

KIC 007749002

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 007749002-01 | OBS | 4325.01 | 0.609922 | 131.805599 | 103.1 | 1.310 | 11.9 | 12.0 | 0.96 | 5936 | 1.17 | 4975.72 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 007749002-01 | OBS | PC | 0.87 | 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 007749002-01

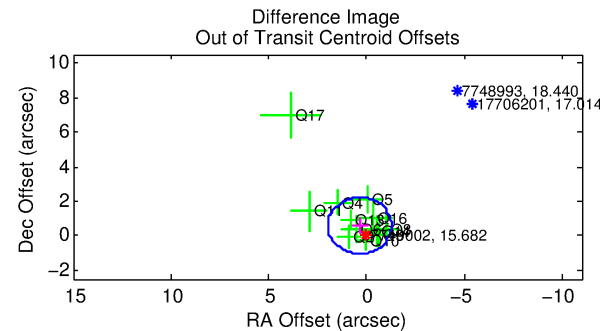
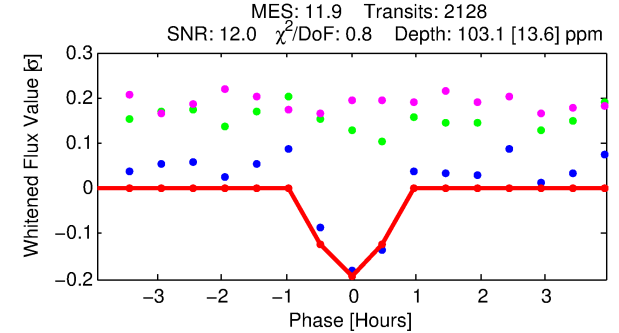
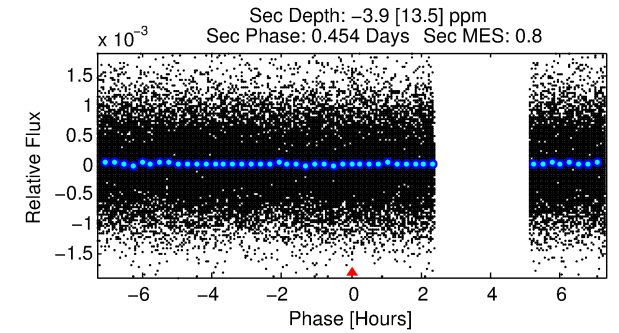
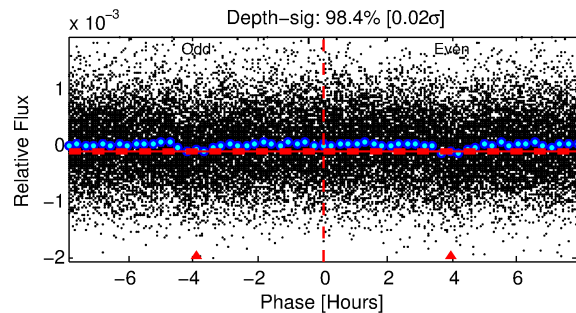
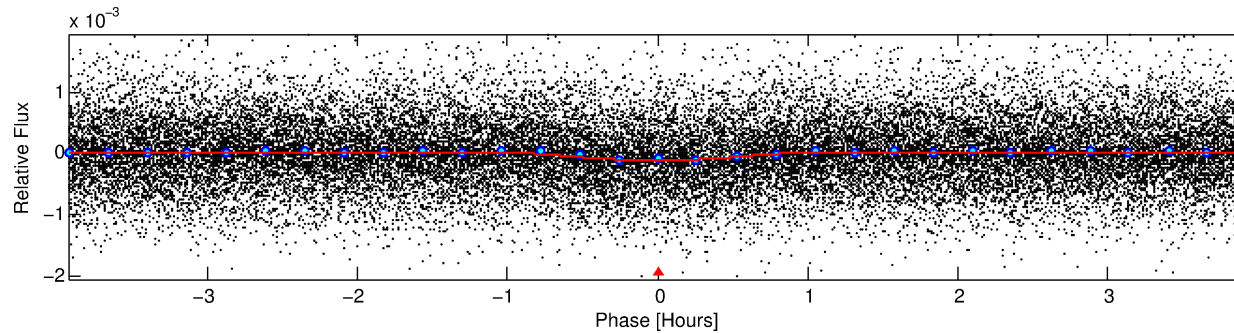
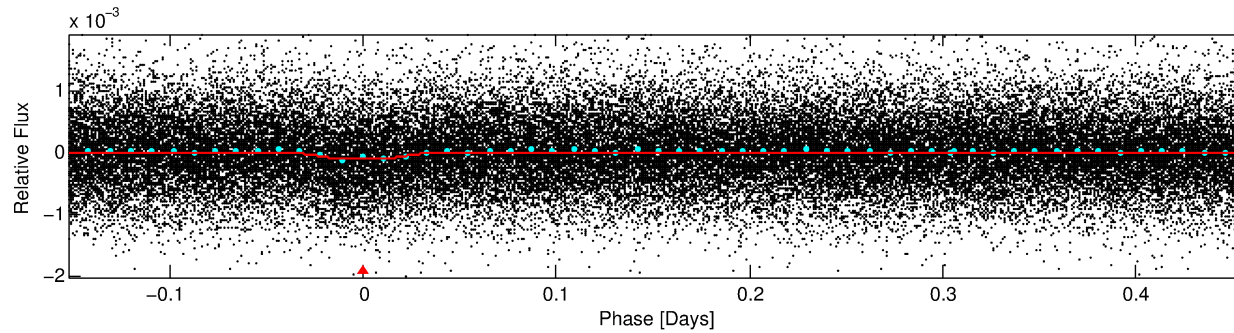
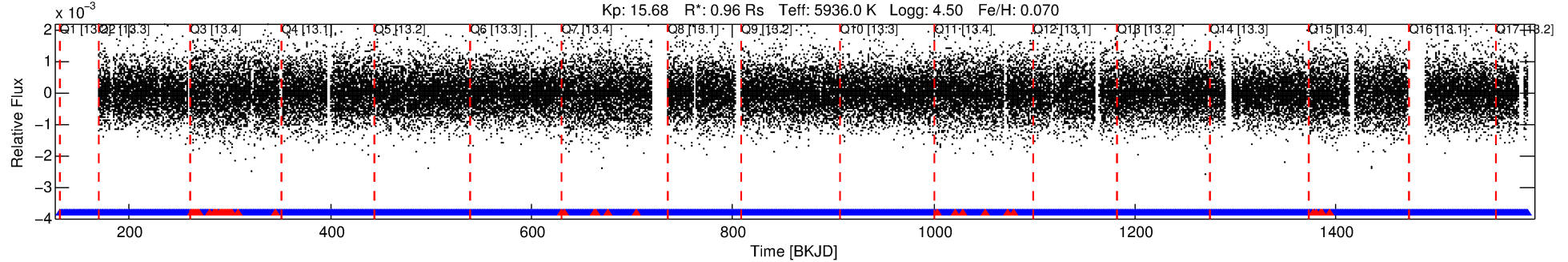
No Significant Match Found

DV One-Page Summary

KIC: 7749002 Candidate: 1 of 1 Period: 0.610 d

KOI: K04325.01 Corr: 0.932

Kp: 15.68 R*: 0.96 Rs Teff: 5936.0 K Logg: 4.50 Fe/H: 0.070



DV Fit Results:

Period = 0.60992 [0.00001] d
Epoch = 131.8056 [0.0017] BKJD
Rp/R* = 0.0111 [0.0074]
a/R* = 1.88 [4.45]
b = 0.90 [0.70]
Seff = 4975.72 [2121.34]
Teq = 2142 [228] K
Rp = 1.17 [0.87] Re
a = 0.0144 [0.0040] AU
Ag = N/A
Teffp = N/A

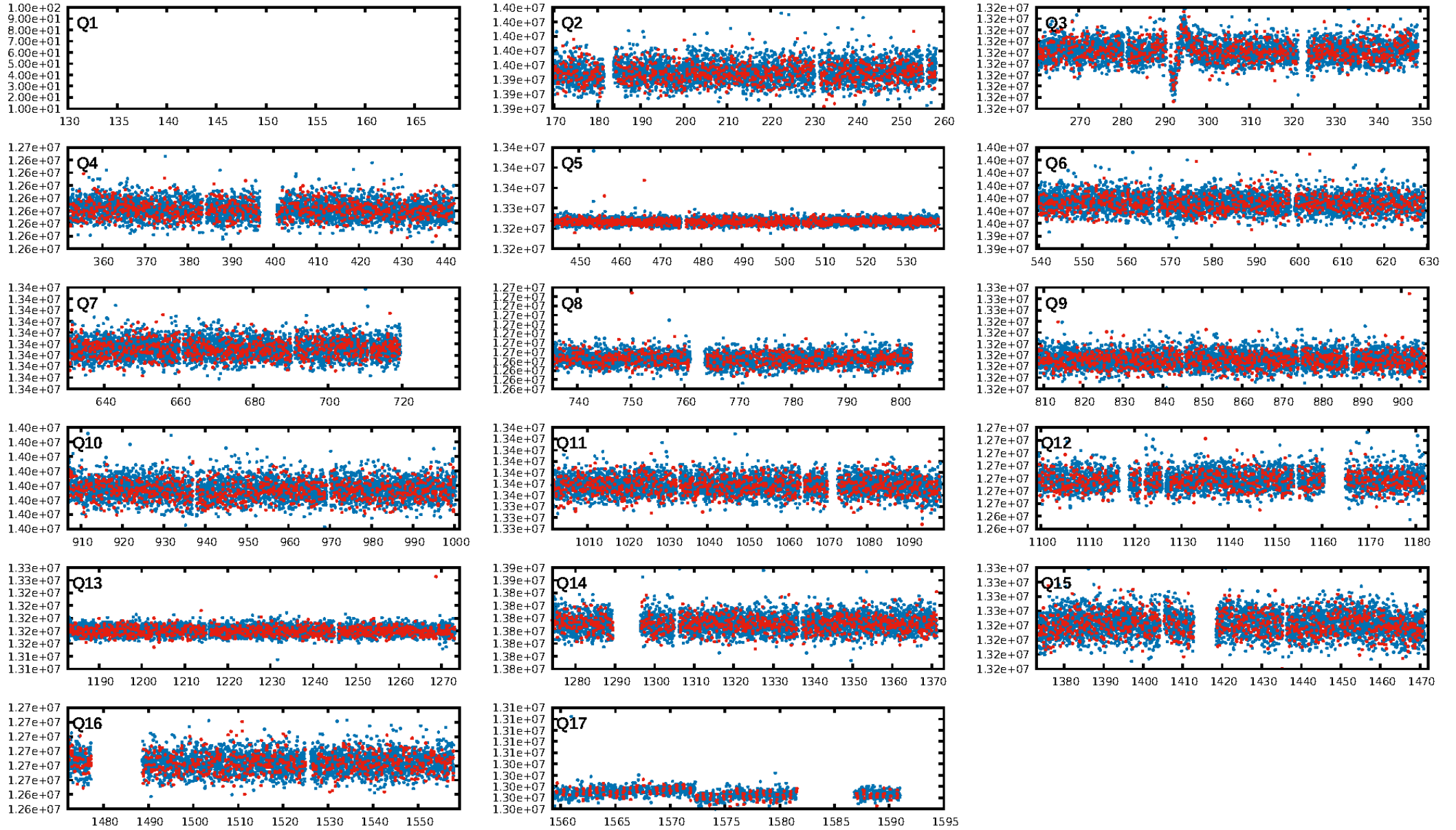
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.40e-33
RollingBand-fgt: 0.98 [2037/2084]
GhostDiagnostic-chr: 10.03
Centroid-sig: 0.8%
Centroid-so: 2.120 arcsec [1.70σ]
OotOffset-rm: 0.687 arcsec [1.27σ]
KicOffset-rm: 0.662 arcsec [1.12σ]
OotOffset-st: 4/1/3/4 [12]
KicOffset-st: 4/1/3/4 [12]
DiffImageQuality-fgm: 0.58 [7/12]
DiffImageOverlap-fno: 1.00 [16/16]

