

NASA TM X-65800

THE NATIONAL SPACE SCIENCE DATA CENTER GUIDE TO INTERNATIONAL ROCKET DATA

LELAND L. DUBACH

JANUARY 1972

Reproduced by
NATIONAL TECHNICAL
INFORMATION SERVICE
U S Department of Commerce
Springfield VA 22151

(NASA-TM-X-65800) THE NATIONAL SPACE
SCIENCE DATA CENTER GUIDE TO INTERNATIONAL
ROCKET DATA L.L. Dubach (NASA) Jan. 1972
62 p CSCI 05B

N72-15929

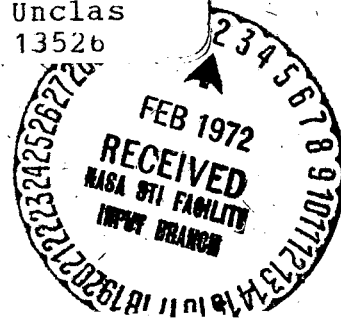
Unclas
13526

G3/34

FACILITY FORM 60

(ACCESSION NUMBER) 62 (THRU) 63
 (PAGES) 6 (CODE) 34
 (NASA CR OR TMX) TMX 6-5800 (ARY) _____

Reproduced by
NATIONAL TECHNICAL
INFORMATION SERVICE
Springfield, Va. 22151



X-601-72-2

NATIONAL SPACE SCIENCE DATA CENTER
GUIDE TO INTERNATIONAL SCIENTIFIC ROCKET DATA

Prepared by

Leland L. Dubach
National Space Science Data Center

National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland 20770

January 1972

PRECEDING PAGE BLANK NOT FILMED

NATIONAL SPACE SCIENCE DATA CENTER
GUIDE TO INTERNATIONAL SCIENTIFIC ROCKET DATA

Abstract

Background information is given which briefly describes the mission of the National Space Science Data Center (NSSDC), including its functions and systems, along with its policies and purposes for collecting rocket data. The operation of a machine-sensible rocket information system, which allows the Data Center to have convenient access to information and data concerning all rocket flights carrying scientific experiments, is also described. The central feature of this system, an index of rocket flights maintained on magnetic tape, is described. Standard outputs for NSSDC and for the World Data Center A (WDC-A) for Rockets and Satellites are described.

PRECEDING PAGE BLANK NOT FILMED

CONTENTS

	<u>Page</u>
INTRODUCTION	1
NSSDC Systems	2
NSSDC Data Collection Policy	3
ROCKET INFORMATION SYSTEM	5
ROCKET File Content	5
ROCKET File Outputs	10
ROCKET File Procedures	10
Requests	11
REFERENCES	17
Appendix A. World Data Centers	A-1
Appendix B. Launch Site Index	B-1
Appendix C. Rocket Identification, Agency Designations	C-1
Appendix D. Experimenter Affiliations	D-1
Appendix E-1. Instrument Codes	E-1
Appendix E-2. Instrument List (Proposed 1972 Revision)	E-3
Appendix F. ROCKET File Input Sheet	F-1

ILLUSTRATIONS

<u>Figure</u>	<u>Page</u>
1. Sample Launch Report	6
2. Rocket Discipline Codes	8
3. Event Codes	12
4. Sample ROCKET File Outputs (4A and 4B)	13
5. Sample SRL Report	15

INTRODUCTION

Observations of the space above the earth's surface may be made from the ground or from spacecraft operating above the ground. There are several discipline-oriented data centers interested in ground-based observations that include the remote observation of space data. The National Space Science Data Center (NSSDC) collects data observed from spacecraft (i.e., satellites, rockets, balloons, and aircraft). Observations from space produce tremendous amounts of data to be processed and studied. This huge volume of data is complicated by the wide diversity of spacecraft and of observing instruments.

Observations generally fall into four categories which overlap to some extent. First, there are observations of the engineering performance of the spacecraft. The data from these observations are of interest to a specialized engineering community and are used by spacecraft designers and engineers in order to build more reliable and more efficient spacecraft. Therefore, the useful lifetime of these data is usually short. Biomedical experiments related to space travel are included in this category.

The second category of spacecraft observations is closely related to the commercial pursuits of mankind. This category involves the observation of meteorological and oceanographic phenomena for the forecasting of oceanic and atmospheric conditions and includes communications and navigation, surveillance and inventory of agricultural and wildlife resources, mapping, and surveying. Although the length of their useful lives varies widely, most observations are initially used within a period of hours or days after the time of observation.

The third category includes spacecraft observations made for obtaining information essential to national security. Use of these observations is necessarily limited to the various agencies concerned with national security and defense.

NSSDC is concerned only with the fourth category of spacecraft observations, the "in situ" or remote observations of the natural environment from spacecraft. These may be more fully described as observations of geophysical and astrophysical phenomena made specifically for the purpose of improving our scientific understanding of the chemistry and physics of our universe. In order to obtain the full benefit of these scientific observations, they must be made readily available since their useful life may be relatively long. Although the processes being observed are only partially understood, it is known that they interact with one another in many ways. Consequently, most observations are expected to show complex temporal and spatial variations. These variations occur over a wide spectrum of sizes, frequencies, intensities,

etc., of the various observed parameters. At present, investigation of only a few of the more easily observed variables has produced large volumes of data that may be useful for scientific study. Briefly stated, the mission of NSSDC is "to provide the means for the dissemination and analysis of space science data beyond that provided by the original experimenter" (Shapiro, 1969). The mission of NSSDC is more completely stated in a NASA Policy Directive (Reference 8). The purpose of this paper is to describe the policies and procedures established for the identification and selection of one segment of the NSSDC data base: namely rocket data. Since the various Data Center systems overlap with the ROCKET System, a brief description of the other interacting systems is given below.

NSSDC SYSTEMS

In order to facilitate the orderly and economical handling of data and requests for information in the past five years of operation, NSSDC has developed eight interrelated systems. The files within the systems are machine-sensible and include update routines and a variety of select and sort options. A more detailed description of NSSDC systems appears in Karlow and Vette (1969).

The Data Set Processing System operates independently of the other seven systems. This system is tape oriented and designed to provide maximum flexibility in receiving, reformatting, and indexing data in order to accommodate a wide variety of incoming data and requests.

The Extraterrestrial Photographic Information Center index is maintained to assist in identifying photographic data. The Non-Satellite Data System accounts for most non-satellite data available for use at NSSDC.

The Request Accounting Status and History information system is designed (1) to document data request processing, (2) to maintain a record of requests, and (3) to compile a variety of summary information about NSSDC request activity. The Technical Reference File is a bibliography of literature related to spacecraft scientific experimentation. Each entry is keyworded for the scientific content, the spacecraft identification, and the type of publication. The Distribution System includes names and current addresses of all spacecraft experimenters and contacts and all NSSDC mailing list addressees.

The Automated Internal Management (AIM) System and the ROCKET System are concerned with summary satellite and rocket information. Since the observational lifetime of a satellite is on the order of months or years, the information in the AIM System is voluminous.

NSSDC DATA COLLECTION POLICY

Rocket-borne observations are suitable for altitudes below those possible or economical for satellite operations and above those possible for research balloons. Gathering rocket data on a per-observation basis may be expensive when compared to other observational techniques because the time span of useful observation (normally about 10 minutes) is dependent on the altitude reached. Therefore, the rocket is most effective between altitudes of 50 and 400 km and above 400 km when the observation time required is quite short. Documentation from satellites and satellite experiments provides a much greater quantity of data for a given effort expended. Balloons and aircraft fall into a category similar to rockets in observing space data, except that they are most useful at altitudes below 50 km and for longer periods of time (days for balloons, hours for aircraft). Scientific payloads launched by guns (gun probes) and rockets launched from balloons (rockoons) are categorized with rockets.

Satellite observations can be made for months and even years unless the perigee altitude is low. In this case, frictional drag provides sufficient deceleration of the satellite to cause decay of the orbit and subsequent reentry. Typically, a satellite of low eccentricity will reenter when perigee altitudes become as low as 160 km (100 statute miles) and will have at least a 1-year lifetime when perigee altitudes are above 450 km (280 statute miles). For altitudes above 450 km, geophysical observations are limited, primarily by instrument design and instrument reliability.

Currently, the policy at NSSDC has been to concentrate on the active collection and documentation of satellite experiment data. The rocket data are obtained only when readily available, but identifying and indexing rocket flights and the associated literature* are actively pursued at NSSDC. When resources permit, the Data Center may actively collect and document research rocket data. Balloon and aircraft data will be handled in a manner similar to rocket data, but present limitations of NSSDC resources have prohibited activity with these kinds of observational data. In its indexing scheme, NSSDC has attempted to provide sufficient summary and reference information in a format that allows an interested investigator to identify rocket launches and select data that may be useful to his research. From these listings and from other available NSSDC files, the desired experimenters' addresses and some publications relative to the rocket flights of interest may be identified.

*It should be noted that no attempt is made to include synoptic rocket data that are routinely observed by the meteorological rocket networks (MRN). These data have a limited longer term scientific use and are collected by the World Data Center A for Meteorology (Hansen, 1970).

ROCKET INFORMATION SYSTEM

ROCKET FILE CONTENT

The ROCKET file index is maintained on magnetic tape so that sorting, selecting, updating, and report preparation can be easily accomplished. The information is obtained from a variety of sources including lists of launches from various agencies and results of launches reported in scientific journals. The primary source is the launch report (Figure 1) submitted to World Data Centers (WDC's) in accordance with the international Committee on Space Research (COSPAR) agreements (References 1, 2, 4, and 6). Each of the three World Data Centers is composed of several discipline-oriented subdivisions (see Appendix A). NSSDC operates the WDC-A for Rockets and Satellites and maintains its rocket information.

The NSSDC ROCKET file provides six major blocks of information which are described in the following paragraphs. The 20 specific entries allowed which comprise these six blocks are listed in Appendix F.

