

KIC 009467404

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 009467404-01 | OBS | 2717.01 | 0.929900 | 132.253511 | 65.5 | 1.625 | 35.4 | 44.8 | 1.41 | 6039 | 1.35 | 6520.30 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 009467404-01 | 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.

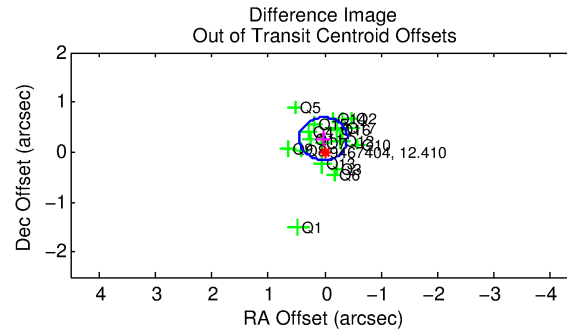
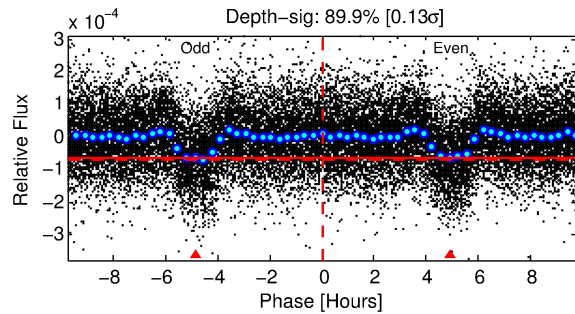
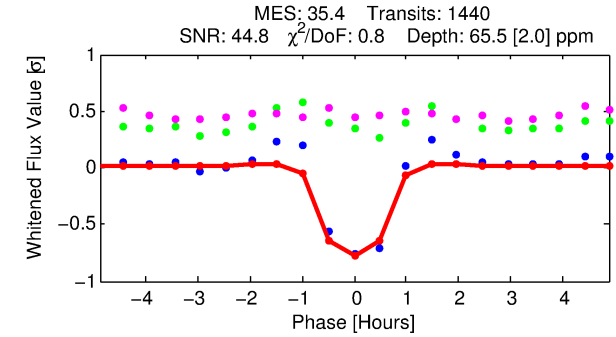
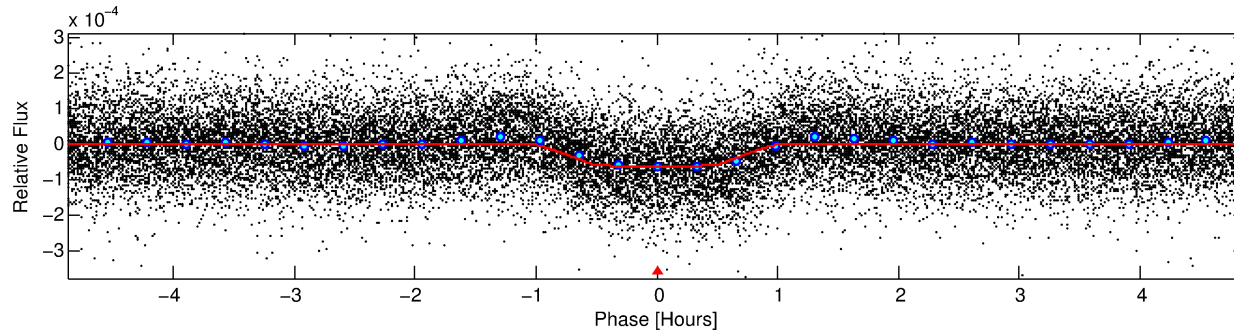
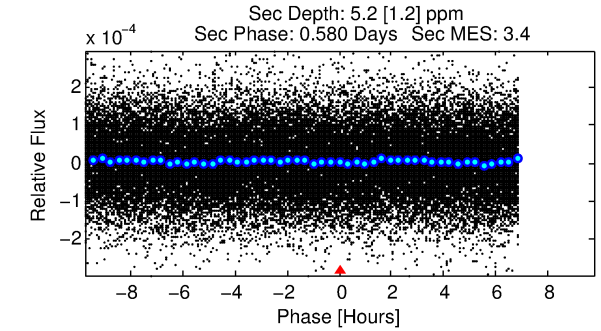
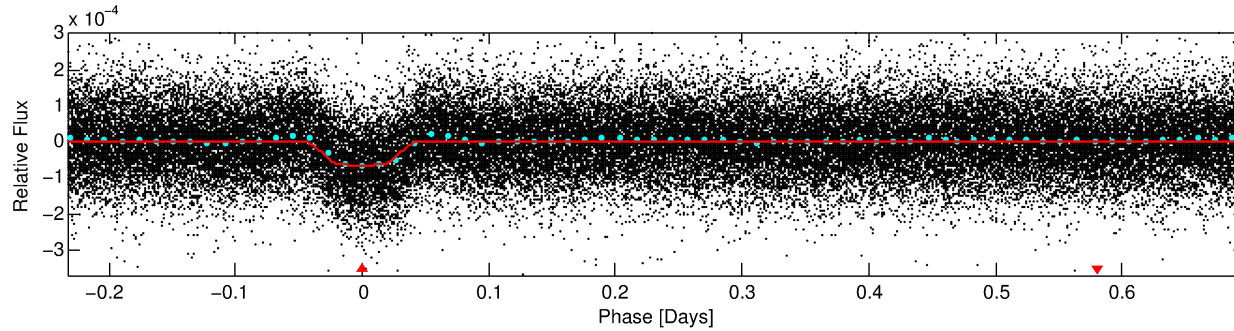
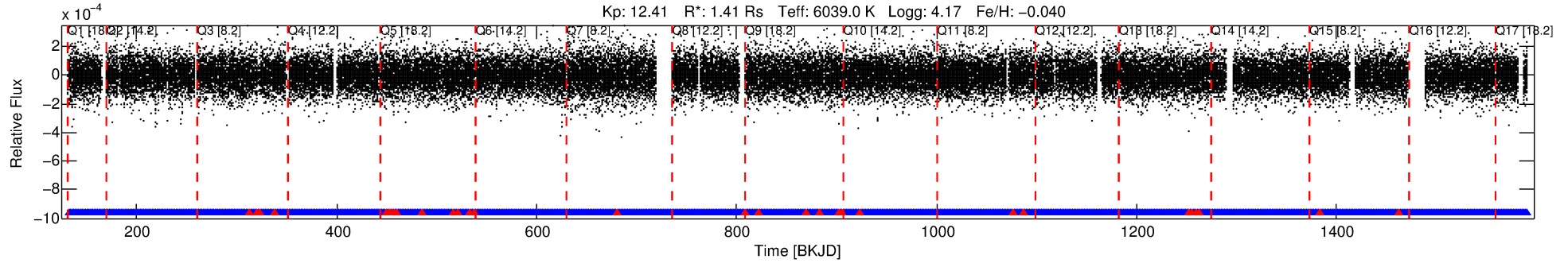
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009467404-01

No Significant Match Found

DV One-Page Summary

KIC: 9467404 Candidate: 1 of 1 Period: 0.930 d
KOI: K02717.01 Corr: 0.946



DV Fit Results:

Period = 0.92990 [0.00000] d
Epoch = 132.2535 [0.0005] BKJD
Rp/R* = 0.0088 [0.0013]
a/R* = 2.20 [1.31]
b = 0.90 [0.16]
Seff = 6520.30 [1949.92]
Teff = 2291 [171] K
Rp = 1.35 [0.32] Re
a = 0.0191 [0.0034] AU
Ag = 0.57 [0.27] [-1.61σ]
Teffp = 3076 [297] K [2.29σ]

