

KIC 010854166

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 010854166-01 | OBS | No | 1.263540 | 132.351768 | 3.4 | 11.461 | 9.1 | 2.4 | 1.20 | 6576 | 0.24 | 4107.10 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 010854166-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | SWEET_NTL—LPP_DV—LPP_ALT—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.

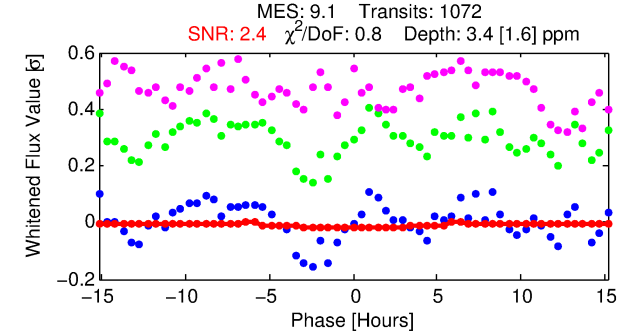
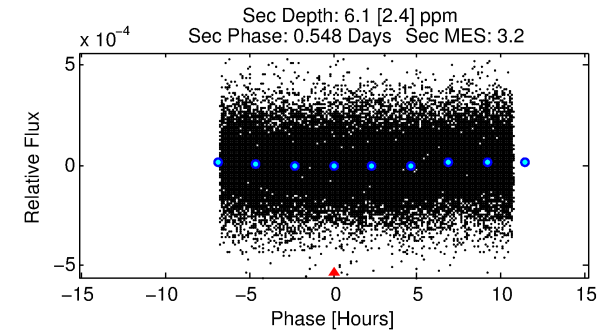
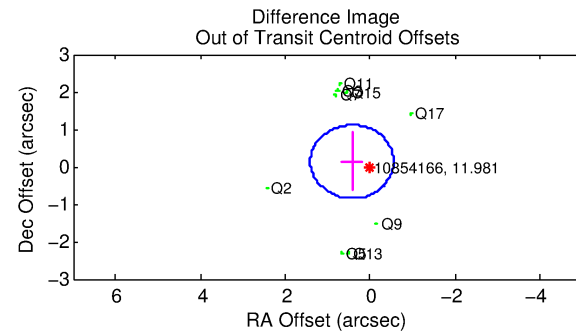
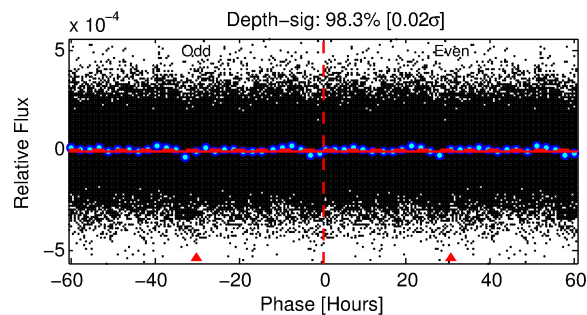
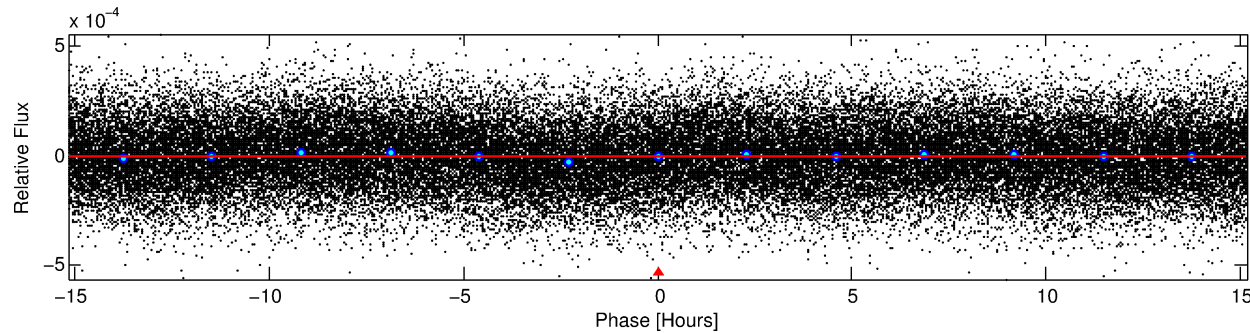
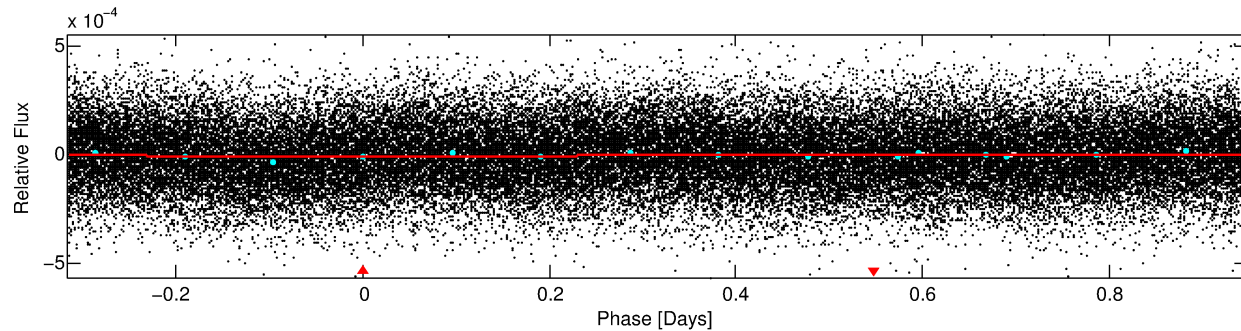
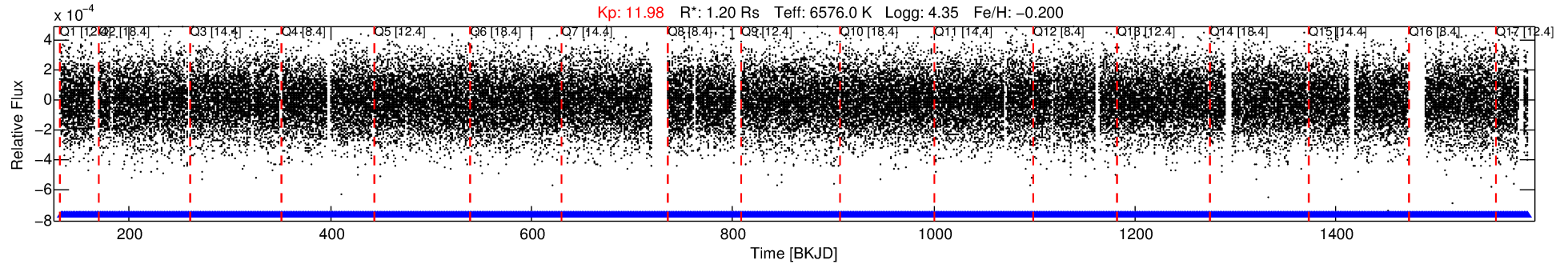
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010854166-01

No Significant Match Found

DV One-Page Summary

KIC: 10854166 Candidate: 1 of 1 Period: 1.264 d



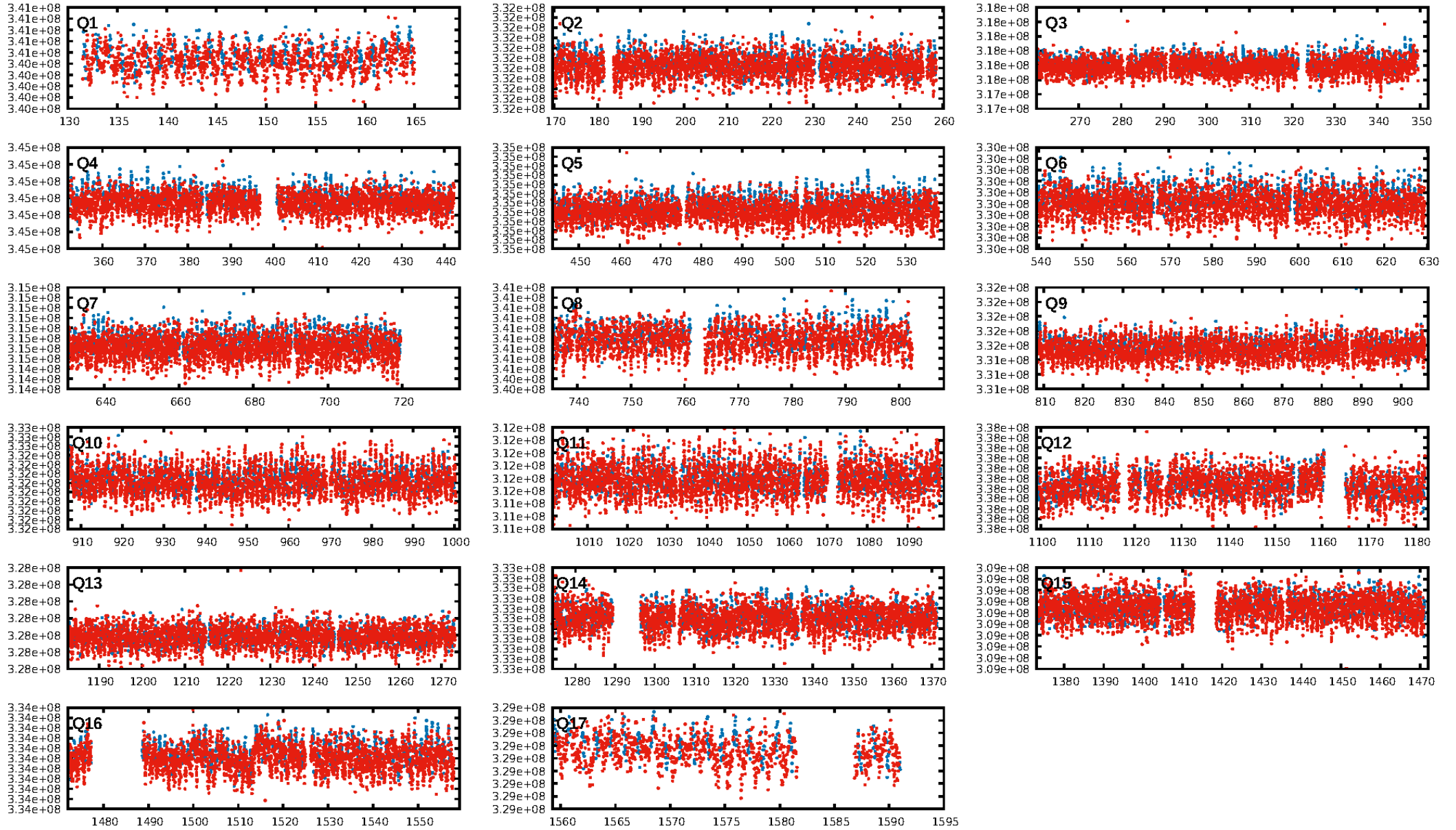
DV Fit Results:

Period = 1.26354 [0.00011] d
Epoch = 132.3518 [0.0293] BKJD
 $R_p/R^* = 0.0018$ [0.0050]
 $a/R^* = 1.04$ [1.22]
 $b = 0.72$ [10.37]
 $\text{Seff} = 4107.10$ [1718.47]
 $T_{\text{eq}} = 2041$ [214] K
 $R_p = 0.24$ [0.65] R_{e}
 $a = 0.0241$ [0.0065] AU
 $A_g = 34.84$ [190.21] [0.18 σ]
 $T_{\text{eff}} = 7668$ [10444] K [0.54 σ]

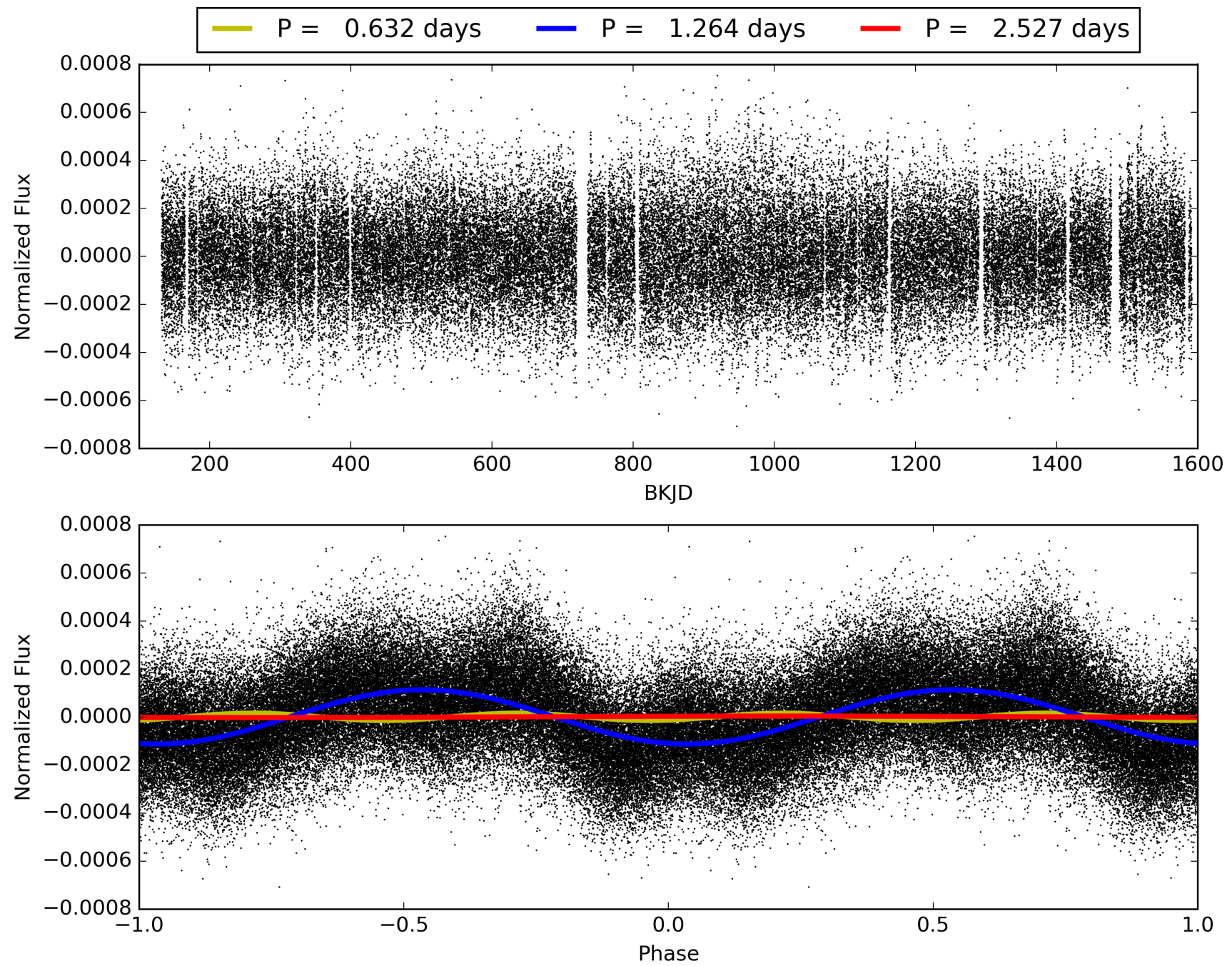
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1023/1023]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.445 arcsec [1.36 σ]
KicOffset-rm: 0.616 arcsec [2.21 σ]
OotOffset-st: 1/4/0/4 [9]
KicOffset-st: 1/4/0/4 [9]
DiffImageQuality-fgm: 0.33 [3/9]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 010854166-01, PDC Light Curves

