

6th Biennial Geochemical SIMS Workshop
Oral Presentations

Thursday Morning, November 3, 2011

8:15 am Welcome and Logistical Information
G.R. Huss (University of Hawai'i)

Session 1: Geochronology and Cosmochronology

Chair: Marty Grove (Stanford University)

8:25 am **Keynote:** A Search for an Extraterrestrial Impact Signatures in Jack Hills Zircons
M. Wielicki, E. Bell, S. Abbott and M. Harrison (UCLA)

8:55 am U-Th Dating of Accessory Minerals
J. Vazquez (U. S. Geological Survey)

9:15 am New SIMS U-Pb Reference Materials
A.K. Kennedy¹, J.L. Crowley², M.D. Schmitz² and J. Wotzlaw³
(¹Curtin University, ²Boise State University, ³Université de Genève)

9:35 am Calcium-41 Revisited: Development of Potassium Isotope Mass Spectrometry on CAMECA 1280HR2
M.-C. Liu^{1,2} and M. Chaussidon¹ (¹CRPG-CNRS, ²Academia Sinica)

9.55 am Coffee Break

Session 2: Geochemistry

Chair: Trevor Ireland (Australian National University)

10:15 am SIMS-Based Geochemistry at WHOI
N. Shimizu (Woods Hole)

10:35 am Light Elements in Abyssal Peridotites: Fingerprinting Sources of Migrating Melts
E. Hellebrand¹, T. Morishita^{1,2} and K. Nagashima¹ (¹University of Hawai'i, ²Kanazawa University)

10:55 am Ti-in-Quartz Thermometry of Symplectites in Retrograde Metamorphic Assemblages
M. Grove and E. Peterman (Stanford University)

11:15 am Oxygen Isotope Signatures in Carbonate and Silicate Inclusions in Deep Mantle Diamonds
J. Matzel¹, B. Jacobsen¹, F. Kaminsky² and I.D. Hutcheon¹ (¹Lawrence Livermore National Laboratory, ²KM Diamond Exploration, Ltd.)

11:35 am Progress in SIMS Analysis of C- and N-Isotopes in Diamond
R.A. Stern¹, M. Palot¹, T. Stachel¹, D.G. Pearson¹ and P. Cartigny² (¹University of Alberta, ²Intitute de Physique du Globe et URA CNRS)

11:55 am to 1:00 pm Lunch

Thursday Afternoon, November 3, 2011

Session 3: Stable Isotopes, Terrestrial and Extraterrestrial

Chair: Kevin McKeegan (UCLA)

- 1:00 pm **Keynote:** Stable Isotope Geochemistry and Cosmochemistry at WiscSIMS: Recent Progress.
N.T. Kita (University of Wisconsin)
- 1:30 pm High Precision Mg and O Isotope Measurement in Olivine from Meteoritic Chondrules.
M. Chaussidon¹, T.-H. Luu^{1,2}, C. Rollion-Bard¹ and A. Gurenko¹ (¹CRPG-CNRS, ²IPGP)
- 1:50 pm Oxygen Isotope Systematics of Chondrules: An Example of Combined Oxygen Three-Isotope Analyses Using 3µm and 15µm Primary Beams.
T. Ushikubo (University of Wisconsin)
- 2:10 pm Technical Development of Triple Oxygen Isotopic Analysis Using SHRIMP-IIe/MC
K. Yi¹, C.-S. Cheong¹, T.E. Hong¹ and B.-G. Choi² (¹Korea Basic Science Institute, ²Seoul National University)
- 2:30 pm D/H and ¹H/¹⁸O of Apatite in Apollo Rocks: Implications for the Origin of Lunar Water
J.P. Greenwood¹, S. Itoh², N. Sakamoto², P.H. Warren³, L.A. Taylor⁴ and H. Yurimoto² (¹Wesleyan University, ²Hokkaido University, ³UCLA, ⁴University of Tennessee)

2:50 pm Coffee Break

Session 4: Analyzing Solar Wind from the Genesis Mission

Chair: Marc Chaussidon (CRPG-CNRS)

- 3:10 pm MegaSIMS and Results from the Genesis Mission
K.D. McKeegan¹, A.P. Kallio¹, V.S. Heber¹, G. Jarzebinski¹, P.H. Mao², C.D. Coath³, T. Kunihiro⁴ and D.S. Burnett² (¹UCLA, ²Caltech, ³University of Bristol, ⁴Okayama University)
- 3:30 pm Backside Depth Profiling by SIMS: Mg Isotopic Composition of Solar Wind Collected by the Genesis Mission
V. S. Heber¹, A.J.G. Jurewicz², S. Smith³, M. Wadhwa², K.D. McKeegan¹ and D.S. Burnett⁴ (¹UCLA, ²Arizona State University, ³Evans Analytical Group, ⁴Caltech)
- 5:00 pm Group Picture.** Meet in front of lecture hall.

