier circuit for horizon scanner enabling amplification and accurate measurement of specified parameters  
[NASA-CASE-XGS-01784] c10 N71-20782
- CLAMPS**
- Portable device for aligning surfaces of two adjacent wall or sheet sections for joining at point of junction  
[NASA-CASE-XMF-01452] c15 N70-41371
- Hydraulic clamping of sheet stock specimens  
[NASA-CASE-XLA-05100] c15 N71-17696
- Inertial component clamping assembly design for spacecraft guidance and control system mounting  
[NASA-CASE-XMS-02184] c15 N71-20813
- Design and development of module joint clamping device for application to solar array construction  
[NASA-CASE-XNP-02341] c15 N71-21531
- Quick attach mechanism for moving or stationary wires, ropes, or cables  
[NASA-CASE-XFR-05421] c15 N71-22994
- CLAYS**
- White paint production by heating impure aluminum silicate clay having low solar absorptance  
[NASA-CASE-XNP-02139] c18 N71-24184
- CLEAN ROOMS**
- Environmentally controlled suit for working in sterile chamber  
[NASA-CASE-LAR-10076-1] c05 N73-20137
- CLEANERS**
- Device for back purging thrust engines  
[NASA-CASE-XMS-04826] c28 N71-28849
- Noncontaminating swab with absorbent end covered with netted envelope to prevent egress of absorbent material  
[NASA-CASE-MFS-18100] c15 N72-11390
- CLEANING**
- Device for removing plastic dust cover from digital computer disk packs for inspection and cleaning  
[NASA-CASE-LAR-10590-1] c15 N70-26819
- CLEAR AIR TURBULENCE**
- Development of radiometric sensor to warn aircraft pilots of region of clear air turbulence along flight path  
[NASA-CASE-ERC-10081] c14 N72-28437
- Remote detection and measurement of clear air turbulence using pulsed laser radar  
[NASA-CASE-MFS-21244-1] c20 N73-21523
- CLIMBING FLIGHT**
- Aircraft indicator for pilot control of takeoff roll, climbout path and verticle flight path in poor visibility conditions  
[NASA-CASE-XLA-00487] c14 N70-40157
- CLINICAL MEDICINE**
- Automatic system for measuring and monitoring

## CLOCKS

systolic and diastolic blood pressure in humans  
[NASA-CASE-MSC-13999-1] c05 N72-25142

Process for preparing calcium phosphate salts  
for tooth repair  
[NASA-CASE-ERC-10338] c04 N72-33072

Heat pipe production of high purity radioiodine  
for thyroid measurements  
[NASA-CASE-LEW-11390-3] c11 N73-28128

Surgical liquification pump for removing  
macerated tissue from eye  
[NASA-CASE-LEW-12051-1] c04 N73-32000

**CLOCKS**

Time synchronization system for synchronizing  
clocks at remote locations with master clock  
using moon reflected coded signals  
[NASA-CASE-NPO-10143] c10 N71-26326

Circuit for measuring wide range of pulse rates  
by utilizing high capacity counter  
[NASA-CASE-XNP-06234] c10 N71-27137

Fault-tolerant clock apparatus for use in  
digital logic systems which maintains output  
pulses during component failure  
[NASA-CASE-MSC-12531-1] c14 N73-22386

**CLOSED CIRCUIT TELEVISION**

Development of spacecraft docking system for  
optical alignment of spacecraft using  
television camera system  
[NASA-CASE-MSC-12559-1] c31 N73-26879

**CLOSED CYCLES**

Closed loop radio communication ranging system  
to determine distance between moving airborne  
vehicle and fixed ground station  
[NASA-CASE-XNP-01501] c21 N70-41930

Digital phase-locked loop for accumulator output  
signal phase-locked to input signal  
[NASA-CASE-GSC-11623-1] c10 N73-31202

**CLOSED ECOLOGICAL SYSTEMS**

Potable water reclamation from human wastes in  
zero-G environment  
[NASA-CASE-XLA-03213] c05 N71-11207

Spacecraft with artificial gravity and earthlike  
atmosphere  
[NASA-CASE-LEW-11101-1] c31 N73-32750

**CLOSURES**

Design and characteristics of device for closing  
canisters under high vacuum conditions  
[NASA-CASE-XLA-01446] c15 N71-21528

**CLOUDS (METEOROLOGY)**

Monitor for electric fields of cloud formations  
in particular area  
[NASA-CASE-KSC-10731-1] c14 N73-10461

Development and characteristics of apparatus for  
measuring intensity of electric field in  
atmosphere  
[NASA-CASE-KSC-10730-1] c14 N73-32318

**COATING**

Solder coating process for printed copper  
circuit protection  
[NASA-CASE-XNP-01599] c09 N71-20705

High thermal emittance black surface coatings  
and process for applying to metal and metal  
alloy surfaces used in radiative cooling of  
spacecraft  
[NASA-CASE-XLA-06199] c15 N71-24875

**COATINGS**

Bonded solid lubricant coatings of calcium  
fluoride and binder for high temperature  
stability  
[NASA-CASE-XMS-00259] c18 N70-36400

Nonflammable coatings of synthetic mica and  
silicate gelant solution mixed with latex  
paint for use in liquid oxygen or high oxygen  
gaseous atmospheres  
[NASA-CASE-MFS-20486] c18 N72-21557

Improved silicide coatings for refractory metals  
employed in space shuttles and gas turbine  
engine components  
[NASA-CASE-LEW-11179-1] c17 N73-22474

Contrast color coating for meteoroid impact  
position locator for space vehicles  
[NASA-CASE-LAR-10629-1] c14 N73-32348

**COAXIAL CABLES**

Design and development of device for cooling  
inner conductor of coaxial cable  
[NASA-CASE-XNP-09775] c09 N71-20445

Design and development of electric connectors  
for rigid and semirigid coaxial cables  
[NASA-CASE-XNP-04732] c09 N71-20851

## SUBJECT INDEX

Transducer circuit design with single coaxial  
cable for input and output connections  
including incorporation into miniaturized  
catheter transducer  
[NASA-CASE-ARC-10132-1] c09 N71-24597

Collapsible antenna boom and coaxial  
transmission line having inflatable inner tube  
[NASA-CASE-MFS-20068] c07 N71-27191

Vibration isolation system, using coaxial  
helical compression springs  
[NASA-CASE-NPO-11012] c15 N72-11391

Development and characteristics of hermetically  
sealed coaxial package for containing  
microwave semiconductor components  
[NASA-CASE-GSC-10791-1] c15 N73-14469

Phase delay control system for stabilizing  
signals passing through coaxial cables  
[NASA-CASE-NPO-13138-1] c09 N73-20238

Coaxial anode for gas radiation counter for  
suppressing background ionization interference  
[NASA-CASE-GSC-11492-1] c14 N73-28497

**COBALT ALLOYS**

High strength, corrosion resistant cobalt-based  
alloys for aerospace structures  
[NASA-CASE-XLE-00726] c17 N71-15644

High temperature cobalt-base alloy resistant to  
corrosion by liquid metals and to sublimation  
in vacuum environment  
[NASA-CASE-XLE-02991] c17 N71-16025

High temperature ferromagnetic cobalt-base alloy  
for electrical power generating equipment  
[NASA-CASE-XLE-03629] c17 N71-23248

Cobalt-tungsten alloys with superior strength at  
elevated temperatures  
[NASA-CASE-LEW-10436-1] c17 N73-32415

**COCKPIT SIMULATORS**

Controlled visibility device for simulating poor  
visibility conditions in training pilots in  
instrument landing and flight procedures  
[NASA-CASE-XFR-04147] c11 N71-10748

**CODERS**

Design and development of encoder/decoder system  
to generate binary code which is function of  
outputs of plurality of bistable elements  
[NASA-CASE-NPO-10342] c10 N71-33407

Biorthogonal encoder with modular design  
[NASA-CASE-NPO-10629] c08 N72-18184

**CODING**

Description of error correcting methods for use  
with digital data computers and apparatus for  
encoding and decoding digital data  
[NASA-CASE-XNP-02748] c08 N71-22749

Binary concatenated coding system to measure,  
count, and record numerical information using  
minimized number of digits  
[NASA-CASE-MSC-14082-1] c08 N73-16163

Apparatus and digital technique for coding rate  
data  
[NASA-CASE-LAR-10128-1] c08 N73-20217

**COENZYMES**

Bioassay of flavin coenzymes  
[NASA-CASE-GSC-10565-1] c06 N72-25149

**COHERENT ELECTROMAGNETIC RADIATION**

Design of folded traveling wave maser structure  
[NASA-CASE-XNP-05219] c16 N71-15550

Development of focused image holography with  
extended sources  
[NASA-CASE-ERC-10019] c16 N71-15551

**COHERENT LIGHT**

Hybrid holographic system using reference,  
transmitted, and reflected beams simultaneously  
[NASA-CASE-MFS-20074] c16 N71-15565

Development of apparatus for amplitude  
modulation of diode laser by periodic  
discharge of direct current power supply  
[NASA-CASE-XMS-04269] c16 N71-22895

Coherent light beam device and method for  
measuring gas density in vacuum chambers  
[NASA-CASE-XER-11203] c14 N71-28994

**COHERENT RADIATION**

Method and apparatus for producing intense,  
coherent, monochromatic light from low  
temperature plasma  
[NASA-CASE-XNP-04167-3] c25 N72-21693

Design and development of multichannel laser  
remote control system using modulated  
helium-neon laser as transmitter and light  
collector as receiving antenna  
[NASA-CASE-LAR-10311-1] c16 N73-16536

## COINCIDENCE CIRCUITS

Operation of two dimensional, word oriented, coincident current, magnetic core memory with reduced bit switching current and increased word switching current for lower power dissipation  
[NASA-CASE-ERC-10166] c08 N70-22136

## COLD CATHODES

Cold cathode discharge tube with pressurized gas cell for meteoroid detection in space  
[NASA-CASE-LAR-10483-1] c14 N73-32327

## COLD WORKING

Cold metal hydroforming techniques using epoxy molds for counteracting creep or stretch  
[NASA-CASE-XLE-05641-1] c15 N71-26346

## COLLAPSE

Collapsible piston for hypervelocity gun  
[NASA-CASE-MS-C-13789-1] c11 N73-32152

## COLLECTION

Automatic liquid collection and disposal system  
[NASA-CASE-LAR-11071-1] c15 N73-18474

## COLLIMATION

Measurement of relative azimuth bearing using laser source for projecting collimated beam  
[NASA-CASE-GSC-11262-1] c16 N72-21503

## COLLIMATORS

X ray collimating structure for focusing radiation directly onto detector  
[NASA-CASE-XHO-04106] c14 N70-40240

Focusing optical collimator for high resolution scanning of electromagnetic radiations, neutrons, and other particles  
[NASA-CASE-MFS-20932-1] c14 N73-27380

Collimator for analyzing spatial location of near and distant sources of radiation  
[NASA-CASE-MFS-20546-2] c14 N73-30389

## COLLISION AVOIDANCE

Cooperative Doppler radar system for avoiding midair collisions  
[NASA-CASE-LAR-10403] c21 N71-11766

Satellite aided aircraft collision avoidance system effective for large number of aircraft  
[NASA-CASE-ERC-10090] c21 N71-24948

Vertically stacked collinear array of independently fed omnidirectional antennas for use in collision warning systems on commercial aircraft  
[NASA-CASE-LAR-10545-1] c09 N72-21244

Economical satellite aided vehicle avoidance system for preventing midair collisions  
[NASA-CASE-ERC-10419] c21 N72-21631

Development and operating principles of collision warning system for aircraft accident prevention  
[NASA-CASE-HQN-10703] c21 N73-13643

Development and characteristics of electronic signalling system and data processing equipment for warning systems to avoid midair collisions between aircraft  
[NASA-CASE-LAR-10717-1] c21 N73-30641

## COLLOIDAL GENERATORS

Colloidal particle generator for electrostatic engine for propelling space vehicles  
[NASA-CASE-XLE-00817] c28 N70-33265

## COLLOIDAL PROPELLANTS

Colloidal particle generator for electrostatic engine for propelling space vehicles  
[NASA-CASE-XLE-00817] c28 N70-33265

Low density and low viscosity magnetic propellant for use under zero gravity conditions  
[NASA-CASE-XLE-01512] c12 N70-40124

Electrostatic microthrust propulsion system with annular slit colloid thruster  
[NASA-CASE-GSC-10709-1] c28 N71-25213

## COLOR

Chemical spot test for identifying magnesium or magnesium alloys used in aerospace applications  
[NASA-CASE-LAR-10953-1] c17 N73-27446

Contrast color coating for meteoroid impact position locator for space vehicles  
[NASA-CASE-LAR-10629-1] c14 N73-32348

## COLOR PHOTOGRAPHY

Color photointerpretation of interference colors reflected from thin film oil-coated components in moving gases for gas flow visualization  
[NASA-CASE-XMP-01779] c12 N71-20815

## COLOR TELEVISION

Color television system utilizing single gun current sensitive color cathode ray tube

[NASA-CASE-ERC-10098] c09 N71-28618  
Color television system for allowing monochrome television camera to produce color pictures

[NASA-CASE-MS-C-12146-1] c07 N72-17109  
Video tape recorder with scan conversion playback for color television signals

[NASA-CASE-NPO-10166-1] c07 N73-22076

## COLOR VISION

Color perception tester for testing color code perceptiveness of individuals  
[NASA-CASE-KSC-10278] c05 N72-16015

## COLORIMETRY

Specific wavelength colorimeter for measuring given solute concentration in test sample  
[NASA-CASE-MS-C-14081-1] c14 N73-18443

## COLUMNS (PROCESS ENGINEERING)

Micropacked column for rapid chromatographic analysis using low gas flow rates  
[NASA-CASE-XNP-04816] c06 N69-39936

## COMBINATORIAL ANALYSIS

Apparatus for computing square roots  
[NASA-CASE-XGS-04768] c08 N71-19437

## COMBUSTION

Device for detection of combustion light preceding gaseous explosions  
[NASA-CASE-LAR-10739-1] c14 N73-16484

## COMBUSTION CHAMBERS

Rocket chamber leak test fixture using tubular plug  
[NASA-CASE-XPR-09479] c14 N69-27503

Propellant injectors for rocket combustion chambers  
[NASA-CASE-XLE-00103] c28 N70-33241

Metal ribbon wrapped outer wall for regeneratively cooled combustion chamber  
[NASA-CASE-XLE-00164] c15 N70-36411

Apparatus for cooling and injecting hypergolic propellants into combustion chamber of small rocket engine  
[NASA-CASE-XLE-00303] c15 N70-36535

Ignition system for monopropellant combustion devices  
[NASA-CASE-XNP-00249] c28 N70-38249

Fabrication method for lightweight regeneratively cooled combustion chamber of channel construction  
[NASA-CASE-XLE-00150] c28 N70-41818

Rocket combustion chamber stability by controlling transverse instability during propellant combustion  
[NASA-CASE-XLE-04603] c33 N71-21507

Regenerative cooling system for rocket combustion chamber using coolant tubes in convergent-divergent nozzle  
[NASA-CASE-XLE-04857] c28 N71-23968

Rocket engine injector orifice to accommodate changes in density, velocity, and pressure, thereby maintaining constant mass flow rate of propellant into rocket combustion chamber  
[NASA-CASE-XLE-03157] c28 N71-24736

Coaxial injector for mixing liquid propellants within combustion chambers  
[NASA-CASE-NPO-11095] c15 N72-25455

Transpiration-cooled rocket chamber formed of porous metal wall  
[NASA-CASE-LEW-11118-1] c15 N72-32501

Airflow distribution control in gas turbine engines  
[NASA-CASE-LEW-11593-1] c28 N73-25816

Swirl can, full-annulus combustion chambers for high performance gas turbine engines  
[NASA-CASE-LEW-11326-1] c23 N73-30665

[NASA-CASE-LEW-11326-1] c23 N73-30665

COMBUSTION CONTROL  
Pressurized gas injection for burning rate control of solid propellants  
[NASA-CASE-XLE-03494] c27 N71-21819

Solid propellant rocket motor with igniter operating in vacuum and sustaining burning of propellant below normal combustion limit  
[NASA-CASE-NPO-11559] c28 N71-34949

COMBUSTION EFFICIENCY  
Fuel injection system for maximum combustion efficiency of rocket engines  
[NASA-CASE-XLE-00111] c28 N70-38199

Utilization of inorganic metal-oxidizer materials in solid rocket propellants resulting in increased combustion efficiency  
[NASA-CASE-NPO-11975-1] c27 N73-17802

## COMBUSTION PHYSICS

- Characteristics of solid propellant rocket engine with controlled rate of thrust buildup operating in vacuum environment  
[NASA-CASE-NPO-11559] c28 N73-24784
- COMBUSTION PRODUCTS**  
Contamination free separation nut eliminating combustion products from ambient surroundings generated by squib firing  
[NASA-CASE-XGS-01971] c15 N71-15922  
Device for generating and controlling combustion products for testing of fire detection system  
[NASA-CASE-GSC-11095-1] c14 N72-10375
- COMBUSTION STABILITY**  
Rocket combustion chamber stability by controlling transverse instability during propellant combustion  
[NASA-CASE-XLE-04603] c33 N71-21507
- COMMAND MODULES**  
Energy absorbing crew couch strut for Apollo command module  
[NASA-CASE-MSC-12279] c15 N72-17450
- COMMUNICATING**  
Communication between computers using two identical communications links  
[NASA-CASE-NPO-11161] c68 N72-25207
- COMMUNICATION**  
Circuitry for developing autocorrelation function continuously within signal receiving period  
[NASA-CASE-XNP-00746] c07 N71-21476  
Superconductive resonant cavity for improved signal to noise ratio in communication signal  
[NASA-CASE-MSC-12259-2] c07 N72-33146
- COMMUNICATION CABLES**  
Method of making molded electric connector for use with flat conductor cables  
[NASA-CASE-XMF-03498] c15 N71-15986  
Process for making HF shielded cable connector assemblies and resulting structures  
[NASA-CASE-GSC-11215-1] c09 N73-28083
- COMMUNICATION EQUIPMENT**  
Multiplexed communication system design including automatic correction of transmission errors introduced by frequency spectrum shifts  
[NASA-CASE-XNP-01306] c07 N71-20814  
Binary data decoding device for use at receiving end of communication channel  
[NASA-CASE-NPO-10118] c07 N71-24741  
Development of communication system for transmitting differential phase shift keyed signals from input data bits without timing or phase reference signals  
[NASA-CASE-MSC-14065-1] c07 N73-10215  
Design and development of closed-loop, digital data communication system using optimum number of interconnecting wires  
[NASA-CASE-MSC-13912-1] c07 N73-12151  
Characteristics of data-aided carrier tracking loop used for tracking carrier in angle modulated communications system  
[NASA-CASE-NPO-11282] c10 N73-16205  
Doppler compensated communication system for locating supersonic transport position  
[NASA-CASE-GSC-10087-4] c07 N73-20174
- COMMUNICATION SATELLITES**  
Erectable, inflatable, radio signal reflecting passive communication satellite  
[NASA-CASE-XLA-00210] c30 N70-40309  
Development of antenna system for spin stabilized communication satellite for simultaneous reception and transmission of data  
[NASA-CASE-XGS-02607] c31 N71-23009  
Elimination of tracking occultation problems occurring during continuous monitoring of interplanetary missions by using Earth orbiting communications satellite  
[NASA-CASE-XAC-06029-1] c31 N71-24813  
Satellite radio communication system with remote steerable antenna  
[NASA-CASE-XNP-02389] c07 N71-28900
- COMMUTATION**  
High speed low level voltage commutating switch  
[NASA-CASE-XLE-00060] c09 N70-39915
- COMMUTATORS**  
Rocket-borne aspect sensor consisting of radiaticn sensor, apertured disk, commutator, and counting circuits  
[NASA-CASE-XGS-08266] c14 N69-27432
- Commutator for steering precisely controlled bidirectional currents through numerous loads by use of magnetic core shift registers  
[NASA-CASE-NPO-10743] c08 N72-21199
- COMPARATOR CIRCUITS**  
Describing frequency discriminator using digital logic circuits and supplying single binary output signal  
[NASA-CASE-MFS-14322] c08 N71-18692  
Development of pulsed differential comparator circuit  
[NASA-CASE-XLE-03804] c10 N71-19471
- COMPARATORS**  
Photometric flow meter with comparator reference means  
[NASA-CASE-XGS-01331] c14 N71-22996  
Characteristics of comparator circuits for comparison of binary numbers in information processing system  
[NASA-CASE-XNP-04819] c08 N71-23295
- COMPENSATORS**  
Star image motion compensator using telescope for maintaining fixed images  
[NASA-CASE-LAR-10523-1] c14 N72-22444
- COMPOSITE MATERIALS**  
High strength reinforced metallic composites for applications over wide temperature range  
[NASA-CASE-XLE-02428] c17 N70-33288  
Method for producing fiber reinforced metallic composites with high strength and elasticity over wide temperature range  
[NASA-CASE-XLE-00231] c17 N70-38198  
Composites reinforced with short metal fibers or whiskers and having high tensile strength  
[NASA-CASE-XLE-00228] c17 N70-38490  
Unfired-ceramic, highly reflective composite insulation for large launch vehicles  
[NASA-CASE-XMF-01030] c18 N70-41583  
Freeze casting of metal ceramic and refractory compound powders into plastic slips  
[NASA-CASE-XLE-00106] c15 N71-16076  
Preparation and characteristics of lightweight refractory insulation  
[NASA-CASE-XMF-05279] c18 N71-16124  
Flexible composite membrane structure impervious to extremely reactive chemicals in rocket propellants  
[NASA-CASE-XNP-08837] c18 N71-16210  
Cryostat for flexure fatigue testing of composite materials  
[NASA-CASE-XMF-02964] c14 N71-17659  
Description of method for producing metallic composites reinforced with ceramic and refractory hard metals that are fibered in place  
[NASA-CASE-XLE-03925] c18 N71-22894  
Electrically coupled individually encapsulated solar cell matrix  
[NASA-CASE-NPO-11190] c03 N71-34044  
Diffusion bonded graphite reinforced aluminum composites  
[NASA-CASE-MFS-21077] c18 N71-34502  
Heat treatment and tooling for forming shapes from thermosetting honeycomb core sheets  
[NASA-CASE-NPO-11036] c15 N72-24522  
Method for making fiber composites with high strength at high temperatures  
[NASA-CASE-LEW-10424-2-2] c18 N72-25539  
Development of procedure for repairing fiberglass structures which retains geometry and strength of original structure  
[NASA-CASE-LAR-10416-1] c15 N72-27527  
Development of thermal compensating structure which maintains uniform length with changes in temperature  
[NASA-CASE-MFS-20433] c15 N72-28496  
Process for developing flame retardant elastomeric composition textiles for use in space suits  
[NASA-CASE-MSC-14331-1] c18 N73-27501
- COMPOSITE PROPELLANTS**  
Ammonium perchlorate composite propellant with organic Cu/II/ chelate catalytic additive  
[NASA-CASE-LAR-10173-1] c27 N71-14090
- COMPOSITE STRUCTURES**  
Inflatable honeycomb panel element for lightweight structures usable in space stations and other construction  
[NASA-CASE-XLA-00204] c32 N70-36536

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## CONDUCTORS

Shrouded composite propulsion system configuration  
[NASA-CASE-XIA-01043] c28 N71-10780

Development of composite structures for spacecraft to serve as anti-meteoroid device  
[NASA-CASE-LAR-10788-1] c31 N73-20880

**COMPRESSED AIR**

Actuator using compressed gas as driving force to control valve handling large liquid flows  
[NASA-CASE-XHQ-01208] c15 N70-35409

**COMPRESSIBLE FLUIDS**

Capacitor for measuring density of compressible fluid in liquid, gas, or liquid and gas phases  
[NASA-CASE-XLE-00143] c14 N70-36618

Apparatus for tensile strength testing of specimen by pressurized fluid  
[NASA-CASE-YKS-06250] c14 N71-15600

**COMPRESSING**

Method and apparatus for producing very low temperature refrigeration based on gas pressure balance  
[NASA-CASE-XNP-08877] c15 N71-23025

Apparatus and method for compression molding of thermosetting plastics  
[NASA-CASE-LAR-10489-1] c15 N72-21484

**COMPRESSION LOADS**

Pressure transducer for systems for measuring forces of compression  
[NASA-CASE-NPO-10832] c14 N72-21405

**COMPRESSION TESTS**

Development of test apparatus for subjecting metal specimen to tensile and compressive loads at constant temperature  
[NASA-CASE-LAR-10426-1] c32 N72-27947

Test equipment to prevent buckling of small diameter specimens during compression tests  
[NASA-CASE-LAR-10440-1] c14 N73-32323

**COMPRESSOR BLADES**

Process for welding compressor and turbine blades to rotors and discs of jet engines  
[NASA-CASE-LEW-10533-1] c15 N73-28515

**COMPRESSORS**

Thermal pump-compressor for converting solar energy  
[NASA-CASE-XLA-00377] c33 N71-17610

Gated compressor, distortionless signal limiter with plurality of channels  
[NASA-CASE-NPO-11820-1] c07 N72-28166

**COMPUTATION**

Apparatus for computing square roots  
[NASA-CASE-XGS-04768] c08 N71-19437

**COMPUTER COMPONENTS**

Asynchronous binary array divider for computerized division operations  
[NASA-CASE-ERC-10180] c08 N70-11132

Computer circuit performing both counting and shifting logic operations also capable of miniaturization and integration in basic circuits  
[NASA-CASE-XNP-01753] c08 N71-22897

**COMPUTER GRAPHICS**

System for digitizing graphic displays  
[NASA-CASE-NPO-10745] c08 N72-22164

**COMPUTER PROGRAMMING**

Encoders designed to generate comma free biorthogonal Reed-Muller type code comprising conversion of 64 6-bit words into 64 32-bit data for communication purposes  
[NASA-CASE-NPO-10595] c10 N71-25917

Computer controlled infusion pump for time varying input of calcium into physiological systems  
[NASA-CASE-ARC-10447-1] c05 N73-14092

**COMPUTER PROGRAMS**

Self testing and repairing computer comprising control and diagnostic unit and rollback points for error correction  
[NASA-CASE-NPO-10567] c08 N71-24633

Development of computer program for estimating reliability of self-repair and fault-tolerant systems with respect to selected system and mission parameters  
[NASA-CASE-NPO-13086-1] c15 N73-12495

Development of flight simulator system to show position of joystick displacement  
[NASA-CASE-NPO-11497] c08 N73-25206

**COMPUTER STORAGE DEVICES**

Magnetic matrix memory system for nondestructive reading of information contained in matrix  
[NASA-CASE-XMP-05835] c08 N71-12504

Binary sequence detector with few memory elements and minimized logic circuit complexity  
[NASA-CASE-XNP-05415] c08 N71-12505

Pulsed magnetic core memory element with blocking oscillator feedback for interrogation without loss of digital information  
[NASA-CASE-XGS-03303] c08 N71-18595

Reliable magnetic core circuit apparatus with application in selection matrices for digital memories  
[NASA-CASE-XNP-01318] c10 N71-23033

Time division multiplexed telemetry transmitting system controlled by programmed memory  
[NASA-CASE-GSC-10131-1] c07 N71-24624

Serial digital decoder design with square circuit matrix and serial memory storage units  
[NASA-CASE-NPO-10150] c08 N71-24650

Digital memory system with multiple switch cores for driving each word location  
[NASA-CASE-XNP-01466] c10 N71-26434

Redundant memory for enhanced reliability of digital data processing system  
[NASA-CASE-GSC-10564] c10 N71-29135

Memory device employing semiconductor and ferroelectric properties of single crystal barium titanate  
[NASA-CASE-ERC-10307] c08 N72-21198

**COMPUTERIZED SIMULATION**

Integrated time shared instrumentation display for aerospace vehicle simulators  
[NASA-CASE-XLA-01952] c08 N71-12507

**COMPUTERS**

Telemetry data unit to form multibit words for use between demodulator and computer  
[NASA-CASE-XNP-09225] c09 N69-24333

Data compression processor for monitoring analog signals by sampling procedure  
[NASA-CASE-NPO-10068] c08 N71-19288

Computer system using adaptive voting to tolerate failure and operate in fail-operational, fail-safe manner  
[NASA-CASE-MSC-13932-1] c08 N72-21206

Communication between computers using two identical communications links  
[NASA-CASE-NPO-11161] c08 N72-25207

**CONCAVITY**

Concave grating spectrometer for use in near and vacuum ultraviolet regions  
[NASA-CASE-XGS-01036] c14 N70-40003

**CONCENTRATION (COMPOSITION)**

Specific wavelength colorimeter for measuring given solute concentration in test sample  
[NASA-CASE-MSC-14081-1] c14 N73-18443

**CONCENTRATORS**

Concentrator device for controlling direction of solar energy onto energy converters  
[NASA-CASE-XLE-01716] c09 N70-40234

**CONDENSATES**

Apparatus for determining volatile condensable material present in polymeric products  
[NASA-CASE-XNP-09699] c06 N71-24607

Development and characteristics of device for removing condensate from heat exchangers with straight through gas flow  
[NASA-CASE-MSC-14143-1] c33 N73-32823

**CONDENSERS (LIQUIFIERS)**

Condenser-separator for dehumidifying air utilizing sintered metal surface  
[NASA-CASE-XLA-08645] c15 N69-21465

Development and characteristics of device for removing condensate from heat exchangers with straight through gas flow  
[NASA-CASE-MSC-14143-1] c33 N73-32823

**CONDUCTING FLUIDS**

Multiducted electromagnetic pump for conductive liquids  
[NASA-CASE-NPO-10755] c15 N71-27084

**CONDUCTIVE HEAT TRANSFER**

Measuring conductive heat flow and thermal conductivity of laminar gas stream in cylindrical plug to simulate atmospheric reentry  
[NASA-CASE-XLE-00266] c14 N70-34156

Space suit body heat exchanger design composed of thermal conductance yarn and liquid coolant loops  
[NASA-CASE-XMS-09571] c05 N71-19439

**CONDUCTORS**

Support for flexible conductor cable between drawers or racks holding electronic equipment

## CONES

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- CONES**  
Black body radiometer design with temperature  
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[NASA-CASE-NPO-10890] c11 N73-12265
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[NASA-CASE-XLE-00715] c15 N70-34859
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- Characteristics of microwave antenna with  
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[NASA-CASE-YKS-03495] c14 N69-39785
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[NASA-CASE-XLA-04622] c03 N70-41580
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- Design and development of quick release connector  
[NASA-CASE-XLA-01141] c15 N71-13789
- Development and characteristics of strainer for  
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[NASA-CASE-XLA-05056] c15 N72-11389
- Squib actuated disconnect for spacecraft  
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[NASA-CASE-NPO-13172-1] c33 N73-17917
- Process for making BF shielded cable connector  
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[NASA-CASE-GSC-11215-1] c09 N73-28083
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[NASA-CASE-NPO-11120] c33 N70-41524
- Three stage motion restraining mechanism for  
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[NASA-CASE-GSC-10306-1] c15 N71-24694
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[NASA-CASE-LAR-10129-1] c15 N73-25512
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[NASA-CASE-MSC-12233-1] c15 N72-25454
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Lightweight, rugged, inexpensive satellite  
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[NASA-CASE-XGS-01593] c03 N70-35408
- CONTAINERS**  
Manufacture of fluid containers from fused  
coated polyester sheets having resealable septum  
[NASA-CASE-NPO-10123] c15 N71-24835
- Method for locating leaks in hermetically sealed  
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- Quantitative liquid measurements in container by  
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[NASA-CASE-XNP-02500] c18 N71-27397
- CONTAMINANTS**  
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toxic, corrosive, or noxious fluids and fumes  
from materials handling equipment for  
cleansing and accident prevention  
[NASA-CASE-XMS-01905] c12 N71-21089
- CONTAMINATION**  
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monitoring of inert gas metal arc welding  
[NASA-CASE-XMF-02039] c15 N71-15871
- Contamination free separation nut eliminating  
combustion products from ambient surroundings  
generated by squib firing  
[NASA-CASE-XGS-01971] c15 N71-15922
- Apparatus and process for volumetrically  
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chemicals for small batch reactions  
[NASA-CASE-NPO-10070] c15 N71-27372
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[NASA-CASE-GSC-10879-1] c14 N72-25413
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[NASA-CASE-XNP-02723] c07 N70-41680
- CONTOURS**  
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surface using X-Y plotter and traveling  
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[NASA-CASE-XLA-08646] c14 N71-17586
- Processing system for semiperiodic electrical  
signals to produce real time contoured display  
[NASA-CASE-MSC-13407-1] c10 N72-20225
- CONTRACTION**  
Elastomeric extensometer for measuring surface  
area changes of human body caused by body  
expansion and contraction  
[NASA-CASE-MFS-21049-1] c14 N73-11405
- CONTROL**  
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more than one fluid flow, and having stable  
qualities under loads  
[NASA-CASE-YMS-05890] c09 N71-23191
- Control system for pressure balance device used  
in calibrating pressure gauges  
[NASA-CASE-XMF-04134] c14 N71-23755
- Power control system for thermal nuclear reactor  
[NASA-CASE-XLE-05799] c22 N72-21644
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separately located ion gauge pressures on  
vacuum chambers  
[NASA-CASE-XLE-00787] c14 N71-21090
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motor to rotate in either direction  
[NASA-CASE-GSC-10366-1] c10 N71-18772
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analog-to-digital converter  
[NASA-CASE-XNP-04780] c08 N71-19687
- Development of attitude control system for  
vertical takeoff aircraft using reaction  
nozzles displaced from various axes of aircraft  
[NASA-CASE-XAC-08972] c02 N71-20570
- Device for controlling rotary potentiometer  
mounted on aircraft steering wheel or aileron  
control  
[NASA-CASE-XAC-10019] c15 N71-23809
- Controlled release device for use in launching  
rockets or missiles  
[NASA-CASE-YKS-03338] c15 N71-24043
- Circuits for controlling reversible dc motor  
[NASA-CASE-XNP-07477] c09 N71-26092
- Digital memory system with multiple switch cores  
for driving each word location  
[NASA-CASE-XNP-01466] c10 N71-26434
- Fluid control jet amplifiers  
[NASA-CASE-XLE-09341] c12 N71-28741
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[NASA-CASE-LEW-11188-1] c02 N71-34017

- System for control of variable signal generator  
[NASA-CASE-NPO-11064] c07 N72-11150
- Solid state remote circuit selector switching circuit  
[NASA-CASE-LEW-10387] c09 N72-22201
- Development of device for simulating charge and discharge cycle of battery in synchronous orbit  
[NASA-CASE-GSC-11211-1] c03 N72-25020
- Bridge-type gain control circuit  
[NASA-CASE-GSC-10786-1] c10 N72-28241
- Flow control valve for high temperature fluids  
[NASA-CASE-NPO-11951-1] c15 N73-10501
- Digital control system for Baum folding machine providing automatic counting and machine shutoff  
[NASA-CASE-LAR-10688-1] c15 N73-11442
- Control circuit for nuclear thermionic converter power source for spacecraft  
[NASA-CASE-NPO-13114-1] c22 N73-13656
- Phase delay control system for stabilizing signals passing through coaxial cables  
[NASA-CASE-NPO-13138-1] c09 N73-20238
- Interferometer prism and control system for precisely determining direction to remote light source  
[NASA-CASE-ARC-10278-1] c14 N73-25463
- Development and characteristics of variable ratio, mixed-mode, bilateral master-slave control system for space shuttle remote manipulator system  
[NASA-CASE-MSC-14245-1] c31 N73-30832
- CONTROL ROCKETS**
- Unit for generating thrust from catalytic decomposition of hydrogen peroxide, for high altitude aircraft or spacecraft reaction control  
[NASA-CASE-XMS-00583] c28 N70-38504
- CONTROL RODS**
- Nuclear reactor control rod assembly with improved driving mechanism  
[NASA-CASE-XLE-00298] c22 N70-34501
- Manual control mechanism for adjusting control rod to null position  
[NASA-CASE-XLA-01808] c15 N71-20740
- CONTROL SIMULATION**
- Kinesthetic control simulator with multiple degree of freedom of movement similar to lunar flying vehicles  
[NASA-CASE-LAR-10276-1] c11 N70-26813
- CONTROL STABILITY**
- Design and development of active control system for air cushion vehicle to reduce or eliminate effects of excessive vertical vibratory acceleration  
[NASA-CASE-LAR-10531-1] c02 N73-13023
- CONTROL SURFACES**
- Conical valve plug for use with reactive cryogenic fluids  
[NASA-CASE-XLE-00715] c15 N70-34859
- Attitude control system for spacecraft based on conversion of incident solar radiation on movable control surfaces into mechanical torques  
[NASA-CASE-XNP-02982] c31 N70-41855
- Characteristics of system for providing yaw control of vehicles at high supersonic and hypersonic speeds by deflecting flaps mounted on upper wing surface  
[NASA-CASE-LAR-11140-1] c02 N73-20008
- CONTROL UNITS (COMPUTERS)**
- Self testing and repairing computer comprising control and diagnostic unit and rollback points for error correction  
[NASA-CASE-NPO-10567] c08 N71-24633
- CONTROL VALVES**
- Electromechanical actuator and its use in rocket thrust control valve  
[NASA-CASE-XNP-05975] c15 N69-23185
- Multiple orifice fluid flow control valve to provide different flow patterns  
[NASA-CASE-ERC-10208] c15 N70-10867
- Conical valve plug for use with reactive cryogenic fluids  
[NASA-CASE-XLE-00715] c15 N70-34859
- Control valve and coaxial variable injector for controlling bipropellant mixture ratio and flow  
[NASA-CASE-XNP-09702] c15 N71-17654
- Control valve for switching main stream of fluid from one stable position to another by means of electrohydrodynamic forces  
[NASA-CASE-NPO-10416] c12 N71-27332
- Force balanced throttle valve for fuel control in rocket engines  
[NASA-CASE-NPO-10808] c15 N71-27432
- Dual stage check valve for cryogenic supply systems used in space flight environmental control system  
[NASA-CASE-MSC-13587-1] c15 N73-30459
- CONTROLLED ATMOSPHERES**
- Rectangular electric conductors for conductor cables to withstand spacecraft vibration and controlled atmosphere  
[NASA-CASE-MFS-14741] c09 N70-20737
- High voltage pulse generator for testing flash and ignition limits of nonmetallic materials in controlled atmospheres  
[NASA-CASE-MSC-12178-1] c09 N71-13518
- System for continuous monitoring of exhalations, weighing, and cage cleaning for animal exposed to controlled atmosphere for toxic study  
[NASA-CASE-XAC-05333] c11 N71-22875
- CONTROLLERS**
- Unitary three-axis controller for flight vehicles within or outside atmosphere  
[NASA-CASE-XPR-00181] c21 N70-33279
- Two axis flight controller with potentiometer control shafts directly coupled to rotatable ball members  
[NASA-CASE-XPR-04104] c03 N70-42073
- Hand controller operable about three respectively perpendicular axes and capable of actuating signal generators for attitude control devices  
[NASA-CASE-XMS-07487] c15 N71-23255
- Aircraft and spacecraft hand controllers for yaw, pitch, and roll  
[NASA-CASE-MSC-12394-1] c03 N73-20041
- CONVECTIVE FLOW**
- Design and development of device to prevent geysering during convective circulation of cryogenic fluids  
[NASA-CASE-KSC-10615] c15 N73-12486
- CONVECTIVE HEAT TRANSFER**
- Thin film gage for measuring convective heat transfer on surfaces in air stream  
[NASA-CASE-NPO-10617] c14 N70-12618
- CONVERGENCE**
- Electrical device for developing converging spherical shock waves  
[NASA-CASE-MFS-20890] c14 N72-22439
- CONVERGENT-DIVERGENT NOZZLES**
- Gimbaled partially submerged nozzle for solid propellant rocket engines for providing directional control  
[NASA-CASE-XMP-01544] c28 N70-34162
- Regenerative cooling system for rocket combustion chamber using coolant tubes in convergent-divergent nozzle  
[NASA-CASE-XLE-04857] c28 N71-23968
- CONVOLUTION INTEGRALS**
- Learning decoders for decoding compatible convolutional codes  
[NASA-CASE-MSC-14070-1] c07 N72-27178
- COOLANTS**
- Simulated fuel assembly-type flow measurement apparatus for coolant flow in reactor core  
[NASA-CASE-XLE-00724] c14 N70-34669
- COOLING**
- Microwave power receiving antenna solving heat dissipation problems by construction of elements as heat pipe devices  
[NASA-CASE-MFS-20333] c09 N71-13486
- Dissipative voltage regulator system for minimizing heat dissipation  
[NASA-CASE-GSC-10891-1] c10 N71-26626
- Cooling and radiation protection of ruby lasers using copper sulfate solution in alcohol  
[NASA-CASE-MFS-20180] c16 N72-12440
- COOLING SYSTEMS**
- Automatic thermal switch for improving efficiency of cooling gases below 40 K  
[NASA-CASE-XNP-03796] c23 N71-15467
- Differential thermopile for measuring cooling water temperature rise  
[NASA-CASE-XAC-00812] c14 N71-15598
- Electric power system with circulatory liquid coolant-cooling system  
[NASA-CASE-MFS-14114-2] c09 N71-24807
- Portable cryogenic cooling system design including turbine pump, cooling chamber, and

## COORDINATES

atomizer  
[NASA-CASE-NPO-10467] c23 N71-26654

Development and characteristics of natural circulation radiator for use with nuclear power plants installed in lunar space stations  
[NASA-CASE-XHQ-03673] c33 N71-29046

Development and characteristics of cooling system to maintain temperature of rack mounted electronic modules  
[NASA-CASE-MS-C-12389] c33 N71-29052

Development of method for cooling high temperature wall members with cooling medium having high heat absorption capability  
[NASA-CASE-HQN-00938] c33 N71-29053

Apparatus for liquid spray cooling of turbine blades  
[NASA-CASE-XLE-00027] c33 N71-29152

Radial heat flux transformer for use in heating and cooling processes  
[NASA-CASE-NPO-10828] c33 N72-17948

Light shield and cooling apparatus for high intensity ultraviolet lamps  
[NASA-CASE-LAR-10089-1] c15 N73-13474

**COORDINATES**

Mechanical coordinate converter for use with spacecraft tracking antennas  
[NASA-CASE-XNP-00614] c14 N70-36907

System for locating lightning strokes by coordination of directional antenna signals  
[NASA-CASE-KSC-10729-1] c09 N73-32110

**COPOLYMERS**

Method for producing alternating ether-siloxane copolymers with stable properties when exposed to elevated temperatures and UV radiation  
[NASA-CASE-XMF-02584] c06 N71-20905

Preparation of dicyanoacetylene and vinylidene copolymers using organic compounds  
[NASA-CASE-XNP-03250] c06 N71-23500

**COPPER**

Development of method for etching copper  
[NASA-CASE-XGS-06306] c17 N71-16044

Method of plating copper on aluminum to permit conventional soldering of structural aluminum bodies  
[NASA-CASE-XLA-08966-1] c17 N71-25903

**COPPER COMPOUNDS**

Gallium arsenide solar cell preparation by surface deposition of cuprous iodide on thin n-type polycrystalline layers and heating in iodine vapor  
[NASA-CASE-XNP-61960] c09 N71-23027

Cooling and radiation protection of ruby lasers using copper sulfate solution in alcohol  
[NASA-CASE-MFS-20180] c16 N72-12440

**COPPER FLUORIDES**

Method to produce high purity copper fluoride by heating copper hydroxyfluoride powder and subjecting to flowing fluorine gas  
[NASA-CASE-LEW-10794-1] c06 N72-17093

**CORDAGE**

Fabrication of root cord restrained fabric suit sections from sheets of fabric  
[NASA-CASE-MS-C-12398] c05 N72-20098

**COBE STORAGE**

Memory device employing semiconductor and ferroelectric properties of single crystal barium titanate  
[NASA-CASE-ERC-10307] c08 N72-21198

**CORES**

Rolling element with hollow center or low density material for bearings  
[NASA-CASE-LEW-11087-2] c15 N72-31491

**CORRECTION**

Doppler frequency shift correction device for multiplex communication with Applications Technology Satellites  
[NASA-CASE-XGS-02749] c07 N69-39978

**CORRELATION DETECTION**

Phase detector with time correlation integrator for frequency multiplexed signals  
[NASA-CASE-GSC-11744-1] c09 N73-23291

**CORRELATORS**

Synchronous detection system for detecting weak radio astronomical signals  
[NASA-CASE-XNP-09832] c30 N71-23723

**CORROSION PREVENTION**

Vapor deposited laminated nitride-silicon coating for corrosion prevention of carbonaceous surfaces

## SUBJECT INDEX

[NASA-CASE-XLA-00284] c15 N71-16075

Method to prevent stress corrosion cracking in titanium alloys  
[NASA-CASE-NPO-10271] c17 N71-16393

Method and apparatus for inducing compressive stresses in pressure vessel to prevent stress corrosion  
[NASA-CASE-XLA-07390] c15 N71-18616

Development of fluoride coating to prevent oxidation of beryllium surfaces at elevated temperatures  
[NASA-CASE-LEW-10327] c17 N71-33408

**CORROSION RESISTANCE**

High strength, corrosion resistant cobalt-based alloys for aerospace structures  
[NASA-CASE-XLE-00726] c17 N71-15644

Hydrazine monoperfluoro alkanoate solder flux leaving corrosion resistant coating, for metals such as copper  
[NASA-CASE-XNP-03459-2] c18 N71-15688

High temperature cobalt-base alloy resistant to corrosion by liquid metals and to sublimation in vacuum environment  
[NASA-CASE-XLE-02991] c17 N71-16025

Metal soldering with hydrazine monoperfluoro alkanoate for corrosion resistant coatings  
[NASA-CASE-XNP-03459] c15 N71-21078

Flame sprayed intermetallic coating for producing oxidation corrosion and erosion resistant low alloy austenitic stainless steel for use in automobile internal combustion engines  
[NASA-CASE-LEW-11267-2] c15 N72-28502

**COSINE SERIES**

Service life of electromechanical device for generating sine/cosine functions  
[NASA-CASE-LAR-10503-1] c09 N72-21248

Function generators for producing complex vibration mode patterns used to identify vibration mode data  
[NASA-CASE-LAR-10310-1] c10 N73-20253

**COSMIC DUST**

Sensor for detecting and measuring energy, velocity and direction of travel of a cosmic dust particle  
[NASA-CASE-GSC-10503-1] c14 N72-20381

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[NASA-CASE-MSC-13802-1] c30 N72-20805

System for detecting impact position of cosmic dust on detector surface  
[NASA-CASE-GSC-11291-1] c25 N72-33696

**COUCHES**

Shock absorbing couch for body support under high acceleration or deceleration forces  
[NASA-CASE-XMS-01240] c05 N70-35152

Low onset rate energy absorber in form of strut assembly for crew couch of Apollo command module  
[NASA-CASE-MSC-12279-1] c15 N70-35679

Shock absorbing articulated multiple couch assembly  
[NASA-CASE-MSC-11253] c05 N71-12343

Collapsible couch system for manned space vehicles  
[NASA-CASE-MSC-13140] c05 N72-11085

**COULOMETERS**

Alkaline-type coulometer cell for primary charge control in secondary battery recharge circuits  
[NASA-CASE-XGS-05434] c03 N71-20491

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[NASA-CASE-GSC-10487-1] c03 N71-24719

**COUNTERS**

Circuit for measuring wide range of pulse rates by utilizing high capacity counter  
[NASA-CASE-XNP-06234] c10 N71-27137

Electronic strain level counter on in-flight aircraft  
[NASA-CASE-LAR-10756-1] c32 N73-26910

**COUNTING CIRCUITS**

Rocket-borne aspect sensor consisting of radiation sensor, apertured disk, commutator, and counting circuits  
[NASA-CASE-XGS-08266] c14 N69-27432

Design of transistorized ring counter circuit with special steering and tripping circuits  
[NASA-CASE-XGS-03095] c09 N69-27463

- Counter-divider circuit for accuracy and reliability in binary circuits  
[NASA-CASE-XMF-00421] c09 N70-34502
- Reversible ring counter using cascaded single silicon controlled rectifier stages  
[NASA-CASE-XGS-01473] c09 N71-10673
- Capacitor sandwich structure containing metal sheets of known thickness for counting penetration rates of meteoroids  
[NASA-CASE-XLE-01246] c14 N71-10797
- Electronic counter circuit utilizing magnetic core and low power consumption  
[NASA-CASE-XNP-08836] c09 N71-12515
- Synchronous counter design incorporating cascaded binary stages driven by previous stages and inputs through NAND gates  
[NASA-CASE-XGS-02440] c08 N71-19432
- Digital cardiometer incorporating circuit for measuring heart rate of subject over predetermined portion of one minute also converting rate to beats per minute  
[NASA-CASE-XMS-02399] c05 N71-22896
- Computer circuit performing both counting and shifting logic operations also capable of miniaturization and integration in basic circuits  
[NASA-CASE-XNP-01753] c08 N71-22897
- Noninterruptible digital counter circuit design with display device for pulse frequency modulation  
[NASA-CASE-XNP-09759] c08 N71-24891
- COUPLING**
- Coupling device for linear shaped charge for space vehicle abort system  
[NASA-CASE-XLA-00189] c33 N70-36846
- Base support for expansible and contractible coupling between two members  
[NASA-CASE-NPO-11059] c15 N72-17454
- COUPLING CIRCUITS**
- Interrogator and current driver circuit for combination with transistor flip-flop circuit  
[NASA-CASE-XGS-03058] c10 N71-19547
- Antenna array at focal plane of reflector with coupling network for beam switching  
[NASA-CASE-GSC-10220-1] c07 N71-27233
- Phase modulator with tuned variable length electrical lines including coupling and varactor diode circuits  
[NASA-CASE-MSC-13201-1] c07 N71-28429
- High efficiency transformerless amplitude modulator coupled to RF power amplifier  
[NASA-CASE-GSC-10668-1] c07 N71-28430
- Radiometer quadrature control and measuring system using optical coupling circuitry  
[NASA-CASE-MFS-21660-1] c14 N73-13434
- COUPLINGS**
- Releasable coupling device designed to receive and retain matching ends of electrical connectors  
[NASA-CASE-XMS-07846-1] c09 N69-21927
- Stage separation using remote control release of joint with explosive insert  
[NASA-CASE-XLA-02854] c15 N69-27490
- Space vehicle stage coupling and quick release separation mechanism  
[NASA-CASE-XLA-01441] c15 N70-41679
- Standard coupling design for mass production  
[NASA-CASE-XMS-02532] c15 N70-41808
- Quick-release coupling for fueling rocket vehicles with cryogenic propellants  
[NASA-CASE-XKS-01985] c15 N71-10782
- Ratchet mechanism for high speed operation at reduced backlash  
[NASA-CASE-MFS-12805] c15 N71-17805
- Split nut and bolt separation device  
[NASA-CASE-XNP-06914] c15 N71-21489
- Quick disconnect duct coupling device for single-handed operation  
[NASA-CASE-MFS-20395] c15 N71-24903
- Coupling arrangement for isolating torque loads from axial, radial, and bending loads  
[NASA-CASE-XLA-04897] c15 N72-22482
- COVERINGS**
- Apparatus for ejecting covers of instrument packages using differential pressure principle  
[NASA-CASE-XMP-04132] c15 N69-27502
- Transparent plastic film for attaching cover glasses to silicon solar cells  
[NASA-CASE-LEW-11065-1] c03 N72-11064
- CRACKING (FRACTURING)**
- Method to prevent stress corrosion cracking in titanium alloys  
[NASA-CASE-NPO-10271] c17 N71-16393
- Development of method and equipment for detecting cracks in materials with porous subsurface matrix covered by impervious coating  
[NASA-CASE-MSC-14187-1] c14 N73-17564
- Improved silicide coatings for refractory metals employed in space shuttles and gas turbine engine components  
[NASA-CASE-LEW-11179-1] c17 N73-22474
- CREEP RUPTURE STRENGTH**
- Nickel base alloy with resistance to oxidation at high temperatures and superior stress-rupture properties  
[NASA-CASE-XLE-02082] c17 N71-16026
- CRITICAL EXPERIMENTS**
- Apparatus and process for volumetrically dispensing reagent quantities of volatile chemicals for small batch reactions  
[NASA-CASE-NPO-10070] c15 N71-27372
- CROSSED FIELDS**
- Crossed-field plasma accelerator for laboratory simulation of atmospheric reentry conditions  
[NASA-CASE-XLA-00675] c25 N70-33267
- Direct conversion of thermal energy into electrical energy using crossed electric and magnetic fields  
[NASA-CASE-XLE-00212] c03 N70-34134
- Crossed field MHD plasma generator-accelerator  
[NASA-CASE-XLA-03374] c25 N71-15562
- CROSSLINKING**
- New trifunctional alcohol derived from trier acid and novel method of preparation  
[NASA-CASE-NPO-10714] c06 N69-31244
- CRUCIBLES**
- Evaporating crucible of tantalum-tungsten foil, nickel alumina bonding agent, and ceramic coating  
[NASA-CASE-XLA-03105] c15 N69-27483
- CRUDE OIL**
- Decontamination of petroleum products with honey  
[NASA-CASE-XNP-03835] c06 N71-23499
- CRYOGENIC EQUIPMENT**
- Gas balancing, cryogenic refrigeration apparatus with Joule-Thomson valve assembly  
[NASA-CASE-NPO-10309] c15 N69-23190
- Low thermal loss piping arrangement for moving cryogenic media through double chamber structure  
[NASA-CASE-XNP-08882] c15 N69-39935
- Method and apparatus for removing plastic insulation from wire using cryogenic equipment  
[NASA-CASE-MFS-10340] c15 N71-17628
- Dual solid cryogenics for spacecraft refrigeration insuring low temperature cooling for extended periods  
[NASA-CASE-GSC-10188-1] c23 N71-24725
- Reliability of automatic refilling valving device for cryogenic liquid systems  
[NASA-CASE-NPO-11177] c15 N72-17453
- Dual stage check valve for cryogenic supply systems used in space flight environmental control system  
[NASA-CASE-MSC-13587-1] c15 N73-30459
- CRYOGENIC FLUID STORAGE**
- Control system for maintaining liquid nitrogen level in cryogenic reservoir  
[NASA-CASE-XLA-09714] c03 N70-35700
- Apparatus for cryogenic liquid storage with heat transfer reduction and for liquid transfer at zero gravity conditions  
[NASA-CASE-XLE-00345] c15 N70-38020
- Cryogenic storage system for gases onboard spacecraft  
[NASA-CASE-XMS-04390] c31 N70-41871
- Carbon dioxide purge systems to prevent condensation in spaces between cryogenic fuel tanks and hypersonic vehicle skin  
[NASA-CASE-XLA-01967] c31 N70-42015
- Fabrication of filament wound propellant tank for cryogenic storage  
[NASA-CASE-XLE-03803-2] c15 N71-17651
- Prefabricated multilayered self-evacuating insulation panels using gas with low vapor pressure at cryogenic temperatures for application to storage of cryogenics  
[NASA-CASE-XLE-04222] c23 N71-22881

- Multilayer insulation panels for cryogenic liquid containers  
[NASA-CASE-MPS-14023] c33 N71-25351
- Development of thermal insulation material for insulating liquid hydrogen tanks in spacecraft  
[NASA-CASE-XMF-05046] c33 N71-28892
- Cyclically heated auxiliary chamber for heating and mixing stored fluids  
[NASA-CASE-ARC-10442-1] c14 N73-30415
- CRYOGENIC FLUIDS**
- Cryogenic flux-gated magnetometer using superconductors  
[NASA-CASE-XAC-02407] c14 N69-27423
- Fuel tank pressure-relief device for venting cryogenic liquid vapors through tubes with porous plug  
[NASA-CASE-XLE-00288] c15 N70-34247
- Conical valve plug for use with reactive cryogenic fluids  
[NASA-CASE-XLE-00715] c15 N70-34859
- Two component valve assembly for cryogenic liquid transfer regulation  
[NASA-CASE-XLE-00397] c15 N70-36492
- Measuring density of single and two-phase cryogenic fluids in rocket fuel tanks  
[NASA-CASE-XLE-00688] c14 N70-41330
- Leakproof soft metal seal for use in very high vacuum systems operating at cryogenic temperatures  
[NASA-CASE-XGS-02441] c15 N70-41629
- High pressure liquid flow sight assembly for wide temperature range applications including cryogenic fluids  
[NASA-CASE-XLE-02998] c14 N70-42074
- Automatic thermal switch for improving efficiency of cooling gases below 40 K  
[NASA-CASE-XNP-03796] c23 N71-15467
- Describing apparatus for separating gas from cryogenic liquid under zero gravity and for venting gas from fuel tank  
[NASA-CASE-XLE-00586] c15 N71-15968
- Development of apparatus for measuring thermal conductivity  
[NASA-CASE-XGS-01052] c14 N71-15992
- Method and apparatus for producing fine particles in cryogenic liquid bath for gelled rocket propellants  
[NASA-CASE-NPO-10250] c23 N71-16212
- Superconducting alternator design with cryogenic fluid for cooling windings below critical temperature  
[NASA-CASE-XLE-02823] c09 N71-23443
- Flow angle sensor and remote readout system for use with cryogenic fluids  
[NASA-CASE-XLE-04503] c14 N71-24864
- Design and development of device to prevent geysering during convective circulation of cryogenic fluids  
[NASA-CASE-KSC-10615] c15 N73-12486
- Pump for cryogenic liquids using magnetocaloric material  
[NASA-CASE-LEW-11672-1] c15 N73-14479
- CRYOGENIC GYROSCOPES**
- Cryogenic gyroscope housing with annular disks for gas spin-up  
[NASA-CASE-MFS-21136-1] c23 N72-27731
- CRYOGENIC MAGNETS**
- Improved alternator with windings of superconducting materials acting as permanent magnet  
[NASA-CASE-XLE-02824] c03 N69-39890
- CRYOGENIC ROCKET PROPELLANTS**
- Quick-release coupling for fueling rocket vehicles with cryogenic propellants  
[NASA-CASE-XKS-01985] c15 N71-10782
- Hot-wire liquid level detector for cryogenic propellants  
[NASA-CASE-XLE-00454] c23 N71-17802
- Automatically reciprocating, high pressure pump for use in spacecraft cryogenic propellants  
[NASA-CASE-XNP-04731] c15 N71-24042
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[NASA-CASE-XLE-02647] c18 N71-23658
- Development of foam insulation for filament wound cryogenic storage tank  
[NASA-CASE-XLE-03803] c15 N71-23816
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- High strength aluminum casting alloy for cryogenic applications in aerospace engineering  
[NASA-CASE-XMF-02786] c17 N71-20743
- Portable cryogenic cooling system design including turbine pump, cooling chamber, and atomizer  
[NASA-CASE-NPO-10467] c23 N71-26654
- CRYOLITE**
- Ultraviolet filter of thorium fluoride and cryolite on quartz base  
[NASA-CASE-XNP-02340] c23 N69-24332
- CRYOSTATS**
- Cryostat for flexure fatigue testing of composite materials  
[NASA-CASE-XMF-02964] c14 N71-17659
- Cryostat for use with horizontal fatigue testing machines at low temperatures  
[NASA-CASE-XMF-10968] c14 N71-24234
- CRYSTAL FILTERS**
- Infrared tunable dye laser with nonlinear wavelength mixing crystal in optical cavity  
[NASA-CASE-ARC-10463-1] c09 N73-32111
- CRYSTAL GROWTH**
- Device for producing high purity silicon carbide on carbon base by hydrogen reduction of silicon tetrachloride  
[NASA-CASE-XLA-02057] c26 N70-40015
- Electrodeposition method for producing crystalline material from dense gaseous medium  
[NASA-CASE-NPO-10440] c15 N72-21466
- CRYSTAL OSCILLATORS**
- Describing crystal oscillator instrument for detecting condensable gas contaminants in vacuum apparatus  
[NASA-CASE-NPO-10144] c14 N71-17701
- CRYSTAL RECTIFIERS**
- Turn on current transient limiter for controlling peak current flow in high capacity load  
[NASA-CASE-GSC-10413] c10 N71-26531
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- Brushless dc tachometer design with Hall effect crystals and output voltage magnitude proportional to rotor speed  
[NASA-CASE-MPS-20385] c09 N71-24904
- CULTURE TECHNIQUES**
- Development of variable angle device for positioning test tubes to permit optimum drying of culture medium  
[NASA-CASE-LAR-10507-1] c11 N72-25284
- Automatic inoculating device for agar trays using cotton swab or loop  
[NASA-CASE-LAR-11074-1] c05 N73-16096
- CURING**
- Method for curing thick sections of room temperature vulcanizing single component silicone rubber  
[NASA-CASE-MSC-12230-1] c15 N70-35640
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- Solid state switching circuit design to increase current capacity of low rated relay contacts  
[NASA-CASE-XNP-09228] c09 N69-27500
- Technique and equipment for sputtering using apertured electrode and pulsed substrate bias  
[NASA-CASE-LEW-10920-1] c17 N73-24569
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- Distribution of currents to circuits using electrical adaptor  
[NASA-CASE-XLA-01288] c09 N69-21470
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[NASA-CASE-XLE-02066] c28 N71-15661
- Reversible current directing circuitry for reversible motor control  
[NASA-CASE-XLA-09371] c10 N71-18724
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[NASA-CASE-XNP-00952] c10 N71-23271
- Power converters for supplying direct current from one voltage for another voltage for use  
[NASA-CASE-XER-11046-2] c09 N72-21251
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- Apparatus for ballasting high frequency transistors  
[NASA-CASE-XGS-05003] c09 N69-24318
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[NASA-CASE-NPO-10188] c03 N71-20273
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[NASA-CASE-XMF-09386] c15 N69-21854
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[NASA-CASE-XMS-04178] c15 N71-22798
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[NASA-CASE-MFS-21485-1] c15 N72-31490
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[NASA-CASE-GSC-10083-1] c30 N71-16090
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[NASA-CASE-NPO-10595] c10 N71-25917
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[NASA-CASE-NPO-12107] c08 N71-27255
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[NASA-CASE-XNP-01068] c10 N71-28739
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[NASA-CASE-XAC-04030] c10 N71-19472
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[NASA-CASE-XNP-02778] c08 N71-22710
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[NASA-CASE-ARC-10003-1] c09 N71-25866
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[NASA-CASE-NPO-10769] c08 N72-11171
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[NASA-CASE-XNP-02778] c08 N71-22710  
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[NASA-CASE-ERC-10151] c16 N71-29131  
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[NASA-CASE-NPO-11659-1] c14 N72-22453  
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[NASA-CASE-MSC-14053-1] c08 N72-27215  
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[NASA-CASE-NPO-13103-1] c07 N73-20180

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[NASA-CASE-XNP-08832] c08 N71-12506  
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[NASA-CASE-XNP-02791] c07 N71-23026  
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[NASA-CASE-XNP-09461] c28 N72-23809

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## DEFORMETERS

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[NASA-CASE-XLA-05906] c31 N71-16221  
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[NASA-CASE-XMP-06531] c14 N71-17575  
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[NASA-CASE-XNP-01059] c23 N71-21821  
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[NASA-CASE-ERC-10045] c15 N71-24910  
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- [NASA-CASE-XLA-02619] c10 N71-26334  
Hydrogen fire blink detector for high altitude  
rocket or ground installation  
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[NASA-CASE-LAR-10739-1] c14 N73-16484  
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[NASA-CASE-ARC-10194-1] c23 N73-20741  
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[NASA-CASE-LAR-10483-1] c14 N73-32327  
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continuous flow  
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[NASA-CASE-NPO-11322] c06 N72-25146
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[NASA-CASE-XMF-04133] c06 N71-20717  
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[NASA-CASE-XMF-03074] c06 N71-24740  
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[NASA-CASE-MFS-13994-2] c06 N72-25148  
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esters  
[NASA-CASE-LEW-11325-1] c06 N73-27980
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with diamond particles to increase resistance  
to corrosion, galling, and erosion  
[NASA-CASE-NPO-10779] c15 N70-34641  
Exponential horn, copper plate, magnetic hammer,  
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[NASA-CASE-MFS-20698] c15 N72-20446  
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[NASA-CASE-MFS-20698-2] c15 N73-19457
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[NASA-CASE-XMS-01546] c14 N70-40233  
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diaphragms in valves or pressure switches  
[NASA-CASE-XNP-01962] c32 N70-41370  
Flexible rocket motor nozzle closure device to  
aid ignition and protect rocket chamber from  
foreign objects  
[NASA-CASE-XLA-02651] c28 N70-41967  
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[NASA-CASE-IAC-00731] c11 N71-15960  
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[NASA-CASE-XLA-03660] c15 N71-21060  
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[NASA-CASE-XAC-02981] c14 N71-21072  
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[NASA-CASE-XNP-05297] c15 N71-23811  
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[NASA-CASE-NPO-11433] c18 N71-31140  
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[NASA-CASE-MFS-14216] c14 N73-13418
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[NASA-CASE-MSC-13999-1] c05 N72-25142
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diatomic gas for production of different  
wavelengths  
[NASA-CASE-ARC-10370-1] c16 N72-10432
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antenna feed  
[NASA-CASE-NPO-13171-1] c07 N73-12150
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[NASA-CASE-MFS-20974] c14 N72-15430  
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dielectric constant  
[NASA-CASE-MFS-21629] c14 N72-22442
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to improve glass fusion  
[NASA-CASE-XGS-04531] c03 N69-24267  
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[NASA-CASE-XNP-09750] c14 N69-39937  
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vehicles operating over extended periods  
[NASA-CASE-XMF-00517] c03 N70-34157  
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silica not introducing paths of high thermal  
conductivity through ablative shield  
[NASA-CASE-XMS-04312] c07 N71-22984  
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[NASA-CASE-XNP-08880] c09 N71-24808  
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[NASA-CASE-HQN-10541-2] c15 N71-27135  
Quasi-optical microwave circuit with dielectric  
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[NASA-CASE-ERC-10011] c07 N71-29065  
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refractory dielectrics as diffusant masks and  
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[NASA-CASE-XER-08476-1] c26 N72-17820  
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[NASA-CASE-LAR-10294-1] c26 N72-28762  
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[NASA-CASE-MFS-22129-1] c09 N73-26197
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[NASA-CASE-XNP-05297] c15 N71-23811  
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refractory metals  
[NASA-CASE-XLE-06773] c15 N71-23817
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[NASA-CASE-XAC-00435] c09 N70-35440  
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[NASA-CASE-GSC-10366-1] c10 N71-18772
- DIFFERENTIAL INTERFEROMETRY**  
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[NASA-CASE-XMF-05844] c14 N71-17587
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[NASA-CASE-XMS-05894-1] c15 N69-21924  
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## DIFFRACTION

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## DIFFRACTION

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[NASA-CASE-ERC-10001] c23 N71-24868

**DIFFRACTION PATTERNS**  
Digital sensor for counting fringes produced by interferometers with improved sensitivity and one photomultiplier tube to eliminate alignment problem  
[NASA-CASE-LAR-10204] c14 N71-27215

**DIFFRACTOMETERS**  
Dual purpose optical instrument capable of simultaneously acting as spectrometer and diffractometer  
[NASA-CASE-XNP-05231] c14 N73-28491

**DIFFUSERS**  
Transmitting and reflecting diffuser  
[NASA-CASE-LAR-10385-3] c23 N73-32538

**DIFFUSION**  
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[NASA-CASE-ERC-10072] c09 N70-11148  
Metallic film diffusion for boundary lubrication in aerospace engineering  
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[NASA-CASE-GSC-10518-1] c15 N72-22489  
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**DIGITAL COMPUTERS**  
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[NASA-CASE-LAR-10590-1] c15 N70-26819  
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[NASA-CASE-XKS-08012-2] c31 N71-15566  
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[NASA-CASE-XNP-02748] c08 N71-22749  
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[NASA-CASE-XNP-00911] c08 N70-41961  
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[NASA-CASE-XNP-09453] c08 N71-19420  
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[NASA-CASE-XNP-01068] c10 N71-28739  
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[NASA-CASE-NPO-10844] c07 N72-20140  
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[NASA-CASE-XNP-09759] c08 N71-24891  
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[NASA-CASE-XNP-04819] c08 N71-23295
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- Liquid aerosol dispenser with explosively driven piston to compress light gas to extremely high pressure  
[NASA-CASE-MFS-20829] c12 N72-21310
- Lyophilized spore dispenser for production of finely divided monoparticulate cloud of bacterial spores  
[NASA-CASE-LAR-10544-1] c15 N72-21477
- Mechanism for dispensing precisely measured charges of potable water into reconstitution bags  
[NASA-CASE-MFS-21115-1] c05 N72-28097
- DISPERSING**
- Apparatus for mechanically dispersing ultrafine metal powders subjected to shock waves  
[NASA-CASE-XLE-04946] c17 N71-24911
- DISPERSIONS**
- Detergent with glyceryl esters and oil as protective coating to prevent fogging of space suit visor  
[NASA-CASE-MSC-13530-2] c06 N73-11107
- Method for producing alkali metal dispersions of high purity  
[NASA-CASE-XNP-08876] c17 N73-28573
- DISPLACEMENT**
- Bimetallic fluid displacement apparatus for stirring and heating stored gases and liquids  
[NASA-CASE-ARC-10441-1] c15 N73-30461
- DISPLACEMENT MEASUREMENT**
- Null-type vacuum microbalance for measuring minute mechanical displacements  
[NASA-CASE-YAC-00472] c15 N70-40180
- Development and characteristics of self-calibrating displacement transducer for measuring magnitude and frequency of displacement of bodies  
[NASA-CASE-XLA-00781] c09 N71-22999
- Gas bearing for model support with capacity for measuring angular displacement of model in bearing  
[NASA-CASE-XLA-09346] c15 N71-28740
- Method and apparatus for remote measurement of displacement of marks on specimen undergoing tensile test  
[NASA-CASE-NPO-10778] c14 N72-11364

## DISPLAY DEVICES

Integrated time shared instrumentation display for aerospace vehicle simulators  
[NASA-CASE-XLA-01952] c08 N71-12507

Data processing and display system for terminal guidance of X-15 aircraft  
[NASA-CASE-XFR-00756] c02 N71-13421

Fluidic-thermochromic display device  
[NASA-CASE-ERC-10031] c12 N71-18603

Cathode ray tube system for displaying ones and zeros in binary wave train  
[NASA-CASE-XGS-04987] c08 N71-20571

Optical projector system for establishing optimum arrangement of instrument displays in aircraft, spacecraft, other vehicles, and industrial instrument consoles  
[NASA-CASE-XNP-03853] c23 N71-21882

Optical monitor panel consisting of translucent screen with test or meter information projected onto it from rear for application in control rooms of missile launching and tracking stations  
[NASA-CASE-XKS-03509] c14 N71-23175

Binary to decimal decoder logic circuit design with feedback control and display device  
[NASA-CASE-XKS-06167] c08 N71-24890

Noninterruptable digital counter circuit design with display device for pulse frequency modulation  
[NASA-CASE-XNP-09759] c08 N71-24891

Data acquisition system for converting displayed analog signal to digital values  
[NASA-CASE-NPO-10344] c10 N71-26544

Plasma-fluidic hybrid display system combining high brightness and memory characteristics  
[NASA-CASE-ERC-10100] c09 N71-33519

System for digitizing graphic displays  
[NASA-CASE-NPO-10745] c08 N72-22164

Digital video system for displaying image and alphanumeric data on cathode ray tube  
[NASA-CASE-NPO-11342] c09 N72-25248

Development of apparatus for mounting scientific experiments in spacecraft to permit utilization without maneuvering spacecraft  
[NASA-CASE-MSC-12372-1] c31 N72-25842

Development of laser illuminated device for displaying conditions of cylindrical surfaces in two dimensions  
[NASA-CASE-NPO-11861-1] c14 N72-28461

Rotating generator for angular display of television raster in horizontal and visual simulation systems  
[NASA-CASE-FRC-10071-1] c07 N73-14171

Development and characteristics for automatically displaying digits in any desired order using optical techniques  
[NASA-CASE-XKS-00348] c09 N73-14215

Situational display system of cathode ray tubes to assist pilot in aircraft control  
[NASA-CASE-ERC-10350] c14 N73-20474

Multichannel medical monitoring system to measure physiological parameters from display device at remote control station  
[NASA-CASE-MSC-14180-1] c05 N73-22045

Device for displaying and recording angled views of samples to be viewed by microscope  
[NASA-CASE-GSC-11690-1] c14 N73-28499

Alphanumeric character display device for oscilloscopes  
[NASA-CASE-GSC-11582-1] c09 N73-32120

Transparent switchboard which permits optical display devices to be adapted for use in man machine communications  
[NASA-CASE-MSC-13746-1] c10 N73-32143

**DISSIPATION**  
Dissipative voltage regulator system for minimizing heat dissipation  
[NASA-CASE-GSC-10891-1] c10 N71-26626

**DISSOLVING**  
Apparatus for mixing two or more liquids under zero gravity conditions  
[NASA-CASE-LAR-10195-1] c15 N73-19458

**DISTANCE MEASURING EQUIPMENT**  
Binary coded sequential acquisition ranging system for distance measurements  
[NASA-CASE-NPO-11194] c08 N72-25209

Apparatus for determining distance to lightning strokes from single station by magnetic and electric field sensing antennas

[NASA-CASE-KSC-10698] c07 N73-20175

**DISTILLATION EQUIPMENT**  
Utilization of solar radiation by solar still for converting salt and brackish water into potable water  
[NASA-CASE-XMS-04533] c15 N71-23086

Purification apparatus for vaporization and fractional distillation of liquids  
[NASA-CASE-XNP-08124] c15 N71-27184

System for recovering oxygen and/or water from extraterrestrial soil and iron oxide materials  
[NASA-CASE-MSC-12332-1] c15 N72-15476

U shaped heated tube for distillation and purification of liquid metals  
[NASA-CASE-XNP-08124-2] c06 N73-13129

**DISTRIBUTED AMPLIFIERS**  
Broadband distribution amplifier with complementary pair transistor output stages  
[NASA-CASE-NPO-10003] c10 N71-26415

**DIVERGENT NOZZLES**  
Shrouded divergent body attached to exhaust nozzle for jet noise suppression  
[NASA-CASE-LEW-11286-1] c02 N73-21066

**DIVIDING (MATHEMATICS)**  
Asynchronous binary array divider for computerized division operations  
[NASA-CASE-ERC-10180] c08 N70-11132

**DOCUMENT STORAGE**  
Describing device for flagging punched business cards  
[NASA-CASE-XLA-02705] c08 N71-15908

**DOORS**  
Design and specifications of emergency escape system for spacecraft structures  
[NASA-CASE-MSC-12086-1] c05 N71-12345

**DOPPLER EFFECT**  
Doppler frequency shift correction device for multiplex communication with Applications Technology Satellites  
[NASA-CASE-XGS-02749] c07 N69-39978

Describing laser Doppler velocimeter for measuring mean velocity and turbulence of fluid flow  
[NASA-CASE-MPS-20386] c21 N71-19212

System for measuring velocities of radiating particles based on Doppler shift  
[NASA-CASE-HQN-10740-1] c24 N72-28719

Doppler compensated communication system for locating supersonic transport position  
[NASA-CASE-GSC-10087-4] c07 N73-20174

Laser Doppler velocimeter for simultaneously measuring orthogonal fluid velocity components without flow field perturbation  
[NASA-CASE-ARC-10637-1] c14 N73-21390

**DOPPLER RADAR**  
Cooperative Doppler radar system for avoiding midair collisions  
[NASA-CASE-LAR-10403] c21 N71-11766

**DOSIMETERS**  
Development of dosimeter for measuring absorbed dose of high energy ionizing radiation  
[NASA-CASE-XLA-03645] c14 N71-20430

**DRAG CHUTES**  
Deployment system for flexible wing with rigid superstructure  
[NASA-CASE-XLA-01220] c02 N70-41863

Development and characteristics of parachute fabric for aerodynamic decelerator using lightweight, variable solidity, knitted material  
[NASA-CASE-LAR-10776-1] c02 N72-21004

**DRAG MEASUREMENT**  
Device for measuring drag forces in flight tests  
[NASA-CASE-XLA-00113] c14 N70-33386

Electric analog for measuring induced drag on nonplanar airfoils  
[NASA-CASE-XLA-00755] c01 N71-13410

Electric analog for measuring induced drag on nonplanar airfoils  
[NASA-CASE-XLA-05828] c01 N71-13411

Impact energy absorber with decreasing absorption rate  
[NASA-CASE-XLA-01530] c14 N71-23092

**DRAG REDUCTION**  
Directed fluid stream for propeller blade loading control  
[NASA-CASE-YAC-00139] c02 N70-34856

Aircraft wheel spray drag alleviator for dual tandem landing gear  
[NASA-CASE-XLA-01583] c02 N70-36825

**DRIFT (INSTRUMENTATION)**

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**DRIFT (INSTRUMENTATION)**

Automatic measuring and recording of gain and zero drift characteristics of electronic amplifier  
 [NASA-CASE-XMS-05562-1] c09 N69-39986  
 Solar radiation direction detector and device for compensating degradation of photocells  
 [NASA-CASE-XLA-00183] c14 N7C-40239

**DRILL BITS**  
 Impact bit for cutting, collecting, and storing samples such as lunar rock cuttings  
 [NASA-CASE-XNP-01412] c15 N7C-42034

**DRILLS**  
 Rotary impact-type rock drill for recovering rock cuttings  
 [NASA-CASE-XNP-07478] c14 N69-21923  
 Auger-type soil penetrometer for burrowing into soil formations  
 [NASA-CASE-XNP-05530] c14 N73-32321

**DRIVES**  
 Inverter drive circuit for semiconductor switch  
 [NASA-CASE-LEW-10233] c10 N71-27126

**DROPS (LIQUIDS)**  
 Development of droplet monitoring probe for use in analysis of droplet propagation in mixed-phase fluid stream  
 [NASA-CASE-NPO-10985] c14 N73-20478

**DRUGS**  
 Self-scanning chromatographic-fluorographic drug detector with optical readout system  
 [NASA-CASE-ARC-10633-1] c05 N73-22048

**DRY CELLS**  
 Energy source with tantalum capacitors in parallel and miniature silver oxide button cells for initiating pyrotechnic devices on spacecraft and rocket vehicles  
 [NASA-CASE-LAR-10367-1] c03 N70-26817

**DRYING**  
 Drying chamber for photographic sheet material  
 [NASA-CASE-GSC-11074-1] c14 N73-28489

**DRYING APPARATUS**  
 Gas purged dry box glove reducing permeation of air or moisture into dry box or isolator by diffusion through glove  
 [NASA-CASE-XLE-02531] c05 N71-23080

**DUCTS**  
 Quick disconnect duct coupling device for single-handed operation  
 [NASA-CASE-MFS-20395] c15 N71-24903

**DUST COLLECTORS**  
 Device for removing plastic dust cover from digital computer disk packs for inspection and cleaning  
 [NASA-CASE-LAR-10590-1] c15 N70-26819  
 Cosmic dust analyzer using ion time of flight techniques to determine constituency of hypervelocity particles such as micrometeoroids  
 [NASA-CASE-MSC-13802-1] c30 N72-20805

