Apollo Lunar Surface Experiments Package Status Reports

1973

Apollo Lunar Surface Experiments Package
Status Reports 1973
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APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

2 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

Mission control real-time support of all ALSEP's was suspended at 2115 G.m.t., 31 December, and resumed at 2150 G.m.t., 1 January. Lunar midnight at the Apollo 17 site occurred January 1, 2042 G.m.t. ALSEP 17 station telemetry data indicates normal operations, with no appreciable change in the experiments package status and/or operations since the last report.

The central station's data subsystem component temperatures continue to alternate about their point of thermal equilibrium, while the station's external structural temperatures are stabilized.

AT-01, Upper sunshield = -278.5°F
AT-10, Bottom structure = -172.6°F
CS-37, Thermal plate = 34.8°F

Power for the ALSEP generated by the RTG is stable. Downlink signal strength is reported at -141.0 ± 2.0 dbm. The station's command decoder switch inhibit pulse occurred as anticipated, verified by a status change in telemetry point AB-18. The command to inhibit the next internally generated 61-hour pulse was transmitted at 0305 G.m.t., 2 January.

The Heat Flow Experiment continues to operate normally, with periodic ring bridge survey's being accomplished. Thermocouple temperature measured at the lunar surface is 107 ± 8°K. The temperature at 230 cm depth is 256.6°K at probe #1, and 256.9°K at probe #2.

There is no change in the Lunar Surface Gravimeter Experiment status. The experiment's sensor temperatue is stabilized at 49.169°C (slave heater ON).

The Lunar Surface Profiling Experiment remains in standby select.

The Lunar Atmospheric Compositon Experiment is in operate select. The experiment was re-configured on 30 December because of the termination of mission control real-time support. It is planned to re-configure the LACE's scientific sensing capability today. The instrument is currently configured to the following; high voltage power supply OFF, low voltage power supply ON, ion source filaments OFF, multipliers HIGH, and back-up heater ON. The LACE's electronics temperature (AM-41) remains stabilized at -2.3°F.

The Lunar Ejecta and Meteorites Experiment is configured to measure impact flux rates on the lunar surface. Since the LEAM's automatic thermal control became active, the instrument's internal temperature (AJ-11) has been cyclic, between 6.4°F and -1.3°F.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status as of 1100 G.m.t., 2 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1140	697	521	256
Total Commands to Date	15914	8122	13052	4346
Sun Angle	220°	226°	246°	258°
Input Power	69.4w	70.8w	72.9w	70.4w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	18.2°F	33.2°F	0.7°F	40.6°F
PSE Sensor Temp (DL-07)	126.2°F	124.2°F	124.5°F	125.8°F
LSM Internal Temp (DM-05)	Invalid	N/A	4.7°C	-7.7°C
SWS Module 300 Temp (DW-13)	-15.2°C	N/A	Standby	N/A
SIDE Temp	4.2°C	Invalid	6.6°C	N/A
CCGE Temp	OFF	Invalid	110.2°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-20.0°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-61.5°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.3°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	21
Total Commands to Date	3403
Sun Angle	276°
Input Power	76.5w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	34.8°F
IMS Temp (AM-41)	-2.3°F
LEAM Temp (AJ-11)	6.4°F
HFE Temp Ref 1 (DH-13)	290.8°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	36.0°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

3 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

All experiments and the central station continue to operate as planned in the lunar night environment, with the electronics and structural temperatures of each of the experiments package components continuing to indicate equilibrated temperature characteristics. A steady output of 76.8 watts from the RTG is being received by the experiments package. The signal strength from the ALSEP transmitter is reported at -140.0 ± 1.0 dbm.

The Heat Flow Experiment's initial low conductivity (mode II) measurement was activated at 0558 G.m.t., 3 January. This is the first of a sequence of eight mode II conductivity measurements to determine how efficiently the near surface layer of the moon conducts heat. To make the conductivity measurements, a heater surrounding a thermometer will be energized with 0.002 watts of power. The temperature rise of the thermometer after the heater is commanded ON gives a measure of how effectively heat is dissipated into the lunar medium and hence its conductivity. These measurements, at eight different locations in the moon's subsurface will be carried out in various time segments (36-hours per segment), during the next three weeks.

There has been no change in status of the Lunar Surface Gravimeter Experiment since the last report.

The Lunar Surface Profiling Experiment is in standby as planned.

The Lunar Atmospheric Composition Experiment continues to collect data on the composition of the lunar atmosphere. Subsequent commanding of the LACE on 2 January re-configured the experiment to the following; automatic sweep, high voltage power supply ON, ion source filaments ON, multipliers HIGH, low voltage power supply ON, and back-up heater ON. The two mass range data channels (DM-04, intermediate mass range; and, DM-03, low mass range) continue to display electrical background noise during part of the analyzer sweep. The LACE's electronics temperature (AM-41) is increasing at an average rate of 0.5°F/hour.

The Lunar Ejecta and Meteorites Experiment is configured to measure impact flux rates on the lunar surface. Since the LEAM's automatic thermal control became active, the instrument's internal temperature (AJ-11) has been cyclic, between 6.4°F and -1.3°F.

It is requested that any organization having comments, questions or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status at 1100 G.m.t., 3 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1141	698	522	257
Total Commands to Date	15916	8143	13099	4356
Sun Angle	232°	238°	261°	274°
Input Power	68.9w	70.8w	72.5w	70.4w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	16.2°F	33.2°F	0.7°F	40.4°F
PSE Sensor Temp (DL-07)	126.2°F	124.2°F	124.5°F	125.8°F
LSM Internal Temp (DM-05)	Invalid	N/A	3.8°C	-7.7°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	Standby	N/A
SIDE Temp	4.2°C	Invalid	6.6°C	N/A
CCGE Temp	OFF	Invalid	110.2°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-20.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-63.5°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.4°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	22
Total Commands to Date	3449
Sun Angle	289°
Input Power	76.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	29.4°F
LMS Temp (AM-41)	10.1°F
LEAM Temp (AJ-11)	0.8°F
HFE Temp Ref 1 (DH-13)	290.3°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	30.4°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

4 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

The central station and all experiments continue to indicate thermal stability in the lunar night environment, with the instruments continuing to provide an uninterrupted flow of scientific and engineering data. The radiated power of the package's transmitter is steady. The RTG is supplying a constant source of power to the system.

The Heat Flow Experiment continues to measure subsurface and surface temperature data normally from all sensors. The experiment's first low conductivity measurement (H11 ON) is currently in the 31st hour, of a planned 36-hour observation period. Following completion of this initial mode II measurement, the instrument will be commanded to its gradient mode (mode I), with all sensors being sampled in full sequence, for 24-hours prior to the second low conductivity measurement (H21 ON). The instrument's thermocouples, above the surface, are reading 104 ± 8°K.

Nulling operations of the Lunar Surface Gravimeter's sensor beam have not been successfully accomplished. Subsequent commanding of the LSG on 3 January re-configured the experiment per the agreed course of action. The experiment's beam was centered by adjusting the mass change mechanism, in order to obtain long term seismic and free mode science data. Post amp gain was set to maximum. The remaining status of the instrument's subsystem was left unchanged, i.e., command decoder OFF, seismic gain HIGH, and slave heater ON. The experiment's sensor temperature is stabilized at 49.169°C.

The Lunar Surface Profiling Experiment remains in standby, with a 30 minute passive listening mode planned for 5 January.

The Lunar Atmospheric Composition Experiment continues to collect data on the composition of the lunar atmosphere. The two mass range data channels (DM-04, intermediate mass range; and, DM-03, low mass range) continue to display electrical background noise during part of the analyzer sweep. There has been no change in configuration of the LACE's subsystem components since the last report. The LACE's electronics temperature, AM-41, stabilized at 13.4°F.

The Lunar Ejecta and Meteorites Experiment is configured to measure impact flux rates on the lunar surface. The LEAM's internal temperature (AJ-11) continues to cycle between 6.4°F and -1.3°F.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status at 1100 G.m.t., 4 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1142	699	523	258
Total Commands to Date	15920	8158	13141	4364
Sun Angle	245°	251°	273°	283°
Input Power	68.9w	70.8w	72.9w	70.4w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	16.2°F	33.2°F	-0.8°F	40.4°F
PSE Sensor Temp (DL-07)	126.1°F	124.2°F	124.5°F	125.8°F
LSM Internal Temp (DM-05)	Invalid	N/A	3.8°C	-7.7°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	Standby	N/A
SIDE Temp	4.2°C	Invalid	6.6°C	N/A
CCGE Temp	OFF	Invalid	110.2°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-20.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-64.5°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.2°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	23
Total Commands to Date	3654
Sun Angle	301°
Input Power	76.5w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	28.7°F
LMS Temp (AM-41)	13.4°F
LEAM Temp (AJ-11)	2.9°F
HFE Temp Ref 1 (DH-13)	290.9°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	30.4°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

5 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

The central station continues operating normally, with the station's electronics and structural components temperatures unchanged. Downlink RF signal strength is reported at -140.0 ± 1.0 dbm. Power from the RTG remains constant. The station's command decoder switch inhibit pulse occurred as anticipated, verified by a status change in telemetry point AB-18. The command to inhibit the next internally generated 61-hour pulse was transmitted at 1515 G.m.t., 4 January.

The Heat Flow Experiment continues to operate normally, with periodic ring bridge survey's being accomplished. Thermocouple temperature measured at the lunar surface is 104 ± 8°K. The temperature at 230 cm depth is 256.5°K at probe #1, and 256.9°K at probe #2.

There is no change in the Lunar Surface Gravimeter Experiment status since being re-configured to obtain long term seismic and free mode science data. The experiment's sensor temperature is stabilized at 49.169°C (slave heater ON).

The Lunar Surface Profiling Experiment was commanded ON at 0700 G.m.t., 5 January, and to LSPE data format processing (high bit rate) at 0708 G.m.t., for a thirty minute passive listening period. Two geophone calibration pulses were sent to the experiment during the listening mode. Data output of all geophones appeared normal and no significant signals were noted in real-time. LSPE processing was terminated at 0738 G.m.t., and the instrument commanded to standby select at 0740 G.m.t.

The Lunar Atmospheric Composition Experiment continues to collect data on the composition of the lunar atmosphere. There has been no change in configuration of the LACE's subsystem components since the last report. The LACE's electronics temperature, AM-41, stabilized at 13.4°F.

The Lunar Ejecta and Meteorites Experiment is configured to measure impact flux rates on the lunar surface. The LEAM's internal temperature (AJ-11) continues to cycle between 6.4°F and -1.3°F.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Apollo 16 ALSEP

Operational status from 29 December 1972, 1200 G.m.t., to 5 January 1973, 1200 G.m.t.

Central station	Midnight of the 9th lunation occurred on 3 January at the Descartes Site. The DSS-1 (10 watts) heater remains ON for lunar night operation. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength of -141.0 ± 3.0 dbm from transmitter "A".
Passive seismic experiment	The typical night-time pattern of low background noise with occasional small, high frequency signals, is currently being sensed by the passive seismometer. Experiment operation continues with the feedback loop filter commanded OUT, the sensor gains of all components configured to 0 db, and the sensor assembly temperature stabilized (auto ON thermal control mode). The uncage/arm fire circuit is configured to the uncaged state. No significant seismic events were noted during the limited real-time support of this instrument. Since 30 December 1972, the y-axis leveling motor has not responded to leveling commands. This is the second lunar night this anomaly has occurred.
Lunar surface magnetometer experiment	The experiment continues to measure time-dependent solar and induced magnetic fields. The instrument's 270th flip calibration sequence was executed correctly by command on 5 January 1973. The experiment is presently configured with the digital filter commanded IN, the flip cal inhibit logic commanded IN, and the sensors in the 200 gamma range.
Active seismic experiment	The experiment is in standby OFF with a 30-minute listening period scheduled for 6 January. On 30 December 1972 the experiment was commanded to operate select at 0644 G.m.t. and to high bit rate ON at 0649 G.m.t. for a passive listening period. Two geophone calibration pulses were sent to the instrument during the listening mode. Data output of all geophones appeared normal and no significant signals were noted in real-time. High bit rate operations were terminated at 0719 G.m.t. and the experiment commanded to standby OFF at 0721 G.m.t.

Apollo 15 ALSEP

Operational status from 29 December 1972, 1200 G.m.t., to 5 January 1973, 1200 G.m.t.

Central station	Midnight of the station's 18th lunation occurred 4 January; power from the RTG continues steady and transmitter "A" downlink signal strength is reported at -136.0 ± 2.0 dbm. The lunar night's operational procedure of eliminating the data subsystem's timer outputs by uplinking the timer's reset command, octal 150, twice daily at 1400 G.m.t. and 2200 G.m.t. was initiated on 30 December.
Passive seismic experiment	Operation is in the auto ON thermal control mode, sensor gains are 0 db, and the feedback loop filter commanded OUT in order to achieve seismic network congruity. No major seismic signals have been noted during the limited real time support of this instrument. The instrument's uncage/arm fire circuitry was commanded to the OT state on 30 December 1972, to deliver maximum heat into the sensor assembly for lunar night operations.
Lunar surface magnetometer experiment	The experiment's sensors are presently in the 50 gamma range (gamma range change executed 27 December) for lunar night operation. Currently the instrument has executed 755 flip calibration sequences since activation. The experiment's y-axis sensor head remains fixed at a 180 degree position, not responding to flip cal commands. The x-axis and z-axis sensors are returned to the 180 degree position following each flip cal sequence to maintain sensor head synchronization. The experiment's y-axis sensor has indicated off-scale LOW (static) since 20 September 1972.
Solar wind spectrometer experiment	Presently in standby select. The instrument has not been commanded to operate select since 17 August 1972.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is presently operating in the 0-39 frame stepping sequence with the Channeltron high voltages commanded ON simultaneously with the Apollo 12 and 14 ALSEP SIDE instruments. This places the instruments in synchronization with each other and eliminates cal sequences. At six hour intervals, the master reset and reset at 39 sequence is repeated with sufficient delay to attain two calibration sequences. This mode of operation optimizes science return at a time when command capability is available during the 45 day support period for the Apollo 17 ALSEP.

Apollo 15 ALSEP (continued)

Operational status from 29 December 1972, 1200 G.m.t., to 5 January 1973, 1200 G.m.t.

Heat flow experiment	The temperature of probe 1 at the bottom of the lowest probe section is 253.1°K, with probe 2 indicating a temperature of 250.7°K at its lower-most point. The instrument's cable thermocouples on the lunar surface indicate a temperature of approximately 88.7°K. Since 29 May 1972, the instrument's measurement TREF 2 has continually displayed erroneous data. A duplicate measurement TREF 1, is operating normally so that no data are lost.

Apollo 14 ALSEP

Operational status from 29 December 1972, 1200 G.m.t. to 5 January 1973, 1200 G.m.t.

Central station	Sunset of the 24th lunar day at the Apollo 14 landing site occurred 29 December. Power output of the radioisotope source is unvarying; and, transmitter "A" signal strength was reported at -138.8 ± 2.7 dbm. The central station's DSS-1 heater (10 watts) was commanded ON for lunar night operations at 1151 G.m.t., 29 December; average thermal plate temperature was 33.8°F.
Passive seismic experiment	This instrument is configured; thermal control auto ON, 0 db gain on all sensors, and filter OUT. The instrument's long period z-axis has not displayed valid data nor responded to commands since 17 November 1972. No major seismic events have been noted during real-time support.
Active seismic experiment	Currently in standby select with a 30-minute passive listening mode planned for 12 January. On 30 December 1972, and 5 January 1973, a 30-minute passive listening mode was not performed because the instrument's temperature was below its operational limites for high bit rate operation.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is presently operating in the 0-39 stepping sequence simultaneously with the Apollo 12 and 15 ALSEP SIDE instrument. This places the instruments in synchronization with each other. At six hour intervals, the master reset and reset at 39 sequence is repeated with sufficient delay to get two cal sequences. This mode of operation optimizes science return at a time when command capability is available during the 45 day support period for the Apollo 17 ALSEP. Intermittent positive engineering data interruptions (anomaly occurred 9 May 1971) in one section of the analog-to-digital filter are having no adverse effect on the scientific outputs of the experiments.
Charge particle lunar environmental experiment	Under a revised operations procedure (reference SMEAR #79) the experiment was configured to automatic thermal control mode indefinitely. The instrument is presently operating in the full auto mode. Analyzer A voltage appears normal and analyzer B voltage is below operating limits. Between 2300 G.m.t., 4 January, and 0500 G.m.t., 5 January, it was noted that the CPLEE had changed from auto sequence to manual (-350 vdc) with no CVW activity reported by the supporting ground station. The instrument's internal temperature was -22.0°C. The experiment was commanded back to the automatic sequence at 0504 G.m.t., 5 January, without incident.

Apollo 12 ALSEP

Operational status from 29 December 1972, 1200 G.m.t., to 5 January 1973, 1200 G.m.t.

Central station	Sunset of the packages 39th lunar day occurred 29 December; RTG power output is constant; and transmitter "B" signal strength was reported at -140.8 ± 3.2 dbm. The central station's DSS-1 heater (10 watts) was commanded ON at 2340 G.m.t. 29 December when the average thermal plate temperature decreased to 19°F.
Passive seismic experiment	The instrument's thermal control mode is auto ON, the sensor gains at 0 db, and the feedback loop filter commanded OUT. No seismic signals have been noted in real-time during this reporting period. The instrument's z-axis drive motor was commanded ON December 29 for lunar night operation. At 0712 G.m.t., 2 January, the instrument responded to a spurious command octal 071, y leveling motor ON. The Ascension tracking station confirmed receipt of the command in the ALSEP downlink and the leveling motor was turned OFF at 0716 G.m.t.,2 January, without incident.
Lunar surface magnetometer experiment	Scientific and engineering data have been static since 4 June 1972. The instrument's digital filter remains commanded IN.
Solar wind spectrometer experiment	This experiment continues to return scientific data on solar wind plasma, magnetosphere plasma and magnetopause crossings, by sensing the direction and energies of both electrons and positive ions.
Suprathermal ion detector experiment	Cyclic commanding of the experiment's high voltage power supply during the current lunar day has been unchanged from the previous operational procedures. The SIDE was commanded ON for continuous support 27 December. The instrument is commanded to master reset and to reset frame counter at frame 39. This places all SIDE instruments in synchronization with each other and eliminates cal sequences. At six hour intervals, the master reset and reset at 39 sequence is repeated with sufficient delay to attain two cal sequences. This mode of operation optimizes science return at a time when command capability is available during the 45 day support period of the Apollo 17 ALSEP. At 0727 G.m.t.,30 December 1972, the SIDE downlink became static and remained so until data returned valid at 2230 G.m.t., 1 January 1973.

Status as of 1100 G.m.t., 5 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1143	700	524	259
Total Commands to Date	15926	8175	13178	4383
Sun Angle	258°	264°	285°	298°
Input Power	68.9w	70.8w	72.9w	70.4w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	DSS-1 ON(10W)
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	16.2°F	33.1°F	-0.8°F	41.5°F
PSE Sensor Temp (DL-07)	126.1°F	124.2°F	124.4°F	125.8°F
LSM Internal Temp (DM-05)	Invalid	N/A	3.8°C	-7.7°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	Standby	N/A
SIDE Temp	4.2°C	Invalid	6.6°C	N/A
CCGE Temp	OFF	Invalid	110.2°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.0°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-65.0°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.2°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	24
Total Commands to Date	3715
Sun Angle	312°
Input Power	76.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	27.5°F
LMS Temp (AM-41)	13.4°F
LEAM Temp (AJ-11)	5.0°F
HFE Temp Ref 1 (DH-13)	290.7°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	29.1°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

6 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

ALSEP 17 station telemetry data indicates virtually no change in the experiments package status and/or operations during the past 24 hours. The central station's electronics and structural components temperatures, the thermoelectric power source output, and transmitter "A" signal strength remain essentially unchanged. The experiments scientific sensors continue to operate steadily in the lunar night environment. The Heat Flow Experiment's second low conductivity measurement (H21 ON) is currently in the 19th hour, of a planned 36-hour observation period. The Lunar Surface Gravimeter Experiment is acquiring long term seismic and free mode information. The Lunar Surface Profiling Experiment is in standby select as planned. There has been no change in configuration of the Lunar Atmospheric Composition Experiment which continues to sense the lunar atmosphere's constituents. The Lunar Ejecta and Meteorites Experiment continues to collect statistical data of impact flux rates on the lunar surface.

It is requested that any organization having comments, questions, or suggestions concering this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status of 1100 G.m.t., 6 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1144	701	525	260
Total Commands to Date	15928	8203	13218	4397
Sun Angle	272°	278°	299°	311°
Input Power	68.9w	70.9w	72.9w	70.4w
Heater and Power Dumps	DSS-1 ON(10)	DSS-1 ON(10)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	16.2°F	33.1°F	-0.8°F	40.4°F
PSE Sensor Temp (DL-07)	126.1°F	124.2°F	124.4°F	125.8°F
LSM Internal Temp (DM-05)	Invalid	N/A	3.8°C	-7.7°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	Standby	N/A
SIDE Temp	4.3°C	Invalid	6.6°C	N/A
CCGE Temp	OFF	Invalid	108.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-20.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-65.5°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.2°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	25
Total Commands to Date	3752
Sun Angle	326°
Input Power	76.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	28.4°F
LMS Temp (AM-41)	13.4°F
LEAM Temp (AJ-11)	-1.3°F
HFE Temp Ref 1 (DH-13)	290.9°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	30.4°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

7 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

The central station's data subsystem component temperatures continue to alternate about their point of thermal equilibrium, while the station's external structural temperatures are stabilized. Power for the ALSEP generated by the RTG is stable. Downlink signal strength is reported at -139.0 ± 1.0 dbm. The station's command decoder switch inhibit pulse occurred as anticipated, verified by a status change in telemetry point AB-18. The command to inhibit the next internally generated 61-hour pulse was transmitted at 0507 G.m.t., 7 January.

The Heat Flow Experiment continues to operate normally, with all temperature sensors returning data. The experiment's second low conductivity measurement was successfully accomplished January 6. Following completion of the second mode II measurement, the instrument was returned to its gradient mode (mode I), with all sensors being sampled in full sequence, for 24-hours prior to the third low conductivity measurement (H14 ON). The instrument's thermocouples, above the surface, are reading 104 ± 8°K. The temperature of probe 1 at the bottom of the lowest probe section is 256.5°K, with probe 2 indicating a temperature of 256.9°K at its lowermost point.

The Lunar Surface Gravimeter Experiment remains configured to collect long term seismic and free mode information. The experiment's subsystem components continue to operate normally. The experiment's sensor temperature remains stabilized at 49.169°C (slave heater ON).

The Lunar Surface Profiling Experiment remains in standby select.

The Lunar Atmospheric Composition Experiment continues to collect data on the composition of the lunar atmosphere. The experiment is currently configured to the following; automatic sweep, high voltage power supply ON, ion source filaments ON, multipliers HIGH, low voltage power supply ON, and back-up heater ON. The two mass range data channels (DM-04, intermediate mass range; and, DM-03, low mass range) continue to display electrical background noise during part of the analyzer sweep. The LACE's electronics temperature (AM-41) remains stabilized at 13.4°F.

The Lunar Ejecta and Meteorites Experiment is configured to measure impact flux rates on the lunar surface. Since the LEAM's automatic thermal control became active, the instrument's internal temperature (AJ-11) has been cyclic, between 6.4°F and -1.3°F.

It is requested that any organization having comments, questions or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status of 1100 G.m.t., 7 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1145	702	526	261
Total Commands to Date	15932	8233	13254	4411
Sun Angle	284°	290°	311°	323°
Input Power	68.9w	70.4w	72.9w	70.4w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	15.9°F	33.1°F	-0.8°F	40.4°F
PSE Sensor Temp (DL-07)	126.1°F	124.1°F	124.4°F	125.8°F
LSM Internal Temp (DM-05)	Invalid	N/A	3.8°C	-7.7°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	Standby	N/A
SIDE Temp	4.3°C	Invalid	6.6°C	N/A
CCGE Temp	OFF	Invalid	108.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-20.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-66.0°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.1°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	26
Total Commands to Date	3754
Sun Angle	338°
Input Power	76.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	28.4°F
LMS Temp (AM-41)	13.4°F
LEAM Temp (AJ-11)	0.8°F
HFE Temp Ref 1 (DH-13)	290.3°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	30.4°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

8 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

ALSEP 17 station telemetry data indicates virtually no change in the experiments package status and/or operations during the past 24 hours. The central station's electronics and structural components temperatures, the thermoelectric power source output, and transmitter "A" signal strength remain essentially unchanged. The experiments scientific sensors continue to operate steadily in the lunar night environment. The Heat Flow Experiment's third low conductivity measurement (H14 ON) is currently in the seventh hour, of a planned 36-hour observation period. The Lunar Surface Gravimeter Experiment is acquiring long term seismic and free mode information. The Lunar Surface Profiling Experiment is in standby select as planned. There has been no change in configuration of the Lunar Atmospheric Composition Experiment which continues to sense the lunar atmosphere's constituents. The Lunar Ejecta and Meteorites Experiment continues to collect statistical data of impact flux rates on the lunar surface.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status of 1100 G.m.t., 8 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1146	703	527	262
Total Commands to Date	15934	8256	13302	4421
Sun Angle	296°	302°	323°	335°
Input Power	68.9w	70.9w	72.9w	70.4w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	15.3°F	32.6°F	-0.8°F	40.4°F
PSE Sensor Temp (DL-07)	126.1°F	124.1°F	124.3°F	125.8°F
LSM Internal Temp (DM-05)	Invalid	N/A	3.8°C	-7.7°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	Standby	N/A
SIDE Temp	4.3°C	Invalid	6.6°C	N/A
CCGE Temp	OFF	Invalid	108.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-20.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-66.0°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.1°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	27
Total Commands to Date	3794
Sun Angle	350°
Input Power	76.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	27.5°F
LMS Temp (AM-41)	13.4°F
LEAM Temp (AJ-11)	2.9°F
HFE Temp Ref 1 (DH-13)	290.0°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	29.1°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

9 January 1973
G.m.t.: 1100

Apollo 17 ALSEP

Lunar sunrise at the Apollo 17 site will occur later today. The central station continues operating normally, with the station's electronics and structural components temperatures unchanged. Downlink RF signal strength is reported at -138.0 ± 1.0 dbm. Power from the RTG remains constant.

The Heat Flow Experiment continues to operate normally, with all temperature sensors returning data. The experiment's third low conductivity measurement (H14 ON) is currently in the 29th hour of a planned 46-hour observation period. Following completion of the third mode II measurement, the instrument will be returned to its gradient mode (mode I), with all sensors being sampled in full sequence, for 12-hours prior to the fourth low conductivity measurement (H24 ON). The instrument's thermocouples, above the surface, are reading 125 ± 8°K.

The Lunar Surface Gravimeter Experiment continues to collect seismic and free mode information. The experiment's sensor temperature remains stabilized at 49.169°C (slave heater ON).

The Lunar Surface Profiling Experiment remains in standby, with a 30 minute passive listening mode planned for 12 January.

