



TIC 307210830 TRANSITS VALIDATION REPORT

This document is created by the WATSON report generator (<https://github.com/PlanetHunters/watson>) and focuses on the target star TIC 307210830.

RA (deg)	Dec (deg)	V (mag)	J (mag)	H (mag)	K (mag)
8:18:07.62	-68:18:46.80	-	-	-	-

Table 1: The proposed target parameters.

T0 (d)	Period (d)	Duration (h)	Depth (ppt)
1354.7156	1.0492	0.89	0.158

Table 2: The candidate parameters.

Metric	Value	Passed
fast_snr	11.491	True
short_snr	14.482	True
long_snr	8.821	True
snr_p_t0	39.982	True
snr_p_2t0	15.309	False
snr_2p_t0	30.187	True
snr_2p_2t0	26.16	True
snr_p2_t0	15.309	False
snr_p2_t02	0.001	True
transit_offset_ra	124.546	False
transit_offset_dec	-68.326	False
transit_offset_err	0.004	True
transit_offset_pos	0.019	False
core_flux_snr	7.265	True
halo_flux_snr	24.817	True
og_score	3.416	False
centroids_ra_snr	-3.995	False
centroids_dec_snr	12.467	False

Table 3: The results of the numerical tests.



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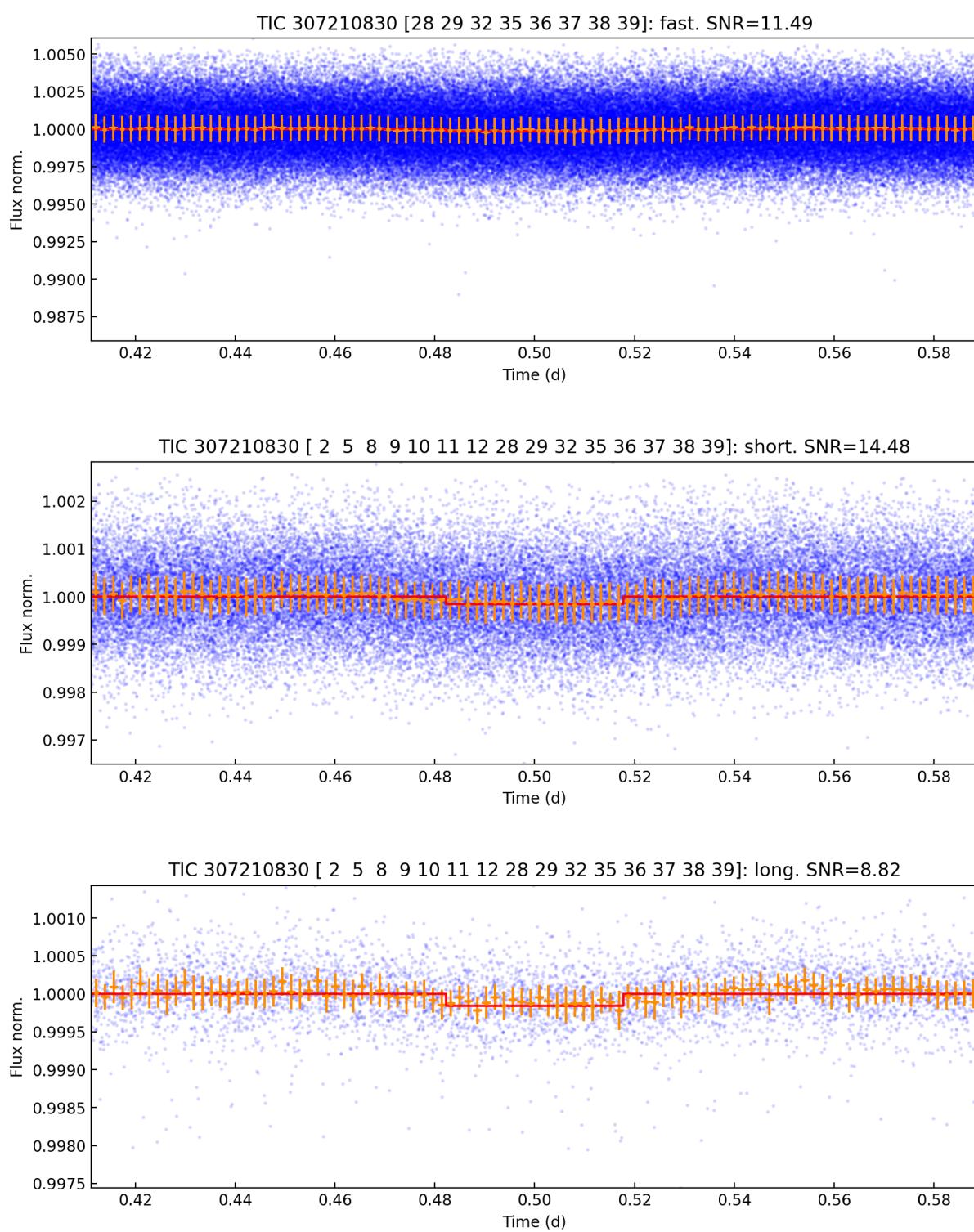


