

ASTRONOMY-GEOPHYSICS

Launch Earth Satellite

United States announces plans to blast a small, unmanned satellite into orbit around earth during International Geophysical Year in 1957-58.

► **MAN'S ANCIENT DREAM** of reaching the planets is seen much closer to reality with the announcement the United States will crack the space barrier by launching a small earth satellite during the International Geophysical Year in 1957-58.

Fact will start to catch up with fiction when man for the first time breaks free, if only for a short time, from the sea of air that is the earth's atmosphere. Although the small object will be unmanned, not occupied even by a mouse, it will be followed by others.

If the information gained from the first and later circling satellites shows that man could probably survive in outer space, humans will follow the test animals as inhabitants of space satellites.

Then later, they may man space ships that will reach first for the moon, next for the planets. This is for the future, but just how far in the future it is hard to tell.

Many scientists believe it impossible for man ever to reach even the moon. Others hold that at least the moon and the planets may be visited eventually, but centuries in the future. A few more enthusiastic are hoping that outer space can be pierced at least as far as our moon within 100 years.

The mythological boy named Icarus who melted his wax wings by flying too close to the sun may have been the first to illustrate man's yearning for the stars.

In the last 30 years the possibility of reaching beyond the earth's atmosphere has been seriously studied by some scientists. With the advent of atomic power an energy source that might power space vehicles was foreseen.

Details of the space satellite as announced are practically identical with those first reported exclusively in the *SCIENCE NEWS LETTER* of March 27, 1954. (See also *SNL*, May 15, 1954, p. 306, June 12, 1954, p. 381, and May 7, p. 295.)

The technical problems involved in launching the earth's first small satellite are many. They have been solved individually, but not collectively.

A WAC Corporal shot from the nose of a V-2 rocket over White Sands, N. M., on Feb. 24, 1949, rose to a height of 250 miles, about the height at which the earth's first artificial moon will circle. She stayed there just a short time, however.

Numerous rocket flights to lower altitudes since then have resulted in improved techniques for radioing back to earth information on conditions high in the atmosphere.

Dr. Athelstan F. Spilhaus, a member of the United States National Committee for the International Geophysical Year, said

that at the present time scientists could learn as much from looking at the satellite as from having the satellite so instrumented that it would look at the earth.

Visible Over Equator

► **THE EARTH SATELLITE** will be visible to persons near the equator. The basketball-sized, man-made moon will be painted white, and will travel around the equator, *SCIENCE SERVICE* learned.

Scientists would rather have the satellite travel a polar route around the world, but for political reasons, the first try will be equatorial. By traveling in an orbit around the equator, the man-made satellite will be circling the earth without infringing on many great powers. A polar route would be better, as the equatorial route is over more water, thus complicating the matter of observation stations.

Traveling at the proposed speed of 18,000 miles per hour, 200 to 300 miles in outer

space, the satellite will take about 90 minutes to make a complete revolution. It will be visible for about 15 to 20 minutes from any one spot near the equator. Although it will not be easily seen with the naked eye, it will be visible through small telescopes or high-powered binoculars.

The satellite will be a very fleeting object as it travels through the sky. To see it, a person would have to know exactly where to look. It is possible, however, to predict the exact path of the man-made moon, giving its position in the sky at any time. This information could be published in the newspapers for those who wish to view man's first attempt at outer space travel with an unmanned satellite.

Painted white for tracking, the satellite will reflect the sun's rays in the same manner the moon does. Best time to see it will be twilight.

It was also learned that sodium has not proved effective in tests to date as a further means for tracking the object through the heavens. It had been suggested that sodium, such as common table salt, be sprayed from the rocket to enable scientists to make a trail for easier tracking view at all times. The tests indicate, however, that sodium is effective only at lower altitudes.

Science News Letter, August 6, 1955



SATELLITE DEMONSTRATED—Dr. Athelstan F. Spilhaus, a member of the U. S. National Committee for the International Geophysical Year, demonstrates over a large globe of the world the height at which the proposed earth satellite would circle earth. He is using a piece of chalk to represent the basketball-sized moonlet the United States will launch sometime between July, 1957, and December, 1958.