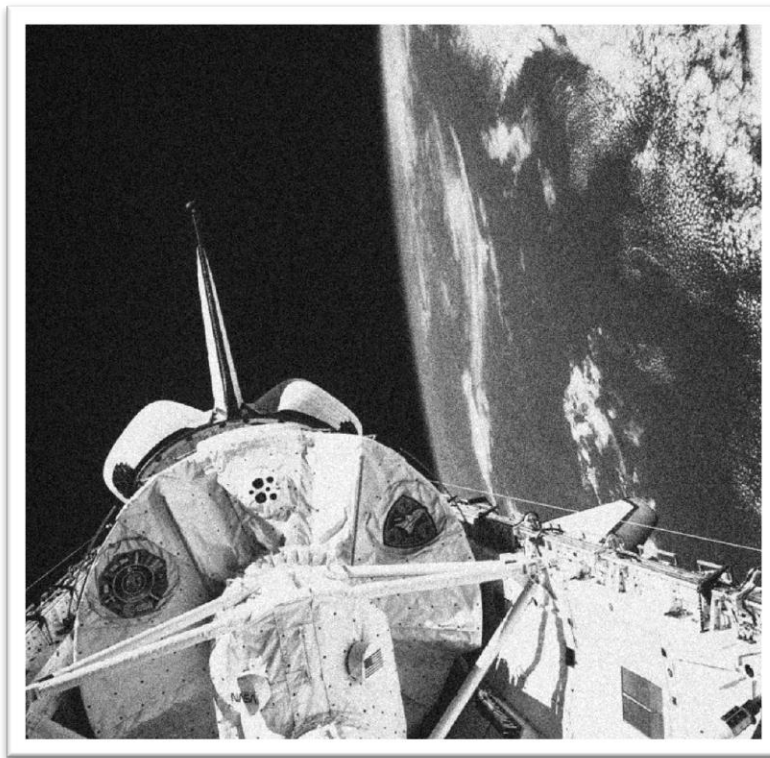


NASA Marshall Space Flight Center

GUIDE TO THE SPACELAB COLLECTION



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2013

Guide to the SPACELAB Collection

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Summary Information

Repository: Marshall History Archives

Title: Spacelab Collection

Call Number: MS-0033

Extent: 11.7 Linear Feet

Abstract: This collection contains correspondence, presentations, reports, publications, and photographs related to the NASA Spacelab missions (1983-1998).

Language: English

Administrative Information

Restrictions on Access: None

Terms Governing Use and Reproduction: All materials in this collection must remain inside the Marshall History Office and can only be accessed by the archivist. Property rights reside with the repository.

Source: Majority of material acquired from Center Director's Vault files.

Citation: [After identification of item(s)] Spacelab Collection, History Archives, Marshall Space Flight Center, Huntsville, AL.

Processing: Processed by Brian C. Odom, August 2013.

Collection Description

Historical Note: Spacelab was part of NASA's Space Shuttle program whose missions, from 1983-1998, provided scientists with both a pressurized manned laboratory module and unpressurized external instrument platforms (pallets), that was suitable for conducting research and application activities across the fields of astronomy, atmospheric physics, life sciences, Earth observations, and materials sciences under microgravity. Developed to be an adaptable, reusable workshop for conducting scientific experiments in the microgravity environment of space, Spacelab was a cooperative venture between NASA, which held overall program planning and management for implementation, and the European Space Agency (ESA), which was responsible for design and development of the module and pallets with their associated support equipment.

Marshall Space Flight Center in Huntsville, Alabama held Lead Center management responsibilities for the project with future Marshall Center Director Thomas Jack Lee serving as Program Manager at Marshall. These responsibilities included Program

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Management and Direct Program Tasks consisting of all functions related to the management of U.S. activities including establishment of design requirements, overall program/systems engineering and integration, definition and maintenance of interfaces, development of selected flight and ground hardware/software, planning and development of operational concepts and Follow-on Procurement. Selection as Lead Center was also owing to Marshall's valuable efforts during Skylab.

