08:00 Breakfast

08:30 Session 1

08:30	Tyler Meng	<i>Field Studies of Terrestrial Analogs to Buried Martian Glaciers</i> - Debris-covered glaciers are found on Earth & Mars. Ground-based data acquired in Alaska complements remote measurements to characterize links between surface morphology, englacial structure & climate evolution.
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08:38	Amanda Stadermann	<i>Moon Diver and the Orange Mountain Basalt</i> - Moon Diver is a proposed Discovery mission that will enter a lunar pit. The Orange Mountain Basalt is a flood basalt from the breakup of Pangaea. How do they relate?
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08:46	Teddy Kareta	<i>Telescope to Laboratory Studies of Near-Sun Objects</i> - We describe a new high temperature vacuum heating experiment, designed to replicate the pressures and temperatures experienced by near-sun small bodies for comparison with telescopic observations.
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08:54	Zarah Brown	What's heating Saturn's thermosphere? Cassini Grand Finale observations show connection between circulation and heating - We created a 2D map of Saturn's thermospheric temperature and density. I describe the horizontal winds we infer from this data and how atmospheric dynamics may help resolve Saturn's energy crisis.
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09:02	Kana Ishimaru	Dehydration and recrystallization experiments of serpentine for understanding thermal history of hydrated asteroids - To constrain the temperature and duration of thermal metamorphism on hydrated asteroids, we conducted heating experiments of serpentine. Our results could estimate thermal histories of Ryugu and Bennu.
09:10	Ben Lew	<i>Rotational modulation of a rare planetary-mass companion in L-T Transition -</i> I will present a new HST observation result of the rotational modulation of a rare planetary-mass companion in L/T Transition.
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09:18	Zoe Wilbur	Investigating aubrites using X-ray computed tomography and bulk partition coefficients - We scan aubrites using XCT to provide a 3D view of aubritic mineralogies, and calculate aubrite bulk distribution coefficients, which we compare to petrologic experiments run under mercurian conditions.
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09:26	Maureen Y. Palm	<i>Latitudinal variations in Titan's atmosphere</i> - We analyzed Cassini UVIS observations of Titan occulting Orion's belt her to measure the latitude and altitude dependence of abundances of different organic species in Titan's atmosphere.
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09:34	Nathanial P Hendler	<i>Is The Solar System Normal</i> - What is the typical size of a protoplanetary disk? How does the size of the Solar System compare? Using our census of 199 disk sizes, we determine if the outer edge of the Kuiper belt is wack.
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09:42	Hamish Hay	Invited:Powering the Galilean Satellites with moon-moon tides - Present day oceans in the Galilean moons are too thick to be excited by eccentricity tidal forces. Instead, we find that resonant excitation is possible due to tidal forcing from the adjacent moons.