Figure 1: Folded curve for all available cadences.



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TIC 307210830 Transits depth analysis $T_0=1354.72$ $P=1.05d$

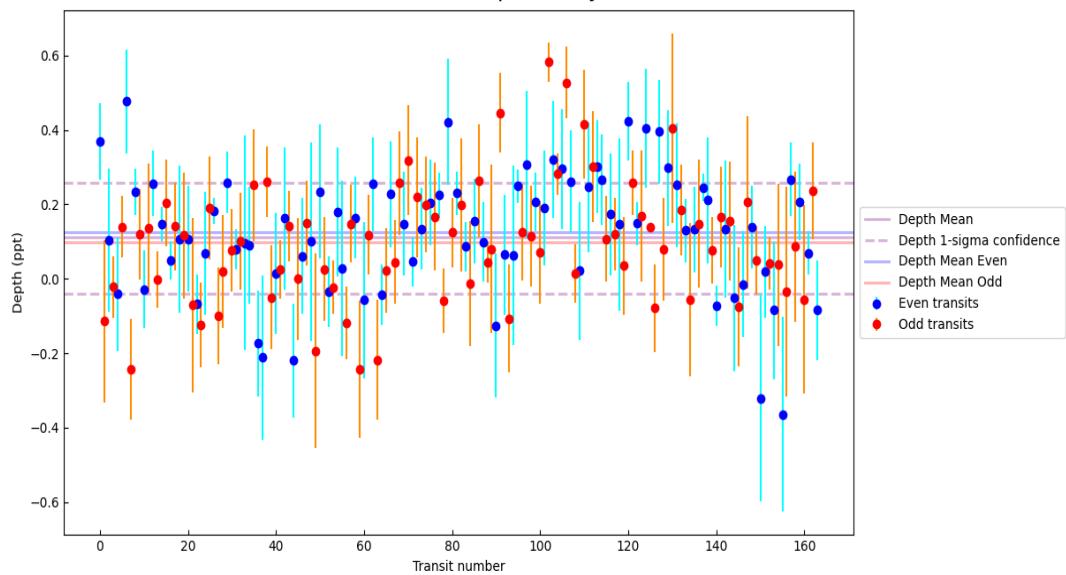


Figure 2: The candidate single-transits depths plot.

