

## Program

# *40th LUNAR AND PLANETARY SCIENCE CONFERENCE*

March 23–27, 2009

To access the abstracts, use the hand tool of your Acrobat Reader  
to click on the name of any session.  
After the full program listing for that session appears,  
click on the title of a presentation to view the abstract for that presentation.

### **Sunday Evening, March 22, 5:00 p.m.**

Waterway Ballroom                      Reception/Registration  
Prefunction Area

### **Monday Morning, March 23, 8:30 a.m.**

Waterway Ballroom 1                      [Phoenix: Exploration of the Martian Arctic](#)  
Waterway Ballroom 4                      [Origin and Early Evolution of the Moon](#)  
Waterway Ballroom 5                      [Comet Wild 2: Mineralogy and More](#)  
Waterway Ballroom 6                      [Astrobiology: Meteorites, Microbes, Hydrous Habitats, and Irradiated Ices](#)

### **Monday Afternoon, March 23, 1:30 p.m.**

Waterway Ballroom 4                      [PLENARY SESSION: Masursky Lecture and Dwornik Award Presentations](#)

### **Monday Afternoon, March 23, 2:30 p.m.**

Waterway Ballroom 1                      [Phoenix: Soil, Chemistry, and Habitability](#)  
Waterway Ballroom 4                      [Planetary Differentiation](#)  
Waterway Ballroom 5                      [Presolar Grains: Structures and Origins](#)  
Waterway Ballroom 6                      [SPECIAL SESSION: Venus Atmosphere: Venus Express and Future Missions](#)

### **Monday Evening, March 23, 5:30 p.m.**

Waterway Ballroom 4                      NASA Headquarters Briefing

### **Immediately followed by**

Student/Scientist Reception

**Tuesday Morning, March 24, 8:30 a.m.**

Waterway Ballroom 1	<a href="#">Mars Polar Caps: Past and Present</a>
Waterway Ballroom 4	<a href="#">SPECIAL SESSION: Lunar Missions: Results from Kaguya, Chang'e-1, and Chandrayaan-1, Part I</a>
Waterway Ballroom 5	<a href="#">Early Nebula Processes and Models</a>
Waterway Ballroom 6	<a href="#">SPECIAL SESSION: Icy Satellites of Jupiter and Saturn: Cosmic Gymnasts</a>

**Tuesday, March 24, 12:00 – 1:30 p.m.**

Waterway Ballroom 4	Community Forum on Future Lunar Missions
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**Tuesday Afternoon, March 24, 1:30 p.m.**

Waterway Ballroom 1	<a href="#">Mars: Ground Ice and Climate Change</a>
Waterway Ballroom 4	<a href="#">SPECIAL SESSION: Lunar Missions: Results from Kaguya, Chang'e-1, and Chandrayaan-1, Part II</a>
Waterway Ballroom 5	<a href="#">Chondrite Parent-Body Processes</a>
Waterway Ballroom 6	<a href="#">SPECIAL SESSION: Icy Satellites of Jupiter and Saturn: Salubrious Surfaces</a>
Montgomery Ballroom	<a href="#">SNC Meteorites</a>

**Tuesday Evening, March 24, 6:30 p.m.**

Town Center Exhibit Area	Poster Session I
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[Lunar Missions: Results from Kaguya, Chang'e-1, and Chandrayaan-1](#)

[LRO and LCROSS](#)

[Geophysical Analysis of the Lunar Surface and Interior](#)

[Remote Observation and Geologic Mapping of the Lunar Surface](#)

[Lunar Spectroscopy](#)

[Venus Geology, Geophysics, Mapping, and Sampling](#)

[Planetary Differentiation](#)

[Bunburra and Buzzard Coulee: Recent Meteorite Falls](#)

[Meteorites: Terrestrial History](#)

[CAIs and Chondrules: Records of Early Solar System Processes](#)

[Volatile and Organic Compounds in Chondrites](#)

[Crashing Chondrites: Impact, Shock, and Melting](#)

[Ureilite Studies](#)

[Petrology and Mineralogy of the SNC Meteorites](#)

[Martian Meteorites](#)

[Phoenix Landing Site: Perchlorate and Other Tasty Treats](#)

[Mars Polar Atmospheres and Climate Modeling](#)

[Mars Polar Investigations](#)

[Mars Near-Surface Ice](#)

[Mars: A Volatile-Rich Planet](#)

[Mars: Geochemistry and Alteration Processes](#)

**Tuesday Evening, March 24, 6:30 p.m. (continued)**[Martian Phyllosilicates: Identification, Formation, and Alteration](#)[Astrobiology](#)[Instrument Concepts, Systems, and Probes for Investigating Rocks and Regolith](#)[Seeing is Believing: UV, VIS, IR, X- and Gamma-Ray Camera and Spectrometer Instruments](#)[Up Close and Personal: In Situ Analysis with Laser-Induced Breakdown Spectroscopy and Mass Spectrometry](#)[Jupiter and Inscrutable Io](#)[Tantalizing Titan](#)[Enigmatic Enceladus and Intriguing Iapetus](#)[Icy Satellites: Cryptic Craters](#)[Icy Satellites: Gelid Geology/Geophysics](#)[Icy Satellites: Cool Chemistry and Spectacular Spectroscopy](#)[Asteroids and Comets](#)[Comet Wild 2: Mineralogy and More](#)[Hypervelocity Impacts: Stardust Models, LDEF, and ISPE](#)[Presolar Grains](#)[Early Nebular Processes: Models and Isotopes](#)[Solar Wind and Genesis: Measurements and Interpretation](#)[Education and Public Outreach](#)**Wednesday Morning, March 25, 8:30 a.m.**

Waterway Ballroom 1

[Ancient Martian Crust: Primary Mineralogy and Aqueous Alteration](#)