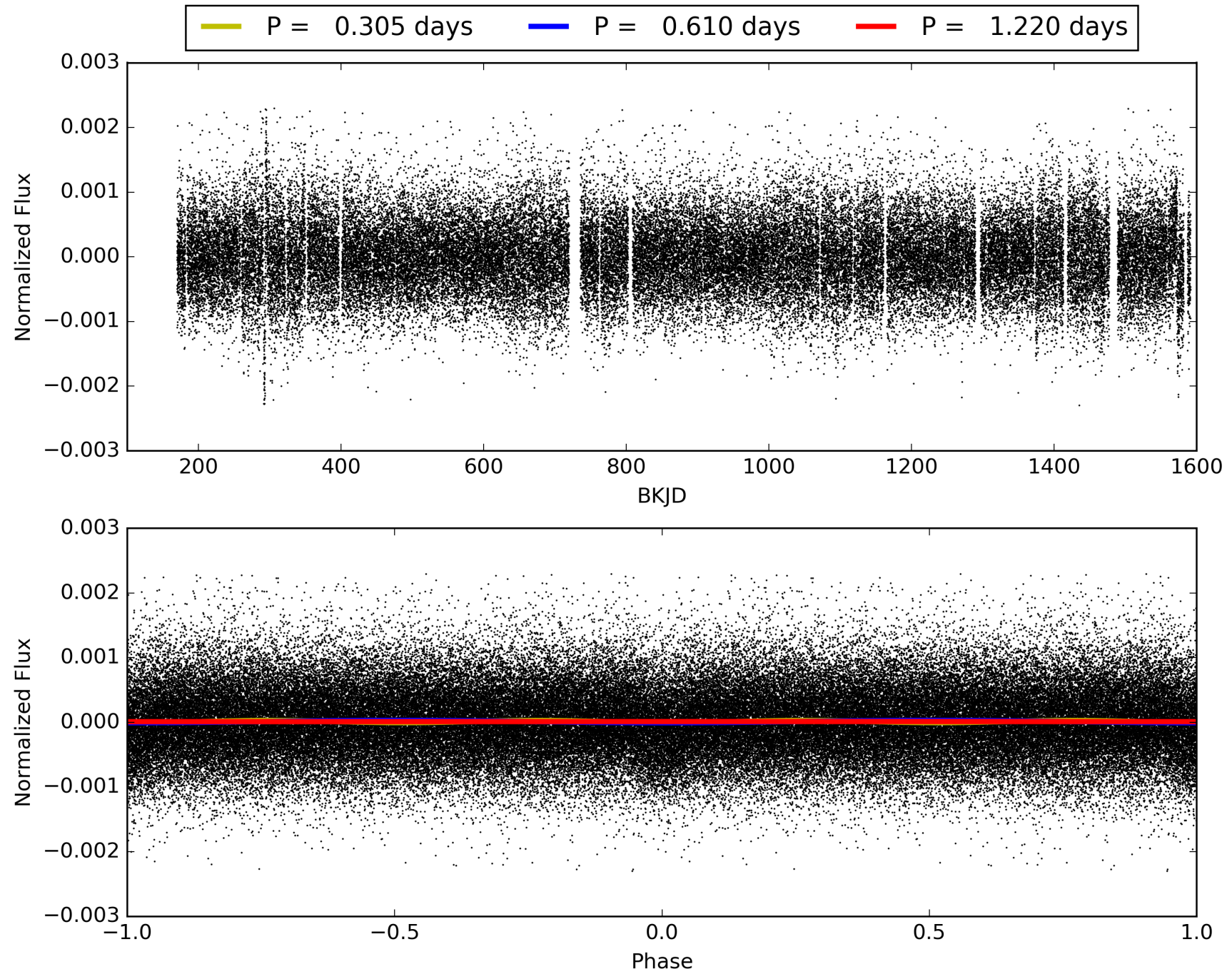
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:05:15 Z

