

## JSC LUNAR PROGRAM REVIEW

October 30, 1973

### SUMMARY OF ACTION ITEMS

The following are the action items of the October 30, 1973, JSC Lunar Program Review.

1. TN3 to furnish SM a milestone schedule of the Apollo ephemeris data processing by Wollenhaupt.
2. TN3 to transmit information to SM on Dr. Heiken's intention to withdraw from the Lunar Photo Analysis program.
3. TN3 to determine why the 85-ft. dish antennas are being utilized more frequently for ALSEP tracking instead of the 30-ft. dish.
4. TN3 to furnish SM with the rationale for the change in scope and/or emphasis on the cartographic contracts.
5. TN3 to obtain letter from Dr. R. Kovach requesting the termination of the ASE 30-minute listening periods/week for Apollo 14 and 16.
6. TN3 to forward a copy of the letter forwarded to the PI's which requested them to maintain the JSC-furnished digital data tapes.
7. TN3 to obtain detailed written procedures from Dr. J. Weber prior to any configuration changes of the LSG.
8. TN3 to submit memo to SM closing out the investigation of the Apollo 15 subsatellite.

Work Copy

PRELIMINARY



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
LYNDON B. JOHNSON SPACE CENTER  
HOUSTON, TEXAS 77058

REPLY TO  
ATTN OF:

TN3-

D R A F T

TO: Distribution

FROM: TA/Director of Science and Applications

SUBJECT: Minutes of Third JSC Lunar Program Review, October 30, 1973

The third Lunar Program Review was held via telecon on October 30, 1973. The agenda is presented in enclosure 1 and the attendees are listed in enclosure 2.

The meeting opened with a presentation of the action items from the July 26, 1973, meeting, as follows:

- *TN3 will determine a workaround plan and alternatives to assure that Apollo experiments ephemeris data processing will continue during manned Skylab mission activities.*

Enclosure 3, showing the schedule of various activities, indicates an expected completion of all Apollo ephemeris processing by the end of calendar year 1973. A review and milestone schedule will be discussed at the next Program Review.

- *Details of SR&T funds transfer to Center DITMO accounts will be investigated by S&AD (reference astronomy research funds to support S-201, Far UV Camera.)*

Monies from a wide variety of sources can be added to the CAD support contract to perform new task statements. However, increasing DITMO

## PRELIMINARY

2

accounts and fixed head counts is not allowed. SA (Hqs.) funds (\$25K) have been approved, but not transferred, for continued support of S-201. This activity, utilizing an IBM 1108 computer, is not in conflict with the ALSEP processing (CDC 3600).

- *The Manager for Apollo Lunar Experiments, TA, will transmit all Center lunar program Level 1 recommendations to NASA Headquarters for consideration. SM/Headquarters will write all letters resulting from Level 1 action.*

The case in point (LSM/Sonett) of discontinuing processing at ARC of Apollo 15 data after September 1972 was recommended by letter to NASA Headquarters on September 26, 1973.

### A. OPERATION AND DATA MANAGEMENT

1. The Science Requirements Branch presented the contract status of the lunar experiments Principal Investigators (enclosure 3).

- Roberson wants to see the final reports from the PI's before he approves a grant on the synthesis program.

- Contract S-213 - Dr. H. Schmid possibly going to Switzerland. O'Bryant stated that a contract proposal would be required if a change in PI occurred.

- S-216 - If the new ephemeris shows promise of better data analysis, the contract will possibly be extended 6 months.

- S-225 - Dr. G. Heiken has indicated intention of withdrawal from program. O'Bryant requested a letter from TN3 stating position and including a copy of Dr. Heiken's memo.

## PRELIMINARY

3

- S-214 and S-220 - The emphasis of these studies was reevaluated because of data return and the emphasis was rearranged. O'Bryant requested a letter updating the steering committee on these. Hardee will prepare letter.

- Apollo Cartographic Program

- 1:250,000 Scale - There are 174 maps in work, with possibly 25 Apollo 17 maps on fiscal '75 money.

- Roberson stated that a letter is in typing giving authorization for revising priorities of the 174 maps as recommended in TN letter of October 19, 1973.

2. Subsatellite operations have been terminated. The battery life was 8 months longer than predicted.

3. The ALSEP operational status was not presented because there were no changes since the presentation of October 25, 1973.

4. Under the data problems of timing, there will be a meeting between CAD and Latham at Galveston on November 1, 1973.

5. The Geophysical Data Evaluation Working Group activities were presented as shown in enclosure 3.

### B. LUNAR SAMPLE PROGRAM

The Curator's office provided a status of the samples program, as shown in enclosure 4.

- The Curator requires the list of approved and rejected PI's at the earliest possible time to assure grants being issued by January 1974.

## PRELIMINARY

4

- O'Bryant asked if implementation will be with \$5.5 million or will there be a plan to meet a lower fiscal commitment.

- Headquarters is tooling up to review proposals as rapidly as possible.

- PI inventory approximately 60% complete. Writing letter to PI's to "prod" completion.

- Should minimize weighing activities since weighing tends to degrade material.

- First draft of sample security review report is complete.

- O'Bryant requested update version of summary chart of lost samples. Pomeroy will send copy of existing chart so that Duke will be able to maintain continuity.

- Approximately 2000 sample backlog which is 2 months work. Should be up to steady state by end of 1973.

- The question was asked about the review and update of the 0609 Handbook for next year and if the handbook defined that the PI must do sighting of samples for inventory. The handbook does not define this but the PI is responsible whether he does the sighting or delegates.

- Duke requested that the inventory discussion be continued outside of this meeting at a later time.

- The question arose as to the protocol of reviewing of 0609 Handbook. It is a JSC document and does not require Headquarters review and approval. JSC will send Headquarters an information copy.

- Sample allocation should be complete by January 1974.

- Have continuing schedule for Boulder consortium work.

## PRELIMINARY

5

- On completion of sample allocation, will go back to samples of previous missions.

- The schedule for a second round of allocations will follow Apollo 17 procedure. Will be presented to Headquarters for approval.

- Contractor staff upgrading is going satisfactorily.

- O'Bryant reviewed the recommendations of LPC on broadening exposure to lunar samples.

- S&AD should develop a plan for expanding coverage to include graduate students.

### C. PLANNING FOR THE FIFTH LUNAR SCIENCE CONFERENCE

The conference is set up along the following lines--that for six half-days there will be three simultaneous sessions at which investigators will give papers. With rare exceptions, only one paper will be presented orally by each team of investigators. This reduces the number of papers to be given from about 275 last year to about 220 for the Fifth Conference. It will be possible to submit additional abstracts up to a total of three for inclusion in the abstract volume as a means of presenting additional information to the lunar science community. Each session will be 3-1/2 hours long--1/2 hour will be used at the discretion of the session chairman for discussion as he sees fit. A strict 8-minute limit on the oral presentation will be held, with 7 minutes available per speaker for discussion and the transition from one speaker to the next.

# PRELIMINARY

6

In order to avoid the standard disciplinary data dump, all abstracts submitted to the Fifth Conference must be specifically designed for one of six problems in lunar science. Approximate statements of these problems are as follows:

1. Constraints on structure and composition of the deep lunar interior.
2. Character and movement of materials at the lunar surface.
3. The nature of the igneous progenitors of present lunar rocks.
4. Characterization and evolution of the lunar crust.
5. The nature of impact processes and their effects on lunar materials.
6. Exchange of material and energy between the moon and its environment.