The Lunar Atmospheric Composition Experiment continues to collect data on the composition of the lunar atmosphere. At 1819 G.m.t., 8 January, (sun angle of 355°) the LACE experienced, what appears to be, an internally generated mode change from automatic analyzer sweep to the lock mode (sweep hold). The experiment's temperatures were stabilized; electronics temperature, AM-41 = 13.4°F; and, low voltage power supply temperature, AM-15 = 24.2°F. The LACE was commanded back to the automatic sweep mode at 2035 G.m.t., 8 January, without incident. Investigation of this unexpected functional change is continuing. The LACE's electronics temperatures remain stabilized; AM-41 = 13.4°F and AM-15 = 24.2°F.

The Lunar Ejecta and Meteorites Experiment is configured to measure impact flux rates on the lunar surface. The LEAM's internal temperature (AJ-11) continues to cycle between 6.4°F and -1.3°F.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status of 1100 G.m.t., 9 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1147	704	528	263
Total Commands to Date	15938	8269	13322	4431
Sun Angle	308°	314°	335°	347°
Input Power	68.9w	70.9w	72.9w	70.4w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	15.0°F	32.3°F	-0.8°F	40.4°F
PSE Sensor Temp (DL-07)	126.1°F	124.1°F	124.3°F	125.7°F
LSM Internal Temp (DM-05)	Invalid	N/A	3.8°C	-8.9°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	Standby	N/A
SIDE Temp	4.3°C	Invalid	7.2°C	N/A
CCGE Temp	OFF	Invalid	106.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-20.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-66.0°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.1°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	28
Total Commands to Date	3818
Sun Angle	2°
Input Power	76.5w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	29.1°F
LMS Temp (AM-41)	13.4°F
LEAM Temp (AJ-11)	-1.3°F
HFE Temp Ref 1 (DH-13)	290.1°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	30.4°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

10 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

The central station is operating normally. The station's subsystem components continued to measure a constant temperature increase until the average thermal plate temperature reached 75.4°F (near 0300 G.m.t., 10 January) when the station's automatic power management (APM) system begin re-distribution of reserve power. The APM thermostat (APM 2 circuit is inside the power conditioning unit) enabled APM 2 dumping the experiments package's excessive reserve power externally from the central station. Excessive reserve power dumped overboard is from 2-30 watts. Reserve power greater than 30 watts is dumped back into the central station. Currently the station's data subsystem component temperatures continue to alternate about their point of thermal equilibrium, while the central station's external structural temperatures continue to increase. Downlink signal strength is reported at -137.0 dbm, plus or minus one dbm. The RTG output to the experiments package continues to be stable. The station's command decoder switch inhibit pulse occurred as anticipated, verified by a status change in telemetry point AB-18. The command to inhibit the next internally generated 61-hour pulse was transmitted at 1848 G.m.t., 9 January.

The Heat Flow Experiment temperature sensors and thermocouples in the cable are continuing to track the temperatures on and below the lunar surface. The HFE's fourth low conductivity measurement (H24 ON) is currently in the seventh hour, of a planned 36-hour observation period. The experiment's thermocouples, above the surface, are reading 240 ± 8°K, and the temperature at the lowermost sensors is about 257°K. The HFE electronics package temperature is increasing at an average rate of 0.05°K/hour.

The Lunar Surface Gravimeter Experiment remains configured to collect long term seismic and free mode information. The experiment's subsystem components continue to operate normally. The experiment's sensor temperature has increased to 49.173°C (slave heater ON) in the past 26 hours.

The Lunar Surface Profiling Experiment remains in standby select.

The Lunar Atmospheric Composition Experiment is currently in operate ON, not sensing the lunar atmosphere's constitutents. At 1537 G.m.t., 9 January (5° sun angle) the LACE experienced, what appears to be, an internally generated mode change from automatic analyzer sweep to the lock mode (sweep hold). The experiment's temperatures were increasing at the time (electronics, AM-41 = 15.0°F, and the low voltage power supply, AM-15 = 16.6°F). The LACE was commanded back to the automatic sweep mode at 1545 G.m.t. without incident. Investigation of this second unexpected change is continuing. Subsequent commanding of the ex-

periment to its fixed mode and cyclic mode collected additional atmospheric events. The instrument's low and intermediate mass range data channels continue to display electrical background noise during part of the analyzer sweep. The LACE was then re-configured (2236 G.m.t., 9 January) to its present operational mode; back-up heater OFF, low voltage power supply ON, multipliers HIGH, discriminator level LOW, high voltage power supply and ion source filaments OFF, and sweep control locked. The instrument's electronics temperature is currently increasing at an average rate of 2.3°F/hour.

The Lunar Ejecta and Meteorites Experiment is in standby select. At 1138 G.m.t., 10 January, the LEAM was commanded to standby select per the agreed operational plan (AJ-09 = 166.5°F, and AJ-11 = 169.5°F, at a sun angle of 15 degrees). Preceding the LEAM standby command the experiment's electronics temperature, AJ-09, was increasing at an average rate of 3.1°F/hour.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status as of 1200 G.m.t., 10 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1148	705	529	264
Total Commands to Date	15942	8275	13352	4442
Sun Angle	318°	326°	346°	359°
Input Power	68.9w	70.5w	72.5w	70.4w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	15.0°F	32.3°F	-0.8°F	40.3°F
PSE Sensor Temp (DL-07)	126.0°F	124.1°F	124.3°F	125.7°F
LSM Internal Temp (DM-05)	Invalid	N/A	3.8°C	-7.7°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	Standby	N/A
SIDE Temp	Static	Invalid	7.2°C	N/A
CCGE Temp	OFF	Invalid	106.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-20.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-66.0°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.3°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	29
Total Commands to Date	3945
Sun Angle	15°
Input Power	76.1w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LEAM & LSPE Standby
Avg Thermal Plate Temp	71.2°F
LMS Temp (AM-41)	66.7°F
LEAM Temp (AJ-11)	169.5°F
HFE Temp Ref 1 (DH-13)	291.4°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	72.0°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

11 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

The central station continues operating normally. Downlink RF signal strength is reported at -137.0 ± 1.0 dbm. Power from the RTG remains constant. Engineering measurements of the central station's electronics and thermal plate temperatures continue to alternate between the APM 2 set points of 60°F and 80°F. The station's external structural temperatures continue to increase within anticipated limits.

The Heat Flow Experiment continues to operate normally, with all temperature sensors returning data. The experiment's fourth low conductivity measurement (H24 ON) is currently in the 31st hour of a planned 36-hour observation period. Following completion of the fourth mode II measurement, the instrument will be returned to its gradient mode (mode I) for 24-hours prior to the fifth low conductivity measurement (H12 ON). The instrument's thermocouples, above the surface, are reading 302 ± 8°K.

The Lunar Surface Gravimeter Experiment remains configured to collect seismic and free mode information. The experiment's sensor temperature remains stabilized at 49.173°C (slave heater ON).

The Lunar Surface Profiling Experiment remains in standby select, with a 30-minute passive listening mode planned for 12 January.

The Lunar Atmospheric Composition Experiment is in operate select, with the high voltage power supply and ion source filaments OFF. The instrument's high voltage and filaments were commanded ON for a two hour period at 1555 G.m.t., 10 January, collecting lunar atmospheric constitutents. It is planned to operate the LACE daily in this manner throughout this lunar day in order to attain science data, as the experiment's internal components outgas. The LACE's electronics temperature (AM-41) is currently increasing at an average rate of 0.8°F/hour.

The Lunar Ejecta and Meteorites Experiment is currently OFF. The experiment was commanded OFF at 1339 G.m.t., 10 January, (AJ-11 = 169.5°F, and AJ-09 = 166.5°F) due to unexpected high temperatures. The LEAM will remain in this configuration pending results of thermal analysis currently in process. Currently AJ-11 (mirror temperature) is increasing at about 0.48°F/hour.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status f 1100 G.m.t., 11 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1149	706	530	265
Total Commands to Date	15944	8281	13380	4475
Sun Angle	331°	339°	358°	11°
Input Power	68.9w	70.5w	72.9w	69.6w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	All OFF
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	15.0°F	32.3°F	-0.8°F	51.1°F
PSE Sensor Temp (DL-07)	126.0°F	124.1°F	124.3°F	126.2°F
LSM Internal Temp (DM-05)	Invalid	N/A	3.8°C	24.3°C
SWS Module 300 Temp (DW-13)	-16.1°C	N/A	Standby	N/A
SIDE Temp	Static	Invalid	7.2°C	N/A
CCGE Temp	OFF	Invalid	106.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-20.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-66.4°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.3°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	30
Total Commands to Date	3974
Sun Angle	26°
Input Power	75.3w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LEAM OFF/LSPE Stby
Avg Thermal Plate Temp	70.2°F
LMS Temp (AM-41)	92.4°F
LEAM Temp (AJ-11)	173.8°F
HFE Temp Ref 1 (DH-13)	299.8°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	70.7°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

12 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

The central station's data subsystem electronics and thermal plate temperatures, as well as the station's external structural temperatures continue to increase within anticipated limits. RTG output power remains constant. The downlink received signal strength is reported at -137.0 ± 1.0 dbm.

The Heat Flow Experiment continues to operate normally, with periodic ring bridge survey's being accomplished. The experiment's fourth low conductivity measurement was successfully accomplished January 11. Lunar surface temperature as measured by the instrument's thermocouples is 338 ± 8°K. The temperature at 230 cm depth is 256.5°K at probe #1, and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment continues to collect seismic and free mode information. The experiment's sensor temperature remains stabilized at 49.173°C (slave heater ON).

The Lunar Seismic Profiling Experiment was commanded ON at 1055 G.m.t., 12 January, and to LSPE data format processing (high bit rate) at 1059 G.m.t., for a thirty minute passive listening period. Two geophone calibration pulses were sent to the experiment during the listening mode. Data output of all geophones appeared normal and no significant signals were noted in real-time. LSPE processing was terminated at 1125 G.m.t., and the instrument commanded to standby select at 1129 G.m.t.

The Lunar Atmospheric Composition Experiment is in operate select, with the high voltage power supply and ion source filaments OFF. It is planned to operate the experiment in this mode for several days after lunar sunrise to avoid manmade contamination of the instrument from increased gas pressures previously sensed by the Cold Cathode Gauge Experiment at other ALSEP sites and anticipated at this deployment site. The LACE's electronics temperature (AM-41) is continuing to increase at an average rate of 0.6°F/hour.

The Lunar Ejecta and Meteorites Experiment is currently OFF. The experiment was commanded OFF at 1339 G.m.t., 10 January, due to unexpected high temperatures. The LEAM will remain in this configuration pending results of thermal analysis currently in process. Currently AJ-11 (mirror temperature) is continuing to increase at about 0.5°F/hour.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Apollo 16 ALSEP

Operational status from 5 January 1973, 1200 G.m.t., to 12 January 1973, 1200 G.m.t.

Central station

Sunrise of the 10th lunar day occurred on 10 January 1973 at the Descartes Site. The DSS-1 (10 watts) heater was commanded OFF at 2114 G.m.t., 10 January 1973, when the average thermal plate temperature was 52°F. The thermoelectric power source output is normal. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength of 140.2 ± 2.3 dbm from transmitter "A".

Passive seismic experiment

Experiment operation continues with the feedback loop filter commanded OUT, the sensor gains of all components configured to 0 db, and the sensor assembly temperature stabilized (auto ON thermal control mode). The uncage/arm fire circuit is configured to the uncaged state. The instrument will be configured in this manner throughout lunar day. At 1727 G.m.t., 10 January 1973, the y-axis responded to auto mode leveling commands. Previous attempts to level the y-axis since 30 December 1972 were not successful.

Lunar surface magnetometer experiment

The experiment continues to measure time-dependent solar and induced magnetic fields with increased activity as the moon approaches the earth's transition region. The instrument's 282nd flip calibration sequence was executed correctly by command on 12 January 1973. The experiment is presently configured with the digital filter commanded OUT, the flip cal inhibit logic commanded IN and the sensors in the 200 gamma range.

Active seismic experiment

The experiment is in standby OFF, with the next 30-minute passive listening period planned for 19 January. The experiment was commanded to high bit rate select on 5 and 12 January as follows:

Date	ASE ON G.m.t.	HBR ON G.m.t.	HBR OFF G.m.t.	ASE OFF G.m.t.	Geophone Cals	Events
5	0545	0623	0653	0659	Two	None
12	0851	0910	0940	0945	Two	Several

Apollo 15 ALSEP

Operational status from 5 January 1973, 1200 G.m.t., to 12 January 1973, 1200 G.m.t.

Central station	Sunrise of the station's 19th lunation occurred 11 January 1973; power from the RTG continues steady and transmitter "A" downlink signal strength is reported at 136.0 ± 2.0 dbm. The 18-hour timer was initiated for day operations on 9 January 1973 at 1400 G.m.t.
Passive seismic experiment	Operation is in the auto ON thermal control mode, sensor gains are 0 db, and the feedback loop filter commanded OUT in order to achieve seismic network congruity. No seismic events of significance were noted during real-time support.
Lunar surface magnetometer experiment	The experiment's sensors are presently in the 100 gamma range (0208 G.m.t., 11 January), for lunar day operation. Currently the instrument has executed 771 flip calibration sequences since activation. The experiment's y-axis sensor head remains fixed at a 180 degree position, not responding to flip cal commands. The x-axis and z-axis sensors are returned to the 180 degree position following each flip cal sequence to maintain sensor head synchronization. The experiment's y-axis sensor has indicated off-scale LOW (static) since 20 September 1972.
Solar wind spectrometer experiment	Presently in standby pending further analysis per SMEAR #45. The instrument has not been commanded to operate select since 17 August 1972.
Suprathermal ion detector/cold cathode gauge experiment	At 0150 G.m.t. on January 1973, the operational procedure of operating the instrument in the 0-39 frame stepping sequence was curtailed and commanded back to its normal automatic stepping sequence. This change of procedure was coordinated with the Principal Investigator. The Apollo 12 and 14 SIDES are also configured in this manner to achieve synchronization of all three instruments.
Heat flow experiment	The temperature of probe 1 at the bottom of the lowest probe section is 253.1°K with probe 2 indicating a temperature of 250.7°K at its lowermost point. The instrument's cable thermocouples on the lunar surface indicate a temperature of approximately 261.8°K. Since 29 May 1972, the instrument's measurement TREF 2 has continually displayed erroneous data. A duplicate measurement, TREF 1, is operating normally so that no data are lost.

Apollo 14 ALSEP

Operational status from 5 January 1973, 1200 G.m.t., to 12 January 1973, 1200 G.m.t.

Central station	Sunrise of the 25th lunar day at the Apollo 14 landing site will occur on 13 January 1973. Power output of the radioisotope source is unvarying; and, transmitter "A" signal strength was reported at 140.0 ± 4.0 dbm. The central station's DSS-1 heater (10 watts) will be commanded OFF for lunar day operations on 13 January.
Passive seismic experiment	This instrument is configured identically to the other seismometer's (thermal control auto ON, 0 db gain on all sensors, and filter OUT) in order to match seismic response. The instrument's long period z-axis has not displayed valid data nor responded to commands since 17 November 1972.
Active seismic experiment	Currently in standby without a 30-minute passive listening mode planned for today. The experiment was not commanded to high bit rate on 5 January due to the AS-03 temperature restraint of -60°C. Next listening mode is scheduled for 19 January 1973.
Suprathermal ion detector/cold cathode gauge experiment	At 2256 G.m.t., 8 January 1973, the procedure of operating the instrument in the 0-39 frame stepping sequence was discontinued. The experiment was commanded back to its normal automatic stepping sequence. This change of procedure was coordinated with the Principal Investigator. The Apollo 12 and 15 SIDES are also configured in this manner to achieve synchronization of all three instruments. Intermittent positive engineering data interruptions (anomaly occurred 9 May 1971) in one section of the analog-to-digital filter are having no adverse effect on the scientific outputs of the experiments.
Charged particle lunar environmental	The experiment was commanded to automatic mode at 1839 G.m.t., 11 December 1972. The instrument will remain in this mode under the present operational plan. It was erroneously reported on 5 January that during the CPLEE's spurious mode change from automatic sequence to manual mode (-350 voltage range) that no CVW activity occurred. Review of the downlink data indicated that a spurious CVW (octal 117, Deflection Sequence OFF) was recorded at 0004 G.m.t., 5 January 1973. Octal 117 interrupts the experiment's automatic sequence of voltages to the deflection plates. The instrument was reset back to the automatic sequence at 0504 G.m.t. on 5 January 1973, without incident. This was the 45th spurious functional change in the Apollo 14 station since its activation in February 1971.

Apollo 12 ALSEP

Operational status from 5 January 1973, 1200 G.m.t., to 12 January 1973, 1200 G.m.t.

Central station	Sunrise of the 40th lunar day will occur 13 January 1973; RTG power output is constant; and transmitter "B" signal strength was reported at 140.0 ± 2.0 dbm. The central station's DSS-1 heater (10 watts) will be commanded OFF on 13 January when the central station's average thermal plate temperature increases to about 16°F.
Passive seismic experiment	The instrument's thermal control mode is auto ON, the component gains are configured at 0 db, and the feedback loop filter commanded OUT. The instrument's z-axis drive motor will be commanded OFF on 13 January for lunar day operation. At 0057 G.m.t., 11 January 1973, the instrument's temperature (DL-07) was offscale LOW and returned on scale at 0700 G.m.t., on 11 January 1973. At 1300 G.m.t., 11 January, the PSE's sensor temperature was again offscale LOW.
Lunar surface magnetometer experiment	Scientific and engineering data have been static since 4 June 1972. The instrument's digital filter remains commanded IN.
Solar wind spectrometer experiment	This experiment continues to return scientific data on solar wind plasma, magnetosphere plasma and magnetopause crossings, by sensing the direction and energies of both electrons and positive ions.
Suprathermal ion detector experiment	At 0121 G.m.t., 9 January 1973, the procedure for operating the instrument in the 0-39 frame stepping sequence was discontinued. The experiment was commanded to the normal automatic stepping sequence. This change in procedure was coordinated with the Principal Investigator. The Apollo 14 and 15 SIDES are also configured in this manner to achieve synchronization of all three instruments. At 0640 G.m.t., 10 January 1973, the SIDE downlink became static during real-time support and has remained so.

Status as of 1100 G.m.t., 12 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1150	707	531	266
Total Commands to Date	15946	8287	13431	4501
Sun Angle	343°	351°	10°	24°
Input Power	68.9w	70.4w	71.8w	70.1w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	All OFF
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	15.0°F	32.1°F	21.7°F	72.2°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.1°F	125.2°F	126.5°F
LSM Internal Temp (DM-05)	Invalid	N/A	15.0°C	36.4°C
SWS Module 300 Temp (DW-13)	-16.1°C	N/A	Standby	N/A
SIDE Temp	Static	Invalid	12.6°C	N/A
CCGE Temp	OFF	Invalid	294.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-20.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-66.4°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	295.5°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	31
Total Commands to Date	4007
Sun Angle	38°
Input Power	75.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LEAM OFF/LSPE Stby
Avg Thermal Plate Temp	86.1°F
LMS Temp (AM-41)	108.1°F
LEAM Temp (AJ-11)	186.5°F
HFE Temp Ref 1 (DH-13)	308.4°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	86.1°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

13 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

Power from the radioisotope source remains constant at 75.8 watts. The average temperature of the central station electronics thermal plate continues increasing at a rate of about 1.1 °F per hour. Downlink signal strength is adequate at -137.0 dbm, plus or minus 1.0 dbm. A status change in the station's command decoder switch inhibit telemetry point, AB-18, verified that the internally generated 61-hour pulse occurred as anticipated. At 0835 G.m.t., 12 January, the command to inhibit the automatic switchover capability of the central station's command decoder to the opposite receiver/decoder was executed.

The Heat Flow Experiment's housekeeping data indicates that the instrument's electronics package thermal plate temperature continues increasing at about 0.3 °K/hour. Thermocouple temperatures indicate a lunar surface temperature of 364 ± 8°K.

The Lunar Surface Gravimeter Experiment remains configured to collect seismic and free mode information. The experiment's sensor temperature remains stabilized at 49.173°C (slave heater ON).

The Lunar Seismic Profiling Experiment remains in standby select as planned.

The Lunar Atmospheric Composition Experiment is in operate select, with the high voltage power supply and ion source filaments OFF. The experiment's established maximum operating temperature this second lunar day is 125°F (reference electronics telemetry point AM-41) or a normalized sun angle of 60 degrees, whichever occurs first. The LACE's current temperature rise is continuing at about 0.5 °F/hour. Therefore, anticipated turn-off of the experiment will occur later today. Subsequent turn-on for science data will occur when the sun angle is at a normalized elevation of 90° (1600 G.m.t., 16 January).

The Lunar Ejecta and Meteorites Experiment is currently OFF. The experiment was commanded OFF on 10 January due to unexpected high temperatures. The LEAM will remain in this configuration pending results of thermal analysis currently in process. The LEAM's mirror temperature (AJ-11) appears to have attained a maximum temperature value of 192.5°F, as the experiment's temperature has remained unchanged since 2211 G.m.t., 12 January (normalized sun angle of 44.6 degrees).

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status as of 1200 G.m.t., 13 January 1973, was as follow

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1151	708	532	267
Total Commands to Date	15948	8296	13481	4515
Sun Angle	355°	3°	22°	35°
Input Power	68.9w	69.0w	72.3w	70.1w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	All OFF
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	14.7°F	32.8°F	73.1°F	85.4°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.1°F	126.0°F	127.0°F
LSM Internal Temp (DM-05)	Invalid	N/A	43.5°C	36.4°C
SWS Module 300 Temp (DW-13)	-16.1°C	N/A	Standby	N/A
SIDE Temp (DI-05)	Static	Invalid	51.8°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	339.4°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-20.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-66.9°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	298.6°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	32
Total Commands to Date	4007
Sun Angle	52°
Input Power	75.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LEAM OFF/LSPE Stby
Avg Thermal Plate Temp	97.9°F
LMS Temp (AM-41)	122.0°F
LEAM Temp (AJ-11)	192.5°F
HFE Temp Ref 1 (DH-13)	317.3°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	98.0°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

14 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

The central station is operating nominally. Over 4000 commands have been sent and executed to date. Radioisotope thermal generator power output and downlink signal strength remain steady. The experiments package's internal and external temperatures continue to increase with the approach of lunar noon.

The Heat Flow Experiment probes continue to equilibrate. The experiment's fifth low conductivity measurement (H12 ON) is currently in the 13th hour of a planned 36-hour observation period. Following completion of the fifth mode II measurement, the instrument will be returned to its gradient mode (mode I) for 24-hours prior to the sixth low conductivity measurement (H22 ON). Lunar surface temperature as measured by the instrument's thermocouples is 378 ± 8°K.

The Lunar Surface Gravimeter Experiment remains configured to collect seismic and free mode information. The experiment's sensor temperature remains stabilized at 49.173°C.

The Lunar Seismic Profiling Experiment remains in standby select.

The Lunar Atmospheric Composition Experiment is currently powered down. At 1950 G.m.t., 13 January, the LACE was commanded OFF per the established second lunar day plan (electronics temperature AM-41 = 125.4°F). Normalized sun angle at experiment turn-off was 55.5 degrees. Currently the LACE's electronics temperature is continuing to decrease at about 3.7°F/hour.

The Lunar Ejecta and Meteorites Experiment is OFF. The LEAM will remain in this configuration pending results of thermal analysis currently in process. The LEAM's mirror temperature (AJ-11) attained a maximum temperature value of 192.5°F, near 2211 G.m.t., 12 January. The experiment's temperature remained unchanged until 1948 G.m.t., 13 January, (sun angle of 55.5°) when a temperature drop was observed. Currently the LEAM's temperature is decreasing at an average rate of 0.28°F/hour.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status as of 1200 G.m.t., 14 January 1973, was as follow.

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1152	709	533	268
Total Commands to Date	15968	8304	13505	4538
Sun Angle	6°	12°	35°	48°
Input Power	68.9w	70.0w	72.3w	70.1w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	46.6°F	58.0°F	89.6°F	96.7°F
PSE Sensor Temp (DL-07)	125.6°F	124.6°F	126.8°F	128.9°F
LSM Internal Temp (DM-05)	Invalid	N/A	50.8°C	37.3°C
SWS Module 300 Temp (DW-13)	19.5°C	N/A	Standby	N/A
SIDE Temp (DI-05)	19.4°C	Invalid	68.8°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	347.4°K	N/A
CPLEE Elect Temp (AC-06)	N/A	12.2°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-12.5°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	306.2°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	33
Total Commands to Date	4044
Sun Angle	64°
Input Power	75.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LEAM & LACE OFF/LSPE Stby
Avg Thermal Plate Temp	118.3°F
LMS Temp (AM-41)	65.7°F
LEAM Temp (AJ-11)	186.5°F
HFE Temp Ref 1 (DH-13)	325.2°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	119.0°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

15 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

Power from the RTG remains constant. The downlink received signal is reported at -137.0 ±1.0 dbm. The central station's command decoder switch inhibit pulse occurred as anticipated, verified by a status change in telemetry point AB-18. The command to inhibit the next internally generated 61-hour pulse was transmitted 0412 G.m.t., 15 January. The central station's average thermal plate temperature continues to increase at a rate of about 0.20°F/hour, as compared to an average increase of 0.57°F/hour for the previous reporting period.

The annual thermal wave has no appreciable effect at the Heat Flow Experiment probe depths. The experiment's fifth low conductivity measurement (H12 ON) was successfully accomplished at 1200 G.m.t., today. Lunar surface temperature as measured by the instrument's thermocouples is 382 ± 8°K. The temperature at 230 cm depth is 256.5°K at probe #1, and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment continues to collect seismic and free mode information. The experiment's sensor temperature remains stabilized at 49.173°C (slave heater ON).

The Lunar Seismic Profiling Experiment is in standby select as planned.

The Lunar Atmospheric Composition Experiment remains powered down. Subsequent turn-on for science data will occur when the sun angle is at a normalized elevation of about 90° (1600 G.m.t., 16 January). The LACE's electronics temperature (AM-41) continued to decrease, reaching a minimum temperature of 64.9°F at a sun angle of about 65 degrees (1500 G.m.t., 14 January). The experiment's temperature then reversed itself and began to increase. Currently the instrument's telemetry data is indicating a increasing temperature of about 0.3°F/hour.

The Lunar Ejecta and Meteorites Experiment is OFF. The LEAM will remain in this configuration pending results of thermal analysis currently in process. Currently AJ-11 (mirror temperature) is continuing to decrease at an average rate of 0.70°F/hour. (For the previous reporting period, the rate of decrease was 0.28°F/hour.)

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Stat s of 1100 G.m.t., 15 January 1973, was as follc

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1153	710	534	269
Total Commands to Date	15996	8314	13535	4550
Sun Angle	18°	24°	47°	60°
Input Power	68.6w	69.5w	72.3w	70.1w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	70.2°F	79.8°F	100.2°F	103.9°F
PSE Sensor Temp (DL-07)	126.1°F	125.0°F	132.3°F	136.8°F
LSM Internal Temp (DM-05)	Invalid	N/A	56.3°C	40.3°C
SWS Module 300 Temp (DW-13)	37.2°C	N/A	Standby	N/A
SIDE Temp (DI-05)	44.9°C	Invalid	78.0°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	364.0°K	N/A
CPLEE Elect Temp (AC-06)	N/A	33.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	18.5°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	316.0°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	34
Total Commands to Date	4045
Sun Angle	74°
Input Power	75.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	ALL OFF
Experiment Status	LEAM & LACE OFF/LSPE Stby
Avg Thermal Plate Temp	122.3°F
LMS Temp (AM-41)	69.0°F
LEAM Temp (AJ-11)	172.8°F
HFE Temp Ref 1 (DH-13)	328.7°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	123.1°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

16 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

The central station's data subsystem electronics and thermal plate temperatures, as well as the station's external structural temperatures continue to increase within anticipated limits. RTG output power remains constant. The downlink received signal strength is reported at -136.0 ± 1.0 dbm.