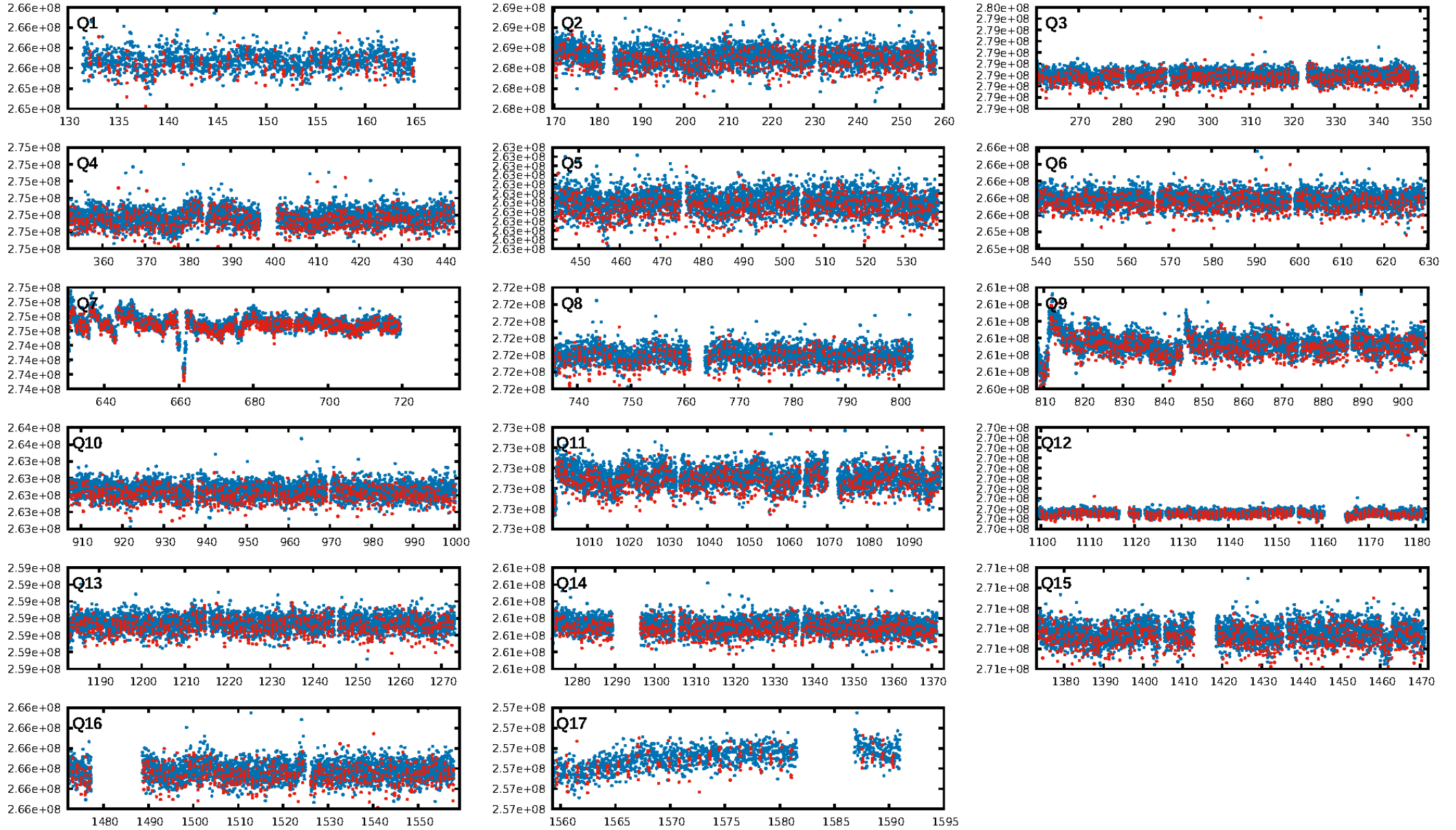
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.44e-250
RollingBand-fgt: 0.98 [1346/1376]
GhostDiagnostic-chr: 52.31
Centroid-sig: 1.7%
Centroid-so: 0.451 arcsec [1.71σ]
OotOffset-rm: 0.272 arcsec [1.91σ]
KicOffset-rm: 0.045 arcsec [0.32σ]
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]

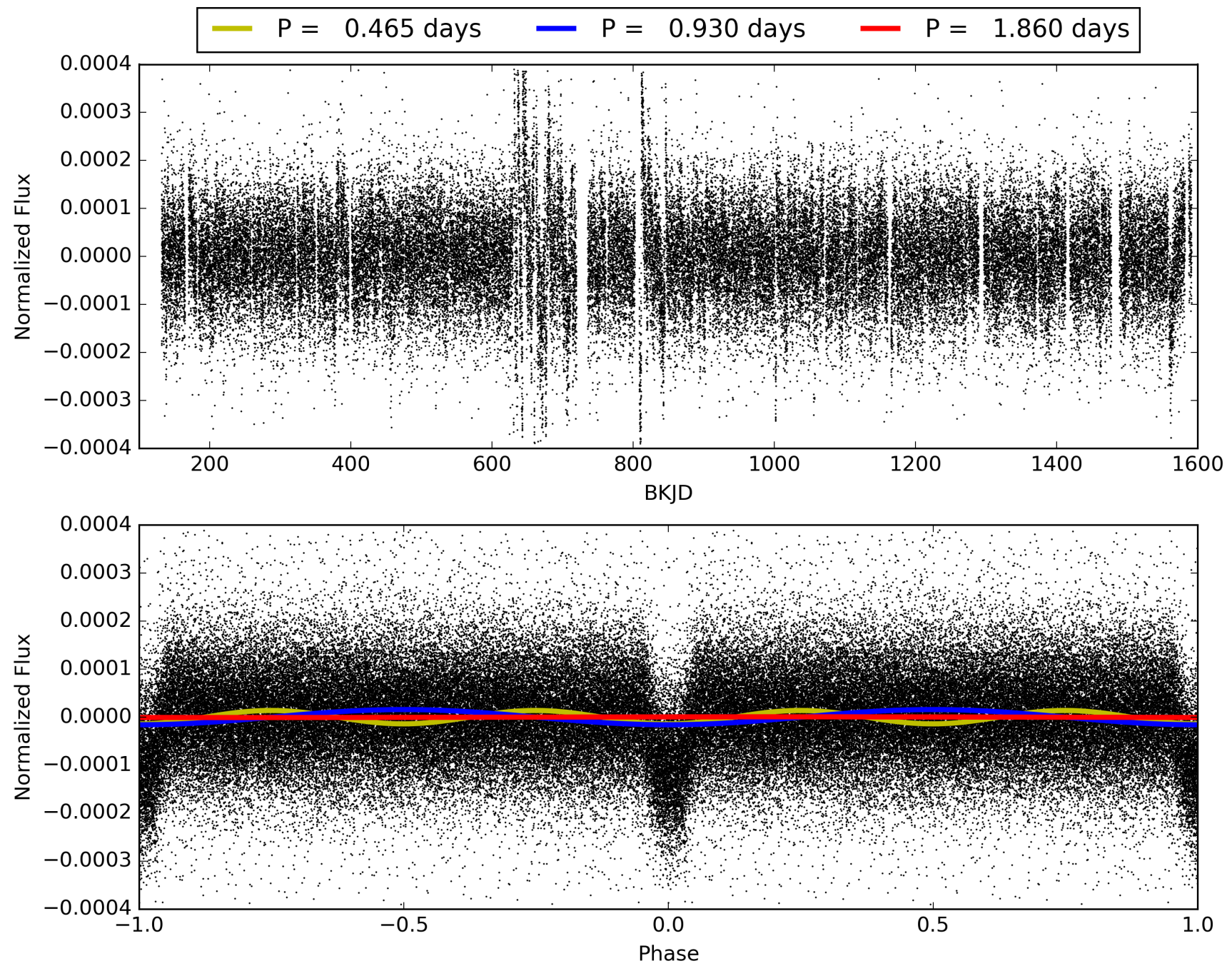
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:49:08 Z

