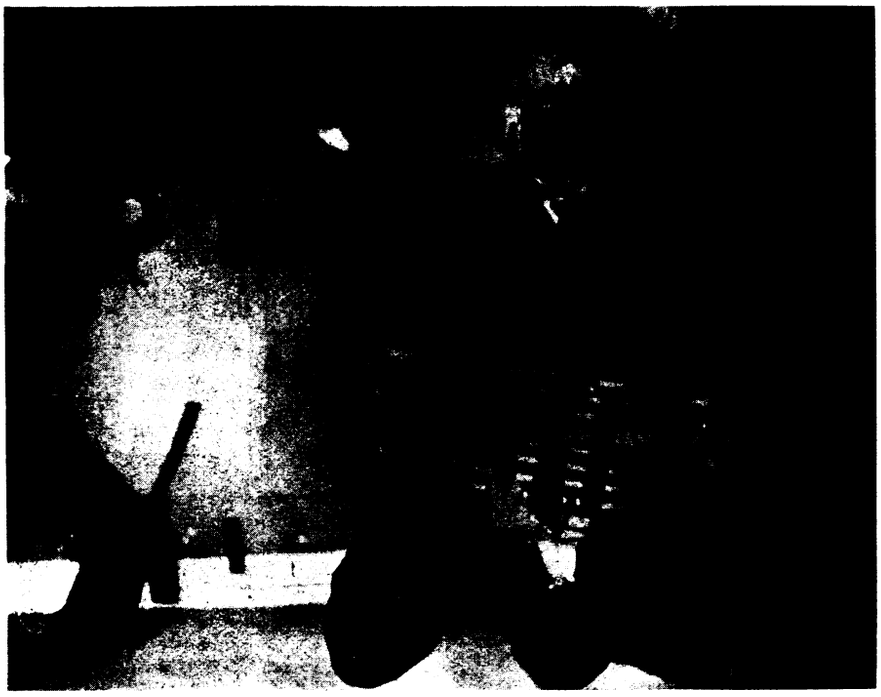

ZERO GRAVITY BELT—Scientist Ralph E. Flexman tests under zero gravity conditions a belt that will enable men to leave orbiting space vehicles to perform inspection, repair and assembly tasks in space. The belt is being developed by Textron's Bell Aerosystems Company, Buffalo, N. Y.

SPACE

Chimp Will Play in Space

➤ A CHIMP will soon take a ride around the earth, playing with flashing lights and levers and not worrying what it is all about.

His main concern will be to carry out the tasks of the 70-minute program he has been taught to perform here on earth. This includes rest periods, rewards consisting of sips of water and banana-flavored pellets if he does his job. The chimp will be launched from Cape Canaveral.

His "job" will be to work with levers and display panels with colored lights. In most tasks he will react to colored lights by hitting the appropriate lever under the light. One task includes three symbols, two of which are alike. He must be able to indicate which symbol is different.

All the tasks were designed for the first orbiting chimp in order to check whether his mental and physical capabilities are as good during the flight as when his feet are on the ground.

The lucky fellow to ride from one to three times around the earth in the Mercury capsule will be chosen from five chimps who have been in training for the flight.

All are four years old, weigh 40 pounds and include the veteran astro-chimp, Ham, who went on his first space flight Jan. 31, 1961, on the Mercury-Redstone-II rocket. The rocket traveled 155 miles into space.

If the chimps do not respond to their jobs, or are lazy, they will be given a "hot-foot" in the form of a mild shock in the left foot as, what the psychologists call, a "negative reinforcement." However, the National Aeronautics and Space Administration reported that the chimps in training have not needed this very often.

The orbital chimp flight, the first United States flight around the earth with a living being, will be handled as carefully as the suborbital flights of the first two U.S. astronauts.

The chimp will wear the equivalent of an astronaut's space suit. He will be protected in a pressure-tight metal and plastic box connected to an environmental system like the one to which the astronaut's suit was connected. His heart rate, blood pressure, breathing and temperature will be measured during the flight by 18 ground stations around the world. Medical personnel will be present at all these stations during the flight.

The MA-5 flight will last four and one half hours if the chimp circles the earth three times. He will be flying 100 to 150 miles above the earth. The chimp would land in the Atlantic Ocean near Bermuda after one orbit or about 1,000 miles southeast of Cape Canaveral if the chimp makes three orbits.

During the flight the chimp will be given pure oxygen, and he has an escape hatch on the side of his capsule if anything goes wrong. Since he cannot talk, recorded tapes will talk to him during the flight to test out voice communication. Four separate cameras will take pictures of his actions.

• Science News Letter, 80:351 November 25, 1961

ASTRONOMY

Promising Comet Seki Disappoints Astronomers

➤ COMET SEKI, expected to become as bright as Halley's comet, has disappointed astronomers. (See SNL, 80:304, 1961.)

Halley's famous comet appeared in 1910 as a first magnitude object, which is as bright as the brightest stars in the heavens. Comet Seki has been observed as only fifth magnitude, Dr. Elizabeth Roemer of the U.S. Naval Observatory, Flagstaff, Ariz., told SCIENCE SERVICE.

This is just visible to the naked eye under good seeing conditions. However, Dr. Roemer said the comet may actually have brightened to fourth magnitude at times when it could not be observed.

The astronomer has observed Seki from the time it appeared, and has photographed it with the 40-inch reflecting telescope at Flagstaff. She said the comet had a tail several degrees long on Oct. 21, ten days after its discovery by a Japanese amateur astronomer. When last observed at Flagstaff on Nov. 11, Seki had become a faded blob trailing a few streamers, the remnants of the tail, she said.

Seki, which was expected to have reached its greatest brightness as it came closest to earth, 12,000,000 miles away, on Nov. 14, moved south rapidly and could be seen only from the Southern Hemisphere after that time.

However, by the end of November it is expected to be visible from the United States again, although it will now have faded even further and be about seventh or eighth magnitude, Dr. Roemer said. At that brightness it can barely be seen with binoculars but will be visible through small telescopes.

Dr. Roemer said comet Seki will continue to move away from the earth and by mid-January it will be difficult to observe even with very large telescopes.

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GEOLOGY

Tiny Plant Grains Lead Scientists to Oil

➤ ANCIENT SPORES and pollen grains are valuable tools to the oil industry as indicators of oil-bearing rocks.

Palynology, the study of fossil spores and pollen, has gained impetus in oil research since World War II, according to Dr. Aureal T. Cross, professor of geology at Michigan State University, East Lansing, Mich.

These tiny reproductive cells of plants, which are spread by wind and water, are used to reconstruct geologic landscape and the extent of ancient seas. This helps geologists understand the formation and discovery of oil deposits.

The major reason for the studies being conducted by many oil companies is the abundance of these fossils, which are small and well protected as compared to remains of large plant parts, he said.

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