

Goldschmidt 2005

CONFERENCE PROGRAMME

Saturday May 21st 2005

Symposium S05**Room: Albertson 102****Advances in *in situ* Microanalysis of Trace Elements****Convenors:****Adam Kent & Steve Eggins**

- 08:30** **Sutton S, Newville M, Rivers M, Eng P & Lanzirotti A:**
X-Ray Fluorescence Microprobes using Microfocusing Mirrors
- 08:45** **Metrich N, Berry A, O'Neill H & Susini J:**
A XANES Study of Sulfur Speciation in Synthetic Glasses and Melt Inclusions
- 09:00** **Anderson A, Mayanovic R, Bassett W & Chou I:**
X-Ray Microspectroscopic Analyses of Mineral-Fluid and Melt-Fluid Interactions at Extreme Temperatures and Pressures
- 09:15** **Keller L, Flynn G & Sutton S:**
Submicrometer-Scale Minor and Trace Element Mapping in Comet Dust
- 09:30** **Houk R:**
KEY New Directions in ICP-MS
- 10:00** **Olesik J & Casey N:**
Sub-ms Time-Resolved Laser Ablation-ICP-Mass Spectrometry
- 10:15** **Potrasson F, Freydier R, Mao X, Mao S & Russo R:**
INV Femtosecond Laser Ablation ICP-MS Analysis of Trace Elements in Solids
- 10:30** **Horn I & von Blanckenburg F:**
196 nm Femtosecond Laser Ablation: Applications to Trace Element and Radiogenic Isotope Ratio Determinations
- 10:45** **Hervig R:**
INV Useful Ion Yields and Limits of SIMS Analysis
- 11:00** **Layne G, Tivey M & Humphris S:**
INV Trace Metal Concentrations in Common Sulfide Minerals using SIMS
- 11:15** **Genareau K, Roggensack K & Hervig R:**
SIMS Depth-Profiling of Igneous Phenocrysts: Examining Trace Element Variations on the Edge
- 11:30** **Le Fèvre B & Ottolini L:**
SIMS Analysis of Chlorine at Low Contents in Silicates: a New Tool for Upper-Mantle Geochemical Studies
- 11:45** **Kinman W & Neal C:**
Crystal Size Distributions as a Guide for Microanalysis: An Example from Detroit Seamount

(Symposium S05 continues on page 15)

Symposium S12**Room: Agricultural Science 204****Carbon and Gold****Convenors:****John Parnell & Robert Hough**

- 09:30** **Southam G & Lengke M:**
KEY Bacteria Gold Interactions
- 10:00** **Phillips N:**
KEY Carbon, and Gold-Only Deposits
- 10:30** **Barnicoat A, Phillips G, Walshe J & Lawrence S:**
Carbonaceous Matter and Gold in Carlin Deposits: How Intimate was the Relationship?

(Symposium S12 continues on page 15)

Symposium S20**Room: Renfrew 125****Earth Materials and Human Health****Convenors:****Geoff Plumlee & Greg Meeker****08:30 Miller A:***KEY* Libby, MT: Overview of Asbestos Exposures and Health Effects**09:00 Meeker G, Lowers H & Brownfield I:**

Asbestos from Libby Montana; Compositions and Morphologies That Don't Fit Current Asbestos Definitions

09:15 Sanchez M & Gunter M:

Low-Level Detection of Libby Amphiboles in Attic Insulation

09:30 Dogan AU & Dogan M:

Re-Evaluation and Re-Classification of Erionite Group Minerals

09:45 Swayze G, Higgins C, Clinkenbeard J, Kokaly R, Clark R, Meeker G & Sutley S:

Using Imaging Spectroscopy to Map Ultramafic Rocks, Serpentinites, and Tremolite-Actinolite-Bearing Rocks in California

10:00 Wendlandt R, Harrison W, Vaughan D & Wincott P:*INV* Surface Coatings on Quartz Grains in Bentonites and their Relevance to Human Health**10:15 Walraven N, Vriend S, van Os B, Klaver G & Oomen A:***KEY* Factors Controlling the Bioaccessibility of Pb in Polluted Soils**10:45 Goldhaber M, Morrison J, Reynolds R & Smith D:**

A Soil Geochemical Transect in Northern California-Links to Human Health Issue

11:00 Zhu J, Zheng G, Johnson TM & Li S:

Distribution of Native Selenium in Yutangba of China and its Environmental Implications

11:15 Sahabi F & Kheirkhah M:

Flour Pollution in Drinking Water in Makoo City of West Azarbaijan, Northwest Iran

11:30 Lowers H, Breit G & Foster A:

Importance of Pyrite as an Arsenic Sink in Bengal Sediment

11:45 Plumlee G:

The Medical Geology and Geochemistry of Mineral Deposits

(Symposium S20 continues on page 71)

Symposium S24**Room: Agricultural Science 106****Geochemical Controls on Microbial Processes****Convenors:****Greg Druschel & Jan Amend****08:30 Pearson A:***KEY* Assessing Microbial Metabolisms *in situ*: Insights from Carbon Isotopic Analyses at the Molecular Level**09:00 Whitaker R, Allen E, Tyson G & Banfield J:***INV* Population Dynamics in Acid Mine Drainage Biofilms from the Richmond Mine at Iron Mountain, California**09:15 Knab NJ, Fossing H & Joergensen BB:**

Methane Flux Control in Ocean Margin Sediments

09:30 Sivan O, Schrag D & Murray R:

Rates of Methanogenesis and Methanotrophy in Deep-Sea Sediments

09:45 Jin Q & Banfield J:*INV* Thermodynamics Controls the Rates of Microbial Sulfate Reduction**10:00 Koretsky C, Moore C, DiChristina T & Van Cappellen P:***INV* Unravelling the Effects of Macrofauna, Macrophytes and Microbes on Iron and Sulfate Reduction in Saltmarsh Sediments**10:15 Carey E, Burns J, DiChristina TJ & Taillefert M:***INV* Formation of Soluble Organic-Fe(III) Complexes during Microbial Iron Reduction**10:30 Buss H, Bruns MA, Schultz M, Mathur C, Moore J & Brantley S:**

Microbial Fe Cycling in Deep Regolith

10:45 Edwards K, Rogers D & Webb E:*KEY* Microbial Weathering of Seafloor Hydrothermal Sulfides**11:15 Inskip W, Macur R, Ackerman G, Kozubal M, Taylor W & Korf S:**

Linking Microbial and Geochemical Processes in Geothermal Habitats

11:30 D'Imperio S, Lehr C & McDermott T:*INV* Microbial Interactions with Sulfide and Arsenite in an Acidic Geothermal Spring in Yellowstone National Park**11:45 Amend J, Rogers K, Rusch A & Gammon C:**

The Vulcano Hydrothermal System: Microbial Community Structure, Novel Isolates, and Geochemical Energy Sources

(Symposium S24 continues on page 16)

Symposium S34**Room: Albertson 101****Growth and Dissolution under Stress: Pressure Solution, Replacement and Weathering****Convenors:****Dag Dysthe & Francois Renard****10:00 Boles J, Israelachvili J, Alcantar N, Anzalone A, Meyer E, Greene W & Pataki M:***KEY* Pressure Solution and Mica in Quartzose Sandstone: Observations and Experiments**10:30 Karcz Z, Aharonov E, Ertas D, Polizzotti R & Scholz C:***KEY* The Evolution of Grain Contacts Undergoing Pressure Solution – Unique Insights from a Confocal Viewpoint**11:00 Bisschop J, Putnis C, Jamtveit B & Dysthe DK:**

Does Stress Affect the Dissolution Reaction of Calcite?

11:15 Katsman R & Aharonov E:

Modelling Localized Volume Changes: Application to Pressure Solution and Stylolites

11:30 Koehn D & Renard F:*INV* Modelling the Formation of Stylolites as a Competition between Elastic Forces, Surface Tension and Noise**11:45 Merino E:***INV* Physical Chemistry of Replacement: Consequences for Petrology and Reaction-Transport Modeling

(Symposium S34 continues on page 16)

Symposium S42**Room: Renfrew 126****Isotopic Records of Early Planetary Evolution****Convenors:****Jeff Vervoort, Trevor Ireland & Yuri Amelin****08:30 Stevenson D:***KEY* Earth Formation: Combining Physical Models with Isotopic and Elemental Constraints**09:00 Ireland T, Holden P & Norman M:**

The Oxygen Isotope Composition of the Sun

09:15 Lyons J:

CO Self-Shielding and Oxygen Isotopes in the Solar Nebula

09:30 Podosek FA:*INV* Early Solar System Timescales**09:45 Dunn S, Amelin Y & Nemchin A:**

U-Pb Dating of Meteoritic Perovskite

10:00 Bouvier A, Blichert-Toft J, Vervoort J, McClelland W & Albarède F:

Pb-Pb Geochronology of the Early Solar System

10:15 Wadhwa M:*INV* From Dust to Planets: Time Scales of Accretion and Differentiation in the Early Solar System**10:30 Stirling C, Halliday A, Potter E & Andersen M:**The Formation of the Solar System: New Constraints from the ^{247}Cm - ^{235}U Chronometer**10:45 Jacobsen S:***INV* The Hf-W Isotopic System and the Origin of the Earth and Moon**11:00 Wiechert U & Halliday AN:**

Magnesium Isotope Composition of Chondrites, Achondrites and the Earth-Moon System

11:15 Schönbacher M, Hauri E, Carlson R & Horan M:

Ag Isotope Variations in the Earth

(Symposium S42 continues on page 17)

Symposium S44**Room: Albertson 201****Lifetime Predictions of Toxic and Radioactive Waste Disposal and Remediation Schemes: Thermochemical Data, Theoretical Models and Reaction Transport Codes****Convenors:** Dave Wesolowski, Jordi Bruno & Rod Ewing**08:30 Murphy W & Pickett D:***KEY* Episodic Release and Transport at the Peña Blanca Repository Analog Site**09:00 Grambow B:***INV* Coupled Modelling of the Source-Term for Radionuclide Release from Nuclear Waste Forms in the Near-Field**09:15 Sassani D:***INV* Coupled Processes in Performance Assessment Source-Term Models for Geologic Repository Systems**09:30 Navrotsky A:***INV* Calorimetric Study of Stability of Phases Containing Exchangeable Anions: Sodalite, Cancrinite, Hydrotalcite**09:45 Pekala M, Kramers J & Waber N:**Uranium Series Disequilibrium in the Opalinus Clay – A way to Assess the Effective Diffusion Coefficient for ²³⁴U**10:00 Janots E, Brunet F, Goffé B & Poinssot C:**

