MSA Tucson 2026 Meeting

Final Program

Sunday, Feb 15

Breakfast with a Mineralogist

Monday, Feb 16

Field trips

Evening reception at Mineral Nexus

Mineralogy as Visual Geochemistry-Getting the Eye **[keynote talk]**

Peter Megaw

Abstract titles followed by an asterisk (*****) indicate that the first author is a student

Tuesday, Feb 17

Oral Presentations in GEM Ballroom at the Doubletree Inn Convention Center

8:00-8:10 AM Arrival and Welcome
Documents: Programs, Maps, Local restaurants

8:10-8:30 The Mineralogy of Critical Minerals **[keynote talk]**
Nancy L. Ross

8:30 - 8:45 Developing Standards for In Situ Hydrogen Isotope Measurements in Garnet *
Kathryn Bickerstaff, Sarah Penniston-Dorland, Megan Newcombe, Phil Piccoli, Jaime Barnes, Jianhua Wang

8:45 -9:00 Variations in H2O and δD within andradite-rich garnet crystals – implications for tungsten skarn- and ore-forming processes *
Kathleen Stepien, Sarah Penniston-Dorland, Megan Newcombe, Phil Piccoli, Richard Ash, Jianhua Wang, Jade Star Lackey

9:00 - 9:15 Using Li in garnet as a tracer of fluid flow during metamorphism: Insights from trace-element analysis and petrologic modeling
Sarah Penniston-Dorland, Besim Dragovic, Tom Raimondo, Richard Ash

9:15 - 9:30 Lawsonite was here: seeing ghosts of ancient subduction
Donna L. Whitney; Sara Hanel; Laure Martin

9:30 - 9:45 Magmatic Processes and Timescales Behind a Complex Monogenetic Eruption: Xitle Volcano, Mexico *
J. Ahmadi, E. Widom, R. Sanchez, D.C. Kuentz, M.-N. Guilbaud, C. Siebe, M.P. Loocke, T.B. Blum, K. Kitajima, S.M. Straub

9:45 - 10:00 Crystalline Zircons Are Forever
John W. Valley

10:00 - 10:30 **Coffee Break**

10:30 - 10:45 Some Thoughts on Teaching College Mineralogy Classes
Pamela Burnley

10:45 - 11:00 Inspiration and Education Through Minerals: Building Vitality of the A.E. Seaman Mineral Museum of Michigan Tech Through Strategic Planning
John A. Jaszczak and Patrice F. Cobin

11:00 - 11:15 Museum missions: Inspiration, education, and research; which dominates in our displays?
John Rakovan, McNamara, K., and Connolly, C

11:15 - 11:30 GIA's Field Gemology Project: Building a Gemstone Reference Collection
Aaron C. Palke, Wim Vertriest

11:30 11:45 Transforming RRUFF: New interface, new capabilities, same mission
Barbara Lafuente, Robert T Downs, Nate Stone, Alex Pires, Thomas Bristow

11:45 - 12:00 Raman Spectroscopy for Verifying Mineral Species in Museums
Paul R. Bartholomew, Jeffrey E. Post and Céline Martin

12:00 - 12:20 25 Years of Online Mineral Data with mindat.org **[keynote talk]**
Jolyon Ralph

12:20 - 1:25 Lunch

1:25 - 1:45 Biomineral precursors in time and deep time **[keynote talk]**
Pupa U.P.A. Gilbert

1:45 - 2:00 On the importance of biomineral chemistry at the nanoscale: Shark teeth as a case study *
Alberto Pérez-Huerta, Eshita Samajpati, Gabriela A. Farfan

2:00 - 2:15 Guanine: Unraveling the Mysteries of Nature's Most Enigmatic Biomineral
Zak Jibrin, Shaunna Morrison, Nathan Yee, and Vikas Nanda