10:00 Break

10:15	Tommi Koskinen	<i>Invited: Multi-instrument constraints on Saturn's helium abundance and evolution models from Cassini</i> - The abundance of helium in Saturn's envelope has significant consequences for the thermal evolution of the planet and contradicting measurements have led to considerable debate on this important parameter. I will describe new constraints from Cassini.
10:35	Tanner Campbell	Simultaneous Multi-color Photometric RSO Characterization - Our goal is to characterize Resident Space Objects in several orbit regimes with passive sensors by collecting concurrent multi-color data. We have built a multi-aperture array on an alt-alt mount to do this.
10:43	Alfred McEwen	<i>Io Volcano Observer (IVO 3.0) Mission Concept for Discovery</i> - The IVO concept has improved after 3 tries due to technology advances, instrument developments (JUICE, Europa Clipper, BepiColombo), and a focus on tidal heating as a fundamental planetary process.
10:51	Kat Volk	Neptune's migration speed and Kuiper belt inclination excitation: it's complicated - Our work is a counter example to suggestions that slow Neptune migration explains large Kuiper belt inclinations. Other factors (secular excitation, numerical simplifications) play an important role.
10:59	Guy McArthur	<i>HiView 2.0: Updating a large C++ application to the modern era</i> - HiView is a cross-platform desktop app for analysis of high-res images. I present some of the challenges encountered in modernizing it with new language features, new platform APIs, and new build tools.
11:07	Ilaria Pascucci	The frequency of Earth-size planets in the habitable zone of Sun-like stars - I will discuss the limitations of current estimates on the frequency of Earth-size planets at \sim 1au and a path forward to obtain a more reliable value.
11:15	Walter Harris	<i>Chimera</i> - Centaurs are icy bodies migrating between the TNOs and JFCs and the most pristine objects inside Neptune's orbit. Chimera is a mission concept to study the most active Centaur, 29P/Schwassmann-Wachmann. $\Psi \mathscr{A}$
11:23	Kristin Block	Space exploration ethics: Making a case for professionals and training at LPL - Ethical considerations in our field extend beyond those related to workforce diversity and planetary protection. We should be prepared to approach these issues in an informed and intelligent way.
11:31	Isamu Matsuyama	<i>Global tectonic patterns of the Moon</i> - We developed a general stress and tectonics model that can consider multiple stress generating mechanisms. The model was applied to the Moon, which exhibits a global scale thrust faulting pattern.
11:39	Andrew Ryan	Planetary Surface Thermophysics - I will discuss the thermophysical properties of planetary regolith and how thermal models aid us in planetary science and exploration.
11:47	Antony Trinh	A different spin on gravity/topography data - Crustal thickness is often inferred from gravity/topography data by assuming the crust floats over a fluid layer. I will highlight the prominent role of crustal stresses in such a state of isostasy.

