

KIC 011513486

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 011513486-01 | OBS | 4748.01 | 6.647522 | 137.135581 | 302.4 | 2.085 | 11.3 | 12.3 | 1.01 | 6046 | 2.04 | 236.18 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 011513486-01 | 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.

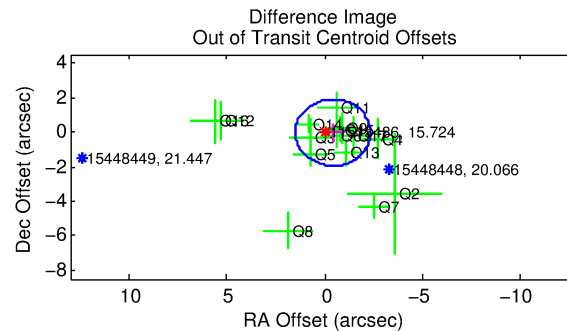
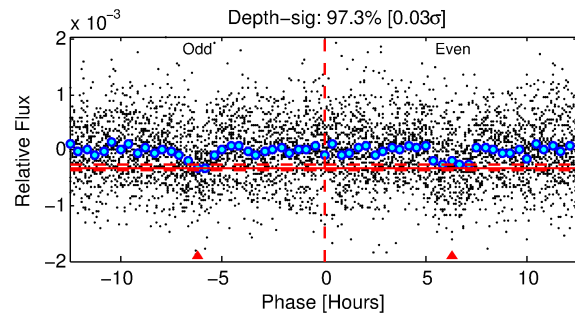
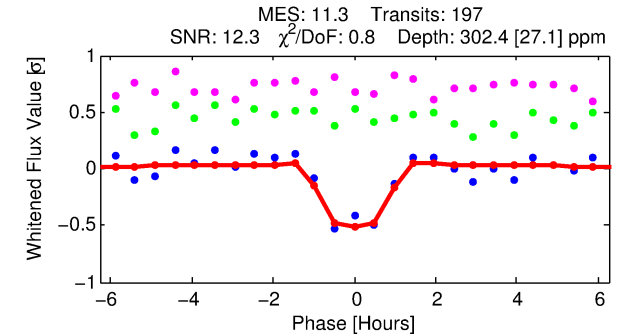
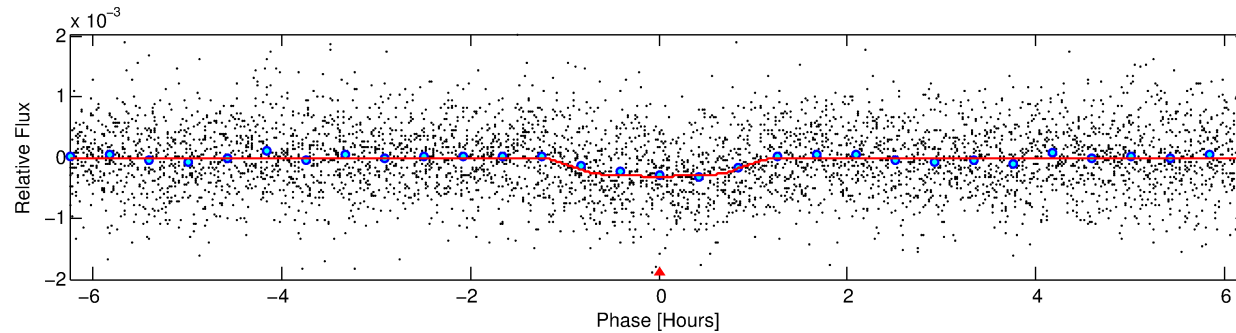
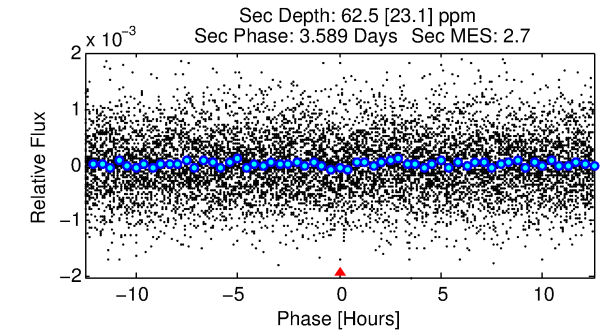
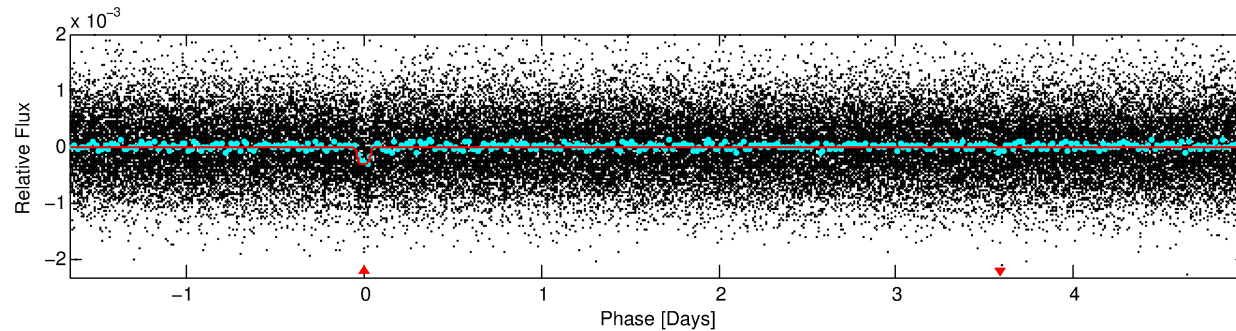
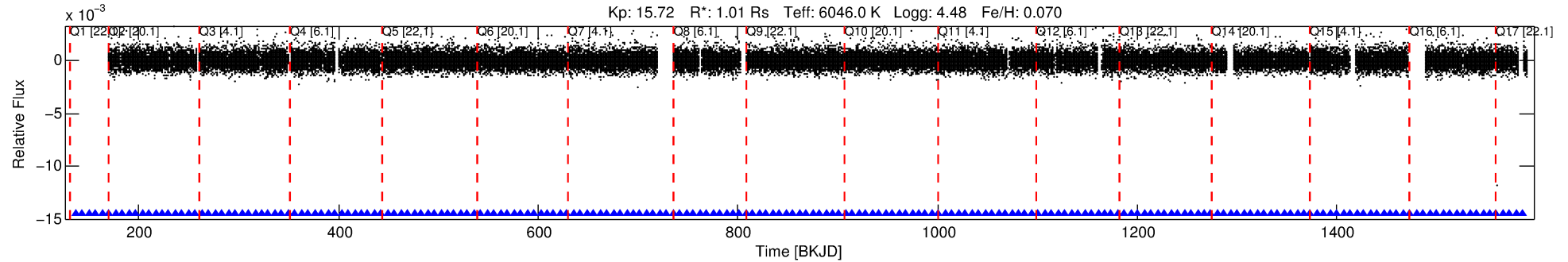
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011513486-01

No Significant Match Found

DV One-Page Summary

KIC: 11513486 Candidate: 1 of 1 Period: 6.648 d
KOI: K04748.01 Corr: 0.947



DV Fit Results:

Period = 6.64752 [0.00003] d
Epoch = 137.1356 [0.0036] BKJD
Rp/R* = 0.0186 [0.0096]
a/R* = 12.37 [31.47]
b = 0.88 [0.65]
Seff = 236.18 [98.45]
Teq = 1000 [104] K
Rp = 2.04 [1.24] Re
a = 0.0717 [0.0192] AU
Ag = 42.29 [49.34] [0.84σ]
Teffp = 3941 [1091] K [2.68σ]

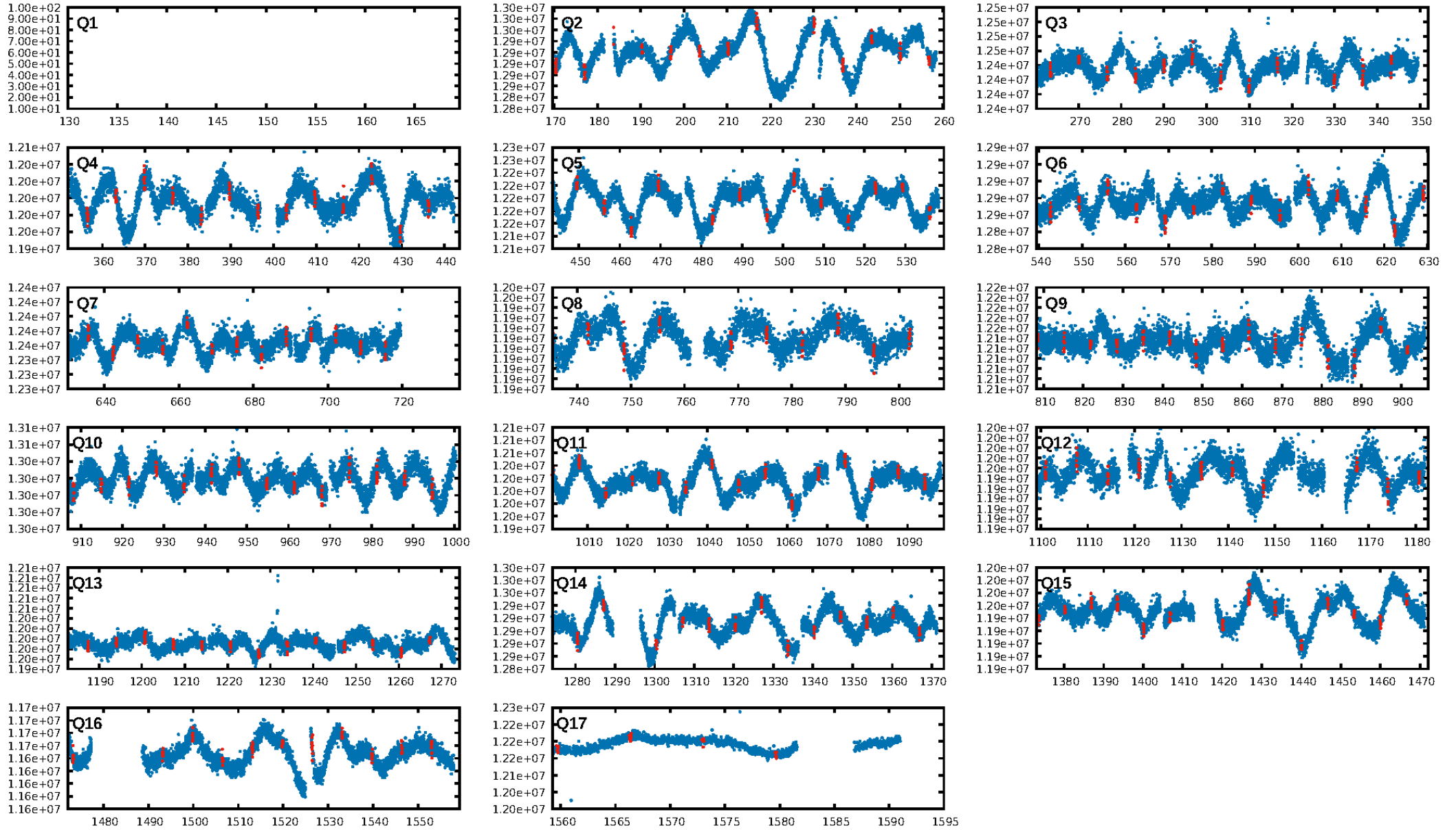
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.83e-29
RollingBand-fgt: 1.00 [193/193]
GhostDiagnostic-chr: 2.239
Centroid-sig: 1.0%
Centroid-so: 1.822 arcsec [1.84σ]
OotOffset-rm: 0.415 arcsec [0.65σ]
KicOffset-rm: 0.553 arcsec [0.84σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.33 [5/15]
DiffImageOverlap-fno: 1.00 [16/16]

