

KIC 010321927

Q1-17 DR25 TCE Parameters

| TCE | Run Type | KOI? | Period (Days) | Epoch (BKJD) | Depth (ppm) | Duration (Hours) | MES | SNR | R_{\star} (R_{\odot}) | T_{\star} (K) | R_p (R_{\oplus}) | S_p (S_{\oplus}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 010321927-01 | OBS | 7997.01 | 321.024050 | 179.702382 | 559.1 | 7.425 | 7.5 | 7.0 | 0.81 | 5334 | 2.02 | 0.69 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---------------------------------|
| 010321927-01 | OBS | FP | 0.10 | 1 | 0 | 0 | 0 | ALL_TRANS_CHASES—CENT_FEW_DIFFS |

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

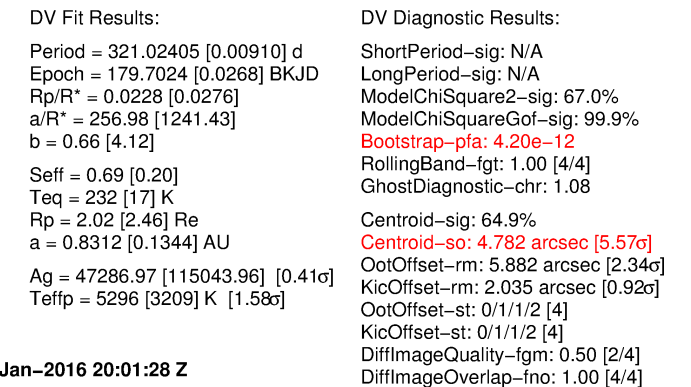
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

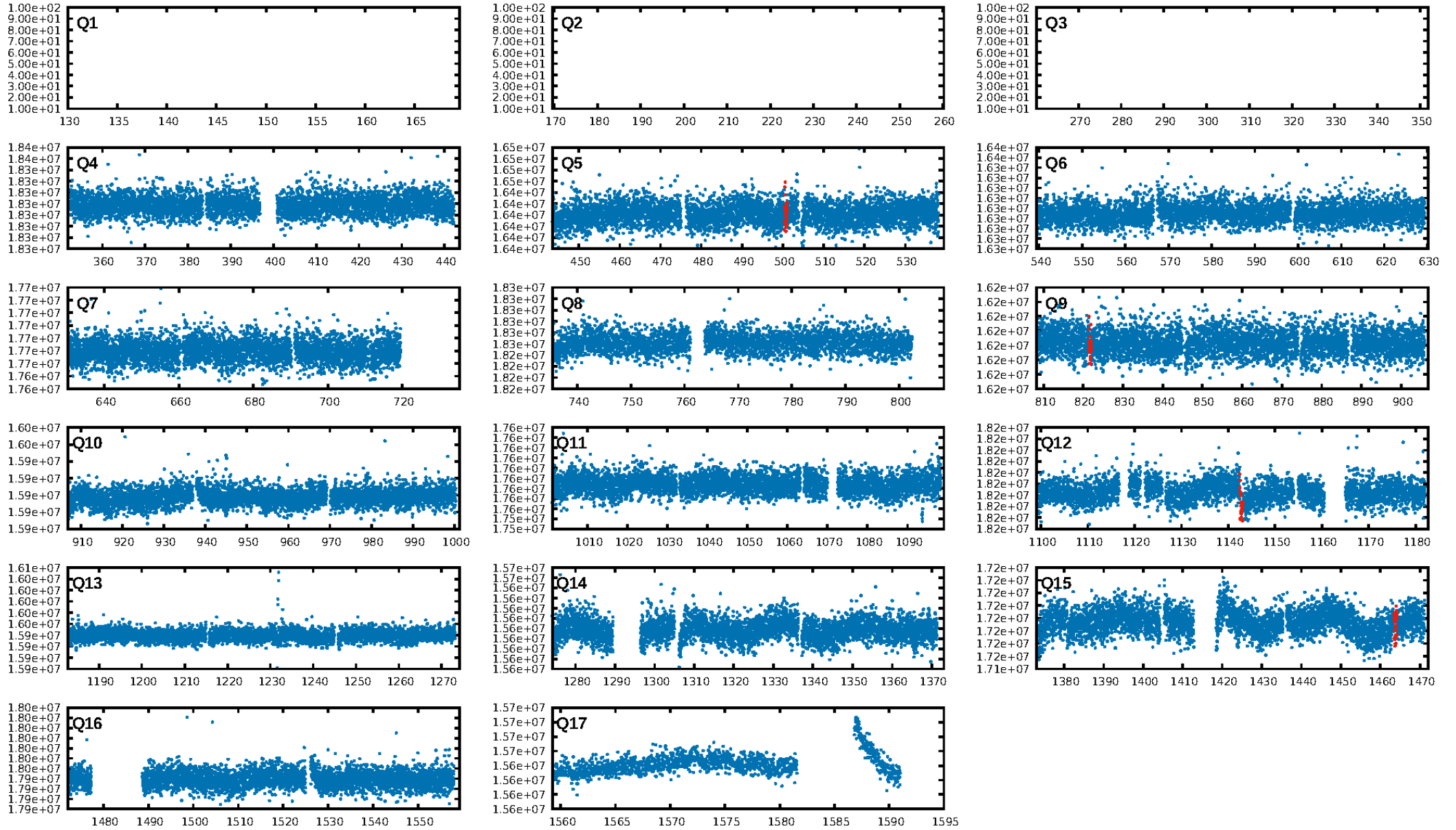
Ephemeris Match Information For 010321927-01

No Significant Match Found

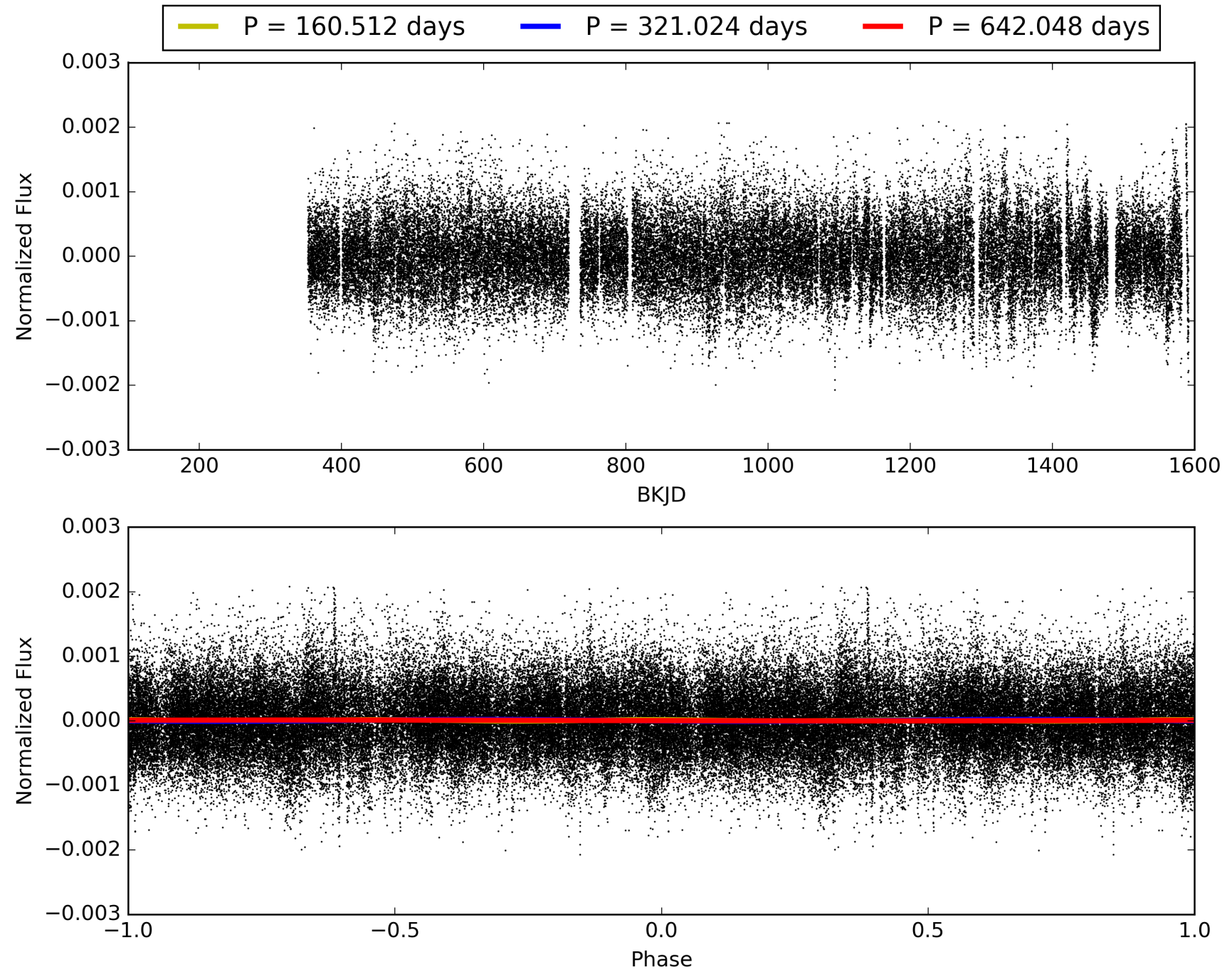
KIC: 10321927 Candidate: 1 of 1 Period: 321.024 d



