

Introduction

This study provides a comparative analysis of light curves and periodograms using Fourier series and phase diagrams to investigate the pulsations of the RR Lyr star. The star is identified as KIC 7198959 in Kepler data from Quarter 2 and TIC 1597177514 in TESS data from Sector 14. The Blazhko effect is detected in the Kepler data, with its frequency and period being determined. Observations were conducted using Kepler (2009), Oukaimeden (2015), and TESS (2019), offering a comprehensive dataset that allows for an evaluation of the strengths and limitations of each observational technique.



•Effective temperature: •Absolute magnitude: •Surface gravity: •Blazhko effect detected in Kepler data with a modulation frequency of

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•Metallicity:

Fe/H] = -1.3

•Color:

(B-V) = 0.36

T eff=6.500 K

M = 0.61

 $\log g = 2.7$

Fb = 0.0256 (1/davs).•Blazhko period:

39.04 days.

This study demonstrates the advantages of combining space- and ground-based observations for RR Lyrae stars. While Kepler provides high-precision uninterrupted photometry, ground-based data from Oukaimeden enhance long-term monitoring. TESS, with its broader sky coverage, serves as an intermediary dataset confirming the key findings. The consistency of the results across different observational sources highlights the reliability of this multi-method approach. Future work will focus on refining pulsation models, analyzing period variations over longer timescales, and exploring additional RR Lyrae stars to expand the dataset.