

KIC 005124667

Q1-17 DR25 TCE Parameters

| TCE | Run Type | KOI? | Period (Days) | Epoch (BKJD) | Depth (ppm) | Duration (Hours) | MES | SNR | R _★ (R _☉) | T _★ (K) | R _p (R _⊕) | S _p (S _⊕) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|----------------------------------|--------------------|----------------------------------|----------------------------------|
| 005124667-01 | OBS | 1822.01 | 150.877987 | 206.692657 | 667.9 | 8.902 | 51.4 | 50.7 | 1.74 | 5504 | 4.90 | 7.57 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 005124667-01 | 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.

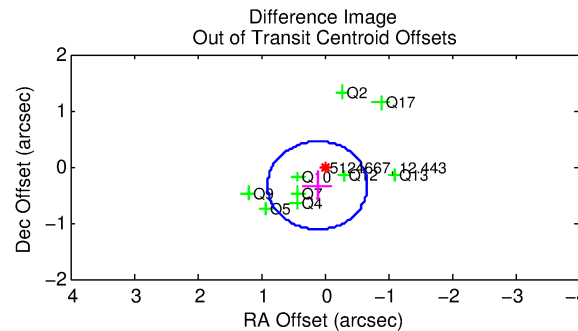
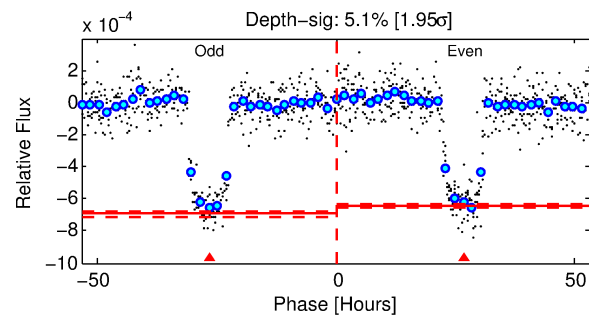
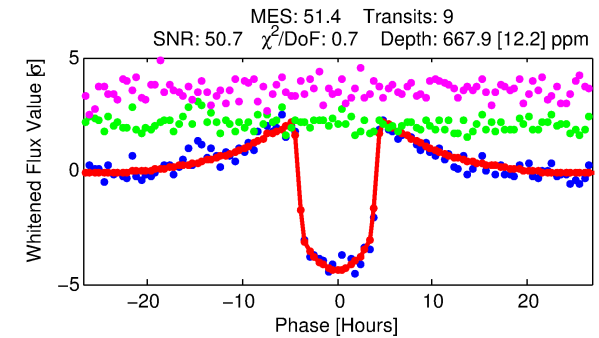
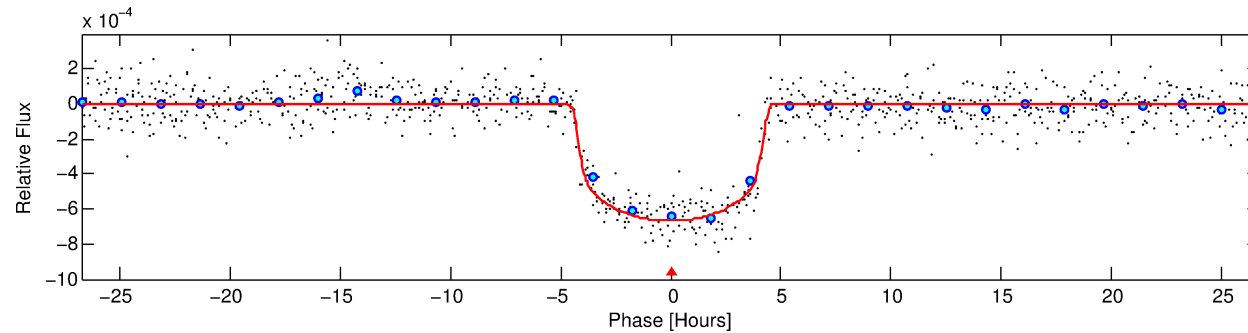
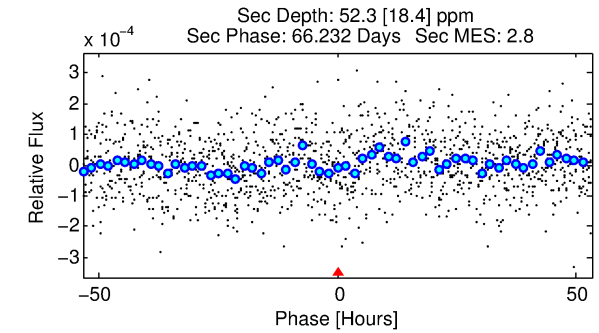
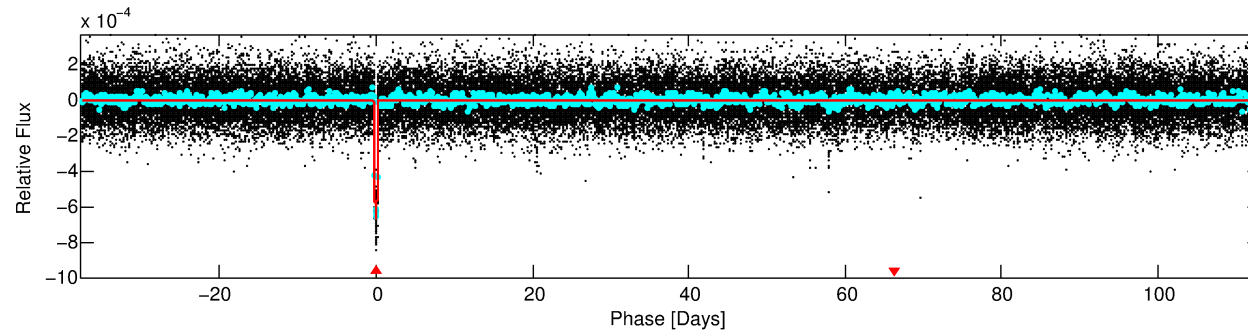
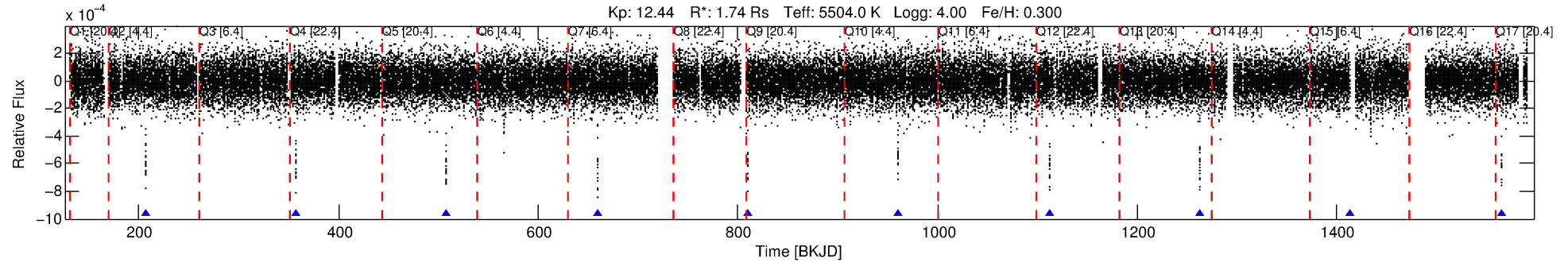
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005124667-01

No Significant Match Found

DV One-Page Summary

KIC: 5124667 Candidate: 1 of 1 Period: 150.878 d
KOI: K01822.01 Corr: 0.986



DV Fit Results:

Period = 150.87799 [0.00044] d
Epoch = 206.6927 [0.0021] BKJD
Rp/R* = 0.0259 [0.0014]
a/R* = 89.27 [18.80]
b = 0.76 [0.12]
Seff = 7.57 [3.98]
Teq = 423 [56] K
Rp = 4.90 [1.74] Re
a = 0.5723 [0.1889] AU
Ag = 392.40 [250.57] [1.56σ]
Teffp = 2911 [272] K [8.97σ]

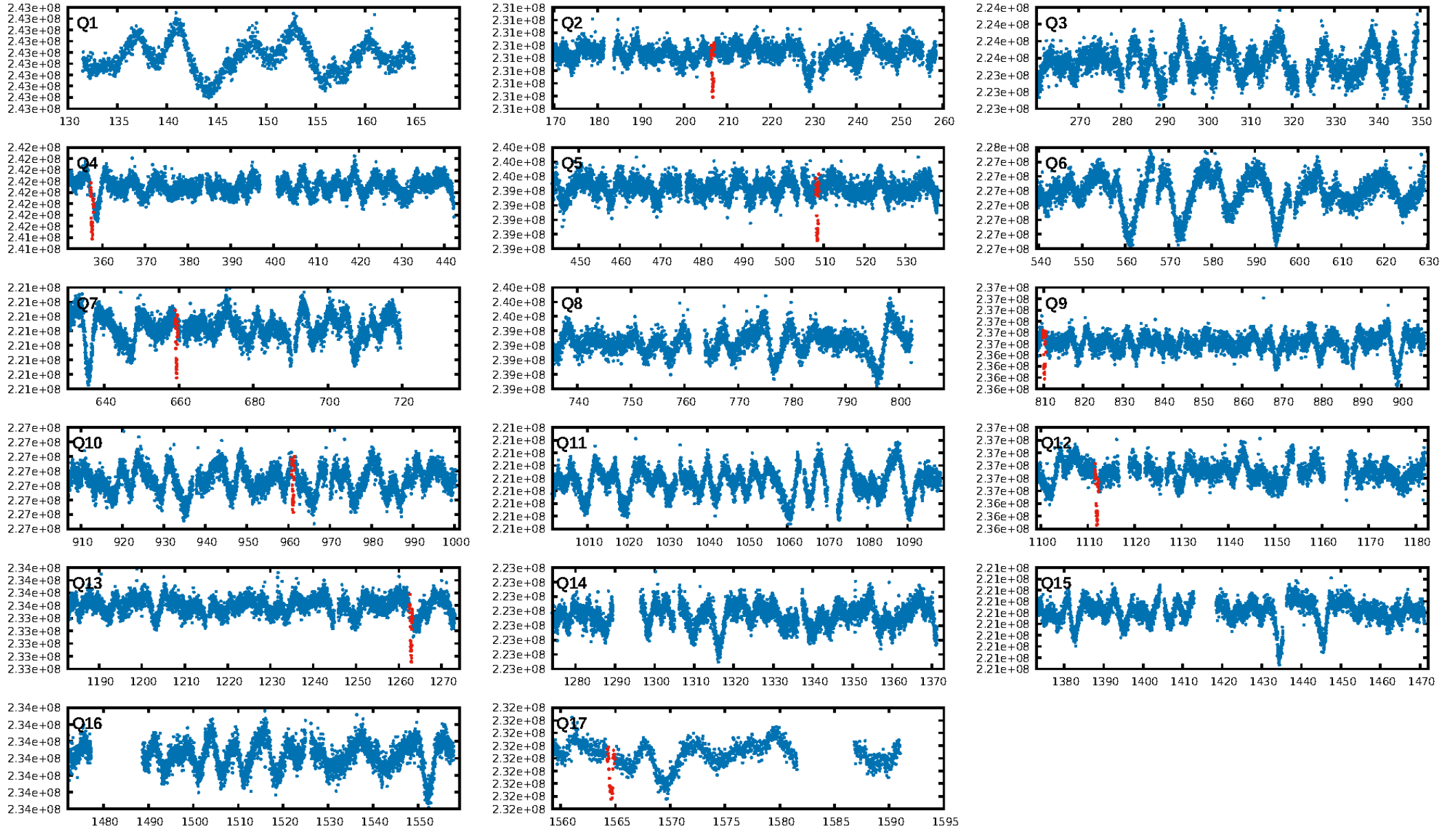
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 77.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 5.669
Centroid-sig: 8.6%
Centroid-so: 0.377 arcsec [1.54σ]
OotOffset-rm: 0.353 arcsec [1.35σ]
KicOffset-rm: 0.509 arcsec [2.11σ]
OotOffset-st: 2/1/2/4 [9]
KicOffset-st: 2/1/2/4 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 1.00 [9/9]