TCE 010321927-01, PDC Light Curves

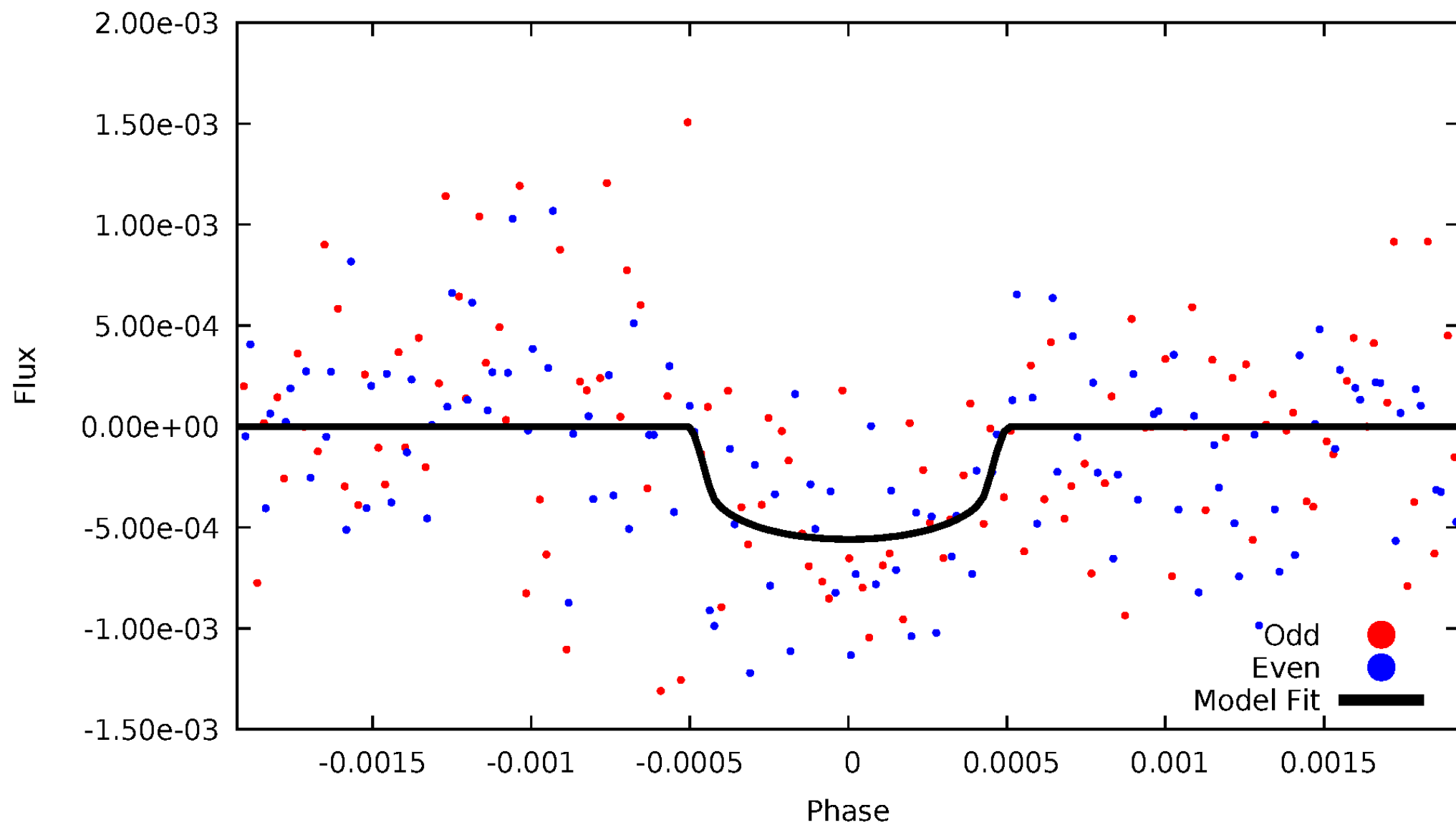


TCE 010321927-01



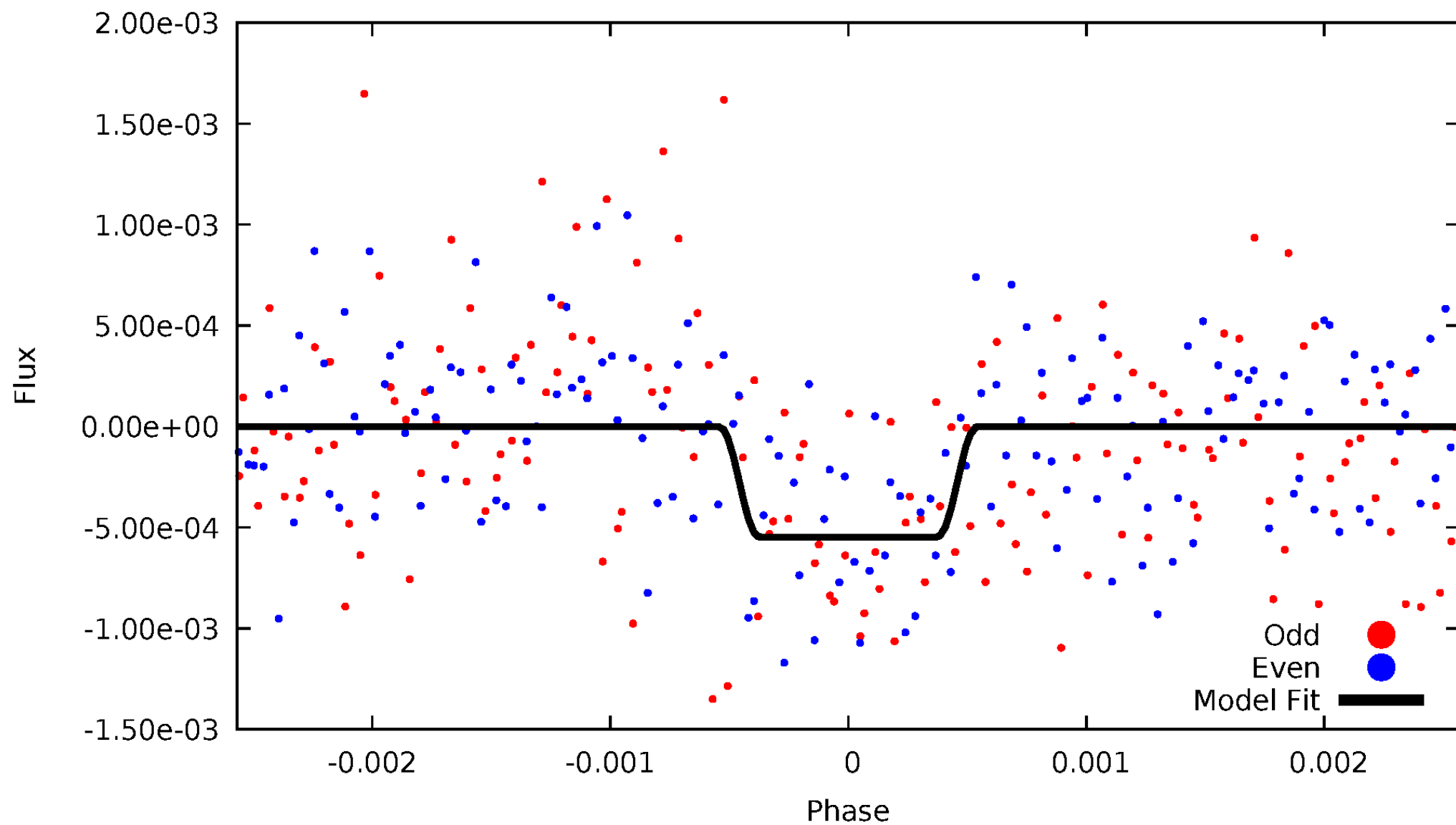