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

TCE 009467404-01, PDC Light Curves

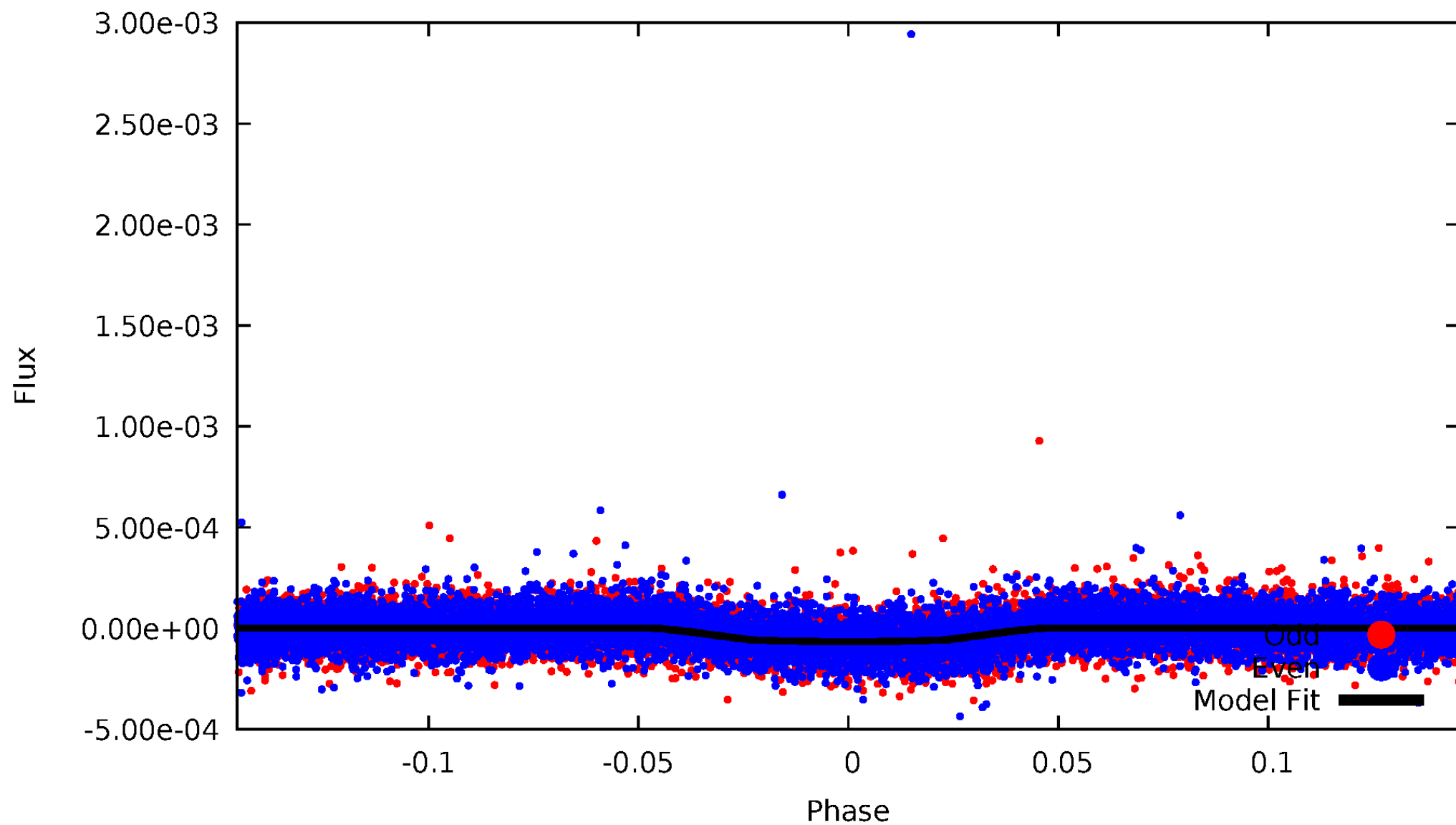


TCE 009467404-01



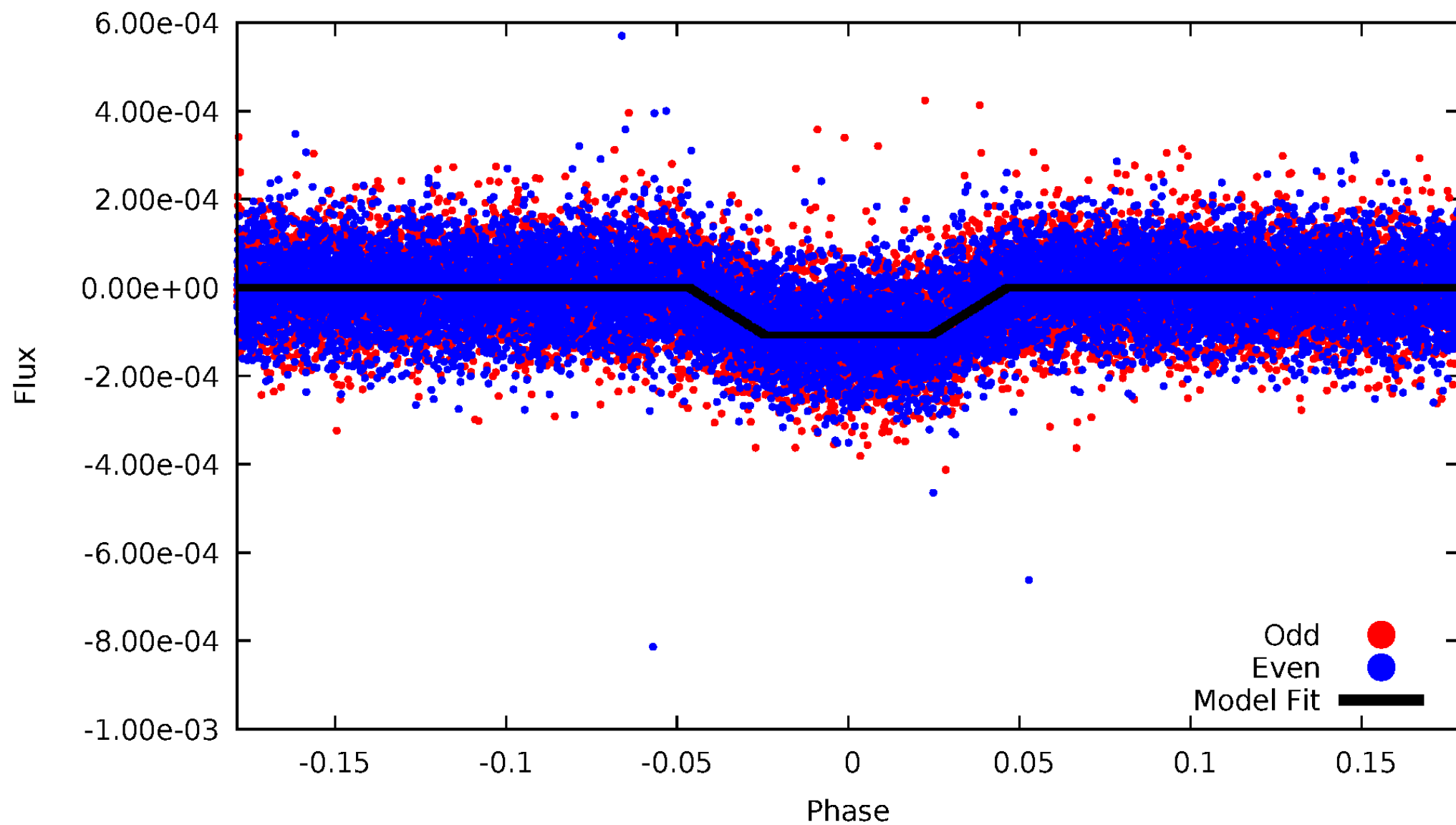
DV Odd/Even

TCE 009467404-01



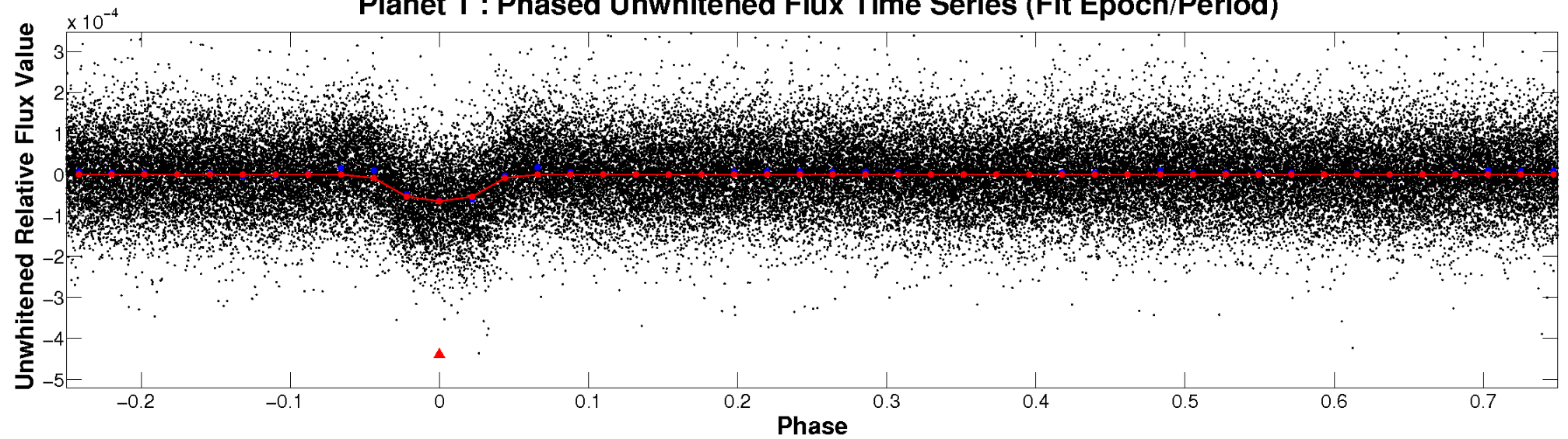
ALT Odd/Even

TCE 009467404-01

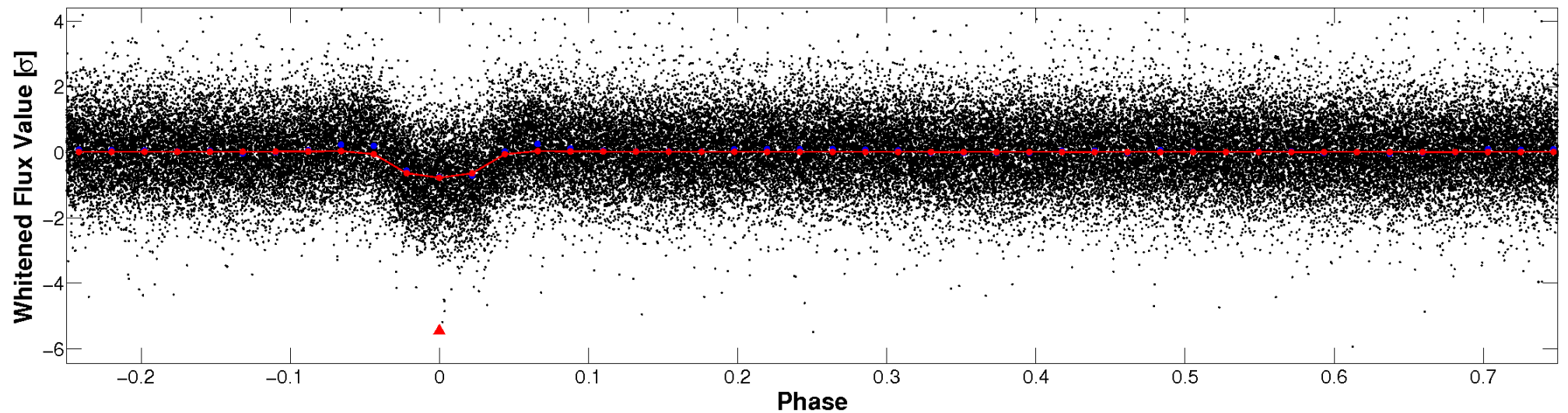


