

KIC 009344572

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 009344572-01 | OBS | No | 0.975009 | 132.473112 | 120.4 | 4.624 | 13.6 | 11.2 | 1.93 | 7620 | 2.45 | 21808.40 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|-----------------------------------------------------------|
| 009344572-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT |

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

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

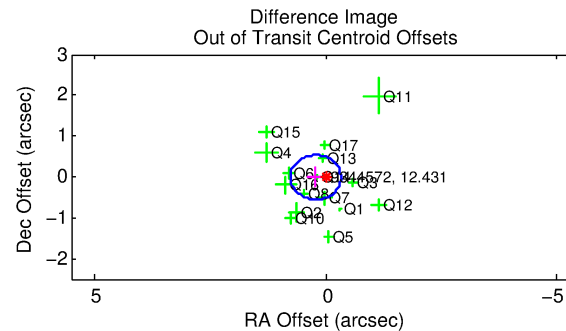
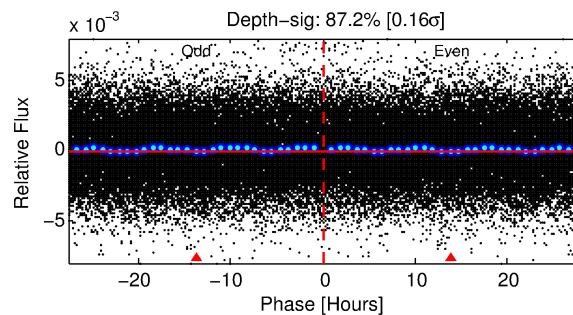
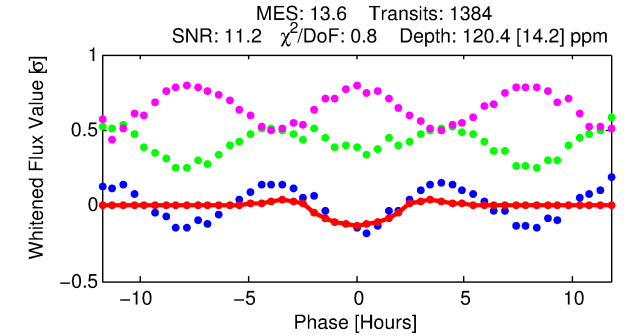
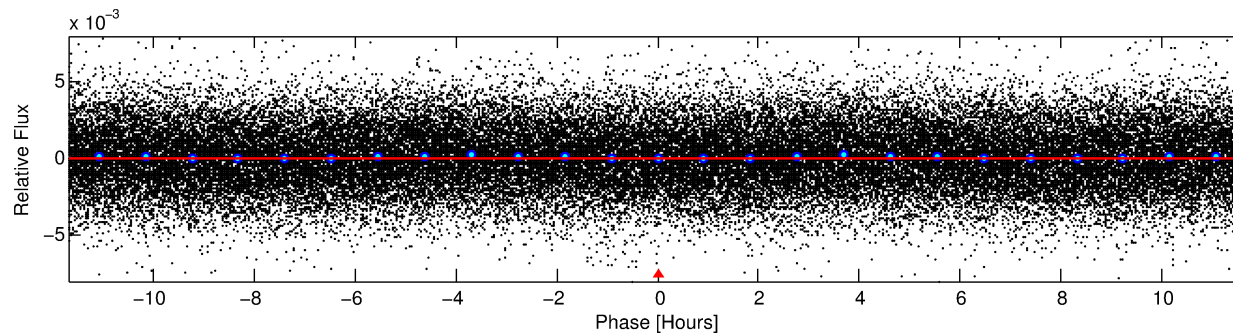
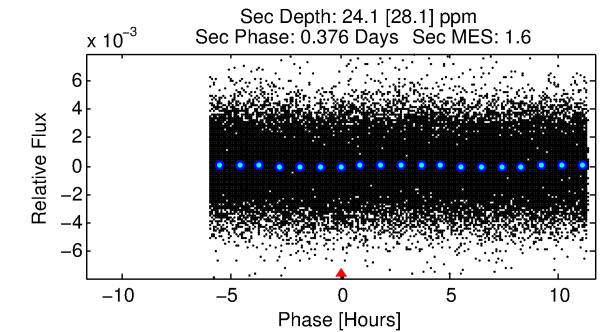
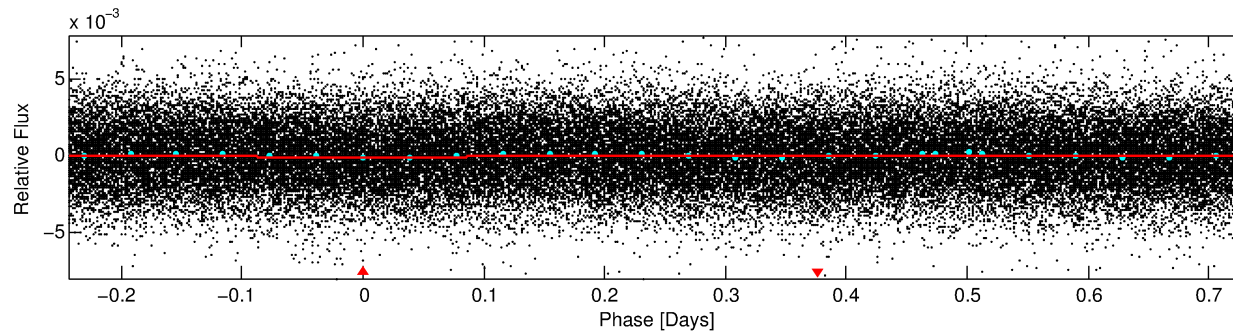
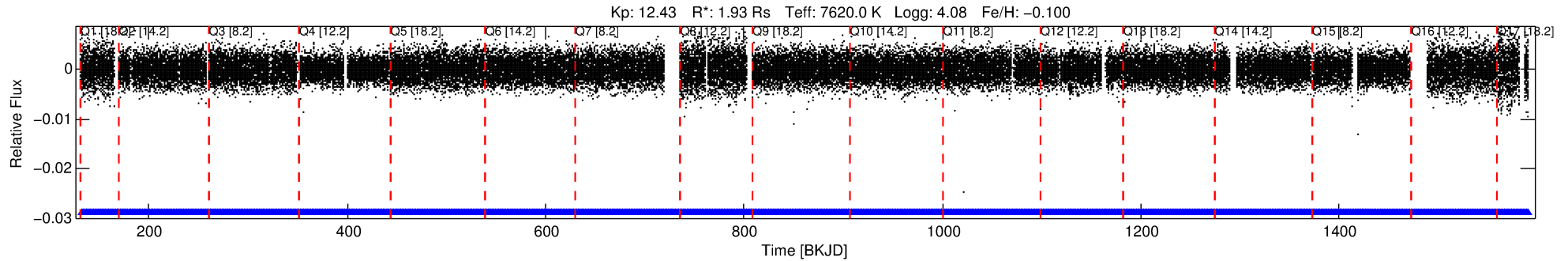
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009344572-01

No Significant Match Found

DV One-Page Summary

KIC: 9344572 Candidate: 1 of 1 Period: 0.975 d



DV Fit Results:

Period = 0.97501 [0.00001] d
Epoch = 132.4731 [0.0055] BKJD
Rp/R* = 0.0117 [0.0063]
a/R* = 1.19 [1.26]
b = 0.90 [0.72]
Seff = 21808.40 [7574.81]
Teff = 3099 [269] K
Rp = 2.45 [1.47] Re
a = 0.0227 [0.0048] AU
Ag = 1.13 [1.84] [0.07σ]
Teffp = 4942 [1982] K [0.92σ]

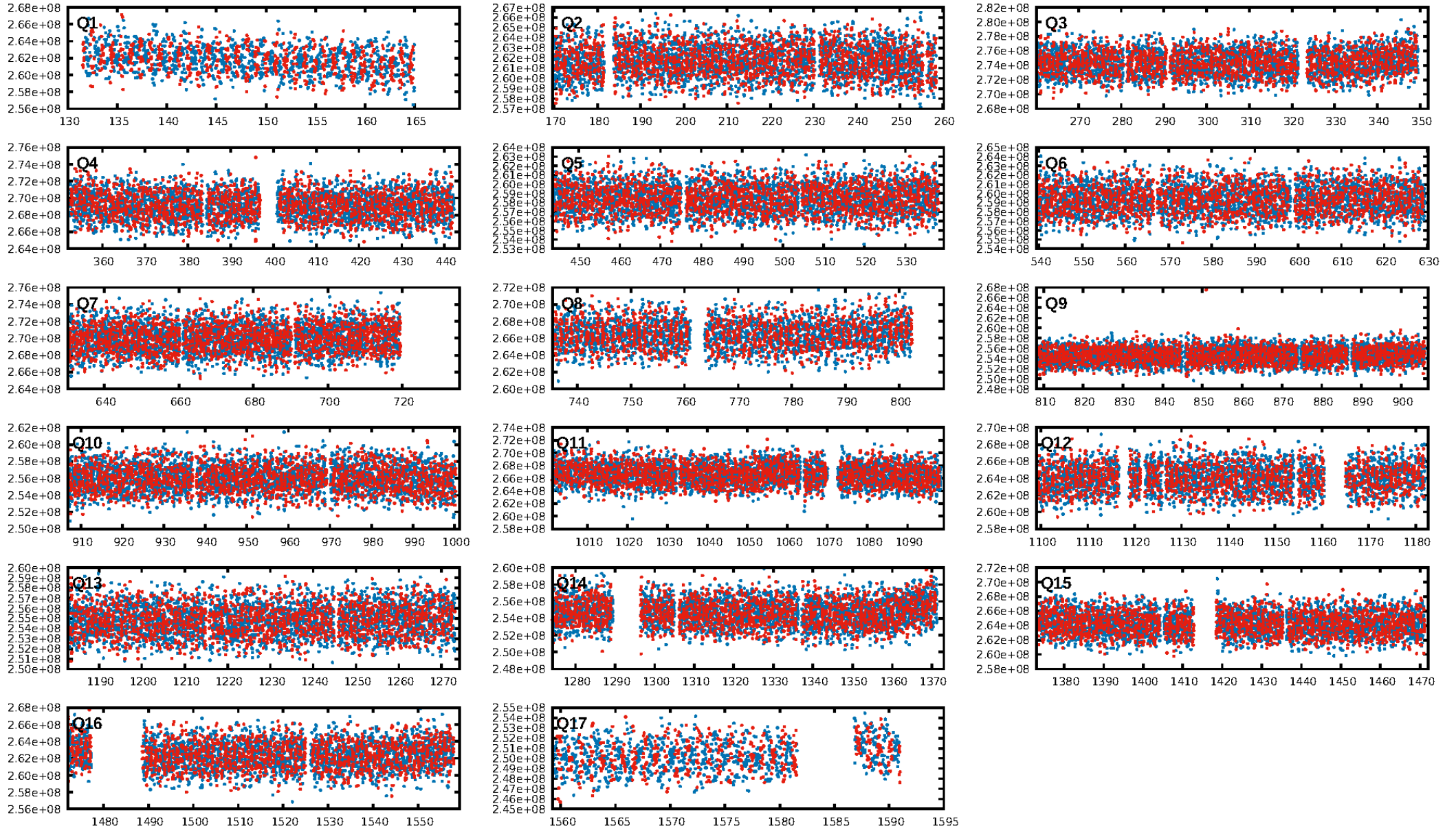
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.34e-65
RollingBand-fgt: 1.00 [1321/1321]
GhostDiagnostic-chr: 1.951
Centroid-sig: 76.6%
Centroid-so: 0.039 arcsec [0.41σ]
OotOffset-rm: 0.216 arcsec [1.19σ]
KicOffset-rm: 0.262 arcsec [1.32σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 1.00 [17/17]