Waterway Ballroom 4

[SPECIAL SESSION: Messenger at Mercury: A Global Perspective on the Innermost Planet](#)

Waterway Ballroom 5

[CAIs and Chondrules: Records of Early Solar System Processes](#)

Waterway Ballroom 6

[Small Bodies: Shapes of Things to Come](#)**Wednesday, March 25, 12:15 – 1:15 p.m.**

Waterway Ballroom 1

Community Forum on Decadal Survey for Planetary Sciences

**Wednesday Afternoon, March 25, 1:30 p.m.**

Waterway Ballroom 1

[Sulfur on Mars: Rocks, Soils, and Cycling Processes](#)

Waterway Ballroom 4

[Mercury: Evolution and Tectonics](#) followed at 3:00 p.m. by[Venus Geology, Volcanism, Tectonics, and Resurfacing](#)

Waterway Ballroom 5

[Asteroid–Meteorite Connections](#)

Waterway Ballroom 6

[Impacts I: Models and Experiments](#)

Montgomery Ballroom

[Solar Wind and Genesis: Measurements and Interpretation](#)

**Thursday Morning, March 26, 8:30 a.m.**

Waterway Ballroom 1	<a href="#">Mars: Aqueous Processes</a>
Waterway Ballroom 4	<a href="#">Magmatic Volatiles and Eruptive Conditions of Lunar Basalts</a>
Waterway Ballroom 5	<a href="#">Comparative Planetology</a> followed at 10:00 a.m. by <a href="#">Interstellar Matter: Origins and Relationships</a>
Waterway Ballroom 6	<a href="#">Impacts II: Craters and Ejecta</a>

**Thursday Afternoon, March 26, 1:30 p.m.**

Waterway Ballroom 1	<a href="#">Mars: Tectonics and Dynamics</a>
Waterway Ballroom 4	<a href="#">Mars Analogs I: Geological</a> followed at 3:00 p.m. by <a href="#">Exploring the Diversity of Lunar Lithologies with Sample Analyses and Remote Sensing</a>
Waterway Ballroom 5	<a href="#">Chondrite Accretion and Early History</a>
Waterway Ballroom 6	<a href="#">Science Instruments for the Mars Science Lander</a> followed at 3:15 p.m. by <a href="#">Martian Gullies: Morphology and Origins</a>

**Thursday Evening, March 26, 6:30 p.m.**

Town Center Exhibit Area	Poster Session II  <a href="#">Mercury</a> <a href="#">Pursuing Lunar Exploration</a> <a href="#">Sources and Eruption of Lunar Basalts</a> <a href="#">Chemical and Physical Properties of the Lunar Regolith</a> <a href="#">Lunar Dust and Transient Surface Phenomena</a> <a href="#">Lunar Databases and Data Restoration</a> <a href="#">Meteoritic Samples of the Moon</a> <a href="#">Chondrites, Their Clasts, and Alteration</a> <a href="#">Achondrites: Primitive and Not So Primitive</a> <a href="#">Iron Meteorites</a> <a href="#">Meteorite Methodology</a> <a href="#">Antarctic Micrometeorites</a> <a href="#">HEDs and Vesta</a> <a href="#">Dust Formation and Transformation</a> <a href="#">Interstellar Organic Matter</a> <a href="#">Early Solar System Chronology</a> <a href="#">Comparative Planetology</a> <a href="#">Impacts I: Models and Experiments</a> <a href="#">Impacts II: Craters and Ejecta</a> <a href="#">Mars: Volcanism</a> <a href="#">Mars: Tectonics and Dynamics</a> <a href="#">Martian Stratigraphy: Understanding the Geologic History of Mars Through the Sedimentary Rock Record</a>
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**Thursday Evening, March 26, 6:30 p.m. (continued)**

[Mars: Valleys and Valley Networks](#)

[Mars: Aqueous Processes In Valles Marineris and the Southern Highlands](#)

[Mars: Aqueous Geomorphology](#)

[Martian Gullies: Morphology and Origins](#)

[Mars: Dunes, Dust, and Wind](#)

[Mars: Remote Sensing](#)

[Mars: Geologic Mapping, Photogrammetry, and Cratering](#)

[Martian Mineralogy: Constraints from Missions and Laboratory Investigations](#)

[Mars Analogs: Chemical and Physical](#)

[Mars Analogs: Sulfates and Sulfides](#)

[Missions: Approaches, Architectures, Analogs, and Actualities](#)

[Not Just Skin Deep: Electron Microscopy, Heat Flow, Radar,  
and Seismology Instruments](#)

[Planetary Data Systems, Techniques, and Interpretation](#)

**Friday Morning, March 27, 8:30 a.m.**

Waterway Ballroom 1

[Mars: Dunes, Dust, and Wind](#)

Waterway Ballroom 4

[Mars: Volcanism](#)

Waterway Ballroom 5

[Early Solar System Chronology](#)

Waterway Ballroom 6

[Seek Out and Explore: Upcoming and Future Missions](#)

**Friday Afternoon, March 27, 1:30 p.m.**

Waterway Ballroom 1

[Mars: Early History and Impact Processes](#)

Waterway Ballroom 4

[Mars Analogs II: Chemical and Spectral](#)

Waterway Ballroom 5

[Achondrites and their Parent Bodies](#)

Waterway Ballroom 6

[Planning for Future Exploration of the Moon](#)

**Print-Only Presentations**

[Mercury and Venus](#)

[Moon](#)

[Mars](#)

[Astrobiology](#)

[Meteorites](#)

[Impacts](#)

[Outer Solar System](#)

[Asteroids and Comets](#)

[Presolar Grains and Early Solar Nebula](#)

[Missions and Instruments](#)

[Education and Public Outreach and Data Visualization](#)