**DYE LASERS**  
 Development of laser head for simultaneous optical pumping of several dye lasers  
 [NASA-CASE-LAR-11341-1] c16 N73-25564  
 Infrared tunable dye laser with nonlinear wavelength mixing crystal in optical cavity  
 [NASA-CASE-ARC-10463-1] c09 N73-32111

**DYES**  
 Dye penetrant and technique for nondestructive tests of solid surfaces contacted by liquid oxygen  
 [NASA-CASE-XMF-02221] c18 N71-27170

**DYNAMIC CHARACTERISTICS**  
 Dynamic sensor for gas pressure or density measurement  
 [NASA-CASE-XAC-02877] c14 N70-41681  
 Design of precision vertical alignment system using laser with gravitationally sensitive cavity  
 [NASA-CASE-ARC-10444-1] c16 N73-33397

**DYNAMIC LOADS**  
 Multilegged support system for wind tunnel test models subjected to thermal dynamic loading  
 [NASA-CASE-XLA-01326] c11 N71-21481  
 Apparatus for measuring load on cable under static or dynamic conditions comprising pulleys pivoting structure against restraint of tension strap  
 [NASA-CASE-XMS-04545] c15 N71-22878  
 Development and characteristics of device for indicating and recording magnitude of force

applied in axial direction  
 [NASA-CASE-MSC-15626-1] c14 N72-25411

**DYNAMIC MODULUS OF ELASTICITY**  
 Apparatus for testing metallic and nonmetallic beams or rods by bending at high temperatures in vacuum or inert atmosphere  
 [NASA-CASE-XLE-01300] c15 N70-41993

**DYNAMIC RESPONSE**  
 Lunar and planetary gravity simulator to test vehicular response to landing  
 [NASA-CASE-XLA-00493] c11 N70-34786  
 Pressure sensor network for measuring liquid dynamic response in flight including fuel tank acceleration, liquid slosh amplitude, and fuel depth monitoring  
 [NASA-CASE-XLA-05541] c12 N71-26387  
 Response analyzing apparatus for liquid vapor interface sensor of sloshing rocket propellant  
 [NASA-CASE-MFS-11204] c14 N71-29134

**DYNAMIC STRUCTURAL ANALYSIS**  
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 [NASA-CASE-ARC-10154-1] c14 N72-22440

**DYNAMIC TESTS**  
 Hydraulic support equipment for full scale dynamic testing of large rocket vehicle under free flight conditions  
 [NASA-CASE-XMF-01772] c11 N70-41677  
 Hydraulic support apparatus for dynamic testing of space vehicles under near-free flight conditions  
 [NASA-CASE-XMF-03248] c11 N71-10604

**DYNAMOMETERS**  
 Dynamometer measuring microforce thrust produced by ion engine  
 [NASA-CASE-XLE-00702] c14 N70-40203  
 Development of thrust dynamometer for measuring performance of jet and rocket engines  
 [NASA-CASE-XLE-05260] c14 N71-20429

**E**

**EAR**  
 Ear oximeter for monitoring blood oxygenation and pressure, pulse rate, and pressure pulse curve, using dc and ac amplifiers  
 [NASA-CASE-XAC-05422] c04 N71-23185

**EARTH ATMOSPHERE**  
 Ablation sensor for measuring surface ablation rate of material on vehicles entering earths atmosphere on entry into planetary atmospheres  
 [NASA-CASE-XLA-01791] c14 N71-22991

**EARTH ORBITS**  
 Electric furnace for vacuum and zero gravity melting of high melting point materials during earth orbit  
 [NASA-CASE-MFS-20710] c11 N72-23215  
 Design and development of space shuttle system for delivering payload to earth orbit or celestial orbit  
 [NASA-CASE-MSC-12391] c30 N73-12884

**ECONOMIC ANALYSIS**  
 Economical satellite aided vehicle avoidance system for preventing midair collisions  
 [NASA-CASE-ERC-10419] c21 N72-21631

**EFFICIENCY**  
 Recovering efficiency of solar cells damaged by environmental radiation through thermal annealing  
 [NASA-CASE-XGS-04047-2] c03 N72-11062

**EJECTION**  
 Apparatus for ejecting covers of instrument packages using differential pressure principle  
 [NASA-CASE-XMF-04132] c15 N69-27502

**EJECTION SEATS**  
 Ejector for separating astronaut from ejection seat during prelaunch or initial launch phase of flight  
 [NASA-CASE-XMS-04625] c05 N71-20718

**EJECTORS**  
 Automatic ejection valve for attitude control and midcourse guidance of space vehicles  
 [NASA-CASE-XNP-00676] c15 N70-38996  
 Ejector for separating astronaut from ejection seat during prelaunch or initial launch phase of flight  
 [NASA-CASE-XMS-04625] c05 N71-20718

## SUBJECT INDEX

## ELECTRIC CONDUCTORS

- Latching mechanism with pivoting catch and self-contained spring ejector  
[NASA-CASE-XLA-03538] c15 N71-24897
- ELASTIC BODIES**  
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[NASA-CASE-XNP-09452] c15 N69-27504  
Development of systems for automatically and continually suppressing or attenuating bending motion in elastic bodies  
[NASA-CASE-XAC-05632] c32 N71-23971  
Device for measuring tensile forces applied to tension members  
[NASA-CASE-MFS-21728-1] c14 N73-25467
- ELASTIC DEFORMATION**  
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[NASA-CASE-XLE-01481] c14 N71-10781  
Development of systems for automatically and continually suppressing or attenuating bending motion in elastic bodies  
[NASA-CASE-XAC-05632] c32 N71-23971
- ELASTIC MEDIA**  
Miniature vibration isolator utilizing elastic tubing material  
[NASA-CASE-XLA-01019] c15 N70-40156
- ELASTIC PROPERTIES**  
Elastic universal joint for rocket motor mounting  
[NASA-CASE-XNP-00416] c15 N70-36947  
Resilient vehicle wheel for lunar surface travel  
[NASA-CASE-MFS-20400] c31 N71-18611  
Threadless fastener apparatus comprising receiving apertures for plurality of articles, self-locked condition, and capable of using nonmalleable materials in both ends  
[NASA-CASE-XFR-05302] c15 N71-23254  
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[NASA-CASE-NPO-10767-1] c06 N73-33076
- ELASTIC SHEETS**  
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[NASA-CASE-XMS-05516] c15 N71-17803  
Elastic mandrel fabrication of thin bottom walls with cavities for temperature measurement  
[NASA-CASE-LAR-10318-1] c14 N72-20396
- ELASTOMERS**  
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[NASA-CASE-ARC-10268-1] c09 N70-12620  
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[NASA-CASE-NPO-10853] c18 N70-34685  
Describing metal valve pintle with encapsulated elastomeric body  
[NASA-CASE-MSC-12116-1] c15 N71-17648  
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[NASA-CASE-XMF-04680] c15 N71-19489  
Preparation of elastomeric diamine silazane polymers  
[NASA-CASE-XMF-04133] c06 N71-20717  
Leak resistant bonded elastomeric seal for secondary electrochemical cells  
[NASA-CASE-XGS-02631] c03 N71-23006
- ELECTRIC ARCS**  
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[NASA-CASE-XLA-00330] c33 N70-34540  
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[NASA-CASE-XMF-00392] c15 N70-34814  
Tripping system for electric arc driven impulse wind tunnel  
[NASA-CASE-XMF-00411] c11 N70-36913  
Electric arc device for minimizing electrode ablation and heating gases to supersonic or hypersonic wind tunnel temperatures  
[NASA-CASE-XAC-00319] c25 N70-41628  
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[NASA-CASE-XAC-01677] c09 N71-20816  
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[NASA-CASE-XLE-04788] c09 N71-22987  
Nonconsumable metal electric arc electrodes for producing solar simulator radiation source  
[NASA-CASE-LEW-11162-1] c09 N71-34210
- ELECTRIC BATTERIES**  
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[NASA-CASE-XGS-03864] c15 N69-24320
- Sealed electric storage battery with gas manifold interconnecting each cell  
[NASA-CASE-XNP-03378] c03 N71-11051  
Battery charging system with cell to cell voltage balance  
[NASA-CASE-XGS-05432] c03 N71-19438  
Development and characteristics of battery charging circuits with coulometer for control of available current  
[NASA-CASE-GSC-10487-1] c03 N71-24719  
Heat activated emf cells with aluminum anode  
[NASA-CASE-LEW-11359] c03 N71-28579  
Design and characteristics of electric storage battery with wedge-shaped contour negative plates to prevent malfunctions due to shape-change phenomenon  
[NASA-CASE-NPO-10720-1] c03 N72-22048  
Development of device for simulating charge and discharge cycle of battery in synchronous orbit  
[NASA-CASE-GSC-11211-1] c03 N72-25020  
Development of Mylar enclosure for maintaining temperature of balloon-borne batteries and electronic modules  
[NASA-CASE-GSC-11620-1] c14 N72-33379  
Development of test probe device for simultaneous determination of condition of cells in multi-cell storage battery  
[NASA-CASE-MFS-20761-1] c03 N73-17037  
Development of timing device for conserving batteries on remote data collection platform by generating synchronous time windows  
[NASA-CASE-GSC-11182-1] c31 N73-32769
- ELECTRIC BRIDGES**  
Transducer and frequency discriminator circuit with four-terminal circulating diode bridge  
[NASA-CASE-ARC-10364-1] c10 N72-12176  
Pulsed excitation voltage circuit for strain gage bridge transducers  
[NASA-CASE-FRC-10036] c09 N72-22200  
Bridge-type gain control circuit  
[NASA-CASE-GSC-10786-1] c10 N72-28241
- ELECTRIC CELLS**  
Expanding and contracting connector strip for solar cell array of Nimbus satellite  
[NASA-CASE-XGS-01395] c03 N69-21539  
Design and characteristics of heat activated electric cell with anode made from one or more alkali metals and cathode made from oxidizing material  
[NASA-CASE-LEW-11358] c03 N71-26084  
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[NASA-CASE-XMS-02063] c03 N71-29044
- ELECTRIC CHARGE**  
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[NASA-CASE-NPO-10194] c03 N71-20407  
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[NASA-CASE-XNP-04758] c03 N71-24605
- ELECTRIC CHOPPERS**  
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[NASA-CASE-GSC-10082-1] c10 N72-20221
- ELECTRIC COILS**  
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[NASA-CASE-XMS-05303] c07 N69-27462
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Hollow spherical electrode for shielding dielectric junction between high voltage conductor and insulator  
[NASA-CASE-XLE-03778] c09 N69-21542  
Conductor for connecting parallel cells into submodules in series to form solar cell matrix  
[NASA-CASE-NPO-10821] c03 N71-19545  
Electrical switching device comprising conductive liquid confined within square loop of deformable nonconductive tubing also used for leveling  
[NASA-CASE-NPO-10037] c09 N71-19610  
Dry electrode design with wire sandwiched between two flexible conductive discs for monitoring physiological responses  
[NASA-CASE-FRC-10029] c09 N71-24618

## ELECTRIC CONNECTORS

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[NASA-CASE-LEW-10489-1] c15 N72-25447
- Controlled distribution of electrophoretic samples in flow path through conductive screens  
[NASA-CASE-MFS-21395-1] c14 N72-27425
- Coaxial electrical conductor for high gamma flux locations of thermionic converter  
[NASA-CASE-LEW-10950-1] c09 N72-31239
- Improved injector with porous plug for bubbles of gas into feed lines of electrically conductive liquid  
[NASA-CASE-NPO-11377] c15 N73-27406
- ELECTRIC CONNECTORS**
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[NASA-CASE-XLA-01288] c09 N69-21470
- Fixture for simultaneously supporting several components for electrical testing  
[NASA-CASE-XNP-06032] c09 N69-21926
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[NASA-CASE-XMS-07846-1] c09 N69-21927
- Electrical feedthrough connection for printed circuit boards  
[NASA-CASE-XMP-01483] c14 N69-27431
- Electrical connector pin with wiping action to assure reliable contact  
[NASA-CASE-XMP-04238] c09 N69-39734
- Rectangular electric conductors for conductor cables to withstand spacecraft vibration and controlled atmosphere  
[NASA-CASE-MFS-14741] c09 N70-20737
- Patent data on terminal insert connector for flat electric cables  
[NASA-CASE-XMP-00324] c09 N70-34596
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[NASA-CASE-XNP-05082] c15 N70-41960
- Method of making molded electric connector for use with flat conductor cables  
[NASA-CASE-XMP-03498] c15 N71-15986
- Design and development of electric connectors for rigid and semirigid coaxial cables  
[NASA-CASE-XNP-04732] c09 N71-20851
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[NASA-CASE-XNP-03918] c14 N71-23087
- Maintaining current flow through solar cells with open connection using shunting diode  
[NASA-CASE-XLE-04535] c03 N71-23354
- Electrical connections for thin film hybrid microcircuits  
[NASA-CASE-XMS-02182] c10 N71-28783
- Breakaway multiwire electrical cable connector with particular application for umbilical type cables  
[NASA-CASE-NPO-11140] c15 N72-17455
- Reliability of electrical connectors after heat sterilization  
[NASA-CASE-NPO-10694] c09 N72-20200
- Development of electric connector and pin assembly with radio frequency absorbing sleeve to reduce radio frequency interference  
[NASA-CASE-XLA-02609] c09 N72-25256
- Electrical interconnection of unilluminated solar cells in solar battery array  
[NASA-CASE-GSC-10344-1] c03 N72-27053
- Separable flat cable connector with isolated electrical contacts  
[NASA-CASE-MFS-20757] c09 N72-28225
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- Solid state switching circuit design to increase current capacity of low rated relay contacts  
[NASA-CASE-XNP-09228] c09 N69-27500
- Characteristics of hermetically sealed electric switch with flexible operating capability  
[NASA-CASE-XNP-09808] c09 N71-12518
- Electrode connection for n-on-p silicon solar cell  
[NASA-CASE-XLE-04787] c03 N71-20492
- Development of slip ring assembly with inner and outer peripheral surfaces used as electrical contacts for brushes  
[NASA-CASE-XMP-01049] c15 N71-23049
- Separable flat cable connector with isolated electrical contacts  
[NASA-CASE-MFS-20757] c09 N72-28225
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[NASA-CASE-XMS-09352] c09 N71-23316
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[NASA-CASE-NPO-10733] c09 N70-35631
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[NASA-CASE-XGS-03505] c03 N71-10608
- Development of in-line fuse device for protection of electric circuits from excessive currents and voltages  
[NASA-CASE-MSC-12135-1] c09 N71-12526
- Micromicroampere current measuring circuit, with two subminiature thermionic diodes with filament cathodes  
[NASA-CASE-XNP-00384] c09 N71-13530
- Connector internal force gage for measuring strength of electrical connection  
[NASA-CASE-XNP-03918] c14 N71-23087
- Electric circuit for producing high current pulse having fast rise and fall time  
[NASA-CASE-XMS-04919] c09 N71-23270
- Electric circuit for reversing direction of current flow  
[NASA-CASE-XNP-00952] c10 N71-23271
- Maintaining current flow through solar cells with open connection using shunting diode  
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- ELECTROPHOTOMETERS**
- Method and photodetector device for locating abnormal voids in low density materials  
[NASA-CASE-MFS-20044] c14 N71-28993
- ELECTROPHYSIOLOGY**
- Dry electrode design with wire sandwiched between two flexible conductive discs for monitoring physiological responses  
[NASA-CASE-FRC-10029] c09 N71-24618
- ELECTROPLATING**
- Method of plating copper on aluminum to permit conventional soldering of structural aluminum bodies  
[NASA-CASE-XLA-08966-1] c17 N71-25903
- Shielded flat conductor cable fabricated by electroless and electrolytic plating  
[NASA-CASE-MFS-13687] c09 N71-28691
- Procedure for fabricating element with cavity closed by thin wall with precisely shaped slit  
[NASA-CASE-LAR-10409-1] c15 N73-20526
- Technique and equipment for sputtering using apertured electrode and pulsed substrate bias  
[NASA-CASE-LEW-10920-1] c17 N73-24569
- ELECTROSTATIC CHARGE**
- High strength antistatic plastic film laminate for inhibiting buildup of electrostatic charges on plastic bodies  
[NASA-CASE-MSC-12255-1] c18 N70-20713
- Charged particle analyzer with periodically varying voltage applied across electrostatic

- deflection members  
[NASA-CASE-XAC-05506-1] c24 N71-16095
- Development of equipment and method for electrifying dielectric to determine electrostatic properties  
[NASA-CASE-MFS-22129-1] c09 N73-26197
- Electrostatic entrained material measurement system  
[NASA-CASE-MFS-22128-1] c14 N73-26442
- ELECTROSTATIC ENGINES**
- Colloidal particle generator for electrostatic engine for propelling space vehicles  
[NASA-CASE-XLE-00817] c28 N70-33265
- Encapsulated heater forming hollow body for cathode used in ion thruster  
[NASA-CASE-LEW-10814-1] c28 N70-35422
- Electrostatic ion engines using high velocity electrons to ionize propellant  
[NASA-CASE-XLE-00376] c28 N70-37245
- Electron bombardment ion rocket engine with improved propellant introduction system  
[NASA-CASE-XLE-02066] c28 N71-15661
- ELECTROSTATIC GENERATORS**
- Electrostatic modulator for communicating through plasma sheath formed around spacecraft during reentry  
[NASA-CASE-XLA-01400] c07 N70-41331
- ELECTROSTATIC PROBES**
- Low impedance apparatus for measuring electrostatic field intensity near space vehicles  
[NASA-CASE-XLE-00820] c14 N71-16014
- ELECTROSTATIC PROPULSION**
- Nuclear electric generator for accelerating charged propellant particles in electrostatic propulsion system  
[NASA-CASE-XLE-00818] c22 N70-34248
- High voltage insulators for direct current in acceleration system of electrostatic thruster  
[NASA-CASE-XLE-01902] c28 N71-10574
- Electrostatic microthruster propulsion system with annular slit colloid thruster  
[NASA-CASE-GSC-10709-1] c28 N71-25213
- ELECTROSTATICS**
- Development of equipment and method for electrifying dielectric to determine electrostatic properties  
[NASA-CASE-MFS-22129-1] c09 N73-26197
- ELECTROTHERMAL ENGINES**
- Electrothermal rocket engine using resistance heated heat exchanger  
[NASA-CASE-XLE-00267] c28 N70-33356
- High resistance cross flow heat exchangers for electrothermal rocket engines  
[NASA-CASE-XLE-01783] c28 N70-34175
- ELEVATION**
- Tracking mount for laser telescope employed in tracking large rockets and space vehicles to give information regarding azimuth and elevation  
[NASA-CASE-MFS-14017] c14 N71-26627
- Automatic braking device for rapidly transferring humans or materials from elevated location  
[NASA-CASE-XKS-07814] c15 N71-27067
- ELEVATORS (LIFTS)**
- Centrifuge mounted motion simulator with elevator mechanism  
[NASA-CASE-XAC-00399] c11 N70-34815
- Guide member for stabilizing cable of open shaft elevator  
[NASA-CASE-RSC-10513] c15 N72-25453
- ELEVONS**
- Supersonic or hypersonic vehicle control system comprising elevons with hinge line sweep and free of adverse aerodynamic cross coupling  
[NASA-CASE-XLA-08967] c02 N71-27088
- ELLIPSES**
- Ellipsograph for describing and cutting ellipses with minimal axial dimensions  
[NASA-CASE-XLA-03102] c14 N71-21079
- ELONGATION**
- Strain gage measurement of elongation due to thermally and mechanically induced stresses  
[NASA-CASE-XGS-04478] c14 N71-24233
- EMERGENCIES**
- Silent alarm system for multiple room facility or school  
[NASA-CASE-NPO-11307-1] c10 N73-30205
- EMERGENCY BREATHING TECHNIQUES**
- Pulmonary resuscitation method and apparatus with adjustable pressure regulator  
[NASA-CASE-XMS-01115] c05 N70-39922
- EMERGENCY LIFE SUSTAINING SYSTEMS**
- Development and characteristics of inflatable structure to provide escape from orbit for spacecrews under emergency conditions  
[NASA-CASE-XMS-06162] c31 N71-28851
- Three transceiver lunar emergency system to relay voice communication of astronaut  
[NASA-CASE-MFS-21042] c07 N72-25171
- EMISSION SPECTRA**
- Emission spectroscopy method for contamination monitoring of inert gas metal arc welding  
[NASA-CASE-XMP-02039] c15 N71-15871
- EMITTANCE**
- High thermal emittance black surface coatings and process for applying to metal and metal alloy surfaces used in radiative cooling of spacecraft  
[NASA-CASE-XLA-06199] c15 N71-24875
- EMITTERS**
- Inverted geometry transistor for use with monolithic integrated circuit  
[NASA-CASE-ARC-10330-1] c09 N73-32112
- EMULSIONS**
- Apparatus for obtaining isotropic irradiation on film emulsion from parallel radiation source  
[NASA-CASE-MFS-20095] c24 N72-11595
- ENCAPSULATING**
- Controlled caging and uncaging mechanism for remote instrument control  
[NASA-CASE-GSC-11063-1] c03 N70-35584
- Development of bacteriostatic conformal coating and methods of application  
[NASA-CASE-GSC-10007] c18 N71-16046
- Flexible, repairable, portable composition for encapsulating electric connectors  
[NASA-CASE-XGS-05180] c18 N71-25881
- Test chambers with orifice and helium mass spectrometer for detecting leak rate of encapsulated semiconductor devices  
[NASA-CASE-ERC-10150] c14 N71-28992
- Electrically coupled individually encapsulated solar cell matrix  
[NASA-CASE-NPO-11190] c03 N71-34044
- ENCLOSURES**
- Method and apparatus for bowing of instrument panels to improve radio frequency shielded enclosure  
[NASA-CASE-XMP-09422] c07 N71-19436
- ENDOSCOPES**
- Borescope with adjustable hinged telescoping optical system  
[NASA-CASE-MFS-15162] c14 N72-32452
- ENDOTHERMIC REACTIONS**
- Sensor device with switches for measuring surface recession of charring and noncharring ablaters  
[NASA-CASE-XLA-01781] c14 N69-39975
- ENEMY PERSONNEL**
- Development of electronic detection system for remotely determining number and movement of enemy personnel  
[NASA-CASE-ARC-10097-2] c07 N73-25160
- ENERGY ABSORPTION**
- Non-reusable kinetic energy absorber for application in soft landing of space vehicles  
[NASA-CASE-XLE-00810] c15 N70-34861
- Low onset rate energy absorber in form of strut assembly for crew couch of Apollo command module  
[NASA-CASE-HSC-12279-1] c15 N70-35679
- Air brake device for absorbing and measuring power from rotating shafts  
[NASA-CASE-XLE-00720] c14 N70-40201
- Design and development of double acting shock absorber for spacecraft docking operations  
[NASA-CASE-XMS-03722] c15 N71-21530
- Nonreusable energy absorbing device comprising ring member with plurality of recesses, cutting members, and guide member mounted in each recess  
[NASA-CASE-XMP-10040] c15 N71-22877
- Suspended mass oscillation damper based on impact energy absorption for damping wind induced oscillations of tall stacks, antennas, and unbilical towers  
[NASA-CASE-LAR-10193-1] c15 N71-27146

- Energy absorption device in high precision gear train for protection against damage to components caused by stop loads  
[NASA-CASE-XNP-01848] c15 N71-28959
- Shock absorber for use as protective barrier in impact energy absorbing system  
[NASA-CASE-NPO-10671] c15 N72-20443
- High energy absorption docking system design for docking large spacecraft  
[NASA-CASE-MFS-20863] c31 N73-26876
- Metal shearing energy absorber  
[NASA-CASE-HQN-10638-1] c15 N73-30460
- ENERGY CONVERSION**
- Thermoelectric power conversion by liquid metal flowing through magnetic field  
[NASA-CASE-XNP-00644] c03 N70-36803
- Concentrator device for controlling direction of solar energy onto energy converters  
[NASA-CASE-XLE-01716] c09 N70-40234
- Device for converting electromagnetic wave energy into electric power  
[NASA-CASE-GSC-11394-1] c09 N73-32109
- ENERGY CONVERSION EFFICIENCY**
- Vacuum thermionic converter with short-circuited triodes and increased electron transmission and conversion efficiency  
[NASA-CASE-XLE-01015] c03 N69-39898
- Direct conversion of thermal energy into electrical energy using crossed electric and magnetic fields  
[NASA-CASE-XLE-00212] c03 N70-34134
- Increasing power conversion efficiency of electronic amplifiers by power supply switching  
[NASA-CASE-XMS-00945] c09 N71-10798
- ENERGY DISSIPATION**
- Energy dissipating shock absorbing system for land payload recovery or vehicle braking  
[NASA-CASE-XLA-00754] c15 N70-34850
- ENERGY SOURCES**
- Energy source with tantalum capacitors in parallel and miniature silver oxide button cells for initiating pyrotechnic devices on spacecraft and rocket vehicles  
[NASA-CASE-LAR-10367-1] c03 N70-26817
- Pulse generator for synchronizing or resetting electronic signals without requiring separate external source  
[NASA-CASE-XGS-03632] c09 N71-23311
- ENERGY STORAGE**
- Switching mechanism with energy stored in coil spring  
[NASA-CASE-XGS-00473] c03 N70-38713
- Development of stored charge device using field effect transistor technology  
[NASA-CASE-NPO-11156-2] c03 N73-30974
- ENGINE CONTROL**
- Direct current electromotive system for regenerative braking of electric motor  
[NASA-CASE-XMF-01096] c10 N71-16030
- Development and characteristics of system for integrated control of engine power and aerodynamic configuration of aircraft during landing approach  
[NASA-CASE-ARC-10456-1] c02 N73-30938
- ENGINE COOLANTS**
- Apparatus for cooling and injecting hypergolic propellants into combustion chamber of small rocket engine  
[NASA-CASE-XLE-00303] c15 N70-36535
- Injector manifold assembly for bipropellant rocket engines providing for fuel propellant to serve as coolant  
[NASA-CASE-XMF-00148] c28 N70-38710
- ENGINE DESIGN**
- Design and development of gas turbine combustion unit with nozzle guide vanes for introducing diluent air into combustion gases  
[NASA-CASE-XLE-103477-1] c28 N71-20330
- Construction and method of arranging plurality of ion engines to form cluster thereby increasing efficiency and control by decreasing heat radiated to space  
[NASA-CASE-XNP-02923] c28 N71-23081
- Design and development of movable turbine inlet guide vanes to provide aerodynamic choking for jet engine  
[NASA-CASE-LAR-10642-1] c28 N72-27820
- ENGINE FAILURE**
- System for monitoring presence of neutrals in streams of ions - ion engine control  
[NASA-CASE-XNP-02592] c24 N71-20518
- ENGINE INLETS**
- Design and development of movable turbine inlet guide vanes to provide aerodynamic choking for jet engine  
[NASA-CASE-LAR-10642-1] c28 N72-27820
- ENGINE MONITORING INSTRUMENTS**
- System for monitoring presence of neutrals in streams of ions - ion engine control  
[NASA-CASE-XNP-02592] c24 N71-20518
- ENGINE TESTS**
- Electric propulsion engine test chamber  
[NASA-CASE-XLE-00252] c11 N70-34844
- ENGINEERING DRAWINGS**
- High-temperature, high-pressure spherical segment valve  
[NASA-CASE-XAC-00074] c15 N70-34817
- Graphic illustration of lifting body design  
[NASA-CASE-FRC-10063] c01 N71-12217
- Specifications and drawings for semipassive optical communication system  
[NASA-CASE-XLA-01090] c07 N71-12389
- Method of making molded electric connector for use with flat conductor cables  
[NASA-CASE-XMF-03498] c15 N71-15986
- ENTHALPY**
- Measuring conductive heat flow and thermal conductivity of laminar gas stream in cylindrical plug to simulate atmospheric reentry  
[NASA-CASE-XLE-00266] c14 N70-34156
- ENVIRONMENT SIMULATION**
- Method and apparatus for applying compressional forces to skeletal structure of subject to simulate force during ambulatory conditions  
[NASA-CASE-ARC-10100-1] c05 N71-24738
- Gravity environment simulation by locomotion and restraint aid for studying manual operation performance of astronauts at zero gravity  
[NASA-CASE-ARC-10153] c05 N71-28619
- ENVIRONMENT SIMULATORS**
- Space environment simulator for testing spacecraft components under aerospace conditions  
[NASA-CASE-NPO-10141] c11 N71-24964
- ENVIRONMENTAL CONTROL**
- Portable environmental control and life support system for astronaut in and out of spacecraft  
[NASA-CASE-XMS-09632-1] c05 N71-11203
- Portable apparatus producing high velocity annular air column surrounding low velocity, filtered, superclean air central core for industrial clean room environmental control  
[NASA-CASE-XMF-03212] c15 N71-22721
- Development and characteristics of thermal sensitive panel for controlling ratio of solar absorptivity to surface emissivity for space vehicle temperature control  
[NASA-CASE-XLA-07728] c33 N71-22890
- Dual solid cryogenics for spacecraft refrigeration insuring low temperature cooling for extended periods  
[NASA-CASE-GSC-10188-1] c23 N71-24725
- Vibration control of flexible bodies in steady accelerating environment  
[NASA-CASE-LAR-10106-1] c15 N71-27169
- Test chamber for determining decomposition and autoignition of materials used in spacecraft under controlled environmental conditions  
[NASA-CASE-KSC-10198] c11 N71-28629
- Readily assembled universal environment housing for electronic equipment  
[NASA-CASE-KSC-10031] c15 N72-22486
- Environmentally controlled suit for working in sterile chamber  
[NASA-CASE-LAR-10076-1] c05 N73-20137
- Dual stage check valve for cryogenic supply systems used in space flight environmental control system  
[NASA-CASE-MSC-13587-1] c15 N73-30459
- Spacecraft with artificial gravity and earthlike atmosphere  
[NASA-CASE-LEW-11101-1] c31 N73-32750
- ENVIRONMENTAL ENGINEERING**
- Thermal control wall panel with application to spacecraft cabins  
[NASA-CASE-XLA-01243] c33 N71-22792
- ENVIRONMENTAL TESTS**
- Multisample test chamber for exposing materials to X rays, temperature change, and gaseous

- conditions and determination of material effects  
[NASA-CASE-XMS-02930] c11 N71-23042
- Space suit using nonflexible material with low leakage and providing protection against thermal extremes, physical punctures, and radiation with high mobility articulation  
[NASA-CASE-XAC-07043] c05 N71-23161
- Flammability test chamber for testing materials in certain predetermined environments  
[NASA-CASE-KSC-10126] c11 N71-24985
- Multiaxes vibration device for making vibration tests along orthogonal axes of test specimen  
[NASA-CASE-MFS-20242] c14 N73-19421
- ENVIRONMENTS**
- Hermetically sealed elbow actuator for use in severe environments  
[NASA-CASE-MFS-14710] c09 N72-22195
- ENZYME ACTIVITY**
- Use of enzyme hexokinase and glucose to reduce inherent light levels of ATP in luciferase compositions  
[NASA-CASE-XGS-05533] c04 N69-27487
- Enzymatic luminescent bioassay method for determining bacterial levels in urine  
[NASA-CASE-GSC-11C92-2] c04 N73-27052
- ENZYMES**
- Protein sterilization of firefly luciferase without denaturation  
[NASA-CASE-GSC-10225-1] c06 N73-27086
- EPOXY COMPOUNDS**
- Synthesis of siloxane containing epoxy polymers with low dielectric properties  
[NASA-CASE-MFS-13994-1] c06 N71-11240
- Synthesis of siloxane containing epoxide and diamine polymers  
[NASA-CASE-MFS-13994-2] c06 N72-25148
- EPOXY RESINS**
- Nonmagnetic hermetically sealed battery case made of epoxy resin and woven glass tape for use with electrochemical cells in spacecraft  
[NASA-CASE-XGS-00886] c03 N71-11053
- Epoxy resin sealing device for electrochemical cells in high vacuum environments  
[NASA-CASE-XGS-02630] c03 N71-22974
- Cold metal hydroforming techniques using epoxy molds for counteracting creep or stretch  
[NASA-CASE-XLE-05641-1] c15 N71-26346
- Miniature electromechanical junction transducer operating on piezjunction effect and utilizing epoxy for stress coupling component  
[NASA-CASE-ERC-10087] c14 N71-27334
- Infusible polymer production from reaction of polyfunctional epoxy resins with polyfunctional aziridine compounds  
[NASA-CASE-NPO-10701] c06 N71-28620
- EQUIPMENT SPECIFICATIONS**
- Differential pressure cell insensitive to changes in ambient temperature and extreme overload  
[NASA-CASE-XAC-00042] c14 N70-34816
- High-temperature, high-pressure spherical segment valve  
[NASA-CASE-XAC-00074] c15 N70-34817
- Remote-reading torque meter for use where high horsepowers are transmitted at high rotative speeds  
[NASA-CASE-XLE-00503] c14 N70-34818
- Magnetically centered liquid column float  
[NASA-CASE-XAC-00030] c14 N70-34820
- Electric propulsion engine test chamber  
[NASA-CASE-XLE-00252] c11 N70-34844
- Channel-type shell construction for rocket engines and related configurations  
[NASA-CASE-XLE-00144] c28 N70-34860
- Non-reusable kinetic energy absorber for application in soft landing of space vehicles  
[NASA-CASE-XLE-00810] c15 N70-34861
- Slit regulated gas journal bearing  
[NASA-CASE-XNP-00476] c15 N70-38620
- Specifications and drawings for semipassive optical communication system  
[NASA-CASE-XLA-01090] c07 N71-12389
- Stretcher with rigid head and neck support with capability of supporting immobilized person in vertical position for removal from vehicle hatch to exterior also useful as splint stretcher  
[NASA-CASE-XMF-06589] c05 N71-23159
- Development of test apparatus for subjecting metal specimen to tensile and compressive loads at constant temperature  
[NASA-CASE-LAR-10426-1] c32 N72-27947
- Development of performed attachable thermocouple from thermoelectrically different metals  
[NASA-CASE-LRW-11072-2] c14 N72-28443
- Development of vortex fluid amplifier for throttling rocket exhaust  
[NASA-CASE-LRW-10374-1] c28 N73-13773
- Simplified technique and device for producing industrial grade synthetic diamonds  
[NASA-CASE-MFS-20698-2] c15 N73-19457
- EQUIPOTENTIALS**
- Equipotential space suits utilizing mechanical aids to minimize astronaut energy at bending joints  
[NASA-CASE-LAR-10007-1] c05 N71-11195
- Instrument for measuring potentials on two dimensional electric field plot  
[NASA-CASE-XLA-08493] c10 N71-19421
- ERGOMETERS**
- Manual actuator for exercise machine onboard spacecraft  
[NASA-CASE-MFS-21481-1] c15 N73-15503
- Development of restraint system for securing personnel to ergometer while exercising under weightless conditions  
[NASA-CASE-MFS-21046-1] c14 N73-27377
- Versatile ergometer with work load control  
[NASA-CASE-MFS-21109-1] c05 N73-27941
- Tilting table for testing human body in variety of positions while exercising on ergometer or other biomedical devices  
[NASA-CASE-MFS-21010-1] c05 N73-30078
- Pneumatic foot pedal operated fluidic exercising device  
[NASA-CASE-MSC-11561-1] c05 N73-32014
- EROSION**
- Flame sprayed intermetallic coating for producing oxidation corrosion and erosion resistant low alloy austenitic stainless steel for use in automobile internal combustion engines  
[NASA-CASE-LEW-11267-2] c15 N72-28502
- ERROR ANALYSIS**
- Development of computer program for estimating reliability of self-repair and fault-tolerant systems with respect to selected system and mission parameters  
[NASA-CASE-NPO-13086-1] c15 N73-12495
- ERROR CORRECTING DEVICES**
- Error correction circuitry for binary signal channels  
[NASA-CASE-XNP-03263] c09 N71-18843
- Multiplexed communication system design including automatic correction of transmission errors introduced by frequency spectrum shifts  
[NASA-CASE-XNP-01306] c07 N71-20814
- Description of error correcting methods for use with digital data computers and apparatus for encoding and decoding digital data  
[NASA-CASE-XNP-02748] c08 N71-22749
- Guide accessories for correctly aligning paper in typewriter to correct typographical errors  
[NASA-CASE-MFS-15218-1] c15 N73-31438
- ERROR DETECTION CODES**
- Self testing and repairing computer comprising control and diagnostic unit and rollback points for error correction  
[NASA-CASE-NPO-10567] c08 N71-24633
- ERROR SIGNALS**
- Error correction circuitry for binary signal channels  
[NASA-CASE-XNP-03263] c09 N71-18843
- Feedback controller for sampling error signals within single control formulation time interval  
[NASA-CASE-GSC-10554-1] c08 N71-29033
- ERRORS**
- Analog to digital converter using offset voltage to eliminate errors  
[NASA-CASE-MSC-13110-1] c08 N72-22163
- ESCAPE CAPSULES**
- Aerial capsule emergency separation device using jettisonable towers  
[NASA-CASE-XLA-00115] c03 N70-33343
- Emergency escape cabin system for launch towers  
[NASA-CASE-XKS-02342] c05 N71-11199

- Spacecraft design with single point aerodynamic and hydrodynamic stability for emergency transport of men from space station to splashdown  
[NASA-CASE-MSC-13281] c31 N72-18859
- ESCAPE SYSTEMS**  
Design and specifications of emergency escape system for spacecraft structures  
[NASA-CASE-MSC-12086-1] c05 N71-12345  
Automatic braking device for rapidly transferring humans or materials from elevated location  
[NASA-CASE-XKS-07814] c15 N71-27067
- ESTERS**  
Fluorinated esters of polycarboxylic acid and lubricating compositions for use at extreme temperature  
[NASA-CASE-MPS-21040-1] c06 N73-30098
- ETCHING**  
Reusable masking boot for chemical machining operations  
[NASA-CASE-XNP-02092] c15 N70-42033  
Development of method for etching copper  
[NASA-CASE-XGS-06306] c17 N71-16044  
Composition and process for improving definition of resin masks used in chemical etching  
[NASA-CASE-XGS-04993] c14 N71-17574  
Etching aluminum alloys with aqueous solution containing sulfuric acid, hydrofluoric acid, and an alkali metal dichromate for adhesive bonding  
[NASA-CASE-XMF-02303] c17 N71-23828  
Selective plating of etched circuits without removing previous plating  
[NASA-CASE-XGS-03120] c15 N71-24047  
Nickel plating onto etched aluminum castings  
[NASA-CASE-XNP-04148] c17 N71-24830  
Scanning nozzle plating system for etching or plating metals on substrates without masking  
[NASA-CASE-NPO-11758-1] c15 N72-28507
- ETHERS**  
Method for producing alternating ether-siloxane copolymers with stable properties when exposed to elevated temperatures and UV radiation  
[NASA-CASE-XMF-02584] c06 N71-20905  
Chemical synthesis of hydroxy terminated perfluoro ethers as intermediates for highly fluorinated polyurethane resins  
[NASA-CASE-NPO-10768] c06 N71-27254  
Formation of polyurethane resins from hydroxy terminated perfluoro ethers  
[NASA-CASE-NPO-10768-2] c06 N72-27144
- ETHYLENE OXIDE**  
Using ethylene oxide in preparation of sterilized solid rocket propellants and encapsulating materials  
[NASA-CASE-XNP-01749] c27 N70-41897  
Ethylene oxide sterilization and encapsulating process for sterile preservation of instruments and solid propellants  
[NASA-CASE-XNP-09763] c14 N71-20461
- EUTECTIC ALLOYS**  
High temperature bonding of sapphire to sapphire by eutectic Al<sub>2</sub>O<sub>3</sub> and ZrO<sub>2</sub> mixture to form sapphire rubidium maser cell  
[NASA-CASE-GSC-11577-1] c15 N73-19467
- EVACUATING (VACUUM)**  
Filling honeycomb matrix with deaerated paste filler  
[NASA-CASE-XMS-01108] c15 N69-24322  
Sealing evacuation port and evacuating vacuum container such as space jackets  
[NASA-CASE-XMF-03290] c15 N71-23256  
Gas leak detection in evacuated systems using ultraviolet radiation probe  
[NASA-CASE-ERC-10034] c15 N71-24896  
Vacuum displacement compression molding of tubular bodies from thermosetting plastics  
[NASA-CASE-LAR-10782-2] c15 N73-31444
- EVAPORATION**  
Evaporating crucible of tantalum-tungsten foil, nickel alumina bonding agent, and ceramic coating  
[NASA-CASE-XLA-03105] c15 N69-27483
- EVAPORATORS**  
Spatter proof evaporant source design for use in vacuum deposition of solid thin films on substrates  
[NASA-CASE-XMF-06065] c15 N71-20395
- Means of vapor deposition using electric current and evaporator filament  
[NASA-CASE-LAR-10541-1] c15 N72-32487
- EXERCISE (PHYSIOLOGY)**  
Manual actuator for exercise machine onboard spacecraft  
[NASA-CASE-MPS-21481-1] c15 N73-15503  
Development of restraint system for securing personnel to ergometer while exercising under weightless conditions  
[NASA-CASE-MPS-21046-1] c14 N73-27377  
Tilting table for testing human body in variety of positions while exercising on ergometer or other biomedical devices  
[NASA-CASE-MPS-21010-1] c05 N73-30078
- EXHAUST GASES**  
Device for adding water to high velocity exhaust jets to reduce velocity, noise, and temperature  
[NASA-CASE-XMF-01813] c28 N70-41582  
Exhaust nozzle for reducing noise in gas turbines by mixing low velocity air with high velocity engine exhaust  
[NASA-CASE-LEW-11569-1] c28 N73-14792  
Reduction of jet engine noise due to turbulent mixing of exhaust gases with ambient atmosphere  
[NASA-CASE-ARC-10712-1] c28 N73-20826
- EXHAUST NOZZLES**  
High thrust annular liquid propellant rocket engine and exhaust nozzle design  
[NASA-CASE-XLE-00078] c28 N70-33284  
Exhaust nozzle with afterburning for generating thrust  
[NASA-CASE-XLA-00154] c28 N70-33374  
Penshaped, supersonic exhaust nozzle design  
[NASA-CASE-XLE-00057] c28 N70-38711  
Automatic ejection valve for attitude control and midcourse guidance of space vehicles  
[NASA-CASE-XNP-00676] c15 N70-38996  
Jet aircraft exhaust nozzle for noise reduction  
[NASA-CASE-LAR-10951-1] c28 N73-19819  
Shrouded divergent body attached to exhaust nozzle for jet noise suppression  
[NASA-CASE-LEW-11286-1] c02 N73-21066
- EXPANDABLE STRUCTURES**  
Expanding and contracting connector strip for solar cell array of Nimbus satellite  
[NASA-CASE-XGS-01395] c03 N69-21539  
Method of compactly packaging centrifugally expandable lightweight flexible reflector satellite  
[NASA-CASE-XLA-00138] c31 N70-37981  
Foldable conduit capable of springing back as self erecting structural member  
[NASA-CASE-XLE-00620] c32 N70-41579  
Collapsible high gain antenna which can be automatically expanded to operating state  
[NASA-CASE-KSC-10392] c07 N73-26117  
Expandable space frames with high expansion to collapse ratio  
[NASA-CASE-ERC-10365-1] c31 N73-32749
- EXPANSION**  
Apparatus for measuring polymer membrane expansion in electrochemical cells  
[NASA-CASE-XGS-03865] c14 N69-21363  
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[NASA-CASE-MPS-21049-1] c14 N73-11405
- EXPERIMENTAL DESIGN**  
Efficient operation of improved hydrofoil design  
[NASA-CASE-XLA-00229] c12 N70-33305  
Sealed electric storage battery with gas manifold interconnecting each cell  
[NASA-CASE-XNP-03378] c03 N71-11051  
Electrode attached to helmets for detecting low level signals from skin of living creatures  
[NASA-CASE-ARC-10043-1] c05 N71-11193  
Conditioning suit for normal function of astronaut cardiovascular system in gravity environment  
[NASA-CASE-XLA-02898] c05 N71-20268  
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[NASA-CASE-XAC-07043] c05 N71-23161
- EXPLOSIONS**  
Device for detection of combustion light preceding gaseous explosions

- [NASA-CASE-LAR-10739-1] c14 N73-16484
- EXPLOSIVE DEVICES**
- Stage separation using remote control release of joint with explosive insert  
[NASA-CASE-XLA-02854] c15 N69-27490
- Hermetically sealed explosive release mechanism for actuator device  
[NASA-CASE-XGS-00824] c15 N71-16078
- Development of non-magnetic indexing device for orienting magnetic flux sensing instrument in magnetic field without generation of detrimental magnetic fields  
[NASA-CASE-XGS-02422] c15 N71-21529
- Development of apparatus for detonating explosive devices in order to determine forces generated and detonation propagation rate  
[NASA-CASE-LAR-10800-1] c33 N72-27959
- Development and characteristics of squib actuated explosive disconnect for spacecraft release from launch vehicle  
[NASA-CASE-NPO-11330] c33 N73-26958
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- Electric discharge apparatus for electrohydraulic explosive forming  
[NASA-CASE-XMF-00375] c15 N70-34249
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[NASA-CASE-LAR-10941-1] c15 N72-33478
- Explosive welding of thin metal scarf joint  
[NASA-CASE-LAR-11211-1] c15 N73-14480
- Method for eliminating noise and debris of explosive welding techniques by using complete enclosure  
[NASA-CASE-LAR-10941-2] c15 N73-32371
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[NASA-CASE-NPO-11743-1] c33 N73-29959
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[NASA-CASE-MFS-20861-1] c18 N73-32437
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[NASA-CASE-NPO-11130] c08 N72-20176
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[NASA-CASE-LAR-10319-1] c14 N73-32322
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[NASA-CASE-XMP-07587] c15 N71-18701
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[NASA-CASE-XLA-10322] c15 N72-17452
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[NASA-CASE-MFS-21049-1] c14 N73-11405
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[NASA-CASE-XMS-01624] c15 N70-40062
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[NASA-CASE-XMS-09632-1] c05 N71-11203
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[NASA-CASE-XMS-05304] c05 N71-12336
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[NASA-CASE-MSC-12243-1] c05 N71-24728
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[NASA-CASE-MSC-12609-1] c05 N73-32012
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[NASA-CASE-NPO-10812] c15 N73-13464
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[NASA-CASE-XMF-03934] c09 N71-22985
- Ultrasonic device for ophthalmic eye surgery with safe removal of macerated material  
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[NASA-CASE-MSC-13601-1] c05 N72-11088
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[NASA-CASE-MSC-12398] c05 N72-20098
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[NASA-CASE-MSC-12549-1] c15 N73-11443
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- Collimator for analyzing spatial location of near and distant sources of radiation  
[NASA-CASE-MFS-20546-2] c14 N73-30389
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- Transient heat transfer gage for measuring total radiant intensity from far ultraviolet and ionized high temperature gases  
[NASA-CASE-XNP-09802] c33 N71-15641
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- Force measuring instrument for structural members, particularly fastening bolts or studs  
[NASA-CASE-XMF-00456] c14 N70-34705
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[NASA-CASE-XLA-01807] c15 N71-10799
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[NASA-CASE-ARC-10140-1] c15 N71-17653
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[NASA-CASE-XMS-03745] c15 N71-21076
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[NASA-CASE-LEW-10856-1] c15 N72-22490
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[NASA-CASE-NPO-11609-1] c06 N72-22114
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[NASA-CASE-NPO-11082] c08 N72-22167
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[NASA-CASE-NPO-10760] c09 N72-25254
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[NASA-CASE-XNP-01107] c10 N71-28859
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[NASA-CASE-MSC-13492-1] c10 N71-28860
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[NASA-CASE-NPO-11948-1] c10 N73-15255
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[NASA-CASE-NPO-10351] c08 N71-12503
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[NASA-CASE-XAC-04031] c08 N71-18594
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[NASA-CASE-XKS-06167] c08 N71-24890
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[NASA-CASE-XLA-01127] c07 N70-41372
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[NASA-CASE-NPO-11282] c10 N73-16205
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[NASA-CASE-GSC-10097-1] c08 N71-27210
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[NASA-CASE-XNP-00597] c18 N71-23088
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[NASA-CASE-NPO-10733] c09 N70-35631
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[NASA-CASE-XNP-07040] c08 N71-12500
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[NASA-CASE-GSC-10022-1] c10 N71-25882
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[NASA-CASE-NPO-10199] c09 N72-17156
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[NASA-CASE-XLE-03583] c31 N71-17629
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[NASA-CASE-MSC-12243-1] c05 N71-24728
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[NASA-CASE-LAR-10106-1] c15 N71-27169
- Flexible barrier membrane comprising porous substrate and incorporating liquid gallium or indium metal used as sealant barriers for spacecraft walls and pumping liquid propellants  
[NASA-CASE-XNP-08881] c17 N71-28747
- Heat sealable transparent plastic film for mounting solar cell array to flexible substrate  
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- Development of device for simulating cyclic thermal loading of flexible materials by application of mechanical stresses and deformations  
[NASA-CASE-LAR-10270-1] c32 N72-25877
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[NASA-CASE-MFS-21680-1] c15 N73-20525
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Two degree inverted flexure from single block of material  
[NASA-CASE-ARC-10345-1] c15 N73-12488
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Terminal guidance system for quidding aircraft into preselected altitude and/or heading at terminal point  
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Aircraft indicator for pilot control of takeoff roll, climbout path and verticle flight path in poor visibility conditions  
[NASA-CASE-XLA-00487] c14 N7G-40157

Two axis flight controller with potentiometer control shafts directly coupled to rotatable ball members  
[NASA-CASE-XFR-04104] c03 N70-42073

Development of aircraft control system with high performance electrically controlled and mechanically operated hydraulic valves for precise flight operation  
[NASA-CASE-XAC-00048] c02 N71-29128

Characteristics of system for providing yaw control of vehicles at high supersonic and hypersonic speeds by deflecting flaps mounted on upper wing surface  
[NASA-CASE-LAR-11140-1] c02 N73-20008

Development of flight simulator system to show position of joystick displacement  
[NASA-CASE-NPO-11497] c08 N73-25206

Development and characteristics of system for integrated control of engine power and aerodynamic configuration of aircraft during landing approach  
[NASA-CASE-ARC-10456-1] c02 N73-30938

**FLIGHT CREWS**  
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[NASA-CASE-XLA-00118] c05 N70-33285

**FLIGHT RECORDERS**  
Event recorder with constant speed motor which rotates recording disk  
[NASA-CASE-XLA-01832] c14 N71-21006

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Aerial capsule emergency separation device using jettisonable towers  
[NASA-CASE-XLA-00115] c03 N70-33343

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[NASA-CASE-LAR-10717-1] c21 N73-30641

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[NASA-CASE-XFR-00929] c31 N70-34966

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[NASA-CASE-XFR-03107] c09 N71-19449

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[NASA-CASE-YKS-04631] c10 N71-23663

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[NASA-CASE-LAR-10276-1] c11 N70-26813

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[NASA-CASE-INP-00708] c14 N70-35394

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[NASA-CASE-MFS-20509] c11 N72-17183

Device for applying simulated g-forces to arm of aircraft simulator pilot  
[NASA-CASE-LAR-10550-1] c11 N72-27271

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[NASA-CASE-XMS-01994-1] c14 N72-17326

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[NASA-CASE-LAR-10531-1] c02 N73-13023

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[NASA-CASE-GSC-10700] c23 N71-30027  
Absolute focus locking device for microscopes to maintain set focus for extended time period  
[NASA-CASE-LAR-10184] c14 N72-22445  
Electron beam controller using magnetic field to refocus spent electron beam in microwave oscillator tube  
[NASA-CASE-LEW-11617-1] c09 N72-28227
- FOILS (MATERIALS)**  
Foil seal between parts moving relative to each other  
[NASA-CASE-XLE-05130] c15 N69-21362  
Procedure for making insulating foil for use in multilayer insulating system  
[NASA-CASE-LEW-11484-1] c15 N73-22415
- FOLDING**  
Characteristics of device for folding thin flexible sheets into compact configuration  
[NASA-CASE-XLA-00137] c15 N70-33180
- FOLDING STRUCTURES**  
Lenticular vehicle with foldable aerodynamic control flaps and reaction jets for operation above and within earth's atmosphere  
[NASA-CASE-XGS-00260] c31 N70-37924  
Collapsible, space erectable loop antenna system for space vehicle  
[NASA-CASE-XMF-00437] c07 N70-40202  
Unfolding boom assembly with knuckle joints for positioning equipment for spacecraft  
[NASA-CASE-XGS-00938] c32 N70-41367  
Foldable conduit capable of springing back as self erecting structural member  
[NASA-CASE-XLE-00620] c32 N70-41579  
Foldable, double cone and parabolic reflector system for solar ray concentration  
[NASA-CASE-XLA-04622] c03 N70-41580  
Method for deployment of flexible wing glider from space vehicle with minimum impact and loading  
[NASA-CASE-XMS-00907] c02 N70-41630  
Development and characteristics of variable sweep wing control system for supersonic aircraft  
[NASA-CASE-XLA-03659] c02 N71-11041  
Hydraulic actuator design for space deployment of heat radiators  
[NASA-CASE-NSC-11817-1] c15 N71-26611  
Apparatus and method of assembling building blocks by folding pre-cut flat sheets of material during on-site construction  
[NASA-CASE-NSC-12233-1] c15 N72-25454  
Electrically conductive wire storage in plastic capsule that allows for unfolding  
[NASA-CASE-LAR-10168-1] c09 N73-22151
- FOOD**  
Detection of bacteria in biological fluids and foods  
[NASA-CASE-GSC-11533-1] c14 N73-13435
- FORCE**  
Electromechanical actuator for producing mechanical force and/or motion in response to electrical signals  
[NASA-CASE-NPO-11738-1] c09 N73-30185
- FORCE DISTRIBUTION**  
Device for handling heavy loads by distributing forces

[NASA-CASE-XNP-04969] c11 N69-27466  
Development of two force component measuring device

[NASA-CASE-XAC-04886-1] c14 N71-20439  
Tensile strength testing device having pulley guides for exerting multiple forces on test specimen

[NASA-CASE-XNP-05634] c15 N71-24834  
Development and characteristics of device for indicating and recording magnitude of force applied in axial direction

[NASA-CASE-MS-C-15626-1] c14 N72-25411  
Variable direction force coupler for transmitting force along selectable curve path

[NASA-CASE-MFS-20317] c15 N73-13463

**FORMALDEHYDE**  
Chemical synthesis of formaldehyde based disinfectants without penetrating odor and eye and ear irritation properties

[NASA-CASE-NPO-12115-1] c06 N73-17153

**FORMATES**  
Preparation of polyurethane polymer by reacting hydroxy polyformal with organic diisocyanate

[NASA-CASE-MFS-10509] c06 N73-30103

**FORMING TECHNIQUES**  
Apparatus for forming wire grids for electric strain gauges

[NASA-CASE-XLE-00023] c15 N70-33330  
Hot forming of plastic sheets

[NASA-CASE-XMS-05516] c15 N71-17803  
Forming tubes from long thin flat metal strips

[NASA-CASE-XGS-04175] c15 N71-18579  
Portable magnetomotive hammer for metal working

[NASA-CASE-XMF-03793] c15 N71-24833  
Forming mold for polishing and machining curved solar magnesium reflector with reinforcing ribs

[NASA-CASE-XLE-08917-2] c15 N71-24836  
Heat treatment and tooling for forming shapes from thermosetting honeycomb core sheets

[NASA-CASE-NPO-11036] c15 N72-24522  
Pressurized heat treatment of formed superalloy powder products

[NASA-CASE-LEW-10805-3] c17 N72-28542  
Compression molding apparatus for thermosetting plastic compositions

[NASA-CASE-LAR-10489-2] c15 N73-31446

**FOUNDATIONS**  
Base support for expandable and contractible coupling between two members

[NASA-CASE-NPO-11059] c15 N72-17454

**FOURIER TRANSFORMATION**  
Photographic film restoration system using Fourier transformation lenses and spatial filter

[NASA-CASE-MS-C-12448-1] c14 N72-20394  
Continuous Fourier transform method and apparatus

[NASA-CASE-ARC-10466-1] c08 N73-21199

**FRACTIONATION**  
Purification apparatus for vaporization and fractional distillation of liquids

[NASA-CASE-XNP-08124] c15 N71-27184

**FRACTURE MECHANICS**  
Apparatus for testing metallic and nonmetallic beams or rods by bending at high temperatures in vacuum or inert atmosphere

[NASA-CASE-XLE-01300] c15 N70-41993

**FRAMES**  
Shock absorbing articulated multiple couch assembly

[NASA-CASE-MS-C-11253] c05 N71-12343  
Pliable frame for sunglasses in emergency survival kits

[NASA-CASE-XMS-06064] c05 N71-23096  
Expandable space frames with high expansion to collapse ratio

[NASA-CASE-ERC-10365-1] c31 N73-32749

**FRAMING CAMERAS**  
High speed photo-optical time recorder for indicating time at exposure of each frame of high speed movie camera film

[NASA-CASE-KSC-10294] c14 N72-18411

**FREE FLIGHT TEST APPARATUS**  
Hydraulic support equipment for full scale dynamic testing of large rocket vehicle under free flight conditions

[NASA-CASE-XNP-01772] c11 N70-41677  
Hydraulic support apparatus for dynamic testing of space vehicles under near-free flight conditions

[NASA-CASE-XMF-03248] c11 N71-10604

Free flight suspension system for use with aircraft models in wind tunnel tests

[NASA-CASE-XLA-00939] c11 N71-15926

**FREEZE DRYING**  
Rice preparation process consisting of cooking, two freezing-thawing cycles, and then freeze drying

[NASA-CASE-MS-C-13540-1] c05 N72-33096

**FREQUENCY ANALYZERS**  
Describing frequency discriminator using digital logic circuits and supplying single binary output signal

[NASA-CASE-MFS-14322] c08 N71-18692  
Broadband frequency discriminator with resistive captive inductive networks

[NASA-CASE-NPO-10096] c07 N71-24583  
Audio frequency analysis circuit for determining, displaying, and recording frequency of sweeping audio frequency signal

[NASA-CASE-NPO-11147] c14 N72-27408  
Continuous Fourier transform method and apparatus

[NASA-CASE-ARC-10466-1] c08 N73-21199

**FREQUENCY CONTROL**  
Automatic control of voltage supply to direct current motor

[NASA-CASE-XMS-04215-1] c09 N69-39987  
Variable frequency magnetic coupled multivibrator with temperature compensated frequency control circuit

[NASA-CASE-XGS-00458] c09 N70-38604  
Variable frequency magnetic coupled multivibrator with output signal of constant amplitude and waveform

[NASA-CASE-XGS-00131] c09 N70-38995  
Development of automatic frequency discriminators and control for phase lock loop providing frequency preset capabilities

[NASA-CASE-XMF-08665] c10 N71-19467  
Linear accelerator frequency control system

[NASA-CASE-XGS-05441] c10 N71-22962  
Tuning arrangement for frequency control of magnetron-type electron discharge device

[NASA-CASE-XNP-09771] c09 N71-24841  
Low loss dichroic plate for passing radiation within selected frequency band for Cassegrain antenna feed

[NASA-CASE-NPO-13171-1] c07 N73-12150  
Automatic frequency control circuit for FM television transmitter

[NASA-CASE-MFS-21540-1] c07 N73-18177  
Development of acoustical controlled distributed feedback laser with continuous frequency spectrum tuning

[NASA-CASE-NPO-13175-1] c16 N73-27431

**FREQUENCY CONVERTERS**  
Frequency to analog converters with unipolar field effect transistor for determining potential charge by pulse duration of input signal

[NASA-CASE-XNP-07040] c08 N71-12500  
Describing static inverter with single or multiple phase output

[NASA-CASE-XMF-00663] c08 N71-18752  
Voltage controlled, variable frequency relaxation oscillator with MOSFET variable current feed

[NASA-CASE-GSC-10022-1] c10 N71-25882  
Development of family of frequency to amplitude converters for frequency analysis of complex input signal waveforms

[NASA-CASE-MS-C-12395] c09 N72-25257

**FREQUENCY DISTRIBUTION**  
Monopole antenna system for maximum omnidirectional efficiency for use on satellites

[NASA-CASE-XLA-00414] c07 N70-38260  
Variable frequency subcarrier oscillator with temperature compensation

[NASA-CASE-XNP-03916] c09 N71-28810

**FREQUENCY DIVIDERS**  
Modification of conventional digital frequency divider to extend frequency range

[NASA-CASE-LAR-10730-1] c10 N72-27255  
Low phase noise frequency divider for use with deep space network communication system

[NASA-CASE-NPO-11569] c10 N73-26229

**FREQUENCY DIVISION MULTIPLEXING**  
Earth satellite relay station for frequency multiplexed voice transmission

[NASA-CASE-GSC-10118-1] c07 N71-24621

FREQUENCY MEASUREMENT

SUBJECT INDEX

System for monitoring condition responsive devices by using frequency division multiplex technique  
 [NASA-CASE-KSC-10521] c07 N73-20176

**FREQUENCY MEASUREMENT**  
 Measurement system for physical quantity represented by or converted to variable frequency signal  
 [NASA-CASE-MFS-20658-1] c14 N73-30386

**FREQUENCY MODULATION**  
 Accelerometer with FM output signals indicative of mechanical strain on it  
 [NASA-CASE-XLA-G0492] c14 N7G-34799  
 Circuitry for generating sync signals in FM communication systems including video information  
 [NASA-CASE-XNP-1G83C] c07 N71-11281  
 Demodulator for simultaneous demodulation of two modulating ac signal carriers close in frequency  
 [NASA-CASE-XMF-G1160] c07 N71-11298  
 Optical tracker with pair of FM reticles having patterns 90 deg out of phase  
 [NASA-CASE-XGS-05715] c23 N71-16100  
 Atomic hydrogen maser with bulb temperature control by output frequency difference signal for wall shift elimination  
 [NASA-CASE-HQN-10654-1] c16 N73-13489  
 Automatic frequency control circuit for FM television transmitter  
 [NASA-CASE-MFS-21540-1] c07 N73-18177  
 Device for locating electrically nonlinear objects and determining distance to object by FM signal transmission  
 [NASA-CASE-KSC-10108] c14 N73-25461

**FREQUENCY MULTIPLIERS**  
 Multiple varactor for generating high frequencies with high power and high conversion efficiency  
 [NASA-CASE-XMF-04958-1] c10 N71-26414

**FREQUENCY RANGES**  
 Variable time constant, wide frequency range smoothing network for noise removal from pulse chains  
 [NASA-CASE-XGS-01983] c10 N70-41964  
 Variable frequency nuclear magnetic resonance spectrometer providing drive signals over wide frequency range and minimizing noise effects  
 [NASA-CASE-XNP-09830] c14 N71-26266  
 Modification of conventional digital frequency divider to extend frequency range  
 [NASA-CASE-LAR-10730-1] c10 N72-27255

**FREQUENCY SCANNING**  
 Ultrasonic adjustable scanner for flaw detection in flat or radial panels of honeycomb structure with welded seams  
 [NASA-CASE-MFS-20335-1] c14 N72-27421

**FREQUENCY SHIFT**  
 Doppler frequency shift correction device for multiplex communication with Applications Technology Satellites  
 [NASA-CASE-XGS-02749] c07 N69-39978  
 Serrodyne traveling wave tube reentrant amplifier for synchronous communication satellites operating at microwave frequencies  
 [NASA-CASE-XGS-01022] c07 N71-16088  
 Multiplexed communication system design including automatic correction of transmission errors introduced by frequency spectrum shifts  
 [NASA-CASE-XNP-01306] c07 N71-20814  
 Doppler shifted laser beam as fluid velocity sensor  
 [NASA-CASE-YAC-10770-1] c16 N71-24828

**FREQUENCY SHIFT KEYING**  
 Frequency shift keyed demodulator - circuit diagrams  
 [NASA-CASE-XGS-02889] c07 N71-11282  
 Frequency shift keying apparatus for use with pulse code modulation data transmission system  
 [NASA-CASE-XGS-01537] c07 N71-23405

**FREQUENCY STABILITY**  
 Gas laser frequency stabilized by position of mirrors in resonant cavity  
 [NASA-CASE-XGS-03644] c16 N71-18614  
 Solid state broadband stable power amplifier  
 [NASA-CASE-XNP-10854] c10 N71-26331  
 Transistor circuit with piezoelectric crystal for stable high frequency oscillator  
 [NASA-CASE-GSC-11513-1] c09 N73-16185

FREQUENCY STANDARDS

Development of method for synchronizing clocks at several ground stations based on signals received from spacecraft or satellites  
 [NASA-CASE-XNP-08875] c10 N71-23099

**FREQUENCY SYNCHRONIZATION**  
 Synchronized digital communication system  
 [NASA-CASE-XNP-03623] c09 N73-28084

**FREQUENCY SYNTHESIZERS**  
 Digitally controlled frequency synthesizer for pulse frequency modulation telemetry systems  
 [NASA-CASE-XGS-02317] c09 N71-23525

**FRICTION FACTOR**  
 Self lubricating gears and other mechanical parts having surface adapted to frictional contact  
 [NASA-CASE-MFS-14971] c15 N71-24984

**FRICTION MEASUREMENT**  
 Kinetic and static friction force measurement between magnetic tape and magnetic head surfaces  
 [NASA-CASE-XNP-08680] c14 N71-22995

**FRICTION REDUCTION**  
 Development of low friction magnetic recording tape  
 [NASA-CASE-XGS-00373] c23 N71-15978  
 Hollow high strength rolling elements for antifriction bearings fabricated from preformed components  
 [NASA-CASE-LEW-11026-1] c15 N73-33383

**FRICTIONLESS ENVIRONMENTS**  
 Air bearings for near frictionless transfer of loads from one body to another  
 [NASA-CASE-XMF-01887] c15 N71-10617  
 Platform with several ground effect pads and plenum chambers  
 [NASA-CASE-MFS-14685] c31 N71-15689  
 Development of apparatus for simulating zero gravity conditions  
 [NASA-CASE-MFS-12750] c27 N71-16223

**FROST**  
 Insulating system for receptacles of liquefied gases using wire cloth for forming frost layer  
 [NASA-CASE-XMF-00341] c15 N70-33323

**FUEL CELLS**  
 Inorganic ion exchange membrane electrolytes for fuel cell use  
 [NASA-CASE-XNP-04264] c03 N69-21337  
 Operation method for combined electrolysis device and fuel cell using molten salt to produce power by thermoelectric regeneration mechanism  
 [NASA-CASE-XLE-01645] c03 N71-20904  
 Electrode sealing and insulation for fuel cells containing caustic liquid electrolytes using powdered plastic and metal  
 [NASA-CASE-XMS-01625] c15 N71-23022  
 Development and characteristics of ion-exchange membrane and electrode assembly for fuel cells or electrolysis cells  
 [NASA-CASE-XMS-02063] c03 N71-29044  
 Method for producing asbestos matrix suitable for use in fuel cell or electrolysis cell  
 [NASA-CASE-MSC-12568-1] c18 N73-16577

**FUEL CONTROL**  
 Attitude and propellant flow control system for liquid propellant rocket vehicles  
 [NASA-CASE-XMF-00185] c21 N70-34539  
 Flexible ring slosh damping baffle for spacecraft fuel tank  
 [NASA-CASE-LAR-10317-1] c32 N71-16103  
 Submerged fuel tank baffles to prevent sloshing in liquid propellant rocket flight  
 [NASA-CASE-XLA-04605] c32 N71-16106  
 Control valve and coaxial variable injector for controlling bipropellant mixture ratio and flow  
 [NASA-CASE-XNP-09702] c15 N71-17654  
 Force balanced throttle valve for fuel control in rocket engines  
 [NASA-CASE-NPO-10808] c15 N71-27432  
 Variable-orifice hydraulic mechanism for aircraft gas turbine engine fuel control  
 [NASA-CASE-LEW-11187-1] c28 N73-19793

**FUEL FLOW**  
 Development of system for preheating vaporized fuel for use with internal combustion engines  
 [NASA-CASE-NPO-12072] c28 N72-22772

**FUEL FLOW REGULATORS**  
 Solenoid two-step valve for bipropellant flow rate control to rocket engine

- [NASA-CASE-XMS-04890-1] c15 N70-22192  
Water electrolysis rocket engine with self-regulating stoichiometric fuel mixing regulator  
[NASA-CASE-XGS-08729] c28 N71-14044
- FUEL GAGES**  
Response analyzing apparatus for liquid vapor interface sensor of sloshing rocket propellant  
[NASA-CASE-MFS-11204] c14 N71-29134
- FUEL INJECTION**  
Apparatus for cooling and injecting hypergolic propellants into combustion chamber of small rocket engine  
[NASA-CASE-XLE-00303] c15 N70-36535  
Fuel injection system for maximum combustion efficiency of rocket engines  
[NASA-CASE-XLE-00111] c28 N70-38199  
Propellant injection assembly having individually removable and replaceable nozzles for liquid fueled rocket engines  
[NASA-CASE-XHF-00968] c28 N71-15660  
Fuel and oxidizer injection head for thrust chamber of reaction engine  
[NASA-CASE-NPO-10046] c28 N72-17843  
Improved injector with porous plug for bubbles of gas into feed lines of electrically conductive liquid  
[NASA-CASE-NPO-11377] c15 N73-27406  
Rocket propellant injector with porous faceplate for rocket engine combustion chamber  
[NASA-CASE-LEW-11071-1] c27 N73-27695
- FUEL PUMPS**  
Variable displacement fuel pump for internal combustion engines  
[NASA-CASE-MSC-12139-1] c28 N71-14058
- FUEL SYSTEMS**  
Internal labyrinth and shield structure to improve electrical isolation of propellant feed source from ion thruster  
[NASA-CASE-LEW-10210-1] c28 N71-26781  
Development of system for preheating vaporized fuel for use with internal combustion engines  
[NASA-CASE-NPO-12072] c28 N72-22772  
Development of electronic circuit for measurement transducer power supply to be used for liquid level measurement in liquid propellant rocket engines  
[NASA-CASE-MFS-21698-1] c09 N73-26196
- FUEL TANK PRESSURIZATION**  
Fuel tank pressure-relief device for venting cryogenic liquid vapors through tubes with porous plug  
[NASA-CASE-XLE-00288] c15 N70-34247  
Automatically reciprocating, high pressure pump for use in spacecraft cryogenic propellants  
[NASA-CASE-XNP-04731] c15 N71-24042  
Method and apparatus for pressurizing propellant tanks used in propulsion motor feed system  
[NASA-CASE-XNP-00650] c27 N71-28929
- FUEL TANKS**  
Reduced gravity liquid configuration simulator to study propellant behavior in rocket fuel tanks  
[NASA-CASE-XLE-02624] c12 N69-39988  
Flexible ring slosh damping baffle for spacecraft fuel tank  
[NASA-CASE-LAR-10317-1] c32 N71-16103  
Submerged fuel tank baffles to prevent sloshing in liquid propellant rocket flight  
[NASA-CASE-XLA-04605] c32 N71-16106  
Pressure sensor network for measuring liquid dynamic response in flight including fuel tank acceleration, liquid slosh amplitude, and fuel depth monitoring  
[NASA-CASE-XLA-05541] c12 N71-26387  
Electrical failure detector in solid rocket propellant motor insulation against thermal degradation by fuel grain  
[NASA-CASE-XMF-03968] c14 N71-27186  
Pressure tight seal for superalloy used in hypersonic aircraft fuel tank joints  
[NASA-CASE-LAR-10170-1] c15 N72-21471
- FUEL VALVES**  
Apparatus for cooling and injecting hypergolic propellants into combustion chamber of small rocket engine  
[NASA-CASE-XLE-00303] c15 N70-36535  
Semitoroidal diaphragm cavitating flow control valve  
[NASA-CASE-XNP-09704] c12 N71-18615
- Filler valve design for supplying liquid propellants at high pressure to space vehicles  
[NASA-CASE-XNP-01747] c15 N71-23024
- FUNCTION GENERATORS**  
Mechanical function generators with potentiometer as sensing element  
[NASA-CASE-IAC-00001] c15 N71-28952  
Digital quasi-exponential function generator  
[NASA-CASE-NPO-11130] c08 N72-20176  
Service life of electromechanical device for generating sine/cosine functions  
[NASA-CASE-LAR-10503-1] c09 N72-21248  
Function generators for producing complex vibration mode patterns used to identify vibration mode data  
[NASA-CASE-LAR-10310-1] c10 N73-20253  
Integrated circuit tanquet function generator  
[NASA-CASE-MSC-13907-1] c10 N73-26230
- FURLABLE ANTENNAS**  
Development and characteristics of extensible dipole antenna using deformable tubular metallic strip element  
[NASA-CASE-HQN-00937] c07 N71-28979  
Furlable antenna for spacecraft  
[NASA-CASE-NPO-11361] c07 N72-32169
- FURNACES**  
High speed infrared furnace  
[NASA-CASE-XLE-10466] c17 N69-25147  
Development of black-body source calibration furnace  
[NASA-CASE-XLE-01399] c33 N71-15625  
Induction heating of metallurgical specimens to high temperatures in coil furnace  
[NASA-CASE-XLE-04026] c14 N71-23267  
Electric furnace for vacuum and zero gravity melting of high melting point materials during earth orbit  
[NASA-CASE-MFS-20710] c11 N72-23215
- FUSION (MELTING)**  
Silver chloride use in technique for fusion bonding of graphite to silver, glass, ceramics, and certain other metals  
[NASA-CASE-XGS-00963] c15 N69-39735  
Process for fiberizing ceramic materials with high fusion temperatures and tensile strength  
[NASA-CASE-XNP-00597] c18 N71-23088
- FUSION WELDING**  
Fabricating solar cells with dielectric layers to improve glass fusion  
[NASA-CASE-XGS-04531] c03 N69-24267  
Control of fusion welding through use of thermocouple wire  
[NASA-CASE-MFS-06074] c15 N71-20393  
Solid state welding of butt joint by fusion welding, surface cleaning, and heating in air  
[NASA-CASE-LEW-11387-1] c15 N72-25471  
Electrical resistance butt welder for welding fine gauge tungsten/rhenium thermocouple wire  
[NASA-CASE-LAR-10103-1] c15 N73-14468

## G

## GADOLINIUM

- Doping silicon material with gadolinium to increase radiation resistance of solar cells  
[NASA-CASE-XLE-02792] c26 N71-10607  
Gadolinium or samarium doped-silicon semiconductor material with resistance to radiation damage for use in solar cells  
[NASA-CASE-XLE-10715] c26 N71-23292

## GALLIUM

- Device for measuring two orthogonal components of force with gallium flotation of measuring target for use in vacuum environments  
[NASA-CASE-XAC-04885] c14 N71-23790

## GALLIUM ARSENIDES

- Describing method for vapor deposition of gallium arsenide films to manganese substrates to provide semiconductor devices with low resistance substrates  
[NASA-CASE-XNP-01328] c26 N71-18064  
Gallium arsenide solar cell preparation by surface deposition of cuprous iodide on thin n-type polycrystalline layers and heating in iodine vapor  
[NASA-CASE-XNP-01960] c09 N71-23027  
Water content in vapor deposition atmosphere for forming n-type and p-type junctions of zinc doped gallium arsenide

- [NASA-CASE-XNP-01961] c26 N71-29156  
Graded band gap p-n junction gallium  
arsenide/gallium aluminum arsenide solar cell  
[NASA-CASE-LAR-11174-1] c03 N73-26047
- GALVANIC SKIN RESPONSE**  
Adhesive spray process for attaching biomedical  
skin electrodes  
[NASA-CASE-XFR-07658-1] c05 N71-26293
- GAMMA RAYS**  
Coaxial electrical conductor for high gamma flux  
locations of thermionic converter  
[NASA-CASE-LEW-10950-1] c09 N72-31239  
Design of gamma ray spectrometer for measurement  
of intense radiation using Compton scattering  
effect  
[NASA-CASE-MFS-21441-1] c14 N73-30392
- GANTY CRANES**  
Design and characteristics of mechanically  
extended and telescoping boom on crane assembly  
[NASA-CASE-NPO-11118] c03 N72-25021
- GARMENTS**  
Electromedical garment, applying  
vectorcardiologic type electrodes to human  
torsos for data recording during physical  
activity  
[NASA-CASE-XFR-10856] c05 N71-11189
- GAS ANALYSIS**  
Gas analyzer for bi-gaseous mixtures suitable  
for use in test facilities  
[NASA-CASE-XLA-01131] c14 N71-10774  
Describing crystal oscillator instrument for  
detecting condensable gas contaminants in  
vacuum apparatus  
[NASA-CASE-NPO-10144] c14 N71-17701  
Design and characteristics of time of flight  
mass spectrometer to measure or analyze gases  
at low pressures and time of flight of single  
gas molecule  
[NASA-CASE-XNP-01056] c14 N71-23041  
Microwave double resonance spectroscopy  
absorption cell for gas analysis  
[NASA-CASE-LAR-10305] c14 N71-26137  
Ion microprobe mass spectrometer with cooled  
electrode target for analyzing traces of fluids  
[NASA-CASE-ERC-10014] c14 N71-28863  
Development and characteristics of injection  
system for use with gas chromatograph  
[NASA-CASE-ARC-10344-1] c14 N72-21433  
Nondispersive gas analysis using radiation  
detection for quantitative analysis  
[NASA-CASE-ARC-10308-1] c06 N72-31141  
Apparatus for analyzing gas samples in  
containers including vacuum chamber, mass  
spectrometer, and gas chromatography  
[NASA-CASE-GSC-10903-1] c14 N73-12444
- GAS BAGS**  
Payload soft landing system using stowable gas bag  
[NASA-CASE-XLA-09881] c31 N71-16085
- GAS BEARINGS**  
Externally pressurized air bearing for gyros  
operating in high temperature, low gravity  
environments  
[NASA-CASE-XMF-00515] c15 N70-34664  
Slit regulated gas journal bearing  
[NASA-CASE-XNP-00476] c15 N70-38620  
Air bearings for spacecraft gyros  
[NASA-CASE-XMF-00339] c15 N70-39896  
Air bearings for near frictionless transfer of  
loads from one body to another  
[NASA-CASE-XMF-01887] c15 N71-10617  
Fluid power transmission and gas bearing system  
[NASA-CASE-XMS-01445] c12 N71-16031  
Bismuth and lead surface coatings for gas  
bearings in aerospace engineering  
[NASA-CASE-XGS-02011] c15 N71-20739  
Swivel support for gas bearing for position  
adjustment between ball and supporting cup  
[NASA-CASE-XMF-07808] c15 N71-23812  
Low friction gas bearing system for fluid power  
transmission to bearing-supported payload  
[NASA-CASE-ERC-10097] c15 N71-28465  
Gas bearing for model support with capacity for  
measuring angular displacement of model in  
bearing  
[NASA-CASE-XLA-09346] c15 N71-28740  
Journal air bearing with cylindrical cup  
designed to ride on shaft  
[NASA-CASE-MFS-20423] c15 N72-11388
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[NASA-CASE-WLP-10002] c15 N72-17451
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[NASA-CASE-XNP-04816] c06 N69-39936  
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[NASA-CASE-XNP-03128] c10 N70-41991  
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[NASA-CASE-NPO-10234] c06 N72-17094  
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[NASA-CASE-ARC-10344-1] c14 N72-21433  
Gas chromatographic method for analyzing  
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[NASA-CASE-NPO-11322] c06 N72-25146  
Ultraviolet chromatographic detector for  
quantitative and qualitative analysis of  
compounds  
[NASA-CASE-HQN-10756-1] c14 N72-25428  
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thermal energy generation  
[NASA-CASE-LEW-10250-1] c22 N71-28759
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with Joule-Thomson valve assembly  
[NASA-CASE-NPO-10309] c15 N69-23190  
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[NASA-CASE-XLE-09475-1] c33 N71-15568
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[NASA-CASE-XAC-02877] c14 N70-41681  
Device for simultaneously determining density,  
velocity, and temperature of streaming gas  
[NASA-CASE-XLA-03375] c16 N71-24074  
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[NASA-CASE-XER-11203] c14 N71-28994  
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[NASA-CASE-XLE-04599] c22 N72-20597  
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[NASA-CASE-NPO-10440] c15 N72-21466  
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[NASA-CASE-LAR-10000] c14 N73-30394
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[NASA-CASE-ERC-10034] c15 N71-24896  
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slow-wave structure in gas discharge plasma  
[NASA-CASE-XER-11019] c09 N71-23598
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[NASA-CASE-MFS-14711] c15 N71-26185

