

every coordinate in the sky to the nearest 0'. or 0'.0001, the astronomer concentrates on special astronomical objectives of particular interest. The parameters of importance, then, are:

1. Celestial object: spherical coordinates, distance.
2. Intensity of radiation, polarization.
3. Wavelength.
4. Time, date.

The amount of accurate data for each of these parameters, of course, varies with the type of sensing and recording. For example, a direct photograph of a portion of the sky normally covers only a very narrow range of wavelength and time; however, properly interpreted the intensity data is very good for a very wide range of spherical coordinates. A spectrophotometric scanning device, on the other hand, gives excellent and detailed intensity data for many wavelengths; but generally applies to a particular set of coordinates for a particular instant of time. The problem of the astronomer is to obtain all the data for all time (or a reasonable fraction of this), and to interpret these data according to presently known physical laws, and to theorize how these laws can best be modified and extended.

Dr. MUELLER. We assume that first of all the Voyager program is going to go forward and now we are looking at what comes after the initial Voyager flights. We looked at a specific mission in some detail and the objectives of this particular mission (MT66-10,201, fig. 9) of manned Mars-Venus reconnaissance would be the return of a Martian or a Venusian surface sample. Another objective would be reconnaissance and mapping of Mars and Venus. It would make

OBJECTIVES OF MANNED MARS/VENUS RECONNAISSANCE

- RETURN OF MARTIAN SURFACE SAMPLE
- RECONNAISSANCE AND MAPPING OF MARS AND VENUS
- ASTRONOMICAL OBSERVATIONS OF THE PLANETS, SUN AND OTHER BODIES
- MANNED PLANETARY SYSTEMS DEVELOPMENT AND PROOF TESTING
- MANNED PLANETARY OPERATIONAL EXPERIENCE
- UTILIZATION OF PRESENTLY EVOLVING TECHNOLOGY TO EMBARK ON MANNED PLANETARY EXPLORATION
- ACQUIRE ENGINEERING DESIGN INPUT DATA FOR APPLICATION TO FUTURE SYSTEMS
- ENHANCEMENT OF NATIONAL PRESTIGE

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FIGURE 9