

SECTION 2 - MISSION OBJECTIVES

SECTION 2

MISSION OBJECTIVES

This section contains an activity summary, reflecting the objectives for Mission H as described in "Mission Requirements H-1 Type Mission". Table 2-1 provides a functional breakdown of the objectives and indicates the page in the timeline where the activity occurs. The alpha numeric listing presented in Table 2-1 is not intended to represent a priority or a sequential listing.

All of the test requirements have been implemented into the timeline. Details of the implemented test requirements are adequately covered in the Lunar Surface Operation Plan and the Photographic and TV Operations Plan.

TABLE 2-1
MISSION OBJECTIVE/ACTIVITY
REFERENCE

| NUMBER | OBJECTIVE | ACTIVITY | PAGE NO. |
|-------------------------------|--|---|--|
| A A-1 | Contingency Sample Collection Provide a contingency sample for postflight scientific investigations | EVA-1 | 3-93 |
| B B-1 B-2 B-3 B-4 | Lunar Surface EVA Operations Evaluate walking pace on typical terrain Evaluate the capability of the crew to lift and maneuver large packages Evaluate the capability of the crew to unstow and deploy the erectable S-band antenna Evaluate the adequacy of the preflight estimates of time required to perform specific EVA activities | EVA-1, EVA2 } EVA 1 } EVA-1 EVA-1, EVA-2 | 3-93 3-94 3-109 3-94 3-93 3-109 |
| C C-1 | PLSS Recharge Demonstrate the capability to recharge the PLSS while in the LM on the lunar surface | POST EVA-1 | 3-97 3-100 |
| F F-1 F-2 F-3 | Selected Sample Collection Collect rock samples and fine-grained fragmental material Collect one large rock Collect a core tube sample | EVA-1 EVA-1 EVA-1 | 3-96 3-96 3-96 |

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TABLE 2-1 (CONT'D)
MISSION OBJECTIVE/ACTIVITY
REFERENCE

| NUMBER | OBJECTIVE | ACTIVITY | PAGE NO. |
|--------|---|-----------------------|-------------------------|
| G | Photographs of Candidate Exploration Sites | | |
| G-1 | Obtain stereoscopic photographs of selected lunar sites | POST LM JETTISON | 3-137 |
| G-2 | Obtain high resolution photographs of selected lunar sites | POST LM JETTISON | 3-139 3-141 3-153 |
| H | Lunar Surface Characteristics | | |
| H-1 | Obtain data on the mechanical behavior and terrain characteristics of the lunar surface | EVA-1, EVA-2 | 3-93 3-109 |
| H-2 | Determine the LM landing gear stroking, footpad lunar surface interaction, LM attitude and ground clearance after landing | TOUCHDOWN, EVA-1 | 3-87 3-94 |
| H-3 | Determine the extent of lunar surface erosion and the effects of surface ejecta on the LM resulting from DPS exhaust impingement during landing | EVA-1 | |
| I | Lunar Environment Visibility | | |
| I-1 | Deleted | | |
| I-2 | Obtain data on the ability to perform visual tasks while on the lunar surface | EVA-1 | 3-93 3-109 |
| I-3 | Obtain data on the ability to observe contrast in the lunar shadow and on the lunar terrain | EVA-2 | 3-109 |
| J | Landed LM Location | | |
| J-1 | Determine the position of the landed LM in real time | DOI THROUGH TOUCHDOWN | 3-88 |
| J-2 | Obtain data to permit a postflight determination of the landed LM location | DOI THROUGH TOUCHDOWN | 3-90 |