The schedule for the conference which begins on March 18 and runs through March 22, 1974, is tentatively as follows:

## Monday, March 18

- 8:30 - 9:15 -- Introductory remarks
- 9:30 - 1:00 -- Simultaneous sessions #1
- 2:00 - 5:30 -- Simultaneous sessions #2
- 8:30 - 11:30 -- Smoker

## Tuesday, March 19

- 8:30 - 12:00 -- Simultaneous sessions #3
- 1:30 - 5:00 -- Simultaneous sessions #4
- Evening -- Free

# PRELIMINARY

7

## Wednesday, March 20

8:30 - 12:00 -- Simultaneous sessions #5

1:30 - 2:15 -- PI meeting

2:15 - 5:00 -- Consortium discussions

Evening -- Free

## Thursday, March 21

8:30 - 12:00 -- Simultaneous sessions #6

1:30 - 2:30 -- Dedication of the conference and comments from  
various officials

2:30 - 5:00 -- Special talks

7:30 - 9:00 -- Presentation on Skylab

## Friday, March 22

8:30 - 12:00 -- Summaries of the six problem sessions

1:30 - 4:30 -- Optional tours of JSC facilities, including the  
Curator's office, and of the Lunar Science Institute.

The number of sessions devoted to each of the six problem topics outlined will be determined when the abstracts have been submitted. Tuesday and Wednesday evenings have deliberately been left free for one-to-one discussions among the attendees. The Wednesday afternoon session on consortium discussions will be loosely structured and voluntary and will be used to assess insofar as possible consortium operations, including determination of those factors that are important in consortia that have operated successfully and those which have contributed to poor operations in other cases. The special talks for Thursday afternoon



# PRELIMINARY

8

will be selected by the Program Committee from submitted abstracts or by special invitation. In these talks, individual investigators would describe their work on broad or unique lunar problems. The summaries on Friday will be given by individuals who were not chairmen of the sessions for each problem topic but who have accepted prior to those sessions the assignment to listen carefully to the talks for their topic, to talk with the investigators presenting papers, and to provide a balanced summary of the state of knowledge of that particular area.

In the letters going to PI's, the structure of the conference will be described, the 8-minute limit on papers will be strongly presented, and the need for all papers to fit one of the problem sessions will be expressed. PI's will also be notified that with very few exceptions they will be allowed to present only one paper and they should designate the problem to which that paper applies. They will also be told that up to three abstracts with information pertinent to other session topics may be submitted for inclusion in the abstract volume. It is not the intention of the committee to accept all abstracts submitted--only those which meet high standards and contain significant information. In principle, we would expect to accept papers for the proceedings for each abstract accepted.

## D. LSI CONFERENCE ON LUNAR GEOLOGY

Sent out 125 invitations.

REVIEW

9

The next Lunar Program Review will be by telecon on January 29, 1974. Presentation material will be ready for Headquarters to carry back from the Geology Conference on January 17-19, 1974.

Meeting adjourned.

Anthony J. Calio

4 Enclosures

## Distribution:

NASA Hqs, J. E. Naugle, S  
H. J. Smith, SS  
R. J. Allenby, SM  
R. P. Bryson, SM  
J. B. Hanley, SM  
N. D. Hanners, SM  
W. T. O'Bryant, SM  
J. H. Pomeroy, SM  
F. I. Roberson, SM  
D. Senich, SM  
A. T. Strickland, SM

AA/C. C. Kraft, Jr.  
AB/S. A. Sjoberg  
AC/G. W. S. Abbey  
BH6/G. D. Waddell  
FA/H. W. Tindall  
FC/E. F. Kranz  
FC9/K. K. Kundel  
FD5/J. C. Currie  
F. Fulton  
C. E. Hutchinson (LEC)  
W. D. Poates  
FS4/P. D. Dell'Osso  
JA/J. V. Piland  
JL/J. R. Brinkmann  
JL3/J. W. Holland  
MA/O. G. Morris  
PA/G. S. Lunney  
TA/A. J. Calio  
TDX/R. R. Miley (BxA)  
TL/M. B. Duke  
J. W. Harris  
TN/L. A. Haskin  
D. L. Teegarden  
TN2/R. D. Hudson  
TN3/R. R. Baldwin  
J. R. Bates  
J. E. Dixon (LEC)  
W. F. Eichelman  
S. N. Hardee  
P. E. Lafferty  
W. W. Lauderdale (GE)  
TN6/W. C. Phinney  
TN7/P. R. Brett

Enclosure 1

AGENDA  
LUNAR PROGRAM REVIEW  
October 30, 1973  
9:00 a.m.  
Building 2, Room 660

1. Previous Action Items R. Baldwin
2. Curator's Report M. Duke
3. Status of Apollo Experiment PI Contracts
  - a. Orbital Experiments W. Eichelman
  - b. Surface Experiments W. Eichelman
  - c. Photo Data Analysis J. Dixon
4. Status of Apollo Experiment Operations
  - a. ALSEP R. Miley
  - b. Subsatellite P. Lafferty
  - c. Data Processing J. Bates
5. GDEWG Activities W. Eichelman
  - a. User's Handbook
  - b. Archiving
  - c. Data at NSSDC
6. LSI Conference on Lunar Geology W. Phinney
7. Planning for Fifth Lunar Science Conference L. Haskin

Enclosure 2

ATTENDEES

THIRD JSC LUNAR PROGRAM REVIEW

October 30, 1973

Headquarters

R. Allenby, SM  
J. Hanley, SM  
N. Hinnners, SM  
W. O'Bryant, SM  
J. Pomeroy, SM  
F. Roberson, SM

JSC

R. Baldwin, TN3  
J. Bates, TN3  
A. Calio, TA  
J. Dixon, TN3 (LEC)  
M. Duke, TL  
W. Eichelman, TN3  
N. Hardee, TN3  
L. Haskin, TN  
P. Lafferty, TN3  
W. Lauderdale, TN3 (GE)  
R. Miley, TDX (BxA)  
G. Waddell, BH6

LUNAR PROGRAM REVIEW

OCTOBER 30, 1973

Enclosure 3

Agenda  
Lunar Program Review  
October 30, 1973  
10:00 a.m.  
Building 2, Room 660

- |  |              |
|--|--------------|
| 1. Previous Action Items                       | R. Baldwin   |
| 2. Status of Apollo Experiment PI Contracts    |              |
| a. Orbital Experiments                         | W. Eichelman |
| b. Surface Experiments                         | W. Eichelman |
| c. Photo Data Analysis                         | J. Dixon     |
| 3. Status of Apollo Experiment Operations      |              |
| a. ALSEP                                       | R. Miley     |
| b. Subsatellite                                | P. Lafferty  |
| c. Data Processing                             | J. Bates     |
| 4. GDEWG Activities                            | W. Eichelman |
| a. Users Handbook                              |              |
| b. Archiving                                   |              |
| c. Data at NSSDC                               |              |
| 5. Curator's Report                            | M. Duke      |
| 6. LSI Conference on Lunar Geology             | W. Phinney   |
| 7. Planning for Fifth Lunar Science Conference | L. Haskin    |