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 [NASA-CASE-XNP-08877] c15 N71-23025  
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 [NASA-CASE-NPO-10117] c15 N71-15608  
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 [NASA-CASE-MFS-12806] c14 N71-17588  
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 [NASA-CASE-MPS-12915] c11 N71-17600  
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 [NASA-CASE-XMF-01779] c12 N71-20815  
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 [NASA-CASE-FRC-10012] c14 N72-17329  
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 [NASA-CASE-NPO-12109] c11 N72-22245  
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 [NASA-CASE-ARC-10106-1] c28 N72-22769  
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 [NASA-CASE-MSC-12297] c14 N72-23457  
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 [NASA-CASE-KSC-10644] c09 N72-27227  
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 [NASA-CASE-NPO-10633] c03 N72-28025  
 Gas flow control device, including housing and input port  
 [NASA-CASE-NPO-11479] c15 N73-13462  
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 [NASA-CASE-MFS-21424-1] c12 N73-16248  
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 [NASA-CASE-MSC-14143-1] c33 N73-32823

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 Chlorine generator for purifying water in life support systems of manned spacecraft  
 [NASA-CASE-XLA-08913] c14 N71-28933  
 Gas operated quick disconnect coupling for umbilical connectors  
 [NASA-CASE-NPO-11202] c15 N72-25450  
 Actuator operated by electrolytic drive gas generator and evacuator  
 [NASA-CASE-NPO-11369] c15 N73-13467  
 Development and operating principles of gas generator for deploying recovery parachutes from space capsules during atmospheric entry  
 [NASA-CASE-LAR-10549-1] c31 N73-13898

**GAS GUNS**  
 Electric arc device for minimizing electrode ablation and heating gases to supersonic or hypersonic wind tunnel temperatures  
 [NASA-CASE-XAC-00319] c25 N70-41628

**GAS INJECTION**  
 Pressurized gas injection for burning rate control of solid propellants  
 [NASA-CASE-XLE-03494] c27 N71-21819

**GAS IONIZATION**  
 Electrostatic modulator for communicating through plasma sheath formed around spacecraft during reentry  
 [NASA-CASE-XLA-01400] c07 N70-41331  
 Multichannel photoionization chamber for measuring absorption, photoionization yield, and coefficients of gases  
 [NASA-CASE-ERC-10044-1] c14 N71-27090

**GAS LASERS**  
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 [NASA-CASE-ERC-10210] c16 N70-41525  
 Gas laser frequency stabilized by position of mirrors in resonant cavity  
 [NASA-CASE-XGS-03644] c16 N71-18614  
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 [NASA-CASE-ARC-10370-1] c16 N72-10432

**GAS LUBRICANTS**  
 High temperature gas lubricant consisting of two fluoro-bromo-methanes  
 [NASA-CASE-XLE-00353] c18 N70-39897

**GAS MASERS**  
 Solid state chemical source for ammonia beam masers  
 [NASA-CASE-XGS-01504] c16 N70-41578  
 Atomic hydrogen maser with bulb temperature control by output frequency difference signal for wall shift elimination  
 [NASA-CASE-HQN-10654-1] c16 N73-13489

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 [NASA-CASE-XLA-01131] c14 N71-10774  
 Equipment for measuring partial water vapor pressure in gas tank  
 [NASA-CASE-XMS-01618] c14 N71-20741  
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 [NASA-CASE-XMS-02952] c18 N71-20742  
 Gas chromatographic method for analyzing hydrogen deuterium mixtures  
 [NASA-CASE-NPO-11322] c06 N72-25146

**GAS PIPES**  
 Tubular flow restrictor for gas flow control in pipeline  
 [NASA-CASE-NPO-10117] c15 N71-15608

**GAS PRESSURE**  
 Expulsion and measuring device for determining quantity of liquid in tank under conditions of weightlessness  
 [NASA-CASE-XMS-01546] c14 N70-40233  
 Dynamic sensor for gas pressure or density measurement  
 [NASA-CASE-XAC-02877] c14 N70-41681  
 Wide range dynamic pressure sensor with vibrating diaphragm for measuring density and pressure of gaseous environment  
 [NASA-CASE-ARC-10263-1] c14 N72-22438

**GAS STREAMS**  
 Device for simultaneously determining density, velocity, and temperature of streaming gas  
 [NASA-CASE-XLA-03375] c16 N71-24074  
 Device for measuring stagnation pressure of supersonic gas streams  
 [NASA-CASE-LAR-11139-1] c14 N73-20483

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 Device for simultaneously determining density, velocity, and temperature of streaming gas  
 [NASA-CASE-XLA-03375] c16 N71-24074

**GAS TURBINE ENGINES**  
 Variable-orifice hydraulic mechanism for aircraft gas turbine engine fuel control  
 [NASA-CASE-LEW-11187-1] c28 N73-19793  
 Airflow distribution control in gas turbine engines  
 [NASA-CASE-LEW-11593-1] c28 N73-25816  
 Swirl can, full-annulus combustion chambers for high performance gas turbine engines  
 [NASA-CASE-LEW-11326-1] c23 N73-30665

**GAS TURBINES**  
 Method for maintaining good performance in gas turbine during air flow distortion  
 [NASA-CASE-LEW-10286-1] c28 N71-28915  
 Exhaust nozzle for reducing noise in gas turbines by mixing low velocity air with high velocity engine exhaust  
 [NASA-CASE-LEW-11569-1] c28 N73-14792

**GAS VALVES**  
 High-temperature, high-pressure spherical segment valve  
 [NASA-CASE-XAC-00074] c15 N70-34817  
 Shrink-fit vacuum system gas valve  
 [NASA-CASE-XGS-00587] c15 N70-35087  
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 [NASA-CASE-XLE-00815] c15 N70-35407

- Three-port transfer valve with one port open continuously suitable for manned space flight  
[NASA-CASE-XAC-01158] c15 N71-23051
- GAS WELDING**  
Emission spectroscopy method for contamination monitoring of inert gas metal arc welding  
[NASA-CASE-XMP-02639] c15 N71-15871
- GASEOUS DIFFUSION**  
Gas purged dry box glove reducing permeation of air or moisture into dry box or isolator by diffusion through glove  
[NASA-CASE-XLE-02531] c65 N71-23080  
Gaseous core diffusion nuclear reactor for thermal energy generation  
[NASA-CASE-LEW-10250-1] c22 N71-28759
- GASEOUS FISSION REACTORS**  
Nuclear gaseous reactor for heating working fluid to high temperatures  
[NASA-CASE-XLE-00321] c22 N70-34572  
Gaseous core diffusion nuclear reactor for thermal energy generation  
[NASA-CASE-LEW-10250-1] c22 N71-28759
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Electrostatic ion engines using high velocity electrons to ionize propellant  
[NASA-CASE-XLE-00376] c28 N70-37245  
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[NASA-CASE-XMP-06926] c28 N71-22983
- GASES**  
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[NASA-CASE-NPO-10070] c15 N71-27372  
High speed scanner for measuring mass of preselected gases at high sampling rate  
[NASA-CASE-LAR-10766-1] c14 N72-21432  
Observation window for internal gas confining chamber  
[NASA-CASE-NPO-10890] c11 N73-12265  
Device for detection of combustion light preceding gaseous explosions  
[NASA-CASE-LAR-10739-1] c14 N73-16484
- GASKETS**  
Leakproof soft metal seal for use in very high vacuum systems operating at cryogenic temperatures  
[NASA-CASE-XGS-02441] c15 N70-41629  
Laminated polyquinoxaline resin/fiberglass gasket, resistant to ionizing radiation and liquid hydrogen temperatures  
[NASA-CASE-MFS-21364] c15 N72-20460
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[NASA-CASE-XGS-01881] c09 N70-40123  
Silicon controlled rectifier pulse gate amplifier for blocking false gating caused by negative transient voltages  
[NASA-CASE-XLA-07497] c09 N71-12514  
Logic AND gate for fluid circuits  
[NASA-CASE-XLA-07391] c12 N71-17579  
Synchronous counter design incorporating cascaded binary stages driven by previous stages and inputs through NAND gates  
[NASA-CASE-XGS-02440] c08 N71-19432  
Switching series regulator with gating control network  
[NASA-CASE-XMS-09352] c09 N71-23316  
Gated compressor, distortionless signal limiter with plurality of channels  
[NASA-CASE-NPO-11820-1] c07 N72-28166
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[NASA-CASE-LAR-10686] c14 N71-28935
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[NASA-CASE-MFS-14772] c15 N71-17692  
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[NASA-CASE-XGS-04227] c15 N71-21744  
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[NASA-CASE-MFS-14971] c15 N71-24984  
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[NASA-CASE-ARC-10462-1] c15 N73-29459
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[NASA-CASE-NPO-10250] c23 N71-16212
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[NASA-CASE-XNP-00920] c15 N71-15906  
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[NASA-CASE-XMF-01544] c28 N70-34162  
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[NASA-CASE-XMP-01669] c21 N71-23289  
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[NASA-CASE-GSC-10306-1] c15 N71-24694  
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[NASA-CASE-XLE-10326-2] c15 N72-29488
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[NASA-CASE-XGS-04531] c03 N69-24267  
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[NASA-CASE-XLE-02624] c12 N69-39988  
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[NASA-CASE-XLE-08569] c03 N71-23449  
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[NASA-CASE-XGS-00359] c14 N70-34158  
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design using parallel transistors  
[NASA-CASE-MFS-22342-1] c09 N73-24236

**GYROSCOPES**  
Externally pressurized air bearing for gyros  
operating in high temperature, low gravity  
environments  
[NASA-CASE-XMF-00515] c15 N70-34664  
Air bearings for spacecraft gyros  
[NASA-CASE-XMP-00339] c15 N70-39896  
Development of spacecraft experiment pointing  
and attitude control system  
[NASA-CASE-XLA-05464] c21 N71-14132  
Spin stabilized gyroscope having spinning rotor  
and stationary platform  
[NASA-CASE-GSC-11479-1] c21 N73-11680  
Temperature corrected circuit for gyroscope or  
accelerometer of digital rebalance type  
[NASA-CASE-NPO-13044-1] c14 N73-13436  
Strapped down gyroscope aligned with sun and  
star tracker optical axis calibrating roll,  
yaw and pitch values  
[NASA-CASE-ARC-10716-1] c31 N73-32784

**GYROSTABILIZERS**  
Spin stabilized gyroscope having spinning rotor  
and stationary platform  
[NASA-CASE-GSC-11479-1] c21 N73-11680

## H

**HAFNIUM**  
Thermal shock resistant hafnia ceramic materials  
[NASA-CASE-LAR-10894-1] c18 N73-14584

**HALIDES**  
Grinding mixtures of powdered metals and inert  
fillers for conversion to halide  
[NASA-CASE-LEW-10450-1] c15 N72-25448

**HALL EFFECT**  
Current measurement by use of Hall effect  
generator  
[NASA-CASE-XAC-01662] c14 N71-23037  
Brushless dc tachometer design with Hall effect  
crystals and output voltage magnitude  
proportional to rotor speed  
[NASA-CASE-MFS-20385] c09 N71-24904  
Development of Hall effect transducer for  
converting mechanical shaft rotations into  
proportional electrical signals  
[NASA-CASE-LAR-10620-1] c09 N72-25255  
Development and characteristics of magnetometer  
with single Bi<sub>2</sub>Se<sub>3</sub> crystal as sensing element  
[NASA-CASE-LEW-11632-1] c14 N72-25440  
Hall effect magnetometer for measuring magnetic  
fields  
[NASA-CASE-LEW-11632-2] c14 N73-29437  
Speed control system for dc motor equipped with  
brushless Hall effect device  
[NASA-CASE-MFS-20207-1] c09 N73-32107

**HALL GENERATORS**  
Current measurement by use of Hall effect  
generator  
[NASA-CASE-XAC-01662] c14 N71-23037

**HALOGENS**  
Modification of polyurethanes with alkyl halide  
resins, inorganic salts, and encapsulated  
volatile and reactive halogen for fuel fire  
control  
[NASA-CASE-ARC-10098-1] c06 N71-24739

**HAMMERS**  
Exponential horn, copper plate, magnetic hammer,  
and anvil in apparatus for making diamonds  
[NASA-CASE-MFS-20698] c15 N72-20446

**HAND (ANATOMY)**  
Mechanically operated hand which can depress  
trigger using touch control device  
[NASA-CASE-MFS-20413] c15 N72-21463

**HANDLING EQUIPMENT**  
Supporting and protecting frame structure and  
plug for empty thrust chamber assembly,  
handling, and shipping  
[NASA-CASE-XMF-00580] c11 N70-35383  
Handling tool for printed circuit cards  
[NASA-CASE-MFS-20453] c15 N71-29133

**HARDENING**  
Boron radiation hardening for stabilizing gate  
threshold potential of MOS devices  
[NASA-CASE-GSC-11425-2] c09 N73-32114

**HARMONIC GENERATORS**  
Wideband generator for producing sine wave  
quadrature and second harmonic of input signal  
[NASA-CASE-NPO-11133] c10 N72-20223

**HARNESSES**  
Helmet and torso tiedown mechanism for  
shortening pressure suits upon inflation  
[NASA-CASE-XMS-00784] c05 N71-12335  
One hand backpack harness  
[NASA-CASE-LAR-10102-1] c05 N72-23085  
Combined shoulder harness and lap belt restraint  
system for use in aircraft or automobiles  
[NASA-CASE-ARC-10519-1] c05 N72-31117

**HATCHES**  
Design and specifications of emergency escape  
system for spacecraft structures  
[NASA-CASE-MSC-12086-1] c05 N71-12345

**HEART FUNCTION**  
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recording movements of organs such as heart  
valves  
[NASA-CASE-ARC-10597-1] c05 N72-31116  
Development of instantaneous reading tachometer  
for measuring electrocardiogram signal rate  
[NASA-CASE-MFS-20418] c14 N73-24473

**HEART RATE**  
Digital cardiometer incorporating circuit  
for measuring heartbeat rate of subject over  
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[NASA-CASE-XMS-02399] c05 N71-22896  
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measurement  
[NASA-CASE-MFS-20284] c05 N72-22098  
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for measuring electrocardiogram signal rate  
[NASA-CASE-MFS-20418] c14 N73-24473
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directly into electrical energy  
[NASA-CASE-XLE-01903] c22 N71-23599
- HEAT EXCHANGERS**  
Electrothermal rocket engine using resistance  
heated heat exchanger  
[NASA-CASE-XLE-00267] c28 N70-33356  
Space suit body heat exchanger design composed  
of thermal conductance yarn and liquid coolant  
loops  
[NASA-CASE-XMS-09571] c05 N71-19439  
Dual solid cryogenics for spacecraft refrigeration  
insuring low temperature cooling for extended  
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[NASA-CASE-GSC-10188-1] c23 N71-24725  
Shell-side liquid metal boiler employing tube  
and shell heat exchanger  
[NASA-CASE-NPO-10831] c33 N72-20915  
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multistage refrigeration unit  
[NASA-CASE-NPO-10634] c23 N72-25619  
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removing condensate from heat exchangers with  
straight through gas flow  
[NASA-CASE-MSC-14143-1] c33 N73-32823
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shield to reduce radiative transfer between  
sensor elements  
[NASA-CASE-XMS-05909-1] c14 N69-27459  
Heat flux sensor adapted for mounting on  
aircraft or spacecraft to measure aerodynamic  
heat flux inflow to aircraft skin  
[NASA-CASE-XPR-03802] c33 N71-23085  
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and cooling processes  
[NASA-CASE-NPO-10828] c33 N72-17948
- HEAT MEASUREMENT**  
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[NASA-CASE-XAC-10768] c09 N71-18830
- HEAT PIPES**  
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for supporting wick against wall of shell  
[NASA-CASE-NPO-11120] c33 N70-41524  
Electric power system utilizing thermionic  
plasma diodes in parallel and heat pipes as  
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[NASA-CASE-XMF-05843] c03 N71-11055  
Microwave power receiving antenna solving heat  
dissipation problems by construction of  
elements as heat pipe devices  
[NASA-CASE-MFS-20333] c09 N71-13486  
Double-wall isothermal cylinder containing heat  
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[NASA-CASE-MFS-20355] c33 N71-25353  
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bombardment of cesium heat pipe causing  
spallation reaction  
[NASA-CASE-LEW-11390-2] c24 N73-20763  
Heat pipe production of high purity radioiodine  
for thyroid measurements  
[NASA-CASE-LEW-11390-3] c11 N73-28128  
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[NASA-CASE-GSC-11619-1] c33 N73-32828
- HEAT PUMPS**  
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energy  
[NASA-CASE-XLA-00377] c33 N71-17610  
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converting human operator output into heat  
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[NASA-CASE-NPO-10677] c05 N72-11084  
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for transmitting warming fluid through fluid  
circuit to control temperature of spacecraft  
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[NASA-CASE-NPO-11417] c15 N73-24513
- HEAT RADIATORS**  
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liquid in planetary spacecraft structures  
[NASA-CASE-XLE-03307] c33 N71-14035  
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controlled environmental conditions  
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- HEAT RESISTANT ALLOYS**  
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blades operating at high temperatures  
[NASA-CASE-XLE-00151] c17 N70-33283  
Nickel alloy series for aerospace structures  
subjected to high temperatures  
[NASA-CASE-XLE-00283] c17 N70-36616  
High temperature cobalt-base alloy resistant to  
corrosion by liquid metals and to sublimation  
in vacuum environment  
[NASA-CASE-XLE-02991] c17 N71-16025  
Brazing alloy adapted for brazing corrosion  
resistant steel to refractory metals, also for  
brazing refractory metals to other refractory  
metals  
[NASA-CASE-XNP-03063] c17 N71-23365  
Pressure tight seal for superalloy used in  
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[NASA-CASE-LAR-10170-1] c15 N72-21471  
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[NASA-CASE-LEW-10805-2] c15 N72-21485  
Intermetallic coating for nickel based superalloy  
[NASA-CASE-LEW-11348-1] c17 N72-25517  
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[NASA-CASE-LEW-10805-3] c17 N72-28542  
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[NASA-CASE-LEW-10805-1] c15 N73-13465  
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[NASA-CASE-MFS-22324-1] c18 N73-21471  
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and analysis of various compositions to show  
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- HEAT SHIELDING**  
Heat flux sensor assembly with proviso for heat  
shield to reduce radiative transfer between  
sensor elements  
[NASA-CASE-XMS-05909-1] c14 N69-27459  
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[NASA-CASE-XMS-00486] c33 N70-33344  
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heat shield to provide longitudinal and  
directional stability at hypersonic velocities  
[NASA-CASE-XMS-04142] c31 N70-41631  
Transpirationally cooled heat ablation system  
for interplanetary spacecraft reentry shielding  
[NASA-CASE-XMS-02677] c31 N70-42075  
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[NASA-CASE-XMF-08656] c06 N71-11242  
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acetal amine reactions  
[NASA-CASE-XMF-08652] c06 N71-11243  
Preparation and characteristics of lightweight  
refractory insulation  
[NASA-CASE-XMF-05279] c18 N71-16124  
Development and characteristics of thermal  
radiation shielding of refractory metal foil  
used for induction furnace  
[NASA-CASE-XLE-03432] c33 N71-24145  
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shell structure heat shielding and built-in,  
removable excursion module  
[NASA-CASE-MSC-13047-1] c31 N71-25434  
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eliminating heat shorts for use in  
manufacturing space suits  
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## HEAT SINKS

Thermal conductive, electrically insulated cleavable adhesive connection between electronic module and heat sink [NASA-CASE-XMS-02087] c09 N70-41717

Development and characteristics of calorimeter with integral heat sink for maintenance of constant temperature [NASA-CASE-XMF-04268] c33 N71-29051

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Black body radiometer design with temperature sensing and cavity heat source cone winding [NASA-CASE-XNP-09701] c14 N71-26475

Radioactive isotope capsule container design for atmospheric reentry protection and heat transmission to spacecraft [NASA-CASE-LEW-11227-1] c33 N71-35153

Thermally cascaded thermoelectric generator with radioisotopic heat source [NASA-CASE-NPO-10753] c03 N72-26031

## HEAT TRANSFER

Thermal switch for transferring excess heat from one region to another heat dissipating one [NASA-CASE-XNP-00463] c33 N70-36847

Sandwich panel structure for removing heat from shield between hot and cold areas [NASA-CASE-XLA-00349] c33 N70-37979

Apparatus for cryogenic liquid storage with heat transfer reduction and for liquid transfer at zero gravity conditions [NASA-CASE-XLE-00345] c15 N70-38020

Method for improving heat transfer characteristics in nucleate boiling process [NASA-CASE-XMS-04268] c33 N71-16277

Design and development of device for cooling inner conductor of coaxial cable [NASA-CASE-XNP-09775] c09 N71-20445

Heat sensing instrument, using thermocouple junction connected under heavy conducting material [NASA-CASE-XLA-01551] c14 N71-22989

Mixed liquid and vapor phase analyzer design with thermocouples for relative heat transfer measurement [NASA-CASE-NPO-10691] c14 N71-26199

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Manually activated heat pump for mechanically converting human operator output into heat energy [NASA-CASE-NPO-10677] c05 N72-11084

High intensity radiant energy pulse source for calibrating heat transfer gauges with thermoluminescent shutter activation [NASA-CASE-ARC-10178-1] c09 N72-17152

Development of thermocouple instrument for measuring temperature of wall heated by flowing fluid without disturbing boundary layer [NASA-CASE-XLE-05230] c14 N72-27410

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Development and characteristics of thermal control system for maintaining constant temperature within spacecraft module with wide variations of component heat transfer [NASA-CASE-GSC-11018-1] c31 N73-30829

Temperature control of welding equipment by detection of discrete bands of infrared radiation from objects being heated [NASA-CASE-MFS-20781-2] c14 N73-31401

Thermal flux transfer system for maintaining thrust chamber of operative reaction motor at given temperatures [NASA-CASE-NPO-12070-1] c28 N73-32606

Electrostatically controlled heat transfer system for conducting thermal energy [NASA-CASE-NPO-11942-1] c33 N73-32818

**HEAT TRANSMISSION**

Radioactive isotope capsule container design for atmospheric reentry protection and heat transmission to spacecraft

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Oven for heat treating heat shields [NASA-CASE-XMS-04318] c15 N69-27871

Vacuum method for molding thermosetting compounds used as ablative materials [NASA-CASE-XLA-01091] c15 N71-10672

Production of refractory bodies with controlled porosity by pressing and heating mixtures of refractory and inert metal powders [NASA-CASE-LEW-10393-1] c17 N71-15468

White paint production by heating impure aluminum silicate clay having low solar absorptance [NASA-CASE-XNP-02139] c18 N71-24184

Method for diffusion welding dissimilar metals in vacuum chamber [NASA-CASE-GSC-10303] c15 N72-22487

Pressurized heat treatment of formed superalloy powder products [NASA-CASE-LEW-10805-3] c17 N72-28542

Development of method for fabricating ceramets and analysis of various compositions to show electrical and physical properties [NASA-CASE-NPO-13120-1] c18 N73-23629

**HEATING**

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**HEATING EQUIPMENT**

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Electric arc heater with supersonic nozzle and fixed arc length for use in high temperature wind tunnels [NASA-CASE-XAC-01677] c09 N71-20816

Radial heat flux transformer for use in heating and cooling processes [NASA-CASE-NPO-10828] c33 N72-17948

Tank heater for lowering viscosity of highly viscous liquids in storage tanks [NASA-CASE-WLP-10040-1] c15 N73-13475

Self-cycling fluid heater for heating continuous fluid stream to ultrahigh temperatures to facilitate chemical reactions [NASA-CASE-MSC-15567-1] c33 N73-16918

Cyclically heated auxiliary chamber for heating and mixing stored fluids [NASA-CASE-ARC-10442-1] c14 N73-30415

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Collapsible high gain antenna which can be automatically expanded to operating state [NASA-CASE-KSC-10392] c07 N73-26117

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Variable geometry rotor system for direct control over wake vortex [NASA-CASE-LAR-10557] c02 N72-11018

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Helium refining by superfluidity [NASA-CASE-XNP-00733] c06 N70-34946

Apparatus and method capable of receiving large quantity of high pressure helium, removing impurities, and discharging at received pressure [NASA-CASE-XMF-06888] c15 N71-24044

**HELIUM-NEON LASERS**

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Transparent polycarbonate resin, shell helmet and latch design for high altitude and space flight [NASA-CASE-XMS-04935] c05 N71-11190

Electrode attached to helmets for detecting low level signals from skin of living creatures [NASA-CASE-ARC-10043-1] c05 N71-11193

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 [NASA-CASE-NPO-10337] c14 N71-15604

**HERMETIC SEALS**  
 Piston in bore cutter for severing parachute control lines and sealing cable hole to prevent water leakage into load  
 [NASA-CASE-XMS-04072] c15 N70-42017  
 Hermetically sealed explosive release mechanism for actuator device  
 [NASA-CASE-IGS-00824] c15 N71-16078  
 Sealing apparatus for joining two pieces of fragile materials  
 [NASA-CASE-XLA-01494] c15 N71-24164  
 Method for locating leaks in hermetically sealed containers  
 [NASA-CASE-ERC-10045] c15 N71-24910  
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 [NASA-CASE-MS-10959] c15 N71-26243  
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 [NASA-CASE-XNP-01263-2] c15 N71-26312  
 Pressure seals suitable for use in environmental test chambers  
 [NASA-CASE-NPO-10796] c15 N71-27068  
 Hermetic sealing device for ends of tubular bodies during materials testing operations  
 [NASA-CASE-NPO-10431] c15 N71-29132  
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 [NASA-CASE-HFS-14710] c09 N72-22195  
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**HEXOKINASE**  
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 [NASA-CASE-XGS-05533] c04 N69-27487

**HIGH ACCELERATION**  
 Astronaut restraint suit for high acceleration protection  
 [NASA-CASE-XAC-00405] c05 N70-41819

**HIGH ALTITUDE**  
 Compact bellows spirometer for high speed and high altitude space travel  
 [NASA-CASE-XAR-01547] c05 N69-21473

**HIGH ALTITUDE ENVIRONMENTS**  
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 [NASA-CASE-XLA-04126] c28 N71-26779

**HIGH ASPECT RATIO**  
 Aerospace configuration with low and high aspect ratio variability for high and low speed flight  
 [NASA-CASE-XLA-00142] c02 N70-33286  
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 [NASA-CASE-XLA-00806] c02 N70-34858

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 Converging coaxial plasma accelerator for generating dense high velocity plasma bursts  
 [NASA-CASE-ARC-10109] c25 N71-29181

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 Apparatus for ballasting high frequency transistors  
 [NASA-CASE-XGS-05003] c09 N69-24318  
 Holder for high frequency crystal resonators  
 [NASA-CASE-XNP-03637] c15 N71-21311  
 Multiple varactor for generating high frequencies with high power and high conversion efficiency  
 [NASA-CASE-XMF-04958-1] c10 N71-26414

**HIGH GRAVITY ENVIRONMENTS**  
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**HIGH PASS FILTERS**  
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**HIGH POLYMERS**  
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 [NASA-CASE-XAC-11225] c14 N69-27486

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 High-temperature, high-pressure spherical segment valve  
 [NASA-CASE-XAC-00074] c15 N70-34817  
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 [NASA-CASE-XNP-00214] c15 N70-36908  
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 [NASA-CASE-XNP-00732] c28 N70-41447  
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 [NASA-CASE-XNP-01152] c15 N70-41811  
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 [NASA-CASE-XLE-02998] c14 N70-42074  
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 [NASA-CASE-XNP-00710] c15 N71-10778  
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 [NASA-CASE-XLA-00378] c11 N71-15925  
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 [NASA-CASE-MS-11010] c15 N71-19485  
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 [NASA-CASE-XKS-02582] c15 N71-21234  
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 [NASA-CASE-XMF-06888] c15 N71-24044  
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**HIGH RESOLUTION**  
 High resolution attitude sensor for sensing spacecraft attitude relative to light source  
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 High resolution radar transmitting system for transmitting optical pulses to targets  
 [NASA-CASE-NPO-11426] c07 N73-26119  
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 [NASA-CASE-HFS-20932-1] c14 N73-27380

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 [NASA-CASE-XAR-01547] c05 N69-21473  
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 [NASA-CASE-XAC-00060] c09 N70-39915  
 Impact testing machine for imparting large impact forces on high velocity packages  
 [NASA-CASE-XNP-04817] c14 N71-23225  
 Flow meter for measuring stagnation pressure in boundary layer around high speed flight vehicle  
 [NASA-CASE-XFR-02007] c12 N71-24692  
 Method for reducing mass of ball bearings for long life operation at high speed  
 [NASA-CASE-LEW-10856-1] c15 N72-22490

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 Electrically operated rotary shutter for television camera aboard spacecraft  
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**HIGH STRENGTH**  
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**HIGH STRENGTH ALLOYS**  
 High strength, corrosion resistant cobalt-based alloys for aerospace structures  
 [NASA-CASE-XLE-00726] c17 N71-15644  
 High strength aluminum casting alloy for cryogenic applications in aerospace engineering  
 [NASA-CASE-XMF-02786] c17 N71-20743  
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[NASA-CASE-LEW-10874-1] c17 N72-22535

Cobalt-tungsten alloys with superior strength at elevated temperatures  
[NASA-CASE-LEW-10436-1] c17 N73-32415

**HIGH TEMPERATURE**

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[NASA-CASE-XLE-00490] c33 N70-34545

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[NASA-CASE-NPO-10404] c03 N71-12255

Hypersonic test facility for studying ablation in models under high pressure and high temperature  
[NASA-CASE-XLA-00378] c11 N71-15925

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[NASA-CASE-XNP-00597] c18 N71-23088

Induction heating of metallurgical specimens to high temperatures in coil furnace  
[NASA-CASE-XLE-04026] c14 N71-23267

Method of forming ceramic to metal seals impervious to gaseous and liquid mercury at high temperature  
[NASA-CASE-XNP-01263-2] c15 N71-26312

Method for making fiber composites with high strength at high temperatures  
[NASA-CASE-LEW-10424-2-2] c18 N72-25539

Superalloys from prealloyed powders at high temperatures  
[NASA-CASE-LEW-10805-1] c15 N73-13465

**HIGH TEMPERATURE AIR**

Apparatus and method for generating large mass flow of high temperature air at hypersonic speeds  
[NASA-CASE-LAR-10612-1] c12 N73-28144

**HIGH TEMPERATURE ENVIRONMENTS**

High speed infrared furnace  
[NASA-CASE-XLE-10466] c17 N69-25147

Nickel alloy series for aerospace structures subjected to high temperatures  
[NASA-CASE-XLE-00283] c17 N70-36616

Water cooled gage for strain measurements in high temperature environments  
[NASA-CASE-XNP-09205] c14 N71-17657

**HIGH TEMPERATURE FLUIDS**

Self-cycling fluid heater for heating continuous fluid stream to ultrahigh temperatures to facilitate chemical reactions  
[NASA-CASE-MSC-15567-1] c33 N73-16918

**HIGH TEMPERATURE GASES**

Multiple wavelength radiation measuring instrument for determining hot body or gas temperature  
[NASA-CASE-XLE-00011] c14 N70-41946

Ablative resins used for retarding regression in ablative material  
[NASA-CASE-XLE-05913] c33 N71-14032

Transient heat transfer gage for measuring total radiant intensity from far ultraviolet and ionized high temperature gases  
[NASA-CASE-XNP-09802] c33 N71-15641

Generation of high temperature, high mass flow, and high Reynolds number air at hypersonic speeds  
[NASA-CASE-LAR-10578-1] c12 N73-25262

**HIGH TEMPERATURE LUBRICANTS**

Production of barium fluoride-calcium fluoride composite lubricant for bearings or seals  
[NASA-CASE-XLE-08511-2] c18 N71-16105

Self lubricating fluoride-metal composite materials for outer space applications  
[NASA-CASE-XLE-08511] c18 N71-23710

**HIGH TEMPERATURE PLASMAS**

Apparatus for producing highly conductive, high temperature electron plasma with homogeneous temperature and pressure distribution  
[NASA-CASE-XLA-00147] c25 N70-34661

**HIGH TEMPERATURE PROPELLANTS**

Development of system for delivering vaporized mercury to electron bombardment ion engine  
[NASA-CASE-NPO-10737] c28 N72-11709

**HIGH TEMPERATURE RESEARCH**

Fire retardant polyisocyanurate foam with high temperature resistance  
[NASA-CASE-ARC-10280-1] c18 N70-34695

Gas cooled high temperature thermocouple  
[NASA-CASE-XLE-09475-1] c33 N71-15568

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Fatigue testing apparatus with light shield and infrared reflector for high temperature evaluation of loaded sheet samples  
[NASA-CASE-XLA-01782] c14 N71-26136

**HIGH TEMPERATURE TESTS**

High-temperature, high-pressure spherical sequent valve  
[NASA-CASE-XAC-00074] c15 N70-34817

Test apparatus for determining mechanical properties of refractory materials at high temperatures in vacuum or inert atmospheres  
[NASA-CASE-XLE-00335] c14 N70-35368

Apparatus for testing metallic and nonmetallic beams or rods by bending at high temperatures in vacuum or inert atmosphere  
[NASA-CASE-XLE-01300] c15 N70-41993

**HIGH VACUUM**

Epoxy resin sealing device for electrochemical cells in high vacuum environments  
[NASA-CASE-XGS-02630] c03 N71-22974

Device for high vacuum film deposition with electromagnetic ion steering  
[NASA-CASE-NPO-10331] c09 N71-26701

Absolute pressure measuring device for measuring gas density level in high vacuum range  
[NASA-CASE-LAR-10000] c14 N73-30394

**HIGH VACUUM ORBITAL SIMULATOR**

Space environmental work simulator with portions of space suit mounted to vacuum chamber wall  
[NASA-CASE-XMF-07488] c11 N71-18773

**HIGH VOLTAGES**

Hollow spherical electrode for shielding dielectric junction between high voltage conductor and insulator  
[NASA-CASE-XLE-03778] c09 N69-21542

High voltage cable for use in high intensity ionizing radiation fields  
[NASA-CASE-XNP-00738] c09 N70-38201

High voltage pulse generator for testing flash and ignition limits of nonmetallic materials in controlled atmospheres  
[NASA-CASE-MSC-12178-1] c09 N71-13518

High voltage transistor circuit  
[NASA-CASE-XNP-06937] c09 N71-19516

High voltage divider system for attenuating high voltages to convenient levels suitable for introduction to measuring circuits  
[NASA-CASE-XLE-02008] c09 N71-21583

High-voltage isolator design for injecting hydrogen bubbles into liquid metal feed lines to interrupt electrical continuity  
[NASA-CASE-NPO-11075] c09 N71-34208

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System for storing histogram data in optimum number of elements  
[NASA-CASE-XNP-09785] c08 N69-21928

**HOLDERS**

Water cooled contactors for holding rotating carbon arc anode  
[NASA-CASE-XMS-03700] c15 N69-24266

Quick disconnect latch and handle combination for mounting articles on walls or supporting bases in spacecraft under zero gravity conditions  
[NASA-CASE-MFS-11132] c15 N71-17649

Holder for high frequency crystal resonators  
[NASA-CASE-XNP-03637] c15 N71-21311

Design and construction of mechanical probe for determining if object is properly secured  
[NASA-CASE-MFS-20760] c14 N72-33377

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Adjustable hole cutter for forming circular openings  
[NASA-CASE-MFS-22649-1] c15 N73-32376

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Hole mobility of deposited semiconductor films in vacuum utilizing thermal gradient  
[NASA-CASE-XKS-04614] c15 N69-21460

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Holographic image enhancement technique with two exposure steps to reduce exposure time of desired information  
[NASA-CASE-ERC-10135] c14 N70-11245

Development of focused image holography with extended sources  
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[NASA-CASE-ERC-10017] c16 N71-15567
- Method and means for recording and reconstructing holograms without use of reference beam  
[NASA-CASE-ERC-10020] c16 N71-26154
- Multiple image storing system for obtaining holographic record on film of high speed projectile  
[NASA-CASE-MFS-20596] c14 N72-17324
- Method and apparatus for checking stability of recording setup for white light holograms  
[NASA-CASE-MFS-21455-1] c16 N72-31515
- Development of technique for producing holograms using propagation of surface waves within layer of photosensitive material  
[NASA-CASE-MFS-22040-1] c16 N73-26500
- Thin film analyzer utilizing holographic techniques  
[NASA-CASE-MFS-20823-1] c16 N73-30476
- Holographic system for nondestructive testing  
[NASA-CASE-MFS-21704-1] c16 N73-30478
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- Location identification system with ground based transmitter and aircraft borne receiver/decoder  
[NASA-CASE-ERC-10324] c07 N72-25173
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- Technique for making foldable, inflatable, plastic honeycomb core panels for use in building and bridge structures, light and radio wave reflectors, and spacecraft  
[NASA-CASE-XLA-03492] c15 N71-22713
- Heat treatment and tooling for forming shapes from thermosetting honeycomb core sheets  
[NASA-CASE-NPO-11036] c15 N72-24522
- Honeycomb core structures of minimum surface tubule sections  
[NASA-CASE-ERC-10363] c18 N72-25541
- HONEYCOMB STRUCTURES**
- Filling honeycomb matrix with deaerated paste filler  
[NASA-CASE-XMS-G1108] c15 N69-24322
- Inflatable honeycomb panel element for lightweight structures usable in space stations and other construction  
[NASA-CASE-XLA-00204] c32 N70-36536
- Fluid flow control valve for regulating fluids in molecular quantities  
[NASA-CASE-XLE-00703] c15 N71-15967
- Method and apparatus for fabrication of heat insulating and ablative reentry structure  
[NASA-CASE-XMS-02009] c33 N71-20834
- Method for honeycomb panel bonding by thermosetting film adhesive with electrical heat means  
[NASA-CASE-XMF-01402] c18 N71-21651
- Development of thermal insulation material for insulating liquid hydrogen tanks in spacecraft  
[NASA-CASE-XMF-05046] c33 N71-28892
- Honeycomb panels of minimal surface, periodic tubule layers  
[NASA-CASE-ERC-10364] c18 N72-25540
- Development of manually operated tool for facing exposed end to insert installed in honeycomb panel  
[NASA-CASE-MFS-21485-1] c15 N72-31490
- Development of process for bonding resinous body in cavities of honeycomb structures  
[NASA-CASE-MSC-12357] c15 N73-12489
- HOPPERS**
- Design and development of device to prevent clogging in hoppers containing particulate materials  
[NASA-CASE-LAR-10961-1] c15 N73-12496
- HORIZON SCANNERS**
- Oscillatory electromagnetic mirror drive system for horizon scanners  
[NASA-CASE-XLA-03724] c14 N69-27461
- Multi-lobar scan horizon sensor  
[NASA-CASE-XGS-00809] c21 N70-35427
- Attitude orientation control of spin stabilized final stage space vehicles, using horizon scanners  
[NASA-CASE-XLA-00281] c21 N70-36943
- Clamped amplifier circuit for horizon scanner enabling amplification and accurate measurement of specified parameters  
[NASA-CASE-XGS-01784] c10 N71-20782
- Horizon sensor design with digital sampling of spaced radiation-compensated thermopile infrared detectors  
[NASA-CASE-XNP-06957] c14 N71-21088
- Method and equipment for locating earth infrared horizon from space, independent of season and latitude  
[NASA-CASE-LAR-10726-1] c14 N73-20475
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- Delta winged, manned reentry vehicle capable of horizontal glide landing at low speeds  
[NASA-CASE-XLA-00241] c31 N70-37986
- HORIZONTAL TAIL SURFACES**
- Development and characteristics of translating horizontal tail assembly for supersonic aircraft  
[NASA-CASE-XLA-08801-1] c02 N71-11043
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- Device for improving efficiency of parabolic horn antenna system for linearly polarized signals  
[NASA-CASE-XNP-00611] c09 N70-35219
- Device for improving efficiency of parabolic reflector horn for linearly or circularly polarized waves  
[NASA-CASE-XNP-00540] c09 N70-35382
- Characteristics of antenna horn feeds consisting of central horn with overlapping peripheral horns  
[NASA-CASE-GSC-10452] c07 N71-12396
- Multiple mode horn antenna with radiation pattern of equal beamwidths and suppressed sidelobes  
[NASA-CASE-XNP-01057] c07 N71-15907
- Multipurpose microwave antenna, employing dish reflector with plural coaxial horn feeds  
[NASA-CASE-NPO-11264] c07 N72-25174
- HOT CATHODES**
- Improved cathode containing barium carbonate block and heated tungsten screen for electron bombardment ion thruster  
[NASA-CASE-XLE-07087] c06 N69-39889
- HOT PRESSING**
- Cermet for nuclear fuel constructed by pressing metal coated ceramic particles in die at temperature to cause bonding of metal coatings, and tested for thermal stability  
[NASA-CASE-LEW-10219-1] c18 N71-28729
- HOT WORKING**
- Hot forming of plastic sheets  
[NASA-CASE-XMS-05516] c15 N71-17803
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- Hot-wire liquid level detector for cryogenic propellants  
[NASA-CASE-XLE-00454] c23 N71-17802
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- Sealed housing for protecting electronic equipment against electromagnetic interference  
[NASA-CASE-MSC-12168-1] c09 N71-18600
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[NASA-CASE-MSC-12324-1] c05 N72-22093
- Readily assembled universal environment housing for electronic equipment  
[NASA-CASE-KSC-10031] c15 N72-22486
- Cryogenic pyroscope housing with annular disks for gas spin-up  
[NASA-CASE-MFS-21136-1] c23 N72-27731
- Gas flow control device, including housing and input port  
[NASA-CASE-NPO-11479] c15 N73-13462
- HOVERING**
- Hovering type flying vehicle design and principle mechanisms for manned or unmanned use  
[NASA-CASE-MSC-12111-1] c02 N71-11039
- HUGONIOT EQUATION OF STATE**
- Method for determining density of impacting particles by using Hugoniot curves  
[NASA-CASE-LAR-11059-1] c30 N73-26838
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- Efficient operation of improved hydrofoil design  
[NASA-CASE-XLA-00229] c12 N70-33305
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- Method and apparatus for applying compressional forces to skeletal structure of subject to simulate force during ambulatory conditions  
[NASA-CASE-ARC-10100-1] c05 N71-24738
- Automatic braking device for rapidly transferring humans or materials from elevated location  
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## HUMAN BODY

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## HUMAN BODY

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- Electromedical garment, applying vectorcardiologic type electrodes to human torsos for data recording during physical activity  
[NASA-CASE-XFR-10856] c05 N71-11189
- Thermoregulating with cooling flow pipe network for humans  
[NASA-CASE-XMS-10269] c05 N71-24147
- Elastomeric extensometer for measuring surface area changes of human body caused by body expansion and contraction  
[NASA-CASE-MFS-21049-1] c14 N73-11405
- Tilting table for testing human body in variety of positions while exercising on ergometer or other biomedical devices  
[NASA-CASE-MFS-21010-1] c05 N73-30078
- HUMAN FACTORS ENGINEERING**
- Shock absorbing couch for body support under high acceleration or deceleration forces  
[NASA-CASE-XMS-01240] c05 N70-35152
- Harness assembly adapted to support man on ground based apparatus which simulates weightlessness  
[NASA-CASE-MFS-14671] c05 N71-12341
- Multiple circuit switch apparatus requiring minimum hand and eye movement by operator  
[NASA-CASE-XAC-03777] c10 N71-15909
- Remote control device operated by movement of finger tips for manual control of spacecraft attitude  
[NASA-CASE-XAC-02405] c09 N71-16089
- Design and development of flexible tunnel for use by spacecrews in performing extravehicular activities  
[NASA-CASE-MSC-12243-1] c05 N71-24728
- Development of apparatus and method for quantitatively measuring brain activity as automatic indication of sleep state and level of consciousness  
[NASA-CASE-MSC-13282-1] c05 N71-24729
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- Optical vision testing unit for testing eyes and visual system of human subject  
[NASA-CASE-MSC-13601-1] c05 N72-11088
- Color perception tester for testing color code perceptiveness of individuals  
[NASA-CASE-KSC-10278] c05 N72-16015
- HUMAN REACTIONS**
- Reaction tester for testing reaction to light stimuli  
[NASA-CASE-MSC-13604-1] c05 N73-13114
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[NASA-CASE-XNP-09744] c27 N71-16392
- HYDRAULIC CONTROL**
- Shear modulated fluid amplifier of high pressure hydraulic vortex amplifier type  
[NASA-CASE-MFS-10412] c12 N71-17578
- Throttle valve for regulating fluid flow volume  
[NASA-CASE-XNP-09698] c15 N71-18580
- Fluidic-thermochromic display device  
[NASA-CASE-ERC-10031] c12 N71-18603
- Development and characteristics of variable displacement fluid pump for transforming hydraulic pressures  
[NASA-CASE-MFS-20830] c15 N71-30028
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- Hydraulic support equipment for full scale dynamic testing of large rocket vehicle under free flight conditions  
[NASA-CASE-XMF-01772] c11 N70-41677
- Hydraulic support apparatus for dynamic testing of space vehicles under near-free flight conditions  
[NASA-CASE-XMF-03248] c11 N71-10604
- Hydraulic drive mechanism for leveling isolation platforms  
[NASA-CASE-XMS-03252] c15 N71-10658
- Antibacklash circuit for hydraulic drive system  
[NASA-CASE-XNP-01020] c03 N71-12260
- Hydraulic clamping of sheet stock specimens  
[NASA-CASE-XLA-05100] c15 N71-17696
- Design and development of double acting shock absorber for spacecraft docking operations  
[NASA-CASE-XMS-03722] c15 N71-21530
- Hydraulic apparatus for casting and molding of liquid polymers  
[NASA-CASE-XNP-07659] c06 N71-22975
- System to control speed of hydraulically movable members by limiting energy applied to actuators with hydraulic servo loop  
[NASA-CASE-ARC-10131-1] c15 N71-27754
- Development of aircraft control system with high performance electrically controlled and mechanically operated hydraulic valves for precise flight operation  
[NASA-CASE-XAC-00048] c02 N71-29128
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[NASA-CASE-MFS-20830] c15 N71-30028
- Design and characteristics of mechanically extended and telescoping boom on crane assembly  
[NASA-CASE-NPO-11118] c03 N72-25021
- Design and development of device to prevent geysering during convective circulation of cryogenic fluids  
[NASA-CASE-KSC-10615] c15 N73-12486
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[NASA-CASE-MFS-20944] c15 N73-13466
- Development and characteristics of combined pressure regulator and shutoff valve with variable pressure response characteristics  
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- Rocket propellant injector with porous faceplate for rocket engine combustion chamber  
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- Solid propellant containing hydrazinium nitroformate oxidizer and polymeric hydrocarbon binder  
[NASA-CASE-NPO-12015] c27 N73-16764
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- Catalyst bed ignition system for hydrazine propellants  
[NASA-CASE-XNP-00876] c28 N70-41311
- Hydrazine monoperfluoro alkanoate solder flux leaving corrosion resistant coating, for metals such as copper  
[NASA-CASE-XNP-03459-2] c18 N71-15688
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[NASA-CASE-NPO-11433] c18 N71-31140
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- Apparatus for producing hydrocarbon slurry containing small particles of magnesium for use as jet aircraft fuel  
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- Solid propellant containing hydrazinium nitroformate oxidizer and polymeric hydrocarbon binder  
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[NASA-CASE-XLE-05641-1] c15 N71-26346
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[NASA-CASE-XMF-03873] c06 N69-39733
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[NASA-CASE-XGS-01419] c03 N70-41864
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 [NASA-CASE-NPO-11322] c06 N72-25146  
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 [NASA-CASE-MFS-15063] c14 N72-25412  
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 [NASA-CASE-HQN-10654-1] c16 N73-13489  
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 [NASA-CASE-XGS-08729] c28 N71-14044  
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 [NASA-CASE-XMS-00583] c28 N70-38504  
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 base by hydrogen reduction of silicon  
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 hydrogen-permeable palladium alloy  
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 [NASA-CASE-NPO-10051] c18 N71-24934  
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 [NASA-CASE-XLA-08967] c02 N71-27088  
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IGNITION TEMPERATURE

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 [NASA-CASE-NPO-13160-1] c14 N73-23525

**INVERTERS**  
 Silicon controlled rectifier inverter with compensation of transients to avoid false gating  
 [NASA-CASE-XLA-08507] c09 N69-39984  
 Inverter oscillator with voltage feedback  
 [NASA-CASE-NPO-10760] c09 N72-25254

**IODINE**  
 Method of producing output voltage from photovoltaic cell using poly-N-vinyl carbazole complexed with iodine  
 [NASA-CASE-NPO-10373] c03 N71-18698  
 Gallium arsenide solar cell preparation by surface deposition of cuprous iodide on thin n-type polycrystalline layers and heating in iodine vapor  
 [NASA-CASE-XNP-01960] c09 N71-23027

**IODINE ISOTOPES**  
 Apparatus for producing high purity I-123 from Xe-123 by bombarding tellurium target with cyclotron beam  
 [NASA-CASE-LEW-10518-2] c24 N72-28714  
 Production of I-123 for use as radiopharmaceutical for low radiation exposure  
 [NASA-CASE-LEW-10518-1] c24 N72-33681  
 Production of iodine isotope by high energy bombardment of cesium heat pipe causing spallation reaction  
 [NASA-CASE-LEW-11390-2] c24 N73-20763  
 Heat pipe production of high purity radioiodine for thyroid measurements  
 [NASA-CASE-LEW-11390-3] c11 N73-28128

**ION ACCELERATORS**  
 Helium outgassing process for fused glass coating on ion accelerator grid  
 [NASA-CASE-LEW-10278-1] c15 N71-28582

**ION BEAMS**  
 Ion beam deflector system for electronic thrust vector control for ion propulsion yaw, pitch, and roll forces  
 [NASA-CASE-LEW-10689-1] c28 N71-26173  
 Ion beamlets of predetermined configurations formed in screen grid of ion thruster  
 [NASA-CASE-LEW-11646-1] c28 N72-32760  
 Development and characteristics of improved dispensing targets for ion beam particle generators  
 [NASA-CASE-NPO-13112-1] c11 N73-29138

**ION CHARGE**  
 Coaxial anode for gas radiation counter for suppressing background ionization interference  
 [NASA-CASE-GSC-11492-1] c14 N73-28497  
 Quadrupole mass spectrometer using noise spectrum for ion separation and identification  
 [NASA-CASE-XNP-04231] c14 N73-32325

**ION CONCENTRATION**  
 Development of method for applying metal alloy film or coating to irregular shaped metal object  
 [NASA-CASE-LEW-11262-1] c17 N71-34455

**ION CURRENTS**  
 System for monitoring presence of neutrals in streams of ions - ion engine control  
 [NASA-CASE-XNP-02592] c24 N71-20518

**ION ENGINES**  
 Improved cathode containing barium carbonate block and heated tungsten screen for electron bombardment ion thruster  
 [NASA-CASE-XLE-07687] c06 N69-39889  
 High-vacuum condenser tank for testing ion rocket engines  
 [NASA-CASE-XLE-00168] c11 N70-33278  
 Encapsulated heater forming hollow body for cathode used in ion thruster  
 [NASA-CASE-LEW-10814-1] c28 N70-35422  
 Electrostatic ion engines using high velocity electrons to ionize propellant  
 [NASA-CASE-XLE-00376] c28 N70-37245  
 Metal ion rocket engine design  
 [NASA-CASE-XLE-00342] c28 N70-37980

Dynamometer measuring microforce thrust produced by ion engine  
 [NASA-CASE-XLE-00702] c14 N70-40203  
 Increasing available power per unit area in ion rocket engine by increasing beam density  
 [NASA-CASE-XLE-00519] c28 N70-41576  
 Accel and focus electrode design for ion engine with improved efficiency  
 [NASA-CASE-XNP-02839] c28 N70-41922  
 Ion engine with magnetic circuit for optimal discharge  
 [NASA-CASE-XLE-01124] c28 N71-14043  
 Electron bombardment ion rocket engine with improved propellant introduction system  
 [NASA-CASE-XLE-02066] c28 N71-15661  
 System for monitoring presence of neutrals in streams of ions - ion engine control  
 [NASA-CASE-XNP-02592] c24 N71-20518  
 Construction and method of arranging plurality of ion engines to form cluster thereby increasing efficiency and control by decreasing heat radiated to space  
 [NASA-CASE-XNP-02923] c28 N71-23081  
 Electronic cathodes for use in electron bombardment ion thrusters  
 [NASA-CASE-XLE-04501] c09 N71-23190  
 Permanently magnetized ion engine casing construction for use in spacecraft propulsion systems  
 [NASA-CASE-XNP-06942] c28 N71-23293  
 Development and characteristics of ion thruster accelerator with single glass coated grid to provide increased ion extraction capability and larger diameter accelerator system  
 [NASA-CASE-LEW-10106-1] c28 N71-26642  
 Internal labyrinth and shield structure to improve electrical isolation of propellant feed source from ion thruster  
 [NASA-CASE-LEW-10210-1] c28 N71-26781  
 Low mass ionizing device for use in electric thrust spacecraft engines  
 [NASA-CASE-XNP-01954] c28 N71-28850  
 Development of system for delivering vaporized mercury to electron bombardment ion engine  
 [NASA-CASE-NPO-10737] c28 N72-11709  
 Ion beamlets of predetermined configurations formed in screen grid of ion thruster  
 [NASA-CASE-LEW-11646-1] c28 N72-32760  
 Process for fabricating matched pairs of dished screen and accelerator grids for ion thruster accelerator system  
 [NASA-CASE-LEW-11694-1] c28 N73-22721  
 Characteristics of ion rocket engine with combination keeper electrode and electron baffle  
 [NASA-CASE-NPO-11880] c28 N73-24783  
 Single grid accelerator system for electron bombardment type ion thruster  
 [NASA-CASE-XLE-10453-2] c28 N73-27699

**ION EXCHANGE MEMBRANE ELECTROLYTES**  
 Inorganic ion exchange membrane electrolytes for fuel cell use  
 [NASA-CASE-XNP-04264] c03 N69-21337  
 Development and characteristics of ion-exchange membrane and electrode assembly for fuel cells or electrolysis cells  
 [NASA-CASE-XNS-02063] c03 N71-29044

**ION EXCHANGING**  
 Fuel system for thermal nuclear reactor which uses inorganic ion exchanger  
 [NASA-CASE-LEW-11645-2] c22 N73-28660

**ION IMPACT**  
 Development and characteristics of improved dispensing targets for ion beam particle generators  
 [NASA-CASE-NPO-13112-1] c11 N73-29138

**ION PROBES**  
 Ion microprobe mass spectrometer with cooled electrode target for analyzing traces of fluids  
 [NASA-CASE-ERC-10014] c14 N71-28863

**ION PROPULSION**  
 Variable thrust ion engine using thermal decomposition of solid cesium compound to produce propulsive vapor  
 [NASA-CASE-XMF-00923] c28 N70-36802  
 Electrostatic ion engines using high velocity electrons to ionize propellant  
 [NASA-CASE-XLE-00376] c28 N70-37245  
 Metal ion rocket engine design  
 [NASA-CASE-XLE-00342] c28 N70-37980

- Method for producing porous tungsten plates for ionizing cesium compounds for propulsion of ion engines  
[NASA-CASE-XLE-00455] c28 N70-38197
- Accel and focus electrode design for ion engine with improved efficiency  
[NASA-CASE-XNP-02839] c28 N70-41922
- Electric rocket engine with electron bombardment ionization chamber  
[NASA-CASE-XNP-04124] c28 N71-21822
- Ion beam deflector system for electronic thrust vector control for ion propulsion yaw, pitch, and roll forces  
[NASA-CASE-LEW-10689-1] c28 N71-26173
- Development and characteristics of ion thruster accelerator with single glass coated grid to provide increased ion extraction capability and larger diameter accelerator system  
[NASA-CASE-LEW-10106-1] c28 N71-26642
- Development of system for delivering vaporized mercury to electron bombardment ion engine  
[NASA-CASE-NPO-10737] c28 N72-11709
- Radial magnetic field for ion thruster  
[NASA-CASE-LEW-10770-1] c28 N72-22770
- Automatic shunting of ion thruster magnetic field when thruster is not operating  
[NASA-CASE-LEW-10835-1] c28 N72-22771
- Process for fabricating matched pairs of dished screen and accelerator grids for ion thruster accelerator system  
[NASA-CASE-LEW-11694-1] c28 N73-22721
- ION SOURCES**
- Apertured electrode focusing system for ion sources with nonuniform plasma density  
[NASA-CASE-XNP-03332] c09 N71-10618
- Multilayer porous refractory metal ionizer design with thick, porous, large-grain substrates and thin, porous micron-grain substrates  
[NASA-CASE-XNP-04338] c17 N71-23046
- Development and characteristics of ion thruster accelerator with single glass coated grid to provide increased ion extraction capability and larger diameter accelerator system  
[NASA-CASE-LEW-10106-1] c28 N71-26642
- Low mass ionizing device for use in electric thrust spacecraft engines  
[NASA-CASE-XNP-01954] c28 N71-28850
- Development and characteristics of apparatus for ionization analysis  
[NASA-CASE-ARC-10017-1] c14 N72-29464
- IONIZATION CHAMBERS**
- Automatic baseline stabilization for ionization detector used in gas chromatograph  
[NASA-CASE-XNP-03128] c10 N70-41991
- Electric rocket engine with electron bombardment ionization chamber  
[NASA-CASE-XNP-04124] c28 N71-21822
- Multichannel photoionization chamber for measuring absorption, photoionization yield, and coefficients of gases  
[NASA-CASE-ERC-10044-1] c14 N71-27090
- Development and characteristics of apparatus for ionization analysis  
[NASA-CASE-ARC-10017-1] c14 N72-29464
- IONIZATION GAGES**
- Ionization vacuum gage  
[NASA-CASE-XNP-00646] c14 N70-35666
- Ionization control system design for monitoring separately located ion gage pressures on vacuum chambers  
[NASA-CASE-XLE-00767] c14 N71-21090
- Development and characteristics of apparatus for ionization analysis  
[NASA-CASE-ARC-10017-1] c14 N72-29464
- Ionization gage for measuring ultrahigh vacuum levels  
[NASA-CASE-XLA-05087] c14 N73-30391
- IONIZATION POTENTIALS**
- Electrodes having array of small surfaces for field ionization  
[NASA-CASE-ERC-10013] c09 N71-26678
- IONIZED GASES**
- Plasma probes having guard ring and primary sensor at same potential to prevent stray wall current collection in ionized gases  
[NASA-CASE-XLE-00690] c25 N69-39884
- Transient heat transfer gage for measuring total radiant intensity from far ultraviolet and ionized high temperature gases  
[NASA-CASE-XNP-09802] c33 N71-15641
- IONIZERS**
- Description of electrical equipment and system for purification of waste water by producing silver ions for bacterial control  
[NASA-CASE-MSC-10960-1] c03 N71-24718
- Process for fabricating matched pairs of dished screen and accelerator grids for ion thruster accelerator system  
[NASA-CASE-LEW-11694-1] c28 N73-22721
- IONIZING RADIATION**
- High voltage cable for use in high intensity ionizing radiation fields  
[NASA-CASE-XNP-G0738] c09 N70-38201
- Laminated polyquinoxaline resin/fiberglass gasket, resistant to ionizing radiation and liquid hydrogen temperatures  
[NASA-CASE-MFS-21364] c15 N72-20460
- IONOSPHERE**
- Lightweight, rugged, inexpensive satellite battery for producing electrical power from ionosphere using electrodes with different contact potentials  
[NASA-CASE-XGS-01593] c03 N70-35408
- IONS**
- Micrometeoroid analyzer using arrays of interconnected capacitors and ion detector  
[NASA-CASE-ARC-10443-1] c14 N73-20477
- IRISES (MECHANICAL APERTURES)**
- Waveguide, thin film window and microwave irises  
[NASA-CASE-LAR-10513-1] c07 N72-25170
- Development of thin film microwave iris installed in microwave waveguide transverse to flow of energy in waveguide  
[NASA-CASE-LAR-10511-1] c09 N72-29172
- IRON OXIDES**
- System for recovering oxygen and/or water from extraterrestrial soil and iron oxide materials  
[NASA-CASE-MSC-12332-1] c15 N72-15476
- IRRADIATION**
- Solar sensor with coarse and fine sensing elements for matching preirradiated cells on degradation rates  
[NASA-CASE-XLA-G1584] c14 N71-23269
- Apparatus for obtaining isotropic irradiation on film emulsion from parallel radiation source  
[NASA-CASE-MFS-20095] c24 N72-11595
- Process for depositing pure metals by irradiating liquids  
[NASA-CASE-LEW-10906-1] c06 N72-25164
- ISOCYANATES**
- Fire retardant polyisocyanurate foam with high temperature resistance  
[NASA-CASE-ARC-10280-1] c18 N70-34695
- ISOLATORS**
- Internal labyrinth and shield structure to improve electrical isolation of propellant feed source from ion thruster  
[NASA-CASE-LEW-10210-1] c28 N71-26781
- High-voltage isolator design for injecting hydrogen bubbles into liquid metal feed lines to interrupt electrical continuity  
[NASA-CASE-NPO-11075] c09 N71-34208
- Development and characteristics of supporting frame to isolate payloads from multi-gravitational forces  
[NASA-CASE-MFS-21680-1] c15 N73-20525
- ISOPROPYL ALCOHOL**
- Preparation of fluorinated polyethers from 2-hydro-perhaloisopropyl alcohols  
[NASA-CASE-MFS-11492] c06 N73-30102
- ISOTHERMAL LAYERS**
- Double-wall isothermal cylinder containing heat transfer fluid thermal reservoir as spacecraft insulation cover  
[NASA-CASE-MFS-20355] c33 N71-25353
- J**
- JET AIRCRAFT**
- Deflector for preventing objects from entering nacelle inlets of jet aircraft  
[NASA-CASE-XLE-00388] c28 N70-34788
- JET AIRCRAFT NOISE**
- Upper surface, external flow, jet-augmented flap configuration for high wing jet aircraft for noise reduction  
[NASA-CASE-XLA-00087] c02 N70-33332

- Jet aircraft exhaust nozzle for noise reduction  
[NASA-CASE-LAR-10951-1] c28 N73-19819
- Reduction of jet engine noise due to turbulent mixing of exhaust gases with ambient atmosphere  
[NASA-CASE-ARC-10712-1] c28 N73-20826
- Jet aircraft noise and sonic boom measuring device which converts sound pressure into electric current  
[NASA-CASE-LAR-11173-1] c14 N73-22387
- Development of annular acoustically porous elements for installation in exhaust and inlet ducts of turbofan engine to reduce aircraft engine noise intensity  
[NASA-CASE-LAR-11141-1] c02 N73-22975
- Development of aircraft configuration for reduction of jet aircraft noise by exhausting engine gases over upper surface of wing  
[NASA-CASE-LAR-11087-1] c02 N73-26008
- Method and apparatus for improving operating efficiency and reducing low speed noise for turbine aircraft engines  
[NASA-CASE-LAR-11310-1] c28 N73-31699
- JET AMPLIFIERS**
- Fluid jet amplifier with fluid from jet nozzle deflected by inlet pressure  
[NASA-CASE-XLE-03512] c12 N69-21466
- Fluid control jet amplifiers  
[NASA-CASE-XLE-09341] c12 N71-28741
- JET BLAST EFFECTS**
- Separation mechanism for use between stages of multistage rocket vehicles  
[NASA-CASE-XLA-00188] c15 N71-22874
- JET CONTROL**
- Attitude control device for space vehicles  
[NASA-CASE-XNP-00294] c21 N70-36938
- JET ENGINES**
- Absorptive, nonreflecting barrier mounted between closely spaced jet engines on supersonic aircraft, for preventing shock wave interference  
[NASA-CASE-XLA-02865] c28 N71-15563
- Development of thrust dynamometer for measuring performance of jet and rocket engines  
[NASA-CASE-XLE-05260] c14 N71-20429
- Afterburner-equipped jet engine nacelle with slotted configuration afterbody  
[NASA-CASE-XLA-10450] c28 N71-21493
- Magnetic force welding to form T joints between jet engine parts of dissimilar thickness  
[NASA-CASE-LEW-10533-2] c15 N72-25479
- Process for welding compressor and turbine blades to rotors and discs of jet engines  
[NASA-CASE-LEW-10533-1] c15 N73-28515
- JET EXHAUST**
- Development of aircraft configuration for reduction of jet aircraft noise by exhausting engine gases over upper surface of wing  
[NASA-CASE-LAR-11087-1] c02 N73-26008
- JET FLAPS**
- Upper surface, external flow, jet-augmented flap configuration for high wing jet aircraft for noise reduction  
[NASA-CASE-XLA-00087] c02 N70-33332
- JET FLOW**
- Two-phase flow system with discrete, impinging two-phase jets  
[NASA-CASE-NPO-11556] c12 N72-25292
- JET MIXING FLOW**
- Fuel injection system for maximum combustion efficiency of rocket engines  
[NASA-CASE-XLE-00111] c28 N70-38199
- JET NOZZLES**
- Fluid jet amplifier with fluid from jet nozzle deflected by inlet pressure  
[NASA-CASE-XLE-03512] c12 N69-21466
- Thrust and attitude control apparatus using jet nozzle in movable canard surface or fin configuration  
[NASA-CASE-XLE-03583] c31 N71-17629
- JET THRUST**
- System for aerodynamic control of rocket vehicles by secondary injection of fluid into nozzle exhaust stream  
[NASA-CASE-XLA-01163] c21 N71-15582
- Drive mechanism for operating reactance attitude control system for aerospace bodies  
[NASA-CASE-XMP-01598] c21 N71-15583
- JETTISON SYSTEMS**
- Describing assembly for opening stabilizing and decelerating flaps of flight capsules used in space research  
[NASA-CASE-XMP-03169] c31 N71-15675
- System for deploying and ejecting releasable clamshell fairing sections from spinning sounding rockets  
[NASA-CASE-GSC-10590-1] c31 N73-14853
- JOINING**
- Transparent plastic film for attaching cover glasses to silicon solar cells  
[NASA-CASE-LEW-11065-1] c03 N72-11064
- JOINTS (ANATOMY)**
- Space suit with pressure-volume compensator system  
[NASA-CASE-XLA-05332] c05 N71-11194
- Equipotential space suits utilizing mechanical aids to minimize astronaut energy at bending joints  
[NASA-CASE-LAR-10007-1] c05 N71-11195
- Cord restraint system for pressure suit joints  
[NASA-CASE-XMS-09635] c05 N71-24623
- JOINTS (JUNCTIONS)**
- Hollow spherical electrode for shielding dielectric junction between high voltage conductor and insulator  
[NASA-CASE-XLE-03778] c09 N69-21542
- Elastic universal joint for rocket motor mounting  
[NASA-CASE-XNP-00416] c15 N70-36947
- Portable device for aligning surfaces of two adjacent wall or sheet sections for joining at point of junction  
[NASA-CASE-XMP-01452] c15 N70-41371
- Design and development of flexible joint for pressure suits  
[NASA-CASE-XMS-09636] c05 N71-12344
- Elbow forming in jacketed pipes while maintaining separation between core shape and jacket pipes  
[NASA-CASE-XNP-10475] c15 N71-24679
- Method and apparatus for precision sizing and joining of large diameter tubes by bulging or constricting overlapping ends  
[NASA-CASE-XMP-05114-2] c15 N71-26148
- Universal joints for connecting two displaced shafts or members  
[NASA-CASE-NPO-10646] c15 N71-28467
- Flexible bellows joint shielding sleeve for propellant transfer pipelines  
[NASA-CASE-XNP-01855] c15 N71-28937
- Mechanism for restraining universal joints to prevent separation while allowing bending, angulation, and lateral offset in any position about axis  
[NASA-CASE-XNP-02278] c15 N71-28951
- Solid state welding of butt joint by fusion welding, surface cleaning, and heating in air  
[NASA-CASE-LEW-11387-1] c15 N72-25471
- Reduction of peak shear stress in bonded joint  
[NASA-CASE-LAR-10900-1] c15 N73-10499
- Explosive welding of thin metal scarf joint  
[NASA-CASE-LAR-11211-1] c15 N73-14480
- Improved latching device for joining structural components in motionless relationship  
[NASA-CASE-MFS-21606-1] c15 N73-22417
- JOULE-THOMSON EFFECT**
- Gas balancing, cryogenic refrigeration apparatus with Joule-Thomson valve assembly  
[NASA-CASE-NPO-10309] c15 N69-23190
- JOURNAL BEARINGS**
- Slit regulated gas journal bearing  
[NASA-CASE-XNP-00476] c15 N70-38620
- Journal air bearing with cylindrical cup designed to ride on shaft  
[NASA-CASE-MFS-20423] c15 N72-11388
- Journal bearing sectors for lubricant films  
[NASA-CASE-LEW-11076-1] c15 N72-21473
- Bearing sectors for controlling self excited instability of journal bearing shafts rotating at high speeds in low viscosity lubricants  
[NASA-CASE-LEW-11076-2] c15 N73-20533
- JUNCTION DIODES**
- Phototransistor with base collector junction diode for integration into photo sensor arrays  
[NASA-CASE-MFS-20407] c09 N73-19235
- JUNCTION TRANSISTORS**
- Apparatus for ballasting high frequency transistors  
[NASA-CASE-XGS-05003] c09 N69-24318
- Miniature piezofunction semiconductor transducer with in situ stress coupling

[NASA-CASE-ERC-10087-2] c14 N72-31446

**K****KINETIC ENERGY**

Non-reusable kinetic energy absorber for application in soft landing of space vehicles  
[NASA-CASE-XLE-00810] c15 N70-34861

**KINETIC FRICTION**

Kinetic and static friction force measurement between magnetic tape and magnetic head surfaces  
[NASA-CASE-INP-08680] c14 N71-22995

**KINETICS**

Micrometeoroid analyzer using arrays of interconnected capacitors and ion detector  
[NASA-CASE-ARC-10443-1] c14 N73-20477

**L****LABORATORY EQUIPMENT**

Design of mechanical device for stirring several test tubes simultaneously  
[NASA-CASE-XAC-06956] c15 N71-21177

Gas purged dry box (glove reducing permeation of air or moisture into dry box or isolator by diffusion through glove)  
[NASA-CASE-XLE-02531] c05 N71-23080

Apparatus and process for volumetrically dispensing reagent quantities of volatile chemicals for small batch reactions  
[NASA-CASE-NPO-10070] c15 N71-27372

Development of variable angle device for positioning test tubes to permit optimum drying of culture medium  
[NASA-CASE-LAR-10567-1] c11 N72-25284

Development of method for controlling vapor content of gas  
[NASA-CASE-NPO-10633] c03 N72-28025

Apparatus for mixing two or more liquids under zero gravity conditions  
[NASA-CASE-LAR-10195-1] c15 N73-19458

Self-scanning chromatographic-fluorographic drug detector with optical readout system  
[NASA-CASE-ARC-10633-1] c05 N73-22048

**LAMINAR FLOW**

Laminar flow of liquid coolants in rocket engines  
[NASA-CASE-NPO-10122] c12 N71-17631

**LAMINATES**

Multilayer porous refractory metal ionizer design with thick, porous, large-grain substrates and thin, porous micron-grain substrates  
[NASA-CASE-XNP-04338] c17 N71-23046

Laminated polyquinoxaline resin/fiberglass gasket, resistant to ionizing radiation and liquid hydrogen temperatures  
[NASA-CASE-MFS-21364] c15 N72-20460

Method for preparing laminates of stressed face sandwich structures with light weight cores  
[NASA-CASE-XLA-11028] c15 N72-21486

Development and characteristics of polyimide impregnated laminates with fiberglass cloth backing for application as printed circuit boards  
[NASA-CASE-MFS-20408] c18 N73-12604

Development of composite structures for spacecraft to serve as anti-meteoroid device  
[NASA-CASE-LAR-10788-1] c31 N73-20880

**LANDING AIDS**

Electro-optical attitude sensing device for landing approach of flight vehicle  
[NASA-CASE-XMS-01994-1] c14 N72-17326

Magnetic method for detection of aircraft position relative to runway  
[NASA-CASE-ARC-10179-1] c21 N72-22619

**LANDING GEAR**

Pivotal shock absorbing assembly for use as load distributing portion in landing gear systems of space vehicles  
[NASA-CASE-XMF-03856] c31 N70-34159

Nose gear steering system for vehicles with main skids to provide directional stability after loss of aerodynamic control  
[NASA-CASE-XLA-01804] c02 N70-34160

Landing pad assembly for aerospace vehicles  
[NASA-CASE-XMF-02853] c31 N70-36654

Aircraft wheel spray drag alleviator for dual tandem landing gear  
[NASA-CASE-XLA-01583] c02 N70-36825

Spacecraft shock absorbing system for soft landings  
[NASA-CASE-XMF-02108] c31 N70-36845

Shock absorber for landing gear of lunar or planetary landing modules  
[NASA-CASE-XMF-01045] c15 N70-40354

Vertically descending flight vehicle landing gear for rough terrain  
[NASA-CASE-XMF-01174] c02 N70-41589

**LANDING MODULES**

Shock absorber for landing gear of lunar or planetary landing modules  
[NASA-CASE-XMF-01045] c15 N70-40354

**LANDING SIMULATION**

Lunar and planetary gravity simulator to test vehicular response to landing  
[NASA-CASE-XLA-00493] c11 N70-34786

**LASER MATERIALS**

Development of laser head for simultaneous optical pumping of several dye lasers  
[NASA-CASE-LAR-11341-1] c16 N73-25564

Development of technique for producing holograms using propagation of surface waves within layer of photosensitive material  
[NASA-CASE-MFS-22040-1] c16 N73-26500

**LASER MODE LOCKING**

Procedure and device for effecting dual mode locking in pulsed Nd-YAG lasers  
[NASA-CASE-GSC-11746-1] c16 N73-32398

**LASER MODES**

Overlapping beams of neodymium laser for detecting picosecond light pulses  
[NASA-CASE-ERC-10227] c14 N70-12626

Xenon flashlamp driver system for optical laser pumping  
[NASA-CASE-ERC-10283] c16 N72-25485

Development of acoustical controlled distributed feedback laser with continuous frequency spectrum tuning  
[NASA-CASE-NPO-13175-1] c16 N73-27431

**LASER OUTPUTS**

Method and apparatus using temperature control for wavelength tuning of liquid lasers  
[NASA-CASE-ERC-10187] c16 N69-31343

Describing laser Doppler velocimeter for measuring mean velocity and turbulence of fluid flow  
[NASA-CASE-MFS-20386] c21 N71-19212

Development of apparatus for amplitude modulation of diode laser by periodic discharge of direct current power supply  
[NASA-CASE-XMS-04269] c16 N71-22895

Doppler shifted laser beam as fluid velocity sensor  
[NASA-CASE-XAC-10770-1] c16 N71-24828

Calibrator for measuring and modulating or demodulating laser outputs  
[NASA-CASE-XLA-03410] c16 N71-25914

Method and apparatus for optically modulating light or microwave beam  
[NASA-CASE-GSC-10216-1] c23 N71-26722

Laser machining device with dielectric functioning as beam waveguide for mechanical and medical applications  
[NASA-CASE-HQN-10541-2] c15 N71-27135

Optical communication system with gas filled waveguide for laser beam transmission  
[NASA-CASE-HQN-10541-4] c16 N71-27183

Development of laser illuminated device for displaying conditions of cylindrical surfaces in two dimensions  
[NASA-CASE-NPO-11861-1] c14 N72-28461

Design and development of multichannel laser remote control system using modulated helium-neon laser as transmitter and light collector as receiving antenna  
[NASA-CASE-LAR-10311-1] c16 N73-16536

Development of laser head for simultaneous optical pumping of several dye lasers  
[NASA-CASE-LAR-11341-1] c16 N73-25564

Development of technique for producing holograms using propagation of surface waves within layer of photosensitive material  
[NASA-CASE-MFS-22040-1] c16 N73-26500

Development of acoustical controlled distributed feedback laser with continuous frequency spectrum tuning  
[NASA-CASE-NPO-13175-1] c16 N73-27431

**LASER RANGER/TRACKER**

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[NASA-CASE-LAR-10241-1] c05 N72-21076
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[NASA-CASE-MSC-12393-1] c02 N73-26006
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- Portable environmental control and life support system for astronaut in and out of spacecraft  
[NASA-CASE-XMS-09632-1] c05 N71-11203
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[NASA-CASE-MSC-12243-1] c05 N71-24728
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[NASA-CASE-XMS-09637-1] c05 N71-24730
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[NASA-CASE-XLA-08913] c14 N71-28933
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## LIGHT AIRCRAFT

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[NASA-CASE-XMF-02221] c18 N71-27170  
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[NASA-CASE-XNP-07659] c06 N71-22975

