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Award

2003 Best Student Paper in Planetary Sciences Award for Shoichi Itoh

We are proud to announce that the winner of the Best Student Paper in Planetary Sciences Award for the year 2003 is Shoichi Itoh (Department of Earth and Planetary Sciences, Tokyo Institute of Technology, Tokyo, Japan) for his paper "Contemporaneous formation of chondrules and refractory inclusions in the early solar system" (*Nature* 423:728–731).

Shoichi has received his Ph.D. in Earth and Planetary Sciences from Tokyo Institute of Technology and was nominated for this award by Sara Russell (The Natural History Museum, London, UK) and Hisayoshi Yurimoto (Hokkaido University, Sapporo, Japan).

Shoichi was born and grew up in Tokyo, Japan. Shoichi was interested in natural sciences, in particular planetary sciences, and for that reason he entered Tokyo Institute of Technology, the highest Japanese university devoted specifically to science fields. He selected the cosmochemistry laboratory to finish his science degree and continued to study in the same laboratory to obtain a Masters of science degree. As part of his Masters research, he developed a method to obtain stable secondary ion emission using a finer primary beam than ever before in a Cameca IMS 1270 ion microprobe. Thus he succeeded in measuring all three oxygen isotopes from an area of a micron in diameter. This analytical development was essential for the study of fine refractory materials accumulated in primitive meteorites, which are believed to be the first material that condensated in the solar nebula.

Shoichi has always been interested in the problem of origins. His thesis investigations of petrologic and isotopic cosmochemistry of refractory inclusions from CO chondrites made an important contribution to the field of origin of the solar system. By developing state-of-the-art techniques in microanalysis using combinations of scanning electron microscopy and secondary ion mass spectrometry, he was able to determine the oxygen and magnesium isotopic compositions of individual mineral grains of refractory inclusions, both amoeboid olivine inclusions (AOAs) and Ca-Al-rich inclusions (CAIs). He demonstrated that refractory inclusions in petrographic type 3.0 CO chondrites have preserved the original petrographical and isotopic signatures acquired in the solar nebula, but that refractory inclusions in CO chondrites of petrographic type 3.1 or higher have been

disturbed by parent body processes and that their isotopic signatures have been overprinted. In the course of this precise and systematic study, Shoichi did not miss the existence of a small compound object of chondrule-bearing CAI. Although several objects of CAI-bearing chondrules had been observed in primitive chondrites, chondrule-bearing CAIs had never been observed. From the petrographic evidence of the chondrule-bearing CAI, he concluded that at least some chondrules must have formed before CAIs. The paper represents a significant discovery that has inspired a lot of debate because the traditional belief is that chondrules formed several million years after the CAI formation. The implications of the observation are profound. And while Shoichi's conclusion that formation of chondrules and CAIs overlapped in time and space is still controversial, it is having a high impact on the direction of the current and future research.

I wish to join with the officers and members of the Meteoritical Society and the Planetary Division of the Geological Society of America, as well as the competition judges in congratulating Shoichi Itoh. His work stood out in a field of strong papers and exemplifies the high standards attained by students in planetary science.

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