SHORT GUIDE

TO

LUNAR SAMPLE INFORMATION

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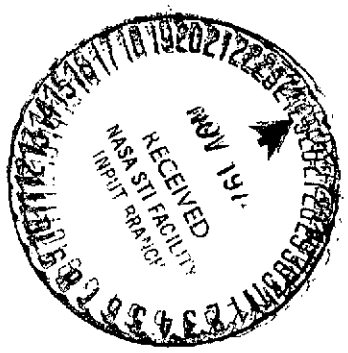

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This guide is not an official NASA statement of the nature or extent of information or data pertaining to lunar samples. An extended version of this guide is in preparation with more information on the contents and use of the documents and photographs mentioned.

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November 1974

A SHORT GUIDE TO LUNAR SAMPLE INFORMATION

This guide briefly describes the data pertaining to the collection, processing and study of lunar samples and the ways to gain access to that data.

Lunar samples for scientific study are distributed by NASA only to approved teams of investigators, numbering about 140 worldwide. Proposals for sample study undergo peer group review; new proposals from persons not currently in the program are encouraged. Funding for lunar sample study is currently about $6 million per year and support for sample study is anticipated to continue through the end of the decade. For information write: Lunar Programs Office, Code SM, NASA Headquarters, Washington, DC 20546.

Petrographic thin sections of lunar samples, in a comprehensive collection, may be examined in the Curatorial Facility at the Johnson Space Center. Scientists, not in the sample program, wishing to study the thin section collection should submit a brief request, in writing, to: Lunar Sample Curator, Code TL, NASA Johnson Space Center, Houston, TX 77058. The request should explain the reason for wanting to examine the thin sections, and indicate that the requestor is familiar with the use of a petrographic microscope. Teaching sets of polished thin sections of lunar rocks and soils have been prepared for short term loan to colleges and universities within the United States. For information about the loan of these thin sections contact the Lunar Sample Curator at the above address. Displays of lunar samples are available for loan for exhibits at museums, meetings and other public events. For information contact Public Affairs Office, Code AP4, NASA Johnson Space Center, Houston, TX 77058.

Data pertaining to the samples includes not only the normally published literature but also NASA and USGS interagency documents, sample processing information, and photography taken from lunar orbit, on the lunar surface, and of samples in the Lunar Receiving Laboratory in Houston.

Documents produced prior to each mission, Table 1, are most useful in obtaining a historical perspective on mission planning. The minutes of three advisory committees to NASA, Group for Lunar Exploration Planning, Apollo Site Selection Board, and Science Working Panel are significant in understanding the scientific rationales behind mission planning.

The 90-day Mission Report summarizes operational aspects of each completed mission, and compares the completed mission to the pre-mission plans. The Preliminary Science Report contains progress reports on the field geology and lunar sample studies, and data from each experiment flown on the mission with a description of the experimental apparatus.

Principal sample description reports are noted on Table 1. The Lunar Sample Preliminary Examination Team (LSPET) described all samples from each mission with the aid of a binocular microscope. In addition, supplemental petrographic and geochemical analyses were produced on a selected suite of samples. Thin sections were made for another representative group of samples. A sample catalog and inventory were produced after each mission. Supplemental catalogs and reports have been compiled for 4-10mm diameter soil fragments (coarse fines), rake samples, cores, soils and suites of samples collected from boulders (Table 1). Copies of the Apollo 14-17 catalogs and some of the supplemental catalogs are still available from the Lunar Sample Curator, and microfilm or microfiche copies of all catalogs and documents listed are available from the National Space Science Data Center (NSSDC), Code 601.4, NASA Goddard Space Flight Center, Greenbelt, MD 20771. A set of 6 orthogonal photos, generally in color, were taken of all larger rocks during the preliminary examination. The best photo of each rock is used for the sample catalog; these photos can be ordered from NSSDC, using the NASA photo number.

The Curator maintains comprehensive historical records of allocations, dissections, and degradation of individual lunar samples. The current location and mass of all samples, and the degree of degradation of samples returned from scientific investigators to the Curator is stored in a computerized system. Information about the geometry of rock and core dissection can be obtained from data packs containing photographs of each step in the dissection and handwritten copies of all documentation. Curatorial personnel are prepared to assist persons seeking detailed information from these data systems. Sets of drawings (cutting diagrams) prepared by the Curator's office show the major subdivisions of each dissected rock.