STATUS OF APOLLO EXPERIMENTS

PI CONTRACTS

ORBITAL

SURFACE

PHOTO DATA ANALYSIS

OPERATIONS

ALSEP

SUBSATELLITE

DATA PROCESSING



SCHEDULE RESPONSIBILITY <u>W. F. Eichelman</u>		MANNED SPACE FLIGHT SCHEDULE		ORIGINAL SCHEDULE APPROVAL <u>3-30-73</u> (DATE)																																	
STATUS RESPONSIBILITY _____		LUNAR SURFACE EXPERIMENTS		LAST SCHEDULE CHANGE _____ (DATE) (NO.) (INITIALS)																																	
		CONTRACTOR: _____		PROJECT SCHD. NO. _____																																	
MILESTONES		CY 1973												CY 1974												CY 1975											
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1	S031 U of T NAS 9-13143 →	[Solid bar from Jan 1973 to Dec 1973]																																			
2		[Solid bar from Jan 1974 to Dec 1974]																																			
3	MIT 9-12334	[Solid bar from Jan 1974 to Dec 1974]																																			
4		[Solid bar from Jan 1975 to Dec 1975]																																			
5	S033 Stanford 9-5632	[Solid bar from Jan 1973 to Dec 1973]																																			
6	203 "	[Solid bar from Jan 1974 to Dec 1974]																																			
7		[Solid bar from Jan 1975 to Dec 1975]																																			
8	S034 Ames Intra-Center	[Solid bar from Jan 1973 to Dec 1973]																																			
9	Intra-Center	[Solid bar from Jan 1974 to Dec 1974]																																			
10	U of Ariz.	[Solid bar from Jan 1975 to Dec 1975]																																			
11		[Solid bar from Jan 1973 to Dec 1973]																																			
12	S035 JPL RD50	[Solid bar from Jan 1974 to Dec 1974]																																			
13		[Solid bar from Jan 1975 to Dec 1975]																																			
14	S036 Rice Univ. 9-5911	[Solid bar from Jan 1973 to Dec 1973]																																			
15		[Solid bar from Jan 1974 to Dec 1974]																																			
16	S037 Lamont-Doh. 9-6037	[Solid bar from Jan 1975 to Dec 1975]																																			
17		[Solid bar from Jan 1973 to Dec 1973]																																			
18	S038 Rice Univ. 9-5884	[Solid bar from Jan 1974 to Dec 1974]																																			
19		[Solid bar from Jan 1975 to Dec 1975]																																			
20	S058 U of T 9-5964	[Solid bar from Jan 1973 to Dec 1973]																																			

NOTES

Proposed Extension [Dashed bar from Jan 1974 to Dec 1974]

Schedule Responsibility: W. F. Eichelman	LUNAR SURFACE EXPERIMENTS		Orig. Sched. Approval: 3-30-73 Status as of: <u>10-19-73</u>
	CY 1973	CY 1974	CY 1975
	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D
S-202 GSFC Intra-Center			
S-205 UTD NAS 9-12074			
S-207 U of Md. NAS 9-5886			
BxA			

SCHEDULE RESPONSIBILITY <u>W. F. Eichelman</u> STATUS RESPONSIBILITY _____		<b>MANNED SPACE FLIGHT SCHEDULE</b> <b>LUNAR ORBIT EXPERIMENTS</b>		ORIGINAL SCHEDULE APPROVAL <u>3-30-73</u> (DATE) LAST SCHEDULE CHANGE _____ (DATE) (NO.) (INITIALS) STATUS AS OF <u>10-19-73</u> (DATE) (INITIALS)	
		CONTRACTOR: _____ PROJECT SCHED. NO. _____		(LEVEL)	
MILESTONES		CY 19 73		CY 19 74	
		J F M A M J J A S O N D		J F M A M J J A S O N D	
1	S160 GSFC →	Completed			
2		Completed			
3	JPL RD79	Completed			
4		Completed			
5	UofC, SD NAS 9-10670	Completed			
6		Completed			
7	S161 AS&E 9-9983	Completed			
8		Completed			
9	GSFC	Completed			
10		Completed			
11	S162 AS&E 9-9982	Completed			
12		Completed			
13	S164 JPL RD87	Completed			
14		Completed			
15	S165 UTD 9-10410	Completed			
16		Completed			
17	S169 JHU 9-11528	Completed			
18		Completed			
19	GSFC	Completed			
20		Completed			
NOTES					

Schedule Responsibility: W. F. Eichelman			LUNAR SURFACE EXPERIMENTS		Orig. Sched. Approval: 3-30-73 Status as of: 10-19-73																																	
			CY 1973												CY 1974												CY 1975											
			J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
S-059	USGS																																					
S152	GE	NAS 9-11468													Completed																							
	Washington U.	9-11895													Completed																							
	UofC, Berkeley	9-12005													Completed																							
S-200	UofC, Berkeley	9-11266																																				
	CIT	9-11454																																				
	MSFC																																					
S-201	NRL	T-91885													Completed																							
S-204	MIT	9-11540																																				
S-229	CIT	9-12585																																				
	Rover Traverse	GSEC													Completed																							

SCHEDULE RESPONSIBILITY <u>W. F. Eichelman</u> STATUS RESPONSIBILITY _____		MANNED SPACE FLIGHT SCHEDULE LUNAR ORBIT EXPERIMENTS CONTRACTOR: _____ PROJECT SCHD. NO. _____		LEVEL <span style="border: 1px solid black; border-radius: 50%; padding: 2px;"> </span>	ORIGINAL SCHEDULE APPROVAL <u>3-30-73</u> (DATE) LAST SCHEDULE CHANGE _____ (DATE) (NO.) (INITIALS) STATUS AS OF <u>10-19-73</u> (DATE) (INITIALS)																																
MILESTONES		CY 1973					CY 1974					CY 1975																									
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1	S170 Stanford NAS 9-10579 →	██████████										Completed																									
2																																					
3	S171 Rice U. 9-10428	██████████																																			
4																																					
5	S173 UofC, Berk. 9-10509	██████████										██████████																									
6																																					
7	S174 UCLA 9-12236	██████████										██████████																									
8																																					
9	S177 SUNY 9-11640	██████████										Completed																									
10																																					
11	S178 GSFC	██████████										Completed																									
12																																					
13	S209 JPL RD88	██████████										██████████																									
14																																					
15	U of Utah 9-12168	██████████										██████████																									
16																																					
17	USGS T-573B	██████████										██████████																									
18																																					
19																																					
20																																					
NOTES																																					

## LUNAR SURFACE EXPERIMENTS

### S059 FIELD GEOLOGY

- ALL PANORAM ASSEMBLED @ USGS TO BE ARCHIVED
- ALL SITE MAPS TO BE ARCHIVED
- A17 SITE MAP AND LOCATION ACCURACIES UNDER INVESTIGATION

### S078 LR<sup>3</sup>

- FINAL REPORT APPROVED
- FINAL CONTRACT CLOSE OUT IN PROCESS

### S152 COSMIC RAY

- ALL CONTRACTS COMPLETED
- PANEL SHEETS TO BE ARCHIVED BY CURATOR

### S-199 TRAVERSE GRAVIMETER

- DATA ANALYSIS CONTINUING BASED ON AVAILABLE SITE CONTOUR MAP. FINALIZED SITE MAP NOT COMPLETED

### S-200 SOIL MECHANICS

- FINAL REPORT BEING PREPARED
- PENETROMETER DRUMS FORWARDED TO JSC FOR ARCHIVING

### S-204 SURFACE ELECTRIC PROPERTIES

- MULTILAYER MODEL GOOD COMPARISON TO DATA

### S-229 NEUTRON PROBE

- DATA PROCESSING MORE COMPLICATED THAN EXPECTED
- OVERRUN EXPECTED FOR BOTH CIT & UC SAN DIEGO
- DATA ANALYSIS TO BE COMPLETED BY 12/30/74

