

KIC 011309335

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 011309335-01 | OBS | No | 2.404656 | 132.780302 | 31.6 | 28.856 | 10.1 | 16.9 | 2.68 | 7377 | 2.00 | 9729.49 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|-------------------------------|
| 011309335-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—CENT_SATURATED |

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

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

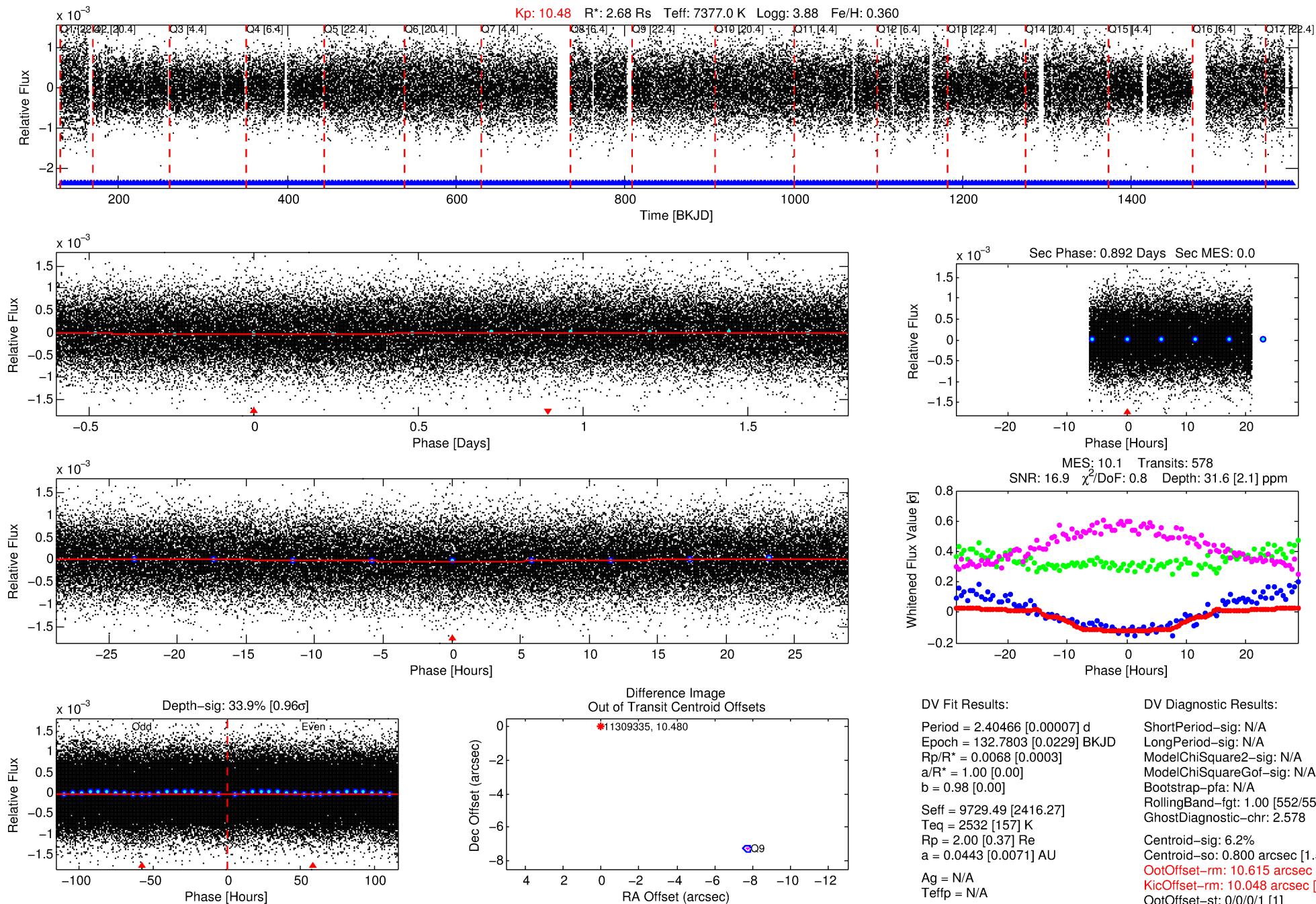
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011309335-01

No Significant Match Found

DV One-Page Summary

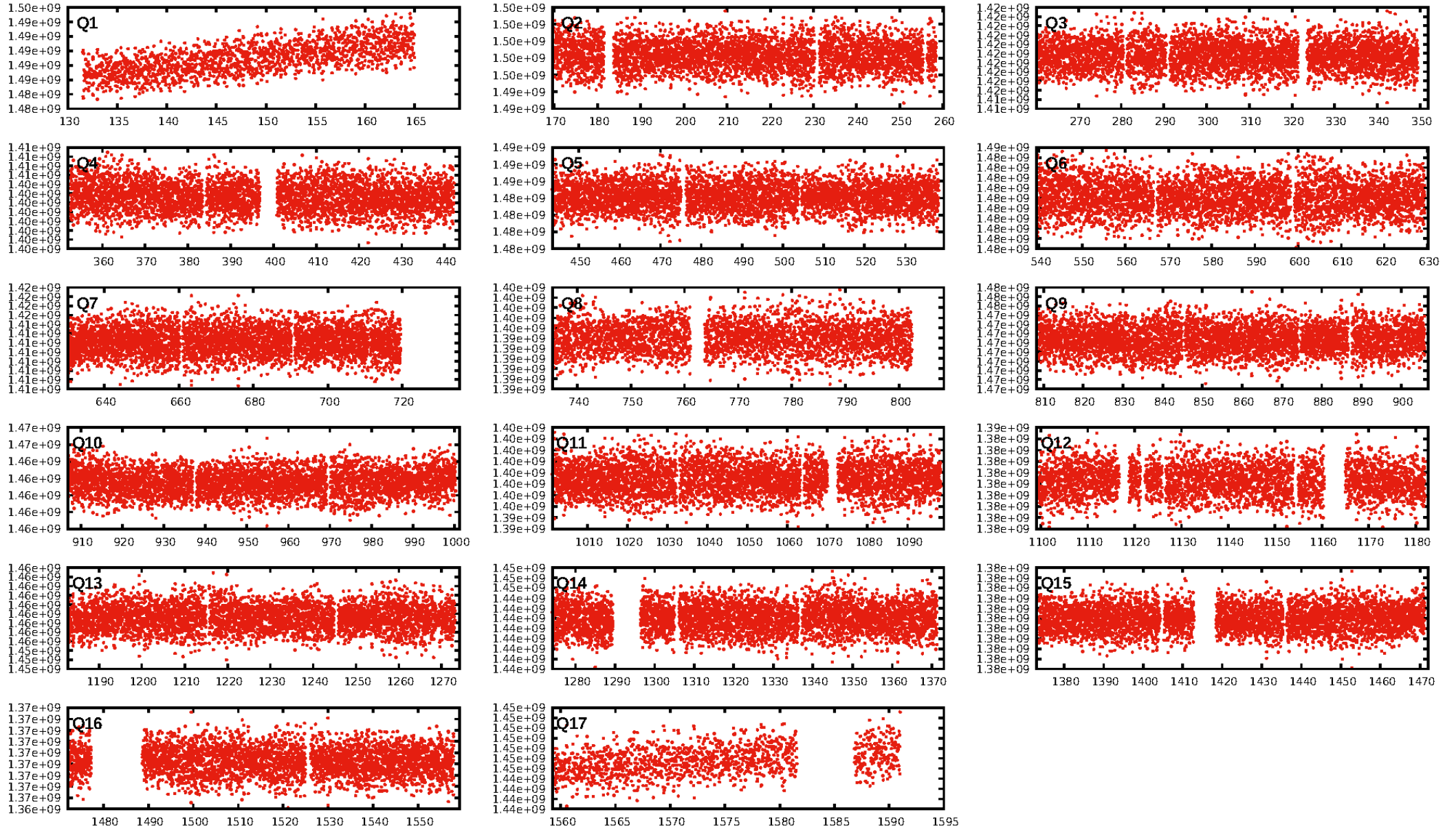
KIC: 11309335 Candidate: 1 of 1 Period: 2.405 d