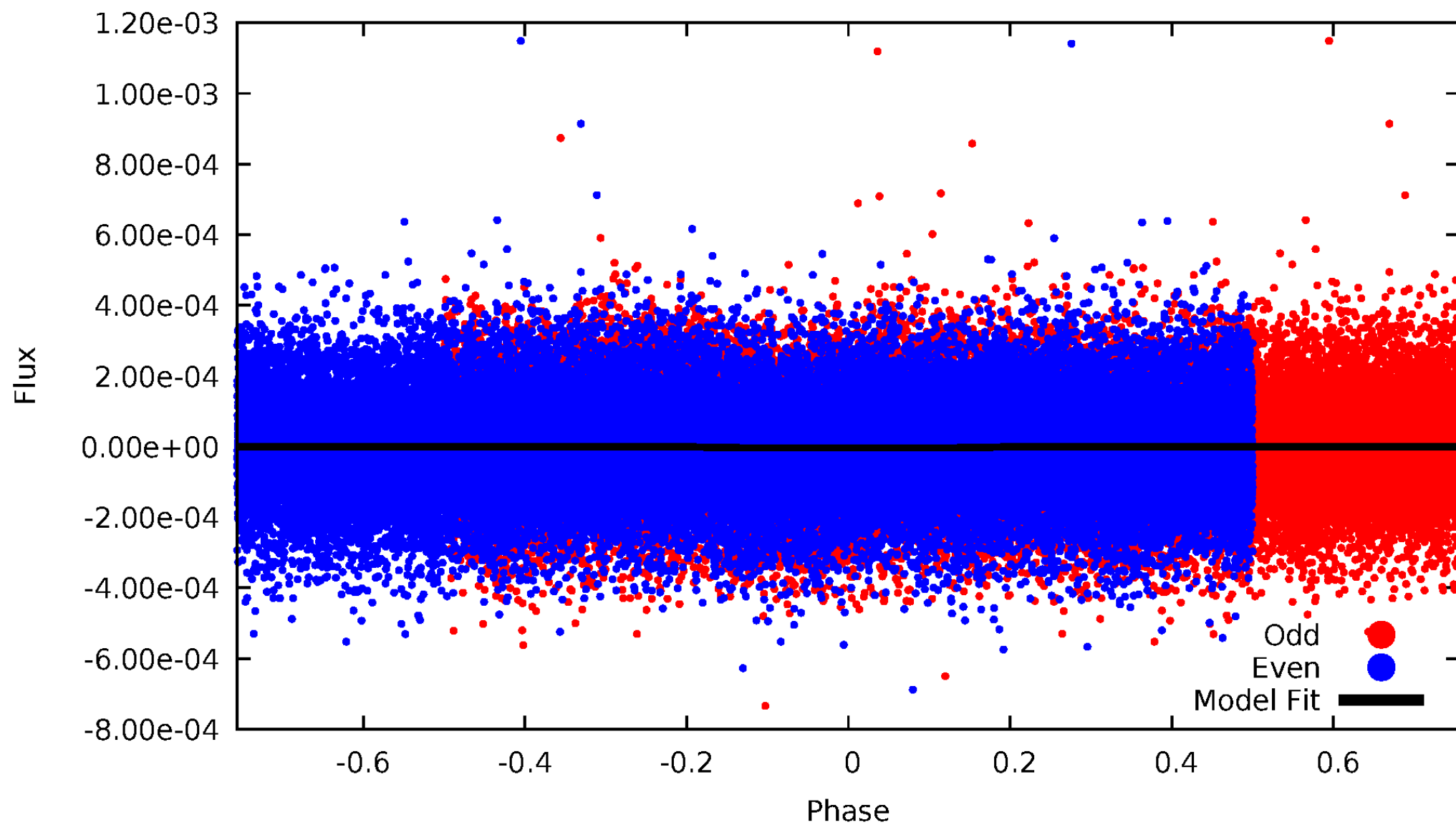


TCE 010854166-01



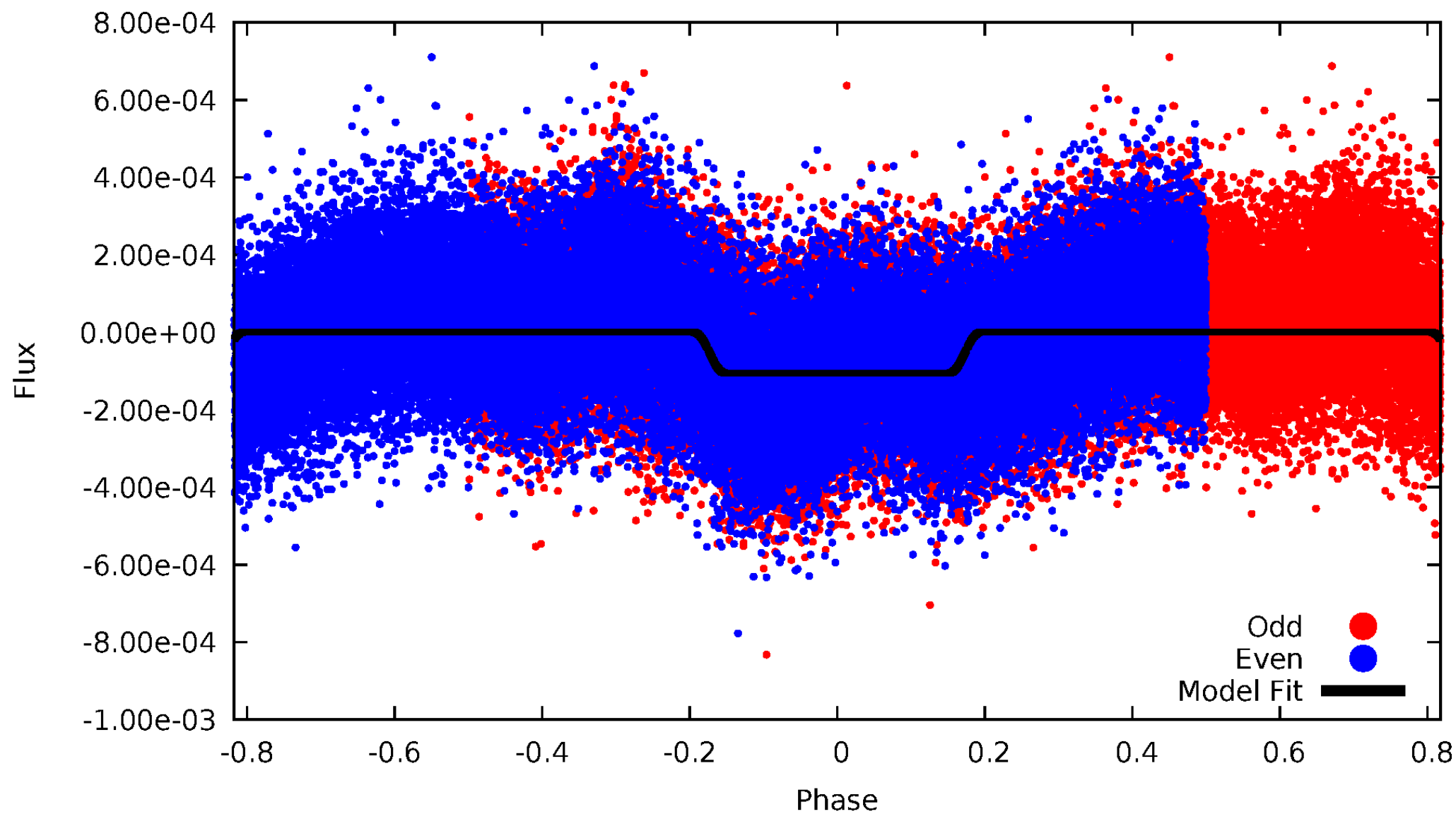
DV Odd/Even

TCE 010854166-01



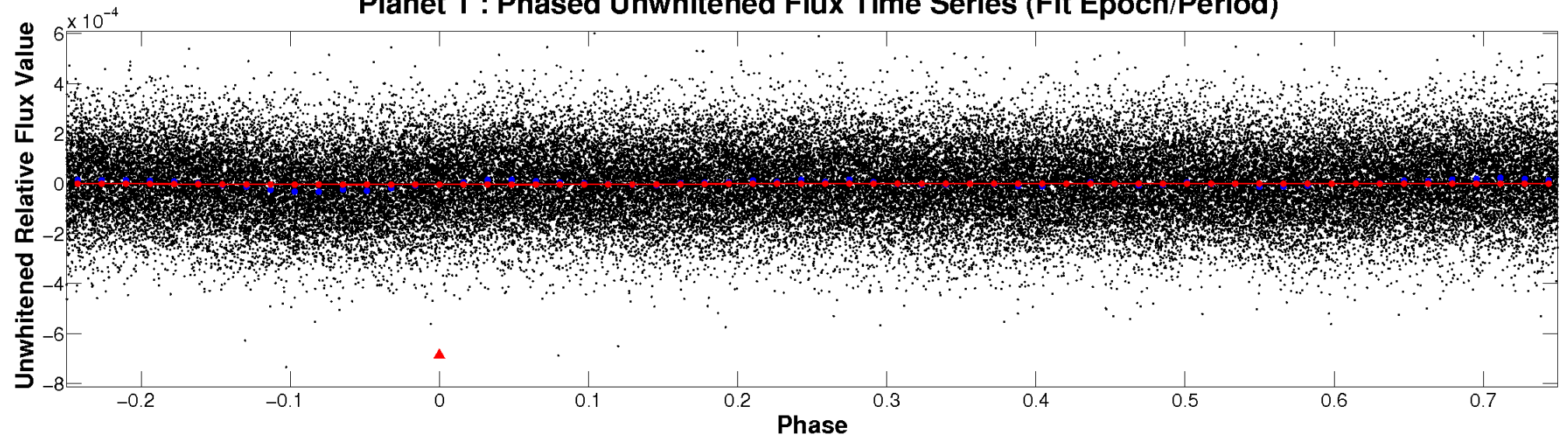
ALT Odd/Even

TCE 010854166-01

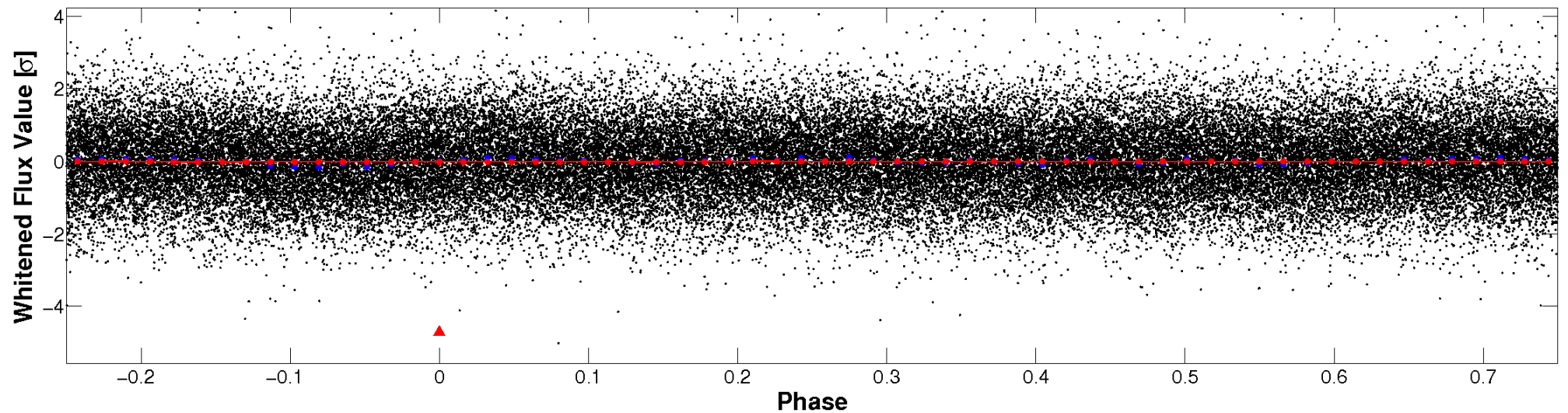


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

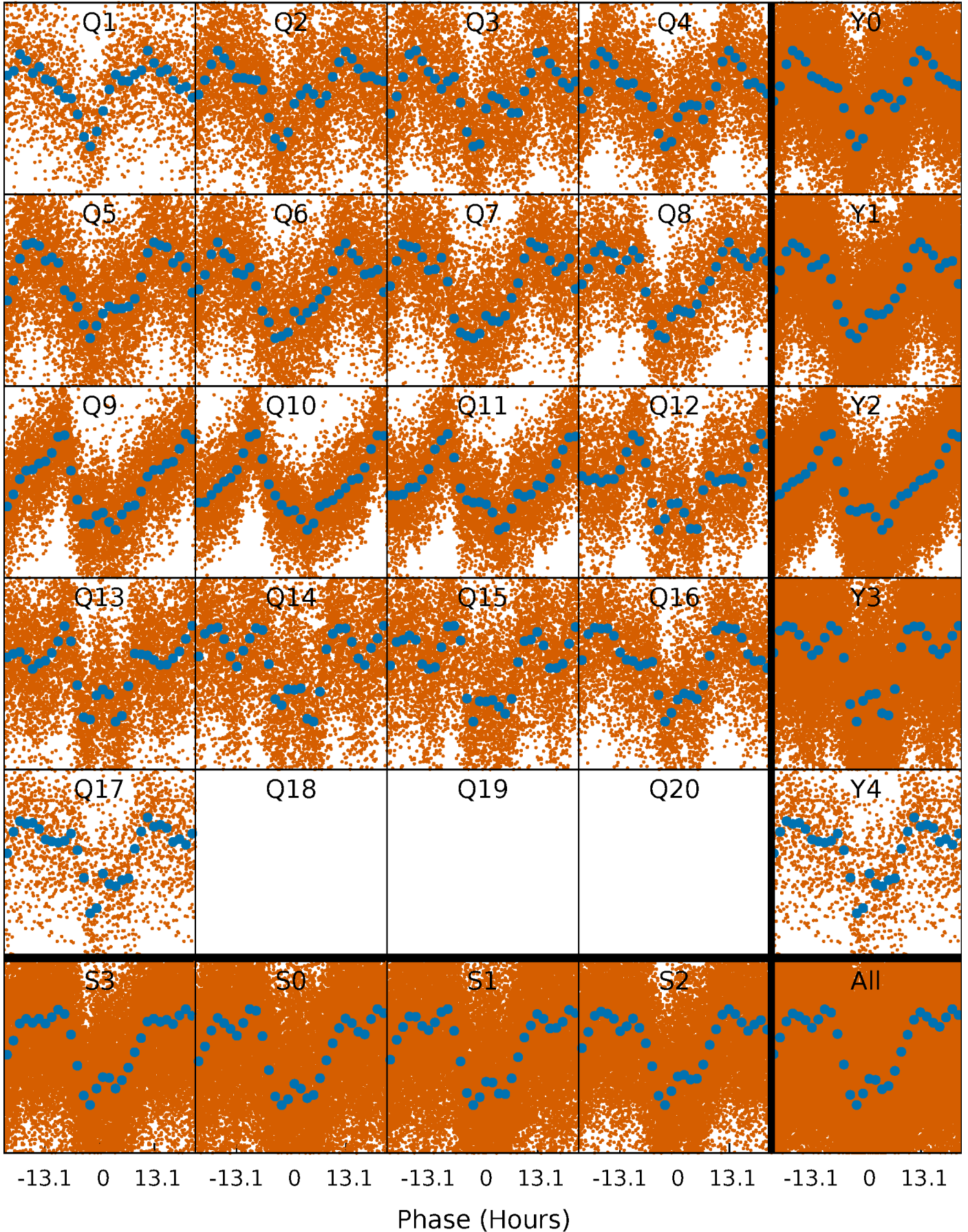


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