Non-Whitened Vs. Whitened Light Curve

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

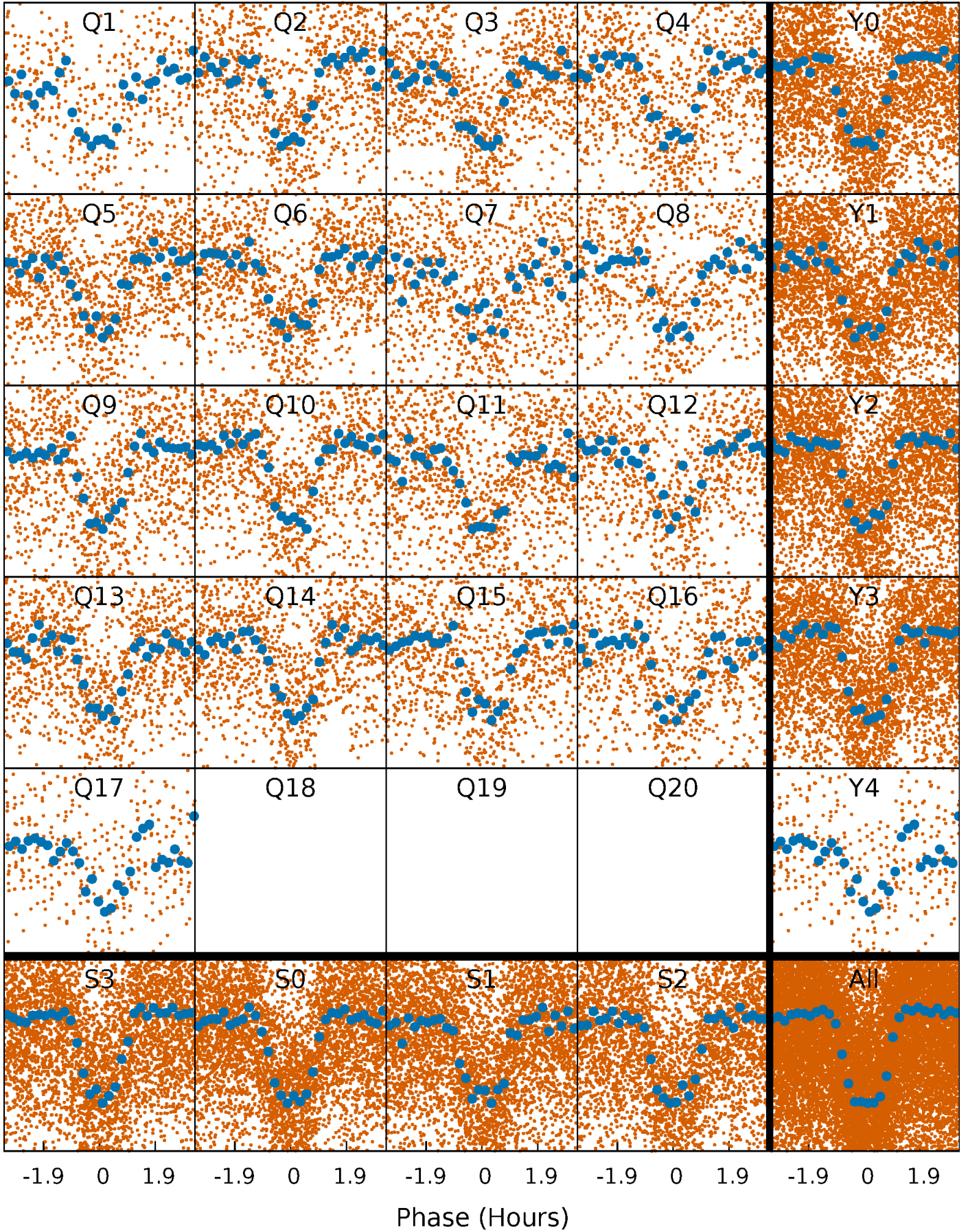


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



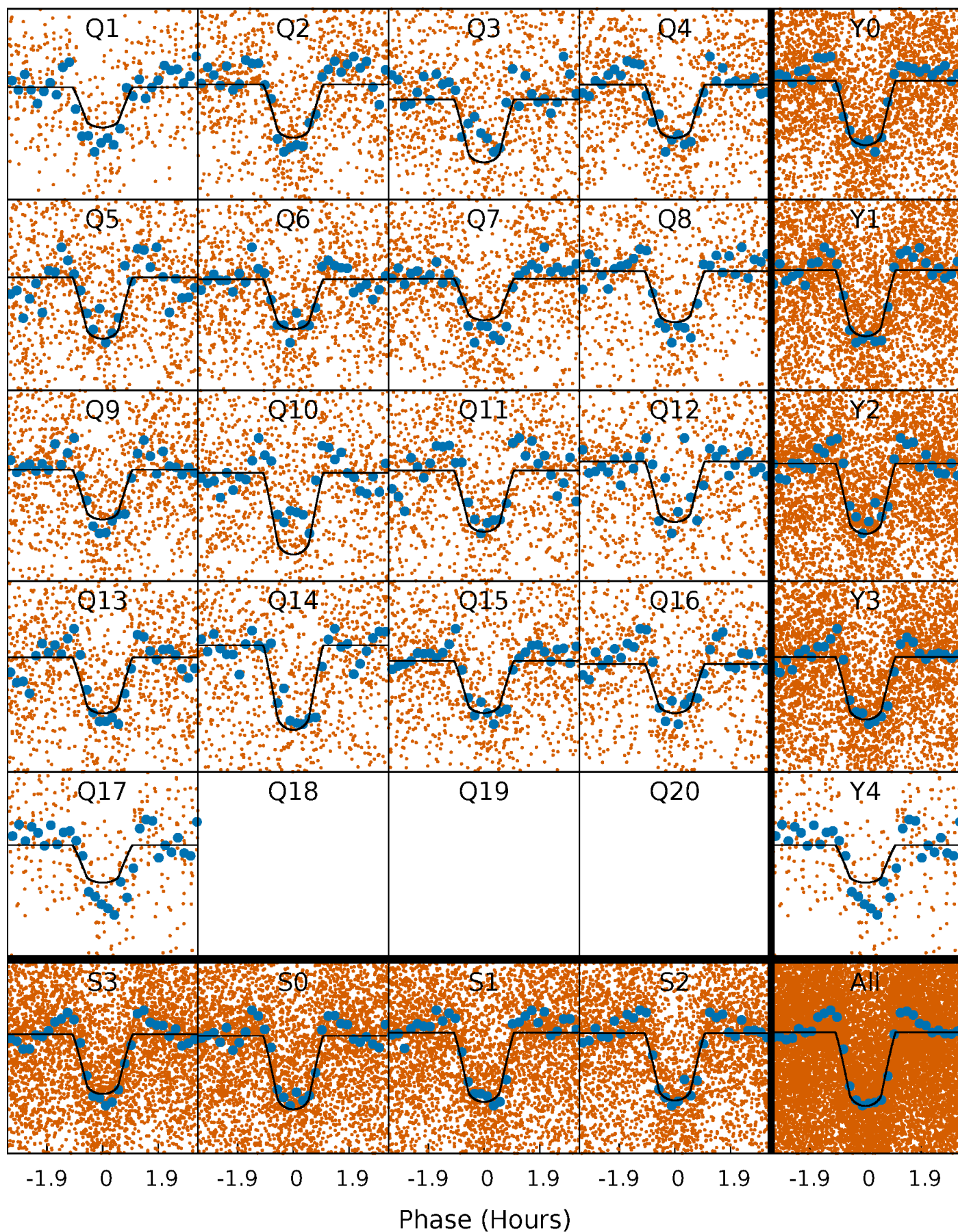
PDC Quarter-Phased Transit Curves

TCE 009467404-01 P= 0.929900 Days $T_0=132.253511$ (BKJD)