The idea for Spacelab first emerged between 1969 and 1971 as NASA sought projects to follow the Apollo program and in September of 1971, Headquarters tasked Marshall with conducting a design study of "Sortie Can" suitable for short-duration missions of five to seven days with capabilities for Earth observation astronomy. A Memorandum of Understanding was worked out in 1973 between NASA and ESRO (soon to be a part of the European Space Agency (ESA)) in which the Europeans agreed to develop the pressurized laboratory as well as the unpressurized pallets. In 1974, with an agreement reached between NASA and ESA, NASA administrator James C. Fletcher announced Sortie Lab would now be known be the name of Spacelab, a name preferred by the Europeans. Spacelab also provided Marshall with opportunities to expand its role in the fields of program operations and space science.

The November 28, 1983 launch of Spacelab 1 (SL-1), with its six-man crew of a commander, pilot, two mission specialists, and two payload specialists, onboard the orbiter *Columbia* (STS-9) marked the culmination of much work by an international team of contributors. The 10-day mission achieved great results with 72 experiments, ranging across five disciplines, produced 20 million photos and 2 trillion bits of data, and was deemed by NASA to be an "unqualified success."

In all there would be 26 Spacelab missions, culminating with the April 17-May 3, 1998 flight of Neurolab, again aboard the orbiter *Columbia*. Marshall also held technical and programmatic responsibilities for the International Microgravity Laboratory, Atlas, Spacelab-J, United States Microgravity Payload, and the United States Microgravity Laboratory series of missions.

Historical Sources:

Dunar, Andrew J. and Stephen P. Waring. *Power to Explore: A History of Marshall Space Flight Center 1960-1990*. NASA: Washington D.C., 1999.

Jenkins, Dennis R. *Space Shuttle: The History of the National Space Transportation System, the First 100 Missions*. Specialty Press: North Branch, 2010.

Lord, Douglas R. *Spacelab: An International Success Story*. NASA: Washington D.C., 1987.

Wright, Mike. *Spacelab: A Short-Term Spaceborne Laboratory*. FY1993 Research and Technology, Annual Report of the Marshall Space Flight Center.

Scope and Content Note: The collection (11.7 linear ft.) includes general correspondence (1972-1993), correspondence related to payload and mission planning, project reviews, as well as numerous publications related to scientific

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results and microgravity experiments. Also included within the printed material portion of the collection are several press kits, NASA fact sheets, publications, and other press releases. Three boxes of photographs are also included in the collection. The Spacelab collection also includes items related to the subjects of sortie lab, payloads, microgravity, space shuttle, and reference manuals.

Arrangement Note: This collection is organized into the following series:

Series I: Correspondence

Series II: Payloads

Series III: Payload Projects

Series IV: Spacelab Missions

Series V: Spacelab General

Series VI: Spacelab Science Results Study

Series VII: Microgravity Payloads

Series VIII: Publications

Series IX: Photographs

Series X: Atlas Missions

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Collection Inventory Series I: Correspondence

Box	Description	Date
Box 1, Folder 1	Sortie Lab - 1972	1972
Box 1, Folder 2	Spacelab (Formerly Sortie Lab) - 1973	1973
Box 1, Folder 3	Sortie Lab – 1973- June 1974	1973-1974
Box 1, Folder 3	Spacelab – 1974	1974
Box 1, Folder 4	Spacelab – 1974	1974
Box 1, Folder 5	Spacelab – 1975	1975
Box 2, Folder 1	Spacelab – 1976	1976
Box 2, Folder 2	Spacelab – 1977	1977
Box 3, Folder 1	Spacelab – 1978-79	1978-1979
Box 3, Folder 2	Spacelab (General) 1979/1980	1979-1980
Box 4, Folder 1	Spacelab - 1980-1981	1980-1981
Box 4, Folder 2	Spacelab - 1980-1981	1980-1981
Box 5, Folder 1	Spacelab - 1981-April 1983	1981-1983
Box 5, Folder 2	Spacelab – 1983	1983
Box 5, Folder 3	Spacelab – 1983-1984	1983-1984
Box 6, Folder 1	Spacelab Program - 1984	1984
Box 6, Folder 2	Spacelab – 1985	1985
Box 6, Folder 3	Spacelab – 1985	1985
Box 7, Folder 1	Spacelab Program General – 1985	1985
Box 7, Folder 2	Spacelab Program – 1986	1986
Box 7, Folder 3	Spacelab – 1990	1990
Box 7, Folder 4	Spacelab – 1991	1991
Box 7, Folder 5	Spacelab – 1992	1992

