

KIC 005444548

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 005444548-01 | OBS | 0409.01 | 13.249310 | 139.774463 | 640.1 | 4.694 | 74.4 | 76.0 | 1.08 | 5799 | 3.12 | 99.80 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 005444548-01 | OBS | PC | 1.00 | 0 | 0 | 0 | 0 | NO_COMMENT |

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

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

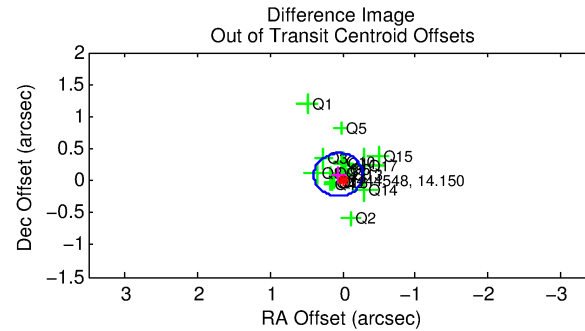
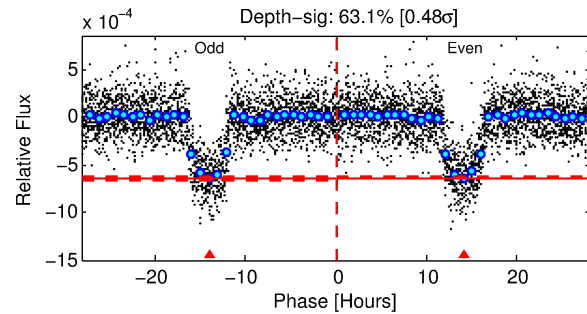
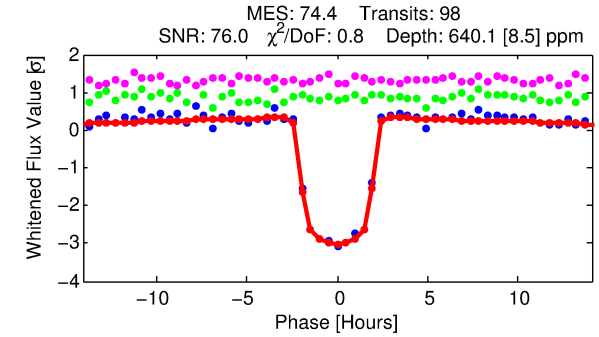
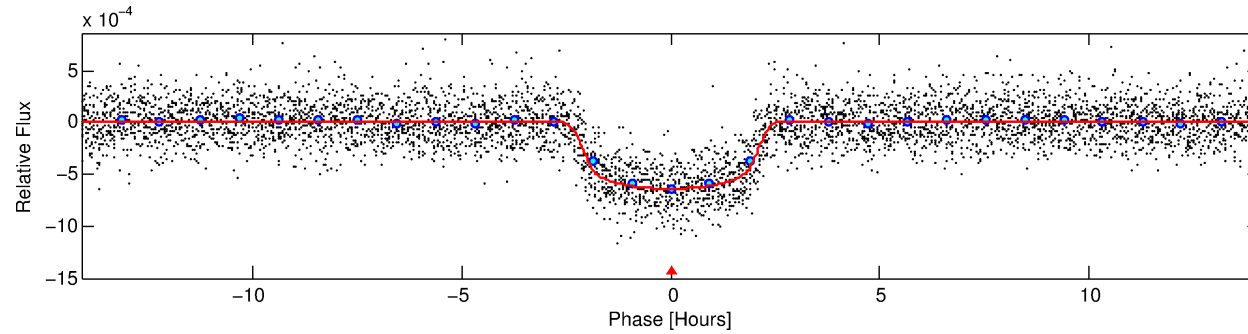
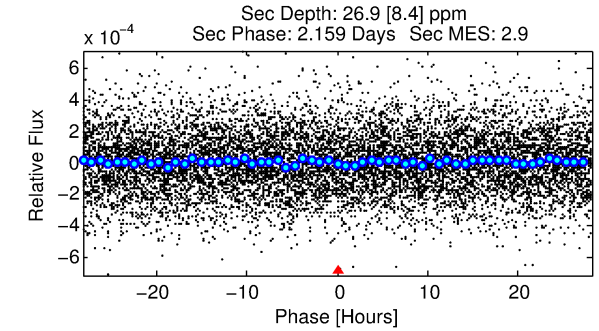
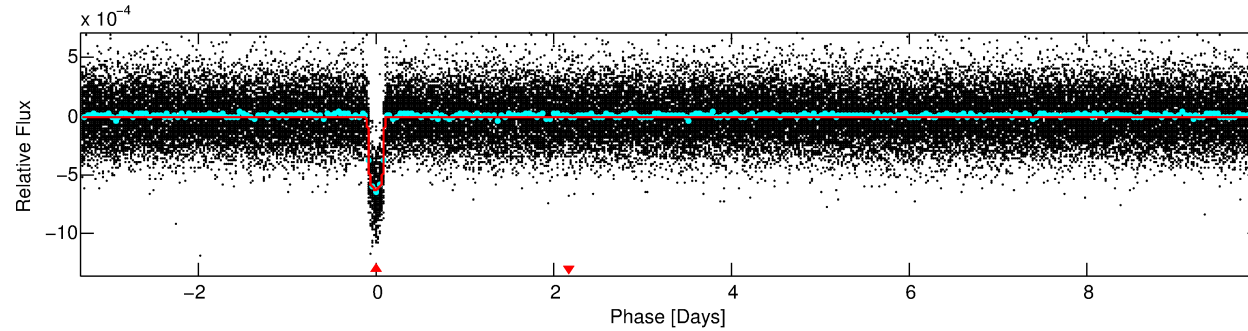
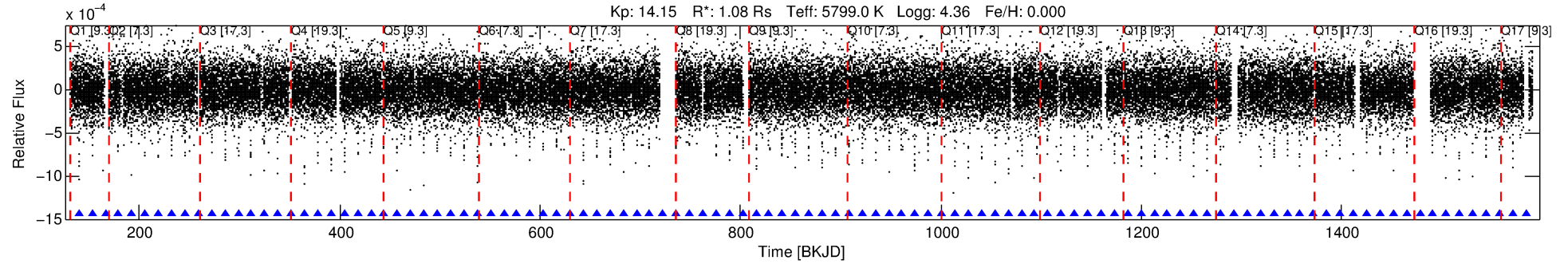
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005444548-01

No Significant Match Found

DV One-Page Summary

KIC: 5444548 Candidate: 1 of 1 Period: 13.249 d
KOI: K00409.01 Corr: 0.975



DV Fit Results:

Period = 13.24931 [0.00002] d
Epoch = 139.7745 [0.0012] BKJD
Rp/R* = 0.0265 [0.0011]
a/R* = 12.31 [2.30]
b = 0.85 [0.06]
Seff = 99.80 [21.07]
Teff = 806 [43] K
Rp = 3.12 [0.48] Re
a = 0.1086 [0.0141] AU
Ag = 17.90 [6.75] [2.50σ]
Teffp = 2563 [213] K [8.10σ]

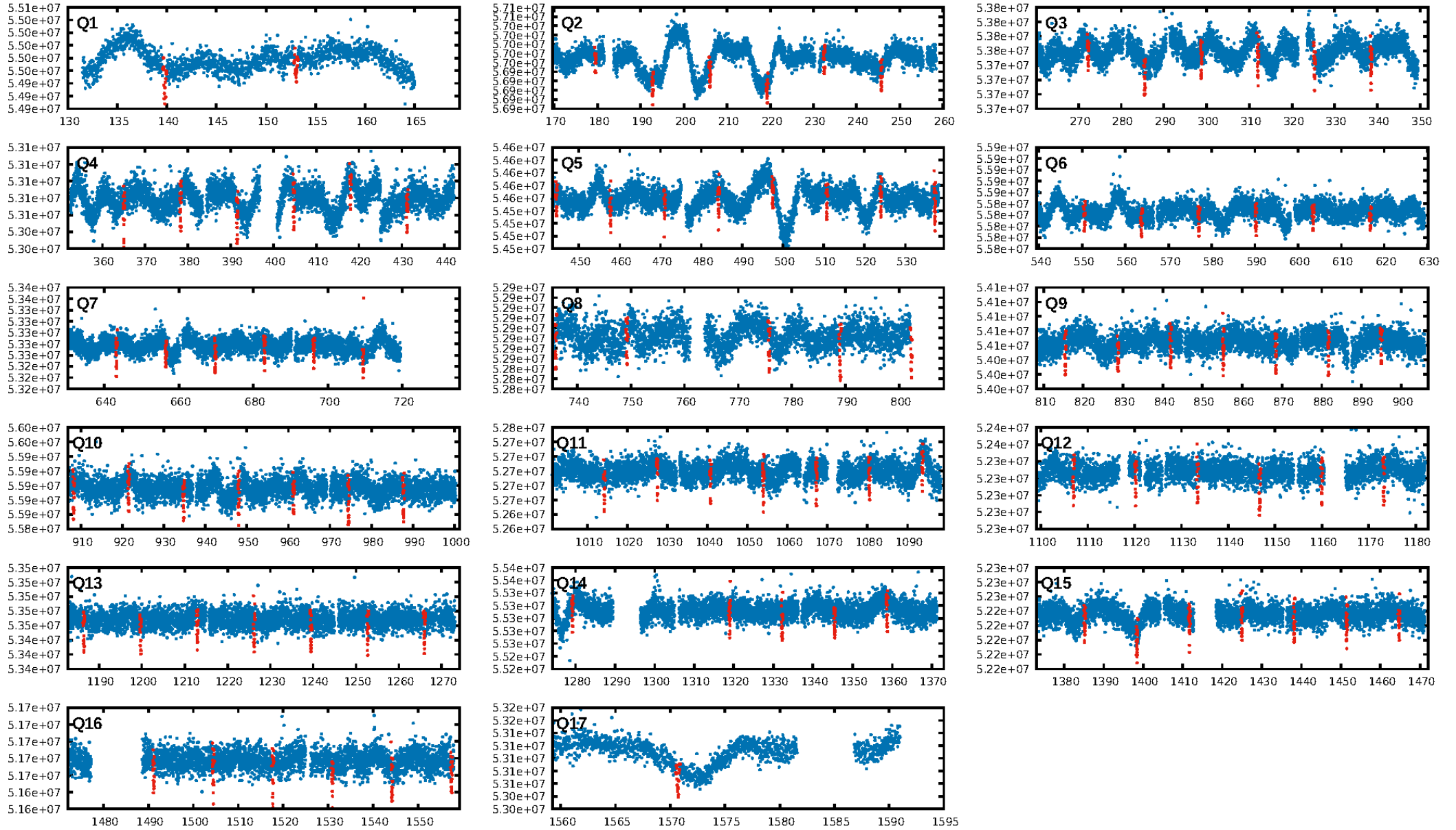
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [95/95]
GhostDiagnostic-chr: 6.685
Centroid-sig: 14.1%
Centroid-so: 0.257 arcsec [1.69σ]
OotOffset-rm: 0.111 arcsec [0.99σ]
KicOffset-rm: 0.235 arcsec [2.11σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