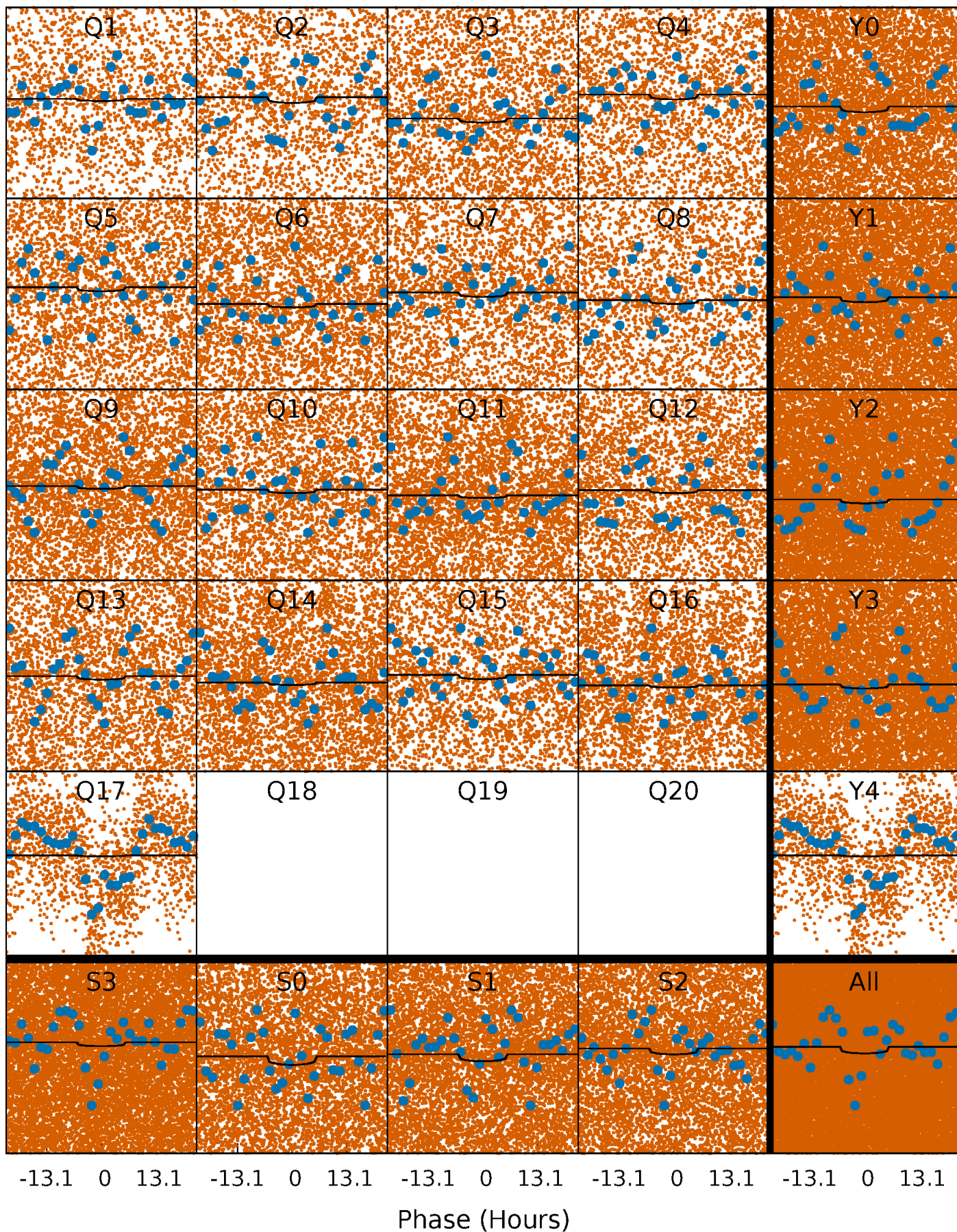
PDC Quarter-Phased Transit Curves

TCE 010854166-01 P= 1.263540 Days $T_0=132.351768$ (BKJD)



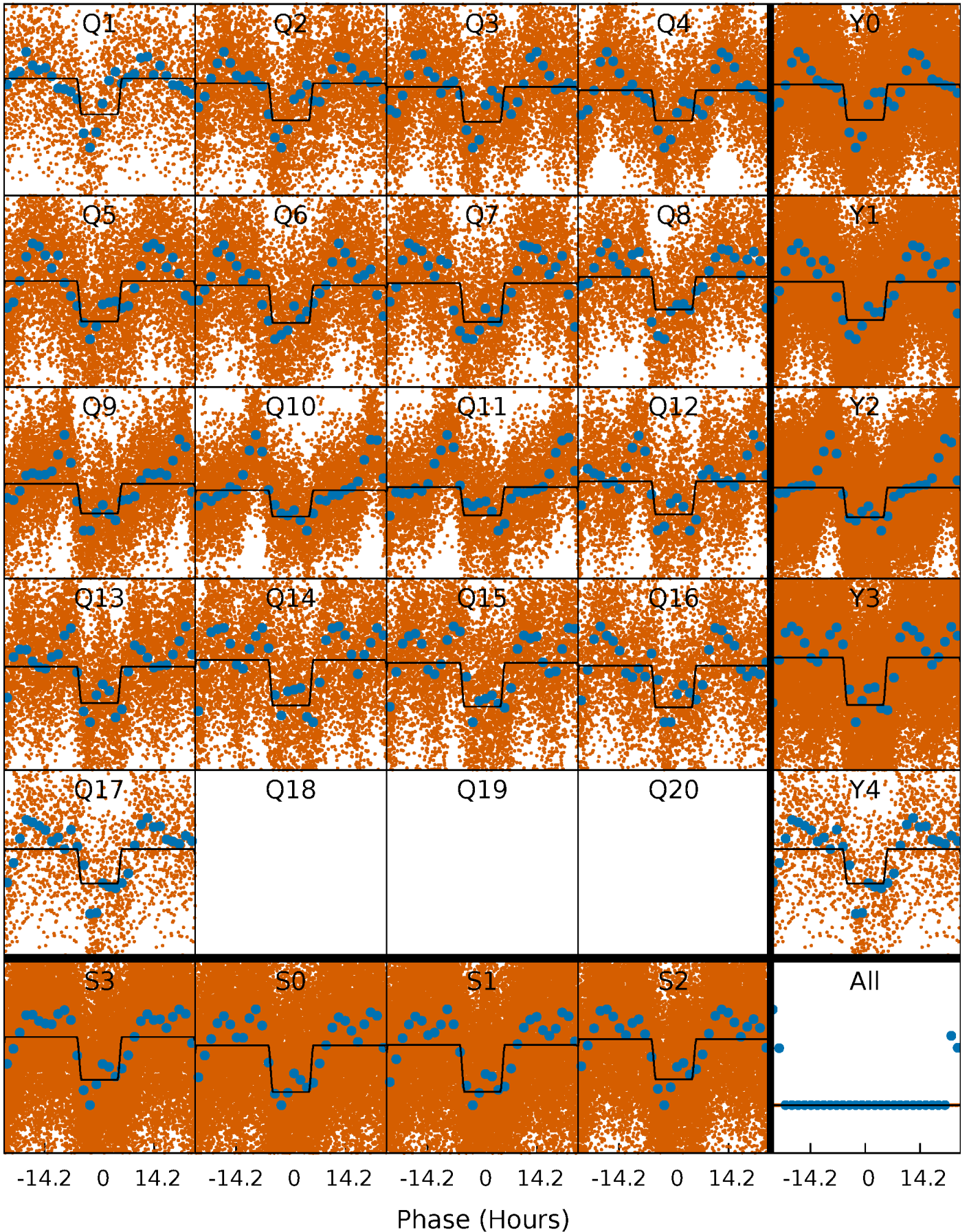
DV Quarter-Phased Transit Curves

TCE 010854166-01 P= 1.263540 Days $T_0=132.351768$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

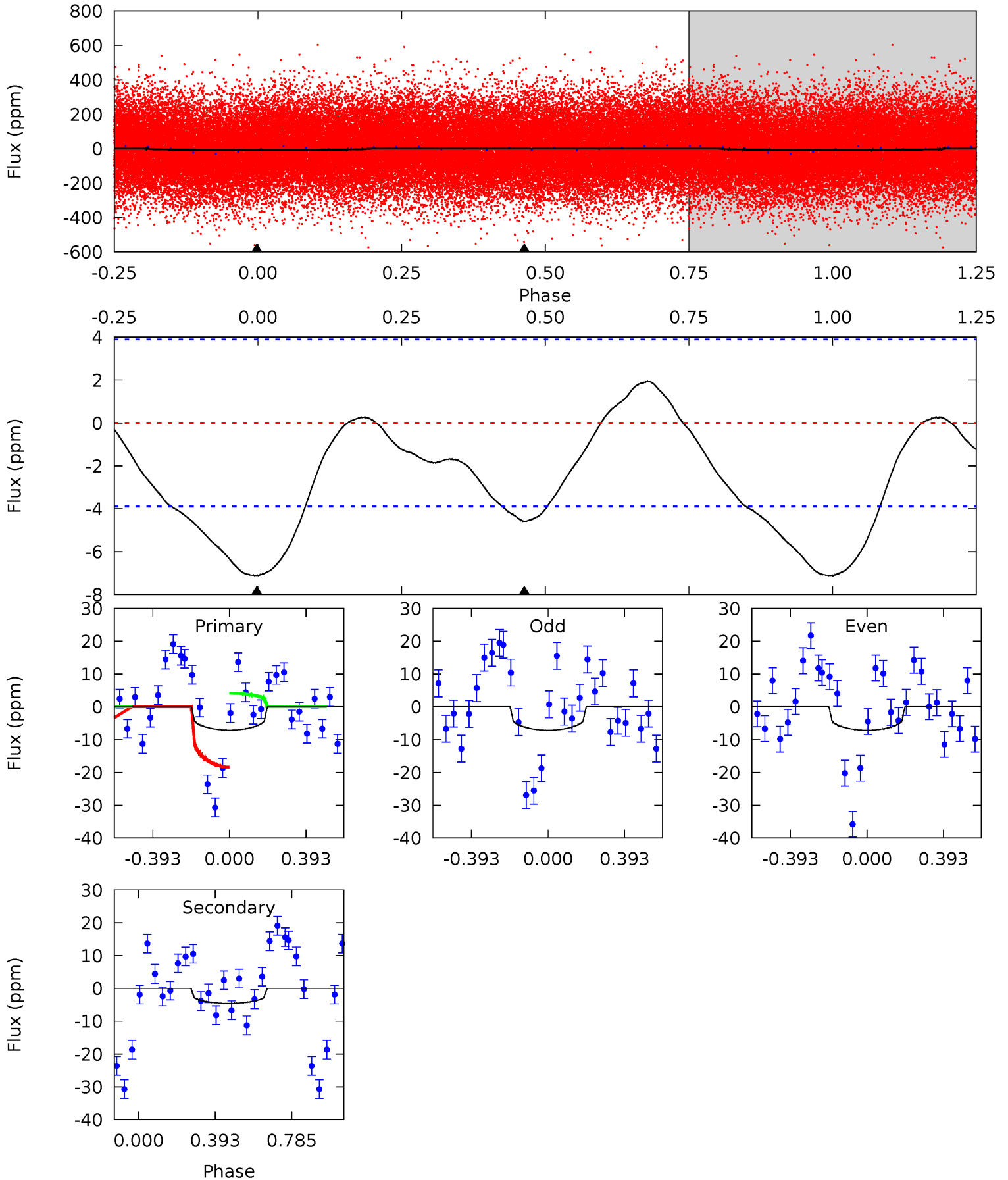
TCE 010854166-01 P= 1.263523 Days $T_0=132.361147$ (BKJD)



