SPACE

Best Spot for Moon Base

An old volcanic crater near a lunar "sea" is believed to be the best site for a moon base because shelters and building materials might be found in such areas.

➤ THE BEST SPOT for landing on the moon for the purpose of building a moon base would be an old volcanic lunar crater located close to one of the so-called seas, a scientist believes.

The pock-like craters on the moon's face are divided by many geologists into two categories, volcanic and impact craters. The impact craters are believed to have been formed by meteors hitting the moon.

Jack Green of North American Aviation, Downey, Calif., told the American Geophysical Union meeting in Los Angeles that volcanic craters would probably contain lava caves that might shelter moon visitors against the heat and cold of the moon's surface ranging from 212 degrees Fahrenheit down to about 166 degrees below zero.

Volcanic craters could also be expected to contain rock froths, porous rocks good for insulation, and rocks holding water that might be utilized by moon travelers. Rocks having metals useful for building the moon base might also be found as a result of volcanic activity, he said. The impact craters would have none of these advantages.

The lunar base should be built in a crater close to one of the maria, or seas, (named by the ancients because of their dark color) since basalt from the maria can be metallurgically processed and their materials used for building purposes.

He suggested that the crater Alphonsus, bordering on Mare Nubium, not far from the center of the moon face seen from earth, may be a volcanic crater useful for moon landings.

Another geologist, Dr. John A. O'Keefe of the National Aeronautics and Space Administration's Goddard Space Flight Center, Greenbelt, Md., told the meeting that the existence of granite on the moon will be substantiated if it can be established that tektites originated on the moon because granite contains silica of which tektites are made. Tektites are natural glass found on the earth's surface that are believed by some to fall from the skies.

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Origin of Tektites

➤ NEW EVIDENCE showing that tektites came from outer space was presented at the American Geophysical Union meeting at the University of California in Los Angeles.

Amounts of oxygen isotope much different than the ratio found in any rocks on the earth strongly indicate that tektites came from outer space, geochemists Dr. Hugh P. Taylor of Pennsylvania State University and Dr. Samuel Epstein of the California Institute of Technology said.

Tektites from such areas as Czechoslovakia, Texas and Australia were examined and found to contain a significantly lower fraction of oxygen isotopes than in shales and other sedimentary rocks of the earth. Further comparison with granite rocks also supported the outer space theory since no significant amount of any suitable source material exists on the earth, the scientists stated.

Tektites are bits of natural glass widely distributed throughout the world. Many scientists believe they were formed when a meteorite crashed into the earth, whereas other scientists believe that tektites are debris that reached the earth after a meteor collided with the moon.

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Electricity From Earth

➤ ELECTRIC CURRENTS generated in the earth's atmosphere may flow far into outer space, according to Dr. H. W. Kasemir, U.S. Army Signal Research and Development Agency scientist, Fort Monmouth, N. J.

Dr. Kasemir told the American Geophysical Union meeting in Los Angeles that calculations of the current flow lines in the atmosphere show that the electric current penetrates the ionosphere and reaches far into outer space.

The concept challenges the more widely held theory that pictures the atmospheric current flow as inside a spherical condenser, where the ionosphere is the positive outer sphere and the negatively charged earth is the inner sphere. Because air is a good conductor, the so-called air-earth current flows from the ionosphere to the ground, causing world-wide thunderstorm activity.

The ionosphere cannot be considered as the layer which blocks off the charged particles from space, the scientist said. He urged the modification of the spherical condenser model as a start toward the calculation of the atmospheric electric current flow in space.

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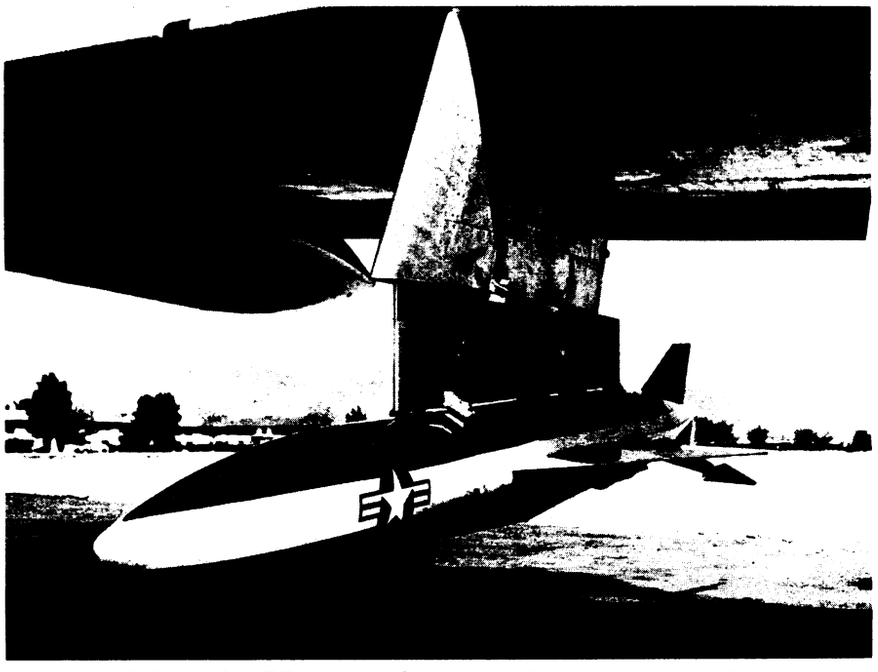

RECORD SET—This RP-76-4 rocket-powered target missile, developed by Radioplane Division of Northrop Corporation, Van Nuys, Calif., attained a speed exceeding Mach 2 at an altitude of 65,500 feet. Radio controlled, it is suitable as a high-altitude, high-speed training target for surface-to-air missiles.

NATURAL RESOURCES

U.S. Mineral Production Reaches $18 Billion

➤ THE 1961 mineral production in the United States has been valued at $18 billion by the U. S. Bureau of Mines. The figure is slightly higher than in 1960 and second only to the record high of $18.1 billion for 1957.

Natural gas and petroleum were chiefly responsible for the gain, according to preliminary figures. These fuels offset the decrease in metals and other nonmetals. Crude petroleum production rose two percent.

While silver rose slightly, gold was reduced to its lowest peacetime level in 77 years. Silver, uranium and vanadium were the only metals to list gains.

Helium was one of the largest gainers, with an increase of about 15%. This may reflect the use of the gas in nuclear and space research and technology. More than $10,000,000 was spent for helium from the five Bureau of Mines helium plants.

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