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Washington, D. C. 20546

(Phone: 202/755-8370)

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Bill O'Donnell  
Headquarters, Washington, D.C.  
(Phone: 202/755-2354)

Charles Redmond  
Johnson Space Center, Tex.  
(Phone: 713/483-4341)

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APOLLO SOYUZ CREWS TO PRODUCE OWN "SOLAR ECLIPSE"

An artificial solar eclipse that they alone can see will be produced by the American and Russian crews on their joint space mission in July 1975.

Astronauts and cosmonauts will work together on the 10-day joint Apollo Soyuz Test Project.

They will be producing the artificial eclipse, to be seen from the Russian Soyuz spacecraft, in order to see and photograph the solar corona -- the atmosphere of the Sun.

This atmosphere is much fainter than the surface of the Sun. To prevent light from the surface from coming through, the Apollo spacecraft will be used as an occulting device, producing the artificial eclipse.

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The experiment will allow space photography to be performed of the extended solar corona as well as the spacecraft-associated environment around the Apollo vehicle which could develop from outgassing of sealed compartments, degassing and sublimation of outer structural materials of the spacecraft or firings of the attitude control thrusters.

In the experiment, the Apollo will first align the Soyuz toward the Sun. Then, shortly after spacecraft sunrise, the Apollo will undock from the Soyuz and back away toward the Sun.

As the distance between the two spacecraft increases, more of the solar corona will be exposed to the field of view of the motion picture camera mounted on the Soyuz. During separation, this camera will automatically take sequences of photographs with varying exposures.

An attempt will be made to correlate the observed coronal structure with surface activity on the Sun, which is to be observed simultaneously with ground-based instruments.

Principal investigator for the experiment is Dr. G.M. Nikolsky of the USSR. American co-investigator is Dr. R.T. Giuli of NASA's Johnson Space Center, Houston, Tex. Dr. Giuli is also the program scientist for the other experiments to be performed jointly with the USSR or unilaterally by the United States.