*Asterisk by name indicates student/post-doc speaker.

COMPRES 2021 Annual Meeting Program

Day 1: Aug 12

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
				Contributed Talks **Earth's Upper Mantle and Transition Zone** **Session Chair - Tom Duffy, Princeton University**
8:15 AM	9:15 AM	10:15 AM	11:15 AM	*Reynold Silber, Yale University Effect of pressure on diffusion creep in olivine
8:27 AM	9:27 AM	10:27 AM	11:27 AM	*Yingzhe Li, University of Illinois at Urbana-Champaign Thermal expansion of KOH olivine
8:39 AM	9:39 AM	10:39 AM	11:39 AM	*Rose Hurlow, University of New Mexico Deformation behavior and textures of antigorite + olivine under mantle wedge conditions
8:51 AM	9:51 AM	10:51 AM	11:51 AM	*Vili Grigorova, Macquarie University Pressure calibrations for a new neutron transparent large volume sample assembly used with Paris-Edinburgh press
9:03 AM	10:03 AM	11:03 AM	12:03 PM	*Paul Ginsberg, University of Illinois at Urbana-Champaign The sound velocities of eclogitic garnets via nuclear resonant inelastic x-ray scattering and Brillouin scattering
9:15 AM	10:15 AM	11:15 AM	12:15 PM	*Jingui Xu, University of Hawaii at Manoa Phase transitions of orthopyroxene at high pressure-temperature
9:27 AM	10:27 AM	11:27 AM	12:27 PM	*Man Xu, University of Chicago Sound velocity and compressibility of melts along the hedenbergite ($CaFeSi_2O_6$)-diopside ($CaMgSi_2O_6$) join at high pressure: Implications for stability and seismic signature of Fe-rich melts in the mantle
9:39 AM	10:39 AM	11:39 AM	12:39 PM	*Wenyi Zhou, University of New Mexico Large Composition and Temperature Variation in the Mantle Transition Zone
9:51 AM	10:51 AM	11:51 AM	12:51 PM	*Jeff Gay, Université de Lille Phase Change of Pyrolitic Material: In-situ Transformation and Induced Microstructures at 660 km Depth
10:03 AM	11:03 AM	12:03 PM	01:03 PM	Break
				Facilities Project Reports **Session Chair - Mark Rivers, Facilities Chair, University of Chicago**
10:25 AM	11:25 AM	12:25 PM	01:25 PM	Ercan Alp, Argonne National Laboratory Nuclear Resonant and Inelastic X-Ray Scattering Program at APS
10:35 AM	11:35 AM	12:35 PM	01:35 PM	Barbara Lavina, Argonne National Laboratory Combined diffraction and nuclear resonance spectroscopy at 3-ID-B: Major developments
10:40 AM	11:40 AM	12:40 PM	01:40 PM	Matthew Whitaker, Brookhaven National Laboratory MAXPD: Multi-anvil X-ray powder diffraction at NSLS-II
10:50 AM	11:50 AM	12:50 PM	01:50 PM	Haiyan Chen, Stony Brook University APS 6MB-B beamline: A large volume high pressure synchrotron facility for mineral and rock physics
11:00 AM	12:00 PM	01:00 PM	02:00 PM	Bora Kalkan, University of California, Santa Cruz Latest news and updates about operations on ALS beamline 12.2.2