2:15 - 2:30 The Evolutionary System of Mineralogy: An Informatics Approach to Mineral Classification
Robert M. Hazen, Shaunna M. Morrison, Anirudh Prabhu, Yanzhang Li, Marko Bermanec, and Hialiang Dong

2:30 - 2:45 The Co-Evolution Of Copper Minerals And Copper Proteins Thru Geologic Time *
Catherine Juranek, Daniel Hummer, Fabia Ursula Battistuzzi, Robert M Hazen, Shaunna M. Morrison, Robert T Downs

2:45 - 3:15 **Coffee break**

3:15 - 3:30 Origins and Evolution Through the Lens of Mineralogy
Michael L. Wong, Stuart Bartlett, H. James Cleaves II, Carol E. Cleland, Heather Demarest, Anirudh Prabhu, Jonathan I. Lunine, Robert M. Hazen

3:30 - 3:45 Computational Networks for Comparing Ionic Substitutions across Different Mineral Formational Groups *
Kate Hendrickson, Anirudh Prabhu, Robert T. Downs, Zak Jibrin, Shaunna M. Morrison

3:45 - 4:00 Linking complex helium behavior to crystal-chemical characteristics to advance apatite (U-Th)/He thermochronology
Tremblay, Marissa M., Guo, Hongcheng, Stanley, Jessica R., Jepson, Gilby, Montejo, Carlos, and Zhan, Wenbo

4:00 - 4:15 U-Th-Pb Geochronology of Critical Minerals by Laser Ablation ICPMS and SIMS Microanalysis – The Need for Matrix-Matched Reference Minerals
Paul Sylvester

Poster Presentations in the Turquoise Room at the Pima County Historic Courthouse

4:30 - 8:00 Poster Session

6:30 - 8:00 Reception in Courtyard with Posters Open until 8:00 PM

Wednesday, February 18

8:00-8:10 Announcements

8:10 - 8:30 Keynote presentation by Liz Rampe (TBD)
Liz Rampe

8:30 - 8:45 Nanomineralogy of Planetary Materials: Discovery of New Minerals Representing Extreme Conditions of Formation
Chi Ma

8:45 - 9:00 Characterizing Ferric Hydroxysulfate on Mars. A New Mineral?
J. L. Bishop, J. M. Meusburger, C. M. Weitz, M. Parente, C. Gross, D. Talla, A. M. Saranathan, Y. Itoh, M. R. D. Gruendler, A. E. G. Howells, M. Yeşilbaş, T. Hiroi, B. Schmitt, A. Maturilli, M. Al-Samir, T. F. Bristow, B. Lafuente, M. Wildner

9:00 - 9:15 A Mn-Fe(III) phosphate on Mars: Laueite or Strunzite !
A.H. Treiman, J. Berger, N. Lanza, D. Blake

9:15 - 9:30 Evidence for multiple generations of sulfide precipitation on asteroid Ryugu *
Maizey Benner, Devin Schrader, Thomas Zega

9:30 - 9:45 The Mineralogical Evidence for Hydrothermal Alteration of Asteroid Bennu
T.J. Zega, T.J. McCoy, H.C. Connolly Jr., D.S. Lauretta, and the OSIRIS-REx Mineralogy and Petrology Working Group

9:45 - 10:00 Nanoscale fluid inclusions in samples returned from asteroid Bennu *
Beau S Prince; Thomas J Zega; Zack Gainsforth; Maizey C Benner; Jessica J Barnes; Pierre Haenecour; Zoë E Wilbur; Sara Russell; Timothy J McCoy; Harold C Connolly, Jr; Dante S Lauretta

10:00-10:30 **Coffee Break**

10:30 - 10:45 Thermodynamic Origins of Primordial Soup Under Asteroidal Setting *
V.R. Manga, R. Nanayakkara, M.K. Kontogiannis, M.C. Benner, B.S. Prince, N. Kerrison, P. Haenecour, J.J. Barnes, D. Hogan, R. Maier, L.P. Keller, S.S. Russell, T.J. Zega, H.C. Connolly, D.S. Lauretta

