# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>TABLE OF CONTENTS</td>
<td>11</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>ORIGINATING SOURCE CODES</td>
<td>2</td>
</tr>
<tr>
<td>PUBLICATIONS</td>
<td>5</td>
</tr>
<tr>
<td>General Interest</td>
<td>5</td>
</tr>
<tr>
<td>Technical</td>
<td>9</td>
</tr>
<tr>
<td>SKYLAB REPORTS</td>
<td>12</td>
</tr>
<tr>
<td>TELEVISION TAPES</td>
<td>17</td>
</tr>
<tr>
<td>Educational Television Programs</td>
<td>17</td>
</tr>
<tr>
<td>Skylab On-Board Television</td>
<td>22</td>
</tr>
<tr>
<td>First Manned Mission</td>
<td>22</td>
</tr>
<tr>
<td>Second Manned Mission</td>
<td>25</td>
</tr>
<tr>
<td>Third Manned Mission</td>
<td>31</td>
</tr>
<tr>
<td>16 MILLIMETER FILM</td>
<td>35</td>
</tr>
<tr>
<td>Headquarters</td>
<td>35</td>
</tr>
<tr>
<td>Marshall Space Flight Center</td>
<td>35</td>
</tr>
<tr>
<td>Johnson Space Center</td>
<td>36</td>
</tr>
<tr>
<td>Skylab Experiment Films</td>
<td>39</td>
</tr>
<tr>
<td>PHOTOGRAPHS</td>
<td>47</td>
</tr>
<tr>
<td>EXHIBITS</td>
<td>48</td>
</tr>
</tbody>
</table>
INTRODUCTION

This is a compilation of information related to Skylab produced through October 1974.

This publication is not intended as a catalog of available information but rather as a resource or reference guide of the material that was produced.

Though most of the items listed herein are no longer available for general distribution, many of them are on file at NASA Headquarters and at the various NASA centers. Some may be furnished on occasion for educational purposes and for radio and television broadcasts.

Six categories of data are listed.

- Publications
- Films
- Television tapes
- Exhibits
- Photographs
- Skylab reports

Some of the preceding categories are subdivided into general interest and technical sections. However, these divisions are somewhat overlapping.

Pertinent information is provided in parenthesis following the listed titles. In all cases, an originating source code (OC-1, OC-2, etc.) is provided if available, the year or time-frame of publication, issue or occurrence is shown. For data collected aboard Skylab, the flight number is shown. Skylab flights correlate to the following periods: Skylab 2, May 25–June 22, 1973; Skylab 3, July 28–Sept. 25, 1973; and Skylab 4, Nov. 16, 1973 – Feb. 8, 1974.
The following is a listing of sources of Skylab information together with an originating source code.

OC-1 Superintendent of Documents
U. S. Government Printing Office
Washington, D.C. 20402

OC-2 National Aeronautics and Space Administration
Public Affairs Office
Washington, D.C. 20546

OC-3 NASA George C. Marshall Space Flight Center
Public Affairs Office
Marshall Space Flight Center, Alabama 35812

OC-4 NASA Lyndon B. Johnson Space Center
Public Affairs Office
Houston, Texas 77058

OC-5 National Aeronautics and Space Administration
Historical Office
Washington, D.C. 20546

OC-6 National Aeronautics and Space Administration
Public Affairs Desk
Technology Utilization Office, Code K
Washington, D.C. 20546

OC-7 NASA George C. Marshall Space Flight Center
Skylab Program Office
Marshall Space Flight Center, Alabama 35812

OC-8 NASA Lyndon B. Johnson Space Center
Management Operations Office
Bioengineering Systems Division
Houston, Texas 77058

OC-9 National Aeronautics and Space Administration
Office of Manned Space Flight
Washington, D.C. 20546

OC-10 NASA George C. Marshall Space Flight Center
Manned Flight Awareness Office
Marshall Space Flight Center, Alabama 35812

OC-11 NASA George C. Marshall Space Flight Center
Management Services Offices
Marshall Space Flight Center, Alabama 35812

2
OC-12 National Aeronautics and Space Administration  
Director Educational Program Code FE  
Washington, D. C. 20546

OC-13 NASA Lyndon B. Johnson Space Center  
Management Operations Office  
Project Support Division  
Medical Research & Operations Directorate  
Houston, Texas 77058

OC-14 NASA Goddard Space Flight Center  
Public Affairs Office  
Greenbelt, Maryland 20770

OC-15 NASA Lyndon B. Johnson Space Center  
PTD Audiovisual and Motion Picture Production Office - JL131  
Houston, Texas 77058

OC-16 Other

For general information on NASA and its programs inquiries may be directed to the Public Affairs Office at the NASA Center, as indicated in the list below:

Alaska  
Arizona  
California  
Hawaii  
Idaho  
Montana  
Nevada  
Oregon  
Utah  
Washington  
Wyoming

Alaska  
Arizona  
California  
Hawaii  
Idaho  
Montana  
Nevada  
Oregon  
Utah  
Washington  
Wyoming

NASA Ames Research Center  
Moffett Field, California 94035

NASA George C. Marshall Space Flight Center  
Marshall Space Flight Center, Alabama 35812
*Connecticut
Delaware
District of Columbia
*Maine
Maryland
*Massachusetts
*New Hampshire
New Jersey
*New York
Pennsylvania
*Rhode Island
*Vermont
Florida
Georgia
Puerto Rico
Virgin Islands
Kentucky
North Carolina
South Carolina
Virginia
West Virginia
Illinois
Indiana
Michigan
Minnesota
Ohio
Wisconsin
Colorado
Kansas
Nebraska
New Mexico
North Dakota
Oklahoma
South Dakota
Texas

*For film requests write to:

National Audiovisual Center (GSA)
Washington, D.C. 20409

NASA Goddard Space Flight Center
Greenbelt, Maryland 20771

NASA John F. Kennedy Space Center
Kennedy Space Center, Florida 32899

NASA Langley Research Center
Langley Station
Hampton, Virginia 23365

NASA Lewis Research Center
21000 Brookpark Road
Cleveland, Ohio 44135

NASA Johnson Space Center
Houston, Texas 77058
The following is a list of publications, (books, booklets, pamphlets, and brochures) containing Skylab information.

**GENERAL INTEREST PUBLICATIONS:**

Preliminary chronology, Skylab (1973; 180 pages; OC-5) HKN-130
A management chronology, beginning with Skylab concept, covering period from July 1959 through May 1973.

Space Applications (1972; 13 pages; OC-2)
Management summary of NASA programs.

Benefits from NASA-Developed Technology (1972; 59 pages; OC-2)
Describes many benefits resulting from the application of space technology to uses on Earth. Provides a general description of the Skylab Sleep Monitoring Experiment.

Skylab Student Project Summary Description (1973; 83 pages; OC-7) MSFC-SL-73-3
Brief review of student project. Includes Skylab mission summary, student experiment selection and student experiment hardware descriptions. Illustrated. Students and science advisors identified. Defines experiment objectives, implementation, and data and analysis requirements.

ATM Apollo Telescope Mount (Pamphlet; OC-3)
Summary of Skylab solar observatory experiments, experiment control panel and provides a brief background relative to the ATM.

Skylab, an Adventure in Science and Photography (1974; pamphlet; OC-3)
Summary of photographic experiments, cameras and film carried aboard Skylab.
Skylab, Working on a New Frontier (1973; brochure; OC-3)
Summary of various aspects of Skylab; several on-board photographs of crew activity. Published during the second manned mission.

Kohoutek, Comet of Century (1973; brochure; OC-3)
Basic description of comets, a general background on the Kohoutek Comet including planned activities.

Skylab Operations Summary (1974; 7 pages; OC-3)
Four-page summation of Skylab early problems, Skylab accomplishments and crew activities, plus three pages of fact sheets showing crew time devoted to various activities.

Skylab (1972; pamphlet; OC-2)
Pre-mission summary of planned Skylab activities.

Improving our Environment (1973; pamphlet; OC-2)
Summary of Skylab, other spacecraft and NASA technologies being used in Earth research and monitoring of Earth's environment.

Summary of Skylab mission activities. Includes photographs of crewmen. Also lists information sources.

NASA Facts, Food for Space (Brochure; OC-4)
Evolution of food packaging and serving techniques. Devoted primarily to Skylab.

Mission Report, First Mission (1973; 8 pages; OC-2) MR-13
Summary of Skylab problems prior to launch of first crew, repairs made to Skylab and other mission highlights.

Mission Report, Second Mission (1973; 8 pages; OC-2) MR-14
Skylab events, achievements and preliminary findings summarized for the second manned mission.

Skylab (1973; pamphlet; OC-10)
Manned Flight Awareness Orientation to Skylab including mission objectives, module configuration launch vehicles and summary profile of each manned mission.

Skylab 1 and 2, Science and Engineering in Orbit (Premission; pamphlet; OC-10)
Crew biography, experiments scheduled, typical work day, Skylab description by module and launch vehicle illustration.
Skylab 3, Science and Engineering in Orbit (Prelaunch; pamphlet; OC-10)
Crew biography, experiments scheduled, typical work day, illustrated modular description of Skylab and launch vehicle illustration.

Historical summary of Skylab from concept through launch readiness at the Kennedy Space Center.

NASA Facts--Skylab (1972; fold-out; OC-1)
Pictorial review of Skylab experiment categories, mission sequence and a 21" by 24" reproduction of a Skylab painting (cut-away view).

NASA National Aeronautics and Space Administration (Pamphlet; OC-1)
General information relative to Skylab and other NASA programs. Skylab goals and planned mission. Lists NASA facilities with briefs relative to the responsibilities of each.

Toward a Better Tomorrow with Aeronautical and Space Technology (1973; 199 pages; OC-1)
Space program presentation to Committee on Aeronautical and Space Sciences (93rd Congress, First Session). Covers total space program including projections. Contains briefs on Skylab biological space processing and manufacturing in space, and use of Skylab remote biomedical sensors in Earth-based medical programs.

Skylab Program Description (1971; 64 pages; OC-1)
General Skylab information published in agreement with National Science Teachers Association. Provides Skylab background for students participating in Skylab Student Project. Provides briefs of physical science experiments.

Information for Teachers (1971; brochure; OC-12)
Aid to teachers in formulating opinions and the educational benefits of Skylab solar experiment data.

Skylab 4, Third Manned Mission for America's First Space Station (Prelaunch; pamphlet; OC-10)
Crew biography, experiments scheduled, typical work day, illustrated modular description of Skylab and launch vehicle, summary of Skylab 2 and 3 including on-board photographs.
Skylab Experiments General Descriptions (1971; 129 pages; OC-7)
Abbreviated descriptions of experiments for which MSFC had development or integration responsibility. Contains experiment purpose, description, significance, and principal investigator. Photographs included.

Space Station: Key to the Future (Premission; 40 pages; OC-1) EP-75
Manned utilization of space discussed from a space station point of view. Skylab identified as a forerunner. Discussed are areas of study and future returns, and space station concepts. Illustrations and photographs.