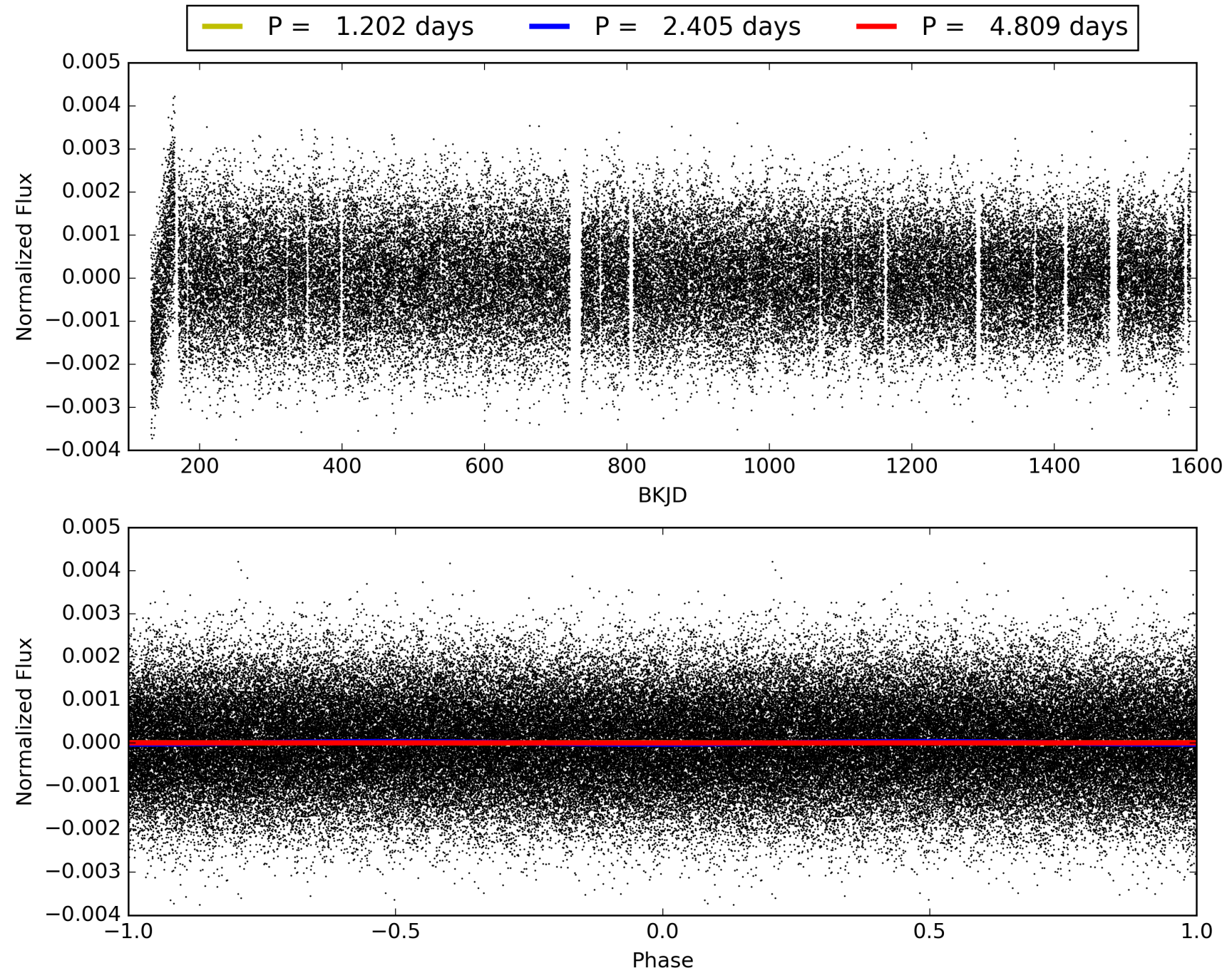
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:35:55 Z