10:45 - 11:00 Formation of Mg_2FeH_6 and Hydrogen Ingassing in Sub-Neptune *
Xuehui Wei, Taehyun Kim, Sibo Chen, Stella Chariton, Vitali B. Prakapenka, S.-H. Dan Shim

11:00 - 11:15 The bulk clay mineralogy of the carbonaceous chondrites as revealed by powder XRD

Laurence A.J. Garvie

11:15 - 11:30 Textural diversity and isotopic resetting in systematically oriented granular zircon from impact structures *
Leah Shteynman, Jennifer Reyné Davis, Thomas G. Sharp

11:30 AM - 12:30 PM Lunch

12:30 - 12:45 Infrared micro- and nano-spectroscopy of order and orientation of water in beryl *
Máté Garai, Richard Puro, and Markus B. Raschke

12:45 - 1:00 Spectroscopy of Enigmatic Type IaA+Ib Diamonds
Taryn Linzmeyer, Mike Breeding, Mike Jollands, Matthew F. Hardman, Sally Magana

1:00 - 1:15 Raman Spectroscopy Study of Natural Manganese Oxides
Jeffrey E. Post, Peter J. Heaney

1:15 - 1:30 Mineralogy for Nuclear Forensics: The Structural and Spectroscopic Diversity of Uranyl Oxyhydroxyhydrates
Tyler L. Spano, Brodie S. Barth, Nicholas M. Kaitschuck, Daniel E. Felton, Travis A. Olds, Andrew Miskowiec

1:30 - 1:45 The Rapidly Changing Hierarchy of Uranyl Mineral Structures
Peter C. Burns

1:45 - 2:00 Raman Density Functional Theory (DFT) Calculations for Minerals: Advances for Transition Metal Materials
David A. McKeown, Luis Patricio Aguinaga Del Hierro, and Nicholas A. Mecholsky

2:00 - 2:15 Multiphoton Microscopy of Gemstones *
Alevy E.G., **Crossley S.D.**, Nguyen L.T., Phai V.D., Magnus J.H., and Kieu K.Q.

2:15 - 2:45 **Coffee Break**

2:45 - 3:00 Neutron Diffraction Studies in Mineralogy and Geochemistry: Time Resolved, Non-Destructive, Light Element, Extreme Environment, and more
Si Athena Chen, Matthias D. Frontzek, Bryan C. Chakoumakos, Peter J. Heaney, Jeffrey Post

3:00 - 3:15 A Focused Ion Beam and Transmission Electron Microscopy Study of Iridescent Hematite

Peter J. Heaney, Jeffrey E. Post, Ke Wang, Xiayang Lin, Marina Portoghese, Silvia Vignolini

3:15 - 3:30 Geochemical and Radiogenic Controls on Color Zoning in Zambian Amethyst
Patrick R. Phelps, Olivia Napoli, Cin-Ty A. Lee

3:30 - 3:45 Naturally Occuring New Aluminum Phosphate Polymorph with a Metastable Structure
Shiyun Jin, Marcus J. Origlieri, Elina Myagkaya, William O. Nachlas, Anthony R. Kampf, and Aaron Palke

3:45 - 4:00 Discovery of the Largest-Known Moissanite Crystal Cluster
Joseph Biasi

4:00-4:15 Micro-Raman Spectroscopy Characterization of Emeralds Combined With LA-ICP- MS Analysis and Multivariate Statistical Methods
Raquel Alonso-Perez; Adriana Heimann Rios; Daniel Gray; Manuel A. Palacios; Arthur McClelland

Poster Presentations in the Turquoise Room at the Pima County Historic Courthouse

4:30 - 8:00 Poster Session

6:30 - 8:30 Reception in Courtyard and Museum Tour with Posters Open until 8:30 PM

