

TIC 59458906

Eclipsing binary candidate dossier - Star Vetter

PERIOD ALIAS

BLS EPHEMERIS

Period 0.664423 d (ALIASSED, see below)
-> corrected period: 1.328846 d
Epoch (t0) 2500.4218 BTJD
Duration 0.3500 d
Depth 0.489 % (4,895 ppm)
SNR 973.7

CATALOG CROSS-MATCH (novelty)

VSX	no match
ASAS-SN	no match
Gaia eclipsing-binary table	no match
Gaia variable classification	no match
TESS EB catalog (Prsa+2022)	no match
ExoFOP TOI list	no match

INDEPENDENT CHECKS (f3i gates)

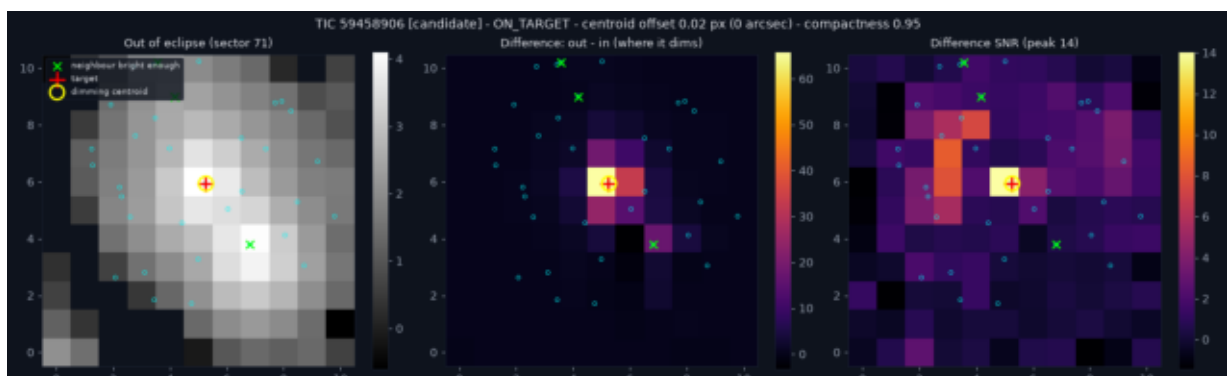
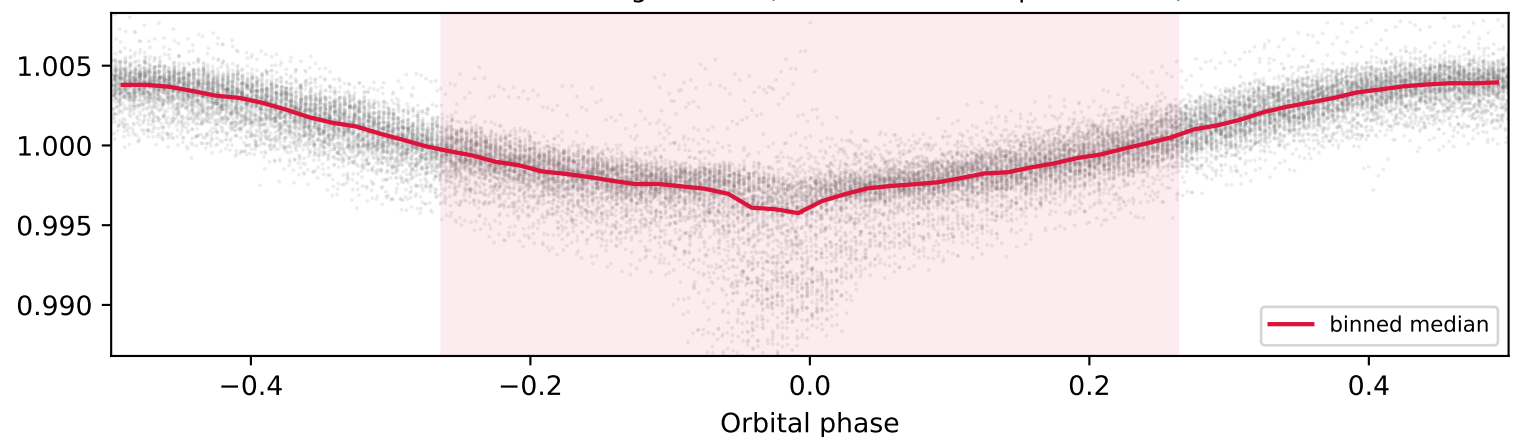
Eclipses observed 139 (gate ≥ 3)
Robust depth ratio 0.93 (gate ≥ 0.50)
Robust depth sigma 236.0 (gate ≥ 7.0)
Odd/even z-score 9.79 (ALIAS FLAGGED)
Secondary eclipse not detected

Verdict: NOVEL

PIXEL-LEVEL SOURCE CHECK (TESScut difference imaging)

Sector 71 light-curve dip in this sector: 54.1 sigma t0 refined by 0.0050 phase
Difference-image peak SNR 14.08 (gate ≥ 5.0) Compactness 0.95 (gate ≥ 0.50)
Dimming centroid offset 0.02 px (0 arcsec) (gate ≤ 1.0 px, i.e. on the target)
Nearest bright-enough neighbour in cutout: TIC 59458904
2.64 px away, dTmag +0.08 - farther from the dimming than the target

Phase-folded light curve (shaded = BLS eclipse window)



Caveat (PERIOD ALIAS): Odd/even eclipse-depth z-score is 9.79 (gate > 3.0): alternating eclipses differ significantly in depth, the signature of a true period double what BLS found. Pixel-check confirmation and eclipse timing are unaffected - report the corrected period, 1.328846 d, in any write-up.