

COMPRES 2022 Annual Meeting Program

Day 1: Aug 11				
PDT	MDT	CDT	EDT	
8:00 AM	9:00 AM	10:00 AM	11:00 AM	Carl Agee, President of COMPRES, University of New Mexico Welcome and Introduction
8:15 AM	9:15 AM	10:15 AM	11:15 AM	Keynote Talk: Barbara Romanowicz, University of California, Berkeley The morphology of deep mantle plumes from seismic imaging: our evolving perception and implications for mantle dynamics
9:00 AM	10:00 AM	11:00 AM	12:00 PM	Discussion
<u>Contributed Talks</u>				
Earth's Lower Mantle Session Chair - Jin Zhang, University of New Mexico				
9:15 AM	10:15 AM	11:15 AM	12:15 PM	*Keng-Hsien Chao, University of Hawaii at Manoa <u>Equation of states and structure of Ca(Si,Ti)O₃ perovskite solid solution</u>
9:27 AM	10:27 AM	11:27 AM	12:27 PM	*Junjie Dong, Harvard University <u>Nonlinearity of the postspinel transition and its expression in slabs and plumes worldwide</u>
9:39 AM	10:39 AM	11:39 AM	12:39 PM	*Byeongkwan Ko, Michigan State University <u>Effects of redox conditions on the stability of carbonate in Earth's lower mantle</u>
9:51 AM	10:51 AM	11:51 AM	12:51 PM	*Emma Stoutenburg, University of Chicago <u>FeAlO₃ in the lower mantle</u>
10:03 AM	11:03 AM	12:03 PM	01:03 PM	*Benjamin Strozewski, California Institute of Technology <u>Equation of State and Spin Crossover of (Al,Fe)-bearing phase H</u>
10:15 AM	11:15 AM	12:15 PM	01:15 PM	Susannah Dorfman, Michigan State University <u>Pressure enhances sodium solubility in magnesio-wüstite</u>
10:27 AM	11:27 AM	12:27 PM	01:27 PM	Break
Facilities and EOID Project Reports Session Chair - Bin Chen, Facilities Chair, University of Hawaii at Manoa				
10:45 AM	11:45 AM	12:45 PM	01:45 PM	Barbara Lavina, Argonne National Laboratory Combined diffraction and nuclear resonance spectroscopy at 3-ID-B: Major developments
10:55 AM	11:55 AM	12:55 PM	01:55 PM	Matthew Whitaker, Brookhaven National Laboratory MAXPD: Multi-anvil X-ray powder diffraction at NSLS-II
11:05 AM	12:05 PM	01:05 PM	02:05 PM	Haiyan Chen, Stony Brook University APS 6MB-B beamline: A large volume high pressure synchrotron facility for mineral and rock physics
11:15 AM	12:15 PM	01:15 PM	02:15 PM	Bora Kalkan, University of California, Santa Cruz ALS beamline 12.2.2 facility update
11:25 AM	12:25 PM	01:25 PM	02:25 PM	Dongzhou Zhang, APS Recent updates about the Partnership for eXtreme Xtallography (PX ²) program
11:35 AM	12:35 PM	01:35 PM	02:35 PM	Zhenxian Liu & Russell Hemley, University of Illinois at Chicago Frontier synchrotron infrared spectroscopy under extreme conditions beamline at NSLS-II
11:45 AM	12:45 PM	01:45 PM	02:45 PM	Kurt Leinenweber, Arizona State University COMPRES Multi-Anvil Cell Assembly Project progress report
11:55 AM	12:55 PM	01:55 PM	02:55 PM	Joanne Stubbs, University of Chicago GSECARS overview
12:05 PM	01:05 PM	02:05 PM	03:05 PM	Young Jay Ryu, University of Chicago COMPRES/GSECARS gas loading system update
12:15 PM	01:15 PM	02:15 PM	03:15 PM	Tom Duffy, Princeton University Mineral physics elasticity database
12:25 PM	01:25 PM	02:25 PM	03:25 PM	Bin Chen, University of Hawaii at Manoa Externally-Heated Diamond Anvil Cell Experimentation (EH-DANCE)
12:35 PM	01:35 PM	02:35 PM	03:35 PM	Matthew Whitaker Enabling in situ acoustic velocity measurements at extreme conditions in the MAXPD endstation at NSLS-II
12:45 PM	01:45 PM	02:45 PM	03:45 PM	Break