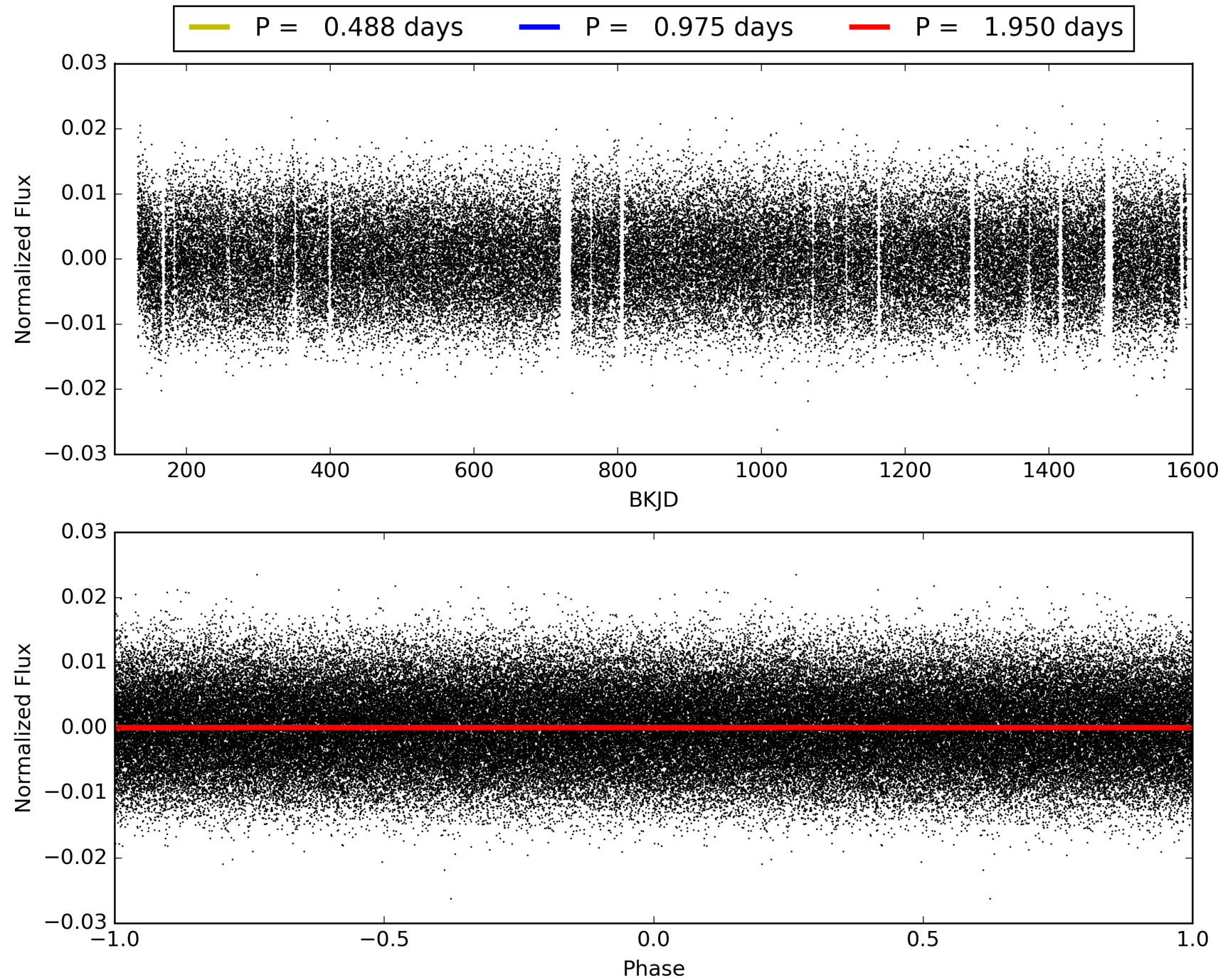
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:11:59 Z

