

Program



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.

April 24, 2017

Monday Morning, 8:30 a.m.

Arizona Ballroom [Plenary: Planetary Protection](#)

Monday Morning, 10:15 a.m.

Arizona Ballroom A-C [Origin and Evolution of Life: Prebiotic Chemistry: Mineralogy and the Origin of Life](#)

Arizona Ballroom D [Exoplanets: Biosignatures: Pigments and Other Biological Surface Features as Exoplanet Biosignatures](#)

followed at 11:15 a.m. by

Arizona Ballroom D [Exoplanets: Biosignatures: The Science of Exoplanet Biosignatures Using Space and Ground-Based Telescopes I](#)

Arizona Ballroom E-G [Solar System Sites: Ice and Ocean Worlds: Biochemical Strategies for Searching for Signs of Life On and Within Ocean Worlds](#)

Palo Verde [New Technologies and Techniques: Life Detection: Seeking the Tricorder: Advanced Technologies for Life Discovery and Detection](#)

followed at 11:15 a.m. by

Palo Verde [New Technologies and Techniques: Other Technologies and Techniques: Instruments and Robotics for Exploration of Mars](#)

Mesa Room [Astrobiology as a Human Endeavor: Planetary Protection: Astrobiology and Planetary Protection I](#)

Monday Afternoon, 1:30 p.m.

Arizona Ballroom A-C [Origin and Evolution of Life: Prebiotic Chemistry: Functional Biopolymers I](#)

Arizona Ballroom D [Exoplanets: Biosignatures: The Science of Exoplanet Biosignatures Using Space and Ground-Based Telescopes II](#)

Arizona Ballroom E-G [Origin and Evolution of Life: Evolution/Genetics: Major Transitions in Evolution](#)

Monday Afternoon (continued)

Palo Verde [Solar System Sites: Mars: Biosignature Detection on Mars I: Mission Data and Instruments](#)

Mesa Room [Astrobiology as a Human Endeavor: Planetary Protection: Astrobiology and Planetary Protection II](#)

followed at 2:15 p.m. by

Mesa Room [Astrobiology as a Human Endeavor: Astrobiology Education and Public Outreach: Knowing What and How to Communicate Astrobiology Concepts Workshop](#)

Monday Evening, Poster Session I: Presenters Available 7:00–8:00 p.m.

Main Hall Topics listed below will be highlighted between 7:00–8:00 p.m.

[Astrobiology as a Human Endeavor: Astrobiology Education and Public Outreach: Innovations in Astrobiology Teaching and Learning](#)

[Exoplanets: Habitability: Connecting Modeling and Observations in the Search for Habitable Planets](#)

[Exoplanets: Habitability: Formation of Habitable and “Earth-Like” Planets](#)

[Exoplanets: Habitability: Ionizing Radiation as a Constraint on Habitability](#)

[Exoplanets: Habitability: Redox Processes in Astrobiology from Nebulae to Life](#)

[Origin and Evolution of Life: Prebiotic Biochemistry: Ab Initio Computational Prebiotic Chemistry](#)

[Origin and Evolution of Life: Prebiotic Biochemistry: From Molecules To Cells](#)

[Origin and Evolution of Life: Prebiotic Chemistry: Experimental Insights into Organic Geochemistry](#)

[Origin and Evolution of Life: Prebiotic Chemistry: Functional Biopolymers](#)

[Origin and Evolution of Life: Prebiotic Chemistry: Journey to the Centre of the Earth: Intraterrestrial Life on Extraterrestrial Planets](#)

[Origin and Evolution of Life: Prebiotic Chemistry: Mineralogy and the Origin of Life](#)

[Origin and Evolution of Life: Theory/Fundamental Questions: Biothermodynamics: The Relationships Between Non-Equilibrium Systems, Energy Flow and Life](#)

[Origin and Evolution of Life: Theory/Fundamental Questions: Laws of Life](#)

[Solar System Sites: Mars: Habitability and Preservation Potential of Silica-Producing Hydrothermal Systems](#)

[Solar System Sites: Mars: Modern and Ancient Biosignatures and the Search for Life on Mars](#)

Monday Evening, Poster Session II: Presenters Available 8:00–9:00 p.m.

Main Hall Topics listed below will be highlighted between 8:00–9:00 p.m.

