

*Muchlberger,*

APOLLO 17  
EXPERIMENTS PRIORITY AND WEIGHT SUMMARY  
16TH SCIENCE WORKING PANEL MEETING

MAY 10, 1972

RICHARD R. BALDWIN/TD5

MAY 10, 1972

J-3 MISSION EXPERIMENT/OBJECTIVE PRIORITIES

SURFACE EXPERIMENTS/OBJECTIVES

<u>EXPERIMENT/OBJECTIVE NAME AND NUMBER</u>	<u>5TH SWP (14 DEC 70)</u>	<u>PRIORITIES</u>	
		<u>MIP (7 MARCH 1972)</u>	<u>14TH SWP (7 FEB 1972)</u>
● CONTINGENCY SAMPLE	1	-	-
● DOCUMENTED SAMPLES AT HIGHEST PRIORITY TRAVERSE STATION (P/O S-059)	2	1	1
● HEAT FLOW (S-037)*	3	2	2
● LUNAR SURFACE GRAVIMETER (S-207)*	6	3	6
● LUNAR SEISMIC PROFILING (S-203)*	7	4	5
● LUNAR ATMOSPHERIC COMPOSITION (S-205)*	9	5	7
● LUNAR EJECTA AND METEORITES (S-202)*	11	6	11
● DRILL CORE SAMPLE (P/O S-059)	4	7	3
● LUNAR GEOLOGY INVESTIGATION (S-059)	5	8	4
● SURFACE ELECTRICAL PROPERTIES (S-204)	8	9	8
● TRAVERSE GRAVIMETER (S-199)	10	10	12
● SOIL MECHANICS (S-200)	-	-	-
● NEUTRON FLUX MONITOR	-	-	9
● 500 MM CAMERA SYSTEM	-	-	10

ALSEP

\*PART OF ALSEP

Same as  
4 May 1971  
HQ/MAL  
memo,

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J-3 SCIENCE AND SUPPORT EQUIPMENT PAYLOAD AT EARTH LIFT-OFF  
(AS OF MAY 1, 1972)

	<u>ITEMS (LB)</u>	
	<u>PLANNED</u>	<u>PROPOSED</u>
<u>LM ASCENT STAGE</u>		
SCIENCE EQUIPMENT PAYLOAD	0.5	
PHOTOGRAPHIC EQUIPMENT PAYLOAD	9.8	
SUPPORTING EQUIPMENT PAYLOAD	14.8	
<u>LM DESCENT STAGE</u>		
SCIENCE EQUIPMENT PAYLOAD	502.7*	
PHOTOGRAPHIC EQUIPMENT PAYLOAD	15.0	
SUPPORTING EQUIPMENT PAYLOAD	163.5	
LUNAR ROVING VEHICLE	<u>516.9</u>	
STATUS	1223.2	1223.2
CONTROL WEIGHT	<u>1200.0</u>	
MARGIN	-23.2	
ADDITIONAL ITEMS PROPOSED		<u>+22.1</u> + TBD LB**
NEW STATUS		1245.3 + TBD LB
CONTROL WEIGHT		<u>1200.0</u>
NEW MARGIN		-45.3 - TBD LB

\*INCLUDES 4.5 LB EXPECTED ADDITIONAL WEIGHT FOR LUNAR GRAVITY TRAVERSE (S-199)

\*\*LRV SAMPLER AND LONG TERM LUNAR SURFACE EXPERIMENTS

*added 8# structures LGH  
revis  
2nd sept handle*

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J-3 SCIENCE EQUIPMENT PAYLOAD AT EARTH LAUNCH (LM DESCENT STAGE)  
(AS OF MAY 1, 1972)

<u>EQUIPMENT</u>	<u>CURRENT WEIGHT (LB)</u>
DOCUMENTED SAMPLE COLLECTION*	--
FUEL CASKET ASSEMBLY	54.3
PALLET ASSEMBLY	142.7
S-037 HEAT FLOW	40.3
S-207 LUNAR SURFACE GRAVIMETER	28.5
S-203 LUNAR SEISMIC PROFILING	55.5
S-205 LUNAR ATMOSPHERE COMPOSITION	20.0
S-202 LUNAR EJECTA AND METEORITES	15.7
DRILL CORE SAMPLE COLLECTION	--
S-059 LUNAR GEOLOGY INVESTIGATION	77.5
S-204 SURFACE ELECTRICAL PROPERTIES	35.2
S-199 LUNAR GRAVITY TRAVERSE	33.0**
TOTAL	502.7
 <u>DISCUSSION ITEMS</u>	
NEUTRON FLUX MONITOR	4.0 (1.0)
LRV SAMPLER	TBD
LONG-TERM LUNAR SURFACE EXPERIMENTS	TBD
PADDED SAMPLE BAGS (2)	1.0
SURFACE SAMPLER	1.2
CORE SAMPLE VACUUM CONTAINER (CSVC)	1.1
500-MM CAMERA SYSTEM WITH 1 MAGAZINE***	13.8
TOTAL	21.1 (1.0) + TBD LB