## LUNAR ORBIT EXPERIMENTS

### S-160 GAMMA RAY SPECTROMETER

JPL ● CONTRACT COMPLETED

- DATA BEING SUBMITTED TO NSSDC. ALL 15 DATA @ GSFC. ALL 16 LUNAR ORBIT DATA COMPLETE

UC SAN DIEGO

- CONTRACT COMPLETE. REQUIRE FINAL REPORT

### S-161 X-RAY FLUORENCES

GSFC ● CONTRACT COMPLETED

ASE ● CONTRACT COMPLETED, FINAL REPORT ON GALATIC PRELIMINARY APPROVED

### S-162 ALPHA PARTICLE

- CONTRACT COMPLETED

### S-164 S BAND

- COMPLETED A17 CSM/LM DATA IN REPRODUCTION
- CONTRACT MODIFICATION EXTENDING EXPIRATION DATE TO 6/30/74
- ADDITIONAL COST ~ 13K
- PRELIMINARY ORBIT ELEMENT DATA IS PROMISING FOR PROVIDING GLOBAL FIELD INFORMATION

### S-165 MASS SPEC

- CONTRACT COMPLETE. NEED FINAL REPORT
- REQUEST FOR ADDITIONAL FUNDING DISAPPROVED

### S-169 FAR UV SPECTROMETER

- EPHEMERIS TAPE PROBLEMS CORRECTED
- COST ON SCHEDULE
- GALACTIC UV MAYBE ACCOMPLISHED IF FUNDING IS AVAILABLE

## LUNAR ORBIT EXPERIMENTS (continued)

### **S-170 BISTATIC RADAR**

- CONTRACT COMPLETE
- FINAL REPORT APPROVED
- ALL DATA SUBMITTED TO NSSDC

### **S-171 INFRARED SCANNING RADIOMETER**

- RECEIVED EPHEMERIS TAPE MID-SEPTEMBER
- MERGING IN PROCESS
- DATA TAPE DEBUGGING CONTINUES
- SOURCE EQUIVALENCY TEST RESULTS BEING INCORPORATED INTO SOFTWARE
- PRELIMINARY THERMAL/CONTOUR MAPS BEING CORRELATED TO PHOTOGRAPHIC DATA

### **S-173 PARTICLES & FIELDS EXPERIMENT**

- RECEIVED PROPOSAL FOR EXTENSION TO 6/30/74
- PROPOSED COST \$46,160
- PERSONNEL/REARRANGEMENT

### **S-174 MAGNETOMETER**

- PROCESSED DATA FORWARDED TO UCLA
- EXTENSIVE STATISTICAL ANALYSIS INITIATED
- PROPOSE EXTENSION TO 6/30/74 BECAUSE OF DATA PROCESSING

### **S-209 LUNAR SOUNDER**

- HOLOGRAM EVALUATION TO BE COMPLETED BY 11/15/73
- HOLOGRAM PRODUCTION NON-UNIFORMITY & VIEWER PERFORMANCE PROVIDES UNCERTAINTY ON USEFULNESS FOR SUB-SURFACE FEATURE DETECTION



LUNAR ORBIT EXPERIMENTS (continued)

- UTAH VIEWER & HOLOGRAMS BEST BY .400B OR BETTER
- UTAH MAJOR EFFORT ORIENTED TO EVALUATING USEFULNESS OF HOLOGRAMS
- TWO REVS OF HF-1 DATA DIGITIZED
- EVALUATING QUANTITY OF HF-2 & VHF DATA TO BE DIGITIZED
- DEBUGGING PROFILE PROGRAM
- ERIM PRODUCE DATA FOR DIGITAL ENHANCEMENT BY 10/22/73
- ERIM DIGITIZING CAPABILITY MAINTAINED UNTIL 6/30/74
- INTRAACTIVE PROGRAM OPERATING
- APPROXIMATELY 2 MOS DELAY FOR PERIPHERAL EQUIPMENT WILL DELAY ENHANCEMENT PRODUCTION PHASE @ JPL
- ROUTINE DATA PROCESSING EXPECTED BY END OF YEAR
- ANALYSIS & INTERPRETATION STILL SCHEDULED WITHIN PLANNED EXTENSION

## APOLLO PHOTO DATA ANALYSIS EXPERIMENTS

S-211 - LOW BRIGHTNESS IMAGE ANALYSIS

MR. R. MERCER

- AUDIT AND POST-AUDIT MANAGEMENT REVIEW HELD AT DUDLEY OBSERVATORY
  - \$20K CREDITED TO PROGRAM
  - DOCUMENTED POLICIES AND PROCEDURES HAVE BEEN SUBMITTED BY DUDLEY
- TECHNICAL REVIEW HELD AT GSFC REVEALED PROMISING SCIENTIFIC RESULTS
- S-211 CONTRACTED THROUGH JANUARY 1974. ANTICIPATE  $\approx$ 10K OVERRUN

- MEETING HELD AT NOAA ON OCTOBER 4, 1973
  - ESTABLISHED SCHEDULE BASED ON AVAILABILITY OF DATA FROM DMA
  - DEFINED APPROACH BASED ON QUALITY OF DATA AVAILABLE
  - PI IS OPERATING WITHIN BUDGET
  - CONTRACT END DATE IS SEPTEMBER 1974

- CONTRACT ENDS DECEMBER 1973
- ANALYSES LIMITED BY QUALITY OF EPHEMERIS
- REFINED EPHEMERIS FOR APOLLO 17 LASER DATA WILL BE COMPLETED BY DECEMBER
- EXTENSION OF STUDY IS POSSIBLE PENDING RESULTS OF REFINED EPHEMERIS DATA

S-225 - MORPHOLOGY AND GENESIS OF LUNAR CRATER CHAINS

DR. G. HEIKEN

- PI HAS WITHDRAWN FROM PROGRAM
- FINAL REPORT SCHEDULED FOR RELEASE BY JANUARY 1, 1974

S-226 - CONTAMINATION PHOTOGRAPHY

DR. P. CRAVEN

- FINAL REPORT DUE THIS MONTH

CONTRACTS WITH CHANGE IN EMPHASIS

S-214 - LUNAR ALTITUDE PROFILE

DR. J. JUNKINS

- PI PROPOSES TO USE PHOTOGRAMMETRIC REDUCTIONS AND ASSOCIATED  
COVARIANCE MATRICES IN LIEU OF JSC GENERATED  
EPHEMERIS FOR PRECISE ERROR ANALYSIS
- JSC SUPPORTS PI AND HAS COORDINATED SUPPORT AT DMATC AND DMAAC

CONTRACTS WITH CHANGE IN EMPHASIS

S-220 - LUNAR GEOLOGY - EASTERN MARIA

DR. R. YOUNG

- PI PROPOSES CONCENTRATION ON DETAILED STUDIES OF SMALL REGIONS,

MARE SURFACE FEATURES AND GEOLOGIC PROCESSES TO:

- (1) STUDY MARE EVOLUTION
- (2) STUDY MARE REGIONS TO CHARACTERIZE DIFFERENCES
- (3) PROVIDE GEOLOGIC INTERPRETATIONS

- JSC SUPPORTS THIS MINOR CHANGE IN EMPHASIS

APOLLO CARTOGRAPHIC PROGRAM

1:250,000 SCALE MAPS

- SELECTION OF BEST IMAGERY USING APOLLO 17 PHOTOGRAPHY IN LIEU OF  
APOLLO 15 HAS BEEN COORDINATED WITH DMATC
- APPARENT CONTOUR PROBLEMS HAVE BEEN INVESTIGATED AND RESOLUTION  
COORDINATED WITH DMATC
- UPDATED REQUIREMENTS AND PRIORITIES FOR FIRST 174 MAP SHEETS ASSIGNED  
AND REPRODUCTION MATERIALS DEFINED
- 39 MAP SHEETS ON HOLD PENDING COMPLETION OF APOLLO 16 PHOTOGRAMMETRIC  
CONTROL



## APOLLO CARTOGRAPHIC PROGRAM

### SPECIAL SCALE MAPS

- TWO 1:10,000 SCALE MAPS HAVE BEEN ASSIGNED TO DMATC
- THIRTEEN 1:50,000 SCALE MAPS HAVE BEEN ASSIGNED TO DMATC
- UNCONTROLLED RECTIFIED PAN PHOTOGRAPHY HAS BEEN RECOMMENDED

FOR IMAGERY ONLY PRODUCT. OPTION FOR TOPOGRAPHIC MAP

- SELECTION OF 10 ADDITIONAL AREAS FOR 1:50,000 SCALE MAPS

WILL BE IDENTIFIED 3<sup>rd</sup> QUARTER FISCAL YEAR 1974

### PROFILES

- ALL ASSIGNED PROFILES ARE COMPLETE

PHOTO ANALYSIS SUPPORT DATA

PHOTO SUPPORT DATA

- APOLLO 17 PAN CAMERA, APOLLO 17 MAPPING CAMERA AND MICROFILM FORMAT COMPLETED.

LASER AND GRAVITY DATA

- APOLLO 17 DATA COMPLETED

APOLLO 17 PAN FILM RECTIFICATION

- COMPLETED

APOLLO 17 SUPPORT DATA

- CORRECTION TO PAN AND METRIC SUPPORT DATA COMPLETED.

- TIME BIAS ADJUSTED
- STATE VECTOR ADJUSTED

USGS - LUNAR ATLAS PROGRAM

- FOURTH ATLAS REVIEW MEETING HELD OCTOBER 2, 1973
- SCHEDULES ISSUED WITH MILESTONES KEYED TO SUBMISSION OF  
PRELIMINARY DRAFT OCTOBER 31, 1973
- MINUTES PREPARED AND DISTRIBUTED
- NEXT REVIEW MEETING NOVEMBER 20, 1973

UPDATED SCHEDULE OF MILESTONES FOR APOLLO ATLAS

- 10/02/73 - APOLLO ATLAS PROGRAM REVIEW
- 10/15/73 - CAPTION WRITING COMPLETE (30-40% COMPLETE AS OF 10/02)
- 10/15/73 - INDEX MAPS FOR EACH CHAPTER COMPLETE (COLTON)
- 10/23/73 - INTRODUCTION CHAPTER COMPLETE (MASURSKY AND EL-BAZ)
- 10/23/73 - INTRODUCTION SECTIONS FOR EACH CHAPTER COMPLETE (MASURSKY)
- 10/31/73 - SUBMISSION OF FIRST DRAFT OF ATLAS TO NASA/JSC
- 11/05/73 - TECHNICAL REVIEW OF FIRST DRAFT BY EDITORIAL BOARD
- MID-NOVEMBER - MEETING WITH TECHNICAL PUBLICATIONS REPRESENTATIVES,  
WASHINGTON, DC
- MID-NOVEMBER - ATLAS PROGRAM REVIEW COMBINED WITH ABOVE MEETING
- TBD - USGS TO PROVIDE DETAILED MILESTONES FOR THIS PERIOD TO  
NASA/JSC BY 11/15/73
- 01/31/74 - SUBMISSION OF FINAL DRAFT TO NASA/JSC

SCHEDULE RESPONSIBILITY _____ STATUS RESPONSIBILITY _____		<b>MANNED SPACE FLIGHT SCHEDULE</b> <b>APOLLO PHOTO DATA ANALYSIS</b>		(LEVEL)	ORIGINAL SCHEDULE APPROVAL _____ (DATE) LAST SCHEDULE CHANGE _____ (DATE) (NO.) (INITIALS) STATUS AS OF _____ (DATE) (INITIALS)																																
CONTRACTOR: _____		PROJECT SCHD. NO. _____																																			
MILESTONES		CY 1973												CY 1974												CY 1975											
		J F M A M J J A S O N D												J F M A M J J A S O N D												J F M A M J J A S O N D											
1																																					
2	S-210																																				
3	OBSERVATOIRE DE PARIS																																				
4	LETTER OF AGREEMENT																																				
5																																					
6	S-211																																				
7	DUDLEY OBSERVATORY																																				
8	9-12557																																				
9																																					
10	S-212																																				
11	HIGH ALTITUDE OBSERVATORY																																				
12	LETTER OF AGREEMENT																																				
13																																					
14	S-213																																				
15	NOAA																																				
16	T-1168B																																				
17																																					
18	S-214																																				
19	UNIVERSITY OF VIRGINIA																																				
20	9-12752																																				
NOTES																																					

SCHEDULE RESPONSIBILITY _____ STATUS RESPONSIBILITY _____		<b>MANNED SPACE FLIGHT SCHEDULE</b> <b>APOLLO PHOTO DATA ANALYSIS</b>		<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">             LEVEL           </div>	ORIGINAL SCHEDULE APPROVAL _____ (DATE) LAST SCHEDULE CHANGE _____ (DATE) (NO.) (INITIALS) STATUS AS OF _____ (DATE) (INITIALS)																																
		CONTRACTOR: _____		PROJECT SCHED. NO. _____																																	
<b>MILESTONES</b>		CY 1973												CY 1974												CY 1975											
		J F M A M J J A S O N D												J F M A M J J A S O N D												J F M A M J J A S O N D											
1																																					
2	S-215																																				
3	LANGLEY RESEARCH CENTER																																				
4	INTER-CENTER																																				
5																																					
6	S-216																																				
7	JPL RD-149																																				
8																																					
9	S-217																																				
10	JPL RD-148																																				
11																																					
12	S-218																																				
13	UCLA 9-12757																																				
14																																					
15	S-219																																				
16	WOODS HOLE OCEANOGRAPHIC																																				
17	9-12563																																				
18																																					
19																																					
20																																					
NOTES																																					