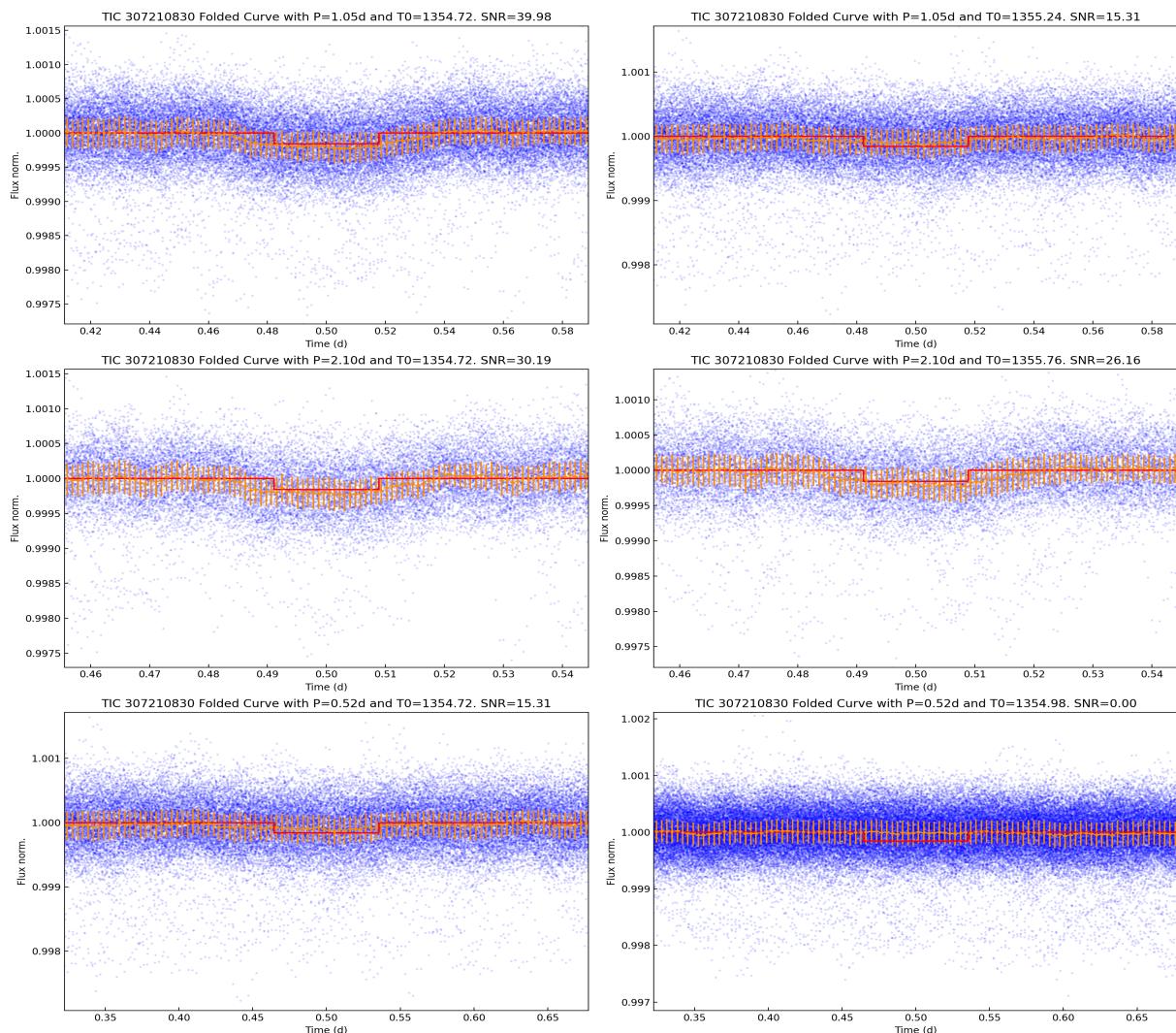


Figure 3: Above, the candidate folded at its found period for the found epoch and epoch + $P/2$. Middle, the candidate folded at its harmonic for the found epoch and epoch + P . Bottom, the candidate folded at its subharmonic for the found epoch and epoch + $P/2$, where the candidate has been masked.

