Bellcomm, Inc Technical Library Collection

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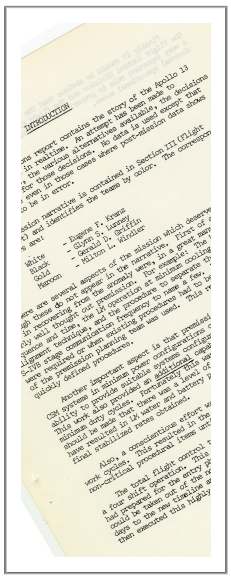

National Air and Space Museum Archives
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https://airandspace.si.edu/archives

Table of Contents

Collection Overview

Repository:	National Air and Space Museum Archives
Title:	Bellcomm, Inc Technical Library Collection
Date:	1959-1972
Identifier:	NASM.XXXX.0093
Creator:	Bellcomm, Inc.
Extent:	81.71 Cubic feet (222 letter document boxes, 1 slim letter document box, 4 flatboxes)
Language:	English .
Summary:	This collection contains the non-book portion of Bellcomm's Technical Library. The material in the collection consists of technical reports prepared by NASA subcontractors and/or NASA facilities during the first decade of space exploration (1960-1970). The collections also includes some reports issued by the California Institute of Technology's Jet Propulsion Lab (JPL) at Pasadena, CA, including Space Program and Research Summaries, as well as technical and engineering documents.

Administrative Information

Acquisition Information

Bellcomm, Inc, transfer, XXXX-0093, unknown

Processing Information Note

The collection, as it now exists, consists of engineering study reports and other documents covering all aspects of the United States space program, but relating primarily to the manned space flight program and the Apollo program in particular. Some portions of the original Bellcomm library, most notably books, were placed in the library collection of the NASM, now part of the Smithsonian Institution Libraries. The remaining material was turned over to the NASM Astronautics Department.(1)

At that time some of the material in the collection was dispersed among the departmental files and some extraneous material was interfiled. Most notably, all reports originating at the Jet Propulsion Laboratory (JPL) were removed for interfiling with a collection of JPL reports being assembled by the Astronautics department staff. During the processing of the Jet Propulsion Laboratory Publications Collection (now NASM Archives Accession XXXX-0612) in 1999, some 5½ cubic feet of material which could be positively identified as belonging to the Bellcomm Library was removed from the JPL Collection and returned to the Bellcomm Collection. During the processing of the Bellcomm Collection, items which could be determined not to have originated with Bellcomm were removed from the collection and some effort was made to retrieve Bellcomm material from several other collections of Astronautics/Space Science and Exploration/Space History materials.

The determination of whether to retain or retrieve an item was based primarily on date and markings on the document. Items postdating the transfer of the Bellcomm material to NASM (ca.1972) were

automatically removed from the collection. Items bearing one of the several "Bellcomm Technical Library" stamps in use over the lifetime of the company were automatically included in the collection, while items bearing stamps from other NASM collections were removed. If no such stamps were present, a judgement was made based upon other markings. Some -- but not all -- stamped Bellcomm materials also have the report number or title hand-written on or near the spine; unstamped documents bearing similar hand-written report numbers have been retained or replevened, as appropriate. Therefore it is impossible at this date precisely to determine what documents were or were not present in the Library at the time of its transfer to the NASM; in addition a number of multi-volume reports remain incomplete.

Endnote:

1. The Astronautics Department later became the Department of Space Science and Exploration (SS&E). Currently it is the Department of Space History (DSH).

Preferred Citation

Bellcomm, Inc Technical Library Collection, Accession XXXX-0093, National Air and Space Museum, Smithsonian Institution.

Restrictions

No restrictions on access

Conditions Governing Use

Historical

Bellcomm, Inc was a subsidiary of American Telephone and Telegraph (AT&T) established in 1963 for the National Aeronautics and Space Administration (NASA). Bellcomm was originally organized to provide NASA's Office of Manned Space Flight with technical and management advice for the Manned Space Flight Program. As the NASA-Bellcomm relationship evolved, the latter became directly responsible for systems engineering and analysis and assisted in the overall spacecraft integration for the Apollo program. Bellcomm's Technical Library provided company personnel with immediate access to technical reports and studies dealing with a wide variety of topics affecting the American space program. When the Apollo Program ended in 1972 the company also ceased operation and the library was transferred to the National Air and Space Museum (NASM).

Scope and Content Note

This collection contains the non-book portion of Bellcomm's Technical Library. The material in the collection consists of technical reports prepared by NASA subcontractors and/or NASA facilities during the first decade of space exploration (1960-1970). The reports cover a variety of space exploration-related subjects, including a number of defunct programs and space medicine concerns, as well as the better-known exploration projects, such as Mercury, Gemini, Surveyor, and so forth. The library also includes some reports issued by the California Institute of Technology's Jet Propulsion Lab (JPL) at Pasadena, CA, including Space Program and Research Summaries, as well as technical and engineering documents.

Arrangement

Several attempts were made to organize the Bellcomm material before it was transferred from SS&E to the NASM Archives Division. The most thorough of these attempts left two sections of the collection independently organized by corporate author and a third unorganized section. As the proposed corporate-author organization would cause documents relating to a single program to be separated based upon which contractor submitted the report while juxtaposing completely unrelated materials, this arrangement has been discarded in favor of a subject (program or study) arrangement.

Following a series of Bibliographies and General Reports, the materials are organized into five series based upon NASA's functional organization during much of the 1960s: Launch Vehicle Programs, Manned Space Flight Programs, Space Science and Applications (Planetary Reconnaissance and Earth-Orbiting Satellites), Tracking and Data Acquisition, and Advanced Research and Technology. Materials relating to military programs follow in a separate series.

Under each series, materials are arranged by study and/or project. Materials relating to specific missions follow general material relating to the project under which the mission was launched. As no reference has surfaced to date positively linking a specific study to a specific project or program, series assignments have been made based upon the study name. The series assignments in this finding aid should not be taken to represent the actual NASA program or project under which the report was originally funded.

- Series I. Bibliographies and General Reports
- Series II. Launch Vehicle Programs
- Series III. Manned Space Flight Programs
- Series IV. Space Science and Applications
- Series V. Tracking and Data Acquisition
- Series VI. Advanced Research and Technology
- Series VII. Military Programs and Studies

Bibliography

Many of the project explanations were compiled from material within the collection itself. Additional reference sources were:

Ezell, Linda Neuman. *NASA Historical Data Book*, Vol. II, *Programs and Projects 1958-1968*. The NASA Historical Series; NASA SP-4012, Vol. II. Washington, DC: NASA, Scientific and Technical Information Division, 1988.

--------. *NASA Historical Data Book*, Vol. III, *Programs and Projects 1969-1978*. The NASA Historical Series; NASA SP-4012, Vol. III. Washington, DC: NASA, Scientific and Technical Information Division, 1988.

Benson, Charles D., and William Barnaby Faherty. *Moonport - A History of Apollo Launch Facilities and Operations*. NASA SP-4202. Washington, DC: NASA, Scientific and Technical Information Office, 1978.

Corporate Abbreviations

ACM: Allis-Chalmers Manufacturing Co

ACM/RD: ACM, Research Division

Aerospace: The Aerospace Corp

Aerospace/ETRO: Aerospace Corp, Eastern Test Range Office

Aerospace/GLSD: Aerospace, Gemini Launch Systems Directorate (El Segundo Technical Operations)

Aerospace/SEO: Aerospace, Systems Engineering Operations
Aerospace/SSO: Aerospace, Special Studies Office (System Planning Division, El Segundo Technical Operations)
AFAEDC: United States Air Force, Arnold Engineering Development Center
AFCRL: United States Air Force, Cambridge Research Laboratories
AFETR: United States Air Force, Eastern Test Range (Canaveral AFS, FL)
AFMTC: United States Air Force, Missile Test Center (Patrick AFB, FL)
AFSC: United States Air Force, Air Force Systems Command
AFSC/ARML: AFSC, 6570th Aerospace Medical Research Laboratory (Aerospace Medical Division)
AFSC/ESD: AFSC, Electronic Systems Division
AFSC/FDL: AFSC, Flight Dynamics Laboratory (Aeronautical Systems Division)
AFSC/SAM: AFSC, School of Aerospace Medicine (Aerospace Medical Division)
AGC: Aerojet-General Corp
AGC/LRO: AGC, Liquid Rocket Operations
AGC/SGC: AGC, Space-General Corp
Allison/ED: Allison, Engineering Department
ARMC: AiResearch Manufacturing Co.
Avco: Avco Corp
Avco/ERL: Avco, Everett Research Laboratories
Avco/RAD: Avco, Research and Advanced Development Division
BBRC: Ball Brothers Research Corp
Bell: Bell Aerospace Corp (Textron)
Bell/BAC: Bell, Bell Aerosystems Co
Bell Labs: Bell Telephone Laboratories
Bendix/ASD: Bendix Corp, Aerospace Systems Division
Bendix/BPAD: Bendix Corp, Bendix Products Aerospace Division
Bendix/BPAD/EAES: Bendix/BPAD, Energy Absorption Equipment Section
Bendix/BPAD/SSMG: Bendix/BPAD, Space Structure Mechanics Group
Bendix/BSD: Bendix Corp, Bendix Systems Division
Bendix/ECD: Bendix, Energy Controls Division
Bendix/ECD/AMD: Bendix/ECD, Analytical Mechanics Dept
Boeing/AG: Boeing, Aerospace Group
Boeing/AG/SD: Boeing/AG, Space Division
Boeing/ALASG: Boeing, Apollo Launch Availability Study Group
Boeing/ASD: Boeing, Aero-Space Division
Boeing/ASD/LSB: Boeing/ASD, Launch Systems Branch
Boeing/ASD/SBB: Boeing/ASD, Saturn Booster Branch
Boeing/S5LO: Boeing, Saturn V Launch Operations (Atlantic Test Center)
Boeing/SD: Boeing, Space Division
Boeing/SD/LSB: Boeing/SD, Launch Systems Branch
Boeing/SRL: Boeing Co, Scientific Research Laboratories
Bdefitemn/RL: Bdefitemn Engineering Co Inc, Research Laboratories

Chrysler/DSG: Chrysler Corp, Defense-Space Group
Chrysler/SD: Chrysler Corp, Space Division
Cornell/CRSR: Cornell University, Center for Radiophysics and Space Research
CUA/SSAP: Catholic University of America, Department of Space Science and Applied Physics
CVC/VA: Chance Vought Corp, Vought Astronautics
Douglas/MSSD: Douglas Aircraft Co, Missile and Space Systems Division
Douglas/SSC: Douglas, Space Systems Center
Fairchild/SSE: Fairchild Stratos Inc, Spacecraft Systems Engineering
Ford: Ford Motor Co
Ford/Philco/AD: Ford, Philco Corp, Aeronutronic Division
Garrett/ARMD: Garrett Corp, AiResearch Manufacturing Division
GATC: General American Transportation Corp.
GATC/GARD: GATC, General American Research Division
GD: General Dynamics Corp.
GD/Astronautics: GD, Astronautics Division
GD/Convair: GD, Convair Division
GE: General Electric Co
GE/AATD: GE, Aircraft Accessory Turbine Department
GE/AP: GE, Accessory Power
GE/ASD: GE, Apollo Support Dept
GE/ASD/KCE: GE/ASD, KSC Checkout Engineering
GE/DECO: GE, Direct Energy Conversion Operation
GE/DSD: GE, Defense Systems Department
GE/MSD: GE, Missile and Space Division
GE/MSD/ANSO: GE/MSD, Advanced Nuclear Systems Operation
GE/MSD/IPSO: GE/MSD, Isotope Power Systems Operation
GE/RL: GE, Research Laboratory
GE/SD: GE, Spacecraft Department
GE/SSO: GE, Space Systems Organization
GE/TEMPO: GE, Technical Military Planning Operation
GM: General Motors Corp
GM/AC: GM, AC Electronics Division
GM/AC-DRL/LPP: GM, AC Electronics-Defense Research Laboratories, Lunar and Planetary Programs
GM/DRL: GM, Defense Research Laboratories
Grumman: Grumman Aircraft Engineering Corp
Grumman/ED: Grumman, Engineering Dept
Grumman/PSD: Grumman, Product Support Dept
GSFC: Goddard Space Flight Center (NASA)
GSFC/DOB: GSFC, Data Operations Branch (Manned Flight Operations Division, Tracking and Data Systems Directorate)
GSFC/MFOB: GSFC, Manned Flight Operations Branch (Manned Flight Operations Division)
GSFC/NSSDC: GSFC, National Space Science Data Center

GWU/BSCP: George Washington University, Biological Sciences Communication Project
GWU/PPS: George Washington University, Program of Policy Studies
Harvard/HCO: Harvard University, Harvard College Observatory
Hercules/CPD: Hercules Inc, Chemical Propulsion Division
Honeywell/AD: Honeywell, Aeronautical Division
Honeywell/AD/MPG: Honeywell/AD, Military Products Group
Honeywell/SAS: Honeywell, Space and Armament Systems
Hughes: Hughes Aircraft Co.
Hughes/SSD: Hughes, Space Systems Division
IAS: Institute of the Aerospace Sciences
IBM/FSD: IBM Federal Systems Division
IBM/SGC: IBM Space Guidance Center
IITRI/ASC: IIT Research Institute, Astro Sciences Center
JHU/APL/CPIA: Johns Hopkins University, Applied Physic Laboratory, Chemical Propulsion Information Agency
JPL/ALST: JPL, Advanced Lunar Studies Team
KSC: Kennedy Space Center (NASA)
KSC/DASA: KSC, Data Acquisition Systems and Analysis
KSC/ESD: KSC, Engineering Support Division
KSC/HLSS: KSC, Historical and Library Services Section
KSC/LSEED: KSC, Launch Support Equipment Engineering Division
KSC/LSRO: KSC, Launch Systems Reliability Office (Launch Support Equipment Engineering Division)
KSC/LVO: KSC, Launch Vehicle Operations
KSC/SO: KSC, Safety Office
Langley: Langley Research Center (NASA)
Langley/FRPO: Langley, Flight Reentry Programs Office
Langley/LOPO: Langley, Lunar Orbiter Project Office
Langley/STG: Langley, Space Task Group
Langley/VPO: Langley, Viking Project Office
LC/AID: Library of Congress, Aerospace Information Division
Lockheed: Lockheed Aircraft Corp
Lockheed/LCO: Lockheed, Lockheed-California Co
Lockheed/LCO/SO: Lockheed/LCO, Spacecraft Organization
Lockheed/LEC: Lockheed, Lockheed Electronics Co
Lockheed/LMSC: Lockheed, Lockheed Missiles and Space Co
Lockheed/LMSC/CSP: Lockheed/LMSC, Cryogenic Stage Programs
Lockheed/LMSC/HREC: Lockheed/LMSC, Huntsville Research and Engineering Center
Lockheed/LMSC/PVS: Lockheed/LMSC, Propulsion Vehicle Systems
Lockheed/LMSC/RDD: Lockheed/LMSC, Research and Development Division
Lockheed/LMSC/SSD: Lockheed/LMSC, Space Systems Division
LTV/AD: Ling-Temco-Vought Inc., Astronautics Division
LTV/MSD: LTV Aerospace Corp, Missiles and Space Division --Texas

Martin/AGSD: Martin Co, Advanced Ground Systems Dept
Martin/BD: Martin Co, Baltimore Division
McDonnell: McDonnell Aircraft Corp
MDC/DMSSD: MDC, Douglas Missile and Space Systems Division
MDC/MAC: McDonnell Douglas Corp., McDonnell Astronautics Co
MDC/MDAC: MDC, McDonnell Douglas Astronautics Co
MDC/MDAC/ED: MDC/MDAC, Eastern Division
MIT: Massachusetts Institute of Technology
MIT/CSR: MIT, Center for Space Research
MIT/IL: MIT, Instrumentation Laboratory
MIT/LL: MIT, Lincoln Laboratory
MMC/AD: Martin Marietta Corp, Aerospace Division
MMC/DD: MMC, Denver Division
MMC/ND: MMC, Nuclear Division
MSC: Manned Spacecraft Center (NASA)
MSC/AFPS: MSC, Apollo Flight Planning Section (Flight Planning Branch, Flight Crew Support Division)
MSC/AMPO: MSC, Advanced Missions Program Office
MSC/ASPO: MSC, Apollo Spacecraft Program Office
MSC/ATSO: MSC, Apollo Trajectory Support Office (Mission and Planning Analysis Division)
MSC/FCD: MSC, Flight Control Division
MSC/FES: MSC, Flight Equipment Section (Mission Operations Branch, Flight Crew Support Division)
MSC/FOD: MSC, Flight Operations Directorate
MSC/FPB: MSC, Flight Planning Branch (Crew Procedures Division)
MSC/FSD: MSC, Flight Support Division
MSC/GPB: MSC, Guidance and Performance Branch (Mission Planning and Analysis Division)
MSC/ISD: MSC, Information Systems Division,
MSC/LEPO: MSC, Lunar Experiments Project Office
MSC/LMO: MSC, Lunar Missions Office (Advanced Spacecraft Technology Division)
MSC/LSPO: MSC, Lunar Surface Project Office (Engineering and Development Directorate)
MSC/MAB: MSC, Management Analysis Branch
MSC/MATT: MSC, Mission Analysis Task Team (Saturn V Orbital Workshop Study)
MSC/MPAD: MSC, Mission Planning and Analysis Division
MSC/MSB: MSC, Mapping Sciences Branch (Earth Observations Division, Science and Applications Directorate
MSC/MSL: MSC, Mapping Sciences Laboratory
MSC/OMSFPG: MSC, Office of Manned Space Flight Planning Group
MSC/RQAO: MSC, Reliability and Quality Assurance Office (Reliability and Certification Office)
MSC/RSB: MSC, Recovery Systems Branch (Landing and Recovery Division)
MSC/SED: MSC, Systems Engineering Division
MSC/SOB: MSC, Systems Operations Branch (Landing and Recovery Division)
MSC/TTB: MSC, Thermochemical Test Branch (Propulsion and Power Division)
MSFC: Marshall Space Flight Center (NASA)

MSFC/AESB: MSFC, Airborne Electrical Systems Branch (Astrionics Laboratory)

MSFC/ASIS: MSFC, Airborne Systems Integration Section (Astrionics Division)

MSFC/FPO: MSFC, Future Projects Office

MSFC/LVOD: MSFC, Launch Vehicle Operations Division

MSFC/MDC: MSFC, Managerial Data Center

MSFC/MDWG: MSFC, Meteoroid Damage Working Group,

MSFC/MSO: MSFC, Management Services Office

MSFC/MSS: MSFC, Manned Simulation Section (Man/System Integration Branch, Mechanical and Crew Systems Integration Division, Astronautics Laboratory, Science and Engineering Directorate)

MSFC/PVEL: MSFC, Propulsion and Vehicle Engineering Laboratory (Vehicle Systems Division, Systems Requirements Branch)

MSFC/S1BPO: MSFC, Saturn IB Program Office

MSFC/S1PCO: MSFC, Saturn I/IB Program Control Office

MSFC/S5PCO: MFSC, Saturn V Program Control Office

MSFC/S5PO: MSFC, Saturn V Program Office

MSFC/S5TMO: MSFC, Saturn V Test Management Office

MSFC/SEO: MSFC, Systems Engineering Office

MSFC/SFEWG: MSFC, Saturn Flight Evaluation Working Group

MSFC/SODS: MSFC, Systems Operations Design Section (Astrionics Division)

MSFC/SPEO: MSFC, Saturn Program Engineering Office (Mission Engineering Branch)

MSFC/SSAO: MSFC, Scientific Spacecraft Applications Office (Saturn Systems Office)

MSFC/SSO: MSFC, Saturn Systems Office

MSFC/THMS: MSFC, Technical Handbooks and Manuals Section (Engineering Documentation Branch, Vehicle Systems Division, Propulsion and Vehicle Engineering Laboratory)

MSFC/TS: MSFC, Trajectory Section (Flight Mechanics Branch, Mission Planning and Analysis Division, Aero-Astrodynamics Laboratory)

MSFC/VSIO: MSFC, Vehicle Systems Integration Office (Propulsion and Vehicle Engineering Division)

MSFC/VTS: MSFC, Vehicle Test Section (Mechanical Systems Analysis Branch, Quality Assurance Division)

NAA: North American Aviation Inc

NAA/SD: NAA, Space Division

NAA/SID: NAA, Space and Information Systems Division

NAR: North American Rockwell Corp

NAR/SD: NAR, Space Division

NASA/ANWG: NASA, Apollo Navigation Working Group (joint MSC-GSFC)

NASA/FCSD: NASA, Flight Crew Support Division (Spacecraft Systems Operations Branch)

NASA/OART: NASA, Office of Advanced Research and Technology

NASA/OART/MAD: NASA/OART, Mission Analysis Division

NASA/OCR: NASA, Office of Congressional Relations

NASA/OMSF: NASA, Office of Manned Space Flight

NASA/OP/HD: NASA, Office of Policy, Historical Division

NASA/OTU: NASA, Office of Technology Utilization

Northrop: Northrop Corp

Northrop/SL: Northrop, Space Laboratories

Northrop/VD: Northrop, Ventura Division
NRAO: National Radio Astronomy Observatory
OSU/MED: Ohio State University, Mechanical Engineering Department
PWA: Pratt & Whitney Aircraft
RAND: RAND Corp
RAND/ED: RAND, Engineering Division
RAND/PD: RAND, Physics Division
Raytheon/SISD: Raytheon Co, Space and Information Systems Division
RCA: Radio Corp of America
RCA/AED: RCA, Astro-Electronics Division
Rocketdyne/J2RP: Rocketdyne Engineering, J-2 Reliability Projects
SAE: Society of Automotive Engineers
SAO: Smithsonian Institution Astrophysical Observatory
STL: Space Technology Laboratories, Inc
TI/SSD: Texas Instruments Inc, Science Services Division
TRW/SG: TRW Systems Group
TRW/STL: TRW, Space Technology Laboratories
UAC: United Aircraft Corp
UAC/HS: United Aircraft Corp, Hamilton Standard Division
UC: Union Carbide Corp
UC/ADD: UC, Advanced Developments Division
USACE/AMS: United States Army Corps of Engineers, Army Map Service
USAEWES: United States Army Engineer Waterways Experiment Station
USATEC/YPG: United States Army Test and Evaluation Command, Yuma Proving Ground
USDC/CFSTI: United States Department of Commerce, Clearinghouse for Federal Scientific and Technical Information (Institute for Applied Technology, National Bureau of Standards)
USDoD: United States Department of Defence
USN/BuWeps: United States Navy, Bureau of Naval Weapons
USN/OO: United States Navy, Oceanography Office
Westinghouse/DSC: Westinghouse, Defense and Space Center
Westinghouse/DSC/SOD: Westinghouse/DSC, Systems Operation Division

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Project Mercury Launches

All launches by date:

Mission	Launch Date	Launch vehicle	Payload	Remarks
LJ-1	21 Aug 1959	Little Joe	Mercury boiler plate	unsuccessful beach test of LES
Big Joe 1	9 Sep 1959	Big Joe	Mercury boiler plate	
LJ-6	4 Oct 1959	Little Joe	Mercury boiler plate	
LJ-1A	4 Nov 1959	Little Joe	Mercury boiler plate	repeat of LJ-1
LJ-2	4 Dec 1959	Little Joe	Mercury boiler plate	high-altitude LES test

Mission	Launch Date	Launch vehicle	Payload	Remarks
LJ-1B	21 Jan 1960	Little Joe	Mercury boiler plate	beach abort w/rhesus (Miss Sam)
MA-1	29 Jul 1960	Atlas	Mercury s/c 4	launch vehicle failure
LJ-5	8 Nov 1960	Little Joe	Mercury s/c 3	unsuccessful test of LES
MR-1	21 Nov 1960	Redstone	Mercury s/c 2	premature booster cut-off
MR-1A	19 Dec 1960	Redstone	Mercury s/c 2	suborbital reentry test
MR-2	3 Jan 1961	Redstone	Mercury s/c 5	suborbital w/chimp (Ham)
MA-2	21 Feb 1961	Atlas	Mercury s/c 6	suborbital test
LJ-5A	18 Mar 1961	Little Joe	Mercury s/c 14	unsuccessful test of LES
MR-BD	24 Mar 1961	Redstone		LV qualified for manned flight
MA-3	25 Apr 1961	Atlas	Mercury s/c 8	launch vehicle failure
LJ-5B	28 Apr 1961	Little Joe	Mercury s/c 14	successful LES test
MR-3	5 May 1961	Redstone 7	Mercury s/c 7	suborbital; Shepard, "Freedom 7"
MR-4	21 Jul 1961	Redstone 8	Mercury s/c 11	suborbital; Grissom, "Liberty Bell 7"
MA-4	13 Sep 1961	Atlas	Mercury s/c 8	orbital test of tracking network
MA-5	2 Nov 1961	Atlas	Mercury s/c 9	2 orbits w/chimp (Enos)
MA-6	20 Feb 1962	Atlas 109-D	Mercury s/c 13	3 orbits; Glenn, "Friendship 7"
MA-7	24 May 1962	Atlas 107-D	Mercury s/c 18	3 orbits; Carpenter, "Aurora 7"
MA-8	3 Oct 1962	Atlas 113-D	Mercury s/c 16	6 orbits; Schirra, "Sigma 7"
MA-9	15 May 1963	Atlas 130-D	Mercury s/c 20	22 orbits; Cooper, "Faith 7"

Manned launches only, by date:

Mission	Launch Date	Launch vehicle	Payload	Remarks
MR-3	5 May 1961	Redstone 7	Mercury s/c 7	suborbital; Shepard, "Freedom 7"
MR-4	21 Jul 1961	Redstone 8	Mercury s/c 11	suborbital; Grissom, "Liberty Bell 7"
MA-6	20 Feb 1962	Atlas 109-D	Mercury s/c 13	3 orbits; Glenn, "Friendship 7"
MA-7	24 May 1962	Atlas 107-D	Mercury s/c 18	3 orbits; Carpenter, "Aurora 7"
MA-8	3 Oct 1962	Atlas 113-D	Mercury s/c 16	6 orbits; Schirra, "Sigma 7"
MA-9	15 May 1963	Atlas 130-D	Mercury s/c 20	22 orbits; Cooper, "Faith 7"

By launch vehicle: Big Joe

Mission	Launch Date	Launch vehicle	Payload	Remarks
Big Joe 1	9 Sep 1959	Big Joe	Mercury boiler plate	

By launch vehicle: Little Joe

Mission	Launch Date	Launch vehicle	Payload	Remarks
LJ-1	21 Aug 1959	Little Joe	Mercury boiler plate	unsuccessful beach test of LES
LJ-1A	4 Nov 1959	Little Joe	Mercury boiler plate	repeat of LJ-1
LJ-1B	21 Jan 1960	Little Joe	Mercury boiler plate	beach abort w/rhesus (Miss Sam)
LJ-2	4 Dec 1959	Little Joe	Mercury boiler plate	high-altitude LES test
LJ-5	8 Nov 1960	Little Joe	Mercury s/c 3	unsuccessful test of LES
LJ-5A	18 Mar 1961	Little Joe	Mercury s/c 14	unsuccessful test of LES
LJ-5B	28 Apr 1961	Little Joe	Mercury s/c 14	successful LES test
LJ-6	4 Oct 1959	Little Joe	Mercury boiler plate	

By launch vehicle: Atlas

Mission	Launch Date	Launch vehicle	Payload	Remarks
MA-1	29 Jul 1960	Atlas	Mercury s/c 4	launch vehicle failure
MA-2	21 Feb 1961	Atlas	Mercury s/c 6	suborbital test
MA-3	25 Apr 1961	Atlas	Mercury s/c 8	launch vehicle failure
MA-4	13 Sep 1961	Atlas	Mercury s/c 8	orbit test of tracking network
MA-5	2 Nov 1961	Atlas	Mercury s/c 9	2 orbits w/chimp (Enos)
MA-6	20 Feb 1962	Atlas 109-D	Mercury s/c 13	3 orbits; Glenn, "Friendship 7"
MA-7	24 May 1962	Atlas 107-D	Mercury s/c 18	3 orbits; Carpenter, "Aurora 7"
MA-8	3 Oct 1962	Atlas 113-D	Mercury s/c 16	6 orbits; Schirra, "Sigma 7"

By launch vehicle: Redstone

Mission	Launch Date	Launch vehicle	Payload	Remarks
MR-1	21 Nov 1960	Redstone	Mercury s/c 2	premature booster cut-off
MR-1A	19 Dec 1960	Redstone	Mercury s/c 2	suborbital reentry test
MR-2	3 Jan 1961	Redstone	Mercury s/c 5	suborbital w/chimp (Ham)
MR-BD	24 Mar 1961	Redstone		LV qualified for manned flight
MR-3	5 May 1961	Redstone 7	Mercury s/c 7	suborbital; Shepard, "Freedom 7"
MR-4	21 Jul 1961	Redstone 8	Mercury s/c 11	suborbital; Grissom, "Liberty Bell 7"

Mercury capsule listing and disposition:

Payload	Mission	Launch Date	Launch vehicle	Remarks
Mercury s/c 1		9 May 1960		beach abort test
Mercury s/c 2	MR-1	21 Nov 1960	Redstone	premature booster cut-off

Payload	Mission	Launch Date	Launch vehicle	Remarks
	MR-1A	19 Dec 1960	Redstone	suborbital reentry test
Mercury s/c 3	LJ-5	8 Nov 1960	Little Joe	unsuccessful test of LES
Mercury s/c 4	MA-1	29 Jul 1960	Atlas	launch vehicle failure
Mercury s/c 5	MR-2	3 Jan 1961	Redstone	suborbital w/chimp (Ham)
Merucry s/c 6	MA-2	21 Feb 1961	Atlas	suborbital test
Mercury s/c 7	MR-3	5 May 1961	Redstone 7	suborbital; Shepard, "Freedom 7"
Mercury s/c 8	MA-3	25 Apr 1961	Atlas	launch vehicle failure
	MA-4	13 Sep 1961	Atlas	orbital test of tracking network
Mercury s/c 9	MA-5	2 Nov 1961	Atlas	2 orbits w/chimp (Enos)
Merucry s/c 10				environmental test, St.Louis
Mercury s/c 11	MR-4	21 Jul 1961	Redstone 8	suborbital; Grissom, "Liberty Bell 7"
Mercury s/c 12				mission cancelled; not delivered
Mercury s/c 13	MA-6	20 Feb 1962	Atlas 109-D	3 orbits; Glenn, "Friendship 7"
Mercury s/c 14	LJ-5A	18 Mar 1961	Little Joe	unsuccessful test of LES
	LJ-5B	28 Apr 1961	Little Joe	successful LES test
Mercury s/c 15				mission cancelled; not delivered
Mercury s/c 16	MA-8	3 Oct 1962	Atlas 113-D	6 orbits; Schirra, "Sigma 7"
Mercury s/c 17				parts support
Mercury s/c 18	MA-7	24 May 1962	Atlas 107-D	3 orbits; Carpenter, "Aurora 7"
Mercury s/c 19				mission cancelled; not delivered
Mercury s/c 20	MA-9	15 May 1963	Atlas 130-D	22 orbits; Cooper, "Faith 7"

Project Gemini Launches

All launches by date:

Mission	Launch Date	Launch vehicle	Payload	Remarks
GT-1	8 Apr 1964	GLV-1	Gemini s/c 1	unmanned orbital test of GLV & s/c
GT-2	19 Jan 1965	GLV-2	Gemini s/c 2	unmanned suborbital reentry test
GT-3	23 Mar 1965	GLV-3	Gemini 3	Grissom & Young, "Molly Brown"

Mission	Launch Date	Launch vehicle	Payload	Remarks
GT-4	3 Jun 1965	GLV-4	Gemini 4	McDivitt & White; first EVA
GT-5	21 Aug 1965	GLV-5	Gemini 5	Cooper & Conrad
GT-6A	15 Dec 1965	GLV-6	Gemini 6	Schirra & Stafford
GT-7	4 Dec 1965	GLV-7	Gemini 7	Borman & Lovell
GT-8	16 Mar 1966	GLV-8	Gemini 8	Armstrong & Scott
	16 Mar 1966	TLV-5302	GATV-5003	Agena target vehicle for GT-8
GT-9A	3 Jun 1966	GLV-9	Gemini 9	Stafford & Cernan
	1 Jun 1966	TLV-5304	ATDA	docking target for GT-9A
GT-10	18 Jul 1966	GLV-10	Gemini 10	Young & Collins
	18 Jul 1966	TLV-5305	GATV-5005	Agena target vehicle for GT-10
GT-11	12 Sep 1966	GLV-11	Gemini 11	Conrad & Gordon
	12 Sep 1966	TLV-5306	GATV-5005	Agena target vehicle for GT-11
GT-12	11 Nov 1966	GLV-12	Gemini 12	Lovell & Aldrin
	11 Nov 1966	TLV-5307	GATV-5001	Agena target vehicle for GT-12

Saturn/Apollo Program Launches

Saturn Program Development Launches

Mission	Launch Date	Launch vehicle	Payload	Remarks
SA-1	27 Oct 1961	Saturn I	dummy second stage	
SA-2	25 Apr 1962	Saturn I	dummy second stage	Project *Highwater*
SA-3	16 Nov 1962	Saturn I	dummy second stage	Project *Highwater*
SA-4	28 Mar 1963	Saturn I	dummy second stage	
SA-5	29 Jan 1964	Saturn I		
SA-6	28 May 1964	Saturn I	BP-3	
SA-7	18 Sep 1964	Saturn I	BP-15	Saturn I declared operational
SA-8	25 May 1965	Saturn I	BP- ; *Pegasus 2*	
SA-9	16 Feb 1965	Saturn I	BP- ; *Pegasus 1*	
SA-10	30 Jul 1965	Saturn I	BP- ; *Pegasus 3*	last Saturn I launch

Apollo Program Launches

Mission	Launch Date	Launch vehicle	Payload	Remarks
A-001	13 May 1964	Little Joe II	BP-12	suborbital LES test
A-002	8 Dec 1964	Little Joe II	BP-23	LES test
A-003	19 May 1965	Little Joe II	BP-22	LES test
A-004	20 Jan 1966	Little Joe II	CSM-002	LES test
A-101	see SA-6 (Saturn development launch)			
A-102	see SA-7 (Saturn development launch)			
AS-201	26 Feb 1966	SA-201 (Sat IB)	CSM-009	suborbital test of Apollo heat shield

Mission	Launch Date	Launch vehicle	Payload	Remarks
AS-202	25 Aug 1966	SA-202 (Sat IB)	CSM-011	test of Apollo heat shield
AS-203	5 Jul 1966	SA-203 (Sat IB)		no spacecraft
AS-204	not launched	SA-204 (Sat IB)	CSM-012	*Apollo 1*; CM des by fire 27 Jan 1967
AS-204	22 Jan 1968	SA-204 (Sat IB)	aero fairing; LM-1	*Apollo 5*; unmanned launch with LM
AS-205	11 Oct 1968	SA-205 (Sat IB)	CSM-101	*Apollo 7*; first manned Apollo launch
AS-501	9 Nov 1967	SA-501 (Sat V)	CSM-017, LTA-10R	*Apollo 4*
AS-502	4 Apr 1968	SA-502 (Sat V)	CM-020, SM-014, LTA-2R	*Apollo 6*
AS-503	21 Dec 1968	SA-503 (Sat V)	CSM-103	*Apollo 8*; first lunar orbital flight
AS-504	3 Mar 1969	SA-504 (Sat V)	CSM-104, LM-3	*Apollo 9*
AS-505	18 May 1969	SA-505 (Sat V)	CSM-106, LM-4	*Apollo 10*
AS-506	16 Jul 1969	SA-506 (Sat V)	CSM-107, LM-5	*Apollo 11*; first lunar landing
AS-507	14 Nov 1969	SA-507 (Sat V)	CSM-108, LM-6	*Apollo 12*
AS-508	11 Apr 1970-04	SA-508 (Sat V)	CSM-109, LM-7	*Apollo 13*
AS-509	31 Jan 1971	SA-509 (Sat V)	CSM-110, LM-8	*Apollo 14*
AS-510	26 Jul 1971	SA-510 (Sat V)	CSM-112, LM-10, LRV-1	*Apollo 15*
AS-511	16 Apr 1972	SA-511 (Sat V)	CSM-113, LM-11, LRV-2	*Apollo 16*
AS-512	7 Dec 1972	SA-512 (Sat V)	CSM-114, LM-12, LRV-3	*Apollo 17*; last lunar landing mission

By Apollo Mission Number:

Mission	Launch Vehicle	Command Module	Lunar Module	Launch Date	Remarks
Apollo 1	SA-204	CSM-204		not launched	AS-204
	Sat IB				CM destroyed by fire 27 Jan 1967
Apollo 4	SA-501	CSM-017		9 Nov 1967	AS-501
	Sat V				
Apollo 5	SA-204	aerodynamic fairing	LM-1	22 Jan 1968	AS-204
	Sat IB				unmanned launch
Apollo 6	SA-502	CSM-020		4 Apr 1968	AS-502
	Sat V				unmanned launch
Apollo 7	SA-205	CSM-101		11 Oct 1968	AS-205
	Sat IB				first manned Apollo launch
Apollo 8	SA-503	CSM-103		21 Dec 1968	AS-503
	Sat V				first manned lunar orbital flight
Apollo 9	SA-504	CSM-104	LM-3 "Spider"	3 Mar 1969	AS-504
	Sat V	"Gumdrop"			
Apollo 10	SA-505	CSM-106	LM-4 "Snoopy"	18 May 1969	AS-505

Mission	Launch Vehicle	Command Module	Lunar Module	Launch Date	Remarks
	Sat V	"Charlie Brown"			
Apollo 11	SA-506	CSM-107	LM-5 "Eagle"	16 Jul 1969	AS-506
	Sat V	"Columbia"			first manned lunar landing
Apollo 12	SA-507	CSM-108	LM-6 "Intrepid"	14 nov 1969	AS-507
	Sat V	"Yankee Clipper"			
Apollo 13	SA-508	CSM-109	LM-7 "Aquarius"	11 Apr 1970	AS-508
	Sat V	"Odyssey"			landing cancelled due to in-flight explosion
Apollo 14	SA-509	CSM-110	LM-8 "Antares"	31 Jan 1971	AS-509
	Sat V	"Kitty Hawk"			
Apollo 15	SA-510	CSM-112	LM-10 "Falcon"	26 Jul 1971	AS-510
	Sat V	"Endeavour"	LRV-1		
Apollo 16	SA-511	CSM-113	LM-11 "Orion"	16 Apr 1972	AS-511
	Sat V	"Casper"	LRV-2		
Apollo 17	SA-512	CSM-114	LM-12 "Challenger"	7 dec 1972	AS-512
	Sat V	"America:	LRV-3		last lunar landing mission

Names and Subject Terms

This collection is indexed in the online catalog of the Smithsonian Institution under the following terms:

Subjects:

Astronautics

Types of Materials:

Photographs
Publications
Reports

Names:

American Telephone and Telegraph Company
Bellcomm, Inc.
California Institute of Technology. Jet Propulsion Lab
Project Gemini (U.S.)
Project Mercury (U.S.)
Project Surveyor (U.S.)
United States. National Aeronautics and Space Administration

Container Listing

Series I: Bibliographies and General Reports, 1958-1972

Arrangement: The materials in this series are publications and reports of a general nature, not relating to any specific NASA program or functional area. The series is divided into two subseries by genre:

- Subseries I.A. Bibliographies
- Subseries I.B. General Reports

Subseries I.A.: Bibliographies, 1959-1968

Arrangement: The documents in this subseries are published bibliographic works. The bulk were prepared by JPL and are organized by title and date, followed by bibliographies prepared by other organizations organized by date:

- I.A.1. Astronautics Information Index (1959)
- I.A.2. Astronautics Information Abstracts (1959-1963)
- I.A.3. Astronautics Information Open Literature Survey (1960-1962)
- I.A.4. Astronautics Information Literature Search (1961-1965)
- I.A.5. Miscellaneous Bibliographies (1961-1968)

Subseries I.A.1.: Astronautics Information Index, 1959

Astronautics Information Index. (JPL.)

Volume 1	
Box 1, Folder 1	Part A. Abstracts 1,001 - 1,175. (March 1, 1959.)
Box 1, Folder 2	Part B. Abstracts 1,001 - 1.329. (May 15, 1959.)
Box 1, Folder 3	Part C. Abstracts 1,001 - 1,503. (September 15, 1959.)

Subseries I.A.2.: Astronautics Information Abstracts, 1959-1963

Astronautics Information Abstracts. (JPL.)

Volume 1	
Box 1, Folder 4	Part A. Abstracts 1,001 - 1,175. (March 1, 1959.)
Box 1, Folder 5	Part B. Abstracts 1,176 - 1,329. (May 15, 1959.)
Box 1, Folder 6	Part C. Abstracts 1,330 - 1,503. (September 15, 1959.)
Volume III	

Box 1, Folder 7	No.6. Abstracts 3,597 - 3,698. (June 1961.)
	Volume IV
Box 1, Folder 8	No.1. Abstracts 4,001 - 4,100. (July 1961.)
Box 1, Folder 9	No.2. Abstracts 4,101 - 4,201. (August 1961.)
Box 1, Folder 10	No.3. Abstracts 4,202 - 4,321. (September 1961.)
Box 1, Folder 11	No.4. Abstracts 4,322 - 4,427. (October 1961.) [2 copies]
Box 1, Folder 12	No.5. Abstracts 4,428 - 4,521. (November 1961.)
Box 1, Folder 13	No.6. Abstracts 4,522 - 4,616. (December 1961.)
	Volume V
Box 1, Folder 14	No.2. Abstracts 5,101 - 5,200. (February 1962.)
Box 1, Folder 15	No.3. Abstracts 5,201 - 5,330. (March 1962.)
Box 1, Folder 16	No.4. Abstracts 5,331 - 5,455. (April 1962.)
Box 1, Folder 17	No.5. Abstracts 5,456 - 5,566. (May 1962.)
Box 1, Folder 18	No.6. Abstracts 5,567 - 5,682. (June 1962.)
	Astronautics Information Abstracts - Reports and Open Literature. (JPL.)
	Volume VI
Box 2, Folder 1	No.1. Abstracts 60,001 - 60,307. (July 1962.)
Box 2, Folder 2	No.2. Abstracts 60,308 - 60,603. (August 1962.)
Box 2, Folder 3	No.3. Abstracts 60,604 - 60,929. (September 1962.)
Box 2, Folder 4	No.4. Abstracts 60,930 - 61,248. (October 1962.)
Box 2, Folder 5	No.5. Abstracts 61,249 - 61,601. (November 1962.)
Box 2, Folder 6	No.6. Abstracts 61,602 - 61,885. (December 1962.)
	Volume VII
Box 2, Folder 7	No.1. Entries 70,001 - 70,344. (January 1963.)

Box 2, Folder 8	No.2. Entries 70,345 - 70,608. (February 1963.)
Box 2, Folder 9	No.3. Entries 70,609 - 70,930. (March 1963.)
Box 2, Folder 10	No.4. Entries 70,931 - 71.239. (April 1963.)
Box 2, Folder 11	No.5. Entries 71,240 - 71,645. (May 1963.)
Box 2, Folder 12	No.6. Entries 71,646 - 72,015. (June 1963.)
	Volume VIII
Box 2, Folder 13	No.1. Entries 80,001 - 80,367. (July 1963.)
Box 2, Folder 14	No.2. Entries 80,368 - 80,778. (August 1963.)

Subseries I.A.3.: Astronautics Information Open Literature Survey, 1960-1962

Arrangement: published 1959 - June 1962; merged with *Astronautics Information Abstracts* as *Astronautics Information Abstracts - Reports and Open Literature* beginning July 1962

	Astronautics Information Open Literature Survey. (JPL.)
	Volume 1.
Box 3, Folder 1	Part D. Entries 13,166 - 13,888. (January 15, 1960.)
	Volume II.
Box 3, Folder 2	No.1-2. Entries 20,001 - 20,674. (January-February 1960.)
Box 3, Folder 3	No.6. Entries 21,871 - 22,113. (June 1960.)
Box 3, Folder 4	No.7. Entries 22,114 - 22,420. (July 1960.)
Box 3, Folder 5	No.9. Entries 22,671 - 22,870. (September 1960.)
Box 3, Folder 6	No.10. Entries 22,871 - 23,094. (October 1960.)
Box 3, Folder 7	No.11. Entries 23,095 - 23,310. (November 1960.)
Box 3, Folder 8	No.12. Entries 23,311 - 23,514. (December 1960.)
	Volume III
Box 3, Folder 9	No.5. Entries 30,845 - 31,145. (May 1961.)

	Volume IV.
Box 3, Folder 10	No.1. Entries 40,001 - 40,202. (July 1961.)
Box 3, Folder 11	No.2. Entries 40,203 - 40,456. (August 1961.)
Box 3, Folder 12	No.3. Entries 40,454 - 40,728. (September 1961.)
Box 3, Folder 13	No.4. Entries 40,729 - 41,018. (October 1961.)
Box 3, Folder 14	No.5. Entries 41,019 - 41,268. (November 1961.)
Box 3, Folder 15	No.6. Entries 41,269 - 41,476. (December 1961.)
	Volume V.
Box 3, Folder 16	No.1. Entries 50,001 - 50,205. (January 1962.)
Box 4, Folder 1	No.2. Entries 50,206 - 50,417. (February 1962.)
Box 4, Folder 2	No.3. Entries 50,418 - 50,669. (March 1962.)
Box 4, Folder 3	No.4. Entries 50,670 - 50,951. (April 1962.)
Box 4, Folder 4	No.5. Entries 50,952 - 51,270. (May 1962.)
Box 4, Folder 5	No.6. Entries 51,271 - 51,483. (June 1962.)

Subseries I.A.4.: Astronautics Information Literature Search, 1961-1965

	Astronautics Information Literature Search. (JPL.)
Box 4, Folder 6	No.254 Supplement. Biological and Artificial Intelligence. (May 31, 1961.)
Box 4, Folder 7	No.260. Effects of Sterilizing Agents on Microorganisms. (August 1961.)
Box 4, Folder 8	No.341. Organic Semiconductors: Properties and Applications. (May 31, 1961.)
Box 4, Folder 9	No.345. Radiometry and Photometry of the Moon and Planets. (September 1961.)
Box 4, Folder 10	No.428. Electrically Propelled Spacecraft and Associated Subjects. (May 1962.)
Box 4, Folder 11	No.464. Engineering Equipment and Processes Adaptable to Lunar and Planetary Exploration. (May 1963.)

