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Correlated heavy isotope signatures in presolar SiC

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The isotopic compositions of Zr, Mo, Ru, and Ba in presolar SiC have much to tell us about nucleosynthesis in stars, particularly asymptotic giant branch (AGB) stars, the likely sources of mainstream as well as types Y and Z presolar SiC grains. We highlight here two examples from recent simultaneous measurements on multiple elements in single presolar grains. (1) From their Mo and Ru isotopic compositions, the mainstream, Y-, and Z-type SiC grains from the Murchison meteorite have remarkably constant and solar-like ratios of *r*- to *p*-process isotopes, implying that their parental AGB stars had near-solar initial isotopic compositions. (2) Zr, Mo, and Ba isotopes were measured in over 80 presolar SiC grains from the Aguas Zarcas meteorite over the past two weeks. We will summarize recent data and their implications for nucleosynthesis and mixing in AGB stars.

Author: Prof. DAVIS, Andrew (University of Chicago)

Co-authors: Dr STEPHAN, Thomas (University of Chicago); Ms KORSMEYER, Julie (University of Chicago); Mr REGULA, Andrew (University of Chicago); Mr FOWLER, Gavin (University of Chicago); Mr MUMMA, Liv (University of Chicago); Prof. HECK, Philipp (Field Museum of Natural History); Dr HOPPE, Peter (Max Planck Institute for Chemistry); Prof. NITTLER, Larry (Arizona State University)

Presenter: Prof. DAVIS, Andrew (University of Chicago)

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