## LIQUID PROPELLANT ROCKET ENGINES

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- Mixed liquid and vapor phase analyzer design with thermocouples for relative heat transfer measurement  
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- Propellant injectors for rocket combustion chambers  
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- Liquid rocket systems for propulsion and control of spacecraft  
[NASA-CASE-XNP-00610] c28 N70-36910
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- Venting device for liquid propellant storage tank using magnetic field to separate liquid and gaseous phases  
[NASA-CASE-XLE-01449] c15 N70-41646
- Liquid propellant tank design with semitoroidal bulkhead  
[NASA-CASE-XMP-01899] c31 N70-41948
- Method and feed system for separating and orienting liquid and vapor phases of liquid propellants in zero gravity environment  
[NASA-CASE-XLE-01182] c27 N71-15635
- Control valve and coaxial variable injector for controlling bipropellant mixture ratio and flow  
[NASA-CASE-XNP-09702] c15 N71-17654
- Slosh and swirl alleviator for liquid propellant tanks during transport and flight  
[NASA-CASE-XLA-05749] c15 N71-19569
- Filler valve design for supplying liquid propellants at high pressure to space vehicles  
[NASA-CASE-XNP-01747] c15 N71-23024
- Electronic recording system for spatial mass distribution of liquid rocket propellant droplets or vapors ejected from high velocity nozzles  
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- Flexible barrier membrane comprising porous substrate and incorporating liquid gallium or indium metal used as sealant barriers for spacecraft walls and pumping liquid propellants  
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- Response analyzing apparatus for liquid vapor interface sensor of sloshing rocket propellant  
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- Development of electronic circuit for measurement transducer power supply to be used for liquid level measurement in liquid propellant rocket engines  
[NASA-CASE-MFS-21698-1] c09 N73-26196
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[NASA-CASE-LAR-10317-1] c32 N71-16103
- Submerged fuel tank baffles to prevent sloshing in liquid propellant rocket flight  
[NASA-CASE-XLA-04605] c32 N71-16106
- Hot-wire liquid level detector for cryogenic propellants  
[NASA-CASE-XLE-00454] c23 N71-17802
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[NASA-CASE-XLA-05749] c15 N71-19569
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- Venting device for liquid propellant storage tank using magnetic field to separate liquid and gaseous phases  
[NASA-CASE-XLE-01449] c15 N70-41646
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[NASA-CASE-XLA-00415] c15 N71-16079
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[NASA-CASE-XLE-00586] c15 N71-15968
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[NASA-CASE-MFS-11204] c14 N71-29134
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- Electrical switching device comprising conductive liquid confined within square loop of deformable nonconductive tubing also used for leveling  
[NASA-CASE-NPO-10037] c09 N71-19610
- Purification apparatus for vaporization and fractional distillation of liquids  
[NASA-CASE-XNP-08124] c15 N71-27184
- Quantitative liquid measurements in container by resonant frequencies  
[NASA-CASE-XNP-02500] c18 N71-27397
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- Ablative system with liquid carrying ablative material bodies and forming self-replacing ablative surface  
[NASA-CASE-LEW-10359] c33 N72-25911
- Pressurized tank for feeding liquid waste into processing equipment  
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[NASA-CASE-NPO-10998-1] c06 N73-32029
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- Multiple Belleville spring assembly with even load distribution  
[NASA-CASE-XNP-06840] c15 N70-38225
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[NASA-CASE-XMS-06782] c32 N71-15974
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 Differential pressure cell insensitive to changes in ambient temperature and extreme overload  
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**LOADING OPERATIONS**  
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 Device for handling heavy loads by distributing forces  
 [NASA-CASE-XNP-04969] c11 N69-27466  
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 [NASA-CASE-XAC-00073] c14 N70-34813  
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 Development of device for transferring load from load cell to bypass mechanism  
 [NASA-CASE-XMS-06329-1] c15 N71-20441  
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 [NASA-CASE-XMS-05890] c09 N71-23191  
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 [NASA-CASE-GSC-10413] c10 N71-26531  
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 [NASA-CASE-GSC-10065-1] c10 N71-27136  
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 [NASA-CASE-NPO-10808] c15 N71-27432  
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 [NASA-CASE-XNP-01848] c15 N71-28959  
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 [NASA-CASE-WLP-10002] c15 N72-17451  
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 [NASA-CASE-NPO-11103] c14 N72-21406  
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 [NASA-CASE-MFS-20434] c11 N72-25288  
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 [NASA-CASE-MFS-20317] c15 N73-13463  
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 [NASA-CASE-MFS-21488-1] c14 N73-23526  
 Versatile erqometer with work load control  
 [NASA-CASE-MFS-21109-1] c05 N73-27941  
 Three-axis, adjustable loading structure for testing soundness of aircraft skin by applying pressure  
 [NASA-CASE-FRC-10051-1] c14 N73-30416

**LOCATES SYSTEM**  
 System for locating lightning strokes by coordination of directional antenna signals  
 [NASA-CASE-KSC-10729-1] c09 N73-32110

**LOCKING**  
 Releasable coupling device designed to receive and retain matching ends of electrical connectors  
 [NASA-CASE-XMS-07846-1] c09 N69-21927

**LOCKS (FASTENERS)**  
 Ball locking device which releases in response to small forces when subjected to high axial loads  
 [NASA-CASE-XMF-01371] c15 N70-41829  
 Low friction bearing and lock mechanism for two-axis gimbal carrying satellite payload  
 [NASA-CASE-GSC-10556-1] c31 N71-26537  
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 [NASA-CASE-XNP-00816] c28 N71-28928  
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 [NASA-CASE-LAR-10686] c14 N71-28935  
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 Jet shoes for space locomotion  
 [NASA-CASE-XLA-08491] c05 N69-21380  
 Attitude control training device for astronauts permitting friction-free movement with five degrees of freedom  
 [NASA-CASE-XMS-02977] c11 N71-10746  
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**LOGIC CIRCUITS**  
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 [NASA-CASE-ERC-10072] c09 N70-11148  
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 [NASA-CASE-XMF-00421] c09 N70-34502  
 Binary to binary-coded decimal converter using single set of logic circuits notwithstanding number of shift register decades  
 [NASA-CASE-XNP-00432] c08 N70-35423  
 Conversion system for increasing resolution of analog to digital converters  
 [NASA-CASE-XAC-00404] c08 N70-40125  
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 [NASA-CASE-XGS-04767] c08 N71-12494  
 Binary sequence detector with few memory elements and minimized logic circuit complexity  
 [NASA-CASE-XNP-05415] c08 N71-12505  
 Bistable multivibrator circuits operating at high speed and low power dissipation  
 [NASA-CASE-XGS-00823] c10 N71-15910  
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 [NASA-CASE-XLA-07391] c12 N71-17579  
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 [NASA-CASE-XGS-04766] c08 N71-18602  
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 [NASA-CASE-XLA-07732] c08 N71-18751  
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 [NASA-CASE-GSC-10366-1] c10 N71-18772  
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 [NASA-CASE-NPO-10150] c08 N71-24650  
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 [NASA-CASE-XKS-06167] c08 N71-24890  
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 [NASA-CASE-XNP-08567] c09 N71-26000  
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 [NASA-CASE-XNP-04623] c10 N71-26103  
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 [NASA-CASE-GSC-11367] c10 N71-26374  
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 [NASA-CASE-GSC-10878-1] c10 N72-22236  
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 [NASA-CASE-NPO-11948-1] c10 N73-15255  
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## LONGITUDINAL CONTROL

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[NASA-CASE-XMF-00437] c07 N70-40202  
Automatic carrier acquisition system for phase locked loop receiver  
[NASA-CASE-NPO-11628-1] c07 N73-30113
- LOCPS**  
Tape cartridge with high capacity storage of endless-loop magnetic tape  
[NASA-CASE-XGS-00769] c14 N70-41647  
Endless loop tape transport mechanism for driving and tensioning recording medium in magnetic tape recorder  
[NASA-CASE-XGS-01223] c07 N71-10609  
High speed electrically actuated ribbon loop for shuttering optical or fluid passageways  
[NASA-CASE-ARC-10516-1] c23 N72-27739  
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[NASA-CASE-NPO-11941-1] c10 N73-27171
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Aerospace configuration with low and high aspect ratio variability for high and low speed flight  
[NASA-CASE-XLA-00142] c02 N70-33286  
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[NASA-CASE-XLA-00806] c02 N70-34858
- LOW COST**  
Low cost efficient thermionic converter for use in nuclear reactors  
[NASA-CASE-NPO-13121-1] c22 N73-12702
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[NASA-CASE-MFS-20044] c14 N71-28993  
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[NASA-CASE-MSC-14187-1] c14 N73-17564
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[NASA-CASE-XMF-00479] c14 N70-34794
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- LOW NOISE**  
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[NASA-CASE-NPO-11569] c10 N73-26229
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[NASA-CASE-FRC-10022] c12 N71-26546
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[NASA-CASE-XLA-03691] c31 N71-15674  
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[NASA-CASE-XMF-02966] c10 N71-24863
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[NASA-CASE-XGS-10010] c03 N72-15986
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[NASA-CASE-XMF-02964] c14 N71-17659  
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[NASA-CASE-XMF-10968] c14 N71-24234
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[NASA-CASE-XMS-01620] c23 N71-15673
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[NASA-CASE-XAC-00060] c09 N70-39915  
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[NASA-CASE-GSC-10114-1] c10 N71-27366
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Metallic film diffusion for boundary lubrication in aerospace engineering  
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[NASA-CASE-LEW-11076-1] c15 N72-21473  
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[NASA-CASE-LEW-11076-2] c15 N73-20533  
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[NASA-CASE-MFS-22411-1] c15 N73-28532  
Fluorinated esters of polycarboxylic acid and lubricating compositions for use at extreme temperature  
[NASA-CASE-MFS-21040-1] c06 N73-30098
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[NASA-CASE-KSC-10723-1] c15 N73-23553  
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[NASA-CASE-LEW-11026-1] c15 N73-33383
- LUBRICATION SYSTEMS**  
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[NASA-CASE-MFS-21214-1] c09 N73-30181
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[NASA-CASE-XLA-01987] c23 N71-23976
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[NASA-CASE-XLA-00062] c14 N70-33254  
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Development and characteristics of penetrometer for measuring physical properties of lunar surface  
[NASA-CASE-XLA-00934] c14 N71-22765  
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[NASA-CASE-MFS-20130] c28 N71-27585  
Three transceiver lunar emergency system to relay voice communication of astronaut  
[NASA-CASE-MFS-21042] c07 N72-25171
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[NASA-CASE-LAR-10276-1] c11 N70-26813
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[NASA-CASE-XLA-00493] c11 N70-34786
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[NASA-CASE-XNP-01412] c15 N70-42034
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[NASA-CASE-XNP-09776] c15 N71-20440  
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- M**
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[NASA-CASE-XLE-01092] c15 N71-22797  
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[NASA-CASE-FRC-10005] c15 N71-26145  
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[NASA-CASE-NPO-13205-1] c15 N73-31442
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[NASA-CASE-LAR-10953-1] c17 N73-27446
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Improved alternator with windings of superconducting materials acting as permanent magnet  
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Relay circuit breaker with magnetic latching to provide conductive and nonconductive paths for current devices  
[NASA-CASE-MSC-11277] c09 N71-29008
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 Electrically connected matrix of discrete solar cell blanks  
 [NASA-CASE-NPO-10591] c03 N72-22041
- MACLEOD GAGES**  
 Automatic recording McLeod gage with three electrodes and solenoid valve connection  
 [NASA-CASE-XLE-03280] c14 N71-23093

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- Capacitance measuring device for determining flare accuracy on tapered tubes  
[NASA-CASE-XKS-03495] c14 N69-39785
- Characteristics and performance of electrical system to determine angular rotation  
[NASA-CASE-XMF-00447] c14 N70-33179
- Two plane balance for simultaneous measurements of multiple forces  
[NASA-CASE-XAC-00073] c14 N70-34813
- Parallel motion suspension device for measuring instruments  
[NASA-CASE-XNP-01567] c15 N70-41310
- Method and apparatus for measuring potentials in plasmas  
[NASA-CASE-XLE-00821] c25 N71-15650
- Transducer for measuring deflections from vibrating structures  
[NASA-CASE-XLA-03135] c32 N71-16428
- Gage for quality control of sealing surfaces of threaded boss  
[NASA-CASE-XMF-04966] c14 N71-17658
- Equipment for measuring partial water vapor pressure in gas tank  
[NASA-CASE-XMS-01618] c14 N71-20741
- Gauge for measuring quantity of liquid in spherical tank in reduced gravity  
[NASA-CASE-XMS-06236] c14 N71-21007
- Nonreusable energy absorbing device comprising ring member with plurality of recesses, cutting members, and guide member mounted in each recess  
[NASA-CASE-XMF-10040] c15 N71-22877
- Ablation sensor for measuring surface ablation rate of material on vehicles entering earths atmosphere on entry into planetary atmospheres  
[NASA-CASE-XLA-01791] c14 N71-22991
- Test fixture for measuring moment of inertia of irregularly shaped body with multiple axes  
[NASA-CASE-XGS-01023] c14 N71-22992
- Electron beam deflection devices for measuring electric fields  
[NASA-CASE-XMF-10289] c14 N71-23699
- Device for measuring two orthogonal components of force with gallium flotation of measuring target for use in vacuum environments  
[NASA-CASE-XAC-04885] c14 N71-23790
- Gage for measuring internal angle of flare on end of tube  
[NASA-CASE-XMF-04415] c14 N71-24693
- Device utilizing RC rate generators for continuous slow speed measurement  
[NASA-CASE-XMF-02966] c10 N71-24863
- Solid state force measuring electromechanical transducers made of piezoresistive materials  
[NASA-CASE-ERC-10088] c26 N71-25490
- Design and development of layout tool for machine shop use to locate point in precise reference to straight or bowed reference edge  
[NASA-CASE-FRC-10005] c15 N71-26145
- Volume displacement transducer for leak detection in hermetically sealed semiconductor devices  
[NASA-CASE-ERC-10033] c14 N71-26672
- Deformation measuring apparatus with feedback control for arbitrarily shaped structures  
[NASA-CASE-LAR-10098] c32 N71-26681
- Foam insulation thickness measuring and injection device for spacecraft applications  
[NASA-CASE-MFS-20261] c14 N71-27005
- Resonant infrasonic gauging device for measuring liquid quantity in closed bladderless reservoir  
[NASA-CASE-MSC-11847-1] c14 N72-11363
- Measuring roll alignment of test body with respect to reference body  
[NASA-CASE-GSC-10514-1] c14 N72-20379
- Sensor for detecting and measuring energy, velocity and direction of travel of a cosmic dust particle  
[NASA-CASE-GSC-10503-1] c14 N72-20381
- Pumping and metering dual piston system and monitor for reaction chamber constituents  
[NASA-CASE-GSC-10218-1] c15 N72-21465
- Capacitive tank gauging device for monitoring one constituent of two phase fluid by sensing dielectric constant  
[NASA-CASE-MFS-21629] c14 N72-22442
- Development of mechanical device for measuring distance of point within sphere from surface of sphere  
[NASA-CASE-XLA-06683] c14 N72-28436
- Surface based altitude measuring system for accurately measuring altitude of airborne vehicle  
[NASA-CASE-ERC-10412-1] c09 N73-12211
- Instrument for measuring magnitude and direction of flow velocity in flow field  
[NASA-CASE-LAR-10855-1] c14 N73-13415
- Automatic device for measuring human metabolic oxygen rate and breathing dynamics  
[NASA-CASE-MFS-21415-1] c05 N73-15156
- Device for recording locations of measurements made by hand-held noncontacting probe  
[NASA-CASE-LAR-10806-1] c14 N73-15474
- Multiaxes vibration device for making vibration tests along orthogonal axes of test specimen  
[NASA-CASE-MFS-20242] c14 N73-19421
- Material testing system with load sensor for applying and measuring cyclic tensile and compressive loads to test specimens  
[NASA-CASE-MFS-20673] c14 N73-20476
- Development of droplet monitoring probe for use in analysis of droplet propagation in mixed-phase fluid stream  
[NASA-CASE-NPO-10985] c14 N73-20478
- Remotely controlled device for detection of mass changes in selected specimens  
[NASA-CASE-MFS-21556-1] c14 N73-20487
- Jet aircraft noise and sonic boom measuring device which converts sound pressure into electric current  
[NASA-CASE-LAR-11173-1] c14 N73-22387
- Device for measuring tensile forces applied to tension members  
[NASA-CASE-MFS-21728-1] c14 N73-25467
- Device for measuring thermoelectric properties of materials under high pressure  
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- Radio frequency source resistance measuring instruments of varied design  
[NASA-CASE-NPO-11291-1] c14 N73-30388
- Absolute pressure measuring device for measuring gas density level in high vacuum range  
[NASA-CASE-LAR-10000] c14 N73-30394
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[NASA-CASE-XNP-00614] c14 N70-36907
- Load cell protection device using spring-loaded breakaway mechanism  
[NASA-CASE-XMS-06782] c32 N71-15974
- Design and development of satellite despin device  
[NASA-CASE-XMF-08523] c31 N71-20396
- Development of two force component measuring device  
[NASA-CASE-XAC-04886-1] c14 N71-20439
- Design, development, and characteristics of latching mechanism for operation in limited access areas  
[NASA-CASE-XMS-03745] c15 N71-21076
- Design of mechanical device for stirring several test tubes simultaneously  
[NASA-CASE-XAC-06956] c15 N71-21177
- Design and development of random function tracer for obtaining coordinates of points on contour maps  
[NASA-CASE-XLA-01401] c15 N71-21179
- Design and characteristics of device for closing canisters under high vacuum conditions  
[NASA-CASE-XLA-01446] c15 N71-21528
- Development of non-magnetic indexing device for orienting magnetic flux sensing instrument in magnetic field without generation of detrimental magnetic fields  
[NASA-CASE-XGS-02422] c15 N71-21529
- Design and development of module joint clamping device for application to solar array construction  
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- Apparatus for mechanically dispersing ultrafine metal powders subjected to shock waves  
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[NASA-CASE-KSC-10162] c09 N72-11225  
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[NASA-CASE-NPO-10985] c14 N73-20478  
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elevation indications  
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wires, ropes, or cables  
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[NASA-CASE-NPO-10158] c33 N71-16356  
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[NASA-CASE-NPO-10138] c33 N71-16357  
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[NASA-CASE-NPO-11850-1] c09 N73-10248

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[NASA-CASE-XNP-09453] c08 N71-19420  
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measure physiological parameters from display  
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[NASA-CASE-MSC-14180-1] c05 N73-22045  
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- Vertically stacked collinear array of independently fed omnidirectional antennas for use in collision warning systems on commercial aircraft  
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[NASA-CASE-XMS-03454] c09 N71-20658  
Plural beam antenna with parabolic reflectors  
[NASA-CASE-GSC-11013-1] c09 N73-19234  
Multimode antenna feed system for microwave and broadband communication  
[NASA-CASE-GSC-11046-1] c07 N73-28013
- PARABOLOID MIRRORS**  
Three mirror glancing incidence system for X ray telescope  
[NASA-CASE-MFS-21372] c14 N72-20397  
Optical data processing system using paraboloidal reflecting surfaces  
[NASA-CASE-GSC-11296-1] c23 N73-30666
- PARACHUTE DESCENT**  
Multiple parachute system for landing control of Apollo type spacecraft  
[NASA-CASE-XLA-00898] c02 N70-36804  
Parachute system for lowering manned spacecraft from post-reentry to ocean landing  
[NASA-CASE-XLA-00195] c02 N70-38009  
Piston in bore cutter for severing parachute control lines and sealing cable hole to prevent water leakage into load  
[NASA-CASE-XMS-04072] c15 N70-42017  
Development and operating principles of gas generator for deploying recovery parachutes from space capsules during atmospheric entry  
[NASA-CASE-LAR-10549-1] c31 N73-13898
- PARACHUTE FABRICS**  
Development and characteristics of parachute fabric for aerodynamic decelerator using lightweight, variable solidity, knitted material  
[NASA-CASE-LAR-10776-1] c02 N72-21004
- PARACHUTES**  
System for controlling torque buildup in suspension of gondola connected to balloon by parachute shroud lines  
[NASA-CASE-GSC-11077-1] c02 N73-13008
- PARAGLIDERS**  
Multiple parachute system for landing control of Apollo type spacecraft  
[NASA-CASE-XLA-00898] c02 N70-36804
- PARALLEL PLATES**  
Describing instrument capable of measuring true shear viscosity of liquids and viscoelastic materials  
[NASA-CASE-XNP-09462] c14 N71-17584
- PARAMETRIC AMPLIFIERS**  
Development of idler feedback system to reduce electronic noise problem in two parametric amplifiers  
[NASA-CASE-LAR-10253-1] c09 N72-25258
- PARAWINGS**  
Method for deployment of flexible wing glider from space vehicle with minimum impact and loading  
[NASA-CASE-XMS-00907] c02 N70-41630
- PARTIAL PRESSURE**  
Equipment for measuring partial water vapor pressure in gas tank  
[NASA-CASE-XMS-01618] c14 N71-20741
- PARTICLE ACCELERATION**  
Selector mechanism for mechanical separation and discrimination of high velocity molecular particles  
[NASA-CASE-XLE-01533] c11 N71-10777  
Method and apparatus for use in forming highly collimated beam of microparticles with high charge to mass ratio and injecting beam into electrostatic accelerating tube  
[NASA-CASE-XGS-06628] c24 N71-16213
- PARTICLE ACCELERATOR TARGETS**  
Development and characteristics of improved dispensing targets for ion beam particle generators  
[NASA-CASE-NPO-13112-1] c11 N73-29138
- PARTICLE BEAMS**  
Particle beam power density detection and measurement apparatus  
[NASA-CASE-XLE-00243] c14 N70-38602  
Development and characteristics of improved dispensing targets for ion beam particle generators  
[NASA-CASE-NPO-13112-1] c11 N73-29138
- PARTICLE COLLISIONS**  
Momentum-velocity analyzer for measuring minute space particles  
[NASA-CASE-XMS-04201] c14 N71-22990
- PARTICLE DENSITY (CONCENTRATION)**  
Particle detector for measuring micrometeoroid velocity in space  
[NASA-CASE-XLA-00495] c14 N70-41332
- PARTICLE EMISSION**  
Mosaic semiconductor radiation detector and position indicator systems engineering for low energy particles  
[NASA-CASE-XGS-03230] c14 N71-23401  
Apparatus for detecting particle emission lower than noise level of multiplier tube  
[NASA-CASE-XLA-07813] c14 N72-17328

## PARTICLE ENERGY

Particle detector for indicating incidence and energy of minute space particles  
[NASA-CASE-XLA-00135] c14 N70-33322

## PARTICLE MOTION

Controlled distribution of electrophoretic samples in flow path through conductive screens  
[NASA-CASE-HFS-21395-1] c14 N72-27425

## PARTICLE PRODUCTION

Heat pipe production of high purity radioiodine for thyroid measurements  
[NASA-CASE-LEW-11390-3] c11 N73-28128

Development and characteristics of improved dispensing targets for ion beam particle generators  
[NASA-CASE-NPO-13112-1] c11 N73-29138

## PARTICLE SIZE DISTRIBUTION

Micropacked column for rapid chromatographic analysis using low gas flow rates  
[NASA-CASE-XNP-04816] c06 N69-39936

Apparatus for producing hydrocarbon slurry containing small particles of magnesium for use as jet aircraft fuel  
[NASA-CASE-XLE-00010] c15 N70-33382

Production of high strength refractory compounds and microconstituents into refractory metal matrix  
[NASA-CASE-XLE-03940] c18 N71-26153

## PARTICLES

Development of device for separating, collecting, and viewing soil particles  
[NASA-CASE-XNP-09770] c15 N71-20440

Development of apparatus for producing metal powder particles of controlled size  
[NASA-CASE-XLE-06461-2] c17 N72-28535

## PARTICULATE SAMPLING

Design and development of device to prevent clogging in hoppers containing particulate materials  
[NASA-CASE-LAR-10961-1] c15 N73-12496

Development and operation of apparatus for sampling particulates in gases in upper atmosphere  
[NASA-CASE-HQN-10037-1] c14 N73-27376

## PASSAGEWAYS

Space expandable tether device for use as passageway between two docked spacecraft  
[NASA-CASE-XMS-10993] c15 N71-28936

## PASSIVE SATELLITES

Erectable, inflatable, radio signal reflecting passive communication satellite  
[NASA-CASE-XLA-00210] c30 N70-40309

Apparatus for measuring backscatter and transmission characteristics of sample segment of large spherical passive satellites  
[NASA-CASE-XGS-02608] c07 N70-41678

Forming inflatable panels erectable in space for passive communication satellite  
[NASA-CASE-XLA-03497] c15 N71-23052

## PATENTS

Electromechanical actuator and its use in rocket thrust control valve  
[NASA-CASE-XNP-05975] c15 N69-23185

Gas balancing, cryogenic refrigeration apparatus with Joule-Thomson valve assembly  
[NASA-CASE-NPO-10309] c15 N69-23190

Lithium drifted silicon radiation detector with gold rectifying contacts  
[NASA-CASE-XLE-10529] c14 N69-23191

Fecal waste disposal container  
[NASA-CASE-XMS-06761] c05 N69-23192

Thermal shock resistant hafnia ceramic materials  
[NASA-CASE-LAR-10894-1] c18 N73-14584

## PATIENTS

Stretcher with rigid head and neck support with capability of supporting immobilized person in vertical position for removal from vehicle hatch to exterior also useful as splint stretcher  
[NASA-CASE-XMF-06589] c05 N71-23159

## PATTERN RECOGNITION

Roughness detector for recording surface pattern of irregularities  
[NASA-CASE-XLA-00203] c14 N70-34161

Development of auditory display of two-dimensional patterns to assist blind persons in pattern identification  
[NASA-CASE-HQN-10832-1] c14 N73-12456

## PAYLOADS

Plastic foam generator for space vehicle instrument payload package flotation in water landing  
[NASA-CASE-XLA-00838] c03 N70-36778

Stage separation system for spinning vehicles and payloads  
[NASA-CASE-XLA-02132] c31 N71-10582

Payload/spent rocket engine case separation system  
[NASA-CASE-XLA-05369] c31 N71-15687

High velocity guidance and spin stabilization gyro controlled jet reaction system for launch vehicle payloads  
[NASA-CASE-XLA-01339] c31 N71-15692

Payload soft landing system using stowable gas bag  
[NASA-CASE-XLA-09881] c31 N71-16085

Zero gravity apparatus utilizing pneumatic decelerating means to create payload subjected to zero gravity conditions by dropping its height  
[NASA-CASE-XMF-06515] c14 N71-23227

Development and characteristics of supporting frame to isolate payloads from multi-gravitational forces  
[NASA-CASE-HFS-21680-1] c15 N73-20525

## PCM TELEMETRY

Variable time constant, wide frequency range smoothing network for noise removal from pulse chains  
[NASA-CASE-XGS-01983] c10 N70-41964

Data acquisition and processing system with buffer storage and timing device for magnetic tape recording of PCM data and timing information  
[NASA-CASE-NPO-12107] c08 N71-27255

High speed direct binary to binary coded decimal converter for use in PCM telemetry systems  
[NASA-CASE-KSC-10326] c08 N72-21197

## PELLETS

Supporting structure for simultaneous exposure of pellets to X rays  
[NASA-CASE-XNP-06031] c15 N71-15606

## Peltier Effects

Use of silicon controlled rectifier shorting circuit to protect thermoelectric generator source from thermal destruction  
[NASA-CASE-XGS-04808] c03 N69-25146

## PENETRANTS

Dye penetrant and technique for nondestructive tests of solid surfaces contacted by liquid oxygen  
[NASA-CASE-XMF-02221] c18 N71-27170

## PENETROMETERS

Development and characteristics of penetrometer for measuring physical properties of lunar surface  
[NASA-CASE-XLA-00934] c14 N71-22765

Penetrometer for empirically determining load-bearing characteristics of inclined surfaces of remotely located bodies of soil  
[NASA-CASE-NPO-11103] c14 N72-21406

Portable penetrometer for analyzing soil characteristics  
[NASA-CASE-HFS-20774] c14 N73-19420

Auger-type soil penetrometer for burrowing into soil formations  
[NASA-CASE-XNP-05530] c14 N73-32321

## PERCEPTION

Measuring method for cutaneous perception using instrument with elongated tubular housing  
[NASA-CASE-MSC-13609-1] c05 N72-25122

## PERFLUORO COMPOUNDS

Chemical synthesis of hydroxy terminated perfluoro ethers as intermediates for highly fluorinated polyurethane resins  
[NASA-CASE-NPO-10768] c06 N71-27254

Perfluoro polyether acyl fluorides  
[NASA-CASE-NPO-10765] c06 N72-20121

Reaction of polyperfluoropolyenes with fluorine to produce saturated polymer chain or create reactive sites on chain  
[NASA-CASE-NPO-10862] c06 N72-22107

Silphenylenesiloxane polymer with in-chain perfluoroalkyl groups  
[NASA-CASE-HFS-20979] c06 N72-25151

Polymerization of perfluorobutadiene  
[NASA-CASE-NPO-10863-2] c06 N72-25152

Formation of polyurethane resins from hydroxy terminated perfluoro ethers

- [NASA-CASE-NPO-10768-2] c06 N72-27144  
Process for preparing disilanolols with in-chain  
perfluoroalkyl groups  
[NASA-CASE-MFS-20979-2] c06 N73-32030
- PERFORATED PLATES**  
Helium outgassing process for fused glass  
coating on ion accelerator grid  
[NASA-CASE-LEW-10278-1] c15 N71-28582
- PERFORATED SHELLS**  
Elastic mandrel fabrication of thin bottom walls  
with cavities for temperature measurement  
[NASA-CASE-LAR-10318-1] c14 N72-20396
- PERFORMANCE TESTS**  
Flexible, franquible electrochemical cell and  
package for operation in low temperature  
environment  
[NASA-CASE-XGS-10010] c03 N72-15986  
Test method and equipment for identifying faulty  
cells or connections in solar cell assemblies  
[NASA-CASE-NPO-10401] c03 N72-20033  
Development of apparatus for detonating  
explosive devices in order to determine forces  
generated and detonation propagation rate  
[NASA-CASE-LAR-10866-1] c33 N72-27959
- PERMEABILITY**  
Water insoluble, cationic permselective membrane  
[NASA-CASE-NPO-11091] c18 N72-22567
- PEROXIDES**  
Low pressure perfluorobutadiene polymerization  
with peroxide catalysts  
[NASA-CASE-NPO-10447] c06 N70-11252
- PERSPIRATION**  
Manufacturing process for making perspiration  
resistant-stress resistant biopotential  
electrode  
[NASA-CASE-MSC-90153-2] c05 N72-25120
- PETURBATION**  
Absorbing gas reactivity control system for  
minimizing power distribution and perturbation  
in nuclear reactors  
[NASA-CASE-XLE-04599] c22 N72-20597  
Laser Doppler velocimeter for simultaneously  
measuring orthogonal fluid velocity components  
without flow field perturbation  
[NASA-CASE-ARC-10637-1] c14 N73-21396
- PHASE COHERENCE**  
Apparatus for estimating amplitude and sign of  
phase difference or time lag between two signals  
[NASA-CASE-NPO-11203] c10 N72-20224  
Design of nonlinear coherence receiver with  
feedback signal selection for carrier tracking  
in telecommunications  
[NASA-CASE-NPO-11921-1] c07 N73-23118
- PHASE CONTROL**  
System designed to reduce time required for  
obtaining synchronization in data  
communication with spacecraft utilizing  
pseudonoise codes  
[NASA-CASE-NPO-10214] c10 N71-26577  
Wideband voltage controlled oscillator with high  
phase stability  
[NASA-CASE-XLA-03893] c10 N71-27271  
Radiometer quadrature control and measuring  
system using optical coupling circuitry  
[NASA-CASE-MFS-21660-1] c14 N73-13434  
System for generating timing and control signals  
during repetitive fixed length serial data  
transmission  
[NASA-CASE-NPO-13125-1] c09 N73-18225  
Phase delay control system for stabilizing  
signals passing through coaxial cables  
[NASA-CASE-NPO-13138-1] c09 N73-20238  
Voltage controlled oscillator circuit for  
two-phase induction motor control  
[NASA-CASE-MFS-21465-1] c10 N73-32145
- PHASE DEMODULATORS**  
Development of phase demodulation system with  
two phase locked loops  
[NASA-CASE-XNP-00777] c10 N71-19469
- PHASE DETECTORS**  
Detector assembly for discriminating first  
signal with respect to presence or absence of  
second signal at time of occurrence of first  
signal  
[NASA-CASE-XMF-00701] c09 N70-40272  
Bipolar phase detector and corrector for split  
phase PCM data signals  
[NASA-CASE-XGS-01590] c07 N71-12392
- High speed phase detector design indicating  
phase relationship between two square wave  
input signals  
[NASA-CASE-XNP-C1306-2] c09 N71-24596  
Voltage controlled phase shifter with low  
distortion  
[NASA-CASE-MFS-21671-1] c10 N73-17211  
Phase detector with time correlation integrator  
for frequency multiplexed signals  
[NASA-CASE-GSC-11744-1] c09 N73-23291
- PHASE LOCK DEMODULATORS**  
Phase locked demodulator with bandwidth  
switching amplifier circuit  
[NASA-CASE-XNP-01107] c10 N71-28859
- PHASE LOCKED SYSTEMS**  
System for phase locking onto carrier frequency  
signal located within receiver bandpass  
[NASA-CASE-XGS-04994] c09 N69-21543  
Phase locked loop with sideband rejecting  
properties in continuous wave tracking radar  
[NASA-CASE-XNP-02723] c07 N70-41680  
Development of automatic frequency  
discriminators and control for phase lock loop  
providing frequency preset capabilities  
[NASA-CASE-XMF-08665] c10 N71-19467  
Development and characteristics of burst  
synchronization detection system  
[NASA-CASE-XMS-05605-1] c10 N71-19468  
Development of phase demodulation system with  
two phase locked loops  
[NASA-CASE-XNP-00777] c10 N71-19469  
Diversity receiving system with diversity phase  
lock  
[NASA-CASE-XGS-01222] c10 N71-20841  
Phase locked phase modulation system with  
voltage controlled oscillator for final phase  
linearity  
[NASA-CASE-XNP-05382] c10 N71-23544  
Video sync processor with phase locked system  
[NASA-CASE-KSC-10002] c10 N71-25865  
Digital second order, phase locked loop with  
counter driven by stable clock pulse source  
[NASA-CASE-NPO-11905-1] c08 N73-12192  
Characteristics of data-aided carrier tracking  
loop used for tracking carrier in angle  
modulated communications system  
[NASA-CASE-NPO-11282] c10 N73-16205  
Filter for third order phase locked loops in  
signal receivers  
[NASA-CASE-NPO-11941-1] c10 N73-27171  
Improved phase lock loop for receiver in  
multichannel telemetry system with suppressed  
carrier  
[NASA-CASE-NPO-11593-1] c07 N73-28012  
Automatic carrier acquisition system for phase  
locked loop receiver  
[NASA-CASE-NPO-11628-1] c07 N73-30113  
Digital phase-locked loop for accumulator output  
signal phase-locked to input signal  
[NASA-CASE-GSC-11623-1] c10 N73-31202
- PHASE MODULATION**  
Plural channel data transmission system with  
quadrature modulation and complementary  
demodulation  
[NASA-CASE-XAC-06302] c08 N71-19763  
Adaptive notch filter, using modulation  
techniques for reversed phase noise signal  
[NASA-CASE-XMP-01892] c10 N71-22986  
Phase locked phase modulation system with  
voltage controlled oscillator for final phase  
linearity  
[NASA-CASE-XNP-05382] c10 N71-23544  
Scanning signal phase and amplitude electronic  
control device with hybrid T waveguide junction  
[NASA-CASE-NPO-10302] c10 N71-26142  
Phase modulator with tuned variable length  
electrical lines including coupling and  
varactor diode circuits  
[NASA-CASE-MSC-13201-1] c07 N71-28429  
Multicarrier communications system for  
transmitting modulated signals from single  
transmitter  
[NASA-CASE-NPO-11548] c07 N73-26118  
Phase modulation of tone and binary signals on  
carrier waves in communication systems  
[NASA-CASE-GSC-11743-1] c07 N73-27107
- PHASE SHIFT**  
Bipolar phase detector and corrector for split  
phase PCM data signals

- [NASA-CASE-XGS-01550] c07 N71-12392  
Left and right hand circular electromagnetic polarization excitation by phase shifter and hybrid networks
- [NASA-CASE-GSC-10021-1] c09 N71-24595  
Pulse code modulated data from frequency multiplex communications by digital phase shift or carrier
- [NASA-CASE-NPO-11338] c08 N72-25208  
**PHASE SHIFT CIRCUITS**  
Design of gyrator circuit using operational amplifiers to replace ungrounded inductors
- [NASA-CASE-XAC-10608-1] c09 N71-12517  
Phase shifting circuit for selecting phase of input signal
- [NASA-CASE-ARC-10269-1] c10 N72-16172  
Continuously variable, voltage-controlled phase shifter
- [NASA-CASE-NPO-11129] c09 N72-33204  
Voltage controlled phase shifter with low distortion
- [NASA-CASE-MFS-21671-1] c10 N73-17211  
Voltage controlled oscillator circuit for two-phase induction motor control
- [NASA-CASE-MFS-21465-1] c10 N73-32145  
**PHASE SHIFT KEYING**  
Development of communication system for transmitting differential phase shift keyed signals from input data bits without timing or phase reference signals
- [NASA-CASE-MS-C-14065-1] c07 N73-10215  
Development of differential phase shift keyed signal receiver to resolve differential phase shift in incoming signal
- [NASA-CASE-MSC-14066-1] c10 N73-10269  
Multiple phase shift keying communications for improving carrier tracking efficiency and data detection performance
- [NASA-CASE-NPO-13103-1] c07 N73-20180  
**PHASE SWITCHING INTERFEROMETERS**  
Interferometric tuning acquisition and tracking radar antenna system
- [NASA-CASE-XMS-09610] c07 N71-24625  
**PHASE TRANSFORMATIONS**  
Magneto hydrodynamic generator for mixing nonconductive gas and liquid metal mist to form slugs
- [NASA-CASE-XLE-02083] c03 N69-39983  
Method and feed system for separating and orienting liquid and vapor phases of liquid propellants in zero gravity environment
- [NASA-CASE-XLE-01182] c27 N71-15635  
**PHASED ARRAYS**  
Development of phase control coupling for use with phased array antenna
- [NASA-CASE-ERC-10285] c10 N73-16206  
**PHASED LOCKED SYSTEMS**  
Bit synchronization system using digital data transition tracking phased locked loop
- [NASA-CASE-NPO-10844] c07 N72-20140  
**PHENOLS**  
Utilization of lithium p-lithiphenoxide to prepare star polymers
- [NASA-CASE-NPO-10998-1] c06 N73-32029  
**PHONOCARDIOGRAPHY**  
Phonocardiogram simulator producing electrical voltage waves to control amplitude and duration between simulated sounds
- [NASA-CASE-XKS-10804] c05 N71-24606  
Vibrophonocardiograph comprising low weight and small volume piezoelectric microphone with amplifier having high input impedance for high sensitivity and low frequency response
- [NASA-CASE-XPR-07172] c05 N71-27234  
**PHOSPHATES**  
Method of preparing stable nonpolarizable silicon dioxide layers on silicon using phosphosilicate glass as getter material for fabricating long life semiconductor devices
- [NASA-CASE-ERC-10071] c06 N70-11167  
Low concentration alkaline solution treatment of aluminum with metal phosphate surface coatings to improve chemical bonding and reduce coating weight
- [NASA-CASE-XLA-01995] c18 N71-23047  
**PHOSPHONITRILES**  
Chemical synthesis of thermally stable organometallic polymers with divalent metal ion and tetraphenylphosphonitrilic units
- [NASA-CASE-HQN-10364] c06 N71-27363  
**PHOTOABSORPTION**  
Gas laser with lasing medium for removing films deposited on terminating optics of cavity
- [NASA-CASE-ERC-10210] c16 N70-41525  
**PHOTOCATHODES**  
Spectrometer using photoelectric effect to obtain spectral data
- [NASA-CASE-XNP-04161] c14 N71-15599  
**PHOTOCONDUCTIVITY**  
Photofabrication techniques for selective removal of conductive metals oxide coatings from nonconductive substrates
- [NASA-CASE-ERC-10108] c06 N72-21094  
**PHOTOCONDUCTORS**  
Electronic divider and multiplier for analog electric signals
- [NASA-CASE-XFR-05637] c09 N71-19480  
Photoconducting semiconductor system for converting stored optical images into video signals
- [NASA-CASE-NPO-13131-1] c16 N73-31467  
**PHOTOELECTRIC CELLS**  
Sun tracker with rotatable plane-parallel plate and two photocells
- [NASA-CASE-XGS-01159] c21 N71-10678  
**PHOTOELECTRIC EFFECT**  
Spectrometer using photoelectric effect to obtain spectral data
- [NASA-CASE-XNP-04161] c14 N71-15599  
**PHOTOELECTRIC MATERIALS**  
Light radiation direction indicator with baffle of two parallel grids
- [NASA-CASE-XNP-03930] c14 N69-24331  
**PHOTOGRAPHIC EQUIPMENT**  
Camera protecting device for use in photographing rocket engine nozzles or other engine components
- [NASA-CASE-NPO-10174] c14 N71-18465  
**PHOTOGRAPHIC FILM**  
Image copier system for film editing and composite reproduction of multiple images
- [NASA-CASE-NPO-10196-2] c14 N70-20711  
Longitudinal film gate and lock mechanism for securing film in motion picture cameras under vibration and high acceleration loads
- [NASA-CASE-LAR-10686] c14 N71-28935  
Photographic film restoration system using Fourier transformation lenses and spatial filter
- [NASA-CASE-MSC-12448-1] c14 N72-20394  
Mechanical exposure interlock device for preventing film overexposure in oscilloscope camera
- [NASA-CASE-LAR-10319-1] c14 N73-32322  
**PHOTOGRAPHIC MEASUREMENT**  
Photographic method for measuring viscoelastic strain in solid propellants and other materials
- [NASA-CASE-XNP-01153] c32 N71-17645  
Impact measuring technique for determining size of hypervelocity projectiles
- [NASA-CASE-LAR-10913] c14 N72-16282  
**PHOTOGRAPHIC PROCESSING EQUIPMENT**  
Drying chamber for photographic sheet material
- [NASA-CASE-GSC-11074-1] c14 N73-28489  
**PHOTOGRAPHIC RECORDING**  
Photographing surface flow patterns on wind tunnel test models
- [NASA-CASE-XLA-01353] c14 N70-41366  
Development of focused image holography with extended sources
- [NASA-CASE-ERC-10019] c16 N71-15551  
Recording and reconstructing focused image holograms
- [NASA-CASE-ERC-10017] c16 N71-15567  
Method and means for recording and reconstructing holograms without use of reference beam
- [NASA-CASE-ERC-10020] c16 N71-26154  
Multiple image storing system for obtaining holographic record on film of high speed projectile
- [NASA-CASE-MFS-20596] c14 N72-17324  
Phototropic composition of matter with sensitivity to ultraviolet light and usable for producing positive photographic images
- [NASA-CASE-XGS-03736] c14 N72-22443  
Development of method for measuring temperature of wind tunnel scale model by photographic recording of changes in thin film phase-change

- temperature indicating material  
[NASA-CASE-LAR-11053-1] c33 N73-11972
- Development of technique for producing holograms using propagation of surface waves within layer of photosensitive material  
[NASA-CASE-MFS-22040-1] c16 N73-26500
- PHOTOIONIZATION**  
Multichannel photoionization chamber for measuring absorption, photoionization yield, and coefficients of gases  
[NASA-CASE-ERC-10044-1] c14 N71-27090
- PHOTOMETERS**  
Michelson interferometer with photodetector for optical direction sensing  
[NASA-CASE-NPO-10320] c14 N71-17655
- Indicator device for monitoring charge of wet cell battery, using semiconductor light emitter and photodetector  
[NASA-CASE-NPO-10194] c03 N71-20407
- Electro-optical detector for determining position of light source  
[NASA-CASE-XNP-01059] c23 N71-21821
- Photometric flow meter with comparator reference means  
[NASA-CASE-XGS-01331] c14 N71-22996
- Development of radiant energy sensor to detect the radiant energy wavelength bands from portions of radiating body  
[NASA-CASE-ERC-10174] c14 N72-25409
- Characteristics of infrared photodetectors manufactured from semiconductor material irradiated by electron beam  
[NASA-CASE-LAR-10728-1] c14 N73-12445
- PHOTOMICROGRAPHY**  
Stereo photomicrography system with stereo microscope for viewing specimen at various magnifications  
[NASA-CASE-LAR-10176-1] c14 N72-20380
- Device for displaying and recording angled views of samples to be viewed by microscope  
[NASA-CASE-GSC-11690-1] c14 N73-28499
- Hand-held, lightweight, portable photomicroscope  
[NASA-CASE-ARC-10468-1] c14 N73-33361
- PHOTOMULTIPLIER TUBES**  
Photomultiplier detector of Canopus for spacecraft attitude control  
[NASA-CASE-XNP-03914] c21 N71-10771
- Electronic divider and multiplier for analog electric signals  
[NASA-CASE-XFR-05637] c09 N71-19480
- Circuit design for determining amount of photomultiplier tube light detection utilizing variable current source and dark current signals of opposite polarity  
[NASA-CASE-XMS-03478] c14 N71-21040
- Apparatus for detecting particle emission lower than noise level of multiplier tube  
[NASA-CASE-XLA-07813] c14 N72-17328
- Scan oscilloscope for mapping surface sensitivity of photomultiplier tube  
[NASA-CASE-LAR-10320-1] c09 N72-23172
- Design and development of light sensing device for controlling orientation of object relative to sun or other light source  
[NASA-CASE-NPO-11201] c14 N72-27409
- Control circuit for reducing bias voltage and radiation sensitivity of photomultiplier  
[NASA-CASE-ARC-10593-1] c09 N73-30187
- PHOTOSENSITIVITY**  
Photosensitive light source device for detecting unmanned spacecraft deviation from reference attitude  
[NASA-CASE-XNP-00438] c21 N70-35089
- Light sensitive control system for automatically opening and closing dome of solar optical telescope  
[NASA-CASE-MSC-10966] c14 N71-19568
- Scan oscilloscope for mapping surface sensitivity of photomultiplier tube  
[NASA-CASE-LAR-10320-1] c09 N72-23172
- PHOTOTRANSISTORS**  
Phototransistor imaging system with mosaic of phototransistors on semiconductor substrate  
[NASA-CASE-MFS-20809] c23 N73-13660
- Phototransistor with base collector junction diode for integration into photo sensor arrays  
[NASA-CASE-MFS-20407] c09 N73-19235
- PHOTOTROPISM**  
Phototropic composition of matter with sensitivity to ultraviolet light and usable for producing positive photographic images  
[NASA-CASE-XGS-03736] c14 N72-22443
- PHOTOVISCOELASTICITY**  
Photographic method for measuring viscoelastic strain in solid propellants and other materials  
[NASA-CASE-XNP-01153] c32 N71-17645
- PHOTOVOLTAIC CELLS**  
Sensor consisting of photocells mounted on pyramidal base for improved pointing accuracy of planetary trackers  
[NASA-CASE-XNP-04180] c07 N69-39736
- Light sensitive digital aspect sensor for attitude control of earth satellites or space probes  
[NASA-CASE-XGS-00359] c14 N70-34158
- Method of producing output voltage from photovoltaic cell using poly-N-vinyl carbazole complexed with iodine  
[NASA-CASE-NPO-10373] c03 N71-18698
- Thin film metal-insulator-metal photovoltaic light detector with trapezoidal barrier  
[NASA-CASE-NPO-11432-2] c14 N72-28442
- PHOTOVOLTAIC EFFECT**  
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[NASA-CASE-MSC-12259-1] c07 N70-12616
- PHYSICAL PROPERTIES**  
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[NASA-CASE-MFS-10512] c06 N73-30099
- PHYSIOLOGICAL EFFECTS**  
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[NASA-CASE-MSC-12397-1] c05 N72-25119
- PHYSIOLOGICAL TESTS**  
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[NASA-CASE-XFR-07172] c05 N71-27234
- Multichannel medical monitoring system to measure physiological parameters from display device at remote control station  
[NASA-CASE-MSC-14180-1] c05 N73-22045
- PHYSIOLOGY**  
Piezoelectric transducer for monitoring sound waves of physiological origin  
[NASA-CASE-XMS-05365] c14 N71-22993
- Computer controlled infusion pump for time varying input of calcium into physiological systems  
[NASA-CASE-ARC-10447-1] c05 N73-14092
- PIERCING**  
Pressurized cell micrometeoroid detector  
[NASA-CASE-XLA-00936] c14 N71-14996
- Inflatability and flotation of one man life raft after puncture to main wall  
[NASA-CASE-LAR-10241-1] c05 N72-21076
- PIEZOELECTRIC CRYSTALS**  
Miniature solid state, direction sensitive, stress transducer design with bonded semiconductive piezoresistive element for sensing residual stresses  
[NASA-CASE-XNP-02983] c14 N71-21091
- Transistor circuit with piezoelectric crystal for stable high frequency oscillator  
[NASA-CASE-GSC-11513-1] c09 N73-16185
- PIEZOELECTRIC TRANSDUCERS**  
Piezoelectric transducer for detecting and measuring micrometeoroids  
[NASA-CASE-XAC-01101] c14 N70-41957
- Describing crystal oscillator instrument for detecting condensable gas contaminants in vacuum apparatus  
[NASA-CASE-NPO-10144] c14 N71-17701
- Piezoelectric transducer for monitoring sound waves of physiological origin  
[NASA-CASE-XMS-05365] c14 N71-22993
- Miniature piezoelectric semiconductor transducer with in situ stress coupling  
[NASA-CASE-ERC-10087-2] c14 N72-31446
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- Piezoelectric pump for supplying fluid at high frequencies to gyroscope fluid suspension system [NASA-CASE-XNP-05429] c26 N71-21824
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- Controlled visibility device for simulating poor visibility conditions in training pilots in instrument landing and flight procedures [NASA-CASE-XFR-04147] c11 N71-10748
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- Low thermal loss piping arrangement for moving cryogenic media through double chamber structure [NASA-CASE-XNP-08882] c15 N69-39935
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- Development and characteristics of test equipment for determining temperature and electron density of plasma based on derivation of absorption coefficients [NASA-CASE-ARC-10598-1] c25 N73-29750
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- Development of self-energized plasma compressor for compressing plasma discharged from coaxial plasma generator [NASA-CASE-MFS-22145-1] c25 N73-26721
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- Coaxial, high density, hypervelocity plasma generator and accelerator using electrodes [NASA-CASE-MFS-20589] c25 N72-32688
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[NASA-CASE-XNP-06508] c18 N69-39895  
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[NASA-CASE-MFS-20855] c15 N73-27405  
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[NASA-CASE-LEW-11072-1] c14 N73-24472
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[NASA-CASE-XLA-03492] c15 N71-22713  
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[NASA-CASE-XMS-01625] c15 N71-23022  
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[NASA-CASE-LAR-10121-1] c15 N71-26721  
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[NASA-CASE-LAR-10489-1] c15 N72-21484  
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[NASA-CASE-XLE-05130] c15 N69-21362
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[NASA-CASE-GSC-11182-1] c31 N73-32769
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[NASA-CASE-XGS-03120] c15 N71-24047  
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[NASA-CASE-NPO-11758-1] c15 N72-28507  
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[NASA-CASE-GSC-11163-1] c15 N73-32360
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[NASA-CASE-NPO-11317-2] c16 N73-31468
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[NASA-CASE-MFS-14685] c31 N71-15689  
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[NASA-CASE-XLA-08493] c10 N71-19421
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[NASA-CASE-XPR-09479] c14 N69-27503  
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[NASA-CASE-XLA-09122] c15 N69-27505  
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[NASA-CASE-NPO-10298] c12 N71-17661  
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[NASA-CASE-GSC-10640-1] c28 N72-18766
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[NASA-CASE-XHQ-01208] c15 N70-35409  
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[NASA-CASE-XMS-10660-1] c15 N71-25975  
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[NASA-CASE-MSC-11010] c15 N71-19485  
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[NASA-CASE-XLA-01731] c32 N71-21045  
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- Two beam interferometer-polarimeter  
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- Peak polarity selector for monitoring waveforms  
[NASA-CASE-FRC-10010] c10 N71-24862
- Precision full wave rectifier circuit for rectifying incoming electrical signals having positive or negative polarity with only positive output signals  
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- Polyimide foams produced in presence of alkanolamine or siloxane-glycol polymer  
[NASA-CASE-ARC-10464-1] c06 N72-21102
- Stable polyimide synthesis from mixtures of monomeric diamines and polycarboxylic acid esters  
[NASA-CASE-LEW-11325-1] c06 N73-27980

## POLYISOBUTYLENE

- Chemical process for production of polyisobutylene compounds and application as solid rocket propellant binder  
[NASA-CASE-NPO-10893] c27 N73-22710

## POLYMER CHEMISTRY

- New trifunctional alcohol derived from trimer acid and novel method of preparation

- [NASA-CASE-NPO-10714] c06 N69-31244
- Synthesis of siloxane containing epoxy polymers with low dielectric properties  
[NASA-CASE-MFS-13994-1] c06 N71-11240
- Apparatus for determining volatile condensable material present in polymeric products  
[NASA-CASE-XNP-09699] c06 N71-24607

## POLYMERIC FILMS

- High strength antistatic plastic film laminate for inhibiting buildup of electrostatic charges on plastic bodies  
[NASA-CASE-MSC-12255-1] c18 N70-20713
- Ethylene oxide sterilization and encapsulating process for sterile preservation of instruments and solid propellants  
[NASA-CASE-XNP-09763] c14 N71-20461
- Hydraulic apparatus for casting and molding of liquid polymers  
[NASA-CASE-XNP-07659] c06 N71-22975
- Heat sealable transparent plastic film for mounting solar cell array to flexible substrate  
[NASA-CASE-LEW-11069-1] c03 N71-29048
- Transparent plastic film for attaching cover glasses to silicon solar cells  
[NASA-CASE-LEW-11065-1] c03 N72-11064
- Thermodielectric radiometer using polymer film as capacitor  
[NASA-CASE-ARC-10138-1] c14 N72-24477
- Silicon solar cell with plastic film binding to cover glass  
[NASA-CASE-LEW-11065-2] c03 N73-26048
- Development and characteristics of system for skin packaging articles using thermoplastic film heating and vacuum operated equipment  
[NASA-CASE-MFS-20855] c15 N73-27405

## POLYMERIZATION

- Synthesis of polyfluorobutadiene by polymerization of perfluorobutadiene with diisopropyl peroxydicarbonate  
[NASA-CASE-NPO-10863] c06 N70-11251
- Low pressure perfluorobutadiene polymerization with peroxide catalysts  
[NASA-CASE-NPO-10447] c06 N70-11252
- Process for interfacial polymerization of pyromellitic dianhydride and tetraamino benzene  
[NASA-CASE-XLA-03104] c06 N71-11235
- Synthesis and chemical properties of imidazopyrrolone/imide copolymers  
[NASA-CASE-XLA-08802] c06 N71-11238
- Direct synthesis of polymeric schiff bases from two amines and two aldehydes  
[NASA-CASE-XMF-08655] c06 N71-11239
- Synthesis of azine polymers for heat shields by azine-aromatic aldehyde reaction  
[NASA-CASE-XMF-08656] c06 N71-11242
- Synthesis of schiff bases for heat shields by acetal amine reactions  
[NASA-CASE-XMF-08652] c06 N71-11243
- Preparation of elastomeric diamine silazane polymers  
[NASA-CASE-XMF-04133] c06 N71-20717
- Reaction of polyperfluoropolyenes with fluorine to produce saturated polymer chain or create reactive sites on chain  
[NASA-CASE-NPO-10862] c06 N72-22107
- Cross linked polymer system for oil or fat absorption properties  
[NASA-CASE-NPO-11609-1] c06 N72-22114
- Silphenylenesiloxane polymer with in-chain perfluoroalkyl groups  
[NASA-CASE-MFS-20979] c06 N72-25151
- Polymerization of perfluorobutadiene  
[NASA-CASE-NPO-10863-2] c06 N72-25152
- Monomer polymerization by plasma discharge as thin film for water purification membrane  
[NASA-CASE-ARC-10643-1] c06 N73-29074
- Preparation of fluorohydroxy ethers by reacting fluoroalkylene oxides with alkali salt of polyfluoroalkylene diol  
[NASA-CASE-MFS-10507] c06 N73-30101
- Preparation of fluorinated polyethers from 2-hydro-perhaloisopropyl alcohols  
[NASA-CASE-MFS-11492] c06 N73-30102

## POLYMERS

- Preparation of ordered poly(arylenesiloxane)/polymers  
[NASA-CASE-XMF-10753] c06 N71-11237
- Synthesis of aromatic diamines and dialdehyde polymers using Schiff base

## POLYTETRAFLUOROETHYLENE

## SUBJECT INDEX

- [NASA-CASE-XMF-03074] c06 N71-24740  
Automated ball rebound resilience test equipment for determining viscoelastic properties of polymers
- [NASA-CASE-XLA-08254] c14 N71-26161  
Infusible polymer production from reaction of polyfunctional epoxy resins with polyfunctional aziridine compounds
- [NASA-CASE-NPO-10701] c06 N71-28620  
Development of solid state polymer coating for obtaining thermal balance in spacecraft components
- [NASA-CASE-XLA-01745] c33 N71-28903  
Mercaptan terminated polymer containing sulfonic acid salts of nitrosubstituted aromatic amines for heat and moisture resistant coatings
- [NASA-CASE-ARC-10325] c06 N72-25147  
Solid propellant containing hydrazinium nitroformate oxidizer and polymeric hydrocarbon binder
- [NASA-CASE-NPO-12015] c27 N73-16764  
Chemical process for production of polyisobutylene compounds and application as solid rocket propellant binder
- [NASA-CASE-NPO-10893] c27 N73-22710  
High temperature and ultraviolet stability properties of poly(diarylsiloxo)arylazine
- [NASA-CASE-ARC-10592-1] c18 N73-29554  
Utilization of lithium p-lithiophenoxide to prepare star polymers
- [NASA-CASE-NPO-10998-1] c06 N73-32029  
**POLYTETRAFLUOROETHYLENE**  
Procedure for bonding polytetrafluoroethylene thermal protective sleeves to magnesium alloy conical shell components with different thermal coefficients
- [NASA-CASE-XLA-01262] c15 N71-21404  
**POLYURETHANE FOAM**  
Self-erectable space structures of flexible foam for application in planetary orbits
- [NASA-CASE-XLA-00686] c31 N70-34135  
Modification of polyurethanes with alkyl halide resins, inorganic salts, and encapsulated volatile and reactive haloqen for fuel fire control
- [NASA-CASE-ARC-10098-1] c06 N71-24739  
Lightweight fire resistant plastic foam for thermal protection of reentry vehicles and aircraft structures
- [NASA-CASE-ARC-10180-1] c28 N72-20767  
**POLYURETHANE RESINS**  
Chemical synthesis of hydroxy terminated perfluoro ethers as intermediates for highly fluorinated polyurethane resins
- [NASA-CASE-NPO-10768] c06 N71-27254  
Formation of polyurethane resins from hydroxy terminated perfluoro ethers
- [NASA-CASE-NPO-10768-2] c06 N72-27144  
Chemical and physical properties of synthetic polyurethane polymer prepared by reacting hydroxy carbonate with organic diisocyanate
- [NASA-CASE-MFS-10512] c06 N73-30099  
Preparation of stable polyurethane polymer by reacting polymer with diisocyanate
- [NASA-CASE-MFS-10506] c06 N73-30100  
Preparation of polyurethane polymer by reacting hydroxy polyformal with organic diisocyanate
- [NASA-CASE-MFS-10509] c06 N73-30103  
Chemical and elastic properties of fluorinated polyurethanes
- [NASA-CASE-NPO-10767-1] c06 N73-33076  
**POROUS MATERIALS**  
Production of refractory bodies with controlled porosity by pressing and heating mixtures of refractory and inert metal powders
- [NASA-CASE-LEW-10393-1] c17 N71-15468  
Multilayer porous refractory metal ionizer design with thick, porous, large-grain substrates and thin, porous micron-grain substrates
- [NASA-CASE-XNP-04338] c17 N71-23046  
Lubrication for bearings by capillary action from oil reservoir of porous material
- [NASA-CASE-XNP-03972] c15 N71-23048  
Method and photodetector device for locating abnormal voids in low density materials
- [NASA-CASE-MFS-20044] c14 N71-28993  
Production method for manufacturing porous tungsten bodies from tungsten powder particles
- [NASA-CASE-XNP-04339] c17 N71-29137  
Compressible electrolyte saturated sponge electrode for biomedical applications
- [NASA-CASE-MSC-13648] c05 N72-27103  
Development of method and equipment for detecting cracks in materials with porous subsurface matrix covered by impervious coating
- [NASA-CASE-MSC-14187-1] c14 N73-17564  
Porous electrode for use in electrochemical cells
- [NASA-CASE-GSC-11368-1] c09 N73-32108  
**POROUS PLATES**  
Method for producing porous tungsten plates for ionizing cesium compounds for propulsion of ion engines
- [NASA-CASE-XLE-00455] c28 N70-38197  
**PORTABLE EQUIPMENT**  
Portable electron beam welding chamber
- [NASA-CASE-LEW-11531] c15 N71-14932  
Portable apparatus producing high velocity annular air column surrounding low velocity, filtered, superclean air central core for industrial clean room environmental control
- [NASA-CASE-XMF-03212] c15 N71-22721  
Portable cutting machine for piping weld preparation
- [NASA-CASE-XKS-07953] c15 N71-26134  
Method and apparatus for precision sizing and joining of large diameter tubes by bulging or constricting overlapping ends
- [NASA-CASE-XMF-05114-2] c15 N71-26148  
Portable cryogenic cooling system design including turbine pump, cooling chamber, and atomizer
- [NASA-CASE-NPO-10467] c23 N71-26654  
Automatic controlled drive mechanism for portable boring bar
- [NASA-CASE-XLA-03661] c15 N71-33518  
One hand backpack harness
- [NASA-CASE-LAR-10102-1] c05 N72-23085  
Portable tester for monitoring bacterial contamination by adenosine triphosphate light reaction
- [NASA-CASE-GSC-10879-1] c14 N72-25413  
Portable device for dispensing potable water to crew members aboard operating spacecraft
- [NASA-CASE-MFS-21163-1] c05 N72-28098  
Portable device for detecting pneumatic pressure leaks in hermetically sealed housings
- [NASA-CASE-MFS-21761-1] c14 N73-18444  
Portable penetrometer for analyzing soil characteristics
- [NASA-CASE-MFS-20774] c14 N73-19420  
Tool exchange capabilities of portable wrench characterized by telescopic sleeve
- [NASA-CASE-MFS-22283-1] c15 N73-30462  
Hand-held, lightweight, portable photomicroscope
- [NASA-CASE-ARC-10468-1] c14 N73-33361  
**PORTS (OPENINGS)**  
Sealing evacuation port and evacuating vacuum container such as space jackets
- [NASA-CASE-XMF-03290] c15 N71-23256  
**POSITION (LOCATION)**  
Position locating system for remote aircraft using voice communication and digital signals
- [NASA-CASE-GSC-10087-2] c21 N71-13958  
Development of telemetry system for position location and data acquisition
- [NASA-CASE-GSC-10083-1] c30 N71-16090  
Automatic braking device for rapidly transferring humans or materials from elevated location
- [NASA-CASE-XKS-07814] c15 N71-27067  
System and method for position locating for air traffic control involving supersonic transports
- [NASA-CASE-GSC-10087-3] c07 N72-12080  
Location identification system with ground based transmitter and aircraft borne receiver/decoder
- [NASA-CASE-ERC-10324] c07 N72-25173  
System for detecting impact position of cosmic dust on detector surface
- [NASA-CASE-GSC-11291-1] c25 N72-33696  
Device for recording locations of measurements made by hand-held noncontacting probe
- [NASA-CASE-LAR-10806-1] c14 N73-15474  
Development of radio locating system for monitoring geographic movement of surface vehicles in metropolitan area using unsynchronized radio broadcasting stations
- [NASA-CASE-NPO-13217-1] c07 N73-26144

- Collimator for analyzing spatial location of near and distant sources of radiation  
[NASA-CASE-MFS-20546-2] c14 N73-30389
- POSITION INDICATORS**
- Rocket-borne aspect sensor consisting of radiation sensor, apertured disk, commutator, and counting circuits  
[NASA-CASE-XGS-08266] c14 N69-27432
- Characteristics and performance of electrical system to determine angular rotation  
[NASA-CASE-XMF-00447] c14 N70-33179
- Radioactive source for encoding shaft position  
[NASA-CASE-GSC-10644-1] c14 N70-35583
- Magnetic element position sensing device, using misaligned electromagnets  
[NASA-CASE-XGS-07514] c23 N71-16099
- Describing angular position and velocity sensing apparatus  
[NASA-CASE-XGS-05680] c14 N71-17585
- Mosaic semiconductor radiation detector and position indicator systems engineering for low energy particles  
[NASA-CASE-XGS-03230] c14 N71-23401
- Doppler compensated communication system for locating supersonic transport position  
[NASA-CASE-GSC-10087-4] c07 N73-20174
- Aircraft mounted crash location transmitter for emergency signal transmission after crashes  
[NASA-CASE-MFS-16609-2] c07 N73-31084
- POSITIONING**
- Centering device with ultrafine adjustment for use with roundness measuring apparatus  
[NASA-CASE-XMF-00480] c14 N70-39898
- Portable device for aligning surfaces of two adjacent wall or sheet sections for joining at point of junction  
[NASA-CASE-XMF-01452] c15 N70-41371
- Electro-optical/computer system for aligning large structural members and maintaining correct position  
[NASA-CASE-XNP-02029] c14 N70-41955
- Manual control mechanism for adjusting control rod to null position  
[NASA-CASE-XLA-01808] c15 N71-20740
- Tool positioning holder for grinding by ball nose milling cutter  
[NASA-CASE-LAR-10450-1] c15 N73-10504
- Rotating generator for angular display of television raster in horizontal and visual simulation systems  
[NASA-CASE-FRC-10071-1] c07 N73-14171
- POSITIONING DEVICES (MACHINERY)**
- Swivel support for gas bearing for position adjustment between ball and supporting cup  
[NASA-CASE-XMF-07808] c15 N71-23812
- Caterpillar micropositioner for positioning machine tools adjacent to workpiece  
[NASA-CASE-GSC-10760-1] c14 N72-16283
- Positioning mechanism for converting translatory motion into rotary motion  
[NASA-CASE-NPO-10679] c15 N72-21462
- Optical system for monitoring angular position of rotating mirror  
[NASA-CASE-GSC-11353-1] c23 N72-27736
- Design and development of test stand system for supporting test items in vacuum chamber  
[NASA-CASE-MFS-21362] c11 N73-20267
- POSITIVE FEEDBACK**
- Complementary regenerative transistorized switch circuit employing positive and negative feedback  
[NASA-CASE-XGS-02751] c09 N71-23015
- POTABLE WATER**
- Potable water reclamation from human wastes in zero-G environment  
[NASA-CASE-XLA-03213] c05 N71-11207
- Utilization of solar radiation by solar still for converting salt and brackish water into potable water  
[NASA-CASE-XMS-04533] c15 N71-23086
- Chlorine generator for purifying water in life support systems of manned spacecraft  
[NASA-CASE-XLA-08913] c14 N71-28933
- Mechanism for dispensing precisely measured charges of potable water into reconstitution bags  
[NASA-CASE-MFS-21115-1] c05 N72-28097
- Portable device for dispensing potable water to crew members aboard operating spacecraft  
[NASA-CASE-MFS-21163-1] c05 N72-28098
- POTASSIUM SILICATES**
- Fireproof potassium silicate coating composition, insoluble in water after application  
[NASA-CASE-GSC-10072] c18 N71-14014
- POTENTIOMETERS (INSTRUMENTS)**
- Two axis flight controller with potentiometer control shafts directly coupled to rotatable ball members  
[NASA-CASE-XFR-04104] c03 N70-42073
- Device for controlling rotary potentiometer mounted on aircraft steering wheel or aileron control  
[NASA-CASE-XAC-10019] c15 N71-23809
- Mechanical function generators with potentiometer as sensing element  
[NASA-CASE-XAC-006011] c15 N71-28952
- POTTING COMPOUNDS**
- Removable potting compound for instrument shock protection  
[NASA-CASE-XLA-00482] c15 N70-36409
- Flexible, repairable, portable composition for encapsulating electric connectors  
[NASA-CASE-XGS-05180] c18 N71-25881
- Thermally conductive polymer for potting electrical components  
[NASA-CASE-GSC-11304-1] c06 N72-21105
- POWDER METALLURGY**
- Freeze casting of metal ceramic and refractory compound powders into plastic slips  
[NASA-CASE-XLE-00106] c15 N71-16076
- Production method for manufacturing porous tungsten bodies from tungsten powder particles  
[NASA-CASE-XNP-04339] c17 N71-29137
- Superalloy material from prealloyed powders  
[NASA-CASE-LEW-10805-2] c15 N72-21485
- Dry electrode manufacture, using silver powder with cement  
[NASA-CASE-FRC-10029-2] c05 N72-25121
- Grinding mixtures of powdered metals and inert fillers for conversion to halide  
[NASA-CASE-LEW-10450-1] c15 N72-25448
- Superalloys from prealloyed powders at high temperatures  
[NASA-CASE-LEW-10805-1] c15 N73-13465
- Development of method for fabricating cermets and analysis of various compositions to show electrical and physical properties  
[NASA-CASE-NPO-13120-1] c18 N73-23629
- POWER AMPLIFIERS**
- Characteristics of high power, low distortion, alternating current power amplifier  
[NASA-CASE-LAR-10218-1] c09 N70-34559
- Power supply with automatic power factor conversion system  
[NASA-CASE-XMS-02159] c10 N71-22961
- Solid state broadband stable power amplifier  
[NASA-CASE-XNP-10854] c10 N71-26331
- High efficiency transformerless amplitude modulator coupled to RF power amplifier  
[NASA-CASE-GSC-10668-1] c07 N71-28430
- POWER EFFICIENCY**
- Low power drain transistor feedback circuit  
[NASA-CASE-XGS-04999] c09 N69-24317
- Excitation and detection circuitry for flux responsive magnetic head  
[NASA-CASE-XNP-04183] c09 N69-24329
- Increasing available power per unit area in ion rocket engine by increasing beam density  
[NASA-CASE-XLE-00519] c28 N70-41576
- Absorbing gas reactivity control system for minimizing power distribution and perturbation in nuclear reactors  
[NASA-CASE-XLE-04599] c22 N72-20597
- Remote sensing equipment to ensure efficiency in microwave electric power transmission to remote receiving stations  
[NASA-CASE-MFS-21470-1] c10 N73-20257
- POWER GAIN**
- Serrodyne traveling wave tube reentrant amplifier for synchronous communication satellites operating at microwave frequencies  
[NASA-CASE-XGS-G1022] c07 N71-16088
- Switching circuit for control of cathode ray tube beam with fast rise time for output signal  
[NASA-CASE-KSC-10647-1] c10 N72-31273
- POWER LIMITERS**
- Monostable multivibrator for conserving power in spacecraft systems

## POWER LINES

## SUBJECT INDEX

[NASA-CASE-GSC-10682-1] c10 N72-20221

**POWER LINES**  
Patent data on terminal insert connector for flat electric cables  
[NASA-CASE-XMF-00324] c09 N70-34596

**POWER SERIES**  
Describing circuit for obtaining sum of squares of numbers  
[NASA-CASE-XGS-04765] c08 N71-18693

**POWER SPECTRA**  
Method and apparatus for high resolution power spectrum analysis  
[NASA-CASE-NPO-10748] c08 N72-20177

**POWER SUPPLIES**  
Tape recorder designed for low power consumption and resistance to operational failure under high stress conditions  
[NASA-CASE-XGS-08259] c14 N71-23698  
Current dependent variable inductance for input filter chokes of ac or dc power supplies  
[NASA-CASE-ERC-10139] c09 N72-17154  
Performance of ac power supply developed for CO<sub>2</sub> laser system  
[NASA-CASE-GSC-11222-1] c16 N73-32391

**POWER SUPPLY CIRCUITS**  
Regulated dc to dc converter  
[NASA-CASE-XGS-03429] c03 N69-21330  
Power control switching circuit using low voltage semiconductor controlled rectifiers for high voltage isolation  
[NASA-CASE-XNP-02713] c10 N69-39888  
Pulse-forming circuit for fast sweep out of charges stored in power transistors  
[NASA-CASE-NPO-10674] c10 N70-22132  
Increasing power conversion efficiency of electronic amplifiers by power supply switching  
[NASA-CASE-XMS-00945] c09 N71-10798  
Electric power system utilizing thermionic plasma diodes in parallel and heat pipes as cathodes  
[NASA-CASE-XMF-05843] c03 N71-11055  
Pulsed energy power system for application of combustible gases to turbine controlling ac voltage generator  
[NASA-CASE-MS-C-13112] c03 N71-11057  
Data processor having multiple sections activated at different times by selective power coupling to sections  
[NASA-CASE-XGS-04767] c08 N71-12494  
Microwave power receiving antenna solving heat dissipation problems by construction of elements as heat pipe devices  
[NASA-CASE-MFS-20333] c09 N71-13486  
Design, development, and operating principles of power supply with starting circuit which is independent of voltage regulator  
[NASA-CASE-XMS-01991] c09 N71-21449  
Power supply with automatic power factor conversion system  
[NASA-CASE-XMS-02159] c10 N71-22961  
Electric circuit for reversing direction of current flow  
[NASA-CASE-XNP-00952] c10 N71-23271  
Power supply with overload protection for series stage transistor  
[NASA-CASE-XMS-00913] c10 N71-23543  
Automatic power supply circuit design for driving inductive loads and minimizing power consumption including solenoid example  
[NASA-CASE-NPO-10716] c09 N71-24892  
Unsaturating magnetic core transformer design with warning signal for electrical power processing equipment  
[NASA-CASE-ERC-10125] c09 N71-24893  
Device for monitoring voltage by generating signal when voltages drop below predetermined value  
[NASA-CASE-KSC-10020] c10 N71-27338  
Power point tracker for maintaining optimal output voltage of power source  
[NASA-CASE-GSC-10376-1] c14 N71-27407  
Microwave power divider for providing variable output power to output waveguide in fixed waveguide system  
[NASA-CASE-NPO-11031] c07 N71-33606  
Circuit for monitoring power supply by ripple current indication  
[NASA-CASE-KSC-10162] c09 N72-11225

Dc to ac to dc converter with transistor driven synchronous rectifiers  
[NASA-CASE-GSC-11126-1] c09 N72-25253  
Integrated circuit power gyrator with Z-matrix design using parallel transistors  
[NASA-CASE-MFS-22342-1] c09 N73-24236

**PRECESSION**  
Dynamic precession damping of spin-stabilized vehicles by using rate gyroscope and angular accelerometer  
[NASA-CASE-XLA-01989] c21 N70-34295

**PRECISION**  
Precision stepping drive device using cam disk  
[NASA-CASE-MFS-14772] c15 N71-17692  
Method and apparatus for precision sizing and joining of large diameter tubes by bulging or constricting overlapping ends  
[NASA-CASE-XMF-05114-2] c15 N71-26148

**PREFLIGHT OPERATIONS**  
Automatic balancing device for use on frictionless supported attitude-controlled test platforms  
[NASA-CASE-LAR-10774] c10 N71-13545

**PRELAUNCH TESTS**  
Low loss parasitic probe antenna for prelaunch tests of spacecraft antennas  
[NASA-CASE-XKS-09348] c09 N71-13521  
Digital computer system for automatic prelaunch checkout of spacecraft  
[NASA-CASE-XKS-08012-2] c31 N71-15566

**PREPOLYMERS**  
Carboxyl terminated polyester prepolymers and foams produced from prepolymers and materials  
[NASA-CASE-NPO-10596] c06 N71-25929

**PRESSURE CHAMBERS**  
Tripping system for electric arc driven impulse wind tunnel  
[NASA-CASE-XMF-00411] c11 N70-36913

**PRESSURE DISTRIBUTION**  
Piston device for producing known constant positive pressure within lungs by using thoracic muscles  
[NASA-CASE-XMS-01615] c05 N70-41329  
Preventing pressure buildup in electrochemical cells by reacting palladium oxide with evolved hydrogen  
[NASA-CASE-XGS-01419] c03 N70-41864  
Device for suppressing pressure oscillations in fluid transmission line  
[NASA-CASE-MFS-10354-2] c12 N72-25306

**PRESSURE EFFECTS**  
Vacuum displacement compression molding of tubular bodies from thermosetting plastics  
[NASA-CASE-LAR-10782-2] c15 N73-31444

**PRESSURE GAGES**  
Differential pressure cell insensitive to changes in ambient temperature and extreme overload  
[NASA-CASE-XAC-00042] c14 N70-34816  
Blood pressure measuring system for separately recording dc and ac pressure signals of Korotkoff sounds  
[NASA-CASE-XMS-06061] c05 N71-23317  
Control system for pressure balance device used in calibrating pressure gages  
[NASA-CASE-XMF-04134] c14 N71-23755  
Improved McLeod gage for pressure measurement  
[NASA-CASE-XAC-04458] c14 N71-24232  
Ultrahigh vacuum gauge with two collector electrodes  
[NASA-CASE-LAR-02743] c14 N73-32324

**PRESSURE GRADIENTS**  
Positive displacement flowmeter for measuring extremely low flows of fluid with self calibrating features  
[NASA-CASE-XMF-02822] c14 N70-41994

**PRESSURE MEASUREMENTS**  
Design and development of inertia diaphragm pressure transducer  
[NASA-CASE-XAC-02981] c14 N71-21072  
Design and development of pressure sensor for measuring differential pressures of few pounds per square inch  
[NASA-CASE-IMF-01974] c14 N71-22752  
Improved McLeod gage for pressure measurement  
[NASA-CASE-XAC-04458] c14 N71-24232  
Coherent light beam device and method for measuring gas density in vacuum chambers  
[NASA-CASE-XER-11203] c14 N71-28994