DV Model-Shift Uniqueness Test

010854166-01, P = 1.263540 Days, E = 131.088228 Days

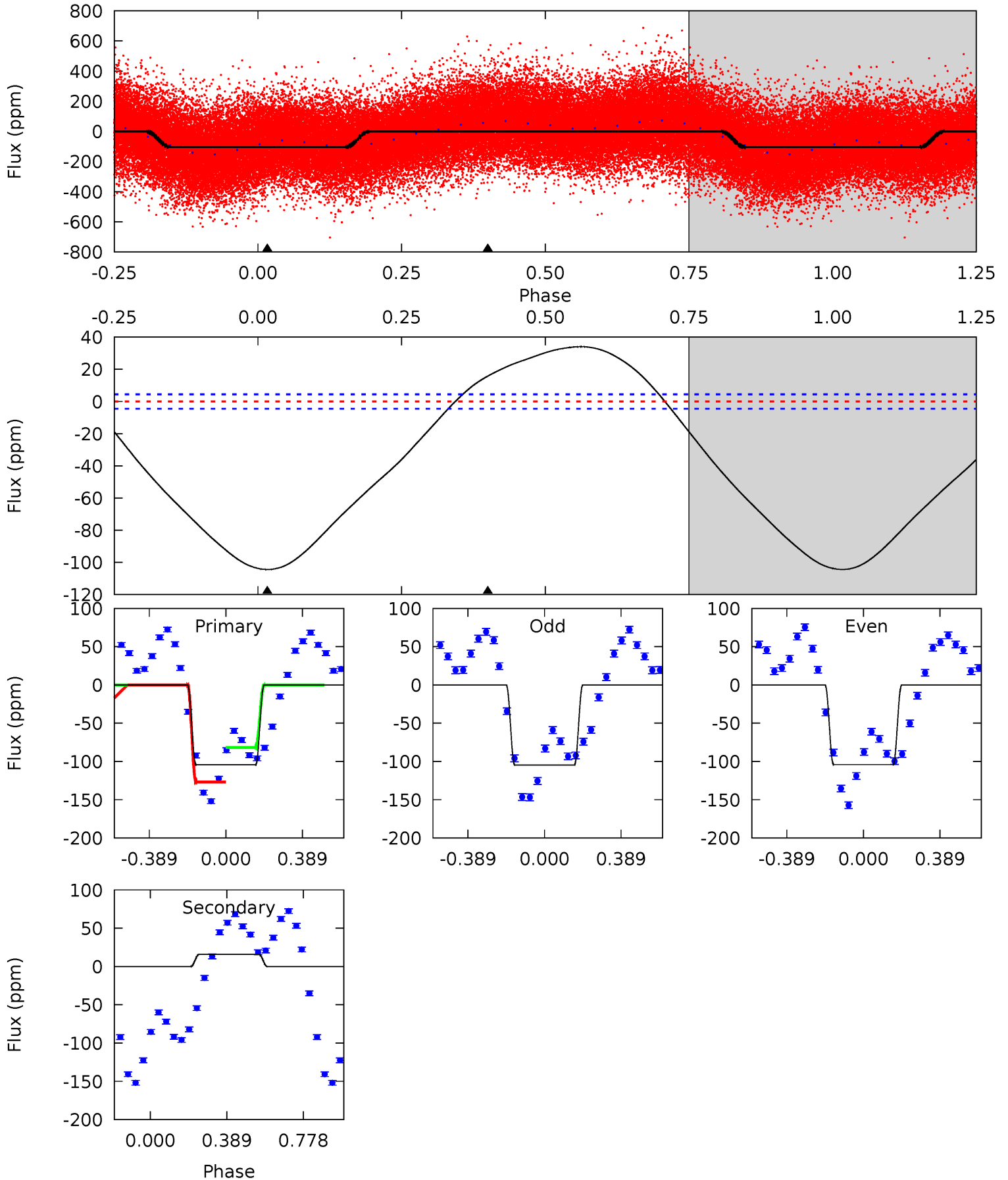
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.79 | 5.03 | 0 | 0 | 4.27 | 0.85 | 1.03 | 7.79 | 7.79 | 5.03 | 5.03 | 0.00 | 1.45 | 0.21 | 7.99 |



Alt Model-Shift Uniqueness Test

010854166-01, P = 1.263523 Days, E = 131.097624 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 98.8 | -14.9 | 0 | 0 | 4.27 | 0.86 | 11.9 | 98.8 | 98.8 | -14.9 | -14.9 | 0.32 | 1.01 | 0.25 | 23.5 |



Stellar Parameters For KIC 010854166

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6576^{+162}_{-255} | $4.353^{+0.084}_{-0.210}$ | $-0.200^{+0.250}_{-0.300}$ | $1.195^{+0.389}_{-0.167}$ | $1.180^{+0.175}_{-0.158}$ | $0.974^{+0.381}_{-0.528}$ |
| | +2%/-4% | +2%/-5% | +125%/-150% | +33%/-14% | +15%/-13% | +39%/-54% |
| Source | PHO54 | PHO54 | PHO54 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 010854166-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|------------------------|----------------------------|
| DV | -5 ± 1 | $0.54^{+0.54}_{-0.38}$ | 2883^{+215}_{-173} | 4860^{+4570}_{-1289} | $4.800^{+46.381}_{-3.594}$ |
| Alt. | 16 ± 1 | $1.40^{+0.72}_{-0.63}$ | 2882^{+238}_{-145} | -4376^{+506}_{-1138} | $-2.528^{+1.431}_{-5.840}$ |

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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

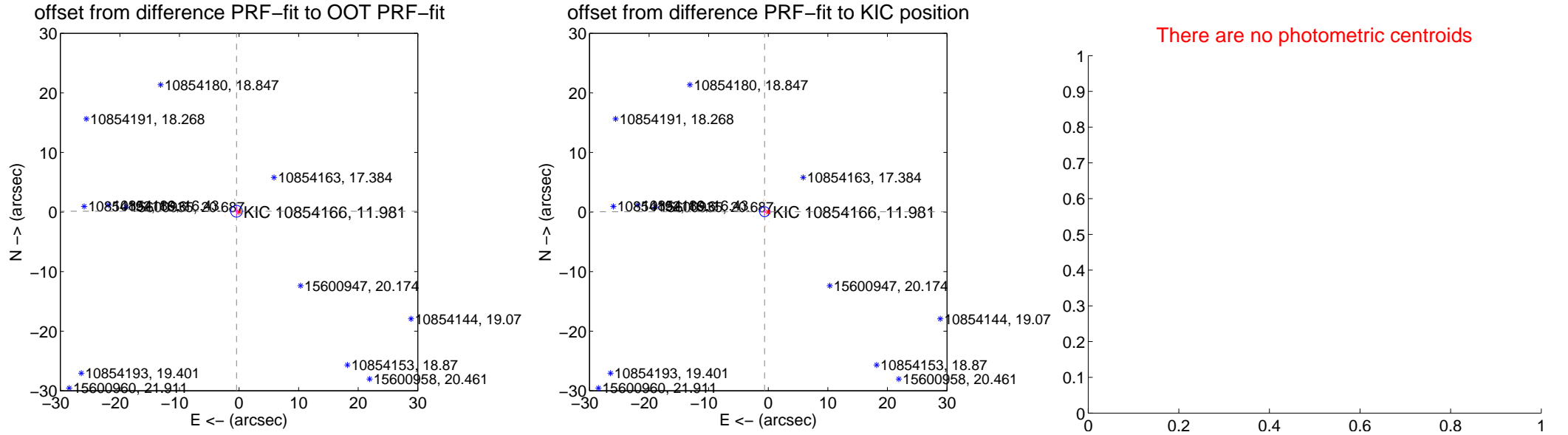
DV Centroid Data

Supplemental centroid analysis for 010854166-01. **Kepler magnitude: 11.98.** Transit SNR 2.38