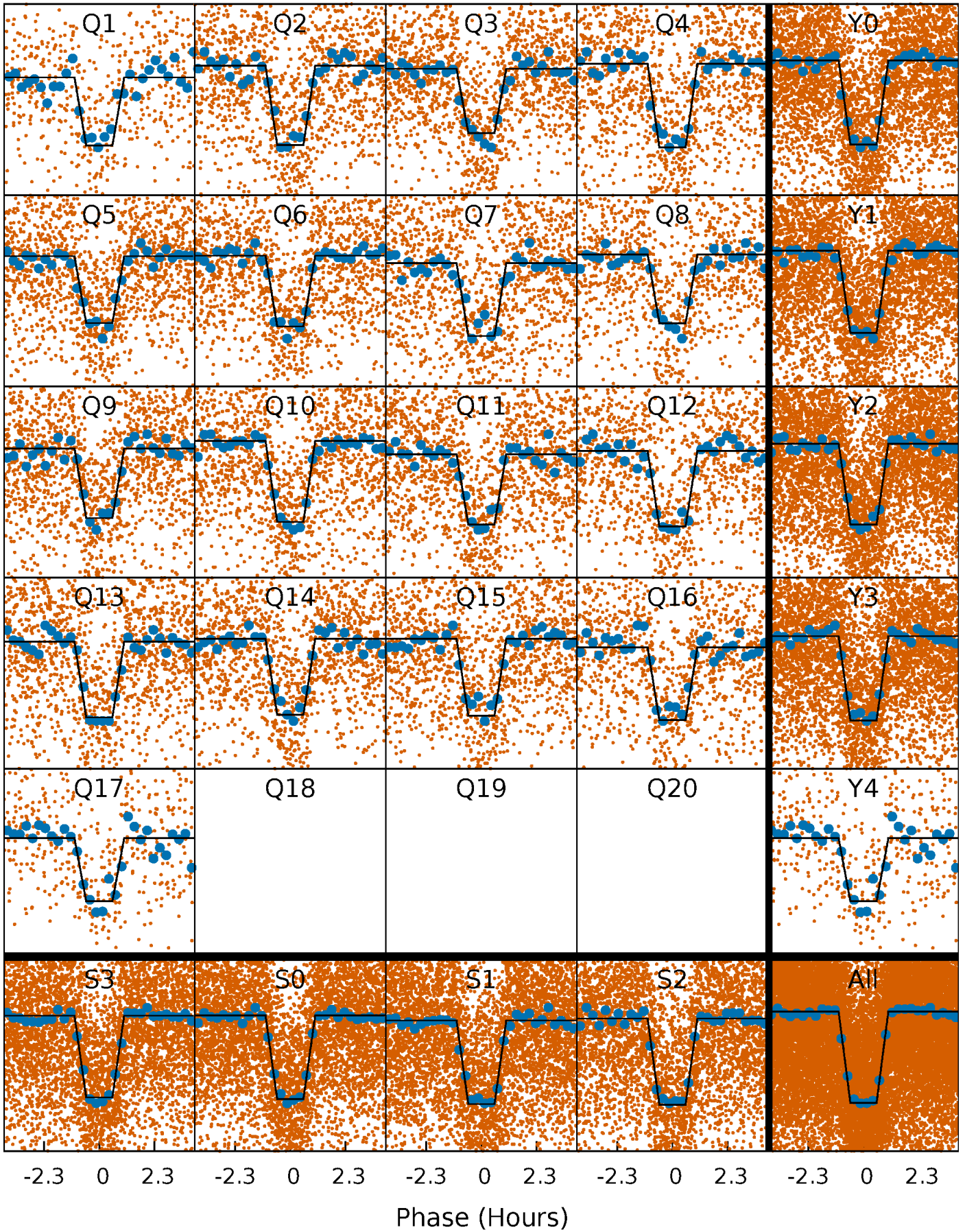
DV Quarter-Phased Transit Curves

TCE 009467404-01 P= 0.929900 Days $T_0=132.253511$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

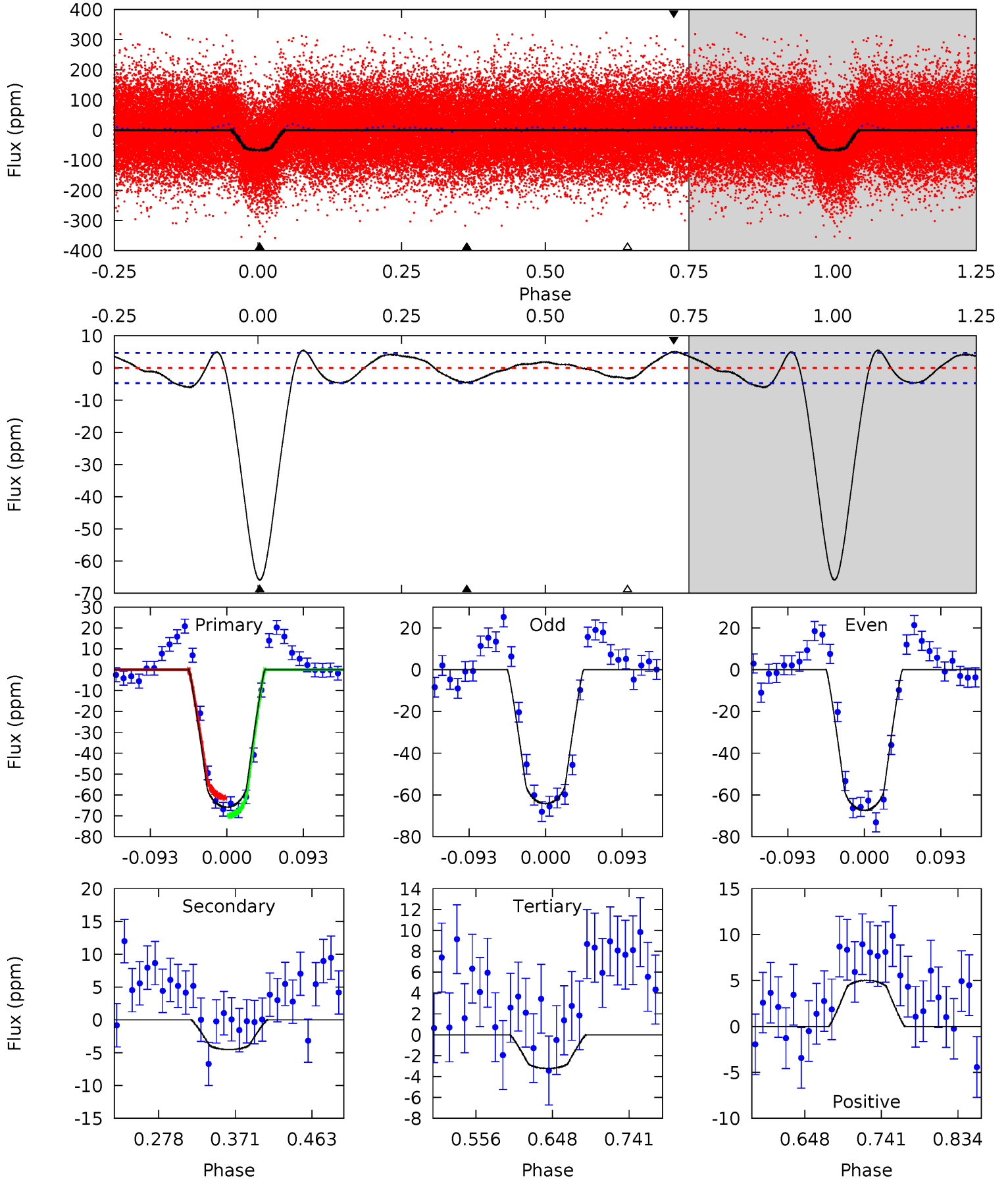
TCE 009467404-01 P= 0.929905 Days $T_0=132.251944$ (BKJD)



DV Model-Shift Uniqueness Test

009467404-01, P = 0.929900 Days, E = 131.323611 Days

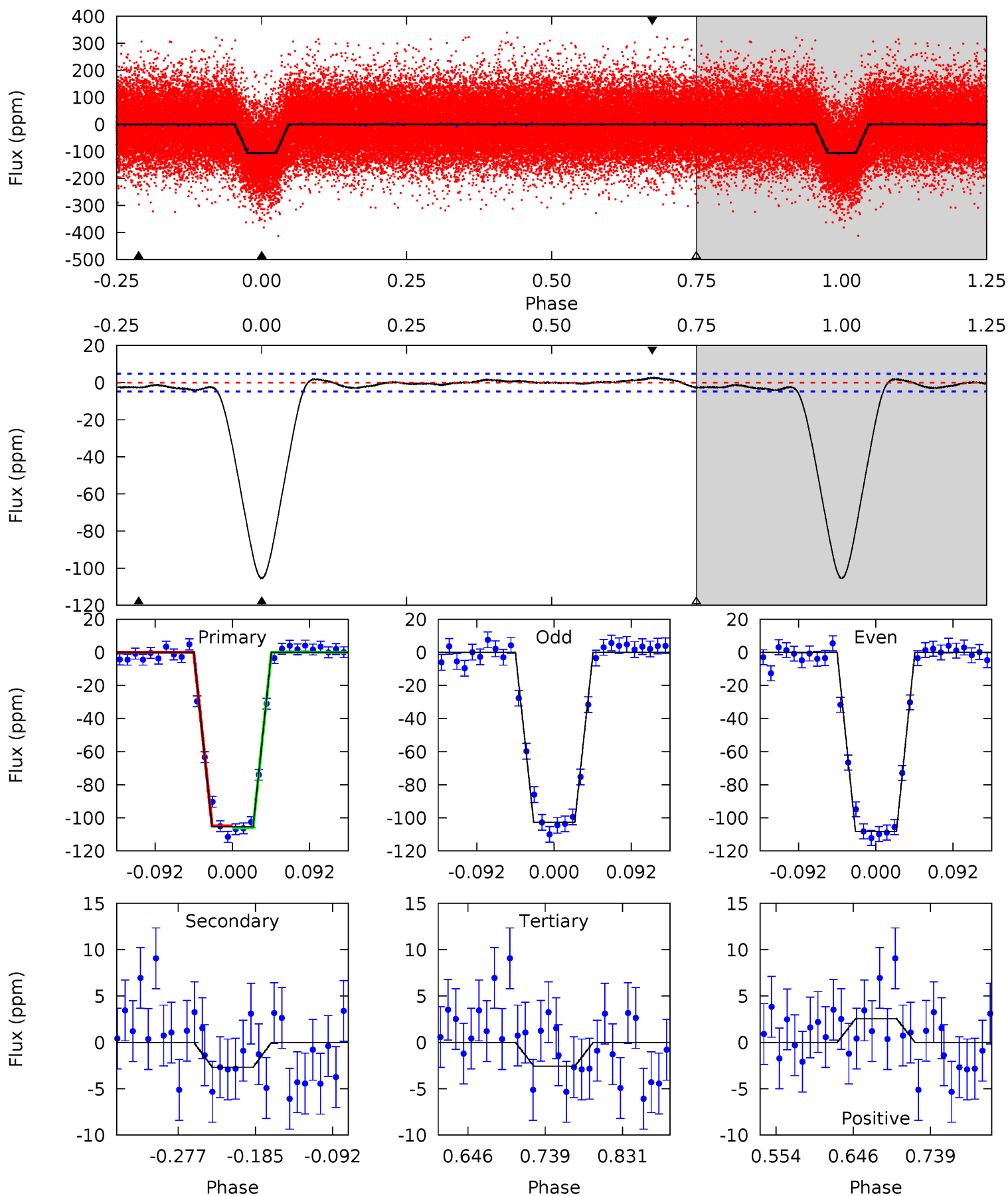
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 64.3 | 4.41 | 3.15 | 4.89 | 4.58 | 1.68 | 2.89 | 61.2 | 59.4 | 1.27 | -0.48 | 1.52 | 0.99 | 0.08 | 4.26 |



