

CHAPTER 4.0

SPACE MISSIONS AND PAYLOADS, 1979-1990

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In this chapter man's space activities are first reviewed historically beginning in 1957 (although a period of interesting stirrings and essential accomplishments preceded that year); next space activities of the several nations during the 1970's as seen from the present are discussed; then an effort is made to estimate the prospects for international cooperation in space during the 1980's and beyond. Man's activities in space through the 1980's in terms of the various missions, payloads and traffic schedules are delineated as provided by the NASA and the DoD for the purposes of this study, and by the study contractors, and others up to the time of this report. MATHEMATICA has taken the liberty of extending the activities and discussing possible changes in emphasis in several areas. The scenarios, i. e., variations on the mission model, that were costed represent reasonable alternatives as seen at the present time.

4.1 Introduction

4.1.1 Historical Review of Space Activity

The United State Space Program as we have experienced it over the past ten years did not really exist until our society was challenged by the Soviet Union with Sputnik I on 4 October 1957 and we failed to orbit a grapefruit sized, six kilogram satellite with Vanguard TV-3 later in the same year. A manned landing on the moon and safe return of the astronauts to Earth was declared to be the nation's goal in space for the 1960's by President Kennedy in the spring of 1961. This was widely approved by the American people and supported by the U. S. Congress.

Explorer I, the United States' first satellite, was successfully orbited on 31 January 1958 and since then almost 200 civil spacecraft and over 400 military payloads have been placed in orbit by the United States with an overall success rate of about 75% and a total expenditure of approximately \$50 billion.