

---

# Magnetic fields in V471 Tau - rapid rotation in close binaries

Gaitee Hussain<sup>\*1</sup>, Evelyne Alecian<sup>2</sup>, Jean-Francois Donati<sup>3</sup>, Julien Morin<sup>4</sup>, and Scott Gregory<sup>5</sup>

<sup>1</sup>European Southern Observatory (ESO) – Karl-Schwarzschild Str. 2 D-85748 Garching bei Munchen, Germany

<sup>2</sup>IPAG (IPAG) – Université Joseph Fourier - Grenoble 1, INSU, Centre National de la Recherche Scientifique – 414 Rue de la piscine - BP 53 38041 GRENOBLE CEDEX 9, France

<sup>3</sup>Institut de recherche en astrophysique et planétologie (IRAP) – Université Paul Sabatier - Toulouse 3, Observatoire Midi-Pyrénées, Centre National de la Recherche Scientifique : UMR5277 – France

<sup>4</sup>Laboratoire Univers et Particules de Montpellier (LUPM) – Université Montpellier 2 - Sciences et Techniques, Institut National de Physique Nucléaire et de Physique des Particules du CNRS, Centre National de la Recherche Scientifique : UMR5299 – Université de Montpellier II Place Eugène Bataillon - CC 72 34095 Montpellier Cédex 05, France

<sup>5</sup>School of Physics and Astronomy, University of St Andrews – University of St Andrews, North Haugh, St Andrews, Fife, KY16 9SS, UK, United Kingdom

## Abstract

V471 Tau is an eclipsing binary system (white dwarf + K2). Its rapid rotation rate makes it a perfect analogue of the well-studied and characterised K dwarf, AB Dor. We have collected spectropolarimetric datasets closely monitoring the rotation period at three well separated epochs. I will present the surface spot and magnetic field maps of the system at all three epochs and discuss the short and long-term variability shown in our datasets. To conclude I will compare the global properties of its magnetic activity with that of AB Dor.

**Keywords:** Binamics

---

<sup>\*</sup>Speaker