There are 3 quarters with good PRF difference image offsets

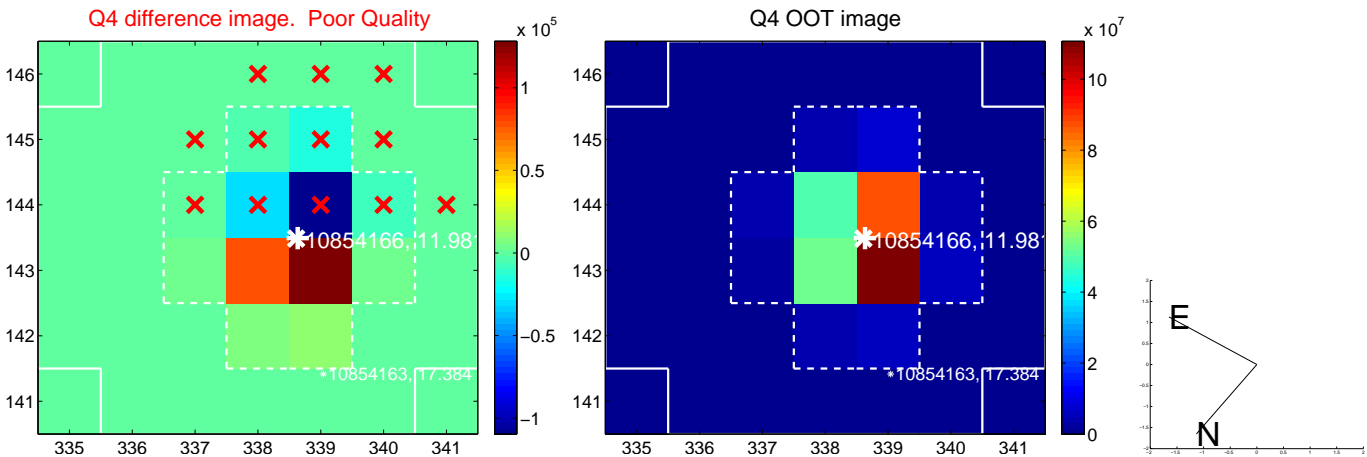
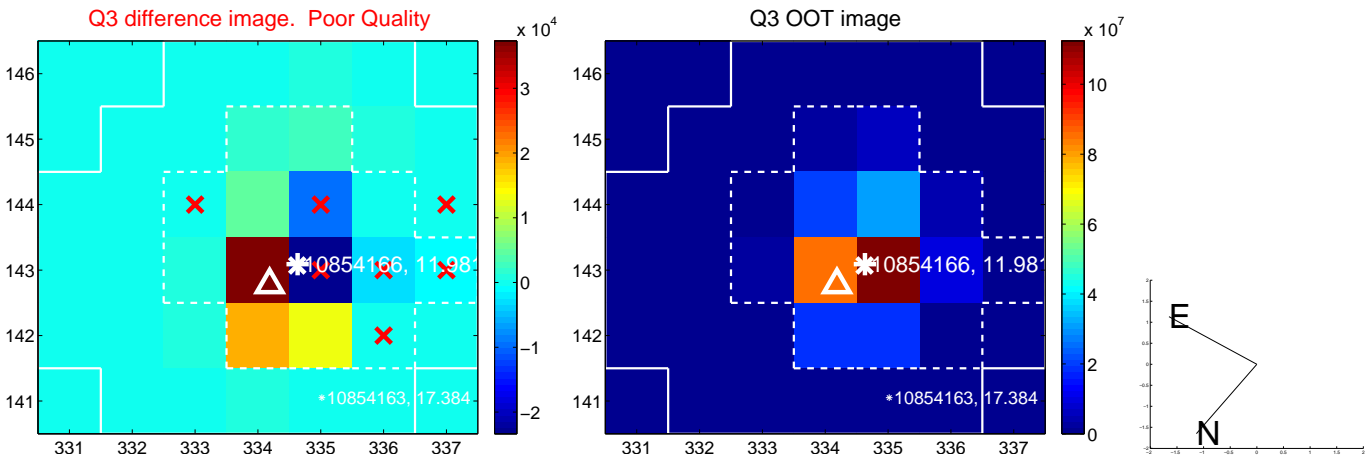
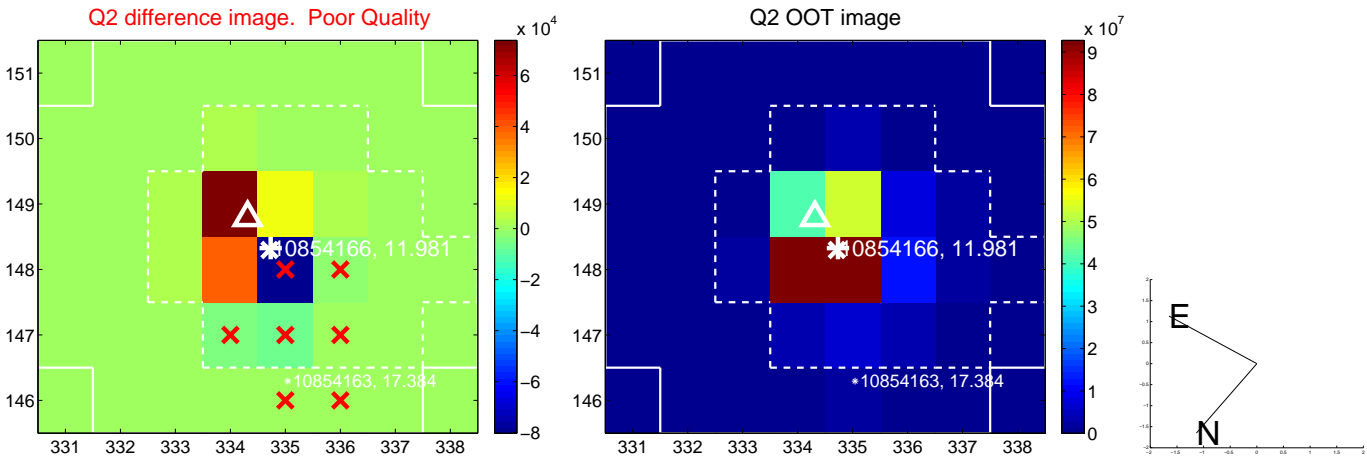
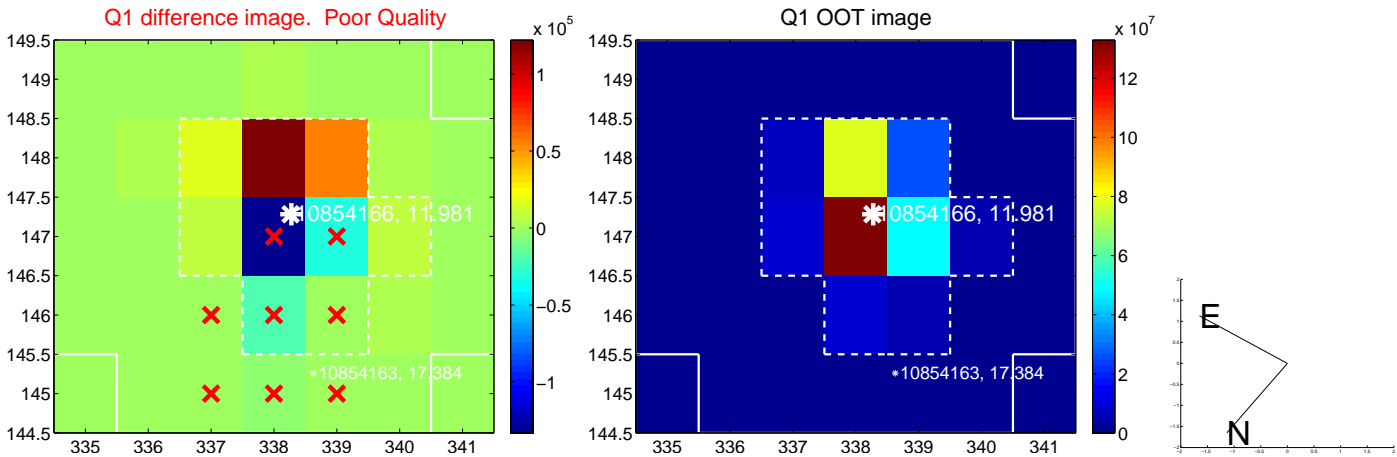
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.445 ± 0.327 | 1.36 | 0.425 ± 0.255 | 0.132 ± 0.776 |
| PRF-fit source offset from KIC position | 0.616 ± 0.278 | 2.21 | 0.614 ± 0.277 | 0.052 ± 0.609 |
| photometric centroid source offset | — | — | — | — |

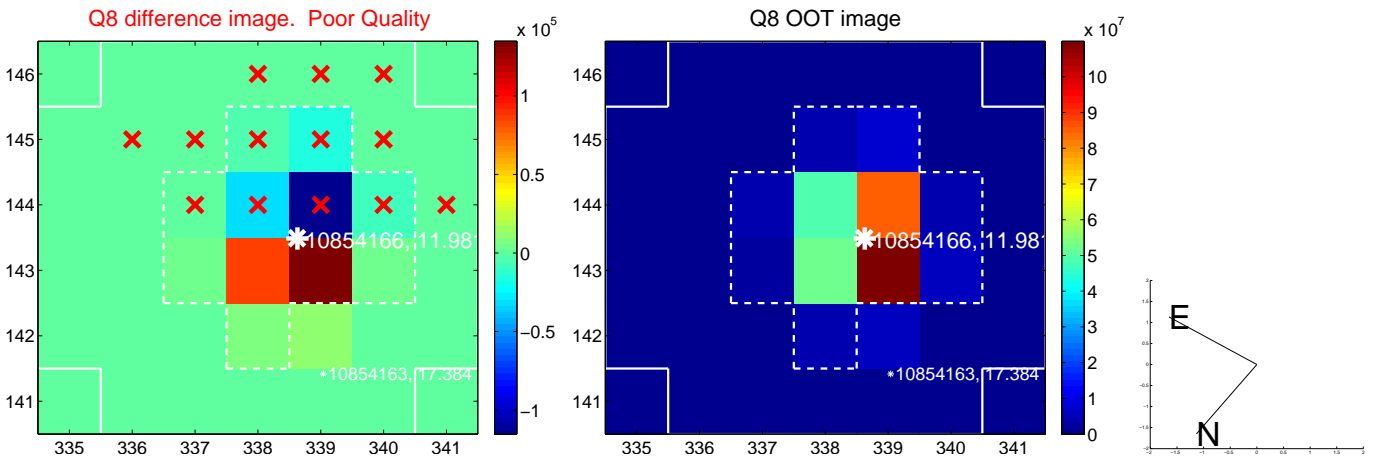
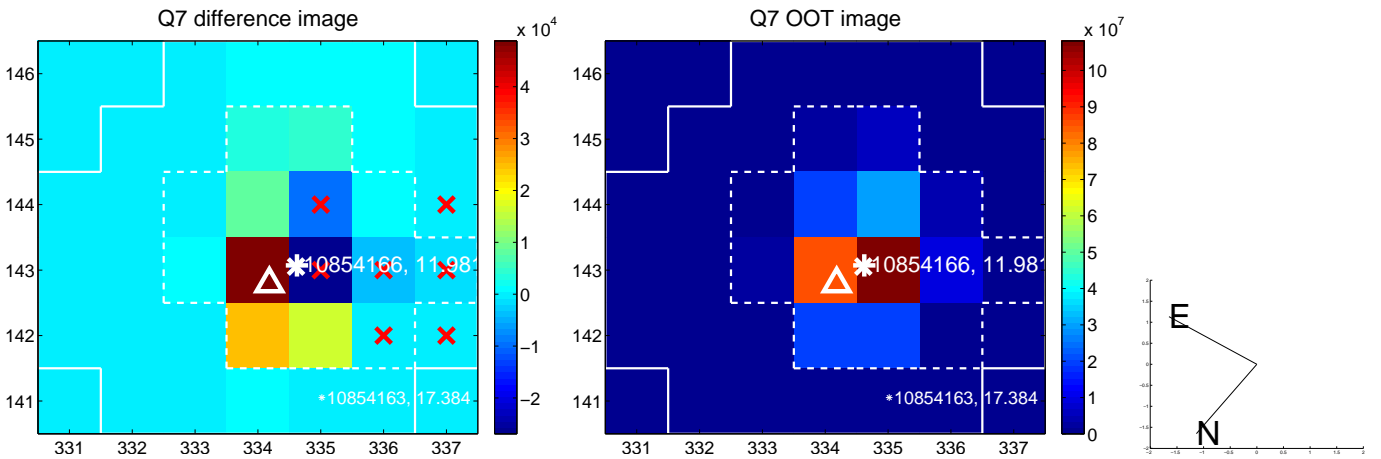
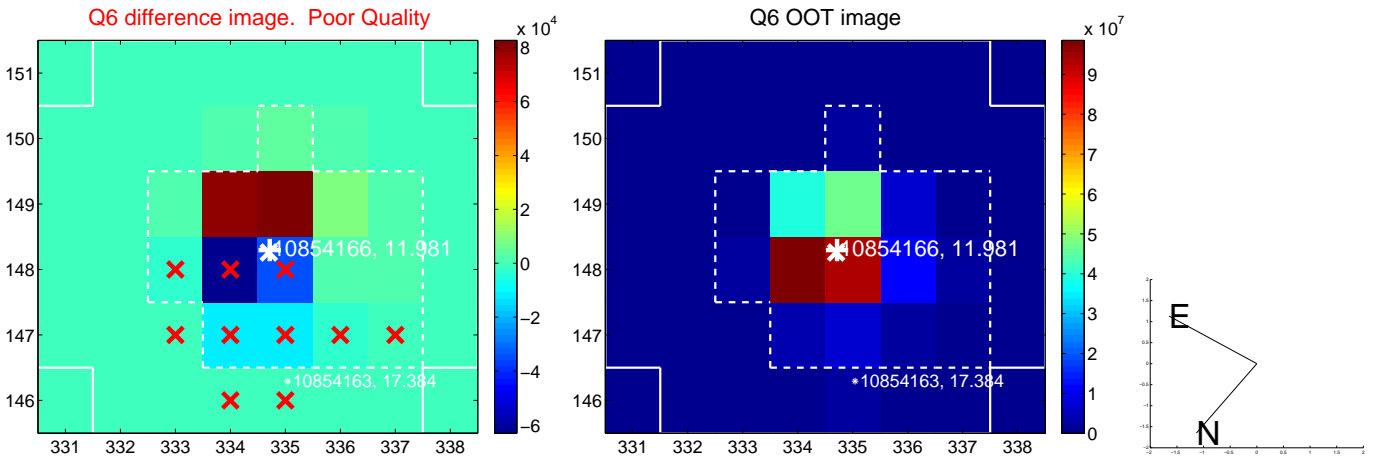
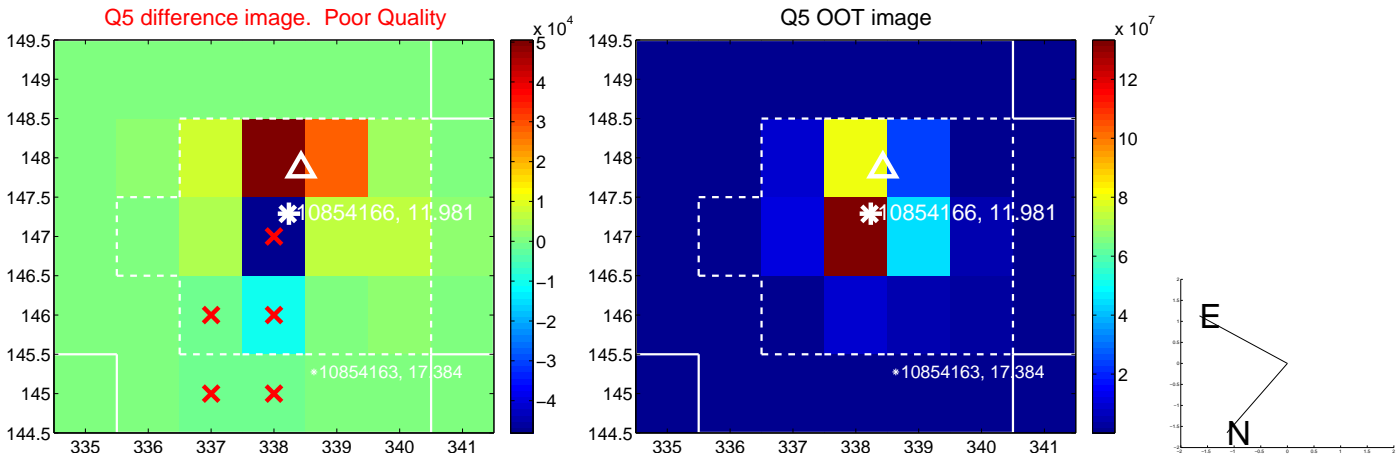