1. Rocket Identification Numbers. Since rocket identifications appear in such a variety of forms, a standard NSSDC identification has been adopted. It uses the UT date of launch and a unique, sequential, NSSDC-assigned two-digit serial number. The UT date of launch is used because it is the most universally available identifier for the rocket flight. The NSSDC-assigned serial number resolves any ambiguities that might arise from identical firing times, while keeping the identification number short. The standard identification number is preceded by an R to identify it as a rocket identification. The coded key is written RYYMM-DDSS; thus, the tenth flight assigned a serial number for 31 December 1973 would be designated as R7312-3110 with year, month, day, and serial number indicated in that order using two digits each. When the UT day of an identified rocket launch is unknown, relevant known information is kept in a temporary file. This file is identical to the ROCKET file except that its entries have identification numbers arbitrarily assigned. When the UT day of launch is identified, the whole file entry is transferred from the temporary file to the regular file.

The ROCKET file also includes the launch site, the UT time of launch, the rocket identification assigned by the sponsoring agency, the rocket type or name, and any project name associated with the launch. When the launch site is on board a ship, the ship location at time of launch is included. The launch sites identified to date, along with the coded abbreviations used, are listed in Appendix B. When launch sites have changed names or are in close proximity to one another, only one designation is normally used. Appendix C contains a list of agency keys used in assigning rocket designations.

AFCRL
REPORT OF SOUNDING ROCKET LAUNCHING

Vehicle No.: AO4.004-2 Rocket Type: Aerobee 170 Launching Site: White Sands
Range No.: AO4.004-2 Missile Range, New Mexico
Lat.: 32° 24'N
Long.: 106° 21'W

AFCRL Project Scientist: Dr. R.W. Walker

Experimenter and Location: Dr. R.W. Walker, AFCRL, L.G. Hanscom Field,
Bedford, Mass. 01730

OBJECTIVES AND INSTRUMENTATION:

OBJECTIVES: To investigate natural radiation which is emitted by the celestial sphere.

INSTRUMENTATION: The payload consisted of Hi-Star and stellar aspect sensors, ACS with stellar tracker, telemetry, and associated support instrumentation.

REMARKS:

Launching Date: 3 April 1971 Time: 0250 MST Peak Altitude: 158 Km.*
(98 st. mi.)

Rocket Performance: The rocket performance objectives were achieved.

Instrumentation Performance: Good

PRELIMINARY EXPERIMENTAL RESULTS:

Good experimental results were obtained and a successful recovery was made.

COMMENTS AND RECOMMENDATIONS:

* Based on plotboard data. Not to be considered final.
Prepared: 5 April 1971

Figure 1. Sample Launch Report

2. Sponsors and Experimenters. All experimenters and their affiliations at the time of launch are listed along with the country (and agency when needed) that sponsored or funded the launch. If obtaining the current address of an experimenter becomes necessary, it can usually be provided from the NSSDC Distribution file. The standard abbreviations used for experimenter affiliations are shown in Appendix D.

3. Experiment Discipline. The scientific disciplines with which the experiments are concerned are coded, as well as can be determined, from the information provided by the sponsoring country. The disciplines have been divided into 10 general categories, each of which may have up to 16 subcategories (Figure 2). (Note that in the Atmospheric Physics category subcategories V, Y, and Z have been specially designated because they are frequently used techniques, and each can be used to observe one or more of the other subcategories listed.)

4. Instrumentation. Designation of instrumentation is difficult, even when a complete description of the instruments used is available. Normally, only a very brief instrument description, if any, is available. In order to simplify the coding so that a technician can categorize the instrument, a standard list of instruments has been prepared. The instrument energy converter or sensor function has been emphasized, and the collimating, concentrating, selecting, comparing, and amplification characteristics have been largely ignored. The current list is included as Appendix E-1. Appendix E-2 is a draft of a new list that will be adopted in early 1972. This new listing is consistent with the keywords used in the Technical Reference File (TRF).

5. Performance Results. The performance of the rocket and the performance of the experiment are listed categorically as a success, partial success, or failure. The apogee heights are also listed.

The NSSDC Technical Reference File includes bibliographical entries keyworded to the NSSDC standard rocket ID. Thus, for any entry sorted from the ROCKET file, a reference bibliography resulting from that rocket flight can be obtained by using the NSSDC rocket ID as a key. Publications that are not readily available through standard library sources, including NASA's Scientific and Technical Information Facility, can be provided through WDC-A for Rockets and Satellites. Rocket data are frequently found in a fairly complete form in the literature. A space in the ROCKET file is available to indicate when data are available at NSSDC, either as published documents or in other forms.

1. Aurora and Airglow
 - 1A Deleted
 - 1B Auroral emissions
 - 1C Airglow emissions
 - 1D Auroral/airglow composition
 - 1E Atmospheric radiations
 - 1X Subdiscipline unknown

2. Atmospheric Physics
 - 2A Winds and diffusion
 - 2B Pressure
 - 2C Temperature
 - 2D Albedo
 - 2E Planetary radiations
 - 2F Neutral density
 - 2G Neutral composition
 - 2H Electromagnetic waves
 - 2I Acoustics
 - 2J Meteorological applications
 - 2K Noctilucent clouds
 - 2L Absorption/scattering
 - 2V Vapor trail or chemical release
 - 2X Subdiscipline unknown
 - 2Y Falling sphere
 - 2Z Grenades

3. Ionosphere
 - 3A Wave propagation
 - 3B Currents and fields
 - 3C Ion/electron density
 - 3D Ion composition
 - 3E Ion/electron temperature
 - 3F Ion production/recombination
 - 3G Ionospheric motions
 - 3X Subdiscipline unknown

4. Energetic Particles
 - 4A Galactic or solar cosmic rays
 - 4B Deleted
 - 4C Trapped radiation
 - 4D Precipitating particles
 - 4X Subdiscipline unknown

Figure 2. Rocket Discipline Codes

- 5. Magnetic and Electric Fields
 - 5A Electric fields
 - 5B Magnetic fields
 - 5C Other
 - 5X Subdiscipline unknown

- 6. Solar Physics
 - 6A Radio (>1 mm)
 - 6B Infrared (.8-1000 μ)
 - 6C Visible (3000-8000 A)
 - 6D Ultraviolet (2000-3000 A)
 - 6E Extreme UV (100-2000 A)
 - 6F X rays (.001-100 A)
 - 6G Gamma rays (<.001 A)
 - 6X Subdiscipline unknown

- 7. Astronomy
 - 7A Radio (>1 mm)
 - 7B Infrared (.8-1000 μ)
 - 7C Visible (3000-8000 A)
 - 7D Ultraviolet (2000-3000 A)
 - 7E Extreme UV (100-2000 A)
 - 7F X rays (.001-100 A)
 - 7G Gamma rays (<.001 A)
 - 7X Subdiscipline unknown

- 8. Planetology
 - 8A Micrometeorites
 - 8B Zodiacal light or gegenschein
 - 8C Gravity
 - 8D Terrain photographs
 - 8X Subdiscipline unknown

- 9. Biology
 - 9X Subdiscipline unknown

- 0. Rocket/Satellite Test and Other
 - 0A Performance
 - 0B Communication systems
 - 0C Experiment test/development
 - 0D Engineering experiments
 - 0E Other
 - 0X Subdiscipline unknown

Figure 2. Rocket Discipline Codes (continued)

6. Miscellaneous. There are spaces in the index for three other entries. (1) If rocket-borne observations are being made concurrently with an important geophysical or other event, an appropriate identification of the event can be made. The key is shown in Figure 3. (2) A record is kept, for internal use, of the date of initial entry of data on each rocket into the file. (3) Space for free-text remarks is available.

ROCKET FILE OUTPUTS

Upon request, a selection can be made on any of the ROCKET entries, except for the remarks section. Two standard listings, each of which contains much of the file content on all rockets, are prepared monthly. These listings are identical in content, but one is sorted by NSSDC rocket ID and the other by agency ID. Figure 4 illustrates these listings. A complete file listing is also prepared periodically for internal use at the Data Center. A WDC-A report, "Sounding Rocket Launching Report" (SRL), is published monthly (Figure 5) and includes launches with successful rocket and experiment performances that were added to the ROCKET file during that month. The report is divided into three sections: (1) summary of sounding rocket launchings, (2) addresses of experimenters, and (3) rocket discipline codes. The SRL is published in cumulative form every 6 months and every 2 years as the "World Data Center A for Rockets and Satellites Catalogue of Data." A complete listing of the ROCKET file in SRL form is planned for early 1972 as a WDC-A publication.

ROCKET FILE PROCEDURES

The majority of information in the file is obtained from the rocket launch announcements which are routinely received. A typical announcement is shown in Figure 1. The information from these announcements is coded and added periodically (at least monthly) to the file. The SRL is prepared from the monthly update to the file. Another important source of information is scientific publications. As the NSSDC data acquisition scientists encounter literature and/or published data resulting from rocket flights, these publications are keyworded with the standard NSSDC rocket ID and then screened for information missing from the ROCKET file index. In this way, additional flights are added to the index, and supplemental information is gathered about rocket flights previously identified.

Entries and additions to the file are made by keypunched cards (Appendix F).

REQUESTS

Information or data at NSSDC are available to scientific investigators at no more than the cost of copying (Fava et al., 1970). This includes routine and/or special listings prepared from the ROCKET information system. Investigators should address their requests to:

WDC-A, Rockets and Satellites
Goddard Space Flight Center (Code 601)
Greenbelt, Maryland 20771 U.S.A.

If it is more convenient, requests from other nations may be routed through any of the other WDC's. The addresses of the other two WDC's for Rockets and Satellites are included here for reference.

WDC-B, Rockets and Satellites
Soviet Geophysics Committee
Academy of Sciences of
the U.S.S.R.
Molodezhnaya 3
Moscow B-296, U.S.S.R.

