Total solar eclipse in Australia, Nov. 14

November 6 2012

(Phys.org)—A total eclipse of the Sun will be visible from the northeastern Australia coast, along the Great Barrier Reef, about an hour after sunrise on November 14 there, which corresponds to the afternoon of Tuesday, November 13, in the United States. Jay Pasachoff, Field Memorial Professor of Astronomy at Williams College (Williamstown, Massachusetts) and Chair of the International Astronomical Union's Working Group on Eclipses [sites.williams.edu/iau-eclipses], is in Australia for viewing his 56th solar eclipse, working with about two dozen colleagues and students on their scientific observations. Pasachoff is currently based at Caltech in Pasadena, California, on sabbatical leave.

Pasachoff's scientific work will concentrate on the dynamics and motions in the solar corona as well as variations in the temperature of the corona over the sunspot cycle. He and his students and colleagues will be observing from three sites on the Australian coast with the Sun only about 14° above the eastern horizon, about an hour after sunrise. The rest of the path of totality is entirely over the ocean, where a few cruise ships carrying ecotourists will intercept it but where there will be no steady bases for telescopes used for scientific observations. The equipment at the site in Miallo, north of Port Douglas, will include telescopes, cameras, and a spectrograph to study the corona.

Other sites from which the team will observe will be in Port Douglas and in Trinity Beach on the north side of Cairns, all in Queensland. The eclipse's totality will last about 2 minutes, starting at 6:38 a.m. on Wednesday, November 14, which is 3:38 p.m. in New York and 12:38 p.m. in California on Tuesday, November 13. Pasachoff's work at the

solar eclipses of 2012 is supported in part by a grant from the Solar Research Program of the Atmospheric and Geospace Sciences Division of the National Science Foundation.

Vojtech Rusin, Metod Saniga and Pavel Rapavy from Slovakia will observe the eclipse from a Pasachoff site overlooking the sea in Trinity Beach. They are supported in part by a grant from the Committee for Research and Exploration of the National Geographic Society. Rusin is a member of the IAU Working Group on Eclipses.

Adjacent to them at Trinity Beach will be a team led by solar astronomer Alphonse Sterling, a Japan-based scientist from NASA's Marshall Space Flight Center. He will be accompanied by University of Alabama at Huntsville scientist Hakeem Oluseyi and graduate student Roderick Gray. They will be joined there by Wesleyan University graduate student (and Williams College alumna) Amy Steele, who is supported by Pasachoff's NSF grant. They will be filmed in a video about black astrophysicists being made under the supervision of Jarita Holbrook of UCLA, the chair of the American Astronomical Society's Historical Astronomy Division. (Pasachoff is vice chair.)

Also collaborating will be Prof. John Seiradakis and Aris Voulgaris from the Aristotle University in Thessaloniki, Greece, hosts for the 2006 total solar eclipse on the Greek island Kastellorizo. Their team of 16 scientists and students will carry out coronal photography and spectroscopy. Pasachoff, Seiradakis, and Voulgaris are coauthors of two recent papers in the journal Solar Physics about what is revealed about the changing temperature of the corona over the sunspot cycle based on spectra taken with the instrument made by Voulgaris at the past several total eclipses.

The expeditions are being assisted by the expertise of Terry Cuttle of the Astronomical Society of Queensland. Prof. Pasachoff and Dr. Naomi Pasachoff made a reconnoitering trip to Cairns and Port Douglas, in

which the detailed arrangements were made, in 2010. Mr. Cuttle has also made public outreach arrangements for Pasachoff to speak about eclipse observations at Mereeba on November 5 and Cairns on November 9.

Several webcasts of the eclipse will be available in the U.S. on the afternoon of November 13, including www.ustream.tv/cairnseclipse2012

Provided by Williams College

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