

KIC 002156514

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 002156514-01 | OBS | No | 1.585611 | 132.890270 | 31.4 | 3.109 | 9.4 | 7.8 | 1.75 | 6564 | 1.18 | 6287.74 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------------|
| 002156514-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | SWEET_NTL—LPP_DV |

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

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

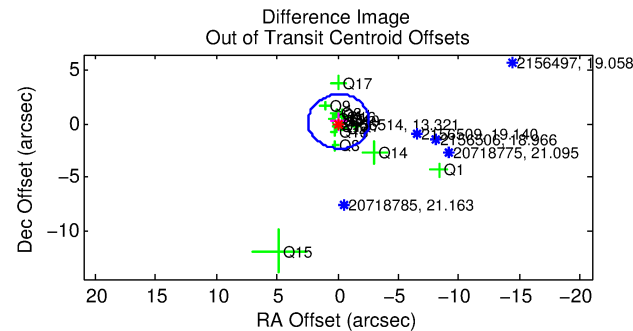
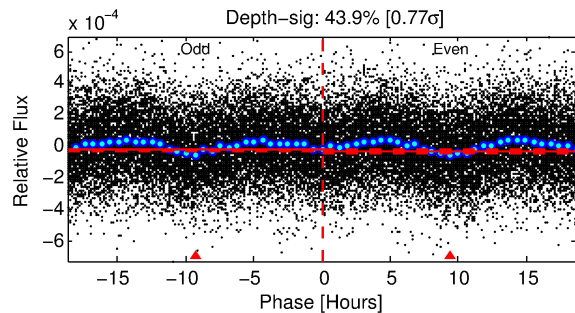
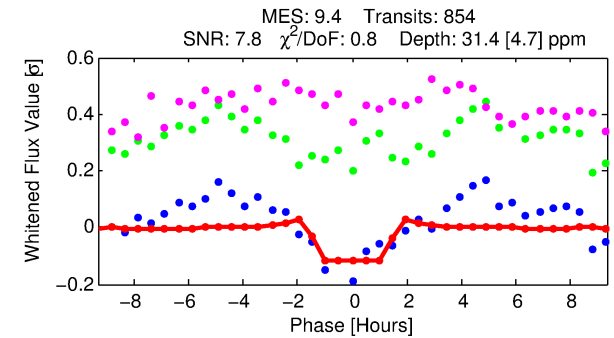
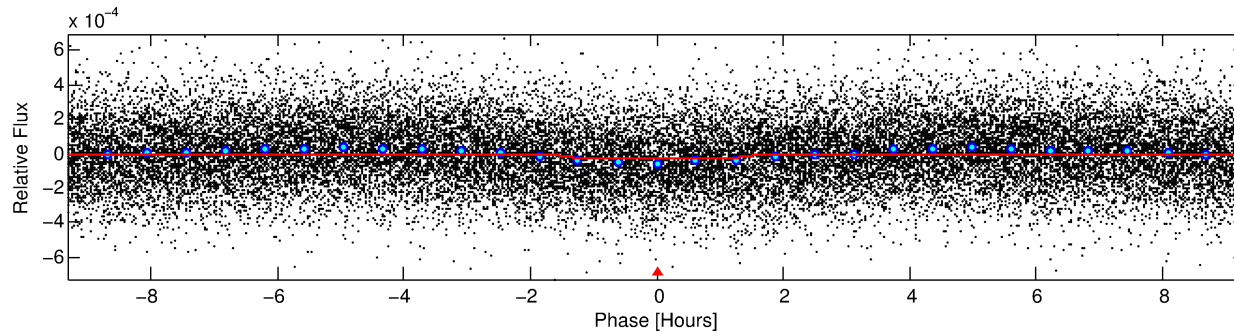
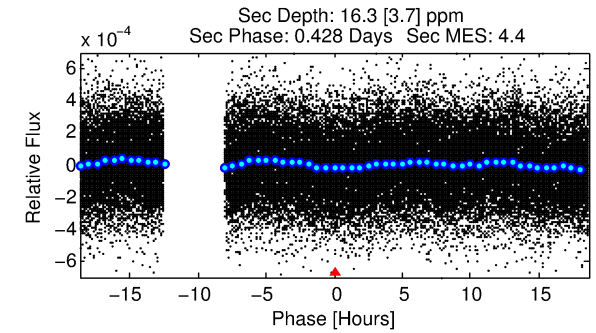
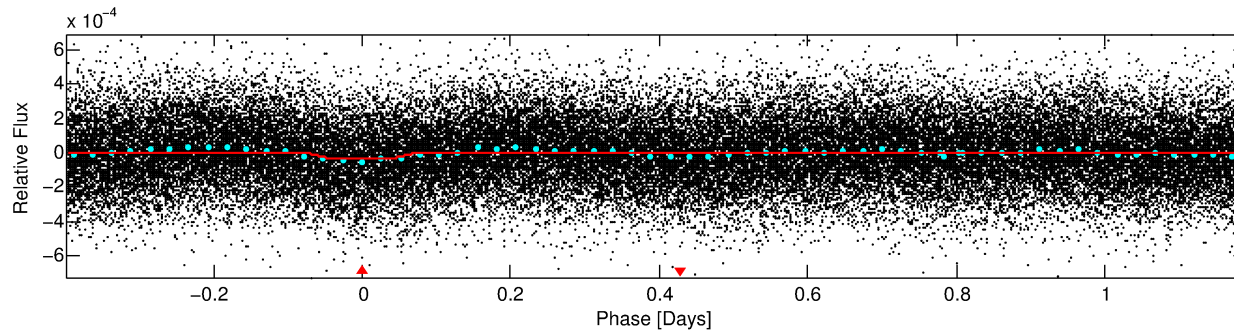
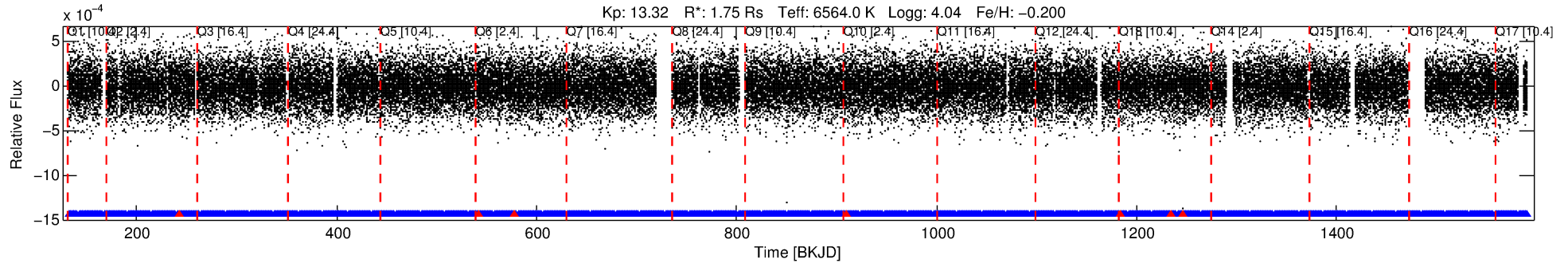
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002156514-01

No Significant Match Found

DV One-Page Summary

KIC: 2156514 Candidate: 1 of 1 Period: 1.586 d



DV Fit Results:

Period = 1.58561 [0.00002] d
Epoch = 132.8903 [0.0036] BKJD
Rp/R* = 0.0062 [0.0023]
a/R* = 1.78 [2.64]
b = 0.93 [0.32]
Seff = 6287.74 [3291.43]
Teq = 2271 [297] K
Rp = 1.18 [0.60] Re
a = 0.0285 [0.0092] AU
Ag = 5.25 [4.84] [0.88σ]
Teffp = 5314 [1042] K [2.81σ]