- Design, development, and characteristics of pressure and temperature sensor operating immersed in fluid flow  
[NASA-CASE-LEW-10281-1] c14 N72-17327
- Method for designing wind tunnel model airfoil with integrally formed pressure measurement orifices  
[NASA-CASE-LAR-10812-1] c11 N72-27272
- Calibration of vacuum gauges for measuring total and partial pressures in ultrahigh vacuum region  
[NASA-CASE-XGS-07752] c14 N73-30390
- Absolute pressure measuring device for measuring gas density level in high vacuum range  
[NASA-CASE-LAR-10000] c14 N73-30394
- PRESSURE OSCILLATIONS**  
Device for suppressing pressure oscillations in fluid transmission lines  
[NASA-CASE-MFS-10354] c12 N70-41976
- PRESSURE REDUCTION**  
Relief valve to permit slow and fast bleeding rates at difference pressure levels  
[NASA-CASE-XMS-05894-1] c15 N69-21924
- Sealed electric storage battery with gas manifold interconnecting each cell  
[NASA-CASE-XNP-03378] c03 N71-11051
- PRESSURE REGULATORS**  
Pressure regulating system with high pressure fluid source, adapted to maintain constant downstream pressure  
[NASA-CASE-XNP-00450] c15 N70-38603
- Pulmonary resuscitation method and apparatus with adjustable pressure regulator  
[NASA-CASE-XMS-01115] c05 N70-39922
- Structural design of high pressure regulator valve  
[NASA-CASE-XNP-00710] c15 N71-10778
- Space suit with pressure-volume compensator system  
[NASA-CASE-XLA-05332] c05 N71-11194
- Portable environmental control and life support system for astronaut in and out of spacecraft  
[NASA-CASE-XMS-09632-1] c05 N71-11203
- Antibacklash circuit for hydraulic drive system  
[NASA-CASE-XNP-01020] c03 N71-12260
- High impact pressure regulator having minimum number of lightweight movable elements  
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[NASA-CASE-XLA-08916] c15 N71-29018
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PROTEINS

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[NASA-CASE-GSC-11746-1] c16 N73-32398
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[NASA-CASE-NPO-10758] c14 N73-14427
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High resolution radar transmitting system for transmitting optical pulses to targets  
[NASA-CASE-NPO-11426] c07 N73-26119
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[NASA-CASE-XNP-08881] c17 N71-28747
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[NASA-CASE-XNP-05429] c26 N71-21824
- Vapor-liquid separator design with vapor driven pump for separated liquid pumping for application in propellant transfer  
[NASA-CASE-XMF-04042] c15 N71-23023
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[NASA-CASE-XNP-04731] c15 N71-24042
- Development and characteristics of variable displacement fluid pump for transforming hydraulic pressures  
[NASA-CASE-MFS-20830] c15 N71-30028
- Pumping and metering dual piston system and monitor for reaction chamber constituents  
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[NASA-CASE-XLA-02705] c08 N71-15908
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- PUNCHES**  
Punch and die device for forming convolution series in thin gage metal hemispheres  
[NASA-CASE-XNP-05297] c15 N71-23811
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[NASA-CASE-XLA-01967] c31 N70-42015
- Developing high pressure gas purification and filtration system for use in test operations of space vehicles  
[NASA-CASE-MFS-12806] c14 N71-17588
- Fluid transferring system design for purging toxic, corrosive, or noxious fluids and fumes from materials handling equipment for cleansing and accident prevention  
[NASA-CASE-XMS-01905] c12 N71-21089
- Device for back purging thrust engines  
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[NASA-CASE-XNP-04389] c28 N71-20942
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[NASA-CASE-XLA-01781] c14 N69-39975
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[NASA-CASE-LAR-10367-1] c03 N70-26817
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[NASA-CASE-NPO-11330] c33 N73-26958
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[NASA-CASE-MFS-21660-1] c14 N73-13434
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[NASA-CASE-HQN-10756-1] c14 N72-25428
- QUANTITATIVE ANALYSIS**  
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[NASA-CASE-NPO-10691] c14 N71-26199
- Quantitative liquid measurements in container by resonant frequencies  
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 quartz lamp elements protectively positioned  
 to withstand severe environmental stress  
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 [ NASA-CASE-XNP-00748 ] c07 N70-36911  
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 [ NASA-CASE-XNP-00748 ] c07 N70-36911  
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 radiation, and adaptable for erection and  
 deployment with minimum effort and time  
 [ NASA-CASE-XMS-00893 ] c07 N70-40063  
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 [ NASA-CASE-GSC-10553-1 ] c07 N71-19854  
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 [ NASA-CASE-XLA-11154 ] c07 N72-21117  
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 [ NASA-CASE-XAC-02970 ] c14 N69-39896  
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 [ NASA-CASE-XNP-09227 ] c15 N69-24319  
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 and process for applying to metal and metal  
 alloy surfaces used in radiative cooling of  
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 [ NASA-CASE-XLA-06199 ] c15 N71-24875  
**RADIANT FLUX DENSITY**  
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 calibrating heat transfer gauges with  
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[ NASA-CASE-ARC-10178-1 ] c09 N72-17152  
**RADIANT HEATING**  
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 quartz lamp elements protectively positioned  
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 [ NASA-CASE-XLA-00141 ] c09 N70-33312  
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 [ NASA-CASE-XLE-00490 ] c33 N70-34545  
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 [ NASA-CASE-XLE-00387 ] c33 N70-34812  
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 [ NASA-CASE-MFS-14253 ] c33 N71-24858  
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 [ NASA-CASE-ERC-10174 ] c14 N72-25409  
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 [ NASA-CASE-XLA-00135 ] c14 N70-33322  
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 [ NASA-CASE-XGS-00466 ] c21 N70-34297  
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 [ NASA-CASE-XGS-04047-2 ] c03 N72-11062  
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 [ NASA-CASE-MSC-12280 ] c27 N71-16348  
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 [ NASA-CASE-XGS-05534 ] c23 N71-16355  
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 [ NASA-CASE-XMS-03478 ] c14 N71-21040  
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 detecting orientation of space vehicle with  
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 [ NASA-CASE-XGS-03230 ] c14 N71-23401  
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 transparent media by measuring intensity of  
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- [NASA-CASE-ERC-10021] c06 N71-28635  
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[NASA-CASE-ARC-10308-1] c06 N72-31141  
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[NASA-CASE-NPO-12128-1] c14 N73-32317
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[NASA-CASE-XNP-00459] c11 N70-38675
- RADIATION DOSAGE**  
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[NASA-CASE-XLA-03645] c14 N71-20430
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[NASA-CASE-XLA-04555-1] c14 N71-25892
- RADIATION MEASUREMENT**  
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[NASA-CASE-LAR-11027-1] c14 N72-28463  
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[NASA-CASE-NPO-11493] c14 N73-12447
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[NASA-CASE-XGS-08266] c14 N69-27432  
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[NASA-CASE-XLA-00120] c21 N70-33181  
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[NASA-CASE-XLE-00011] c14 N70-41946  
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[NASA-CASE-MFS-20407] c09 N73-19235  
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[NASA-CASE-LEW-11159-1] c14 N73-28488  
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[NASA-CASE-MFS-21441-1] c14 N73-30392
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[NASA-CASE-XNP-01310] c33 N71-28852  
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[NASA-CASE-MFS-20180] c16 N72-12440
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[NASA-CASE-LEW-10210-1] c28 N71-26781  
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[NASA-CASE-MFS-20095] c24 N72-11595  
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[NASA-CASE-NPO-11686] c14 N73-25462
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[NASA-CASE-XGS-04119] c18 N69-39979  
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[NASA-CASE-XLE-02792] c26 N71-10607  
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[NASA-CASE-XGS-07801] c09 N71-12513  
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[NASA-CASE-ARC-10593-1] c09 N73-30187
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[NASA-CASE-XMS-05909-1] c14 N69-27459  
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[NASA-CASE-NPO-11120] c33 N70-41524  
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[NASA-CASE-XLE-03307] c33 N71-14035  
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[NASA-CASE-HQN-00937] c07 N71-28979
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[NASA-CASE-XNP-09832] c30 N71-23723
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[NASA-CASE-XMF-09422] c07 N71-19436
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[NASA-CASE-XMP-08665] c10 N71-19467
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[NASA-CASE-XGS-02610] c14 N71-23174
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[NASA-CASE-XGS-01418] c09 N71-23573
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[NASA-CASE-XNP-09830] c14 N71-26266
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[NASA-CASE-GSC-10668-1] c07 N71-28430
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[NASA-CASE-LEW-10926-1] c17 N73-24569
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[NASA-CASE-NPO-13140-1] c07 N73-27106
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[NASA-CASE-ERC-10119] c26 N72-21701
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[NASA-CASE-GSC-11215-1] c09 N73-28083
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[NASA-CASE-XLA-00901] c07 N71-10775
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[NASA-CASE-XGS-00740] c07 N71-23098
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[NASA-CASE-XLA-00210] c30 N70-40309
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[NASA-CASE-XGS-02610] c14 N71-23174
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[NASA-CASE-XGS-01812] c07 N71-23001
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- Development of radio locating system for monitoring geographic movement of surface vehicles in metropolitan area using unsynchronized radio broadcasting stations  
[NASA-CASE-NPO-13217-1] c07 N73-26144
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[NASA-CASE-MFS-16609-2] c07 N73-31084
- RADIO WAVES**
- Gunn effect microwave diodes with RF shielding  
[NASA-CASE-ERC-10119] c26 N72-21701
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- Radioactive isotope capsule container design for atmospheric reentry protection and heat transmission to spacecraft  
[NASA-CASE-LEW-11227-1] c33 N71-35153
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[NASA-CASE-NPO-10753] c03 N72-26031
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[NASA-CASE-GSC-10644-1] c14 N70-35583
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[NASA-CASE-XNP-02588] c15 N71-18613
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[NASA-CASE-XLA-04556] c14 N69-27484
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[NASA-CASE-XNP-09701] c14 N71-26475
- Black body radiometer having isothermally surrounded cavity for ultraviolet, visible and infrared radiation  
[NASA-CASE-NPO-10810] c14 N71-27323
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[NASA-CASE-ARC-10138-1] c14 N72-24477
- Development of radiant energy sensor to detect the radiant energy wavelength bands from portions of radiating body  
[NASA-CASE-ERC-10174] c14 N72-25409
- Development of radiometric sensor to warn aircraft pilots of region of clear air turbulence along flight path  
[NASA-CASE-ERC-10081] c14 N72-28437
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[NASA-CASE-MFS-21108-1] c14 N73-12455
- Radiometer quadrature control and measuring system using optical coupling circuitry  
[NASA-CASE-MFS-21660-1] c14 N73-13434
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[NASA-CASE-ERC-10276] c14 N73-26432
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- Communication system for transmitting biomedical information obtained from patient in moving ambulance to hospital for diagnosis  
[NASA-CASE-FRC-10031] c05 N70-20717
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[NASA-CASE-XLA-02619] c10 N71-26334
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- Telescoping-spike supersonic nozzle for turbojet or ramjet engines  
[NASA-CASE-XLE-00005] c28 N70-39899
- RANDOM LOADS**
- Fatigue testing device applying random discrete load levels to test specimen and applicable to aircraft structures  
[NASA-CASE-XLA-02131] c32 N70-42003
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- Circuits for amplitude limiting of random noise inputs  
[NASA-CASE-NPO-10169] c10 N71-24844
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[NASA-CASE-NPO-11612] c11 N72-20251
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[NASA-CASE-NPO-11623-1] c23 N72-25628
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- Circuitry for generating random square wave pulses using white noise source  
[NASA-CASE-MSC-14131-1] c09 N73-26199
- RANGE FINDERS**
- Closed loop radio communication ranging system to determine distance between moving airborne vehicle and fixed ground station  
[NASA-CASE-XNP-01501] c21 N70-41930
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RECTIFIERS

Spacecraft ranging system  
[NASA-CASE-NPO-10066] c09 N71-18598

Orbital and entry tracking accessory mounted on  
global map to provide range requirements for  
reentry vehicles to any landing site  
[NASA-CASE-LAR-10626-1] c14 N72-21416

Binary coded sequential acquisition ranging  
system for distance measurements  
[NASA-CASE-NPO-11194] c08 N72-25209

Loop transponder for regenerating code of  
mu-type ranging system  
[NASA-CASE-NPO-11707] c07 N73-25161

**RARE EARTH COMPOUNDS**  
Including didymium hydrate in nickel hydroxide  
of positive electrode of storage batteries to  
increase ampere hour capacity  
[NASA-CASE-XGS-03505] c03 N71-10608

**RAREFIED GASES**  
Magnetically controlled plasma accelerator  
capable of ignition in low density gaseous  
environment  
[NASA-CASE-XLA-00327] c25 N71-29184

**RATES (PER TIME)**  
Data rate converter with rotatable data storing  
drum and fixed and rotatable read/record heads  
[NASA-CASE-NPO-11659-1] c14 N72-22453

Apparatus and digital technique for coding rate  
data  
[NASA-CASE-LAR-10128-1] c08 N73-20217

**RC CIRCUITS**  
RC transistor circuit to indicate each pulse of  
pulse train and occurrence of nth pulse  
[NASA-CASE-XMF-00906] c09 N70-41655

Device utilizing RC rate generators for  
continuous slow speed measurement  
[NASA-CASE-XMF-02966] c10 N71-24863

Digital data handling circuits for pulse  
amplifiers  
[NASA-CASE-XNP-01068] c10 N71-28739

Design of active RC network capable of operating  
at high Q values with reduced sensitivity to  
gain amplification and number of passive  
components  
[NASA-CASE-ARC-10042-2] c10 N72-11256

Active RC filter networks and amplifiers for  
deep space magnetic field measurement  
[NASA-CASE-XAC-05462-2] c10 N72-17171

RC networks with voltage amplifier, RC input  
circuit, and positive feedback  
[NASA-CASE-ARC-10020] c10 N72-17172

Active filter circuit comprising passive RC  
network and dc voltage or operational amplifier  
[NASA-CASE-XAC-05462] c09 N72-20209

Multiloop RC active filter network with low  
parameter sensitivity and low amplifier gain  
[NASA-CASE-ARC-10192] c09 N72-21245

Temperature control system comprised of  
wheatstone bridge with RC circuit  
[NASA-CASE-NPO-11304] c14 N73-26430

**REACTION CONTROL**  
Development of voice operated controller for  
controlling reaction jets of spacecraft  
[NASA-CASE-XLA-04063] c31 N71-33160

**REACTION WHEELS**  
Satellite stabilization reaction wheel scanner  
[NASA-CASE-XGS-02629] c14 N71-21082

Gravity gradient attitude control system with  
gravity gradiometer and reaction wheels for  
artificial satellite attitude control  
[NASA-CASE-GSC-10555-1] c21 N71-27324

**REACTIVITY**  
Absorbing gas reactivity control system for  
minimizing power distribution and perturbation  
in nuclear reactors  
[NASA-CASE-XLE-04599] c22 N72-20597

**REACTOR CORES**  
Simulated fuel assembly-type flow measurement  
apparatus for coolant flow in reactor core  
[NASA-CASE-XLE-00724] c14 N70-34669

Solid state device for mapping flux and power in  
nuclear reactor cores  
[NASA-CASE-XLE-00301] c14 N70-36808

Reactor heated in-core diodes for energy  
conversion  
[NASA-CASE-NPO-10542] c09 N72-27228

**REACTOR TECHNOLOGY**  
Nuclear reactor control rod assembly with  
improved driving mechanism  
[NASA-CASE-XLE-00298] c22 N70-34501

**READOUT**  
Flow angle sensor and remote readout system for  
use with cryogenic fluids  
[NASA-CASE-XLE-04503] c14 N71-24864

System for checking status of several  
double-throw switches by readout indications  
[NASA-CASE-XLA-08799] c10 N71-27272

**REAL TIME OPERATION**  
Respiratory analysis system to determine gas  
flow rate and frequency of respiration and  
expiration cycles in real time  
[NASA-CASE-HSC-13436-1] c05 N73-32015

**RECEIVERS**  
Semiconductor in resonant cavity for improving  
signal to noise ratio of communication receiver  
[NASA-CASE-MS-C-12259-1] c07 N70-12616

Design of nonlinear coherence receiver with  
feedback signal selection for carrier tracking  
in telecommunications  
[NASA-CASE-NPO-11921-1] c07 N73-23118

Improved phase lock loop for receiver in  
multichannel telemetry system with suppressed  
carrier  
[NASA-CASE-NPO-11593-1] c07 N73-26012

Automatic carrier acquisition system for phase  
locked loop receiver  
[NASA-CASE-NPO-11628-1] c07 N73-30113

**RECONSTRUCTION**  
Method and means for recording and  
reconstructing holograms without use of  
reference beam  
[NASA-CASE-ERC-10020] c16 N71-26154

**RECORDING INSTRUMENTS**  
Weighing and recording device for obtaining  
precise automatic record of small changes in  
force  
[NASA-CASE-XLA-02605] c14 N71-10773

Blood pressure measuring system for separately  
recording dc and ac pressure signals of  
Korotkoff sounds  
[NASA-CASE-XMS-06061] c05 N71-23317

Helical recorder for multiple channel recording  
[NASA-CASE-GSC-10614-1] c09 N72-11224

Device for recording locations of measurements  
made by hand-held noncontacting probe  
[NASA-CASE-LAR-10806-1] c14 N73-15474

**RECOVERABLE LAUNCH VEHICLES**  
Techniques for recovery of multistage rocket  
vehicles by providing lifting surfaces on  
individual sections  
[NASA-CASE-XMF-00389] c31 N70-34176

**RECOVERABLE SPACECRAFT**  
Describing assembly for opening stabilizing and  
decelerating flaps of flight capsules used in  
space research  
[NASA-CASE-XMF-03169] c31 N71-15675

**RECOVERY**  
Underwater recovery assembly for ejectable sound  
source mounted on mobile device  
[NASA-CASE-LAR-10595-1] c15 N72-31493

**RECOVERY PARACHUTES**  
Parachute system for lowering manned spacecraft  
from post-reentry to ocean landing  
[NASA-CASE-XLA-00195] c02 N70-38009

Development and operating principles of gas  
generator for deploying recovery parachutes  
from space capsules during atmospheric entry  
[NASA-CASE-LAR-10549-1] c31 N73-13898

**RECTANGULAR PANELS**  
Rectangular solar cell stacked panels to  
generate electrical power aboard spacecraft  
[NASA-CASE-NPO-11771] c03 N73-20040

**RECTIFIERS**  
Lithium drifted silicon radiation detector with  
gold rectifying contacts  
[NASA-CASE-XLE-10529] c14 N69-23191

Power control switching circuit using low  
voltage semiconductor controlled rectifiers  
for high voltage isolation  
[NASA-CASE-XNP-02713] c10 N69-39888

Precision full wave rectifier circuit for  
rectifying incoming electrical signals having  
positive or negative polarity with only  
positive output signals  
[NASA-CASE-ARC-10101-1] c09 N71-33109

Voltage amplitude-responsive trigger circuit  
with silicon controlled rectifier  
[NASA-CASE-GSC-10221-1] c09 N72-23171

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Dc to ac to dc converter with transistor driven synchronous rectifiers  
[NASA-CASE-GSC-11126-1] c09 N72-25253

**REDUCED GRAVITY**  
Reduced gravity liquid configuration simulator to study propellant behavior in rocket fuel tanks  
[NASA-CASE-XLE-02624] c12 N69-39988

Apparatus for measuring human body mass in zero or reduced gravity environment  
[NASA-CASE-XMS-03371] c05 N70-42000

Cable suspension and inclined walkway system for simulating reduced or zero gravity environments  
[NASA-CASE-XLA-01787] c11 N71-16028

Chemical lasers using low or zero gravity chemical reactions  
[NASA-CASE-MSC-10986-2] c16 N72-25489

Development of restraint system for securing personnel to ergometer while exercising under weightless conditions  
[NASA-CASE-MFS-21046-1] c14 N73-27377

**REDUCTION (CHEMISTRY)**  
Producing metal powders of controlled particle size by reducing oxide using reactive metal vapor in vacuum  
[NASA-CASE-XLE-06461] c17 N72-22530

**REDUNDANT COMPONENTS**  
Redundant memory for enhanced reliability of digital data processing system  
[NASA-CASE-GSC-10564] c10 N71-29135

**REENTRY COMMUNICATION**  
Electrostatic modulator for communicating through plasma sheath formed around spacecraft during reentry  
[NASA-CASE-XLA-01400] c07 N70-41331

Method and apparatus for communicating through ionized layer of gases surrounding spacecraft during reentry into planetary atmospheres  
[NASA-CASE-XLA-01127] c07 N70-41372

Reentry communication by injection of water droplets into plasma layer surrounding space vehicle  
[NASA-CASE-XLA-01552] c07 N71-11284

**REENTRY SHIELDING**  
Transpirationally cooled heat ablation system for interplanetary spacecraft reentry shielding  
[NASA-CASE-XMS-02677] c31 N70-42075

Method and apparatus for fabrication of heat insulating and ablative reentry structure  
[NASA-CASE-XMS-02009] c33 N71-20834

Radioactive isotope capsule container design for atmospheric reentry protection and heat transmission to spacecraft  
[NASA-CASE-LEW-11227-1] c33 N71-35153

Ablative heat shield for protection from aerodynamic heating of reentry spacecraft  
[NASA-CASE-MSC-12143-1] c33 N72-17947

**REENTRY TRAJECTORIES**  
Aerodynamic configuration of reentry vehicle heat shield to provide longitudinal and directional stability at hypersonic velocities  
[NASA-CASE-XMS-04142] c31 N70-41631

**REENTRY VEHICLES**  
Leading edge design for hypersonic reentry vehicles  
[NASA-CASE-XLA-00165] c31 N70-33242

Delta winged, manned reentry vehicle capable of horizontal glide landing at low speeds  
[NASA-CASE-XLA-00241] c31 N70-37986

Telespectrograph for analyzing upper atmosphere by tracking bodies reentering atmosphere at high velocities  
[NASA-CASE-XLA-03273] c14 N71-18699

Ablation sensor for measuring surface ablation rate of material on vehicles entering earths atmosphere on entry into planetary atmospheres  
[NASA-CASE-XLA-01791] c14 N71-22991

Design of ring wing vehicle of high drag-to-weight ratio to withstand reentry stress into low density atmosphere  
[NASA-CASE-XLA-04901] c31 N71-24315

Development of auxiliary lifting system to provide ferry capability for entry vehicles  
[NASA-CASE-LAR-10574-1] c11 N73-13257

Development and operating principles of gas generator for deploying recovery parachutes from space capsules during atmospheric entry  
[NASA-CASE-LAR-10549-1] c31 N73-13898

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**REFERENCE SYSTEMS**  
Automatic frequency control device for providing frequency reference for voltage controlled oscillator  
[NASA-CASE-KSC-10393] c09 N72-21247

**REFINING**  
Helium refining by superfluidity  
[NASA-CASE-INP-00733] c06 N70-34946

**REFLECTANCE**  
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[NASA-CASE-INP-08840] c23 N71-16365

Device for determining acceleration of gravity by interferometric measurement of travel of falling body  
[NASA-CASE-XMP-05844] c14 N71-17587

Highly stable optical mirror assembly optimizing image quality of light diffraction patterns  
[NASA-CASE-ERC-10001] c23 N71-24868

Transmitting and reflecting diffuser  
[NASA-CASE-LAR-10385-3] c23 N73-32538

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[NASA-CASE-MFS-20243] c23 N73-13662

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Vacuum preparation of zinc titanate pigment resistant to loss of reflective properties  
[NASA-CASE-MFS-13532] c18 N72-17532

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Ellipsoidal mirror reflector for measuring reflectance  
[NASA-CASE-XGS-05291] c23 N71-16341

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[NASA-CASE-XLA-00138] c31 N70-37981

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[NASA-CASE-XGS-09190] c31 N71-16102

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[NASA-CASE-XGS-08269] c23 N71-26206

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[NASA-CASE-NPO-10303] c07 N72-22127

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[NASA-CASE-NPO-11264] c07 N72-25174

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[NASA-CASE-NPO-11661] c07 N73-14130

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[NASA-CASE-XLE-00335] c14 N70-35368

Method for producing refractory molybdenum disilicides  
[NASA-CASE-XMS-00370] c17 N71-20941

Prestressed rocket nozzle with ceramic inner rings and refractory metal outer rings  
[NASA-CASE-INP-02888] c18 N71-21068

Semiconductor device manufacture using refractory dielectrics as diffusant masks and interconnection insulating materials  
[NASA-CASE-XER-08476-1] c26 N72-17820

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[NASA-CASE-MFS-20710] c11 N72-23215

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[NASA-CASE-XLE-00387] c33 N70-34812

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[NASA-CASE-LEW-10393-1] c17 N71-15468

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[NASA-CASE-XNP-03063] c17 N71-23365

Development and characteristics of thermal radiation shielding of refractory metal foil used for induction furnace  
[NASA-CASE-XLE-03432] c33 N71-24145

Production of high strength refractory compounds and microconstituents into refractory metal matrix  
[NASA-CASE-XLE-03940] c18 N71-26153

Silicide coating process and composition for protection of refractory metals from oxidation  
[NASA-CASE-XLE-10910] c18 N71-29040

Development of procedure for improved distribution of refractory compounds and micro-constituents in refractory metal matrix  
[NASA-CASE-XLE-03940-2] c17 N72-28536

Improved silicide coatings for refractory metals employed in space shuttles and gas turbine engine components  
[NASA-CASE-LEW-11179-1] c17 N73-22474

**REFRIGERATING**  
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[NASA-CASE-NPO-10634] c23 N72-25619

**REFRIGERATING MACHINERY**  
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[NASA-CASE-NPO-10309] c15 N69-23190

Method and apparatus for producing very low temperature refrigeration based on gas pressure balance  
[NASA-CASE-XNP-08877] c15 N71-23025

Dual solid cryogenics for spacecraft refrigeration insuring low temperature cooling for extended periods  
[NASA-CASE-GSC-10188-1] c23 N71-24725

**REFRIGERATORS**  
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[NASA-CASE-XNP-00920] c15 N71-15906

**REGENERATION (ENGINEERING)**  
Switching circuit with regeneratively connected transistors eliminating power consumption when not in use  
[NASA-CASE-XNP-02654] c10 N70-42032

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[NASA-CASE-XNP-01096] c10 N71-16030

**REGENERATIVE COOLING**  
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[NASA-CASE-XLE-00164] c15 N70-36411

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[NASA-CASE-XLE-00150] c28 N70-41818

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[NASA-CASE-XLE-00685] c28 N70-41992

Regenerative cooling system for rocket combustion chamber using coolant tubes in convergent-divergent nozzle  
[NASA-CASE-XLE-04857] c28 N71-23968

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[NASA-CASE-XLE-05230-2] c14 N73-13417

**REGENERATIVE FUEL CELLS**  
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[NASA-CASE-XLE-04526] c03 N71-11052

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[NASA-CASE-NPO-11707] c07 N73-25161

**REGISTERS (COMPUTERS)**  
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[NASA-CASE-GSC-10186] c08 N71-33110

**REINFORCED PLASTICS**  
Process for developing filament reinforced plastic tubes used in research and development programs  
[NASA-CASE-LAR-10203-1] c15 N72-16330

Development of procedure for repairing fiberglass structures which retains geometry and strength of original structure  
[NASA-CASE-LAR-10416-1] c15 N72-27527

**REINFORCEMENT (STRUCTURES)**  
Reinforcing beam system for highly flexible diaphragms in valves or pressure switches  
[NASA-CASE-XNP-01962] c32 N70-41370

Fabrication of light weight panel structure using pairs of elongate hollow ribs of semicircular configuration  
[NASA-CASE-LAR-11052-1] c32 N73-13929

**REINFORCING FIBERS**  
High strength reinforced metallic composites for applications over wide temperature range  
[NASA-CASE-XLE-02428] c17 N70-33288

Method for producing fiber reinforced metallic composites with high strength and elasticity over wide temperature range  
[NASA-CASE-XLE-00231] c17 N70-38198

Description of method for producing metallic composites reinforced with ceramic and refractory hard metals that are fibered in place  
[NASA-CASE-XLE-03925] c18 N71-22894

Production and application of sprayable fiber reinforced ablation material  
[NASA-CASE-XLA-04251] c18 N71-26100

**RELAXATION OSCILLATORS**  
Voltage controlled, variable frequency relaxation oscillator with MOSFET variable current feed  
[NASA-CASE-GSC-10022-1] c10 N71-25882

**RELAY SATELLITES**  
Earth satellite relay station for frequency multiplexed voice transmission  
[NASA-CASE-GSC-10118-1] c07 N71-24621

**RELEASING**  
Bolt-latch mechanism for releasing despin weights from space vehicle  
[NASA-CASE-XLA-00679] c15 N70-38601

Quick-release coupling for fueling rocket vehicles with cryogenic propellants  
[NASA-CASE-XKS-01985] c15 N71-10782

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[NASA-CASE-XGS-08718] c15 N71-24600

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[NASA-CASE-XMS-10660-1] c15 N71-25975

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[NASA-CASE-GSC-10814-1] c03 N73-20039

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[NASA-CASE-GSC-11600-1] c14 N73-18436

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[NASA-CASE-NPO-13086-1] c15 N73-12495

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[NASA-CASE-XMF-04966] c14 N71-17658

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[NASA-CASE-NPO-11177] c15 N72-17453

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[NASA-CASE-NPO-10694] c09 N72-20200

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[NASA-CASE-XMS-05894-1] c15 N69-21924

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[NASA-CASE-XLE-00586] c15 N71-15968

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REMOTE CONTROL

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 Flow angle sensor and remote readout system for use with cryogenic fluids [NASA-CASE-XLE-04503] c14 N71-24864  
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[NASA-CASE-XNP-02500] c18 N71-27397  
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[NASA-CASE-ERC-10403-1] c10 N73-26228  
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[NASA-CASE-XFR-08403] c05 N71-11202  
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[NASA-CASE-FRC-10022] c12 N71-26546  
Automatic device for measuring human metabolic oxygen rate and breathing dynamics

[NASA-CASE-MFS-21415-1] c05 N73-15156  
Respiratory analysis system to determine gas flow rate and frequency of respiration and expiration cycles in real time

[NASA-CASE-MSC-13436-1] c05 N73-32015  
**RESPIROMETERS**  
Automatic device for measuring human metabolic oxygen rate and breathing dynamics

[NASA-CASE-MFS-21415-1] c05 N73-15156  
**RESPONSES**  
System for monitoring condition responsive devices by using frequency division multiplex technique

[NASA-CASE-KSC-10521] c07 N73-20176  
**RESTARTABLE ROCKET ENGINES**  
Collapsible auxiliary tank for restarting liquid propellant rocket motors under zero gravity

[NASA-CASE-XNP-01390] c28 N70-41275  
Regenerative cooling system for small rocket engine having restart capability and using noncryogenic hypergolic propellants

[NASA-CASE-XLE-00685] c28 N70-41992  
**RESUSCITATION**  
Pulmonary resuscitation method and apparatus with adjustable pressure regulator

[NASA-CASE-XMS-01115] c05 N70-39922  
**RETARDING**  
Ablative resins used for retarding regression in ablative material

[NASA-CASE-XLE-05913] c33 N71-14032  
**RETICLES**  
Optical tracker with pair of FM reticles having patterns 90 deg out of phase

[NASA-CASE-XGS-05715] c23 N71-16100  
Production measures for visible and ultraviolet transmitting reticles for star trackers

[NASA-CASE-GSC-11188-3] c14 N73-10460  
Method for producing reticles for use in outer space

[NASA-CASE-GSC-11188-2] c21 N73-19630  
Production method of star tracking reticles for transmitting in visible and near ultraviolet regions

[NASA-CASE-GSC-11188-1] c14 N73-32320  
**RETRACTABLE EQUIPMENT**  
Retractable runway lights

[NASA-CASE-XLA-00119] c11 N70-33329  
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[NASA-CASE-XMF-07587] c15 N71-18701  
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[NASA-CASE-XMS-12158-1] c31 N69-27499  
Device for use in descending spacecraft as altitude sensor for actuating deceleration retrorockets

[NASA-CASE-XMS-03792] c14 N70-41812  
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[NASA-CASE-NPO-10300] c14 N71-17662  
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Steerable solid propellant rocket motor adapted to effect payload orientation as multistage rocket stage or reduce velocity as retrorocket

[NASA-CASE-XNP-00234] c28 N70-38645  
**REUSABLE SPACECRAFT**  
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[NASA-CASE-XMF-01973] c31 N70-41588  
Design and configuration of aerospace vehicle for performing earth orbit mission and returning to preselected landing site

[NASA-CASE-MFS-21527] c31 N72-15781  
Spacecraft configurations and aerodynamic characteristics of space shuttle systems with two reusable stages

[NASA-CASE-MSC-12433] c31 N73-14854  
**REVERSED FLOW**  
Multistage multiple reentry axial flow reaction turbine with reverse flow reentry ducting

[NASA-CASE-XLE-00170] c15 N7C-36412  
Reversible current directing circuitry for reversible motor control

[NASA-CASE-XLA-09371] c10 N71-18724  
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[NASA-CASE-XMS-09310] c15 N71-22706  
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Wind tunnel test section for simulating high Reynolds number over transonic speed range

[NASA-CASE-MFS-20509] c11 N72-17183  
**RIBBONS**  
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[NASA-CASE-XLE-00164] c15 N7C-36411  
Device for bending metal ribbon or wire

[NASA-CASE-XLA-05966] c15 N72-12438  
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[NASA-CASE-LEW-11726-1] c26 N73-26752  
**RIBOFLAVIN**  
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[NASA-CASE-GSC-10565-1] c06 N72-25149  
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[NASA-CASE-XLA-06095] c01 N69-39981  
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[NASA-CASE-LAR-11052-1] c32 N73-13929  
**RICE**  
Rice preparation process consisting of cooking, two freezing-thawing cycles, and then freeze drying

[NASA-CASE-MSC-13540-1] c05 N72-33096  
**RIGID STRUCTURES**  
Pneumatic mechanism for releasing hook and loop fasteners between large rigid structures

[NASA-CASE-XMS-10660-1] c15 N71-25975  
Storage stable, thermally activated foaming compositions for erecting and rigidizing mechanisms of thin sheet solar collectors

[NASA-CASE-LAR-10373-1] c18 N71-26155  
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[NASA-CASE-XNP-08907] c23 N71-29123  
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[NASA-CASE-MFS-21309-1] c15 N72-25480
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[NASA-CASE-XGS-03095] c09 N69-27463
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[NASA-CASE-XGS-01473] c09 N71-10673  
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- RING WINGS**  
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[NASA-CASE-XLA-04901] c31 N71-24315
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[NASA-CASE-KSC-10162] c09 N72-11225
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[NASA-CASE-XNP-05082] c15 N70-41960
- ROCKET ENGINE CASES**  
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[NASA-CASE-XLE-00409] c28 N71-15658  
Regeneratively cooled rocket motor casing with tapered channels to insure minimum thicknesses at each channel cross section for necessary strength requirements  
[NASA-CASE-XLE-05689] c28 N71-15659  
Payload/spent rocket engine case separation system  
[NASA-CASE-XLA-05369] c31 N71-15687  
Liner for hybrid solid propellants to bind propellant to rocket motor case  
[NASA-CASE-XNP-09744] c27 N71-16392  
Permanently magnetized ion engine casing construction for use in spacecraft propulsion systems  
[NASA-CASE-XNP-06942] c28 N71-23293
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[NASA-CASE-XLE-00144] c28 N70-34860  
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[NASA-CASE-LEW-10814-1] c28 N70-35422  
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[NASA-CASE-XLE-00303] c15 N70-36535  
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- ROCKET FLIGHT**  
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- ROCKET LAUNCHING**  
Design and characteristics of linkage to alleviate rocket vehicle divergence during launch  
[NASA-CASE-XLA-00256] c31 N71-15663  
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[NASA-CASE-XMP-01544] c28 N70-34162  
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[NASA-CASE-XLE-00145] c28 N70-36806  
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[NASA-CASE-XLA-02651] c28 N70-41967  
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[NASA-CASE-HQN-00938] c33 N71-29053

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[NASA-CASE-MFS-20619] c28 N72-11708

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Maximum density fuming nitric acid used as sterilizable oxidizer in bipropellants  
[NASA-CASE-NPO-10687] c27 N69-33347

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[NASA-CASE-NPO-11975-1] c27 N73-17802

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[NASA-CASE-XMS-04890-1] c15 N70-22192

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**ROCKETS**

Device for detecting hydrogen fires onboard high altitude rockets  
[NASA-CASE-MFS-13130] c10 N72-17173

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[NASA-CASE-XNP-07478] c14 N69-21923

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[NASA-CASE-GSC-10514-1] c14 N72-20379

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[NASA-CASE-MSC-12394-1] c03 N73-20041

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Solid lubricant applied to porous roller bearings prior to use in ultrahigh vacuum  
[NASA-CASE-XLE-09527] c15 N71-17688

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[NASA-CASE-XLA-02809] c15 N71-22982

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[NASA-CASE-LEW-11087-2] c15 N72-31491

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[NASA-CASE-LEW-11087-1] c15 N73-30458

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[NASA-CASE-XLE-02999] c15 N71-16052

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[NASA-CASE-XLE-09527-2] c15 N71-26189

**ROLLING MOMENTS**

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[NASA-CASE-XNP-01307] c21 N70-41856

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Process permitting application of synthetic resin coating to irregular-shaped objects at ambient temperature  
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[NASA-CASE-XMF-01598] c21 N71-15583

Combination guide and rotary bearing for freely moving shaft  
[NASA-CASE-XLA-00013] c15 N71-29136

**ROTARY WING AIRCRAFT**

Aircraft control system for rotary wing aircraft  
[NASA-CASE-ERC-10439] c02 N73-19004

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[NASA-CASE-LAR-10557] c02 N72-11018

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[NASA-CASE-XGS-02401] c14 N69-27485

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[NASA-CASE-MFS-11279] c16 N71-20400

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[NASA-CASE-LAR-11051-1] c21 N73-28646

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[NASA-CASE-XLE-05130] c15 N69-21362

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[NASA-CASE-XMS-04300] c09 N71-19479

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[NASA-CASE-ERC-10065] c09 N71-27364

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Radial module manned space station with artificial gravity environment  
[NASA-CASE-XMS-01906] c31 N70-41373

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[NASA-CASE-XLA-03127] c11 N71-10776

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ROTATING MIRRORS

Optical retrodirective modulator with focus spoiling reflector driven by modulation signal  
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[NASA-CASE-XLA-00793] c21 N71-22880

Optical device containing rotatable prism and reflecting mirror for generating precise angles  
[NASA-CASE-XGS-04173] c19 N71-26674

Optical system for monitoring angular position of rotating mirror  
[NASA-CASE-GSC-11353-1] c23 N72-27736

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Fluid seal formed by flexible disk on rotating shaft to retain lubricating oils around shaft  
[NASA-CASE-XLE-05130-2] c15 N71-19570

Anemometer with braking mechanism to prevent rotation of wind driven elements  
[NASA-CASE-XMF-05224] c14 N71-23726

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[NASA-CASE-XNP-06936] c15 N71-24695

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[NASA-CASE-XNP-02862-1] c15 N71-26294

Combination guide and rotary bearing for freely moving shaft  
[NASA-CASE-XLA-00013] c15 N71-29136

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[NASA-CASE-LAR-10620-1] c09 N72-25255

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[NASA-CASE-XLE-10326-4] c15 N72-27522

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[NASA-CASE-LEW-11076-2] c15 N73-20533

Digital servocontroller for rotating antenna shaft  
[NASA-CASE-KSC-10769-1] c09 N73-27153

Development of optical system for detecting defective components in rotating machinery with emphasis on bearing assemblies  
[NASA-CASE-KSC-10752-1] c15 N73-27407

High speed, self-acting shaft seal  
[NASA-CASE-LEW-11274-1] c15 N73-29457

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Semilinear bearing comprising two rows of roller bearings separated by spherical bearings and permitting rotational and translational movement  
[NASA-CASE-XLA-02809] c15 N71-22982

Mechanical actuator wherein linear motion changes to rotational motion  
[NASA-CASE-XGS-04548] c15 N71-24045

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[NASA-CASE-NPO-10679] c15 N72-21462

**ROTOR BLADES (TURBOMACHINERY)**

Locking device for retaining turbine rotor blades on turbine wheel  
[NASA-CASE-XNP-00816] c28 N71-28928

Blade vibration damping pins for turbomachinery  
[NASA-CASE-XLE-00155] c28 N71-29154

Transonic propulsion fan for turbofan engine with rotor blade spacing designed to minimize noise emission  
[NASA-CASE-LEW-11402-1] c28 N72-20770

**ROTOR SPEED**

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[NASA-CASE-MFS-20385] c09 N71-24904

**ROTORS**

Multistage, multiple reentry, single rotor, axial flow turbine  
[NASA-CASE-XLE-00085] c28 N70-39895

Describing angular position and velocity sensing apparatus  
[NASA-CASE-XGS-05680] c14 N71-17585

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[NASA-CASE-XNP-06507] c09 N71-23548

Electromagnetic braking arrangement for controlling rotor rotation in electric motor  
[NASA-CASE-XNP-06936] c15 N71-24695

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[NASA-CASE-NPO-11418-1] c14 N73-13420

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[NASA-CASE-LEW-10533-1] c15 N73-28515

**RUBBER**

Rubber composition for expulsion bladders and diaphragms for use with hydrazine  
[NASA-CASE-NPO-11433] c18 N71-31140

**RUBBER COATINGS**

Intumescent paint containing nitrile rubber for fire protection  
[NASA-CASE-ARC-10196-1] c18 N73-13562

**RUBY LASERS**

Cooling and radiation protection of ruby lasers using copper sulfate solution in alcohol  
[NASA-CASE-MPS-20180] c16 N72-12440

**RUNWAY ALIGNMENT**

Magnetic method for detection of aircraft position relative to runway  
[NASA-CASE-ARC-10179-1] c21 N72-22619

**RUNWAY LIGHTS**

Retractable runway lights  
[NASA-CASE-XLA-00119] c11 N70-33329

**RUPTURING**

Knife structure for controlling rupture of shock tube diaphragms  
[NASA-CASE-XAC-00731] c11 N71-15960

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**SAFETY DEVICES**

Helmet and torso tiedown mechanism for shortening pressure suits upon inflation  
[NASA-CASE-XMS-00784] c05 N71-12335

Positive locking check valve for stopping reversed flow  
[NASA-CASE-XMS-09310] c15 N71-22706

Description of protective device for providing safe operating conditions around work piece in machine or metal working tool  
[NASA-CASE-XLE-01092] c15 N71-22797

Velocity limiting safety system for motor driven research vehicle  
[NASA-CASE-XLA-07473] c15 N71-24895

Device for generating and controlling combustion products for testing of fire detection system  
[NASA-CASE-GSC-11095-1] c14 N72-10375

Restraint torso for increased mobility and reduced physiological effects while wearing pressurized suits  
[NASA-CASE-MSC-12397-1] c05 N72-25119

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[NASA-CASE-XLE-00046] c15 N70-33311

**SAMARIUM**

Gadolinium or samarium doped-silicon semiconductor material with resistance to radiation damage for use in solar cells  
[NASA-CASE-XLE-10715] c26 N71-23292

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[NASA-CASE-LAR-10623-1] c14 N73-30395

**SAMPLING**

Impact bit for cutting, collecting, and storing samples such as lunar rock cuttings  
[NASA-CASE-XNP-01412] c15 N70-42034

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[NASA-CASE-XMS-06767-1] c14 N71-20435

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[NASA-CASE-NPO-11373] c13 N72-25323

Automatic swabbing apparatus for sampling of microbiological surfaces  
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Digital to analog converter for sampled signal reconstruction  
[NASA-CASE-MSC-12458-1] c08 N73-32081

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Sandwich panel structure for removing heat from shield between hot and cold areas  
[NASA-CASE-XLA-00349] c33 N70-37979

Particle detector for measuring micrometeoroid velocity in space

- [NASA-CASE-XLA-00495] c14 N70-41332  
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[NASA-CASE-XLE-01246] c14 N71-10797  
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[NASA-CASE-XLA-03492] c15 N71-22713  
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[NASA-CASE-XNP-05297] c15 N71-23811  
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[NASA-CASE-XLA-11028] c15 N72-21486
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[NASA-CASE-GSC-11577-1] c15 N73-19467
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[NASA-CASE-GSC-10555-1] c21 N71-27324  
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- Shielded flat conductor cable of ribbonlike wires laminates in thin flexible insulation  
[NASA-CASE-MFS-13687-2] c09 N72-22198
- SHIFT REGISTERS**
- Binary to binary-coded decimal converter using single set of logic circuits notwithstanding number of shift register decades  
[NASA-CASE-XNP-00432] c08 N70-35423

- Linear three-tap feedback shift register  
[NASA-CASE-NPO-10351] c08 N71-12503
- Computer circuit performing both counting and shifting logic operations also capable of miniaturization and integration in basic circuits  
[NASA-CASE-XNP-01753] c08 N71-22897
- Commutator for steering precisely controlled bidirectional currents through numerous loads by use of magnetic core shift registers  
[NASA-CASE-NPO-10743] c08 N72-21199
- Multistage feedback shift register with states decomposable into cycles of equal length  
[NASA-CASE-NPO-11082] c08 N72-22167
- MOD 2 sequential function generator for multibit sequence, with two-bit shift register for each pair of bits  
[NASA-CASE-NPO-10636] c08 N72-25210
- Linear shift register with feedback logic for generating pseudonoise linear recurring binary sequences  
[NASA-CASE-NPO-11406] c08 N73-12175
- Family of m-ary linear feedback shift register with binary logic  
[NASA-CASE-NPO-11868] c10 N73-20254
- Nonrecursive counting digital filter containing shift register  
[NASA-CASE-NPO-11821-1] c08 N73-26175
- Event sequence detector with several input and shift register responsive to clock pulses  
[NASA-CASE-NPO-11703-1] c10 N73-32144
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[NASA-CASE-XMP-03856] c31 N70-34159
- Energy dissipating shock absorbing system for land payload recovery or vehicle braking  
[NASA-CASE-XLA-00754] c15 N70-34850
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[NASA-CASE-XMS-01240] c05 N70-35152
- Low onset rate energy absorber in form of strut assembly for crew couch of Apollo command module  
[NASA-CASE-MSC-12279-1] c15 N70-35679
- Landing pad assembly for aerospace vehicles  
[NASA-CASE-XMF-02853] c31 N70-36654
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[NASA-CASE-XMF-02108] c31 N70-36845
- Shock absorber for landing gear of lunar or planetary landing modules  
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[NASA-CASE-MSC-11253] c05 N71-12343
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[NASA-CASE-XMS-03722] c15 N71-21530
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[NASA-CASE-NPO-10626] c15 N72-15465
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[NASA-CASE-NPO-10671] c15 N72-20443
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[NASA-CASE-MFS-21680-1] c15 N73-20525
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[NASA-CASE-NPO-13253-1] c15 N73-31445
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[NASA-CASE-NPO-10626] c15 N72-15465
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Silphenylenesiloxane polymer with in-chain perfluoroalkyl groups
- [NASA-CASE-MFS-20979] c06 N72-25151  
Fluid polydimethylsiloxane resin with low outgassing properties in cured state
- [NASA-CASE-GSC-11358-1] c06 N73-26100  
Utilization of thiophenyl ether disiloxane and trisiloxane as lubricant fluids in severe environment including space
- [NASA-CASE-MFS-22411-1] c15 N73-28532
- SILVER**  
Dry electrode manufacture, using silver powder

- with cement  
[NASA-CASE-FRC-10029-2] c05 N72-25121
- SILVER CADMIUM BATTERIES**  
Cathodes made of sintered metal oxide and polymer matrix, for silver cadmium and silver zinc batteries  
[NASA-CASE-NPO-11157] c15 N70-22275
- SILVER CHLORIDES**  
Electrochemically reversible silver-silver chloride electrode for detecting bioelectric potential differences generated by human muscles and organs  
[NASA-CASE-XMS-02872] c05 N69-21925  
Silver chloride use in technique for fusion bonding of graphite to silver, glass, ceramics, and certain other metals  
[NASA-CASE-XGS-00963] c15 N69-39735
- SILVER COMPOUNDS**  
Description of electrical equipment and system for purification of waste water by producing silver ions for bacterial control  
[NASA-CASE-MSC-10960-1] c03 N71-24718
- SILVER ZINC BATTERIES**  
Cathodes made of sintered metal oxide and polymer matrix, for silver cadmium and silver zinc batteries  
[NASA-CASE-NPO-11157] c15 N70-22275  
Elimination of two step voltage discharge property of silver zinc batteries by using divalent silver oxide capacity of cell to charge anodes to monovalent silver state  
[NASA-CASE-XGS-01674] c03 N71-29129
- SIMULATORS**  
Development of apparatus for simulating zero gravity conditions  
[NASA-CASE-MFS-12750] c27 N71-16223  
Phonocardiogram simulator producing electrical voltage waves to control amplitude and duration between simulated sounds  
[NASA-CASE-YKS-10804] c05 N71-24606  
Sign wave generation simulator for variable amplitude, frequency, damping, and phase pulses for oscilloscope display  
[NASA-CASE-NPO-10251] c10 N71-27365
- SINE SERIES**  
Service life of electromechanical device for generating sine/cosine functions  
[NASA-CASE-LAR-10503-1] c09 N72-21248  
Function generators for producing complex vibration mode patterns used to identify vibration mode data  
[NASA-CASE-LAR-10310-1] c10 N73-20253
- SINE WAVES**  
Sign wave generation simulator for variable amplitude, frequency, damping, and phase pulses for oscilloscope display  
[NASA-CASE-NPO-10251] c10 N71-27365  
Wideband generator for producing sine wave quadrature and second harmonic of input signal  
[NASA-CASE-NPO-11133] c10 N72-20223  
Brushless electromechanical generator for sine and cosine functions  
[NASA-CASE-LAR-11389-1] c09 N73-32121
- SINGLE CRYSTALS**  
Producing high purity silicon carbide on carbon base by hydrogen reduction of silicon tetrachloride  
[NASA-CASE-XLA-00158] c26 N70-36805  
Single crystal film semiconductor devices  
[NASA-CASE-ERC-10222] c09 N72-22199  
Development and characteristics of magnetometer with single Bi<sub>2</sub>Se<sub>3</sub> crystal as sensing element  
[NASA-CASE-LEW-11632-1] c14 N72-25440
- SINTERING**  
Condenser-separator for dehumidifying air utilizing sintered metal surface  
[NASA-CASE-XLA-08645] c15 N69-21465  
Production of refractory bodies with controlled porosity by pressing and heating mixtures of refractory and inert metal powders  
[NASA-CASE-LEW-10393-1] c17 N71-15468  
Development of method for fabricating cermets and analysis of various compositions to show electrical and physical properties  
[NASA-CASE-NPO-13120-1] c18 N73-23629
- SIZE (DIMENSIONS)**  
Development of apparatus for producing metal powder particles of controlled size  
[NASA-CASE-XLE-06461-2] c17 N72-28535
- SIZE DETERMINATION**  
Impact measuring technique for determining size of hypervelocity projectiles  
[NASA-CASE-LAR-10913] c14 N72-16282
- SIZE SEPARATION**  
Method and apparatus for precision sizing and joining of large diameter tubes by bulging or constricting overlapping ends  
[NASA-CASE-XMF-05114-2] c15 N71-26148  
Device which separates and screens particles of soil samples for vidicon viewing in vacuum and reduced gravity environments  
[NASA-CASE-XNP-09770-3] c11 N71-27036
- SIZING (SHAPING)**  
Method and apparatus for shaping and joining large diameter metal tubes using magnetomotive forces  
[NASA-CASE-XMF-05114] c15 N71-17650
- SIZING SCREENS**  
Method for making screen with unlimited fineness of mesh and screen thickness  
[NASA-CASE-XLE-00953] c15 N71-15966  
Screen particle separator for soil samples  
[NASA-CASE-XNP-09770-2] c15 N72-22463
- SKEWNESS**  
Tape guidance system for multichannel digital recording system  
[NASA-CASE-XNP-09453] c08 N71-19420
- SKID LANDINGS**  
Nose gear steering system for vehicles with main skids to provide directional stability after loss of aerodynamic control  
[NASA-CASE-XLA-01804] c02 N70-34160
- SKIN (ANATOMY)**  
Conditioning tanned sharkskin for use as abrasive resistant clothing  
[NASA-CASE-XMS-09691-1] c18 N71-15545
- SKIN (STRUCTURAL MEMBER)**  
Development of resilient fastener for attaching skin of aerospace vehicles to permit movement of skin relative to framework  
[NASA-CASE-XLA-01027] c31 N71-24035
- SKIN TEMPERATURE (NON-BIOLOGICAL)**  
Heat flux sensor adapted for mounting on aircraft or spacecraft to measure aerodynamic heat flux inflow to aircraft skin  
[NASA-CASE-XFR-03802] c33 N71-23085
- SKIRTS**  
Inflatable rocket engine nozzle skirt with transpiration cooling  
[NASA-CASE-MFS-20619] c28 N72-11708
- SLEEP**  
Development of apparatus and method for quantitatively measuring brain activity as automatic indication of sleep state and level of consciousness  
[NASA-CASE-MSC-13282-1] c05 N71-24729
- SLEEVES**  
Nonreusable energy absorbing device comprising ring member with plurality of recesses, cutting members, and guide member mounted in each recess  
[NASA-CASE-XMF-10040] c15 N71-22877  
Tool exchange capabilities of portable wrench characterized by telescopic sleeve  
[NASA-CASE-MFS-22283-1] c15 N73-30462
- SLENDER BODIES**  
Support techniques for restraint of slender bodies such as launch vehicles  
[NASA-CASE-XLA-C2704] c11 N69-21540
- SLIDING CONTACT**  
Electrical connector pin with wiping action to assure reliable contact  
[NASA-CASE-XMF-04238] c09 N69-39734  
Development of slip ring assembly with inner and outer peripheral surfaces used as electrical contacts for brushes  
[NASA-CASE-XMP-01049] c15 N71-23049
- SLIP CASTING**  
Freeze casting of metal ceramic and refractory compound powders into plastic slips  
[NASA-CASE-XLE-00106] c15 N71-16076
- SLITS**  
Slit regulated gas journal bearing  
[NASA-CASE-XNP-60476] c15 N70-38620  
Procedure for fabricating element with cavity closed by thin wall with precisely shaped slit  
[NASA-CASE-LAR-10409-1] c15 N73-20526

## SLOT ANTENNAS

- Planar array circularly polarized antenna with wall slot excitation  
[NASA-CASE-NPO-10301] c07 N72-11148
- Omnidirectional antenna array with circumferential slots for mounting on cylindrical space vehicle  
[NASA-CASE-LAR-10163-1] c09 N72-25247
- Circularly polarized antenna with linearly polarized pair of elements  
[NASA-CASE-ERC-10214] c09 N72-31235
- Turnstile slot antenna system for spacecraft or missile telemetry and command control  
[NASA-CASE-GSC-11428-1] c09 N73-11206
- SLOTS**
- Belleville spring assembly with elastic guides having low hysteresis  
[NASA-CASE-XNP-09452] c15 N69-27504
- Direct lift control system having flaps with slots adjacent to their leading edge and particularly adapted for lightweight aircraft  
[NASA-CASE-LAR-10249-1] c02 N71-26110
- Slotted fine-adjustment support for optical devices  
[NASA-CASE-MFS-20249] c15 N72-11386
- SLURRY PROPELLANTS**
- Apparatus for producing hydrocarbon slurry containing small particles of magnesium for use as jet aircraft fuel  
[NASA-CASE-XLE-00010] c15 N70-33382
- SMOKE**
- Development of method for protecting large and oddly shaped areas from radiant and convective heat  
[NASA-CASE-XNP-01310] c33 N71-28852
- SODIUM CHLORIDES**
- Composition of diffuse reflective coating containing sodium chloride in combination with diol solvent and organic wetting and drying agents  
[NASA-CASE-GSC-11214-1] c06 N73-13128
- SOFT LANDING**
- Non-reusable kinetic energy absorber for application in soft landing of space vehicles  
[NASA-CASE-XLE-00810] c15 N70-34861
- Spacecraft shock absorbing system for soft landings  
[NASA-CASE-XNP-02108] c31 N70-36845
- Payload soft landing system using stowable gas bag  
[NASA-CASE-XLA-09881] c31 N71-16085
- SOFT LANDING SPACECRAFT**
- Pivotal shock absorbing assembly for use as load distributing portion in landing gear systems of space vehicles  
[NASA-CASE-XMF-03856] c31 N70-34159
- SOIL SCIENCE**
- Auger-type soil penetrometer for burrowing into soil formations  
[NASA-CASE-XNP-05530] c14 N73-32321
- SOILS**
- Method and apparatus for obtaining oxygen from soils containing metal oxides  
[NASA-CASE-MSC-12408-1] c13 N72-20355
- Penetrometer for empirically determining load-bearing characteristics of inclined surfaces of remotely located bodies of soil  
[NASA-CASE-NPO-11103] c14 N72-21406
- Screen particle separator for soil samples  
[NASA-CASE-XNP-09770-2] c15 N72-22483
- Soil burrowing mole apparatus  
[NASA-CASE-XNP-07169] c15 N73-32362
- SOLAR ACTIVITY**
- Computation method and apparatus for predicting solar flares by correlating planetary ephemeris data with gravitational force effects on sun  
[NASA-CASE-ERC-10323-1] c30 N70-22183
- Radiometric measuring system for solar activity and atmospheric attenuation and emission  
[NASA-CASE-ERC-10276] c14 N73-26432
- SOLAR ARRAYS**
- Deployable cantilever support for deploying solar cell arrays aboard spacecraft and reducing transient loading  
[NASA-CASE-NPO-10883] c31 N72-22874
- Electrical interconnection of unilluminated solar cells in solar battery array  
[NASA-CASE-GSC-10344-1] c03 N72-27053
- Development of solar energy powered heliostropes assembly to orient solar array toward sun  
[NASA-CASE-GSC-10945-1] c21 N72-31637
- SOLAR CELLS**
- Fabricating solar cells with dielectric layers to improve glass fusion  
[NASA-CASE-XGS-04531] c03 N69-24267
- Solar radiation direction detector and device for compensating degradation of photocells  
[NASA-CASE-XLA-00183] c14 N70-40239
- Attitude control system for spacecraft based on conversion of incident solar radiation on movable control surfaces into mechanical torques  
[NASA-CASE-XNP-02982] c31 N70-41855
- Simulating voltage-current characteristic curves of solar cell panel with different operational parameters  
[NASA-CASE-XMS-01554] c10 N71-10578
- Doping silicon material with gadolinium to increase radiation resistance of solar cells  
[NASA-CASE-XLE-02792] c26 N71-10607
- Modifying existing solar cells for temperature control  
[NASA-CASE-NPO-10109] c03 N71-11049
- Solar battery with interconnecting means for plural cells  
[NASA-CASE-XNP-06506] c03 N71-11050
- Fabrication methods for matrices of solar cell submodules  
[NASA-CASE-XNP-05821] c03 N71-11056
- Metal strip mounting arrangement for solar cell arrays on spacecraft  
[NASA-CASE-XGS-01475] c03 N71-11058
- Conductor for connecting parallel cells into submodules in series to form solar cell matrix  
[NASA-CASE-NPO-10821] c03 N71-19545
- Space erectable rollup solar array of arcuate solar panels furled on tapered drum for spacecraft storage during launch  
[NASA-CASE-NPO-10188] c03 N71-20273
- Electrode connection for n-on-p silicon solar cell  
[NASA-CASE-XLE-04787] c03 N71-20492
- Fabrication of solar cell banks for attaching solar cells to base members or substrates  
[NASA-CASE-XNP-00826] c03 N71-20895
- Gallium arsenide solar cell preparation by surface deposition of cuprous iodide on thin n-type polycrystalline layers and heating in iodine vapor  
[NASA-CASE-XNP-01960] c09 N71-23027
- Gadolinium or samarium doped-silicon semiconductor material with resistance to radiation damage for use in solar cells  
[NASA-CASE-XLE-10715] c26 N71-23292
- Maintaining current flow through solar cells with open connection using shunting diode  
[NASA-CASE-XLE-04535] c03 N71-23354
- Metal pattern bonding technique for cover glass attachment to silicon solar cells for space applications  
[NASA-CASE-XLE-08569] c03 N71-23449
- Addition of group 3 elements to silicon semiconductor material for increased resistance to radiation damage in solar cells  
[NASA-CASE-XLE-02798] c26 N71-23654
- Method of attaching cover glass to silicon solar cell without using adhesive  
[NASA-CASE-XLE-08569-2] c03 N71-24681
- Method and apparatus for fabricating solar cell panels  
[NASA-CASE-XNP-03413] c03 N71-26726
- Heat sealable transparent plastic film for mounting solar cell array to flexible substrate  
[NASA-CASE-LEW-11069-1] c03 N71-29048
- Development and characteristics of solar cells with phosphors in cover glass to improve response to solar ultraviolet radiation  
[NASA-CASE-ARC-10050] c03 N71-33409
- Electrically coupled individually encapsulated solar cell matrix  
[NASA-CASE-NPO-11190] c03 N71-34044
- Recovering efficiency of solar cells damaged by environmental radiation through thermal annealing  
[NASA-CASE-XGS-04047-2] c03 N72-11062
- Transparent plastic film for attaching cover glasses to silicon solar cells  
[NASA-CASE-LEW-11065-1] c03 N72-11064

- Spacecraft solar cell system with switching circuit to provide compensation for environmental changes  
[NASA-CASE-GSC-10669-1] c03 N72-20031
- Test method and equipment for identifying faulty cells or connections in solar cell assemblies  
[NASA-CASE-NPO-10401] c03 N72-20033
- Electrically connected matrix of discrete solar cell blanks  
[NASA-CASE-NPO-10591] c03 N72-22041
- Solar cell panel with light transmitting cover plate  
[NASA-CASE-NPO-10747] c03 N72-22042
- Development of process for constructing protective covers for solar cells  
[NASA-CASE-GSC-11514-1] c03 N72-24037
- Apparatus for applying thin glass slides to solar cells  
[NASA-CASE-NPO-10575] c03 N72-25019
- Electrical interconnection of unilluminated solar cells in solar battery array  
[NASA-CASE-GSC-10344-1] c03 N72-27053
- Rectangular solar cell stacked panels to generate electrical power aboard spacecraft  
[NASA-CASE-NPO-11771] c03 N73-20040
- Graded band gap p-n junction gallium arsenide/gallium aluminum arsenide solar cell  
[NASA-CASE-LAR-11174-1] c03 N73-26047
- Silicon solar cell with plastic film binding to cover glass  
[NASA-CASE-LEW-11065-2] c03 N73-26048
- SOLAR COLLECTORS**
- Expanding and contracting connector strip for solar cell array of Nimbus satellite  
[NASA-CASE-XGS-01395] c03 N69-21539
- Concentrator device for controlling direction of solar energy onto energy converters  
[NASA-CASE-XLE-01716] c09 N70-40234
- Space erectable rollup solar array of arcuate solar panels furled on tapered drum for spacecraft storage during launch  
[NASA-CASE-NPO-10188] c03 N71-20273
- Storage stable, thermally activated foaming compositions for erecting and rigidizing mechanisms of thin sheet solar collectors  
[NASA-CASE-LAR-10373-1] c18 N71-26155
- Development and characteristics of solar cells with phosphors in cover glass to improve response to solar ultraviolet radiation  
[NASA-CASE-ARC-10050] c03 N71-33409
- SOLAR ENERGY**
- Rectangular solar cell stacked panels to generate electrical power aboard spacecraft  
[NASA-CASE-NPO-11771] c03 N73-20040
- SOLAR FURNACES**
- Lens assembly for solar furnace or solar simulator  
[NASA-CASE-XNP-04111] c14 N71-15622
- SOLAR GENERATORS**
- Describing method for vapor deposition of gallium arsenide films to manganese substrates to provide semiconductor devices with low resistance substrates  
[NASA-CASE-XNP-01328] c26 N71-18064
- SOLAR GRAVITATION**
- Table structure and rotating magnet system simulating gravitational forces on spacecraft and displaying trajectories between Earth, Venus, and Mercury  
[NASA-CASE-XNP-00708] c14 N70-35394
- SOLAR OBSERVATORIES**
- Light sensitive control system for automatically opening and closing dome of solar optical telescope  
[NASA-CASE-MS-10966] c14 N71-19568
- SOLAR RADIATION**
- Space simulator with uniform test region radiation distribution, adapted to simulate Venus solar radiations  
[NASA-CASE-XNP-00459] c11 N70-38675
- Design and characteristics of device for sensing solar radiation and providing spacecraft attitude control to maintain direction with respect to incident radiation  
[NASA-CASE-XNP-05535] c14 N71-23040
- Utilization of solar radiation by solar still for converting salt and brackish water into potable water  
[NASA-CASE-XMS-04533] c15 N71-23086
- SOLAR RADIO EMISSION**
- System generating sidereal frequency signals from signals of standard solar frequency without use of mixing operations or feedback loops  
[NASA-CASE-XGS-02610] c14 N71-23174
- SOLAR REFLECTORS**
- Foldable, double cone and parabolic reflector system for solar ray concentration  
[NASA-CASE-XLA-04622] c03 N70-41580
- Modifying existing solar cells for temperature control  
[NASA-CASE-NPO-10109] c03 N71-11049
- Fabrication of curved reflector segments for solar mirror  
[NASA-CASE-XLE-08917] c15 N71-15597
- Thermal pump-compressor for converting solar energy  
[NASA-CASE-XLA-00377] c33 N71-17610
- Forming mold for polishing and machining curved solar magnesium reflector with reinforcing ribs  
[NASA-CASE-XLE-08917-2] c15 N71-24836
- Inorganic thermal control and solar reflector coatings  
[NASA-CASE-MFS-20011] c18 N72-22566
- SOLAR SENSORS**
- Sensor consisting of photocells mounted on pyramidal base for improved pointing accuracy of planetary trackers  
[NASA-CASE-XNP-04180] c07 N69-39736
- Spacecraft attitude control system using solar and earth sensors, gyroscopes, and jet actuators  
[NASA-CASE-XNP-00465] c21 N70-35395
- Sun tracker with rotatable plane-parallel plate and two photocells  
[NASA-CASE-XGS-01159] c21 N71-10678
- Solar sensor with coarse and fine sensing elements for matching preirradiated cells on degradation rates  
[NASA-CASE-XLA-01584] c14 N71-23269
- SOLAR SIMULATORS**
- Optical system for increasing light beam intensity within solar simulators  
[NASA-CASE-NPO-11096] c11 N70-25959
- Lens assembly for solar furnace or solar simulator  
[NASA-CASE-XNP-04111] c14 N71-15622
- Nonconsumable metal electric arc electrodes for producing solar simulator radiation source  
[NASA-CASE-LEW-11162-1] c09 N71-34210
- SOLDERED JOINTS**
- Soldering device particularly suited to making high quality wiring joints for aerospace engineering utilizing capillary attraction to regulate flow of solder  
[NASA-CASE-XLA-08911] c15 N71-27214
- SOLDERING**
- Hydrazine monoperfluoro alkanoate solder flux leaving corrosion resistant coating, for metals such as copper  
[NASA-CASE-XNP-03459-2] c18 N71-15688
- Metal soldering with hydrazine monoperfluoro alkanoate for corrosion resistant coatings  
[NASA-CASE-XNP-03459] c15 N71-21078
- Method of plating copper on aluminum to permit conventional soldering of structural aluminum bodies  
[NASA-CASE-XLA-08966-1] c17 N71-25903
- Device for resistance soldering electrical leads to solder cups of multiple terminal block  
[NASA-CASE-GSC-10913] c15 N72-22491
- Development of electrical system for indicating optimum contact between electrode and metal surface to permit improved soldering operation  
[NASA-CASE-KSC-10242] c15 N72-23497
- SOLDERS**
- Solder coating process for printed copper circuit protection  
[NASA-CASE-XNF-01599] c09 N71-20705
- SOLENOID VALVES**
- Solenoid two-step valve for bipropellant flow rate control to rocket engine  
[NASA-CASE-XMS-04890-1] c15 N70-22192
- Automatic recording McLeod gage with three electrodes and solenoid valve connection  
[NASA-CASE-XLE-03280] c14 N71-23093
- Solenoid valve including guide for armature and valve member  
[NASA-CASE-GSC-10607-1] c15 N72-20442

- Automatically operable self-leveling load table with plurality of solenoid valves  
[NASA-CASE-MFS-22039-1] c14 N73-30428
- SOLENOIDS**
- Water cooled solenoid capable of producing magnetic field intensities up to 100 kilo gauss  
[NASA-CASE-XNP-01951] c09 N70-41929
- Automatic power supply circuit design for driving inductive loads and minimizing power consumption including solenoid example  
[NASA-CASE-NPO-10716] c09 N71-24892
- Development of rotary solenoid shutter drive assembly and inertia damper for use with cameras mounted in satellites  
[NASA-CASE-GSC-11560-1] c09 N73-26198
- SOLID LUBRICANTS**
- Bonded solid lubricant coatings of calcium fluoride and binder for high temperature stability  
[NASA-CASE-XMS-00259] c18 N70-36400
- Solid lubricant applied to porous roller bearings prior to use in ultrahigh vacuum  
[NASA-CASE-XLE-09527] c15 N71-17688
- Preparation of inorganic solid film lubricants with long wear life and stability in aerospace environments  
[NASA-CASE-XMP-03988] c15 N71-21403
- Development of rolling element bearing for operation in ultrahigh vacuum environment  
[NASA-CASE-XLF-09527-2] c15 N71-26189
- SOLID PROPELLANT IGNITION**
- Solid propellant ignition with hypergolic fluid injected to predetermined portions of propellant  
[NASA-CASE-XLE-00207] c28 N70-33375
- Method for igniting solid propellant rocket motors by injecting hypergolic fluids  
[NASA-CASE-XLE-01988] c27 N71-15634
- SOLID PROPELLANT ROCKET ENGINES**
- Spherical solid propellant rocket engine design  
[NASA-CASE-XLA-00105] c28 N70-33331
- Mandrel for shaping solid propellant rocket fuel into engine casing  
[NASA-CASE-XLA-00304] c27 N70-34783
- Spherical solid propellant rocket engine having abrupt burnout  
[NASA-CASE-XHQ-01897] c28 N70-35381
- Grain configuration for solid propellant rocket engines  
[NASA-CASE-XGS-03556] c27 N70-35534
- Solid propellant rocket vehicle thrust control method and apparatus  
[NASA-CASE-XNP-00217] c28 N70-38181
- Steerable solid propellant rocket motor adapted to effect payload orientation as multistage rocket stage or reduce velocity as retrorocket  
[NASA-CASE-XNP-00234] c28 N70-38645
- Method of making solid propellant rocket motor having reliable high altitude capabilities, long shelf life, and capable of firing with nozzle closure with foamed plastic permanent mandrel  
[NASA-CASE-XLA-04126] c28 N71-26779
- Electrical failure detector in solid rocket propellant motor insulation against thermal degradation by fuel grain  
[NASA-CASE-XMF-03968] c14 N71-27186
- Solid propellant rocket motor with igniter operating in vacuum and sustaining burning of propellant below normal combustion limit  
[NASA-CASE-NPO-11559] c28 N71-34949
- Solid propellant rocket engine with venting system to control effective nozzle throat area  
[NASA-CASE-XNP-03282] c28 N72-20758
- Thin walled nozzle with insulative nonablative coating for solid propellant rocket engines  
[NASA-CASE-NPO-11458] c28 N72-23810
- Characteristics of solid propellant rocket engine with controlled rate of thrust buildup operating in vacuum environment  
[NASA-CASE-NPO-11559] c28 N73-24784
- SOLID PROPELLANTS**
- Variable thrust ion engine using thermal decomposition of solid cesium compound to produce propulsive vapor  
[NASA-CASE-XMP-00923] c28 N70-36802
- Photographic method for measuring viscoelastic strain in solid propellants and other materials  
[NASA-CASE-XNP-01153] c32 N71-17645
- Ethylene oxide sterilization and encapsulating process for sterile preservation of instruments and solid propellants  
[NASA-CASE-XNP-09763] c14 N71-20461
- Chemical process for production of polyisobutylene compounds and application as solid rocket propellant binder  
[NASA-CASE-NPO-10893] c27 N73-22710
- SOLID ROCKET BINDERS**
- Liner for hybrid solid propellants to bind propellant to rocket motor case  
[NASA-CASE-XNP-09744] c27 N71-16392
- SOLID ROCKET PROPELLANTS**
- Using ethylene oxide in preparation of sterilized solid rocket propellants and encapsulating materials  
[NASA-CASE-XNP-01749] c27 N70-41897
- Pressurized gas injection for burning rate control of solid propellants  
[NASA-CASE-XLE-03494] c27 N71-21819
- Solid propellant stabilizer containing nitroguanidine  
[NASA-CASE-NPO-12000] c27 N72-25699
- Solid propellant containing hydrazinium nitroformate oxidizer and polymeric hydrocarbon binder  
[NASA-CASE-NPO-12015] c27 N73-16764
- Utilization of inorganic metal-oxidizer materials in solid rocket propellants resulting in increased combustion efficiency  
[NASA-CASE-NPO-11975-1] c27 N73-17802
- SOLID STATE**
- Solid state chemical source for ammonia beam masers  
[NASA-CASE-XGS-01504] c16 N70-41578
- SOLID STATE DEVICES**
- Solid state switching circuit design to increase current capacity of low rated relay contacts  
[NASA-CASE-XNP-09228] c09 N69-27500
- Temperature compensated solid state differential amplifier with application in bioinstrumentation circuits  
[NASA-CASE-XAC-00435] c09 N70-35440
- Solid state device for mapping flux and power in nuclear reactor cores  
[NASA-CASE-XLE-00301] c14 N70-36808
- Solid state operational integrator  
[NASA-CASE-NPO-10230] c09 N71-12520
- Microwave power receiving antenna solving heat dissipation problems by construction of elements as heat pipe devices  
[NASA-CASE-MFS-20333] c09 N71-13486
- Computer circuit performing both counting and shifting logic operations also capable of miniaturization and integration in basic circuits  
[NASA-CASE-XNP-01753] c08 N71-22897
- Solid state television camera system consisting of monolithic semiconductor mosaic sensor and molecular digital readout systems  
[NASA-CASE-XMF-06092] c07 N71-24612
- Solid state circuit for switching alternating current input signal as function of direct current gating transistor  
[NASA-CASE-XNP-06505] c10 N71-24799
- Solid state force measuring electromechanical transducers made of piezoresistive materials  
[NASA-CASE-ERC-10088] c26 N71-25490
- Development and characteristics of solid state acoustic variable time delay line using direct current voltage and radio frequency pulses  
[NASA-CASE-ERC-10032] c10 N71-25900
- Solid state broadband stable power amplifier  
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[NASA-CASE-XMF-01543] c31 N71-17730
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[NASA-CASE-MFS-14017] c14 N71-26627
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- High temperature spark plug for igniting liquid rocket propellants  
[NASA-CASE-XLE-00660] c28 N70-39925
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[NASA-CASE-XLA-03659] c02 N71-11041
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[NASA-CASE-XLA-G880-1] c02 N71-11043
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[NASA-CASE-XLA-02865] c28 N71-15563
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[NASA-CASE-LEW-11058-1] c28 N72-20769
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[NASA-CASE-XLA-00221] c02 N70-33266
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[NASA-CASE-MFS-20642] c14 N72-21407
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[NASA-CASE-XLA-01326] c11 N71-21481
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[NASA-CASE-XLA-03271] c11 N69-24321
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[NASA-CASE-XGS-02401] c14 N69-27485
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[NASA-CASE-MFS-21680-1] c15 N73-20525
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**SURFACE FINISHING**

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 Ultrasonic device for ophthalmic eye surgery with safe removal of macerated material [NASA-CASE-LEW-11669-1] c05 N73-27062  
 Surgical liquification pump for removing macerated tissue from eye [NASA-CASE-LEW-12051-1] c04 N73-32000

**SURVIVAL EQUIPMENT**  
 Survival couch for aircraft or spacecraft crews [NASA-CASE-XLA-00118] c05 N70-33285  
 Lightweight life preserver without fastening devices [NASA-CASE-XMS-00864] c05 N70-36493  
 Pliable frame for sunglasses in emergency survival kits [NASA-CASE-XMS-06064] c05 N71-23096

**SUSPENDING (HANGING)**  
 Parallel motion suspension device for measuring instruments [NASA-CASE-XNP-01567] c15 N70-41310  
 Cable suspension and inclined walkway system for simulating reduced or zero gravity environments [NASA-CASE-XLA-01787] c11 N71-16028  
 Suspended mass oscillation damper based on impact energy absorption for damping wind induced oscillations of tall stacks, antennas, and unbilical towers [NASA-CASE-LAR-10193-1] c15 N71-27146

**SWEAT COOLING**  
 Transpiration cooled turbine blade made from metallic or ceramic wires [NASA-CASE-XLE-00020] c15 N70-33226  
 Transpirationally cooled heat ablation system for interplanetary spacecraft reentry shielding [NASA-CASE-XMS-02677] c31 N70-42075  
 Transpiration-cooled rocket chamber formed of porous metal wall [NASA-CASE-LEW-11118-1] c15 N72-32501

**SWEEP CIRCUITS**  
 Transistorized circuit for producing multiple slope voltage sweep [NASA-CASE-XMS-03542] c09 N71-28926

**SWEEP EFFECT**  
 Supersonic or hypersonic vehicle control system comprising elevons with hinge line sweep and free of adverse aerodynamic cross coupling [NASA-CASE-XLA-08967] c02 N71-27088

**SWELLING**  
 Para-benzoquinone dioxide and concentrated mineral acid processed to yield intumescent or fire resistant, heat insulating materials [NASA-CASE-ARC-10304-1] c18 N73-26572

**SWEEP WINGS**  
 Design of supersonic aircraft with novel fixed, swept wing planform [NASA-CASE-XLA-04451] c02 N71-12243

**SWIRLING**  
 Slosh and swirl alleviator for liquid propellant tanks during transport and flight [NASA-CASE-XLA-05749] c15 N71-19569  
 Swirl can, full-annulus combustion chambers for high performance gas turbine engines [NASA-CASE-LEW-11326-1] c23 N73-30665

**SWITCHES**  
 Switching mechanism with energy stored in coil spring [NASA-CASE-XGS-00473] c03 N70-38713  
 Digital memory system with multiple switch cores for driving each word location [NASA-CASE-XNP-01466] c10 N71-26434