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Box 7, Folder 6 Spacelab – 1993 1993

Series II: Payloads

Box 8, Folder 1 Spacelab Payloads – 1975 1975

Box 8, Folder 2 Request for Comments on Safety Policy and Requirements Document for Payloads Using National Space Transportation System (STS) 1975

Box 8, Folder 3 Development and Integration of Spacelab Payloads by James T. Murphy (3 copies) 10/15/1975

Box 8, Folder 4 Spacelab Payloads – 1980-1982 1980-1982

Box 8, Folder 5 Spacelab Payloads – 1984 – General 1984

Box 8, Folder 6 Spacelab Payloads – 1984 1984

Box 9, Folder 1 Spacelab Payload (General) – 1984 1984

Box 9, Folder 2 Spacelab Payload – ADSF 1984 1984

Box 9, Folder 3 Spacelab Payload – 1985 1985

Box 9, Folder 4 Spacelab Payload General – 1985 1985

Box 10, Folder 1 Spacelab Payload – 1986 1986

Box 10, Folder 2 Spacelab Payload – 1986/1987 1986-1987

Series III: Payload Projects

Box 10, Folder 3 Spacelab Payload Projects - 1976 1976

Box 11, Folder 1 Spacelab Payload Projects – 1977 1977

Box 11, Folder 2 Spacelab Payload Projects – 1978-79 1978-1979

Box 11, Folder 3 Spacelab Payload Projects – 1980 & 1981 1980-1981

Box 12, Folder 1 Spacelab Payload Projects – 1982 1982

Box 12, Folder 2 Spacelab Payload Projects – 1983 1983

Series IV: Spacelab Missions

Box 13, Folder 1 National Geographic Volume 164, No. 3 September 1983 – Article on Spacelab 1 September 1983

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Box 13, Folder 2	Spacelab 1 Press Information – Contains SL-1 First Spacelab Mission/STS-9 Ninth Space Shuttle Mission Press Kit – November – December 1983 and various other factsheets	1983
Box 13, Folder 3	Spacelab Mission 1 Experiment Descriptions – Third Edition NASA TM – 82537 ESA/FSLP-EX-001 Edited by Paul D. Craven Space Science Laboratory August 1983	August 1983
Box 13, Folder 4	Spacelab 1 Press Book from Rockwell International	1983
Box 13, Folder 5	SL-1 Contingency Assessment	May 1980
Box 13, Folder 6	SL D-1	September 1985
Box 13, Folder 7	Spacelab 2 Post Mission Science Report – 1986	1986
Box 13, Folder 8	Spacelab 3 Mission Science Review – Proceedings of a symposium held at NASA George C. Marshall Space Flight Center Marshall Space Flight Center, Alabama December 4, 1985 - NASA Conference Publication 2429	December 1985
Box 14, Folder 1	Spacelab 1980-1985 (Spacelab 1,2,3)	1980-1985

Series V: Spacelab General

Box 14, Folder 2	Spacelab Integration File - 1976-1980	1976-1980
Box 14, Folder 3	Spacelab Level IV Integration - 1978-1981	1978-1981
Box 14, Folder 4	Spacelab Integration Contract Review	December 1984
Box 15, Folder 1	Program Alignment FY81 – Spacelab	9/26/1980
Box 15, Folder 2	Spacelab Presentation to Management – 1975	1975
Box 15, Folder 3	Spacelab Presentations to Management – January to May 1976	1976
Box 15, Folder 4	Spacelab Presentations to Management – January to May 1976	1976
Box 15, Folder 5	Spacelab 1976 –Contract and Integration Documents	1976
Box 15, Folder 6	Spacelab 1977 – Contract and Integration Documents	1977
Box 16, Folder 1	Spacelab Presentations – 1974	1974
Box 16, Folder 2	Spacelab Weekly Notes	1980