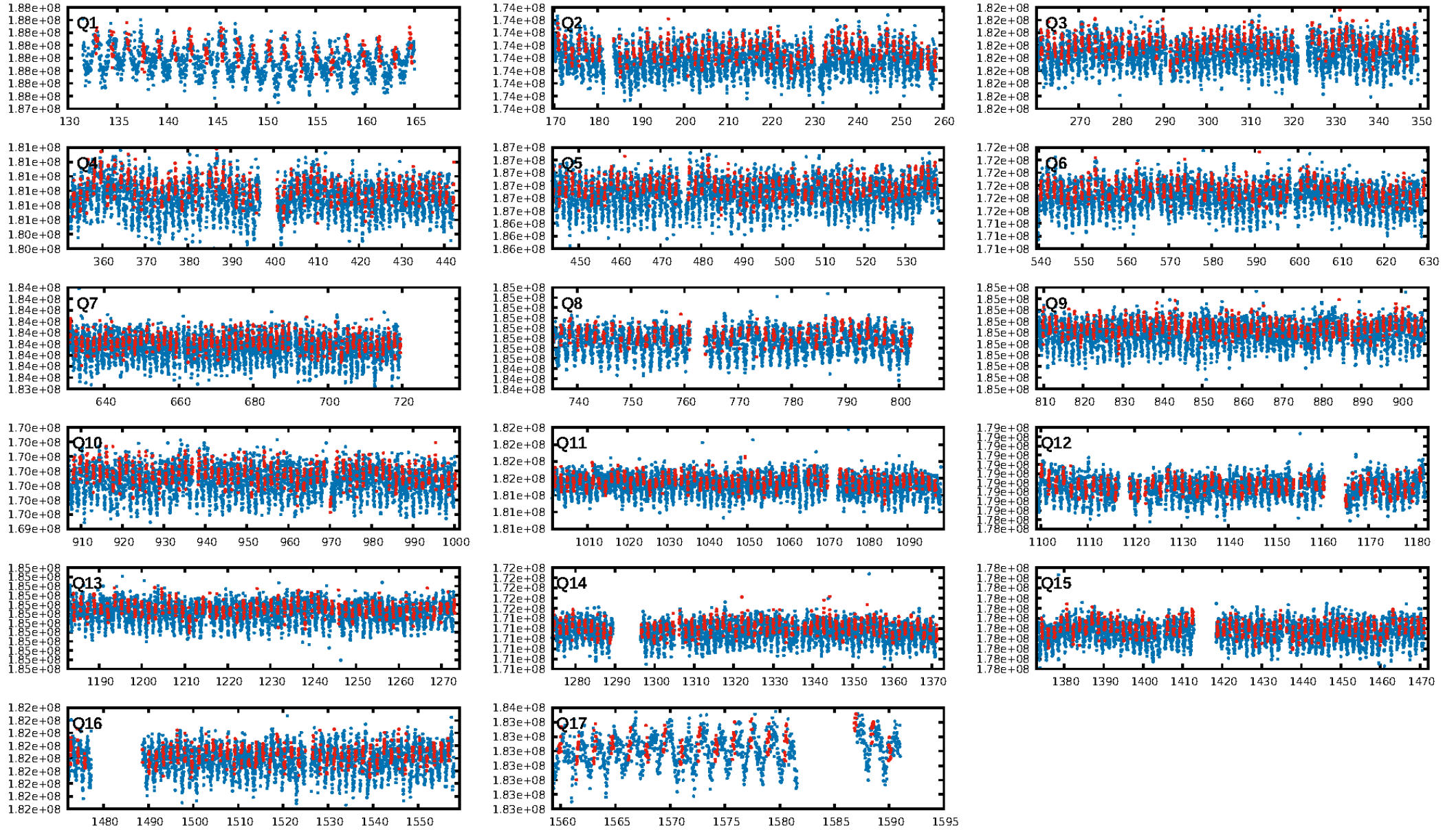
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.29e-18
RollingBand-fgt: 0.99 [809/816]
GhostDiagnostic-chr: 0.9568
Centroid-sig: 48.6%
Centroid-so: 0.679 arcsec [0.91σ]
OotOffset-rm: 0.242 arcsec [0.29σ]
KicOffset-rm: 0.338 arcsec [0.45σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.71 [12/17]
DiffImageOverlap-fno: 1.00 [17/17]

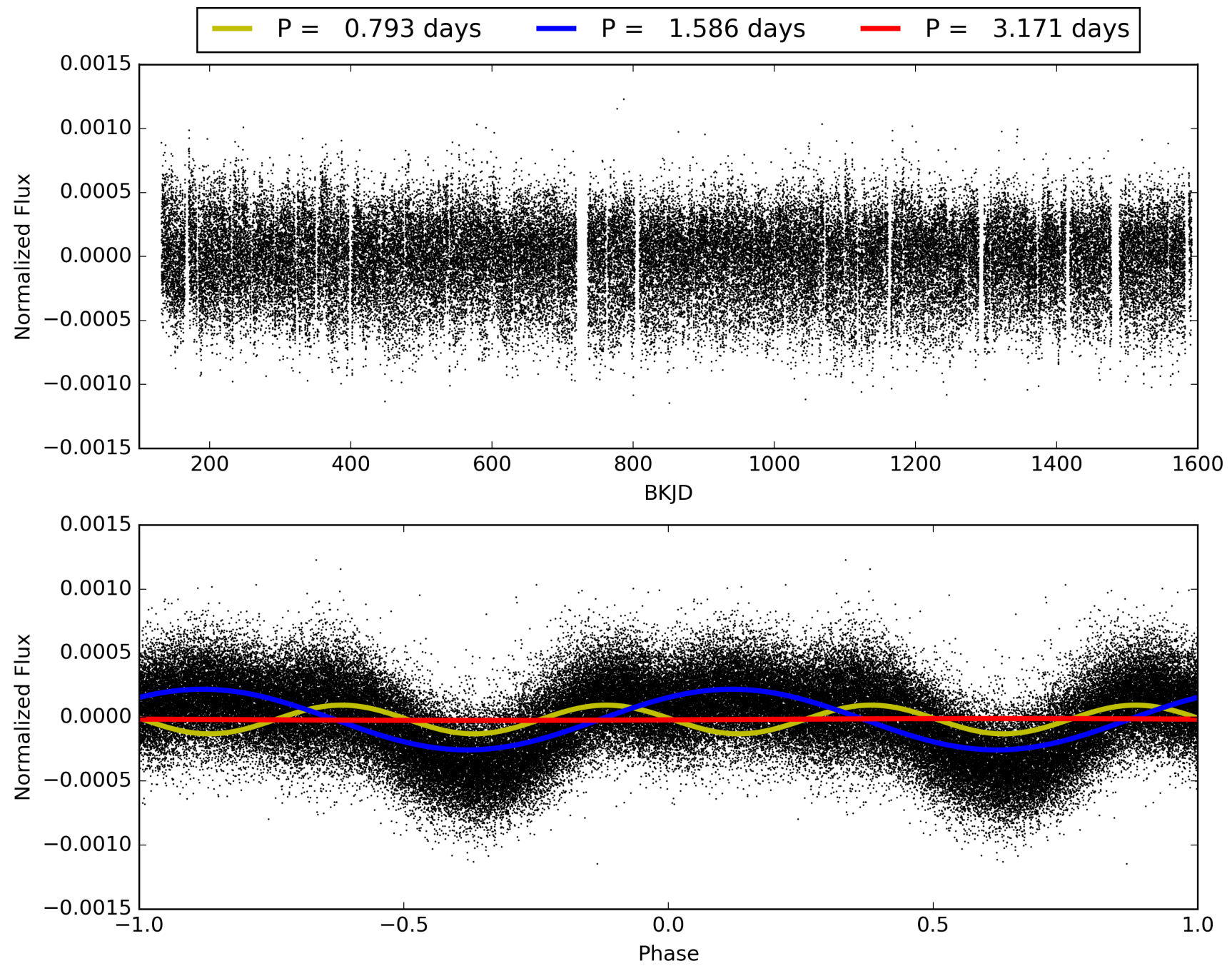
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:50:16 Z