DV Odd/Even

TCE 010321927-01

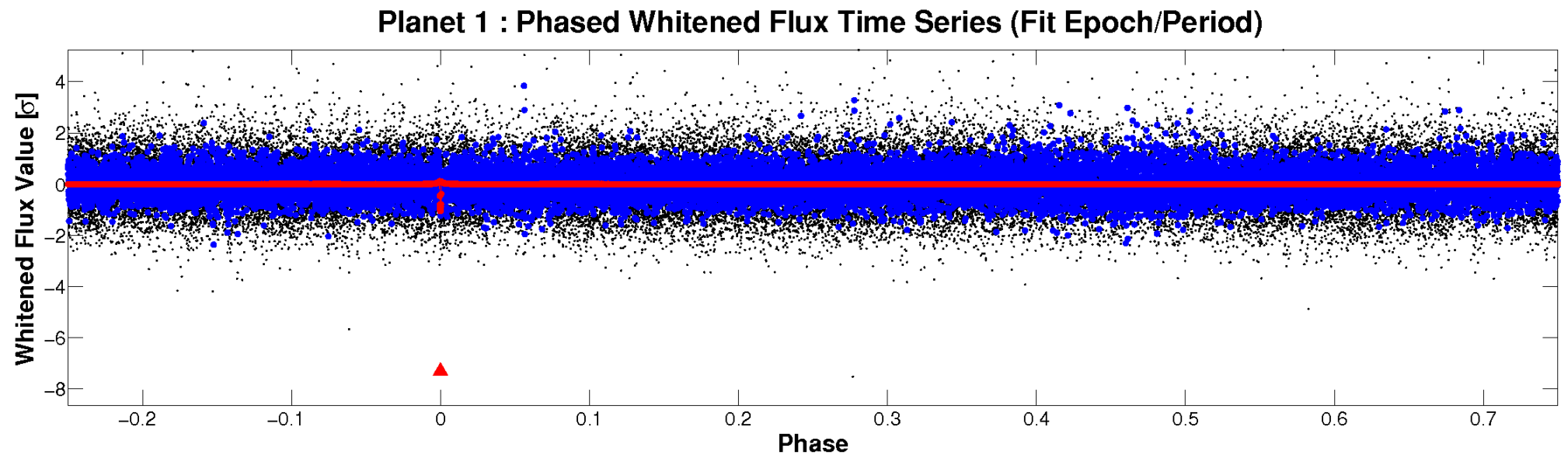
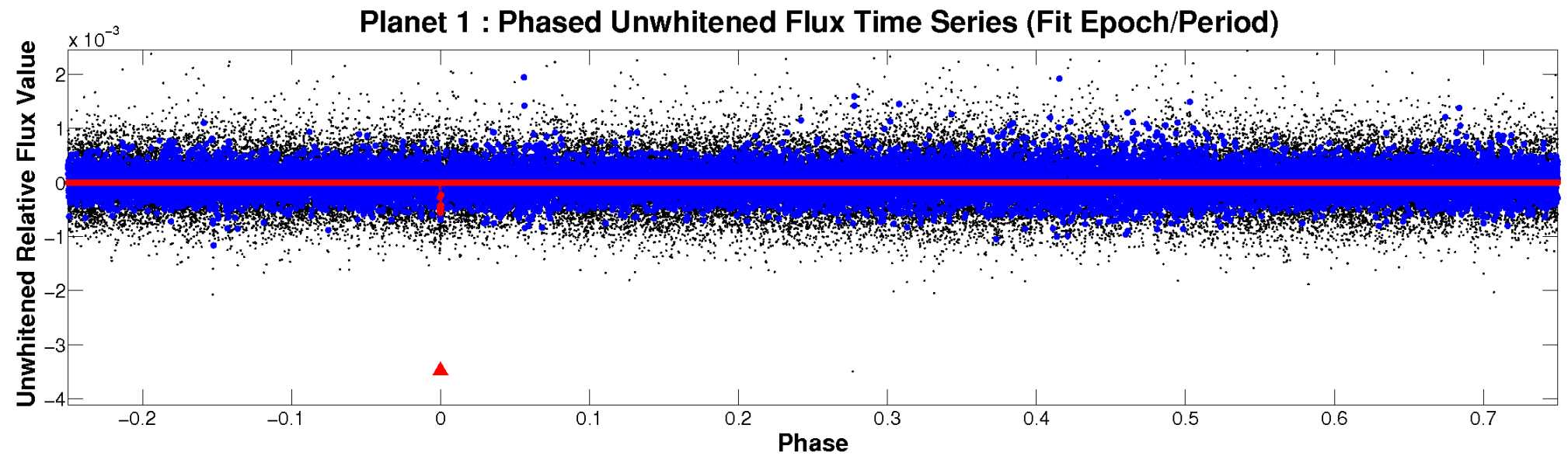