Most geochemical and petrographic mode data on lunar samples is compiled from published literature in another computerized system maintained by the Curatorial office. A bibliography and author index is also kept up-to-date. Microfilm and hard copy printouts of either of these compilations can be obtained from Dr. J. L. Warner, TN6, NASA Johnson Space Center, Houston, TX 77058.

The USGS Field Geology Team (AFGIT or ALGIT) was responsible for three types of post mission documents. Several revisions of these reports were produced; only the current are listed in Table 1. An interpretation of the geological setting for each mission appeared as an article in both the Preliminary Science Report and in SCIENCE. The collection of samples on the lunar surface is documented with photographs and with comments between the astronauts and mission control (Air to Ground Transcript). This data is compiled in a report detailing the presampling location and orientation of individual samples. Documents which index the lunar surface photography by sample number (Table 1) include photos on which is annotated the location of each sample. Copies of the unannotated photos may be requested from NSSDC.

Each Apollo landing site has been photographed from lunar orbit at several scales and sun angles. Table 2 lists a useful set of photography which can be ordered from NSSDC.

A brief description of the National Space Science Data Center (NSSDC) and its policies is printed on the sample request form included here. NSSDC is the designated distribution point for many of the documents listed in Table 1, and for most Apollo lunar photography.

The libraries of the Lunar Science Institute, 3303 NASA Road 1, Houston, TX 77058, have an extensive collection of articles, books, and documents pertaining to the moon. The photography and maps from Ranger, Surveyor, Lunar Orbiter and Apollo missions, are easily accessible in the Photolibrary. The Sample Information Library maintains a collection of orthogonal photos of all lunar rocks, soils and cores accompanied by copies of Curatorial cutting diagrams and a representative set of photomicrographs. All materials mentioned in this guide, with the exception of the Curatorial data packs and computerized inventories, are available for use in the LSI Data Center. Though the LSI is not a distribution point for items, the librarians and scientific staff of the Institute will provide an introduction to the materials and assist scientists and educators in obtaining photos and documents, whenever possible, from such sources as NSSDC, USGS, the Curator's Office and Superintendent of Documents. Interlibrary loans from the LSI library collections may be arranged by qualified persons. Those who are interested in Visiting Scientist appointments at the Institute to use the libraries, carry out research projects or prepare new research proposals for lunar sample or lunar related problems, should contact the Institute Director.

TABLE 1. LIST OF MISSION RELATED DOCUMENTS

	Apollo 11	Apollo 12	Apollo 14	Apollo 15	Apollo 16	Apollo 17
Flight Plans	MSC-1/1/69	MSC-11/15/69	MSC-1/31/71	MSC-6/21/71	MSC-3/6/72	MSC-10/23/72
Mission Science Planning Document	None	None		MSC 04010	MSC 04143R	MSC 05871R
Traverse Planning Package		11/14/69		7/71	3/9/72	11/1/72
Lunar Surface Procedures	MSC-6/27/69	MSC-10/23/69	MSC-12/31/70	MSC-7/9/71	MSC-3/16/72	v.1 Nominal 11/6/72 v.2 Contingency 12/1/72
Mission Site Geology Map - (USGS)	I-619	I-627	I-708	I-723	I-748	I-800
Mission Science Handbook	None	None	MSC-1/28/71	MSC-04472	MSC-05894R	MSC-07564
Air-to-Ground Transcript	MSC-7/69	MSC-11/69	MSC-2/71	MSC-04558	MSC-06802	MSC-07629
Crew Debriefing for Science and Photography	MSC-8/2/69	MSC-12/12/69	MSC-04033	MSC-04562	MSC-06806	MSC-07632
Mission Report (90-day)	MSC-00171 NASA SP-238	MSC-01855	MSC-04112	MSC-05161	MSC-07230	JSC-07904
LSPET Science Paper	v. 165, p. 1211-27	v. 167, p. 1325-39	v. 173, p. 681-93	v.175, p. 363-75	v. 179, p. 23-34	v. 182, p. 659-72
AF (or L) GIT Science Paper		in LSPET paper	v.173, p. 716-719	v.175, p. 407-415	v. 179, p. 62-69	v. 182, p. 672-680
Sample Location and Orientation Compilation	Proc. 2nd LSC v. 1, p. 17-26	Proc. 2nd LSC v. 1, p. 17-26	USGS Astro. IA Rpt. 28 & 29	USGS Astro. IA Rpt. 47	USGS Astro. IA Rpt. 51	USGS Astro. IA Rpt. 71
AF (or L) GIT Geology Summary	NASA SP-214 p. 41-83	NASA SP-235 p. 113-182	NASA SP-272 p. 39-86	NASA SP-289 p. 5-1 to 5-12	NASA SP-315 p. 6-1 to 6-81	NASA SP-330 p. 6-1 to 6-91
AF (or L) GIT Index to Lunar Surface Photo by Sample No.	NASA SP-214 p. 41-83	NASA SP-235 p. 113-182	USGS Astro. IA Rpt. 29	USGS Astro. IA Rpt. 47	USGS Astro. IA Rpt. 51	USGS Astro. IA Rpt. 71
Preliminary Science Report	NASA SP-214	NASA SP-235	NASA SP-272	NASA SP-289	NASA SP-315	NASA SP-330