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Box 16, Folder 3	MSFC Performance Review Spacelab October 1980	October 1980
Box 16, Folder 4	Spacelab Experiments – PATIE	1985
Box 16, Folder 5	Spacelab (OFT PALLET) Readiness Review	1981
Box 16, Folder 6	Spacelab Astro-1 FRR Board Phase I, Mr. Lee Chaired Board	1/21/1986
Box 16, Folder 7	Spacelab Payload – 1982 Transfer of OSS-3/7 GSFC to MSFC	1982
Box 16, Folder 8	Spacelab User’s Guide Level I- September 9, 1974 NASA-MF-74-2 Preliminary	9/9/1974
Box 16, Folder 9	Spacelab/ERNO NASA Resident Office Personnel Assignments	9/14/1979
Box 17, Folder 1	Final Science Results Spacelab J – NASA SP-525 Office of Life and Microgravity Sciences and Applications NASA Headquarters, Washington, DC	February 1995
Box 17, Folder 2	Spacelab Data Book – ESA – BR-14	September 1983

Series VI: Spacelab Science Results Study

Box 17, Folder 3	Spacelab Science Results Study Final Report - Executive Summary Contract Number NAS8-97095 Task No H-30194D –Robert J. Naumann, Study Team Leader University of Alabama in Huntsville August 18, 1999	8/18/1999
Box 17, Folder 4	Spacelab Science Results Study Final Report – Volume I, External Observations, Contract Number NAS8-97095 Task No H-30194D – Robert J. Naumann, Study Team Leader, Charles A. Lundquist, Astrophysics, Einar Tandberg-Hanssen, Solar Physics, James L. Horwitz, Space Plasma Physics, Glynn A. Germany, Atmospheric Science, James F. Cruise, Earth Observations University of Alabama in Huntsville August 18, 1999	8/18/1999
Box 17, Folder 5	Spacelab Science Results Study Final Report – Volume II, Microgravity Science, Contract Number NAS8-97095 Task No H-30194D –Robert J. Naumann, Study Team Leader University of Alabama in Huntsville August 18, 1999	8/18/1999
Box 17, Folder 6	Spacelab Science Results Study Final Report – Appendix Volume II, Microgravity Science, Contract Number NAS8-97095 Task No H-30194D –Robert J. Naumann, Study Team Leader University of Alabama in Huntsville August 18, 1999	8/18/1999

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Box 17, Folder 7 Spacelab Science Results Study Final Report – Volume III, 8/18/1999
Microgravity Science, Contract Number NAS8-97095 Task No H-
30194D –Robert J. Naumann, Study Team Leader University of
Alabama in Huntsville August 18, 1999

Series VII: Microgravity Payloads

Box 18, Folder 1 USML-1 Microgravity - 1992 1992

Box 18, Folder 2 The First United States Microgravity Laboratory – 90-Day Science 10/23/1992
Report

Box 18, Folder 3 First International Microgravity Laboratory – Summary of Preliminary September
Results 1992

Box 18, Folder 4 USML-2 1995

Box 18, Folder 5 USML-2 1995

Box 19, Folder 1 USMP-2 Mission Overview – Mission Dependent Training Cadre- 1993?
Principal Investigator Simulation Presentation Brian E. Blair Payload
Operations Lead EO22

Box 19, Folder 2 IML-2 German (DARA) Experiments ?

Box 19, Folder 3 Execute Packages IML-2 (MSI Reports “Published” on Shuttle) IML-2 7/8/1994

Box 19, Folder 4 IML-2 1993-1995

Box 20, Folder 1 Fourth United States Microgravity Payload – Second Investigators July 1996
Working Group USMP-4, Marshall Space Flight Center Huntsville,
Alabama July 25-26, 1996

Box 20, Folder 2 4th US Microgravity Payload USMP-4 February
1998

Box 20, Folder 3 Fourth United States Microgravity Payload Third Investigators Working 9/9/1997
Group Marshall Space Flight Center Huntsville, Alabama

Box 20, Folder 4 Microgravity General 1994-1995

Series VIII: Publications

Box 20, Folder 5 Joint Launch + One Year Science Review of USML-1 and USMP-1 with May 1994
the Microgravity Measurement Group Ed. By N. Ramachandran, D.O.
Frazier, S.L. Lehoczky, and C.R. Baugher – Proceedings of a
Conference Held at Huntsville, Alabama September 22-24-1993 –

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NASA Conference Publication 3272 Volume I