11:10 AM	12:10 PM	01:10 PM	02:10 PM	Dongzhou Zhang, APS Recent updates about the Partnership for eXtreme Xtallography (PX^2) program
11:20 AM	12:20 PM	01:20 PM	02:20 PM	Zhenxian Liu & Russell Hemley, University of Illinois at Chicago Frontier synchrotron infrared spectroscopy under extreme conditions beamline at NSLS-II
11:30 AM	12:30 PM	01:30 PM	02:30 PM	Kurt Leinenweber, Arizona State University COMPRES Multi-Anvil Cell Assembly Project
11:40 AM	12:40 PM	01:40 PM	02:40 PM	Mark Rivers, University of Chicago GSECARS update
11:50 AM	12:50 PM	01:50 PM	02:50 PM	Mark Rivers - GSECARS, APS COMPRES/GSECARS gas loading system update
12:00 PM	01:00 PM	02:00 PM	03:00 PM	Break
12:15 PM	01:15 PM	02:15 PM	03:15 PM	Keynote Talk: Steve Shirey, Carnegie Institution for Science Sublithospheric diamonds: sampling plate tectonics at 300 to 700 km depths in Earth's mantle
12:45 PM	01:45 PM	02:45 PM	03:45 PM	Discussion
01:00 PM	02:00 PM	03:00 PM	04:00 PM	Break
				Contributed Talks **Planetary Science** **Session Chair - Rebecca Fischer, Harvard University**
01:15 PM	02:15 PM	03:15 PM	04:15 PM	*Hadrien Pirotte, University of Liège Understanding the evolution of Mercury using minor and trace elements partitioning between silicate, metal and sulfide melts
01:27 PM	02:27 PM	03:27 PM	04:27 PM	*Joren Celis, Katholieke Universiteit Leuven Experimental constraints on the internal structure of Mercury
01:39 PM	02:39 PM	03:39 PM	04:39 PM	*Meryem Berrada, University of Western Ontario Mercury Heat Flow in an Fe10Ni10Si Core
01:51 PM	02:51 PM	03:51 PM	04:51 PM	*Vasilije Dobrosavljevic, California Institute of Technology Melting and phase relations of Fe-Ni-Si determined by a multi-technique approach
02:03 PM	03:03 PM	04:03 PM	05:03 PM	*Jesse Gu, Harvard University Incorporation of melt-scaling laws into models of Earth's accretion and core formation
02:15 PM	03:15 PM	04:15 PM	05:15 PM	Colin Jackson, Tulane University Incompatibility of argon during magma ocean crystallization
02:27 PM	03:27 PM	04:27 PM	05:27 PM	*Junjie Dong, Harvard University The effects of bulk composition and temperature on Martian mantle mineralogy
02:39 PM	03:39 PM	04:39 PM	05:39 PM	*Eric Lenhart, University of Western Ontario Electrical resistivity of liquid Fe10wt%Ni at high pressures and implications for the energy source for an early dynamo in Vesta
02:51 PM	03:51 PM	04:51 PM	05:51 PM	*Joshua Littleton, Western University Electrical resistivity of FeS and Fe-FeS: Implications for thermal transport in the core of Ganymede
03:03 PM	04:03 PM	05:03 PM	06:03 PM	*Donghoon Kim, Princeton University Structure and density of silicon carbide to 1.5 TPa: Implications for extrasolar planets
03:15 PM	04:15 PM	05:15 PM	06:15 PM	Happy Hour