SCHEDULE RESPONSIBILITY _____ STATUS RESPONSIBILITY _____		<b>MANNED SPACE FLIGHT SCHEDULE</b> <b>APOLLO PHOTO DATA ANALYSIS</b>		<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">             LEVEL           </div>		ORIGINAL SCHEDULE APPROVAL _____ (DATE) LAST SCHEDULE CHANGE _____ (DATE) (NO.) (INITIALS) STATUS AS OF _____ (DATE) (INITIALS)																															
		CONTRACTOR: _____		PROJECT SCHD. NO. _____																																	
<b>MILESTONES</b>		<b>CY 19 73</b>				<b>CY 19 74</b>				<b>CY 19 75</b>																											
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1	→																																				
2	S-220																									▼											
3	STATE UNIVERSITY OF N.Y.																																				
4	9-12770																																				
5																																					
6	S-221																									▼											
7	UNIVERSITY OF ARKANSAS																																				
8	9-13196																																				
9																																					
10	S-222																									▼											
11	USGS T-11678																																				
12																																					
13	S-223																									▼											
14	WOODS HOLE OCEANOGRAPHIC																																				
15	9-12564																																				
16																																					
17	S-224																									▼											
18	AMES RESEARCH CENTER																																				
19	INTER-CENTER																																				
20																																					
NOTES																																					



SCHEDULE RESPONSIBILITY _____  STATUS RESPONSIBILITY _____		<b>MANNED SPACE FLIGHT SCHEDULE</b> <b>APOLLO PHOTO DATA ANALYSIS</b>  CONTRACTOR: _____ PROJECT SCHED. NO. _____		<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">             LEVEL           </div> ORIGINAL SCHEDULE APPROVAL _____ (DATE) LAST SCHEDULE CHANGE _____ (DATE) (NO.) (INITIALS) STATUS AS OF _____ (DATE) (INITIALS)																																	
<b>MILESTONES</b>		CY 1973												CY 1974												CY 1975											
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1	→																																				
2	S-225																																				
3	JSC INTER-CENTER																																				
4																																					
5	S-226																																				
6	MSFC INTER-CENTER																																				
7																																					
8																																					
9																																					
10																																					
11																																					
12																																					
13																																					
14																																					
15																																					
16																																					
17																																					
18																																					
19																																					
20																																					
NOTES																																					

## SUBSATELLITE

### APOLLO 15

<u>DATE</u>	<u>REV</u>	<u>TRACKING TIME (MIN)</u>
8-9-73	8879	14.5
8-16-73	8962	2, 13
8-20-73	9013	.5, 1.5, 1.5, 1, .5
8-23-73	9046	.5, .5, 4, 2

9-13-73      UNABLE TO TRACK; ATTEMPTED TO COMMAND ON  
UTILIZING 3 DIFFERENT TRACKING STATIONS ( $\approx 120$  MIN)

- RECOMMENDED TO LUNAR PROGRAM OFFICE TERMINATION OF TRACKING EFFORT
- POWER SUPPLY DEGRADATION UNDER INVESTIGATION
- BATTERY SYSTEM OPERATED 8 MONTHS LONGER THAN DESIGN GOAL
- POWER SUPPLY DEGRADATION NOT ATTRIBUTED TO FAILURE OR MALFUNCTION. DEGRADATION DUE TO MODE OF OPERATING

## ALSEP BxA OPERATIONS

- ASTIR STATUS

• ASTIR'S COMPLETED	-	18
HOLD STATUS	-	12
IN WORK	-	15
TOTAL		45

- MAJOR TASKS

- LSG NOISE TESTING
- LSG CONFIGURATION SIMULATION
- LONG-TERM OPERATIONS

19 OCTOBER 1973

APOLLO LUNAR SURFACE EQUIPMENT STATUS  
3.0 INSTRUMENT STATUS

	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP	APOLLO 17 ALSEP
PSE	SPZ AXIS MALFUNCTION- ED SINCE DEPLOYMENT. Z DRIVE MOTOR REQUIR- ED @ NIGHT FOR THERMAL CONTROL SINCE 2/1/70.	LPY AXIS OCCASIONALLY DIFFICULT TO LEVEL. LPZ AXIS INOPERATIVE SINCE 11/17/72. <i>IN- TERMITTENT REAL TIME DIGITAL DATA DURING 33rd LUNAR NIGHT (9/30/73 TO 10/1/73)</i>	FULL OPERATION	LPX, LPY, & LPZ AXES OCCASIONALLY DIFFI- CULT TO LEVEL.	N/A
ASE	N/A	MORTARS NOT FIRED. HBR FOR 30 MIN/WK ABOVE -60°C. #3 GEOPHONE NOISY SINCE 3/26/71, DATA RE- COVERABLE.	N/A	LAUNCHED 3 MORTARS. HBR 30 MIN/WK. PITCH SENSOR AND ROLL SEN- SOR FAILED SINCE 5/23/72.	N/A
LSM	DATA INTERMITTENT STARTING 12/11/69. DATA STATIC SINCE 6/4/72. FLIP CAL CMD WAS DISCON- TINUED 6/14/72.	N/A	NO FLIP CAL CMD ABOVE 62°C. Y-AXIS FLIP CAL FAILED 8/30/71. Y-AXIS DATA STATIC SINCE 9/20/72.	REAL TIME SCIENCE DATA INTERMITTENT FROM 2/15/73 TO 8/17/73.	N/A
SWS	INTERMITTENT MODU- LATION DROP IN PRO- TON ENERGY LEVELS 13 AND 14 SINCE 11/5/71.	N/A	IN STANDBY SINCE 6/30/72, . TM OUT OF SYNC & EXCESSIVE POWER DRAIN. PERIODIC CHECK- ING FOR POSSIBLE RECOVERY.	N/A	N/A

APOLLO LUNAR SURFACE EQUIPMENT STATUS  
3.0 INSTRUMENT STATUS  
(CONTINUED)

	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP	APOLLO 17 ALSEP
SIDE	CYCLIC COMMANDING REQUIRED BECAUSE OF HIGH VOLTAGE ARCING ABOVE 55°C. INTERMITTENT DIGI- TAL DATA (SCIENCE AND ENGINEERING) SINCE 9/9/72.	LOSS OF SOME ENGI- NEERING DATA BECAUSE OF FAILURE OF POSI- TIVE PART OF A/D CONVERTER ON 4/5/71. LUNAR NIGHT OPERA- TION ONLY BECAUSE OF ANOMALOUS STAND- BY OPERATIONS OF SIDE SINCE 4/15/73.	CYCLIC COMMANDING REQUIRED TO PRE- CLUDE SPURIOUS MODE CHANGES ABOVE 85°C. FULL OPERATION FROM 5/1/72 TO 9/13/73.	N/A	N/A
HFE	N/A	N/A	TEMP REF 2 OFF- SCALE HIGH SINCE 8/7/71. USING TEMP REF 1. PROBES NOT TO FULL DEPTH INTENDED.	INOPERATIVE: ELEC- TRICAL CABLE BROKEN DURING DEPLOYMENT.	FULL OPERATION THERMAL ACCU- RACY BEING EVALUATED.
CCIG	FAILED 14 HRS AFTER TURN ON, 11/20/69.	INTERMITTENT NIGHT TIME SCIENCE DATA SINCE 2/19/72. FULL OPERATION UNTIL SIDE ANOMALY (4/15/73). LUNAR NIGHT OPERA- TION SINCE THEN AS DICTATED BY SIDE.	ERRATIC NIGHT TIME SCIENCE DATA SINCE 2/22/73. AUTOMATIC ZERO AND CALIBRATION FUNCTIONS NOT OPERA- TING. DAY TIME DATA VALID THRU 7/15/73.	N/A	N/A