Play-by-play account of activities after the loss of the Skylab meteoroid shield through repair by the astronauts.

Space Among Us (1973; 133 pages; OC-14) X-207-72-27
An assembly of some effects of space research on society. Appendices provide excerpts from related articles and speeches.

Film Catalog, Lyndon B. Johnson Space Center (50 pages; OC-15)
Includes 16 mm Skylab film available for loan from Houston. A supplement provides updates to the catalog.

Aerospace Bibliography (1972; 116 pages; OC-12) EP-48
For teachers and adult readers an updated list of books, references, periodicals, and other educational materials related to space flight and space science.

Skylab Film Resources Catalog (1974; 75 pages; OC-4)
Five categories of film materials are included in this catalog: sound productions, newscaps and stock footage, kinescopes, inflight footage, and student project experiments.
TECHNICAL PUBLICATIONS

Skylab Experiments, Information for Teachers
All volumes are suitable for adaptation to classroom curricula. Each illustrates and describes experiments including the methods of performance aboard Skylab.

Volume 1--Physical Science, Solar Astronomy
(1973; 63 pages; OC-1) EP-110

Volume 2--Remote Sensing of Earth Resources
(1973; 83 pages; OC-1) EP-111

Volume 3--Materials Science (1973; 49 pages; OC-1) EP-112

Volume 4--Life Sciences (1973; 89 pages; OC-1) EP-113

Volume 5--Astronomy and Space Physics (1973; 73 pages; OC-1) EP-114

Volume 6--Mechanics (1973; 27 pages; OC-1) EP-115


Skylab and the Life Sciences (1973; 56 pages; OC-8)
Illustrated summary of biomedical monitoring requirements, biomedical experiments and the equipment used in the Skylab biomedical program.

Earth Resources Survey Systems (1972; 371 pages; OC-1)
Proceedings from an international workshop. Defines remote sensing techniques and uses of data attained; defines use of satellites—including Skylab—in Earth resources data collection.

Skylab and the Sun (1973; 50 pages; OC-1) EP-119
Describes the Sun, the Skylab program, Skylab solar studies, Skylab observation instruments and systems, and associated programs that supported Skylab solar observation activities.

Skylab Earth Resources Investigations (1973; 63 pages; OC-1)
Identifies objectives of the Skylab Earth resources investigations, defines domestic and foreign investigation locale, and lists associated principal investigators.
Skylab, A Guidebook (1973; 345 pages; OC-1)
Skylab purpose, history and description of modules, systems and experiments. Includes summary of supporting ground-based astronomy program.

Skylab Experiments (1972; 211 pages; OC-9)
Description of Skylab experiments, objectives, hardware, and data return requirements.

Skylab Experiment Integration Summary (1972; 84 pages; OC-7)
Provides descriptive and illustrated information covering the Skylab program, particularly of the experiment sensors, instruments and the experiment objectives.

Skylab News Reference (1973; 330 pages; OC-2)
Explanation of Skylab modules, systems and experiments. Contains crew biographies, launch facilities and their operation, flight operations, and other topics.

Technical Summary Handbook (1971; 70 pages; OC-9)
Basic technical information for background knowledge. Covers launch vehicles, Skylab space station and Command and Service Modules. Explains seven categories of Skylab experiments.

Skylab Experiment Data Summary (1973; 66 pages; OC-7) MSFC-SL-73-4
Summary of Skylab program, mission profile and activities, Skylab and launch vehicle physical data, Skylab modules and systems, crew synopsis, experiment data.

Skylab Program Experiments Technical Summary (1971; 189 pages; OC-2)
Information is presented in viewgraph format. Photographs are included.
Information for Teachers (1972; 40 pages; OC-1) EP-106
Brief descriptions of Skylab program, Skylab student project, student experiment selection and student experiment performance; includes samples of proposals submitted by students and appropriate classroom activities related to the student experiments.

Space and Science Teachers' Guide (1973; 20 pages; OC-3)
Booklet describing 16 educational TV tapes designed for junior high school science classes. Each TV program has a brief summary. To aid teachers in planning. See ETV programs - page 17 of this document.

Science from Skylab Teachers' Guide (1974; 20 pages; OC-3)
Booklet describing 16 educational TV tapes designed for junior high school science classes. Each TV program has a brief summary. To aid teachers in planning. See ETV programs - page 17 of this document.

Biomedical Experiments and Systems in Skylab (1971; 75 pages; OC-13)
Included for each experiment are key personnel, purpose, historical background, data requirements, and system description. Photographs.
SKYLAB REPORTS

Following completion of the Skylab mission in February, 1974, technical reports were prepared on the mission, various projects, Skylab systems, and other special subjects. These reports may be available for a nominal cost from the National Technical Information Service, Springfield, Virginia 22151.

MSFC Skylab Final Program Report (1974; 526 pages; OC-7) TM X-64808
This report presents a concise technical history and managerial critique of the MSFC role in the Skylab program. The report also includes recommendations and conclusions applicable to hardware design, test program philosophy and performance, and program management techniques with potential application to future programs.

MSFC Skylab Corollary Experiments Final Technical Report (1974; 84 pages; OC-7) TM X-64809
This report presents the evolution of the development and integration of Skylab experiments from initial concepts through mission operations. All experiment systems are covered as well as management controls which were developed and exercised to assure acceptable operational capability and optimize data acquisition for final scientific results.

This report presents the history and development of the Skylab Airlock Module and the Payload Shroud, from initial concept through final design, related test programs, mission performance and lessons learned.

MSFC Skylab Apollo Telescope Mount Final Technical Report (1974; 422 pages; OC-7) TM X-64811
This report documents the history of the development of the ATM from initial concept through its final design and mission performance. A comprehensive discussion of the final module design, related test programs and lessons learned is included.

This report presents the history of the development of the Skylab Multiple Docking Adapter (MDA), from initial concept through its final design, related test programs, mission performance, and lessons learned.
This report documents and summarizes the results of the Orbital Workshop technical contract including development, verification, mission performance, and conclusions based on program results and experience.

This report presents the Skylab's Saturn Workshop mission performance. A variety of experiments were conducted to determine man's ability to live and work in space for extended periods, to make Sun and Earth investigations, and to advance science and technology in several areas of space applications. Performance is compared with design parameters, and problem causes and solutions are treated. This report has not been released.

This report presents a summary of the Apollo Telescope Mount (ATM) performance during the 8.5-month Skylab mission. The report contains a brief description of each ATM system, system performance summaries, discussion of all significant ATM anomalies and a summary of the Skylab ATM Calibration Rocket Project (CALROC).

This report presents the planned and actual major Skylab sequences. Off-nominal events are highlighted. Differences between planned and actual events are discussed.

This report has not been released.

This report presents the planned and actual major Electrical and Caution and Warning performance. Off-nominal events are highlighted. Differences between planned and actual events are discussed.

This report presents an evaluation of the in-orbit performance compared with functional requirements and the fidelity of communications. In-orbit performance includes processing engineering, scientific, experiment, and biomedical data, implementing ground-generated commands, audio and video communication, generating rendezvous ranging information and radio frequency transmission and reception.

This report has not been released.
This report presents a detailed evaluation of the Skylab Apollo Telescope Mount (ATM) experiments performance throughout the eight and one-half month Skylab Mission. Descriptions and the objectives of each instrument are included. Also included is a discussion of the anomalies experienced, the causes, and corrective actions taken. Conclusions, based on evaluation of the performance of each instrument, are presented.

This report presents an evaluation of the performance of the Skylab Thermal and Environmental Control System. Actual performance is compared to design and functional requirements and anomalies and discrepancies and their resolution are discussed.

This report has not been released.

This report has not been released.

This report presents a concise performance evaluation of MSFC responsible Skylab Crew System Hardware. This report also includes hardware design descriptions, post-mission assessments, and hardware design recommendations with potential application to future programs.

The report summarizes the Skylab system and experiment contamination control evaluation. The Cluster systems and experiments evaluated include Induced Atmosphere, Corollary and ATM Experiments, Thermal Control Surfaces, Solar Array Systems, Windows, and Star Tracker.

This report presents the twelve Marshall Space Flight Center science demonstrations which were accomplished on the Skylab III and IV missions. These were defined in response to crew requests for time-gap fillers and were designed to be accomplished using onboard equipment.
Retention and Application of Skylab Experiment Experiences to Future Programs (1974; 51 pages; OC-7) TM X-64839
This report consolidates into one listing certain outstanding problems encountered on Skylab Experiments in order that these experiences and associated recommendations might help to prevent similar problems on future programs. The criteria for selection of the data to be utilized in this document was to identify the problem areas within the Skylab Program which it was felt would be a major significance with respect to future programs.

Vehicle Misalignment Predictions and Vehicle Experiment Pointing Compatibility Assessment (1974; 69 pages; OC-7) TM X-64840
This report presents a technique for predicting vehicle misalignment, the relationship of vehicle misalignment to the total vehicle/experiment integration effort, and the methodology used in performing a vehicle/experiment pointing compatibility assessment.

MSFC Skylab Neutral Buoyancy Simulator Report (1974; 180 pages; OC-7) TM X-64844
This report presents the role of the Neutral Buoyancy Simulator in the development, crew training, and flight operational aspects of Skylab.

MSFC Skylab Operations Summary Report (1974; 137 pages; OC-7) TM X-64845
This operations report is a summary of the actions and problems MSFC encountered, together with procedures and staffing required to provide the mission support role. This report has been prepared as a reference for future operations planning as well as an evaluation report for the Skylab mission.

MSFC Skylab ATM Calibration Rocket Project Final Report (1974; 155 pages; OC-7) TM X-64846
This report provides the results of the Apollo Telescope Mount (ATM) Calibration Rocket (CALROC) performances and anomalies encountered. The performance period included six CALROC flights during the Skylab 2, 3 and 4 missions as well as those rocket flights prior to the Skylab mission which carried CALROC hardware for test purposes. Background material such as project purpose, management, launch facilities, booster and payload configuration is included for better understanding of the CALROC payload and its mission objectives.
This report presents design criteria statements applicable to a wide variety of flight systems, experiments and other payloads, associated ground support equipment and facility support systems.

This report documents the preflight activities and the Skylab mission support effort for the Thruster Attitude Control System (TACS). The preflight activities include a description of problems and their solutions encountered in the development, qualification, and flight checkout test programs. The mission support effort is presented as it relates to system performance assessment, real-time problem solving, flight anomalies, and the daily system evaluation. Finally, the detailed flight evaluation is presented for each phase of the mission using system telemetry data.

This report has not been released.