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

TCE 009344572-01, PDC Light Curves

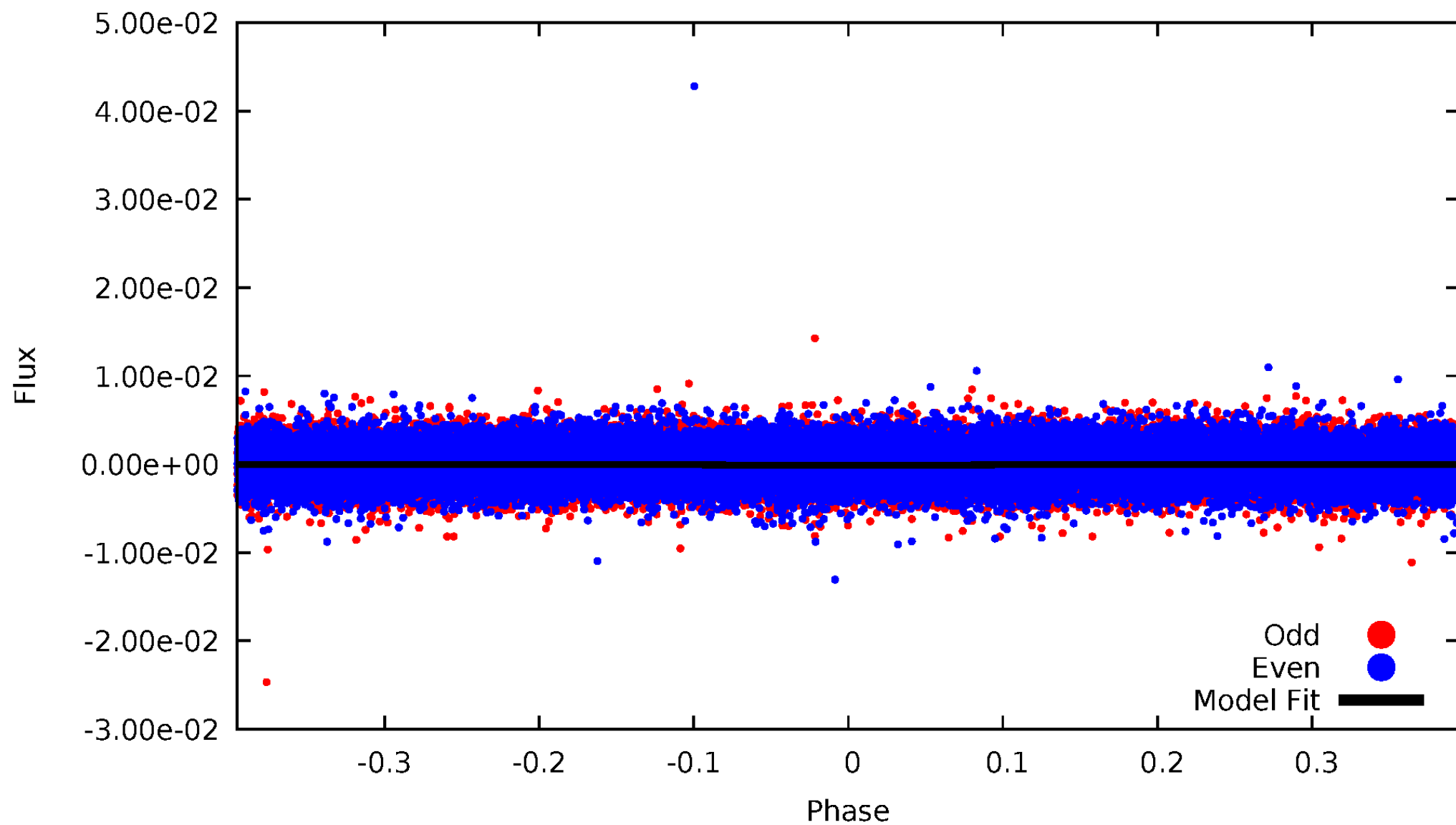


TCE 009344572-01



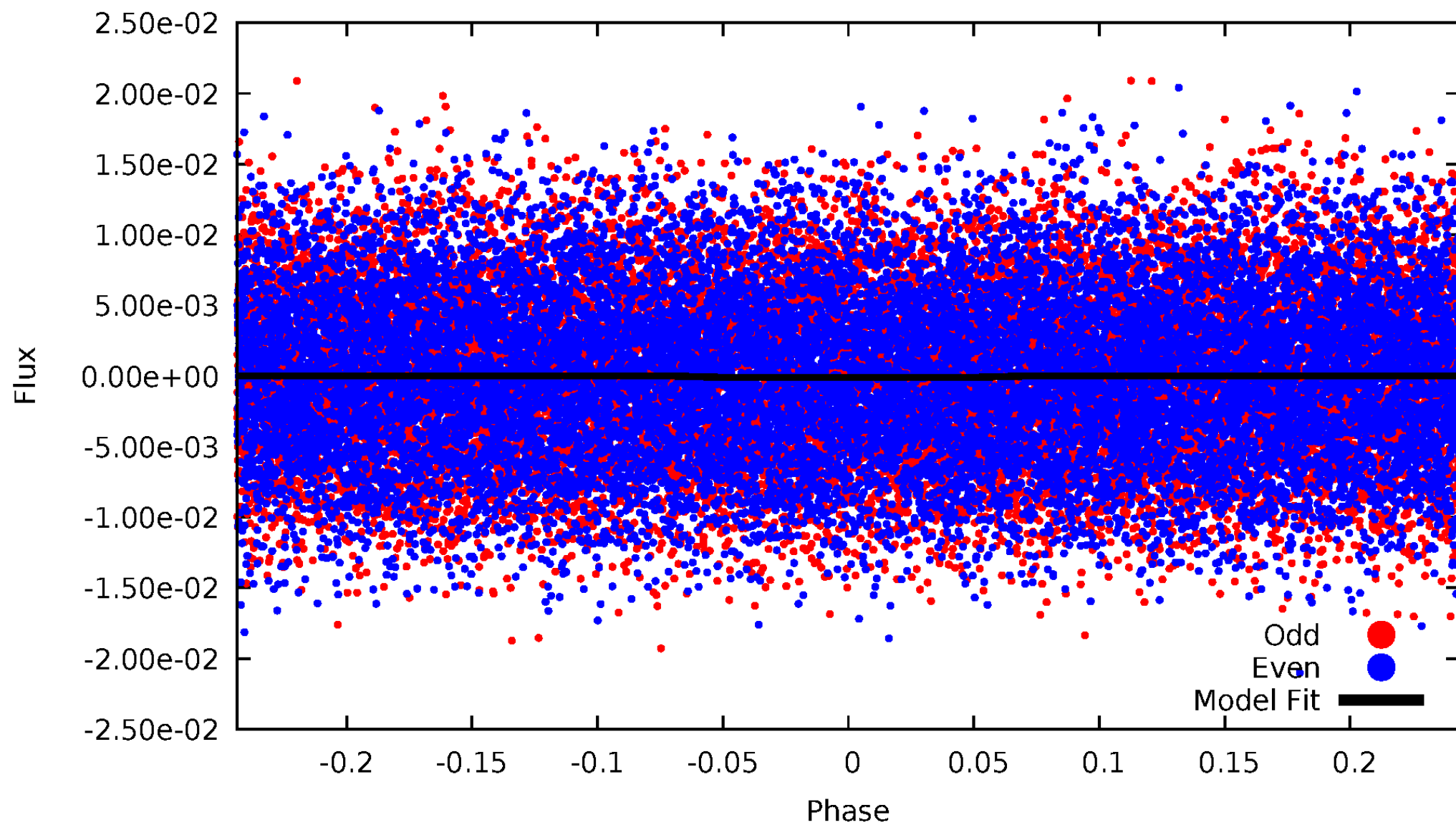
DV Odd/Even

TCE 009344572-01

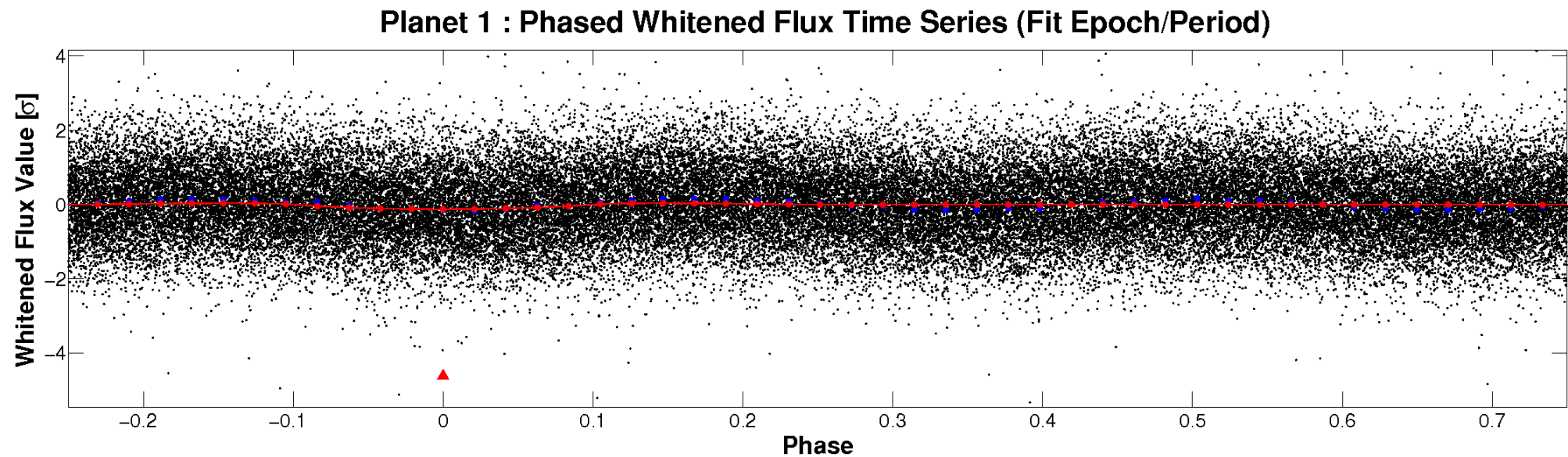
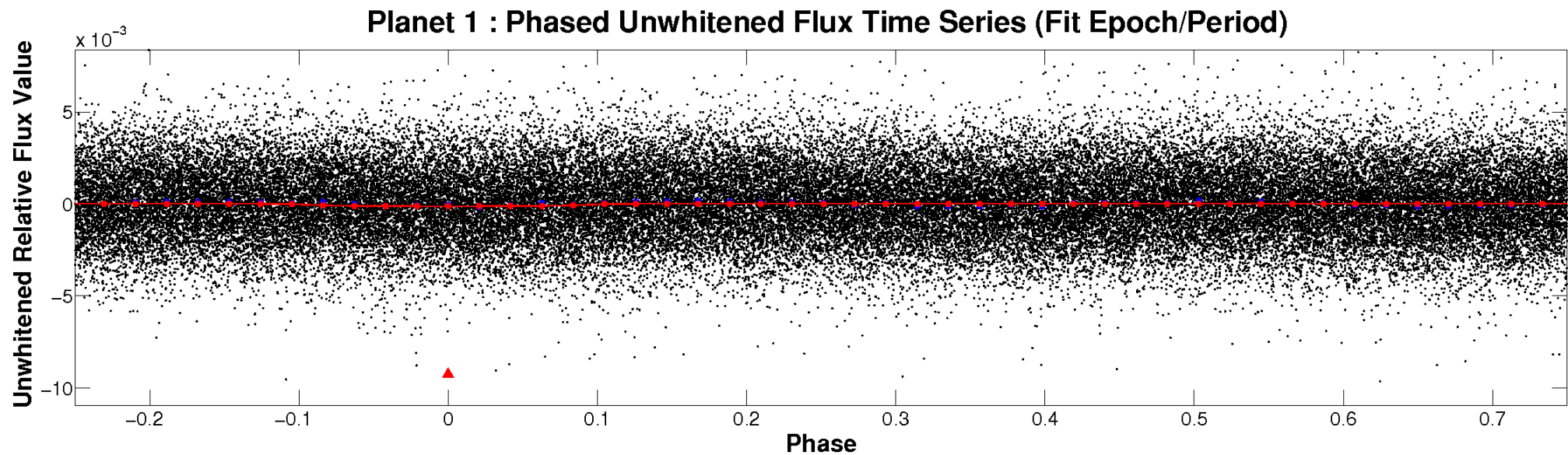


