

KIC 010091124

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 010091124-01 | OBS | No | 27.033751 | 143.627039 | 860.1 | 40.671 | 13.3 | 22.0 | 0.97 | 6032 | 5.52 | 34.86 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|----------|
| 010091124-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |

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

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

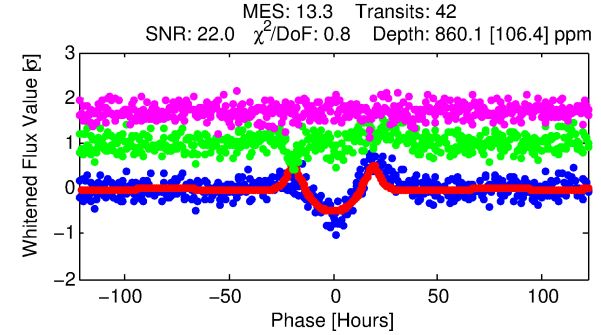
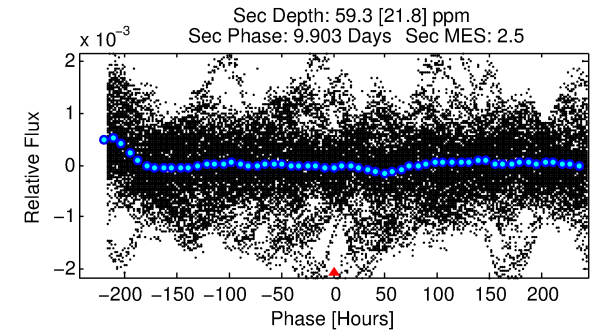
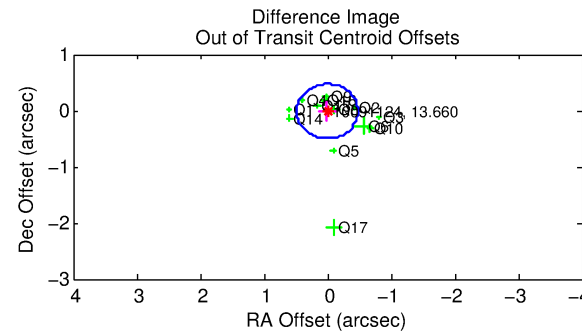
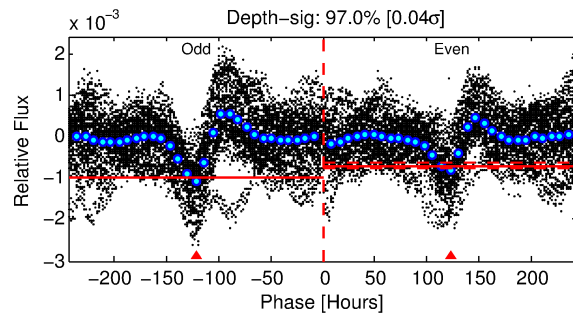
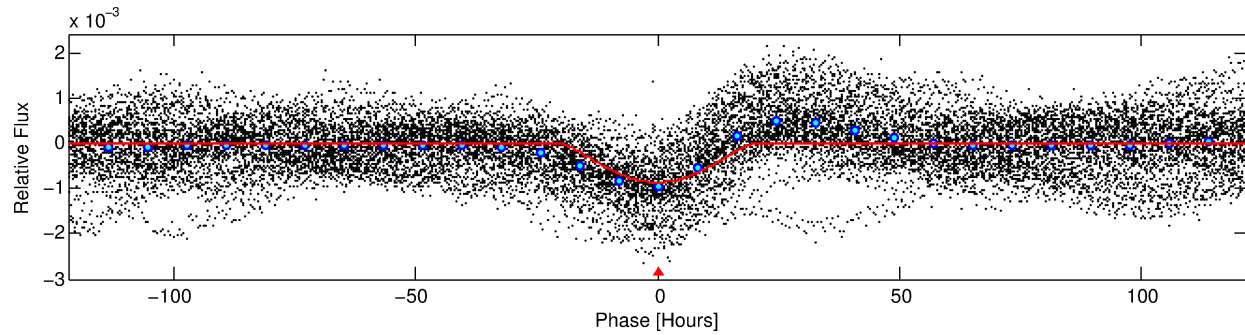
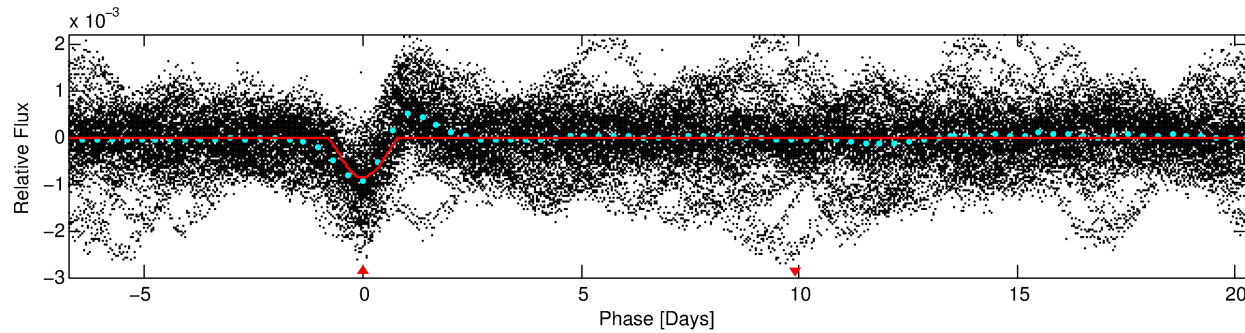
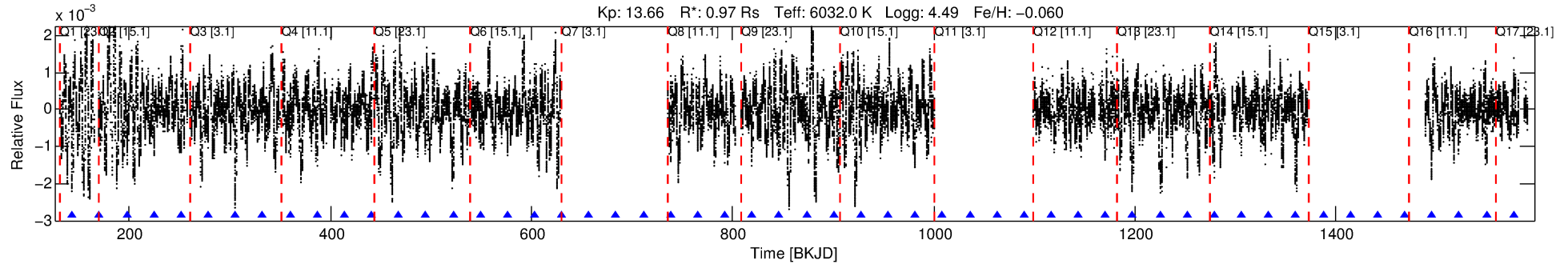
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010091124-01

No Significant Match Found

DV One-Page Summary

KIC: 10091124 Candidate: 1 of 1 Period: 27.034 d



DV Fit Results:

Period = 27.03375 [0.00061] d
Epoch = 143.6270 [0.0182] BKJD
Rp/R* = 0.0520 [0.0172]
a/R* = 1.95 [0.10]
b = 1.00 [0.03]
Seff = 34.86 [14.66]
Teq = 620 [65] K
Rp = 5.52 [2.57] Re
a = 0.1795 [0.0491] AU
Ag = 34.52 [29.51] [1.14 σ]
Teffp = 2322 [447] K [3.77 σ]

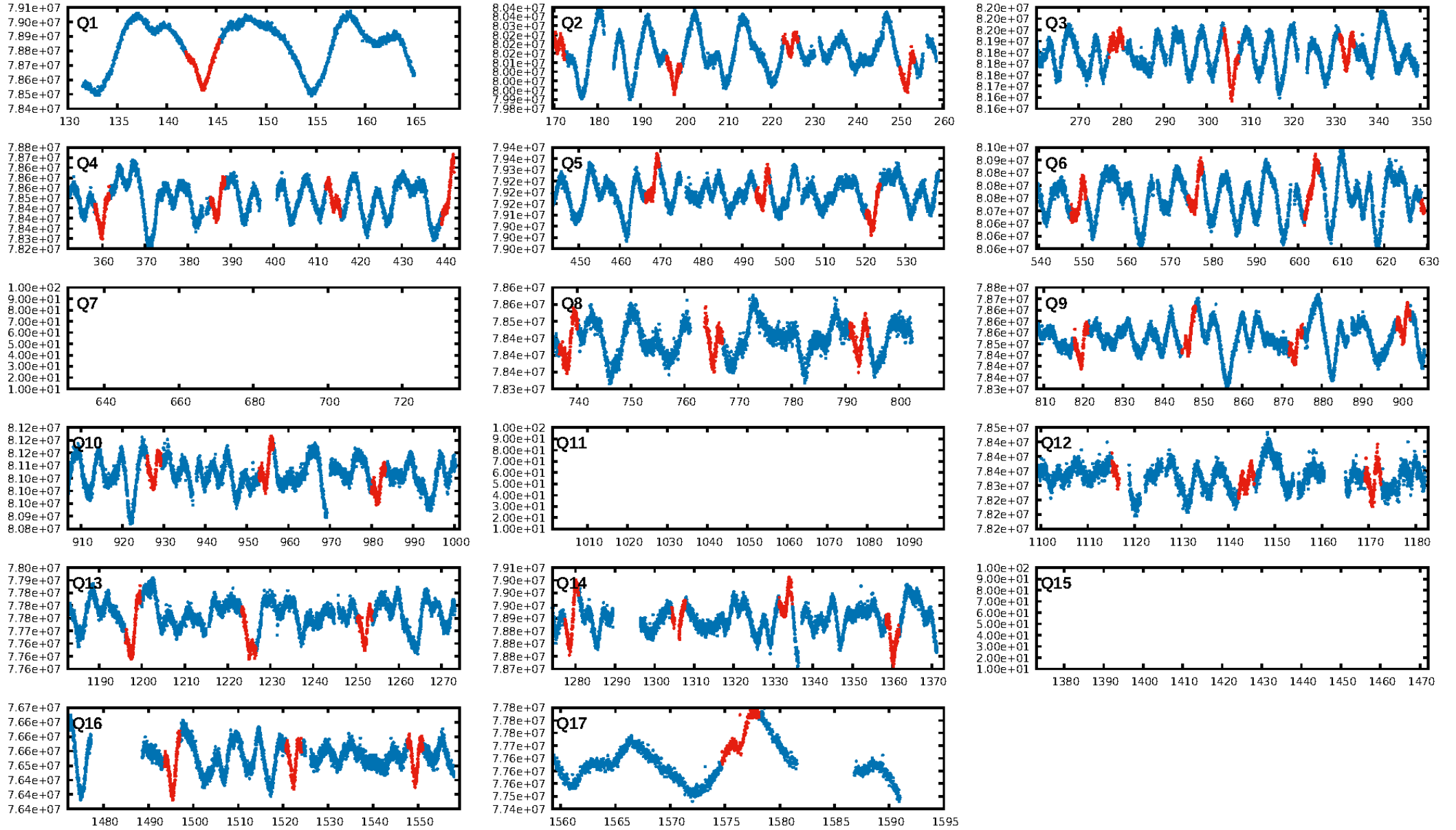
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 97.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.42e-41
RollingBand-fgt: 1.00 [40/40]
GhostDiagnostic-chr: 0.9371
Centroid-sig: 57.5%
Centroid-so: 0.381 arcsec [4.04 σ]
OotOffset-rm: 0.015 arcsec [0.09 σ]
KicOffset-rm: 0.212 arcsec [1.31 σ]
OotOffset-st: 4/1/3/5 [13]
KicOffset-st: 4/1/3/5 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [14/14]