Box 5, Folder 1	No.490. Television, Photogrammetry, Photometry, and Radiometry Adaptable to Space Reconnaissance. (November 1963.)
Box 5, Folder 2	No.523. Structural Modeling. (March 1963.)
Box 5, Folder 3	No.541. Interactions of Spacecraft and Other Moving Bodies with Natural Plasmas. (December 1965.)
Box 5, Folder 4	No.587. Electric Propulsion. (June 1964.)

Subseries I.A.5.: Miscellaneous Bibliographies, 1961-1968

Box 5, Folder 5	JPL Library Literature Searches 1956-1966 - Subject and Title Index. (JPL. No date.)
Box 5, Folder 6	Publications of the Jet Propulsion Laboratory July 1960 through June 1961. (D. K. Walsh and R. J. Sippel, JPL. Bibliography 39-2. December 29, 1961.)
Box 5, Folder 7	Lunar Dimensions - Annotated Bibliography of Soviet-Bloc Literature. (LC/AID. AID Report B-63-100. 30 July 1963.)
Box 5, Folder 8	Meteoroid Impact on Space Vehicles - Bibliography of Laboratory Experiment and Theory 1962 [Draft]. (MSFC/MDWG. No date.)
Box 5, Folder 9	List of Published Technical Reports. (GCA Corp. 15 October 1966.)
Box 5, Folder 10	Radiobiology - A Selected Bibliography. (Leslie A. Kulp and Frances Hong; GWU/BSCP. August 28, 1967.)
Box 5, Folder 11	Contractual Listing of Publications Supported by the Physical Biology Program of the National Aeronautics and Space Administration. (L. A. Kulp, Frances Hong, and Sheila Rollins (compilers); GWU/BSCP. July 6, 1967.)
Box 6, Folder 1	Contractual Listing of Publications Supported by the Environmental Biology Program, Bioscience Programs Division of the National Aeronautics and Space Administration. (L. A. Kulp, Frances Hong, and Sheila Rollins (compilers); GWU/BSCP. September 1967.)
Box 6, Folder 2	Contractual Listing of Publications Supported by the Exobiology Program, Bioscience Programs Division of the National Aeronautics and Space Administration. (L. A. Kulp, Frances Hong, and Sheila Rollins (compilers); GWU/BSCP. September 29, 1967.)
Box 6, Folder 3	A Guide to the Literature on Carbon Dioxide Lasers (1 January 1964 - 30 June 1968). (John H. McElroy, Steven C. Flagiello, John B. McDay, and Harold E. Walker; GSFC. X-524-68-435. November 1968.)

Subseries I.B.: General Reports, 1958-1972

Arrangement: The materials in this subseries do not relate to any specific NASA program or project. Documents are grouped by general subject as follows:

- I.B.1. Historical Reports (1962-1972)
- I.B.2. "An Introduction to Astronautics" (RAND Corp Lectures; 1958)
- I.B.3. Management - General (1960-1971)
- I.B.4. Management - NASA Facilities (1962-1965)
- I.B.5. Miscellaneous Reports (1958-1966)

Subseries I.B.1.: Historical Reports, 1962-1972

Box 6, Folder 4	Aeronautical and Astronautical Events of 1961. (NASA. January 1962.)
Box 6, Folder 5	NASA Space Flight Record 1958-1970. (NASA. December 31, 1970.)
Box 6, Folder 6	NASA Space Flight Record 1958-1972. (NASA. December 31, 1972.)
Box 6, Folder 7	A Summary of Major NASA Launchings October 31, 1958-September 30, 1970. (KSC/HLSS. KHR-1. December 1970.) [2 copies]
Box 6, Folder 8	NASA Office of Defense Affairs - The First Five Years. (W. Fred Boone. NASA/OP/HD. HHR-32. December 1970.)
Box 6, Folder 9	History of Aviation and Cosmonautics, Vol. III. (translation of "Iz Istorii Aviatsii I Kosmonavtikim Vyp. 3." USSR Academy of Sciences. Soviet National Association of Historians of Natural Science and Technology, Moscow, 1965.) (N. D. Anoshchenko (ed.); NASA. TT F-11,429. November 1967.)

Subseries I.B.2.: *An Introduction to Astronautics*, 1958

Scope and Contents: In 1958 the RAND Corp presented a series of Secret (classified) lectures on Astronautics entitled "An Introduction to Astronautics." RAND later published unclassified sections of these lectures as a series of papers. This subseries is arranged in order of the original lectures. Some lecture numbers are not included as the material remained classified at the time RAND published the lecture series.

Box 7, Folder 1	Lecture No.2: "The Space Environment." (A. G. Wilson; RAND. P-1427. February 24, 1958.)
Box 7, Folder 2	Lecture No.3: "Trajectory Fundamentals." (Samuel Herrick; RAND. P-1303. 7 March 1958.)
Box 7, Folder 3	Lecture No.4: "Types of Space Flights." (R. W. Buchheim; RAND. P-1428. February 24, 1958.)
Box 7, Folder 4	Lecture No.5: "Propulsion Fundamentals." (B. Pinkel; RAND. P-1429. February 24, 1958.)

Box 7, Folder 5	Lecture No.9: "Aerodynamics for Space Flight." (E. P. Williams and Carl Gazley, Jr; RAND. P-1256. 24 February 1958.)
Box 7, Folder 6	Lecture No.10: "The Penetration of Planetary Atmospheres." (C. Gazley, Jr; RAND. P-1322. 24 February 1958.)
Box 7, Folder 7	Lecture No.13: "Orientation and Control." (T. B. Garber; RAND. P-1430. February 24, 1958.)
Box 7, Folder 8	Lecture No.14: "Some Information-Theory Considerations in Space Communications." (P. Swerling; RAND. P-1393. 24 February 1958.)
Box 7, Folder 9	Lecture No.15: "Communications in Space Operations." (C. M. Crain and R. T. Gabler; RAND. P-1394. February 24, 1958.)
Box 7, Folder 10	Lecture No.16: "Internal Environment of Manned Space Vehicles." (S. H. Dole; RAND. P-1309. 24 February 1958.)
Box 7, Folder 11	Lecture No.17: "A Discussion of Energy Sources for Space-Communications." (J. H. Huth; RAND. P-1318. 10 March 1958.)
Box 7, Folder 12	Lecture No.19: "Space Flight Ground Facility Requirements Problem - Launching Facilities." (J. J. O'Sullivan; RAND. P-1431. February 24, 1958.)
Box 7, Folder 13	Lecture No.20: "Scientific Exploration in the Fringe of Space." (W. W. Kellogg; RAND. P-1350. February 4, 1958.)
Box 7, Folder 14	Lecture No.21: "Physics of Solar-Terrestrial Space: Lunar Flight." (E. H. Vestine; RAND. P-1344. 24 February 1958.)
Box 7, Folder 15	Lecture No.32: "Soviet Astronautics." (F. J. Krieger; RAND. P-1437. February 24, 1958.)

Subseries I.B.3.: Management - General, 1960-1971

Box 7, Folder 16	Cost of Alternative Programs - Philosophy and Characteristics. (H. P. Hatry and F. S. Jackson; GE/TEMPO. SP-96. July 1960.)
Box 7, Folder 17	Space Logistics: Technology Versus Management. (Chauncey F. Bell; RAND. P-2613. August 1962.)
Box 7, Folder 18	Major Factors in Aerospace Planning and Decision-Making. (Robert G. Smith; GWU/PPS. 10 May 1966.)
	Study of Scientific and Technical Data Activities in the United States.
	Final Report. (Science Communication, Inc. December 1968.)

Box 8, Folder 1	Volume I: Plan for Study and Implementation of National Data System Concepts.
	Volume II: Preliminary Census of Scientific and Technical Data Activities.
Box 8, Folder 2	Parts A and B.
Box 8, Folder 3	Part C.
	Study of the Economic Impact of Stimulated Technological Activity.
	Findings. (Midwest Research Institute. 22 November 1971.)
Box 8, Folder 4	Part I: Overall Economic Impact of Technological Progress: Its Measurement.

Subseries I.B.4.: Management - NASA Facilities, 1962-1966

Arrangement: This material consists of general management documents, including policies, procedures, and specifications, for various NASA facilities, organized alphabetically by facility and by date.

- Kennedy Space Center (Cape Canaveral, FL)
- Marshall Space Flight Center (Huntsville, AL)
- Wallops Station (Wallops Island, VA)

	Kennedy Space Center (Cape Canaveral, FL), 1966
Box 8, Folder 5	"Modification Instruction." (GE for KSC. K-AM-032/2. c.1966.)
	Marshall Space Flight Center (Huntsville, AL), 1962-1965
Box 8, Folder 6	"Weight Notation System, Standard For." (MSFC. MSFC-STD-204A. December 6, 1962.)
Box 8, Folder 7	"Protective Finishes for Space Vehicle Structures and Associated Flight Equipment, General Specification For." (MSFC. MSFC-SPEC-250. February 28, 1963.)
Box 8, Folder 8	Michoud and Mississippi Test Operations Management Information. (MSFC/MDC. June 1964.)
	Huntsville Facilities Management Information. (MSFC/MDC. July 1964.)
Box 8, Folder 9	Volume III
Box 8, Folder 10	Michoud Operations - Quality Assurance and Reliability. [presentation graphics]. (MSFC. c.1965.)

Wallops Station (Wallops Island, VA), 1964

Box 9, Folder 1-3	Wallops Station Handbook. (Wallops Station. 6 April 1964.) [3 folders]

Subseries I.B.5.: Miscellaneous Documents, 1958-1966

Box 9, Folder 4	Space Flight - Trajectories, Navigation and Maneuvers. (R. W. Buchheim; RAND. P-1387. 16 May 1958.)
Box 9, Folder 5	International Political Implications of Activities in Outer Space - A Report of a Conference October 22-23, 1959. (RAND. R-362-RC. May 5, 1960.)
Box 9, Folder 6	Appraising Soviet Astronautics. (F. J. Krieger; RAND/PD. P-2107. September 29, 1960.)
Box 9, Folder 7	Feasibility of Interstellar Travel. (Dwain F. Spencer and Leonard D. Jaffe; JPL. TR 32-233. March 15, 1962.)
Box 9, Folder 8	Programs of Graduate and Undergraduate Study in Space Science and Applied Physics. (CUA/SSAP. March 25, 1964.)
Box 9, Folder 9	Selections from the TRW Space Technology Laboratories Lecture Series, Volume Two. (TRW/STL. 1965.)
Box 9, Folder 10	Geo-Astrophysics Laboratory - Review. (Boeing/SRL. January-June 1966.)
Box 9, Folder 11	Geo-Astrophysics Laboratory - Review. (Boeing/SRL. July-December 1966.)

Return to Table of Contents

Series II: Launch Vehicle Programs, 1962-1971

Arrangement: This series consists of documents pertaining to the development and production of launch vehicles and associated equipment, primarily for NASA use. The materials are organized into three subseries:

- II.A. Studies (1963-1971)
- II.B. Projects (1962-1971)
- II.C. Engine and Propulsion Systems (1963-1971)

Subseries II.A.: Studies, 1963-1971

Arrangement: The documents in this subseries relate to launch vehicle studies which can not be linked to any specific launch vehicle project. Materials are organized chronologically by study.

- Study of Large Sea-Launched Space Vehicles
- Launch Vehicle Component Costs Study
- Study of Design Considerations of Reusable Launch Vehicles
- Study of Advanced Multipurpose Large Launch Vehicles
- [Study to Evaluate Advanced Upper Stages]
- Large Ballistic Launch Vehicles Recovery and Reuse Study
- National Space Booster Study
- Cost Studies of Multipurpose Large Launch Vehicles
- Positive Expulsion Study

	Study of Large Sea-Launched Space Vehicles
	Final Report. (Henry M. Hunter; STL. January 1963.)
	Volume II: Cost Program, Study Evaluation.
Box 9, Folder 12	[folder 1 of 3]
Box 10, Folder 1-2	[folders 2-3 of 3]
	Launch Vehicle Component Costs Study
	Final Report. (Lockheed/LMSC. LMSC-895429. 30 June 1965.)
Box 10, Folder 3	Volume III: Research and Technology Implications Report.
	Study of Design Considerations of Reusable Launch Vehicles
	Final Report. (Douglas/MSSD. DAC-57916. October 1966.)
	Volume V: Launch Vehicle Cost Program.
Box 10, Folder 4	Book 1: Cost Program Formulation
	Study of Advanced Multipurpose Large Launch Vehicles

Box 10, Folder 5	Interim Report. (Boeing/SD/LSB. D5-13378-1. June 23, 1967.)
	[Study to Evaluate Advanced Upper Stages]
Box 10, Folder 6	Presentation to NASA-OART [presentation graphics]. (Douglas/MSSD. July 1967.)
	Large Ballistic Launch Vehicles Recovery and Reuse Study
Box 10, Folder 7	Summary Technical Report. (Boeing/SD/LSB. D5-13370-1. August 6, 1967.)
	Final Report. (Boeing/SD/LSB. D5-13370-2. August 6, 1967.)
	Volume 1.
Box 10, Folder 8-9	[folders 1-2 of 3]
Box 11, Folder 1	[folder 3 of 3]
Box 11, Folder 2-3	Volume 2. [2 folders]
Box 11, Folder 4	Research and Technology Implications Report. (Boeing/SD/LSB. D5-13370-3. August 6, 1967.)
	National Space Booster Study
	-Part One: Cost Analysis of Current Launch Systems
Box 11, Folder 5	Saturn Systems Presentation [presentation graphics]. (Chrysler/SD. AE-PB-68-1. October 3, 1968.)
	-Low Cost Launch Vehicle Study
Box 11, Folder 6	Mid-Term Briefing [presentation graphics]. (TRW/SG. 11851-6003-R0-00. 10 December 1968.)
Box 11, Folder 7	Final Briefing [presentation graphics]. (TRW/SG. 11851-6010-R0-00. 23 June 1969.)
	Cost Studies of Multipurpose Large Launch Vehicles
Box 11, Folder 8	Final Presentation [presentation graphics]. (Boeing. D5-17028. September 1969.)
	Positive Expulsion Study
Box 11, Folder 9	A State of the Art Study. (JHU/APL/CPIA. CPIA Publication 210. May 1971.)

Subseries II.B.: Launch Vehicle Projects, 1962-1971

Arrangement: This subseries consists of documents pertaining to projects intended to develop flight hardware for the United States space program. In some cases the project was cancelled before it reached flight - or even hardware - status, but the project involved design work to meet specific mission parameters. It is in this context that the Space Shuttle, normally considered a manned program, is included here. The materials are organized into subseires by the name of the launch vehicle project in alphabetical order. Unless otherwise noted, documents are arranged chronologically under each project heading.

- II.B.1. General (1967)
- II.B.2. Atlas (1966-1967)
- II.B.3. Centaur (1963-1970)
- II.B.4. Delta (1962)
- II.B.5. Nova (1964)
- II.B.6. Reusable Aerospace Passenger Transport (1966)
- II.B.7. Saturn (1962-1971)
- II.B.8. Space Shuttle (1969-1970)
- II.B.9. Space Tug (1971)
- II.B.10. Titan (1968-1970)

Subseries II.B.1.: General, 1967

Box 12, Folder 1	"Launch Vehicle History." (C. R. James (ed.); Boeing Co. D2-24015-1. February 1, 1967) [thermofax original]

Subseries II.B.2.: Atlas, 1966-1967

Scope and Contents: In 1959 NASA began utilizing the Atlas ICBM to orbit small blunt-bodied spacecraft, modifying the missile into the Atlas Space Launch Vehicle (SLV). Most notably, four of the manned Mercury flights used Atlas D/Atlas SLV-3 as boosters. The Atlas was also paired with smaller boosters as upper stages, giving rise to Atlas-Able, Atlas-Agena, and Atlas-Centaur boosters.

Box 12, Folder 2	"Atlas SLV-3 Space Launch Vehicle - Flight Evaluation Report: SLV-3 5303 (Flight Date 17 May 1966)." (GD/Convair. GDC/BKF66-029. 27 June 1966.)
Box 12, Folder 3	"AtlasVehicle 89D - Flight Evaluation Report (Flight Date 11 December 1966)." (GD/Convair. GDC/BKF66-083. 15 February 1967.)

Subseries II.B.3.: Centaur, 1963-1970

Scope and Contents: Work on Centaur began in 1956. Planned from the start as upper stage for the Atlas launch vehicle, Centaur was the first American booster to utilize liquid hydrogen propellant. Development problems delayed its introduction until mid-1965. During 1966-1968, the Centaur vehicle was used to launch the Surveyor series of lunar probes and continued in use into the Space Shuttle era.

Box 12, Folder 4	"Centaur Nucleonic Propellant Utilization System" [proposal]. (Giannini Controls Corp. GSDP-268. 1 June 1963.)
Box 12, Folder 5-6	"Centaur D-1 Payload Users Guide." (Aerospace. TOR-0066(5701-07)1. 30 June 1970.) [2 folders]

Box 12, Folder 7	"Centaur D-1 Payload Users Guide." (Aerospace. TOR-0066(5701-07)1. 30 June 1970, change 14 July 1970.)
Box 12, Folder 8	"Centaur D-1 Payload Users Guide." (Aerospace. TOR-0066(5701-07)1. 30 June 1970, change 17 July 1970.)

Subseries II.B.4.: Delta, 1962

Scope and Contents: Work on Delta began in 1959. Originally, Delta was to be an interim second stage for the Thor launch vehicle until the Scout and Vega boosters became available. In the end, however, Delta was the most frequently used booster in the Thor family in the 1960-1968 period, later becoming the most popular booster in the NASA stable.

Box 12, Folder 9	"Project Delta - Third Stage and Spacecraft Preparation at AMR." (Douglas. July 1962.)

Subseries II.B.5.: Nova (Post-Saturn Launch Vehicle), 1964

Scope and Contents: Nova was the largest of NASA's planned stable of launch vehicles. Nova was to be capable of launching a manned mission directly to lunar orbit. With NASA's selection of lunar rendezvous for Apollo in 1962 there was no immediate need for Nova and the project was cancelled in 1964.

	Solid Motor Logistics Study
	[Final Report] (Martin. NASA-CR-63-111. January 1964.)
Box 12, Folder 10	Volume I: Condensed Summary Report
	Post Saturn Launch Vehicle System Study.
	Part III: Final Technical Report. (Martin. ER 12603-I. November 1964.)
Box 12, Folder 11	Volume I: Summary

Subseries II.B.6.: Reusable Aerospace Passenger Transport, 1966

Scope and Contents: The Reusable Aerospace Passenger Transport (RAPT) was a preliminary examination of alternatives to the disposable boosters then in use by NASA. The RAPT concept was later embodied in the Space Shuttle Program.

	Launch Mode Comparison Study
Box 12, Folder 12	Research and Technology Implications Report. (Martin. MARTIN-CR-66-33. July 1966.)

Subseries II.B.7.: Saturn, 1962-1971

Arrangement: The Saturn family of launch vehicles spanned the middle, in boost capacity, of NASA's planned stable of launch vehicles. Development of the Saturn family began in August 1958 at the Army Ballistic Missile Agency, where it was called Juno. In 1958 it was renamed Saturn and, in November, transferred to NASA control. With the decision to utilize lunar rendezvous for the Apollo program, the Saturn family became the launch vehicles for Apollo. Saturn IB and Saturn V launch vehicles were the boosters for all flights of the Apollo spacecraft, including the Skylab and Apollo-Soyuz Test Program launches.

Documents relating to the Saturn Program are organized into subseries by general topic:

- II.B.7.a. General Documents (1962-1966)
- II.B.7.b. Saturn I / Saturn IB (1964-1967
- II.B.7.c. Saturn C-3 (1961)
- II.B.7.d. Saturn V (1963-1971)
- II.B.7.e. Saturn Program Development Launches (1963-1965)
- II.B.7.f. Saturn Improvement Program (1965-1970)

Subseries II.B.7.a.: General Documents, 1962-1966

Box 13, Folder 1	"Saturn." (MSFC. No Date.)
Box 13, Folder 2	"A Bibliography of the Saturn System." (MSFC/SSAO. M-SAT-62-4. December 12, 1962.)
Box 13, Folder 3	"Saturn Illustrated Chronology (April 1957 - April 1962)." (MSFC/SSO. No date.)
Box 13, Folder 4	"Saturn Illustrated Chronology April 1957 - November 1962." (MSFC/SSO. M-SAT-63-3. February 15, 1963.)
Box 13, Folder 5	"Documentation of Saturn Program Data Concepts for the Electronic Engineering Measuring and Tracking Office at the Launch Operations Center." (GE/ASD. NASw-410-30-13-9. 9 January 1963.)
Box 13, Folder 6	"Lightning Detection Warning Systems on Saturn Launch Complexes 34, 37, and 39." (E. W. Eulitz and R. H. Jones; KSC/ESD. TR-107-1. December 18, 1964.)
Box 13, Folder 7	"Lightning Detection Warning Systems on Saturn Launch Complexes 34, 37, and 39." (E. W. Eulitz and R. H. Jones; KSC/ESD. TR-107-1. December 18, 1964; Errata April 15, 1965..)
Box 13, Folder 8-9	"Astrionics System Handbook - Saturn Launch Vehicle." (MSFC/SEO. January 2, 1964.) [2 folders]
Box 13, Folder 10	"Saturn IB/V Astrionics System." (S. M. Seltzer; MSFC/SEO. MTP-ASTR-S-63-15. January 2, 1964.)
	"Astrionics System Handbook - Saturn Launch Vehicle." (MSFC/SEO. 1 August 1965.)

Box 13, Folder 11	[folder 1 of 2]
Box 14, Folder 1	[folder 2 of 2]
Box 224 (OS), Folder 1	"Vehicle Mechanical Systems Test Schematic." (MSFC/VTS. c.1965.)
Box 224 (OS), Folder 2	"Advanced Electrical Schematics - Ground Support Equipment." (MSFC/SODS. c.1966.)

Subseries II.B.7.b.: Saturn I / Saturn IB, 1964-1967

Arrangement: The Saturn I (originally called the Saturn C-1) was the first of the Saturn family of launch vehicles. Two-stage Saturn I boosters (S-I first stage and S-IV second stage) were used to launch boilerplate Apollo capsules through 1965.The Saturn IB (originally Saturn C-1B and Uprated Saturn I) grew from the cancellation of the Saturn C-2 vehicle in 1961.

The Saturn IB was an upgraded Saturn I, with sufficient thrust to place a fully-configured Apollo capsule into Earth orbit. Two-stage Saturn IB boosters (S-IB first stage and S-IVB second stage) were used for the manned earth-orbital missions of the Apollo (non-Lunar Module flights), Skylab, and Apollo-Soyuz programs.

Box 14, Folder 2	"Determination of Criticality Numbers for Saturn I, Block II Vehicle Ground Support Equipment (Launch Complex 37B)." (KSC/LSRO. TR-4-49-3-D. March 6, 1964.)
Box 14, Folder 3	"DAC AMR Progress Report - S-IV." (Douglas. No date.)
Box 14, Folder 4	"Saturn IB Performance Study." (Lockheed/LMSC. H-64-019. December 1964.)
Box 14, Folder 5	"Saturn I/IB Progress Report October 1, 1964 - March 31, 1965." (MSFC/S1PCO. MPR-SAT I/IB-65-1. c.1965.)
Box 14, Folder 6	"Saturn IB Payload Planner's Guide." (Douglas/MSSD. SM-47010. March 1965.)
Box 14, Folder 7	"Saturn IB Project Specification Addendum (SA-202)." (MSFC. RS01W-1000002A. March 21, 1966.)
Box 14, Folder 8	"Saturn IB Launch Vehicle Project Development Plan." (MSFC/S1BPO. No date.)
Box 14, Folder 9-10	"Saturn IB Launch Vehicle Project Development Plan." (MSFC/S1BPO. MA-001-003-2H. January 1, 1967.) [2 copies]
	Uprated Saturn I S-IB Stage
Box 15, Folder 1	Assembly and Test Report - S-IB-7. (Walter T. Liebracht. Chrysler/SD. RB-B7-EIR-5.1. 18 July 1967.)

Box 224 (OS), Folder 3	"S-I Stage Electrical Schematics." (MSFC/ASIS. No date.)

Subseries II.B.7.c.: Saturn C-3, 1961

Arrangement: The Saturn C-3 was originally intended as one of two boosters (with the Nova launch vehicle) to be used with the Apollo program. With the selection in 1962 of the lunar rendezvous mode for the moon landing program, NASA determined that the Saturn I/IB and Saturn V launch vehicles would be sufficient for its needs and Saturn C-3 project was cancelled.

	Saturn C-3 Launch Facilities Study
	Final Report. (MMC/AD. ER 12125-III. December 1961.)
Box 15, Folder 2	Volume III: Design Criteria for Launch Facilities.

Subseries II.B.7.d.: Saturn V, 1963-1971

Arrangement: The Saturn V (originally designated Saturn C-5) was the largest of the Saturn family. The three-stage Saturn V (S-IC first stage; S-II second stage; S-IVB third stage) was used to launch all fully-configured Apollo missions (CSM and LM) as well as the orbital workshop for the Skylab program.

Saturn V-related materials are organized into subseries by topic and arranged chronologically:

- II.B.7.d.1.General (1964-1970)
- II.B.7.d.2. Saturn V/S-IC (1963-1965)
- II.B.7.d.3. Saturn V/S-II (1968-1971)
- II.B.7.d.4. Saturn V/S-IVB (1964-1971)
- II.B.7.d.5. Saturn V Launch Vehicles (Flight Hardware) (1967-1969)

Subseries II.B.7.d.1.: Saturn V - General, 1964-1970

Box 15, Folder 3	"Saturn V Launch Support Equipment General Criteria and Description." (KSC/LSEED. SP-4-37-D. January 23, 1964.)
Box 15, Folder 4-6	"Saturn V Launch Vehicle Design Data." (MSFC/VSIO. IN-P&VE-V-62-6. December 17, 1962, reissued July 15, 1964.) [3 folders]
Box 15, Folder 7	"Saturn V Quarterly Progress Report October 1, 1964 - December 31, 1964." (MSFC/S5PCO. MPR-SAT V.64-4. No date.)
Box 15, Folder 8	"Saturn V Project Development Plan." (MSFC/S5PO. MA 001-AZD-2H. September 1965.)
Box 16, Folder 1	"Saturn V Quarterly Progress Report July 1, 1965 - September 30, 1965." (MSFC/S5PCO. MPR-SAT V.65-3. No date.)

Box 16, Folder 2	"Saturn V Quarterly Progress Report January 1, 1966 - March 31, 1966." (MSFC/S5PCO. MPR-SAT V 66-1. No date.)
Box 16, Folder 3	"Investigation of Saturn V Launch Vehicle and Launch Vehicle Ground Support Equipment Recycle Capability." (MSFC. SE 005 002 2H. March 31, 1967.)
	"Specification for the Operation System for the Saturn V Launch Computer Complex." (IBM/SGC. 66-232-0001. 1 June 1967.)
Box 16, Folder 4	Volume I.
Box 16, Folder 5-6	Volume II. [2 folders]
Box 16, Folder 7	"Saturn V Ground Test Plan and Status Summary." (MSFC/S5TMO. June 15, 1967.)
Box 16, Folder 8	"Saturn V Project Development Plan." (MSFC/S5PO. MA 001-AZD-2H. November 1967.)
Box 16, Folder 9	"Saturn V Technical Checklist." (MSFC/PVEL. July 1, 1968.)
Box 17, Folder 1-2	"Saturn V Specification Index." (MSFC/S5PCO. CM-004-001-2H. 1 May 1969. [2 folders]
Box 17, Folder 3	"Saturn V Specification Cross Reference Index." (MSFC/S5PCO. CM-004-007-2H. 1 May 1969.)
Box 17, Folder 4	"Saturn V Systems Mission Program Annual Progress Report FY-1970." (Boeing/AG/SD. D5-15385-6. June 30, 1970.)

Subseries II.B.7.d.2.: Saturn V/S-IC (Saturn V First Stage), 1963-1965

Box 17, Folder 5	"Boeing Manufacturing Plan for S-IC Stage." (Boeing/ASD/SBB. D5-12561. December 11, 1963.) [2 folders]
Box 17, Folder 7	"S-IC Maintainability After LOX Loading." Boeing/ASD/LSB. D5-11394. July 21, 1964.)
Box 17, Folder 8	"S-IC Program Review and Assessment" [presentation graphics]. (Boeing/ASD/LSB. August 25, 1964.)
Box 18, Folder 1	"Saturn S-IC Annual Progress Report - Fiscal Year 1965." (Boeing/ASD/LSB. D5-12601-2. July 30, 1965.)
Box 18, Folder 2	"Saturn S-IC Quarterly Technical Progress Report - July 2, 1965 - September 30, 1965." (Boeing/SD/LSB. D5-11994-9. October 11, 1965.)

	"Saturn V/S-IC Contract End Item Detail Specification (Prime Equipment) - Performance/Design and Product Configuration Requirements."
Box 18, Folder 3	CEI No. 000011A - S-IC-1 Flight Stage for Saturn V Launch Vehicle. (Boeing. CP02S00001101. November 1, 1965.)
Box 18, Folder 4	CEI No. 000011E - S-IC-5 Flight Stage for Saturn V Launch Vehicle. (Boeing. CP02S00001105. November 1, 1965.)
Box 18, Folder 5	CEI No. 000011F - S-IC-6 Flight Stage for Saturn V Launch Vehicle. (Boeing. CP02S00001106. November 1, 1965.)
Box 18, Folder 6	CEI No. 000011G - S-IC-7 Flight Stage for Saturn V Launch Vehicle. (Boeing. CP02S00001107. November 1, 1965.)
Box 18, Folder 7	CEI No. 000011H - S-IC-8 Flight Stage for Saturn V Launch Vehicle. (Boeing. CP02S00001108. November 1, 1965.)
Box 18, Folder 8	CEI No. 000011I - S-IC-9 Flight Stage for Saturn V Launch Vehicle. (Boeing. CP02S00001109. November 1, 1965.)
Box 18, Folder 9	CEI No. 000011J - S-IC-10 Flight Stage for Saturn V Launch Vehicle. (Boeing. CP02S00001110. November 1, 1965.)

Subseries II.B.7.d.3.: Saturn V/S-II (Saturn V Second Stage), 1968-1971

Box 18, Folder 10	"Saturn S-II Stage Progress Report July 1970 through June 1971." (NAR/SD. SID 63-266-55. July 1971.)
Box 19, Folder 1	"S-II-4 Static Firing Final Test Report." (NAR/SD. SD 68-104. 26 April 1968.)

Subseries II.B.7.d.4.: Saturn V/S-IVB (Saturn V Third Stage), 1964-1971

Box 19, Folder 2	"Orbital Checkout of S-IVB." (Douglas/MSSD. SM-46695. 27 May 1964.)
Box 19, Folder 3	"S-IVB Quarterly Review Agenda." (Douglas. March 10-11, 1965.)
Box 19, Folder 4	"Saturn S-IVB Quarterly Review" [presentation graphics]. (Douglas/MSSD. March 10, 11, 1965.)
Box 19, Folder 5	"Saturn S-IVB Stage Quarterly Weight and Balance Status Report, Model No. DSV-4B." (MDC/MDAC. MDC G0868. December 1970.)
Box 19, Folder 6	"Saturn S-IVB Stage Quarterly Weight and Balance Status Report, Model No. DSV-4B." (MDC/MDAC. MDC G0971. March 1971.)

Subseries II.B.7.d.5.: Saturn V Launch Vehicles (Flight Hardware), 1967-1969

"Saturn V Program Specification." (MSFC.)

Box 19, Folder 7	SA-501. (RS02W-1000001A. November 15, 1965, revison B. September 13, 1967.)
Box 19, Folder 8	Addendum (SA-505). (RS02W-1000005A. March 31, 1967, rev. May 7, 1969.)
Box 19, Folder 9	Addendum (SA-506). (RS02W-1000006A. March 31, 1967, rev. May 20, 1969.)
Box 20, Folder 1	Addendum (SA-507). (RS02W-1000007A. March 31, 1967, rev. April 21, 1969.)
Box 20, Folder 2	Addendum (SA-508). (RS02W-1000008A. March 31, 1967, rev. May 5, 1969.)
Box 20, Folder 3	Addendum (SA-509). (RS02W-1000009A. March 31, 1967, rev. May 5, 1969.)
Box 20, Folder 4	Addendum (SA-510). (RS02W-1000010A. March 31, 1967, rev. May 5, 1969.)
Box 20, Folder 5	Addendum (SA-511). (RS02W-1000011A. March 31, 1967, rev. May 5, 1969.)
Box 20, Folder 6	Addendum (SA-512). (RS02W-1000012A. 29 April 1968, rev. May 5, 1969.)
Box 20, Folder 7	Addendum (SA-513). (RS02W-1000013A. 29 April 1968, rev. May 5, 1969.)

Subseries II.B.7.e.: Saturn Program Development Launches, 1963-1965

Arrangement: This subseries consists of documents pertaining to specific launches with "SA-" (Saturn) mission designations. Launches of Saturn vehicles mated to Apollo spacecraft, which received "AS-" (Apollo-Saturn) mission designations are listed under subseries III.D.3 (Manned Space Flight Programs - Apollo Program). Documents are arranged chronologically by launch number. For a full listing of Saturn (SA-), Apollo (A-) and Apollo-Saturn (AS-) launches, see Appendix 4.

- Saturn Development Launches - SA-4 (1963)
- Saturn Development Launches - SA-5
- Saturn Development Launches - SA-6 (1964)
- Saturn Development Launches - SA-7 (1964)
- Saturn Development Launches - SA-8 (1964-1965)
- Saturn Development Launches - SA-9 (1964-1965)
- Saturn Development Launches - SA-10 (1965)

Saturn Development Launches (SA-4), 1963

Box 20, Folder 8	"Countdown Manual for Saturn I, Vehicle Serial SA-4." (MSFC/LVOD. March 14, 1963.)

Saturn Development Launches (SA-5), undated

Box 20, Folder 9	"Complex 37 Safety Plan for SA-5." (KSC/SO. No date.)
	Saturn Development Launches (SA-6), 1964
Box 20, Folder 10	"SA-6 Ground Instrumentation Profile." (R. J. Bush and L. R. Pollman; GE/ASD. SP-83-E. 22 May 1964.)
Box 20, Folder 11	"Instrumentation Operations Analysis, Part IIb of the Firing Test Report, Saturn Vehicle SA-6." (Noble F. Hinds and John Trippe, Jr.; KSC/DASA. TR-4-51-2b-1. June 29, 1964.)
	Saturn Development Launches (SA-7), 1964
Box 20, Folder 12	"Saturn I Countdown Manual (Vol. II) - SA-7 - Test Number 7-LSVI-300 Launch Countdown." (KSC. September 5, 1964.)
Box 20, Folder 13	"Computing Notes on the Saturn Mission (SA-7)." (GSFC/DOB. X-550-64-269. September 23, 1964.)
Box 20, Folder 14	"Failure Reporting Summary, SA-7 - Pre-Launch, Test and Checkout at KSC." (GE/ASD for KSC. SP-152. October 14, 1964.)
Box 20, Folder 15	"Instrumentation Operations Analysis for Saturn/Apollo Vehicle SA-7." (Noble F. Hinds and John Trippe Jr; KSC/DASA. TR-98-1. November 5, 1964.)
	Saturn Development Launches (SA-8), 1964-1965
	"SA-8 Saturn Technical Information Handbook." (MSFC/THMS. October 15, 1964.)
Box 20, Folder 16	Volume I of 4.
Box 21, Folder 1	Volume II of 4.
Box 21, Folder 2-3	Volume III of 4. [2 folders]
Box 21, Folder 4	Volume IV of 4.
Box 21, Folder 5	"Instrumentation Operations Analysis for Saturn/Apollo Vehicle SA-8." (Noble F. Hinds and John Trippe, Jr.; KSC/DASA. TR-179. July 15, 1965.)
	Saturn Development Launches (SA-9), 1964-1965
	"SA-9 Vehicle and Launch Complex Functional Description." (Chrysler/SD. HEC-D042. May 1964.)
Box 21, Folder 6	Volume VI: Environmental Control System.

	"SA-9 Saturn Technical Information Handbook." (MSFC/THMS. May 15, 1964.)
Box 22, Folder 1	Volume I of 4.
Box 22, Folder 2	Volume II of 4.
Box 22, Folder 3	Volume III of 4.
Box 22, Folder 4	Volume IV of 4..
Box 22, Folder 5	"SA-9 Ground Instrumentation Reliability Profile." (GE/ASD for KSC. SP-177. February 5, 1965.)
Box 22, Folder 6	"Instrumentation Operations Analysis for Saturn/Apollo Vehicle SA-9." (Noble F. Hinds and John Trippe, Jr.; KSC/DASA. TR-161. March 19, 1965.) [2 copies]
	Saturn Development Launches (SA-10), 1965
	"SA-10 Saturn Technical Information Handbook." (MSFC/THMS. March 15, 1965.)
Box 22, Folder 7	Volume I of 4.
Box 23, Folder 1	Volume II of 4.
Box 23, Folder 2-3	Volume III of 4. [2 folders]
Box 23, Folder 4	Volume IV of 4.

Subseries II.B.7.f.: Saturn Improvement Program, 1965-1970

Arrangement: By the mid 1960s NASA had initiated several studies to extend the capabilities of the Saturn family. The studies examined a number of Modified Launch Vehicle (MLV) configurations based on the Saturn IB and Saturn V launch vehicles as well as Intermediate Payload (INT) launch vehicles based on modified Saturn stages (MS-IB, MS-IC, MS-II, and MS-IVB). Documents are organized into subseries by improved booster type; unless otherwise noted documents within each subseries are arranged chronologically by study.

- II.B.7.f.1. General Studies (1966-1970)
- II.B.7.f.2. MLV Saturn IB (1965-1967)
- II.B.7.f.3. MLV Saturn V (1966-1967)
- II.B.7.f.4. MLV Saturn INT-20 (1969)
- II.B.7.f.5. MLV Saturn INT-21 (1969)
- II.B.7.f.6. 260in SRM/S-IVB (1967-1968)

Subseries II.B.7.f.1.: General Studies, 1966-1970

	Study of Launch Facilities for Improved Saturns.

	Phase III
	Final Report (Martin/AGSD. MARTIN-CR-66-41. December 1966.)
Box 23, Folder 5	Volume I: MLV SAT IB-11.5 and -11.7(A)
Box 23, Folder 6-7	Volume II: MLV SATURN V-3B, -4(S)B, -25(S) and -23(L) [rough draft]. [2 folders]
Box 24, Folder 1-2	Volume II: MLV SAT V-3B, -4(S)B, -25(S) and -23(L). [2 folders]
Box 24, Folder 3	Volume III: MLV SAT INT-20 and -21
Box 24, Folder 4	Volume IV: MLV SAT INT-17, -18(S)A, and -18(S)B.
Box 24, Folder 5	Volume V: Executive Summary
	Comparative Economic Study of Launch Facilities, Launch Operations, and Support for a Range of Intermediate Payload Launch Vehicles at the Kennedy Space Center and Kennedy Air Force Station.
Box 24, Folder 6-7	Final Report. (Chrysler/SD. 16 March 1970.) [2 folders]
Box 24, Folder 8	Addendum Report. (Chrysler/SD. 18 June 1970.) [120 Inch SRM Tri-Cluster Launch Vehicle]

Subseries II.B.7.f.2.: MLV Saturn IB, 1965-1967

	Saturn IB Improvement Study
	Liquid First Stage and Boost Assist.
	Final Report. (Chrysler/SD. AS-654. March 31, 1965.)
Box 24, Folder 9	Volume I: Summary Report
	Phase III
	Final Report. (Chrysler/SD. TR-AE-67-17. December 16, 1967.)
Box 25, Folder 1-2	Volume II: Technical Report. [2 folders]
	Saturn IB/Zero Stage Preliminary Study
Box 25, Folder 3	Report. (Chrysler/SD. AE-PB-656. May 7, 1965.) [MLV Saturn IB-11.5]

Box 25, Folder 4	Report. (Chrysler/SD. AE-PB-656. July 12, 1965.) [MLV Saturn IB-11.5]
Box 25, Folder 5	Saturn IB/Zero Stage Study
	Report. (Chrysler/SD. AE-PB-700. December 31, 1965.) [MLV Saturn IB-11.5]
Box 25, Folder 6	"Report on a 260-Inch Diameter Cryogenic Propellant Third Stage for the Saturn IB." (Chrysler/SD. TR-AE-65-4. No date.) [MLV Saturn IB-142]

Subseries II.B.7.f.3.: MLV Saturn V, 1965-1967

	Saturn V and Intermediate Payload Saturn Vehicles Improvement Studies.
Box 25, Folder 7	First Quarterly Review [presentation graphics]. (Douglas/MSSD. SM-51889-P. 28 February 1966.)
	Studies of Improved Saturn V Vehicles and Intermediate Saturn Vehicles.
Box 25, Folder 8	Volume 7: Presentation Charts [presentation graphics]. (NAA/SID. SID 66-1326-7. No date.)
Box 25, Folder 9	"A 'Building Block' Approach to Saturn V Uprating Using Solid Propellant Rocket Motors." (J. W. Monroe and C. J. Corso; Boeing/SD/LSB. D5-13365. June 14, 1967.)
Box 25, Folder 10	"Product Improved Saturn V Evaluation" [presentation graphics]. (NAA/SD. PD 67-35. July 1967.)
	MS-IC Stage for Modified Launch Vehicle (MLV) Saturn V.
Box 25, Folder 11	Volume 1 of 8: Summary Report. (Boeing/ASD/LSB Co. D5-11420-0. April 15, 1965.)
	Design Study of the MS-II Stage for the Modified Launch Vehicle (MLV) Saturn V.
	Final Report. (NAA/SID. SID 65-244-6. 29 March 1965, revised April 1965.)
Box 25, Folder 12	Volume VI: Design Study Summary Briefing [presentation graphics].
	Saturn V Vehicle with 260-Inch Diameter Solid Motor Study.
	Final Report. (Boeing/SD. December 18, 1967.)
Box 26, Folder 1-3	Vehicle Description. (D5-13408-2.) [3 folders]
Box 26, Folder 4	Research and Technology Implications. (D5-13408-3.)

Box 26, Folder 5	Cost Plan. (D5-13408-4.)
Box 26, Folder 6	Appendices. (D5-13408-5.)

Subseries II.B.7.f.4.: MLV Saturn INT-20, 1969

KSC Facilities and Operations for Saturn MS-IC/MS-IVB (Intermediate 20) Launch Vehicle.

Box 26, Folder 7	Executive Summary Report. (Boeing. D5-16785-1. May 23, 1969.)

Saturn V Derivative (S-IC, S-IVB, I.U.) Launch Vehicle System Study.

Box 26, Folder 8	Final Presentation. (Boeing. August 28, 1969.)
	Final Technical Report. (Boeing. D5-17009-2. September 15, 1969.)
Box 26, Folder 9	[folder 1 of 4]
Box 27, Folder 1-3	[folders 2-4 of 4]

Subseries II.B.7.f.5.: MLV Saturn INT-21, 1969

Box 27, Folder 4	"Intermediate -21 Launch Vehicle Preliminary Description for a Phase B Space Station Design." (Boeing/SD/LSB. D5-15583. August 15, 1969.)

Subseries II.B.7.f.6.: 260in SRM/S-IVB, 1967-1968

Launch Facilities and Operations for Large Solid Motors Study.

	Final Report. (Douglas/MSSD.)
Box 27, Folder 5	Volume I: Technical. (DAC-58078. 28 December 1967.)
Box 27, Folder 6	Volume III: Self-Eject Launch Technique, 260-in. SRM/S-IVB Application. (DAC-58115. 27 June 1968.)

Subseries II.B.8.: Space Shuttle, 1969-1970

Arrangement: The Space Transportation System, or "Space Shuttle," was designed as a reusable launch system to ferry personnel and equipment from the surface to low-earth orbit in conjunction with a permanent space station. Although the space station was never funded, shuttle development

continued throughout the 1970s with the first launch occurring in 1981. Document are arranged chronologically.

Box 27, Folder 7	"Low Cost Space Transportation Systems" [presentation graphics]. (NAR/SD. SP 69-2. January 1969.)
Box 28, Folder 1	"Evaluation Criteria for Space Transportation System Concepts." (Deane N. Morris; RAND. P-4293. January 1970.)
Box 28, Folder 2-3	"Proposal to Accomplish Phase B Space Shuttle Program." (MDC. MDC E0120. 30 March 1970.) [2 folders]
Box 28, Folder 4	"Space Shuttle Engine Baseline Configuration - Preliminary Design." (PWA. PDS 3714A. 16 April 1970.)
Box 28, Folder 5	"Space Shuttle Technology Requirements." (NAR/SD. SP 70-8A. 20 September 1970.)
Box 28, Folder 6	"Space Shuttle System - High/Low Cross-Range Orbiter - Trade Study Report." (NAR/SD. SP 70-600-22. 21 October 1970.)
Box 231, Folder 1	"Proposal to Accomplish Phase B Space Shuttle Program." (Space Division, North American Rockwell. SD 70-5. 27 March 1970.)
	Phase A Space Shuttle Study
Box 28, Folder 7-8	Project SERV - Status Review [presentation graphics]. (Chrysler/SD. 30 November 1970.) [2 folders]
Box 29, Folder 1	"Space Shuttle Propulsion Mid-Term Review Splinter Meeting" [presentation graphics]. (MDC. 10,11 December 1970.)

Subseries II.B.9.: Space Tug, 1971

Scope and Contents: The Space Tug was a proposal for an orbit-to-orbit vehicle to move personnel and equipment from low-earth (Space Shuttle) orbit to high-earth (space station) orbit or to lunar orbit.

	Space Tug Study
	Summary. (NAR/SD. PD 69-167. c.1971.)
Box 29, Folder 2	Part I: Mission Analysis and System Requirements.

Subseries II.B.10.: Titan, 1968-1970

Scope and Contents: The Titan family of launch vehicles originated as a ballistic missile for the United States Air Force. NASA modified the Titan II into the Gemini Launch Vehicle (GLV) and utilized the Titan III for unmanned launches beginning in the 1970s due to budget cuts and delays in the Space Shuttle

program. Documents are arranged chronologically. See also subseries VII.A.2. (USAF - Launch Vehicles)

Box 29, Folder 3	"Titan III Family Review." (MMC. January 1968.)
Box 29, Folder 4	"Titan IIIC Payload Users Guide." (MMC/DD. IR-68-3. January 1968.)
Box 29, Folder 5	"Titan IIIC Payload Users Guide." (MMC/DD. MCR-68-62. October 1968.)
Box 29, Folder 6	"Manned Spaceflight for the 1970's - Program Concerns and Titan Launch Vehicle Implications" [presentation graphics]. (MMC/DD. 15 April 1970.)

