

AN OLD TRIPLE SYSTEM WITH AN INNER BROWN DWARF-WHITE DWARF BINARY AND AN
OUTER WHITE DWARF COMPANION

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We identify the first inner brown dwarf-white dwarf binary of a hierarchical triple system in which the outer component is another white dwarf. From optical/near-infrared spectroscopy obtained at the Very Large Telescope with the X-Shooter instrument and/or from *Gaia* photometry plus SED fitting, we determine the effective temperatures and masses of the two white dwarfs and the effective temperature of the brown dwarf. By analysing the available *TESS* light curves of the inner unresolved binary we detect a signal at 1.04 days, which we interpret as the orbital period modulated from irradiation effects of the white dwarf on the brown dwarf's surface. Using the outer white dwarf as a cosmochronometer and analysing the kinematic properties of the system, we conclude that the triple system is about 10 Gyr old.