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

TCE 011309335-01, PDC Light Curves

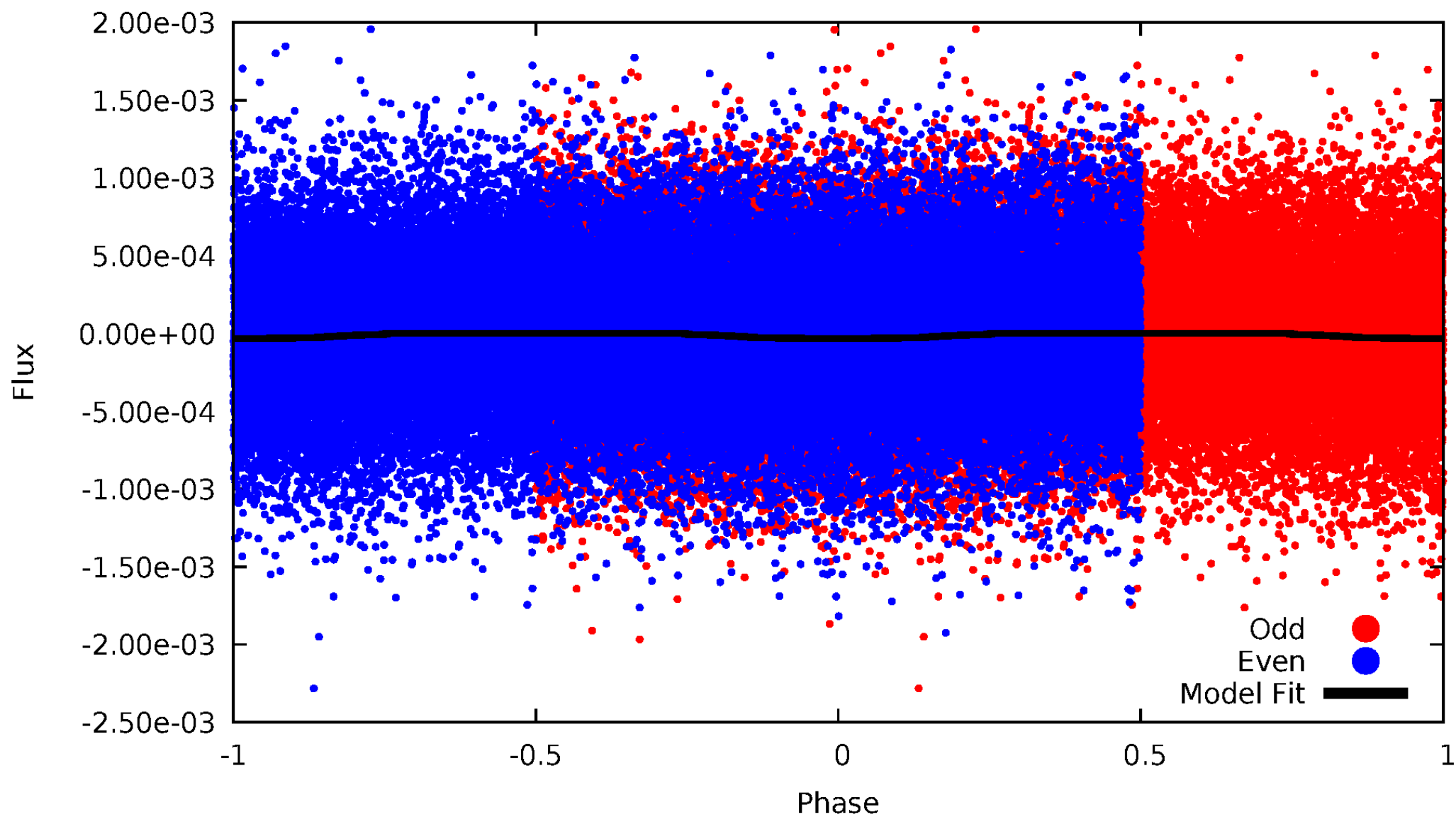


TCE 011309335-01



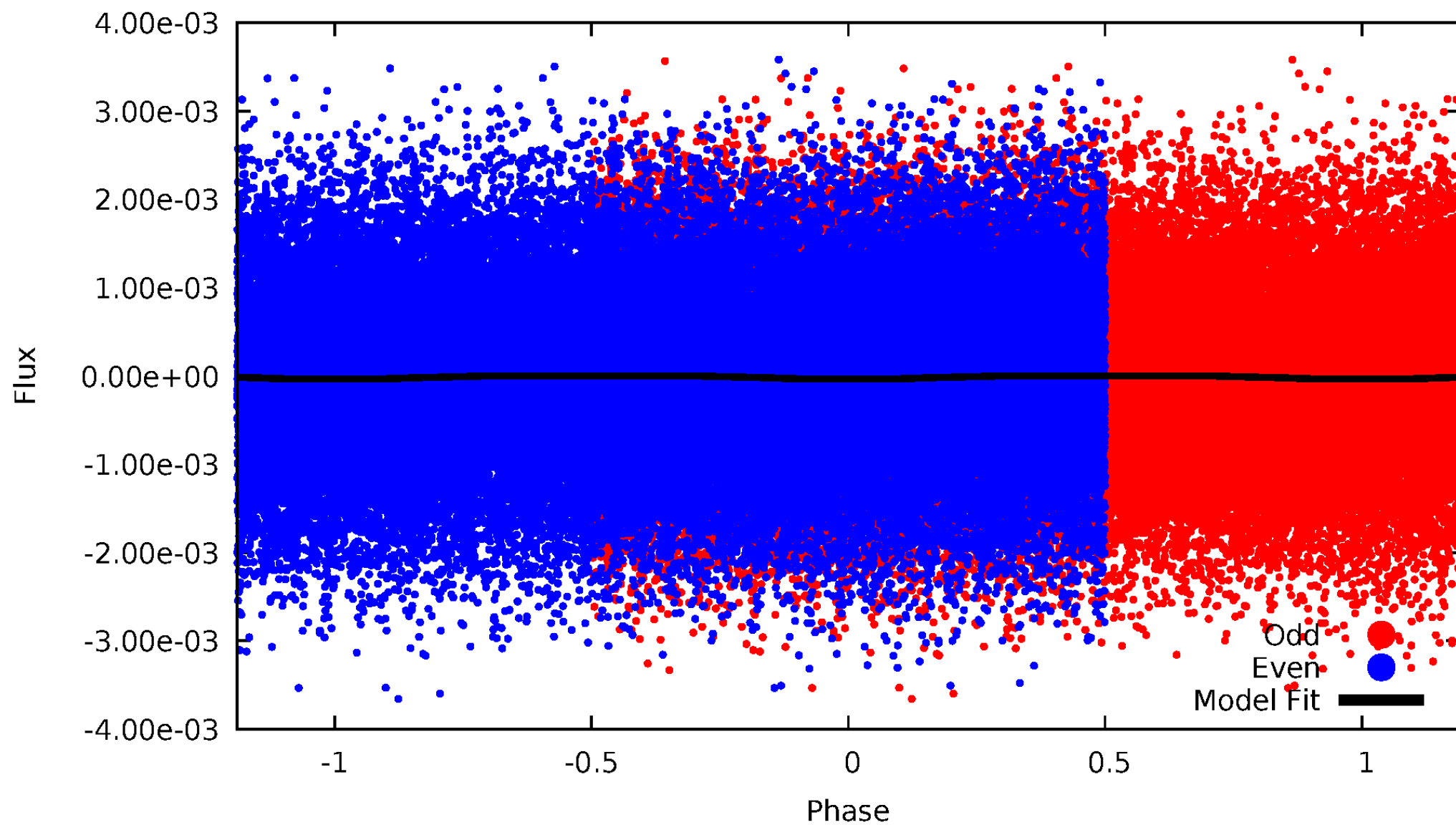
DV Odd/Even

TCE 011309335-01

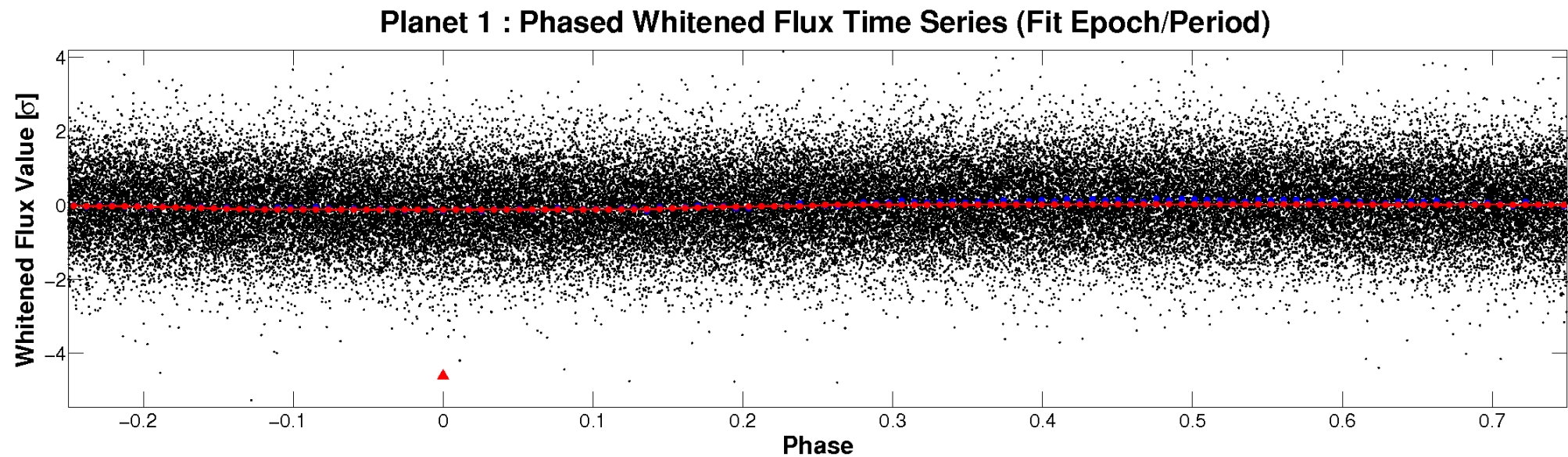
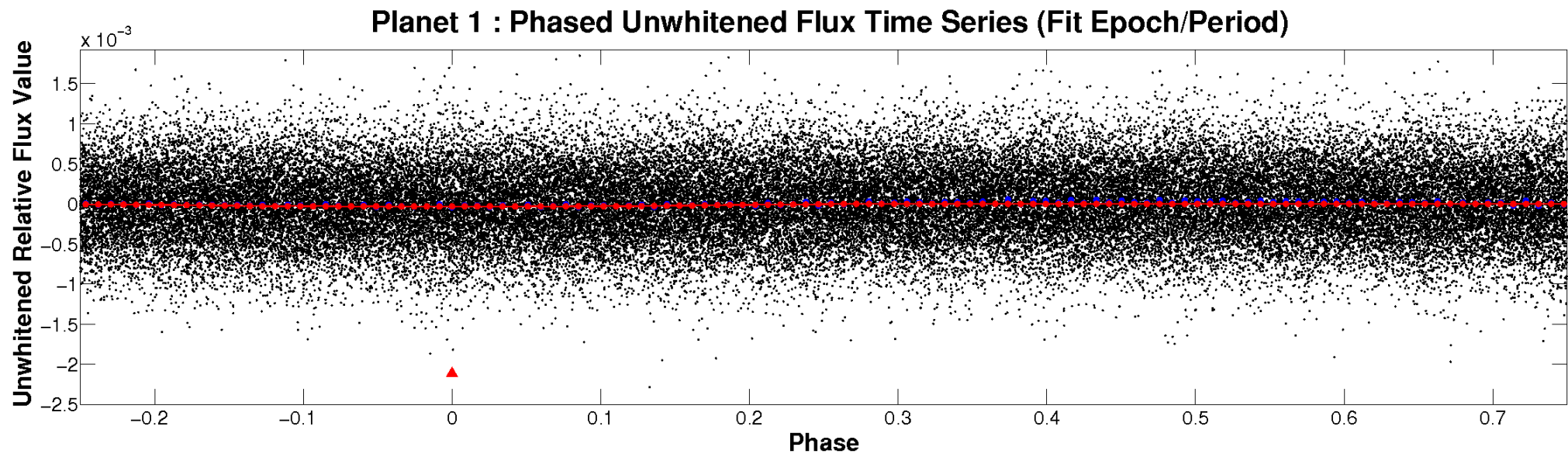


