

Abstract Submitted
for the DAMOP15 Meeting of
The American Physical Society

Solar oscillations and the search for Venus enabled by a laser frequency comb DAVID F. PHILLIPS, ALEXANDER G. GLENDAY, CHIH-HAO LI, NICHOLAS LANGELLIER, Harvard-Smithsonian Center for Astrophysics, GUOQING CHANG, Physics Dept., Hamburg University, DESY and MIT, GABOR FURESZ, Massachusetts Institute of Technology, FRANZ X. KAERTNER, Physics Dept., Hamburg University, DESY and MIT, DIMITAR SASSELOV, ANDREW SZENTGYORGYI, RONALD L. WALSWORTH, Harvard-Smithsonian Center for Astrophysics — We have recently demonstrated sub-m/s sensitivity in measuring the radial velocity (RV) between the Earth and Sun using a simple, home-built solar telescope feeding the HARPS-N spectrograph at the Italian National Telescope calibrated with our green astro-comb. The green astro-comb is a laser frequency comb optimized for calibrating astrophysical spectrographs. We plan, in the coming year, to use the astro-comb calibrated spectrograph and solar telescope to detect the solar RV signal induced by Venus and thus demonstrate sensitivity of these instruments to detect terrestrial exoplanets. Here, we will present the astro-comb, results from the astro-comb calibrating the HARPS-N exoplanet searcher spectrograph, solar RV stability and plans for observing the signature of Venus.

David Phillips
Harvard-Smithsonian Center for Astrophysics

Date submitted: 30 Jan 2015

Electronic form version 1.4