ALT Odd/Even

TCE 010321927-01

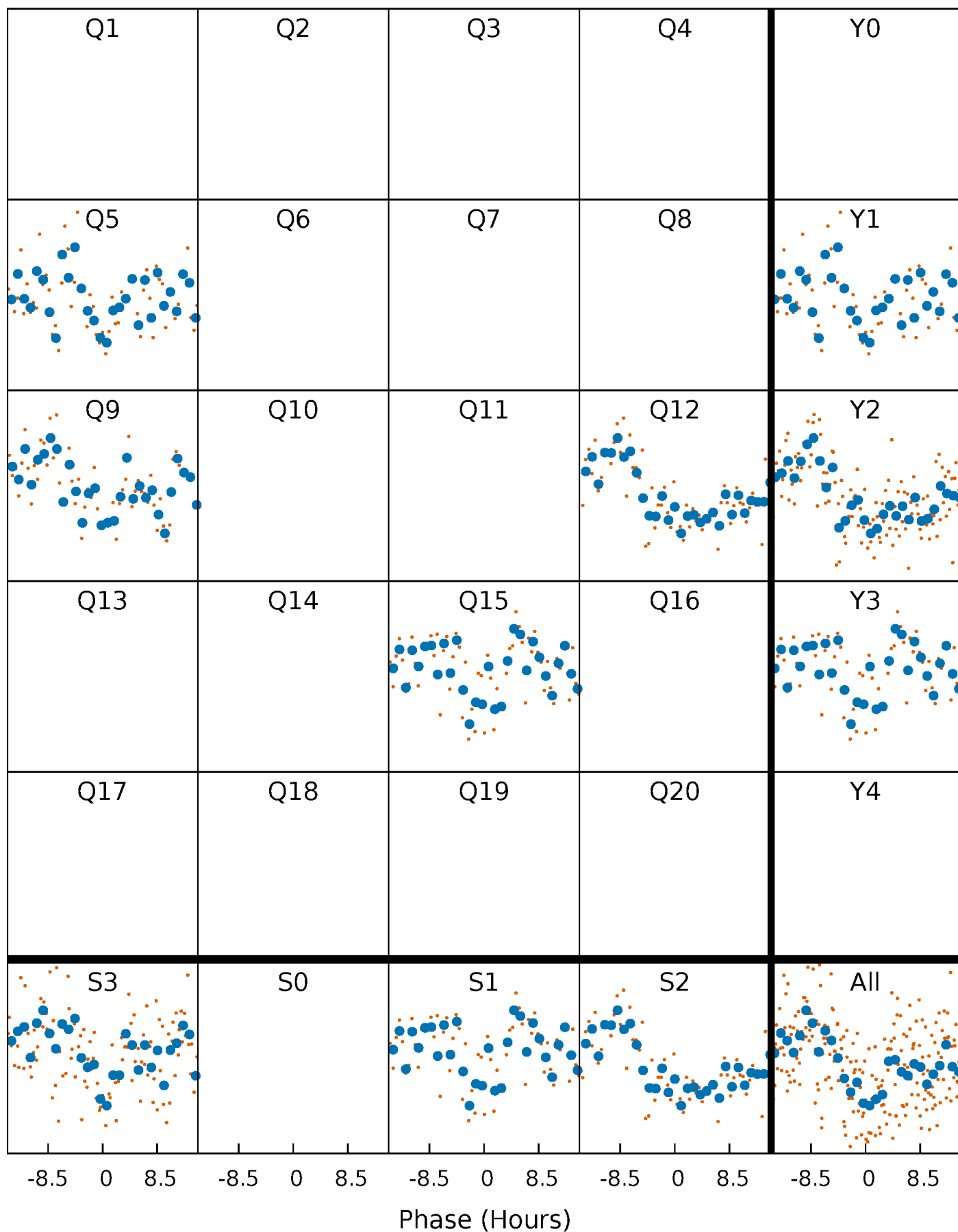


Non-Whitened Vs. Whitened Light Curve



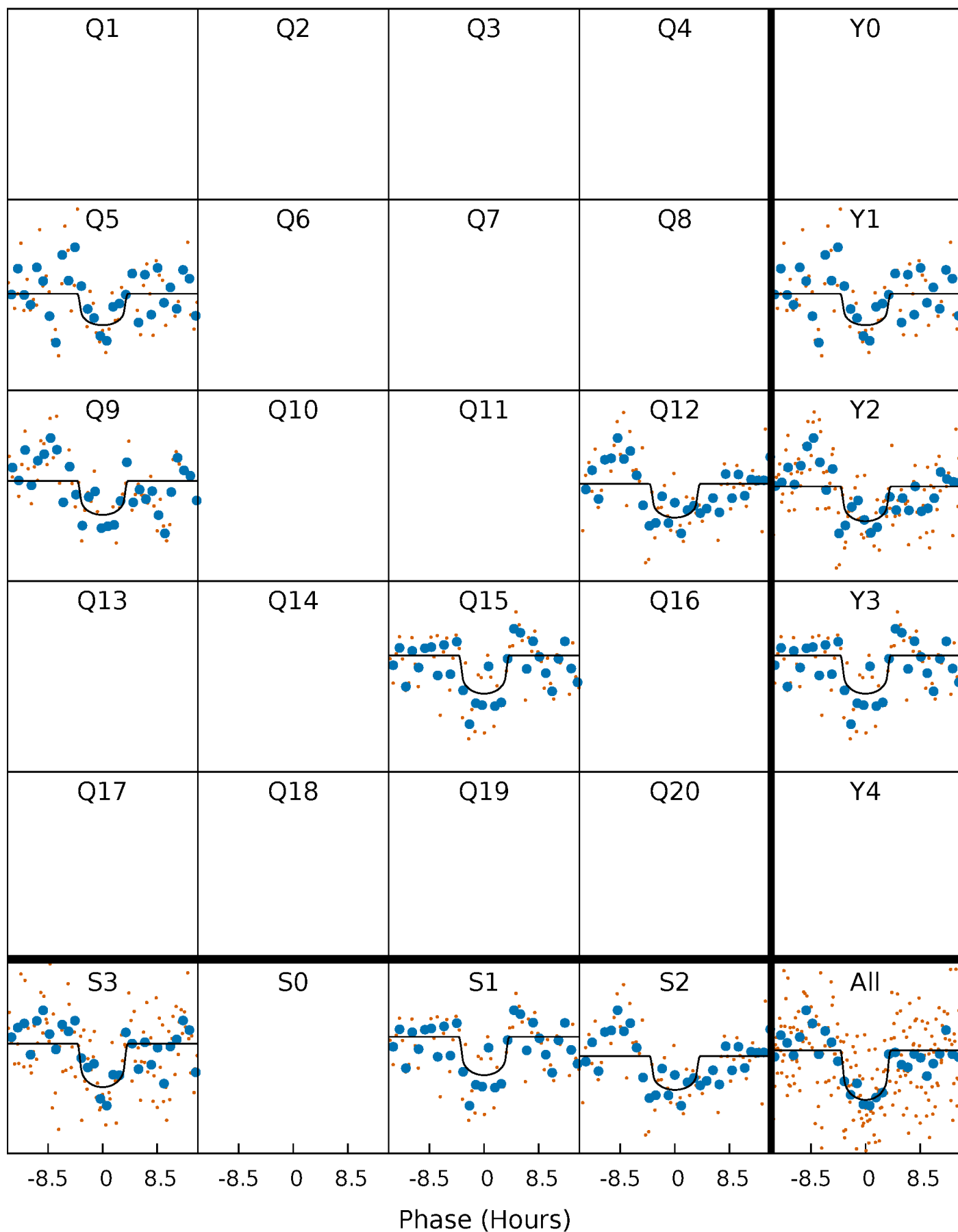
PDC Quarter-Phased Transit Curves

TCE 010321927-01 P=321.024050 Days $T_0=179.702382$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010321927-01 P=321.024050 Days $T_0=179.702382$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

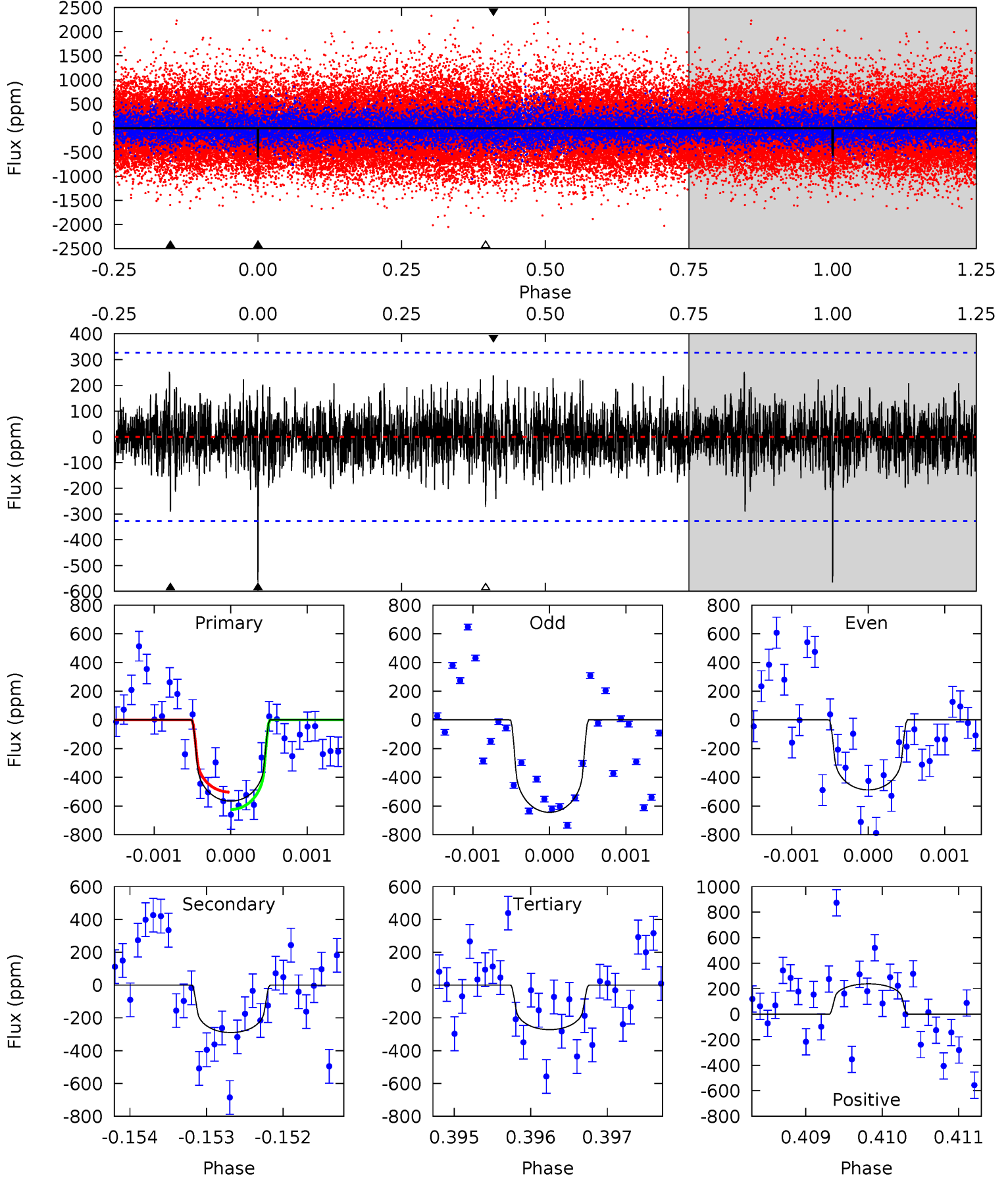
TCE 010321927-01 P=321.018039 Days $T_0=179.713429$ (BKJD)