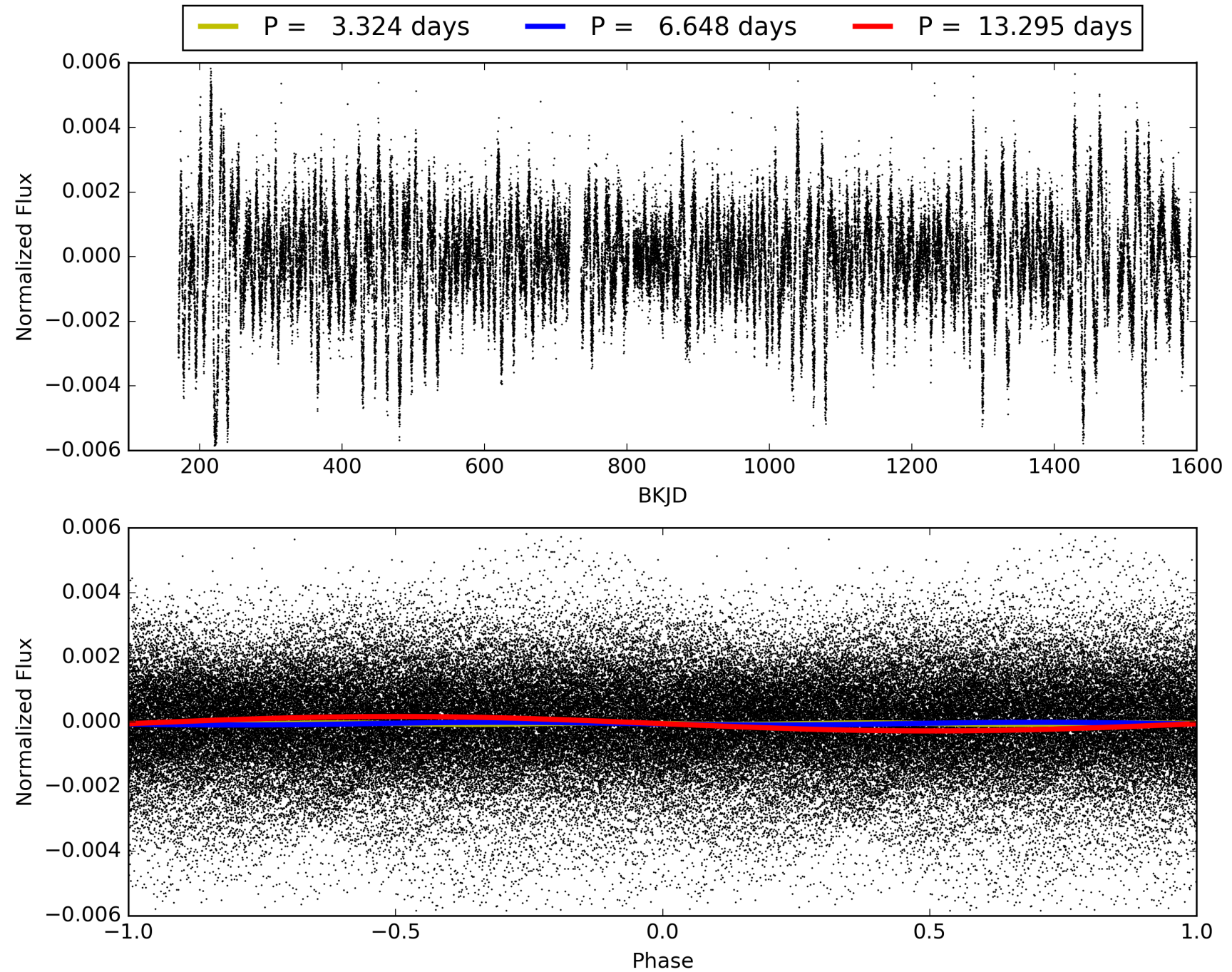
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:31:55 Z

