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## THEMES AND SESSIONS

### **Theme 1: *The Early Solar System: Chemistry and Chronology***

*(Sara Russell & Mini Wadhwa)*

- 01a** Isotopic Anomalies (Martin Bizzarro & Ghylaine Quitte)  
Orals: 17th pm, Posters: 17th
- 01b** Origin of Short-Lived Radionuclides in the Early Solar System (Noriko Kita & Gopalan Srinivasan)  
Orals: 17th am
- 01c** Processes and Timescales in the Solar Nebula (Andrew Davis & Ed Young)  
Orals: 17th pm, Posters: 17th
- 01d** Early Planetary Differentiation Timescales (Alan Brandon & Thorsten Kleine)  
Orals: 17th am, Posters: 17th
- 01e** Early Solar System Materials (Sara Russell & Michael Zolensky)  
Orals: 18th am, Posters: 17th
- 01f** Lunar Geochemistry and Chronology (Vera Fernandes & Randy Korotev)  
Orals: 18th pm, Posters: 17th

### **Theme 2: *Planetary Geochemistry***

*(Bill McDonough)*

- 02a** Differentiation and Chemical Evolution of Mars (Audrey Bouvier & Vinciane Debaille)  
Orals: 15th pm, Posters: 14th
- 02b** Surface Geochemistry and Processes on Mars (Penny King & Nick Tosca)  
Orals: 16th am, Posters: 15th

### **Theme 3: *Early Earth: From Mantle to Microbes***

*(Steve Mojzsis & Vickie Bennett)*

- 03a** Early Earth: The First 100 Million Years (Guillaume Caro & Qing-zhu Yin)  
Orals: 14th am, 14th pm, Posters: 14th
- 03b** The Hadean and Eoarchean Crust-Mantle System (Vickie Bennett & Wouter Bleeker)  
Orals: 14th pm, Posters: 15th
- 03c** Early Evolution of the Atmosphere-Hydrosphere System (Dominic Papineau & Alexander Pavlov)  
Orals: 15th am, Posters: 14th



- 03d** Early Life – Geochemical and Geodynamical Aspects (Lisa Kaltenecker & Matthew Pasek)  
Orals: 15th pm, Posters: 14th
- 03e** Origin of Banded Iron Formations (Clark Johnson & Kurt Konhauser)  
Orals: 15th pm, Posters: 14th
- 03f** Hydrothermal Impact on the Early Precambrian Seawater Composition as Recorded by Banded Iron Formations, Black Shales, and Other Proxies (Andrey Bekker, Axel Hofmann & Beate Orberger)  
Orals: 16th am, Posters: 15th

#### **Theme 4: *Continental Crustal Evolution*** **(*Hugh Smithies & John Percival*)**

- 04a** Felsic Magmatism as a Monitor of Crustal Recycling, Differentiation and Growth Processes (Paul Hoskin & Joe Whalen)  
Orals: 17th am, 17th pm, Posters: 17th
- 04b** Continents and their Lithospheric Keels (Roberta Rudnick & Steve Shirey)  
Orals: 18th am, Posters: 17th
- 04c** Mafic-Ultramafic Magmatism in Crustal Growth (Balz Kamber & Julian Pearce)  
Orals: 17th pm, Posters: 17th
- 04d** Subduction, Sagduction and Delamination Processes in the Generation of Continental Crust (Jean Bédard & Cin-Ty Lee)  
Orals: 18th pm, Posters: 17th
- 04e** 4D Structure of the Continental Crust: Greenstones to Granulites (Nigel Kelly, Andreas Moeller & John Percival)  
Orals: 16th am, Posters: 15th

#### **Theme 5: *Mantle Dynamics*** **(*Cinzia Farnetani & Nicolas Coltice*)**

- 05a** Mixing Lengthscales in the Mantle (Francis Albarède & John Rudge)  
Orals: 14th pm
- 05b** Deep Earth Heterogeneities: Melting, Phase Changes or Chemistry? (John Hernlund & Abby Kavner)  
Orals: 14th pm, Posters: 15th
- 05c** LIPS, Hot Spots and Intraplate Magmatism (Garrett Ito & Bernhard Steinberger)  
Orals: 14th am, Posters: 14th