- Radio frequency controlled solid state switch  
[NASA-CASE-ARC-10136-1] c09 N72-22202
- SWITCHING CIRCUITS**
- Solid state switching circuit design to increase current capacity of low rated relay contacts  
[NASA-CASE-XNP-09228] c09 N69-27500
- Power control switching circuit using low voltage semiconductor controlled rectifiers for high voltage isolation  
[NASA-CASE-XNP-02713] c10 N69-39888
- Selective gold diffusion on monolithic silicon chips for switching and nonswitching amplifier devices and circuits and linear and digital logic circuits  
[NASA-CASE-ERC-10072] c09 N70-11148
- Operation of two dimensional, word oriented, coincident current, magnetic core memory with reduced bit switching current and increased word switching current for lower power dissipation  
[NASA-CASE-ERC-10166] c08 N70-22136
- Electrical power system for space flight vehicles operating over extended periods  
[NASA-CASE-XMF-00517] c03 N70-34157
- High speed low level voltage commutating switch  
[NASA-CASE-XAC-00060] c09 N70-39915
- Switching circuit with regeneratively connected transistors eliminating power consumption when not in use  
[NASA-CASE-XNP-02654] c10 N70-42032
- Using electron beam switching for brushless motor commutation  
[NASA-CASE-XGS-01451] c09 N71-10677
- Increasing power conversion efficiency of electronic amplifiers by power supply switching  
[NASA-CASE-XMS-00945] c09 N71-10798
- Silicon controlled rectifier pulse gate amplifier for blocking false gating caused by negative transient voltages  
[NASA-CASE-XLA-07497] c09 N71-12514
- Describing magnetic core current switching device for steering bipolar current pulses to memory units  
[NASA-CASE-NPO-10201] c08 N71-18694
- Transistorized dc-coupled multivibrator with noninverted output signal  
[NASA-CASE-XNP-09450] c10 N71-18723
- Reversible current directing circuitry for reversible motor control  
[NASA-CASE-XLA-09371] c10 N71-18724
- Constructing Exclusive-Or digital logic circuit in single module  
[NASA-CASE-XLA-07732] c08 N71-18751
- Polarization diversity monopulse tracking receiver design without radio frequency switches  
[NASA-CASE-XGS-03501] c09 N71-20864
- Sight switch using infrared source and sensor mounted beside eye  
[NASA-CASE-XMF-03934] c09 N71-22985
- Complementary regenerative transistorized switch circuit employing positive and negative feedback  
[NASA-CASE-XGS-02751] c09 N71-23015
- Reliable magnetic core circuit apparatus with application in selection matrices for digital memories  
[NASA-CASE-XNP-01318] c10 N71-23033
- Electric circuit for producing high current pulse having fast rise and fall time  
[NASA-CASE-XMS-04919] c09 N71-23270
- Electric circuit for reversing direction of current flow  
[NASA-CASE-XNP-00952] c10 N71-23271
- Switching series regulator with gating control network  
[NASA-CASE-XMS-09352] c09 N71-23316
- Microwave waveguide switch with rotor position control  
[NASA-CASE-XNP-06507] c09 N71-23548
- Signaling summary alarm circuit with semiconductor switch for faulty contact indications  
[NASA-CASE-XLE-03061-1] c10 N71-24798
- Solid state circuit for switching alternating current input signal as function of direct current gating transistor  
[NASA-CASE-XNP-06505] c10 N71-24799
- Inverters for changing direct current to alternating current  
[NASA-CASE-XGS-06226] c10 N71-25950
- Design and development of multistage current steering switch with inductively coupled magnetic cores  
[NASA-CASE-XNP-08567] c09 N71-26000
- Pulse duration control device for driving slow response time loads in selected sequence including switching and delay circuits and magnetic storage  
[NASA-CASE-XGS-04224] c10 N71-26418
- Turn on current transient limiter for controlling peak current flow in high capacity load  
[NASA-CASE-GSC-10413] c10 N71-26531
- Input radio frequency circuit for switching type absolute temperature measuring radiometer for noise sources  
[NASA-CASE-ERC-11020] c14 N71-26774
- Inverter drive circuit for semiconductor switch  
[NASA-CASE-LEW-10233] c10 N71-27126
- Phase locked demodulator with bandwidth switching amplifier circuit  
[NASA-CASE-XNP-01107] c10 N71-28859
- Monostable multivibrator for producing output pulse widths with positive feedback NOR gates  
[NASA-CASE-MSC-13492-1] c10 N71-28860
- Digital magnetic core memory with sensing amplifier circuits  
[NASA-CASE-XNP-01012] c08 N71-28925
- Current regulating voltage divider design with load current shunting  
[NASA-CASE-MFS-20935] c09 N71-34212
- Relay controlled voltage switching unit for scanning circuitry of star tracker  
[NASA-CASE-NPO-11253] c09 N72-17157
- Spacecraft solar cell system with switching circuit to provide compensation for environmental changes  
[NASA-CASE-GSC-10669-1] c03 N72-20031
- Flow rate switch for detecting variations in fluid flow velocity through conduits of pressurized systems  
[NASA-CASE-NPO-10722] c09 N72-20199
- Switching type voltage regulator with relatively simple circuit arrangement  
[NASA-CASE-LEW-11005-1] c09 N72-21243
- Development and characteristics of data multiplexer circuit using field effect transistors arranged in tree switching configuration  
[NASA-CASE-NPO-11333] c08 N72-22162
- Pulse coupling circuit with switch between generator and winding  
[NASA-CASE-LEW-10433-1] c09 N72-22197
- Solid state remote circuit selector switching circuit  
[NASA-CASE-LEW-10387] c09 N72-22201
- Pressure operated electrical switch responsive to pressure decrease after pressure increase  
[NASA-CASE-LAR-10137-1] c09 N72-22204
- Transistorized switching logic circuits with tunnel diodes  
[NASA-CASE-GSC-10878-1] c10 N72-22236
- Switching circuit for control of cathode ray tube beam with fast rise time for output signal  
[NASA-CASE-KSC-10647-1] c10 N72-31273
- Electronic video editor for switching video input signals to common output channel  
[NASA-CASE-KSC-10003] c10 N73-13235
- High isolation RF signal selection switches  
[NASA-CASE-NPO-13081-1] c07 N73-23106
- Solid state switch for variable circuit switching  
[NASA-CASE-NPO-10817-1] c08 N73-30135
- Manually and automatically operable video switching system  
[NASA-CASE-KSC-10782-1] c07 N73-32063
- Transparent switchboard which permits optical display devices to be adapted for use in man machine communications  
[NASA-CASE-MSC-13746-1] c10 N73-32143
- SWITCHING THEORY**
- Multiple circuit switch apparatus requiring minimum hand and eye movement by operator  
[NASA-CASE-XAC-03777] c10 N71-15909
- SWIVELS**
- Swivel support for gas bearing for position adjustment between ball and supporting cup  
[NASA-CASE-XMF-07808] c15 N71-23812
- SYNCHRONISM**
- Synchronizing apparatus for multi-access

- satellite time division multiplex system  
[NASA-CASE-XGS-05918] c07 N69-39974  
Circuitry for generating sync signals in FM  
communication systems including video  
information  
[NASA-CASE-XNP-10830] c07 N71-11281  
Development of method for synchronizing clocks  
at several ground stations based on signals  
received from spacecraft or satellites  
[NASA-CASE-XNP-08875] c10 N71-23099  
Pulse generator for synchronizing or resetting  
electronic signals without requiring separate  
external source  
[NASA-CASE-XGS-03632] c09 N71-23311  
Time synchronization system for synchronizing  
clocks at remote locations with master clock  
using moon reflected coded signals  
[NASA-CASE-NPO-10143] c10 N71-26326  
System designed to reduce time required for  
obtaining synchronization in data  
communication with spacecraft utilizing  
pseudonoise codes  
[NASA-CASE-NPO-10214] c10 N71-26577
- SYNCHRONIZED OSCILLATORS**  
Development of phase demodulation system with  
two phase locked loops  
[NASA-CASE-XNP-G0777] c10 N71-19469  
Phase locked phase modulation system with  
voltage controlled oscillator for final phase  
linearity  
[NASA-CASE-XNP-05382] c10 N71-23544  
Automatic frequency control device for providing  
frequency reference for voltage controlled  
oscillator  
[NASA-CASE-KSC-10393] c09 N72-21247
- SYNCHRONIZERS**  
Development and characteristics of burst  
synchronization detection system  
[NASA-CASE-XMS-05605-1] c10 N71-19468  
Time division relay synchronizer with master  
sync pulse for activating binary counter to  
produce signal identifying time slot for station  
[NASA-CASE-GSC-10373-1] c07 N71-19773  
Design and development of synchronous servo loop  
control system  
[NASA-CASE-XNP-03744] c10 N71-20448  
Digital synchronizer for extracting binary data  
in receiver of PSK/PCM communication system  
[NASA-CASE-NPO-10851] c07 N71-24613  
Video sync processor with phase locked system  
[NASA-CASE-KSC-10002] c10 N71-25865  
Digital correlation method for synchronizing  
received pulse code modulated communications  
signals  
[NASA-CASE-NPO-11302-2] c07 N72-28164  
Bit synchronizer for split phase PCM  
transmission with two loop systems  
[NASA-CASE-MSC-12494-1] c07 N73-11142  
System for generating timing and control signals  
during repetitive fixed length serial data  
transmission  
[NASA-CASE-NPO-13125-1] c09 N73-18225
- SYNCHRONOUS MOTORS**  
Synchronous dc direct-drive system comprising  
multiple-loop hybrid control system  
controlling load directly connected to actuator  
[NASA-CASE-GSC-10065-1] c10 N71-27136
- SYNCHRONOUS SATELLITES**  
Position locating system for remote aircraft  
using voice communication and digital signals  
[NASA-CASE-GSC-10087-2] c21 N71-13958  
Serrrodyne traveling wave tube reentrant  
amplifier for synchronous communication  
satellites operating at microwave frequencies  
[NASA-CASE-XGS-01022] c07 N71-16088  
Traffic control system for supersonic transports  
using synchronous satellite for data relay  
between vehicles and ground station  
[NASA-CASE-GSC-10087-1] c02 N71-19287  
Tracking antenna system with array for  
synchronous satellite or ground based radar  
[NASA-CASE-GSC-10553-1] c07 N71-19854  
Satellite network synchronization system with  
multiple access to multiplex repeater  
[NASA-CASE-GSC-10390-1] c07 N72-11149  
Development of device for simulating charge and  
discharge cycle of battery in synchronous orbit  
[NASA-CASE-GSC-11211-1] c03 N72-25020
- SYNTHESIS**  
Synthesis of polymeric schiff bases by  
schiff-base exchange reactions  
[NASA-CASE-XMF-08651] c06 N71-11236  
Preparation of ordered poly(arylenesiloxane/  
polymers  
[NASA-CASE-XMF-10753] c06 N71-11237  
Synthesis and chemical properties of  
imidazopyrrolone/imide copolymers  
[NASA-CASE-XLA-08802] c06 N71-11238  
Chemical synthesis of formaldehyde based  
disinfectants without penetrating odor and eye  
and ear irritation properties  
[NASA-CASE-NPO-12115-1] c06 N73-17153  
Stable polyimide synthesis from mixtures of  
monomeric diamines and polycarboxylic acid  
esters  
[NASA-CASE-LEW-11325-1] c06 N73-27980
- SYNTHESIZERS**  
Digitally controlled frequency synthesizer for  
pulse frequency modulation telemetry systems  
[NASA-CASE-XGS-02317] c09 N71-23525
- SYNTHETIC FIBERS**  
Manufacture of fluid containers from fused  
coated polyester sheets having resealable septum  
[NASA-CASE-NPO-10123] c15 N71-24835  
Structure of fabric layers for micrometeoroid  
protection garment with capability for  
eliminating heat shorts for use in  
manufacturing space suits  
[NASA-CASE-MSC-12109] c18 N71-26285  
Flexible barrier membrane comprising porous  
substrate and incorporating liquid gallium or  
indium metal used as sealant barriers for  
spacecraft walls and pumping liquid propellants  
[NASA-CASE-XNP-08881] c17 N71-28747
- SYNTHETIC RESINS**  
Process permitting application of synthetic  
resin coating to irregular-shaped objects at  
ambient temperature  
[NASA-CASE-XNP-06508] c18 N69-39895
- SYSTEM FAILURES**  
Tape recorder designed for low power consumption  
and resistance to operational failure under  
high stress conditions  
[NASA-CASE-XGS-08259] c14 N71-23698  
Fault-tolerant clock apparatus for use in  
digital logic systems which maintains output  
pulses during component failure  
[NASA-CASE-MSC-12531-1] c14 N73-22386
- SYSTEMS ANALYSIS**  
Analog to digital converter analyzing system  
[NASA-CASE-NPO-10560] c08 N72-22166
- SYSTEMS ENGINEERING**  
Design of magnetohydrodynamic induction machine  
with end poles which produce compensating  
magnetic fields  
[NASA-CASE-XNP-07481] c25 N69-21929  
Hovering type flying vehicle design and  
principle mechanisms for manned or unmanned use  
[NASA-CASE-MSC-12111-1] c02 N71-11039  
Solar battery with interconnecting means for  
plural cells  
[NASA-CASE-XNP-06506] c03 N71-11050  
Transparent polycarbonate resin, shell helmet  
and latch design for high altitude and space  
flight  
[NASA-CASE-XMS-04935] c05 N71-11190  
Design and operation of multi-feed cone  
Cassegrain antenna  
[NASA-CASE-NPO-10539] c07 N71-11285  
Method and apparatus for measuring potentials in  
plasmas  
[NASA-CASE-XLE-00821] c25 N71-15650  
Design and operation of viscous pendulum damper  
[NASA-CASE-XLA-02079] c12 N71-16894  
Alarm system design for monitoring one or more  
relay circuits  
[NASA-CASE-XMS-10984-1] c10 N71-19417  
Wide range analog data compression system  
[NASA-CASE-XGS-02612] c08 N71-19435  
Space suit body heat exchanger design composed  
of thermal conductance yarn and liquid coolant  
loops  
[NASA-CASE-XMS-09571] c05 N71-19439  
Silicon radiation detecting probe design for in  
vivo biomedical use  
[NASA-CASE-XMS-01177] c05 N71-19440

- Design and operation of high speed binary to decimal conversion system  
[NASA-CASE-XGS-01230] c08 N71-19544
- Sputter proof evaporant source design for use in vacuum deposition of solid thin films on substrates  
[NASA-CASE-XMF-06065] c15 N71-20395
- Method and apparatus for fabrication of heat insulating and ablative reentry structure  
[NASA-CASE-XMS-02009] c33 N71-20834
- Polarization diversity monopulse tracking receiver design without radio frequency switches  
[NASA-CASE-XGS-03501] c09 N71-20864
- Pneumatic cantilever beams and platform for space erectable structure  
[NASA-CASE-XLA-01731] c32 N71-21045
- Magnetically opened diaphragm design with camera shutter and expansion tube applications  
[NASA-CASE-XLA-03660] c15 N71-21060
- Portable apparatus producing high velocity annular air column surrounding low velocity, filtered, superclean air central core for industrial clean room environmental control  
[NASA-CASE-XMF-03212] c15 N71-22721
- Rotary spindle lathe attachments for machining geometrical cones  
[NASA-CASE-XMS-04292] c15 N71-22722
- Apparatus and method for spin forming tubular elbows with high strength, uniform thickness, and close tolerances  
[NASA-CASE-XMF-01083] c15 N71-22723
- Spacecraft air lock system to provide ingress and egress of astronaut without subjecting vehicular environment to vacuum of space  
[NASA-CASE-XLA-02050] c31 N71-22968
- Method of stationkeeping for lenticular gravity gradient satellites  
[NASA-CASE-XLA-03132] c31 N71-22969
- Filler valve design for supplying liquid propellants at high pressure to space vehicles  
[NASA-CASE-XNP-01747] c15 N71-23024
- Method and apparatus for producing very low temperature refrigeration based on gas pressure balance  
[NASA-CASE-XNP-08877] c15 N71-23025
- Monitoring circuit design for sampling circuit control and reduction of time-bandwidth in video communication systems  
[NASA-CASE-XNP-02791] c07 N71-23026
- Multisample test chamber for exposing materials to X rays, temperature change, and gaseous conditions and determination of material effects  
[NASA-CASE-XMS-02930] c11 N71-23042
- Variable duration pulse integrator design for integrating pulse duration modulated pulses with elimination of ripple content  
[NASA-CASE-XLA-01219] c10 N71-23084
- Sealed electrochemical cell with flexible casing for varying electrolyte level in cell  
[NASA-CASE-XGS-01513] c03 N71-23336
- Mosaic semiconductor radiation detector and position indicator systems engineering for low energy particles  
[NASA-CASE-XGS-03230] c14 N71-23401
- Device for measuring two orthogonal components of force with gallium flotation of measuring target for use in vacuum environments  
[NASA-CASE-XAC-04885] c14 N71-23790
- Transducer circuit design with single coaxial cable for input and output connections including incorporation into miniaturized catheter transducer  
[NASA-CASE-ARC-10132-1] c09 N71-24597
- Method of attaching cover glass to silicon solar cell without using adhesive  
[NASA-CASE-XLE-08569-2] c03 N71-24681
- Development of attitude control system for sounding rocket stabilization during ballistic phase of flight  
[NASA-CASE-XGS-01654] c31 N71-24750
- Temperature telemetric transmitter with frequency determining tank circuit for short range transmission  
[NASA-CASE-NPO-10649] c07 N71-24840
- Tuning arrangement for frequency control of magnetron-type electron discharge device  
[NASA-CASE-XNP-09771] c09 N71-24841
- Broadband modified turnstile antenna for use in space tracking and communications  
[NASA-CASE-MSC-12209] c09 N71-24842
- Apparatus to determine electric field strength by measuring deflection of electron beam impinging on target  
[NASA-CASE-XMF-06617] c09 N71-24843
- Binary to decimal decoder logic circuit design with feedback control and display device  
[NASA-CASE-XKS-06167] c08 N71-24890
- Noninterruptable digital counter circuit design with display device for pulse frequency modulation  
[NASA-CASE-XNP-09759] c08 N71-24891
- Quick disconnect duct coupling device for single-handed operation  
[NASA-CASE-MFS-20395] c15 N71-24903
- Brushless dc tachometer design with Hall effect crystals and output voltage magnitude proportional to rotor speed  
[NASA-CASE-MFS-20385] c09 N71-24904
- Pneumatic mechanism for releasing hook and loop fasteners between large rigid structures  
[NASA-CASE-XMS-10660-1] c15 N71-25975
- Sealed fluorescent tube light unit capable of connection with other units to form string of work lights  
[NASA-CASE-XKS-05932] c09 N71-26787
- Apparatus for semiautomatic inspection of microfilmed documents for density, resolution, size, and position  
[NASA-CASE-MFS-20240] c14 N71-26788
- Method and apparatus for remote measurement of displacement of marks on specimen undergoing tensile test  
[NASA-CASE-NPO-10778] c14 N72-11364
- Spacecraft solar cell system with switching circuit to provide compensation for environmental changes  
[NASA-CASE-GSC-10669-1] c03 N72-20031
- Electric storage battery with high impact resistance  
[NASA-CASE-NPO-11021] c03 N72-20032
- Three mirror scanning incidence system for X ray telescope  
[NASA-CASE-MFS-21372] c14 N72-20397
- Supersonic combustion rocket with small rocket motor substituted for turbopumps  
[NASA-CASE-LEW-11058-1] c28 N72-20769
- Method and apparatus for providing active attitude control for spacecraft by converting any attitude motion of vehicle into simple rotational motion  
[NASA-CASE-HQN-10439] c21 N72-21624
- Development of light sensing system for controlled orientation of object relative to sun or other light source  
[NASA-CASE-NPO-11311] c14 N72-25414
- Development of thrust control system for application to control of aircraft and spacecraft  
[NASA-CASE-MSC-13397-1] c21 N72-25595
- Design of system for calibrating pressure transducers  
[NASA-CASE-LAR-10910-1] c14 N72-28462
- Combined shoulder harness and lap belt restraint system for use in aircraft or automobiles  
[NASA-CASE-ARC-10519-1] c05 N72-31117
- Development of computer program for estimating reliability of self-repair and fault-tolerant systems with respect to selected system and mission parameters  
[NASA-CASE-NPO-13086-1] c15 N73-12495
- Design and development of active control system for air cushion vehicle to reduce or eliminate effects of excessive vertical vibratory acceleration  
[NASA-CASE-LAR-10531-1] c02 N73-13023
- Measurement system for physical quantity represented by or converted to variable frequency signal  
[NASA-CASE-MFS-20658-1] c14 N73-30386
- Holographic system for nondestructive testing  
[NASA-CASE-MFS-21704-1] c16 N73-30478
- Design of precision vertical alignment system using laser with gravitationally sensitive cavity  
[NASA-CASE-ARC-10444-1] c16 N73-33397
- SYSTEMS STABILITY
- Development and characteristics of annular momentum control device for two axis

stabilization of spacecraft  
[NASA-CASE-LAR-11051-1] c21 N73-28646

**SYSTOLIC PRESSURE**  
Automatic system for measuring and monitoring  
systolic and diastolic blood pressure in humans  
[NASA-CASE-MSC-13999-1] c05 N72-25142

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**TACHOMETERS**  
Digital cardi tachometer incorporating circuit  
for measuring heartbeat rate of subject over  
predetermined portion of one minute also  
converting rate to beats per minute  
[NASA-CASE-XMS-02399] c05 N71-22896

Brushless dc tachometer design with Hall effect  
crystals and output voltage magnitude  
proportional to rotor speed  
[NASA-CASE-MFS-26385] c09 N71-24904

Development of instantaneous reading tachometer  
for measuring electrocardiogram signal rate  
[NASA-CASE-MFS-20418] c14 N73-24473

**TAKEOFF**  
Aircraft instrument for indicating malfunctions  
during takeoff  
[NASA-CASE-XLA-00100] c14 N70-36807

Aircraft indicator for pilot control of takeoff  
roll, climbout path and verticle flight path  
in poor visibility conditions  
[NASA-CASE-XLA-00487] c14 N70-40157

**TANGENTS**  
Integrated circuit tangent function generator  
[NASA-CASE-MSC-13907-1] c10 N73-26230

**TANK GEOMETRY**  
Liquid propellant tank design with semitoroidal  
bulkhead  
[NASA-CASE-XMF-01899] c31 N70-41948

**TANKS (CONTAINERS)**  
Radiation source and detection system for  
measuring amount of liquid inside tanks  
independently of liquid configuration  
[NASA-CASE-MSC-12280] c27 N71-16348

Development of apparatus and method for testing  
leakage of large tanks  
[NASA-CASE-XMF-02392] c32 N71-24285

Design and development of device to prevent  
clogging in hoppers containing particulate  
materials  
[NASA-CASE-LAR-10961-1] c15 N73-12496

Floating baffle for tank drain  
[NASA-CASE-MSC-10639] c15 N73-26472

**TANTALUM**  
Oxygen-doped tantalum emitter for thermionic  
devices such as cesium vapor diodes  
[NASA-CASE-NPO-11138] c03 N70-34646

Arc electrode of graphite with tantalum ball tip  
[NASA-CASE-XLE-04788] c09 N71-22987

Organometallic compounds of niobium and tantalum  
useful for film deposition  
[NASA-CASE-XNP-04623] c06 N71-28808

**TANTALUM ALLOYS**  
Evaporating crucible of tantalum-tungsten foil,  
nickel alumina bonding agent, and ceramic  
coating  
[NASA-CASE-XLA-03105] c15 N69-27483

**TANTALUM OXIDES**  
Development of thin film temperature sensor from  
TaO  
[NASA-CASE-NPO-11775] c26 N72-28761

**TAPE RECORDERS**  
Plural recorder system which limits signal  
recording to signals of sufficient interest  
[NASA-CASE-XMS-06949] c09 N69-21467

Endless loop tape transport mechanism for  
driving and tensioning recording medium in  
magnetic tape recorder  
[NASA-CASE-XGS-01223] c07 N71-10609

Development of low friction magnetic recording  
tape  
[NASA-CASE-XGS-00373] c23 N71-15978

Tape guidance system for multichannel digital  
recording system  
[NASA-CASE-XNP-09453] c08 N71-19420

Design and development of synchronous servo loop  
control system  
[NASA-CASE-XNP-03744] c10 N71-20448

Development of data storage system for storing  
digital data in high density format on  
magnetic tape

[NASA-CASE-XNP-02778] c08 N71-22710

Digital telemetry system apparatus to reduce  
tape recorder wow and flutter noise during  
playback  
[NASA-CASE-XGS-01812] c07 N71-23001

Tape recorder designed for low power consumption  
and resistance to operational failure under  
high stress conditions  
[NASA-CASE-XGS-08259] c14 N71-23698

Transient video signal tape recorder with  
expanded playback  
[NASA-CASE-ARC-10003-1] c09 N71-25866

Closed loop servosystem for variable speed tape  
recorders onboard spacecraft  
[NASA-CASE-NPO-10700] c07 N71-33613

Design and characteristics of recording system  
for selective reprocessing and filtering of  
data to obtain optimum signal to noise ratios  
[NASA-CASE-ERC-10112] c07 N72-21119

Video tape recorder with scan conversion  
playback for color television signals  
[NASA-CASE-NPO-10166-1] c07 N73-22076

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motor casing having minimum thickness at each  
channel cross section  
[NASA-CASE-XLE-00409] c28 N71-15658

Regeneratively cooled rocket motor casing with  
tapered channels to insure minimum thicknesses  
at each channel cross section for necessary  
strength requirements  
[NASA-CASE-XLE-05689] c28 N71-15659

**TARGET ACQUISITION**  
Acquisition and tracking system for optical radar  
[NASA-CASE-MFS-20125] c16 N72-13437

Target acquisition antenna feed with reflector  
system  
[NASA-CASE-GSC-10064-1] c10 N72-22235

Development of electronic detection system for  
remotely determining number and movement of  
enemy personnel  
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Electronic background suppression field scanning  
sensor for detecting point source targets  
[NASA-CASE-XGS-05211] c07 N69-39980

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diffusion bonded to metal substrate  
[NASA-CASE-MFS-20482] c15 N72-22492

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communication systems  
[NASA-CASE-XLA-03076] c07 N71-11266

Circuitry for generating sync signals in FM  
communication systems including video  
information  
[NASA-CASE-XNP-10830] c07 N71-11281

Automatic estimation of signal to noise ratio  
and other parameters in signal communication  
systems  
[NASA-CASE-XNP-05254] c07 N71-20791

Digital synchronizer for extracting binary data  
in receiver of PSK/PCM communication system  
[NASA-CASE-NPO-10851] c07 N71-24613

Encoders designed to generate comma free  
biorthogonal Reed-Muller type code comprising  
conversion of 64 6-bit words into 64 32-bit  
data for communication purposes  
[NASA-CASE-NPO-10595] c10 N71-25917

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feedback signal selection for carrier tracking  
in telecommunications  
[NASA-CASE-NPO-11921-1] c07 N73-23118

Multicarrier communications system for  
transmitting modulated signals from single  
transmitter  
[NASA-CASE-NPO-11548] c07 N73-26118

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carrier waves in communication systems  
[NASA-CASE-GSC-11743-1] c07 N73-27107

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- Time division multiplexed telemetry transmitting system controlled by programmed memory  
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- Temperature telemetric transmitter with frequency determining tank circuit for short range transmission  
[NASA-CASE-NPO-10649] c07 N71-24840
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[NASA-CASE-NPO-10214] c10 N71-26577
- Zero power telemetry actuated switch for biomedical equipment  
[NASA-CASE-ARC-10105] c09 N72-17153
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[NASA-CASE-NPO-11358] c07 N72-25172
- Control and information system for digital telemetry data using analog converter to digitize sensed parameter values  
[NASA-CASE-NPO-11016] c08 N72-31226
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[NASA-CASE-XLA-03271] c11 N69-24321
- Tracking mount for laser telescope employed in tracking large rockets and space vehicles to give information regarding azimuth and elevation  
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[NASA-CASE-NPO-10468] c23 N71-33229
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[NASA-CASE-XMF-06092] c07 N71-24612
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- Automatic closed circuit television arc guidance control for welding joints  
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- Color television system utilizing single gun current sensitive color cathode ray tube  
[NASA-CASE-ERC-10098] c09 N71-28618
- Development of auditory display of two-dimensional patterns to assist blind persons in pattern identification  
[NASA-CASE-HQN-10832-1] c14 N73-12456
- Rotating generator for angular display of television raster in horizontal and visual simulation systems  
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- Improvements in receiver of narrow bandwidth television system  
[NASA-CASE-XMS-06740-1] c07 N71-26579
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- Electron beam scanning system for improved image definition and reduced power requirements for video signal transmission  
[NASA-CASE-ERC-10552] c09 N71-12539
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[NASA-CASE-XMS-05605-1] c10 N71-19468
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- Stereoscopic television system, including projecting pair of binocular images  
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[NASA-CASE-XAC-00435] c09 N70-35440
- Variable frequency magnetic coupled multivibrator with temperature compensated frequency control circuit  
[NASA-CASE-XGS-00458] c09 N70-38604
- Matched thermistors for microwave power meters with compensation for temperature changes  
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- Development of temperature compensated thrust measuring gage for measuring forces as function of time in environment with varying temperature  
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- Variable frequency subcarrier oscillator with temperature compensation  
[NASA-CASE-XNP-03916] c09 N71-28810
- Omnidirectional liquid filled accelerometer design with liquid and housing temperature compensation  
[NASA-CASE-HQN-10780] c14 N71-30265
- Development of thermal compensating structure which maintains uniform length with changes in temperature  
[NASA-CASE-MFS-20433] c15 N72-28496
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Ultraviolet radiation resistant alkali-metal silicate coatings for temperature control of spacecraft  
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Passive thermal control coating on aluminum foil laminate for inflatable spacecraft surfaces  
 [NASA-CASE-XLA-01291] c33 N70-36617

Thermal switch for transferring excess heat from one region to another heat dissipating one  
 [NASA-CASE-XNP-C0463] c33 N70-36847

Sandwich panel structure for removing heat from shield between hot and cold areas  
 [NASA-CASE-XLA-C0349] c33 N70-37979

Device for adding water to high velocity exhaust jets to reduce velocity, noise, and temperature  
 [NASA-CASE-XMF-01813] c28 N70-41582

Modifying existing solar cells for temperature control  
 [NASA-CASE-NPO-10109] c03 N71-11049

Temperature sensor warning system for pneumatic tires of aircraft and ground vehicles  
 [NASA-CASE-XLA-01926] c14 N71-15620

Intermittent type silica gel adsorption refrigerator for providing temperature control for spacecraft components  
 [NASA-CASE-XNP-00920] c15 N71-15906

Using heat control unit to preheat circulating fluid  
 [NASA-CASE-XMF-04237] c33 N71-16278

Mounting apparatus for temperature control system  
 [NASA-CASE-NPO-10138] c33 N71-16357

Design and development of device for cooling inner conductor of coaxial cable  
 [NASA-CASE-XNP-C9775] c09 N71-20445

Thermal control wall panel with application to spacecraft cabins  
 [NASA-CASE-XLA-01243] c33 N71-22792

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 [NASA-CASE-XLA-07728] c33 N71-22890

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 [NASA-CASE-XNP-05524] c33 N71-24876

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 [NASA-CASE-XNP-02792] c14 N71-28958

Automatic control device for regulating inlet water temperature of liquid cooled spacesuit  
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 [NASA-CASE-NPO-10633] c03 N72-28025

Development of Mylar enclosure for maintaining temperature of balloon-borne batteries and electronic modules  
 [NASA-CASE-GSC-11620-1] c14 N72-33379

Atomic hydrogen maser with bulb temperature control by output frequency difference signal for wall shift elimination  
 [NASA-CASE-HQN-10654-1] c16 N73-13489

Design and development of thermomechanical pump for transmitting warming fluid through fluid circuit to control temperature of spacecraft instrumentation  
 [NASA-CASE-NPO-11417] c15 N73-24513

Automatic temperature control for liquid cooled space suit  
 [NASA-CASE-ARC-10599-1] c05 N73-26071

Temperature control system comprised of wheatstone bridge with RC circuit  
 [NASA-CASE-NPO-11304] c14 N73-26430

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 [NASA-CASE-GSC-11018-1] c31 N73-30829

Temperature control of welding equipment by detection of discrete bands of infrared radiation from objects being heated  
 [NASA-CASE-MFS-20781-2] c14 N73-31401

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 [NASA-CASE-XMS-04318] c15 N69-27871

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Shock and vibration damping device using temperature sensitive solid amorphous polymers

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 [NASA-CASE-XLE-00703] c15 N71-15967

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 [NASA-CASE-MFS-14259] c15 N71-19213

Temperature sensitive magnetometer with pulsating thermally cycled magnetic core  
 [NASA-CASE-XAC-03740] c14 N71-26135

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 [NASA-CASE-MSC-13276-1] c14 N71-27058

Procedure for repairing and recovering voice data from heat damaged magnetic tapes  
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 [NASA-CASE-XAC-00812] c14 N71-15598

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 [NASA-CASE-NPO-13044-1] c14 N73-13436

Development of temperature compensated light source with components and circuitry for maintaining luminous intensity independent of temperature variations  
 [NASA-CASE-ARC-10467-1] c09 N73-14214

Method and device for verifying reliability of fire detectors  
 [NASA-CASE-GSC-11600-1] c14 N73-18436

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 [NASA-CASE-NPO-10617] c14 N70-12618

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 [NASA-CASE-XGS-01052] c14 N71-15992

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 [NASA-CASE-XNP-08961] c14 N71-24809

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 [NASA-CASE-LEW-10281-1] c14 N72-17327

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 [NASA-CASE-LAR-10318-1] c14 N72-20396

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 [NASA-CASE-XLE-05230] c14 N72-27410

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 [NASA-CASE-LAR-11053-1] c33 N73-11972

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 [NASA-CASE-XLE-05230-2] c14 N73-13417

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 [NASA-CASE-XLA-04556] c14 N69-27484  
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 [NASA-CASE-NPO-10158] c33 N71-16356  
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 [NASA-CASE-NPO-10138] c33 N71-16357  
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 [NASA-CASE-XFP-03802] c33 N71-23085  
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 [NASA-CASE-NPO-10649] c07 N71-24840  
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 [NASA-CASE-XLE-00231] c17 N70-38198  
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 [NASA-CASE-XLE-00228] c17 N70-38490  
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 [NASA-CASE-XKS-06250] c14 N71-15600  
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 [NASA-CASE-XNP-00597] c18 N71-23088  
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 [NASA-CASE-XNP-05634] c15 N71-24834  
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[NASA-CASE-XNP-05634] c15 N71-24834  
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 [NASA-CASE-KSC-10126] c11 N71-24985  
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 [NASA-CASE-NPO-10796] c15 N71-27068  
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 [NASA-CASE-KSC-10198] c11 N71-28629  
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 [NASA-CASE-ERC-10150] c14 N71-28992  
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[NASA-CASE-XMS-G9690] c33 N72-25913

Development of test apparatus for subjecting metal specimen to tensile and compressive loads at constant temperature  
[NASA-CASE-LAR-10426-1] c32 N72-27947

Development of apparatus for detonating explosive devices in order to determine forces generated and detonation propagation rate  
[NASA-CASE-LAR-10800-1] c33 N72-27959

Equipment for vibration testing of assemblies, components, and other articles  
[NASA-CASE-GSC-11302-1] c14 N73-13416

Development of test probe device for simultaneous determination of condition of cells in multi-cell storage battery  
[NASA-CASE-MFS-20761-1] c03 N73-17037

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[NASA-CASE-MFS-21362] c11 N73-20267

Test set for signal conditioner modules  
[NASA-CASE-KSC-10750-1] c14 N73-23527

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[NASA-CASE-KSC-10730-1] c14 N73-32318

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[NASA-CASE-LAR-10440-1] c14 N73-32323

**TEST FACILITIES**

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[NASA-CASE-XLE-00252] c11 N70-34844

Test apparatus for determining mechanical properties of refractory materials at high temperatures in vacuum or inert atmospheres  
[NASA-CASE-XLE-00335] c14 N70-35368

Gas analyzer for bi-gaseous mixtures suitable for use in test facilities  
[NASA-CASE-XLA-01131] c14 N71-10774

Design and characteristics of device for launching models in wind tunnels without disturbance of air flow  
[NASA-CASE-XNP-03578] c11 N71-23030

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[NASA-CASE-NPC-12109] c11 N72-22245

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Automatic balancing device for use on frictionless supported attitude-controlled test platforms  
[NASA-CASE-LAR-10774] c10 N71-13545

Micro-pound extended range thrust stand for small rocket engines  
[NASA-CASE-GSC-10710-1] c28 N71-27094

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Force separation rigid tethering device using cables  
[NASA-CASE-XLA-02332] c32 N71-17609

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[NASA-CASE-XMS-10993] c15 N71-28936

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Flexible cable that can be made rigid  
[NASA-CASE-MSC-13512-1] c15 N72-22485

Underwater recovery assembly for ejectable sound source mounted on mobile device  
[NASA-CASE-LAR-10595-1] c15 N72-31493

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Chemical synthesis of thermally stable organometallic polymers with divalent metal ion and tetraphenylphosphonitrilic units  
[NASA-CASE-HQM-10364] c06 N71-27363

**TEXTILES**

Process for developing flame retardant elastomeric composition textiles for use in space suits  
[NASA-CASE-MSC-14331-1] c18 N73-27501

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**VEHICLE WHEELS**  
Resilient vehicle wheel for lunar surface travel  
[NASA-CASE-MFS-20400] c31 N71-18611  
Resilient wheel design with woven wire tire and abrasive treads for lunar surface vehicles  
[NASA-CASE-MPS-13929] c15 N71-27091

## VELOCITY

Velocity limiting safety system for motor driven research vehicle  
[NASA-CASE-XLA-C07473] c15 N71-24895

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[NASA-CASE-XLA-00495] c14 N70-41332  
Superconductive accelerometer employing variable force principle to determine acceleration of bodies  
[NASA-CASE-XMF-01099] c14 N71-15969  
Device for determining acceleration of gravity by interferometric measurement of travel of falling body  
[NASA-CASE-XMF-05844] c14 N71-17587  
Describing laser Doppler velocimeter for measuring mean velocity and turbulence of fluid flow  
[NASA-CASE-MFS-20386] c21 N71-19212  
Momentum-velocity analyzer for measuring minute space particles  
[NASA-CASE-XMS-04201] c14 N71-22990  
Development of combined velocimeter and accelerometer based on color changes in liquid crystalline material subjected to shear stresses  
[NASA-CASE-ERC-10292] c14 N72-25410  
System for measuring velocities of radiating particles based on Doppler shift  
[NASA-CASE-HQN-10740-1] c24 N72-28719  
Instrument for measuring magnitude and direction of flow velocity in flow field  
[NASA-CASE-LAR-10855-1] c14 N73-13415  
Laser Doppler velocimeter for simultaneously measuring orthogonal fluid velocity components without flow field perturbation  
[NASA-CASE-ARC-10637-1] c14 N73-21390

**VELOCITY MODULATION**  
Selector mechanism for mechanical separation and discrimination of high velocity molecular particles  
[NASA-CASE-XLE-01533] c11 N71-10777  
Describing device for velocity control of electromechanical drive mechanism of scanning mirror of interferometer  
[NASA-CASE-XGS-03532] c14 N71-17627

**VENTING**  
Fuel tank pressure-relief device for venting cryogenic liquid vapors through tubes with porous plug  
[NASA-CASE-XLE-00288] c15 N70-34247  
Venting device for liquid propellant storage tank using magnetic field to separate liquid and gaseous phases  
[NASA-CASE-XLE-01449] c15 N70-41646  
Valve seat with resilient support ring for venting valves subjected to high pressure sealing loads  
[NASA-CASE-XKS-02582] c15 N71-21234  
Venting device for pressurized space suit helmet to eliminate vomit expelled by crewmen  
[NASA-CASE-XMS-09652-1] c05 N71-26333  
Solid propellant rocket engine with venting system to control effective nozzle throat area  
[NASA-CASE-XNP-03282] c28 N72-20758

**VENTRAL SECTIONS**  
Deployable flexible ventral fins providing triangular planform of flexible material for spin recovery of aircraft  
[NASA-CASE-LAR-10753-1] c02 N73-10031

**VENUS (PLANET)**  
Space simulator with uniform test region radiation distribution, adapted to simulate Venus solar radiations  
[NASA-CASE-XNP-00459] c11 N70-38675

**VERTICAL FLIGHT**  
Aircraft indicator for pilot control of takeoff roll, climbout path and verticle flight path in poor visibility conditions  
[NASA-CASE-XLA-00487] c14 N70-40157

**VERTICAL LANDING**  
Vertically descending flight vehicle landing gear for rough terrain  
[NASA-CASE-XMF-01174] c02 N70-41589

**VERTICAL TAKEOFF AIRCRAFT**  
Mechanical stabilization system for VTOL aircraft  
[NASA-CASE-XLA-06339] c02 N71-13422  
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- nozzles displaced from various axes of aircraft  
[NASA-CASE-XAC-08972] c02 N71-20570
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- VHF/UHF parasitic probe antenna for spacecraft  
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- Lightweight life preserver without fastening  
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[NASA-CASE-XMS-00864] c05 N70-36493
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restraining and damping three dimensional  
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- Vibration control of flexible bodies in steady  
accelerating environment  
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- VIBRATION DAMPING**
- Mercury filled pendulum damper for controlling  
bending vibration induced by wind effects  
[NASA-CASE-LAR-10274-1] c14 N71-17626
- Digital filter for reducing jitter in digital  
control systems  
[NASA-CASE-NPO-11088] c08 N71-29034
- Blade vibration damping pins for turbomachinery  
[NASA-CASE-XLE-00155] c28 N71-29154
- VIBRATION EFFECTS**
- Electromagnetic energy detection by thermal  
sensor with vibrating electrode  
[NASA-CASE-XAC-10768] c09 N71-18830
- Development of ultrasonic radiation equipment  
for removing material from host surface and  
vacuum apparatus for recovery of material  
[NASA-CASE-NPO-11213] c15 N73-20514
- Development of optical system for detecting  
defective components in rotating machinery  
with emphasis on bearing assemblies  
[NASA-CASE-KSC-10752-1] c15 N73-27407
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[NASA-CASE-XAC-11225] c14 N69-27486
- Miniature vibration isolator utilizing elastic  
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- Vibration damping system operating in low vacuum  
environment for spacecraft mechanisms  
[NASA-CASE-XMS-01620] c23 N71-15673
- Hermetically sealed vibration damper design for  
use in gimbal assembly of spacecraft inertial  
guidance system  
[NASA-CASE-MSC-10959] c15 N71-26243
- Tuned damped vibration absorber for mass  
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for use with wind tunnel models  
[NASA-CASE-LAR-10083-1] c15 N71-27006
- Vibration isolation system, using coaxial  
helical compression springs  
[NASA-CASE-NPO-11012] c15 N72-11391
- VIBRATION MEASUREMENT**
- Development of system for measuring damping  
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subjected to random forces or influences  
[NASA-CASE-ARC-10154-1] c14 N72-22440
- VIBRATION METERS**
- Fiber optic transducers for monitoring and  
analysis of vibration in aerospace vehicles  
and onboard equipment  
[NASA-CASE-XMF-02433] c14 N71-10616
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- Function generators for producing complex  
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- Equipment for vibration testing of assemblies,  
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[NASA-CASE-GSC-11302-1] c14 N73-13416
- VIBRATION TESTS**
- Electronic detection system for peak  
acceleration limits in vibrational testing of  
spacecraft components  
[NASA-CASE-NPO-10556] c14 N71-27185
- Digitally controlled random noise vibration  
testing  
[NASA-CASE-NPO-11612] c11 N72-20251
- Fixture for supporting articles during vibration  
tests comprising integral annular unit  
[NASA-CASE-MFS-20523] c14 N72-27412
- Equipment for vibration testing of assemblies,  
components, and other articles  
[NASA-CASE-GSC-11302-1] c14 N73-13416
- Multiaxes vibration device for making vibration  
tests along orthogonal axes of test specimen  
[NASA-CASE-MFS-20242] c14 N73-19421
- VIBRATIONAL SPECTRA**
- Tuned damped vibration absorber for mass  
vibrating in more than one degree of freedom  
for use with wind tunnel models  
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- Circuitry for generating sync signals in FM  
communication systems including video  
information  
[NASA-CASE-XNP-10830] c07 N71-11281
- Monitoring circuit design for sampling circuit  
control and reduction of time-bandwidth in  
video communication systems  
[NASA-CASE-XNP-02791] c07 N71-23026
- Teletypewriter video communication system and  
apparatus  
[NASA-CASE-XNP-06611] c07 N71-26102
- VIDEO DATA**
- TV camera output signal control system for  
digital spacecraft communication  
[NASA-CASE-XNP-01472] c14 N70-41807
- Transient video signal tape recorder with  
expanded playback  
[NASA-CASE-ARC-10003-1] c09 N71-25866
- Restoration and improvement of demodulated  
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[NASA-CASE-GSC-10185-1] c07 N72-12081
- Photoconducting semiconductor system for  
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- Video signal processing system for sampling  
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[NASA-CASE-NPO-10140] c07 N71-24742
- Video sync processor with phase locked system  
[NASA-CASE-KSC-10002] c10 N71-25865
- Teletypewriter video communication system and  
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- Video signal enhancement of signal component  
representing brightness of scene element in  
low contrast  
[NASA-CASE-NPO-10343] c07 N71-27341
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processor with high noise immunity  
[NASA-CASE-NPO-10199] c09 N72-17156
- Electronic video editor for switching video  
input signals to common output channel  
[NASA-CASE-KSC-10003] c10 N73-13235
- Video tape recorder with scan conversion  
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[NASA-CASE-NPO-10166-1] c07 N73-22076
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- Operation of vidicon tube for scanning spatial  
charge density pattern  
[NASA-CASE-XNP-06028] c09 N71-23189
- Device which separates and screens particles of  
soil samples for vidicon viewing in vacuum and  
reduced gravity environments  
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- Data storage system with vidicon tube for  
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- Method of producing output voltage from  
photovoltaic cell using poly-N-vinyl carbazole  
complexed with iodine  
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- VINYLLIDENE**
- Preparation of dicyanoacetylene and vinylidene  
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[NASA-CASE-XNP-03250] c06 N71-23500
- VISCOELASTICITY**
- Automated ball rebound resilience test equipment  
for determining viscoelastic properties of  
polymers

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**VISCOMETERS**  
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**VISCOUSITY**  
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**VISCOUS DAMPING**  
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Controlled visibility device for simulating poor visibility conditions in training pilots in instrument landing and flight procedures [NASA-CASE-XFR-04147] c11 N71-10748  
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**VISORS**  
Detergent with glyceryl esters and oil as protective coating to prevent fogging of space suit visor [NASA-CASE-MSC-13530-2] c06 N73-11107

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**VISUAL FIELDS**  
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**VISUAL OBSERVATION**  
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[NASA-CASE-ERC-10187] c16 N69-31343  
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[NASA-CASE-XLE-00011] c14 N70-41946  
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[NASA-CASE-ERC-10248] c14 N72-17323  
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- WEATHERPROOFING**  
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[NASA-CASE-XMS-01624] c15 N70-40062  
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[NASA-CASE-XNP-01350] c28 N70-41275  
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[NASA-CASE-XLA-03213] c05 N71-11207  
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[NASA-CASE-MFS-12750] c27 N71-16223  
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[NASA-CASE-ARC-10100-1] c05 N71-24738  
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[NASA-CASE-XMS-Q3371] c05 N70-42000

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[NASA-CASE-MFS-14671] c05 N71-12341

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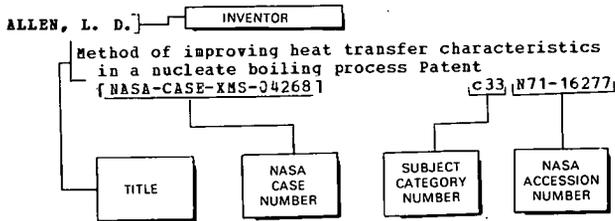
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Section 2

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- ALBUS, J. S.**  
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- ALLEN, R. W.**  
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- ALLEN, W. W.**  
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ANDERSON, K. P.  
Pulsed excitation voltage circuit for transducers  
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High speed rolling element bearing  
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High speed hybrid bearing comprising a fluid  
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ANDERSON, W. W.  
Annular momentum control device used for  
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ANDERSON, W. W., JR.  
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ARIAS, A.  
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ARMSTRONG, H. T.  
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[NASA-CASE-MSC-12259-1] c07 N70-12616

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**ASTHEIMER, R. W.**  
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**ATKISSON, E. A.**  
 Apparatus having coaxial capacitor structure for  
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**AUSTIN, W. E.**  
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**AVIZIENIS, A. A.**  
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**AYVAZIAN, R. A.**  
 Laminar flow enhancement Patent  
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**B**

**BABA, P. D.**  
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**BABB, B. D.**  
 Method and apparatus for cryogenic wire  
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 [NASA-CASE-MFS-12827] c14 N71-17656

**BABECKI, A. J.**  
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**BACCHI, R.**  
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 [NASA-CASE-XHQ-01208] c15 N70-35409

**BACHLE, W. H.**  
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 [NASA-CASE-NPO-11118] c03 N72-25021

**BADIN, F. E.**  
 Space simulation and radiative property testing  
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 [NASA-CASE-MFS-20096] c14 N71-30026

**BAEHR, E. F.**  
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 [NASA-CASE-LEW-12051-1] c04 N73-32000

**BAER, D. A.**  
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**BAGBY, J. P.**  
 Thermally operated valve Patent  
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**BAHMAN, H.**  
 Self-erecting reflector Patent  
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**BAHM, E. J.**  
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 [NASA-CASE-NPO-10700] c07 N71-33613

**BAILLY, C. L., JR.**  
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**BAILLY, F. J., JR.**  
 Airplane take-off performance indicator Patent  
 [NASA-CASE-XLA-00100] c14 N70-36807

**BAILLY, G. A.**  
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 [NASA-CASE-XGS-01418] c09 N71-23573

**BAILLEY, M. C.**  
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 [NASA-CASE-LAR-10545-1] c09 N72-21244

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**BAKER, C. D.**  
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**BAKER, M. E.**  
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 [NASA-CASE-XGS-04227] c15 N71-21744

**BAKER, V. D.**  
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**BAKSTON, B.**  
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**BALES, T. T.**  
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 [NASA-CASE-LAR-11072-1] c15 N73-20535

**BALLARD, R. R.**  
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 [NASA-CASE-YPR-04104] c03 N70-42073

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 [NASA-CASE-XLA-00838] c03 N70-36778

**BAMFORD, R. M.**  
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 [NASA-CASE-XNP-00416] c15 N70-36947  
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 [NASA-CASE-NPO-10064] c15 N71-17693

**BANDINI, U.**  
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 [NASA-CASE-XMS-10984-1] c10 N71-19417

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 [NASA-CASE-LEW-10835-1] c28 N72-22771  
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 [NASA-CASE-LEW-11646-1] c28 N72-32760  
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 [NASA-CASE-LEW-11694-1] c28 N73-22721

**BANTA, R. D.**  
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**BARBER, J. B.**  
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**BARBERA, A. J.**  
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 Pulsed energy power system Patent  
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**BARKER, P.**  
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**BARNETT, J. H., JR.**  
 Life raft stabilizer  
 [NASA-CASE-MSC-12393-1] c02 N73-26006

**BARNETT, M. B.**  
 Alpha source shaft position encoder  
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 [NASA-CASE-GSC-10644-1] c14 N70-35583

**BARNISKIS, W. A.**  
 Bus voltage compensation circuit for controlling  
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 [NASA-CASE-XMS-04215-1] c09 N69-39987

**BARRETT, T. W.**  
 Personal propulsion unit Patent  
 [NASA-CASE-MFS-20130] c28 N71-27585

**BARRINGTON, A. B.**  
 Sorption vacuum trap Patent  
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**BARRINGTON, A. E.**  
 Leak detector wherein a probe is monitored with  
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**BASZULIS, A.**  
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 [NASA-CASE-XNP-08124-2] c06 N73-13129

**BASS, A. M.**  
 Ultraviolet resonance lamp Patent  
 [NASA-CASE-ARC-10030] c09 N71-12521  
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 Fluid flow restrictor Patent  
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**BATHKER, D. A.**  
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**BATSCH, F. P.**  
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 Slit regulated gas journal bearing Patent  
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**BATTE, W. G.**  
 Exclusive-Or digital logic module Patent  
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**BAUCOM, R. M.**  
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**BAUER, H. B.**  
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**BAUERNSCHUB, J. P., JR.**  
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**BAUGHMAN, J. R.**  
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**BAUMAN, A. J.**  
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**BAXTER, R. D.**  
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**BEAM, B. H.**  
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## INVENTOR INDEX

BILLINGSLEY, P. C.

**BEAM, R. M.**  
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 Continuously operating induction plasma  
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**BEATTY, R. W.**  
 Rotary vane attenuator wherein rotor has  
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 Water separating system Patent  
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**BECK, A. P.**  
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 Method of inhibiting stress corrosion cracks in  
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**BECKER, H. H.**  
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 [NASA-CASE-LAR-10362-1] c15 N72-27486

**BECKER, R. A.**  
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 [NASA-CASE-XNP-04161] c14 N71-15599

**BECKERLE, L. D.**  
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**BECKMAN, P.**  
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**BECKWITH, R. H.**  
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**BEEHN, J. H.**  
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**BELANGER, E. J.**  
 Fluid lubricant system Patent  
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**BELASCO, N.**  
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**BELEW, H. W., JR.**  
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**BELEW, R. R.**  
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 [NASA-CASE-MFS-20863] c31 N73-26876

**BELL, D., III**  
 Heated element fluid flow sensor Patent  
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**BELL, V. L., JR.**  
 Process for interfacial polymerization of  
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 Imidazopyrrolone/imide copolymers Patent  
 [NASA-CASE-XLA-08802] c06 N71-11238  
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 [NASA-CASE-XLA-03645] c14 N71-20430

**BEMENT, L. J.**  
 Linear explosive comparison  
 [NASA-CASE-LAR-10800-1] c33 N72-27959

Totally confined explosive welding  
 [NASA-CASE-LAR-10941-1] c15 N72-33478  
 Explosively welded scarf joint  
 [NASA-CASE-LAR-11211-1] c15 N73-14480  
 Totally confined explosive welding  
 [NASA-CASE-LAR-10941-2] c15 N73-32371

**BENEDICT, R. D.**  
 Transient augmentation circuit for pulse  
 amplifiers Patent  
 [NASA-CASE-XNP-01068] c10 N71-28739

**BENGTSON, R. D.**  
 Fast opening diaphragm Patent  
 [NASA-CASE-XLA-03660] c15 N71-21060

**BENNIGHT, J. D.**  
 Method and apparatus for precision sizing and  
 joining of large diameter tubes Patent  
 [NASA-CASE-XMP-05114] c15 N71-17650  
 Method and apparatus for precision sizing and  
 joining of large diameter tubes Patent  
 [NASA-CASE-XMP-G5114-3] c15 N71-24865  
 Method and apparatus for precision sizing and  
 joining of large diameter tubes Patent  
 [NASA-CASE-XMP-05114-2] c15 N71-26148

**BEREMAND, G. B.**  
 Method of making fiber composites  
 [NASA-CASE-LEW-10424-2-2] c18 N72-25539

**BERG, O. E.**  
 Dust particle injector for hypervelocity  
 accelerators Patent  
 [NASA-CASE-XGS-06628] c24 N71-16213  
 Cosmic dust sensor  
 [NASA-CASE-GSC-10503-1] c14 N72-20381

**BERGLUND, R. A.**  
 Erectable modular space station Patent  
 [NASA-CASE-XLA-00678] c31 N70-34296

**BERNARDIN, R. M.**  
 Measuring device Patent  
 [NASA-CASE-XMS-01546] c14 N70-40233

**BERNATOWICZ, D. T.**  
 Silicon solar cell array Patent Application  
 [NASA-CASE-LEW-11069-1] c03 N71-29048

**BERNSEN, B.**  
 Electrical apparatus for detection of thermal  
 decomposition of insulation Patent  
 [NASA-CASE-XMF-03968] c14 N71-27186

**BERRY, E. H.**  
 Positive dc to positive dc converter Patent  
 [NASA-CASE-XMF-14301] c09 N71-23188  
 Positive dc to negative dc converter  
 Patent  
 [NASA-CASE-XMF-08217] c03 N71-23239

**BESSETTE, R. J.**  
 Space suit  
 [NASA-CASE-MSC-12609-1] c05 N73-32012

**BESWICK, A. G.**  
 Lunar penetrometer Patent  
 [NASA-CASE-XLA-00934] c14 N71-22765

**BEUYUKIAN, C. S.**  
 Tube dimpling tool Patent  
 [NASA-CASE-XMS-06876] c15 N71-21536

**BEYLIK, C. M.**  
 Pressure seal Patent  
 [NASA-CASE-NPO-10796] c15 N71-27068

**BHIWANKER, N. E.**  
 A method for making conductors for ferrite  
 memory arrays  
 [NASA-CASE-LAR-10994-1] c18 N73-30536

**BIBBO, C.**  
 Flexible seal for valves Patent  
 [NASA-CASE-XLE-00101] c15 N70-33376

**BIENIEK, T.**  
 Metal containing polymers from cyclic tetrameric  
 phenylphosphonitrimides Patent  
 [NASA-CASE-HQN-10364] c06 N71-27363

**BILDERBACK, R. R.**  
 Amplitude modulated laser transmitter Patent  
 [NASA-CASE-XMS-04269] c16 N71-22895

**BILES, J. E., JR.**  
 High impact pressure regulator Patent  
 [NASA-CASE-NPO-10175] c14 N71-18625

**BILLINGHAM, J.**  
 Temperature controller for a fluid cooled garment  
 [NASA-CASE-ARC-10599-1] c05 N73-26071

**BILLINGS, C. E.**  
 Emergency escape system Patent  
 [NASA-CASE-XKS-07814] c15 N71-27067

**BILLINGSLEY, P. C.**  
 Image copier Patent Application  
 [NASA-CASE-NPO-10196-2] c14 N70-20711

Electro-optical scanning apparatus Patent  
 Application [NASA-CASE-NPO-11106] c14 N70-34697  
 Image data rate converter [NASA-CASE-NPO-11659-1] c14 N72-22453  
 Electro-optical scanning apparatus [NASA-CASE-NPO-11106-2] c23 N72-28696

**BILLMAN, K. W.**  
 Method and apparatus for wavelength tuning of liquid lasers [NASA-CASE-ERC-10187] c16 N69-31343  
 Method and apparatus for the detection of picosecond light pulses by two-photon planar processes Patent Application [NASA-CASE-ERC-10227] c14 N70-12626  
 Method and apparatus for determining properties of a plasma [NASA-CASE-ARC-10598-1] c25 N73-29750  
 Infrared tunable laser [NASA-CASE-ARC-10463-1] c09 N73-32111  
 Alignment apparatus using a laser having a gravitationally sensitive cavity reflector [NASA-CASE-ARC-10444-1] c16 N73-33397

**BILOW, H.**  
 Thiophenyl ether disiloxanes and trisiloxanes useful as lubricant fluids [NASA-CASE-MFS-22411-1] c15 N73-28532

**BINCLEY, W. G.**  
 Voltage regulator with plural parallel power source sections Patent [NASA-CASE-GSC-10891-1] c10 N71-26626

**BIRCHENOUGH, A. G.**  
 Switching regulator [NASA-CASE-LEW-11005-1] c09 N72-21243

**BIRD, J. D.**  
 Jet shoes [NASA-CASE-XLA-08491] c05 N69-21380

**BISHOP, O. L.**  
 Broadband choke for antenna structure [NASA-CASE-XMS-05303] c07 N69-27462

**BISHOP, R. E.**  
 Optical alignment system Patent [NASA-CASE-XNP-02029] c14 N70-41955

**BLACK, I. A.**  
 Apparatus for measuring thermal conductivity Patent [NASA-CASE-XGS-01052] c14 N71-15992

**BLACK, J. M.**  
 Full-wave modulator-demodulator-amplifier apparatus [NASA-CASE-FRC-10072-1] c09 N72-15206

**BLACK, S. H.**  
 Automatic gain control system [NASA-CASE-XMS-05307] c09 N69-24330

**BLACK, W. W.**  
 Triaxial antenna Patent [NASA-CASE-YGS-02290] c07 N71-28809

**BLACKBAY, J. R.**  
 Temperature controller for a fluid cooled garment [NASA-CASE-ARC-10599-1] c05 N73-26071

**BLACKSTOCK, T. A.**  
 Ferry system [NASA-CASE-LAR-10574-1] c11 N73-13257

**BLAIR, G. R.**  
 Inorganic thermal control pigment Patent [NASA-CASE-XNP-02139] c18 N71-24184

**BLAISE, H. T.**  
 Air cushion lift pad Patent [NASA-CASE-MFS-14685] c31 N71-15689  
 Methods and apparatus employing vibratory energy for wrenching Patent [NASA-CASE-MFS-20586] c15 N71-17686

**BLANCHARD, W. S., JR.**  
 Space capsule Patent [NASA-CASE-XLA-00149] c31 N70-37938  
 Space capsule Patent [NASA-CASE-XLA-01332] c31 N71-15664  
 Lateral displacement system for separated rocket stages Patent [NASA-CASE-XLA-04804] c31 N71-23008  
 High lift aircraft [NASA-CASE-LAR-11252-1] c02 N73-26007  
 Quiet jet transport aircraft [NASA-CASE-LAR-11087-1] c02 N73-26008

**BLANCHE, J. P.**  
 Electrical feed-through connection for printed circuit boards and printed cable [NASA-CASE-XMF-01483] c14 N69-27431

**BLAND, C.**  
 Bacteriostatic conformal coating and methods of application Patent [NASA-CASE-GSC-10007] c18 N71-16046

**BLAND, W. M., JR.**  
 Survival couch Patent [NASA-CASE-XLA-00118] c05 N70-33285

**BLANKENSHIP, C. P.**  
 Protective device for machine and metalworking tools Patent [NASA-CASE-XLE-01092] c15 N71-22797

**BLAZE, C. J.**  
 Formed metal ribbon wrap Patent [NASA-CASE-XLE-00164] c15 N70-36411

**BLOSSER, E. R.**  
 Method for determining presence of OH in magnesium oxide [NASA-CASE-NPO-10774] c06 N72-17095

**BLUE, J. W.**  
 Apparatus for producing high purity I-123 [NASA-CASE-LEW-10518-2] c24 N72-28714  
 Production of high purity I-123 [NASA-CASE-LEW-10518-1] c24 N72-33681  
 Method of producing I-123 [NASA-CASE-LEW-11390-2] c24 N73-20763  
 Production of I-123 [NASA-CASE-LEW-11390-3] c11 N73-28128

**BLUME, H. C.**  
 Parametric amplifiers with idler circuit feedback [NASA-CASE-LAR-10253-1] c09 N72-25258  
 Apparatus and method for applying protective coatings [NASA-CASE-LAR-10362-1] c15 N72-27486

**BLUMRICH, J. F.**  
 Pivotal shock absorbing pad assembly Patent [NASA-CASE-XMF-03856] c31 N70-34159  
 Landing pad assembly for aerospace vehicles Patent [NASA-CASE-XMF-02853] c31 N70-36654  
 Double-acting shock absorber Patent [NASA-CASE-XMF-01045] c15 N70-40354  
 Tank construction for space vehicles Patent [NASA-CASE-XMF-01899] c31 N70-41948  
 Docking structure for spacecraft Patent [NASA-CASE-XMF-05941] c31 N71-23912  
 Omnidirectional wheel [NASA-CASE-MFS-21309-1] c15 N72-25480

**BLOTINGER, B.**  
 Signal generator [NASA-CASE-XNP-05612] c09 N69-21468

**BLYMILLER, E. R.**  
 Microcircuit negative cutter [NASA-CASE-XLA-09843] c15 N72-27485

**BOATRIGHT, W. B.**  
 Apparatus and method for generating large mass flow of high temperature air at hypersonic speeds [NASA-CASE-LAR-10578-1] c12 N73-25262

**BOCKHOLDT, W. H.**  
 Narrow bandwidth video Patent [NASA-CASE-XMS-06740-1] c07 N71-26579

**BOEDY, D. D.**  
 Power supply circuit Patent [NASA-CASE-XMS-00913] c10 N71-23543

**BOEER, K. W.**  
 High field CdS detector for infrared radiation [NASA-CASE-LAR-11027-1] c14 N72-28463

**BOEHN, J.**  
 Gravity device Patent [NASA-CASE-XMF-00424] c11 N70-38196

**BOEX, E. W.**  
 Filter regeneration systems [NASA-CASE-MSC-14273-1] c12 N73-28179

**BOGNER, R. S.**  
 Improved storage battery [NASA-CASE-NPC-10720-1] c03 N72-22048

**BOGUSZ, F. J.**  
 Pressure transducer calibrator Patent [NASA-CASE-XNP-01660] c14 N71-23036

**BOIES, R. D.**  
 Instrument for measuring potentials on two dimensional electric field plots Patent [NASA-CASE-XLA-08493] c10 N71-19421

**BOISSEVAIN, A. G.**  
 Optical machine tool alignment indicator Patent [NASA-CASE-XAC-09489-1] c15 N71-26673

**BOLT, C. A., JR.**  
 Broadband choke for antenna structure [NASA-CASE-XMS-05303] c07 N69-27462

**BOHD, W. W.**  
 Connector internal force gauge Patent  
 [NASA-CASE-XNP-03918] c14 N71-23087

**BONN, J. L.**  
 Wire grid forming apparatus Patent  
 [NASA-CASE-XLE-00023] c15 N70-33330

**BONNER, T. F., JR.**  
 Quiet jet transport aircraft  
 [NASA-CASE-LAR-11087-1] c02 N73-26008

**BONO, P.**  
 Recoverable single stage spacecraft booster Patent  
 [NASA-CASE-XMF-01973] c31 N70-41588

**BOODLEY, L. E.**  
 Connector strips-positive, neqative and T tabs  
 [NASA-CASE-XGS-01395] c03 N69-21539

**BOOTH, F. W.**  
 Condenser - Separator  
 [NASA-CASE-XLA-08645] c15 N69-21465  
 Separator Patent  
 [NASA-CASE-XLA-00415] c15 N71-16079  
 Thermal pump-compressor for space use Patent  
 [NASA-CASE-XLA-00377] c33 N71-17610  
 Soldering device Patent  
 [NASA-CASE-XLA-08911] c15 N71-27214  
 Centrifugal hydrophobic separator  
 [NASA-CASE-LAR-10194-1] c12 N72-11293  
 Air removal device  
 [NASA-CASE-XLA-8914] c15 N73-12492  
 Zero qravaty liquid mixer  
 [NASA-CASE-LAR-10195-1] c15 N73-19458

**BOOTH, R. A.**  
 Solid state switch  
 [NASA-CASE-XNP-09228] c09 N69-27500

**BORELLI, M. T.**  
 Adaptive tracking notch filter system Patent  
 [NASA-CASE-XMF-01892] c10 N71-22986

**BOBOSON, H. R.**  
 Wide range linear fluxgate magnetometer Patent  
 [NASA-CASE-XGS-01587] c14 N71-15962

**BOSCO, G. B., JR.**  
 Rotating shaft seal Patent  
 [NASA-CASE-XNP-02862-1] c15 N71-26294

**BOSHERS, W. A.**  
 Battery testing device  
 [NASA-CASE-MFS-20761-1] c03 N73-17037

**BOSTON, R. E.**  
 Alphanumeric character generator for oscilloscopes  
 [NASA-CASE-GSC-11582-1] c09 N73-32120

**BOURKE, D. G.**  
 Data compression system with a minimum time  
 delay unit Patent  
 [NASA-CASE-XNP-08832] c08 N71-12506

**BOWER, K. F.**  
 Buffered analog converter  
 [NASA-CASE-KSC-10397] c08 N72-25206

**BOYLE, J. C.**  
 Balance torque meter Patent  
 [NASA-CASE-XGS-01013] c14 N71-23725

**BOYLE, J. V., JR.**  
 Adjustable attitude guide device Patent  
 [NASA-CASE-XLA-07911] c15 N71-15571  
 Canister closing device Patent  
 [NASA-CASE-XLA-01446] c15 N71-21528

**BOZAJIAN, J. M.**  
 Thermal switch Patent  
 [NASA-CASE-XNP-00463] c33 N70-36847

**BRACKEN, P. A.**  
 Telemetry processor  
 [NASA-CASE-GSC-11388-1] c07 N73-24187

**BRADLEY, R. H.**  
 Emergency earth orbital escape device  
 [NASA-CASE-MSC-13281] c31 N72-18859  
 A method of delivering a vehicle to earth orbit  
 and returning the reusable portion thereof to  
 earth  
 [NASA-CASE-MSC-12391] c30 N73-12884

**BRADY, J. C.**  
 Surface roughness detector Patent  
 [NASA-CASE-XLA-00203] c14 N70-34161

**BRANDHORST, H. W., JR.**  
 High power laser apparatus and system  
 [NASA-CASE-XLE-02529-3] c09 N72-32229

**BRANSTETTER, J. R.**  
 Black-body furnace Patent  
 [NASA-CASE-XLE-01399] c33 N71-15625

**BRASCHWITZ, J. M.**  
 External liquid-spray cooling of turbine blades  
 Patent  
 [NASA-CASE-XLE-00037] c28 N70-33372

**BRAUN, W.**  
 Ultraviolet atomic emission detector  
 [NASA-CASE-HQN-10756-1] c14 N72-25428

**BRAWNER, C. C., JR.**  
 Specific wavelength colorimeter  
 [NASA-CASE-MSC-14081-1] c14 N73-18443

**BRAWNER, E. L.**  
 Color perception tester  
 [NASA-CASE-KSC-10278] c05 N72-16015

**BREED, L. L.**  
 Fluorinated esters of polycarboxylic acids  
 [NASA-CASE-MFS-21040-1] c06 N73-30098

**BREED, L. W.**  
 Preparation of ordered poly /arylenesiloxane/  
 polymers  
 [NASA-CASE-XMF-10753] c06 N71-11237

**BREEZE, R. K.**  
 Method and system for respiration analysis Patent  
 [NASA-CASE-XFR-08403] c05 N71-11202

**BREGMAN, B. J.**  
 Derivation of a tangent function using an  
 integrated circuit four-quadrant multiplier  
 [NASA-CASE-MSC-13907-1] c10 N73-26230

**BREITWIESER, R.**  
 High current electrical leads  
 [NASA-CASE-LEW-10950-1] c09 N72-31239

**BREJCHA, A. G., JR.**  
 Coaxial cable connector Patent  
 [NASA-CASE-XNP-04732] c09 N71-20851

**BRETT, P. R.**  
 Oxygen production method and apparatus  
 [NASA-CASE-MSC-12332-1] c15 N72-15476

**BREY, H.**  
 Frequency division multiplex technique  
 [NASA-CASE-KSC-10521] c07 N73-20176

**BRICKER, R. W.**  
 Mass measuring system Patent  
 [NASA-CASE-XMS-03371] c05 N70-42000

**BRINICH, P. F.**  
 Electrothermal rockets having improved heat  
 exchangers Patent  
 [NASA-CASE-XLE-01783] c28 N70-34175

**BRINKS, B. J.**  
 Plating nickel on aluminum castings Patent  
 [NASA-CASE-XNP-04148] c17 N71-24830

**BRISSENDEN, R. F.**  
 Cable arrangement for rigid tethering Patent  
 [NASA-CASE-XLA-02332] c32 N71-17609

**BROCK, F. J.**  
 Gauge calibration by diffusion  
 [NASA-CASE-XGS-07752] c14 N73-30390  
 Ultrahigh vacuum measuring ionization gauge  
 [NASA-CASE-XLA-05087] c14 N73-30391

**BRODER, J. D.**  
 Method of making electrical contact on silicon  
 solar cell and resultant product Patent  
 [NASA-CASE-XLE-04787] c03 N71-20492  
 Silicon solar cell array Patent Application  
 [NASA-CASE-LEW-11059-1] c03 N71-29048  
 Attaching cover glasses to solar cells  
 [NASA-CASE-LEW-11065-1] c03 N72-11064  
 Covered silicon solar cells  
 [NASA-CASE-LEW-11065-2] c03 N73-26048

**BRODERICK, J. C.**  
 Solid state television camera system Patent  
 [NASA-CASE-XMF-06092] c07 N71-24612

**BRODERICK, R. F.**  
 Signal ratio system utilizing voltage controlled  
 oscillators Patent  
 [NASA-CASE-XMF-04367] c09 N71-23545  
 Radar antenna system for acquisition and  
 tracking Patent  
 [NASA-CASE-XMS-09610] c07 N71-24625

**BRODIE, S. B.**  
 Variable ratio mixed-mode bilateral master-slave  
 control system for shuttle remote manipulator  
 system  
 [NASA-CASE-MSC-14245-1] c31 N73-30832

**BROKL, S. S.**  
 Numerical computer peripheral interactive device  
 with manual controls  
 [NASA-CASE-NPO-11497] c08 N73-25206

**BROOKS, G. W.**  
 Impact simulator Patent  
 [NASA-CASE-XLA-00493] c11 N70-34786  
 Flexible ring slosh damping baffle Patent  
 [NASA-CASE-LAR-10317-1] c32 N71-16103  
 Lunar penetrometer Patent  
 [NASA-CASE-XLA-00934] c14 N71-22765

BROOKS, J. D.  
Continuously operating induction plasma  
accelerator Patent  
[NASA-CASE-XLA-01354] c25 N70-36946

BROOKS, R. A.  
Capacitive tank gaqing apparatus being  
independent of liquid distribution  
[NASA-CASE-MFS-21629] c14 N72-22442

BROUSSARD, R.  
Optical tracking mount Patent  
[NASA-CASE-MFS-14017] c14 N71-26627

BROWN, C. E.  
G conditioning suit Patent  
[NASA-CASE-XLA-02898] c05 N71-20268

BROWN, D.  
Radial module space station Patent  
[NASA-CASE-XMS-01906] c31 N7C-41373

BROWN, D. W.  
Phase-locked loop with sideband rejecting  
properties Patent  
[NASA-CASE-XNP-02723] c07 N70-41680

BROWN, G. A.  
Integrated circuit including field effect  
transistor and cermet resistor  
[NASA-CASE-GSC-10835-1] c09 N72-33205

BROWN, G. V.  
Magneto-caloric pump  
[NASA-CASE-LEW-11672-1] c15 N73-14479

Method of fabricating a twisted composite  
superconductor  
[NASA-CASE-LEW-11015] c26 N73-32571

BROWN, H. H.  
Reaction tester  
[NASA-CASE-MSC-13604-1] c05 N73-13114

BROWN, J. W.  
Reduced gravity fecal collector seat and urinal  
[NASA-CASE-MFS-22102-1] c05 N73-20141

BROWN, K. H.  
Phase modulator Patent  
[NASA-CASE-MSC-13201-1] c07 N71-28429

BROWN, R. L.  
Gimbale, partially submerged rocket nozzle Patent  
[NASA-CASE-XMF-01544] c28 N70-34162

BROWN, R. M.  
Multiple pass reimaging optical system  
[NASA-CASE-ARC-10194-1] c23 N73-20741

BROWN, W. E.  
Method and apparatus for measuring solar  
activity and atmospheric radiation effects  
[NASA-CASE-ERC-10276] c14 N73-26432

BROWN, W. E., III  
Method and means for providing an absolute power  
measurement capability Patent  
[NASA-CASE-ERC-11020] c14 N71-26774

Clear air turbulence detector  
[NASA-CASE-ERC-10081] c14 N72-28437

BROWNING, R. E.  
Flexible seal for valves Patent  
[NASA-CASE-XLE-00101] c15 N70-33376

BROYLES, H. F.  
Parallel plate viscometer Patent  
[NASA-CASE-XNP-09462] c14 N71-17584

BROYLES, H. H.  
Parallel plate viscometer Patent  
[NASA-CASE-XNP-09462] c14 N71-17584

BRUCE, R. A.  
Specialized halogen generator for purification  
of water Patent  
[NASA-CASE-XLA-08913] c14 N71-28933

Centrifugal hydrophobic separator  
[NASA-CASE-LAR-10194-1] c12 N72-11293

Air removal device  
[NASA-CASE-XLA-8914] c15 N73-12492

Zero gravity liquid mixer  
[NASA-CASE-LAR-10195-1] c15 N73-19458

BRUNSTEIN, S. A.  
Dual frequency microwave reflex feed  
[NASA-CASE-NPO-13091-1] c09 N73-12214

BRYAN, C. J.  
Autoignition test cell Patent  
[NASA-CASE-KSC-10198] c11 N71-28629

BRYAN, M. B.  
Wind tunnel model damper Patent  
[NASA-CASE-XLA-C9480] c11 N71-33612

BRYANT, E. L.  
Fatigue testing device Patent  
[NASA-CASE-XLA-02131] c32 N70-42003

BRYANT, W. H.  
Digital controller for a Baum folding machine  
[NASA-CASE-LAR-10688-1] c15 N73-11442

BRYSON, E. F.  
Soil penetrometer  
[NASA-CASE-XNP-05530] c14 N73-32321

BUCHANAN, R. I.  
Hypersonic test facility Patent  
[NASA-CASE-XLA-00378] c11 N71-15925

Hypersonic test facility Patent  
[NASA-CASE-XLA-05378] c11 N71-21475

BUCHHELE, D. E.  
Optical torque meter Patent  
[NASA-CASE-XLE-00503] c14 N70-34818

BUCHHOLD, T. A.  
Superconductive accelerometer Patent  
[NASA-CASE-XMF-01099] c14 N71-15969

BUCHMILLER, L. D.  
Folded traveling wave maser structure Patent  
[NASA-CASE-XNP-05219] c16 N71-15550

BUCKLEY, D. H.  
Gas lubricant compositions Patent  
[NASA-CASE-XLE-00353] c18 N70-39897

Metallic film diffusion for boundary  
lubrication Patent  
[NASA-CASE-XLE-01765] c18 N71-10772

Alloys for bearings Patent  
[NASA-CASE-XLE-05033] c15 N71-23810

Metallic film diffusion for boundary  
lubrication Patent  
[NASA-CASE-XLE-10337] c15 N71-24046

BULLINGER, H. B.  
Photoetching of metal-oxide layers  
[NASA-CASE-ERC-10108] c06 N72-21094

BUNCE, R. C.  
Closed loop ranging system Patent  
[NASA-CASE-XNP-01501] c21 N70-41930

Automatic carrier acquisition system  
[NASA-CASE-NPO-11628-1] c07 N73-30113

BUNKER, E. R., JR.  
Automated equipotential plotter  
[NASA-CASE-NPO-11134] c09 N72-21246

BURCH, C. F.  
Grinding arrangement for ball nose milling cutters  
[NASA-CASE-LAR-10450-1] c15 N73-10504

BURCH, J. L.  
Two speed drive system  
[NASA-CASE-MFS-20645] c15 N72-20463

Automatically operable self-leveling load table  
[NASA-CASE-MFS-22039-1] c14 N73-30428

BURCHAM, T. W.  
Controlled release device Patent  
[NASA-CASE-XKS-03338] c15 N71-24043

BURCHER, E. E.  
Transmitting and reflecting diffusers  
[NASA-CASE-LAR-10385-2] c23 N72-28694

Laser communication system for controlling  
several functions at a location remote to the  
laser  
[NASA-CASE-LAR-10311-1] c16 N73-16536

A spectrometer integrated with a facsimile camera  
[NASA-CASE-LAR-11207-1] c14 N73-28496

Transmitting and reflecting diffuser  
[NASA-CASE-LAR-10385-3] c23 N73-32538

BURGETT, F. A.  
Measuring device Patent  
[NASA-CASE-XMS-01546] c14 N70-40233

Process for conditioning tanned sharkskin and  
articles made therefrom Patent  
[NASA-CASE-XMS-09691-1] c18 N71-15545

BURK, S. M., JR.  
Deployable flexible ventral fins for use as an  
emergency spin recovery device in aircraft  
[NASA-CASE-LAR-10753-1] c02 N73-10031

BURKE, J. R.  
Optical spin compensator  
[NASA-CASE-XGS-02401] c14 N69-27485

BURKHART, J. A.  
Magneto-plasma-dynamic arc thruster  
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 [NASA-CASE-MFS-11132] c15 N71-17649

**COLBURN, M. E.**  
 Automatic instrument for chemical processing to  
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**COLE, H. A., JR.**  
 Method and apparatus for measuring the damping  
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**COLE, P. T.**  
 Low friction magnetic recording tape Patent  
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**COLES, W. D.**  
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**COLLINS, E. B., JR.**  
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 Recovery of potable water from human wastes in  
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 [NASA-CASE-XLA-03213] c05 N71-11207

**COLLINS, W. A.**  
 Flight control system  
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**COLONY, J. A.**  
 Phototropic composition of matter  
 [NASA-CASE-XGS-03736] c14 N72-22443

**CONANT, J. E.**  
 Television simulation for aircraft and space  
 flight Patent  
 [NASA-CASE-XFR-03107] c09 N71-19449

**CONE, C. D., JR.**  
 Minimum induced drag airfoil body Patent  
 [NASA-CASE-XLA-00755] c01 N71-13410

Minimum induced drag airfoil body Patent  
 [NASA-CASE-XLA-05828] c01 N71-13411

Absolute focus lock for microscopes  
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**CONGER, C. C.**  
 Inductance device with vacuum insulation  
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**CORIGLIO, G. V.**  
 Petzval type objective including field shaping  
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 [NASA-CASE-GSC-10700] c23 N71-30027

**CONN, J. H.**  
 Moment of inertia test fixture Patent  
 [NASA-CASE-XGS-01023] c14 N71-22992

**CONNOLLY, J. P.**  
 Automatic real-time pair feeding system for  
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**CONNOR, E. W.**  
 Condensate removal device for heat exchange  
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**CONNORS, J. P.**  
 Annular rocket motor and nozzle configuration  
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 [NASA-CASE-XLE-00078] c28 N70-33284

Annular supersonic decelerator or drogue Patent  
 [NASA-CASE-XLE-00222] c02 N70-37939

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 [NASA-CASE-XLE-00057] c28 N70-38711

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CROUCH, H. W.

