



Eastbay Astronomical Society Presents

Actual title changed to "The story of EDI: can a small interferometer find planets?"

"Early EDI 462.pdf"
7/17/11

"Searching for Exoplanets"

(by using spectrally dispersed interferometry and high resolution spectroscopy)

by Dave Erskine

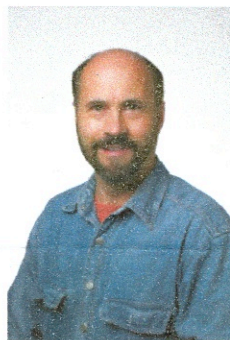
When: July 16, 2011, 7:30 – 9:30PM

Where: Chabot Space and Science Center, Room: Hauben

Abstract of Lecture

A small interferometer placed in series with a spectrograph can boost the performance of the spectrograph for Doppler velocimetry (planet search) and high resolution spectroscopy. This can allow small inexpensive lower resolution spectrographs to perform the duties of larger prohibitively expensive spectrographs.

We have been testing the concept at the Mt. Palomar 5-meter telescope. The resolution of an IR spectrograph has been boosted by 10x. Doppler measurements of M stars have been taken with 15 m/s systematic precision. Uncertainty in removing telluric absorption features is currently the important source of systematic error.



Biography of Dave Erskine

Dave is a physicist at Lawrence Livermore National Lab since 1987, working in the shock physics group, specializing in optical interferometry, especially Doppler interferometry, where they measure the velocity of shock compressed targets. Since 1997 he has been developing novel interferometric methods for spectroscopy and Doppler velocimetry that combine a diffraction grating with an interferometer, with astronomical applications. He has been testing these ideas in collaboration with UC Berkeley Space Science Laboratory and Cornell University at Lick Observatory and the Mt. Palomar Observatory 200 inch telescope.