Thursday, February 19

8:05-8:15 Welcome to Day 3

8:15 - 8:30 Thermodynamics and Kinetics of Pressing Matter
Alexandra Navrotsky

8:30 - 8:45 FORCE - Facility for Open Research in a Compressed Environment Progress, Updates and Plans
Thomas G. Sharp, Kurt D. Leinenweber, Sang-Heon Dan Shim, David J. Smith, Alexandra Navrotsky, Kara Brugman, Sibo Chen, Kyusei Tsuno and Logan Leinbach

8:45 - 9:00 Rare Earth Oxyphosphates: Structure, Thermochemistry, and Stability of Selected Compounds in the System REE2O3-P2O5
Konrad Burkmann, Sergey Ushakov, Jared Matteucci, Victor Kelly, Ligen Wang, Qi-Jun Hong, Jun Wu, Hongw Xu, Elizabeth Opila, Robert Glaum, Alexandra Navrotsky

9:00 - 9:15 Shock-ramp compression of MgO up to 400 GPa on the Z machine
Steven D. Jacobsen, Hannah J. Bausch, Joshua P. Townsend, Jean-Paul Davis, Sakun Duwal, Christopher T. Seagle, Tirzah Abbott, Alisha N. Clark

9:15 - 9:30 Elastic constants of monocrystalline tungsten under quasihydrostatic pressures to 11.3 GPa
Ran Wang, Brian Gulick, Baosheng Li, Hongwu Xu

9:30 - 9:45 Bridgmanite/melt partitioning of Fe3+, and redox evolution of a solidifying magma ocean.
H. L. Zhang, **M. M. Hirschmann**, W. Lu, O. T. Lord, S. Yaroslavtsev, A. Rosenthal, A.I. Chumakov, Z. Du

9:45 - 10:00 Temperature Dependence of Iron-Redox Equilibria in Ultra-High Temperature Melts *
Henry (Daoheng) Wang, Marc M. Hirschmann, Catherine A. Macris, Hongluo Zhang, Peter A. Solheid, Jiaqi Lu

10:00-10:30 **Coffee Break**

10:30 - 10:45 Hydride-doped perovskite reveals new possibilities for planetary hydrogen budgets
William R. Palfey, SonJong Hwang, William A. Goddard III, George R. Rossman

10:45 - 11:00 Experimental and theoretical study of transition metal speciation in hydrothermal and subduction-related fluids
Naoko Takahashi, Shigeru Yamashita, Bjorn Mysen

11:00 - 11:15 Quantifying Reaction Rates of Low-Temperature Silicate Alteration Using Novel Silicon Isotope Doping Technique *
Lauren Gasior, Juan Carlos de Obeso, Christopher R. Anderson, Diego P Fernandez

11:15 - 11:30 Predicting Reactivities of Deep-Earth Minerals by Machine Learning and AI4Min-PE
Yanzhang Li, Yuxuan Hu, Xiangzhi Bai, Yan Li

11:30 - 11:45 Synthetic Hydroxybastnäsite-(La) Solubility and Speciation in Carbonate Bearing Aqueous Solutions at 175-250 °C *
Katharine Rose-Hull Haylea Nisbet, Artaches Migdisov, Margaret E. Reece, Hakim Boukhalfa, Alexander Gysi, Nicole Hurtig, Chen Zhu, Alexandra Navrotsky, and Hongwu Xu

11:45 - 12:00 A quantitative Goldschmidt ternary classification using correlations of mineral-forming elements
D.R. Hummer, X. Ma, A. Prabhu, Q. Xiang, C. Liu, R.H. Hazen, J.J. Golden, R.T. Downs

12:00 Closing Remarks and Invitation to Tucson 2027

Poster Presentations

Posters may be put up after 12:00 PM on Tuesday, February 17, and should be up no later than 4:30 PM on Tuesday, February 17. Posters should be removed by the end of the reception on Wednesday, February 18. Authors are requested to be present at their posters from 5:00 - 6:30 PM on both Tuesday (Feb. 17) and Wednesday (Feb. 18) to present results and answer questions, and the poster rooms will be open for participants to visit from 4:30 - 8:30 PM both days.