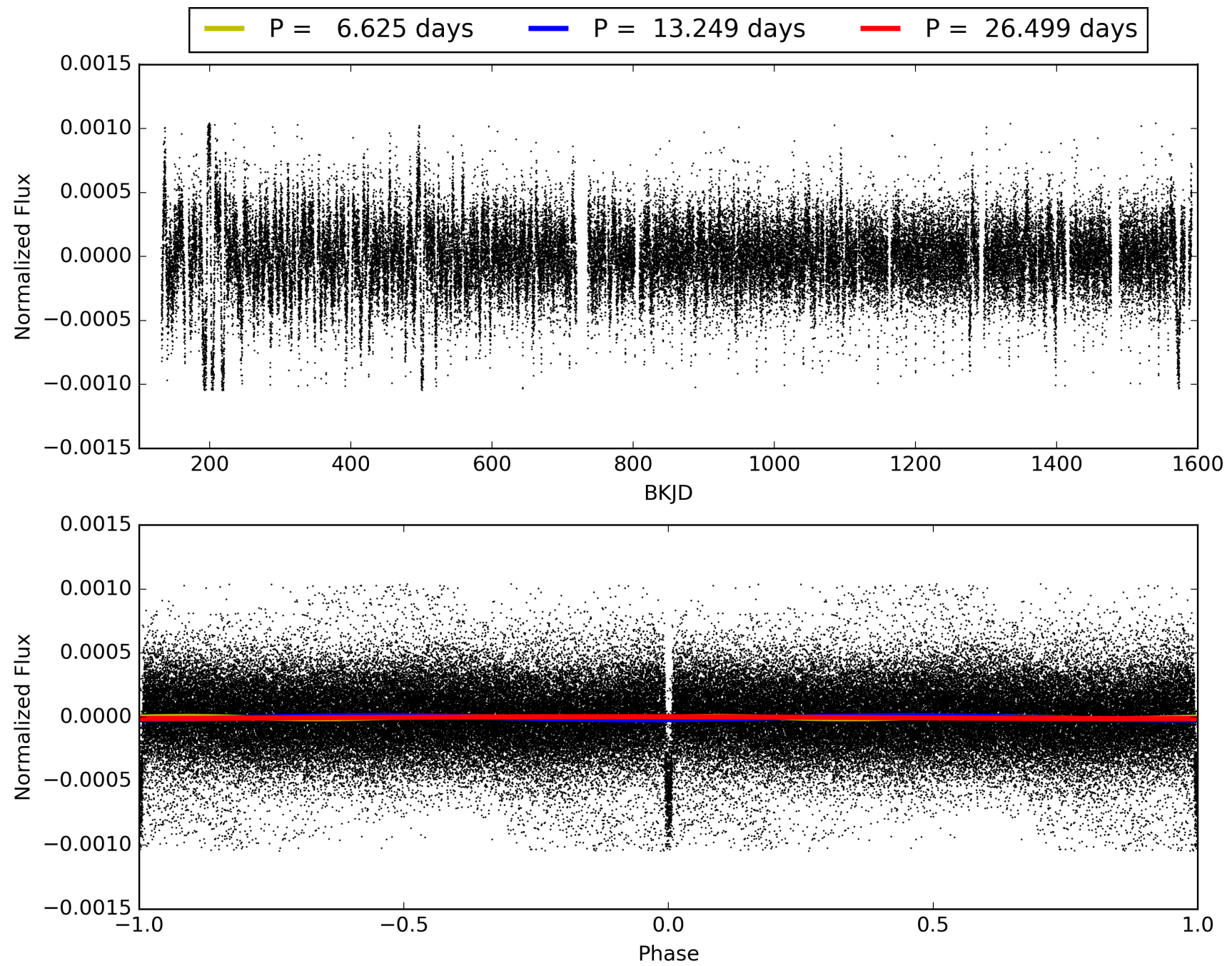
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:41:54 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005444548-01, PDC Light Curves