11:55 Lunch

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13:15	Allison McGraw	<i>Invited:Searching for the Parent(s) of "Carbonaceous" Achondrite NWA 6704</i> - Spectral parameters of achondrite NWA6704 are distinguished from HEDs, giving insight on a parent body; likely a V-type asteroid proximal to C-type asteroids with affinities to the S(VI) spectral region.
13:35	David Cantillo	<i>Constraining Exogenic Carbonaceous Material Abundance on (16) Psyche</i> - Asteroid (16) Psyche is the largest metallic asteroid in the main belt. We have created three-component mixtures of metal, pyroxene, and carbonaceous chondrite that simulate its observed Vis to NIR spectra.
13:43	Kate Su	Witnessing Large Asteroid Collisions in Young Exoplanetary Systems - I will describe how to use time-series observations to observe the aftermath of large asteroid impacts in young exoplanetary systems during the eras of terrestrial planet formation.
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13:51	Eric Petersen	The Origin of Buried Ice at Galena Creek Rock Glacier, Wyoming - Galena Creek Rock Glacier is a potential analog to Martian debris-covered glaciers. The high purity ice it contains is derived from past glacial accumulation and recent debris-facilitated ice accumulation.
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13:59	Rodney Heyd	<i>CaSSIS image pipeline processing using Nextflow</i> - The CaSSIS GDS uses Nextflow in multiple image processing pipelines. I show here our Level 3 product pipeline and review some lessons learned while bringing this pipeline to production in Bern.
14:07	Cathryn Sephus	<i>Shedding light on phototrophic pigment evolution: Reconstruction of ancestral rhodopsins</i> - We have inferred ancestral proteorhodopsin pigment protein sequences from phylogeny as a way to directly explore the evolution of spectral biosignatures on Earth with future exoplanetary applications.
14:15	Zoe Torralba	<i>Spectroscopy of the Agues Zarcas Metorite</i> - We created large grain size mixtures of Aguas Zarcas carbonaceous meteorite and measured them with visible to near-infrared reflectance (.35-2.5um) spectroscopy.
14:23	Audrie Fennema	Automated Processing of CaSSIS Anaglyphs - Anaglyphs can aid in qualitative analysis of complex surfaces with a minimized amount of computational and personnel resources. I will describe an automated process for producing CaSSIS anaglyphs.
14:31	Ron Ballouz	Surface refreshing of Martian moon Phobos by orbital eccentricity-driven grain motion - The surface of Mars' moon Phobos has two distinct units, red and blue, of unknown origin. We show that Phobos' eccentricity drives surface grain motion, excavating blue pristine material.
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14:39	Dante Lauretta	OSIRIS-REx at Asteroid (101955) Bennu: The Site Selection Campaign - The OSIRIS-REx science payload is currently being used to survey Bennu to select and document the best candidate sample sites.
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14:47	Chris Schaller	<i>Using JMARS as the foundation for science-driven mission planning</i> - HiRISE and CaSSIS use JMARS for science- driven mission planning. I show here how we've used the open-source version of JMARS as the foundation of a planning tool for CaSSIS.
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14:55	Jennifer Croissant	<i>Invited:Interdisciplinarity: Promise, Perils, and Praxis</i> - I review studies of interdiscliplinary collaboration. The pitfalls and benefits of collaborations are not distributed equally across dimensions such as age/rank, gender, and centrality to the field.
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15:30	Kristopher G Klein	HelioSwarm: Revealing the Transfer and Dissipation of Turbulence in Plasmas throughout the Universe - Turbulence drives energy transport in plasmas throughout the universe. HelioSwarm, a proposed spacecraft swarm, will make the first multi-scale measurements of turbulence, quantifying this universal process.
15:38	Singleton Thibodeaux-Yost	<i>HiRISE Uplink Planning Process</i> - Planning for HiRISE requires balancing data volume, managing instrument temperatures, predicting weather, and using past images to inform the image settings.
15:46	Nicole Baugh	<i>Updating the HiRISE Photometry Prediction (HIPHOP) tool</i> - I present changes to HIPHOP, used to optimize settings for scene brightness, that facilitate streamlining of the HiRISE planning process and make use of existing image data for model predictions.
15:54	Jessy Forelli	<i>Title</i> - Using the FIB and TEM, I will create a catalog that explores the variability in composition and crystal structure between different types of meteorites for my senior thesis project.
16:02	Francisco (Frank) Valdes	Asteroid Science with DECam - As the pipeline scientist for NOAO's DECam I have been creating a DECam Astroid Database (DAD) from the NOAO NEO Survey and a serendipitous detection program from community programs.
16:10	Shane Stone	Seasonal and Dust Storm Induced Variation in Upper Atmospheric Water on Mars - We present in-situ data from MAVEN NGIMS which demonstrates the transport of water to the upper atmosphere of Mars. This water is ionized and dissociated to form H, which can then escape to space.
16:18	Veronica Bray	Hydrocode modeling of the Flynn creek impact - Effect of water depth on rim preservation - Drill core data and computer simulations are combined to study the Flynn Creek crater. Rim collapse, and the spacing of impact-related fracturing that surrounds the crater, are affected by sea depth.
16:26	Jason Perry	Batch Processing Mars Trace Gas Orbiter CaSSIS Images - CaSSIS is a four-color, push-frame camera aboard ESA's Mars Trace Gas Orbiter. I will discuss the development of a batch geometric pipeline of these images using USGS's ISIS software package.
16:34	Cassandra Lejoly	د معنا Radial Dust Profiles of Three Close Approach Jupiter Family Comets - In our work, we present dust radial profiles of 46P/Wirtanen and compare them to the dust radial profiles of 41P/Tuttle-Giacobini-Kresàk (41P/TGK), 45P/Honda- Mrkos-Pajdusáková (45P/HMP).
16:45	Jessica Barnes	Keynote:Volatiles in the inner Solar System: A view from ureilites - The volatile element systematics of ureilite meteorites can be used to inform us about the processes that occurred on ancient small bodies and the potential origins of volatiles in the early inner Solar System.

17:15 Reception