ALT Odd/Even

TCE 011309335-01

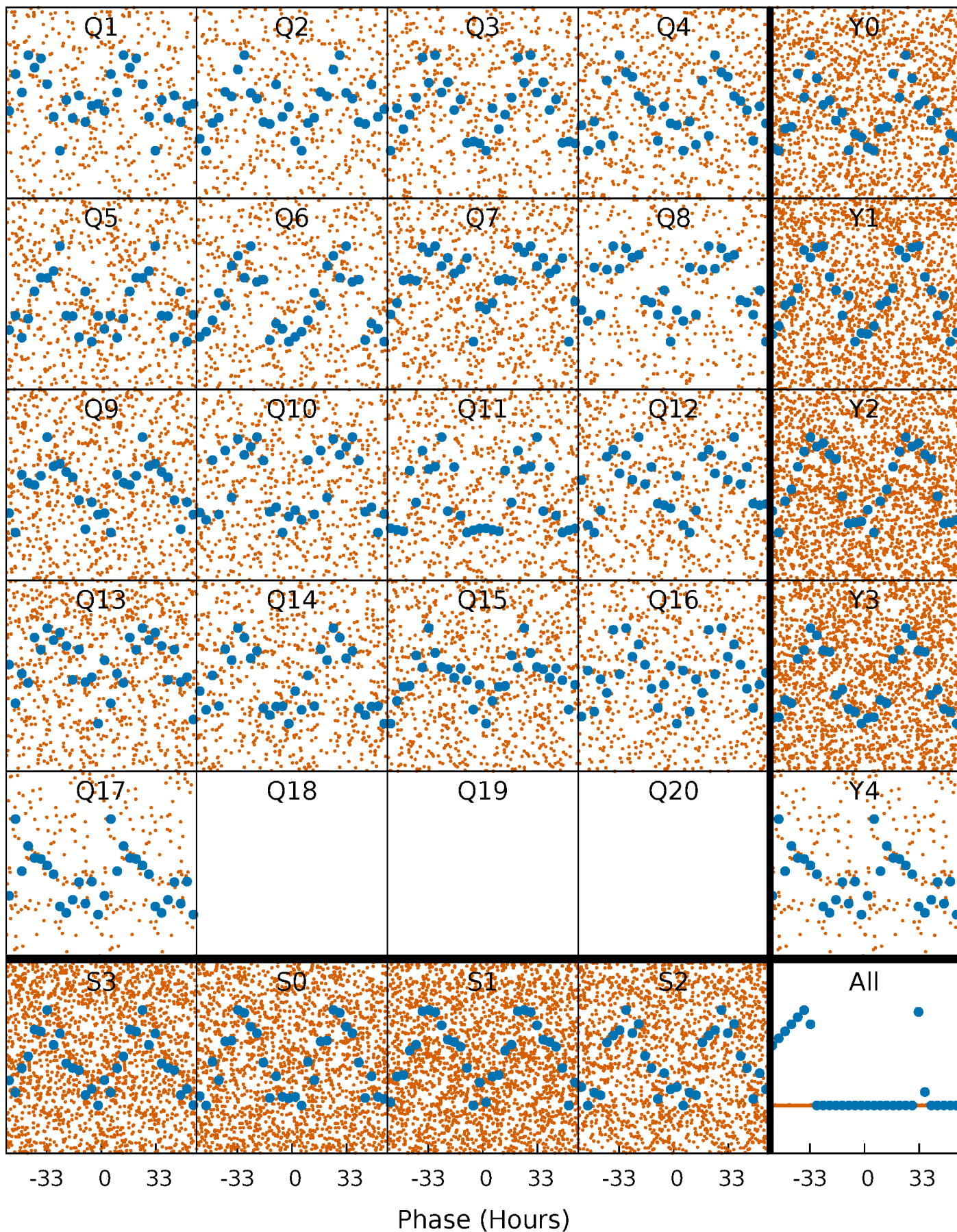


Non-Whitened Vs. Whitened Light Curve



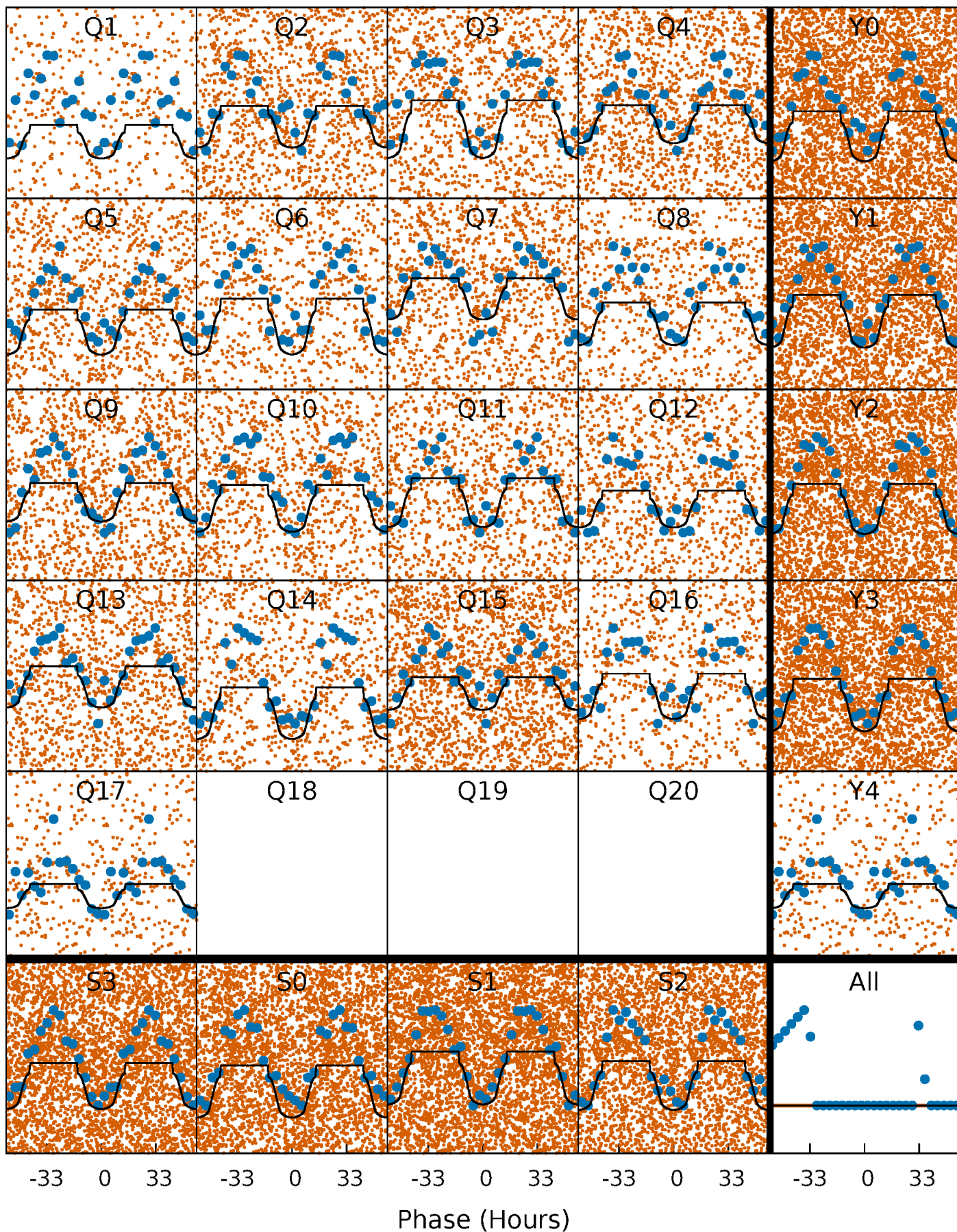
PDC Quarter-Phased Transit Curves

TCE 011309335-01 P= 2.404656 Days $T_0=132.780302$ (BKJD)



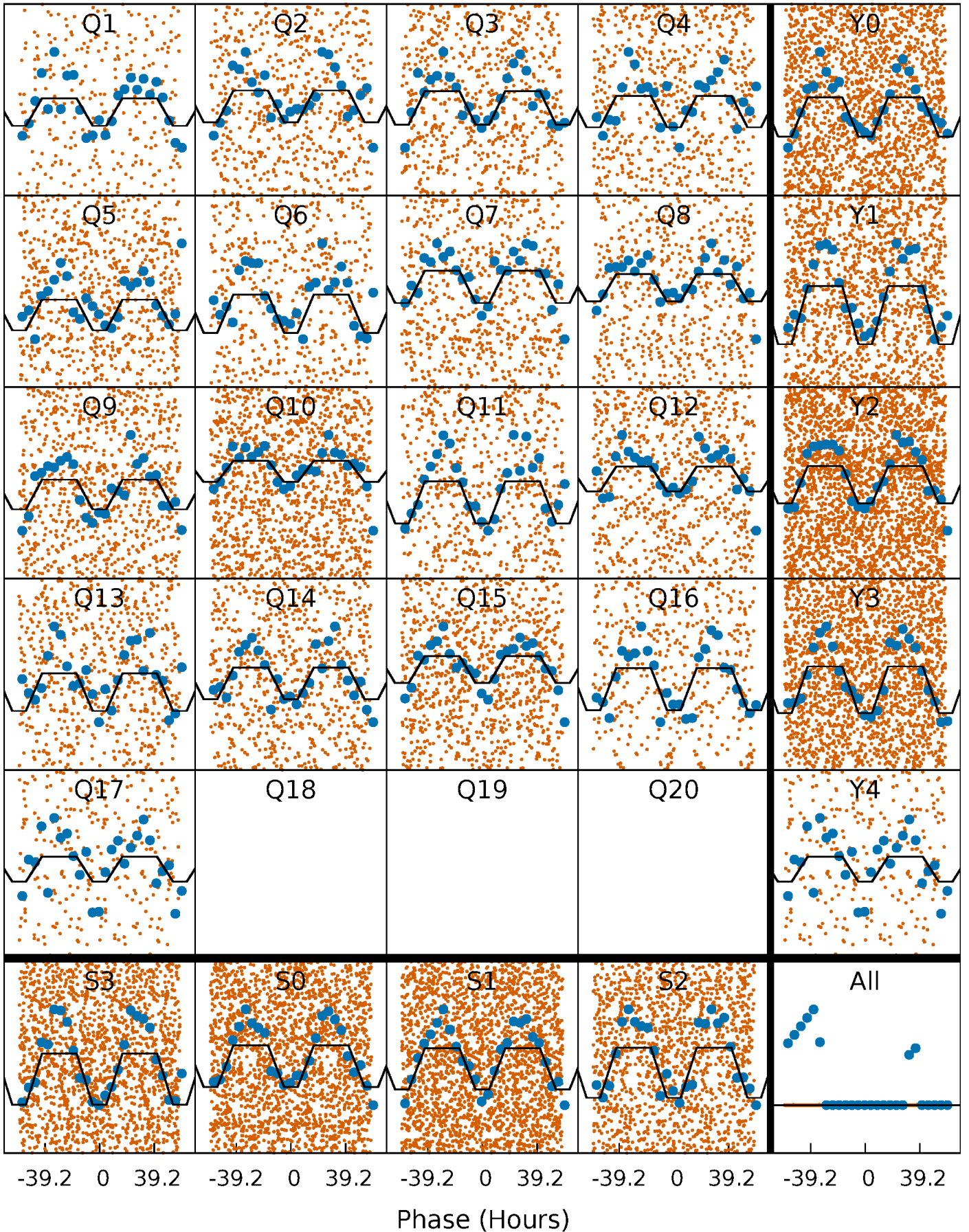
DV Quarter-Phased Transit Curves

TCE 011309335-01 P= 2.404656 Days $T_0=132.780302$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

