

# Non-Digital Data at NSSDC

Dave Williams

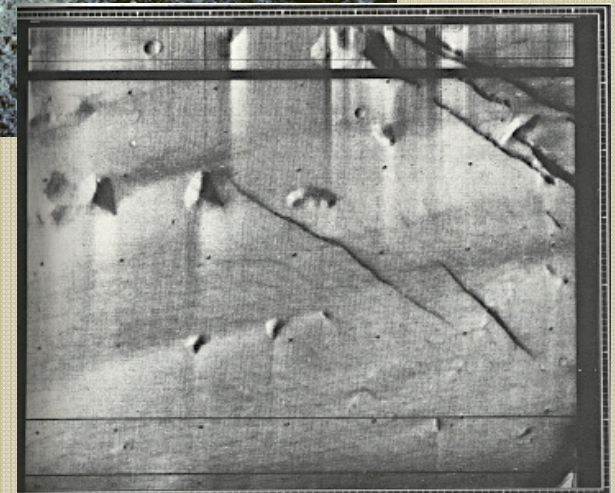
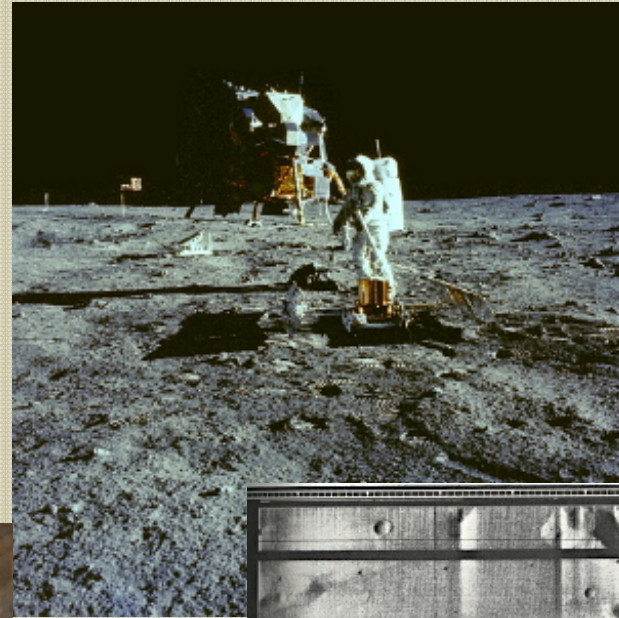
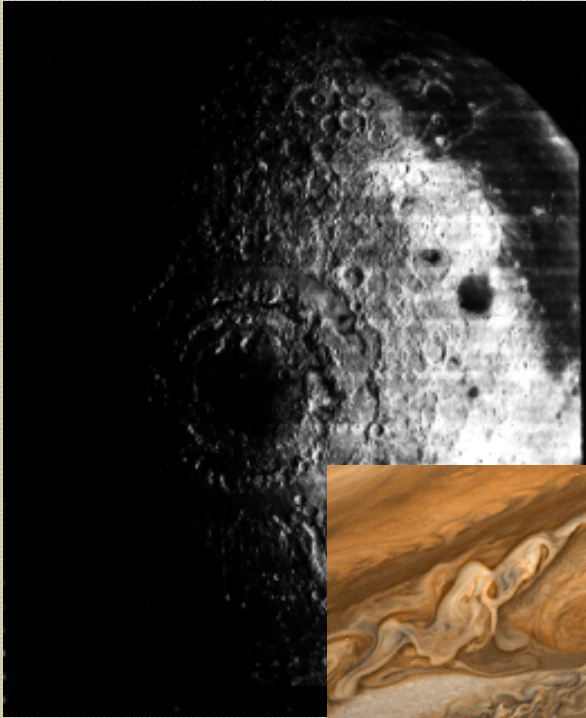
PDS Management Council

Washington, D.C.

