

**Friday, March 18, 2005**  
**DIFFERENTIATED METEORITES**  
**8:30 a.m. Salon C**

**Chairs: G. K. Benedix**  
**C. M. Corrigan**

- 8:30 a.m. Walker R. J. \* McCoy T. J. Schulte R. F. McDonough W. F. Ash R. D.  
 $^{187}\text{Re}$ - $^{187}\text{Os}$ ,  $^{190}\text{Pt}$ - $^{186}\text{Os}$  Isotopic and Highly Siderophile Element Systematics of Group IVA Irons [#1313]  
 High precision analysis of highly siderophile elements in group IVA irons are generally suggestive of simple crystal-liquid fractionation. Fuzzy Creek is not consistent with this interpretation. Ungrouped irons Nedagolla and EET 83230 have some chemical characteristic consistent with IVA.
- 8:45 a.m. Honesto J. \* McDonough W. F. Walker R. J. McCoy T. J. Ash R. D.  
 $^{187}\text{Re}$ - $^{187}\text{Os}$  Isotopic and Highly Siderophile Element Systematics of Group IVB Irons [#1929]  
 IVB irons were analyzed for highly siderophile element abundances and  $^{187}\text{Re}$ - $^{187}\text{Os}$  isotopic systematics. The results require a bulk core with very high refractory HSE abundances and low Re/Os.
- 9:00 a.m. Corrigan C. M. \* Rumble D. III McCoy T. J. Ash R. D. McDonough W. F.  
 Honesto J. Walker R. J.  
*The Tishomingo Iron: Relationship to IVB Irons, CR Clan Chondrites, and Angrites and Implications for the Origin of Volatile-depleted Iron Meteorites* [#2062]  
 The oxygen isotopic and siderophile element composition of Tishomingo suggest formation through melting of a CR-like precursor through processes similar to IVB irons, but on a separate parent body. A direct link with angrites is possible.
- 9:15 a.m. Goodrich C. A. \* Wlotzka F. Ross D. K. Spettel B. Dreibus G. Bartoschewitz R.  
*Northwest Africa 1500: A Plagioclase-bearing Monomict Ureilite* [#1073]  
 NWA 1500 is an olivine-rich meteorite, with significant augite and plagioclase. We interpret it to be a cumulate ureilite, formed from a melt produced in a deep, oxidized source region. Its plagioclase represents the "missing basaltic component" from the UPB.
- 9:30 a.m. Nakamuta Y. \*  
*Modal Abundances of Carbon in Ureilites: Implications for the Petrogenesis of Ureilites* [#1089]  
 Modal abundances of carbon in ureilites were measured. The modal abundance and mg# of olivine were found to inversely relate and confirm the smelting reactions in the parent body and suggest that subgroups I and III came from different parent bodies.
- 9:45 a.m. Rankenburg K. \* Brandon A. D. Humayun M.  
*Highly Siderophile Elements and Osmium Isotope Systematics in Ureilites: Are the Carbonaceous Veins Primary Components?* [#1224]  
 An unsolved problem of ureilite research is the question of whether their carbon and associated metal are primary phases. We present Os isotope data for 18 bulk ureilites and compare HSE patterns to unravel the history of the ureilite parent body.
- 10:00 a.m. Kallemeyn G. W. \* Warren P. H.  
*Siderophile Geochemistry of Ureilites: Reading the Record of Early Stages of Planetesimal Core Formation* [#2165]  
 We present much new data for ureilites. The average ureilite composition can be modeled by assuming that the major yet not exhaustive siderophile depletions of typical ureilites formed by down-seepage of small proportions of S-rich metallic melt.

- 10:15 a.m. Mittlefehldt D. W. \* Hudon P. Galindo C. Jr.  
*Petrology, Geochemistry and Genesis of Ureilites* [#1040]  
Ureilites are enigmatic achondrites that have some characteristics resulting from high temperature igneous processing, yet retain other characteristics inherited from the solar nebula.
- 10:30 a.m. Lee D.-C. \* Halliday A. N. Singletary S. J. Grove T. L.  
*<sup>182</sup>Hf-<sup>182</sup>W Chronometry and an Early Differentiation in the Parent Body of Ureilites* [#1638]  
Ureilite parent body must have differentiated early, and melting events that can simultaneously remove Hf and W (e.g., smelting) are necessary to explain the observed Hf-W data.
- 10:45 a.m. Yamaguchi A. \* Mikouchi T.  
*Heating Experiments of the HaH 262 Eucrite and Implication for the Metamorphic History of Highly Metamorphosed Eucrites* [#1574]  
We performed heating experiments of a eucrite near the solidus to understand mineralogical and chemical changes during high temperature metamorphism. Partial melts formed at 1050°–1100°C are rich in P and Ti, suggesting preferential melting of mesostasis phases.
- 11:00 a.m. Benedix G. K. \* McCoy T. J. Lauretta D. S.  
*Iron Reduction During Metamorphism on the Winonaite/IAB Iron Meteorite Parent Body* [#1749]  
We show temperature and oxygen fugacity estimates that indicate, while some reduction did take place during cooling of the Winonaite-IAB parent body, it cannot account for the reduced mineral compositions. It is the intrinsic nature of the parent body.
- 11:15 a.m. Gounelle M. \* Engrand C. Chaussidon M. Zolensky M. E. Maurette M.  
*An Achondritic Micrometeorite from Antarctica: Expanding the Solar System Inventory of Basaltic Asteroids* [#1655]  
We report on the texture, mineralogy, REEs abundance and oxygen isotopic composition of an Antarctic achondritic micrometeorite. This is the first basaltic micrometeorite. It is different from any other known planetary basalt.
- 11:30 a.m. Rai V. K. \* Jackson T. L. Thiemens M. H.  
*Mass Independent Sulfur in Achondrites: Possible Evidence of Photochemistry in the Solar Nebula* [#1231]  
Sulfur isotopic composition of several achondritic meteorites has been measured. Though small but resolvable excesses of <sup>33</sup>S has been found in HED, Acapulcoite-Lodranites group of achondrites.