Subseries II.C.: Launch Vehicle Programs - Engines and Propulsion Systems, 1963-1971

Arrangement: This subseries consists of documents relating to spacecraft engine, propulsion, and power systems. Materials are organized by topic. Unless otherwise noted, documents are arranged chronologically by study within each subseries:

- II.C.1. General Documents (1965-1970)
- II.C.2. Aerospike Engine Program (1971)
- II.C.3. F-1 Engine Program (1965-1968)
- II.C.4. H-1 Engine Program (1965)
- II.C.5. J-2 Engine Program (1964-1970)
- II.C.6. Nuclear Flight Systems (1963-1971)

Subseries II.C.1.: General Documents, 1965-1970

Arrangement: The documents in this subseries do not relate to any specific hardware program.

	Chamber Technology for Space-Storable Propellants.
	Task II Interim Report (Rocketdyne. October 13, 1965.)
Box 29, Folder 7-8	Volume 2 [Thrust Chamber Fabrication and Testing]. [2 folders]
Box 29, Folder 9	"Design Criteria for Space Propulsion Systems" [presentation graphics]. (AGC. SG P-1069-1. c.1967.)
Box 30, Folder 1	"Cryogenic Auxiliary Propulsion System" [presentation graphics]. (Rocketdyne. BCI 67-26. c.1967.)
Box 30, Folder 2	"Space Storable Propulsion System" [presentation graphics]. (PWA. GP 67-252. 16 October 1967.)
	Propellant Selection for Spacecraft Propulsion Systems.
Box 30, Folder 3	Letter No.6: Quarterly Status for the Period 6 October 1967 through 12 January 1968. (Lockheed/LMSC/RDD K-19-68-1. No date.)

Box 30, Folder 4	Phase II Letter No.4: Midterm Status for the Period 6 September 1968 through 5 January 1969. (Lockheed/LMSC/RDD. K-21-69-1. 31 January 1969.)
Box 30, Folder 5	Summary Presentation [presentation graphics]. (Lockheed/LMSC/PVS. K-21-69-8. July 31, 1969.)

Large Hydrogen-Oxygen Ablative Chamber Test Program.

Box 30, Folder 6	Final Report. (R. J. Kovach, J. A. Mellish, R. W. Michel; AGC/LRO. AGC 9400-15 (NASA CR-72512). 14 March 1969.)

High Energy Upper Stage Motor Program

Phase II Final Report. (Hercules/CPD. H250-12-6-7. July 1970.)

Box 30, Folder 7	Volume I: Top Summary
Box 30, Folder 8	Volume II Notes: • *Task I - System Selection* • *Task II - Detailed Design*
Box 31, Folder 1	Volume III: Task III - Analysis
Box 31, Folder 2	Volume IV Notes: • *Task IV - Verification Test Program* • *Task V - Reliability* • *Task VI - Toxicity and Safety* • *Task VII - Management Support*

Subseries II.C.2.: Aerospike Engine Program, 1971

Cast Segment Evaluation

Box 31, Folder 3	Final Report. (Rocketdyne. R-8416. February 1971.)

Subseries II.C.3.: F-1 Engine Program, 1965-1968

Arrangement: The Rocketdyne F-1 engine was NASA's largest rocket engine, developing 6,672,000 newtons of thrust from liquid oxygen and RP-1 fuel. NASA originally planned to install eight to twelve F-1 engines in the first stage of its proposed Nova launch vehicle, but instead utilized five F-1s in the S-IC stage of the Saturn V.

F-1 Uprating Study

Box 31, Folder 4	Final Report. (Rocketdyne. R-5910. 26 January 1965.)

Box 31, Folder 5	"F-1 Rocket Engine - Illustrated Parts Breakdown" [Technical Manual]: (Rocketdyne. R-3896-4. 12 December 1967, rev. 3 May 1968 (change no.1).) [revised pages only]

Subseries II.C.4.: H-1 Engine Program, 1965

Arrangement: The Rocketdyne H-1 engine was the smallest rocket engine used in the Saturn launch vehicle family, developing 889,600 newtons of thrust from liquid oxygen and RP-1 fuel. Eight H-1 engines powered the S-I and S-IB stages of NASA's Saturn I and Saturn IB launch vehicles (respectively).

	H-1 Uprating Study
	Final Report. (Rocketdyne. R-6091. June 1965.)
Box 32, Folder 1	Volume 1: Summary

Subseries II.C.5.: J-2 Engine Program, 1964-1970

Arrangement: The Rocketdyne J-2 engine was an intermediate engine between the F-1 and H-1, developing 1,000,800 newtons of thrust from liquid oxygen and liquid hydrogen. Five J-2s powered the S-II stage of NASA's Saturn V launch vehicle while a single J-2 was installed in the S-IVB stage of the Saturn IB and Saturn V. Initially NASA had also planned to install J-2s in the upper stages of the Nova launch vehicle.

Box 32, Folder 2	"Quarterly Functional Analysis for Period Ending 31 December 1963." (Rocketdyne. R-5498-2. 20 January 1964.)
Box 32, Folder 3	"Quarterly Failure Effects Analysis for Period Ending 31 December 1963." (Rocketdyne. R-5499-2. 20 January 1964.)
Box 32, Folder 4-6	"Quarterly Progress Report for Period Ending 31 August 1964." (Rocketdyne. R-2600-16. 29 September 1964.) [3 folders]
Box 32, Folder 7	"J-2 Engine Data Manual." (Rocketdyne. R-3825-1. No date.) [Sections X, XI, and XII only]
Box 32, Folder 8	"Reliability Plan for the J-2 Propulsion System." (Rocketdyne/J2RP. R-5406-2. 31 January 1966.)
Box 33, Folder 1	"Bimonthly Progress Report - November-December 1968." (Rocketdyne. R-6300-21. 26 February 1969.)
Box 33, Folder 2-4	"J-2 Rocket Engine - Operating Instructions" [Technical Manual Supplement]. (Rocketdyne. R-3825-1B. 6 May 1970, rev. 22 September 1970 (change no.1).) [3 folders]
Box 33, Folder 5	"The Impact of the J-2S Engine on the NASA Space Program" [presentation graphics]. (Rocketdyne. BCI 68-74. No date.)

Subseries II.C.6.: Nuclear Flight Systems, 1963-1971

Arrangement: The material in this subseries relates to general programs for spacecraft nuclear propulsion and nuclear power systems. For documents relating to planned utilization of specific designs, see relevant entries under **Series III.** (Manned Space Flight Programs) and **Series IV.** (Space Science and Applications). Documents in this subseries are organized by program or study. Unless otherwise noted documents are arranged chronologically by study within each subseries.

- II.C.6.a. General Documents (1963-1968)
- II.C.6.b. Space Nuclear Auxiliary Power (SNAP) Program (1968)
- II.C.6.c. Modular Nuclear Vehicle Study (1966-1969)
- II.C.6.d. Nuclear Flight System Definition Study (1970-1971)

Subseries II.C.6.a.: General Documents, 1963-1968

Box 33, Folder 6	"A Study of Nuclear Electric and Nuclear Rocket Space Propulsion." (T. N. Edelbaum; UAC. B-110053-3. June 1963.)
	Human Engineering Data for Advanced Ground Support Operations with Nuclear Space Systems.
	[Report.]
	Volume II: Detail Technical Summary. (Douglas/MSSD. SM-48723. June 1965.)
Box 33, Folder 7	Book 2.
	Nuclear Stage Design Study
	[Report.] (Douglas/MSSD. SM-57976. January 1967.)
Box 33, Folder 8	[folder 1 of 2]
Box 34, Folder 1	[folder 2 of 2]
Box 34, Folder 2	"Influence of Thrust Level on Nuclear Propulsion System Performance." (Richard W. Schaupp; NASA/OART/MAD. MP-68-2. June 28, 1968.)

Subseries II.C.6.b.: Space Nuclear Auxiliary Power (SNAP) Program, 1968

Arrangement: Documents in this subseries are organized by program.

	SNAP 19.
	Phase III Final Report. (MMC/ND. May 1968.)
Box 34, Folder 3	Volume I: Power Supply System. (MND-3607-239-1.)
Box 34, Folder 4	Volume III: Generator Developmental Aspects. (MND-3607-239-3.)

	SNAP-27
Box 34, Folder 5	Quarterly Report No.10: January 1, 1968 to March 31, 1968. (GE/MSD/IPSO. GEMS 400. No date.)

Subseries II.C.6.c.: Modular Nuclear Vehicle Study (MNVS), 1966-1969

	Modular Nuclear Vehicle Study
	Phase II Report. (Lockheed/LMSC/CSP.)
Box 34, Folder 6	Volume I: Summary. (LMSC-A830244. 29 February 1968.)
Box 34, Folder 7	Volume II: Nuclear Propulsion Module Systems Analysis. (LMSC-A830245. 1 March 1967.)
Box 34, Folder 8	Volume III: Nuclear Propulsion Module - Vehicle Design. (LMSC-A830246. 1 March 1967.)
Box 34, Folder 9	Volume IV: Nuclear Propulsion Module - Performance. (LMSC-A830247. 31 March 1967.)
Box 34, Folder 10	Volume V: Flight Safety Studies. (LMSC-A830248. 31 March 1967.)
Box 35, Folder 1	Volume VI: Integrated Test Plan. (LMSC-A830250. 30 November 1966.)
Box 35, Folder 2	Volume VIII: NRSD Operating Plan and Facilities Requirements. (LMSC-A830251. 30 November 1966.)
Box 35, Folder 3	Volume X: Research and Technology Implications. (LMSC-A830253. 1 November 1967.)
Box 35, Folder 4	Volume XI: Nuclear Radiation Environment. (LMSC-A848446. 16 October 1967.)
	Phase III Report. (Lockheed/LMSC/CSP)
Box 35, Folder 5	Nuclear Propulsion Module - Flight Safety Studies. (K-05-67-3. 29 February 1968.)
Box 35, Folder 6	NGTM Calculational Model and Test Facility Support. (K-05-68-1. 29 February 1968.)
	Phase IV and V Report. (Lockheed/LMSC/CSP)
Box 35, Folder 7	Summary and SRT Requirements. (LMSC-A965497. 31 December 1969.)

Subseries II.C.6.d.: Nuclear Flight System Definition Study (NFSDS), 1970-1971

	Nuclear Flight System Definition Study
	Outer-Planet Exploration Missions
	Final Report. (NAR/SD. January 1970.)
	Volume III: Mission Analysis. (SD 70-32-3.)
Box 35, Folder 8	[Sections 1 through 3]
Box 35, Folder 9	[Sections 4 through Appendix]
	Volume IV: Conceptual Design. (SD 70-32-4.)
Box 36, Folder 1	[Sections 1.0 through 3.0]
Box 36, Folder 2	[Sections 4.0 through Appendixes]
Box 36, Folder 3	Volume VI: Technology Development. (SD 70-32-6.)
	Phase III. [North American-Rockwell contract].
	Final Report. (NAR/SD. April 1971.)
Box 36, Folder 4	Volume I: Executive Summary. (SD 71-466-1.)
	Volume II: Concept and Feasibility Analysis.
	Part A: System Evaluation and Capability. (SD 71-466-2.)
Box 36, Folder 5-6	[folder 1-2 of 3]
Box 37, Folder 1	[folder 3 of 3].
Box 37, Folder 2	Part B: Baseline System Definition. (SD 71-466-3.)
Box 37, Folder 3	Part C: System Engineering Documentation. (SD 71-466-4.)
Box 37, Folder 4	Volume III: Program Support Requirements. (SD 71-466-5.)
Box 37, Folder 5	Volume V: Schedules, Milestones and Networks. (SD 71-466-7.)
Box 37, Folder 6	Volume VI: Reliability and Safety Analysis. (SD 71-466-8.)
	Phase III. (McDonnell-Douglas contract].

	Final Report. (MDC/MDAC. MDC G2134. May 1971.)
	Volume II: Concept and Feasibility Analysis.
	Part A: Class 1 Hybrid RNS.
Box 38, Folder 1-2	Book 1: System Analysis and Operations. [2 folders]
Box 38, Folder 3-4	Book 2: System Definition. [2 folders]
	Part B: Class 3 RNS.
Box 38, Folder 5-6	Book 1: System Analysis and Operations. [2 folders]
	Book 2: System Definition.
Box 38, Folder 7	[folder 1 of 2]
Box 39, Folder 1	[folder 2 of 2]
	Volume III: Program Support Requirements.
Box 39, Folder 2	Part A: Class 1 Hybrid RNS.
Box 39, Folder 3	Part B: Class 3 RNS.
Box 39, Folder 4	Part C: Test Program Analyses and SRT Requirements.
Box 39, Folder 5	Volume V: Schedules, Milestones, and Networks.

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Series III: Manned Space Flight Programs, 1959-1971

Arrangement: This series consists of documents pertaining to NASA manned space flight programs. Materials not relating to a specific program are grouped into subseries by topic and within subseries by date. Materials relating to specific manned programs are organized by program in order of launch (Mercury-Gemini-Apollo).

- Subseries III.A. General (1961-1970)
- Subseries III.B. Environmental Control and Life Support Systems (1959-1968)
- Subseries III.C. Human Factors (1963-1967)
- Subseries III.D. Programs (1959-1972)

Subseries III.A.: General Documents, 1961-1970

Arrangement: Documents are arranged chronologically.

Box 39, Folder 6	"Anyone for the Moon?" (J. D. Williams; RAND. P-2383. September 1961.)
Box 39, Folder 7	"Manned Flight Awareness Workshop, March 17-19, 1970, Huntsville, AL: Discussions and Recommendations." (MSFC. PM-SS-70-1. May 1, 1970.)

Subseries III.B.: Environmental Control and Life Support Systems, 1959-1968

Arrangement: This subseries consist of material which pertains to the general principles and equipment for the creation and maintenance of spacecraft cabin environment for manned flight. For documents pertaining to specific program requirements or specific spacecraft, see the relevant subseries under subseries III.D. (Programs.). Documents in this subseries are arranged chronologically by study.

Box 39, Folder 8	"Space Vehicle Environment." (C.Gazley Jr, W. W. Kellogg, and E. H. Vestine; RAND/ED. P-1335. July 7, 1958, rev. June 15, 1959.)
	Selection of Space Cabin Atmospheres
	[Report.]
Box 40, Folder 1	Part II: Fire and Blast Hazaards in Space Cabins. (Emanuel M. Roth; Dept of Aeronautics Medicine and Bioastronautics, Lovelace Foundation for Medical Education and Research. c.1964-1966.)
Box 40, Folder 2	"Space Cabin Simulator: Atmosphere and Contaminants." (R. P. Cox; Douglas/ MSSD. SM-47768. 25 February 1965.)
Box 40, Folder 3	"Fire Prevention in Manned Spacecraft and Test Chamber Oxygen Atmospheres." (MSC. NASA General Working Paper 10 063. October 10, 1966.)
Box 40, Folder 4	"Life Support System Manned Testing with Oxygen and Water Recovery." (A. L. Ingelfinger (NASA/OART); T. C. Secord and W. F. Arndt (MDC/DMSSD). c.1967.)
	Independent Development in Advanced Life Support Systems.

	Phase II Report
Box 40, Folder 5	Biotechnology. (T. M. Olcott and W. J. Conner; Lockheed/LMSC. LMSC-A914650. 6 December 1967.)
	A Space Station Life Support System for Use in an Altitude Chamber.
	Final Report. (ARMC. 68-3266. February 6, 1968.)
	Design Study and Implementation Program.
	Volume I
Box 40, Folder 6	Part 1.
Box 40, Folder 7-8	Part 2. [2 folders]
Box 41, Folder 1	Environmental Control/Life Support Systems for Manned Spacecraft.
	Maintainability and Reliability Program [presentation graphic]. (Boeing/SD. April 1968.)
Box 41, Folder 2	"The Impact of Maintainability on the Design of Long Duration Life Support System" [presentation graphic]. (ARMC. c.1968.)
Box 41, Folder 3	"Synthesis of Formaldehyde from CO2 and H2." (P. Budininkas and G. A. Remus; GATC/GARD; and J. Shapira; NASA Ames. SAE Aeronautic and Space Engineering and Manufacturing Meeting. 680715. October 7-11, 1968.)
Box 41, Folder 4	"Waste Utilization for Propulsion on Manned Space Missions." (C. David Good, James E. Mars, and Eckart W. Schimidt; Rocket Research Corp. SAE Aeronautic and Space Engineering and Manufacturing Meeting. 680717. October 7-11, 1968.)
Box 41, Folder 5	"Evaluation of a Closed-Cycle Life-Support System During a 60-Day Manned Test." (J. K. Jackson, M. S. Bonura, and D. F. Putnam; MDC/MDAC. SAE Aeronautic and Space Engineering and Manufacturing Meeting. 680741. October 7-11, 1968.) [2 copies]
Box 41, Folder 6	"Reliability and Maintainability Problems Confronting Environmental Control/Life Support Systems for Long Duration Space Flight." (J. R. Burnett and C. D. King; GDC/Convair. SAE Aeronautic and Space Engineering and Manufacturing Meeting. 680744. October 7-11, 1968.)
Box 41, Folder 7	"Maintainability and Reliability of Environmental Control/Life Support Systems." (Hugh A. Jennings; Boeing/SD. SAE Aeronautic and Space Engineering and Manufacturing Meeting. 680745. October 7-11, 1968.)

Box 41, Folder 8	"Parametric Analysis of Some Requirements for Life Support Systems Applied to Earth Orbital Missions." (Robert S. Barker, Stuart W. Nicol, and Mahmoud M. Yakut; MDC/MDAC; and Joseph L. Anderson; NASA/OART/MAD. SAE Aeronautic and Space Engineering and Manufacturing Meeting. 680746. October 7-11, 1968.) [2 copies]

Subseries III.C.: Human Factors, 1963-1967

Scope and Contents: This subseries consists of general materials relating to design considerations required to allow human beings to operate successfully during space missions. Documents in this subseries are organized chronologically. For materials relating to specific programs or missions, see subseries III.D. (Programs). For materials relating to USAF Human Factors studies, see subseries VII.A.3. (USAF - Manned Programs)

Box 41, Folder 9	"Visual Capability of Pilots as Applied to Rendezvous Operations." (Jack E. Pennington and Roy F. Brissendon; Langley. IAS. January 21-23, 1963.)
Box 41, Folder 10-11	"Bioenergetic Considerations in the Design of Space Suits for Lunar Exploration." (Emanuel M. Roth. Dept of Aeronautics Medicine and Bioastronautics, Lovelace Foundation for Medical Education and Research. July 12, 1963.) [2 folders]
Box 41, Folder 12-14	"Human Factors Systems Program (July 1962 - February 1964)" [Preliminary draft]. (Eugene B. Konecci; NASA/OART. c.1964.) [3 folders]
Box 42, Folder 1	"Research on Pilot Skill Retention for Manned Space Flight." (Milton A. Grodsky, Joseph A. Mandour, J. Thomas Warfield, and Thomas M. Flaherty; Martin/BD. RM-180. July 1964.)
	Full Pressure Suit Heat Balance Studies.
Box 42, Folder 2-3	Technical Report. (ARMC. LS-140. February 1965.) [2 folders]
Box 42, Folder 4	"Space Systems Biotechnology." (Douglas/MSSD. April 1965.)
Box 42, Folder 5	"Man-Machine Simulation Experience." (Murray A. Geisler and Allen S. Ginsberg; RAND. P-3214. August 1965.)
Box 42, Folder 6	"Biotechnology - 1967." (Douglas/MSSD. No date.)
	Study for the Collection of Human Engineering Data for Maintenance and Repair of Advanced Space Systems.
	Final Study Report. (GE/MSD. 67SD4441. 31 December 1967.)
Box 42, Folder 7	Volume I: Summary Technical Report

Subseries III.D.: Programs, 1959-1971

Scope and Contents: This subseries consists of materials pertaining to specific manned spaceflight programs, including programs which reached flight status and those which were cancelled during the planning stages. Documents are grouped into subseries by program in chronological order:

- III.D.1. Mercury Program (1959-1963)
- III.D.2. Gemini Program (1964-1968)
- III.D.3. Apollo Program (1962-1972)
- III.D.4. Apollo Follow-On Programs (1962-1971)
- III.D.5. Space Station Programs (1964-1972)
- III.D.6. Manned Interplanetary Concepts (1962-1968)

Subseries III.D.1.: Mercury Program, 1959-1963

Scope and Contents: In 1958, Project Mercury was selected as the first American manned space program. Responsibility for the project was assigned to the NACA (later NASA), including vehicle design and astronaut selection. Mercury's primary objective was to place a manned vehicle safely in Earth orbit and safely recover both the man and vehicle. A secondary objective was to study human capabilities in the launch, orbit, and recovery environments. Delays in qualifying flight hardware pushed the initial manned mission back from 1960 to 1961, after which six manned missions were launched successfully through 1963. For a listing of Mercury launches, see Appendix 2 (page 106). Documents within this subseries are arranged chronologically.

Box 42, Folder 8	"Project Mercury Background Material." (Langley/STG. March 23, 1959.)
Box 42, Folder 9	"Project Mercury Status Report No.2 for Period Ending April 2, 1959." (Langley/STG. No date.)
Box 42, Folder 10	"Project Mercury Status Report No.3 for Period Ending July 31, 1959." (Langley/STG. No date.)
Box 42, Folder 11	"Project Mercury Status Report No.4 for Period Ending October 31, 1959." (Langley/STG. No date.)
Box 42, Folder 12	"Project Mercury Status Report No.5 for Period Ending January 31, 1960." (Langley/STG. No date.)
Box 42, Folder 13	"Project Mercury Status Report No.6 for Period Ending April 30, 1960." (Langley/STG. No date.)
Box 42, Folder 14	"Project Mercury Status Report No.8 for Period Ending October 31, 1960." (Langley/STG. No date.)
Box 42, Folder 15	"Project Mercury Status Report No.9 for Period Ending January 31, 1961." (Langley/STG. No date.)
Box 42, Folder 16	"Project Mercury Status Report No.10 for Period Ending April 30, 1961." (Langley/STG. No date.)

Box 42, Folder 17	"Project Mercury Status Report No.11 for Period Ending July 31, 1961." (Langley/ STG. No date.)
Box 43, Folder 1	"Mercury-Redstone III Sub-Orbital Manned Flight." (NASA/OCR. April 28, 1961.)
Box 43, Folder 2	"Proceedings of the Mercury-Atlas Booster Reliability Workshop." (GD/Astronautics. 12 July 1963.)

Subseries III.D.2.: Gemini Program, 1964-1968

Scope and Contents: Originally proposed in 1961 as a follow-on to Project Mercury, President Kennedy's call for a manned lunar landing before 1970 converted Project Gemini (originally Mercury Mark II) into a testbed for Project Apollo, the lunar landing program. The two-man Gemini crews practiced all the major elements necessary for the Apollo program, including long-duration space flight, orbital rendezvous and extravehicular activity. Development problems with the modified Titan ICBM launch vehicle (called the Gemini Launch Vehicle or GLV) delayed the first manned launch until 1965. Ten manned missions accomplished all of the project goals. For a listing of Project Gemini launches, see Appendix 3 (page 108). Documents relating to the program in general are arranged chronologically followed by materials relating to specific Gemini missions organized by mission designation.

Box 43, Folder 3	"Final Report on the Flight Test of the Gemini Rendezvous Radar and Transponder, Held at the White Sands Missile Range, August - December 1964." (Richard G. Fenner and Douglas A. LaPoint; MSC; and Kevin McCabe; Lockheed/LEC. MSC. No date.)
Box 43, Folder 4	"A Piloted Simulation Study of the Gemini-Agena Rendezvous with and without Canted Nozzles." (Gene C. Moen, Alfred J. Meintel Jr, and William M. Kahlbaum Jr.; LRC. Langley Working Paper 87. March 24, 1965.)
	"Gemini Mid-Program Conference, February 23-25, 1966" [preprint] (MSC. No date.)
Box 43, Folder 5-6	Part I. [2 folders]
Box 43, Folder 7	Part II: Experiments
Box 44, Folder 1	"Gemini Mid-Program Conference Including Experiment Results, February 23-25, 1966. (MSC. SP-121. 1966.)
Box 44, Folder 2-4	"Gemini Program Launch Systems Final Report." (Aerospace/GLSD. TOR-1001(2126-80)-3. January 1967.) [3 folders]
Box 44, Folder 5	"Simulation of Gemini Extravehicular Tasks by Water Immersion Techniques." (Otto F. Trout Jr and Gary P. Beasley; LRC. Langley Working Paper 558. February 15, 1968.)
	"Project Gemini Familiarization Manual." (McDonnell. SEDR 300)

Box 44, Folder 6	Volume I: Long Range and Modified Configurations. (15 March 1964)
Box 45, Folder 1-2	Volume I: Long Range and Modified Configurations. (15 March 1964, changed 31 December 1964.) [2 folders]
Box 45, Folder 3-8	Volume II: Rendezvous and Docking Configurations. (1 July 1966, changed 22 August 1966.) [2 copies, 6 folders]
Box 46, Folder 1	Supplement. (1 July 1966.)
Box 46, Folder 2	"Gemini Program Mission Report - Gemini-Titan 1 (GT-1)." (MSC. MSC-R-G-64-1. May 1964.)
Box 46, Folder 3-4	"Gemini Program Mission Report - GT-2 Gemini 2." (MSC. MSC-G-R-65-1. February 1965.) [2 folders]
Box 46, Folder 5	"Gemini Program Mission Report - GT-3 Gemini 3." (MSC. MSC-G-R-65-2. April 1965.)
	"Gemini Program Mission Report - Gemini V." (MSC. MSC-G-R-65-4. August 1965.)
Box 46, Folder 6	[folder 1 of 2]
Box 47, Folder 1	[folder 2 of 2]
Box 47, Folder 2	Supplemental Report 5: Engineering Evaluation of GT-5 Recovered Stage I Oxidizer Tank LV 407. (Martin for MSC. MSC-G-R-65-4. No date.)
	Manned Space-Flight Experiments
Box 47, Folder 3	Interim Report: Gemini V Mission. (NASA. January 6, 1966.)
Box 47, Folder 4	"Gemini Program Mission Report - Gemini VI-A." (MSC. MSC-G-R-65-5. October 1965.)
Box 47, Folder 5	"Gemini Program Mission Report - Gemini VI-A." (MSC. MSC-G-R-66-2. January 1966.)
Box 47, Folder 6-7	"Gemini Program Mission Report - Gemini VII." (MSC. MSC-G-R-66-1. January 1966.) [2 folders]
	"Gemini Program Mission Report - Gemini VIII." (MSC. MSC-G-R-66-4. April 1966.)
Box 47, Folder 8	[folder 1 of 2]
Box 48, Folder 1	[folder 2 of 2]

Box 48, Folder 2	"Ready Reference Handbook - The U. S. Air Force Astronaut Maneuvering Unit." (LTV/AD. No date.)
Box 48, Folder 3-4	"Gemini Program Mission Report - Gemini IX-A." (MSC. MSC-G-R-66-6. July 1966.) [2 folders]
Box 48, Folder 5-6	"Gemini Program Mission Report - Gemini X." (MSC. MSC-G-R-66-7. August 1966.) [2 folders]
	"Gemini Program Mission Report - Gemini XI." (MSC. MSC-G-R-66-8. October 1966.)
Box 48, Folder 7	[folder 1 of 2]
Box 49, Folder 1	[folder 2 of 2]
Box 49, Folder 2	"History of Gemini/Titan Launch Vehicle 12 at ETR." (Aerospace/ETRO . TOR-1001(A2126-10)-3. 11 November 1966.) [preservation photocopy]
Box 49, Folder 3-4	"Gemini Program Mission Report - Gemini XII." (MSC. MSC-G-R-67-1. January 1967.) [2 folders]

Subseries III.D.3.: Apollo Program, 1962-1972

Scope and Contents: The Apollo Program was NASA's plan for manned lunar exploration, with landing scheduled to commence in the 1970s. With President Kennedy's call for a manned lunar landing before 1970 the program was accelerated. Despite setbacks in systems development and the loss of three astronauts due to a fire during ground testing, on 20 July 1969 Neil Armstrong, the Commander of Apollo 11, became the first human to set foot on the Moon. Although budget cuts forced the cancellation of several planned landings and an ambitious post-Apollo lunar exploration program, six missions followed Apollo 11 and five landed successfully. For a complete listing of Apollo Program launches, see Appendix 4 (page 109). Materials in this subseries are grouped by topic. Unless otherwise noted, within each subseries documents are arranged chronologically by study.

- III.D.3.a. General Documents and Studies (1962-1970)
- III.D.3.b. Lunar Landing Research Vehicle (1964)
- III.D.3.c. Guidance and Navigation (1963-1967)
- III.D.3.d. Tracking and Instrumentation (1962-1967)
- III.D.3.e. Scientific Experiments (1966-1970)
- III.D.3.f. Apollo Spacecraft (1962-1971)
- III.D.3.g. Apollo Missions (1962-1970)
- III.D.3.h. Apollo Launches (1964-1972)

Subseries III.D.3.a.: General Documents and Studies, 1962-1970

Scope and Contents: This subseries consists of reports and studies relevant to the Apollo Program as a whole, rather than to any specific topic.

Box 49, Folder 5	"Design Study for Lunar Survival Cache" [proposal]. (Goodyear. GAP-1204S1. 25 July 1962.)

Box 49, Folder 6	"Survey of the Physical and Environmental Parameters of the Moon." (GE/ASD. NASw-410-20-13-10. February 1963.)
Box 50, Folder 1	"Major Meteroid Streams." (MSC. Project Apollo Working Paper 1096. November 14, 1963.)
Box 50, Folder 2	"Standardization of Selenographic Direction References." (MSC. Project Apollo Working Paper 1098. November 20, 1963.)
Box 50, Folder 3	"An Analog Simulation Study of the Tether Concept of Apollo Docking Control." (MSC. Program Apollo Working Paper 1110. April 15, 1964.) [photocopy]
	Apollo Specification Project
Box 50, Folder 4	Volume I: Technical and Management Proposal. (TRW/STL. Proposal 3430.00. June 1964.)
	Apollo Check-Out Systems Study
Box 50, Folder 5	Astronaut-Crew Requirements for Apollo In-Flight Operations. (N. F. Kristy and H. P. Roth; RAND. RM-4311-NASA. September 1964.)
Box 50, Folder 6	Integration of Man and Computer in Prelaunch Checkout of Advanced Space Vehicles. (R. D. Pepler and J. G. Wohl; Dunlap and Associates, Inc. RAND. RM-4506-NASA. April 1965.)
Box 50, Folder 7	"Apollo Logistics Requirements Plan." (NASA/OMSF. NHB 7500.1. November 1965.)
Box 50, Folder 8	"Apollo Program Development Plan." (NASA/OMSF. M-D MA 500; MA 001.000-1. January 1966.)
	"Apollo Program Management System."
Box 50, Folder 9	Volume 1: NASA-Apollo Program Management. (NASA/OMSF. December 1967.)
Box 50, Folder 10	Volume 2: MSC/Apollo Program Management. (MSC/MAB. November 26, 1967.)
Box 50, Folder 11	Volume 3: MSFC Apollo Program Management. (MSFC. December 1967.)
Box 51, Folder 1	"Photo Equipment for Manned Space Flight Handbook." (MSC/FES. MSC-CF-E-68-12. June 20, 1968.)
	Apollo Launch Availability Study, Phase I

Box 51, Folder 2-3	KSC Apollo Saturn V Ground and Mission Support Equipment Redundancy Study - Phase I. (Boeing/ALASG. D2-119011-4. March 1968.) [2 folders]
Box 51, Folder 4-5	Apollo Spacecraft Configuration Weight and Performance Summary. (Boeing. D2-118078-U. December 15, 1969.) [2 folders]
	"Apollo Engineering and Technology Index."
	Volume I: Corporate Author Index. (MSC. MSC-APOLLO-4T. April 1970.)
Box 51, Folder 6-7	Part 1 - A to M. [2 folders]
Box 52, Folder 1-2	Part 2 - N to Z [2 folders]
Box 52, Folder 3	Volume II: Systems Index. (MSC. MSC-APOLLO-3. April 1968.)
Box 52, Folder 4	Volume III: Configuration Index. (MSC. MSC-APOLLO-3T. January 1969.)

Subseries III.D.3.b.: Lunar Landing Research Vehicle (LLRV), 1964

Scope and Contents: The Lunar Landing Research Vehicle (LLRV) was designed by Bell Aerospace as a free-flight simulator to investigate piloting and operational problems involved in lunar landing approach and takeoff. To simulate lunar atmosphere and gravity the LLRV compensated for aerodynamic drag and the higher gravity of earth by vectoring the thrust from the single turbofan engine and using rockets to balance five-sixths of the weight of the vehicle.

Box 52, Folder 5	"Lunar Landing Research Vehicle Flight Manual." (Bell/BAC. 7161-954005. 1 April 1964.)

Subseries III.D.3.c.: Guidance and Navigation, 1963-1967

Scope and Contents: This subseries consists of documents pertaining to the guidance and navigation subsystems onboard the Apollo spacecraft (both the Apollo Command-Service Module (CSM) and Apollo Lunar Excursion Module/Lunar Module (LEM/LM)). For material relating to the Apollo CSM and LEM/LM in general, see subseries III.D.3.f. (Apollo Program Spacecraft).

Box 52, Folder 6	"Apollo Guidance and Navigation - Documentation Handbook." (MIT/IL. E-1087. 10 May 1963.)
	"Apollo Guidance and Navigation - Equipment Familiarization Manual."
	C/M System. (GM/AC. ND-1021037. 1 March 1964.)
Box 52, Folder 7	[folder 1 of 2]
Box 53, Folder 1	[folder 2 of 2]

Box 53, Folder 2	"Apollo Missions and Navigation Systems Characteristics." (NASA/ANWG . ANWG 65-AN-1.0. February 5, 1965.)
Box 53, Folder 3	"Apollo Navigation - Ground and Onboard Capabilities." (NASA/ANWG. ANWG 65-AN-2.0. September 1, 1965.)
	"Apollo Guidance and Navigation System - Study Guide."
	Block I (Series 100) G&N System Course
Box 53, Folder 4	Functions and Operations. (GM/AC. 1 August 1965.) [photocopy]
	LEM PGNCS [Primary Guidance, Navigation and Control System] Course
Box 53, Folder 5	Functions and Operations. (GM/AC. 1 November 1965.)
Box 53, Folder 6-7	PGNCS Hardware. (GM/AC. 15 November 1965.) [2 folders]
Box 54, Folder 1	"Apollo Missions and Navigation Systems Characteristics." (NASA/ANWG. ANWG AN-1.1. April 4, 1966.)
Box 54, Folder 2	"Apollo Missions and Navigation Systems Characteristics." (NASA/ANWG. ANWG AN-1.2. January 17, 1967.)
	Navigational Aids for Lunar Pilotage
Box 54, Folder 3	Final Report. (Geonautics, Inc. April 1967.)

Subseries III.D.3.d.: Tracking and Instrumentation, 1962-1967

Scope and Contents: This subseries consists of material pertaining to the tracking, telemetry, and communications considerations for Apollo missions. For documents relating to space tracking, telemetry, and communications in general, see Series V. (Tracking and Data Acquisition).

Box 54, Folder 4	"Estimated 1963-1970 Capability of the Deep Space Instrumentation Facility for Apollo Project." (JPL. EPD-29 Revision 1. February 1, 1962.)
Box 54, Folder 5	"A Ground Instrumentation Support Plan for the Near-Earth Phases of Apollo Missions." (GSFC. X-520-62-211. November 23, 1962.)
Box 54, Folder 6	"A System for Re-Entry Tracking of the Apollo Spacecraft." (GSFC. X-523-63-56. April 2, 1963.)
	Study of Abort Procedures, Lunar Landing and Lunar Reconnaissance for the Apollo Mission
	Interim Report. (The Bisset-Berman Corp. C60-6. 31 May 1963.)

Box 54, Folder 7	Part II: Summary of Task Status.
Box 54, Folder 8-9	Final Report. (The Bisset-Berman Corp. C60-10. 6 September 1963.) [2 folders]
Box 54, Folder 10	"Re-Entry Tracking for Apollo." (F. O. Vonbun; GSFC. X-513-64-85. March 6, 1964.)
Box 55, Folder 1	"Apollo Re-Entry Infrared Support." (F. O. Vonbun; GSFC. X-513-65-4. December 5, 1964.)
Box 55, Folder 2-3	Project Apollo Radio Blackout Investigation
	Final Report. (Raytheon/SISD. U67-4072A. September 1967.) [2 folders]

Subseries III.D.3.e.: Scientific Experiments, 1966-1970

Scope and Contents: This subseries consists of documents pertaining to individual scientific experiments proposed or designed to be conducted during Apollo missions. Materials are organized into two subseries by topic. Within each subseries documents are arranged chronologically.

- III.D.3.e.1. General Experiments (1968-1970)
- III.D.3.e.2. Apollo Lunar Scientific Experiments Package (ALSEP) (1966-1970)

Subseries III.D.3.e.1.: General Experiments, 1968-1970

Box 55, Folder 4	"Study of a Lunar Seismometer Package." (JPL. 760-28. June 10, 1968.)
	"Experiment Proposal for Manned Space Flight."
Box 55, Folder 5	Surface Electrical Properties. (Gene Simmons; MIT/CSR. October 23, 1969.)
Box 55, Folder 6	"Apollo Experiments Program Plan." (MSC. MSC-02410. May 11, 1970.)

Subseries III.D.3.e.2.: Apollo Lunar Surface Experiments Package (ALSEP), 1966-1970

Scope and Contents: The Apollo Lunar Surface Experiments Package (ALSEP) was a self-contained experiment package to be placed on the lunar surface by the Apollo astronauts. Each ALSEP package contained a number of scientific instruments, a power supply, and telemetry equipment to allow the package to function after the astronauts had left the surface. In order to reduce the astronaut workload on the first lunar landing mission, Apollo 11 carried a simplified ALSEP called the Early Apollo Scientific Experiments Package (EASEP), which contained only two experiment packages. Subsequent missions carried ALSEP units consisting of four individual experiment packages drawn from the eight Apollo lunar surface experiments.

This subseries consists of general documentation for the ALSEP/EASEP equipment. For documents relating to ALSEP/EASEP as equipment for a specific Apollo mission, see subseries III.D.3.h.3. (Apollo/Saturn V Launches) under the specific mission designation. Following the general material, arranged chronologically, documents pertaining to specific ALSEP units are arranged by unit number.

Box 55, Folder 7	"ALSEP Data Subsystem - Preliminary Design Review" [presentation graphics]. (Bendix/BSD . June 29, 1966.)
	"ALSEP Flight System Familiarization Manual." (Bendix/ASD for MSC/LSPO. ALSEP-MT-03. 1 August 1967.)
Box 55, Folder 8-9	[photocopy; copy 1; 2 folders]
Box 56, Folder 1-2	[photocopy; copy 2; 2 folders]
Box 56, Folder 3	"ALSEP Familiarization Course Handout (For Training Purposes Only)." (Bendix/ASD. 15 January 1968.)
Box 56, Folder 4	"ALSEP Familiarization Course Handout." (Bendix/ASD . 15 January 1968.)
Box 56, Folder 5	"EASEP Familiarization Course Handout." (Bendix/ASD. BSR 2601. 15 February 1969.)
Box 56, Folder 6-7	"ALSEP Familiarization Course Handout." (Bendix/ASD . BSR 2264-B. 1 May 1969.) [2 folders]
Box 57, Folder 1	"ALSEP (EASEP) Mission Configuration/System Description." (MSC/FSD. June 1969.) [2 copies]
Box 57, Folder 2	"ALSEP (EASEP) Mission Configuration/System Description."(MSC/FSD. Revision I, June 1969)
Box 57, Folder 3	"ALSEP Mission Configuration/System Description." (MSC/FSD. October 1969.) [2 copies]
Box 57, Folder 4	"ALSEP Mission Configuration/System Description." (MSC/FSD. February 1970.)
Box 57, Folder 5	"ALSEP Systems Handbook."
	ALSEP 1. (MSC/FCD. FCO36. October 16, 1967.)

Subseries III.D.3.f.: Apollo Program Spacecraft, 1962-1971

Scope and Contents: The Apollo program utilized two manned spacecraft: the Apollo Command-Service Module (CSM), which was the main spacecraft during the earth-orbital and earth-moon/moon-earth transfer phases of the mission, and the Lunar Excursion Module (LEM, later simplified to "Lunar Module," LM), which was utilized during the lunar descent/ascent phases of the mission.

This subseries consists of documentation for both the Apollo CSM and LM except for materials relating to the guidance and navigation subsystems, for which see subseries III.D.3.c. (Guidance and Navigation), above. The materials in this subseries are organized by topic. Unless otherwise noted documents are arranged chronologically by study within each subseries.

- III.D.3.f.1. General (1962-1970)

- III.D.3.f.2. Command-Service Module (1962-1970)
- III.D.3.f.3. Lunar Excursion Module/Lunar Module (1963-1971)

Subseries III.D.3.f.1.: General Documentation, 1962-1970

Scope and Contents: This subseries consists of documentation for the Apollo spacecraft in general or to both the CSM and LEM/LM spacecraft.

Box 57, Folder 6	"A Compendium of Some Spacecraft Systems Studies Relating to the Manned Lunar Landing Using Lunar Orbital Rendezvous." (MSC. Project Apollo Working Paper 1045. May 28, 1962.) [photocopy]
Box 57, Folder 7	"Apollo Radiation Shielding Status Report." (NAA/SID. SID 62-821. July 1962.)
	"The Apollo Spacecraft - A Chronology."
Box 57, Folder 8	Volume I: Through November 7, 1962. (MSC. No date.)
	"Apollo Systems Descriptions."
Box 58, Folder 1	Volume I. (MSC. TM X-880. 30 September 1963.)
Box 58, Folder 2-4	Volume II: Saturn Launch Vehicles. (MSC. TM X-881. 1 February 1964.) [3 folders]
Box 58, Folder 5	"Organization and Operation for Apollo Spacecraft Environmental Tests at Manned Spacecraft Center." (MSC. Project Apollo Working Paper 1123. May 4, 1964.)
Box 58, Folder 6	"Apollo Spacecraft Familiarization" [NASA Support Manual]. (NAA/SID (SID 62-435) for NASA. SM2A-02. 30 April 1965.)
Box 58, Folder 7	"Apollo Spacecraft Master Test Plan." (MSC. MSC-A-D-65-1. May 17, 1965.)
Box 59, Folder 1-2	"Apollo Spacecraft Familiarization" [NASA Support Manual]. (NAA/SID (SID 62-435) for NASA. SM2A-02. December 1965.) [1 printed copy, 1 photocopy; 2 folders]
Box 59, Folder 3	"Spacecraft Materials." (MSC. Project Apollo Working Paper 1232. April 2, 1967.) [photocopy]
Box 59, Folder 4	"Apollo Spacecraft Nonmetallic Materials Requirements." (MSC/SED. MSC-PA-D-67-13. February 9, 1968.)
Box 59, Folder 5	"Apollo Spacecraft Parts and Materials Information Service." (MSC/RQAO. MSC-A-D-67-3 Rev.B. March 1, 1968.)
Box 59, Folder 6	"Entry Monitor Scroll Assembly Design Verification Tests." (NAR/SD. SD 69-467. 20 August 1969.)
	"CSM/LM Spacecraft Operational Data Book."

	Volume V: ALSEP Data Book. (MSC. November 1970.)
Box 59, Folder 7	Appendix C: ALSEP Array 'C.'

Subseries III.D.3.f.2.: Command-Service Module (CSM), 1962-1970

Scope and Contents: This subseries consists of documentation specifically for the Apollo Command-Service Module. Documents are organized into subseries by manufacturing block and within each subseries by date.

- III.D.3.f.2.a. General (1962-1968)
- III.D.3.f.2.b. Block I Spacecraft (1965-1966)
- III.D.3.f.2.c. Block II Spacecraft (1964-1970)

Subseries III.D.3.f.2.a.: General, 1962-1968

	"Apollo Life Systems Design Criteria Handbook." (NAA/SID. 15 June 1962)
Box 59, Folder 8	Volume I: Spacecraft. (SID 62-431-1.)
	Volume II: Ground Support. (SID 62-431-2.)
Box 59, Folder 9	[folder 1 of 3]
Box 60, Folder 1-2	[folders 2-3 of 3]
	Apollo Spacecraft - Command Module Inner Structure
	Structural Analysis Report. (NAA/SID. SID 64-60. 30 April 1966.)
Box 60, Folder 3-4	Volume IV, Appendix F. [2 folders]
	Pressurization System for Use in the Apollo Service Propulsion System
Box 60, Folder 5	Summary Report. (Martin. MARTIN CR-66-46. September 1966.)
Box 60, Folder 6	"Command Module Mockup Fire Tests." (MSC. Apollo Program Working Paper 1280. April 3, 1967.) [photocopy]
Box 60, Folder 7	"Development and Qualification of the Apollo Sea Dye Marker." (MSC. Program Apollo Working Paper 1318. May 8, 1967.)
	"Apollo Operations Handbook - CSM, Preliminary."
Box 60, Folder 8	Subsection 2.13: Docking and Crew Transfer. (26 June 1968.)

Subseries III.D.3.f.2.b.: Block I Spacecraft, 1965-1966

	"Program Apollo Test Directive."
Box 60, Folder 9	Spacecraft 001. (MSC. Program Apollo Working Paper 1167. March 19, 1965.) [photocopy]
Box 60, Folder 10	"Integrated Verification and Operational Plan - S/C 012." (GE/ASD. August 26, 1966.)