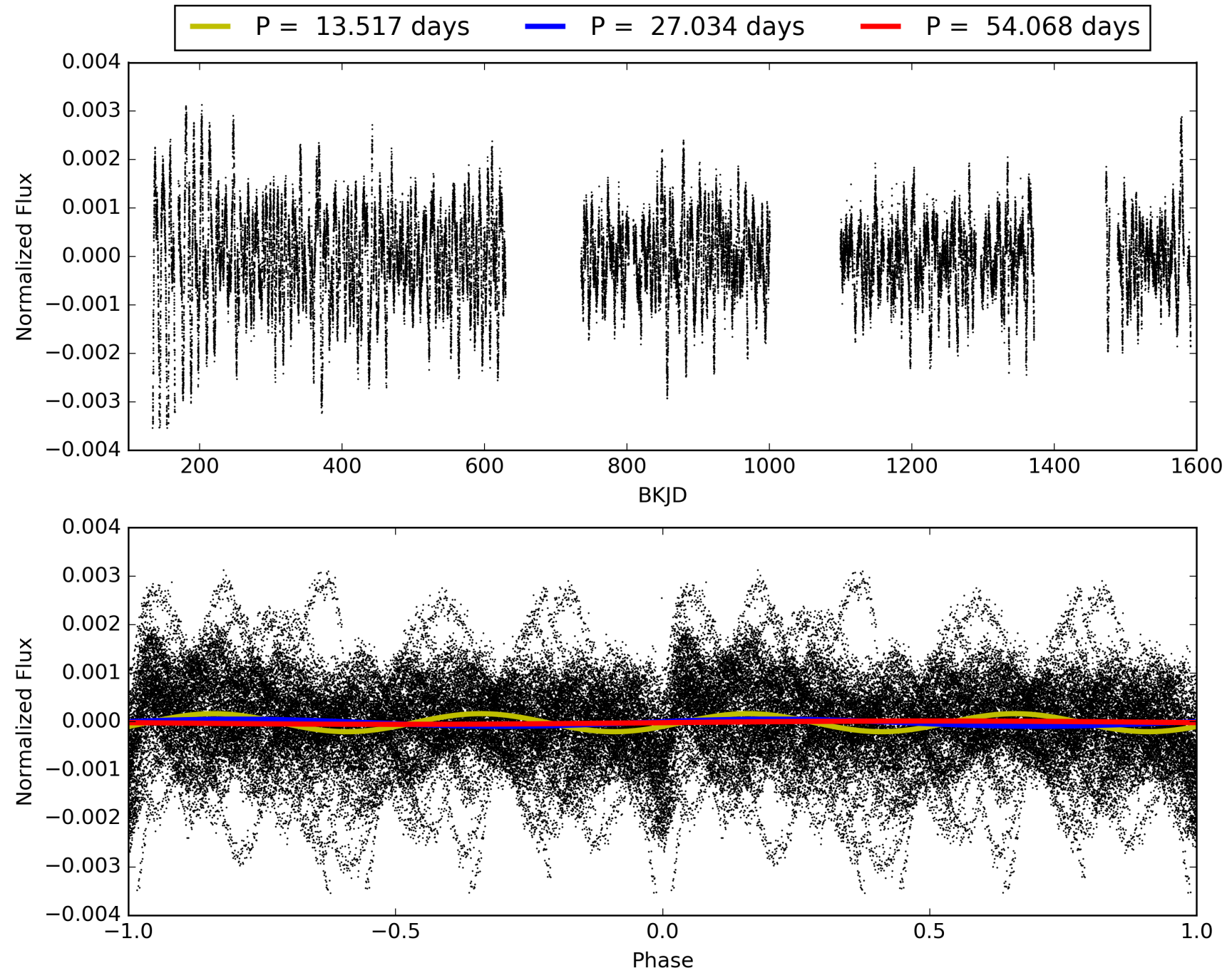
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 10:00:23 Z