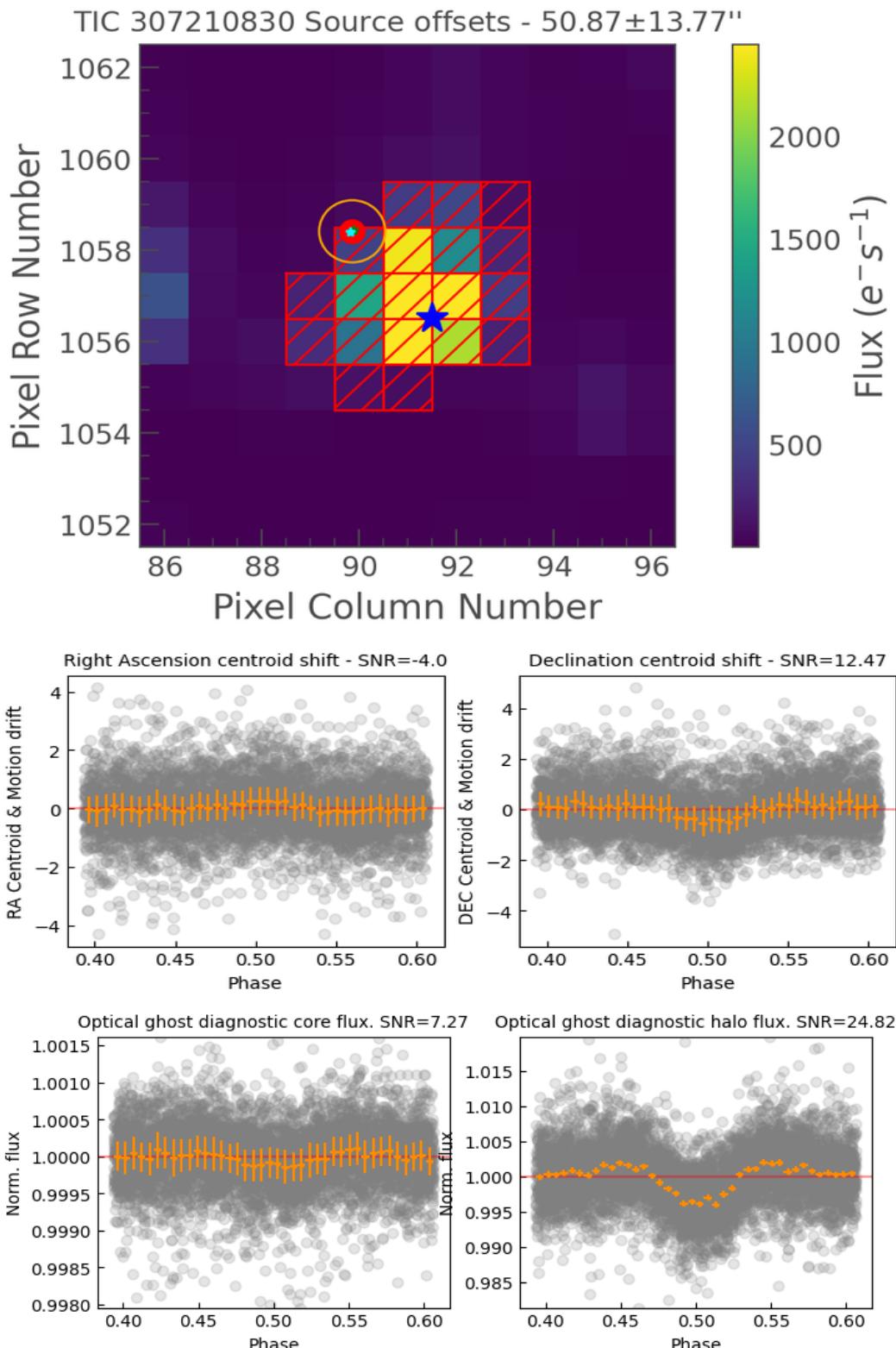


Figure 4: Above, the computed target offset (red circle) from the differential image offset (cyan dot) and the per-pixel BLS SNR offset (green dot). Middle left, the right ascension centroid shift with binning. Middle right, the declination centroid shift with binning. Bottom left, optical ghost diagnostic curve for core flux. Bottom right, optical ghost diagnostic curve for halo flux

The next pages will contain each of the single-transits vetting sheets with the next information:

1. **TOP-LEFT:** Plot with single transit photometry found in the analyzed curve (with momentum dumps, if any).
2. **TOP-CENTER:** Plot with X-axis data drift (X-axis motion vs X-axis centroid offset) around the transit times.



3. **TOP-RIGHT:** Plot with Y-axis data drift (Y-axis motion vs Y-axis centroid offset) around the transit times.
4. **CENTER-LEFT:** Plot with SAP for used aperture vs SAP for smaller aperture around the transit times.
5. **CENTER-CENTER:** Plot with smaller aperture over used aperture on the target.
6. **CENTER-RIGHT:** Plot with single transit photometry found in the analyzed curve around the transit times.
7. **BOTTOM:** Plot TPF flux measurements for each pixel around the transit times.



