

Abstract Submitted
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Solar radial velocity variations and the search for Venus enabled by a laser frequency comb DAVID F. PHILLIPS, Harvard-Smithsonian Center for Astrophysics, XAVIER DUMUSQUE, Geneva Observatory, CHIH-HAO LI, AOSense, Inc., ALEXANDER GLENDAY, Komodo Health, Inc., DIMITAR SASSELOV, ANDREW SZENTGYORGYI, RONALD L. WALSWORTH, Harvard-Smithsonian Center for Astrophysics — We have recently demonstrated 50 cm/s sensitivity in measuring the radial velocity (RV) between the Earth and Sun using a simple, compact 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 have been operating the solar telescope to detect the RV signal of the Sun as a star for the past year both to study RV jitter associated with stellar (solar) fluctuations and to demonstrate sensitivity of these instruments to detect terrestrial exoplanets. In this talk I will present results from calibrating the HARPS-N exoplanet searcher spectrograph, solar RV stability, and the current status of our search for the signature of Venus.

David F. Phillips
Harvard-Smithsonian Center for Astrophysics

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