[Astrobiology as a Human Endeavor: Astrobiology Education and Public Outreach: Astrobiology and Planetary Protection](#)

[Astrobiology as a Human Endeavor: New Strategies for SETI](#)

[Exoplanets: Biosignatures: Pigments and Other Biological Surface Features as Exoplanet Biosignatures](#)

[Exoplanets: Habitability: The Apple Doesn’t Fall Far from the Tree: Insights into Planetary Habitability from Stellar Characterization](#)

[Exoplanets: Habitability: The Habitability of Proxima Centauri b](#)

[Exoplanets: Biomarkers: The Science of Exoplanet Biosignatures Using Space and Ground-Based Telescopes](#)

[Origin and Evolution of Life: Prebiotic Chemistry: Electron Transfer Reactions of Interest to Astrobiologists](#)

[Origin and Evolution of Life: Prebiotic Chemistry: Life Without Light: New Developments and Perspectives in Chemolithotrophic Metabolism and Its Geochemical Signatures](#)

Poster Session I (continued)

[Origin and Evolution of Life: Prebiotic Chemistry: Origin of Life Hypotheses: Salt Water \(Ocean Vents\) or Fresh Water \(Pools on Land\)](#)

[Origin and Evolution of Life: Prebiotic Chemistry: Reaction Kinetics, Thermodynamics, and Habitability](#)

[Solar System Sites: Mars: Biosignature Detection on Mars](#)

[Solar System Sites: Mars: Modern Mars Habitability](#)

April 25, 2017

Tuesday Morning, 8:30 a.m.

Arizona Ballroom [Plenary: Recent Developments in Origin of Life Studies](#)

Tuesday Morning, 10:15 a.m.

Arizona Ballroom A-C [Exoplanets: Habitability: Ionizing Radiation as a Constraint on Habitability](#)

Arizona Ballroom D [Solar System Sites: Ice and Ocean Worlds: Seeking Evidence of Habitable Conditions and Life Activity in Serpentinizing Systems](#)

Arizona Ballroom E-G [Origin and Evolution of Life: Prebiotic Chemistry: Ab Initio Computational Prebiotic Chemistry](#)

followed at 11:15 a.m. by

Arizona Ballroom E-G [Origin and Evolution of Life: Theory/Fundamental Questions: Biothermodynamics: The Relationships Between Non-Equilibrium Systems, Energy Flow and Life](#)

Palo Verde [New Technologies and Techniques: Life Detection: Biosignature Detection on Mars: Strategies and Analog Studies to Guide Mars 2020 and ExoMars](#)

Mesa Room [Astrobiology as a Human Endeavor: SETI: New Strategies for SETI](#)

Tuesday Afternoon, 1:30 p.m.

Arizona Ballroom A-C [Origin and Evolution of Life: Prebiotic Chemistry: Functional Biopolymers II](#)

Arizona Ballroom D [Solar System Sites: Earth in Time/Deep Biosphere: Earth's Deep Biosphere and the Astrobiosphere](#)

followed at 2:30 p.m. by

Arizona Ballroom D [Exoplanets: Habitability: Formation of Habitable and "Earth-Like" Planets I](#)

Arizona Ballroom E-G [Origin and Evolution of Life: Theory/Fundamental Questions: Laws of Life I](#)

Palo Verde [Solar System Sites: Mars: Biosignature Detection on Mars II: Analogue Exploration](#)

Mesa Room [New Technologies and Techniques: Other Technologies and Techniques: Astrobiology 'Omics': Using Systems Biology to Address Big Questions in Astrobiology](#)

Tuesday Afternoon, 4:15 p.m.

Arizona Ballroom A-C [Origin and Evolution of Life: Prebiotic Chemistry: Functional Biopolymers III](#)

Arizona Ballroom D [Exoplanets: Habitability: Formation of Habitable and "Earth-Like" Planets II](#)

Arizona Ballroom E-G [Origin and Evolution of Life: Theory/Fundamental Questions: Laws of Life II](#)

Palo Verde [Solar System Sites: Mars: Biosignature Detection on Mars III: Habitability Studies](#)

Mesa Room [New Technologies and Techniques: Other Technologies and Techniques: Big Data in Astrobiology](#)