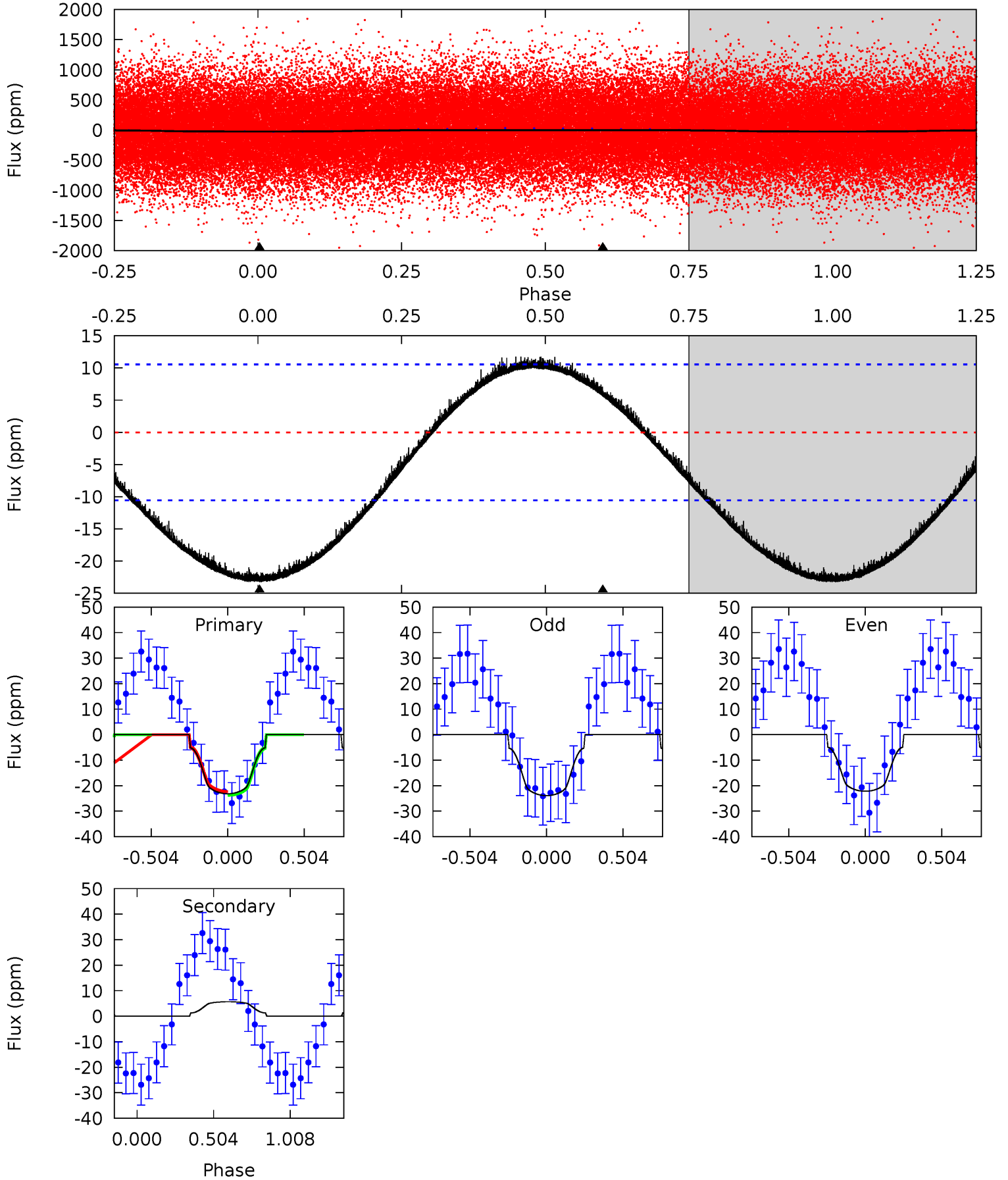
TCE 011309335-01 P= 2.404574 Days $T_0=132.806225$ (BKJD)



DV Model-Shift Uniqueness Test

011309335-01, P = 2.404656 Days, E = 130.375646 Days

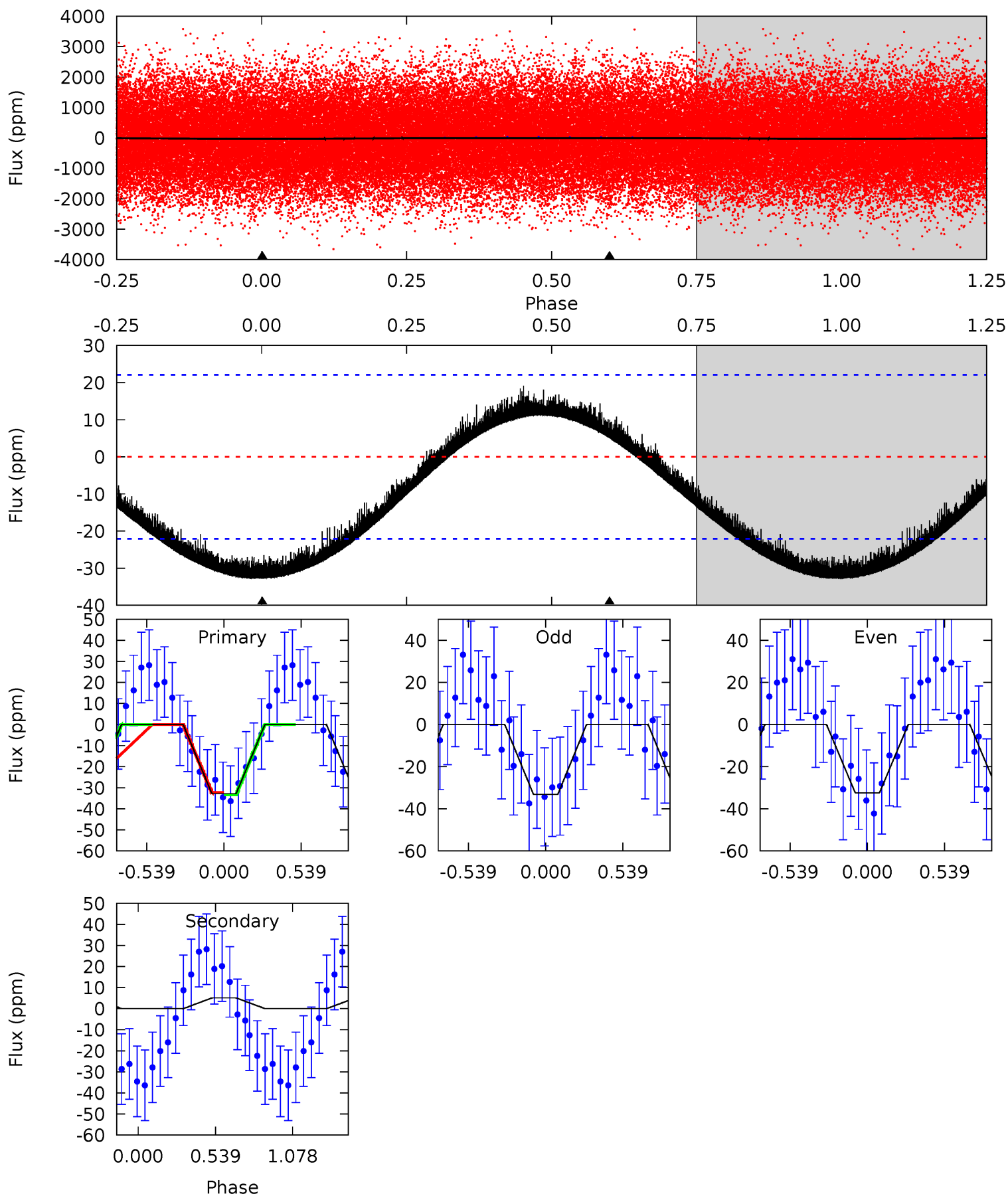
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 9.25 | -2.27 | 0 | 0 | 4.21 | 0.67 | 1.20 | 9.25 | 9.25 | -2.27 | -2.27 | 0.34 | 1.31 | 0.34 | 0.28 |



Alt Model-Shift Uniqueness Test

011309335-01, P = 2.404574 Days, E = 130.401651 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.24 | -0.97 | 0 | 0 | 4.20 | 0.61 | 0.75 | 6.24 | 6.24 | -0.97 | -0.97 | 0.08 | 1.02 | 0.37 | 0.10 |



Stellar Parameters For KIC 011309335

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|---------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 7377^{+73}_{-88} | $3.883^{+0.138}_{-0.092}$ | $0.360^{+0.050}_{-0.150}$ | $2.683^{+0.364}_{-0.485}$ | $2.005^{+0.150}_{-0.165}$ | $0.146^{+0.107}_{-0.042}$ |
| | +1%/-1% | +4%/-2% | +14%/-42% | +14%/-18% | +7%/-8% | +73%/-28% |
| Source | SPE68 | SPE68 | SPE68 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 011309335-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-------------|------------------------|----------------------|------------------------|----------------------------|
| DV | 6 ± 3 | $1.99^{+0.19}_{-0.20}$ | 3533^{+141}_{-160} | -4669^{+397}_{-328} | $-1.597^{+0.723}_{-0.799}$ |
| Alt. | 5 ± 5 | $1.69^{+0.16}_{-0.18}$ | 3531^{+138}_{-164} | -4841^{+1464}_{-739} | $-2.013^{+1.999}_{-2.173}$ |

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

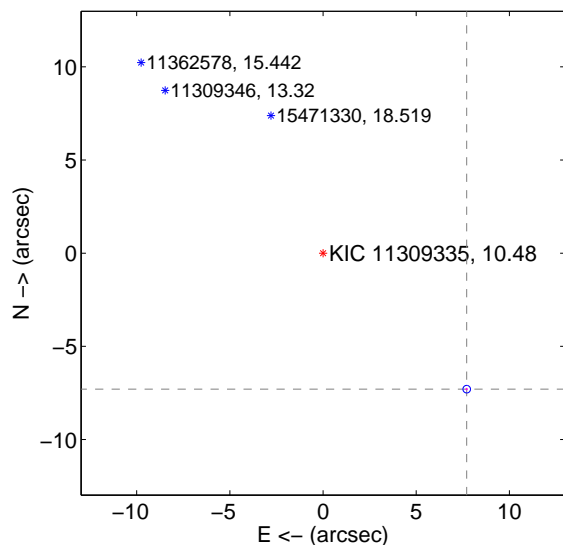
Supplemental centroid analysis for 011309335-01. **Kepler magnitude: 10.48.** Transit SNR 16.95