TABLE 1 (continued)

	Apollo 11	Apollo 12	Apollo 14	Apollo 15	Apollo 16	Apollo 17
LSPET Sample Catalog	MSC 8/31/69	NASA TR-R-353	NASA TMX-58062	MSC 03209	MSC 03210	MSC 03211
4-10 Coarse Fines Catalog	none	none	none	MSC 03228	Marvin 10/72	Meyer 6/73
Catalog of Soils	← Heiken 11/74 →					
Rake Sample Catalog	none	none	none	none	Phinney and Lofgren 5/73; Keil 12/72; Smith and Steele 9/72	Keil 5/74; Phinney 9/74
Core Dissection Report	none	NASA TMX 58066	NASA TMX 58070	NASA TMX 58101		
Boulder Report	none	none	none	none	none	NASA TMX 58116 and Wood 1/74
Stereo Closeup Camera Report	NASA TMX 58077	NASA TMX 58078	NASA TMX 58072	none	none	none
Data Users Note	NSSDC 70-06	NSSDC 70-09	NSSDC 71-16a	NSSDC 72-07	NSSDC 73-01	NSSDC 74-08
70mm, 16mm and 5" Photo Index	NSSDC 70-02	NSSDC 70-11	NSSDC 71-16b	NSSDC microfilm or microfiche only	NSSDC microfilm or microfiche only	NSSDC microfilm or microfiche only
70mm Photo Catalog	NSSDC 70-07	NSSDC 70-10	NSSDC 71-16c	none	none	none
Lunar Photo Index Map	NSSDC	NSSDC	NSSDC	NSSDC	NSSDC	NSSDC
Panoramic and Metric Photo Index	none	none	none	NSSDC microfilm or microfiche only	NSSDC microfilm or microfiche only	NSSDC microfilm or microfiche only

TABLE 2. HIGH QUALITY ORBITAL PHOTOS OF APOLLO LANDING SITES

Type of Photo	Apollo 11	Apollo 12	Apollo 14	Apollo 15	Apollo 16	Apollo 17
Oblique	16-m-1389	16-m-2515	16-m-2507 16-m-1419	15-m-1538 17-m-2107	16-m-567 16-m-568 16-m-2464	17-m-938 15-m-835
Vertical High Resolution Pan or Orbiter	II 84 M	III 154 H2	III 133 H2	15-p-9377 15-p-9427	16-p-4558	17-p-2309
Large Area High Sun				15-m-2048	16-m-2954	15-m-1113
Smaller Area Medium Sun				15-m-854	16-m-0162	17-m-0447
Broad Moon, Wide View	IV 85 M	IV 125 M	IV 120 M	IV 102 M	IV 89 M	IV 78 M
Medium Scale Orbiter	IV 85 H1 V 74 M	IV 125 H3 III 154 M	III 133 M IV 120 H3	IV 102 H3 IV 110 H1	IV 89 H3	IV 78 H3

Key to read photo numbers

16-m-1389 = Apollo 16-metric camera frame 1389
17-p-2309 = Apollo 17 pan camera photo frame 2309
IV 85 M = Lunar Orbiter IV medium resolution frame 85
IV 85 H1 = Lunar Orbiter IV high resolution frame 85 H1

LUNAR SAMPLE INFORMATION DOCUMENTS

APOLLO 11

Lunar sample information catalog, Apollo 11. Houston, NASA Manned Spacecraft Center, August 31, 1969.