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

TCE 011513486-01, PDC Light Curves

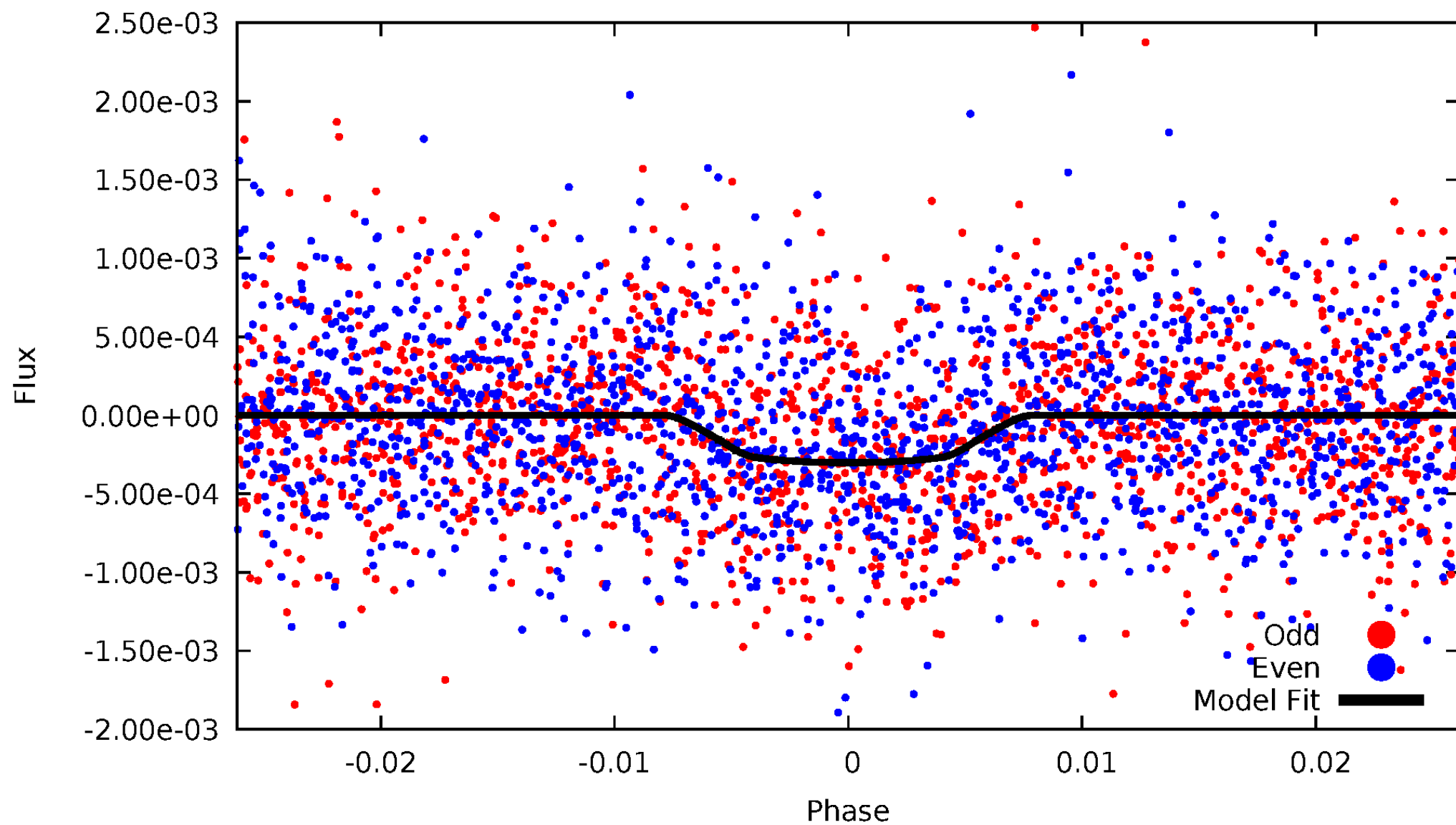


TCE 011513486-01



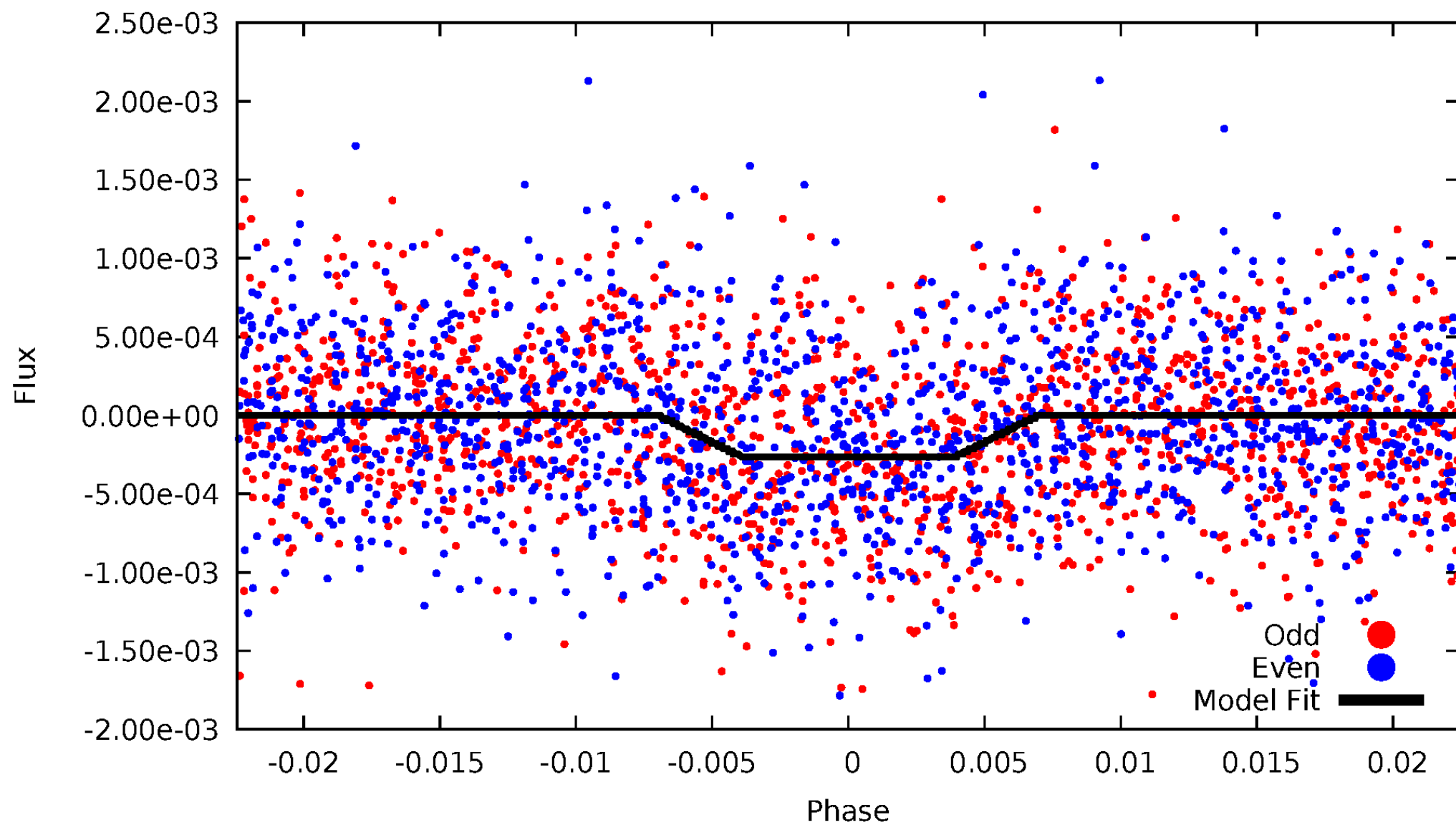
DV Odd/Even

TCE 011513486-01



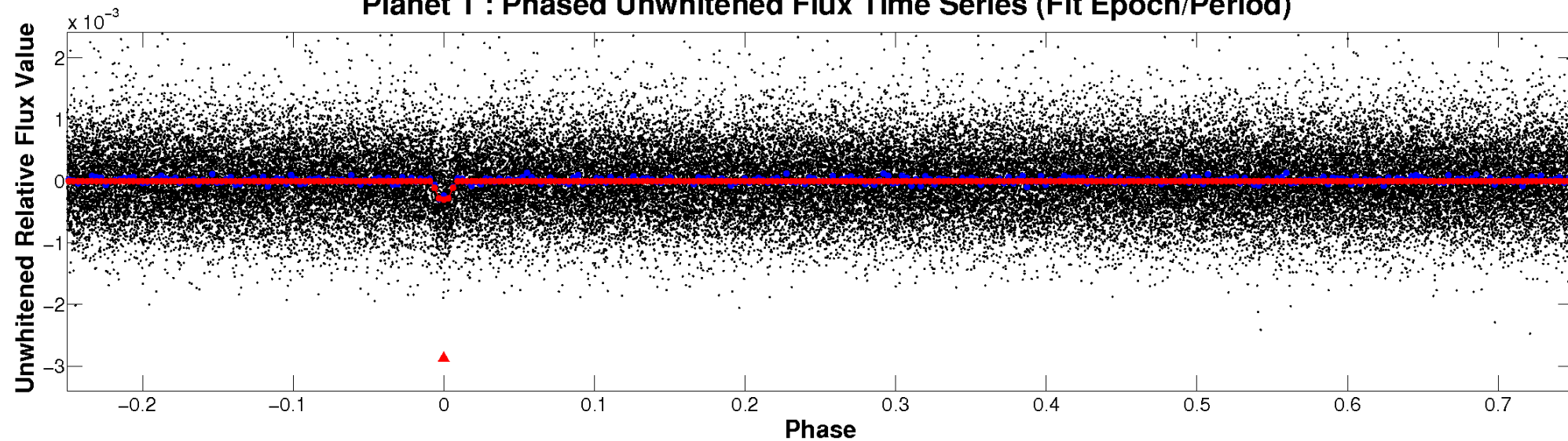
ALT Odd/Even

TCE 011513486-01

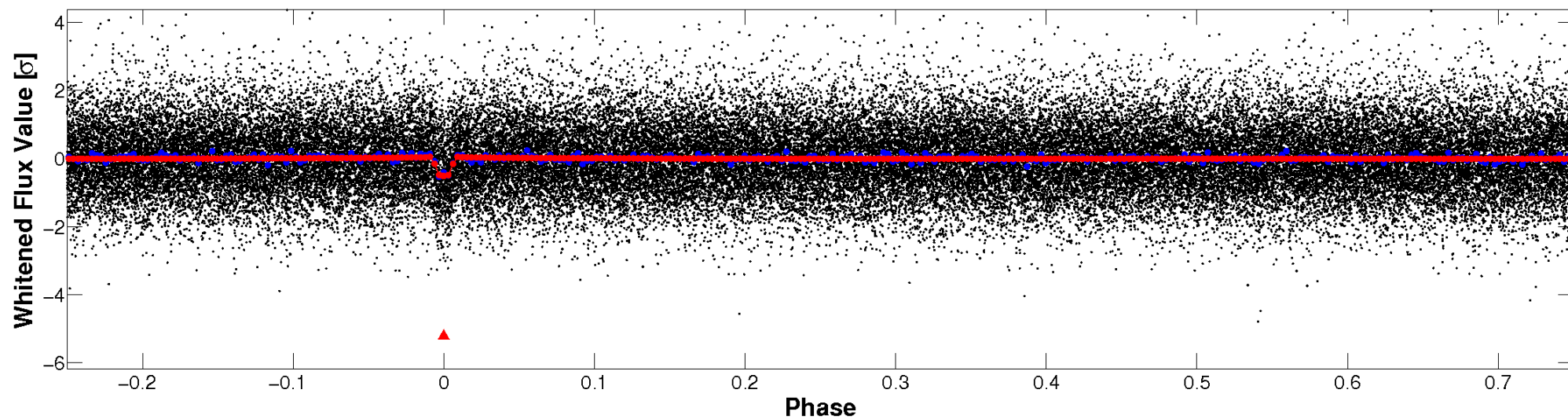


Non-Whitened Vs. Whitened Light Curve

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

