

#282

APOLLO 17

U.V. SPECTROMETER

72-096A-02A

Table of Contents

1. Introduction
2. Errata/Change Log
3. LINKS TO RELEVANT INFORMATION IN THE ONLINE NSSDC
INFORMATION SYSTEM
4. Catalog Materials
 - a. Associated Documents
 - b. Core Catalog Materials

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 This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system.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

UV SPECTROMETER DATA ON TAPE

72-096A-02A

PSPA-00070

This data set has been restored. There were originally five 7-track, 800 BPI tapes written in Binary. There is one restored tape. The DR tape is a 3480 cartridge and the DS tape is 9-track, 6250 BPI. The original tapes were created on a 7094 computer and the restored tapes were created on an IBM 9021 computer. The DR and DS numbers along with the corresponding D numbers are as follows:

DR#	DS#	D#	FILES	TIME SPAN
-----	-----	-----	-----	-----
DR005314	DS005314	D016633	1	12/10/72 - 12/10/72
		D016634	2	12/11/72 - 12/14/73
		D016635	3	12/14/72 - 12/16/74
		D016636	4	12/16/72 - 12/18/74
		D016637	5	12/18/72 - 12/19/75

APOLLO 17

U.V. SPECTROMETER

72-096A-02A

This data set contains 5 Apollo 17 U. V. Spectrometer tapes. They are 556 BPI, 7 track, Binary, 1 file, made on the IBM 7094. Each 12 second spectrometer scan is represented by one physical record containing 125 36-bit integer words.

<u>D#</u>	<u>C#</u>	<u>TIME SPAN</u>
D-16633	C-12813	12/14/72 - 12/16/72
D-16634	C-12814	12/18/72 - 12/19/72
D-16635	C-12815	12/16/72 - 12/18/72
D-16636	C-12816	12/11/72 - 12/14/72
D-16637	C-12817	12/10/72 - 12/10/72

92-096A-02A

APOLLO 17 ULTRAVIOLET SPECTROMETER EXPERIMENT (S-169)

DATA TAPES

<u>TAPE NUMBER</u>	<u>ACTUAL ELAPSED TIME</u>	<u>NUMBER OF RECORDS</u>
H11173	81:22 - 95:27	2804
H11810	110:51 - 188:55	12371
H10980	188:55 - 234:53	8871
H11519	235:04 - 273:08	8303
H11467	273:09 - 299:31	5837

72-096A-02A

7 Tracks
556 BPI
1 file per tape
written on
IBM 7094

Apollo 17 Ultraviolet Spectrometer Experiment

Data Format

The data from the Apollo 17 Ultraviolet Spectrometer Experiment (S-169) are contained on five magnetic tapes covering the following time periods:

Tape 1: 81:22 - 95:27
Tape 1: ~~81:37:30~~ - ~~94:58:21~~ CTE
Tape 2: 110:51:55 - 188:55:05 CTE
Tape 3: 188:55:15 - 234:53:00 CTE
Tape 4: 235:04:02 - 273:08:15 CTE
Tape 5: 273:09:15 - 299:31:15 CTE

Each 12 second spectrometer scan is represented by one physical record containing 125 36-bit integer words. The record format is given in Table I. The data words represent the number of photoelectrons per 0.1 second, and the wavelengths corresponding to each data word are given in Table II. Note that at large counting rates, the data words must be corrected for counter dead-time according to the following expression:

$$C_{\text{actual}} = \frac{C_{\text{obs}}}{1 - C_{\text{obs}} \tau} \quad (1)$$

Where C_{actual} is the real count rate per 0.1 second
 C_{obs} is the observed count rate per 0.1 second
and $\tau = 1.83 \times 10^{-5}$

Records that have flagged data dropouts or do not match the synch words have been eliminated from the final tape.

To convert the actual count rate to brightness, we use the expression

$$S = B \cdot \frac{10^{-6}}{4\pi} \frac{A_s A_g}{F^2} \text{ (QTPG)}$$

(7)

where S is the signal in counts per second
B is the brightness in Rayleighs
 A_s is the slit area = 1.14 cm^2
 A_g is the grating area = 104 cm^2
F is the focal length = 50 cm

The product of quantum efficiency and transmission, QTPG, is given in Table III at 11 wavelengths, along with the instrument sensitivity in photoelectrons/ second/ Rayleigh.

During the mission, the sensitivity of the instrument deteriorated due to continuous exposure to solar Lyman- α radiation reflected by the moon. During Trans-Earth-Coast the sensitivity was reduced to 83% of the value given in the calibration table.

A detailed description of the instrument is given in Fastie, The Moon, 7,49 (1973) Preliminary results are given in the Apollo 17 Preliminary Science Report, NASA SP-330, p. 23-1 (1973) and by Fastie et al, Science 182, 710 (1973).

Table I. Record Format (S-169)

Word	
0	Johns Hopkins "green" word - ignore
1	synch word = 65514
2	synch word = 21
3	motor step count (typically 4800)
4	synch word = 21
5	synch word = 65514
6-120	data words
121	original tape number
122	{ record and word location on original
123	
124	time (CTE) in integer milliseconds of word one.

Tabl II

BIN
NO.WAVELENGTH
INTERVAL (Å)

(4)

6	1184.00 TO	1184.09
7	1184.09 TO	1187.05
8	1189.05 TO	1194.50
9	1194.50 TO	1197.67
10	1197.67 TO	1199.46
11	1199.46 TO	1201.33
12	1201.33 TO	1202.99
13	1202.99 TO	1205.22
14	1205.22 TO	1207.38
15	1207.38 TO	1209.35
16	1209.35 TO	1211.14
17	1211.14 TO	1212.85
18	1212.85 TO	1214.61
19	1214.61 TO	1216.27
20	1216.27 TO	1217.88
21	1217.88 TO	1219.72
22	1219.72 TO	1221.48
23	1221.48 TO	1223.12
24	1223.12 TO	1224.80
25	1224.80 TO	1226.38
26	1226.38 TO	1227.76
27	1227.76 TO	1229.16
28	1229.16 TO	1230.40
29	1230.40 TO	1232.11
30	1232.11 TO	1234.03
31	1234.03 TO	1235.71
32	1235.71 TO	1237.11
33	1237.11 TO	1238.67
34	1238.67 TO	1240.17
35	1240.17 TO	1241.31
36	1241.31 TO	1242.24
37	1242.24 TO	1243.15
38	1243.15 TO	1246.83
39	1246.83 TO	1254.10
40	1254.10 TO	1261.82
41	1261.82 TO	1269.87
42	1269.87 TO	1277.11
43	1277.11 TO	1283.99
44	1283.99 TO	1291.64
45	1291.64 TO	1298.70
46	1298.70 TO	1306.16
47	1306.16 TO	1313.83
48	1313.83 TO	1321.09
49	1321.09 TO	1328.26
50	1328.26 TO	1335.43
51	1335.43 TO	1342.09
52	1342.09 TO	1349.98
53	1349.98 TO	1357.22
54	1357.22 TO	1363.76
55	1363.76 TO	1370.59
56	1370.59 TO	1377.90
57	1377.90 TO	1385.13
58	1385.13 TO	1392.16
59	1392.16 TO	1399.08
60	1399.08 TO	1406.43

61	1406.43	TO	1413.63
62	1413.63	TO	1420.87
63	1420.87	TO	1427.93
64	1427.93	TO	1434.84
65	1434.84	TO	1439.97
66	1439.97	TO	1443.57
67	1443.57	TO	1445.95
68	1445.95	TO	1448.08
69	1448.08	TO	1449.67
70	1449.67	TO	1451.44
71	1451.44	TO	1453.16
72	1453.16	TO	1454.54
73	1454.54	TO	1456.34
74	1456.34	TO	1458.08
75	1458.08	TO	1459.59
76	1459.59	TO	1461.41
77	1461.41	TO	1463.18
78	1463.18	TO	1464.64
79	1464.64	TO	1466.03
80	1466.03	TO	1467.44
81	1467.44	TO	1469.13
82	1469.13	TO	1470.54
83	1470.54	TO	1472.51
84	1472.51	TO	1473.87
85	1473.87	TO	1475.35
86	1475.35	TO	1476.94
87	1476.94	TO	1478.53
88	1478.53	TO	1480.22
89	1480.22	TO	1481.96
90	1481.96	TO	1483.78
91	1483.78	TO	1485.67
92	1485.67	TO	1487.42
93	1487.42	TO	1488.87
94	1488.87	TO	1490.15
95	1490.15	TO	1492.89
96	1492.89	TO	1498.83
97	1498.83	TO	1506.48
98	1506.48	TO	1514.48
99	1514.48	TO	1522.22
100	1522.22	TO	1529.78
101	1529.78	TO	1536.81
102	1536.81	TO	1544.02
103	1544.02	TO	1550.92
104	1550.92	TO	1558.21
105	1558.21	TO	1565.91
106	1565.91	TO	1573.71
107	1573.71	TO	1580.71
108	1580.71	TO	1587.84
109	1587.84	TO	1595.89
110	1595.89	TO	1603.34
111	1603.34	TO	1610.74
112	1610.74	TO	1617.78
113	1617.78	TO	1625.05
114	1625.05	TO	1632.87
115	1632.87	TO	1639.87
116	1639.87	TO	1647.64
117	1647.64	TO	1655.35
118	1655.35	TO	1662.47
119	1662.47	TO	1669.72
120	1669.72	TO	1671.57