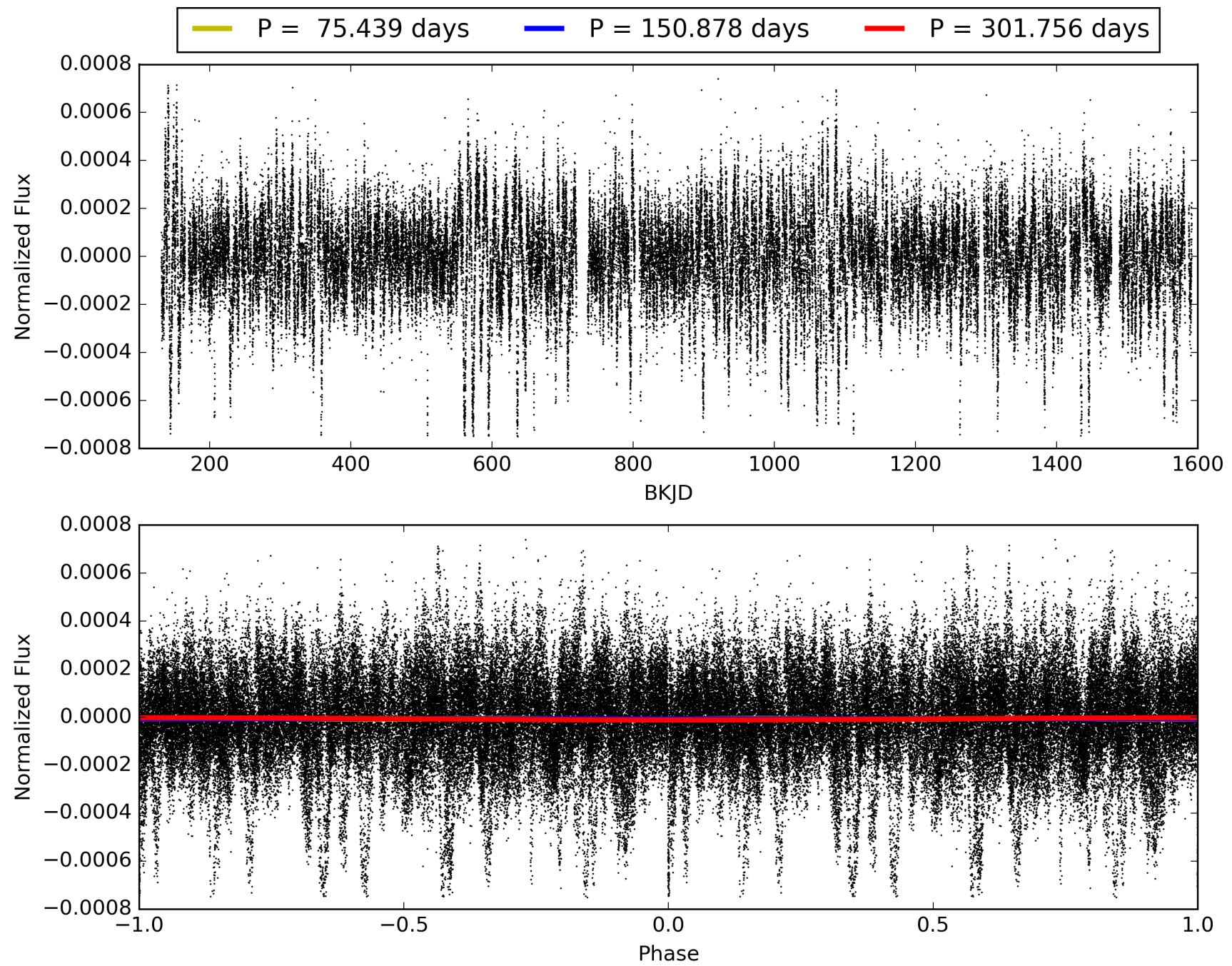
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:31:24 Z