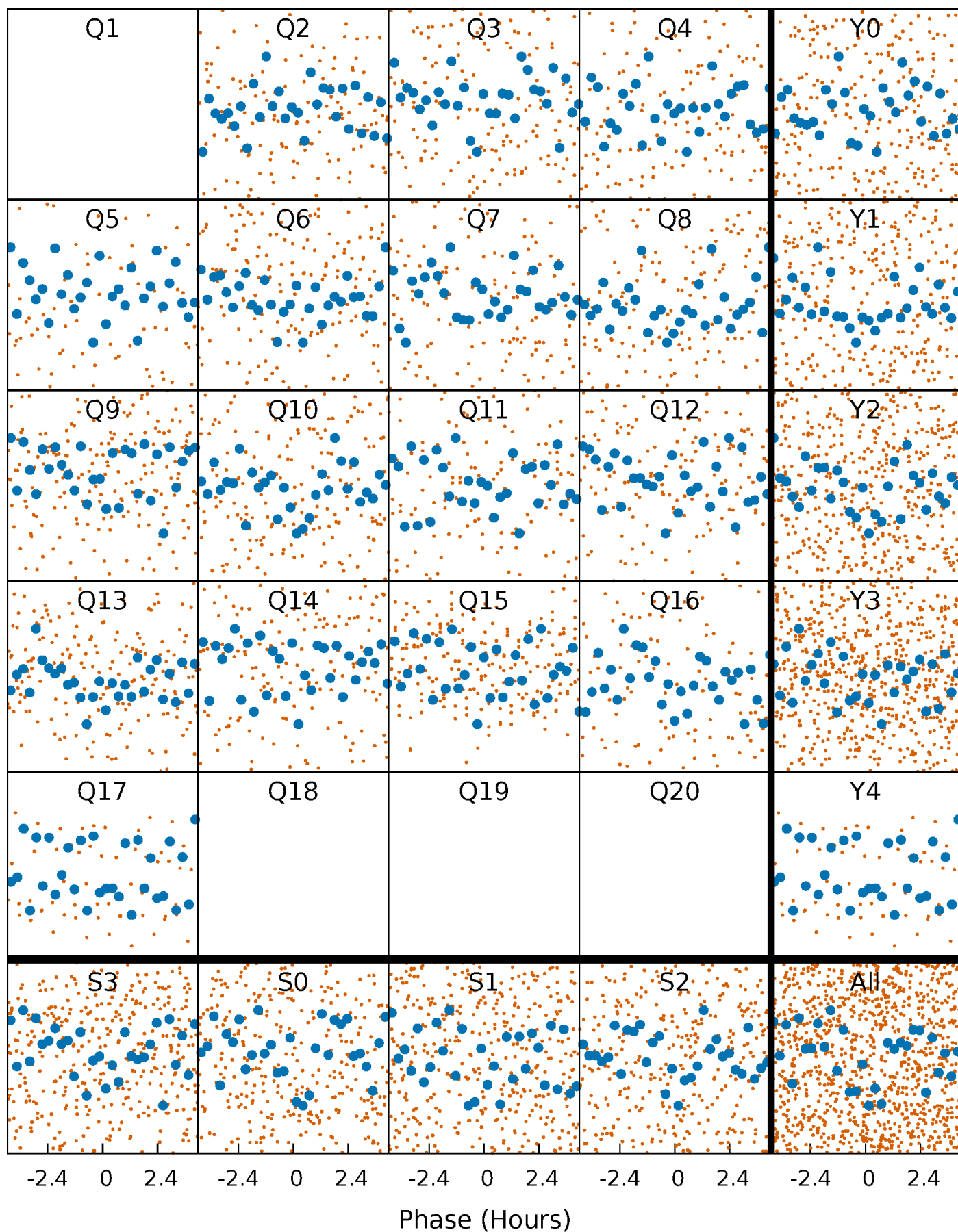


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



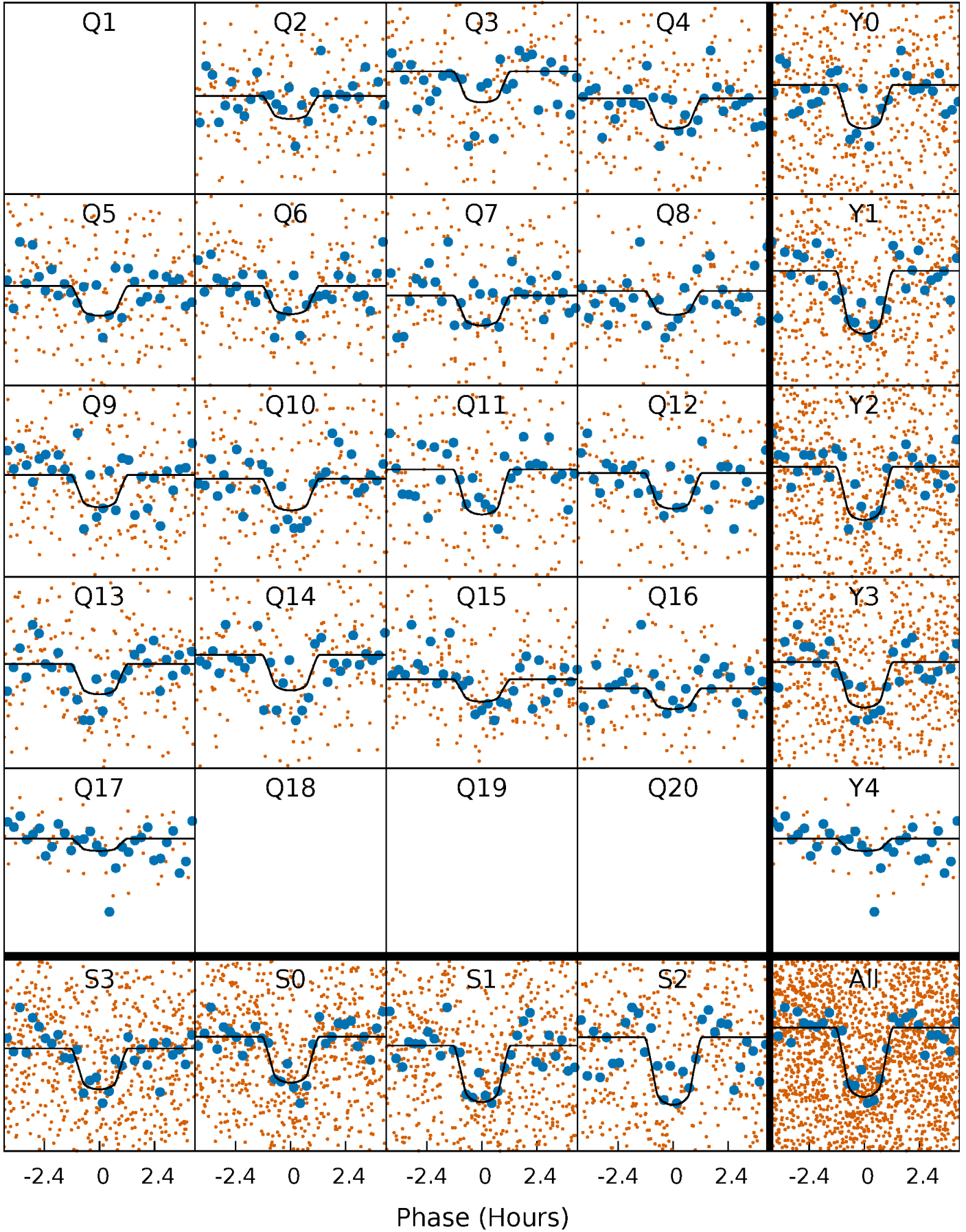
PDC Quarter-Phased Transit Curves

TCE 011513486-01 P= 6.647522 Days $T_0=137.135581$ (BKJD)



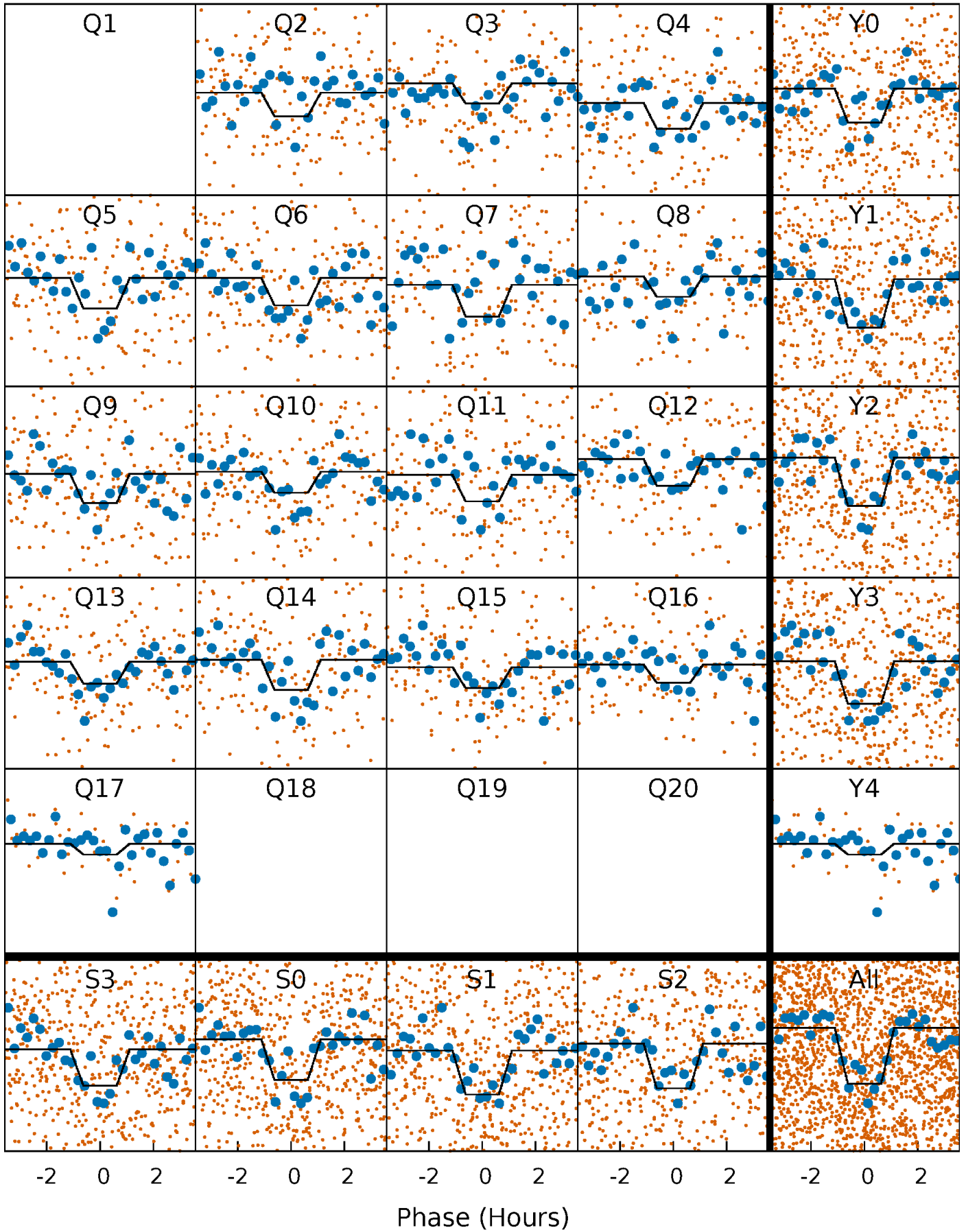
DV Quarter-Phased Transit Curves

TCE 011513486-01 P= 6.647522 Days $T_0=137.135581$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