APOLLO 12

Warner, Jeffrey, comp., Apollo 12 lunar sample information catalog. Houston, NASA Manned Spacecraft Center, June 1970. *(MSC S-243 or TR R-353)*

Lindsay, John F. et al., Description of core samples returned by Apollo 12. Houston, NASA Manned Spacecraft Center, November 1971. *(TM X-58066)*

APOLLO 14

Apollo 14 lunar sample information catalog. Houston, NASA Manned Spacecraft Center, Setpember 1971. *(TM X-58062)*

Fryxell, Roald and Grant Heiken, Description, dissection, and subsampling of Apollo 14 core sample 14230. Houston, NASA Manned Spacecraft Center, October 1971. *(TM X-58070)*

APOLLO 15

Lunar sample information catalog, Apollo 15. Houston, NASA Manned Spacecraft Center, November 1971. *(MSC 03209)*

Heiken, Grant H. et al., Stratigraphy of the Apollo 15 drill core. Houston, NASA Manned Spacecraft Center, November 1972. *(TM X-58101 or MSC 07603)*

Powell, Benjamin N., Apollo 15 coarse fines (4-10mm): sample classification, description and inventory. Houston, NASA Manned Spacecraft Center, February 1972. *(MSC 03228)*

APOLLO 16

Lunar sample information catalog, Apollo 16. Houston, NASA Manned Spacecraft Center, July 1972. *(MSC 03210)*

Keil, Klaus, et al., Description, classification, and inventory of Apollo 16 rake samples from the LM area and station 5. Houston, NASA Manned Spacecraft Center, October 1972.

APOLLO 16 *(continued)*

Marvin, Ursula B., Apollo 16 coarse fines (4-10mm): sample classification, description and inventory. Houston, NASA Manned Spacecraft Center, October 1972.

Phinney, William and Gary Lofgren, Description, classification, and inventory of Apollo 16 rake samples from stations 1, 4, and 13. Houston, NASA Lyndon B. Johnson Space Center, May 1973.

Smith, J.V. and I.M. Steele, Apollo 16 rake samples 67515 to 68537 sample classification, description and inventory. Houston, NASA Manned Spacecraft Center, September 1972.

APOLLO 17

Lunar sample information catalog, Apollo 17. Houston, NASA Lyndon B. Johnson Space Center, April 1973. *(MSC 03211)*

Consortium Indomitabile, Interdisciplinary studies of samples from boulder 1, station 2, Apollo 17. Cambridge, Mass., Smithsonian Astrophysical Observatory, January 1974.

Heiken, Grant H. et al., Preliminary data on boulders at station 6, Apollo 17 landing site. Houston, NASA Lyndon B. Johnson Space Center, October 1973. *(TM X-58116 or JSC 08484)*

Keil, Klaus et al., Description, classification and inventory of 113 Apollo 17 rake samples from stations 1A, 2, 7, and 8. Houston, NASA Lyndon B. Johnson Space Center, April 1974.

Meyer, Charles Jr., Apollo 17 coarse fines (4-10mm): sample location, classification and photo index. Houston, NASA Lyndon B. Johnson Space Center, June 1973.

Phinney, William, et al., Description, classification, and inventory of Apollo 17 rake samples from station 6. Houston, NASA Lyndon B. Johnson Space Center, September 1974.

APOLLO 11 - APOLLO 17 INCLUSIVE

Heiken, Grant H., A Catalog of lunar soils. Houston, NASA Lyndon B. Johnson Space Center, November 1974.

(The documents listed above represent only that part of the lunar sample literature which has been published through the auspices of the NASA Curatorial Facility. Many other articles have been published in scientific journals and are available through the normal channels. These documents are available on microfiche or microfilm from the National Space Science Data Center (NSSDC), Code 601.4, NASA Goddard Space Flight Center, Greenbelt, Maryland 20771, or on interlibrary loan from the Sample Information Library of the Lunar Science Institute, 3303 NASA Road #1, Houston, Texas 77058.)