ALT Odd/Even

TCE 009344572-01

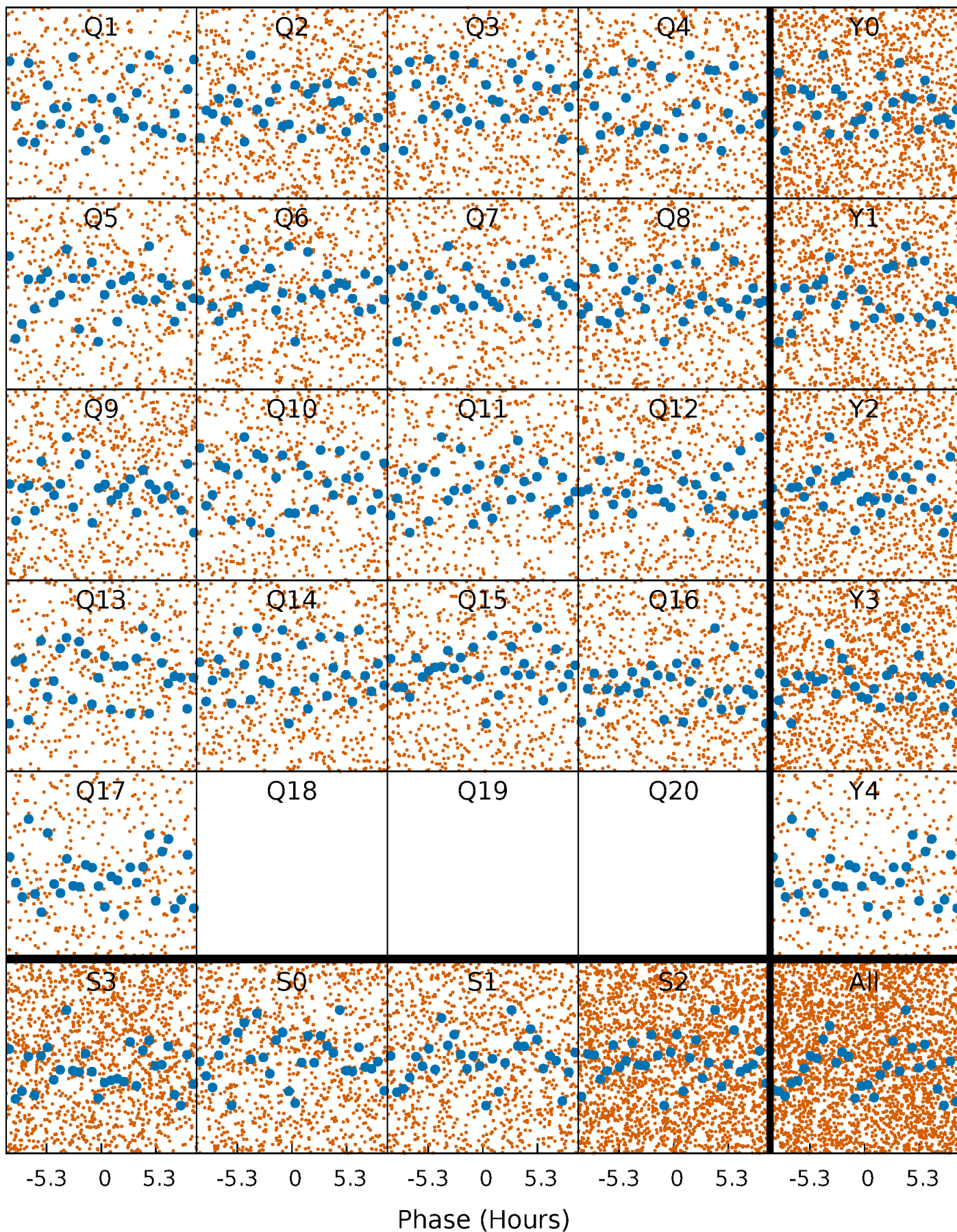


Non-Whitened Vs. Whitened Light Curve



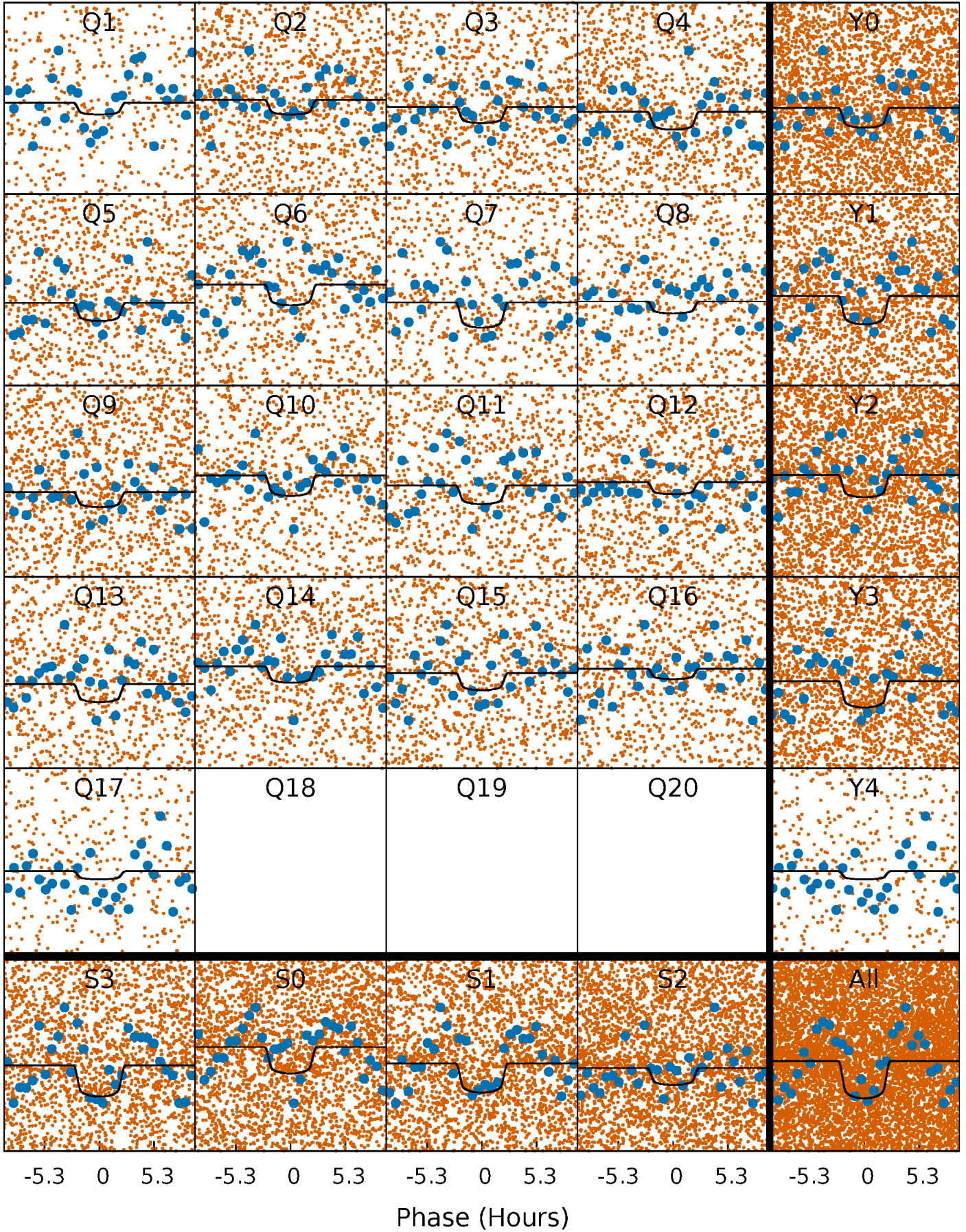
PDC Quarter-Phased Transit Curves

TCE 009344572-01 P= 0.975009 Days $T_0=132.473112$ (BKJD)



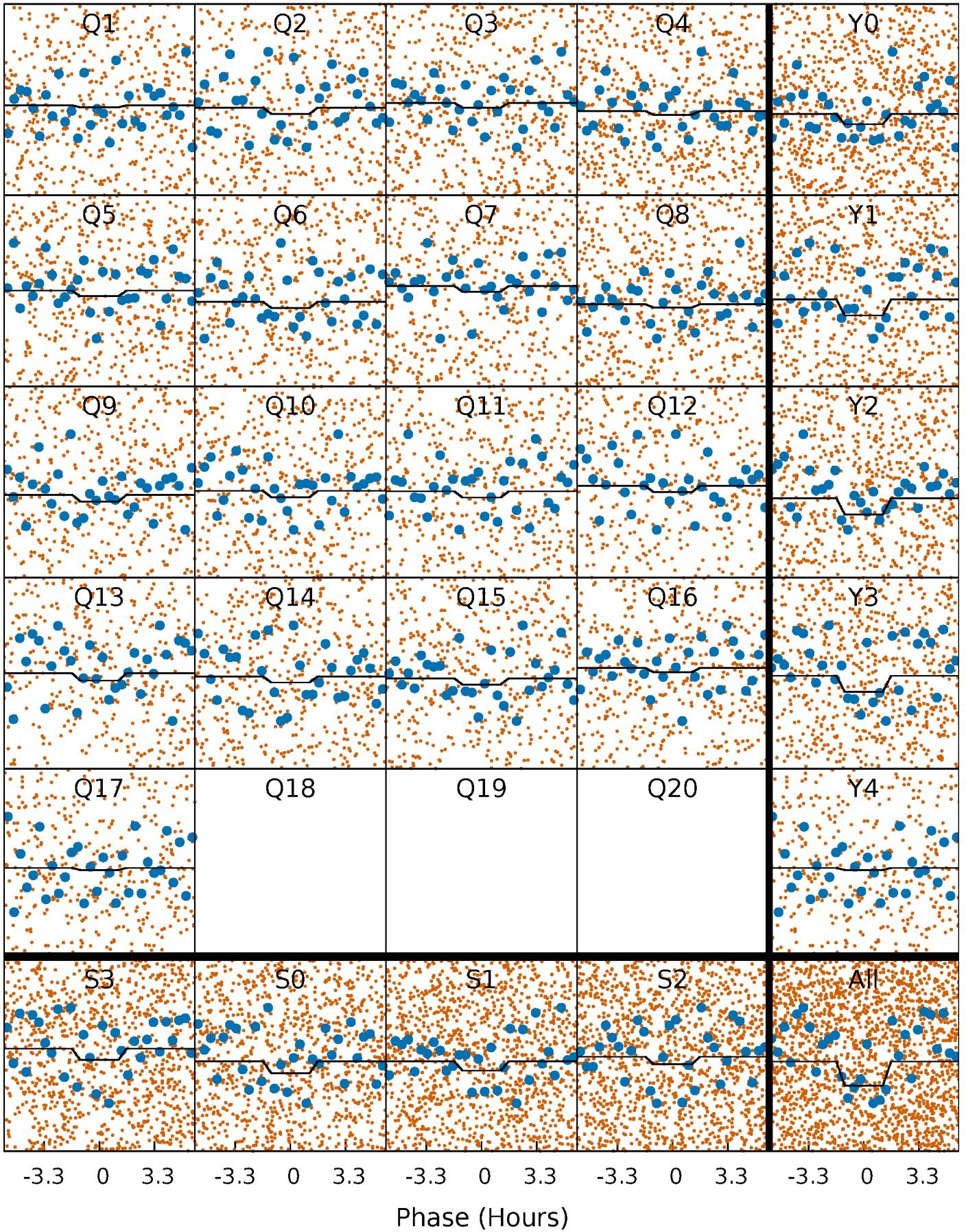
DV Quarter-Phased Transit Curves

TCE 009344572-01 P= 0.975009 Days $T_0=132.473112$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