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

TCE 005124667-01, PDC Light Curves

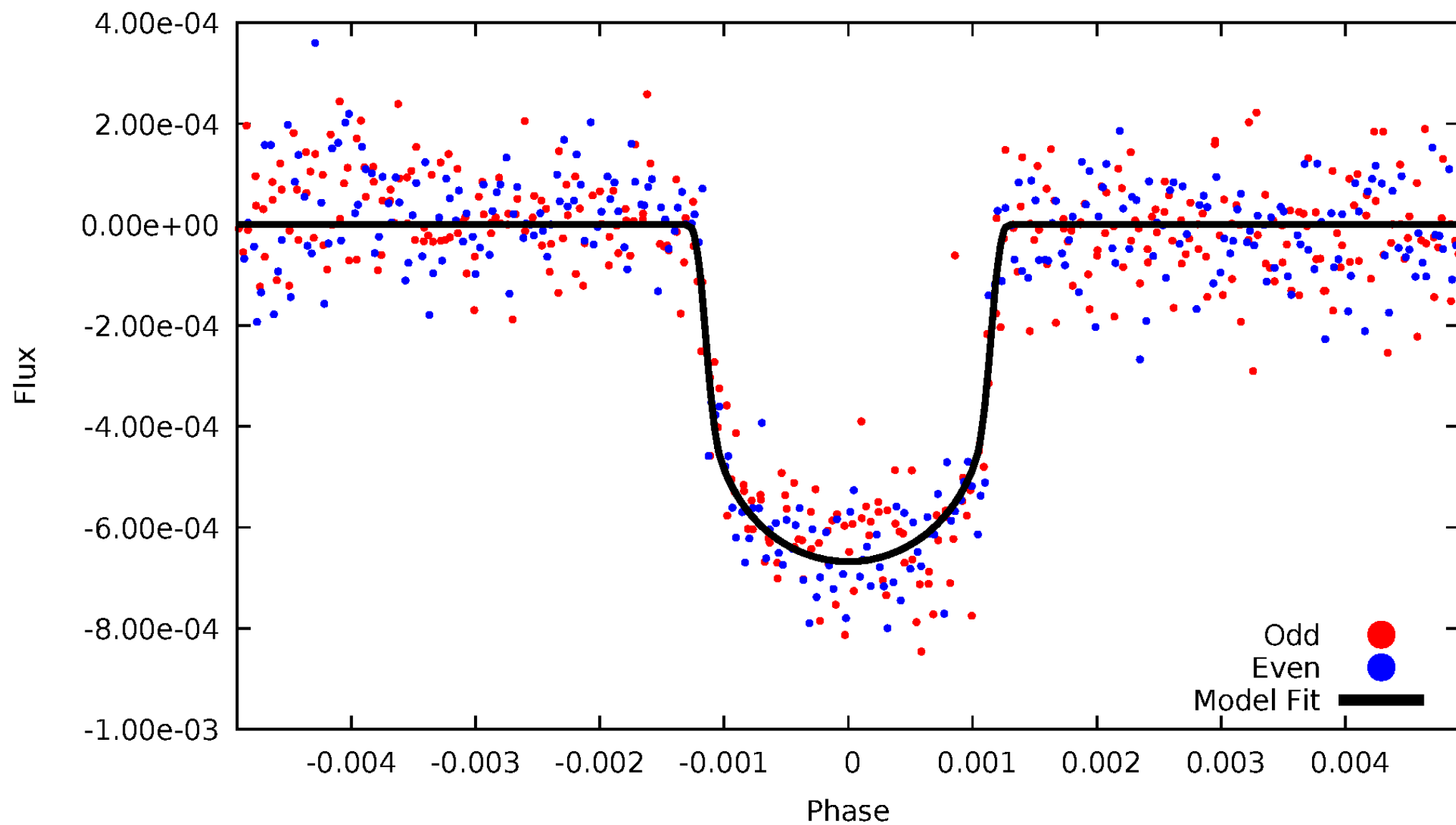


TCE 005124667-01



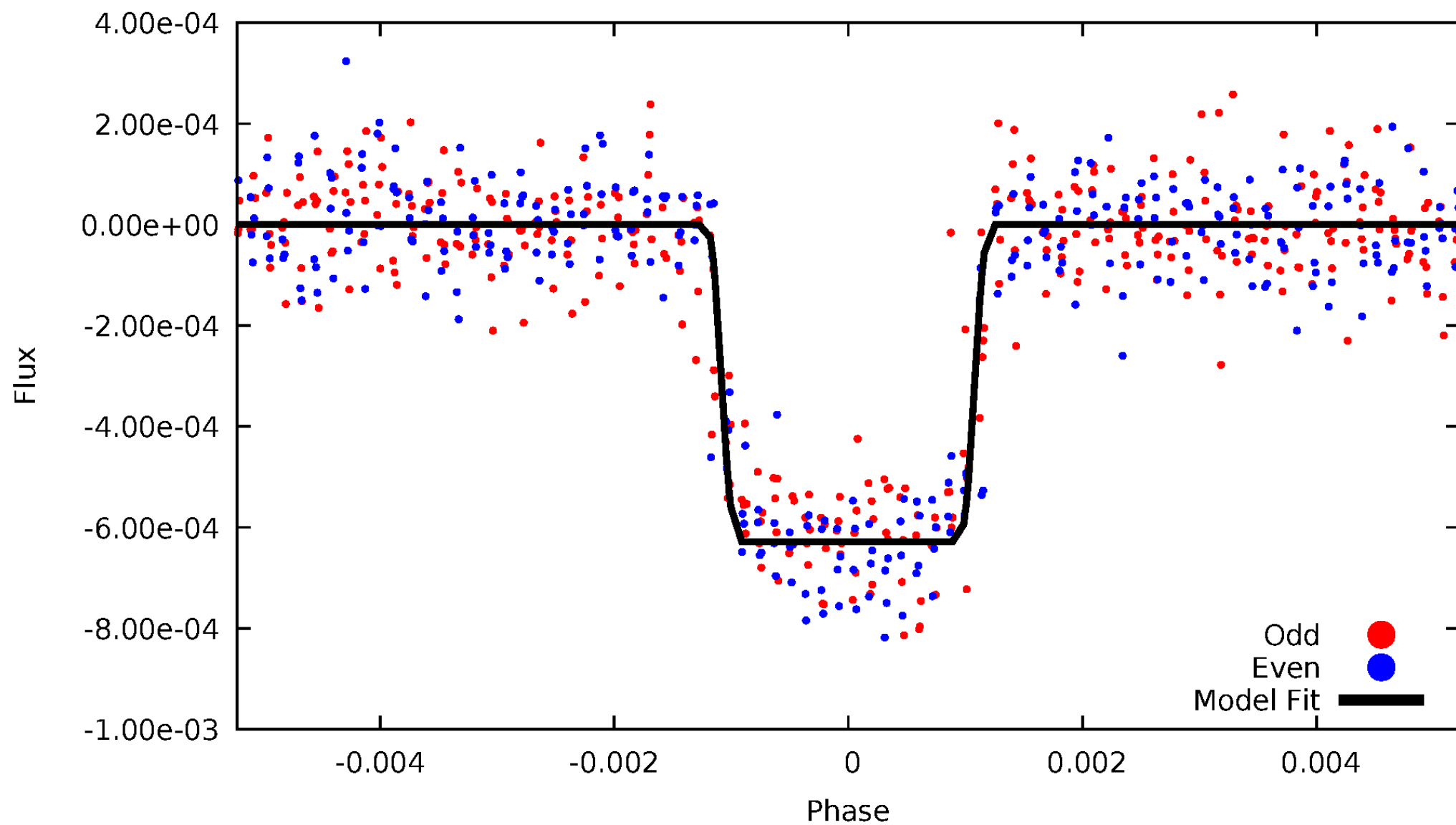
DV Odd/Even

TCE 005124667-01

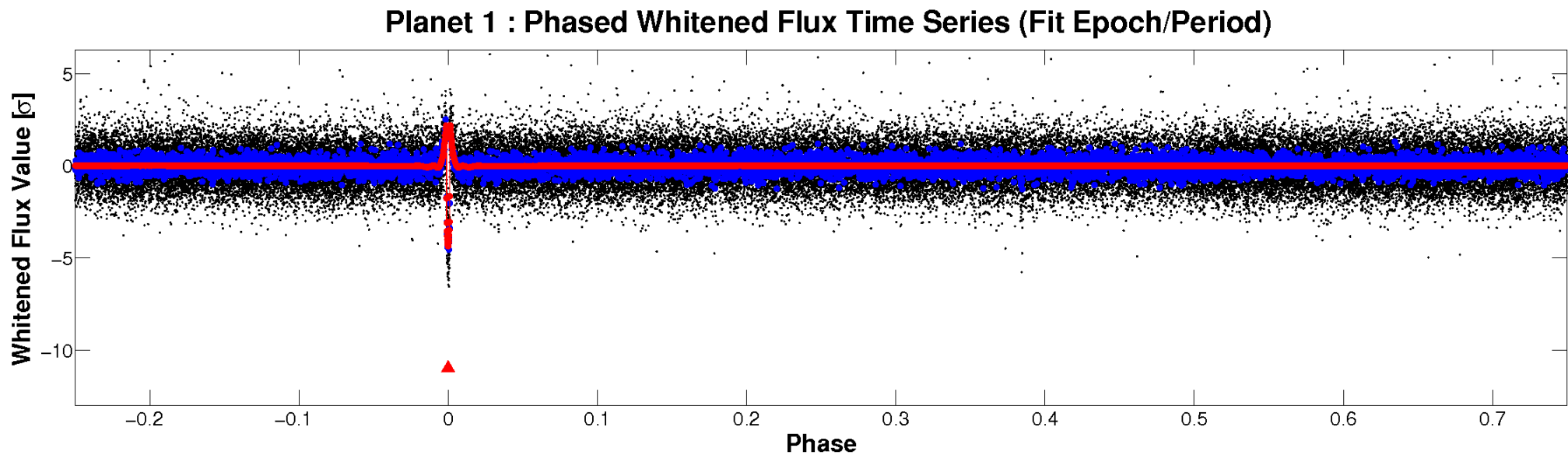
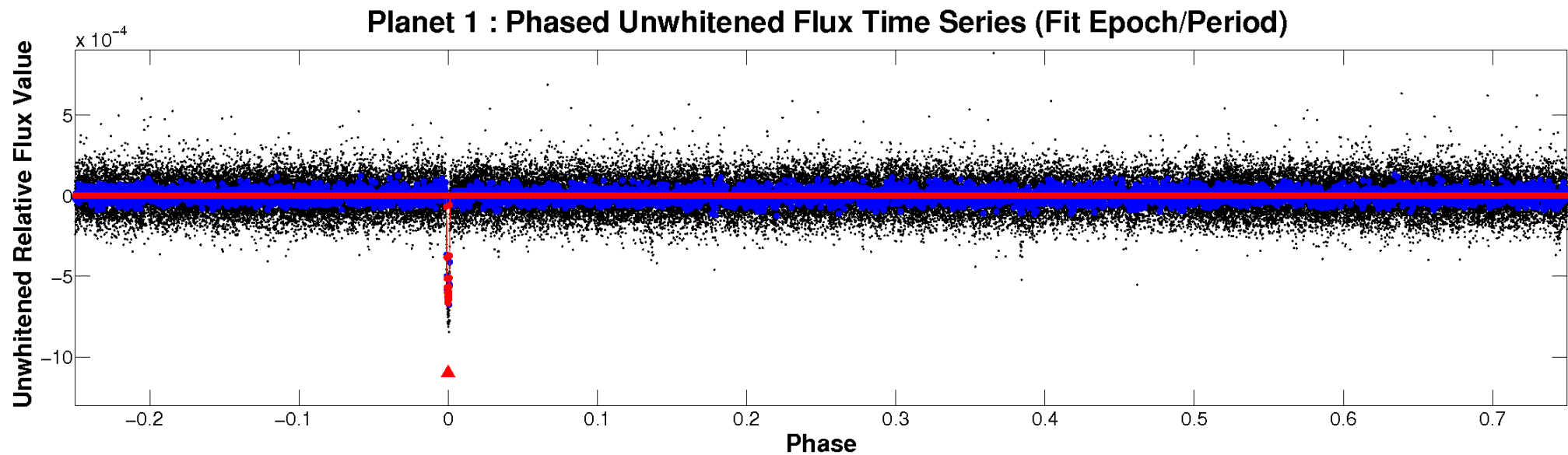


