A COMPENDIUM OF LUNAR
SURFACE EXPERIMENTS
PICTORIAL DESCRIPTIONS
APOLLO J-1 MISSION
MAY 15, 1970
ALSEP STORAGE IN LM SEQ BAY
ATTACHED TO LM DESCENT STAGE

RTG FUEL CASK STRUCTURE ASSEMBLY

ALSEP INSTALLATION IN LM SEQ BAY

DETAIL A

STOWED SUBPACKAGE NO. 2
STOWED SUBPACKAGE NO. 1
TYPICAL SCHEMATIC OF ALSEP SURFACE EXPERIMENTS AND LASER RANGING RETRO-REFLECTOR IN DEPLOYED POSITIONS FOR J-1 MISSION
HEAT PROBE IMPLANTED

HEAT FLOW ELECTRONICS ASSEMBLY

3RD GEOPHONE
2ND GEOPHONE

CENTRAL STATION
1ST GEOPHONE

PASSIVE SEISMIC MORTAR PACKAGE ASSEMBLY

LASER RANGE RETRO-REFLECTOR

ALSD CASINGS AND DRILL STRINGS

ALSD

HEAT PROBE TO BE IMPLANTED IN 10 FT. HOLE DRILLED BY ALSD

PERSPECTIVE REPRESENTATION OF ALSEP SURFACE EXPERIMENTS AND LASER RANGING RETRO-REFLECTOR IN DEPLOYED POSITIONS
ASSEMBLY OF ALSEP CENTRAL STATION AND RTG POWER SOURCE

STRUCTURE/THERMAL SUBSYSTEM COMPONENTS FROM ALSEP SUBPACKAGE NO. 1

STRUCTURE/THERMAL SUBSYSTEM COMPONENTS FROM ALSEP SUBPACKAGE NO. 2
Solar cells mount on top of central station dust detector sensor package. Cables send sensor signals to AlSEP data subsystem.

Schematic of dust detector experiment (M-515)
SCHEMATIC OF DEPLOYED PASSIVE SEISMIC EXPERIMENT (S-031)
SCHEMATIC OF LUNAR SURFACE MAGNETOMETER EXPERIMENT (S-034)
SCHEMATIC DESCRIPTION OF BASIC EQUIPMENT COMPRISING THE ACTIVE SEISMIC EXPERIMENT (S-033) (LESS ELECTRONICS)

- Antenna Flag
- Geophone Implanted
- Geophones
- Geophone Prior to Implanting
- Cable to Central Station
- Spike
- Rocket Motor
- Asm. Initiator Selector Switch
- Thumper/Central Station Cable
- Arm/Fire Switch
- Safe Slide
- Grenade Assemblies
- Thumper
- Geophone Cable and Reel
- Astronaut Using Thumper

LAUNCH ASSEMBLY
- Mortar Package Assembly
- Stored Electronics Cable for Connection with Central Station

MORTAR PACKAGE ASSEMBLY
- Antenna Flag
- Geophone Implanted
- Geophones
- Geophone Prior to Implanting
- Cable to Central Station
- Spike
- Rocket Motor
- Asm. Initiator Selector Switch
- Thumper/Central Station Cable
- Arm/Fire Switch
- Safe Slide
- Grenade Assemblies
- Thumper
- Geophone Cable and Reel
- Astronaut Using Thumper

THUMPER GEOPHONE ASSEMBLY
- Cable from Thumper to Central Station
- Geophone in Lunar Surface
NOTES:
(1) GRENADES TO BE ACTIVATED AT EARTH COMMAND NEARLY ONE YEAR AFTER EMBLACEMENT OF THE EXPERIMENT ON THE LUNAR SURFACE.

(2) EXPERIMENT DESIGN PROVIDES FOR MEASUREMENT OF GRENADE LAUNCH ANGLE, GRENADE LAUNCH VELOCITY, AND TIME OF FLIGHT.
GRADIENT SENSORS WITHIN HEATER COILS

PROBE SECTION

RING SENSORS

PROBE NO. 1

FLEXIBLE SPRING

PROBE NO. 2

SUNSHIELD

ELECTRONICS PACKAGE

REFLECTOR

TO CENTRAL STATION

CABLE REEL

ASTRONAUT DRILLING HOLES FOR HEAT PROBES WITH APOLLO LUNAR SURFACE DRILL

PICTORIAL PORTRAYAL OF HEAT FLOW EXPERIMENT AND SUPPORTING EQUIPMENT (APOLLO LUNAR SURFACE DRILL)
HOLE CASINGS

RACK ASSEMBLY

WRENCH

DRILL STRINGS

DRILL STRING

BATTERY PACK AND HANDLE

POWER HEAD AND SHIELD

TREADLE

APOLLO LUNAR SURFACE DRILL (ALSD)
LRRR FACE WITH MAXIMUM ALIGNMENT AND NORMALITY TO EARTH-BASED LASER STATION

SCHEMATIC OF LASER RANGING RETRO-REFLECTOR EXPERIMENT (S-078)
4 DETECTOR STACKS (1/2" THICK) MOUNTED ON LM

COMIC RAY DETECTORS (S-152) MOUNTED ON LM (CONCEPT ONLY DEPICTED—EXACT LOCATION TO BE SPECIFIED BY GAC ICD)
FIELD MEASUREMENT
VOICE DOWN LINKED
TO MSC

ELECTRONICS BOX
WITH 3 METERS
TO READ X, Y, Z
COMPONENTS OF
MAGNETIC
FIELD

MAGNETOMETER
SENSOR HEAD
AND TRIPOD ASSY.

FLAT 50' CABLE

PICTORIAL REPRESENTATION OF LUNAR PORTABLE MAGNETOMETER EXPERIMENT (S-198)
MAJOR EQUIPMENT USED IN PERFORMANCE OF THE LUNAR GEOLOGY INVESTIGATION EXPERIMENT (S-059)
USE OF LRV IN PERFORMANCE OF THE LUNAR GEOLOGY EXPERIMENT (S-059)
DEPTH OF PENETRATION AND CHARACTERISTICS INDICATED FROM PHOTOGRAPHS OF ASTRONAUT FOOTPRINTS LEFT IN LUNAR SOIL

COMMENTS FROM ASTRONAUTS CONCERNING EASE OR DIFFICULTY IN USING TOOLS FOR GEOLOGY AND OTHER TASKS INCLUDING ADHESION OF SOIL TO TOOLS, EASE OF "DIGGING", ETC.

CONCEPT OF DATA TO BE USED FOR ANALYSIS IN THE SOIL MECHANICS EXPERIMENT (S-200)