The Heat Flow Experiment continues to operate normally, with all temperature sensors returning data. The experiment's sixth low conductivity measurement (H22 ON) is currently in the first hour of a planned 36-hour observation period. The instrument's thermocouples, above the surface, are reading 386 ± 8°K.

The Lunar Surface Gravimeter Experiment remains configured to collect seismic and free mode information. The experiment's sensor temperature remains stabilized at 49.173°C (slave heater ON).

The Lunar Seismic Profiling Experiment remains in standby select, with a 30-minute passive listening mode planned for 19 January.

The Lunar Atmospheric Composition Experiment remains powered down. Subsequent turn-on for science data will occur later today. Currently LACE's electronics temperature (AM-41) continues increasing at about 0.1°F/hour.

The Lunar Ejecta and Meteorites Experiment is OFF. The LEAM will remain in this configuration pending results of thermal analysis currently in process. Currently AJ-11 (mirror temperature) is continuing to decrease at an average rate of 0.2°F/hour.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status as of 1100 G.m.t., 16 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1154	711	535	270
Total Commands to Date	16013	8322	13541	4571
Sun Angle	30°	36°	59°	72°
Input Power	68.0w	69.5w	72.3w	70.4w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	82.7°F	94.6°F	107.1°F	108.5°F
PSE Sensor Temp (DL-07)	126.5°F	125.4°F	138.5°F	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	62.6°C	44.7°C
SWS Module 300 Temp (DW-13)	52.7°C	N/A	Standby	N/A
SIDE Temp (DI-05)	33.8°C	Invalid	84.2°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	364.0°K	N/A
CPLEE Elect Temp (AC-06)	N/A	48.8°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	44.6°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	323.0°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	35
Total Commands to Date	4047
Sun Angle	87°
Input Power	75.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LEAM & LACE OFF/LSPE Stby
Avg Thermal Plate Temp	125.2°F
LMS Temp (AM-41)	73.6°F
LEAM Temp (AJ-11)	163.0°F
HFE Temp Ref 1 (DH-13)	328.2°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	126.7°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

17 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

The central station's data subsystem components attained a maximum temperature value near 1400 G.m.t., 16 January, as the station's average thermal plate temperature peaked at 125.5°F (normalized sun angle of 89.5 degrees). This second lunar day maximum temperature is 3.5 degrees lower when compared with highest temperature of the average thermal plate during first lunar day operations. Radioactive thermo generator output remains constant. Downlink signal strength is reportedly varying between -134 dbm to -136 dbm depending on the receiving site.

Maximum surface temperature as measured by the Heat Flow Experiment's thermocouples was 387 ± 8°K at lunar noon. The experiment's sixth low conductivity measurement (H22 ON) is currently in the 13th hour of a planned 36-hour observation period. Following completion of the sixth mode II measurement, the instrument will be returned to its gradient mode (mode I) for 72 hours prior to the seventh low conductivity measurement (H13 ON). The maximum temperature reached by the HFE's electronics was 330.1°K near 1800 G.m.t., 16 January (91.1° sun angle).

The Lunar Surface Gravimeter Experiment's sensor temperature remains stabilized at 49.173°C (slave heater ON). The experiment continues to collect seismic and free mode information.

The Lunar Seismic Profiling Experiment is in standby select.

The Lunar Atmospheric Composition Experiment is currently powered down. The instrument's high voltage and filaments were commanded ON per the established plan for a 27-minute period at 1719 G.m.t., 16 January, collecting lunar atmospheric constitutents data. It was planned to operate the LACE in this manner throughout this lunar day in order to attain science data and avoid manmade contamination of the instrument. Subsequent turn-on for science data will occur again when the sun angle is at a normalized elevation of 173° (1100 G.m.t.,23 Janurary). The instrument's electronics temperature (AM-41) has been stabilized at 75.8°F since 0600 G.m.t., today (97.1° sun angle).

The Lunar Ejecta and Meteorites Experiment is OFF. The LEAM will remain in this configuration pending results of thermal analysis currently in process. The LEAM's temperature (AJ-11) continued to decrease, reaching a minimum temperature of 163.0°F at a sun angle of about 85 degrees (0600 G.m.t., 16 January). The experiment's temperature then reversed itself and began to increase. Currently AJ-11 (mirror temperature) is continuing to increase at an average rate of 0.50°F/hour. (For the previous reporting period, the average rate of decrease was 0.36°F/hour.)

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Stat[illegible] of 1100 G.m.t., 17 January 1973, was as follo

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1155	712	536	271
Total Commands to Date	16032	8334	13572	4602
Sun Angle	43°	49°	71°	81°
Input Power	68.6w	69.5w	72.3w	70.4w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	89.4°F	106.1°F	112.8°F	110.2°F
PSE Sensor Temp (DL-07)	127.3°F	127.8°F	Offscale HIGH	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	67.7°C	47.0°C
SWS Module 300 Temp (DW-13)	60.9°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Invalid	88.2°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	364.0°K	N/A
CPLEE Elect Temp (AC-06)	N/A	63.3°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	62.9°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	328.0°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	36
Total Commands to Date	4109
Sun Angle	99°
Input Power	75.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LEAM & LACE OFF/LSPE Stby
Avg Thermal Plate Temp	124.8°F
LMS Temp (AM-41)	75.8°F
LEAM Temp (AJ-11)	179.0°F
HFE Temp Ref 1 (DH-13)	329.9°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	126.0°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

18 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

The central station continues operating normally. Radioactive thermoelectric generator output is constant. Downlink RF signal strength is reported at -136.0 ± 1.0 dbm. The central station's command decoder switch inhibit pulse occurred as anticipated, verified by a status change in telemetry point AB-18. The command to inhibit the next internally generated 61-hour pulse was executed at 1217 G.m.t., 17 January.

The Heat Flow Experiment probes and electronics are performing normally. The experiment is operating in the gradient mode (mode 1), with all sensors being sampled in full sequence. The experiment's sixth low conductivity measurement (H22 ON) was successfully accomplished January 17. Lunar surface temperature as measured by the instrument's thermocouples is 381 ± 8°K.

The Lunar Surface Gravimeter Experiment continues to collect seismic and free mode information. The experiment's sensor temperature remains stabilized at 49.173°C (slave heater ON). There has been no change in the operational status of the LSG since being re-configured on 3 January per the established plan.

The Lunar Seismic Profiling Experiment is in standby select, with a 30-minute passive listening mode planned for 19 January.

The Lunar Atmospheric Composition Experiment is OFF. Currently LACE's electronics temperature (AM-41) is decreasing at about 0.15°F/hour. The experiment's temperature had remained stabilized (AM-41 = 75.8°F) until a normalized sun angle of about 100 degrees and then began its current decreasing temperature trend. It is the established plan that the instrument remain in the powered down mode until its electronics temperature decreases to 32°F, at which time the LACE will be commanded to standby select prior to lunar sunset.

The Lunar Ejecta and Meteorites Experiment is OFF. The LEAM will remain in this configuration pending results of thermal analysis currently in process. Currently AJ-11 (mirror temperature) is continuing to increase at an average rate of 0.31°F/hour. (For the previous reporting period, the average rate of increase was 0.66°F/hour.)

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status as of 1100 G.m.t., 18 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1156	713	537	272
Total Commands to Date	16068	8344	13602	4637
Sun Angle	58°	64°	85°	97°
Input Power	68.4w	69.6w	72.3w	70.4w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	94.1°F	115.3°F	115.7°F	110.5°F
PSE Sensor Temp (DL-07)	129.1°F	125.5°F	Offscale HIGH	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	69.5°C	48.2°C
SWS Module 300 Temp (DW-13)	64.3°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Invalid	89.5°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	372.6°K	N/A
CPLEE Elect Temp (AC-06)	N/A	75.2°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	77.2°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	330.9°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	37
Total Commands to Date	4131
Sun Angle	112°
Input Power	75.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LEAM & LACE OFF/LSPE Stby
Avg Thermal Plate Temp	124.1°F
LMS Temp (AM-41)	72.1°F
LEAM Temp (AJ-11)	186.5°F
HFE Temp Ref 1 (DH-13)	325.9°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	126.0°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

19 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

The central station's data subsystem electronics and thermal plate temperatures, as well as the station's external structural temperatures continue to decrease within anticipated limits. RTG output power remains constant. The downlink received signal strength is reported at -136.0 ± 1.0 dbm.

Lunar surface temperature as measured by the Heat Flow Experiment's thermocouples is 370 ± 8°K. Subsurface temperature at 230 cm depth is 256.5°K at probe #1, and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment continues to collect seismic and free mode information. The experiment's sensor temperature remains stabilized at 49.173°C.

The Lunar Seismic Profiling Experiment was commanded ON at 0620 G.m.t., 19 January, and to LSPE data format processing (high bit rate) at 0636 G.m.t., for a thirty minute passive listening period. Two geophone calibration pulses were sent to the experiment during the listening mode. Data output of all geophones appeared normal, with LM noise apparently being recorded by the LSPE. LSPE processing was terminated at 0706 G.m.t., and the instrument commanded to standby select at 0708 G.m.t.

The Lunar Atmospheric Composition Experiment remains powered down. Currently the LACE's electronics temperature (AM-41) continues to decrease at a rate of about 0.38°F/hour, as compared to an average rate of decrease of 0.15°F/hour for the previous reporting period.

The Lunar Ejecta and Meteorites Experiment is OFF. The LEAM will remain in this configuration pending results of thermal analysis currently in process. The LEAM's temperature (AJ-11) continued to increase, reaching a maximum temperature of 186.5°F at a normalized sun angle of 109.3 degrees (0600 G.m.t., 18 January). The experiment's temperature then reversed itself and began to decrease. Currently AJ-11 is continuing to decrease at an average rate of 0.19°F/hour.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status as of 1100 G.m.t., 19 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1157	714	538	273
Total Commands to Date	16076	8356	13613	4666
Sun Angle	70°	76°	97°	109°
Input Power	68.4w	69.9w	72.3w	70.4w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	94.2°F	117.0°F	116.1°F	109.7°F
PSE Sensor Temp (DL-07)	133.7°F	127.2°F	Offscale HIGH	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	69.5°C	45.8°C
SWS Module 300 Temp (DW-13)	65.2°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Invalid	88.2°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	364.0°K	N/A
CPLEE Elect Temp (AC-06)	N/A	79.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	82.0°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	331.5°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	38
Total Commands to Date	4147
Sun Angle	124°
Input Power	75.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LEAM & LACE OFF/LSPE Stby
Avg Thermal Plate Temp	119.9°F
LMS Temp (AM-41)	63.1°F
LEAM Temp (AJ-11)	182.0°F
HFE Temp Ref 1 (DH-13)	320.6°K
LSG Temp (DG-04)	49.1°F
LSP Temp (AP-01)	121.7°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

20 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

The ALSEP 17 station experienced an unanticipated penumbral eclipse of the moon on 18 January. This event was the first such eclipse experienced by the 17 station. As in previous eclipses, no unusual scientific data resulting from the effects of this eclipse were noted in real time analysis. The eclipse began with entry into the penumbral shadow at about 2000 G.m.t., 18 January, and remained within this shadow zone for approximately 3 hours and 53 minutes. A table of ALSEP temperature deviations during the eclipse are included in this report. The next eclipse will occur on 15 June 1973.

ALSEP 17 station telemetry data indicated normal operations, with no appreciable change in the experiment's package status and/or operations since the last report. The station's command decoder switch inhibit pulse occurred as anticipated, verified by a status change in telemetry point AB-18. The command to inhibit the next internally generated 61-hour pulse was transmitted at 0335 G.m.t., 20 January.

The Heat Flow Experiment continues to operate normally, with all temperature sensors returning data. The instrument's thermocouple temperatures indicate a lunar surface temperature of 352 ± 8°K.

The Lunar Surface Gravimeter Experiment remains configured to collect seismic and free mode information. The experiment's sensor temperature remains stabilized at 49.173°C.

The Lunar Seismic Profiling Experiment is in standby select, with a 30-minute passive listening mode planned for 26 January.

The Lunar Atmospheric Composition Experiment remains powered down. Subsequent turn-on for science data will occur on 23 January. Currently the LACE's electronics temperature (AM-41) continues decreasing at about 0.31°F/hour, as compared to an average rate of decrease of 0.38°F/hour for the previous reporting period.

The Lunar Ejecta and Meteorites Experiment is OFF. The LEAM will remain in this configuration pending results of thermal analysis currently in process. Currently AJ-11 (mirror temperature) is continuing to decrease at an average rate of 0.30°F/hour. (For the previous reporting period, the average rate of decrease was 0.19°F/hour.)

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

ALSEP
20 January 1973
G.m.t.: 1300

Apollo 17 Temperatures

Penumbral Eclipse, 18 January 1973

TIME: GMT

TM POINT	18 January							19 January			
	1701	1902	2003	2127	2215	2300	2353	0000	0019	0148	0300
C/S Sunshield (AT-01) (^{o}F)	204.9	204.9	202.1	134.3	128.7	179.6	196.5	196.5	199.3	199.3	196.5
AVG Thermal Plate (^{o}F)	123.4	123.0	123.0	118.5	115.0	114.6	115.3	115.7	115.7	117.2	118.1
HFE TC12 Temp (^{o}K)	368.8	368.7	368.2	319.0	345.6	365.5	366.9	367.1	366.9	366.6	366.0
LACE Temp (AM-41) (^{o}F)	70.6	69.8	69.8	63.1	58.6	57.6	58.6	58.6	58.6	59.5	60.5
LEAM Temp (AJ-11 (^{o}F)	186.5	186.5	186.5	177.5	169.5	168.4	171.7	171.7	172.8	174.9	176.0

NOTE: Temperatures listed are taken at various times, limited by real time readout constraints, and may not reflect the lowest actual values.

Status as of 1100 G.m.t., 20 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1158	715	539	274
Total Commands to Date	16087	8368	13637	4695
Sun Angle	82°	88°	109°	121°
Input Power	68.1w	70.6w	72.4w	70.4w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE & CPLEE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	94.1°F	119.6°F	118.0°F	105.9°F
PSE Sensor Temp (DL-07)	139.7°F	130.3°F	Offscale HIGH	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	69.5°C	44.7°C
SWS Module 300 Temp (DW-13)	67.1°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Invalid	90.9°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	364.0°K	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	N/A	N/A
ASE GLA Temp (AS-03)	N/A	87.1°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	331.3°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	39
Total Commands to Date	4157
Sun Angle	136°
Input Power	75.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LEAM & LACE OFF/LSPE Stby
Avg Thermal Plate Temp	114.3°F
LMS Temp (AM-41)	55.7°F
LEAM Temp (AJ-11)	174.9°F
HFE Temp Ref 1 (DH-13)	314.9°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	116.2°F

Apollo 16 ALSEP

Operational status from 12 January 1973, 1200 G.m.t., to 19 January 1973, 1200 G.m.t.

Central station	Noon of the 10th lunar day occurred on 17 January at the Descartes Site. The thermoelectric power source output is normal. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength of -140.7 ± 2.7 dbm from transmitter "A".
Passive seismic experiment	Experiment operation continues with the feedback loop filter commanded OUT, the sensor gains of all components configured to 0 db, and thermal control in auto ON. The instrument's sensor assembly temperature (DL-07) was off-scale HIGH at 0100 G.m.t., 16 January. The sensor's temperature is projected to return on-scale 25 January. It is assumed that the impact event of 18 January, sensed by the 14 station's seismometer, was also recorded by this station's instrument. No real-time playback of the 16 station's data for that time period was initiated.
Lunar surface magnetometer experiment	The experiment continues normal operation and is currently indicating passage of the moon through the earth's geomagnetic tail. The instrument's 288th flip calibration sequence was executed correctly by command on 19 January. The experiment is presently configured with the digital filter commanded OUT, the flip cal inhibit logic commanded IN and the sensors in the 200 gamma range.
Active seismic experiment	The experiment is in standby OFF. On 19 January the experiment was commanded to operate select at 0903 G.m.t., and to high bit rate ON at 0915 G.m.t., for a passive listening period. Two geophone calibration pulses were sent to the instrument during the listening mode. Data output of all geophones appeared normal and no significant signals were noted in real-time. High bit rate operations were terminated at 0945 G.m.t., and the experiment commanded to standby OFF at 0953 G.m.t.

Apollo 15 ALSEP

Operational status from 12 January 1973, 1200 G.m.t., to 19 January 1973, 1200 G.m.t.

Central station

Noon of the station's 19th lunation occurred 18 January; power from the RTG continues steady and transmitter "A" downlink signal strength is reported at -137.3 ± 2.7 dbm.

Passive seismic experiment

Operation is in the auto ON thermal control mode, sensor gains are 0 db, and the feedback loop filter commanded OUT in order to achieve seismic network congruity. The instrument's sensor assembly temperature (DL-07) was offscale HIGH at 0230 G.m.t., 17 January, and is projected to return onscale 22 January. Real-time playback of this station's telemetry data indicated that the 15 station seismometer also sensed the impact event of 18 January.

Lunar surface magnetometer experiment

The experiment's sensors are in the 100 gamma range for lunar day operation. Currently the instrument has executed 777 flip calibration sequences since activation. Flip calibration sequences have been suspended this lunar day as the sensor internal temperature is above 62°C. The experiment's y-axis sensor has indicated off-scale LOW (static) since 20 September 1972.

Solar wind spectrometer experiment

At 1438 G.m.t., 12 January, (sun angle equaled 13 degrees) the experiment was commanded to operate select in order to provide data required in analysis of the instrument's anomalous operations. The instrument's telemetry data continuously indicated out of sync data. While in operate select the SWS was also a steady source of interference to the passive seismometer and suprathermal ion detector experiments operation. Following the operate select period the instrument was commanded back to standby select.

At 0736 G.m.t., 19 January, (95 degree sun angle) the experiment was again commanded to operate select in order to provide added data required in analysis of the instrument's high power demand anomaly. During the operate select period the experiment continued to demand excessive power (9.0 - 10.6 watts), while the instrument's telemetry data continuously indicated all zero's.

Apollo 15 ALSEP (continued)

Operational status from 12 January 1973, 1200 G.m.t., to 19 January 1973, 1200 G.m.t.

Solar wind spectrometer experiment	It is currently planned to cycle the experiment to operate select near lunar sunset (26 January) for added data. A SMEAR is being drafted to turn-off the SWS, in order to use the additional power (4 watts) that becomes available in the operation of the experiments package's central station. The central station's DSS-2 heater (5 watts) would then be commanded ON during subsequent lunar night operations.
Suprathermal ion detector/cold cathode gauge experiment	Operating in the full automatic stepping sequence (0-127 frames) with the Channeltron high voltages commanded ON.
Heat flow experiment	The temperature of probe 1 at the bottom of the lowest probe section is 253.1°K with probe 2 indicating a temperature of 250.7°K at its lowermost point. The instrument's cable thermocouples on the lunar surface indicate a temperature of approximately 371.7°K. Since 29 May 1972, the instrument's measurement TREF 2 has continually displayed erroneous data. A duplicate measurement, TREF 1, is operating normally so that no data are lost.

Apollo 14 ALSEP

Operational status from 12 January 1973, 1200 G.m.t., to 19 January 1973, 1200 G.m.t.

Central station	Sunrise of the 25th lunar day at the Apollo 14 landing site occurred on 13 January. Power output of the radioisotope source is steady and transmitter "A" signal strength was reported at -141.8 ± 2.7 dbm. The central station's DSS-1 heater (10 watts) was commanded OFF for lunar day operations on 13 January at 1504 G.m.t.
Passive seismic experiment	This instrument is configured to 0 db gain on all sensors and filter OUT. At 0507 G.m.t., 17 January, the instrument's heater was commanded to forced OFF to minimize heating during lunar day time operation. This seismometer sensed an event, probably a meteorite impact, beginning at 2302 G.m.t., 18 January. This event, currently being analyzed, was also sensed by the 15 station seismometer, and the 12 station seismometer (verified by a data playback). The event was measured by the instrument's LPX, LPY, and SPZ components. The instrument's long period z-axis has not displayed valid data nor responded to commands since 17 November 1972.
Active seismic experiment	Currently is standby. The experiment was not commanded to high bit rate on 12 January due to the AS-03 temperature restraint of -60°C. On 19 January, experiment commanded ON at 1026 G.m.t., and to high bit rate ON at 1032 G.m.t., for a passive listening mode operation. Data output of geophones 1 and 2 appeared normal; geophone 3 was continuously erratic. No geophone calibration pulses were sent during the listening mode operation. High bit rate terminated at 1103 G.m.t., and the instrument commanded to standby at 1108 G.m.t. No significant signals were noted in real time.
Suprathermal ion detector/cold cathode gauge experiment	Operating in the full automatic stepping sequence with the Channeltron high voltages commanded ON. Intermittent positive engineering data interruptions (anomaly occurred 9 May 1971) in one section of the analog-to-digital filter are having no adverse effect on the scientific outputs of the experiments.

Apollo 14 ALSEP (continued)

Operational status from 12 January 1973, 1200 G.m.t., to 19 January 1973, 1200 G.m.t.

Charged particle lunar environmental experiment	The experiment was commanded to automatic mode 11 December 1972. The instrument has remained in this mode under the present operational plan. At 0040 G.m.t., 17 January, the CPLEE responded to a spurious Channeltron HIGH voltage mode change (+3200 vdc). The instrument was commanded back to the Channeltron LOW voltage mode (+2800 vdc) 17 January, without incident. This was the 46th spurious functional change in the Apollo 14 station since its activation in February 1971.

Apollo 12 ALSEP

Operational status from 12 January 1973, 1200 G.m.t., to 19 January 1973, 1200 G.m.t.

Central station	Sunrise of the 40th lunar day occurred 13 January; RTG power output is constant; and, transmitter "B" signal strength was reported at -140.3 ± 1.7 dbm. The central station's DSS-1 heater (10 watts) was commanded OFF at 2311 G.m.t., 13 January, for lunar day operation.
Passive seismic experiment	The instrument's thermal control mode is auto ON, the component gains are configured at 0 db, and the feedback loop filter commanded OUT. The instrument's z-axis drive motor was commanded OFF at 2309 G.m.t., 13 January, for lunar day operation. At 1759 G.m.t., 13 January, the PSE's sensor temperature (DL-07) returned on-scale (sun angle = 0.6°). The impact event of 18 January was also measured by the ALSEP 12 seismometer (verified by a data playback).
Lunar surface magnetometer experiment	Scientific and engineering data have been static since 4 June 1972.
Solar wind spectrometer experiment	This experiment continues uninterrupted operations, returning scientific data on solar wind plasma, magnetosphere plasma and magnetopause crossings, by sensing the direction and energies of both electrons and positive ions.
Suprathermal ion detector experiment	Cyclic operation of this instrument was initiated this lunar day at 1712 G.m.t., 15 January. The SIDE is operated in this manner to preclude instrument mode changes at internal temperatures above 55°C.

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

21 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

The central station continues operating normally. Engineering measurements of the station's internal and external subsystem components indicate the expected gradual temperature decrease with sun elevation. Currently the station's average thermal plate temperature continues to follow the first lunar day's thermal curve within two degrees. Downlink RF signal strength is reported at -140.0 ± 1.0 dbm. Power output from the radioisotope source remains constant at 75.8 watts.

The Heat Flow Experiment's seventh low conductivity measurement (H13 ON) is currently in the 13th hour of a planned 36-hour observation period. Lunar surface temperature as measured by the HFE's thermocouples is 330 ± 8°K. Subsurface temperature at 230 cm depth is 256.5°K at probe #1, and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment remains configured to collect seismic and free mode information. The experiment's sensor temperature remains stabilized at 49.173°C (slave heater ON).

The Lunar Seismic Profiling Experiment remains in standby select.

The Lunar Atmospheric Composition Experiment is OFF. Currently AM-41 (electronics temperature) is continuing to decrease at an average rate of 0.69°F/hour. The current rate of decrease is tracking the instrument's first lunar day's thermal curve within five degrees.

The Lunar Ejecta and Meteorites Experiment remains powered down. Currently the LEAM's mirror temperature (AJ-11) continues decreasing at about 0.58°F/hour, as compared to an average rate of decrease of 0.31°F/hour for the previous reporting period.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status as of 1100 G.m.t., 21 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1159	716	540	275
Total Commands to Date	16097	8374	13649	4707
Sun Angle	94°	100°	121°	133°
Input Power	68.4w	70.4w	72.3w	70.1w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	94.2°F	119.5°F	116.1°F	100.3°F
PSE Sensor Temp (DL-07)	Offscale HIGH	133.4°F	Offscale HIGH	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	64.2°C	41.4°C
SWS Module 300 Temp (DW-13)	67.1°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Invalid	90.9°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	355.6°K	N/A
CPLEE Elect Temp (AC-06)	N/A	79.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	88.8°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	328.3°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	40
Total Commands to Date	4182
Sun Angle	148°
Input Power	75.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LEAM & LACE OFF/LSPE Stby
Avg Thermal Plate Temp	104.1°F
LMS Temp (AM-41)	39.1°F
LEAM Temp (AJ-11)	160.9°F
HFE Temp Ref 1 (DH-13)	309.4°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	105.9°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

22 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

All experiments are operating per the extablished plan. Power from the RTG remains constant. The downlink received signal is steady at -142.0 ± 2.0 dbm. The central station's average thermal plate temperature continues to decrease at an average rate of 1.13°F/hour, as compared to a decrease of 0.43°F/hour for the previous reporting period.

The Heat Flow Experiment probes and electroics are operating normally. The experiment is operating in the gradient mode (mode 1), with all sensors being sampled in full sequence. The experiment's seventh low conductivity measurement (H13 ON) was successfully accomplished earlier today. The HFE's final low conductivity measurement (H23 ON) will be activated at 0000 G.m.t., 23 January. This is the last of a sequence of eight mode 2 conductivity measurements to determine how efficiently the near surface layer of the moon conducts heat. Lunar surface temperature as measured by the instrument's thermocouples is 296 ± 8°K.

The Lunar Surface Graviemter Experiment continues to collect seismic and free mode information. The experiment's sensor temperature remains stabilized at 49.173°C. There has been no change in the operational status of the LSG since being re-configured on 3 January per the established plan.

The Lunar Seismic Profiling Experiment is in standby select, with a 30-minute listening mode planned for 26 January.

The Lunar Atmospheric Composition Experiment was placed in standby select, per the established plan, when its electronics temperature (AM-41) decreased to 31.3°F at near 1816 G.m.t., 21 January. The normalized sun angle was 151.9 degrees. Preceding the LACE standby command the experiment's temperature was decreasing at an average rate of 0.87°F/hour. Currently the LACE's electronics temperature is increasing at about 3.69°F/hour.