12:55 PM	01:55 PM	02:55 PM	03:55 PM	Thomas Sharp, Arizona State University Discussion of the Facility for Open Research in a Compressed Environment (FORCE) facility at ASU
01:55 PM	02:55 PM	03:55 PM	04:55 PM	Break
<u>Contributed Talks</u>				
Minerals under chaotic planetary environments Session Chair - Jemila Edmond, Case Western Reserve University				
02:05 PM	03:05 PM	04:05 PM	05:05 PM	*Hannah Bausch, Northwestern University <u>Shock and shock-ramp compression of iron-rich (Mg,Fe)O at Earth's core conditions</u>
02:17 PM	03:17 PM	04:17 PM	05:17 PM	*Qinting Jiang, Yale University <u>Solar wind origin of water on Earth: an experimental study of hydrogen implantation on olivine, orthopyroxene and quartz</u>
02:29 PM	03:29 PM	04:29 PM	05:29 PM	*Tyler Perez, Johns Hopkins University <u>Novel experiments to measure viscosity of minerals at high pressures and temperatures</u>
02:41 PM	03:41 PM	04:41 PM	05:41 PM	*Tianqi Xie, University of Western Ontario <u>High-pressure high-temperature study of intermediate plagioclase feldspar: Implications for shock metamorphic features</u>
02:53 PM	03:53 PM	04:53 PM	05:53 PM	*Matthew Whitaker, Stony Brook University <u>Catching lightning in a gabbro – A multi-modal synchrotron study</u>
03:05 PM	04:05 PM	05:05 PM	06:05 PM	Happy Hour

Day 2: Aug 12				
<u>Contributed Talks</u>				
Volatiles in the Earth's Interior Session Chair - Thomas Sharp, Arizona State University				
PDT	MDT	CDT	EDT	
8:00 AM	9:00 AM	10:00 AM	11:00 AM	*Laura Gardner, Northwestern University <u>Exploring Earth's deep water cycle using sublithospheric diamonds</u>
8:12 AM	9:12 AM	10:12 AM	11:12 AM	Robert Rapp, University of Hawaii at Manoa <u>Water triggers melting of continental sediments in the slab graveyards of the lower mantle</u>
8:24 AM	9:24 AM	10:24 AM	11:24 AM	*Wenyi Zhou, University of New Mexico <u>Experimental constrains on the effect of water on viscosity of the mantle incipient melt</u>
8:36 AM	9:36 AM	10:36 AM	11:36 AM	Qiong Liu, Peking University <u>Ultrasonic Studies of alkali-rich hydrous silicate glasses</u>
8:48 AM	9:48 AM	10:48 AM	11:48 AM	*Yanyao Zhang, University of Texas at Austin <u>Hydrated basalt in Earth's lower mantle</u>
9:00 AM	10:00 AM	11:00 AM	12:00 PM	*Mingsheng Zhao, Peking University <u>Sound velocities of the natural topaz at high pressure and implications for seismic velocities and circulation of water and fluorine in subducted slabs</u>
9:12 AM	10:12 AM	11:12 AM	12:12 PM	Break
Earth's Upper Mantle and Transition Zone Session Chair - Jin Zhang, University of New Mexico				
9:22 AM	10:22 AM	11:22 AM	12:22 PM	*Paul Ginsberg, University of Illinois at Urbana-Champaign <u>High pressure single-crystal elasticity of an intermediate mantle garnet</u>
9:34 AM	10:34 AM	11:34 AM	12:34 PM	*Jennifer Girard, Yale University <u>Polycrystalline olivine strength evolution studied using in-situ synchrotron x-ray and D-DIA</u>
9:46 AM	10:46 AM	11:46 AM	12:46 PM	*Ming Hao, University of New Mexico <u>Fast seismic anomalies of cratonic lithosphere explained by the delaminated lower continental crust</u>
9:58 AM	10:58 AM	11:58 AM	12:58 PM	*Timothy Officer, University of Chicago <u>Transformational faulting at high pressure and temperature in Fe-rich olivine Fo₂₅Fe₇₅: Implications for deep-focus earthquakes</u>
10:10 AM	11:10 AM	12:10 PM	01:10 PM	*Ricardo Daniel Rodriguez Moncayo, Western University <u>Phase behavior and initial characterization of new post-spinel phase candidate of chromite</u>