TABLE 2-1 (CONT'D)
MISSION OBJECTIVE/ACTIVITY
REFERENCE

| NUMBER | OBJECTIVE | ACTIVITY | PAGE NO |
|--------|--|-----------------------|---------------|
| L | Photographic Coverage | | |
| L-1 | Obtain photographs of the lunar surface during LM descent | PDI THROUGH TOUCHDOWN | 3-87 |
| L-2 | Obtain photographs of the lunar surface after touch-down and prior to cabin depressurization | POST TOUCHDOWN | 3-88 |
| L-3 | Obtain photographs of the landed LM, of various EVA evaluation tasks and of operations related to geologic inspection and sampling | EVA-1, EVA-2 | 3-93 3-109 |
| M | Television Coverage | | |
| M-1 | Provide TV camera coverage of an astronaut descending to the lunar surface | EVA-1, EVA 2 | 3-93 3-109 |
| M-2 | Provide TV camera coverage of an external view of the landed LM | EVA-1 | 3-94 |
| M-3 | Provide TV camera coverage of the lunar surface in the general vicinity of the LM | EVA-1 | 3-94 |
| M-4 | Provide TV camera panoramic coverage of distant terrain features | EVA-1 | 3-94 |
| M-5 | Provide TV camera coverage of an astronaut during lunar surface activities | EVA-1, EVA 2 | 3-93 3-109 |
| N | Surveyor III Investigation | | |
| N-1 | Obtain photographs of lunar material in vicinity of Surveyor III | EVA-2 | 3-113 |
| N-2 | Obtain samples of lunar material in the crater containing the Surveyor III | EVA-2 | 3-113 |
| N-3 | Obtain photographs of Surveyor III | EVA-2 | 3-113 |
| N-4 | Obtain parts of the Surveyor III | EVA-2 | 3-113 |
| N-5 | Obtain data on the extent of mirror debonding on Surveyor III | EVA-2 | 3-113 |

TABLE 2-1 (CONT'D)
MISSION OBJECTIVE/ACTIVITY
REFERENCE

| NUMBER | OBJECTIVE | ACTIVITY | PAGE NO. |
|-----------------------------|---|-----------------|----------------|
| 0 0-1 | Selenodetic Reference Point Update Obtain lunar landmark tracking data to permit an update of the selenodetic coordinates of a selected lunar reference point | CSM SOLO-REV 26 | 3-111 |
| ALSEP ALSEP-1 ALSEP-2 | Apollo Lunar Surface Experiments Package Deploy the Lunar Passive Seismic Experiment (S-031) Deploy the Lunar Surface Magnetometer Experiment (S-034) | EVA-1 EVA-1 | 3-95 3-95 |
| ALSEP-3 ALSEP-4 | Deploy the Solar Wind Spectrometer Experiment (S-035) Deploy the Suprathermal Ion Detector Experiment (S-036) and the Cold Cathode Ion Gauge Experiment (S-058) | EVA-1 EVA-1 | 3-95 3-95 |
| S-059 S-059-1 S-059-2 | Lunar Field Geology Deleted Examine, describe, photograph and collect lunar geologic samples for return to earth | EVA-2 | 3-109 |
| S-159-3 | Collect a lunar environment sample of lunar surface material | EVA-2 | 3-109 |
| S-059-4 | Collect a gas analysis sample of lunar surface material | EVA-2 | 3-109 |
| S-059-5 S-059-6 | Obtain core samples of lunar material Study and describe field relationships (such as shape, size, range, patterns of alignment or distribution) of all accessible types of lunar topographic features | EVA-2 EVA-2 | 3-109 3-109 |

TABLE 2-1 (CONT'D)

MISSION OBJECTIVE/ACTIVITY
REFERENCE

| NUMBER | OBJECTIVE | ACTIVITY | PAGE NO. |
|------------------|---|---------------------------------------|----------------|
| S-080 S-080-1 | Solar Wind Composition Conduct the Solar Wind Composition Experiment (S-080) | EVA-1, EVA-2 | 3-94 3-113 |
| S-158 | Multispectral photography | CSM SOLO | 3-113 3-116 |
| T-029 | Pilot Describing Function Experiment (No crew activity required) | Post Mission Debriefing & Analysis | ----- |
| M-515 | Lunar Dust Detector Experiment (no crew activity required) | EVA-1 | 3-95 |