NCAR

National Center for
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von Braun Visits Boulder Research Facilities

Boulder, Colo.---Dr. Wernher von Braun, director of the NASA Marshall Space Flight Center at Huntsville, Alabama, visited the laboratories of the National Center for Atmospheric Research (NCAR), the Environmental Science Services Administration (ESSA), and the Ball Brothers Research Corporation in Boulder today (Thursday, June 8).

Dr. von Braun and a group of about a dozen NASA scientists and engineers spent the morning at the NCAR Laboratory, where they were briefed by Dr. Gordon A. Newkirk, Jr., of the High Altitude Observatory of NCAR, on the coronagraph experiment that he and his colleagues are planning to send into orbit aboard NASA's Apollo Telescope Mount (ATM).

After lunch at the NCAR cafeteria, the Huntsville group went to the Boulder Laboratories of the ESSA Institutes for Environmental Research for a briefing on the solar activity forecast system of the Space Disturbances Laboratory there.

From ESSA, they went to Ball Brothers Research Corporation for a demonstration of the ATM coronagraph equipment that is being engineered and built for the High Altitude Observatory by Ball Brothers.

The coronagraph is a telescope used to observe and photograph the solar corona, the luminous gaseous atmosphere of the sun that is visible during a total eclipse when the moon blocks off the flood of light from the face of the sun. The coronagraph uses a system of lenses, apertures, and occulting disks to create an artificial eclipse within itself. To operate effectively, the coronagraph must be used where the air is thin and clear, as dust, moisture, and even the molecules of the air itself scatter the sunlight and reduce the coronagraph's ability to occlude the unwanted light from the face of the sun.

Coronagraph observations have been made from Climax, Colorado, high on the Continental Divide, ever since the western hemisphere's first coronagraph was

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set up there in 1940. But even the Climax station, at an elevation of 11,500 feet above sea level, is deep in the ocean of air that is the earth's atmosphere.

In the summer of 1965, Dr. Newkirk flew a balloon-borne coronagraph twice from the NCAR Scientific Balloon Flight Station at Palestine, Texas. This instrument, weighing about 1700 pounds, was carried aloft by a balloon inflated with more than 3 million cubic feet of helium. It photographed the solar corona from altitudes of nearly 100,000 feet. These "near-space" flights showed that the basic design of the balloon-borne coronagraph could be adopted, with some modifications, for a satellite-borne instrument.

NASA is planning to put the Apollo Telescope Mount into orbit during a series of manned flights known as the Apollo Applications Program. The HAO coronagraph will be one of several solar observing instruments aboard the ATM during its orbital mission, which is being scheduled for a period of peak solar activity about two years from now. The ATM mission is expected to gain new information that will be of great value to scientists at NASA, ESSA, NCAR, and other research groups concerned with the sun, the earth, and the space that surrounds them.

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