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November 1974

U.S. GEOLOGICAL SURVEY INTERAGENCY REPORTS

ASTROGEOLOGY REPORTS FOR APOLLO MISSIONS

APOLLO 11

Schleicher, David, ed., Geologic transcript from Apollo 11 mission. Flagstaff, U.S. Geological Survey, December 1969. *(Astrogeology 20)*

APOLLO 12

Schleicher, David, ed., Paraphrased geologic excerpts from Apollo 12 mission. Flagstaff, U.S. Geological Survey, June 1970. *(Astrogeology 21)*

APOLLO 14

Batson, R.M., et al., Preliminary log of 70mm pictures taken on the lunar surface during the Apollo mission. Flagstaff, U.S. Geological Survey, March 1971. *(Astrogeology 25)*

Sutton, R.L., et al., Documentation of the Apollo 14 samples. Flagstaff, U.S. Geological Survey, May 1971. (Supercedes Astrogeology 27) *(Astrogeology 28)*

Swann, G.A., et al., Preliminary geologic investigations of the Apollo 14 landing site. Flagstaff, U.S. Geological Survey, March 1971. *(Astrogeology 29)*

APOLLO 15

Apollo Lunar Geology Investigation Team, Preliminary report on the geology and field petrology at the Apollo 15 landing site. Flagstaff, U.S. Geological Survey, August 1971. *(Astrogeology 32)*

Sutton, R.L., et al., Preliminary documentation of the Apollo 15 samples. Flagstaff, U.S. Geological Survey, August 1971. *(Astrogeology 34)*

Batson, R.M., et al., Preliminary catalog of pictures taken on the lunar surface during the Apollo 15 mission. Flagstaff, U.S. Geological Survey, August 1971. *(Astrogeology 35)*

Swann, G.A., et al., Preliminary description of Apollo 15 sample environments. Flagstaff, U.S. Geological Survey, September 1971. *(Astrogeology 36)*

Sutton, R.L., et al., Documentation of Apollo 15 samples. Flagstaff, U.S. Geological Survey, April 1972. *(Astrogeology 47)*

APOLLO 16

Apollo Lunar Geology Investigation Team, Preliminary report on the geology and field petrology at the Apollo 16 landing site. Flagstaff, U.S. Geological Survey, April 1972. *(Astrogeology 48)*

Apollo Lunar Geology Investigation Team, Progress report: Apollo 16 sample documentation. Flagstaff, U.S. Geological Survey, May 1972. *(Astrogeology 49)*

Batson, R.M., et al., Preliminary catalog of pictures taken on the surface during the Apollo 16 mission. Flagstaff, U.S. Geological Survey, May 1972. *(Astrogeology 50)*

Apollo Lunar Geology Investigation Team, Documentation and environment of the Apollo 16 samples: a preliminary report. Flagstaff, U.S. Geological Survey, May 1972. *(Astrogeology 51)*

APOLLO 17

Apollo Lunar Geology Investigation Team, Preliminary report on the geology and field petrology at the Apollo 17 landing site. Flagstaff, U.S. Geological Survey, December 1972. *(Astrogeology 69)*

Larson, K.B., et al., Preliminary catalog of pictures taken on the surface during the Apollo 17 mission. Flagstaff, U.S. Geological Survey, January 1972. *(Astrogeology 70)*

Apollo Lunar Geology Investigation Team, Documentation and environment of the Apollo 17 samples: a preliminary report. Flagstaff, U.S. Geological Survey, January 1973. *(Astrogeology 71)*

Apollo Lunar Geology Investigation Team, Preliminary geologic analysis of the Apollo 17 site. Flagstaff, U.S. Geological Survey, March 1973. *(Astrogeology 72)*

(All of the above publications are in great demand and few copies are available at this time from the Astrogeology Branch of the U.S. Geological Survey in Flagstaff, Arizona. However, library copies at the Lunar Science Institute and Flagstaff may be requested on interlibrary loan. Final versions of these documents are currently in progress and will soon be available through another government distribution center. As these final reports of mission activities are published, they will be announced in the LUNAR SCIENCE INFORMATION BULLETIN.)