Alt Model-Shift Uniqueness Test

009467404-01, P = 0.929905 Days, E = 131.322039 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 101.7 | 2.58 | 2.49 | 2.46 | 4.58 | 1.68 | 1.29 | 99.2 | 99.2 | 0.10 | 0.13 | 2.58 | 1.00 | 0.02 | 0.64 |



Stellar Parameters For KIC 009467404

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6039^{+134}_{-121} | $4.169^{+0.168}_{-0.112}$ | $-0.040^{+0.150}_{-0.150}$ | $1.413^{+0.234}_{-0.260}$ | $1.075^{+0.108}_{-0.090}$ | $0.537^{+0.452}_{-0.178}$ |
| | +2%/-2% | +4%/-3% | +375%/-375% | +17%/-18% | +10%/-8% | +84%/-33% |
| Source | SPE59 | SPE59 | SPE59 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 009467404-01 / KOI 2717.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|------------------------|---------------------------|
| DV | -5 ± 1 | $1.34^{+0.26}_{-0.25}$ | 3190^{+151}_{-180} | 3016^{+375}_{-680} | $0.500^{+0.262}_{-0.176}$ |
| Alt. | -3 ± 1 | $1.58^{+0.25}_{-0.24}$ | 3193^{+155}_{-175} | -2679^{+5170}_{-329} | $0.217^{+0.133}_{-0.095}$ |

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 $A_{obs} \gg 1.0$

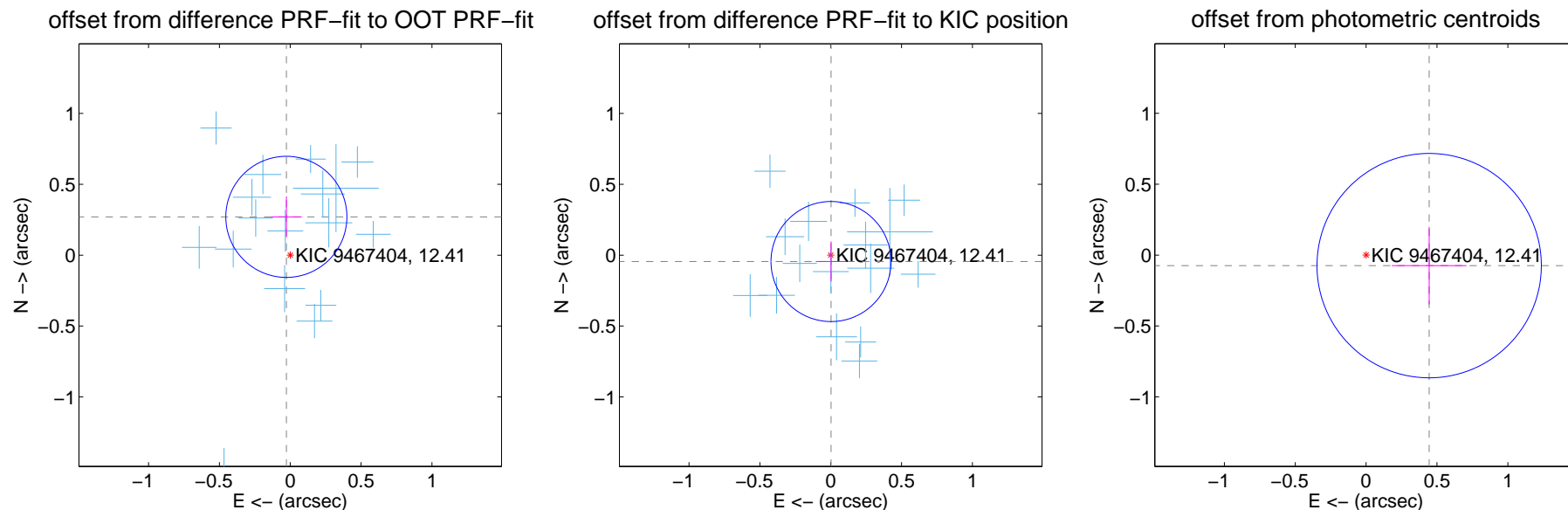
DV Centroid Data

Supplemental centroid analysis for 009467404-01. Kepler magnitude: 12.41. Transit SNR 44.77

There are 17 quarters with good PRF difference image offsets

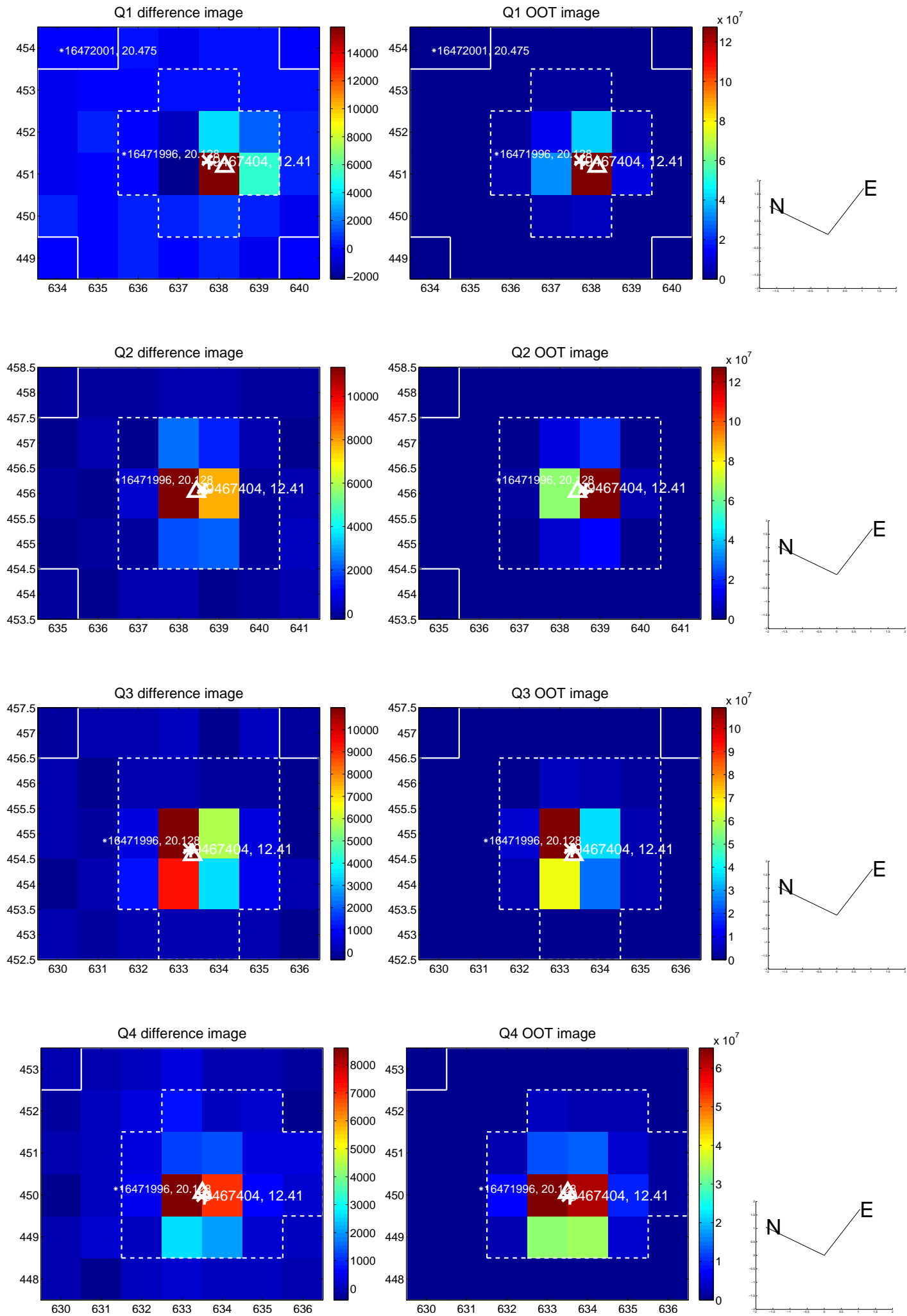
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.272 ± 0.142 | 1.91 | 0.028 ± 0.109 | 0.270 ± 0.144 |
| PRF-fit source offset from KIC position | 0.045 ± 0.141 | 0.32 | -0.002 ± 0.107 | -0.045 ± 0.142 |
| photometric centroid source offset | 0.45 ± 0.26 | 1.71 | -0.44 ± 0.26 | -0.07 ± 0.27 |