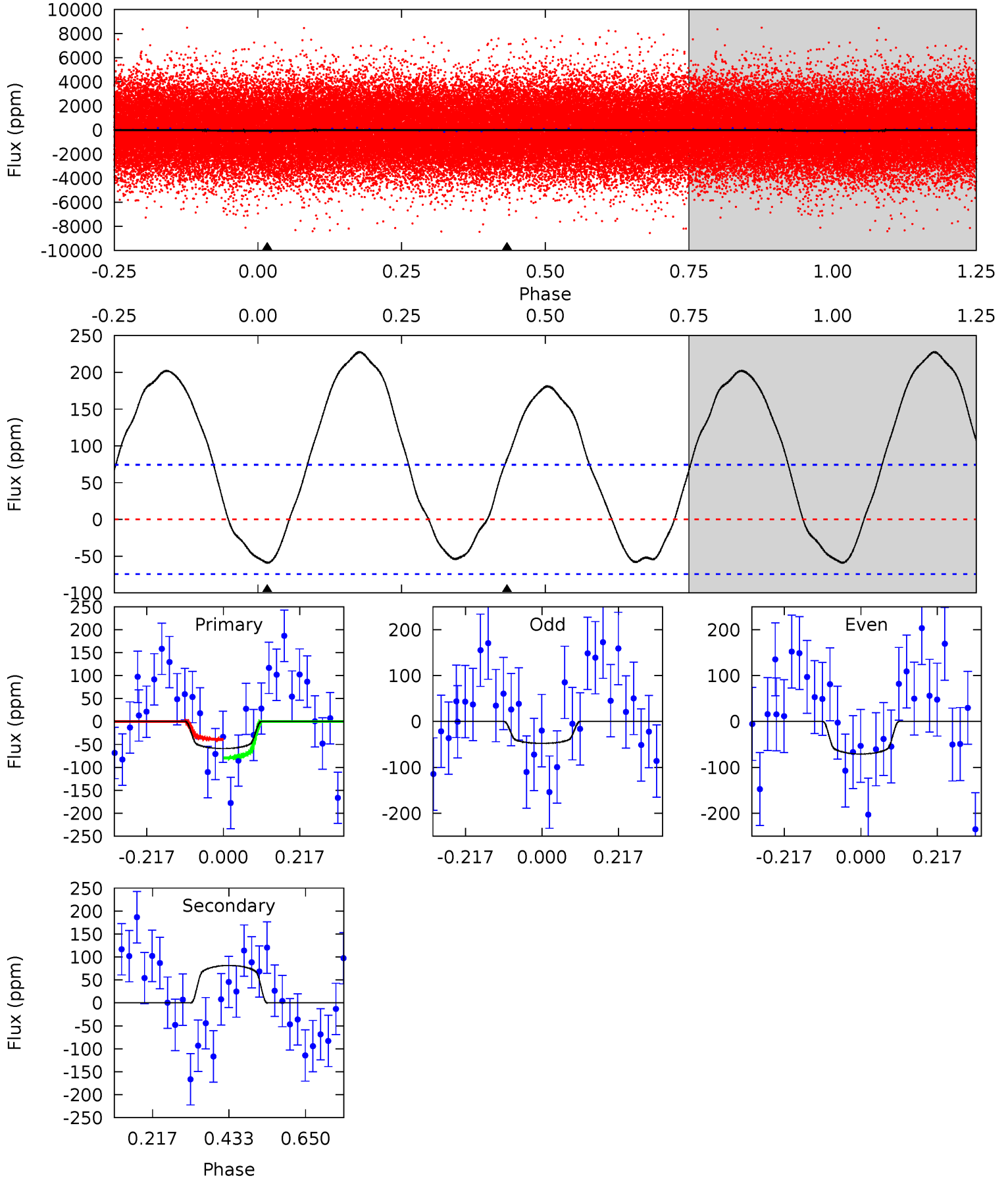
TCE 009344572-01 P= 0.975031 Days $T_0=132.462179$ (BKJD)



DV Model-Shift Uniqueness Test

009344572-01, P = 0.975009 Days, E = 131.498103 Days

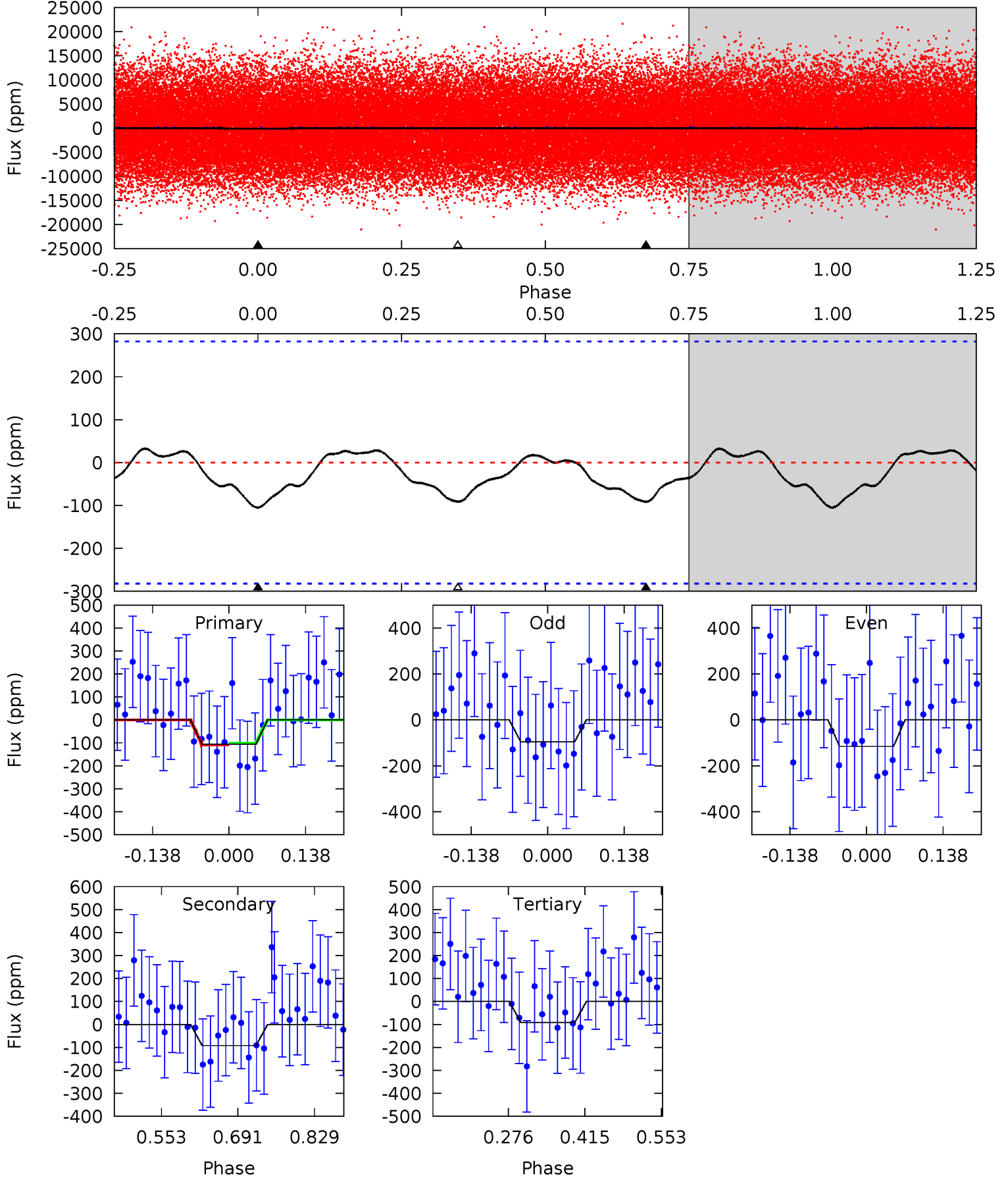
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 3.49 | -4.82 | 0 | 0 | 4.40 | 1.24 | 4.56 | 3.49 | 3.49 | -4.82 | -4.82 | 0.68 | 0.89 | 0.79 | 1.19 |



Alt Model-Shift Uniqueness Test

009344572-01, P = 0.975031 Days, E = 131.487148 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 1.68 | 1.46 | 1.46 | 0 | 4.50 | 1.48 | 0.60 | 0.22 | 1.68 | 0.01 | 1.46 | 0.16 | 0.67 | 0.24 | 0.06 |



Stellar Parameters For KIC 009344572

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|-------------------------------------------|
| | 7620^{+211}_{-316} | $4.082^{+0.165}_{-0.165}$ | $-0.100^{+0.200}_{-0.350}$ | $1.927^{+0.492}_{-0.443}$ | $1.634^{+0.187}_{-0.257}$ | $0.322^{+0.285}_{-0.151}$ |
| | +3%/-4% | +4%/-4% | +200%/-350% | +26%/-23% | +11%/-16% | +89%/-47% |
| 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 009344572-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|--------------|------------------------|----------------------|-------------------------|-----------------------------|
| DV | 81 ± 17 | $2.58^{+1.29}_{-1.36}$ | 4318^{+305}_{-278} | -6537^{+1106}_{-3265} | $-3.397^{+1.994}_{-11.876}$ |
| Alt. | -92 ± 63 | $2.22^{+1.24}_{-1.28}$ | 4312^{+285}_{-302} | 6849^{+4543}_{-2114} | $4.810^{+19.016}_{-3.630}$ |