DV Model-Shift Uniqueness Test

010321927-01, P = 321.024050 Days, E = 179.702382 Days

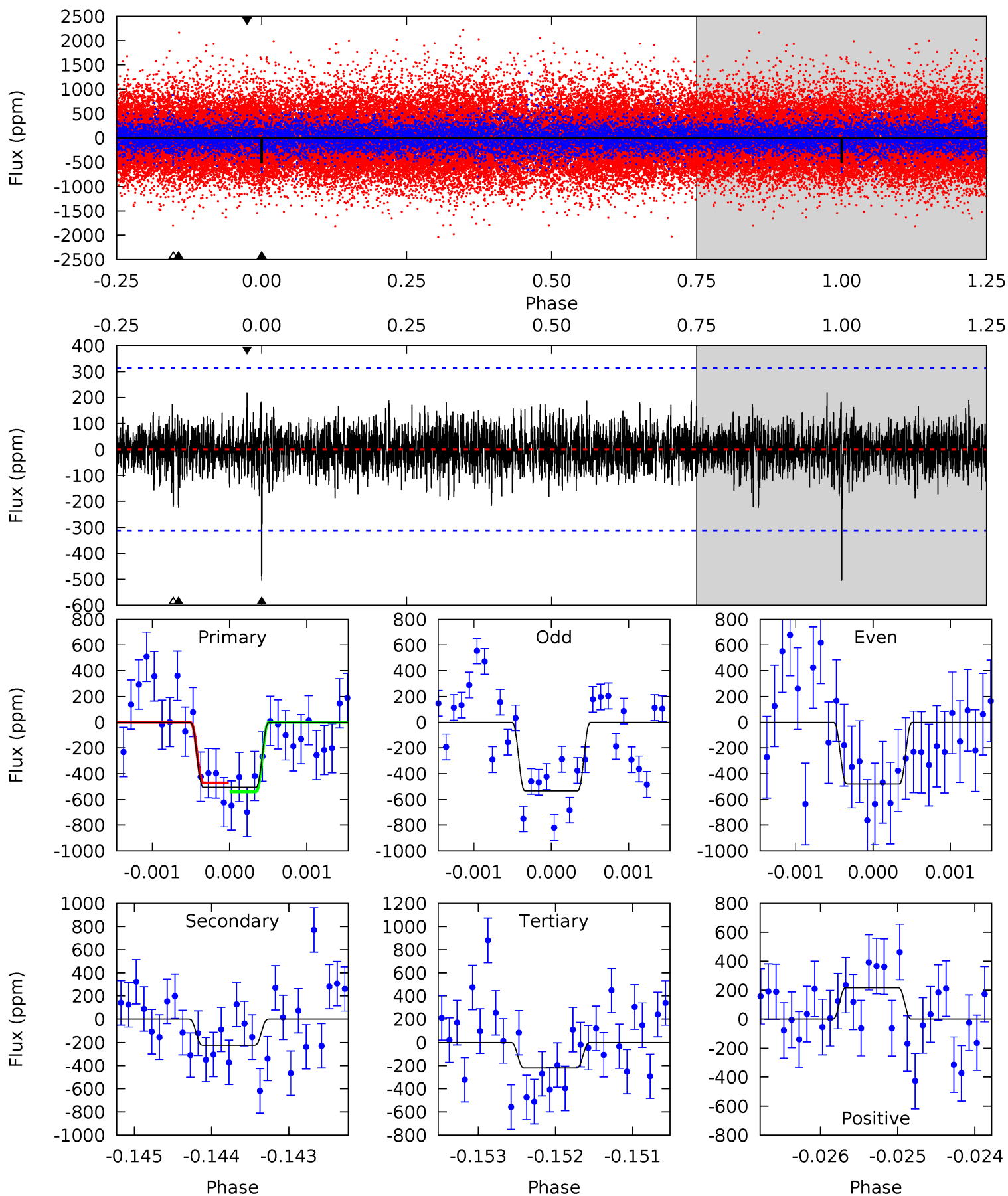
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 9.45 | 4.84 | 4.54 | 3.97 | 5.45 | 3.29 | 1.21 | 4.91 | 5.48 | 0.30 | 0.86 | 1.31 | 1.01 | 0.31 | 1.01 |



Alt Model-Shift Uniqueness Test

010321927-01, P = 321.018039 Days, E = 179.713429 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.79 | 3.89 | 3.86 | 3.77 | 5.44 | 3.27 | 1.04 | 4.93 | 5.02 | 0.04 | 0.12 | 0.47 | 0.95 | 0.30 | 0.59 |



Stellar Parameters For KIC 010321927

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5334^{+185}_{-185} | $4.492^{+0.112}_{-0.150}$ | $-0.320^{+0.350}_{-0.300}$ | $0.810^{+0.138}_{-0.101}$ | $0.743^{+0.113}_{-0.052}$ | $1.972^{+0.940}_{-0.753}$ |
| | +3%/-3% | +2%/-3% | +109%/-94% | +17%/-12% | +15%/-7% | +48%/-38% |
| Source | KIC0 | KIC0 | KIC0 | DSEP | | |

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010321927-01 / KOI 7997.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|-----------------------|----------------------------|
| DV | -290 ± 60 | $2.57^{+2.44}_{-1.68}$ | 326^{+20}_{-18} | 4307^{+2704}_{-920} | $16685^{+124131}_{-12297}$ |
| Alt. | -224 ± 58 | $2.76^{+2.25}_{-1.78}$ | 326^{+20}_{-18} | 4025^{+2105}_{-744} | 11138^{+79629}_{-7778} |

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

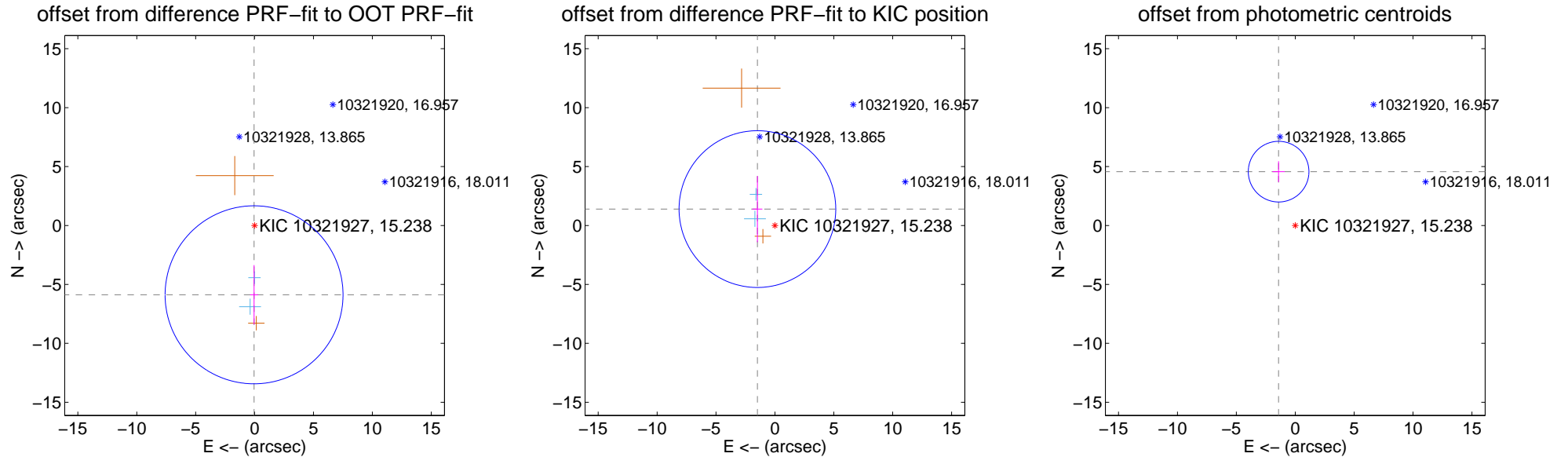
DV Centroid Data

Supplemental centroid analysis for 010321927-01. Kepler magnitude: 15.24. Transit SNR 7.04

