

APOLLO APPLICATIONS

(Set No. 3)

Question 1. According to figures previously presented by NASA, four AOSO satellites would have cost about \$167.4 million, or about \$42 million each. The PSAC report states (p. 74) concerning ATM "the expected value of scientific return may be no greater than would have been obtained with one of the original 9-month AOSO flights."

(a) What information will ATM provide that could not have been provided by AOSO?

(b) Why was AOSO canceled?

(c) At the time of the PSAC review, what was the estimated cost of each ATM, exclusive of launch cost?

(d) What is the current estimated cost for ATM?

(e) How many ATMs will be built?

(f) What is the estimated launch cost per ATM, including the cost of the launch vehicle?

(g) If there has been an increase in cost since the PSAC review, what was the reason for the increase?

(h) Why, in terms of scientific return, is the ATM worth the increased cost over what AOSO would have provided?

Answer 1.

(a) The scientific objectives of the ATM experiment are not identical to those of the AOSO. The instrumentation was tailored, in each case, to the unique capabilities of the respective missions.

The ATM, using film as the basic means of data acquisition, will provide wide bandwidth, high-resolution studies to be made of rapidly fluctuating solar phenomena. As an example, the rise time of solar flares, measured in seconds can be photographed by the ATM. AOSO would have provided long-term studies of the sun, but with a low data rate capability.

Launches for both ATM and AOSO were planned during the next period of maximum solar activity because data from both types of space telescopes are essential to understand solar activity and solar flares.

(b) The AOSO was canceled because of budgetary considerations. In particular, the AOSO imposed heavy constraints upon the fiscal year 1966 and fiscal year 1967 budgets since development funding requirements for the program peaked during this time period.

(c) At that time (September 1966), the estimated cost of the first ATM, exclusive of launch, was \$36 million.

(d) The current estimated cost of the first ATM is \$38.4 million.