WDC-C, Rockets and Satellites
Radio and Space Research Station
Ditton Park
Slough, Bucks, England

<u>CODE</u>	<u>EVENT</u>
A	<u>A</u> urora/Airglow
C	E <u>c</u> lipse
D	<u>D</u> awn/Dusk
E	Sporadic <u>E</u>
F	Spread <u>F</u>
I	<u>I</u> onospheric Event (SID, PAC, or AZA)
M	<u>M</u> agnetic Storm
N	<u>N</u> ight/Day
O	<u>N</u> octilucent Cloud
Q	Magnetic <u>Q</u> uiet Time
R	<u>A</u> rtificial Event
S	<u>S</u> olar Event (Flare)
T	Sat <u>e</u> llite Overfly
U	<u>Q</u> uiet Sun
W	Strat <u>w</u> arm
X	No Event or Event Undetermined

Figure 3. Event Codes

SUMMARY OF SOUNDING ROCKET LAUNCHINGS
IDENTIFIED DURING PERIOD 1 SEPT - 30 SEPT 1971

DATE (UT)	TIME (UT)	ROCKET NUMBER OR TYPE	SPONSORING COUNTRY	LAUNCHING SITE	EXPERIMENTS*										APPROX. APOGEE (KM)	PRINCIPAL EXPERIMENTER(S)	
					1	2	3	4	5	6	7	8	9	0			
04/29/65	1426	SL 461	AUSTRALIA	WOOMERA		Z										124	UNKNOWN
09/08/70	0507	P030H	UNITED KINGDOM	SOUTH UIST												148	BOWEN, P. J.
09/08/70	1901	P032H	UNITED KINGDOM	SOUTH UIST												149	BOWEN, P. J.
09/11/70	0559	P031H	UNITED KINGDOM	SOUTH UIST												N/A	BOWEN, P. J.
09/18/70	1139	P01CH	UNITED KINGDOM	SOUTH UIST												144	WILLIAMS, E. P.
10/08/70	0820	SL 0972	AUSTRALIA UNITED KINGDOM	WOOMERA												232	COOKE, B. A.
10/14/70	0845	SL 1021	AUSTRALIA UNITED KINGDOM	WOOMERA												270	WILLMORE, A. F. CRUISE, A. M.
11/11/70	0455	SL 0905	AUSTRALIA UNITED KINGDOM	WOOMERA												183	SANFORD, P. W. NEWTON, A. C. CRUISE, A. M.
11/12/70	1230	P021H	UNITED KINGDOM	SOUTH UIST												85	WILLIAMS, E. R.
11/16/70	2108	P037H	UNITED KINGDOM	SOUTH UIST												N/A	ROTHWELL, P.
11/19/70	0616	P047H	UNITED KINGDOM	SOUTH UIST												129	RYCROFT, M. J. BULLOUGH, K.
11/19/70	2200	SL 0904	AUSTRALIA UNITED KINGDOM	WOOMERA												209	JANES, A. F. BARNES, M. B.

LATEST MONTHLY **DATA REPORT-HIGH ALTITUDE METEOROLOGICAL DATA**
ISSUED BY WDC-A FOR METEOROLOGY IS DECEMBER 1969

*REFER TO FINAL PAGE OF REPORT FOR EXPLANATION OF CODES FOR TYPE OF EXPERIMENT.

Figure 5. Sample SRL Report

PRECEDING PAGE BLANK NOT FILMED

REFERENCES

1. "COSPAR Guide to Rocket and Satellite Information and Data Exchange," COSPAR Information Bulletin No. 9, July 1962.
2. "COSPAR Guide to Rocket and Satellite Information and Data Exchange," COSPAR Transactions No. 4, part 1, December 1967.
3. Fava, J. A., C. K. Michlovitz, and N. Karlow, "Responding to Requests at the National Space Science Data Center," NASA-GSFC X-601-70-162, May 1970.
4. "Guide to International Data Exchange through the World Data Centers for the Period 1960-Onwards," November 1963.
5. Hansen, H., "Some Notes on the Availability of Rocketsonde and Other High Altitude Meteorological Data," April 1970, Unpublished.
6. "ICSU-WDC (International Council of Scientific Unions - World Data Centers) Memorandum No. 7," April 1971.
7. Karlow, N., and J. I. Vette, "Flow and Use of Information at the National Space Science Data Center," NSSDC 69-02, January 1969.
8. "Policy Concerning Data Obtained from Space Science Flight Experiments," NASA Policy Directive (NPD) 8030.3, January 1967.
9. Shapiro, A., "Requirements for the National Space Science Data Center Information System," NSSDC 69-04, March 1969.

Appendix A. World Data Centers

I-V

LOCATION	DISCIPLINE																											
	National Office	Airglow	Aurorae	Visual Observations	All-Sky Photos	Cosmic Rays	Geomagnetism	Glaciology	Gravity	Ionosphere	Longitude & Latitude	Meteorology	Nuclear Radiation	Oceanography	Rockets & Satellites	Seismology	Solar (astronomy)	Calcium Plage	Corona	Comet Tails	H- α Flares	Protons	SID	Radio	Sunspots	Tsunamis	Upper Mantle	
COUNTRY	CITY																											
Belgium	Uccle								C																			
Czechoslovakia	Ondrejov																						C					
Denmark	Charlottenlund							C1																				
Federal Republic Of Germany	Freiburg																				C				C			
Federal Republic Of Germany	Munich																			C								
France	Bagneres-de-Bigorre																		C									
France	Meudon																				C							
France	Paris		C1																									
France	Strasbourg															C												
Italy	Arcetri-Firenze																	C										
Italy	Rome																					C						
Japan	Kyoto						C2																					
Japan	Tokyo (Tokyo Astronomical Observatory)		C2																									
Japan	Tokyo (Institute of Physical & Chemical Research)						C2																					
Japan	Tokyo (Japan Meteorological Agency)												C2															
Japan	Tokyo (Radio Research Laboratories)									C2																		
Japan	Toyokawa																									C		
Netherlands	Utrecht																									C		
Sweden	Kiruna				C																							
Sweden	Stockholm												C1															
Sweden	Uppsala					C1																						
Switzerland	Zurich																										C	
United Kingdom	Edinburgh			C																								
United Kingdom	Cambridge							C																				
United Kingdom	Slough									C1					C								C1	C1				

Appendix A. World Data Centers (continued)

A-2

LOCATION	DISCIPLINE																												
	National Office	Airglow	Aurorae	Visual Observations	All-Sky Photos	Cosmic Rays	Geomagnetism	Glaciology	Gravity	Ionosphere	Longitude & Latitude	Meteorology	Nuclear Radiation	Oceanography	Rockets & Satellites	Seismology	Solar (astronomy)	Calcium Plage	Corona	Comet Tails	H- α Flares	Protons	SID	Radio	Sunspots	Tsunamis	Upper Mantle		
COUNTRY	CITY																												
United States	Asheville, N.C.																												
United States	Boulder, Colo.		A	A		A				A								A											
United States	Greenbelt, Md.														A														
United States	Honolulu, Hawaii																									A			
United States	Palisades, N.Y.																										A		
United States	Boulder, Colo.						A		A								A												
United States	Tacoma, Wash.							A																					
United States	Washington, D.C. (National Academy of Sciences)	A																											
United States	Washington, D.C. (National Oceanic and Atmospheric Administration)													A															
United States	Washington, D.C. (U.S. Naval Observatory)										A																		
U.S.S.R.	Kiev																				B								
U.S.S.R.	Moscow (Institute of Aeroclimatology)							B1	B1		B1	B1	B1	B1	B1	B1											B1		
U.S.S.R.	Moscow (Soviet Geophysical Committee of the Academy of Sciences)	B	B2	B2		B2	B2			B2								B2											
U.S.S.R.	Simeiz, Crimea																					B							

Appendix B. Launch Site Index*

Country Code	Country	Site Code	Launching Site	Geographic Coordinates		International Zone Time
				Lat	Long.	
AL	Algeria	HAMM	Hammaguir (Colomb Bechar)	30D54'N	003D05'W	UT 0
AL	Algeria	REGN	Reggane	26D43'N	000D10'E	UT 0
AR	Argentina	CHAM	Chamical	30D20'S	066D19'W	UT -4
AR	Argentina	MARC	Mar Chiquita	37D45'S	057D25'W	UT -4
AR	Argentina	MRDP	Mar Del Plata	38D00'S	058D00'W	UT -4
AR	Argentina	TART	Tartagul	22D46'S	063D49'W	UT -4
AU	Australia	WOOM	Woomera	31D58'S	136D31'E	UT +9
AU	Australia	CARN	Carnarvon	24D30'S	113D24'E	UT +8
AX	Antarctica (Fr)	DMDU	Dumont d'Urville	64D40'S	140D01'E	UT +9
UR	U.S.S.R.	XMOL	Ship Molodezhnaya			
BR	Brazil	CASS	Cassino	32D12'S	052D10'W	UT -3
BR	Brazil	NATL	Natal	05D52'S	035D23'W	UT -3
CA	Canada	CPPR	Cape Parry, N.W. Terr.	70D10'N	124D43'W	UT -8
CA	Canada	FTCR	Fort Churchill, Manitoba	58D44'N	093D49'W	UT -6
CA	Canada	PRIM	Primrose Lake, Alberta	54D45'N	110D03'W	UT -7
CA	Canada	RESB	Resolute Bay, N.W. Terr.	74D42'N	094D54'W	UT -6
CA	Canada	EQUD	East Quoddy, Nfld.	44D54'N	063D25'W	UT -4
FG	French Guiana	KFRG	Kourou (Guyane)	05D12'N	052D44'W	UT -4
FR	France	IDLF	Ile du Levant	43D03'N	006D28'E	UT 0
FR	France	TCLN	Test Center of Landes	44D16'N	003D36'W	UT +1
GR	Greece	KARY	Karystos	38D01'N	024D25'E	UT +2
GR	Greece	KORO	Koroni Beach	36D46'N	021D57'E	UT +2
IA	Indonesia	LPSC	Lapan Space Center, Indonesia	06D16'S	106D52'E	UT +7
IN	India	THUM	Thumba (Trivandrum)	08D32'N	076D52'E	UT +5
IT	Italy	SARA	Sardinia	39D56'N	009D24'E	UT +1
JA	Japan	AKTA	Akita	39D34'N	140D04'E	UT +9

*Ordered by country code.