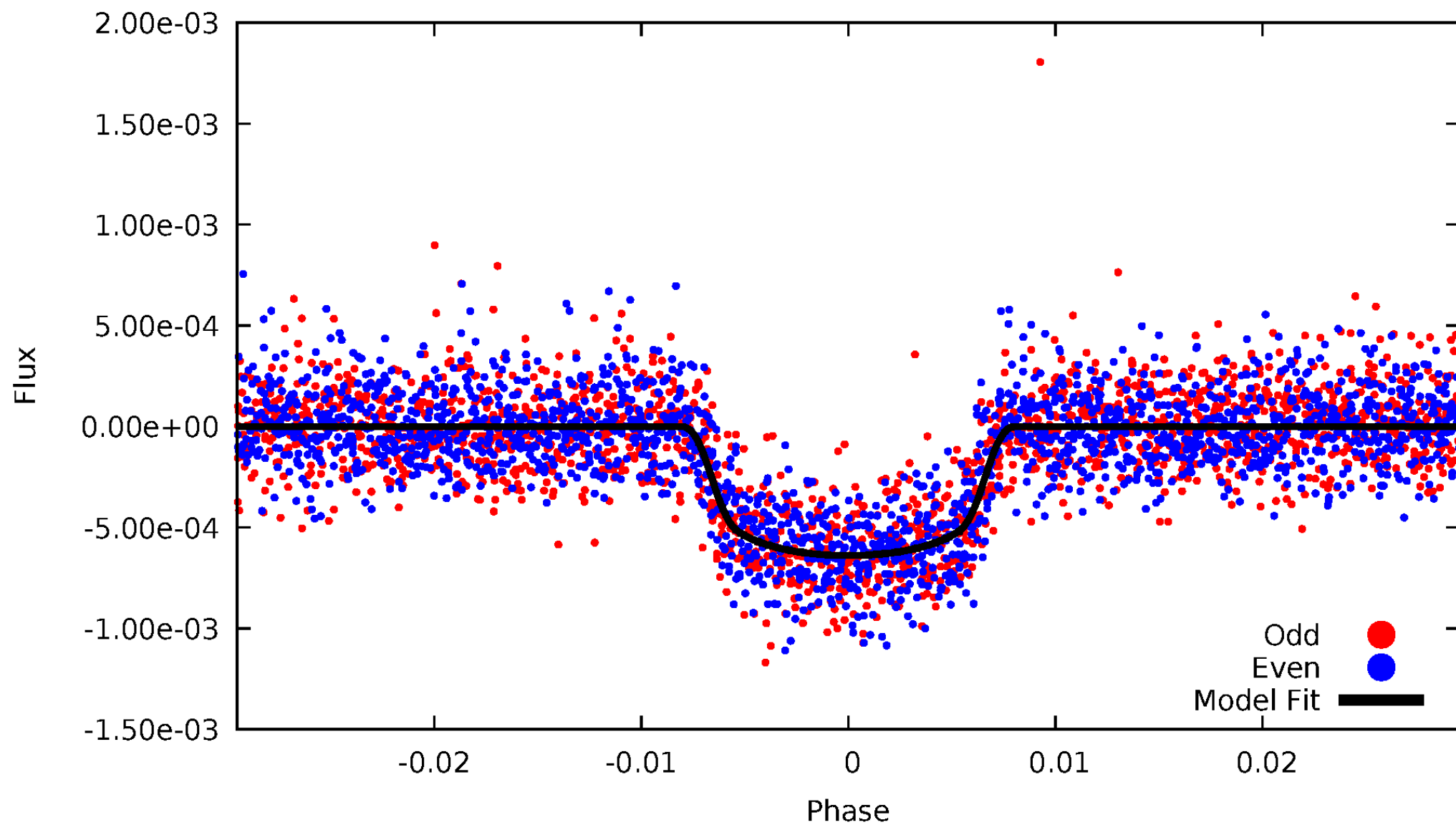


TCE 005444548-01



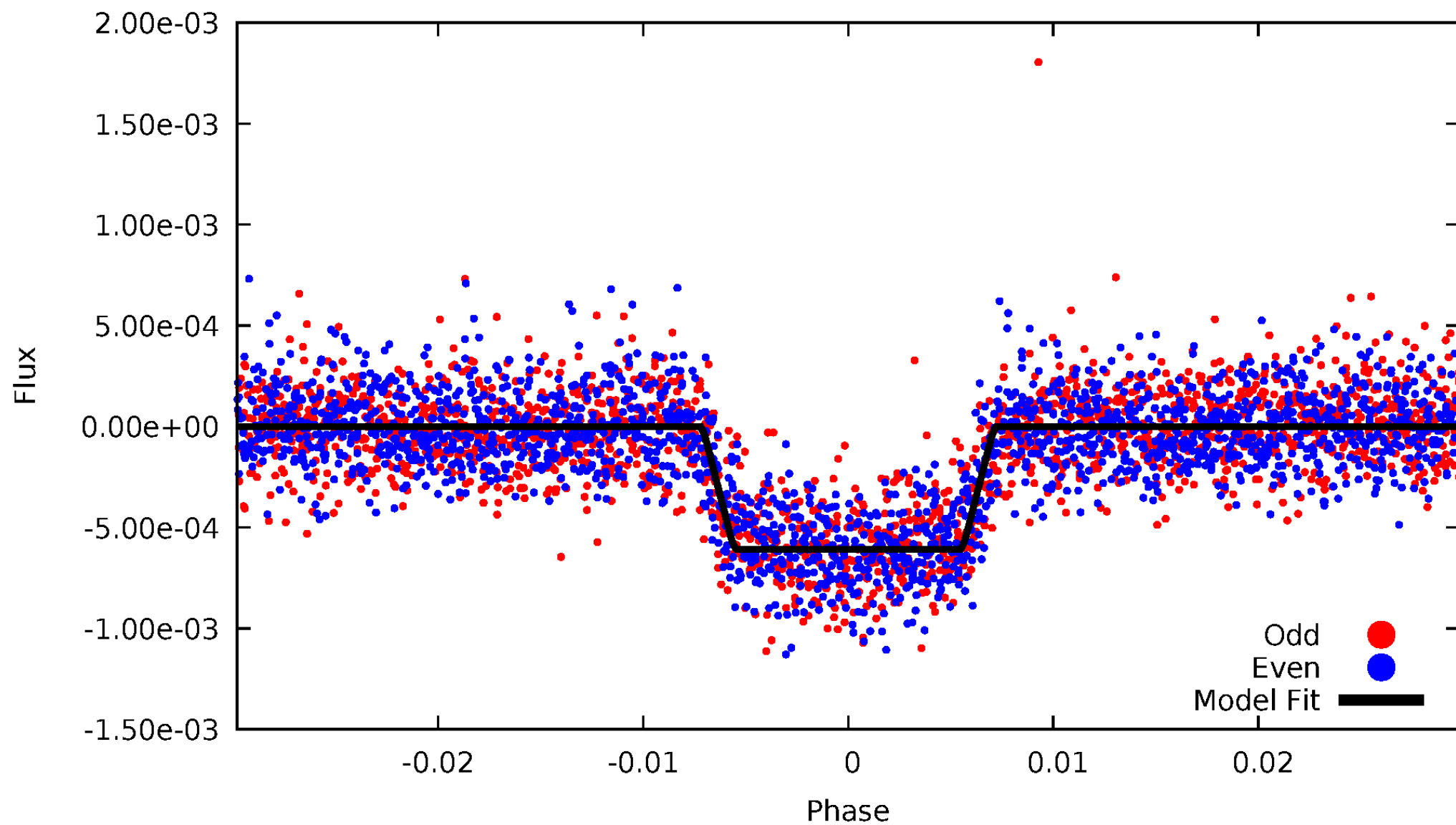
DV Odd/Even

TCE 005444548-01

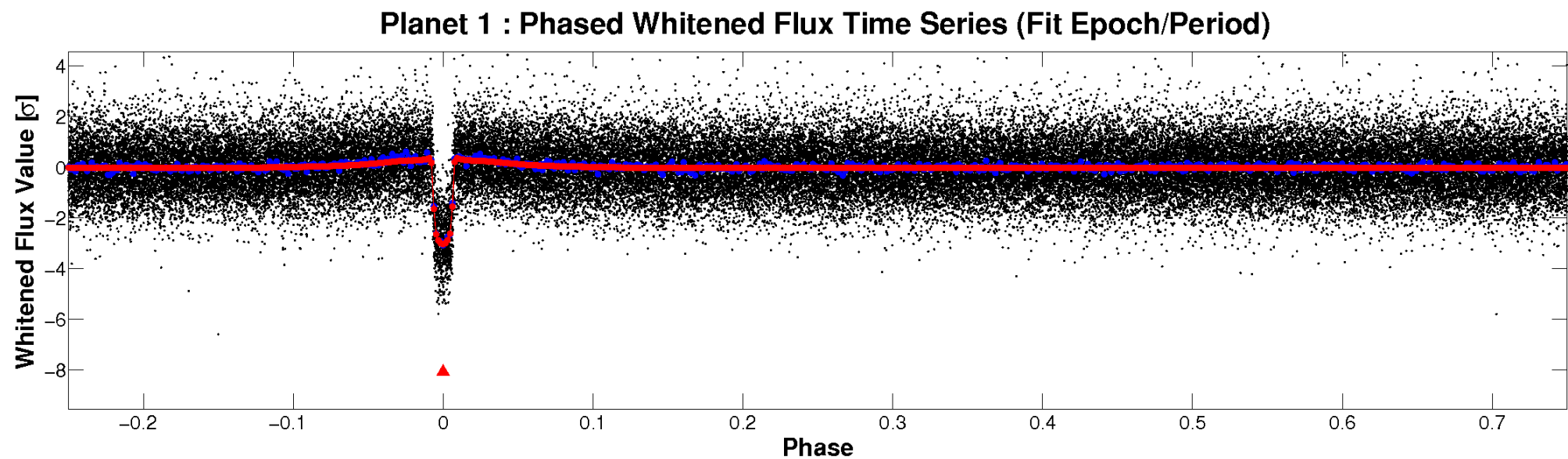
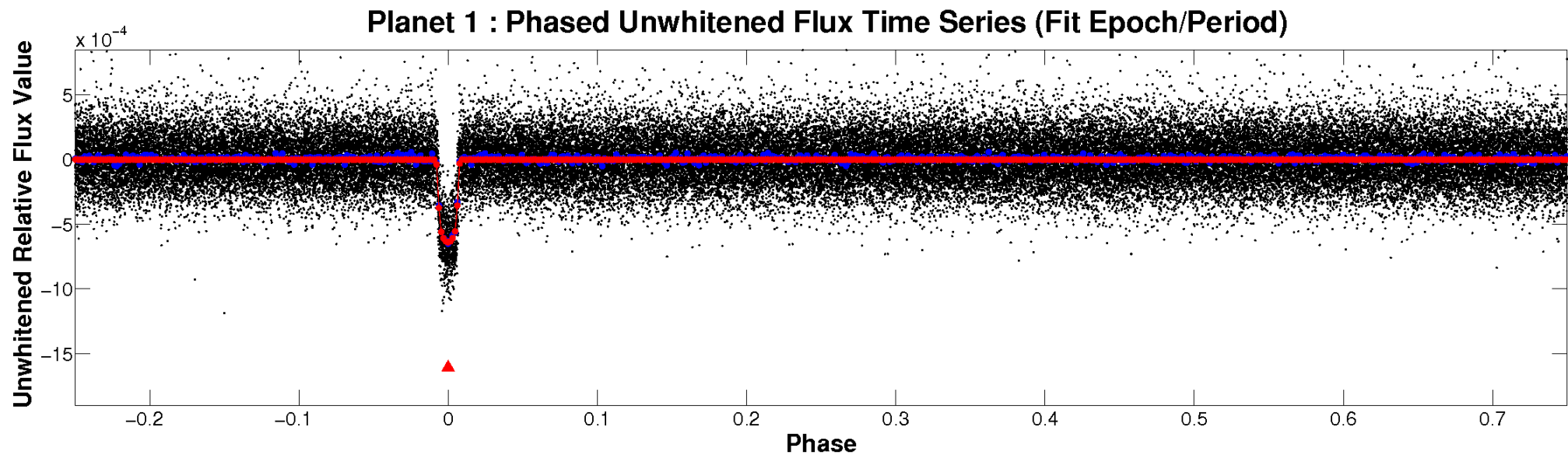


