

necting hoses are not attacked and destroyed by free chemical radicals expected to exist in space. These radicals are combined on earth into harmless chemicals. When found alone they are very active and dangerous.

The astronauts of 1970 will again board their craft and take off for earth where they will report their finds and have their samples tested.

Today, in 1962, some scientists believe the lunar craters are of both volcanic and meteoric origin, others are convinced that there was never any volcanic action on the moon and that all the pockmark-like mountains were caused by meteors. Probably no one will have proof until the moon is explored directly.

Most of the experts today agree that there is a dust layer on the moon. Hundred-degree drops in temperature that occur in a few minutes indicate an insulating layer on the moon. If the layer is not dust from scattering meteors, it may be volcanic ash. The temperature changes are measured during lunar eclipses when the earth passes between the sun and the moon.

Some scientists believe the dust is a few inches thick; others see the possibility that the first astronauts and their spacecraft may be engulfed in a hundred feet of dust.

However, one scientist thinks that the moon has lost most of its dust from meteoric bombardment. He believes that the dust would be hurled away at such speeds that it would escape the low gravitation

of the moon which is only one-sixth of earth's. It is possible that all the dust escaped from the moon this way since dust particles tend to stick together in a vacuum.

For this reason, another scientist speculates that the dust layer, if present, will more likely be a strong crunchy material. A manned vehicle flying around the moon could possibly be devised as a lunar "submarine" able to dig into this material for protection against deadly radiation from solar flares. The flares are storms on the sun sending giant tongues of hot gas millions of miles into space.

Some scientists now believe that radiation would not be dangerous to man on the moon except during solar flares. However, shielding will be necessary while astronauts fly through the Van Allen belts of trapped particles girdling the earth. The problem of proper shielding has to be met before man can make the trip to the moon.

Scientists hope to get a clue to the origin of the solar system on the moon. One theory proposes the sun and planets, including the earth, were formed side by side from the same nebula; another holds that all the planets and moons of planets were formed from bodies the size of the earth's moon. Some of these broke up, others merged. Other scientists believe the moon has broken off from the earth at a time when the earth had greater angular momentum (was spinning faster).

• Science News Letter, 81:202 March 31, 1962

ASTRONOMY

Seek Planet Clues

➤ MANY OF THE MYSTERIES of the two planets closest to earth, Mars and Venus, could probably be solved by a worldwide observation network.

Existing astronomical observatories around the world may be organized in a cooperative watch of the two planets, a study by the National Academy of Sciences suggested.

Communications procedures, uniform observing practices and a central organization, probably in the United States, to receive the observations would be part of the program. The central organization would also analyze observations and make them generally available.

This would mark the first time that continuous observations of the planets were made. The observations would be of great importance because the daily changes on the planets could be observed without break for long periods. Some of the features to be studied would be the cloud patterns entirely covering the surface of Venus, the white and yellow clouds of Mars and the blue haze that periodically covers Mars.

These features could give clues to the atmospheres of the planets. The program was initially recommended by a study group at the University of California's Jet Propulsion Laboratory. The group also proposed that the following be included in such a program:

1. Additional staff needed at observatories be drawn from scientists of the country

where observations were made, but interchange of research workers also be encouraged.

2. The central organization to act as a study center where techniques of the related sciences of geophysics and astronomy could be employed simultaneously.

3. New sites, with exceptionally good seeing conditions for lunar and planetary observations, be established in the U.S.

The observation program is estimated to cost about \$1,000,000 a year.

• Science News Letter, 81:203 March 31, 1962

A tiny *radio* device which can report on the acidity of the stomach after it is swallowed has been developed.

A recent study indicates the Interstate *freeways* are about two and a half times safer than the highways of earlier design they are replacing.

The *universities* in the U. S. are granting more graduate fellowships in the physical sciences and mathematics than in any other fields.

While there is a great demand for *meteorologists* from the Government, armed services, private research organizations and industry, only about a dozen Ph.D. meteorologists are produced each year in the U. S.

Art of Argument

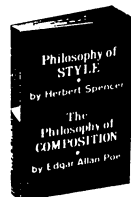
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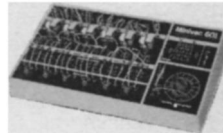


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