

KIC 009651169

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 009651169-01 | OBS | No | 6.180165 | 136.853849 | 4.3 | 20.917 | 8.1 | 3.3 | 3.21 | 7552 | 0.77 | 4479.28 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--------------------------------------|
| 009651169-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED |

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

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

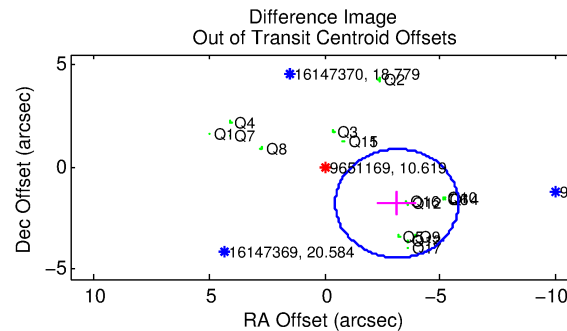
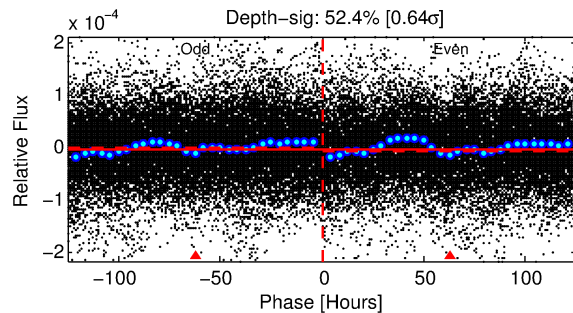
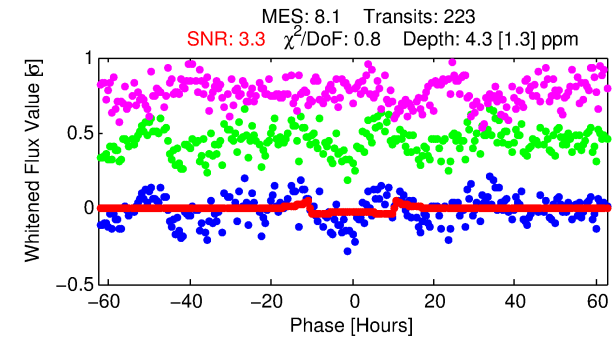
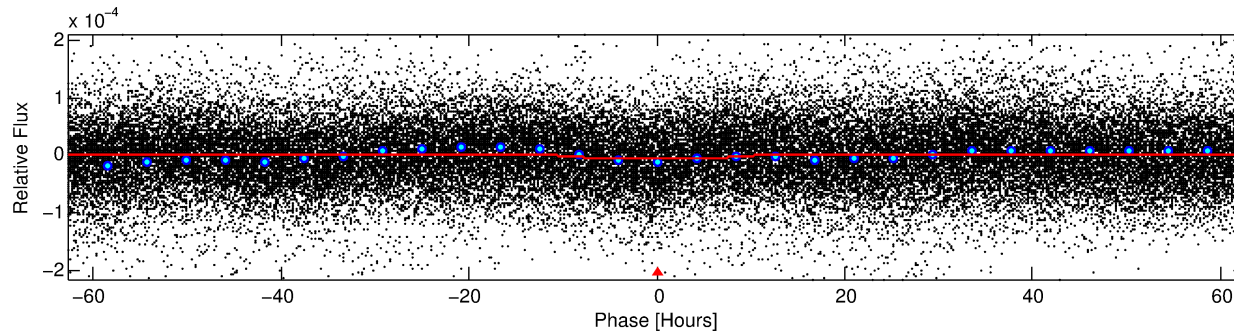
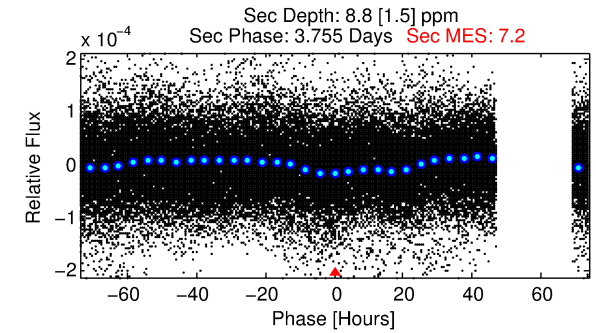
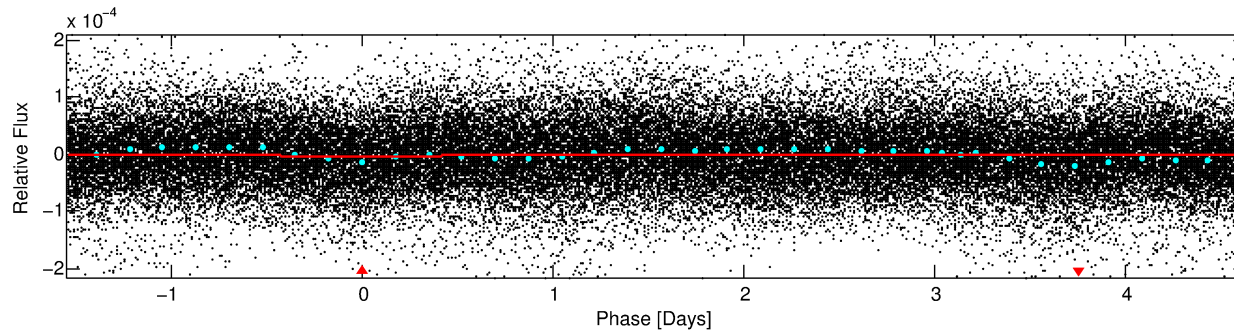
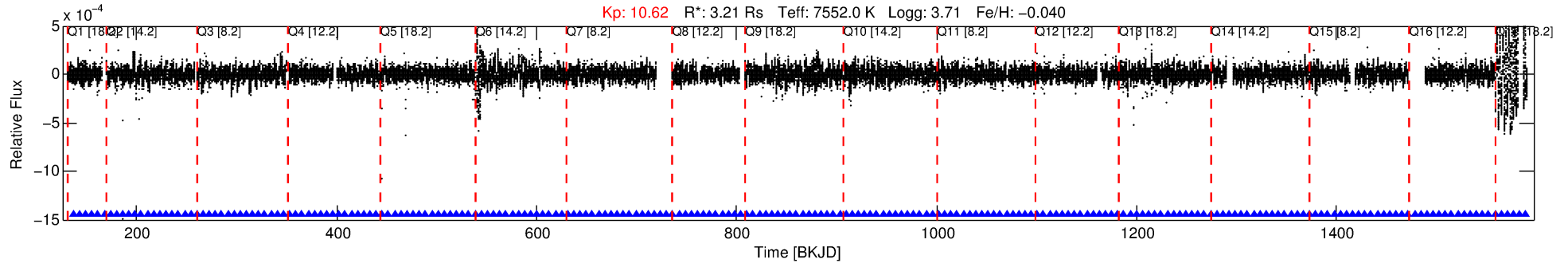
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009651169-01