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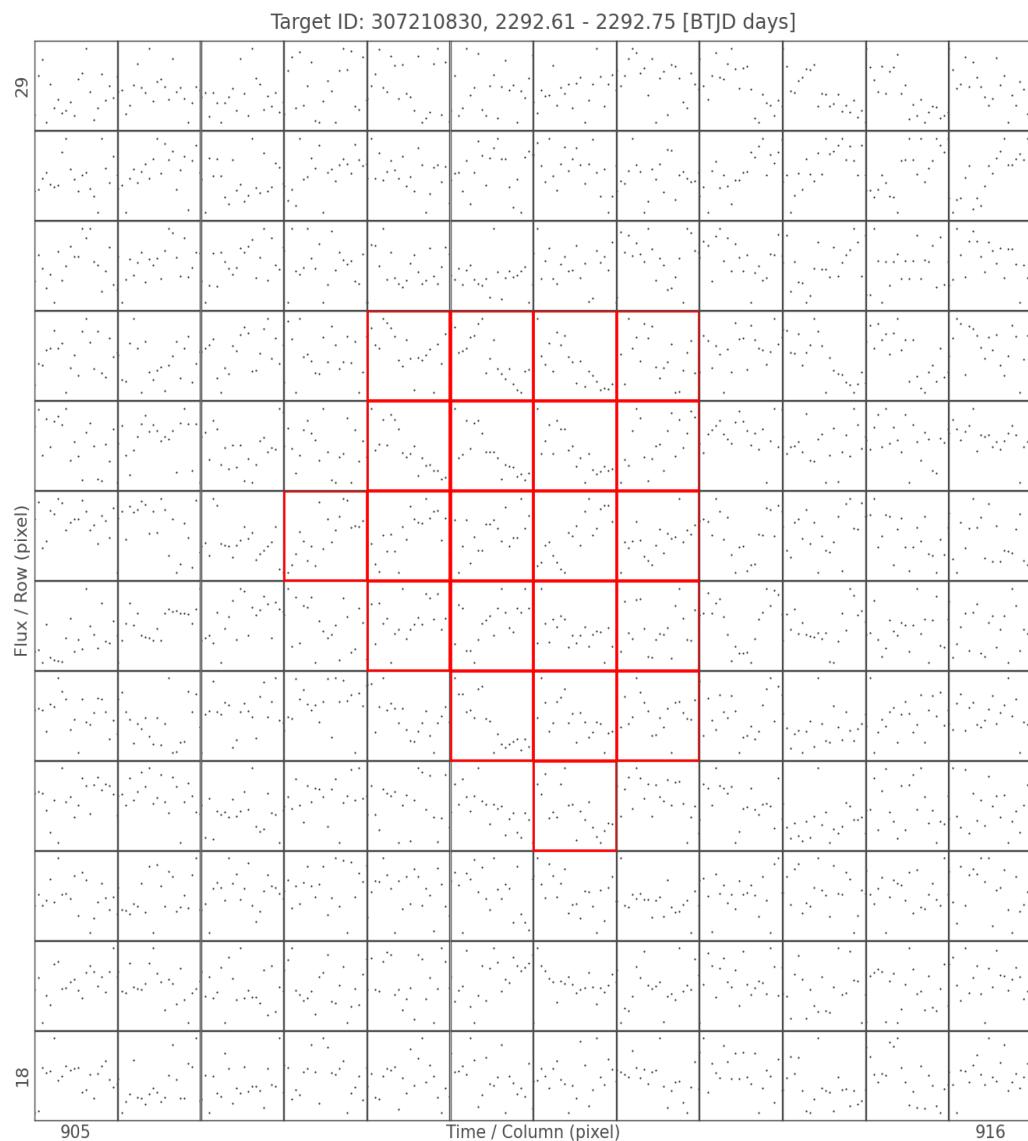