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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.

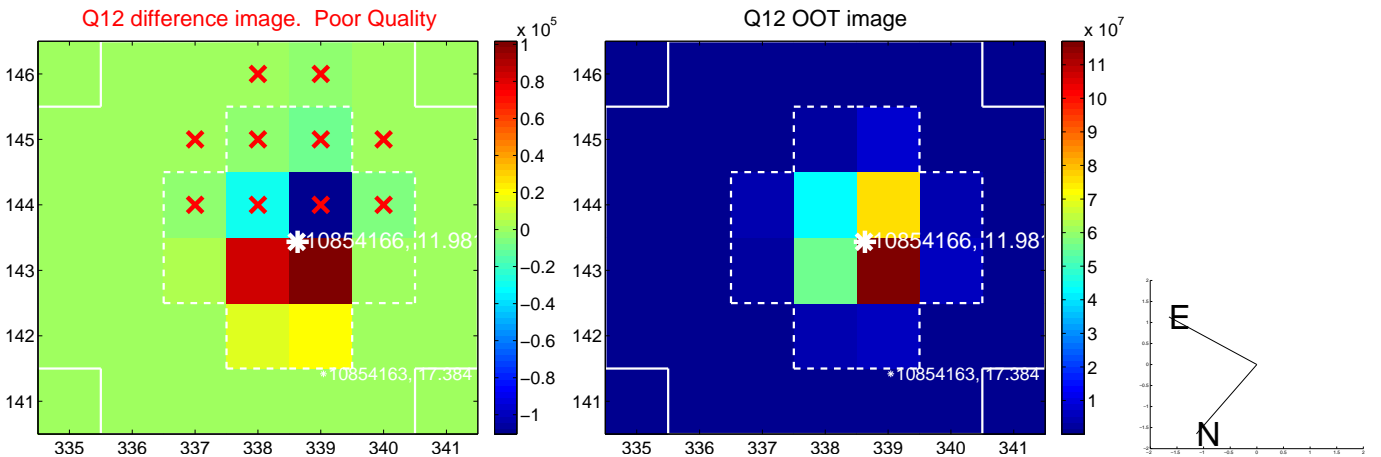
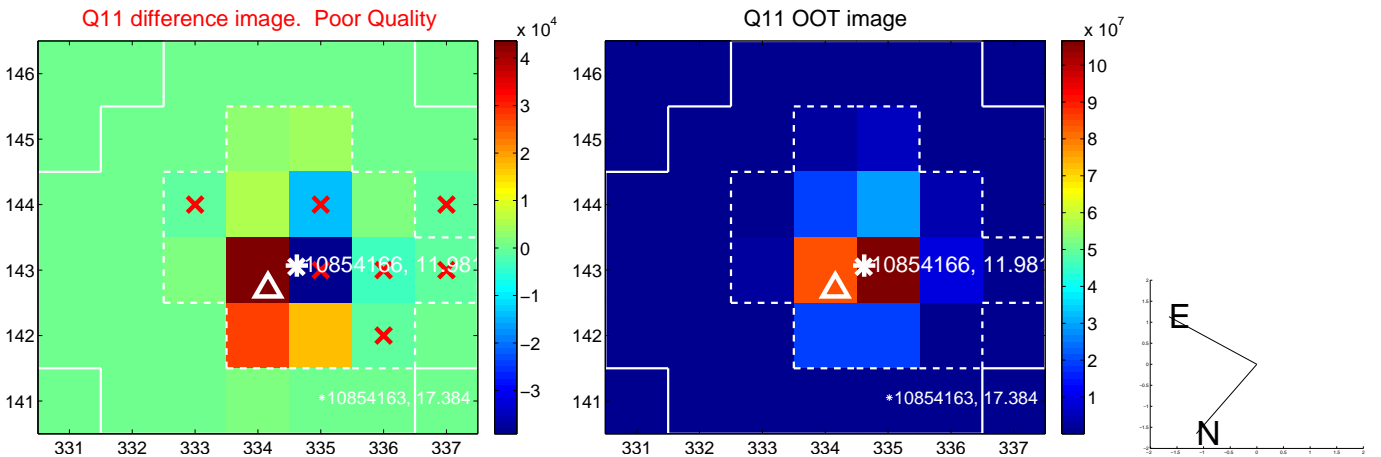
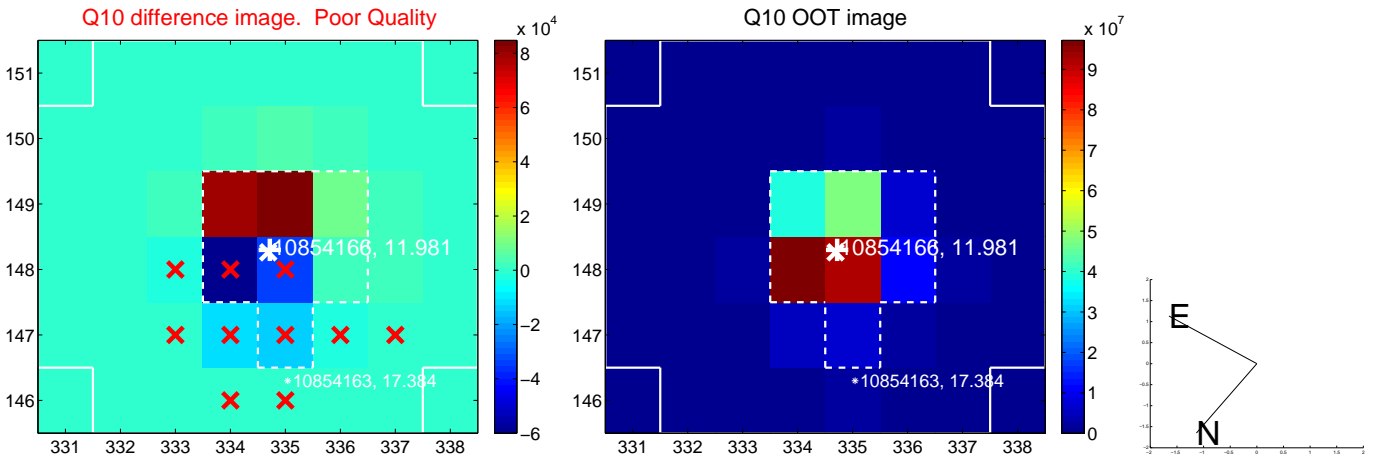
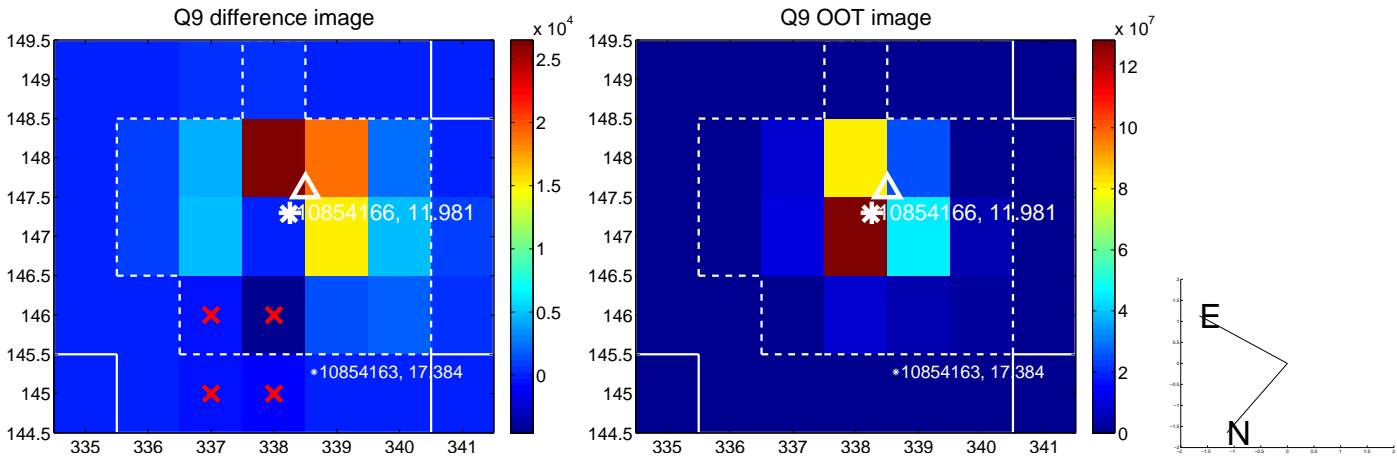
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



