

## Paper Announcement: Speckle Interferometry of Red Dwarf Stars

Brian D. Mason<sup>1</sup>, William I. Hartkopf<sup>1,2</sup>, Korie N. Miles<sup>3</sup>  
U.S. Naval Observatory  
3450 Massachusetts Avenue, NW, Washington, DC, 20392-5420  
Electronic mail: brian.d.mason@navy.mil

John P. Subasavage<sup>1,4</sup>  
U.S. Naval Observatory  
Flagstaff, AZ 86001  
jsubasavage@nofs.navy.mil

Deepak Raghavan<sup>1</sup>  
Center for High Angular Resolution Astronomy  
Georgia State University, P.O. Box 3969, Atlanta, GA 30302-3969  
raghavan@astro.gsu.edu

Todd J. Henry  
RECONS Institute  
Chambersburg, PA 17201  
toddhenry28@gmail.com

**Abstract:** We report high resolution optical speckle observations of 336 M dwarfs which result in 113 measurements of relative position of 80 systems and 256 other stars with no indications of duplicity. These are the first measurements for two of the systems. We also present the earliest measures of relative position for 17 others. We include orbits for six of the systems, two revised and four reported for the first time. For one of the systems with a new orbit, G 161-7, we determine masses of  $0.156 \pm 0.011$  and  $0.1175 \pm 0.0079 M_{\odot}$  for the A and B components, respectively. All six of these new calculated orbits have short periods between five and thirty-eight years and hold the promise of deriving accurate masses in the near future. For many other pairs we can establish their nature as physical or chance alignment depending on their relative motion. Of the 80 systems, 32 have calculated orbits, 25 others are physical pairs, 4 are optical pairs and 19 are currently unknown.

The cite for the full article is : *The Astronomical Journal*, **155**, 215; 2018. It is available for free download at : <https://arxiv.org/abs/1804.07845>.

<sup>1</sup>Visiting Astronomer, Kitt Peak National Observatory and Cerro Tololo Inter-American Observatory, National Optical Astronomy Observatories, operated by Association of Universities for Research in Astronomy, Inc. under contract to the National Science Foundation.

<sup>2</sup>Retired.

<sup>3</sup>SEAP Intern.

<sup>4</sup>Current address: The Aerospace Corporation, 2310 E. El Segundo Boulevard, El Segundo, CA 90245, email: john.subasavage@aero.org.