28 March 2012



# Photographs





# Microfilm/Microfiche

APOLLO 16

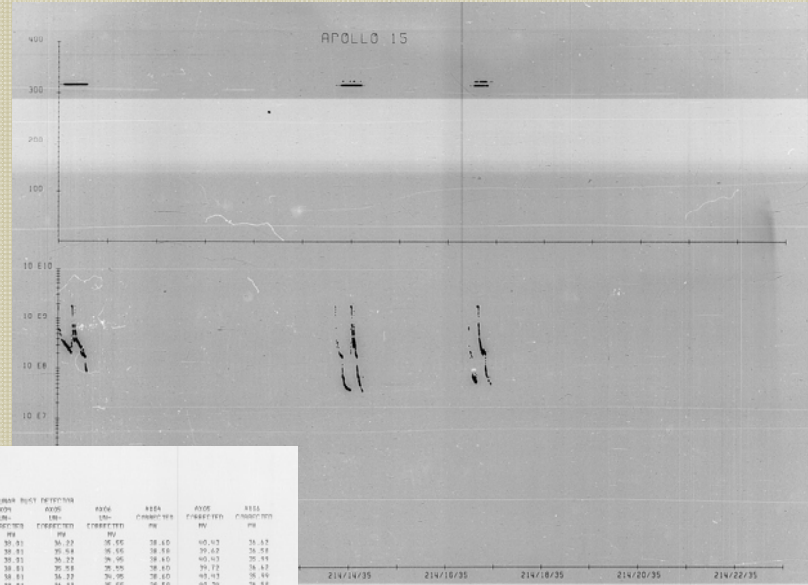
(B3)

UNIVERSITY OF CALIFORNIA  
Soil Mechanics Laboratory

APOLLO 16 - LSRP Date 11/12 MAY 1972  
 FLIGHT UNIT (% 2004) Lunar Penetration Data Reduction  
 LUNAR DRUM (% 2008) Index No. 5 Page No. 1  
 0.5 in<sup>2</sup> conc = 3.2758 cm<sup>2</sup>

DRUM LOAD #	DRUM LOAD #	DRUM CIRCUM. DEFLECTED (mm)	LOAD Newtons	STRESS Newton/cm <sup>2</sup>	ACML DEPTH (cm)	ACML DEPTH (cm)
deg-min	degrees	mm			cm	cm
0°00'	0.00	0.00	0.0	0.0	89.77	0.00
0°00'	0.00	0.00*	3.5	1.1	89.88	0.11
2°50'	2.83	1.57	23.8	7.4	89.80	0.12
5°14'	5.23	2.90	41.0	12.7	89.94	0.17
6°55'	6.92	3.84	53.0	16.4	89.94	0.17
9°05'	9.08	5.03	68.7	21.3	90.00	0.19
9°20'	9.33	5.17	70.3	21.8	90.00	0.23
5°40'	5.67	3.14	44.0	13.6	90.00	0.23
9°41'	9.68	5.36	72.8	22.6	90.21	0.24
14°38'	14.63	8.11	109.0	33.8	90.11	0.34
15°02'	15.03	8.33	111.7	34.6	90.16	0.39
9°38'	9.63	5.34	72.6	22.5	90.16	0.39
16°35'	16.58	9.19	127.6	38.0	90.16	0.39
18°33'	18.55	10.28	137.0	42.5	90.21	0.44
18°49'	18.82	10.43	132.8	43.0	90.21	0.48
8°49'	8.22	4.2	67.0	19.8	90.21	0.48
20°00'	20.00	08	147.3	45.7	90.21	0.48
21°19'	21.32	11.82	157.0	48.7	90.21	0.52
8°15'	8.25	4.57	62.5	19.4	90.21	0.52
23°24'	23.40	12.97	172.0	53.3	90.21	0.52