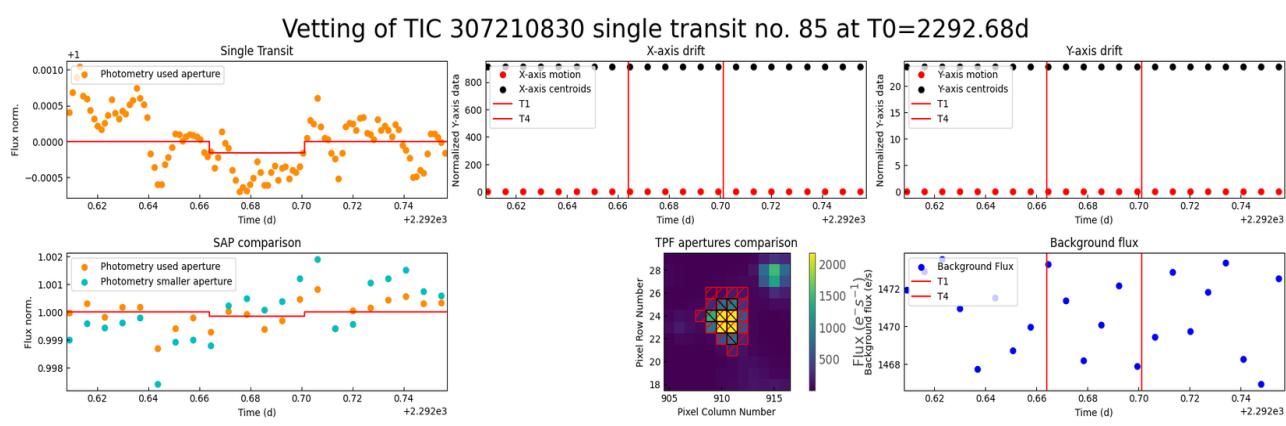
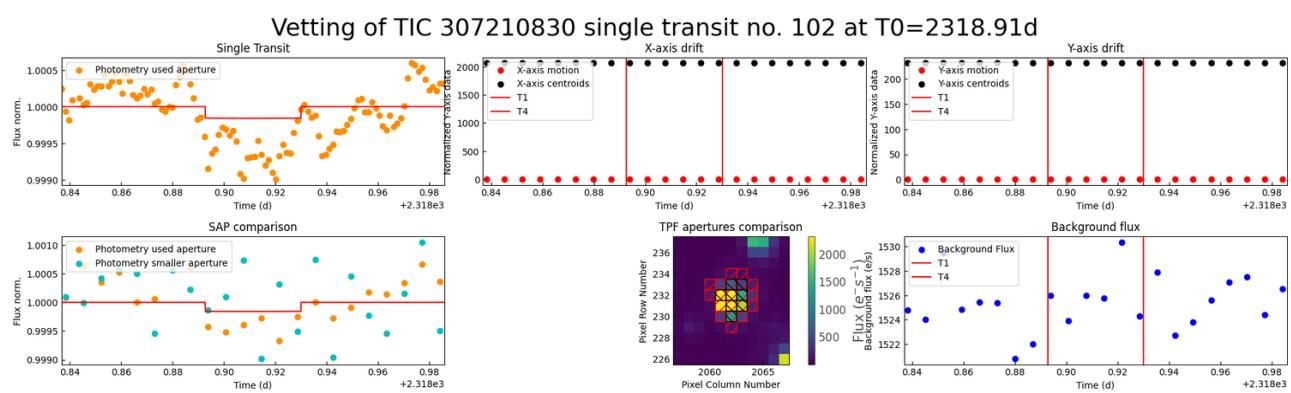