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

TCE 010091124-01, PDC Light Curves

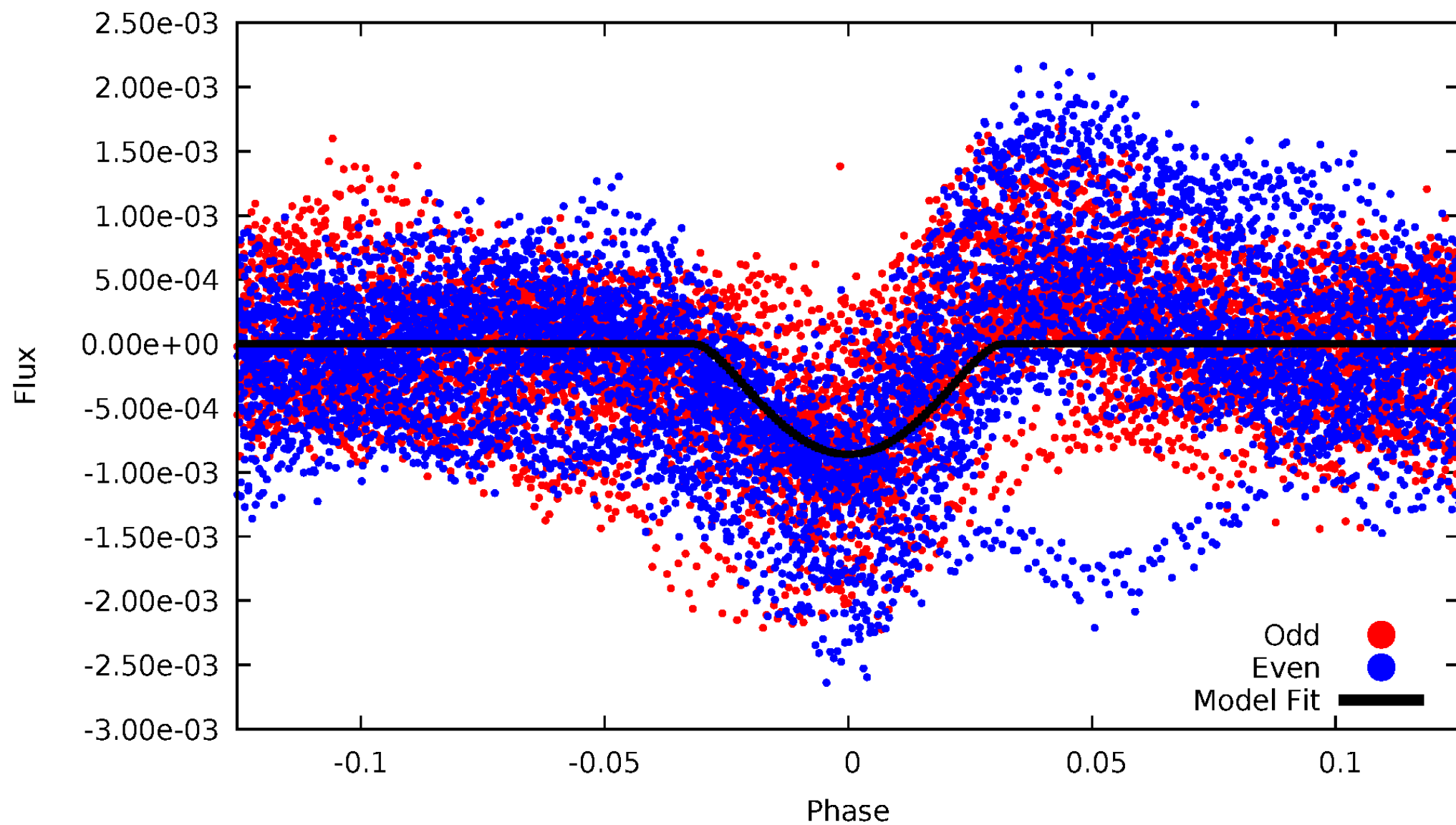


TCE 010091124-01



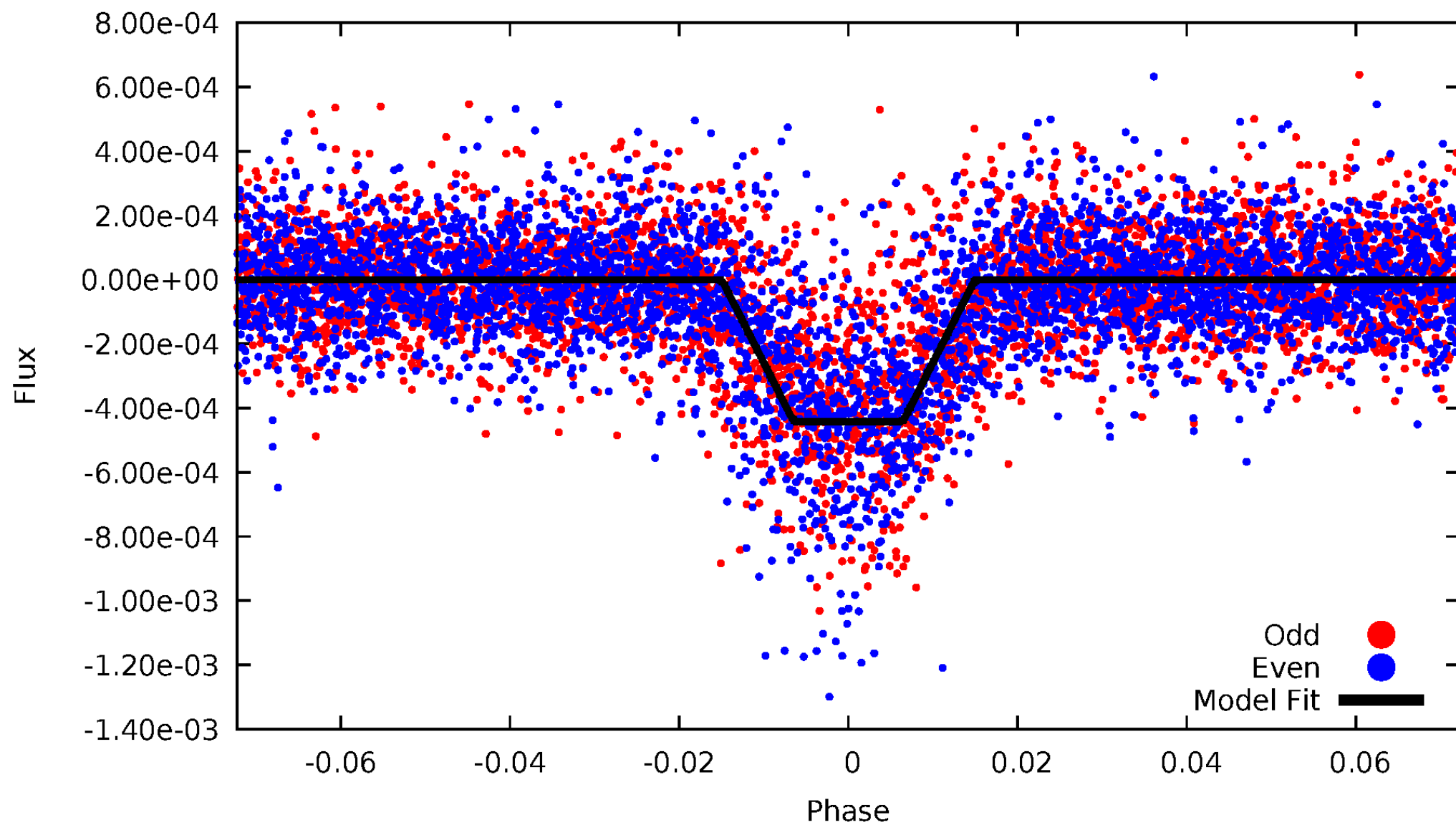
DV Odd/Even

TCE 010091124-01

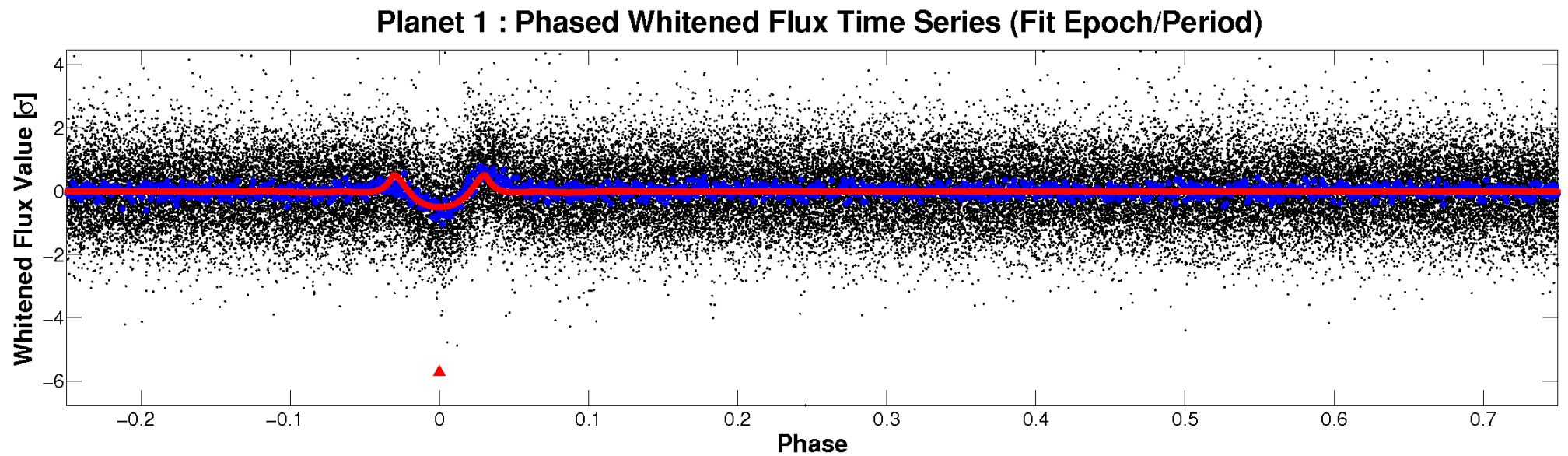
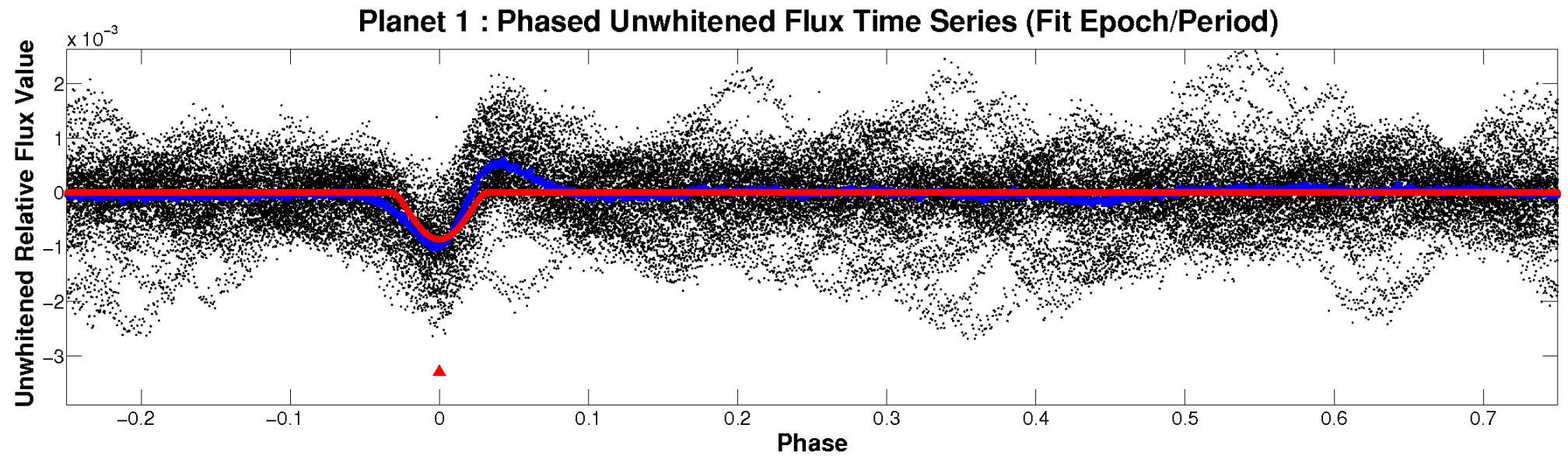