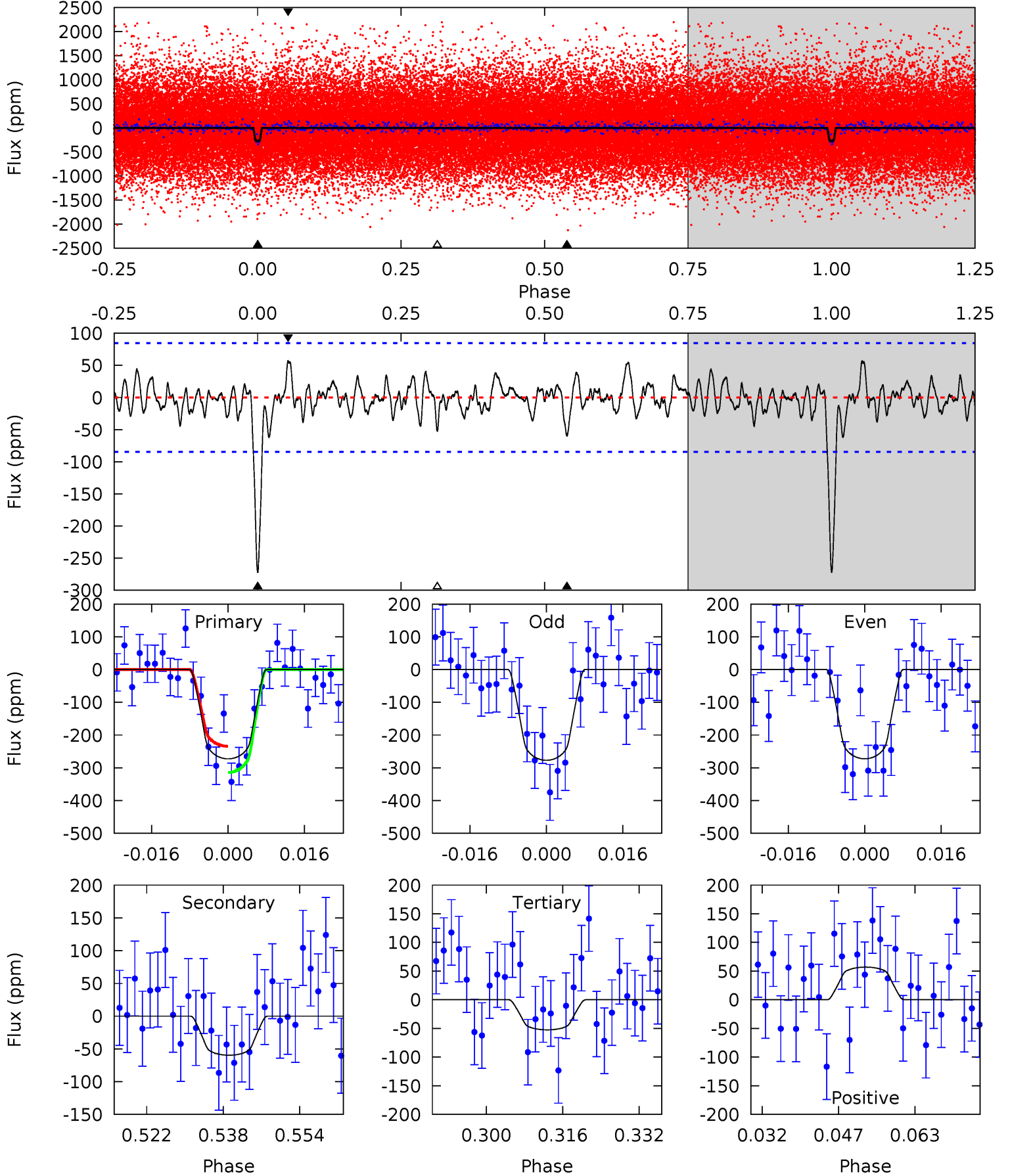
TCE 011513486-01 P= 6.647506 Days $T_0=137.138307$ (BKJD)



DV Model-Shift Uniqueness Test

011513486-01, P = 6.647522 Days, E = 137.135581 Days

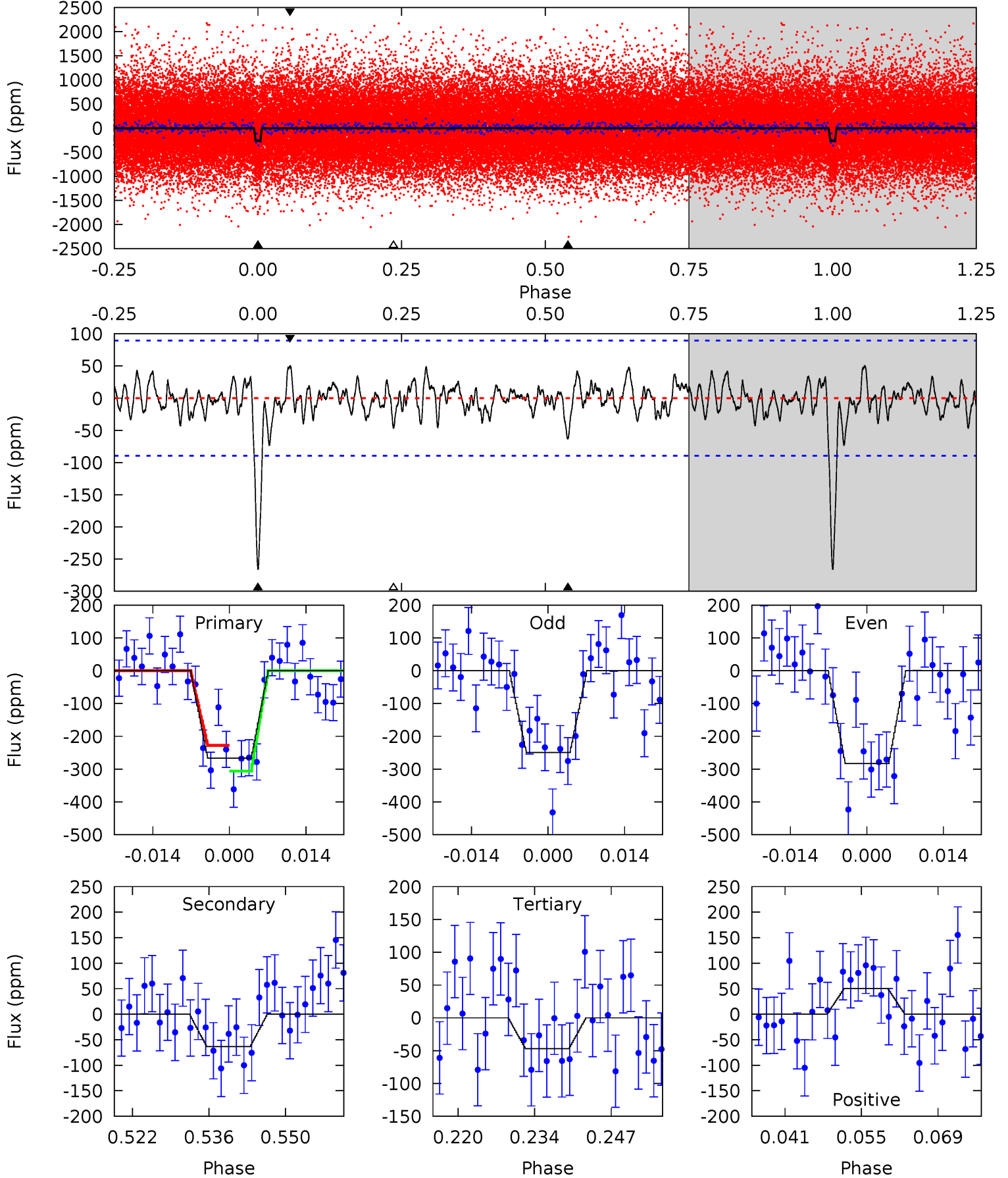
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 15.9 | 3.48 | 3.07 | 3.33 | 4.94 | 2.41 | 1.09 | 12.9 | 12.6 | 0.42 | 0.16 | 0.14 | 0.94 | 0.17 | 2.35 |



Alt Model-Shift Uniqueness Test

011513486-01, P = 6.647506 Days, E = 137.138307 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.8 | 3.52 | 2.60 | 2.80 | 4.96 | 2.46 | 1.05 | 12.2 | 12.0 | 0.92 | 0.72 | 0.93 | 1.09 | 0.16 | 2.17 |



Stellar Parameters For KIC 011513486

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 6046^{+190}_{-211} | $4.478^{+0.054}_{-0.216}$ | $0.070^{+0.250}_{-0.300}$ | $1.007^{+0.318}_{-0.106}$ | $1.111^{+0.130}_{-0.159}$ | $1.532^{+0.333}_{-0.832}$ |
| | +3%/-3% | +1%/-5% | +357%/-429% | +32%/-11% | +12%/-14% | +22%/-54% |
| 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 011513486-01 / KOI 4748.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|--------------|------------------------|----------------------|-----------------------|-------------------|
| DV | -60 ± 17 | $2.16^{+1.14}_{-1.01}$ | 1433^{+106}_{-76} | 4145^{+1239}_{-615} | 34^{+94}_{-20} |
| Alt. | -63 ± 18 | $1.92^{+1.15}_{-1.00}$ | 1424^{+97}_{-71} | 4352^{+1552}_{-681} | 45^{+161}_{-27} |

