

Do brown dwarfs have planets? – UVES spectra and HST/SOFI images of young brown dwarfs in Cha I

V. Joergens (Max-Planck Institut für extraterrestrische Physik,
Giessenbachstr.1, D-85748 Garching, Germany)

E. Guenther (Thüringer Landessternwarte Tautenburg,

Karl-Schwarzschild-Observatorium, Sternwarte 5, D-07778 Tautenburg, Germany)

R. Neuhauser, N. Huélamo (Max-Planck Institut für extraterrestrische Physik, Garching)

F. Comerón, J. Alves, Wolfgang Brandner (European Southern Observatory
Karl-Schwarzschild-Str. 2, D-85748 Garching, Germany)

We report on a search for companions to young brown dwarfs in the Cha I star forming cloud. Based on spectra taken with UVES at the VLT, we measured radial velocities (RVs) with a precision of ~ 200 m/s and found significant RV variations for five bona-fide and candidate brown dwarfs in Cha I. They can be caused by either a (substellar or planetary) companion or stellar activity. A companion causing the detected RV variations would have about a few Jupiter masses. We also found that the RV dispersion is only ~ 2 km/s suggesting that there is no run-away brown dwarf among them.

In order to search for companions in a wider orbit we carried out a direct imaging campaign with the HST and SOFI at the NTT. These observations yielded to the detection of a few companion candidates around some of the bona fide and candidate brown dwarfs in Cha I.