

#291

APOLLO 17

MASS PEAK DATA

72-096C-08C

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1. INTRODUCTION:

The documentation for this data set was originally on paper, kept in NSSDC's Data Set Catalogs (DSCs). The paper documentation in the Data Set Catalogs have been made into digital images, and then collected into a single PDF file for each Data Set Catalog. The inventory information in these DSCs is current as of July 1, 2004. This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system. The information existing in the DSCs is now not needed for locating the data files, but we did not remove that inventory information.

The offline tape datasets have now been migrated from the original magnetic tape to Archival Information Packages (AIP's).

A prior restoration may have been done on data sets, if a requestor of this data set has questions; they should send an inquiry to the request office to see if additional information exists.

2. ERRATA/CHANGE LOG:

NOTE: Changes are made in a text box, and will show up that way when displayed on screen with a PDF reader.

When printing, special settings may be required to make the text box appear on the printed output.

Version	Date	Person	Page	Description of Change
01				
02				

3 LINKS TO RELEVANT INFORMATION IN THE ONLINE NSSDC
INFORMATION SYSTEM:

<http://nssdc.gsfc.nasa.gov/nmc/>

[NOTE: This link will take you to the main page of the NSSDC Master Catalog. There you will be able to perform searches to find additional information]

4. CATALOG MATERIALS:

- a. Associated Documents To find associated documents you will need to know the document ID number and then click here.
<http://nssdcftp.gsfc.nasa.gov/miscellaneous/documents/>

- b. Core Catalog Materials

APOLLO 17 LM/ALSEP
MASS PEAK DATA ON TAPE

72-096C-08C

PSPA-00147

This data set has been restored. There were originally ten 9-track, 1600 BPI tapes written in Binary. There are two restored tapes. The DR tapes are 3480 cartridges and the DS tapes are 9-track, 6250 BPI. The original tapes were created on an IBM 360 computer and the restored tapes were created on a MRS computer. The DR and DS numbers along with the corresponding D numbers are as follows:

DR#	DS#	D#	FILES	TIME SPAN
-----	-----	-----	-----	-----
DR004301	DS004301	D017037	1	01/02/73 - 01/10/73
		D017038	2	01/23/73 - 02/10/73
		D017039	3	02/22/73 - 03/10/73
		D017040	4	03/24/73 - 04/08/73
		D017041	5	04/23/73 - 05/10/73 (a)
DR004302	DS004302	D017042	1	05/23/73 - 06/06/73
		D017043	2	06/19/73 - 07/07/73
		D017044	3	07/21/73 - 08/05/73
		D017045	4	08/19/73 - 09/02/73
		D017046	5	09/17/73 - 10/04/73

(a) D017041: Read error occurred in record 4 of File 1.

REQ. AGENT
DLB

RAND NO.
RC2447

ACQ. AGENT
RNH

APOLLO 17

MASS PEAK DATA

72-096C-08C

This data set consists of ten Apollo 17 Mass Peak data tapes created on an IBM 360 computer at 1600 BPI, 9-track, BIN, 1 file.

The time spans for the tapes are:

<u>D#</u>	<u>C#</u>	<u>TIME SPAN</u>
D-17037	C-14022	1/02/73 - 1/10/73
D-17038	C-14023	1/23/73 - 2/10/73
D-17039	C-14024	2/22/73 - 3/10/73
D-17040	C-14025	3/24/73 - 4/08/73
D-17041	C-15026	4/23/73 - 5/10/73
D-17042	C-14027	5/23/73 - 6/06/73
D-17043	C-14028	6/19/73 - 7/07/73
D-17044	C-14029	7/21/73 - 8/05/73
D-17045	C-14030	8/19/73 - 9/02/73
D-17046	C-14031	9/17/73 - 10/04/73

LUNAR ATMOSPHERIC COMPOSITION EXPERIMENT

(NASA EXPERIMENT S-205)

NSSDC IDENTIFICATION NUMBER:

APOLLO 17 72-096C-08

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THE UNIVERSITY OF TEXAS AT DALLAS

P. O. BOX 688

RICHARDSON, TEXAS 75080

Sensitivity: 6.7×10^{-13} (5 X 10^{-15} torr)
Dynamic range: 6.7×10^{-13} to 1.3×10^{-7} Pa
(5 X 10^{-15} to 1 X 10^{-9} torr)