ALT Odd/Even

TCE 005124667-01

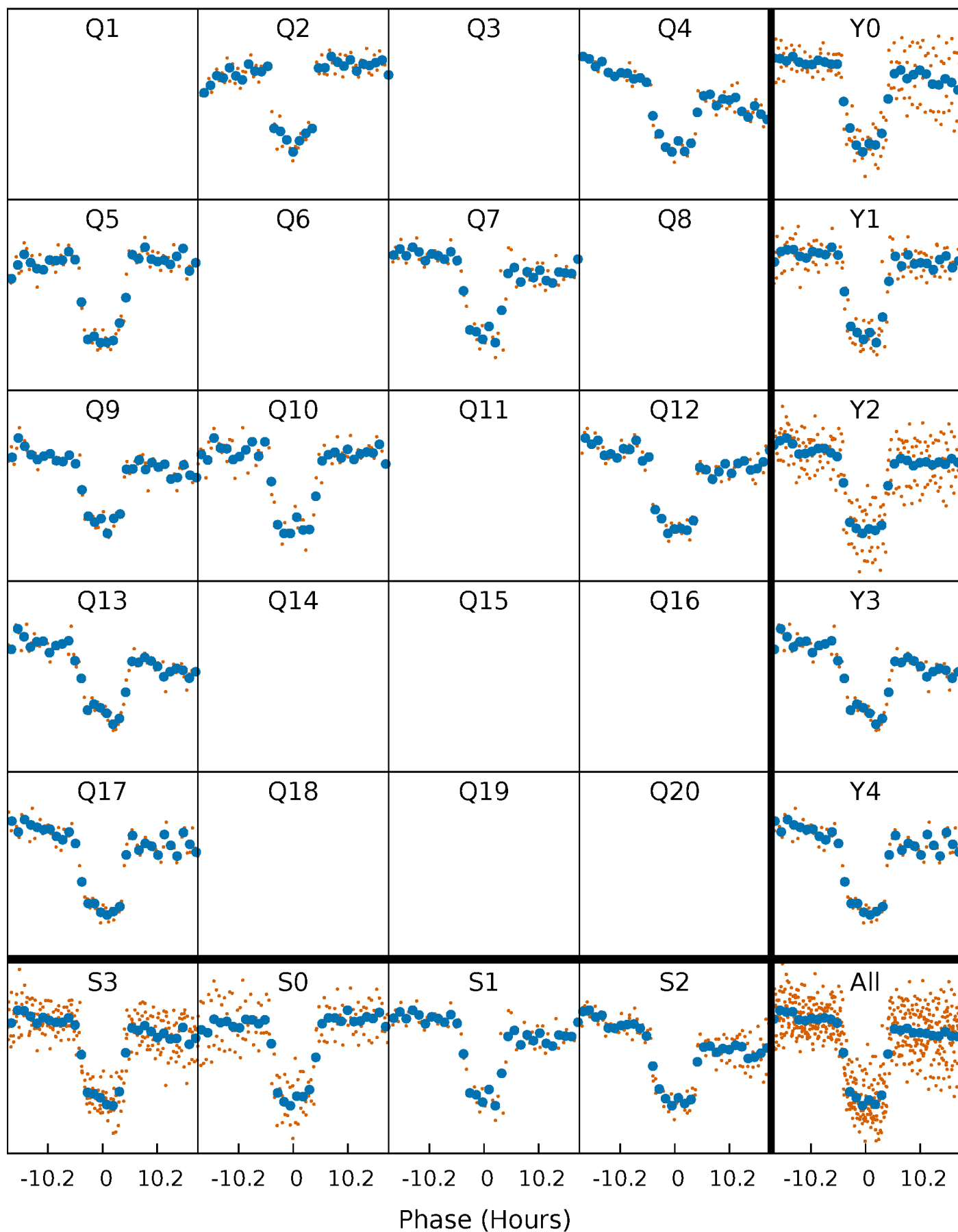


Non-Whitened Vs. Whitened Light Curve



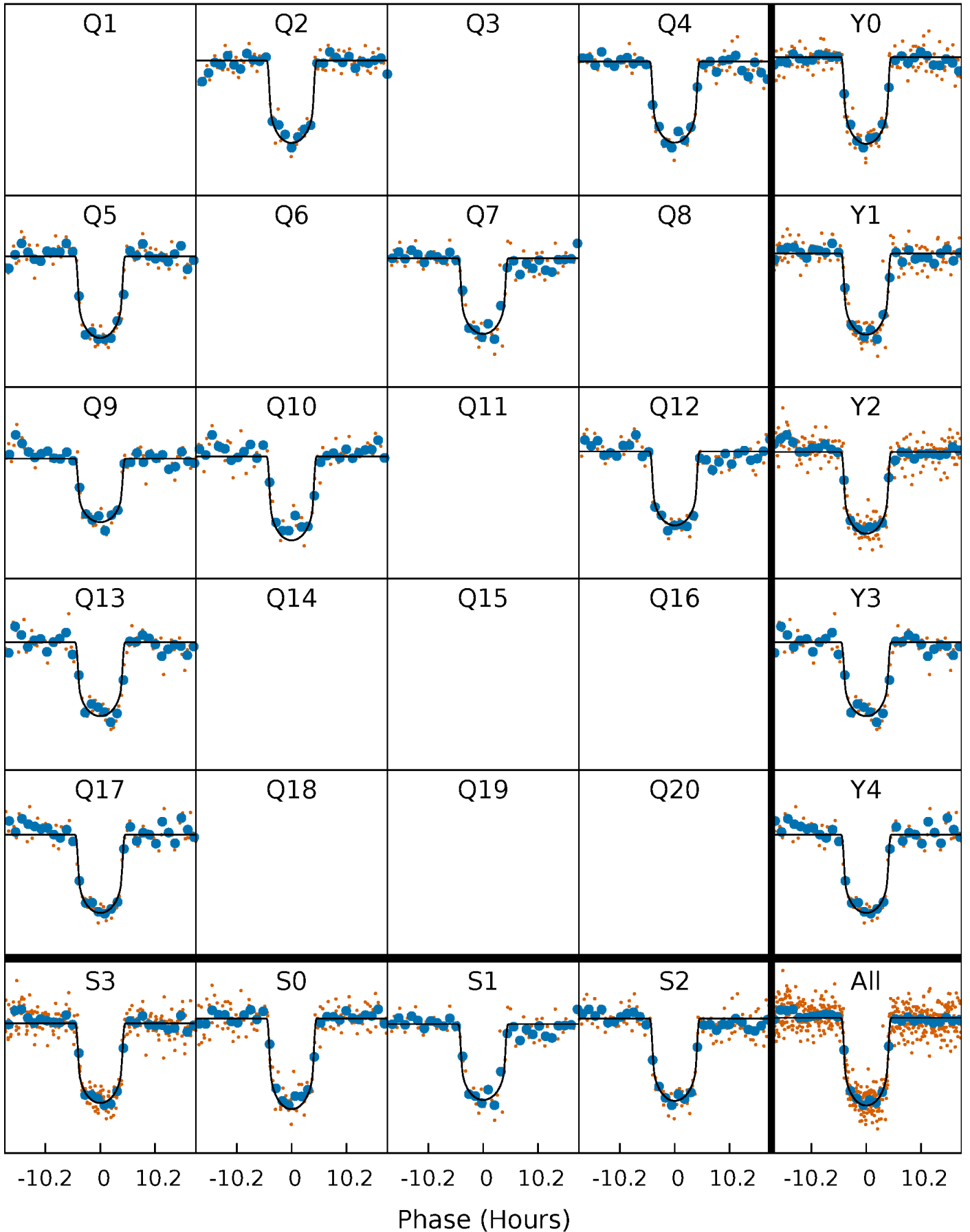
PDC Quarter-Phased Transit Curves

TCE 005124667-01 P=150.877987 Days $T_0=206.692657$ (BKJD)



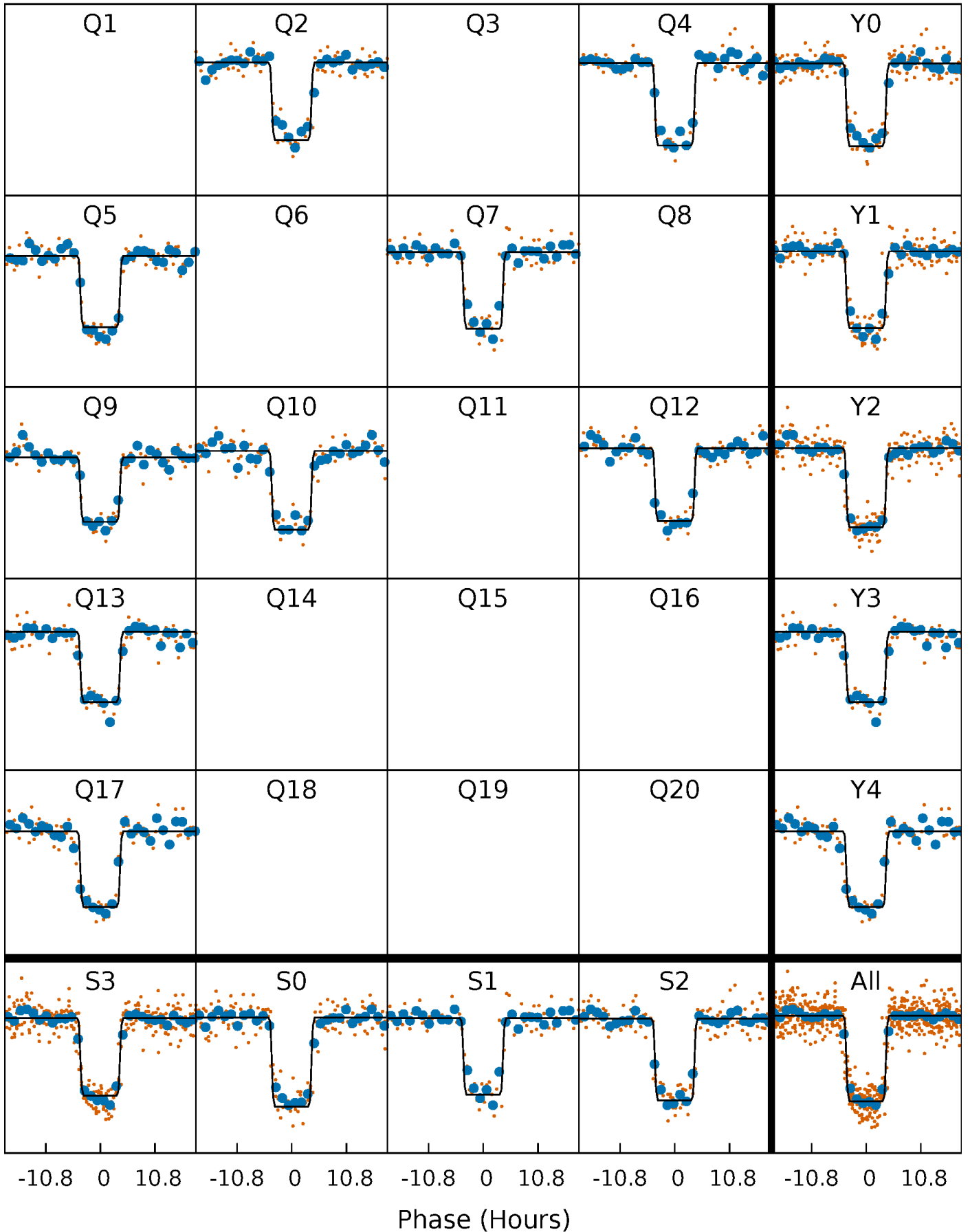
DV Quarter-Phased Transit Curves

TCE 005124667-01 P=150.877987 Days $T_0=206.692657$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

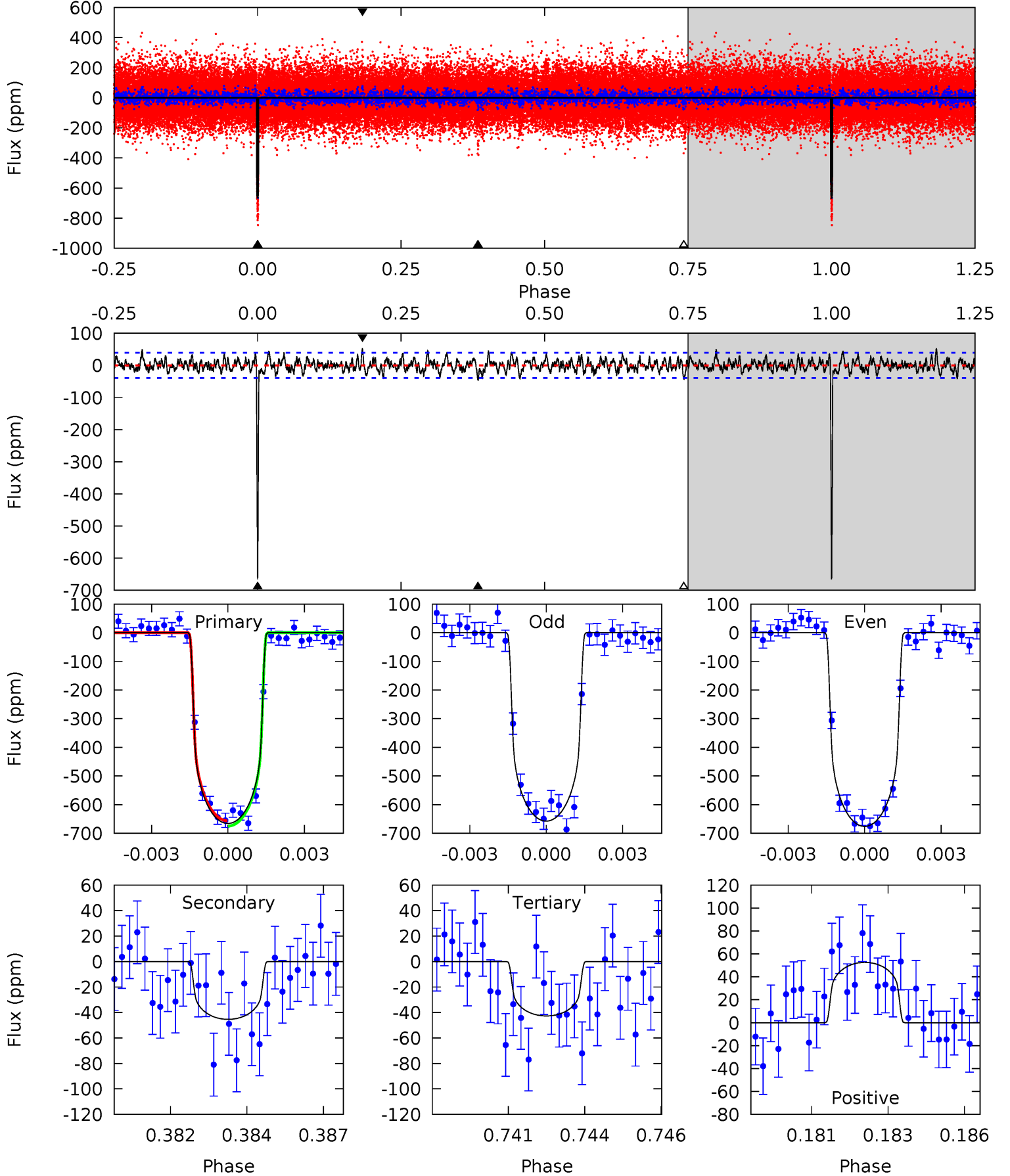
TCE 005124667-01 P=150.881407 Days $T_0=206.679600$ (BKJD)



DV Model-Shift Uniqueness Test

005124667-01, $P = 150.877987$ Days, $E = 55.814670$ Days

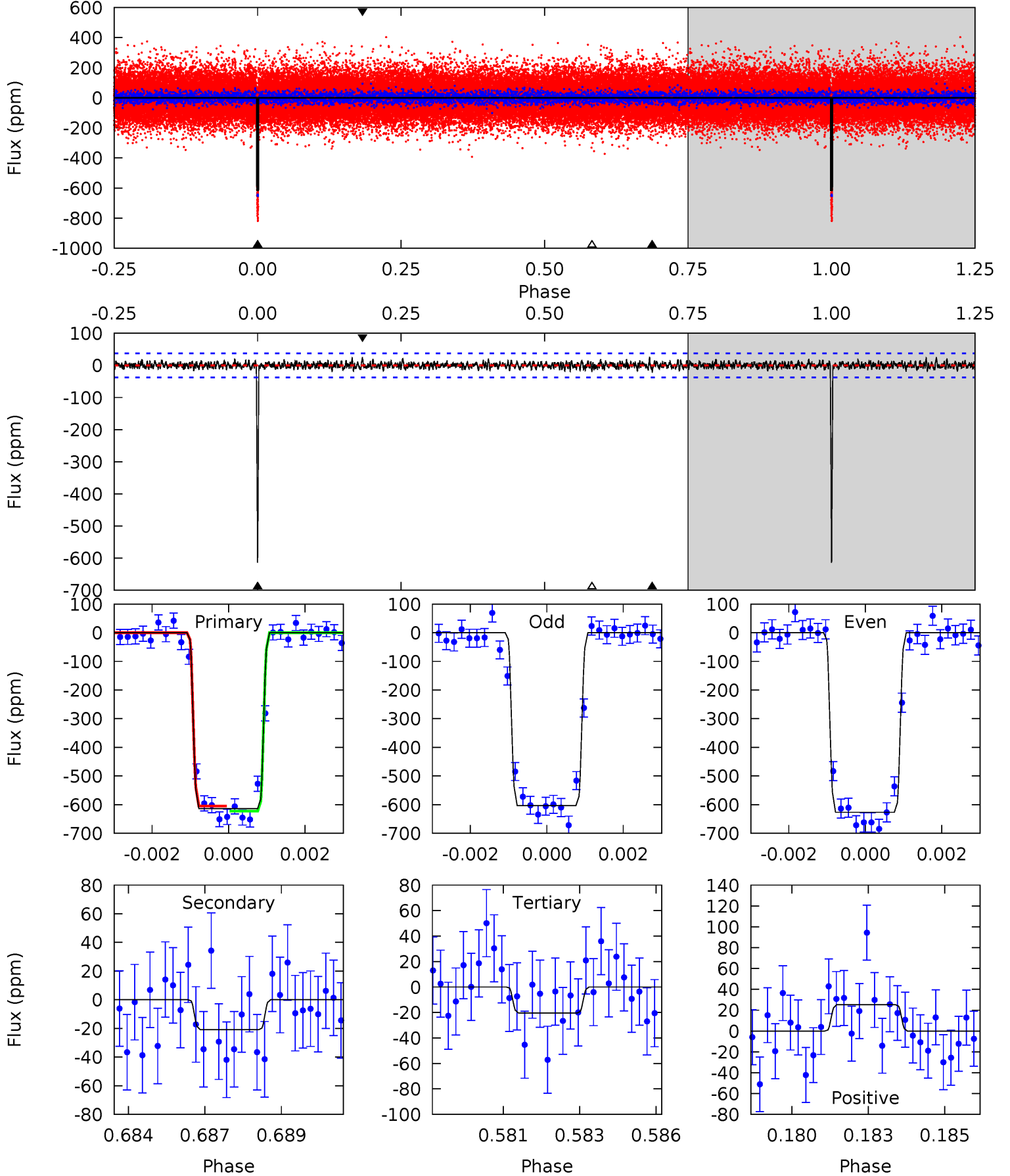
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 89.4 | 6.10 | 5.74 | 7.06 | 5.29 | 3.02 | 1.98 | 83.7 | 82.4 | 0.36 | -0.97 | 1.23 | 1.00 | 0.07 | 1.24 |



Alt Model-Shift Uniqueness Test

005124667-01, $P = 150.881407$ Days, $E = 55.798193$ Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 86.6 | 2.94 | 2.88 | 3.56 | 5.30 | 3.04 | 0.92 | 83.7 | 83.0 | 0.07 | -0.62 | 1.65 | 1.01 | 0.04 | 1.25 |



Stellar Parameters For KIC 005124667

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 5504^{+87}_{-76} | $3.999^{+0.304}_{-0.095}$ | $0.300^{+0.150}_{-0.150}$ | $1.737^{+0.261}_{-0.608}$ | $1.099^{+0.098}_{-0.131}$ | $0.295^{+0.555}_{-0.087}$ |
| | +2%/-1% | +8%/-2% | +50%/-50% | +15%/-35% | +9%/-12% | +188%/-29% |
| Source | SPE90 | FLK73 | SPE90 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 005124667-01 / KOI 1822.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|----------------------|--------------------|
| DV | -45 ± 7 | $4.79^{+0.61}_{-0.90}$ | 585^{+27}_{-57} | 3340^{+105}_{-110} | 364^{+184}_{-90} |
| Alt. | -21 ± 7 | $4.65^{+0.59}_{-0.83}$ | 588^{+28}_{-53} | 3005^{+141}_{-161} | 177^{+96}_{-63} |

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

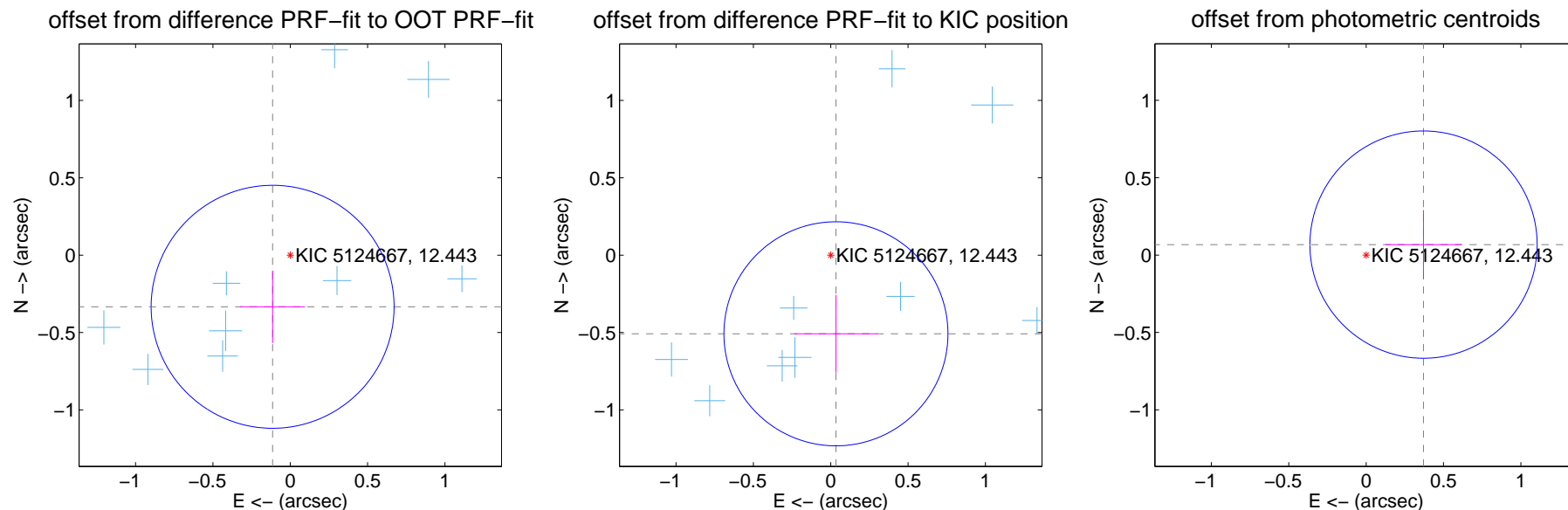
DV Centroid Data

Supplemental centroid analysis for 005124667-01. Kepler magnitude: 12.44. Transit SNR 50.71

There are 9 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

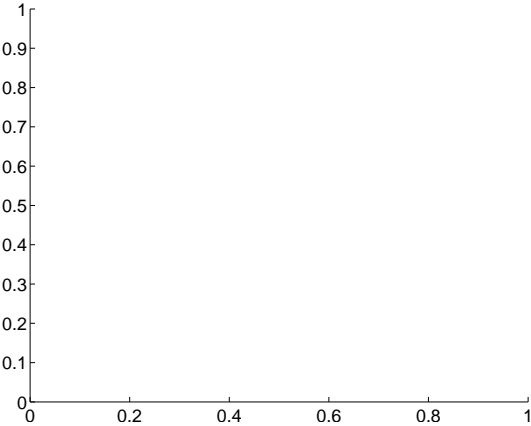
| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.353 ± 0.262 | 1.35 | 0.114 ± 0.210 | -0.334 ± 0.234 |
| PRF-fit source offset from KIC position | 0.509 ± 0.241 | 2.11 | -0.034 ± 0.269 | -0.508 ± 0.251 |
| photometric centroid source offset | 0.38 ± 0.24 | 1.54 | -0.37 ± 0.25 | 0.07 ± 0.22 |



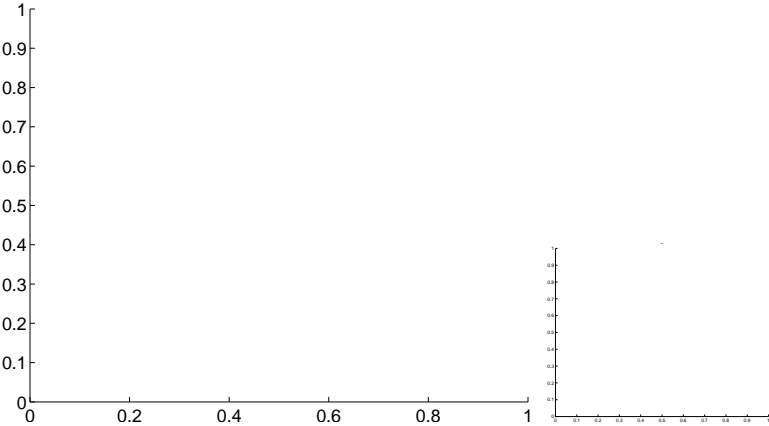
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