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- 05d** New Frontiers for Geochemical Reservoirs (Bernard Bourdon & Allen McNamara)  
Orals: 15th am

**Theme 6: *Mantle Geochemistry***  
*(Catherine Chauvel & Cornelia Class)*

- 06a** Ridges and Geochemical Mapping of the Mantle (David Graham & Emily Klein)  
Orals: 18th am, 18th pm, Posters: 17th
- 06b** How are Mantle Heterogeneities Created? (Catherine Chauvel & Andreas Stracke)  
Orals: 17th pm, Posters: 15th
- 06c** Carbonatites, Alkaline Silica-Undersaturated and Ultrapotassic Rocks: Probes of the Subcontinental Mantle – A Symposium Dedicated to Keith Bell (Bruce Kjarsgaard, Antonio Simonetti & Marjorie Wilson)  
Orals: 14th am, 14th pm, Posters: 15th
- 06d** Geochemistry of Real Mantle Samples (Laurie Reisberg & Rich Walker)  
Orals: 15th am, 15th pm, Posters: 14th
- 06e** Continental Extension-Related Basalts: Mantle Sources and Magma Generation Processes (Stefan Jung & Jörg Pfänder)  
Orals: 18th pm, Posters: 17th

**Theme 7: *Experimental Petrology***  
*(Michael Walter & Penny King)*

- 07a** Deep-Mantle Chemistry (James Badro & Yingwei Fei)  
Orals: 17th am
- 07b** Experiments on Volatiles in Melts and Minerals (Don Baker & Robert Luth)  
Orals: 14th am, Posters: 15th
- 07c** Partitioning Among Melts, Metals, and Minerals in Planetary Systems (Elizabeth Cottrell & Wim van Westrenen)  
Orals: 15th pm, Posters: 14th
- 07d** Experimental Petrology Related to Ore Deposits (Phil Candela & Robert Linnen)  
Orals: 18th am, Posters: 17th
- 07e** Experimental Petrology Applied to Planetary Evolution (Carl Agee & Hugh O'Neill)  
Orals: 15th am, Posters: 14th
- 07f** Diffraction and Absorption Spectroscopies at High Temperatures and Pressures (Grant Henderson, Daniel Neuville & Eiji Ohtani)  
Orals: 17th pm, Posters: 15th



- 07g** Metamorphic and Transport Processes (Lukas Baumgartner & Craig Manning)  
Orals: 17th pm, Posters: 15th
- 07h** Crystallography of Petrologically Significant Minerals: Symposium in Honor of Thomas Armbruster (Edward Grew & Lee Groat)  
Orals: 18th am, 18th pm, Posters: 17th

**Theme 8: *Fluids in the Crust and Mantle***  
*(Jacqueline Dixon & Robert Bodnar)*

- 08a** Experimental Studies of Geofluids and Fluid-Mineral Interactions Using Synchrotron-Based and Other Spectroscopic Techniques (Alan Anderson & Robert Mayanovic)  
Orals: 14th am, Posters: 14th
- 08b** Saline Fluids in Mineralization and Metamorphism (Greg Dipple & Bruce Yardley)  
Orals: 14th pm, Posters: 15th
- 08c** The Whole Earth Geohydrologic Cycle (Robert Bodnar & Jacqueline Dixon)  
Orals: 14th pm
- 08d** Properties of Geofluids: Linking Experiment, Theory and Application (Thomas Driesner & Carmen Sanchez-Valle)  
Orals: 14th pm, Posters: 15th
- 08e** The Role of Fluids in Diamond Growth and Resorption (Maya Kopylova & Emma Tomlinson)  
Orals: 16th am, Posters: 15th
- 08f** From Subduction Zones to Plumes and Ridges: Volatile Cycles and the Role of Volatiles in the Mantle (Jacqueline Dixon & Marc Hirschmann)  
Orals: 15th am, Posters: 14th
- 08g** Metasomatism in the Lower Crust and Upper Mantle, Fluids, Melts and Mass Transport (Tom Chacko & Daniel Harlov)  
Orals: 15th pm, Posters: 14th