April 26, 2017*Wednesday Morning, 8:30 a.m.*Arizona Ballroom [Plenary: Astrobiology Education: In a Diverse World...And Toward a Better One](#)*Wednesday Morning, 10:15 a.m.*Arizona Ballroom A-C [Origin and Evolution of Life: Prebiotic Geochemistry: Origin of Life: Hypothesis I: Salt Water \(Ocean Vents\)](#)Arizona Ballroom D [Exoplanets: Habitability: Connecting Modeling and Observations in the Search for Habitable Planets I](#)Arizona Ballroom E-G [New Technologies and Techniques: Other Technologies and Techniques: Technology for Accessing Ocean Worlds](#)*followed at 11:15 a.m. by*Arizona Ballroom E-G [Solar System Sites: Ice and Ocean Worlds: Habitability of Ocean Worlds I](#)Palo Verde [Solar System Sites: Mars: Modern Mars Habitability I](#)Mesa Room [Astrobiology as a Human Endeavor: Astrobiology Education and Public Outreach: Innovations in Astrobiology Teaching and Learning I](#)*Wednesday Afternoon, 1:30 p.m.*Arizona Ballroom A-C [Origin and Evolution of Life: Prebiotic Geochemistry: Origin of Life: Hypothesis II: Fresh Water \(Pools on Land\)](#)Arizona Ballroom D [Exoplanets: Habitability: Connecting Modeling and Observations in the Search for Habitable Planets II](#)Arizona Ballroom E-G [Solar System Sites: Ice and Ocean Worlds: Habitability of Ocean Worlds II](#)Palo Verde [Solar System Sites: Mars: Modern Mars Habitability II](#)Mesa Room [Astrobiology as a Human Endeavor: Astrobiology Education and Public Outreach: Innovations in Astrobiology Teaching and Learning II](#)*Wednesday Afternoon, 4:15 p.m.*Arizona Ballroom [Plenary: What's It All About? Social and Conceptual Issues in Astrobiology](#)*Wednesday Evening, Poster Session III: Presenters Available 7:00–8:00 p.m.*

Main Hall Topics listed below will be highlighted between 7:00–8:00 p.m.

[Miscellaneous Topics in Astrobiology](#)[New Technologies and Techniques: Other Technologies and Techniques: Astrobiology 'Omics': Using Systems Biology to Address Big Questions in Astrobiology](#)[New Technologies and Techniques: Other Technologies and Techniques: Big Data Astrobiology](#)[Origin and Evolution of Life: Evolution/Genetics: Current Superlatives and Contenders for "Extreme" Life on Earth](#)[Origin and Evolution of Life: Evolution/Genetics: Early Genomes, Ribosomes, and Translation](#)[Origin and Evolution of Life: Evolution/Genetics: Major Transitions in Evolution](#)[Solar System Sites: Earth in Time/Deep Biosphere: Novel Geologic Reservoirs for Biosignature Preservation](#)[Solar System Sites: Ice and Ocean Worlds: Assessing Ceres' Past and Present Habitability](#)

Poster Session II (continued)

[Solar System Sites: Ice and Ocean Worlds: Biochemical Strategies for Searching for Signs of Life On and Within Ocean Worlds](#)

[Solar System Sites: Ice and Ocean Worlds: Creative Destruction? The Survival and Fate of Microbes and Molecules at the Near-Surface of Icy Worlds](#)

[Solar System Sites: Ice and Ocean Worlds: Habitability in Subsurface Oceans](#)

Wednesday Evening, Poster Session IV: Presenters Available 8:00–9:00 p.m.

Main Hall Topics listed below will be highlighted between 8:00–9:00 p.m.

[New Technologies and Techniques: Life Detection: Biosignature Detection on Mars: Strategies and Analog Studies to Guide Mars 2020 and ExoMars](#)

[New Technologies and Techniques: Life Detection: In Situ Life Detection: Approaches, Challenges, and Opportunities](#)

[New Technologies and Techniques: Life Detection: Life Detection Lessons from Analogue Environments on Earth](#)

[New Technologies and Techniques: Other Technologies and Techniques: Stable Isotope Techniques](#)

[New Technologies and Techniques: Other Technologies and Techniques: Technology for Accessing Ocean Worlds](#)

[Origin and Evolution of Life: Evolution/Genetics: Experimental Microbial Evolution](#)

[Origin and Evolution of Life: Evolution/Genetics: How do Symbioses Enable Life to Colonize New Habitats?](#)

[Origin and Evolution of Life: Evolution/Genetics: Understanding the Role of Viruses: Signs of Extraterrestrial Life, Impacts on Biogeochemistry, and Research into the Origin and Evolution of Life](#)

[Solar System Sites: Earth in Time/Deep Biosphere: Earth's Deep Biosphere and the Astrobiosphere](#)

[Solar System Sites: Earth in Time/Deep Biosphere: Sustained Habitability, Life, and the Biosignatures of a Dynamic Early Earth](#)

[Solar System Sites: Ice and Ocean Worlds: Habitability of Ocean Worlds](#)

[Solar System Sites: Ice and Ocean Worlds: Seeking Evidence of Habitable Conditions and Life Activity in Serpentinizing Systems](#)

April 27, 2017*Thursday Morning, 8:30 a.m.*

Arizona Ballroom [Plenary: The Evolutionary Transition from Anoxygenic to Oxygenic Photosynthesis](#)

Thursday Morning, 10:15 a.m.