Telescoping-spike supersonic inlet for aircraft engines Patent  
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Thrust and direction control apparatus Patent  
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CONRAD, E. W.  
Thrust vector control apparatus Patent  
[NASA-CASE-XLE-00208] c28 N70-34294

Non-reusable kinetic energy absorber Patent  
[NASA-CASE-XLE-00810] c15 N70-34861

CONRAD, W. M.  
Frequency modulation demodulator threshold extension device Patent  
[NASA-CASE-MSC-12165-1] c07 N71-33696

COOGAN, J. M.  
Method of planetary atmospheric investigation using a split-trajectory dual flyby mode Patent  
[NASA-CASE-XAC-08494] c30 N71-15990

COOK, T. A.  
A fluid dispenser  
[NASA-CASE-MFS-21163-1] c05 N72-28098

COOK, W. M., JR.  
Detector panels-micrometeoroid impact Patent  
[NASA-CASE-XLA-05906] c31 N71-16221

COOLIDGE, J. E.  
Data transfer system Patent  
[NASA-CASE-NPO-12107] c08 N71-27255

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Vibrating element electrometer with output signal magnified over input signal by a function of the mechanical Q of the vibrating element Patent  
[NASA-CASE-XAC-02807] c09 N71-23021

Thermally cycled magnetometer Patent  
[NASA-CASE-XAC-03740] c14 N71-26135

COOPER, C. R.  
Underwater space suit pressure control regulator  
[NASA-CASE-MFS-20332] c05 N72-20097

Underwater space suit pressure control regulator  
[NASA-CASE-MFS-20332-2] c05 N73-25125

COOPER, D. W.  
Generator for a space power system Patent  
[NASA-CASE-XLE-04250] c09 N71-20446

COOPER, W. E.  
Collapsible Apollo couch  
[NASA-CASE-MSC-13140] c05 N72-11085

COPELAND, J. T., JR.  
High speed photo-optical time recording  
[NASA-CASE-KSC-10294] c14 N72-18411

CORBIN, P. L.  
Automatic fatigue test temperature programmer Patent  
[NASA-CASE-XLA-02059] c33 N71-24276

CORNILLE, H. J., JR.  
Stretch de-spin mechanism Patent  
[NASA-CASE-XGS-00619] c30 N70-40016

CORNISH, S.  
Flame detector operable in presence of proton radiation  
[NASA-CASE-MFS-21577-1] c03 N73-20042

COBSON, B. W., JR.  
Nozzle Patent  
[NASA-CASE-XLA-00154] c28 N70-33374

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[NASA-CASE-LAR-10951-1] c28 N73-19819

COSTES, N. C.  
Self-recording portable soil penetrometer  
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COSTON, B. M.  
Dual solid cryogenics for spacecraft refrigeration Patent  
[NASA-CASE-GSC-10188-1] c23 N71-24725

COTE, C. E.  
Display for binary characters Patent  
[NASA-CASE-XGS-04987] c08 N71-20571

COUCH, R. B.  
Apparatus for aiding a pilot in avoiding a midair collision between aircraft  
[NASA-CASE-LAR-10717-1] c21 N73-30641

COULBERT, C. D.  
Multislot film cooled pyrolytic graphite rocket nozzle Patent  
[NASA-CASE-XNP-04389] c28 N71-20942

COUVILLON, L. A., JR.  
Signal-to-noise ratio estimating by taking ratio of mean and standard deviation of integrated signal samples Patent  
[NASA-CASE-XNP-05254] c07 N71-20791

Method and apparatus for frequency-division multiplex communications by digital phase shift of carrier  
[NASA-CASE-NPO-11338] c08 N72-25208

Method and apparatus for synchronizing a single channel digital communications system  
[NASA-CASE-NPO-11302-2] c07 N72-28164

Apparatus for deriving synchronizing pulses from pulses in a single channel PCM communications system  
[NASA-CASE-NPO-11302-1] c07 N73-13149

Pseudonoise (PN) synchronization of data system with derivation of clock frequency from received signal for clocking receiver PN generator  
[NASA-CASE-XNP-03623] c09 N73-28084

COWAN, J. J.  
Holographic device  
[NASA-CASE-MFS-22040-1] c16 N73-26500

COWELL, T. E.  
Aerodynamic spike nozzle Patent  
[NASA-CASE-XGS-01143] c31 N71-15647

COX, J. A.  
Analog-to-digital converter  
[NASA-CASE-MSC-13110-1] c08 N72-22163

CRABILL, N. L.  
Control system for rocket vehicles Patent  
[NASA-CASE-XLA-01163] c21 N71-15582

CRAWFORD, R.  
Solar energy powered heliotope  
[NASA-CASE-GSC-10945-1] c21 N72-31637

CRAWFORD, W. E.  
Drive circuit for minimizing power consumption in inductive load Patent  
[NASA-CASE-NPO-10716] c09 N71-24892

CREASY, W. K.  
Shock absorber Patent  
[NASA-CASE-XMS-03722] c15 N71-21530

CREE, D.  
Amplifier drift tester  
[NASA-CASE-XMS-05562-1] c09 N69-39986

CREE, R. F.  
Catalyst for growth of boron carbide single crystal whiskers  
[NASA-CASE-XHQ-03903] c15 N69-21922

CREPEAU, P. C.  
Flexible, repairable, pottable material for electrical connectors Patent  
[NASA-CASE-XGS-05180] c18 N71-25881

CRESS, S. B.  
Coaxial inverted geometry transistor having buried emitter  
[NASA-CASE-ARC-10330-1] c09 N73-32112

CRESSEY, J. R.  
Display for binary characters Patent  
[NASA-CASE-XGS-04987] c08 N71-20571

CREWS, J. H., JR.  
Strain coupled servo control system Patent  
[NASA-CASE-XLA-08530] c32 N71-25360

CRIBB, H. E.  
Parasitic probe antenna Patent  
[NASA-CASE-XKS-09348] c09 N71-13521

Weatherproof helix antenna Patent  
[NASA-CASE-XKS-08485] c07 N71-19493

VHF/UHF parasitic probe antenna Patent  
[NASA-CASE-XKS-09340] c07 N71-24614

Validation device for spacecraft checkout equipment Patent  
[NASA-CASE-XKS-10543] c07 N71-26292

Protective suit having an audio transceiver Patent  
[NASA-CASE-KSC-10164] c07 N71-33108

Collapsible high gain antenna  
[NASA-CASE-KSC-10392] c07 N73-26117

CROFT, R. M.  
Personal propulsion unit Patent  
[NASA-CASE-MFS-20130] c28 N71-27585

CROFTS, D. E.  
Heat flux sensor assembly  
[NASA-CASE-XMS-05909-1] c14 N69-27459

CROSWELL, W. F.  
Omnidirectional microwave spacecraft antenna Patent  
[NASA-CASE-XLA-03114] c09 N71-22888

Stacked array of omnidirectional antennas  
[NASA-CASE-LAR-10545-1] c09 N72-21244

Dielectric loaded aperture antenna  
[NASA-CASE-LAR-11084-1] c09 N73-12216

CROUCH, H. W.  
Shrink-fit gas valve Patent

[NASA-CASE-XGS-00587] c15 N70-35087  
**CROW, R. B.**  
 Wide band doubler and sine wave quadrature generator  
 [NASA-CASE-NPO-11133] c10 N72-20223  
 Filter for third order phase locked loops  
 [NASA-CASE-NPO-11941-1] c10 N73-27171  
**CROM, G. W.**  
 Foot pedal operated fluid type exercising device  
 [NASA-CASE-MSC-11561-1] c05 N73-32014  
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 All-directional fastener Patent  
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 Multilegged support system Patent  
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**CUBBISON, B. W.**  
 Thrust and direction control apparatus Patent  
 [NASA-CASE-XLE-03583] c31 N71-17629  
**CUBLEY, H. D.**  
 Antenna array phase quadrature tracking system Patent  
 [NASA-CASE-MSC-12205-1] c07 N71-27056  
**CUNNINGHAM, H. R.**  
 A potable water dispenser  
 [NASA-CASE-MFS-21115-1] c05 N72-28097  
**CURRIE, J. E.**  
 Bi-carrier demodulator with modulation Patent  
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 Transistor servo system including a unique differential amplifier circuit Patent  
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 [NASA-CASE-MFS-20418] c14 N73-24473  
 Induction motor control system with voltage controlled oscillator circuit  
 [NASA-CASE-MFS-21465-1] c10 N73-32145  
**CURRIE, R. E., JR.**  
 Relay binary circuit Patent  
 [NASA-CASE-XMF-00421] c09 N70-34502  
**CURRY, J. E.**  
 Method of producing alternating ether siloxane copolymers Patent  
 [NASA-CASE-XMF-02584] c06 N71-20905  
**CURRY, K. C.**  
 Torsional disconnect unit  
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**CURRY, R. E.**  
 Display research collision warning system  
 [NASA-CASE-HQ-10703] c21 N73-13643  
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 Life support system  
 [NASA-CASE-MSC-12411-1] c05 N72-20096  
**CZARCINSKI, E. A.**  
 Programmable telemetry system Patent  
 [NASA-CASE-GSC-10131-1] c07 N71-24624

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**DAHM, W. K.**  
 Clear air turbulence detector  
 [NASA-CASE-MFS-21244-1] c20 N73-21523  
**DAILEY, C. C.**  
 Microwave power receiving antenna Patent  
 [NASA-CASE-MFS-20333] c09 N71-13486  
**DALE, W. J.**  
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 [NASA-CASE-LAB-10318-1] c14 N72-20396  
**DALELIO, G. P.**  
 Synthesis of polymeric schiff bases by schiff-base exchange reactions Patent  
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 Direct synthesis of polymeric schiff bases from two amines and two aldehydes Patent  
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 Azine polymers and process for preparing the same Patent  
 [NASA-CASE-XMF-08656] c06 N71-11242  
 Synthesis of polymeric schiff bases by reaction of acetals and amine compounds Patent  
 [NASA-CASE-XMF-08652] c06 N71-11243  
 Aromatic diamine-aromatic dialdehyde high molecular weight Schiff base polymers prepared in a monofunctional Schiff base Patent

[NASA-CASE-IMP-03074] c06 N71-24740  
**DALY, W. E.**  
 Fault-tolerant clock apparatus  
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**DAMERON, C. E.**  
 Instrument for measuring potentials on two dimensional electric field plots Patent  
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 Capacitive tank gaging apparatus being independent of liquid distribution  
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 Radiation hardening of MOS devices by boron  
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 [NASA-CASE-GSC-11425-2] c09 N73-32114  
**DANE, D. H.**  
 Harness assembly Patent  
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 Air cushion lift pad Patent  
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 Ratchet mechanism Patent  
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 Mechanically actuated triggered hand  
 [NASA-CASE-MFS-20413] c15 N72-21463  
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**DANGLE, E. E.**  
 Rocket engine Patent  
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 Adaptive tracking notch filter system Patent  
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 Fuel injection pump for internal combustion engines Patent  
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**DARR, J., JR.**  
 Threadless fastener apparatus Patent  
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 Collapsible nozzle extension for rocket engines Patent  
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**DASGUPTA, K.**  
 Dual purpose optical instrument capable of simultaneously acting as spectrometer and diffractometer  
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**DAVID, R. E.**  
 Insulated electrocardiographic electrodes  
 [NASA-CASE-MSC-14339-1] c05 N73-21151  
**DAVIDS, L. H.**  
 Guidance and maneuver analyzer Patent  
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 Spacecraft attitude sensor  
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 Ripple indicator  
 [NASA-CASE-KSC-10162] c09 N72-11225  
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 Centrifuge mounted motion simulator Patent  
 [NASA-CASE-XAC-00399] c11 N70-34815  
**DAVIES, W. D. T.**  
 Correlation type phase detector  
 [NASA-CASE-GSC-11744-1] c09 N73-23291  
**DAVIS, A. J.**  
 Fiber optic vibration transducer and analyzer Patent  
 [NASA-CASE-XMF-02433] c14 N71-10616  
**DAVIS, B. K.**  
 Spectral method for monitoring atmospheric contamination of inert-gas welding shields Patent  
 [NASA-CASE-XMF-02039] c15 N71-15871  
 Stud-bonding gun  
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## INVENTOR INDEX

DESCAMP, V. A.

DAVIS, E. J.  
Cable stabilizer for open shaft cable operated elevators  
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DAVIS, E. S.  
Anti-glare improvement for optical imaging systems Patent  
[NASA-CASE-NPO-10337] c14 N71-15604  
Radiant energy intensity measurement system Patent  
[NASA-CASE-XNP-06510] c14 N71-23797  
Reference voltage switching unit  
[NASA-CASE-NPO-11253] c09 N72-17157

DAVIS, J. G., JR.  
Tube fabricating process  
[NASA-CASE-LAB-10203-1] c15 N72-16330

DAVIS, J. P.  
Multiducted electromagnetic pump Patent  
[NASA-CASE-NPO-10755] c15 N71-27084  
Shell side liquid metal boiler  
[NASA-CASE-NPO-10831] c33 N72-20915  
Uninsulated in-core thermionic diode  
[NASA-CASE-NPO-10542] c09 N72-27228

DAVIS, J. W.  
Burst diaphragm flow initiator Patent  
[NASA-CASE-MFS-12915] c11 N71-17600  
Wind tunnel test section  
[NASA-CASE-MFS-20509] c11 N72-17183  
Altitude simulation chamber for rocket engine testing  
[NASA-CASE-MFS-20620] c11 N72-27262

DAVIS, L. P.  
Isolation coupling arrangement for a torque measuring system  
[NASA-CASE-XLA-04897] c15 N72-22482

DAVIS, H. S.  
Decomposition unit Patent  
[NASA-CASE-XMS-00583] c28 N70-38504

DAVIS, W. T.  
Strain coupled servo control system Patent  
[NASA-CASE-XLA-08530] c32 N71-25366

DAVISON, E. H.  
Meteoroid sensing apparatus having a coincidence network connected to a pair of capacitors Patent  
[NASA-CASE-XLE-01246] c14 N71-10797

DAVISON, H. W.  
Gaseous control system for nuclear reactors  
[NASA-CASE-XLE-04599] c22 N72-20597

DAWN, P. S.  
Burn rate testing apparatus  
[NASA-CASE-XMS-09690] c33 N72-25913

DAY, J. L.  
Electrode for biological recording  
[NASA-CASE-XMS-02872] c05 N69-21925  
Pressed disc type sensing electrodes with ion-screening means Patent  
[NASA-CASE-XMS-04212-1] c05 N71-12346  
Method of making a perspiration resistant biopotential electrode  
[NASA-CASE-MSC-90153-2] c05 N72-25120

DAYAN, V. H.  
Hydrogen leak detection device Patent  
[NASA-CASE-MFS-11537] c14 N71-20442

DE FORIA, R. B.  
Fluid power transmitting gas bearing Patent  
[NASA-CASE-ERC-10097] c15 N71-28465

DE GEER, H. D.  
Traversing probe Patent  
[NASA-CASE-XFR-02007] c12 N71-24692

DE GRASSE, R. W.  
Folded traveling wave maser structure Patent  
[NASA-CASE-XNP-05219] c16 N71-15550

DE LUCA, J. J.  
Segmented superconducting magnet for a broadband traveling wave maser Patent  
[NASA-CASE-XGS-10518] c16 N71-28554

DE MARS, G. A.  
An apparatus for restoring optically degraded laser optics Patent Application  
[NASA-CASE-ERC-10210] c16 N70-41525

DE STEESE, J. G.  
Thermionic tantalum emitter doped with oxygen Patent Application  
[NASA-CASE-NPO-11138] c03 N70-34646

DE WITT, R. L.  
Fluid coupling Patent  
[NASA-CASE-XLE-00397] c15 N70-36492

DEAL, F. C.  
Temperature measurement system  
[NASA-CASE-MFS-20781-2] c14 N73-31401

DEBOO, G. J.  
Gyrator type circuit Patent  
[NASA-CASE-XAC-10608-1] c09 N71-12517  
Feedback integrator with grounded capacitor Patent  
[NASA-CASE-XAC-10607] c10 N71-23669  
Precision rectifier with FET switching means Patent  
[NASA-CASE-ARC-10101-1] c09 N71-33109  
Phase shift circuit apparatus  
[NASA-CASE-ARC-10269-1] c10 N72-16172  
Temperature compensated light source using a light emitting diode  
[NASA-CASE-ARC-10467-1] c09 N73-14214  
Self-tuning bandpass filter  
[NASA-CASE-ARC-10264-1] c09 N73-20231

DECKER, A. J.  
High powered arc electrodes  
[NASA-CASE-LEW-11162-1] c09 N71-34210

DEERKOSKI, L. F.  
Signal-to-noise ratio determination circuit  
[NASA-CASE-GSC-11239-1] c10 N73-25241

DEIS, B. C.  
Traveling sealer for contoured table Patent  
[NASA-CASE-XLA-01494] c15 N71-24164

DEL CASALE, L. A.  
Signal generator  
[NASA-CASE-XNP-05612] c09 N69-21468

DEL CURTO, B.  
System for monitoring the presence of neutrals in a stream of ions Patent  
[NASA-CASE-XNP-02592] c24 N71-20518

DEL DUCA, A.  
Electronic divider and multiplier using photocells Patent  
[NASA-CASE-XFR-05637] c09 N71-19480

DELAURE, L. A.  
Emergency earth orbital escape device  
[NASA-CASE-MSC-13281] c31 N72-18859

DELGREGO, D. J., SR.  
Clear air turbulence detector  
[NASA-CASE-MFS-21244-1] c20 N73-21523

DELUCA, J. J.  
Bonding of sapphire to sapphire by eutectic mixture aluminum oxide and zirconium oxide  
[NASA-CASE-GSC-11577-1] c15 N73-19467

DELVIGS, P.  
Preparation of polyimides from mixtures of monomeric diamines and esters of polycarboxylic acids  
[NASA-CASE-LEW-11325-1] c06 N73-27980

DEMOGENES, C.  
Low cycle fatigue testing machine  
[NASA-CASE-LAR-10270-1] c32 N72-25877

DEMOREST, K. E.  
Self-lubricating gears and other mechanical parts Patent  
[NASA-CASE-MFS-14971] c15 N71-24984

DENACI, D. E.  
Clamping assembly for inertial components Patent  
[NASA-CASE-XMS-02184] c15 N71-20813

DEO, H.  
Dual purpose momentum wheels for spacecraft with magnetic recording  
[NASA-CASE-NPO-11481] c21 N73-13644

DERING, V. G.  
Vortex breach high pressure gas generator  
[NASA-CASE-LAR-10549-1] c31 N73-13898

DERR, L. J.  
Direct radiation cooling of the collector of linear beam tubes  
[NASA-CASE-XNP-09227] c15 N69-24319  
Temperature-compensating means for cavity resonator of amplifier Patent  
[NASA-CASE-XNP-00449] c14 N70-35220  
Electron beam tube containing a multiple cathode array employing indexing means for cathode substitution Patent  
[NASA-CASE-NPO-10625] c09 N71-26182  
Thermostatic actuator  
[NASA-CASE-NPO-10637] c15 N72-12409  
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[NASA-CASE-NPO-11283] c09 N72-25260  
Electrostatically controlled heat shutter  
[NASA-CASE-NPO-11942-1] c33 N73-32818

DESCAMP, V. A.  
Filter regeneration systems  
[NASA-CASE-MSC-14273-1] c12 N73-28179

DETWEILER, H. K.  
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**F**

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## INVENTOR INDEX

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**HEIMBEL, G. J.**  
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**HEINDL, J. C.**  
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**HEINEMANN, K.**  
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**HEINEY, O. K.**  
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**HEISHAN, R. H.**  
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**HELBERT, W. B., JR.**  
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**HENDERSON, M. E.**  
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**HENRY, A. W.**  
 Dicyanoacetylene polymers Patent  
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**HENRY, B. Z.**  
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**HEPPNER, J. P.**  
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**HEROLD, C. P.**  
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**HERR, R. W.**  
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**HERRON, B. G.**  
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**HESS, R. V.**  
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**HESS, R. W.**  
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**HESTER, H. B.**  
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 Color television systems using a single gun  
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HRUBY, R. J.

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HONNELL, M. A.  
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HOOD, R. T.  
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HOOPER, C. D.  
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HOOVER, R. B.  
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HOPKINS, P. H.  
Differential phase shift keyed communication  
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Aircraft wheel spray drag alleviator Patent  
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Photographic film restoration system  
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Instrument support with precise lateral  
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HORTON, J. C.  
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HORTTOR, R. L.  
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HOSETHIEN, H. H.  
Adaptive tracking notch filter system Patent  
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HOTZ, G. H.  
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HOUCK, W. H.  
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HOWARD, J. C.  
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HOWARD, W. D.  
Method and device for detecting voids in low  
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HOWARD, W. H.  
Skeletal stressing method and apparatus Patent  
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JOHNSON, C. L.  
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Heat conductive resiliently compressible  
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JONES, R. H.  
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JONES, W. P.  
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JORDAN, A. W.  
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[NASA-CASE-NPO-11021] c03 N72-20032

JORDON, W. J.  
Inspection gage for boss Patent  
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JOSIAS, C. S.  
Micro current measuring device using plural  
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JOSLYN, A. W.  
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JOYNER, U. T.  
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JUDD, J. H.  
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## INVENTOR INDEX

KEMP, R. P.

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Trialkyl-dihalotantalum and niobium compounds  
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[NASA-CASE-XNP-04023] c06 N71-28808

**K**

KABANA, W. P.  
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KALKBRENNER, R. W.  
Heat transfer device Patent Application  
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KALLINS, C.  
Rotary actuator  
[NASA-CASE-NPO-10244] c15 N72-26371

KAMI, S.  
Gas regulator Patent  
[NASA-CASE-NPO-10298] c12 N71-17661

KAHINSKAS, R. A.  
Penetrating radiation system for detecting the  
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[NASA-CASE-MSC-12280] c27 N71-16348

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Mixture separation cell Patent  
[NASA-CASE-XMS-02952] c18 N71-20742

KAMPINSKY, A.  
Method and apparatus for determining  
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[NASA-CASE-XGS-02608] c07 N70-41678  
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KANE, T. R.  
Spacecraft attitude control method and apparatus  
[NASA-CASE-HQN-10439] c21 N72-21624

KARLIOTIS, A. H.  
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KARSH, I.  
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KEMP, R. H.  
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Conically shaped cavity radiometer with a dual purpose cone winding Patent  
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KENYON, G. C.  
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KEPLER, C. E.  
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KERLEY, J. J., JR.  
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Angular displacement indicating gas bearing support system Patent  
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KERSLAKE, W. R.  
Ion thruster cathode  
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Electronic cathode having a brush-like structure and a relatively thick oxide emissive coating Patent  
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KERWIN, W. J.  
Nonmagnetic thermal motor for a magnetometer  
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KESSEL, J. E.  
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Nonflammable coating compositions  
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KEYNTON, R. J.  
Technique for control of free-flight rocket vehicles Patent  
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KIBBE, R. K.  
Load cell protection device Patent  
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KIEFER, P. J., JR.  
Thermal conductive connection and method of making same Patent  
[NASA-CASE-XMS-02087] c09 N70-41717

KIKIN, G. H.  
Multiducted electromagnetic pump Patent  
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KIM, C.  
Arterial pulse wave pressure transducer  
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Butt welder for fine gauge tungsten/rhenium thermocouple wire  
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KING, H. H.  
Method of making impurity-type semiconductor electrical contacts Patent  
[NASA-CASE-XMP-01016] c26 N71-17818

KING, R. B.  
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KING, R. W.  
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KINKEL, J. F.  
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KINWARD, K. F.  
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KINSEL, R. C.  
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KINZLER, J. A.  
Emergency escape system Patent  
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Accelerometer with FM output Patent  
[NASA-CASE-XLA-00492] c14 N70-34799

KIS, G.  
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## INVENTOR INDEX

KRAUSE, S. J.

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KLECHKA, E. W.  
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KLEIN, E. L.  
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KLEIN, H. G.  
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KLEINBERG, L. L.  
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KLEINBOCK, L.  
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KLIMA, S. J.  
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KLINE, A. J., JR.  
Automatic frequency discriminators and control  
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KLINGMAN, E. E., III  
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KLISCH, J. A.  
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KOBOLOFF, G.  
Amplitude steered antenna array  
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KOCH, E. F.  
Expulsion bladder-equipped storage tank  
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[NASA-CASE-XNP-C0612] c11 N70-38182  
Combined pressure regulator and shutoff valve  
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KOCH, K. F.  
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KODIS, R. D.  
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KORDES, E. E.  
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KOSCHMEDER, L. A.  
Bi-polar phase detector and corrector for split  
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KOSMAHL, H. G.  
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KOVELL, S. P.  
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KRAMER, F.  
Device for suppressing sound and heat produced  
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KRAMER, H.  
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KRAUSE, I. A.  
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KBAUSHAAR, W. L.  
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KBAWCZONER, W. M.  
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KREISHMAN, W. S.  
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KBIEVE, W. F.  
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KRUPNICK, A. C.  
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Nonflammable coating compositions  
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[NASA-CASE-XMS-00583] c28 N70-38504

KUBICZ, A. P.  
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[NASA-CASE-GSC-10667-1] c10 N71-33129  
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KUBIK, C. F.  
Method and construction for protecting heat  
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KUBIK, J. S.  
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KUBOKAWA, C. C.  
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KUEBLER, M. E.  
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[NASA-CASE-XMP-00442] c31 N71-10747

KUHN, R. E.  
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KUHN, R. F., JR.  
Universal restrainer and joint Patent  
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KUHNS, P. W.  
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KUPPERIAN, J. B., JR.  
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KUBIGER, W. L.  
Short range laser obstacle detector  
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KURTZ, R. L.  
Hybrid holographic system using reflected and  
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Multiple image storing system for high speed  
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Remote platform power conserving system  
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KUEYLO, M. J., III  
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KUEZHALS, P. B.  
Spacecraft experiment pointing and attitude  
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[NASA-CASE-XLA-05464] c21 N71-14132

Attitude control and damping system for  
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[NASA-CASE-XLA-02551] c21 N71-21708

LA ROSSA, F. J.  
Array phasing device Patent  
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Method and apparatus of simulating zero gravity  
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**LE VAY, K. H.**  
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**LEE, D. H.**  
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**LEE, J. S.**  
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**LEE, M. C.**  
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LONG, W. C.  
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LONGYEAR, W. D.  
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LOUGHEAD, A. G.  
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LOVALL, D. D.  
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LOVELOCK, J. E.  
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LOWEN, I. B.  
Spacecraft attitude detection system by stellar  
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LOWRY, J. G.  
Jet aircraft configuration Patent  
[NASA-CASE-XLA-00087] c02 N70-33332  
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[NASA-CASE-XLA-00166] c02 N70-34178

LOY, C. A.  
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[NASA-CASE-XLE-05130-2] c15 N71-19570

A spiral groove seal  
[NASA-CASE-XLE-10326-4] c15 N72-27522

Spiral groove seal  
[NASA-CASE-XLE-10326-2] c15 N72-29488

High speed, self-acting shaft seal  
[NASA-CASE-LEW-11274-1] c15 N73-29457

**LOEBBERS, S. S.**  
Thermionic tantalum emitter doped with oxygen  
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[NASA-CASE-NPO-11138] c03 N70-34646

Thermionic diode switch Patent  
[NASA-CASE-NPO-10404] c03 N71-12255

**LUDEWIS, R. W.**  
Multiple fan integrated propulsion wing system  
[NASA-CASE-LEW-11224-1] c02 N72-10033

**LUND, W. C.**  
Heated porous plug microthruster  
[NASA-CASE-GSC-10640-1] c28 N72-18766

**LUNDQUIST, J. R.**  
Preparation of high purity copper fluoride  
[NASA-CASE-LEW-10794-1] c06 N72-17093

**LUSHBAUGH, W. A.**  
Data compression system  
[NASA-CASE-XNP-09785] c08 N69-21928

Data compressor Patent  
[NASA-CASE-XNP-04067] c08 N71-22707

Error correcting method and apparatus Patent  
[NASA-CASE-XNP-02748] c08 N71-22749

Comparator for the comparison of two binary  
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[NASA-CASE-XNP-04819] c08 N71-23295

Parallel generation of the check bits of a PN  
sequence Patent  
[NASA-CASE-XNP-04623] c10 N71-26103

Versatile arithmetic unit for high speed  
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[NASA-CASE-NPO-11371] c08 N73-12177

**LUTES, G. F., JR.**  
Broadband stable power multiplier Patent  
[NASA-CASE-XNP-10854] c10 N71-26331

Cascaded complementary pair broadband transistor  
amplifiers Patent  
[NASA-CASE-NPO-10003] c10 N71-26415

Low phase noise digital frequency divider  
[NASA-CASE-NPO-11569] c10 N73-26229

**LUTZ, E. B.**  
Operational integrator Patent  
[NASA-CASE-NPO-10230] c09 N71-12520

**LYLAND, J. W.**  
Versatile arithmetic unit for high speed  
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[NASA-CASE-NPO-11371] c08 N73-12177

**LYNCH, E. J.**  
Three-axis, adjustable loading structure  
[NASA-CASE-FRC-10051-1] c14 N73-30416

**LYNCH, T. L.**  
Pulsed excitation voltage circuit for transducers  
[NASA-CASE-FRC-10036] c09 N72-22200

**LYON, W. E.**  
Optical range finder having nonoverlapping  
complete images  
[NASA-CASE-MS-C-12105-1] c14 N72-21409

**MACCONOCHIE, I. O.**  
Excessive temperature warning system Patent  
[NASA-CASE-XLA-01926] c14 N71-15620

**MACFADDEN, J. A.**  
Rotating mandrel for assembly of inflatable  
devices Patent  
[NASA-CASE-XLA-04143] c15 N71-17687

**MACGLASHAN, W. P., JR.**  
Belleville spring assembly with elastic guides  
[NASA-CASE-XNP-09452] c15 N69-27504

Method of treating metallic surfaces Patent  
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[NASA-CASE-NPO-10779] c15 N70-34641

High pressure four-way valve Patent  
[NASA-CASE-XNP-00214] c15 N70-36908

Multiple Belleville spring assembly Patent  
[NASA-CASE-XNP-00840] c15 N70-38225

Pressure regulating system Patent  
[NASA-CASE-XNP-00450] c15 N70-38603

Ejection unit Patent  
[NASA-CASE-XNP-00676] c15 N70-38996

Reinforcing means for diaphragms Patent  
[NASA-CASE-XNP-01962] c32 N70-41370

High pressure filter Patent  
[NASA-CASE-XNP-00732] c28 N70-41447

Antiflutter ball check valve Patent  
[NASA-CASE-XNP-01152] c15 N70-41811

High pressure regulator valve Patent  
[NASA-CASE-XNP-00710] c15 N71-10778

Filler valve Patent  
[NASA-CASE-XNP-01747] c15 N71-23024

**MACKEY, C. A.**  
Quick disconnect latch and handle combination  
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[NASA-CASE-MFS-11132] c15 N71-17649

**MACLEOD, N. H.**  
Bacterial contamination monitor  
[NASA-CASE-GSC-10879-1] c14 N72-25413

**MACOMBER, J. W.**  
Nuclear reactor control rod assembly with  
improved driving mechanism Patent  
[NASA-CASE-XLE-00298] c22 N70-34501

**MACVEIGH, G. E.**  
Analog spatial maneuver computer  
[NASA-CASE-GSC-10880-1] c08 N72-11172

**MADDOX, J. W.**  
Air bearing  
[NASA-CASE-WLP-10002] c15 N72-17451

**MADRY, J. H.**  
Satellite appendage tie down cord Patent  
[NASA-CASE-XGS-02554] c31 N71-21064

Redundant actuating mechanism Patent  
[NASA-CASE-XGS-08718] c15 N71-24600

**MADISON, I. B.**  
Aerodynamic spike nozzle Patent  
[NASA-CASE-XGS-01143] c31 N71-15647

**MADSEN, B.**  
Apparatus and method for skin packaging articles  
[NASA-CASE-MFS-20855] c15 N73-27405

**MAHAN, J. C.**  
Device for preventing high voltage arcing in  
electron beam welding Patent  
[NASA-CASE-XMF-08522] c15 N71-19486

**MAIDEN, D. L.**  
Flow velocity and directional instrument  
[NASA-CASE-LAR-10855-1] c14 N73-13415

**MAILLOUX, R. J.**  
Array phasing device Patent  
[NASA-CASE-ERC-10046] c10 N71-18722

Circularly polarized antenna  
[NASA-CASE-ERC-10214] c09 N72-31235

Phase control circuits using frequency  
multiplications for phased array antennas  
[NASA-CASE-ERC-10285] c10 N73-16206

**MAJOR, C. J.**  
Mixture separation cell Patent  
[NASA-CASE-XMS-02952] c18 N71-20742

**MALLING, L. E.**  
Digital television camera control system Patent  
[NASA-CASE-XNP-01472] c14 N70-41807

Reduced bandwidth video communication system  
utilizing sampling techniques Patent  
[NASA-CASE-XNP-02791] c07 N71-23026

**MALMBERG, J. H.**  
Waveform simulator Patent  
[NASA-CASE-NPO-10251] c10 N71-27365

## INVENTOR INDEX

MARZEK, R. A.

**MALONE, L. B.**  
 Emergency lunar communications system  
 [NASA-CASE-MFS-21042] c07 N72-25171

**MANATT, S. L.**  
 Audio frequency marker system  
 [NASA-CASE-NPO-11147] c14 N72-27408

**MANCINELLI, B. R.**  
 Telemetry processor  
 [NASA-CASE-GSC-11388-1] c07 N73-24187

**MANDEL, C. H.**  
 Azimuth laying system Patent  
 [NASA-CASE-XMF-01669] c21 N71-23289

**MANDELKORN, J.**  
 Method of making a silicon semiconductor device  
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 [NASA-CASE-XLE-02792] c26 N71-10607

Method of making electrical contact on silicon  
 solar cell and resultant product Patent  
 [NASA-CASE-XLE-04787] c03 N71-20492

Gd or Sm doped silicon semiconductor composition  
 Patent  
 [NASA-CASE-XLE-10715] c26 N71-23292

Silicon solar cell with cover glass bonded to  
 cell by metal pattern Patent  
 [NASA-CASE-XLE-08569] c03 N71-23449

Semiconductor material and method of making same  
 Patent  
 [NASA-CASE-XLE-02798] c26 N71-23654

Method of attaching a cover glass to a silicon  
 solar cell Patent  
 [NASA-CASE-XLE-08569-2] c03 N71-24681

**MANGION, C.**  
 System for preconditioning a combustible vapor  
 [NASA-CASE-NPO-12072] c28 N72-22772

**MANGOLD, D. W.**  
 Medical subject monitoring systems  
 [NASA-CASE-MSC-14180-1] c05 N73-22045

**MANNING, C. R.**  
 Thermal shock resistant hafnia ceramic material  
 [NASA-CASE-LAR-10894-1] c18 N73-14584

**MANNING, C. R., JR.**  
 Controlled glass bead peening Patent  
 [NASA-CASE-XLA-07390] c15 N71-18616

**MAROLI, R.**  
 Aircraft-mounted crash-activated radio device  
 [NASA-CASE-MFS-16609-2] c07 N73-31084

**MANTLER, R. L.**  
 Rocket propellant injector Patent  
 [NASA-CASE-XLE-00103] c28 N70-33241

**MANUS, E. A.**  
 Active microwave irises and windows  
 [NASA-CASE-LAR-10513-1] c07 N72-25170

Thin film microwave iris  
 [NASA-CASE-LAR-10511-1] c09 N72-29172

**MAPLE, W. E.**  
 Analytical test apparatus and method for  
 determining oxide content of alkali metal Patent  
 [NASA-CASE-XLE-01997] c06 N71-23527

**MAPLES, H. E.**  
 Light intensity modulator controller Patent  
 [NASA-CASE-XMS-04300] c09 N71-19479

**MARAK, R. J.**  
 Life raft stabilizer  
 [NASA-CASE-MSC-12393-1] c02 N73-26006

**MARGOSIAN, P. H.**  
 Electrostatic thruster with improved insulators  
 Patent  
 [NASA-CASE-XLE-01902] c28 N71-10574

Single grid accelerator for an ion thruster  
 [NASA-CASE-XLB-10453-2] c28 N73-27699

**MARGRAF, H. J.**  
 High pressure four-way valve Patent  
 [NASA-CASE-XNP-00214] c15 N70-36908

**MARRKLE, R. A.**  
 Self-adjusting multisegment, deployable, natural  
 circulation radiator Patent  
 [NASA-CASE-XHQ-03673] c33 N71-29046

**MARLOW, M. O.**  
 Method of making a cermet Patent  
 [NASA-CASE-LEW-10219-1] c18 N71-28729

**MARLOW, R. E.**  
 An improved system for enhancing tool exchange  
 capabilities of a portable wrench  
 [NASA-CASE-MFS-22283-1] c15 N73-30462

**MAROPIS, N.**  
 Methods and apparatus employing vibratory energy  
 for wrenching Patent  
 [NASA-CASE-MFS-20586] c15 N71-17686

**MARRKLE, R. A.**  
 Process for preparation of dianilinosilanes Patent  
 [NASA-CASE-XMF-06409] c06 N71-23230

**MARRONI, M. A., JR.**  
 Pressure garment joint Patent  
 [NASA-CASE-XMS-09636] c05 N71-12344

Omnidirectional joint Patent  
 [NASA-CASE-XMS-09635] c05 N71-24623

Foreshortened convolute section for a  
 pressurized suit Patent  
 [NASA-CASE-XMS-09637-1] c05 N71-24730

Method of forming a root cord restrained  
 convolute section  
 [NASA-CASE-MSC-12398] c05 N72-20098

Restraint torso for a pressurized suit  
 [NASA-CASE-MSC-12397-1] c05 N72-25119

**MARSH, H. E., JR.**  
 Trifunctional alcohol  
 [NASA-CASE-NPO-10714] c06 N69-31244

Novel polycarboxylic prepolymeric materials and  
 polymers thereof Patent  
 [NASA-CASE-NPO-10596] c06 N71-25929

Oil and fat absorbing polymers  
 [NASA-CASE-NPO-11609-1] c06 N72-22114

**MARSHALL, J. H.**  
 Baseline stabilization system for ionization  
 detector Patent  
 [NASA-CASE-XNP-03128] c10 N70-41991

**MARSHALL, T. H., JR.**  
 Nuclear mass flowmeter  
 [NASA-CASE-MFS-20485] c14 N72-11365

**MARSIK, S. J.**  
 Production of pure metals  
 [NASA-CASE-LEW-10906-1] c06 N72-25164

Selective nickel deposition  
 [NASA-CASE-LEW-10965-1] c15 N72-25452

**MARTEL, R. J.**  
 Amplitude steered antenna array  
 [NASA-CASE-GSC-11446-1] c09 N73-32117

**MARTIN, J. W.**  
 Dynamic Doppler simulator Patent  
 [NASA-CASE-XMS-05454-1] c07 N71-12391

**MARTIN, N. C.**  
 Segmented back-up bar Patent  
 [NASA-CASE-XMF-00640] c15 N70-39924

Portable alignment tool Patent  
 [NASA-CASE-XMF-01452] c15 N70-41371

**MARTIN, R. B.**  
 Color perception tester  
 [NASA-CASE-KSC-10278] c05 N72-16015

**MARTIN, S. C.**  
 Correlation type phase detector  
 [NASA-CASE-GSC-11744-1] c09 N73-23291

**MARTIN, W. L.**  
 Phase-locked loop with sideband rejecting  
 properties Patent  
 [NASA-CASE-XNP-02723] c07 N70-41680

Method of resolving clock synchronization error  
 and means therefor Patent  
 [NASA-CASE-XNP-08875] c10 N71-23099

Communications link for computers  
 [NASA-CASE-NPO-11161] c08 N72-25207

Binary coded sequential acquisition ranging system  
 [NASA-CASE-NPO-11194] c08 N72-25209

Digital video display system using cathode ray  
 tube  
 [NASA-CASE-NPO-11342] c09 N72-25248

**MARTINAGE, L. H.**  
 Power supply Patent  
 [NASA-CASE-XMS-02159] c10 N71-22961

**MARTINECK, H. G.**  
 Electrical connector for flat cables Patent  
 [NASA-CASE-XMF-00324] c09 N70-34596

Printed cable connector Patent  
 [NASA-CASE-XMF-00369] c09 N70-36494

Method of making a molded connector  
 Patent  
 [NASA-CASE-XMF-03498] c15 N71-15986

Electrical connector  
 [NASA-CASE-MFS-20757] c09 N72-28225

**MARTUCCI, V. J.**  
 Tuning arrangement for an electron discharge  
 device or the like Patent  
 [NASA-CASE-XNP-09771] c09 N71-24841

**MARTZ, E. L.**  
 Externally pressurized fluid bearing Patent  
 [NASA-CASE-XMF-00515] c15 N70-34664

**MARZEK, R. A.**  
 Tool for use in lifting pin supported objects  
 [NASA-CASE-NPO-13157-1] c15 N73-26475

MASCI, A. C.  
 Deep space monitor communication satellite system Patent  
 [NASA-CASE-XAC-06029-1] c31 N71-24813

MASEK, T. D.  
 Electron bombardment ion engine Patent  
 [NASA-CASE-XNP-04124] c28 N71-21822  
 Feed system for an ion thruster  
 [NASA-CASE-NPO-10737] c28 N72-11709

MASEHJIAN, J.  
 Temperature sensitive capacitor device  
 [NASA-CASE-NPO-09750] c14 N69-39937  
 Thin film capacitive bolometer and temperature sensor Patent  
 [NASA-CASE-NPO-10607] c09 N71-27232  
 New use of thin film light detector  
 [NASA-CASE-NPO-11432-2] c14 N72-28442  
 Thin film temperature sensor and method of making same  
 [NASA-CASE-NPO-11775] c26 N72-28761  
 Stored charged device  
 [NASA-CASE-NPO-11156-2] c03 N73-30974  
 Deep trap, laser activated image converting system  
 [NASA-CASE-NPO-13131-1] c16 N73-31467

MASLOWSKI, B. A.  
 Insulation foil and method of making  
 [NASA-CASE-LEW-11484-1] c15 N73-22415

MASON, R. J.  
 Collapsible reflector Patent  
 [NASA-CASE-XMS-03454] c09 N71-20658

MASON, R. M.  
 Radial module space station Patent  
 [NASA-CASE-XMS-01906] c31 N70-41373

MASSUCCO, A. A.  
 Flame retardant elastomeric compositions  
 [NASA-CASE-MSC-14331-1] c18 N73-27501

MATHUR, F. P.  
 Program for computer aided reliability estimation  
 [NASA-CASE-NPO-13086-1] c15 N73-12495

MATSUHIRO, D. S.  
 Shoulder harness and lap belt restraint system  
 [NASA-CASE-ARC-10519-1] c05 N72-31117

MATTAUCH, R. J.  
 Infrared detectors  
 [NASA-CASE-LAR-10728-1] c14 N73-12445

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 Lightweight, variable solidity knitted parachute fabric  
 [NASA-CASE-LAR-10776-1] c02 N72-21004

MAULDIN, D. G.  
 Contourograph system for monitoring electrocardiograms  
 [NASA-CASE-MSC-13407-1] c10 N72-20225

MAX, C. E.  
 Production of pure metals  
 [NASA-CASE-LEW-10906-1] c06 N72-25164

MAXWELL, M. S.  
 Spacecraft attitude detection system by stellar reference Patent  
 [NASA-CASE-XGS-03431] c21 N71-15642  
 Programmable telemetry system Patent  
 [NASA-CASE-GSC-10131-1] c07 N71-24624  
 Plural beam antenna  
 [NASA-CASE-GSC-11013-1] c09 N73-19234

MAXWELL, H. W.  
 Helical coaxial resonator RF filter  
 [NASA-CASE-XGS-02816] c07 N69-24323

MAXWELL, R. F., JR.  
 Electronic background suppression method and apparatus for a field scanning sensor  
 [NASA-CASE-XGS-05211] c07 N69-39980

MAXWELL, W. A.  
 Process of casting heavy slips Patent  
 [NASA-CASE-XLE-00106] c15 N71-16076

MAY, C. E.  
 Selective nickel deposition  
 [NASA-CASE-LEW-10965-1] c15 N72-25452

MAY, C. J.  
 Capacitor power pak Patent Application  
 [NASA-CASE-LAR-10367-1] c03 N70-26817

MAYALL, S. D.  
 Frictionless universal joint Patent  
 [NASA-CASE-NPO-10646] c15 N71-28467

MAYNARD, O. E.  
 Radial module space station Patent  
 [NASA-CASE-XMS-01906] c31 N70-41373

MAYNE, R. C.  
 Shock absorbing mount for electrical components  
 [NASA-CASE-NPO-13253-1] c15 N73-31445

MAYO, E. E.  
 Hypersonic reentry vehicle Patent  
 [NASA-CASE-XMS-04142] c31 N70-41631

MAYO, J. W.  
 Connector - Electrical  
 [NASA-CASE-XLA-01288] c09 N69-21470  
 Tubular coupling having frangible connecting means  
 [NASA-CASE-XLA-02854] c15 N69-27490  
 Missile stage separation indicator and stage initiator Patent  
 [NASA-CASE-XLA-00791] c03 N70-39930  
 Detector panels-micrometeoroid impact Patent  
 [NASA-CASE-XLA-05906] c31 N71-16221

MAYO, R. F.  
 Electric-arc heater Patent  
 [NASA-CASE-XLA-00330] c33 N70-34540

MAZER, L.  
 Analog-to-digital conversion system Patent  
 [NASA-CASE-XAC-00404] c08 N70-40125

MCAFEE, D. F.  
 Bi-polar phase detector and corrector for split phase PCM data signals Patent  
 [NASA-CASE-XGS-01590] c07 N71-12392  
 Radio frequency coaxial high pass filter Patent  
 [NASA-CASE-XGS-01418] c09 N71-23573

MCALEXANDER, B. T.  
 A laser head for simultaneous optical pumping of several dye lasers  
 [NASA-CASE-LAR-11341-1] c16 N73-25564

MCBRAYER, R. O.  
 Soft frame adjustable eyeglasses Patent  
 [NASA-CASE-XMS-06064] c05 N71-23096

MCBRAYAR  
 Ion-exchange membrane with platinum electrode assembly Patent  
 [NASA-CASE-XMS-02063] c03 N71-29044

MCBRAYAR, H.  
 Oxygen production method and apparatus  
 [NASA-CASE-MSC-12332-1] c15 N72-15476  
 Reconstituted asbestos matrix  
 [NASA-CASE-MSC-12568-1] c18 N73-16577

MCCAIG, J. C.  
 Electric arc welding Patent  
 [NASA-CASE-XMF-00392] c15 N70-34814

MCCALLUM, J.  
 Porus electrode comprising a bonded stack of pieces of corrugated metal foil  
 [NASA-CASE-GSC-11368-1] c09 N73-32108

MCCAMPBELL, W. H.  
 Electric arc welding Patent  
 [NASA-CASE-XMF-00392] c15 N70-34814  
 Weld control system using thermocouple wire Patent  
 [NASA-CASE-MFS-06074] c15 N71-20393  
 RC rate generator for slow speed measurement Patent  
 [NASA-CASE-XMF-02966] c10 N71-24863  
 A dc motor speed control system Patent  
 [NASA-CASE-MFS-14610] c09 N71-28886

MCCANN, D. H.  
 Phototransistor  
 [NASA-CASE-MFS-20407] c09 N73-19235

MCCANN, R. J.  
 Device for handling heavy loads  
 [NASA-CASE-XNP-04969] c11 N69-27466

MCCARTY, J. L.  
 Lunar penetrometer Patent  
 [NASA-CASE-XLA-00934] c14 N71-22765

MCCAUL, P. F.  
 Sidereal frequency generator Patent  
 [NASA-CASE-XGS-02610] c14 N71-23174

MCCHESENEY, J. R.  
 Modulator for tone and binary signals  
 [NASA-CASE-GSC-11743-1] c07 N73-27107

MCCLENAHAN, J. O.  
 High speed shutter  
 [NASA-CASE-ARC-10516-1] c23 N72-27739  
 Photomultiplier circuit including means for rapidly reducing the sensitivity thereof  
 [NASA-CASE-ARC-10593-1] c09 N73-30187

MCCONAUGHEY, R. T.  
 Star scanner  
 [NASA-CASE-GSC-11569-1] c14 N73-11404

MCCONNELL, J. C.  
 Method of plating copper on aluminum Patent  
 [NASA-CASE-XLA-08966-1] c17 N71-25903

MCCORMACK, W.  
 Single action separation mechanism Patent  
 [NASA-CASE-XLA-00188] c15 N71-22874

INVENTOR INDEX

MELFI, L. T., JR.

**MCCORMICK, C. T., JR.**  
Automatic signal range selector for metering devices Patent  
[NASA-CASE-XMS-06497] c14 N71-26244

**MCCRAW, D. L.**  
Emergency escape system Patent  
[NASA-CASE-MSC-12086-1] c05 N71-12345

**MCCREA, F. E.**  
Indexing microwave switch Patent  
[NASA-CASE-XNP-06507] c09 N71-23548

**MCCREARY, R. A.**  
Parallel motion suspension device Patent  
[NASA-CASE-XNP-01567] c15 N70-41310

**MCCREIGHT, L. R.**  
Conducting flow electrophoresis in the substantial absence of gravity  
[NASA-CASE-MFS-21394-1] c12 N72-27310

Electrophoretic sample insertion  
[NASA-CASE-MFS-21395-1] c14 N72-27425

**MCCUSKER, T. J.**  
Foldable solar concentrator Patent  
[NASA-CASE-XLA-04622] c03 N70-41580

**MCDANIELS, D. L.**  
Reinforced metallic composites Patent  
[NASA-CASE-XLE-02428] c17 N70-33288

Method of making fiber reinforced metallic composites Patent  
[NASA-CASE-XLE-00231] c17 N70-38198

Reinforced metallic composites Patent  
[NASA-CASE-XLE-00228] c17 N70-38490

**MCDARIS, R. A.**  
Emergency escape system Patent  
[NASA-CASE-XKS-07814] c15 N71-27067

**MCDAVID, L. S.**  
Specific wavelength colorimeter  
[NASA-CASE-MSC-14081-1] c14 N73-18443

**MCDERMOND, D. K.**  
Synchronous counter Patent  
[NASA-CASE-XGS-02440] c08 N71-19432

**MCDREVITT, F. R.**  
Laser coolant and ultraviolet filter  
[NASA-CASE-MFS-20180] c16 N72-12440

**MCDONALD, G. E.**  
Nuclear fuel elements  
[NASA-CASE-XLE-00209] c22 N73-32528

**MCDONALD, R. T.**  
System for communicating biomedical information by means of unmodified conventional voice communication systems Patent Application  
[NASA-CASE-FRC-10031] c05 N70-20717

Gas low pressure low flow rate metering system Patent  
[NASA-CASE-FRC-10022] c12 N71-26546

Respiration monitor  
[NASA-CASE-FRC-10012] c14 N72-17329

**MCDUGAL, A. R.**  
Force-balanced, throttle valve Patent  
[NASA-CASE-NPO-10808] c15 N71-27432

Quick disconnect coupling  
[NASA-CASE-NPO-11262] c15 N72-25450

Rotary actuator  
[NASA-CASE-NPO-10680] c31 N73-14855

Disconnect unit  
[NASA-CASE-NPO-11330] c33 N73-26958

**MCGANNON, W. J.**  
Ophthalmic method and apparatus  
[NASA-CASE-LEW-11669-1] c05 N73-27062

Ophthalmic liquefaction pump  
[NASA-CASE-LEW-12651-1] c04 N73-32000

**MCGEEHEE, J. R.**  
Frangible tube energy dissipation Patent  
[NASA-CASE-XLA-00754] c15 N70-34850

Omnidirectional multiple impact landing system Patent  
[NASA-CASE-XLA-09881] c31 N71-16085

**MCGOUGH, J. T.**  
Emergency escape system Patent  
[NASA-CASE-XKS-07814] c15 N71-27067

**MCHAFFIE, D. J.**  
Extensible cable support Patent  
[NASA-CASE-XMF-07587] c15 N71-18701

**MCHATTON, A. D.**  
Canister closing device Patent  
[NASA-CASE-XLA-01446] c15 N71-21528

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**MEINTEL, A. J., JR.**  
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**MEISENHOLDER, G. W.**  
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MOSIER, B.

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**MINOTT, P. O.**  
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**MITCHELL, D. K.**  
Borescope with variable angle scope [NASA-CASE-MFS-15162] c14 N72-32452

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Attitude control for spacecraft Patent [NASA-CASE-XNP-00294] c21 N70-36938

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**MITCHELL, N. M.**  
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**MITCHELL, V. M.**  
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Collapsible loop antenna for space vehicle Patent [NASA-CASE-XMP-00437] c07 N70-40202

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## N

NAESETH, R. L.  
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 Ultraprecise calibrated light source  
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**HUSBAUM, W. J.**  
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OAKLEY, E. C.  
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ODELL, H. G.  
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Corrosion resistant beryllium Patent  
[NASA-CASE-LEN-10327] c17 N71-33408

ODONNELL, T. J.  
Spherically-shaped rocket motor Patent  
[NASA-CASE-XHQ-01897] c28 N70-35381

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Fast opening diaphragm Patent  
[NASA-CASE-XLA-03660] c15 N71-21060

Measurement of time differences between luminous  
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[NASA-CASE-XLA-01987] c23 N71-23976

OFFIK, W. G.  
Emergency escape system Patent  
[NASA-CASE-XKS-02342] c05 N71-11199

OGDEN, H. F.  
Aerodynamic measuring device Patent  
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Whole body measurement system  
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OHLSON, J. E.  
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[NASA-CASE-NPO-13140-1] c07 N73-27106

OKANE, J. B.  
Pressure suit tie-down mechanism Patent  
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OKEAN, H. C.  
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OKEEFE, W. J.  
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[NASA-CASE-ERC-10392] c21 N73-14692

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Integrated lift/drag controller for aircraft  
[NASA-CASE-ARC-10456-1] c02 N73-30938

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Hot wire liquid level detector for cryogenic  
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Electronic checkout system for space vehicles Patent  
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Purge device for thrust engines Patent  
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Variable frequency magnetic multivibrator Patent  
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PERLMUTTER, M.  
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[NASA-CASE-XMF-06515] c14 N71-23227

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Clamping assembly for inertial components Patent  
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Shock absorbing support and restraint means Patent  
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Two component bearing Patent  
[NASA-CASE-XLA-00013] c15 N71-29136

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Improved four phase logic systems  
[NASA-CASE-MSC-14240-1] c10 N73-21240  
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[NASA-CASE-MSC-14180-1] c05 N73-22045

PETERSEN, H. W.  
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[NASA-CASE-HQN-10756-1] c14 N72-25428

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## INVENTOR INDEX

POWER, J. L.

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POLLACK, I.  
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POOL, S. L.  
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POPE, J. H.  
Miniature ingestible telemeter devices to measure deep body temperature  
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POPICK, H.  
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PORADEK, J. C.  
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POTEATE, W. B.  
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[NASA-CASE-XNP-01057] c07 N71-15907

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[NASA-CASE-MFS-14322] c08 N71-18692

**REINHARDT, G.**  
Gas purged dry box glove Patent  
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Heat detection and compositions and devices  
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Heat detection and compositions and devices  
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Optically pumped resonance magnetometer for  
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**ROBERTSON, W. L.**  
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**ROBILLARD, G.**  
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**ROBINS, A. W.**  
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**ROBINSON, H.**  
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**ROBINSON, W. J.**  
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[NASA-CASE-NPO-10768] c06 N71-27254  
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**RODNER, W. H.**  
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**ROGALLO, F. M.**  
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**ROGALLO, V. L.**  
Propeller blade loading control Patent  
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Null-type vacuum microbalance Patent  
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**ROGERS, P. O.**  
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**ROLF, E.**  
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[NASA-CASE-MFS-20386] c21 N71-19212

**ROLIK, G. P.**  
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**ROLLER, B. F.**  
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[NASA-CASE-NUC-10107-1] c09 N72-21254

**ROLLINS, G. N.**  
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**RON, F. E.**  
Gaseous nuclear rocket Patent  
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**ROMAN, J. A.**  
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**SANDROCK, G. D.**  
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## INVENTOR INDEX

SCHOEN, A. H.

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SAUNDERS, A. E.  
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SCAPICCHIO, A. J.  
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SCHACH, M.  
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SCHACHT, W. F.  
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SCHACHTER, M. M.  
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SCHAEFER, D. H.  
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SCHAFFER, G. L.  
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Hot air balloon deceleration and recovery system  
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SCHORUM, S. W.  
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SCIACCA, T. P.  
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SCOW, J.  
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## INVENTOR INDEX

SHUBE, E. E.

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Heat activated cell with alkali anode and alkali salt electrolyte Patent  
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[NASA-CASE-MFS-14253] c33 N71-24858

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[NASA-CASE-XLE-00820] c14 N71-16014  
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SERAFINI, T. T.  
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SEYFFERT, M. B.  
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SHALTENS, R. K.  
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SHANKAR, M. K.  
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SHAPIRO, H.  
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SHELTON, J. P., JR.  
Monopulse tracking system Patent  
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SHELTON, E. D.  
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SHEPARD, C. E.  
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SHEPARD, L. F.  
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SHEPARD, S. K.  
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SHERWIN, E. J.  
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SHIMODA, K.  
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 Automatic acquisition system for phase-lock loop  
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## INVENTOR INDEX

TROST, R. F.

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**TIMOR, U.**  
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**TISCHLER, R. F.**  
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**TOLSON, B. A.**  
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**TONGIER, H., JR.**  
 Absolute focus lock for microscopes  
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 High impact pressure regulator Patent  
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**TOTH, L. R.**  
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 [NASA-CASE-HQN-10541-3] c23 N72-23695

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 Digital telemetry system Patent  
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 New polymers of perfluorobutadiene and method of  
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 [NASA-CASE-NPO-10447] c06 N70-11252  
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 [NASA-CASE-NPO-10863-2] c06 N72-25152

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 [NASA-CASE-MSC-12121-1] c15 N71-27147

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 [NASA-CASE-XGS-02554] c31 N71-21064

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**VICK, A. E.**  
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 [NASA-CASE-XLA-01907] c14 N71-23268  
**VOLKOFF, J. J.**  
 Electro-optical scanning apparatus Patent  
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 [NASA-CASE-NPO-11106] c14 N70-34697  
 Electro-optical scanning apparatus  
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 Sun tracker with rotatable plane-parallel plate and two photocells Patent  
 [NASA-CASE-XGS-01159] c21 N71-10678  
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 [NASA-CASE-XGS-04393] c21 N71-14159  
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 [NASA-CASE-ARC-10275-1] c05 N72-22092

**W**

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 An inverter ratio failure detector  
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 [NASA-CASE-XLA-00284] c15 N71-16075  
 Method of coating carbonaceous base to prevent oxidation destruction and coated base Patent  
 [NASA-CASE-XLA-00302] c15 N71-16077  
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 [NASA-CASE-XLA-01995] c18 N71-23047  
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 Differential temperature transducer Patent  
 [NASA-CASE-XAC-00812] c14 N71-15598  
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 Space environmental work simulator Patent  
 [NASA-CASE-XMF-07488] c11 N71-18773  
**WALL, W. A., JR.**  
 Apparatus for welding torch angle and seam tracking control Patent  
 [NASA-CASE-XMF-03287] c15 N71-15607  
 Automatic closed circuit television arc guidance control Patent  
 [NASA-CASE-MFS-13046] c07 N71-19433  
 Automatic welding speed controller Patent  
 [NASA-CASE-XMF-01730] c15 N71-23050  
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 [NASA-CASE-XMF-07069] c15 N71-23815  
 Internal flare angle gauge Patent  
 [NASA-CASE-XMF-04415] c14 N71-24693  
**WALLACE, E. D.**  
 Apparatus for tensile testing Patent  
 [NASA-CASE-XKS-06250] c14 N71-15600  
 Valve seat with resilient support member Patent  
 [NASA-CASE-XKS-02582] c15 N71-21234  
 Weld preparation machine Patent  
 [NASA-CASE-XKS-07953] c15 N71-26134  
**WALLINGFORD, W. M.**  
 Differential phase shift keyed communication system  
 [NASA-CASE-MSC-14065-1] c07 N73-10215  
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 [NASA-CASE-MSC-14066-1] c10 N73-10269  
**WALLIO, M. A.**  
 Electric-arc heater Patent  
 [NASA-CASE-XLA-00330] c33 N70-34540  
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 Specific wavelength colorimeter  
 [NASA-CASE-MSC-14081-1] c14 N73-18443  
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 Vibration damping system Patent  
 [NASA-CASE-XHS-01620] c23 N71-15673  
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 Apparatus for making a metal slurry product Patent  
 [NASA-CASE-XLE-00010] c15 N70-33382

**WALSH, T. H.**  
 Interferometric rotation sensor  
 [NASA-CASE-ARC-10278-1] c14 N73-25463

**WALTERS, R. E.**  
 Telespectrograph Patent  
 [NASA-CASE-XLA-03273] c14 N71-18699

**WALTON, T. S.**  
 Electronic checkout system for space vehicles  
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 [NASA-CASE-XKS-08012-2] c31 N71-15566

**WANG, G. Y.**  
 An asynchronous binary array divider Patent  
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 [NASA-CASE-ERC-10180] c08 N70-11132

**WANG, T. G.**  
 Material suspension within an acoustically  
 excited resonant chamber  
 [NASA-CASE-NPO-13263-1] c15 N73-31443

**WARD, D. R.**  
 Automatically deploying nozzle exit cone  
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 [NASA-CASE-XLE-01640] c31 N71-15637

**WARD, J. C., JR.**  
 Capacitor power pak Patent Application  
 [NASA-CASE-LAR-10367-1] c03 N70-26817

**WARD, J. F.**  
 Variable geometry rotor system  
 [NASA-CASE-LAR-10557] c02 N72-11018

**WARD, W. D.**  
 Vapor liquid separator Patent  
 [NASA-CASE-XMF-04042] c15 N71-23023

**WARRENTINE, D. K.**  
 Automatic battery charger Patent  
 [NASA-CASE-XNP-04758] c03 N71-24605

**WARNECK, P.**  
 Analytical photoionization mass spectrometer  
 with an argon gas filter between the light  
 source and monochrometer Patent  
 [NASA-CASE-LAR-10180-1] c06 N71-13461

**WARREN, A. P.**  
 Assembly for recovering a capsule Patent  
 [NASA-CASE-XMF-00641] c31 N70-36410  
 Space capsule ejection assembly Patent  
 [NASA-CASE-XMF-03169] c31 N71-15675  
 Method and apparatus for securing to a  
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 [NASA-CASE-MFS-11133] c31 N71-16222

**WATERS, W. J.**  
 Nickel-base alloy Patent  
 [NASA-CASE-XLE-00283] c17 N70-36616  
 Nickel-base alloy containing Mo-W-Al-Cr-  
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 [NASA-CASE-XLE-02082] c17 N71-16026  
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 [NASA-CASE-LEW-10874-1] c17 N72-22535  
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 [NASA-CASE-LEW-10805-3] c17 N72-28542  
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 [NASA-CASE-LEW-10805-1] c15 N73-13465

**WATSON, J. D.**  
 Tumbler system to provide random motion  
 [NASA-CASE-XGS-02437] c15 N69-21472

**WATSON, J. E.**  
 High temperature spark plug Patent  
 [NASA-CASE-XLE-00660] c28 N70-39925

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 Payload/burned-out motor case separation system  
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 [NASA-CASE-XLA-05369] c31 N71-15687

**WATSON, V. R.**  
 Electric arc apparatus Patent  
 [NASA-CASE-XAC-01677] c09 N71-20816

**WEAR, J. D.**  
 Rocket engine Patent  
 [NASA-CASE-XLE-00342] c28 N70-37980

**WEAVER, L. B.**  
 Multiple in-line docking capability for rotating  
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 [NASA-CASE-MFS-20855-1] c31 N72-25853

**WEBB, D. L.**  
 Video sync processor Patent  
 [NASA-CASE-KSC-10002] c10 N71-25865  
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 [NASA-CASE-KSC-10003] c10 N73-13235

**WEBB, J. A., JR.**  
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 [NASA-CASE-LEW-11581-1] c05 N73-18139

**WEBB, J. B.**  
 Delayed simultaneous release mechanism  
 [NASA-CASE-GSC-10814-1] c03 N73-20039

**WEBB, W. C.**  
 Telemetry processor  
 [NASA-CASE-GSC-11388-1] c07 N73-24187

**WEBER, R. J.**  
 Venting vapor apparatus Patent  
 [NASA-CASE-XLE-00288] c15 N70-34247  
 Supersonic combustion rocket  
 [NASA-CASE-LEW-11058-1] c28 N72-20769

**WEETON, J. W.**  
 Reinforced metallic composites Patent  
 [NASA-CASE-XLE-02428] c17 N70-33288  
 Method of making fiber reinforced metallic  
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 [NASA-CASE-XLE-00228] c17 N70-38490  
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 [NASA-CASE-XLE-03925] c18 N71-22894  
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 [NASA-CASE-XLA-00141] c09 N70-33312

**WEINBERG, A. J.**  
 Tungsten seal coat Patent  
 [NASA-CASE-XNP-03704] c15 N71-17695

**WEINGART, J. M.**  
 Stacked solar cell arrays  
 [NASA-CASE-NPO-11771] c03 N73-20040

**WEINSTEIN, M.**  
 Bonding thermoelectric elements to nonmagnetic  
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 [NASA-CASE-XGS-04554] c15 N69-39786  
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 [NASA-CASE-XGS-05718] c26 N71-16037

**WEISS, P. F.**  
 Acquisition and tracking system for optical radar  
 [NASA-CASE-MFS-20125] c16 N72-13437

**WEISS, S.**  
 Pretreatment method for anti-wettable materials  
 [NASA-CASE-XMS-03537] c15 N69-21471

**WEITZEL, D. F.**  
 Propellant tank pressurization system Patent  
 [NASA-CASE-XNP-00650] c27 N71-28929

**WEITZEL, D. H.**  
 Resilience testing device Patent  
 [NASA-CASE-XLA-08254] c14 N71-26161  
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 [NASA-CASE-MFS-20974] c14 N72-15430

**WELCH, W. A.**  
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 [NASA-CASE-MSC-12297] c14 N72-23457

**WELLING, C. E.**  
 Thermally activated foaming compositions Patent  
 [NASA-CASE-LAR-10373-1] c18 N71-26155

**WELLMAN, J. B.**  
 Gas flow control device  
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**WELLMAN, T. R.**  
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**WELLS, B. R.**  
 Apparatus for ejection of an instrument cover  
 [NASA-CASE-XMF-04132] c15 N69-27502

**WELLS, F. E.**  
 Positive displacement flowmeter Patent  
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WILLIAMS, J. R.