Thermochemical and Experimental Stability of Synthetic La-Bearing Minerals as Analogues to Nuclear-Waste Forms

10:15 Skomurski E, Shuller L, Becker U & Ewing R:The Corrosion of UO₂ Versus ThO₂: a Quantum Mechanical Investigation**10:30 Pourtier E, Ballerat-Busserolles K, Devidal J, Gibert F & Majer V:**

Standard Thermodynamic Properties of Aqueous Lanthanides and Solubility of Synthetic Pure Nd Monazite

10:45 Neuhoff P:

Thermodynamic and Structural Models of Pollucite-Analcime Solid Solutions

11:00 Carroll S, Alai M, Craig L, Gdowski G, Hailey P, Nguyen QA, Rard J, Staggs K, Sutton M & Wolery T:*INV* Chemical Environment at Waste Package Surfaces in a High-Level Radioactive Waste Repository**11:15 Palmer D, Anovitz L, Cole D, Fayek M, Gruszkiewicz M, Riciputi L, Wesolowski D & Wilson L:***INV* Experimental Approaches to Predict the Behavior of Liquid Films**11:30 Wolery T, Peterman Z, Carroll S, Jove-Colon C, Sutton M, Rard J & Wijesinghe A:**

Dust Salts and Deliquescence on Waste Packages in an Unsaturated-Zone Repository

11:45 Juckett M, Yang L & Pabalan R:

Deliquescence Relative Humidity and Characterization of Dusts from the Vicinity of Yucca Mountain, Nevada

(Symposium S44 continues on page 12)

Symposium S45**Room: Renfrew 111****Mantle Heterogeneity, Past and Present****Convenors:**

Francis Albarède & Paul Tackley

08:30 Tackley P & Xie S:*KEY* Modeling Mantle Geochemical (Isotopic) and Geodynamical Evolution**09:00 Deschamps E, Trampert J & Tackley P:***INV* A Comparison between Lower Mantle Models from Probabilistic Tomography and Models of Thermo-Chemical Convection**09:15 Wen L:***INV* The Core-Mantle Boundary Region, Hotspot Motion and Geochemistry**09:30 Angel R, Zhao J, Vanpeteghem C & Ross N:**

Structure and Properties of Silicate Perovskites in the Deep Mantle

09:45 Burnard P & Toplis M:Helium Solubility in Carbonate Liquids: Potential for Generating High ³He/U Mantle**10:00 Class C & Goldstein S:**

Evolution of Helium Isotopes in the Earth's Mantle

10:15 Ballentine C, Marty B, Sherwood Lollar B & Cassidy M:*INV* The Source and Consequence of Neon Isotope Heterogeneity in the Mantle**10:30 Kellogg J & Tackley P:***INV* A Comparison of Methods for Modeling Chemical Variability in the Earth's Mantle**10:45 Weaver K & DePaolo D:**

Sr-Isotopic Evolution of the Mantle

11:00 Garnero E, Helmberger D & McNamara A:*INV* Deep Mantle Heterogeneity, Anisotropy, and Thermochemical Piles**11:15 Ito G & Mahoney J:***INV* MORB versus OIB Genesis: Stratification in Mantle Composition or in Upper Mantle Melting?**11:30 Li B:**

Scales of Thermal Anomaly and Chemical Heterogeneity in the Lower Mantle

11:45 Peltier R & Liu Y:

Phase Transition Mediated Mantle Mixing: The Influence of Temperature Dependent Clapeyron Slope on the Heterogeneity Spectrum

(Symposium S45 continues on page 18)

Symposium S58**Room: CNR 010****Novel Isotopic Methods in Tracing Paleooceanographic Processes****Convenors:****Ariel Anbar & Olivier Rouxel**

- 08:30 Pagani M:**
INV Controls on Paleo-Alkenone $\delta^{13}\text{C}$
- 09:00 Galy A, Sime NG & Tipper ET:**
INV The Importance of a Vital Effect on the Ca Isotopic Composition of Foraminiferal Tests
- 09:15 Morris E, Paytan A & Bullen T:**
Seawater Calcium Isotopes from Marine Barite: a Potential Record of Carbonate Deposition in the Oceans
- 09:30 John S, Bergquist B, Saito M & Boyle E:**
Zinc Isotope Variations in Phytoplankton and Seawater
- 09:45 Bergquist BA, John SG & Boyle EA:**
Iron Isotopes in the Marine System
- 10:00 Ge C, Jiang S, Ling H & Chen P:**
Boron Isotope Variation and its Environmental Implication in Wuqian River Estuary, Hainan Island, China
- 10:15 Wing B, Johnston D, Ono S, Farquhar J & Paytan A:**
Sulfur Multiple Isotope Constraints on the Cenozoic-Cretaceous Sulfur Cycle
- 10:30 Johnston D, Farquhar J, Wing B, Lyons T, Kah L, Strauss H & Canfield D:**
Using the Multiple Isotopes of Sulfur to Constrain Microbial Processes in the Proterozoic Ocean
- 10:45 Chu X, Zhang T, Strauss H, Zhang Q & Feng L:**
Dynamic Ocean Chemistry Around the Marinoan glaciation – Isotopic Evidence from Cap Carbonates
- 11:00 Rouxel O, Bekker A & Edwards K:**
Iron Isotope Constraints on the Archean and Paleoproterozoic Ocean Redox State
- 11:15 Kaufman A, Xiao S & Yin L:**
Ion Microprobe Carbon Isotope Analysis of Archean Microfossils?
- 11:30 Anbar A & Williams G:**
Molybdenum Isotope Prospects

(Symposium S58 continues on page 19)

Symposium S68**Room: Renfrew 112****Subduction Zone Magmatism and Related Processes****Convenors:****Gene Yogodzinski & Terry Plank**

- 08:30 Hilton D, Fischer T, Shaw A, De Leeuw D & Walker J:**
The CO_2 -He Isotope and Relative Abundance Systematics of the Central American Arc
- 08:45 Fischer T, Hilton D, Elkins L, Shaw A, Zimmer M, Takahata N & Sano Y:**
Central America Arc Volatiles: Along- and Across- arc Variations
- 09:00 de Leeuw D, Hilton D, Fischer T & Walker J:**
Along and Across-Arc Profiles in He-C Systematics: New Data from El Salvador and Honduras
- 09:15 Shaw A, Hauri E, Kelley K, Fischer T, Hilton D, Stern R, Hawkins J & Plank T:**
INV Hydrogen Isotope Variations in Mariana Arc Melt Inclusions
- 09:30 Bindeman I, Turner S, Eiler J & Portnyagin M:**
INV The Isotopic Composition of Subduction Fluid: High-, Low-, or Normal $\delta^{18}\text{O}$?
- 09:45 Kelley K & Plank T:**
INV Distribution of Water in the Mantle Wedge of Subduction Zones
- 10:00 Danyushevsky L, Crawford T, Leslie R, Tetroeva S & Falloon T:**
KEY Subduction-Related Magmatism along the Southeast Margin of the North Fiji Backarc Basin
- 10:30 Hergt J & Woodhead J:**
Magmatic Evolution in the Lau-Tonga Arc-Backarc Basin System
- 10:45 Woodhead J:**
INV Hf-Isotopes in Subduction Settings: The Plot Thickens
- 11:00 Barry T, Pearce J, Leat P & Millar I:**
Some Isotopic Constraints on Fluid versus Melt Transfer from Slab to Wedge: Hf Isotope Evidence from the South Sandwich Arc
- 11:15 Brown S, Yogodzinski G, Gersen M & Vervoort J:**
Slab Contributions in the Aleutian Arc: a Hf Isotopic Perspective
- 11:30 Singer B, Leeman W, Thirlwall M, Tonarini S, Jicha B & Rogers N:**
B and $\delta^{11}\text{B}$ in Aleutian Island Arc Basalt Track Slab and Sediment Fluid Addition to the Mantle Wedge
- 11:45 Aulbach S, Griffin WL, Pearson NJ & O'Reilly SY:**
The Eclogite Mantle Reservoir: $^{176}\text{Hf}/^{177}\text{Hf}$, Nb/Ta and Zr/Hf of Rutile

(Symposium S68 continues on page 13)

Symposium S71**Room: Albertson 101****Teaching Geochemistry****Convenors:****Cathy Manduca & David Mogk**

- 08:30 Mogk D, Lennon L & Kirk K:**
Digital Resources for Teaching Geochemistry
- 09:00 Ratajeski K, Mogk D & Downs R:**
Teaching Mineralogy with Crystal Structure Databases and Visualization Software:
a Digital Resource Collection
- 09:30 Long D:**
A Laboratory in Environmental Geochemistry
- 09:45 Hoskin P:**
Retention of Visual-Kinesthetic Activities in Geochemical Syllabi

(Symposium S71 continues on page 21)

Symposium S73**Room: Administration Auditorium****The Earth's Weathering Engine; Coupling Chemical Weathering With Physical Erosion, Biology, Hydrology and Climate****Convenors: Arjun Heimsath, Art White, Jerome Gaillardet & Susan Brantley**

- 08:45 Dietrich W:**
KEY Does Life Leave a Topographic Signature on Earth?
- Presentation by the Houtermans Medallist**
- 09:15 Hodson M, Andre J, Ashton HS, Arnold RE, Carpenter D, Currie M, Lapied E & Nahmani JY:**
What Earthworms Get up to in Soil
- 09:45 Keller CK & Balogh Z:**
Chemical Weathering, Land Plants, and CO₂ Sinks: Role of Ecological Disturbance
- 10:00 Fimmen R, Richter D & Vasudevan D:**
INV Rhizosphere Iron-Redox Cycling: Electron Transfer Reactions that Drive Mineral Weathering
- 10:15 Needham S & Worden R:**
Worm Excretion Processes and the Weathering of Icelandic Basalt
- 10:30 White A, Schulz M & Vivit D:**
Distinguishing between Lithogenic and Biologic Processes in Soils
- 10:45 Gislason S, Eiriksdottir E, Sigfusson B, Snorrason A, Elefsen S, Hardardottir J, Karjilov M, Oelkers E, Torssander P & Gisladottir G:**
The Effect of Climate, Vegetation, Rock Age, and Human Activity on Basalt Weathering Rates in NE-Iceland
- 11:00 Blum A & Hellmann R:**
Weathering within Soils Developed on a Chronosequence of Glacial Moraines in the French Alps
- 11:15 Frogner Kockum P, Herbert R & Gislason S:**
A Diverse Ecosystem Response to Volcanic Ash Falls
- 11:30 Patino L, Velbel M, Price J & Wade J:**
Element Redistribution during Weathering of Volcanic Rocks in Sedentary Landscapes
- 11:45 Phillips F:**
Desert Soils and Global Climate Cycles: Vapor Lock in the Earth's Weathering Engine

(Symposium S73 continues on page 14)

Symposium G04**Room: Renfrew 126****Cosmochemistry**

- 11:30** **Neal C & Shearer C:**
Evidence for Garnet in the Lunar Mantle
- 11:45** **McDonough W:**
How and When did the Earth Inherit its Volatile Signature?