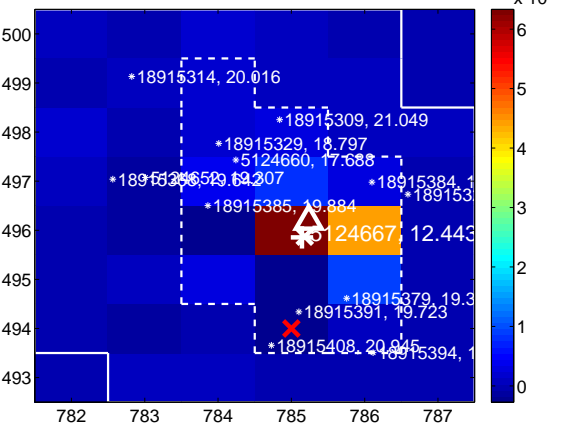
Q1 no difference image



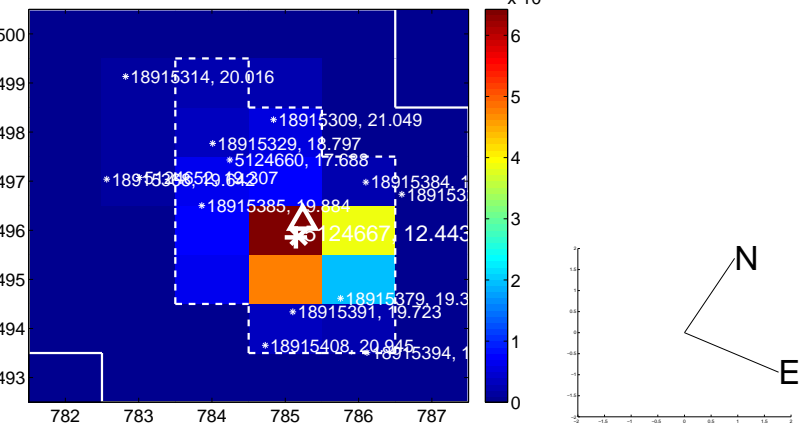
Q1 no OOT image



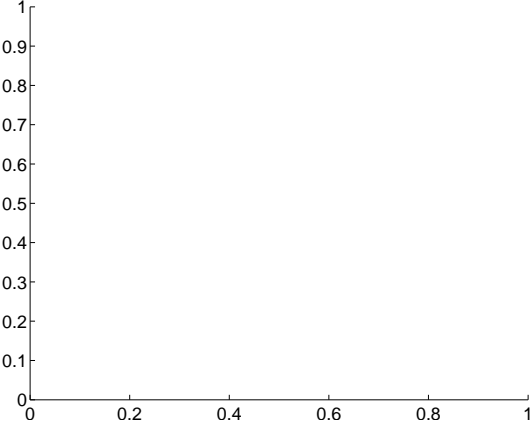
Q2 difference image



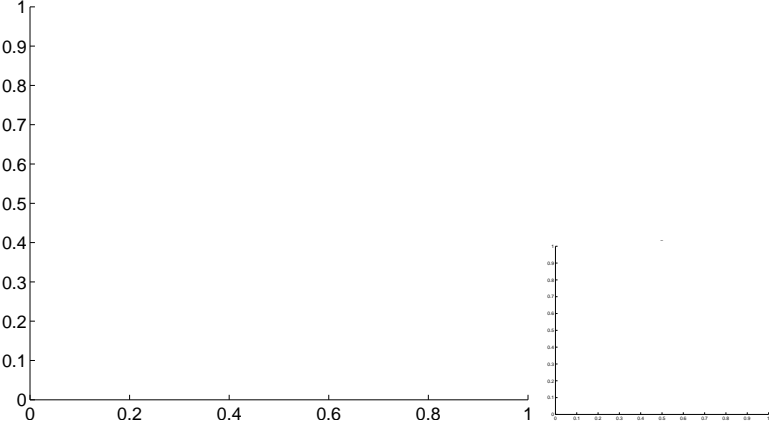
Q2 OOT image



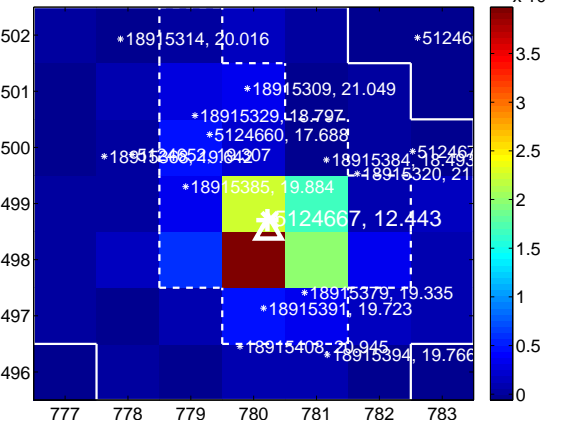
Q3 no difference image



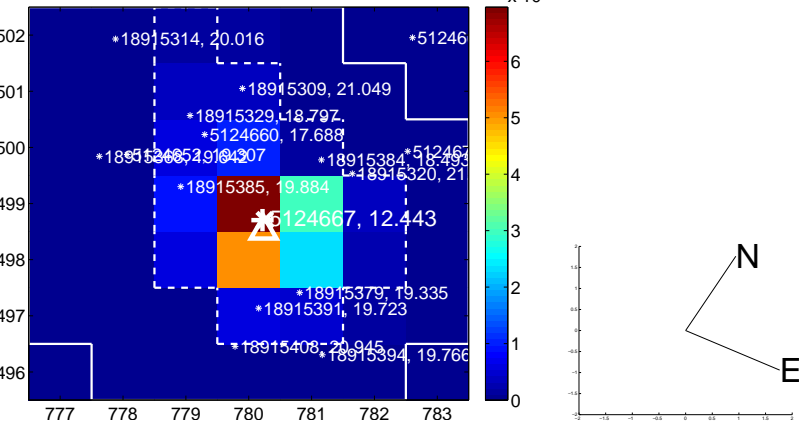
Q3 no OOT image



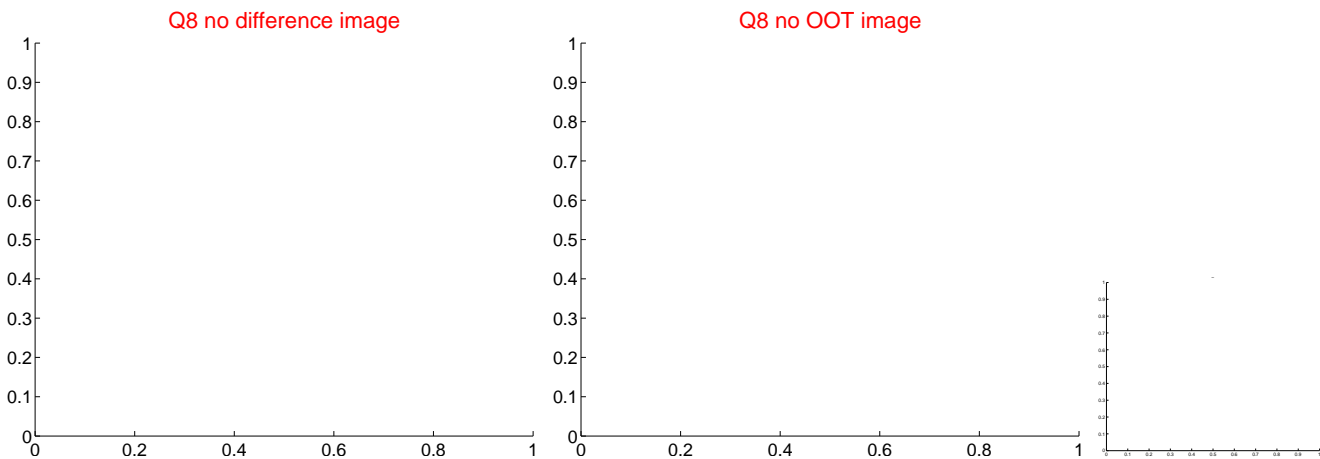
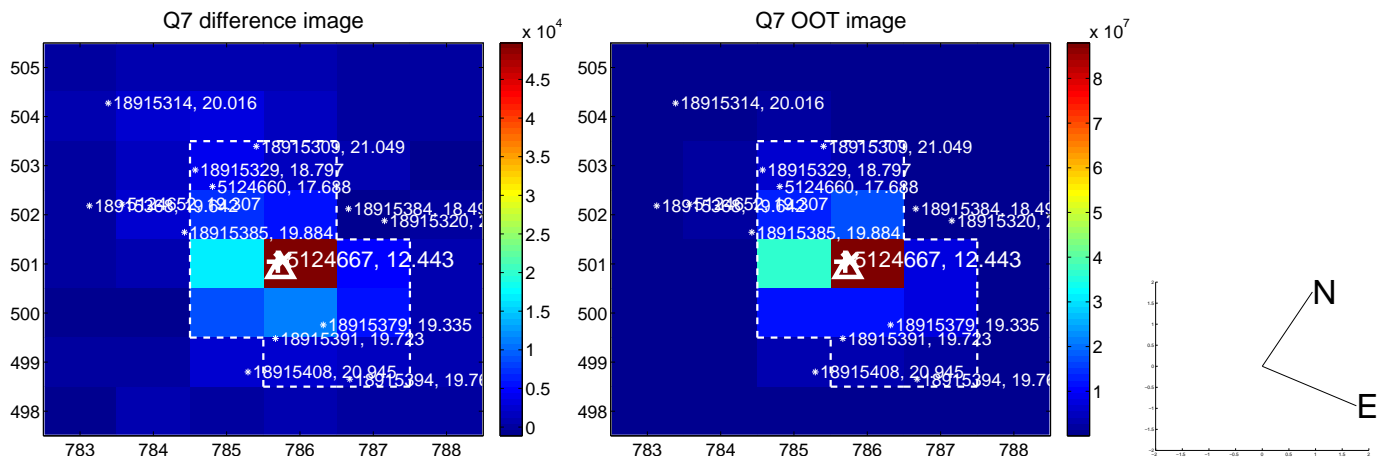
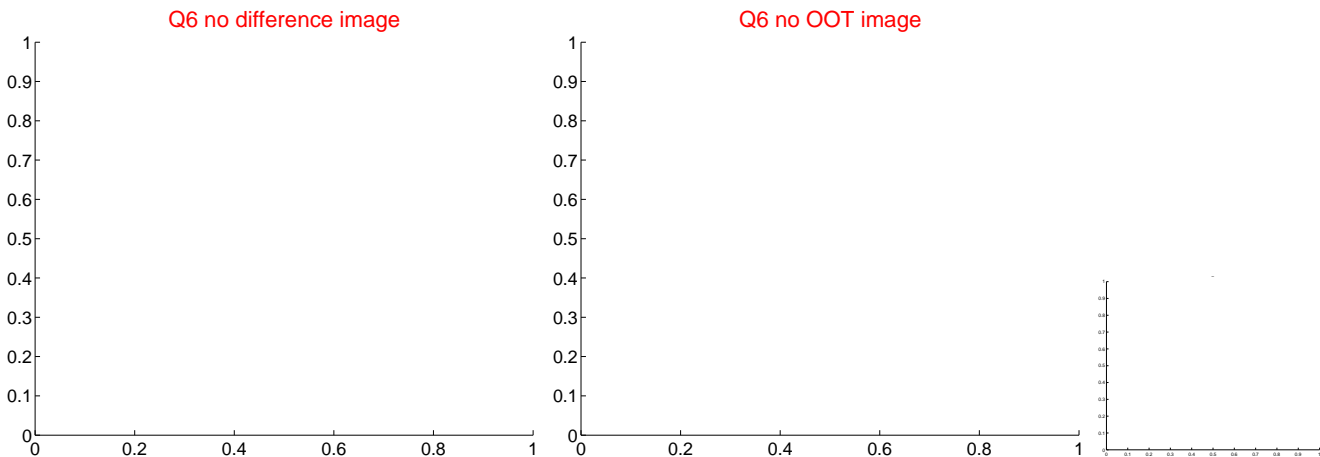
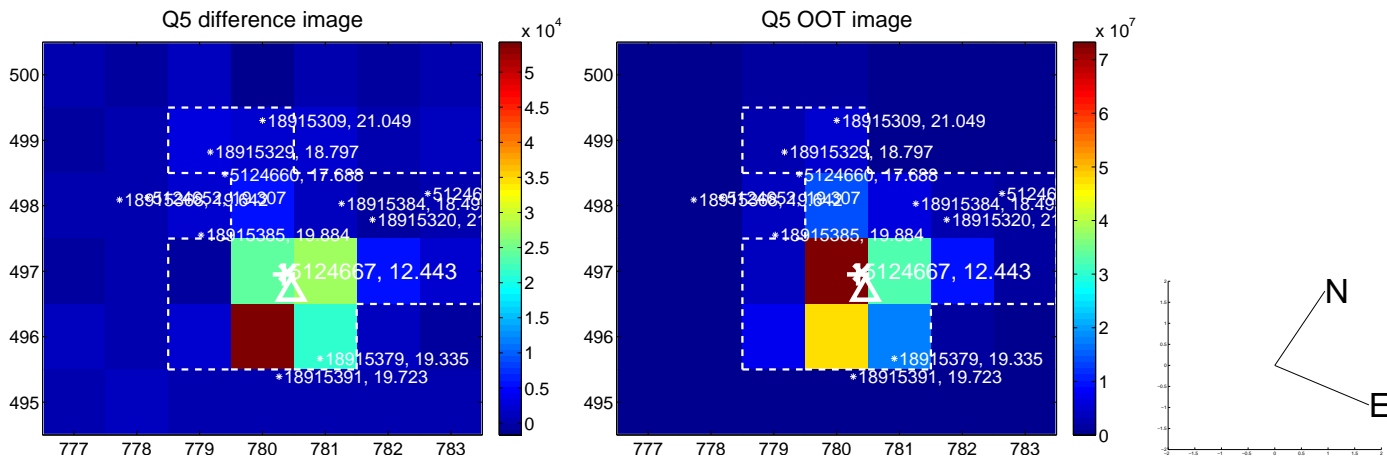
Q4 difference image



