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ATS SYNCHRONOUS ORBIT COLOR PHOTO

The National Aeronautics and Space Administration's Applications Technology Satellite III (ATS-III) has transmitted from synchronous orbit a color photograph of the Earth which officials describe as excellent in quality.

The picture represents the best of the first few color pictures taken of the Earth by this satellite from the 22,300-mile altitude. ATS-III is located over the equator at 47 degrees W. longitude where its "view" of the Earth shows North and South America, part of Africa and Europe as well as the southern part of the Greenland icecap. Antarctica is covered with clouds. The photo shows the entire disk of the Earth, a cloud-covered globe in the blackness of space.

It was received at NASA's Rosman, N.C. ground station Nov. 8 and processed at NASA's Goddard Space Flight Center, Greenbelt, Md., which has project management of ATS.

The 805-pound spacecraft was launched from Cape Kennedy Nov. 5 carrying communications, meteorology, navigation and spacecraft technology experiments.

Dr. Verner E. Suomi, of the University of Wisconsin, chief experimenter for the multi-color spin scan cloud camera, said color registration "is perfect and the resolution is very high. Details of features as small as two or three miles in size are readily visible. The color contrast, in addition to the brightness contrast, convey additional information.

"Certain minor adjustments of color balance and fine size adjustments on the ground-based imaging system remain to be done.

"The whole Atlantic area is visible extending half way up Greenland and south to the Antartica.

"The large scale storms and smaller scale convective storms in South America are especially well displayed. From a time series of pictures such as these the United States has, in effect, given South America a means to track their weather far beyond what they are able to do by conventional means;

"The U.S.A. land mass is shown in good detail as far west as the Rocky Mountains. The Great Lakes and the Mississippi Valley are covered by a cold front. The Eastern Seaboard is shown in excellent detail.

"In one single photograph, the equatorial cloud-free band which was seen from ATS I pictures in the Pacific is also evident in the Atlantic. These pictures are ideal for continuing studies from the heat budget and convective systems. Now we can study convective systems over tropical land areas. Also the extra value of the color information makes it easier to distinguish land areas and other geographical points.

"The additional meteorological information in a color photograph is more subtle, but it is there. Low clouds tend to be bluer than high clouds. This has been possible even though adjustments to color balance on the ground are still underway.

"There are suggestions that the muddy outflow from the Amazon River in Brazil can be seen. We have not yet been able to determine whether or not the Gulf Stream water will be visible. Also, we do not have an example of the colors in the Terminator Zone (sunrise and sunset) to determine if cloud heights can be accurately positioned."

ATS-III is the third in a series of five satellites which is managed by the National Aeronautics and Space Administration's Office of Space Science and Applications. The prime spacecraft contractor is Hughes Aircraft Co., Culver City, Calif.