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

TCE 007749002-01, PDC Light Curves

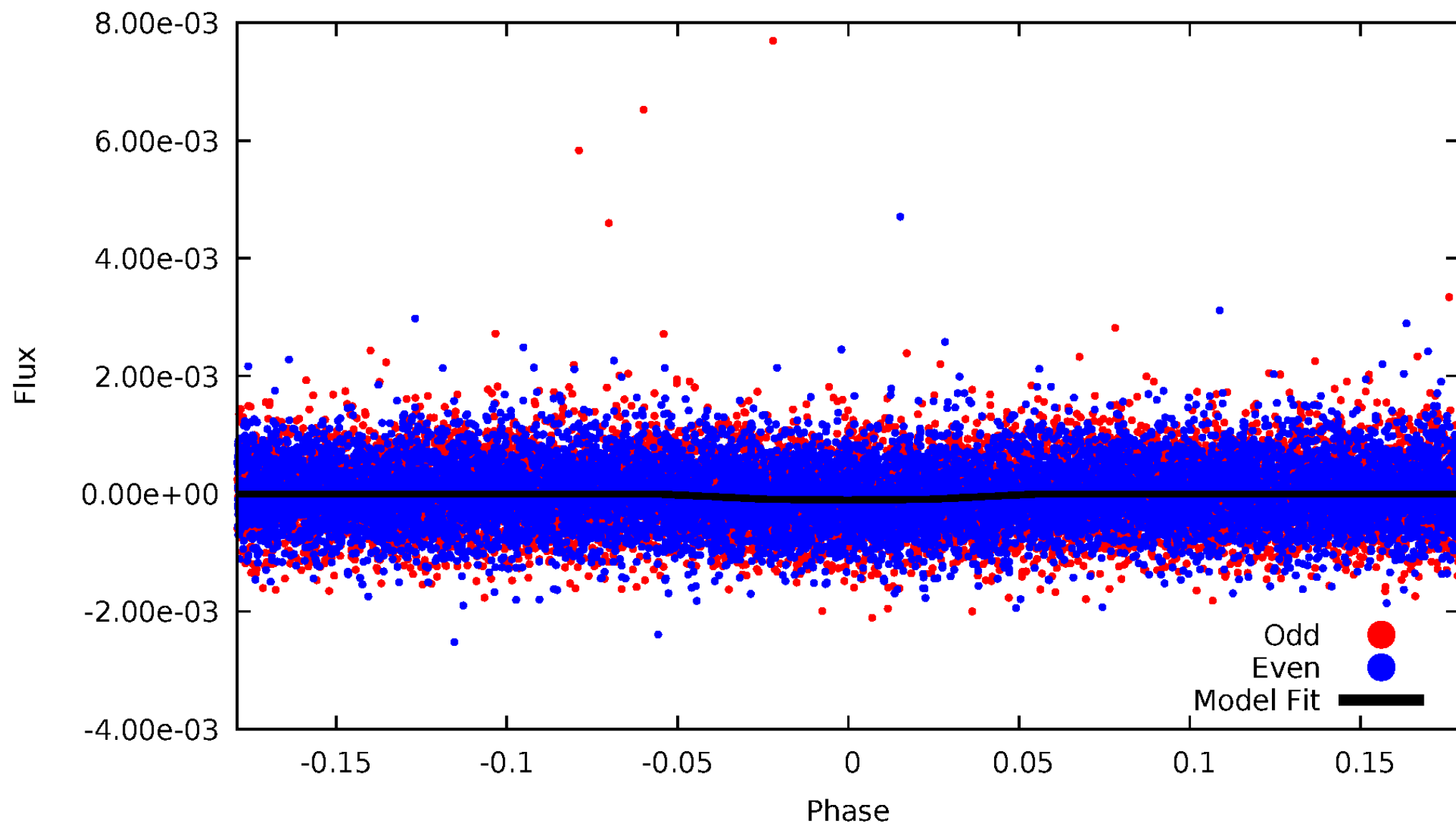


TCE 007749002-01



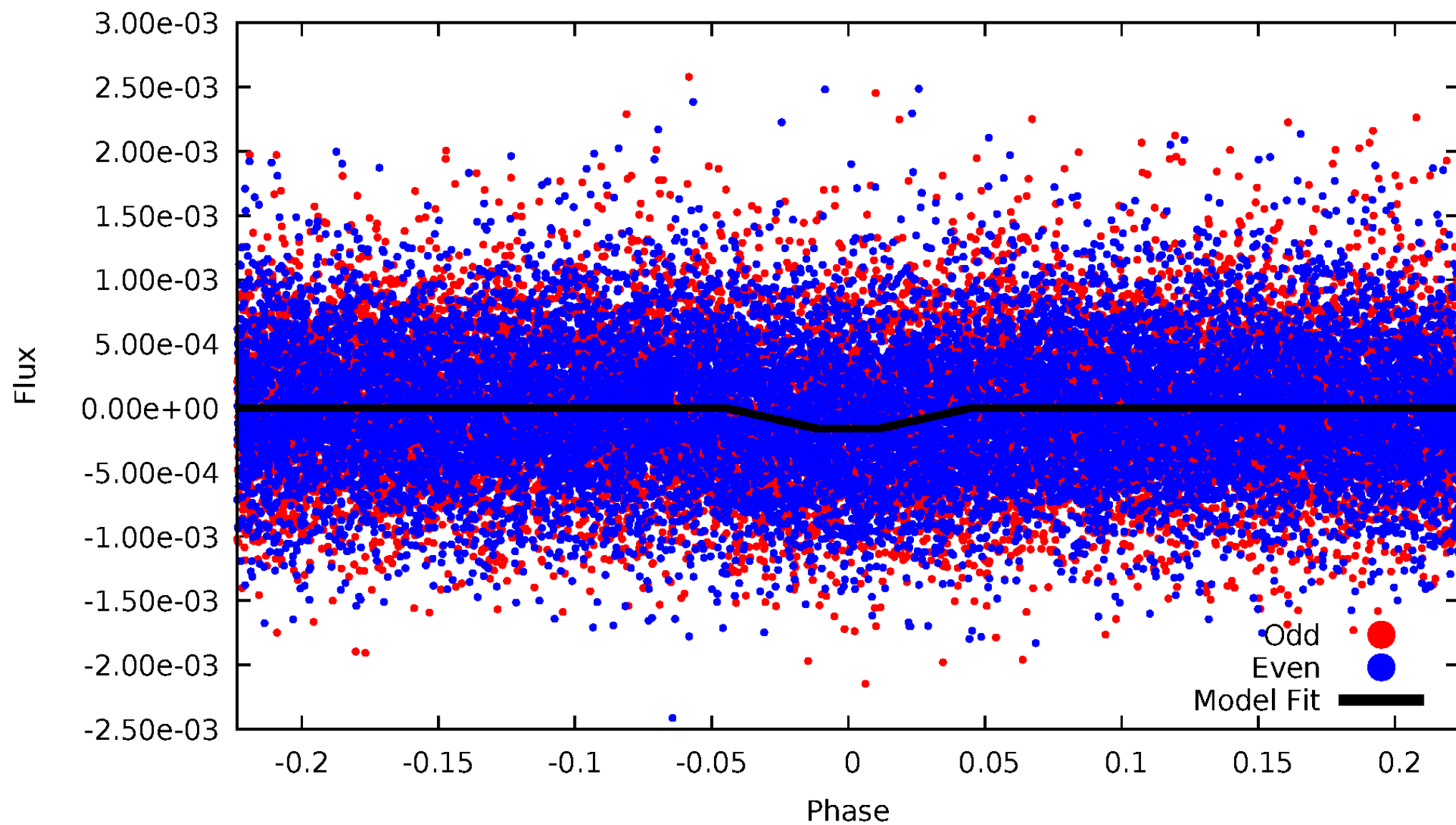
DV Odd/Even

TCE 007749002-01



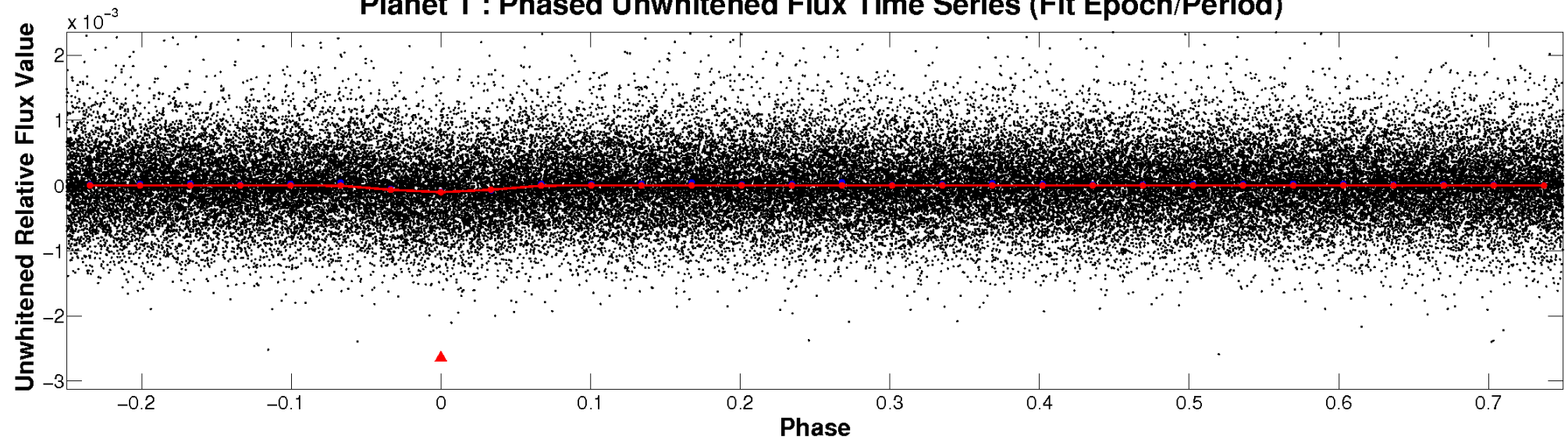
ALT Odd/Even

TCE 007749002-01

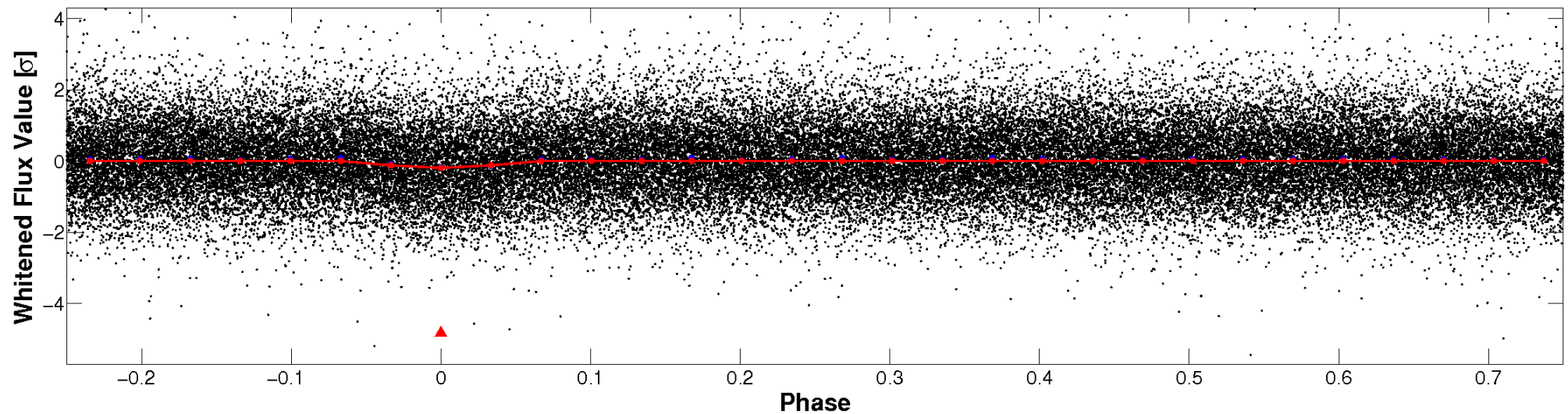


Non-Whitened Vs. Whitened Light Curve

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

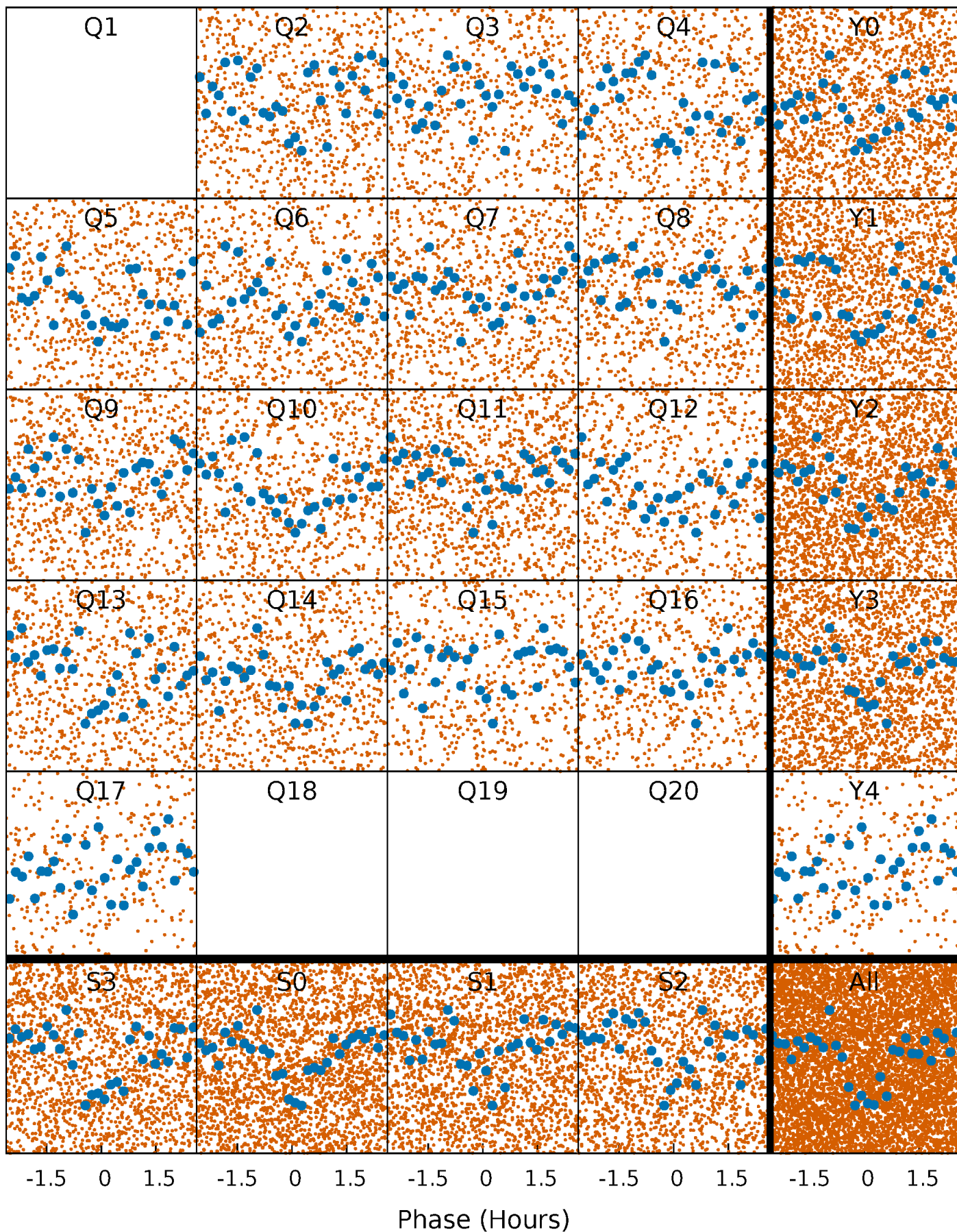