No Significant Match Found

DV One-Page Summary

KIC: 9651169 Candidate: 1 of 1 Period: 6.180 d



DV Fit Results:

Period = 6.18016 [0.00018] d
Epoch = 136.8538 [0.0202] BKJD
Rp/R* = 0.0022 [0.0004]
a/R* = 1.37 [0.45]
b = 0.90 [0.15]
Seff = 4479.28 [3404.24]
Teq = 2086 [396] K
Rp = 0.77 [0.38] Re
a = 0.0818 [0.0371] AU
Ag = 55.08 [47.02] [1.15σ]
Teffp = 8787 [999] K [6.24σ]

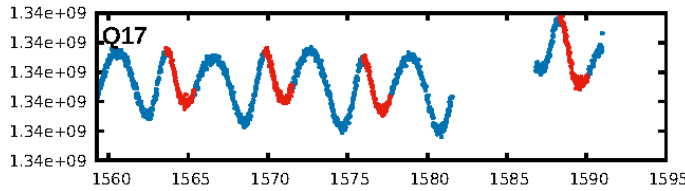
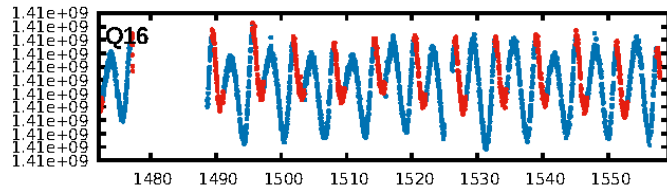
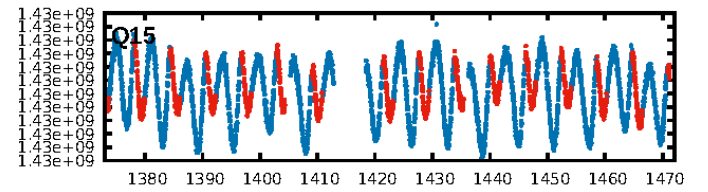
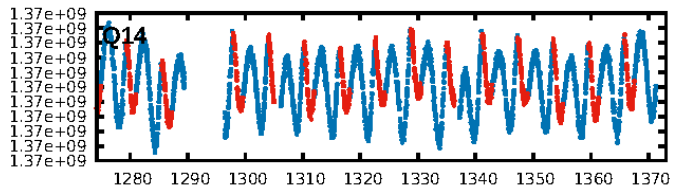
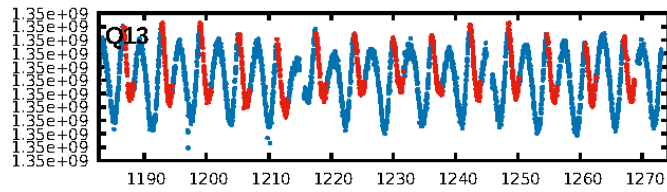
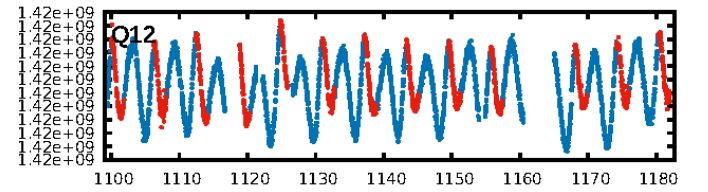
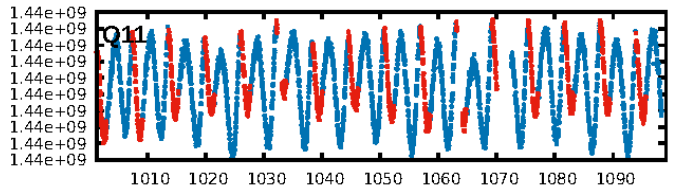
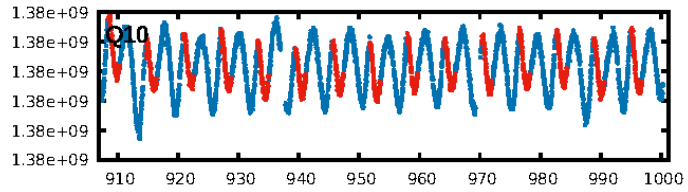