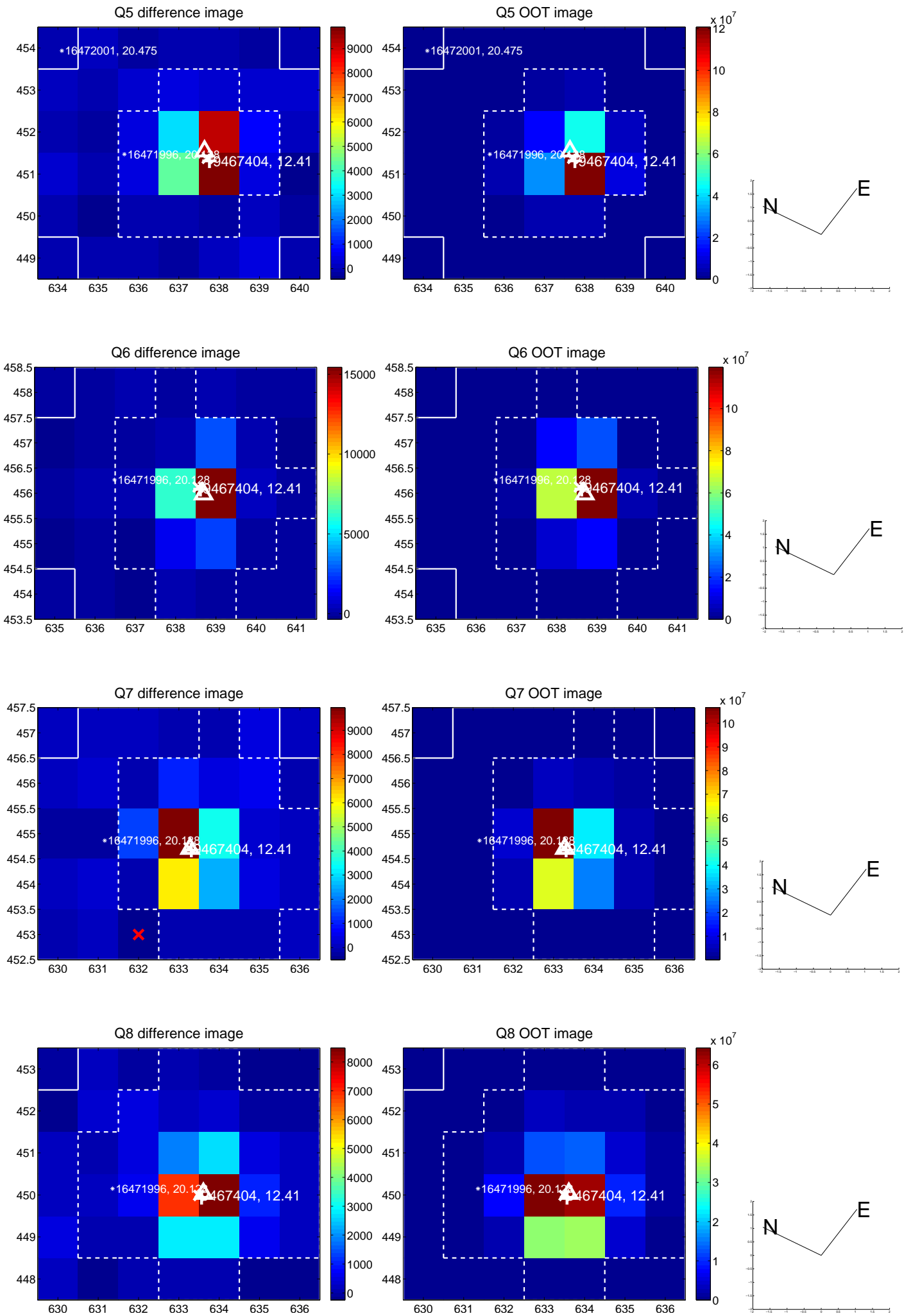


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

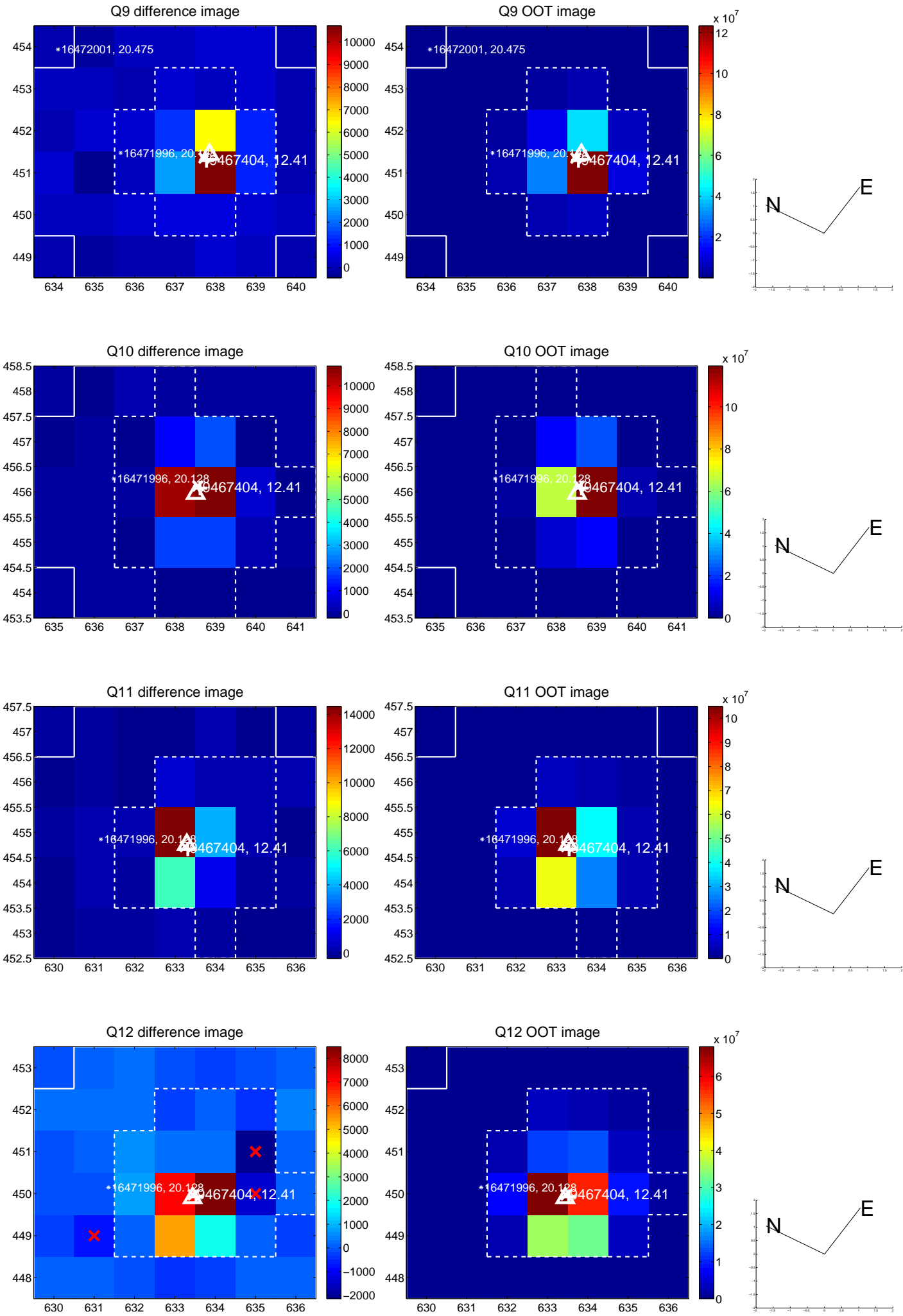
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