Box 21, Folder 1	NASA Microgravity Materials Science Conference Compiled by F. Szofran, D. McCauley, and C. Walker – Proceedings of a Conference Held at Huntsville, Alabama June 10-11, 1996 – NASA Conference Publication 3342	October 1996
Box 21, Folder 2	Life Science and Microgravity Spacelab (LMS) Final Report J.P. Downey, Compiler – NASA/CP – 1998-206960	February 1998
Box 21, Folder 3	Third United States Microgravity Payload: One Year Report – Compiled by P.A. Curreri, D. McCauley, and C. Walker – Proceedings of a Conference Held in Washington, DC, February 10-11, 1997- NASA/CP-1998-207891	November 1998
Box 21, Folder 4	Microgravity Science Laboratory (MSL-1) Final Report Compiled by M.B. Robinson – Proceedings of the Microgravity Science Laboratory (MSL-1) One Year Science Review Meeting held at Marshall Space Flight Center, Huntsville, Alabama, August 25-26, 1998 – NASA/CP—1998-208868	November 1998
Box 22, Folder 1	The Spacelab Accomplishments Forum Ed. By J. Emond, Compiled by N. Bennett, D. McCauley, K. Murphy- Proceedings of a Forum held in Washington, DC March 10-11, 1999 – NASA/CP—2000-210332 (2 Copies)	September 2000
Box 22, Folder 2	Fourth United States Microgravity Payload: One Year Report Compiled by E.C. Ethridge, P.A. Curreri, and D.E. McCauley – Proceedings of a Conference Held at Marshall Space Flight Center January 22, 1999 – NASA/CP—1999-209628 (2 Copies)	September 1999
Box 22, Folder 3	11 th International Conference on Atmospheric Electricity Compiled by H.J. Christian – Proceedings of a Conference Held in Guntersville, Alabama June 7-11, 1999—NASA/CP—1999-209261	June 1999
Box 23, Folder 1	Second International Microgravity Laboratory (IML-2) Final Report – R.S. Snyder, Compiler – NASA Reference Publication 1405 (2 Copies)	July 1997
Box 23, Folder 2	Second United States Microgravity Laboratory: One Year Report, Volume 1 Ed. By M. Vlasse, D. McCauley, and C. Walker – NASA/TM—1998-208697	August 1998
Box 23, Folder 3	Second United States Microgravity Laboratory: One Year Report, Volume 2 Ed. By M. Vlasse, D. McCauley, and C. Walker – NASA/TM—1998-208697	August 1998

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Box 24, Folder 1	Spacelab and Attached Missions	Undated
Box 24, Folder 2	Spacelab: working in orbit	Undated
Box 24, Folder 3	Spacelab: the space laboratory of Europe	Undated
Box 24, Folder 4	ESA: Spacelab	Undated
Box 24, Folder 5	Fuwatto '92	Undated
Box 24, Folder 6	Getting Aboard Spacelab (2 Copies)	Undated
Box 24, Folder 7	Spacelab 3 (2 Copies)	Undated
Box 24, Folder 8	Spacelab Utilization	Undated
Box 24, Folder 9	Spacelab J	Undated
Box 24, Folder 10	Spacelab 2	Undated
Box 24, Folder 11	Spacelab Life Sciences 2	Undated
Box 24, Folder 12	Spacelab (2 Copies)	Undated
Box 24, Folder 13	Spacelab Life Sciences 1	Undated
Box 24, Folder 14	Spacelab ESA Data Book (2 Copies)	Undated
Box 24, Folder 15	Spacelab News Reference	Undated
Box 24, Folder 16	Spacelab/space shuttle	Undated
Box 24, Folder 17	Flight Path to the Future	Undated
Box 24, Folder 18	Spacelab 1 Experiments	Undated
Box 24, Folder 19	Spacelab - Spacelab	Undated
Box 24, Folder 20	ATLAS	Undated
Box 24, Folder 21	Spacelab 1	Undated
Box 25, Folder 1	Spacelab Users Guide: A Short Introduction to Spacelab and Its Use	November 1976
Box 25, Folder 2	Spacelab Fact Sheet – Release Number 77-125	June 1977