**Theme 9: *Subduction Processes***  
*(Jon Davidson & Yoshiyuki Tatsumi)*

- 09a** Light Element Isotope Insights into Arc Magmatism and Mantle Dynamics (Jeff Ryan & Yuji Sano)  
Orals: 17th am, Posters: 17th
- 09b** New Views on Fractionation Depths in Arc Magmas (Richard Arculus & Simon Turner)  
Orals: 18th am



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- 09c** Relationship of Geodynamics to Magmatic and Fluid Processes in Subduction Zones (Hikaru Iwamori & Colin Macpherson)  
Orals: 17th pm, Posters: 17th
- 09d** Primitive and High Mg# Andesites, their Origin and Evolution, and their Possible Role in Continental Genesis (Peter Kelemen & Yoshihiko Tamura)  
Orals: 15th am, 15th pm, Posters: 14th
- 09e** Secular Changes in Arc Magma Compositions Through Time (Jun-ichi Kimura & Herve Martin)  
Orals: 18th pm, Posters: 17th

**Theme 10: *Magmatic Processes***  
(*Aaron Pietruszka & Kari Cooper*)

- 10a** Crystal Records of Magmatic Processes (Adam Kent & Erik Klemetti)  
Orals: 17th pm, 18th am, Posters: 17th
- 10b** Primary Melt Generation and Dynamics of Magma Transport and Storage (Rajdeep Dasgupta, Richard Katz & Jeff Standish)  
Orals: 17th am, 17th pm, Posters: 17th
- 10c** Temporal Geochemical Evolution of Active Magmatic Systems (Julie Bryce, Andrew Calvert & Karen Harpp)  
Orals: 18th pm, Posters: 17th
- 10d** Links between Plutonic and Volcanic Systems (Drew Coleman, Jonathan Miller & Jorge Vazquez)  
Orals: 16th am, Posters: 15th
- 10e** Mechanisms and Time Scales of Crustal Assimilation (Wendy Bohron, David Peate & Michael Rowe)  
Orals: 16th am, Posters: 15th

**Theme 11: *Thermochronology***  
(*Jim Lee & Peter Reiners*)

- 11a** The Physics and Chemistry of Thermochronology (Ethan Baxter & David Shuster)  
Orals: 17th pm, Posters: 17th
- 11b** High-Temperature Thermochronology, Tectonics and P-T-T Paths: A Session in Honor of Derek York (Mike Cosca & Simon P Kelley)  
Orals: 18th am, Posters: 17th
- 11c** Sedimentary Basin Development and Evolution (Barbara Carrapa & Richard Ketcham)  
Orals: 18th pm, Posters: 17th



## **Theme 12: *Resource Geochemistry***

*(Sarah-Jane Barnes & Sarah Gleeson)*

- 12a** Group V and VI Elements in Ore Deposit Genesis and Exploration (Sarah-Jane Barnes, L. Paul Bedard & Scott Wood)  
Orals: 15th am, Posters: 14th
- 12b** Experiments and Observations Bearing on the Behaviour of Chalcophile and Siderophile Elements in Magmatic Systems (James Brenan & Pedro Jugo)  
Orals: 16th am, Posters: 15th
- 12c** Linking Felsic Magmatism to Orogenesis Through to Ore Genesis (David John, Dave Lentz, Brent McInnes & Kirsten Rasmussen)  
Orals: 15th am, Posters: 14th
- 12d** Sedimentary Basins: Fluids, Energy and Metallic Resources (Simon George & Kurt Kyser)  
Orals: 15th pm, Posters: 14th
- 12e** Geochemistry and Exploration Geochemistry of Ore Deposits (Stephen Cook, Sarah Gleeson & Matthew Leybourne)  
Orals: 14th am, 14th pm, Posters: 15th

