

A long-period radio transient in a binary orbit

Abstract

New long-period radio transients have recently been detected, and their existence challenges previous understanding of pulsar and magnetar emission mechanisms (Hurley-Walker et al. 2022b). By searching archival data taken by the Murchison Widefield Array, we have detected a new long-period radio transient with a repeating timescale of ~ 3 hours. Its polarisation and pulse morphology characteristics are similar to the other long-period radio transients. It also appears to be in a ~ 5 -year orbit with an as-yet unknown companion. Here, we request follow-up of this source with MeerKAT to obtain a dynamic spectrum, and monitoring to help solve for its orbital parameters.