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

TCE 002156514-01, PDC Light Curves

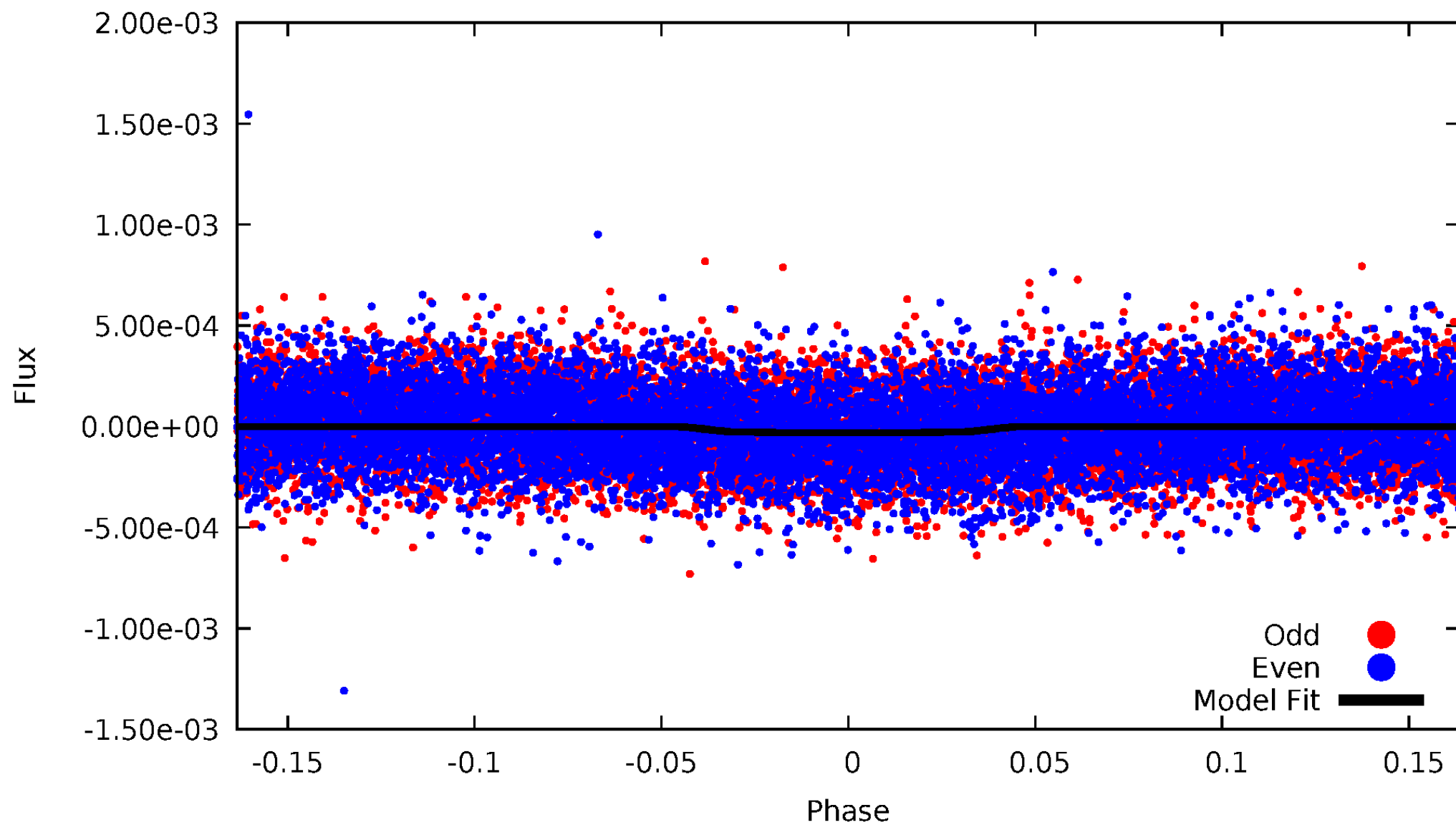


TCE 002156514-01



DV Odd/Even

TCE 002156514-01

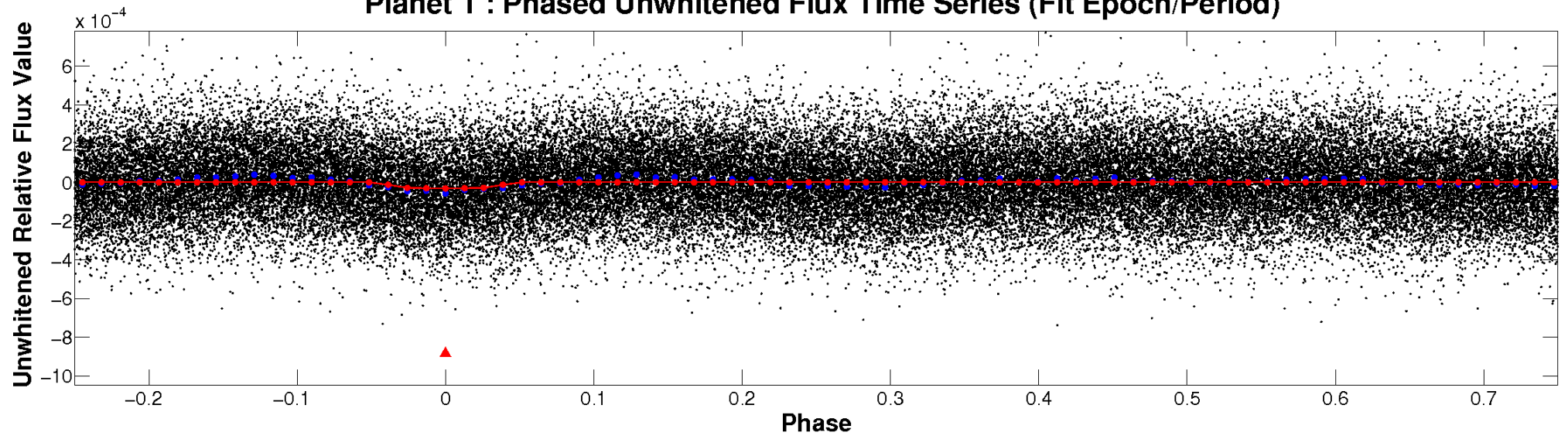


ALT Odd/Even

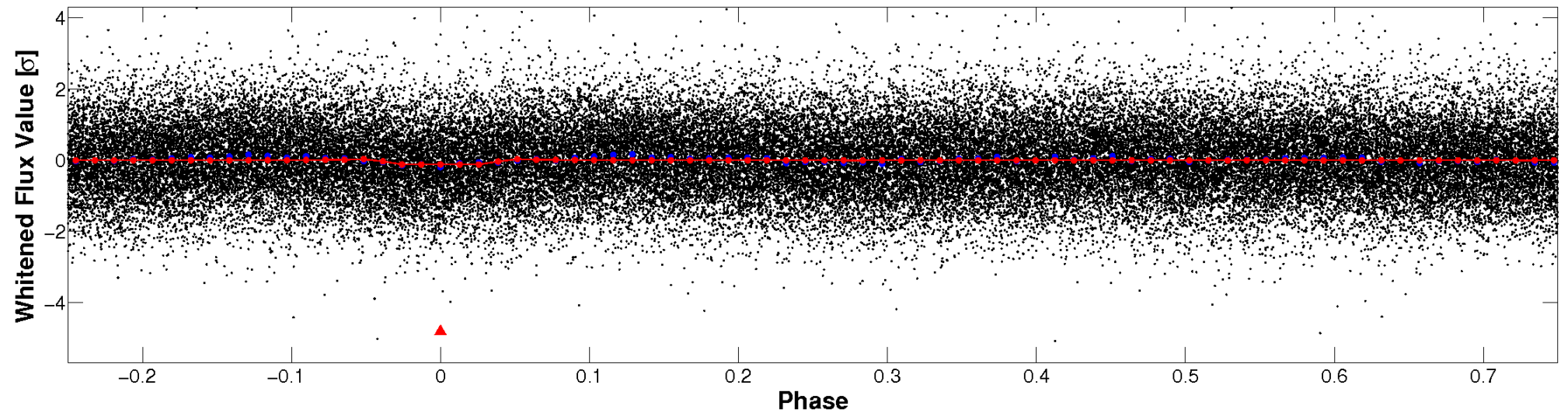
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