(Symposium G04 continues on page 22)

Symposium G12**Room: Agricultural Science 204****Hydrothermal Geochemistry**

- 10:45** **Mark G, Williams P, Blake K, van Achterberg E & Ryan C:**
Br-Cl Fractionation in Mid-Crustal Fluid-Rock Systems
- 11:00** **Allan M & Yardley B:**
Hydrothermal Processes in a Breccia-Hosted Au Deposit
- 11:15** **Koski A & Wood S:**
The Geochemistry of the Geothermal System in the Alvord Basin, Oregon
- 11:30** **Kendrick M:**
⁴⁰Ar/³⁹Ar-Kr-Xe Systematics of Quartz: Mt Isa, Australia
- 11:45** **Bastrakov E, Shvarov Y, Girvan S, Cleverley J, McPhail DB & Wyborn L:**
FreeGs: a Web-Enabled Thermodynamic Database for Geochemical Modelling

(Symposium G12 continues on page 23)

Symposium G18**Room: Agricultural Science 204****Mineral Deposits**

- 08:30** **Partey F, Lev S, Casey R, Widom E, Lueth V & Rakovan J:**
Source of Fluorine and Petrogenesis of the Rio Grande Rift Type Barite-Fluorite-Galena Deposits
- 08:45** **Hai-Jun Z, Run-Sheng H & Wei-Xuan F:**
Geochemical Evidences for Origin of Metallogenic Materials in the Maoping Pb-Zn Deposit, Zhaotong, Yunnan, China
- 09:00** **Da Silva F & Lima A:**
Assessing the Performance of BLEG to Detect Gold Anomalies in Stream Sediment Geochemistry (Portugal)
- 09:15** **Run-Sheng H, Zhi-Long H, Jin C, Geng-Sheng M & Hai-Jun Z:**
S, Pb, C and O Isotope Evidences for Deposit Genesis in the Huize Carbonate-Hosted Zn-Pb-(Ag) District, Yunnan, China

(Symposium G18 continues on page 24)

Symposium S10**Room: Albertson 101****Bioirrigation: Field-, Laboratory- and Model- Based Assessments of the Geochemical Influence of Burrowing Macrofauna****Convenors: Carla Koretsky, Christof Meile & Yoko Furukawa****13:30 Van Cappellen P, Meile C & Koretsky C:***KEY* Irrigation in Early Diagenetic Models: From One-Dimensional Mass Transfer Coefficients to Multi-Dimensional, Ecologically-Based Models**14:00 Meile C, Berg P, Van Cappellen P & Tuncay K:**

Heterogeneity in Aquatic Sediments: 1D Representations of a 3D Environment

14:15 Boudreau B:*INV* The Nonlocal Irrigation Model: Misleading or Misunderstood?**14:30 Shull D:***KEY* Modeling the Effects of Burrow Geometry on Pore-Water Transport in Marine Sediments**15:00 Finelli C:***INV* Bioirrigation as a Source of Nutrients for Benthic Algae: a Study of Burrow Ventilation by Ghost Shrimp (*Thalassinidea*) from the Northern Gulf of Mexico**15:15 Stahl H & Glud R:***INV* Two Dimensional Optical O₂ Measurements in Marine Bioturbated Sediments**15:30 Zorn M, Lalonde S, Gingras M & Konhauser K:**

Microscale Oxygen Distribution in Invertebrate Burrows from Willapa Bay, Washington

15:45 Gingras M:

Wide Range of Infaunal Animal Behaviors Means the Geochemical Impacts of Sediment-Animal Interactions are Extremely Variable

Plenary Lecture by the Urey Medalist**Administration Auditorium****16:40 Navrotsky A:**

Geochemical, Thermochemical, Crystal Chemical: Some Recurring Themes

(Symposium S10 continues on page 15)

Symposium S13**Room: CNR 010****Carbonates - Powerful Archives for Paleoclimatographic Research - The Good the Bad and the Most Confusing****Convenors:****Adina Paytan & Zanna Chase****13:30 Russell A, Schmidt M, Spero H & Anderson D:***KEY* Timing of Glacial Changes in SST and pCO₂ from Foraminiferal U/Ca, Mg/Ca and $\delta^{18}\text{O}$ in a Caribbean Core**14:00 Hastings D, Hollweg T, Flower B, Cronin T, Edgar NT & Quinn T:***INV* High-Resolution Deglacial Record of Climate Change in Central Florida from Fresh Water Ostracodes**14:15 Broecker W, Barker S & Clark E:**

The Radiocarbon Age Glacial Deep Water

14:30 Billups K & Scheiderich K:*INV* Paired Mg/Ca and $\delta^{18}\text{O}$ Records Reveal Mid Miocene Paleoclimatology**14:45 Eiler J, Ghosh P, Affeck H, Adkins J, Schauble E, Schrag D & Hoffman P:**Carbonate Paleothermometry Based on Abundances of ¹³C-¹⁸O Bonds**15:00 Stoll H, Arevalos A, Burke A, Shimizu N, Theroux S & Ziveri P:***KEY* Unraveling Nutrient, Growth Rate, Calcification, and Diagenesis Effects on the Chemistry of Coccolith Calcite**15:30 Hall J:***INV* Foraminiferal Lithium as a Paleoclimatographic Proxy**15:45 Lyons T, Hurtgen M & Gill B:***INV* New Insight into the Utility of Carbonate-Associated Sulfate**16:00 Hemming G & Hönisch B:***INV* A Critical Review and Recent Advances in the Boron Isotope Paleo-PH Proxy**16:15 Brand U:**

Isotopes in Paleozoic Carbonate Components: An Evaluation of Proxies

Plenary Lecture by the Urey Medalist**Administration Auditorium****16:40 Navrotsky A:**

Geochemical, Thermochemical, Crystal Chemical: Some Recurring Themes

(Symposium S13 continues on page 15)

Symposium S27 **Room: Renfrew 111**
**Geochemical, Rheological, and Geophysical Aspects of Deep
 Mantle Phase Changes**

Convenors: Isabelle Daniel & Jay Bass

- 13:30 Li B & Kung J:**
KEY Composition of the Earth's Lower Mantle: Results from Forward and Inverse Mineral Physics Modeling
- 14:00 Akber-Knutson S, Steinle-Neumann G & Asimow P:**
INV On the Sharpness of the Perovskite/Post-Perovskite Transition in the Earth's Mantle
- 14:15 Kopylova M & Hayman P:**
 First Natural Samples of Ferropericlaase from the Lowermost Mantle
- 14:30 Sun D, Ahrens TJ & Asimow PD:**
INV Thermodynamics of the Lowermost Mantle
- 14:45 Agee C & Draper D:**
 New Experimental Constraints on the Martian Basalt Source Mantle
- 15:00 Lakshatanov D, Sinogeikin S, Litasov K, Ohtani E & Bass J:**
 Effect of Al³⁺ and H⁺ on Elasticity of Stishovite
- 15:15 Nestola E, Gatta GD & Boffa Ballaran T:**
 The Effect of Ca Substitution on the Compressional Behavior of Enstatite (Mg₂Si₂O₆) up to 10 GPa
- 16:40 Plenary Lecture by the Urey Medalist** **Administration Auditorium**
Navrotsky A:
 Geochemical, Thermochemical, Crystal Chemical: Some Recurring Themes

(Symposium S27 continues on page 16)

Symposium S32 **Room: Renfrew 125**
Geochronology of Mantle Samples

Convenors: Graham Pearson, Larry Heaman & Rick Carlson

- 13:30 Shirey S, Schmitz M, Westerlund K, Richardson S, Wiechert U, Pearson G, Carlson R & Harris J:**
 Dating Mantle Samples: Examples from the Re-Os System in Eclogites and Diamonds
- 13:45 Schmitz M, Shirey S & Carlson R:**
INV Diamonds beneath an Ancient Continental Rift: The Star Kimberlite, South Africa
- 14:00 Aulbach S, Griffin WL, Pearson NJ, O'Reilly SY & Kivi K:**
INV Os-Hf-Nd Isotope Constraints on Subcontinental Lithospheric Mantle Evolution, Slave Craton (Canada)
- 14:15 Wang K, O'Reilly S, Griffin W, Pearson N, Matsumura R & Shinjo R:**
 Proterozoic Mantle Lithosphere beneath the East African Rift (Southern Ethiopia): *In situ* Re-Os Evidence
- 14:30 Garden B, Carlson R, Pearson G, Shirey S & Richardson S:**
 A Comparison of Mineral and Whole Rock Approaches to Re-Os Dating of the Kaapvaal Lithospheric Mantle
- 14:45 Luguet A, Pearson DG, Jaques AL, Bulanova GP, Smith CB, Roffey S & Rayner MJ:**
INV Archean Mantle beneath the Halls Creek Mobile Zone, W. Australia Revealed by Re-Os Isotopes
- 15:00 Zhi X, Xia Q, Jin Z & Wang Y:**
 Re-Os Isotopic Systematics of the Neo-Tethys Dongqiao Ophiolite Complex, Northern Tibet: First Data
- 15:15 Jacob D:**
INV Radiometric Dating of Eclogite Xenoliths from Kimberlites
- 15:30 Schmidberger S, Heaman L, Simonetti A & Whiteford S:**
In situ Pb and Sr and Lu-Hf Isotope Systematics of Mantle Eclogites from the Diavik Diamond Mine, NWT, Canada
- 15:45 Pearson DG, Nowell G & Ottley C:**
 Dating Mantle Melting using the Lu-Hf Isotope System
- 16:00 Lapen TJ, Medaris, Jr. LG, Johnson CM & Beard BL:**
 Archean to Middle Proterozoic Evolution of the Sandvik Ultramafic Body, Norway: Evidence from Sm-Nd and Lu-Hf Isotope Analyses
- 16:15 Wittig N, Duggen S, Baker J, Kluegel A & Hoernle K:**
 HIMU Lithospheric Mantle beneath Northwest Africa
- 16:40 Plenary Lecture by the Urey Medalist** **Administration Auditorium**
Navrotsky A:
 Geochemical, Thermochemical, Crystal Chemical: Some Recurring Themes

(Symposium S32 continues on page 16)