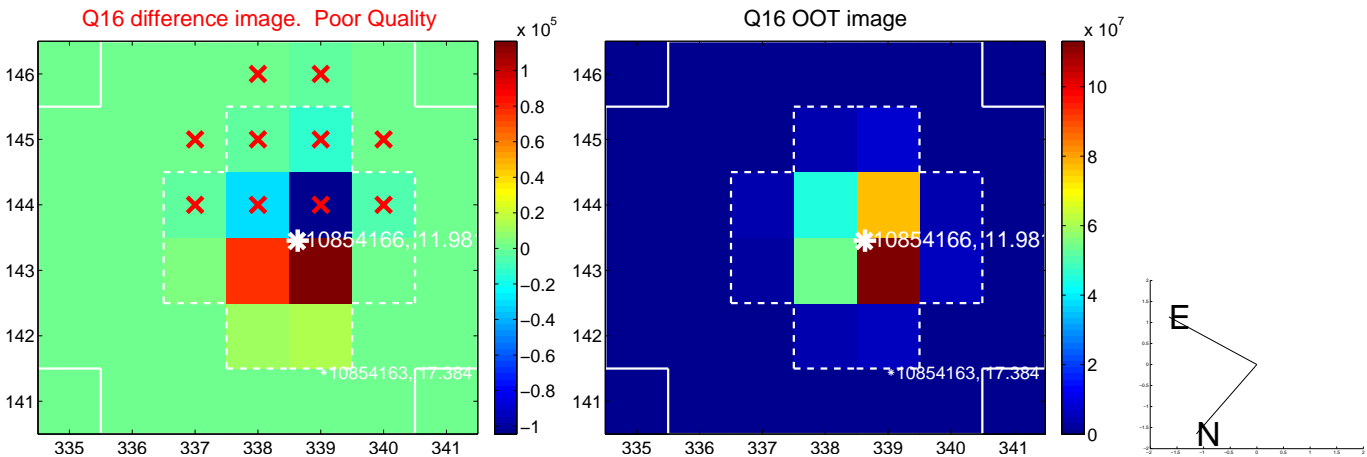
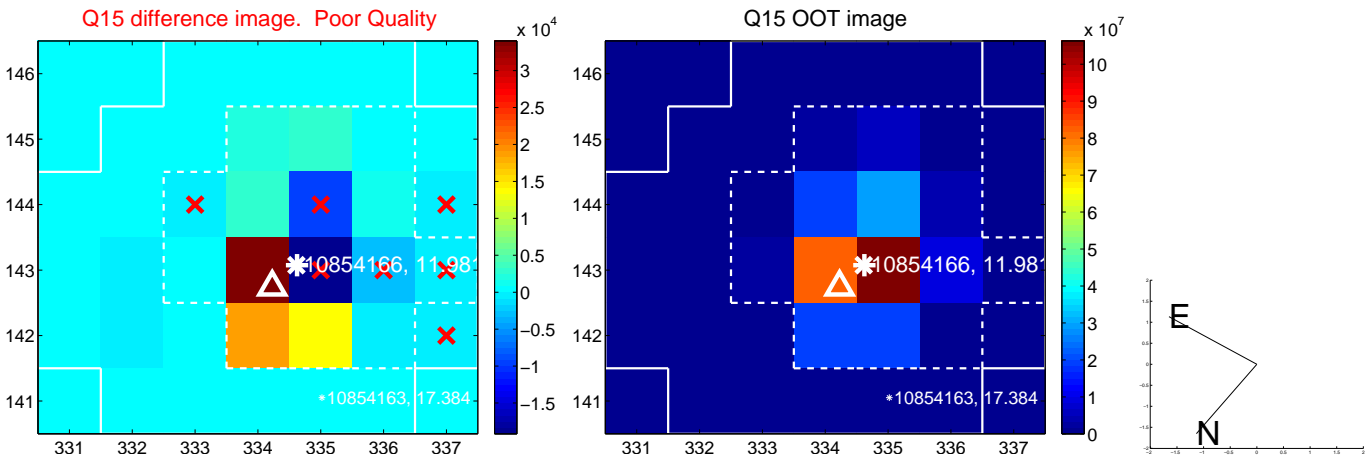
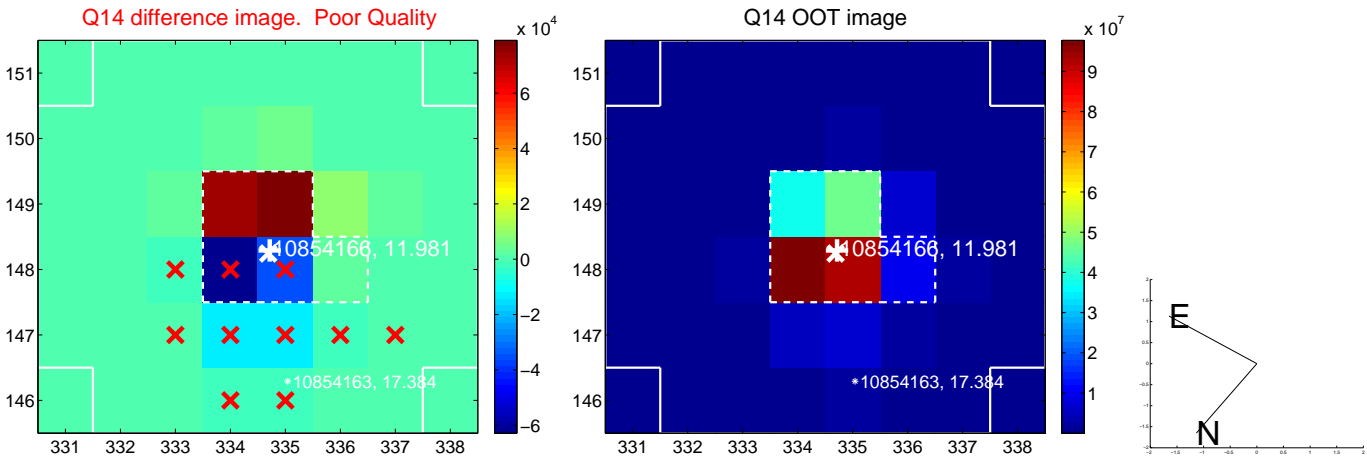
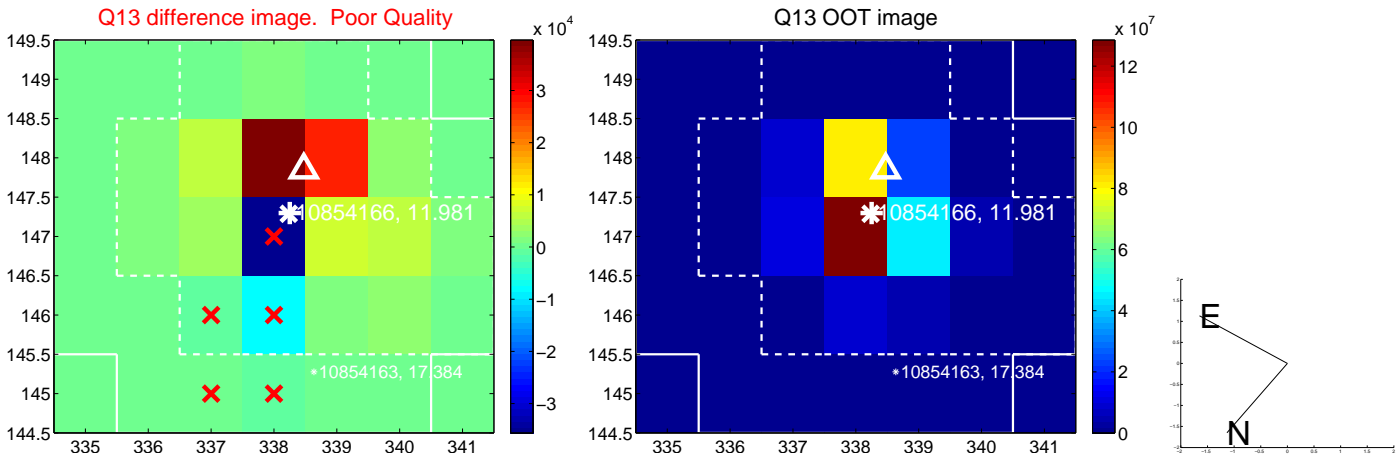
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



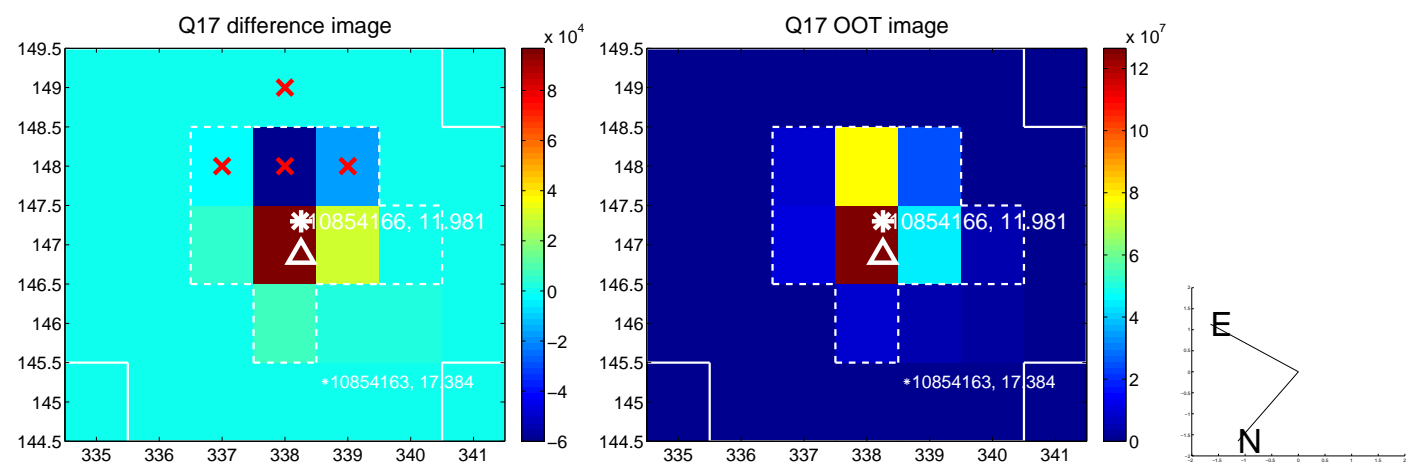
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination

