ALSEP Performance Summary Reports

1974

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ALSEP PERFORMANCE SUMMARY REPORT

4 January 1974
G.m.t.: 1300

This report covers the ALSEPs activities and data from the previous two weeks.

Apollo 17 ALSEP

Sunrise of the scientific station's 14th lunation occurred on 29 December 1973. 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 downlink received signal is reported between -135.0 dbm and -143.0 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 operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. Lunar surface temperature as measured by the HFE thermocouples is 345.5° ± 8°K. Subsurface temperatures at 230 cm depth are 256.4°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for seismic data collection as follows: Seismic high gain, integrator shorted mode, bias OUT, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and tilt servo motors in an intermediate position. The experiment sensor temperature remains stabilized at 49.207°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY select. LSPE passive listening mode operations were accomplished during this reporting period 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
28 Dec	1601	1610	1640	1642	2	None
03 Jan	1054	1100	1130	1131	2	Responses

The Lunar Atmospheric Composition Experiment is currently OFF. The LACE was commanded OFF on 1 January 1974 for the remainder of this lunar day when the electronics temperature (AM-41) reached 124.0°F.

The Lunar Ejecta and Meteorites Experiment is presently OFF. The LEAM was commanded OFF on 1 January 1974 when the instrument mirror temperature (AJ-11) indicated 186.5°F. The LEAM will remain OFF until the mirror temperature decreases to 180.0°F at which time the instrument will be commanded ON for the remainder of this lunation.

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 21 December 1973, 1300 G.m.t., to 4 January 1974, 1300 G.m.t.

Central station	Sunrise of the 22nd lunation occurred on 30 December 1973. The DSS-1 heater (10 watts) was commanded OFF on 31 December 1973. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -136.0 dbm and -140.5 dbm from transmitter "B".
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. The long period y-axis did not respond to leveling commands on 24 December 1973, but did respond on 31 December 1973 when leveling commands were executed. The seismometer's long period y-axis has experienced sluggish leveling since 9 February 1971. No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 596 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The active seismic experiment is currently in standby OFF. *The instrument was commanded to high bit rate ON 3 January 1974 to verify operational status. Operation was satisfactory at this time. This check was performed per Apollo 16 ALSEP, SMEAR 27.*

Apollo 15 ALSEP

Operational status from 21 December 1973, 1300 G.m.t., to 4 January 1974, 1300 G.m.t.

Central station	Sunrise of the station's 31st lunation occurred on 31 December 1973. The transmitter "A" downlink signal strength is reported between -134.0 dbm and -141.0 dbm.
Passive seismic experiment	The instrument is configured for seismic network congruity (Apollo 16 ALSEP). No significant seismic events were noted during real-time support.
Lunar surface magnetometer experiment	The instrument is currently ON. The experiment sensors were re-configured to the 100 gamma range on 31 December 1973 for lunar day operation, and flip calibration commands continue to be transmitted to the instrument with no apparent response, although all engineering and science data continue to be incoherent. Investigation of the anomaly, which occurred on 10 December 1973, continues.
Solar Wind spectrometer experiment	The instrument remains in STANDBY (Apollo 15 ALSEP, SMEAR 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 instrument measurement, TREF 1, is operating normally (TREF 2 has been invalid since 29 May 1972). The lunar surface temperature is 328.6°K as indicated by the cable thermocouples. The sub-surface temperature is 253.4°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.0°K at its lower-most point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 21 December 1973, 1300 G.m.t., to 4 January 1974, 1300 G.m.t.

Central station	Sunrise at the Apollo 14 site occurred on 2 January 1974 (37th lunation). Transmitter "A" signal strength was reported between -137.5 dbm and -144.5 dbm. The DSS-1 heater (10 watts) was commanded OFF for lunar day operation on 3 January 1974. Data processor "Y" was verified by command on 3 January 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). *At 0249 G.m.t. on 1 January 1974 the MILA tracking station reported a spurious functional change of the PSE from ON to STANDBY (no CVW was reported in the downlink). At the direction of mission control, the instrument was commanded ON at 0435 G.m.t., 1 January 1974 (octal 036, PSE ON) and subsequently reconfigured for seismic network congruity (Ref. Apollo 16 ALSEP) by the HAW site without further incident. No significant seismic events have been noted during this report period.*
Active seismic experiment	The experiment is currently in STANDBY. *The instrument was commanded to high bit rate select on 3 January 1974 to verify operational status. The output of geophone #2 appeared abnormal. This anomaly is currently under investigation. The status check was performed per Apollo 14 ALSEP, SMEAR 86.*
Suprathermal ion detector/cold cathode gauge experiment	The experiment is currently operating in the full automatic stepping sequence with Channeltron high voltages commanded ON. The CCGE data continues to be normal.
Charged particle lunar environmental experiment	The CPLEE was commanded to STANDBY earlier today, 4 January 1974, per the present operational plan. The experiment had been in OPERATE select since 17 December 1973.

Apollo 12 ALSEP

Operational status from 21 December 1973, 1300 G.m.t., to 4 January 1974, 1300 G.m.t.

Central station

Sunrise of the 52nd lunar day occurred on 3 January 1974 at the ALSEP site in the Ocean of Storms. A signal strength of -140.0 ± 2.0 dbm from transmitter "B" was reported by the tracking stations. The DSS-1 heater (10 watts) was commanded OFF for lunar day operations at 0949 G.m.t., 3 January 1974 when the average thermal plate temperature was 44.2°F. Data processor "Y" was verified by command on 3 January 1974.

Passive seismic experiment

The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). *The instrument's long period z-axis failed to respond to calibration commands on 28 December 1973. The output of the z-axis, as observed on the analog helicorder, appeared quiescent. The instrument was subsequently commanded from the 0 db gain range to the -10, -20, -30, and back to 0 db gain, with long period calibration commands sent at each gain level and no calibration responses observed. the instrument again failed to respond to calibration commands during real-time support on 31 December 1973 and 1 January 1974. The long period z-axis returned to normal operation (response to LP cal commands and seismic data observed) during real-time support on 2 January 1974 and has remained functional throughout the rest of this report period.* The z-axis drive motor was commanded OFF for lunar day operation on 3 January 1974. No significant seismic events were noted during the periodic real-time support periods of this instrument.

Lunar surface magnetometer experiment

Scientific and engineering data outputs remain invalid.

Solar wind spectrometer experiment

The instrument is currently in the normal gain mode and is recording solar wind plasma data for subsequent long-term analysis.

Suprathermal ion detector experiment

Currently the SIDE is ON. Cyclic commanding of the instrument in the full automatic stepping sequence with Channeltron high voltages ON to experiment power OFF will be initiated later today to preclude instrument mode changes at internal temperatures above 55°C.

Status as of 1400 G.m.t., 3 January 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1507	1064	888	623
Total Commands to Date	18917	10848	20167	9574
Sun Angle	4.4°	10.4°	31.8°	43.7°
Input Power	65.2w	67.9w	70.3w	68.6w
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	43.6°F	72.5°F	85.5°F	87.6°F
PSE Sensor Temp (DL-07)	126.4°F	124.5°F	126.5°F	127.6°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	37.3°C
SWS Module 300 Temp (DW-13)	4.3°C	N/A	Standby	N/A
SIDE Temp (DI-05)	14.4°C	Invalid	66.7°C	N/A
CCGE Temp (DI-04)	HIGH	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	-22.2°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	304.0°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	388
Total Commands to Date	12047
Sun Angle	59.1°
Input Power	75.0w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby/LEAM & LACE OFF
Avg Thermal Plate Temp	112.9°F
LACE Temp (AM-41)	67.4°F
LEAM Temp (AJ-11)	182.0°F
HFE Temp Ref 1 (DH-13)	323.2°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	113.5°F

ALSEP PERFORMANCE SUMMARY REPORT

11 January 1974
G.m.t.: 1300

Apollo 17 ALSEP

Noon of the scientific station's 14th lunation occurred on 5 January. All experiments and the central station are operating as expected. Downlink signal strength is reported at -139.5 ± 2.5 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174, to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. Lunar surface temperature as measured by the HFE's thermocouples is 320.0 ± δ°K. Subsurface temperature at 230 cm depth is 256.4°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for seismic data collection as follows: Seismic high gain, integrator shorted mode, bias OUT, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and tilt servo motors in an intermediate position. The experiment sensor temperature remains stabilized at 49.207°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY select. The next passive listening period is planned for later today.

The Lunar Atmospheric Composition Experiment is currently in STANDBY for the remainder of this lunar day. *The instrument was commanded to STANDBY at 1440 G.m.t., 10 January. The LACE electronic temperature is presently reading 52.7°F and is tracking approximately 2°F higher than the previous lunation's temperature profile.*

The Lunar Ejecta and Meteorites Experiment is presently ON. *The instrument was commanded ON at 1442 G.m.t., 10 January, when the mirror temperature (AJ-11) decreased to 173.8°F. The mirror temperature profile is tracking approximately 2.5°F higher than the previous lunation.* The instrument's mirror temperature (AJ-11) currently is reading 173.8°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 4 January 1974, 1300 G.m.t., to 11 January 1974, 1300 G.m.t.

Central station	Noon of the 22nd lunar day occurred on 7 January at the Descartes Site. The DSS-1 heater (10 watts) is OFF for lunar day operations. The 18-hour 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 between -136.0 dbm and -139.0 dbm from transmitter "B".
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. The instrument's sensor temperature (DL-07) indicated off-scale HIGH at the beginning of real-time support on 5 January (sun angle 73.1°). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experimetn	The LSM continues in the full operational mode and all data have been valid since 17 August 1973. The instrument has accomplished 602 flip calibration sequences since activation.
Active seismic experiment	The experiment is currently in STANDBY OFF and present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 4 January 1974, 1300 G.m.t., to 11 January 1974, 1300 G.m.t.

Central station	Noon of the station's 31st lunation occurred on 8 January. Transmitter "A" downlink signal strength is reported between -134.0 dbm and -140.5 dbm.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. At the start of real-time support on 6 January the instrument's sensor temperature (DL-07) was off-scale HIGH (sun angle 75.0°). No significant seismic events were noted during this limited real-time support period.
Lunar surface magnetometer experiment	The instrument is currently ON. The experiment sensors are in the 100 gamma range for lunar day operation, and flip calibration commands continue to be transmitted to the instrument with no apparent response. All LSM engineering and science data continue to be incoherent. Investigation of the anomaly, which occurred on 10 December 1973, continues.
Solar wind spectrometer experiment	The instrument remains in STANDBY (Apollo 15 ALSEP, SMEAR 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument is currently in STANDBY. Cyclic commanding of the experiment was initiated for the remainder of this lunar day on 4 January (Apollo 15 ALSEP, SMEAR 47). A special scientific data gathering period was conducted on 7 January 1974 to observe those low energy data counts which appear some 33 hours prior to lunar noon. Cursory results of the test appear to have verified the PI's assumptions of these energy phenomena.
Heat flow experiment	The HFE is operating in the normal gradient mode. The lunar surface temperature was 362.8°K on 10 January as indicated by the cable thermocouples. The sub-surface temperature was 253.4°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 250.9°K at its lower-most point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 4 January 1974, 1300 G.m.t., to 11 January 1974, 1300 G.m.t.

Central station	Noon of the 37th lunation at the Apollo 14 site occurred on 9 January. Transmitter "A" signal strength was reported at -140.0 ± 3.0 dbm. The DSS-1 heater (10 watts) is OFF for lunar day operations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater was commanded to FORCED OFF at 0051 G.m.t., 7 January, to minimize heating during lunar day operations. During this limited real-time support period no significant seismic events have been noted.
Active seismic experiment	The experiment is currently in STANDBY and present operations are per Apollo 14 ALSEP, SMEAR 86. *The instrument was commanded to high bit rate select on 9 January 1974 to further investigate the geophone #2 anomaly of 3 January 1974. Geophone calibration commands were executed. The calibration of geophone #1 was normal and the calibration trace of geophone #2 was abnormal in that it was the inverse of the geophone #1 calibration trace. The data on the analog recorder indicated that the ring-down and response signals of geophone #2 were larger than normal. Response signals also were not observed in high bit rate operation on geophone #2 although geophone #1 recorded a small response at that time. Further investigation of the anomaly continues.*
Suprathermal ion detector/cold cathode gauge experiment	*The instrument experienced a functional change to STANDBY between 2200 G.m.t., 3 January, and 0230 G.m.t., 4 January, as reported by the Madrid tracking station.* The experiment remains in STANDBY and present plans are to leave it in this configuration the remainder of the lunar day to preclude instrument mode changes at elevated temperatures.
Charged particle lunar environmental experiment	The CPLEE is currently in STANDBY select. Present plans are to leave the experiment in STANDBY select until after sunset of this lunation, 17 January 1974.

Apollo 12 ALSEP

Operational status from 4 January 1974, 1300 G.m.t., to 11 January 1974, 1300 G.m.t.

Central station	Noon of the 52nd lunar day occurred on 10 January at the site in the Ocean of Storms. The signal strength is -141.5 ± 1.5 dbm from transmitter "B" as reported by the tracking stations. The DSS-1 heater (10 watts) is OFF for lunar day operations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The PSE's sensor temperature (DL-07) was off-scale HIGH at the beginning of real-time support on 10 January (sun angle 91.4 °). No significant seismic events were noted during the periodic real-time support periods of this instrument.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data for subsequent long-term analysis.
Suprathermal ion detector experiment	Currently the SIDE is OFF. Cyclic commanding of the instrument in the full automatic stepping sequence with Channeltron high voltages ON to experiment power OFF is in effect to preclude instrument mode changes at internal temperatures above 55°C.

Statu .s of 1600 G.m.t., 10 January 1974, was as follow

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1513	1070	894	629
Total Commands to Date	19028	10904	20401	9697
Sun Angle	92.5°	98.5°	119.6°	131.5°
Input Power	65.2w	67.7w	70.3w	68.6w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE/SIDE/CPLEE Stby	SWS/SIDE Stby	ASE OFF
Avg Thermal Plate Temp	95.3°F	115.1°F	116.5°F	95.1°F
PSE Sensor Temp (DL-07)	Offscale HIGH	135.6°F	Offscale HIGH	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	42.4°C
SWS Module 300 Temp (DW-13)	67.1°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Invalid	Standby	N/A
CCGE Temp (DI-04)	OFF	Invalid	Standby	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	114.3°C
HFE Temp Ref 1 (DH-13)	N/A	N/A	329.2°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	394
Total Commands to Date	12156
Sun Angle	146.7°
Input Power	75.0w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE/LACE Stby
Avg Thermal Plate Temp	101.6°F
LACE Temp (AM-41)	52.7°F
LEAM Temp (AM-41)	173.8°F
HFE Temp Ref 1 (DH-13)	310.6°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	103.2°F

ALSEP PERFORMANCE SUMMARY REPORT

18 January 1974
G.m.t.: 1300

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

ALSEPs	*Date*	*GMT LOS*	*GMT AOS*	*Data Loss*
12,14,15,16,17	*12 Jan*	*1855*	*1910*	0^h15^m

Apollo 17 ALSEP

Sunset of the 14th lunation occurred on 13 January at Taurus Littrow. The central station is operating normally with the automatic power management circuit functioning as designed. The structural components temperatures are tracking the temperature profile of previous lunations. 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. Downlink RF signal strength is reported at -143.0 ± 4.0 dbm from transmitter "A".

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 100.0 ± 8°K. At a depth of 230 cm, the subsurface temperatures are 256.5°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating in the open loop mode. The instrument is configured to seismic high gain, integrator shorted mode, bias OUT, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and the tilt servo motors in an intermediate position. *Some apparent activity was noted at 1522 G.m.t., 15 January 1974, as observed on the instrument's seismic output (DG-01).* The experiment sensor temperature is presently stabilized at 49.207°C (slave heater ON).

The Lunar Seismic Profiling Experiment is in STANDBY select. The experiment was commanded ON at 0012 G.m.t., 12 January, and to LSPE data format processing (high bit rate) at 0049 G.m.t. Two geophone calibration pulses were sent during the listening period. Activity was observed on all geophones during the real-time operation. LSPE processing was terminated at 0123 G.m.t., and the instrument was commanded to STANDBY select at 0126 G.m.t.

The Lunar Atmospheric Composition Experiment was commanded from STANDBY to ON at 1342 G.m.t., 12 January, for lunar night. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and back-up heater, ON. The electronics temperature (AM-41) is currently 3.2°F. *The LACE high voltage will be commanded ON later today to determine if any positive change in instrument status has occurred.*

ALSEP PERFORMANCE SUMMARY REPORT (continued)

18 January 1974
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 instrument's mirror temperature (AJ-11) currently is reading -17.4°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 11 January 1974, 1300 G.m.t., to 18 January 1974, 1300 G.m.t.

Central station	Sunset at the Descartes Site occurred on 14 January for the 22nd lunar day. The DSS-1 heater (10 watts) was commanded ON at 0039 G.m.t., 14 January, for lunar night operations when the average thermal plate decreased to 53.8°F. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter "B" is reported between -132.0 and -142.0 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. The instrument's assembly temperature returned to on-scale on 14 January at a Sun Angle of 178.6° (DL-07 = 136.8°F). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 608 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently in STANDBY OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 11 January 1974, 1300 G.m.t., to 18 January 1974, 1300 G.m.t.

Central station	Sunset of the site's 31st lunation occurred on 15 January. Transmitter "A" downlink signal strength is reported as -136.8 ± 5.8 dbm by the tracking stations with 30-foot antenna.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. The PSE's sensor temperature (DL-07) returned on-scale on 11 January. *At 0721 G.m.t., 14 January 1974, the instrument responded to a spurious command (octal 064, gain change LPZ). The MILA tracking station confirmed receipt of the command verification word in the ALSEP downlink signal. The PSE long period sensor was returned to the 0 db gain range by Mode I command at 0822 G.m.t., 14 January, without incident.*
Lunar Surface magnetometer experiment	The instrument is currently ON. All engineering and science data continue to be incoherent. Investigation of the anomaly, which occurred on 10 December 1973, continues.
Solar wind spectrometer experiment	The instrument remains in STANDBY select (Apollo 15 ALSEP, SMEAR 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames).
Heat flow experiment	The instrument measurement, TREF 1, is operating normally. The lunar surface temperature is 95.1°K as indicated by the cable thermocouples. The sub-surface temperature is 253.4°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.0°K at its lower-most point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 11 January 1974, 1300 G.m.t., to 18 January 1974, 1300 G.m.t.

Central station	Sunset at the Apollo 14 site occurred on 17 January. Transmitter "A" signal strength was reported as -134.0 to -143.0 dbm from the 30-foot tracking stations. The DSS-1 heater (10 watts) was commanded ON for lunar night operation on 16 January.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater was commanded to ON at 1439 G.m.t., 14 January, for lunar night operations.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument was commanded ON at 1347 G.m.t., 16 January, and is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON for the remainder of this lunation.
Charged particle lunar environmental experiment	The experiment was commanded ON at 1343 G.m.t., 16 January, and is operating in the manual mode at the -35 vdc range and automatic thermal control mode. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage to 2280 vdc, at which time the instrument will be commanded to STANDBY select.

Apollo 12 ALSEP

Operational status from 11 January 1974, 1300 G.m.t., to 18 January 1974, 1300 G.m.t.

Central station	Sunset of the 52nd lunar day occurred on 17 January. The DSS-1 heater (10 watts) was commanded ON for lunar night operation on 17 January. A signal strength of -138.0 to -144.0 dbm from transmitter "B" was reported by the 30-foot tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The sensor temperature (DL-07) returned on-scale at the start of real-time support on 17 January. No significant seismic events were noted during the periodic real-time support periods.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument remains in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is in the full automatic stepping sequence with Channeltron high voltages ON. The instrument was commanded to ON at 1342 G.m.t., 15 January, for lunar night operations.

Status as of 0030 G.m.t., 18 January 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1521	1078	884	637
Total Commands to Date	19109	10975	20597	9817
Sun Angle	180.0°	186.4°	207.2°	219.4°
Input Power	65.3w*(66.1w)*	68.5w*(69.4w)*	70.8w*(71.4w)*	69.5w*(69.5w)*
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE Standby	SWS Standby	ASE OFF
Avg Thermal Plate Temp	20.7°F	37.1°F	-1.7°F	36.4°F
PSE Sensor Temp (DL-07)	127.6°F	124.5°F	124.7°F	125.9°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	-9.0°C
SWS Module 300 Temp (DW-13)	20.1°C	N/A	Standby	N/A
SIDE Temp (DI-05)	22.7°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	116.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-20.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-7.3°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	402
Total Commands to Date	12321
Sun Angle	234.8°
Input Power	76.5w*(76.9w)*
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	31.5°F
LACE Temp (AM-41)	3.2°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	286.8°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	34.0°F

**Value in parenthesis indicates RTG output during last lunation at a similar sun angle.*

ALSEP PERFORMANCE SUMMARY REPORT

25 January 1974
G.m.t.: 1300

Apollo 17 ALSEP

Midnight of the 14th lunation at the Taurus Littrow lunar site occurred on 20 January. The central station is operating normally. Downlink signal strength from the 30 foot antenna tracking stations is reported at -139.5 ± 3.5 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174, to inhibit automatic selection of the redundant command signal processing chain (by internally generated 61-hour pulses) continues 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 106 ± 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 on 23 January.

The Lunar Surface Gravimeter Experiment is operating in the open loop mode. The instrument is configured to seismic high gain, integrator shorted mode, bias OUT, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and the tilt servo motors in an intermediate position. The experiment sensor temperature is presently stabilized at 49.207°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY select. LSPE passive listening mode operations were accomplished during this reporting period 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
18 Jan	1307	1320	1350	1353	2	None
23 Jan	1444	1500	1530	1532	2	None

The next passive listening period is planned for 1 February 1974.

The Lunar Atmospheric Composition Experiment is currently in Operate Select ON, without processing scientific data. A sequence of operational commands were executed by the experiment during real-time support on 18 January 1974. The instrument's telemetry data did indicate some signs of change during the 30 minutes that the multiplier high voltage power supply operated, but no significant improvement has resulted from the LACE not being operational since 17 October 1973. The experiment's filament #2 was not commanded ON during the operational status check. The experiment was reconfigured to its lunar night operational mode, and currently remains in this mode. The LACE will be cycled from ON to OFF to maintain the electronics temperature

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below the previously established 125°F limit. No periodic check is planned within the next sixty days. The electronics temperature (AM-41) is currently stabilized at -2.3°F, which is 5.5°F cooler than the previous lunar night's thermal profile.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The experiment's periodic calibrate pulses are occurring as anticipated. The instrument's mirror temperature (AJ-11) currently is reading -17.4°F and tracking the previous 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 18 January 1974, 1300 G.m.t., to 25 January 1974, 1300 G.m.t.

Central station	This ALSEP experienced midnight of its 22nd lunation on 22 January. The DSS-1 heater (10 watts) is ON for lunar night operations. Inhibiting of the 18-hour timer output pulses is continuing. The 30-foot antenna tracking stations report a signal strength of -136.0 $\pm$ 3.0 dbm from transmitter "B".
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. The long period y-axis has not responded to leveling commands since 17 January 1974. No significant seismic events were observed during the real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 614 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently in STANDBY OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 18 January 1974, 1300 G.m.t., to 25 January 1974, 1300 G.m.t.

Central station	Midnight of the station's 31st lunation occurred on 23 January. Transmitter "A" downlink signal strength was reported at -134.7 ± 2.7 dbm from the 30 foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's uncage/arm fire circuitry has been cycling per the normal 18-hour timer output pulse functions. During the real-time support periods this past week no significant seismic events were observed.
Lunar surface magnetometer experiment	The experiment is ON with the sensors in the 50 gamma range for lunar night operations. Currently the instrument has executed 1225 flip calibration sequences since activation. All engineering and science data continues to be incoherent. Investigation of the anomaly, which occurred on 10 December 1973, is continuing.
Solar wind spectrometer experiment	The instrument remains in STANDBY select (Apollo 15 ALSEP, SMEAR 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating continuously with channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) for the remainder of this lunation (Apollo 15 ALSEP, SMEAR 47).
Heat flow experiment	The instrument measurement, TREF 1, is operating normally (TREF 2 has been invalid since 29 May 1972). The lunar surface temperature is 87.4°K as indicated by the cable thermocouples. The sub-surface temperature is 253.4°K at the bottom of the lowest section of probe #1. Probe #2 indicates a temperature of 250.9°K at its lower-most point. Ring bridge surveys are being conducted periodically.

Apollo 14 ALSEP

Operational status from 18 January 1974, 1300 G.m.t., to 25 January 1974, 1300 G.m.t.

Central station	Midnight at the Apollo 14 site occurred on 24 January. Transmitter "A" signal strength was reported between -134.0 dbm and -141.5 dbm by the 30 foot antenna tracking stations. The DSS-1 heater (10 watts) is ON for lunar night operation.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument heater is operating in the AUTO ON mode for lunar night operation. *At the beginning of real-time support of this instrument on 23 January it was observed that the long-period z-axis sensor gain indicated -10 db. Review of the ALSEP downlink indicated no command verification word (octal 064). Therefore, this spurious functional change occurred between real-time support periods on 21 January and 23 January. The z-axis sensor gain was commanded back to 0 db gain without incident at 1541 G.m.t., 23 January.* During the limited real-time support periods of this week no significant seismic events have been observed.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The experiment is currently operating in the full automatic stepping sequence with Channeltron high voltages commanded ON.
Charged particle lunar environmental experiment	The experiment is currently ON in the manual mode at the -35 vdc range and automatic thermal control mode. It is planned to leave the experiment in this configuration pending possible degradation of analyzer A voltage, (AC-03), to 2200 vdc at which time the instrument will be commanded to STANDBY select.

Apollo 12 ALSEP

Operational status from 18 January 1974, 1300 G.m.t., to 25 January 1974, 1300 G.m.t.

Central station	Midnight of the 52nd lunar night occurred today. A signal strength of -135.0 dbm to -142.0 dbm from transmitter "B" was reported by the 30 foot antenna 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 (Ref. Apollo 16 ALSEP). *The instrument's long period z-axis failed to respond to calibration commands on 23 January 1974. The output of the z-axis, as observed on the analog helicorder, appeared quiescent. This anomaly previously occurred on 31 December 1973, however on 2 January and until this date, the instrument had responded normally to the calibration commands.* At 1239 G.m.t., 19 January, the PSE sensor temperature (DL-07) was offscale LOW (sun angle = 200.3°). No significant seismic events were observed during real-time support of the instrument.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	The SIDE is in OPERATE select and automatic stepping sequence for the remainder of this lunation.

Status as of 1600 G.m.t., 23 January 1974, was as follows.

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	15226	1083	889	642
Total Commands to Date	19149	11004	20684	9857
Sun Angle	250.7°	256.6°	277.8°	289.6°
Input Power	65.2w	68.1w	70.5w	69.5w
Heater and Power Dumps	DSS-1 ON(10w)	DSS-1 ON(10w)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE Standby	SWS Standby	ASE OFF
Avg Thermal Plate Temp	7.8°F	28.9°F	-4.7°F	35.3°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.3°F	124.5°F	125.9°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	-9.0°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	Standby	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	110.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.7°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-70.3°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	407
Total Commands to Date	12480
Sun Angle	304.8°
Input Power	76.5w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	32.1°F
LACE Temp (AM-41)	-2.3°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	285.9°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	34.0°F

ALSEP PERFORMANCE SUMMARY REPORT

1 February 1974
G.m.t.: 1300

Another type of ALSEP data loss has transpired during January 1974. Data loss is in the form of poor quality data and data gaps being processed from the analog range data tapes. Due to the ALSEP data processing plan at JSC, these data losses are just now being determined, although the data may have been recorded several months previously. It must be noted that the ALSEP data losses from these periods is non-recoverable.

It has been determined that the ALSEP packages listed herein have been affected:

ALSEP	*Date*	*G.m.t.*	*Site*	*Remarks*
Apollo 15 & 17	*21 Nov 73*	*1020-1244*	*MILA*	*Data gaps*
Apollo 15 & 17	*21 Nov 73*	*1020-1723*	*MILA*	*Poor quality*
Apollo 12,14,15,16&17	*10 Dec 73*	*0124-0552*	*ACN*	*Poor quality and Data gaps*

Apollo 17 ALSEP

Sunrise of the scientific station's 15th lunation occurred on 28 January 1974. The central station's data subsystem electronics, thermal plate, and external structural temperatures continue to rise within anticipated limits. The downlink received signal is reported between -133.0 dbm and -141.0 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 operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. Lunar surface temperature as measured by the HFE thermocouples is 224.0 + 8°K. Subsurface temperatures at 230 cm depth are 256.4°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for seismic data collection as follows: seismic high gain, integrator shorted mode, bias OUT, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and tilt servo motors in an intermediate position. The experiment sensor temperature remains stabilized at 49.207°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY select. The next passive listening position is planned for later today, 1 February.

ALSEP PERFORMANCE SUMMARY REPORT (continued)

1 February 1974
G.m.t.: 1300

The Lunar Atmospheric Composition Experiment is currently OFF, following Mode 1 commanding by the Canary Island tracking station. The LACE OFF command occurred on 31 January 1974, 1620 G.m.t. The experiment will be in the OFF configuration for the remainder of this lunar day.

The Lunar Ejecta and Meteorites Experiment is presently OFF. The LEAM was commanded OFF on 31 January 1974, 1617 G.m.t., (Mode 1) when the instrument's mirror temperature (AJ-11) increased to 194.0°F. The LEAM will remain OFF until the mirror temperature decreases to 180.0°F at which time the instrument will be commanded ON for the remainder of this lunation.

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 25 January 1974, 1300 G.m.t., to 1 February 1974, 1300 G.m.t.

Central station	Sunrise of the 23rd lunation occurred on 29 January 1974. The DSS-1 heater (10 watts) was commanded OFF on 29 January 1974. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -132.0 dbm and -138.3 dbm from transmitter "B".
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. The long period y-axis did not respond to leveling commands from 17 January to 29 January 1974 but did respond on 29 January 1974 when leveling commands were executed. The seismometer's long period y-axis has experienced sluggish leveling since 9 February 1971. No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 620 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The active seismic experiment is currently in standby OFF per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 25 January 1974, 1300 G.m.t., to 1 February 1974, 1300 G.m.t.

Central station	Sunrise of the station's 32nd lunation occurred on 30 January 1974. The transmitter "A" downlink signal strength is reported between -132.0 dbm and -141.0 dbm.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). *At 0550 G.m.t., 29 January 1974, the instrument responded to a spurious command (octal 075, leveling speed HIGH). The Hawaii tracking station confirmed receipt of the command in the ALSEP downlink. After verification during real-time support, the leveling speed was commanded to LOW by mission control at 1413 G.m.t., 29 January 1974, without incident. During real-time support at 1407 G.m.t., 25 January 1974, it was noted that calibration responses for the long period z-axis on the Helicorder drums appeared abnormal. The pulses appeared normal on the analog strip recorders. All calibration pulses on the long-period z-axis have appeared abnormal during the subsequent real-time support periods. The instrument sensor temperature (DL-07) was 124.4°F and the sun angle was 301.6° when the abnormal calibration pulse was first noted.* No significant seismic events were noted during real-time support.
Lunar surface magnetometer experiment	The instrument is currently ON. The experiment sensors were re-configured to the 100 gamma range on 29 January 1974 for lunar day operation, and flip calibration commands continue to be transmitted to the instrument with no apparent response, although all engineering and science data continue to be incoherent. Investigation of the anomaly, which occurred on 10 December 1973, continues.
Solar wind spectrometer experiment	The instrument remains in STANDBY (Apollo 15 ALSEP, SMEAR 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 (concluded)

Operational status from 25 January 1974, 1300 G.m.t., to 1 February 1974, 1300 G.m.t.

Heat flow experiment	The instrument measurement, TREF 1, is operating normally (TREF 2 has been invalid since 29 May 1972). The lunar surface temperature is 84.0°K as indicated by the cable thermocouples. The sub-surface temperature is 253.4°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 250.9°K at its lower-most point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 25 January 1974, 1300 G.m.t., to 1 February 1974, 1300 G.m.t.

Central station	Sunrise at the Apollo 14 site will occur on 1 February 1974 (38th lunation). Transmitter "A" signal strength was reported between -136.0 dbm and -143.5 dbm. The DSS-1 heater (10 watts) will be commanded OFF for lunar day operation on 2 February 1974. Data processor "Y" will be verified by command on 2 February 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). No significant seismic events have been noted during this report period.
Active seismic experiment	The experiment is currently in STANDBY per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The experiment is currently operating in the full automatic stepping sequence with Channeltron high voltages commanded ON. The CCGE data continues to be normal.
Charged particle lunar environmental experiment	The CPLEE will be commanded to STANDBY on 2 February 1974, per the present operational plan. The experiment has been in OPERATE select since 16 January 1974.

Apollo 12 ALSEP

Operational status from 25 January 1974, 1300 G.m.t., to 1 February 1974, 1300 G.m.t.

Central station	Sunrise of the 53rd lunar day will occur on 1 February 1974 at the ALSEP site in the Ocean of Storms. A signal strength of -141.0 ± 5.0 dbm from transmitter "B" was reported by the tracking stations. The DSS-1 heater (10 watts) will be commanded OFF for lunar day operations on 2 February 1974. Data processor "Y" will be verified by command on 2 February 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). *The instrument's long period z-axis again failed to respond to calibration commands on 23 January 1974. The output of the z-axis, as observed on the analog helicorder, appeared quiescent. The instrument had previously failed to respond to calibration commands during real-time support on 28 December 1973. The long period z-axis is expected to return to normal operation (response to LP cal commands and seismic data observed) after sunrise on 1 February 1974.* The z-axis drive motor will be commanded OFF for lunar day operation on 2 February 1974. No significant seismic events were noted during the periodic real-time support periods of this instrument.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data for subsequent long-term analysis.
Suprathermal ion detector experiment	Currently the SIDE is ON in the full automatic stepping sequence with Channeltron high voltages ON.

Status as of 1600 G.m.t., 30 January 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1533	1090	914	649
Total Commands to Date	19155	11016	20784	9910
Sun Angle	334.7°	340.7°	3.3°	15.0°
Input Power	64.7w	68.0w	70.8w	68.6w
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	6.5°F	28.2°F	-5.5°F	46.9°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.3°F	124.1°F	126.3°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	26.5°C
SWS Module 300 Temp (DW-13)	-16.0°C	N/A	Standby	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	106.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.7°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-71.1°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	414
Total Commands to Date	12573
Sun Angle	30.1°
Input Power	74.4w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	63.4°F
LACE Temp (AM-41)	111.1°F
LEAM Temp (AJ-11)	173.8°F
HFE Temp Ref 1 (DH-13)	303.5°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	63.1°F

ALSEP PERFORMANCE SUMMARY REPORT

8 February 1974
G.m.t.: 1300

Apollo 17 ALSEP

Noon of the scientific station's 15th lunation occurred on 4 February at the Taurus Littrow site. Downlink signal strength is reported at -140.7 ± 4.2 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174, to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. Lunar surface temperature as measured by the HFE's thermocouples is 362 ± 8°K. Subsurface temperature at 230 cm depth is 256.4°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for seismic data collection as follows: seismic high gain, integrator shorted mode, bias OUT, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and tilt servo motors in an intermediate position. The experiment sensor temperature remains stabilized at 49.207°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY select. LSPE passive listening mode operations were accomplished during this reporting period 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
2 Feb	0211	0223	0253	0255	2	None
7 Feb	1930	1940	2010	2012	2	Responses

The next passive listening period is planned for 16 February 1974.

The Lunar Atmospheric Composition Experiment is currently OFF. The instrument will be commanded to STANDBY later today to maintain thermal stability prior to turn ON for the lunar night. *The LACE electronic temperature is presently reading 72.1°F and is tracking the previous lunation's temperature profile.*

The Lunar Ejecta and Meteorites Experiment is presently OFF. The instrument will be commanded ON later today. *The mirror temperature profile (AJ-11) is tracking that of the previous lunation and is currently reading 192.5°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 1 February 1974, 1300 G.m.t., to 8 February 1974, 1300 G.m.t.

Central station	Noon of the 23rd lunar day occurred on 5 February at the Descartes Site. The DSS-1 heater (10 watts) is OFF for lunar day operations. The 18-hour 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 between -136.0 dbm and -139.0 dbm from transmitter "B".
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. The instrument's sensor temperature (DL-07) indicated off-scale HIGH at the beginning of real-time support on 4 February (sun angle 75.1°). No significant seismic events were observed during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM continues in the full operational mode and all data have been valid since 17 August 1973. The instrument has accomplished 626 flip calibration sequences since activation.
Active seismic experiment	The active seismic experiment is currently in standby OFF. *The instrument was commanded to high bit rate ON, 2 February 1974, to verify operational status. Operation was satisfactory at this time. The check was performed per Apollo 16 ALSEP, SMEAR 27.*

Apollo 15 ALSEP

Operational status from 1 February 1974, 1300 G.m.t., to 8 February 1974, 1300 G.m.t.

Central station

Noon of the station's 32nd lunation occurred on 6 February. Transmitter "A" downlink signal strength at the 30 foot antenna tracking stations is reported between -134.0 dbm and -139.2 dbm.

Passive seismic experiment

The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). *The problem encountered with the abnormal calibration response (excessive recovery time) of the long-period z-axis displayed on the mission control Helicorder, 25 January 1974, has been corrected. During real-time support on 2 February 1974 a ground equipment problem here at JSC was discovered and the anomaly has been resolved. All calibration pulses since that date are now normal.* The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. At the start of real-time support on 5 February the instrument's sensor temperature (DL-07) was off-scale HIGH (sun angle 73.6°). No significant seismic events were observed during this limited real-time support period.

Lunar surface magnetometer experiment

The instrument is currently ON. The experiment sensors are in the 100 gamma range for lunar day operation, and flip calibration commands continue to be transmitted to the instrument with no apparent response. All LSM engineering and science data continue to be incoherent. Investigation of the anomaly, which occurred on 10 December 1973, continues.

Solar wind spectrometer experiment

The instrument remains in STANDBY (Apollo 15 ALSEP, SMEAR 46).

Suprathermal ion detector/cold cathode gauge experiment

The instrument is currently in STANDBY. *At the beginning of real-time support on 31 January it was noted that the command register contained a master reset (SIDE Load 8). The spurious functional change occurred between real-time support periods on 30 January and 31 January. The instrument was commanded to STANDBY and back to ON at 0024 G.m.t., 1 February, returning the experiment to normal configuration without incident.* Cyclic commanding of the experiment was initiated for the remainder of this lunar day on 4 February (Apollo 15 ALSEP, SMEAR 47). On 5 February 1974, during real-time support, a special scientific data gathering period was conducted to observe those low energy data counts which appear some 33 hours prior to lunar noon.

Apollo 15 ALSEP (concluded)

Operational status from 1 February 1974, 1300 G.m.t., to 8 February 1974, 1300 G.m.t.

Heat flow experiment	The HFE is operating in the normal gradient mode. The lunar surface temperature was 370.3°K on 7 February as indicated by the cable thermocouples. The sub-surface temperature was 253.4°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.0°K at its lower-most point. Ring bridge surveys are obtained periodically. *At 2214 G.m.t., 5 February 1974, the Canary Island tracking station observed a spurious functional change in the ALSEP downlink signal (Octal 145, sub-sequence #2 select). The experiment was reconfigured by command from mission control to full sequence (Octal 141) at 1353 G.m.t., 6 February, without incident.*

Apollo 14 ALSEP

Operational status from 1 February 1974, 1300 G.m.t., to 8 February 1974, 1300 G.m.t.

Central station	Noon of the 38th lunation at the Apollo 14 site occurred today. The 30-foot antenna tracking stations report a signal strength from transmitter "A" at -139.5 $\pm$ 3.5 dbm. The DSS-1 heater (10 watts) is OFF for lunar day operations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater was commanded to FORCED OFF at 1211 G.m.t., 5 February, to minimize heating during lunar day operations. During the limited real-time support periods no significant seismic events have been observed.
Active seismic experiment	The experiment is currently in STANDBY. *The instrument was commanded to high bit rate select on 2 February 1974 to verify operational status. The output of geophones #2 and #3 appeared abnormal as had previously been observed on 3 January 1974. The status check was performed per Apollo 14 ALSEP, SMEAR 86.*
Suprathermal ion detector/cold cathode gauge experiment	*The instrument experienced a functional change to STANDBY between 1250 G.m.t. and 1726 G.m.t., 1 February, as reported by the Madrid tracking station.* The experiment remains in STANDBY and present plans are to leave it in this configuration the remainder of the lunar day to preclude instrument mode changes at elevated temperatures.
Charged particle lunar environmental experiment	The CPLEE is currently in STANDBY select. Present plans are to leave the experiment in STANDBY select until after sunset of this lunation, 15 February 1974.

Apollo 12 ALSEP

Operational status from 1 February 1974, 1300 G.m.t., to 8 February 1974, 1300 G.m.t.

Central station

Noon of the 53rd lunar day will occur on 9 February at the ALSEP site in the Ocean of Storms. The signal strength is -139.7 ± 3.7 dbm from transmitter "B" as reported by the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) was commanded OFF for lunar day operations at 2359 G.m.t., 1 February 1974, when the average thermal plate temperature was 43.2°F.

Passive seismic experiment

The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). *The long period z-axis returned to normal operation (response to LP cal commands and seismic data observed) during real-time support on 1 February 1974 and has remained functional throughout this report period. The LPZ axis had previously failed to respond to calibration commands since 23 January 1974.* No significant seismic events were observed during the periodic real-time support periods of this instrument.

Lunar surface magnetometer experiment

Scientific and engineering data outputs remain invalid.

Solar wind spectrometer experiment

The instrument is currently in the normal gain mode and is 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 this lunar day on 3 February 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*
5 Feb/1516 G.m.t.	*53.7°C*	*Command register X10*
6 Feb/1528 G.m.t.	*54.6°C*	*Command register X10*

These mode changes were cleared without incident by commanding the experiment to STANDBY/OFF for cooldown prior to the next real-time support period.

Status as of 2000 G.m.t., 07 February 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1541	1098	922	657
Total Commands to Date	19238	11080	20930	10029
Sun Angle	75.1°	81.0°	102.2°	114.0°
Input Power	64.8w	67.8w	70.3w	69.5w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE/CPLEE/SIDE Stby	SWS & SIDE Stby	ASE OFF
Avg Thermal Plate Temp	96.2°F	115.7°F	118.1°F	101.4°F
PSE Sensor Temp (DL-07)	137.9°F	131.2°F	Offscale HIGH	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	45.8°C
SWS Module 300 Temp (DW-13)	67.1°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Standby	Standby	N/A
CCGE Temp (DI-04)	OFF	Standby	Standby	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	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	332.5°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	422
Total Commands to Date	12725
Sun Angle	129.3°
Input Power	75.0w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby/LACE & LEAM OFF
Avg Thermal Plate Temp	112.7°F
LACE Temp (AM-41)	72.1°F
LEAM Temp (AJ-11)	192.5°F
HFE Temp Ref 1 (DH-13)	320.6°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	114.2°F

ALSEP PERFORMANCE SUMMARY REPORT

15 February 1974
G.m.t.: 1300

On 5 February 1974 the Apollo 14 ALSEP completed three years of uninterrupted operations.

Apollo 17 ALSEP

Sunset of the 15th lunation occurred on 12 February at Taurus Littrow. The central station is operating normally with the automatic power management circuit functioning as designed. The structural components temperatures are tracking the temperature profile of previous lunations. 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. Downlink RF signal strength is reported as -143.0 $\pm$ 4.0 dbm from transmitter "A".

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 116.0 $\pm$ 8^{o}K. At a depth of 230 cm, the subsurface temperatures are 256.5^{o}K at probe #1 and 256.8^{o}K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for seismic data collection as follows: seismic high gain, integrator shorted mode, bias OUT, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and the tilt servo motors in an intermediate position. The experiment sensor temperature is presently stabilized at 49.207^{o}C (slave heater ON).

The Lunar Seismic Profiling Experiment is in STANDBY select. The next passive listening period is planned for 16 February.

The Lunar Atmospheric Composition Experiment was commanded from STANDBY to ON at 1404 G.m.t, 10 February, for lunar night. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and back-up heater, ON. The electronics temperature (AM-41) is currently 4.9^{o}F.

The Lunar Ejecta and Meteorites Experiment is configured to measure impact flux rates on the lunar surface. The LEAM was commanded ON for the lunar night at 1741 G.m.t., 8 February. The instrument's mirror temperature (AJ-11) currently is reading -17.4^{o}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 8 February 1974, 1300 G.m.t., to 15 February, 1300 G.m.t.

Central station	Sunset at the Descartes Site occurred on 13 February for the 23rd lunar day. The DSS-1 heater (10 watts) was commanded ON at 1451 G.m.t., 12 February, for lunar night operations when the average thermal plate decreased to 53.8°F. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter "B" is reported between -135.0 and -140.5 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. The instrument's assembly temperature returned to on-scale on 13 February at a sun angle of 178.1°. No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 632 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently in STANDBY OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 8 February 1974, 1300 G.m.t., to 15 February 1974, 1300 G.m.t.

Central station	Sunset of the site's 32nd lunation occurred on 14 February. Transmitter "A" downlink signal strength is reported as -136.5 $\pm$ 2.5 dbm by the tracking stations with 30-foot antennas.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. The PSE's sensor temperature (DL-07) returned on-scale on 9 February at a sun angle of 134.8^{o}. No significant seismic events were observed during the limited real-time support periods.
Lunar surface magnetometer experiment	The instrument is currently ON and in the 100 gamma range. All engineering and science data continue to be incoherent.
Solar wind spectrometer experiment	The instrument remains in STANDBY select (Apollo 15 ALSEP, SMEAR 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) since 1440 G.m.t., 9 February 1974.
Heat flow experiment	The instrument measurement, TREF 1, is operating normally. The lunar surface temperature is 106.5^{o}K as indicated by the cable thermocouples. The sub-surface temperature is 253.4^{o}K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.0^{o}K at its lower-most point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 8 February 1974, 1300 G.m.t., to 15 February 1974, 1300 G.m.t.

Central station	Sunset at the Apollo 14 site will occur later today, 15 February. Transmitter "A" signal strength was reported as -135.0 to -141.5 dbm from the 30-foot tracking stations. The DSS-1 heater (10 watts) was commanded ON for lunar night operation on 14 February.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in AUTO ON for lunar night operations.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been in STANDBY since 1 February 1974. *On 14 February several attempts were made to command the experiment to ON without success. Later today, 15 February, another attempt will be made to command the experiment ON.*
Charged particle lunar environmental experiment	The experiment was commanded ON at 1400 G.m.t., 14 February, and is operating in the manual mode at the -35 vdc range and automatic thermal control mode. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage to 2280 vdc, at which time the instrument will be commanded to STANDBY select.

Apollo 12 ALSEP

Operational status from 8 February 1974, 1300 G.m.t., to 15 February 1974, 1300 G.m.t.

Central station	Sunset of the 53rd lunar day will occur on 16 February. The DSS-1 heater (10 watts) will be commanded ON for lunar night operation on 16 February. A signal strength of -138.0 to -145.0 dbm from transmitter "B" was reported by the 30-foot tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The sensor temperature (DL-07) is expected to return on-scale at the start of real-time support later today, 15 February. No significant seismic events were noted during the periodic real-time support periods.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument remains in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is in the full automatic stepping sequence with Channeltron high voltages ON. The instrument was commanded to ON at 1353 G.m.t., 14 February, for lunar night operations. *During real-time support at 1853 G.m.t., 8 February 1974, the SIDE experienced an unexpected mode change to command register X10. The mode change was cleared without incident by commanding the instrument to STANDBY/OFF for cooldown prior to the next support period on 9 February 1974.*

Status as of 1600 G.m.t., 14 February 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1548	1105	929	664
Total Commands to Date	19301	11136	21079	10169
Sun Angle	158.1°	164.1°	185.2°	197.0°
Input Power	64.8w	67.6w	71.3w	69.4w
Heater and Power Dumps	All OFF	DSS-1 ON(10w)	All OFF	DSS-1 ON(10w)
Experiment Status	All ON	ASE/SIDE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	66.9°F	62.1°F	16.1°F	37.3°F
PSE Sensor Temp (DL-07)	Offscale HIGH	125.2°F	124.8°F	126.0°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	-5.4°C
SWS Module 300 Temp (DW-13)	48.7°C	N/A	Standby	N/A
SIDE Temp (DI-05)	18.2°C	Standby	8.3°C	N/A
CCGE Temp (DI-04)	HIGH	Standby	152.4°K	N/A
CPLEE Elect Temp (AC-06)	N/A	3.9°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	286.7°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	429
Total Commands to Date	12819
Sun Angle	212.8°
Input Power	77.1w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	31.7°F
LACE Temp (AM-41)	4.9°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	286.4°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	34.0°F

ALSEP PERFORMANCE SUMMARY REPORT

22 February 1974
G.m.t.: 1300

ALSEP data could not be processed by JSC from the analog range data tapes due to excessive noise on the tapes. It must be noted that the ALSEP data losses from these periods are non-recoverable. ALSEP packages affected were:

ALSEP	*DATE*	*G.m.t.*	*SITE*
Apollo 17	*20 Nov 73*	*1835-1950*	*ULA*
Apollo 17	*18 Dec 73*	*0754-1518*	*MIL*
Apollo 16	*18 Dec 73*	*0806-1518*	*MIL*

Apollo 17 ALSEP

Midnight of the 15th lunation at the Taurus Littrow lunar site occurred on 19 February. The central station is operating normally. Downlink signal strength from the 30 foot antenna tracking stations is reported at -139.5 ± 3.5 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174, to inhibit automatic selection of the redundant command signal processing chain (by internally generated 61-hour pulses) continues 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 107 ± 8°K. At a depth of 230 cm, the subsurface temperatures are 256.6°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating in the open loop mode. The instrument is configured to seismic high gain, integrator shorted mode, bias OUT, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and the tilt servo motors in an intermediate position. The experiment sensor temperature is presently stabilized at 49.207°C (slave heater ON).

The Lunar Seismic Profiling Experiment is in STANDBY select. The experiment was commanded ON at 1117 G.m.t., 16 February, and to LSPE data format processing (high bit rate) at 1130 G.m.t. Two geophone calibration pulses were sent during the listening period. Activity was observed on all geophones during the real-time operation. LSPE processing was terminated at 1200 G.m.t., and the instrument was commanded to STANDBY select at 1204 G.m.t. The next passive listening period is scheduled for later today.

22 February 1974
G.m.t.: 1300

The Lunar Atmospheric Composition Experiment is currently ON without processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and back-up heater, ON. The electronics temperature (AM-41) is currently 3.2°F.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) currently is reading -17.4°F and tracking the previous 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 15 February 1974, 1300 G.m.t., to 22 February 1974, 1300 G.m.t.

Central station	This ALSEP experienced midnight of its 23rd lunation on 20 February. The DSS-1 heater (10 watts) is ON for lunar night operations. Inhibiting of the 18-hour timer output pulses is continuing. The 30-foot antenna tracking stations report a signal strength of -136.2 $\pm$ 1.8 dbm from transmitter "B".
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. No significant seismic events were observed during the real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 640 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently in STANDBY OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 15 February 1974, 1300 G.m.t., to 22 February 1974, 1300 G.m.t.

Central station	Midnight of the station's 32nd lunation occurred on 21 February. Transmitter "A" downlink signal strength was reported at -136.8 $\pm$ 1.8 dbm from the 30 foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's uncage/arm fire circuitry has been cycling per the normal 18-hour timer output pulse functions. During the real-time support periods this past week no significant seismic events were observed.
Lunar surface magnetometer experiment	The experiment is ON with the sensors in the 50 gamma range for lunar night operations. All engineering and science data continues to be incoherent.
Solar wind spectrometer experiment	The instrument remains in STANDBY select (Apollo 15 ALSEP, SMEAR 46).
Suparthermal ion detector/cold cathode gauge experiment	The instrument is operating continuously with channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) for the remainder of this lunation (Apollo 15 ALSEP, SMEAR 47).
Heat flow experiment	The instrument measurement, TREF 1, is operating normally (TREF 2 has been invalid since 29 May 1972). The lunar surface temperature is 84.4^{o}K as indicated by the cable thermocouples. The sub-surface temperature is 253.4^{o}K at the bottom of the lowest section of probe #1. Probe #2 indicates a temperature of 251.0^{o}K at its lower-most point. Ring bridge surveys are being conducted periodically.

Apollo 14 ALSEP

Operational status from 15 February 1974, 1300 G.m.t., to 22 February 1974, 1300 G.m.t.

Central station	Midnight at the Apollo 14 site occurred on 23 February. *At 0828 G.m.t., 15 February 1974, the Ascension tracking station reported a loss of downlink due to a spurious functional change (Octal 014, transmitter OFF). At the direction of Mission Control downlink was re-established at 0852 G.m.t., 15 February, by Mode I command through the Ascension tracking station (Octal 013, transmitter ON) without incident.* Transmitter "A" signal strength was reported between -135.0 dbm and -142.0 dbm by the 30 foot antenna tracking stations. The DSS-1 heater (10 watts) is ON for lunar night operation.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument heater is operating in the AUTO ON mode for lunar night operation. *At the start of real-time support on 20 February it was noted that the instrument had experienced a spurious functional change (Octal 102, coarse level sensor IN) without a CVW reported in the downlink. The PSE was re-configured to coarse level sensor OUT (Octal 102) at 1410 G.m.t., 20 February 1974, by Mission Control without incident.*
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The experiment is currently operating in the full automatic stepping sequence with Channeltron high voltages commanded ON.
Charged particle lunar environmental experiment	The experiment is currently ON in the manual mode at the -35 vdc range and automatic thermal control mode. It is planned to leave the experiment in this configuration pending possible degradation of analyzer A voltage, (AC-03), to 2280 vdc at which time the instrument will be commanded to STANDBY select.

Apollo 12 ALSEP

Operational status from 15 February 1974, 1300 G.m.t., to 22 February 1974, 1300 G.m.t.

Central station	Midnight of the 53rd lunar night will occur on 23 February. A signal strength of -135.0 dbm to -141.5 dbm from transmitter "B" was reported by the 30-foot antenna 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 (Ref. Apollo 16 ALSEP). At 1252 G.m.t., 18 February, the PSE sensor temperature (DL-07) was offscale LOW (sun angle = 205.3°). No significant seismic events were observed during real-time support of the instrument.
Lunar surface magnetometer experiment	*At the start of real-time support on 20 February 1974 it was noted that the instrument had experienced a spurious functional change (Octal 131, flip/cal initiate) without a CVW reported in the downlink. The LSM sensors were re-configured to the 180° position (Octal 131, flip/cal initiate) by Mission Control at 1412 G.m.t., 20 February, without incident.*
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	The SIDE is in OPERATE select and automatic stepping sequence for the remainder of this lunation.

Status as of 1600 G.m.t., 20 February 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1554	1111	935	670
Total Commands to Date	19354	11170	21186	10225
Sun Angle	230.3°	236.2°	257.4°	269.3°
Input Power	64.7w *(65.1w)*	68.4w *(68.4w)*	70.5w *(70.8w)*	69.5w *(69.5w)*
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	7.8°F	28.9°F	-4.7°F	35.3°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.3°F	124.5°F	125.9°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	-9.0°C
SWS Module 300 Temp (DW-13)	-15.2°C	N/A	Standby	N/A
SIDE Temp (DI-05)	4.8°C	Invalid	6.0°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	112.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.7°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-69.5°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	435
Total Commands to Date	12932
Sun Angle	284.6°
Input Power	76.5w *(76.5w)*
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	30.5°F
LACE Temp (AM-41)	3.2°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	285.4°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	33.0°F

**Value in parentheses indicates RTG output during last lunation at a similar sun angle.*

ALSEP PERFORMANCE SUMMARY REPORT

1 March 1974
G.m.t.: 1300

Apollo 17 ALSEP

Sunrise of the scientific station's 16th lunation occurred on 26 February 1974. The central station's data subsystem electronics, thermal plate, and external structural temperatures continue to rise within anticipated limits. The downlink received signal is reported between -135.0 dbm and -141.0 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 operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. Lunar surface temperature as measured by the HFE thermocouples is $300^{o} \pm 8^{o}$K. Subsurface temperatures at 230 cm depth are 256.5^{o}K at probe #1 and 256.9^{o}K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for seismic data collection as follows: seismic high gain, integrator shorted mode, bias OUT, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and tilt servo motors in an intermediate position. The experiment sensor temperature remains stabilized at 49.207^{o}C (slave heater ON).

The Lunar Seismic Profiling Experiment is in STANDBY select. The experiment was commanded ON at 1425 G.m.t., 27 February, and to LSPE data format processing (high bit rate) at 1440 G.m.t. Two geophone calibration pulses were sent during the listening period. No activity was observed during real-time operation. LSPE processing was terminated at 1515 G.m.t., and the instrument was commanded to STANDBY select at 1517 G.m.t. *The next passive listening period is scheduled for 3 March at which time the experiment will remain in high bit rate until 7 March. This four days of extended LSPE operation is scheduled in order to pursue a study of meteoroid impacts and thermal moonquakes. The station will be commanded to normal bit rate for brief periods during real-time support to monitor the other experiments operation.*

The Lunar Atmospheric Composition Experiment is currently ON without processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and back-up heater, ON. The electronics temperature (AM-41) is currently 104.0^{o}F.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) currently is reading 159.8^{o}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 22 February 1974, 1300 G.m.t., to 1 March 1974, 1300 G.m.t.

Central station	Sunrise of the 24th lunation occurred on 28 February 1974. The DSS-1 heater (10 watts) was commanded OFF on 28 February 1974. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -134.0 dbm and -138.5 dbm from transmitter "B".
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. The long period y-axis has responded to leveling commands throughout this lunar night. No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 644 flip calibration sequences have been executed and verified by the experiment's engineering data since acitvation.
Active seismic experiment	The Active Seismic Experiment is currently in standby OFF per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 22 February 1974, 1300 G.m.t., to 1 March 1974, 1300 G.m.t.

Central station	Sunrise of the station's 33rd lunation occurred on 1 March 1974. The transmitter "A" downlink signal strength is reported between -134.0 dbm and -138.5 dbm.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). No significant seismic events were noted during real-time support.
Lunar surface magnetometer	The instrument is currently ON. All engineering and science data continue to be incoherent. The instrument continues to be monitored for any change in status.
Solar wind spectrometer experiment	The instrument remains in STANDBY (Apollo 15 ALSEP, SMEAR 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 instrument measurement, TREF 1, is operating normally (TREF 2 has been invalid since 29 May 1972). The lunar surface temperature is 84.2°K as indicated by the cable thermocouples. The sub-surface temperature is 253.4°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.0°K at its lower-most point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 22 February 1974, 1300 G.m.t., to 1 March 1974, 1300 G.m.t.

Central station	Sunrise at the Apollo 14 site will occur on 2 March 1974 (39th lunation). Transmitter "A" signal strength was reported between -140.0 dbm and -143.5 dbm. The DSS-1 heater (10 watts) will be commanded OFF for lunar day operation on 2 March 1974. Data processor "Y" will be verified by command on 2 March 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). No significant seismic events have been noted during this report period.
Active seismic experiment	The experiment is currently in STANDBY per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The experiment is currently operating in the full automatic stepping sequence with Channeltron high voltages commanded ON. The CCGE data continues to be normal.
Charged particle lunar environmental experiment	The CPLEE will be commanded to STANDBY on 2 March 1974, per the present operational plan. The experiment has been in OPERATE select since 14 February.

Apollo 12 ALSEP

Operational status from 22 February 1974, 1300 G.m.t., to 1 March 1974, 1300 G.m.t.

Central station

Sunrise of the 54th lunar day will occur on 3 March 1974 at the ALSEP site in the Ocean of Storms. A signal strength of -139.5 ± 3.0 dbm from transmitter "B" was reported by the tracking stations. The DSS-1 heater (10 watts) will be commanded OFF for lunar day operations on 3 March 1974. Data processor "Y" will be verified by command on 3 March 1974.

Passive seismic experiment

The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). *The instrument's long period z-axis again failed to respond to calibration commands on 22 February 1974. The output of the z-axis, as observed on the analog helicorder, appeared quiescent. The instrument had previously failed to respond to calibration commands during real-time support on 23 January 1974. The long period z-axis is expected to return to normal operation (response to LP cal commands and seismic data observed) after sunrise on 3 March 1974.* The z-axis drive motor will be commanded OFF for lunar day operation on 3 March 1974. No significant seismic events were noted during the periodic real-time support periods of this instrument.

Lunar surface magnetometer experiment

Scientific and engineering data outputs remain invalid.

Solar wind spectrometer experiment

The instrument is currently in the normal gain mode and is recording solar wind plasma data for subsequent long-term analysis.

Suprathermal ion detector experiment

Currently the SIDE is ON in the full automatic stepping sequence with Channeltron high voltages ON. *At 1248 G.m.t. on 27 February the Canary Island tracking site reported receipt of a CVW without ground command (Octal 104, SIDE Load 1). The instrument was commanded to STANDBY and back to ON by Mission Control at 1358 G.m.t., 27 February, returning the experiment to normal configuration without incident-*

Status as of 1600 G.m.t., 28 February was was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1562	1119	943	678
Total Commands to Date	19368	11186	21274	10266
Sun Angle	327.3°	334.2°	356.0°	6.5°
Input Power	64.3w	68.4w	70.3w	69.0w
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	6.2°F	27.7°F	-5.5°F	52.0°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.3°F	124.1°F	126.1°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	11.3°C
SWS Module 300 Temp (DW-13)	-16.0°C	N/A	Standby	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	6.0°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	106.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-23.3°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-71.1°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	443
Total Commands to Date	13045
Sun Angle	22.5°
Input Power	74.5w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby
Avg Thermal Plate Temp	56.3°F
LACE Temp (AM-41)	104.0°F
LEAM Temp (AJ-11)	159.8°F
HFE Temp Ref 1 (DH-13)	298.9°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	56.1°F

ALSEP PERFORMANCE SUMMARY REPORT

8 March 1974
G.m.t.: 1300

Apollo 17 ALSEP

Noon of the scientific station's 16th lunation occurred on 6 March at the Taurus Littrow site. Downlink signal strength is reported at -140.0 ± 4.0 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174, to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. Lunar surface temperature as measured by the HFE's thermocouples is 383.0 ± 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 is operating and configured for seismic data collection as follows: seismic high gain, integrator shorted mode, bias OUT, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and tilt servo motors in an intermediate position. The experiment sensor temperature remains stabilized at 49.207°C (slave heater ON).

The Lunar Seismic Profiling Experiment is in STANDBY select. The experiment was commanded ON at 1630 G.m.t., 3 March 1974, and to LSPE data format processing (high bit rate) at 1700 G.m.t. Geophone calibration pulses were sent during the listening period. Activity was observed during real-time operation. LSPE processing was terminated at 0432 G.m.t., 7 March 1974, and the instrument was commanded to STANDBY select at 0439 G.m.t. The four days of extended LSPE operation were scheduled to pursue a study of meteoroid impacts and thermal moonquakes. The station was commanded to normal bit rate for brief periods during real-time support to monitor the other experiments operation.

The Lunar Atmospheric Composition Experiment is currently OFF. The instrument was commanded to OFF at 1458 G.m.t., 1 March 1974. The LACE electronic temperature is presently reading 83.3°F and is tracking the previous lunation's temperature profile.

The Lunar Ejecta and Meteorites Experiment is presently OFF. The instrument was commanded OFF at 1456 G.m.t., 1 March 1974. The mirror temperature profile (AJ-11) is tracking that of the previous lunation and is currently reading 189.5°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 1 March 1974, 1300 G.m.t., to 8 March 1974, 1300 G.m.t.

Central station	Noon of the 24th lunar day occurred on 7 March at the Descartes Site. The DSS-1 heater (10 watts) is OFF for lunar day operations. The 18-hour 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 between -133.0 dbm and -139.5 dbm from transmitter "B".
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. The instrument's sensor temperature (DL-07) indicated off-scale HIGH at the beginning of real-time support on 5 March (sun angle 68.6^{o}). No significant seismic events were observed during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM continues in the full operational mode and all data have been valid since 17 August 1973. The instrument has accomplished 650 flip calibration sequences since activation.
Active seismic experiment	The Active Seismic Experiment is currently in standby OFF. *The instrument was commanded to high bit rate ON, 3 March 1974, to verify operational status. Operation was satisfactory at this time. The check was performed per Apollo 16 ALSEP, SMEAR 27.*

Apollo 15 ALSEP

Operational status from 1 March 1974, 1300 G.m.t., to 8 March 1974, 1300 G.m.t.

Central station	Noon of the station's 33rd lunation occurred on 8 March. Transmitter "A" downlink signal strength at the 30-foot antenna tracking stations is reported between -131.5 dbm and -140.0 dbm.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. At the start of real-time support on 7 March the instrument's sensor temperature (DL-07) was off-scale HIGH (sun angle 73.6^{o}). No significant seismic events were observed during this limited real-time support period.
Lunar surface magnetometer experiment	The instrument is currently ON. All LSM engineering and science data continue to be incoherent.
Solar wind spectrometer experiment	*The instrument remains in STANDBY. At 1444 G.m.t., 2 March, the experiment was commanded to operate select for 4 minutes in order to provide additional data on the instrument's anomalous operation. The instrument's telemetry data continuously indicated out of sync data. During the operate select period the experiment continued to demand excessive power (9 watts). Following the operate select period the instrument was commanded back to STANDBY select (Apollo 15 ALSEP, SMEAR 46).*
Suprathermal ion detector/cold cathode gauge experiment	The instrument is currently in STANDBY. Cyclic commanding of the experiment was initiated for the remainder of this lunar day on 5 March (Apollo 15 ALSEP, SMEAR 47). On 7 March 1974, during real-time support, a special scientific data gathering period was conducted to observe those low energy data counts which appear some 33 hours prior to lunar noon.
Heat flow experiment	The HFE is operating in the normal gradient mode. The lunar surface temperature was 368.2^{o}K on 7 March as indicated by the cable thermocouples. The subsurface temperature was 253.4^{o}K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.0^{o}K at its lower-most point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 1 March 1974, 1300 G.m.t., to 8 March 1974, 1300 G.m.t.

Central station	Sunrise of the 39th lunation at the Apollo 14 site occurred on 2 March. The 30-foot antenna tracking stations report a signal strength from transmitter "A" at -137.5 ± 2.5 dbm. The DSS-1 heater (10 watts) is OFF for lunar day operations. Data processor "Y" was verified by command on 3 March 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater was commanded to FORCED OFF on 7 March to minimize heating during lunar day operations. During the limited real-time support periods no significant seismic events have been observed.
Active seismic experiment	The experiment is currently in STANDBY. *The instrument was commanded to high bit rate select on 3 March 1974 to verify operational status. The output of geophones #2 and #3 appeared abnormal as had initially been observed on 3 January 1974. The status check was performed per Apollo 14 ALSEP, SMEAR 86.*
Suprathermal ion detector/cold cathode gauge experiment	*The instrument experienced a functional change to STANDBY between 2054 G.m.t., 2 March and 0331 G.m.t., 3 March 1974.* The experiment remains in STANDBY and present plans are to leave it in this configuration the remainder of the lunar day to preclude instrument mode changes at elevated temperatures.
Charged particle lunar environmental experiment	The CPLEE is currently in STANDBY select. Present plans are to leave the experiment in STANDBY select until after sunset of this lunation, 17 March 1974.

Apollo 12 ALSEP

Operational status from 1 March 1974, 1300 G.m.t., to 8 March 1974, 1300 G.m.t.

Central station	Sunrise of the 54th lunation occurred on 3 March at the ALSEP site in the Ocean of Storms. The signal strength is -139.0 $\pm$ 3.0 dbm from transmitter "B" as reported by the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) was commanded OFF for lunar day operations on 3 March when the average thermal plate temperature was 44.0^{o}F. Data processor "Y" was verified by command on 3 March 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The z-axis drive motor was commanded OFF for lunar day operation on 3 March 1974. The long period z-axis returned to normal operation (response to LP cal commands and seismic data observed) during real-time support on 3 March 1974 and has remained functional through out this report period. The LPZ axis had previously failed to respond to calibration commands since 22 February 1974. No significant seismic events were observed during the periodic real-time support periods of this instrument.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is 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 for this lunar day on 5 March in an effort to preclude instrument mode changes at internal temperatures above 55^{o}C.

Status as of 0530 G.m.t., 7 March 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1569	1126	950	685
Total Commands to Date	19449	11233	21436	10374
Sun Angle	48.6°	54.6°	75.6°	87.5°
Input Power	64.3w	67.2w	69.8w	69.4w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE/CPLEE/SIDE Stby	SWS & SIDE Stby	ASE OFF
Avg Thermal Plate Temp	92.8°F	105.0°F	112.8°F	103.6°F
PSE Sensor Temp (DL-07)	127.3°F	129.6°F	Offscale HIGH	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	47.0°C
SWS Module 300 Temp (DW-13)	60.9°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Standby	Standby	N/A
CCGE Temp (DI-04)	OFF	Standby	Standby	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	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	328.2°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	450
Total Commands to Date	13162
Sun Angle	102.7°
Input Power	74.9w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby/LACE & LEAM OFF
Avg Thermal Plate Temp	118.8°F
LACE Temp (AM-41)	83.3°F
LEAM Temp (AJ-11)	189.5°F
HFE Temp Ref 1 (DH-13)	328.6°F
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	123.1°F

ALSEP PERFORMANCE SUMMARY REPORT

15 March 1974
G.m.t.: 1300

ALSEP data could not be processed by JSC from the analog range data tapes due to excessive noise on the tapes. It must be noted that the ALSEP data losses from these periods are non-recoverable. ALSEP packages affected were:

ALSEP	*DATE*	*G.m.t.*	*SITE*
Apollo 17	*4 Jan 74*	*0227-0353*	*ROS*
Apollo 17	*5/6 Mar 74*	*2122-0113*	*MIL*

Apollo 17 ALSEP

Sunset of the 16th lunation occurred on 13 March at Taurus Littrow. The central station is operating normally with the automatic power management circuit functioning as designed. The structural components temperatures are tracking the temperature profile of previous lunations. 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. Downlink RF signal strength is reported as -142.3 $\pm$ 4.3 dbm from transmitter "A".

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 122.0 $\pm$ 8^{o}K. At a depth of 230 cm, the subsurface temperatures are 256.5^{o}K at probe #1 and 256.8^{o}K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for seismic data collection as follows: seismic high gain, integrator shorted mode, bias OUT, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and the tilt servo motors in an intermediate position. The experiment sensor temperature is presently stabilized at 49.207^{o}C (slave heater ON).

The Lunar Seismic Profiling Experiment is in STANDBY select. The experiment was commanded ON at 1427 G.m.t., 13 March, and to LSPE data format processing (high bit rate) at 1430 G.m.t. Two geophone calibration pulses were sent during the listening period. Activity was observed on all geophones during the real-time operation. LSPE processing was terminated at 1500 G.m.t., and the instrument was commanded to STANDBY select at 1501 G.m.t. The next passive listening period is scheduled for 17 March.

15 March 1974
G.m.t.: 1300

The Lunar Atmospheric Composition Experiment was commanded from STANDBY to ON at 1451 G.m.t., 12 March, for lunar night. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and back-up heater, ON. The electronics temperature (AM-41) is currently 10.1°F.

The Lunar Ejecta and Meteorites Experiment is configured to measure impact flux rates on the lunar surface. The LEAM was commanded ON for the lunar night at 1514 G.m.t., 10 March. The instrument's mirror temperature (AJ-11) currently is reading -13.0°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 8 March 1974, 1300 G.m.t., to 15 March, 1974, 1300 G.m.t.

Central station	Sunset at the Descartes Site occurred on 14 March for the 24th lunar day. The DSS-1 heater (10 watts) was commanded ON at 1323 G.m.t., 14 March, for lunar night operations when the average thermal plate decreased to 38.9°F. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter "B" is reported between -135.0 and -145.0 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. The instrument's assembly temperature returned on-scale, 14 March, at a sun angle of 176.5°. No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 656 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently in STANDBY OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 8 March 1974, 1300 G.m.t., to 15 March 1974, 1300 G.m.t.

Central station	Sunset of the site's 33rd lunation occurs later today. Transmitter "A" downlink signal strength is reported as -136.0 $\pm$ 3.0 dbm by the tracking stations with 30-foot antennas.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. The PSE's sensor temperature (DL-07) returned on-scale, 12 March, at a sun angle of 140.7^{o}. No significant seismic events were observed during the limited real-time support periods.
Lunar surface magnetometer experiment	The instrument is currently ON and in the 100 gamma range. All engineering and science data continue to be incoherent.
Solar wind spectrometer experiment	The instrument remains in STANDBY select (Apollo 15 ALSEP, SMEAR 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) since 1412 G.m.t., 11 March 1974.
Heat flow experiment	The instrument measurement, TREF 1, is operating normally. The lunar surface temperature is 293.8^{o}K as indicated by the cable thermocouples. The sub-surface temperature is 253.4^{o}K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.0^{o}K at its lower-most point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 8 March 1974, 1300 G.m.t., to 15 March 1974, 1300 G.m.t.

Central station	Sunset at the Apollo 14 site will occur 17 March. Transmitter "A" signal strength was reported as -134.0 to -142.5 dbm from the 30-foot tracking stations. The DSS-1 heater (10 watts) will be commanded ON for lunar night operation on 16 March. *At the start of real-time support on 8 March it was noted that the DTREM had responded to a spurious functional change without a CVW noted in the downlink (Octal 031, DTREM OFF). Review of central station data revealed that the change occurred between the end of real-time support on 18 February (1434 G.m.t.) and the start of real-time operations on 20 February (1404 G.m.t.). The DTREM was subsequently reconfigured to ON (Octal 027) during real-time support at 1403 G.m.t., 8 March, without incident.*
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in AUTO ON for lunar night operations. *Between support periods of 13 and 14 March, the instrument experienced a spurious functional change (Octal 071, Y motor ON). No CVW was noted in the Apollo 14 ALSEP downlink. The Y-motor was commanded OFF at 1450 G.m.t., 14 March, by mission control without incident.*
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been in STANDBY since 3 March 1974. The instrument will be commanded ON for lunar night operation after sunset on 17 March.
Charged particle lunar environmental experiment	The CPLEE is currently in STANDBY select. Present plans are to leave the experiment in STANDBY select until after sunset of this lunation, 17 March 1974.

Apollo 12 ALSEP

Operational status from 8 March 1974, 1300 G.m.t., to 15 March 1974, 1300 G.m.t.

Central station	Sunset of the 54th lunar day will occur on 18 March. The DSS-1 heater (10 watts) will be commanded ON for lunar night operation on 17 March. A signal strength of -139.0 to -143.0 dbm from transmitter "B" was reported by the 30-foot tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). At the start of real-time support on 10 March the instrument's sensor temperature (DL-07) was offscale HIGH (sun angle = 89.6°). No significant seismic events were noted during the periodic real-time support periods.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument is in the normal gain mode and recording solar wind plasma data. *The experiment was commanded to the extended range mode at 1458 G.m.t., 12 March, due to high particle counts, and subsequently returned to normal gain mode at 1345 G.m.t., 13 March.*
Suprathermal ion detector experiment	Currently the SIDE is OFF. Cyclic commanding of the instrument in the full automatic stepping sequence with channeltron high voltages ON to experiment power OFF is in effect to preclude instrument mode changes at internal temperatures above 55°C. *At 0731 G.m.t. on 10 March the Ascension Island Tracking Site reported receipt of a CVW without ground command (Octal 053, SIDE STANDBY). The instrument was commanded to OFF by Mode 1 command at 0811 G.m.t., 10 March, returning the instrument to normal configuration. During real-time support at 1514 G.m.t., 10 March, the SIDE experienced an unexpected mode change to command register X10. The mode change was cleared without incident by commanding the instrument to STANDBY/OFF for cool-down prior to the next support period on 11 March 1974.*

Status as of 1500 G.m.t., 14 March 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1576	1133	957	692
Total Commands to Date	19525	11271	21595	10593
Sun Angle	137.3°	143.2°	165.4°	176.5°
Input Power	64.4w	67.2w	70.3w	68.6w
Heater and Power Dumps	All OFF	All OFF	All OFF	DSS-1 ON(10w)
Experiment Status	SIDE OFF	ASE/SIDE/CPLEE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	83.9°F	89.8°F	78.5°F	38.9°F
PSE Sensor Temp (DL-07)	Offscale HIGH	Offscale HIGH	125.8°F	138.5°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	31.0°C
SWS Module 300 Temp (DW-13)	59.16°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Standby	62.5°C	N/A
CCGE Temp (DI-04)	OFF	Standby	308.8°K	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	N/A	N/A
ASE GLA Temp (AS-03)	N/A	75.7°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	298.7°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	457
Total Commands to Date	13349
Sun Angle	191.9°
Input Power	76.5w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	33.2°F
LACE Temp (AM-41)	10.1°F
LEAM Temp (AJ-11)	-11.9°F
HFE Temp Ref 1 (DH-13)	287.0°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	35.0°F

11 March 1974

ALSEP DTREM OPERATIONS NOTE OF INTEREST

A partial eclipse of the moon occurred between the hours of 2337 G.m.t., 9 December 1973, and 0352 G.m.t., 10 December 1973. Initially it was thought that the Apollo ALSEP instruments would not be significantly affected as the closest approach of the eclipse umbra was about 1050 km south of the most southern ALSEP site (Apollo 16 ALSEP, which has no solar measurement device).

Data analysis of the Apollo 14 ALSEP and Apollo 15 ALSEP Dust, Thermal, and Radiation Engineering Measurements Packages (DTREM) used for measuring space radiation damage to solar cells and indirectly measuring the reflected infrared brightness temperature, show that the December 1973 eclipse did have an effect on, at least, the Apollo 14 and 15 scientific packages. The DTREM data also reflects the December eclipse to be the darkest penumbral eclipse experienced to date.

Prior to the start of the eclipse, the ALSEP instruments were encountering lunar mid-day environment. Listed below are the negative temperature excursions experienced by the Apollo 14 and 15 scientific instruments:

	10 December 1973/Time Group(G.m.t.)			DTREM Δ Temperature
	Start Of Shadow Crossing	Minimum Light	Return To Initial Conditions	
Apollo 14 ALSEP	00^h14^m	01^h39^m	03^h21^m	60^oC
Apollo 15 ALSEP	00^h39^m	01^h51^m	02^h56^m	25^oC

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

NASA-JSC

ALSEP PERFORMANCE SUMMARY REPORT

22 March 1974
G.m.t.: 1300

Apollo 17 ALSEP

Midnight of the 16th lunation at the Taurus Littrow lunar site occurred on 20 March. The central station is operating normally. Downlink signal strength from the 30-foot antenna tracking stations is reported at -139.0 ± 4.0 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174, to inhibit automatic selection of the redundant command signal processing chain (by internally generated 61-hour pulses) continues 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 256.4°K at probe #1 and 256.9°K at probe #2 on 20 March.

It appears that the Lunar Surface Gravimeter Experiment's thermal control circuitry is operating out of regulation. Playback of the LSG's data indicated that the thermal control circuit's anomalous operation occurred at 0116 G.m.t., 15 March 1974. Since that time numerous ground command sequences have been initiated to regain control of the instrument's thermal control switching functions. As part of this procedure the LSG was commanded to STANDBY SELECT from 1750 G.m.t., 16 March, to 0033 G.m.t., 18 March. Cyclic commanding of the LSG's slave heater was initiated 21 March. On 22 March, it is planned to command the experiment to STANDBY SELECT until 24 March, at which time the next operational steps will be implemented. The LSG is currently ON and configured as follows: seismic gain LOW, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and the tilt servo motors in an intermediate position. Investigation of this anomaly is continuing.

The Lunar Seismic Profiling Experiment is in STANDBY select. The experiment was commanded ON at 0123 G.m.t., 18 March, and to LSPE data format processing (high bit rate) at 0130 G.m.t. Two geophone calibration pulses were sent during the listening period. No activity was observed during the real-time operation. LSPE processing was terminated at 0200 G.m.t., and the instrument was commanded to STANDBY select at 0201 G.m.t. The next passive listening period is scheduled for later today.

22 March 1974
G.m.t.: 1300

The Lunar Atmospheric Composition Experiment is currently in OPERATE SELECT ON, without processing scientific data. A sequence of operational commands were executed by the experiment during real-time support 20 March 1974. The LACE's telemetry data again indicated positive signs of change during the 35 minutes that the multiplier high voltage power supply and filament #2 were operated. Filament #2 had not been operated successfully since 19 October 1973. The positive sign of this lunar night thermal cycling procedure is that the LACE accomplished one complete scientific data sweep before experiencing a breakdown of the experiment's high voltage power supply. The experiment was reconfigured to its lunar night operational mode, and currently remains in this mode. The LACE will continue to be cycled from ON to OFF to maintain the electronics temperature below the previously established 125°F limit. No periodic thermal cycling check is planned within the next sixty days.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) currently is reading -17.4°F and tracking the previous 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 15 March 1974, 1300 G.m.t., to 22 March 1974, 1300 G.m.t.

Central station	This ALSEP experienced midnight of its 24th lunation today. The DSS-1 heater (10 watts) is ON for lunar night operations. Inhibiting of the 18-hour timer output pulses is continuing. The 30-foot antenna tracking stations report a signal strength of -136.5 $\pm$ 2.5 dbm from transmitter "B".
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. No significant seismic events were observed during the real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 660 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently in STANDBY OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 15 March 1974, 1300 G.m.t., to 22 March 1974, 1300 G.m.t.

Central station	Midnight of the station's 33rd lunation will occur on 23 March. Transmitter "A" downlink signal strength was reported at -136.0 $\pm$ 3.0 dbm from the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's uncage/arm fire circuitry has been cycling per the normal 18-hour timer output pulse functions. During the real-time support periods this past week no significant seismic events were observed.
Lunar surface magnetometer experiment	The experiment is ON, however, all engineering and science data continue to be incoherent.
Solar wind spectrometer experiment	The instrument remains in STANDBY select (Apollo 15 ALSEP, SMEAR 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating continuously with channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) for the remainder of this lunation (Apollo 15 ALSEP, SMEAR 47).
Heat flow experiment	The instrument measurement, TREF 1, is operating normally. The lunar surface temperature is 90.6^{o}K as indicated by the cable thermocouples. The sub-surface temperature is 253.5^{o}K at the bottom of the lowest section of probe #1. Probe #2 indicates a temperature of 251.0^{o}K at its lower-most point. Ring bridge surveys are being conducted periodically.

Apollo 14 ALSEP

Operational status from 15 March 1974, 1300 G.m.t., to 22 March 1974, 1300 G.m.t.

Central station	Midnight at the Apollo 14 site will occur on 23 March. Transmitter "A" signal strength was reported between -135.0 dbm and -143.0 dbm by the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) is ON for lunar night operation. *At 0832 G.m.t., 19 March, the Central Station responded to a spurious command (octal 056, DSS-2, 5-watt heater ON). The Ascension ground station reported receipt of a CVW in the downlink. After verification during real-time support, the DSS-2 (5 watt) heater was commanded OFF by transmission of octal 055 at 1356 G.m.t., 19 March, without incident.*
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument heater is operating in the AUTO ON mode for lunar night operation. During the limited real-time support periods of this week no significant seismic events have been observed.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument was commanded ON at 1251 G.m.t., 16 March, and is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON for the remainder of this lunation.
Charged particle lunar environmental experiment	The experiment was commanded ON at 1253 G.m.t., 16 March, and is operating in the manual mode at the -35 vdc range and automatic thermal control mode. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage to 2280 vdc, at which time the instrument will be commanded to STANDBY select.

Apollo 12 ALSEP

Operational status from 15 March 1974, 1300 G.m.t., to 22 March 1974, 1300 G.m.t.

Central station	Midnight of the 54th lunar night will occur on 25 March. A signal strength of -136.5 dbm to -143.0 dbm from transmitter "B" was reported by the 30-foot antenna 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 (Ref. Apollo 16 ALSEP). At 1342 G.m.t., 19 March, the PSE sensor temperature (DL-07) was offscale LOW (sun angle = 198.7^{o}). No significant seismic events were observed during real-time support of the instrument.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	The SIDE is in OPERATE select and automatic stepping sequence for the remainder of this lunation.

Status as of 1600 G.m.t., 20 March 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1582	1139	963	698
Total Commands to Date	19622	11325	21746	10661
Sun Angle	212.1°	218.0°	239.1°	251.0°
Input Power	64.3w*(65.2w)*	67.6w*(68.0w)*	69.9w*(71.0w)*	68.9w*(69.5w)*
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	6.9°F	28.9°F	-4.7°F	35.3°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.3°F	124.6°F	125.9°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	-8.9°C
SWS Module 300 Temp (DW-13)	-14.8°C	N/A	Standby	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	112.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.7°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	283.6°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	463
Total Commands to Date	13611
Sun Angle	266.2°
Input Power	76.1w*(76.5w)*
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	30.1°F
LACE Temp (AM-41)	3.2°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	286.0°
LSG Temp (DG-04)	Offscale LOW
LSP Temp (AP-01)	31.7°F

**Value in parentheses indicates RTG output during last lunation at a similar sun angle.*

NASA-JSC

ALSEP PERFORMANCE SUMMARY REPORT

29 March 1974
G.m.t.: 1300

Apollo 17 ALSEP

Sunrise of the scientific station's 17th lunation occurred on 28 March 1974. The central station's data subsystem electronics, thermal plate, and external structural temperatures continue to rise within anticipated limits. The downlink received signal is reported between -134.5 dbm and -144.5 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.

Telemetry parameter AB-11, which reports the status of the Lunar Surface Profiling Experiment, has failed (LOW, all zero's) in the OFF/STANDBY condition. The following table depicts the changes in AB-11 since the initial occurrence:

	AB-11 LSPE Status		*Lunar Cycle*
Date/Time(G.m.t.)	*Indicated*	*Actual*	*Day/Night*
26 Sep 73/1338	*STANDBY*	*STANDBY*	*Night*
28 Sep 73/1243	*OT*	*STANDBY*	*Night*
28 Sep 73/1246	*STANDBY*	*STANDBY*	*Night*
02 Oct 73/0344	*OT*	*STANDBY*	*Night*
03 Oct 73/1603	*STANDBY*	*STANDBY*	*Day*
16 Oct 73/2303	*OT*	*STANDBY*	*Night*
06 Nov 73/2216	*STANDBY*	*STANDBY*	*Day*
11 Nov 73/1416	*OT*	*STANDBY*	*Day*
16 Mar 74/1351	*OT*	*STANDBY*	*Night*
17 Mar 74/2353	*OFF*	*STANDBY*	*Night*

The telemetry point still indicates an ON status when the experiment is commanded ON and the failure is only in the OFF/STANDBY condition.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. Lunar surface temperature as measured by the HFE thermocouples is $106.0^{\circ} + 8^{\circ}$K. Subsurface temperatures at 230 cm depth are 256.5°K at probe #1 and 256.8°K at probe #2 as of 27 March.

The Lunar Surface Gravimeter Experiment was commanded to STANDBY select at 1543 G.m.t., 27 March to further investigate the slave heater anomaly. During real-time support on 29 March the LSG will be commanded ON and configured as follows: seismic gain LOW, integrator shorted mode, bias out, post amplifier gain at increment 7, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the slave heater OFF. The instrument will be operated in this configuration for the remainder of this lunar day (Apollo 17 ALSEP, SMEAR 62).

29 March 1974
G.m.t.: 1300

The Lunar Surface Profiling Experiment is in STANDBY select. The experiment was commanded ON at 1457 G.m.t., 27 March, and to LSPE data format processing (high bit rate) at 1500 G.m.t. Two geophone calibration pulses were sent during the listening period. No activity was observed during real-time operation. LSPE processing was terminated at 1530 G.m.t., and the instrument was commanded to STANDBY select at 1535 G.m.t. The next passive listening period is scheduled for 1 April 1974.

The Lunar Atmospheric Composition Experiment is currently ON without processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and back-up heater, ON. The electronics temperature (AM-41) was reading -2.3°F on 27 March.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) was reading -17.4°F on 27 March.

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 22 March 1974, 1300 G.m.t., to 29 March 1974, 1300 G.m.t.

Central station	Sunrise of the 25th lunation will occur later today, 29 March 1974. The DSS-1 heater (10 watts) will be commanded OFF on 30 March 1974. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -134.0 dbm and -140.0 dbm from transmitter "B".
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. The long period y-axis has responded to leveling commands throughout this lunar night. *A seismic event was noted during the limited real-time support of this instrument between 1432 and 1451 G.m.t., 25 March 1974.*
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 666 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently in standby OFF per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 22 March 1974, 1300 G.m.t., to 29 March 1974, 1300 G.m.t.

Central station	Midnight of the station's 33rd lunation occurred on 23 March 1974. The transmitter "A" downlink signal strength is reported between -134.0 dbm and -140.0 dbm.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). *The seismic event noted during real-time support on Apollo 16 and 12 ALSEPs was not observed on the Apollo 15 ALSEP.*
Lunar surface magnetometer experiment	The instrument is currently ON. All engineering and science data continue to be incoherent. The instrument continues to be monitored for any change in status.
Solar wind spectrometer experiment	The instrument remains in STANDBY (Apollo 15 ALSEP, SMEAR 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 seqeunce (0-127 frames).
Heat flow experiment	The instrument measurement, TREF 1, is operating normally. The lunar surface temperature is 84.9°K as indicated by the cable thermocouples. The sub-surface temperature is 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.0°K at its lower-most point as of 27 March. Ring bridge surveys are obtained periodically. *An unexpected functional change of the HFE occurred at 0020 G.m.t., 23 March, when the Guam tracking station noted a command verification word of octal 142 in the downlink signal. The HFE's probe #1 select command was corrected by ground command with no further problems at 1346 G.m.t., 25 March.*

Apollo 14 ALSEP

Operational status from 22 March 1974, 1300 G.m.t., to 29 March 1974, 1300 G.m.t.

Central station	Midnight at the Apollo 14 site occurred on 24 March 1974 (39th lunation). Transmitter "A" signal strength was reported between -136.5 dbm and -144.0 dbm. The DSS-1 heater (10 watts) is ON for lunar night operation.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument heater is operating in the AUTO ON mode for lunar night operation. *The seismic event noted during this report period on Apollo 16 and 12 ALSEPs was not observed on the Apollo 14 ALSEP.*
Active seismic experiment	The experiment is currently in STANDBY per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The experiment is currently operating in the full automatic stepping sequence with Channeltron high voltages commanded ON.
Charged particle lunar environmental experiment	The CPLEE is ON per the present operational plan. The experiment has been in OPERATE select since 16 March 1974.

Apollo 12 ALSEP

Operational status from 22 March 1974, 1300 G.m.t., to 29 March 1974, 1300 G.m.t.

Central station	Midnight of the 54th lunar day occurred on 25 March 1974 at the ALSEP site in the Ocean of Storms. A signal strength of -137.0 ± 2.5 dbm from transmitter "B" was reported by the tracking stations. The DSS-1 heater (10 watts) is ON for lunar night operations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The z-axis drive motor is ON for lunar night operation. *The instrument's long period z-axis responded to all calibration commands this lunar night. The instrument had failed to respond to calibration commands during real-time support the previous three lunar nights. A seismic event was noted during the periodic real-time support periods of this instrument between 1432 and 1451 G.m.t., 25 March 1974 (Ref. Apollo 16 ALSEP).*
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data for subsequent long-term analysis.
Suprathermal ion detector experiment	Currently the SIDE is ON in the full automatic stepping sequence with Channeltron high voltages ON.

Status as of 1700 G.m.t., 27 March was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1589	1146	970	705
Total Commands to Date	19632	11327	21832	10689
Sun Angle	298.1°	304.0°	325.1°	337.0°
Input Power	63.8w	67.6w	70.0w	69.0w
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	4.7°F	27.7°F	-5.5°F	34.7°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.3°F	124.4°F	125.8°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	-8.9°C
SWS Module 300 Temp (DW-13)	-16.1°C	N/A	Standby	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	108.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-71.1°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	470
Total Commands to Date	13700
Sun Angle	352.7°
Input Power	76.1w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSG/LSPE Stby
Avg Thermal Plate Temp	23.4°F
LACE Temp (AM-41)	-2.3°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	284.8°K
LSG Temp (DG-04)	Standby
LSP Temp (AP-01)	25.2°F

ALSEP PERFORMANCE SUMMARY REPORT

5 April 1974
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was not available (inadvertent scheduling error) at the following times:

ALSEPs	*Date*	*GMT LOS*	*GMT AOS*	*Data Loss*
12,14,15,16,17	*03 April*	*0202*	*0232*	0^h30^m

Apollo 17 ALSEP

Noon of the scientific station's 17th lunation occurred on 4 April at the Taurus Littrow site. Downlink signal strength is reported at -140.0 ± 5.0 dbm from transmitter "A". Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174, to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. On 4 April the lunar surface temperature, as measured by the HFE's thermocouples, was 374.0 ± 8°K. Subsurface temperature at 230 cm depth was 256.5°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment was commanded to ON at 1755 G.m.t., 29 March, to further investigate the slave heater anomaly. The instrument is configured as follows: seismic gain LOW, integrator shorted mode, bias out, post amplifier gain at increment 7, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the slave heater OFF. The instrument will be operated in this configuration for the remainder of this lunar day (Apollo 17 ALSEP, SMEAR 62).

The Lunar Surface Profiling Experiment is in STANDBY select. The experiment was commanded ON at 0611 G.m.t., 2 April, and to LSPE data format processing (high bit rate) at 0615 G.m.t. Two geophone calibration pulses were sent during the listening period. No activity was observed during real-time operation. LSPE processing was terminated at 0645 G.m.t., and the instrument was commanded to STANDBY select at 0646 G.m.t. The next passive listening period is scheduled for 12 April 1974.

The Lunar Atmospheric Composition Experiment is currently OFF. The instrument was commanded OFF at 2159 G.m.t., 31 March 1974.

ALSEP PERFORMANCE SUMMARY REPORT (continued)

5 April 1974
G.m.t.: 1300

The Lunar Ejecta and Meteorites Experiment is presently OFF. The instrument was commanded OFF at 2159 G.m.t., 31 March 1974.

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 March 1974, 1300 G.m.t., to 5 April 1974, 1300 G.m.t.

Central station	Sunrise of the 25th lunar day occurred on 30 March at the Descartes Site. The DSS-1 heater (10 watts) is OFF for lunar day operations. The 18-hour 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 between -135.0 dbm and -139.5 dbm from transmitter "B".
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. The instrument's sensor temperature (DL-07) indicated off-scale HIGH at the beginning of real-time support on 4 April (sun angle 73.2°). No significant seismic events were observed during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM continues in the full operational mode and all data have been valid since 17 August 1973. The instrument has accomplished 672 flip calibration sequences since activation.
Active seismic experiment	The Active Seismic Experiment is currently in standby OFF. *The instrument was commanded to high bit rate ON, 2 April 1974, to verify operational status. Operation was satisfactory at this time. The check was performed per Apollo 16 ALSEP, SMEAR 27.*

Apollo 15 ALSEP

Operational status from 29 March 1974, 1300 G.m.t., to 5 April 1974, 1300 G.m.t.

Central station	Sunrise of the station's 34th lunation occurred on 30 March. Transmitter "A" downlink signal strength at the 30-foot antenna tracking stations is reported between -133.0 dbm and -138.5 dbm. *At 0932 G.m.t., 4 April, the station experienced a functional change from Transmitter "A" to Transmitter "B" (octal 015). A CVW was not observed in the Apollo 15 ALSEP downlink, however, a 14.8 KHZ frequency shift was observed by the Goldstone tracking station. At 1408 G.m.t., 4 April, Transmitter "A" (octal 012) was reselected by command through mission control without incident.*
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. No significant seismic events were observed during this limited real-time support period.
Lunar surface magnetometer experiment	The instrument is currently ON. All LSM engineering and science data continue to be incoherent.
Solar wind spectrometer experiment	The instrument remains in STANDBY (Apollo 15 ALSEP, SMEAR 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument is currently in STANDBY. Cyclic commanding of the experiment was initiated for the remainder of this lunar day on 3 April (Apollo 15 ALSEP, SMEAR 47).
Heat flow experiment	The HFE is operating in the normal gradient mode. On 4 April the lunar surface temperature was 360.2°K as indicated by the cable thermocouples. The subsurface temperature was 253.4°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.0°K at its lower-most point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 29 March 1974, 1300 G.m.t., to 5 April 1974, 1300 G.m.t.

Central station	Sunrise of the 40th lunation at the Apollo 14 site occurred on 1 April. The 30-foot antenna tracking stations report a signal strength from transmitter "A" at -138.5 ± 3.5 dbm. The DSS-1 heater (10 watts) is OFF for lunar day operations. Data processor "Y" was verified by command on 2 April 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater will be commanded to FORCED OFF on 5 April to minimize heating during lunar day operations. During the limited real-time support periods no significant seismic events have been observed.
Active seismic experiment	The experiment is currently in STANDBY. *The instrument was commanded to high bit rate select on 2 April 1974 to verify operational status. The output of geophones #2 and #3 appeared abnormal as had initially been observed on 3 January 1974. The status check was performed per Apollo 14 ALSEP, SMEAR 86.*
Suprathermal ion detector/cold cathode gauge experiment	*The instrument experienced a functional change to STANDBY at 0847 G.m.t., 2 April.* The experiment remains in STANDBY and present plans are to leave it in this configuration the remainder of the lunar day to preclude instrument mode changes at elevated temperatures. *At 0308 G.m.t., 1 April, the Hawaii tracking station noted a command octal 104 (SIDE Load 1) in the ALSEP downlink. At the beginning of real-time support of this instrument on 2 April it was verified that the ground plane step programmer indicated Load 1. The instrument was commanded to STANDBY at 0355 G.m.t. and back to ON at 0357 G.m.t., 2 April 1974, to return the experiment to its normal configuration without incident.*
Charged particle lunar environmental experiment	The CPLEE is currently in STANDBY select. The experiment was commanded to STANDBY at 1455 G.m.t., 3 April. Present plans are to leave the experiment in STANDBY select until after sunset of this lunation, 16 April 1974.

Apollo 12 ALSEP

Operational status from 29 March 1974, 1300 G.m.t., to 5 April 1974, 1300 G.m.t.

Central station	Sunrise of the 55th lunation occurred on 1 April at the ALSEP site in the Ocean of Storms. The signal strength is between -136.0 dbm and -143.5 dbm from transmitter "B" as reported by the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) was commanded OFF for lunar day operations on 2 April when the average thermal plate temperature was 42.4°F. Data processor "Y" was verified by command on 2 April 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The z-axis drive motor was commanded OFF for lunar day operation on 2 April 1974. The long period z-axis has remained functional (response to LP cal commands and seismic data observed) throughout this report period. At the beginning of real-time support on 2 April it was noted that the PSE sensor temperature had returned on-scale (DL-07 = 126.3°F, sun angle = 4.4°). *Between the end of support at 1955 G.m.t., 2 April, and start of support at 1334 G.m.t., 3 April, a functional change (Filter IN, octal 101) occurred in the experiment. At 1431 G.m.t., 3 April, the command (Filter OUT, octal 101) was executed through mission control without incident. A CVW was not seen in the Apollo 12 ALSEP downlink.* No significant seismic events were observed during the periodic real-time support periods of this instrument.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is 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 for this lunar day on 3 April in an effort to preclude instrument mode changes at internal temperatures above 55°C.

Status as of 1400 G.m.t., 4 April 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1597	1154	978	713
Total Commands to Date	19719	11399	21983	10792
Sun Angle	34.0°	40.0°	61.1°	73.0°
Input Power	64.4w	66.7w	69.8w	68.1w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE/CPLEE/SIDE Stby	SWS & SIDE Stby	ASE OFF
Avg Thermal Plate Temp	87.3°F	94.1°F	107.3°F	100.6°F
PSE Sensor Temp (DL-07)	126.6°F	125.5°F	138.2°F	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	43.5°C
SWS Module 300 Temp (DW-13)	52.7°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Standby	Standby	N/A
CCGE Temp (DI-04)	OFF	Standby	Standby	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	N/A	N/A
ASE GLA Temp (AS-03)	N/A	43.6°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	322.7°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	478
Total Commands to Date	13789
Sun Angle	88.2°
Input Power	74.6w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby/LACE & LEAM OFF
Avg Thermal Plate Temp	118.4°F
LACE Temp (AM-41)	81.3°F
LEAM Temp (AJ-11)	172.8°F
HFE Temp Ref 1 (DH-13)	327.7°K
LSG Temp (DG-04)	Offscale LOW
LSP Temp (AP-01)	119.7°F

ALSEP PERFORMANCE SUMMARY REPORT

11 April 1974
G.m.t.: 1300

Apollo 17 ALSEP

Sunset of the scientific station's 17th lunation will occur on 12 April at the Taurus Littrow site. Downlink signal strength is reported at -142.5 ± 3.5 dbm from transmitter "A". Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174, to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. On 10 April the lunar surface temperature, as measured by the HFE's thermocouples, was 226 + 8°K. Subsurface temperature at 230 cm depth was 256.4°K at probe #1 and 256.7°K at probe #2.

The Lunar Surface Profiling Experiment is currently in STANDBY select. The next passive listening period is scheduled for 12 April 1974.

The Lunar Atmospheric Composition Experiment is in STANDBY. The experiment had been commanded from OFF to STANDBY during this report period at 1414 G.m.t., 9 April, to maintain thermal stability of the instrument. At this time the electronics temperature had decreased to 45.1°F at a sun angle of 137.1°. The instrument will be commanded ON for the remainder of this lunation later today. The LACE electronics temperature (AM-41) was 102.2°F on 10 April.

The Lunar Ejecta and Meteorites Experiment is configured to measure impact flux rates on the lunar surface. The LEAM was commanded ON for the remainder of this lunation at 1436 G.m.t., 8 April, when the mirror temperature (AJ-11) decreased to 180.5°F (Apollo 17 ALSEP, SMEAR 49 R-3) at a sun angle of 137.1°. The instrument's mirror temperature (AJ-11) was 166.3°F on 10 April.

On 10 April an attempt was made to configure the Lunar Surface Gravimeter Experiment for lunar night operation. The intent of the change was to drive the beam to a new position (approximately +5.8 Vdc as indicated by DG-01 at 49°C) using the coarse/vernier slew motors. It was expected that the instrument would stabilize at about 79°C during lunar night and the accompanying temperature drift of the sensor would eventually re-center the beam at 0.0 volts. This operational mode would provide a means of measuring gravity wave coincident signals during some portion of lunar night.

11 April 1974
G.m.t.: 1300

The attempt to drive the beam to a seismic output (DG-01 value) of +5.8 Vdc was not successful. Four gross slew up commands were executed. These commands changed the seismic output from a value of -1.03 Vdc to +0.92 Vdc in successively smaller increments. It was decided to delay any further attempts to change the beam position until a more efficient method of change could be proposed and agreed upon.

The LSG is operating and configured as follows: seismic low gain, integrator shorted mode, bias OUT, post amplifier gain at increment seven (7), the coarse screw driven to the fourth gross slew up from the bottom, the fine screw driven to the extreme lower position, the tilt servo motors in an intermediate position, and slave heater ON.

The LSG will remain in this operational configuration pending analysis resulting from the unsuccessful sensor beam re-centering attempt.

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 April 1974, 1300 G.m.t., to 11 April 1974, 1300 G.m.t.

Central station	Noon of the 25th lunar day occurred on 5 April at the Descartes Site. The DSS-1 heater (10 watts) is OFF for lunar day operations. The 18-hour 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 between -134.0 dbm and -142.0 dbm from transmitter "B".
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. The instrument's sensor temperature (DL-07) is expected to return on-scale tomorrow, 12 April. No significant seismic events were observed during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM continues in the full operational mode and all data have been valid since 17 August 1973. The instrument has accomplished 678 flip calibration sequences since activation.
Active seismic experiment	The Active Seismic Experiment is currently in standby OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 5 April 1974, 1300 G.m.t., to 11 April 1974, 1300 G.m.t.

Central station	Noon of the station's 34th lunation occurred on 6 April at the Hadley Rille site. Transmitter "A" downlink signal strength at the 30-foot antenna tracking stations is reported between -133.0 dbm and -138.4 dbm.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire and short period calibration circuitry is cycling normally as a result of the central station's data subsystem timer outputs. On 5 April the instrument's sensor temperature (DL-07) was offscale HIGH (sun angle 75.8°) and returned on-scale (DL-07 = 138.2°F) (sun angle 133.9°) on 10 April. No significant seismic events were observed during this limited real-time support period.
Lunar surface magnetometer experiment	The instrument is currently ON. All LSM engineering and science data continue to be incoherent.
Solar wind spectrometer experiment	The instrument remains in STANDBY select (Apollo 15 ALSEP, SMEAR 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) since 1405 G.m.t., 9 April 1974.
Heat flow experiment	The HFE is operating in the normal gradient mode. The lunar surface temperature was 345.6°K on 10 April as indicated by the cable thermocouples. The subsurface temperature was 253.4°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 250.1°K at its lower-most point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 5 April 1974, 1300 G.m.t., to 11 April 1974, 1300 G.m.t.

Central station	Noon of the 40th lunation at the Apollo 14 site occurred on 8 April. The 30-foot antenna tracking stations report a signal strength from transmitter "A" at -138.0 $\pm$ 4.0 dbm. The DSS-1 heater (10 watts) is OFF for lunar day operations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is operating in the FORCED OFF configuration to minimize heating during lunar day. No significant seismic events have been observed during the limited real-time support periods of this report.
Active seismic experiment	The experiment is currently in STANDBY per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The experiment remains in STANDBY and present plans are to leave it in this configuration the remainder of the lunar day to preclude instrument mode changes at elevated temperatures.
Charged particle lunar environmental experiment	The CPLEE is currently in STANDBY select. Present plans are to leave the experiment in STANDBY select until after sunset of this lunation, 16 April 1974.

Apollo 12 ALSEP

Operational status from 5 April 1974, 1300 G.m.t., to 11 April 1974, 1300 G.m.t.

Central station	Noon of the 55th lunation occurred on 9 April at the ALSEP site in the Ocean of Storms. The signal strength is -141.7 $\pm$ 3.7 dbm from transmitter "B" as reported by the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) remains OFF for lunar day operations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). At the start of real-time support on 9 April the instrument's sensor temperature (DL-07) was off-scale HIGH (sun angle 95.0^{o}). No significant seismic events were noted during the periodic real-time support periods.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is 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 is in effect for this lunar day in an effort to preclude instrument mode changes at internal temperatures above 55^{o}C. *During real-time support at 1614 G.m.t., 6 April 1974, the SIDE experienced an unexpected change to X10 accumulation mode. This functional change was cleared without incident by commanding the instrument to STANDBY/OFF for cooldown prior to the next support period on 7 April 1974.*

Status as of 1600 G.m.t., 10 April 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1603	1160	984	719
Total Commands to Date	19776	11434	22070	10863
Sun Angle	108.0°	113.9°	135.1°	146.9°
Input Power	66.5w	66.8w	69.8w	68.1w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE/CPLEE/SIDE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	91.2°F	107.9°F	106.7°F	83.3°F
PSE Sensor Temp (DL-07)	Offscale HIGH	136.1°F	138.2°F	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	41.4°C
SWS Module 300 Temp (DW-13)	64.3°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Standby	85.5°C	N/A
CCGE Temp (DI-04)	OFF	Standby	347.4°K	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	N/A	N/A
ASE GLA Temp (AS-03)	N/A	78.8°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	321.4°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	484
Total Commands to Date	13886
Sun Angle	162.2°
Input Power	74.5w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE & LACE Stby
Avg Thermal Plate Temp	59.3°F
LACE Temp (AM-41)	102.2°F
LEAM Temp (AJ-11)	166.3°F
HFE Temp Ref 1 (DH-13)	299.2°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	59.6°F

NASA-JSC

ALSEP PERFORMANCE SUMMARY REPORT

19 April 1974
G.m.t.: 1300

On 21 April 1974 the Apollo 16 ALSEP will have completed two years of uninterrupted operation.

Apollo 17 ALSEP

Midnight of the 17th lunation occurs today, 19 April, at Taurus Littrow. The central station is operating normally with the automatic power management circuit functioning as designed. The structural components temperatures are tracking the temperature profile of previous lunations. 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. Downlink RF signal strength is reported as -138.0 $\pm$ 3.0 dbm from transmitter "A".

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. On 18 April lunar surface temperature, as measured by the HFE thermocouples, was 109.0 $\pm$ 8^{o}K. At a depth of 230 cm, the subsurface temperatures were 256.5^{o}K at probe #1 and 256.8^{o}K at probe #2.

The LSG is operating and configured as follows: seismic low gain, integrator shorted mode, bias OUT, post amplifier gain at increment seven (7), the coarse screw driven to the fourth gross slew up from the bottom, the fine screw driven to the extreme lower position, the tilt servo motors in an intermediate position, and slave heater ON. The experiment's sensor temperature (DG-04) has remained offscale HIGH since 11 April 1974.

The Lunar Seismic Profiling Experiment is currently in STANDBY. LSPE passive listening mode operations were accomplished during this reporting period 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
12 Apr	1501	1515	1545	1547	2	Responses
16 Apr	1351	1400	1430	1432	2	Responses

The next passive listening period is planned for 26 April 1974.

The Lunar Atmospheric Composition Experiment was commanded from STANDBY to ON at 1418 G.m.t., 11 April, but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and back-up heater, ON. The electronics temperature (AM-41) was 3.2^{o}F on 18 April.

19 April 1974
G.m.t.: 1300

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) currently is reading -17.4^{o}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 11 April 1974, 1300 G.m.t., to 19 April 1974, 1300 G.m.t.

Central station	Sunset at the Descartes Site occurred on 13 April for the 25th lunar day. The DSS-1 heater (10 watts) was commanded ON at 1406 G.m.t., 12 April, for lunar night operations when the average thermal plate decreased to 56.2°F. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter "B" is reported between -135.0 and -138.0 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. The instrument's assembly temperature returned onscale 13 April at a sun angle of 176.2°. No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM continues in the full operational mode and all data have been valid since 17 August 1973. The instrument has accomplished 684 flip calibration sequences since activation.
Active seismic experiment	The Active Seismic Experiment is currently in standby OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 11 April 1974, 1300 G.m.t., to 19 April 1974, 1300 G.m.t.

Central station	Sunset of the site's 34th lunation occurred on 14 April. Transmitter "A" downlink signal strength is reported as -136.8 ± 2.8 dbm by the tracking stations with 30-foot antennas.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. No significant seismic events were observed during the limited real-time support periods.
Lunar surface magnetometer experiment	The instrument is currently ON. All engineering and science data continue to be incoherent.
Solar wind spectrometer experiment	The instrument remains in STANDBY due to excessive power comsumption (Apollo 15 ALSEP, SMEAR 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) since 1405 G.m.t., 9 April 1974.
Heat flow experiment	The instrument measurement, TREF 1, is operating normally. The lunar surface temperature was 91.0°K on 18 April as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.0°K at its lower-most point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 11 April 1974, 1300 G.m.t., to 19 April 1974, 1300 G.m.t.

Central station	Sunset at the Apollo 14 site occurred on 16 April. Transmitter "A" signal strength was reported as -136.0 to -144.0 dbm from the 30-foot tracking stations. The DSS-1 heater (10 watts) was commanded ON for lunar night operation on 15 April.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in AUTO ON for lunar night operations. *At the start of real-time support on 12 April it was noted that the instrument's short period calibration status had changed from OFF to ON and the uncage status had changed from UNCAGED to OT. This functional change occurred without a CVW in the downlink. The short period calibration status was returned to OFF and the uncage to UNCAGED status by mission control at 1557 G.m.t. on 12 April without incident.*
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument was commanded ON at 1400 G.m.t., 15 April. *The SIDE experienced a spurious functional change to STANDBY (without a CVW reported in the downlink) at 1232 G.m.t., 17 April, as reported by the Canary Island Tracking Site. Two unsuccessful attempts to command the instrument ON were made by mission control before SIDE initialized to the full automatic stepping sequence with Channeltron high voltage ON at 1353 G.m.t., 17 April.*
Charged particle lunar environmental experiment	The experiment was commanded ON at 1402 G.m.t., 15 April, and is operating in the manual mode at the -35 vdc range and automatic thermal control mode. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage to 2280 vdc, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 11 April 1974, 1300 G.m.t., to 19 April 1974, 1300 G.m.t.

Central station	Sunset of the 55th lunar day occurred on 16 April. The DSS-1 heater (10 watts) was commanded ON for lunar night operation on 16 April. A signal strength of -138.0 to -143.5 dbm from transmitter "B" was reported by the 30-foot tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The sensor temperature (DL-07) returned onscale on 15 April at a sun angle of 167.3^{0} and was offscale LOW at the start of real-time support on 18 April (sun angle = 204.4^{0}). No significant seismic events were noted during the periodic real-time support periods.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument remains in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is in the full automatic stepping sequence with Channeltron high voltages ON. The instrument was commanded to ON at 1343 G.m.t., 14 April, for lunar night operations.

Status as of 1600 G.m.t., 18 April 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1611	1168	992	727
Total Commands to Date	19900	11512	22225	10997
Sun Angle	204.4°	210.4°	231.7°	243.7°
Input Power	64.3w	67.6w	70.0w	69.0w
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	6.5°F	28.4°F	-5.5°F	35.3°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.4°F	124.7°F	125.9°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	-9.0°C
SWS Module 300 Temp (DW-13)	-14.8°C	N/A	Standby	N/A
SIDE Temp (DI-05)	4.8°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	112.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.7°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-62.5°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	492
Total Commands to Date	13960
Sun Angle	259.0°
Input Power	76.1w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	28.4°F
LACE Temp (AM-41)	3.2°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	285.1°K
LSG Temp (DG-04)	Offscale HIGH
LSP Temp (AP-01)	30.4°F

NASA-JSC

ALSEP PERFORMANCE SUMMARY REPORT

26 April 1974
G.m.t.: 1300

Apollo 16 ALSEP, the fourth nuclear-powered scientific data station installed on the moon, began its third year of operation on 21 April 1974.

Apollo 17 ALSEP

Midnight of the 17th lunation at the Taurus Littrow lunar site occurred on 19 April. The central station is operating normally. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain (by internally generated 61-hour pulses), continues during real-time support periods. Downlink signal strength from the 30-foot antenna tracking stations was reported at -137.0 ± 3.0 dbm from transmitter "A".

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 was 106.4 ± 8°K. At a depth of 230 cm, the subsurface temperatures were 256.4°K at probe #1 and 256.8°K at probe #2 on 24 April.

The Lunar Surface Gravimeter regained thermal stabilization at 1200 G.m.t., 20 April. The instrument's sensor temperature was onscale at the start of real-time support on 19 April (DG-04 = 52.3°C at 1425 G.m.t.) and continued to decrease until 1200 G.m.t., 20 April, when the temperature stabilized at 49.2°C. The LSG remained at this stable temperature through the start of real-time support on 22 April. The instrument was successfully re-configured to its operational mode prior to the 15 March 1974 anomaly per Apollo 17 Smear ALSEP 66. The LSG configuration is: seismic gain high, integrator shorted (open loop), bias out, post amplifier gain at increment 15, slave heater ON, coarse and fine screws driven to the extreme lower position, tilt servo motors in an intermediate position and sensor beam near center.

The Lunar Seismic Profiling Experiment is in STANDBY. The next passive listening period is scheduled for later today.

The Lunar Atmospheric Composition Experiment is ON, without processing scientific data due to high voltage power supply and filament #2 OFF. The electronics temperature (AM-41) was 3.2°F on 24 April and is tracking the previous lunar night temperature profile.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) was reading -17.4°F and tracking the previous lunar night temperature profile on 24 April.

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 April 1974, 1300 G.m.t., to 26 April 1974, 1300 G.m.t.

On 21 April 1974 the Apollo 16 ALSEP completed its second year of uninterrupted operation as a scientific data gathering station on the lunar surface.

Central station	This ALSEP experienced midnight of its 25th lunation on 20 April. The DSS-1 heater (10 watts) is ON for lunar night operations. Inhibiting of the 18-hour timer output pulses is continuing. The 30-foot antenna tracking stations report a signal strength of -136.5 ± 1.5 dbm from transmitter "B".
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. *The long period y-axis, which has experienced sluggish leveling since 9 February 1972 did not respond to leveling commands on 22 April. The y-axis had been leveled since 29 January 1974.* No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 690 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 19 April 1974, 1300 G.m.t., to 26 April 1974, 1300 G.m.t.

Central station	Midnight of the station's 34th lunation occurred on 21 April. Transmitter "A" downlink signal strength was reported at -136.5 ± 3.5 dbm from the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's uncage/arm fire circuitry has been cycling per the normal 18-hour timer output pulse functions. During the real-time support periods this past week no significant seismic events were observed.
Lunar surface magnetometer experiment	The experiment is ON, however, all engineering and science data continue to be incoherent.
Solar wind spectrometer experiment	The instrument remains in STANDBY due to excessive power consumption (Apollo 15 ALSEP, SMEAR 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating continuously with channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) for the remainder of this lunation (Apollo 15 ALSEP, SMEAR 47).
Heat flow experiment	The instrument measurement, TREF 1, is operating normally. On 24 April the lunar surface temperature was 86.0°K as indicated by the cable thermocouples. The subsurface temperature was 253.4°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.0°K at its lower-most point. Ring bridge surveys are being conducted periodically.

Apollo 14 ALSEP

Operational status from 19 April 1974, 1300 G.m.t., to 26 April 1974, 1300 G.m.t.

Central station	Midnight at the Apollo 14 site occurred on 23 April. Transmitter "A" signal strength was reported at -141.0 ± 3.0 dbm by the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) is ON for lunar night operation. *At 1114 G.m.t., 22 April, the Central Station responded to a spurious command (octal 056, DSS-2, 5-watt heater ON). The Madrid ground station reported receipt of a CVW in the downlink. After verification during real-time support, the DSS-2 (5 watt) heater was commanded OFF by transmission of octal 055 at 1346 G.m.t., 22 April, without incident.*
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument heater is operating in the AUTO ON mode for lunar night operation. During the limited real-time support periods of this week no significant seismic events have been observed.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON for the remainder of this lunation. *The SIDE experienced a spurious functional change to STANDBY (without a CVW reported in the downlink) at 2214 G.m.t., 20 April, as reported by the Hawaii Tracking Site. The SIDE was initialized to the full automatic stepping sequence with Channeltron high voltages ON at 2330 G.m.t., 20 April.*
Charged particle lunar environmental experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage to 2280 vdc, at which time the instrument will be commanded to STANDBY. *Between real-time support periods of 19 and 22 April 1974, the CPLEE responded to a spurious Channeltron HIGH voltage mode change, octal 120, (+3200 vdc). The instrument was commanded back to the Channeltron LOW voltage mode, octal 121, (+2800 vdc) on 23 April by Mode I command through the Bermuda tracking station without incident.*

Apollo 12 ALSEP

Operational status from 19 April 1974, 1300 G.m.t., to 26 April 1974, 1300 G.m.t.

Central station	Midnight of the 55th lunar night occurred on 23 April. The central station DSS-1 heater (10 watts) is ON for lunar night operations. A signal strength of -137.5 dbm to -142.5 dbm from transmitter "B" was reported by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The Z-axis motor is ON to maximize heating in the instrument for lunar night operation. The PSE sensor temperature (DL-07) has been offscale LOW since 18 April. No significant seismic events were observed during real-time support of the instrument.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	The SIDE is ON and in the automatic stepping sequence for the remainder of this lunation.

Status as of 1600 G.m.t., 24 April 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1617	1174	998	733
Total Commands to Date	19916	11535	22308	11032
Sun Angle	278.9°	284.9°	306.0°	317.9°
Input Power	63.5w*(63.8w)*	67.1w*(67.6w)*	69.9w*(70.0w)*	68.9w*(69.1w)*
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	4.4°F	27.7°F	-7.1°F	34.7°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.3°F	124.4°F	125.8°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	-8.9°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	Standby	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	108.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-23.3°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-70.7°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	498
Total Commands to Date	14165
Sun Angle	333.1°
Input Power	76.1w*(76.1w)*
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	29.1°F
LACE Temp (AM-41)	3.2°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	285.3°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	30.4°F

**Value in parentheses indicates RTG output during last lunation at a similar sun angle.*

ALSEP PERFORMANCE SUMMARY REPORT

3 May 1974
G.m.t.: 1300

ALSEP data could not be processed by JSC from the analog range data tapes during the following times:

ALSEP	*DATE*	*G.m.t.*	*SITE*	*REMARKS*
Apollo 14	*04 Mar 74*	*1327/1502(1^h35^m)*	*TAN*	*Station Problem*
Apollo 16	*09 Mar 74*	*0011/0245(2^h34^m)*	*MAD*	*Station Problem*
Apollo 17	*09 Mar 74*	*1040/1118(38^m)*	*ROS*	*Noisy Data*

It must be noted that these data losses are non-recoverable.

Apollo 17 ALSEP

Noon of the scientific station's 18th lunation will occur on 4 May at the Taurus Littrow site. Downlink signal strength is reported at -140 ± 5.0 dbm from transmitter "A". Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. On 2 May the lunar surface temperature, as measured by the HFE's thermocouples, was 360 ± 8°K. Subsurface temperature at 230 cm depth was 256.5°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for seismic data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. LSPE passive listening mode operations were accomplished during this reporting period 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
26 Apr	1449	1515	1545	1547	2	None
01 May	1740	1742	1812	1816	2	Responses

The next passive listening period is planned for 10 May 1974.

The Lunar Atmospheric Composition Experiment is currently OFF. The instrument was commanded OFF at 1440 G.m.t., 29 April 1974. The LACE electronic temperature (AM-41) was reading 72.1°F on 2 May.

3 May 1974
G.m.t.: 1300

The Lunar Ejecta and Meteorites Experiment is presently OFF. The instrument was commanded OFF at 1418 G.m.t., 30 April 1974, when the mirror temperature (AJ-11) was 192.5°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 26 April 1974, 1300 G.m.t., to 3 May 1974, 1300 G.m.t.

Central station	Sunrise of the 26th lunation occurred on 28 April 1974. The DSS-1 heater (10 watts) was commanded OFF on 28 April when the average thermal plate temperature was 56.7°F. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -135.0 dbm and -138.0 dbm from transmitter "B".
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The long period y-axis did not respond to leveling commands from 22 April to 26 April 1974 but did respond on 28 April 1974 when leveling commands were executed. The seismometer's long period y-axis has previously experienced this leveling anomaly during lunar night operations. No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 696 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. *The instrument was commanded to high bit rate ON, 1 May 1974, to verify operational status. Operation was satisfactory at this time. The check was performed per Apollo 16 ALSEP, SMEAR 27.*

Apollo 15 ALSEP

Operational status from 26 April 1974, 1300 G.m.t., to 3 May 1974, 1300 G.m.t.

Central station	Sunrise of the station's 35th lunation occurred on 29 April. Transmitter "A" downlink signal strength was reported at -135.8 ± 1.8 dbm from the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's uncage/arm fire circuitry has been cycling per the normal 18-hour timer output pulse functions. During the real-time support periods this past week no significant seismic events were observed.
Lunar surface magnetometer experiment	The experiment is ON, however, all engineering and science data continue to be incoherent.
Solar wind spectrometer experiment	The instrument remains in STANDBY due to excessive power consumption (Apollo 15 ALSEP, SMEAR 46).
Suprathermal detector/cold cathode gauge experiment	The instrument is operating continuously with channeltron high voltages commanded ON and in full automatic stepping sequence (Apollo 15 ALSEP, SMEAR 47).
Heat flow experiment	The instrument is operating in the normal gradient mode. On 2 May the lunar surface temperature was 339.7°K as indicated by the cable thermocouples. The subsurface temperature was 253.4°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.1°K at its lower-most point. Ring bridge surveys are conducted periodically.

Apollo 14 ALSEP

Operational status from 26 April 1974, 1300 G.m.t., to 3 May 1974, 1300 G.m.t.

Central station	Sunrise of the 41st lunation at the Apollo 14 site occurred on 30 April. The 30-foot antenna tracking stations report a signal strength from transmitter "A" at -138.5 ± 4.5 dbm. The DSS-1 heater (10 watts) is OFF for lunar day operations. Data processor "Y" was verified by command on 1 May 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater will be commanded to FORCED OFF on 5 May to minimize heating during lunar day operations. During the limited real-time support periods no significant seismic events have been observed.
Active seismic experiment	The experiment is currently in STANDBY. *The instrument was commanded to high bit rate ON, 1 May 1974 to verify operational status. The output of geophones #2 and #3 appeared abnormal as had initially been observed on 3 January 1974. The status check was performed per Apollo 14 ALSEP, SMEAR 86.*
Suprathermal ion detector/cold cathode gauge experiment	The experiment is currently in STANDBY. *At 0737 G.m.t, 26 April, the SIDE experienced a spurious functional change from ON to STANDBY (without a CVW reported in the downlink) as reported by the Guam Tracking Station. The SIDE was re-initialized to the full automatic stepping sequence with Channeltron high voltages ON at 1008 G.m.t., 26 April, by mode 1 command from the Carnarvon Tracking Station. The SIDE again experienced a spurious functional change to STANDBY (without a CVW in the downlink) at 0136 G.m.t., 1 May, as reported by the Hawaii Tracking Station.* Present plans are to leave it in this configuration the remainder of the lunar day.
Charged particle lunar environmental experiment	The CPLEE is currently in STANDBY. The experiment was commanded to STANDBY at 1238 G.m.t., 2 May. Present plans are to leave the experiment in STANDBY until after sunset of this lunation, 15 May 1974.

Apollo 12 ALSEP

Operational status from 26 April 1974, 1300 G.m.t., to 3 May 1974, 1300 G.m.t.

Central station	Sunrise of the 56th lunation occurred on 1 May at the ALSEP site in the Ocean of Storms. The signal strength is between -136.0 dbm and -142.0 dbm from transmitter "B" as reported by the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) was commanded OFF for lunar day operations on 1 May when the average thermal plate temperature was 38.8°F. Data processor "Y" was verified by command on 1 May 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The z-axis drive motor was commanded OFF for lunar day operation on 1 May 1974. At the beginning of real-time support on 1 May it was noted that the PSE sensor temperature had returned onscale (DL-07 = 126.3°F, sun angle = 4.2°). No significant seismic events were observed during the periodic real-time support periods of this instrument.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid. *At the start of real-time support on 26 April 1974 it was noted that the instrument had experienced a spurious functional change (Octal 131, flip/cal initiate) without a CVW reported in the downlink. The LSM sensors were re-configured to the 180° position (Octal 131, flip/cal initiate) by mission control at 1347 G.m.t., 26 April, without incident.*
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data for subsequent long-term analysis.
Suprathermal ion detector experiment	The SIDE is currently ON and in the automatic stepping sequence. On 4 May it is planned to start cyclic commanding of the instrument in the full automatic stepping sequence with Channeltron high voltages ON to experiment power OFF in an effort to preclude instrument mode changes at internal temperatures above 55°C during the lunar day.

Status as of 1400 G.m.t., 2 May 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1625	1182	1006	741
Total Commands to Date	19959	11574	22425	11091
Sun Angle	15.6°	21.6°	42.7°	54.6°
Input Power	63.9w	66.8w	69.3w	68.1w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	All ON	ASE/CPLEE&SIDE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	62.7°F	71.0°F	92.5°F	92.0°F
PSE Sensor Temp (DL-07)	125.9°F	124.8°F	128.3°F	130.2°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	37.3°C
SWS Module 300 Temp (DW-13)	29.0°C	N/A	Standby	N/A
SIDE Temp (DI-05)	35.3°C	Standby	74.5°C	N/A
CCGE Temp (DI-04)	HIGH	Standby	355.6°K	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	N/A	N/A
ASE GLA Temp (AS-03)	N/A	Standby	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	310.2°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	506
Total Commands to Date	14308
Sun Angle	69.8°
Input Power	74.2w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby/LACE & LEAM OFF
Avg Thermal Plate Temp	111.6°F
LACE Temp (AM-41)	72.1°F
LEAM Temp (AJ-11)	174.9°F
HFE Temp Ref 1 (DH-13)	324.4°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	112.8°F

NASA-JSC

ALSEP PERFORMANCE SUMMARY REPORT

10 May 1974
G.m.t.: 1300

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

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
12,14,15,16,17	*27 Mar 74*	*0906/1030*	1^h24^m	*GWM*	*Station Problem*
12	*03 May 74*	*1259/1340*	0^h41^m	*GWM*	*Downlink Modulation Loss*
16	*04 May 74*	*0143/0350*	2^h07^m	*MIL*	*Station Problem*

It must be noted that these data losses are non-recoverable.

Apollo 17 ALSEP

Sunset of the scientific station's 18th lunation will occur on 11 May at the Taurus Littrow site. Downlink signal strength is reported at -142.0 ± 3.0 dbm from transmitter "A". Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. On 9 May the lunar surface temperature, as measured by the HFE's thermocouples, was 258 ± 8°K. Subsurface temperature at 230 cm depth was 256.5°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. The next passive listening period is planned for later today.

The Lunar Atmospheric Composition Experiment is currently in STANDBY. The instrument was commanded to STANDBY at 1402 G.m.t., 9 May 1974. The LACE electronic temperature (AM-41) was reading 32.7°F.

The Lunar Ejecta and Meteorites Experiment is ON. The instrument was commanded ON at 1357 G.m.t., 9 May 1974, when the mirror temperature (AJ-11) was 151.2°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 15 ALSEP

Operational status from 3 May 1974, 1300 G.m.t., to 10 May 1974, 1300 G.m.t.

Central station	Noon of the station's 35th lunation occurred on 6 May at the Hadley Rille site. Transmitter "A" downlink signal strength at the 30- foot antenna tracking stations is reported between -134.0 dbm and -139.0 dbm. *At 2337 G.m.t., 3 May 1974, the Madrid tracking station reported that an unexpected functional change occurred when the central station began processing data in the low bit rate mode. The data processor was commanded back to normal bit rate (Octal 006) by the Madrid station per Network direction at 0021 G.m.t., 4 May 1974, without incident. No data was lost during the low bit rate processing.*
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire and short period calibration circuitry is cycling normally as a result of the central station's data subsystem timer outputs. On 6 May the instrument's sensor temperature (DL-07) was offscale HIGH (sun angle 91.3°) and returned onscale (DL-07 = 138.8°F, sun angle 128.1°) on 9 May. No significant seismic events were observed during this limited real-time support period.
Lunar surface magnetometer experiment	The instrument is currently ON and all engineering and science data remains incoherent.
Solar wind spectrometer experiment	*The instrument remains in STANDBY. At 1455 G.m.t., 6 May, the experiment was commanded to operate for 5 minutes in order to provide additional data on the instrument's anomalous operation. During the operate period the experiment continued to demand excessive power (9 watts). Following the operational period the instrument was commanded back to STANDBY (Apollo 15 ALSEP, SMEAR 46).*
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) since 1337 G.m.t., 8 May 1974.

Apollo 16 ALSEP

Operational status from 3 May 1974, 1300 G.m.t., to 10 May 1974, 1300 G.m.t.

Central station	Noon of the 26th lunar day occurred on 5 May at the Descartes Site. The DSS-1 heater (10 watts) is OFF for lunar day operations. The 18-hour 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 between -135.0 dbm and -141.0 dbm from transmitter "B".
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The instrument's sensor temperature (DL-07) indicated offscale HIGH at the beginning of real-time support on 4 May (sun angle 79.5^{o}). No significant seismic events were observed during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM continues in the full operational mode and all data have been valid since 17 August 1973. The instrument has accomplished 702 flip calibration sequences since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP (continued)

Operational status from 3 May 1974, 1300 G.m.t., to 10 May 1974, 1300 G.m.t.

Heat flow experiment	The HFE is operating in the normal gradient mode. The lunar surface temperature was 350.1°K on 09 May as indicated by the cable thermocouples. The subsurface temperature was 253.1°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.1°K at its lower-most point. Ring bridge surveys are conducted periodically during real-time support.

Apollo 14 ALSEP

Operational status from 3 May 1974, 1300 G.m.t., to 10 May 1974, 1300 G.m.t.

Central station	Noon of the 41st lunation at the Apollo 14 site occurred on 8 May. The 30-foot antenna tracking stations report a signal strength from transmitter "A" at -138.5 ± 2.5 dbm. The DSS-1 heater (10 watts) is OFF for lunar day operations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP) the instrument's heater is operating in the FORCED OFF configuration to minimize heating during lunar day. No significant seismic events have been observed during the limited real-time support periods of this report
Active seismic experiment	The experiment is currently in STANDBY per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The experiment remains in STANDBY and present plans are to leave it in this configuration the remainder of the lunar day to preclude instrument mode changes at elevated temperatures.
Charged particle lunar environmental experiment	The CPLEE is currently in STANDBY. Present plans are to leave the experiment in STANDBY until after sunset of this lunation, 13 May 1974.

Apollo 12 ALSEP

Operational status from 3 May 1974, 1300 G.m.t., to 10 May 1974, 1300 G.m.t.

Central station

Noon of the 56th lunation occurred on 8 May at the ALSEP site in the Ocean of Storms. The signal strength is -140.3 ± 2.3 dbm from transmitter "B" as reported by the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) remains OFF for lunar day operations. *The Guam tracking station experienced an abrupt loss of the Apollo 12 ALSEP downlink signal modulation at 1259 G.m.t., 03 May 1974. The following commands were executed by mission control to correct the situation:*

G.m.t.	*Command*	*Remarks*
1339	*Transmitter "A" Select*	*No downlink signal modulation*
1341	*Data Processor "X" Select*	*Modulation restored*
1346	*Transmitter "B" Select*	*Reselection of Transmitter "B", nominal downlink*

The above results indicate that the source of the loss of downlink signal modulation is from the apparent failure of the Apollo 12 Y Data Processor. Since selection of the X Data Processor no downlink signal problems have been experienced.

Passive seismic experiment

The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). At the start of real-time support on 9 May the instrument's sensor temperature (DL-07) was offscale HIGH (sun angle 100.8°). No significant seismic events were noted during the periodic real-time support periods.

Lunar surface magnetometer experiment

Scientific and engineering data outputs remain invalid.

Solar wind spectrometer experiment

The instrument is currently in the normal gain mode and is 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 is in effect for this lunar day in an effort to preclude instrument mode changes at internal temperatures above 55°C.

Status as of 1600 G.m.t., 9 May 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1632	1189	1013	748
Total Commands to Date	20053	11606	22540	11190
Sun Angle	101.9°	107.8°	128.9°	140.8°
Input Power	63.9w	67.2w	69.3w	68.1w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE OFF	ASE/CPLEE&SIDE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	90.7°F	108.9°F	108.0°F	86.9°F
PSE Sensor Temp (DL-07)	Offscale HIGH	131.9°F	138.8°F	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	39.3°C
SWS Module 300 Temp (DW-13)	64.3°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Standby	86.8°C	N/A
CCGE Temp (DI-04)	OFF	Standby	347.4°K	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	N/A	N/A
ASE GLA Temp (AS-03)	N/A	Standby	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	322.9°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	513
Total Commands to Date	14487
Sun Angle	156.1°
Input Power	74.6w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE&LACE Stby
Avg Thermal Plate Temp	88.7°F
LACE Temp (AM-41)	32.7°F
LEAM Temp (AJ-11)	151.2°F
HFE Temp Ref 1 (DH-13)	301.6°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	90.2°F

ALSEP PERFORMANCE SUMMARY REPORT

17 May 1974
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was not available during the following period. It should be noted that this data loss is non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
14	*15 May 74*	*0150/0200*	0^h10^m	*ACN*	*Station Problem*

Apollo 17 ALSEP

Midnight of the scientific station's 18th lunation will occur on 18 May at the Taurus Littrow site. Downlink signal strength is reported at -142.0 ± 3.3 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues 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. On 16 May lunar surface temperature, as measured by the HFE thermocouples, was 111.0 ± 8°K. At a depth of 230 cm, the subsurface temperatures were 256.4°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. LSPE passive listening mode operations were accomplished during this reporting period 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
10 May	1412	1415	1445	1445	2	Responses
16 May	0255	0300	0330	0332	2	None

The next passive listening period is planned for 24 May 1974.

ALSEP PERFORMANCE SUMMARY REPORT (continued)

17 May 1974
G.m.t.: 1300

The Lunar Atmospheric Composition Experiment was commanded from STANDBY to ON at 1407 G.m.t., 10 May, but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and backup heater, ON. The electronics temperature (AM-41) was 3.2°F on 16 May.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) currently is reading -17.4°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 10 May 1974, 1300 G.m.t., to 17 May 1974, 1300 G.m.t.

Central station	Sunset at the Descartes Site occurred on 12 May for the 26th lunation. The DSS-1 heater (10 watts) was commanded ON at 1400 G.m.t., 12 May, for lunar night operations when the average thermal plate decreased to 43.1°F. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B is reported between -131.0 and -138.5 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The uncage/arm fire circuit is configured to the OT state. The instrument's assembly temperature returned onscale 12 May at a sun angle of 176.3°. No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM continues in the full operational mode and all data have been valid since 17 August 1973. The instrument has accomplished 708 flip calibration sequences since activation.
Active seismic experiment	The Active Seismic Experiment is currently in standby OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 10 May 1974, 1300 G.m.t., to 17 May 1974, 1300 G.m.t.

Central station	Sunset of the site's 35th lunation occurred on 13 May. Transmitter A downlink signal strength is reported as -136.0 ± 4.0 dbm by the tracking stations with 30-foot antennas.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. No significant seismic events were observed during the limited real-time support periods.
Lunar surface magnetometer experiment	The instrument is currently ON. All engineering and science data continue to be incoherent.
Solar wind spectrometer experiment	The instrument remains in STANDBY due to excessive power consumption (Apollo 15 ALSEP, SMEAR 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) since 1337 G.m.t., 8 May 1974.
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 93.8°K on 16 May as indicated by the cable thermocouples. The subsurface temperature was 253.4°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.1°K at its lowermost point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 10 May 1974, 1300 G.m.t., to 17 May 1974, 1300 G.m.t.

Central station	Sunset at the Apollo 14 site occurred on 15 May. Transmitter A signal strength was reported as -138.0 to -143.5 dbm from the 30-foot tracking stations. The DSS-1 heater (10 watts) was commanded ON for lunar night operation on 14 May.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in AUTO ON for lunar night operations. No significant seismic events were observed during the periodic real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument was commanded ON at 1355 G.m.t., 14 May, and is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON for the remainder of this lunation.
Charged particle lunar environment experiment	The experiment was commanded ON at 1446 G.m.t., 14 May, and is operating in the manual mode at the -35 vdc range and automatic thermal control mode. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage, to 2280 vdc, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 10 May 1974, 1300 G.m.t., to 17 May 1974, 1300 G.m.t.

Central station	Sunset of the 56th lunation occurred on 16 May. The DSS-1 heater (10 watts) was commanded ON for lunar night operation on 16 May. A signal strength of -136.0 to -144.5 dbm from transmitter B was reported by the 30-foot tracking stations. The downlink signal has been nominal since data processor X was selected on 3 May 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The sensor temperature was onscale (DL-07 = 139.1°F, sun angle = 162.1°) at the start of real-time support 14 May 1974. No significant seismic events were noted during the periodic real-time support periods.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument remains in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is in the full automatic stepping sequence with Channeltron high voltages ON. The instrument was commanded to ON at 1405 G.m.t., 13 May, for lunar night operations.

Status as of 1600 G.m.t., 16 May 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1639	1196	1020	755
Total Commands to Date	20157	11662	22680	11319
Sun Angle	186.2°	192.0°	213.0°	225.2°
Input Power	64.3w	67.1w	70.3w	68.6w
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	11.9°F	30.5°F	-5.5°F	35.3°F
PSE Sensor Temp (DL-07)	126.8°F	124.4°F	124.7°F	125.9°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	-9.0°C
SWS Module 300 Temp (DW-13)	-3.0°C	N/A	Standby	N/A
SIDE Temp (DI-05)	3.7°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	116.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.0°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-27.6°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	520
Total Commands to Date	14648
Sun Angle	240.7°
Input Power	75.6w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	29.1°F
LACE Temp (AM-41)	3.2°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	285.6°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	30.4°F

NASA-JSC

ALSEP PERFORMANCE SUMMARY REPORT

24 May 1974
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was not available during the following period. It should be noted that this data loss is non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
14	*01 April 74*	*1928/2125*	1^h57^m	*CYI*	*Station problem*
12,14,15, 16,17	*15 May 74*	*2040/2044*	0^h04^m	*HAW*	*Station problem*
12,14,15, 16,17	*20 May 74*	*0955/0958*	0^h03^m	*MAD*	*Station problem*

Apollo 17 ALSEP

Sunrise of the 19th lunation at the Taurus Littrow lunar site will occur on 26 May. The central station is operating normally. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain (by internally generated 61-hour pulses), continues during real-time support periods. Downlink signal strength from the 30-foot antenna tracking stations was reported at -137.7 ± 2.7 dbm from transmitter "A".

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 was 108 ± 8°K. At a depth of 230 cm, the subsurface temperatures were 256.5°K at probe #1 and 256.8°K at probe #2 on 22 May.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is in STANDBY. The next passive listening period is scheduled for later today.

The Lunar Atmospheric Composition Experiment is ON, without processing scientific data due to high voltage power supply and filament #2 OFF. *A sequence of operational commands were executed by the experiment during real-time support 20 May 1974. The LACE's telemetry data indicated no signs of change from the previous operational check of 20 March 1974 (multiplier high voltage power supply and filament #2 were operated).*

The experiment was reconfigured to its lunar night operational mode, and currently remains in this mode. The LACE will continue to be cycled from ON to OFF to maintain the electronics temperature below the previously established 125°F limit. No periodic thermal cycling check is planned within the next sixty days. The electronics temperature (AM-41) was -2.3°F on 22 May.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) was reading -17.4°F on 22 May.

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 17 May 1974, 1300 G.m.t., to 24 May 1974, 1300 G.m.t.

Central station	This ALSEP experienced midnight of its 26th lunation on 20 May. The DSS-1 heater (10 watts) is ON for lunar night operations. Inhibiting of the 18-hour timer output pulses is continuing. The 30-foot antenna tracking stations report a signal strength of -136.5 $\pm$ 1.5 dbm from transmitter "B".
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 714 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 17 May 1974, 1300 G.m.t., to 24 May 1974, 1300 G.m.t.

Central station	Midnight of the station's 35th lunation occurred on 21 May. Transmitter "A" downlink signal strength was reported at -137.0 ± 2.0 dbm from the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's uncage/arm fire circuitry has been cycling per the normal 18-hour timer output pulse functions. During the real-time support periods this past week no significant seismic events were observed.
Lunar surface magnetometer experiment	The experiment is ON, however, all engineering and science data continue to be incoherent.
Solar wind spectrometer experiment	The instrument remains in STANDBY due to excessive power consumption (Apollo 15 ALSEP, SMEAR 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating continuously with channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) for the remainder of this lunation (APOLLO 15 ALSEP, SMEAR 47).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors are being sampled in full sequence. On 22 May the lunar surface temperature was 86.8°K as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.1°K at its lowermost point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 17 May 1974, 1300 G.m.t., to 24 May 1974, 1300 G.m.t.

Central station	Midnight at the Apollo 14 site occurred on 22 May. Transmitter "A" signal strength was reported at -141.5 ± 2.5 dbm by the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) is ON for lunar night operation.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument heater is operating in the AUTO ON mode for lunar night operation. *The long period Y-axis did not respond to leveling commands during real-time support on 22 May 1974. The Y-axis had previously responded to leveling commands since 17 December 1973.* During the limited real-time support periods of this week, no significant seismic events have been observed.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON for the remainder of this lunation. *The SIDE experienced a spurious functional change to STANDBY (without a CVW reported in the downlink) at 1135 G.m.t., 19 May, as reported by the Goldstone tracking station. The SIDE was initialized to the full automatic stepping sequence with Channeltron high voltages ON at 1616 G.m.t., 19 May, by the Hawaii tracking station.*
Charged particle lunar environmental experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage to 2280 vdc, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 17 May 1974, 1300 G.m.t., to 24 May 1974, 1300 G.m.t.

Central station	Midnight of the 56th lunar night occurred on 23 May. The central station DSS-1 heater (10 watts) is ON for lunar night operations. A signal strength of -135.0 dbm to -143.5 dbm from transmitter "B" was reported by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). *At 0056 G.m.t., 18 May, the instrument experienced a spurious functional change to thermal control forced OFF (Octal 076). A CVW was observed in the downlink signal by the Guam tracking station and the experiment was commanded back to the AUTO ON mode at 0143 G.m.t., 18 May, without incident.* The Z-axis motor is ON to maximize heating in the instrument for lunar night operation. The PSE sensor temperature (DL-07) has been offscale LOW since 20 May. No significant seismic events were observed during real-time support of the instrument.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	The SIDE is ON and in the automatic stepping sequence for the remainder of this lunation.