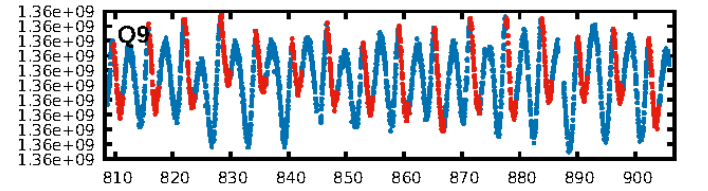
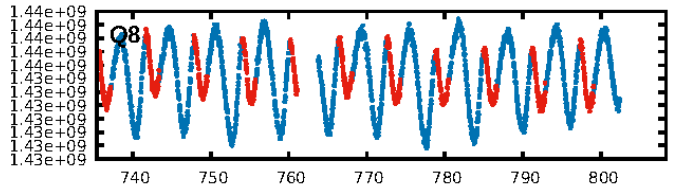
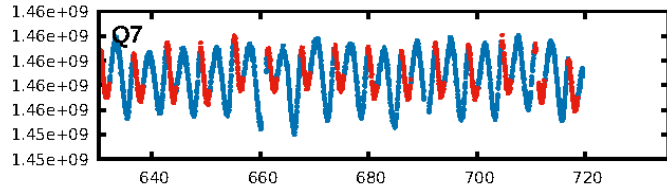
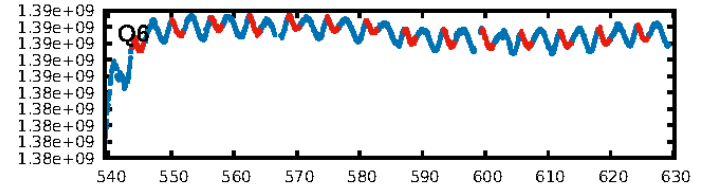
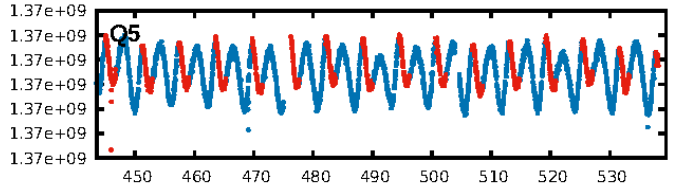
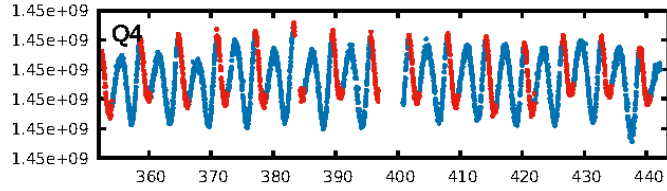
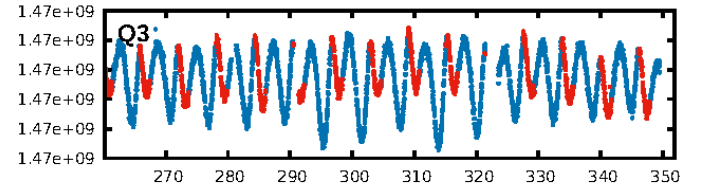
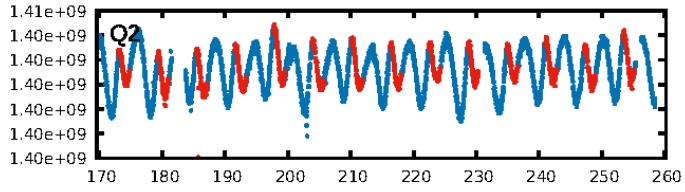
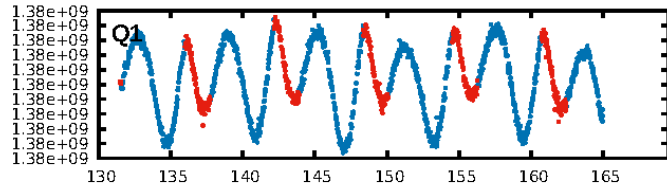
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.64e-16
RollingBand-fgt: 1.00 [214/214]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 3.602 arcsec [4.06σ]
KicOffset-rm: 4.199 arcsec [4.37σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.41 [7/17]
DiffImageOverlap-fno: 1.00 [17/17]

