

Astro2010 Panel on Electromagnetic Observations from Space

Committee

Alan Dressler

Chair

Dr. Alan Dressler, NAS, is an observational astronomer at the Observatories of the Carnegie Institution. His principal areas of research cover the formation and evolution of galaxies and the study of star populations of distant galaxies. Dr. Dressler has made significant contributions in understanding galaxy formation and evolution, including effects of the environment on galaxy morphology. He was a leader in the identification of the "great attractor" which causes a large distortion of the Hubble expansion. From 1993-1995 Dr. Dressler chaired the AURA committee "HST & Beyond: Exploration and the Search for Origins" that presented NASA with A Vision for Ultraviolet-Optical-Infrared Space Astronomy. Dr. Dressler served on the NRC Committee on Setting Priorities for NSF-Sponsored Large Research Facility Projects and he chaired the Panel on Optical and Infrared Astronomy from the Ground of the 2000 Astronomy and Astrophysics Survey Committee.

Michael Bay

Member

Mr. Michael Bay is President and Chief Engineer of Bay Engineering Innovations, an engineering consulting firm that provides systems engineering, risk management, integrated systems modeling, and electrical systems engineering for unmanned and manned space missions. Prior to founding Bay Engineering, Mr. Bay served as Chief Engineer for the Microwave Anisotropy Probe and as Mission Systems Engineer for the Solar Dynamics Observatory at NASA's Goddard Space Flight Center. Mr. Bay was also a member of NASA's Engineering Safety Center. Mr. Bay has also served in mission systems engineering and electrical systems engineering roles at Jackson and Tull's Aerospace Engineering Division. Mr. Bay earned his B.S. in Computer Science from Loyola College. He was the first recipient of the Judith A. Resnik Field Award from the Institute of Electrical and Electronic Engineers, and holds a patent for the Soft Mount Umbilical Mechanism.

Alan P. Boss

Member

Dr. Alan Boss is a Research Staff Member in the Department of Terrestrial Magnetism at the Carnegie Institution of Washington. Dr. Boss's research focuses on the formation of stars and planetary systems, including both theoretical models of solar system formation and observational instruments and techniques. Dr. Boss helped develop the disk instability model of solar system formation. He is also a member of the Science Working Group for NASA's recently launched Kepler Mission to search for habitable planets around nearby stars, and has served on the External Independent Readiness Board for NASA's exoplanet program. Dr. Boss earned his Ph.D. in Physics from the University of California at Santa Barbara, is a member of the American Academy of Arts and Sciences, and is a fellow of the American Association for the Advancement of Science, the Meteoritical Society, and the American Geophysical Union.

Mark Devlin

Member

Dr. Mark Devlin is the Reese W. Flower Professor of Astronomy and Astrophysics at the University of Pennsylvania. Dr. Devlin's primary research interests include experimental cosmology at millimeter and submillimeter wavelengths and balloon-borne and ground-based instrumentation to support these observations. He is the Principal Investigator for the Balloon-borne Large Aperture Submillimeter Telescope (BLAST) and the National Radio Astronomy Observatory's Penn Array, and is a collaborator on the Atacama Cosmology Telescope and the balloon-borne Primordial Anisotropy Polarization Pathfinder Array. Dr. Devlin earned his B.S. in Physics and Mathematics from the University of Wisconsin and his Ph.D. in Physics from the University of California at Berkeley.

Megan Donahue

Member

Dr. Megan Donahue is a Professor in the Department of Physics and Astronomy at Michigan State University. Dr. Donahue's research interests include distribution and cooling flows of the intergalactic gas, star formation in bright galaxies, and distant galactic clusters, for which she uses data from NASA's Chandra X-ray Observatory and Hubble Space Telescope and the European Space Agency's X-ray Multi-Mirror Newton X-ray Observatory. She earned her B.S. in Physics from the Massachusetts Institute of Technology and her PhD in Astrophysics from the University of Colorado. Dr. Donahue served on the NRC's NASA Astrophysics Performance Assessment Committee.