Status as of 1600 G.m.t., 22 May 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1645	1202	1026	761
Total Commands to Date	20169	11678	22774	11352
Sun Angle	260.8°	266.7°	287.6°	299.7°
Input Power	63.8w*(63.8w)*	67.1w*(67.6w)*	69.8w*(69.4w)*	68.9w*(68.9w)*
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	3.5°F	27.0°F	-7.8°F	34.7°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.3°F	124.4°F	125.8°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	-8.9°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	Standby	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	110.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	22.7°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-70.7°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	526
Total Commands to Date	14777
Sun Angle	314.9°
Input Power	75.6w*(76.1w)*
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	29.1°F
LACE Temp (AM-41)	-2.3°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	285.5°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	30.4°F

**Value in parentheses indicates RTG output during last lunation at a similar sun angle.*

ALSEP PERFORMANCE SUMMARY REPORT

31 May 1974
G.m.t.: 0100

A partial eclipse of the Moon will occur on 4 and 5 June 1974. As the Moon passes through the Earth's shadow, all ALSEPs will pass through the umbral phase and experience total darkness. This is the first occurrence of a total eclipse for all ALSEPs at the same time. A real-time support period is planned for this event.

Remote site coverage for recording of ALSEP downlink data was not available during the following periods. It should be noted that the data losses are non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
14, 15, 16, 17	*12-13 Apr 74*	*2354/0318*	3^h24^m	*ACN*	*Station Problem*
12, 14, 15, 16, 17	*23 May 74*	*2215/2228*	0^h13^m	*GDS*	*Station Problem*

Apollo 17 ALSEP

Noon of the scientific station's 19th lunation will occur on 2 June at the Taurus Littrow site. Downlink signal strength is reported at -141.5 ± 4.5 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. On 29 May the lunar surface temperature, as measured by the HFE's thermocouples, was 295 ± 8°K. Subsurface temperature at 230 cm depth was 256.5°K at probe #1 and 256.8° K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for seismic data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. LSPE passive listening mode operation was accomplished during this reporting period as follows:

31 May 1974
G.m.t.: 0100

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 May	1448	1500	1530	1532	2	None

The next passive listening period is planned for 31 May 1974.

The Lunar Atmospheric Composition Experiment is currently OFF. The instrument was commanded OFF at 2007 G.m.t., 29 May 1974, when electronic temperature (AM-41) was reading 116.1°F.

The Lunar Ejecta and Meteriorites Experiment is presently OFF. The instrument was commanded OFF at 1504 G.m.t., 30 May 1974, when the mirror temperature (AJ-11) was 196.0°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 24 May 1974, 1300 G.m.t., to 31 May 1974, 0100 G.m.t.

Central station	Sunrise of the 27th lunation occurred on 27 May 1974. The DSS-1 heater (10 watts) was commanded OFF on 28 May when the average thermal plate temperature was 66.4°F. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -134.0 dbm and -138.0 dbm from transmitter B.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 720 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 24 May 1974, 1300 G.m.t., to 31 May 1974, 0100 G.m.t.

Central station	Sunrise of the station's 36th lunation occurred on 28 May. Transmitter A downlink signal strength was reported at -136.0 ± 2.5 dbm from the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's uncage/arm fire circuitry has been cycling per the normal 18-hour timer output pulse functions. During the real-time support periods this past week no significant seismic events were observed.
Lunar surface magnetometer experiment	The experiment is ON, however, all engineering and science data continue to be incoherent.
Solar wind spectrometer experiment	The instrument remains in STANDBY due to excessive power consumption (Apollo 15 ALSEP, SMEAR 46).
Suprathermal detector/cold cathode gauge experiment	The instrument is operating continuously with channeltron high voltages commanded ON and in full automatic stepping sequence (Apollo 15 ALSEP, SMEAR 47).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 286.4°K on 29 May as indicated by the cable thermocouples. The subsurface temperature was 253.3°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.1°K at its lowermost point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 24 May 1974, 1300 G.m.t., to 31 May 1974, 0100 G.m.t.

Central station	Sunrise of the 42nd lunation at the Apollo 14 site occurred on 30 May. The 30-foot antenna tracking stations report a signal strength from transmitter A at -138.0 $\pm$ 3.0 dbm. The DSS-1 heater (10 watts) is OFF for lunar day operations. Data processor "Y" will be verified by command on 31 May 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater will be commanded to FORCED OFF on 3 June to minimize heating during lunar day operations. During the limited real-time support periods no significant seismic events have been observed.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The experiment is currently in STANDBY. Present plans are to leave it in this configuration the remainder of the lunar day.
Charged particle lunar environmental experiment	The CPLEE is currently ON. The experiment will be commanded to STANDBY on 1 June until after sunset of this lunation, 14 June 1974.

Apollo 12 ALSEP

Operational status from 24 May 1974, 1300 G.m.t., to 31 May 1974, 0100 G.m.t.

Central station	Sunrise of the 57th lunation occurred on 30 May at the ALSEP site in the Ocean of Storms. The signal strength is between -135.0 dbm and -142.0 dbm from transmitter B as reported by the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) will be commanded OFF for lunar day operations on 31 May. Data processor Y will be verified by command on 31 May 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The Z-axis drive motor will be commanded OFF for lunar day operation on 31 May 1974. No significant seismic events were observed during the periodic real-time support periods of this instrument.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data for subsequent long-term analysis.
Suprathermal ion detector experiment	The SIDE is currently ON and in the automatic stepping sequence. On 1 June it is planned to start cyclic commanding of the instrument in the full automatic stepping sequence with Channeltron high voltages ON to experiment power OFF in an effort to preclude instrument mode changes at internal temperatures above 55°C during the lunar day.

Status as of 2100 G.m.t., 29 May 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1652	1209	1033	768
Total Commands to Date	20177	11694	22882	11419
Sun Angle	348.8°	354.8°	16.0°	28.9°
Input Power	63.4w	66.6w	68.9w	67.7w
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	1.6°F	26.5°F	46.6°F	67.4°F
PSE Sensor Temp (DL-07)	Offscale Low	124.2°F	125.7°F	126.7°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	35.5°C
SWS Module 300 Temp (DW-13)	-16.05°C	N/A	Standby	N/A
SIDE Temp (DI-05)	4.25°C	Invalid	30.9°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	316.2°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-71.4°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	298.2°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	533
Total Commands to Date	14897
Sun Angle	43.1°
Input Power	73.6w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stby/LACE OFF
Avg Thermal Plate Temp	73.9°F
LACE Temp (AM-41)	116.1°F
LEAM Temp (AJ-11)	186.5°F
HFE Temp Ref 1 (DH-13)	311.5°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	74.1°F

NASA-JSC

ALSEP PERFORMANCE SUMMARY REPORT

7 June 1974
G.m.t.: 1300

A partial eclipse of the Moon occurred on 4 and 5 June 1974. As the Moon passed through the Earth's shadow, all ALSEPs were in the umbral phase and experienced total darkness. This was the first occurrence of a total eclipse of all ALSEPs at the same time. A real-time support period was conducted for this event.

Remote site coverage for recording of ALSEP downlink data was not available during the following period. It should be noted that the data loss is non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
12	*5 Jun 74*	*0352/0411*	0^h19^m	*ACN*	*Station Problem*

Apollo 17 ALSEP

Noon of the scientific station's 19th lunation occurred on 2 June at the Taurus Littrow site. Downlink signal strength is reported at - 142.0 ± 4.0 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. On 6 June the lunar surface temperature, as measured by the HFE's thermocouples, was 329 ± 8°K. Subsurface temperature at 230 cm depth was 256.5°K at probe #1 and 256.8°K at probe #2. *The HFE was operated in the thermocouple only mode during the eclipse.*

The Lunar Surface Gravimeter Experiment is operating and configured for seismic data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. LSPE passive listening mode operation was accomplished during this reporting period 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
31 May	0350	0400	0430	0431	2	Responses

The next passive listening period is planned for 7 June 1974.

The Lunar Atmospheric Composition Experiment is currently in STANDBY. The LACE was commanded to STANDBY at 1925 G.m.t., 6 June, when the electronic temperature (AM-41) was reading 55.7°F.

7 June 1974
G.m.t.: 1300

The Lunar Ejecta and Meteorites Experiment is presently ON and configured to measure impact flux rates on the lunar surface. The instrument was commanded ON at 1924 G.m.t., 6 June, when the mirror temperature was reading 173.8°F. *During the lunar eclipse the LEAM was commanded ON at 1949 G.m.t., 4 June. The instrument operated normally throughout the period. The mirror temperature (AJ-11) experienced a temperature from 188.5°F to 118.4°. The LEAM was commanded OFF by mode I through the Hawaii Tracking Station at 1045 G.m.t., 5 June, when the mirror temperature reached 196.0°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 `EP

Operational status from 31 May 1974, 0100 G.m.t., to 7 June 1974, 1300 G.m.t.

Central station	Noon of the 27th lunation occurred on 3 June 1974. The DSS-1 heater (10 watts) is OFF for lunar day operation. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -135.0 dbm and -140.0 dbm from transmitter B.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The instrument's sensor temperature (DL-07) indicated offscale HIGH at the beginning of real-time support on 2 June (sun angle 72.6^{o}). No significant seismic events were observed during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 726 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. The instrument was commanded to high bit rate ON, 31 May 1974, to verify operational status. Operation was satisfactory at this time. The check was performed per Apollo 16 ALSEP, SMEAR 27.

Apollo ALSEP

Operational status from 31 May 1974, 0100 G.m.t., to 7 June 1974, 1300 G.m.t.

Central station	Noon of the station's 36th lunation occurred on 4 June. Transmitter A downlink signal strength was reported at -136.3 ± 2.3 dbm from the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's uncage/arm fire circuitry has been cycling per the normal 18-hour timer output pulse functions. During the real-time support periods this past week no significant seismic events were observed.
Lunar surface magnetometer experiment	The experiment is ON, however, all engineering and science data continue to be incoherent.
Solar wind spectrometer experiment	*The instrument remains in STANDBY. At 2134 G.m.t., 4 June, the experiment was commanded to operate for 4 minutes in order to provide additional data on the instrument's anomalous operation. During the operate period the experiment continued to demand excessive power (9 watts). Following the operational period the instrument was commanded back to STANDBY (Apollo 15 ALSEP, SMEAR 46).*
Suprathermal detector/cold cathode gauge experiment	The instrument is currently in STANDBY. Cyclic commanding of the experiment was initiated for the remainder of this lunar day on 2 June (Apollo 15 ALSEP, SMEAR 47). On 3 June 1974, a special scientific data gathering period was conducted during real-time support to observe those low energy data counts which appear some 33 hours prior to lunar noon.
Heat flow experiment	The instrument is operating in the normal gradient mode. On 6 June the lunar surface temperature was 360.8°K as indicated by the cable thermocouples. The subsurface temperature was 253.4°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.1°K at its lower-most point. Ring bridge surveys are conducted periodically. *During the lunar eclipse the experiment was operated in the thermocouples only mode.*

Apollo 14 ALSEP

Operational status from 31 May 1974, 0100 G.m.t. to 7 June 1974, 1300 G.m.t.

Central station

Noon of the 42nd lunation at the Apollo 14 site occurred on 6 June. The 30-foot antenna tracking stations report a signal strength from transmitter A at -138.5 dbm ± 2.5 dbm. The DSS- 1 heater (10 watts) is OFF for lunar day operations. Data processor Y was verified by command on 31 May 1974.

Passive seismic experiment

The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater was commanded to FORCED OFF on 5 June to minimize heating during lunar day operations. *At 2124 G.m.t., 2 June, the PSE experienced a spurious functional change in the long period z-axis sensor gain (octal 064) to -10 db as verified in the ALSEP downlink by the Madrid Tracking Station. The z-axis sensor gain was commanded back to 0 db without incident at 2218 G.m.t., 2 June, by the Madrid Tracking Station at the direction of mission control.* During the limited real-time support periods no significant seismic events have been observed.

Active seismic experiment

The experiment is currently in STANDBY. *The instrument was commanded to high bit rate ON, 31 May 1974, to verify operational status. The output of geophones #2 and #3 appeared abnormal as had initially been observed on 3 January 1974. The status check was performed per Apollo 14 ALSEP, SMEAR 86.*

Suprathermal ion detector/cold cathode gauge experiment

The experiment is currently in STANDBY. *At 1539 G.m.t., 30 May, the SIDE experienced a functional change from ON to STANDBY as reported by the Ascension Tracking Station. The SIDE was re-initialized to the full automatic stepping sequence with Channeltron high voltages ON at 2118 G.m.t., 4 June, for operation during the lunar eclipse. The SIDE again experienced a functional change to STANDBY at 0056 G.m.t., 5 June, shortly after emergence into full sunlight.* Present plans are to leave it in this configuration the remainder of the lunar day.

Charged particle lunar environmental experiment

The CPLEE is currently in STANDBY. *The experiment was commanded ON at 1936 G.m.t., 4 June, in the -35 vdc mode for the eclipse of the moon. The experiment was commanded to STANDBY at 2112 G.m.t., 4 June. Present plans are to leave the experiment in STANDBY until after sunset of this lunation, 14 June 1974.*

Apollo 12 ALSEP

Operational status from 31 May 1974, 0100 G.m.t., to 7 June 1974, 1300 G.m.t.

Central station	Noon of the 57th lunation occurred on 7 June at the ALSEP site in the Ocean of Storms. The signal strength is between -137.0 dbm and -144.0 dbm from transmitter B as reported by the 30- foot antenna tracking stations. The DSS-1 heater (10 watts) was commanded OFF for lunar day operations on 31 May when the average thermal plate temperature was 37.3°F. Data processor X was verified by command on 31 May 1974.
Passive seismic experiement	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The z-axis drive motor was commanded OFF for lunar day operation on 31 May 1974. At the beginning of real- time support on 31 May it was noted that the PSE sensor temperature had returned onscale (DL- 07 = 126.3°F, sun angle = 4.1°). No significant seismic events were observed during the periodic real-time support periods of this instrument.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data for subsequent long- term analysis. *On 31 May the experiment was commanded to the extended range because of an increase in activity and was returned to the normal range on 2 June.*
Suprathermal ion detector	Cyclic commanding of the instrument in the full automatic stepping sequence with Channeltron high voltages ON to experiment power OFF was initiated for this lunar day on 1 June in an effort to preclude instrument mode changes at internal temperatures above 55°C.

Status a .f 2000 G.m.t., 6 June 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1660	1217	1041	776
Total Commands to Date	20299	11792	23012	11533
Sun Angle	86.0°	91.9°	113.1°	124.9°
Input Power	63.8w	66.8w	69.3w	67.7w
Heater and Power Dumps	ALL OFF	ALL OFF	ALL OFF	ALL OFF
Experiment Status	SIDE OFF	ASE/CPLEE&SIDE Stby	SWS&SIDE Stby	ASE OFF
Avg Thermal Plate Temp	89.9°F	110.3°F	112.8°F	94.8°F
PSE Sensor Temp (DL-07)	136.3°F	129.2°F	138.4°F	Offscale HIGH
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	40.3°C
SWS Module 300 Temp (DW-13)	63.5°C	N/A	Standby	N/A
SIDE Temp (DI-05)	OFF	Standby	Standby	N/A
CCGE Temp (DI-04)	Invalid	Standby	Standby	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	N/A	N/A
ASE GLA Temp (AS-03)	N/A	Standby	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	326.9°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	541
Total Commands to Date	15063
Sun Angle	140.1°
Input Power	74.2w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	ALL OFF
Experiment Status	LACE/LSPE Stby/LEAM ON
Avg Thermal Plate Temp	100.3°F
LACE Temp (AM-41)	55.7°F
LEAM Temp (AJ-11)	173.8°F
HFE Temp Ref 1 (DH-13)	311.8°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	101.2°F

ALSEP PERFORMANCE SUMMARY REPORT

14 June 1974
G.m.t.: 1300

Later today it is planned to terminate the operation of the Apollo 12 Lunar Surface Magnetometer and the Apollo 15 Lunar Surface Magnetometer and Solar Wind Spectrometer. These instruments have not returned valid scientific data for an extended period of time. The experiments will be commanded to the power OFF mode. This reconfiguration will increase the level of the available reserve power to the Apollo 12 and Apollo 15 ALSEPs and insure the continued successful return of science data from the lunar surface.

A partial eclipse of the Moon occurred on 4 and 5 June 1974. As the Moon passed through the Earth's shadow, all ALSEPs were in the umbral phase and experienced total darkness.

Apollo 17 ALSEP

Midnight of the scientific station's 19th lunation will occur on 17 June at the Taurus Littrow site. Downlink signal strength is reported at -138.0 ± 3.0 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues 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. On 13 June lunar surface temperature, as measured by the HFE thermocouples, was 106.3 ± 8°K. At a depth of 230 cm, the subsurface temperatures were 256.5°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Surface Profiling Experiment is in STANDBY select. The experiment was commanded ON at 1527 G.m.t., 7 June, and to LSPE data format processing (high bit rate) at 1540 G.m.t. Two geophone calibration pulses were sent during the listening period. Seismic activity was observed on all data channels. LSPE processing was terminated at 1610 G.m.t., and the instrument was commanded to STANDBY select at 1612 G.m.t. The next passive listening period is scheduled for later today.

14 June 1974
G.m.t.: 1300

The Lunar Atmospheric Composition Experiment was commanded from STANDBY to ON at 1313 G.m.t., 9 June, but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and backup heater, ON. The electronics temperature (AM-41) was 3.2°F on 13 June.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) currently is reading -17.4°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 07 June 1974, 1300 G.m.t., to 14 June 1974, 1300 G.m.t.

Central station	Sunset at the Descartes Site occurred on 11 June for the 27th lunation. The DSS-1 heater (10 watts) was commanded ON at 1914 G.m.t., 10 June, for lunar night operations when the average thermal plate decreased to 50.1°F. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B is reported between -136.0 and -140.0 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The instrument's assembly temperature (DL-07) returned onscale 11 June at a sun angle of 182.6°. No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM continues in the full operational mode and all data have been valid since 17 August 1973. The instrument has accomplished 734 flip calibration sequences since activation.
Active seismic experiment	The Active Seismic Experiment is currently in standby OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 07 June 1974, 1300 G.m.t., to 14 June 1974, 1300 G.m.t.

Central station	Sunset of the site's 36th lunation occurred on 12 June. Transmitter A downlink signal strength is reported as -137.0 ± 2.0 dbm by the tracking stations with 30-foot antennas. *At 0545 G.m.t., 8 June, the Central Station responded to a spurious command (octal 024, DSS-1, 10-watt heater ON). The Madrid ground station reported receipt of a CVW in the downlink. After verification during real-time support, the DSS-1 (10 watt) heater was commanded OFF by transmission of octal 025 at 1321 G.m.t., 8 June, without incident.*
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. No significant seismic events were observed during the real-time support periods.
Lunar surface magnetometer experiment	The instrument is currently ON. All engineering and science data continue to be incoherent.
Solar wind spectrometer experiment	The instrument remains in STANDBY due to excessive power consumption (Apollo 15 ALSEP, SMEAR 46).
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) since 1406 G.m.t., 7 June 1974.
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 97.9°K on 13 June as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.1°K at its lowermost point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 07 June 1974, 1300 G.m.t., to 14 June 1974, 1300 G.m.t.

Central station	Sunset at the Apollo 14 site occurred today, 14 June. Transmitter A signal strength was reported at -139.0 to -145.5 dbm from the 30-foot tracking stations. The DSS-1 heater (10 watts) was commanded ON for lunar night operation on 13 June.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in AUTO ON for lunar night operations. No significant seismic events were observed during the periodic real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument was commanded ON at 1346 G.m.t., 13 June, and is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON for the remainder of this lunation.
Charged particle lunar environment experiment	The experiment was commanded On at 1347 G.m.t., 13 June, and is operating in the manual mode at the -35 vdc range and automatic thermal control mode. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage, to 2280 vdc, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 07 June 1974, 1300 G.m.t., to 14 June 1974, 1300 G.m.t.

Central station	Sunset of the 57th lunation occurred on 14 June. The DSS-1 heater (10 watts) will be commanded ON for lunar night operation later today. A signal strength of -139.5 to -144.5 dbm from transmitter B was reported by the 30-foot tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The sensor temperature was onscale (DL-07 = 140.2^{o}F, sun angle = 156.0^{o}) at the start of real-time support 12 June 1974. No significant seismic events were noted during the periodic real-time support periods.
Lunar surface magnetometer experiment	Scientific and engineering data outputs remain invalid.
Solar wind spectrometer experiment	The instrument remains in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is in the full automatic stepping sequence with Channeltron high voltages ON. The instrument was commanded to ON at 1343 G.m.t., 12 June, for lunar night operations.

Status as of 1600 G.m.t., 13 June 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1667	1224	1048	783
Total Commands to Date	20354	11845	23136	11656
Sun Angle	168.1°	174.0°	195.5°	207.4°
Input Power	63.4w	67.2w	69.8w	69.0w
Heater and Power Dumps	All OFF	DSS-1 ON (10w)	All OFF	DSS-1 ON (10w)
Experiment Status	All ON	ASE Stby	SWS Stby	ASE OFF
Avg Thermal Plate Temp	45.8°F	47.3°F	3.1°F	35.9°F
PSE Sensor Temp (DL-07)	133.9°F	124.8°F	124.8°F	126.0°F
LSM Internal Temp (DM-05)	Invalid	N/A	Invalid	-7.7°C
SWS Module 300 Temp (DW-13)	34.4°C	N/A	Standby	N/A
SIDE Temp (DI-05)	42.4°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	123.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	1.3°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	65.6°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.8°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	548
Total Commands to Date	15224
Sun Angle	222.7°
Input Power	75.6w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	29.1°F
LACE Temp (AM-41)	3.2°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	285.4°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	30.4°F

JUNE 4 - 5, 1974

LUNAR EVENTS

	CDT	GMT
Moon enters penumbra	1424/4 Jun	1924/4 Jun
Moon enters umbra	1539	2039
Middle of eclipse	1717	2217
Moon exits umbra	1853	2353
Moon exits penumbra	2009	0109/5 Jun
Duration of eclipse (hrs + mins)	5+45	

Magnitude of eclipse (0.832)

ALSEP EVENTS (CDT - TIMES APPROXIMATE)

	1	2	3	4	5
ALSEP enters penumbra	1449	1454	1511	1452	1509
ALSEP enters umbra	1611	1607	1633	1615	1622
ALSEP middle of eclipse	1705	1719	1727	1709	1733
ALSEP exits umbra	1757	1828	1819	1801	1842
ALSEP exits penumbra	1919	1940	1941	1923	1954
Penumbral duration (hrs + mins)	4+30	4+46	4+30	4+31	4+45
Umbral duration (hrs + mins)	1+46	2+21	1+46	1+46	2+20

LUNAR ECLIPSE DATA, 4-5 JUNE 1974

Apollo 12 ALSEP

	Date/Time G.m.t.		
Parameter	04/1911	04/2143	05/0026
CS1	63.40w	65.96w	61.70w
CS2	19.15w	15.99w	17.80w
AT01	171.1°F	-51.5°F	120.2°F
AT02	171.1°F	-49.0°F	120.2°F
AT08	202.1°F	34.7°F	131.5°F
AT09	67.4°F	13.3°F	-2.5°F
Avg TP	89.82°F	71.78°F	54.38°F
PSE DL07	128.91°F	128.84°F	126.74°F
SWS Mod 300	62.58°C	55.05°C	42.86°C
Snsr	59.71°C	-3.46°C	6.39°C
SIDE T2	43.19°C	49.15°C	38.39°C

LSM invalid

Apollo 14 ALSEP

	Date/Time G.m.t.				
Parameter	04/1943	04/1950	04/2115	04/2306	05/0100
CS1	66.64w	66.64w	69.48w	68.04w	66.29w
CS2	38.29w	38.50w	41.50w	34.68w	42.64w
AT01	185.2°F	185.2°F	10.7°F	-126.1°F	179.6°F
AT02	188.1°F	185.2°F	13.3°F	-126.1°F	176.8°F
AT08	190.9°F	193.7°F	81.2°F	-7.8°F	142.8°F
AT09	117.4°F	114.6°F	70.1°F	-2.5°F	59.1°F
Avg TP	107.48°F	107.62°F	97.38°F	78.78°F	80.98°F
PSE DL07	134.39°F	134.43°F	134.53°F	132.68°F	130.46°F
CPLEE AC-5	54.28°C	54.89°C	33.93°C	4.44°C	34.58°C
AC-6	53.69°C	54.28°C	46.00°C	22.86°C	30.38°C
ASE AS02	73.4°C	73.4°C	73.4°C	55.3°C	44.1°C
AS03	69.8°C	69.8°C	68.3°C	57.8°C	55.4°C
AS04	59.8°C	59.8°C	41.3°C	12.6°C	35.9°C

SIDE invalid

Apollo 15 ALSEP

	Date/Time G.m.t.			
Parameter	04/1911	04/2045	04/2332	05/0122
CS1	69.29w	71.31w	70.84w	68.79w
CS2	24.64w	24.36w	17.63w	26.61w
AT01	151.3°F	81.2°F	-135.9°F	134.3°F
AT02	179.6°F	100.6°F	-131.0°F	162.6°F
AT08	123.1°F	81.2°F	-28.5°F	61.9°F
AT09	86.7°F	64.6°F	-31.1°F	48.2°F
Avg TP	111.5°F	107.28°F	77.82°F	80.84°F
PSE DL07	142.14°F	142.14°F	137.45°F	134.33°F
SIDE CCIG	364.01°K	355.62°K	249.20°K	301.58°K
T2	59.43°C	64.53°C	56.51°C	51.84°C
HFE TREF1	327.925°K	322.970°K	290.388°K	302.979°K
TC12	351.536°K	280.013°K	149.550°K	351.199°K
TC22	366.721°K	287.265°K	157.916°K	365.417°K

SWS and LSM invalid

LUNAR ECLIPSE DATA, 4-5 JUNE 1974

Apollo 16 ALSEP

Parameter	Date/Time G.m.t. 04/1923	04/2222	05/0032
CS1	68.14w	70.01w	66.74w
CS2	36.54w	38.64w	36.02w
AT01	182.3°F	-59.1°F	72.9°F
AT02	171.1°F	-61.7°F	64.6°F
AT08	140.0°F	8.0°F	61.9°F
AT09	83.9°F	18.6°F	10.7°F
Avg TP	100.32°F	83.30°F	72.54°F
PSE DL07	H	H	H
LSM X axis	77.58°C	60.59°C	36.86°C
Y axis	77.58°C	60.59°C	36.11°C
Z axis	79.62°C	62.04°C	37.63°C
Base	37.63°C	29.79°C	21.22°C
Intrnl	43.52°C	38.29°C	30.32°C

ASE and HFE OFF

Apollo 17 ALSEP

Parameter	Date/Time G.m.t. 04/1924	04/1950	04/2200	04/2342	05/0118
CS36	74.17w	74.48w	77.04w	76.18w	73.63w
CS61	47.56w	44.43w	45.63w	38.83w	43.24w
AT01	202.1°F	202.1°F	-31.1°F	-118.8°F	157.0°F
AT02	199.3°F	199.3°F	-33.7°F	-121.2°F	159.8°F
AT08	100.6°F	100.6°F	34.7°F	-15.6°F	34.7°F
AT09	196.5°F	196.5°F	48.2°F	-5.1°F	145.6°F
Avg TP	111.7°F	111.6°F	96.0°F	78.5°F	75.8°F
LSG DG01	-1.6121 vdc	1.9879 vdc	-0.9505 vdc	-0.0165 vdc	- 0.2500 vdc
DG03	-0.0235 vdc	-0.0235 vdc	0.0738 vdc	0.0155 vdc	0.2684 vdc
DG04	49.199° C	49.199°C	49.199°C	49.199°C	49.199°C
HFE TREF1	322.783°K	322.713°K	305.742°K	289.588°K	295.305°K
TC12	364.840°K	364.227°K	173.215°K	152.216°K	361.528°K
TC22	366.009°K	365.488°K	174.428°K	151.038°K	362.480°K
LACE AM41	75.8°F	75.8°F	50.6°F	19.7°F	18.2°F
LEAM AJ06	OFF	151.5°F	138.0°F	114.0°F	112.5°F
AJ07	OFF	154.0°F	142.5°F	120.0°F	114.0°F
AJ08	OFF	164.0°F	144.0°F	120.0°F	124.5°F
AJ09	OFF	177.3°F	166.5°F	141.0°F	130.5°F
AJ11	188.0°F	188.0°F	162.0°F	124.6°F	130.7°F
LSP AP01	113.5°F	113.5°F	98.0°F	80.2°F	76.8°F

LACE OFF, LSPE STANDBY

NASA-JSC

ALSEP PERFORMANCE SUMMARY REPORT

21 June 1974
G.m.t.: 1300

The operations of the Apollo 12 ALSEP Lunar Surface Magnetometer and the Apollo 15 ALSEP Lunar Surface Magnetometer and Solar Wind Spectrometer were terminated on 14 June 1974 as per the agreed implementation plan without incident. The experiments had not yielded any scientific data for an extended period of time and had very little probability of recovery. To insure the continued successful return of science data from the other experiments and to eliminate a potential critical reserve power level situation of the Apollo 12 and 15 ALSEPs the subject experiments were commanded to the power OFF mode. These were the first experiments in the Apollo ALSEP program to be terminated by command. The reconfiguration provided the following results:

ALSEP	*RESERVE POWER INCREASE*	*AVERAGE THERMAL PLATE TEMPERATURE INCREASE*
12	*+8.67w*	*+11.25°F*
15	*+13.71w*	*+20.6°F*

Remote site coverage for recording of ALSEP downlink data was not available during the following periods. It should be noted that the data losses are non-recoverable.

ALSEP	*DATA*	*G.M.T.*	*LOSS*	*SITE*	*REMARKS*
15	*13 June 74*	*1836/1844*	*0^h08^m*	*HAW*	*Transmitter Switch, A to B*
12	*18 June 74*	*1430/1455*	*0^h25^m*	*ACN/MAD*	*Higher Priority*
14, 15					
16, 17	*18 June 74*	*1430/1438*	*0^h08^m*	*ACN/MAD*	*Higher Priority*

Apollo 17 ALSEP

Midnight of the scientific station's 19th lunation occurred on 17 June at the Taurus Littrow site. Downlink signal strength is reported at -138.0± 2.0 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues 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. On 19 June lunar surface temperature, as measured by the HFE thermocouples, was 108.5±8°K. At a depth of 230 cm, the subsurface temperatures were 256.5°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

21 June 1974
G.m.t.: 1300

The Lunar Seismic Profiling Experiment is currently in STANDBY. LSPE passive listening mode operations were accomplished during this reporting period 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
14 June	1358	1400	1430	1432	2	None
19 June	1436	1445	1515	1517	2	None

The next passive listening period is planned for 28 June 1974.

The Lunar Atmospheric Composition Experiment is ON but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and backup heater, ON. The electronics temperature (AM-41) was 3.2°F on 19 June.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) currently is reading -17.4°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 14 June 1974, 1300 G.m.t., to 21 June 1974, 1300 G.m.t.

Central Station	Midnight at the Descartes Site occurred on 18 June for the 27th lunation. The DSS-1 heater (10 watts) is ON for lunar night operations. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B is reported between -134.0 and -139.0 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM continues in the full operational mode and all data have been valid since 17 August 1973. The instrument has accomplished 738 flip calibration sequences since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 14 June 1974, 1300 G.m.t., to 21 June 1974, 1300 G.m.t.

Central Station	Midnight of the site's 36th lunation occurred on 19 June. Transmitter A downlink signal strength is reported as - 137.0 ± 3.0 dbm by the tracking stations with 30-foot antennas. *At 1836 G.m.t., 13 June 1974, the Hawaii Tracking Station reported a loss of lock on the Apollo 15 ALSEP downlink. Lock was re-established at 1844 G.m.t., 13 June. During real-time support on 14 June it was determined that the loss of lock was caused by a switch from Transmitter A to Transmitter B (octal 015). At 1553 G.m.t., 14 June, Transmitter A was reselected (octal 012) by mission control without incident.*
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. No significant seismic events were observed during the limited real-time support periods.
Lunar surface magnetometer experiment	*The instrument was permanently commanded OFF at 1537 G.m.t., 14 June 1974.*
Solar wind spectrometer experiment	*The instrument was permanently commanded OFF at 1524 G.m.t., 14 June 1974.*
Suprathermal ion detector/cold	The instrument has been operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) since 1406 G.m.t., 7 June 1974.
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 87.8°K on 19 June as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.1°K at its lowermost point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 14 June 1974, 1300 G.m.t., to 21 June 1974, 1300 G.m.t.

Central Station	Midnight at the Apollo 14 site occurred on 21 June. Transmitter A signal strength was reported as -136.0 to -145.5 dbm from the 30-foot tracking stations. The DSS-1 heater (10 watts) is ON for lunar night operation. *At the start of real-time support on 15 June it was noted that the DTREM had responded to a spurious functional change without a CVW noted in the downlink (Octal 031, DTREM OFF). Review of central station data revealed that the change occurred between the end of real-time support on 14 June (1600 G.m.t.) and the start of real-time operations on 15 June (1440 G.m.t.). The DTREM was subsequently reconfigured to ON (Octal 027) during real-time support at 1526 G.m.t., 19 June, without incident.*
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in AUTO ON for lunar night operations. No significant seismic events were observed during the periodic real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode experiment	The instrument is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON for the remainder of this lunation. *At 1509 G.m.t., 13 June, the SIDE experienced a functional change from ON to STANDBY as reported by the Hawaii Tracking Station. Five attempts were made on 13 June to command the experiment ON. The SIDE was re-initialized to the full automatic stepping sequence with Channeltron high voltages ON at 1159 G.m.t., 14 June. The SIDE again experienced a functional change to STANDBY at 0927 G.m.t., 16 June, and was re-initialized at 1238 G.m.t., 16 June, through mission control. Previously seven attempts had been made by the Goldstone Tracking Station to command the experiment ON.*
Charged particle lunar environment experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage, to 2280 vdc, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 14 June 1974, 1300 G.m.t., to 21 June 1974, 1300 G.m.t.

Central station	Midnight of the 57th lunation will occur later today, 21 June. The DSS-1 heater (10 watts) was commanded ON for lunar night operation on 14 June. A signal strength of -135.0 to -144.0 dbm from transmitter B was reported by the 30-foot tracking stations. *Between 1330 G.m.t., 3 June, and 1400 G.m.t., 4 June 1974 the central station responded to a spurious command (octal 022, 14 watt PDR ON). None of the tracking stations confirmed receipt of the command in the Apollo 12 ALSEP downlink. The 14-watt PDR was returned to OFF (octal 023) by command through mission control at 1209 G.m.t., 14 June, without incident.*
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The sensor temperature was offscale LOW (sun angle = 217.6°) at the start of real-time support 17 June 1974. No significant seismic events were noted during the periodic real-time support periods.
Lunar surface magnetometer experiment	*The instrument was permanently commanded OFF at 1514 G.m.t., 14 June 1974.*
Solar wind spectrometer experiment	The instrument remains in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is in the full automatic stepping sequence with Channeltron high voltages ON. The instrument was commanded to ON at 1343 G.m.t., 12 June, for lunar night operations. *At 1543 G.m.t., 14 June, the SIDE responded to a spurious OFF command (octal 054). Receipt of a CVW was not confirmed in the Apollo 12 ALSEP downlink. The SIDE was re-initialized at 1549 G.m.t., 14 June, by command (octal 052, operational power ON) through mission control without incident.*

Status as of 1600 G.m.t., 19 June 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1673	1230	1054	789
Total Commands to Date	20430	11877	23244	11699
Sun Angle	242.8°	248.8°	269.9°	281.8°
Input Power	63.4w *(63.8w)*	66.6w *(67.1w)*	69.9w *(69.4w)*	68.5w *(68.5w)*
Heater and Power Dumps	DSS-1 ON (10w)	DSS-1 ON (10w)	All OFF	DSS-1 ON (10w)
Experiment Status	*LMS OFF*	ASE Stby	*LMS & SWS OFF*	ASE OFF
Avg Thermal Plate Temp	16.6°F	26.3°F	12.8°F	34.7°F
PSE Sensor Temp (DL-07)	offscale LOW	124.3°F	124.4°F	125.8°F
LSM Internal Temp (DM-05)	*OFF*	N/A	*OFF*	-9.0°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	*OFF*	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	110.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.7°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-70.3°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.8°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	554
Total Commands to Date	15354
Sun Angle	297.0°
Input Power	75.6w *(75.6w)*
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	27.9°F
LACE Temp (AM-41)	3.2°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	285.2°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	29.1°F

Value in parentheses indicates RTG output during last lunation at a similar sun angle.

NASA-JSC

ALSEP PERFORMANCE SUMMARY REPORT

28 June 1974
G.m.t.: 1200

Remote site coverage for recording of ALSEP downlink data was not available during the following period. It should be noted that the data losses are non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
12, 14, 15 16, 17	*28 Apr 74*	*0600/0634*	*34^m*	*CRO*	*Station Problem*

Apollo 17 ALSEP

Sunrise of the scientific station's 20th lunation occurred on 24 June at the Taurus Littrow site. Downlink signal strength is reported at 140.5 ± 3.5 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. On 27 June the lunar surface temperature, as measured by the HFE's thermocouples, was 240 ± 8°K. Subsurface temperature at 230 cm depth was 256.5°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for seismic data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. The next LSPE passive listening mode operation is planned for later today.

The Lunar Atmospheric Composition Experiment was commanded to OFF for lunar day operation at 1500 G.m.t., 27 June, when the electronics temperature (AM-41) was 118.0°F.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) was 174.9°F on 27 June.

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 21 June 1974, 1300 G.m.t., to 28 June 1974, 1200 G.m.t.

Central station	Sunrise of the 28th lunation occurred on 26 June 1974. The DSS-1 heater (10 watts) was commanded OFF on 26 June 1974. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -133.0 dbm and -139.5 dbm from transmitter B.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 744 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 21 June 1974, 1300 G.m.t., to 28 June 1974, 1200 G.m.t.

Central station	Sunrise of the station's 37th lunation occurred on 27 June 1974. The transmitter A downlink signal strength is reported between -133.0 dbm and -138.5 dbm.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). No significant seismic events were noted during real-time support.
LUNAR SURFACE MAGNETOMETER EXPERIMENT	*THE INSTRUMENT WAS PERMANENTLY COMMANDED OFF AT 1537 G.M.T., 14 JUNE 1974, PER THE AGREED OPERATIONAL PLAN. REPORTS ON THE EXPERIMENT IN THIS SECTION ARE DISCONTINUED AS OF THIS DATE, 28 JUNE 1974.*
SOLAR WIND SPECTROMETER EXPERIMENT	*THE INSTRUMENT WAS PERMANENTLY COMMANDED OFF AT 1524 G.M.T., 14 JUNE 1974, PER THE AGREED OPERATIONAL PLAN. REPORTS ON THE EXPERIMENT IN THIS SECTION ARE DISCONTINUED AS OF THIS DATE, 28 JUNE 1974.*
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating continuously with channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) for the remainder of this lunation (APOLLO 15 ALSEP, SMEAR 47).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors are being sampled in full sequence. On 27 June the lunar surface temperature was 89.7°K indicated by the cable thermocouples. The subsurface temperature was 253.4°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.1°K at its lowermost point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 21 June 1974, 1300 G.m.t., to 28 June 1974, 1200 G.m.t.

Central station	Sunrise at the Apollo 14 site will occur later today (43rd lunation). Transmitter A signal strength was reported between -135.5 dbm and -140.0 dbm. DSS-1 heater (10 watts) will be commanded OFF for lunar day operation on 29 June 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). No significant seismic events have been noted during this report period.
Active seismic experiment	The experiment is currently in STANDBY per Apollo 14 ALSEP, SMEAR 86,
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON for the remainder of this lunation. *At 2258 G.m.t., 23 June, the SIDE experienced a functional change from ON to STANDBY as reported by the Goldstone Tracking Station. The SIDE was re-initialized to the full automatic stepping sequence with Channeltron high voltages ON at 0124 G.m.t., 24 June.*
Charged particle lunar environmental experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode.

Apollo 12 ALSEP

Operational status from 21 June 1974, 1300 G.m.t., to 28 June 1974, 1200 G.m.t.

Central station	Sunrise of the 58th lunar day will occur on 29 June 1974 at the ALSEP site in the Ocean of Storms. A signal strength of -138.5 ± 3.5 dbm from transmitter B was reported by the tracking stations. The DSS-1 heater (10 watts) is ON for lunar night operations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The z-axis drive motor is ON to maximize heating in the instrument during lunar night. No significant seismic events were noted during the periodic real-time support periods of this instrument.
LUNAR SURFACE MAGNETOMETER EXPERIMENT	*THE INSTRUMENT WAS PERMANENTLY COMMANDED OFF AT 1514 G.M.T., 14 JUNE 1974, PER THE AGREED OPERATIONAL PLAN. REPORTS ON THE EXPERIMENT IN THIS SECTION ARE DISCONTINUED AS OF THIS DATE, 28 JUNE 1974.*
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data for subsequent long-term analysis.
Suprathermal ion detector experiment	Currently the SIDE is ON in the full automatic stepping sequence with Channeltron high voltages ON.

Status as of 1600 G.m.t., 27 June 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1681	1238	1062	797
Total Commands to Date	20422	11893	23332	11752
Sun Angle	340.8°	346.7°	7.9°	19.7°
Input Power	62.9w	66.6w	69.4w	67.6w
Heater and Power Dumps	DSS-1 ON (10w)	All OFF	All OFF	All OFF
Experiment Status	*LSM OFF*	ASE Stby	*LSM & SWS OFF*	ASE OFF
Avg Thermal Plate Temp	13.8°F	25.3°F	12.5°F	56.4°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.3°F	124.4°F	126.4°F
LSM Internal Temp (DM-05)	*OFF*	N/A	*OFF*	31.1°C
SWS Module 300 Temp (DW-13)	-16.0°C	N/A	*OFF*	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	108.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-23.3°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-71.1°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	562
Total Commands to Date	15467
Sun Angle	34.9°
Input Power	73.6w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby/LACE OFF
Avg Thermal Plate Temp	61.7°F
LACE Temp (AM-41)	118.0°F
LEAM Temp (AJ-11)	174.9°F
HFE Temp Ref 1 (DH-13)	305.1°F
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	61.4°F

ALSEP PERFORMANCE SUMMARY REPORT

3 July 1974
G.m.t.: 1300

On 29 June 1974 all ALSEP Passive Seismometer Experiments and the Lunar Surface Profiling Experiment exhibited a marked increase in the levels of response. This was noted initially at 1617 G.m.t., during real-time support operations, and continued until approximately 1730 G.m.t. An increase of significant energy counts in the Solar Wind Spectrometer and Lunar Surface Magnetometer Experiments flux were also experienced at this time.

Remote site coverage for recording of ALSEP downlink data was not available during the following period. It should be noted that the data loss is non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
14	*27 Jun 74*	*1345/1417*	*32^m*	*ACN*	*Station Problem*

Apollo 17 ALSEP

Noon of the scientific station's 20th lunation occurred on 2 July at the Taurus Littrow site. Downlink signal strength is reported at -142.5 ± 2.5 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. On 2 July the lunar surface temperature, as measured by the HFE's thermocouples, was 375 ± 8^{o}K. Subsurface temperature at 230 cm depth was 256.5^{o}K at probe #1 and 256.8^{o}K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2^{o}C (slave heater ON).

The Lunar Surface Profiling Experiment is in STANDBY. The experiment was commanded ON at 1623 G.m.t., 29 June, and to LSPE data format processing (high bit rate) at 1700 G.m.t. Two geophone calibration pulses were sent during the listening period. Seismic activity was observed on all data channels. LSPE processing was terminated at 1730 G.m.t., and the instrument was commanded to STANDBY select at 1732 G.m.t. The next passive listening period is scheduled for later today, 3 July.

3 July 1974
G.m.t.: 1300

The Lunar Atmospheric Composition Experiment is currently OFF. The electronic temperature (AM-41) was 80.0°F on 2 July.

The Lunar Ejecta and Meteorites Experiment is presently OFF. The instrument was commanded OFF at 1355 G.m.t., 28 June 1974, when the mirror temperature (AJ-11) was 189.5°F. The temperature was 176.0°F on 2 July.

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 28 June 1974, 1200 G.m.t., to 3 July 1974, 1300 G.m.t.

Central Station	Noon of the 28th lunation occurred on 3 July 1974. The DSS-1 heater (10 watts) is OFF for lunar day operation. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -135.0 dbm and -139.0 dbm from transmitter B.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON: component gains, 0 db; and feedback loop filter OUT). The instrument's sensor temperature (DL-07) indicated offscale HIGH at the beginning of real-time support on 2 July (sun angle 79.6^{o}). A significant seismic event was noted during the limited real-time support of this instrument on 29 June.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 748 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. *The instrument was commanded to high bit rate ON, 29 June 1974, to verify operational status. Operation was satisfactory at this time. The check was performed per Apollo 16 ALSEP, SMEAR 27.*

Apollo 15 ALSEP

Operational status from 28 June 1974, 1200 G.m.t., to 3 July 1974, 1300 G.m.t.

Central station	Noon of the station's 37th lunation will occur on 4 July. Transmitter A downlink signal strength was reported at -136.0 ± 2.0 dbm from the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's uncage/arm fire circuitry has been cycling per the normal 18 hour timer output pulse functions. During the real-time support periods this past week a significant seismic event was observed on 29 June.
Suprathermal detector/cold cathode gauge experiment	The instrument is currently in STANDBY. Cyclic commanding of the experiment was initiated for the remainder of this lunar day on 3 July (Apollo 15 ALSEP, SMEAR 47).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 360.7°K on 2 July as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.1°K at its lowermost point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 28 June 1974, 1200 G.m.t., to 3 July 1974, 1300 G.m.t.

Central station	Sunrise of the 43rd lunation at the Apollo 14 site occurred on 28 June. The 30-foot antenna tracking stations report a signal strength from transmitter A at -140.0 ± 3.0 dbm. The DSS- 1 heater (10 watts) is OFF for lunar day operations. Data processor Y was verified by command on 29 June 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater will be commanded to FORCED OFF on 3 July to minimize heating during lunar day operations. During the limited real-time support periods a significant seismic event was observed on 29 June.
Active seismic experiment	The experiment is currently in STANDBY. *The instrument was commanded to high bit rate ON, 29 June, to verify operational status. The output of geophones #2 and #3 appeared abnormal as had initially been observed on 3 January 1974. The status check was performed per Apollo 14 ALSEP, SMEAR 86.*
Suprathermal ion detector/cold cathode gauge experiment	The experiment is currently in STANDBY. *At 2346 G.m.t., 28 June the SIDE experienced a functional change from ON to STANDBY as reported by the Ascension Tracking Station.* Present plans are to leave it in this configuration the remainder of the lunar day.
Charged particle lunar environmental experiment	The CPLEE is currently in STANDBY. The experiment was commanded to STANDBY on 30 June for the remainder of this lunar day.

Apollo 12 ALSEP

Operational status from 28 June 1974, 1200 G.m.t., to 3 July 1974, 1300 G.m.t.

Central station	Sunrise of the 58th lunation occurred on 29 June at the ALSEP site in the Ocean of Storms. The signal strength is between -137.5 dbm and -144.5 dbm from transmitter B as reported by the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) was commanded OFF for lunar day operations on 29 June.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The Z-axis drive motor was commanded OFF for lunar day operation on 29 June. A significant seismic event was observed during the periodic real-time support periods of this instrument on 29 June.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data for subsequent long-term analysis.
Suprathermal ion detector experiment	The SIDE is currently OFF. On 30 June cyclic commanding of the instrument in the full automatic stepping sequence with Channeltron high voltages On to experiment power OFF in an effort to preclude instrument mode changes at internal temperatures above 55^{o}C during the lunar day was initiated.