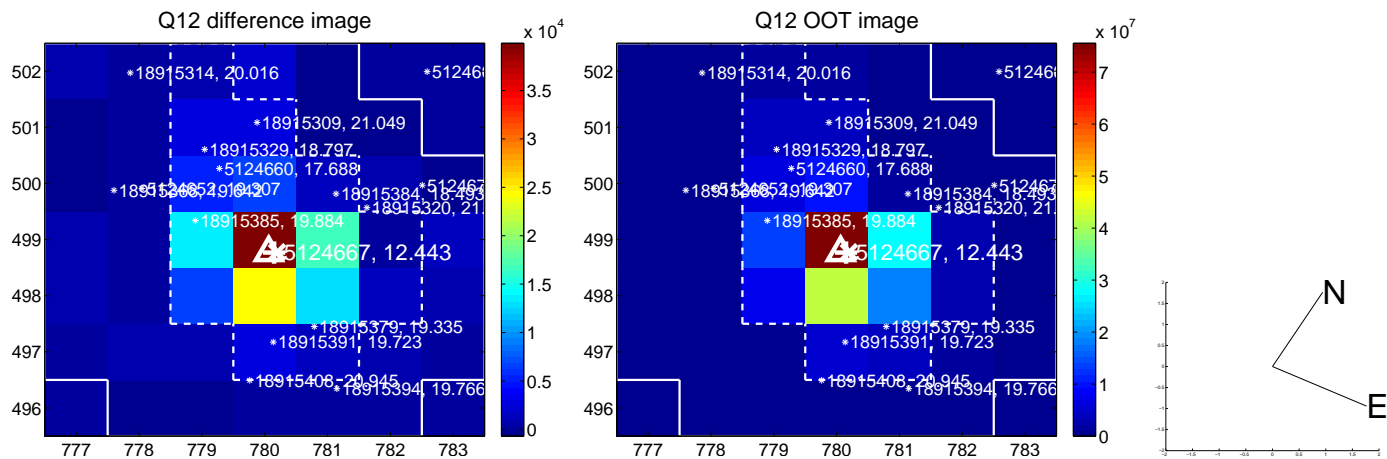
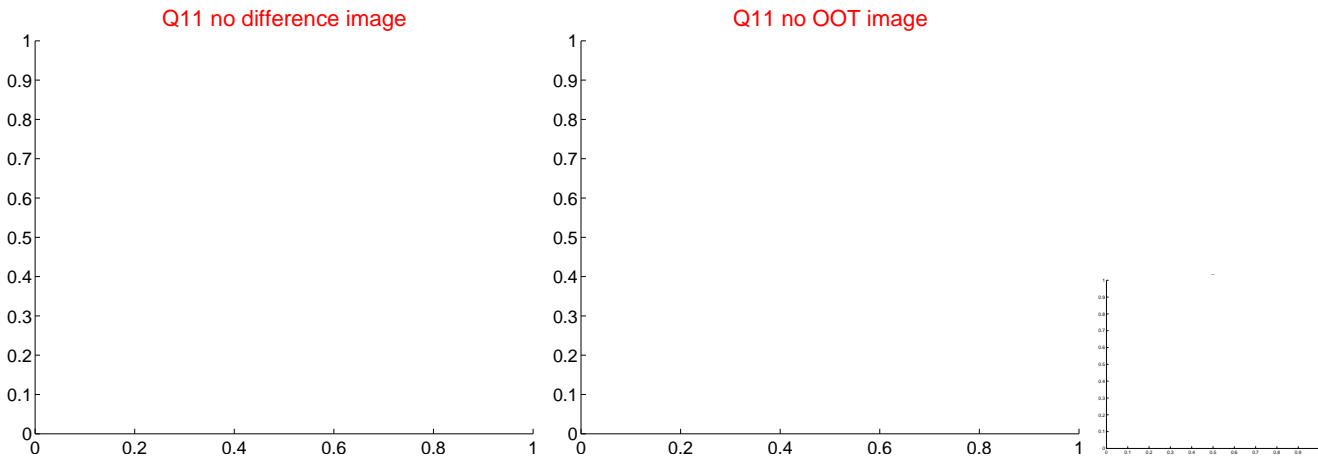
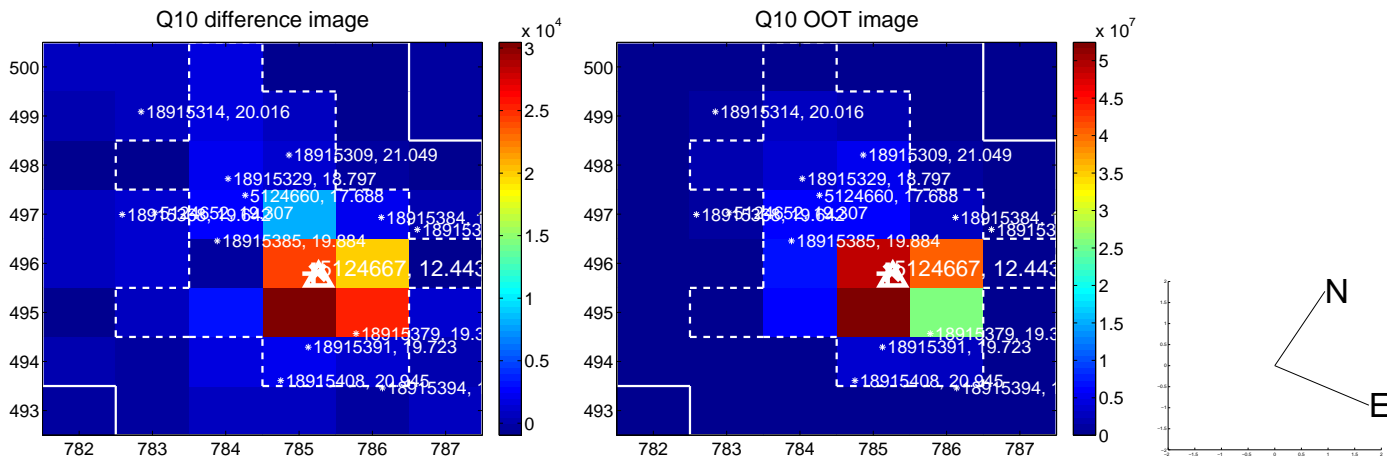
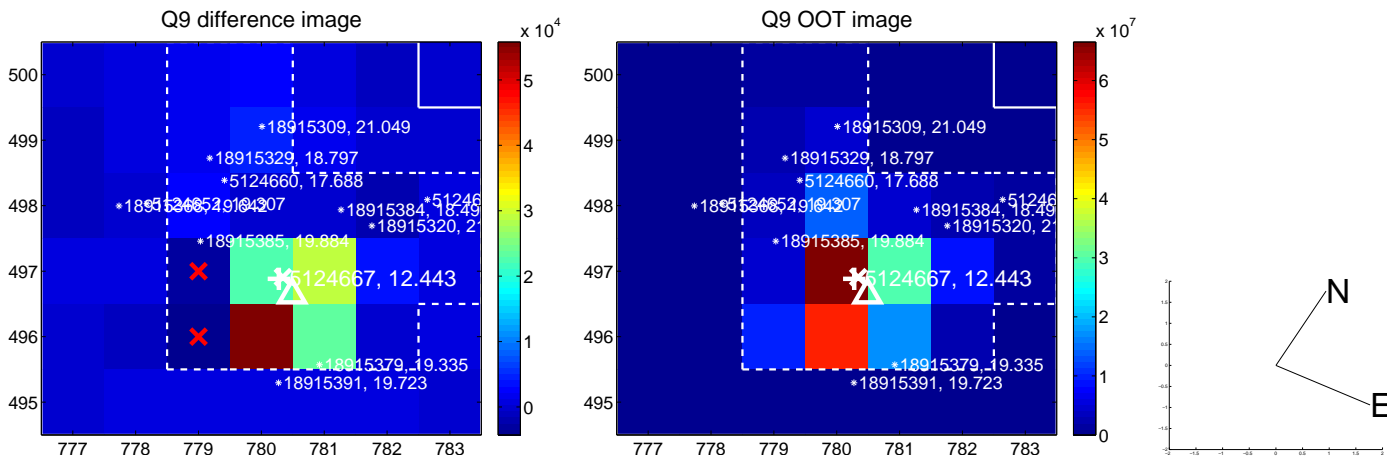
Q4 OOT image