TREADWELL



DRUM NO	DRUM DATE	DRUM CIRCUM. (mm)	LOAD (N)	STRESS (N/cm <sup>2</sup> )	ACML DEPTH (cm)	ACML DEPTH (cm)	AREA (mm <sup>2</sup> )	AREA (cm <sup>2</sup> )	ACML DEPTH (cm)	ACML DEPTH (cm)
197 10 07 30 865	30.72	45.00	26.78	30.51	30.23	30.95	38.40	40.92	36.82	38.54
197 10 14 30 801	29.22	41.87	26.78	29.81	30.54	30.95	38.58	39.82	38.54	39.84
197 10 14 2 733	30.73	45.00	26.78	30.51	30.22	30.95	38.40	40.92	36.82	38.54
197 10 14 6 633	30.26	40.00	26.78	30.83	30.93	30.95	38.40	39.72	38.42	38.42
197 11 0 11 809	30.26	40.00	26.78	30.83	30.23	30.95	38.40	40.92	36.82	38.54
197 11 0 14 766	30.27	41.87	26.78	29.81	30.53	30.95	38.58	39.82	38.54	39.84
197 11 0 16 561	30.73	45.00	26.78	30.51	30.22	30.95	38.40	40.92	36.82	38.54
197 11 0 18 411	30.27	41.87	26.78	29.81	30.54	30.95	38.58	39.82	38.54	39.84
197 11 0 18 334	30.74	45.00	26.78	30.51	30.23	30.95	38.40	40.92	36.82	38.54
197 11 0 20 000	30.26	40.00	26.78	30.83	30.93	30.95	38.40	39.72	38.42	38.42
197 11 0 21 826	30.74	45.00	26.78	30.51	30.23	30.95	38.40	40.92	36.82	38.54
197 11 1 11 763	30.81	40.00	26.78	30.83	30.93	30.95	38.40	39.72	38.42	38.42
197 11 1 6 600	30.81	40.00	26.78	30.83	30.93	30.95	38.40	39.72	38.42	38.42
197 11 1 3 436	30.81	41.07	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54
197 11 1 8 1762	30.81	40.00	26.78	30.83	30.93	30.95	38.40	39.72	38.42	38.42
197 11 14 40 106	30.81	40.00	26.78	30.83	30.93	30.95	38.40	39.72	38.42	38.42
197 11 11 16 802	30.81	40.00	26.78	30.83	30.93	30.95	38.40	39.72	38.42	38.42
197 11 12 32 370	30.85	40.00	26.78	30.85	30.22	30.95	38.40	40.92	36.82	38.54
197 11 12 32 128	30.85	40.00	26.78	30.85	30.22	30.95	38.40	40.92	36.82	38.54
197 11 12 32 118	30.85	40.00	26.78	30.85	30.22	30.95	38.40	40.92	36.82	38.54
197 11 14 36 450	30.88	41.87	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54
197 11 16 26 186	30.87	40.00	26.78	30.85	30.22	30.95	38.40	40.92	36.82	38.54
197 11 18 15 122	30.88	40.00	26.78	30.85	30.22	30.95	38.40	40.92	36.82	38.54
197 11 17 16 808	30.87	40.00	26.78	30.85	30.22	30.95	38.40	40.92	36.82	38.54
197 11 18 2 796	30.84	40.00	26.78	30.81	30.22	30.95	38.40	40.92	36.82	38.54
197 11 18 16 120	30.85	41.87	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54
197 11 19 12 466	30.81	41.07	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54
197 11 19 16 663	30.81	40.00	26.78	30.83	30.22	30.95	38.40	40.92	36.82	38.54
197 11 21 14 138	30.82	41.87	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54
197 11 22 16 876	30.81	41.87	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54
197 11 23 20 810	30.81	41.87	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54
197 11 24 16 166	30.81	40.00	26.78	30.83	30.22	30.95	38.40	40.92	36.82	38.54
197 11 25 10 482	30.85	41.87	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54
197 11 26 12 818	30.86	41.87	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54
197 11 27 1 128	30.86	40.00	26.78	30.83	30.22	30.95	38.40	40.92	36.82	38.54
197 11 28 1 490	30.86	40.00	26.78	30.83	30.22	30.95	38.40	40.92	36.82	38.54
197 11 28 16 807	30.86	40.00	26.78	30.83	30.22	30.95	38.40	40.92	36.82	38.54
197 11 29 10 162	30.86	40.00	26.78	30.83	30.22	30.95	38.40	40.92	36.82	38.54
197 11 30 16 807	30.86	41.87	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54
197 11 31 10 870	30.81	41.87	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54
197 11 31 16 111	30.81	40.00	26.78	30.83	30.22	30.95	38.40	40.92	36.82	38.54
197 11 31 21 807	30.82	41.87	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54
197 11 31 26 813	30.82	41.87	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54
197 11 31 16 178	30.86	40.00	26.78	30.83	30.22	30.95	38.40	40.92	36.82	38.54
197 11 31 16 513	30.86	40.00	26.78	30.83	30.22	30.95	38.40	40.92	36.82	38.54
197 11 31 16 951	30.86	40.00	26.78	30.83	30.22	30.95	38.40	40.92	36.82	38.54
197 11 31 16 817	30.86	40.00	26.78	30.83	30.22	30.95	38.40	40.92	36.82	38.54
197 11 31 16 523	30.87	41.87	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54
197 11 31 16 817	30.87	41.87	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54
197 11 31 16 195	30.88	41.87	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54
197 11 31 16 531	30.89	41.87	26.78	29.81	30.51	30.95	38.40	40.92	36.82	38.54