There are 0 quarters with good PRF difference image offsets

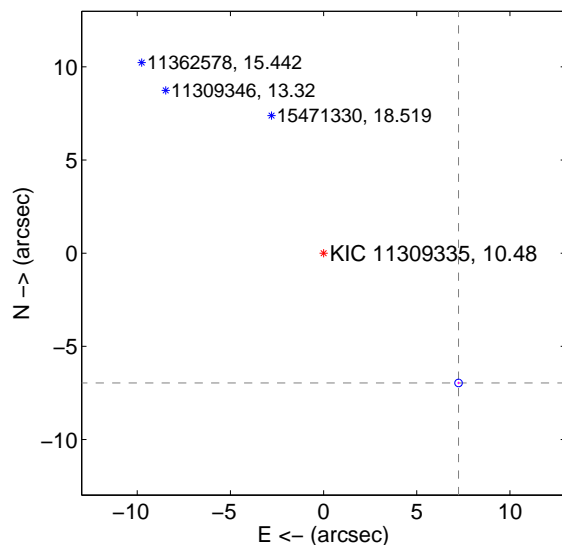
The direct PRF centroid is offset from the target star catalog position by about 0.57 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 10.615 \pm 0.068 | 156.71 | -7.709 \pm 0.068 | -7.298 \pm 0.068 |
| PRF-fit source offset from KIC position | 10.048 \pm 0.068 | 148.35 | -7.241 \pm 0.068 | -6.966 \pm 0.068 |
| photometric centroid source offset | 0.80 \pm 0.50 | 1.59 | 0.34 \pm 0.58 | 0.72 \pm 0.49 |

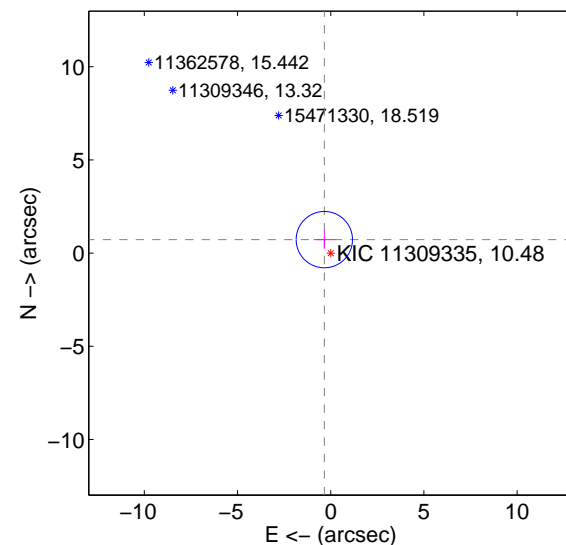
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