\*PART OF LUNAR GEOLOGY INVESTIGATION

\*\*EXPECTED WEIGHT INCREASE FROM 28.5 TO 33.0 LB BUT NOT YET REFLECTED IN OFFICIAL DOCUMENTATION

\*\*\*12 MAGAZINES APPROVED (6 COLOR AND 6 B&W)

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J-3 SCIENCE/PHOTOGRAPHIC/SUPPORT EQUIPMENT PAYLOAD AT EARTH LIFT-OFF (AS OF MAY 1, 1972)

LM ASCENT STAGE

	<u>WEIGHT (LB)</u>
<u>SCIENCE EQUIPMENT PAYLOAD</u>	
SAMPLE SCALE	0.5
<u>PHOTOGRAPHIC EQUIPMENT PAYLOAD</u>	
CAMERA 16-MM DATA ACQUISITION	1.7
LENS, 10 MM	0.5
CAMERA LS ELECTRIC HASSELBLAD	3.1
LENS, 60 MM	1.7
PROTECTIVE COVER, RESEAU	0.2
TRIGGER, E.H.C.	0.2
HANDLE, E.H.C.	0.5
BRACKET, WEDGE, 16-MM CAMERA	0.7
BRUSH, LENS	0.3
POLARIZING FILTER	0.2
BRACKET, CAMERA MOUNT	0.5
ADAPTER ASSY, 20DSBD-70-MM CAMERA	0.2
TOTAL	<u>9.8</u>
<u>SUPPORTING EQUIPMENT PAYLOAD</u>	
FLAG KIT, STANDARD	0.8
INTERIM STOWAGE ASSY.	6.4
WEBBING, CONTINGENCY TIEDOWN	0.4
HOLDER, LRV MAP	0.5
SUPPORT ASSY. EQUIPMENT	6.1
BAG, STOWAGE, 70-MM MAGAZINE	0.6
TOTAL	<u>14.8</u>

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J-3 PHOTOGRAPHIC/SUPPORT EQUIPMENT PAYLOAD AT EARTH LIFT-OFF (AS OF MAY 1, 1972)

LM DESCENT STAGE

PHOTOGRAPHIC EQUIPMENT PAYLOAD

	<u>WEIGHT (LB)</u>
CAMERA LS ELECTRIC HASSELBLAD	3.1
LENS, 60 MM	1.7
PROTECTIVE COVER, RESEAU	0.2
TRIGGER, E.H.C.	0.2
HANDLE, E.H.C.	0.5
CAMERA/POWER PACK ASSY, 16-MM LS	8.0
BRACKET, CAMERA MOUNT	0.5
STAFF, 16-MM CAMERA/PP	0.8
TOTAL	<u>15.0</u>

SUPPORTING EQUIPMENT PAYLOAD

TV SYS, LM COLOR	12.8
TV CONTROL UNIT	13.9
STOWAGE MT ASSY (CTVC)	1.7
LCRU, LUNAR COMM RELAY UNIT	53.7
STWG. CONT. LCRU ANCILLARY ITEMS	8.7
LCRU BATTERIES	8.9
ANTENNA, HIGH GAIN (CABLE + MAST)	10.6
ANTENNA, LOW GAIN (CABLE + MAST)	2.5
FLAG KIT, LUNAR SURFACE	2.5
TRIPOD, TV	1.3
PALLET, LRV AFT CHASSIS	38.9
WISE DEVICE, DRILL STRING	0.3
BAG, SAMPLE CONTAINMENT (6)	3.6
CONTAINER, CORE STEM STOWAGE	1.0
CONTAINER, BORE/CORE STEM STOW	0.2
COVER, BORE/CORE STEM STOW	0.2
RETAINER ASSY, LOWER	0.6
RETAINER ASSY, UPPER	0.9
COVER ASSY, RETAINER	0.8
SPACER, CORE & BORE STEM STOWAGE (2)	0.2
SUNSHADE, GCTA	0.2
TOTAL	<u>163.5</u>

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J-3 SCIENCE EQUIPMENT WEIGHT AT EARTH LIFT-OFF (AS OF MAY 1, 1972)  
(S-059 LUNAR GEOLOGY INVESTIGATION)

