

## James R. Arnold awarded Kuiper Prize

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James R. Arnold, a professor of cosmochemistry at the University of California, San Diego, has been awarded the 1993 Gerard P. Kuiper Prize by the Division of Planetary Sciences of the American Astronomical Society.

The Kuiper Prize is awarded annually to a "scientist whose achievements have most advanced our understanding of the planetary system."

According to the organization, Arnold was recognized specifically for his contributions to the study of cosmic-ray produced radio isotopes or cosmogenic nuclides and his work in gamma-ray spectroscopy.

"Arnold's contributions and those of others, enabled by his earlier work, have had a large and long-lasting effect on planetary science," the organization said.

Arnold's work in cosmogenic nuclides includes both the theory and the laboratory application of the theory to such diverse topics as radiocarbon dating, circulation of the oceans, and the cosmic-ray exposure ages of meteorites and lunar samples.

Arnold's group made the first measurements of isotopes produced by high-energy solar storm particles in lunar surface materials. This work was developed to define the intensity and shape of solar system storm particles reaching our part of the solar system. Using these isotopes as tracers, his group measured the rate of turnover of the lunar soil due to meteorite impact. He constructed a model to explain the very slow rates of turnovers observed, and in particular, the smoothness of the surface of most regions.

Arnold and his colleagues also built and used a gamma-ray detector flown on Apollo 15 and 16 to map the content of several elements over the surface of the moon. His techniques were so successful that they have been included in every planned orbital mission to atmosphere-free bodies in the Solar System.

The prize, which was awarded at the annual meeting of the AAS/DPS, is named in honor of the late Gerard P. Kuiper of the University of Arizona, who played a leading role in astronomical observations of solar system objects and in NASA's lunar exploration program.

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