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Box 25, Folder 3	Spacelab ESA – First Mission	Undated
Box 25, Folder 4	ESA – Spacelab	1980
Box 25, Folder 5	STS-9 and Spacelab 1	1983
Box 25, Folder 6	Spacelab Users' Guide: A Short Introduction to Spacelab ESA SP-1001 Issue No. 3 (2 copies)	June 1983
Box 25, Folder 7	Spacelab Users' Guide	June 1983
Box 25, Folder 8	Spacelab	Undated
Box 25, Folder 9	Science –American Association for the Advancement of Science Volume 225, Number 4658 – Spacelab 1	7/13/84
Box 25, Folder 10	The User's Guide to Spacelab Payload Processing	October 1986
Box 25, Folder 11	Information Summaries: Spacelab (2 copies)	April 1987
Box 25, Folder 12	Spacelab Life Sciences 1	1989
Box 25, Folder 13	Solid Surface Combustion Experiment	Oct. 1990
Box 25, Folder 14	Information Summaries: Spacelab (2 Copies)	Sept. 1994
Box 25, Folder 15	The Life and Microgravity Spacelab Mission	Undated
Box 25, Folder 16	Spacelab Info	October 1983
Box 25, Folder 17	NASA Fact Sheet: Spacelab Mission Operations Control, Huntsville	July 1991

Series IX: Photographs

Box 26, Folder 1	Spacelab General
Box 26, Folder 2	Spacelab 1,2,3 Crew Training
Box 26, Folder 3	Spacelab 1,2,3 Crews on Orbit
Box 26, Folder 4	Spacelab 1,2,3 Hardware Development and Testing
Box 27, Folder 1	Spacelab 1,2,3 Mission Patches
Box 27, Folder 2	Spacelab 1,2,3 On Orbit Photos

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Box 27, Folder 3	Spacelab Concepts
Box 27, Folder 4	Spacelab D-2
Box 27, Folder 5	Spacelab Ground Control
Box 28, Folder 1	ASTRO-1
Box 28, Folder 2	ASTRO-2 Payload
Box 28, Folder 3	Sortie Lab
Box 28, Folder 4	Spacelab Life Sciences
Box 28, Folder 5	International Microgravity Lab-1
Box 28, Folder 6	US Microgravity Lab-1
Box 28, Folder 7	Microgravity
Box 28, Folder 8	US Microgravity Payload-4
Box 28, Folder 9	US Microgravity Lab-2

Series X: Atlas Missions

Box 29, Folder 1	Atlas General	1991
Box 29, Folder 2	A Look Back at Atlas -1, DRAFT	12/7/1992
Box 29, Folder 3	Atlas-1 – Spacelab: Research to Understand Our Earth, Our Sun, Our Atmosphere (2 Copies)	c1991
Box 29, Folder 4	Earth’s Mysterious Atmosphere – Atlas-1 Teacher’s Guide with Activities, For Use with Middle-School Students	1991
Box 29, Folder 5	The Atlas1 Mission by Marsha R. Torr, Space Science Laboratory, Marshall Space Flight Center	c1992
Box 29, Folder 6	Atlas-1 and Middle Atmosphere Global Change by Marsha R. Torr, Space Science Laboratory, Marshall Space Flight Center	c1992
Box 29, Folder 7	Fact Sheet – Atlas-1: The First Atmosphere Laboratory for Applications and Science	February 1992
Box 29, Folder 8	Atlas-1 Experiments – Far Universe Space Telescope (FAUST), Energetic Neutral Atom Precipitation (ENAP), and Atmospheric Emissions Photometric Imaging (AEPI) Experiment Material	c1992

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Box 29, Folder 9	Atlas-1: Encountering Planet Earth (2 Copies)	c1991
Box 29, Folder 10	Atlas-1 Results	1993
Box 29, Folder 11	Atlas-2 Material	1995
Box 29, Folder 12	Atlas-2 – Includes STS-56 Press Kit (March 1993) and Atlas-2: A Spacelab Component of Mission to Planet Earth Presentation by Tim Miller	1993
Box 29, Folder 13	Atmospheric Detectives – Atlas-1 Teacher’s Guide with Activities	1992
Box 29, Folder 14	Atlas-3 Brochure – Atmospheric Laboratory for Applications and Science (2 Copies)	c1994
Box 29, Folder 15	Atlas-3 Poster	c1994