Appendix B. Launch Site Index (continued)

Country Code	Country	Site Code	Launching Site	Geographic Coordinates		International Zone Time
				Lat	Long.	
JA	Japan	KAGA	Kagoshima	31D15'N	131D04'E	UT +9
JA	Japan	OBAl	Obachi, Aomori	40D42'N	141D44'E	UT +9
KE	Kenya	SMPK	San Marco Platform	02D56'S	040D13'E	UT +3
NO	Norway	ANDA	Andoya	69D18'N	016D01'E	UT +1
NZ	New Zealand	KARP	Cape Karikari	34D00'S	173D30'E	UT +12
PA	Pakistan	SONM	Sonmiani (Karachi)	25D12'N	066D45'E	UT +4
PR	Puerto Rico	AREO	Arecibo (Vega Baja)	18D30'N	066D50'W	UT -4
SM	Surinam	CORE	Coronie	05D51'N	056D18'W	UT -4
SP	Spain	AREN	Arenosello (Huelva)	37D06'N	006D44'E	UT +1
SW	Sweden	KIRA	Kiruna	68D00'N	021D00'E	UT +1
SW	Sweden	KRON	Kronogard	66D13'N	019D47'E	UT +1
UA	United States	ARRF	Alaska Rocket Range, Alaska	65D06'N	147D30'W	UT -10
UA	United States	BARS	Barking Sands (Kauai), Hawaii	22D04'N	159D46'W	UT -11
UA	United States	BART	Barter Island, Alaska	70D07'N	143D38'W	UT -10
UA	United States	CPKF	Atlantic Missile Range, Florida	28D27'N	080D32'W	UT -5
UA	United States	CPKF	Cape Canaveral, Florida	28D27'N	080D32'W	UT -5
UA	United States	CPKF	Cape Kennedy, Florida	28D27'N	080D32'W	UT -5
UA	United States	CPKF	Eastern Test Range, Florida	28D27'N	080D32'W	UT -5
UA	United States	EGLN	Eglin AFB (Panama City), Florida	30D23'N	086D42'W	UT -6
UA	United States	FTSM	Fort Sherman (Canal Zone)	09D20'N	079D59'W	UT -5
UA	United States	FTWW	Fairbanks, Alaska	64D48'N	147D38'W	UT -10
UA	United States	FTWW	Fort Wainwright, Alaska	64D48'N	147D38'W	UT -10
UA	United States	JOHI	Johnston Island	16D45'N	169D31'W	UT -11
UA	United States	KEWE	Keweenaw, Michigan	47D26'N	087D43'W	UT -6
UA	United States	KWJN	Kwajalein, Marshall Islands	08D44'N	167D44'E	UT +12
UA	United States	PTBO	Point Barrow, Alaska	71D20'N	156D47'W	UT -10
UA	United States	PTMU	Point Mugu (Oxnard), Calif.	34D07'N	119D07'W	UT -8
UA	United States	TONM	Tonopah Test Range, Nevada	38D00'N	116D30'W	UT -8

Appendix B. Launch Site Index (continued)

Country Code	Country	Site Code	Launching Site	Geographic Coordinates		International Zone Time
				Lat.	Long.	
UA	United States	VNBC	Pacific Missile Range, Calif.	34D38'N	120D32'W	UT -8
UA	United States	VNBC	Point Arguello (Lompoc), Calif.	34D37'N	120D35'W	UT -8
UA	United States	VNBC	Western Test Range (Lompoc), Calif.	34D38'N	120D32'W	UT -8
UA	United States	VNBC	Vandenburg AFB (Lompoc), Calif.	34D38'N	120D32'W	UT -8
UA	United States	WALI	Wallops Island, Virginia	37D50'N	075D29'W	UT -5
UA	United States	WSMR	Holloman, New Mexico	32D24'N	106D32'W	UT -7
UA	United States	WSMR	White Sands Missile Range, New Mexico	32D24'N	106D32'W	UT -7
UA	United States	XCRO	Ship Croatan			
UA	United States	YUMA	Yuma, Arizona	32D52'N	114D19'W	UT -7
UK	United Kingdom	ANTA	Antigua, BWI	17D09'N	061D47'W	UT -4
UK	United Kingdom	ASNI	Ascension Island	07D59'S	014D25'W	UT 0
UK	United Kingdom	SUST	South Uist, Scotland	57D22'N	007D20'W	UT +1
UR	U.S.S.R.	KAIS	Kheisa Island	80D27'N	058D03'E	UT +5
UR	U.S.S.R.	KAPU	Kapustin Yar, Astrakhan	48D31'N	045D48'E	UT +4
UR	U.S.S.R.	PLES	Plesetsk, Arkhangelsk	65D42'N	040D21'E	UT +4
UR	U.S.S.R.	TYUR	Tyuratarm, Kazakhstan	45D38'N	063D16'E	UT +4
UR	U.S.S.R.	KAPU	Volgograd, Stalingrad	48D31'N	045D48'E	UT +4

Appendix C

Rocket Identification, Agency Designations

The format and codes used by nations, organizations, and agencies to identify rockets are compiled alphabetically by country name. When it is not obvious, the date that usage of the code was initiated is included. In designating the format, sequential letters are used to key alphabetic codes and sequential numbers to key numerical codes. When the format is of variable length, X or 0 is used to key letters or numbers, respectively. Where Roman numerals are commonly used, they are keyed with Z but are converted to Arabic numbers in the listings for convenience in sorting. When either a letter or a number can be used, the key for the more common case is used and underlined (see key below). NSSDC would appreciate information that would correct or extend this listing.

KEY

letter keys	A,B,C - - - U,V,W (single letter key) X (key for one or more letters)
number keys	1,2,3,4 - - - (single Arabic number key) 0 (key for one or more numbers) Z (key for Roman numerals)

EXAMPLES

<u>Example 1</u>	Canada
Key	= ABC-ZD-123
Agency ID	= AKF-III A-12
NSSDC File Entry	= AKF-3A-012
<u>Example 2</u>	U.S. (early launches to about 1956)
Key	= X-123
Agency ID	= Viking-2
NSSDC File Entry	= Viking-002

Canada

Format

ABC-ZD-123

Affiliation of funding agency-----A
Affiliation of project scientist-----B
Payload manufacturer-----C
Rocket type (D sometimes omitted)-----ZD
Serially assigned number-----123

Codes

- (a) Key for "A" or "B" or "C"
- A - National Research Council
 - B - Communications Research Centre (previously DRTE)
 - C - CARDE (Canadian Armament R&D Establishment)
 - D - University of Saskatchewan
 - E - University of Toronto
 - F - Bristol Aerospace Ltd.
 - G - Pacific Missile Range
 - H - University of Western Ontario
 - K - University of Calgary
 - L - Federal Republic of Germany (MPI)
 - M - York University
 - N - University of British Columbia
 - O - University of Montreal

(b) Key for "ZD"

Agency Entry	NSSDC File Entry
II	= 2 - Black Brant 2
IIIA	= 3A - Black Brant 3A
IVA	= 4A - Black Brant 4A
IVB	= 4B - Black Brant 4B
VA	= 5A - Black Brant 5A
VA/1	= 5A/1 - Black Brant 5A/1
VB	= 5B - Black Brant 5B
	BA - Boosted Arcas
	S2 - Skua II

Example

Key = ABC-ZD-123
Agency ID = AMF-IIIA-47
NSSDC File Entry = AMF-3A-047

England (See United Kingdom)

ESRO (European Space Research Organization)

Format

X-A12/3

Organization-----X
Rocket type-----A
Payload package identification-----12
Serially assigned number-----3

Codes

- (a) Key for "X"
ESRO - European Space Research Organization
- (b) Key for "A"
A - Arcas
B - Belier
C - Centaure
D - Dragon
S - Skylark
V - Veronique
- (c) Key for "12"
These are described in "ESRO Information Document 2/68" and various issues of the "ESRO/ELDO Bulletin." Each payload is identified as consisting of one or more rocket (e.g., R.12) and/or satellite (e.g., S.12) experiments.

Example

Key = X-A12/3
Agency ID = C62/2
NSSDC File Entry = ESRO-C62/2

France

Format

X-123

Launch site or rocket type-----X
Serially assigned number-----123

France (continued)

Code

Key for "X"
 CE - Centaur
 D - Dragon
 D1 - Dragon I
 D2 - Dragon II
 D3 - Dragon III
 N - Hammaguir Range, Algeria (North Africa)
 NA - Hammaguir Range, Algeria (North Africa)

Example

Key = X-12
 Agency ID = Dragon III ND24
 NSSDC File Entry = D3-024

India

Format

X-12-345

National agency-----X
 Rocket type-----12
 Serially assigned number-----345

Codes

- (a) Key for "X"
 INCOSPAR - Indian Committee for Space Research
 ISRO - Indian Space Research Organization
- (b) Key for "12"
 08 - M100
 10 - unknown
 11 - unknown
 15 - unknown
 19 - unknown
 20 - unknown
 23 - unknown
 24 - unknown
 25 - unknown
 30 - unknown
 35 - unknown

India (continued)

40 - unknown
45 - unknown
JD - Judi Dart

Example

Key = X-12-34
Agency ID = ISRO-45.03
NSSDC File Entry = ISRO-45.003

Italy

Format

X-AB-123

Organization-----X
Rocket type-----AB
Serially assigned number-----123

Codes

- (a) Key for "X"
ISRC - Italian Space Research Council
- (b) Key for "AB"
SK - Skylark
RS - Unknown

Example

Key = X-AB-123
Agency ID = ISRC-RC-02
NSSDC File Entry = ISRC-RC-002

Japan

Format 1 (first rocket development models)

X-A

Rocket type-----X
Text purpose-----A

Japan (continued)

Codes for Format 1

- (a) Key for "X"
Pencil
Baby
- (b) Key for "A"
S - Simple
R - Recovery
T - Telemeter

Example of Format 1

Key	= X-A
Agency ID	= Baby-R
NSSDC File Entry	= Baby-R

Format 2 (rocket development models)

AB-123-4/5

Rocket purpose-----	AB
First stage diameter in millimeters-----	123
Test motor - fractional part of nominal length-----	4/5

Codes for Format 2

- (a) Key for "AB"
AT - Antenna test
FN - Four nozzle test
FT - Flutter test
HT - Heat and structural test
K- - Kappa
L- - Lambda
LT - Launch test
ML - Unknown
MT - Meteorological rocket
OT - Operational test
RT - Radar transponder
S- - Sigma
SO - Safety operation
ST - Stability test
SP - Spin tail (fin test)

Japan (continued)

(b) Key for "123"

050 - 50 mm
075 - 75 mm
122 - 122 mm
128 - 128 mm
135 - 135 mm
150 - 150 mm
160 - 160 mm
245 - 245 mm
300 - 300 mm
420 - 420 mm
735 - 735 mm

(c) Key for "4/5" (used for ground test rocket motors)

1/9 - One ninth flight design length
1/3 - One third flight design length
2/3 - Two thirds flight design length
3/3 - Full size motor
J - Unknown

Example of Format 2

Key = AB-123-4/5
Agency ID = L-735-3/3
NSSDC File Entry = L-735-3/3

Format 3

A-12B-CD-345

Rocket type-----A
Rocket model-----12B
Parameters observed (usually omitted)-----CD
Serially assigned number-----345

Codes for Format 3

(a) Key for "A"

K - Kappa
L - Lambda
M - Mu
S - Sigma

Japan (continued)

- (b) Key for "12"
Serially assigned number. Roman and Arabic numbers are both commonly used for K-6. For other rockets, Arabic numbers are most commonly used.

