

Plenary talks (PV)

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**Plenary Talk** PV IV Tue 9:15 Audimax  
**Isotopic Microprobe Mass Spectrometry** — ●MICHAEL J. PELLIN  
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Technological advances in analytical methods enable discovery. Lip-  
pershey and Janssen's conversion of their telescopes to optical micro-  
scopes enabled Hooke and van Leeuwenhoek to investigate biological  
structures and to discover micro-organisms. Similar statements can be  
made about the electron and scanning probe microscopes. Microprobe  
mass spectrometry instrumentation has undergone a similar transfor-

mation with the advent of new, bright, stable ion sources that allow  
probing ever smaller voxels of matter. We will review these advances  
focusing on a unique application - the study of presolar grains. These  
mesoscale refractory grains are thought to have condensed around dy-  
ing stars and were trapped in primitive meteorites during our solar sys-  
tems formation. The objects are challenging to investigate since each  
tells a unique story of its original star and analysis is atom limited,  
requires high lateral resolution, and needs isotopic precision. These  
smallest objects are our only samples of other stars and the research  
again connects astronomy and microscopy.