AVAILABILITY OF DATA

The LACE initial turn-on occurred on December 27, 1972, at 18:07 G.m.t. and continued throughout the first lunar night. Operation has been continuous during each lunar night from shortly after sunset to approximately sunrise. During the April and September 1973 sunrise periods, operation continued 4 or 5 hr into the daytime to track the behavior of argon. Daytime operation has been severely curtailed because of the high outgassing rates encountered as the site warms, thus producing a large artifact background that covers most of the ambient gas levels except helium. This relatively high background gas concentration would likely degrade the instrument ion source sensitivity if operated for long periods (hours) in this environment. Likewise, extended daytime operation periods, one in January, one in February, and one in May, have given information on the daytime gas concentrations at the site. Table I lists the periods of instrument operation during its first 9 months on the lunar surface.

In general, the instrument has operated well. All housekeeping data have remained within bounds. A fortuitous occurrence, the slow evaporation of the tungsten filament, which produces doubly charged tungsten peaks in the mass 91 to 93 range of the spectrum, has provided a constant check on the instrument sensitivity, which has remained very stable with time.

FORMAT OF DATA

Data processing has resulted in the blocking of data into complete mass spectra on magnetic tape. Brief time gaps in the data are filled with flag words to ensure proper location of the good measurements in the spectra. Reduced data also include the background count level of each analyzer channel and decommutated housekeeping data.

Microfilm records are formatted outputs of the data on magnetic tape. Each mass spectrum produces six pages of data, two each for the low-, mid-, and high-mass ranges. Examples of the high-mass page are given in figure 2. The data format is as follows.

DESCRIPTION

HIGH	Mass range (low, mid, high)
STAT	Tracking station identification
N. ELEV	Elevation of the Sun
AZMUTH	Azimuth of the Sun
ZENITH	Zenith angle of the Sun
T BASE	Temperature of the baseplate, °C
T IONS	Temperature of the ion source, °C
T MOON	Surface temperature of the Moon, K
TCF	Temperature correction factor $[(T \text{ IONS} + 273.2)/T \text{ MOON}]^{1/2}$
SYNC	Sweep sync code
TAVG	Average time between frames of data, msec
HK SYNC BLK	The block (90 frames) of data in which the internal housekeeping marker was found
EXP I	Instrument current monitor
PMP I	Ion pump current monitor
PMP V	Ion pump voltage monitor
BASE T	Baseplate temperature monitor
IONS T	Ion source temperature monitor
+12V	+12 V temperature monitor
+5V	+5 V temperature monitor
-12V	-12 V temperature monitor
-15V	-15 V temperature monitor
EMIS I	Emission current monitor

description

FIL1 I Filament number 1 current monitor
FIL2 I Filament number 2 current monitor
MHV Multiplier high-voltage monitor
LVPS T Low-voltage power supply temperature
monitor
SWEEP Sweep high-voltage monitor
ETEMP Electronics temperature, °C
MDAPBHF M = Multiplier high-voltage HI/LO flag
D = Disk HI/LO flag
A = Sweep high-voltage AUTO/STEP flag
P = Ion pump ON/OFF flag
B = Bakeout heater ON/OFF flag
H = High voltage ON/OFF flag
F = Filament ON/OFF flag

73 89 3 25 39

73 = year
89 = Julian day
3 25 39 = hours, minutes, and seconds
in G.m.t.

Time gap in data

TABLE I. - PERIODS OF LACE OPERATION DURING FIRST 9 MONTHS
ON LUNAR SURFACE

LACE turned on -		LACE turned off -	
Date	Time, G.m.t.	Date	Time, G.m.t.
Dec. 27, 1972	18:07	Jan. 9, 1973	22:36
Jan. 16, 1973	17:19	Jan. 16, 1973	17:46
Jan. 23, 1973	14:39	Feb. 8, 1973	13:29
Feb. 16, 1973	01:00	Feb. 16, 1973	01:26
Feb. 22, 1973	11:02	Mar. 12, 1973	10:55
Mar. 23, 1973	23:20	Apr. 11, 1973	10:14
Apr. 22, 1973	15:33	May 10, 1973	15:13
May 14, 1973	10:33	May 14, 1973	10:49
May 23, 1973	09:12	June 8, 1973	19:09
June 21, 1973	19:21	July 8, 1973	16:09
July 19, 1973	14:53	Aug. 3, 1973	23:45
Aug. 17, 1973	13:17	Sept. 2, 1973	21:33

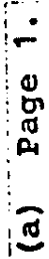


Figure 2.- Examples of LACE microfilm record representing two pages of high-mass ranges.

Magnetic Tape Formats

The magnetic tapes of the Apollo 17 Mass Spectrometer data are written IBM 360, 9 track, 1600 BPI. Record format is Variable Span. Logical record length is 17780 Bytes. Block size is 17784 Bytes. Word assignments for the logical record are shown on the following page.

		TAPOUT	TYPE	VARIABLE NAME
1	1	TIME IN MS	R*8	DTIME
33	33	"	I*4	MASSAR
1440	1473	"	I*4	MASBR
1440	2913	"	I*4	MASCR
16 X 1	4353	AVG TIME PER FRAME PER BLOCK	R*4	TAVGP
16 X 1	4369	HOUSEKEEPING MONITORS	I*4	HOUSEPR
16 X 1	4385	SWEEP HV MONITOR	I*4	SWEEPPR
16 X 1	4401	ELECTRONICS TEMPERATURE	R*4	ETEMPR
1	4417	STATION ID	I*4	STATNR
1	4418	SYNC CODE	I*4	SYNCR
1	4419	AZIMUTH	R*4	AZMTHR
1	4420	ZENITH	R*4	ZNITHR
1	4421	NORMAL ELEVATION	R*4	NORMAR
1	4422	MOON TEMPERATURE	R*4	TMOONR
1	4423	BASEPLATE TEMPERATURE	R*4	BASETR
1	4424	ION SOURCE TEMPERATURE	R*4	IONTR
1	4425	TEMPERATURE CORRECTION FACTOR	R*4	TCFR
1	4426	STATUS AT START OF SWEEP	I*4	STATSR
1	4427	STATUS AT END OF SWEEP	I*4	ENDSR
1	4428	MULTIPLIER HIGH-LOW	I*4	MHIJLR
1	4429	DISCRIMINATOR HIGH-LOW	I*4	DHIJLR
1	4430	SWEEP MODE AUTO-LOCK	I*4	AUTOLR
1	4431	ION PUMP ON-OFF	I*4	IONPMR
1	4432	BAKEOUT HEATER ON-OFF	I*4	BAKEOR
1	4433	HIGH VOLTAGE PS ON-OFF	I*4	HVPSOR
1	4434	FILAMENT ON-OFF	I*4	FILOR
1	4435	NO. OF COMMANDS EXECUTED	I*4	NCMDSR
	4436			
	4437			
	4438			
	4439			
	4440			

17760 BYTES

LACE logical record word assignments

017037
DR004301

RECORD 1

[illegible]

D/7037

(16600)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(16640)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(16680)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(16720)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(16760)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(16800)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(16840)	00000002	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(16880)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(16920)	00000000	00000001	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(16960)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17000)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17040)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17080)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17120)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17160)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17200)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17240)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17280)	00000002	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17320)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17360)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17400)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17440)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17480)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17520)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17560)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17600)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17640)	474A2CB7	474A2CB7	474A2CB7	474A2CB7	474A2CB7	474A2CB7	474A2CB7	474A2CB7	474A2CB7
(17680)	429B4263	429B4263	431177F3	426B2191	4B37C067	C212547B	C212547B	00A7FFDB	00000001
(17720)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
(17760)	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000

HEX DUMP OF 1b

FILE 1	RECORD 839	17768 BYTES
(0)	45680000	45640000
(40)	00000000	00000000
(80)	00000000	00000000
(120)	00000000	00000000
(160)	00000000	00000000
(200)	00000000	00000000
(240)	00000000	00000000
(280)	00000000	00000000
(320)	00000000	00000000
(360)	00000000	00000000
(400)	00000000	00000000
(440)	00000000	00000000
(480)	00000000	00000000
(520)	00000000	00000000

[illegible]

FILE	1	RECORD	1	17768	BYTES
(0)	45680000	45640000	4877134C	7E000000	00000000
(40)	00000000	00000000	00000000	00000000	00000000
(80)	00000000	00000000	00000000	00000000	00000000
(120)	00000000	00000000	00000000	00000000	00000000
(160)	00A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(200)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(240)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(280)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(320)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(360)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(400)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(440)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(480)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(520)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(560)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(600)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(640)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(680)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(720)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(760)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(800)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(840)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(880)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(920)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(960)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(1000)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(1040)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(1080)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(1120)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(1160)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(1200)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(1240)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71
(1280)	04A2CB71	04A2CB71	04A2CB71	04A2CB71	04A2CB71