APOLLO LUNAR SURFACE EQUIPMENT STATUS  
 3.0 INSTRUMENT STATUS  
 (CONTINUED)

	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP	APOLLO 17 ALSEP
LEAM	N/A	N/A	N/A	N/A	THERMAL PROBLEM: 196°F TURN-OFF FOR LUNATION 11 & 12 SUBSEQUENT OPER- ATIONAL PLAN TBD.
LSPE	N/A	N/A	N/A	N/A	HBR 30 MIN/WK
LACE	N/A	N/A	N/A	N/A	APPARENT FAILURE OF MULTIPLIER HIGH VOLTAGE POWER SUPPLY ON 10/17/73, CAUSING TOTAL LOSS OF SCIENCE DATA. IN- STRUMENT CURRENTLY CONFIGURED TO HIGH: VOLTAGE, OFF; FILA- MENT, OFF; MULTI- PLIER, LOW; AND BACK-UP HEATER OFF. SUBSEQUENT OPERA- TIONAL PLAN TBD.
LSG	N/A	N/A	N/A	N/A	INSTRUMENT RECON- FIGURED 9/26/73 TO IMPROVE QUAL- ITY OF FREE MODE DATA, DETECT TI- DAL VARIATIONS, AND DETERMINE SPRING CONSTANT OF BEAM. SENSOR BEAM CENTERED.

# APOLLO LUNAR SURFACE EQUIPMENT STATUS

## 3.0 INSTRUMENT STATUS (CONCLUDED)

	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP	APOLLO 17 ALSEP	
CPLEE	N/A	ANALYZER B FAILED 4/8/71. ANALYZER A INTERMITTENT OPERA- TIONS SINCE 6/6/71.	N/A	N/A	N/A	
C/S	FULL OPERATION WITH XMTR B & PROCESSOR Y. (12-HOUR TIMER FAILED ON 2/16/70.)	FULL OPERATION WITH XMTR A & PROCESSOR Y. (12-HOUR TIMER FAILED ON 2/17/71.) ANTENNA SEATING PROB- LEMS DURING DEPLOY- MENT AFFECTS SIGNAL STRENGTH.	FULL OPERATION	FULL OPERATION WITH XMTR B & PROCESSOR Y.	FULL OPERATION	
DTREM	FULL OPERATION	FULL OPERATION	FULL OPERATION	N/A	N/A	
	APOLLO 11 ALSEP	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP	APOLLO 17 ALSEP
LR <sup>3</sup>	FULL OPERATION	N/A	FULL OPERATION	FULL OPERATION	N/A	N/A

The signal strength fluctuations that are observed in the downlink signal of each of the five ALSEP's is of no consequence as no system telemetry is lost due to this phenomenon. These signal strength phenomenon are most probably caused by variations in the tracking stations characteristics, the Earth-Moon libration pattern, and associated atmospheric phenomenon.

Power output of the various ALSEP Radioisotope Thermoelectric Generators (RTG) continues to be more than adequate. There is no question as to the expected and progressive gradual degradation of the ALSEP RTGs. The RTG's characteristics are such that continuous changing of thermoelectric material properties exist. These changes in characteristics can be caused by a large number of variables, i.e., thermal coating degradation, metallurgical aging, thermal shocks, and decrease of inert gas pressure. Based on the current RTG data no catastrophic failure should occur through normal system operations.

## DATA PROBLEMS

### ◦ TIMING

- INABILITY TO CORRELATE PSE NETWORK (MAX ERROR OF 86 SEC.)
- CHANGED DIRECT TO FM ON RANGE TAPES IN JULY
- IDENTIFY INTERNAL TIME GENERATION
- CORRECTIONS UNDER INVESTIGATION

### ◦ READING

- PROBLEM STARTED AFTER COMPUTER CHANGE TO 3200
- PROBLEM FIRST IDENTIFIED WITH LSG/LEAM DATA TAPES
- WORK AROUND BY READING TAPES ON 1108
- PSE PI TAPES STILL BEING REJECTED  $\approx$  10 OUT OF 36
- ASE TAPE IDENTIFIED ERRONEOUS HEADER INFORMATION



## EPHEMERIS

- APOLLO SIM BAY EXPERIMENTS
  - LUNAR SOUNDER DATA SHIPPED 10/24/73 (JPL TO PROVIDE DATA TO USGS)
  - ALL OTHER APOLLO 17 DATA SHIPPED
  - DATA ARCHIVAL INITIATED. COMPLETION SCHEDULED FOR 1st QUARTER CALENDAR 1974
- EXTENDED APOLLO SUPPORT
  - BOWIN - DATA FILES BEING PREPARED. PROCESSING TO START 10/29/73. SCHEDULED COMPLETION 12/31/73
  - SJOGREN - WORK PROCEEDING SLOWLY. HANDICAPPED BY MACHINE TIME AVAILABILITY. OPTIMISTIC COMPLETION DATA 12/31/73
- P&FS
  - PARTICLES - DATA THRU JANUARY 1973 SHOULD BE SHIPPED BY 11/5/73
  - GRAVITY - SHIPPED NOVEMBER 1972 CONCENTRATED TRACKING DATA 10/17/73. JANUARY/FEBRUARY 73 CONCENTRATED TRACKING DATA SCHEDULED TO BE SHIPPED 11/15/73. ALL REMAINING DATA BY 12/14/73
  - ARCHIVING - DATA ARCHIVAL INITIATED. ALL P&FS 2 AND P&FS 1 VERS. 41 THRU 4415 RAW DOPPLER DATA SHIPPED TO NSSDC 10/1/73. EXPECTED COMPLETION - ALL DATA - 1st QUARTER CALENDAR 1974

# **GEOPHYSICAL DATA EVALUATION WORKING GROUP ACTIVITIES**

- DATA USERS HANDBOOK
- DATA ARCHIVING
- DATA AT NSSDC

#### DATA USERS HANDBOOK

- FIRST DRAFT SCHEDULE TO BE COMPLETE 11/12/73
- WILL BE DISTRIBUTE TO PI'S FOR PROOF READING
- WILL BE PUBLISHED BY S A D

#### DATA ARCHIVING

- STUDYING FEASIBILITY OF STORING CAD WORKING TAPES IN FEDERAL STORAGE
- DATA IS BEING SHIPPED TO NSSDC BY PI'S
- TAPES FROM JSC FOR PSE MONTH COVERAGE READ PROBLEMS

# NSSDC DATA

S031 Passive Seismic Experiment on Apollo 12, 14, 15, and 16 ALSEP Latham

Ninety-two of the expected 120 JSC tapes to provide one month's continuous PSE data have been received. They contain data for a few days in the middle of July 1973. The tapes have been entered as a proprietary data set for release after July 1974. Sample rolls of the compressed time scale plots and expended scale plots of selected events have been received. Total of 110 event tapes have been received.

S033 Active Seismic Experiment on Apollo 14 and 16 ALSEP Kovach

Five reformatted - log compressed tapes, 1 for Apollo 14 and 4 for Apollo 15, have been received, along with documentation. Tapes have been returned to JSC for time correction on headers.

S034 Lunar Surface Magnetometer on Apollo 12, 15, and 16 ALSEP Ryal

Thirty-five "corrected" tapes of Apollo 12 data have just been received. NSSDC has 8 rolls of microfilm plots containing Apollo 12, 15, and 16 data. Documentation at NSSDC is fairly complete.