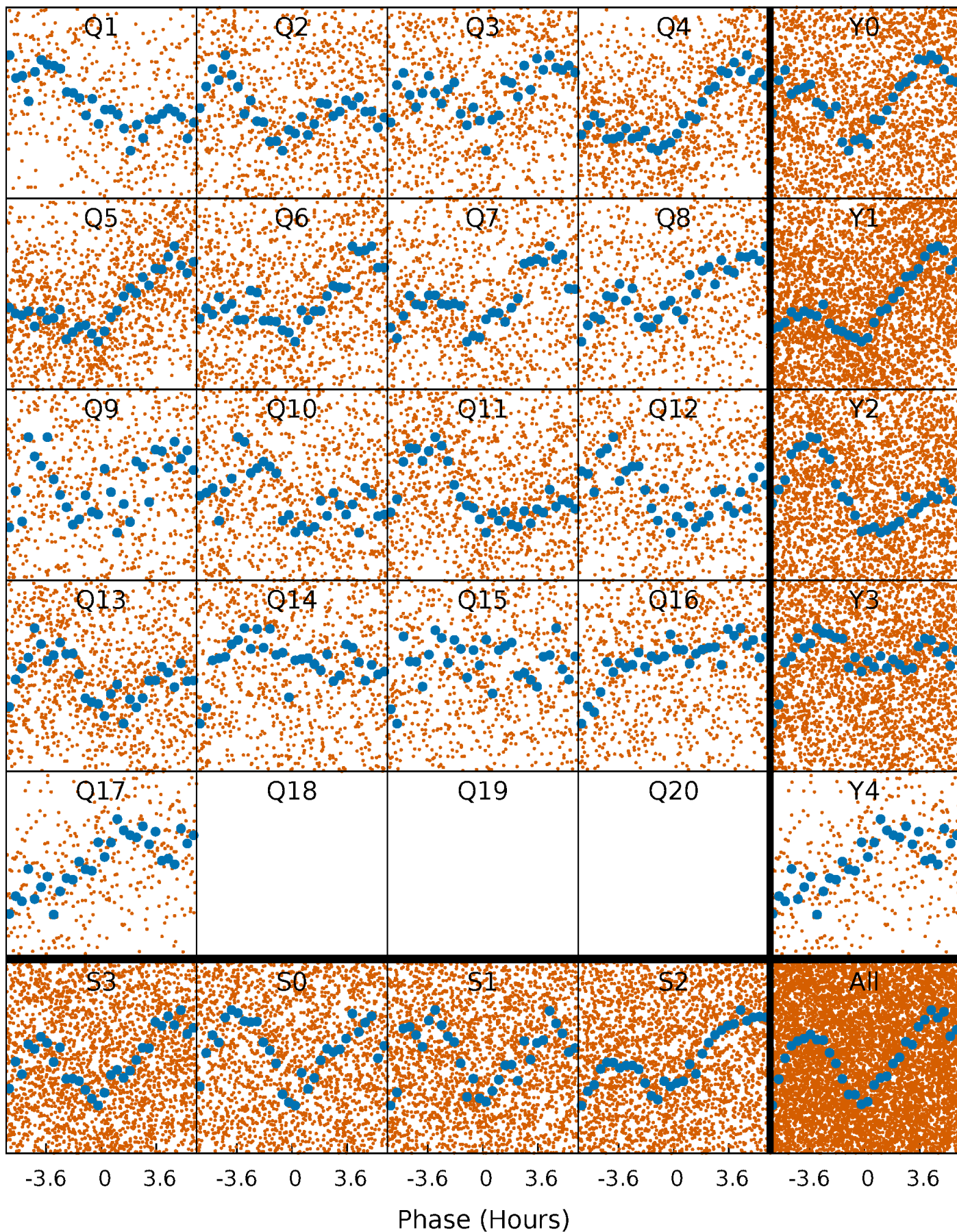


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



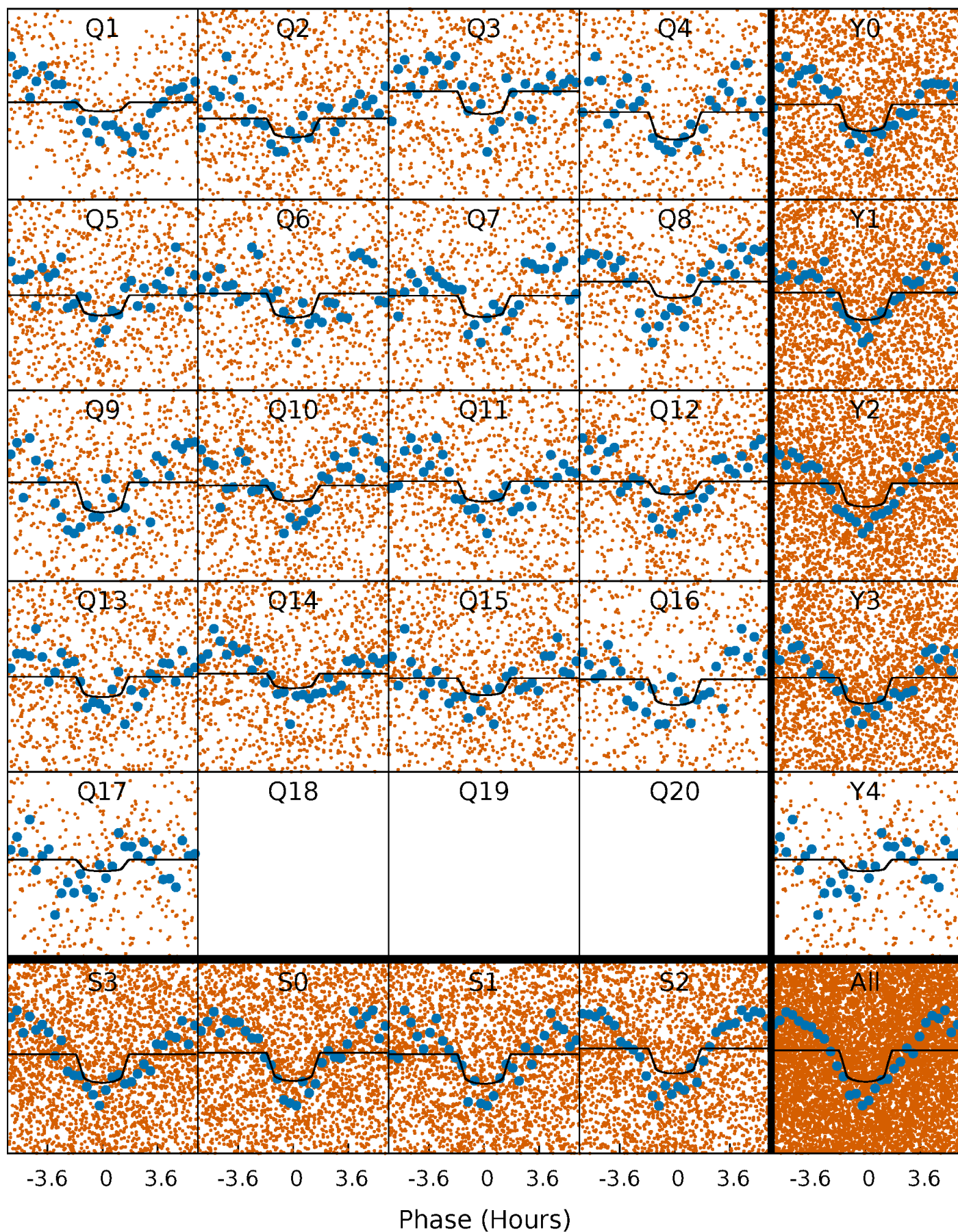
PDC Quarter-Phased Transit Curves

TCE 002156514-01 P= 1.585611 Days $T_0=132.890270$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 002156514-01 P= 1.585611 Days $T_0=132.890270$ (BKJD)

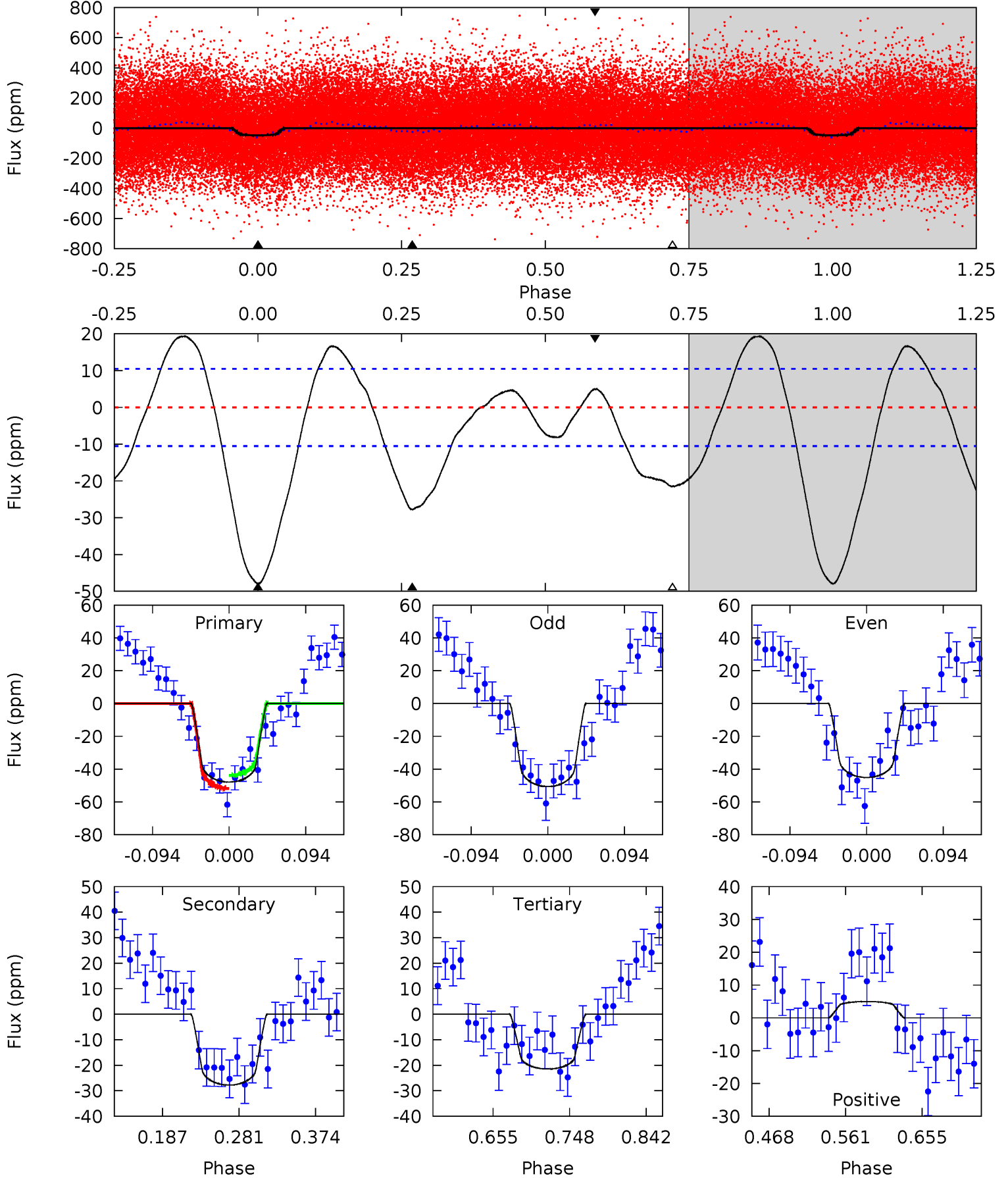


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

002156514-01, P = 1.585611 Days, E = 131.304659 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 20.9 | 12.1 | 9.37 | 2.17 | 4.58 | 1.68 | 5.25 | 11.5 | 18.7 | 2.74 | 9.94 | 1.20 | 1.04 | 0.29 | 1.76 |



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 002156514

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6564^{+181}_{-227} | $4.040^{+0.293}_{-0.158}$ | $-0.200^{+0.250}_{-0.300}$ | $1.753^{+0.494}_{-0.603}$ | $1.232^{+0.201}_{-0.201}$ | $0.322^{+0.607}_{-0.138}$ |
| | +3%/-3% | +7%/-4% | +125%/-150% | +28%/-34% | +16%/-16% | +189%/-43% |
| 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 002156514-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|----------------------------|
| DV | -28 ± 2 | $1.12^{+0.47}_{-0.44}$ | 3144^{+249}_{-300} | 6041^{+1800}_{-790} | $9.962^{+16.567}_{-5.059}$ |
| Alt. | N/A | N/A | N/A | N/A | N/A |