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



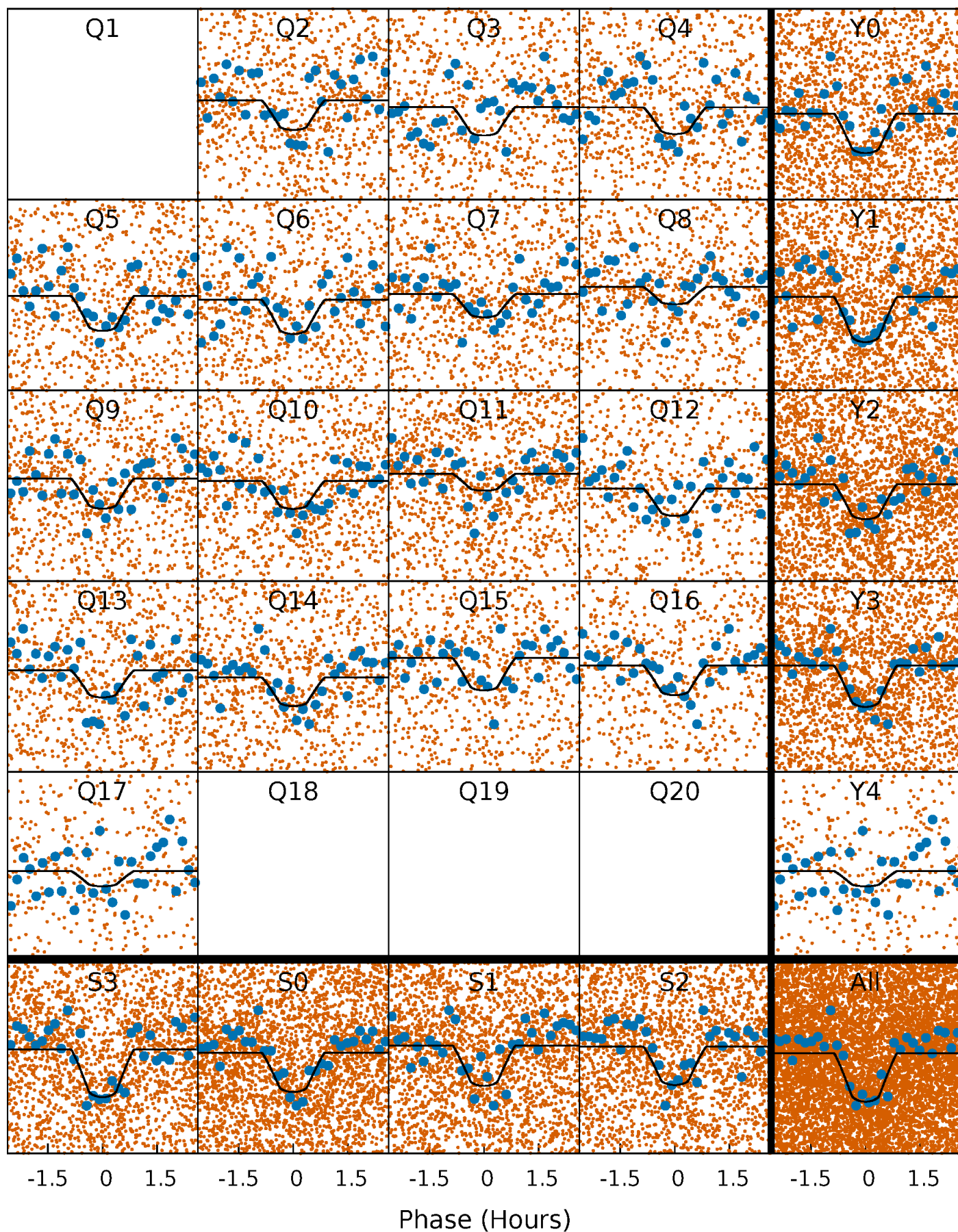
PDC Quarter-Phased Transit Curves

TCE 007749002-01 P= 0.609922 Days $T_0=131.805599$ (BKJD)



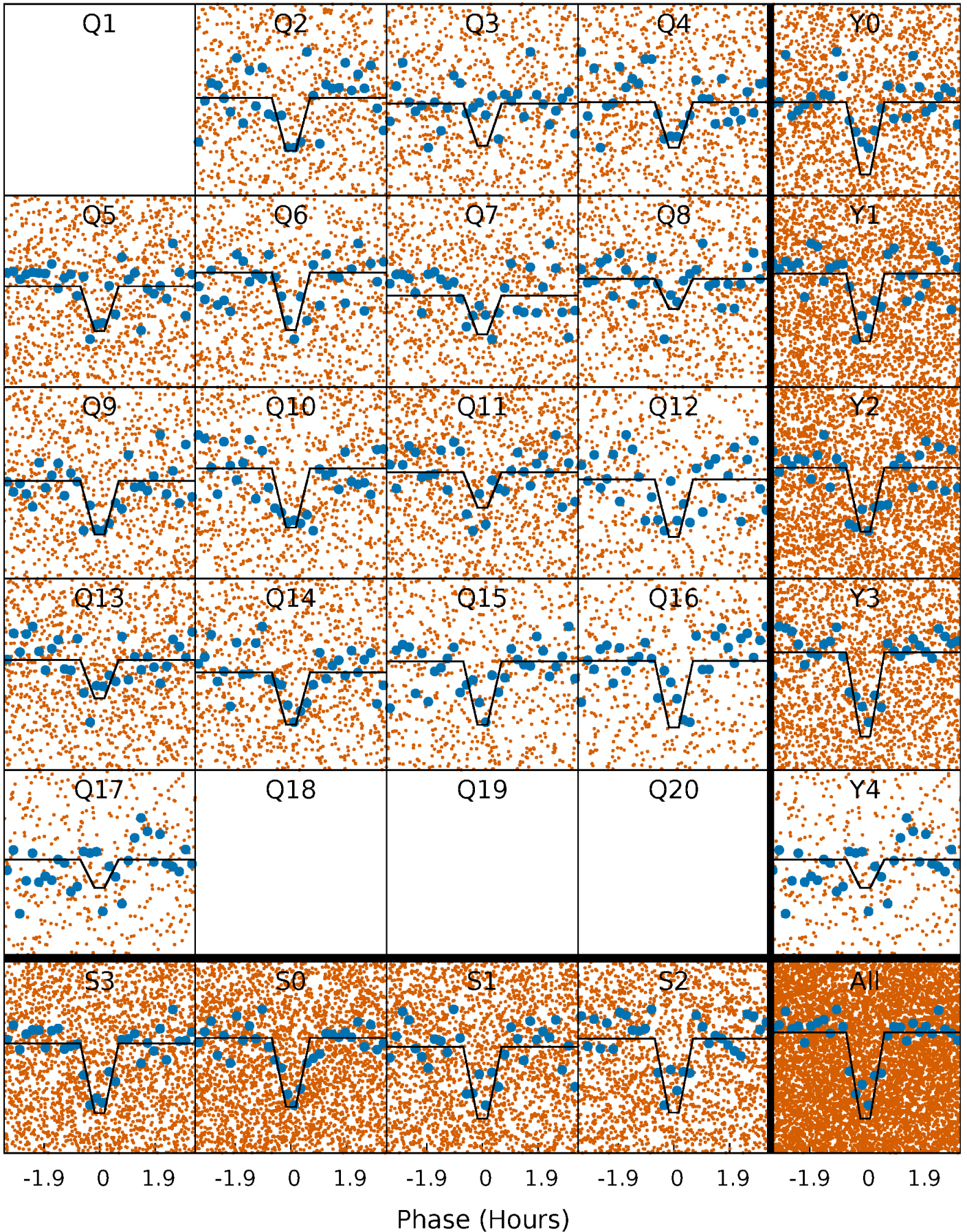
DV Quarter-Phased Transit Curves

TCE 007749002-01 P= 0.609922 Days $T_0=131.805599$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

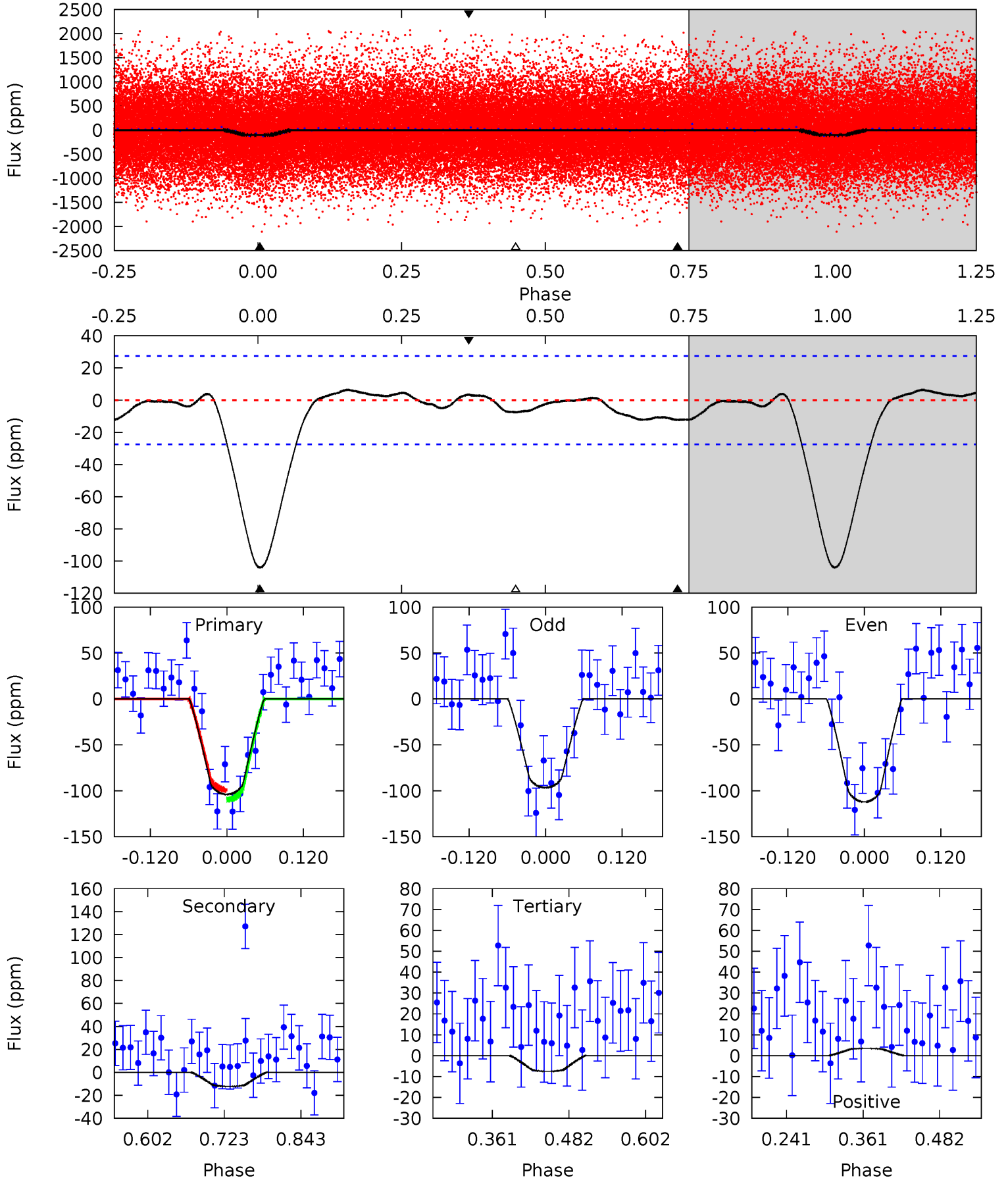
TCE 007749002-01 $P = 0.609925$ Days $T_0 = 131.805190$ (BKJD)