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

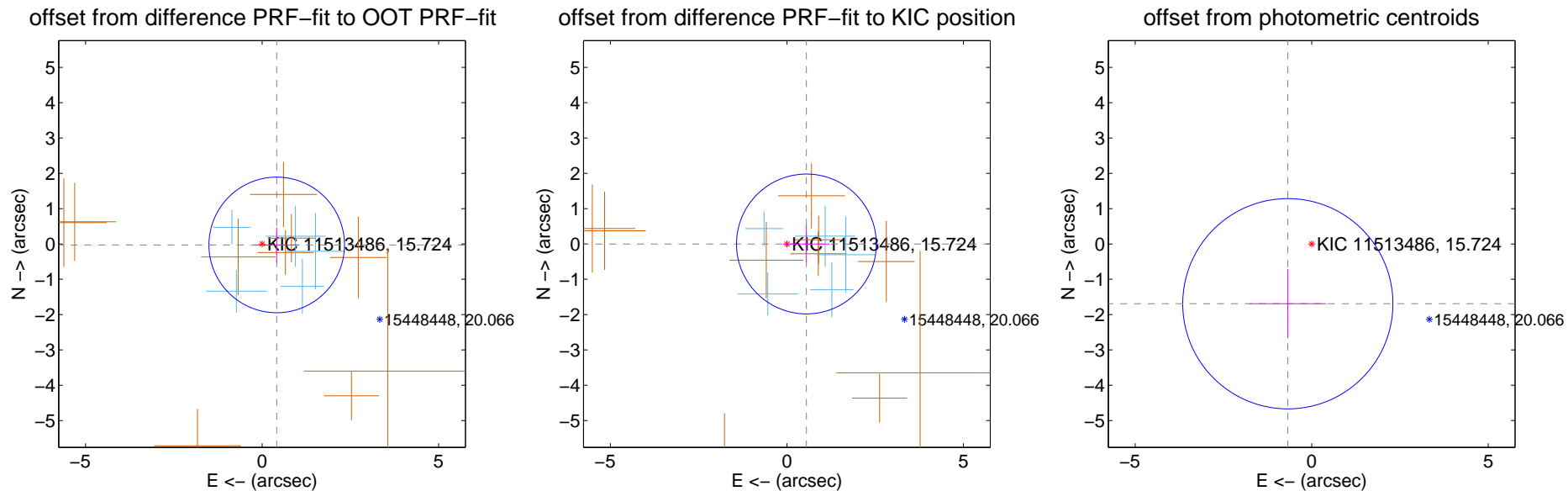
DV Centroid Data

Supplemental centroid analysis for 011513486-01. Kepler magnitude: 15.72. Transit SNR 12.26

There are 5 quarters with good PRF difference image offsets

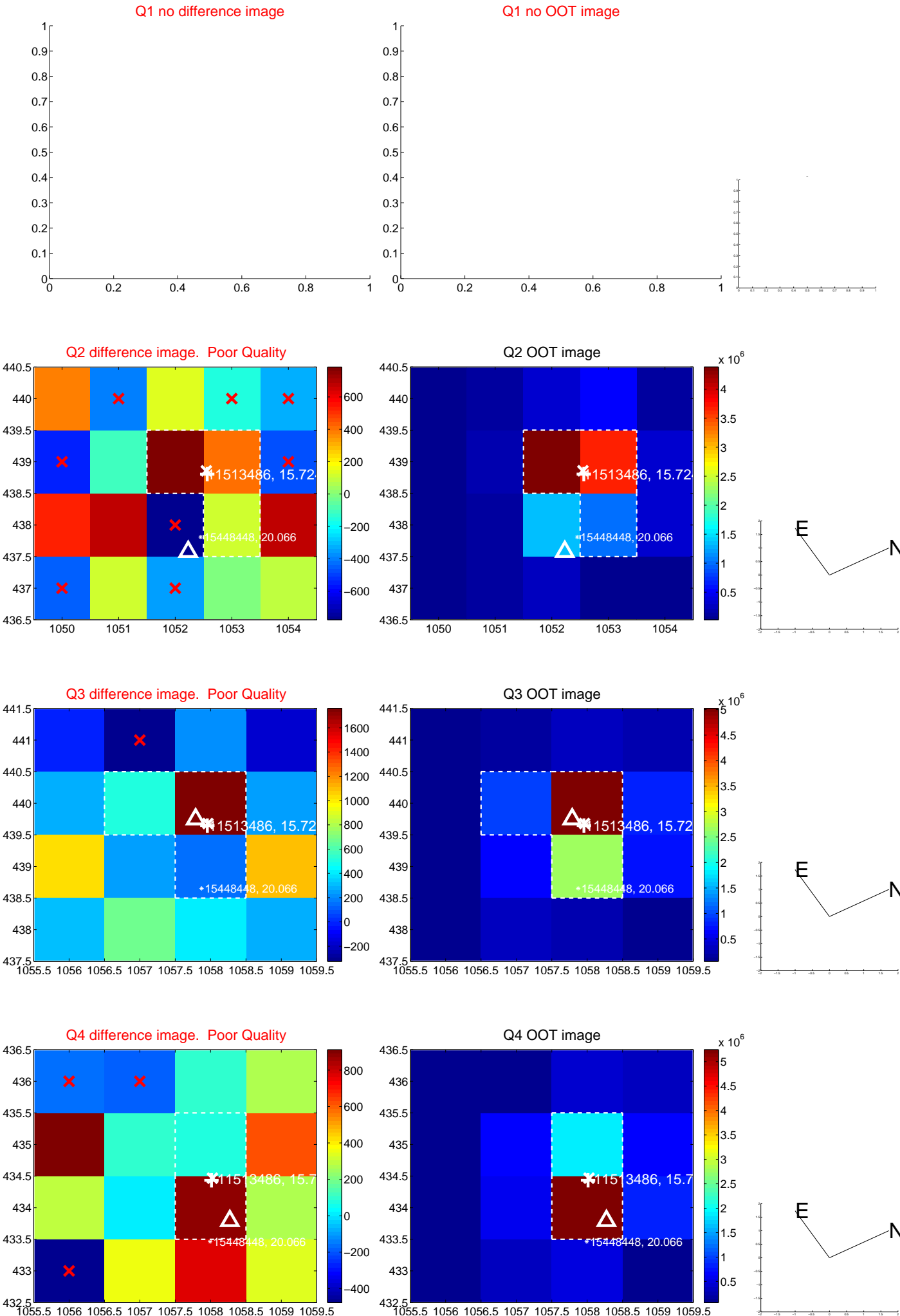
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.415 ± 0.640 | 0.65 | -0.414 ± 0.633 | -0.027 ± 0.496 |
| PRF-fit source offset from KIC position | 0.553 ± 0.660 | 0.84 | -0.553 ± 0.660 | -0.001 ± 0.524 |
| photometric centroid source offset | 1.82 ± 0.99 | 1.84 | 0.68 ± 1.09 | -1.69 ± 0.98 |