The Lunar Ejecta and Meteorites Experiment is OFF. The LEAM will remain in this configuration pending results of thermal analysis currently in process. Currently AJ-11 (mirror temperature) is continuing to decrease at an average rate of 1.08°F/hour. (For the previous reporting period, the average rate of decrease was 0.58°F/hour.)

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status as of 1100 G.m.t., 22 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1160	717	541	276
Total Commands to Date	16114	8380	13682	4716
Sun Angle	104°	112°	131°	145°
Input Power	68.1w	69.5w	72.3w	70.1w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	93.9°F	115.2°F	111.2°F	91.6°F
PSE Sensor Temp (DL-07)	Offscale HIGH	134.8°F	140.5°F	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	61.0°C	42.4°C
SWS Module 300 Temp (DW-13)	67.1°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Invalid	86.8°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	347.4°K	N/A
CPLEE Elect Temp (AC-06)	N/A	79.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	88.8°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	323.8°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	41
Total Commands to Date	4184
Sun Angle	160°
Input Power	75.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LEAM OFF/LACE & LSPE Stby
Avg Thermal Plate Temp	76.9°F
LMS Temp (AM-41)	97.0°F
LEAM Temp (AJ-11)	135.1°F
HFE Temp Ref 1 (DH-13)	300.0°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	78.2°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

23 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

Central station operations are as anticipated, with the station about to experience its second lunar sunset later today. The station's data subsystem components measured a continuous temperature drop until the electronics average thermal plate temperature reached 54.3°F, near 0330 G.m.t., 23 January. The station's automatic power management system (APM 2) then began re-distribution of excessive reserve power. Since APM 2 began dumping the package's excessive reserve power internally the thermal plate's average temperature has been cyclic (minimum temperature = 54.3°F; and, maximum temperature = 77.5°F). Currently the station's electronics thermal plate temperature is decreasing. There is no appreciable change reported in the received downlink signal strength, and RTG power output to the experiments is unchanged. The station's command decoder switch inhibit pulse occurred as anticipated, verified by a status change in telemetry point AB-18. The command to inhibit the next internally generated 61-hour pulse was transmitted at 1637 G.m.t., 22 January.

The Heat Flow Experiment's eighth low conductivity measurement (H23 ON) is currently in the 13th hour of a planned 36-hour observation period. Lunar surface temperature as measured by the HFE's thermocouples is 227 ± 8°K. Subsurface temperature at 230 cm depth is 256.5°K at probe #1, 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment remains configured to collect seismic and free mode information. The experiment's sensor temperature remains stabilized at 49.173°C (slave heater ON).

The Lunar Seismic Profiling Experiment remains in standby select.

The Lunar Atmospheric Composition Experiment is in standby select, with subsequent turn-on for science data planned for today. The LACE's electronics temperature (AM-41) continues to follow the first day's thermal curve within five degrees. Currently AM-41 is decreasing at an average rate of 0.61°F/hour.

The Lunar Ejecta and Meteorites Experiment is in operate ON. The experiment was commanded OFF on 10 January due to unexpected high temperatures. The LEAM was commanded to operate select for science data and additional thermal data, per the established plan, when its mirror temperature (AJ-11) decreased to 130°F. The instrument's operate select command was executed at 1317 G.m.t., 22 January, (AJ-11 = 129.0°F). Thermal analysis of the instrument's unexpected high temperatures is continuing. It is planned to operate the LEAM for science throughout lunar night. Currently the LEAM's mirror temperature is decreasing at about 0.87°F/hour.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status as of 1100 G.m.t., 23 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1161	718	542	277
Total Commands to Date	16124	8388	13691	4757
Sun Angle	116°	124°	144°	157°
Input Power	68.4w	69.5w	72.3w	70.1w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	93.6°F	108.5°F	102.8°F	80.3°F
PSE Sensor Temp (DL-07)	Offscale HIGH	134.4°F	132.1°F	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	62.6°C	42.4°C
SWS Module 300 Temp (DW-13)	65.2°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Invalid	80.5°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	339.4°K	N/A
CPLEE Elect Temp (AC-06)	N/A	72.1°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	85.3°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	316.8°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	42
Total Commands to Date	4239
Sun Angle	172°
Input Power	75.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LACE & LSPE Stby
Avg Thermal Plate Temp	63.2°F
LMS Temp (AM-41)	83.9°F
LEAM Temp (AJ-11)	129.0°F
HFE Temp Ref 1 (DH-13)	292.5°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	64.0°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

24 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

The experiments package is functioning normally, some 16-hours into its second lunar night. It is estimated that sunset occurred near 2038 G.m.t., 23 January (sun angle of 177.4°). The sunset time is based on the decisive temperature decrease recorded from the Heat Flow Experiment thermocouples (TC-12 and TC-22), and the central station's upper sunshield temperature transducer, AT-01.

The central station is operating satisfactorily, with the station's automatic power management (APM) functioning as anticipated. Currently the average thermal plate temperature is decreasing at an average rate of about 2.0°F/hour. Downlink signal strength is adequate at -143.0 dbm, plus or minus one dbm. The RTG output power to the experiments package continues to be stable.

The Heat Flow Experiment probes and electronics are operating normally. The experiment is operating in the gradient mode (mode 1), with all sensors being sampled in full sequence. The experiment's eighth low conductivity measurement (H23 ON) was successfully accomplished earlier today. This was the last of a sequence of eight mode 2 conductivity measurements to determine how efficiently the near surface layer of the moon conducts heat. Lunar surface temperature as measured by the instrument's thermocouples is 124 ± 8°K.

The Lunar Surface Gravimeter Experiment continues to collect seismic and free mode information. The experiment's sensor temperature remains stabilized at 49.173°C.

The Lunar Seismic Profiling Experiment is in standby select.

The Lunar Atmospheric Composition Experiment is in operate ON, sensing the lunar atmosphere's constitutents. The instrument's high voltage and filaments were commanded ON per the established plan at 1436 G.m.t., 23 January. It is planned to operate the LACE for science throughout lunar night. Currently the LACE's electronics temperature (AM-41) continues decreasing at about 2.69°F/hour, as compared to an average rate of decrease of 0.61°F/hour for the previous reporting period.

The Lunar Ejecta and Meteorites Experiment is configured to measure impact flux rates on the lunar surface. The LEAM was commanded to standby select at 1947 G.m.t., 23 January, for 74-minutes. The instrument remained in the standby configuration throughout the optical sunset, per the established plan. Currently AJ-11 (mirror temperature) is continuing to decrease at an average rate of 5.61°F/hour. (For the previous reporting period, the average rate of decrease was 0.87°F/hour.)

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status as of 1100 G.m.t., 24 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1162	719	543	278
Total Commands to Date	16134	8394	13725	4794
Sun Angle	129°	136°	156°	169°
Input Power	68.1w	69.5w	72.9w	70.1w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	90.4°F	98.7°F	90.7°F	64.8°F
PSE Sensor Temp (DL-07)	Offscale HIGH	131.2°F	126.0°F	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	62.6°C	39.3°C
SWS Module 300 Temp (DW-13)	62.6°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Invalid	71.0°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	323.8°K	N/A
CPLEE Elect Temp (AC-06)	N/A	59.5°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	80.4°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	306.9°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	43
Total Commands to Date	4358
Sun Angle	184°
Input Power	77.2w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	40.0°F
LMS Temp (AM-41)	31.3°F
LEAM Temp (AJ-11)	-5.6°F
HFE Temp Ref 1 (DH-13)	289.8°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	42.0°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

25 January 1973
G.m.t.: 1300

Apollo 17 ALSEP

All experiments are operating per the established plan. Power from the RTG remains constant. The downlink received signal is reported at -142.0 ± 2.0 dbm. The central station's average thermal plate temperature continues to decrease at an average rate of 0.50 °F/hour, as compared to a decrease of 2.01 °F/hour for the previous reporting period. The station's command decoder switch inhibit pulse occurred as anticipated, verified by a status change in telemetry point AB-18. The command to inhibit the next internally generated 61-hour pulse was transmitted at 0541 G.m.t., 25 January.

The Heat Flow Experiment temperature sensors and thermocouples in the cable are continuing to track the temperatures on and below the lunar surface. The HFE is currently operating in the gradient mode, with all sensors being sampled in full sequence. Lunar surface temperature as measured by the HFE's thermocouples is 117 ± 8°K. Subsurface temperature at 230 cm depth is 256.5 °K at probe #1, 256.9 °K at probe #2.

The Lunar Surface Gravimeter Experiment continues to collect seismic and free mode information. The experiment's sensor temperature remains stabilized at 49.173 °C (slave heater ON). There has been no change in the operational status of the LSG since being re-configured on 3 January per the established plan.

The Lunar Seismic Profiling Experiment is in standby select, with a 30-minute passive listening mode planned for 26 January.

The Lunar Atmospheric Composition Experiment continues to collect data on the composition of the lunar atmosphere. Subsequent commanding of the LACE on 23 January configured the experiment to the following lunar night operational mode; automatic sweep, high voltage power supply ON, ion source filaments ON, multipliers HIGH, low voltage power supply ON, discriminator level HIGH, and back-up heater ON. The two mass range data channels (DM-04, intermediate mass range; and, DM-03, low mass range) continue to display electrical background noise during part of the analyzer sweep. Currently the LACE's electronics temperature (AM-41) continues decreasing at about 0.61 °F/hour, as compared to an average rate of decrease of 2.69 °F/hour for the previous reporting period.

ALSEP STATUS REPORT (continued)

25 January 1973
G.m.t.: 1300

The Lunar Ejecta and Meteorites Experiment continues to collect statistical data of impact flux rates on the lunar surface. The experiment's periodic calibrate pulses are occurring as anticipated. This signal is used to calibrate the overall sensor electronics and data storage system of the LEAM experiment. The instrument's mirror temperature (AJ-11) dropped rapidly following lunar sunset. The mirror reached a minimum temperature of -17.7°F at a sun angle of 194.6 degrees (0653 G.m.t., 25 January). Since that time the LEAM's mirror temperature, as well as its internal electronics temperatures, have remained unchanged.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Status as of 1100 G.m.t., 25 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1163	720	544	279
Total Commands to Date	16142	8401	13744	4859
Sun Angle	141°	149°	168°	181°
Input Power	All OFF	All OFF	All OFF	DSS-1 ON(10w)
Heater and Power Dumps	68.1w	70.0w	72.9w	70.4w
Experiment Status	SIDE OFF	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	83.1°F	87.5°F	73.6°F	59.6°F
PSE Sensor Temp (DL-07)	Offscale HIGH	127.8°F	125.7°F	126.6°F
LSM Internal Temp (DM-05)	Invalid	N/A	56.4°C	16.5°C
SWS Module 300 Temp (DW-13)	59.0°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Invalid	57.5°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	301.6°K	N/A
CPLEE Elect Temp (AC-06)	N/A	45.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	69.8°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	299.0°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	44
Total Commands to Date	4386
Sun Angle	196°
Input Power	76.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	28.0°F
LMS Temp (AM-41)	16.6°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	289.9°K
LSG Temp (DG-04)	49.1°F
LSP Temp (AP-01)	29.1°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

26 January 1973
G.m.t.: 0600

Apollo 17 ALSEP

The Apollo 17 ALSEP forty-five day phase II operations were terminated at 0600 G.m.t., 26 January, when mission control's 24-hour real time support was suspended and the Spaceflight Tracking & Data Network shifted to phase III operations in support of the ALSEP 12, 14, 15, 16 and 17 stations. Phase III operations require that all ALSEP scientific and engineering data be recorded continuously at the tracking stations for subsequent analysis. Intermittent periods of real time data monitoring, phase II operations, at mission control are basically scheduled at a minimum of three hours every other day during lunar night, and three hours per day during lunar day-time. Additional periods are scheduled at optical terminator crossings of lunar sunrise and sunset. Also, as of today, the daily ALSEP status report is suspended, and will be published in the future on Friday of each week.

This report covers the 17 station activity and data from the previous 17 hours of operations. Station telemetry data indicates virtually no change in the experiments package status and/or operations during the past few hours. The central station's electronics and structural components temperatures continue the anticipated temperature decrease, while the thermoelectric power source output, and transmitter "A" signal strength remain essentially unchanged. The experiments scientific sensors continue to operate steadily in the lunar night environment. The Heat Flow Experiment continues gradient mode operations, with all sensors being sampled in full sequence. Lunar surface temperature as measured by the HFE's thermocouples is 115 ± 8°K. The Lunar Surface Gravimeter Experiment is configured to collect long term seismic and free mode information. The Lunar Seismic Profiling Experiment is in standby select as planned. There has been no change in configuration of the Lunar Atmospheric Composition Experiment, which continues to sense the lunar atmosphere's constituents. The Lunar Ejecta and Meteorites Experiment continues to collect statistical data of impact flux rates on the lunar surface.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Apollo 16 ALSEP

Operational status from 19 January 1973, 1200 G.m.t., to 26 January 1973, 0600 G.m.t.

Central station	Sunset of the 10th lunar day occurred on 25 January at the Descartes Site. The thermoelectric power source output is normal. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength of -140.8 ± 1.7 dbm from transmitter "A". The central station DSS-1 (10w) heater was commanded ON at 0859 G.m.t., 25 January for lunar night operation.
Passive seismic experiment	Experiment operation continues with the feedback loop filter commanded OUT, the sensor gains of all components configured to 0 db, and thermal control in auto ON. The instrument's sensor assembly temperature (DL-07) returned on-scale 24 January at 2305 G.m.t. (sun angle 175°). No significant seismic events were noted during the limited real-time support.
Lunar surface magnetometer experiment	The experiment continues normal operation and has indicated passage of the moon out of the earth's magnetopause and bow shock regions. The instrument's 294th flip calibration sequence was executed correctly by command on 24 January. The experiment is presently configured with the digital filter commanded OUT, the flip cal inhibit logic commanded IN, and the sensors in the 200 gamma range.
Active seismic experiment	The experiment is in standby OFF with a 30-minute passive listening mode scheduled later today, 26 January 1973.

Apollo 15 ALSEP

Operational status from 19 January 1973, 1200 G.m.t., to 26 January 1973, 0600 G.m.t.

Central station	Sunset of the station's 19th lunation will occur today 26 January; power from the RTG continues steady and transmitter "A" downlink signal strength is reported at -137.5 ± 4.0 dbm.
Passive seismic experiment	Operation is in the auto ON thermal control mode, sensor gains are 0 db, and the feedback loop filter commanded OUT in order to achieve seismic network congruity. The instrument's sensor assembly temperature (DL-07) was onscale at 0155 G.m.t., 22 January. No significant seismic events were noted during the intermittent real-time support for this period.
Lunar surface magnetometer experiment	The experiment's sensors are in the 100 gamma range and will be commanded to the 50 gamma range for lunar night operation on 27 January. Currently the instrument has executed 781 flip calibration sequences since activation. Flip calibration sequences were resumed for this lunar day, 25 January, as the sensor internal temperature decreased below 62°C. The experiment's y-axis sensor has indicated off-scale LOW (static) since 20 September 1972.
Solar wind spectrometer experiment	Presently in standby select. The instrument has not been commanded to operate select since 19 January 1973. It is currently planned to leave the experiment in standby select per SMEAR #46. Periodically (monthly), the experiment will be commanded to operate select to ascertain the instrument status. The previous operate select periods provided additional data points sufficient to conclude that the experiment has not recovered from its anomalous operation.
Suprathermal ion detector/cold cathode gauge experiment	Operating in the full automatic stepping sequence (0-127 frames) with the Channeltron high voltages commanded ON.
Heat flow experiment	The temperature of probe 1 at the bottom of the lowest probe section is 253.1°K with probe 2 indicating a temperature of 250.7°K at its lowermost point. The instrument's cable thermocouples on the lunar surface indicate a temperature of approximately 171.7 K. Since 29 May 1972, the instrument's measurement TREF 2 has continually displayed erroneous data. A duplicate measurement, TREF 1, is operating normally so that no data are lost.

Apollo 14 ALSEP

Operational status from 19 January 1973, 1200 G.m.t., to 26 January 1973, 0600 G.m.t.

Central station	Sunset of the 25th lunar day at the Apollo 14 landing site will occur on 28 January. Power output of the radioisotope source is steady and transmitter "A" signal strength was reported at -139.8 ± 1.7 dbm. The central station's DSS-1 heater (10 watts) will be commanded ON for lunar night operations on 27 January.
Passive seismic experiment	This instrument is configured to 0 db gain on all sensors and filter OUT. At 0527 G.m.t., 25 January, the instrument's heater was commanded to auto ON for the remainder of this lunation. No significant seismic events were noted during the limited real-time support for this period.
Active seismic experiment	Currently in standby with a 30-minute passive listening period scheduled today, 26 January.
Suprathermal ion detector/cold cathode gauge experiment	Operating in the full automatic stepping sequence with the Channeltron high voltages commanded ON. Intermittent positive engineering data interruptions (anomaly occurred 9 May 1971) in one section of the analog-to-digital filter are having no adverse effect on the scientific outputs of the experiments. The CCGE appears to have sensed an event in conjunction with the seismic impact event recorded 18 January. The gauge was sensing an overall pressure increase following the eclipse, and then about six minutes after the seismic event, the experiment sensed a small increase in pressure which may be indicative of an event. This data is currently under analysis.
Charged particle lunar environmental	Operating in its full automatic voltage stepping sequence (automatic thermal control ON). The CPLEE was commanded to standby select at 0324 G.m.t., 20 January, (normalized sun angle of 84°) and remained in that mode until 2303 G.m.t., 20 January (94 degree sun angle). This 20-hour period being the time of maximum ultraviolet radiation from the sun directly into the experiment's analyzer A helix Channeltron aperture. Direct ultraviolet contamination results in a substantial increase of photon counts in the Channeltron. This operational procedure also results in extension of the Channeltron's photo-multiplier effectivity. Uninterrupted operations for science data occurred from 11 December 1972 until 20 January 1973. It is planned to continue uninterrupted operations of the CPLEE under the revised operational guidelines referenced in SMEAR's #77, 78 and 79.

Apollo 12 ALSEP

Operational status from 19 January 1973, 1200 G.m.t., to 26 January 1973, 0600 G.m.t.

Central station	Sunset of the 40th lunar day will occur on 28 January; RTG power output is constant; and, transmitter "B" signal strength was reported at -142.3 ± 1.7 dbm. The central station's DSS-1 heater (10 watts) will be commanded ON 28 January, for lunar night operation.
Passive seismic experiment	The instrument's thermal control mode is auto ON, the component gains are configured at 0 db, and the feedback loop filter commanded OUT. The instrument's z-axis drive motor will be commanded ON 28 January, for lunar night operation. At 0102 G.m.t., 21 January, the PSE's sensor temperature (DL-07) was off-scale HIGH (sun angle = 89°) and is projected to return on-scale on 27 January. No significant seismic events were noted during this intermittent real-time support period.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid, as experienced since 4 June 1972.
Solar wind spectrometer experiment	Uninterrupted operations in the low gain mode, since 7 August 1972, recording solar wind plasma data for subsequent long term analysis.
Suprathermal ion detector experiment	Cyclic commanding of the instrument in the full automatic stepping sequence with Channeltron high voltages ON to experiment power OFF was initiated on 15 January 1973 in an effort to preclude instrument mode changes at internal temperatures above 55°C. However, the experiment experienced two mode changes to X10 mode (0853 G.m.t., 20 January, T2 = 55.6°C; and, 1455 G.m.t., 24 January, T2 = 52.8°C). The instrument was commanded to standby OFF after each mode change and returned to operate select without incident when the internal temperatures had cooled sufficiently. The instrument will be commanded to operate select, automatic stepping sequence, for uninterrupted lunar night operation on 27 January.

Status as of 0600 G.m.t., 26 January 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1164	721	545	280
Total Commands to Date	16181	8405	13785	4865
Sun Angle	150°	155°	177°	190°
Input Power	68.1w	70.0w	73.5w	70.4w
Heater and Power Dumps	All OFF	All OFF	All OFF	DSS-1 ON(10w)
Experiment Status	SIDE OFF	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	75.1°F	80.7°F	50.7°F	42.7°F
PSE Sensor Temp (DL-07)	Offscale HIGH	127.3°F	125.1°F	126.0°F
LSM Internal Temp (DM-05)	Invalid	N/A	47.0°C	-1.1°C
SWS Module 300 Temp (DW-13)	54.3°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Invalid	42.4°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	274.2°K	N/A
CPLEE Elect Temp (AC-06)	N/A	37.9°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	64.2°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	290.4°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	45
Total Commands to Date	4449
Sun Angle	205°
Input Power	76.5w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	26.7°F
LMS Temp (AM-41)	15.0°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	290.0°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	27.8°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

2 February 1973
G.m.t.: 0600

Apollo 17 ALSEP

The central station continues operating normally, with the station's electronics and structural components temperatures stabilizing. Downlink RF signal strength is reported between -138.5 dbm and -144.0 dbm. Power from the RTG remains constant. The station's command decoder switch inhibit pulse occurred as anticipated, verified by a status change in telemetry point AB-18. The command to inhibit the next internally generated 61-hour pulse was transmitted at 0406 G.m.t., 31 January.

The Heat Flow Experiment has continued to operate nominally with periodic ring bridge surveys being accomplished. A mode 3 (H14 ON) high conductivity test was conducted on 25 January beginning at 1530 G.m.t. and terminating at 1700 G.m.t. Purpose of the test was to measure the efficiency of the moon's near surface layer heat conduction. A heater surrounding the thermometers was energized. The temperature rise of the thermometers, after the heater is commanded ON, gives a measure of how effectively heat is dissipated into the lunar medium and hence the conductivity of the lunar medium. The measurements at different locations in the moon's subsurface were carried out in various time segments. Thermocouple temperature measured at the lunar surface is $103 \pm 8^{\circ}K$. The temperature at 230 cm depth is $256.5^{\circ}K$ at probe #1 and $256.9^{\circ}K$ at probe #2.

There is no change in the Lunar Surface Gravimeter Experiment status since being re-configured to obtain long term seismic and free mode science data. The experiment's sensor temperature has increased to $49.178^{\circ}C$ (slave heater ON).

The Lunar Seismic Profiling Experiment was commanded ON at 0511 G.m.t., 27 January, and to LSPE data format processing (high bit rate) at 0515 G.m.t., for a thirty minute passive listening period. Two geophone calibration pulses were sent to the experiment during the listening mode. Data output of all geophones appeared normal. LSPE processing was terminated at 0540 G.m.t., and the instrument commanded to standby select at 0542 G.m.t. The next passive listening period is scheduled on 3 February.

2 February 1973
G.m.t.: 0600

ALSEP STATUS REPORT (continued)

The Lunar Atmospheric Composition Experiment continues to collect data on the composition of the lunar atmosphere. The experiment is presently configured for lunar night operational mode (automatic sweep, high voltage power supply ON, ion source filaments ON, multipliers HIGH, low voltage power supply ON, discriminator level HIGH and back-up heater ON). Two mass range data channels (intermediate and low) continue to display background electrical noise during portions of the analyzer sweep. The LACE electronics temperature (AM-41) is currently stabilized at 13.4°F, the same measurement as occurred the previous lunar night.

The Lunar Ejecta and Meteorites Experiment is configured to measure impact flux rates on the lunar surface. The experiment's periodic calibrate pulses are occurring as anticipated. The LEAM survival temperature (AJ-11) has decreased to -20.8°F and has remained there over a period of 72 hours minimum.

It is requested that any organization having comments, questions or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Apollo 16 ALSEP

Operational status from 26 January 1973, 0600 G.m.t., to 2 February 1973, 0600 G.m.t.

Central station

Midnight of the 10th lunation occurred on 1 February at the Descartes Site. The DSS-1 (10 watts) heater remains ON for lunar night operation. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength of -141.0 ± 2.0 dbm from transmitter "A".

Passive seismic experiment

The typical night-time pattern of low background noise with occasional small, high frequency signals, is currently being sensed by the passive seismometer. Experiment operation continues with the feedback loop filter commanded OUT, the sensor gains of all components configured to 0 db, and the sensor assembly temperature stabilized (auto ON thermal control mode). The uncage/arm fire circuit is configured to the uncaged state. No significant seismic events were noted during the limited real-time support of this instrument. During real-time support on 27 January, an attempt to level the LP y-axis was made without success. The y-axis remained in the off-scale positive direction. The DL-07 temperature was 125.9°F and the sun angle was 203° at the time. This is the third occurrence of this anomaly. On 30 January, during real-time support, an attempt was made to level the LP x-axis from the off-scale positive position without success. The DL-07 temperature was 125.8°F and the sun angle was 238° at this time. This is the first occurrence of this anomaly.

Lunar surface magnetometer experiment

The experiment continues to measure time-dependent solar and induced magnetic fields. The instrument's 300th flip calibration sequence was executed correctly by command on 1 February 1973. The experiment is presently configured with the digital filter commanded OUT, the flip cal inhibit logic commanded IN, and the sensors in the 200 gamma range.

Apollo 16 ALSEP (continued)

Operational status from 26 January 1973, 0600 G.m.t., to 2 February 1973, 0600 G.m.t.

Active seismic experiment	The experiment is in standby OFF with a 30-minute listening period scheduled for 3 February. On 28 January, the experiment was commanded to operate select at 0427 G.m.t. and to high bit rate ON at 0437 G.m.t. for a passive listening period. Two geophone calibration pulses were sent to the instrument during the listening mode. Data output of all geophones appeared normal and no significant signals were noted in real-time. High bit rate operations were terminated at 0507 G.m.t. and the experiment commanded to standby OFF at 0510 G.m.t.

Apollo 15 ALSEP

Operational status from 26 January 1973, 0600 G.m.t., to 2 February 1973, 0600 G.m.t.

Central station	Midnight of the station's 19th lunation will occur today, 2 February; power from the RTG continues steady and transmitter "A" downlink signal strength is reported between -132.0 dbm and -136.9 dbm. The lunar night's operational procedure of eliminating the data subsystem's timer outputs by uplinking the timer's reset command, octal 150, twice daily at 1400 G.m.t. and 2200 G.m.t. was initiated on 31 January at 0358 G.m.t. At 2107 G.m.t., 30 January, a spurious CVW (octal 017, 5-watt heater ON) was observed by the Hawaii ground station. At the direction of mission control, the Hawaii ground station commanded the 5-watt heater OFF (octal 021) at 2131 G.m.t., 30 January. This was the 36th spurious functional change in the ALSEP 15 station since activation in July 1971.
Passive seismic experiment	Operation is in the auto ON thermal control mode, sensor gains are 0 db, and the feedback loop filter commanded OUT in order to achieve seismic network congruity. No major seismic signals have been noted during the limited real time support of this instrument. The instrument's uncage/arm fire circuitry will remain in the OT state to deliver maximum heat into the sensor assembly for lunar night operations.
Lunar surface magnetometer experiment	The experiment's sensors are presently in the 50 gamma range (gamma range change executed 27 January) for lunar night operation. Currently the instrument has executed 793 flip calibration sequences since activation. The experiment's y-axis sensor head remains fixed at a 180 degree position, not responding to flip cal commands. The experiment's y-axis sensor has indicated off-scale LOW (static) since 20 September 1972.
Solar wind spectrometer experiment	At 0156 G.m.t., 26 January, (sun angle of 177°) the instrument was commanded to operate select to provide data for analysis of the instrument's anomalous operation. The telemetry data continuously indicated out of sync. A steady source of interference to the passive seismometer and supra-thermal ion detector experiments by the SWS experiment was noted. The instrument was commanded to standby select at 0204 G.m.t. (8 minutes operation). Power requirement appeared normal during the operating time of the instrument. It is currently planned to leave the experiment in standby select and operate it periodically (monthly) per SMEAR #46 to ascertain instrument status.

