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saturn history  
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University of Alabama Research Institute  
History of Science & Technology Group

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NASA STARTS  
DEVELOPMENT  
WORK ON ATM

SATURN HISTORY DOCUMENT  
University of Alabama Research Institute  
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Date: \_\_\_\_\_ Doc # \_\_\_\_\_

The National Aeronautics and Space Administration is initiating development for a manned solar astronomical mission to fly during the period of maximum solar activity that begins in 1968.

The mission will require an Apollo Telescope Mount (ATM) and instruments for observing the Sun which will be designated to be operated from a manned Apollo spacecraft launched by an updated Saturn I vehicle.

NASA's Marshall Space Flight Center, Huntsville, Ala., will have project and experiment development responsibility. The telescope mounting frame will be designed and built at Marshall, while the major components will be purchased from industrial sources. The experimental instruments will be built by the respective scientific investigators or contractors associated with them.

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The present program is directed at development and procurement of equipment for one solar physics flight mission. This mission is considered as a possible alternate to a currently scheduled Apollo flight and would become the payload for one of the twelve updated Saturn I launch vehicles now included in the Apollo program in the event its primary mission in the Apollo program is accomplished in the earlier flights.

The flight mission hardware to be developed consists of a mounting structure, power supply, pointing control system, command and display console, data retrieval system, solar observation experiments and associated ground support equipment.

Objectives of the mission are to acquire high resolution measurements and observations of the structure and behavior of the Sun from above the Earth's atmosphere, and to test man's capabilities for conducting astronomical observations in space.

The pointing control system will be based on a control moment gyro which has been developed by the Bendix Corporation's Eclipse Pioneer Division under the supporting research and technology program at NASA's Langley Research Center, Hampton, Va.

Experiments to be carried on the ATM will be provided by the following principal investigators:

Dr. R. Giacconi, American Science and Engineering, Inc. (X-Ray Spectroheliograph); Dr. L. Goldberg, Harvard College Observatory (UV Spectrometer and UV Spectroheliometer); Dr. J. Milligan, Goddard Space Flight Center (X-Ray/EUV Telescope); Dr. G. A. Newkirk, High Altitude Observatory (White light coronagraph); Dr. J. D. Purcell, Naval Research Laboratory (UV Spectroheliograph and EUV Spectrograph).

Each of these investigators has been conducting continuing solar investigations in association with NASA.

Procurement costs are estimated at about \$35 million over a three-year period.

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