5:15 pm to 8:00 pm Poster Session

Friday Morning, November 4, 2011

Session 5: Science with Small Samples

Chair: Larry Nittler (Carnegie Institution of Washington)

- 8:15 am **Keynote:** Characterization of Presolar Silicate Grains: NanoSIMS, Auger Spectroscopy, and FIB-TEM
C. Floss (Washington University)
- 8:45 am Applications of the Newly Installed NanoSIMS 50L at the Institute of Geology and Geophysics, Chinese Academy of Sciences
Y. Lin, W. Yang, J. Zhang, J. Hao, S. Hu, L. Feng and X. Zhao (Chinese Academy of Sciences)
- 9:05 am Hayabusa Sample Analysis by SIMS
H. Yurimoto (Hokkaido University)
- 9:25 am Measurements of Stardust Samples
R.C. Ogliore, K. Nagashima and G.R. Huss (University of Hawai'i)

9:45 am Coffee Break

Session 6: Ion Imaging and Other Topics

Chair: Hisayoshi Yurimoto (Hokkaido University)

- 10:05 am Isotope Imaging with SCAPS Detector: Applications to Oxygen and ^{26}Al - ^{26}Mg Isotope Systematics in Ca- and Al-rich Inclusions
K. Nagashima¹, G.R. Huss¹, A.N. Krot¹, and H. Yurimoto² (¹University of Hawai'i, ²Hokkaido University.)
- 10:25 am Some Pitfalls of SIMS Ion Imaging (or What is Shoved Under the Rug)
L. Nittler (Carnegie Institution of Washington)
- 10:45 am Evidence for the Extra-terrestrial Origin of the First Natural Quasicrystal
Y. Guan¹, L. Bindi^{2,3}, J.M. Eiler¹, L. Hollister⁴, G.J. MacPherson⁵, P.J. Steinhardt⁴, and N. Yao⁴ (¹Caltech, ²Universita degli Studi di Firenze, ³CNR-Istituto di Geoscienze e Georisorse, ⁴Princeton University, ⁵Smithsonian Institution)
- 11:05 am The Use of SIMS for Nuclear Forensics. A Geochemical Perspective
A.J. Fahey (Pacific Northwest National Lab)
- 11:25 am Using an Electron Multiplier in Analog Mode
P. Williams¹, J. Lorincik², K. Franzreb¹ and R. Hervig¹ (¹Arizona State University, ²ASCR)

11:45 am to 1:00 pm Lunch

Friday Afternoon, November 4, 2011

Session 7: New Instruments and Instrument Development

Chair: Richard Hervig (Arizona State University)

- 1:00 pm Commissioning of SHRIMP SI
T. Ireland and P. Holden (Australian National University)
- 1:20 pm Cameca Instruments for Geosciences: Recent Developments
P. Peres, F. Fernandes and M. Schuhmacher (Cameca Instruments)
- 1:40 pm Low Impact Energy SIMS Using SHRIMP
C. Magee (Australian Scientific Instruments)
- 2:00 pm Development of Laser Ionization Mass Nanoscope “LIMAS”
S. Ebata^{1,2}, M. Ishihara², K. Uchino³, S. Itose⁴, M. Matsuya⁴, M. Kudo⁴, K. Bajo¹ and H. Yurimoto¹ (¹Hokkaido University, ²Osaka University, ³Kyushu University, ⁴JEOL Ltd.)
- 2:20 pm CHILI – The Chicago Instrument for Laser Ionization
T. Stephan¹, A.M. Davis¹, M.J. Pellin^{1,2}, M.R. Savina^{1,2}, A.J. King¹, N. Liu¹, R. Trappitsch¹ and R. Yokochi¹ (University of Chicago, Argonne National Laboratory)

2:40 pm Coffee Break

Session 8: Statistics and Data Analysis

Chair: Andrew Davis (University of Chicago)

- 3:00 pm Statistical Bias in Isotope Ratio Measurement
G.R. Huss and R.C. Ogliore (University of Hawai‘i)
- 3:20 pm Towards Resolving the Statistical Bias Problem in Isotope Ratio Measurements
C.D. Coath and R.C.J. Steele (University of Bristol)
- 7:00 pm Workshop Dinner**