Apollo 15 ALSEP (continued)

Operational status from 26 January 1973, 0600 G.m.t., to 2 February 1973, 0600 G.m.t.

Suprathermal ion detector/cold cathode gauge experiment	The instrument is presently operating in the full automatic stepping sequence (0-127 frames) with the Channeltron high voltages commanded ON.
Heat flow experiment	The temperature of probe 1 at the bottom of the lowest probe section is 253.2°K, with probe 2 indicating a temperature of 250.7°K at its lower-most point. The instrument's cable thermocouples on the lunar surface indicate a temperature of approximately 89.2°K. Since 29 May 1972, the instrument's measurement TREF 2 has continually displayed erroneous data. A duplicate measurement TREF 1, is operating normally so that no data are lost.

Apollo 14 ALSEP

Operational status from 26 January 1973, 0600 G.m.t., to 2 February 1973, 0600 G.m.t.

Central station

Sunset of the 25th lunar day at the Apollo 14 landing site occurred 28 January. Power output of the radioisotope source is unvarying; and, transmitter "A" signal strength was reported between -137.0 dbm end -140.5 dbm. The central station's DSS-1 heater (10 watts) was commanded ON for lunar night operations at 0242 G.m.t., 27 January; average thermal plate temperature was 61.0°F.

Passive seismic experiment

This instrument is configured; thermal control auto ON, 0 db gain on all sensors, and filter OUT. The instrument's long period z-axis has not displayed valid data nor responded to commands since 17 November 1972. No major seismic events have been noted during real-time support. At 2030 G.m.t., 29 January, a spurious CVW (octal 073, Uncage Arm/Fire) was observed by the Honeysuckle ground station. During real-time support, 30 January, data confirmed that the Arm/Fire circuit was in the OT state and the spurious CVW had taken effect. Beginning at 0528 G.m.t., 30 January, five commands (Octal 073) were sent by mission control to return the Uncage Arm/Fire to the Uncage state without success. This was the 47th spurious functional change in the Apollo 14 station since activation in February 1971.

Active seismic experiment

Currently in standby select with a 30-minute passive listening mode planned for 3 February. On 27 January, experiment commanded ON at 0254 G.m.t., data output of geophones 1 and 2 appeared normal; geophone 3 was offscale HIGH/intermittent. No geophone calibration pulses were sent during the listening mode operation. High bit rate terminated at 0330 G.m.t., and the instrument commanded to standby at 0334 G.m.t. No significant signals were noted in real time.

Suprathermal ion detector/cold cathode gauge experiment

Operating in the full automatic stepping sequence with the Channeltron high voltages commanded ON. Intermittent positive engineering data interruptions (anomaly occurred 9 May 1971) in one section of the analog-to-digital filter are having no adverse effect on the scientific outputs of the experiments.

Apollo 14 ALSEP (continued)

Operational status from 26 January 1973, 0600 G.m.t., to 2 February 1973, 0600 G.m.t.

Charge particle lunar environmental experiment	Under a revised operations procedure (reference SMEAR #79) the experiment was configured to automatic thermal control mode indefinitely. The instrument is presently operating in the full auto mode. Analyzer A voltage appears normal and analyzer B voltage is below operating limits.

Apollo 12 ALSEP

Operational status from 26 January 1973, 0600 G.m.t., to 2 February 1973, 0600 G.m.t

Central station	Sunset of the packages 40th lunar day occurred 28 January; RTG power output is constant; and transmitter "B" signal strength was reported at -141.5 ± 2.5 dbm. The central station's DSS-1 heater (10 watts) was commanded ON at 1140 G.m.t., 28 January when the average thermal plate temperature decreased to 25.9°F.
Passive seismic experiment	The instrument's thermal control mode is auto ON, the sensor gains at 0 db, and the feedback loop filter commanded OUT. No seismic signals have been noted in real-time during this reporting period. The instrument's z-axis drive motor was commanded ON for lunar night operating during January 28 support period. The DL-07 temperature returned on-scale 28 January.
Lunar surface magnetometer experiment	Scientific and engineering data have been static since 4 June 1972. The instrument's digital filter remains commanded IN.
Solar wind spectrometer experiment	This experiment continues to return scientific data on solar wind plasma magnetosphere plasma and magnetopause crossings, by sensing the direction and energies of both electrons and positive ions.
Suprathermal ion detector experiment	The instrument was commanded, to operate select, automatic stepping sequence (0-127 frames) at 0247 G.m.t., 27 January, for lunar night operation. On 28 January the SIDE downlink became static (digital words all zeroes) three times during real-time support and remained so through termination of support at 1600 G.m.t. At 0528 G.m.t., 30 January, the SIDE downlink became valid during real-time support and has remained valid.

Status as of 0600 G.m.t., 1 February 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1170	727	551	286
Total Commands to Date	16250	8495	13917	4958
Sun Angle	224°	230°	251°	263°
Input Power	68.9w	71.0w	72.9w	70.6w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	14.2°F	33.3°F	1.1°F	40.8°F
PSE Sensor Temp (DL-07)	126.2°F	124.2°F	124.5°F	125.8°F
LSM Internal Temp (DM-05)	Invalid	N/A	3.8°C	-7.7°C
SWS Module 300 Temp (DW-13)	-15.3°C	N/A	Standby	N/A
SIDE Temp (DI-05)	3.7°C	Invalid	7.2°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	112.2°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-20.0°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-62.0°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.2°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	51
Total Commands to Date	4584
Sun Angle	279°
Input Power	76.5w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	25.2°F
LMS Temp (AM-41)	13.4°F
LEAM Temp (AJ-11)	-20.8°F
HFE Temp Ref 1 (DH-13)	289.8°F
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	26.5°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

9 February 1973
G.m.t.: 1300

Apollo 17 ALSEP

All experiments are operating per the established plan. Power from the RTG remains constant. The downlink received signal is reported at -137.5 ± 2.5 dbm. Engineering measurements of the central station's electronics and thermal plate temperatures continue to alternate between the APM 2 set points of 60°F and 80°F. During the second lunar night, the central station's average thermal plate temperature stabilized at a minimum temperature of 25°F, within 2°F of the first lunar night temperature. The station's command decoder switch inhibit pulse is occurring as anticipated. The planned procedure to inhibit the output of this pulse is being maintained.

The Heat Flow Experiment temperature sensors and thermocouples in the cable are continuing to track the temperatures on and below the lunar surface. The HFE is currently operating in the gradient mode, with all sensors being sampled in full sequence. On 8 February, the instrument was commanded to the thermocouple mode (thermocouple 11 only) for a period of 51 minutes to gather background data necessary for accurate thermocouple analysis. Lunar surface temperature as measured by the HFE's thermocouples is 270 ± 8°K. Subsurface temperature at 230 cm depth is 256.5°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment's pivot beam that measures seismic disturbances remains centered but not completely free. The instrument continues to collect seismic and free mode information. Analysis of science data recorded to date is underway. The experiments housekeeping data continues to indicate very stable operation.

The Lunar Seismic Profiling Experiment is in standby select, with the next 30-minute passive listening period planned for 16 February. LSPE passive listening mode operations were conducted on 3 and 8 February as follows:

Date	LSPE ON G.m.t.	HBR ON G.m.t.	HBR OFF G.m.t.	LSPE STBY G.m.t.	Geophone Cals	Events
3	0321	0330	0410	0448	Two	None
8	1119	1130	1200	1206	Two	None

ALSEP STATUS REPORT (concluded)

9 February 1973
G.m.t.: 1300

The Lunar Atmospheric Composition Experiment continued to collect data on the composition of the lunar atmosphere throughout lunar night. Real time support for the LACE was conducted from 0545 G.m.t. through 1329 G.m.t., 8 February, to collect near sunrise data and to obtain additional outgassing rates of the site and instrument. The instrument's high voltage was commanded OFF at 1329 G.m.t., 8 February, when the gas pressure in the ion source due to hydrocarbon molecules became sufficient enough to degrade the ion source sensitivity. (Apollo 17 SMEAR, ALSEP 42) It is planned that the LACE will be commanded OFF during real-time support 10 February and will remain OFF until 15 February. Subsequent turn-on for science data is planned for 15 February.

The Lunar Ejecta and Meteorites Experiment continued to collect statistical data of impact flux rates on the lunar surface throughout lunar night. The experiment's periodic calibrate pulses are occurring as anticipated. On 8 February, the LEAM was commanded to standby for a 60 minute period in an effort to avoid the possible phenomena associated with lunar sunrise and lunar dust transport. (Apollo 17 SMEAR, ALSEP 41) The LEAM will be commanded OFF for the remainder of this lunar day on 9 February, due to elevated internal temperatures. Analysis of the elevated temperatures is currently in process.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Apollo 16 ALSEP

Operational status from 26 January 1973, 0600 G.m.t., to 9 February 1973, 1300 G.m.t.

Central station	Sunrise of the 11th lunar day will occur today, 9 February at the Descartes Site. The thermoelectric power source output is normal. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength of -141.0 ± 3.0 dbm from transmitter "A". The central station's DSS-1 heater (10 watt) remains ON. It is planned to command the DSS-1 heater ON 10 February.
Passive seismic experiment	Experiment operation continues with the feedback loop filter commanded OUT, the sensor gains of all components configured to 0 db, and thermal control in auto ON. The instrument's x axis tidal data returned on-scale 3 February. The y axis leveling motor does not respond to leveling commands. This is characteristic of lunar night operation. No significant seismic events were noted during the limited real-time support.
Lunar surface magnetometer experiment	The experiment continues normal operation. The instrument's 306th flip calibration sequence was executed correctly by command on 8 February. The experiment is presently configured with the digital filter commanded OUT, the flip cal inhibit logic commanded IN, and the sensors in the 200 gamma range.
Active seismic experiment	The experiment is in standby OFF with a 30-minute passive listening mode scheduled later today, 9 February 1973.

Apollo 15 ALSEP

Operational status from 26 January 1973, 0600 G.m.t., to 9 February 1973, 1300 G.m.t.

Central station	Sunrise of the station's 20th lunation will occur today, 11 February; power from the RTG continues steady and transmitter "A" downlink signal strength is reported at -136.7 ± 3.2 dbm.
Passive seismic experiment	Operation is in the auto ON thermal control mode, sensor gains are 0 db, and the feedback loop filter commanded OUT in order to achieve seismic network congruity. No significant seismic events were noted during the intermittent real-time support for this period.
Lunar surface magnetometer experiment	The experiment's sensors are in the 100 gamma range. Currently the instrument has executed 799 flip calibration sequences since activation. The experiment's y-axis sensor has indicated off-scale LOW (static) since 20 September 1972.
Solar wind spectrometer experiment	Presently in standby select. The instrument has not been commanded to operate select since 19 January 1973. It is currently planned to leave the experiment in standby select per SMEAR #46. Periodically (monthly), the experiment will be commanded to operate select to ascertain the instrument status. The previous operate select periods provided additional data points sufficient to conclude that the experiment has not recovered from its anomalous operation.
Suprathermal ion detector/cold cathode gauge experiment	Operating in the full automatic stepping sequence (0-127 frames) with the Channeltron high voltages commanded ON.
Heat flow experiment	The temperature of probe 1 at the bottom of the lowest probe section is 253.1°K with probe 2 indicating a temperature of 250.7°K at its lowermost point. The instrument's cable thermocouples on the lunar surface indicate a temperature of approximately 171.7°K. Since 29 May 1972, the instrument's measurement TREF 2 has continually displayed erroneous data. A duplicate measurement, TREF 1, is operating normally so that no data are lost.

Apollo 14 ALSEP

Operational status from 26 January 1973, 0600 G.m.t. to 9 February 1973, 1300 G.m.t

Central station	Sunrise of the 26th lunar day at the Apollo 14 landing site will occur on 11 February. Power output of the radioisotope source is steady and transmitter "A" signal strength was reported at -141.0 ± 2.0 dbm. The central station's DSS-1 heater (10 watts) is ON for lunar night operations. At 2255 G.m.t., 4 February, the Hawaii tracking station noted a spurious command verification word, octal 042, active seismic experiment ON, in the ALSEP downlink telemetry and a subsequent verification in the standby status telemetry, AB-05. The ASE was returned to standby at 2309 G.m.t. without incident.
Passive seismic experiment	This instrument is configured to 0 db gain on all sensors and filter OUT. The instrument's heater is ON. No significant seismic events were noted during the limited real-time support for this period.
Active seismic experiment	Currently in standby with a 30-minute passive listening period scheduled today, 9 February.
Suprathermal ion detector/cold cathode gauge experiment	Operating in the full automatic stepping sequence with the Channeltron high voltages commanded ON. Intermittent positive engineering data interruptions (anomaly occurred 9 May 1971) in one section of the analog-to-digital filter are having no adverse effect on the scientific outputs of the experiments.
Charged particle lunar environmental	Operating in its full automatic voltage stepping sequence (automatic thermal control ON). It is planned to continue uninterrupted operations of the CPLEE under the revised operational guidelines referenced in SMEAR's #77, 78 and 79.

Apollo 12 ALSEP

Operational status from 26 January 1973, 0600 G.m.t., to 9 February 1973, 1300 G.m.t.

Central station	Sunrise of the 41st lunar day will occur on 12 February; RTG power output is constant; and, transmitter "B" signal strength was reported at -140.7 ± 1.2 dbm. The central station's DSS-1 heater (10 watts) is ON, for lunar night operation.
Passive seismic experiment	The instrument's thermal control mode is auto ON, the component gains are configured to 0 db, and the feedback loop filter commanded OUT. The instrument's z-axis drive motor is ON for lunar night operation. The PSE's sensor temperature (DL-07) returned on-scale 27 January. No significant seismic events were noted during this intermittent real-time support period.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid, as experienced since 4 June 1972.
Solar wind spectrometer experiment	Uninterrupted operations in the low gain mode, since 7 August 1972, recording solar wind plasma data for subsequent long term analysis.
Suprathermal ion detector experiment	The instrument is commanded to operate select, automatic stepping sequence, for uninterrupted lunar night operation. The experiment experienced an unexpected command register load of reset frame counter at 9, at 0332 G.m.t., 6 February. The instrument's command register was cleared at 0334 G.m.t. without incident.

Status as of 1400 G.m.t., 8 February 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1177	734	558	293
Total Commands to Date	16270	8507	14013	4990
Sun Angle	314.7°	320.7°	341.8°	353.7°
Input Power	68.4w	70.0w	72.3w	70.4w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	14.7°F	31.9°F	0.8°F	40.5°F
PSE Sensor Temp (DL-07)	125.9°F	124.09°F	124.3°F	125.8°F
LSM Internal Temp (DM-05)	Invalid	N/A	3.8°C	-8.96°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	Standby	N/A
SIDE Temp (DI-05)	3.7°C	Invalid	7.2°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	106.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-19.9°	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-66.0	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.2°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	58
Total Commands to Date	4916
Sun Angle	8.7°
Input Power	76.2w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	61.5°F
LMS Temp (AM-41)	55.7°F
LEAM Temp (AJ-11)	71.0°F
HFE Temp Ref 1 (DH-13)	291.3°K
LSG Temp (DG-04)	49.1°F
LSP Temp (AP-01)	63.1°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

16 February 1973
G.m.t.: 1300

Apollo 17 ALSEP

All experiments and the central station are operating per the established plan. Power from the RTG remains constant. The downlink received signal is reported at -137.5 ± 2.5 dbm. The station's command decoder switch inhibit pulse is occurring as anticipated. The planned procedure to inhibit the output of this pulse is being maintained. Average thermal plate temperature is tracking within five degrees of the second lunar day noon thermal profile for an identical operational configuration of the LACE and LEAM OFF, and the LSPE in standby.

The Heat Flow Experiment continues to operate normally, with periodic ring bridge survey's being accomplished. On 16 February the instrument was commanded to the thermocouple mode (thermocouple 11 only) for a duration of one hour to gather background data necessary for accurate thermocouple analysis. This operating mode is identical to that performed on 8 February 1973. The HFE is currently operating in the gradient mode, with all sensors being sampled in full sequence. Lunar surface temperature as measured by the HFE's thermocouples is 392 ± 8°K. Subsurface temperature at 230 cm depth is 256.4°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment continues to collect data in the seismic and free mode channels. All subsystems including the mass-changing, beam clamp/unclamp, screw drive, thermal control, pressure and electronics are operating nominally.

The Lunar Seismic Profiling Experiment is in standby select, with the next 30-minute passive listening period planned for 22 February. The experiment was commanded ON at 0340 G.m.t., 15 February, and to LSPE data format processing (high bit rate) at 0403 G.m.t., for a thirty-minute passive listening period. Two geophone calibration pulses were sent during the listening period. Data output of the geophones appeared normal. LSPE processing was terminated at 0433 G.m.t., and the instrument commanded to standby select at 0436 G.m.t.

The Lunar Atmospheric Composition Experiment is currently OFF. During real-time support on 16 February the LACE was commanded ON for 30 minutes for the collection of science data. It is planned the LACE will remain in the OFF mode until the electronics temperature (AM-41) decreases to 32°F. The LACE will then be placed to standby select prior to ephemeris sunset. Currently the electronics temperature (AM-41) is tracking its second lunar day thermal profile exactly.

The Lunar Ejecta and Meteorites Experiment was commanded OFF for the remainder of this lunar day on 10 February, due to elevated internal temperatures. The instrument's mirror temperature (AJ-11) peaked at 172.8°F, which is 25°F less than the maximum temperature of the second lunar day.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Apollo 16 ALSEP

Operational status from 9 February 1973, 1300 G.m.t, to 16 February, 1300 G.m.t.

Central station

Sunrise of the 11th lunar day occurred on 9 February 1973 at the Descartes Site. The DSS-1 (10 watts) heater was commanded OFF at 0217 G.m.t., 10 February, when the average thermal plate temperature was 72.9°F. The thermoelectric power source output is normal. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -139.0 dbm and -143.5 dbm from transmitter "A".

Passive seismic experiment

Experiment operation continues with the feedback loop filter commanded OUT, the sensor gains of all components configured to 0 db, and the sensor assembly temperature stabilized (auto ON thermal control mode). The uncage/arm fire circuit is configured to the uncaged state. The instrument will be configured in this manner throughout lunar day. At 0222 G.m.t., 10 February 1973, the y-axis responded to leveling commands. Previous attempts to level the y-axis since 27 January 1973 were not successful. No significant seismic events were noted during the limited real time support. The instrument's sensor assembly temperature was off-scale HIGH during real-time support, 15 February (sun angle, 72.7°). It is projected to return on-scale 24 February 1973.

Lunar surface magnetometer experiment

The instrument's 315th flip calibration sequence was executed correctly by command on 16 February. The experiment is presently configured with the digital filter commanded IN, the flip cal inhibit logic commanded ON, and the sensors in the 200 gamma range. At the beginning of real time support, 15 February, the LSM telemetry science data was static. All engineering data appeared valid. The experiment was commanded to standby at 0207 G.m.t. and back to ON at 0210 G.m.t. Three flip calibration commands were executed and there was no change in science data output. The experiment was initialized in X thermal control and the y-axis and z-axis offsets commanded to +75% with no difficulty (sun angle, 72.7°C; internal temperature 53.5°C) 0213 G.m.t., 15 February. The LSM science data was valid at the start of real-time support at 0133 G.m.t., 16 February 1973. Following a sequence of commands, on 16 February it was determined that the most probable cause for the apparent static science data on 15 February was a temporary malfunction of the instrument's digital filter. It is the planned procedure to command the digital filter OUT if this anomalous condition reappears.

Operational status from 9 February 1973, 1300 G.m.t., to 16 February, 1300 G.m.t.

Active seismic experiment	The experiment is in standby OFF with a 30-minute passive listening period scheduled for today. On 10 February 1973 the experiment was commanded to operate select at 0215 G.m.t. and to high bit rate ON at 0230 G.m.t. for a passive listening period. Two geophone calibration pulses were sent to the instrument during the listening mode. Data output of all geophones appeared normal and no significant signals were noted in real-time. High bit rate operations were terminated at 0300 G.m.t. and the experiment commanded to standby OFF at 0305 G.m.t.

Apollo 15 ALSEP

Operational status from 9 February 1973, 1300 G.m.t., to 16 February 1973, 1300 G.m.t.

Central station	Sunrise of the station's 20th lunation occurred 10 February 1973; power from the RTG continues steady and transmitter "A" downlink signal strength is reported at -136.5 ± 3.0 dbm. The 18-hour timer was initiated for day operations at 0130 G.m.t., 10 February.
Passive seismic experiment	Operation is in the auto ON thermal control mode, sensor gains are 0 db, and the feedback loop filter commanded OUT in order to achieve seismic network congruity. No significant seismic events were noted during the intermittent real time support of this experiment. At 0950 G.m.t., 14 February 1973, the instrument experienced a spurious command (octal 073) to the instrument's uncage/arm fire circuitry. As the 18-hour timer is presently operating unhibited no adverse effects were encountered by this spurious command. Therefore, a corrective command was not entered. The seismometer's sensor temperature (DL-07) indicated offscale HIGH during real time support 16 February (sun angle, 72.7 degrees). It is projected to return onscale 20 February.
Lunar surface magnetometer experiment	The experiment's sensors are presently in the 100 gamma range for lunar day operation. The experiment is indicating passage of the moon through the earth's geomagnetic tail. Currently the instrument has executed 810 flip calibration sequences since activation. The experiment's y-axis sensor head remains fixed at a 180 degree position, not responding to flip cal commands. The experiment's y-axis sensor has indicated off-scale LOW (static) since 20 September 1972.
Solar wind spectrometer experiment	Presently in standby select pending further analysis per SMEAR #45. The instrument has not been commanded to operate select since 26 January 1973.
Suprathermal ion detector/cold cathode gauge experiment	Operating in the full automatic stepping sequence (0-127 frames) with the Channeltron high voltages commanded ON.
Heat flow experiment	The temperature of probe 1 at the bottom of the lowest probe section is 253.1°K, with probe 2 indicating a temperature of 250.7°K at its lowermost point. The instrument's cable thermocouples on the lunar surface indicate a temperature of approximately 368.6°K. Since 29 May 1972, the instrument's measurement TREF 2 has continually displayed erroneous data. A duplicate measurement, TREF 1, is operating normally so that no data are lost.

Apollo 14 ALSEP

Operational status from 9 February 1973, 1300 G.m.t., to 16 February 1973, 1300 G.m.t.

Central station	Sunrise of the 26th lunar day at the Apollo 14 landing site occurred 11 February 1973. Power output of the radioisotope source is unvarying; and, transmitter "A" signal strength was reported between -138.0 dbm and -141.5 dbm. The central station's DSS-1 heater (10 watts) was commanded OFF for lunar day operations at 0159 G.m.t., 12 February.
Passive seismic experiment	This instrument is configured identically to the other seismometer's (0 db gain on all sensors, and filter OUT) in order to match seismic response. The experiment's thermal control system was commanded to forced OFF, 16 February (sun angle = 52 degrees). The instrument's long period z-axis has not displayed valid data nor responded to commands since 17 November 1972. The uncage arm/fire circuit has been in the OT state since 30 January 1973. No major seismic events have been noted during real-time support.
Active seismic experiment	Currently in standby select with the next 30-minute passive listening mode planned for 16 February. On 12 February 1973, the experiment was commanded to operate select at 1611 G.m.t. and to high bit rate ON at 1630 G.m.t. Geophone 3 indicated offscale HIGH, and no significant signals were noted in real-time. No geophone calibration pulses were sent to the instrument during the listening mode. High bit rate operation was terminated at 1700 G.m.t. and the instrument commanded to standby at 1703 G.m.t.
Suprathermal ion detector/cold cathode gauge experiment	Operating in the full automatic stepping sequence with the Channeltron high voltages commanded ON. Intermittent positive engineering data interruptions (anomaly occurred 9 May 1971) in one section of the analog-to-digital filter are having no adverse effect on the scientific outputs of the experiments.
Charged particle lunar environmental	Operating in its full automatic voltage stepping sequence (automatic thermal control ON). It is planned to continue uninterrupted operations of the CPLEE under the revised operational guidelines referenced in SMEAR's #77, 78 and 79.

Apollo 12 ALSEP

Operational status from 9 February 1973, 1300 G.m.t., to 16 February 1973, 1300 G.m.t.

Central station	Sunrise of the 41st lunar day occurred on 12 February 1973; RTG power output is constant; and transmitter "B" signal strength was reported between -136.0 dbm and -139.5 dbm. The central station's DSS-1 heater (10 watts) was commanded OFF at 1412 G.m.t., 12 February, when the central station's average thermal plate temperature increased to 41.6°F.
Passive seismic experiment	The instrument's thermal control mode is auto ON, the component gains at 0 db, and the feedback loop filter commanded OUT. The instrument's z-axis drive motor was commanded OFF at 1409 G.m.t., 12 February, for lunar day operation when the instrument's sensor assembly temperature (DL-07) was 126.3°F. No significant seismic signals were noted during the intermittent real-time support.
Lunar surface magnetometer experiment	Scientific and engineering data have been static since 4 June 1972. The instrument's digital filter remains commanded IN.
Solar wind spectrometer experiment	This experiment continues to perform its design function well beyond its planned operational period, returning more than three years of scientific data on solar wind plasma, magnetosphere plasma and magnetopause crossings, by sensing the direction and energies of both electrons and positive ions.
Suprathermal ion detector experiment	At the beginning of real time support 15 February, the experiment had experienced a X10 mode change (T2 = 64.53°C). The instrument was commanded to standby OFF without incident. Cyclic commanding of the instrument in the full automatic stepping sequence with Channeltron high voltages ON to experiment power OFF will be initiated on 16 February 1973 in an effort to preclude instrument mode changes at internal temperatures above 55.5°C.

Status as of 0300 G.m.t., 16 February 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1185	742	566	301
Total Commands to Date	16340	8560	14213	5168
Sun Angle	45°	52°	73°	85°
Input Power	68.1w	69.5w	72.3w	70.4w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	90.6°F	109.4°F	112.8°F	110.0°F
PSE Sensor Temp (DL-07)	127.3°F	129.1°F	Offscale HIGH	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	66.0°C	50.8°C
SWS Module 300 Temp (DW-13)	60.9°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Invalid	88.2°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	364.0°K	N/A
CPLEE Elect Temp (AC-06)	N/A	66.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	66.9°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	328.4°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	66
Total Commands to Date	5025
Sun Angle	99°
Input Power	76.3w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LACE & LEAM OFF/LSPE Stby
Avg Thermal Plate Temp	124.3°F
LMS Temp (AM-41)	75.8°F
LEAM Temp (AJ-11)	180.5°F
HFE Temp Ref 1 (DH-13)	327.8°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	126.0°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

23 February 1973
G.m.t.: 1300

Sunset of the third lunar day occurred on 22 February at the Taurus Littrow site. Station telemetry data indicates virtually no change in the experiments package status compared to the second lunar day operation. The central station's electronic and structural temperatures continue the anticipated temperature decrease, while the thermoelectric power source output, and transmitter "A" signal strength remain essentially unchanged.