Subseries III.D.3.f.2.c.: Block II Spacecraft, 1964-1970

Box 61, Folder 1	"NASA Inspection and Review of Block II Command and Service Module Mock-Ups." (NAA/SID. SID 64-1685. 30 September 1964.)
Box 61, Folder 2	"Apollo Command Module/Service Module Measurement Requirements - Spacecraft 2TV-1, Block II." (NAR/SD. SD 68-266. 1 April 1968.) [Block II Test Vehicle]
Box 61, Folder 3	"Apollo CSM 101 Delta Vibration Qualification Test, Battery Circuit Breaker Panel." (NAR/SD. SD 68-252. February 1968.) [Apollo 7 CSM]
Box 61, Folder 4	"Apollo Engineering Analysis Report - Block II SPS Flight-Readiness Firing, Service Module 102." (NAR/SD. SD 68-253. 20 March 1968.)
Box 61, Folder 5	"Apollo Command Module/Service Module Measurement Requirements - CSM 104, Block II." (NAR/SD. SD 68-269. 2 September 1968.) [Apollo 9 CSM]
Box 61, Folder 6	"Apollo Command Module/Service Module Measurement Requirements - CSM 106, Block II." (NAR/SD. SD 68-270. 1 October 1968.) [Apollo 10 CSM]
Box 61, Folder 7	"Apollo Delta Qualification Test of the Docking System-Probe Assembly." (R. H. Prowett; NAR/SD. March 1969.)
Box 61, Folder 8	"Apollo Block II Waste-Management System Zero-Gravity Development Test Program." (E. J. Byrne; NAR/SD. SD 69-137. April 1969.)
Box 62, Folder 1	"Engineering Analysis Report. Propellant Utilization and Gaging System for Service Propulsion System (SPS), Apollo - Block II, Delta Qualification Tests, Spacecraft 106 and Subs." ([NAR/SD.] SD 69-432. June 4, 1969.) [photocopy]
	"Apollo Operations Handbook - Block II Spacecraft." (NASA/SSOB/FCSD. SM2A-03-BLOCK II-(1).)
Box 62, Folder 2	Volume 1: Spacecraft Description. (15 April 1969 rev. 16 July 1969.) [revised pages only]
Box 62, Folder 3-6	Volume 1: Spacecraft Description. (15 April 1969 rev. 15 June 1970.) [4 folders]

Box 62, Folder 7	"CSM 108 (Mission H-1) Mission Evaluation Study Analysis Report." (NAR/SD. SD 69-633. November 1969.) [Apollo 12 CSM]

Subseries III.D.3.f.3.: Lunar Excursion Module (LEM)/Lunar Module (LM), 1963-1971

Box 63, Folder 1	"Study of the Attitude Control Handling Qualities of the LEM During Final Approach to Lunar Landing." (MSC. Project Apollo Working Paper 1074. May 10, 1963.)
	Lunar Landing Abort Procedures Study
Box 63, Folder 2	[Report.] (Honeywell/AD. 2B-B-20(G). 24 June 1963.)
Box 63, Folder 3	"The LEM Guidance System." (Honeywell/AD/MPG. R-ED 24060. 4 September 1963.)
Box 63, Folder 4	"Lunar Excursion Module Environmental and Thermal Control System Optimization." (MSC. Program Apollo Working Paper 1102. January 8, 1964.)
	Lunar Landing Dynamics Study
	Technical Proposal
Box 63, Folder 5	Volume I: Technical and Related Data. (Bendix/BPAD/SSMG Corp. SPP-64-101. February 7, 1964.)
Box 63, Folder 6	"Analog Simulation of the Pilot Controlled Rendezvous Maneuvers for LEM." (MSC. Program Apollo Working Paper 1109. March 12, 1964.)
Box 63, Folder 7	"Lunar Excursion Module Visibility Requirements." (MSC. Program Apollo Working Paper 1115. June 15, 1964.)
Box 63, Folder 8	"Technical Proposal for the Study of the Lunar Soil Identification Problem and Its Relationship to LEM Landability." (Bendix/BPAD/EAES. SPP-65-109. 17 December 1965.)
Box 63, Folder 9	"LM Range Safety Package." (S. Epstein; Grumman. LED-540-44. 30 September 1966.)
	Lunar Module (LM) Soil Mechanics Study
Box 63, Folder 10	Mid Term Report. (Bendix/ECD/AMD. MM-67-2. January 26, 1967.)
	LM Descent Engine Progress and Status Reports
Box 63, Folder 11	Monthly Progress Report. (TRW/SG. 01827-6114-T000. 10 September 1967.)

Box 63, Folder 12	Monthly Progress Report. (TRW/SG. 01827-6151-T000. 10 February 1968.)
Box 63, Folder 13	Monthly Progress Report. (TRW/SG. 01827-6154-T000. 10 March 1968.)
Box 64, Folder 1	Monthly Progress Report. (TRW/SG. 01827-6156-T000. 10 April 1968.)
Box 64, Folder 2	Monthly Progress Report. (TRW/SG. 01827-6164-T000. 10 May 1968.)
Box 64, Folder 3	Monthly Progress Report. (TRW/SG. 01827-6167-T000. 10 June 1968.)
	"Universal Lunar Module Systems Handbook."
Box 64, Folder 4-6	LM-4 and Subsequent. (MSC/FCD. FCO27. January 17, 1969.) [3 folders]
	"Apollo Operations Handbook - Lunar Module, LM-7 and Subsequent."
	Volume I: Subsystems Data. (NASA/SSB/FCSD. LMA790-3-LM 7 and Subsequent. 1 February 1970.)
Box 64, Folder 7-8	[folder 1-2 of 4]
Box 65, Folder 1-2	[folder 3-4 of 4]
	"Apollo Operations Handbook - Lunar Module, LM-10 and Subsequent."
Box 65, Folder 3-5	Volume II: Operational Procedures. (NASA/SSB/FCSD. LMA790-3-LM 10 and Subsequent. 1 September 1970.) [3 folders]
	"Lunar Module 7, 8, and 9 - Elementary Functional Diagrams." (Grumman/PSD. LED-267-37C. 1 November 1970.)
Box 65, Folder 6-7	[folder 1-2 of 4]
Box 66, Folder 1-2	[folder 3-4 of 4]
Box 66, Folder 3-6	"Lunar Module 10 and Subsequent - Elementary Functional Diagrams." (Grumman/PSD. LED-267-53B. 1 May 1971.) [4 folders]
Box 225 (OS), Folder 1-4	"Level Three Volumes for LM-10 and Subsequent." (Grumman/PSD. LED 267-57. February 3, 1970.) [4 folders]

Subseries III.D.3.g.: Apollo Missions, 1962-1970

Scope and Contents: This subseries consists of documentation on the general development of the missions in the Apollo program. For documentation on the actual flight of any given mission plan, see subseries

III.D.3.h. (Apollo Missions - Launches). Materials are organized by topic. Unless otherwise noted documents within each subseries are arranged chronologically by study.

- III.D.3.g.1. General (1962-1970)
- III.D.3.g.2. Landing Sites (1962-1970)
- III.D.3.g.3. Mission Plans (1968-1970)

Subseries III.D.3.g.1.: General, 1962-1970

Scope and Contents: The material in this subseries consists of documentation on the development of Apollo mission plans in general. For documentation on specific mission plans, see subseries III.D.3.g.3. (Mission Plans).

Box 66, Folder 7	"Apollo Mission Analysis." (NAA/SID. SID 62-379. 13 August 1962.)
Box 67, Folder 1-2	"Project Apollo Mission Operations Analysis for a Typical Lunar Landing Mission." (NAA/SID. SID 62-379-1. 28 January 1963.) [2 folders]
Box 67, Folder 3	"Study of Powered Descent Trajectories for Manned Lunar Landings." (MSC. Project Apollo Working Paper 1084. August 9, 1963.)
Box 67, Folder 4	"Crew Activities on Initial Lunar Landing Mission." (MSC. Project Apollo Working Paper 1092. October 16, 1963.)
Box 67, Folder 5	"Preliminary Apollo Reference Trajectory." (MSC. February 1964.)
Box 67, Folder 6	"Aircraft Simulation of Lunar Landing Approach Trajectories." (MSC. Program Apollo Working Paper 1159. February 9, 1965.)
Box 67, Folder 7	"Flight Crew Training for Apollo Block I Missions." (MSC. Program Apollo Working Paper 1200. February 14, 1966.)
	"Mission Modular Data Book."
Box 67, Folder 8-9	Block II Lunar Mission. (NAA/SID. SID 66-1245. 1 January 1967.) [2 folders]
	Block II Earth Orbital Mission
Box 68, Folder 1-3	Part 1 of 3. (NAA/SID. SID 66-1501A. 1 December 1966, rev. 15 March 1967.) [3 folders]
Box 68, Folder 4	Part 2 of 3. (NAA/SID. SID 66-1501. 15 March 1967.)
Box 68, Folder 5	Block II Earth Orbital Mission. (NAA/SID. SID 66-1501A. Reprinted October 1967.)
	"Science and Technology Advisory Committee Briefing - Lunar Landing Mission."
Box 68, Folder 6	Part 3 [presentation graphics]. (MSC. October 6-8, 1967.)

Box 68, Folder 7	"Program and Mission Definition. Apollo Lunar Exploration." (MSC/AMPO. SPD-9P-052. May 15, 1969.)
Box 69, Folder 1	"Program and Mission Definition. Apollo Lunar Exploration." (MSC/AMPO. SPD-9P-052. August 15, 1969.)
	"Apollo Program (Phase I Lunar Exploration)."
Box 69, Folder 2	Mission Definitions. (MSC/ASPO. MSC-01266. August 15, 1970.)

Subseries III.D.3.g.2.: Landing Sites, 1962-1970

Box 69, Folder 3	"A Proposal for the Study of the Roll of Unmanned Lunar Spacecraft in the Selection of an Apollo Landing Site." (Fairchild/SSE. SSE 4.0. June 1962.)
Box 69, Folder 4	"Selection of Unmanned Vehicles to Find Lunar Landing Sites for Manned Spacecraft." (Grumman. PDR-348. January 1963.)
Box 69, Folder 5	"Environmental Factors Involved in the Choice of Lunar Operational Dates and the Choice of Lunar Landing Sites." (MSC. Project Apollo Working Paper 1100. November 22, 1963.)
Box 69, Folder 6	"Lunar Landing and Site Selection Study. Phase I, Preselected Landing Site." (MSC. Program Apollo Working Paper 1112. March 23, 1964.)
	Study of Quantitative Methods for LEM Landing-Site Selection
Box 69, Folder 7-8	Final Report. (TI/SSD. 15 March 1966.) [2 folders]
Box 69, Folder 9	"Lunar Landing Site Documentation: Candidate and Potential - Sept. Assb." (Lockheed/LEC. LEC/HASD 671-80-027. 24 September 1969.)
Box 69, Folder 10	"Lunar Exploration: Highland 'Impact' Crater Study." (Lockheed/LEC. LEC/HASD TWP-69-033. 3 October 1969.)
Box 70, Folder 1	"Mapping Sciences Laboratory Data Bank. Site Data Coverage Index." (MSC. 5 August 1970.)

Subseries III.D.3.g.3.: Mission Plans, 1968-1970

Arrangement: Documents in this subseries are organized by mission plan designation and date.

Box 70, Folder 2	"Medical Requirements - Apollo Mission C Prime." (MSC. November 1, 1968.)
Box 70, Folder 3	"Medical Requirements - Apollo Mission D." (MSC. January 1969.)

Box 70, Folder 4	"Mission Requirements for First Apollo Lunar Landing Mission." (TRW/SG. 05952-H152-R0-00. 11 April 1967 (Revision 3).) [Apollo Mission G]
	"Apollo Mission Techniques, Mission G." [Apollo 11]
	Powered Ascent. (MSC/ASPO. Internal Note S-PA-9T-128. June 25, 1969.)
Box 70, Folder 5	Techniques Description
	Lunar Orbit Activities. (MSC/ASPO. Internal Note S-PA-9T-135. June 30, 1969.)
Box 70, Folder 6	Vol 1: Techniques Description
Box 70, Folder 7	"Medical Requirements - H Type Mission - Lunar Landing." (MSC. October 1969.)
Box 70, Folder 8	"Saturn V Mission Implementation Plan - H- Series Missions - Apollo 12, 13, 14 and 15." (MSFC/SPEO. PM-SAT-8010.5. February 9, 1970.)
	"Apollo Mission Techniques, Mission H-1."
	Lunar Surface Phase. (MSC/ASPO. Internal Note MSC-00178. October 15, 1969.)
Box 70, Folder 9	Techniques Description
	Lunar Orbit Activities. (MSC/ASPO. Internal Note MSC-01212. October 30, 1969.)
Box 70, Folder 10	Techniques Description
Box 70, Folder 11	"LEM Rendezvous Procedures, H-2 Mission." (MSC. Internal Note MSC-01835. March 12, 1970.)
Box 70, Folder 12	"Mission Requirements - H-3 Type Mission - Lunar Landing." (MSC/ASPO. S-PD-9R-056. September 14, 1970 (change A).) [revised pages only]

Subseries III.D.3.h.: Apollo Launches, 1964-1972

Scope and Contents: Apollo missions were designated primarily by launch vehicle. A- series launches (A-001 through A-004) were test launches of boiler plate Apollo capsules on Little Joe II boosters to test the Apollo Launch Escape System (LES). Two A- series launches (A-101 and A-102) were also Saturn I vehicle development launches SA-6 and SA-7, respectively; information relating to these launches is filed under Launch Vehicle Programs - Saturn Program Development Launches - SA-6 or -SA-7 (subseries II.B.7.e.3. or II.B.7.e.4., respectively). All Apollo/Saturn IB launches were designated in the AS-200 series (AS-201 through AS-205), while all Apollo/ Saturn V launches were designated in the AS-500 series (AS-501 through AS-512). In both cases the launch numbers were identical to the vehicle number of the Saturn launch vehicle

used (SA-201 through SA-205 and SA-501 through SA-512). Beginning with AS-204, launches also received Apollo mission numbers. For a complete listing of all SA- (Saturn development) and AS- (Apollo/Saturn) launches, as well as a listing of launch designations and Apollo mission designations, see Appendix 4 (page 109). This subseries consists of documentation for the various Apollo program missions as actually flown. For documentation on the missions as planned, see subseries III.D.3.g.3. (Mission Plans).

- III.D.3.h.1. Boiler Plate Launches (A- series) (1964-1966)
- III.D.3.h.2. Apollo/Saturn IB Launches (AS-200 series) (1965-1969)
- III.D.3.h.3. Apollo/Saturn V Launches (AS-500 series) (1964-1972)

Subseries III.D.3.h.1.: Boiler Plate Launches (A- series), 1964-1966

Box 70, Folder 13	"Reporting Plan for Apollo Mission A-001 (BP-12)." (MSC. Program Apollo Working Paper 1121. April 21, 1964.)
Box 70, Folder 14	"Spacecraft 002 - Little Joe II Launch Vehicle Performance and Interface Specification." (NAA/SID. SID 65-720. 22 October 1965.) [A-004]
Box 71, Folder 1	"Postlaunch Report for Apollo Mission 004 (Spacecraft 002)." (MSC. MSC-A-R-66-3. April 15, 1966.)

Subseries III.D.3.h.2.: Apollo Launches, AS-200 series [Apollo/Saturn IB Launches], 1965-1969

Scope and Contents: This subseries consists of documentation on the launch vehicles and mission activities for Apollo/Saturn IB launches. For documents on Apollo/Saturn V launches, including all lunar missions, see subseries III.D.3.h.3. (Apollo/Saturn V Launches). Materials in this subseries are grouped by launch designation. Unless otherwise noted, documents within each subseries are arranged chronologically.

- III.D.3.h.2.a. AS-200 series (1965-1968)
- III.D.3.h.2.b. AS-201 (1965-1966)
- III.D.3.h.2.c. AS-202 (1965-1966)
- III.D.3.h.2.d. AS-203 (1966)
- III.D.3.h.2.e. AS-204 (Apollo 1) (1965-1967)
- III.D.3.h.2.f. AS-204 (Apollo 5) (1967-1968)
- III.D.3.h.2.g. AS-205 (Apollo 7) (1966-1969)
- III.D.3.h.2.h. AS-206 (1966)

Subseries III.D.3.h.2.a.: Apollo Launches - AS-200 series (General), 1965-1968

Arrangement: Documents in this subseries are general procedural documents for all Apollo/Saturn IB launches. Materials are arranged by Kennedy Space Center (KSC) document number and USAF Eastern Test Range (AFETR) Operations Directive number.

Box 71, Folder 2	"Data Flow Plan - Apollo 200." (MSC/FCD. June 1965.)
Box 71, Folder 3	"Apollo/Saturn IB Launch Operations Plan - All Missions." (KSC. K-IB-021. May 25, 1967.)

Box 71, Folder 4	"Apollo/Saturn IB Ground Safety Plan." (KSC. K-IB-023. September 14, 1967 rev. September 10, 1968.) [revised pages only]
Box 71, Folder 5	"Apollo-Saturn IB RF-1 and LV Hypergol Loading for Launch." (AFETR. Operations Directive 4211. 19 January 1966.)
Box 71, Folder 6	"Apollo-Saturn IB Over-all Test." (AFETR. Operations Directive 4231. 14 October 1965.)
Box 71, Folder 7	"Apollo-Saturn IB Spacecraft Hypergolic Loading Test." (AFETR. Operations Directive 4236. 3 January 1966.)
Box 71, Folder 8	"Apollo-Saturn IB RP-1 Loading." (AFETR. Operations Directive 4237. 3 January 1966.)
Box 71, Folder 9	"Apollo-Saturn IB Flight Readiness Test." (AFETR. Operations Directive 4239. 14 June 1966.)
Box 71, Folder 10	"Apollo-Saturn IB Complex 34 Systems Tests." (AFETR. Operations Directive 4241. 2 November 1965.)
Box 71, Folder 11	"Apollo-Saturn IB Command/Telemetry Test with NASA Instrumented Aircraft." (AFETR. Operations Directive 4243. 4 August 1967.)
Box 71, Folder 12	"Apollo-Saturn IB Complex 16 Systems Tests." (AFMTC. Operations Directive 4253. 1 November 1965.)

Subseries III.D.3.h.2.b.: Apollo Launches - AS-201, 1965-1966

	"Saturn-Apollo Space Vehicle Summary." (MSFC/MSO. No date.)
Box 71, Folder 13	AS-201/SC-009 Contributions to Saturn LOR.
	"Saturn Technical Information Handbook - SA-201." (MSFC. August 15, 1965.)
Box 71, Folder 14	Volume I.
Box 72, Folder 1	Volume II.
Box 72, Folder 2	Volume III
Box 72, Folder 3	Volume IV.
Box 72, Folder 4	"Apollo/Saturn IB Launch Operations Plan - AS-201." (KSC. 600-39-0004. November 29, 1965.)

Box 72, Folder 5	"Apollo-Saturn IB AS-201 Launch." (AFETR. Operations Direction 4201. 10 December 1965.)
Box 72, Folder 6	"Apollo/Saturn IB Consolidated Instrumentation Plan for AS-201." (KSC. K-IB-029. January 31, 1966.)
Box 72, Folder 7	"Postlaunch Report for Mission AS-201 (Apollo Spacecraft 009)." (MSC. MSC-A-R-66-4. May 6, 1966.)

Subseries III.D.3.h.2.c.: Apollo Launches - AS-202, 1965-1966

	"Saturn Technical Information Handbook - SA-202." (MSFC. December 6, 1965.)
Box 73, Folder 1	Volume I.
Box 73, Folder 2	Volume II.
Box 73, Folder 3	Volume III
Box 73, Folder 4	Volume IV.
Box 73, Folder 5	"Apollo-Saturn IB AS-202 Launch." (AFETR. Operations Directive 4202. 8 March 1966.)
Box 73, Folder 6	"Apollo/Saturn IB Launch Operations Plan - AS-202." (KSC. K-IB-021/2. March 15, 1966.)
Box 73, Folder 7	"Apollo/Saturn IB Flight Safety Plan - Vehicle AS-202." (KSC. K-IB-02.13/2. July 15, 1966.)
	"Results of the Third Saturn IB Launch Vehicle Test Flight - AS-202." (MSFC. MPR-SAT-FE-66-13. October 25, 1966.)
Box 74, Folder 1	Volume I.

Subseries III.D.3.h.2.d.: Apollo Launches - AS-203, 1966

	"Saturn Technical Information Handbook - SA-203." (MSFC. March 31, 1966.)
Box 74, Folder 2	Volume I.
Box 74, Folder 3	Volume II.
Box 74, Folder 4	Volume III
Box 74, Folder 5	Volume IV.

Box 74, Folder 6	"Apollo-Saturn IB AS-203 Launch." (AFETR. Operations Directive 4203. 28 March 1966.)
Box 75, Folder 1	"Apollo/Saturn IB Launch Operations Plan - AS-203." (KSC. K-IB-021/3. April 29, 1966.)
Box 75, Folder 2	"AS-203 Technical Information Summary." (MSFC. R-ASTR-S-85-66. June 14, 1966.)
Box 75, Folder 3	"Apollo/Saturn IB Consolidated Instrumentation Plan for AS-203." (KSC. K-IB-029/3. June 30, 1966.)
Box 75, Folder 4	"Results of the Second Saturn IB Launch Vehicle Test Flight - AS-203." (MSFC. MPR-SAT-FE-66-12. September 22, 1966.)

Subseries III.D.3.h.2.e.: Apollo Launches - AS-204 (Apollo 1), 1965-1967

Scope and Contents: AS-204, later designated Apollo 1, was to be the first manned Apollo/Saturn launch in early 1967. A fire started in the command module during a simulated countdown on 27 January 1967, killing astronauts Virgil I. Grisson, Edward H. White, and Roger B. Chaffee. The investigation of the accident and resulting design changes to the Apollo Command Module forced delays in the program launch schedule. Following the post-accident investigation the launch vehicle from AS-204 (Saturn IB SA-204) was reused to launch the unmanned Apollo 5 mission, which received the same launch designation (AS-204). Documents pertaining to both AS-204 launches or specifically to the cancelled AS-204/Apollo 1 mission are filed under subseries III.D.3.h.2.e. (AS-204 (Apollo 1)); documents which pertain only to the subsequent AS-204/Apollo 5 mission are filed under subseries III.D.3.h.2.f. (AS-204 (Apollo 5)).

Box 75, Folder 5	"Apollo Data Flow Plan - AS-204." (MSC/FCD. September 1965.)
	"Saturn Technical Information Handbook - SA-204." (MSFC. March 31, 1966.)
Box 75, Folder 6	Volume I.
Box 75, Folder 7	Volume II.
Box 75, Folder 8	Volume III
Box 76, Folder 1	"J-2 Design Certification Report - S-IVB Engine J2025 - Saturn IB Flight AS-204." (Rocketdyne/J2RP. R-6705-1. 24 August 1966 rev. 14 September 1966.)
	Apollo/Saturn-204 Design Certification Review.
Box 76, Folder 2	Launch Vehicle Report - S-IVB Stage [presentation graphics]. (DAC/MSSD. September 1966.)
Box 76, Folder 3-5	Mission AS-204/SC-012 Design Certification Review [presentation graphics]. (NAA/SID. SID 66-1233. September 1966.) [3 folders]

	Design Certification Review Report (KSC)
Box 76, Folder 6-7	Volume I. (September 7, 1966) [2 folders]
Box 76, Folder 8	Volume I Addenda. (September 13, 1966)
Box 77, Folder 1	Volume II. (September 7, 1966)
Box 77, Folder 2	Volume II Addenda. (September 30, 1966).
	Launch Vehicle Report
Box 77, Folder 3	Volume 2: S-IB Stage. (Chrysler/SD. TR-SY-66-3. September 14, 1966.)
	Volume 5: GSE
Box 77, Folder 4	Part 1. (GE/ASD. ESE-TP-020. No date)
	Design Certification Review Oral Report. (KSC)
Box 77, Folder 5	Launch Complex 34 Mechanical Systems. (September 23, 1966)
Box 77, Folder 6-7	"Design Certification Review - Spacecraft 013 [sic]/Mission 204" [presentation graphics]. (MSC. September 26-28, 1966.) [2 copies; 2 folders]
Box 78, Folder 1	"Apollo/Saturn IB Launch Operations Plan - AS-204/205." (KSC. K-IB-021/4/5. September 26, 1966.)
Box 78, Folder 2	"Special Tests [Related to Spacecraft 012 Accident]." (MSC. Apollo Program Working Paper 1272. April 6, 1967.)

Subseries III.D.3.h.2.f.: Apollo Launches - AS-204 (Apollo 5), 1967-1968

Scope and Contents: Following the post-accident investigation into the AS-204 (Apollo 1) fire of 27 January 1967, the launch vehicle from that mission (Saturn IB SA-204) was used to launch the unmanned Apollo 5 mission, also designated AS-204, on 22 January 1968. This mission was the first launch of a Saturn launch vehicle carrying a Lunar Module (LM-1), with an aerodynamic fairing replacing the normal Apollo Command/Service Module atop the booster. Documents pertaining to both AS-204 launches or specifically to the cancelled Apollo 1 mission are filed under subseries III.D.3.h.2.e. (AS-204 (Apollo 1)); documents pertaining only to the subsequent Apollo 5 mission are filed under subseries III.D.3.h.2.f. (AS-204 (Apollo 5)).

Box 78, Folder 3	"AS-204/LM-1 Mission Operations Review" [presentation graphics]. (MSC/FCD. November 15, 1967.)
Box 78, Folder 4	"Technical Information Summary - Apollo 5 (AS-204/LM-1), Apollo Saturn IB Flight Vehicle." (MSFC. R-ASTR-67-63. December 15, 1967.)

Box 78, Folder 5	"Apollo/Saturn IB Flight Safety Plan - Vehicle AS-204/LM-1." (KSC. K-IB-02.13/4. December 15, 1967.)
Box 78, Folder 6-7	"Results of the Fourth Saturn IB Launch Vehicle Test Flight - AS-204." (MSFC/SFEWG. MPR-SAT-FE-68-2. April 5, 1968.) [2 copies; 2 folders]
	"Apollo 5 Mission Report." (MSC. MSC-PA-R-68-7. March 1968)
Box 78, Folder 8	Supplemental Report on Communication System Performance During Apollo 5 Mission. (MSC/ISD. EB68-3328. November 1968.) [Supplements Section 6.8]

Subseries III.D.3.h.2.g.: Apollo Launches - AS-205 (Apollo 7), 1966-1969

Scope and Contents: AS-205/Apollo 7 (Apollo mission C), launched on 11 October 1968, was the first manned launch of the Apollo spacecraft and Saturn IB launch vehicle. The three man crew (Walter M. Schirra, Donn F. Eisele, and R. Walter Cunningham) spent over ten days in earth orbit testing the performance of the Apollo spacecraft.

Box 78, Folder 9	"Apollo Operational Support Plan AS-205A." (MSC/FCD. FCO43-205A. 7 June 1966.)
Box 79, Folder 1	"Saturn IB Flight Manual." (MFSC. MSFC-MAN-205. April 15, 1968.) [manual prepared for AS-205 crew]
Box 79, Folder 2-6	"Apollo Deactivation Procedures for Landing Safing Team (Apollo 7; 205/101)." (NAR/SD (SD 68-138) for MSC/RSB. SM2A-08-SC101-1. 3 September 1968, rev.27 September 1968.) [5 folders]
Box 79, Folder 7	"Space Environment Operations Plan, AS-205/101." (MSC/FOD. FCO43. October 1, 1968.)
Box 80, Folder 1	"Results of the Fifth Saturn IB Launch Vehicle Test Flight, AS-205 (Apollo 7 Mission)." (MSFC/SFEWG. MPR-SAT-FE-68-4. January 25, 1969.)
	"Apollo 7 Mission Report." (MSC. MSC-PA-R-68-15.)
Box 80, Folder 2	Supplement 4: Reaction Control System Performance. (July 1969)

Subseries III.D.3.h.2.h.: Apollo Launches - AS-206, 1966

Scope and Contents: The AS-206 launch was originally planned as an unmanned Saturn IB/LM test flight. Following the AS-204/Apollo 1 accident, these tests were performed during the AS-501/Apollo 4 and AS-204/Apollo 5 missions so that AS-206 was never launched. The SA-206 (Saturn IB) launch vehicle was eventually used to launch the Skylab 2 mission in 1973.

Box 80, Folder 3	"Apollo Operational Support Plan, AS-206A." (MSC/FCD. FCO43-206A. 1 April 1966.)

Box 80, Folder 4	"Apollo Flight Operations Plan, AS-206A." (MSC/FOD. FCO39-501. 1 May 1966.)
Box 80, Folder 5	"Interface Control Document - Definition of Saturn SA-206 Flight Sequence Program." (MSFC/AESB. 40M33606. May 31, 1966.)

Subseries III.D.3.h.3.: Apollo Launches, AS-500 series [Saturn V] Launches, 1964-1972

Arrangement: This subseries consists of documentation on the launch vehicles and mission activities for Apollo/Saturn V launches. For documents on Apollo/Saturn IB launches, see subseries III.D.3.h.2. Materials in this subseries are grouped by launch designation. Unless otherwise noted, documents within each subseries are arranged chronologically.

- III.D.3.h.3.a. AS-500 series (1964-1970)
- III.D.3.h.3.b. AS-501 (Apollo 4) (1965-1968)
- III.D.3.h.3.c. AS-502 (Apollo 6) (1968)
- III.D.3.h.3.d. AS-503 (Apollo 8) (1968-1969)
- III.D.3.h.3.e. AS-504 (Apollo 9) (1968-1969)
- III.D.3.h.3.f. AS-505 (Apollo 10) (1969)
- III.D.3.h.3.g. AS-506 (Apollo 11) (1969)
- III.D.3.h.3.h. AS-507 (Apollo 12) (1969-1970)
- III.D.3.h.3.i. AS-508 (Apollo 13) (1970)
- III.D.3.h.3.j. AS-509 (Apollo 14) (1970-1971)
- III.D.3.h.3.k. AS-510 (Apollo 15) (1971-1972)
- III.D.3.h.3.l. AS-511 (Apollo 16) (1971-1972)
- III.D.3.h.3.m. AS-512 (Apollo 17) (1972)

Subseries III.D.3.h.3.a.: Apollo Launches - AS-500 series (General), 1964-1970

Scope and Contents: Documents in this subseries are general procedural documents for all Apollo/Saturn V launches.

	"KSC Operations Plan." (GE/ASD/KCE. July 1, 1964.)
Box 80, Folder 6-7	Volume III: Vehicle Operations [Preliminary]. [2 folders]
	"KSC Apollo/Saturn Program Development/Operations Plan." (KSC. 100-39-0001 (K-PM-0).)
Box 80, Folder 8	Volume II: Saturn V Operations Plan. (October 1, 1965.)
Box 81, Folder 1	Volume II: Saturn V Operations Plan. (October 1, 1965 changed August 15, 1966.)
	"Apollo/Saturn V Ground Safety Plan." (KSC. K-V-053.)
Box 81, Folder 2	Volume I: General Requirements and Industrial Safety Operating Procedures. (March 1, 1970.)
Box 81, Folder 3	Volume II: Launch Complex 39 Ground Safety Plan. (October 15, 1970.)

Box 81, Folder 4	Volume III: Operations and Checkout Building. (February 1, 1968.)
Box 81, Folder 5	Volume IV: Spacecraft Ordnance Buildings. (February 1, 1968.)
Box 81, Folder 6	Volume V: Fluid Test Complex. (February 1, 1968.)
Box 81, Folder 7	Volume VI: Propulsion Test Complex. (February 1, 1968.)

Subseries III.D.3.h.3.b.: Apollo Launches - AS-501 (Apollo 4), 1965-1968

Scope and Contents: The AS-501/Apollo 4 launch on November 9, 1967 was the first development launch of the Saturn V launch vehicle and was intended to qualify the Saturn V for operational status. The Apollo 4 mission placed an unmanned command-service module and boilerplate lunar module into earth orbit. The reentry of the command module was used to test various aspects of the spacecraft, telemetry, and ground tracking systems during simulated reentry from a lunar mission.

Box 81, Folder 8	"Apollo Operational Support Plan, AS-501." (MSC/FCD. 65-FCO34-501. October 1965.)
Box 81, Folder 9	"Performance and Design Requirements for the Saturn V Launch Vehicle Ground Support System/Apollo Program (SA-501), General Specification For." (MSFC. SS10W10000001D. June 30, 1967.)
Box 82, Folder 1	"Reentry Test Plan for the Apollo AS-501." (John Marini and William Rice. GSFC. X-551-67-443. September 1967.)
Box 82, Folder 2	"Apollo 4. Spacecraft 017/Saturn 501 Flight Plan." (MSC. October 27, 1967.)
Box 82, Folder 3	"Saturn V Launch Vehicle Flight Evaluation Report - AS-501 Apollo 4 Mission." (MSFC/SFEWG. MPR-SAT-FE-68-1. January 15, 1968.)

Subseries III.D.3.h.3.c.: Apollo Launches - AS-502 (Apollo 6), 1968

Scope and Contents: The AS-502/Apollo 6 launch on April 4, 1968 was the second development launch of the Saturn V launch vehicle. As in Apollo 4, the Apollo 6 mission placed an unmanned command-service module and boilerplate lunar module into earth orbit to test the CSM emergency detection systems . Once again the reentry of the command module was used to test aspects of the spacecraft, telemetry, ground tracking, and recovery systems.

Box 82, Folder 4	"Reentry Test Plan for Apollo 6 (AS-502)." (John Marini and William Rice; GSFC. X-551-68-64. February 20, 1968.)
Box 82, Folder 5	"Apollo 6 Spacecraft. Headquarters Flight Readiness Review" [presentation graphics]. (MSC. March 11, 1968.)
Box 82, Folder 6	"Apollo/Saturn V Flight Safety Plan - Vehicle AS-502." (KSC. K-V-05.13/2. March 15, 1968.)

Box 82, Folder 7	"Apollo 6 Mission Report." (MSC. MSC-PA-R-68-9. May 1968.)
Box 83, Folder 1	"Saturn V Launch Vehicle Flight Evaluation Report - AS-502 Apollo 6 Mission." (MSFC/SFEWG. MPR-SAT-FE-68-3. June 25, 1968.)

Subseries III.D.3.h.3.d.: Apollo Launches - AS-503 (Apollo 8), 1968-1969

Scope and Contents: AS-503/Apollo 8 (Apollo mission C′) was the first manned launch of the Apollo/Saturn V launch vehicle. Launched on December 21,1968, Apollo 8 was the first attempt to send a manned spacecraft to the moon. On December 24/25, 1968 Apollo 8 orbited the moon and the three-man crew (Frank Borman, James A. Lovell, and William A. Anders) became the first humans to see its far side. The mission demonstrated the capabilities of the Apollo command-service module and the status of NASA facilities relative to manned lunar missions.

Box 83, Folder 2	"Saturn V Flight Manual - SA 503." (MSFC. MSFC-MAN-503. 1 April 1968.)
Box 83, Folder 3	"Apollo AS503/CSM103 Final Flight Plan." (T. A. Guillory. MSC/FPB. November 22, 1968.)
	"Apollo Deactivation Procedures for Landing Safing Team (Apollo 8; 503/103)." (NAR/SD (SD 68-743) for MSC/RSB. SM2A-08-SC103-1. November 20, 1968, rev. December 6, 1968.)
Box 83, Folder 4-5	[folders 1-2 of 4]
Box 84, Folder 1-2	[folders 3-4 of 4]
Box 84, Folder 3	"Flight Evaluation Program Plan - Communications System for Apollo 8 Mission." (MSC/ISC. EB.68-3144-U. December 9, 1968.)
	"Apollo 8 Mission Report."
Box 84, Folder 4	Supplement 3: Performance of the Command and Service Module Reaction Control System. (MSC. MSC-PA-R-69-1. March 30, 1969.)

Subseries III.D.3.h.3.e.: Apollo Launches - AS-504 (Apollo 9), 1968-1969

Scope and Contents: AS-504/Apollo 9 (Apollo mission D) was the first launch of an Apollo/Saturn V launch vehicle with a functional Lunar Module (LM). Launched on March 3, 1969, Apollo 9 was an earth orbital mission to demonstrate LM capability and practice CSM-LM orbital rendezvous procedures. The three-man crew (James A. McDivitt, David R. Scott, and Russell L. Schweikart) spent ten days in orbit.

Box 84, Folder 5	"Saturn V Flight Manual - SA 504." (MSFC. MSFC-MAN-504. September 1, 1968.)
Box 84, Folder 6	"The Consumables Analysis for the Apollo 9 Spacecraft Operational Trajectory." (MSC/GPB. MSC Internal Note 69-FM-9. January 15, 1969.)

	"Apollo Deactivation Procedures for Landing Safing Team (Apollo 9; 504/104/LM3)." (NAR/SD (SD 68-1014) for MSC/RSB. SM2A-08-SC104-1. January 20, 1969.)
Box 84, Folder 7-8	[folders 1-2 of 4]
Box 85, Folder 1-2	[folders 3-4 of 4]
Box 85, Folder 3-5	"Mission Evaluation 104 Study Analysis Report." (NAR/SD. SD 69-73. February 1969.) [3 folders]
Box 85, Folder 6	"LM-3 Environmental Control System Performance under Contingent Conditions." (H. R. Howell; LTV/MSD. 350.14. February 3, 1969.)
Box 86, Folder 1	"Saturn V Launch Vehicle Flight Evaluation Report - AS-504 Apollo 9 Mission." (MSFC/SFEWG. MPR-SAT-FE-69-4. May 5, 1969.)
Box 86, Folder 2-3	"S-II-4 Flight Final Test Report." (NAR/SD. SD 69-98. May 16, 1969.) [2 folders]
Box 86, Folder 4	"Apollo 9 Multispectral Photography: Geologic Analysis." (Paul D. Lowman Jr; GSFC. X-644-69-423. September 1969.)

Subseries III.D.3.h.3.f.: Apollo Launches - AS-505 (Apollo 10), 1969

Scope and Contents: AS-505/Apollo 10 (Apollo mission F) was a lunar orbital mission to test LM operations in the lunar environment. Launched on May 18, 1969, the three-man crew (Thomas P. Stafford, John W. Young, and Eugene A. Cernan) undertook the full range of activities required for a lunar landing including lunar orbit rendezvous and docking, lunar descent, and a low pass to within 50,000 feet of the lunar surface, demonstrating the range of LM capabilities excepting only final approach and lunar landing.

Box 86, Folder 5	"Saturn V Flight Manual - SA 505." (MSFC. MSFC-MAN-505. April 10, 1969.)
	"Apollo Deactivation Procedures for Landing Safing Team (Apollo 10; 505/106/LM4)." (NAR/SD (SD 68-1042) for MSC/RSB. SM2A-08-SC106-1. March 7, 1969 rev. April 21, 1969.)
Box 86, Folder 6	[folder 1 of 3]
Box 87, Folder 1-2	[folders 2-3 of 3]
Box 87, Folder 3	"Technical Information Summary Apollo-10 (AS-505). Apollo Saturn V Space Vehicle." (MSFC. S&E-ASTR-S-69-24. May 1, 1969.)
Box 87, Folder 4	"Apollo 10 Mission Report." (MSC. MSC-00126. August 1969.)
Box 87, Folder 5	"Apollo 10 Photography Index: 70-mm and 16-mm Frame Index." (MSC/MSL, published by GSFC/NSSDC. NSSDC 69-14. October 1969.)

Subseries III.D.3.h.3.g.: Apollo Launches - AS-506 (Apollo 11), 1969

Scope and Contents: AS-506/Apollo 11 (Apollo mission G) was the first lunar landing mission planned in the Apollo program. Following launch on July 16, 1969, the three-man crew (Neil Armstrong, Michael Collins, and Edwin E. Aldrin, Jr) traveled to the moon and established lunar orbit. On July 20, 1969, Armstrong and Aldrin descended to the lunar surface in the Sea of Tranquility to become the first humans to set foot on the moon. While on the surface they gathered 21 kg of rock and soil samples, activated the Early Apollo Scientific Experiments Package (EASEP, see also subseries III.D.3.e.2.), and took numerous photographs. Collins remained in lunar orbit in the command module and conducted a series of orbital experiments. Armstrong and Aldrin remained on the surface for just over 21 hours before lifting off to rendezvous with Collins in orbit. The three men returned safely to earth on July 24.

Box 87, Folder 6	"EASEP Handbook for Apollo 11 Flight Crew." (MSC. c.June 12, 1969.) [photocopy]
Box 87, Folder 7	"Technical Information Summary, Apollo-11 (AS-506) Apollo Saturn V Space Vehicle." (MSFC. S&E-ASTR-S-101-69. June 25, 1969.)
Box 87, Folder 8	"Recovery Requirements, Apollo 11." (MSC/LRD. June 12, 1969 changed June 25, 1969.) [changes only]
	"Apollo Deactivation Procedures for Landing Safing Team (Apollo 11; 506/107/LM5)." (NAR/SD (SD 69-303) for MSC/RSB. SM2A-08-SC107-1. June 30, 1969.)
Box 87, Folder 9	[folder 1 of 3]
Box 88, Folder 1-2	[folders 2-3 of 3]
	"Launch Vehicle Operations for Support of Space Vehicle Countdown Demonstration Test and Launch Countdown (Released for AS-506)."
Box 88, Folder 3	Volume I of III. (Boeing/S5LO for KSC/LVO. TCP V-20060. June 30, 1969.)
Box 88, Folder 4	Volume II of III. (July 3, 1969.)
Box 88, Folder 5	Volume III of III. (June 6, 1969.)
Box 88, Folder 6	"Apollo/Saturn V Launch Vehicle Countdown (Released for AS-506)." (KSC. K-V-0513-2 (TCP V-40300). July 3, 1969.)
	"AS-506 'G' Mission Launch Vehicle Operational Trajectory." (G. Wittenstein, P. Pack, and D. Bell; MSFC/TS. MFT-1-69. July 14, 1969.)
Box 88, Folder 7-8	[folders 1-2 of 3]
Box 89, Folder 1	[folder 3 of 3]
Box 89, Folder 2	"Saturn V Launch Vehicle Flight Evaluation Report - AS-506 Apollo 11 Mission." (MSFC/SFEWG. MPR-SAT-FE-69-9. September 20, 1969.)

Box 89, Folder 3	"Apollo Mission 11 Photography Indexes." (Aeronautical Chart and Information Center, USAF for NASA. October 1969.)
Box 89, Folder 4	"Apollo 11 Mission Report." (MSC. MSC-00171. November 1969.)

Subseries III.D.3.h.3.h.: Apollo Launches - AS-507 (Apollo 12), 1969-1970

Scope and Contents: AS-507/Apollo 12 (Apollo mission H-1) was the second lunar landing mission planned in the Apollo program. Launched on 14 November 1969, the three-man crew (Charles Conrad, Jr, Richard F. Gordon, and Alan L. Bean) followed a mission plan similar to that of Apollo 11, although extra emphasis was placed on insuring spacecraft systems operations following a lightning strike on the vehicle during the launch from Kennedy Space Center. On 19 November 1969, Conrad and Bean descended to the lunar surface in the Ocean of Storms, achieving a precision landing 535 feet from Surveyor III, which had landed 2½ years earlier. The astronauts conducted two extravehicular activities (EVAs) on the lunar surface, totaling nearly eight hours outside of the LM, during which they activated the Apollo Lunar Surface Experiments Package (ALSEP, see also subseries III.D.3.e.2.), collected 34kg of lunar surface samples, and retrieved parts from the nearby Surveyor III spacecraft (one landing leg of the Surveyor spacecraft is now in the collection of the National Air and Space Museum). Gordon remained in lunar orbit in the command module and conducted a series of orbital experiments. Conrad and Bean remained on the surface for just over 31 hours before lifting off to rendezvous with Gordon in orbit. The three men returned safely to earth on 24 November.

Box 89, Folder 5	"ALSEP Handbook for Apollo 12 Flight Crew." (MSC. c. June 10, 1969.) [photocopy]
Box 89, Folder 6	"Apollo/Saturn V Flight Safety Plan, Vehicle AS-507." (KSC. K-V-05.13/7. no date.)
Box 89, Folder 7	"Manned Space Flight Network Premission Briefing Report for the AS-507 Mission." (GSFC. October 1969.)
	"Apollo Deactivation Procedures for Landing Safing Team (Apollo 12; 507/108/LM6)." (NAR/SD (SD 69-446) for MSC/RSB. SM2A-08-SC108-1. 20 October 1969.)
Box 89, Folder 8	[folder 1 of 3]
Box 90, Folder 1-2	[folders 2-3 of 3]
Box 90, Folder 3	"Apollo Mission 12 Photography Indexes." (Aeronautical Chart and Information Center, USAF for NASA. March 1970.)
Box 90, Folder 4	"Apollo 12 Mission Report." (MSC. MSC-01855. March 1970.)

Subseries III.D.3.h.3.i.: Apollo Launches - AS-508 (Apollo 13), 1970

Scope and Contents: AS-508/Apollo 13 (Apollo mission H-2) was the third lunar landing mission planned in the Apollo program. Launched on 11 April 1970, the three-man crew (James A. Lovell Jr., John L. Swigert Jr., and Fred W. Haise) were to follow a mission plan similar to those of Apollo 11 and 12, with Lovell and Haise landing in the Fra Mauro region of the moon. However, on 13 April 1970, with the spacecraft on its way to the moon some 56 hours after launch, a cryogenic

oxygen tank in the service module exploded causing a loss of power, depleting the supply of breathing oxygen, and placing the crew in jeopardy. The lunar landing was aborted and sole aim of the mission became the safe return of the three astronauts. With the assistance of ground controllers the crew utilized the lunar module as a life boat until 17 April, when the three men returned safely to earth.

Box 90, Folder 5	[Briefing on LM Descent, Ascent, and Aborts for Apollo 13 Crew]. [presentation graphics]. (MSC/MPAD. January 17, 1970.)
Box 90, Folder 6-7	"Launch Mission Rules, Apollo 13 (SA-508/CSM-109/LM-7)." (KSC. K-V-05.10/8. February 17, 1970.) [2 folders]
Box 91, Folder 1-3	"Apollo Deactivation Procedures for Landing Safing Team (Apollo 13; 508/109/LM7)." (NAR/SD (SD 69-647) for MSC/RSB. SM2A-08-SC109-1. 15 January 1970.) [3 folders]
	"Apollo Deactivation Procedures for Landing Safing Team (Apollo 13; 508/109/LM7)." (NAR/SD (SD 69-647) for MSC/RSB. SM2A-08-SC109-1. 2 March 1970.)
Box 91, Folder 4-5	[folders 1-2 of 3]
Box 92, Folder 1	[folder 3 of 3]
Box 92, Folder 2	"Saturn V Flight Manual - SA 508." (MSFC. MSFC-MAN-508. 15 August 1969 rev. 1 March 1970.)
Box 92, Folder 3	"ALSEP Handbook for Apollo 13 Flight Crew." (MSC. March 27, 1970.) [photocopy]
	Apollo 13 Review Board
Box 92, Folder 4-5	Report. (NASA. June 15, 1970.) [2 copies]
Box 92, Folder 6	Appendix A: Baseline Data: Apollo 13 Flight Systems and Operations.
Box 92, Folder 7-8	Appendix B-E [2 folders] Notes: • Appendix B: *Report of Mission Events Panel.* • Appendix C: *Report of Manufacturing and Test Panel.* • Appendix D: *Report of Design Panel* • Appendix E: *Report of Project Management Panel.*
Box 93, Folder 1	Appendix F-H Notes: • Appendix F: *Special Tests and Analyses* • Appendix G: *Board Administrative Procedures.* • Appendix H: *Board Releases and Press Statements.*
	MSC Apollo 13 Investigation Team
	Final Report, Panel 1: Spacecraft Incident Investigation.