Poster position assignments are listed below. C = Copper Room; T = Turquoise Room

Poster position

T1 Crystallographic and Microstructure Characterization of Laser 3D-Printed Lunar Regolith Simulants for Off-world Construction *
Tirzah M. Abbott, Valerie Svaldi, Carlos Avila, Portia Cortner, Lynn Stevens, Laura L. Gardner, Jennifer Edmunson, Frank Ledbetter, Vinayak P. Dravid, Katie Koube, Steven D. Jacobsen

T2 Thermodynamic stability of rare earth minerals (carbonates) *
G. A. Agbanga, M. Scharrer, K. Burkmann, C. G. White, B. F. Woodfield and A. Navrotsky

T3 Nonlinear Optical Mineralogy of Astromaterials Enabled by Multiphoton Microscopy *
Alevy E. G., Crossley S. D., Nguyen L. T., Magnus J., and Kieu K. Q.

T4 Geochemical Controls on Mineralogy, Composition, and Morphology of Ca-Mg carbonate Biominerals *
Erica N. Anderson, Yihang Fang

T5 A 20,000 Year History of Atmospheric Mineral Dust Preserved in a Peruvian Ice Core *
Austin M. Weber, Emilie Beaudon, Stanislav Kutuzov, Mary Davis, and Lonnie G. Thompson

T6 Mineralogy and textures of 'caswellite', a pseudomorph after mica from Franklin, New Jersey *
Justin A. Bank, Earl R. Verbeek, F. Zeb Page, Daniel R. Hummer

T7 Differentiating metamorphic and igneous zircons: Applications of machine learning on rare earth elements with newly derived formulas *
Jarrod Burges

T8 Role of Al_2O_3 in Deep Mantle Heterogeneities *
Ishita Das, Adongo Vincent, Gaurav Shukla

T9 Characterizing water-extractable organic matter from oil-contaminated soils in the spray zone at a legacy oil spill site near Bemidji, MN (USA): Implications for mineral weathering *
Alicia DiNovo, David Podgorski, Sasha Wagner

T10 Graphite for the Energy Transition: Geology, Supply, and Strategy
Mariliis Eensalu

T11 Mineral Association Analysis (MAA): Predicting mineral occurrence on Earth and Mars via mineral association rule mining
Shaunna M Morrison, Kate Hendrickson, Anirudh Prabhu, Forest Yee, Robert T Downs, Jolyon Ralph

T12 A new Raman spectroscopically-based approach to quantify stresses in crystals *
Madeline Makowski, Matthew J. Kohn

T13 APS–Phosphate Mineral Assemblages Recording Uranium–Gold Precipitation in the Mankarchua Basin, Singhbhum Craton, Eastern India *
Smruti Prakash Mallick, Kamal Lochan Pruseth, Dewashish Upadhyay, Amit Mondal, Ashim Kumar Patel, Jyoti Chandra

T14 Timescales of armalcolite-melt reaction and implications for the cooling history of high-Ti mare basalts *
Gustavo Marchant-Allende, Kelsey Prissel

T15 Femto-second laser ablation behavior of chalcogenide minerals: implications for matrix-matching of reference materials
Alec J. Martin, Jason D. Kirk

T16 Fluorine in minerals: crystal chemistry and spectroscopy
John McCloy, John Bussey, Daniel Neuville, M. Chris Dixon Wilkins

T17 “Criti-Coal”: Defining REE- & Critical Mineral-enriched Horizons in Coal Seams from the Powder River Basin (WY, MT)
Cole M. Messa, Davin A. Bagdonas, Robert W. Gregory, & Tyler C. Brown

