

The First Harvard-Smithsonian Conference on Theoretical Astrophysics:

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# The First Generation of Cosmic Structures

*Sponsored by Raymond and Beverly Sackler*

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The talks of the First Harvard-Smithsonian Conference on Theoretical Astrophysics, entitled "The First Generation of Cosmic Structures", will be video projected at Phillips auditorium on May 15-19 with a time shift of half a day relative to the conference times.

Below is the corresponding screening schedule of the talks.

Date: May, 15-19, 2000 (Monday-Friday)

Place: Phillips Auditorium, Harvard College Observatory, 60 Garden St, Cambridge, MA, USA

## **Program:**

***Monday: 2pm-5:30pm***

Welcoming Address:

Irwin Shapiro (Harvard-Smithsonian CfA)

Session 1: *The High-Redshift Universe: Theoretical overview*

*Session Chair: Ramesh Narayan*

Martin Rees (Institute of Astronomy, Cambridge University, UK):

*End of the Dark Ages and Reionization: Overview*

Abraham Loeb (Harvard-Smithsonian CfA):

*Properties of the First Sources of Light*

Simon White (MPI fur Astrophysik, Germany):

*Simulations and Modeling of Galaxy Formation*

***Tuesday: 9am -5:30pm***

Session 2: *The High-Redshift Universe: Observations*

*Session Chair: James Moran*

Charles Steidel (CalTech):

*Star-Forming Galaxies at  $z=1-5$ : Connection to Large Scale Structure*

Mark Dickinson (Space Telescope Science Inst.):

*The Hubble Deep Fields*

Arjun Dey (NOAO):

*What We Will Know About  $z5$  Prior to NGST*

Antoinette Songaila (Univ. of Hawaii):

*The Chemical Evolution of the Universe*

Amy Barger (Univ. of Hawaii):

*Multi-Wavelength Observations of Obscured Regions*

Session 2: *Observations (continued)*

*Session Chair: David Tytler*

Hyron Spinrad (Univ. of California, Berkeley):

*Observations of the High- $z$  Universe: Overview and Perspective*

Lennox Cowie (Univ. of Hawaii):

*The Hawaii Deep Surveys*

Xiaohui Fan (Princeton Univ.):

*High Redshift Quasars in the Sloan Digital Sky Survey*

Robert Kirshner (Harvard-Smithsonian CfA):

*High-Redshift Supernovae*

Neta Bahcall (Princeton Univ.):

*Redshift Evolution of Galaxy Clusters*

Session 3: Feedback on the Intergalactic Medium

*Session Chair: Richard Larson*

Jordi Miralda-Escude (Ohio State Univ.):

*Reionization: Overview*

**Wednesday: 9am-5:30pm**

Piero Madau (Institute of Astronomy, Cambridge Univ., UK):

*Star and Quasar Formation Histories and Reionization*

Michael Shull (Univ. of Colorado)

*Emission Spectrum and UV Escape Fraction of the First Stars*

Rachel Somerville (Institute of Astronomy, Cambridge Univ., UK):

*Semi-Analytic Modeling of High-Redshift Galaxies*

Joseph Silk (Oxford Univ., UK):

*Feedback from AGN Outflows*

Andrea Ferrara (Arcetri Obs., Florence, Italy):

*Feedback from Supernova Outflows*

Session 4: Numerical Simulations

*Session Chair: William Press*

Lars Hernquist (Harvard-Smithsonian CfA):

*Evolution of the Intergalactic Medium*

Session 4: Numerical Simulations (continued)

Jeremiah Ostriker (Princeton Univ.):

*Simulations of the First Objects: Overview*

Michael Norman (Univ. of Illinois):

*Fragmentation of the First Baryonic Objects*

Nickolay Gnedin (Univ. of Colorado):

*Simulations of Reionization*

Session 5: Cosmic Microwave Background

*Session Chair: George Rybicki*

Martin White (Harvard-Smithsonian):

*Secondary Effects of Reionization*

Andrew Lange (CalTech):

*Results from BOOMERANG and Other Ground-Based Experiments*

John Carlstrom (Univ. of Chicago):

*Interferometric Observations of CMB Anisotropy*

***Thursday: 9am-5:30pm***

Suzanne Staggs (Princeton Univ.)

*The Future of Polarization Experiments*

Session 6: Specific Sources

*Session Chair: Alexander Dalgarno*

Avery Meiksin (Univ. of Edinburgh, UK):

*21 cm Emission*

Volker Bromm (Yale University):

*Simulations of the Formation of the First Stars*

Zoltan Haiman (Princeton Univ.):

*Empirical Signatures of the First Stars and Quasars*

Rennan Barkana (Inst. for Advanced Study, Princeton):

*Physical Properties of the First Galaxies*

Martin Haehnelt (MPI fur Astrophysik, Germany):

*Models of the Evolution of Quasars*

Session 6: Specific Sources (continued)

Peter Meszaros (Penn State Univ.):

*Gamma-Ray Bursts: Overview*

Eli Waxman (Weizmann Institute, Israel):

*Cosmological Sources of High Energy Particles*

Tom Abel (Harvard-Smithsonian CfA):

*Fragmentation of the First Objects*

Session 7: Next Generation Telescopes

*Session Chair: John Huchra*

Wallace Sargent (CalTech):

*The Future of Large Ground-Based Optical/IR Telescopes*

David Wilner (Harvard-Smithsonian CfA):

*Probing High Redshifts with the Sub-Millimeter Array*

Andrew Blain (Institute of Astronomy, Cambridge Univ., UK):

*The Future of Far-IR -- mm Studies of the High Redshift Universe*

***Friday: 9am-12:30pm***

Harvey Butcher (Netherlands Foundation for Research in Astronomy, Netherlands)

*Probing High-Redshifts with the Square Kilometer Array*

Richard Mushotzky (NASA):

*The Present and Future of X-Ray Telescopes*

Peter Stockman (Space Telescope Science Inst.):

*The Next Generation Space Telescope: Scientific Overview*

John Mather (NASA):

*The Next Generation Space Telescope: Technology Development*

Closing Summary: Edwin Turner (Princeton Univ.)

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