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

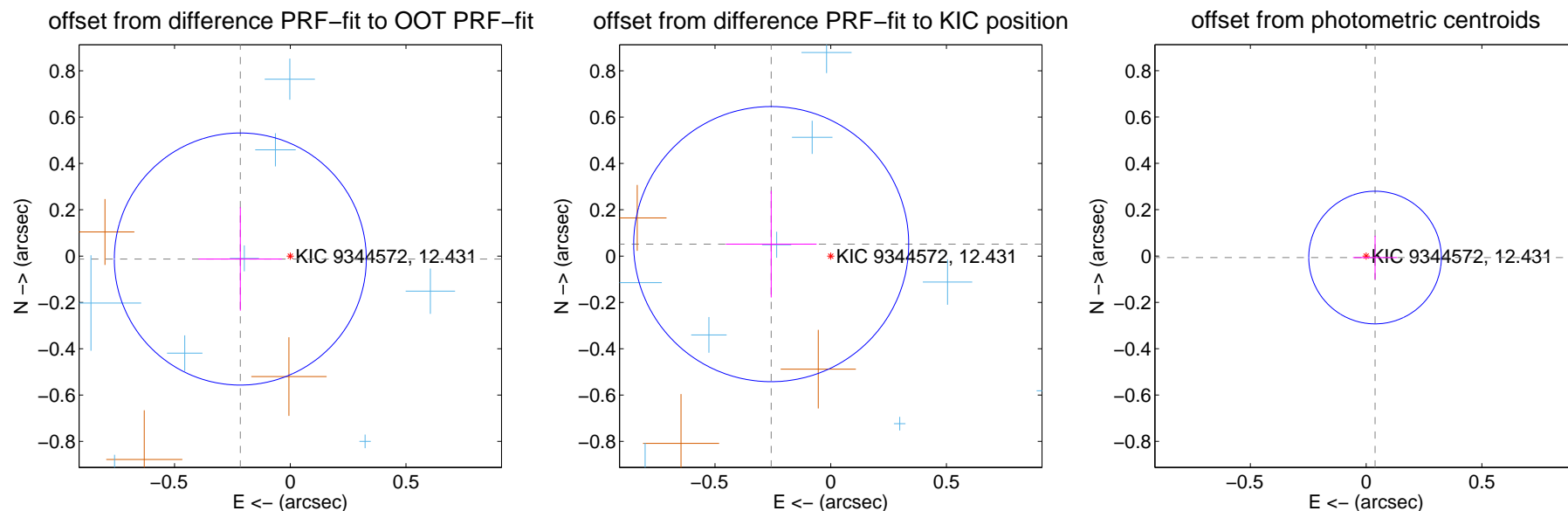
DV Centroid Data

Supplemental centroid analysis for 009344572-01. Kepler magnitude: 12.43. Transit SNR 11.17

There are 12 quarters with good PRF difference image offsets

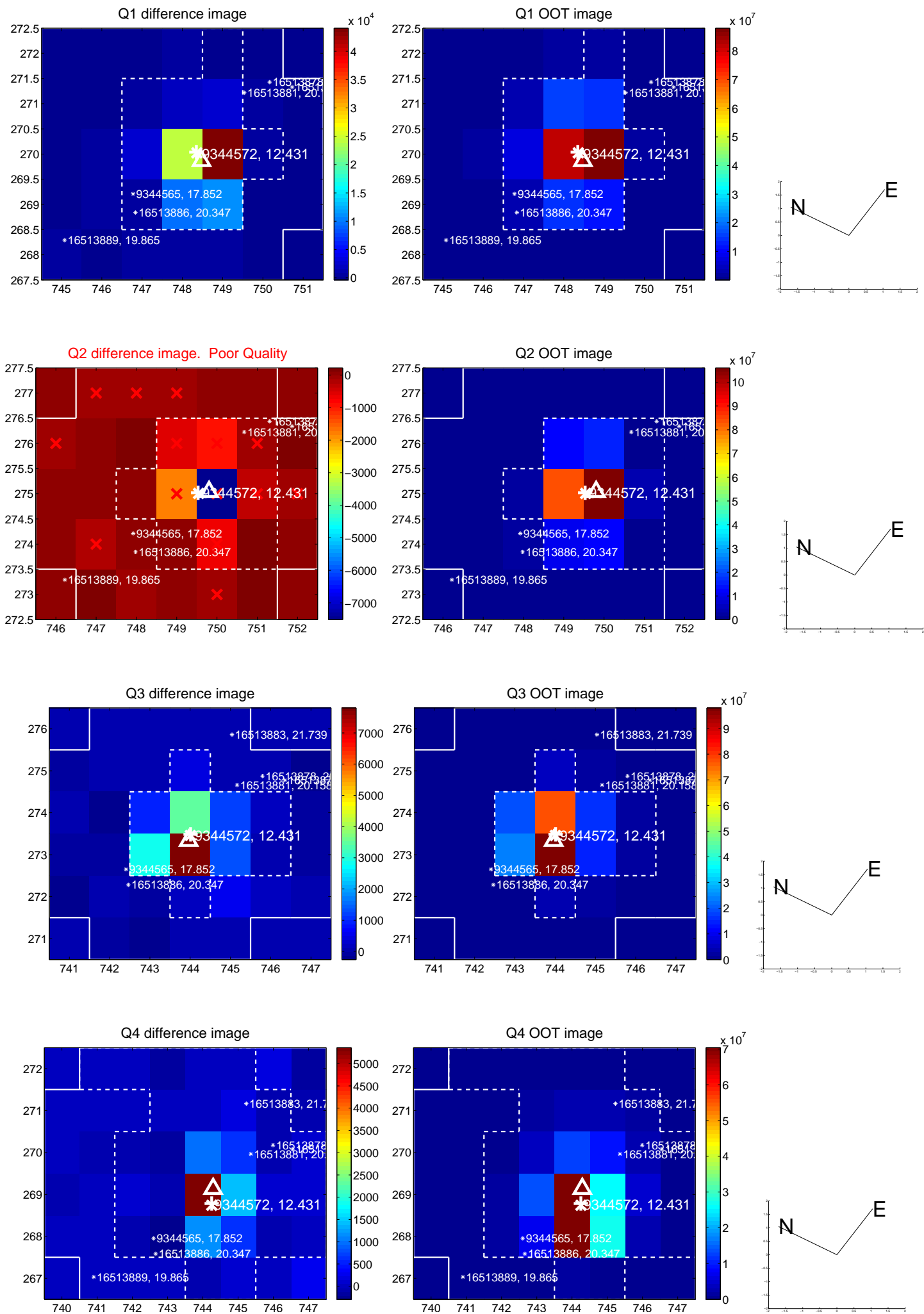
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|-----------------------------------------|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.216 ± 0.181 | 1.19 | 0.216 ± 0.181 | -0.013 ± 0.223 |
| PRF-fit source offset from KIC position | 0.262 ± 0.198 | 1.32 | 0.257 ± 0.196 | 0.052 ± 0.230 |
| photometric centroid source offset | 0.04 ± 0.10 | 0.41 | -0.04 ± 0.10 | -0.01 ± 0.09 |