This report presents the background of the Skylab Student Project, emphasizes experiment performance and is considered interim in that while results and evaluations are touched upon, detailed reporting is considered the responsibility and prerogative of student investigators.
TELEVISION TAPES

Thirty-two science oriented television programs were recorded in two series of sixteen programs each by the Marshall Space Flight Center in cooperation with the Alabama State Department of Education. All programs are suitable for transmitted or closed circuit television. They are intended to supplement high-school science education programs, but benefits could also be realized by the students in lower grades. Synopses booklets are listed on page 11. For information, contact the MSFC Public Affairs Office or the educational television coordinator, Alabama Department of Education, Montgomery, Alabama.

Television was recorded aboard Skylab and was transmitted to Earth. Scenes of astronauts performing general activities, experiments, and science demonstrations and scenes of the astronauts providing a guided tour of the Skylab space station are recorded and are on file in the video tape libraries of the Johnson Space Center and the Marshall Space Flight Center.

Requests for information concerning availability of these tapes should be directed to the respective Public Affairs Office of these two Centers.

EDUCATIONAL TELEVISION PROGRAMS:

Space and Science Series

The Earth, The Sun, The Universe (1973; 20 minutes; Program No. 1 OC-3)
Provides an explanation of the universe, including terminology used in astronomy. Relates the Solar System to the universe and introduces the "Space and Science" series of programs.

Sources of Deep Space Radiation (1973; 20 minutes; Program No. 2 OC-3)
Defines and locates radiation sources, describes star structure and evolution, defines methods of search and briefly describes the effects of radiation on the Earth's environment.

Our Protective Atmosphere (1973; 20 minutes; Program No. 3 OC-3)
Provides a space-age point of view relative to Earth's atmosphere, defines techniques used to acquire new knowledge and stimulates an attitude of respect for the atmosphere.

Space Power Generation (1973; 20 minutes; Program No. 4 OC-3)
Describes solar cells, radioisotope thermo-nuclear generators and fuel cells. Portrays potential solutions to Earth's energy crisis.

Mass Determination in Zero G (1973; 20 minutes; Program No. 5 OC-3)
Defines the difference between mass and weight, explains the universal character of mass, portrays mass measurement techniques used in the absence of gravity and stresses the need to think in terms of universal laws of physics.
Behavioral Studies (1973; 20 minutes; OC-3)  
Defines the need for behavioral preparation of both men and women in future, very long duration space flights. Thought provoking, without solutions.

Physical Fitness in Space (1973; 20 minutes; OC-3)  
Explains the different body systems in relation to Skylab experiments. Through an astronaut's personal experience, defines the need for balancing intellectual pursuits with physical fitness.

Living and Working in Space (1973; 20 minutes; OC-3)  
Amplifies the role of gravity in every-day living and allows an interpretive comparison between life in space and on Earth.

Long Distance Medical Aid (1973; 20 minutes; OC-3)  
Illustrates advances in medical technology as a fallout of the space program and defines technology uses here on Earth.

New Energy Resources (1973; 20 minutes; OC-3)  
Explains current energy inefficiencies and defines steps now being taken for transition to new energy systems.

Materials Processing in Space (1973; 20 minutes; OC-3)  
Defines techniques for processing materials such as metal and crystal structures and illustrates the effects of gravity to these forms. Includes welding, cutting and melting. Presents propagation and the control of fire in space.

Growing Perfect Crystals in Space (1973; 20 minutes; OC-3)  
Comparison of natural and Earth-grown synthetic crystals to synthetic crystals grown in space. Defines uses of crystals and method for growing them.

Vegetation Studies by Remote Sensing (1973; 20 minutes; OC-3)  
Defines use of infrared spectroscopy in remotely sensing amount, type and condition of vegetation. Covers various methods used for remote sensing.
Mineral Detection (1973; 20 minutes; OC-3)
Defines mineral depletion and stresses the need for minerals management to preclude depletion of resources. Techniques and need for in-space sensing are defined.

Earth Mapping (1973; 20 minutes; OC-3)
Evolution of cartography as aided by the space programs and the importance of cartography of the inventory and management of Earth's resources. Includes the economy of providing land-use data from space.

Pollution Detection by Remote Sensing (1973; 20 minutes; OC-3)
Role of aircraft and satellites in locating pollution and its sources. Different types of pollution, sensing methods and types of hardware are defined.

Science From Skylab Series

Introduction (1974; 15 minutes; OC-3)
Brief review of Skylab program including rationale for experiment and science demonstration selection. Covers use of Skylab in demonstrating basic laws of physics. Introduces other programs in this series.

Energy Loss and Angular Momentum (1974; 15 minutes; OC-3)
Provides Earth-related illustrations and on-board Skylab demonstrations which show the law of conservation of angular momentum at work. Terminology is defined and inter-relationship developed.

Magnetism (1974; 15 minutes; OC-3)
Basics of magnetism reviewed by classical demonstrations. The Earth is presented as a magnetic system and Skylab demonstrations show that the magnetic field extends beyond terrestrial boundaries.
Surface Tension and Capillary Action (1974; 15 minutes; OC-3)
Basic demonstrations are supplemented by Skylab demonstrations that show the principles of surface tension and molecular attraction at work. Skylab was a near-perfect laboratory for these demonstrations.

Aerodynamics (1974; 15 minutes; OC-3)
The basics of aerodynamics are reviewed emphasizing lift. The Skylab demonstrations show considerations for maintaining controlled and stable flight.

Elasticity and Spring Oscillation (1974; 15 minutes; OC-3)
Earth-based and Skylab demonstrations related to Hook's Law of Elasticity. The Skylab demonstration shows the complexity of combined stresses in a spring.

Physiological Adaptations (1974; 15 minutes; OC-3)
A scientist reviews the fish experiment conducted on Skylab in relation to knowledge of fish attained on Earth. Lack of adaptation by adult fish in Skylab and ease of adaptation by hatchlings are shown.

Artificial Gravity (1974; 15 minutes; OC-3)
Principles of centrifugal and centripetal forces including their potential use for creating artificial gravity in future space applications.

Optics and Lenses (1974; 15 minutes; OC-3)
Basic lens properties and formation of lenses are explained. The potential for unusual methods of lens formation in space are explored.

Acoustics (1974; 15 minutes; OC-3)
Sound generation, tone or pitch, method of transmission, design considerations and new ways to put sound to use are covered.

Principles and Uses of Gyroscopes (1974; 15 minutes OC-3)
The Skylab gyroscope demonstration allows explanation of gyroscopes in readily understandable terms. Common uses of gyroscopes are shown and explained.
Weather and Cloud Formation (1974; 15 minutes; OC-3)
Basics of atmospheric composition, cloud formation, condensation and raindrop formation are covered. Relationship of satellites to weather prediction and the need for continued weather observations in prediction are developed.

Space Propulsion (1974; 15 minutes; OC-3)
Explanation and practical applications of Newton's Laws of Motion are covered. Introduces various types of rocket engines and thrusters.

Solar Astronomy (1974; 15 minutes; OC-3)
Skylab solar photography and an explanation of solar energy production. Includes explanation of energy movement to the Sun's surface and radiation into space.

Space Processing Techniques (1974; 15 minutes; OC-3)
Results of some Skylab experiments on solids melting and resolidification are discussed. Skylab Liquid Floating Zone science demonstration is shown and related to handling and mixing of fluids without containers in space processing applications.

Wave Theory (1974; 15 minutes; OC-3)
Presents wave theory in terms easily understood. Defines and covers the electromagnetic spectrum. Associates solar observation aboard Skylab with the electromagnetic spectrum.
SKYLAB ON-BOARD TELEVISION

FIRST MANNED MISSION

Specimen Mass Measurement Device and Water Gun (1973)
Telecast of the commander demonstrating the operation of the Specimen Mass Measurement Device and the water drink gun. Both of these items were required due to Skylab's zero gravity environment.

Identification No.
TV-1

Preparation for Earth Resources (1973)
This telecast shows the crew preparing the Earth Resources equipment to ensure its readiness for an Earth observation pass.

Identification No.
TV-11

M131, Human Vestibular Function (1973)
This telecast shows segments of an oculogyral illusion test aboard Skylab.

Identification No.
TV-19

Blood Sampling (1973)
Shows the science pilot taking and processing a blood sample from the commander.

Identification No.
TV-4

M092, Lower Body Negative Pressure (1973)
Telecast of the science pilot, Dr. Kerwin, performing the lower body negative pressure experiment with the commander, Conrad, as the subject.

Identification No.
TV-6

M171, Metabolic Activity (1973)
Using the bicycle ergometer to provide a calibrated work load, scenes of the metabolic activity operation were televised.

Identification No.
TV-9

Additional Lower Body Negative Pressure, M092 (1973)
Telecast of one of the astronauts in the lower body negative pressure device where reduced atmospheric pressure causes blood pooling in the legs to simulate normal hydrostatic pressure of the blood.

Identification No.
TV-7

M551, Metals Melting (1973)
Behavior of molten metals under Skylab conditions was televised to aid in the study of metals processing in space.

Identification No.
TV-24

M131, Human Vestibular Function (1973)
This was the second telecast of this experiment during the first manned Skylab mission. The experiment uses a rotating chair.

Identification No.
TV-20

ED31, Bacteria and Spores (1973)
Shows the science pilot performing the inoculation of this student experiment at night and collecting data the following morning.

Identification No.
TV-18
M172, Body Mass Measurement Device (1973)
Operation of the equipment used to determine if the bodies of the astronauts have experienced excessive mass (weight) loss.

Science Pilot Highlights (1973)
The science pilot, Dr. Kerwin, covers highlights of the mission from the scientific point of view. Demonstration of the in-flight medical support equipment was included.

Rendezvous (1973)
Exterior of Skylab as first Skylab crew completed rendezvous and performed fly-around of damaged space station.

Press Conferences (1973)
Two separate press conferences by the first Skylab crew. Questions supplied by the press and spontaneous answers by the crew.

Meal Preparation (1973)
Onboard scenes of the commander preparing dinner during the early part of the first manned Skylab mission.

Eating Aboard Skylab (1973)
This telecast portrays some differences between dining aboard Skylab and dining on Earth. The commander and the pilot are shown eating their noon meal.

Crew Day Off Activities (1973)
Shows the ingenuity of astronauts in preventing boredom while in the zero gravity environment of Skylab. Shows "Skylab 500" and Dr. Kerwin performing calisthenics in space.

View From Window (1973)
Several scenes taken from the wardroom window in the Orbital Workshop portion of Skylab.

Crew Tour No. 1 (1973)
This telecast shows the crew quarters in the Orbital Workshop portion of Skylab. Included are the wardroom, waste management and sleep compartments. No audio.

Crew Tour No. 2 (1973)
Orbital Workshop forward compartment, Airlock Module and Multiple Docking Adapter are shown in this portion of the Skylab tour.

Identification No.

TV-5

TV-28

TV-41

TV-27

TV-2

TV-3

DOY-152

TV-37

TV-25

TV-26
Undock and Flyaround (1973)
Views of Skylab by the first crew as they undocked and departed for their return to Earth after a very successful 28 day mission.

