

CSC/SETI Institute Colloquium Series



HST Imaging of Fomalhaut: Direct detection of an exosolar planet and Kuiper Belt around a nearby star

Paul Kalas

SETI Institute and University of California, Berkeley



Advances in high-contrast imaging have produced a new sample of spatially resolved debris disks with morphologies attributed to the dynamical effects of planets. I will briefly review several cases, including our recent non-detection of Beta Pictoris b using Keck adaptive optics at L-prime. Then I will focus on the case for a planetary system around the nearby A star Fomalhaut. Optical coronagraphic observations using the Advanced Camera for Surveys aboard HST shows a vast dusty debris belt offset from the star and cleanly sculpted at its inside border. Follow-up HST images have further revealed a co-moving point source with apparent orbital motion 18 AU interior to the dust belt. I will discuss both the observational and theoretical evidence that the point source is a planet with < 3 Jupiter masses, making Fomalhaut b the lowest mass planet candidate detected via direct imaging. I will give alternate explanations and discuss future plans for the detailed mapping of Fomalhaut's planetary system.

Wednesday, September 16, 12:00 noon
The SETI Institute, Europa room



If you would like to receive regular e-mails about the CSC/SETI Institute colloquium series, please sign up at: <http://mailman.seti.org/listinfo/colloquium>