Status as of 1600 G.m.t., 2 July 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1686	1243	1067	802
Total Commands to Date	20531	11932	23431	11831
Sun Angle	24.8°	41.8°	68.9°	80.8°
Input Power	63.0w	66.6w	68.9w	68.0w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	*LSM OFF*	ASE/CPLEE/SIDE Stdby	*LSM & SWS OFF*	ASE OFF
Avg Thermal Plate Temp	82.5°F	94.2°F	106.6°F	100.2°F
PSE Sensor Temp (DL-07)	126.9°F	125.9°F	136.7°F	Offscale HIGH
LSM Internal Temp (DM-05)	*OFF*	N/A	*OFF*	43.5°C
SWS Module 300 Temp (DW-13)	56.7°C	N/A	*OFF*	N/A
SIDE Temp (DI-05)	OFF	Standby	85.5°C	N/A
CCGE Temp (DI-04)	OFF	Standby	364.0°K	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	N/A	N/A
ASE GLA Temp (AS-03)	N/A	50.9°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	323.1°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	567
Total Commands to Date	15565
Sun Angle	96.0°
Input Power	73.7w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby/LACE & LEAM OFF
Avg Thermal Plate Temp	112.9°F
LACE Temp (AM-41)	80.0°F
LEAM Temp (AJ-11)	176.0°F
HFE Temp Ref 1 (DH-13)	325.6°F
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	114.2°F

ALSEP PERFORMANCE SUMMARY REPORT

12 July 1974
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was not available during the following period. It should be noted that the data loss is non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
12	*8 July 74*	*0129/0148*	*19m*	*ACN*	*Transmitter OFF (spurious command octal 014)*

Apollo 17 ALSEP

Sunset of the scientific station's 20th lunation occurred on 9 July at the Taurus Littrow site. Downlink signal strength is reported at -139.2 ± 3.2 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues 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 107 ± 8°K. At a depth of 230 cm, the subsurface temperatures are 256.5°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and the tilt servo motors in an intermediate position. The experiment sensor temperature is presently stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is in STANDBY. The experiment was commanded ON at 1532 G.m.t., 5 July, and to LSPE data format processing (high bit rate) at 1540 G.m.t. Two geophone calibration pulses were sent during the listening period. Activity was observed on all geophones during the real-time operation. LSPE processing was terminated at 1609 G.m.t., and the instrument was commanded to STANDBY at 1611 G.m.t. The next passive listening period is scheduled for 13 July.

The Lunar Atmospheric Composition Experiment was commanded from STANDBY to ON at 1431 G.m.t., 8 July, but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament OFF; high voltage power supply, OFF; and back-up heater, ON. The electronics temperature (AM-41) was 4.9°F on 11 July.

ALSEP PERFORMANCE SUMMARY REPORT (continued)

12 July 1974
G.m.t.: 1300

The Lunar Ejecta and Meteorites Experiment is configured to measure impact flux rates on the lunar surface. The LEAM was commanded ON for the lunar night at 1613 G.m.t., 5 July. The instrument's mirror temperature (AJ-11) currently is reading -17.4^{o}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 3 July 1974, 1300 G.m.t., to 12 July 1974, 1300 G.m.t.

Central station	Sunset at the Descartes Site occurred on 10 July for the 28th lunar day. The DSS-1 heater (10 watts) was commanded ON at 1247 G.m.t., 10 July, for lunar night operations when the average thermal plate decreased to 41.9°F. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B is reported between -136.0 and -139.0 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The instrument's assembly temperature (DL-07) returned on-scale, 10 July, at a sun angle of 176.6°. No significant seismic events were noted during the limited real-time support of this instrument.
Lunar Surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 756 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 3 July 1974, 1300 G.m.t., to 12 July 1974, 1300 G.m.t.

Central station	Sunset of the site's 37th lunation occurred 11 July. Transmitter A downlink signal strength is reported as -137.0 ± 2.0 dbm by the tracking stations with 30-foot antennas. *At 1556 G.m.t., 9 July, the central station responded to a spurious command (octal 033, 18-hour timer inhibit). The Guam Tracking Station confirmed receipt of the command in the ALSEP downlink. The timer was returned to the accept condition by command (octal 032) from mission control at 0209 G.m.t., 10 July, without incident. The data subsystem's 18-hour timer outputs are occurring normally.*
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. No significant seismic events were observed during the limited real-time support periods.
Suprathermal ion detector/cold cathode gauge	The instrument has been operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) since 1242 G.m.t., 6 July 1974.
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 141.6°K on 11 July as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.1°K at its lowermost point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 3 July 1974, 1300 G.m.t., to 12 July 1974, 1300 G.m.t.

Central station	Sunset at the Apollo 14 site will occur on 13 July. Transmitter A signal strength was reported as -139.0 to -146.0 dbm from the 30-foot tracking stations. The DSS-1 heater (10 watts) will be commanded ON for lunar night operation later today.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater was commanded to AUTO ON for lunar night operations 10 July. No significant seismic events were observed during the periodic real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been in STANDBY since 28 June 1974. The instrument will be commanded ON for lunar night operation during real-time support later today.
Charged particle lunar environmental experiment	The CPLEE is currently in STANDBY. The instrument will be commanded ON for lunar night operation during real-time support later today.

Apollo 12 ALSEP

Operational status from 3 July 1974, 1300 G.m.t., to 12 July 1974, 1300 G.m.t.

Central station	Sunset of the 58th lunar day will occur on 13 July. The DSS-1 heater (10 watts) will be commanded ON for lunar night operation at sunset. A signal strength of -136.0 to -146.0 dbm from transmitter B was reported by the 30-foot tracking stations. *During Phase III support at 0129 G.m.t., 8 July, the Acension Island Tracking Station experienced loss of the ALSEP downlink. This spurious functional change was corrected by mode I command (octal 013, transmitter ON) at 0148 G.m.t. by the supporting station. Nineteen minutes of Apollo 12 ALSEP data were lost due to this spurious change (transmitter OFF, octal 014).*
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). At the start of real-time support on 7 July the instrument's sensor temperature (DL-07) was offscale HIGH (sun angle = 101.1^{0}). At the beginning of real-time support on 11 July it was noted that the PSE sensor temperature had returned on-scale (DL-07 = 142.1^{0}F, sun angle = 150.5^{0}). No significant seismic events were observed during the periodic real-time support periods of this instrument.
Solar wind spectrometer experiment	The instrument is in the normal gain mode and recording solar wind plasma data. *The experiment was operated in the extended range mode due to observation of high particle counts during the following G.m.t. times: 29 Jun/1829 to 1 Jul/1527 and 8 Jul/1343 to 9 Jul/1430.*
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) since 1346 G.m.t., 11 July 1974.

Status as of 1600 G.m.t., 11 July 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1695	1252	1076	811
Total Commands to Date	20620	11976	23619	11954
Sun Angle	151.6°	157.6°	178.7°	190.6°
Input Power	63.1w	66.7w	70.5w	68.5w
Heater and Power Dumps	All OFF	All OFF	All OFF	DSS-1 ON (10w)
Experiment Status	*LSM OFF*	ASE/CPLEE/SIDE Stdby	*LSM & SWS OFF*	ASE OFF
Avg Thermal Plate Temp	73.1°F	71.5°F	46.8°F	37.8°F
PSE Sensor Temp (DL-07)	142.1°F	126.1°F	125.0°F	126.1°F
LSM Internal Temp (DM-05)	*OFF*	N/A	*OFF*	-1.1°C
SWS Module 300 Temp (DW-13)	51.1°C	N/A	*OFF*	N/A
SIDE Temp (DI-05)	22.7°C	Standby	38.4°C	N/A
CCGE Temp (DI-04)	Invalid	Standby	243.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	N/A	N/A
ASE GLA Temp (AS-03)	N/A	74.2°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	292.3°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	576
Total Commands to Date	15781
Sun Angle	205.8°
Input Power	75.6w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	28.2°F
LACE Temp (AM-41)	4.9°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	286.1°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	30.4°F

ALL TIMES - CDT

ALSEP SUPPORT SCHEDULE/EVENTS

PSE CALS DAILY

June 23/174	24/175	25/176	26/177	27/178	28/179	29/180
NO SUPPORT	0900-1100 ALSEP 17 HFE RBS FLIP CAL	NO SUPPORT ALSEP 16	0900-1100 ALSEP 15 TIMER RST ALSEP 16 C/S HTR OFF TIMER RST FLIP CAL HFE RBS	0900-1100 LACE OFF	0900-1100 ALSEP 14 LEAM OFF FLIP CAL HFE RBS	1000-1400 ALSEP 12 ALSEP 12 & 14 C/S HTR OFF PROC CHKS ALSEP 16 & 14 HBR CHECK ALSEP 17 HBR

June 30/181	July 1/182	2/183	3/184	4/185	5/186	6/187
0800-1000 ALSEP 12 SIDE OFF	0900-1100 ALSEP 12 CYCLE SIDE ALSEP 15 SIDE STBY ALSEP 14 CPLEE STBY FLIP CAL HFE RBS -16Z	0900-1100 ALSEP 14 PSE HTR OFF CYCLE SIDES 12 & 15 -16Z	0900-1100 CYCLE SIDES 12 & 15 ALSEP 17 HBR FLIP CAL HFE RBS -16Z	0900-1100 CYCLE SIDES 12 & 15 -16Z	0900-1100 CYCLE SIDES 12 & 15 FLIP CAL HFE RBS -16Z	0800-1000 LEAM ON LACE STBY CYCLE SIDES 12 & 15

July 7/188	8/189	9/190	10/191	11/192	12/193	13/194
0800-1000 ALSEP 12 CYCLE SIDE ALSEP 15 SIDE ON	0900-1100 CYCLE SIDE 12 LACE ON FLIP CAL HFE RBS +16Z	0900-1100 ALSEP 17 CYCLE SIDE 12 ALSEP 16 C/S HTR ON +16Z 2100-2200 +16Z	0800-1100 ALSEP 16 CYCLE SIDE 12 ALSEP 14 PSE HTR ON FLIP CAL HFE RBS	0900-1100 ALSEP 15 CYCLE SIDE 12	0900-1200 ALSEP 12 SIDE ON ALSEP 14 C/S HTR ON SIDE ON CPLEE ON FLIP CAL HFE RBS	1800-2200 ALSEP 14 & 12 ALSEP 12 PSE ZMTR ON C/S HTR ON ALSEP 17 HBR

NASA-JSC

ALSEP PERFORMANCE SUMMARY REPORT

19 July 1974
G.m.t.: 1300

Apollo 17 ALSEP

Midnight of the scientific station's 20th lunation occurred on 16 July at the Taurus Littrow site. Downlink signal strength is reported at -138.0 ± 3.0 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues 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. On 17 July lunar surface temperature, as measured by the HFE thermocouples, was 108.5±8°K. At a depth of 230 cm, the subsurface temperatures were 256.5°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. LSPE passive listening mode operations were accomplished during this reporting period 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
14 July	0054	0100	0113	0115	0	No Decom Lock
14 July	0116	0117	0119	0120	0	No Decom Lock
14 July	0125	0130	0200	0203	2	None

The next passive listening period is planned for 19 July 1974.

The Lunar Atmospheric Composition Experiment is ON but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament OFF; high voltage power supply, OFF; and backup heater, ON. The electronics temperature (AM-41) was reading 3.2°F on 17 July.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) currently is reading -17.4°F.

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

Apollo 16 ALSEP

Operational status from 12 July 1974, 1300 G.m.t., to 19 July 1974, 1300 G.m.t.

Central station	Midnight at the Descartes Site occurred on 18 July for the 28th lunation. The DSS-1 heater (10 watts) is ON for lunar night operations. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B is reported between -133.0 and -138.0 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM continues in the full operational mode and all data have been valid since 17 August 1973. The instrument has accomplished 762 flip calibration sequences since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 12 July 1974, 1300 G.m.t., to 19 July 1974, 1300 G.m.t.

Central station	Midnight of the site's 37th lunation occurred on 19 July. Transmitter A downlink signal strength is reported as -135.5 ± 3.0 dbm by the tracking stations with 30-foot antennas.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. No significant seismic events were observed during the limited real-time support periods.
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) since 1242 G.m.t., 6 July 1974. *At 0005 G.m.t., 12 July, the Carnarvon Tracking Station noted a command octal 107 (SIDE Load 4) in the ALSEP downlink. Later, during real-time support on 12 July, the spurious functional was verified and cleared without incident at 1341 G.m.t.*
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 89.1°K on 17 July as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.2°K at its lowermost point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 12 July 1974, 1300 G.m.t., to 19 July 1974, 1300 G.m.t.

Central station	Sunset at the Apollo 14 site occurred on 13 July. Transmitter A signal strength was reported as -136.0 to -144.5 dbm from the 30-foot tracking stations. The DSS-1 heater (10 watts) is ON for lunar night operation.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in AUTO ON for lunar night operations. No significant seismic events were observed during the periodic real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON since 1344 G.m.t., 12 July.
Charged particle lunar environment experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode since 1346 G.m.t., 12 July. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage, to 2280 vdc, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 12 July 1974, 1300 G.m.t., to 19 July 1974, 1300 G.m.t.

Central station	Sunset of the 58th lunation occurred on 13 July. The DSS-1 heater (10 watts) was commanded ON for lunar night operation on 13 July. A signal strength of -136.5 to -143.5 dbm from transmitter B was reported by the 30-foot tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The z-axis drive motor was commanded ON at 2213 G.m.t., 13 July, to maximize heating in the instrument during lunar night. No significant seismic events were noted during the periodic real-time support periods.
Solar wind spectrometer experiment	The instrument remains in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is in the full automatic stepping sequence with Channeltron high voltages ON since 1346 G.m.t., 11 July.

Status as of 1600 G.m.t., 17 July 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1701	1258	1082	817
Total Commands to Date	20716	12021	23707	12020
Sun Angle	225.1°	231.0°	252.1°	264.0°
Input Power	62.9w *(63.4w)*	66.2w *(66.6w)*	69.4w *(69.9w)*	68.5w *(68.5w)*
Heater and Power Dumps	DSS-1 ON (10w)	DSS-1 ON (10w)	All OFF	DSS-1 ON (10w)
Experiment Status	LMS OFF	ASE Stby	LMS & SWS OFF	ASE OFF
Avg Thermal Plate Temp	14.7°F	25.5°F	12.8°F	34.5°F
PSE Sensor Temp (DL-07)	126.2°F	124.1°F	124.5°F	125.8°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	-9.0°C
SWS Module 300 Temp (DW-13)	-15.2°C	N/A	OFF	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	7.2°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	112.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.7°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-69.1°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	582
Total Commands to Date	15898
Sun Angle	279.2°
Input Power	75.2w *(75.6w)*
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	26.9°F
LACE Temp (AM-41)	3.2°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	285.7°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	27.8°F

Value in parentheses indicates RTG output during last lunation at a similar sun angle.

ALSEP PERFORMANCE SUMMARY REPORT

26 July 1974
G.m.t.: 1300

This reporting period culminates an aggregate total of 15 years that the Apollo 12 through 17 ALSEP lunar laboratories have returned scientific data of the moon and its associated solar phenomena to the earth for interpretation and evaluation. During this operational time period the various experiment packages and central stations have responded to 84,599 functional changes as a result of ground commands which have resulted in the ultimate collection of the scientific data.

Apollo 17 ALSEP

Sunrise of the scientific station's 21st lunation occurred on 24 July at the Taurus Littrow site. Downlink signal strength is reported at -140.7 ± 4.7 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. On 24 July the lunar surface temperature, as measured by the HFE's thermocouples, was 143 ± 8°K. Subsurface temperature at 230 cm depth was 256.5°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. LSPE passive listening mode operations were accomplished during this reporting period 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
19 July	1527	1530	1600	1601	2	None
24 July	1525	1530	1600	1602	2	None

The next passive listening period is planned for 28 July 1974.

The Lunar Atmospheric Composition Experiment is ON but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and backup heater, ON. The electronics temperature (AM-41) was reading 3.2°F on 24 July.

26 July 1974
G.m.t.: 1300

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) was reading -14.0°F on 24 July.

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

Apollo 16 ALSEP

Operational status from 19 July 1974, 1300 G.m.t., to 26 July 1974, 1300 G.m.t.

Central station	Sunrise of the 29th lunation occurred on 25 July 1974. The DSS-1 heater (10 watts) will be commanded OFF for lunar day operations later today. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -134.0 dbm and -139.0 dbm from transmitter B.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 768 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 19 July 1974, 1300 G.m.t., to 26 July 1974, 1300 G.m.t.

Central station	Sunrise of the station's 38th lunation occurred today at the Hadley Rille lunar site. The transmitter A downlink signal strength is reported between -133.0 dbm and -137.0 dbm.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). No significant seismic events were noted during real-time support.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating continuously with channeltron high voltages commanded ON and in full automatic stepping sequence (Apollo 15 ALSEP, SMEAR 47).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors are being sampled in full sequence. On 24 July the lunar surface temperature was 84.5^{o}K indicated by the cable thermocouples. The subsurface temperature was 253.5^{o}K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.2^{o}K at its lowermost point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 19 July 1974, 1300 G.m.t., to 26 July 1974, 1300 G.m.t.

Central station	Sunrise at the Apollo 14 site will occur on 28 July (44th lunation). Transmitter A signal strength was reported between -135.0 dbm and -140.0 dbm. DSS-1 heater (10 watts) will be commanded OFF for lunar day operation on 28 July 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). No significant seismic events have been noted during this report period.
Active seismic experiment	The experiment is currently in STANDBY per Apollo 14 ALSEP, SMEAR 86,
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON for the remainder of this lunation.
Charged particle lunar environmental experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage, to 2280 vdc, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 19 July 1974, 1300 G.m.t., to 26 July 1974, 1300 G.m.t.

Central station	Sunrise of the 59th lunar day will occur on 28 July 1974 at the ALSEP site in the Ocean of Storms. A signal strength of -139.0 ± 2.0 dbm from transmitter B was reported by the tracking stations. The DSS-1 heater (10 watts) will be commanded OFF for lunar day operations on 28 July.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The z-axis drive motor is ON to maximize heating in the instrument during lunar night. The sensor temperature (DL-07) has been offscale LOW (sun angle 248.5^{o}) since the start of real-time support on 19 July 1974. No significant seismic events were noted during the periodic real-time support periods of this instrument.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data for subsequent long-term analysis.
Suprathermal ion detector experiment	Currently the SIDE is ON in the full automatic stepping sequence with Channeltron high voltages ON.

Status as of 1700 G.m.t., 24 July 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1708	1265	1089	824
Total Commands to Date	20722	12033	23776	12044
Sun Angle	311.3°	317.2°	338.4°	350.2°
Input Power	62.5w	65.7w	68.9w	68.5w
Heater and Power Dumps	DSS-1 ON (10w)	DSS-1 ON (10w)	All OFF	DSS-1 ON (10w)
Experiment Status	LSM OFF	ASE Stby	LSM & SWS OFF	ASE OFF
Avg Thermal Plate Temp	13.4°F	23.4°F	12.5°F	33.6°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.0°F	124.4°F	125.8°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	-9.0°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	OFF	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	106.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	- 22.7°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-71.1°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	589
Total Commands to Date	16024
Sun Angle	5.5°
Input Power	75.2w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	27.2°F
LACE Temp (AM-41)	3.2°F
LEAM Temp (AJ-11)	-14.0°F
HFE Temp Ref 1 (DH-13)	286.2°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	27.8°F

ALSEP PERFORMANCE SUMMARY REPORT

1 August 1974
G.m.t.: 2000

On 29 July 1974 the Lunar Surface Magnetometer and the Solar Wind Spectrometer Experiments of Apollo 15 ALSEP were commanded ON. The instruments had been OFF for two successive lunar nights. Neither instrument downlinked valid scientific or engineering data and are still considered to be ineffective. The instruments were commanded back to OFF after a few minutes of observation.

Remote site coverage for recording of ALSEP downlink data was not available during the following periods. It should be noted that the data losses are non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
15	*28 Jul 74*	*1606/1623*	*17^m*	*ACN*	*Station Problem*
16	*28 Jul 74*	*1638/1705*	*27^m*	*ACN*	*Station Problem*
12	*29 Jul 74*	*0000/0009*	*09^m*	*GDS*	*Station Problem*

APOLLO 17 ALSEP

Noon of the scientific station's 21st lunation occurred on 31 July at the Taurus Littrow site. Downlink signal strength is reported at -142.0 ± 3.0 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. On 31 July the lunar surface temperature, as measured by the HFE's thermocouples, was 373 ± 8°K. Subsurface temperature at 230 cm depth was 256.5°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Surface Profiling Experiment is in STANDBY. The experiment was commanded ON at 0257 G.m.t., 29 July, and to LSPE data format processing (high bit rate) at 0300 G.m.t. Two geophone calibration pulses were sent during the listening period. Seismic activity was observed on all data channels. LSPE processing was terminated at 0330 G.m.t., and the instrument was commanded to STANDBY at 0331 G.m.t. The next passive listening period is scheduled for 8 August.

1 August 1974
G.m.t.: 2000

The Lunar Atmospheric Composition Experiment is currently OFF. The instrument was commanded OFF at 1439 G.m.t., 28 July 1974, when the electronic temperature (AM-41) was 126.8°F. The temperature was 80.0°F on 31 July.

The Lunar Ejecta and Meteorites Experiment is presently OFF. The instrument was commanded OFF at 1441 G.m.t., 28 July 1974, when the mirror temperature (AJ-11) was 183.5°F. The temperature was 170.6°F on 31 July.

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

Apollo 16 ALSEP

Operational status from 26 July 1974, 1300 G.m.t., to 1 August 1974, 2000 G.m.t.

Central Station	Noon of the 29th lunation will occur today, 1 August 1974. The DSS-1 heater (10 watts) is OFF for lunar day operation. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -135.5 dbm and -139.0 dbm from transmitter B.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). *The long period Y-axis has responded to leveling commands since 28 April 1974. The lunar night leveling anomaly has not been experienced for the past three (3) lunations (26th - 28th). On 30 July, the long period Z-axis drove in the positive direction on the first leveling attempt although the negative direction had been selected. This anomaly has been observed previously.* The instrument's sensor temperature (DL-07) indicated offscale HIGH at the beginning of real-time support on 31 July (sun angle 74.1°). No significant seismic event was noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 774 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. *The instrument was commanded to high bit rate ON, 29 July 1974, to verify operational status. Operation was satisfactory at this time. The check was performed per Apollo 16 ALSEP, SMEAR 27.*

Apollo 15 ALSEP

Operational status from 26 July 1974, 1300 G.m.t., to 1 August 1974, 2000 G.m.t.

On 30 July the Apollo 15 ALSEP completed three years of lunar operation.

Central station	Noon of the station's 38th lunation will occur on 2 August. Transmitter A downlink signal strength was reported at -136.5 ± 2.5 dbm from the 30-foot antenna tracking stations. *At 0128 G.m.t., 28 July, a spurious CVW (octal 017, 5-watt heater ON) was observed by the Ascension ground station. At the direction of Mission Control, the Hawaii ground station commanded the 5-watt heater OFF (octal 021) at 0220 G.m.t., 28 July. This was the 67th spurious functional change in the ALSEP 15 station since activation on 31 July 1971.*
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's uncage/arm fire circuitry has been cycling per the normal 18 hour timer output pulse functions. During the real-time support periods this past week, no significant seismic events were observed.
Suprathermal detector/cold cathode gauge experiment	The instrument is currently in STANDBY. Cyclic commanding of the experiment was initiated for the remainder of this lunar day on 31 July (Apollo 15 ALSEP, SMEAR 47).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 357.9°K on 31 July as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.2°K at its lowermost point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 26 July 1974, 1300 G.m.t., to 1 August 1974, 2000 G.m.t.

Central station	Sunrise of the 44th lunation at the Apollo 14 site occurred on 28 July. The 30-foot antenna tracking stations report a signal strength from transmitter A at -139.0 ± 4.0 dbm. The DSS-1 heater (10 watts) is OFF for lunar day operations. Data processor Y was verified by command on 29 July 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater will be commanded to FORCED OFF on 1 August to minimize heating during lunar day operations. *On 30 and 31 July, the long period Y-axis was noisy because one bit was not setting and is apparently an internal instrument problem. This anomaly is intermittent and had been observed previously by the Principal Investigator and during real-time support on 14 April 1973.* During the limited real-time support periods, no significant seismic events were observed.
Active seismic experiment	The experiment is currently in STANDBY. *The instrument was commanded to high bit rate ON, 29 July, to verify operational status. The output of geophones #2 and #3 appeared abnormal as had initially been observed on 3 January 1974. The status check was performed per Apollo 14 ALSEP, SMEAR 86.*
Suprathermal ion detector/cold cathode gauge experiment	The experiment is currently in STANDBY. *At 1100 G.m.t., 28 July, the SIDE experienced a functional change from ON to STANDBY as reported by the Guam tracking station.* Present plans are to leave it in this configuration the remainder of the lunar day.
Charged particle lunar environment experiment	The CPLEE is currently in STANDBY. The experiment was commanded to STANDBY on 30 July for the remainder of this lunar day.

Apollo 12 ALSEP

Operational status from 26 July 1974, 1300 G.m.t., to 1 August 1974, 2000 G.m.t.

Central station	Sunrise of the 59th lunation occurred on 28 July at the ALSEP site in the Ocean of Storms. The signal strength is between -137.0 dbm and -143.5 dbm from transmitter B as reported by the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) was commanded OFF for lunar day operations on 29 July.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The Z-axis drive motor was commanded OFF for lunar day operation on 29 July. No significant seismic events were observed during the periodic real-time support periods of this instrument.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data for subsequent long-term analysis.
Suprathermal ion detector experiment	The SIDE is currently OFF. On 30 July, cyclic commanding of the instrument in the full automatic stepping sequence, with Channeltron high voltages ON to experiment power OFF, in an effort to preclude instrument mode changes at internal temperatures above 55°C during the lunar day, was initiated.

Status as of 1600 G.m.t., 31 July 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1715	1272	1096	831
Total Commands to Date	20790	12084	23905	12151
Sun Angle	36.3°	42.2°	63.3°	75.2°
Input Power	63.1w	65.4w	68.4w	67.7w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	LSM OFF	ASE/CPLEE/SIDE STANDBY	SWS & LSM OFF, SIDE STANDBY	ASE OFF
Avg Thermal Plate Temp	78.4°F	88.3°F	100.0°F	99.5°F
PSE Sensor Temp (DL-07)	126.6°F	125.4°F	134.0°F	Offscale HIGH
LSM Internal Temp (DM-05)	OFF	N/A	OFF	42.4°C
SWS Module 300 Temp (DW-13)	54.3°C	N/A	OFF	N/A
SIDE Temp (DI-05)	OFF	STANDBY	STANDBY	N/A
CCGE Temp (DI-04)	OFF	STANDBY	STANDBY	N/A
CPLEE Elect Temp (AC-06)	N/A	STANDBY	N/A	N/A
ASE GLA Temp (AS-03)	N/A	43.6°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	321.1°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	596
Total Commands to Date	16144
Sun Angle	90.4°
Input Power	73.3w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE STANDBY/LACE & LEAM OFF
Avg Thermal Plate Temp	112.3°F
LACE Temp (AM-41)	80.0°F
LEAM Temp (AJ-11)	170.6°F
HFE Temp Ref 1 (DH-13)	325.8°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	113.5°F

July 14/195	15/196	16/197	17/198	18/199	19/200	20/201
0800-1000	0900-1100 ALSEP 15 NEG X POS Y FLIP CAL HFE RBS	NO SUPPORT	0900-1100 FLIP CAL HFE RBS	NO SUPPORT	0900-1200 ALSEP 17 HBR FLIP CAL HFE RBS	NO SUPPORT
July 21/202	22/203	23/204	24/205	25/206	26/207	27/208
NO SUPPORT	0900-1100 FLIP CAL HFE RBS	NO SUPPORT	0900-1200 ALSEP 17 LACE HTR OFF HBR ALSEP 16 AUTO X POS Y FLIP CAL HFE RBS	NO SUPPORT ALSEP 16	0900-1100 ALSEP 15 TIMER RST ALSEP 16 TIMER RST C/S HTR OFF FLIP CAL HFE RBS	0800-1000 ALSEP 17 LACE OFF LEAM OFF
July 28/209	29/210	30/211	31/212	Aug 1/213	2/214	3/215
2000-2400 ALSEP 14 & 12 C/S HTRS OFF PROC CHKS ALSEP 14 & 16 ASE CHKS ALSEP 17 HBR	0900-1100 ALSEP 16 NEG Z FLIP CAL HFE RBS	0900-1100 ALSEP 14 CPLEE STDBY ALSEP 12 CYCLE SIDE ALSEP 16 NEG Z	0900-1100 ALSEP 12 & 15 CYCLE SIDES ALSEP 16 NEG Z FLIP CAL HFE RBS	1600-2000 ALSEP 12 & 15 CYCLE SIDES ALSEP 14 PSE HTR OFF ALSEP 15 SIDE SPRT ALSEP 16 NEG Z	0900-1200 ALSEP 12 & 15 CYCLE SIDES ALSEP 16 NEG Z FLIP CAL HFE RBS	0800-1000 ALSEP 12 & 15 CYCLE SIDES

ALSEP PERFORMANCE SUMMARY REPORT

9 Aug 1974
G.m.t.: 0000

On 5 August 1974 the Lunar Surface Magnetometer Experiment of the Apollo 12 ALSEP was commanded ON. The instrument had been OFF for two successive lunar nights. The instrument did not downlink valid scientific or engineering data but the status bits are functioning properly to the inhibit, flip calibration, and science/calibration modes. The instrument was commanded back to OFF after a few minutes of observation.

Apollo 17 ALSEP

Sunset of the scientific station's 21st lunation occurred on 8 August at the Taurus Littrow site. Downlink signal strength is reported between -134.0 and -139.5 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues 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 103.0 ± 8°K. At a depth of 230 cm, the subsurface temperatures are 256.5°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and the tilt servo motors in an intermediate position. The experiment sensor temperature is presently stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is in STANDBY. *The next passive listening period is scheduled for 12 August at which time the experiment will remain in high bit rate until 16 August. The four days of extended LSPE operation are scheduled in order to pursue a study of meteroid impacts and thermal moonquakes. The station will be commanded to normal bit rate for brief periods during real-time support to monitor the other experiments operation. This will be the third (3rd) of eight (8) segmented HBR listening periods to obtain data for one complete lunation.*

The Lunar Atmospheric Composition Experiment was commanded from STANDBY to ON at 1443 G.m.t., 7 August, but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and back-up heater, ON. The electronics temperature (AM-41) was 79.3°F on 7 August.

9 August 1974
G.m.t.: 0000

The Lunar Ejecta and Meteorites Experiment is configured to measure impact flux rates on the lunar surface. The LEAM was commanded ON for the lunar night at 1321 G.m.t., 4 August, when the instrument's mirror temperature (AJ-11) was reading 176.0°F.

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

Apollo 16 ALSEP

Operational status from 1 August 1974, 2000 G.m.t., to 9 August 1974, 0000 G.m.t.

Central station	Sunset at the Descartes Site will occur later today, 9 August, for the 29th lunation. The DSS-1 heater (10 watts) will be commanded ON for lunar night operations later today, 9 August. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B was reported as -138.0 ± 2.0 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The instrument's assembly temperature (DL-07) returned on-scale, 8 August, at a sun angle of 172.0°. *A significant seismic event was noted during the limited real-time support of this instrument on 4 August 1974 (Ref. Apollo 15 ALSEP).*
Lunar Surface magnetometer experiment	The instrument is currently ON. The LSM data have been valid since 17 August 1973. 780 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 1 August 1974, 2000 G.m.t., to 9 August 1974, 0000 G.m.t.

Central station	Sunset of the site's 38th lunation will occur on 10 August. Transmitter A downlink signal strength is reported as -136.5 ± 1.5 dbm by the tracking stations with 30-foot antennas. The data subsystem's 18-hour timer outputs are occurring normally.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. *A significant seismic event was observed during the limited real-time support period on 4 August 1974 beginning at 1254 G.m.t. The event was also observed on the Apollo 12, 14, and 16 ALSEP PSE instruments but it was most active on the Apollo 15 ALSEP instrument.*
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) since 1339 G.m.t., 5 August 1974.
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 296.1°K on 8 August as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.1°K at its lowermost point. Ring bridge surveys are obtained periodically.

Apollo 14 ALSEP

Operational status from 1 August 1974, 2000 G.m.t., to 9 August 1974, 0000 G.m.t.

Central station	Noon at the Apollo 14 site occurred on 4 August. Transmitter A signal strength was reported as -138.0 ± 3.5 dbm from the 30-foot tracking stations. The DSS-1 heater (10 watts) is OFF for lunar day operations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in AUTO ON. *From 30 July to 2 August 1974, the long period Y-axis was noisy because one bit was not setting. The noise did not appear from 3 August to 6 August. On 7 August the y-axis was again noisy. This anomaly had been observed previously by the Principal Investigator and during real-time support on 14 April 1973. A significant event was observed during the periodic real-time support period on 4 August 1974 (Ref. Apollo 15 ALSEP).*
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been in STANDBY since 28 July 1974.
Charged particle lunar environmental experiment	The CPLEE is currently in STANDBY.

Apollo 12 ALSEP

Operational status from 1 August 1974, 2000 G.m.t., to 9 August 1974, 0000 G.m.t.

Central station	Noon of the 59th lunar day occurred on 5 August. The DSS-1 heater (10 watts) is OFF for lunar day operations. A signal strength of -136.0 to -145.5 dbm from transmitter B was reported by the 30-foot tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). At the start of real-time support on 6 August the instrument's sensor temperature (DL-07) was offscale HIGH (sun angle = 108.3°). *At 1429 G.m.t., 5 August 1974, the instrument was inadvertently commanded to STANDBY. It was immediately commanded back to ON and re-initialized at 1431 G.m.t., 5 August. A significant seismic event was observed during the periodic real-time support period on 4 August 1974 (Ref. Apollo 15 ALSEP).*
Solar wind spectrometer experiment	The instrument is ON and in the normal gain mode recording solar wind plasma data. *The experiment was operated in the extended range mode due to observation of high particle counts from 6 Aug/1349 to 7 Aug/1344 G.m.t.*
Suprathermal ion detector/cold cathode gauge experiment	The instrument is currently OFF. On 10 August the experiment will be operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames). *During real-time support at 1408 G.m.t., 4 August 1974, the SIDE experienced an unexpected mode change to command register X10 at a temperature of 54.6°C. The mode change was cleared without incident by commanding the instrument to OFF for cooldown prior to the next support period on 5 August 1974.*

Status as of 1600 G.m.t., 8 August 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1723	1280	1104	839
Total Commands to Date	20861	12120	24031	12277
Sun Angle	133.8°	139.8°	160.9°	171.5°
Input Power	62.6w	65.3w	68.9w	67.7w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	LSM/SIDE OFF	ASE/CPLEE/SIDE Stdby	LSM/SWS OFF	ASE OFF
Avg Thermal Plate Temp	87.0°F	88.8°F	81.9°F	63.8°F
PSE Sensor Temp (DL-07)	Offscale HIGH	127.1°F	125.7°F	Offscale HIGH
LSM Internal Temp (DM-05)	OFF	N/A	OFF	34.5°C
SWS Module 300 Temp (DW-13)	59.2°C	N/A	OFF	N/A
SIDE Temp (DI-05)	39.2°C	Standby	65.6°C	N/A
CCGE Temp (DI-04)	Invalid	Standby	316.2°K	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	N/A	N/A
ASE GLA Temp (AS-03)	N/A	74.2°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	299.8°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	604
Total Commands to Date	16299
Sun Angle	188.0°
Input Power	75.6w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	32.4°F
LACE Temp (AM-41)	15.0°F
LEAM Temp (AJ-11)	-9.8°F
HFE Temp Ref 1 (DH-13)	286.1°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	34.0°F

ALSEP PERFORMANCE SUMMARY REPORT

16 August 1974
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was not available during the following period. It should be noted that the data losses are non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
14	*12 Aug 1974*	*1805/1816*	*11^m*	*MIL*	*Station Problem*

Apollo 17 ALSEP

Midnight of the scientific station's 21st lunation occurred on 15 August at the Taurus Littrow site. Downlink signal strength is reported at -139.2 ± 4.2 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues 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. On 14 August lunar surface temperature, as measured by the HFE thermocouples was 108.5±8°K. At a depth of 230 cm, the subsurface temperatures were 256.4°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is ON. The experiment was commanded ON at 1016 G.m.t., 12 August 1974, and to LSPE data format processing (high bit rate) at 1025 G.m.t. Geophone calibration pulses were sent during the listening period. Activity was observed during real-time operation. LSPE processing will be terminated on 16 August 1974. The four days of extended LSPE operation were scheduled to pursue a study of meteroid impacts and thermal moonquakes. The station was commanded to normal bit rate for brief periods during real-time support to monitor the other experiments operation. The next passive listening mode is planned for 6 September 1974.

The Lunar Atmospheric Composition Experiment is ON but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and backup heater, ON. The electronics temperature (AM-41) was reading 3.2°F on 14 August 1974.

ALSEP PERFORMANCE SUMMARY REPORT (continued)

16 August 1974
G.m.t.: 1300

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) currently is reading -17.4°F.

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

Apollo 16 ALSEP

Operational status from 9 August 1974, 0000 G.m.t., to 16 August 1974, 1300 G.m.t.

Central station	Midnight at the Descartes Site will occur on 16 August for the 29th lunation. The DSS-1 heater (10 watts) is ON for lunar night operations. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B is reported between -135.0 and -139.5 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM continues in the full operational mode and all data have been valid since 17 August 1973. The instrument has accomplished 786 flip calibration sequences since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 9 August 1974, 0000 G.m.t., to 16 August 1974, 1300 G.m.t.

Central station	Sunset of the site's 38th lunation occurred on 10 August. Transmitter A downlink signal strength is reported as -137.7 ± 2.7 dbm by the tracking stations with 30-foot antennas.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. No significant seismic events were observed during the limited real-time support periods.
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) since 1339 G.m.t., 5 August 1974.
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 90.7°K on 14 August as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.2°K at its lowermost point. Ring bridge surveys are obtained periodically.
Solar wind spectrometer experiment	Commanded OFF 14 June 1974.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 9 August 1974, 0000 G.m.t., to 16 August 1974, 1300 G.m.t.

Central station	Sunset at the Apollo 14 site occurred on 11 August. Transmitter A signal strength was reported as -139.7 ± 4.7 dbm from the 30-foot tracking stations. The DSS-1 heater (10 watts) is ON for lunar night operation.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in AUTO ON for lunar night operations. No significant seismic events were observed during the periodic real-time support periods. *The long period Y-axis noise problem discussed in last week's report, has continued intermittently during this reporting period.*
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON since 1235 G.m.t., 11 August.
Charged particle lunar environment experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode since 1238 G.m.t., 11 August. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage, to 2280 VDC, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 9 August 1974, 0000 G.m.t., to 16 August 1974, 1300 G.m.t.

Central station	Sunset of the 58th lunation occurred on 12 August. The DSS-1 heater (10 watts) was commanded ON for lunar night operation on 12 August. A signal strength of -137.0 to -144.5 dbm from transmitter B was reported by the 30-foot tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The z-axis drive motor was commanded ON at 0952 G.m.t., 12 August, to maximize heating in the instrument during lunar night. No significant seismic events were noted during the periodic real-time support periods.
Solar wind spectrometer experiment	The instrument remains in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is in the full automatic stepping sequence with Channeltron high voltages ON since 1238 G.m.t., 10 August.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Status as of 1600 G.m.t., 14 August 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1729	1286	1110	845
Total Commands to Date	20984	24151	12388	12180
Sun Angle	206.0°	212.2°	233.5°	244.9°
Input Power	62.5w *(62.9w)*	65.3w *(66.2w)*	68.9w *(69.4w)*	68.5w *(68.5w)*
Heater and Power Dumps	DSS-1 ON (10w)	DSS-1 ON (10w)	All OFF	DSS-1 ON (10w)
Experiment Status	LSM OFF	ASE Stby	LSM & SWS OFF	ASE OFF
Avg Thermal Plate Temp	15.0°F	24.7°F	14.5°F	34.5°F
PSE Sensor Temp (DL-07)	126.3°F	124.1°F	124.6°F	125.9°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	-9.0°C
SWS Module 300 Temp (DW-13)	-14.8°C	N/A	OFF	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	7.2°C	N/A
CCGE Temp (DI-04)	Invalid	Invalid	112.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.7°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	283.6°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	610
Total Commands to Date	16453
Sun Angle	260.5°
Input Power	75.5w *(75.2w)*
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	All ON
Avg Thermal Plate Temp	25.9°F
LACE Temp (AM-41)	3.2°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	286.9°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	27.9°F

Value in parentheses indicates RTG output during last lunation at a similar sun angle.

ALSEP PERFORMANCE SUMMARY REPORT

23 August 1974
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was not available during the following periods. It must be noted that these data losses are non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
15	*26 June 74*	*0331/0407*	*36^m*	*ORR*	*Station Problem*
16	*19 August 74*	*1446/1453*	*07^m*	*ACN*	*Dropped per Network direction for Modulation Index re-check*
12	*20 August 74*	*0156/0202*	*06^m*	*GWM*	*Downlink modulation loss*

Apollo 17 ALSEP

Sunrise of the scientific station's 22nd lunation occurred on 22 August at the Taurus Littrow site. Downlink signal strength is reported at -141.7 ± 4.7 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods. *On 16 August, prior to termination of the LSPE four day listening period, three (3) geophone calibrate commands (octal #170) were sent with no functional reponses or CVWs received in the downlink. Uplink A was in use at this time. On 19 August, during real-time support thirty three (33) commands were sent to the ALSEP package with only four (4) functional verifications. Uplink B was selected by transmitting command octal #122 (switch uplink). Subsequently, thirty one (31) commands were sent during the 19 August real-time support with no further problems. Investigation of this anomaly is in progress.*

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. On 21 August the lunar surface temperature, as measured by the HFE's thermocouples, was 105±8°K. Subsurface temperature at 230 cm depth was 256.5°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. *A 4-day passive listening period was conducted from 12 August to 16 August 1974 in*

order to pursue a study of meteroid impacts and thermal moonquakes. Several significant events were noted during the real-time support periods when the LSP high bit rate was observed for one (1) hour. These events occurred during lunar night time (Sun Angle 233.7° to 285.6°). The next 4-day passive listening period is planned for 6 to 10 September 1974.

The Lunar Atmospheric Composition Experiment is ON but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and backup heater, ON. The electronics temperature (AM-41) was reading 1.4°F on 21 August.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) was reading -17.4°F on 21 August.

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

Apollo 16 ALSEP

Operational status from 16 August 1974, 1300 G.m.t., to 23 August 1974, 1300 G.m.t.

Central station	Sunrise of the 30th lunation will occur today, 23 August 1974. The DSS-1 heater (10 watts) will be commanded OFF for lunar day operations. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -135.0 dbm and -137.5 dbm from transmitter B.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 802 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 16 August, 1974, 1300 G.m.t., to 23 August 1974, 1300 G.m.t.

Central station	Sunrise of the station's 39th lunation will occur at the Hadley Rille lunar site on 24 August 1974. The transmitter A downlink signal strength is reported between -132.0 dbm and -138.0 dbm.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). No significant seismic events were noted during real-time support.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating continuously with channeltron high voltages commanded ON and in full automatic stepping sequence (Apollo 15 ALSEP, SMEAR 47).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors are being sampled in full sequence. On 21 August the lunar surface temperature was 85.1°K indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.2°K at its lowermost point. Ring bridge surveys are obtained periodically.
Solar wind spectrometer experiment	Commanded OFF 14 June 1974.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 16 August 1974, 1300 G.m.t., to 23 August 1974, 1300 G.m.t.

Central station	Sunrise at the Apollo 14 site will occur on 26 August (45th lunation). Transmitter A signal strength was reported between -135.0 dbm and -140.5 dbm. DSS-1 heater (10 watts) will be commanded OFF for lunar day operation on 27 August 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). No significant seismic events have been noted during this report period. *The long period Y-axis has operated normally during this report period.*
Active seismic experiment	The experiment is currently in STANDBY per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON for the remainder of this lunation.
Charged particle lunar environmental experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage, to 2280 vdc, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 16 August 1974, 1300 G.m.t., to 23 August 1974, 1300 G.m.t.

Central station	Sunrise of the 60th lunar day will occur on 27 August 1974 at the ALSEP site in the Ocean of Storms. A signal strength of -139.7 ± 2.7 dbm from transmitter B was reported by the tracking stations. The DSS-1 heater (10 watts) will be commanded OFF for lunar day operations on 27 August. *At 0156 G.m.t., 20 August, the Guam tracking station noted a loss of downlink modulation from transmitter B. Also, the signal strength increased from -137.0 dbm to -131.0 dbm. Downlink modulation was recovered at 0202 G.m.t., 22 August, without any corrective action by mission control or the tracking station. Signal strength then returned to -137.0 dbm again.*
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The z-axis drive motor is ON to maximize heating in the instrument during lunar night. The sensor temperature (DL-07) has been offscale LOW (sun angle 291.7°) since the start of real-time support on 21 August 1974. *At 2309 G.m.t., 19 August, the instrument experienced a spurious command (octal 075) placing the experiment's leveling speed mode to HIGH. The instrument was commanded back to the LOW mode at 1355 G.m.t., 21 August, with no adverse effects.* No significant seismic events were noted during the periodic real-time support periods of this instrument.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma for subsequent long-term analysis.
Suprathermal ion detector experiment	Currently the SIDE is ON in the full automatic stepping sequence with Channeltron high voltages ON.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Status as of 1600 G.m.t., 21 August 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1736	1293	1117	852
Total Commands to Date	20999	12203	24215	12417
Sun Angle	292.8°	298.8°	319.9°	331.8°
Input Power	62.5w	64.8w	68.9w	68.0w
Heater and Power Dumps	DSS-1 ON (10w)	DSS-1 ON (10w)	All OFF	DSS-1 ON (10w)
Experiment Status	LSM OFF	ASE STBY	LSM & SWS OFF	ASE OFF
Avg Thermal Plate Temp	12.9°F	22.7°F	11.7°F	33.6°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.0°F	124.4°F	125.8°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	-9.0°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	OFF	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	7.2°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	108.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.7°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-71.1°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	617
Total Commands to Date	16559
Sun Angle	347.0°
Input Power	75.2w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE STBY
Avg Thermal Plate Temp	25.2°F
LACE Temp (AM-41)	1.4°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	286.1°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	26.5°F

TIMES - CDT — ALSEP SUPPORT SCHEDULE/EVENTS — PSE CALS DAILY

Aug 4/216	5/217	6/218	7/219	8/220	9/221	10/222
0800-1000 ALSEP 17 LEAM ON LACE STDBY ALSEP 12 & 15 CYCLE SIDES	0900-1100 ALSEP 15 SIDE ON ALSEP 12 CYCLE SIDE ALSEP 16 POS Z FLIP CAL HFE RBS	0900-1100 ALSEP 12 CYCLE SIDE ALSEP 16 POS Z	0900-1100 ALSEP 17 LACE ON ALSEP 16 POS Z ALSEP 12 CYCLE SIDE FLIP CAL HFE RBS	0900-1100 ALSEP 17 HBR ALSEP 12 CYCLE SIDE ALSEP 16 POS Z 1900-2000 ALSEP 16 C/S HTR ON POS Z ALSEP 14 PSE HTR ON	0900-1100 ALSEP 16 ALSEP 12 CYCLE SIDE FLIP CAL HFE RBS	0800-1000 ALSEP 15 ALSEP 12 SIDE ON
Aug 11/223	12/224	13/225	14/226	15/227	16/228	17/229
0800-1100 ALSEP 14 C/S HTR ON SIDE ON CPLEE ON	0500-0900 ALSEP 12 PSE Z-MTR ON C/S HTR ON ALSEP 17 HBR ON FLIP CAL HFE RBS 1900-2000 ALSEP 12 PSE LEVEL	0900-1100 ALSEP 17 HBR	0900-1100 ALSEP 15 NEG X POS Y FLIP CAL HFE RBS ALSEP 17 HBR	NO SUPPORT ALSEP 17 HBR	0900-1100 FLIP CAL HFE RBS ALSEP 17 HBR OFF	NO SUPPORT
Aug 18/230	19/231	20/232	21/233	22/234	23/235	24/236
NO SUPPORT	0900-1100 FLIP CAL HFE RBS	NO SUPPORT	0900- 1100 ALSEP 16 AUTO X FLIP CAL HFE RBS	NO SUPPORT ALSEP 17	0900-1100 ALSEP 16 FLIP CAL HFE RBS	0900-1100 ALSEP 15 ALSEP 16 C/S HTR OFF TIMER RST ALSEP 15 TIMER RST

ALSEP PERFORMANCE SUMMARY REPORT

30 August 1974
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was not available during the following period. It should be noted that the data losses are non-recoverable.