The Heat Flow Experiment continues to operate normally, with periodic ring bridge survey's being accomplished. The HFE is currently operating in the gradient mode, with all sensors being sampled in full sequence. Lunar surface temperature as measured by the HFE's thermocouples is 308 ± 8°K. Subsurface temperature at 230 cm depth is 256.4°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment continues to collect data in the seismic and free mode channels. All subsystems including the mass-changing, beam clamp/unclamp, screw drive, thermal control, pressure and electronics are operating nominally.

The Lunar Seismic Profiling Experiment is in standby select, with the next 30-minute passive listening period planned for today, 23 February.

The Lunar Atmospheric Composition Experiment was commanded ON for the remainder of this lunation 22 February, 1102 G.m.t. During real-time support on 20 and 22 February, the LACE was commanded ON for one sweep of the mass ranges for the collection of science data. Currently the electronics temperature (AM-41) is tracking its second lunar day terminator profile exactly.

The Lunar Ejecta and Meteorites Experiment was commanded ON for the remainder of this lunar day on 20 February. The LEAM had been commanded OFF since 10 February due to elevated internal temperatures. The instrument's mirror temperature (AJ-11) is tracking the second lunation sunset terminator temperature profile exactly. The instrument was commanded to STANDBY for a 114 minute period, 22 February, in an effort to avoid the possible phenomena associated with lunar sunset and lunar dust transport (Apollo 17 SMEAR, ALSEP 41).

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Apollo 16 ALSEP

Operational status from 16 February 1973, 1300 G.m.t., to 23 February 1973, 1300 G.m.t.

Central station

Sunset of the 11th lunar day will occur today, 23 February at the Descartes Site. The thermoelectric power source output is normal. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength of -142.2 + 2.3 dbm from transmitter "A".

Passive seismic experiment

Experiment operation continues with the feedback loop filter commanded OUT, the sensor gains of all components configured to 0 db, and thermal control in auto ON. The instrument's sensor assembly temperature (DL-07) is expected to return on-scale today, 23 February, (sun angle 175°). No significant seismic events were noted during the limited real-time support. At the start of real-time support 20 and 22 February, it was noted that the PSE had executed a spurious functional change in the ARM/FIRE status from UNCAGED to CT. No CVW's were noted in the ALSEP downlink history.

Lunar surface magnetometer experiment

The Lunar Surface Magnetometer remains ON with invalid science data. At the beginning of real-time support, 16 February, the instrument science data was again invalid similar to the February 14 support and would not respond to flip calibrations or filter commands. The instrument is presently configured with the digital filter OUT, flip cal inhibit logic commanded ON, and sensors in the 200 gamma range.

Active seismic experiment

The experiment is in standby OFF with a 30-minute passive listening period scheduled for today. On 16 February 1973 the experiment was commanded to operate select at 2112 G.m.t. and to high bit rate ON at 2130 G.m.t. for a passive listening period. Two geophone calibration pulses were sent to the instrument during the listening mode. Data output of all geophones appeared normal and no significant signals were noted in real-time. High bit rate operations were terminated at 2200 G.m.t., and the experiment commanded to standby OFF at 2204 G.m.t.

Apollo 15 ALSEP

Operational status from 16 February 1973, 1300 G.m.t., to 23 February 1973, 1300 G.m.t.

Central station	Sunset of the station's 20th lunation will occur 24 February; power from the RTG continues steady; and, transmitter "A" downlink signal strength is reported at -137.1 ± 1.9 dbm.
Passive seismic experiment	Operation is in the auto ON thermal control mode, sensor gains are 0 db, and the feedback loop filter commanded OUT in order to achieve seismic network congruity. The instrument's sensor assembly temperature (DL-07) was onscale 20 February. No significant seismic events were noted during the intermittent real-time support for this period.
Lunar surface magnetometer experiment	The experiment's sensors are in the 100 gamma range and will be commanded to the 50 gamma range for lunar night operation on 24 February. Currently the instrument has executed 812 flip calibration sequences since activation. Flip calibration sequences were resumed for this lunar day, 22 February, as the sensor internal temperature decreased below 62°C. The experiment's y-axis sensor has indicated off-scale LOW (static) since 20 September 1972.
Solar wind spectrometer experiment	Presently in standby select. The instrument has not been commanded to operate select since 19 January 1973. It is currently planned to leave the experiment in STANDBY (Apollo 15 SMEAR, ALSEP 46). Periodically, the experiment will be commanded to operate select to ascertain the instrument status. The previous operate select periods provided additional data points sufficient to conclude that the experiment has not recovered from its anomalous operation.
Suprathermal ion detector/cold cathode gauge experiment	Operating in the full automatic stepping sequence (0-127 frames) with the Channeltron high voltages commanded ON.
Heat flow experiment	The temperature of probe 1 at the bottom of the lowest probe section is 253.1°K, with probe 2 indicating a temperature of 250.7°K at its lowermost point. The instrument's cable thermocouples on the lunar surface indicate a temperature of approximately 310.5°K. Since 29 May 1972, the instrument's measurement TREF 2 has continually displayed erroneous data. A duplicate measurement, TREF 1, is operating normally so that no data are lost.

Apollo 14 ALSEP

Operational status from 16 February 1973, 1300 G.m.t., to 23 February 1973, 1300 G.m.t.

Central station	Sunset of the 26th lunar day at the Apollo 14 landing site will occur on 26 February. Power output of the radioisotope source is steady and transmitter "A" signal strength was reported at -139.5 ± 1.5 dbm. The central station's DSS-1 heater (10 watts) will be commanded ON for lunar night operations on 26 February.
Passive seismic experiment	This instrument is configured to 0 db gain on all sensors and filter OUT. On 22 February, the instrument's heater was commanded to auto ON for the remainder of this lunation. No significant seismic events were noted during the limited real-time support for this period.
Active seismic experiment	Currently in standby select with the next 30-minute passive listening mode planned for 23 February. On 22 February 1973, the experiment was commanded to operate select at 0256 G.m.t. and to high bit rate ON at 0300 G.m.t. Geophone 3 indicated offscale HIGH, and no significant signals were noted in real-time. No geophone calibration pulses were sent to the instrument during the listening mode. High bit rate operation was terminated at 0330 G.m.t. and the instrument commanded to standby at 0332 G.m.t.
Suprathermal ion detector/cold cathode gauge experiment	Operating in the full automatic stepping sequence with the Channeltron high voltages commanded ON. Intermittent positive engineering data interruptions (anomaly occurred 9 May 1971) in one section of the analog-to-digital filter are having no adverse effect on the scientific outputs of the experiments.
Charged particle lunar environmental	The CPLEE was commanded to STANDBY select at 1700 G.m.t., 18 February, and remained in that mode until 1334 G.m.t., 20 February. This 43 hour period being the time of maximum ultraviolet radiation from the sun directly into the experiment's analyzer A helix Channeltron aperture. Direct ultraviolet contamination results in a substantial increase of photon counts in the Channeltron. This operational procedure also results in extension of the Channeltron's photo-multiplier effectivity. On 22 February, the instrument's Channeltron "A" high voltage decreased to 1632 volts and the instrument was commanded to STANDBY at 0215 G.m.t., 22 February. It is planned that the CPLEE remain in STANDBY select until 28 February.

Apollo 12 ALSEP

Operational status from 16 February 1973, 1300 G.m.t., to 23 February 1973, 1300 G.m.t.

Central station

Sunset of the 41st lunar day will occur on 27 February; RTG power output is constant; and, transmitter "B" signal strength was reported at -141.0 ± 2.0 dbm. The central station's DSS-1 heater (10 watts) will be commanded ON 28 February for lunar night operation.

Passive seismic experiment

The instrument's thermal control mode is auto ON, the component gains are configured at 0 db, and the feedback loop filter commanded OUT. The instrument's z-axis drive motor will be commanded ON 28 February for lunar night operation. At 1329 G.m.t., 20 February, the PSE's sensor temperature (DL-07) was off-scale HIGH (sun angle = 100°) and is projected to return onscale on 24 February. No significant seismic events were noted during this intermittent real-time support period.

Lunar surface magnetometer experiment

Scientific and engineering data outputs remain invalid, as experienced since 4 June 1972.

Solar wind spectrometer experiment

Uninterrupted operations in the low gain mode, since 7 August 1972, recording solar wind plasma data for subsequent long term analysis. At 0042 G.m.t., 22 February, the sum cup modulation voltages in proton energy levels 13 and 14 were the same as level 12. This anomaly was last noted 29 August 1972 and has no effect on science data. The data was valid at 1717 G.m.t., 22 February.

Suprathermal ion detector experiment

Cyclic commanding of the instrument in the full automatic stepping sequence with Channeltron high voltages ON to experiment power OFF was initiated on 15 February 1973 in an effort to preclude instrument mode changes at internal temperatures above 55°C. However, the experiment experienced one mode change to X10 mode (0341 G.m.t., 22 February, T2 = 59.4°C). The instrument was commanded to standby OFF after the mode change and returned to operate select without incident when the internal temperatures had cooled sufficiently. The instrument will be commanded to operate select, automatic stepping sequence, for uninterrupted lunar night operation on 24 February.

Status as of 1800 G.m.t., 22 February 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1191	748	572	307
Total Commands to Date	16390	8595	14285	5308
Sun Angle	124°	130°	151°	162°
Input Power	68.1w	69.5w	72.3w	70.1w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE & CPLEE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	90.2°F	101.0°F	96.1°F	72.9°F
PSE Sensor Temp (DL-07)	Offscale HIGH	132.5°F	127.0°F	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	62.6°C	28.0°C
SWS Module 300 Temp (DW-13)	63.5°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Invalid	75.6°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	331.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	N/A	N/A
ASE GLA Temp (AS-03)	N/A	82.0°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	311.1°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	72
Total Commands to Date	5128
Sun Angle	177°
Input Power	77.5w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	69.4°F
LMS Temp (AM-41)	72.9°F
LEAM Temp (AJ-11)	108.9°F
HFE Temp Ref 1 (DH-13)	290.9°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	71.4°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

2 March 1973
G.m.t.: 1200

Remote site coverage for recording of Apollo 12 ALSEP downlink data was not available from 0139 to 0200 G.m.t., 25 February; 0228 to 0250 G.m.t., 26 February; and 0006 to 0427 G.m.t., 28 February. Negotiations are progressing to achieve an agreement which will minimize the loss of downlink data.

Apollo 17 ALSEP

Midnight occurs today, 2 March, at Taurus-Littrow. The central station is in normal operation with the automatic power manage circuit functioning as designed. The average thermal plate temperature is currently within 0.5°F of the second lunar night temperature profile. The structural components temperatures have stabilized and are tracking the temperature profile of the second lunation. Downlink RF signal strength is reported at -141.5 ± 4.0 dbm from transmitter "A". Thermoelectric power source output essentially remains unchanged. The procedure of inhibiting the internally generated 61-hour pulse continues with the command (octal 174) being sent to the command decoder switch during real-time support periods.

The Heat Flow Experiment is presently operating in the gradient mode and all sensors are being sampled in full sequence. Ring bridge surveys are being achieved on a periodic basis. Lunar surface temperature, as measured by the HFE thermocouples, is 108° ± 8°K. At a depth of 230 cm, the subsurface temperatures are 256.5°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment remains configured to collect data in the seismic and free mode channels. The mass-changing, beam clamp/unclamp, screw drive, thermal control, pressure, and electronics subsystems are operating nominally. The experiment's sensor temperature increased to 49.182°C (slave heater ON) during real-time support (0115 to 0400 G.m.t., 25 February 1973) and has remained so.

The Lunar Seismic Profiling Experiment is currently in STANDBY select. Passive listening mode operations were attempted on 24, 25 and 26 February as follows:

Date	LSPE ON G.m.t.	HBR ON G.m.t.	HBR OFF G.m.t.	LSPE STDBY G.m.t.	Geophone Cals	Signal Strength	Station
24	0357	0359	0420	0427	0	--	ACN
25	0209	0215	0235	0239	0	-141 to-142 dbm	ACN, CYI
26	0217	0230	0237	0240	0	-138 dbm	ACN

2 March 1973
G.m.t.: 1200

HBR was terminated early each time as data was not being processed due to the inability of the sites to obtain DECOM lock. The experiment was commanded ON at 1125 G.m.t., 28 February, and to LSPE data format processing (high bit rate) at 1155 G.m.t. Two geophone calibration pulses were sent. Data output appeared normal. Following a 30 minute listening period LSPE processing was terminated at 1225 G.m.t. The instrument was commanded to STANDBY select at 1228 G.m.t. The next listening period is scheduled for 9 March 1973.

The Lunar Atmospheric Composition Experiment continues to collect data on the lunar atmospheric composition since turn-on for lunar night on 22 February 1973. The present configuration is automatic sweep; high voltage power supply, ON; ion source filaments, ON; multipliers, HIGH; low voltage power supply, ON; discriminator level, HIGH; and back-up heater, ON. The LACE electronics temperature (AM-41) has currently stabilized at 13.4°F and is tracking the second lunar night temperature profile exactly.

The Lunar Ejecta and Meteorites Experiment continues to collect data of impact flux rates since turn-on for lunar night operation on 22 February 1973. The instrument's mirror temperature (AJ-11) is currently stabilized at -20.8°F, which is exactly the minimum temperature attained during the second lunar night.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Apollo 16 ALSEP

Operational status from 23 February 1973, 1300 G.m.t., to 2 March 1973, 1200 G.m.t.

Central station

The Descartes Site will experience midnight of the 11th lunation on 3 March 1973. Inhibiting of the 18-hour timer output pulses is continuing. Output of the RTG is normal. Signal strengths from transmitter "A" is between -137.0 dbm and -144.5 dbm, as reported by the tracking stations with 30-foot antenna. The DSS-1 heater (10 watts) was commanded ON at 0158 G.m.t., 23 February 1973, for lunar night operation when the average thermal plate temperature decreased to 63.7°F.

Passive seismic experiment

The experiment is configured in the AUTO ON thermal control mode, sensor gains 0 db, and the feedback loop filter commanded OUT for achievement of seismic network congruity. The uncage/arm fire circuit has remained in the UNCAGED state since the change from OT state by command on 22 February. On 25 February, for the fourth consecutive lunation, attempts to level the LP y-axis were not successful. The anomaly occurs at the beginning of lunar night and it is expected, from the past three occurrences, that attempts to level the LP y-axis will be successful after lunar sunrise. The instrument's sensor assembly temperature (DL-07) was 125.7°F and the sun angle was 195° at this time. The DL-07 temperature measurement returned onscale at the beginning of real-time support at 0100 G.m.t., 24 February. No significant seismic events have been noted during the limited real-time support of this instrument. Patterns of low-background noise and occasional small, high frequency signals are being sensed (typically night-time).

Lunar surface magnetometer experiment

The experiment is currently ON but the science data remains invalid. The instrument is configured in X thermal control, +75% for y-axis and z-axis offsets, digital filter OUT, flip cal inhibit logic ON, and the sensors in the 200 gamma range. The instrument's 325th flip calibration sequence was executed by command on 24 February.

Apollo 16 ALSEP (continued)

Operational status from 23 February 1973, 1300 G.m.t., to 2 March 1973, 1200 G.m.t.

Active seismic experiment	The experiment is currently OFF. On 24 Feburary at 0309 G.m.t. the experiment was commanded ON and at 0323 G.m.t. to high bit rate ON for a passive listening period. During the period, two calibration pulses were executed to the geophones. Data output appeared normal and no significant signals were noted. High bit rate operation was terminated at 0353 G.m.t. The experiment was commanded to OFF at 0354 G.m.t. The next passive listening period is scheduled for 7 March 1973.

Apollo 15 ALSEP

Operational status from 23 February 1973, 1300 G.m.t., to 2 March 1973, 1200 G.m.t.

Central station	The RTG output power remains steady. Transmitter "A" downlink signal strength is reported at -137.5 ± 3.5 dbm by the tracking stations with 30-foot antenna. Sunset of the site's 20th lunation occurred on 24 February. The lunar night operational procedure of eliminating the data subsystem timer outputs, by uplink of the timer reset command (octal 150) twice daily at 1400 G.m.t. and 2200 G.m.t., was initiated on 27 February at 1038 G.m.t.
Passive seismic experiment	The experiment is in the AUTO ON thermal control mode, sensor gains 0 db, and the feedback loop filter commanded OUT to maintain the integrity of the seismic network. The instrument's uncage/arm fire circuitry is in the OT state to obtain maximum heating in the sensor assembly during lunar night operation. During the intermittent real-time support periods of this experiment no significant seismic events were noted.
Lunar surface magnetometer experiment	The experiment sensors were commanded to the 50 gamma range at 0218 G.m.t., 26 February 1973, for lunar night operation. The y-axis sensor head is fixed at the 180 degree position; does not respond to flip cal commands; and has indicated off-scale LOW static since 20 September 1972. The instrument has executed 824 flip calibration sequences since activation.
Solar wind spectrometer experiment	The instrument has been in STANDBY since 26 January 1973 pending further analysis (Apollo 17 SMEAR, ALSEP 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument is currently operating with the Channeltron high voltages commanded ON and in the full automatic stepping sequence (0-127 frames).

Operational status from 23 February 1973, 1300 G.m.t., to 2 March 1973, 1200 G.m.t.

Heat flow experiment	The instrument measurement, TREF 2, has continuously displayed erroneous data since 29 May 1972. A duplicate measurement, TREF 1, is operating normally and no data are lost. The lunar surface temperature is 92.4°K as indicated by the cable thermocouples. The sub-surface temperature is 253.2°K at the bottom of the lowest section of probe #1. Probe #2 indicates a temperature of 250.8°K at its lower-most point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 23 February 1973, 1300 G.m.t., to 2 March 1973, 1200 G.m.t.

Central station

Sunset at the Apollo 14 site occurred on 26 February. RTG power output is steady. Transmitter "A" signal strength was reported at -138.0 ± 2.0 dbm. The DSS-1 heater (10 watts) was commanded ON for lunar night operation at 0247 G.m.t., 26 February 1973. Average thermal plate temperature was 50.7°F. At 0527 G.m.t., 26 February, the Canary tracking station noted a spurious command verification word (octal 017, 7-Watt PDR ON) in the ALSEP downlink telemetry. At the direction of mission control, Canary uplinked octal 021, 7-Watt PDR OFF, at 0630 G.m.t., 26 February, without incident. This was the 49th spurious functional change in the ALSEP 14 station since activation in February 1971.

Passive seismic experiment

The instrument is configured to 0 db gain on all sensors, filter OUT, and thermal control AUTO ON. During real-time support on 24 February 1973 attempts to level the LP y-axis were unsuccessful. DL-07 temperature measurement was 132.0°F and sun angle was 149.9°. Subsequent attempts on 25 and 26 February were also unsuccessful. No significant seismic events were noted during the limited real-time support periods.

Active seismic experiment

The experiment is currently in STANDBY. On 26 February 1973, the experiment was commanded to ON at 2057 G.m.t. and to high bit rate ON at 2110 G.m.t. for a passive listening mode. A significant signal was noted on all geophones. The signal appeared also on geophone 3, although intermittently. Geophone calibration pulses were not sent during the listening period. At 2143 G.m.t. high bit rate operation was terminated. The instrument was commanded to STANDBY at 2142 G.m.t., 26 February. The next listening period is scheduled for 13 March 1973.

Suprathermal ion detector/cold cathode gauge experiment

The experiment is currently operating in the full automatic stepping sequence with the Channeltron high voltages commanded ON. Since 9 May 1971 intermittent positive engineering data interruptions in one section of the analog-to-digital filter are not adversely affecting the scientific outputs of the experiment.

Apollo 14 ALSEP (continued)

Operational status from 23 February 1973, 1300 G.m.t., to 2 March 1973, 1200 G.m.t.

Charged particle lunar environmental experiment	The instrument is presently operating in the manual mode at -35 volt range and automatic thermal control mode. At 1126 G.m.t., 28 February, the instrument was commanded ON. Immediately the C/S automatic power-off sequencer placed the PSE, SIDE/CCGE, and CPLEE experiments in STANDBY indicating an overload on the power subsystem. The PSE and SIDE/CCGE experiments were commanded to operate select and the CPLEE to ON in the manual mode at 1134 G.m.t., 28 February. It was noted that the gate (flip/flop), in the logic controlling the high voltage stepping sequence polarity, was in the positive (+) state. The instrument was commanded to the full automatic sequence and then to the manual mode at 1230 G.m.t. This command sequence successfully reset the logic and the instrument was stepped to the -35 (vdc) range at 1231 G.m.t. without futher incident. Analyzer A high voltage remains substantially constant at the 2500 vdc level. Analyzer B high voltage remains inoperative.

Apollo 12 ALSEP

Operational status from 23 February 1973, 1300 G.m.t., to 2 March 1973, 1200 G.m.t.

Central station	Sunset of the 41st lunar day occurred on 27 February. Power output from the RTG remains steady. A signal strength of -141.0 ± 2.0 dbm from transmitter "B" was reported by the tracking stations. The DSS-1 heater (10 watts) was commanded ON for lunar night operations at 1847 G.m.t., 26 February, when the average thermal plate temperature was 36.1°F.
Passive seismic experiment	The instrument is configured for seismic network congruity; thermal control mode AUTO ON; component gains at 0 db; and feedback loop filter OUT. The z-axis drive motor was commanded ON for lunar night operation at 1851 G.m.t, 26 February, when the sensor temperature (DL-07) decreased to 131.8°F. At 0303 G.m.t., 26 February, the sensor temperature (DL-07) returned onscale during the real-time support period. No significant seismic events were noted during the periodic real-time support periods.
Lunar surface magnetometer experiment	Since 4 June 1972, scientific and engineering data outputs have been invalid.
Solar wind spectrometer experiment	The instrument is currently in the low gain mode (since 7 August 1972) and is recording solar wind plasma data for subsequent long term analysis.
Suprathermal ion detector experiment	The instrument was commanded to operate select and full automatic stepping sequence (0-127 frames) at 0304 G.m.t., 26 February, for lunar night operation. During real-time support on 25 February the experiment experienced an unexpected mode register load of X10 at 0247 G.m.t. The instrument was commanded without incident to OFF on 25 February, 0251 G.m.t., until 26 February, as the internal temperatures were 59.43°C.

Status as of 1300 G.m.t., 28 February 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1197	754	578	313
Total Commands to Date	16476	8664	14425	5421
Sun Angle	196°	203°	223°	235°
Input Power	68.9w	70.5w	72.9w	70.4w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	17.3°F	35.6°F	1.4°F	39.4°F
PSE Sensor Temp (DL-07)	126.5°F	124.2°F	124.7°F	125.9°F
LSM Internal Temp (DM-05)	Invalid	N/A	3.8°C	12.1°C
SWS Module 300 Temp (DW-13)	-12.7°C	N/A	Standby	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	6.0°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	114.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-34.0°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-46.1°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.7°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	78
Total Commands to Date	5213
Sun Angle	250°
Input Power	77.2w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	26.2°F
LMS Temp (AM-41)	13.4°F
LEAM Temp (AJ-11)	-20.8°F
HFE Temp Ref 1 (DH-13)	288.8°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	27.8°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

9 March 1973
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was not available at the following times:

Apollo 12 ALSEP	0951 to 1021 G.m.t., 2 March
	0642 to 0659 G.m.t., 4 March
	0942 to 1154 G.m.t., 5 March
	0955 to 1227 G.m.t., 6 March
	1203 to 1228 G.m.t., 7 March
Apollo 15 ALSEP	0926 to 0945 G.m.t., 4 March
Apollo 16 ALSEP	0918 to 1022 G.m.t., 3 March

Negotiations are progressing to achieve an agreement which will minimize the loss of downlink data.

Apollo 17 ALSEP

The central station continues operating normally, with the station's electronics and structural components temperatures stabilizing. Downlink RF signal strength is reported between -135.0 dbm and -141.0 dbm. Power from the RTG remains constant. The station's command decoder switch inhibit pulse occurred as anticipated, verified by a status change in telemetry point AB-18. The procedure of inhibiting the internally generated 61-hour pulse continues with the command (octal 174) being sent to the command decoder switch during real-time support periods.

The Heat Flow Experiment is presently operating in the gradient mode and all sensors are being sampled in full sequence. Ring bridge surveys are being achieved on a periodic basis. Lunar surface temperature, as measured by the HFE thermocouples, is $105^{\circ} \pm 8^{\circ}$K. At a depth of 230 cm, the subsurface temperatures are 256.5°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment remains configured to collect data in the seismic and free mode channels. The mass-changing, beam clamp/unclamp, screw drive, thermal control, pressure, and electronics subsystems are operating nominally. The experiment's sensor temperature remains stable at 49.182°C (slave heater ON).

The Lunar Seismic Profiling Experiment is in standby with a passive listening mode scheduled for today, 9 March.

The Lunar Atmospheric Composition Experiment continues to collect data on the lunar atmospheric composition since turn-on for lunar night on 22 February 1973. The present configuration is automatic sweep; high voltage power supply, ON; ion source filaments, ON; multipliers, HIGH; low voltage power supply, ON; discriminator level, HIGH; and back-up

9 March 1973
G.m.t.: 1300

heater ON. Since 22 February, the high mass range data channel has displayed electronic background noise similar to that seen on the intermediate and low mass range data channels since initial instrument turn-on. The LACE electronics temperature (AM-41) has currently stabilized at 13.4° F and is tracking the second lunar night temperature profile exactly.

The Lunar Ejecta and Meteorites Experiment continues to collect data of impact flux rates since turn-on for lunar night operation on 22 February 1973. The instrument's mirror temperature (AJ-11) is currently stabilized at -20.8°F, which is exactly the minimum temperature attained during the second lunar night.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Apollo 16 ALSEP

Operational status from 2 March 1973, 1200 G.m.t., to 9 March 1973, 1300 G.m.t.

Central station

Midnight of the 11th lunation occurred on 3 March at the Descartes Site. The DSS-1 (10 watts) heater remains ON for lunar night operation. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength of -142 ± 2.0 dbm from transmitter "A". Intermittent PCM data amplitude hits were noted in the downlink on 3 and 6 March. Telemetry signal strength remained steady and decom lock was maintained.

Passive seismic experiment

The experiment is configured in the AUTO ON thermal control mode, sensor gains 0 db, and the feedback loop filter commanded OUT for achievement of seismic network congruity. No significant seismic events have been noted during the limited real-time support of this instrument. Patterns of low-background noise and occasional small, high frequency signals are being sensed (typically night-time).

Lunar surface magnetometer experiment

The experiment is currently ON but the science data remains invalid. The instrument is configured in X thermal control, +75% for y-axis and z-axis offsets, digital filter OUT, flip cal inhibit logic ON, and the sensors in the 200 gamma range. The instrument's 331st flip calibration sequence was executed by command on 7 March.