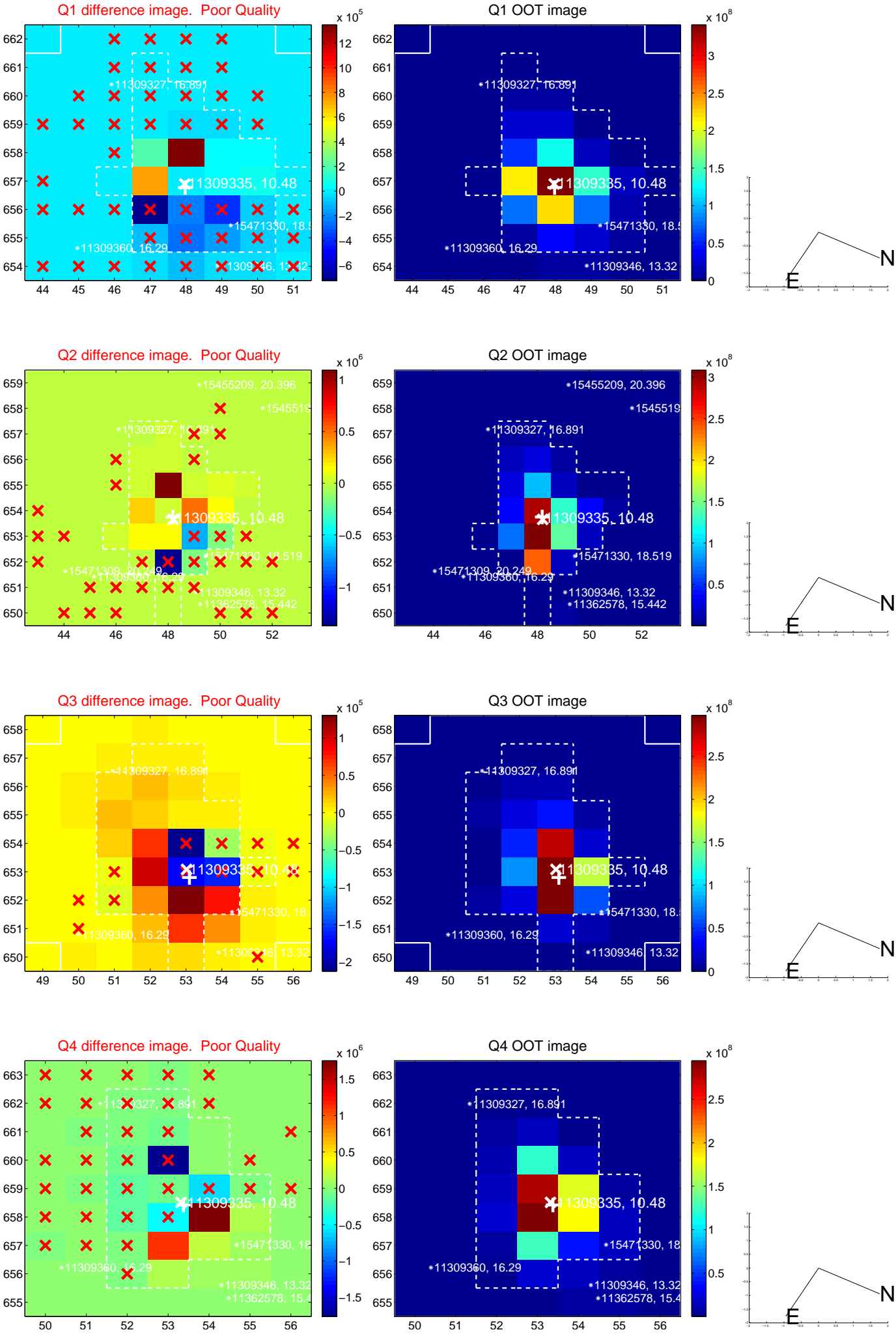


offset from photometric centroids

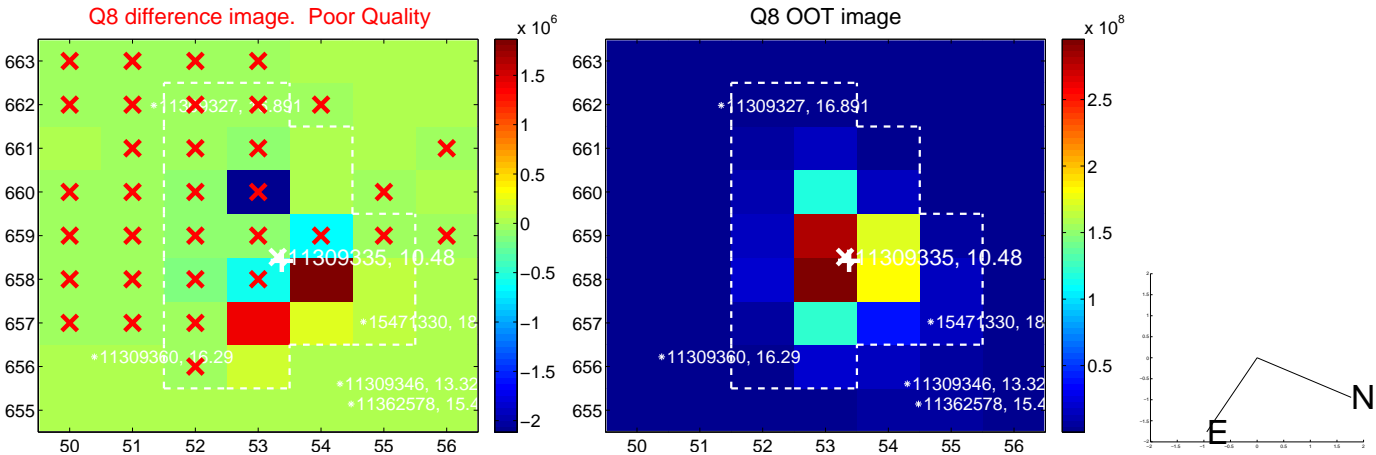
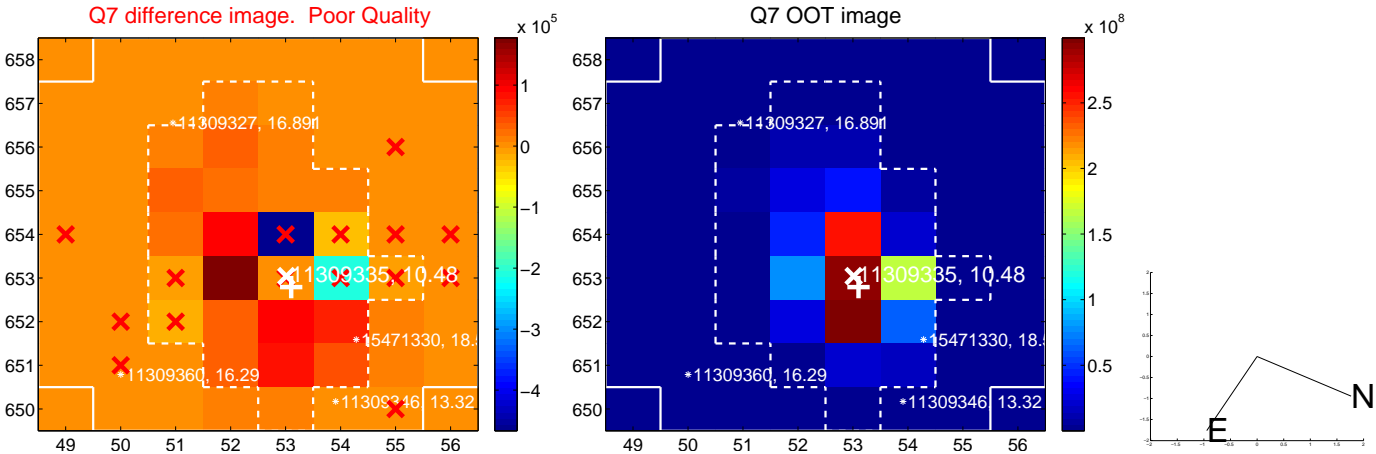
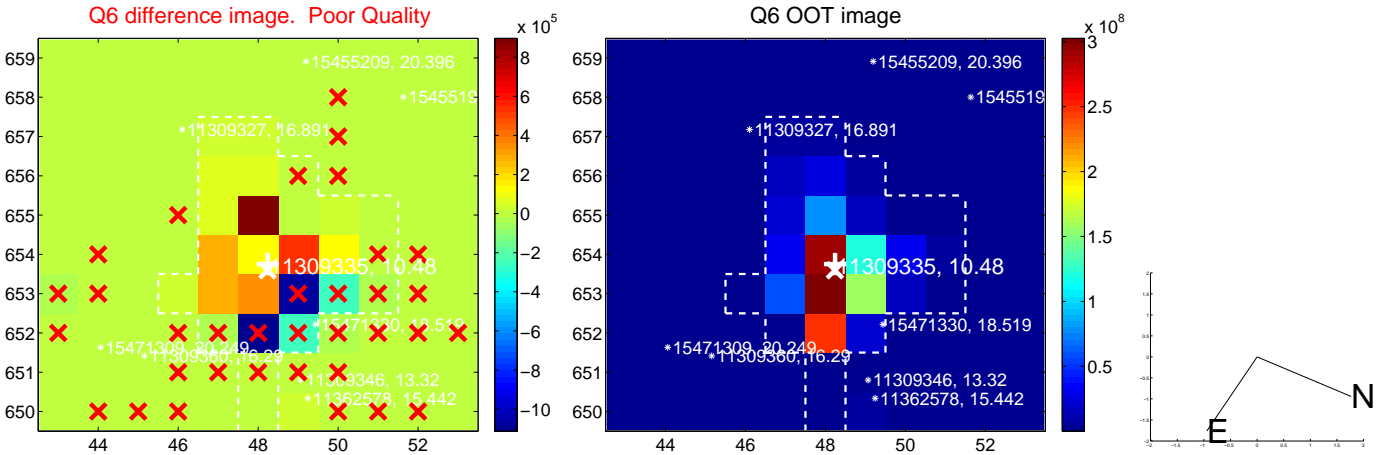
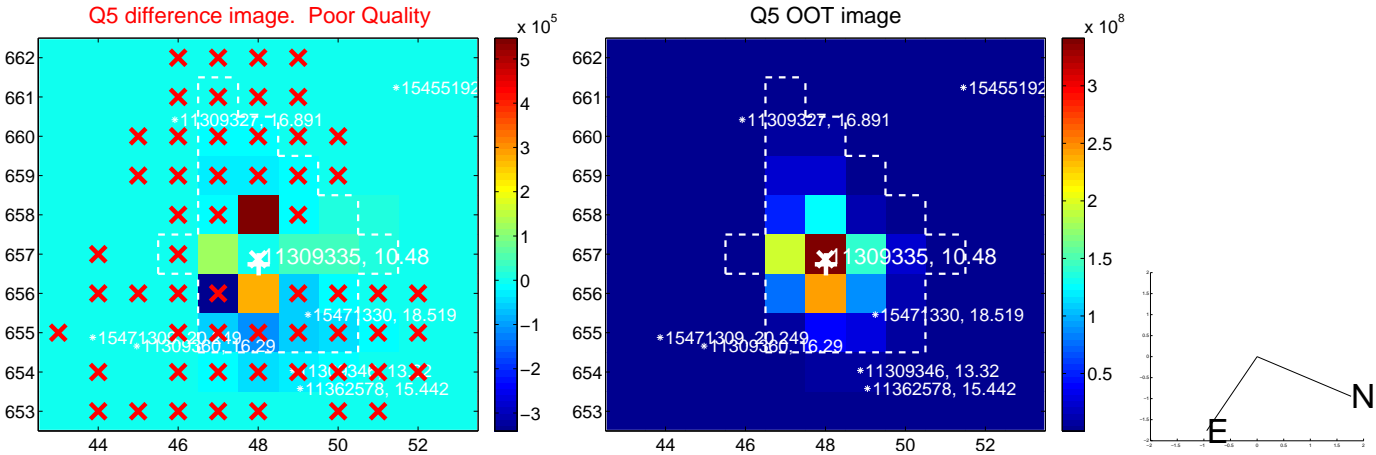


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

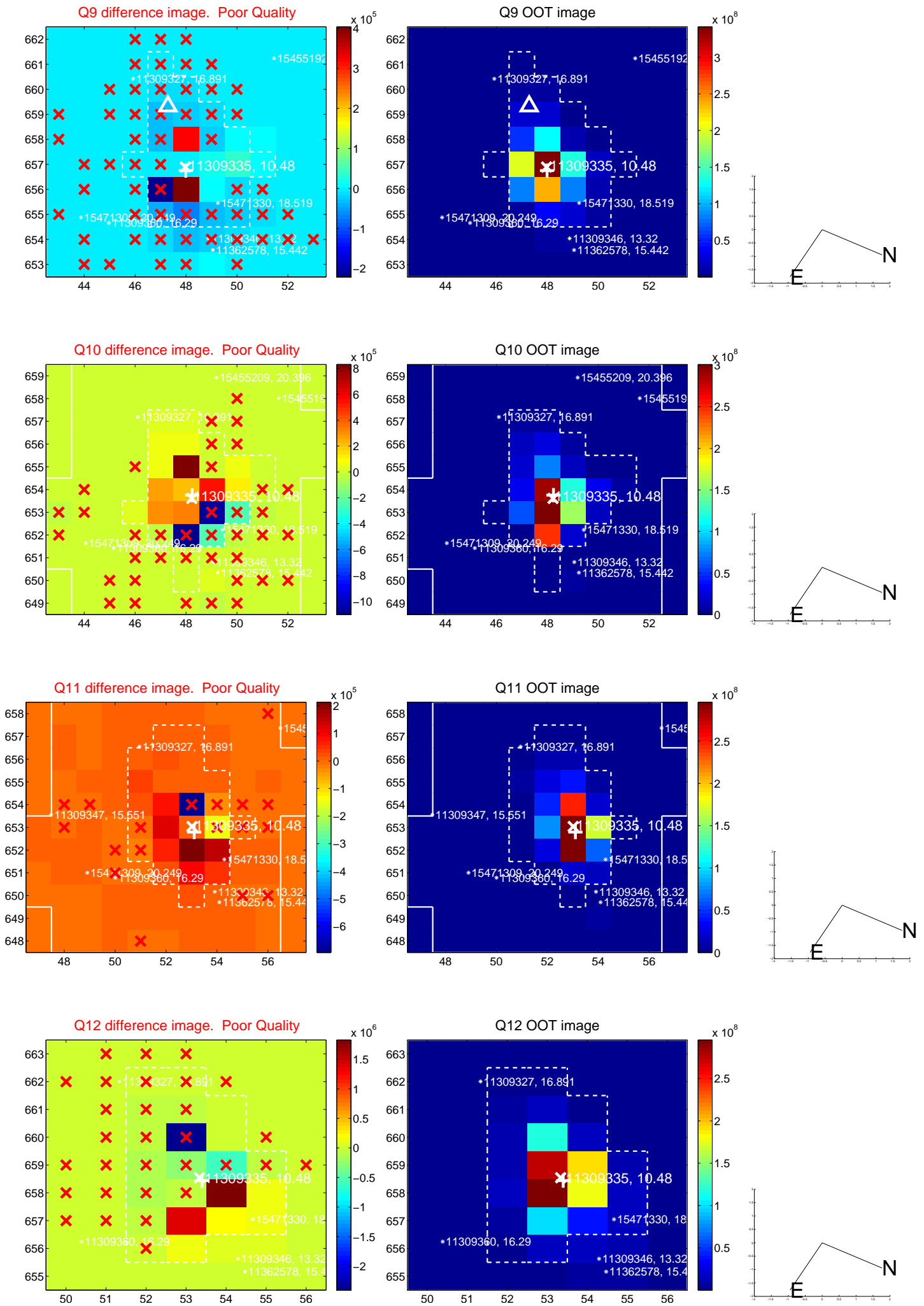
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