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November 1974

APOLLO PHOTOGRAPHIC INDEXES AND INDEX MAPS

APOLLO 11

Data users' note; Apollo 11 lunar photography. Greenbelt, Md., National Space Science Data Center, April 1970. *(NSSDC 70-06)*

Apollo 11 photography; 70mm, 16mm, and 35mm frame index. Greenbelt, Md., National Space Science Data Center, February 1970. *(NSSDC 70-02)*

Apollo 11 70mm photographic catalog. Greenbelt, Md., National Space Science Data Center, April 1970. *(NSSDC 70-07)*

Apollo mission 11 lunar photography index. Greenbelt, Md., National Space Science Data Center, October 1969. *(4 map sheets)*

APOLLO 12

Data users' note; Apollo 12 lunar photography. Greenbelt, Md., National Space Science Data Center, July 1970. *(NSSDC 70-09)*

Apollo 12 photography; 70mm, 16mm, and 35mm frame index. Greenbelt, Md., National Space Science Data Center, July 1970. *(NSSDC 70-11)*

Apollo 12 70mm photographic catalog. Greenbelt, Md., National Space Science Data Center, July 1970. *(NSSDC 70-10)*

Apollo mission 12 lunar photography index. Greenbelt, Md., National Space Science Data Center, March 1970. *(4 map sheets)*

APOLLO 13

Data users' note; Apollo 13 lunar photography. Greenbelt, Md., National Space Science Data Center, December 1970. *(NSSDC 70-18pt.I)*

Apollo 13 photography; 70mm and 16mm frame index. Greenbelt, Md., National Space Science Data Center, December 1970. *(NSSDC 70-18 pt. II)*

Apollo 13 photographic catalog. Greenbelt, Md., National Space Science Data Center, December 1970. *(NSSDC 70-18 pt. III)*

Apollo mission 13 lunar photography index. Greenbelt, Md., National Space Science Data Center, June 1970. *(1 map sheet)*

APOLLO 14

Data users' note; Apollo 14 lunar photography. Greenbelt, Md., National Space Science Data Center, August 1971. *(NSSDC 71-16a)*

Apollo 14 photography; 70mm, 35mm, 16mm, and 5 in. frame index. Greenbelt, Md., National Space Science Data Center, August 1971. *(NSSDC 71-16b)*

Apollo 14 photographic catalog. Greenbelt, Md., National Space Science Data Center, August 1971. *(NSSDC 71-16c)*

Apollo mission 14 lunar photography index. Greenbelt, Md., National Space Science Data Center, June 1971. *(3 map sheets)*

APOLLO PHOTOGRAPHIC INDEXES AND INDEX MAPS, CONT.

APOLLO 15

Data users' note; Apollo 15 lunar photography. Greenbelt, Md., National Space Science Data Center, December 1972. *(NSSDC 72-07)*

Apollo 15 photography; 70mm, 35mm, 16mm, and 5 in. frame index. Greenbelt, Md., National Space Science Data Center, December 1972. *(Available only on microfiche or 16mm microfilm)*

Apollo 15 panoramic and metric photography index. Greenbelt, Md., National Space Science Data Center, December, 1972. *(Available only on microfiche or 16mm microfilm)*

Apollo mission 15 lunar photography index. Greenbelt, Md., National Space Science Data Center, March 1972. *(10 map sheets)*

APOLLO 16

Data users' note; Apollo 16 lunar photography. Greenbelt, Md., National Space Science Data Center, May 1973. *(NSSDC 73-01)*

Apollo 16 photography; 70mm, 35mm, 16mm, and 5 in. frame index. Greenbelt, Md., National Space Science Data Center, May 1973. *(Available only on microfiche or 16mm microfilm)*

Apollo 16 panoramic and metric photography index. Greenbelt, Md., National Space Science Data Center, May 1973. *(Available only on microfiche or 16mm microfilm)*

Apollo mission 16 lunar photography index. Greenbelt, Md., National Space Science Data Center, October 1972. *(6 map sheets)*

APOLLO 17

Data users' note; Apollo 17 lunar photography. Greenbelt, Md., National Space Science Data Center, December 1974. *(NSSDC 74-08)*

Apollo 17 photography; 70mm, 35mm, 16mm, and 5 in. frame index. Greenbelt, Md., National Space Science Data Center, June 1974. *(Available only on microfiche or 16mm microfilm)*

Apollo 17 panoramic and metric photography index. Greenbelt, Md., National Space Science Data Center, June 1974. *(Available only on microfiche or 16mm microfilm)*

Apollo mission 17 lunar photography index. Greenbelt, Md., National Space Science Data Center, November 1973. *(8 map sheets)*

The above materials are available from the National Space Science Data Center (NSSDC) at little or no cost to scientists or educators when the items are to be used for professional purposes.