Zero Gravity Restraints (1973)
This telecast shows a demonstration of sleep restraints and triangle shoes used on Skylab. It also shows the Skylab shower and trash airlock.

Parasol Deployment (1973)
Shows deployment of the thermal shield through the solar scientific airlock in the Orbital Workshop.

Orbital Workshop Checkout (1973)
Coverage of the crew activities during activation using a fixed television camera in the Orbital Workshop dome area.

Tape Reloading (1973)
Removal and replacement of magnetic tape in the Earth Resources tape recorder.

Apollo Telescope Mount Operation (1973)
Coverage of the Commander, Conrad, operating the control and display console during solar observation from Skylab.

Extravehicular Activities Simulation (1973)
During two passes over the continental United States, coverage of the crew preparing for EVA on the following day was provided by live telecast.

Solar Array Release EVA (1973)
Coverage of the extravehicular activity crewmen taken by the pilot through an Airlock Module structural transition section window. A corner of the parasol thermal shield is visible.

Earth Television Coverage (1973)
A camera was attached to the viewfinder tracking telescope of the Earth Resources equipment to provide high resolution coverage of the Earth during an Earth observation pass.
EVA, Film Change (1973)
Crew performance of extravehicular activities
during retrieval of exposed solar film from
the Apollo Telescope Mount. This activity
also included film replacement.

SECOND MANNED MISSION

Crew Eating (1973)
Live pictures of noon meal before the
crew had fully adapted to zero gravity.

Meal Preparation (1973)
Preparation of the next meal on Mission
Day 26.

Personal Hygiene Demonstration (1973)
Allows the viewer to compare personal hygiene
conducted on Earth with space-oriented personal
hygiene.

Spacecraft Tour (1973)
Telecast shows the crew quarters area in the
Orbital Workshop.

Spacecraft Tour Continued (1973)
Covers Orbital Workshop forward compartment
Airlock Module and Multiple Docking Adapter.

Press Conference (1973)
Second Skylab crew provides spontaneous
answers to questions from the press.

Earth Television Coverage (1973)
Telecast is in two parts. The first part shows
North Africa, Gibraltar, the Mediterranean,
Italy, and a volcano in Sardinia. The second
part shows Spain and France.

Rendezvous (1973)
Black and white coverage of Skylab as the
second crew approaches for docking.

Crew Exercise (1973)
Telecast is in three parts. Shows crew exercising
techniques using two different types of exercise
equipment plus arm pedaling on the bicycle ergo-
meter.
Medical Experiment Area (1973)
Shows crew activities in the medical experiment area of the Orbital Workshop.

Tropical Storm Brenda (1973)
Two separate telecasts showing out of the window television views of the storm.

Crew Day Off (1973)
Crew day off activities, including shower, haircut, and gymnastics.

Tropical Storm Christine (1973)
Clouds in the area of the tropical depression over the Atlantic Ocean about midway between South America and South Africa. Three separate telecasts.

Tropical Storm Delia (1973)
Three separate telecasts of this storm over the Gulf of Mexico. In the two DOY-247 telecasts, the landfall at Galveston, Texas is shown.

Dart Throwing (1973)
Two telecasts. Both show crewmen throwing darts in the Skylab environment, but in the second the crewmen have modified the dart fins for better operation in zero gravity and low atmospheric pressure.

Drought Area (1973)
African drought area as it appeared from Skylab window.

Specimen Mass Measurement Device and Water Gun (1973)
Operation of the Specimen Mass Measurement Device and the water drink gun. Both of these items were required due to Skylab's zero gravity environment.

ML10, Blood Sampling (1973)
Shows blood removal followed by hemoglobin tests.

ML72, Body Mass Measurement Device (1973)
Operation of the equipment used to determine if the bodies of the astronauts have experienced excessive mass (weight) loss.
MO92, Lower Body Negative Pressure (1973)

MO92 was divided into two telecasts with part 2 to be performed first. Part 1 was deleted because of a camera failure.

MO93, Vectorcardiogram (1973)
Telecast shows data being taken for the ninth time during the second manned mission. The bicycle ergometer was used.

MI71, Metabolic Activity (1973)
Using the bicycle ergometer to provide a calibrated work load, scenes of the metabolic activity operation were televised.

MI31, Rotating Litter Chair (1973)
Three separate telecasts of this experiment. Investigations were oculogyral illusion (TV-19), motion sensitivity (TV-20), and spatial localization (TV-21).

Science Pilot Highlights (1973)
Dr. Garriott provides solar physics highlights from the first part of the second manned mission.

ED74 Mass Measurement (1973)
Telecast of this student experiment shows four mass determinations using a cantilevered spring beam device.

SO63, UV Airglow Horizon Photography (1973)
This telecast provided data on the ultraviolet horizon airglow as viewed from Skylab.

SO19, UV Stellar Astronomy (1973)
Operation of the ultraviolet astronomy experiment from the anti-solar scientific airlock in the Orbital Workshop.

Angular Momentum (1973)
Science demonstration showing the conservation of angular momentum and energy loss.

Large Water Drops (1973)
One science demonstration in a four-part series. Shows effects of surface tension.
Fish Eggs and Hatchlings (1973)  
*TV-53*  
Another in a series of four science demonstrations. Shows fish eggs and hatchlings in Skylab environment.

Minnows (1973)  
*TV-53*  
This science demonstration in the four-part series shows minnow fingerlings swimming in a water bag aboard Skylab. Two telecasts were made.

Wilburforce Pendulum (1973)  
*TV-53*  
The last in the series of four, this science demonstration shows the odd effects of spring action in zero gravity.

Magnetic Effects (1973)  
*TV-54*  
Two separate telecasts show that the Earth's magnetic field influences this science demonstration aboard Skylab.

Paper Airplane (1973)  
*TV-55*  
Two separate science demonstrations aboard Skylab show aerodynamic effects in zero gravity.

ED32, Invitro Immunology (1973)  
*TV-58*  
Shows inoculation of immunodiffusion plates with antigen and the start of incubation for this student experiment.

ED52, Web Formation (1973)  
*TV-59*  
Five separate telecasts of this student experiment show how well cross spiders adapted to the environment aboard Skylab.

ED63, Cytoplasmic Streaming (1973)  
*TV-60*  
Television coverage was provided for this student experiment, but plants were dead.

ED78, Liquid Motion (1973)  
DOY-244 DOY-248  
Two telecasts provided different versions of this student experiment designed to evaluate the motion of liquids in the Skylab environment.

Achilles Tendon (1973)  
DOY-242  
Shows testing of achilles tendon reflexes on each of the three crewmen.
Eye, Ear, Nose and Throat Examination (1973) DOY-259

Televised medical examination of all three crewmen.

T013, Crew/Vehicle Disturbances (1973) TV-10

Vehicle disturbances resulting from crew activities were measured to provide correlation for design of future spacecraft control systems.

Tape Reloading (1973) TV-12

Removal and replacement of magnetic tape in the Earth Resources tape recorder.

Apollo Telescope Mount Operation (1973) TV-13

Coverage of operation of the control and display console during solar observation from Skylab.

Extravehicular activities (1973) TV-43

Two separate telecasts. The first shows some activities outside the spacecraft required for deployment of the twin-pole thermal shield. The second shows crew activities related to installation of the gyro six-pack used in control of Skylab attitudes.

T020, Foot Controlled Maneuvering Unit (1973) TV-57

Three separate telecasts. All show operation of this type astronaut maneuvering unit, a predecessor to maneuvering units that may have future use in space. Operations were conducted in shirtsleeves and in space suits.

Mass Measurement Device Repair (1973) TV-62

Shows replacement of the electronic portion of the small mass measurement device.

Television Camera Test (1973) TV-63

Both television cameras were tested to ensure proper video operation.
M509, Astronaut Maneuvering Equipment (1973)

Operation of this type maneuvering equipment in three telecasts. One shows operation with the astronaut in shirtsleeves, one with the astronaut in a space suit and the other shows special tests to demonstrate precision and flexibility of the maneuvering backpack.

Skylab 3 Crew Debriefing (1973)

Three part telecast by the second Skylab crew to provide the third Skylab crew with pertinent technical information to aid them during their mission.

Earth Resources (1973)

Two telecasts. Both show the crew preparing the Earth Resources equipment to ensure its readiness for an Earth observation pass. The first telecast shows a view of Chicago and Lake Michigan through the S190A window and the crew performing an Earth Resources pass.

Television System Troubleshooting (1973)

Telecast shows the Apollo Telescope Mount control and display panel which provided a visual aid in troubleshooting the onboard video tape recorder.

Earth Resources Camera (1973)

Telecast of Earth terrain camera operations from the anti-solar scientific airlock in the Orbital Workshop.

Television System Verification (1973)

Telecast of the Apollo Telescope Mount control and display panel and M092, lower body negative pressure device, as a verification of successful replacement of the onboard video tape recorder.

Tape Recorder Maintenance (1973)

Telecast shows disassembly and troubleshooting of the Airlock Module data and voice tape recorder.

Experiment Package Jettison (1973)

Jettisoning the defective T027/S073 boom out of the anti-solar scientific airlock.
Earth Resources (1973)
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Experiment Package Jettison (1973)
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S183, UV Stellar Panorama (1973)
Telecast shows the installation of the ultraviolet panorama experiment in the anti-solar scientific airlock.

THIRD MANNED MISSION

Eating (1973)
Two separate telecasts, days 330 and 332

Personal Hygiene Demonstration (1973)
Demonstration on Day 347

Press Conferences (1974)
Two conferences, held on Days 2 and 31
Viewfinder Tracking System (1973)
Views of South Africa.

Out of Window (1973)
Mississippi Delta during Earth observation pass.

General Purpose Intravehicular Activity (1973 & 1974)

Seven-part telecast. The first part, on Day 331, shows the pilot exercising on the treadmill. Three telecasts focus on the various instruments used aboard Skylab for study of the Kohoutek Comet on Days 354, 365 and 1. Two telecasts show sketches of the comet as it appeared from Skylab on Days 4 and 6. A discussion of the Earth observation instruments was held on Day 25.

Earth Surface Features (1973 & 1974)
This eleven-part telecast provides the following views: 1) Falkland Currents, 2) Falkland/South Equatorial Currents, 3) Aleutian Islands, 4) California and Baja, 5) Japan and Alaska, 6) Aleutian Islands, 7) California and Baja, 8) Galapagos Islands, 9) Mouth of the Amazon, 10) California and Baja, and 11) Andes and Santiago, Chile.