T18 Phylogeny Controls the Crystal Structure of Enamel and Enameloid Bioapatite *
John T. Fink, Gabriela A. Farfan, Matthew J. Kohn, Myla A. Negrete, Teresa Y. Hsu, Katherine E. Bemis, Melissa T. Hawkins

T19 Raman Spectroscopic Investigation of Natural Arsenide and Antimonide Minerals *
Jakob Newcomer, Nicole C. Hurtig

T20 Mineralogical Composition of the Allchar Formation, North Macedonia: Implications for Rare Mineral Formation in Heavy Metal Deposits *
Seth Nichols, Dr. Daniel Hummer

T21 AI for crystallography: Introducing “Crystract”, an R package for batch processing and analyzing CIF Files.
Anirudh Prabhu, Don Ngo, Julia Hubner, Shaunna Morrison

T22 Ilmenite-Based Tools for Igneous Systems
Kelsey Prissel

T23 Structure and thermodynamics of xenotime-wakefieldite solid solutions, REV1-xPxO4 *
Katharine G. D. Rose-Hull, Andrew C. Strzelecki, Margaret E. Reece, Kristina Lilova, Tamilarasan Subramani, Chris J. Benmore, Xiaofeng Guo, Alexandra Navrotsky, Hongwu Xu

T24 The Influence of Mineral and Organic Matter Phases on Mobility and Fractionation of Select Rare Earth Elements in Biosolid-Amended Soil Analog Systems *
Jenna Salvat, James Ranville

T25 Mineralization and Analysis of the Mercury District of Southwest Arkansas *
Corey Swiger

T26 Mapping Color in History: Tracing Historic Ores Through the Analysis of Mineral Pigments
Celia S. Chari, Katherine Eremin, Jinah Kim

T27 Using speleothems to study magnetic excursions and environmental conditions in the Philippines *
Emma Kostecki, Cauê Borlina, Joshua Feinberg, Street Senan, Natasha Sekhon, Daniel Ibarra, Jaren Yambing, David McGee

T28 Deciphering lower mantle heterogeneities through high-pressure FeOOH phases *
Sparsh Sharma, Gaurav Shukla

T29 Isotopic Insights into Anthraxolite in the Little Falls Dolostone, New York *
David Tibbits, Anirban Basu, Bob Borofsky, Kevin Downey, Sean Kinney, Morgan Schaller, Bill Stephens PG, Stuart Strife, Brent Turrin, Sasha Wagner, Michael Walter

T30 Molecular Hydrogen in Olivine: Insights into Stability, Diffusion, and the Deep Water Cycle *
Yi Wang, Feiwu Zhang, Joshua Muir

T31 The surprising mineral diversity associated with life in the Sonoran Desert
Laurence A.J. Garvie

T32 Phase mixing of bridgmanite and davemaoite in hot mantle regions
Feiwu Zhang, Joshua Muir

C33 Spatio-chemical distribution of mafic lavas of the central Oregon High Cascades: Regional and localized scale *
Smith, Alyssa K., Streck, Martin J., Conrey, Richard M.

C34 Solubility conditions of sodium in ferropericlase in the Earth's lower mantle *
Luisa Chavarria, Hannah Bausch, Allison Pease, Vitali Prakapenka, Katherine Armstrong, Susannah M. Dorfman

C35 High-pressure melting of volatile-bearing pyroxenite: Implications for sub-arc magma generation *
Jitendra Kumar Dash, Sujoy Ghosh, Dwijesh Ray

C36 Effects of composition on structure and physical properties of glass analogues for magma oceans
S. M. Dorfman, A. Pease, M. Lv, Y. J. Ryu, A. I. Chumakov, Y. Xiao, V. B. Prakapenka

C37 Reconnaissance Geochemical Evolution and Pressure-Temperature Differences of the Be-rich, Aquamarine-bearing RMG-2 Pegmatite System of Mount Antero, CO (USA) *
Logan Erichsen, Matt Brueseke, Brian Busse