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

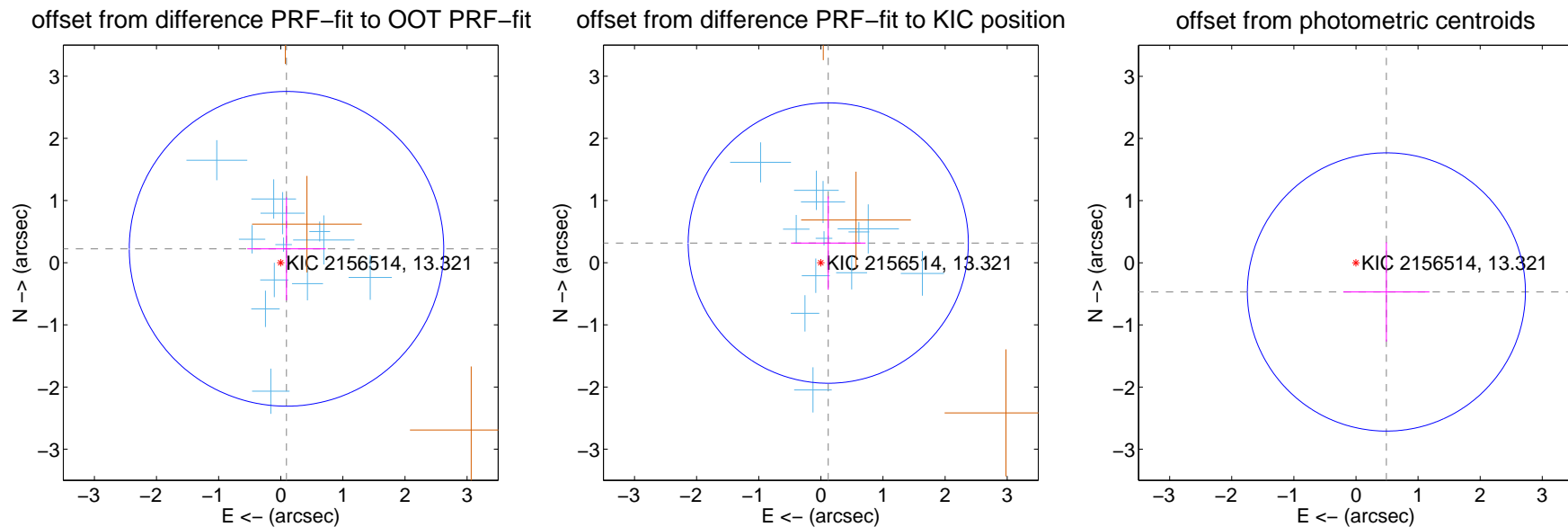
DV Centroid Data

Supplemental centroid analysis for 002156514-01. Kepler magnitude: 13.32. Transit SNR 7.79

There are 12 quarters with good PRF difference image offsets

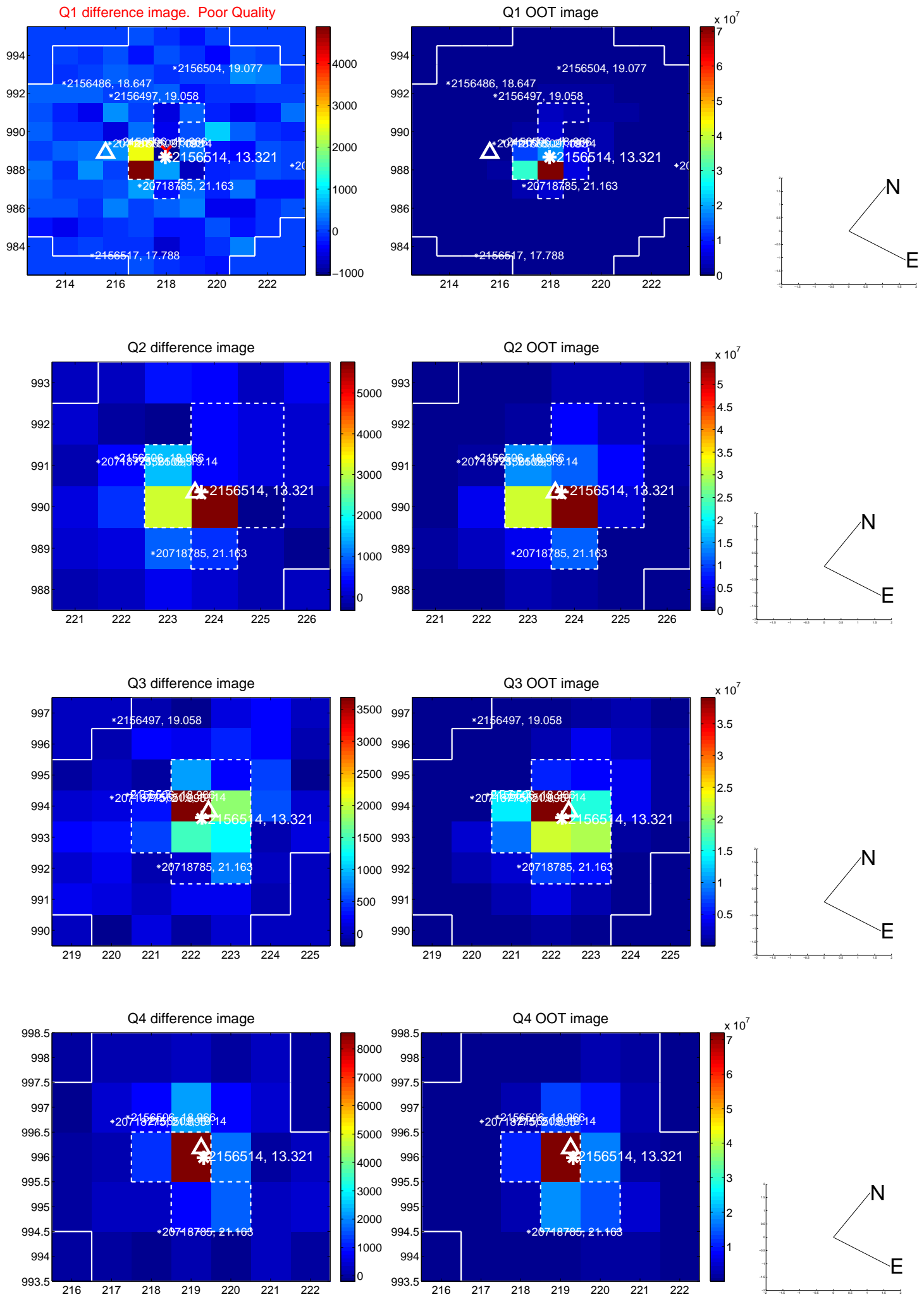
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 0.242 ± 0.844 | 0.29 | -0.093 ± 0.632 | 0.223 ± 0.828 |
| PRF-fit source offset from KIC position | 0.338 ± 0.752 | 0.45 | -0.119 ± 0.601 | 0.316 ± 0.751 |
| photometric centroid source offset | 0.68 ± 0.75 | 0.91 | -0.49 ± 0.69 | -0.47 ± 0.80 |