ALT Odd/Even

TCE 010091124-01

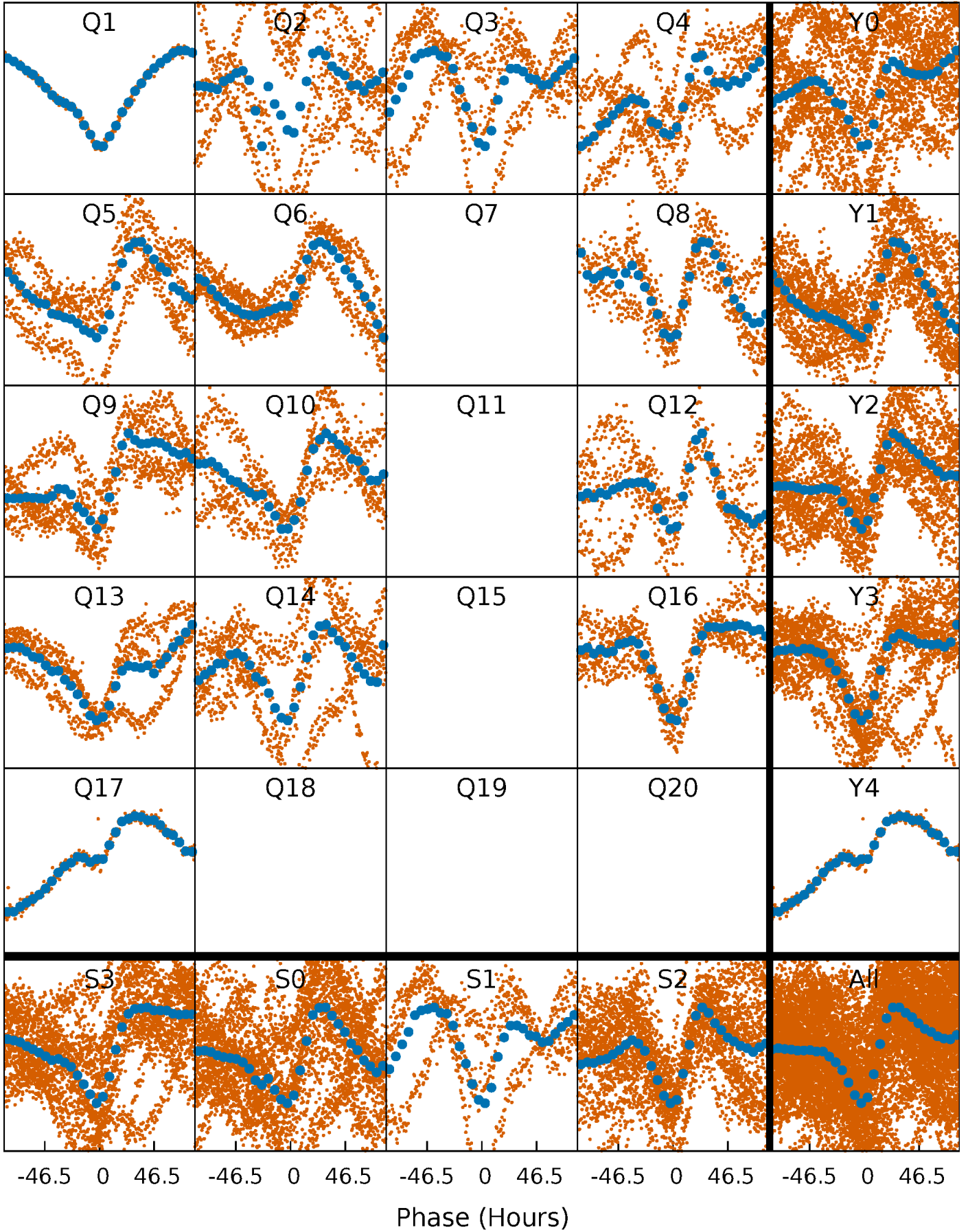


Non-Whitened Vs. Whitened Light Curve



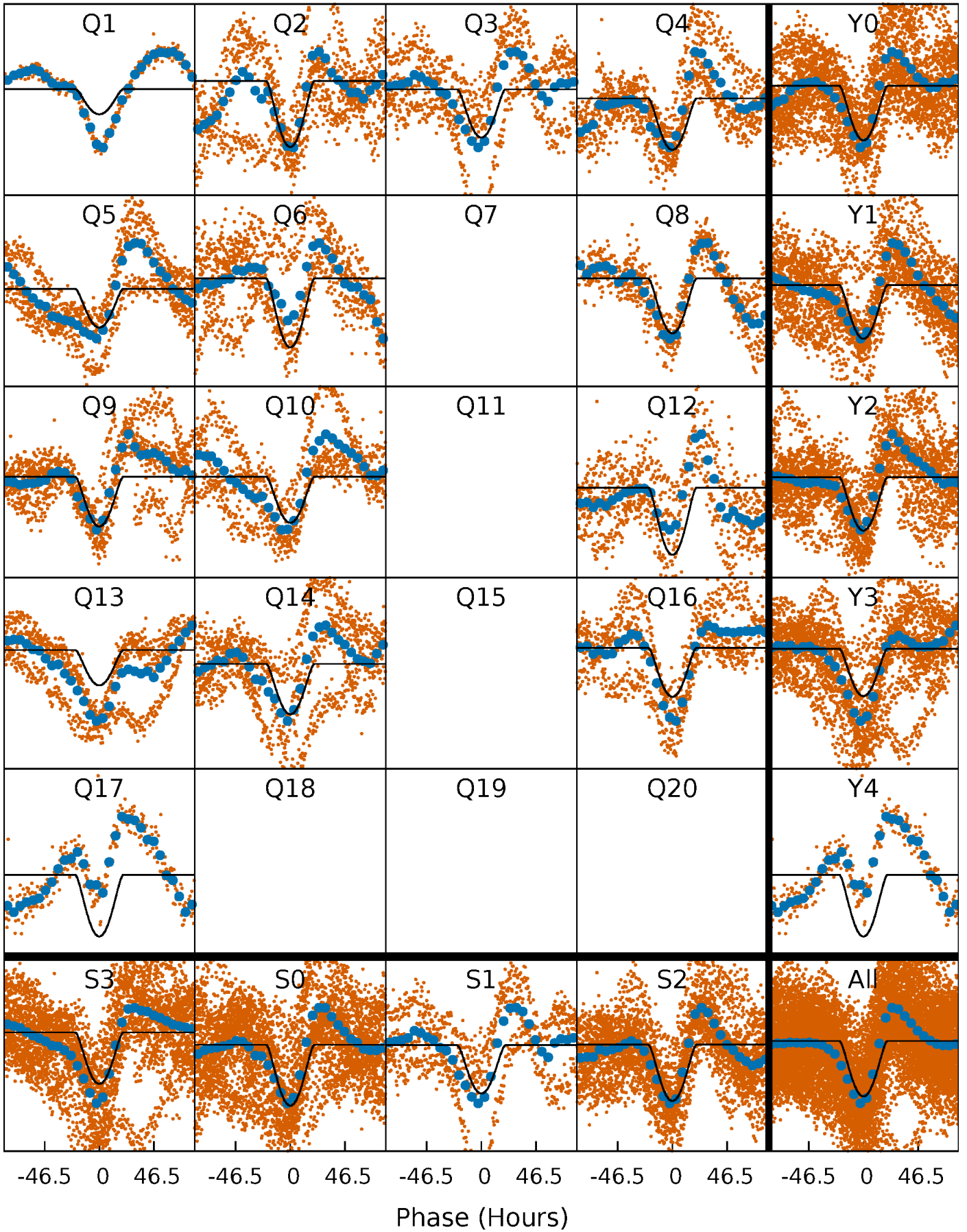
PDC Quarter-Phased Transit Curves

TCE 010091124-01 P= 27.033751 Days $T_0=143.627039$ (BKJD)



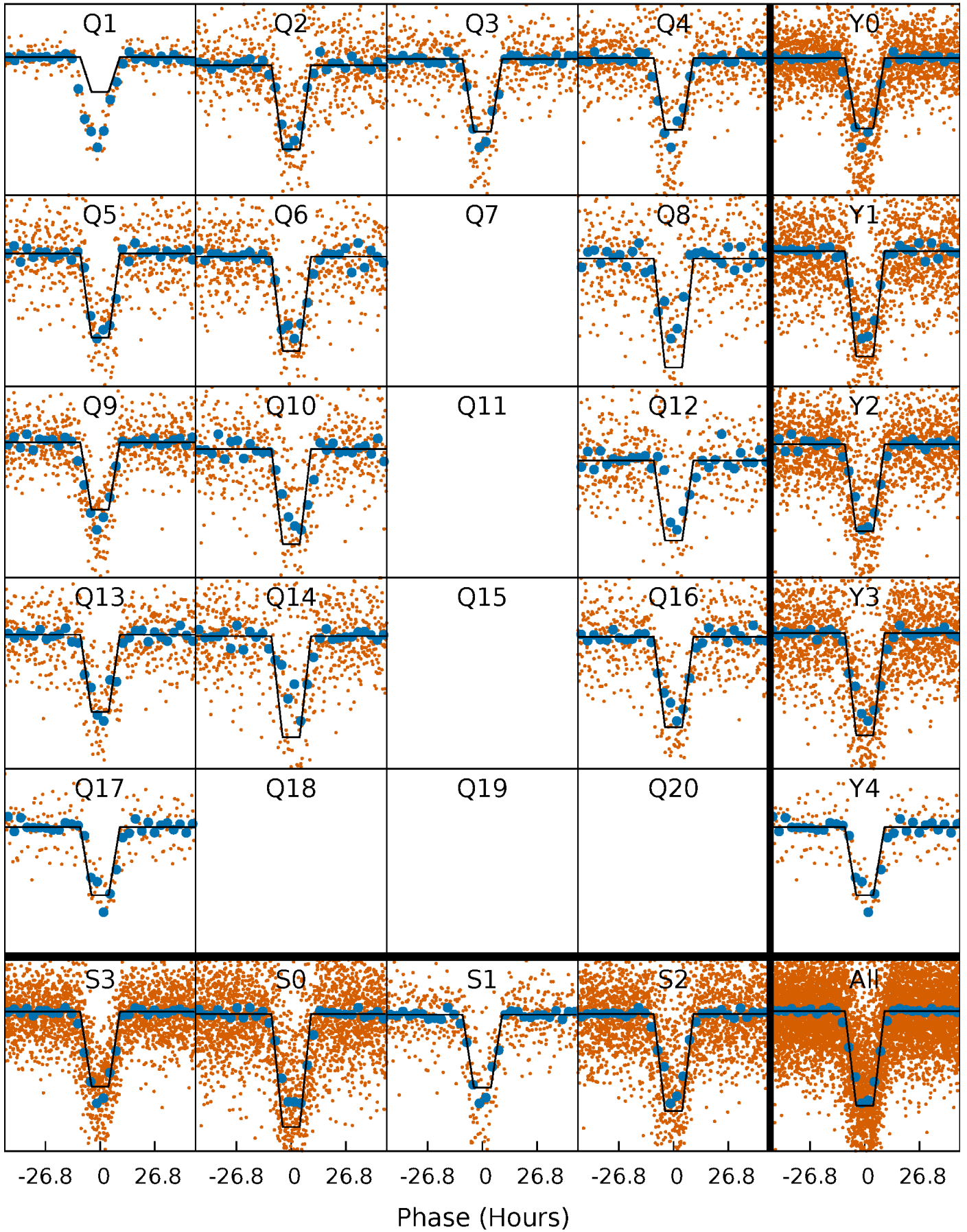
DV Quarter-Phased Transit Curves

TCE 010091124-01 P= 27.033751 Days $T_0=143.627039$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

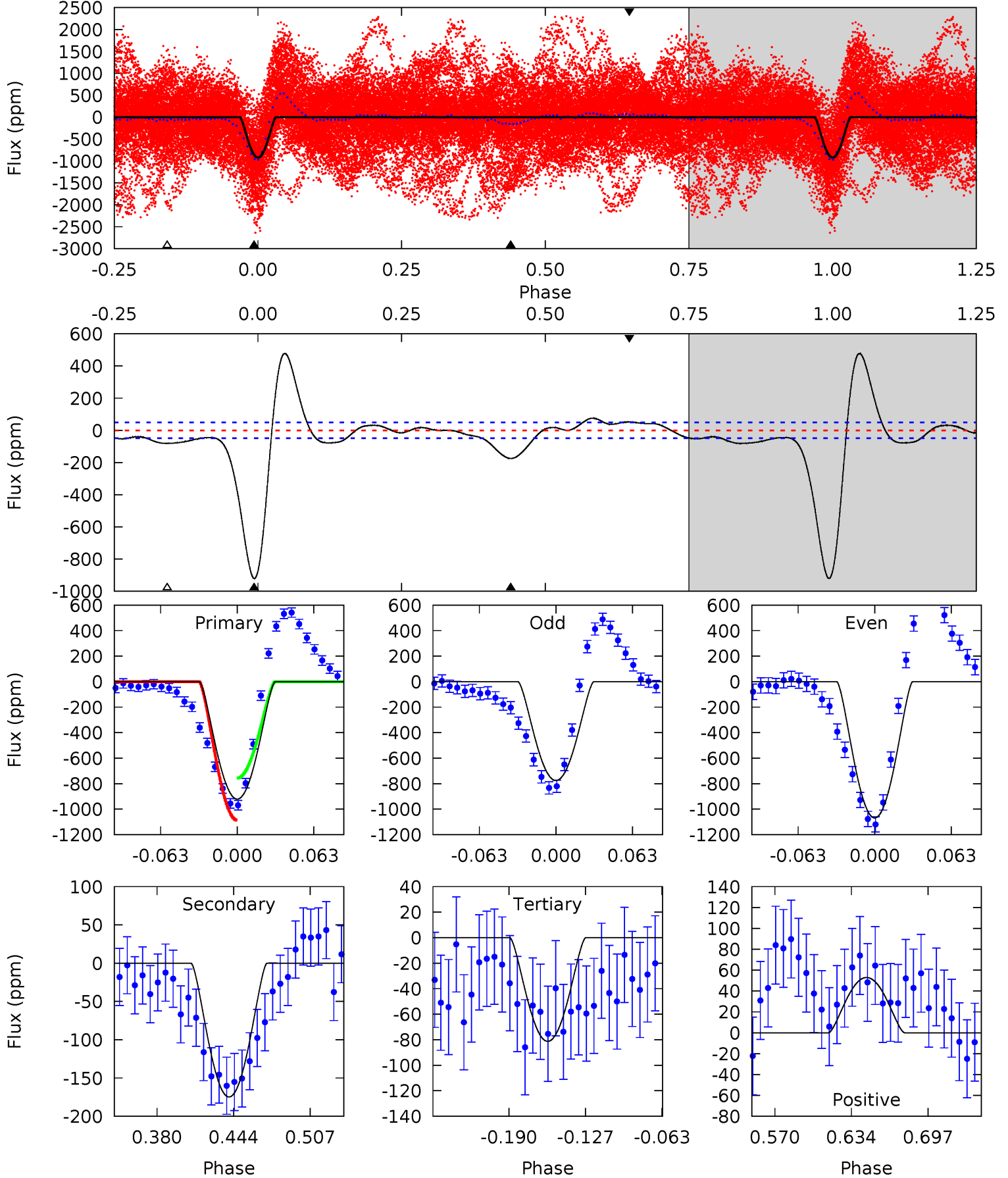
TCE 010091124-01 P= 27.031031 Days $T_0=143.751124$ (BKJD)