Day 2: Aug 13

PDT	MDT	CDT	EDT	
				Contributed Talks **Earth's Lower Mantle** **Session Chair - Sabrina Tecklenburg, Stanford University**
8:00 AM	9:00 AM	10:00 AM	11:00 AM	Jennifer Girard, Yale University Formation of metallic Fe in bridgmanite under shallow lower mantle conditions
8:12 AM	9:12 AM	10:12 AM	11:12 AM	*Yanyao Zhang, University of Texas, Austin Elasticity of Ferroelastic Post-Stishovite Transition: Implications to Regional Seismic Scatterers in the Lower Mantle
8:24 AM	9:24 AM	10:24 AM	11:24 AM	*Byeongkwan Ko, Arizona State University Water-induced Diamond Formation at the Earth's Core-mantle Boundary Conditions
8:36 AM	9:36 AM	10:36 AM	11:36 AM	*Shanece Esdaille, Florida International University Mineral physics constraints on ultra-low velocity zones at the base of Earth's lower mantle
8:48 AM	9:48 AM	10:48 AM	11:48 AM	*Hannah Bausch, Northwestern University Shock-ramp compression of (Mg,Fe)O on the Z machine: Preliminary theory and application to ultra-low velocity zones
				EOID Project Reports **Session Chair - Lily Thompson, EOID Chair, Sewanee: University of the South**
9:00 AM	10:00 AM	11:00 AM	12:00 PM	Lily Thompson, Sewanee: University of the South Introduction and Overview
9:05 AM	10:05 AM	11:05 AM	12:05 PM	Bin Chen, University of Hawaii at Manoa Externally-Heated Diamond Anvil Cell Experimentation (EH-DANCE)
9:15 AM	10:15 AM	11:15 AM	12:15 PM	Tom Duffy, Princeton University Mineral Elasticity Database
9:25 AM	10:25 AM	11:25 AM	12:25 PM	Anne Pommier, Carnegie Institution for Science & Kurt Leinenweber, Arizona State University Development of an electrical cell in the multi-anvil to study planetary deep interiors
9:35 AM	10:35 AM	11:35 AM	12:35 PM	Lily Thompson, Sewanee: University of the South Questions and Discussion
9:40 AM	10:40 AM	11:40 AM	12:40 PM	Break
				Breakout Sessions
10:00 AM	11:00 AM	12:00 PM	01:00 PM	Andy Campbell, University of Chicago COMPRES Business Meeting and Election
10:15 AM	11:15 AM	12:15 PM	01:15 PM	Tom Duffy, Princeton University New organization for management of synchrotron beamlines for Earth sciences
10:45 AM	11:45 AM	12:45 PM	01:45 PM	Break
				Student/Post-doc breakout Managing research and your career as pandemic restrictions lessen Panel members: Shaughnessy Brown (Google), Stella Chariton (University of Chicago), Melinda Rucks (Princeton University)
				Contributed Talks **Elasticity and Crystal Structures** **Session Chair - Sabrina Tecklenburg, Stanford University**
11:15 AM	12:15 PM	01:15 PM	02:15 PM	*Mario Calderon-Cueva, Michigan State University High-pressure structure and bonding of AMg_2Pn_2 thermoelectrics (A=Ca, Mg, Yb; Pn=Bi, Sb)
11:27 AM	12:27 PM	01:27 PM	02:27 PM	*Fei Wang, Northwestern University High-pressure crystal structure and equation of state of ferromagnesian jeffbenite
11:39 AM	12:39 PM	01:39 PM	02:39 PM	*Ricardo Rodriguez, Western University Raman and synchrotron x-ray diffraction study of post-spinel chromite phases
11:51 AM	12:51 PM	01:51 PM	02:51 PM	*Melinda Rucks, Princeton University High-pressure behavior of single crystal apatite to 61 GPa
12:03 PM	01:03 PM	02:03 PM	03:03 PM	*Renee Delamater-Droungas, Princeton University Trends in the elastic anisotropy of minerals from a mineral elasticity database
12:15 PM	01:15 PM	02:15 PM	03:15 PM	Break
12:30 PM	01:30 PM	02:30 PM	03:30 PM	Keynote Talk: Meenakshi Wadhwa, Arizona State University Timescales of events in the early solar system: A perspective from chronological studies of achondrite meteorites
01:00 PM	02:00 PM	03:00 PM	04:00 PM	Discussion
01:15 PM	02:15 PM	03:15 PM	04:15 PM	Break
				Contributed Talks **Volatiles in the Mantle and the Core** **Session Chair - Tom Sharp, Arizona State University**
01:45 PM	02:45 PM	03:45 PM	04:45 PM	*Stephen Clapp, Florida State University High-pressure behavior of layered silicates
01:57 PM	02:57 PM	03:57 PM	04:57 PM	*Ye Peng, Florida State University High-pressure Raman spectroscopic study of amphiboles
02:09 PM	03:09 PM	04:09 PM	05:09 PM	Yongjae Lee, Yonsei University A role for subducted albite in the water cycle and alkalinity of subduction fluids
02:21 PM	03:21 PM	04:21 PM	05:21 PM	*Laura Gardner, Northwestern University High-resolution imaging of polyphase microinclusions in diamond using pink beam tomography at GSECARS
02:33 PM	03:33 PM	04:33 PM	05:33 PM	*Keng-Hsien Chao, University of Hawaii at Manoa Diamond from water and iron carbides in deep planetary interiors? An experimental investigation of iron carbide-water reaction
02:45 PM	03:45 PM	04:45 PM	05:45 PM	*Harrison Allen-Sutter, Arizona State University Precipitation of iron metal from iron bearing mantle minerals via reduction by hydrogen
02:57 PM	03:57 PM	04:57 PM	05:57 PM	*Taehyun Kim. Yonsei University Water may limit silicon amount in the Earth's core
03:09 PM	04:09 PM	05:09 PM	06:09 PM	*Suyu Fu, Arizona State University Impact of H on Fe-Si alloys at high pressure and temperature: Effects of light elements on structures of planetary cores
03:21 PM	04:21 PM	05:21 PM	06:21 PM	*Mauritz van Zyl, University of Western Ontario Nitrogen incorporation into possible deep Earth materials
03:33 PM	04:33 PM	05:33 PM	06:33 PM	*Allison Pease, Michigan State University Deformation of Fe-nitrides under uniaxial compression
03:45 PM	04:45 PM	05:45 PM	06:45 PM	Carl Agee, President, University of New Mexico Concluding Remarks
04:00 PM	05:00 PM	06:00 PM	07:00 PM	Adjourn