(6)

Table III. Calibration Data

<u>Wavelength (A)</u>	<u>QTPG</u>	<u>Photoelectrons/sec/R</u>
1192	.0163	61.5
1216	.0196	74
1280	.0263	99
1336	.0251	95
1395	.0233	88
1463	.0200	75.5
1518	.0156	59
1582	.0093	35
1608	.0079	29.8
1639	.0070	26.4
1655	.0078	29.4

188.55-231.53

DEC 24 1972 -

DEC 16, 1972

FILE 0001 REC 0000

0001	0001740000001
0049	0000000000002
0057	0000000000003
0145	0000000000000
0153	0000000000002
0241	0000000000000
0285	0000000000001
0337	0000000000003
0385	0000000000000
0433	0000000000000
0481	0000000000001
0529	0000000000003
0577	0000000000004
0625	0000000000005
0673	0000000000001
0721	0000000000001

FILE 0001 REC 0003 CH 0750

0001	00017400000001
0049	00000000000002
0057	00000000000004
0145	00000000000001
0193	00000000000002
0241	00000000000001
0289	00000000000003
0337	00000000000004
0385	00000000000005
0433	00000000000001
0481	00000000000001
0529	00000000000003
0577	00000000000000
0625	00000000000001
0673	00000000000001
0721	00000000000003

FILE 0001 REC 0004 CH 0750

0.001	0001740000001
0.049	0000000000007
0.097	0000000000022
0.145	0000000000000
0.153	0000000000005
0.241	0000000000001
0.289	0000000000005
0.337	0000000000000
0.385	0000000000003
0.433	0000000000001
0.481	0000000000004

[illegible][illegible][illegible][illegible][illegible][illegible][illegible]

FILE 0001 REC 0022 CH 0750

0721 000000000650

FILE 0001 REC 0023 CH 0750

0001 000174000001

0049 000000000205

0057 000000021206

0145 000000013750

0153 000000000176

0241 000000000175

0289 000000000177

0337 000000000207

0385 000000000270

0433 000000000265

0481 000000000266

0529 000000000344

0577 000000000322

0625 000000000533

0673 000000000375

0721 000000000602

000000026563

000000177752

000000000252

000000025775

000000006531

000000000227

000000000232

000000000367

000000000225

000000000237

000000000263

000000000322

000000000351

000000000317

000000000535

000000000405

000000026563

000000000500

000000000025

000000000310

000000032053

000000002352

000000000246

000000000134

000000000154

000000000367

000000000260

000000000271

000000000360

000000000310

000000000310

000000000414

000000000415

000000000670

000000000123

000000011300

000000000404

000000034736

000000000705

000000000210

000000000126

000000000603

000000000442

000000000233

000000000252

000000000320

000000000343

000000000347

000000000376

000000000500

000000000123

006231604242

000000000025

000000000526

000000034615

000000000420

000000000227

000000000137

000000000176

000000000321

000000000300

000000000302

000000000360

000000000352

000000000431

000000000353

000000000507

006231633570

000000177752

000000001501

000000031406

000000000266

000000000226

000000000465

000000000246

000000000263

000000000244

000000000266

000000000350

000000000312

000000000363

000000000320

000000000602

000000000152

0000000007055

000000025454

000000000214

000000000175

000000001023

000000000234

000000000241

000000000257

000000000250

000000000345

000000000344

000000000516

000000000346

000000000715

0000000000154

000000014674

000000020636

000000000170

000000000176

000000000427

000000000216

000000000242

000000000223

000000000316

000000000360

000000000304

000000000705

000000000346

000000000536