DV Model-Shift Uniqueness Test

010091124-01, P = 27.033751 Days, E = 116.593288 Days

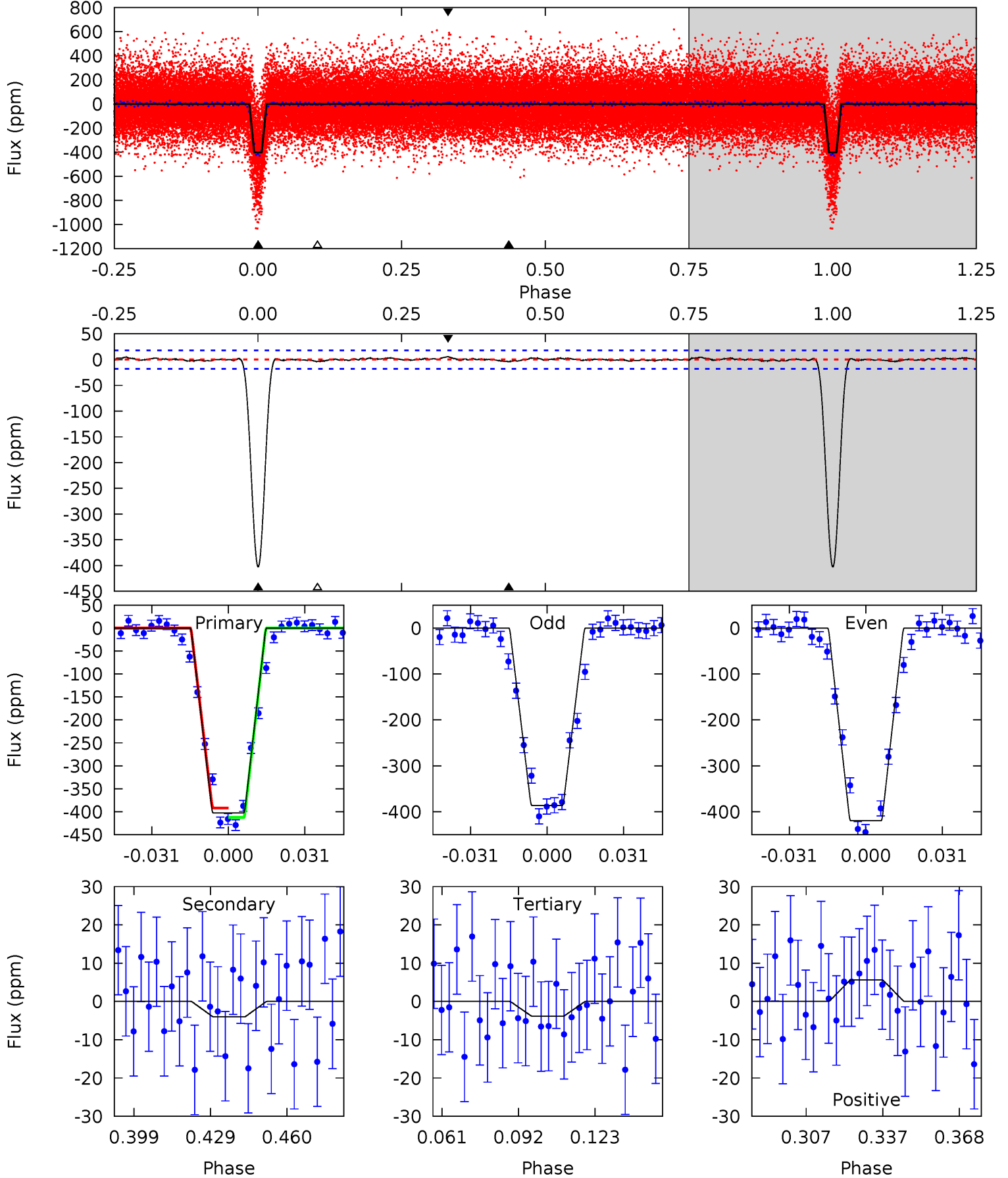
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 87.6 | 16.6 | 7.73 | 5.03 | 4.66 | 1.86 | 6.24 | 79.8 | 82.5 | 8.89 | 11.6 | 14.2 | 1.09 | 0.34 | 15.7 |



Alt Model-Shift Uniqueness Test

010091124-01, P = 27.031031 Days, E = 116.720093 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 108.2 | 1.08 | 1.03 | 1.52 | 4.81 | 2.16 | 0.45 | 107.2 | 106.7 | 0.05 | -0.44 | 4.46 | 0.97 | 0.01 | 2.75 |



Stellar Parameters For KIC 010091124

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6032^{+169}_{-211} | $4.485^{+0.054}_{-0.216}$ | $-0.060^{+0.300}_{-0.300}$ | $0.973^{+0.318}_{-0.106}$ | $1.055^{+0.134}_{-0.134}$ | $1.612^{+0.362}_{-0.858}$ |
| | +3%/-3% | +1%/-5% | +500%/-500% | +33%/-11% | +13%/-13% | +22%/-53% |
| Source | PHO1 | 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 010091124-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|------------------------|-------------------|-----------------------|----------------------------|
| DV | -175 ± 11 | $5.89^{+2.03}_{-1.97}$ | 884^{+70}_{-46} | 3504^{+514}_{-305} | 87^{+114}_{-37} |
| Alt. | -4 ± 4 | $2.63^{+1.89}_{-1.54}$ | 881^{+67}_{-41} | 2506^{+700}_{-1139} | $8.022^{+42.968}_{-7.704}$ |

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 $A_{obs} \gg 1.0$

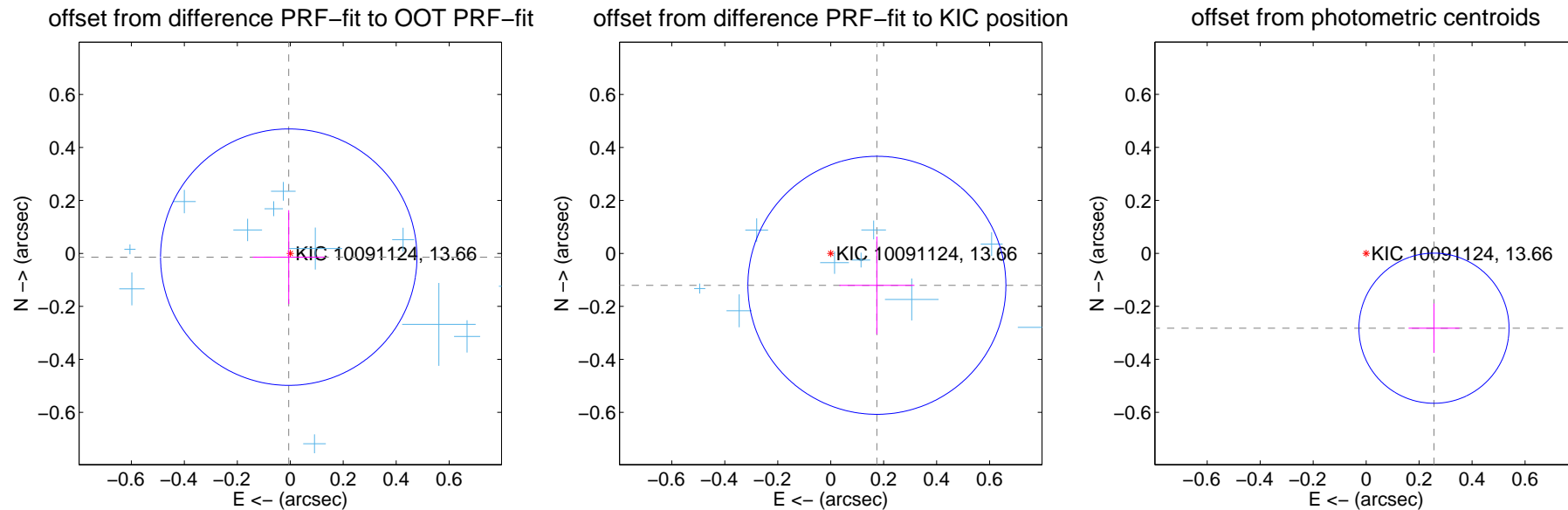
DV Centroid Data

Supplemental centroid analysis for 010091124-01. Kepler magnitude: 13.66. Transit SNR 21.97