Crew Day Off Activities (1973 & 1974)
Nine separate telecasts that include: 1) air swimming and pilot in shower; 2) space suit donning demonstration; 3) removal of foot restraints at wardroom table; 4) Christmas special; 5) space suit with the name S. Claus; 6 and 7) sketches of the Kohoutek Comet; 8) discussion of water blob, and 9) completion of human body momentum demonstration (Part of TV-87)

M110, Blood Sampling (1973)
Day 340

M092, Lower Body Negative Pressure (1974)
OC-3)

S183 Ultraviolet Panorama (1973)
Comet observations on Day 334
<table>
<thead>
<tr>
<th>Identification No.</th>
<th>Description</th>
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<tbody>
<tr>
<td>TV-27</td>
<td>Professor Kohoutek Conference (1973) Live conference relative to comet on Day 362.</td>
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<tr>
<td>TV-28</td>
<td>Science Pilot Highlights (1973) Discussion of Apollo Telescope Mount procedures and techniques on Day 338</td>
</tr>
<tr>
<td>TV-33</td>
<td>Water Sampling (1973) Conducted on Day 337.</td>
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<td>TV-68</td>
<td>ED61/62 Plant Growth/Plant Phototropism (1973)</td>
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<tr>
<td>TV-69</td>
<td>The first telecast shows preparations for the experiment and the second shows experiment data gathering operations.</td>
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<tr>
<td>TV-81</td>
<td>Human Body Momentum (1974) Science demonstration in two parts. The second part was completed as a crew day off activity.</td>
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<tr>
<td>TV-101-1 thru TV-101-5</td>
<td>Liquid Floating Zone (1974) Science demonstration televised in five parts on five consecutive days.</td>
</tr>
<tr>
<td>TV-107-1 thru TV-107-5</td>
<td>Fluid Mechanics (1974) Science demonstration in five parts (Days 4, 5, 18, 23, and 24)</td>
</tr>
</tbody>
</table>
Orbital Mechanics (1974)
Science demonstration conducted on Day 21.

Gypsy Moth (1973)
Telecast showing larvae hatched in Skylab (Day 352).

Three separate telecasts. The commander is shown in two telecasts, both in shirtsleeves and suited. The science pilot is suited in the other.

TO20, Foot Controlled Maneuvering Unit (1974)

Activation, Multiple Docking Adapter (1973)

Coolant Servicing (1973)
Crew operations during servicing of the Airlock Module coolanol system on Day 323.

Air Mixing Screen Cleaning (1973)
Shows the crew cleaning the screen located in the Orbital Workshop (Day 335).

S192 Alignment (1973)
Telecast of crew performing alignment procedures for one of the Earth observation sensors (Day 329).

S054 Film Canister Reloading (1973)
Telecast of the crew reloading a film canister for one of the Apollo Telescope Mount solar telescopes (Day 332).

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<td>TV-110</td>
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<td>TV-36</td>
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<td>TV-XX</td>
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</tbody>
</table>
Headquarters

Skylab (1972; 27 minutes) HQ-216
NASA's first manned space laboratory - SKYLAB. Three 3-man crews live and work in this laboratory for periods up to 56 days. The film, produced before the mission, shows the major objectives, its principal components, and features the four launches involved, and a few of the scientific investigations that were performed which illustrate their type and scope.

Marshall Space Flight Center

Skylab - silent footage (1974; 13 minutes)
General Skylab concepts. Developed for group presentations, narration to be given by a speaker. Script available with film.

Skylab: The Search and the Hope (1974; 23 minutes) MSFC-74-350
A comprehensive film that covers the scientific achievements of Skylab - studies of the Earth, the Sun, space technology, and even man himself. The relevance of the Skylab program is emphasized throughout. The film is suitable for general audiences as well as technically oriented viewers.

Skylab Mission Made Possible (1974; 20 minutes) MSFC-74-369
A complete chronology of the problem and repair of the Skylab space station during its first six weeks. The film provides an interesting in-depth story of the behind-the-scenes activities of NASA and its industry team to save the stranded space station.

Skylab: The First Mission (1973; 25 minutes) MSFC-73-370

Skylab: The Second Journey (1974; 25 minutes) MSFC-74-403

Skylab: The Third Mission (1974; 13 1/2 minutes) MSFC 74-413

Skylab: High School in Space (1974; 13 1/2 minutes) MSFC-74-418
A film that depicts the involvement of education and space. Features the Skylab student experiments and science demonstrations.
The Manned Spacecraft Center - Where Tomorrow Begins
(1972; 30 minutes) MSC-532
Depicts the role of the NASA Manned Spacecraft Center in the nation's space flight programs from Mercury, Gemini, and Apollo through Skylab and programs of the future. The audience is given a tour through engineering and scientific facilities at the MSC and an insight into subjects such as astronaut training, engineering and development, and mission operation and control. The MSC aircraft and Earth resource programs are also demonstrated as presently carried on and as planned, using tomorrow's technologically advanced capabilities.

Space in the 70's - Man in Space: The Second Decade
(1971; 28 minutes) MSC-556
Previews benefits to mankind resulting from U. S. space flights, including Apollo 8 (December 1968), the first Moon orbital mission, and Apollo 11 (July 1969), the historic goal of landing man on the Moon. Apollo 11 collected the first of many rock and soil samples and set up the first of many planned scientific stations. Future programs include Skylab, reusable Space Shuttle, an orbiting Space Station, and, eventually, manned expeditions to other planets.

Manned Space Flight - New Goals - New Challenges
(1970; 19 minutes) MSC-538R
Shows where we stand today in manned space flight and where we will be in the near future if present capability is applied to such imminent developments as Skylab, space stations, space shuttles, further lunar exploration, and future planetary missions.

Skylab - On the Eve of Launch (1973; 11 minutes)
JSC-604
Expresses the continuity of the United States space program, describes Skylab and its flight plans, highlights the final preparation of flight articles and crew training up to the eve of launch of the first mission, and presents a short review of representative experiments and their possibilities for the benefit of mankind.

Skylab (1972; 28 minutes) MSC-569
Describes Skylab and its three 3-man missions scheduled for 1973. Gives examples of the 50 or more scientific experiments and investigations directed by some of the world's leading scientists. The four broad categories are biomedical, solar and stellar astronomy, materials processing, and Earth resources surveys and sensor development.
Skylab Medical Experiments (1973; 31 minutes) JSC-590
Describes the equipment and experiments of the Skylab Medical Experiments Program. Discusses major experiment items such as the lower body negative pressure device, the ergometer, the rotating litter chair, and the experiment support system. Covers blood studies, microbiological studies, and emergency medical gear. Furnishes a brief look at the food program. The film is aimed at audiences with some technical expertise.

Apollo Applications (1967; 26 minutes) MSC-356
Presents the Apollo Applications Program as envisioned in early 1967 with potential benefits from Apollo hardware. Interviews with Dr. Charles Tawes, Dr. Charles Berry, Astronaut James Lovell, Dr. Lloyd Berknes, Dr. Eugene Shoemaker, Dr. James Arnold, and Dr. Leo Goldberg.

Skylab - The Second Manned Mission - A Scientific Harvest (1974; 36-1/2 minutes) JSC-627
Covers the Skylab launch activities and docking with unmanned SL-1 workshop. Includes observations of student experiments - the Mummichogs minnows and Arabella the spider; crew medical experiments and exercise routines, and the enabling of the Earth Resources Experiments Package. Shows planet Earth documentation, manned operation of the Apollo Telescope Mount for observations of the Sun and beyond, outside EVA activity, testing of the Astronaut Maneuvering Unit, experiments to explore industrial uses of space, and the Skylab living routine.

Skylab - The First 40 Days (1973; 25 minutes) JSC-623
Records the launch of unmanned Skylab on May 14, 1973, and the major problem resulting from the loss of the meteoroid heat shield. Shows the fabrication of materials and the equipment used in the repair operation, followed by the installation of the parasol after the launch and docking of the manned SL-2 with the SL-1 workshop. Includes onboard sequences of daily work routines and some of the experiments.

Skylab - The Problem - The Fix (1973; 10 minutes) JSC-622
Illustrates the fabrication of the materials and equipment used to repair SL-1 and includes onboard film which shows the EVA operations in connection with the repairs.
EREP (1973; 3 minutes) JSC-613
Shows the Earth Resources Experiments Package to be flown aboard Skylab and scan the Earth in a number of spectrums. Includes photos taken in regular light and infrared from orbiting Apollo and Gemini spacecraft to give some idea of what will be seen through EREP.

Skylab - Youth Accepts the Challenge of Space (1973; 31 minutes) JSC-620
NASA reached out beyond the astronauts, engineers, and professional scientists to directly involve the youth of the nation in the Skylab project. From the 3,409 proposals submitted by high school students, the 19 to be conducted during the Skylab mission are described.

Skylab - Earth and Sun Observations (1973; 25 minutes) JSC-621
Describes special equipment aboard Skylab to provide a vast amount of new information about the land, sea, and atmosphere. A cluster of telescopes will observe and photograph the Sun as never before seen by man, clear of Earth's atmosphere.

Skylab - An Investigation in Space (1973; 22 minutes) JSC-625
Describes the four modules that comprise Skylab, the scientific laboratory. Also describes living and working conditions, including food, housekeeping, devices for dealing with weightlessness, and many other factors involved in the experiments.

Skylab - Space Science Experiments (1973; 23 minutes) JSC-626
The primary objective of Skylab is to conduct scientific investigations in the areas of biomedical sciences, solar physics, Earth resources, crew operations, astrophysics, and space technology. This film describes six of the approximately 90 experiments performed, five of which involve space photography and the sixth collects impressions of flying micro-meteorites.

Skylab - America's First Space Station (1974; 60 minutes) JSC-650
An interesting collection of space film molded into a complete story of Skylab, its problems, its crews, and its scientific achievements.
Skylab Experiment Films

These are single concept films of individual Skylab experiments. Generally, each shows the principal investigator for the experiment "on camera" in sync sound explaining his experiment in terms of how it works and the results he hopes to achieve.

Johnson Space Center (JSC) Experiment Films

**M073 - Bioassay of Body Fluids (1973; 6-1/2 minutes)**
JSC-596

Dr. Carolyn Leach - Principal Investigator, NASA Johnson Space Center, Houston. Evaluation of blood and urine for endocrinological studies of zero-G environment.

**M171 - Metabolic Activity (1973; 4 minutes)**
JSC-597

**M133 - Sleep Monitoring (1973; 13 minutes)**
JSC-598
James D. Frost, Jr., M.D. - Principal Investigator, Baylor University, Houston. Evaluation of sleep quantity and quality in zero-G environment.

**M092 - Lower Body Negative Pressure (1973; 4:13 minutes)**
JSC-599
Robert L. Johnson, M.D. - Principal Investigator, NASA Johnson Space Center, Houston. Determination of cardiovascular conditioning and adaptation to a weightless environment.

**S193 & S194 - Microwave Measurements of Earth (1973; 4-1/2 minutes)**
JSC-600
Dallas E. Evans - Project Scientist, NASA Johnson Space Center, Houston. Experiment S193 provides parameters for the design of radar altimeters; experiment S194 provides backup for S193 and provides data on brightness temperature and surface reflectivity of the Earth's surface.