Box 93, Folder 2	Volume I: Anomaly Investigation. (MSC. June 1970.)
Box 93, Folder 3	Volume II: Manufacturing and Test History of Oxygen Tank. (MSC. July 1970).
Box 93, Folder 4	Volume III: Special Analyses and Tests in Support of Investigation. (MSC. September 1970.)
Box 93, Folder 5	Final Report, Panel 2: Flight Crew Observations. (MSC. May 1970.)
Box 93, Folder 6	Final Report, Panel 3: Flight Operations and Network. (MSC. May 1970.)
Box 93, Folder 8	Final Report, Panel 4: Photo Handling, Processing, and Cataloguing. (MSC. May 1970.)
Box 93, Folder 9	Final Report, Panel 5A: Corrective Action Study and Implementation for Command and Service Modules. (MSC. June 1970.)
Box 93, Folder 10	Final Report, Panel 5B: Corrective Action Study and Implementation for Lunar Module. (MSC. June 1970.)
Box 93, Folder 11	Final Report, Panel 5C: Corrective Action Study and Implementation for Government Furnished Equipment. (MSC. May 1970.)
	Final Report, Panel 6: Related Systems Evaluation. (MSC. May 1970.)
Box 93, Folder 12	Volume I: Summary.
Box 93, Folder 13	Volume II: Lunar Module.
Box 94, Folder 1	Volume III: Command and Service Modules.
Box 94, Folder 2	Volume IV: Government Furnished Equipment and Ground Support Equipment.
Box 94, Folder 3	Final Report, Panel 7: Reaction Processes in High Pressure Fluid Systems. (MSC. May 1970.)
Box 94, Folder 4	Final Report, Panel 8: High Pressure Oxygen Systems Survey. (MSC. May 1970.)
Box 94, Folder 5	Addendum 1. (MSC. June 1970.)
Box 94, Folder 6	Final Report, Panel 9: Safety, Reliability and Quality Assurance. (MSC. May 1970.)
Box 94, Folder 7	Final Report, Panel 11: Administrative, Communications, and Procurement. (MSC. May 1970.)

	Apollo 13 Cryogenic Oxygen Tank 2 Anomaly.
Box 94, Folder 8	Anomaly Report No.1. (MSC. MSC Internal Note MSC-02545. July 1970.)

Subseries III.D.3.h.3.j.: Apollo Launches - AS-509 (Apollo 14), 1970-1971

Scope and Contents: AS-509/Apollo 14 (Apollo mission H-3) was the fourth lunar landing mission planned in the Apollo program and the third to land on the moon. Launched on 31 January 1971, the three-man crew (Alan B. Shepard Jr., Stuart A. Roosa, and Edgar D. Mitchell) followed a normal Apollo trajectory to the moon, entering lunar orbit on 4 February 1971. While Roosa remained in lunar orbit conducting research, Shepard and Mitchell landed in the Fra Mauro region originally planned as the landing site for Apollo 13 to carry out various experiments, including the deployment of an ALSEP (see also subseries III.D.3.e.2.), during nine hours of EVA. After 33 hours on the surface, Shepard and Mitchell rejoined Roosa with 43kg of lunar samples. The three men returned safely to Earth on 9 February.

Box 94, Folder 9	"Mission Requirements - SA-509/CSM-110/LM-8 - H-3 Type Mission - Lunar Landing." (MSC. SPD9-R-056. June 9, 1970.)
Box 94, Folder 10	"Apollo 14 Lunar Surface Procedures (Preliminary), Revision A" (MSC. October 31, 1970.)
Box 94, Folder 11	"Apollo 14 (January 31, 1971) Flight Plan - Final." (NASA. December 2, 1970.)
Box 94, Folder 12	"Apollo 14 (Jan 31, 1971) AS-509/CSM-110/LM-8 - Flight Plan - Final." (MSC/AFPS. Rev. December 23, 1970.) [revised pages only]
Box 95, Folder 1	"Apollo Postretrieval Procedures - Command Module (Apollo 14; 509/110/ LM8)." (NAR/SD (SD 70-240) for MSC/RSB. SM2A-08-SC110. 28 December 1970.) [revisions only]
Box 95, Folder 2-5	"Apollo Deactivation Procedures for Landing Safing Team (Apollo 14; 509/110/ LM8)." (NAR/SD (SD 70-241) for MSC/RSB. SM2A-08-SC110-1. 28 December 1970.) [4 folders]
Box 95, Folder 6	"Apollo Deactivation Procedures for Landing Safing Team." (NAR/SD (SD 70-241) for NASA MSC/RSB. SM2A-08-SC110-1. 28 December 1970 rev. 28 January 1971.) [Apollo 14; 509/110/LM8] [revisions only]
Box 95, Folder 7	"Saturn V Flight Manual - SA 509." (MSFC. MSFC-MAN-509. 15 August 1969 rev. 1 January 1971.)
Box 95, Folder 8	"ALSEP Handbook for Apollo 14 Flight Crew." (MSC. January 7, 1971.) [photocopy]
Box 95, Folder 9	"Saturn V - Apollo 14/AS-509 Mission Implementation Plan." (MSFC/SPEO. PM-SAT-8010.7. January 15, 1971.)

Box 95, Folder 10	"Apollo 14 Lunar Photography." (GSFC/NSSDC. [NSSDC Data User's Note] 71-16a. August 1971.)

Subseries III.D.3.h.3.k.: Apollo Launches - AS-510 (Apollo 15), 1971-1972

Scope and Contents: AS-510/Apollo 15 (Apollo mission J-1) was the fifth lunar landing mission planned in the Apollo program and the fourth to land on the moon. Launched on 26 July 1971, the three-man crew (David R. Scott, Alfred M. Worden Jr., and James B. Irwin) entered lunar orbit on 29 July 1971. While Worden remained in orbit conducting research, Scott and Irwin landed in the Hadley-Apenine region to carry out various experiments, including the deployment of an ALSEP (see also subseries III.D.3.e.2.) and the first use of the Lunar Roving Vehicle (LRV), during eighteen hours of EVA. After 67 hours on the surface, Scott and Irwin rejoined Worden with 77kg of lunar samples. After releasing a satellite into lunar orbit on 4 August, the three men returned safely to Earth on 7 August.

Box 96, Folder 1	"Apollo 15 Package: Television and Ground Controlled Television Assembly." (NASA. undated.)
Box 96, Folder 2	"Lunar Surface Scientific Equipment for Apollo Mission 15 Furnished by Lunar Surface Project Office." (MSC. March 5, 1971.)
Box 96, Folder 3-4	"Launch Vehicle Malfunction Overall Test." (Boeing/S5LO for KSC/LVO. TCP V-20049. March 17, 1971.) [Released for AS-510; 2 folders]
Box 96, Folder 5-6	"Final Flight Mission Rules - Apollo 15 (AS-510/112/LM-10)." (MSC/FCD. MSC-01807. May 3, 1971.) [2 folders]
Box 96, Folder 7	"On the Moon with Apollo 15 - A Guidebook to Hadley Rille and the Apennine Mountains." (Gene Simmons (Chief Scientist); MSC. June 1971.)
Box 97, Folder 1-2	"Launch Mission Rules - Apollo 15 (SA-510/CSM-112/LM-10/LRV-1)." (KSC. K-V-05.10/10. June 2, 1971.) [2 folders]
Box 97, Folder 3	"Apollo Postretrieval Procedures for NASA Recovery Team (Apollo 15, 510/112/LM10)." (NAR/SD (SD 71-42) for MSC/SOB. SM2A-08-SC112. 15 June 1971.)
	"Apollo Deactivation Procedures for Landing Safing Team (Apollo 15, 510/112/LM10)." (NAR/SD (SD 71-43) for MSC/SOB. SM2A-08-SC112-1. 15 June 1971.)
Box 97, Folder 4-6	[folders 1-3 of 4]
Box 98, Folder 1	[folder 4 of 4]
Box 98, Folder 2	"Saturn V Flight Manual - SA 510." (MSFC. MSFC-MAN-510. 15 August 1969, rev. 25 June 1971.)
Box 98, Folder 3	"Apollo 15 Index of Mapping Camera and Panoramic Camera Photographs." (MSC/MSB. January 1972.)

Subseries III.D.3.h.3.l.: Apollo Launches - AS-511 (Apollo 16), 1971-1972

Scope and Contents: AS-511/Apollo 16 was the sixth lunar landing mission planned in the Apollo program and the fifth to land on the moon. Launched on 16 April 1972, the three-man crew (John W. Young, Thomas K. Mattingly II, and Charles M. Duke, Jr.) entered lunar orbit on 19 April 1972. While Mattingly remained in orbit conducting research, Young and Duke landed in the Descartes region to carry out various experiments, including the deployment of an ALSEP (see also subseries III.D.3.e.2.) and exploration via Lunar Roving Vehicle (LRV), during twenty hours of EVA. After 71 hours on the surface, Young and Duke rejoined Mattingly with 95kg of lunar samples. The three men returned safely to Earth on 27 April.

Box 98, Folder 4	"Flight Mission Rules Input Document." (MSFC. PM-MO-12-71. September 10, 1971.)
Box 98, Folder 5	"Apollo Postretrieval Procedures for NASA Recovery Team (Apollo 16, 511/113/LM11)." (NAR/SD (SD 71-666) for MSC/SOB. SM2A-08-SC113. 15 December 1971.)
Box 98, Folder 6	"Lunar Surface Scientific Equipment for Apollo Mission 16 Furnished by Lunar Scientific Project Office." (GE for MSC/LSPO. January 10, 1972.) [photocopy]
Box 98, Folder 7	"Apollo 16 Index of Mapping Camera and Panoramic Camera Photographs." (MSC/MSB. MSC-07251. August 1972.)
Box 98, Folder 8	"Apollo 16 Index of 70mm Photographs and 16mm Film Strips." (MSC/MSB. MSC-07252. November 1972.)

Subseries III.D.3.h.3.m.: Apollo Launches - AS-512 (Apollo 17), 1972

Scope and Contents: AS-512/Apollo 17 was the sixth and final lunar landing mission in the Apollo program. Launched on 7 December 1972, the three-man crew (Eugene A. Cernan, Ronald E. Evans, and Harrison H. Schmitt) entered lunar orbit on 10 December 1972. While Evans remained in orbit conducting research, Cernan and Schmitt landed in the Taurus-Littrow region of the moon to carry out various experiments, including the deployment of an ALSEP (see also subseries III.D.3.e.2.) and exploration via Lunar Roving Vehicle (LRV), during 22 hours of EVA. After 75 hours on the surface, Cernan and Schmitt rejoined Evans with 117kg of lunar samples. The three men returned safely to Earth on 19 December.

Box 99, Folder 1-2	"Apollo 17 Final Flight Plan." (MSC/FPB. October 23, 1972.) [2 folders]
Box 99, Folder 3	"Apollo 17 Final Flight Plan." [Revision B]. (MSC/FPB. November 29, 1972.) [revisions only]
Box 99, Folder 4	"Lunar Surface Scientific Equipment for Apollo 17." (MSC/LEPO. November 1972.)

Subseries III.D.4.: Apollo Follow-On Programs, 1961-1971

Arrangement: As originally planned the Apollo Program was an initial reconnaissance of the lunar surface to be followed by more intensive exploration of the moon and experimentation in lunar and Earth orbit. This second phase was to use the Apollo spacecraft system as its basis, with added capability provided by additional vehicles and technology. NASA initiated a series of studies in 1962 examining various aspects of the Apollo follow-on exploration/experimentation regime to be instituted in the late-1960s/early-1970s time frame. By late 1964 the various studies had been organized as the Apollo Extension System (AES).

AES still envisioned a combination of lunar surface, lunar orbit, and earth orbit missions lasting up to 120 days (six months). Geared toward utilizing Apollo-era hardware as much as possible, it examined the possibilities of using spent Saturn stages as orbital workshops (OWS) or lunar surface bases. In August 1965 AES was placed under the control of the Saturn/Apollo Applications Office and a month later was renamed the Apollo Applications Program (AAP).

Over the next several years AAP was progressively reduced in response to budget cuts. The lunar surface missions, as immediate follow-on to the Apollo landings, were the first missions to be cut. The earth orbital missions (OWS) were also pared back. In mid-1969 NASA inherited the food/diet and spacesuit contracts and the astronauts from the Defense Department's cancelled Manned Orbital Laboratory (MOL) program. Despite this addition, in July 1969 AAP was cut to a single OWS launch and three manned missions. In February 1970 the AAP program was renamed Skylab.

The material in this subseries relates to NASA studies conducted under AAP and its predecessors, both as an organized program and as separately-funded study contracts. Materials relating to early development work on Skylab systems and operations as well as materials relating to Skylab as named, are included with materials on earth orbital projects as subseries III.D.4.g. (Earth Orbital Program Studies/Skylab). For documents relating to NASA's post-Apollo programs, including the Manned Orbital Research Laboratory (MORL) and space station programs, see subseries III.D.5. (Space Station Programs). For documents relating to NASA's planned manned interplanetary program, including studies involving the use of Apollo and Saturn hardware for interplanetary missions, see subseries III.D.6. (Manned Interplanetary Concepts) The materials in this subseries are grouped into subseries by topic. Unless otherwise noted, documents are arranged chronologically by study within each subseries.

- III.D.4.a. General (1962-1970)
- III.D.4.b. Apollo Spacecraft Design Modifications (1965-1968)
- III.D.4.c. Experiment Design (1965-1967)
- III.D.4.d. Logistic Systems (1962-1969)
- III.D.4.e. Lunar Surface Projects (1963-1970)
- III.D.4.f. Lunar Orbital Program Studies (1963-1969)
- III.D.4.g. Earth Orbital Program Studies/Skylab (1961-1971)

Subseries III.D.4.a.: General, 1962-1970

Scope and Contents: This subseries consists of documents pertaining to space exploration in the general context of Apollo follow-on exploration.

"Astronautics Information."

Box 99, Folder 5	Utilization of Extraterrestrial Resources [Seminar Proceedings]. (JPL. September 25-26, 1962.)

Box 99, Folder 6	Recommendations for Utilization of Lunar Resources - A Report of the Working Group on Extraterrestrial Resources [Seminar Proceedings]. (JPL. March 8, 1963.)
	Manned Space Flight Network Augmentation Study for the Apollo Extension System.
	[Report.]
Box 99, Folder 7	Part I. Tracking and Data Systems Directorate. (GSFC. September 1, 1965.)
Box 99, Folder 8-10	"Apollo Applications Program - A Bibliography." (Extraterrestrial Research Center. April 1966.) [3 folders]
Box 99, Folder 11	"The Space Program in the Post-Apollo Period - A Report of the President's Science Advisory Committee." (The White House. February 1967.)
Box 100, Folder 1	"America's Next Decades in Space - A Report for the Space Task Group." (NASA. September 1969.)
Box 100, Folder 2	"The Post-Apollo Space Program: Directions for the Future." (Space Task Group Report to the President. September 1969.)
Box 100, Folder 3	"Apollo Lunar Exploration Program Science Objectives and Mission Plans" [presentation graphics and outline]. (Bellcomm, Inc. September 1969.)
Box 100, Folder 4	"The Next Decade in Space - A Report of the Space Science and Technology Panel of the President's Science Advisory Committee." (Office of Science and Technology, Executive Office of the President. March 1970.)

Subseries III.D.4.b.: Apollo Spacecraft Design Modifications, 1965-1968

Arrangement: The documents in this subseries relate to modifications suggested to the Apollo Command/ Service Module (CSM) or other Apollo system spacecraft for the various Apollo follow-on missions.

	Preliminary Definition Study for Utilization of CSM for AES.
	Experiment Identification Descriptions. (NAA/SID. December 1965.)
Box 100, Folder 5	Volume 2: Behavioral Experiments (SID 65-1537-2.)
Box 100, Folder 6-7	Volume 3: Physical Science Experiments (SID 65-1537-3.) [2 folders]
	Land Landing System. (NAA/SID. 18 February 1966.)
Box 100, Folder 8-9	Technical Summary (SID 65-1544-1.) [2 folders]

	CSM Study for Apollo Applications.
	Bimonthly Summary Report. (NAA/SID. 13 March 1967.)
Box 101, Folder 1	Volume 3: Task 4.1: Mission Analysis (SID 67-54-3.)
Box 101, Folder 2	"Evaluation of Apollo Oxygen Cryogenic Storage System for Apollo Applications Program Missions." (David R. Saucier Jr; MSC/TTB. Internal Note MSC-EP-R-67-30. December 15, 1967.)
Box 101, Folder 3-4	"Selected Discussion on Manned Spacecraft Advanced Hardware Development Current Status and Plans." (MSC. April 25, 1968.) [2 copies]

Subseries III.D.4.c.: Experiment Design, 1965-1967

Arrangement: The materials in this subseries relate to the design and selection of experiments for Apollo follow-on exploration.

	Apollo Logistics Support System Scientific Mission Support Study. (Study of Sample Experiments for Engineering Design Purposes).
	Final Report. (Bendix/BSD. BSR-1112. March 1965.)
Box 101, Folder 5	Summary
Box 101, Folder 6-7	[Part I]. [2 folders]
	[Part II]
Box 101, Folder 8	[folder 1 of 2]
Box 102, Folder 1	[folder 2 of 2]
	Scientific Mission Support Study - Apollo Extension System.
	Final Report. (Bendix/BSD. BSR-1207. November 1965.)
Box 102, Folder 2	Volume I: Summary
Box 102, Folder 3-4	Volume II. [2 folders]
Box 102, Folder 5-7	"Lunar Surface Exploration - Identification and Description of Proposed Experiments." (Brown/RL. Technical Note R-160. November 1965.) [3 folders]
	Research Program on Radio Astronomy and Plasma for AAP Lunar Surface Missions.

	Final Report. (NAA/SID. SID 66-381. 31 May 1966.)
Box 102, Folder 8	Volume III: Research and Technology Implications.
	"Experiment Requirements Document."
Box 103, Folder 1-3	[Volume VIII: Space Station Development]. (Martin. [January 1967].) [incomplete; 3 folders]
Box 103, Folder 4	Volume X: Lunar Surface Experiments. (Martin. 18 January 1967.)
Box 103, Folder 5	"Experimenter's Design Handbook for the Manned Lunar Surface Program." (Robert A. Fuchs; Hughes for MSFC. SSD 60352R. January 1967.)
	Applications A and B Phase B Integration Study Document.
Box 103, Folder 6	Applications A Experiment Descriptions and Requirements. (Applications A and B Phase B Integration Task Group, MSC. April 1967.)
Box 104, Folder 1	Applications B Experiment Descriptions and Requirements. (Applications A and B Phase B Integration Task Group, MSC. April 1967.)
Box 104, Folder 2	"A Program Analysis for Lunar Exploration." (JPL/ALST. 760-5. July 25, 1967.)

Subseries III.D.4.d.: Logistic Systems, 1962-1969

Scope and Contents: The materials in this subseries relate to the transportation and/or storage of astronauts, equipment, and supplies to and from earth and lunar orbit and the lunar surface.

Box 104, Folder 3	"Supply Truck to the Moon." (D. H. Dickson, GE/MSD. [c.1962])
Box 104, Folder 4-5	"Design Feasibility Study - Crew Stay-Time Extension Payload (CRESTEP)." (L. Aasen, J. Belton, C. Browning, I. Drut, W. Heath, N. LeVora, and J. Renhult; Garrett/ARMD. SS-885-R. January 14, 1963.) [2 folders]
Box 104, Folder 6	"Advanced Lunar Transportation Systems." (Thomas Ray Salter; LTV/AD. American Astronautical Society Preprint 64-20. May 1964.)
	Minimum Cost Launch-of-Opportunity Module Study.
Box 104, Folder 7	Apollo Extension System 1400 Cubic Foot Module [presentation graphics]. (Boeing. D2-84051-1. [c.1966])
	Cryogenic Storage System Study (AES Payloads) Program.
Box 104, Folder 8	Summary Technical Report Covering Period February 1 through August 1, 1966. (Boeing/AG/SD. D2-113345-1. No date.)

Box 104, Folder 9	Detailed Technical Final Report Covering Period February 1 through August 1, 1966. (Boeing/AG/SD D2-113345-2. No date.)
	Advanced Logistics Spacecraft System Study.
	Final Report. (MDC/MAC. F738. 31 October 1967.)
Box 105, Folder 1	Volume II: Spacecraft Design and Performance Summary.
Box 105, Folder 2	Volume III: Mission and Spacecraft Performance Analysis.
Box 105, Folder 3	Volume IV: Spacecraft Design Analysis and Spacecraft Selection.
Box 105, Folder 4-6	Volume V: Subsystems and Weight Analyses. [3 folders]
Box 106, Folder 1	Volume VI: Mission Reliability, Crew Safety and Rescue.
Box 106, Folder 2	Volume VII: Operational Support
Box 106, Folder 3	Volume VIII: Program Development and Costs, and Study Results.
Box 106, Folder 4	Volume IX: Mars Return Analysis
Box 106, Folder 5	"The TALL [Titan-Agena Lunar Logistics] System - A Lunar Logistics Supplement to Apollo" [presentation graphics]. (LAC/LMSC. November 21, 1967.)
Box 106, Folder 6	"HOSS [Delta Hydrogen-Oxygen Second Stage] for Lunar Delivery" [presentation graphics]. (DAC/MSSD. January 1968.)
	Improved Lunar Cargo and Personnel Delivery System Study.
Box 106, Folder 7	First Interim Presentation [presentation graphics]. (LAC/LMSC. LMSC-A848420. 19 September 1967.)
Box 106, Folder 8	Second Interim Presentation [presentation graphics]. (LAC/LMSC. LMSC-A848420. 13 December 1967.
Box 106, Folder 9	Final Presentation [presentation graphics]. (LAC/LMSC. LMSC-A922814. 20 March 1968.)
	Final Report. (LAC/LMSC. T-28-68-4. 28 June 1968.)
Box 106, Folder 10	Volume I: Management Summary
Box 106, Folder 11	Volume II: Study Summary
Box 107, Folder 1-2	Volume IIIA: Conceptual Designs and Subsystem Analyses. [2 folders]

Box 107, Folder 3	Volume IV: Design Evolution and Performance Studies.
Box 107, Folder 4	Volume V: Evolutionary Development Plan.
Box 107, Folder 5	Volume VI: Supporting Research and Technology Requirements.
	Study of Integral Launch and Reentry Vehicle System.
Box 107, Folder 6	Technical Review [presentation graphics]. (NAR/SD. SP 69-11. May 1, 1969.)
	Final Report. (NAR/SD. SD 69-758. December 1969.)
Box 107, Folder 7	Technical Report - First Phase

Subseries III.D.4.e.: Lunar Surface Projects, 1963-1971

Arrangement: The materials in this subseries relate to projects and studies for manned exploration of the lunar surface. For items relating to unmanned projects, see subseries IV.E.2.a. (Planetary Reconnaissance - Moon) and IV.E.3. (Planetary Reconnaissance - by Project). The materials in this subseries are organized by the general area of activity. Within each subseries documents are arranged chronologically by study unless otherwise noted.

- III.D.4.e.1. General (1965-1968)
- III.D.4.e.2. Lunar Base Concepts (1963-1970)
- III.D.4.e.3. Lunar Surface Vehicle Concepts (1963-1970)
- III.D.4.e.4. Lunar Flying Vehicle Concepts (1963-1969)

Subseries III.D.4.e.1.: General, 1965-1968

Arrangement: This subseries consists of documents relating to lunar surface exploration but not specifically involved with base or vehicle concepts.

	Initial Concept of Lunar Exploration Systems for Apollo.
	[Final Report]. (Boeing/ASD for NASA. CR-55765. No date.)
Box 108, Folder 1	Volume II: System Considerations
	Volume III
Box 108, Folder 2	Part 1: Subsystem Analysis and Module Configuration. (CR-55763.)
Box 108, Folder 3	Part 2: Subsystem Analysis and Module Configuration. (CR-55764.)
	Communications and Control - Lunar Exploration Systems for Apollo.
	Final Study Report. (Westinghouse/DSC/SOD. March 1965.)
Box 108, Folder 4	Volume 1: Report Summary. (SO-113.)

Box 108, Folder 5	Volume 2: Technical Report. (SO-114.)
Box 108, Folder 6	Volume 3: Research and Technology Implications. (SO-115.)
	LEM Utilization Study
Box 108, Folder 7	Final Presentation [presentation graphics]. (15 July 1965.)
	Study of Emplaced Lunar Scientific Station for Apollo Extension Systems.
Box 108, Folder 8	Phase II Presentation - Preliminary Design [presentation graphics]. (Westinghouse/DSC/SOD. SO-218. April 1966.)
	[Final Report]
	Volume 1: Final Technical Report
Box 109, Folder 1-2	Part 1 (SO-240.) [2 folders]
Box 109, Folder 3-4	Part 2 (SO-241.) [2 folders]
Box 109, Folder 5	Volume 2: Summary Report (SO-242.)
Box 109, Folder 6	Volume 3 Research and Technology Implications (SO-243.)
	MIMOSA [Study of Mission Modes and Systems Analysis for Lunar Exploration].
	[Interim Report]. (LAC/LMSC. LMSC-A820749. 30 June 1968.)
	Volume II: Lunar Exploration Concept Development and Alternative Mode Definition for the 1970-1980 Timeframe.
Box 109, Folder 7	Addendum 2, Part 3.
Box 109, Folder 8	Study of an Electrical Power System for Support of a 12-Man Lunar Base. (GE/MSD/ANSO. 67SD2006. c.1967.)
	Final Report. (LAC/LMSC. 30 April 1967.)
Box 110, Folder 1	MIMOSA Summary Digest. (LMSC-A847940.)
Box 110, Folder 2	MIMOSA Summary Technical Report. (LMSC-A847941.)
	MIMOSA Technical Report. (LMSC-A847942.)
Box 110, Folder 3	Volume I: Lunar Exploration Equipment and Mode Definition.

Box 110, Folder 4	Volume II: Candidate Lunar Exploration Programs.
Box 110, Folder 5	Volume III: Recommended Lunar Exploration Plan.
	MIMOSA Planning Methodology. (LMSC-A847943.)
Box 110, Folder 6	Volume I: Planners Handbook (Except Appendices K and L).
Box 110, Folder 7	Volume III: Scientific Programs.
Box 110, Folder 8	"Development of a Subsurface Drill System for Post-Apollo Missions." (Westinghouse/DSC. March 1967.)
Box 111, Folder 1	"Lunar Mission Planning Data Book." (MSC/LMO. July 1967.)

Subseries III.D.4.e.2.: Lunar Base Concepts, 1963-1971

Arrangement: The materials in subseries relate to manned shelters on the lunar surface other than the Apollo Lunar Module.

	Initial Concept for a Lunar Base
Box 111, Folder 2-3	Midterm Progress Report. (Boeing/ASD. D2-100055. September 15, 1963.) [2 folders]
	Lunar Applications of a Spent S-IVB/IU Stage (LASS).
Box 111, Folder 4	[presentation graphics]. (DAC/MSSD. PP158. September 1966.)
Box 111, Folder 5-6	[Report]. (L. O. Schulte and D. E. Davin, DAC/MSSD. DAC-56365P. September 1966.) [2 folders]
Box 111, Folder 7	"Five-Day Lunar Shelter and Extravehicular Manned Test." (LAC/LMSC. 6-71-67-3. June 1967.)
	Early Lunar Shelter Design and Comparison Study.
	Final Report. (Garrett/ARMD. [c.July 1967].)
Box 112, Folder 1	Volume 1: Summary. (67-1964-1, Part 1.) Notes: • Book 1: Management Summary.
Box 112, Folder 2	Volume 1: Summary. (67-1964-1, Part 2.) Notes: • Book 2: Technical Summary
Box 112, Folder 3	Volume 2: Mission Timelines and Requirements. (67-1964-2.)
Box 112, Folder 4	Volume 3: Subsystems. (67-1964-3. Part 1.)

	Notes: • Book 1: Electrical Power • Book 2: Environmental Control/Life Support.
Box 112, Folder 5	Volume 3: Subsystems. (67-1964-3, Part 2.) Notes: • Book 3: Fluid Containment • Book 4: Thermal Control • Book 5: Astrionics
Box 112, Folder 6	Volume 4: System Integration and Configuration Design. (67-1964-4.)
Box 112, Folder 7	Volume 5: Resource Plan. (67-1964-5.)
	Volume 6: Supporting Studies. (67-1964-6.) Notes: • Book 1: Structural Design and LM/T Integration. • Book 2: Review of Scientific Mission Requirements • Book 3: Hassle Analysis of Proposed Schedule.
Box 112, Folder 8	[folder 1 of 2]
Box 113, Folder 1	[folder 2 of 2]
	Design Requirements for Reactor Power Systems for Lunar Exploration.
	[Final Report]. (LAC/LMSC. LMSC-677879. September 1967.)
Box 113, Folder 2	Volume I: Summary Final Report. (LMSC-677879-I.)
Box 113, Folder 3-5	Volume II: Final Report. (LMSC-677879-II.) [3 folders]
Box 113, Folder 6	"Preliminary Study of Lunar Bases" [presentation graphics]. (Benjamin Milwitzky; NASA Headquarters. [c.1969].)
	SLA Mini-Base Concept for Extended Lunar Missions.
Box 113, Folder 7	Long Term Lunar Missions Using Apollo Hardware Derivatives [SLA Mini-Base presentation graphics]. (NAR/SD. PD 69-163.) Notes: • as issued November 1969 • as revised January 1970
Box 113, Folder 8	Lunar Exploration Planning [SLA Mini-Base presentation graphics]. (NAR/SD. PD 69-164. November 1969.)
	[Final Report]. (NAR/SD. SD 70-516. September 1970.)
Box 113, Folder 9	Volume I: Summary
Box 114, Folder 1	Volume II: Crew Considerations and Systems Analysis.

Box 114, Folder 2	Volume III: Mission Considerations and Spacecraft Performance.
Box 114, Folder 3	The SLA Mini-Base [presentation graphics]. (NAR/SD. [c.1971].)

Subseries III.D.4.e.3.: Lunar Surface Vehicle Concepts, 1963-1970

Arrangement: The materials in this subseries relate to the design of surface vehicles for use in lunar exploration.

Box 114, Folder 4	"Manned Lunar Auxiliary Vehicle." (Chrysler/DSG. 6 December 1963.)
	Lunar Surface Vehicles as Part of LESA
Box 114, Folder 5	Final Report [presentation graphics]. (Boeing/ASD. June 1964.)
	Analysis of Lunar Surface Vehicles for Lunar Exploration Systems for Apollo.
	Final Report. (Boeing/ASD. D2-100134-1. July 15, 1964.)
Box 114, Folder 6	Volume I: Technical Study
	Apollo Logistics Support System Payloads - Preliminary Design Study.
	Final Report. (Bendix/BSD. ALSS-TR-013; BSR-1119; BSC-45336. June 1965.)
Box 114, Folder 7	Condensed Summary Report
Box 114, Folder 8	Volume I: Program Summary
	Apollo Logistics Support System Payloads.
Box 115, Folder 1-2	Interim Report [presentation graphics]. (Boeing/ASD. D2-36072-1. September 1964.) [2 folders]
	Final Presentation. (Boeing/ASD. D2-36072-3. April 1965.)
Box 115, Folder 3-4	Volume 2 [presentation graphics]. [2 folders]
Box 115, Folder 5	Summary Report. (Boeing/ASD. D2-36072-3. June 1965.)
	MOLAB Astrionic Systems - Navigation and Guidance. (Boeing/ASD. D2-83205-1. June 1965.).
Box 115, Folder 6-7	[folders 1-2 of 3]
Box 116, Folder 1	[folder 3 of 3]

	MOLAB Astrionic Systems - Communications, Command and Control. (Boeing/ASD. D2-83205-2. June 1965.)
Box 116, Folder 2-4	Volume 1. [3 folders]
Box 116, Folder 5-7	Volume 2. [3 folders]
	Lunar Surface Mobility Systems Comparison and Evaluation (MOBEV) Study
Box 117, Folder 1	[Proposal]. (Bendix/BSD. BSD 1034. October 1965.)
Box 117, Folder 2	Preliminary Design Study of a Lunar Local Scientific Survey Module (LSSM). [Boeing contract]
	Final Summary Report. (Boeing/SD. D2-83010-1. June 1966.)
Box 117, Folder 3-6	Final Technical Report: System Analysis, Design Integration, Thermal Control, and Power System Design. (Boeing/SD. D2-83011-1. June 1966.) [4 folders]
	Final Technical Report: Mobility System Analysis and Design. (GM/DRL (TR66-17) for Boeing/SD. D2-83012-1. June 1966.)
Box 117, Folder 7	[folder 1 of 3]
Box 118, Folder 1-2	[folders 2-3 of 3]
Box 118, Folder 3	Final Technical Report: Navigation System Analysis and Design. (GM/AC (EP66-109) for Boeing/SD. D2-83013-1. June 1966.)
Box 118, Folder 4	Final Technical Report: Telecommunications System Analysis and Design. (RCA/AED for Boeing/SD. D2-83014-1. June 1966.)
Box 118, Folder 5	Final Technical Report: Life Support Subsystem Analysis and Design. (Garrett/ARMD (66-0473) for Boeing/SD. D2-83015-1. June 1966.)
Box 118, Folder 6	System Functional Specification. (Boeing/SD. D2-83016-1. June 1966.)
Box 118, Folder 7	Research and Advanced Technology. (Boeing/SD. D2-83017-1. June 1966.)
Box 118, Folder 8	Program Plan. (Boeing/SD. D2-83018-1. June 1966.)
Box 119, Folder 1-2	Program Cost. (Boeing/SD. D2-83018-2. June 1966.) [2 folders]
	Preliminary Design Study of a Lunar Local Scientific Survey Module (LSSM). [Bendix contract]
	Final Report. (Bendix/BSD. BSR 1287. July 1966.)

	Volume II.
Box 119, Folder 3	Book 9: Systems Analysis
	Preliminary Design Study of a Lunar Gravity Simulator.
Box 119, Folder 4	First Interim Report. (LAC/LMSC/HREC. LMSC/HREC A783082. 29 July 1966.)
Box 119, Folder 5	Second Interim Report. (LAC/LMSC/HREC. LMSC/HREC A783245. 6 September 1966.)
Box 119, Folder 6	Third Interim Report. (LAC/LMSC/HREC. LMSC/HREC A783335. 25 October 1966.)
Box 119, Folder 7	Final Report. (LAC/LMSC/HREC. LMSC/HREC A783336, HREC 0351-1. November 1966.)
Box 119, Folder 8	Condensed Summary Report. (LAC/LMSC/HREC. LMSC/HREC A783968, HREC 0351-2. March 1967.)
	Engineering Design Test of Mobility Test Articles (MTAs).
Box 119, Folder 9	Block I Test Plan. (F. E. Northon; USATEC/YPG. July 1966.)
	Engineer Design Test of Mobility Test Articles - Models BX-1 and GM-1.
Box 119, Folder 10	Supplement to Final Report: MTA Terrain Identification. (F. E. Northon; USATEC/YPG. YPG Report 7010. June 1967.)
	Engineer Design Test (Block I) of Mobility Test Article, Model BX-1.
Box 119, Folder 11	Final Report. (F. E. Northon; USATEC/YPG. YPG Report 7011. June 1967.)
Box 119, Folder 12	Summary Test Report. (F. E. Northon; USATEC/YPG. YPG Report 7015. July 1967.)
	Engineer Design Test of Mobility Test Article, Model GM-1.
Box 119, Folder 13	Final Report. (F. E. Northon; USATEC/YPG. YPG Report 7022. November 1967.)
Box 119, Folder 14	Summary Test Report. (F. E. Northon; USATEC/YPG. YPG Report 7025. December 1967.)
	Specified Local Scientific Survey Module (LSSM) Design Study. [Boeing contract]

	Technical Report. (Boeing/SD. D2-113471-2. November 1966.)
Box 120, Folder 1-4	Volume 1: LSSM Vehicle and Subsystems Analysis and Design. [4 folders]
Box 120, Folder 5	Volume 2: LSSM Vehicle Performance Improvement Analysis.
	Resources Plans. (Boeing/SD. D2-113471-3. November 1966.)
	Volume 1: Resources Plan
Box 120, Folder 6	[folder 1 of 2]
Box 121, Folder 1	[folder 2 of 2]
Box 121, Folder 2	Volume 2: Test Plan
	Specified LSSM Supplemental Studies
Box 121, Folder 3	Condensed Summary Report. (Boeing/SD. D2-114082-3. October 1967.)
	Specified Local Scientific Survey Module (LSSM) Design Study. [Bendix contract]
	Final Report. (Bendix/ASD and LAC/LMSC. BSR 1495. February 1967.)
Box 121, Folder 4	Volume I: Program Summary
	Volume II: Technical Report
Box 121, Folder 5-8	Book 1: Specified LSSM Detailed Design. [4 folders]
Box 121, Folder 9	Book 2: Appendix A (Thermal Analysis)
Box 122, Folder 1	Book 3: Appendix B (Specified LSSM Interfaces).
Box 122, Folder 2	Book 4: Appendix C (Operations Analysis).
Box 122, Folder 3	Book 5: Appendix D (Vehicle Analysis)
Box 122, Folder 4	Book 6: Appendix E (Human Factors Analysis).
Box 122, Folder 5	Book 7: Appendix F (Communications Analysis).
Box 122, Folder 6	Book 8: Appendix G (Navigation Analysis).
	Volume III: Resources Plan
Box 122, Folder 7	Book 1: Summary Program Plan

Box 122, Folder 8-10	Book 2: Development and Production Plans. [3 folders]
Box 123, Folder 1	Book 4: Development Plan for Performance Improvement Items.
Box 123, Folder 2	Additional Tasks Final Presentation Brochure [presentation graphics]. (Bendix/ASD. BSR 2195. September 1967.)
	Additional Tasks Final Report. (Bendix/ASD. BSR 2162. October 1967.
Box 123, Folder 3	Volume I: Condensed Summary. [2 copies]
	Volume II:
Box 123, Folder 4	Book 1: Interface Analysis and Integration Support Study.
Box 123, Folder 5	Book 2: Test and Simulation Program Study.
Box 123, Folder 6	Book 3: Mobility Performance Enhancement Study.
	Nutator Drive Experimental Test Program Final Report. (Bendix/ASD. BSR 2192. October 1967.)
Box 123, Folder 7	Volume I: Condensed Summary
Box 123, Folder 8	Volume II.
	Human Factors Visual Simulation Study
Box 123, Folder 9	Final Report. (NAA/SID. SID 67-288. April 1967.)
	Lunar Wheel and Drive Experimental Test Program.
	Final Report. (GM/AC-DRL/LPP. TR67-18. June 1967.)
Box 124, Folder 1	Volume I: Summary Technical Report
Box 124, Folder 2-6	Volume II: Detailed Technical Report. [5 folders]
Box 124, Folder 7	Volume III: Task 7.0 - Lunar Roving Vehicle Drive System Analysis.
Box 124, Folder 8	"Prospects for a Lunar 'Field Assistant.'" (JPL. 760-7. July 19, 1967.)
Box 125, Folder 1	[Graphics for Presentation on Lunar Surface Vehicle Design]. (GM/AC. [c.1968].)
Box 125, Folder 2	"Lunar Surface Mobility Systems Technology Summary" [presentation graphics]. (Bendix/ASD. BSR 2313. 28 May 1968.)

Box 125, Folder 3	"Investigation of a Hopping Transporter Concept for Lunar Exploration." (Marshall H. Kaplan and Howard W. Seifert; Dept of Aeronautics and Astronautics, Stanford University. SUDAAR 348. June 1968.)
	Dual-Mode (Manned/Automated) Lunar Roving Vehicle Design Definition Study.
Box 125, Folder 4	First Monthly Program Progress Review [presentation graphics]. (Bendix/ASD. BSR 2708. May 1969.)
	Final Report. (Bendix/ASD. BSR 2816. January 1970.)
	Volume II: Vehicle Design and Systems Integration.
Box 125, Folder 5-7	Book 1: DLRV System Design and Analysis. [3 folders]
Box 125, Folder 8	Book 2: DLRV Tiedown, Off-Loading, and Checkout.
Box 126, Folder 1	Book 3: Ground Support Equipment
Box 126, Folder 2	Book 4: Systems Safety Analysis
	Volume III: Astrionics Systems.
Box 126, Folder 3	Book 1: Navigation Subsystem Design and Analysis.
Box 126, Folder 4	Book 2: Communications Subsystem Design and Analysis.
Box 126, Folder 5	Book 3: Hazard Detection Subsystem Design and Analysis.
Box 126, Folder 6	Book 4: Control Subsystem Design and Analysis.
Box 126, Folder 7	Book 5: Power Subsystem Design and Analysis.
Box 126, Folder 8	Volume IV: Scientific Systems. Notes: • Part 1: Scientific Equipment Interface Design and Analysis. • Part 2: Engineering Techniques for Determining Engineering Properties of the Lunar Surface.
Box 127, Folder 1-2	Volume V: Mission Operations. [2 folders]
Box 127, Folder 3	Volume VI: Growth Capability of DLRV
Box 127, Folder 4	Volume VII: DLRV Systems Specification
Box 127, Folder 5	"Science Imaging and Sampling Requirements for a Dual-Mode Lunar Rover: A Questionnaire." (R. Ward, J. Conley, and L. Jaffe; JPL. 760-52. April 1970.)

Performance Evaluation of Wheels for Lunar Vehicles.

Box 127, Folder 6	Summary Report. (USAEWES. Misc Paper M-70-4. May 1970.)

Subseries III.D.4.e.4.: Lunar Flying Vehicle Concepts, 1963-1969

Arrangement: The materials in this subseries relate to the theory and design of flying vehicle for use in lunar exploration beyond the ascent/descent operations capable by the Lunar Module.

	Study of Lunar Launch Ascent Trajectory Control Employing Simple Manual/Visual Control Techniques.
Box 127, Folder 7	Proposal for. (Bell/BAC. D7190-953001. April 1963.)
Box 127, Folder 8	[Report]. (Bell/BAC. D7190-950001. July 1963.)
	An Engineering Study and Preliminary Design of a Lunar Escape Device.
Box 127, Folder 9	Proposal. (Bell/BAC. D7195-953001. July 1963.)
	An Engineering Study and Preliminary Design of a One Man Propulsion Device for Lunar and Free-Space Environments.
Box 128, Folder 1-2	Final Report. (UAC/HS. May 21, 1964.) [2 folders]
	A Study of Lunar Flying Vehicles
Box 128, Folder 3	Lunar Flying Vehicle Optimization Study. (Bell/BAC. 7217-902002. June 1965.)
Box 128, Folder 4	Final Report. (Bell/BAC. 7217-928001. June 1965.)
Box 128, Folder 5	Summary. (Bell/BAC. 7217-950001. June 1965.)
	Study of Manned Flying Systems.
	Mid-Term Report. (Bell/BAC. 7243-950001. November 1965.)
Box 128, Folder 6	Volume I: [Vehicle and Subsystem Studies]
Box 128, Folder 7	Volume II: [Mission Analysis]
	Final Report. (Bell/BAC. 7243-950002. June 1966.)
Box 129, Folder 1	Volume I: Vehicle and Subsystem Analysis.
Box 129, Folder 2	Volume II: Mission Analysis

Box 129, Folder 3	Summary. (Bell/BAC. 7243-950003. June 1966.)
Box 129, Folder 4	Research and Technology. (Bell/BAC. 7243-920001. June 1966.)
	Low Thrust Throttleable Engine for the Lunar Manned Flying System.
Box 129, Folder 5-6	Resources Plan. (TRW/SG. 9990-7222-R0000. 28 February 1966.) [2 folders]
	Lunar Manned Flying System Radar Altimeter.
Box 129, Folder 7	Resources Plan. (Westinghouse/DSC. 30 April 1966.)
Box 129, Folder 8	"Presentation on Lunar Surface Rescue and Escape" [presentation graphics]. (Bell/BAC. 7296-953001. c.1967.)
	Flight Test of a One Man Flying Vehicle.
Box 129, Folder 9	Summary Report. (Bell/BAC. 2330-950001. July 1967.) [2 copies]
	Final Report. (Bell/BAC. 2330-95002. July 1967.)
Box 129, Folder 10	Volume I: Flight Test Program. [2 copies]
Box 129, Folder 11	Volume II: Mission Applications Studies. [2 copies]
	Study of a One Man Lunar Flying Vehicle.
	Final Report. (Bell/BAC. 7335-950010. July 1969.)
Box 130, Folder 1-2	Part 1. [2 folders]
Box 130, Folder 3	Part 2.

Subseries III.D.4.f.: Lunar Orbital Program Studies, 1963-1969

Scope and Contents: The materials in this subseries concern experiments to be conducted in lunar orbit.

	Lunar Reconnaissance Mission
	[Report]. (AGC/SGC. SGC P-3505. March 1963.)
Box 130, Folder 4	Part 1.
Box 130, Folder 5-6	Part 2. [2 folders]

	Lunar Orbital Survey Missions (LOSM) Study.
	Final Report. (Lockheed/LMSC. LMSC-A842063. 16 January 1967.)
Box 130, Folder 7	Volume I: Summary
Box 130, Folder 8	"Lunar Orbit Science - Summary Briefing" [presentation graphics]. (NAR/SD. PD 68-64. December 1968 rev. January 1969.)

Subseries III.D.4.g.: Earth Orbital Program Studies/Skylab, 1961-1971

Arrangement: The material in this subseries relates to studies intended to lead to Earth orbital missions utilizing Apollo hardware. Included in this material are documents pertaining to Saturn Orbital Workshop development, which became the Skylab program in February 1970. Documents pertaining to other space station development, including the Manned Orbital Research Laboratory (MORL) are filed under subseries III.D.5. (Space Station Program).

