

H-alpha observations of the recurrent nova T CrB

M. Hristova, S. Kandzhichka (TU Sofia), V. Marchev, R. Zamanov, K. Stoyanov (Bulgarian Academy of Sciences), D. Marchev (Shumen University)

We performed spectral observations of the recurrent nova T Coronae Borealis with the Echelle spectrograph at the 2m RCC telescope (Bonev et al. 2017, *Bulgar. Astron. J.*, 26, 67) of the National Astronomical Observatory Rozhen, Bulgaria:

| Date-obs | exposure | EW(H-alpha) [Å] |
|------------------|-------------|--------------------|
| 2024-08-21T19:30 | 60 min | 11.9 +/- 0.6 |
| 2024-08-22T20:23 | 60 min | 11.2 +/- 0.6 |
| 2025-01-18T03:20 | 30min+45min | 12.5 +/- 0.6 |
| 2025-03-09T23:10 | 45min+45min | 21.8 +/- 1.0 |

On the spectrum obtained on 9/10 March 2025, we measure equivalent width of H-alpha emission line 21.8 angstroms. This means that the equivalent width of H-alpha emission line increased by factor of 2 in comparison with the observations in August 2024 and January 2025 (thus confirm the finding in ATel#17041). The emission line is asymmetric with violet-to-red peak ratio 0.63 +/- 0.01, which probably means that the accretion disc is eccentric. The emission line is double peaked with distance between the peaks 91 +/- 1 km/s, which corresponds to a disc radius 107 R_sun, which means that the disc extends almost to the inner Lagrangian point L₁.

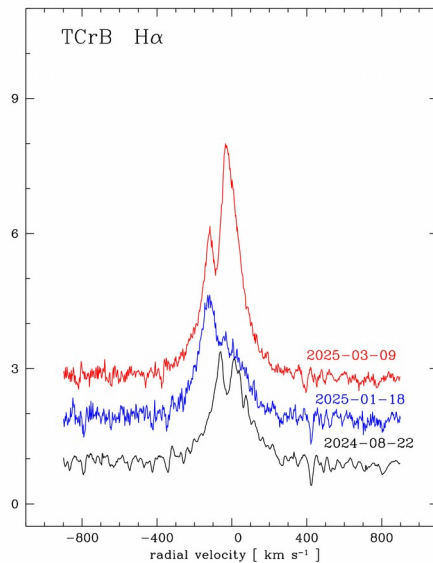


Fig. 1 Evolution of the H-alpha emission line of T CrB.