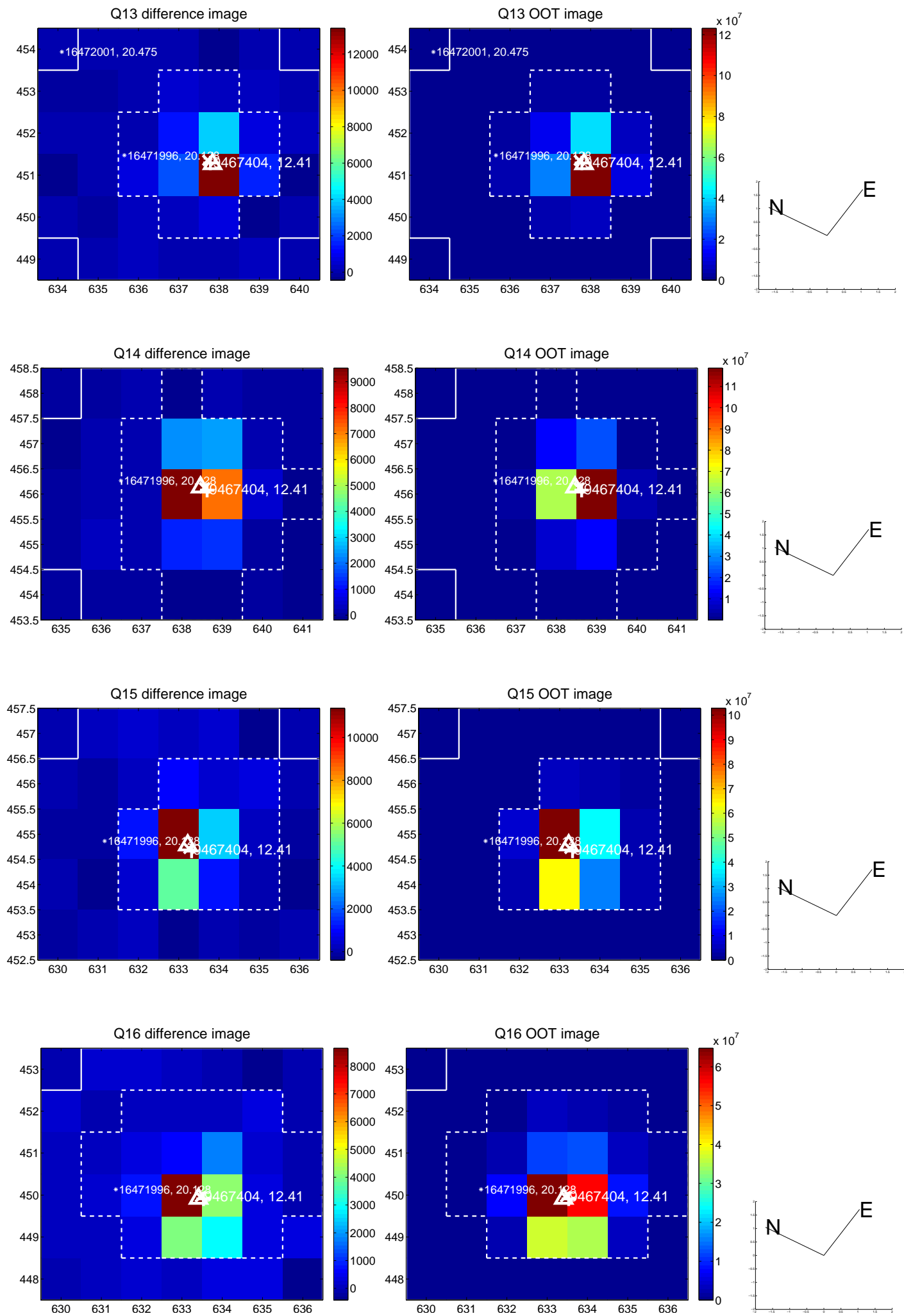
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



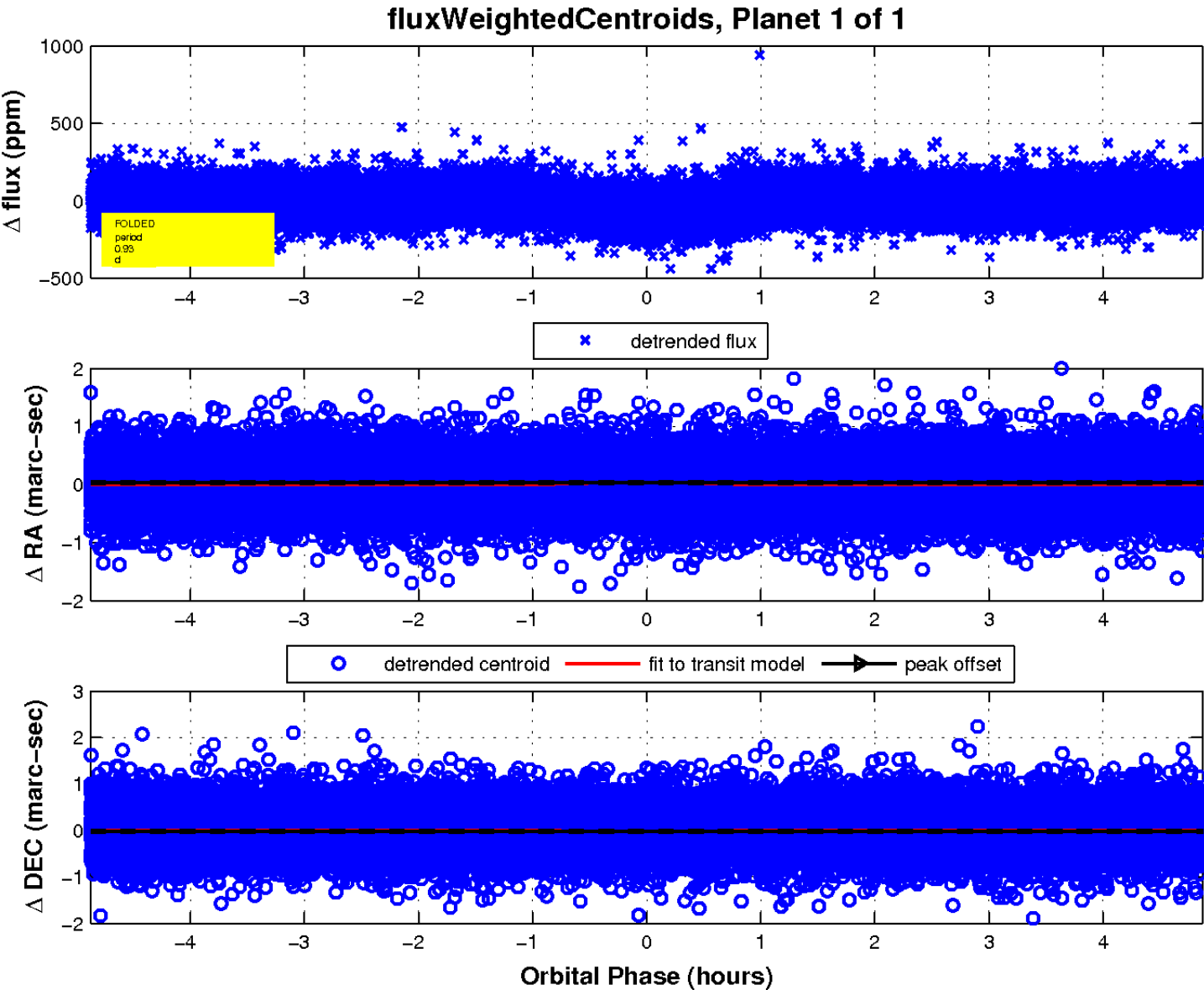
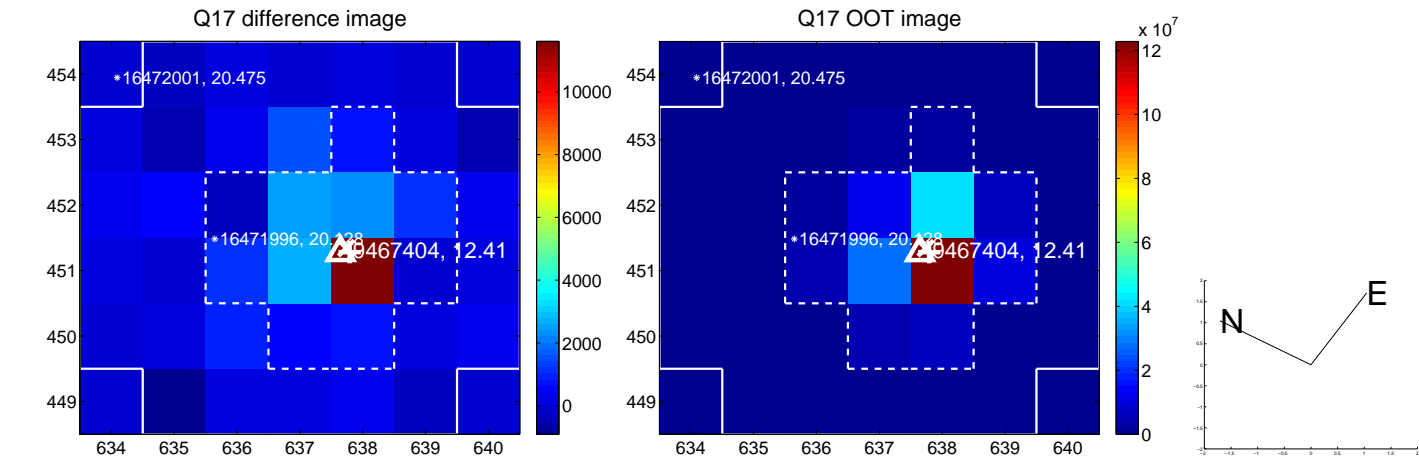
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