ALT Odd/Even

TCE 005444548-01

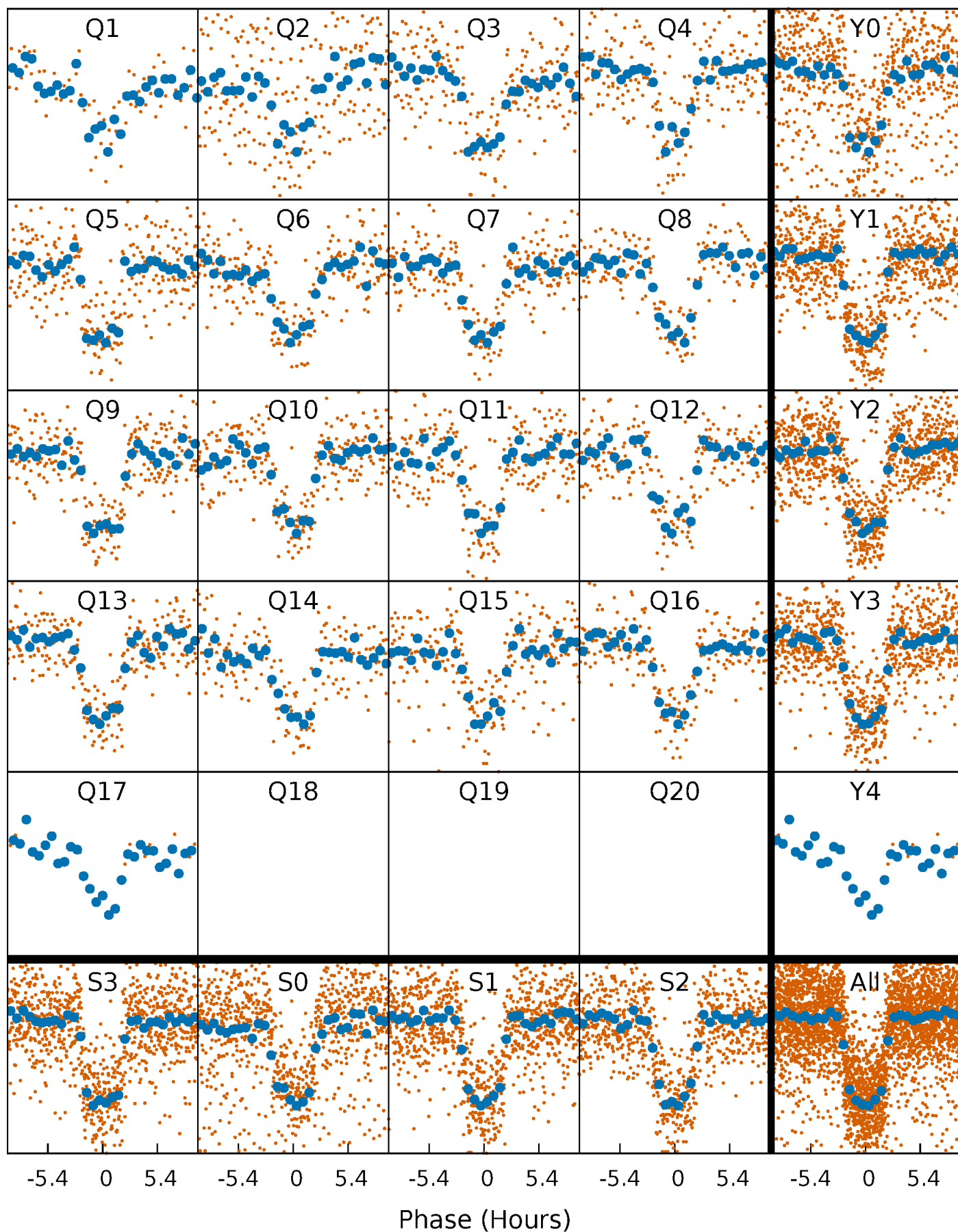


Non-Whitened Vs. Whitened Light Curve



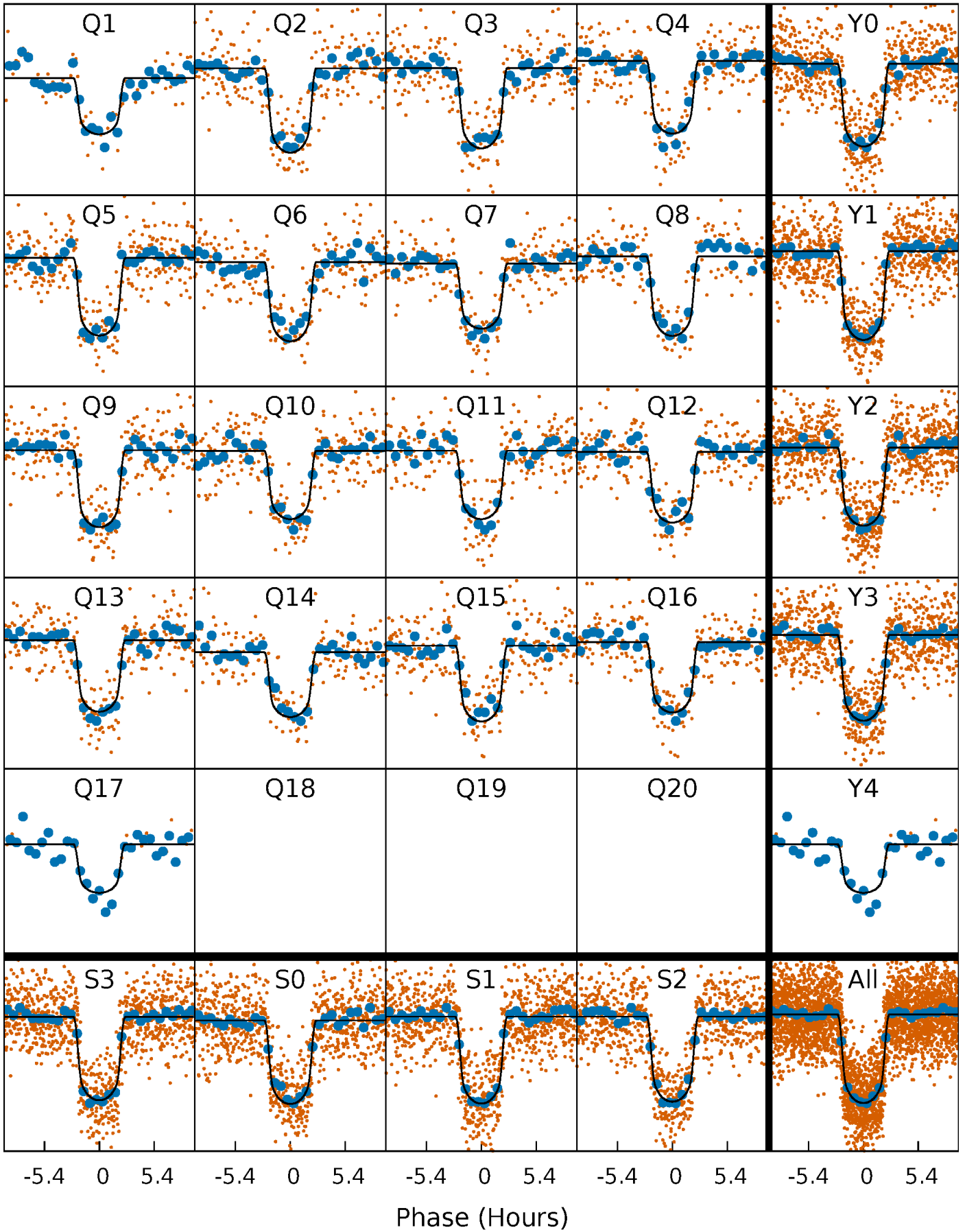
PDC Quarter-Phased Transit Curves

TCE 005444548-01 P= 13.249310 Days $T_0=139.774463$ (BKJD)



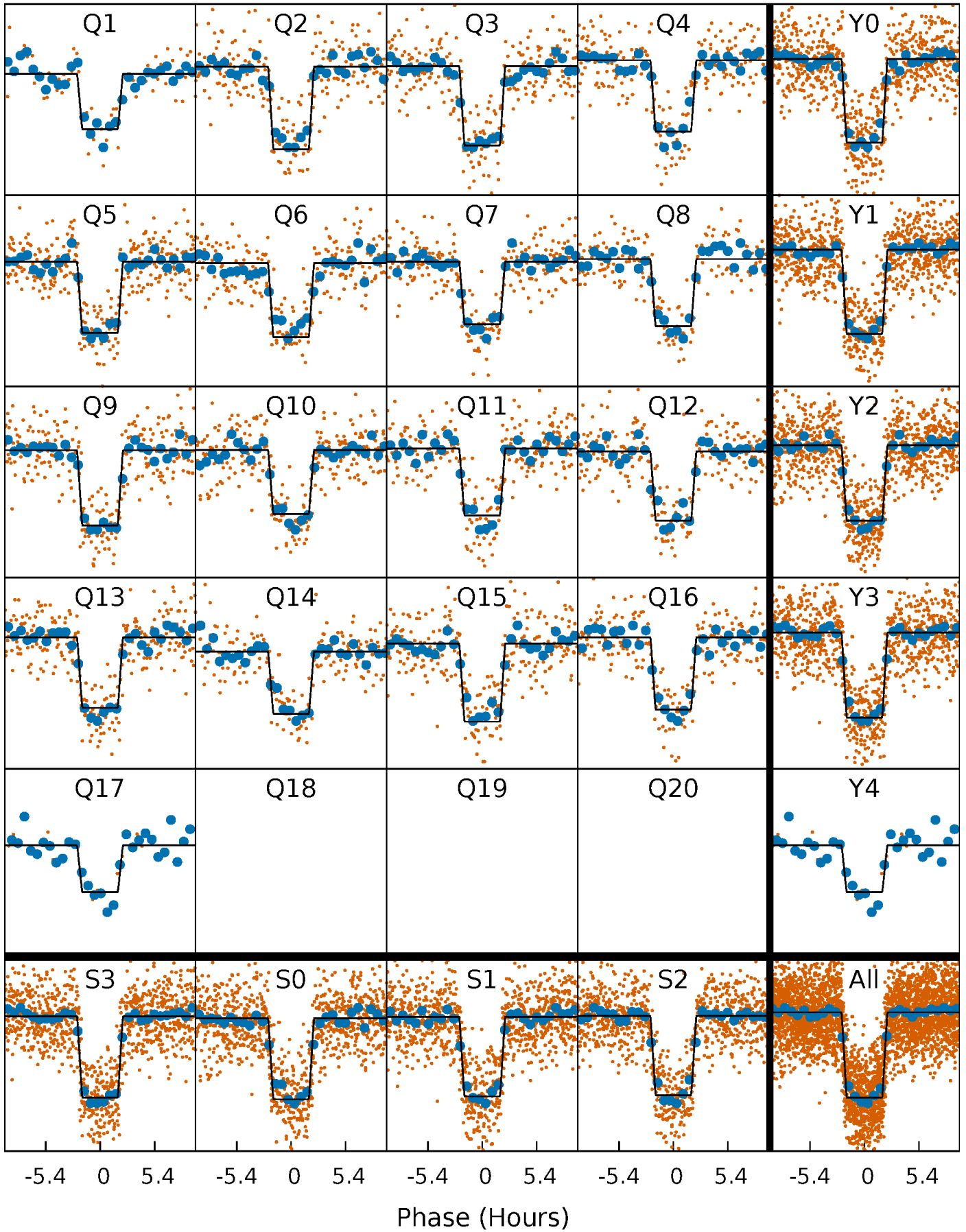
DV Quarter-Phased Transit Curves

TCE 005444548-01 P= 13.249310 Days $T_0=139.774463$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