# Non-Digital Data Archive

NSSDC currently has large holdings of hard-copy planetary and lunar data collected over 40 years, including:

- 410,000 ft of photographic film, 335,000 cut frames, and 180 reels of movie film
- 231 unique microfilm data collections comprising 2036 reels of microfilm
- 178 unique microfiche data collections comprising 11,147 microfiche cards

# NSSDC Analog Archive

Discipline	Microfilm (reels)	Microfiche (cards)	Film (ft)	Film (frames)	Movie (reels)	Maps	Slides
<b>Astrophysics</b>	2357	5963	100	11975	0	0	62
<b>Earth Science</b>	55	773	13067	64610	4	0	0
<b>Planetary</b>	2036	11147	409081	335053	181	1773	768
<b>Space Physics</b>	34589	30507	580	6173	2	0	36893
<b>Other</b>	3224	3624	3785	6206	20	0	2112
<b>Totals</b>	<b>42,261</b>	<b>52,014</b>	<b>426,613</b>	<b>424,017</b>	<b>207</b>	<b>1,773</b>	<b>39,835</b>



# Non-Digital Data Request Examples

- Viking Gas Exchange Biology Experiment data requested (Tufts University). Only known set of these data held on 14 microfilm reels at NSSDC. The Labeled Release data on these reels was previously converted to a PDS data set. Plan is to scan the GEX and Pyrolytic Release data from microfilm
- Viking 2 Seismograms were requested (JHU-APL) for the Insight Discovery Phase-A effort. They were scanned from microfilm.



# Plans for Non-Digital Archive

NSSDC has been tasked to end support of its non-digital archive and release its hardcopy holdings. Since these represent some of the best working copies of lunar and planetary photography and unique data on microform we are attempting to dispose of these in a way that they won't be lost to the scientific community.



- Site visits and telecons with the National Archives and Records Administration
- Working on estimates of storage costs with Iron Mountain
- Data holdings being reviewed by PDS
- Possibility of saving high-priority data sets for digital scanning
- Clarification of NASA data retention policies





NATIONAL  
ARCHIVES

March 27, 2012

### **NARA Recommendations for the Photographic Records at the NSSDC**

knowledge, expertise, nor experience in-house necessary to fully assist researchers in gaining access to specific images of interest. The best and most complete knowledge of this photography and how to get access to it resides at NSSDC. Therefore, NARA strongly recommends that NSSDC keep ready access to the first generation working copies so that NSSDC can act as a “reference center” for the NARA-preserved planetary and lunar image holdings for future use by the science community and the general public. Without such a reference center and the ability to call on experienced custodians of the records, the full and genuine usefulness of the photographic evidence to researchers will be lost.