<u>ITEM DESCRIPTION</u>	<u>SRC NO. 1 (LB)</u>	<u>SRC NO. 2 (LB)</u>	<u>OTHER S-059 EQUIPMENT (LB)</u>
SAMPLE RETURN CONTAINER	15.3	15.3	
BAG, SAMPLE COLLECTION	1.6	1.7	
SES CONTAINER	0.8	0.8	
20-BAG DSB DISPENSER	2.9 (3)	3.9 (4)	
DRIVE TUBES	2.0 (3)	4.1 (6)	
CAPS AND DISPENSER	0.5 (2)	0.7 (3)	
ORGANIC SAMPLE	0.2	0.2	
PACKING FRAME	0.2		
	<u>23.5</u>	<u>26.7</u>	
TOTAL			
TOTAL OF SRC 1 & 2		50.2	

<u>ITEM DESCRIPTION</u>		
TOOL EXTENSION (2)		3.6
TONGS (2)		2.0
GNOMON		0.6
TOOL, ASSY, DRIVE TUBE		0.1
SCOOP, ADJ. SAMPLING		0.9
HAMMER		2.8
BAG, EXTRA COLLECTION (4)		4.8
BAG, SAMPLE COLLECTION (2)		3.4
BAG, SAMPLE RETURN		3.2
CORE STEMS (6)		2.6
LUNAR SAMPLING RAKE		<u>3.3</u>
TOTAL	<u>27.3</u>	27.3
S-059 TOTAL	77.5	

DISCUSSION ITEMS

LRV SAMPLER	TBD
PADDED SAMPLE BAGS (2)	1.0
SURFACE SAMPLER	1.2
CORE SAMPLE VACUUM CONTAINER (CSVC)	<u>1.1</u>
	3.3 + TBD LB

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J-3 SCIENCE HARDWARE WEIGHT AT LUNAR LIFT-OFF (LM ASCENT STAGE)  
(AS OF MAY 1, 1972)

<u>ITEM</u>	<u>SRC NO. 1 (LB)</u>	<u>SRC NO. 2 (LB)</u>
SAMPLE RETURN CONTAINER	14.6	14.6
SAMPLE COLLECTION BAG	1.6	1.7
DOCUMENTED SAMPLE BAGS	2.3	3.0
SESC	0.7	0.7
DRIVE TUBES WITH CAPS	1.7	3.3
ORGANIC SAMPLE	<u>0.2</u>	<u>0.2</u>
TOTAL WEIGHT	21.1	23.5



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J-3 SUPPORT EQUIPMENT PAYLOAD AT LUNAR LIFT-OFF (LM ASCENT STAGE)  
(AS OF MAY 1, 1972)

<u>SUPPORTING EQUIPMENT PAYLOAD</u>	<u>WEIGHT (LB)</u>
STANDARD FLAG KIT	0.8
INTERIM STOWAGE ASSEMBLY	6.4
XFER BAG 16-MM MAG	0.3
XFER BAG 70-MM MAG	0.5
XFER BAG 16-MM MAG	0.1
XFER BAG 70-MM MAG	0.5
SAMPLE CONTAINMENT BAGS (6)	3.6
XFER BAG 70-MM MAG (2)	0.6
CORE STEM STOWAGE CONTAINER	<u>1.0</u>
TOTAL	13.8

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16TH SCIENCE WORKING PANEL BALLOT

SURFACE

<u>EXPERIMENT</u>	<u>PRIORITY</u>	<u>SWP</u> <u>Vote</u>	<u>WRM</u> <u>Priority</u>
1. DOCUMENTED SAMPLES AT HIGHEST PRIORITY TRAVERSE STATION (P/O S-059)	1	240	1
2. HEAT FLOW (S-037)	2	227	2
3. LUNAR SURFACE GRAVIMETER (S-207)	5	180	6
4. LUNAR SEISMIC PROFILING (S-203)	6	183	5
5. LUNAR ATMOSPHERIC COMPOSITION (S-205)	12	144	8
6. LUNAR EJECTA AND METEORITES (S-202)	7	128	10
7. DRILL CORE SAMPLE (P/O S-059)	4	200	4
8. LUNAR GEOLOGY INVESTIGATION (S-059)	3	201	3
9. SURFACE ELECTRICAL PROPERTIES (S-204)	11	154	7
10. TRAVERSE GRAVIMETER (S-199)	13	107	13
11. NEUTRON FLUX MONITOR	8	129	9
12. LRV SAMPLER <i>includes 48 bags</i>	9	120	11
13. 500-MM CAMERA SYSTEM	10	68	16
14. CORE SAMPLE VACUUM CONTAINER (CSVC) <i>includes eliminating 1 SESC</i>	14	88	14
15. PADDED SAMPLE BAGS	16	50	17
<del>16. SURFACE SAMPLER</del>	<del>1</del>		
17. LONG-TERM LUNAR SURFACE EXPERIMENTS <i>2 drill stems</i>	20	48	18
NOTE: RAKE AND SECOND EXTENSION HANDLE IN APPROVED PAYLOAD.	15	110	12
<i>DAC Camera system</i>	17	24	20
<i>SWC Experiment</i>	18	45	19
<i>LPM Experiment</i>	19	72	15