There are 2 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 7.58 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 5.882 ± 2.518 | 2.34 | 0.043 ± 0.336 | -5.881 ± 2.520 |
| PRF-fit source offset from KIC position | 2.035 ± 2.217 | 0.92 | 1.485 ± 0.424 | 1.392 ± 2.803 |
| photometric centroid source offset | 4.78 ± 0.86 | 5.57 | 1.41 ± 0.52 | 4.57 ± 0.88 |

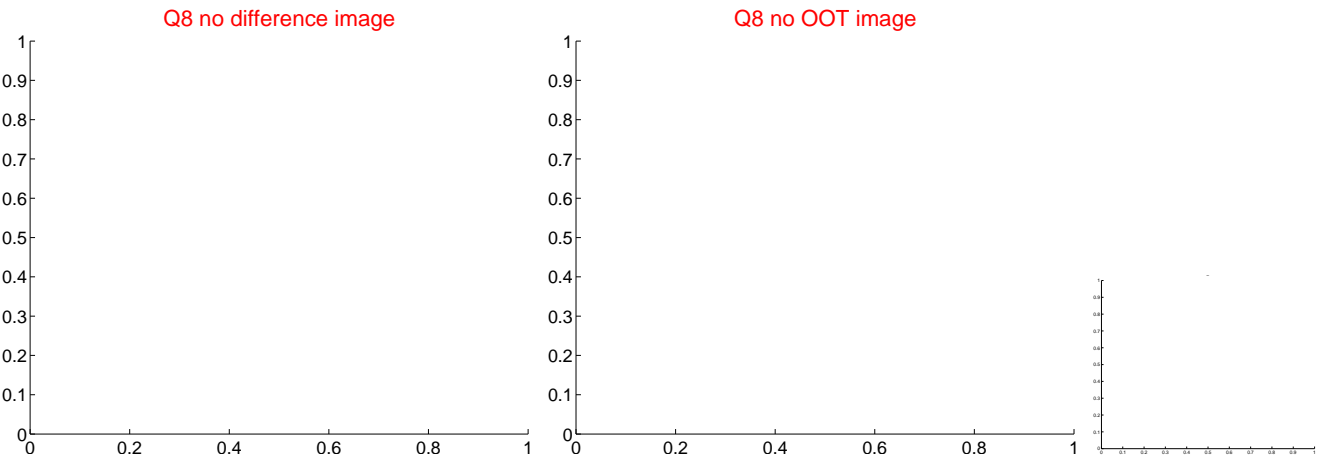
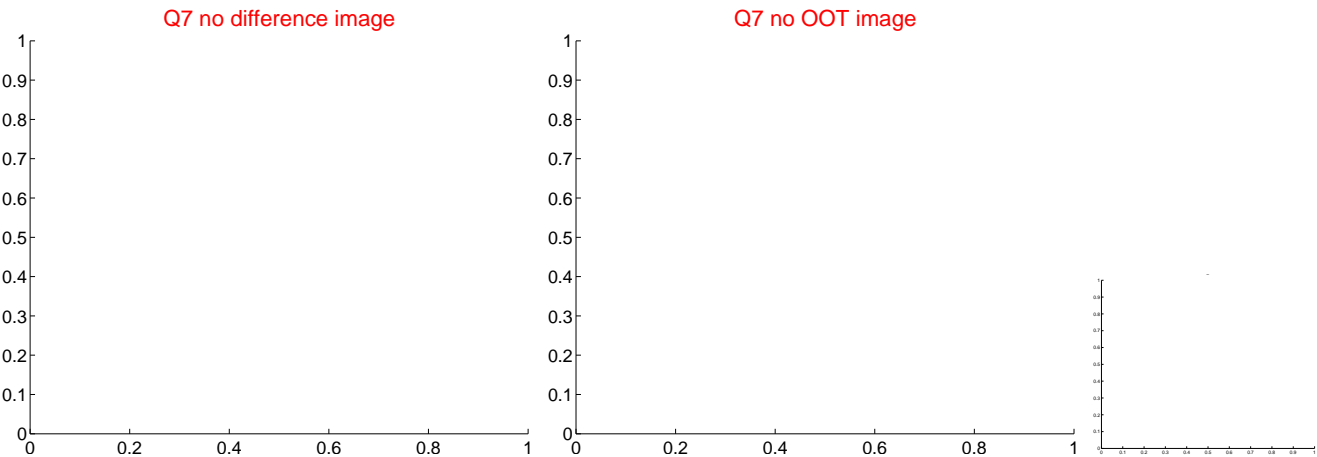
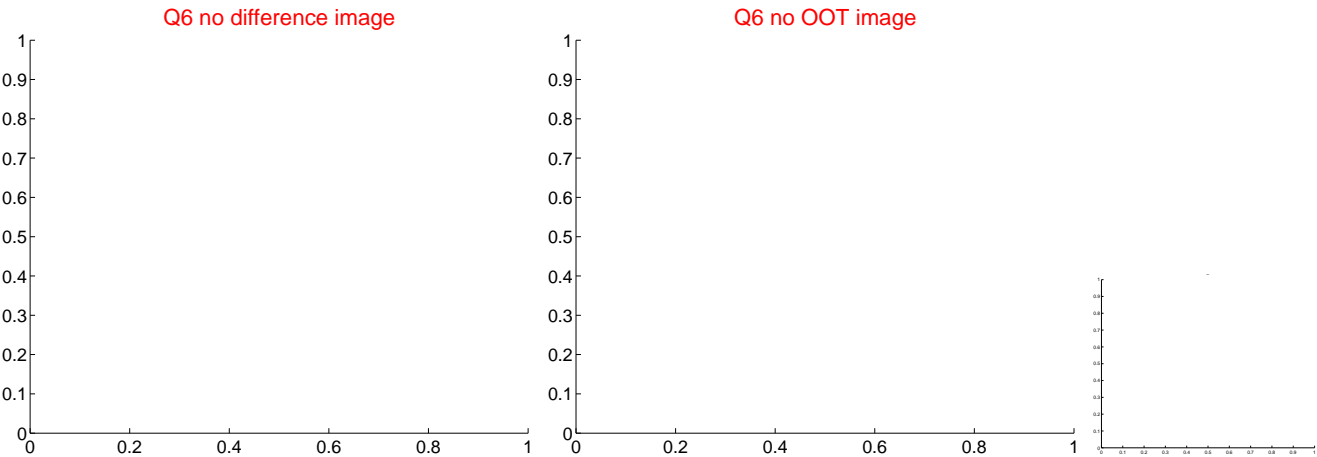
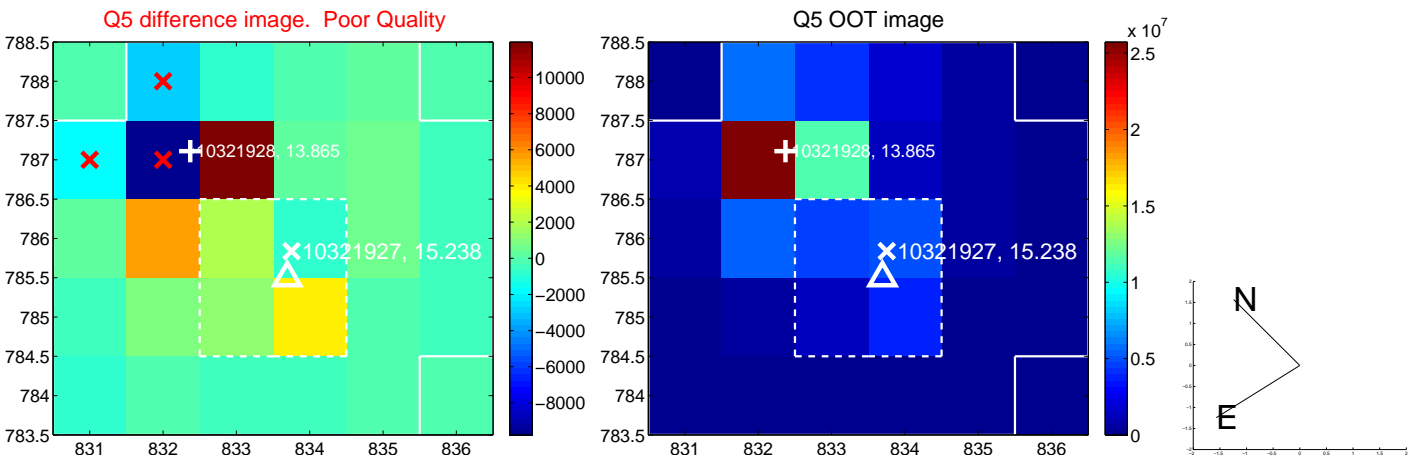


