Interplanetary Dust and Micrometeorites

Kearsley A. T.  Graham G. A.  Yano H.  Wright I. P.

*Micrometeoroids and Orbital Debris Preserved on Multi-Layered Insulation Foils from the Japanese Space Flyer Unit Spacecraft [#1122]*

Micrometeoroid and orbital debris particles are preserved as abundant and well-preserved residues on Multilayer Insulation (MLI) foils that were exposed to LEO during the flight of the Japanese Space Flyer Unit (SFU). MLI holds great potential as a repository of natural particles.


*Observation of Interplanetary and Interstellar Dust by Mars Dust Counter on Board NOZOMI: Three-Year Results [#1167]*

Mars Dust Counter (MDC) on board NOZOMI has detected more than 90 dust impacts in three years. In interplanetary observation from 1999, MDC has detected about 60 interplanetary particles moving around the sun and several interstellar dust particles.

Joswiak D. J.  Brownlee D. E.

*Plagioclase Feldspar Minerals in 5–15 μm Chondritic IDPs Collected in the Stratosphere [#1767]*

Albitic and anorthitic plagioclase feldspars were found in nine CP stratospheric IDPs. The albitic feldspars are likely to have secondary origins while the anorthic feldspars may represent sampling from condensates produced during solar nebula evolution.

Austin D. E.  Manning H. L. K.  Bailey C. L.  Farnsworth J. T.  Ahrens T. J.  Beauchamp J. L.

*Hypervelocity Microparticle Impact Studies: Simulating Cosmic Dust Impacts on the Dustbuster [#1939]*

Iron and copper microparticles accelerated to 2-20 km/s in a 2 MV Van de Graaff accelerator were used to test a recently-developed cosmic dust mass spectrometer, known as the Dustbuster.

Floss C.  Stadermann F. J.

*NanoSIMS Measurements of Nitrogen Isotopic Distributions in IDPs and Renazzo: Uniform 15N Enrichment in a Chondritic IDP [#1350]*

Most of the IDP Kipling is enriched in 15N by 500‰. It also contains two subgrains with 15N values of >1000‰. Renazzo matrix fragments are less enriched in 15N, suggesting either different carriers or different degrees of parent body processing.

Yin Q-Z.

*Chemical Signatures of Interstellar Dusts Preserved in Primitive Chondrites and Inner Planets of the Solar System [#1436]*

We show that the inheritance of interstellar materials by the solar system is not only documented by the presence of presolar grains, various isotopic anomalies, but also expressed in the chemical element distribution in the inner solar system.