

Dr.'s Urey and Nagy probe life on moon possibility with new mass spectrometer instrument

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Scientists at the University of California, San Diego, have installed an instrument that one day may help man learn whether there ever was life on the moon or in meteorites.

The instrument is a combined mass spectrometer and gas chromatograph, whose purchase from an American affiliate of a Japanese manufacturer was financed by a \$54,000 grant from the National Aeronautics and Space Administration.

Co-investigators in the work that can lead to additional knowledge of the origin of the moon and of meteorites are Dr. Harold C. Urey, Nobel Prize winner and professor of chemistry-at-large at the University of California, and Dr. Bartholomew S. Nagy; head of UCSD's organic geochemistry laboratory.

The mass spectrometer is used to analyze organic compounds in sedimentary rocks, marine sediments, and in meteorites. It is also used to develop techniques for the analysis of rock samples when and if they are brought back from the moon by astronauts.

In essence, the organic material extracted from rocks and sediments is fed into the gas chromatograph where it is vaporized and separated into individual compounds.

These compounds are then sent, one by one, through the mass spectrometer which breaks them down further into characteristic molecular fragments.

The automatically recorded results make it possible for scientists to identify the molecular composition of the originally complex extract.

The first lunar samples will be taken to NASA's new \$8 million Lunar Sample Center at Houston, Tex., for study before being distributed to other institutions in the United States equipped with instruments similar to that at UCSD.

For several years, Drs. Urey and Nagy have been probing the possibility that meteorites may contain evidences of biological life and Dr. Urey suggested in this connection that carbonaceous meteorites may come from the moon after having been flung into space by other meteorite or comet impacts on the moon and captured by earth's gravity. This suggestion, now seriously being considered by many important scientists, indicates that scientists may already be studying moon rocks without knowing where they originated.

Dr. Nagy has studied samples of the famous Orgueil meteorite, which fell in southern France in 1864 and., after exploding in the earth's atmosphere, produced a meteorite shower.

Scientists have shown that some meteorites contain organic matter, that is, a class of chemicals that include those made by living organisms.

Dr. Nagy said he and other scientists have found chemical compounds in meteorites that could be the result of living organisms but that the evidence is inconclusive.

Dr. Urey has said that "if found in terrestrial objects, some substances in meteorites would be regarded as indisputably biological."

Drs. Urey and Nagy hope their instrument may provide the answers to some of the puzzling concepts regarding the moon and meteorites.