ALSEP	*DATE*	*G.mt.*	*LOSS*	*SITE*	*REMARKS*
15	*11 Jul 74*	*1855/2322*	$4^h 27^m$	*CRO*	*Station Problem*

APOLLO 17 ALSEP

Noon of the scientific station's 22nd lunation occurred today at the Taurus Littrow site. Downlink signal strength as reported from the 30-foot antenna tracking stations was -141.0 ± 4.0 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. On 29 August the lunar surface temperature, as measured by the HFE's thermocouples, was 376 ± 8°K. Subsurface temperature at 230 cm depth was 256.4°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Surface Profiling Experiment is in STANDBY. The next passive listening period is scheduled from 6 September through 10 September 1974, to achieve the third segment of one complete lunar cycle by the experiment.

The Lunar Atmospheric Composition Experiment is currently OFF. The instrument was commanded OFF at 1633 G.m.t., 25 August 1974, when the electronic temperature (AM-41) was 121.3°F. The temperature was 80.0°F on 29 August.

The Lunar Ejecta and Meteorites Experiment is presently OFF. The instrument was commanded OFF at 1533 G.m.t., 26 August 1974, when the mirror temperature (AJ-11) was 192.5°F. The temperature was 168.4°F on 29 August.

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

Apollo 16 ALSEP

Operational status from 23 August 1974, 1300 G.m.t., to 30 August 1974, 1300 G.m.t.

Central station	Noon of the 30th lunation will occur tomorrow, 31 August 1974. The DSS-1 heater (10 watts) is OFF for lunar day operation. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -136.0 dbm and -139.0 dbm from transmitter B.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic event was noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 808 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. *The instrument was commanded to high bit rate ON, 27 August 1974, to verify operational status. Operation was satisfactory at this time. The check was performed per Apollo 16 ALSEP, SMEAR 27.*

Apollo 15 ALSEP

Operational status from 23 August 1974, 1300 G.m.t., to 30 August 1974, 1300 G.m.t.

Central station	Noon of the station's 39th lunation will occur on 1 September. Transmitter A downlink signal strength was reported at -135.5 ± 3.5 dbm from the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's uncage/arm fire circuitry has been cycling per the normal 18 hour timer output pulse functions. During the real-time support periods this past week, no significant seismic events were observed.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is currently in STANDBY. *At the beginning of real-time support 26 August, it was observed that the experiment had a 10 loaded in the command register. The instrument was commanded to standby OFF and back to ON, clearing the command register without incident.* Cyclic commanding of the experiment will be initiated during real-time support today and for the remainder of this lunar day. (Apollo 15 ALSEP, SMEAR 47).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 354.2°K on 29 August as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.2°K at its lowermost point. Ring bridge surveys are obtained periodically.
Solar wind spectrometer experiment	Commanded OFF 14 June 1974.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 23 August 1974, 1300 G.m.t., to 30 August 1974, 1300 G.m.t.

Central station	Sunrise of the 45th lunation at the Apollo 14 site occurred on 26 August. The 30-foot antenna tracking stations report a signal strength from transmitter A at -139.2 ± 3.2 dbm. The DSS-1 heater (10 watts) is OFF for lunar day operations. Data processor Y was verified by command on 27 August 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater will be commanded to FORCED OFF later today to minimize heating during lunar day operations. *The long period Y-axis noise anomaly that had previously been reported has been observed during this report period.* No significant seismic events were observed during the limited real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY. *The instrument was commanded to high bit rate ON, 27 August, to verify operational status. The output of geophones #2 and #3 appeared abnormal as had initially been observed on 3 January 1974. The status check was performed per Apollo 14 ALSEP, SMEAR 86.*
Suprathermal ion detector/cold cathode gauge experiment	The experiment is currently in STANDBY. *At 2233 G.m.t., 26 August, the SIDE experienced a functional change from ON to STANDBY as reported by the Ascension tracking station.* Present plans are to leave it in this configuration the remainder of the lunar day.
Charged particle lunar environment experiment	The CPLEE is currently in STANDBY. The experiment was commanded to STANDBY on 29 August for the remainder of this lunar day.

Apollo 12 ALSEP

Operational status from 23 August 1974, 1300 G.m.t., to 30 August 1974, 1300 G.m.t.

Central station	Sunrise of the 60th lunation occurred on 27 August at the ALSEP site in the Ocean of Storms. The signal strength is between -137.5 dbm and -142.5 dbm from transmitter B as reported by the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) was commanded OFF for lunar day operations on 27 August.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The Z-axis drive motor was commanded OFF for lunar day operation on 27 August. At the beginning of real-time support on 27 August it was noted that the PSE sensor temperature had returned on-scale (DL-07 = 126.4^{o}F, sun angle = 4.5^{o}). No significant seismic events were observed during the periodic real-time support periods of this instrument.
Solar wind spectrometer experiment	The instrument is currently ON. The instrument was commanded to the extended range mode at 1410 G.m.t., 29 August, due to an increase of high particle counts.
Suprathermal ion detector experiment	The SIDE is currently OFF. The instrument was commanded OFF during real-time support on 28 August when the internal temperature was 41.6^{o}C. Cyclic commanding of the instrument in the full automatic stepping sequence with Channeltron high voltages ON to experiment power OFF is in effect for this lunar day in an effort to preclude instrument mode changes at internal temperatures above 55^{o}C.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Status as of 1600 G.m.t., 29 August 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1744	1301	1125	860
Total Commands to Date	21093	12260	24324	12544
Sun Angle	30.5°	36.5°	57.6°	69.5°
Input Power	62.6w	64.9w	67.9w	67.7w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	SIDE & LSM OFF	SIDE,CPLEE,ASE STBY	SIDE STBY/LSM,SWS OFF	ASE OFF
Avg Thermal Plate Temp	74.1°F	84.7°F	101.5°F	99.5°F
PSE Sensor Temp (DL-07)	126.4°F	125.4°F	132.4°F	142.0°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	41.4°C
SWS Module 300 Temp (DW-13)	49.6°C	N/A	OFF	N/A
SIDE Temp (DI-05)	OFF	STBY	STBY	N/A
CCGE Temp (DI-04)	OFF	STBY	STBY	N/A
CPLEE Elect Temp (AC-06)	N/A	STBY	N/A	N/A
ASE GLA Temp (AS-03)	N/A	34.6°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	318.9°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	625
Total Commands to Date	16730
Sun Angle	84.7°
Input Power	73.3w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE STBY/LACE & LEAM OFF
Avg Thermal Plate Temp	111.6°F
LACE Temp (AM-41)	80.0°F
LEAM Temp (AJ-11)	168.4°F
HFE Temp Ref 1 (DH-13)	326.2°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	112.8°F

ALSEP PERFORMANCE SUMMARY REPORT

6 September 1974
G.m.t.: 1300

On 4 September 1974 the Guam tracking station noted that a satellite placed in earth synchronous orbit was transmitting signals on 2277.5 MHz with sidebands of 1.024 MHz. The maximum signal strength at the center frequency was -122.0 dbm. The satellite could interfere with the support of ALSEP by the Guam tracking station. The ALSEP frequencies range from 2275.5 to 2279.5 MHz.

On 3 September 1974 the Lunar Surface Magnetometer Experiments of the Apollo 12 and 15 ALSEPs and the Solar Wind Spectrometer Experiment of Apollo 15 ALSEP were commanded ON. The instruments had been OFF for three successive lunar nights. Neither instrument downlinked valid scientific or engineering data and are still considered to be ineffective. The instruments were commanded back to OFF after a few minutes of observation.

Apollo 17 ALSEP

Sunset of the scientific station's 22nd lunation will occur later today at the Taurus Littrow site. Downlink signal strength is reported between -134.0 and -139.5 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods. *Over 300 commands have been received and executed by the central station through uplink B since the switch from uplink A on 19 August 1974.*

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 289.0 ± 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 is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and the tilt servo motors in an intermediate position. The experiment sensor temperature is presently stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is in STANDBY. *The next passive listening period is scheduled for 6 September at which time the experiment will remain in high bit rate until 10 September (sun angles, 181.5° to 235.0°). The four days of extended LSPE operation are scheduled in order to pursue a study of meteroid impacts and thermal moonquakes. The station will be commanded to normal bit rate for brief periods during real-time support to monitor the other experiments operation. This will be the*

6 September 1974
G.m.t.: 1300

fourth (4th) of eight (8) segmented HBR listening periods to obtain data for one complete lunation (Apollo 17 ALSEP, SMEAR 68).

The Lunar Atmospheric Composition Experiment was commanded to STANDBY with the survival heater ON at 1345 G.m.t., 30 August, at the request of the Principal Investigator. The purpose of this operation during lunar day was to increase the temperature (bake-out) in the electronics section, and therefore the outgassing, in an attempt to correct the Multiplier High Voltage Power Supply problem which exists in the experiment (Apollo 17 ALSEP, SMEAR 70). The maximum temperature observed by the electronic temperature (AM-41) was 142.3°F during this operation. The LACE was commanded ON at 1407 G.m.t., 5 September, but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF: high voltage power supply OFF; and backup heater, ON. The electronics temperature (AM-41) was reading 90.6°F at this time.

The Lunar Ejecta and Meteorites Experiment is configured to measure impact flux rates on the lunar surface. The LEAM was commanded ON for the lunar night at 1438 G.m.t., 3 September, when the instrument's mirror temperature (AJ-11) was reading 169.5°F.

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

Apollo 16 ALSEP

Operational status from 30 August 1974, 1300 G.m.t., to 6 September 1974, 1300 G.m.t.

Central station	Noon of the 30th lunation occurred on 31 August 1974. The DSS-1 heater (10 watts) is OFF for lunar day operation. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -137.0 dbm and -141.0 dbm from transmitter B.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). *The long period Y-axis has responded to leveling commands since 28 April 1974. The lunar night leveling anomaly has not been experienced for the past four (4) lunations (26th to 29th).* The instrument's sensor temperature (DL-07) indicated offscale HIGH at the beginning of real-time support on 30 August (sun angle 80.7°). It is predicted the temperature will return onscale on 7 September. No significant seismic event was noted during the limited real-time support period of this instrument.
Lunar surface magnetometer experiment	The LSM is currently ON and recording data as the moon passes through the earth's geomagnetic tail. 814 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 30 August 1974, 1300 G.m.t., to 6 September 1974, 1300 G.m.t.

Central station

Noon of the station's 39th lunation occurred 1 September. Transmitter A downlink signal strength was reported at -139.0 ± 2.0 dbm from the 30-foot antenna tracking stations.

Passive seismic experiment

The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's uncage/arm fire circuitry has been cycling per the normal 18 hour timer output pulse functions. *At 1143 G.m.t., 31 August, a spurious CVW (octal 101, Feedback Filter In) was observed by the Guam ground station. At 2205 G.m.t., 31 August, octal 101 (Feedback Filter Out) was executed by Mission Control without incident. This was the 69th spurious functional change in the ALSEP 15 station since activation on 31 July 1971. At the beginning of real-time support on 2 September it was noted that DL-07 (sensor temperature) was offscale HIGH. The temperature returned onscale (140.36°F) during real-time support on 3 September.* During the real-time support periods this past week, no significant seismic events were observed.

Suprathermal ion detector/cold cathode gauge experiment

The instrument is currently ON. Automatic sequencing of the experiment was initiated for the remainder of this lunation on 3 September (Apollo 15 ALSEP, SMEAR 47).

Heat flow experiment

The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 331.2°K on 5 September as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.2°K at its lowermost point. Ring bridge surveys are obtained periodically.

Solar wind spectrometer experiment

Commanded OFF 14 June 1974. *At 1515 G.m.t., 3 September, a command was sent to turn the experiment ON with no valid engineering or scientific data being returned in the downlink. It was noted that the SWS electronics drew 1.5 watts of power and that the heater turned ON and used 4.5 watts of power. The instrument was commanded OFF after a few minutes of operation.*

Operational status from 30 August 1974, 1300 G.m.t., to 6 September 1974, 1300 G.m.t.

Lunar surface magnetometer experiment	Commanded OFF 14 June 1974. *At 1520 G.m.t., 3 September, the instrument was commanded ON with all engineering and scientific data being returned in the downlink out of synchronization. It was noted that the LSM electronics drew 1.5 watts of power. The instrument was commanded OFF after a few minutes of operation.*

Apollo 14 ALSEP

Operational status from 30 August 1974, 1300 G.m.t., to 6 September 1974, 1300 G.m.t.

Central station	Noon at the Apollo 14 site occurred on 3 September. Transmitter A signal strength was reported as -142.5 ± 2.5 dbm from the 30-foot tracking stations. The DSS-1 heater (10 watts) is OFF for lunar day operations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in FORCED OFF. *The long period Y-axis noisy data, because one bit was not setting, has been observed from 30 August to 5 September. This anomaly had been observed previously by the Principal Investigator and during real-time support on 14 April 1973.* No significant event was observed during the periodic real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been in STANDBY since 26 August 1974.
Charged particle lunar environmental experiment	The CPLEE is currently in STANDBY.

Apollo 12 ALSEP

Operational status from 30 August 1974, 1300 G.m.t., to 6 September 1974, 1300 G.m.t.

Central station	Noon of the 60th lunar day occurred on 3 September. The DSS-1 heater (10 watts) is OFF for lunar day operations. A signal strength of -140.0 to -144.0 dbm from transmitter B was reported by the 30-foot tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). At the start of real-time support on 4 September, the instrument's sensor temperature (DL-07) was offscale HIGH (sun angle = 102.3°). It is predicted that the temperature will return onscale on 8 September 1974. No significant seismic event was observed during the real-time supports this report period.
Solar wind spectrometer experiment	The instrument is ON and in the normal gain mode recording solar wind plasma data. *The experiment was operated in the extended range mode due to observation of high particle counts from 29 Aug/1410 to 30 Aug/1409 G.m.t.*
Suprathermal ion detector/cold cathode gauge	The SIDE is currently OFF. The instrument was commanded OFF during real-time support on 28 August when the internal temperature was 41.6°C. Cyclic commanding of the instrument in the full automatic stepping sequence with Channeltron high voltages ON to experiment power OFF is in effect for this lunar day in an effort to preclude instrument mode changes at internal temperatures above 55°C. *On 3 and 4 September the SIDE experienced a reduction of high energy calibrations and data counts probably due to a loss of amplifier gain. During the support period on 4 September the data appeared to return to normal. On 5 September after the experiment was commanded ON all SIDE engineering and scientific data appeared normal during the real-time support period.*
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974. *At 1508 G.m.t., 3 September, a command was sent to turn the experiment ON with no valid engineering or scientific data being returned in the downlink. A command to turn the instrument OFF was executed shortly thereafter. It was noted the LSM electronics drew 0.9 watts of power.*

Status as of 1600 G.m.t., 5 September 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1751	1308	1132	867
Total Commands to Date	21154	12294	24445	12651
Sun Angle	115.8°	121.7°	142.9°	154.7°
Input Power	62.2w	64.9w	67.9w	67.2w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	LSM/SIDE OFF	ASE/CPLEE/SIDE Stdby	LSM/SWS OFF	ASE OFF
Avg Thermal Plate Temp	94.7°F	100.3°F	100.6°F	74.1°F
PSE Sensor Temp (DL-07)	Offscale HIGH	136.2°F	129.3°F	Offscale HIGH
LSM Internal Temp (DM-05)	OFF	N/A	OFF	39.3°C
SWS Module 300 Temp (DW-13)	62.6°C	N/A	OFF	N/A
SIDE Temp (DI-05)	OFF	Standby	81.7°C	N/A
CCGE Temp (DI-04)	OFF	Standby	339.4°K	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	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	315.9°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	632
Total Commands to Date	16881
Sun Angle	170.0°
Input Power	73.6w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Standby
Avg Thermal Plate Temp	67.5°F
LACE Temp (AM-41)	91.2°F
LEAM Temp (AJ-11)	143.8°F
HFE Temp Ref 1 (DH-13)	294.5°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	70.0°F

ALSEP PERFORMANCE SUMMARY REPORT

13 September 1974
G.m.t.: 1300

Apollo 17 ALSEP

Midnight of the scientific station's 22nd lunation will occur later today at the Taurus Littrow site. Downlink signal strength is reported at -138.0 ± 4.0 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues 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. On 12 September lunar surface temperature, as measured by the HFE thermocouples was 109 ± 8°K. At a depth of 230 cm, the subsurface temperatures were 256.4°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. *A 4-day passive listening period was conducted from 1415 G.m.t., 6 September, to 2355 G.m.t., 10 September 1974, in order to continue a study of meteroid impacts and thermal moonquakes. Several significant events were noted during the real-time support periods when the LSP high bit rate was observed for one (1) hour. These events occurred during lunar night time (Sun Angle 181.4° to 235.1°).* The next 4-day passive listening period is planned for 22 to 25 October 1974.

The Lunar Atmospheric Composition Experiment is ON but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and backup heater, ON. The electronics temperature (AM-41) was reading 3.2°F on 12 September.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) was reading -17.4°F on 12 September.

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

Apollo 16 ALSEP

Operational status from 6 September 1974, 1300 G.m.t., to 13 September 1974, 1300 G.m.t.

Central station	Sunset at the Descartes Site occurred on 7 September for the 30th lunar day. The DSS-1 heater (10 watts) was commanded ON at 1320 G.m.t., 6 September, for lunar night operations when the average thermal plate temperature decreased to 63.4°F. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B is reported between -133.0 and -139.0 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The instrument's assembly temperature (DL-07) returned on-scale, 7 September, at a sun angle of 177.8°. No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 820 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 6 September 1974, 1300 G.m.t., to 13 September 1974, 1300 G.m.t.

Central station	Sunset of the station's 39th lunation occurred at the Hadley Rille Site on 8 September. Transmitter A downlink signal strength is reported as -135.8 ± 2.8 dbm by the tracking stations with 30-foot antennas.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. No significant seismic events were observed during the limited real-time support periods.
Suprathermal ion detector/cold cathode gauge	The instrument is ON and operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 91.1°K on 12 September as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 256.1°K at its lowermost point. Ring bridge surveys are obtained periodically.
Solar wind spectrometer experiment	Commanded OFF 14 June 1974.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 6 September 1974, 1300 G.m.t., to 13 September 1974, 1300 G.m.t.

Central station	Sunset at the Apollo 14 site occurred on 10 September. Transmitter A signal strength was reported as -136.0 to -144.0 dbm from the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) is ON for lunar night operation.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in AUTO ON for lunar night operations. *At 1126 G.m.t., 10 September, the PSE responded to a spurious command (octal 071, Y-motor ON) as observed by the Ascension Tracking Station. The Y-motor was returned to the OFF condition by mode 1 command (octal 071), from the Guam Tracking Station at 1901 G.m.t., 10 September. The long period Y-axis noisy data, previously reported, has continued to be observed throughout this reporting period.* No significant seismic events were observed during the periodic real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON since 1359 G.m.t., 9 September.
Charged particle lunar environment experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode since 1403 G.m.t., 9 September. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage, to 2280 vdc, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 6 September 1974, 1300 G.m.t., to 13 September 1974, 1300 G.m.t.

Central station	Sunset of the 60th lunation occurred on 10 September. The DSS-1 heater (10 watts) was commanded ON for lunar night operation on 10 September. A signal strength of -138.0 to -143.0 dbm from transmitter B was reported by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). *During real-time support on 11 September the PSE long period X and Y axes failed to respond to calibration commands (octal 066). The long period Z calibration response was normal. The PSE was commanded to gain steps (-10, -20, -30, and 0 db) and calibration commands were transmitted at each gain step without response by the X and Y axes. The science data appeared normal, however the data level appeared low. On 12 September during real-time support calibration commands to the PSE responded normally in all axes. Problem analysis is in progress.* The instrument's assembly temperature (DL-07) returned onscale, 9 September, at a sun angle of 163.3°. The Z-axis drive motor was commanded ON at 2043 G.m.t., 10 September, to maximize heating in the instrument during lunar night. No significant seismic events were noted during the periodic real-time support periods.
Solar wind spectrometer experiment	The instrument remains in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is in the full automatic stepping sequence with Channeltron high voltages ON since 1337 G.m.t., 8 September.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974. *At 0136 G.m.t., 6 September the Madrid Tracking Station noted a spurious command (octal 042 LSM power ON) in the downlink signal. During real-time support on 6 September, receipt of the command was confirmed and the experiment was commanded OFF (octal 044) without incident. A 1.0 watt reserve power change was noted during the ON to OFF command sequence.*

Status as of 1600 G.m.t., 12 September 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1758	1315	1139	874
Total Commands to Date	21279	12344	24540	12783
Sun Angle	201.2°	207.2°	228.3°	240.2°
Input Power	62.5w	65.9w	68.9w	68.0w
Heater and Power Dumps	All ON	All ON	All OFF	All ON
Experiment Status	LSM OFF	ASE Stdby	LSM/SWS OFF	ASE OFF
Avg Thermal Plate Temp	14.7°F	24.2°F	12.5°F	34.7°F
PSE Sensor Temp (DL-07)	126.4°F	124.7°F	124.6°F	125.9°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	-8.9°C
SWS Module 300 Temp (DW-13)	-13.9°C	N/A	OFF	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	7.2°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	112.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.7°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-58.2°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.6°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	639
Total Commands to Date	17008
Sun Angle	255.4°
Input Power	74.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stdby
Avg Thermal Plate Temp	25.5°F
LACE Temp (AM-41)	3.2°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	285.3°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	26.5°F

TIMES - CDT

ALSEP SUPPORT SCHEDULE/EVENTS

PSE CALS DAILY

Aug 25/237	26/238	27/239	28/240	29/241	30/242	31/243
1100-1200	0900-1100 ALSEP 14 ALSEP 12 ALSEP 17 LACE OFF LEAM OFF FLIP CAL HFE RBS	0800-1200 ALSEP 12 PSE Z-MTR OFF C/S HTR OFF ALSEP 14 C/S HTR OFF Y PROC CHK ASE CHK ALSEP 16 ASE CHK	0900-1100 ALSEP 12 SIDE OFF FLIP CAL HFE RBS	0900-1100 ALSEP 12 CYCLE SIDE ALSEP 15 SIDE STBY ALSEP 14 CPLEE STDBY ALSEP 16 NEG Z	0900-1100 ALSEP 12 & 15 CYCLE SIDES ALSEP 14 PSE HTR OFF ALSEP 16 NEG Z FLIP CAL HFE RBS 2230-2400 ALSEP 15 SIDE SPRT	0000-0230 ALSEP 15 SIDE SPRT ALSEP 16 NEG Z ALSEP 12 CYCLE SIDE 1500-1600 ALSEP 16 NEG Z
Sep 1/244	2/245	3/246	4/247	5/248	6/249	7/250
0900-1100 ALSEP 12 & 15 CYCLE SIDES ALSEP 16 NEG Z	0900-1100 ALSEP 12 & 15 CYCLE SIDES ALSEP 16 NEG Z FLIP CAL HFE RBS	0900-1100 ALSEP 12 CYCLE SIDE ALSEP 15 SIDE ON ALSEP 17 LACE STDBY LEAM ON	0900-1100 ALSEP 12 CYCLE SIDE FLIP CAL HFE RBS	0900-1100 ALSEP 12 CYCLE SIDE ALSEP 16 POS Z ALSEP 17 LACE ON	0900-1100 ALSEP 17 HBR ON ALSEP 12 CYCLE SIDE ALSEP 16 C/S HTR ON POS Z FLIP CAL HFE RBS 2100-2200 ALSEP 16 POS Z	0900-1100 ALSEP 16 ALSEP 12 CYCLE SIDE ALSEP 14 PSE HTR ON ALSEP 17 HBR
Sep 8/251	9/252	10/253	11/254	12/255	13/256	14/257
0900-1100 ALSEP 15 ALSEP 12 CYCLE SIDE ALSEP 17 HBR	0900-1100 ALSEP 12 SIDE ON ALSEP 14 C/S HTR ON SIDE ON CPLEE ON ALSEP 17 HBR FLIP CAL HFE RBS	1600-2000 ALSEP 12 PSE Z-MTR ON C/S HTR ON ALSEP 14 ALSEP 17 HBR OFF	0900-1100 FLIP CAL HFE RBS	0900-1100 ALSEP 15 NEG X POS Y	0900-1100 FLIP CAL HFE RBS	NO SUPPORT

ALSEP PERFORMANCE SUMMARY REPORT

20 September 1974
G.m.t.: 1300

Apollo 17 ALSEP

Sunrise of the scientific station's 23rd lunation will occur on 21 September at the Taurus Littrow site. Downlink signal strength is reported between -136.0 and -142.5 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods. *There has been no further problem executing commands since the switch from Uplink A to Uplink B on 19 August 1974.*

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. On 18 September the lunar surface temperature, as measured by the HFE thermocouples, was 106.0 ± 8°K. At a depth of 230 cm, the subsurface temperatures were 256.5°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Surface Profiling Experiment is in STANDBY. The next passive listening period is scheduled for 22 October 1974, to achieve the fifth segment of one complete lunar cycle by the experiment.

The Lunar Atmospheric Composition Experiment is ON but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and backup heater, ON. The electronics temperature (AM-41) was reading 3.2°F on 18 September 1974.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) was reading -17.4°F on 18 September.

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

Apollo 16 ALSEP

Operational status from 13 September 1974, 1300 G.m.t., to 20 September 1974, 1300 G.m.t.

Central station	Sunrise at the Descartes Site will occur on 22 September for the 31st lunation. The DSS-1 heater (10 watts) is ON for lunar night operations. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B is reported at -136.0 ± 3.0 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM continues in the full operational mode and all data have been valid since 17 August 1973. The instrument has accomplished 826 flip calibration sequences since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 13 September 1974, 1300 G.m.t., to 20 September 1974, 1300 G.m.t.

Central station

Midnight of the site's 39th lunation occurred on 16 September. Transmitter A downlink signal strength is reported as -134.5 ± 2.5 dbm by the tracking stations with 30-foot antennas.

Passive seismic experiment

The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. *At 2143 G.m.t., 13 September, the PSE responded to a spurious command (octal 076, Thermal Control Mode Auto OFF) as observed by the Guam Tracking Station. The PSE was returned to the Thermal Control Mode Auto ON (octal 076) condition by mission control at 1351 G.m.t., 16 September. At the beginning of real-time support the following conditions were noted on the PSE:*

Date	*LPX*	*LPY*	*LPZ*	*DL-07*
16 Sep 74	*L*	*H*	*H*	*L*
18 Sep 74	*L*	*Onscale*	*Onscale*	*106.42°F*

The long period X-axis responded to levelling commands on 18 September and is now onscale. No significant seismic events were observed during the limited real-time support periods.

Suprathermal ion detector/cold cathode gauge experiment

The instrument has been operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) since 1349 G.m.t., 3 September 1974.

Heat flow experiment

The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 85.9°K on 18 September as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.2°K at its lowermost point. Ring bridge surveys are obtained periodically.

Solar wind spectrometer experiment

Commanded OFF 14 June 1974.

Lunar surface magnetometer experiment

Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 13 September 1974, 1300 G.m.t., to 20 September 1974, 1300 G.m.t.

Central station	Midnight at the Apollo 14 site occurred on 17 September. Transmitter A signal strength was reported at -137.0 ± 2.0 dbm from the 30-foot tracking stations. The DSS-1 heater (10 watts) is ON for lunar night operation.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in AUTO ON for lunar night operations. *The long period Y-axis noise problem, previously reported, has continued during this reporting period.* No significant seismic events were observed during the periodic real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON since 1359 G.m.t., 9 September.
Charged particle lunar environment experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode since 1403 G.m.t., 9 September. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage, to 2280 VDC, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 13 September 1974, 1300 G.m.t., to 20 September 1974, 1300 G.m.t.

Central station	Midnight of the 60th lunation occurred on 18 September. The DSS-1 heater (10 watts) is ON for lunar night operation. A signal strength of -136.5 to -141.0 dbm from transmitter B was reported by the 30-foot tracking station.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The Z-axis drive motor is ON to maximize heating in the instrument during lunar night. *The long period X- and Y-axes have responded to all calibration commands (octal 066) during this report period.* No significant seismic events were noted during the periodic real-time support periods.
Solar wind spectrometer experiment	The instrument remains in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is in the full automatic stepping sequence with Channeltron high voltages ON since 1337 G.m.t., 8 September.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Status as of 1600 G.m.t., 18 September 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1764	1321	1145	880
Total Commands to Date	21300	12356	24642	12815
Sun Angle	274.6°	280.5°	301.7°	313.5°
Input Power	62.1w *(62.5w)*	64.8w *(65.7w)*	68.4w *(68.9w)*	67.7w *(68.0w)*
Heater and Power Dumps	DSS-1 ON (10w)	DSS-1 ON (10w)	All OFF	DSS-1 ON (10w)
Experiment Status	LSM OFF	ASE Stby	LSM & SWS OFF	ASE OFF
Avg Thermal Plate Temp	12.5°F	22.1°F	11.6°F	33.6°F
PSE Sensor Temp (DL-07)	126.1°F	124.1°F	107.5°F	125.8°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	-8.9°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	OFF	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	7.2°C	N/A
CCGE Temp (DI-04)	Invalid	Invalid	108.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-23.3°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-70.7°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	645
Total Commands to Date	17101
Sun Angle	328.8°
Input Power	74.8w *(74.8w)*
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	All OFF
Avg Thermal Plate Temp	24.7°F
LACE Temp (AM-41)	3.2°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	285.2°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	26.5°F

Value in parentheses indicates RTG output during last lunation at a similar sun angle.

ALSEP PERFORMANCE SUMMARY REPORT

27 September 1974
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was not available during the following periods. It must be noted that these data losses are non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
All	*20 Sep 74*	*2119/2126*	*07^m*	*ACN/GDS*	*Higher Priority*
14,15	*24 Sep 74*	*1017/1023*	*06^m*	*ORR*	*Station Problem*

On 20 September 1974 a night-time Filter IN (octal 101) operational check of all ALSEP Passive Seismic Experiments was performed. The filter operation was normal on all experiments. Filter IN/OUT operation was as follows:

ALSEP	*FILTER IN G.m.t.*	*FILTER OUT G.m.t.*
12	*1345*	*1357*
14	*1417*	*1433*
15	*1346*	*1358*
16	*1417*	*1433*

Apollo 17 ALSEP

Sunrise of the scientific station's 23rd lunation occurred on 21 September at the Taurus Littrow site. Downlink signal strength was reported between -134.0 and -142.3 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. On 26 September the lunar surface temperature, as measured by the HFE's thermocouples, was 343 ± 8°K. Subsurface temperature at 230 cm depth was 256.5°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. The next 4-day passive listening period is planned for 22 to 25 October 1974.

The Lunar Atmospheric Composition Experiment is currently in STANDBY with the survival heater ON. The LACE was commanded to STANDBY at 1529 G.m.t., 23 Sep-

tember, when the electronic temperature (AM-41) was reading 126.8°F. The purpose of this operation during lunar day is to increase the temperature (bake-out) in the electronics section, and therefore the outgassing, in an attempt to correct the Multiplier High Voltage Power Supply problem which exists in the experiment (Apollo 17 ALSEP, SMEAR 70). A sequence of operational commands were executed to the experiment during real-time support, 20 September 1974. The LACE's telemetry data indicated no signs of change from the previous operational checks of 20 March and 20 May 1974 (Multiplier High Voltage Power Supply, ON). The experiment was reconfigured to its lunar night operational mode. No periodic thermal cycling check is planned within the next sixty days.

The Lunar Ejecta and Meteorites Experiment is presently OFF. The instrument was commanded OFF at 1525 G.m.t., 24 September 1974, when the mirror temperature (AJ-11) was 188.0°F.

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

Apollo 16 ALSEP

Operational status from 20 September 1974, 1300 G.m.t., to 27 September 1974, 1300 G.m.t.

Central station	Sunrise of the 31st lunation occurred on 22 September 1974. The DSS-1 heater (10 watts) was commanded OFF for lunar day operations on 23 September. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -133.5 and -139.0 dbm from transmitter B.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM is currently ON and recording data as the moon approaches the earth's bow shock and transition region. 832 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. *The instrument was commanded to high bit rate ON at 0201 G.m.t., 26 September 1974, to verify operational status. Operation was satisfactory at this time. The check was performed per Apollo 16 ALSEP, SMEAR 27. A significant event was in progress during the operational check.*

Apollo 15 ALSEP

Operational status from 20 September 1974, 1300 G.m.t., to 27 September 1974, 1300 G.m.t.

Central station	Sunrise of the station's 40th lunation occurred at the Hadley Rille lunar site on 23 September 1974. The transmitter A downlink signal strength is reported between -132.0 dbm and -137.2 dbm. The 18-hour timer was reset (octal 150) at 1327 G.m.t., 23 September. *Between the termination of real-time support on 20 September and the start of support on 23 September the central station experienced a spurious functional change, DSS-2 5-Watt Heater ON (octal 017). A command verification word had not been observed in the ALSEP downlink. The 5-Watt heater was commanded to OFF (octal 021) at 0121 G.m.t., 26 September, by mission control resulting in an increase of 5 watts in reserve power.*
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). No significant seismic events were noted during real-time support.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is ON and operating continuously with channeltron high voltages commanded ON and in full automatic stepping sequence (Apollo 15 ALSEP, SME\R 47).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors are being sampled in full sequence. On 26 September the lunar surface temperature was 334.9°K indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.2°K at its lowermost point. Ring bridge surveys are obtained periodically.
Solar wind spectrometer experiment	Commanded OFF 14 June 1974.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 20 September 1974, 1300 G.m.t., to 27 September 1974, 1300 G.m.t.

Central station	Sunrise of the 46th lunation at the Apollo 14 site occurred on 25 September. The 30-foot antenna tracking stations report a signal strength from transmitter A at -138.5 ± 3.5 dbm. The DSS-1 heater (10 watts) is OFF for lunar day operations. Data processor Y was verified by command on 26 September 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater will be commanded to FORCED OFF, 29 September, to minimize heating during lunar day operations. *The long period Y-axis noise anomaly that had previously been reported has been observed during this report period.* No significant seismic events were observed during the limited real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY. *The instrument was commanded to high bit rate ON, 26 September, to verify operational status. The output of geophones #2 and #3 appeared abnormal as had initially been observed on 3 January 1974. The status check was performed per Apollo 14 ALSEP, SMEAR 86.*
Suprathermal ion detector/cold cathode gauge experiment	The experiment is currently in STANDBY. *At 1120 G.m.t., 25 September, the SIDE experienced a functional change from ON to STANDBY as reported by the Guam Tracking Station.* Present plans are to leave it in this configuration the remainder of the lunar day.
Charged particle lunar environmental experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode. It is planned to command the experiment to STANDBY later today, 27 September.

Apollo 12 ALSEP

Operational status from 20 September 1974, 1300 G.m.t., to 27 September 1974, 1300 G.m.t.

Central station	Sunrise of the 61st lunar day occurred on 25 September 1974 at the ALSEP site in the Ocean of Storms. A signal strength of -138.5 ± 2.5 dbm from transmitter B was reported by the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) was commanded OFF for lunar day operations on 26 September.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The z-axis drive motor is OFF to minimize heating in the instrument during lunar day. The sensor temperature (DL-07) had been offscale LOW between the start of real-time support periods on 20 September and 26 September 1974. No significant seismic events were noted during the periodic real-time support periods of this instrument.
Solar wind spectrometer experiment	*The instrument was commanded to the extended range mode on 26 September due to observation of high particle counts.*
Suprathermal ion detector experiment	The SIDE is ON and in the full automatic stepping sequence with Channeltron high voltages ON.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Status as of 1600 G.m.t., 26 September 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1772	1329	1153	888
Total Commands to Date	21372	12404	24791	12947
Sun Angle	12.2°	18.2°	39.3°	51.2°
Input Power	61.8w	64.5w	67.9w	67.2w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	LSM OFF	ASE STBY	LSM & SWS OFF	ASE OFF
Avg Thermal Plate Temp	50.1°F	62.8°F	90.1°F	91.7°F
PSE Sensor Temp (DL-07)	125.8°F	124.7°F	126.1°F	129.3°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	38.3°C
SWS Module 300 Temp (DW-13)	29.7°C	N/A	OFF	N/A
SIDE Temp (DI-05)	28.1°C	STBY	72.2°C	N/A
CCGE Temp (DI-04)	HIGH	STBY	355.6°K	N/A
CPLEE Elect Temp (AC-06)	N/A	21.0°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-4.9°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	307.5°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	653
Total Commands to Date	17253
Sun Angle	66.4°
Input Power	72.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LACE & LSPE STBY/LEAM OFF
Avg Thermal Plate Temp	93.7°F
LACE Temp (AM-41)	136.5°F
LEAM Temp (AJ-11)	176.0°F
HFE Temp Ref 1 (DH-13)	323.7°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	94.1°F

ALSEP PERFORMANCE SUMMARY REPORT

4 October 1974
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was not available during the following periods. It must be noted that these data losses are non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
All	*22-23 Aug 74*	*1822/0150*	7^h28^m	*MIL*	*Station Problem*
All	*23-24 Aug 74*	*1854/0150*	6^h56^m	*MIL*	*Station Problem*

On 1 October 1974 a day-time Filter IN (octal 101) operational check of all ALSEP Passive Seismic Experiments was performed. The filter operation was normal on all experiments. Filter IN/OUT operation was as follows:

ALSEP	*FILTER IN G.m.t.*	*FILTER OUT G.m.t.*
12	*1345*	*1402*
14	*1422*	*1430*
15	*1345*	*1403*
16	*1421*	*1430*

Apollo 17 ALSEP

Noon of the scientific station's 23rd lunation occurred on 28 September at the Taurus Littrow site. Downlink signal strength is reported between -133.0 and -136.5 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods. *Over 900 commands have been received and executed by the central station through uplink B since the switch from uplink A on 19 August 1974.*

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. On 3 October the lunar surface temperature, as measured by the HFE thermocouples, was 290 ± 8°K. At a depth of 230 cm, the subsurface temperatures were 256.5°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and the tilt servo motors in an intermediate position. The experiment sensor temperature is presently stabilized at 49.2°C (slave heater ON). *Playback of 2 October data indicated that the seismic event (Ref. Apollo 15 ALSEP) was indiscernible on this instrument.*

4 October 1974
G.m.t.: 1300

The Lunar Seismic Profiling Experiment is in STANDBY. The next 4-day passive listening period is scheduled for 22 October 1974.

The Lunar Atmospheric Composition Experiment was operated through this lunar day in STANDBY with the survival heater ON at the request of the Principal Investigator. The purpose of this operation during lunar day was to increase the temperature (bake-out) in the electronics section, and therefore the outgassing, in an attempt to correct the Multiplier High Voltage Power Supply problem which exists in the experiment (Apollo 17 ALSEP, SMEAR 70). The maximum temperature observed in the electronics temperature (AM-41) was 145.5°F between the sun angles of 90° and 106.3°.

The Lunar Ejecta and Meteorites Experiment is configured to measure impact flux rates on the lunar surface. The LEAM was commanded ON for the lunar night at 1428 G.m.t., 2 October, when the instrument's mirror temperature (AJ-11) was reading 180.5°F.

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

Apollo 16 ALSEP

Operational status from 27 September 1974, 1300 G.m.t., to 4 October 1974, 1300 G.m.t.

Central station	Noon of the 31st lunation occurred on 29 September 1974. The DSS-1 heater (10 watts) is OFF for lunar day operation. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength at -135.0 ± 2.0 dbm from transmitter B.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). *The long period Y-axis has responded to leveling commands since 28 April 1974. The lunar night leveling anomaly has not been experienced for the past five (5) lunations (26th to 30th).* The instrument's sensor temperature (DL-07) indicated offscale HIGH at the beginning of real-time support on 29 September (sun angle 74.6°). It is predicted the temperature will return onscale on 7 October. *The seismic event (Ref. Apollo 15 ALSEP) was also seen at the same time by the Apollo 16 ALSEP PSE.*
Lunar surface magnetometer experiment	The LSM is currently ON and recording data as the moon passes through the earth's geomagnetic tail and magnetopause. 838 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 27 September 1974, 1300 G.m.t., to 4 October 1974, 1300 G.m.t.

Central station	Noon of the station's 40th lunation occurred on 30 September. Transmitter A downlink signal strength was reported at -135.5 ± 2.5 dbm from the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's uncage-arm fire circuitry has been cycling per the normal 18 hour timer output pulse functions. At the beginning of real-time support on 30 September it was noted that DL-07 (sensor temperature) was off-scale HIGH. The temperature returned onscale (140.6°F) on 3 October. *A seismic event was in progress at the start of real-time support period of this instrument (1330 G.m.t., 2 October 1974) and continued for approximately 45 minutes.*
Suprathermal ion detector/cold cathode gauge experiment	The instrument is currently ON. Automatic sequencing of the experiment was initiated for the remainder of this lunation on 3 October (Apollo 15 ALSEP, SMEAR 47).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 355.2°K on 3 October as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.2°K at its lowermost point. Ring bridge surveys are obtained periodically.
Solar wind spectrometer experiment	Commanded OFF 14 June 1974.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 27 September 1974, 1300 G.m.t., to 4 October 1974, 1300 G.m.t.

Central station	Noon of the 46th lunation at the Apollo 14 site occurred on 2 October. Transmitter A signal strength was reported as -138.0 ± 3.0 dbm from the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) is OFF for lunar day operations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in FORCED OFF. *The long period Y-axis noisy data, because one bit was not setting, has continued during this report period. As this anomaly is a re-occurring one it will not be referred to any further in this report unless a consequential change in status occurs. The seismic event (Ref. Apollo 15 ALSEP) was also observed by this instrument on the long period X and Y axes.*
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been in STANDBY since 25 September 1974.
Charged particle lunar environmental experiments	The CPLEE has been in STANDBY since 27 September 1974.

Apollo 12 ALSEP

Operational status from 27 September 1974, 1300 G.m.t., to 4 October 1974, 1300 G.m.t.

Central station	Noon of the 61st lunar day occurred on 3 October. The DSS-1 heater (10 watts) is OFF for lunar day operations. A signal strength of -138.0 to -141.5 dbm from transmitter B was reported by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). At the start of real-time support on 3 October the instrument's sensor temperature (DL-07) was offscale HIGH (sun angle = 96.2°). It is predicted that the temperature will return onscale on 9 October 1974. *The seismic event (Ref. Apollo 15 ALSEP) was also observed by this instrument.*
Solar wind spectrometer experiment	The instrument is ON and in the normal gain mode recording solar wind plasma data. *The experiment was operated in the extended range mode due to observation of high particle counts from 26 Sep/0507 to 28 Sep/1403 G.m.t.*
Suprathermal ion detector experiment	The SIDE is currently OFF. The instrument was commanded OFF during real-time support on 27 September when the internal temperature was 50.9°C. Cyclic commanding of the instrument in the full automatic stepping sequence with Channeltron high voltages ON to experiment power OFF is in effect for this lunar day in an effort to preclude instrument mode changes at internal temperatures above 55°C.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Status as of 1600 G.m.t., 3 October 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1779	1336	1160	895
Total Commands to Date	21459	12449	24892	13065
Sun Angle	97.4°	103.4°	124.5°	136.3°
Input Power	62.2w	64.5w	67.9w	67.2w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	LSM/SIDE OFF	ASE/CPLEE Standby	LSM/SWS OFF	ASE OFF
Avg Thermal Plate Temp	93.9°F	109.1°F	110.6°F	91.6°F
PSE Sensor Temp (DL-07)	Offscale HIGH	137.0°F	140.7°F	Offscale HIGH
LSM Internal Temp (DM-05)	OFF	N/A	OFF	39.3°C
SWS Module 300 Temp (DW-13)	65.3°C	N/A	OFF	N/A
SIDE Temp (DI-05)	OFF	Standby	63.5°C	N/A
CCGE Temp (DI-04)	OFF	Standby	355.6°K	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	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	325.4°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	660
Total Commands to Date	17420
Sun Angle	151.6°
Input Power	72.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LACE/LSPE Standby
Avg Thermal Plate Temp	68.7°F
LACE Temp (AM-41)	116.1°F
LEAM Temp (AJ-11)	186.5°F
HFE Temp Ref 1 (DH-13)	305.4°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	70.0°F

Sep 15/258	16/259	17/260	18/261	19/262	20/263	21/264
NO SUPPORT	0900-1100 FLIP CAL HFE RBS	NO SUPPORT	0900-1100 FLIP CAL HFE RBS	NO SUPPORT	0900-1100 ALSEP 16 AUTO X POS Y FLIP CAL HFE RBS	NO SUPPORT ALSEP 17
Sep 22/265	**23/266**	**24/267**	**25/268**	**26/269**	**27/270**	**28/271**
NO SUPPORT ALSEP 16	0800-1000 ALSEP 15 TIMER RST ALSEP 16 C/S HTR OFF TIMER RST FLIP CAL HFE RBS	0900-1100 ALSEP 14 ALSEP 17 LACE OFF LEAM OFF	2000-2400 ALSEP 12 C/S HTR OFF PSE Z MTR OFF ALSEP 14 C/S HTR OFF Y PROC CHK ASE CHK ALSEP 16 ASE CHK FLIP CAL HFE RBS	0000-0100 0900-1100 ALSEP 16 NEG Z	0900-1100 ALSEP 12 SIDE OFF ALSEP 14 CPLEE STBY ALSEP 16 NEG Z FLIP CAL HFE RBS	0900-1100 ALSEP 12 CYCLE SIDE ALSEP 15 SIDE STBY ALSEP 16 NEG Z
Sep 29/272	**30/273**	**Oct 1/274**	**2/275**	**3/276**	**4/277**	**5/278**
1500-1900 ALSEP 12 CYCLE SIDE ALSEP 14 PSE HTR OFF ALSEP 15 SIDE SPRT ALSEP 16 NEG Z	0900-1100 ALSEP 12 & 15 CYCLE SIDES ALSEP 16 NEG Z FLIP CAL HFE RBS	0900-1100 ALSEP 12 & 15 CYCLE SIDES	0900-1100 ALSEP 12 & 15 CYCLE SIDES ALSEP 17 LACE STBY LEAM ON FLIP CAL HFE RBS	0900-1100 ALSEP 12 CYCLE SIDE ALSEP 15 SIDE ON ALSEP 16 POS Z	0900-1100 ALSEP 12 CYCLE SIDE ALSEP 16 POS Z FLIP CAL HFE RBS	0900-1100 ALSEP 17 LACE ON ALSEP 12 CYCLE SIDE ALSEP 16 POS Z

ALSEP PERFORMANCE SUMMARY REPORT

11 October 1974
G.m.t.: 1300

Apollo 17 ALSEP

Midnight of the scientific station's 23rd lunation will occur on 13 October at the Taurus Littrow site. Downlink signal strength is reported at -136.5 ± 2.5 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues 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. On 10 October lunar surface temperature, as measured by the HFE thermocouples was 108 ± 8°K. At a depth of 230 cm, the subsurface temperatures were 256.4°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. The next 4-day passive listening period is planned for 22 to 25 October 1974.

The Lunar Atmospheric Composition Experiment is ON but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and backup heater, ON. The electronics temperature (AM-41) was reading 3.2°F on 10 October.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface. The instrument's mirror temperature (AJ-11) was reading -17.4°F on 10 October.

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

Apollo 16 ALSEP

Operational status from 4 October 1974, 1300 G.m.t., to 11 October 1974, 1300 G.m.t.

Central station	Sunset at the Descartes Site occurred on 7 October for the 31st lunar day. The DSS-1 heater (10 watts) was commanded ON at 0317 G.m.t., 7 October, for lunar night operations when the average thermal plate temperature decreased to 38.8°F. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B is reported between -133.5 and -137.0 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The instrument's assembly temperature (DL-07) returned on-scale, 7 October, at a sun angle of 178.3°. No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM data have been valid since 17 August 1973. 844 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 4 October 1974, 1300 G.m.t., to 11 October 1974, 1300 G.m.t.