**S019 - Ultraviolet Stellar Astronomy (1973; 11 minutes)**
JSC-601
Dr. Karl G. Henize - Scientist/Astronaut, NASA Johnson Space Center, Houston. Recording of ultraviolet spectra lines from milky way stars and provides data for use in the design of satellite observatories.
M509 - Astronaut Maneuvering Unit (1973; 6-1/2 minutes)
JSC-607

M071 - Mineral Balance (1973; 4-1/2 minutes) JSC-609
G. Donald Whedon, M.D. - Principal Investigator, National Institute of Health, Washington. Determination of effects of space flight on muscle and skeletal body systems by gain/loss assessment of biochemical constituents.

M093 - Vectorcardiogram (1973; 2 minutes) JSC-610
Raphael Smith, M.D. - Principal Investigator, U.S. Aerospace Medical Institute, Pensacola. Determination of heart changes in weightless environment.

MO74 & M172 - Specimen Mass Measurement - Body Mass Measurement (1973; 8-1/2 minutes) JSC-612
Dr. William Thornton - Scientist/Astronaut, NASA Johnson Space Center, Houston. Demonstrated use of body mass measurement device and support medical experiments requiring use of mass measurement device.

S191 - Infrared Spectrometer (1973; 2:43 minutes)
JSC-614
Thomas L. Barnett, Ph.D. - Project Scientist, NASA Johnson Space Center, Houston. Magnetic data recording using multispectral infrared scanning device that scans the Earth’s surface along vehicle track.

S109 - Multispectral Photography (1973; 3-1/2 minutes)
JSC-615
Ken Demel - Project Scientist, NASA Johnson Space Center, Houston. Multispectral photography of Earth features in six visible and infrared bandwidths.

SO63 - Ultraviolet-Airglow Horizon Photography (1973; 4-1/2 minutes) JSC-617
Donald M. Packer - Principal Investigator, Naval Research Laboratory, Washington. Photography of the night airglow and daytime ozone layer of the Earth’s atmosphere.
Skylab Food Management (1973; 6-1/2 minutes) JSC-619
Malcolm C. Smith, Jr., D.V.M. - Principal Investigator, Food and Nutrition Branch, NASA Johnson Space Center, Houston. Food planning to meet varied requirements of long duration space flight.

Skylab Recreational Activities (1973; 4 minutes) JSC-616
Larry Bell, Crew Systems Division, NASA Johnson Space Center, Houston. Description of items carried onboard to fulfill recreational needs of manned crews.

Marshall Space Flight Center (MSFC) Experiment Films

DO24 - Thermal Control Coatings MSFC-73-352
Dr. William L. Lehn - Principal Investigator, Wright-Patterson Air Force Base, Ohio. Evaluation of thermal control coatings having long term exposure to space.

M415 - Thermal Control Coatings MSFC-73-362
Eugene C. McKannon - Principal Investigator, NASA Marshall Space Flight Center, Huntsville. Evaluation of thermal control coatings exposed to launch and space environments.

Robert J. Randle, NASA Ames Research Center; and Major Stanley Powers, USAF, co-investigators. Study effects of extended periods of space travel upon navigation sightings ability.

T003 - In-Flight Experiment Aerosol Analysis MSFC-74-373
Dr. William Z. Leavitt - Principal Investigator, Department of Transportation. Measurement of size, concentration and composition of atmospheric particles inside Skylab.

T013 - Crew/Vehicle Disturbances MSFC-74-374
Bruce A. Conway - Principal Investigator, NASA Langley Research Center. Measurement of crew movement effects on the dynamics of manned spacecraft.

T020 - Foot-Controlled Maneuvering Unit MSFC-73-365
Donald E. Hewes - Principal Investigator, NASA Langley Research Center. Evaluation of an astronaut maneuvering device not requiring use of the astronaut hands.

T027 - Contamination Measurements MSFC-73-357
Joseph A. Muscari, Ph. D. - Principal Investigator, Martin-Marietta Aerospace. Determine degradation effects of external contamination upon windows, mirrors and diffraction gratings, as well as to measure brightness and polarization of scattered sunlight.
SO52 - White Light Coronagraph  MSFC-74-378
Dr. Robert MacQueen - Principal Investigator, High Altitude Observatory, Boulder. Photography of solar corona in visible light out to 3 million miles (6 solar radii).

SO54 - X-Ray Spectrographic Telescope  MSFC-74-380
Dr. Riccardo Giacconi - Principal Investigator, American Science and Engineering. X-Ray photography of flares and active regions for determining corona temperatures and energetic particle densities.

SO55A - Ultraviolet Scanning Polychromator  MSFC-74-376
Dr. E.M. Reeves - Principal Investigator, Harvard College Observatory. Observation of temporal changes in ultraviolet radiation emitted by various solar regions.

SO56 - X-Ray Telescope  MSFC-74-375

SO82A - Extreme Ultraviolet Spectroheliograph  MSFC-74-382
Dr. Richard Tousey - Principal Investigator, Naval Research Laboratory. Sequential Photography of the solar disk shows emission features enhanced over white light photographs.

SO82B - Spectrograph and Extreme Ultraviolet Monitor  MSFC-74-379
Dr. Richard Tousey - Principal Investigator, Naval Research Laboratory. Sequential photography of the solar disk shows emission features enhanced over white light photographs.

SO09 - Nuclear Emulsion  MSFC-73-353
Maurice M. Shapiro, Ph. D. - Principal Investigator, Naval Research Laboratory. Recording cosmic ray flux outside earth's atmosphere.

SO73 - Gegenschein/Zodiacal Light  MSFC-73-354
J.L. Weinberg, Ph. D. - Principal Investigator, Dudley Observatory, Albany. Measurement of brightness and polarization of the sky's visible background as seen from above the earth's atmosphere.
S150 - Galactic X-Ray Mapping  MSFC-73-360
William Kraushaar, Ph. D. - Principal Investigator,
University of Wisconsin. Survey of the sky for
faint x-ray sources.

S183 - Ultraviolet Panorama  MSFC-73-363
Dr. George Courtes - Principal Investigator, Laboratoire
d'Astronomie Spatiale du CRNS, Marseille, France.
Ultraviolet measurement of stars.

S228 - Trans-Uranic Cosmic Rays  MSFC-74-377
Dr. P. Buford Price - Principal Investigator,
University of California, Berkley. Identify
trans-uranic nuclei and determine abundance
of nuclei with an atomic map number greater
than 26.

S230 - Magnetospheric Particle Composition  MSFC-73-355
Dr. Don Lind, NASA Johnson Space Center, and Dr.
Johannes Geiss, University of Bern, Switzerland,
co-investigators. Measurement of the abundance of
heavy, rare ions in the earth's magnetosphere
for comparison with Apollo's solar wind composition
experiment.

M512 - Materials Processing Facility  MSFC-73-363
P. Gordon Parks - Principal Investigator, NASA
Marshall Space Flight Center. Evaluation of
molten metal phenomena for manufacturing in a
zero g environment.

M479 - Zero Gravity Flammability  MSFC-73-366
J.H. Kinzey - Principal Investigator, NASA
Johnson Space Center. Determination of flame
propagation, flashover and extinguishment.

M518 - Multipurpose Electric Furnace  MSFC-73-361
An apparatus for experiments involving phase changes
at elevated temperatures (solidification, crystal
growth, etc.)

Proton Spectrometer  MSFC-73-359
George Detko - Principal Investigator, NASA
Marshall Space Flight Center. Determination
of the energy spectrum and intensity of
electrons and protons in radiation belts.

ED11 - Atmospheric Heat Absorption  MSFC-74-383
Joe B. Zmolek - Student Investigator, Lourdes
High School, Oshkosh, Wisconsin. Determination
of atmospheric attenuation of radiant energy in
the visible and near infrared regions by using infor-
mation from Skylab's sensors.
ED12 - Volcanic Study  MSFC-74-384

ED21 - Libration Clouds  MSFC-74-407
Alison Hopfield - Student Investigator, Princeton Day School, Princeton, New Jersey. Observation of two zero-force regions between the Earth and Moon where small particles may have accumulated.

ED22 - Objects Within Mercury's Orbit  MSFC-74-385
Daniel C. Bochsler - Student Investigator Silverton Union High School, Silverton, Oregon. Identification of planetary objects which may orbit the sun at a radius substantially less than that of Mercury's orbit.

ED23 - UV From Quasars  MSFC-74-408
John C. Hamilton - Student Investigator, Aiea, Hawaii. Ultraviolet photograph analysis to augment existing quasar data in radio and visible ranges.

ED24 - X-Ray Stellar Classes  MSFC-74-386
Joe W. Reihs - Student Investigator, Tara High School, Baton Rouge, Louisiana. X-ray observations of celestial regions for relating x-ray emissions to other spectral characteristics of observed stars.

ED25 - X-Rays From Jupiter  MSFC-74-387
Jeanne L. Leventhal - Student Investigator, Berkeley, California. Correlation of x-ray emission from Jupiter with solar activity and decametric radio emission.

ED26 - UV From Pulsars  MSFC-74-388
Neal W. Shannon - Student Investigator, Fernbank Science Center, Atlanta, Georgia. Measurement of ultraviolet radiation from known pulsars for correlation with existing pulsar spectral data.

ED31 - Bacteria and Spores  MSFC-74-389
ED32 - In Vitro Immunology  MSFC-74-390  
Todd A Meister - Student Investigator, Bronx High School of Science, Jackson Heights, New York. Determination of zero g effect upon the immune-response mechanism.

ED33 - Microorganisms in Varying G  MSFC-74-391  
Keith Stein - Student Investigator, W. Tresper Clark High School, Westbury, New York. An effects study of various artificial gravity levels upon microorganisms.

ED41 - Motor Sensory Performance  MSFC-74-392  
Kathy L. Jackson - Student Investigator, Clear Creek High School, Houston, Texas. Measurement of changes in fine, manipulative capabilities of a crew member experiencing extended space conditions.

ED51 - Chick Embryology  MSFC-74-409  
Kent Brandt - Student Investigator, Grand Blanc Senior High School, Grand Blanc, Michigan. A high life form investigation of chicken eggs, studying various stages of embryos in a space environment, as well as studying post-flight motor sensory performance.

ED52 - Web Formation  MSFC-74-393  
Judith S. Miles - Student Investigator, Lexington, Massachusetts. Observation of a spider's web building process and structure in a space environment.

ED61 - Plant Growth  MSFC-74-394  
Joel G. Wordekkemper - Student Investigator, Central Catholic High School, West Point, Nebraska. A study of zero g effects upon geotropism which was run concurrently with ED62.

ED62 - Plant Phototropism  MSFC-74-395  
Donald W. Schlack - Student Investigator, Downey, California. A study of substituting lights for gravity to effect proper plant growth.