There are 13 quarters with good PRF difference image offsets

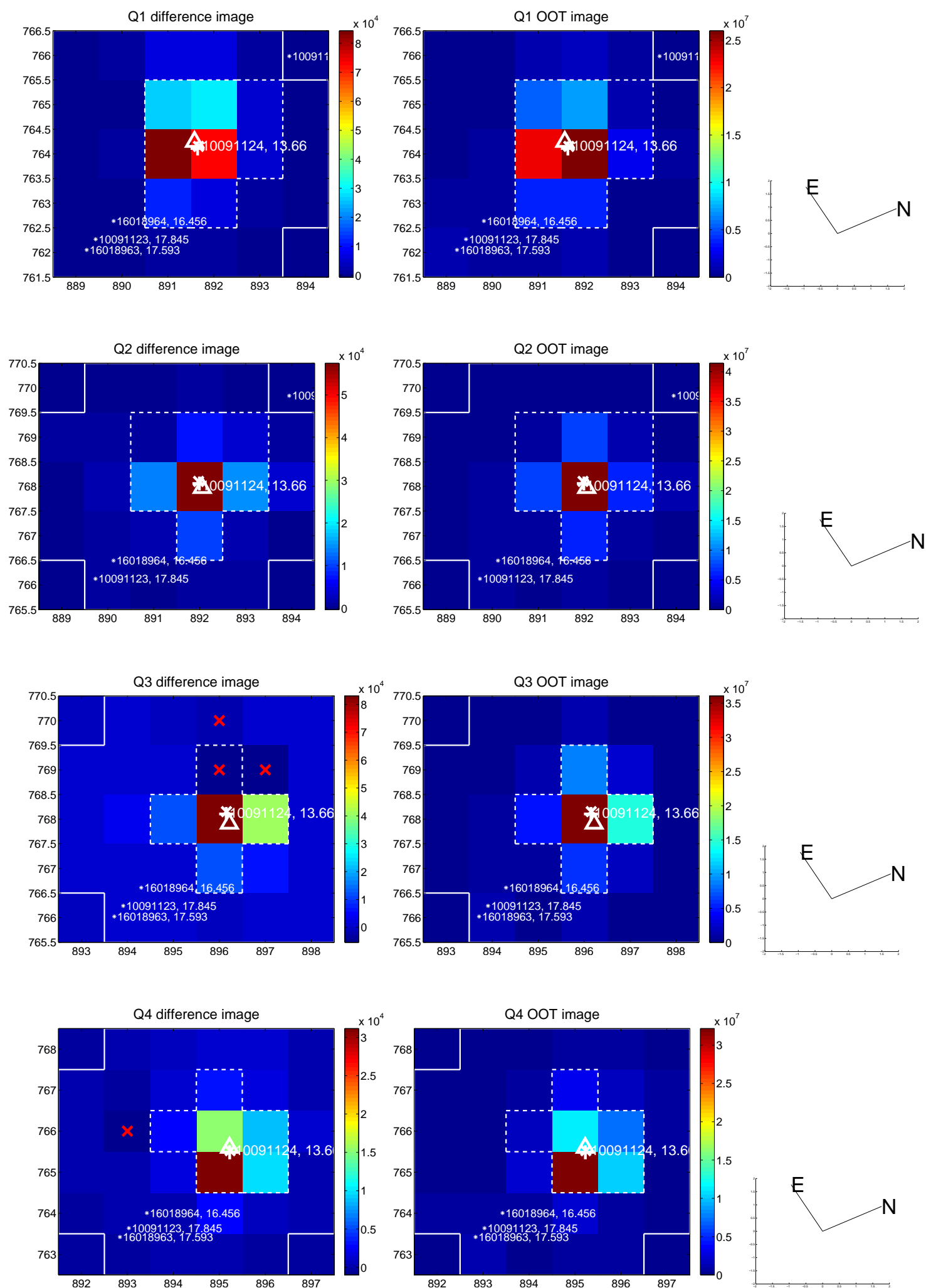
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.015 ± 0.161 | 0.09 | 0.006 ± 0.136 | -0.014 ± 0.177 |
| PRF-fit source offset from KIC position | 0.212 ± 0.162 | 1.31 | -0.174 ± 0.142 | -0.120 ± 0.185 |
| photometric centroid source offset | 0.38 ± 0.09 | 4.04 | -0.26 ± 0.10 | -0.28 ± 0.09 |

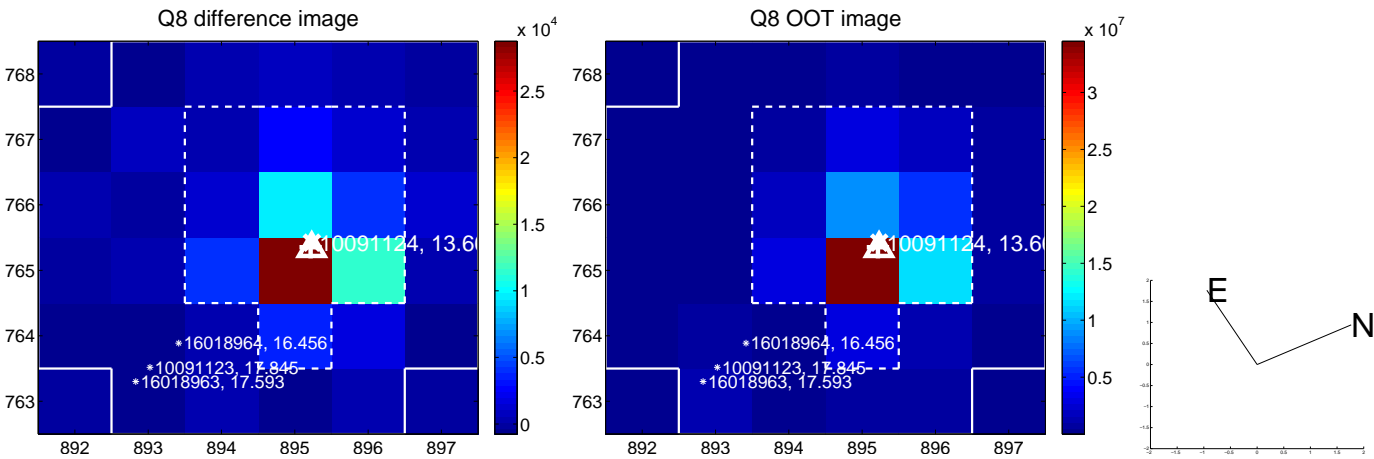
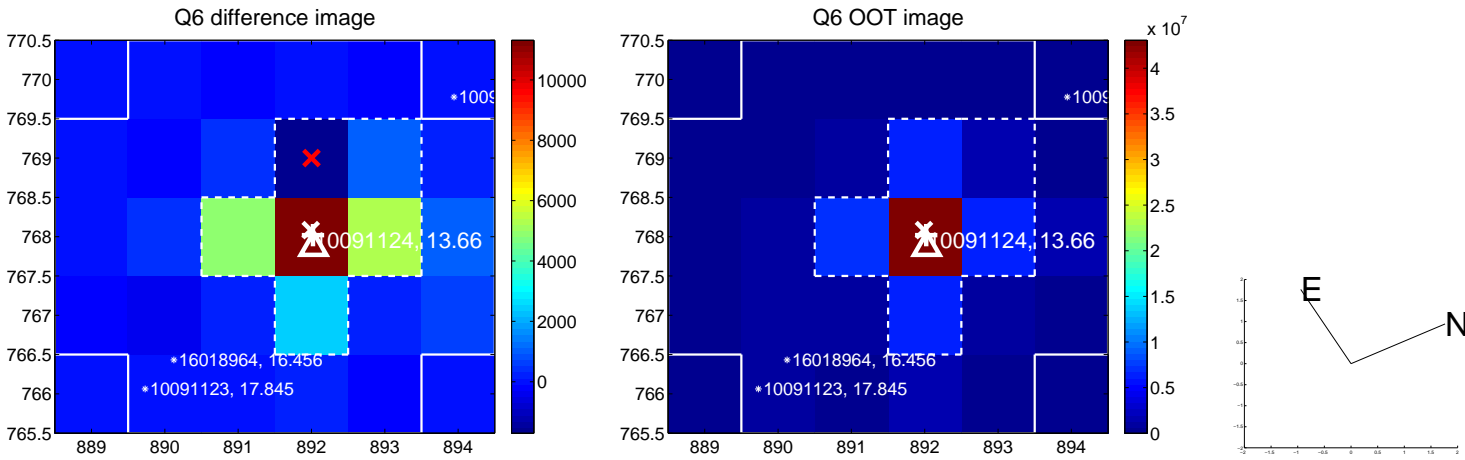
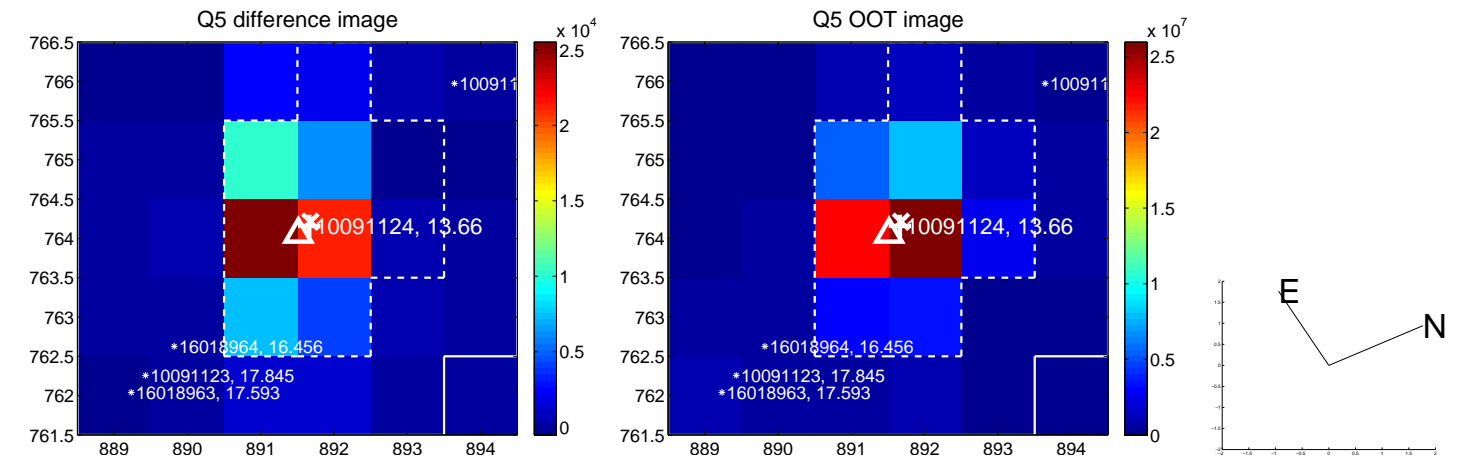