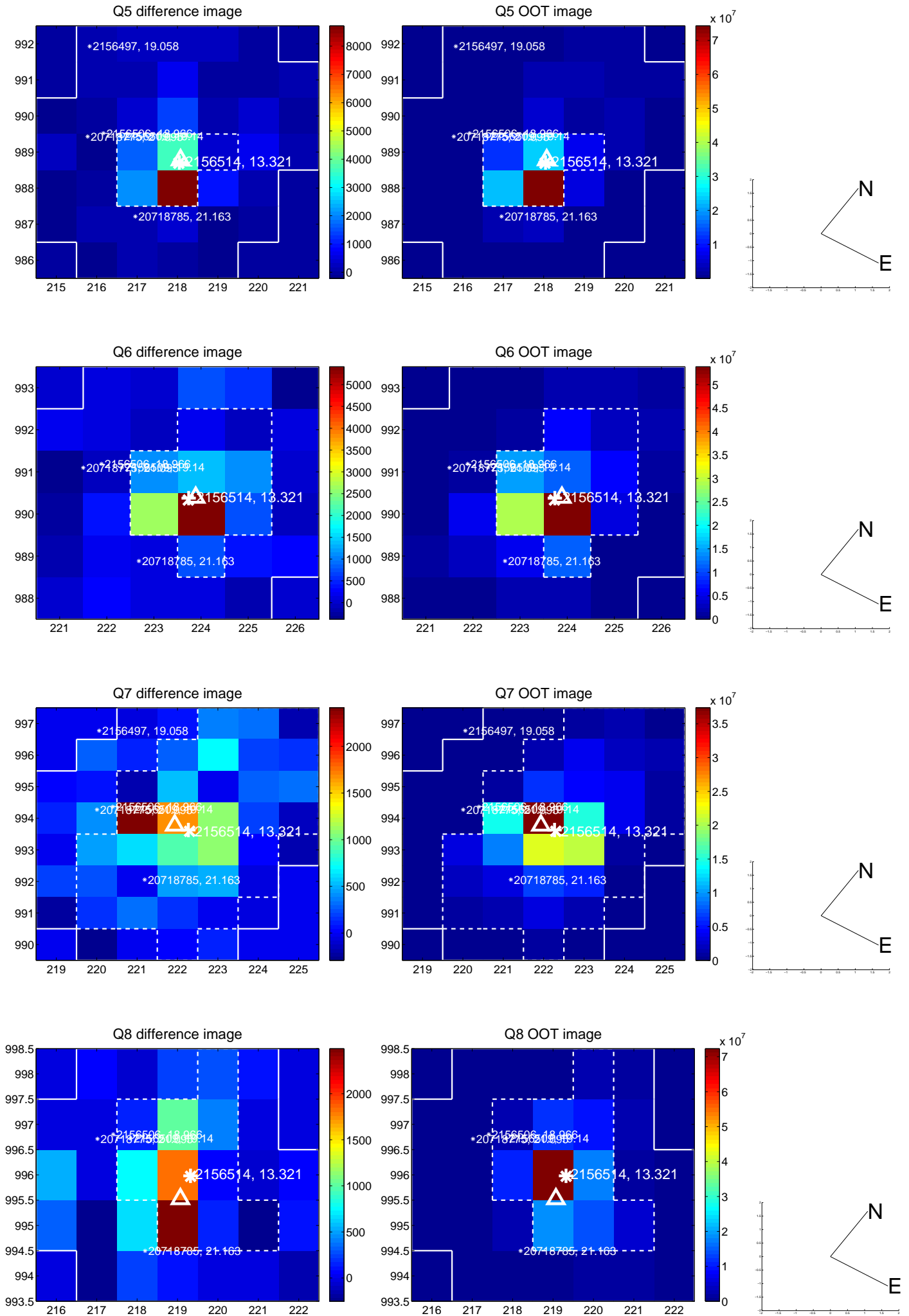


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

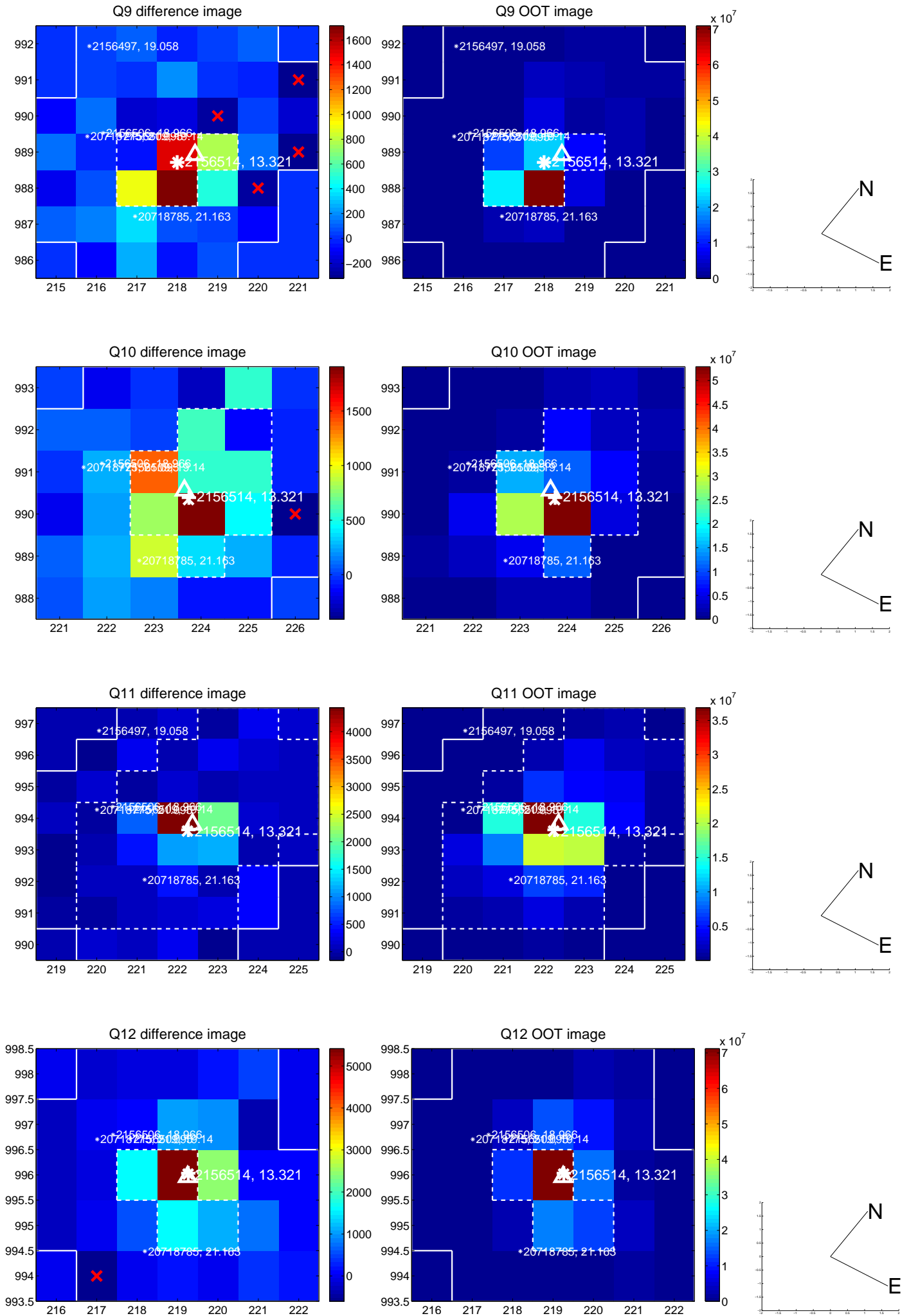
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



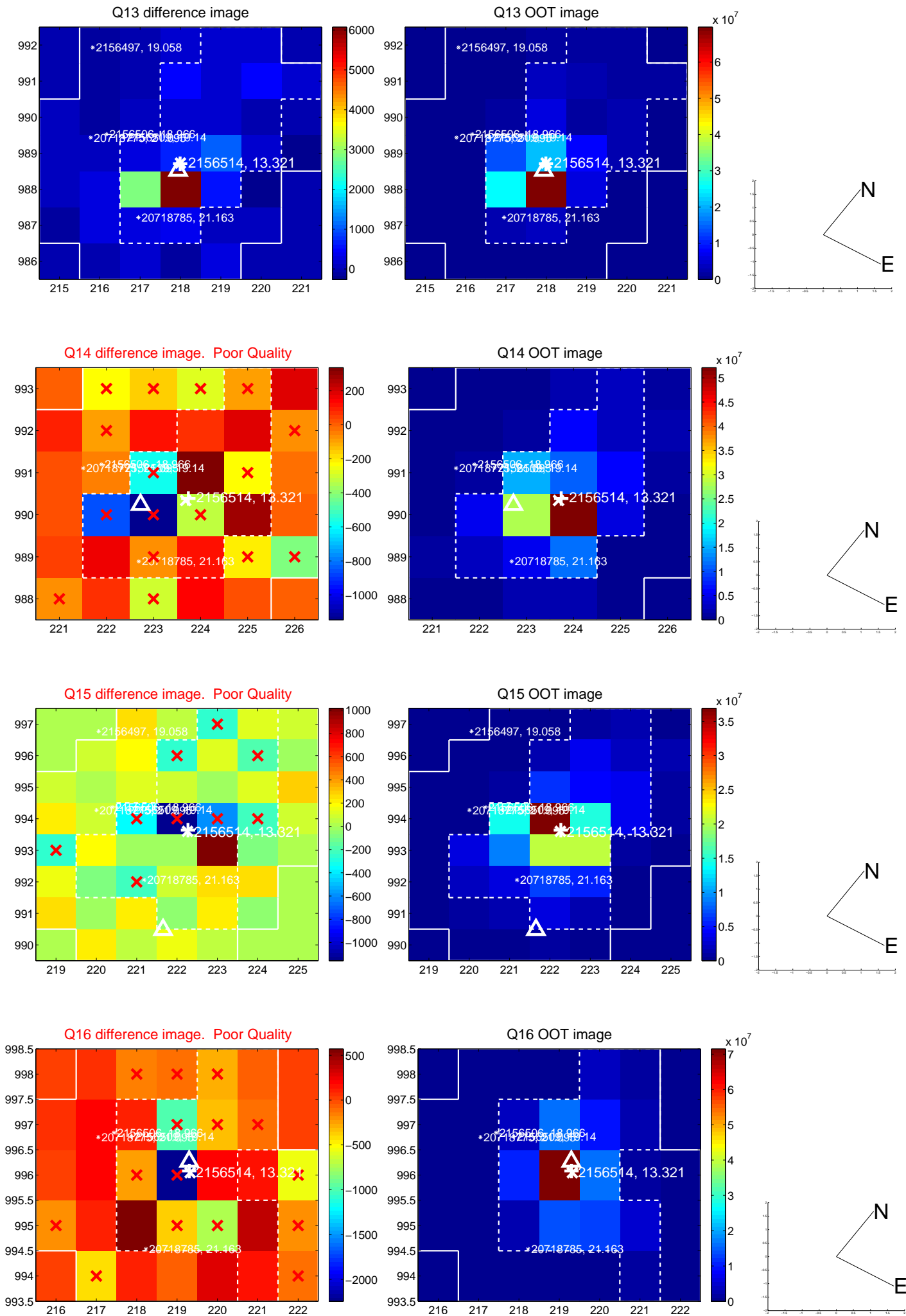
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