ED63 - Cytoplasmic Streaming  MSFC-74-396  

ED71 - Colloidal State  MSFC-74-397  
Keith McGee - Student Investigator, South Garland High School, Garland, Texas. Determination of zero gravity effect upon the colloidal state of matter.
ED72 - Capillary Study  MSFC-74-398
Roger G. Johnston - Student Investigator, Ramsey High School, St. Paul, Minnesota. Observation of capillary and wicking action in zero gravity conditions.

ED73 - Power Flow  MSFC-74-410

ED74 - Mass Measurement  MSFC-74-411
Vincent W. Converse - Student Investigator, Harlem High School, Rockford, Illinois. Oscillation frequency of a pendulum is measured to determine mass.

ED75 - Brownian Motion  MSFC-74-399
Gregory Merkel - Student Investigator, Wilbraham and Monson Academy, Springfield, Massachusetts. Evaluation of Brownian motion in zero g (molecular movement in suspensions).

ED76 - Neutron Analysis  MSFC-74-400
Terry C. Quist - Student Investigator, Thomas Jefferson High School, San Antonio, Texas. Low energy neutrons impact detectors and leave a path for microscopic identification.

ED77 - Universal Gravity  MSFC-74-401
James Healy - Student Investigator, St. Anthony's High School, Bayport, New York. A modified Cavendish balance for measurement of mass attraction of two dissimilar size spheres.

ED78 - Liquid Motion in Zero G  MSFC-74-402
W. Brian Dunalp - Student Investigator, Austintown Fitch High School, Youngstown, Ohio. Motion study of liquid-gas interface (bubble in a liquid) subjected to impulsive forces.
<table>
<thead>
<tr>
<th>Photographs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Space Photography, 1974 Index</strong></td>
</tr>
<tr>
<td>Listing of photographs taken from space including selected Skylab pictures</td>
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<tr>
<td>Booklet-1974; 152 pages; available from: Audio Visual Branch</td>
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<tr>
<td>Public Information Division</td>
</tr>
<tr>
<td>Code FP</td>
</tr>
<tr>
<td>National Aeronautics &amp; Space Administration</td>
</tr>
<tr>
<td>Washington, D.C. 20546</td>
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<tr>
<td><strong>2. Earth Resources Photography</strong></td>
</tr>
<tr>
<td>EROS Data Center</td>
</tr>
<tr>
<td>10th &amp; Dakota Avenue</td>
</tr>
<tr>
<td>Sioux Falls, South Dakota 57198</td>
</tr>
<tr>
<td><strong>3. General Skylab Mission Photography</strong></td>
</tr>
<tr>
<td>General mission photography: Space Photographs</td>
</tr>
<tr>
<td>P. O. Box 486</td>
</tr>
<tr>
<td>Bladensburg, Maryland 20710</td>
</tr>
<tr>
<td><strong>4. Solar Skylab Photography</strong></td>
</tr>
<tr>
<td>Solar experiments data and photography: X-ray/UX Solar Photography Experiment S020, Coronal Spectroheliograph S082A and Chromospheric Spectrograph S082B</td>
</tr>
<tr>
<td>U. S. Naval Research Laboratory</td>
</tr>
<tr>
<td>Washington, D.C. 20390</td>
</tr>
<tr>
<td>White Light Coronagraph S052</td>
</tr>
<tr>
<td>High Altitude Observatory</td>
</tr>
<tr>
<td>Boulder, Colorado 80302</td>
</tr>
<tr>
<td>X-ray Spectrographic Telescope S054</td>
</tr>
<tr>
<td>American Science and Engineering</td>
</tr>
<tr>
<td>955 Massachusetts Avenue</td>
</tr>
<tr>
<td>Cambridge, Massachusetts 02139</td>
</tr>
<tr>
<td>H-Alpha Telescopes, UV Scanning Polychromator S055A</td>
</tr>
<tr>
<td>Harvard College Observatory</td>
</tr>
<tr>
<td>60 Garden Street</td>
</tr>
<tr>
<td>Cambridge, Massachusetts 02138</td>
</tr>
<tr>
<td>X-ray Telescope S056</td>
</tr>
<tr>
<td>Marshall Space Flight Center</td>
</tr>
<tr>
<td>Huntsville, Alabama 35812</td>
</tr>
</tbody>
</table>
EXHIBITS

Skylab Model (OC-2) (OC-3, reference 76697, 76652, 76601)
A 1:20 scale model of Skylab in which the workshop portion has been cut away to show the bi-level workshop interior. Two information panels (optional) are frequently included with the exhibit model. The panels (to be displayed on easels) give descriptive information and photographs of the Skylab mission and its program objectives.

Data:

Type
  Indoor, tabletop or floor
Animation
  None
Dimensions
  14" diameter, 6' tall, (55" wide with wings extended)
Total Weight
  260 lbs.
Mode of Transportation
  Motor Freight
Value for Insurance Purposes
  $4750.00

Setup Requirements:

Equipment
  None
Labor
  Two men
Electrical
  None
Area
  5' x 5'
Setup Time
  30 minutes
Disassembly Time
  30 minutes
No. of Crates
  One
Size
  77" x 35" x 26"
Skylab Table-top Exhibit (OC-2, reference Code M-86) (OC-3, reference 76685, 76686)

A 1:48 scale model Skylab with the workshop portion cut away to show the bi-level workshop interior. The model is encased in a 27" wide x 18-1/2" deep x 34" high plexiglass display case. The information panels contain photographs and copy explaining Skylab program mission objectives.

Data:

Type
Indoor, tabletop

Animation
None

Dimensions
5' wide, 18-1/2" deep

Total Weight
65 lbs.

Mode of Transportation
Hand carry, or air freight

Value for Insurance Purposes
$1,220.50

Setup Requirements:

Equipment
Standard desk or table

Labor
Two men

Electrical
None

Setup Time
30 minutes

Disassembly Time
30 minutes

Area
8' x 5'

No. of Crates
2

Size(s)
36" x 27" x 6"
30" x 10" x 14"

This is a self-contained cabinet on rollers. It includes a three-dimensional painting of the Skylab vehicle in Earth orbit (protected by a plexiglass cover), and an information panel with back-lighted color transparencies on Skylab experiments, and astronaut accommodations.

Data:

Type
Indoor, floor

Animation
None

Dimensions
90" wide, 40" deep, 80" high

Total Weight
1130 lbs.

Mode of Transportation
Motor Freight

Value for Insurance Purposes
$2,370.00

Setup Requirements:

Equipment
Forklift

Labor
Two men

Electrical
110V AC electrical outlet (grounded)

Area
10' x 10'

Minimum Doorway Clearance
42" x 83"

Setup Time
1 hour

Disassembly Time
1 hour

No. of Crates
1

Size
101" x 50" x 93"

Skylab Exhibit (OC-2)
Indoor floor display. Represents medical aspects of Skylab. About 12' wide x 4' deep x 6' high.
Skylab Column Exhibit With 1:96 Scale Model (OC-. 3, reference 76935, 76933)

This is a free-standing aisle exhibit mounted on a carpeted dais. The top portion of the column is of clear plexiglass and houses a 1:96 scale model of Skylab which rotates on a dais inside the enclosure. A wrap-around back-lighted information panel with color transparencies is located underneath the rotating model. The exhibit explains Skylab mission objectives and astronaut accommodations for living and working in space.

Data:

Type
Indoor, free-standing, aisle exhibit

Animation
Rotating Skylab model

Dimensions
Approximately 2 feet diameter, 5 feet high, on 3 feet diameter base

Total Weight
225 lbs.

Mode of Transportation
Motor Freight

Value for Insurance Purposes
$2,500.00

Setup Requirements:

Equipment
None

Labor
Two men

Electrical
110V electrical outlet (grounded)

Area
5' x 5'

Setup Time
2 hours

Disassembly Time
2 hours

No. of Crates
2

Size(s)
28" x 28" x 61"
16" x 11" x 8-1/2"

51
Skylab Triad Exhibit (OC-3, reference 76264)
This exhibit contains a 1:48 scale model of Skylab suspended above a model of Earth. Three information panels, mounted in a triad above the base, discuss the Apollo Telescope Mount, Skylab launch profiles and Skylab program objectives. A 35mm slide projector presents a brief rear-projected slide show on Skylab astronaut training and Skylab facilities.

Data:

Type
Indoor, floor (walk-around)
Animation
Slide show
Dimensions
Approximately 8' diameter, 7' high
Total Weight
2027 lbs.
Mode of Transportation
Motor Freight
Value for Insurance Purposes
$3,450.00

Setup Requirements:

Equipment
Two 6' step-ladders, forklift for unloading (if possible)
Labor
2 men
Electrical
110V AC electrical outlet (grounded)
Area
10' x 10'
Setup Time
4 hours
Disassembly Time
4 hours
No. of Crates
7
Size(s)
90" x 42" x 99"
124" x 67" x 30"
33" x 50" x 10"
42" x 41" x 27"
52" x 51" x 31"
Skylab Compatible "A" Exhibit (OC-3, reference 76351, 76693)
This is a small standup theatre which comfortably accommodates from 7 to 10 people during a 7-minute slide presentation on Skylab, the United States' first space station. Four slide projectors are used in this exhibit to produce full screen, half screen and animated slide sequences on Skylab, its mission objectives, and the Earth applications which may come from such orbital studies. The slide projectors, music and narrative are synchronized and changed electronically through a four-track master tape recording. This exhibit is designed primarily for general public audiences. A 1:20 scale model of Skylab is exhibited on the outside of the theatre shell (optional).

Data:

Type
Indoor, floor

Animation
Slide show, narrative, special effects, music

Dimensions
17' wide, 12' high, 21' long

Total Weight
4170 lbs.

Mode of Transportation
Motor Freight

Value for Insurance Purposes
$5,396.00
$13,879.00 with model

Setup Requirements:

Equipment
10' step-ladder, forklift

Labor
4 men

Electrical
Two 110V AC electrical outlets (grounded)

Area
20' x 25" (12' ceiling)

Setup Time
1 day

Disassembly Time
1 day

No. of Crates
5

Size
45" x 40" x 100"
46" x 55" x 136"
31" x 52" x 140"
27" x 52" x 140"
27" x 52" x 128"
"American Living and Learning in Space" Van Exhibit (OC-3, reference 249)

This is a self-contained traveling exhibit approximately 40-feet long, 14-feet high and 8-feet wide. The van emphasizes NASA's Apollo, Space Shuttle and Skylab programs, and the craftsmanship and effort required by NASA personnel for the success and safety of such space programs. The van contains an actual space suit, pictures of the astronauts, samples of space food, a display of microminiaturization, and several models of various spacecraft and launch vehicles used in the exploration of space along with hardware and materials used in their development. A three-dimensional diorama of astronauts exploring the moon with the Lunar Roving Vehicle (LRV) is also exhibited in the van. Another display shows many Earth applications of space technology.

