In the long term, the AAP–3 and AAP–4 flights will provide a significant initial capability that can be enhanced over the years to conduct comprehensive and detailed studies of the sun. There are many reasons to conduct these studies, but the two principal ones are emphasized below.

First, variations of the sun are the major cause of environmental changes to the earth. Further knowledge of how these environmental changes occur could permit man to control them for his own benefit or learn to better adapt and make use of them.

Secondly, the sun is a valuable astrophysical laboratory which may be viewed by scientists of many disciplines and is considered a virtually untapped reservoir of new and different facets for exploration in extending the knowledge of the respective scientific fields. The effect of the sun on the environment of our planet is especially important since the sun's energy ultimately impacts on every living organism, including all plant and animal life. Evolutionary effects may certainly be said to be tied up with this environment. The effects of the sun's environment on agriculture are obvious. The field of meteorology is intimately concerned with the study of solar physics as a means of predicting and possibly even controlling the earth's weather. Communications are also involved because of the sun's effect on the earth's ionosphere with subsequent disturbing 'black-outs" of world wide radio nets.

Mission Mode and Related Equipment

Apollo Applications flights 3 and 4 comprise the second mission. The equipment for the flights will consist of the following:

For AAP–3, the launch vehicle will be the uprated Saturn I. Spacecraft equipment will consist of the Command Service Module.

For AAP–4, the launch vehicle will be the uprated Saturn I. Spacecraft equipment will consist of the Nose Cone, the Lunar Module Ascent Stage, and the Apollo Telescope Mount (ATM).

The Command and Service Module and crew from AAP–3 will be placed in a low altitude parking orbit and AAP–4 will be launched unmanned into a higher parking orbit (figure 6). The Command and Service Module will transfer to

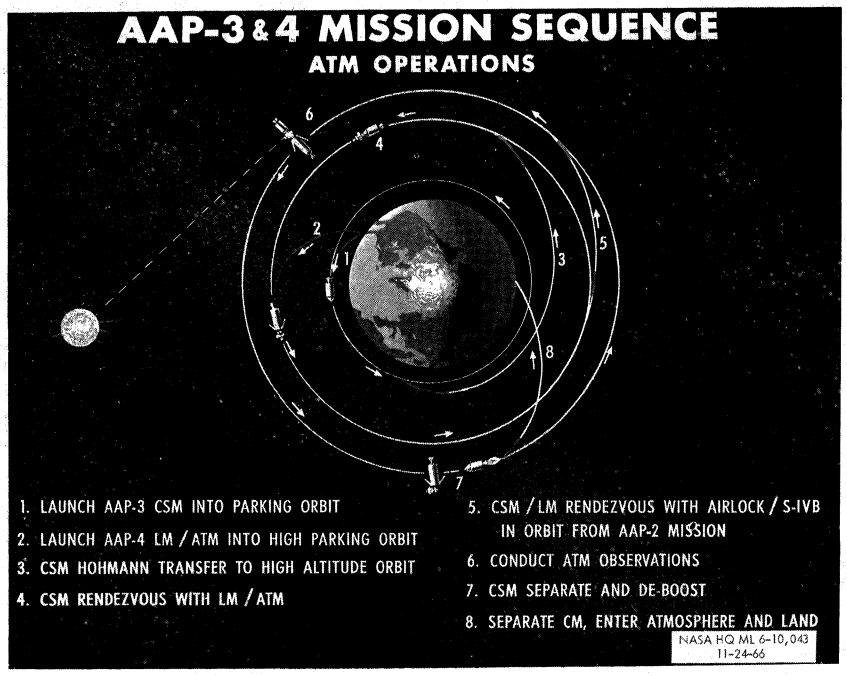

Figure 6