## **Theme 13: *Terrigenous Sediments and Sedimentary Components***

*(David Barbeau & Sidney Hemming)*

- 13a** Sedimentary Constraints on Composition and Evolution of the Continents, Continental Reconstructions and Basin Evolution (David Barbeau, Elena Belousova, James Gleason & Jeff Vervoort)  
Orals: 14th am, Posters: 15th
- 13b** Geochemistry of Mineral Dust: A Record of Climate Change (Balz Kamber, Karen Kohfeld & Gert Jan Weltje)  
Orals: 14th pm, Posters: 15th
- 13c** Sedimentary Contributions to Subduction Zones (Yue Cai & Matthew Thirlwall)  
Orals: 14th pm

## **Theme 14: *Fluid-solid interaction from the atomic to the global scale***

*(Eric Oelkers & Ruth Blake)*

- 14a** Chemical and Isotopic Tracers of Sediment-Porefluid Interactions (Michael E. Böttcher & Kate Maher)  
Orals: 18th pm, Posters: 17th



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- 14b** Geochemical Aspects of CO<sub>2</sub> Sequestration (Per Aagaard & Eric Oelkers)  
Orals: 16th am, Posters: 14th
- 14c** Minerals in Contact with Water, Organics, and Biomolecules: Advances in Interfacial Chemical Analysis, Modeling, and Imaging (Treavor Kendall, Andreas Luttge & Henry Teng)  
Orals: 17th am, 17th pm, 18th am, Posters: 17th
- 14d** Transformations, Transport, and Sequestration of P and N in Aquatic Sediments and Terrestrial Soils: Atomic to Global Scale Fluid-Solid Interactions (Ruth Blake & Kathleen Ruttenger)  
Orals: 15th am, Posters: 14th
- 14e** Frontiers in Nano-Geochemistry (Deb Jaisi, Yifeng Wang & Huifang Xu)  
Orals: 14th am, 14th pm, Posters: 15th
- 14f** Geochemistry and Energy Production in a Carbon-Limited, "Peak Oil" World (Carrick Eggleston)  
Orals: 15th am
- 14g** Advances in the Aqueous and Isotope Geochemistry of Groundwater Recharge (Dirk Kirste & Bernhard Mayer)  
Orals: 18th pm, Posters: 17th

**Theme 15: *Marine Geochemistry***  
*(Katrina Edwards & Tim Eglinton)*

- 15a** GEOTRACES/trace Element Distributions/cycling in the Oceans (Roger Francois & Catherine Jeandel)  
Orals: 15th am, 15th pm, Posters: 14th
- 15b** Paleoclimate: New Proxies, New Insights (John Eiler & Stefan Schouten)  
Orals: 14th am, 14th pm, Posters: 15th
- 15c** Hydrothermal Systems in Ultramafic Rocks (Wolfgang Bach & Dionysis Foustoukos)  
Orals: 16th am, Posters: 14th
- 15e** Quantifying the Chemical Exchange between the Oceanic Lithosphere and Oceans (Laurence Coogan & Kathy Gillis)  
Orals: 15th pm, Posters: 14th

**Theme 16: *Weathering and Landscape Evolution***  
*(Derek Vance & Joerg Schaefer)*

- 16a** Isotopic and Geochemical Insights into the Rates and Mechanisms of Erosion and Weathering (Anthony Dosseto, Gavin Foster, Kate Maher & Joerg Schaefer)  
Orals: 18th am, 18th pm, Posters: 17th



- 16b** Coupling between Chemical Weathering and Physical Erosion (Paul Bierman, Susan Brantley, Francois Chabaux & Lixin Jin)  
Orals: 17th am, 17th pm, Posters: 15th
- 16c** Multiple Approaches for Assessing Processes in the Critical Zone: Focus on Watersheds Around the World (Heather Buss & Vala Ragnarsdottir)  
Orals: 15th am, 15th pm, Posters: 14th
- 16d** Biogeochemistry of Weathering in Glacial Environments: Local, Regional, Global and Extraterrestrial Consequences (Rachael James, Mark Skidmore & Martyn Tranter)  
Orals: 17th pm, Posters: 15th
- 16e** Cosmogenic Nuclide Constraints on Surface Process Rates and Styles (John Gosse, Arjun Heimsath, Susan Ivy-Ochs, Tim Jull, Nat Lifton & Joerg Schaefer)  
Orals: 16th am, Posters: 15th