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

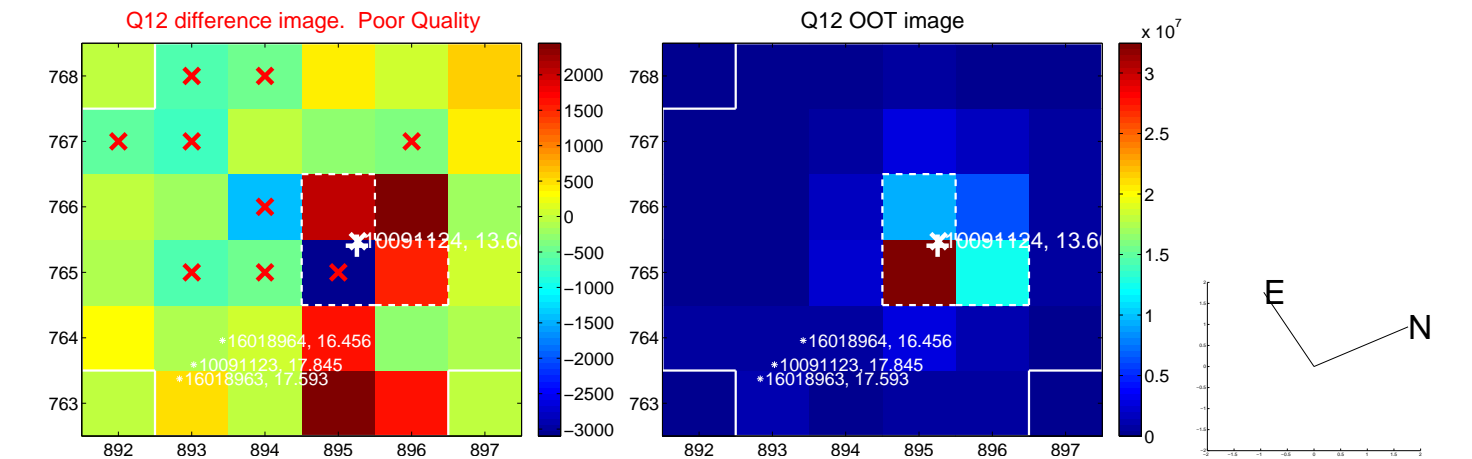
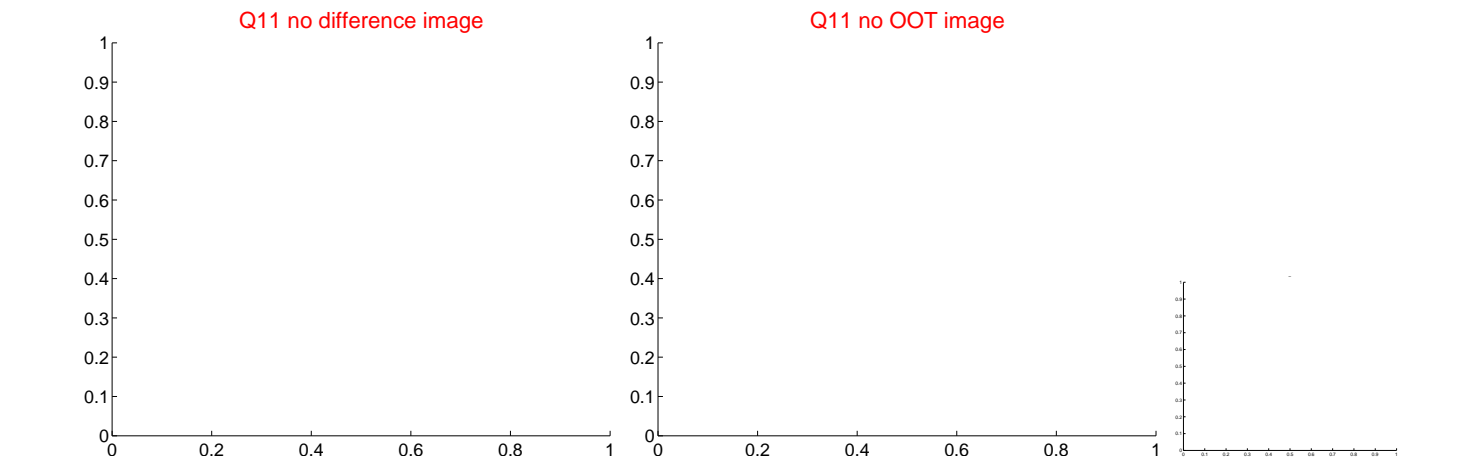
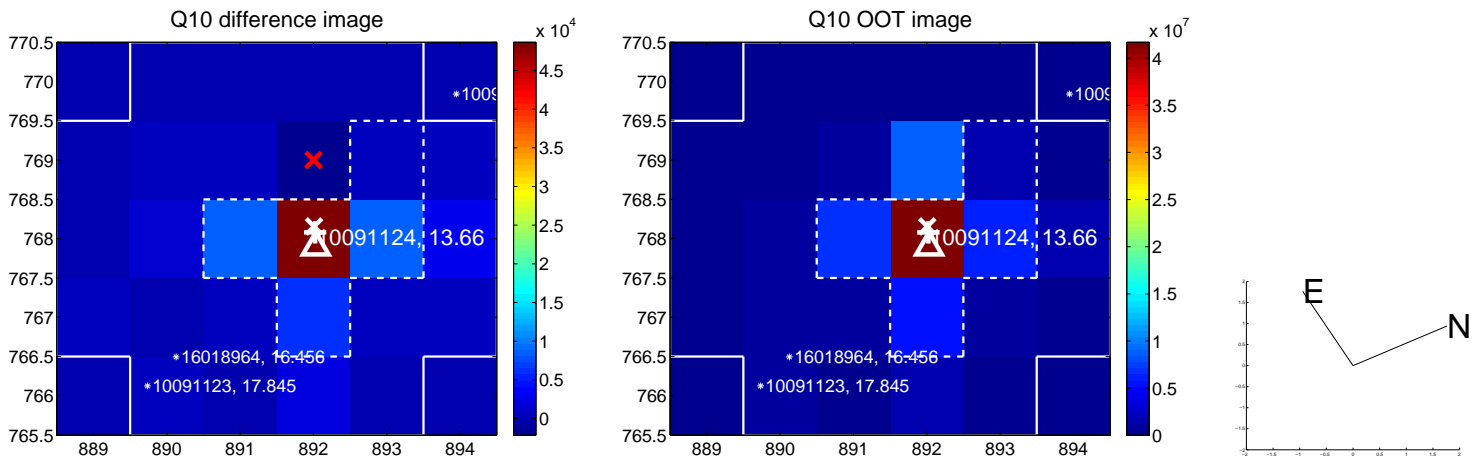
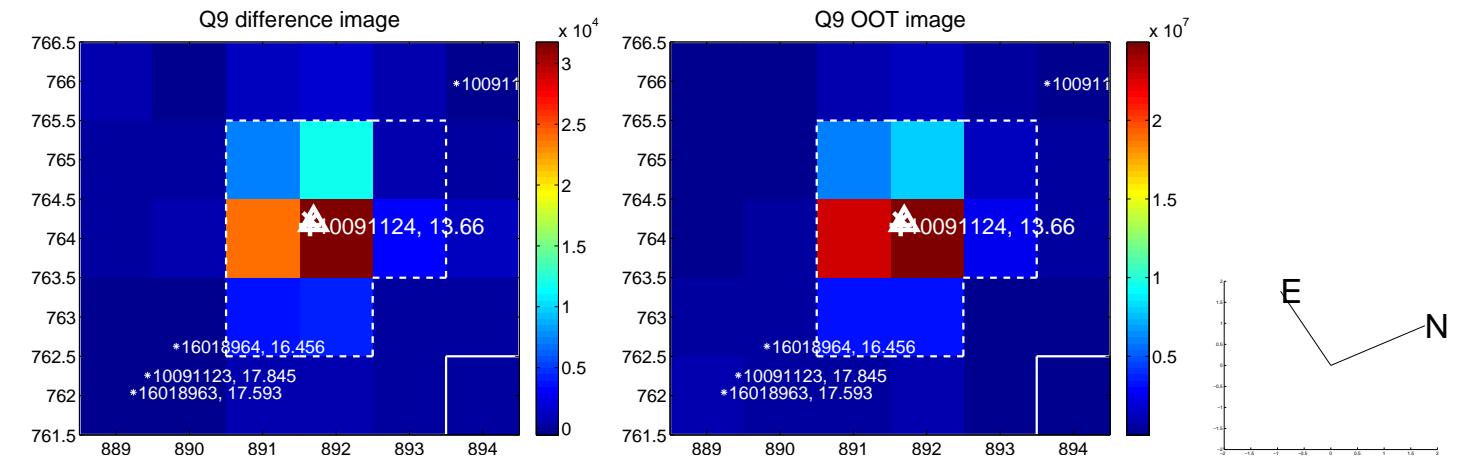
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