Symposium S36**Room: Agricultural Science 204****Hydrothermal Fluids, Magmatic Volatiles, and Surficial Metal Mobility in Platinum-Group Element (PGE) Deposits****Convenors: Iain Samson & Jacob Hanley****13:30 Wood S:***KEY* The Effect of Organic Ligands on the Mobility of the PGE in Soils and Natural Waters: Implications for Exploration and the Environment**14:00 Normand C & Wood S:**

Effect of the Trihydroxamate Siderophores Desferrioxamine-B and Ferrichrome on the Mobility of Pd, Pt, Rh and Ir

14:15 Wilde A:*INV* Economic Pt and Pd in Amagmatic Settings?**14:30 Almeida C & Olivo G:**

The Hydrothermal Ni-Cu-PGE Sulfide Ore of the Fortaleza de Minas Deposit, Brazil

14:45 Boudreau A:*KEY* On the Hydrothermal Origin of Platinum-Group Element Deposits in Layered Intrusions**15:15 Mathez E & Kent A:***INV* Tracing Geochemical Evolution of the Bushveld Complex with Lead Isotopes Analyzed by LA-MC-ICP-MS**15:30 Li C & Ripley E:**

The Roles of Fluid in the Genesis and Modification of Reef-Type PGE Deposits in Large Layered Intrusions

15:45 Ripley E:

Re/Os Isotopic and Fluid Inclusion Studies of Fluid-Rock Interaction in the Contact Aureole of the Duluth Complex, Minnesota

16:00 Shafer P, Ripley E & Li C:

Re/Os Isotopic Studies of Oxide Minerals in the Birch Lake PGE Prospect, Duluth Complex, MN

Plenary Lecture by the Urey Medalist**Administration Auditorium****16:40 Navrotsky A:**

Geochemical, Thermochemical, Crystal Chemical: Some Recurring Themes

(Symposium S36 continues on page 17)

Symposium S41**Room: Albertson 102****Isotopic Ratio Measurement Using Microbeam Methods: Where do we Stand and Where are we Going?****Convenors: Erik Hauri & Norm Pearson****13:30 Guenther D, Kuhn H & Guillong M:***INV* Characterization of Laser-Induced Aerosol for Quantitative Analysis of Solids using LA-ICP-MS**13:45 Pearson N, Griffin W & O'Reilly S:**Laser Ablation MC-ICP-MS: Shedding New Light on *in situ* Isotope Ratio Measurement**14:00 Woodhead J:***INV* Spatial Resolution and the Analysis of Complex Geometries in LA-MC-ICPMS**14:15 Bouman C, Tiepolo M, Vannucci R & Schwieters J:***In situ* Single Spot Analysis of B Isotope Ratios by Laser Ablation Multiple ion Counting ICPMS**14:30 Valley J & Kita N:**

Microanalysis of Oxygen Isotopes

14:45 Steinhöfel G, Horn I, Schoenberg R & von Blanckenburg F:*In situ* Fe Isotope Determination using Femtosecond LA-MC-ICP-MS**15:00 Peucker-Ehrenbrink B, Ball L, Bouman C & Schwieters J:**Low-Level ¹⁸⁷Os/¹⁸⁸Os Analysis by Laser Ablation, Multi-Ion-Counting ICPMS**15:15 Cox R & Barnes S:***In situ* Analysis of Os and Pb Isotope Ratios using Laser Ablation and Collision-Cell Quadrupole ICP-MS**15:30 Kent A & Dilles J:***In situ* Analysis of Pb Isotope Ratios by LA-MC-ICP-MS: Applications to Ore Genesis and Igneous Petrogenesis**15:45 Ramos F & Wolff J:***INV* *In situ* Sr Isotopes Measured by LA-MC-ICPMS: Utility for the Average Joe**16:00 Paces J, Neymark L & Wooden J:**

Ion Microprobe U-Series Dating and Cathodoluminescence of Secondary Opal at Yucca Mountain, Nevada

16:15 Eggins S, GrÛn R, McCulloch MT, Pike AWG, Chappell J & Kinsley L:*INV* *In situ* U-Series Dating by Laser-Ablation MC-ICPMS**Plenary Lecture by the Urey Medalist****Administration Auditorium****16:40 Navrotsky A:**

Geochemical, Thermochemical, Crystal Chemical: Some Recurring Themes

(Symposium S41 continues on page 17)

Symposium S42**Room: Renfrew 126****Isotopic Records of Early Planetary Evolution****Convenors: Jeff Vervoort, Trevor Ireland & Yuri Amelin**

- 13:30** **Halliday A:**
KEY Timing, Mechanisms and Conditions of Terrestrial Planet Accretion and Early Differentiation
- 14:00** **Vervoort J:**
The Implications of the Hf and Nd Isotopic Records for the Early History of the Silicate Earth
- 14:15** **Bennett V & Nutman A:**
INV Early Terrestrial Mantle Dynamics from the ¹⁴³Nd Isotopic Record of 3600 Ma to >3850 Ma Mafic and Felsic Rocks
- 14:30** **Bourdon B & Caro G:**
INV Early Differentiation of Terrestrial Reservoirs and Extinct Radioactivities
- 14:45** **Sharma M & Andreasen R:**
INV Remains of an Enriched Hadean Protocrust in Modern Mantle
- 15:00** **Harrison TM, Blichert-Toft J, Müller W, McCulloch M, Albarède F, Mojzsis S & Holden P:**
Heterogeneous Hadean Hafnium: Evidence of Continental Crust by 4.5 Ga?
- 15:30** **Cavosie AJ, Wilde SA & Valley JW:**
A Lower Age Limit for the Archean Based on $\delta^{18}\text{O}$ of Detrital Zircons
- 15:45** **Stevenson R & Bizzarro M:**
Hf and Nd Isotope Evolution of Lithologies from the 3.8 Ga Nuvvuagittuq Sequence, Northern Superior Province, Canada
- 16:00** **Brandon A, Walker R, Puchtel I & Humayun M:**
Platinum-Osmium Isotope Evolution of the Earth's Mantle
- 16:15** **Puchtel IS, Brandon AD, Humayun M & Walker RJ:**
Pt-Re-Os Isotope and HSE Systematics of 2.8 Ga Komatiites
- 16:40** **Plenary Lecture by the Urey Medalist Administration Auditorium**
Navrotsky A:
Geochemical, Thermochemical, Crystal Chemical: Some Recurring Themes

(Symposium S42 continues on page 17)

Symposium S44**Room: Albertson 201****Lifetime Predictions of Toxic and Radioactive Waste Disposal and Remediation Schemes: Thermochemical Data, Theoretical Models and Reaction Transport Codes****Convenors: Dave Wesolowski, Jordi Bruno & Rod Ewing**

- 13:30** **Yabusaki S, Fang Y & Waichler S:**
Building Conceptual Process Models of Field Scale Uranium Reactive Transport for the Hanford 300 Area
- 13:45** **Bruno J:**
KEY Geochemical Modelling Challenges in the Siting of Deep (and Not so Deep) Repositories for Spent Fuel Disposal
- 14:15** **Follin S:**
INV Hydrogeochemical-Hydrogeological Modeling in the Swedish Nuclear Waste Programme – Principles Used and Examples of Application
- 14:30** **Altmann S, Vinsot A & Coelho D:**
INV Mineral-Solution Interfacial Phenomena Influences on Porewater Over-Pressures in Clay Rocks
- 14:45** **Arcos D, Domènech C & Grandia F:**
INV Reactive Transport Models for Deep Radioactive Waste Disposal
- 15:00** **Xiong Y, Nowak EJ & Brush L:**
Predicting Actinide Solubilities in Various Solutions up to Concentrated Brines: The Fracture-Matrix Transport (FMT) Code
- 15:15** **Anderson C, Jakobsson A & Pedersen K:**
Subsurface Microbial Biofilms and Nuclear Waste Disposal – Geochemical Friends or Foes?
- 15:30** **Van Cappellen P:**
INV Representing Geomicrobial Processes in Subsurface Reactive Transport Models (RTMs)
- 15:45** **Clark S, Felmy A, Qafoku O & Wang Z:**
Thermochemical Data to Describe Actinide Partitioning to Bacteria: a Mixed Solvent Approach
- 16:00** **Forsyth A, Weisener C, Burns P & Fowle D:**
Reductive Dissolution of Zippeite Group Minerals by *Desulfovibrio desulfuricans*
- 16:15** **Monsef R, Moinvaziri H, Emami M & Tajbakhsh G:**
New Field Observations on the Uranium Veins in Intrusive Rocks as the Natural Contamination Source, NE of Tehran
- 16:40** **Plenary Lecture by the Urey Medalist Administration Auditorium**
Navrotsky A:
Geochemical, Thermochemical, Crystal Chemical: Some Recurring Themes

(Symposium S44 continues on page 18)

Symposium S48**Room: Agricultural Science 106****Microbial Mineral Transformations I: Microbial Influences on Mineral Speciation and Stability****Convenors:****Johnson R. Haas & Thilo Behrends****13:30 Gorbushina AA:***KEY* Sub-Aerial Rock-Inhabiting Communities: Role in Land Colonization and Contribution to Biogeochemistry of Rock Surfaces**14:00 MacLean L, Pray T, Onstott T & Southam G:**

High Resolution Structural and Chemical Characterisation of Framboidal Pyrite Formed within a Bacterial Biofilm

14:15 Neal A, Magnuson T, Connon S & Ledbetter R:Photostable β -As₄S₄ Produced at Low Temperature in Culture by a Novel Bacterial Isolate from the Alvord Hydrothermal Basin, Oregon**14:30 Gebrehiwet T, Krishnamurthy R & Haas J:**

Stable Carbon Isotope Fractionation during Anaerobic Microbial Reduction of Metals

14:45 Ferris G:*KEY* Microbial Mineral Transformations in the Fe(II)-Fe(III)-H₂O System**15:15 Ray A, Connon S, Neal A, Sivaswamy VS, Peyton B, Cummings D, Fujita Y & Magnuson T:**Microbial Transformation of AQDS, Fe(III), Cr(VI), and U(VI) by a Novel *Clostridiales*, Strain UFO1**15:30 Davranche M, Vogt L, Dia A, Gruau G & Nowack B:**Investigation of Iron Oxyhydroxides Reduction and Associated Metals Release in Soils using an *in situ* Iron-Coated Support**15:45 Kenward P, Yee N & Fowle D:**

Microbially Controlled Selenate Reduction in Nutrient Limited Systems

16:00 Murray K & Tebo B:

Active Bacterial Mn(II) Oxidation Accelerates Cr(III) Oxidation Compared to Abiotic Oxidation by Mn Oxide Minerals

16:15 Haas J & Northup A:

Dependence of Microbial Dissimilatory U(VI) Reduction on U(VI) Chemical Speciation

Plenary Lecture by the Urey Medalist**Administration Auditorium****16:40 Navrotsky A:**

Geochemical, Thermochemical, Crystal Chemical: Some Recurring Themes

Symposium S68**Room: Renfrew 112****Subduction Zone Magmatism and Related Processes****Convenors:****Gene Yogodzinski & Terry Plank****13:30 Mandeville C, Webster J, Tappen C, Rutherford M, Hauri E & Bacon C:***INV* Depth of Andesitic Magma Storage beneath Mt. Mazama from Melt Inclusions and Experimental Petrology**13:45 Blundy J:***KEY* The Volcanic-Plutonic Connection at Subduction Zones**14:15 Dungan M, Leeman W, Goldstein S, Langmuir C, Davidson J & Piatrowski A:***INV* Partial Assimilative Recycling of the Plutonic Roots of a Continental Arc**14:30 Feineman M, Moriguti T & Nakamura E:***INV* Sources of Magmatism at Daisen Volcano, Southwest Japan Arc**14:45 Yogodzinski G & Kelemen P:**

The Origin of Mafic and Ultramafic Xenoliths from Kanaga and Adak Islands, Central Aleutians, Alaska

15:00 MacKenzie J & Canil D:

Experimental Constraints on Re Mobility in Silicate Magmas

15:15 Lee C, Leeman W, Canil D & Li Z:*INV* Similar V/Sc Systematics in MORBs and Arc Basalts: Implications for the Oxygen Fugacities of their Mantle Source Regions**15:30 Neilson J, Kokelaar P & Fitton G:**

Enigmatic Voluminous Andesite Magmatism at Glencoe Caldera Volcano, SW Scottish Highlands

15:45 Guo F, Fan W, Li C, Li X & Gao X:

Late Mesozoic Adakites from the Northeastern China: Evidence for Subduction of the Paleo-Pacific Ocean Toward the NE Asian Continent

16:00 Zhang J, Liu S, Zhao G & Sun M:

Geochemistry of the Wutai Granitoids: Constraints on the Tectonic Evolution of the Trans-North China Orogen

16:15 Denduluri S, Dasari S, Vysetti B, Nirmal C & Thota R:

Boninitic Magmatism in the Vicinity of Meso Neoproterozoic Epicratonic Chattisgarh Basin, Central India

Plenary Lecture by the Urey Medalist**Administration Auditorium****16:40 Navrotsky A:**

Geochemical, Thermochemical, Crystal Chemical: Some Recurring Themes

(Symposium S68 continues on page 20)

(Symposium S48 continues on page 18)

Symposium S73 Room: Administration Auditorium

**The Earth's Weathering Engine; Coupling Chemical
Weathering With Physical Erosion, Biology, Hydrology
and Climate**

Convenors: Arjun Heimsath, Art White, Jerome Gaillardet & Susan Brantley

13:30 von Blanckenburg F:

KEY The Links between Climate, Tectonics, and Denudation from Cosmogenic Nuclides in River Sediment

14:00 Dosseto A, Bourdon B, Gaillardet J, Allegre CJ & Filizola N:

INV Rapid Response of Erosion to Recent Climatic Changes: New Insights from Uranium-Series

14:15 Anderson S:

INV Mechanical-Chemical Weathering Linkage: Erosion and Solute Fluxes due to Glaciers

14:30 Lemarchand D & Gaillardet J:

Non-Steady State Erosion of Shales in the Mackenzie River Basin (Canada), Evidences from Boron Isotopes

14:45 Riotte J, Godd ris Y, Chabaux F, Munhoven G, Fran ois L & Lorenz S:

Modelling the Global Riverine U Fluxes to the Oceans

15:00 Spence J & Telmer K:

Dissolved and Adsorbed Rare Earth Element (REE) Transport by Rivers in the Canadian Cordillera: Influence of Weathering and Erosion

15:15 Dessert C, Dupr  B, Gaillardet J, Godd ris Y, Fran ois L & Schott J:

INV Basalt Weathering Laws and the Impact of Basalt Weathering on the Global Carbon Cycle

15:30 Calmels D, Gaillardet J, Brenot A & France-Lanord C:

The Mackenzie River Basin: Limited Atmospheric CO₂ Consumption by Rock Weathering

15:45 Godderis Y, Donnadieu Y, Tombozafi M, Pierrehumbert R, Gaillardet J, Kump L & Dupre B:

Links between Climate, Paleogeography and Silicate Rock Weathering: A Cretaceous vs Present Day Comparative Study with the GEOCLIM Model

16:00 Moore J, Lichtner P, White A & Brantley S:

Reactive Transport Modeling of Reaction Fronts

16:15 Fletcher RC, Brantley SL & Buss HL:

Quantitative Model of Spheroidal Weathering: Coupling of Transport, Reaction, and Fracture in the Transformation of Rock to Soil

Plenary Lecture by the Urey Medalist

Administration Auditorium

16:40 Navrotsky A:

Geochemical, Thermochemical, Crystal Chemical: Some Recurring Themes

(Symposium S73 continues on page 21)

Symposium G08

Room: Renfrew 111

Experimental Geochemistry/Petrology

15:30 Nair R & Chacko T:

Eclogite Stability in MORB-Type Bulk Compositions: New Constraints from Fluid-Absent Melting Experiments on Amphibolites

15:45 Miller S, Asimow P & Burnett D:

Melt Thermodynamics and Divalent Element Partitioning between Anorthite and CMAS Liquids

16:00 Lo Cascio M, Liang Y & Shimizu N:

A New Experimental Method for Determining Cpx/melt Trace Element Partitioning during Peridotite Melting

16:15 Shmulovich K, Yardley B & Graham C:

The Solubility of Quartz in Chloride Solutions at 400°-800°C and 0.1-0.9 GPa

Plenary Lecture by the Urey Medalist

Administration Auditorium

16:40 Navrotsky A:

Geochemical, Thermochemical, Crystal Chemical: Some Recurring Themes

(Symposium G08 continues on page 22)

Symposium S05

Posters

Advances in *in situ* Microanalysis of Trace Elements

- 1 **Aubaud C, Withers A, Hirschmann M, Guan Y, Leshin L, Mackwell S & Bell D:**
A New Calibration of H Measurements by SIMS in Glasses and Nominally Anhydrous Minerals: Application to Experimental Determinations of H Partitioning
- 2 **Fryer B & Gagnon J:**
A Simple Technique for Preparing Matrix- and Concentration-Matched Standards for LA-ICPMS Analysis?
- 3 **Gagnon J, Fryer B, Williams-Jones A & Samson I:**
Quantitative Major, Minor and Trace Element Analysis of Minerals by LA-ICPMS Without an Internal Standard
- 4 **Jezequel D, Metzger E, Viollier E, Prevot F, Brayner R & Fievet F:**
Combined Probes for Sub-Millimetric Investigations in Aquatic Sediments
- 5 **Mocek B, Hellebrand E & Ionov D:**
Tracing Element Zonation in Garnet-Peridotites by *in situ* SIMS
- 6 **Monteleone B, Baldwin S, Webb L & Fitzgerald P:**
Constraints on Eclogite Facies Metamorphism in Southeastern Papua New Guinea from *in situ* Ion Microprobe U-Pb and REE Analyses
- 7 **Scott K & French D:**
Rutile Geochemistry as a Guide to Mineralization at the Escondida Cu Deposit, Chile
- 8 **Severin K, Brown R, Babaluk J, Campbell I & Newville M:**
A Comparison of Line Scans and Maps using EPMA, Micro-XRF, and PIXE

Symposium S10

Posters

Bioirrigation: Field-, Laboratory- and Model- Based Assessments of the Geochemical Influence of Burrowing Macrofauna

- 9 **Koretsky C, Meile C & Van Cappellen P:**
Incorporating Complementary Ecological and Biogeochemical Information into Quantitative Bioirrigation Models

Symposium S12

Posters

Carbon and Gold

- 10 **Emsbo P & Koenig A:**
Discovery and Significance of Gold-Rich Bitumen in the Rodeo Deposit, Northern Carlin Trend, Nevada
- 11 **Norman D & Blamey N:**
Methane in Carlin-Type Gold Deposit Fluid Inclusions

Symposium S13

Posters

Carbonates - Powerful Archives for Paleoceanographic Research - The Good the Bad and the Most Confusing

- 12 **Burdige D & Hu X:**
Isotopic Evidence for Shallow-Water Carbonate Dissolution and Reprecipitation
- 13 **Guo F, Qin X, Pan J & Xia F:**
Carbon and Oxygen Isotopic Characteristics of Carbonate Rocks of Carboniferous-Permian in Jiangshan, Zhejiang Province, China
- 14 **Korte C, Brand U, Dickins J, Mertmann D & Veizer J:**
Latitudinal Gradient in $\delta^{18}\text{O}$ of Permian Brachiopods
- 15 **Lakshatanov L, Dubinina E & Stipp S:**
Oxygen Isotope Exchange between Calcite and Water: An Experimental Study
- 16 **Mahmudy Gharai MH, Chen Y & Matsumoto R:**
Methane-Derived Carbonates of the Nankai Trough in Southeast Japan: Are They Related Methane Hydrates?
- 17 **Qiu Y, Fan W & Qi L:**
Ce Anomaly of Carbonate Rock as a Geochemical Tracer for Redox Conditions of Paleo-Atmosphere
- 18 **Rambeau C, Föllmi KB, Matera V, Adatte T & Steinmann P:**
Cadmium Enrichments in Jurassic Carbonates: Causes and Mechanisms
- 19 **Schiff J & Byrne RH:**
Systematic Spatial Variations of Ba and Sr Enrichments over Ambient Seawater Values in Saline, Geothermal, Submarine Springs on the West Florida Shelf
- 20 **Snyder G, Dickens G, Matsumoto R, Hiruta A, Tomaru H, Dicus C & Castellini DG:**
Elemental Remobilization in Marine Sediments: Growth and Destruction of Authigenic Mineral Fronts above Gas Hydrate Systems
- 21 **Taylor K & Perry C:**
Impacts of Fe-Rich Sediment Input upon Chemical Diagenesis of Shallow Marine Tropical Carbonates: Discovery Bay, Jamaica
- 22 **Voice P, Grammer M, Harrison W, Krishnamurthy RV & Swart P:**
A Paleoceanographic Model For the Michigan Basin during Silurian Time from Stable Isotopic Analysis of Brachiopods