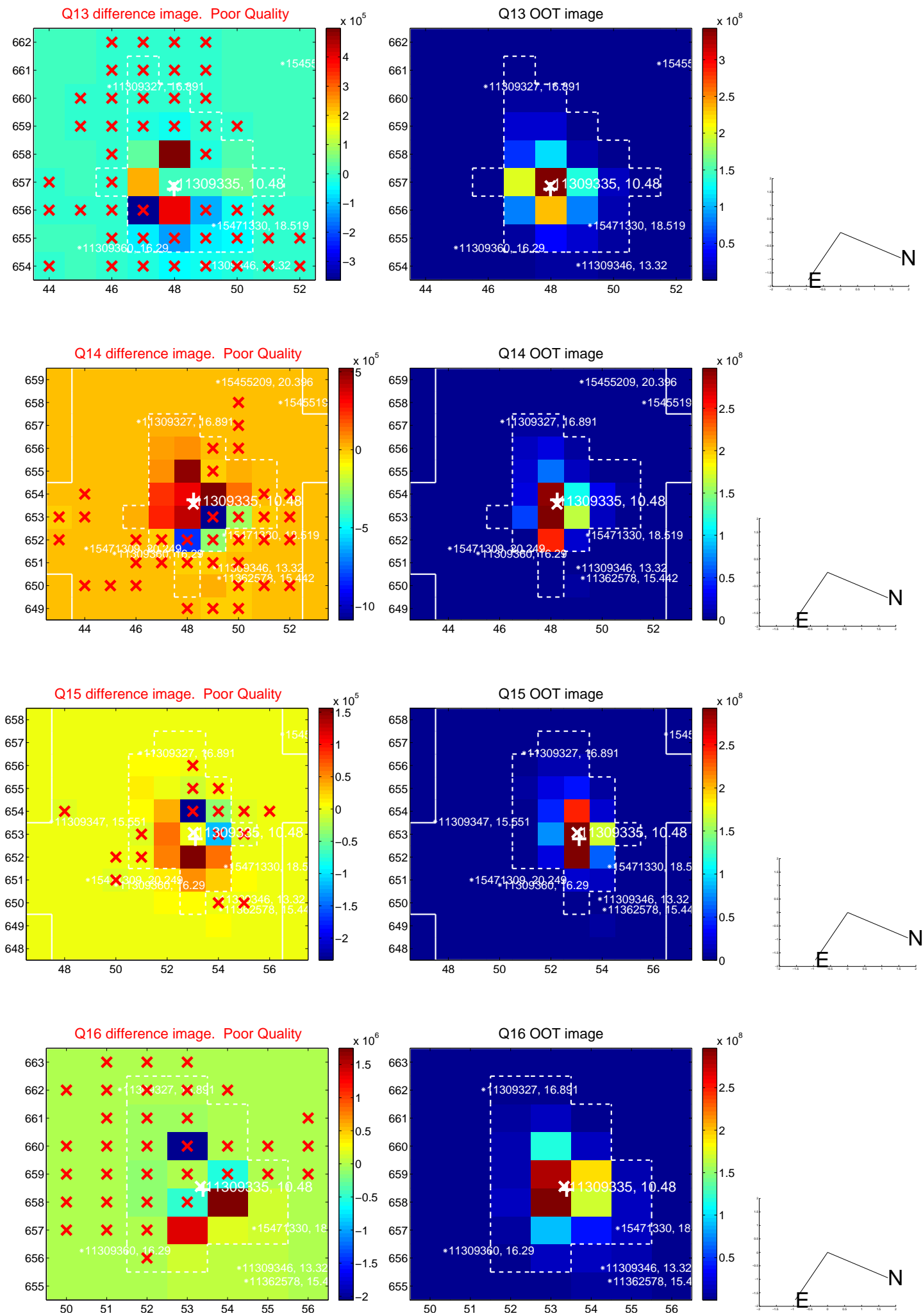
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



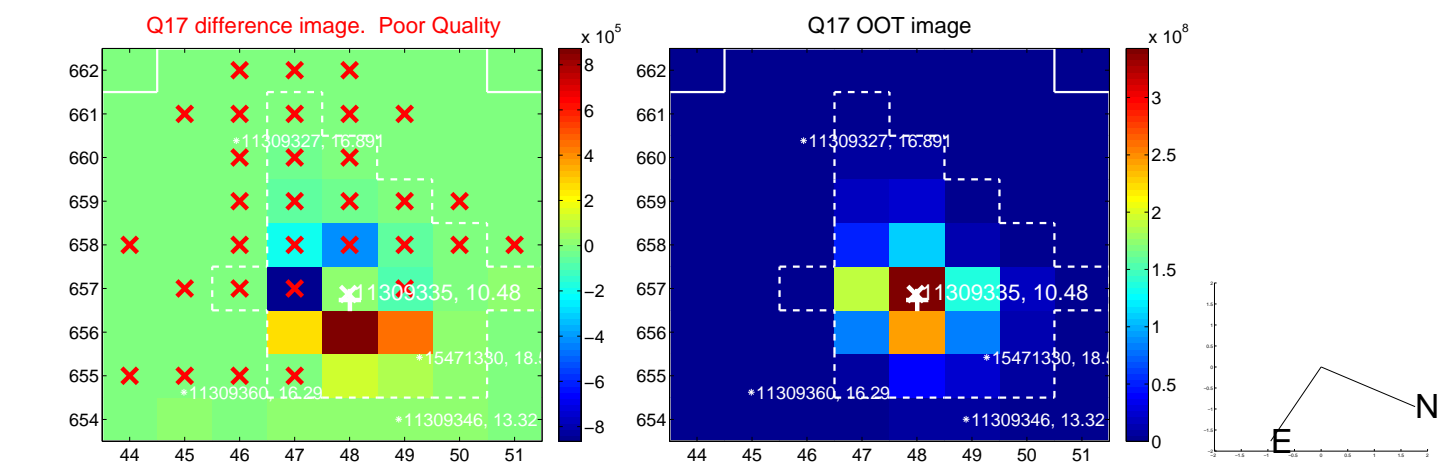
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



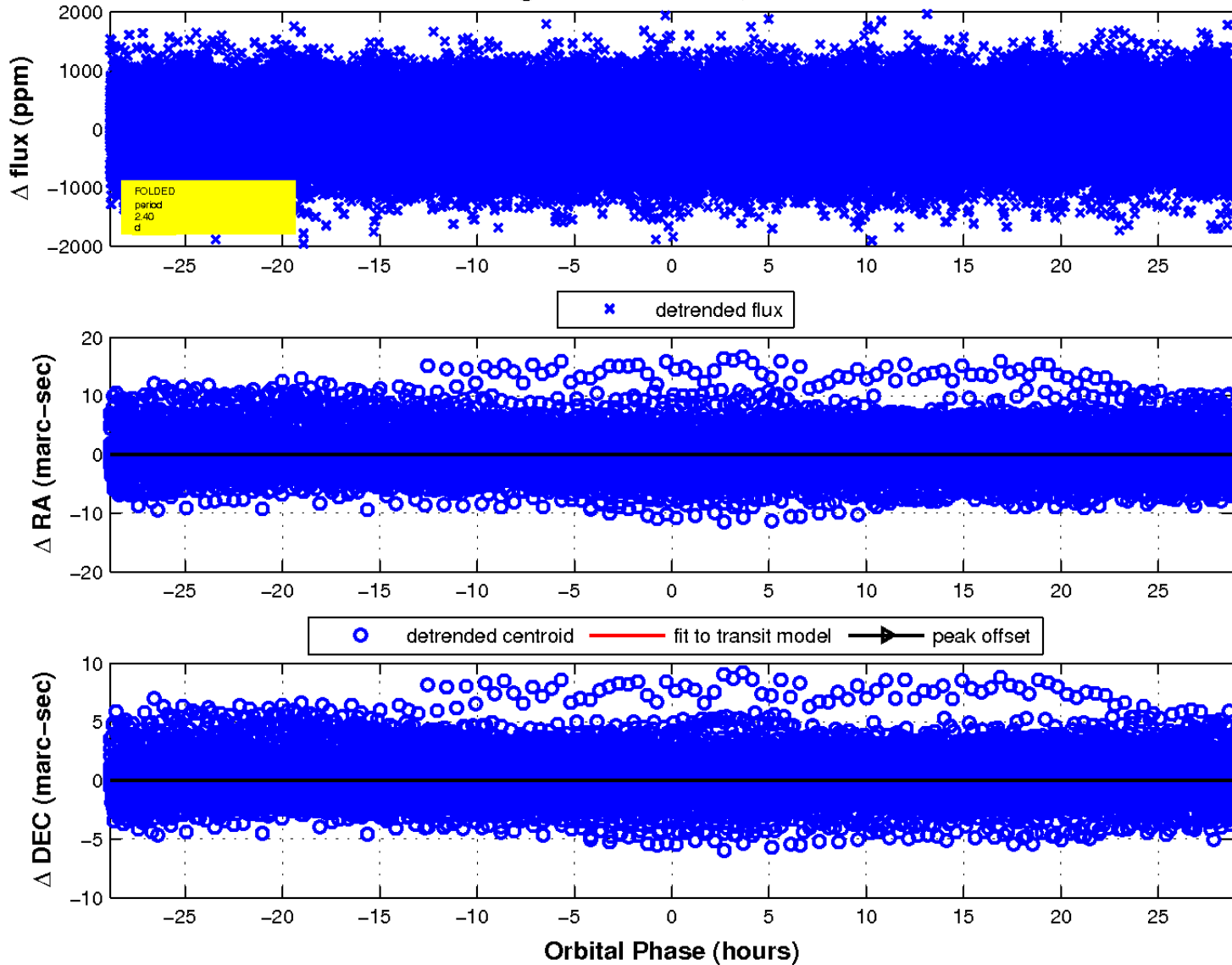
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

