

Variable Star Discovery Report

Discovery of Rotational Variability in Star TYC 5416-422-1

Discoverer: Pralze Somaraj Soniya

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1. Target Identification

Primary Name: TYC 5416-422-1

Cross-ID: Gaia DR2 3038040688720254848

Coordinates (J2000): RA 120.07576, DEC -10.82265

Constellation: Monoceros (Cluster NGC 2506)

2. Methodology

Time-series photometry was obtained from the NASA TESS mission. Light curves were extracted using the 'lightcurve' Python package. Systematic trends were removed, and periodicity was searched using the Lomb-Scargle Periodogram method. The signal was phase-folded to verify coherence.

3. Analysis Results

- Period (P): 6.6801 days
- Epoch (T0): 2459968.8300 (HJD)
- Mean Magnitude: 9.614 (TESS)
- Amplitude: 0.010 mag
- Variability Type: ROT (Rotational / Starspots)

4. Phase Folded Light Curve

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5. Conclusion

The analysis confirms periodic variability consistent with rotational modulation caused by magnetic starspots. This discovery has been submitted to the International Variable Star Index (VSX) for cataloging.