10:22 AM	11:22 AM	12:22 PM	01:22 PM	*Reynold Silber, Yale University <u>Pressure effect on diffusion creep of "dry" olivine aggregate deformation using D-DIA coupled with in-situ synchrotron x-ray</u>
10:34 AM	11:34 AM	12:34 PM	01:34 PM	Break
10:45 AM	11:45 AM	12:45 PM	01:45 PM	Keynote Talk: Roberta Rudnick, University of California, Santa Barbara Origin and Evolution of the Continents
11:30 AM	12:30 PM	01:30 PM	02:30 PM	Discussion
<u>Breakout Sessions</u>				
11:45 AM	12:45 PM	01:45 PM	02:45 PM	COMPRES Business Meeting and Election Led by James van Orman, Case Western Reserve University
11:55 AM	12:55 PM	01:55 PM	02:55 PM	Student/Post-doc Session: Deciding between academia and industry: which one is best for you? Led by Jemila Edmond, Case Western Reserve University
12:05 PM	01:05 PM	02:05 PM	03:05 PM	Dr. Javier D. Santillán (Principal Engineer, Apple)
12:15 PM	01:15 PM	02:15 PM	03:15 PM	Dr. Mingda Lyu (Research Scientist, Rigaku)
12:25 PM	01:25 PM	02:25 PM	03:25 PM	Dr. Yi Hu (Senior Imaging Scientist, Canon)
12:35 PM	01:35 PM	02:35 PM	03:35 PM	Dave Slaperud (Advanced Diamond Products)
12:45 PM	01:45 PM	02:45 PM	03:45 PM	Discussion
12:55 PM	01:55 PM	02:55 PM	03:55 PM	Dr. Colin Jackson (Tulane University), Dr. Alisha Clark (University of Colorado, Boulder), Dr. Kanani Lee (US Coast Guard Academy) and Dr. Elizabeth Thompson (University of the South)
1:15 PM	2:15 PM	3:15 PM	04:15 PM	Break
<u>Contributed Talks</u>				
Fe and Fe Alloys: Planetary Cores and More Session Chair - Wenli Bi, University of Alabama at Birmingham				
1:15 PM	2:15 PM	3:15 PM	4:15 PM	*Meryem Berrada, University of Western Ontario <u>T-X Phase diagrams of Fe-Si alloys at 3-5 GPa from electrical resistivity measurements</u>
1:27 PM	2:27 PM	3:27 PM	4:27 PM	*Eric Edmund, Carnegie Institution for Science <u>Thermal conductivity of FeS at Martian core conditions</u>
1:39 PM	2:39 PM	3:39 PM	4:39 PM	*Shanece Esdaille, Florida International University <u>Pressure-temperature stability of goethite (α-FeOOH) from Raman spectroscopy studies</u>
1:51 PM	2:51 PM	3:51 PM	4:51 PM	*Innocent Ezenwa, Carnegie Institution for Science <u>High-pressure melting curve of Fe by inter-metallic fast diffusion technique</u>
2:03 PM	3:03 PM	4:03 PM	5:03 PM	*Eric Lenhart, University of Western Ontario <u>Electrical resistivity of liquid Fe-8wt%S-4.5wt%Si at high pressure: Implications for outer core heat flow in small terrestrial bodies</u>
2:15 PM	3:15 PM	4:15 PM	5:15 PM	*Oluwasanmi Alexander Orole, University of Western Ontario <u>Investigating the early core of Vesta through electrical resistivity measurements of solid and liquid Fe-5wt%Ni at high P, T</u>
2:27 PM	3:27 PM	4:27 PM	5:27 PM	*Olivia Pardo, California Institute of Technology <u>Lattice dynamics of an iron-bearing hydrated sulfate at high pressure</u>
2:39 PM	3:39 PM	4:39 PM	5:39 PM	Alison Pease, Michigan State University <u>Broadening of Fe-nitride spin transitions under nonhydrostatic compression and impacts on the strength of Fe-nitrides</u>
2:51 PM	3:51 PM	4:51 PM	5:51 PM	*Cijin Zhou, California Institute of Technology <u>Equation of state of an Fe-Ni-S alloy up to 120 Gpa</u>
3:03 PM	4:03 PM	5:03 PM	6:03 PM	Carl Agee, President, University of New Mexico Concluding Remarks
3:18 PM	4:18 PM	5:18 PM	6:18 PM	Adjourn