Address within the U.S.
National Space Science Data Center
Code 601.4
Goddard Space Flight Center
Greenbelt, Md. 20771

Scientists outside the U.S.
World Data Center A
Rockets and Satellites
Code 601
Goddard Space Flight Center
Greenbelt, Md. 20771 USA

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November 1974

U.S. GEOLOGICAL SURVEY GEOLOGIC ATLAS OF THE MOON
APOLLO MISSION SITE QUADRANGLE MAPS

APOLLO 11

Golier, Maurice J., Geologic map of Apollo landing site #2 (Apollo 11). Washington, D.C., U.S. Geological Survey, 1970. *(I-619)*

APOLLO 12

Pohn, H.A., Geologic map of the Lansberg P region of the moon. Washington, D.C., U.S. Geological Survey, 1971. *(I-627)*

APOLLO 14

Eggleton, R.E. and T.W. Offield, Geologic maps of the Fra Mauro region of the moon. Washington, D.C., U.S. Geological Survey, 1970. *(I-708)*

APOLLO 15

Carr, Michael H., et al., Geologic maps of the Apennine-Hadley region of the moon. Washington, D.C., U.S. Geological Survey, 1971. *(I-723)*

APOLLO 16

Milton, Daniel J. and Carroll A. Hodges, Geologic maps of the Descartes region of the moon. Washington, D.C., U.S. Geological Survey, 1972. *(I-748)*

APOLLO 17

Scott, David H., et al., Geologic maps of the Taurus-Littrow region of the moon. Washington, D.C., U.S. Geological Survey, 1972. *(I-800)*

GENERAL NEARSIDE LUNAR MAP

Wilhelms, Don E. and John F. McCauley, Geologic map of the near side of the moon. Washington, D.C., U.S. Geological Survey, 1971. *(I-703)*

(These maps are all available for $1.00 each from the U.S. Geological Survey, General Services Building, 18th and F Streets, N.W., Washington D.C. 20242.)

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PRELIMINARY SCIENCE REPORTS

Apollo 11 Preliminary Science Report. NASA SP-214. 1969. 209 pp.
(Library of Congress Card 77-603770)
NASA No. N70-10030# Original out-of-print.

Apollo 11 Mission Report. NASA SP-238. 1971. 228 pp.
(Library of Congress Card 70-612157)
NASA No. N71-25042# Original out-of-print.

Apollo 12 Preliminary Science Report. NASA SP-235. 1970. 235 pp.
(Library of Congress Card 73-606625)
NASA No. N70-35271# Original may be out-of-print.

Apollo 14 Preliminary Science Report. NASA SP-272. 1971. 313 pp.
(Library of Congress Card 78-611931)
NASA No. N71-30953#; SOD Order No. NAS 1.21:272 $3.00

Apollo 15 Preliminary Science Report. NASA SP-289. 1972. 502 pp.
(Library of Congress Card 72-185106)
NASA No. N72-22814#; SOD Order No. NAS 1.21:289 $8.00

Apollo 16 Preliminary Science Report. NASA SP-315. 1972. 636 pp.
(Library of Congress Card 73-601567)
NASA No. N73-21729#; SOD Order No. NAS 1.21:315 $10.25

Apollo 17 Preliminary Science Report. NASA SP-330. 1973. 710 pp.
(Library of Congress Card 73-600152)
NASA No. N74-18428#; SOD Order No. NAS 1.21:330 $7.95

NOTE:

Facsimile paper copies or microfiche may be available from NTIS by using the NASA no. as an order number. Microfiche availability is indicated by a hash mark (#), *i.e., N73-13789#*. Current prices are: Microfiche - $2.25; Paper Copy - $3.00 and UP. (Contact NTIS Customer Service phone: 703/321-8523 for exact price information). Both NTIS and SOD require prepayment by check, money order, or deposit account. (Check with your librarian). NTIS will accept an American Express Credit Card Number. Prices and availability at both agencies are subject to change.

NTIS: National Technical Information Service
5825 Port Royal Road
Springfield, VA 22152

SOD: Superintendent of Documents
U.S. Government Printing Office
Washington, D. C. 20402

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