Brenna Flaughner

Member

Dr. Brenna Flaughner is a Scientist at the Fermilab Center for Particle Astrophysics, where she is Project Director for the Dark Energy Survey Camera. Dr. Flaughner's research interests are particle physics, astrophysics, and cosmology. Her work includes the use of particle accelerators to investigate the strong nuclear force and observations of galaxies and galaxy clusters to place constraints on dark energy and dark matter candidates. Dr. Flaughner currently leads the development of the Dark Energy Survey Camera, to be installed at the Cerro Tololo Inter-American Observatory in Chile in 2010. Dr. Flaughner earned her B.S. in Physics from Bates College and her Ph.D. in High Energy Physics from Rutgers University.

Tom Greene

Member

Dr. Tom Greene is an astrophysicist at NASA's Ames Research Center, where he is Chief of the Astrophysics Branch. His research interests include young stars and the development of infrared detectors and other astronomical instruments. Dr. Greene is a co-investigator on two instruments for NASA's James Webb Space Telescope, the Near-Infrared Camera and the Mid-Infrared Instrument, and a project scientist on the Stratospheric Observatory for Infrared Astronomy. Dr. Greene earned his PhD from the University of Arizona.

Puragra Guhathakurta

Member

Dr. Puragra Guhathakurta is a Professor of Astronomy and Astrophysics at the University of California Observatories Lick Observatory. Dr. Guhathakurta's research interests are observations of galaxies, local group galaxies, and stellar populations using optical charge-coupled device data, especially faint galaxies and stars, gravitational lensing by galaxy clusters, interacting galaxies, and dwarf galaxies. He has employed the Advanced Camera for Surveys and the Wide-Field Planetary Camera Two on NASA's Hubble Space Telescope in his observations. Dr. Guhathakurta received his B.Sc. in Physics from the University of Calcutta in India and his Ph.D. in Astrophysical Sciences from Princeton University.

Michael G. Hauser

Member

Dr. Michael Hauser is a Professor in the Department of Physics and Astronomy of the Johns Hopkins University, and the Deputy Director of the Space Telescope Science Institute. His research interests are infrared and submillimeter astronomy, cosmology, and the interplanetary and interstellar media. Dr. Hauser is also a member of the Cosmic Background Explorer (COBE) science team and led the COBE team's discovery of the cosmic infrared background radiation, for which the team won the Peter Gruber Foundation's 2006 Cosmology Prize. He earned his PhD from the California Institute of Technology. Dr. Hauser served on the Panel on Astronomy Education and Policy of the 2000 Astronomy and Astrophysics Survey Committee.

Harold McAlister

Member

Dr. Harold McAlister is a Regents' Professor in the Department of Physics and Astronomy at Georgia State University, where he is also the Director of the Center for High Angular Resolution Astronomy (CHARA). His research focuses on high spatial resolution interferometric imaging at optical and near infrared wavelengths, the fundamental astrophysical properties of stars, and the detection of exoplanet systems. Dr. McAlister's work in binary star speckle interferometry led to the development of the CHARA Array, an interferometer consisting of six, one-meter telescopes with the resolving capability of a telescope one-fifth of a mile in diameter. Dr. McAlister earned his B.A. in Physics from the University of Tennessee at Chattanooga and his Ph.D. in Astronomy from the University of Virginia. Dr. McAlister is also the Director and Chief Executive Officer of the Mt. Wilson Observatory Institute.

Peter F. Michelson

Member

Dr. Peter Michelson is Professor of Physics at Stanford University. Dr. Michelson's research interests are in the field of high energy astrophysics, particularly x-ray and gamma-ray observations, instrument development, and the search for gravitational radiation. He led the development of the Large Area Telescope, the primary instrument on NASA and DOE's Fermi Gamma-ray Space Telescope, and has undertaken observations using the Energetic Gamma-Ray Experiment Telescope instrument on the Compton Gamma-Ray Observatory. Dr. Michelson earned his B.S. from Santa Clara University and his Ph.D. from Stanford University. Dr. Michelson has served on the Committee on Gravitational Physics of the National Research Council, and on the High-Energy Astrophysics Panel of the NRC Decadal Astronomy Survey Committee.