Figure 5: The single transit no. 85 vetting plots



Target ID: 307210830, 2318.84 - 2318.98 [BJD days]

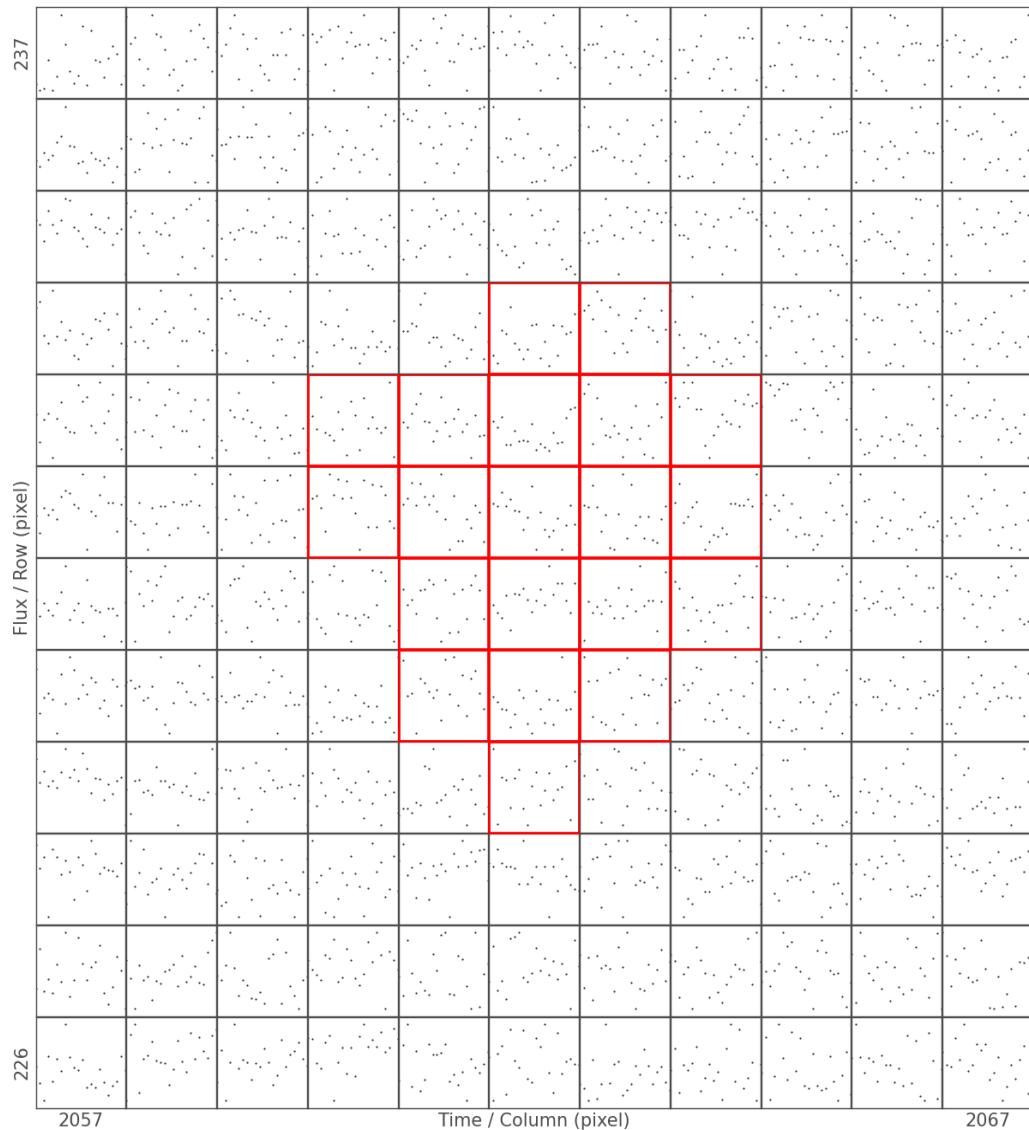


Figure 6: The single transit no. 102 vetting plots