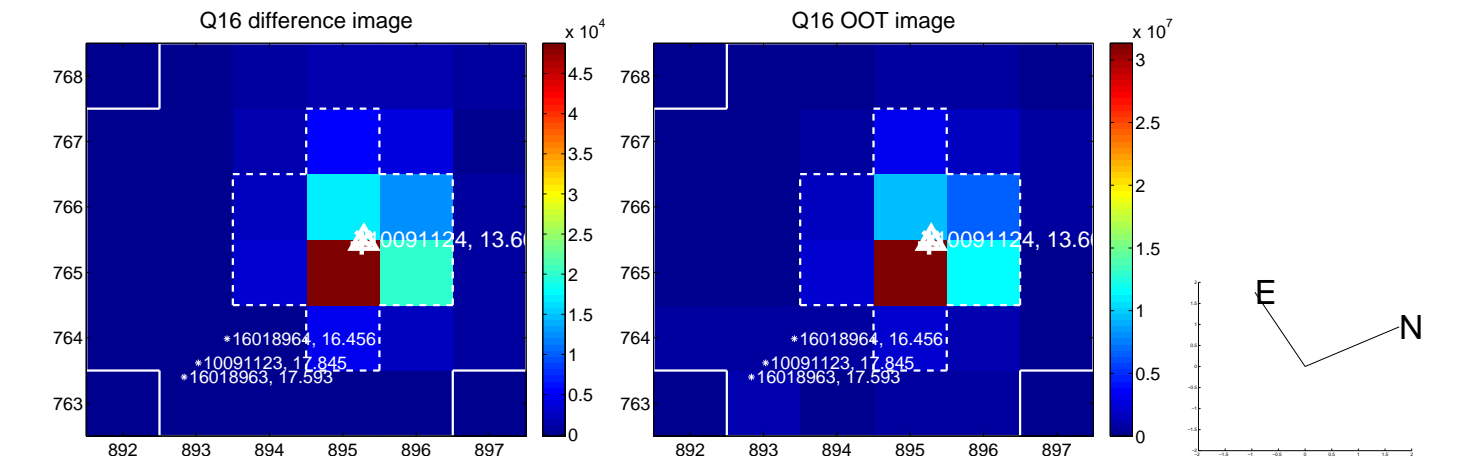
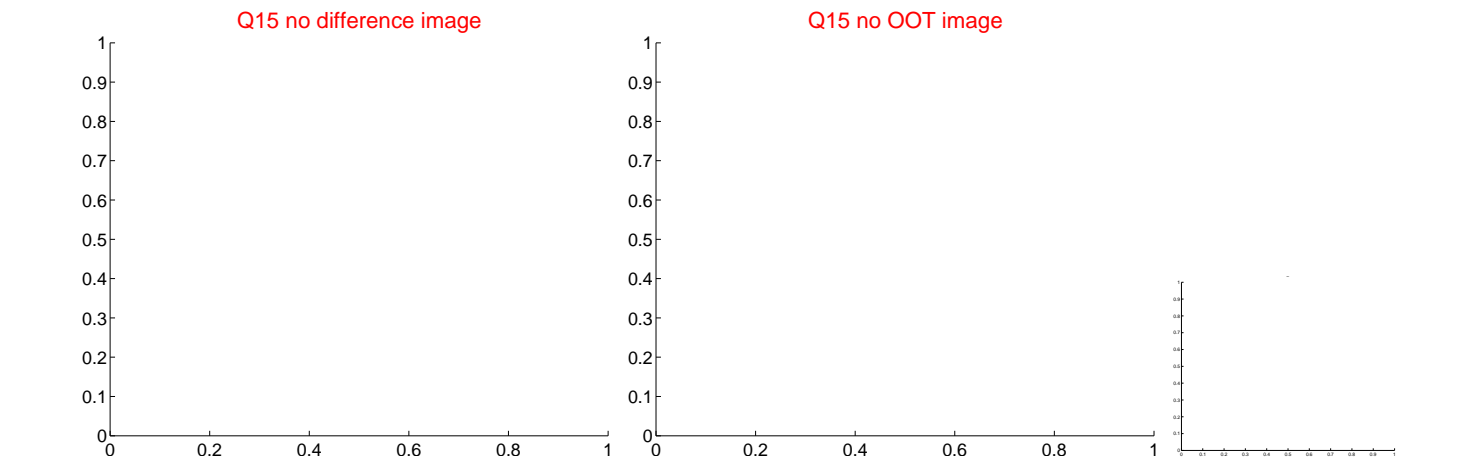
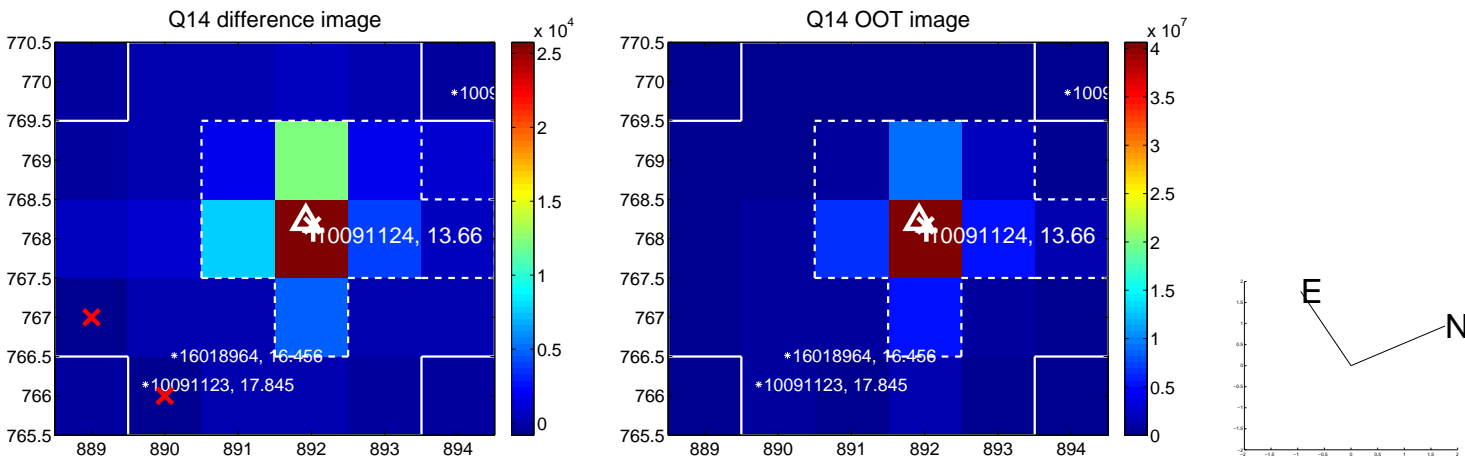
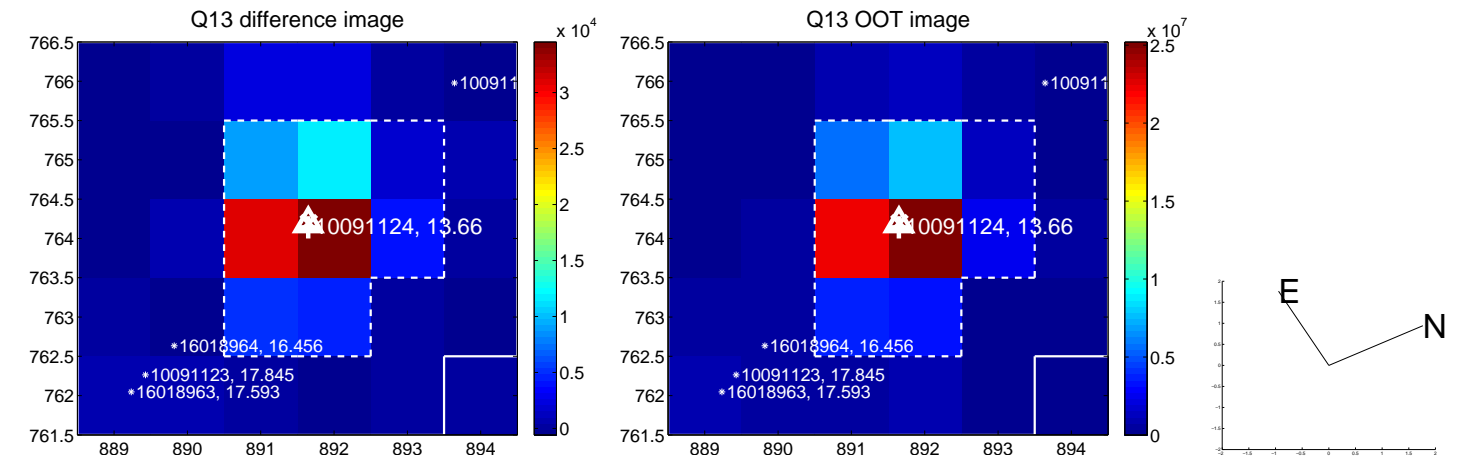
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



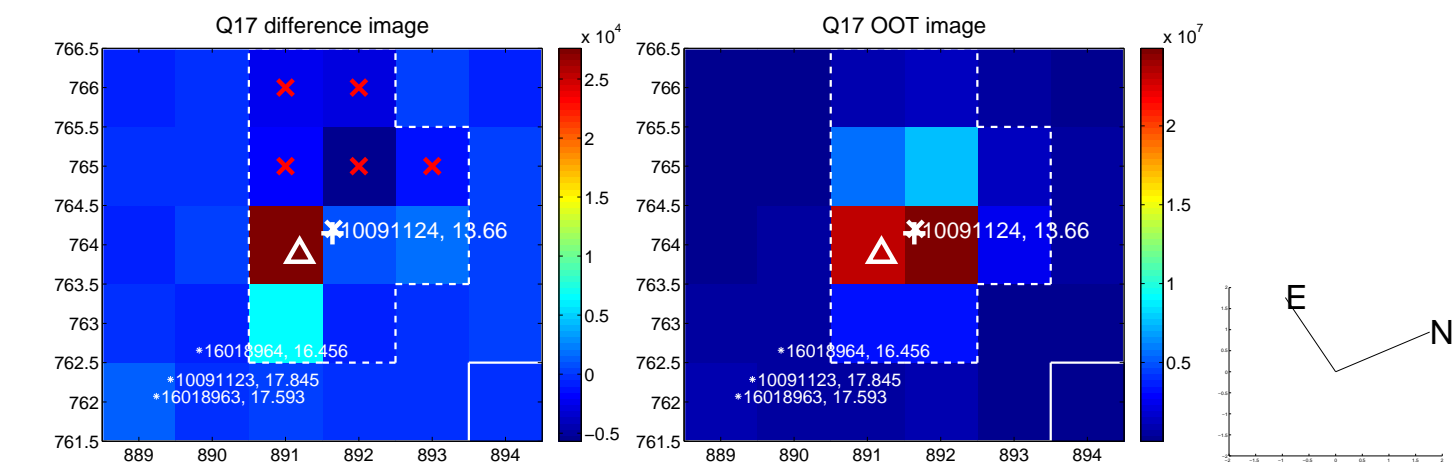
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



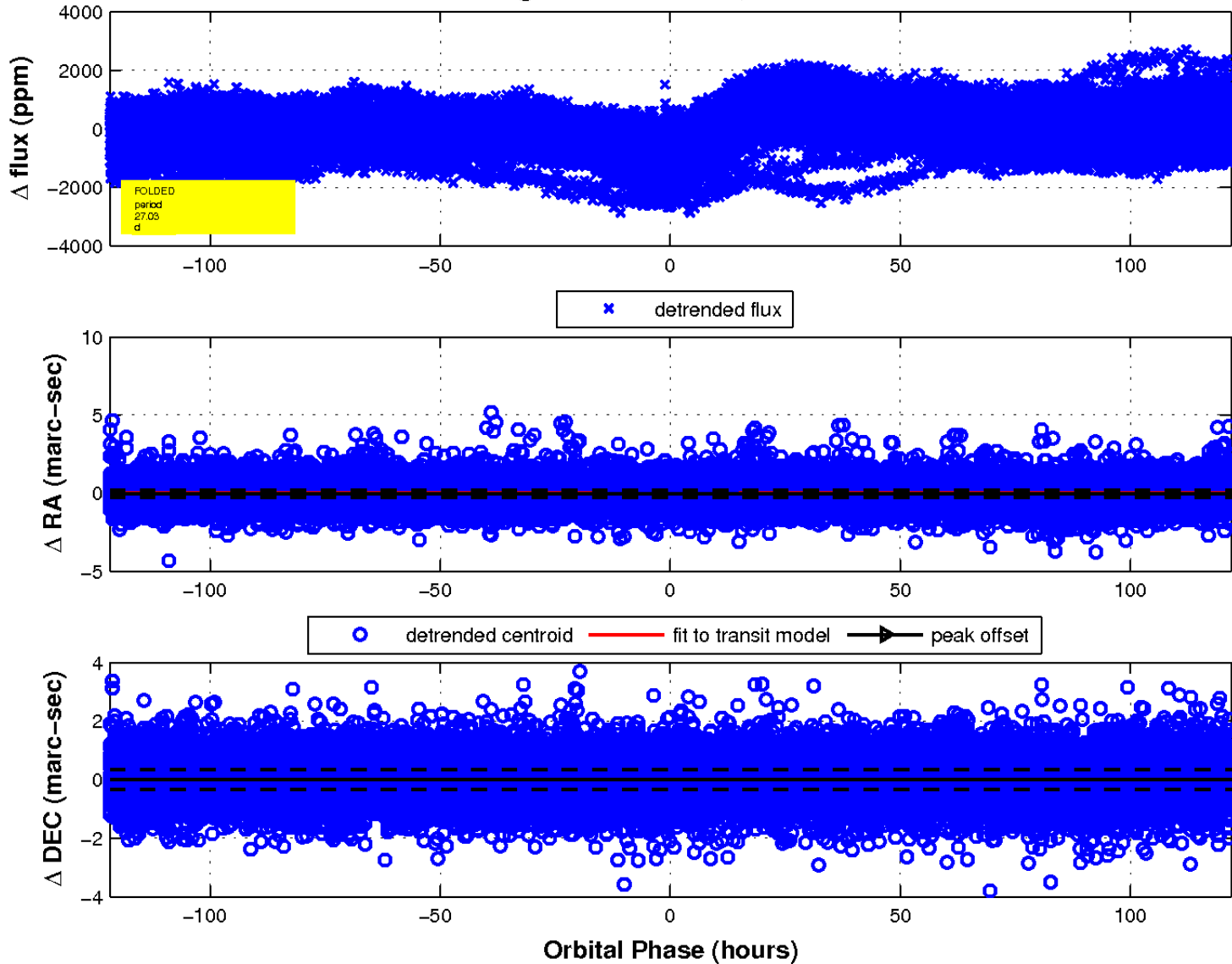
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