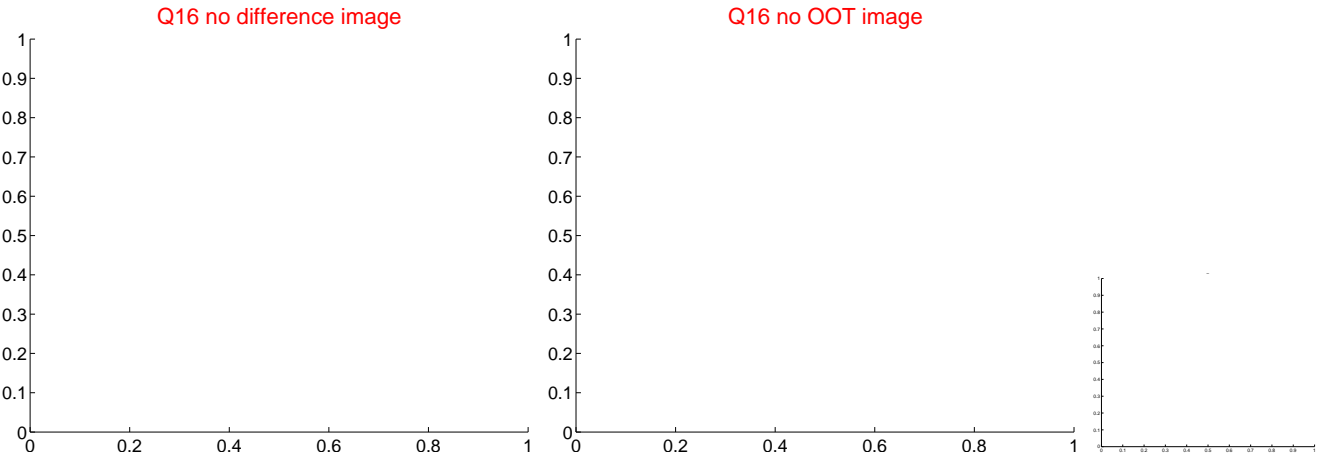
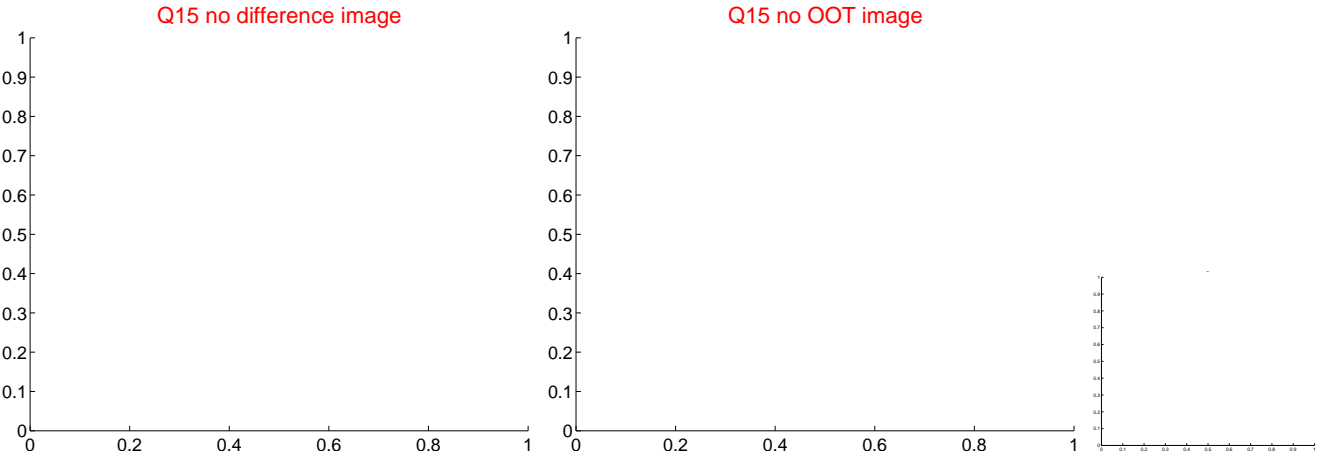
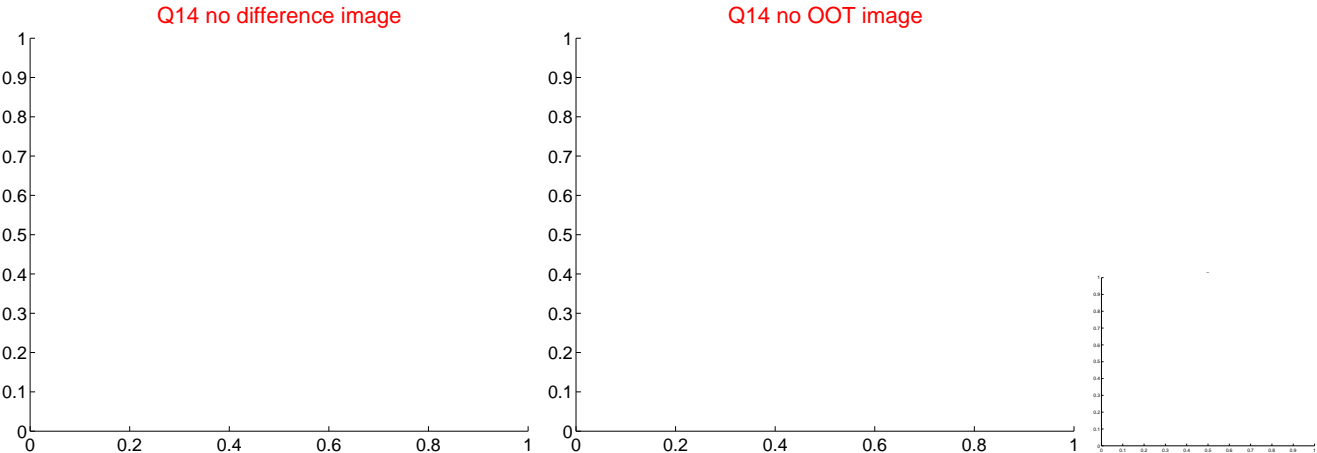
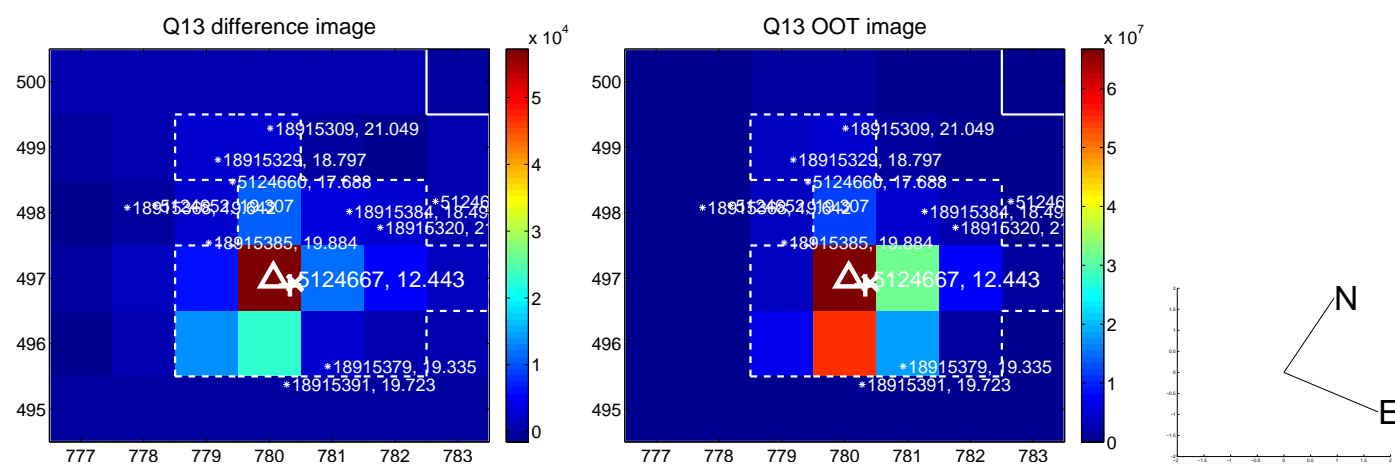
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



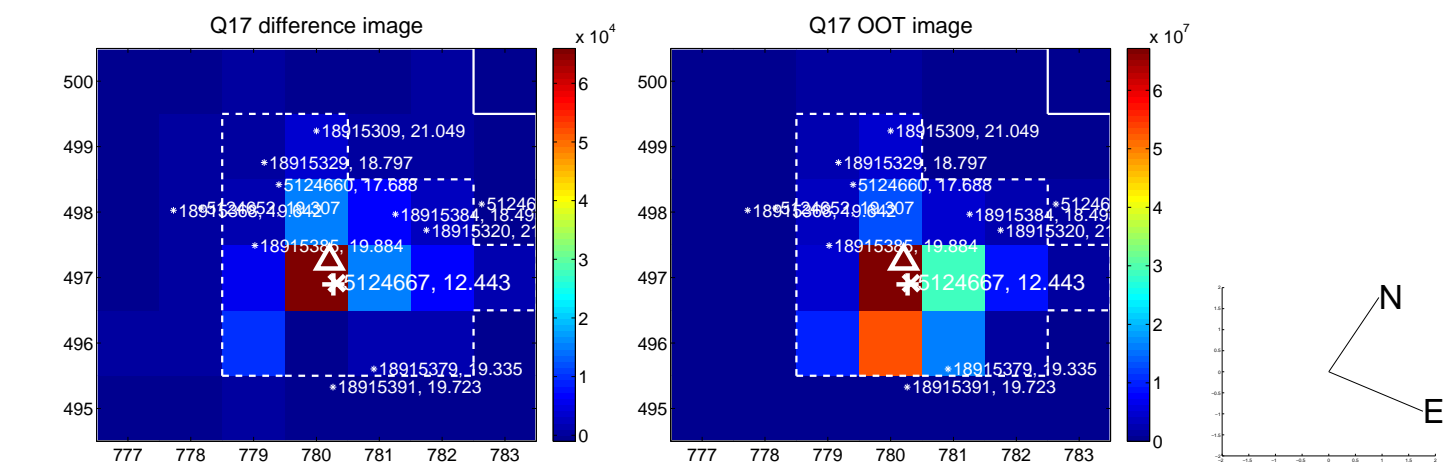
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



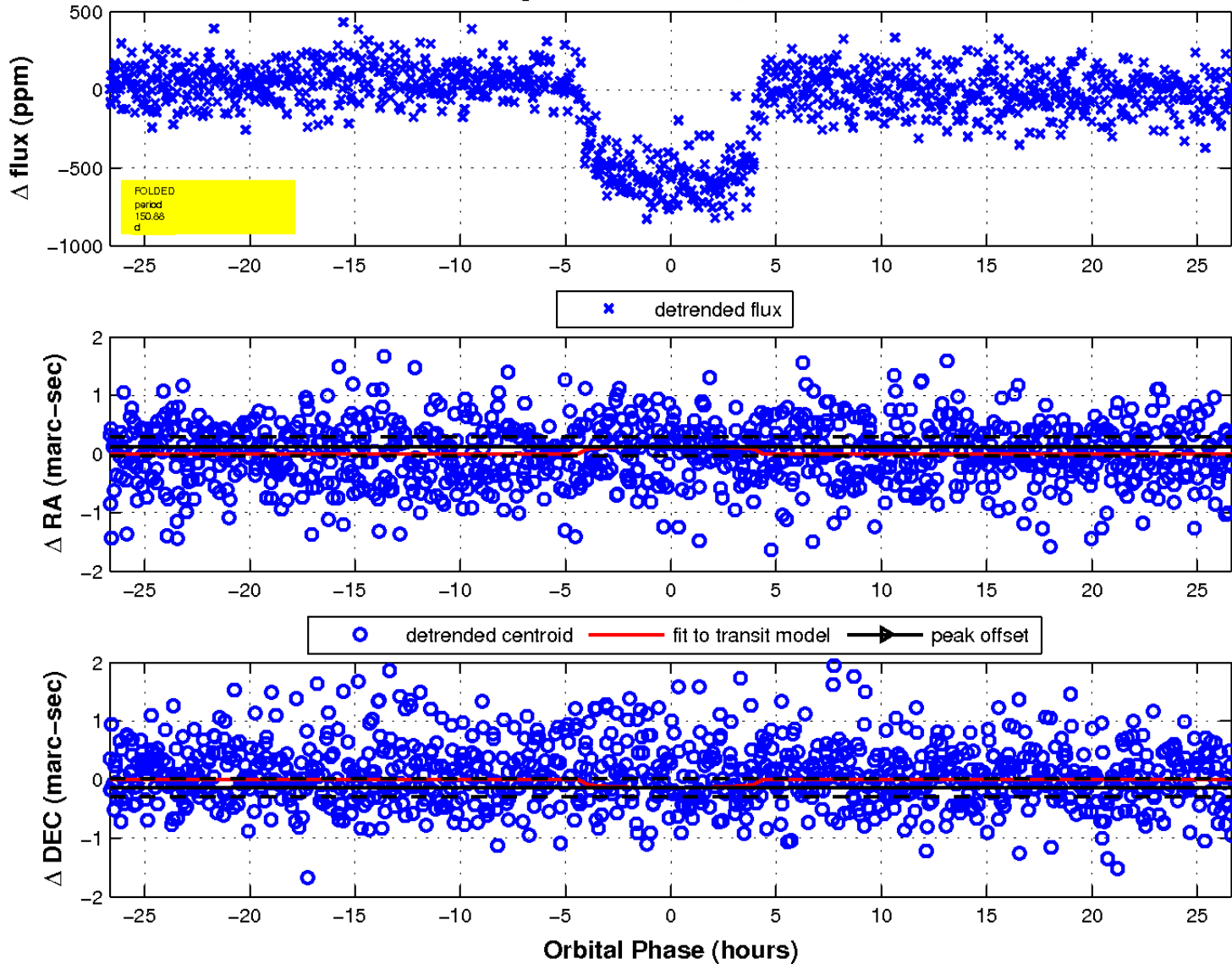
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