	Study of Orbital Launch Operations
	Interim Progress Report. (CVC/VA. TP 64003. 11 June 1961.)
Box 131, Folder 1-4	Volume II: Design Data. [4 folders]
	Study of a Manned Orbital Laboratory, Saturn V Class.
	Planning Analysis
Box 131, Folder 5-6	Tooling Report. (Douglas/MSSD. ATE 709. January 6, 1964.) [2 folders]
	Extended Apollo Systems Utilization Study.
	Final Report. (NAA/SID.)
Box 131, Folder 7	Volume 13: The Adaptation of the Apollo Reaction Control System Propellant Tanks for Apollo X Missions. (Bell/BAC (D8404-953001) for NAA/SID. SID 64-1860-13. 16 November 1964.)
	Addendum 1 (NAA/SID.)
	Volume 2: Experiment Analysis and Requirements.
	Appendix A: NASA Experiments. (SID 65-500-2D. No date.)
Box 132, Folder 1-3	Book 2. [3 folders]
	Volume 3: Configuration Analysis and Experiment Accommodation.

Box 132, Folder 4-7	Appendix A: Engineering Drawings. (SID 65-500-3B.) [4 folders]
	Systems Study of a Manned Orbital Telescope.
Box 133, Folder 1	Midterm Report [presentation graphics]. (Boeing/ASD. D2-90747-1. May 1965.)
	Advanced Orbital Launch Operations Study.
	Phase B Final Report. (LTV/AD. 00.676. 1 November 1965.)
Box 133, Folder 2	Volume I: Summary Technical Report
	ORL [Orbital Research Laboratories] Experiment Program Study.
	Contractor Report. (IBM/FSD. 21 February 1966.)
Box 133, Folder 3	Volume A: Framework for Synthesis
	Volume B.
Box 133, Folder 4	Part I: Agriculture/Forestry
Box 133, Folder 5	Part II: Geology/Hydrology
Box 133, Folder 6	Part III: Oceanography/Marine Technology.
Box 133, Folder 7	Part IV: Geography
Box 134, Folder 1	Part V: Atmospheric Science and Technology.
Box 134, Folder 2	Part VI: Communications and Navigation/Traffic Control.
Box 134, Folder 3	Part VII: Biomedicine/Behavior
Box 134, Folder 4	Part VIII: Advanced Technology and Supporting Research.
Box 134, Folder 5	Part IX: Operations Techniques and Advanced Missions Spacecraft Subsystems.
Box 134, Folder 6	Part X: Extravehicular Engineering Activities.
Box 135, Folder 1	Part XI: Astronomy/Astrophysics
Box 135, Folder 2	Part XII: Bioscience
Box 135, Folder 3	Part XIII: Physical Sciences

Box 135, Folder 4	Volume C: Guidelines for Comprehensive Flight Program.
Box 135, Folder 5	Annex 1.
Box 135, Folder 6	Annex 2.
Box 136, Folder 1	Volume D: Summary of Results
Box 136, Folder 2	Volume E: Bibliographical References for Illustrations and Tables. (15 May 1966.)
Box 136, Folder 3	"S-IVB Role in the Saturn V Synchronous Mission" [presentation graphics]. (Douglas/SSC. PP 156. August 1966.)
	Optical Technology Apollo Extension System Study.
	Phase A Final Technical Report. (Chrysler/SD. [c.1967].)
Box 136, Folder 4	Summary Report
	Experiments for Satellite and Material Recovery from Orbit Study Program.
	Final Report. (BBRC. F67-05. 1 March 1967.)
Box 136, Folder 5	Volume I: Summary
Box 136, Folder 6	Volume II: Technical
Box 136, Folder 7	"Preliminary Data Specification Document for Missions AAP-1a, AAP-1/AAP-2, and AAP-3/AAP-4." (MSC/ATSO. June 19, 1967.)
Box 136, Folder 8	"Radiation Characteristics of Photographic Film for Use in Apollo Application Experiments." (Lockheed/LMSC. LMSC 4,900,226. 30 June 1967.)
Box 136, Folder 9	"Environmental Thermal Control and Life Support Systems Definition for the Short-Term and Long-Term Earth Resources Experiment Carriers." (MSC. NASA General Working Paper 10 074. July 17, 1967.)
Box 136, Folder 10	"S-II/Saturn V for AAP" [briefing charts]. (NAA/SD. PD 67-38. August 1967).
	S-IVB Station Module Study
Box 136, Folder 11	Technical Summary. (Douglas/MSSD. DAC-56554. November 1967.) [photocopy]
Box 137, Folder 1	Experiments Program Report. (Douglas/MSSD. DAC-56556. November 1967.) [photocopy]

	-Advanced Workshop in Low Orbit C. (Douglas/MSSD. November 1967.)
Box 137, Folder 2	Technical Report. (DAC-56548.) [photocopy]
Box 137, Folder 3	Development Plan, Final Report. (DAC-56549.) [photocopy]
	-Early Orbital Space Station (EOSS). (Douglas/MSSD. November 1967.)
Box 137, Folder 4-5	Technical Report. (DAC-56550.) [photocopy; 2 folders]
Box 137, Folder 6	Resources Analysis. (DAC-56553.) [blueprint copy]
Box 138, Folder 1	Research and Technology Report. (DAC-56555.) [blueprint copy]
	-Oceanography and Meteorology: A Systems Analysis to Identify Orbital Research Requirements.
	[Report]. (Douglas/MSSD. April 1968.)
Box 138, Folder 2	Volume I: Executive Summary Report. (DAC-58120.)
Box 138, Folder 3-5	Volume II: Technical Report. (DAC-58121.) [3 folders]
	Saturn V Workshop Study
	[Report]. (MSC/OMSFPG.)
Box 138, Folder 6	Volume I: Summary. (May 15, 1968.) [2 copies]
Box 138, Folder 7	Volume II: Task Team Analysis. (April 1, 1968.)
	Saturn V Orbital Workshop Study
	[Report]. (MSC/MATT.)
	Appendices. (July 1, 1968.)
Box 138, Folder 8	[folder 1 of 2]
Box 139, Folder 1	[folder 2 of 2]
	Habitability Study - Earth Orbital Space Stations [AAP Habitability Report].
Box 139, Folder 2	Final Report. (Raymond Loewy/William Snaith Inc. 31 December 1968.)
Box 139, Folder 3	"Apollo Telescope Mount Extravehicular Activities - Astronaut Review Outline." (MSFC/MSS. July 1, 1969.) [preliminary unchecked data]

Box 139, Folder 4	"Apollo Telescope Mount Extravehicular Activities - Crew Station Review." (MSFC/MSS. July 1, 1969, Revision A).
Box 139, Folder 5	"Airlock Design Data Book." (MDC/MDAC/ED. 15 November 1969.) [photocopy]
Box 139, Folder 6	"Skylab Program - Technical Summary." (NASA/OMSF. June 1970.)
Box 139, Folder 7	"Skylab Command Module (CM) Uprighting Bag Pack Assembly Verification Test." (NAR/SD. SD 70-299. October 1970.)
	Skylab B - Earth Resources, Artificial Gravity, Bioscience Experiments.
	[Report]
Box 139, Folder 8	Volume II: Artificial Gravity Experiment Crew Deck Design. (MSC. MSC-EA-R-71-1. February 1971.)
Box 139, Folder 9	"Skylab Program - Failure Mode and Effects Analysis for Sleep Monitoring System (M133)." (MMC/DD for MSC. MSC-02942. April 22, 1971.)
Box 139, Folder 10	"Skylab Program - Skylab In-Flight Experiments - Summary Descriptions" [presentation graphics]. (MSFC. June 1971.)

Subseries III.D.5.: Space Station Program, 1964-1971

Arrangement: The material in this subseries relate to studies and development work on earth-orbital space stations as part of a post-Apollo space program. Documents pertaining to Apollo follow-on space station development, including the Saturn Orbital Workshop/Skylab program are filed under subseries III.D.4.g. (Earth Orbital Program Studies/Skylab). Documents are arranged chronologically by study.

	Study of a Rotating Manned Orbital Space Station.
	Final Report. (Lockheed/LCO/SO. LR 17502. March 1964.)
Box 139, Folder 11	Volume I Notes: • Report Contents • Section 1 - Introduction • Section 2 - Technical Summary
Box 140, Folder 1	Volume II Notes: • Section 3 - Preliminary Investigations
Box 140, Folder 2-3	Volume III [2 folders] Notes: • Section 4 - Configuration Studies • Section 5.1 - Structures Subsystem

Box 140, Folder 4	Volume IV Notes:	• Section 5.2 - Navigation and Guidance Subsystem. • Section 5.3 - Stabilization and Attitude Control Subsystem. • Section 5.4 - Propulsion Subsystem • Appendix A - Guidance Accuracies • Appendix B - Stabilization and Control
Box 140, Folder 5	Volume V Notes:	• Section 5.5 - Data Management Subsystem. • Section 5.6 - Displays and Controls Subsystem. • Section 5.7 - Communications, Command, and Tracking Subsystems.
Box 140, Folder 6	Volume VI Notes:	• Section 5.8 - Electrical Power Subsystem.
Box 141, Folder 1-2	Volume VII [2 folders] Notes:	• Section 5.9 - Environmental Control and Life Support Subsystems. • Section 5.10 - Miscellaneous Sensors and Equipment. • Section 5.11 - Reliability and Maintainability.
Box 141, Folder 3-5	Volume VIII [3 folders] Notes:	• Section 6 - Human Factors.
Box 141, Folder 6	Volume IX Notes:	• Section 7 - Ground Support. • Section 8 - Program Definition.
Box 141, Folder 7	Volume XI Notes:	• Summary.
Box 141, Folder 8	"Selection of a Power System for a Large Space Station." (MSC. NASA General Working Paper 10 029. June 9, 1964.)	
Box 142, Folder 1	"Radiation Protection for Manned Orbiting Space Stations." (Douglas/MSSD. SM-46257. September 1964.)	
	Manned Orbital Research Laboratory (MORL) Studies	
	-Optimization of the Manned Orbital Research Laboratory (MORL) System Concept.	
	Report. (Douglas/MSSD. September 1964)	
Box 142, Folder 2	Volume III: Systems Analysis - Experimental Program. (SM-46074.)	

Box 142, Folder 3-4	Volume IV: Systems Analysis - Flight Crew. (SM-46075.) [2 folders]
Box 142, Folder 5	Volume V: Operations - Systems Analysis. (SM-46076.)
Box 142, Folder 6-7	Volume IX: Effectiveness Studies - MORL and Unmanned Concepts. (SM-46080.) [2 copies]
Box 143, Folder 1	Volume XIII: Laboratory Mechanical Systems - Artificial Gravity Systems. (SM-46084.)
Box 143, Folder 2	Volume XIV: Laboratory Mechanical Systems - Environmental Control/ Life Support. (SM-46085.)
Box 143, Folder 3-4	Volume XV: Laboratory Mechanical Systems - Stabilization and Control. (SM-46086.) [2 folders]
Box 143, Folder 5	Volume XVII: Laboratory Electrical/Electronic Systems - Electrical Power. (SM-46088.)
Box 143, Folder 6	Volume XIX: Laboratory Electrical/Electronic Systems - Communications and Telemetry. (SM-46090.)
	Volume XXII: Experiment Briefs, Part I. (SM-46093.)
Box 143, Folder 7	[folder 1 of 2]
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Box 144, Folder 2-3	Volume XXII: Experiment Briefs, Part II. (SM-46094.) [2 folders]
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Box 144, Folder 8	Volume XXIV: Technology Studies. (SM-46097.)
Box 145, Folder 1-2	Volume XXV: Preliminary Program Plan. (SM-46098.) [2 folders]
Box 145, Folder 3	Volume XXVII: Cost Plan. (SM-46100.)
	-Development of the Manned Orbital Research Laboratory (MORL) System Utilization Potential.
	Report. (Douglas/MSSD.)

	Task Area III: MORL Concept Responsiveness Analysis. (November 1965.)
Box 145, Folder 4-5	Book 1. (SM-48813.) [2 folders]
Box 145, Folder 6-7	Book 2. (SM-48814.) [2 folders]
	Task Area IV: MORL System Improvement Study. (January 1966.)
	Book 5 [Propulsion Subsystem Analysis]
Box 146, Folder 1-2	[Part 1]. (SM-48819A.) [2 folders]
Box 146, Folder 3-4	[Part 2]. (SM-48819B.) [2 folders]
Box 146, Folder 5	-Definition of a Resistojet Control System for the Manned Orbital Research Laboratory.
	Final Oral Presentation [presentation graphics]. (Douglas/MSSD. DAC-58119. May 1968).
Box 146, Folder 6	"Preliminary Technical Data for Earth Orbiting Space Stations." (MSC. MSC-EA-R-66-1. November 7, 1966.) Notes: • Volume III: Systems.
	Orbital Astronomy Support Facility (OASF) Study.
	Progress Report
Box 146, Folder 7	Briefing Manual [presentation graphics]. (Douglas/MSSD. DAC-57992. March 1967.)
Box 147, Folder 1	Final Briefing [presentation graphics]. (Douglas/MSSD. DAC-58088. February 1968.)
	[Report]. (MDC/DMSSD. 28 June 1968.)
Box 147, Folder 2	Volume I: Technical Summary. (DAC-58141.)
	Volume II: Task A - Orbital Astronomy Research Requirements. (DAC-58142.)
Box 147, Folder 3-5	Part 1: Baseline Astronomy Research Program. [3 folders]
Box 147, Folder 6	Part 2: A Methodology for Systematic Identification of Candidate Space Astronomy Observations.

	Volume III: Task B - Instruments for Orbital Astronomy. (DAC-58143.)
	Book 1 of 2.
Box 147, Folder 7-8	[folder 1-2 of 3]
Box 148, Folder 1	[folder 3 of 3]
Box 148, Folder 2-3	Book 2 of 2. [2 folders]
	Volume IV: Task C - Orbital Astronomy Support Facility Concepts. (DAC-58144.)
Box 148, Folder 4-5	Book 1 of 3. [2 folders]
	Book 2 of 3.
Box 148, Folder 6	[folder 1 of 2]
Box 149, Folder 1	[folder 2 of 2]
Box 149, Folder 2-5	Book 3 of 3. [4 folders]
Box 149, Folder 6	Volume V: Research and Technology Implications for Orbital Astronomy. (DAC-58145.)
	Saturn V Single Launch Space Station and Observatory Facility Study.
Box 149, Folder 7	Midterm Oral Review [presentation graphics]. (Boeing. D2-114017-1. June 14, 1967.)
	Study for Basic Subsystem Module Preliminary Definition.
Box 150, Folder 1	Mid-Term Report [presentation graphics]. (GD/Convair. 13 June 1967.)
	Final Report. (GD/Convair. GDC-DAB67-003. October 1967.)
Box 150, Folder 2	Volume I: Condensed Summary
Box 150, Folder 3	Volume II: Technical Summary
Box 150, Folder 4	Addendum A: Supporting Research Technology.
Box 150, Folder 5	Volume III: '71 Configuration
Box 150, Folder 6	Volume IV: '73 Configurations and Structural Arrangements.

Box 150, Folder 7	Volume V: Reliability and Failure Modes and Effects Analysis.
Box 150, Folder 8	Volume VI: Environmental Control and Life Support.
Box 151, Folder 1	Volume VIII: Electrical Power Systems.
Box 151, Folder 2	Volume IX: Stabilization and Control
Box 151, Folder 3	Volume X: Program Definition
Box 151, Folder 4	"Study of the Astronaut's Capabilities to Maintain Life Support Systems and Cabin Habitability in Weightless Conditions." (Environmental Research Associates. ERA 68-1. c.1968.)
	Study of Manned Space Flight Emergency Concepts.
	-Emergency Deorbit Systems for Apollo Type Spacecraft.
Box 151, Folder 5-6	[Report]. (Aerospace/SSO. ATR-68(7080)-1. 12 February 1968.) [2 folders]
	-[Main Study]
Box 151, Folder 7	Summary Report. (Aerospace/SSO. ATR-68(7080)-2. April 1968.)
Box 151, Folder 8	Technical Discussions. (Aerospace/SSO. ATR-68(7080)-2.VOL I. April 1968.)
	Appendices. (Aerospace/SSO. ATR-68(7080)-2.VOL II. April 1968.)
Box 151, Folder 9	[folder 1 of 2]
Box 152, Folder 1	[folder 2 of 2]
	Intermediate Orbital Workshop
Box 152, Folder 2	Project Plan. (MSFC. June 28, 1968.)
	Intermediate Workshop Study
	[Report]
	Modular Approach. (MSC. MSC-EA-R-68-1. October 1968.)
Box 152, Folder 3	Volume I.
	Study of Separately Launched Multi-Use Space Electrical Power System (SLPM).

	[Report]. (GE/MSD/IPSO. GESP-7007-1. October 1968.)
Box 152, Folder 4	Volume 1: Summary Volume
	Joint NASA-AEC Study for Integration of Reactor TE System and Space Station.
Box 152, Folder 5	Mid Term Review [presentation graphics]. (MSFC. December 11, 1968.)
	Emergency Earth Orbital Escape Device Study.
	Final Report. (Lockheed/LMSC/SSD. LMSC-A940555. January 31, 1969.)
Box 152, Folder 6	Volume 1: Condensed Summary
Box 152, Folder 7	Volume 2: General Technical Summary
Box 152, Folder 8	Volume 2A: System Requirements and Concepts.
Box 152, Folder 9	Volume 2B: Spacecraft System Design
Box 152, Folder 10	Volume 2C: Reentry Controls
Box 152, Folder 11	Volume 2D: Environmental Control; Communications; Electrical Systems.
Box 152, Folder 12	Volume 2E: Additional Study Tasks
Box 152, Folder 13	Volume 3: Preliminary Program Definition Plan.
Box 153, Folder 1	Volume 4: Apollo Applications Program; Emergency Escape System; Preliminary Program Definition Plan.
Box 153, Folder 2	"Space Station Experiment Analysis Activity" [presentation graphics]. (NAR/SD. PD 69-27. February 1969.)
	Requirements Study for a Biotechnology Laboratory for Manned Earth Orbiting Missions.
	Final Report. (MCD/MDAC. February 1969.)
Box 153, Folder 3	Volume I. (DAC-58155.)
Box 153, Folder 4	Volume II. (DAC-58156.)
	Study of Application of Remote Manipulation to Satellite Maintenance.
	Final Report. (GE/SSO. 69SD4286. June 1969.)

Box 153, Folder 5	Volume I: Summary Report
Box 153, Folder 6-7	Volume II: Technical Report. [2 folders]
Box 153, Folder 8	"Preliminary Design of Reactor Power Systems for the Manned Space Base." (G. G. McKhann, J. V. Coggi, and S. D. Diamond; MDC/MDAC. MDAC Paper WD 1296. June 1970.)
Box 153, Folder 9	"Earth-Moon Transportation." (K. A. Ehricke; NAR/SD. SD 70-338. Presented to the American Astronautical Society, June 8-9-10, 1970.)
	Study of Space Station Propulsion System Resupply and Repair.
Box 153, Folder 10	Presentation Material Used at NASA Headquarters [presentation graphics]. (MMC/DD. July 1970.)
	Space Station Prototype Environmental/Thermal Control and Life Support System.
Box 153, Folder 11	System Summary. (UAC/HS. August 1970.)
Box 154, Folder 1	System Configuration Definition; System Installation Data. (UAC/HS.) Notes: [folder includes loose material found in binder with report]
Box 154, Folder 2	System Performance Specification; Reliability Report. (UAC/HS.) Notes: [folder includes loose material found in binder with report]
Box 154, Folder 3	[presentation graphics]. (MSC. December 1970.)
	Commercial Instrumentation for Space Station Application.
	Final Report. (Allen C. Norton; Beckman Instruments Inc. FR-1065-101 [N71-13299]. October 31, 1970.)
Box 154, Folder 4	Volume 1.
	Space Station Study of Resupply/Repair of Monopropellant Subsystems.
Box 154, Folder 5-6	Final Report. (UAC/HS. SP06R70-F. February 1971.) [2 folders]
	Earth Orbital Experiment Program and Requirements Study.
Box 154, Folder 7	Summary Report. (MDC/MDAC. MDC G0788. April 1971.)
	Space Station Program (Phase B) Definition Study [McDonnell Douglas contract].
Box 155, Folder 1	Program Requirements Document (PRD) - Preliminary Draft. (MDC/MDAC. MDC G0243. 7 November 1969 rev. 7 January 1970.)

	Analysis of Space Station Impact on KSC. (MDC/MDAC. MDC G0749. December 1970.)
Box 155, Folder 2-3	Volume II: Appendixes. [2 folders]
	-Option Period Study
	Monthly Progress Report. (MDC/MDAC.)
Box 155, Folder 4	[progress through October 1970] (MDC G0727. November 1970.)
Box 155, Folder 5	[progress through November 1970] (MDC G0756. December 1970.)
Box 155, Folder 6	[progress through December 1970] (MDC G0777. January 1971.)
Box 155, Folder 7	Executive Summary. (MDC/MDAC. MDC G0786. March 1971.) [2 copies]
	Preliminary Performance Specifications. (MDC/MDAC. MDC G0771.)
	Volume I: Preliminary Crew Cargo Module for Space Station Project.
Box 155, Folder 8	(January 1971.)
Box 156, Folder 1	(March 1971.)
Box 156, Folder 2	Volume II: Space Station Module for Space Station Project. (January 1971.)
Box 156, Folder 3	Volume III: Artificial-Gravity System for Space Station Project. (January 1971.)
Box 156, Folder 4-6	Selected Experiment Definition. (MDC/MDAC. MDC G0764. January 1971.) [3 folders]
	Space Station Program Development Definition. (MDC/MDAC. MDC G2150. March 1971.)
Box 156, Folder 7	Volume I: Addenda Program, Project Specifications and Support and Interface Requirements.
Box 156, Folder 8	Volume II: Program Plan
	Report on Selected Update Tasks for Baseline Space Station. (MDC/MDAC. MDC G0783. February 1971.)
Box 157, Folder 1-2	Volume I: Selected Update Tasks. [2 folders]

Box 157, Folder 3	Volume II: Thermal Control
Box 157, Folder 4	Analysis of Modular Space Station Impact on KSC. (MDC/MDAC. MDC G2138. March 1971.)
Box 157, Folder 5-6	Crew Cargo Module Definition. (MDC/MDAC. MDC G0787. February 1971.) [2 folders]
Box 157, Folder 7	Appendixes
Box 157, Folder 8	Program Plans. (MDC/MDAC. MDC G2149. March 1971.)
Box 158, Folder 1	Costs and Schedules Data. (MDC/MDAC. MDC G2122. February 1971.)
	-Study Extension Period
Box 158, Folder 2	First Performance Review [presentation graphics]. (MDC/MDAC. MDC G2279. April 1971)
	Letter Progress and Status Report. (MDC/MDAC.)
Box 158, Folder 3	First Monthly Progress Report (4 Feb 1971-4 March 1971). (15 March 1971.)
Box 158, Folder 4	Second Monthly Progress Report (4 March 1971-4 April 1971). (15 April 1971.)
Box 158, Folder 5	Fourth Monthly Progress Report (4 May 1971-4 June 1971). (15 June 1971.)
Box 158, Folder 6	Fifth Monthly Progress Report (4 June 1971-4 July 1971). (15 July 1971.)
Box 158, Folder 7	Sixth Monthly Progress Report (4 July 1971-4 August 1971). (15 August 1971.)
Box 158, Folder 8	Seventh Monthly Progress Report (4 August 1971-4 September 1971). (15 September 1971.)
Box 158, Folder 9	Eighth Monthly Progress Report (4 September 1971-4 October 1971). (15 October 1971.)
Box 158, Folder 10	Modular Space Station Concept. (MDC/MDAC. MDC G2267. March 1971.)
Box 158, Folder 11	Modular Space Station with 22-Ft-Diameter Core. (MDC/MDAC. MDC G2339. May 1971.)

Box 158, Folder 12	Phase B Mass Property Status Report. (MDC/MDAC. MDAC G2505. August 1971.)
	Space Station Program (Phase B) Definition Study [North American Rockwell contract].
	Solar-Powered Space Station Preliminary Design. (NAR/SD. (MSC-00720). July 1970.)
Box 159, Folder 1	Volume IV: Special Studies, Engineering Analysis. (SD 70-159-4.)
	Nuclear Reactor-Powered Space Station Definition and Preliminary Design. (NAR/SD. (MSC-00741). January 1971.)
Box 159, Folder 2	Volume I: Summary. (SD 70-168-1.)
Box 159, Folder 3	Volume II: Operations. (SD 70-168-2.)
Box 159, Folder 4-5	Volume III: Electrical Power Subsystem. (SD 70-168-3.) [2 folders]
Box 160, Folder 1	Volume IV: Subsystems: Environmental Control and Life Support, Guidance and Control, Reaction Control, Information Management. (SD 70-168-4.)
Box 160, Folder 2	Volume V: Subsystems: Structure, Environmental Protection, Docking, Crew/Habitability. (SD 70-168-5.)
Box 160, Folder 3	Volume VI: Configuration Preliminary Design. (SD 70-168-6.)
Box 226 (OS), Folder 1	Volume VII: Drawings. (SD 70-168-7.)
	-Options Period Study
Box 160, Folder 4	Space Station Mockup Brochure. (NAR/SD. SD 70-536 (MSC-02455). November 1970.) [2 copies]
Box 160, Folder 5	Nuclear Reactor-Powered Space Station Mass Properties. (NAR/SD. SD 70-503 (MSC-00748). November 1970.)
	Nuclear Reactor-Powered Space Station Development Definition. (NAR/SD. (MSC-00749). December 1970.)
Box 160, Folder 6	Volume I: Program Element Specification. (SD 70-505-1.)
Box 160, Folder 7	Volume II: Program Element Master Plan. (SD 70-505-2.)

	Nuclear Reactor-Powered Space Station Preliminary Performance Specification. (NAR/SD. (MSC-02451). November 1970.)
Box 161, Folder 1	Volume 1: Core Module System, Sections 6-9. (SD 70-527-1-1.)
Box 161, Folder 2	Volume 1: Core Module System, Appendix. (SD 70-527-1-2.)
Box 161, Folder 3	Volume 2: Pre-Mission Operations Support. (SD 70-527-2.)
Box 161, Folder 4	Volume 3: Mission Operations Support. (SD 70-527-3.)
Box 161, Folder 5	Options Period Executive Summary. (NAR/SD. SD 70-537 (MSC-02456). January 1971.)
Box 161, Folder 6	Solar-Powered Space Station Thermal Concept Formulation. (NAR/SD. SD 70-535 (MSC-02454). November 1970.)
	Radioisotope-Powered Space Station Design Sheets. (NAR/SD. (MSC-00746). November 1970.)
Box 162, Folder 1	Volume 2: Pre-Mission Operations Support. (SD 70-512-2.)
Box 162, Folder 2	Volume 3: Mission Operations Support. (SD 70-512-3.)
	Radioisotope-Powered Space Station Definition. (NAR/SD. (MSC-00747). January 1971.
Box 162, Folder 3	Volume I: Summary. (SD 70-502-1.)
Box 162, Folder 4	Volume II: Operations. (SD 70-502-2.)
Box 162, Folder 5	Volume III: Subsystems. (SD 70-502-3.)
Box 163, Folder 1	Cargo Module Definition. (NAR/SD. SD 70-540 (MSC-00759). January 1971.)
Box 163, Folder 2	Cargo Module Design Sheets. (NAR/SD. SD 70-541 (MSC-02460). December 1970.)
Box 163, Folder 3	Space Station Core Module Mockup Review and Evaluation. (NAR/SD. SD 70-542-1 (MSC-02461). January 1971.)
Box 163, Folder 4	International System of Units Conversion Assessment. (NAR/SD. SD 70-543 (MSC-02462). January 1971.)
Box 163, Folder 5	Space Station - A Guide for Experimenters. (NAR/SD. SD 70-534 (MSC-02453). October 1970.)

	Quarterly Progress Report. (NAR/SD.)
Box 163, Folder 6	October Quarterly Progress Report [presentation graphics]. (SD 70-544. October 1970.)
	33 Foot Diameter Space Station, Kennedy Space Center Launch Site Support Definition. (NAR/SD. (MSC-02463). December 1970.)
Box 163, Folder 7	Volume 1. (SD 70-545-1.)
Box 164, Folder 1	Volume 2. (SD 70-545-2.)
	Shuttle-Launched Modular Space Station. (NAR/SD. (MSC-02464). January 1971.)
Box 164, Folder 2	Volume I: Concept Definition. (SD 70-546-1.)
Box 164, Folder 3	Volume II: System Development Requirements. (SD 70-546-2.)
Box 164, Folder 4	Volume III: 22-Foot Diameter Core Module Comparison. (SD 70-546-3.)
	-Modular Space Station Program (Extension Period Study).
Box 165, Folder 1	Extension Period Study Plan. (NAR/SD. SD 71-201 (MSC-02466). February 1971.)
	Quarterly Report. (NAR/SD. (MSC-02467).)
Box 165, Folder 2	First Quarterly Report. (SD 71-213. 20 May 1971.)
Box 165, Folder 3	Second Quarterly Report. (SD 71-235. 2 September 1971.)
Box 226 (OS), Folder 2	Drawings. (NAR/SD. SD 71-216 (MSC-02470). January 1972.)
Box 165, Folder 4	Mass Properties Final Report. (NAR/SD. SD 71-219 (MSC-02472). 5 November 1971.)

Subseries III.D.6.: Manned Interplanetary Concepts, 1962-1967

Arrangement: This subseries consists of documents and studies relating to planning for the manned exploration of space beyond the Earth-Moon system. Materials are filed chronologically by study. Where the material includes parallel or competing studies (such as the "Early Manned Interplanetary Mission Study" (below), contracts for which were awarded to both General Dynamics and Lockheed), such studies are filed in their normal chronological place but the name of the relevant contractor is appended to the study title in brackets.

Box 165, Folder 5	"A Possible Approach to the Scientific Exploration of the Planet Mars." (E. A. Steinhoff; RAND. P-2515. January 12, 1962.)
	A Study of Early Manned Interplanetary Missions [General Dynamics contract].
Box 165, Folder 6-7	[Final Summary Report.] [GD/Astronautics. AOK 63-0001. January 1963.] [2 folders] Notes: [incomplete photocopy, sections 8+ only; publication information from GD|A 63-0916, ref.21]
Box 165, Folder 8	[presentation graphics.] (GD/Astronautics. AOK 63-0020. 25 May 1963.)
	Early Manned Interplanetary Mission Study [Lockheed contract].
	Summary Report. (Lockheed/LMSC. 8-32-63-1. March 1963.)
Box 166, Folder 1-2	Volume 1. [2 folders]
Box 166, Folder 3	"The Mission for a Manned Expedition to Mars." (Walter M. Hollister, Ph.D. dissertation; MIT. 10 May 1963.)
Box 166, Folder 4	"Study of Interplanetary Missions to Mercury with Emphasis on Manned Missions to Venus and Mars 1973/82 Involving Capture." (K. A. Ehricke; GD/A. GD|A 63-0916. 30 September 1963.)
Box 166, Folder 5	"A Programmatic Comparison of Initial Manned Missions to Venus and Mars." (K. A. Ehricke; GD/A. AOK 63-031. 16 October 1963.)
	A Study of Manned Locomotion and Protection Systems for Moon, Mars, and Venus.
Box 166, Folder 6	[Report.] (Bell/BAC. D7183-920001. October 1963.)
	Mars Landing and Reconnaissance Mission Environmental Control and Life Support System Study.
Box 166, Folder 7	Midterm Review [presentation graphics]. (UAC/HS. October 23, 1963.)
	Manned Mars Exploration in the Unfavorable (1975-1985) Time Period.
	Final Study Report. (Douglas/MSSD. February 1964.)
Box 167, Folder 1	Volume VI: Entry Analysis. (SM-45580.)
Box 167, Folder 2	Volume VII: Life Sciences and Human Factors. (SM-45581.)
Box 167, Folder 3	Volume VIII: Life Support and Environmental Control. (SM-45582.)

Box 167, Folder 4	Volume IX: Auxiliary Power and Electronics. (SM-45583.)
Box 167, Folder 5-6	Volume X: Vehicle and Structural Design. (SM-45584.) [2 folders]
Box 167, Folder 7	Volume XI: Propulsion and Propellant Management. (SM-45585.)
Box 167, Folder 8	Volume XII: Program Development. (SM-45586.)
	Study of Subsystems Required for a Mars Mission Module.
	Final Report. (NAA/SID.)
Box 168, Folder 1	Volume 1: Condensed Summary. (SID 64-1-1. 2 February 1964.)
Box 168, Folder 2-3	Volume 4: Aerobraking. (SID 64-1-4. 2 January 1964.) [blueprint copy; 2 folders]
	Evaluation of Advanced Integrated Display and Control Systems.
Box 168, Folder 4	Space Mission Definition. (LTV/AD. 00.307. April 1964.)
	Manned Mars Landing and Return Mission Study.
	Final Report. (NAA/SID. April 1964.)
Box 168, Folder 5	Volume 1: Condensed Summary. (SID 64-619-1.)
Box 168, Folder 6	Volume 2: Operational Considerations. (SID 64-619-2.)
	Mars Surface Operations Studies
	Proposal. (GE/MSD. MSD Prop. No. N-40132. May 6, 1964.)
Box 168, Folder 7	Volume 1: Technical Proposal
Box 168, Folder 8	"Technical Synopsis - Manned Mars Mission." (K. Scott Foster; Honeywell/SAS. SD-232. 15 May 1964.)
	Retrorocket-Parachute Landing System Study for Earth and Martian Entry Vehicles.
	Final Report. (Northrop/VD. NVR-3559. June 1964.)
Box 168, Folder 9	[folder 1 of 2]
Box 169, Folder 1	[folder 2 of 2]
	Manned Mars/Venus Flyby Vehicle Systems Study [Honeywell contract].

Box 169, Folder 2	Program [proposal]. (Honeywell/SAS. 4B-E-66. 5 June 1964.)
Box 169, Folder 3	"A Program for Manned Interplanetary Missions" [presentation graphics]. (NAA/SID. SID 64-1198. July 1964.)
	A Study of Manned Interplanetary Missions.
	Final Report. (GD/Astronautics. 1 July 1964.)
Box 169, Folder 4	Volume III: Mission Oriented Studies. (GD|A-AOK 64-006-3.)
Box 169, Folder 5	Volume III Supplement: Mission Oriented Studies. (GD|A-AOK 64-006-3S.)
Box 169, Folder 6-7	Volume V: Crew, Payload, Weights and Parametric Analyses. (GD|A-AOK 64-006-5.) [2 folders, including folded diagram]
Box 169, Folder 8	Volume V Supplement: Crew, Payload, Weights and Parametric Analyses. (GD|A-AOK 64-006-5S.)
	Manned Planetary Reconnaissance Mission Study.
	-Venus/Mars Flyby
Box 170, Folder 1	Technical Summary Report. (MSFC/FPO. FPO Internal Note 1-64. November 1964.)
	Manned Mars and Venus Exploration Studies.
Box 170, Folder 2	Mid-Term Presentation [presentation graphics]. (GD/A. 1 December 1964.)
	A Study of the Development of a Basic Planetary Transportation Systems Model / Space Technology Analysis and Mission Planning (STAMP) [General Dynamics contract]. Notes: Study renamed "Space Technology Analysis and Mission Planning" in early 1964.
Box 170, Folder 3	Presentation of 30 January 1964 [presentation graphics]. (K. A. Ehricke; GD/A. GD|A-AOK 64-003. 28 January 1964.)
	Final Report. (GD/A. c.1965.)
Box 170, Folder 4	Volume I: Summary. (GD|A-AOK 65-001-1.)
	Planetary Transportation Systems Model Study / Space Technology Analysis and Mission Planning (STAMP) [Martin contract]. Notes: Study renamed "Space Technology Analysis and Mission Planning" in early 1964.

Box 170, Folder 5	Summary Report. (R. Novosad and M. Capehart; MMC/DD. MARTIN-CR-65-14. January 1965.)
Box 170, Folder 6	Research and Technical Implication Report. (R. Novosad and M. Capehart; MMC/DD. MARTIN-CR-65-15. January 1965.)
	Study of Conjunction Class Manned Mars Trips
Box 170, Folder 7	Midterm Progress Briefing [presentation graphics]. (Douglas/MSSD. SM-47779. December 1964.)
Box 170, Folder 8	[presentation graphics.] (Douglas/MSSD. SM-48658. April 1965.)
	Technical Details. (Douglas/MSSD. SM-48662. June 1965.)
Box 170, Folder 9	Part I of II.
Box 170, Folder 10	Part II of II.
	S-IVB/Saturn V for Planetary Reconnaissance
	[Report.] (Douglas/MSSD. SM-46912. January 1965.)
	Volume 1: The Study
Box 171, Folder 1-2	Book I. [2 folders]
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Box 172, Folder 1	Book III
Box 172, Folder 2	"Cryogenic Space Vehicles Orbital Rendezvous Program." (Douglas/MSSD. PP151. c.1965.)
	Study of Interplanetary Mission Support Requirements [Boeing contract].
Box 172, Folder 3	Summary Report. (Boeing/ASD. D2-23588-4. May 1965.)
Box 172, Folder 4-6	Final Technical Report. (Boeing/ASD. D2-23588-5. May 1965.) [3 folders]
Box 172, Folder 7	General Technical Summary. (Boeing/ASD. D2-23588-6. May 1965.)
	Interplanetary Mission Support Requirements Study [Douglas contract].
	[Final Report.] (Douglas/MSSD. June 1965.)
Box 172, Folder 8	Volume I: Summary. (SM-48715.)

Box 173, Folder 1	Volume III: Appendix. (SM-48717.)
	Manned Mars and/or Venus Flyby Vehicle Systems Study [North American contract].
	Final Report. (NAA/SID. June 1965.)
Box 173, Folder 2	Volume 3: Spacecraft Configurations and Subsystems Design. (SID 65-761-3.)
Box 173, Folder 3-6	Part 2. (SID 65-761-3A.) [blueprint copy; 4 folders]
	Volume 4: System Evaluation. (SID 65-761-4.)
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Box 174, Folder 3	Volume 5: Reliability Analysis. (SID 65-761-5.)
Box 174, Folder 4	Final Briefing Brochure. (NAA/SID. SID 65-761-6. 18 June 1965.)
Box 174, Folder 5	"Reliability for Manned Interplanetary Travel." (Roy B. Carpenter, Jr.; NAA/SID. SID 65-464. July 1965.)
	Manned Mars Surface Operations Study
	Final Report. (Avco/RAD. RAD-TR-65-26. 30 September 1965.)
	Detailed Technical Report
Box 174, Folder 6	Parts 1 through 3.
Box 175, Folder 1-3	Parts 4 through 7. [3 folders]
Box 175, Folder 4	"A Reliability Concept for Long Range Space Missions." (Roy B. Carpenter; NAA/SID. SID 65-1255. 12 October 1965.)
	A Study of Manned Planetary Flyby Missions Based on Saturn/Apollo Systems
	Six-Month Briefing. (NAA/SID. 1 February 1967.)
Box 175, Folder 5	Volume A: Midterm Briefing [presentation graphics]. (AS 67-5.)
Box 175, Folder 6	Volume B: Launch and Injection (Supplementary Material for Six-Month Briefing). (SID 67-110-2.)

Box 175, Folder 7-8	Volume C: Mission-Objective Systems (Supplementary Material for Six-Month Briefing). (SID 67-110-3.) [2 folders]
Box 175, Folder 9	Volume D: Spacecraft and Subsystem Integration (Supplementary Material for Six-Month Briefing). (SID 67-110-4.)
	Final Report. (NAA/SD. August 1967.)
Box 176, Folder 1	Volume 1: Summary Report. (SID 67-549-1.)
Box 176, Folder 2	Volume 2: Final Briefing [presentation graphics]. (SID 67-549-2.)
Box 176, Folder 3	Volume 3: Missions Data Book. (SID 67-549-3.)
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	Volume 5: Spacecraft Design
	Part I: Design Integration. (SID 67-549-5-1.)
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Box 177, Folder 3	Part III: Meteoroid Protection, Structures, Weights. (SID 67-549-5-3.)
	Volume 6: Subsystems Analysis
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Box 178, Folder 1	Part III: Guidance and Control, Propulsion, Hyperbolic Earth Entry. (SID 67-549-6-3.)
Box 178, Folder 2	Part IV: Telecommunications. (SID 67-549-6-4.)
	Volume 7: Scientific and Engineering Data.
Box 178, Folder 3	Part I. (SID 67-549-7-1.)
Box 178, Folder 4-5	Part II. (SID 67-549-7-2.) [2 folders]
Box 179, Folder 1	Volume 8: Probe Designs. (SID 67-549-8.)

Box 179, Folder 2	Volume 9: Resource Analysis and Evaluation. (SID 67-549-9.)
	Feasibility Study of Modifying the S-II Stage as an Injection Stage for Manned Planetary Flyby Missions
Box 179, Folder 3	Second Midterm Review [presentation graphics]. (NAA/SID. SID 66-1630-5-1. February 1967.)
	Final Report. (NAA/SID.)
Box 179, Folder 4	Volume I: Summary Report. (SID 67-275-1. April 1967.)
	Volume II: S-IIB Injection Stage. (SID 67-275-2. March 1967.)
Box 179, Folder 5	Part 1.
Box 179, Folder 6-8	Part 2. [3 folders]
Box 180, Folder 1	Volume III: Tanker Concepts and LOX Transfer. (SID 67-275-3. March 1967.)
Box 180, Folder 2	Volume IV: Resource Analysis. (SID 67-275-4. March 1967.)
Box 180, Folder 3	Volume V: Summary Briefing [presentation graphics]. (SID 67-275-5. April 1967.)
Box 180, Folder 4	Volume VI: Technical Briefing [presentation graphics]. (SID 67-275-6. April 1967.)
	Definition Study of Experimental Tests for a Manned Mars Excursion Module
	Phase I Report. (NAA/SID. February 1967.)
Box 180, Folder 5	Summary Briefing [presentation graphics]. (SID 67-216.)
Box 180, Folder 6	[additional presentation graphics.] (SID 67-216-1.)
	Phase II Report. (NAA/SD. June 1967.)
Box 180, Folder 7	Summary Briefing [presentation graphics]. (SID 67-588-1.)
Box 180, Folder 8	[additional presentation graphics]. (SID 67-588-2.)
	Final Report. (NAA/SD. 12 January 1968.)
Box 180, Folder 9	Volume III: Test Program. (SD 67-755-3.)

Box 181, Folder 1	"The Plasma Radiation Shield: Concept and Application to Space Vehicles." (Richard H. Levy and Francis W. French; Avco/ERL. Research Report 258. April 1967.)
	Feasibility Study of Modifying the Instrument Unit for Manned Planetary Flyby Mission
Box 181, Folder 2	Presentation. (IBM/FSD. 5 April 1967.)
	Feasibility Study of Modifying the S-IVB Stage as an Injection Stage for Manned Planetary Flyby Missions
	[Report]. (Douglas/MSSD. May 1967.)
Box 181, Folder 3	Volume I: Summary Report. (SM-57996.)
Box 181, Folder 4-5	Volume II: Final Technical Report. (SM-57997.) [2 folders]
Box 181, Folder 6	Volume III: Cost. (SM-58022.)
	-Tradeoff Study of a New Cryogenic Stage for Manned Planetary Exploration [extension to basic study]
Box 181, Folder 7	Final Review [presentation graphics]. (Douglas/MSSD. DAC-58054. September 1967.)
	Study of Technology Requirements for Atmosphere Braking to Orbit About Mars and Venus
Box 181, Folder 8	First Interim Briefing [presentation graphics]. (NAA/SID. SID 67-375. 2 May 1967.).
	Mission Engineering Study of Electrically Propelled Manned Planetary Vehicles
	Final Report. (GE/MSD/ANSO.)
Box 181, Folder 9	Volume I: Summary Report. (ANSO 6300-213. May 5, 1967.)
Box 181, Folder 10	Volume II: Mission Analysis Topical Report. (ANSO 6300-214. July 19, 1967.)
	Volume III: Operational Analysis Topical Report. (ANSO 6300-215. July 19, 1967.)
Box 181, Folder 11	Book II.
	Alternative Mission Modes Study

	Final Report. (TRW/SG. September 1967.)
Box 181, Folder 12	Volume I: Summary Report. (07394-6008-R000.)
Box 182, Folder 1	Volume II: Technical Report. (07394-6009-R000.)
Box 182, Folder 2	Integrated Manned Interplanetary Spacecraft Concept Definition (IMISCD) Study
	Phase 2 Briefing Report [presentation graphics]. (Boeing/AG. D2-113543-2. September 6, 1967.)

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Series IV: Space Science and Applications, 1957-1971

Arrangement: This series consists of documents pertaining to NASA's unmanned space exploration (planetary reconnaissance) and satellite programs. Materials are divided into subseries by topic:

- IV.A. General (1958-1971)
- IV.B. JPL Program Summaries (1961-1969)
- IV.C. Spacecraft Power Supplies (1960-1971)
- IV.D. Earth Orbital Satellites (1959-1970)
- IV.E. Planetary Reconnaissance (1957-1971)

Subseries IV.A.: General, 1958-1971

Arrangement: This subseries consists of documents which do not relate specifically to any particular program nor to the broad subject areas of the other subseries. Materials are arranged chronologically.

Box 182, Folder 3	"Experiments in Interplanetary Biomigration and Space Contamination." (I. Cooper and A. G. Wilson; RAND. P-1406. June 16, 1958.)
Box 182, Folder 4	"On the Rotational Motion of a Body Re-Entering the Atmosphere." (T. B. Garber; RAND. P-1407. July 1959.)
Box 182, Folder 5	"Space Vehicle Attitude Control." (Norri Sirri; JPL. Technical Release 34-121. October 2, 1960.)
Box 182, Folder 6	"Phenomena in the Upper Atmosphere - Review of Soviet Literature." (LC/AID. 62-40. 31 March 1961.)
Box 182, Folder 7	"The Coma Custer of Galaxies, I: Size and Structure." (Guy C. Omer, Jr., Thonrton L. Page, and A. G. Wilson; RAND. P-3088. March 1965.)
Box 182, Folder 8	"Proceedings of the CalTech-JPL Lunar and Planetary Conference, September 13-18, 1965." (JPL. TM 33-266. June 15, 1966.)
Box 182, Folder 9	"TRW Spacecraft Stabilization Activities" [brochure]. (TRW. c.1967.)
Box 182, Folder 10	"Power Systems Division - TRW Systems" [presentation graphics]. (TRW/SG. c.1968.)
Box 182, Folder 11	"Plasma Properties and Performance of Mercury Ion Thrusters." (T. D. Masek; JPL. TR 32-1483. June 15, 1970.)
Box 182, Folder 12	"Spacecraft Adhesives for Long Life and Extreme Environments." (W. D. Roper; JPL. TR 32-1537. August 1, 1971.)
Box 182, Folder 13	"A Reduced Star Catalog Containing 537 Names Stars." (Jack W. Rhoads; JPL. TM 33-507. November 15, 1971.)