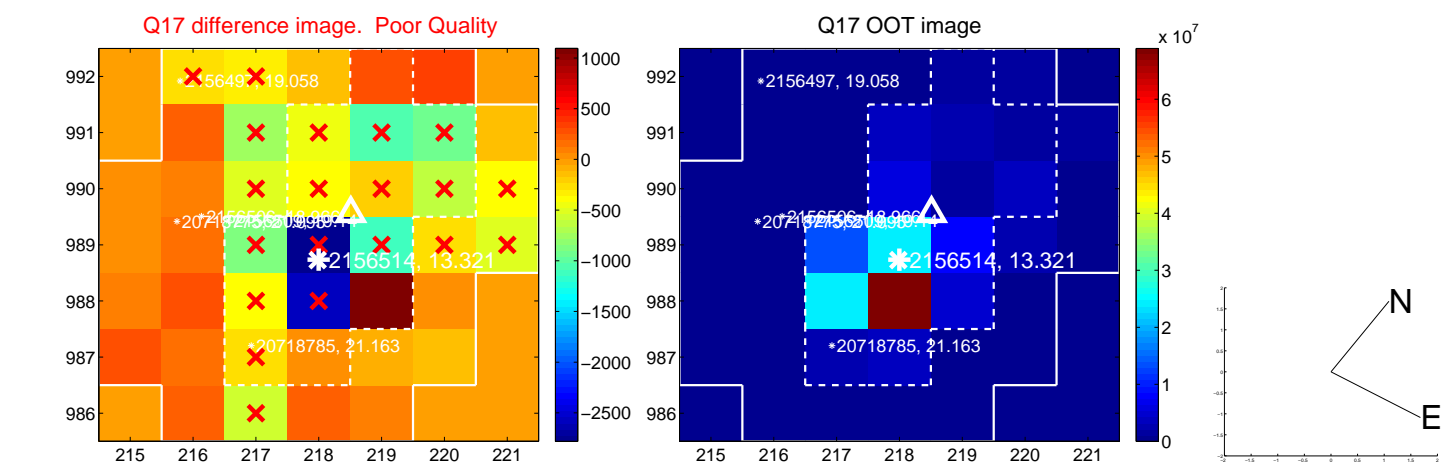
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



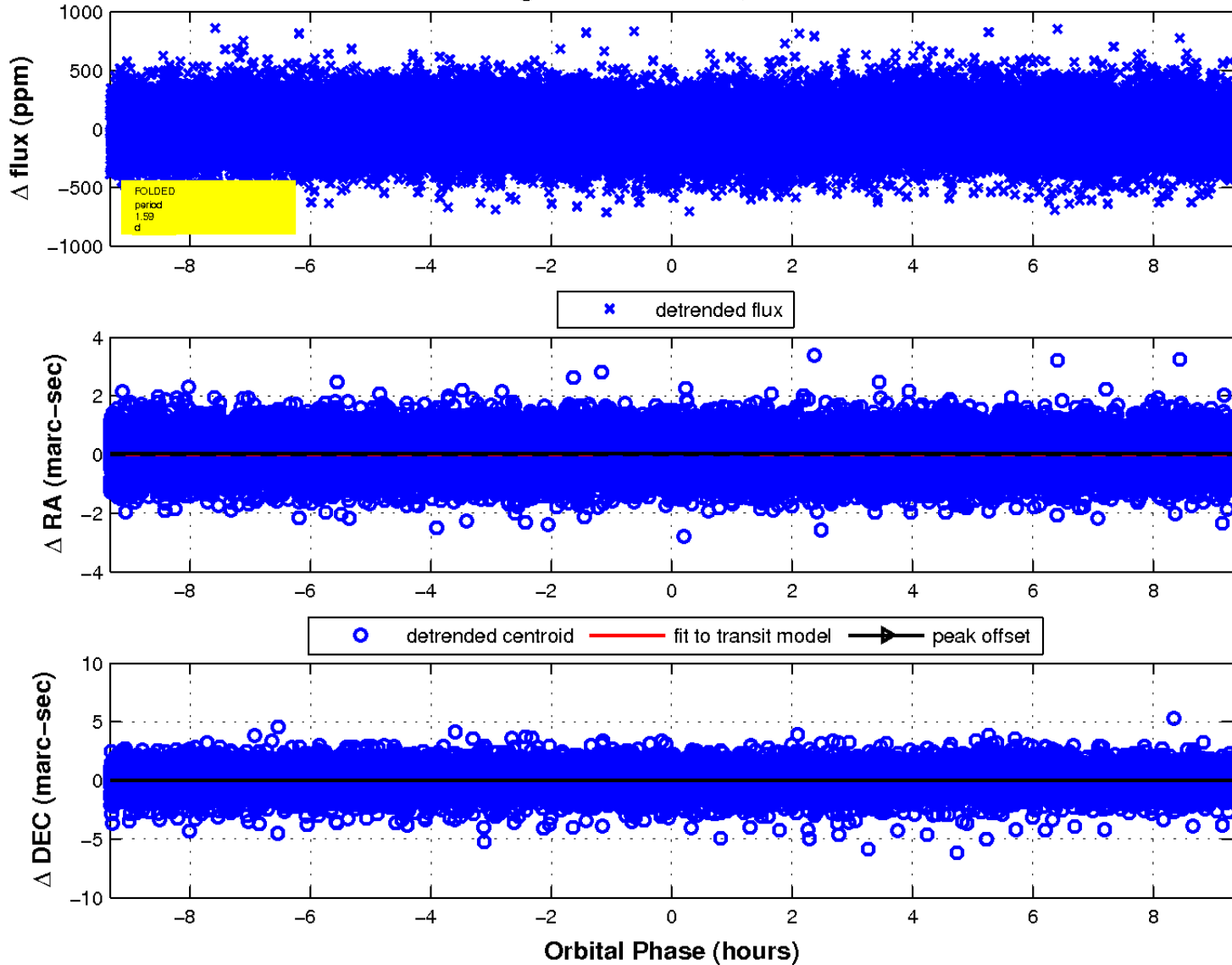
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