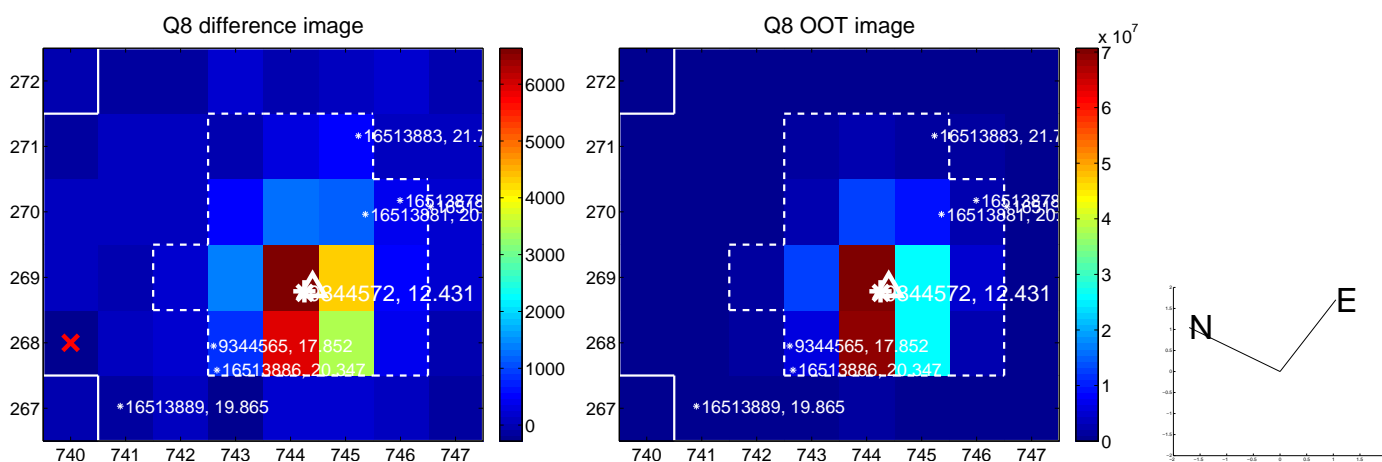
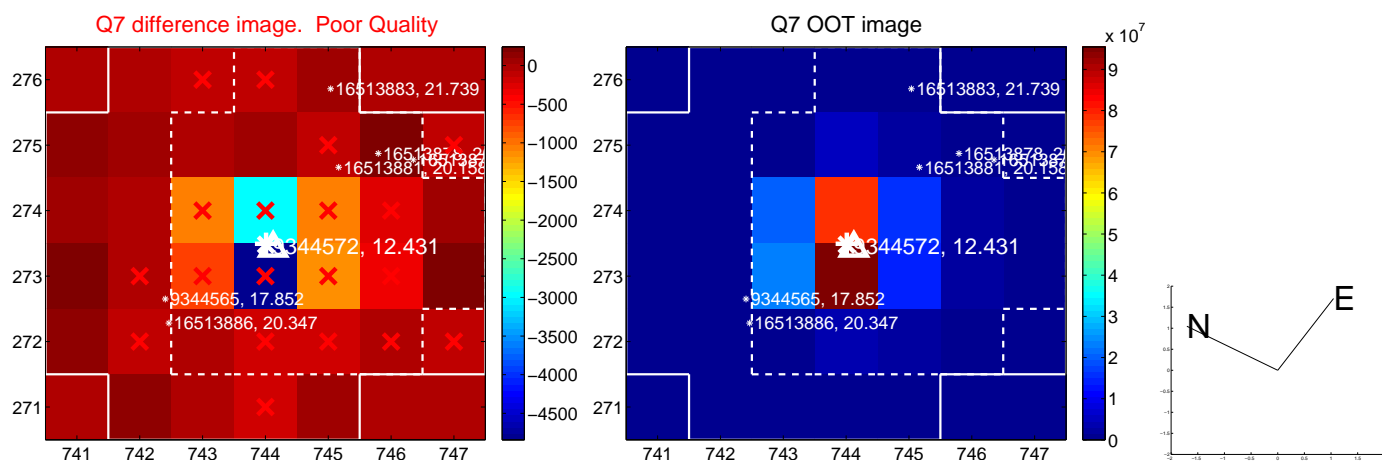
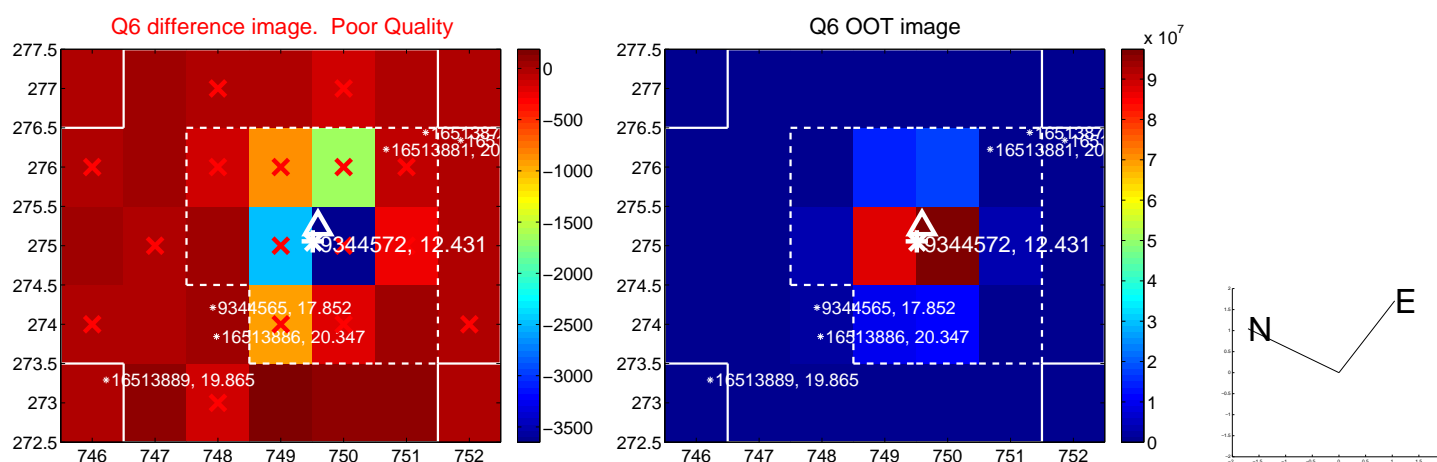
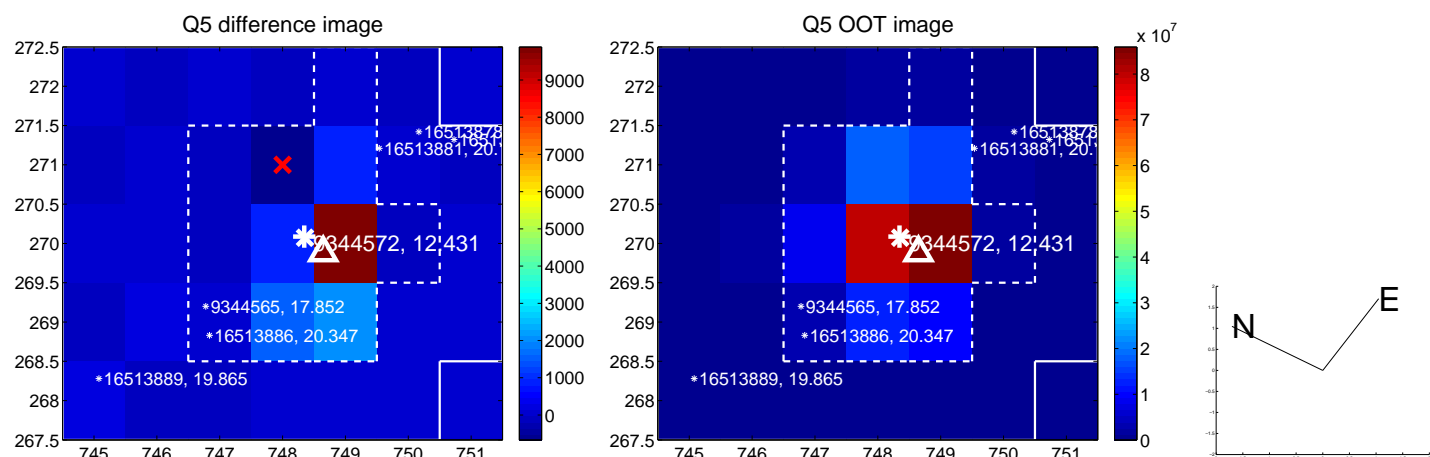


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

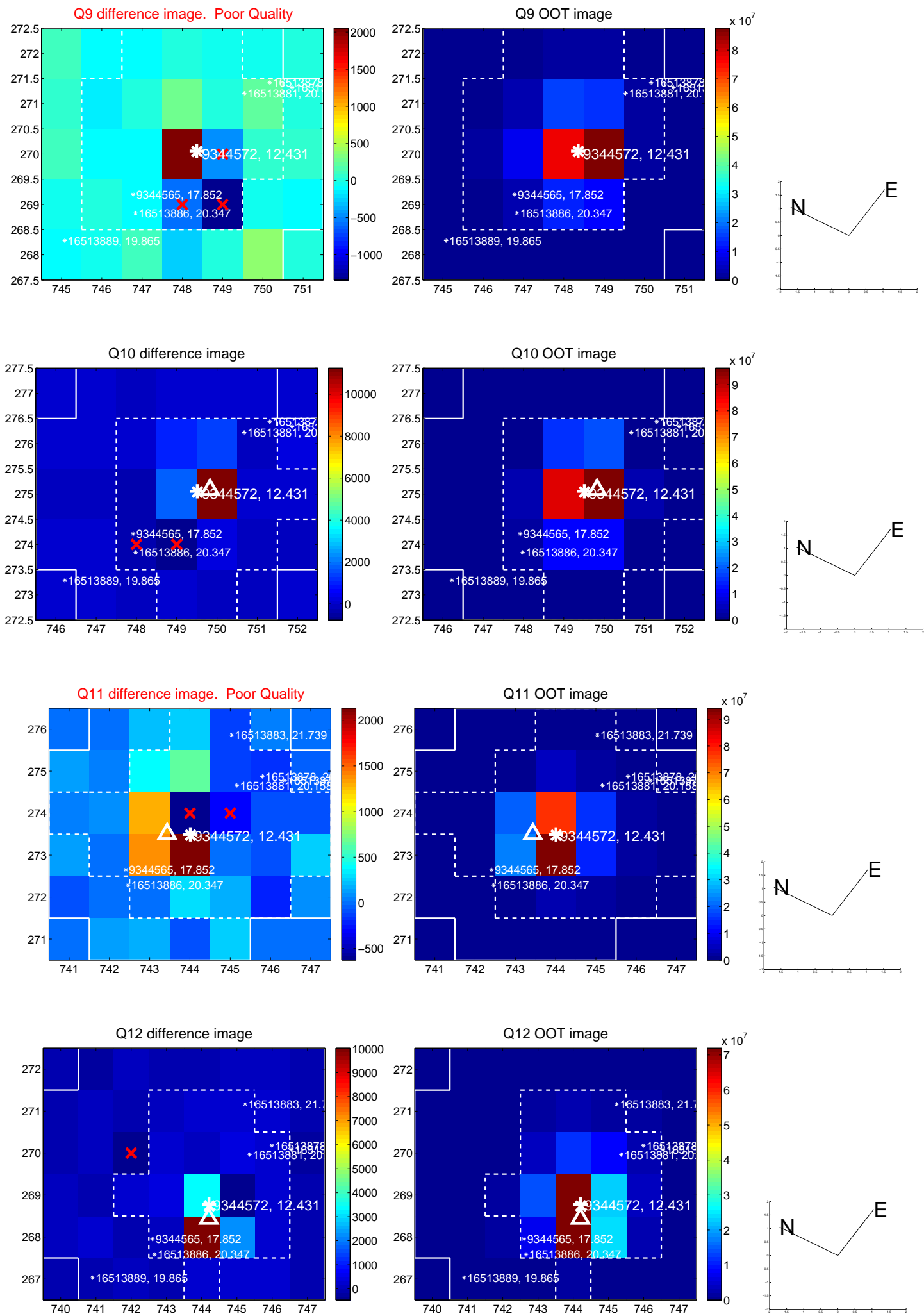
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