DV Model-Shift Uniqueness Test

007749002-01, P = 0.609922 Days, E = 131.805599 Days

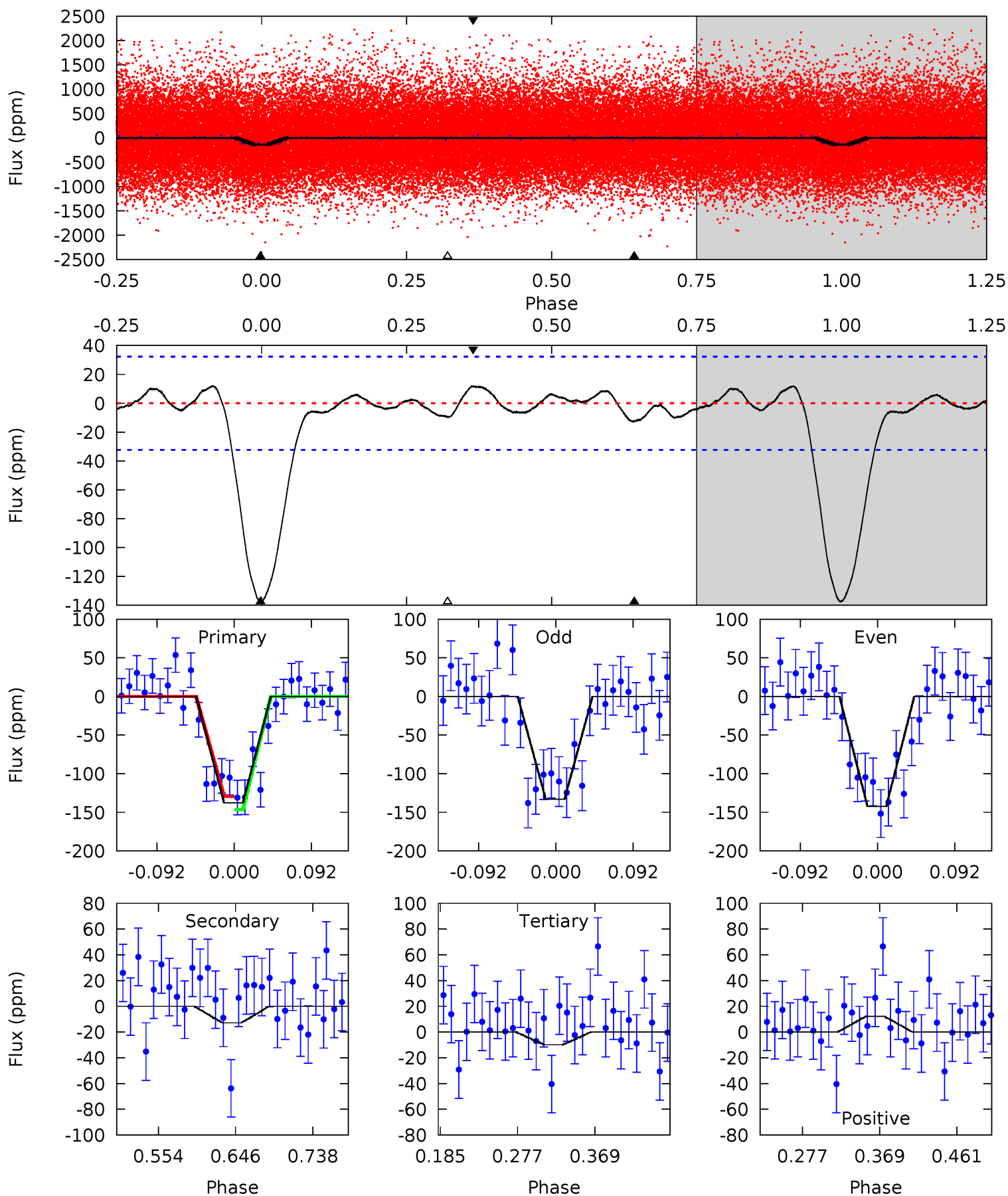
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 17.1 | 2.03 | 1.24 | 0.57 | 4.53 | 1.55 | 0.61 | 15.9 | 16.6 | 0.79 | 1.46 | 1.28 | 0.93 | 0.06 | 0.88 |



Alt Model-Shift Uniqueness Test

007749002-01, P = 0.609925 Days, E = 131.805190 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 19.5 | 1.82 | 1.39 | 1.72 | 4.58 | 1.68 | 0.75 | 18.1 | 17.8 | 0.43 | 0.10 | 0.66 | 0.97 | 0.08 | 1.21 |



Stellar Parameters For KIC 007749002

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 5936^{+176}_{-211} | $4.501^{+0.039}_{-0.221}$ | $0.070^{+0.250}_{-0.300}$ | $0.965^{+0.312}_{-0.104}$ | $1.075^{+0.124}_{-0.152}$ | $1.685^{+0.373}_{-0.932}$ |
| | +3%/-4% | +1%/-5% | +357%/-429% | +32%/-11% | +12%/-14% | +22%/-55% |
| 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 007749002-01 / KOI 4325.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|------------------------|---------------------------|
| DV | -12 ± 6 | $1.34^{+0.79}_{-0.74}$ | 3075^{+238}_{-155} | 3326^{+1411}_{-5973} | $0.729^{+2.976}_{-0.513}$ |
| Alt. | -13 ± 7 | $1.49^{+0.82}_{-0.79}$ | 3077^{+223}_{-158} | 3186^{+1355}_{-5843} | $0.614^{+2.515}_{-0.398}$ |

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 $A_{obs} \gg 1.0$

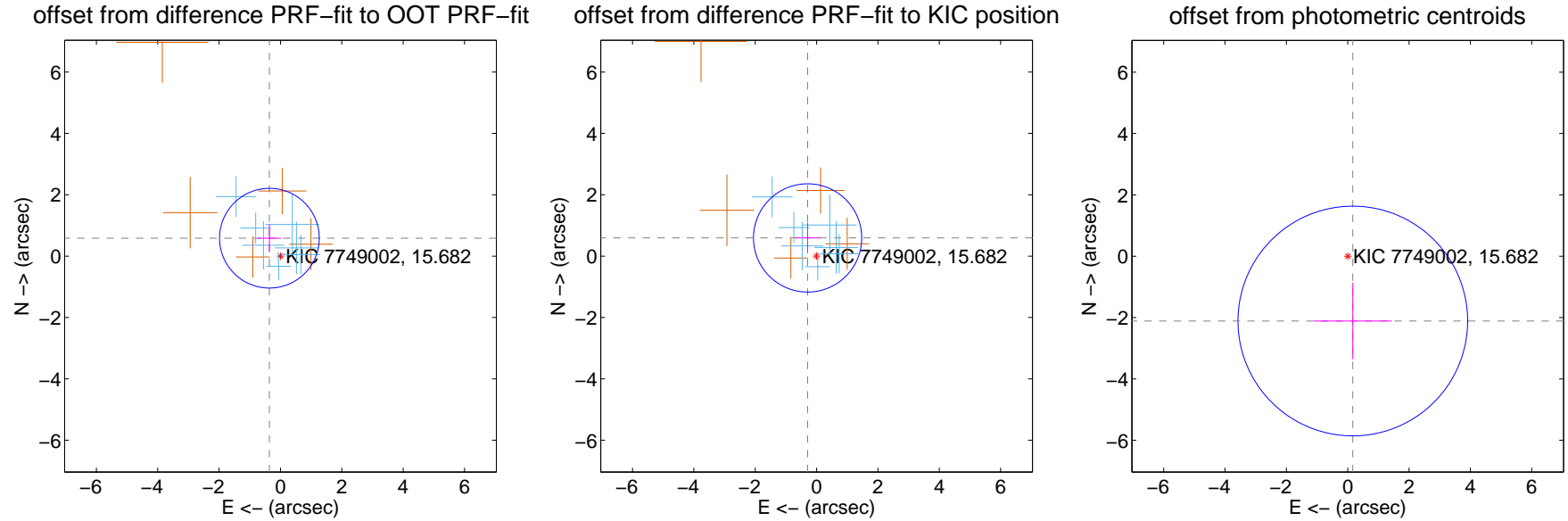
DV Centroid Data

Supplemental centroid analysis for 007749002-01. Kepler magnitude: 15.68. Transit SNR 12.04

There are 7 quarters with good PRF difference image offsets

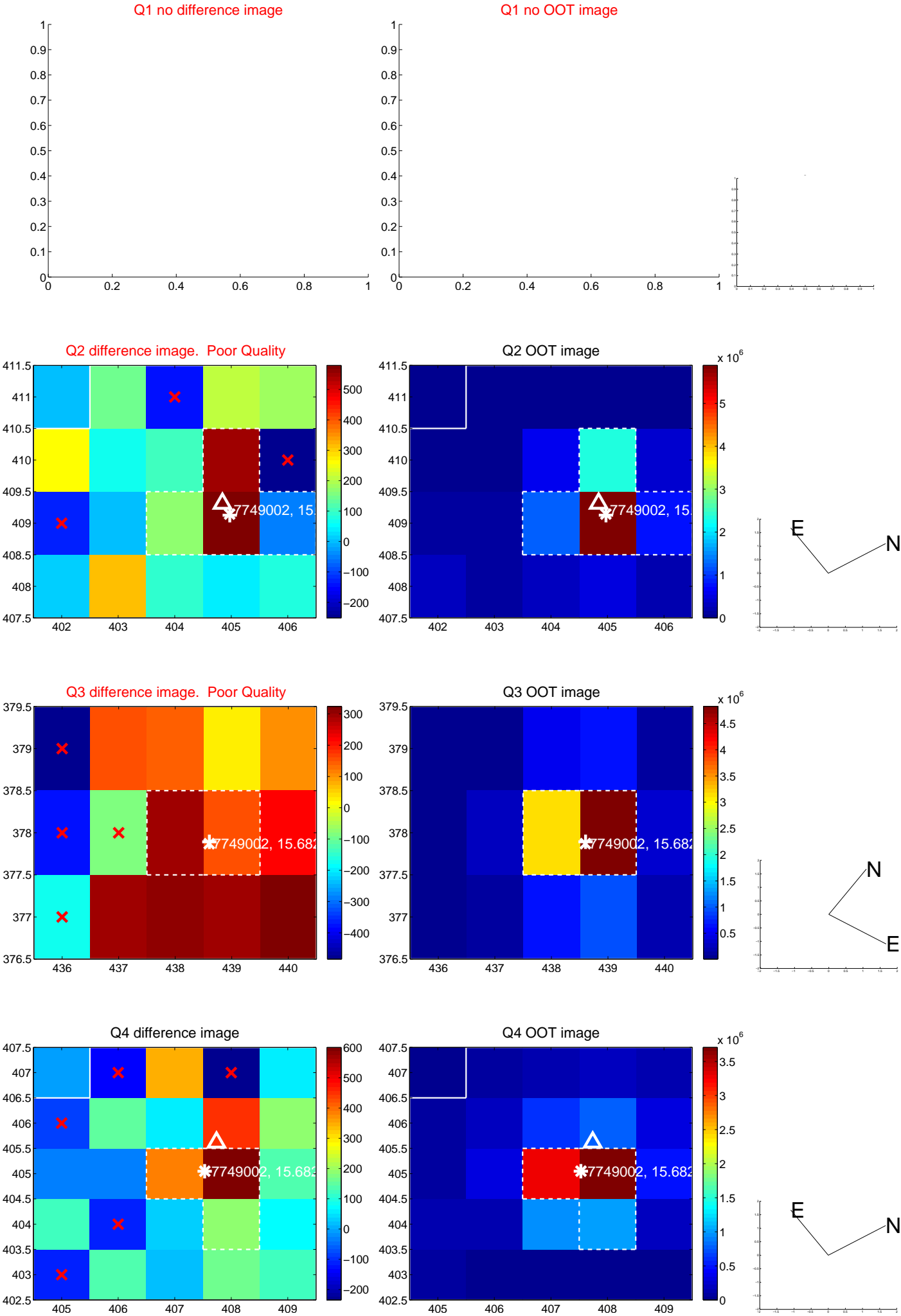
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.687 ± 0.542 | 1.27 | 0.360 ± 0.385 | 0.585 ± 0.452 |
| PRF-fit source offset from KIC position | 0.662 ± 0.588 | 1.12 | 0.292 ± 0.417 | 0.593 ± 0.498 |
| photometric centroid source offset | 2.12 ± 1.25 | 1.70 | -0.17 ± 1.27 | -2.11 ± 1.25 |

