

Lunar physics

Investigation should be conducted on the moon's surface to determine the relationship between the lunar magnetic field, if any, the solar wind and any shock front that might result from their interaction.

Particles and fields measurements should be carried out in lunar orbit and on the lunar surface by three-axis magnetometers and particle detectors. These instruments should be included simultaneously in the lunar surface experiment packages to be emplaced on the early Apollo missions and on lunar orbiting spacecraft.

Measurements should also be made of the vertical component of the lunar electric field, as early as possible in the Apollo program. Additional measurements should be made in orbit of reflected cosmic rays and neutrons, with the latter assisting in the search for water or ice on the moon.

In the early missions following the initial Apollo flights, coordinated measurements should be made of particles and fields at different attitudes, on the surface, about 10 meters above it, and in orbit of about 40 kilometers altitude.

Timing of Apollo Applications program

So far I have discussed what we can do with the Apollo equipment; now I would like to explain in more detail why it is essential to proceed with the Apollo Applications program in the fiscal year 1968 budget. The charts (fig. 92, MC67-5907; fig. 93, MC67-5906) show the status of Apollo Saturn launch vehicle and spacecraft procurement as of February 1967. Note that all of the uprated Saturn I launch vehicles have been procured and that the last of these are now in fabrication and assembly. Of the 15 Saturn V launch vehicles needed for the manned lunar landing, all have been ordered except the last five. However, long lead procurement has been authorized for these vehicles and they will soon be in the Apollo pipeline. Of the 21 Command and Service Modules, all have been ordered except the last three and again long lead procurement for these has been initiated. All of the 15 Lunar Modules have been ordered and they are in various stages of activity in the Apollo pipeline.

This chart (fig. 94, MC67-5917) shows the lead time relationship between the launch vehicles for the basic Apollo project and the follow-on Apollo Applications project.

APOLLO SPACECRAFT PROCUREMENT STATUS AS OF FEB. 25, 1967

SPACECRAFT	BLOCK DESIGN- ATION	USED	ASSEMBLY COMPLETED	IN FABRI- CATION AND ASSEMBLY	ORDERED BUT NOT YET IN FABRICATION	LONG LEAD PROCURE- MENT	TOTAL
COMMAND MODULE	BLOCK I	3	3	—	—	—	6 BLOCK I
	BLOCK II	—	2	7	3	3	15 BLOCK II
							GRAND TOTAL=21
SERVICE MODULE	BLOCK I	3	3	—	—	—	6 BLOCK I
	BLOCK II	—	2	7	3	3	15 BLOCK II
							GRAND TOTAL=21
LUNAR MODULE		—	3	4	8	—	GRAND TOTAL=15

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FIGURE 92