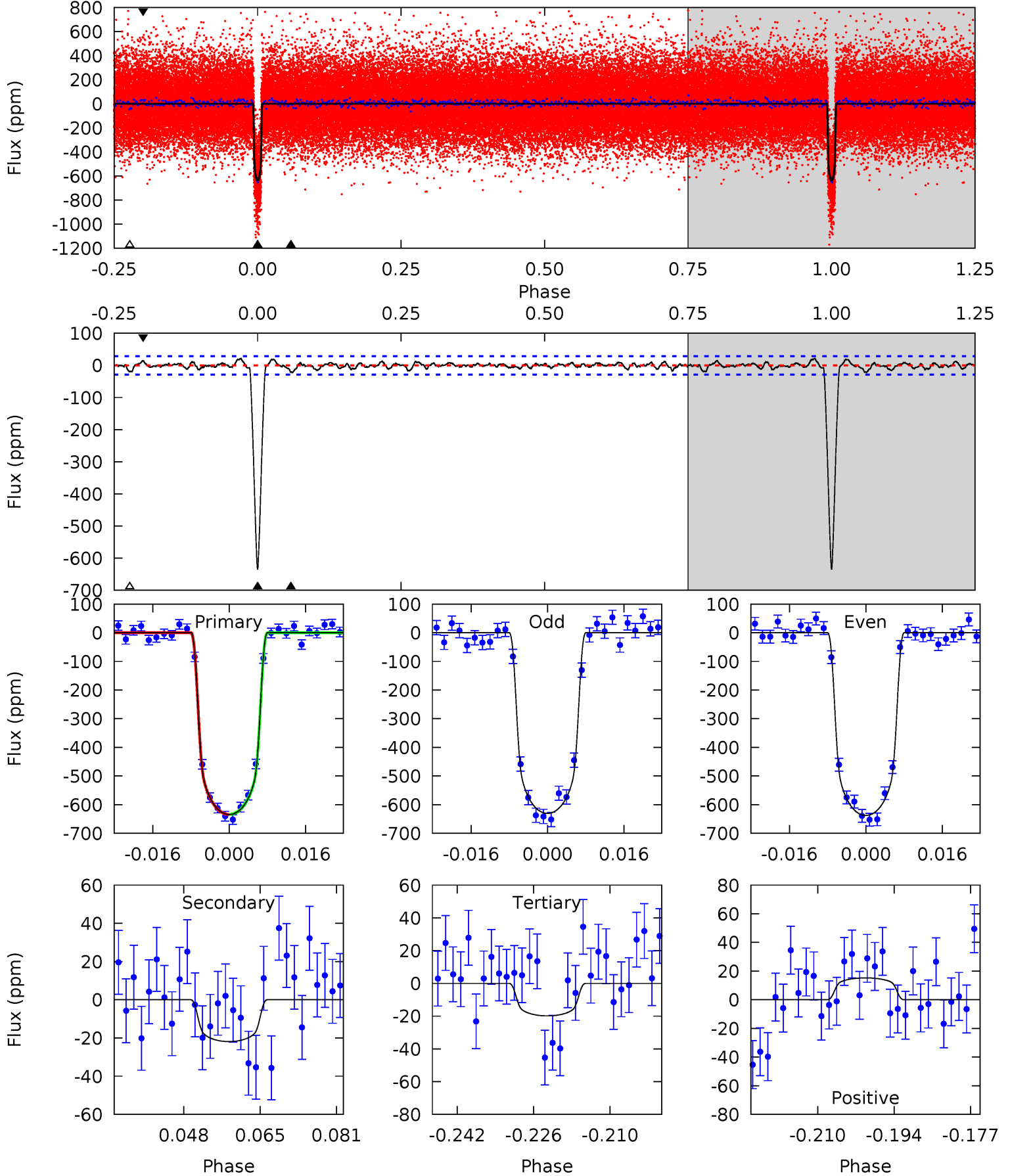
TCE 005444548-01 P= 13.249309 Days $T_0=139.774444$ (BKJD)



DV Model-Shift Uniqueness Test

005444548-01, $P = 13.249310$ Days, $E = 126.525153$ Days

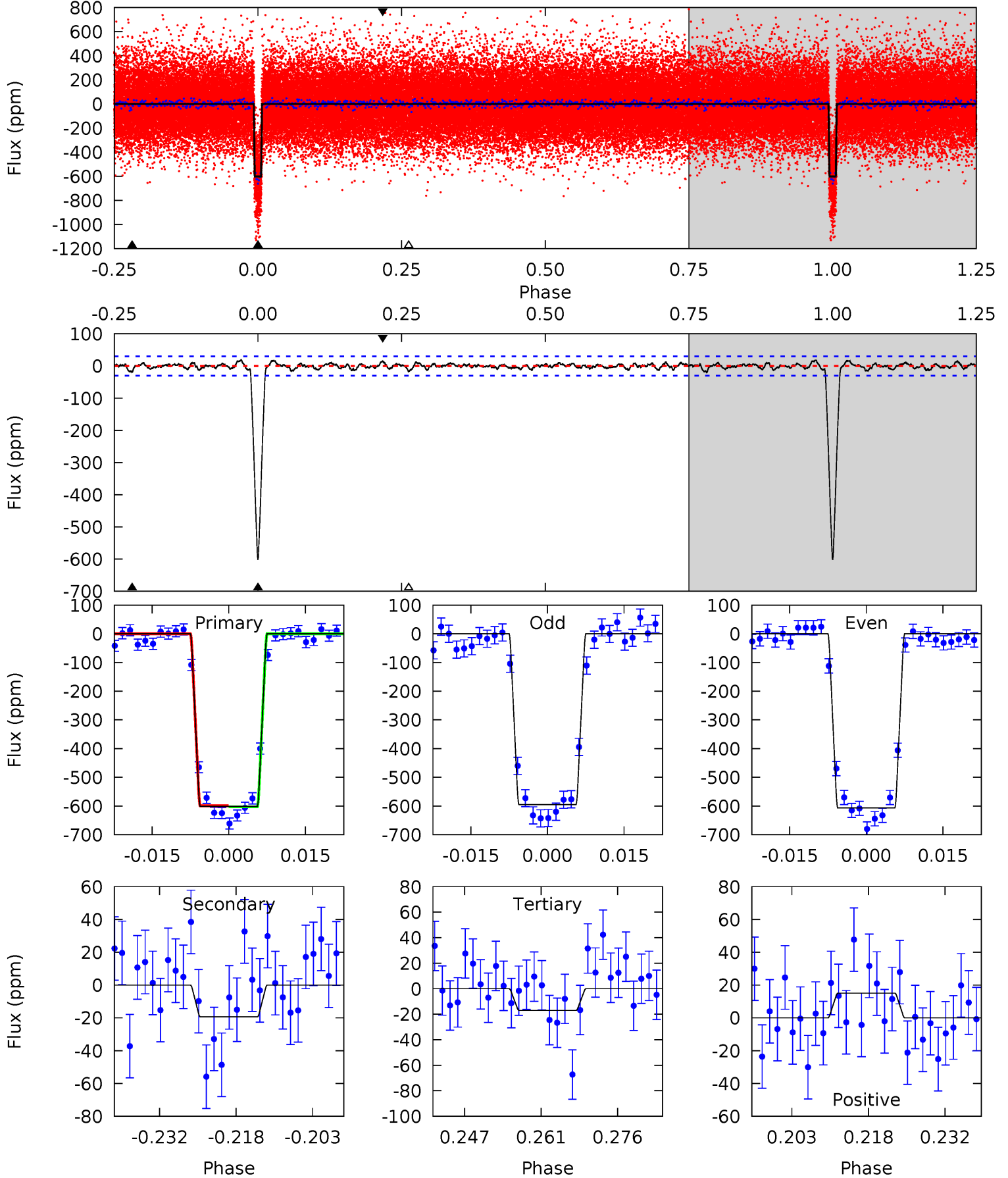
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 108.6 | 3.75 | 3.40 | 2.61 | 4.93 | 2.41 | 1.08 | 105.2 | 106.0 | 0.35 | 1.14 | 0.62 | 1.00 | 0.03 | 0.05 |



Alt Model-Shift Uniqueness Test

005444548-01, P = 13.249309 Days, E = 126.525135 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 99.0 | 3.20 | 2.80 | 2.48 | 4.95 | 2.44 | 0.98 | 96.2 | 96.6 | 0.40 | 0.73 | 0.97 | 1.00 | 0.03 | 0.28 |



Stellar Parameters For KIC 005444548

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 5799^{+104}_{-116} | $4.361^{+0.110}_{-0.110}$ | $0.000^{+0.150}_{-0.150}$ | $1.078^{+0.159}_{-0.130}$ | $0.972^{+0.072}_{-0.058}$ | $1.094^{+0.500}_{-0.342}$ |
| | +2%/-2% | +3%/-3% | +inf%/-inf% | +15%/-12% | +7%/-6% | +46%/-31% |
| Source | SPE57 | SPE57 | SPE57 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 005444548-01 / KOI 0409.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|----------------------|------------------|
| DV | -22 ± 6 | $3.12^{+0.29}_{-0.28}$ | 1125^{+46}_{-45} | 3054^{+127}_{-143} | 14^{+5}_{-4} |
| Alt. | -19 ± 6 | $2.91^{+0.28}_{-0.25}$ | 1127^{+47}_{-50} | 3086^{+139}_{-174} | 15^{+5}_{-5} |

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 $A_{\text{obs}} \gg 1.0$

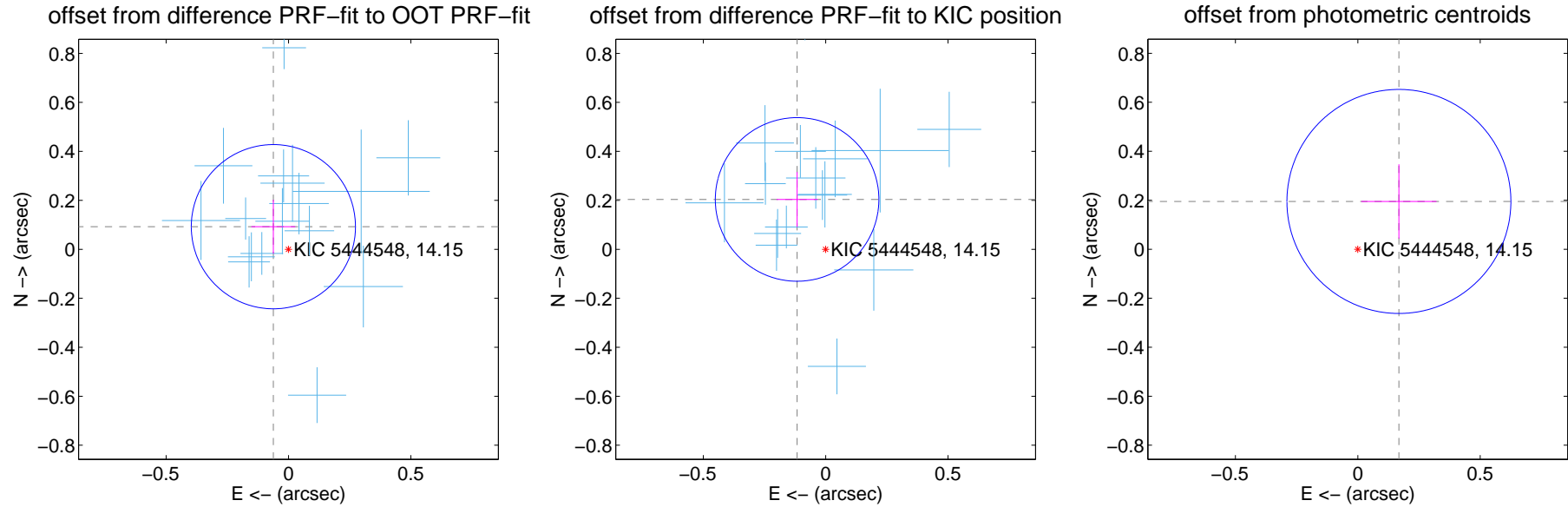
DV Centroid Data

Supplemental centroid analysis for 005444548-01. Kepler magnitude: 14.15. Transit SNR 76.03