21:PO

15

Saturday May 21st 2005: Poster Session

Symposium S24

Posters

Geochemical Controls on Microbial Processes

- 23 **Biddle J, House C & Brenchley J:**
Cultivation of Deeply Buried Microbes Shows Influence of Geochemistry
- 24 **Borch T, Masue Y & Fendorf S:**
Poisoning of Iron Biomineralization by Surface Compositional Changes
- 25 **Druschel G, Lorenson G, Rizzo D, Rogers D & Edwards K:**
Field, Lab, and Computational Tools and Techniques for Linking Geochemical and Microbial Processes in a Range of Environments
- 26 **Esser BK, Beller HR, Carle SF, Hudson GB, Kane SR, LeTain TE, McNab WW & Moran JE:**
New Approaches to Characterizing Microbial Denitrification in the Saturated Zone
- 27 **Fujita Y, Petzke L, Taylor M, Taylor J, Tyler T & Smith R:**
Characterizing Microbial Ureolytic Activity in Groundwater for the Potential to Facilitate Calcite Precipitation for Remediation of ⁹⁰Sr
- 28 **Geissler A, Scheinost A & Selenska-Pobell S:**
Influence of U(VI) on Natural Bacterial Community of a Soil Sample from a Uranium Mining Waste
- 29 **Lorenson G, Rogers D, Price R, Edwards K & Druschel G:**
Application of *in situ* Au-Amalgam Microelectrodes in Yellowstone National Park to Guide Microbial Sampling
- 30 **Meier J & Wendt-Potthoff K:**
Effect of Temperature on Activity, Growth, and Structure of Fe(III) and Sulfate Reducing Communities
- 31 **Plummer M, Hull L, Cooper D, Fox D & Seitz R:**
Oxygen Consumption and Carbon Dioxide Production in a Large Physical Model of the Vadose Zone
- 32 **Rosling A & Finlay R:**
Responses of Ectomycorrhizal Fungi to Mineral Substrates
- 33 **Shepler C, Hull L, Letain T, Hazen T, Nitsche H & Clark S:**
The Interaction of U(VI) with *Bacillus sphaericus*
- 34 **Shukurov N, Pen-Mouratov S, Steinberger Y & Talipov R:**
Soil Free-Living Nematodes Community Structure and Soil Microbial Biomass Response to Soil Pollution in the Vicinity of Navoiy Industrial Area, Uzbekistan

Symposium S27

Posters

Geochemical, Rheological, and Geophysical Aspects of Deep Mantle Phase Changes

- 35 **Eeckhout S & Bolfan-Casanova N:**
Cr Oxidation State in Periclase by XANES Spectroscopy
- 36 **Tian S, Hou Z & Ding T:**
Geochemistry of Carbonatites in Lizhuang REE Deposit, Sichuan, China

Symposium S32

Posters

Geochronology of Mantle Samples

- 37 **Bianchini G, Beccaluva L, Bonadiman C, Nowell G, Pearson G, Siena F & Wilson M:**
Sr-Nd-Hf Isotope Constraints on Lithospheric Mantle Evolution beneath Olot, NE Spain

Symposium S34

Posters

Growth and Dissolution under Stress: Pressure Solution, Replacement, and Weathering

- 38 **Gustavson J & Neuhoff P:**
Pore-Scale Coupling of Dissolution, Diffusion, and Crystallization Forces during Alteration of Vesicular Lavas
- 39 **Jordan G, Aldushin K, Lohkämper T & Schmahl WW:**
Dissolution-Precipitation Creep Under Cyclic Stress
- 40 **Karcz Z, Aharonov E, Ertas D, Polizzotti R & Scholz C:**
The Importance of Plastic Flow in the Deformation of a Sodium Chloride Indenter Undergoing Pressure Solution
- 41 **Renard F:**
3D Microtomography of a Halite Aggregate during Pressure Solution Creep

Symposium S36

Posters

Hydrothermal Fluids, Magmatic Volatiles, and Surficial Metal Mobility in Platinum-Group Element (PGE) Deposits

- 42 **Hanley J & Mungall J:**
A Magmatic End-Member Fluid at Sudbury, Canada?
- 43 **Samson I, Fryer B, Gagnon J & Donnelly CL:**
High Resolution LA-ICP-MS Analyses of PGMs and Sulphides, Marathon Pd-Cu Deposit, Ontario

Symposium S41

Posters

Isotopic Ratio Measurement Using Microbeam Methods: Where do we Stand and Where are we Going?

- 44 **Cocherie A, Robert M & Guerrot C:**
In situ U-Pb Zircon Dating using LA-MC-ICPMS and a Multi-Ion Counting System
- 45 **Fayek M & Palenik CS:**
Characterization of Nd, Te and U Isotope Ratios in Uraninite using SIMS
- 46 **Gerdes A:**
Laser Ablation ICP-MS Dating of Complex Magmatic and Metamorphic Zircon
- 47 **Golledge S, Krinsley D, O'Hara P, Gasser R & Schieber J:**
Time of Flight Secondary Ion Mass Spectrometry (ToF-SIMS) Use in Sedimentary Geochemistry
- 48 **Harlou R, Pearson DG, Nowell GM, Davidson JP & Kent AJR:**
Sr Isotope Studies of Melt Inclusions by TIMS
- 49 **Kemp T, Foster G, Coath C & Schersten A:**
INV Hf Isotopes by Laser Ablation Multi-Collector ICP-MS: Progress, Pitfalls and Prognosis
- 50 **Simonetti A, Heaman L, MacHattie T, Chacko T, Hartlaub R & Eccles R:**
In situ Petrographic Thin Section U-Pb Dating of Zircon and Titanite by Laser ablation-MC-ICP-MS
- 51 **Tunheng A & Hirata T:**
In situ Fe Isotopic Fractionation Determination by Laser Ablation MC-ICP-MS

Symposium S42

Posters

Isotopic Records of Early Planetary Evolution

- 52 **Barnes J, Brearley A, Sharp Z & Chaussidon M:**
 $\delta^{37}\text{Cl}$ Values of the Solar System
- 53 **Fike D, Grotzinger J, Summons R, Pratt L, Finkelstein D & Newall M:**
Uncoupled C and S Biogeochemical Cycling in the Neoproterozoic from the Huqf Supergroup, Oman
- 54 **Hartlaub R, Heaman L, Simonetti A & Bohm C:**
Was There Voluminous Ancient (>4.0 Ga) Sialic Crust? Implications from the Hf Composition of Detrital Zircons
- 55 **Iizuka T, Horie K, Komiya T, Maruyama S, Hirata T, Hidaka H & Windley B:**
Occurrence of a 4.2 Gyr old Zircon in the Acasta Gneiss Complex of Northwestern Canada
- 56 **Jia Y & Kerrich R:**
A ^{15}N -Enriched Archean Atmosphere
- 57 **Lefticariu L, Pratt L, Ripley E & Bish D:**
Experimental Study of Sulfur Isotope Fractionation Associated with Pyrite Oxidation by H_2O_2
- 58 **Matsuda J, Omori H & Maruoka T:**
Carbon Isotope Variations of Carbon Deposits Synthesized in the Laboratory by Arc Discharge
- 59 **Mukasa S, Choi SH, Andronikov A, Osanai Y & Harley S:**
Lu-Hf Systematics of the Earliest Crust in Antarctica: The Napier Complex of Enderby Land
- 60 **Pushkarev Y:**
Rare Earth Elements in the Core?
- 61 **Sano Y, Takahata N & Tsutsumi Y:**
NANO-SIMS U-Pb Dating of Monazite
- 62 **Schoenberg R, Kamber BS & von Blanckenburg F:**
Comparative Stable Fe Isotope Systematics of Terrestrial and Meteoritic Materials

21:PO

17

Saturday May 21st 2005: Poster Session

Symposium S44

Posters

Lifetime Predictions of Toxic and Radioactive Waste Disposal and Remediation Schemes: Thermochemical Data, Theoretical Models and Reaction Transport Codes

- 63 **Bates W, Samson S & Nagy K:**
Dissolution of Labradorite Feldspar in Alkaline, Sodium Nitrate, and Simplified Hanford Tank Solutions
- 64 **Buckau G, Duro L, Kienzler B & Bruno J:**
Presentation of the Funmig Integrated Project within the 6TH FP of the EC
- 65 **Cao H & Wood S:**
The Effect of Organic Ligands on the Solubility of CeO₂ in NaNO₃ Medium
- 66 **Gowd S:**
Environmental Risk Assessment and Remediation of Soils Contaminated due to Waste Disposal from Tannery Industries: a Case Study of Ranipet Industrial Area, Tamil Nadu, India
- 67 **Lee S, Lee KY, Yoon YY, Cho SY & Kim Y:**
Sorption Properties of ⁶⁰Co, ¹⁵²Eu, ¹⁶⁰Tb and ²⁴¹Am in Geological Materials
- 68 **Liu Q, Xu H & Navrotsky A:**
Synthesis and Thermochemistry of Nitrate Cancrinite and Nitrate Sodalite
- 69 **Otani H & Shikazono N:**
Rare Earth and Minor Elements Behavior in Red Soil from Principle Component Analysis
- 70 **Smith R & Fujita Y:**
In situ Stabilization of ⁹⁰Sr by Microbially Facilitated Calcite Precipitation
- 71 **Wood S & Cetiner Z:**
Experimental Measurements of the Solubility of ThO₂ in NaNO₃ Solutions: Hydrolysis of Th(IV) and Complexation by Organic Ligands

(Symposium S44 continues on page 27)

Symposium S45

Posters

Mantle Heterogeneity, Past and Present

- 72 **Afanasiev V, Ashchepkov I, Zinchuk N, Kuchkin A, Saprykin A & Anoshin G:**
Zonation of Ebelykh Eclogite and Peridotite Diamonds: LAM ICP MS
- 73 **Ashchepkov I, Vladykin N, Rotman A, Logvinova A, Pokhilenko H, Saprykin A, Palessky S, Anoshin G, Khelnikova O & Kuchkin A:**
Regularities of Mantle Structure beneath Siberian Craton
- 74 **Choi SH, Mukasa SB, Andronikov AV & Marcano MC:**
Geochemistry of the Tinaquillo Peridotite Massif, Venezuela
- 75 **Matsumoto I, Okada J, Iwamoto K & Arai S:**
Petrological Characteristics of Chromitite Bearing Gabbro from the Inazumiyama Ultramafic Complex of the Sangun Zone, Southwest Japan
- 76 **Osmaston M:**
A New Mechanism for Intraplate Magmagenesis and Petrogenetic Variation: The Importance of Process
- 77 **Rotman A, Ashchepkov I, Nossiko S, Palessky S, Saprykin A, Somov C, Shipupi J, Khelnikova O & Anoshin G:**
Mantle Layering beneath Angola
- 78 **Tirone M & Morgan JP:**
Equilibrium Thermodynamics: Applications to Mantle Geodynamics