[NASA-CASE-MFS-14405] c15 N72-28495  
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 [NASA-CASE-NPO-10468] c23 N71-33229  
**WELLS, W. L.**  
 Electric-arc heater Patent  
 [NASA-CASE-XLA-00330] c33 N70-34540  
**WENDT, A. J.**  
 Rotating mandrel for assembly of inflatable devices Patent  
 [NASA-CASE-XLA-04143] c15 N71-17687  
**WENZEL, G. E.**  
 Amplifier drift tester  
 [NASA-CASE-XMS-05562-1] c09 N69-39986  
**WERNER, E. A.**  
 Method and apparatus for making curved reflectors Patent  
 [NASA-CASE-XLE-08917] c15 N71-15597  
 Apparatus for making curved reflectors Patent  
 [NASA-CASE-XLE-08917-2] c15 N71-24836  
**WESSELSKI, C. J.**  
 Energy absorbing structure Patent Application  
 [NASA-CASE-MS-C-12279-1] c15 N70-35679  
 Low onset rate energy absorber  
 [NASA-CASE-MS-C-12279] c15 N72-17450  
**WEST, R. L.**  
 Device for handling printed circuit cards Patent  
 [NASA-CASE-MFS-20453] c15 N71-29133  
**WEST, R. W., JR.**  
 Method and apparatus for making a heat insulating and ablative structure Patent  
 [NASA-CASE-XMS-C2009] c33 N71-20834  
**WESTBROOK, R. M.**  
 Electrode construction Patent  
 [NASA-CASE-ARC-10043-1] c05 N71-11193  
**WESTON, K. C.**  
 Heat shield Patent  
 [NASA-CASE-XMS-00486] c33 N70-33344  
**WESTPHAL, J. A.**  
 Method and apparatus for aligning a laser beam projector Patent  
 [NASA-CASE-NPO-11087] c23 N71-29125  
**WETHORE, J. W.**  
 Aircraft instrument Patent  
 [NASA-CASE-XLA-00487] c14 N70-40157  
**WETZLER, D. G.**  
 Thrust isolating mounting  
 [NASA-CASE-MFS-21680-1] c15 N73-20525  
**WEZNER, F. S.**  
 Collapsible reflector Patent  
 [NASA-CASE-XMS-03454] c09 N71-20658  
**WHEATLEY, D. G.**  
 Hermetic sealed vibration damper Patent  
 [NASA-CASE-MS-C-10959] c15 N71-26243  
**WHEELER, R. K.**  
 Method and apparatus for stable silicon dioxide layers on silicon grown in silicon nitride ambient Patent Application  
 [NASA-CASE-ERC-10073] c06 N70-12627  
**WHEELER, S.**  
 Wind tunnel microphone structure Patent  
 [NASA-CASE-XNP-00250] c11 N71-28779  
**WHEELER, S. B.**  
 Fluid containers and resealable septum therefor Patent  
 [NASA-CASE-NPO-10123] c15 N71-24835  
**WHIPPLE, D. W.**  
 Microcircuit negative cutter  
 [NASA-CASE-XLA-09843] c15 N72-27485  
**WHIPPLE, E. C., JR.**  
 Method and apparatus for determining satellite orientation utilizing spatial energy sources Patent  
 [NASA-CASE-XGS-00466] c21 N70-34297  
**WHISENANT, J. T.**  
 Inspection gage for boss Patent  
 [NASA-CASE-XMP-04966] c14 N71-17658  
**WHITACRE, H. E.**  
 Quick release hook tape Patent  
 [NASA-CASE-XMS-10660-1] c15 N71-25975  
 Scientific experiment flexible mount  
 [NASA-CASE-MS-C-12372-1] c31 N72-25842  
**WHITCOMB, B. T.**  
 Airfoil shape for flight at supersonic speeds  
 [NASA-CASE-LAR-10585-1] c01 N73-14981  
**WHITE, A. B.**  
 Scientific experiment flexible mount  
 [NASA-CASE-MS-C-12372-1] c31 N72-25842

**WHITE, E. C.**  
 Method of making pressurized panel Patent  
 [NASA-CASE-XLA-08916] c15 N71-29018  
 Lightweight, variable solidity knitted parachute fabric  
 [NASA-CASE-LAR-10776-1] c02 N72-21004  
 Pressurized panel  
 [NASA-CASE-XLA-08916-2] c14 N73-28487  
**WHITE, F. A.**  
 Coincidence apparatus for detecting particles  
 [NASA-CASE-XLA-07813] c14 N72-17328  
**WHITE, J. A.**  
 Magnetically centered liquid column float Patent  
 [NASA-CASE-XAC-00030] c14 N70-34820  
**WHITE, W. P.**  
 Dual resonant cavity absorption cell Patent  
 [NASA-CASE-LAR-10305] c14 N71-26137  
**WHITEHEAD, C. W.**  
 Apparatus for inserting and removing specimens from high temperature vacuum furnaces  
 [NASA-CASE-LAR-10841-1] c15 N73-12494  
**WHITFIELD, C. E.**  
 Selective plating of etched circuits without removing previous plating Patent  
 [NASA-CASE-XGS-03120] c15 N71-24047  
**WHITMORE, F. C.**  
 Continuous magnetic flux pump  
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 [NASA-CASE-XNP-01185] c26 N73-28710  
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 [NASA-CASE-XNP-01188] c15 N73-32361  
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 Dual stage check valve  
 [NASA-CASE-MS-C-13587-1] c15 N73-30459  
**WIBERG, R. E.**  
 Combustion products generating and metering device  
 [NASA-CASE-GSC-11095-1] c14 N72-10375  
**WIEBE, E. R.**  
 Automatic thermal switch Patent  
 [NASA-CASE-XNP-03796] c23 N71-15467  
 Helium refrigerator and method for decontaminating the refrigerator  
 [NASA-CASE-NPO-10634] c23 N72-25619  
**WIECH, R. E.**  
 Zeta potential flowmeter Patent  
 [NASA-CASE-XNP-06509] c14 N71-23226  
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 Temperature regulation circuit Patent  
 [NASA-CASE-XNP-02792] c14 N71-28958  
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 An adaptive voting computer system  
 [NASA-CASE-MS-C-13932-1] c08 N72-21206  
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 Velocity package Patent  
 [NASA-CASE-XLA-01339] c31 N71-15692  
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 Apparatus for microbiological sampling  
 [NASA-CASE-LAR-11069-1] c04 N73-16061  
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 [NASA-CASE-LAR-11074-1] c05 N73-16096  
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 Attitude control and damping system for spacecraft Patent  
 [NASA-CASE-XLA-02551] c21 N71-21708  
**WILLIAMS, D. D.**  
 Apparatus for changing the orientation and velocity of a spinning body traversing a path Patent  
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 [NASA-CASE-LAR-10765-1] c32 N73-20740  
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 Holographic thin film analyzer  
 [NASA-CASE-MFS-20823-1] c16 N73-30476

**WILLIAMS, H. D.**  
 Measurement of time differences between luminous events Patent  
 [NASA-CASE-XLA-01987] c23 N71-23976

**WILLIAMS, S. B.**  
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 [NASA-CASE-XGS-04227] c15 N71-21744

**WILLIAMS, W. F.**  
 System for interference signal nulling by polarization adjustment  
 [NASA-CASE-NPO-13140-1] c07 N73-27106

**WILLIS, A. B.**  
 Static inverters which sum a plurality of waves Patent  
 [NASA-CASE-XMF-00663] c08 N71-18752

**WILLNER, K.**  
 Inverter oscillator with voltage feedback  
 [NASA-CASE-NPO-10760] c09 N72-25254

**WILNER, B. H.**  
 Electrolytically regenerative hydrogen-oxygen fuel cell Patent  
 [NASA-CASE-XLE-04526] c03 N71-11052

**WILSON, M. L.**  
 Nondestructive spot test method for titanium and titanium alloys  
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 [NASA-CASE-LAR-10953-1] c17 N73-27446

**WILSON, M. H.**  
 Optical system for space simulator Patent  
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**WILSON, M. H., JR.**  
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 [NASA-CASE-XNP-00459] c11 N70-38675

**WILSON, R. E.**  
 Automatic pump Patent  
 [NASA-CASE-XNP-04731] c15 N71-24042

**WILSON, T. G.**  
 Regulated dc to dc converter for voltage step-up or step-down with input-output isolation  
 [NASA-CASE-HQN-10792-1] c09 N72-27230

**WILSON, W. A.**  
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 [NASA-CASE-HFS-20586] c15 N71-17686

**WILSON, W. O.**  
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**WIMBER, R. T.**  
 Silicide coatings for refractory metals Patent  
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**WINBLADE, E. L.**  
 Energy management system for glider type vehicle Patent  
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**WINKLER, C. E.**  
 Static inverters which sum a plurality of waves Patent  
 [NASA-CASE-XMF-00663] c08 N71-18752

**WINKLER, T.**  
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 [NASA-CASE-XGS-00823] c10 N71-15910

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 Ellipsograph for pantograph Patent  
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**WISE, R. C.**  
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 [NASA-CASE-MSC-12609-1] c05 N73-32012

**WITTMANN, A. E.**  
 Method of coating circuit paths on printed circuit boards with solder Patent  
 [NASA-CASE-XMF-01599] c09 N71-20705

**WITTROCK, E. P.**  
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**WITZKE, W. R.**  
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**WOBIG, O. A.**  
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 [NASA-CASE-XMS-04292] c15 N71-22722

**WOJTASINSKI, R. J.**  
 Electric field measuring and display system  
 [NASA-CASE-KSC-10731-1] c14 N73-10461  
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 [NASA-CASE-KSC-10729-1] c09 N73-32110  
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 [NASA-CASE-KSC-10728-1] c14 N73-32319

**WOLF, F. T.**  
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 [NASA-CASE-WLP-10002] c15 N72-17451

**WOLFF, J. E.**  
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 [NASA-CASE-XGS-01230] c08 N71-19544

**WOLLER, J. A.**  
 Evacuation port seal Patent  
 [NASA-CASE-XMF-03290] c15 N71-23256

**WOLTHUTS, E. A.**  
 Contourograph system for monitoring electrocardiograms  
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**WONG, R. Y.**  
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 [NASA-CASE-NPO-10343] c07 N71-27341

**WONG, W. J.**  
 Phase detection system for ac power lines  
 [NASA-CASE-MSC-17832-1] c10 N72-33232

**WOO, K. E.**  
 High impact antenna Patent  
 [NASA-CASE-NPO-10231] c07 N71-26101  
 Multi-purpose antenna employing dish reflector with plural coaxial horn feeds  
 [NASA-CASE-NPO-11264] c07 N72-25174

**WOO, R. T.**  
 Low loss dichroic plate  
 [NASA-CASE-NPO-13171-1] c07 N73-12150

**WOOD, A. D.**  
 Transient heat transfer gauge Patent  
 [NASA-CASE-XNP-09802] c33 N71-15641

**WOOD, G. H., JR.**  
 Gas analyzer for bi-gaseous mixtures Patent  
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**WOOD, G. P.**  
 Plasma accelerator Patent  
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 Broadband video process with very high input impedance  
 [NASA-CASE-NPO-10199] c09 N72-17156

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**WOOD, R. C.**  
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**WOODBURY, R. C.**  
 Noise limiter Patent  
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## INVENTOR INDEX

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WOODS, J. M.  
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[NASA-CASE-XMS-01315] c09 N70-41675

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WUENSCHER, H. F.  
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[NASA-CASE-NPO-10821] c03 N71-19545

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[NASA-CASE-NPO-11190] c03 N71-34044

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Ac power amplifier Patent Application  
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BELLCOMM, INC., WASHINGTON, D.C.  
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BENDIX CORP., ANN ARBOR, MICH.  
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BENDIX CORP., DAVENPORT, IOWA.  
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BENDIX CORP., DETROIT, MICH.  
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BOEING CO., HUNTSVILLE, ALA.  
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BOEING CO., SEATTLE, WASH.  
Method of inhibiting stress corrosion cracks in titanium alloys Patent  
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BROWN AND ROOT, INC., HOUSTON, TEX.  
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BROWN ENGINEERING CO., INC., HUNTSVILLE, ALA.  
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Optical system for space simulator Patent Application  
[NASA-CASE-NPO-11096] c11 N70-25959

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CALIFORNIA UNIV., BERKELEY.  
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CALIFORNIA UNIV., LOS ANGELES.  
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**COLLINS RADIO CO., CEDAR RAPIDS, IOWA.**  
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 [NASA-CASE-GSC-10667-1] c10 N71-33129  
**COLLINS RADIO CO., DALLAS, TEX.**  
 Signal path series step biased multidevice high  
 efficiency amplifier Patent  
 [NASA-CASE-GSC-10668-1] c07 N71-28430  
 Heat conductive resiliently compressible  
 structure for space electronics package  
 modules Patent  
 [NASA-CASE-MSC-12389] c33 N71-29052  
 Infinite range electronics gain control circuit  
 [NASA-CASE-GSC-10786-1] c10 N72-28241  
**COMPREHENSIVE DESIGNERS, INC., SHERMAN OAKS, CALIF.**  
 Vehicle for use in planetary exploration  
 [NASA-CASE-NPO-11366] c11 N73-26238  
**COMPUTER CONTROL CO., INC., FRAMINGHAM, MASS.**  
 Test fixture for pellet-like electrical elements  
 [NASA-CASE-XNP-06032] c09 N69-21926  
 Support structure for irradiated elements Patent  
 [NASA-CASE-XNP-06031] c15 N71-15606  
 Counter Patent  
 [NASA-CASE-XNP-06234] c10 N71-27137  
**CONDUCTRON CORP., ANN ARBOR, MICH.**  
 Method of fabricating an object with a thin wall  
 having a precisely shaped slit  
 [NASA-CASE-LAR-10409-1] c15 N73-20526  
**CONRAC CORP., PASADENA, CALIF.**  
 Penetrating radiation system for detecting the  
 amount of liquid in a tank Patent  
 [NASA-CASE-MSC-12280] c27 N71-16348  
**CORNELL UNIV., ITHACA, N.Y.**  
 Flux sensing device using a tubular core with  
 toroidal gating coil and solenoidal output  
 coil wound thereon Patent  
 [NASA-CASE-XGS-01881] c09 N70-40123  
**CRANE CO., BURBANK, CALIF.**  
 Hydraulic transformer Patent  
 [NASA-CASE-MFS-20830] c15 N71-30028  
**CURTISS-WRIGHT CORP., WOOD-RIDGE, N.J.**  
 Gas turbine combustion apparatus Patent  
 [NASA-CASE-XLE-103477-1] c28 N71-20330

## D

**DENVER UNIV., COLO.**  
 Metal shearing energy absorber  
 [NASA-CASE-HQN-10638-1] c15 N73-30460  
**DOBNE AND MARGOLIN, INC., BOHEMIA, N.Y.**  
 Nose cone mounted heat resistant antenna Patent  
 [NASA-CASE-XMS-04312] c07 N71-22984  
**DOUGLAS AIRCRAFT CO., INC., SANTA MONICA, CALIF.**  
 Recoverable single stage spacecraft booster Patent  
 [NASA-CASE-XMF-01973] c31 N70-41588  
 Switching circuit employing regeneratively  
 connected complementary transistors Patent  
 [NASA-CASE-XNP-02654] c10 N70-42032  
 Split nut separation system Patent  
 [NASA-CASE-XNP-06914] c15 N71-21489  
 Artificial gravity spin deployment system Patent  
 [NASA-CASE-XNP-02595] c31 N71-21881  
 Portable superclean air column device Patent  
 [NASA-CASE-XMF-03212] c15 N71-22721  
 Energy absorption device Patent  
 [NASA-CASE-XNP-01848] c15 N71-28959  
 Collapsible pistons  
 [NASA-CASE-MSC-13789-1] c11 N73-32152  
**DUKE UNIV., DURHAM, N.C.**  
 Regulated dc to dc converter for voltage step-up  
 or step-down with input-output isolation  
 [NASA-CASE-HQN-10792-1] c09 N72-27230

## E

**EITEL-MCCULLOUGH, INC., SAN CARLOS, CALIF.**  
 Method of forming ceramic to metal seal Patent  
 [NASA-CASE-XNP-01263-2] c15 N71-26312  
**ELECTRAC, INC., ANAHEIM, CALIF.**  
 Optimum predetection diversity receiving system  
 Patent  
 [NASA-CASE-XGS-00740] c07 N71-23098  
**ELECTRIC STORAGE BATTERY CO., RALEIGH, N.C.**  
 Electric battery and method for operating same  
 Patent  
 [NASA-CASE-XGS-01674] c03 N71-29129

**ELECTRIC STORAGE BATTERY CO., YARDLEY, PA.**  
 Electrode and method of making same Patent  
 Application  
 [NASA-CASE-NPO-11157] c15 N70-22275  
**ELECTRO-OPTICAL SYSTEMS, INC., PASADENA, CALIF.**  
 Focusing system for an ion source having  
 apertured electrodes Patent  
 [NASA-CASE-XNP-03332] c09 N71-10618  
 Electrolytically regenerative hydrogen-oxygen  
 fuel cell Patent  
 [NASA-CASE-XLE-04526] c03 N71-11052  
 Method of producing refractory bodies having  
 controlled porosity Patent  
 [NASA-CASE-LEW-10393-1] c17 N71-15468  
 Soil particles separator, collector and viewer  
 Patent  
 [NASA-CASE-XNP-09770] c15 N71-20440  
 Particle detection apparatus including a  
 ballistic pendulum Patent  
 [NASA-CASE-XMS-04201] c14 N71-22990  
 Polarity sensitive circuit Patent  
 [NASA-CASE-XNP-00952] c10 N71-23271  
 Ion engine casing construction and method of  
 making same Patent  
 [NASA-CASE-XNP-06942] c28 N71-23293  
 Material handling device Patent  
 [NASA-CASE-XNP-09770-3] c11 N71-27036  
 Screen particle separator  
 [NASA-CASE-XNP-09770-2] c15 N72-22483  
**ELECTRONIC IMAGE SYSTEMS CORP., CAMBRIDGE, MASS.**  
 Drying apparatus for photographic sheet material  
 [NASA-CASE-GSC-11074-1] c14 N73-28489  
**ESB, INC., YARDLEY, PA.**  
 Electric storage battery  
 [NASA-CASE-NPO-11021] c03 N72-20032  
 Improved storage battery  
 [NASA-CASE-NPO-10720-1] c03 N72-22048  
**EWEN KNIGHT CORP., EAST NATICK, MASS.**  
 Method and means for providing an absolute power  
 measurement capability Patent  
 [NASA-CASE-ERC-11020] c14 N71-26774

## F

**FAIRCHILD HILLER CORP., GERMANTOWN, MD.**  
 Two axis fluxgate magnetometer Patent  
 [NASA-CASE-GSC-10441-1] c14 N71-27325  
 Space simulation and radiative property testing  
 system and method Patent  
 [NASA-CASE-MFS-20096] c14 N71-30026  
 Thermal control system for a spacecraft modular  
 housing  
 [NASA-CASE-GSC-11018-1] c31 N73-30829  
**FEDERAL-MOGUL CORP., LOS ALAMITOS, CALIF.**  
 Hydraulic casting of liquid polymers Patent  
 [NASA-CASE-XNP-07659] c06 N71-22975  
**FMC CORP., NEW YORK.**  
 Decomposition unit Patent  
 [NASA-CASE-XMS-00583] c28 N70-38504  
**FORD MOTOR CO., DEARBORN, MICH.**  
 Omnidirectional acceleration device Patent  
 [NASA-CASE-HQN-10780] c14 N71-30265

## G

**GARRETT CORP., LOS ANGELES, CALIF.**  
 Relief valve  
 [NASA-CASE-XMS-05894-1] c15 N69-21924  
 Portable environmental control system Patent  
 [NASA-CASE-XMS-09632-1] c05 N71-11203  
 Dual latching solenoid valve Patent  
 [NASA-CASE-XMS-05890] c09 N71-23191  
 Water management system and an electrolytic cell  
 therefor Patent  
 [NASA-CASE-MSC-10960-1] c03 N71-24718  
 Low cycle fatigue testing machine  
 [NASA-CASE-LAR-10270-1] c32 N72-25877  
 Process for separation of dissolved hydrogen  
 from water by use of palladium and process for  
 coating palladium with palladium black  
 [NASA-CASE-MSC-13335-1] c06 N72-31140  
**GCA CORP., BEDFORD, MASS.**  
 Analytical photoionization mass spectrometer  
 with an argon gas filter between the light  
 source and monochromator Patent  
 [NASA-CASE-LAR-10180-1] c06 N71-13461  
**GENERAL DYNAMICS CORP., SAN DIEGO, CALIF.**  
 Light radiation direction indicator with a  
 baffle of two parallel grids

[NASA-CASE-XNP-03930] c14 N69-24331  
Method and apparatus for attaching physiological monitoring electrodes Patent

[NASA-CASE-XFR-07658-1] c05 N71-26293  
Catalyst cartridge for carbon dioxide reduction unit

[NASA-CASE-LAR-10551-1] c06 N72-21099  
Driving lamps by induction

[NASA-CASE-MFS-21214-1] c09 N73-30181  
GENERAL DYNAMICS/ASTRONAUTICS, SAN DIEGO, CALIF.  
Determination of spot weld quality Patent

[NASA-CASE-XNP-C2588] c15 N71-18613  
Pressure transducer calibrator Patent

[NASA-CASE-XNP-01660] c14 N71-23036  
Plating nickel on aluminum castings Patent

[NASA-CASE-XNP-04148] c17 N71-24830  
GENERAL DYNAMICS/CONVAIR, SAN DIEGO, CALIF.  
Signal generator

[NASA-CASE-XNP-05612] c09 N69-21468  
Separation nut Patent

[NASA-CASE-XGS-01971] c15 N71-15922  
Zero gravity separator Patent

[NASA-CASE-XLE-00586] c15 N71-15968  
GENERAL ELECTRIC CO., PHILADELPHIA, PA.  
Catalyst for growth of boron carbide single crystal whiskers

[NASA-CASE-XHQ-03903] c15 N69-21922  
Didymium hydrate additive to nickel hydroxide electrodes Patent

[NASA-CASE-XGS-03505] c03 N71-10608  
Bismuth-lead coatings for gas bearings used in atmospheric environments and vacuum chambers Patent

[NASA-CASE-XGS-02011] c15 N71-20739  
Multiparameter vision tester apparatus

[NASA-CASE-MSC-13601-1] c05 N72-11088  
Automatic control of liquid cooling garment by cutaneous and external auditory meatus temperatures

[NASA-CASE-MSC-13917-1] c05 N72-15098  
Method for measuring cutaneous sensory perception

[NASA-CASE-MSC-13609-1] c05 N72-25122  
Conducting flow electrophoresis in the substantial absence of gravity

[NASA-CASE-MFS-21394-1] c12 N72-27310  
Electrophoretic sample insertion

[NASA-CASE-MFS-21395-1] c14 N72-27425  
Reaction tester

[NASA-CASE-MSC-13604-1] c05 N73-13114  
Air conditioned suit

[NASA-CASE-LAR-10076-1] c05 N73-20137  
An inverter ratio failure detector

[NASA-CASE-NPO-13160-1] c14 N73-23525  
Compton scatter attenuation gamma ray spectrometer

[NASA-CASE-MFS-21441-1] c14 N73-30392  
GENERAL ELECTRIC CO., PLEASANTON, CALIF.  
Method of making a cermet Patent

[NASA-CASE-LEW-10219-1] c18 N71-28729  
GENERAL ELECTRIC CO., SCHEECTADY, N.Y.  
Superconductive accelerometer Patent

[NASA-CASE-XMP-01099] c14 N71-15969  
GENERAL MOTORS CORP., DETROIT, MICH.  
Hermetic sealed vibration damper Patent

[NASA-CASE-MSC-10959] c15 N71-26243  
GENERAL MOTORS CORP., MILWAUKEE, WIS.  
Adjustable tension wire guide Patent

[NASA-CASE-XMS-02383] c15 N71-15918  
GENERAL MOTORS CORP., SANTA BARBARA, CALIF.  
Resilient wheel Patent

[NASA-CASE-MFS-13929] c15 N71-27091  
GENERAL PRECISION SYSTEMS, INC., LITTLE FALLS, N.J.  
Fluidic-thermochromic display device Patent

[NASA-CASE-ERC-10031] c12 N71-18603  
GENERAL PRECISION, INC., LITTLE FALLS, N.J.  
Reversible current control apparatus Patent

[NASA-CASE-XLA-09371] c10 N71-18724  
GENERAL PRECISION, INC., SUNNYVALE, CALIF.  
Broadband video process with very high input impedance

[NASA-CASE-NPO-10199] c09 N72-17156  
GEOPHYSICS CORP. OF AMERICA, BEDFORD, MASS.  
Inflation system for balloon type satellites Patent

[NASA-CASE-XGS-03351] c31 N71-16081  
GEOPHYSICS CORP. OF AMERICA, BOSTON, MASS.  
Ionospheric battery Patent

[NASA-CASE-XGS-01593] c03 N70-35408  
GEORGE WASHINGTON UNIV., WASHINGTON, D.C.  
Arterial pulse wave pressure transducer

[NASA-CASE-GSC-11531-1] c05 N73-11097  
Bacteria detection instrument and method

[NASA-CASE-GSC-11533-1] c14 N73-13435  
GLOBE-UNION, INC., MILWAUKEE, WIS.  
Method of coating solar cell with borosilicate glass and resultant product

[NASA-CASE-GSC-11514-1] c03 N72-24037  
GOODYEAR AEROSPACE CORP., AKRON, OHIO.  
Foldable solar concentrator Patent

[NASA-CASE-XLA-04622] c03 N70-41580  
Method of making a filament-wound container Patent

[NASA-CASE-XLE-03803-2] c15 N71-17651  
Filament wound container Patent

[NASA-CASE-XLE-03803] c15 N71-23816  
Panelized high performance multilayer insulation Patent

[NASA-CASE-MFS-14023] c33 N71-25351  
Thermally activated foaming compositions Patent

[NASA-CASE-LAR-10373-1] c18 N71-26155  
Compression test assembly

[NASA-CASE-LAR-10440-1] c14 N73-32323  
GRACE (W. R.) AND CO., CLARKSVILLE, MD.  
Metal containing polymers from cyclic tetrameric phenylphosphonitrimides Patent

[NASA-CASE-HQN-10364] c06 N71-27363  
GRUMMAN AIRCRAFT ENGINEERING CORP., BETHPAGE, N.Y.  
Sealed cabinetry Patent

[NASA-CASE-MSC-12168-1] c09 N71-18600  
Out of tolerance warning alarm system for plurality of monitored circuits Patent

[NASA-CASE-XMS-10984-1] c10 N71-19417  
GULF GENERAL ATOMIC, SAN DIEGO, CALIF.  
Tungsten seal coat Patent

[NASA-CASE-XNP-03704] c15 N71-17695  
Waveform simulator Patent

[NASA-CASE-NPO-10251] c10 N71-27365  
GULTON INDUSTRIES, INC., ALBUQUERQUE, N.MEX.  
Analog-to-digital converter

[NASA-CASE-MSC-13110-1] c08 N72-22163

## H

## HAMILTON STANDARD, WINDSOR LOCKS, CONN.

Venting device for pressurized space suit helmet Patent

[NASA-CASE-XMS-09652-1] c05 N71-26333  
Condensate removal device for heat exchanger

[NASA-CASE-MSC-14143-1] c33 N73-32823  
HAYES INTERNATIONAL CORP., BIRMINGHAM, ALA.  
Space craft soft landing system Patent

[NASA-CASE-XMP-02108] c31 N70-36845  
Device for preventing high voltage arcing in electron beam welding Patent

[NASA-CASE-XMP-08522] c15 N71-19486  
HAYES INTERNATIONAL CORP., HUNTSVILLE, ALA.  
Method and apparatus for cryogenic wire stripping Patent

[NASA-CASE-MFS-10340] c15 N71-17628  
Self-balancing strain gage transducer Patent

[NASA-CASE-MFS-12827] c14 N71-17656  
Automatic closed circuit television arc guidance control Patent

[NASA-CASE-MFS-13046] c07 N71-19433  
HAZLETON LABS., FALLS CHURCH, VA.  
Use of the enzyme hexokinase for the reduction of inherent light levels

[NASA-CASE-XGS-05533] c04 N69-27487  
Light detection instrument Patent

[NASA-CASE-XGS-05534] c23 N71-16355  
Lyophilized reaction mixtures Patent

[NASA-CASE-XGS-05532] c06 N71-17705  
Firefly pump-metering system

[NASA-CASE-GSC-10218-1] c15 N72-21465  
HOFFMAN ELECTRONICS CORP., EL MONTE, CALIF.  
Method for producing a solar cell having an integral protective covering

[NASA-CASE-XGS-04531] c03 N69-24267  
HONEYWELL, INC., HOPKINS, MINN.  
Frequency control network for a current feedback oscillator Patent

[NASA-CASE-GSC-10041-1] c10 N71-19418  
HONEYWELL, INC., LEXINGTON, MASS.  
Optical instruments

[NASA-CASE-MSC-14096-1] c14 N73-22388  
HONEYWELL, INC., MINNEAPOLIS, MINN.  
Bus voltage compensation circuit for controlling direct current motor

[NASA-CASE-XMS-04215-1] c09 N69-39987

- Apparatus for overcurrent protection of a push-pull amplifier Patent  
[NASA-CASE-MSC-12033-1] c09 N71-13531
- Static inverter Patent  
[NASA-CASE-XGS-05289] c09 N71-19470
- High impedance measuring apparatus Patent  
[NASA-CASE-XMS-08589-1] c09 N71-20569
- Clamping assembly for inertial components Patent  
[NASA-CASE-XMS-02184] c15 N71-20813
- Piezoelectric pump Patent  
[NASA-CASE-XNP-05429] c26 N71-21824
- Controllers Patent  
[NASA-CASE-XMS-07487] c15 N71-23255
- Convoluting device for forming convolutions and the like Patent  
[NASA-CASE-XNP-05297] c15 N71-23811
- Failure sensing and protection circuit for converter networks Patent  
[NASA-CASE-GSC-10114-1] c10 N71-27366
- Voice operated controller Patent  
[NASA-CASE-XLA-04063] c31 N71-33160
- Load current sensor for a series pulse width modulated power supply  
[NASA-CASE-GSC-10656-1] c09 N72-25249
- Radiant source tracker independent of nonconstant irradiance  
[NASA-CASE-NPO-11686] c14 N73-25462
- HUGHES AIRCRAFT CO., CANOGA PARK, CALIF.**  
Refractory porcelain enamel passive thermal control coating for high temperature alloys  
[NASA-CASE-MFS-22324-1] c18 N73-21471
- HUGHES AIRCRAFT CO., CULVER CITY, CALIF.**  
Varactor high level mixer  
[NASA-CASE-XGS-02171] c09 N69-24324
- Thermally operated valve Patent  
[NASA-CASE-XLE-00815] c15 N70-35407
- Thrust dynamometer Patent  
[NASA-CASE-XLE-00702] c14 N70-40203
- Solid state chemical source for ammonia beam maser Patent  
[NASA-CASE-XGS-01504] c16 N70-41578
- Canopus detector including automotive gain control of photomultiplier tube Patent  
[NASA-CASE-XNP-C3914] c21 N71-10771
- Horn feed having overlapping apertures Patent  
[NASA-CASE-GSC-10452] c07 N71-12396
- Deflective rod switch with elastic support and sealing means Patent  
[NASA-CASE-XNP-09808] c09 N71-12518
- Guidance and maneuver analyzer Patent  
[NASA-CASE-XNP-09572] c14 N71-15621
- Method of making screen by casting Patent  
[NASA-CASE-XLE-00953] c15 N71-15966
- Fluid flow control valve Patent  
[NASA-CASE-XLE-00703] c15 N71-15967
- Low noise single aperture multimode monopulse antenna feed system Patent  
[NASA-CASE-XNP-01735] c07 N71-22750
- Multilayer porous ionizer Patent  
[NASA-CASE-XNP-04338] c17 N71-23046
- Construction and method of arranging a plurality of ion engines to form a cluster Patent  
[NASA-CASE-XNP-C2923] c28 N71-23081
- Method for fiberizing ceramic materials Patent  
[NASA-CASE-XNP-00597] c18 N71-23088
- Inorganic thermal control pigment Patent  
[NASA-CASE-XNP-02139] c18 N71-24184
- Triaxial antenna Patent  
[NASA-CASE-XGS-02290] c07 N71-28809
- Variable frequency oscillator with temperature compensation Patent  
[NASA-CASE-XNP-03916] c09 N71-28810
- High efficiency ionizer assembly Patent  
[NASA-CASE-XNP-01954] c28 N71-28850
- Apparatus for changing the orientation and velocity of a spinning body traversing a path Patent  
[NASA-CASE-HQN-00936] c31 N71-29050
- Fabrication of controlled-porosity metals Patent  
[NASA-CASE-XNP-04339] c17 N71-29137
- Ion thruster  
[NASA-CASE-LEW-10770-1] c28 N72-22770
- Method and apparatus for optically monitoring the angular position of a rotating mirror  
[NASA-CASE-GSC-11353-1] c23 N72-27736
- HUGHES AIRCRAFT CO., LOS ANGELES, CALIF.**  
Power control circuit  
[NASA-CASE-XNP-02713] c10 N69-39888
- Thermal switch Patent  
[NASA-CASE-XNP-00463] c33 N70-36847
- Double optic system for ion engine Patent  
[NASA-CASE-XNP-02839] c28 N70-41922
- Sample collecting impact bit Patent  
[NASA-CASE-XNP-01412] c15 N70-42034
- Bootstrap unloader Patent  
[NASA-CASE-XNP-09768] c09 N71-12516
- Difference circuit Patent  
[NASA-CASE-XNP-08274] c10 N71-13537
- Gas regulator Patent  
[NASA-CASE-NPO-10298] c12 N71-17661
- A dc-coupled noninverting one-shot Patent  
[NASA-CASE-XNP-09450] c10 N71-18723
- Phase demodulation system with two phase locked loops Patent  
[NASA-CASE-XNP-00777] c10 N71-19469
- High voltage transistor circuit Patent  
[NASA-CASE-XNP-06937] c09 N71-19516
- Drift compensation circuit for analog to digital converter Patent  
[NASA-CASE-XNP-04780] c08 N71-19687
- System for monitoring the presence of neutrals in a stream of ions Patent  
[NASA-CASE-XNP-02592] c24 N71-20518
- Broadband frequency discriminator Patent  
[NASA-CASE-NPO-10096] c07 N71-24583
- Flexible, repairable, portable material for electrical connectors Patent  
[NASA-CASE-XGS-05180] c18 N71-25881
- Phase multiplying electronic scanning system Patent  
[NASA-CASE-NPO-10302] c10 N71-26142
- Narrow bandwidth video Patent  
[NASA-CASE-XMS-06740-1] c07 N71-26579
- Solar panel fabrication Patent  
[NASA-CASE-XNP-03413] c03 N71-26726
- Method for removing oxygen impurities from cesium Patent  
[NASA-CASE-XNP-04262-2] c17 N71-26773
- Improved high-voltage isolator for liquid metal feed lines  
[NASA-CASE-NPO-11075] c09 N71-34208
- Virtual wall slot circularly polarized planar array antenna  
[NASA-CASE-NPO-10301] c07 N72-11148
- Conical reflector antenna  
[NASA-CASE-NPO-10303] c07 N72-22127
- Injector for use in high voltage isolators for liquid feed lines  
[NASA-CASE-NPO-11377] c15 N73-27406
- Thiophenyl ether disiloxanes and trisiloxanes useful as lubricant fluids  
[NASA-CASE-MFS-22411-1] c15 N73-28532
- HUGHES RESEARCH LABS., MALIBU, CALIF.**  
Thrust dynamometer Patent  
[NASA-CASE-XLE-05260] c14 N71-20429
- IIT RESEARCH INST., CHICAGO, ILL.**  
Spectral method for monitoring atmospheric contamination of inert-gas welding shields Patent  
[NASA-CASE-XMF-02039] c15 N71-15871
- Lightweight refractory insulation and method of preparing the same Patent  
[NASA-CASE-XMF-05279] c18 N71-16124
- Stabilized zinc oxide coating compositions Patent  
[NASA-CASE-XMF-07770-2] c18 N71-26772
- Synthesis of zinc titanate pigment and coatings containing the same  
[NASA-CASE-MFS-13532] c18 N72-17532
- Junction range finder  
[NASA-CASE-KSC-10108] c14 N73-25461
- INCA ENGINEERING CORP., SAN GABRIEL, CALIF.**  
An apparatus for establishing flow of fluid mass having a known velocity  
[NASA-CASE-MFS-21424-1] c12 N73-16248
- INSTITUTE FOR RESEARCH, HOUSTON, TEX.**  
Method of making a perspiration resistant biopotential electrode  
[NASA-CASE-MSC-90153-2] c05 N72-25120
- INSTITUTE OF RESEARCH AND INSTRUMENTATION, HOUSTON, TEX.**  
Pressed disc type sensing electrodes with ion-screening means Patent  
[NASA-CASE-XMS-04212-1] c05 N71-12346

**INTERNATIONAL BUSINESS MACHINES CORP., NEW YORK.**  
 Electrical connector pin with wiping action  
 [NASA-CASE-XNP-04238] c09 N69-39734  
 Tool attachment for spreading loose elements  
 away from work Patent  
 [NASA-CASE-XNP-02107] c15 N71-10809  
 Redundant memory organization Patent  
 [NASA-CASE-GSC-10564] c10 N71-29135

**INTERNATIONAL HARVESTER CO., SAN DIEGO, CALIF.**  
 Silicide coatings for refractory metals Patent  
 [NASA-CASE-XLE-10910] c18 N71-29040

**INTERNATIONAL LATEX CORP., DOVER, DEL.**  
 Space suit  
 [NASA-CASE-MSC-12609-1] c05 N73-32012

**ITT CORP., NUTLEY, N.J.**  
 Time division radio relay synchronizing system  
 using different sync code words for in sync  
 and out of sync conditions Patent  
 [NASA-CASE-GSC-10373-1] c07 N71-19773  
 Tracking receiver Patent  
 [NASA-CASE-XGS-08679] c10 N71-21473  
 Satellite interlace synchronization system  
 [NASA-CASE-GSC-10390-1] c07 N72-11149

**J**

**JET PROPULSION LAB., CALIF. INST. OF TECH., PASADENA.**  
 Pressure variable capacitor  
 [NASA-CASE-XNP-09752] c14 N69-21541  
 Rock drill for recovering samples  
 [NASA-CASE-XNP-07478] c14 N69-21923  
 Data compression system  
 [NASA-CASE-XNP-09785] c08 N69-21928  
 Magneto hydrodynamic induction machine  
 [NASA-CASE-XNP-07481] c25 N69-21929  
 Electromechanical actuator  
 [NASA-CASE-XNP-05975] c15 N69-23185  
 Refrigeration apparatus  
 [NASA-CASE-NPO-10309] c15 N69-23190  
 Direct radiation cooling of the collector of  
 linear beam tubes  
 [NASA-CASE-XNP-09227] c15 N69-24319  
 Excitation and detection circuitry for a flux  
 responsive magnetic head  
 [NASA-CASE-XNP-04183] c09 N69-24329  
 Telemetry word forming unit  
 [NASA-CASE-XNP-09225] c09 N69-24333  
 Solid state switch  
 [NASA-CASE-XNP-09228] c09 N69-27500  
 Belleville spring assembly with elastic guides  
 [NASA-CASE-XNP-09452] c15 N69-27504  
 Trifunctional alcohol  
 [NASA-CASE-NPO-10714] c06 N69-31244  
 New sterilizable propellant oxidizer in  
 dipropellant composition  
 [NASA-CASE-NPO-10687] c27 N69-33347  
 Plurality of photosensitive cells on a  
 pyramidal base for planetary trackers  
 [NASA-CASE-XNP-04180] c07 N69-39736  
 Coating process  
 [NASA-CASE-XNP-06508] c18 N69-39895  
 Bimetallic power controlled actuator  
 [NASA-CASE-XNP-09776] c09 N69-39929  
 Piping arrangement through a double chamber  
 structure  
 [NASA-CASE-XNP-08882] c15 N69-39935  
 Micropacked column for a chromatographic system  
 [NASA-CASE-XNP-04816] c06 N69-39936  
 Temperature sensitive capacitor device  
 [NASA-CASE-XNP-09750] c14 N69-39937  
 Thin-film gauge Patent Application  
 [NASA-CASE-NPO-10617] c14 N70-12618  
 Image copier Patent Application  
 [NASA-CASE-NPO-10196-2] c14 N70-20711  
 Pulsed power transistor circuit with stored  
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 [NASA-CASE-NPO-10674] c10 N70-22132  
 Electrode and method of making same  
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 [NASA-CASE-NPO-11157] c15 N70-22275  
 Cathode sputtering apparatus Patent Application  
 [NASA-CASE-NPO-11009] c15 N70-22292  
 Optical system for space simulator Patent  
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 [NASA-CASE-NPO-11096] c11 N70-25959  
 Method of treating metallic surfaces Patent  
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 [NASA-CASE-NPO-10779] c15 N70-34641

Thermionic tantalum emitter doped with oxygen  
 Patent Application  
 [NASA-CASE-NPO-11138] c03 N70-34646  
 Data handling system based on source  
 significance, storage availability and data  
 received from the source Patent Application  
 [NASA-CASE-XNP-04162-1] c08 N70-34675  
 Flexible material having a controlled resiliency  
 and a process for providing such material  
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 [NASA-CASE-NPO-10853] c18 N70-34685  
 Electro-optical scanning apparatus Patent  
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 [NASA-CASE-NPO-11106] c14 N70-34697  
 Liquid junction and method of fabricating the  
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 [NASA-CASE-NPO-10682] c15 N70-34699  
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 [NASA-CASE-XNP-00733] c06 N70-34946  
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 substrates Patent  
 [NASA-CASE-XNP-00595] c15 N70-34967  
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 [NASA-CASE-XNP-00438] c21 N70-35089  
 Antenna beam-shaping apparatus Patent  
 [NASA-CASE-XNP-00611] c09 N70-35219  
 Temperature-compensating means for cavity  
 resonator of amplifier Patent  
 [NASA-CASE-XNP-00449] c14 N70-35220  
 Parabolic reflector horn feed with spillover  
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 [NASA-CASE-XNP-00540] c09 N70-35382  
 Means for visually indicating flight paths of  
 vehicles between the Earth, Venus, and Mercury  
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 [NASA-CASE-XNP-00708] c14 N70-35394  
 Space vehicle attitude control Patent  
 [NASA-CASE-XNP-00465] c21 N70-35395  
 Binary to binary-coded-decimal converter Patent  
 [NASA-CASE-XNP-00432] c08 N70-35423  
 Cassegrainian antenna subreflector flange for  
 suppressing ground noise Patent  
 [NASA-CASE-XNP-00683] c09 N70-35425  
 Constant current source Patent Application  
 [NASA-CASE-NPO-10733] c09 N70-35631  
 Ionization vacuum gauge Patent  
 [NASA-CASE-XNP-00646] c14 N70-35666  
 Two-fluid magneto hydrodynamic system and method  
 for thermal-electric power conversion Patent  
 [NASA-CASE-XNP-00644] c03 N70-36803  
 Mechanical coordinate converter Patent  
 [NASA-CASE-XNP-00614] c14 N70-36907  
 High pressure four-way valve Patent  
 [NASA-CASE-XNP-00214] c15 N70-36908  
 Liquid rocket system Patent  
 [NASA-CASE-XNP-00610] c28 N70-36910  
 Radar ranging receiver Patent  
 [NASA-CASE-XNP-00748] c07 N70-36911  
 Attitude control for spacecraft Patent  
 [NASA-CASE-XNP-00294] c21 N70-36938  
 Elastic universal joint Patent  
 [NASA-CASE-XNP-00416] c15 N70-36947  
 Apparatus and method for control of a solid  
 fueled rocket vehicle Patent  
 [NASA-CASE-XNP-00217] c28 N70-38181  
 Expulsion bladder-equipped storage tank  
 structure Patent  
 [NASA-CASE-XNP-00612] c11 N70-38182  
 High-voltage cable Patent  
 [NASA-CASE-XNP-00738] c09 N70-38201  
 Umbilical separator for rockets Patent  
 [NASA-CASE-XNP-00425] c11 N70-38202  
 Multiple Belleville spring assembly Patent  
 [NASA-CASE-XNP-00840] c15 N70-38225  
 Ignition system for monopropellant combustion  
 devices Patent  
 [NASA-CASE-XNP-00249] c28 N70-38249  
 Pressure regulating system Patent  
 [NASA-CASE-XNP-00450] c15 N70-38603  
 Slit regulated gas journal bearing Patent  
 [NASA-CASE-XNP-00476] c15 N70-38620  
 Steerable solid propellant rocket motor Patent  
 [NASA-CASE-XNP-00234] c28 N70-38645  
 Space simulator Patent  
 [NASA-CASE-XNP-00459] c11 N70-38675  
 Ejection unit Patent  
 [NASA-CASE-XNP-00676] c15 N70-38996

Time-division multiplexer Patent  
[NASA-CASE-XNP-00431] c09 N70-38998

Trajectory-correction propulsion system Patent  
[NASA-CASE-XNP-01104] c28 N70-39931

Electrically-operated rotary shutter Patent  
[NASA-CASE-XNP-00637] c14 N70-40273

Zero gravity starting means for liquid propellant motors Patent  
[NASA-CASE-XNP-01390] c28 N70-41275

Parallel motion suspension device Patent  
[NASA-CASE-XNP-01567] c15 N70-41310

Ignition means for monopropellant Patent  
[NASA-CASE-XNP-00876] c28 N70-41311

Reinforcing means for diaphragms Patent  
[NASA-CASE-XNP-01962] c32 N70-41370

High pressure filter Patent  
[NASA-CASE-XNP-00732] c28 N70-41447

Phase-locked loop with sideband rejecting properties Patent  
[NASA-CASE-XNP-02723] c07 N70-41680

Digital television camera control system Patent  
[NASA-CASE-XNP-01472] c14 N70-41807

Antiflutter ball check valve Patent  
[NASA-CASE-XNP-01152] c15 N70-41811

Roll attitude star sensor system Patent  
[NASA-CASE-XNP-01307] c21 N70-41856

Process for preparing sterile solid propellants Patent  
[NASA-CASE-XNP-01749] c27 N70-41897

Solenoid construction Patent  
[NASA-CASE-XNP-01951] c09 N70-41929

Closed loop ranging system Patent  
[NASA-CASE-XNP-01501] c21 N70-41930

Printed circuit board with bellows rivet connection Patent  
[NASA-CASE-XNP-05082] c15 N70-41960

Phase-shift data transmission system having a pseudo-noise SYNC code modulated with the data in a single channel Patent  
[NASA-CASE-XNP-00911] c08 N70-41961

Baseline stabilization system for ionization detector Patent  
[NASA-CASE-XNP-03128] c10 N70-41991

Single or joint amplitude distribution analyzer Patent  
[NASA-CASE-XNP-01383] c09 N71-10659

Dual waveguide mode source having control means for adjusting the relative amplitude of two modes Patent  
[NASA-CASE-XNP-03134] c07 N71-10676

Method for determining the state of charge of batteries by the use of tracers Patent  
[NASA-CASE-XNP-01464] c03 N71-10728

High pressure regulator valve Patent  
[NASA-CASE-XNP-00710] c15 N71-10778

Solar battery with interconnecting means for plural cells Patent  
[NASA-CASE-XNP-06506] c03 N71-11050

Sealed battery gas manifold construction Patent  
[NASA-CASE-XNP-03378] c03 N71-11051

Solar cell submodule Patent  
[NASA-CASE-XNP-05821] c03 N71-11056

Reflectometer for receiver input impedance match measurement Patent  
[NASA-CASE-XNP-10843] c07 N71-11267

Means for generating a sync signal in an FM communication system Patent  
[NASA-CASE-XNP-10830] c07 N71-11281

Multi-feed cone Cassegrain antenna Patent  
[NASA-CASE-NPO-10539] c07 N71-11285

Thermionic diode switch Patent  
[NASA-CASE-NPO-10404] c03 N71-12255

Anti-backlash circuit for hydraulic drive system Patent  
[NASA-CASE-XNP-01020] c03 N71-12260

Binary number sorter Patent  
[NASA-CASE-NPO-10112] c08 N71-12502

Linear three-tap feedback shift register Patent  
[NASA-CASE-NPO-10351] c08 N71-12503

Binary sequence detector Patent  
[NASA-CASE-XNP-05415] c08 N71-12505

Data compression system with a minimum time delay unit Patent  
[NASA-CASE-XNP-08832] c08 N71-12506

Magnetic counter Patent  
[NASA-CASE-XNP-08836] c09 N71-12515

Operational integrator Patent  
[NASA-CASE-NPO-10230] c09 N71-12520

Starting circuit for vapor lamps and the like Patent  
[NASA-CASE-XNP-01058] c09 N71-12540

Matched thermistors for microwave power meters Patent  
[NASA-CASE-NPO-10348] c10 N71-12554

Micro current measuring device using plural logarithmic response heated filamentary type diodes Patent  
[NASA-CASE-XNP-00384] c09 N71-13530

Automatic thermal switch Patent  
[NASA-CASE-XNP-03796] c23 N71-15467

Photoelectric energy spectrometer Patent  
[NASA-CASE-XNP-04161] c14 N71-15599

Anti-glare improvement for optical imaging systems Patent  
[NASA-CASE-NPO-10337] c14 N71-15604

Fluid flow restrictor Patent  
[NASA-CASE-NPO-10117] c15 N71-15608

High temperature lens construction Patent  
[NASA-CASE-XNP-04111] c14 N71-15622

Solder flux which leaves corrosion-resistant coating Patent  
[NASA-CASE-XNP-03459-2] c18 N71-15688

Intermittent type silica gel adsorption refrigerator Patent  
[NASA-CASE-XNP-00920] c15 N71-15906

Dual mode horn antenna Patent  
[NASA-CASE-XNP-01057] c07 N71-15907

Means for controlling rupture of shock tube diaphragms Patent  
[NASA-CASE-XAC-00731] c11 N71-15960

Insertion loss measuring apparatus having transformer means connected across a pair of bolometers Patent  
[NASA-CASE-XNP-01193] c10 N71-16057

Polarimeter for transient measurement Patent  
[NASA-CASE-XNP-06883] c23 N71-16101

Flexible composite membrane Patent  
[NASA-CASE-XNP-08837] c18 N71-16210

Mount for thermal control system Patent  
[NASA-CASE-NPO-10138] c33 N71-16357

Optical characteristics measuring apparatus Patent  
[NASA-CASE-XNP-08840] c23 N71-16365

Parallel plate viscometer Patent  
[NASA-CASE-XNP-09462] c14 N71-17584

Means and method of measuring viscoelastic strain Patent  
[NASA-CASE-XNP-01153] c32 N71-17645

Interferometer direction sensor Patent  
[NASA-CASE-NPO-10320] c14 N71-17655

Interferometer servo system Patent  
[NASA-CASE-NPO-10300] c14 N71-17662

Electrical spot terminal assembly Patent  
[NASA-CASE-NPO-10034] c15 N71-17685

Sealed separable connection Patent  
[NASA-CASE-NPO-10064] c15 N71-17693

Incremental motion drive system Patent  
[NASA-CASE-XNP-08897] c15 N71-17694

Microbalance including crystal oscillators for measuring contaminants in a gas system Patent  
[NASA-CASE-NPO-10144] c14 N71-17701

Apparatus and method for protecting a photographic device Patent  
[NASA-CASE-NPO-10174] c14 N71-18465

Ranging system Patent  
[NASA-CASE-NPO-10066] c09 N71-18598

High impact pressure regulator Patent  
[NASA-CASE-NPO-10175] c14 N71-18625

Magnetic core current steering commutator Patent  
[NASA-CASE-NPO-10201] c08 N71-18694

Method of using photovoltaic cell using poly-N-vinylcarbazole complex Patent  
[NASA-CASE-NPO-10373] c03 N71-18698

A dc-coupled noninverting one-shot Patent  
[NASA-CASE-XNP-09450] c10 N71-18723

Automatic fault correction system for parallel signal channels Patent  
[NASA-CASE-XNP-03263] c09 N71-18843

Data compression processor Patent  
[NASA-CASE-NPO-10068] c08 N71-19288

Tape guidance system and apparatus for the provision thereof Patent  
[NASA-CASE-XNP-09453] c08 N71-19420

High voltage transistor circuit Patent  
[NASA-CASE-XNP-06937] c09 N71-19516

Solar cell matrix Patent  
[NASA-CASE-NPO-10821] c03 N71-19545

Electrical switching device Patent [NASA-CASE-NPO-10037]	c09 N71-19610	Decontamination of petroleum products Patent [NASA-CASE-NXP-03835]	c06 N71-23499
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		Electron beam tube containing a multiple cathode array employing indexing means for cathode substitution Patent [NASA-CASE-NPO-10625]	c09 N71-26182
		Fluid phase analyzer Patent [NASA-CASE-NPO-10691]	c14 N71-26199

Variable frequency nuclear magnetic resonance spectrometer Patent [NASA-CASE-XNP-09830] c14 N71-26266

Time synchronization system utilizing moon reflected coded signals Patent [NASA-CASE-NPO-10143] c10 N71-26326

Broadband stable power multiplier Patent [NASA-CASE-XNP-10854] c10 N71-26331

Cascaded complementary pair broadband transistor amplifiers Patent [NASA-CASE-NPO-10003] c10 N71-26415

Digital memory in which the driving of each word location is controlled by a switch core Patent [NASA-CASE-XNP-01466] c10 N71-26434

Conically shaped cavity radiometer with a dual purpose cone winding Patent [NASA-CASE-XNP-09701] c14 N71-26475

Analog signal integration and reconstruction system Patent [NASA-CASE-NPO-10344] c10 N71-26544

Rapid sync acquisition system Patent [NASA-CASE-NPO-10214] c10 N71-26577

Cryogenic cooling system Patent [NASA-CASE-NPO-10467] c23 N71-26654

Vacuum evaporator with electromagnetic ion steering Patent [NASA-CASE-NPO-10331] c09 N71-26701

Automated fluid chemical analyzer Patent [NASA-CASE-XNP-09451] c06 N71-26754

Material handling device Patent [NASA-CASE-XNP-09770-3] c11 N71-27036

Pressure seal Patent [NASA-CASE-NPO-10796] c15 N71-27068

Multiducted electromagnetic pump Patent [NASA-CASE-NPO-10755] c15 N71-27084

Peak acceleration limiter for vibrational tester Patent [NASA-CASE-NPO-10556] c14 N71-27185

Thin film capacitive bolometer and temperature sensor Patent [NASA-CASE-NPO-10607] c09 N71-27232

Black body cavity radiometer Patent [NASA-CASE-NPO-10810] c14 N71-27323

Video signal enhancement system with dynamic range compression and modulation index expansion Patent [NASA-CASE-NPO-10343] c07 N71-27341

Force-balanced, throttle valve Patent [NASA-CASE-NPO-10808] c15 N71-27432

Cavity emitter for thermionic converter Patent [NASA-CASE-NPO-10412] c09 N71-28421

Frictionless universal joint Patent [NASA-CASE-NPO-10646] c15 N71-28467

Epoxy-aziridine polymer product Patent [NASA-CASE-NPO-10701] c06 N71-28620

Fluid impervious barrier including liquid metal alloy and method of making same Patent [NASA-CASE-XNP-08881] c17 N71-28747

Wind tunnel microphone structure Patent [NASA-CASE-XNP-00250] c11 N71-28779

Trialkyl-dihalotantalum and niobium compounds Patent [NASA-CASE-XNP-04C23] c06 N71-28808

Digital memory sense amplifying means Patent [NASA-CASE-XNP-01012] c08 N71-28925

Digital filter for reducing sampling jitter in digital control systems Patent [NASA-CASE-NPO-11088] c08 N71-29034

Method and apparatus for aligning a laser beam projector Patent [NASA-CASE-NPO-11087] c23 N71-29125

Rubber composition for use with hydrazine Patent Application [NASA-CASE-NPO-11433] c18 N71-31140

Rotable accurate reflector system for telescopes Patent [NASA-CASE-NPO-10468] c23 N71-33229

Encoder/decoder system for a rapidly synchronizable binary code Patent [NASA-CASE-NPO-10342] c10 N71-33407

High power microwave power divider Patent [NASA-CASE-NPO-11031] c07 N71-33606

A dc servosystem including an ac motor Patent [NASA-CASE-NPO-10700] c07 N71-33613

Solar cell matrix [NASA-CASE-NPO-11190] c03 N71-34044

Improved high-voltage isolator for liquid metal feed lines [NASA-CASE-NPO-11075] c09 N71-34208

Solid propellant rocket motor [NASA-CASE-NPO-11559] c28 N71-34949

Manually actuated heat pump [NASA-CASE-NPO-10677] c05 N72-11084

Virtual wall slot circularly polarized planar array antenna [NASA-CASE-NPO-10301] c07 N72-11148

System for controlling the operation of a variable signal device [NASA-CASE-NPO-11064] c07 N72-11150

Method and apparatus for data compression by a decreasing slope threshold test [NASA-CASE-NPO-10769] c08 N72-11171

Apparatus for remote measurement of displacement of marks on a specimen undergoing a tensile test [NASA-CASE-NPO-10778] c14 N72-11364

Vibration isolation system using compression springs [NASA-CASE-NPO-11012] c15 N72-11391

Feed system for an ion thruster [NASA-CASE-NPO-10737] c28 N72-11709

Thermostatic actuator [NASA-CASE-NPO-10637] c15 N72-12409

Push-pull transistor amplifier [NASA-CASE-NPO-11365] c09 N72-15204

Shock absorbing device [NASA-CASE-NPO-10626] c15 N72-15465

High voltage transistor amplifier with constant current load [NASA-CASE-NPO-11023] c09 N72-17155

Reference voltage switching unit [NASA-CASE-NPO-11253] c09 N72-17157

Valving device for automatic refilling in cryogenic liquid systems [NASA-CASE-NPO-11177] c15 N72-17453

Expandible support means [NASA-CASE-NPO-11059] c15 N72-17454

Breakaway connector [NASA-CASE-NPO-11140] c15 N72-17455

Modular encoder [NASA-CASE-NPO-10629] c08 N72-18184

Transition tracking bit synchronization system [NASA-CASE-NPO-10844] c07 N72-20140

Data compression system [NASA-CASE-NPO-11243] c07 N72-20154

Digital quasi-exponential function generator [NASA-CASE-NPO-11130] c08 N72-20176

Method and apparatus for high resolution spectral analysis [NASA-CASE-NPO-10748] c08 N72-20177

Flow rate switch [NASA-CASE-NPO-10722] c09 N72-20199

Electrical connector [NASA-CASE-NPO-10694] c09 N72-20200

Wide band doubler and sine wave quadrature generator [NASA-CASE-NPO-11133] c10 N72-20223

Signal phase estimator [NASA-CASE-NPO-11203] c10 N72-20224

Optimal control system for an electric motor driven vehicle [NASA-CASE-NPO-11210] c11 N72-20244

Digital control of random excitation environmental testing [NASA-CASE-NPO-11612] c11 N72-20251

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## K

**KELSEY-HAYES CO., ROMULUS, MICH.**  
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**KOLLSMAN INSTRUMENT CORP., SYOSSET, N.Y.**  
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**KOBAD CORP., NEW YORK.**  
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## L

**LING-TEMCO-VOUGHT, INC., DALLAS, TEX.**  
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**LITTLE (ARTHUR D.), INC., CAMBRIDGE, MASS.**  
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**LOCKHEED AIRCRAFT CORP., BURBANK, CALIF.**  
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**LOCKHEED ELECTRONICS CO., HOUSTON, TEX.**  
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**LOCKHEED MISSILES AND SPACE CO., SUNNYVALE, CALIF.**  
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**LOCKHEED PROPULSION CO., REDLANDS, CALIF.**  
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**LOCKHEED-CALIFORNIA CO., BURBANK.**  
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## M

**MACON-RUST CO., LEXINGTON, KY.**  
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**MARQUARDT CORP., VAN NUYS, CALIF.**  
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**MARTIN MARIETTA CORP., BALTIMORE, MD.**  
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**MARTIN MARIETTA CORP., ORLANDO, FLA.**  
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**MARYLAND UNIV., COLLEGE PARK.**  
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**MASSACHUSETTS INST. OF TECH., CAMBRIDGE.**  
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## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.

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**MCDONNELL AIRCRAFT CO., ST. LOUIS, MO.**  
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 [NASA-CASE-ERC-10087-2] c14 N72-31446  
 Insert facing tool  
 [NASA-CASE-MFS-21485-1] c15 N72-31490  
 Method and apparatus for checking the stability  
 of a setup for making reflection type holograms  
 [NASA-CASE-MFS-21455-1] c16 N72-31515  
 Coaxial high density, hypervelocity plasma  
 generator and accelerator with ionizable metal  
 disc  
 [NASA-CASE-MFS-20589] c25 N72-32688  
 Process for the preparation of brushite crystals  
 [NASA-CASE-ERC-10338] c04 N72-33072  
 Adjustable force probe  
 [NASA-CASE-MFS-20760] c14 N72-33377  
 Conductive elastomeric extensometer  
 [NASA-CASE-MFS-21049-1] c14 N73-11405  
 Steady state thermal radiometer  
 [NASA-CASE-MFS-21108-1] c14 N73-12455  
 Polyimide resin-fiberglass cloth laminates for  
 printed circuit boards  
 [NASA-CASE-MFS-20408] c18 N73-12604  
 Differential pressure control  
 [NASA-CASE-MFS-14216] c14 N73-13418  
 Automatic quadrature control and measuring system  
 [NASA-CASE-MFS-21660-1] c14 N73-13434  
 Redundant hydraulic control system for actuators  
 [NASA-CASE-MFS-20944] c15 N73-13466  
 Device and method for determining X ray  
 reflection efficiency of optical surfaces  
 [NASA-CASE-MFS-20243] c23 N73-13662  
 Metabolic analyzer  
 [NASA-CASE-MFS-21415-1] c05 N73-15156  
 A manual actuator  
 [NASA-CASE-MFS-21481-1] c15 N73-15503  
 Battery testing device  
 [NASA-CASE-MFS-20761-1] c03 N73-17037  
 Strain gauge ambiguity sensor for segmented  
 mirror active optical system  
 [NASA-CASE-MFS-20506-1] c14 N73-17563  
 A leak detector  
 [NASA-CASE-MFS-21761-1] c14 N73-18444  
 Process for making diamonds  
 [NASA-CASE-MFS-20698-2] c15 N73-19457  
 Reduced gravity fecal collector seat  
 [NASA-CASE-MFS-22102-1] c05 N73-20141  
 Microwave power transmission system  
 [NASA-CASE-MFS-21470-1] c10 N73-20257  
 Test stand system for vacuum chambers  
 [NASA-CASE-MFS-21362] c11 N73-20267  
 Material fatigue testing system  
 [NASA-CASE-MFS-20673] c14 N73-20476  
 Clear air turbulence detector  
 [NASA-CASE-MFS-21244-1] c20 N73-21523  
 Electronic optical transfer function  
 analyzer  
 [NASA-CASE-MFS-21672-1] c23 N73-22630  
 Sprag solenoid brake  
 [NASA-CASE-MFS-21846-1] c15 N73-23552  
 System for depositing thin films  
 [NASA-CASE-MFS-20775-1] c26 N73-23770  
 Batemeter  
 [NASA-CASE-MFS-20418] c14 N73-24473  
 Underwater space suit pressure control  
 regulator  
 [NASA-CASE-MFS-20332-2] c05 N73-25125  
 Maxometers (peak wind speed anemometers)  
 [NASA-CASE-MFS-20916] c14 N73-25460  
 Stable supply oscillator  
 [NASA-CASE-MFS-21698-1] c09 N73-26196  
 Electrostatic measurement system  
 [NASA-CASE-MFS-22129-1] c09 N73-26197  
 Electrostatic entrained material measurement  
 system  
 [NASA-CASE-MFS-22128-1] c14 N73-26442  
 Self-energized plasma compressor  
 [NASA-CASE-MFS-22145-1] c25 N73-26721  
 Monitoring deposition of films  
 [NASA-CASE-MFS-20675] c26 N73-26751  
 Docking structure for spacecraft  
 [NASA-CASE-MFS-20863] c31 N73-26876  
 Wide temperature range electronic device with  
 lead attachment  
 [NASA-CASE-ERC-10224-2] c09 N73-27150  
 Restraint system for ergometer  
 [NASA-CASE-MFS-21046-1] c14 N73-27377  
 Multiplate focusing collimator  
 [NASA-CASE-MFS-20932-1] c14 N73-27380  
 Apparatus and method for skin packaging articles  
 [NASA-CASE-MFS-20855] c15 N73-27405  
 Ergometer  
 [NASA-CASE-MFS-21109-1] c05 N73-27941  
 Tilting table for ergometer and for other  
 biomedical devices  
 [NASA-CASE-MFS-21010-1] c05 N73-30078  
 Ultrasonic bone densitometer  
 [NASA-CASE-MFS-20994-1] c05 N73-30090  
 Measurement system  
 [NASA-CASE-MFS-20658-1] c14 N73-30386  
 Collimator of multiple plates with axially  
 aligned identical random arrays of apertures  
 [NASA-CASE-MFS-20546-2] c14 N73-30389  
 Automatically operable self-leveling load table  
 [NASA-CASE-MFS-22039-1] c14 N73-30428  
 Holographic thin film analyzer  
 [NASA-CASE-MFS-20823-1] c16 N73-30476  
 Holographic system for nondestructive testing  
 [NASA-CASE-MFS-21704-1] c16 N73-30478  
 Semiconductor surface protection material  
 [NASA-CASE-ERC-10339-1] c18 N73-30532  
 Remote fire stack igniter  
 [NASA-CASE-MFS-21675-1] c33 N73-31826  
 Polymerizable disilanolis having in-chain  
 perfluoroalkyl groups  
 [NASA-CASE-MFS-20979-2] c06 N73-32030  
 Redundant speed control for brushless Hall  
 effect motor  
 [NASA-CASE-MFS-20207-1] c09 N73-32107  
 Induction motor control system with voltage  
 controlled oscillator circuit  
 [NASA-CASE-MFS-21465-1] c10 N73-32145  
 Hole cutter  
 [NASA-CASE-MFS-22649-1] c15 N73-32376  
 Synthesis of superconducting compounds by  
 explosive compaction of powders  
 [NASA-CASE-MFS-20861-1] c18 N73-32437  
**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,  
 PASADENA OFFICE, CALIF.**  
 Phase control circuits using frequency  
 multiplications for phased array antennas  
 [NASA-CASE-ERC-10285] c10 N73-16206  
 Method of forming difunctional polyisobutylene  
 [NASA-CASE-NPO-10893] c27 N73-22710  
 Radiation and particle detector and amplifier  
 [NASA-CASE-NPO-12128-1] c14 N73-32317  
 Expandable space frames  
 [NASA-CASE-ERC-10365-1] c31 N73-32749  
**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,  
 WOLLOPS STATION, WOLLOPS ISLAND, VA.**  
 Emergency master control valve  
 [NASA-CASE-WLP-10040-1] c15 N73-13475  
**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,  
 WESTERN OPERATIONS OFFICE, SANTA MONICA, CALIF.**  
 Automatic pump Patent  
 [NASA-CASE-XNP-04731] c15 N71-24042  
**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,  
 WASHINGTON, D.C.**  
 Optical spin compensator  
 [NASA-CASE-XGS-02401] c14 N69-27485  
 Waveguide mixer  
 [NASA-CASE-ERC-10179] c07 N72-20141  
 Semiconductor-ferroelectric memory device  
 [NASA-CASE-ERC-10307] c08 N72-21198  
 Shielded cathode mode bulk effect devices  
 [NASA-CASE-ERC-10119] c26 N72-21701

- Fabrication of single crystal film semiconductor devices  
[NASA-CASE-ERC-10222] c09 N72-22199
- Two color horizon sensor  
[NASA-CASE-ERC-10174] c14 N72-25409
- Ultraviolet atomic emission detector  
[NASA-CASE-HQN-10756-1] c14 N72-25428
- Optical pump and driver system for lasers  
[NASA-CASE-ERC-10283] c16 N72-25485
- Clear air turbulence detector  
[NASA-CASE-ERC-10081] c14 N72-28437
- Head-up attitude display  
[NASA-CASE-ERC-10392] c21 N73-14692
- System for indicating direction of intruder aircraft  
[NASA-CASE-ERC-10226-1] c14 N73-16483
- Aircraft control system  
[NASA-CASE-ERC-10439] c02 N73-19004
- Display system  
[NASA-CASE-ERC-10350] c14 N73-20474
- Method and apparatus for measuring solar activity and atmospheric radiation effects  
[NASA-CASE-ERC-10276] c14 N73-26432
- NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.**
- Densitometer Patent  
[NASA-CASE-XLE-00688] c14 N70-41330
- Flowmeter  
[NASA-CASE-MFS-20974] c14 N72-15430
- NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, BOULDER, COLO.**
- Determining distance to lightning strokes from a single station  
[NASA-CASE-KSC-10698] c07 N73-20175
- NATIONAL RESEARCH CORP., CAMBRIDGE, MASS.**
- Gauge calibration by diffusion  
[NASA-CASE-XGS-07752] c14 N73-30390
- Ultrahigh vacuum measuring ionization gauge  
[NASA-CASE-XLA-05087] c14 N73-30391
- Apparatus for absolute pressure measurement  
[NASA-CASE-LAR-10000] c14 N73-30394
- Ultrahigh vacuum gauge having two collector electrodes  
[NASA-CASE-LAR-02743] c14 N73-32324
- NATIONAL SCIENCE FOUNDATION, WASHINGTON, D.C.**
- Auditory display for the blind  
[NASA-CASE-HQN-10832-1] c14 N73-12456
- NORTH AMERICAN AVIATION, INC., CANOGA PARK, CALIF.**
- Method of joining aluminum to stainless steel Patent  
[NASA-CASE-MFS-07369] c15 N71-20443
- Propellant mass distribution metering apparatus Patent  
[NASA-CASE-NPO-10185] c10 N71-26339
- Safety-type locking pin  
[NASA-CASE-MFS-18495] c15 N72-11385
- Hydrogen fire detection system with logic circuit to analyze the spectrum of temporal variations of the optical spectrum  
[NASA-CASE-MFS-13130] c10 N72-17173
- NORTH AMERICAN AVIATION, INC., DOWNEY, CALIF.**
- Heat shield oven  
[NASA-CASE-XMS-04318] c15 N69-27871
- Extensible cable support Patent  
[NASA-CASE-XMF-07587] c15 N71-18701
- High pressure air valve Patent  
[NASA-CASE-MSC-11010] c15 N71-19485
- Load relieving device Patent  
[NASA-CASE-XMS-06329-1] c15 N71-20441
- Optical projector system Patent  
[NASA-CASE-XNP-03853] c23 N71-21882
- Brazing alloy Patent  
[NASA-CASE-XNP-03063] c17 N71-23365
- Vibrophonocardiograph Patent  
[NASA-CASE-YFR-07172] c05 N71-27234
- NORTH AMERICAN AVIATION, INC., EL SEGUNDO, CALIF.**
- Aerodynamic spike nozzle Patent  
[NASA-CASE-YGS-01143] c31 N71-15647
- Expanding center probe and drogue Patent  
[NASA-CASE-XMS-03613] c31 N71-16346
- Radio frequency shielded enclosure  
[NASA-CASE-XMF-09422] c07 N71-19436
- High impedance measuring apparatus  
[NASA-CASE-XMS-08589-1] c09 N71-20569
- Latching mechanism Patent  
[NASA-CASE-XMS-03745] c15 N71-21076
- Tube dimpling tool Patent  
[NASA-CASE-XMS-06876] c15 N71-21536
- Positive locking check valve Patent  
[NASA-CASE-XMS-09310] c15 N71-22706
- Etching of aluminum for bonding Patent  
[NASA-CASE-XMF-02303] c17 N71-23828
- Method and apparatus for varying thermal conductivity Patent  
[NASA-CASE-XNP-05524] c33 N71-24876
- Purge device for thrust engines Patent  
[NASA-CASE-XMS-04826] c28 N71-28849
- Method and construction for protecting heat sensitive bodies from thermal radiation and convective heat Patent  
[NASA-CASE-XNP-01310] c33 N71-28852
- Propellant tank pressurization system Patent  
[NASA-CASE-XNP-00650] c27 N71-28929
- Spherical shield Patent  
[NASA-CASE-XNP-01855] c15 N71-28937
- Universal restrainer and joint Patent  
[NASA-CASE-XNP-02278] c15 N71-28951
- Method and device for cooling Patent  
[NASA-CASE-HQN-00938] c33 N71-29053
- NORTH AMERICAN AVIATION, INC., LOS ANGELES, CALIF.**
- Method and system for respiration analysis Patent  
[NASA-CASE-XFP-08403] c05 N71-11202
- NORTH AMERICAN AVIATION, INC., TORRANCE, CALIF.**
- Method and apparatus for detection and location of microleaks Patent  
[NASA-CASE-XMF-02307] c14 N71-10779
- NORTH AMERICAN ROCKWELL CORP., CANOGA PARK, CALIF.**
- Noncontaminating swabs  
[NASA-CASE-MFS-18100] c15 N72-11390
- Observation window for a gas confining chamber  
[NASA-CASE-NPO-10890] c11 N73-12265
- Droplet monitoring probe  
[NASA-CASE-NPO-10985] c14 N73-20478
- Circuit board package with wedge shaped covers  
[NASA-CASE-MFS-21919-1] c10 N73-25243
- NORTH AMERICAN ROCKWELL CORP., DOWNEY, CALIF.**
- Spacecraft Patent  
[NASA-CASE-MSC-13047-1] c31 N71-25434
- Latching mechanism Patent  
[NASA-CASE-MSC-15474-1] c15 N71-26162
- Dye penetrant for surfaces subsequently contacted by liquid oxygen Patent  
[NASA-CASE-XMF-02221] c18 N71-27170
- Apparatus for remote handling of materials  
[NASA-CASE-LAR-10634-1] c15 N72-21476
- Franqible link  
[NASA-CASE-MSC-11849-1] c15 N72-22488
- Impact monitoring apparatus  
[NASA-CASE-MSC-15626-1] c14 N72-25411
- Bonding or repairing process  
[NASA-CASE-MSC-12357] c15 N73-12489
- Self-cycling fluid heater  
[NASA-CASE-MSC-15567-1] c33 N73-16918
- Aircraft-mounted crash-activated radio device  
[NASA-CASE-MFS-16609-2] c07 N73-31084
- NORTH AMERICAN ROCKWELL CORP., EL SEGUNDO, CALIF.**
- Apparatus for testing wiring harness by vibration generating means  
[NASA-CASE-MSC-15158-1] c14 N72-17325
- NORTH AMERICAN ROCKWELL CORP., LOS ANGELES, CALIF.**
- Phase detection system for ac power lines  
[NASA-CASE-MSC-17832-1] c10 N72-33232
- Tactile sensing means for prosthetic limbs  
[NASA-CASE-MFS-16570-1] c05 N73-32013
- NORTH CAROLINA STATE UNIV., RALEIGH.**
- Thermal shock resistant hafnia ceramic material  
[NASA-CASE-LAR-10894-1] c18 N73-14584
- NORTHEASTERN UNIV., BOSTON, MASS.**
- Pulse-width modulation multiplier Patent  
[NASA-CASE-XER-09213] c07 N71-12390
- NORTHERN CORP., HAWTHORNE, CALIF.**
- Shock tube bypass piston tunnel  
[NASA-CASE-NPO-12109] c11 N72-22245
- NORTHERN ELECTRONICS, PALOS VERDES PENINSULA, CALIF.**
- Method of making dry electrodes  
[NASA-CASE-FRC-10029-2] c05 N72-25121
- Valve seat  
[NASA-CASE-NPO-10606] c15 N72-25451
- NORTHERN SPACE LABS., HAWTHORNE, CALIF.**
- Method of evaluating moisture barrier properties of encapsulating materials Patent  
[NASA-CASE-NPO-10051] c18 N71-24934
- NORTONICS, PALOS VERDES PENINSULA, CALIF.**
- Flexible conductive disc electrode Patent  
[NASA-CASE-FRC-10029] c09 N71-24618
- Gas low pressure low flow rate metering system Patent  
[NASA-CASE-FRC-10022] c12 N71-26546

- Method of removing insulated material from insulated wires  
[NASA-CASE-FRC-10038] c15 N72-20444
- NOTRE DAME UNIV., IND.**  
Synthesis of polymeric schiff bases by schiff-base exchange reactions Patent  
[NASA-CASE-XMF-08651] c06 N71-11236
- Direct synthesis of polymeric schiff bases from two amines and two aldehydes Patent  
[NASA-CASE-XMF-08655] c06 N71-11239
- Azine polymers and process for preparing the same Patent  
[NASA-CASE-XMF-08656] c06 N71-11242
- Synthesis of polymeric schiff bases by reaction of acetals and amine compounds Patent  
[NASA-CASE-XMF-08652] c06 N71-11243
- Aromatic diamine-aromatic dialdehyde high molecular weight schiff base polymers prepared in a monofunctional schiff base Patent  
[NASA-CASE-XMF-03074] c06 N71-24740
- P**
- PACKARD-BELL ELECTRONICS CORP., NEWBURY PARK, CALIF.**  
Optical alignment system Patent  
[NASA-CASE-XNP-02029] c14 N70-41955
- PANAUZA CORP., PENNSAUKEN, N.J.**  
Method of forming transparent films of ZnO  
[NASA-CASE-FRC-10019] c15 N73-12487
- PENINSULAR CHEMRESREARCH, INC., GAINESVILLE, FLA.**  
Hydroxy terminated perfluoro ethers Patent  
[NASA-CASE-NPO-10768] c06 N71-27254
- Perfluoro polyether acyl fluorides  
[NASA-CASE-NPO-10765] c06 N72-20121
- Polyurethane resins from hydroxy terminated perfluoro ethers  
[NASA-CASE-NPO-10768-2] c06 N72-27144
- Highly fluorinated polyurethanes  
[NASA-CASE-NPO-10767-1] c06 N73-33076
- PHILCO-FORD CORP., HOUSTON, TEX.**  
Frequency modulation demodulator threshold extension device Patent  
[NASA-CASE-HSC-12165-1] c07 N71-33696
- PHILCO-FORD CORP., NEWPORT BEACH, CALIF.**  
Mechanically extendible telescoping boom  
[NASA-CASE-NPO-11118] c03 N72-25021
- PHILCO-FORD CORP., PALO ALTO, CALIF.**  
Composite antenna feed  
[NASA-CASE-GSC-11046-1] c07 N73-28013
- Amplitude steered antenna array  
[NASA-CASE-GSC-11446-1] c09 N73-32117
- PRATT AND WHITNEY AIRCRAFT, EAST HARTFORD, CONN.**  
Liquid-gas separation system Patent  
[NASA-CASE-XMS-G1624] c15 N70-40062
- Vibration damping system Patent  
[NASA-CASE-XMS-01620] c23 N71-15673
- Vapor pressure measuring system and method Patent  
[NASA-CASE-XMS-01618] c14 N71-20741
- Sealing member and combination thereof and method of producing said sealing member Patent  
[NASA-CASE-XMS-01625] c15 N71-23022
- Q**
- QUANTUM DYNAMICS, TARZANA, CALIF.**  
Respiratory analysis system and method  
[NASA-CASE-HSC-13436-1] c05 N73-32015
- R**
- RADIATION INSTRUMENT DEVELOPMENT LAB., INC., MELROSE PARK, ILL.**  
High speed binary to decimal conversion system Patent  
[NASA-CASE-XGS-01230] c08 N71-19544
- RADIATION SYSTEMS, INC., MCLEAN, VA.**  
Monopulse tracking system Patent  
[NASA-CASE-XGS-01155] c10 N71-21483
- RADIATION, INC., MELBOURNE, FLA.**  
Remote platform power conserving system  
[NASA-CASE-GSC-11182-1] c31 N73-32769
- RADIO CORP. OF AMERICA, LANCASTER, PA.**  
Bonding graphite with fused silver chloride  
[NASA-CASE-XGS-00963] c15 N69-39735
- RADIO CORP. OF AMERICA, NEW YORK.**  
Water cooled contactor for anode in carbon arc mechanism  
[NASA-CASE-XMS-03700] c15 N69-24266
- Apparatus for ballasting high frequency transistors  
[NASA-CASE-XGS-05003] c09 N69-24318
- Helical coaxial resonator RF filter  
[NASA-CASE-XGS-02816] c07 N69-24323
- Radiation resistant silicon semiconductor devices Patent  
[NASA-CASE-XGS-07801] c09 N71-12513
- GaAs solar detector using manganese as a doping agent Patent  
[NASA-CASE-XNP-01328] c26 N71-18064
- Thermocouple assembly Patent  
[NASA-CASE-XNP-01659] c14 N71-23039
- Method of erasing target material of a vidicon tube or the like Patent  
[NASA-CASE-XNP-06028] c09 N71-23189
- Transient augmentation circuit for pulse amplifiers Patent  
[NASA-CASE-XNP-01068] c10 N71-28739
- RADIO CORP. OF AMERICA, PRINCETON, N.J.**  
Connector strips-positive, negative and T tabs  
[NASA-CASE-XGS-01395] c03 N69-21539
- Solar cell including second surface mirrors Patent  
[NASA-CASE-NPO-10109] c03 N71-11049
- Collapsible reflector Patent  
[NASA-CASE-XMS-03454] c09 N71-20658
- Simple method of making photovoltaic junctions Patent  
[NASA-CASE-XNP-01960] c09 N71-23027
- Method of electrolytically binding a layer of semiconductors together Patent  
[NASA-CASE-XNP-01959] c26 N71-23043
- Method and apparatus for distillation of liquids Patent  
[NASA-CASE-XNP-08124] c15 N71-27184
- Maximum power point tracker Patent  
[NASA-CASE-GSC-10376-1] c14 N71-27407
- Method of changing the conductivity of vapor deposited gallium arsenide by the introduction of water into the vapor deposition atmosphere Patent  
[NASA-CASE-XNP-01961] c26 N71-29156
- Radial heat flux transformer  
[NASA-CASE-NPO-10828] c33 N72-17948
- Target acquisition antenna  
[NASA-CASE-GSC-10064-1] c10 N72-22235
- Method for distillation of liquids  
[NASA-CASE-XNP-08124-2] c06 N73-13129
- Hermetically sealed semiconductor  
[NASA-CASE-GSC-10791-1] c15 N73-14469
- Rotary solenoid shutter drive assembly and rotary inertia damper and stop plate assembly  
[NASA-CASE-GSC-11560-1] c09 N73-26198
- Thermal flux transfer system  
[NASA-CASE-NPO-12070-1] c28 N73-32606
- RAND CORP., SANTA MONICA, CALIF.**  
Satellite communication system Patent  
[NASA-CASE-XNP-02389] c07 N71-28900
- RAYMOND ENGINEERING LAB., INC., MIDDLETOWN, CONN.**  
Synchronous servo loop control system Patent  
[NASA-CASE-XNP-03744] c10 N71-20448
- RAYTHEON CO., LEXINGTON, MASS.**  
An apparatus for restoring optically degraded laser optics Patent Application  
[NASA-CASE-ERC-10210] c16 N70-41525
- RAYTHEON CO., SUDBURY, MASS.**  
Laser Doppler system for measuring three dimensional vector velocity Patent  
[NASA-CASE-HFS-20386] c21 N71-19212
- RCA SERVICE CO., INC., CAMDEN, N.J.**  
Apparatus for inspecting microfilm Patent  
[NASA-CASE-HFS-20240] c14 N71-26788
- RENSSELAER POLYTECHNIC INST., TROY, N.Y.**  
Coincidence apparatus for detecting particles  
[NASA-CASE-XLA-07813] c14 N72-17328
- RESEARCH TRIANGLE INST., DURHAM, N.C.**  
Semiconductor p-n junction stress and strain sensor  
[NASA-CASE-XLA-04980] c09 N69-27422
- ROCHESTER UNIV., N.Y.**  
Concave grating spectrometer Patent  
[NASA-CASE-XGS-01036] c14 N70-40003
- ROCKETDYNE, CANOGA PARK, CALIF.**  
Frequency to analog converter Patent  
[NASA-CASE-XNP-07040] c08 N71-12500
- Load cell protection device Patent  
[NASA-CASE-XMS-06782] c32 N71-15974
- Thermobulb mount Patent  
[NASA-CASE-NPO-10158] c33 N71-16356

- Laminar flow enhancement Patent  
[NASA-CASE-NPO-10122] c12 N71-17631
- Temperature sensitive flow regulator Patent  
[NASA-CASE-MFS-14259] c15 N71-19213
- Hydrogen leak detection device Patent  
[NASA-CASE-MFS-11537] c14 N71-20442
- Technique of elbow bending small jacketed transfer lines Patent  
[NASA-CASE-XNP-10475] c15 N71-24679
- Gas liquefaction and dispensing apparatus Patent  
[NASA-CASE-NPO-10070] c15 N71-27372
- Locking device for turbine rotor blades Patent  
[NASA-CASE-XNP-00816] c28 N71-28928
- Laser camera and diffusion filter therefore Patent  
[NASA-CASE-NPO-10417] c16 N71-33410
- Hydrazinium nitroformate propellant stabilized with nitroquinidine  
[NASA-CASE-NPO-12000] c27 N72-25699
- Heat flow calorimeter  
[NASA-CASE-GSC-11434-1] c14 N72-27430
- Hydrazinium nitroformate propellant with saturated polymeric hydrocarbon binder  
[NASA-CASE-NPO-12015] c27 N73-16764
- Novel polymers and method of preparing same  
[NASA-CASE-NPO-10998-1] c06 N73-32029
- ROPH CORP., CHULA VISTA, CALIF.**  
Method of forming shapes from planar sheets of thermosetting materials  
[NASA-CASE-NPO-11036] c15 N72-24522
- ROYAL AIRCRAFT ESTABLISHMENT, FARNBOROUGH (ENGLAND).**  
Garments for controlling the temperature of the body Patent  
[NASA-CASE-XMS-10269] c05 N71-24147
- RYAN AERONAUTICAL CO., SAN DIEGO, CALIF.**  
Wing deployment method and apparatus Patent  
[NASA-CASE-XMS-00907] c02 N70-41630
- Masking device Patent  
[NASA-CASE-XNP-02092] c15 N70-42033
- S**
- SANDERS ASSOCIATES, INC., NASHUA, N.H.**  
Increasing efficiency of switching type regulator circuits Patent  
[NASA-CASE-XMS-09352] c09 N71-23316
- SANDIA CORP., ALBUQUERQUE, N.MEX.**  
Formaldehyde base disinfectants  
[NASA-CASE-NPO-12115-1] c06 N73-17153
- SANTA CLARA UNIV., CALIF.**  
Reversed cowl flap inlet thrust augmentor  
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**TRW SYSTEMS GROUP, REDONDO BEACH, CALIF.**  
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**TRW SYSTEMS, REDONDO BEACH, CALIF.**  
 Electromechanical actuator  
 [NASA-CASE-XNP-05975] c15 N69-23185  
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 [NASA-CASE-XNP-09698] c15 N71-18580  
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 [NASA-CASE-XNP-09704] c12 N71-18615  
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 [NASA-CASE-NPO-10416] c12 N71-27332  
**TYCO LABS., INC., WALTHAM, MASS.**  
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 [NASA-CASE-XGS-04554] c15 N69-39786  
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## U

**UNIFIED SCIENCE ASSOCIATES, INC., PASADENA, CALIF.**  
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**WESTINGHOUSE ELECTRIC CORP., LIMA, OHIO.**  
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**WESTINGHOUSE ELECTRIC CORP., PITTSBURGH, PA.**  
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Linear sawtooth voltage-wave generator employing  
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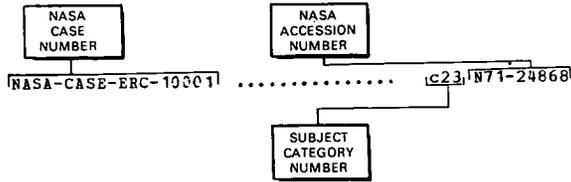
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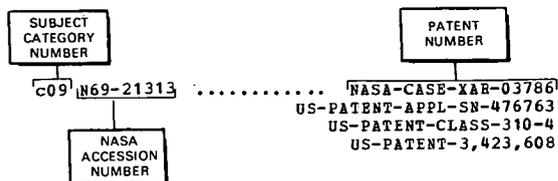
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# Accession Number Index

Section 2

Typical Accession Number Index Listing



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ACCESSION NUMBER INDEX

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