There are 17 quarters with good PRF difference image offsets

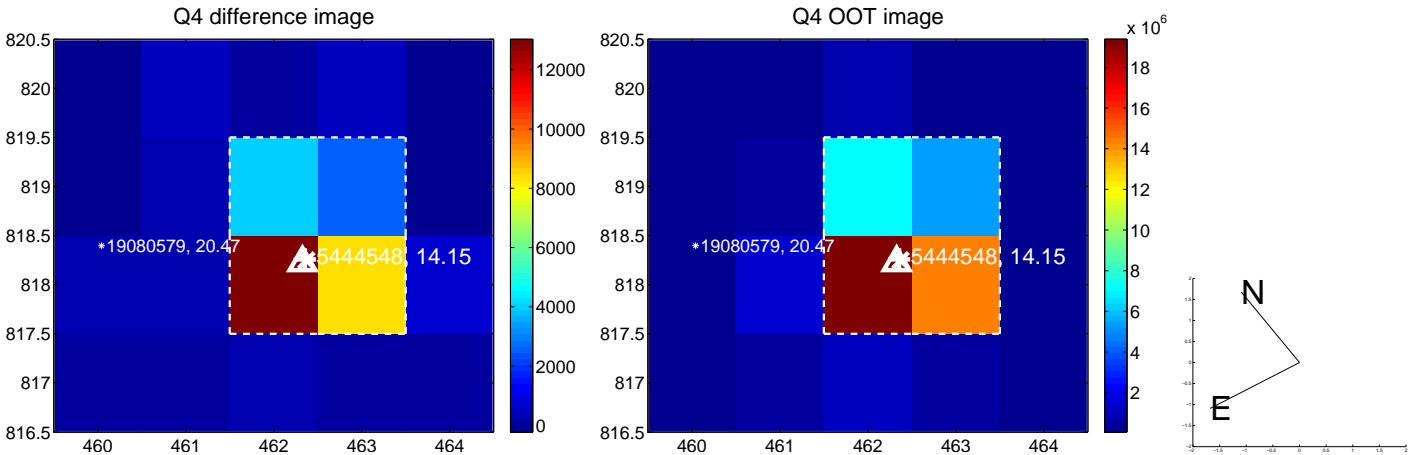
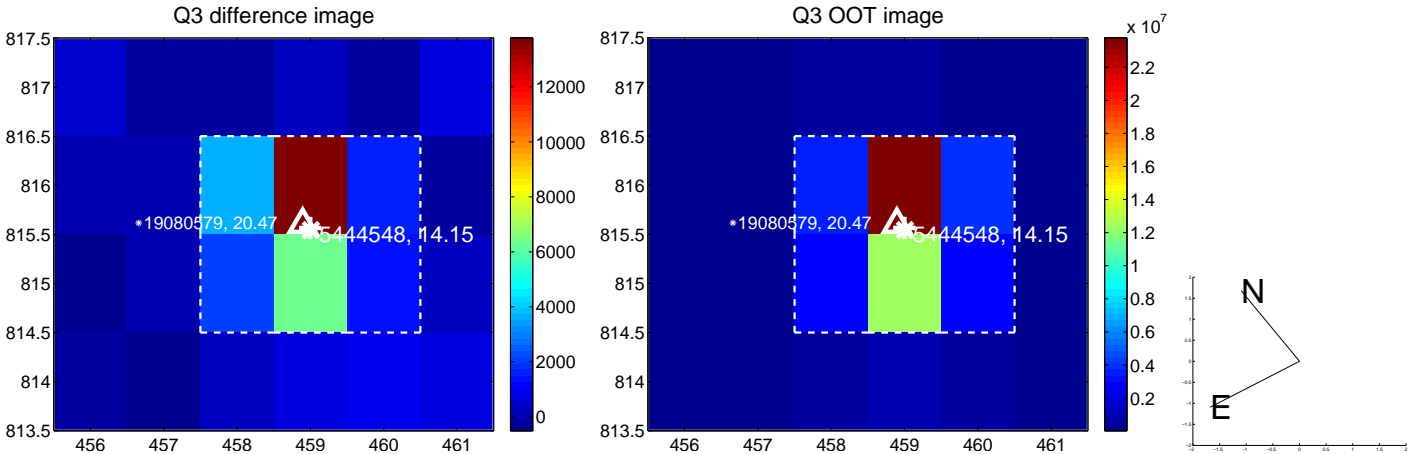
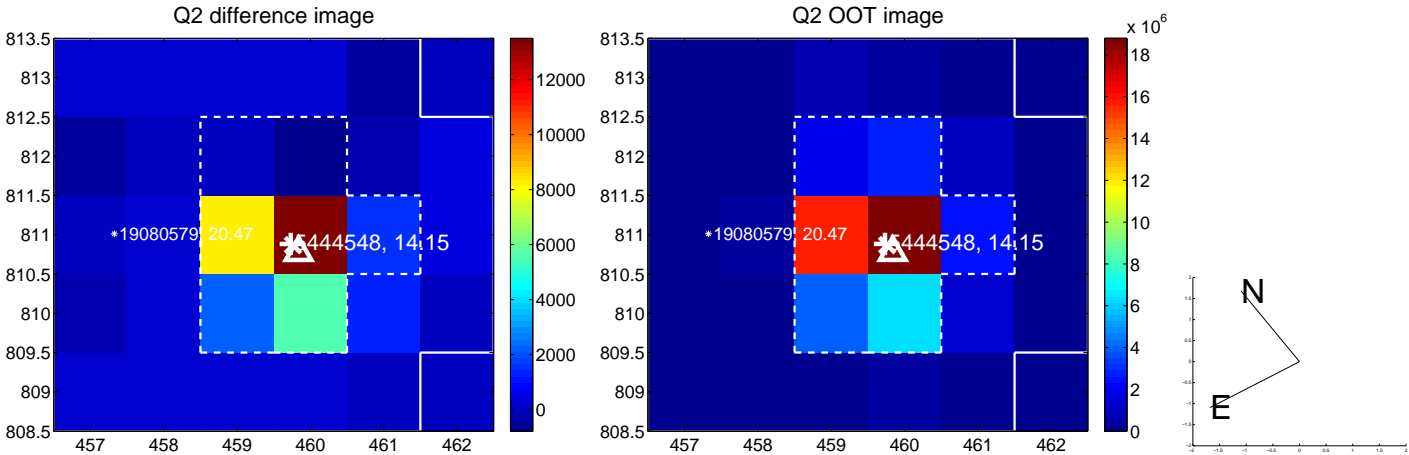
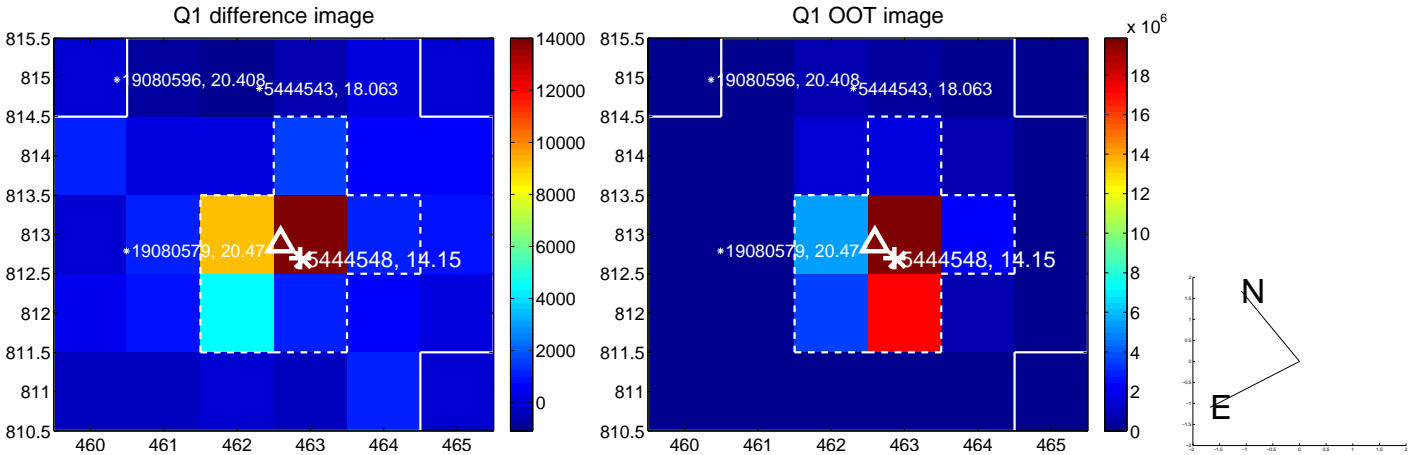
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.111 ± 0.112 | 0.99 | 0.062 ± 0.090 | 0.092 ± 0.110 |
| PRF-fit source offset from KIC position | 0.235 ± 0.111 | 2.11 | 0.117 ± 0.084 | 0.204 ± 0.112 |
| photometric centroid source offset | 0.26 ± 0.15 | 1.69 | -0.17 ± 0.15 | 0.20 ± 0.15 |