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

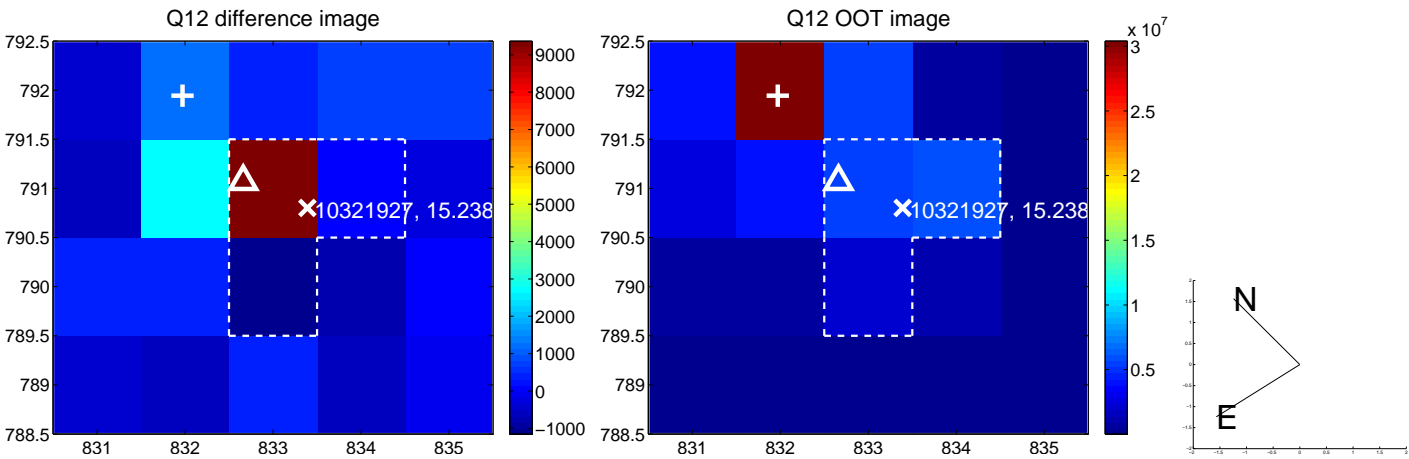
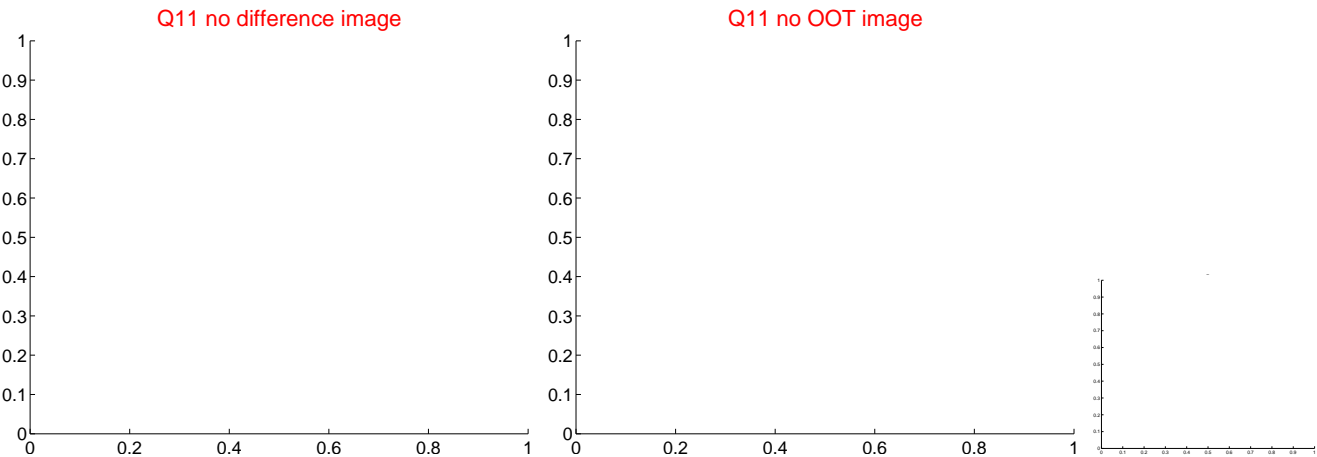
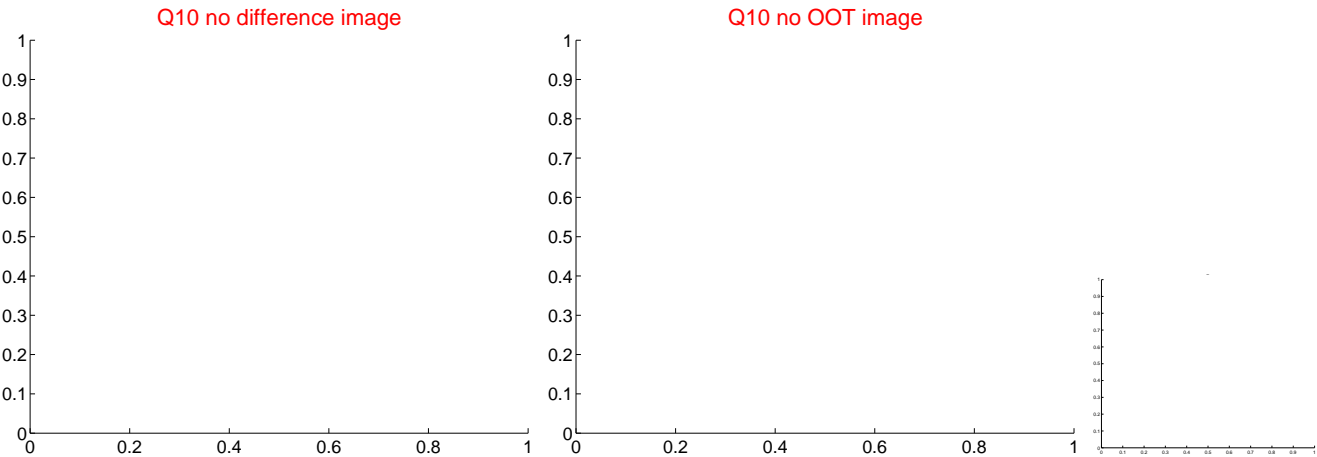
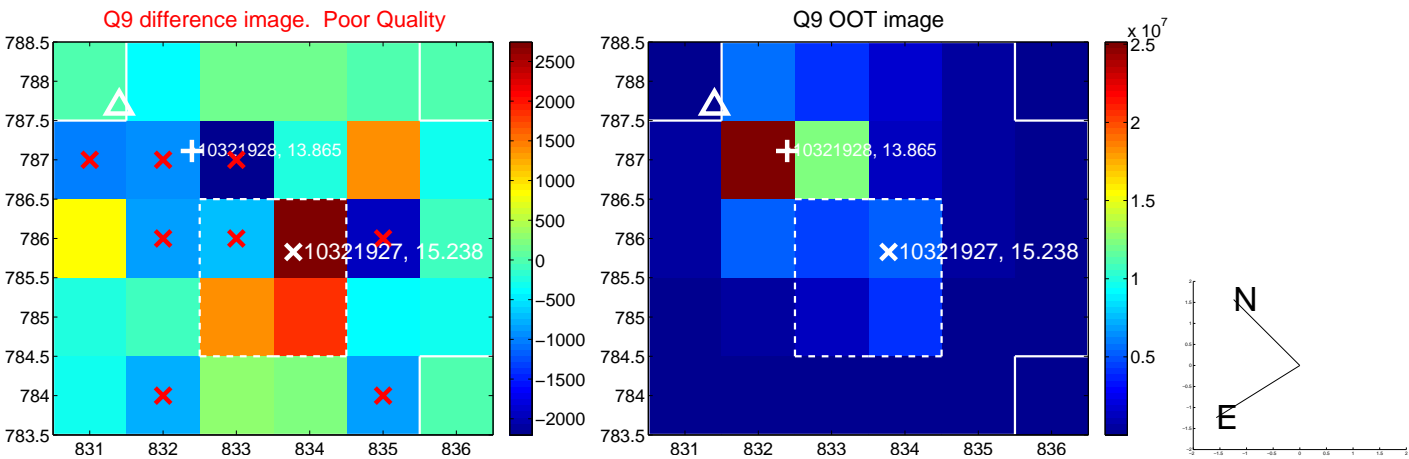
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



