

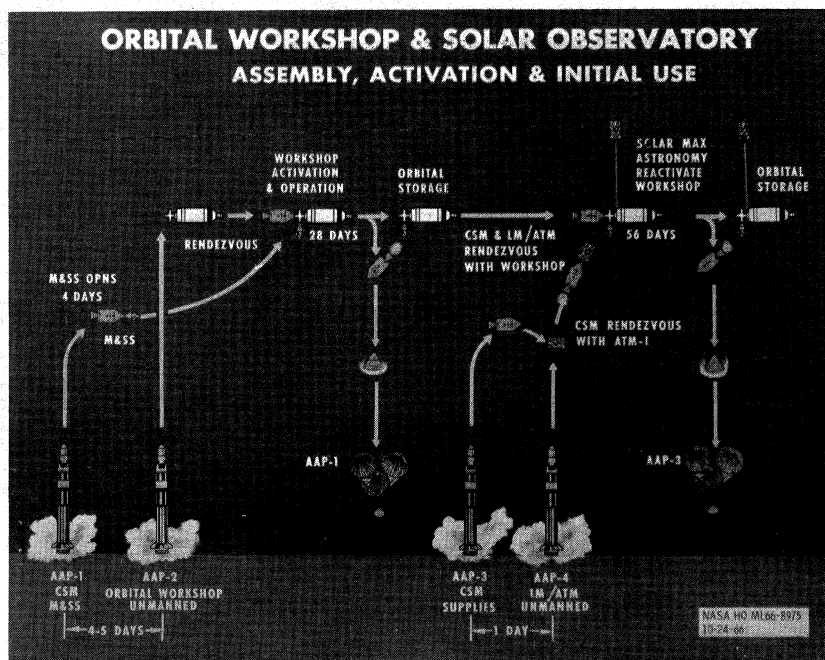


FIGURE 8

OBJECTIVES OF SECOND APOLLO APPLICATIONS MISSION

In summary, the objectives for the second AAP mission are (1) to obtain scientific data on the characteristics of the sun through observations of the entire electromagnetic spectrum made with the ATM instruments; (2) obtain engineering data for selected modes of operation of the Lunar Module/ATM to support development of an advanced manned astronomical observatory; (3) to determine effects of long-duration space flight on crew and space vehicle subsystems up to eight weeks; (4) to leave the Lunar Module/ATM and Orbital Workshop docked in orbit for reactivation and reuse during subsequent Apollo Applications missions; and (5) to conduct approximately five other experiments.

The primary objective of the AAP-3 and AAP-4 flights is to place the Apollo Telescope Mount into operation supported by the Orbital Workshop.

The Apollo Telescope Mount, a significant part of the Apollo Applications program, is essentially a manned solar laboratory being designed and developed to study the sun, its evaluation, structure and behavior. It represents the first use of manned scientific telescopes in space. It provides the capability of carrying large scientific instrumentation to study the sun, having increased spatial and spectral resolution over and above that of similar instrumentation being flown in space today.

Observations from space are of fundamental importance to astronomy, which has long been retarded by the restrictions imposed by the earth's atmosphere. We have, in effect, been looking at the universe through a screen that is partially opaque to ultraviolet, x-rays, gamma rays, and many types of high speed particles. The removal of these restrictions promises to significantly extend our observational reach.

APOLLO TELESCOPE MOUNT

The Apollo Telescope Mount (ATM) provides a new capability for a variety of solar and stellar scientific experiments to be performed above the earth's atmosphere (Figure 7). The ATM provides a stabilized platform which can be carried on Apollo Applications missions to accommodate experiment instruments having a requirement for finely controlled pointing.