Subseries IV.B.: JPL Program Summaries, 1961-1970

Scope and Contents: The Jet Propulsion Laboratory's 37- series Space Program Summary publications summarized JPL's activities in support of NASA operations. Issues 37-1 through 37-14 were organized in two volumes: Volume I contained unclassified material while Volume II contain material classified "Confidential." Issues 37-15 through 37-46 were organized into six volumes: Volumes I, II, and V contained material classified "Confidential," Volume II covered the Deep Space Instrumentation Facility/Deep Space Network, Volume IV contained unclassified material on Supporting Research and Advanced Development, and Volume VI covered Space Exploration Programs and Space Sciences. Issue 37-47 and later were organized into four volumes: Volume I covered Flight Projects, Volume II the Deep Space Network, Volume III covered Support Research and Advanced Development, and Volume IV contained any classified material. This subseries contains volumes specifically covering spaceflight projects - Volume I from issue 37-1 through 37-14, Volume VI for issue 37-15 through 37-46, and Volume I for issue 37-47 and subsequent. For summary volumes covering the Deep Space Network, see subseries V.B. (Tracking and Data Acquisition). For summary volumes covering other JPL development activities, see subseries VI.B. (Advanced Research and Technology). For issues which are not part of this collection, see also the Jet Propulsion Laboratory Publications Collection (NASM Accession XXXX-0612), Series X.

	"Space Programs Summary." (JPL.)
	Volume I [Unclassified Activities]
Box 182, Folder 14	for the period March 1, 1961 to May 1, 1961. (SPS 37-9. June 1, 1961.)
	Volume VI: Space Exploration Programs and Space Sciences.
Box 182, Folder 15	for the period March 1, 1962 to June 1, 1962. (SPS 37-15. June 30, 1962.)
Box 183, Folder 1	for the period May 1, 1962 to August 1, 1962. (SPS 37-16. August 31, 1962.)
Box 183, Folder 2	for the period July 1, 1962 to October 1, 1962. (SPS 37-17. October 31, 1962.)
Box 183, Folder 3	for the period September 1, 1962 to December 1, 1962. (SPS 37-18. December 31, 1962.)
Box 183, Folder 4	for the period November 1, 1962 to January 31, 1963. (SPS 37-19. February 28, 1963.)
Box 183, Folder 5	for the period January 1, 1963 to March 31, 1963. (SPS 37-20. April 30, 1963.)
Box 183, Folder 6	for the period March 1, 1963 to May 31, 1963. (SPS 37-21. June 30, 1963.)
Box 183, Folder 7	for the period May 1, 1963 to July 31, 1963. (SPS 37-22. August 31, 1963.)

Box 183, Folder 8	for the period July 1, 1963 to September 30, 1963. (SPS 37-23. October 31, 1963.)
Box 183, Folder 9	for the period September 1, 1963 to November 30, 1963. (SPS 37-24. December 31, 1963.)
Box 183, Folder 10	for the period November 1, 1963 to December 31, 1963. (SPS 37-25. January 31, 1964.)
Box 183, Folder 11	for the period January 1, 1964 to February 29, 1964. (SPS 37-26. March 31, 1964.)
Box 183, Folder 12	for the period March 1, 1964 to April 30, 1964. (SPS 37-27. May 31, 1964.)
Box 183, Folder 13	for the period May 1, 1964 to June 30 ,1964. (SPS 37-28. July 31, 1964.)
Box 183, Folder 14	for the period July 1, 1964 to August 31, 1964. (SPS 37-29. September 30, 1964.)
Box 183, Folder 15	for the period September 1, 1964 to October 31, 1964. (SPS 37-30. November 30, 1964.)
Box 183, Folder 16	for the period November 1, 1964 to December 31, 1964. (SPS 37-31. January 31, 1965.)
Box 183, Folder 17	for the period January 1, 1965 to February 28, 1965. (SPS 37-32. March 31, 1965.)
Box 183, Folder 18	for the period March 1, 1965 to April 30, 1965. (SPS 37-33. May 31, 1965.)
Box 184, Folder 1	for the period May 1, 1965 to June 30, 1965. (SPS 37-34. July 31, 1965.)
Box 184, Folder 2	for the period July 1, 1965 to August 31, 1965. (SPS 37-35. September 30, 1965.)
Box 184, Folder 3	for the period September 1, 1965 to October 31, 1965. (SPS 37-36. November 30, 1965.)
Box 184, Folder 4	for the period November 1, 1965 to December 31, 1965. (SPS 37-37. January 31, 1966.)
Box 184, Folder 5	for the period January 1, 1966 to February 28, 1966. (SPS 37-38. March 31, 1966.)
Box 184, Folder 6	for the period March 1, 1966 to Aril 30, 1966. (SPS 37-39. May 31, 1966.)
Box 184, Folder 7	for the period May 1, 1966 to June 30, 1966. (SPS 37-40. July 31, 1966.)

Box 184, Folder 8	for the period July 1 to August 31, 1966. (SPS 37-41. September 30, 1966.)
Box 184, Folder 9	for the period September 1 to October 31, 1966. (SPS 37-42. November 30, 1966.)
Box 184, Folder 10	for the period November 1 to December 31, 1966. (SPS 37-43. January 31, 1967.)
Box 184, Folder 11	for the period January 1 to February 28, 1967. (SPS 37-44. March 31, 1967.)
Box 184, Folder 12	for the period March 1 to April 30, 1967. (SPS 37-45. May 31, 1967.)
Box 184, Folder 13	for the period May 1 to June 30, 1967. (SPS 37-46. July 31, 1967.)
	Volume I: Flight Projects
Box 184, Folder 14	for the period March 1 to April 30, 1968. (SPS 37-51. May 31, 1968.)
Box 184, Folder 15	for the period May 1 to June 30, 1968. (SPS 37-52. July 31, 1968.)
Box 184, Folder 16	for the period November 1 to December 31, 1969. (SPS 37-61. January 31, 1970.)

Subseries IV.C.: Spacecraft Power Supplies, 1960-1971

Arrangement: The material in this subseries relates to power sources for unmanned spacecraft in general. Documents relating to the power supply for a specific spacecraft or mission are filed under that specific program. Materials are arranged chronologically.

	Allison Research and Development of Solar Reflectors
	[Report]. (Allison/ED. 1826. 15 August 1960.)
Box 184, Folder 17	Volume I. [blueprint copy]
Box 184, Folder 18	Volume II. [blueprint copy]
Box 185, Folder 1	"Capabilities and Facilities." (GE/DECO. DE-21A. No date.)
Box 185, Folder 2	General Electric - Fuel Cells (miscellaneous) Notes: [material from binder; documents listed in order of placement in binder] • "Putting Fuel Cells to Work: A Progress Report on General Electric Fuel Cell Development, 2nd Edition." (GE/DECO. GEA-7538-A. c.1963.)

	• "Fuel Cell Development at General Electric." (GE/DECO. GEA-7540. c.1962.) • "Failure Mode and Effect Analysis" [loose pages from binder]. • "A New Type of Fuel Cell." (GE/RL. May 1963.) [photocopy] • "Development of an Air-Breathing Fuel Cell Power Source." (L. E. Chapman and E. A. Oster; GE/AP. Presented before the fifteenth annual Power Sources Conference, Atlantic City, NJ. May 1961.) [photocopy] • "Status of Development and Future Prospects for the Ion-Exchange Membrane Fuel Cell." (George A. Phillips; GE/DECO. Prepared for presentation at the Fall Meeting of the American Institute of Electrical Engineers, Detroit, MI. DE-4 (AAT-447). October 15-20, 1961.) • "Process with Cation-Exchange Membrane Fuel Cell Batteries." (E. A. Oster, GE/DECO. DE-29. May 23, 1962.) • "Ion-Exchange Membrane Fuel Cell for Space Vehicle Electric Power." (R. H. Blackmer and G. A. Phillips; GE/DECO. Prepared for presentation at the SAE National Aerospace Engineering and Manufacturing Meeting, Ambassador Hotel, Los Angeles, CA. DE-6 (AAT-445). October 9-13, 1961.) • "Fuel Cells" [brochure]. (GE/DECO. DE-85. No date.) • "Fuel Cell Power Source: Operating Principles of Ion-Membrane Fuel Cell." (GE/AATD. AE-12. No date.) [photocopy] • "Fuel Cell Development: Progress Report from General Electric - Ion Exchange Membrane Fuel Cell by L. W. Niedrach (1959); Ion Exchange Membrane Fuel Cell Batteries by E. A. Oster (1960)." (GE. No date.) [photocopy] • [loose clippings on fuel cells, 1961-1964] • "Hydrocarbon Fuel Cells - A Survey." (H. A. Liebhafsky and E. J. Cairns; GE/DECO. Prepared for Presentation at the American Institute of Electrical Engineers 1962 Pacific Energy Conversion Conference, San Francisco, CA. DE-34. August 12-16, 1962.) • "Status of the Carbon Electrode Fuel Cell Battery." (G. E. Evans; UC/ADD. Presented at the 49th National Meeting, American Institute of Chemical Engineers, New Orleans, LA. March 10-14, 1963.) [2 copies] • "Attributes of the Union Carbide Fuel Cell System." (UC. January 17, 1964.) • "Hydrazine Fuel Cell System." (Scott S. Tomter and A. Peter Antony; ACM/RD. July 3, 1963.) • "Fuel Cells: The Role of a Designer in a New Art." (Will Mitchell, Jr. and J. B. Calkins; ACM. No date.)
Box 185, Folder 3	"Lightweight Solar Panel Development." (Walter A. Hasbach; JPL. TR 32-1519. March 15, 1971.)
Box 185, Folder 4	"Structural Analysis of Silicon Solar Arrays." (L. W. Butterworth and R. K. Yasui; JPL. TR 32-1528. May 15, 1971.)

	1971 NASA/Goddard-Aerospace Industry Battery Workshop
	Transcript of Proceedings. (ACE Federal Reporters Inc.)
Box 185, Folder 5-6	[First Day]. (17 November 1971.) [2 folders]
Box 185, Folder 7	Second Day. (18 November 1971.)

Subseries IV.D.: Earth Orbital Satellites, 1959-1970

Scope and Contents: The material in this subseries are related to earth orbital satellites in general and some NASA satellite programs. Materials are arranged chronologically.

	1958 NASA/USAF Space Probes (ABLE-1)
	Final Report. (NASA. Memo 5-25-59W. June 1959.)
Box 185, Folder 8	Volume 1: Summary
Box 186, Folder 1	"Satellite Charge-Up as a Means of Maintaining the Shape of Echo-Type Satellites in the Outer Van Allen Belt." (R. O. Hundley; RAND. RM-2921-NASA. December 1961.)
Box 186, Folder 2	"The Application of Dynamic Programming to Satellite Intercept and Rendezvous Problems." (F. T. Smith; RAND. P-2683. December 1962.)
Box 186, Folder 3	"Structure and Composition of the Atmosphere." (Hilde K. Kallmann-Bijl; RAND, reprinted from Radio Astronomical and Satellite Studies of the Atmosphere, Jules Aarons, ed. (Amsterdam: North-Holland, 1963.). P-2666. 1963.)
Box 186, Folder 4	"A Study of Passive Communication Satellites." (S. H. Reiger; RAND. R-415-NASA. February 1963.)
Box 186, Folder 5	"Foreign Participation in Communications Satellite Systems: Implications of the Communications Satellite Act of 1962." (Murray L. Schwartz and Joseph M. Goldsen; RAND. RM-3484-RC. February 1963.)
Box 186, Folder 6	"A Passive Communication Satellite: Thistle." (T. F. Burke and A. E. Wessel; RAND. RM-3682-NASA. June 1963.)
	Orbiting Solar Observatory (S-17)
Box 186, Folder 7	Project Development Plan. (GSFC. March 19, 1962, rev. January 10, 1963.)
Box 186, Folder 8	"Notes on the Design and Operation of Satellite Tracking Stations for Geodetic Purposes." (SAO. Special Report 124. May 27, 1963.)

Box 186, Folder 9	"Use of a Laser for Satellite-Range Measurements." (P. H. Anderson, C. G. Lehr, and L. A. Maestre; SAO. Special Report 190R. October 21, 1965, rev. December 3, 1965.)
	TOS [Tiros Operational System]
Box 186, Folder 10	Mission Operations Plan. (GSFC. X-480-66-2. January 1966.)
	Delta-42, Intelsat II F-1
Box 186, Folder 11	Operations Summary. (KSC. TR-467. October 21, 1966.)
Box 186, Folder 12	"Scientific Satellites." (William R. Corliss; NASA/OTU. SP-133. 1967.)
Box 186, Folder 13	"Balloon Observations of the Radiance of the Earth Between 2100 cm-1 and 2700 cm-1." (J. H. Shaw, R. A. McClatchey, and P. W. Schaper; JPL. TR 32-1080; reprinted from Applied Optics, Vol.6 No.2. February 1967.)
Box 186, Folder 14	"Nimbus-Tiros M Comparison Study." (Nimbus-Tiros M Comparison Study Group, LRC. Langley Working Paper 712. February 4, 1969.)
	Orbiting Solar Observatory (OSO-G)
Box 187, Folder 1	Operations Plan 10-69. (GSFC. X-513-69-274. July 1969.)
Box 187, Folder 2	"Satellite Auxiliary-Propulsion Techniques." (Lee B. Holcomb; JPL. TR 32-1505. November 1, 1970.)

Subseries IV.E.: Planetary Reconnaissance, 1957-1971

Arrangement: The material in this subseries relates to the unmanned exploration of the solar system. The materials are organized into three subseries:

- IV.E.1. General (1961-1970)
- IV.E.2. General by Planet (1957-1970)
- IV.E.3. Planetary Reconnaissance Projects (1960-1971)

Subseries IV.E.1.: General, 1961-1970

Arrangement: This subseries consists of documents pertaining to planetary reconnaissance, but not to any specific planet or project. Materials are arranged chronologically by study.

Box 187, Folder 3	"The Performance Analysis of Ballistic Missile or Space Vehicle Guidance Systems." (A. N. Drucker; TRW/STL. May 1961.)
	Studies of the Physical Properties of the Moon and Planets
Box 187, Folder 4	Quarterly Technical Progress Report (4). (RAND. RM-2817-JPL. June 30, 1961.)

	Research Study to Determine Propulsion Requirements and Systems for Space Missions
	[Report.] (AGC.2150. December 1961.)
Box 187, Folder 5	Volume IIa. [photocopy]
Box 187, Folder 6	"A Method of Interplanetary Trip Selection." (J. W. Cottrell and C. E. Olson; Lockheed/LMSC. January 23, 1963.)
	[Study of Advanced Planetary Missions and Spacecraft Systems.]
	[Report.] (JPL. EPD-139.)
Box 187, Folder 7	Volume II: Study of Mar and Venus Orbiter Missions Launched by the 3-Stage Saturn C-1B Vehicle. (1 March 1963.)
Box 187, Folder 8	"Accuracy and Capabilities of the ASC/IITRI Conic Section Trajectory System." (P. M. Pierce and F. Narin; IITRI/ASC. T-5. c.1964).
Box 187, Folder 9	"The Accessible Regions Method of Energy and Flight Time Analysis for One-Way Ballistic Interplanetary Missions." (F. Narin; IITRI/ASC. T-6. June 22, 1964.).
Box 188, Folder 1	"Perturbation, Sighting and Trajectory Analysis for Periodic Comets: 1965-1975." (F. Narin and P. M. Pierce; IITRI/ASC. T-7. October 6, 1964.).
Box 188, Folder 2	"A Review of Lunar and Planetary Magnetic Field Measurements Using Space Probes." (Edward J. Smith; JPL. TR 32-1059; reprinted from Magnetism and the Cosmos, a collection of papers presented at the NATO Advanced Study Institute on Planetary and Stellar Magnetism, School of Physics, the University, Newcastle-upon-Tyne, England, 1965.)
Box 188, Folder 3	"Sighting and Trajectory Analysis for Periodic Comets: 1975-1986." (F. Narin and B. Rejzer; IITRI/ASC. T-11. March 15, 1965.)
Box 188, Folder 4	"Trajectory and Sighting Analysis for First-Apparition Comets." (P. M. Pierce; IITRI/ASC. T-13. June 1965.)
Box 188, Folder 5	"Low-Thrust Trajectory and Payload Analysis for Solar System Exploration Utilizing the Accessible Regions Methods." (A. L. Friedlander; IITRI/ASC. T-14. July 1965.)
Box 188, Folder 6	"Low-Thrust Trajectory Capabilities for Exploration of the Solar System Using Nuclear Electric Propulsion." (A. L. Friedlander; IITRI/ASC. T-17. October 1966.)
Box 188, Folder 7	"Optical Material Problems of Interplanetary Space." (Randolph A. Becker; JPL. TR 32-1098; reprinted from Applied Optics, Vol.6 No.5. May 1967.)

Box 188, Folder 8	"On the Problem of Comet Orbit Determination for Spacecraft Intercept Missions." (Alan L. Friedlander; IITRI/ASC. T-19. May 1967.)
Box 188, Folder 9	"The Accessible Regions Presentation of Gravity-Assisted Trajectories Using Jupiter." (D. A. Klopp and J. C. Niehoff; IITRI/ASC. T-18. June 1967.)
Box 188, Folder 10	"Planetary Program" [presentation graphics]. (NAA/SD. PD 67-39. September 1967.)
	Planetary Programs
Box 188, Folder 11	Launch Vehicles Appendix. (MMC/DD. PR 22-10-64-2. c.1968.)
	-Sterilizable Liquid Propulsion System
Box 188, Folder 12	Final Contract Briefing [presentation graphics]. (MMC/DD. ED22-15-14. 7 March 1968.)
Box 188, Folder 13	"Scientific Questions for the Exploration of the Terrestrial Planets and Jupiter - A Progress Report of the Advanced Planetary Missions Technology Program." (R. J. Mackin, Jr, et al.; JPL. TM 33-410. October 1, 1968.)
Box 188, Folder 14	"Orbital Imagery for Planetary Exploration - Condensed Summary." (IITRI/ASC. January 1970.)
	Planetary Orbital Imaging Sensor Support Requirements Study
Box 188, Folder 15	Final Oral Presentation [presentation graphics]. (IITRI/ASC. January 15, 1970.)
Box 188, Folder 16	"Trajectory and Propulsion Characteristics of Comet Rendezvous Opportunities." (A. L. Friedlanderm J. C. Niehoff, and J. I. Waters; IITRI/ASC. T-25. August 1970.)

Subseries IV.E.2.: General by Planet, 1957-1970

Arrangement: Documents in this subseries relate to specific planets or groups of planets but not to any specific exploration project. The materials are organized by planet beginning with the moon and proceeding in order outward from the sun. Unless otherwise noted, documents within each subseries are arranged chronologically by study.

- IV.E.2.a. Moon (1957-1970)
- IV.E.2.b. Venus (1962-1968)
- IV.E.2.c. Mars (1961-1968)
- IV.E.2.d. Outer Planets (Jupiter, Saturn, Uranus, Neptune, Pluto) (1961-1970)

Subseries IV.E.2.a.: Moon, 1957-1963

Box 189, Folder 1	"Accuracy Requirements for Trajectories in the Earth-Moon System." (H. A. Lieske; RAND. P-1022; presented at the Astronautics Symposium, San Diego, CA). February 19, 1957.)

Box 189, Folder 2	"Lunar Flight." (R. W. Buchheim; RAND. P-1248, class notes, Space Technology, UCLA Extension. 7 January 1958.)
Box 189, Folder 3	"Lunar Flight Trajectories." (R. W. Buchheim; RAND. P-1268, one of a series of lectures in a "Space Technology" course offered by the Extension Division of the University of California. January 30, 1958.)
Box 189, Folder 4	"Lunar Trajectory Studies." (H. A. Lieske; RAND. P-1293, to be presented at ARDC Symposium on Guidance of Ballistic Missiles and Space Vehicles, March 11-13, 1958. 26 February 1958.)
Box 189, Folder 5	"Lunar Rays: Their Formation and Age." (Louis A. Giamboni; RAND. P-1409; reprinted from The Astrophysics Journal, Vol.130 No.1. July 1959.)
Box 189, Folder 6	"Vehicle Design for Lunar Landings." (Robert L. Sohn; STL. STL/TR-060-0000-09169. 20 May 1960.)
Box 189, Folder 7	"Design of a Power System for a Lunar Mobile Surface Vehicle." (R. H. Brody; GE/DSD. 61SPC-3. 2 October 1961.)
Box 189, Folder 8	"Communication Systems Analysis for Lightweight Roving Lunar Vehicle." (G. L. Dunn; GE/SSO. 61SPC-4. 2 November 1961.)
Box 189, Folder 9	"Unmanned Mobile Vehicles for Lunar Surface Exploration." (M. E. Myton; GE/SSO. 61SPC-8. 13 November 1961.)
Box 189, Folder 10	"Summary of Lunar Roving Vehicle Studies." (L. M. Hughes and N. W. Jetta; GE/SSO. 61SPC-9. 20 November 1961.)
Box 189, Folder 11	"Proposal to Study Lunar Terrain Quantification Problems and Applications." (TI/SSD. 182-GD62. October 5, 1962.)
Box 189, Folder 12	"Characteristics of Particles Blown Away by Exhaust Jet Impingement on a Lunar Surface." (Robert L. Grossman; Grumman/ED. ADR 04-04-62.3. December 1962.)
	"Lunar Surface Materials Conference - Boston, Massachusetts - May 21, 22, 23, 1963."
	Volume I: Preprints. (JPL. c.1963.)
Box 189, Folder 13-14	[folders 1-2 of 4]
Box 190, Folder 1-2	[folders 3-4 of 4]
	Evaluation of Lunar Gravity Needs and Gravity Meter Capabilities
Box 190, Folder 3	Final Report. (TI/SSD. 5 July 1963.)

Box 190, Folder 4	"The Interaction of a Rocket Exhaust with the Lunar Surface." (Leonard Roberts; LRC. presented at a Specialists' Meeting on "The Fluid Dynamic Aspect of Space Flight" under the sponsorship of the Fluid Dynamics Panel of the Advisory Group for Aeronautic Research and Development, Marseille, France. April 20-24, 1964.)
	Study of the Feasibility of an Early Lunar Flare
Box 190, Folder 5	Final Report. (Douglas/MSSD. SM-47954. July 1964.)
	Continuing Feasibility Study for Early Lunar Flare (ELF)
	Final Report. (Douglas/MSSD. SM-49259. December 1965.)
Box 190, Folder 6	Volume I: Summary
Box 190, Folder 7	Volume II: Technical Discussion
Box 190, Folder 8	"The Utility of Unmanned Probes in Lunar Scientific Exploration." (R. C. Speed, J. B. Adams, and D. B. Nash; JPL. TM 33-241. July 15, 1965.)
Box 190, Folder 9	"Lunar Surface Strength." (Leonard D. Jaffe; JPL. TR 32-1068, reprinted from ICARUS: International Journal of the Solar System, Vol.6, No.1. January 1967.)
Box 191, Folder 1	"The Scientific Utility of Unmanned Lunar Surface Analysis Probes." (JPL. March 1967.)
	Scientific Instruments for Lunar Exploration
Box 191, Folder 2	Part B: Surveyors, Roving Vehicles, and Rough-Landed Probes. (R. G. Brereton, et al; JPL. ASD 760-3. May 1, 1967.)
	Lunar Survey Probe Utilization Study
Box 191, Folder 3	Summary Report. (JPL. 760-12. October 13, 1967.)
Box 191, Folder 4	"Lunar Traverse Seminar." (JPL. 760-27. July 26, 1968.)
Box 191, Folder 5-6	"A Study of Lunar Traverse Missions." (JPL Advanced Lunar Studies Team. 760-26. 16 September 1968.) [2 folders]
	Science Systems for Mobile Lunar Surface Exploration
Box 191, Folder 7	Preliminary Phase A Study Results. (JPL. 760-36. June 2, 1969.)
	Science Ground Data System and Science Operations Organization for Remotely Controlled Lunar Traverses

Box 191, Folder 8	Phase A Study Report. (C. W. B. McCormick; JPL. 760-39. October 10, 1969.)
Box 191, Folder 9	"Jet Propulsion Laboratory Lunar Studies." (JPL. 760-43. October 15, 1969.)
Box 191, Folder 10	"Value of Unmanned Rover Exploration of the Moon." (D. B. Nash, J. E. Conel, and F. P. Fanale; JPL. 760-56. January 6, 1970.)
	Radar Studies of the Moon
Box 191, Folder 11	Final Report. (MIT/LL. 28 February 1970.)
Box 191, Folder 12	"Crater Deflection Studies." (Ritchie B. Coryell and Larry Durr; JPL. 760-44. March 20, 1970.)
Box 191, Folder 13	"Lunar Landmark Study." (Richard Strelitz; JPL. 760-45. March 20, 1970.)
Box 191, Folder 14	"Remote Visual Examination of Rock Specimens: Preliminary Study of Operational Requirements." (Charles W. B. McCormick and Gary Bailey; JPL. 760-47. May 1970.)

Subseries IV.E.2.b.: Venus, 1962-1968

Box 191, Folder 15	"Radar Exploration of Venus." (Richard M. Goldstein; JPL. TR 32-280. May 25, 1962.)
Box 192, Folder 1	"VENUS: A Chapter from Issledovaniye fizicheskih uslovii na lunye i planetakh (Investigations of the Physical Conditions of the Moon and Planets). Kharkov, 1952." (N. P. Barabashev, translated by Douglas Scott and Dolores Mohr; RAND. RM-3194-JPL. June 1962.)
Box 192, Folder 2	"The Water Content of Venus Inferred from Her Microwave Brightness." (D. Deirmendjian; RAND. P-2794. September 1963.)
Box 192, Folder 3	"JPL Radar Range and Doppler Observations of Venus, 1961-1966." (D. O. Muhleman, C. L. Lawson, D. B. Holdridge, and D. A. O'Handley; JPL. TR 32-1123. July 1, 1968.)

Subseries IV.E.2.c.: Mars, 1962-1967

	A Study of the Optical System for a Mars Probe
Box 192, Folder 4	Final Report. (G. de Vaucouleurs and James G. Baker; Harvard/HCO. June 30, 1961.)
Box 192, Folder 5	"Optical Ellipticity and Internal Structure of Mars." (D. L. Lamar; RAND. RM-3127-JPL. June 1962.)

Box 192, Folder 6	"Limiting Model Atmospheres of Mars." (G. F. Schilling; RAND. R-402-JPL. August 1962.)
Box 192, Folder 7	"Some Geologic Problems of Mars." (Alden A. Loomis; JPL.) Notes: • (TR 32-400. March 4, 1963.) [2 copies] • (TR 32-400 Revision No.1, reprinted from *Geological Society of America Bulletin*, vol.76, October 1965. January 15, 1966.)
Box 192, Folder 8	"An Analysis of the Spectrum of Mars." (Lewis D. Kaplan, Guido Münch, and Hyron Spinrad; JPL. TR 32-554, reprinted from The Astrophysical Journal, Vol.139, No.1. January 1, 1964.)
Box 192, Folder 9	"A Preliminary Analysis of the Geology of Mars." (George P. Zebal; Ford/Philco/AD. U-3065. 19 March 1965.)
Box 192, Folder 10	"Thermal Ecology, Surface Moisture, Permafrost, and Ground Water on Mars." (George P. Zebal; Ford/Philco/AD. U-3072. 2 April 1965.)
Box 192, Folder 11	"High-Dispersion Spectroscopic Observations of Mars." (JPL. TR 32-1048.) Notes: • I. The CO_2 Content and Surface Pressure. (Hyron Spinrad, Ronald A. Schorn, Roger Moore, L. P. Giver, and Harlan J. Smith; JPL. reprinted from *Astrophysical Journal*, Vol.146, No.2, November 1966.) • II. The Water-Vapor Variations. (Ronald A. Schorn, Hyron Spinrad, Roger C. Moore, Harlan J. Smith, and Lawrence P. Giver; JPL. reprinted from *Astrophysical Journal*, Vol.147, No.2, February 1967.)
Box 192, Folder 12	"A Method for Obtaining the Radius of Mars." (Alden A. Loomis, Roger D. Bourke, and Daniel B. DeBra; JPL. TR 32-1091, reprinted from Journal of Geophysical Research, Vol.72, No.4. February 15, 1967.)
Box 192, Folder 13	"Performance of a Mars Soft-Lander with Staged Propulsion." (James H. Kelly and Lawrence J. Ginsberg; JPL. TR 32-1311, reprinted from Journal of Spacecraft and Rockets, Vol.5, No.7. July 1968.)
Box 192, Folder 14	"Carbon Monoxide in the Martian Atmosphere." (L. D. Kaplan, J. Connes, and P. Connes; JPL. TR 32-1458, reprinted from Astrophysical Journal, Vol.157, No.3, September 1967.)

Subseries IV.E.2.d.: Outer Planets (Jupiter, Saturn, Neptune, Uranus, Pluto), 1961-1970

Box 192, Folder 14	"The Conceptual Design of a Nuclear-Power Spacecraft for the Exploration of Jupiter." (Robert J. Beale; JPL. TR 32-115. May 24, 1961.)
	Advanced Planetary Probe Study
Box 192, Folder 15-16	Jupiter Flyby Application. (JPL. EPD-358. 2 May 1966.) [2 folders]

Box 193, Folder 1-3	Jupiter Flyby Application. (JPL. EPD-358 Revision 1. 12 August 1966.) [blueprint copy] [3 folders]
Box 193, Folder 4-5	"Application of the Saturn V Launch Vehicle to Unmanned Scientific Exploration of the Solar System." (Northrop/SL. TM-292/3-6-075. September 1966.) [2 folders]
Box 193, Folder 6	"Preliminary Investigations to Determine Nuclear-Electric Spacecraft Configurations for High-Energy Missions." (J. J. Volkoff and J. R. Womack; JPL. TR 32-1085. June 15, 1967.)
Box 193, Folder 7	"Power System Design for a Jupiter Solar Electric Propulsion Spacecraft." (V. Truscello, JPL, and R. E. Loucks, TRW. JPL TR 32-1347. October 15, 1968.)
Box 193, Folder 8	"The Outer Planets; Challenge for the Seventies." (E. M. Repic, J. R. Eyman, and E. J. Dazzo; NAR/SD. SD 70-100. June 1970.)

Subseries IV.E.3.: Planetary Reconnaissance Projects, 1960-1971

Arrangement: This subseries consists of material relating to specific unmanned exploration projects, including projects that did not reach hardware or flight status. Documents are organized into subseries by project. Unless otherwise noted, documents within each subseries are arranged chronologically by study.

- IV.E.3.a. IMP (Interplanetary Monitoring Probe) (1963)
- IV.E.3.b. Lunar Orbiter (1965-1971)
- IV.E.3.c. Lunar Survey Probe (1965)
- IV.E.3.d. Lunar Viking (1970-1971)
- IV.E.3.e. Mariner (1962-1971)
- IV.E.3.f. Ranger (1960-1966)
- IV.E.3.g. Solar Probe (1963)
- IV.E.3.h. Starlet/Starlite (1967)
- IV.E.3.i. STL Orbiter (1963)
- IV.E.3.j. Surveyor (1960-1970)
- IV.E.3.k. Venus Probe (1968)
- IV.E.3.l. Viking (1968-1970)
- IV.E.3.m. Voyager (Mars) (1963-1967)

Subseries IV.E.3.a.: IMP (Interplanetary Monitoring Probe), 1963

Arrangement: The Interplanetary Monitoring Probe was a proposal by Goddard Space Flight Center to establish a network of satellites to provide continuous monitoring of space radiation in support of the Apollo program.

	Project IMP Interplanetary Monitoring Probe
Box 193, Folder 9	Project Development Plan. (GSFC. June 4, 1963, rev. 2.)

Subseries IV.E.3.b.: Lunar Orbiter, 1965-1971

Arrangement: The Lunar Orbiter project began as an alternative to a planned Surveyor (see subseries IV.E.3.j. below) orbital vehicle when launch vehicle development failures and the failures of the early Ranger probes (see subseries IV.E.3.f. below) placed both of those programs in doubt. Lunar Orbiter was intended to provide photographic data on possible Surveyor and Apollo landing sites as well as other data of interest to lunar scientists and Apollo program planners. All five Orbiters were successful and returned high-quality data in sufficient quantities that the project goals were met after three missions.

Box 193, Folder 10	"Lunar Orbiter Project: Summary of Photographic Data System Calibration." (Langley. No date.) [photocopy]
Box 194, Folder 1	"Characteristics and Format of the Tracking Data to be Obtained by the NASA Deep Space Instrumentation Facility for Lunar Orbiter." (J. Lorell, J. D. Anderson, and W. L. Sjogren; JPL. TM 33-230. June 15, 1965.)
	Study of Applicability of Lunar Orbiter Subsystems in Planetary Orbiters
Box 194, Folder 2	Interim Oral Presentation [presentation graphics]. (Boeing/SD. D2-100710-1. November 29, 1966.)
Box 194, Folder 3	Implementation and Cost Report. (Boeing/SD. D2-100710-3. March 15, 1967.)
	Lunar Orbiter Project
Box 194, Folder 4-5	Spacecraft/SFO Systems Specification, Lunar Orbiter. (Boeing. D2-100106. May 16, 1966.) [2 folders]
Box 194, Folder 6	Mission B Description. (Langley/LOPO. LOTD-107-0. June 1, 1966.)
Box 194, Folder 7	Lunar Orbiter Mission A Photographic Support Data. (Boeing for Langley/LOPO. LOTD-112-2. March 7, 1967.)
Box 194, Folder 8	Mission IV Description. (Langley/LOPO. LOTD-118-0. April 26, 1967.)
Box 194, Folder 9	"A Preliminary Geologic Evaluation of Areas Photographed by Lunar Orbiter V Including an Apollo Landing Analysis of One of the Areas." (Langley/Lunar Orbiter Photo Data Screening Group. Langley Working Paper 506. February 1968.)
Box 194, Folder 10	"Lunar Surface Resolution Coverage of Lunar Orbiter Photography." (C. R. Heinzen and W. F. Peer; JPL. 760-63. 20 January 1971.)

Subseries IV.E.3.c.: Lunar Survey Probe Sensor, 1965

Arrangement: The Lunar Survey Probe Sensor was intended to determine whether the lunar surface at a planned Apollo landing site was capable of supporting the Lunar Module and transmitting that information to a spacecraft in orbit.

	Lunar Survey Probe Sensor Study

Box 195, Folder 1-2	Final Report. (GATC/GARD. MR 1272-1. June 17, 1965.) [2 folders]

Subseries IV.E.3.d.: Lunar Viking, 1970-1971

Arrangement: Lunar Viking was a plan to utilize the technology being developed for the Viking missions to Mars (see subseries IV.E.3.I. below) to conduct a similar orbiter/lander mission to the Moon.

Lunar Viking Feasibility Study

Box 195, Folder 3	First Oral Presentation [presentation graphics]. (MMC/DD. November 1970.)
Box 195, Folder 4	Second Oral Presentation [presentation graphics]. (MMC/DD. January 1971.)

Subseries IV.E.3.e.: Mariner, 1962-1971

Arrangement: The Mariner program was planned to explore Mars and Venus, the nearest planets to earth, by conducting a planetary flyby or by placing a spacecraft in orbit. The Mariner team developed a series of launch projects based upon the target planet and launch timeframe, resulting in similar but different spacecraft for each mission. Six of the first nine missions were successful. Material on the Mariner series of space probes is organized by project, each of which resulted in one or more probe launches. Unless otherwise noted, documents within each subseries are arranged chronologically.

- IV.E.3.e.1. Mariner Venus 1962 (Mariner 1, Mariner 2) (1962-1967)
- IV.E.3.e.2. Mariner Mars 1964 (Mariner 3, Mariner 4) (1965-1967)
- IV.E.3.e.3. Mariner Venus 1967 (Mariner 5) (1968)
- IV.E.3.e.4. Mariner Mars 1969 (Mariner 6, Mariner 7) (1969-1971)
- IV.E.3.e.5. Mariner Mars 1971 (Mariner 8, Mariner 9) (1966-1971)

Subseries IV.E.3.e.1.: Mariner Venus 1962 (Mariner 1, Mariner 2), 1962-1967

Box 195, Folder 5	"Mariner 2 Flight to Venus." (F. L. Barnes, W. E. Bollman, D. W. Curkendall, and T. H. Thornton, Jr; JPL. TR 32-395, reprinted from Astronautics, December 1962.)
Box 195, Folder 6	"Mariner II: Preliminary Reports on Measurements of Venus." (JPL. TR 32-429, reprinted from Science, Vol.139 No.3559. March 8, 1963.)
Box 195, Folder 7	"Mariner 2 Solar Panel Design and Flight Performance." (John A. Zoutendyk, Robert J. Vondra, and Arvin H. Smith; JPL. TR 32-455. June 28, 1963.)
Box 195, Folder 8	"Mariner Spacecraft Packaging." (Julius Jodele; JPL. TR 32-451. July 1, 1963.)
Box 195, Folder 9	"Mariner 2 Observations of the Solar Wind. 2. Relation of Plasma Properties to the Magnetic Field." (Marcia Neugebauer and Conway W. Snyder; JPL. TR 32-1107, reprinted from Journal of Geophysical Research, Vol.72 No.7. April 1. 1967.)

Subseries IV.E.3.e.2.: Mariner Mars 1964 (Mariner 3, Mariner 4), 1965-1967

	"Mariner Mars 1964 Project Report: Mission and Spacecraft Development." (JPL. TR 32-740. March 1, 1965.)
Box 195, Folder 10	Volume II: Appendixes
Box 195, Folder 11	"Mariner IV Measurements Near Mars: Initial Results." (Hugh R. Anderson, et al.; JPL. TR 32-833, reprinted from Science, Vol.149 No.3989, September 10, 1965. November 30, 1965.)
Box 195, Folder 12	"Mariner IV Photography of Mars: Initial Results." (J. Denton Allen, et al.; JPL. TR 32-890, reprinted from Science, Vol.149 No.3684, August 6, 1965. March 1, 1966.)
Box 196, Folder 1	"Polymeric Applications for the Mariner Mars 1964 Spacecraft." (R. F. Freeman, R. A. Boundy, and R. Harrington; JPL. TR 32-1031, reprinted from Rubber and Plastic Age. July 1966.)
Box 196, Folder 2	"A Sensitive S-Band Noise Receiver Developed for the Mariner Mars 1964 Spacecraft Program." (Louis H. Keeler, Andrew J. Nalbandian, and Albert A. Olbeter; JPL. TR 32-1029. November 15, 1966.)
Box 196, Folder 3	"Mariner IV Mechanical Operations." (Richard J. Spehalski; JPL. TR 32-954. December 1, 1966.)
Box 196, Folder 4	"Failure Rate Computations Based on Mariner Mars 1964 Spacecraft Data." (Frank H. Wright; JPL. TR 32-1036. January 15, 1967.)
Box 196, Folder 5	"The Superior Conjunction of Mariner IV." (R. M. Goldstein, et al.; JPL. TR 32-1092. April 1, 1967.)

Subseries IV.E.3.e.3.: Mariner Venus 1967 (Mariner 5), 1968

Box 196, Folder 6	"Design, Test, and Performance of the Mariner V Temperature Control Reference." (W. F. Carroll; JPL. TR 32-1250. April 1, 1968.)

Subseries IV.E.3.e.4.: Mariner Mars 1969 (Mariner 6, Mariner 7), 1969-1971

Box 196, Folder 7	"A Mariner Orbiter Autopilot Design." (E. H. Kopf; JPL. TR 32-1349. January 15, 1969.)
Box 196, Folder 8	"A High-Rate Telemetry System for the Mariner Mars 1969 Mission." (R. C. Tausworthe, M. F. Easterling, and A. J. Spear; JPL. TR 32-1354. April 1, 1969.)
Box 196, Folder 9	"Mariner Mar 1969 Sun Sensor Development." (L. F. Schmidt. TR 32-1452. January 1, 1970.)

Box 196, Folder 10	"Observational Patrol of Mars in Support of Mariners VI and VII." (C. F. Capen; JPL. TR 32-1492. June 15, 1970.)
	"Mariner Mars 1969 Final Project Report." (JPL. TR 32-1460. September 15, 1971.)
Box 196, Folder 11	Volume III: Scientific Investigations (J. A. Stallkamp, A. G. Herriman, and the Mariner Mars 1969 Experimenters.)

Subseries IV.E.3.e.5.: Mariner Mars 1971 (Mariner 8, Mariner 9), 1966-1971

Box 196, Folder 12	"Mars '71 Technical Study." (JPL. EPD-427. 15 August 1966.)
Box 196, Folder 13	Addendum 1. (EPD-427 Add.1. 12 December 1966.)
	"Mariner Mars 1971 Space Flight Operations Plan. (JPL. 610-29.)
Box 196, Folder 14	Volume II: Baseline Operations Plan. (M. J. Alazard; JPL. October 9, 1970.)
Box 196, Folder 15	"Development and Testing of the Television Instrument for the Mariner Mars 1971 Spacecraft." (JPL. TM 610-29. November 1, 1971.)

Subseries IV.E.3.f.: Ranger, 1960-1966

Arrangement: The Ranger program was intended to return data on the earth-moon environment by launching a spacecraft on a lunar intercept course, gathering data during the flight, and obtaining close-up television images of the lunar surface before spacecraft impact. Ranger Block I (Ranger 1 and 2) were planned as earth-orbital missions to test the spacecraft while Block II (Ranger 3, 4, and 5) were to be full lunar missions. Follow-on missions in Block III (Ranger 6 through 9), Block IV (Ranger 10+), and Block V (Ranger lander missions) were in planning stages when the failure of the missions in Blocks I and II caused NASA to cancel Blocks IV and V and drastically simplify Block III to include only TV imaging. Eventually Ranger 7, 8, and 9 succeeding in returning useful images. The material on the Ranger program is organized by block. Unless otherwise noted, documents within each subseries are arranged chronologically by study.

- IV.E.3.f.1. General (1960-1966)
- IV.E.3.f.2. Block II (Ranger 3 through 5) (1961-1963)
- IV.E.3.f.3. Block III (Ranger 6 through 9) (1962-1966)

Subseries IV.E.3.f.1.: General, 1960-1966

Arrangement: This subseries consists of documents pertain to the Ranger program or spacecraft in general, rather than to any specific mission.

Box 196, Folder 16	"Materials in Space." (Ralph A. Happe; JPL. Technical Release 34-143. October 18, 1960.)
Box 196, Folder 17	"The Ranger Program." (JPL. TR 32-141, reprinted from Astronautics, September 1961.)

	Lunar Orbiter Capsule Study
Box 196, Folder 18	Final Report. (RCA/AED. AED-1542. 31 July 1962 rev. 3 August 1962.)
Box 197, Folder 1	"Development of the Midcourse Trajectory-Correction Propulsion System for the Ranger Spacecraft." (Donald H. Lee; JPL. TR 32-335. March 15, 1963.)
Box 197, Folder 2	"The Design of the Ranger Television System to Obtain High-Resolution Photographs of the Lunar Surface." (Donald H. Kindt and Joseph R. Staniszewski; JPL. TR 32-717. March 1, 1965.)
Box 197, Folder 3	"Eyes on the Moon." (Gerald M. Smith, Thomas Vrebalovich, and Donald E. Willingham; JPL. TR 32-937, reprinted from Astronautics and Aeronautics, March 1966. April 15, 1966.)
	Experimental Mapping from Ranger Photography.
Box 197, Folder 4	Final Report. (USACE/AMS. August 1966.)

Subseries IV.E.3.f.2.: Block II (Ranger 3 through 5), 1961-1963

Box 197, Folder 5	"Scientific Experiments for Ranger 3, 4, and 5." (JPL. TR 32-199. December 5, 1961.)
Box 197, Folder 6	"The Lunar Seismograph Experiment: Ranger 3, 4, 5." (D. F. Adamski; JPL. TR 32-272. June 1, 1962.)
Box 197, Folder 7	"Ranger Preflight Science Analysis and the Lunar Photometric Model." (A. G. Herriman, H. W. Washburn, and D. E. Willingham; JPL. TR 32-384. January 7, 1963.)

Subseries IV.E.3.f.3.: Block III (Ranger 6 through 9), 1962-1966

Scope and Contents: Documents in this subseries are arranged by mission.

Box 197, Folder 8-11	"Ranger RA-6 (P-53) through RA-9 (P-56) Spacecraft Design Specification Book." (JPL. 1 November 1962.). [4 folders]
Box 197, Folder 12	"Ranger 6-9 Television System Science Capability and Impact Point Determination." (D. E. Willingham and J. N. Fisher; JPL. c.1964.)
Box 198, Folder 1	"Ranger VI Mission Description and Performance." (JPL. TR 32-699. December 15, 1966.)
Box 198, Folder 2	"Ranger VII. Part I: Mission Description and Performance." (JPL. TR 32-700. December 15, 1964.)

Box 198, Folder 3-4	"Space Flight Operations Plan - Ranger 8 and 9." (JPL. EPD-78. 15 April 1962 rev. 21 December 1964.) [2 folders]

Subseries IV.E.3.g.: Solar Probe, 1963

Arrangement: The Solar Probe program was planned to gather data on the sun and the effect of solar phenomena on the earth by placing spacecraft in solar orbit.

Solar Probe Study

Final Report. (GE/SD. 63SD779. September 3, 1963.)

Box 198, Folder 5	Volume I: Study Summary
Box 198, Folder 6	Volume III: Experiments

Subseries IV.E.3.h.: Starlet/Starlite, 1967

Arrangement: Lockheed's Starlet/Starlite system was intended to open the entire solar system to unmanned exploration by the combination of a high-energy booster (Starlet) and an lightweight inflatable instrument section (Starlite).

Starlet/Starlite System

Box 198, Folder 7	[presentation graphics]. (Lockheed/LMSC. LMSC-A847996. 15 April 1967.)
Box 198, Folder 8-9	Technical Description. (Lockheed/LMSC. LMSC-A847990. December 1967.) [2 folders]

Subseries IV.E.3.i.: STL Orbiter, circa 1963

Arrangement: The STL Orbiter was a proposal by the Space Technology Laboratories (STL) for a lunar orbiter spacecraft. (see also subseries IV.E.3.b. Lunar Orbiter, above).