Arizona Ballroom A-C [New Technologies and Techniques: Other Technologies and Techniques: Stable Isotope Techniques](#)

followed at 11:15 a.m. by

Arizona Ballroom A-C [Solar System Sites: Ice and Ocean Worlds: Creative Destruction? The Survival and Fate of Microbes and Molecules at the Near-Surface of Icy Worlds](#)

Arizona Ballroom D [Solar System Sites: Earth in Time/Deep Biosphere: Sustained Habitability, Life, and the Biosignatures of a Dynamic Early Earth I](#)

Arizona Ballroom E-G [Origin and Evolution of Life: Evolution/Genetics: Early Genomes, Ribosomes, and Translation](#)

Palo Verde [Solar System Sites: Mars: Modern and Ancient Biosignatures and the Search for Life on Mars I](#)

Thursday Morning (continued)

Mesa Room [Origin and Evolution of Life: Prebiotic Chemistry: Reaction Kinetics, Thermodynamics, and Habitability](#)

followed at 11:15 a.m. by

Mesa Room [Origin and Evolution of Life: Prebiotic Chemistry: Electron Transfer Reactions of Interest to Astrobiologists](#)

Thursday Afternoon, 1:30 p.m.

Arizona Ballroom A-C [New Technologies and Techniques: Other Technologies and Techniques: New Technologies and Algorithms for Finding ExoLife](#)

followed at 2:45 p.m. by

Arizona Ballroom A-C [Solar System Sites: Ice and Ocean Worlds: Habitability in Subsurface Oceans](#)

Arizona Ballroom D [Solar System Sites: Earth in Time/Deep Biosphere: Sustained Habitability, Life, and the Biosignatures of a Dynamic Early Earth II](#)

Arizona Ballroom E-G [Origin and Evolution of Life: Evolution/Genetics: Experimental Microbial Evolution](#)

Palo Verde [Solar System Sites: Mars: Modern and Ancient Biosignatures and the Search for Life on Mars II](#)

Mesa Room [New Technologies and Techniques: Life Detection: In Situ Life Detection: Approaches, Challenges, and Opportunities](#)

Thursday Afternoon, 4:15 p.m.

Arizona Ballroom A-C [Solar System Sites: Ice and Ocean Worlds: Assessing Ceres' Past and Present Habitability](#)

Arizona Ballroom D [Origin and Evolution of Life: Prebiotic Chemistry: Life Without Light: New Developments and Perspectives in Chemolithotrophic Metabolism and Its Geochemical Signatures](#)

Arizona Ballroom E-G [Origin and Evolution of Life: Evolution/Genetics: Cellularity, Multicellularity, and Endosymbiosis: Major Transitions and Their Impacts on the Biosphere](#)

Palo Verde [Solar System Sites: Mars: Habitability and Preservation Potential of Silica-Producing Hydrothermal Systems](#)

Mesa Room [New Technologies and Techniques: Other Technologies and Techniques: Application of Single-Cell, Nanopore, and Other Tiny Technologies](#)

April 28, 2017*Friday Morning, 8:30 a.m.*

Arizona Ballroom [Plenary: Getting Astrobiology on Missions](#)

Friday Morning, 10:15 a.m.

Arizona Ballroom A-C [Solar System Sites: Earth in Time/Deep Biosphere: Journey to the Centre of the Earth: Intraterrestrial Life on Extraterrestrial Planets](#)

followed at 11:15 a.m. by

Arizona Ballroom A-C [Solar System Sites: Earth in Time/Deep Biosphere: Sustained Habitability, Life, and the Biosignatures of a Dynamic Early Earth III](#)

Arizona Ballroom D [Exoplanets: Habitability: The Habitability of Proxima Centauri b](#)

Arizona Ballroom E-G [Origin and Evolution of Life: Evolution/Genetics: How do Symbioses Enable Life to Colonize New Habitats?](#)

Friday Morning (continued)

Palo Verde [Origin and Evolution of Life: Prebiotic Chemistry: From Molecules to Cells](#)

followed at 11:15 a.m. by

Palo Verde [New Technologies and Techniques: Life Detection: Life Detection Lessons from Analogue Environments on Earth I](#)

Friday Afternoon, 1:30 p.m.

Arizona Ballroom A-C [Solar System Sites: Earth in Time/Deep Biosphere: Novel Geologic Reservoirs for Biosignature Preservation](#)

Arizona Ballroom D [Exoplanets: Habitability: The Apple Doesn't Fall Far from the Tree: Insights into Planetary Habitability from Stellar Characterization](#)

Arizona Ballroom E-G [Origin and Evolution of Life: Evolution/Genetics: Current Superlatives and Contenders for "Extreme" Life on Earth](#)

Palo Verde [New Technologies and Techniques: Life Detection: Life Detection Lessons from Analogue Environments on Earth II](#)

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