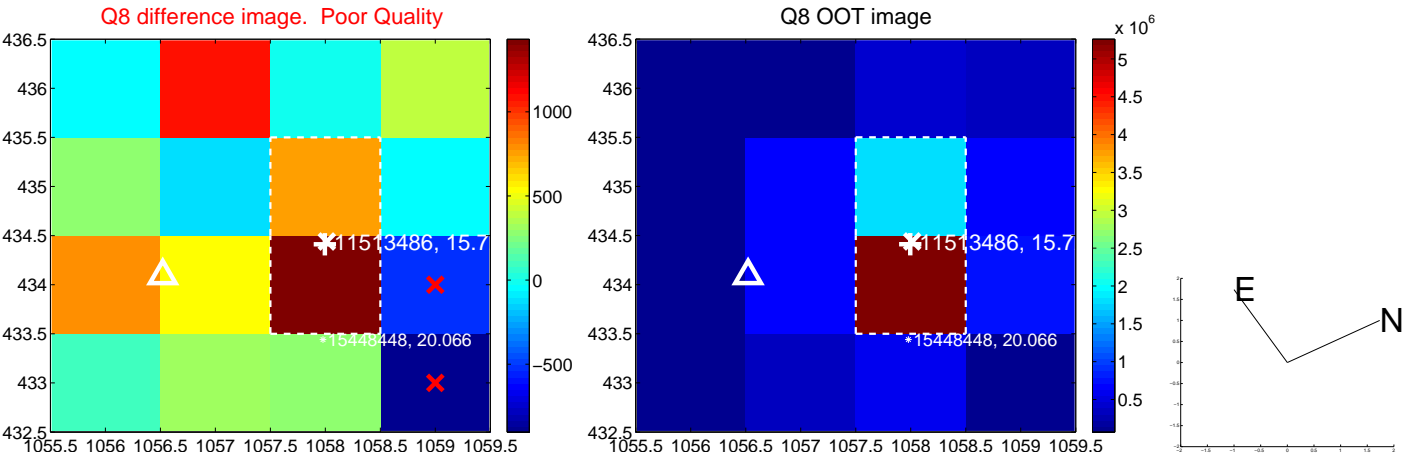
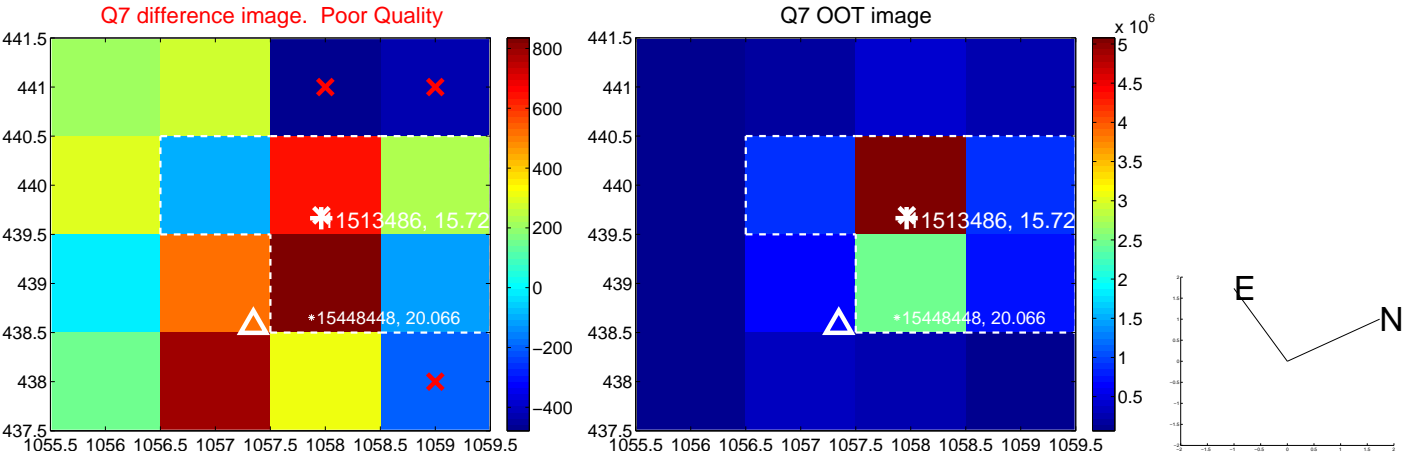
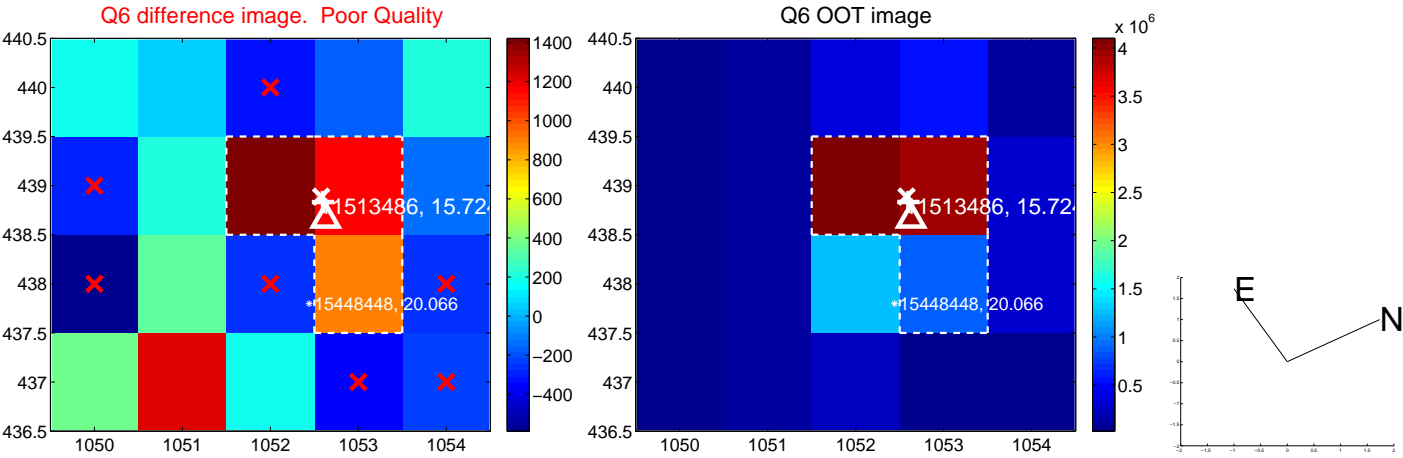
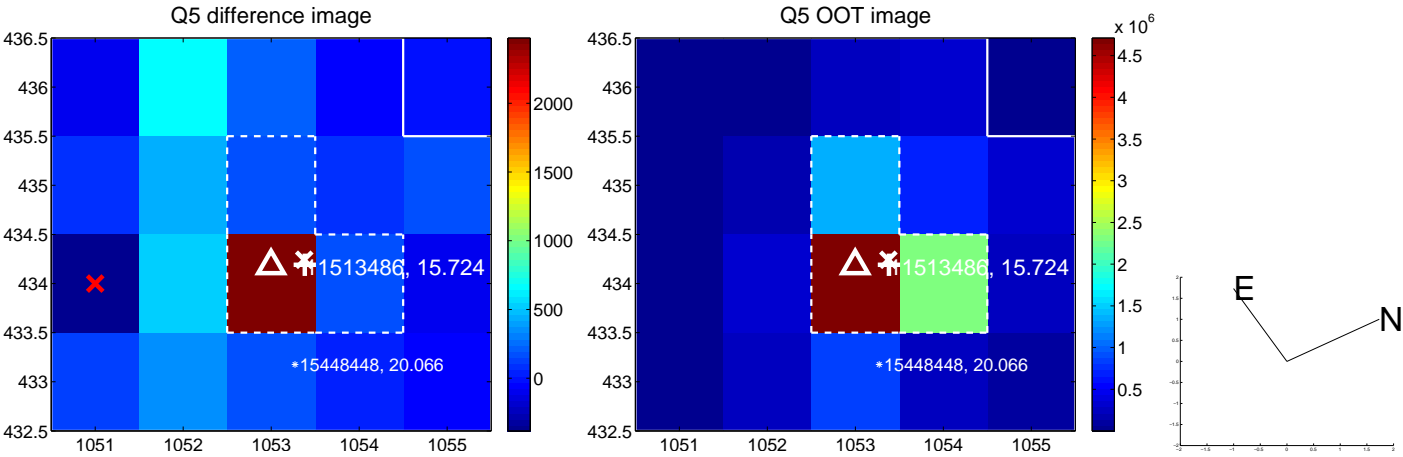


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

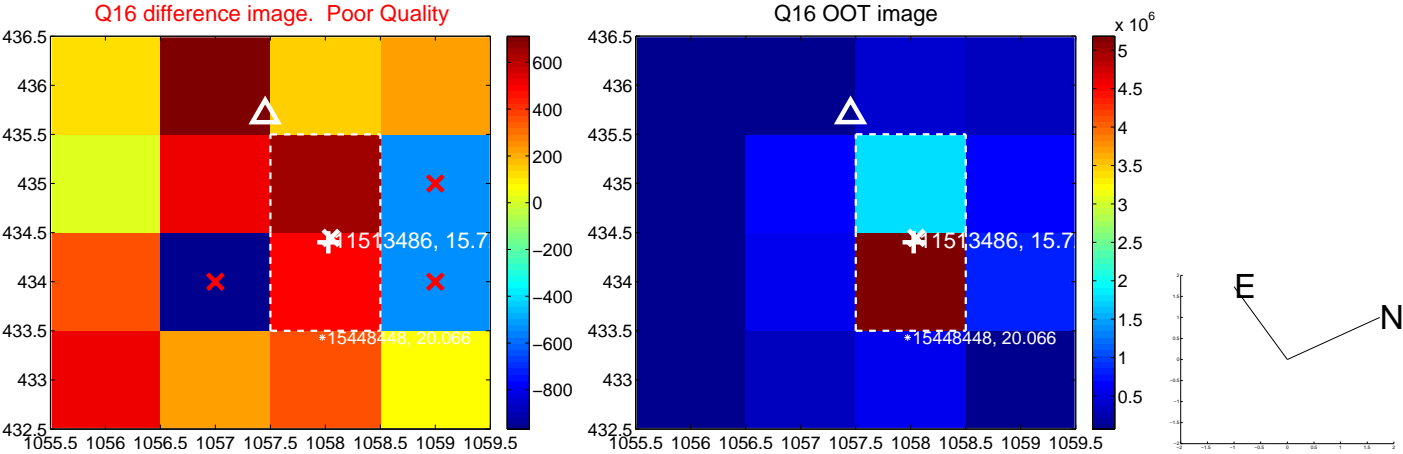
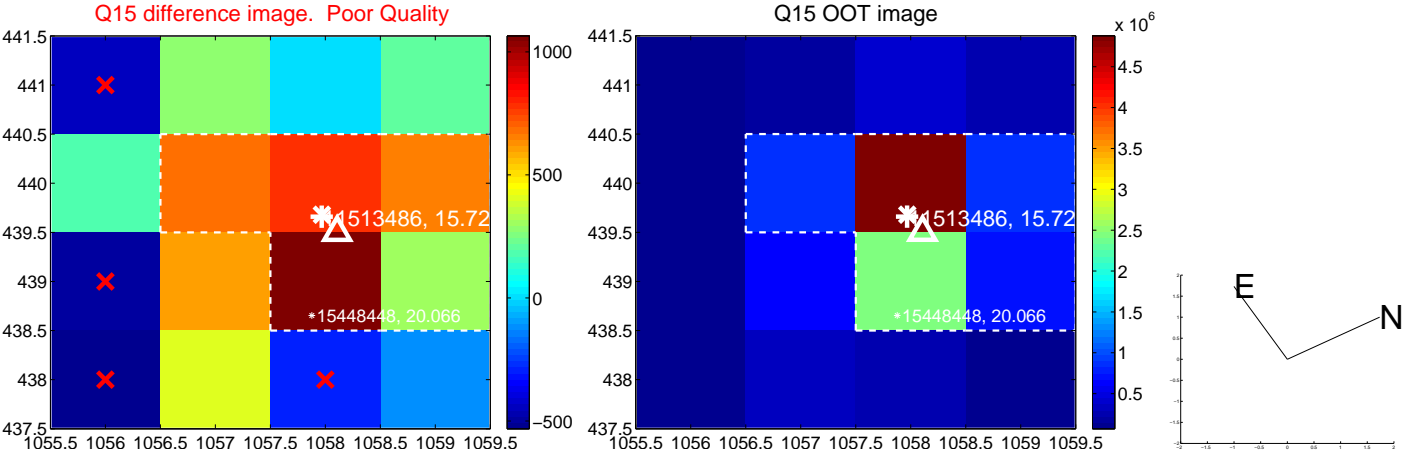
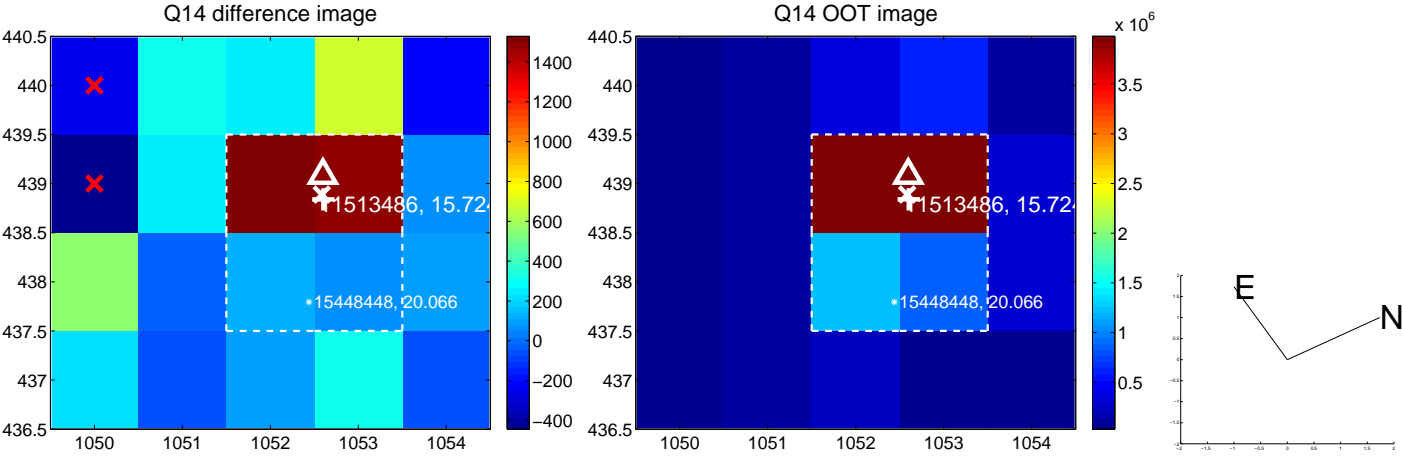
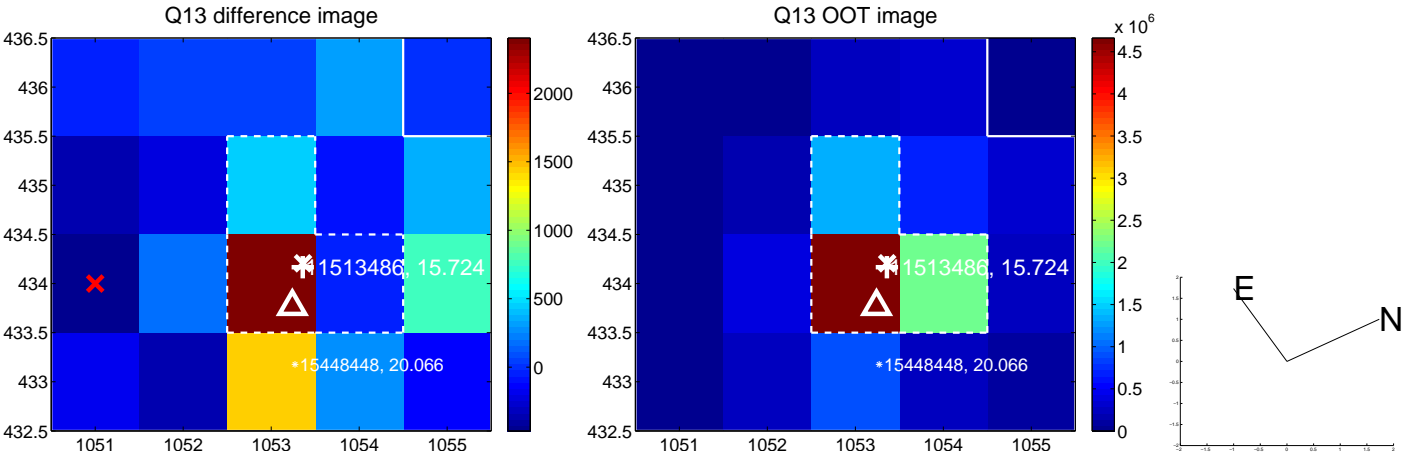
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