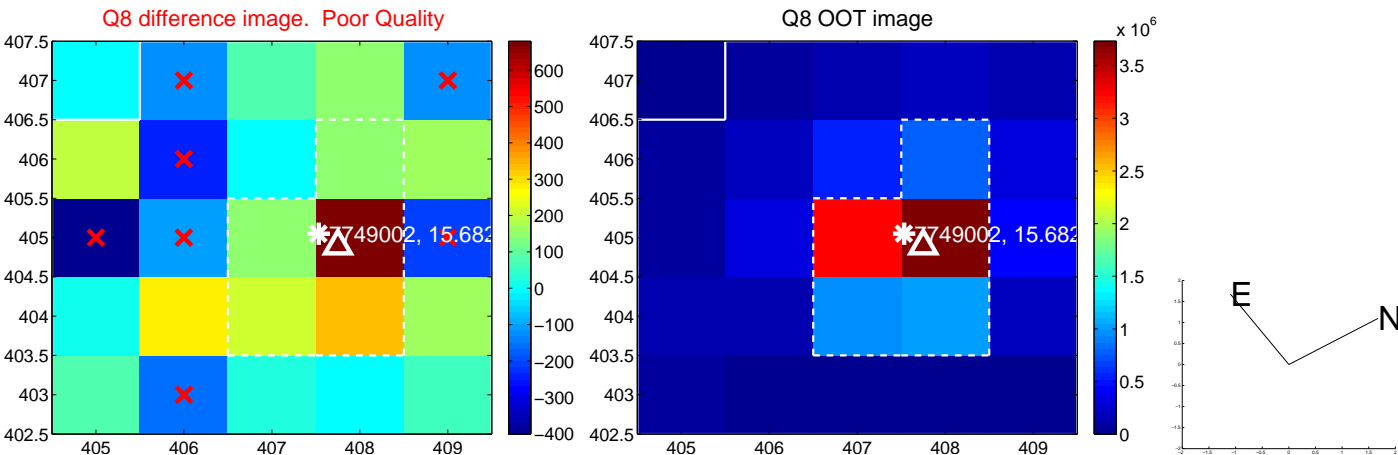
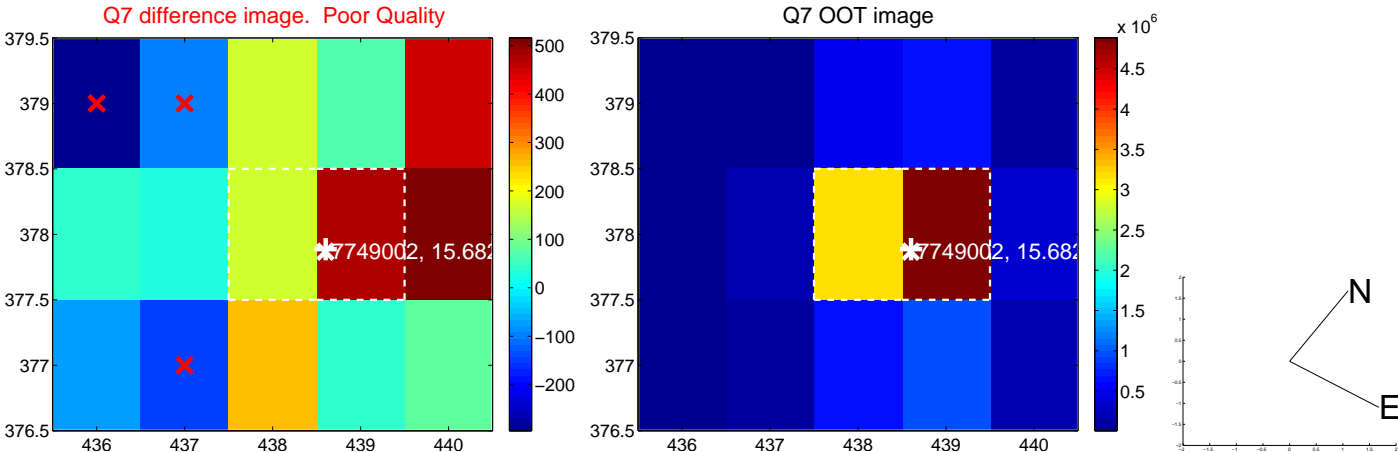
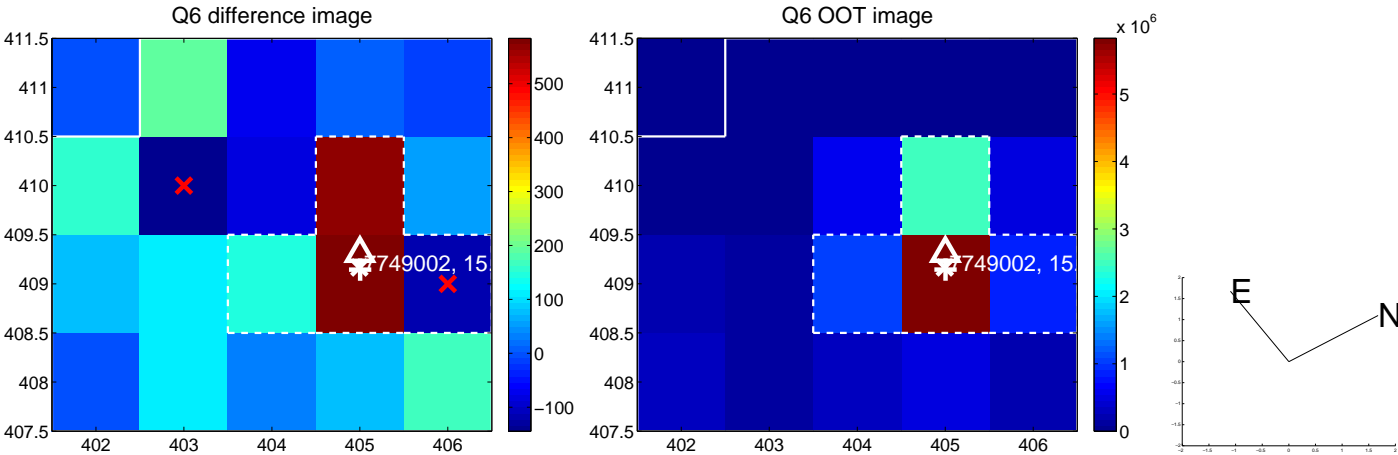
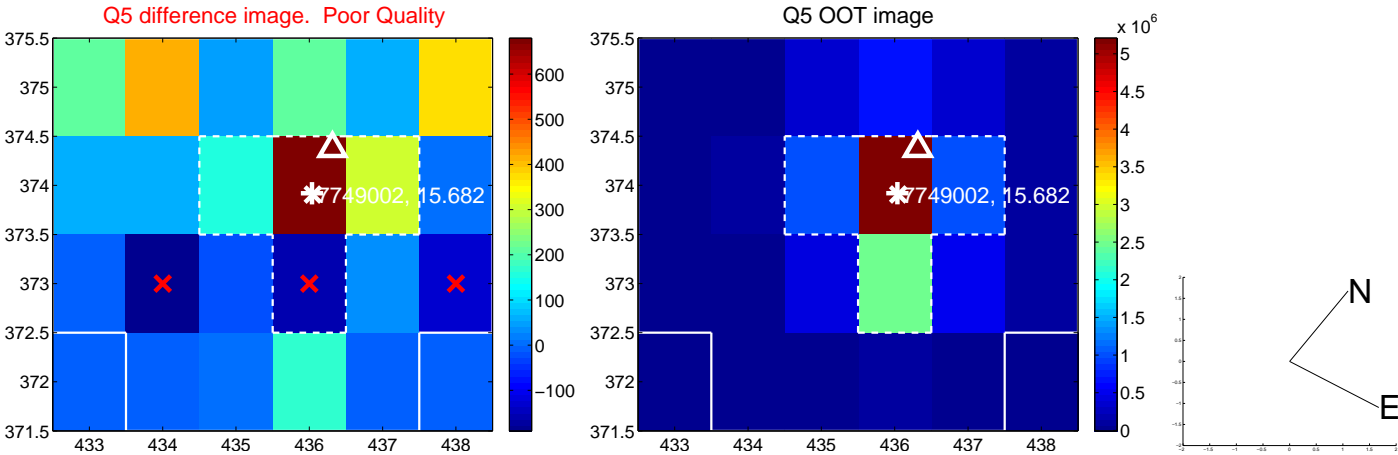