- (c) Key for "B" (when missing, is usually an L or M model)
 - L - Low performance
 - M - Medium performance
 - H - High performance
 - S - Super-high performance

- (d) Key for "CD" (When more than one "CD-345" exists, the file entry will repeat using a "/" separation as shown in the example below.)
 - TW - Temperature, wind
 - CP - Cosmic rays, pressure
 - RS - Solar radiation
 - IC - Unknown
 - ID - Unknown
 - AG - Unknown

Example of Format 3

Key	=	A-12B-CD-345
		(AG-3)
Agency ID	=	K-8 (ID-2)
NSSDC File Entry	=	K-8-AG-5/ID-2

Format 4

A-123

Unknown-----A
Serially assigned number-----123

Code for Format 4

Key for "A"
S - unknown
T - unknown

Japan (continued)

Example of Format 4

Format = A-123
Agency ID = T-63
NSSDC File Entry = T-063

Netherlands

Format X-Z

Launch site-----X
Serially assigned number-----Z

Code

Key for "X"
Surinam

Example

Key = X-Z
Agency ID = Surinam I
NSSDC File Entry = SURINAM-01

Norway

Format X-123

Rocket type-----X
Serially assigned number-----123

Code

Key for "X"
DE - unknown

Example

Key = X-123
Agency ID = DE-35
NSSDC File Entry = DE-035

Pakistan

Format

X-123/45

National agency or rocket name-----X
Serially assigned number-----123
Scheduled launch year (appears after 1968)-----45

Codes

- (a) Key for "X"
Rehbar - Guide
Rehnuma - Leader
Shahpar - Rider
Suparco - Space and Upper Atmospheric Research
Commission
- (b) Key for "45"
Last two digits of year

Example

Key = X-123/45
Agency ID = SUPARCO 62/70
NSSDC File Entry = SUPARCO-062/70

Sweden

Format

A12-345

Launch site-----A
Launch year-----12
Serially assigned number-----345

Codes

- (a) Key for "A"
K - Kiruna
- (b) Key for "12"
Last two digits of year

Sweden (continued)

Example

Key = A-12-345
Agency ID = K62-1
NSSDC File Entry = K-62-001

United Kingdom

Format

AB-123C

Rocket type-----AB
Serially assigned number (four numbers used for
Skylark rockets)-----123
Launch site (omitted for Skylark rockets)-----C

Codes

- (a) Key for "AB"
SU - Skua 1
SA - Skua 2
P- - Petrel
SL - Skylark
- (b) Key for "C"
H - South Uist
T - Thumba
K - Kiruna

Example

Key = AB-123C
Agency ID = P 9H
NSSDC File Entry = P--009A

United States (early launches to about 1956)

Format

X-123

Vehicle or organization name-----X
Serially assigned number-----123

United States (continued)

Code

Key for "X"

A - Applied Physics Lab. (APL), Johns Hopkins
University
DAN - Nike Deacon
N-C - Nike Cajun
NRL - U.S. Naval Research Laboratory
SC - Army Signal Corps Engineering Laboratories
USAF - U.S. Air Force
V-2 - V-2 Rocket
Viking - Viking Rocket

Example

Key = X-12
Agency ID = DAN-4
NSSDC File Entry = DAN-004

United States, DASA (Defense Atomic Support Agency)

Format

A-123B

Agency-----A
Serially assigned number-----123
Unknown (usually omitted)-----B

Code

Key for "A"
D - DASA

Example

Key = A-123B
Agency ID = D-16B
NSSDC File Entry = D-016B

United States, DOD-USAF (Department of Defense, U.S. Air Force)

Format 1 (approximately 1960 to 1968)

AB12.345C

Organization-----A
Fiscal year funding was provided-----B
Rocket type (same as NASA code)-----12
Serially assigned code for experimenters-----345
Serially assigned letter-----C

Codes for Format 1

- (a) Key for "A"
A - USAF
- (b) Key for "B"
A - FY 1961 (CY 60-61)
B - FY 1962
C - FY 1963
D - FY 1964
E - FY 1965
F - FY 1966
G - FY 1967
H - FY 1968
J - FY 1969

Example of Format 1

Key = AB12.345C
Agency ID = AA3.100C
NSSDC File Entry = AA03.100C

Format 2 (approximately 1969 to present)

A12.345-67

Organization-----A
Rocket type-----12
Fiscal year funding was provided-----3
Experiment (payload) number-----45
Serially assigned number-----67

Codes for Format 2

- (a) Key for "A"
A - USAF

United States, DOD-USAF (continued)

- (b) Key for "12"
03 - Aerobee 150
04 - Aerobee 170
07 - Niro
08 - Nike-Tomahawk
16 - Black Brant IV
17 - Black Brant VA
18 - Black Brant VC
19 - Javelin
21 - Trail Blazer
30 - Super Arcas
35 - Aerobee 350

- (c) Key for "3"
0 - 1970, 1980, etc.
1 - 1971, 1981, etc.

Example of Format 2

Key = A12.345-67
Agency ID = A30.900-03
NSSDC File Entry = A30.900-03

Format 3

X₁-X₂

"NAMED" rocket identifier-----X₁
Names assigned to rockets
Launched by Rosenberg of AFCRL-----X₂

Codes for Format 3

- (a) Key for "X₁"
NA - NAME (introduced by NSSDC so names will
sort together)
- (b) Key for "X₂"
Rocket name truncated to 12 characters. Examples follow:

Blanche	Indian Ground	Paragon	Violet
Blossum	Inez	Paula	Wanda
Clair	Jamestown	Queens Fort	Yorkshire
Dagmar	Lila	Rockley	
Dover	Maxwell	Sara	
Foul Bay	Needhams Point	Seawell	
Gun Hill	Orion	Stella	

United States, DOD-USAF (continued)

Example of Format 3

Key = X₁-X₂
Agency ID = Blanche
NSSDC File Entry = NA-Blanche

United States, DOD-USN (Department of Defense, U.S. Navy)
(IGY system used from 1956 to Nov. 7, 1960)

Format (from Nov. 8, 1960)

AB12.345C

Organization-----A
Experiment type-----B
Rocket type-----12
Serially assigned number-----345
Added information-----C

Codes

- (a) Key for "A"
N - Navy or NRL (Naval Research Laboratory)
- (b) Key for "B"
A - Solar radiation (Kreplin)
B - X-ray and UV astronomy (Byram)
C - Aeronomy (Johnson)
D - Airglow (Packer)
E - Solar spectroscopy (Purcell)
F - Infrared astronomy (McNuth)
- (c) Key for "12"
1 - Aerobee, RTV-N10
2 - Aerobee, RTV-N10C
3 - Aerobee 150, Navy Aerobee Hi, AGVL-011 3F, AJ11-21,
RV-N-130
5 - Aerobee 350
6 - Nike Cajun
7 - Black Brant III
8 - Nike Asp
9 - Black Brant IV
10 - Aerobee 300
11 - Aerobee 100 (Junior)
13 - Exos
14 - Astrobe 500

United States, DOD-USN (continued)

- 15 - Astrobee 200
- 16 - Caleb 1
- 17 - Caleb 2
- 18 - Iris
- 19 - Javelin
- 20 - Atlas Pod
- 21 - Super Chief, Sergeant-Talos
- 22 - Blue Scout Jr.
- 23 - Tomahawk

(d) Key for "C"

- F - Funded at least in part by National Science Foundation
- R - Reflight of recovered unsuccessful experiment

Example

Key = AB12.345C
Agency ID = NA3.201
NSSDC File Entry = NA3.201

United States, IGY

Format

AB12.345C

Directing agency-----A
Instrumenting agency-----B
Vehicle type-----12
Serially assigned number-----345
Vehicle purchaser if not directing agency-----C

Codes

(a) Key for "A" or "B" or "C"

- A - USAF CRL (Cambridge Research Laboratory)
- B - ARMY BRL (Ballistic Research Laboratory)
- C - University of Colorado
- F - NSF (National Science Foundation)
- I - SUI (State University of Iowa)
- M - University of Michigan
- N - NRL (Naval Research Laboratory)
- O - Army Ordnance
- S - Army Signal Corps Engineering Laboratory
- U - University of Utah
- CC - Canadian Armament R&D Establishment

United States, IGY (continued)

- (b) Key for "12"
01 - Aerobee, RTV-A-1a, AJ10-25
02 - Aerobee, RTV-N-10c, AJ10-35
03 - Navy Aerobee Hi, RV-N-13c
05 - Rockoon
06 - Nike Cajun
07 - Nike Deacon
08 - Nike Asp
09 - Loki II, Dart
10 - Spaerobee
12 - Aerobee 75