### **Theme 17: *Paleoclimate***

*(Frank McDermott & Rosalind Rickaby)*

- 17a** Marine and Terrestrial Reconstructions of Seasonal and Annual Scale Variability (Kim Cobb, Mary Elliot & Kathleen Johnson)  
Orals: 15th am, Posters: 14th
- 17b** Teleconnections: How are Climate Signals Communicated Globally (Mira Bar-Matthews & Erica Hendy)  
Orals: 14th am, Posters: 14th
- 17c** Global Climatic Transitions and Abrupt Events: Signatures and Mechanisms (Mark Pagani & Andy Ridgwell)  
Orals: 16th am, Posters: 15th
- 17d** Climate Mechanisms from Quaternary Chronology (Gideon Henderson & David Richards)  
Orals: 17th am, 17th pm, Posters: 15th
- 17e** Atmospheric Inputs to Ice: Water, Dust and Gas (Sarah Aciego & Gisela Winckler)  
Orals: 18th am, Posters: 17th
- 17f** Geochemical Tracers of Past Ocean Circulation (Allison Franzese & Alexander Piotrowski)  
Orals: 18th am, 18th pm, Posters: 17th

### **Theme 18: *Environmental Geochemistry***

*(Greg Slater & Patricia Maurice)*

- 18a** Application of Metal Stable Isotope Systems in Environmental Biogeochemistry (Bridget Bergquist & Tom Johnson)  
Orals: 17th am, 17th pm, Posters: 15th



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- 18b** Environmental Geochemistry: Isotopes and Organic Contaminant (Penny Morrill & Hans Richnow)  
Orals: 18th am, Posters: 17th
- 18c** Sulfur Cycling: New Approaches and Techniques to the Investigation of Inorganic, Organic, and Biological Reactions Involving Sulfur (Greg Druschel & Alexey Kamyshny)  
Orals: 14th pm, 15th am, Posters: 15th
- 18d** Biogeochemistry, Mineralogy and Significance of Sulfate Minerals in Earth and Planetary Systems (Karen Hudson-Edwards & Heather Jamieson)  
Orals: 14th am, Posters: 14th
- 18e** Mineralogy and Geochemistry of Metalliferous Mine Wastes: A Symposium in Honor of John Jambor (Anne J.B. Thompson & David J. Vaughan)  
Orals: 17th am, 17th pm, 18th am, Posters: 17th
- 18f** Rates of Geochemical Processes and their Application to Natural Systems: A Symposium in Honor of James I. (Tim) Drever (Simon Poulson & Lisa Stillings)  
Orals: 18th am, 18th pm, Posters: 17th
- 18g** The Environmental and Human Health Impacts and Geochemistry of Atmospheric Particulate Matter (Mark Engle, Allan Kolker & Kevin Telmer)  
Orals: 17th am, 17th pm, Posters: 15th
- 18h** Molecular-Scale Chemical and Biogeochemical Processes Affecting the Mobility of Metal and Radionuclide Contaminants in the Subsurface (John Bargar, Rizlan Bernier-Latmani, Daniel Giammar & Brad Tebo)  
Orals: 14th am, 14th pm, 15th am, 15th pm, 16th am, Posters: 14th, 15th
- 18i** Mineralogy and Health (Laurent Charlet & Javiera Silva)  
Orals: 18th pm, Posters: 17th
- 18j** Using Gases as Indicators for Transport and Reaction Processes in Ground Water and the Vadose Zone (M. Jim Hendry, Rolf Kipfer & Ulrich Mayer)  
Orals: 16th am, Posters: 15th
- 18k** Reactive Transport Modeling of Complex Environmental Systems (Andy Dale, Parisa Jourabchi, Ulrich Mayer & Phillippe van Cappellen)  
Orals: 15th am, 15th pm, Posters: 14th

**Theme 19: *Biogeochemistry***  
**(*Ken Takai & Lesley Warren*)**

- 19a** Metal Ions and Bacteria. A Tribute to Terry Beveridge (Kurt Konhauser & Lesley Warren)  
Orals: 17th am, 17th pm, Posters: 15th



