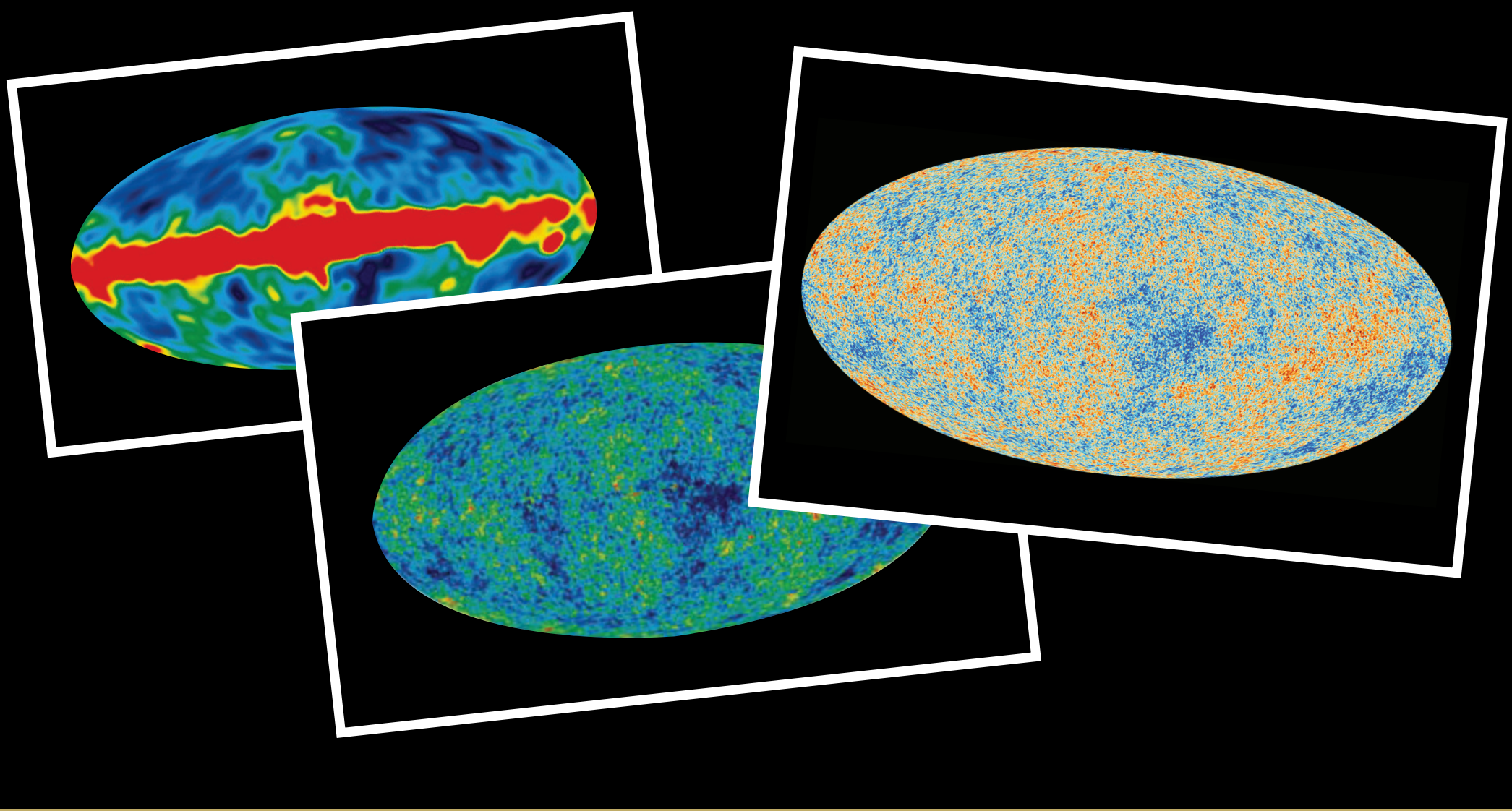
THE BENNETT-MCWILLIAMS

LECTURE

TAKING THE UNIVERSE'S BABY PICTURE



Pictures of the early universe created using data from (l-r) COBE, WMAP and Planck.

4:30 P.M., THURSDAY, APRIL 24, 2014
RASHID AUDITORIUM
GATES AND HILLMAN CENTERS
FREE AND OPEN TO THE PUBLIC
RECEPTION TO FOLLOW

DAVID SPERGEL

SPEAKER BIO: David Spergel, the Charles Young Professor of Astronomy on the Class of 1897 Foundation, is Chair of the Department of Astrophysical Sciences at Princeton University. He holds associate faculty appointments in the departments of physics and mechanical and aerospace engineering. Previously, Spergel was a long-term member at the Institute for Advanced Study. He is a member of the American Academy of Arts and Sciences, and of the National Academy of Sciences, serving as co-chair of the NRC Committee on Astronomy and Astrophysics. Spergel has won a number of prizes including Princeton's Distinguished Teaching Award, the Gruber Prize (as member of the WMAP team), the Shaw Prize in Astronomy, a MacArthur Fellowship and the Helen B. Warner Prize of the AAS. He was also named "One of America's Top Scientists" by Time Magazine.

Spergel's research interests range from the search for planets around nearby stars to the shape of the universe. He has been involved in a number of large research collaborations, currently including the Atacama Cosmology Telescope, a two-part project consisting of the HyperSuprime Cam survey and the PFS spectroscopic study with the Subaru Telescope, and the U.S. Euclid Collaboration. Spergel also serves as co-chair of the Science Definition Team for the WFIRST mission, a space mission that aims to understand dark energy, explore the growth of structures and galaxies, and search for extra-solar planets.

ABSTRACT: Observations of the microwave background, the leftover heat from the big bang, probe the first moments of the universe and provide one of the most important tests of our basic cosmological model. Over the past decade, cosmologists have mapped the variations in temperature that many believe reflect quantum fluctuations during the earliest moments of the universe's history. Other cosmologists interpret these fluctuations as the signature of a pre-big bang universe. The properties of these fluctuations provide our best probe of physical conditions in the early universe, and enable cosmologists to accurately determine the age, composition and shape of the universe.

Carnegie Mellon University
McWilliams Center for Cosmology