Example

Key = AB12.345C
Agency ID = OB6.03
NSSDC File Entry = OB06.003

United States, NASA

Format 1

X12.345AB

Organization-----X
Rocket type-----12
Serially assigned number-----345
Type of instrumenting agency-----A
NASA funding office-----B

Codes for Format 1

- (a) Key for "X"
NASA - National Aeronautics and Space Administration
- (b) Key for "12"
01 - Aerobee 100
02 - Arcon
03 - Nike Asp
04 - Aerobee 150, 150A
05 - Iris
06 - Aerobee 300
07 - Argo E-5
08 - Javelin
09 - Skylark

United States, NASA (continued)

- 10 - Nike Cajun
- 11 - Journeyman
- 12 - Special Project
- 13 - Unknown
- 14 - Nike Apache
- 15 - Arcas
- 16 - Astrobee 1500
- 17 - Aerobee 350
- 18 - Nike Tomahawk

- (c) Key for "A"
- A - Other government agencies
 - C - Industrial
 - D - Department of Defense
 - G - NASA-GSFC
 - I - International
 - N - NASA - other than GSFC
 - U - University or college

- (d) Key for "B"
- A - Aeronomy
 - B - Biology
 - E - Energetic particles and magnetic fields
 - G - Galactic astronomy
 - I - Ionospheric physics
 - M - Meteorology
 - P - Special projects
 - R - Radio astronomy
 - S - Solar physics
 - T - Test and support

Example of Format 1

Key	=	X12.345AB
Agency ID	=	14.434GE
NSSDC File Entry	=	NASA 14.434GE

Format 2

X-12

Organization-----	X
Serially assigned number-----	12

United States, NASA (continued)

Code for Format 2

Key for "X"

EXAMETNET - Experimental Inter-American Meteorological
Network (after 1969 considered a part of
MRN)

Example of Format 2

Key = X-12
Agency ID = EXAMETNET8
NSSDC File Entry = EXAMETNET-08

Format 3 (NASA-Wallops Island)

AB1-2345

Sponsoring organization-----A
Location or type operation (omitted for
Wallops ground launches)-----B
Number of rocket stages-----1
Serially assigned number-----2345

Codes for Format 3

(a) Key for "A"

A - NASA-Ames Research Center
B - U.S. Navy
C - NASA-Lewis Research Center
D - U.S. Air Force
E - U.S. Army
F - Foreign nations
G - NASA-GSFC
H - NASA-Headquarters
I - Industry
J - NASA-Jet Propulsion Laboratory
K - Colleges and universities
L - NASA-Langley Research Center
M - NASA-Manned Spacecraft Center
N - NASA-Kennedy Space Center
O - U.S. Coast Guard
P - NASA-Marshall Space Flight Center
Q - Atomic Energy Commission
R - Electronics Research Center
S - Scientific community other than universities
and colleges

United States, NASA (continued)

- T - Wallops Station
- U - Flight Research Center
- V -
- W - National Oceanic and Atmospheric Administration
(ESSA, WB), Department of Commerce

(b) Key for "B"

- A - Air launch
- B - Airborne instrumentation test
- C - Balloon launch
- D - Aircraft drop test
- E - Shipboard instrument test
- F - Spacecraft or vehicle track
- G - Ground-based instrumentation test
- H - Pt. Barrow, Alaska, launch
- I - French Guiana Space Center
- J - Aeronautical research program
- K - Satellite track
- L -
- M - Mobile-land launch
- N - Natal, Brazil, launch
- P - Earth resources
- Q - Bermuda, U.K., rocket launch
- R - Air/surface recovery equipment test
- S - Shipboard launch
- V - Ground vehicle test

Example of Format 3

Key	=	AB1-2345
Agency ID	=	G2-5351
NSSDC File Entry	=	G2-5351

U.S.S.R.

Format

X-0

Rocket designation-----X-0

U.S.S.R. (continued)

Code

Key for "X-0"

A-4 - Large geophysical rocket

MR-1 - Meteorological rocket

MP-12 - Meteorological rocket

M-100 - Meteorological rocket

Example

Key = X-0

Agency ID = MP-12

NSSDC File Entry = MP-12

Appendix D. Experimenter Affiliations*

<u>Country Code</u>	<u>Affiliation Code</u>	<u>Affiliation</u>
JA	AAIT	Aeronautics and Astronautics Institute, Tokyo University, Tokyo, Japan
AU	ADEU	University of Adelaide, Adelaide, Australia
UA	AFCR	Air Force Cambridge Research Laboratories, Bedford, Massachusetts
CA	ALBU	University of Alberta, Edmonton, Alberta, Canada
UA	ALKU	University of Alaska, College, Alaska
UA	AMES	Ames Research Center, Moffett Field, California
UA	ASEI	AS&E, Inc., Cambridge, Massachusetts
UK	ASPR	Astrophysics Research, Culham, Berks, England
UA	AVCO	Avco Corp., Tulsa, Oklahoma
CA	BALM	Bristol Aircraft Co., Winnipeg, Manitoba, Canada
UA	BBRC	Ball Brothers Research Corp., Boulder, Colorado
UK	BELU	Queens University of Belfast, Belfast, Northern Ireland
UK	BIRY	University of Birmingham, Dept. of Electron Phys., Birmingham, England
UA	BLRL	Ballistic Research Laboratory, Aberdeen, Maryland
IT	BOLU	University of Bologna, Physical Institute, Bologna, Italy
GF	BONU	University of Bonn, Physical Institute, Bonn, Federal Republic of Germany
CA	BRCU	University of British Columbia, Vancouver, B.C., Canada
BR	BSCB	Brazilian Space Commission (C.N.A.E.), Brazil
UA	CABU	University of California at Berkeley, Berkeley, California
UA	CALU	University of California at Los Angeles, Los Angeles, California
UK	CAMU	University of Cambridge, Physics Dept., Cambridge, England
UR	CAOB	Central Aerological Observatory, U.S.S.R.
UA	CASU	University of California at San Diego, San Diego, California
CA	CLGU	University of Calgary, Calgary, Alberta, Canada
UA	CLIT	California Institute of Technology, Pasadena, California
UK	CLNU	University College London, London, England
UA	CLRL	Columbia Radiation Laboratory, New York City, New York
CA	CMRS	Dept. of Communications, Communications Research Centre, Ottawa, Ontario, Canada

*Ordered by affiliation code.

Appendix D. Experimenter Affiliations (continued)

<u>Country Code</u>	<u>Affiliation Code</u>	<u>Affiliation</u>
FR	CNES	National Center of Space Studies, Paris, France
FR	CNET	National Center for the Study of Telecommunications, Paris, France
IT	CNRI	National Research Council, Bologna, Italy
FR	CNRS	National Center of Scientific Research, Verrieres-le-Buisson, France
UA	COLU	University of Colorado, Boulder, Colorado
UA	COMU	Columbia University, New York City, New York
UA	CORU	Cornell University, Ithaca, New York
AU	CSIR	Commonwealth Scientific and Industrial Research Organization, Melbourne, Australia
UK	CULE	Culham Laboratory, Culham, England
AR	CUNU	Cuyo National University, La Rioja, Argentina
UA	CUOA	Catholic University of America, Washington, D.C.
UK	CWLU	University College of Wales, Cardiganshire, Wales
CZ	CZAK	Czechoslovakian Academy of Sciences, Ondrejov Observatory, Czechoslovakia
JA	DEDU	Department of Electronics, Doshisha University, Kyoto, Japan
JA	DEKU	Department of Electronics, Kyoto University, Kyoto, Japan
JA	DIKU	Department of Instrumentation, Kobe University, Kobe, Japan
UA	DONY	Dudley Observatory, Albany, New York
JA	DOSH	Doshisha University, Kyoto, Japan
JA	DPNU	Department of Physics, Nagoya University, Nagoya, Japan
CA	DRBT	Defence Research Board Telecommunications Establishment, Ottawa, Ontario, Canada
DE	DSRI	Danish Space Research Institute, Lyngby, Denmark
UA	ERKC	SLD/ERL, Boulder, Colorado
NE	ESLA	ESLAB, Noordwikerhout, Noordwijk, Netherlands
IT	ESRI	European Space Research Institution, Rome, Italy
FR	ESRO	European Space Research Organization, Nevilly, France
FR	FDSF	Facility of Science, Toulouse, France
JA	FEOU	Faculty of Engineering, Osaka University, Osaka, Japan

Appendix D. Experimenter Affiliations (continued)

<u>Country Code</u>	<u>Affiliation Code</u>	<u>Affiliation</u>
UA	FHCR	Fairchild Hiller Corp., Rockville, Maryland
UA	FLRS	Florida State University, Tallahassee, Florida
JA	FRIJ	Fui Research Institute of Japan, Tokyo, Japan
JA	GETU	College of General Education, University of Tokyo, Tokyo, Japan
JA	GIFU	Gifu University, Gifu, Japan
JA	GITU	Geophysics Institute, Tohoku University, Sendai, Japan
UA	GORD	Geophysical Research Directorate, Bedford, Massachusetts
UA	GPCA	Geophysics Corporation of America, Bedford, Massachusetts
AS	GRAZ	Graz University, Graz, Austria
UA	GSFC	Goddard Space Flight Center, Greenbelt, Maryland
UA	HARO	Harvard College Observatory, Cambridge, Massachusetts
UA	HAWU	University of Hawaii, Honolulu, Hawaii
GF	HEIU	University of Heidelberg, Heidelberg, Federal Republic of Germany
JA	HITC	Hitachi Company, Ltd., Yokohama, Japan
UR	HSMD	Hydrometeorological Service, Main Directorate, U.S.S.R.
UA	HSTU	University of Houston, Houston, Texas
UR	IAPG	Institute of Applied Geophysics, U.S.S.R.
BL	IASB	Institute of Space Aeronomy, Brussels, Belgium
CA	IAST	Institute of Aeronautic Studies, Toronto, Ontario, Canada
JA	IATU	Institute of Atomic Energy, University of Tokyo, Yokosuka, Japan
FR	IFAR	Franco-Allemand Research Institute, St. Louis, Alsace, France
FP	IFTP	Institute for Theoretical Physics, Tubingen, Federal Republic of Germany
GF	IIBG	Ionosphere Institute, Breisach, Federal Republic of Germany
DE	ILLD	Ionosphere Laboratory, Lyngby, Denmark
UA	ILLU	University of Illinois, Urbana, Illinois
UR	INEM	Institute of Experimental Meteorology, U.S.S.R.
GF	INKG	Institute for Nuclear Physics, Federal Republic of Germany
IN	INMD	India Meteorological Department, Poona, India
JA	INTU	Tokyo Institute for Nuclear Study, Tokyo, Japan

