

**NCAR**



## *Information Release*

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### Boulderites Ready for Apollo Skylab Launch Next Week

Boulder, Colorado. . .Six scientists from the National Center for Atmospheric Research (NCAR) here are in Houston, Texas, preparing for the Apollo/Skylab launches May 14 and 15.

The eight-month-long mission of this first U.S. space station will require four launches during 1973. On the first day, the unmanned Skylab workshop will be launched on a two-stage Saturn V.

After it has successfully maneuvered into the planned attitude pointed toward the Sun with its solar observatory moved 90 degrees from the vertical launch position to its operational position, the quarters are pressurized with an oxygen-nitrogen environment and all is ready for the arrival of the astronauts. On the second day then, the first three-man crew will be launched into a low earth orbit in an Apollo spacecraft aboard a Saturn IB rocket. Using the spacecraft's service propulsion system, the astronauts will propel their spacecraft to the Skylab's altitude and dock with Skylab. Four weeks later they will return to a splashdown in the Atlantic.

About two months after the first crew returns, a second crew will be launched to a rendezvous in earth orbit with Skylab. They will stay aboard Skylab conducting experiments for 56 days before returning, again to an Atlantic Ocean recovery area.

A month after the second crew's return, the third and final set of three astronauts will leave for Skylab. They will again stay aboard for 56 days before re-entering their Apollo spacecraft for a return trip to earth and a splashdown in the Pacific Ocean.

The largest element in the Skylab cluster is the workshop and crew quarters section made from the third stage of the Saturn V. Unlike the propulsion units used to send men to the Moon, this third stage was prepared on the ground to serve as a spacecraft.

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Other Skylab components include the Apollo Telescope Mount (ATM) which houses six very special telescopes and two other instruments used for studying the Sun. The largest solar cell array system ever devised for a spacecraft provides the electrical power for the ATM. The array is made of four wings which, when open in space, form a huge cross 98 feet wide. The ATM is housed above the multiple docking adapter at launch and then swings aside at a 90 degree angle once in orbit. Here, aboard ATM, is the Boulder-designed instrument -- a white light coronagraph experiment (WLCE) developed by scientists at NCAR's High Altitude Observatory (HAO). The fabrication was done on contract by the Ball Brothers Research Corporation here.

The WLCE is designed to observe any transient solar events such as flares as well as to gather synoptic observations of the outer atmosphere of the Sun, the solar corona.

Robert M. MacQueen, Principal ATM/Skylab Investigator for HAO's WLCE says: "The structure of the solar corona near the Sun, where solar material can be contained by the coronal magnetic field, is complex and poorly understood. The evolution of coronal structures is particularly obscure. Other fundamental questions include the origin and growth of major coronal structures, and their relation to solar activity.

"Because the brightness of the solar corona is less than one hundred millionth that of the direct solar disc, observations of the corona can only be made when the solar disc is blocked. Nature, of course, provides this occasion at a total solar eclipse, but the numerous eclipse photographs from the past have allowed detailed study of only the particular coronal configurations present at the time of eclipse.

"Another means of observing the corona is to eclipse the Sun by an occulting disc in the observing telescope or coronagraph such as the WLCE."

With MacQueen in Houston for the Skylab launch effort are: John T. Gosling; Ernest G. Hildner; Richard H. Munro; Arthur I. Poland----all HAO co-investigators; and Charles L. Ross, Project Manager. They will share around-the-clock duty shifts to make necessary scientific decisions during the manned portions of the Skylab mission.

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Two experiment scientists and six engineers from Ball Brothers Research Corporation in Boulder are also in Houston with the HAO team. The scientists are Robert M. Broussard and Adam Csoeke-Poeckh, and the engineers are Kenneth Booth, George Gleason, Charles Kitchens, Phillip Olbert, Glenn Tanner, and Wendell Wickstrom.

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