Central station	Sunset of the station's 40th lunation occurred at the Hadley Rille Site on 8 October. Transmitter A downlink signal strength is reported as -135.0 ± 2.0 dbm by the tracking stations with 30-foot antennas.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. *At 0440 G.m.t., 4 October, the PSE responded to a spurious command (octal 066, Calibration LP ON) as observed by the Madrid Tracking Station. During real-time support, later 4 October, the Calibration LP status was commanded to OFF (octal 066) by mission control at 1407 G.m.t.* No significant seismic events were observed during the limited real-time support periods.
Suprathermal ion detector/cold cathode gauge	The instrument is ON and operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 94.5°K on 10 October as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.2°K at its lowermost point. Ring bridge surveys are obtained periodically.
Solar wind spectrometer experiment	Commanded OFF 14 June 1974.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 4 October 1974, 1300 G.m.t., to 11 October 1974, 1300 G.m.t.

Central station	Sunset at the Apollo 14 site occurred on 9 October. Transmitter A signal strength was reported as -134.5 to -139.5 dbm from the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) was commanded ON for lunar night operation at 1400 G.m.t., 9 October.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in AUTO ON for lunar night operations. No significant seismic events were observed during the periodic real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON at 1402 G.m.t., 9 October.
Charged particle lunar environment experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode since 1403 G.m.t., 9 October. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage, to 2280 vdc, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 4 October 1974, 1300 G.m.t., to 11 October 1974, 1300 G.m.t.

Central station	Sunset of the 61st lunation occurred on 10 October. The DSS-1 heater (10 watts) was commanded ON for lunar night operation on 10 October. A signal strength of -137.0 to -141.5 dbm from transmitter B was reported by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). *At 1623 G.m.t., 7 October, the PSE experienced a spurious functional change in the long period X and Y-axes sensor gain (octal 063) to -10 db as verified in the ALSEP downlink by the Hawaii Tracking Station. The X and Y-axes were commanded back to the 0 db (three octal 063s) at 1712 G.m.t., 7 October, by the Hawaii Tracking Station at the direction of mission control.* The instrument's assembly temperature (DL-07) returned onscale, 9 September, at a sun angle of 169.1°. The Z-axis drive motor was commanded ON, 10 October, to maximize heating in the instrument during lunar night. No significant seismic events were noted during the periodic real-time support periods.
Solar wind spectrometer experiment	The instrument remains in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is in the full automatic stepping sequence with Channeltron high voltages ON since 1331 G.m.t., 8 October. *During real-time support on 4 October, the SIDE experienced an unexpected mode change to command register X10 at a temperature of 56.5°C. The mode change was cleared by commanding the instrument to OFF for cooldown prior to the next support period on 5 October.*
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Status as of 1400 G.m.t., 10 October 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1786	1343	1167	902
Total Commands to Date	21521	12522	25100	13195
Sun Angle	182.7°	188.6°	209.7°	221.6°
Input Power	64.4w	64.8w	68.4w	68.0w
Heater and Power Dumps	All ON	All ON	All OFF	All ON
Experiment Status	LSM OFF	ASE Stdby	LSM/SWS OFF	ASE OFF
Avg Thermal Plate Temp	32.7°F	34.0°F	12.5°F	34.7°F
PSE Sensor Temp (DL-07)	127.3°F	124.2°F	124.7°F	125.9°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	-8.9°C
SWS Module 300 Temp (DW-13)	23.2°C	N/A	OFF	N/A
SIDE Temp (DI-05)	27.4°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	116.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-20.6°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-2.6°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.8°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	667
Total Commands to Date	17565
Sun Angle	236.8°
Input Power	74.8w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stdby
Avg Thermal Plate Temp	24.0°F
LACE Temp (AM-41)	3.2°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	287.8°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	25.2°F

ALSEP PERFORMANCE SUMMARY REPORT

18 October 1974
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was not available during the following periods. It must be noted that these data losses are non-recoverable.

ALSEP	DATE	G.m.t.	LOSS	SITE	REMARKS
12	10 October 74	2111/2209	58^m	GDS/ULA	WESTAR-B
17	10 October 74	2116/2209	53^m	GDS/ULA	WESTAR-B
15	10 October 74	2130/2209	39^m	GDS/ULA	WESTAR-B
14,16	10 October 74	2130/2315	1^h45^m	GDS/ULA	WESTAR-B
12,15,17	10 October 74	2310/2315	05^m	ULA	WESTAR-B
12,14,15,16,17	11 October 74	0029/0300	2^h31^m	ULA/TAN	WESTAR-B
15	11 October 74	0930/1013	43^m	CYI	Stn Prob

Apollo 17 ALSEP

Midnight of the scientific station's 23rd lunation occurred on 13 October at the Taurus Littrow site. *Downlink signal strength is reported at -141.0 ± 3.0 dbm from transmitter B. During real-time support on 14 October the Bermuda Tracking Station experienced difficulty in maintaining decom lock on the Apollo 17 ALSEP. The signal strength from transmitter A was -146 dbm and telemetry data quality was poor. At the direction of mission control transmitter A was commanded OFF (octal 013) at 1421 G.m.t. Transmitter B was commanded ON (octal 014) at 1422 G.m.t. and a gain in signal strength of 2 dbm to -144.0 dbm was obtained. The Bermuda Tracking Station was then able to maintain decom lock and an acceptable quality of the telemetry data resulted. There was also a drop of two (2) watts in reserve power when transmitter B was selected but during real-time support on 16 October the reserve power had returned to the normal range for comparative conditions. Analysis indicates that no decom lock difficulties were experienced with signal strengths as low as -147.5 dbm from transmitter A previously.*

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. On 16 October lunar surface temperature, as measured by the HFE thermocouples was 107 ± 8°K. At a depth of 230 cm, the subsurface temperatures were 256.5°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. The next 4-day passive listening period is planned for 22 to 25 October 1974.

ALSEP PERFORMANCE SUMMARY REPORT (CONTINUED)

18 October 1974
G.m.t.: 1300

The Lunar Atmospheric Composition Experiment is ON but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and backup heater, ON.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface.

It is requested that any organization having comments, questions, or suggestions concerning this report contact F. Heinz, Science Requirements Branch TN3, telephone 713-333-3481.

Apollo 16 ALSEP

Operational status from 11 October 1974, 1300 G.m.t., to 18 October 1974, 1300 G.m.t.

Central station	Midnight at the Descartes Site occurred on 14 October for the 31st lunar night. The DSS-1 heater (10 watts) is ON for lunar night operations. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B is reported at -136.5 ± 4.5 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM is ON. 820 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 11 October 1974, 1300 G.m.t., to 18 October 1974, 1300 G.m.t.

Central station	Midnight of the station's 40th lunation occurred at the Hadley Rille Site on 15 October. Transmitter A downlink signal strength is reported at -134.5 ± 2.5 dbm by the tracking stations with 30-foot antennas.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. No significant seismic events were observed during the limited real-time support periods.
Suprathermal ion detector/cold cathode gauge	The instrument is ON and operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 86.9°K on 16 October as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.1°K at its lowermost point. Ring bridge surveys are obtained periodically.
Solar wind spectrometer experiment	Commanded OFF 14 June 1974.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 11 October 1974, 1300 G.m.t., to 18 October 1974, 1300 G.m.t.

Central station	Midnight at the Apollo 14 site occurred on 17 October for the 46th lunation. Transmitter A signal strength was reported at -134.0 to -140.5 dbm from the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) is ON for lunar night operation. *At 1321 G.m.t., 13 October, the Central Station received a spurious command (octal 017, 7-Watt Power Dump Resistor ON) as reported by the Ascension Tracking Station. At the direction of mission control, command octal 021 (7-Watt Power Dump Resistor OFF) was executed by the Ascension Tracking Station at 1409 G.m.t., 13 October. During real-time support on 14 October reserve power was checked to confirm the 7-watt PDR was OFF.*
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in AUTO ON for lunar night operations. No significant seismic events were observed during the periodic real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON since 1402 G.m.t., 9 October.
Charged particle lunar environment experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode since 1403 G.m.t., 9 October. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage, to 2280 vdc, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 11 October 1974, 1300 G.m.t., to 18 October 1974, 1300 G.m.t.

Central station	Midnight of the 61st lunation occurred on 17 October. The DSS-1 heater (10 watts) was commanded ON for lunar night operation on 10 October. A signal strength of -137.0 to -142.5 dbm from transmitter B was reported by the 30-foot antenna tracking stations.
Passive seismic experiment	*The instrument is configured with thermal control, AUTO ON; component gains, 0 db; and feedback loop filter IN. At 1402 G.m.t., 16 October, the feedback loop filter was commanded to IN (octal 101) for a 30-day period at the Principal Investigator's request.* The instrument's assembly temperature (DL-07) was offscale LOW at a sun angle of 230.4° on 14 October. The Z-axis drive motor was commanded ON at 0943 G.m.t., 10 October, to maximize heating in the instrument during lunar night. No significant seismic events were noted during the periodic real-time support periods.
Solar wind spectrometer experiment	The instrument remains in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is in the full automatic stepping sequence with Channeltron high voltages ON since 1331 G.m.t., 8 October.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Status as of 1600 G.m.t., 16 October 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1792	1349	1173	908
Total Commands to Date	21580	12550	25161	13260
Sun Angle	255.9°	261.9°	283.0°	294.9°
Input Power	61.7w *(62.1w)*	64.4w *(64.8w)*	68.4w *(68.9w)*	68.0w *(68.0w)*
Heater and Power Dumps	All ON	All ON	All OFF	All ON
Experiment Status	LSM OFF	ASE Stdby	LSM/SWS OFF	ASE OFF
Avg Thermal Plate Temp	12.0°F	22.1°F	11.6°F	33.6°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.1°F	124.5°F	125.8°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	-9.0°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	OFF	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	108.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-23.3°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-70.7°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	673
Total Commands to Date	17671
Sun Angle	310.1°
Input Power	74.8w *(74.8w)*
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stdby
Avg Thermal Plate Temp	24.7°F
LACE Temp (AM-41)	-2.3°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	286.9°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	26.5°F

Value in parentheses indicates RTG output during last lunation at a similar sun angle.

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Remote site coverage for recording of ALSEP downlink data was not available during the following periods. It must be noted that these data losses are non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
A12	*19 Oct 74*	*1014/1023*	*09^m*	*ACN*	*Station Problem*
A11	*22 Oct 74*	*0119/0121*	*02^m*	*MIL*	*Station Problem*

An operational check of all ALSEP Passive Seismic Experiment Heaters was performed during this support period. The heaters were cycled from AUTO ON to FORCED OFF and back to AUTO ON. The following table shows the changes in reserve power during the cycling of the heaters:

ALSEP	*DATE*	*TO FORCED OFF*	*TO AUTO ON*
12	*23 Oct 74*	*+2.81w*	*-2.16w*
14	*24 Oct 74*	*+3.83w*	*-4.92w*
15	*22 Oct 74*	*+4.61w*	*-5.07w*
16	*21 Oct 74*	*+4.74w*	*-5.01w*

Apollo 17 ALSEP

Sunrise of the scientific station's 24th lunation occurred on 20 October at the Taurus Littrow site. Downlink signal strength was reported as -139.5 ± 4.0 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

The Heat Flow Experiment continues operating in the gradient mode with all sensors being sampled in full sequence and periodic ring bridge surveys being accomplished. On 24 October the lunar surface temperature, as measured by the HFE's thermocouples, was 309 ± 8°K. Subsurface temperature at 230 cm depth was 256.5°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently ON. A 4-day passive listening period was begun at 1445 G.m.t., 22 October, to continue a study of meteoroid impacts and thermal moonquakes. Several significant events were noted during the real-time support periods when the LSP high bit rate was observed for

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one (1) hour. These events occurred during lunar day (Sun Angle 22.5° to 47.0°). The listening period will be terminated later today, 25 October. The next 4-day passive listening period is planned for 1 to 5 November 1974.

The Lunar Atmospheric Composition Experiment is currently in STANDBY with the survival heater ON. The LACE was commanded to STANDBY at 1541 G.m.t., 23 October, when the electronic temperature (AM-41) was reading 120.6°F. The purpose of this operation during lunar day is to increase the temperature (bake-out) in the electronics section, and therefore the outgassing, in an attempt to correct the Multiplier High Voltage Power Supply problem which exists in the experiment (Apollo 17 ALSEP, SMEAR 70).

The Lunar Ejecta and Meteorites Experiment is presently OFF. The instrument was commanded OFF at 1539 G.m.t., 23 October 1974, when the mirror temperature (AJ-11) was 182.0°F.

It is requested that any organization having comments, questions, or suggestions concerning this report contact F. Heinz, Science Requirements Branch TN3, telephone 713-333-3481.

Apollo 16 ALSEP

Operational status from 18 October 1974, 1300 G.m.t., to 25 October 1974, 1300 G.m.t.

Central station	Sunrise of the 32nd lunation occurred on 22 October 1974. The DSS-1 heater (10 watts) was commanded OFF for lunar day operations on 22 October. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -133.0 and -137.2 dbm from transmitter B.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM is currently ON and recording data as the moon approaches the earth's bow shock and transition region. 856 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF (Apollo 16 ALSEP, SMEAR 27).

Apollo 15 ALSEP

Operational status from 18 October 1974, 1300 G.m.t., to 25 October 1974, 1300 G.m.t.

Central station	Sunrise of the station's 41st lunation occurred at the Hadley Rille lunar site on 22 October 1974. The transmitter A downlink signal strength is reported -135.5 ± 2.5 dbm. The 18-hour timer was reset (octal 150) at 1418 G.m.t., 22 October.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). No significant seismic events were noted during real-time support.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is ON and operating continuously with channeltron high voltages commanded ON and in full automatic stepping sequence (Apollo 15 ALSEP, SMEAR 47).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors are being sampled in full sequence. On 24 October the lunar surface temperature was 302.1°K indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.2°K at its lowermost point. Ring bridge surveys are obtained periodically.
Solar wind spectrometer experiment	Commanded OFF 14 June 1974.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 18 October 1974, 1300 G.m.t., to 25 October 1974, 1300 G.m.t.

Central station	Sunrise of the 47th lunation at the Apollo 14 site occurred on 24 October. The 30-foot antenna tracking stations report a signal strength from transmitter A between -136.0 and -142.1 dbm. The DSS-1 heater (10 watts) will be commanded OFF for lunar day operations and data processor Y will be verified by command later today, 25 October.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). No significant seismic events were observed during the limited real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY (Apollo 14 ALSEP, SMEAR 86).
Suprathermal ion detector/cold cathode gauge experiment	The experiment is currently ON.
Charged particle lunar environmental experiment	The experiment is ON and operating in the manual mode at the -35 vdc range and automatic thermal control mode.

Apollo 12 ALSEP

Operational status from 18 October 1974, 1300 G.m.t., to 25 October 1974, 1300 G.m.t.

Central station	Sunrise of the 62nd lunar day occurred today, 25 October 1974 at the ALSEP site in the Ocean of Storms. A signal strength between -136.5 and -140.0 dbm from transmitter B was reported by the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) will be commanded OFF for lunar day operations later today, 25 October.
Passive seismic experiment	*The instrument is configured with thermal control, AUTO ON; component gains, 0 db; and feedback loop filter IN. On 16 October, the feedback loop filter was commanded to IN (octal 101) for a 30-day period at the Principal Investigator's request.* The sensor temperature (DL-07) has been offscale LOW since the start of real-time support period on 14 October. No significant seismic events were noted during the periodic real-time support periods of this instrument.
Solar wind spectrometer experiment	The instrument is ON and remains in the normal gain mode recording solar wind plasma data.
Suprathermal ion detector experiment	The SIDE is ON and in the full automatic stepping sequence with Channeltron high voltages ON. *At 1806 G.m.t., 20 October, the instrument experienced a spurious command (octal 053, STANDBY Power ON) placing the experiment in STANDBY as reported by the Ascension Tracking Station. On 21 October, the experiment was commanded back to ON (octal 052) at 1443 G.m.t. after numerous attempts by mission control. The internal temperature at 1443 G.m.t. was -22.12°C and returned to its normal lunar night reading of 4.83°C on 22 October.*
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Status as of 1600 G.m.t., 24 October 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1800	1357	1181	916
Total Commands to Date	21620	12574	25257	13328
Sun Angle	353.5°	359.4°	20.6°	32.4°
Input Power	61.3w	64.4w	67.4w	67.2w
Heater and Power Dumps	All ON	All ON	All OFF	All OFF
Experiment Status	LSM OFF	ASE STBY	LSM & SWS OFF	ASE OFF
Avg Thermal Plate Temp	10.9°F	21.1°F	66.8°F	76.3°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.1°F	126.1°F	125.9°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	38.3°C
SWS Module 300 Temp (DW-13)	-16.1°C	N/A	OFF	N/A
SIDE Temp (DI-05)	4.8°C	Invalid	45.7°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	331.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-23.3°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-71.1°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	298.8°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	681
Total Commands to Date	17803
Sun Angle	47.7°
Input Power	72.4w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LACE STBY/LEAM OFF
Avg Thermal Plate Temp	83.8°F
LACE Temp (AM-41)	122.7°F
LEAM Temp (AJ-11)	172.8°F
HFE Temp Ref 1 (DH-13)	316.8°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	87.0°F

ALSEP PERFORMANCE SUMMARY REPORT

1 November 1974
G.m.t.: 1300

Apollo 17 ALSEP

Noon of the scientific station's 24th lunation occurred on 28 October at the Taurus Littrow site. Downlink signal strength is reported between -135.0 and -140.1 dbm from transmitter B. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues 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. On 31 October the lunar surface temperature, as measured by the HFE thermocouples, was 348 ± 8°K. At a depth of 230 cm, the subsurface temperatures were 256.5°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, and the tilt servo motors in an intermediate position. The experiment sensor temperature is presently stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is in STANDBY. The next 4-day passive listening period is scheduled to begin later today, 1 November, and to terminate on 5 November.

The Lunar Atmospheric Composition Experiment is operating through this lunar day in STANDBY with the survival heater ON at the request of the Principal Investigator. The purpose of this operation during lunar day is to increase the temperature (bake-out) in the electronics section, and therefore the outgassing, in an attempt to correct the Multiplier High Voltage Power Supply problem which exists in the experiment (Apollo 17 ALSEP, SMEAR 70). The maximum temperature observed in the electronics temperature (AM-41) was 148.9°F at a sun angle of 96.2°.

The Lunar Ejecta and Meteorites Experiment is currently OFF. The LEAM will be commanded ON for the lunar night later today, 1 November.

It is requested that any organization having comments, questions, or suggestions concerning this report contact F. Heinz, Science Requirements Branch, TN3, telephone 713-333-3481.

Apollo 16 ALSEP

Operational status from 25 October 1974, 1300 G.m.t., to 1 November 1974, 1300 G.m.t.

Central station	Noon of the 32nd lunation occurred on 29 October 1974. The DSS-1 heater (10 watts) is OFF for lunar day operation. The 18-hour timer output pulses continue to be inhibited. The 30-foot antenna tracking stations report a signal strength between -133.5 and -141.0 dbm from transmitter B.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The instrument's sensor temperature (DL-07) indicated offscale HIGH at the beginning of real-time support on 27 October (sun angle 68.6°). It is predicted the temperature will return onscale on 4 November. No significant seismic events were noted during the periodic real-time support periods.
Lunar surface magnetometer experiment	The LSM is currently ON and recording data as the moon passes through the earth's geomagnetic tail and magnetopause. 862 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. *The instrument was commanded to high bit rate ON at 1515 G.m.t., 25 October, to verify operational status. Operation was satisfactory at this time. The check was performed per Apollo 16 ALSEP, SMEAR 27. A significant event was in progress during the operational check.*

Apollo 15 ALSEP

Operational status from 25 October 1974, 1300 G.m.t., to 1 November 1974, 1300 G.m.t.

Central station	Noon of the station's 41st lunation occurred on 30 October. Transmitter A downlink signal strength was reported at -137.5 ± 4.5 dbm from the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). *At 0643 G.m.t., 30 October, the PSE experienced a spurious functional change (Leveling Direction to Positive, octal 074) as verified in the ALSEP downlink by the Hawaii Tracking Station. As selected direction of leveling does not affect the normal operation of the instrument no corrective action was taken by mission control.* The instrument's uncage-arm fire circuitry has been cycling per the normal 18 hour timer output pulse functions. At the beginning of real-time support on 29 October it was noted that DL-07 (sensor temperature) was off-scale HIGH. It is predicted the temperature will return onscale on 2 November. No significant seismic events were noted during the periodic real-time support periods.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is currently in STANDBY. Automatic sequencing of the experiment will be initiated for the remainder of this lunation later today, 1 November (Apollo 15 ALSEP, SMEAR 47).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 367.4°K on 31 October as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.2°K at its lowermost point. Ring bridge surveys are obtained periodically.
Solar wind spectrometer experiment	Commanded OFF 14 June 1974.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 25 October 1974, 1300 G.m.t., to 1 November 1974, 1300 G.m.t.

Central station	Noon of the 47th lunation at the Apollo 14 site will occur later today 1 November. Transmitter A signal strength was reported between -136.0 and -143.5 dbm from the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) is OFF for lunar day operations.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in FORCED OFF for lunar day operation. No significant seismic events were noted during the periodic real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY. *The instrument was commanded to high bit rate ON, 25 October, to verify operational status. The output of geophones #2 and #3 appeared abnormal as had initially been observed on 3 January 1974. The status check was performed per Apollo 14 ALSEP, SMEAR 86.*
Suprathermal ion detector/cold cathode gauge experiment	The instrument has been in STANDBY since 0036 G.m.t., 25 October 1974.
Charged particle lunar environmental experiments	The CPLEE has been in STANDBY since 1526 G.m.t., 27 October 1974.

Apollo 12 ALSEP

Operational status from 25 October 1974, 1300 G.m.t., to 1 November 1974, 1300 G.m.t.

Central station	Noon of the 62nd lunar day will occur later today, 1 November. The DSS-1 heater (10 watts) is OFF for lunar day operations. A signal strength of -139.0 ± 3.0 dbm from transmitter B was reported by the 30-foot antenna tracking stations.
Passive seismic experiment	*The instrument is configured with thermal control, AUTO ON; component gains, 0 db; and feedback loop filter IN. On 16 October, the feedback loop filter was commanded to IN (octal 101) for a 30-day period at the Principal Investigator's request.* The sensor temperature (DL-07) had been offscale LOW between the real-time support periods of 14 and 25 October. No significant seismic events were noted during the periodic real-time support periods of this instrument.
Solar wind spectrometer experiment	The instrument is ON and in the normal gain mode recording solar wind plasma data.
Suprathermal ion detector experiment	The SIDE is currently OFF. The instrument was commanded OFF during real-time support on 26 October when the internal temperature was 39.9°C. Cyclic commanding of the instrument in the full automatic stepping sequence with Channeltron high voltages ON to experiment power OFF is in effect for this lunar day. *During real-time support on 29 and 30 October, the SIDE experienced unexpected mode changes to command register X10 at temperatures of 54.6°C and 57.4°C respectively. The mode changes were cleared by commanding the instrument to OFF for cooldown prior to the next support periods.*
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Status as of 1600 G.m.t., 31 October 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1807	1364	1188	923
Total Commands to Date	21773	12620	25365	13480
Sun Angle	78.6°	84.5°	105.7°	117.5°
Input Power	61.8w	64.5w	67.4w	67.2w
Heater and Power Dumps	All OFF	All OFF	All OFF	All OFF
Experiment Status	LSM/SIDE OFF	ASE/CPLEE/SIDE Stby	LSM/SWS OFF/SIDE Stby	ASE OFF
Avg Thermal Plate Temp	92.8°F	113.2°F	115.3°F	100.7°F
PSE Sensor Temp (DL-07)	137.7°F	134.7°F	Offscale HIGH	Offscale HIGH
LSM Internal Temp (DM-05)	OFF	N/A	OFF	43.5°C
SWS Module 300 Temp (DW-13)	67.9°C	N/A	OFF	N/A
SIDE Temp (DI-05)	OFF	Standby	Standby	N/A
CCGE Temp (DI-04)	OFF	Standby	Standby	N/A
CPLEE Elect Temp (AC-06)	N/A	Standby	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	330.8°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	688
Total Commands to Date	17963
Sun Angle	132.8°
Input Power	72.4w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LACE/LSPE Stby/LEAM OFF
Avg Thermal Plate Temp	90.2°F
LACE Temp (AM-41)	135.0°F
LEAM Temp (AJ-11)	189.5°F
HFE Temp Ref 1 (DH-13)	318.4°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	91.5°F

OCT 6/279	7/280	8/281	9/282	10/283	11/284	12/285
0800-1000 ALSEP 12 CYCLE SIDE ALSEP 16 POS Z 2200-2300 ALSEP 14 PSE HTR ON ALSEP 16 C/S HTR ON	0900-1100 ALSEP 16 ALSEP 12 CYCLE SIDE FLIP CAL HFE RBS	0900-1100 ALSEP 15 ALSEP 12 SIDE ON	0900-1100 ALSEP 14 C/S HTR ON SIDE ON CPLEE ON FLIP CAL HFE RBS	0500-0900 ALSEP 12 C/S HTR ON PSE Z MTR ON 2000-2100 ALSEP 12 PSE LEVEL	0900-1100 FLIP CAL HFE RBS	0900-1100 ALSEP 15 NEG X POS Y
OCT 13/286	14/287	15/288	16/289	17/290	18/291	19/292
NO SUPPORT	0900-1100 FLIP CAL HFE RBS	NO SUPPORT	0900-1100 FLIP CAL HFE RBS	NO SUPPORT	0900-1100 FLIP CAL HFE RBS	NO SUPPORT
OCT 20/293	21/294	22/295	23/296	24/297	25/298	26/299
NO SUPPORT ALSEP 17	0900-1100 ALSEP 16 FLIP CAL HFE RBS	0900-1100 ALSEP 15 TIMER RST ALSEP 16 TIMER RST C/S HTR OFF ALSEP 17 HBR ON	0900-1200 FLIP CAL HFE RBS ALSEP 17 HBR	0900-1100 ALSEP 14 ALSEP 17 LACE STDBY LEAM OFF HBR	0900-1300 ALSEP 12 C/S HTR OFF PSE Z MTR OFF ALSEP 14 C/S HTR OFF Y PROC CHK FLIP CAL HFE RBS ALSEP 17 HBR OFF 2000-2200	0900-1100 ALSEP 12 SIDE OFF

ALSEP PERFORMANCE SUMMARY REPORT

8 November 1974
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was not available during the following periods. It must be noted that these data losses are non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
A17	*3 Nov 74*	*0525/0536*	*11^m*	*AGO*	*Station Problem*
A16	*3 Nov 74*	*0525/0540*	*15^m*	*AGO*	*Station Problem*
A17	*3 Nov 74*	*0600/0656*	*56^m*	*QUI*	*Station Problem*

Apollo 17 ALSEP

Sunset of the scientific station's 24th lunation occurred on 4 November at the Taurus Littrow site. Downlink signal strength is reported at -139.0 ± 3.0 dbm from transmitter B. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues 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. On 7 November the lunar surface temperature, as measured by the HFE thermocouples was 114 ± 8°K. At a depth of 230 cm, the subsurface temperatures were 256.6°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. A 4-day passive listening period was begun at 1630 G.m.t., 1 November, to continue a study of meteoroid impacts and thermal moonquakes. Several significant events were noted during the real-time support periods when the LSP high bit rate was observed for one (1) hour. These events occurred during lunar day and night (Sun Angles 145.0° to 193.9°). The listening period was terminated at 1640 G.m.t., 5 November. The next 4-day passive listening period is planned for 12 to 16 December 1974.

The Lunar Atmospheric Composition Experiment is ON but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and backup heater, ON.

ALSEP PERFORMANCE SUMMARY REPORT (continued)

8 November 1974
G.m.t.: 1300

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface for the remainder of this lunation.

It is requested that any organization having comments, questions, or suggestions concerning this report contact F. Heinz, Science Requirements Branch TN3, telephone 713-333-3481.

Apollo 16 ALSEP

Operational status from 1300 G.m.t., 1 November 1974, to 1300 G.m.t., 8 November 1974

Central station	Sunset at the Descartes Site occurred on 5 November for the 32nd lunation. The DSS-1 heater (10 watts) was commanded ON at 0943 G.m.t., 4 November, for lunar night operations when the average thermal plate temperature decreased to 68.0°F. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B is reported at -136.5 ± 2.5 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). The instrument's assembly temperature (DL-07=140.7°F) returned on-scale, 5 November, at a sun angle of 177.7°. No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM is ON and recording data while emerging from the bow shock of the earth's geomagnetic tail. 868 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 1300 G.m.t., 1 November 1974, to 1300 G.m.t., 8 November 1974

Central station	Sunset of the station's 41st lunation occurred at the Hadley Rille Site on 6 November. Transmitter A downlink signal strength is reported at -134.5 ± 1.5 dbm by the tracking stations with 30-foot antennas.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. *Between the real-time support periods of 1 and 2 November, the PSE responded to a spurious command (octal 103, PSE Leveling Mode, FORCED). A CVW was not reported in the ALSEP downlink. During real-time support on 2 November, the PSE Leveling Mode status was commanded to AUTO (octal 103) by mission control at 2137 G.m.t.* No significant seismic events were observed during the limited real-time support periods.
Suprathermal ion detector/cold cathode gauge	The instrument is ON and operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames) since 1454 G.m.t., 1 November. *At 1330 G.m.t., 4 November, the Hawaii Tracking Station reported receiving an octal 107, SIDE MASTER RESET, in the ALSEP downlink. During real-time support, later 4 November, it was verified the instrument had a 008 loaded in the command register. Octals 104, 105, 106, and 107 were sent to the instrument and the command register was cleared at 2110 G.m.t., 4 November with octal 110 (execution command).*
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 99.8°K on 7 November, as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 250.1°K at its lowermost point. Ring bridge surveys are obtained periodically.
Solar wind spectrometer experiment	Commanded OFF 14 June 1974.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 1300 G.m.t., 1 November 1974, to 1300 G.m.t., 8 November 1974

Central station	Sunset at the Apollo 14 site occurred today, 8 November. Transmitter A signal strength was reported at -138.5 ± 1.5 dbm from the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) was commanded ON for lunar night operation at 1457 G.m.t., 7 November.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in AUTO ON for lunar night operations. No significant seismic events were observed during the periodic real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON at 1458 G.m.t., 7 November.
Charged particle lunar environment experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode since 1459 G.m.t., 7 November. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage, to 2280 vdc, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 1300 G.m.t., 1 November 1974, to 1300 G.m.t., 8 November 1974

Central station	Sunset of the 62nd lunation will occur later today, 8 November. The DSS-1 heater (10 watts) will be commanded ON for lunar night operation. A signal strength of -138.5 to -141.0 dbm from transmitter B was reported by the 30-foot antenna tracking stations.
Passive seismic experiment	*The instrument is configured with thermal control, AUTO ON; component gains, 0 db; and feedback loop filter IN. On 16 October, the feedback loop filter was commanded to IN (octal 101) for a 30-day period at the Principal Investigator's request.* The instrument's assembly temperature (DL-07) was offscale HIGH at the beginning of real-time support, 1 November, and returned onscale (DL-07=141.7°F, Sun Angle=162.9°) on 7 November. The Z-axis drive motor will be commanded ON, 8 November, to maximize heating in the instrument during lunar night. No significant seismic events were noted during the periodic real-time support periods.
Solar wind spectrometer experiment	The instrument remains in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is in the full automatic stepping sequence with Channeltron high voltages ON since 1506 G.m.t., 6 November. *During real-time support on 2 November the SIDE experienced an unexpected mode change to command register X10 at a temperature of 54.6°C. The mode change was cleared by commanding the instrument to OFF for cooldown prior to the next support period on 3 November.*
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Status as of 1600 G.m.t., 7 November 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1814	1371	1195	930
Total Commands to Date	21842	12669	25518	13643
Sun Angle	163.7°	169.6°	190.8°	202.6°
Input Power	61.8w	64.9w	68.4w	68.0w
Heater and Power Dumps	All OFF	All ON	All OFF	All ON
Experiment Status	LSM OFF	ASE Stdby	LSM/SWS OFF	ASE OFF
Avg Thermal Plate Temp	65.3°F	58.9°F	14.6°F	35.1°F
PSE Sensor Temp (DL-07)	141.7°F	125.2°F	124.8°F	126.0°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	-7.7°C
SWS Module 300 Temp (DW-13)	43.6°C	N/A	OFF	N/A
SIDE Temp (DI-05)	52.7°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	125.9°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-4.3°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	284.3°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	695
Total Commands to Date	18183
Sun Angle	217.9°
Input Power	74.4w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stdby
Avg Thermal Plate Temp	25.4°F
LACE Temp (AM-41)	4.9°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	284.1°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	27.8°F

ALSEP PERFORMANCE SUMMARY REPORT

15 November 1974
G.m.t.: 1300

November 19 will mark the completion of five full years of continuous operation by the Apollo 12 ALSEP science station on the lunar surface. The lunar scientific station will have exceeded by four years its original one year design life expectation. The Radioisotope Thermoelectric Generator has experienced an anticipated gradual degradation of 12.2 watts (2.44 watts per year). The signal strength from the transmitter has remained essentially constant since activation. The Passive Seismic, Solar Wind Spectrometer, and Suprathermal Ion Detector Experiments are operating and returning valid science data to the Earth. The Lunar Surface Magnetometer Experiment had been permanently deactivated on 14 June 1974. To date over 21935 commands have been transmitted to and executed by the central station and experiments. The Apollo 12 ALSEP will complete its 62nd lunation on the lunar surface with sunrise on 23 November 1974.

Remote site coverage for recording of ALSEP downlink data was not available during the following period. It must be noted that this data loss is non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
17	*9 Nov 74*	*0746/0748*	*02^{m}*	*BUR*	*Station Problem*

Apollo 17 ALSEP

Midnight of the scientific station's 24th lunation occurred on 11 November at the Taurus Littrow site. Downlink signal strength is reported between -139.0 and -145.5 dbm from transmitter B. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues 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. On 13 November lunar surface temperature, as measured by the HFE thermocouples was 108 ± 8°K. At a depth of 230 cm, the subsurface temperatures were 256.6°K at probe #1 and 256.9°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. The next 4-day passive listening period is planned for 12 to 16 December 1974.

15 November 1974
G.m.t.: 1300

The Lunar Atmospheric Composition Experiment is ON but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and backup heater, ON. *A sequence of operational commands were executed to the experiment during real-time support on 13 November. The LACE's telemetry data did not indicate any sign of change from previous operational checks (Multiplier High Voltage Power Supply, ON). The experiment was reconfigured to its lunar night operational mode.*

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface.

It is requested that any organization having comments, questions, or suggestions concerning this report contact F. Heinz, Science Requirements Branch TN3, telephone 713-333-3481.

Apollo 16 ALSEP

Operational status from 1300 G.m.t., 8 November 1974, to 1300 G.m.t., 15 November 1974

Central station	Midnight at the Descartes Site occurred on 13 November for the 32nd lunar night. The DSS-1 heater (10 watts) is ON for lunar night operations. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B is reported between -133.5 and -138.0 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM is ON. 874 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 1300 G.m.t., 8 November 1974, to 1300 G.m.t., 15 November 1974

Central station	Midnight of the station's 41st lunation occurred at the Hadley Rille Site on 14 November. Transmitter A downlink signal strength is reported at -135.5 ± 2.5 dbm by the tracking stations with 30-foot antennas.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. No significant seismic events were observed during the limited real-time support periods.
Suprathermal ion detector/cold cathode gauge	The instrument is ON and operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 88.0°K on 13 November, as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.1°K at its lowermost point. Ring bridge surveys are obtained periodically.
Solar wind spectrometer experiment	Commanded OFF 14 June 1974.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 1300 G.m.t., 8 November 1974, to 1300 G.m.t., 15 November 1974

Central station	Midnight at the Apollo 14 site will occur later today, 15 November, for the 47th lunation. Transmitter A signal strength was reported at -137.5 ± 2.5 dbm from the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) is ON for lunar night operation.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in AUTO ON for lunar night operations. No significant seismic events were observed during the periodic real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON since 7 November.
Charged particle lunar environment experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode since 7 November. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage, to 2280 vdc, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 1300 G.m.t., 8 November 1974, to 1300 G.m.t., 15 November 1974

Central station

Midnight of the 62nd lunation will occur on 16 November. The DSS-1 heater (10 watts) was commanded ON for lunar night operation on 9 November. A signal strength of -137.0 to -141.5 dbm from transmitter B was reported by the 30-foot antenna tracking stations.

Passive seismic experiment

The instrument is configured with thermal control, AUTO ON; component gains, 0 db; and feedback loop filter IN. At 1402 G.m.t., 16 October, the feedback loop filter was commanded to IN (octal 101) for a 30-day period at the Principal Investigator's request. The instrument's assembly temperature (DL-07) was offscale LOW at a sun angle of 236.3° on 13 November. The Z-axis drive motor was commanded ON, 9 November, to maximize heating in the instrument during lunar night. *During real-time support on 9 November the PSE long period X and Y axes failed to respond to calibration commands (octal 066). The long period Z calibration response was normal. The science data appeared normal, however the level appeared low. On 10 November, during real-time support, the calibration commands to the PSE responded normally on all axes. This anomaly had occurred once before on 11 September 1974.*

PSE heater checks were performed on 7, 8, and 9 November. The following table depicts the reserve power reading and delta for the heater condition noted:

DATE/TIME G.M.T.	*HEATER CONDITION*	*RESERVE POWER (W)*	*POWER DELTA (W)*
7 Nov/1600	*AUTO ON*	*33.87*	--
7 Nov/1605	*AUTO OFF*	*33.87*	*0*
7 Nov/1607	*FORCED ON*	*30.91*	*-2.96*
7 Nov/1609	*FORCED OFF*	*30.91*	*0*
7 Nov/1613	*AUTO ON*	*33.87*	*+2.96*
8 Nov/2341	*AUTO ON*	*35.03*	--
8 Nov/2343	*AUTO OFF*	*35.03*	*0*
8 Nov/2345	*FORCED ON*	*32.52*	*-2.51*
8 Nov/2348	*FORCED OFF*	*32.52*	*0*
8 Nov/2352	*AUTO ON*	*35.03*	*+2.51*
8 Nov/2357	*AUTO OFF*	*35.03*	*0*
9 Nov/0006	*FORCED ON*	*32.08*	*-2.95*
9 Nov/0009	*Z MOTOR ON*	*29.29*	*-2.79*
9 Nov/0012	*FORCED OFF*	*29.29*	*0*
9 Nov/0013	*AUTO ON*	*32.26*	*+2.97*

Operational status from 1300 G.m.t., 8 November 1974, to 1300 G.m.t., 15 November 1974

Passive seismic experiment	*From the delta powers observed in the above table it is evident that the heater is ON at all times. Analysis of the cause of this failure is in progress.* No significant seismic events were noted during the periodic real-time support periods.
Solar wind spectrometer experiment	The instrument remains in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is in the full automatic stepping sequence with Channeltron high voltages ON since 1506 G.m.t., 6 November. *On 10 and 11 November the SIDE experienced a reduction of high energy calibrations and data counts due to a loss of amplifier gain. During the support period on 13 November the data returned to normal. This is the second occurrence of the anomaly (3 and 4 September 1974).*
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Status as of 1600 G.m.t., 13 November 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1820	1377	1201	936
Total Commands to Date	21953	12703	25602	13690
Sun Angle	236.8°	242.8°	263.9°	275.8°
Input Power	61.3w *(61.7w)*	64.4w *(64.4w)*	67.9w *(68.4w)*	67.6w *(68.0w)*
Heater and Power Dumps	All ON	All ON	All OFF	All ON
Experiment Status	LSM OFF	ASE Stdby	LSM/SWS OFF	ASE OFF
Avg Thermal Plate Temp	11.9°F	21.9°F	11.6°F	31.6°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.1°F	124.6°F	125.9°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	-9.0°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	OFF	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	110.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.7°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-69.9°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	283.6°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	701
Total Commands to Date	18317
Sun Angle	291.0°
Input Power	74.4w *(74.4w)*
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stdby
Avg Thermal Plate Temp	24.0°F
LACE Temp (AM-41)	3.2°F
LEAM Temp (AJ-11)	-17.4°
HFE Temp Ref 1 (DH-13)	284.9°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	25.2°F

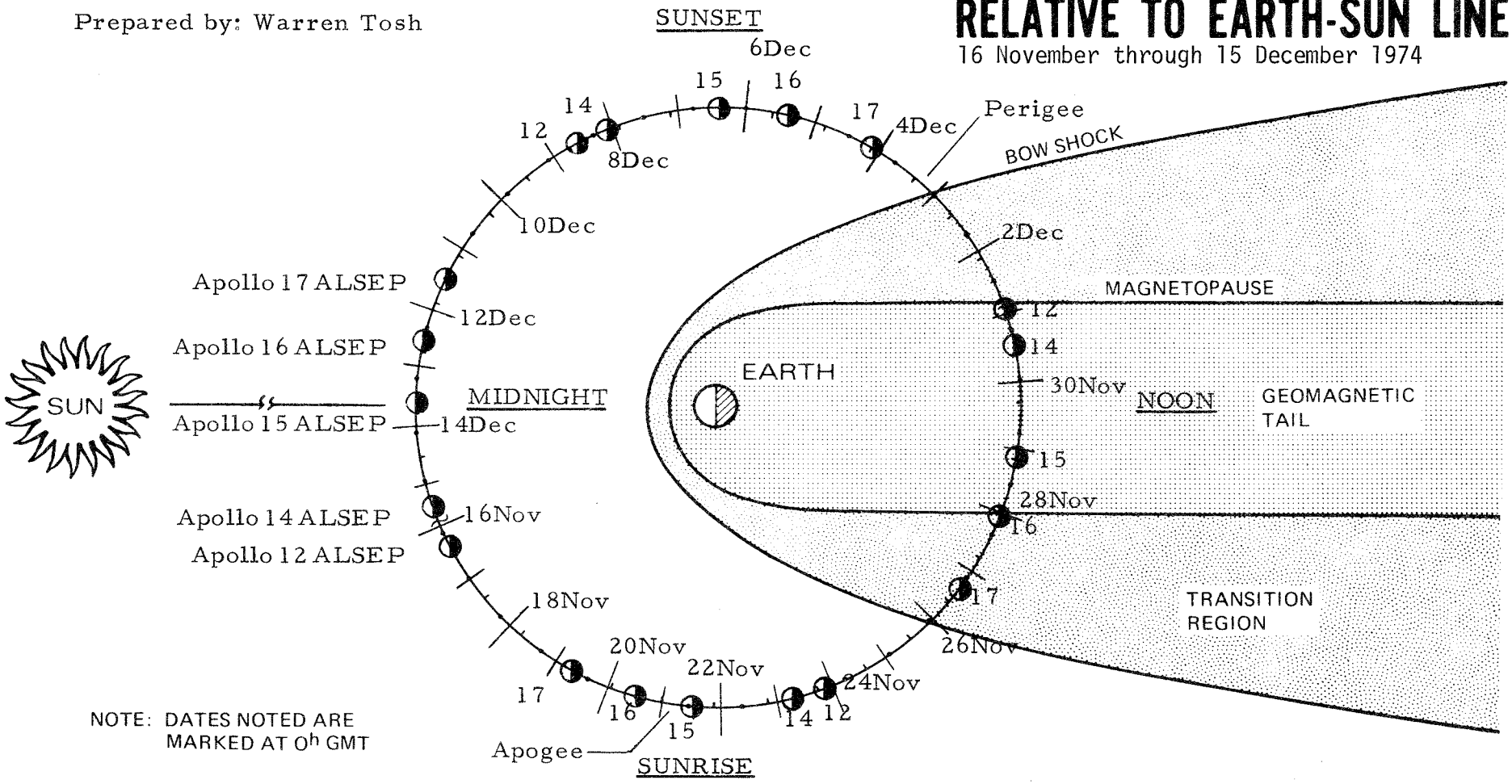
Value in parentheses indicates RTG output during last lunation at a similar sun angle.

Bendix Aerospace Systems Division

Prepared by: Warren Tosh

MOON POSITIONS RELATIVE TO EARTH-SUN LINE

16 November through 15 December 1974



NOTE: DATES NOTED ARE MARKED AT 0^h GMT

APOLLO (ALSEP)	DAY/HOUR (GMT)				
	Midnight	Sunrise	Lunation/Noon	Sunset	Midnight
17	11Nov/2238	19Nov/0745	(25)26Nov/1755	4Dec/0321	11Dec/1252
16	13Nov/0437	20Nov/1346	(33)27Nov/2330	5Dec/0928	12Dec/1853
15	14Nov/0357	21Nov/1309	(42)28Nov/2258	6Dec/0853	13Dec/1813
14	15Nov/2130	23Nov/0650	(48)30Nov/1642	8Dec/0233	15Dec/1148
12	16Nov/0909	23Nov/1844	(63) 1Dec/0427	8Dec/1318	15Dec/2328

ALSEP PERFORMANCE SUMMARY REPORT

22 November 1974
G.m.t.: 1300

Remote site coverage for recording of ALSEP downlink data was not available during the following period. It must be noted that this data loss is non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
14	*13 Nov 74*	*2059/2109*	*10^m*	*GWM*	*Station Problem*

Apollo 17 ALSEP

Sunrise of the scientific station's 25th lunation occurred on 19 November at the Taurus Littrow site. Downlink signal strength is reported between -138.0 and -142.0 dbm from transmitter B. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues 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. On 21 November the lunar surface temperature, as measured by the HFE thermocouples, was 198 ± 8°K. At a depth of 230 cm, the subsurface temperatures were 256.5°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. The next 4-day passive listening period is planned for 12 to 16 December 1974.

The Lunar Atmospheric Composition Experiment is ON but is not processing scientific data. *On 18 November, between 1158 G.m.t. and 1521 G.m.t., the experiment was turned OFF/ON to conduct a cold soak test. During the above time frame the electronics temperature (AM-41) decreased from -2.3°F to -31.3°F. The cold soak was accomplished at the Principal Investigator's request prior to initiating an operational check of the instrument. The LACE's telemetry data did not indicate any significant change from previous operational checks (Multiplier High Voltage Power Supply, ON).* The instrument was reconfigured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and backup heater, ON.

ALSEP PERFORMANCE SUMMARY REPORT (CONTINUED)

22 November 1974
G.m.t.: 1300

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface.

It is requested that any organization having comments, questions, or suggestions concerning this report contact F. Heinz, Science Requirements Branch TN3, telephone 713-333-3481.