Appendix D. Experimenter Affiliations (continued)

<u>Country Code</u>	<u>Affiliation Code</u>	<u>Affiliation</u>
JA	IOLK	Ionosphere Observation Laboratory, University of Kyoto, Kyoto, Japan
JA	IOPR	Institute of Optical Research, Kyoiku University, Tokyo, Japan
UA	IOWU	University of Iowa, Iowa City, Iowa
JA	IPCR	Institute of Physical and Chemical Research, University of Tokyo, Tokyo, Japan
JA	IRIO	Industrial Research Institute, Osaka, Japan
JA	IRLK	Ionosphere Research Laboratory, Kyoto University, Kyoto, Japan
JA	ISAU	Institute of Space and Aeronautical Science, University of Tokyo, Tokyo, Japan
IT	ITSC	Italian Space Commission, Rome, Italy
JA	JAER	Japan Atomic Energy Research Institute, Japan
UA	JHUM	Johns Hopkins University, Baltimore, Maryland
JA	JMAT	Japan Meteorological Agency, Tokyo, Japan
UA	JPLC	Jet Propulsion Laboratory, Pasadena, California
SW	KAGO	Kiruna Geophysical Observatory, Kiruna, Sweden
UA	KENU	University of Kentucky, Lexington, Kentucky
JA	KMEC	Kubota Meteorological Equipment Co., Koga, Japan
UA	KPNO	Kitt Peak National Observatory, Kitt Peak, New Mexico
JA	KYOU	Kyoto University, Kyoto, Japan
UA	LARC	Langley Research Center, Hampton, Virginia
UK	LECU	Leicester University, Leicester, England
UA	LERC	Lewis Research Center, Cleveland, Ohio
BL	LIGU	University of Leige, Astrophysical Institute Cointe, Sclessin, Belgium
UA	LMSC	Lockheed Missile and Space Company, Palo Alto, California
	LPSP	Laboratory Satellite and Planetary Physics
SW	LUNO	Lund Observatory, Lund, Sweden
UA	MARU	University of Maryland, College Park, Maryland
JA	MATC	Matsushita Communication Industrial Co., Yokohama, Japan
UA	MCDA	McDonnell Douglas Aircraft Corp., Santa Monica, California

Appendix D. Experimenter Affiliations (continued)

<u>Country Code</u>	<u>Affiliation Code</u>	<u>Affiliation</u>
JA	MECO	Meisei Electrical Company, Karnakura, Japan
JA	MEDC	Meisei Denki Company, Ltd., Meguro-Ku, Tokyo, Japan
UK	METO	Meteorological Office, Bracknell, Berks, England
UA	MICU	University of Michigan, Ann Arbor, Michigan
JA	MIEC	Mitsubishi Electric Company, Karnakura, Japan
UA	MINU	University of Minnesota, Minneapolis, Minnesota
GF	MIPA	Max-Planck Institute for Physics and Astrophysics, Munich, Federal Republic of Germany
SW	MISU	Meteorological Institute of Stockholm University, Stockholm, Sweden
CA	MONU	University of Montreal, Montreal, Quebec, Canada
GF	MPIA	Max-Planck Institute for Aeronomy, Hannover, Federal Republic of Germany
GF	MPIE	Max-Planck Institute for Nuclear Physics, Heidelberg, Federal Republic of Germany
JA	MPTC	Ministry of Posts and Telecommunications, Tokyo, Japan
UA	MSCH	NASA Manned Spacecraft Center, Houston, Texas
UA	MSIT	Massachusetts Institute of Technology, Cambridge, Massachusetts
UK	MSSL	Mullard Space Science Laboratory, Dorking, Surrey, England
JA	NAGU	Nagoya University, Nagoya, Tokokawa, Japan
UA	NASA	National Aeronautics and Space Administration Headquarters, Washington, D.C.
UA	NBSB	National Bureau of Standards, Boulder, Colorado
UA	NCAR	National Center for Atmospheric Research, Boulder, Colorado
UA	NCAU	University of North Carolina, Raleigh, North Carolina
AR	NCRC	National Cosmic Radiation Center, Tucuman, Argentina
AR	NCSA	National Commission of Spatial Investigations, Buenos Aires, Argentina
FR	NCSS	National Center of Space Studies, Bretigny, France
NO	NDRE	Norwegian Defence Research Establishment, Kjeller, Norway
JA	NEPC	Nippon Electric Company, Kanagawa, Japan
JA	NESC	Nuclear Electronics and Systems Corp., Tokyo, Japan
UA	NHMU	University of New Hampshire, Durham, New Hampshire

Appendix D. Experimenter Affiliations (continued)

<u>Country Code</u>	<u>Affiliation Code</u>	<u>Affiliation</u>
NO	NICP	Norwegian Institute of Cosmic Physics, Oslo, Norway
SP	NITA	National Institute of Technical Aerospace, Madrid, Spain
UA	NLWC	Naval Weapons Center, China Lake, California
AR	NMRS	National Meteorological Service, Buenos Aires, La Rioja, Argentina
UA	NOTS	Naval Ordnance Test Station, Inyokern, California
UA	NOAA	National Oceanic and Atmospheric Administration, Boulder, Colorado
IN	NPLI	National Physical Laboratory, New Delhi, India
CA	NRCP	NRL/Pure Physics, Ottawa, Ontario, Canada
CA	NRCR	National Research Council, Ottawa, Ontario, Canada
UA	NRLW	Naval Research Laboratory, Washington, D.C.
FR	NSRC	National Scientific Research Center, Verrieres-le-Buisson, France
SP	OBDE	Ebro Observatory, Tortosa, Spain
JA	ODCO	Osaka Denpa Co., Osaka, Japan
JA	OKCU	Osaka City University, Osaka, Japan
UA	OKSU	Oklahoma State University, Stillwater, Oklahoma
UK	OOXU	Department of Astrophysics, Oxford University Observatory, Oxford, England
UA	ORNL	Oak Ridge National Laboratory, Oak Ridge, Tennessee
UA	PENS	Pennsylvania State University, University Park, Pennsylvania
UA	PITU	Pittsburgh University, Pittsburgh, Pennsylvania
IN	PRLI	Physical Research Laboratory, Ahmedabad, India
PA	PRUA	Pakistan Space and Upper Atmosphere Research Committee, Karachi, Pakistan
UA	PRUO	Princeton University Observatory, Princeton, New Jersey
UA	RICU	Rice University, Houston, Texas
JA	RINP	Research Institute of Nuclear Physics, University of Tokyo, Tokyo, Japan
SW	RITS	Royal Institute of Technology, Stockholm, Sweden
JA	RIUT	Rikkyo University, Toshimaku, Tokyo, Japan

Appendix D. Experimenter Affiliations (continued)

<u>Country Code</u>	<u>Affiliation Code</u>	<u>Affiliation</u>
NO	RNCS	Royal Norwegian Council for Scientific and Industrial Research, Oslo, Norway
NE	RNMN	Royal Netherlands Meteorological Institute, Debilt, Netherlands
SC	ROES	Royal Observatory Edinburgh, Edinburgh, Scotland
JA	RRLK	Radio Research Laboratories, Tokyo, Japan
UK	RSRS	Radio and Space Research Station, Slough, Bucks, England
UA	SANL	Sandia Laboratories, Albuquerque, New Mexico
UA	SAOC	Smithsonian Astrophysical Observatory, Cambridge, Massachusetts
CA	SASU	University of Saskatchewan, Saskatoon, Saskatchewan, Canada
UA	SCAS	Southwest Center for Advanced Studies, Dallas, Texas
UA	SERL	Space Environment Laboratory, Environmental Research Laboratories, Boulder, Colorado
UK	SHFU	University of Sheffield, Sheffield, England
UK	SHTU	University of Southampton, Southampton, England
CA	SIMU	Simon Frazer University, Burnaby, Canada
JA	SOKC	Sokkisha Company, Tokyo, Japan
UA	SPIA	Spacecraft Inc., Huntsville, Alabama
EP	SPRI	Space Research Institute, Freiburg, Federal Republic of Germany
UA	SRIC	Stanford Research Institute, Menlo Park, California
NE	SRLN	Space Research Laboratory, Utrecht, Netherlands
IN	SSTC	Space Science and Technology Center, Trivandrum, India
SW	STKU	University of Stockholm, Stockholm, Sweden
PA	SUPO	Suparco, Karachi, Pakistan
UA	SURC	Syracuse University Research Corp., Syracuse, New York
UK	SUSU	University of Sussex, Sussex, England
JA	TAOT	Tokyo Astronautical Observatory, Tokyo, Japan
AU	TASU	University of Tasmania, Tasmania, Australia
UA	TEXU	University of Texas, Dallas, Texas
JA	TOKI	Tokai University, Hiratsuka, Japan
JA	TOKU	University of Tokyo, Geophysics Research Laboratory, Tokyo, Japan

Appendix D. Experimenter Affiliations (continued)

