



**U.K.-U.S. SATELLITE**—The S-51 undergoes spin test before launch of this the first United Kingdom-United States international ionosphere satellite. (See SNL, 81:214, April 7, 1962.)

SPACE

## Glenn Reports on Flight

► THE BRILLIANT LIGHT from the "fireball" Astronaut John H. Glenn Jr. saw passing the window of his space capsule was observed by more than 1,400 scientists at a symposium in Washington, D. C.

A color film, showing the astronaut in his cabin during flight, clearly revealed reflections of the burning chunks of retro-pack flying off the space capsule's heatshield.

The astronaut's silvery suit, his face, and instruments around him in the cabin were "washed over" with a bright orange glow every time a chunk went past the window.

The retro-pack is generally flung off the heatshield after its braking rockets have been fired. A faulty indicator had shown that the heatshield might be loose behind the astronaut and he was therefore commanded not to release the retro-pack, which might help hold a loose heatshield onto the capsule.

However, Astronaut Glenn was not informed during most of the flight about the alleged "loose" heatshield. During the showing of the film, he said that he believed it more advisable to keep the pilot updated "on each bit of information, rather than waiting for a final clearcut recommendation from the ground," on suspected malfunctions, such as the heatshield-retro-pack difficulty.

The astronaut also showed color slides he had taken with his 35 millimeter camera

from the capsule. The shots showed cloud formations over the earth very clearly. The U.S. Weather Bureau had asked observations be included in the Mercury program to find if the height of clouds and the different kinds of cloud formations can be determined from the space capsule.

The astronaut said the shadows on clouds on the side opposite from the sun helped to determine the height, and he reported observing various kinds of cloud formations.

The Weather Bureau is interested in improving the optical equipment of the Tiros and Nimbus weather satellites to determine the height of clouds. The astronaut said that from the information gathered on his flight it is quite possible to determine cloud heights from this altitude of from 97 to 159 miles.

His color slides revealed the white band of sunlight at the edge of the earth which is extremely bright at sunset. The bottom layer of the band becomes bright orange and fades into reds as the sun sets.

The band of white sunlight could be seen to fade and become narrower toward the poles. Above the bright halo of sunlight was a deep-blue band and above that the black sky. The astronaut said the light along the horizon is visible for four to five minutes after sunset which he considers a long time since sunset occurred 18 times as fast as normal.

He told how dark shadows were cast

on the earth during sunset and pointed out weather areas showing dark against the white light from the sun.

The astronaut took all the pictures of the sunset after passing into the night side of the sky. He had hoped to study an area close to the sun while above the atmosphere, but this would require a period of dark adaptation prior to sunset.

An eyepatch had been developed for this purpose. It was to be held in place by a tape which unfortunately did not work. The plan had been for the astronaut to use the eye without patch while still in the daylight and to look with the dark-adapted eye after he passed into the dark zone.

If the eye patch can be made to work on the next trip, the astronaut may get valuable information from studying areas close to the sun just as it passes below the horizon. It is also possible that one of the future astronauts in the two-man Gemini capsule could use a mask such as is used by pilots of high-flying aircraft to become dark adapted, which takes seven to ten minutes. The time is dependent on the vitamin-A content in the eye and the general health of the person.

• Science News Letter, 81:247 April 21, 1962

SPACE

## Heat Severest Stress For Glenn on Space Hop

► HEAT DURING REENTRY was the most severe stress experienced during his ride in space, Astronaut John H. Glenn, Jr. told SCIENCE SERVICE.

He first began to feel uncomfortably warm and perspired profusely when the spacecraft got down to about 80,000 feet. This heat stress, he believes, was a major contribution to the slight seasickness he suffered when his capsule was in the water.

"However, I might have felt some discomfort from the water motion even if I had not been so uncomfortably warm," the astronaut said. "Such discomfort is familiar to anyone who has been in bobbing waters in a small boat."

The astronaut also said that he did not feel as tired from the ride as some of the medical experts have indicated. He noted that although the ride took only four and one-half hours, he had been up more than seven hours before launch and had been active both mentally and physically all this time. He emphasized that he felt only the normal amount of fatigue that anyone up and working this span of time would feel.

Glenn said that he looked forward to longer space rides and certainly hoped to make an 18-orbit ride in the future. He said that such a ride would be even less tiring than his pioneer flight because he would have time for a nap.

The astronaut was in Washington, D. C., to report on the results of his orbital flight to more than 1,400 scientists and space experts attending a symposium on the space mission.

• Science News Letter, 81:247 April 21, 1962