Apollo 16 ALSEP

Operational status from 1300 G.m.t., 15 November 1974, to 1300 G.m.t., 22 November 1974

Central station	Sunrise at the Descartes Site occurred on 20 November for the 33rd lunar day. The DSS-1 heater (10 watts) was commanded OFF for lunar day operations on 21 November. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B is reported at -136.2 ± 2.7 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM continues in the full operational mode and all data have been valid since 17 August 1973. The instrument has accomplished 880 flip calibration sequences since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 1300 G.m.t., 15 November 1974, to 1300 G.m.t., 22 November 1974

Central station	Sunrise of the station's 42nd lunation occurred at the Hadley Rille Site on 21 November. Transmitter A downlink signal strength is reported at -135.7 ± 1.7 dbm by the tracking stations with 30-foot antennas. The 18-hour timer was reset (octal 150) at 1523 G.m.t., 21 November.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. No significant seismic events were observed during the limited real-time support periods.
Suprathermal ion detector/cold cathode gauge	The instrument is ON and operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 83.9°K on 21 November, as indicated by the cable thermocouples. The subsurface temperature was 253.6°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.0°K at its lowermost point. Ring bridge surveys are obtained periodically.
Solar wind spectrometer experiment	Commanded OFF 14 June 1974.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 1300 G.m.t., 15 November 1974, to 1300 G.m.t., 22 November 1974

Central station	Sunrise at the Apollo 14 site (48th lunation) will occur on 23 November 1974. Transmitter A signal strength was reported between -138.0 dbm and -143.0 dbm. The DSS-1 heater (10 watts) will be commanded OFF for lunar day operation on 24 November 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). No significant seismic events have been noted during this report period.
Active seismic experiment	The experiment is currently in STANDBY per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON for the remainder of this lunation. *At 2104 G.m.t., 17 November, the SIDE experienced a functional change from ON to STANDBY as reported by the Goldstone Tracking Station. The SIDE was re-initialized to the full automatic stepping sequence with Channeltron high voltages ON at 2329 G.m.t., 17 November, by Mode I command through the Hawaii Tracking Station.*
Charged particle lunar environmental experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode since 7 November. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage, to 2280 vdc, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 1300 G.m.t., 15 November 1974, to 1300 G.m.t., 22 November 1974

Central station	Sunrise of the 63rd lunar day will occur on 23 November 1974 at the ALSEP site in the Ocean of Storms. A signal strength of -139.2 ± 1.7 dbm from transmitter B was reported by the tracking stations. The DSS-1 heater (10 watts) will be commanded OFF for lunar day operations on 24 November.
Passive seismic experiment	*The instrument is configured with thermal control, AUTO ON; component gains, 0 db; and feedback loop filter IN. At 1402 G.m.t., 16 October, the feedback loop filter was commanded to IN (octal 101) and will remain IN indefinetly at the Principal Investigator's request.* The instrument's assembly temperature (DL-07) remains offscale LOW since 13 November, at a sun angle of 236.3°. The Z-axis drive motor is ON to maximize heating in the instrument during lunar night. Analysis of the PSE heater anomaly reported last week is continuing. No significant seismic events were noted during the periodic real-time support periods of this instrument.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is ON in the full automatic stepping sequence with Channeltron high voltages ON.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Status as of 1600 G.m.t., 21 November 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1828	1385	1209	944
Total Commands to Date	21965	12719	25676	13752
Sun Angle	334.4°	340.3°	1.4°	13.3°
Input Power	61.3w	63.9w	67.4w	67.6w
Heater and Power Dumps	All ON	All ON	All OFF	All OFF
Experiment Status	LSM OFF	ASE Stdby	LSM/SWS OFF	ASE OFF
Avg Thermal Plate Temp	10.4°F	20.5°F	10.4°F	69.0°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.1°F	124.2°F	126.3°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	26.5°C
SWS Module 300 Temp (DW-13)	-16.5°C	N/A	OFF	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	6.6°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	106.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-23.3°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-71.1°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	709
Total Commands to Date	18442
Sun Angle	28.5°
Input Power	71.9w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stdby
Avg Thermal Plate Temp	57.9°F
LACE Temp (AM-41)	112.3°F
LEAM Temp (AJ-11)	172.8°F
HFE Temp Ref 1 (DH-13)	302.3°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	57.9°F

TIMES - CST

ALSEP SUPPORT SCHEDULE/EVENTS

PSE CAL'S DAILY

OCT 27/300	28/301	29/302	30/303	31/304	NOV 1/305	2/306
0900-1100 ALSEP 12 CYCLE SIDE ALSEP 14 CPLEE STBY ALSEP 15 SIDE STBY ALSEP 16 NEG Z	0900-1100 ALSEP 12 & 15 CYCLE SIDES ALSEP 14 PSE HTR OFF ALSEP 16 NEG Z FLIP CAL HFE RBS	0000-0400 ALSEP 12 CYCLE SIDE ALSEP 15 SIDE SPRT ALSEP 16 NEG Z	0900-1100 ALSEP 12 & 15 CYCLE SIDES ALSEP 16 NEG Z FLIP CAL HFE RBS	0900-1100 ALSEP 12 & 15 CYCLE SIDES ALSEP 16 NEG Z	0900-1200 ALSEP 12 CYCLE SIDE ALSEP 15 SIDE ON ALSEP 17 LEAM ON HBR ON FLIP CAL HFE RBS	1600-1800 ALSEP 12 CYCLE SIDE ALSEP 16 POS Z ALSEP 17 HBR
NOV 3/307	4/308	5/309	6/310	7/311	8/312	9/313
1800-1900 ALSEP 12 CYCLE SIDE ALSEP 16 POS Z ALSEP 17 LACE ON HBR	0400-0700 ALSEP 17 HBR ALSEP 12 CYCLE SIDE ALSEP 16 C/S HTR ON POS Z FLIP CAL HFE RBS 1500-1600 ALSEP 16 POS Z	0000-0100 ALSEP 16 POS Z 0900-1200 ALSEP 12 CYCLE SIDE ALSEP 14 PSE HTR ON ALSEP 17 HBR OFF	0900-1100 ALSEP 15 ALSEP 12 CYCLE SIDE FLIP CAL HFE RBS	0900-1100 ALSEP 12 SIDE ON ALSEP 14 C/S HTR ON SIDE ON CPLEE ON	1800-2200 ALSEP 12 C/S HTR ON PSE Z MTR ON ALSEP 14 FLIP CAL HFE RBS	0900-1100
NOV 10/314	11/315	12/316	13/317	14/318	15/319	16/320
0900-1100 ALSEP 15 NEG X POS Y	0900-1100 FLIP CAL HFE RBS	NO SUPPORT	0900-1100 FLIP CAL HFE RBS	NO SUPPORT	0900-1100 FLIP CAL HFE RBS	NO SUPPORT

ALSEP PERFORMANCE SUMMARY REPORT

6 December 1974
G.m.t.: 1300

This report covers the period from 22 November to 6 December 1974.

A total eclipse of the Moon occurred on 29 November 1974. As the Moon passed through the Earth's shadow, all ALSEPs were in the umbral phase and experienced total darkness. This was the second occurrence of a total eclipse (first on 4/5 June 1974) of all ALSEPs at the same time. A real-time support period was conducted for this event.

Apollo 17 ALSEP

Sunset of the scientific station's 25th lunation occurred on 4 December at the Taurus Littrow site. Downlink signal strength is reported at -139.2 ± 2.7 dbm from transmitter B. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues 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. On 5 December, the lunar surface temperature, as measured by the HFE thermocouples was 119 ± 8°K. At a depth of 230 cm, the subsurface temperatures were 256.5°K at probe #1 and 256.8°K at probe #2. *During the lunar eclipse on 29 November 1974 the experiment was operated in the thermocouples only mode.*

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. The next 4-day passive listening period is planned for 12 to 16 December 1974.

The Lunar Atmospheric Composition Experiment is ON but it not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and backup heater, ON.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface for the remainder of this lunation. *During the lunar eclipse the LEAM was commanded ON at 1348 G.m.t., 29 November. The instrument operated normally throughout the period. The Mirror Temperature (AJ-11) experienced a temperature change from 196.5°F to 122.9°F. The LEAM was commanded OFF at 1821 G.m.t., 29 November, for lunar day operation.*

6 December 1974
G.m.t.: 1300

It is requested that any organization having comments, questions, or suggestions concerning this report contact F. Heinz, Science Requirements Branch TN3, telephone 713-333-3481.

Apollo 16 ALSEP

Operational status from 1300 G.m.t., 22 November 1974, to 1300 G.m.t., 06 December 1974

Central station	Sunset at the Descartes Site occurred on 5 December for the 33rd lunation. The DSS-1 heater (10 watts) was commanded ON at 2141 G.m.t., 4 December, for lunar night operations when the average thermal plate temperature decreased to 51.1°F. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B is reported at -137.5 ± 2.5 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gain, 0 db; and feedback loop filter OUT). The instrument's assembly temperature (DL-07 = 138.5°F) returned onscale, 5 December, at a sun angle of 178.1°. No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM is ON and recording data while emerging from the bow shock of the earth's geomagnetic tail. 890 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. *The instrument was commanded to high bit rate ON at 1000 G.m.t., 24 November, to verify operational status. Operation was satisfactory at this time. The check was performed per Apollo 16 ALSEP, SMEAR 27.*

Apollo 15 ALSEP

Operational status from 1300 G.m.t., 22 November 1974, to 1300 G.m.t., 06 December 1974

Central station

Sunset of the station's 42nd lunation occurred at the Hadley Rille Site today. Transmitter A downlink signal strength is reported at -136.5 ± 3.5 dbm by the tracking stations with 30-foot antennas. *At 2208 G.m.t., 1 December, and at 0845 G.m.t., 3 December, the Ascension Tracking Station observed a CVW in the downlink signal (octal 017) 5 watt heater ON. The heater was commanded OFF (octal 021) on both occurrences at 2249 G.m.t., 1 December and at 0908 G.m.t., 3 December by the tracking station.*

Passive seismic experiment

The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage-arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. At the start of real-time support on 28 November the instrument's sensor temperature (DL-07) was offscale HIGH (sun angle = 77.4°). At the beginning of real-time support on 3 December it was noted that the PSE sensor temperature had returned onscale (DL-07 = 134.8°F, sun angle 140.0°). *At 1923 G.m.t., 4 December, the PSE responded to a spurious command (octal 063, long period XY-axis sensor gain indicated -10db) as observed by the Hawaii Tracking Station. During real-time support at 2152 G.m.t., 4 December, the long period XY-axis sensor gain was commanded back to the 0 db gain (3-octal 063s) by mission control.* No significant seismic events were observed during the limited real-time support periods.

Suprathermal ion detector/cold cathode gauge

The instrument is ON and operating with the Channeltron high voltages commanded ON and in the full automatic stepping sequence (0-127 frames). During the period from 26 November through 01 December 1974, sequencing ON/OFF of the experiment was in effect for the lunar day time (Apollo 15 ALSEP, SMEAR 47).

Heat flow experiment

The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 276.5°K on 5 December, as indicated by the cable thermocouples. The subsurface temperature was 253.6°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 298.4°K at its lowermost point. Ring bridge surveys are obtained periodically. *At 0708 G.m.t., 26 November, the Goldstone Tracking Station observed a CVW in the downlink signal (octal 136) Low Conductivity Mode of the HFE. During real-time support this spurious functional change was verified and at 1503 G.m.t., 26 November, the experiment was commanded back to the full sequence mode (octal 141). During the lunar eclipse on 29 November 1974 the experiment was operated in the thermocouples only mode.*

Solar wind spectrometer experiment	Commanded OFF 14 June 1974.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 1300 G.m.t., 22 November 1974, to 1300 G.m.t., 06 December 1974

Central station

Noon at the Apollo 14 site (48th lunation) occurred on 30 November 1974. Transmitter A signal strength was reported between -138.0 dbm and -145.0 dbm by the 30 foot antenna stations. The DSS-1 heater (10 watts) was commanded OFF for lunar day operation on 24 November 1974. The Y processor was verified during real-time support 24 November.

Passive seismic experiment

The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). During this reporting period the instrument's heater was operated in the FORCED OFF mode from 27 November through 4 December, to minimize heating during the lunar day operations. *At the beginning of real-time support on 27 November it was observed that the short period z-axis sensor gain indicated -10 db. Review of the ALSEP downlink indicated no command verification word (octal 067). Therefore, this spurious functional change occurred between real-time support periods on 26 November and 27 November. The z-axis sensor gain was commanded back to 0 db gain without incident at 2001 G.m.t., 27 November. A spurious functional command (Calibration SP OFF, octal 065) was executed by the PSE on 29 November during real-time support. The Calibration SP was returned to OFF (octal 065) at 1443 G.m.t., 29 November.* No significant seismic events have been noted during this report period.

Active seismic experiment

The experiment is currently in STANDBY. *The instrument was commanded to high bit rate ON, 24 November, to verify operational status. The output of geophones #2 and #3 appeared abnormal as had initially been observed on 3 January 1974. The status check was performed per Apollo 14 ALSEP, SMEAR 86.*

Suprathermal ion detector/cold cathode gauge experiment

The instrument has been in STANDBY since 1228 G.m.t., 23 November 1974. *At 1837 G.m.t., 21 November, the Mila Tracking Station observed that the SIDE Word 15 was static. Seventeen commands were executed before Word 15 remained dynamic at 2303 G.m.t., 21 November, for forty-four minutes. An additional forty-one commands were executed before Word 15 was dynamic at 0127 G.m.t., 22 November. Sixty-two more commands were transmitted when Word 15 was static from 1704 G.m.t. to 2001 G.m.t., 22 November. Word 15 again went static at 1228 G.m.t., 23 November and was left in this condition until the eclipse on 29 November. Seventy-two commands were transmitted from 1311 G.m.t. to 1624 G.m.t., 29 November without success. The SIDE would not turn ON during the Lunar Eclipse.*

Charged particle lunar environmental experiments

The CPLEE has been in STANDBY since 1528 G.m.t., 25 November 1974. *The experiment was commanded ON from 1259 to 1812 G.m.t., 29 November, for the lunar eclipse. Following the eclipse the instrument was commanded back to STANDBY for the remainder of this lunar day.*

Apollo 12 ALSEP

Operational status from 1300 G.m.t., 22 November 1974, to 1300 G.m.t., 06 December 1974

Central station

Noon of the 63rd lunation occurred 1 December 1974 at the ALSEP site in the Ocean of Storms. A signal strength of -140.5 ± 3.5 dbm from transmitter B was reported by the 30 foot antenna tracking stations. The DSS-1 heater (10 watts) was commanded OFF for lunar day operations on 24 November 1974.

Passive seismic experiment

The instrument is configured with thermal control, AUTO ON; component gains, 0 db; and feedback loop filter IN and will remain IN indefinitely at the Principal Investigator's request. The instrument's assembly temperature (DL-07) remains offscale HIGH since the start of real-time support on 1 December, at a sun angle of 95°. No significant seismic events were noted during the periodic real-time support periods of this instrument.

Solar wind spectrometer experiment

The instrument is currently in the normal gain mode and is recording solar wind plasma data. The experiment was operated in the extended range mode due to observation of high particle counts from 1510 G.m.t., 25 November to 1532 G.m.t., 26 November.

Suprathermal ion detector experiment

The SIDE is currently OFF. The instrument was commanded OFF during real-time support on 25 November when the internal temperature was 51.8°C. Cyclic commanding of the instrument in the full automatic stepping sequence with Channeltron high voltages ON to experiment power OFF is in effect for this lunar day. *At 2308 G.m.t., 26 November, the Ascension Tracking Station reported a spurious CVW Experiment Power ON (octal 052), in the ALSEP downlink. During real-time support on 27 November, it was verified that this spurious command had functioned. The following conditions were observed prior to commanding the experiment OFF at 2216 G.m.t., 27 November for cooldown:*

1. *Electronics Temperature (T2) 76.8°C.*
2. *Mode Register contained a 007 (X10 mode), however the experiment was in full sequence.*
3. *The ground plane stepper was OFF.*
4. *The low energy curve plate analyzer (LECPA) was OFF.*
5. *All high voltages were OFF.*

On 29 November the SIDE was commanded ON at 1150 G.m.t. for operation during the lunar eclipse. Three (3) X10 modes were experienced prior to the passage of the station through the umbral phase of the eclipse. The experiment was turned OFF on each occurrence and the maximum temperature (T2) attained was 59.4°C. No further difficulties were encountered and the SIDE was commanded OFF at 1811 G.m.t. at the end of the eclipse support period. At 1450 G.m.t., 30 November, at a (T2) tempera-

Suprathermal ion detector experiment (continued)	*ture of 53.7°C, the SIDE again experienced an unexpected mode change to X10 and was commanded OFF.* *During real-time support at 0138 G.m.t., 3 December, the SIDE was commanded ON and it was noted that the High Energy calibrations were not functioning, however the High Energy data counts appeared normal. At 0156 G.m.t., after 18 minutes of operation the experiment was commanded OFF (T2 = 52.8°C). At 1740 G.m.t., 3 December the SIDE was again commanded ON, electronics temperature (T2 = 50.0°C), the High Energy calibrations and data were normal throughout this real-time support period. The experiment was commanded OFF (T2 = 54.6°C) at 1904 G.m.t., 3 December, for normal daytime cyclic operation.*
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Status as of 1600 G.m.t., 5 December 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1842	1399	1223	958
Total Commands to Date	22214	13064	25931	14058
Sun Angle	144.4°	150.3°	171.5°	183.3°
Input Power	61.4w	64.8w	67.4w	68.0w
Heater and Power Dumps	All OFF	All OFF	All OFF	All ON
Experiment Status	LSM OFF	SIDE/CPLEE/ASE Stdby	LSM/SWS OFF	ASE OFF
Avg Thermal Plate Temp	81.8°F	81.8°F	69.8°F	46.3°F
PSE Sensor Temp (DL-07)	Offscale HIGH	126.1°F	125.4°F	126.6°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	10.5°C
SWS Module 300 Temp (DW-13)	57.5°C	N/A	OFF	N/A
SIDE Temp (DI-05)	OFF	Stdby	54.6°C	N/A
CCGE Temp (DI-04)	OFF	Stdby	294.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	Stdby	N/A	N/A
ASE GLA Temp (AS-03)	N/A	78.8°C	N/A	OFF
HFE Temp Ref 1 (DH-13)	N/A	N/A	298.4°K	OFF

TM POINT	APOLLO 17 ALSEP
Total Days of Operation	723
Total Commands to Date	18798
Sun Angle	198.5°
Input Power	74.4w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stdby
Avg Thermal Plate Temp	26.7°F
LACE Temp (AM-41)	1.4°F
LEAM Temp (AJ-11)	-14.0°K
HFE Temp Ref 1 (DH-13)	284.7°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	29.1°F

ALSEP PERFORMANCE SUMMARY REPORT

13 December 1974
G.m.t.: 1300

12 December marked the completion of two full years of continuous operation by the Apollo 17 ALSEP science station on the lunar surface. The lunar scientific station has completed the two years of its original design life expectation. The Radioisotope Thermoelectric Generator has experienced gradual degradation of 3.9 watts (1.95 watts per year). The signal strength from the transmitters has remained essentially constant since activation. The Lunar Seismic Profiling, Heat Flow, Lunar Ejecta and Meteorite, and Lunar Surface Gravimeter Experiments are operating and returning valid science data to the Earth. The Lunar Atmospheric Composition Experiment has not returned valid data since 17 October 1973. To date over 18980 commands have been transmitted to and executed by the central station and experiments. The Apollo 17 ALSEP will complete its 25th lunation on the lunar surface with sunrise on 18 December 1974.

Remote site coverage for recording of ALSEP downlink data was not available during the following periods. It must be noted that these data losses are non-recoverable.

ALSEP	*DATE*	*G.m.t.*	*LOSS*	*SITE*	*REMARKS*
15	*23-24 Oct 74*	*2059/0005*	*03^h06^m*	*AGO*	*Station Problem*
12 to 17	*10 Oct 74*	*0000/0507*	*05^h07^m*	*N/A*	*HELIOS Launch*
15	*11 Oct 74*	*0006/0011*	*05^m*	*GWM*	*Station Problem*
15	*11 Oct 74*	*0019/0023*	*04^m*	*GWM*	*Station Problem*
12 to 17	*11 Oct 74*	*0605/0610*	*05^m*	*TAN*	*Station Problem*

Apollo 17 ALSEP

Midnight of the scientific station's 25th lunation occurred on 11 December at the Taurus Littrow site. *Downlink signal strength was reported between -142.0 and -148.5 dbm from transmitter B and after 1532 G.m.t., 9 December 1974, at -142.0 ± 2.0 dbm from transmitter A. At the decision of mission control transmitters were switched from B to A on 9 December. On 6 December tracking stations (Ascension and Canary) with 30-foot antennas were experiencing sporadic data drops on the Apollo 17 ALSEP. The signal strength from transmitter B was -146.0 to -148.5 dbm during the dropouts. The drops were for a few seconds at a time and were not of sufficient duration to warrant data loss reports. It must be noted that the drops occurred at possibly the worst lunar libration pattern for antenna pointing this lunation. After the switch to transmitter A a gain of 2 dbm (-142.0 to -140.0 dbm) in signal strength was realized on 9 December.* Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues during real-time support periods.

ALSEP PERFORMANCE SUMMARY REPORT (continued)

13 December 1974
G.m.t.: 1300

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. On 12 December lunar surface temperature, as measured by the HFE thermocouples, was 108 ± 8°K. At a depth of 230 cm, the subsurface temperatures were 256.6°K at probe #1 and 256.8°K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2°C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently ON. A 4-day passive listening period was begun at 1545 G.m.t., 12 December, to continue a study of meteoroid impacts and thermal moonquakes. No significant events were noted during the real-time support period when the LSP high bit rate was observed for one (1) hour. This listening period is during lunar night (Sun Angles 283.0° to 332.0°) and will be terminated on 16 December 1974. The next 4-day passive listening period is planned for sun angles 331.0° - 024° at a yet to be determined date.

The Lunar Atmospheric Composition Experiment is ON but is not processing scientific data. The instrument is configured to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and backup heater, ON.

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface.

It is requested that any organization having comments, questions, or suggestions concerning this report contact F. Heinz, Science Requirements Branch TN3, telephone 713-333-3481.

Apollo 16 ALSEP

Operational status from 1300 G.m.t., 6 December 1974, to 1300 G.m.t., 13 December 1974

Central station	Midnight at the Descartes Site occurred on 12 December for the 33rd lunar night. The DSS-1 heater (10 watts) is ON for lunar night operations. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B is reported between -134.0 and -138.5 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM is ON. 896 flip calibration sequences have been executed and verified by the experiment's engineering data since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 1300 G.m.t., 6 December 1974, to 1300 G.m.t., 13 December 1974

Central station	Midnight of the station's 42nd lunation will occur later today at the Hadley Rille Site. Transmitter A downlink signal strength is reported at -135.5 ± 2.5 dbm by the tracking stations with 30-foot antennas.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. No significant seismic events were observed during the limited real-time support periods.
Suprathermal ion detector/cold cathode gauge	The instrument is ON and operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 88.6°K on 12 December, as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.1°K at its lowermost point. Ring bridge surveys are obtained periodically.
Solar wind spectrometer experiment	Commanded OFF 14 June 1974.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 1300 G.m.t., 6 December 1974, to 1300 G.m.t., 13 December 1974

Central station	Sunset at the Apollo 14 site occurred on 8 December for the 48th lunation. Transmitter A signal strength was reported at -137.5 ± 2.5 dbm from the 30-foot antenna tracking stations. The DSS-1 heater (10 watts) has been ON for lunar night operations since 1434 G.m.t., 7 December.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The instrument's heater is in AUTO ON for lunar night operations. No significant seismic events were observed during the periodic real-time support periods.
Active seismic experiment	The experiment is currently in STANDBY. Present operations are per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is operating in the full automatic stepping sequence with Channeltron high voltages commanded ON. *Beginning at 1536 G.m.t., 7 December, numerous commands (249) were transmitted to the SIDE in an effort to turn it ON for lunar night operation. Attempts were also made by the Hawaii (25), Guam (31) and Canary (4) Tracking Stations before the SIDE remained ON at 0703 G.m.t., 8 December.*
Charged particle lunar environment experiment	The experiment is operating in the manual mode at the -35 vdc range and automatic thermal control mode since 1435 G.m.t., 7 December. It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage, to 2280 vdc, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 1300 G.m.t., 6 December 1974, to 1300 G.m.t., 13 December 1974

Central station	Sunset of the 63rd lunation occurred on 8 December. The DSS-1 heater (10 watts) was commanded ON for lunar night operation on 8 December. A signal strength of -140.5 ± 2.5 dbm from transmitter B was reported by the 30-foot antenna tracking stations.
Passive seismic experiment	*The instrument is configured with thermal control, AUTO ON; component gains, 0 db; and feedback loop filter IN. At 1402 G.m.t., 16 October, the feedback loop filter was commanded to IN (octal 101) for an indefinite period at the Principal Investigator's request.* The instrument's assembly temperature (DL-07) was offscale LOW at a sun angle of 229.0° on 12 December. The Z-axis drive motor was commanded ON, 8 December, to maximize heating in the instrument during lunar night. *At 0729 G.m.t., 11 December, the PSE responded to a spurious command (octal 072, leveling power Z motor OFF) as observed by the Madrid Tracking Station. The Z motor leveling power was turned ON at 0820 G.m.t., 11 December, by Mode I command through the Ascension Tracking Station.* No significant seismic events were noted during the real-time support periods.
Solar wind spectrometer experiment	The instrument remains in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is in the full automatic stepping sequence with Channeltron high voltages ON since 1449 G.m.t., 6 December.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Status as of 1500 G.m.t., 12 December 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1849	1406	1230	965
Total Commands to Date	22330	13427	26058	14158
Sun Angle	229.1°	235.0°	256.2°	268.0°
Input Power	61.3w *(61.3w)*	64.0w *(64.4w)*	67.4w *(67.9w)*	67.5w *(67.6w)*
Heater and Power Dumps	All ON	All ON	All OFF	All ON
Experiment Status	LSM OFF	ASE Stdby	LSM/SWS OFF	ASE OFF
Avg Thermal Plate Temp	11.9°F	21.4°F	11.0°F	33.6°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.1°F	124.6°F	125.9°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	-9.0°C
SWS Module 300 Temp (DW-13)	-15.2°C	N/A	OFF	N/A
SIDE Temp (DI-05)	4.3°C	Invalid	7.2°C	N/A
CCGE Temp (DI-04)	HIGH	Invalid	110.3°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.7°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-69.5°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	730
Total Commands to Date	18980
Sun Angle	283.3°
Input Power	74.4w *(74.4w)*
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	All ON
Avg Thermal Plate Temp	22.9°F
LACE Temp (AM-41)	-2.3°F
LEAM Temp (AJ-11)	-17.4°
HFE Temp Ref 1 (DH-13)	286.1°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	24.0°F

Value in parentheses indicates RTG output during last lunation at a similar sun angle.

NOVEMBER 29, 1974

LUNAR EVENTS

	CST	GMT
Moon enters penumbra	0626	1226
Moon enters umbra	0729	1329
Middle of eclipse	0914	1514
Moon exits umbra	1059	1659
Moon exits penumbra	1202	1802
Duration of eclipse (hrs + mins)	5+36	
Magnitude of eclipse	(1.295)	

ALSEP EVENTS (CST - TIMES APPROXIMATE)

	1	4	3	2	5
ALSEP enters penumbra	0644	0647	0659	0704	0716
ALSEP enters umbra	0747	0751	0800	0810	0819
ALSEP middle of eclipse	0902	0906	0918	0919	0931
ALSEP exits umbra	1014	1018	1033	1020	1038
ALSEP exits penumbra	1116	1120	1135	1125	1143
Penumbral duration (hrs + mins)	4+32	4+33	4+36	4+21	4+27
Umbral duration (hrs + mins)	2+27	2+27	2+33	2+10	2+19

LUNAR ECLIPSE DATA - 29 NOVEMBER 1974

Apollo 12 ALSEP

Time G.m.t.

Parameter	1252	1412	1457	1618	1812
CS1 (w)	61.38	64.37	63.06	62.21	60.96
CS2 (w)	28.48	35.76	31.18	30.64	35.22
AT01 °F	190.9	-13.0	-81.7	-143.2	182.4
AT02 °F	190.9	-7.8	-79.2	-143.2	182.4
AT08 °F	202.1	61.9	21.3	-18.2	157.0
AT09 °F	83.9	34.7	5.4	-31.1	37.4
AVG TH PL °F	94.64	82.34	73.10	57.48	62.82
PSE DL07 °F	135.20	135.27	134.82	133.38	131.23
SWS MOD 100 °C	65.23	60.86	55.86	46.53	43.58
SWS MOD 200 °C	62.58	56.68	51.88	42.86	42.13
SWS MOD 300 °C	66.14	60.86	56.68	47.28	45.05
SWS SNSR °C	67.90	13.87	-13.46	-46.41	38.79
SIDE T2 °C	56.51	59.43	55.55	48.28	44.02

LSM OFF

Apollo 14 ALSEP

Time G.m.t.

Parameter	1252	1358	1555	1628	1810
CS1 (w)	64.06	67.57	65.38	64.94	63.63
CS2 (w)	39.38	39.86	38.57	38.57	37.21
AT01 °F	207.7	32.0	-128.6	-143.2	199.3
AT02 °F	207.7	37.4	-126.1	-143.2	199.3
AT08 °F	188.1	92.3	-5.1	-18.2	134.3
AT09 °F	128.7	83.9	0.1	-10.4	72.9
AVG TH PL °F	114.74	105.84	82.36	76.78	81.68
PSE DL07 °F	134.56	134.50	132.34	131.58	128.46
CPLEE AC-5 °C	64.08	42.26	13.13	3.40	38.94
CPLEE AC-6 °C	63.28	56.15	30.06	21.74	33.61
ASE AS02 °C	79.9	79.9	61.8	55.3	46.2
ASE AS03 °C	77.2	75.7	66.9	62.9	61.6
ASE AS04 °C	69.2	52.3	21.5	14.4	39.5

SIDE OFF

LUNAR ECLIPSE DATA - 29 NOVEMBER 1974

Apollo 15 ALSEP

Time G.m.t.

Parameter	1140	1412	1519	1623	1730
CS1 (w)	66.95	70.84	69.43	68.93	65.05
CS2 (w)	30.93	29.97	30.65	27.86	24.79
AT01 °F	159.8	40.1	-76.7	-126.1	59.1
AT02 °F	190.9	56.4	-71.7	-121.2	72.9
AT08 °F	106.2	56.4	10.7	-18.2	13.3
AT09 °F	137.2	72.9	16.0	-13.0	61.9
AVG TH PL °F	116.5	108.60	94.90	80.12	81.80
PSE DL07 °F	H	H	H	H	142.43
SIDE/CCIG °K	372.57	347.41	249.50	261.41	255.23
SIDE T2 °C	64.53	72.17	69.92	64.53	62.45
HFE TREF1 °K	332.183	322.555	304.096	291.965	292.199
HFE TC12 °K	359.704	228.078	157.691	145.038	187.521
HFE TC22 °K	370.735	228.060	159.776	147.674	192.622

SWS and LSM OFF

Apollo 16 ALSEP

Time G.m.t.

Parameter	1211	1520	1633	1806
CS1 (w)	67.55	69.10	68.62	65.83
CS2 (w)	35.68	37.59	37.33	34.97
AT01 °F	188.1	-71.7	-126.1	137.2
AT02 °F	176.8	-74.2	-126.1	125.9
AT08 °F	171.1	5.4	-25.9	117.4
AT09 °F	83.9	16.0	-13.0	21.3
AVG TH PL °F	99.4	80.12	73.56	73.44
PSE DL07 °F	H	H	H	H
LSM X-axis °C	81.72	60.59	42.59	33.92
LSM Y-axis °C	81.72	60.59	42.59	34.64
LSM Z-axis °C	83.90	63.54	45.36	36.11
LSM BASE °C	40.03	31.14	24.52	21.89
LSM INTRNL °C	47.01	39.29	33.67	29.52

ASE and HFE OFF

LUNAR ECLIPSE DATA - 29 NOVEMBER 1974

Apollo 17 ALSEP

Time G.m.t.

Parameter	1340	1417	1532	1702	1731	1821
CS36 (w)	72.79	75.64	75.21	73.93	71.53	71.53
CS61 (w)	38.25	36.95	35.22	34.06	32.49	37.09
CS63 (w)	M	25.68	25.68	25.91	25.91	25.68
AT01 °F	179.6	75.6	-64.2	-104.0	10.7	157.0
AT02 °F	254.5	70.1	-69.2	-104.0	13.3	157.0
AT08 °F	97.8	75.6	18.6	-18.2	-7.8	37.4
AT09 °F	196.5	117.4	29.3	8.0	83.9	165.4
AVG TH PL °F	143.0	89.4	75.8	59.2	57.3	58.9
LSG DG04 °C	49.199	49.199	49.199	49.199	49.199	49.199
HFE TREF1 °K	322.655	316.639	300.515	289.010	292.520	M
HFE TREF2 °K	322.571	316.844	300.318	289.116	292.662	295.869
HFE TC12 °K	346.014	238.296	160.444	208.836	359.716	M
HFE TC22 °K	347.003	242.945	159.137	214.692	362.438	363.606
LACE AM41 °F	M	134.2	114.8	97.6	97.6	102.2
LEAM AJ06 °F	156.5	151.5	136.5	112.5	110.1	OFF
LEAM AJ07 °F	156.5	154.0	139.5	117.0	115.5	OFF
LEAM AJ08 °F	166.5	159.0	141.0	118.5	118.5	OFF
LEAM AJ09 °F	185.6	181.4	164.0	139.5	136.5	OFF
LEAM AJ11 °F	196.0	186.5	155.5	123.7	122.9	137.7
LSP AP01 °F	96.0	90.9	77.5	60.5	58.7	59.6

LACE OFF, LSPE STANDBY

TIMES - CST

ALSEP SUPPORT SCHEDULE/EVENTS

PSE CALS DAILY

NOV 17/327	18/322	19/323	20/324	21/325	22/326	23/327
NO SUPPORT	0900-1100 FLIP CAL HFE RBS	NO SUPPORT ALSEP 17	0900-1100 ALSEP 16 AUTO 3X FLIP CAL HFE RBS	0900-1100 ALSEP 15 TIMER RST ALSEP 16 C/S HTR OFF TIMER RST	0900-1100 ALSEP 17 LACE STBY LEAM OFF FLIP CAL HFE RBS	0800-1000 ALSEP 12 ALSEP 14 2300-2400
NOV 24/328	**25/329**	**26/330**	**27/331**	**28/332**	**29/333**	**30/334**
0000-0300 ALSEP 12 C/S HTR OFF PSE Z MTR OFF ALSEP 14 C/S HTR OFF Y PROC CHK ASE CHK ALSEP 16 ASE CHK NEG Z 1500-1600 ALSEP 16 - NEG Z	0900-1100 ALSEP 12 SIDE OFF ALSEP 14 CPLEE STBY ALSEP 16 NEG Z FLIP CAL HFE RBS	0900-1100 ALSEP 12 CYCLE SIDE ALSEP 15 SIDE STBY ALSEP 16 NEG Z	1700-2100 ALSEP 12 CYCLE SIDE ALSEP 14 PSE HTR OFF ALSEP 15 SIDE SPRT ALSEP 16 NEG Z FLIP CAL HFE RBS	NO SUPPORT	0600-1230 TOTAL ECLIPSE ALSEP 12 & 15 CYCLE SIDES FLIP CAL HFE RBS	0900-1100 ALSEP 12 & 15 CYCLE SIDES ALSEP 17 LEAM ON
DEC 1/335	**2/336**	**3/337**	**4/338**	**5/339**	**6/340**	**7/341**
0900-1100 ALSEP 12 CYCLE SIDE ALSEP 15 SIDE ON ALSEP 16 POS Z	2000-2200 ALSEP 12 CYCLE SIDE ALSEP 16 POS Z FLIP CAL HFE RBS	1200-1400 ALSEP 17 LACE ON ALSEP 12 CYCLE SIDE ALSEP 16 POS Z 2200-2300 ALSEP 16 POS Z	0700-0800 ALSEP 16 POS Z 1600-1700 ALSEP 14 PSE HTR ON ALSEP 16 C/S HTR ON POS Z FLIP CAL HFE RBS	0000-0100 ALSEP 16 POS Z 0900-1100 ALSEP 12 CYCLE SIDE	0900-1100 ALSEP 15 ALSEP 12 SIDE ON FLIP CAL HFE RBS	0900-1100 ALSEP 14 C/S HTR ON SIDE ON CPLEE ON

ALSEP PERFORMANCE SUMMARY REPORT

20 December 1974
G.m.t.: 1300

An ALSEP status report will not be published on 27 December in observance of the holidays. The report to be published on 3 January 1975 will include the previous two weeks of ALSEP operations.

The following is a correction to the dates for ALSEP downlink data losses as reported on the Summary Report of 13 December 1974.

ALSEP	DATE	G.m.t.	LOSS	SITE	REMARKS
15	23-24 Oct 74	2059/0005	03^h06^m	AGO	Station Problem
12 to 17	10 Dec 74	0000/0507	05^h07^m	N/A	HELIOS Launch
15	11 Dec 74	0006/0011	05^m	GWM	Station Problem
15	11 Dec 74	0019/0023	04^m	GWM	Station Problem
12 to 17	11 Dec 74	0605/0610	05^m	TAN	Station Problem

Apollo 17 ALSEP

Sunrise of the scientific station's 26th lunation occurred on 18 December at the Taurus Littrow site. Downlink signal strength is reported between -135.5 and -141.5 dbm from transmitter A. Automatic power management continues to distribute power for optimum thermal control. Transmission of command octal 174 (delay uplink switchover), to inhibit automatic selection of the redundant command signal processing chain by the internally generated 61-hour pulses, continues 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. On 18 December the lunar surface temperature, as measured by the HFE thermocouples, was 104 ± 8^{o}K. At a depth of 230 cm, the subsurface temperatures were 256.5K at probe #1 and 256.9^{o} K at probe #2.

The Lunar Surface Gravimeter Experiment is operating and configured for data collection as follows: seismic high gain, integrator shorted mode, bias out, post amplifier gain at increment 15, the coarse and fine screws driven to the extreme lower position, the tilt servo motors in an intermediate position, and the sensor beam near center. The experiment sensor temperature remains stabilized at 49.2^{o}C (slave heater ON).

The Lunar Seismic Profiling Experiment is currently in STANDBY. *A 4-day passive listening period of the Lunar Seismic Profiling Experiment was begun at 1545 G.m.t., 12 December, to continue a study of meteoroid impacts and thermal moonquakes. Some events were noted during the real-time support period when the LSP high bit rate was observed for one (1)hour. This listen-*

ing period was conducted during lunar night (Sun Angles 283.7° to 333.0°) and was terminated at 1458 G.m.t., 16 December 1974. The next 4-day passive listening period is planned for sun angles 331.0° to 024° at a date yet to be determined.

The Lunar Atmospheric Composition Experiment is ON but is not processing scientific data. *On 16 December, between 0703 G.m.t., and 1506 G.m.t., the experiment was turned OFF/STANDBY/ON to conduct a cold soak test. During the test it is estimated the electronics temperature (AM-41) decreased from -2.3°F to -33.6°F. Again on 18 December, between 0905 G.m.t., and 1445 G.m.t., the experiment was turned OFF/ON for another cold soak. During this date it is estimated the electronics temperature (AM-41) decreased from -2.3°F to -35.9°F. The cold soaks were accomplished at the Principal Investigator's request prior to initiating operational checks of the instrument. The LACE's telemetry data did indicate some improvement from previous (18 November 1974) operational checks (Multiplier High Voltage Power Supply, ON). The instrument was reconfigured after each test to discriminator level, LOW; filament, OFF; high voltage power supply, OFF; and backup heater, ON.*

The Lunar Ejecta and Meteorites Experiment is ON and configured to measure impact flux rates on the lunar surface.

It is requested that any organization having comments, questions, or suggestions concerning this report contact F. Heinz, Science Requirements Branch TN3, telephone 713-333-3481.

Apollo 16 ALSEP

Operational status from 1300 G.m..t., 13 December 1974, to 1300 G.m.t., 20 December 1974

Central station	Sunrise at the Descartes Site occurred today for the 34th lunar day. The DSS-1 heater (10 watts) will be commanded OFF for lunar day operations during real-time support today. The 18-hour timer output pulses continue to be inhibited per the agreed operational plan initiated 6 May 1972. The signal strength from transmitter B is reported at -136.3 $\pm$ 2.3 dbm by the 30-foot antenna tracking stations.
Passive seismic experiment	The instrument is configured for seismic network congruity (thermal control, AUTO ON; component gains, 0 db; and feedback loop filter OUT). No significant seismic events were noted during the limited real-time support of this instrument.
Lunar surface magnetometer experiment	The LSM continues in the full operational mode and all data have been valid since 17 August 1973. The instrument has accomplished 902 flip calibration sequences since activation.
Active seismic experiment	The Active Seismic Experiment is currently OFF. Present operations are per Apollo 16 ALSEP, SMEAR 27.

Apollo 15 ALSEP

Operational status from 1300 G.m.t., 13 December 1974, to 1300 G.m.t., 20 December 1974

Central station	Sunrise of the station's 43rd lunation will occur at the Hadley Rille Site on 21 December. Transmitter A downlink signal strength is reported at -135.0 ± 2.0 dbm by the tracking stations with 30-foot antennas.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). The uncage/arm fire circuitry is cycling normally as a result of the central station's data subsystem timer outputs. No significant seismic events were observed during the limited real-time support periods.
Suprathermal ion detector/cold cathode gauge	The instrument is ON and operating with the Channeltron high voltages commanded ON and in full automatic stepping sequence (0-127 frames).
Heat flow experiment	The instrument is presently operating in the gradient mode and all sensors being sampled in full sequence. The lunar surface temperature was 84.6° K on 18 December, as indicated by the cable thermocouples. The subsurface temperature was 253.5°K at the bottom of the lowest section of probe #1. Probe #2 indicated a temperature of 251.1°K at its lowermost point. Ring bridge surveys are obtained periodically.
Solar wind spectrometer experiment	Commanded OFF 14 June 1974.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Apollo 14 ALSEP

Operational status from 1300 F.m.t., 13 December 1974, to 1300 G.m.t., 20 December 1974

Central station	Sunrise at the Apollo 14 site (49th lunation) will occur 22 December 1974. Transmitter A signal strength was reported between -139.3 dbm and + 2.3 dbm. The DSS-1 heater (10 watts) will be commanded OFF for lunar day operation on 23 December 1974.
Passive seismic experiment	The instrument is configured for seismic network congruity (Ref. Apollo 16 ALSEP). No significant seismic events have been noted during this report period.
Active seismic experiment	The experiment is currently in STANDBY per Apollo 14 ALSEP, SMEAR 86.
Suprathermal ion detector/cold cathode gauge experiment	The instrument is currently in STANDBY. *At approximately 1533 G.m.t., 14 December, the SIDE experienced a functional change from ON to STANDBY as reported by the Madrid Tracking Station. The SIDE was re-initialized by the station to the full automatic stepping sequence at 1619 G.m.t., 14 December, by Mode I command. At 1926 G.m.t., 14 December, the SIDE again experienced a functional change from ON to STANDBY as reported by the Ascension Tracking Station. Approximately 1000 commands were transmitted to the experiment by Mode I from the supporting tracking stations and mission control to turn the SIDE ON, without success, between 1926 G.m.t., 14 December and 1745 G.m.t., 16 December.*
Charged particle lunar environmental experiment	The experiment is currently operating in the manual mode at the -35 vdc range and automatic thermal control mode. *At 1309 G.m.t., 13 December, the CPLEE responded to a spurious command (octal 115, Sequencer Advance) as observed by the Canary Tracking Station. During real-time support at 1506 G.m.t., 13 December, the experiment was commanded back to its normal night time operational mode.* It is planned to leave the experiment in this configuration pending possible degradation of AC-03, analyzer A voltage, to 2280 vdc, at which time the instrument will be commanded to STANDBY.

Apollo 12 ALSEP

Operational status from 1300 G.m.t., 13 December 1974, to 1300 G.m.t., 20 December 1974

Central station	Sunrise of the 64th lunar day will occur on 23 December 1974 at the ALSEP site in the Ocean of Storms. A signal strength of 139.5 $\pm$ 2.5 dbm from transmitter B was reported by the 30 foot antenna tracking stations. The DSS-1 heater (10 watts) will be commanded OFF for lunar day operations on 23 December.
Passive seismic experiment	*The instrument is configured with thermal control, AUTO ON; component gains, 0 db; and feedback loop filter IN. At 1402 G.m.t., 16 October, the feedback loop filter was commanded to IN (octal 101) and will remain IN indefinitely at the Principal Investigator's request.* The instrument's assembly temperature (DL-07) remains offscale LOW since 12 December, at a sun angle of 229.0^{0}. The Z-axis drive motor is ON to maximize heating in the instrument during the lunar night. No significant seismic events were noted during the periodic real-time support periods of this instrument.
Solar wind spectrometer experiment	The instrument is currently in the normal gain mode and is recording solar wind plasma data.
Suprathermal ion detector experiment	Currently the SIDE is ON in the full automatic sequence with Channeltron high voltages ON.
Lunar surface magnetometer experiment	Commanded OFF 14 June 1974.

Status as of 1600 G.m.t., 18 December 1974, was as follows:

TM POINT	APOLLO 12 ALSEP	APOLLO 14 ALSEP	APOLLO 15 ALSEP	APOLLO 16 ALSEP
Total Days of Operation	1855	1412	1236	971
Total Commands to Date	22336	14444	26108	14190
Sun Angle	302.7°	308.7°	329.8°	341.7°
Input Power	60.9w	63.9w	67.4w	68.3w
Heater and Power Dumps	All ON	All ON	All OFF	All ON
Experiment Status	LSM OFF	SIDE & ASE Stdby	LSM/SWS OFF	ASE OFF
Avg Thermal Plate Temp	10.4°F	30.5°F	10.4°F	33.4°F
PSE Sensor Temp (DL-07)	Offscale LOW	124.1°F	124.5°F	125.8°F
LSM Internal Temp (DM-05)	OFF	N/A	OFF	-10.2°C
SWS Module 300 Temp (DW-13)	-15.6°C	N/A	OFF	N/A
SIDE Temp (DI-05)	4.3°C	STANDBY	7.2°C	N/A
CCGE Temp (DI-04)	HIGH	STANDBY	106.5°K	N/A
CPLEE Elect Temp (AC-06)	N/A	-22.7°C	N/A	N/A
ASE GLA Temp (AS-03)	N/A	-71.1°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	736
Total Commands to Date	19116
Sun Angle	356.9°
Input Power	74.1w
APM Status (AB-13)	ON
Power Dump Status (AB-14)	All OFF
Experiment Status	LSPE Stdby
Avg Thermal Plate Temp	36.0°F
LACE Temp (AM-41)	-35.9°F
LEAM Temp (AJ-11)	-17.4°F
HFE Temp Ref 1 (DH-13)	286.7°K
LSG Temp (DG-04)	49.2°C
LSP Temp (AP-01)	38.0°F

MERRY CHRISTMAS AND

A HAPPY NEW YEAR

TO ALL

ALSEP SUNRISE/SUNSET PREDICTIONS FOR 1975[1]

Note: Apollo 12 ALSEP based on empirical dat: Apollo 14-17 are "normalized".

Time is shown as GMT (EST)

*Indicates previous day

ALSEP Longitude	Apollo 17 30.75°E	Apollo 16 15.51°E	Apollo 15 3.65°E	Apollo 14 17.47°W	Apollo 12 23.39°W
Lunation	26	34	43	49	64
Sunrise	Dec 18/2206(1706)	Dec 20/0410(2310)*	Dec 21/0333(2233)*	Dec 22/2155(1655)	Dec 23/0916(0416)
Noon	Dec 26/0822(0322)	Dec 27/1400(0900)	Dec 28/1328(0828)	Dec 30/0717(0217)	Dec 30/1900(1400)
Sunset	Jan 2/1756(1256)	Jan 4/0004(1904)*	Jan 4/2328(1828)	Jan 6/1709(1209)	Jan 7/0350(2250)*
Midnight	Jan 10/0329(2229)*	Jan 11/0931(0431)	Jan 12/0852(0352)	Jan 14/0227(2127)*	Jan 14/1406(0906)
Lunation	27	35	44	50	65
Sunrise	Jan 17/1246(0746)	Jan 18/1849(1349)	Jan 19/1812(1312)	Jan 21/1154(0654)	Jan 22/0001(1901)*
Noon	Jan 24/2230(1730)	Jan 26/0439(2339)*	Jan 27/0407(2307)*	Jan 28/2155(1655)	Jan 29/0938(0438)
Sunset	Feb 1/0833(0333)	Feb 2/1439(0939)	Feb 3/1404(0904)	Feb 5/0743(0243)	Feb 5/1819(1319)
Midnight	Feb 8/1802(1302)	Feb 10/0001(1901)*	Feb 10/2322(1822)	Feb 12/1656(1156)	Feb 13/0435(2335)*
Lunation	28	36	45	51	66
Sunrise	Feb 16/0312(2212)*	Feb 17/0913(0413)	Feb 18/0836(0336)	Feb 20/0216(2116)*	Feb 20/1427(0927)
Noon	Feb 23/1247(0747)	Feb 24/1856(1356)	Feb 25/1823(1323)	Feb 28/1209(0709)	Feb 28/2352(1852)
Sunset	Mar 2/2242(1742)	Mar 4/0446(2346)*	Mar 5/0409(2309)*	Mar 6/2146(1646)	Mar 7/0819(0319)
Midnight	Mar 10/0759(0259)	Mar 11/1357(0857)	Mar 12/1316(0816)	Mar 14/0648(0148)	Mar 14/1826(1326)
Lunation	29	37	46	52	67
Sunrise	Mar 17/1657(1157)	Mar 18/2257(1757)	Mar 19/2218(1718)	Mar 21/1555(1055)	Mar 22/0403(2303)*
Noon	Mar 25/0221(2121)*	Mar 26/0826(0326)	Mar 27/0752(0252)	Mar 29/0135(2035)*	Mar 29/1316(0816)
Sunset	Apr 1/1200(0700)	Apr 2/1802(1302)	Apr 3/1723(1223)	Apr 5/1056(0556)	Apr 5/2133(1633)
Midnight	Apr 8/2103(1603)	Apr 10/0259(2159)*	Apr 11/0217(2117)*	Apr 12/1944(1444)	Apr 13/0722(0222)

(12/4/74-WT) - *(REV: 12/18/74 -TB)*

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