<u>Country Code</u>	<u>Affiliation Code</u>	<u>Affiliation</u>
CA	TORU	University of Toronto, Toronto, Canada
UA	TRWI	TRW, Inc., Redondo Beach, California
GF	TUBU	University of Tubingen, Tubingen, Federal Republic of Germany
AR	TUNU	Tucuman National University, La Rioja, Argentina
UA	UBAY	Baylor University, Waco, Texas
SZ	UBPI	University of Bern, Bern, Switzerland
SW	UPIO	Uppsala Ionospheric Observatory, Uppsala, Sweden
UK	UQOP	UWO/Physical, London, England
UA	USCL	University of Southern California at Los Angeles, Los Angeles, California
UA	UTSU	Utah State University, Logan, Utah
UA	VARN	Varian Associates, Palo Alto, California
UA	WALS	Wallops Station, Wallops Island, Virginia
UA	WISU	University of Wisconsin, Madison, Wisconsin
CA	WONU	University of Western Ontario, London, Ontario, Canada
AU	WREA	Weapons Research Establishment, Salisbury, Australia
JA	YAMA	Yamagawa Observatory Radio Research Laboratory, Tokyo, Japan
JA	YHPH	Yokogawa-Hewlett-Packard Ltd., Hachioji, Tokyo, Japan
CA	YUTO	York University, Toronto, Ontario, Canada

Appendix E-1. Instrument Codes*

<u>Instrument Code</u>	<u>Instrument</u>	<u>Instrument Code</u>	<u>Instrument</u>
AC	Accelerometer	MG	Magnetic Spectrometer
AL	Alphatron	MM	Micrometeoroid Detector
AP	Acoustic Probe	MN	Monochrometer
AS	Air Sampler	MS	Mass Spectrometer
BA	Bayard-Alpert Gauge	NE	Nuclear Emission
BI	Biological Material	OM	Omegatron
CA	Camera	OO	No Geophysical Research Instruments
CD	Cerenkov Detectors	OZ	Ozone Detector
CG	Coronagraph	PA	Parachute Borne Instruments
CH	Chaff	PC	Proportional Counters
CR	Chemical Release	PD	Proton Detector
CS	Cadmium Sulfide Cells	PG	Pressure Gauge
EA	Electrostatic Analyzer	PH	Photometer
EF	Electric Field Meters	PT	Pitot Tube
EL	Electrometer	RA	Radar
FP	Faraday Cup	RD	Radiometer
FS	Falling Sphere	RE	Recovery Required
GC	Geiger-Mueller Counter	RH	Redhead Gauge
GR	Grenade	RP	Radio Propagation Experiment
HY	Hygrometer	RR	Radio Frequency Receiver
IC	Ionization Chamber	SC	Scintillators
IP	Impedance Probe	SP	Spectrometer - Spectrograph
IS	Ion Spectrometer	SS	Solid State Detectors
IT	Ion Trap	TL	Neutral Temperature Sensor
LP	Langmuir Probe	VL	VLF Experiment
MA	Magnetometer	XD	X-Ray Detectors
		X	Unknown

*Ordered by code.

Appendix E-2. Instrument List (Proposed 1972 Revision)

Instrument Sub-Category/Category (Alphabetical Order)	Instrument Category (When Appropriate)
Accelerometer	--
Air Sample	--
Alphatron	Neutral Density Gauge
Antenna	--
Antenna	Magnetometer
Antenna	Telescope
Bayard-Alpert	Neutral Density Gauge
Beacon	Propagation
Bead Thermistor	Thermometer
Biological Sample	--
Bolometer	Radiometer
Bragg	Photon Spectrometer
Camera	--
Cerenkov	Multi-Element Counter
Cerenkov	Single Element Counter
Chaff	--
Chamber, Ion	Energy Deposition
Channeltron, Electron Multiplier	Multi-Element Counter
Channeltron, Electron Multiplier	Single Element Counter
Chemical Release	--
Cloud, Ion, Electric Field	Chemical Release
Cloud, Neutral	Chemical Release
Cold Cathode Gauge	Retarding Potential Analyzer
Condenser, Gerdian	Retarding Potential Analyzer
Counter, Single Element	Telescope
Density, Gauge, Neutral	--
Double Focus	Mass Spectrometer
Electric Field, Ion Cloud	Chemical Release

Appendix E-2. Instrument List (Proposed 1972 Revision) (continued)

Instrument Sub-Category/Category (Alphabetical Order)	Instrument Category (When Appropriate)
Electron Multiplier, Channeltron	Multi-Element Counter
Electron Multiplier, Channeltron	Single Element Counter
Electrostatic Analyzer	Multi-Element Counter
Electrostatic Analyzer	Single Element Counter
ELF/VLF	Propagation
Emulsions, Nuclear	Energy Deposition
Energy Deposition	--
Energy Spectrometer	--
Exobiology	--
Falling Sphere	--
Faraday Cup, Planar Trap	Retarding Potential Analyzer
Fixed Frequency	Radiometer
Fixed Frequency, Single Frequency	Ionosonde
Fluxgate	Magnetometer
Geiger Tube	Multi-Element Counter
Geiger Tube	Single Element Counter
Gerdian Condenser	Retarding Potential Analyzer
Gravity	--
Grenade	--
Hygrometer	--
Image Tube	Telescope
Image Tube	Camera
Impedance Probe	Retarding Potential Analyzer
Interferometer	Photon Spectrometer
Ion Chamber	Energy Deposition
Ion Cloud, Electric Field	Chemical Release
Ion Detector, Suprathermal	Retarding Potential Analyzer
Ionosondes	--

Appendix E-2. Instrument List (Proposed 1972 Revision) (continued)

Instrument Sub-Category/Category (Alphabetical Order)	Instrument Category (When Appropriate)
Langmuir Probe	Retarding Potential Analyzer
Magnetic	Mass Spectrometer
Magnetometer	--
Mass Spectrometer	--
Micrometeorites	--
Monochromator, Optical	Photon Spectrometer
Multi-Channel	Radiometer
Multi-Element Counter	--
Neutral Cloud	Chemical Release
Neutral Density Gauge	--
Neutron Monitor	Multi-Element Counter
Neutron Monitor	Single Element Counter
Non-Scanning	Radiometer
Nuclear Emulsions	Energy Deposition
Omegatron	Neutral Density Gauge
Optical Monochromator	Photon Spectrometer
Photography	Telescope
Photography	Camera
Photometer	Telescope
Photometer	Radiometer
Photon Spectrometer	--
Planar Trap, Faraday Cup	Retarding Potential Analyzer
Polarimeter	Radiometer
Pressure	Micrometeorites
Propagation	--
Proportional	Single Element Counter
Proportional	Multi-Element Counter
Proportional	Photon Spectrometer

Appendix E-2. Instrument List (Proposed 1972 Revision) (continued)

Instrument Sub-Category/Category (Alphabetical Order)	Instrument Category (When Appropriate)
Proton Precession	Magnetometer
Photon Spectrometer	Telescope
Quadrupole RF	Mass Spectrometer
Radar	Propagation
Radio Frequency	Mass Spectrometer
Radiometer	Telescope
Radiometer	--
Redhead	Neutral Density Gauge
Retarding Potential Analyzers	--
Sample, Air	--
Scanning	Radiometer
Scintillator	Photon Spectrometer
Scintillator	Multi-Element Counter
Scintillator	Single Element Counter
Search Coil	Magnetometer
Single Element Counter	Telescope
Single Element Counter	--
Single Frequency	Radiometer
Single Frequency, Fixed Frequency	Ionosonde
Solid State	Multi-Element Counter
Solid State Detector	Single Element Counter
Spark Chamber	Multi-Element Counter
Spectrometer, Mass	--
Spectrometer, Energy	--
Spectrometer, Photon	--
Spectrometer, Photon	Telescope
Spherical Trap	Retarding Potential Analyzer
Suprathermal Ion Detector	Retarding Potential Analyzer

Appendix E-2. Instrument List (Proposed 1972 Revision) (continued)

Instrument Sub-Category/Category (Alphabetical Order)	Instrument Category (When Appropriate)
Swept Frequency	Ionosonde
Swept Frequency	Radiometer
Telescope	--
Thermistor, Bead	Thermometer
Thermometer	--
Time of Flight, Velocity Filter	Mass Spectrometer
Trap, Spherical	Retarding Potential Analyzer
Vapor	Magnetometer
Vapor Trail	Chemical Release
Velocity Filter, Time of Flight	Mass Spectrometer
VLF/ELF	Propagation

Appendix F. ROCKET File Input Sheet

ROCKET FILE INPUT SHEET

SUBMITTED _____ DATE _____
 REVIEWED _____ DATE _____

CAT 1 (CARD 1,1)

R001 NSSDC ID 1 R _____ 10
 R002 DATA AVAILABILITY INDICATOR CODE 11
 R003 AGENCY ROCKET ID 12 _____ 25
 26 _____ 40
 41 _____ 55
 R004 PROJECT NAME 56 _____ 70
 R005 DATE ROCKET LAUNCH
 FIRST IDENTIFIED (MMYY) 71 _____ 74 ↑ 79 1 1 80

CAT 2 (CARD 2,1-2,2, etc.)

R006 ROCKET EXPERIMENTERS AND AFFILIATIONS
 (FORMAT: NAME/AFLN/bb NAME/AFLN/bb MAX 10)
 11 _____ 45
 46 _____ 2 1 80
 11 _____ 45
 46 _____ 2 2 80
 11 _____ 45
 46 _____ 2 3 80

CAT 4 (CARD 4,1)

R007 LAUNCH DATE (YYMMDD) 11 _____ 16
 R008 UNIVERSAL TIME OF LAUNCH (HHMM) 17 _____ 20
 R009 LAUNCH SITE CODE 21 _____ 24
 R010 LAUNCH COUNTRY/REGION CODE 25 _____ 26
 R011 LATITUDE } FOR SHIPS ONLY 27 _____ N S 31
 LONGITUDE } 32 _____ E W 37
 R012 ROCKET PERFORMANCE CODE 38
 R013 EXPERIMENT PERFORMANCE CODE 39
 R014 PEAK ALTITUDE (KM) 40 _____ 44
 R015 SPONSORING COUNTRY/REGION CODE 45 _____ 52
 R016 EXPERIMENT DISCIPLINE CODE 53 _____ 66
 R017 INSTRUMENTATION CODE 67 _____ 78 79 4 1 80

CAT 5 (CARD 5,1-5,2, etc.)

R018 EVENT DESCRIPTOR CODE 11
 R019 ROCKET TYPE 12 _____ 28
 R020 REMARKS
 29 _____ 45
 46 _____ 5 1 80
 11 _____ 45
 46 _____ 5 2 80

20