STL Orbiter Study

Box 198, Folder 10	[mid-study presentation graphics]. (STL. c.1963.)

Subseries IV.E.3.j.: Surveyor, 1960-1965

Arrangement: The Surveyor program was planned to explore the lunar surface by soft-landing a spacecraft on the moon and conducting a variety of experiments. NASA planned several possible follow-on programs, including a Surveyor orbital vehicle and a surface rover, but delays in the program caused by booster development failures and the success of the Lunar Orbiter program eventually caused these plans to be shelved. Five of the seven Surveyor landers were highly successful. The material on the Surveyor program is organized by topic. Unless otherwise noted, documents within each subseries are arranged chronologically.

- IV.E.3.j.1. General (1960-1970)
- IV.E.3.j.2. Surveyor Project Status Reports (1965)
- IV.E.3.j.3. Advanced Surveyor/Surveyor Block II/Surveyor Follow-On (1963-1967)

Subseries IV.E.3.j.1.: General, 1960-1965

Arrangement: This subseries consists of documents relating to the planning and design for the Surveyor project in general or to specific missions as flown.

Box 199, Folder 1	"Design Study Requirements for a Lunar Soft Landing Spacecraft (Scientific Mission: Surveyor)." (JPL. TM 33-13 Vol. 3 Rev. 2. November 25, 1960.)
Box 199, Folder 2	"Surveyor Spacecraft System Design Specification." (JPL. Spec No 30240C. 3 December 1962.)
Box 199, Folder 3	"Direct-Ascent vs Parking-Orbit Trajectory for Lunar-Soft-Landing Missions." (T. F. Gautschi and V. C. Clarke Jr; JPL. TM 33-114. December 3, 1962.)
Box 199, Folder 4-5	"Portfolio on Surveyor Television Subsystem." (Hughes. April 1963.) [2 folders]
Box 199, Folder 6	"Surveyor Basic Bus (2100 Pound) - Payload Interface Requirements and Spacecraft System Description." (Hughes/SSD. SSD 239503. June 21, 1963.)
Box 199, Folder 7	"Surveyor Mission Required Velocity Program." (GD/Astronautics. GD|A 63-0598. 1 July 1963.)
Box 199, Folder 8	"Lunar Surface Hardness Experiment for Surveyor" [presentation graphics]. (Ford/Philco/AD. c.1964.)
Box 199, Folder 9	"Surveyor Direct Ascent Trajectory Characteristics." (Hughes/SSD. SSD 4234 R. April 1964.) [photocopy]
Box 199, Folder 10	"Surveyor Spacecraft System Specification." (JPL. Spec No 30240D. 10 June 1964.)
Box 199, Folder 11	"Surveyor Lander Mission and Capability." (Milton Beilock; JPL. TR 32-618. August 1, 1964.)
Box 199, Folder 12-13	"Surveyor Spacecraft Performance Seminar" [presentation graphics]. (Hughes. SSD 4415 B. 8-9 September 1964.) [2 folders]
Box 200, Folder 1-3	"Space Flight Operations Test Plan - Surveyor Mission A." (JPL. EPD-234. 21 December 1964.) [3 folders]
	"Surveyor-DSIF Detailed Operating Procedures - Surveyor Mission P-42." (JPL. EPD-244. 25 January 1965.)
Box 200, Folder 4-6	[folders 1-3 of 4]

Box 201, Folder 1	[folder 4 of 4]
Box 201, Folder 2	"Surveyor Landing Site Recommendations." (August 20, 1965.) [photocopy]
Box 201, Folder 3	"Surveyor Spacecraft Monthly Performance Assessment Report." (Hughes/SSD. SSD 50088 R. 21 October 1965.)
Box 201, Folder 4	"Surveyor Lunar Landing Conditions (February 1967 through February 1968)." (JPL. TM 312-752. November 15, 1966.)
Box 201, Folder 5	"Surveyor Landing Site Recommendations - Missions C, D, E, F, and G" [presentation graphics]. (15 December 1966.)
Box 201, Folder 6	"Surveyor III - Preliminary Science Results." (Surveyor Experimenter Teams and Working Groups; JPL. PD 125. May 15, 1967.)
Box 201, Folder 7	"Surveyor Landing Site Recommendations - Missions D and E" [presentation graphics]. (14 June 1967.)
Box 201, Folder 8	"Surveyor Landing Site Recommendations - Missions F and G" [presentation graphics]. (10 October 1967.)
	"Surveyor V Mission Report." (JPL. TR 32-1246. November 1, 1967.)
Box 201, Folder 9	Part II: Science Results. (Surveyor Investigator Teams, Scientific Evaluation Advisory Team, and Working Groups.)
	"Surveyor VI Mission Report." (JPL. TR 32-1262. August 15, 1968.)
Box 201, Folder 10	Part III: Television Data. (Thomas H. Bird, M. I. Smokler, and D. L. Smyth.)
Box 201, Folder 11	"The Scientific Instruments on Surveyor." (D. H. Le Croissette; JPL. TR 32-1358, reprinted from IEEE Transactions on Aerospace and Electonic Systems, Vol. AES-5 No.1. January 1969.)
Box 202, Folder 1	"Testing of the Surveyor Spacecraft at the JPL Environmental Test Laboratory." (Frank W. Orlik; JPL. TR 32-1323. June 1, 1969.)
Box 202, Folder 2	"Analysis of Surveyor Data." (JPL. TR 32-1443. June 30, 1969.)
Box 202, Folder 3	"Surveyor Lunar Seismometer Instrument Development: Final Report." (A. C. Dunk and E. O. Bulkley; JPL. TR 32-1133. July 15, 1969.)
Box 202, Folder 4	"Basic and Mechanical Propoerties of the Lunar Soil Estimated from Surveyor Touchdown Data." (F. B. Sperling; JPL. TM 33-443. March 15, 1970.)

Subseries IV.E.3.j.2.: Surveyor Project Status Reports, 1965

"Surveyor Project Status Report."

Box 202, Folder 5	As of 22 January 1965. (JPL. SPSR 68. 27 January 1965.)
Box 202, Folder 6	As of 5 March 1965. (JPL. SPSR 71. 10 March 1965.)
Box 202, Folder 7	As of 19 March 1965. (JPL. SPSR 72. 25 March 1965.)
Box 202, Folder 8	As of 16 April 1965. (JPL. SPSR 73. 26 April 1965.)
Box 202, Folder 9	As of 14 May 1965. (JPL. SPSR 75. 20 May 1965.)
Box 202, Folder 10	As of 28 May 1965. (JPL. SPSR 76. 3 June 1965.)
Box 202, Folder 11	As of 11 June 1965. (JPL. SPSR 77. 23 June 1965.)
Box 202, Folder 12	As of 23 July 1965. (JPL. SPSR 80. 30 July 1965.)
Box 202, Folder 13	As of 6 Aug 1965. (JPL. SPSR 81. 16 August 1965.)
Box 202, Folder 14	As of 20 Aug 1965. (JPL. SPSR 82. 30 August 1965.)
Box 202, Folder 15	As of 17 Sep 1965. (JPL. SPSR 83. 27 September 1965.)
Box 202, Folder 16	As of 1 Oct 1965. (JPL. SPSR 84. 8 October 1965.)
Box 202, Folder 17	As of 15 Oct 1965. (JPL. SPSR 85. 20 October 1965.)

Subseries IV.E.3.j.3.: Advanced Surveyor/Surveyor Block II/Surveyor Follow-On, 1963-1965

Arrangement: This subseries consists of documentation on the planned successor to Surveyor, variously termed "Advanced Surveyor," "Surveyor Block II," or "Surveyor Follow-On." Materials are arranged chronologically by study; parallel competing studies are shown with the contractor's name appended to the study name for clarity.

Box 202, Folder 18	"Requirements for a Roving Vehicle for the Surveyor Spacecraft." (JPL. EPD-98. 17 June 1963.)
	Surveyor Lunar Roving Vehicle, Phase I [Bendix contract]
	Proposal. (Bendix. c.1963.)
Box 202, Folder 19	Proposal Summary
	Volume I: Technical and Management Proposal.

	Part I: Technical Presentation
Box 203, Folder 1-3	Book II: Supporting Data. (Bendix. BSC-39529. August 1963.) [3 folders]
Box 203, Folder 4	First Bimonthly Technical Progress Report. (Bendix/BSD. BSR-844. 15 January 1964.)
Box 203, Folder 5-6	Second Bimonthly Technical Progress Report. (Bendix/BSD. BSR-879. 15 March 1964.) [2 folders]
Box 204, Folder 1	Functional Specifications. (Bendix/BSD. BSR-923. 23 April 1964.)
	Surveyor Lunar Roving Vehicle, Phase I [General Motors contract]
	Proposal. (GM/DRL. P63-240. August 19, 1963.)
	Volume One: Technical and Management Proposal.
	Part 1: Technical Presentation
Box 204, Folder 2	Section I: Technical Approach Summary.
Box 204, Folder 3	Section II: GM DRL Basic LRV Program Status.
Box 204, Folder 4	Section III: Detailed Technical Specification (Book 1 of 2).
Box 204, Folder 5-6	Section III: Detailed Technical Specification (Book 2 of 2). [2 folders]
Box 204, Folder 7	Appendix.
Box 204, Folder 8	Engineering Test Model Demonstration. (GM/DRL. TR64-15 Rev. 23 March 1964.)
	Functional Specifications. (GM/DRL. TR64-25. April 1964.)
Box 204, Folder 9	Part 1: SLRV System; Mechanisms, Subsystems & Assemblies; Operational Ground Equipment.
Box 205, Folder 1-2	Part 2: Electronic Subsystems. [2 folders]
	Final Report. (GM/DRL. TR64-26. April 23, 1964.)
Box 205, Folder 3	Volume I: Summary Technical Description.
	Volume II: Appendixes

Box 205, Folder 4-5	Section II: Electronic Subsystems. [2 folders]
Box 205, Folder 6-7	Section III: Mechanical Subsystems. [2 folders]
Box 206, Folder 1	Section IV: Reliability
Box 206, Folder 2	Section V: Additional Information on RTE.
Box 206, Folder 3	"Surveyor Block II Phase 3: A Study of Lunar Terrain Assessment." (JPL. TM 33-172. April 20, 1964.)
	Surveyor Follow-On Study Scientific Objectives
Box 206, Folder 4	Phase 1: Significance of a Successful Surveyor Block I Landing. (James R. Clark, Allan C. Dunk, Seymour M. Horowitz, Dennis H. Le Croissette, and Elliot M. Silverstein; JPL. TM 33-192. December 1, 1964.)
Box 206, Folder 5	Phase 2: The Implications of the Accomplishment of the Complete Surveyor Block I and Ranger Block III Missions. (JPL. [TM 33-166]. c.1963.)
	Surveyor II
Box 206, Folder 6	Proposed Project Development Plan. (Hughes/SSD. SSD 40001P. November 1964.)
	Surveyor Lunar Roving Vehicle
	Proposal. (GM/DRL. P65-40. May 1965.)
	Volume IV: Cost Elements (Phases A, B, C).
Box 206, Folder 7-8	Book 1.
Box 206, Folder 7-8	[folders 1-2 of 4]
Box 207, Folder 1-2	[folders 3-4 of 4]
Box 207, Folder 3	"Utility of Surveyor in Lunar Science Program." (Hughes/SSD. SSD 68245P. January 1967.)

Subseries IV.E.3.k.: Venus Probe, 1968

Arrangement: The Venus Probe was a plan to gather data on the atmosphere and surface of Venus by dropping a probe capsule from a Mariner-type spacecraft through the planet's atmosphere.

	Venus Probe Study

	Final Report.
Box 207, Folder 4-6	Appendices. (MMC/DD. PR-33-1-3. 6 June 1968.) [3 folders]

Subseries IV.E.3.l.: Viking, 1968-1970

Arrangement: The Viking Program was a large-scale reconnaissance program involving combined orbital and surface-lander missions to Mars. Two missions eventually reached Mars in 1976. Some planning also occurred regarding the use of Viking technology for a lunar exploration mission; see subseries IV.E.3.d. (Lunar Viking), above.

	Direct Versus Orbital Entry for Mars Mission. [Titan-Mars '71]
	Final Report. (GE/MSD. 68SD4293. 1 August 1968.)
Box 207, Folder 7	Volume I: Summary
	Volume II: Analytical Studies
Box 208, Folder 1	Book 1.
Box 208, Folder 2	Book 2.
Box 208, Folder 3-5	Volume III: Conceptual Designs. [3 folders]
Box 208, Folder 6	Final Oral Presentation [presentation graphics]. (GE/MSD. August 1, 1968.)
	Viking Project
Box 208, Folder 7	Viking Lander Science Instrument Teams Report. (Langley/VPO. M73-112.0. July 30, 1969.)
Box 208, Folder 8	Viking Mission Definition No.2. (Langley/VPO. M73-101-5. August 11, 1969.)
Box 209, Folder 1	Viking Description Presentation at Viking Preproposal Briefing [presentation graphics]. (Langley/VPO. M73-115-0. September 12, 1969.)
	Viking 75 Project
Box 209, Folder 2	Mars Engineering Model. (Langley/VPO. M75-125-0. March 13, 1970.)

Subseries IV.E.3.m.: Voyager (Mars), 1963-1967

Arrangement: This subseries consists of material pertaining to a Mars exploration program planned in the early 1960s under the title Voyager. This program was cancelled and the name reused for the unrelated Outer Planets exploration program of the 1970s.

	Voyager Design Study
	[Final Report.] (GE/MSD. 63SD801. 15 October 1963.)
	Volume III: Subsystem Design
Box 209, Folder 3-4	Part I. [2 folders]
	Voyager Project
Box 209, Folder 5	Preliminary Voyager 1971 Mission Specification. (JPL. PD 45 (V-MA-004-001-14-03). May 1, 1965.)
Box 209, Folder 6	Voyager 1971 Mission Guidelines. (JPL. PD 46 (V-MA-004-002-14-03.). May 1, 1965.)
	Study of Unmanned Systems to Evaluate the Martian Environment
Box 209, Folder 7-8	Final Report. (NAA/SID. SID 65-1172. September 1965.) [2 folders]
	Planetary Vehicle Thermal Insulation Systems
Box 210, Folder 1	Phase I Summary Report. (GE/MSD. 67SD4289. 3 March 1967.)
Box 210, Folder 2	"Data Book for TRW Voyager/Spacecraft Engine." (TRW/SG. 09133-6006-R000. 26 December 1967.) [photocopy]

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Series V: Tracking and Data Acquisition, 1957-1968

Arrangement: This series consists of documents pertaining to deep space communications, spacecraft trajectory determination and tracking, and telemetry/data acquisition. Materials are organized into two subseries:

- V.A. General (1957-1970)
- V.B. JPL Program Summaries (1962-1968)

Subseries V.A.: General, 1957-1967

Arrangement: Documents are arranged chronologically.

Box 210, Folder 3	"Tracking and Communication for a Moon Rocket." (R. T. Gabler and H. R. O'Mara; RAND. P-1021. 22 April 1957.)
Box 210, Folder 4	"Tracking Programs and Orbit Determination [Seminar Proceedings]." (JPL. February 23-26, 1960.)
Box 210, Folder 5	"Radioscience Conference." (JPL. TM 33-18. June 16, 1960.)
Box 210, Folder 6	"A High-Speed Data Link for Farside Lunar Communication." (GE/DSD. 62SPC-5. 26 March 1962.)
Box 210, Folder 7	"A Lunar Base to Earth Communications System." (GE/DSD. 62SPC-6. 1 May 1962.)
Box 210, Folder 8	"An Operational 960-Mc Maser System for Deep-Space Tracking Missions." (T. Sato and C. T. Stelzreid; JPL. TR 32-306, reprinted from IRE Transactions on Space Electronics and Telemetry. June 1962.)
Box 210, Folder 9	"Space Communications by Means of a Reflected Laser Beam." (T. Gold and M. M. Nieto; Cornell/CRSR. CRSR 158. December 1963.)
Box 210, Folder 10	"System Capabilities and Development Schedule of the Deep Space Instrumentation Facility, 1964-68." (JPL. TM 33-83, Revision 1. April 24, 1964.)
Box 211, Folder 1	"Manned Space Flight Network Instruction Manuals - Index." (GSFC/MFOB. September 20, 1964.)
	"The VLA: A Proposal for a Very Large Array Radio Telescope." (NRAO, distributed by USDC/CFSTI. PB 173 913. January 1967.)
Box 211, Folder 2	Volume II: Systems Design
	Deep Space Communication and Navigation Study
	Final Report. (Bell Labs. May 1, 1968.)

Box 211, Folder 3	Volume 1: Summary. [photocopy]
Box 211, Folder 4	Volume 2: Communication Technology. [photocopy]
Box 211, Folder 5	"Development of an Optical Tracker for a Laser Ranging Telescope." (Edward Devine; GFSC. X-723-69-119. March 1969.)
Box 211, Folder 6	"Proceedings of the Conference on Scientific Applications of Radio and Radar Tracking in the Space Program Held at the Jet Propulsion Laboratory, Pasadena, California April 9-10, 1969." (L. Efron and C/ B/ Solloway, ed.; JPL. TR 32-1475. July 1, 1970.)

Subseries V.B.: JPL Program Summaries, 1962-1968

Arrangement: The Jet Propulsion Laboratory's 37- series Space Program Summary publications summarized JPL's activities in support of NASA operations. Issues 37-1 through 37-14 were organized in two volumes: Volume I contained unclassified material while Volume II contain material classified "Confidential." Issues 37-15 through 37-46 were organized into six volumes: Volumes I, II, and V contained material classified "Confidential," Volume III covered the Deep Space Instrumentation Facility (DSIF; later renamed Deep Space Network, DSN), Volume IV contained unclassified material on Supporting Research and Advanced Development, and Volume VI covered Space Exploration Programs and Space Sciences. Issue 37-47 and later were organized into four volumes: Volume I covered Flight Projects, Volume II the Deep Space Network, Volume III covered Support Research and Advanced Development, and Volume IV contained any classified material. This subseries contains volumes specifically covering the DSIF/DSN - Volume III for issue 37-15 through 37-46 and Volume II for issue 37-47 and subsequent. For summary volumes covering spaceflight projects, see subseries IV.B. (Space Science and Applications - JPL Program Summaries). For summary volumes covering other JPL development activities, see subseries VI.B.

"Space Programs Summary." (JPL)

	Volume III [Deep Space Instrumentation Facility]
Box 211, Folder 7	for the period May 1, 1962 to July 1, 1962. (SPS 37-16. July 31, 1962.)
Box 211, Folder 8	for the period July 1, 1962 to September 1, 1962. (SPS 37-17. October 1, 1962.)
Box 211, Folder 9	for the period September 1, 1962 to November 1, 1962. (SPS 37-18. November 30, 1962.)
Box 211, Folder 10	for the period January 1, 1963 to February 28, 1963. (SPS 37-20. March 31, 1963.)
Box 211, Folder 11	for the period March 1, 1963 to April 30, 1963. (SPS 37-21. May 31, 1963.)
	Volume III [The Deep Space Network]

Box 211, Folder 12	for the period November 1, 1964 to December 1, 1964. (SPS 37-31. January 31, 1965.)
Box 212, Folder 1	for the period July 1, 1965 to August 31, 1965. (SPS 37-35. September 30, 1965.)
Box 212, Folder 2	for the period May 1, 1966 to June 30, 1966. (SPS 37-40. July 31, 1966.)
Box 212, Folder 3	for the period September 1 to October 31, 1966. (SPS 37-42. November 30, 1966.)
Box 212, Folder 4	for the period November 1 to December 31, 1966. (SPS 37-43. January 31, 1967.)
Box 212, Folder 5	for the period March 1 to April 30, 1967. (SPS 37-45. May 31, 1967.)
Box 212, Folder 6	for the period May 1 to June 30, 1967. (SPS 37-46. July 31, 1967.)
	Volume II [The Deep Space Network]
Box 212, Folder 7	for the period July 1 to August 31, 1967. (SPS 37-47. September 30, 1967.)
Box 212, Folder 8	for the period September 1 to October 31, 1967. (SPS 37-48. November 30, 1967.)
Box 212, Folder 9	for the period November 1 to December 31, 1967. (SPS 37-49. January 31, 1968.)
Box 212, Folder 10	for the period January 1 to February 29, 1968. (SPS 37-50. March 31, 1968.)

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Series VI: Advanced Research and Technology, 1958-1970

Arrangement: This series consists of documents pertaining to NASA's basic and applied research program into the problems associated with aviation and space flight, but not directly related to specific programs. Materials are organized into two subseries:

- VI.A. General (1958-1970)
- VI.B. JPL Program Summaries (1962-1966)

Subseries VI.A.: Advanced Research and Technology - General, 1958-1970

Arrangement: Documents are arranged chronologically.

Box 213, Folder 1	"A Discussion of Space Vehicle Guidance Problems." (F. T. Smith; RAND. P-1568. December 4, 1958.)
Box 213, Folder 2	"Effects of a Meteroid Impact on Steel and Aluminum in Space." (R. L. Bjork; RAND. P-1662. December 16, 1958.)
Box 213, Folder 3	"Mass and Heat Transfer Rates for Large Gradients of Concentration and Temperature." (William E. Ranz; University of Minnesota, Department of Chemical Engineering. Technical Report No.1. March 15, 1962.) Notes: [incorrect title page identifies this document as "The Moon" by Gordon J. F. MacDonald, University of California, Institute of Physics.]
	Project FIRE [Flight Investigation Reentry Environment].
Box 213, Folder 4	Project Development Plan. (Project No.714-00-00). (Langley/FRPO. March 1964.)
Box 213, Folder 5	"Monitoring the Combustion Process in Large Engines." (J. G. Sotter and R. M. Clayton; JPL. TR 32-1124, reprinted from Journal of Spacecraft and Rockets, Vol.4 No.5. May 1967.)
Box 213, Folder 6	"Proceedings of the 2nd Aerospace Mechanisms Symposium, held at the University of Santa Clara, Santa Clara, California May 4-5, 1967." (George G. Herzl, ed; JPL. TM 33-355. August 15, 1967.)
Box 213, Folder 7	"Proceedings of the 3rd Aerospace Mechanisms Symposium, held at the Jet Propulsion Laboratory, Pasadena, California May 23-24, 1968." (JPL. TM 33-382. October 1, 1968.)
Box 213, Folder 8	"NASA Nonmetallic Materials Development Program." (MSC. c.1969.)
Box 213, Folder 9	"Aerospace Structural Materials: A Conference Held at Lewis Research Center, Cleveland, Ohio November 18-19, 1969." (NASA. SP-227. 1970.)

Box 213, Folder 10	"Proceedings of the 4th Aerospace Mechanisms Symposium, held at the University of Santa Clara, Santa Clara, California May 22-23, 1969." (George G. Herzl and Mary Fran Buehler, ed; JPL. TM 33-425. January 15, 1970.)

Subseries VI.B.: JPL Program Summaries, 1962-1968

Arrangement: The Jet Propulsion Laboratory's 37- series Space Program Summary publications summarized JPL's activities in support of NASA operations. Issues 37-1 through 37-14 were organized in two volumes: Volume I contained unclassified material while Volume II contain material classified "Confidential." Issues 37-15 through 37-46 were organized into six volumes: Volumes I, II, and V contained material classified "Confidential," Volume III covered the Deep Space Instrumentation Facility (DSIF; later renamed Deep Space Network, DSN), Volume IV contained unclassified material on Supporting Research and Advanced Development, and Volume VI covered Space Exploration Programs and Space Sciences. Issue 37-47 and later were organized into four volumes: Volume I covered Flight Projects, Volume II the Deep Space Network, Volume III covered Supporting Research and Advanced Development, and Volume IV contained any classified material. This subseries contains volumes specifically covering JPL's basic and applied research program - Volume IV for issue 37-15 through 37-46. For summary volumes covering spaceflight project, see subseries IV.B. (Space Science and Applications - JPL Program Summaries). For summary volumes covering the DSIF/DSN, see subseries V.B. (Tracking and Data Acquisition - JPL Program Summaries). For other issues, see also the Jet Propulsion Laboratory Publications Collection (NASM Accession XXXX-0612), Series X. Documents in this subseries are arranged chronologically.

"Space Programs Summary." (JPL)

	Volume IV [Supporting Research and Advanced Development]
Box 214, Folder 1	for the period August 1, 1962 to October 1, 1962. (SPS 37-17. October 30, 1962.)
Box 214, Folder 2	for the period October 1, 1962 to December 1, 1962. (SPS 37-18. December 31, 1962.)
Box 214, Folder 3	for the period December 1, 1962 to January 31, 1963. (SPS 37-19. February 28, 1963.)
Box 214, Folder 4	for the period February 1, 1963 to March 31, 1963. (SPS 37-20. April 30, 1963.)
Box 214, Folder 5	for the period June 1, 1963 to July 31, 1963. (SPS 37-22. August 31, 1963.)
Box 214, Folder 6	for the period August 1, 1963 to September 30, 1963. (SPS 37-23. October 31, 1963.)
Box 215, Folder 1	for the period October 1, 1963 to November 30, 1963. (SPS 37-24. December 31, 1963.)

Box 215, Folder 2	for the period February 1, 1964 to March 31, 1964. (SPS 37-26. April 30, 1964.)
Box 215, Folder 3	for the period April 1, 1964 to May 31, 1964. (SPS 37-27. June 30, 1964.)
Box 215, Folder 4	for the period August 1, 1964 to September 30, 1964. (SPS 37-29. October 31, 1964.)
Box 215, Folder 5	for the period October 1, 1964 to November 30, 1964. (SPS 37-30. December 31, 1964.)
Box 216, Folder 1	for the period December 1, 1964 to January 31, 1965. (SPS 37-31. February 28, 1965.)
Box 216, Folder 2	for the period February 1, 1965 to March 31, 1965. (SPS 37-32. April 30, 1965.)
Box 216, Folder 3	for the period April 1, 1965 to May 31, 1965. (SPS 37-33. June 30, 1965.)
Box 216, Folder 4	for the period August 1, 1965 to September 30, 1965. (SPS 37-35. October 31, 1965.)
Box 216, Folder 5	for the period October 1, 1965 to November 30, 1965. (SPS 37-36. December 31, 1965.)
Box 217, Folder 1	for the period December 1, 1965 to January 31, 1966. (SPS 37-37. February 28, 1966.)
Box 217, Folder 2	for the period February 1, 1966 to March 31, 1966. (SPS 37-38. April 30, 1966.)
Box 217, Folder 3	for the period June 1, 1966 to July 31, 1966. (SPS 37-40. August 31, 1966.)
Box 217, Folder 4	for the period August 1 to September 30, 1966. (SPS 37-41. October 31, 1966.)
Box 217, Folder 5	for the period October 1 to November 30, 1966. (SPS 37-42. December 31, 1966.)

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Series VII: Military Programs and Studies, 1957-1971

Arrangement: This series consists of documents pertaining to programs, projects, and studies conducted by or for elements of the United States National Defense Establishment. Materials are organized into subseries by branch or agency:

- VII.A. United States Air Force (1957-1971)
- VII.B. Advanced Research Projects Agency (1963-1966)
- VII.C. United States Navy (1963-1966)

Subseries VII.A.: United States Air Force, 1957-1971

Arrangement: This subseries consists of documentation for program developed by or research conducted by or for the United States Air Force. Materials are organized into subseries by topic. Unless otherwise noted, documents within each subseries are arranged chronologically.

- VII.A.1. General (1962-1963)
- VII.A.2. Launch Vehicles (1962-1968)
- VII.A.3. Manned Programs (1961-1970)
- VII.A.4. Satellite Programs (1959-1960)
- VII.A.5. Research (1957-1965)
- VII.A.6. Communications (1969-1971)

Subseries VII.A.1.: General, 1962-1963

Arrangement: This subseries consists of general documentation on USAF procedures and policies related to spaceflight or launch operations.

	General Range Safety Plan. (AFMTC. AFMTCP 80-2.)
Box 217, Folder 6	Volume I: Pre-launch Safety Procedures. (1 October 1963.)
Box 217, Folder 7	Volume II: Operations Requirements. (4 September 1962.)
Box 217, Folder 8	Range Safety Officers Handbook. (AFMTC. No date.)
Box 227 (OS), Folder 1	Organization and Functions. (AFMTC. AFMTCP 20-1. January 1963.)
	Test Facilities Handbook. (AFAEDC. July 1963.)
Box 218, Folder 1	Volume 1: Policies and Procedures

Subseries VII.A.2.: Launch Vehicles, 1962-1968

Arrangement: This subseries consists of documentation launch vehicles used by the USAF or studies pertaining to launch vehicles conducted for the USAF.

Box 218, Folder 2	"Titan II Storable Propellant Handbook." (Bell/BAC. AFBSD-TR-62-2 (Bell Report 8182-933004). March 1962.) [diazo duplicate]

Box 218, Folder 3	"WS 107A-2 Titan I Exhibit and Specification Status Report." (STL. 6450.28-256. 31 July 1963.)
	Near-Term Launch Vehicle Concepts Study
	Proposal. (Douglas/MSSD. January 1966.)
Box 218, Folder 4	Volume I: Engineering Proposal. (SM-51938-P)
Box 218, Folder 5	"Titan III Vehicle Family at ETR" [presentation graphics]. (MMC/DD. MCR-68-12. c.1968.)
Box 218, Folder 6	"Titan IIIC Payload Users Guide." (MMC/DD. MCR-68-62. October 1968.)
	Minimum Cost Design (MCD) Booster Study
Box 218, Folder 7	[presentation graphics]. (NAR/SD. SP 68-24. October 1968.).

Subseries VII.A.3.: Manned Programs, 1961-1970

Arrangement: This subseries consists of documentation on the USAF's plans for and the considerations involved in manned spaceflight. Materials are organized into two subseries by topic. Unless otherwise noted, documents within each subseries are arranged chronologically.

- VII.A.3.a. Human Factors (1961-1970)
- VII.A.3.b. School of Aerospace Medicine Reports (1962-1968)

Subseries VII.A.3.a.: Human Factors, 1961-1970

Box 218, Folder 8	"Proposal for a Manned Lunar Vehicle Concept Study. (GE/DSD. G40-703. 24 November 1961.)
Box 219, Folder 1	"Space Radiation Guide." (W. P. Saylor, D. E. Winer, C. J. Eiwen, and A. W. Carriker; American Machine and Foundry Co for AFSC/AMRL. AMRL-TDR-62-86. August 1962.) [photocopy]
Box 219, Folder 2	"Human Engineering Criteria for Manned Space Flight: Minimum Manual Systems." (Donald K. Bauerschmidt and Robert O. Besco; Hughes for AFSC/ ARML. ARML-TDR-62-87. August 1962.) [photocopy]
	"Emergency Detection and Escape Initiation System." (H. H. Edwards, L. Oling, D. B. Taylor; CVC/VA for AFSC/FDL. November 1962.)
Box 219, Folder 3	Part II: Solid Propellant Boosters. (ASD-TDR-62-276, Part II.)
Box 219, Folder 4	"The Handling and Storage of Liquid Propellants." (USAF/Medical Service. AFM 160-39. 1 April 1964.)

Box 219, Folder 5	"Ferry Vehicle Docking System for MOL/Gemini B Vehicles." (All American Engineering Co. Q-354. 7 April 1964.)
Box 219, Folder 6	"Retention of Simulated Lunar Landing Mission Skills: A Test of Pilot Reliability." (Theodore E. Cotterman, Ph.D. and Milton E. Wood; AFSC/AMRL. AMRL-TR-66-222. April 1967.)
Box 219, Folder 7	"Evaluation of a Ground-Based Rescue Concept." (E. J. Rattin; Aerospace/SEO. TOR-0200(4525-04)-1. March 21, 1969.)
Box 220, Folder 1	"Reaction Control Systems for the Orbit-to-Orbit Shuttle." (D. H. Jaeger; Aerospace/SEO. TOR-0059(6759-01)-5. July 14, 1970.)

Subseries VII.A.3.b.: School of Aerospace Medicine Reports, 1962-1968

Arrangement: Documents in this subseries are arranged chronologically by study.

Box 220, Folder 2	"Psychomotor Functioning While Breathing Varying Partial Pressures of Oxygen-Nitrogen." (Jared M. Dunn; AFSC/SAM. 62-82. June 1962.)
Box 220, Folder 3	"Physiologic Response to Increased Oxygen Partial Pressure." (James E. Herlocher, David G. Quigley, Victor S. Behar, E. G. Shaw, and B. E. Welch; AFSC/SAM. c.1964.) Notes: • I. Clinical Observations • II. Respiratory Studies • III. Hematopoiesis
Box 220, Folder 4	"Biochemical Laboratory Apparatus for Use in Space Cabins." (Dale A. Clark, Ph.D; AFSC/SAM. SAM-TDR-64-65. December 1964.)
	"The Radiations of Space."
Box 220, Folder 5	III. Some Effects of 138 Mev Protons on Primates. (Glenn V. Dalrymple, et al.; AFSC/SAM. SAM-TR-65-58. September 1965.)
Box 220, Folder 6	IV. Some Effects of 400Mev Protons on Primates. (Glenn V. Dalrymple, et al.; AFSC/SAM. SAM-TR-65-73. October 1965.)
Box 220, Folder 7	"A Program for the Spatial Disorientation Demonstrator." (Frederic F. Doppelt; AFSC/SAM. SAM-TR-65-66. October 1965.)
Box 220, Folder 8	"Effect of Luminance on the Moon Illusion." (James E. Hamilton; AFSC/SAM. SAM-TR-65-72. October 1965.)
	"Normal Human Serum Parameters for Simulated Altitude and Aerospace Flights."
Box 220, Folder 9	I. Estimation of Change in Serum Protein Concentration." (William G. Glenn, Ph.D. and Carmen F. Garcia; AFSC/SAM. SAM TR 65-219. October 1966.)

Box 220, Folder 10	II. Estimation of Change in Albumin, Gamma Globulin, Albumin/Gamma Globulin Ratio, and A/G Ratio. (William G. Glenn, Ph.D. and Iowa W. Marable; AFSC/SAM. SAM TR 65-202. October 1966.)
Box 220, Folder 11	III. Estimation of Change in Serum Potassium, Sodium, and Chloride. (William G. Glenn, Ph.D. and Ira L. Shannon; AFSC/SAM. SAM TR 65-218. October 1966.)
Box 220, Folder 12	"A Method for Determination of Calcium in Serum, Parotid Fluid and Urine in the Weightless State." (Bruce A. Butcher, Joseph F. Eastis, and Dale A. Clark, Ph.D.; AFSC/SAM. SAM TR 65-222. November 1965.)
Box 220, Folder 13	"Protons and Space Travel - An Introduction." (Glenn V. Dalrymple and Ian R. Lindsay; AFSC/SAM. SAM TR 65-254. June 1966.)
Box 220, Folder 14	"An Estimate of the Biological Effects of the Space Proton Environment." (Glenn V. Dalrymple, et al.; AFSC/SAM. SAM TR 65-261. June 1966.)
Box 220, Folder 15	"Verbal Communication Intelligibility in Oxygen-Helium, and Other Breathing Mixtures, at Low Atmospheric Pressures." (Julian P. Cooke, Ph.D. and Sarah E. Beard; AFSC/SAM. SAM TR 65-269. December 1965.)
Box 220, Folder 16	"Low Doses of Acetazolamide to Aid Accommodation of Men to Altitude." (Stephen M. Cain and James E. Dunn II; AFSC/SAM. SAM TR 65-323. July 1966.)
Box 220, Folder 17	"Heart Rate Response of Anesthetized and Unanesthetized Dogs to Noise and Near-Vacuum Decompression." (Julian P. Cooke, Ph.D. and Richard W. Bancroft, Ph.D.; AFSC/SAM. SAM TR 65-327. July 1966.)
Box 220, Folder 18	"Aerospace Medicine Considerations in Manrating Space Environment Simulators." (Paul W. Musgrave and Donald I. Carter; AFSC/SAM. SAM TR 66-2. June 1966.)
Box 220, Folder 19	"The Combustibility of Materials in Oxygen-Helium and Oxygen-Nitrogen Atmospheres." (Clayton Huggett, Ph.D., Guenther von Elbe, Ph.D., and Wilburt Haggerty; AFSC/SAM. SAM TR 66-85. December 1966.)
Box 220, Folder 20	"Some Cardiovascular Responses in Anesthetized Dogs During Repeated Decompressions to a Near-Vacuum." (Julian P. Cooke, Ph.D. and Richard W. Bancroft, Ph.D.; AFSC/SAM. SAM TR 66-88. October 1966.)
	"The Study of Man During a 56-Day Exposure to an Oxygen-Helium Atmosphere at 258mm Hg Total Pressure."
Box 220, Folder 21	I. Introduction and General Experimental Design. (John J. Hargreaves, et al.; AFSC/SAM. SAM TR 66-256. June 1966.)
Box 220, Folder 22	II. Major and Minor Atmosphere Components. (Jimmie D. Adams, et al.; AFSC/SAM. SAM TR 66-253. June 1966.)

Box 220, Folder 23	III. Renal Response. (H. V. Glatte, et al.; AFSC/SAM. SAM TR 66-250. June 1966.)
Box 220, Folder 24	IV. Selected Blood Enzyme Response. (M. J. Bartek, et al.; AFSC/SAM. SAM TR 66-246. June 1966.)
Box 220, Folder 25	V. Exercise Performance and Cardiovascular Response. (Howard J. Zeft, et al.; AFSC/SAM. SAM TR 66-252. June 1966.)
Box 220, Folder 26	VI. Excretion of Steroids and Catecholamines. (Frode Ulvedal, et al.; AFSC/SAM. SAM TR 66-251. June 1966.)
Box 220, Folder 27	VII. Respiratory Function. (William G. Robertson, et al.; AFSC/SAM. SAM TR 66-257. June 1966.)
Box 220, Folder 28	VIII. Observations on Feeding Bite-Size Foods. (Norman D. Heidelbaugh, et al.; AFSC/SAM. SAM TR 66-242. June 1966.)
Box 220, Folder 29	IX. Nutritional Evaluation of Feeding Bite-Size Foods. (John E. Vanderveen, et al.; AFSC/SAM. SAM TR 66-243. June 1966.)
Box 220, Folder 30	X. Enteric Microbial Flora. (Joseph T. Cordaro, et al.; AFSC/SAM. SAM TR 66-215. June 1966.)
Box 220, Folder 31	XI. Oral, Cutaneous and Aerosol Bacteriologic Evaluation. (James E. Moyer, et al.; AFSC/SAM. SAM TR 66-244. June 1966.)
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	"Observations on Man in an Oxygen-Helium Environment at 380mm Hg Total Pressure."
Box 220, Folder 34	I. Clinical. (Howard J. Zeft, et al.; AFSC/SAM. SAM TR 66-232. May 1966.)
Box 220, Folder 35	II. Respiratory. (W. G. Robertson, et al.; AFSC/SAM. SAM TR 66-231. May 1966.)
Box 220, Folder 36	III. Heat Exchange. (W. L. Epperson, et al.; AFSC/SAM. SAM TR 66-233. May 1966.)
Box 220, Folder 37	IV. Communications. (Charles W. Nixon, Ph.D., William E. Mabson, Frank Trimboli, James E. Endicott, B. E. Welch, Ph.D.; AFSC/SAM. SAM TR 67-205. January 1968.)

Box 220, Folder 38	"Tissue Oxygenation During Hemorrhage in Dogs Breathing 1 and 3 Atmospheres of Oxygen." (Stephen M. Cain, Ph.D. and John M. Connolly, MD; AFSC/SAM. SAM TR 66-258. February 1967.)
Box 220, Folder 39	"A Detailed Study of Contaminant Production in a Space Cabin Simulator at 760mm of Mercury." (James P. Conkle, William E. Mabson, Jimmie D. Adams, Howard J. Zeft, and Billy E. Welch, Ph.D.; AFSC/SAM. SAM TR 66-267. May 1967.)
Box 220, Folder 40	"The Effect of Space Cabin Environment on Viral Infection." (David J. Giron, Frank F. Pindak, and Jerome P. Schmidt; AFSC/SAM. SAM TR 66-323. August 1967.)
Box 220, Folder 41	"High Venous Pressures During Exposure of Dogs to Near-Vacuum Conditions." (Julian P. Cooke, Ph.D., Stephen M. Cain, Ph.D., and Richard W. Bancroft, Ph.D.; AFSCSAM. SAM TR 67-257. October 1967.)
Box 220, Folder 42	"Abdominal Blood Flow Changes During Acceleration Stress in Anesthetized Dogs." (H. L. Stone, Ph.D. and W. C. Alexander; AFSC/SAM. SAM TR 67-268. February 1968.)
Box 220, Folder 43	"Comparative Cardiovascular Responses of Baboons and Dogs to Near-Vacuum Pressures." (Julian P. Cooke, Ph.D., William P. Fife, Ph.D., and Richard W. Bancroft, Ph.D.; AFSC/SAM. SAM-TR-68-44. May 1968.)

Subseries VII.A.4.: Satellite Programs, 1959-1960

	A Recoverable Interplanetary Space Probe.
	Report. (MIT/IL. R-235. July 1959.)
Box 220, Folder 44	Volume I: General Discussion
Box 220, Folder 45	Volume II: Engineering Analyses
Box 221, Folder 1	Volume III: Engineering Analyses
Box 221, Folder 2	Volume IV: Appendices
	Study of a Drag Brake Satellite Recovery System
Box 221, Folder 3-4	Results of Phase I. (Avco/ERL. WADD TR 60-775. July 1960.) [2 folders]

Subseries VII.A.5.: Research, 1957-1965

Arrangement: This subseries consists of documents on various research programs funded by the USAF, but not related to launch vehicles, manned flight considerations, or satellite operations. Materials are

organized into two subseries by topic. Unless otherwise noted, documents within each subseries are arranged chronologically.

- VII.A.5.a. General
- VII.A.5.b. Project RAND

Subseries VII.A.5.a.: General, 1960-1965

Arrangement: This subseries consists documents pertaining to research conducted under USAF contract, including materials originated by the RAND Corp which are not explicitly identified part of Project RAND.

	Weapons Systems Planning and Control Study
Box 221, Folder 5	The Broad Time-Cost-Probability-Value Characteristics of Aero-Space Development Programs. (John B Lathrop; Lockheed. LAC-1. 12 July 1960.)
Box 221, Folder 6	"Operational Design Criteria for Missile Ground Systems: Readiness Testing." (Sidney I. Firstman; RAND. P-2112, to be presented at the 18th National Meeting of the Operations Research Society of America, October 10-12, 1960, Detroit, Michigan. September 15, 1960;)
	Preliminary Investigation of Interplanetary, Lunar and Near Planet Environments
Box 221, Folder 7	Preliminary Investigation of Interplanetary, Lunar and Near Planet Environments and Methods of Simulation. (C. D. Jones, ed; OSU/MED for AFSC/ASD. ASD-TR-61-267. July 1961.)
Box 221, Folder 8	"Space and Planetary Environments (Air Force Surveys in Geophysics No.139)." (Shea L. Valley, ed; AFCRL. AFCRL-62-270. January 1962.)
Box 222, Folder 1	"AFCRL Studies of the November 1960 Solar-Terrestrial Events." (J. Aarons and S. M. Silverman, ed.; AFCRL. AFCRL-62-441. April 1962.)
Box 222, Folder 2	Geophysics and Space Data Bulletin, Volume II, Number 1. (Anne L. Carrigan and Norman J. Oliver, ed.; AFCRL. First Quarter 1965.)

Subseries VII.A.5.b.: Project RAND, 1957-1962

Arrangement: This subseries consists of documentation for research conducted under USAF contract as part of Project RAND (Research and Development). For reports originated by the RAND Corp, but which are not explicitly part of Project RAND, see subseries VII.A.5.a. (General). Documents are arranged by report number.

Box 222, Folder 3	"Outline of a Study of Manned Space Flight (U)." (R. W. Buchheim; RAND. RM-2005. September 27, 1957.)
Box 222, Folder 4	"A Photographic System for Close-Up Lunar Exploration." (M. E. Davies; RAND. RM-2183. 23 May 1958.)

Box 222, Folder 5	"Summary of Orbital and Physical Data for the Planet Mars." (Donna Scott Kirby; RAND. RM-2567. August 1, 1960.)
Box 222, Folder 6	"Design Criteria for Rotating Space Vehicles." (S. H. Dole; RAND. RM-2668. October 18, 1960.)
Box 222, Folder 7	"Solar-Flare Radiation and Manned Space Flight." (D. J. Dugas; RAND. RM-2825-PR. November 1961.)
Box 222, Folder 8	"Space Geomagnetism, Radiation Belts, and Auroral Zones." (E. H. Vestine; RAND. RM-3144-PR. July 1962.)
Box 222, Folder 9	"Costing Tomorrow's Weapon Systems." (David Novick; RAND. RM-3170-PR. June 1962.)

Subseries VII.A.6.: Communications, 1968-1971

Space Communications Program

Box 222, Folder 10	Bibliography of Space Communications Reports. (MIT/LL. SC-8. 1 April 1968.)
	Division 6 Quarterly Technical Summary. (MIT/LL for AFSC/ESD.)
Box 222, Folder 11	(ESD-TR-69-48. 15 March 1969.)
Box 222, Folder 12	(ESD-TR-69-137. 15 June 1969.)
Box 222, Folder 13	(ESD-TR-69-249. 15 September 1969.)
Box 222, Folder 14	(ESD-TR-69-388. 15 December 1969.)
Box 222, Folder 15	(15 March 1971.) [2 copies]

Subseries VII.B.: Advanced Research Projects Agency (ARPA), 1963-1966

Arrangement: Documents in this subseries are arranged chronologically.

Box 227 (OS), Folder 2	"Data for ICBM Re-entry Trajectories." (Dean N. Morris and P. Benson; RAND. RM-3475-ARPA. April 1963.)
Box 222, Folder 16	"Earth Coverages from Satellites at 20,000 and 50,000 N Mi." (G. E. Modesitt; RAND. RM-5095-ARPA. December 1966.)

Subseries VII.C.: United States Navy, 1963-1966

Arrangement: Materials are organized chronologically.

Box 223, Folder 1	"Product Quality Program Requirements for Fleet Ballistic Missile Weapon System Contractors" [Military Specification]. (DoD for USN/BuWeps. MIL-Q-21549B(WEP). 10 June 1963.)
	Spacecraft Oceanography Project
	Annual Report
Box 223, Folder 2-3	1 October 1965 - 1 September 1966. (USN/OO. No date.) [2 folders]

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