Cosmic Dawn Science Interest Group

Probes of Cosmic Dawn

2016 January 4

Miami Room

> We have learned much in recent years about the history of the Universe, from the Big Bang to the present day. A great mystery now confronts us: When and how did the first galaxies form out of cold clumps of hydrogen gas and start to shine—when was our "cosmic dawn"? —*New Worlds, New Horizons*

This Science Interest Group (SIG) is chartered under the auspices of NASA's Cosmic Origins Program Analysis Group to identify and define science observations that inform our understanding of Cosmic Dawn and can uniquely be conducted from space.

This first meeting is designed to serve as a "kickoff" for the SIG's activities, surveying the landscape of current and potential future approaches to studying Cosmic Dawn. While the focus is on space-based approaches, a full understanding will require a combination of both space- and ground-based instruments.

Further, we expect Paul Hertz (NASA Astrophysics) will be beginning a conversation with the community regarding potential Probe-class missions, which would receive more funding than Explorer missions but not as much as a Flagship or Large mission. (An oft-stated cost cap for a Probe is < $1B.) Thus, we will also begin exploring what aspects of Cosmic Dawn exploration might require a Probe mission.

Time	Title	Speaker
09:00	Introduction	Joseph Lazio
09:15	Beyond the Horizon: What is Left to Learn After Hubble about the First Billion Years?	Steven Finkelstein
09:35	Gamma-Ray Bursts as Explosive Probes of Cosmic Dawn	Valerie Connaughton
09:55	Molecular Gas at Cosmic Dawn	Jacqueline Hodge
10:15	The 21cm Reionization Power Spectrum	Aaron Parsons
10:35	*Coffee*	
11:00	Probing the Cosmic Dawn with the James Webb Space Telescope	Mia Bovill / Massimo Stiavelli
11:20	Probing the Reionization Galaxies through Tomographic Intensity Mapping in the Far-IR through Millimeter	C. Matt Bradford
11:40	*adjourn*	

For more information about the Cosmic Dawn SIG, visit http://cd-sig.jpl.nasa.gov/ . To sign up for the mailing list, contact Joseph.Lazio@jpl.nasa.gov .