Active seismic experiment

The experiment is in standby OFF. On 2 March, the experiment was commanded to operate select at 1514 G.m.t. and to high bit rate ON at 1530 G.m.t. for a passive listening period. Two geophone calibration pulses were sent to the instrument during the listening mode. Data output of all geophones appeared normal and no significant signals were noted in real-time. High bit rate operations were terminated at 1600 G.m.t. and the experiment commanded to standby OFF at 1603 G.m.t. On 7 March at 1521 G.m.t. the experiment was commanded ON and at 1545 G.m.t. to high bit rate ON for a passive listening period. During the period, two calibration pulses were executed to the geophones. Data output appeared normal and no significant signals were noted. High bit rate operation was terminated at 1615 G.m.t. The experiment was commanded to OFF at 1618 G.m.t.

Apollo 15 ALSEP

Operational status from 2 March 1973, 1200 G.m.t., to 9 March 1973, 1300 G.m.t.

Central station	Midnight of the station's 20th lunation occurred 4 March; power from the RTG continues steady and transmitter "A" downlink signal strength is reported between -135.0 dbm and -139.0 dbm. The lunar night's operational procedure of eliminating the data subsystem's timer outputs by uplinking the timer's reset command, octal 150, twice daily at 1400 G.m.t. and 2200 G.m.t. is in effect.
Passive seismic experiment	Operation is in the auto ON thermal control mode, sensor gains are 0 db, and the feedback loop filter commanded OUT in order to achieve seismic network congruity. No major seismic signals have been noted during the limited real time support of this instrument. The instrument's uncage/arm fire circuitry will remain in the OT state to deliver maximum heat into the sensor assembly for lunar night operations.
Lunar surface magnetometer experiment	The experiment's sensors are presently in the 50 gamma range for lunar night operation. Currently the instrument has executed 830 flip calibration sequences since activation. The experiment's y-axis sensor head remains fixed at a 180 degree position, not responding to flip cal commands. The experiment's y-axis sensor has indicated off-scale LOW (static) since 20 September 1972.
Solar wind spectrometer experiment	The instrument has been in STANDBY since 26 January 1973 pending further analysis (Apollo 17 SMEAR, ALSEP 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument is currently operating with the Channeltron high voltages commanded ON and in the full automatic stepping sequence (0-127 frames).
Heat flow experiment	The temperature of probe 1 at the bottom of the lowest probe section is 253.2°K, with probe 2 indicating a temperature of 250.7°K at its lower-most point. The instrument's cable thermocouples on the lunar surface indicate a temperature of approximately 85.7°K. Since 29 May 1972, the instrument's measurement TREF 2 has continually displayed erroneous data. A duplicate measurement TREF 1, is operating normally so that no data are lost.

Apollo 14 ALSEP

Operational status from 2 March 1973, 1200 G.m.t., to 9 March 1973, 1300 G.m.t.

Central station	Midnight of the 26th lunar day at the Apollo 14 landing site occurred 6 March. Power output of the radioisotope source is unvarying; and, transmitter "A" signal strength was reported between -138.0 dbm and -142.0 dbm. The central station's DSS-1 heater (10 watts) remains ON for lunar night operations.
Passive seismic experiment	The instrument is configured to 0 db gain on all sensors, filter OUT, and thermal control AUTO ON. During real-time support on 2 March 1973, attempts to level the LP y-axis were unsuccessful. Subsequent attempts on 5 and 7 March were also unsuccessful. No significant seismic events were noted during the limited real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY.
Suprathermal ion detector/cold cathode gauge experiment	The experiment is currently operating in the full automatic stepping sequence with the Channeltron high voltages commanded ON. Since 9 May 1971 intermittent positive engineering data interruptions in one section of the analog-to-digital filter are not adversely affecting the scientific outputs of the experiment.
Charge particle lunar environmental experiment	The instrument is presently in STANDBY. At 1523 G.m.t., 2 March, the instrument was commanded to STANDBY per Apollo 14 ALSEP SMEAR #79, when the instrument's Channeltron A high voltage (AC-03) decreased to 2297 vdc. It is planned to command the instrument to operate select during the real-time support of 12 March.

Apollo 12 ALSEP

Operational status from 2 March 1973, 1200 G.m.t., to 9 March 1973, 1300 G.m.t.

Central station	Midnight of the packages 41st lunar day occurred 6 March; RTG power output is constant; and transmitter "B" signal strength was reported at -140.0 ± 1.0 dbm. The central station's DSS-1 heater (10 watts) remains ON for lunar night support.
Passive seismic experiment	The instrument's thermal control mode is auto ON, the sensor gains at 0 db, and the feedback loop filter commanded OUT. No seismic signals have been noted in real-time during this reporting period. The instrument's z-axis drive motor remains ON for lunar night support.
Lunar surface magnetometer experiment	Scientific and engineering data have been static since 4 June 1972. The instrument's digital filter remains commanded IN.
Solar wind spectrometer experiment	This experiment continues to return scientific data on solar wind plasma magnetosphere plasma and magnetopause crossings, by sensing the direction and energies of both electrons and positive ions.
Suprathermal ion detector experiment	The instrument is currently operating with the Channeltron high voltage commanded ON and in the full automatic stepping sequence (0-127 frames).

Status as of 1700 G.m.t., 7 March 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1204	761	585	320
Total Commands to Date	16500	8694	14518	5467
Sun Angle	284°	290°	310°	322°
Input Power	68.4w	70.0w	72.3w	70.4w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE and CPLEE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	14.7°F	34.2°F	-0.8°F	38.8°F
PSE Sensor Temp (DL-07)	126.0°F	124.1°F	124.4°F	125.8°F
LSM Internal Temp (DM-05)	Invalid	N/A	3.8°C	12.8°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	Standby	N/A
SIDE Temp (DI-05)	3.7°C	Invalid	6.0°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	108.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-65.5°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.2°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	85
Total Commands to Date	5306
Sun Angle	338°
Input Power	76.9w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	26.5°F
LMS Temp (AM-41)	13.4°F
LEAM Temp (AJ-11)	-20.8°F
HFE Temp Ref 1 (DH-13)	289.6°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	26.5°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

16 March 1973
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was not available at the following times, since the last reporting period:

Apollo 12 ALSEP 1500-1550 G.m.t., 9 March

It is understood that the remote sites are currently being modified so that all ALSEP data streams can be recorded by a single site. Thus, the coverage problem should be minimized when all sites are modified by 15 April 1973.

Apollo 17 ALSEP

Sunrise of the scientific station's fourth lunar day occurred 9 March. The central station's data subsystem electronics and thermal plate temperatures, as well as the station's external structural temperatures continue to rise within anticipated limits. The station's current average thermal plate temperature is tracking within three degrees of its second and third lunar day thermal profiles. Power from the RTG remains constant. The downlink received signal is reported at -137.2 ± 1.7 dbm. The procedure of inhibiting the package's internally generated 61-hour pulse continues with the command (octal 174) being sent to the command decoder switch during real-time support periods.

The Heat Flow Experiment continues to measure subsurface and surface temperature data normally from all sensors. Periodic ring bridge survey's are being accomplished. The temperature of probe 1 at the bottom of the lowest probe section is 256.5°K, with probe 2 indicating a temperature of 256.8°K at its lower-most point. Lunar surface temperature as measured by the HFE's thermocouples is 380 ± 8°K. The experiment's electronics package temperature is tracking its third lunar day temperature profile.

The Lunar Surface Gravimeter Experiment remains configured to collect long-term seismic and free mode information. No commanding of the LSG has occurred since 3 January 1973, when the experiment was re-configured per the agreed course of action. The experiment's sensor temperature is stabilized at 49.186°C (slave heater ON).

The Lunar Seismic Profiling Experiment is in STANDBY select as planned. LSPE passive listening mode operations were accomplished on 9 and 15 March as follows:

Date	LSPE ON G.m.t.	HBR ON G.m.t.	HBR OFF G.m.t.	LSPE STBY G.m.t.	Geophone Cals	Events
9	2245	2250	2320	2338	2	None
15	0741	0745	0815	0817	2	None

The next 30-minute passive listening period is planned for 23 March.

16 March 1973
G.m.t.: 1300

The Lunar Atmospheric Composition Experiment is currently OFF. The LACE gathered data on the composition of the lunar atmosphere throughout the dawn terminator. During real-time support 9 March the LACE experienced three unexpected mode changes as follows:

Time (G.m.t.)	Sun Angle (Degree)	AM-41 (°F)	Event
1945	4.5	15.0	Auto Sweep to Sweep Lock
2019	4.8	16.6	Auto Sweep to High Voltage OFF; Filaments OFF; and, Engineering Data Disordered
2220	5.8	24.2	Auto Sweep to Sweep Lock

The LACE was commanded back to the automatic sweep mode after each mode change without incident. Investigation of the lock sweep phenomenon is continuing. The instrument's high voltage was commanded OFF at 0038 G.m.t., 10 March, when the gas pressure in the ion source due to hydrocarbon molecules became sufficient enough to degrade the ion source sensitivity. The LACE was subsequently commanded OFF (1055 G.m.t., 12 March) for the remainder of this lunar day per the agreed operational plan. The experiment's electronics temperature, AM-41, is following its second and third lunar day temperature profiles within two degrees.

The Lunar Ejecta and Meteorite Experiment is presently OFF. The LEAM continued to collect statistical data of impact flux rates on the lunar surface throughout sunrise. The experiment's periodic calibrate pulses occurred as anticipated. On 9 March, the LEAM was commanded to standby for a 78 minute period in an effort to avoid the possible phenomena associated with lunar sunrise and lunar dust transport (Apollo 17 SMEAR, ALSEP 41). The LEAM was subsequently commanded OFF for the remainder of this lunar day at 1633 G.m.t., 11 March, due to elevated internal temperatures (AJ-11 = 164.1°F). Analysis of the elevated temperatures continues. The instrument's fourth day temperature profile is tracking the third lunar day profile within ±2°F.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Apollo 16 ALSEP

Operational status from 9 March 1973, 1300 G.m.t., to 16 March 1973, 1300 G.m.t.

Central station	Sunrise of the 12th lunar day occurred on 10 March. The DSS-1 heater (10 watts) was commanded OFF at 0224 G.m.t., 11 March, when the central station's average thermal plate temperature increased to 53.5°F. The thermoelectric power source output is normal. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The various tracking stations report a signal strength of -139.2 ± 3.7 dbm.
Passive seismic experiment	Seismometer operation continues in AUTO ON thermal control mode, feedback loop filter OUT, and the sensor gains of all components at 0 db. The uncage/arm fire circuit has remained in the UNCAGE state since 22 February 1973. Since 9 March 1973, the y-axis has responded to leveling mode commands. Previous attempts to level the y-axis since 25 February 1973 were not successful. This is a re-occurring lunar night operational anomaly. No events have been noted in real-time.
Lunar surface magnetometer experiment	Scientific data have been static since 16 February 1973. The LSM continues to not respond to flip calibrations (no cal raster) or filter commands. The instrument is currently configured with the digital filter OUT, flip cal inhibit logic commanded ON, and sensors in the 200 gamma range. As of 14 March 337 flip calibration sequences have been executed by and verified by the experiment's engineering data.
Active seismic experiment	The experiment is currently OFF, with the next 30-minute passive listening period planned for later today.

Apollo 15 ALSEP

Operational status from 9 March 1973, 1300 G.m.t., to 16 March 1973, 1300 G.m.t.

Central station	RTG output power remains stable. Transmitter "A" downlink signal strength is reported at -136.7 ± 2.2 dbm. Sunrise of the experiment package's 21st lunar day occurred on 11 March. The lunar night operational procedure of eliminating the data subsystem's timer outputs by uplinking the timer's reset command (octal 150) twice daily was terminated for this lunar day on 11 March.
Passive seismic experiment	In order to maintain the integrity of the seismic network the PSE is configured to AUTO ON thermal control mode, sensor gains 0 db, and the feedback loop filter commanded OUT. The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. During the intermittent real-time support periods this past week no significant seismic events were noted.
Lunar surface magnetometer experiment	The experiment sensors were commanded to the 100 gamma range at 0212 G.m.t., 11 March, for lunar day operation. The y-axis sensor head is fixed at the 180 degree position; does not respond to flip cal commands; and has indicated off-scale LOW static since 20 September 1972. The instrument has executed 838 flip calibration sequences since activation.
Solar wind spectrometer experiment	The instrument has been in STANDBY since 26 January 1973 pending further analysis (Apollo 17 SMEAR, ALSEP 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument is currently operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames). At 1311 G.m.t., 14 March, the Carnarvon tracking station noted a command octal 107 (SIDE Load 4) in the ALSEP downlink. During support 15 March, the spurious functional was verified and cleared without incident.
Heat flow experiment	The instrument measurement, TREF 2, has continuously displayed erroneous data since 29 May 1972. A duplicate measurement, TREF 1, is operating normally and no data are lost. The lunar surface temperature is 344.3°K as indicated by the cable thermocouples. The sub-surface temperature is 253.2°K at the bottom of the lowest section of probe #1. Probe #2 indicates a temperature of 250.7°K at its lower-most point. Ring bridge surveys are being accomplished periodically.

Apollo 14 ALSEP

Operational status from 9 March 1973, 1300 G.m.t., to 16 March 1973, 1300 G.m.t.

Central station	Sunrise at the Apollo 14 site occurred on 13 March (27th lunar day). RTG power output is steady. Transmitter "A" signal strength was reported at -140.2 ± 3.2 dbm. The DSS-1 heater (10 watts) was commanded OFF for lunar day operation at 0443 G.m.t., 15 March. Average thermal plate temperature was 99.4°F.
Passive seismic experiment	Operational configuration is identical to that of the other seismometer's: 0 db gain on all sensors, filter OUT, and thermal control AUTO ON. Subsequent attempts to level the y-axis since 11 March proved to be unsuccessful (re-occurrence of lunar night operational anomaly) until 0451 G.m.t. on 15 March when both x and y axes were leveled satisfactorily. No significant seismic events were noted during the limited real-time support periods of this experiment. At the beginning of real-time of this instrument on 10 March it was noted that the long-period z-axis sensor gain indicated -10 db. Review of the ALSEP downlink indicated no command verification word (octal 064). Thus, this spurious functional change occurred between real-time support periods on 10 March and 11 March. The z-axis sensor gain was commanded back to 0 db gain without incident at 0252 G.m.t., 11 March.
Active seismic experiment	Currently in STANDBY select, with the next 30-minute passive listening mode planned for 21 March. On 15 March, the experiment was commanded to operate select at 0650 G.m.t. and to high bit rate ON at 0700 G.m.t. A response was seen on all three geophones during the high bit rate period of operation. No geophone calibration pulses were sent to the instrument during the listening mode. High bit rate operation was terminated at 0730 G.m.t., and the instrument commanded to STANDBY at 0733 G.m.t.
Suprathermal ion detector/cold cathode gauge experiment	Operating in the full automatic stepping sequence with the Channeltron high voltages commanded ON. Intermittent positive engineering data interruptions (anomaly occurred 9 May 1971) in one section of the analog-to-digital filter are having no adverse effect on the scientific outputs of the experiment.

Operational status from 9 March 1973, 1300 G.m.t., to 16 March 1973, 1300 G.m.t.

Charged particle lunar environmental

The CPLEE is currently in STANDBY select. Since 2 March 1973 (per the agreed operational procedure) the experiment has been commanded to OPERATE select only during real-time support periods, as listed below:

Date	CPLEE ON (G.m.t.)	CPLEE STANDBY (G.m.t.)	Analyzer A Voltage	Operational Mode
11 March	1656	1755	2464.0	Auto
12 March	1021	1230	2465.0	Auto
13 March	1009	1149	2380.8	Auto
15 March	0453	0459	No Sync	Auto

At 0453 G.m.t., 15 March, the CPLEE was commanded to OPERATE select and immediately the central station's automatic power-off sequencer placed the CPLEE and SIDE/CCIG experiments in STANDBY select indicating an overload on the power subsystem. The SIDE/CCIG experiment was commanded back to OPERATE select, and the CPLEE remained in STANDBY select. Current plans are to operate the CPLEE during real-time support periods only, with no further command activity planned this lunar day.

Apollo 12 ALSEP

Operational status from 9 March 1973, 1300 G.m.t., to 16 March 1973, 1300 G.m.t.

Central station	Sunrise of the 42nd lunar day occurred on 13 March. Power output from the RTG remains steady. A signal strength of -139.2 ± 2.7 dbm from transmitter "B" was reported by the tracking stations. The DSS-1 heater (10 watts) was commanded OFF for lunar day operations at 0441 G.m.t., 15 March, when the average thermal plate temperature was 86.4°F.
Passive seismic experiment	The instrument is configured for seismic network congruity; thermal control mode AUTO ON; component gains at 0 db; and feedback loop filter OUT. The z-axis drive motor was commanded OFF for lunar day operation at 0440 G.m.t., 15 March. At 0937 G.m.t., 13 March, the PSE's sensor temperature (DL-07) was offscale LOW (sun angle = 353.1°), and returned onscale on 15 March. No significant seismic events were noted during the periodic real-time support periods of this instrument.
Lunar surface magnetometer experiment	Since 4 June 1972, scientific and engineering data outputs have been invalid.
Solar wind spectrometer experiment	The instrument is currently in the low gain mode (since 7 August 1972) and is recording solar wind plasma data for subsequent long term analysis. At 1253 G.m.t., 15 March, the supporting ground station (Guam) reported a spurious command verification word (octal 046), SWS STANDBY. The spurious functional change was corrected by Mode 1 commanding at 1737 G.m.t., 15 March, through Canary Island tracking station, without incident.
Suprathermal ion detector experiment	Currently the SIDE is in OPERATE select, automatic stepping sequence, gathering scientific data of the dawn terminator. Cyclic commanding of the instrument in the full automatic stepping sequence with Channeltron high voltages ON to experiment power OFF will be initiated on 16 March in an effort to preclude instrument mode changes at internal temperatures above 55°C.

Status as of 0830 G.m.t., 15 March 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1212	769	593	328
Total Commands to Date	16536	8753	15645	5619
Sun Angle	17.8°	23.8°	45.0°	56.8°
Input Power	68.1w	70.1w	71.8w	70.2w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	All ON	ASE & CPLEE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	78.7°F	90.9°F	97.9°F	100.0°F
PSE Sensor Temp (DL-07)	126.7°F	124.9°F	130.1°F	132.7°F
LSM Internal Temp (DM-05)	Invalid	N/A	53.5°C	31.1°C
SWS Module 300 Temp (DW-13)	33.1°C	N/A	Standby	N/A
SIDE Temp (DI-05)	41.6°C	Invalid	76.8°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	355.6°K	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	N/A	N/A
ASE GLA Temp (AS-03)	N/A	16.2°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	313.7°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	93
Total Commands to Date	5499
Sun Angle	72.0°
Input Power	76.3w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby/LACE & LEAM OFF
Avg Thermal Plate Temp	119.0°F
LMS Temp (AM-41)	66.6°F
LEAM Temp (AJ-11)	172.8°F
HFE Temp Ref 1 (DH-13)	325.5°K
LSG Temp (DG-04)	49.1°F
LSP Temp (AP-01)	119.7°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

23 March 1973
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was not available at the following time, since the last reporting period:

Apollo 12 ALSEP 1315-1350 G.m.t., 14 March

Apollo 17 ALSEP

All experiments and the central station are operating as expected. Power from the RTG remains constant. The downlink received signal is reported at -142.7 ± 3.2 dbm. The station's command decoder switch inhibit pulse is occurring as anticipated. The planned procedure to inhibit the output of this pulse is being maintained. The station's average thermal plate temperature is currently tracking its second lunar day temperature profile at identical sun angles prior to this lunar day's sunset (24 March).

The Heat Flow Experiment continues to operate normally, with periodic ring bridge survey's being accomplished. The HFE is currently operating in the gradient mode, with all sensors being sampled in full sequence. Lunar surface temperature as measured by the HFE's thermocouples is 262 ± 8°K. Subsurface temperature at 230 cm depth is 256.5°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment continues to collect data in the seismic and free mode channels. All subsystems including the mass-changing, beam clamp/unclamp, screw drive, thermal control, pressure and electronics are operating nominally. The experiment's sensor temperature remains stabilized at 49.186°C (slave heater ON).

The Lunar Seismic Profiling Experiment is in STANDBY select, with a 30-minute passive listening period planned for later today. The experiment was commanded ON at 0741 G.m.t., 15 March, and to LSPE data format processing (high bit rate) at 0745 G.m.t., for a thirty-minute passive listening period. Data output of the geophones appeared normal. LSPE processing was terminated at 0815 G.m.t., and the instrument commanded to STANDBY select at 0817 G.m.t.

The Lunar Atmospheric Composition Experiment was commanded from OFF to STANDBY at 1549 G.m.t., 20 March, to maintain thermal stability of the instrument (Apollo 17 SMEAR, ALSEP 37). At this time the electronics temperature had decreased to 54.7°F at a sun angle of 135.4°. The present operational plan for experiment activation is scheduled for six hours commencing at 2300 G.m.t. today (Apollo 17 SMEAR, ALSEP 43) for a one hour pre-sunset reference point to follow the Argon 40 concentration as its level decreases throughout the lunar night.

ALSEP STATUS REPORT (continued)

23 March 1973
G.m.t.: 1300

The Lunar Ejecta and Meteorites Experiment was commanded ON for the remainder of this lunar day at 2220 G.m.t., 22 March. The LEAM had been commanded OFF since 11 March due to elevated internal temperatures. The instrument's mirror temperature (AJ-11) continues tracking its second and third lunation temperature profiles. The instrument will be commanded to STANDBY for an 85 minute period, 23 March, in an effort to avoid the possible phenomena associated with lunar sunset and lunar dust transport (Apollo 17 SMEAR, ALSEP 41).

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Apollo 16 ALSEP

Operational status from 16 March 1973, 1300 G.m.t., to 23 March 1973, 1300 G.m.t.

Central station

Lunar noon of the 12th lunar day occurred on 18 March at the Descartes Site. The thermoelectric power source output is normal. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The 30 foot antenna tracking stations report a signal strength of -142.0 ± 2.0 dbm.

Passive seismic experiment

Seismometer operation continues in AUTO ON thermal control mode, feedback loop filter OUT, and the sensor gains of all components at 0 db. At the start of real-time support 21 March, it was noted that the PSE had executed a spurious functional change in the ARM/FIRE status from UNCAGED to OT. No CVW's were noted in the ALSEP downlink history. Real-time commanding to return the instrument status to the UNCAGED state was not successful. The instrument's sensor assembly temperature (DL-07) was off-scale HIGH during real-time support, 17 March (sun angle = 78.5°). DL-07 is projected to return on-scale 24 March. No seismic events have been noted during the limited real-time support of this experiment since the last reporting period.

Lunar surface magnetometer experiment

Scientific data have been static since 16 February 1973. The LSM's scientific data continues not to respond to flip calibrations (no cal raster observed) or filter commands. The instrument is currently configured with the digital filter OUT, flip cal inhibit logic commanded ON, and sensors in the 200 gamma range. As of 22 March, 341 flip calibration sequences have been executed and verified by the experiment's engineering data.

Active seismic experiment

The Active Seismic Experiment is OFF as planned. ASE passive listening mode operations were accomplished on 17 and 21 March as follows:

Date	ASE ON G.m.t.	HBR ON G.m.t.	HBR OFF G.m.t.	ASE OFF G.m.t.	Geophone Cals	Events
17	0320	0330	0400	0403	2	Response
21	1514	1530	1600	1605	2	Response

The next 30-minute passive listening period is planned for 28 March.

Apollo 15 ALSEP

Operational status from 16 March 1973, 1300 G.m.t., to 23 March 1973, 1300 G.m.t.

Central station	RTG output power remains stable. Transmitter "A" downlink signal strength is reported at -136.0 ± 2.0 dbm. Noon of the experiment package's 21st lunar day occurred on 19 March. At 1609 G.m.t., 22 March, the Carnarvon tracking station noted a momentary drop in the downlink and then a 1½ db degradation in signal strength indicating a transmitter switch. At the start of real-time support it was verified that the central station transmitters had switched from "A" to "B". At 2040 G.m.t., 22 March, the transmitters were ground commanded back to the initial configuration of transmitter "A" on-line without incident. This was the 40th such spurious functional change experienced by this ALSEP station since activation.
Passive seismic experiment	In order to maintain the integrity of the seismic network the PSE is configured to AUTO ON thermal control mode, sensor gains 0 db, and the feedback loop filter commanded OUT. At 1616 G.m.t., 17 March, the PSE's sensor temperature (DL-07) was offscale HIGH (sun angle = 73°) and returned onscale at 2042 G.m.t., 22 March (sun angle = 136°). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. During the intermittent real-time support periods this past week no significant seismic events were noted.
Lunar surface magnetometer experiment	The experiment sensors were commanded to the 100 gamma range 11 March, for this lunar day. The y-axis sensor head is fixed at the 180 degree position; does not respond to flip cal commands; and has indicated off-scale LOW static since 20 September 1972. The instrument has executed 842 flip calibration sequences since activation.
Solar wind spectrometer experiment	At 1443 G.m.t., 21 March, the experiment was commanded to operate select for 10 minutes in order to provide additional data required in analysis of the instrument's anomalous operations. The instrument's telemetry data continuously indicated out of sync data. During the operate select period the experiment continued to demand excessive power (13 watts). Following the operate select period the instrument was commanded back to STANDBY select (Apollo 15 SMEAR, ALSEP 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument is currently operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames).

Apollo 15 ALSEP (continued)

Operational status from 16 March 1973, 1300 G.m.t., to 23 March 1973, 1300 G.m.t.

Heat flow experiment

The instrument measurement, TREF 2, has continuously displayed erroneous data since 29 May 1972. A duplicate measurement, TREF 1, is operating normally and no data are lost. The lunar surface temperature is 343.0°K as indicated by the cable thermocouples. The sub-surface temperature is 253.1°K at the bottom of the lowest section of probe #1. Probe #2 indicates a temperature of 250.8°K at its lower-most point. Ring bridge surveys are being accomplished periodically. An unexpected functional change of the HFE occurred at 0624 G.m.t., 18 March, when the Texas tracking station noted a command verification word of octal 144 in the downlink signal. The HFE's load 1 command was corrected by ground command 19 March with no further problems.

Apollo 14 ALSEP

Operational status from 16 March 1973, 1300 G.m.t. to 23 March 1973, 1300 G.m.t.

Central station	Noon at the Apollo 14 site occurred on 20 March (27th lunar day). RTG power output is steady. Transmitter "A" signal strength was reported at -138.0 ± 2.0 dbm. During Phase III support at 0303 G.m.t., 20 March, the Canary Island tracking station experienced loss of the ALSEP downlink. This spurious functional change was corrected by mode I command (octal 013, transmitter ON) at 0344 G.m.t. by the supporting station. Forty-one minutes of Apollo 14 ALSEP data were lost due to this spurious change (transmitter OFF, octal 014).
Passive seismic experiment	Operational configuration is identical to that of other seismometers: 0 db gain on all sensors, filter OUT, the instrument's heater is operating in the forced OFF mode to minimize heating during lunar day operations. During real-time support on 19 March 1973, an attempt to level the long period y-axis was unsuccessful, however, on 21 March it had returned back on scale. Due to the inherent drift rate of this axis at the sun angle of 100° no leveling commands were required or executed during this support period (21 March). The y-axis was leveled without problem on 22 March. No significant seismic events were noted during the limited real-time support periods of this experiment.
Active seismic experiment	Currently in STANDBY select with the next 30-minute passive listening mode planned for 26 March. On 19 March, the experiment was commanded to operate select at 1549 G.m.t. and to high bit rate ON at 1600 G.m.t. A response was seen on all three geophones during the high bit rate period of operation. No geophone calibration pulses were sent to the instrument during the listening mode. High bit rate operation was terminated at 1630 G.m.t., and the instrument commanded to STANDBY at 1632 G.m.t.
Suprathermal ion detector/cold cathode gauge experiment	Operating in the full automatic stepping sequence with the Channeltron high voltages commanded ON. Intermittent positive engineering data interruptions in one section of the analog-to-digital filter are having no adverse effect on the scientific outputs of the experiment. This intermittent anomaly first occurred on 9 May 1971.
Charged particle lunar environmental	The CPLEE remains in STANDBY select, since 15 March 1973. Current plans are to operate the CPLEE during real-time support periods only, with no further command activity planned this lunar day.