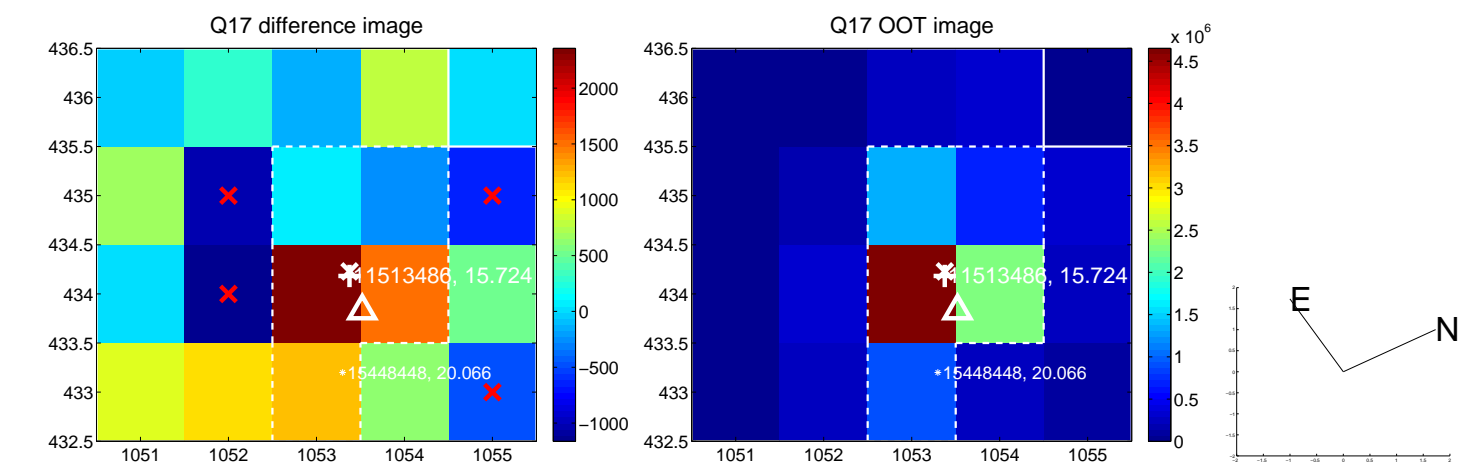
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



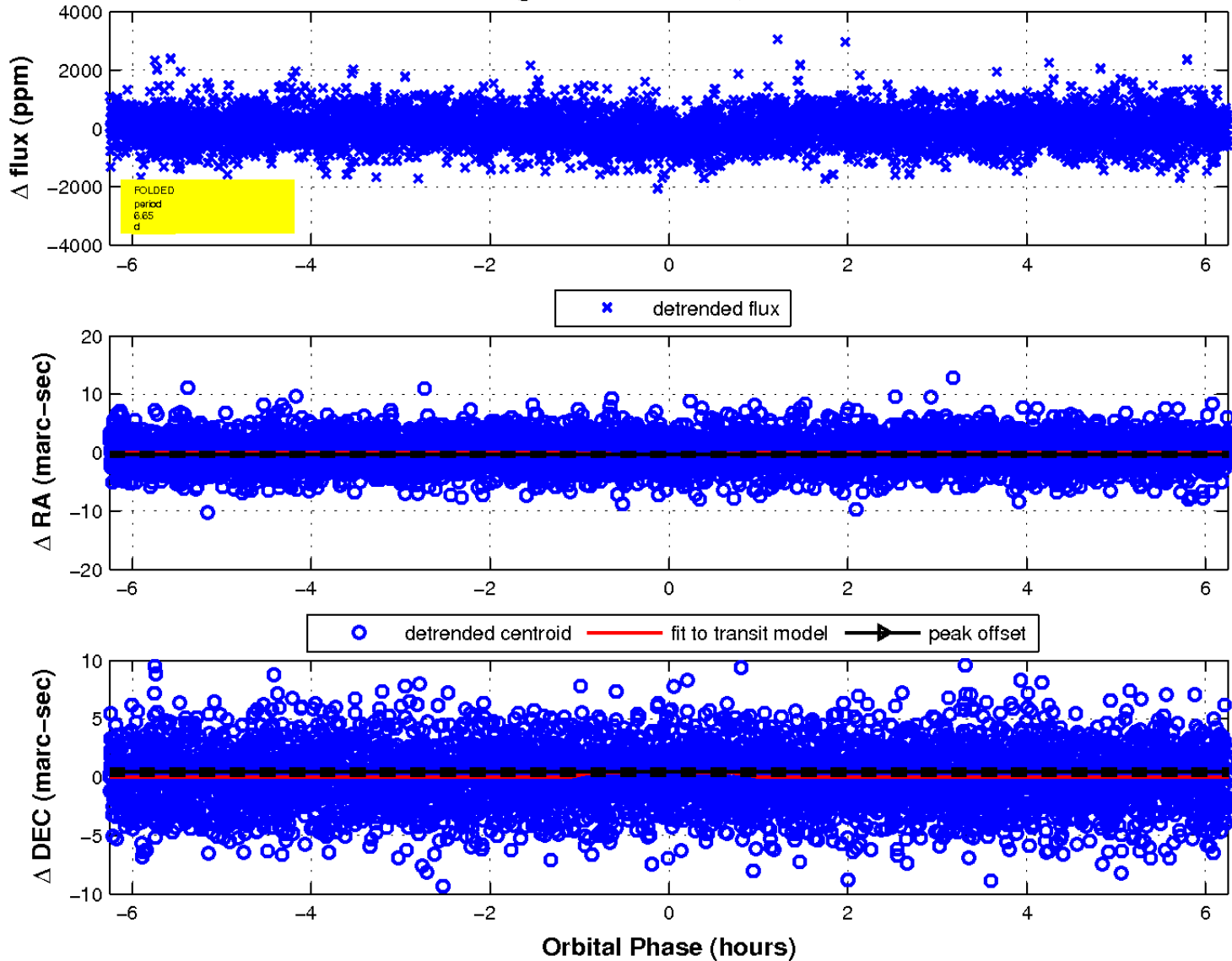
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