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

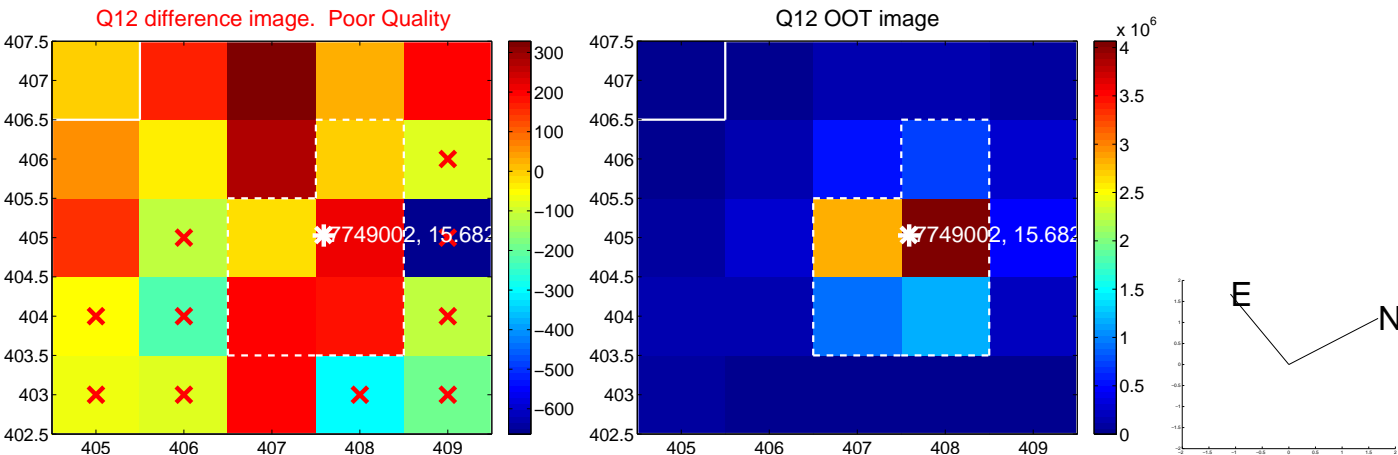
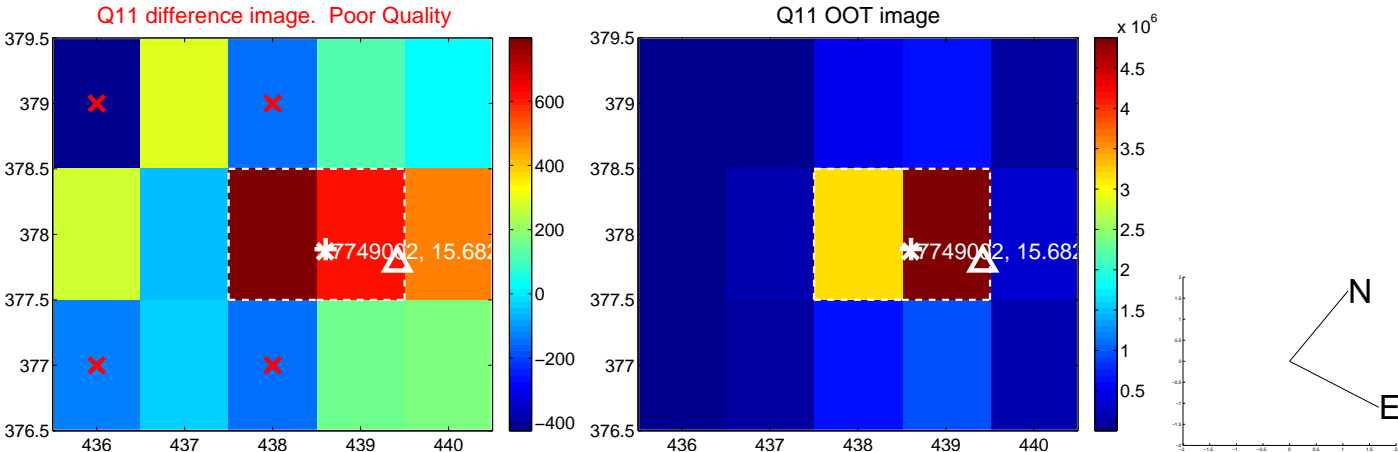
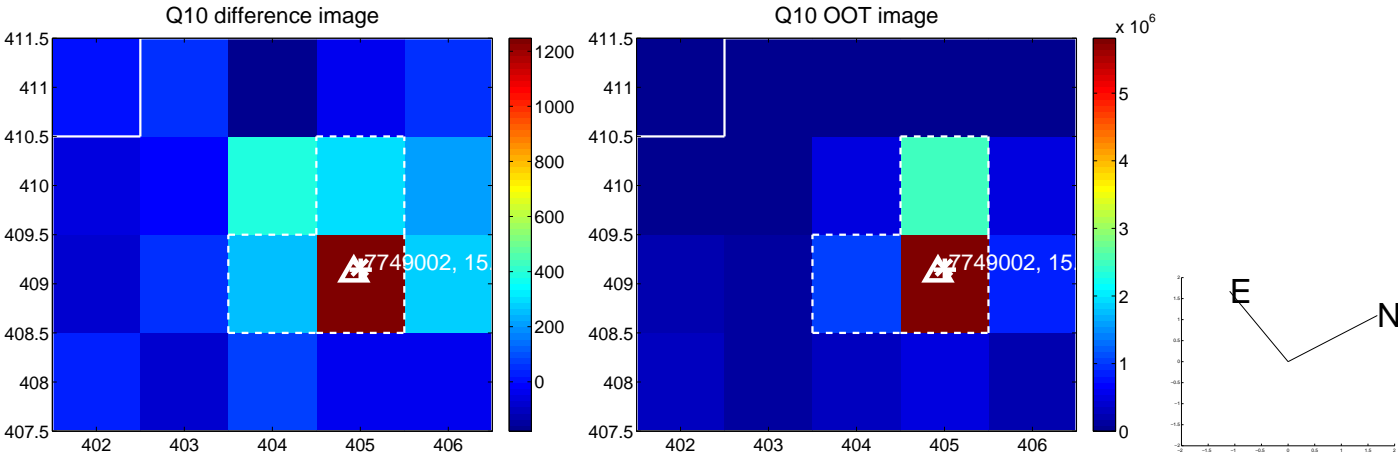
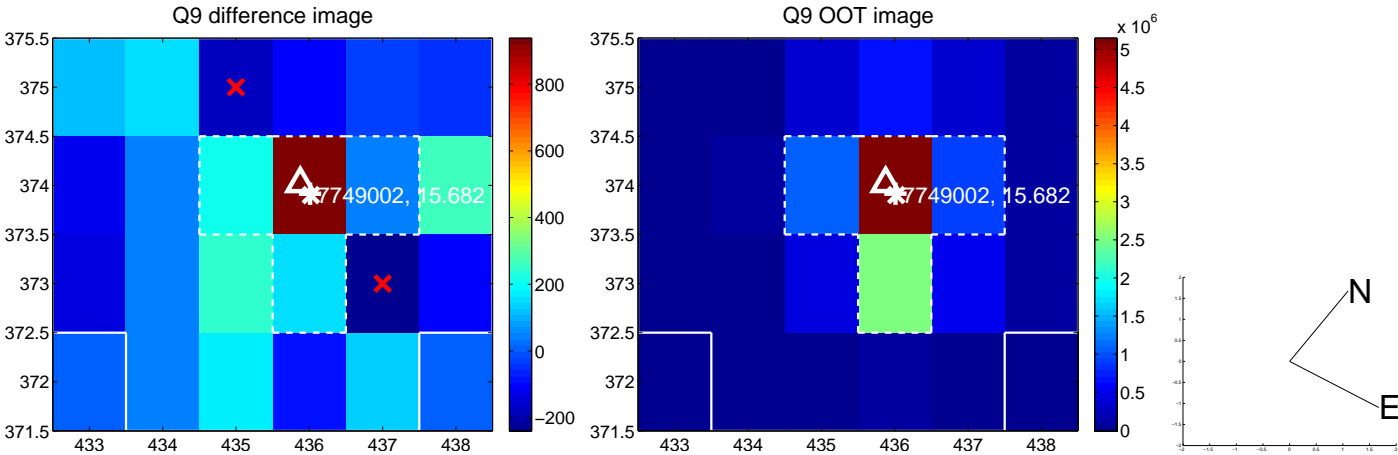
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