Ben R. Oppenheimer

Member

Dr. Ben Oppenheimer is Assistant Curator in the Department of Astrophysics at the American Museum of Natural History and Adjunct Assistant Professor in the Department of Astronomy at Columbia University. Dr. Oppenheimer's primary research interests are comparative exoplanetary science and the design of new astronomical instruments for exoplanet imaging and spectroscopy. He also works on faint white dwarf and brown dwarf stars. Dr. Oppenheimer has served or refereed several NASA proposal review panels and science working groups related to exoplanets. Dr. Oppenheimer earned his B.A. in Physics from Columbia University and his Ph.D. in Astronomy from the California Institute of technology.

Frits Paerels

Member

Dr. Fritz Paerels is an Associate Professor in the Department of Astronomy at Columbia University. Dr. Paerels' research interests include x-ray astronomy, especially x-ray spectroscopy of active galactic nuclei, galaxy clusters, x-ray binaries, and neutron stars; the intergalactic medium and cosmology; the fundamental properties of neutron stars; and instrumentation. He has analyzed data from the High Energy Transmission Grating Spectrometer on NASA's Chandra X-ray Observatory and helped design, construct, and calibrate the Reflection Grating Spectrometer for the European Space Agency's XMM-Newton X-ray Observatory. Dr. Paerels earned his PhD from the University of Utrecht in the Netherlands.

George H. Rieke

Member

Dr. George Rieke is a Regents Professor in the Department of Astronomy at the University of Arizona at Tucson and the Deputy Director of the Steward Observatory in Tucson. Dr. Rieke has worked extensively in the development of innovative far-infrared detector arrays and instrumentation, and their astronomical applications, including the first infrared-optimized telescope. Dr. Rieke is the principal investigator for the multiband imaging photometer, which provides imaging and spectroscopic data at far-infrared wavelengths for NASA's Spitzer Space Telescope, and is the lead scientist on a mid-infrared instrument for NASA's James Webb Space Telescope, scheduled for launch in 2011. Dr. Rieke earned his B.A. in Physics from Oberlin College and his M.S. and Ph.D. in Physics from Harvard University.

Adam G. Riess

Member

Dr. Adam Riess is Professor of Physics and Astronomy at Johns Hopkins University, and senior member of the science staff at the Space Telescope Science Institute. Dr. Riess's research interests are measurements of dark energy and the expansion history of the universe using optical and near-infrared instruments to observe distance indicators like supernovae from space and the ground. He received his B.S. from the Massachusetts Institute of Technology and his Ph.D. from Harvard University. For his work on cosmic acceleration, Dr. Riess shared the 2006 Shaw Prize in Astronomy and the 2007 Gruber Cosmology Prize. Dr. Riess is also a 2008 MacArthur Fellow.

Paul L. Schechter

Member

Dr. Paul Schechter, NAS, is the William A. M. Burden Professor of Astrophysics at the Massachusetts Institute of Technology. Dr. Schechter's research interests are galaxies, clusters of galaxies, the distribution of dark matter, and adaptive optics. He has been carried out optical observations of the mirages produced by extragalactic gravitational potentials using the Hubble Space Telescope and ground-based telescopes. He also helped develop the adaptive optics system for the Carnegie Institute of Washington's Magellan Telescopes. Dr. Schechter received his B.S. from Cornell University and his Ph.D. from the California Institute of Technology.

Todd Tripp

Member

Dr. Todd Tripp is an Associate Professor in the Department of Astronomy at the University of Massachusetts at Amherst. Dr. Tripp's research focuses on the observational study of the evolution of galaxy and star formation in the universe, especially the role of the interstellar and intergalactic medium. Using NASA's Hubble Space Telescope and quasar observations, Dr. Tripp developed a technique for measuring the intergalactic medium that revealed about half of the missing normal matter (baryons) in the universe. Dr. Tripp earned his Ph.D. from the University of Wisconsin at Madison.