S035 Solar Wind Spectrometer on Apollo 12 and 15 ALSEP Snyder

There are 5 tapes and 20 rolls of microfilm data for Apollo 12 at NSSDC. The experimenter is having problems processing his Apollo 15 data and no firm schedule for delivery of this data has been established.

S036 Suprathermal Ion Detector on Apollo 12, 14, and 15 ALSEP Freeman

NSSDC has just received several hundred reels of microfilmed data. No schedule has been established on delivery of the tapes.

S037 Heat Flow Experiment on Apollo 15 and 17 LM Langseth

NSSDC has received 2 tapes of Apollo 15 data along with documentation. No schedule for delivery of the Apollo 17 data.

S038 Charged Particle Lunar Environment on Apollo 14 ALSEP Reasoner

Acquisition of documentation and data thru 6/7/71 is essentially complete. The experiment operated intermittently after this date/ NO schedule has yet been set for acquiring this additional data.

S058 Cold Cathode Ion Gauge on Apollo 12, 14, and 15 ALSEP Johnson  
Bulk of data and some documentation has been received.

S078 Laser Ranging Retroreflector Faller  
Eight digital tape now in archives. Data will be shipped to  
NSSDC regularly.

S152 Cosmic Ray on Apollo 16 LM Fleischer  
Only written report to be archived at NSSDC. No schedule for  
submission of report has been set.

S160 Gamma Ray on Apollo 15 and 16 CSM Arnold  
Dr. Trombka at NASA-GSFC has tapes doing some additional processing  
to clean them up. Plans are to acquire cleaned up version of tapes in  
October or November 1973.

S161 X-Ray Fluorescence on Apollo 15 and 16 CSM Adler  
Tapes are scheduled to arrive in September or October 1973.

S162 Alpha Particle on Apollo 15 and 16 CSM Gorenstein  
Complete set of data and documentation is at NSSDC.

S164 S-Band Transponder on Apollo 12, 14, 15, 16, 17 CSM and LM and  
Apollo 15 and 16 SS Sjogren

Microfilmed Apollo 12, 14, and 15 data has been received.  
Tape data received but returned because of bad format. Tapes are to be  
resubmitted soon. No schedule has been set for delivery of the Apollo  
16 and 17 data.

S165 Orbital Mass Spectrometer on Apollo 15 and 16 CSM Hoffman  
Tapes and documentation are scheduled to be shipped to NSSDC in  
October 1973.

S169 Far UV Spectrometer on Apollo 17 CSM Fastie  
Data is expected in 6 to 12 months.

S170 Bistatic Radar on Apollo 14, 15, and 16 CSM Howard  
Complete set of data and documentation at NSSDC.

S171 IR Scanning Radiometer on Apollo 17 CSM Low  
Data is expected in about one year.

S173 Particle Shadows/Boundary Layer on Apollo 15 and 16 Subsatellites Anderson

One tape of data for each spacecraft have just been received. Some documentation still required. No schedule set for delivery of the microfilms.

S174 Magnetometer- Subsatellite on Apollo 15 and 16 Subsatellite Coleman

No data at NSSDC. NASA/JSC has reported they are shipping NSSDC some tapes and microfilm.

S198 Portable Magnetometer on Apollo 14 and 16 LM Dyal

NSSDC has data in published report. Do not expect any additional data.

S199 Lunar Gravity Traverse on Apollo 17 LM Talwani

Data in published report expected in January 1974.

S200 Soil Mechanics on Apollo 12, 14, 15, 16, and 17 LM Mitchell

Microfilmed data for Apollo 15 and 16 are at NSSDC. Only data for Apollo 12, 14, and 17 are to be in written reports.

S201 Far UV Camera on Apollo 16 LM Carruthers

Second-generation copies of flight films are at NSSDC. Balance of data expected in 6 to 12 months.

S202 Lunar Ejecta and Meteorites on Apollo 17 ALSEP Berg

No data at NSSDC. Experimenter reports he has yet to receive reliably usable tapes from NASA/JSC.

S203 Lunar Seismic Profiling on Apollo 17 LM Kovach

No data schedule for NSSDC.

S204 Surface Electrical Properties on Apollo 17 LM Simmons

NSSDC has not been able to contact experimenter.

S205 Lunar Atmospheric Composition Experiment on Apollo 17 ALSEP Hoffman

Experimenters processing of data is not far enough along to schedule data submission to NSSDC.

S207 Lunar Surface Gravimeter on Apollo 17 ALSEP Weber

No data at NSSDC and none expected before 1974.

S209 Lunar Sounder on Apollo 17 CSM

Phillips

Data expected to start arriving in early 1974 with the bulk of it scheduled to arrive about July 1974.

S229 Neutron Flux on Apollo 17 IM

Burnett

Only science reports are to be archived at NSSDC. Experimenter has not yet been contacted by NSSDC.



## CURATOR'S REPORT

1. LUNAR SAMPLE PROGRAM RECOMMENDATIONS
  - a. SCHEDULE
  - b. SUMMARY OF PROPOSED BUDGET
2. LUNAR SAMPLE INVENTORY/SECURITY
  - a. ANNUAL INVENTORY
  - b. SECURITY REPORT
  - c. SAMPLE SECURITY AND OPERATIONS HANDBOOK
3. SAMPLE PREPARATION ACTIVITIES
  - a. APPOLLO 17
  - b. BOULDER CONSORTIA
  - c. P & ESD PARTICIPATION
4. ALLOCATIONS FROM PREVIOUS MISSIONS
5. CONTRACTOR STAFF UPGRADING
6. REMOTE STORAGE FACILITY
7. BROADENED EXPOSURE TO LUNAR SAMPLES

Enclosure 4

## SAMPLE PREPARATION ACTIVITIES

### APOLLO 17

- o ROCK PREPARATION 50% COMPLETE
- o DISTRIBUTION WILL CONTINUE TO END OF YEAR
- o INCREASED EMPHASIS ON SAMPLE DESCRIPTION

### BOULDER CONSORTIA

- o MAINTAINING ESTABLISHED SCHEDULE
- o DETAILED DESCRIPTIONS RESULTING

### P & ESD PARTICIPATION

- o BOULDER CONSORTIUM SETS EXAMPLE
- o ADOPT-A-ROCK

# LUNAR SAMPLE INVENTORY / SECURITY

## ANNUAL INVENTORY

- o SAMPLE COUNTING COMPLETE
- o WEIGHING OF SAMPLES INITIATED
- o PI INVENTORY 60% COMPLETE

## SECURITY REPORT

- o POINT BY POINT REPLY TO NOVEMBER 3, 1972 REVIEW
- o SUMMARY OF ALL LATER ACTIONS
- o SUMMARY OF JSC INITIATIVES

SAMPLE SECURITY AND OPERATIONS HANDBOOK -- *Final letter*

*Should leave Hq in few days.*

4. ALLOCATIONS FROM PREVIOUS MISSIONS

5. CONTRACTOR STAFF UPGRADING

6. REMOTE STORAGE FACILITY - visiting what-said 11-31-73  
for review of plan for facility. The ~~present~~  
cycle Time? Representative samples. Will put approx 10% sample.
7. BROADENED EXPOSURE TO LUNAR SAMPLES  
(See page 7)

yet approval has to be received from it. Will put approx 10% sample.  
cycle Time? Representative samples.  
in a table in July 1, 1974