Symposium S48

Posters

Microbial Mineral Transformations I: Microbial Influences on Mineral Speciation and Stability

- 79 **Bishay A:**
Bio-Extraction of REE and Other Valuable Elements from Red Mud Left after Alkaline Processing of Gibbsite Bearing Sediments, Sinai, Egypt
- 80 **Lynn J, Nair B & Childers S:**
Microbial Selenate Reduction in a Selenium-Contaminated Watershed
- 81 **Tufano K, Stewart B, Herbel M & Fendorf S:**
Stimulated Migration of Arsenic and Uranium by Reductive Transformation of Iron

Symposium S49

Posters

Microbial Mineral Transformations II: Microbially-Induced Solid Phase Transformations

- 82 **Bank T, Jardine P, Ginder-Vogel M, Fendorf S & Baldwin M:**
Discerning Geochemical and Biogeochemical Metal Reduction Through Gamma Sterilization
- 83 **Duan J & Hou B:**
Microbial Transformation of Iron Oxide to Sulfide Species on Steel Immersed in Seawater
- 84 **Furukawa Y & O'Reilly SE:**
Rapid Precipitation of Amorphous Silica and Aluminum Phases in Experimental Systems with Nontronite (NAu-1) and *Shewanella oneidensis* MR-1
- 85 **Hutchens E, Valsami-Jones E, McEldowney S & Oelkers E:**
Minerals and Bacteria, Friends or Foes?
- 86 **Kocar B, Tufano K, Masui Y, Stewart B, Herbel M & Fendorf S:**
Arsenic Mobilization Influenced by Iron Reduction and Sulfidogenesis
- 87 **Rogers S & Grey N:**
Molecular Study of Microbial S Oxidation in Sulfidic Sediments
- 88 **Weisener C, Forsyth A, Burns P & Fowle D:**
Investigation of the Geochemical Relationships Governing Dissimilatory Bacterial Reduction of U(VI) from Solid Uranyl Mineral Phases

(Symposium S49 continues on page 28)

Symposium S56

Posters

New Results from the Robotic Exploration of Mars and Titan and their Implications on Planetary Environmental Conditions and Cosmochemistry

- 89 **Clevy J & Kattenhorn S:**
Enigmatic Linear Patterns of Hydrogen Concentration on Mars
- 90 **Fan C & Schulze-Makuch D:**
Columbia Plateau Basalt as an Analog to the Basalt of the Martian Northern Plains
- 91 **Fink W, Datta A & Baker V:**
AGFA: (Airborne) Automated Geologic Field Analyzer
- 92 **Pan J, Ma D, Lehmann B, Cao S, Xia F & Chen S:**
Paleoenvironmental Study of Doushantuo Formation: Insights of Trace Element and Carbon Isotope

(Symposium S56 continues on page 37)

Symposium S58

Posters

Novel Isotopic Methods in Tracing Paleooceanographic Processes

- 93 **Ding T, Ma G, Shui M, Wan D & Li R:**
Effect of Rice Growth on Geochemical Circle of Silicon: Silicon Isotope Study on Rice Plants Grew in Field and Laboratory
- 94 **Gao Y, Svec R, Joner S & Bryant B:**
The Life History and Stock Structure of Groundfish from Stable Isotopic Analysis of Otoliths
- 95 **Holmden C, Eglinton B & Papanastassiou D:**
High Mass Resolution Plasma Mass Spectrometry of Cr Isotopes
- 96 **Leighton E, Prave AR, Hawkesworth CJ & Elliott TR:**
Fe Isotope Composition in Neoproterozoic Dolomite Rocks and Banded Iron Formations
- 97 **Yang J, Jiang S, Ling H & Chen Y:**
Re-Os Isotopes as a Tracer and Dating Technique for Black Shales and Ocean Anoxic Events

Symposium S68

Posters

Subduction Zone Magmatism and Related Processes

- 98 **Bebout G & Kump L:**
Sensitivity of Global Carbon Cycling Models to Changing Subduction Fluxes
- 99 **Bryant J, Yogodzinski G & Churikova T:**
Petrology of Metasomatized Mantle Xenoliths from Shiveluch Volcano, Kamchatka
- 100 **Chakravadhanula M, Kerrich R & Naqvi M:**
Geochemistry of First Cycle Volcanogenic Sedimentary Rocks from the Neoarchaean Sandur Superterrane, India
- 101 **Dektor C, Yogodzinski G & Churikova T:**
Petrology of Ultramafic Xenoliths from Kharchinsky Volcano, Russia
- 102 **Eyuboglu Y, Bektas O & Sen C:**
Hornblende and Phlogopite-Bearing Ultramafic Cumulates: Evidence for Subduction-Related Ultramafic Magmatism in the Eastern Pontides, Amasya Area, NE Turkey,
- 103 **Georgiev S, von Quadt A, Peytcheva I & Heinrich C:**
Isotopic Investigations on the Magmatism in Eastern Srednogie
- 104 **Gerseny M, Vervoort J, Brown S & Yogodzinski G:**
Characterizing Contributions to Aleutian Lavas along the Length of the Arc: Evidence from Hf-Nd Isotope Systematics
- 105 **Liu C & Sun W:**
Subduction Modified Re-Os Features of the Mantle Wedge
- 106 **Qiu J, Jiang S, Wang R & Lo Q:**
Petrology and Geochemistry of Shoshonitic Volcanic Rocks from Luzong in the Lower Yangtze Region, Eastern China: Petrogenesis and Inferences on the Nature of the Mantle Sources
- 107 **Rodriguez C, Selles D, Dungan M, Leeman W & Langmuir C:**
Adakitic Signatures in Andean Water-Rich Magmas at Nevado de Longaví
- 108 **Streck M, Browning-Craig H, Haldar D, Ramos F & Duncan R:**
Hornblende Andesites/Dacites in an Oceanic Arc Setting at Narcondam Volcano, Andaman Sea, S.E. Asia
- 109 **Yu C & Vervoort J:**
Hf-Nd-Pb Isotope Variations of Subducting Sediments

Symposium S69

Posters

Subduction Zone Metamorphism. 1. Processing of Geochemical Tracers

- 110 **Busigny V, Cartigny P, Philippot P & Javoy M:**
Contribution of Oceanic Gabbros to the N Recycling in Subduction Zones
- 111 **Gao J, John T & Klemd R:**
INV Partial Dehydration of Blueschist: Insights into the Slab-Wedge Transfer
- 112 **John T & Schenk V:**
Interrelations between Intermediate-Depth Earthquakes and Fluid Flow in Subducting Oceanic Plates
- 113 **King R, Bebout G, Moriguti T & Nakamura E:**
Mélange Zones as a Better Source for the "Slab" Signature in Arcs
- 114 **Zhang L, Zhang H & Zhong Z:**
Geochemical Structure of Pb Isotopes in Tongbai-Dabie area, China

(Symposium S69 continues on page 29)

Symposium S70

Posters

Subduction Zone Metamorphism. 2. Fluids from the Slab to the Surface

- 115 **Mekala RM, Drona SS & Thota GR:**
Geochemistry of High Fe- Tholeiites from the Ramagiri-Hungund Greenstone Belt of Eastern Dharwar Craton, India
- 116 **Sadofsky S, Hoernle K & van den Bogaard P:**
Volatile Cycling Through the Central American Volcanic Arc from Melt Inclusion Studies of Nicaraguan and Costa Rican Magmas
- 117 **Spandler C & Hermann J:**
High-Pressure Veins in Eclogite from New Caledonia; Implications for Fluid Migration and Seismic Activity in Subduction Zones
- 118 **Tessalina S, Yudovskaya M, Françoise C, Birck J, Vadim D, Chaplygin I & Allègre C:**
Sources of Unique Rhenium Enrichment in the Kudriavy Volcano, Kurile Islands

(Symposium S70 continues on page 29)

Symposium S71**Teaching Geochemistry**

- 119 **Knudsen A:**
Rethinking the Traditional Mineralogy Curriculum
- 120 **McCarthy A, Domanik K & Downs R:**
Determining Structural Chemical Formulae using the American Mineralogist Crystal Structure Database

Symposium S73**The Earth's Weathering Engine; Coupling Chemical Weathering With Physical Erosion, Biology, Hydrology and Climate**

- 121 **Aggarwal J, White A & Bullen T:**
Weathering and Uptake of Silicon in the Santa Cruz Terraces: New Evidence from Silicon Isotopes
- 122 **Almeida A & Begonha A:**
The Susceptibility of Peraluminous Two-Mica Granites to Weathering: Implications in the Stone Decay of Built Heritage (Oporto, NW Portugal)
- 123 **Aloisi G, Wallmann K, Drews M, Bohrmann G, Greinert J & Eisenhauer A:**
A Possible CO₂ Sink Through Submarine Weathering of Detrital Silicate Minerals
- 124 **Bentahila Y, Luck J, Ben Othman D & Lallemand S:**
Erosion on Taiwan: Trace Element and (Sr, Pb, Zn) Isotopic Constraints on Marine Sediment Provenance
- 125 **Braun JJ, Ruiz L, Riotte J, Mohan Kumar MS, Murari V, Sekhar M, Barbiero L, Descloitres M, Bost A & Dupré B:**
Chemical and Physical Weathering in the Kabini River Basin, South India
- 126 **Drouet T, Herbauts J & Demaiffe D:**
Strontium Isotopes Highlight Change in Ca Sources in Forest Ecosystems
- 127 **Hausrath E, Neaman A & Brantley S:**
Basalt and Granite Dissolution Rates in the Presence of Citrate
- 128 **Lee C & Little M:**
Theoretical and Observational Links between Erosion and Chemical Weathering
- 129 **Mehta P, Tripathi JK, Pandey D & Rajamani V:**
Geochemistry of Amphibolite Weathering in Different Climatic Setup of Kaveri Catchment of Southern India and its Implications
- 130 **Banerjee A & Merino E:**
Weathering Replacement of Limestone by Clay+Iron Oxide at Bloomington, Indiana