- 19b** The Effect of Microbes on Metal Speciation in the Environment. A Tribute to Terry Beveridge (Jeremy Fein & Bryne Ngwenya)  
Orals: 17th pm, 18th am, Posters: 17th
- 19c** Advances in *in situ* Detection and Analyses of Carbon Associated with Microbial Biosignatures (Sherry L. Cady & Lesley Warren)  
Orals: 18th pm, Posters: 17th
- 19d** Biogeochemistry and Ecology of Life in Marine Sediments (Steven D'Hondt & Fumio Inagaki)  
Orals: 15th am, Posters: 14th
- 19e** Biogeochemistry and Isotope Geochemistry in Submarine Hydrothermal Systems (James Cowen & Jun-ichiro Ishibashi)  
Orals: 15th am, Posters: 14th
- 19f** Advances in Microbe Radionuclide Interactions (Jon Lloyd & Yohey Suzuki)  
Orals: 16th am, Posters: 15th
- 19g** Isotopic Biogeochemical Tracers into the Ancient Rock Record (Gray Bebout, Pierre Cartigny & James Farquhar)  
Orals: 14th am, 14th pm, Posters: 15th
- 19h** The Early Evolution of Photosynthesis – From the Anoxic World to Oxygen-Rich Air (Kurt Konhauser & Euan Nisbet)  
Orals: 15th pm, Posters: 14th
- 19i** Novel Usage of Complimentary Techniques to Characterize Low-Temperature Biogeochemical Environments (Sean Crowe & Lachlan MacLean)  
Orals: 15th pm, Posters: 14th

## **Theme 20: *Techniques***

*(Mark Rehkamper & Shuhei Ono)*

- 20a** Stable Isotopes in high-Temperature Geochemistry (Olivier Rouxel & Thomas Zack)  
Orals: 15th pm, Posters: 14th
- 20b** Experimental and Theoretical Constraints on Isotope Fractionation (Ariel Anbar, Seth John & Edwin Schauble)  
Orals: 14th am, 14th pm, Posters: 15th
- 20c** New Techniques and Methodologies for Ultra-Precise Isotopic Analysis (Joel Baker, Claudine Stirling & Stefan Weyer)  
Orals: 14th pm, 15th am, Posters: 15th
- 20d** Advances in Chronological Methods Applied to Geological and Cosmochemical Problems (Martin Bizzarro & Antonio Simonetti)  
Orals: 16th am, Posters: 15th



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- 20e** Coordinated Imaging and High Resolution *in situ* Analyses at the Micron Scale (Henner Busemann & Richard Cox)  
Orals: 17th pm, Posters: 15th
- 20f** Multiple Isotopes of an Element, Multiple Isotopologues of a Molecule, and Multi-Elemental Isotopes of a Compound (M3) (Huiming Bao & Boswell Wing)  
Orals: 18th am, Posters: 17th
- 20g** Testing Models and Identifying Processes: New Insights and Discoveries from Use of Geochemical Data Compilations (James Kubicki, Kerstin Lehnert & Vincent Salters)  
Orals: 17th am, Posters: 17th
- 20h** High Field Strength Elements and their Isotopes as Tracers for Geological and Planetary Processes (Carsten Münker, Jeff Vervoort & Thomas Zack)  
Orals: 17th am, Posters: 17th
- 20i** Applications of Neutron Scattering in Geochemistry and Mineralogy (David Cole & Nancy Ross)  
Orals: 17th am
- 20j** Synchrotron-Based Micron and Sub-Micron Probes Applied to Bio-, Geo-, and Cosmochemical Questions (George Cody & Martin Obst)  
Orals: 18th pm, Posters: 17th

## **Theme 21: General Sessions**

- 21b** General Geochemistry: Low Temperature Geochemistry  
Orals: 18th pm, Posters: 17th
- 21c** General Geochemistry: Biogeochemistry  
Orals: 15th pm, Posters: 14th
- 21d** General Geochemistry: Other Geochemistry  
Orals: 14th am, Posters: 14th