PTICAL SOCIETY OF SOUTHERN CALIFORNIA

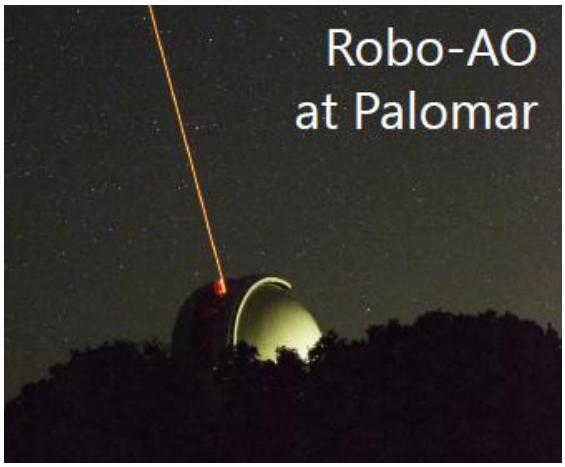
Meeting Announcement

March 12th 2014

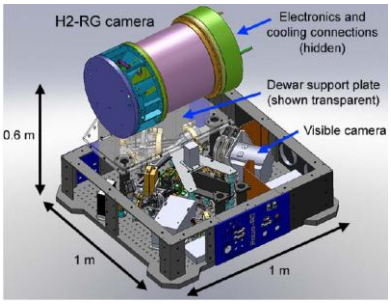
Robo-AO:

The First Autonomous Laser Guide Star Adaptive Optics Instrument

Dr. Reed Riddle, Caltech Optical Observatories



Large surveys, such as the Kepler mission and Palomar Transient Factory, are discovering upwards of thousands of objects which require further characterization at angular resolutions significantly finer than normally allowed by atmospheric seeing. The demands on precious space-based observatories (i.e. Hubble Space Telescope) and large telescopes with adaptive optics (AO) systems (i.e. Keck, VLT, Gemini) leave them generally unavailable for high angular resolution surveys of more than a few tens of targets at a time. To address the gap between scientific objects and available telescopes, we have developed Robo-AO, the first robotic laser AO system, as an economical and efficient imaging instrument for the more readily available 1-3 m class telescopes. The Robo-AO system system demonstrates angular resolutions approaching the visible diffraction limit of the Palomar 60-inch telescope. Observations of over 200 stellar objects per night have routinely been performed, with target-to-target observation overheads of less than 1.5 minutes. Scientific programs requiring high-resolution follow-up characterization of several thousands of targets can thus be executed in mere weeks instead of years, and Robo-AO has already completed the three largest AO surveys to date.



About our speaker: Dr. Riddle is a Research Scientist at Caltech Optical Observatories, and specializes in robotic software for astronomical instruments. Prior to his work on Robo-AO, he was the software lead for the Thirty Meter Telescope site testing program, which utilized remote robotic stations for site characterization. Before that, he was the Associate Director of Whole Earth Telescope Operations at Iowa State University. He received BS degrees in Astronomy and Physics from the University of Arizona, and an MS in Physics and PhD in Astronomy from Georgia State University.

For Directions: http://goo.gl/maps/v1n2U

Wednesday, March 12th, 2014

Social Hour: 6:00; Dinner: 7:00; Talk: 8:00

Cost: $30 for registration by March 6, $35 after (OSSC Student Members Free!)

Venue: Hameetman Auditorium
Cahill Center, Caltech
1200 E. California Blvd.
Pasadena, CA 91107

Free parking after 5pm in underground lot (below athletic field just south of Cahill Center).

On-line Registration: www.ossc.org or
Contact: Matt Samson
Events@ossc.org. 714-494-5349

Please post this notice and invite your friends & colleagues to attend!