Asteroids and Comets — Did the Diversify of Nebular Solids Decline with Distance from the Sun? [5285]
The Mn contents of ferrous olivine grains in a cluster IDP of probable cometary origin match what is seen in comet Wild 2 olivines. This finding is consistent with suggestions that most comets contain similar averaged samplings of nebular solids.

Nebular and Interstellar Materials in a Giant Cluster IDP of Probable Cometary Origin [5365]
We are conducting coordinated mineralogical, and isotopic studies of a giant cluster CP-IDP to determine proportions of inner solar system and interstellar materials. We have identified an $^{16}$O-rich enstatite grain that likely formed near the Sun.

Noble Gases in Giant Cluster IDP U2-20GCA [5149]
Noble gas analyses of 15 particles from U2-20GCA reveal a suite of trapped $^{20}$Ne/$^{22}$Ne ratios similar to HL-Ne, Q-Ne and SW-Ne. Highly spallogenic $^{21}$Ne/$^{22}$Ne points to past residence in an environment of intense energetic proton radiation.

Relationship Between Carbon and Silicates in Cometary Dust [5103]
An ultracarbonaceous IDP fragment is analysed with combined high spatial resolution SEM-EDX and H, C, O isotope mapping to investigate the relationship between the organic matter matrix and the small silicate grains contained within.

D/H and $^{15}$N/$^{14}$N Isotopic Ratios in Organic Matter of Ultracarbonaceous Antarctic Micrometeorites [5275]
We measured H and N isotopic images using polyatomic species with a NanoSIMS-50, together with elemental ratios (C/H and C/N), on an ultracarbonaceous Antarctic micrometeorite. These analyses suggest that its organic matter contain different phases.

Making Hidden Pristine Submicron Carbonaceous Hollow Grains Stand Out In Situ in Interplanetary Dust [5267]
We demonstrate that phase contrast X-ray nanotomography enables hidden pristine sub-µm carbonaceous hollow globules not only to be effectively located in situ in intact IDPs but also to be morphologically and structurally visualized in 3-D detail.

Variations in Organic Functional Groups Between Hydrous and Anhydrous Antarctic Micrometeorites [5301]
Carbon-XANES spectra of organics between hydrous and anhydrous Antarctic micrometeorites (MMs) were compared. In most cases, carbonyl group in anhydrous MMs are more abundant than that in hydrous MM. Organics in hydrous MM is chondritic IOM-like.
*Oxygen Three Isotope Ratios in Five Comet Particles from Stardust Tracks 149 and 172* 
[#5131]
We report oxygen isotopic composition of five new Stardust particles. Particles from track 149 show a general correlation between O isotopes and Mg#, similar to that observed in CR chondrites. Particle 172B appears to be a unique \(^{16}\)O-rich enstatite.

10:30 a.m. Snead C. J. * McKeegan K. D. 
*New Oxygen Isotope Measurements of Four Stardust Impact Crater Residues Show IDP-Like Compositions* 
[#5253]
We have measured the oxygen isotope compositions of four Stardust impact crater residues. These analyses reveal compositions that are similar to those found in interplanetary dust particles, antarctic micrometeorites and CI chondrite components.

10:45 a.m. Ishii H. A. * Bradley J. P. 
*Transmission Electron Microscopy Advances Reveal Subtle Comet Dust Differences* 
[#5162]
TEM advances in multi-SDD-detector EDX mapping applied to Wild 2 dust and likely-cometary CP IDPs demonstrates chondritic fine-grained material at terminal particles is unlike GEMS and consistent with debris generated during the deceleration process.

11:00 a.m. Haas B. A. * Croat T. K. Floss C. Kearsley A. T. Burchell M. J. 
*Characterizing Comet 81P/Wild 2 with Acfer 094 Analog Foils* 
[#5141]
NASA's Stardust mission returned cometary material from comet Wild 2 in Al foil collectors. Creating analog foils with material from meteorite Acfer 094 allows us to investigate the violent collection process to determine the comet's composition.

*Mineralogy of Interplanetary Dust Particles from the Comet Giacobini-Zinner Dust Stream Collections* 
[#5322]
We report a mineralogy study of dust particles from comet 21P/Giacobini-Zinner dust stream targeted collection, showing remarkable mineralogical diversity of each cluster.

11:30 a.m. Joswiak D. J. * Brownlee D. E. Ishii H. A. Sutton S. R. 
*Electron Energy Loss Spectroscopy Measurements of Titanium Valence States in Refractory Nodule Pyroxenes from a Likely Cometary IDP* 
[#5144]
Mineralogical properties combined with Ti EELs measurements on fassaites from refractory nodules in an IDP of likely cometary origin are consistent with formation in a restricted nebular environment with variable \(f_{O_2}\).

11:45 a.m. Floss C. * Wiesman H. Haenecour P. 
*NanoSIMS and Auger Analysis of Impact Craters from the Genesis 'Aluminum Kidney'* 
[#5010]
Results of NanoSIMS and Auger analyses of two craters from the Genesis polished aluminum collector are reported. Apart from one O-anomalous grain, we found no clear evidence of residue from the impactor particles.