Data:

Type
  Outdoor, van
Viewers accommodated
  90 per hour
Animation
  Yes, several audience participation items
Dimensions
  40' x 14' x 18'
Total Weight
  Approximately 12,000 lbs.
Mode of Transportation
  Government or leased truck
Value for Insurance Purposes
  $50,000.00

Setup Requirements:

Equipment
  None
Labor
  Two men for setup, and one licensed electrician (van driver responsible for van placement)
Electrical
  208/220V, single phase, 60Hz, 25 amp. electrical service
Area
  50' x 14' x 14' with maneuvering room
Setup Time
  4 to 6 hours
Disassembly Time
  4 to 6 hours
"Craftsmanship Van 250 Exhibit" (OC-10)

The Craftsmanship Van is a travelling exhibit housed in a standard 50' long trailer similar to those commonly used for hauling freight. A number of displays within the van present information on America's space achievements, space programs, and benefits derived from space technology. Approximately 23 major features are displayed. The exhibit is designed for motivational effort to inspire aerospace workers to assume a greater sense of responsibility for assuring quality in their everyday job performance, and consequently, safe and reliable equipment and systems.

Exhibit Data:

<table>
<thead>
<tr>
<th>Type</th>
<th>Indoor, floor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Models</td>
<td></td>
</tr>
<tr>
<td>Animation</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>50' long x 14'wide x 14'' high</td>
</tr>
<tr>
<td>Total weight</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Mode of Transportation</td>
<td>Leased truck</td>
</tr>
<tr>
<td>Value for Insurance Purposes</td>
<td>None</td>
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</table>

Exhibit Setup Requirements:

<table>
<thead>
<tr>
<th>Equipment</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical</td>
<td>Outlets or connections for 220 volt, single phase 60 hz; 100 amp service</td>
</tr>
<tr>
<td>Labor</td>
<td>3 men (including one electrician)</td>
</tr>
<tr>
<td>Area</td>
<td>50' long x 14' high x 14' wide with maneuvering space</td>
</tr>
<tr>
<td>Setup time</td>
<td>2 hours</td>
</tr>
<tr>
<td>Disassembly time</td>
<td>2 hours</td>
</tr>
<tr>
<td>No. of crates</td>
<td>None</td>
</tr>
<tr>
<td>No. of Size(s)</td>
<td>N/A</td>
</tr>
</tbody>
</table>
"Skylab Exhibit" (OC-10, reference code MSC: 86002)

This exhibit is a three-panel display consisting of one large panel oil painting (showing vehicle launches, Skylab in Earth-orbit, splashdown of command module, and the three Skylab crews), and two smaller panels with various photos of Skylab’s experiments. A taped message is included in the display. The exhibit is designed for motivational effect to inspire aerospace workers to assume a greater sense of responsibility for assuring quality in their everyday job performance, and consequently, safe and reliable equipment and systems.

Exhibit Data:

- Type: Indoor, floor
- Models: None
- Animation: None
- Dimensions: 10' long x 5' wide x 7' high
- Total weight: 1000 pounds
- Mode of Transportation: Motor freight
- Value for Insurance Purposes: None

Exhibit Setup Requirements:

- Equipment: Forklift (for crates)
- Electrical: one 110 vac elect outlet (grounded)
- Labor: 2 men
- Area: 14' x 71
- Setup time: 2 hours
- Disassembly time: 2 hours
- No. of crates: One
- Sizes: 62"H x 53"W x 120"L
"Astronaut Panel Exhibit" (OC-10, reference MSFC #86001)

This exhibit consists of four 4'x8' curved panels displaying an oil painting of an astronaut engaged in extravehicular activity, color photographs of the astronauts, and scale models of the Saturn 1B and Saturn V vehicles toward creating a sense of responsibility in aerospace workers concerning safety and the overall Aerospace Awareness Program.

The exhibit is designed for motivational effect to inspire aerospace workers to assume a greater sense of responsibility for assuring quality in their everyday job performance, and consequently, safe and reliable equipment and systems.

Exhibit Data:

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<tr>
<th>Type</th>
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<tr>
<td>Models</td>
<td>1 - 1/200 scale Saturn V</td>
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<tr>
<td></td>
<td>1 - 1/200 scale Saturn 1B</td>
</tr>
<tr>
<td>Animation</td>
<td>None</td>
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<tr>
<td>Dimensions</td>
<td>16' long x 3' wide x 8' high</td>
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<tr>
<td>Total weight</td>
<td>700 pounds</td>
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<tr>
<td>Mode of transportation</td>
<td>Motor Freight</td>
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<tr>
<td>Value for Insurance Purposes</td>
<td>None</td>
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Exhibit Setup Requirements:

<table>
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<tr>
<th>Equipment</th>
<th>Forklift</th>
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<tr>
<td>Electrical</td>
<td>None</td>
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<tr>
<td>Labor</td>
<td>2 men</td>
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<tr>
<td>Area</td>
<td>17' x 6'</td>
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<tr>
<td>Setup time</td>
<td>2 hours</td>
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<tr>
<td>Disassembly time</td>
<td>2 hours</td>
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<tr>
<td>No. of Crates</td>
<td>One</td>
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<tr>
<td>Size(s)</td>
<td>38&quot;H x 56&quot;W x 96&quot;L</td>
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</table>
"Skylab Exhibit" (OC-10, reference code AAP851, MSFC #86003)

This exhibit is a three-panel display consisting of one large oil painting of the Skylab with an astronaut floating outside in space, and two smaller panels displaying photo transparencies of the Skylab experiments. Short statements relating to the mission accompany the photos. The exhibit is designed for motivational effect to inspire aerospace workers to assume a greater sense of responsibility for assuring quality in their everyday job performance, and consequently, safe and reliable equipment and systems.

Exhibit Data:
- **Type**: Indoor, floor
- **Models**: None
- **Animation**: None
- **Dimensions**: 7' high x 4' wide x 10' long
- **Total weight**: 1000 pounds
- **Mode of Transportation**: Motor freight
- **Value for Insurance Purposes**: None

Exhibit Setup Requirements:

- **Equipment**: Forklift (for crates)
- **Electrical**: One 110 vac elect outlet (grounded)
- **Labor**: 2 men
- **Area**: 14' x 7'
- **Setup time**: 2 hours
- **Disassembly time**: 2 hours
- **No. of crates**: 1
- **No. of size(s)**: 120" long x 56" wide x 62" high
"Skylab Models" (OC-10, reference codes: 1/96 - 76804; 1/48 - 76410; 1/20 - 76799)

Various Skylab Models (scaled at 1/96, 1/48, and 1/20) are used for displays and are designed for motivational effect to inspire aerospace workers to assume a greater sense of responsibility for assuring quality in their everyday job performance, and consequently, safety and reliable equipment and systems.

Exhibit Data:

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<tr>
<th>Type</th>
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<td>Animation</td>
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<td>Dimensions</td>
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<td>Mode of Transportation</td>
<td>Motor freight/air freight</td>
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<td>Value for Insurance Purposes</td>
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Exhibit Setup Requirements:

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<tr>
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<td>Labor</td>
<td>1 man</td>
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<td>Area</td>
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<tr>
<td>Setup time</td>
<td>30 minutes</td>
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<tr>
<td>Disassembly time</td>
<td>30 minutes</td>
</tr>
<tr>
<td>No. of crates</td>
<td>One (each model)</td>
</tr>
<tr>
<td>No. of sizes</td>
<td>(Varies with scale)</td>
</tr>
</tbody>
</table>
ATM Exhibit (OC-3)
A curved triad panel with backlighting is supported from the exhibit base by legs. Depicted on the panel is a synopsis of each solar telescope. A 1:48 scale Skylab is suspended from the triad. A 1:10 scale of the Apollo Telescope Mount rests on the exhibit base. Solar telescopes were contained in the Apollo Telescope Mount. Physical size is 7' high and 8' in diameter.

Earth Resources Exhibit (OC-3)
Curved illustrated panels depict various aspects of Skylab. A 1:48 scale Skylab is mounted on one panel. Physical size is about 8' wide x 5' deep x 6' high.

Skylab Solar Observatory Exhibit (OC-3)
The seven foot high, cylindrical exhibit has a base that supports a plexiglass enclosure. Within the enclosure is a 1:48 scale Skylab. Around the enclosure's base are seven solar photographs. Exhibit diameter is 4 feet.

Skylab Benefits Exhibit (OC-3)
An eight foot high, cylindrical exhibit with a base that supports five illustrated panels. Above the panels is a plexiglass enclosed 1:48 scale Skylab. Exhibit diameter is about 3-1/2 feet.

Skylab Walk-through Exhibit (OC-3)
A brief slide presentation covers launch, meteoroid shield problem, sunshade deployment, and several on-board photographs.

Materials Processing in Space Exhibit (OC-3)
A single panel display of a Materials Processing Facility prototype with a "voice over slides" unit. This facility was used in Skylab for experiments involving space processing techniques. Exhibit size is 8' wide x 2-1/2' deep x 7' high.

Comet Kohoutek Exhibit (OC-3)
A 4' x 8' panel with photographs and a general explanation of Comet Kohoutek.

Student Experiment Exhibits
Eleven table-top exhibits represent selected student experiments aboard Skylab. Back lighting and flood lighting is used in the 5' wide x 2-1/2' deep x 4-1/2' high exhibits. Subject matter is identified in the following exhibit titles. The student investigator follows the experiment titles.

Bacteriology Exhibit (OC-3)
Bacteria and Spores Experiment - Robert L. Staehle ED-31
In-Vitro Immunology Experiment - Todd A. Meister ED-32

60
Physiology and Physics Exhibit (OC-3)
Motor Sensory Performance Experiment - Kathy L. Jackson ED-41
Neutron Analysis Experiment - Terry C. Quist ED-76

Zoology Exhibit (OC-3)
Web Formation Experiment - Judith S. Miles ED-52

Botany Exhibit (OC-3)
Plant Growth/Plant Phototropism Experiment - Joel G. Worde kemper/
Donald W. Schlack ED-61/62
Cytoplasmic Streaming Experiment - Cheryl A. Peltz ED-63

Physics Exhibit (OC-3)
Capillary Study Experiment - Roger G. Johnston ED-72

Physics Exhibit (OC-3)
Mass Measurement Experiment - Vincent W. Converse ED-74
Liquid Motion Experiment - W. Brian Dunlap ED-78

Earth Observation Exhibit (OC-3)
Atmospheric Attenuation of Energy - Joe B. Zmolek ED-11
Volcanic Study Experiment - Troy A. Crites ED-12

Astronomy Exhibit (OC-3)
Libration Clouds Experiment - Alison Hopfield ED-21
Objects Within Mercury's Orbit Experiment - Daniels C. Bochsler ED-22

Astronomy Exhibit (OC-3)
Quasars Experiment - John C. Hamilton ED-23
UV From Pulsars Experiment - Neal W. Shannon ED-26

Astronomy Exhibit (OC-3)
X-Ray Stellar Classes Experiment - Joe W. Reihns ED-24
X-Rays from Jupiter Experiment - Jeanne L. Leventhal ED-25