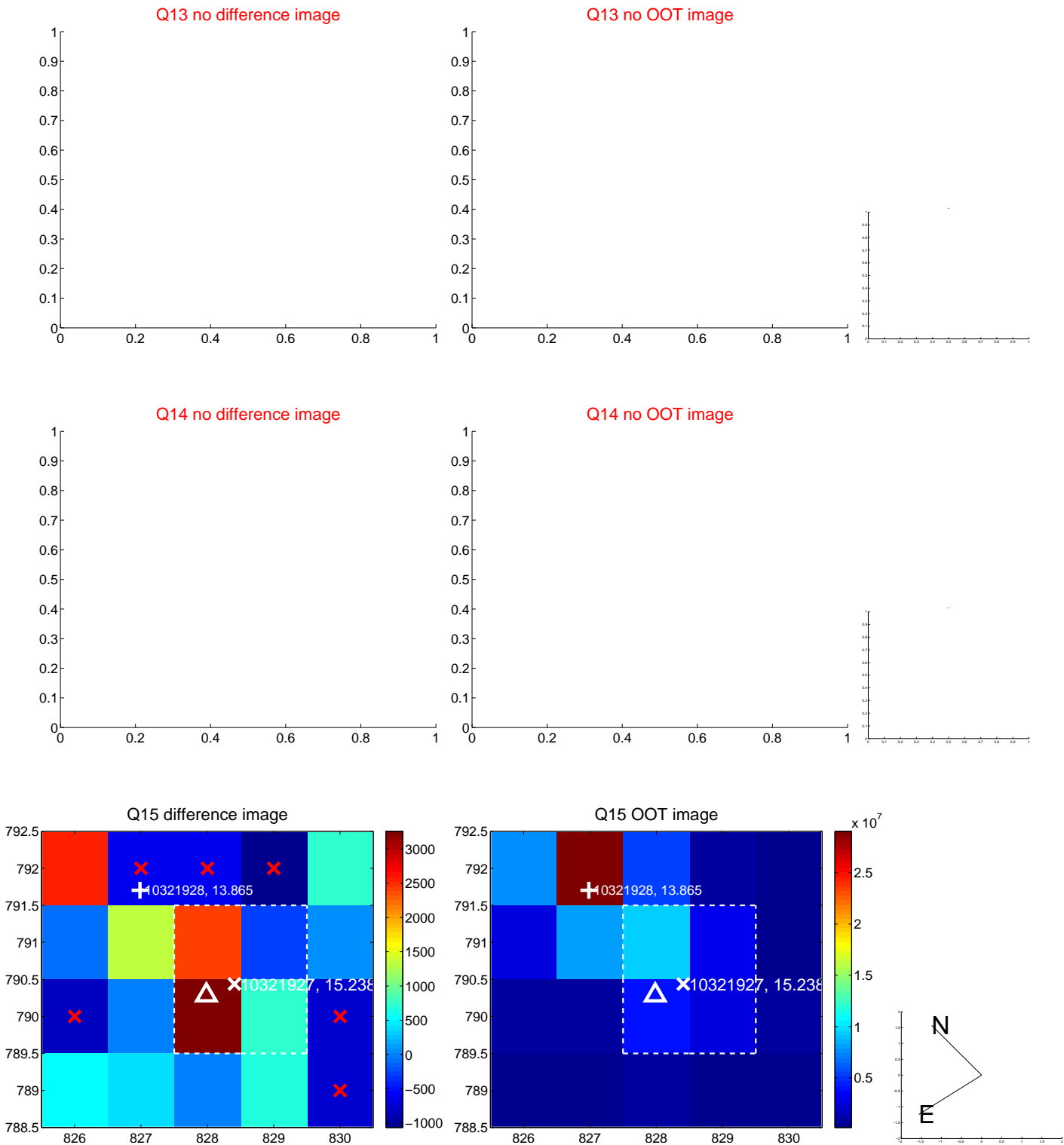
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



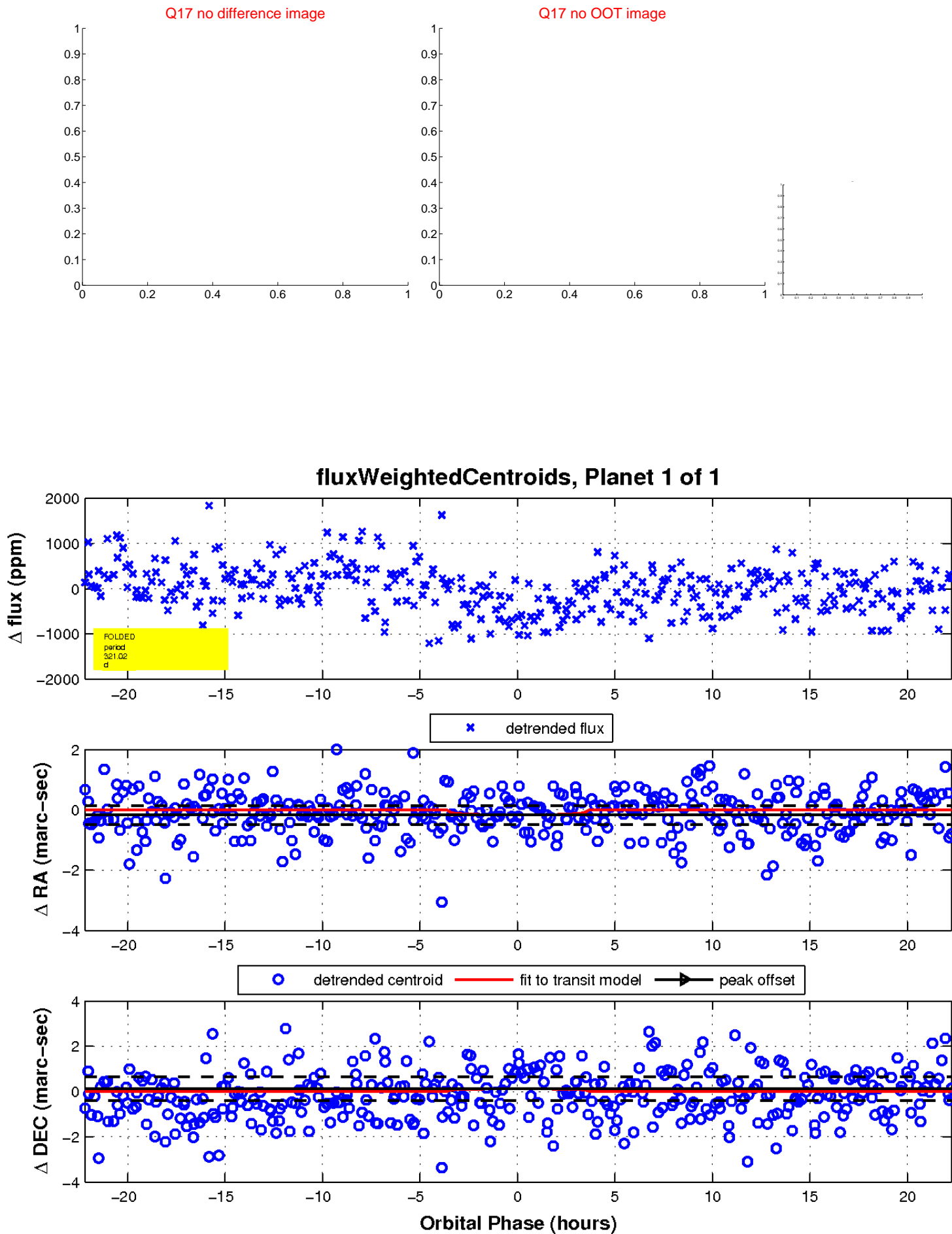
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

