

Monitoring T CrB expected eruption with MeerKAT

Abstract

The MeerKAT telescope has monitored two recurrent novae (RNe) V3890 Sgr and RS Oph which were recently in outburst in 2019 and 2021 respectively. Recurrent novae are thermonuclear eruptions that occur on the surface of white dwarf stars following accumulation of material from a close binary companion. The gas is accreted via Roche-lobe overflow or stellar winds. The environment around the binary system is therefore dense. Radio observations probe the shocks produced when the ejected material interacts with the dense circumstellar material providing information about the surrounding medium and accretion processes. We propose to observe the nova T CrB with MeerKAT (1 – 3 GHz) in combination with LOFAR (100 MHz), AMI (15 GHz), e-MERLIN (5/22 GHz) and NOEMA (100 GHz). Previous two eruptions of T CrB were separated by 80 years, and a third appears imminent, therefore the next eruption presents a unique opportunity to study the system.