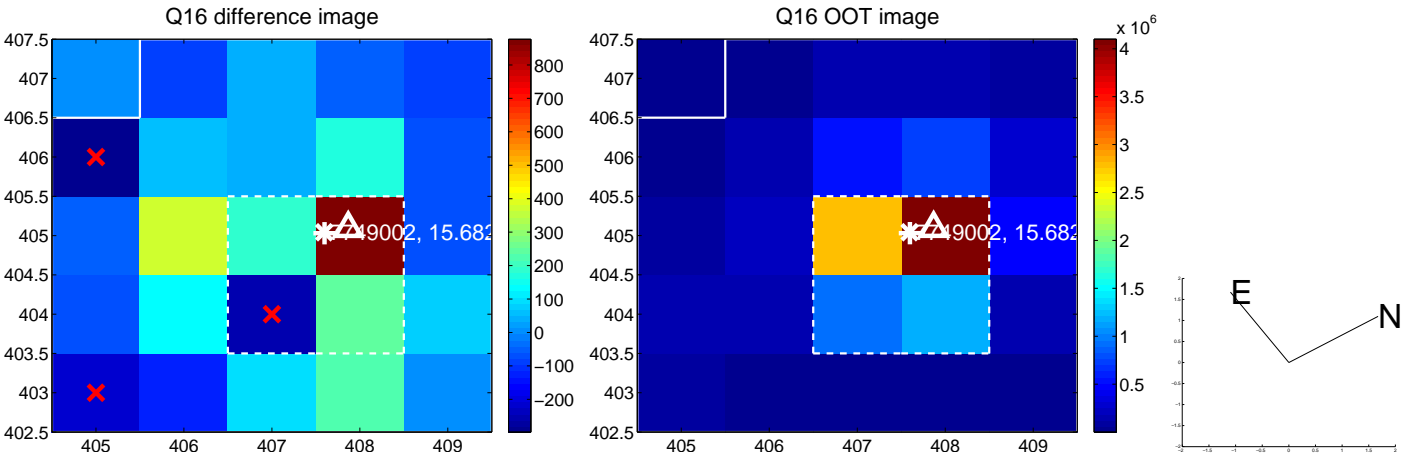
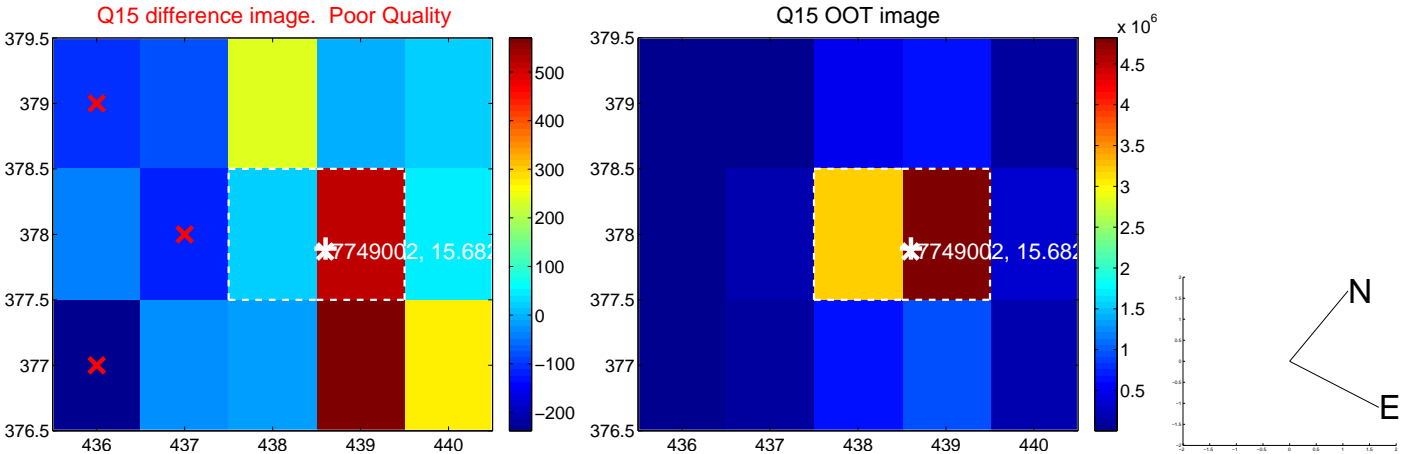
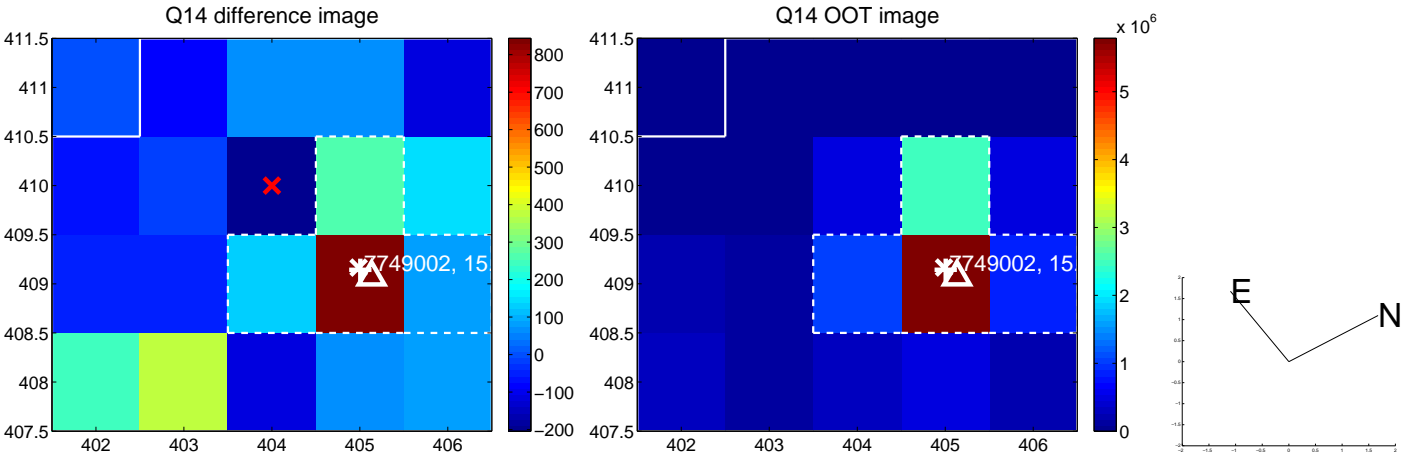
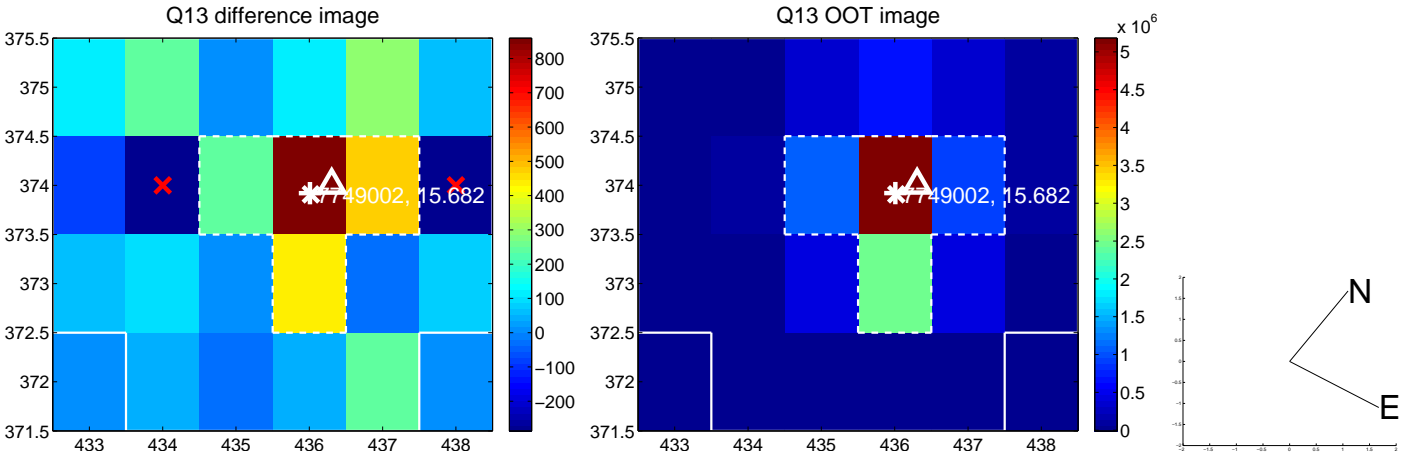
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



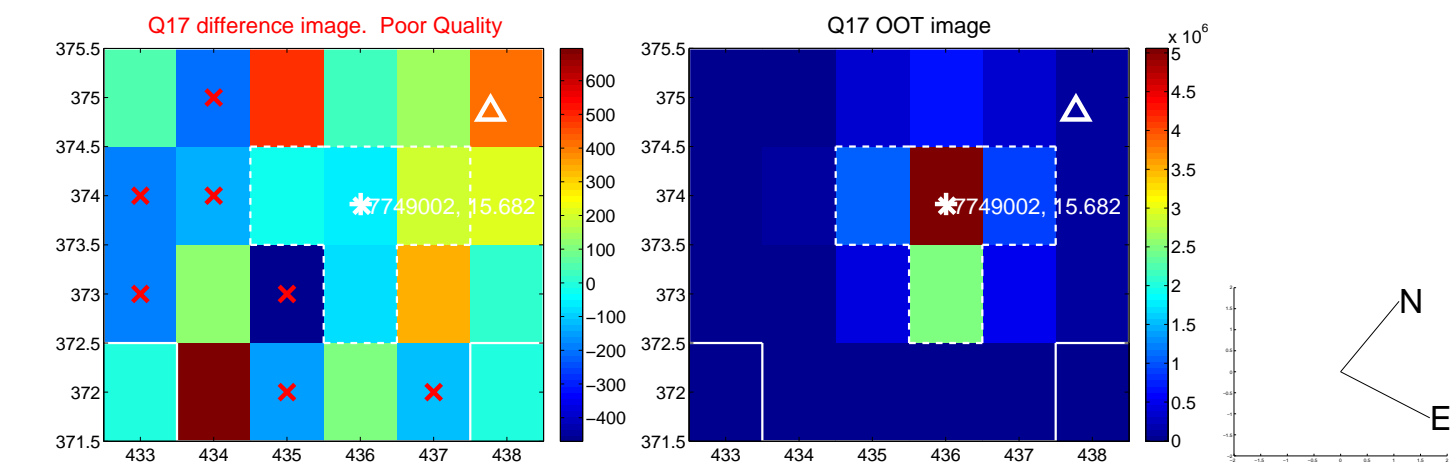
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



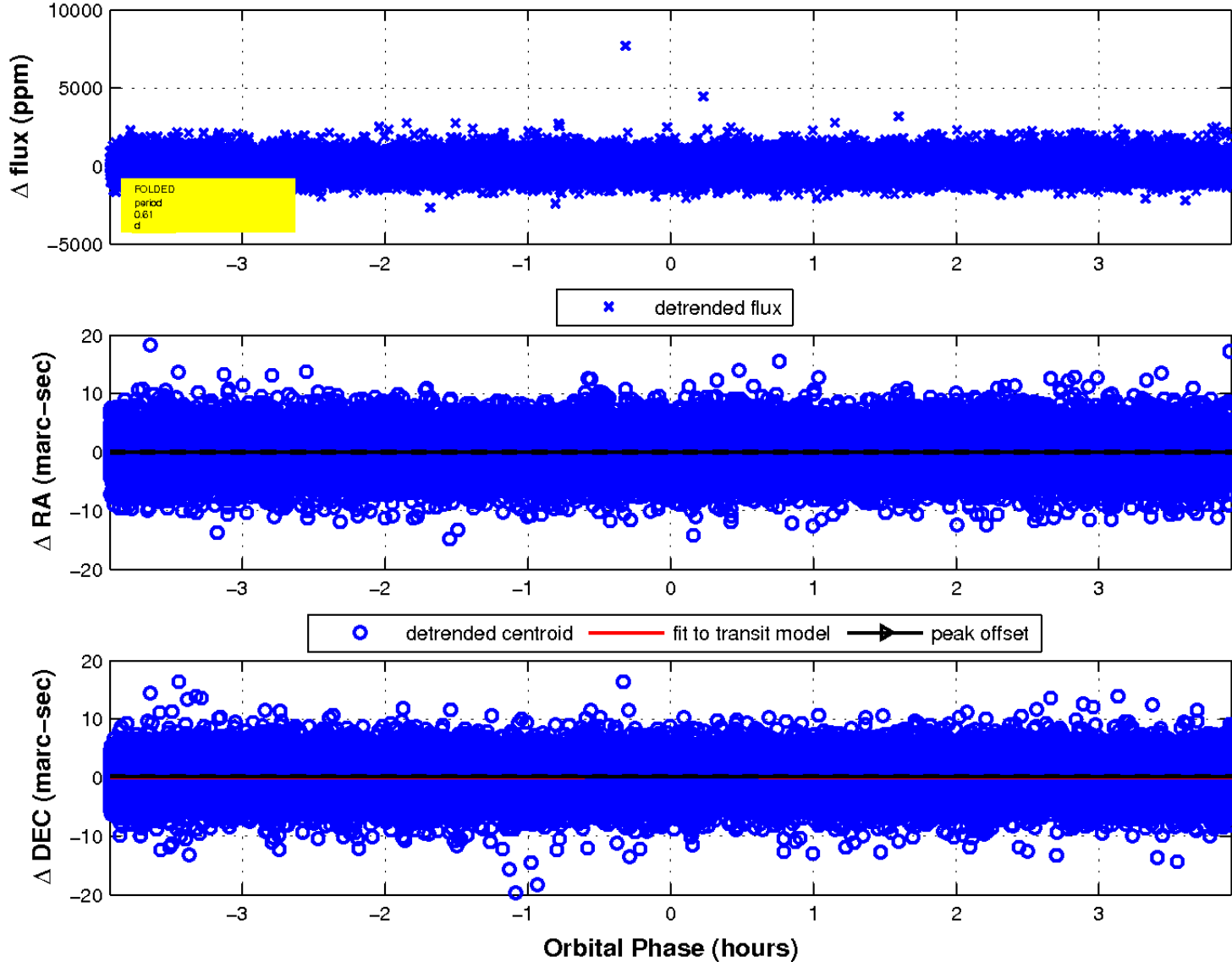
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