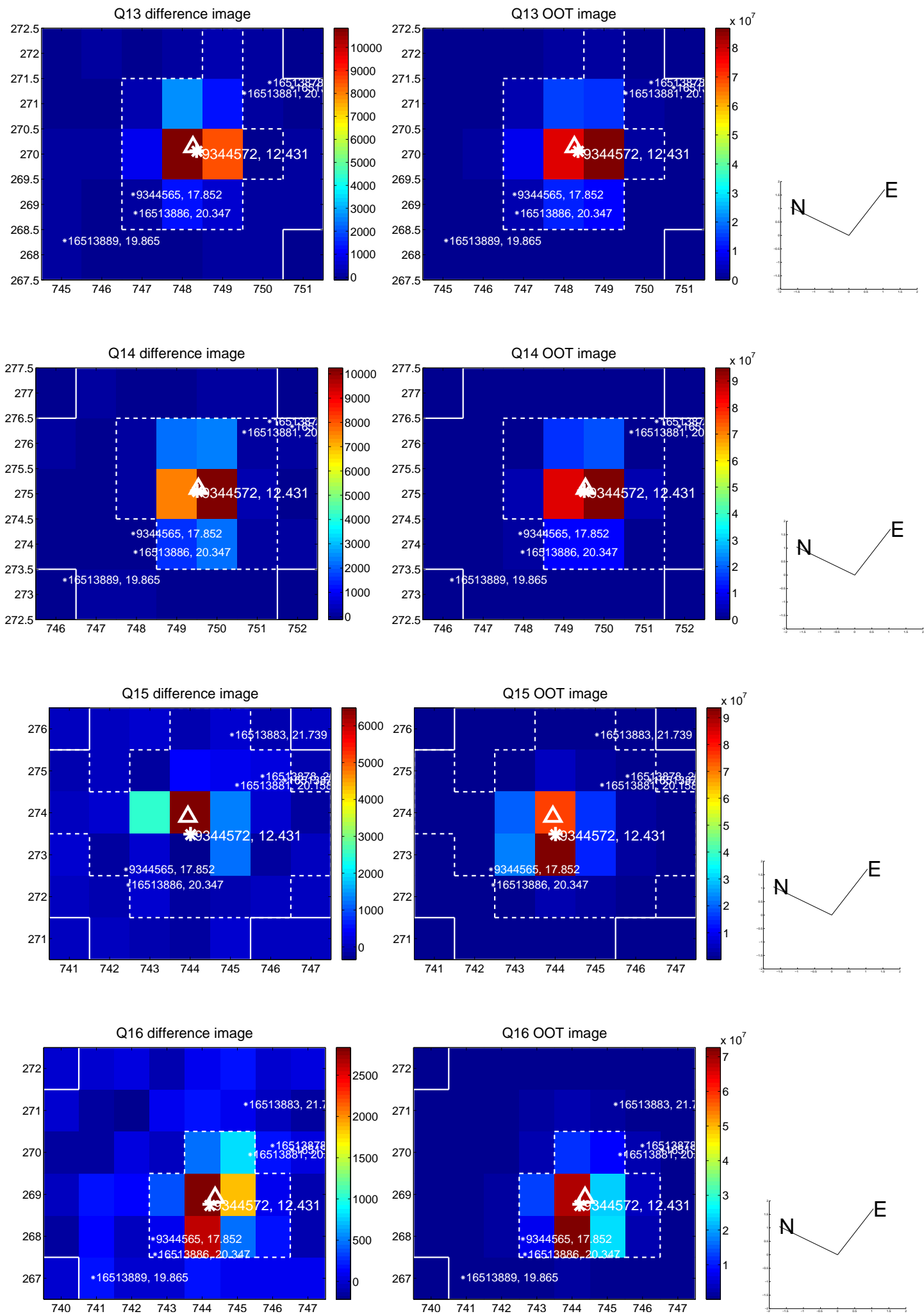
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



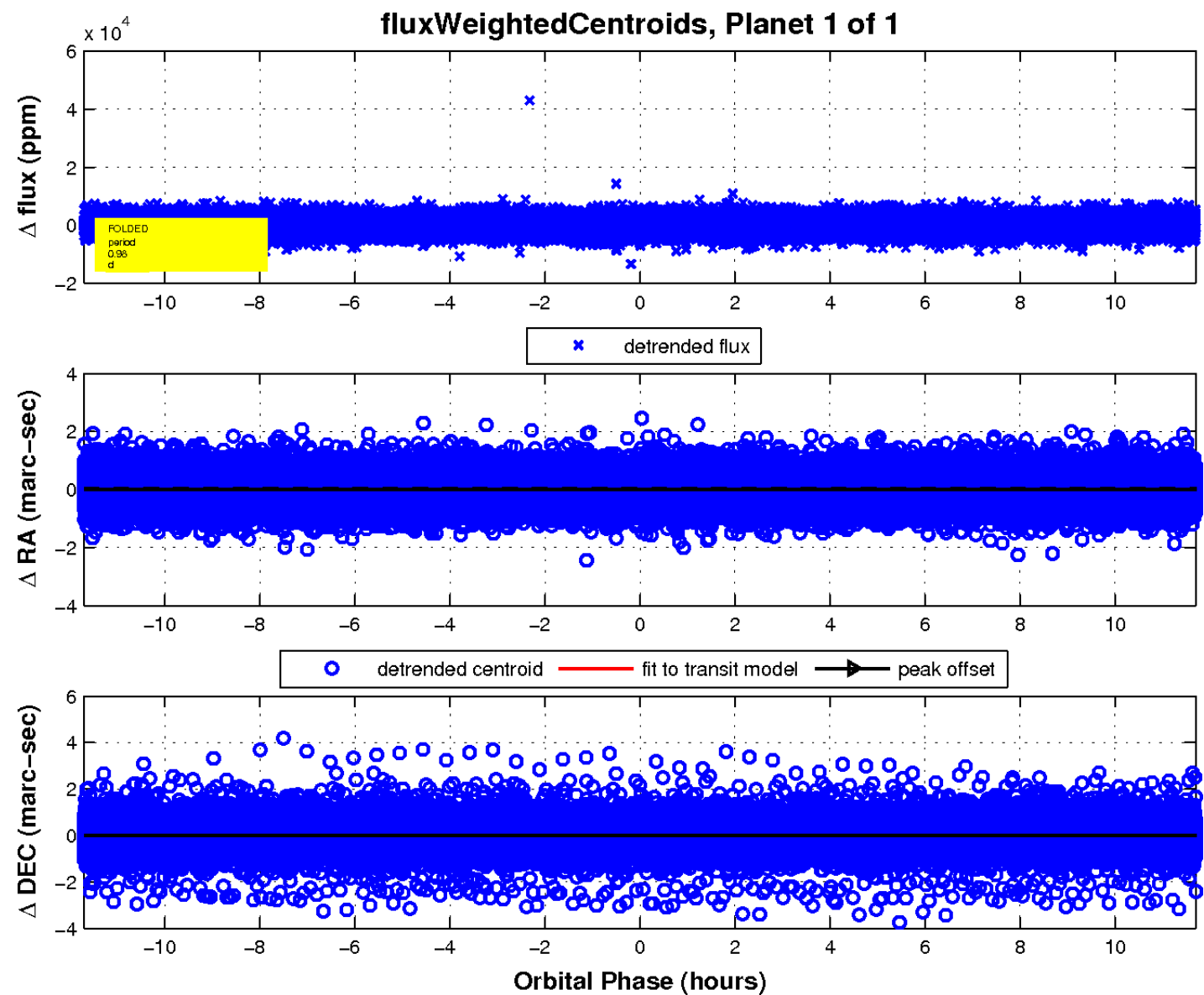
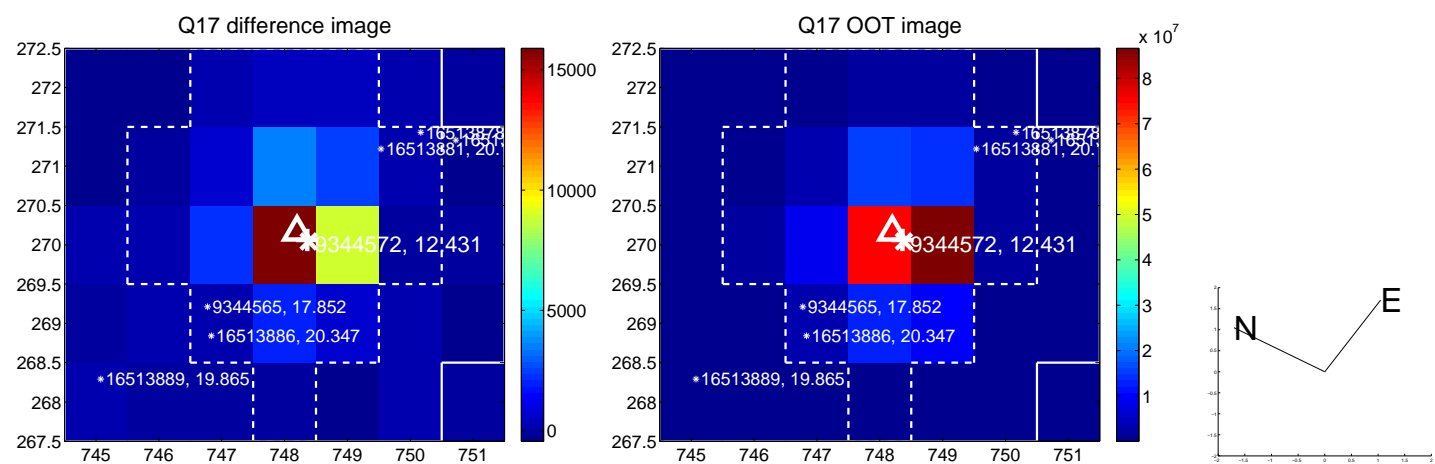
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