C38 Imaging Dislocations in Olivine with Conventional Electron-Backscatter Diffraction
Gordana Garapić and Ulrich Faul

C39 Nanoparticles in Natural Beryllium-Bearing Sapphires
Shiyun Jin, David Saxey, Zakaria Quadia, Steven Reddy, William Rickard, Danis Fougerouse, Xiao Sun, and Aaron Palke

C40 Characterization of the Crazy Sphinx Skarn Deposit, Boulder Batholith, Helena, MT *
Samuel Juneau and Matthew Loocke

C41 Thermodynamics and Structure of Selected $REE_7P_3O_{18}$ and REE_3PO_7 Oxyphosphates *
Victor Kelly, Konrad Burkmann, Sergey Ushakov, Mohit Verma, Godwin Agbanga, Elizabeth Opila, Robert Glaum, Alexandra Navrotsky

C42 Isotopic Dating Of $^{147}Sm/^{143}Nd$ To Determine Age Of Rare Earth Element Mineralization At Hicks Dome, Hardin County, Illinois *
Kristina Kohl, Daniel Hummer, Brett Denny

C43 Social Media Campaigns by the MSA Communications Committee Promote the Aims of the Mineralogical Society of America
Andrea Koziol, Reto Giere, Thomas Hale, Clem Hamelin, Sarah Mazza, Chenguang Sun, and Rachelle Turnier

C44 Thermochemistry and Structure of Rare Earth Nitrates and their Hydrates *
C. Loeffelholz, K. Burkmann, G. A. Agbanga, M. Scharrer, K. Bohmhammel, A. Navrotsky

C45 Comparative Mössbauer characterization of ultramafic silicate glasses *
Jiaqi Lu, Jie Li, Barbara Lavina, E. Ercan Alp, Bin Chen, Marc M. Hirschman, Michael Hu, Catherine A. Macris, Anja Rosenthal, Daoheng Wang, Sergey Yaroslavtsev, Jiyong Zhao

C46 Oscillatory zoning: the relationship between magma dynamics and mineral textures *
Megan McCabe, Patrick Phelps

C47 Assembling a Unified Mineralogical Map of the Moon Through Remote Sensing, Sample Analysis, and the Examination of Paragenetic Modes *
Lindsay Podjasek, Shaunna Morrison

C48 Characterizing Thermal Gradients in Multi-Anvil Press Cell Assemblies *
Maxwell Queener, Kyusei Tsuno, Thomas Sharp

C49 The CheMin legacy beyond Mars: terrestrial applications and evolution for future planetary missions.
Philippe Sarrazin, David F Blake, Elizabeth Rampe, Robert T Downs, Marc Gailhanou, Barbara Lafuente

C50 High-pressure behavior of talc: insight from Raman spectroscopy *
Erin Scott, Mainak Mookherjee, Young Jay Ryu, Jing Yang, and Yingwei Feichavarr

C51 Evidence of Mantle Source Heterogeneity and Phlogopite-rich Subcontinental Lithospheric Mantle Contribution in Early Cretaceous Ultrapotassic Magmas of the Damodar Valley, Eastern India *
Mohammad Shareef, Sujoy Ghosh, Soumendu Sarkar, Vivek P. Malviya, Makoto Arima Sanjay Kumar Mandal

C52 High Throughput Portable X-ray Diffractometer (XRD) Delivers 1 Minute Results in Any Setting: Lab, Field, or Glovebox
Feng Shen, Binbin Deng

C53 Surface Energies of Amorphous and Crystalline Silicates and their Implication for the Formation of Silicate Clouds in Hot Jupiter Atmospheres *
Megan Householder, James R. Lyons, Tamilarasan Subramani, Krisina Lilova, Alexandra Navrotsky

C54 Understanding Blue Benitoite: A Potential for Nb-involved Charge Transfer *
Paolo R. Sanchez, Helen V. Evans, George R. Rossman, Paul H. Oyala