

In response to Chas Beichman's request, the following abstract was submitted to SPIE conference 02 ("Future Research Direction and Visions for Astronomy"), with all of us listed as co-authors.

Title: The Relative Roles of Ground and Space Observatories in the Future Direct Imaging of Extrasolar Planets: A Community White Paper

Karl Stapelfeldt (JPL)
Richard Dekany (Caltech)
Mark Colavita (JPL)
Christ Ftaclas (Univ. of Hawaii)
Bruce Macintosh (LLNL)
Wesley Traub (CfA)
John Trauger (JPL)
Nick Woolf (Univ. of Arizona)

NASA's Origins Roadmap calls for a Terrestrial Planet Finder (TPF) to follow the SIM and NGST missions planned for launch at the end of this decade. A key TPF precursor activity will be the direct detection and spectroscopic study of Jovian planets in nearby star systems. A number of different instrumental approaches have been suggested to achieve the goal of direct exo-Jupiter detection: large groundbased telescopes with a new generation of adaptive optical systems; 1-2 m class optical telescopes, either in space or on long-duration balloons, which employ extremely smooth or actively corrected optics; and mid-infrared nulling interferometers on the ground or in space.

In late 2001, NASA/JPL organized an Exoplanet Direct Imaging Working Group to assess the relative capabilities and unique operational parameter spaces of these various approaches to direct exo-Jupiter detection. During the spring of 2002, this working group will be evaluating the science reach and technical readiness of the various instrument concepts. The common need for wavefront measurement and control provides a unifying theme for these evaluations. The working group will report its findings in the form of a white paper to NASA and the NSF. In this SPIE talk, we will review the main conclusions of the white paper.