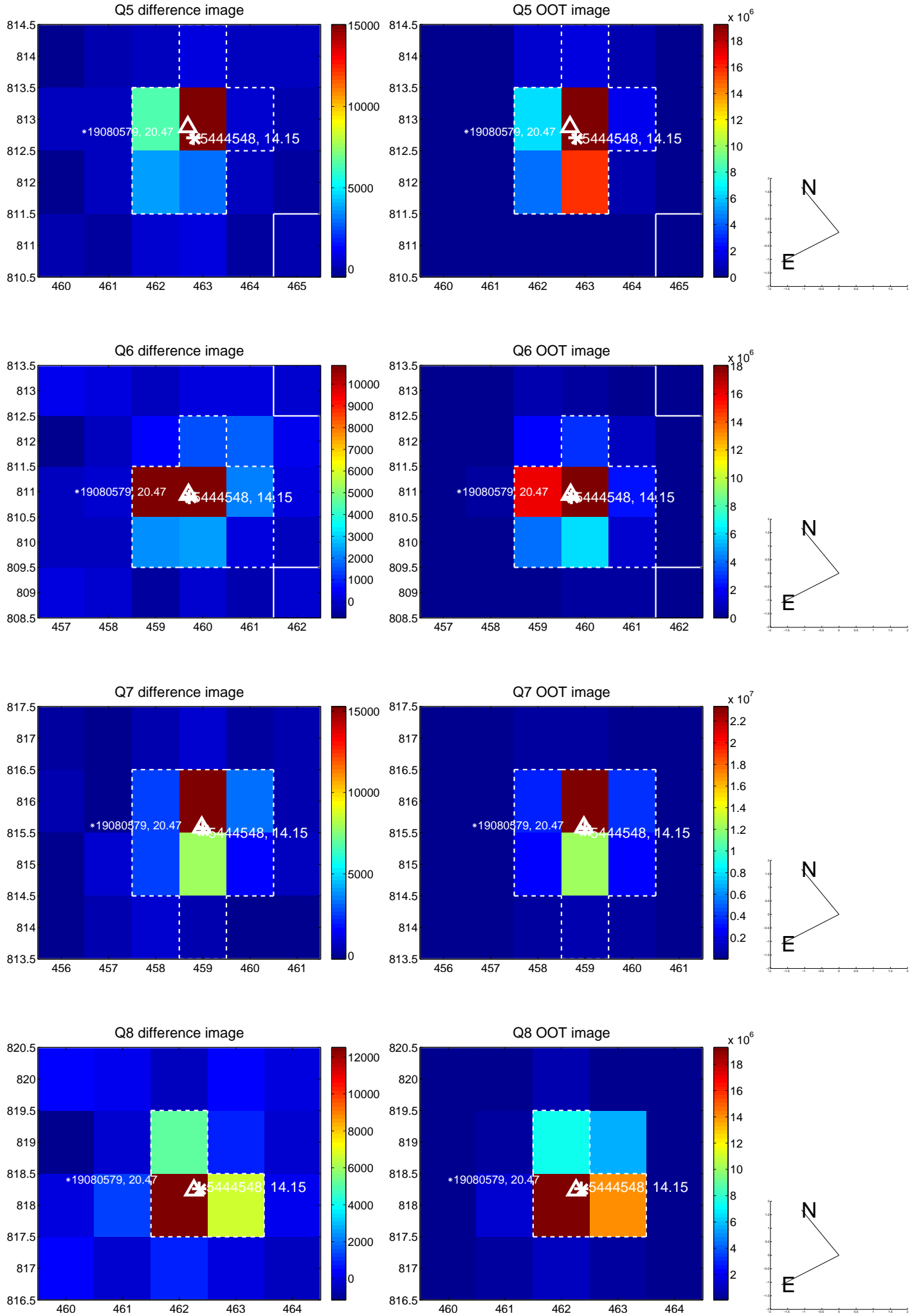


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

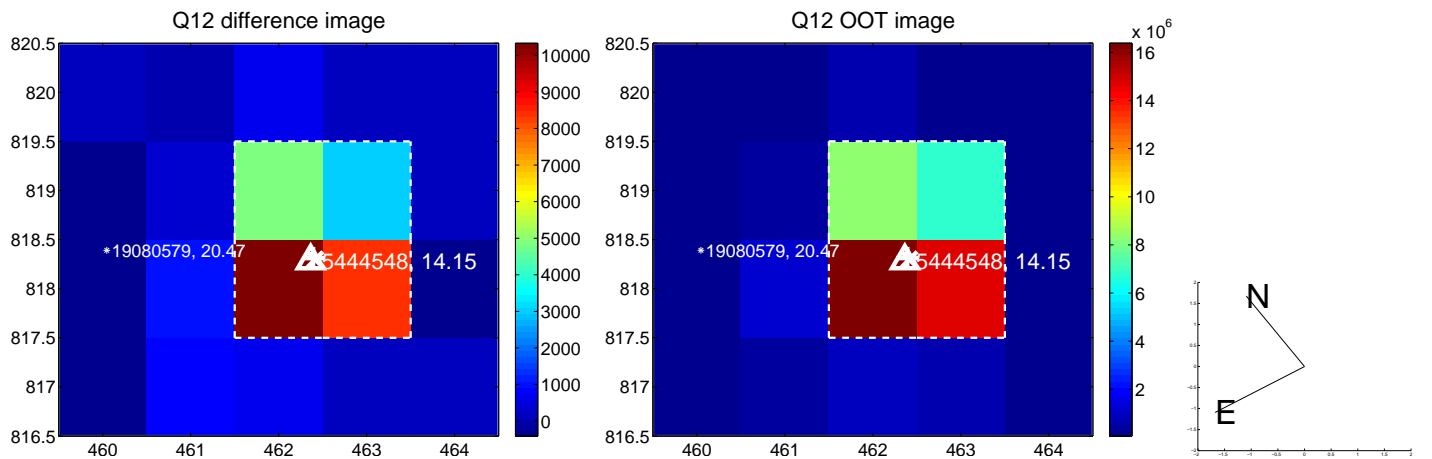
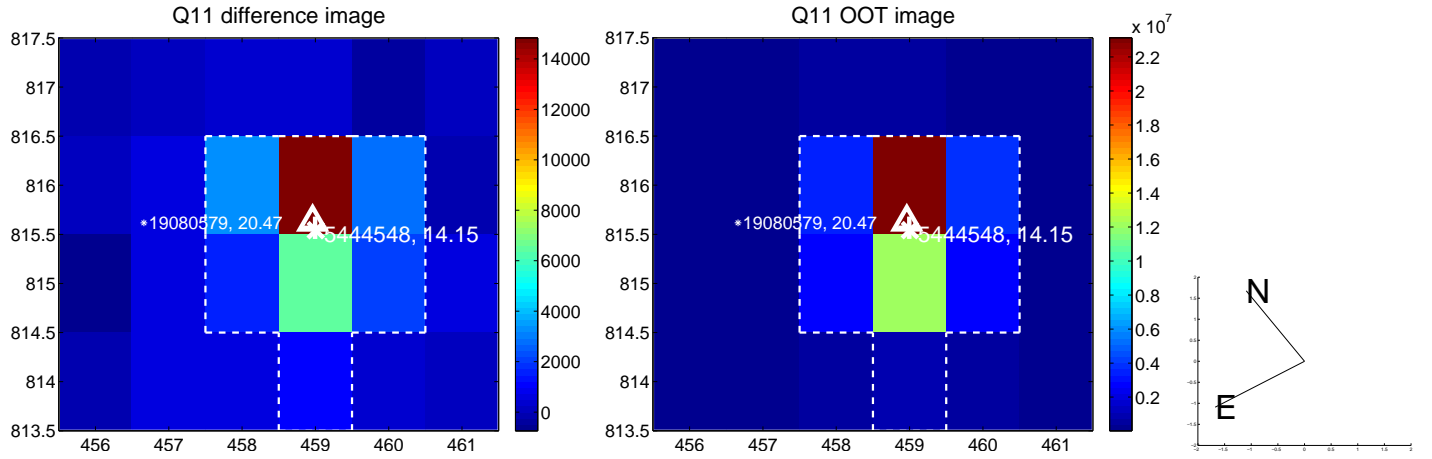
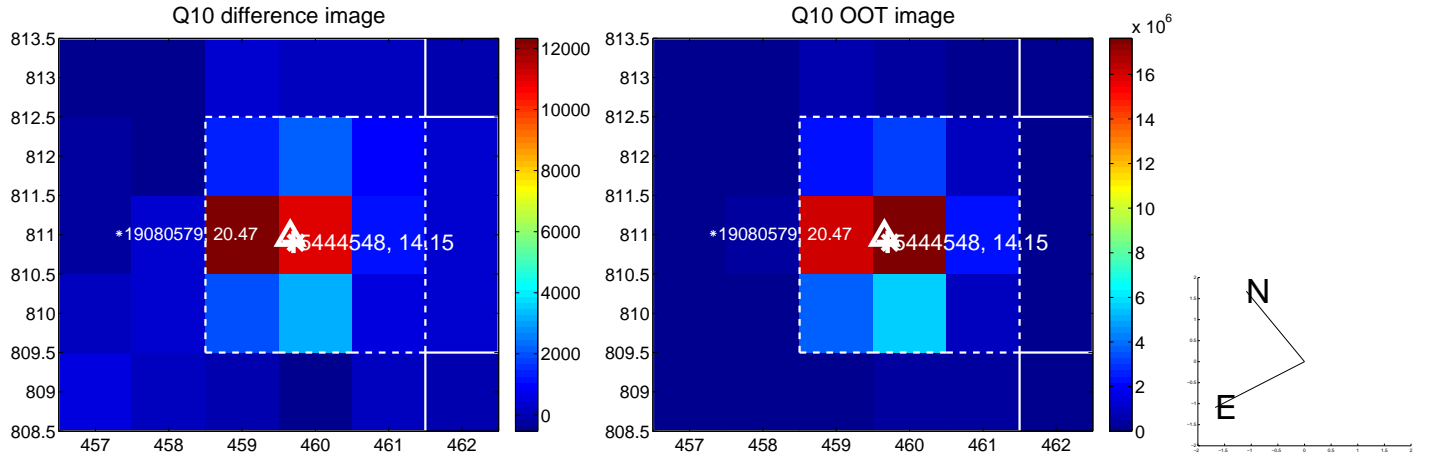
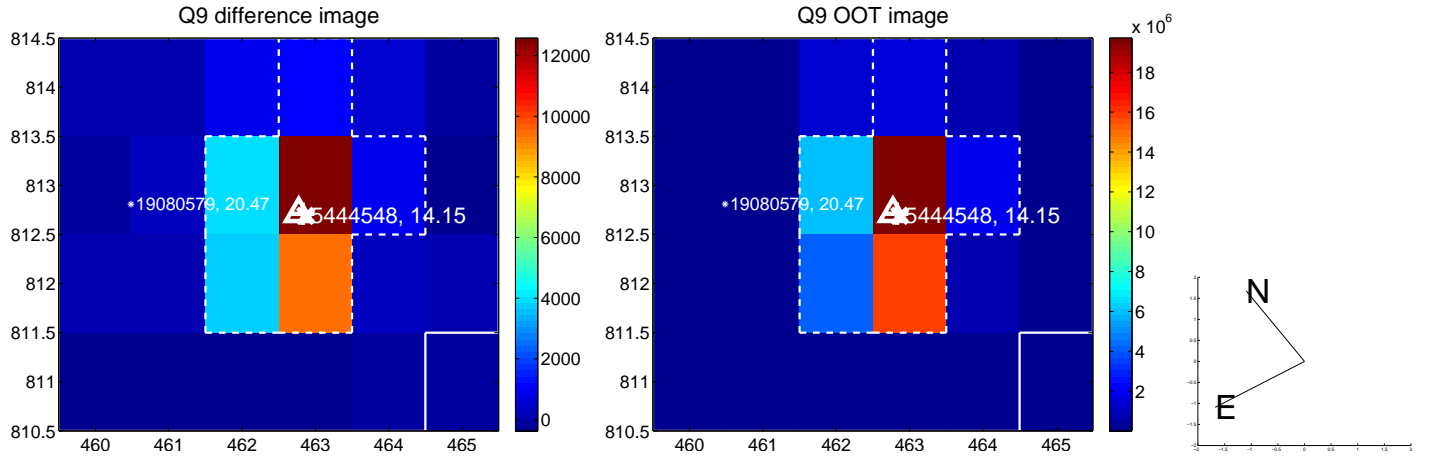
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