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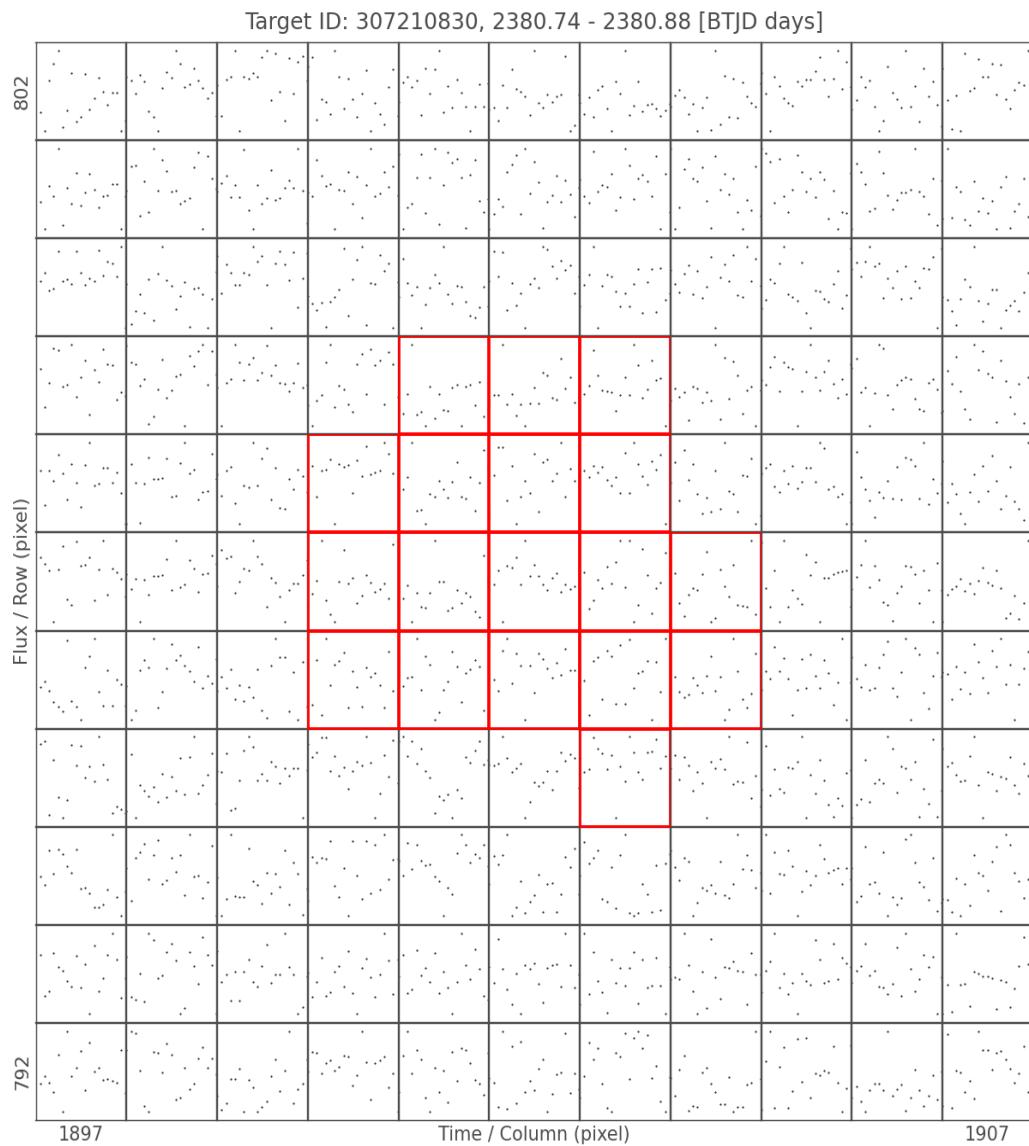
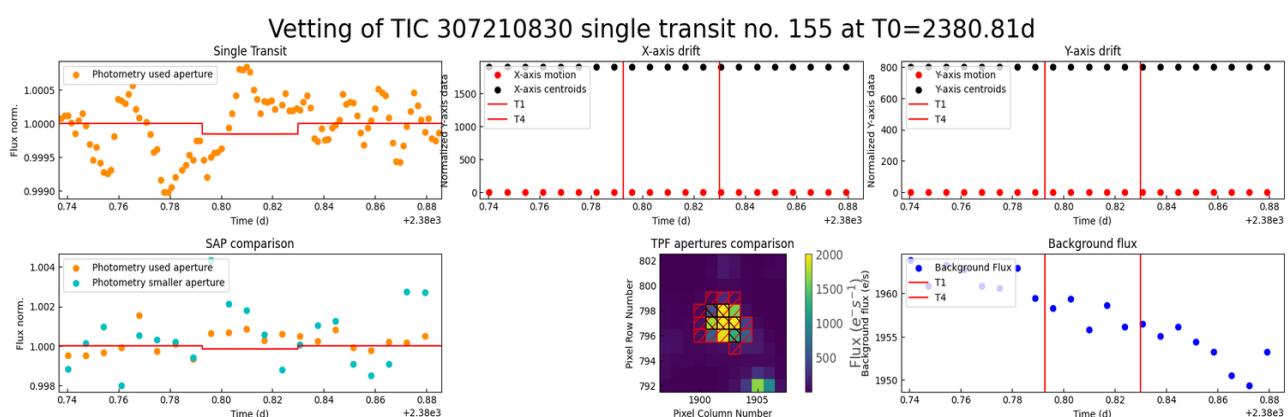


Figure 7: The single transit no. 155 vetting plots