Apollo 12 ALSEP

Operational status from 16 March 1973, 1300 G.m.t., to 23 March 1973, 1300 G.m.t.

Central station

Lunar noon of the 42nd lunar day occurred on 21 March. Power output from the RTG remains steady. A signal strength of -140.2 ± 2.2 dbm from transmitter "B" was reported by the tracking stations.

Passive seismic experiment

The instrument is configured for seismic network congruity; thermal control mode AUTO ON; component gains at 0 db; and feedback loop filter OUT. The instrument's sensor assembly temperature (DL-07) was off-scale HIGH during real-time support, 21 March (sun angle=94°). It is projected to return on scale 27 March 1973. No significant seismic events were noted during the periodic real-time support periods of this instrument.

Lunar surface magnetometer experiment

Since 4 June 1972, scientific and engineering data outputs have been invalid.

Solar wind spectrometer experiment

Uninterrupted operations in the low gain mode, since 7 August 1972, recording solar wind plasma data for subsequent long term analysis. At 2041 G.m.t., 22 March, the sum cup modulation voltages in proton energy levels 13 and 14 were the same as level 12. This anomaly was last noted 22 February 1973 and has no effect on science data.

Suprathermal ion detector experiment

Cyclic commanding of the instrument in the full automatic stepping sequence with Channeltron high voltages ON to experiment power OFF was initiated this lunar day on 16 March in an effort to preclude instrument mode changes at internal temperatures above 55°C. During real-time support within this reporting period the SIDE experienced two unexpected mode changes as follows:

Date/Time	Internal Temp.	Mode
16 March/0305 G.m.t.	56.5°C	Frame counter to 79 and velocity filter to 9
20 March/1530 G.m.t.	55.6°C	Command register X10

Status as of 2200 G.m.t., 22 March 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1219	776	600	335
Total Commands to Date	16601	8813	14762	5730
Sun Angle	109.1°	115.4°	136.2°	148°
Input Power	67.6w	69.5w	72.4w	70.1w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE & CPLEE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	90.7°F	111.6°F	108.0°F	88.0°F
PSE Sensor Temp (DL-07)	Offscale HIGH	132.9°F	136.6°F	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	57.8°C	48.2°C
SWS Module 300 Temp (DW-13)	63.7°F	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Invalid	84.2°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	347.4°K	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	N/A	N/A
ASE GLA Temp (AS-03)	N/A	85.3°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	320.3°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	100
Total Commands to Date	5564
Sun Angle	164.1°
Input Power	76.2w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE & LACE Stby
Avg Thermal Plate Temp	67.2°F
LMS Temp (AM-41)	94.7°F
LEAM Temp (AJ-11)	123.7°F
HFE Temp Ref 1 (DH-13)	299.3°K
LSG Temp (DG-04)	49.1°F
LSP Temp (AP-01)	68.3°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

30 March 1973
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was available at all times since the last reporting period.

Apollo 17 ALSEP

Midnight will occur 31 March at Taurus Littrow. The central station is operating normally with the automatic power management circuit functioning as designed. The average thermal plate temperature is currently within 0.5°F of the third lunar night temperature profile. The structural components temperatures have stabilized and are tracking the temperature profile of the third lunar night. Downlink RF signal strength is reported at -139.0 ± 4.0 dbm from transmitter "A". Thermoelectric power source output essentially remains unchanged. The procedure of inhibiting the internally generated 61-hour pulse continues with the command (octal 174) being sent to the command decoder switch during real-time support periods.

The Heat Flow Experiment is presently operating in the gradient mode and all sensors are being sampled in full sequence. Ring bridge surveys are being achieved on a periodic basis. Lunar surface temperature, as measured by the HFE thermocouples, is 110° ± 8°K. At a depth of 230 cm, the subsurface temperatures are 256.4 °K at probe #1 and 256.8 °K at probe #2.

The Lunar Surface Gravimeter Experiment remains configured to collect data in the seismic and free mode channels. The mass-changing, beam clamp/unclamp, screw drive, thermal control, pressure, and electronics subsystems are operating nominally. The experiment's sensor temperature is presently stabilized at 49.186°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY select. LSPE passive listening mode operations were accomplished on 24 and 28 March as follows:

Date	LSPE ON G.m.t.	HBR ON G.m.t.	HBR OFF G.m.t.	LSPE STBY G.m.t.	Geophone Cals	Events
24	0040	0050	0125	0130	2	Response
28	1723	1740	1810	1812	2	Response

The next 30-minute passive listening period is planned for 6 April.

The Lunar Atmospheric Composition Experiment was commanded ON at 2320 G.m.t., 23 March (Apollo 17 SMEAR, ALSEP 43) for a one hour pre-sunset reference point to follow the Argon 40 concentration as its level decreases throughout the lunar night. The LACE continues to collect data on the lunar atmospheric composition. The present configuration is automatic sweep; high voltage power supply, ON; ion source filaments, ON; multipliers, HIGH; low voltage power supply, ON; discriminator level, HIGH; and back-up heater ON. The LACE electronics temperature (AM-41) has currently stabilized at 13.4°F and is tracking the second lunar night temperature profile.

30 March 1973
G.m.t.: 1300

The Lunar Ejecta and Meteorites Experiment is configured to measure impact flux rates on the lunar surface. The experiment's periodic calibrate pulses are occurring as anticipated. The LEAM was commanded ON for the remainder of this lunar night at 0500 G.m.t., 24 March. The instrument was commanded to STANDBY for a 5 hour and 42 minute period, 23 and 24 March, in an effort to avoid the possible phenomena associated with lunar sunset and lunar dust transport (Apollo 17 SMEAR, ALSEP 45). The instrument's mirror temperature (AJ-11) currently is reading -20.8°F and tracking the second and third lunar night temperature profile.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Apollo 16 ALSEP

Operational status from 23 March 1973, 1300 G.m.t., to 30 March 1973, 1300 G.m.t.

Central station

The Descartes Site experienced sunset on 25 March. At 0926 G.m.t., 26 March 1973, transmitter "B" and processor "Y" were selected by command at the direction of mission control. The Ascension ground station had been experiencing a collapsing of the bit stream and data quality was intermittently poor, however, decom lock could be maintained. A gain in signal strength of 1 dbm was noted when transmitter "B" was selected. Signal strength from transmitter "A", as reported by the 30-foot antenna tracking station, had been -136 dbm. Signal strength after selection of transmitter "B" was -135.0 dbm. Transmitter "A" can still be utilized if required. Output of the RTG is normal. The DSS-1 heater (10 watts) was commanded ON at 1832 G.m.t., 24 March, for lunar night operations when the average thermal plate decreased to 60.7°F. Between the end of real-time support at 1900 G.m.t., 28 March, and start of real-time support at 1536 G.m.t., 29 March, a spurious functional change (octal 032, Timer Output Accept) had occurred. This caused the PSE Calibration Short Period ON/OFF status to change from OFF to ON and the PSE Uncage ARM/FIRE status to change from OT to UNCAGED. No CVW's were noted in the ALSEP downlink history. At 1629 G.m.t., 29 March 1973, a command (octal 033, Timer Output Inhibit) to inhibit the timer output was executed by mission control without incident.

Passive seismic experiment

The typical night-time pattern of low background noise with occasional small, high frequency signals, is currently being sensed by the passive seismometer. Experiment operation continues with the feedback loop filter commanded OUT, the sensor gains of all components configured to 0 db, and the sensor assembly temperature stabilized (auto ON thermal control mode). The uncage/arm fire circuit is configured to the UNCAGED state. No significant seismic events were noted during the limited real-time support of this instrument. The DL-07 temperature measurement returned onscale at the beginning of real-time support at 1550 G.m.t., 25 March. During real-time support 24 March, it was noted that the PSE had executed a spurious functional change in the ARM/FIRE status from OT to UNCAGED. No CVW's were noted in the ALSEP downlink history. Previously, commands to return the instrument status to the UNCAGED state had been unsuccessful. The instrument's sensor assembly temperature (DL-07) was offscale HIGH during real-time support, 24 March (sun angle = 163.1°). During real-time support on 27 March, an attempt to level the LP y-axis was made without success. The y-axis remains in the offscale positive direction. The DL-07 temperature was 125.9°F and the sun angle was 199° at the time. This is the 5th occurrence of this anomaly.

Apollo 16 ALSEP (continued)

Operational status from 23 March 1973, 1300 G.m.t., to 30 March 1973, 1300 G.m.t.

Lunar surface magnetometer experiment	Scientific data have been static since 16 February 1973. The LSM's scientific data continues not to respond to flip calibrations (no cal raster observed) or filter commands. The instrument is currently configured with the digital filter OUT, flip cal inhibit logic commanded ON, and sensors in the 200 gamma range. As of 29 March, 349 flip calibration sequences have been executed and verified by the experiment's engineering data.
Active seismic experiment	The experiment is in standby OFF. On 28 March, the experiment was commanded to operate select at 1735 G.m.t. and to high bit rate ON at 1815 G.m.t. for a passive listening period. Two geophone calibration pulses were sent to the instrument during the listening mode. Data output of all geophones appeared normal and no significant signals were noted in real-time. High bit rate operations were terminated at 1845 G.m.t. and the experiment commanded to standby OFF at 1850 G.m.t. The next 30-minute passive listening period is planned for 4 April.

Apollo 15 ALSEP

Operational status from 23 March 1973, 1300 G.m.t., to 30 March 1973, 1300 G.m.t.

Central station	The RTG output power remains steady. Transmitter "A" downlink signal strength is reported at -138.0 ± 6.0 dbm by the tracking stations with 30-foot antenna. Sunset of the site's 21st lunation occurred on 26 March. The lunar night operational procedure of eliminating the data subsystem timer outputs, by uplink of the timer reset command (octal 150) twice daily at 1400 G.m.t. and 2200 G.m.t., was initiated on 29 March at 1635 G.m.t.
Passive seismic experiment	The experiment is in the AUTO ON thermal control mode, sensor gains 0 db, and the feedback loop filter commanded OUT to maintain the integrity of the seismic network. The instrument's uncage/arm fire circuitry is in the OT state to obtain maximum heating in the sensor assembly during lunar night operation. During the intermittent real-time support periods of this experiment no significant seismic events were noted.
Lunar surface magnetometer experiment	The experiment sensors were commanded to the 50 gamma range at 0035 G.m.t., 27 March 1973, for lunar night operation. The y-axis sensor head is fixed at the 180 degree position; does not respond to flip cal commands; and has indicated off-scale LOW static since 20 September 1972. Flip calibration sequences were resumed for this lunar day, 25 March, as the sensor internal temperature decreased below 62°C. The instrument has executed 856 flip calibration sequences since activation.
Solar wind spectrometer experiment	The instrument has been in STANDBY since 21 March 1973 pending further analysis (Apollo 15 SMEAR, ALSEP 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument is currently operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames).

Apollo 15 ALSEP (continued)

Operational status from 23 March 1973, 1300 G.m.t., to 30 March 1973, 1300 G.m.t.

Heat flow experiment	The instrument measurement, TREF 2, has continuously displayed erroneous data since 29 May 1972. A duplicate measurement, TREF 1, is operating normally and no data are lost. The lunar surface temperature is 88.2°K as indicated by the cable thermocouples. The sub-surface temperature is 253.2°K at the bottom of the lowest section of probe #1. Probe #2 indicates a temperature of 250.8°K at its lower-most point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 23 March 1973, 1300 G.m.t., to 30 March 1973, 1300 G.m.t.

Central station

Sunset at the Apollo 14 site occurred on 27 March. RTG power output is steady. Transmitter "A" signal strength was reported at -136.0 ± 3.0 dbm. The DSS-1 heater (10 watts) was commanded ON for lunar night operation at 2028 G.m.t., 27 March 1973. Average thermal plate temperature was 45.9°F.

Passive seismic experiment

Operational configuration is identical to that of the other siesmometer's: 0 db gain on all sensors, filter OUT, and thermal control AUTO ON. Subsequent attempts to level the y-axis since 22 March have proved to be successful. The instrument's heater is operating in the AUTO ON mode for lunar night operation since being commanded at 0246 G.m.t., 24 March. The instrument's long period z-axis has not displayed valid data nor responded to commands since 17 November 1972. A significant seismic event was noted during the limited real-time support period on 24 March. The event was also sensed by the ALSEP 12 station seismometer. Between the end of real-time support on 27 March 1973 and the beginning of real-time support on 28 March 1973, it was noted that the PSE had executed a spurious functional change in the leveling mode (octal 103) from AUTO to FORCED. No CVW's were noted in the ALSEP downlink history. The PSE was commanded to leveling mode AUTO by mission control at 1923 G.m.t., 28 March without incident.

Active seismic experiment

The experiment is currently in STANDBY. On 27 March 1973, the experiment was commanded to ON at 0217 G.m.t. and to high bit rate ON at 0155 G.m.t. for a passive listening mode. No significant signal was noted during the listening mode. Geophone calibration pulses were not sent during the listening period. At 0229 G.m.t. high bit rate operation was terminated. The instrument was commanded to STANDBY at 0234 G.m.t., 27 March. The next listening period is scheduled for 12 April 1973 when the GLA temperature (AS-03) should be above the -60°C temperature restriction.

Suprathermal ion detector/cold cathode gauge experiment

The experiment is currently operating in the full automatic stepping sequence with Channeltron high voltages commmanded ON. Since 9 May 1971 intermittent positive engineering data interruptions in one section of the analog-to-digital filter are not adversely affecting the scientific outputs of the experiment.

Charge particle lunar environmental experimtne

The CPLEE remains in STANDBY select, since 15 March 1973. Current plans are to operate the CPLEE during real-time support periods only, with no further command activity planned this lunar day.

Apollo 12 ALSEP

Operational status from 23 March 1973, 1300 G.m.t., to 30 March 1973, 1300 G.m.t.

Central station	Sunset of the 42nd lunar day occurred on 28 March. Power output from the RTG remains steady. A signal strength of 139.0 ± 3.0 dbm from transmitter "B" was reported by the tracking stations. The DSS-1 heater (10 watts) was commanded ON for lunar night operations at 1632 G.m.t., 28 March, when the average thermal plate temperature was 20.7°F.
Passive seismic experiment	The instrument is configured for seismic network congruity; thermal control mode AUTO ON; component gains at 0 db; and feedback loop filter OUT. The z-axis drive motor was commanded ON for lunar night operation at 1616 G.m.t., 28 March, when the sensor temperature (DL-07) decreased to 126.4°F. At 0242 G.m.t., 27 March, during the real-time support period, the sensor temperature (DL-07) was noted to have returned onscale. A significant seismic event was noted during the periodic real-time support period on 24 March. The event was also sensed by the ALSEP 14 station seismometer.
Lunar surface magnetometer experiment	Since 4 June 1972, scientific and engineering data outputs have been invalid.
Solar wind spectrometer experiment	Uninterrupted operations in the low gain mode, since 7 August 1972, recording solar wind plasma data for subsequent long term analysis. At 0152 G.m.t., 24 March, the sum cup modulation voltages in proton energy levels 12, 13, and 14 returned to normal operation.
Suprathermal ion detector	The instrument was commanded to operate select and full automatic stepping sequence (0-127 frames) at 0243 G.m.t., 27 March, for lunar night operation.

Status as of 1800 G.m.t., 29 March 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1226	783	607	342
Total Commands to Date	16690	8877	14938	3877
Sun Angle	193°	199°	219°	231°
Input Power	68.9w	70.0w	72.4w	70.4w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE & CPLEE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	17.6°F	35.6°F	1.4°F	35.8°F
PSE Sensor Temp (DL-07)	126.5°F	124.2°F	124.6°F	125.9°F
LSM Internal Temp (DM-05)	Invalid	N/A	4.69°C	8.9°C
SWS Module 300 Temp (DW-13)	-10.9°C	N/A	Standby	N/A
SIDE Temp (DI-05)	3.7°C	Invalid	6.0°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	114.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	OFF	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-40.8°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.5°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	107
Total Commands to Date	5893
Sun Angle	247°
Input Power	77.2w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	26.5°F
LMS Temp (AM-41)	13.4°F
LEAM Temp (AJ-11)	-20.8°F
HFE Temp Ref 1 (DH-13)	289.1°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	27.8°F

APOLLO LUNAR SURFACE EXPERIMENTS PACKAGE STATUS REPORT

5 April 1973
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was available at all times since the last reporting period.

Apollo 17 ALSEP

At 0508 G.m.t., 2 April, the station's command sequencer provided an automatic switchover (61-hour pulse) to the unused receiver/decoder (B) and power routing circuit (X). The station was reconfigured to its primary operational status receiver/decoder "A" and "W" power routing during real-time support April 2 (1501 G.m.t.) without problem. The planned procedure of inhibiting the internally generated pulse remains in effect, with command octal 174 being sent during real-time support periods. The central station continues operating normally, with the station's electronics and structural components temperatures stabilized in the lunar night environment. Downlink RF signal strength as reported by the 30-foot antenna tracking station is between 133.5 dbm and 139.0 dbm. Power from the RTG remains constant. The central station's average thermal plate temperature profile for this lunar night is tracking within 0.5°F that of the second and third night with an identical operational configuration of all experiments ON, and the LSPE in STANDBY.

The Heat Flow Experiment continues to operate normally, with periodic ring bridge survey's being accomplished. The HFE is currently operating in the gradient mode, with all sensors being sampled in full sequence. Lunar surface temperature as measured by the HFE's thermocouples is 108 ± 8°K. Subsurface temperature at 230 cm depth is 256.5°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment continues to collect data in the seismic and free mode channels. The instrument's internal sensor temperature (DG-04) remains stabilized at 49.186°C. In order to accomplish a greater comprehensive analysis of this experiment's output data, two special 10-hour uninterrupted real-time support periods have been scheduled for April 6 and 7, 1973. These special support periods will be directed and monitored by the Principal Investigator in order to accomplish the proposed experiment configuration changes and objectives in Apollo 17, ALSEP, SMEAR 44.

The Lunar Seismic Profiling Experiment is currently in STANDBY select. The next Passive listening mode operation is scheduled for 6 April.

The Lunar Atmospheric Composition Experiment continues to collect data on the lunar atmospheric composition during this lunar night operation. The present configuration is automatic sweep; high voltage power supply, ON; ion source filaments, ON; multipliers, HIGH; low voltage power supply, ON; discriminator level, HIGH; and back-up heater ON. The

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electrical background noise ramp continues to be noted on all three mass range data channel outputs. The noise ramp also is observed to have different characteristics for various LACE configurations, e.g. heaters OFF. The LACE electronics temperature (AM-41) has currently stabilized at 13.4°F and is tracking the second and third lunar night temperature profile.

The Lunar Ejecta and Meteorites Experiment continues to collect data of impact flux rates since turn-on for lunar night operation on 24 March 1973. The instrument's mirror temperature (AJ-11) is stabilized at -20.8°F which is also the minimum temperature attained during the previous two lunar nights.

It is requested that any organization having comments, questions, or suggestions concerning this report contact R. Miley, Science Requirements Branch, TN3, telephone 483-5067.

Apollo 16 ALSEP

Operational status from 30 March 1973, 1300 G.m.t., to 5 April 1973, 1300 G.m.t.

Central station

Midnight of the 12th lunation occurred on 1 April at the Descartes Site. The DSS-1 (10 watts) heater remains ON for lunar night operation. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength of -136.0 ± 0.4 dbm from transmitter "B". The thermoelectric power source output remains essentially unchanged.

Passive seismic experiment

The typical night-time pattern of low background noise with occasional small, high frequency signals, is currently being sensed by the passive seismometer. Experiment operation continues with the feedback loop filter commanded OUT, the sensor gains of all components configured to 0 db, and the sensor assembly temperature stabilized (auto ON thermal control mode). The uncage/arm fire circuit is configured to the OT state. Since 27 March, commands to level the LP y-axis have not been attempted. The y-axis remains in the off-scale positive direction. No significant seismic events were noted during the limited real-time support of this instrument.

Lunar surface magnetometer experiment

Scientific data have been static since 16 February 1973. The LSM's scientific data continues not to respond to flip calibrations (no cal raster observed) or filter commands. The instrument is currently configured with the digital filter OUT, flip cal inhibit logic commanded ON, and sensors in the 200 gamma range. As of 4 April, 355 flip calibration sequences have been executed and verified by the experiment's engineering data.

Active seismic experiment

The experiment is in standby OFF. On 4 April, the experiment was commanded to operate select at 0050 G.m.t. and to high bit rate ON at 0100 G.m.t. for a passive listening period. Two geophone calibration pulses were sent to the instrument during the listening mode. Data output of all geophones appeared normal and no significant signals were noted in real-time. High bit rate operations were terminated at 0130 G.m.t. and the experiment commanded to standby OFF at 0134 G.m.t. The next 30-minute passive listening period is planned for 11 April.

Apollo 15 ALSEP

Operational status from 30 March 1973, 1300 G.m.t., to 5 April 1973, 1300 G.m.t.

Central station	Midnight of the station's 21st lunation occurred 2 April; power from the RTG continues steady and transmitter "A" downlink signal strength is reported between -133.0 dbm and -138.5 dbm. The lunar night operational procedure of eliminating the data subsystem's timer outputs by uplinking the timer's reset command, octal 150, twice daily at 1400 G.m.t and 2200 G.m.t is in effect.
Passive seismic experiment	Operation is in the auto ON thermal control mode, sensor gains are 0 db, and the feedback loop filter commanded OUT in order to achieve seismic network congruity. The instrument's uncage/arm fire circuitry will remain in the OT state to deliver maximum heat into the sensor assembly for lunar night operations. No major seismic signals have been noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The experiment's sensors are presently in the 50 gamma range for this lunar night operation. Currently the instrument has executed 862 flip calibration sequences since activation. The experiment's y-axis sensor head remains fixed at a 180 degree position, not responding to flip cal commands. The instrument's y-axis sensor has indicated off-scale LOW (static) since 20 September 1972.
Solar wind spectrometer experiment	The instrument has been in STANDBY since 21 March 1973 pending further analysis (Apollo 15 SMEAR, ALSEP 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument is currently operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames).
Heat flow experiment	The temperature of probe 1 at the bottom of the lowest probe section is 253.2°K, with probe 2 indicating a temperature of 250.9°K at its lower-most point. The instrument's cable thermocouples on the lunar surface indicate a temperature of approximately 87.1°K. Since 29 May 1972, the instrument's measurement TREF 2 has continually displayed erroneous data. A duplicate measurement, TREF 1, is operating normally so that no data are lost.

Apollo 14 ALSEP

Operational status from 30 March 1973, 1300 G.m.t., to 5 April o973, 1300 G.m.t.

Central station	Midnight at the Apollo 14 site occurred on 4 April. RTG power output is steady. Transmitter "A" signal strength was reported at -139.8 ± 2.3 dbm. The DSS-1 heater (10 watts) is ON for lunar night operation.
Passive seismic experiment	Operational configuration is identical to that of the other seismometer's: 0 db gain on all sensors, filter OUT, and thermal control AUTO ON. The long-period y-axis has remained in the on-scale leveled position since 22 March. The instrument's heater is operating in the AUTO ON mode for lunar night operation. The instrument's long period z-axis has not displayed valid data nor responded to commands since 17 November 1972. During this limited real-time support period no significant seismic events have been noted.
Active seismic experiment	The experiment is currently in STANDBY. The next listening period is scheduled for 12 April 1973 when the instrument temperature should be above the -60°C restriction.
Suprathermal ion detector/cold cathode gauge experiment	The experiment is currently operating in the full automatic stepping sequence with Channeltron high voltages commanded ON. Since 9 May 1971 intermittent positive engineering data interruptions in one section of the analog-to-digital filter are not adversely affecting the scientific outputs of the experiment. At the beginning of real-time support of this instrument on 4 April it was noted that the ground plane step programmer indicated Load 1. Review of the ALSEP downlink indicated no command verification word (octal 104). Thus, this spurious functional change occurred between real-time support periods on 2 April and 4 April. The instrument was commanded to STANDBY at 0236 G.m.t. and back to ON at 0237 G.m.t., 4 April 1973, to return the experiment to its normal configuration without incident.
Charge particle lunar environmental experiment	The CPLEE remains in STANDBY select, since 15 March 1973. Current plans are to operate the CPLEE during real-time support periods only, with no further command activity planned this lunation.

Apollo 12 ALSEP

Operational status from 30 March 1973, 1300 G.m.t., to 5 April 1973, 1300 G.m.t.

Central station	Midnight of the 42nd lunar night occurred today, 5 April. Power output from the RTG remains steady. A signal strength of -138.2 ± 2.7 dbm from transmitter "B" was reported by the tracking stations. The central station DSS-1 heater (10 watts) is ON for lunar night operations.
Passive seismic experiment	The instrument is configured for seismic network congruity; thermal control mode AUTO ON; component gains at 0 db; and feedback loop filter OUT. The z-axis drive motor is ON for lunar night operations. No significant seismic events were noted during this periodic real-time support period.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid, as experienced since 4 June 1972.
Solar wind spectrometer experiment	Uninterrupted operations in the low gain mode, since 7 August 1972, recording solar wind plasma data for subsequent long term analysis. Since 24 March, the sum cup modulation voltages in proton energy levels 12, 13, and 14 have been operating normally.
Suprathermal ion detector	The instrument is presently operate select and full automatic stepping sequence (0-127 frames) for lunar night operation since 27 March.

Status as of 0300 G.m.t., 4 April 1973, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1232	789	613	348
Total Commands to Date	16732	8898	15036	5918
Sun Angle	258°	264°	284°	297°
Input Power	69.3w	70.4w	72.4w	70.4w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE & CPLEE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	14.7°F	34.2°F	-0.8°F	34.9°F
PSE Sensor Temp (DL-07)	126.1°F	124.1°F	124.5°F	125.8°F
LSM Internal Temp (DM-05)	Invalid	N/A	3.8°C	8.9°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	Standby	N/A
SIDE Temp (DI-05)	3.7°C	Invalid	6.0°C	N/A
CCGE Temp (DI-04)	OFF	Invalid	110.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	OFF	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-65.0°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.2°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	113
Total Commands to Date	5794
Sun Angle	313°
Input Power	76.9w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	26.2°F
LMS Temp (AM-41)	13.4°F
LEAM Temp (AJ-11)	-20.8°F
HFE Temp Ref 1 (DH-13)	288.6°K
LSG Temp (DG-04)	49.1°C
LSP Temp (AP-01)	27.8°F