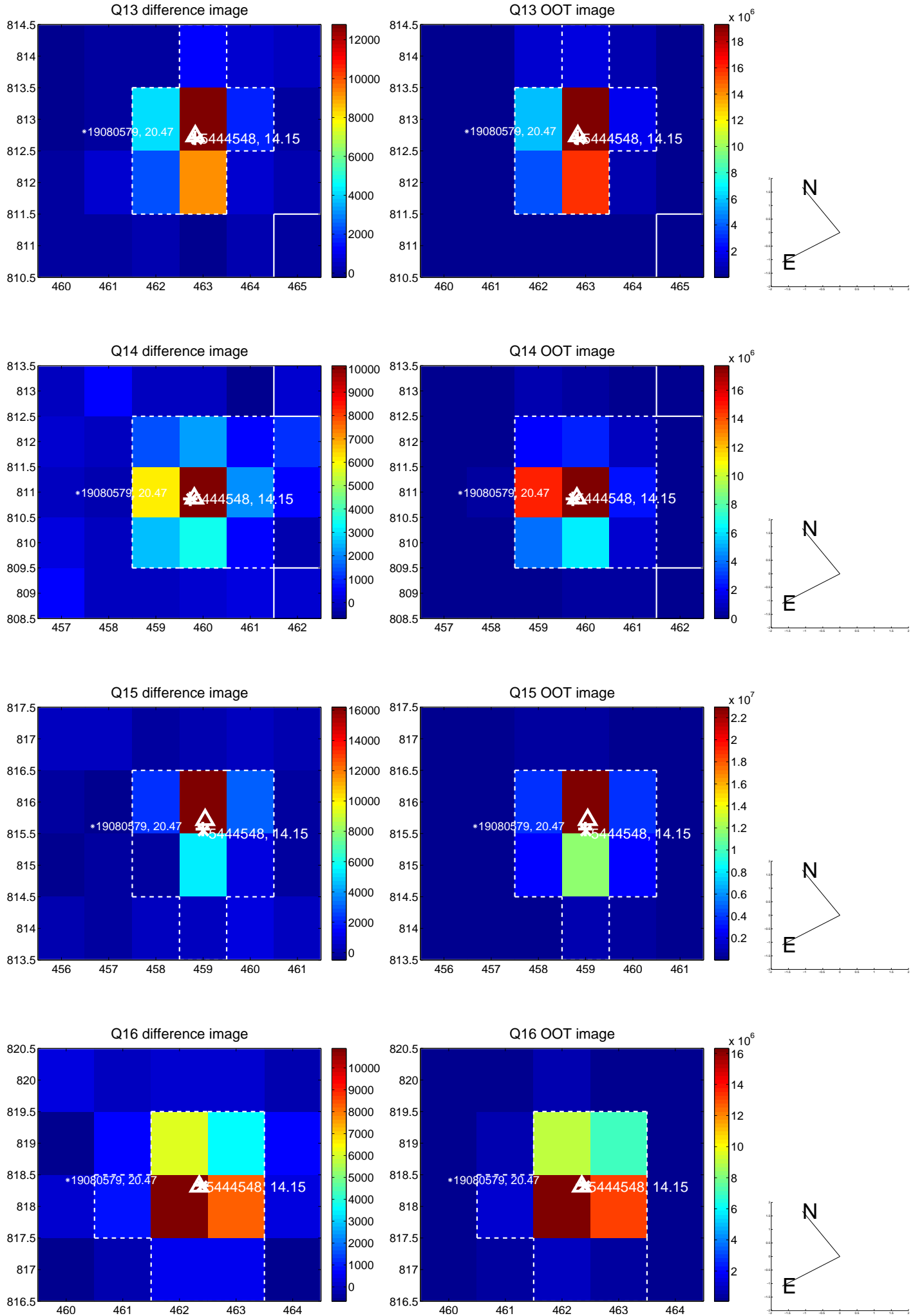
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



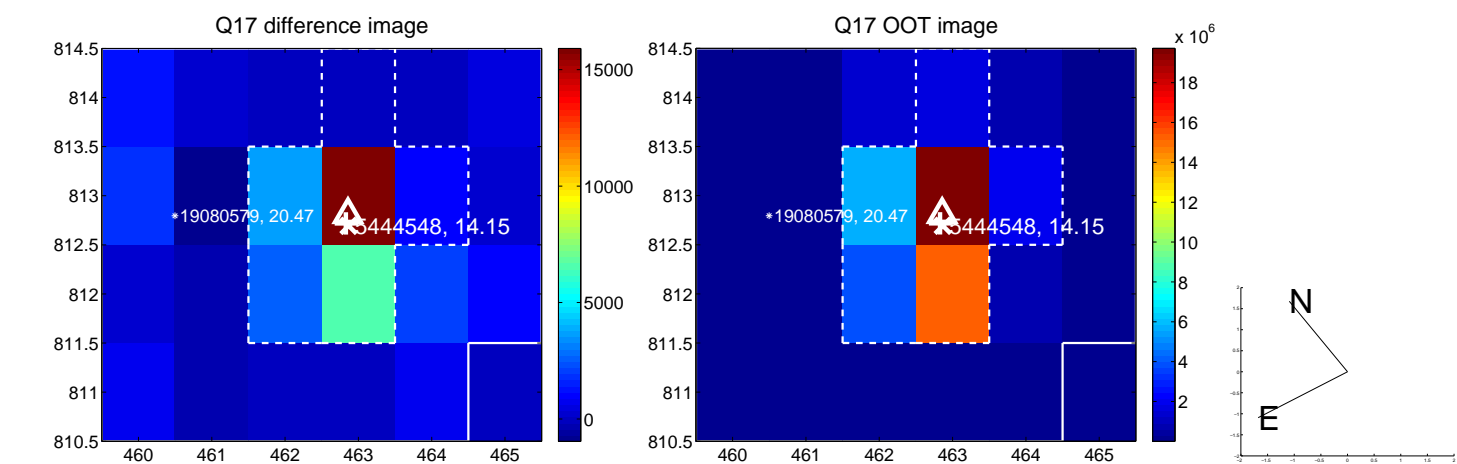
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



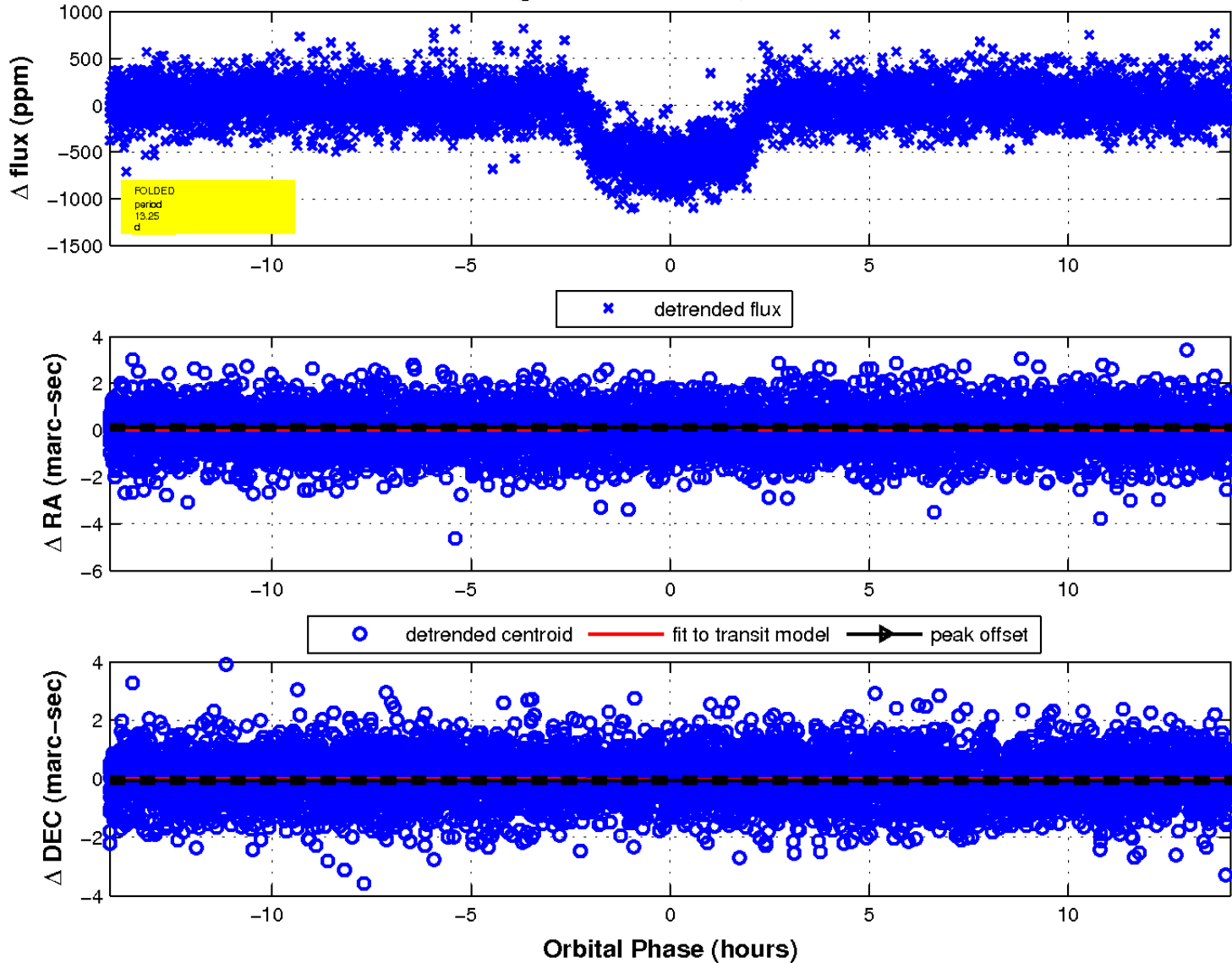
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

