

Astronomical Telescopes and Instrumentation



Author Submission

Conference: **Interferometry in Space (AS19)**

Chairs: **Michael Shao**

Temporary Paper Number #: 581

Presentation Type: Oral Presentation

Submitted: 28 January

Title:

A Visible Light Terrestrial Planet Finder -- Planet Detection and Spectroscopy by Nulling Interferometry with a Single Aperture Telescope

Principal Author:

B. M. Levine

Secondary Authors:

Michael Shao, Charles A. Beichman, Bertrand Mennesson, Rhonda Morgan, Glen Orton, Eugene Serabyn, Stephen Unwin, T. Velusamy (Jet Propulsion Laboratory), and Neville Woolf (Steward Observatory, University of Arizona)

Abstract:

Planet detection around a bright star depends on the resolution of the imaging system and the degree of light suppression of the star relative to the planet. We present a concept for a visible light Terrestrial Planet Finding (VTPF) mission. Its major feature is an imaging system for planet detection using a nulling interferometer behind a single aperture telescope. This configuration is capable of detecting earth-like planets with a 5m aperture using both imaging and spectroscopic imaging modes. We will describe the principles of the system, and show results of studies demonstrating its feasibility.

Principal Author Affiliation:

Jet Propulsion Laboratory

4800 Oak Grove Drive

MS 301-486

Pasadena, CA 91109

USA

Phone: 818-393-6669

Fax: 818-393-2412

Email: bmlevine@huey.jpl.nasa.gov

Principal Author Biography:

B. Martin Levine holds a BS from the Rochester Institute of Technology, a MS Degree from Colorado State University, and a PhD in Optics from the University of Rochester. He works at the Jet Propulsion Laboratory and is the Deputy Manager of the Interferometry Center of Excellence.

Keywords:

Planet Detection, Nulling Interferometer, Spectroscopy

[Search AS02 Submissions](#) | [AS02 Author Submissions](#)

[Abstract Submissions](#) |

© 2002 SPIE - The International Society for Optical Engineering