Posters

- 131 **Pacheco FAL & Van der Weijden CH:**
Hydrologic and Kinetic Modeling of Plagioclase Weathering Rates in the Rio Vouga Basin (Portugal)
- 132 **Phedorin M, Fedotov A, Goldberg E, Saeva O, Zolotarev K & Grachev M:**
Century-Resolved 1 Myr History of Paleogeographic Changes in Lake Khubsugul (Mongolia), Reconstructed from Geochemical Markers in Lake Bottom Sediments
- 133 **Pomies C, Bickle M, Tipper ET, Chapman H, Fairchild IJ & Harris N:**
Record of the Weathering Timescale in Himalayan Rivers
- 134 **Rad S, Gaillardet J, Louvat P, Bourdon B & Allègre CJ:**
Weathering Process on Tropical Volcanic Islands (Guadeloupe, Martinique and Réunion) by using U-Series
- 135 **Schroth A, Friedland A & Bostick B:**
Influence of Overstory Vegetation on Long-Term Chemical Weathering Rates
- 136 **Simons S & Nemchin A:**
U-Series Ages of the Latest Silification Event in Regolith of the Yilgarn Craton, Western Australia
- 137 **Singh SK & Rai SK:**
Sediment Tracing in the Ganga River System
- 138 **Tripathi JK & Rajamani V:**
Geochemistry and Origin of Ferruginous Nodules from the Weathered Gneissic Rocks of Presently Subarid Southern India Mysore Plateau
- 139 **Wang B, Gough L, Smith D & Gustavsson N:**
Geochemical Landscapes of Alaska

Symposium S80**Water in the Terrestrial Planets**

- 140 **Grow J & Gunter M:**
In situ use of Microwaves to Remotely Determine the Water Content of Minerals

(Symposium S80 continues on page 32)

Posters

Symposium G04

Posters

Cosmochemistry

- 141 **Galimov E & Krivtsov A:**
Geochemical Constraints and Dynamic Simulation of the Origin of the Earth-Moon System
- 142 **Giannuzzi L & Friedmann EI:**
The Characterization of Martian Meteorite ALH84001 using Focused Ion Beam Specimen Preparation and Transmission Electron Microscopy
- 143 **Huber H, Rubin A & Wasson J:**
Fractionated REE in EL Chondrites
- 144 **Zheng Y, Wang S & Ouyang Z:**
Dielectric Properties of Lunar Material and its Microwave Penetration Depth

Symposium G08

Posters

Experimental Geochemistry/Petrology

- 145 **Brady J & Cherniak D:**
Fe-Mg Interdiffusion Experiments in Olivine
- 146 **Burchard M, Fockenberg T & Maresch W:**
Fluids in the System CaO-Al₂O₃-SiO₂-H₂O (CASH) – Thermodynamic Modeling of Experimental Results
- 147 **Dogan AU, Dogan M, Kilinc A, Steele I, Yesilyurt FI, Ustunisik G, Ozbay S, Tigli M, Conger O & Tosun S:**
TE and REE Modeling of Central Anatolian Volcanics, Turkey
- 148 **Dwarzski R, Draper D, Shearer C & Agee C:**
Crystal Chemical Controls on Garnet Partitioning of REE and HFSE
- 149 **Jacobsen B, Yin Q, Tinker D & Leshar C:**
Tungsten Self-Diffusion: Constraints on the Core Formation Timescale
- 150 **Kanthurugovindappa A & Chintamani S:**
Geochemistry of the Granite Intrusion in the Madurai Block, South of Palghat - Cauvery Shear Zone
- 151 **Mönicke A, Laporte D & Schiano P:**
Partial Melting of a Fertile Peridotite: Application of the Microcrack Extraction Technique
- 152 **Perri F, Rizzo G, Mongelli G & Critelli S:**
Zircons from the Arenite of Early Mesozoic Continental Redbeds of the Western and Central Mediterranean Area: a Case of Typological Study
- 153 **Yaxley G, Berry A, Woodland A & O'Neill H:**
Calibration of XANES for Determination of Fe³⁺/ΣFe in Garnet

Symposium G11

Posters

Hydrology/Hydrogeochemistry

- 21:PO
- 23
- 154 **Banks V, Al T, Loomer D, Parker B & Mayer U:**
Trace-Metal Mobility during KMnO_4 Oxidation of TCE: Column Experiments
- 155 **Baxter A & Price J:**
Atmospheric/Soil CO_2 Consumption at Coweeta Hydrologic Laboratory, Western North Carolina, USA
- 156 **Chelnokov G & Tchepkaia N:**
The Geochemistry of Rare Earth Elements in Groundwater from Northern Sikhotealin (Far East of Russia)
- 157 **Chudaev O, Chudaeva V, Sugimori K, Kuno A, Matsuo M & Nordstrom K:**
Geochemistry of Thermal Waters of Mendeleev Volcano (Kuril Islands)
- 158 **Fairley J, Hinds J & Zakrajsek JR:**
Field Evidence for Unstable Thermal-Convective Transport in a Fault Controlled Geothermal System
- 159 **Griffioen J:**
Cation-Exchange Patterns in Groundwater in Coastal Lowlands of the Western Netherlands
- 160 **Jaffe L, Hilton D, Porcelli D, Swarzenski P, Baskaran M & Kulongoski J:**
U-Th-Ra-Rn-He Relationships in Mojave River Basin Groundwaters
- 161 **Qian J, Wu J & Liu Y:**
Experiment Study on Validity of LCL and Critical Re for Groundwater Flow in a Single Fracture
- 162 **Tchepkaia N & Chelnokov G:**
Groundwater Chemistry and Origin of Na-HCO_3 Type of Water from Northern Primorye (Russia)
- 163 **Wu J, Qian J & Chen Y:**
Comparative Methodologies for Hydro-Geochemical Sampling Plans for Contaminant Plume Monitoring under Uncertainty
- 164 **Wu J, Zhu X & Ye S:**
Groundwater Modeling for the Phreatic-Confined Aquifers System in the Huolinhe River Basin, Inner Mongolia, China
- 165 **Ye S, Xue Y & Wu J:**
Numerical Modeling of Land Subsidence in Shanghai
- 166 **Zhou Y & Wang S:**
Hydrogeochemical Process and its Environmental Indication of Drip Water: Study on Four Caves of Guizhou, China

Symposium G12

Posters

Hydrothermal Geochemistry

- 167 **Baker L & Wood S:**
A Modified Hydrogen Electrode Concentration Cell (HECC): Study of Scheelite Solubility
- 168 **Bickle M & Pomies C:**
Timescale of TAG Activity Revisited
- 169 **Evans K & Powell R:**
The Thermodynamics of Mixing in Saline and Mixed Solvent Solutions at Elevated Temperature and Pressure: a Framework for Geological Phase Equilibria Calculations
- 170 **Guijian L:**
Geochemistry of Sulfur in Chinese Coal
- 171 **Jin Z, Zhu D, Hu W, Zhang X & Zhang J:**
Mineralogical and Geochemical Features of Hydrothermally Dissolved Carbonate Reservoir Rocks in Tarim Basin, NW China
- 172 **Kissin S, Cetiner Z, Stoffregen R & Wood S:**
Investigation of the Alunite-Natroalunite Solid Solution and Na-K Exchange between Solid and Solution at 250°C
- 173 **Li X, Hua R & Mao J:**
Clay Mineralogy, Kübler Index and K-Ar Ages of Illite in Yinshan Polymetallic Deposit, Dexing, Jiangxi Province, South China
- 174 **Liu W & McPhail DC:**
Thermodynamic Properties of Copper Chloride Complexes and Copper Transport in Magmatic Hydrothermal Solutions
- 175 **Sadeghi Bojd M & Moore F:**
From Fluid Inclusion Study to Genesis of the Anguran Ore Deposit, NW Iran
- 176 **Song Y, Hu W, Ni P & Duan Z:**
An Improved Iterative Technique to Determine the Volume and Composition of $\text{NaCl-H}_2\text{O-CO}_2$ Fluid Inclusion
- 177 **Sun Z:**
Gas Geochemistry of Ore-Forming Solution in the Xiazhuang U-Ore-Field, North Guangdong, China
- 178 **Ye L:**
Origin of Mineralizing Fluid of Niujiaotang Cd-Rich Zinc Deposit, Duyun, Guizhou, China
- 179 **Zhang W, Ni P, Hua R & Wang R:**
The Geochemical Characteristics of the Ore-Forming Fluid of Dajishan Tungsten Deposit in South China

Symposium G15**Posters****Low-Temperature Aqueous Geochemistry**

- 180 Spycher N & Pruess K:**
A Non-Iterative Model for H₂O-CO₂ Mutual Solubility in Chloride Brines
- 181 Um W & Serne RJ:**
Iodide Adsorption and Transport at the Hanford Site, Washington
- 182 Zhou G & Zheng Y:**
An Experimental Study of Kinetic Oxygen Isotope Fractionation during CaCO₃ Polymorphism

Symposium G17**Posters****Metamorphic Geochemistry**

- 183 Chetty T & Parthasarathy G:**
Metamorphism of Neoproterozoic Kerala Khondalite Belt: a Study on Fluid Deposited Graphite
- 184 Mazaheri SA & Kaheni S:**
Genetic Model Formation of Bimetasomatic Skarns from Australia
- 185 Sazonov A & Zviaguina E:**
Geochemistry of Gold of Metamorphic Rocks
- 186 Schneiderhan EA, Zimmermann U & Gutzmer J:**
Provenance Studies on the Neoproterozoic the Ventersdorp Supergroup (South Africa)
- 187 Zimmermann U & Bahlburg H:**
The Crustal Evolution of the Central Andes during the Neoproterozoic to the Silurian

Symposium G18**Posters****Mineral Deposits**

- 188 Gao J & Lu J:**
REE Characters of Sulphide Oxidation Zone of Xinqiao Massive Sulphide Deposit of Anhui, China
- 189 Gao Z, Yu Y, Yang Z & Rao W:**
The Red-Clay-Type Gold Deposit in China
- 190 Hofstra A & Emsbo P:**
Source of Salt in Hydrothermal Fluids Based on Na-Cl-Br of Fluid Inclusions
- 191 Lafontaine J, Thorne K & Lentz D:**
Devil Pike Brook Gold Deposit, South-Central New Brunswick: An Example of a Mesothermal Lode Gold System in the Canadian Appalachians
- 192 Lima A & Da Silva F:**
Adapted BLEG Method in Stream Sediment Geochemistry at Régua-Verin Structure (Portugal)
- 193 Lu J, Hua R & Yao C:**
Re-Os Age for Molybdenite from the Dexing Porphyry Cu-Au Deposit of Jiangxi Province, China
- 194 Noronha F & Lima A:**
Li Stream Sediment Geochemistry at Barroso Pegmatite Field (Portugal)
- 195 Run-Sheng H, Xiao-Feng L, De-Yun M, Geng-Sheng M & Zhi-Cai T:**
Fault Tectono-Geochemistry and Prognosis of Concealed Ores in the Tongchang Cu-Au Polymetallic Orefield, Shaanxi, China
- 196 Vetter S & Lentz DR:**
Geology of the Elmtree Gold Deposit, Northern NB, Canada