

Radio emission in ultracool dwarfs: the nearby triple system VHS 1256 – 1257

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Radio observations of ultracool stellar objects (late M, L and T objects) constitute a remarkable opportunity to investigate the magnetic activity of these objects and its influence on the formation of disks or planets.

The system VHS 1256-1257 is one of the candidates to improve the statistics of active cool objects. This young system (150-300 Myr) consists of a 0,1" equal-magnitude M7.5 brown dwarf binary and a planetary-mass L7 companion separated by 8". We observed this system with the Jansky Very Large Array and with the European VLBI Network at several frequency bands during 2015 and 2016.

We found weak but persistent radio emission spatially coincident with the main component of VHS 1256-1257. The spectral behavior of the detected radio emission suggests that the acting radiation mechanism would be non-thermal, gyrosynchrotron emission. This implies the presence of magnetic fields of the order of kGauss. In addition, we set a strong upper bound to the flux density of the L7 planetary companion. Future observations with different radio interferometers to clarify the nature of VHS1256-1257 will be discussed.