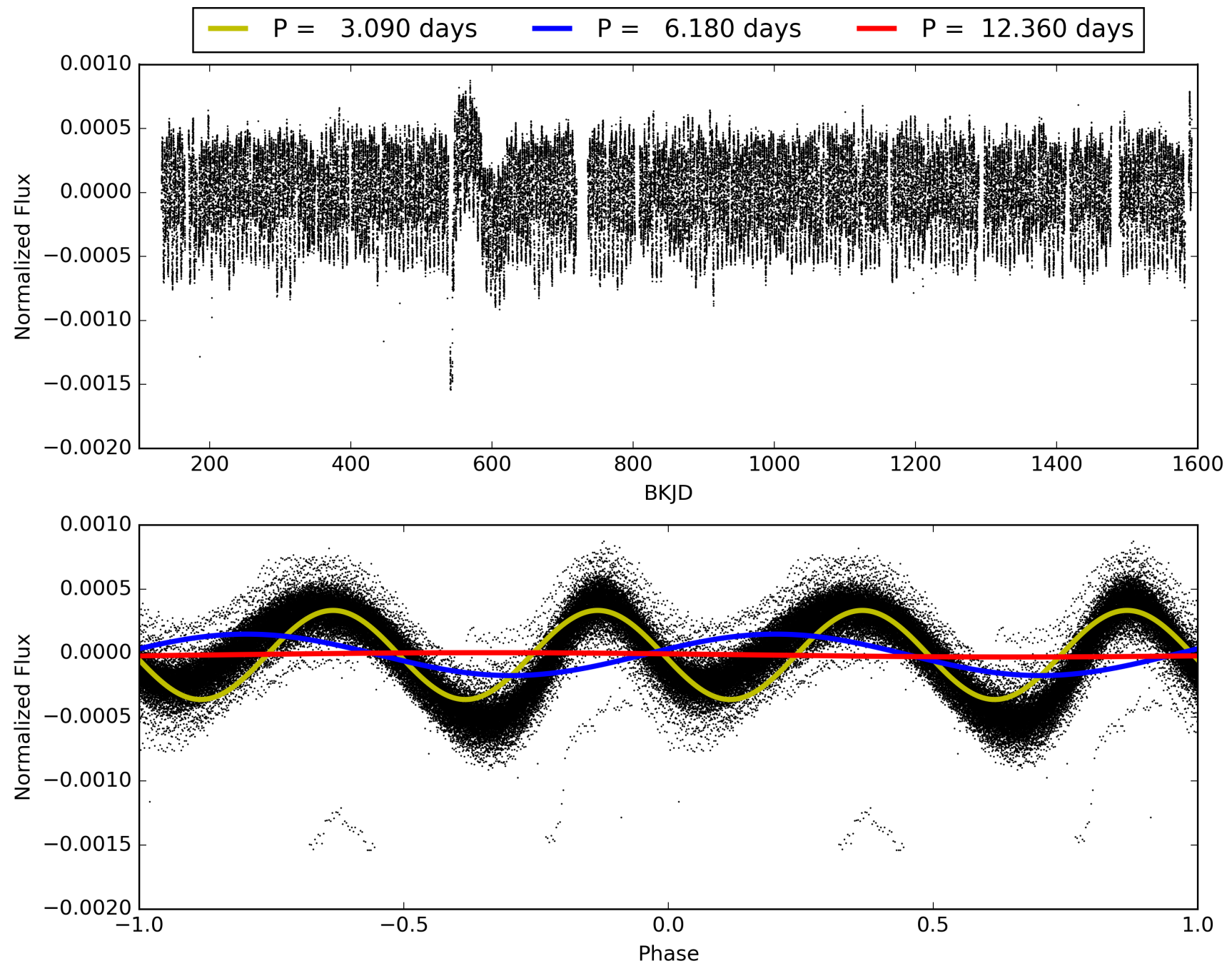
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:08:07 Z

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

TCE 009651169-01, PDC Light Curves

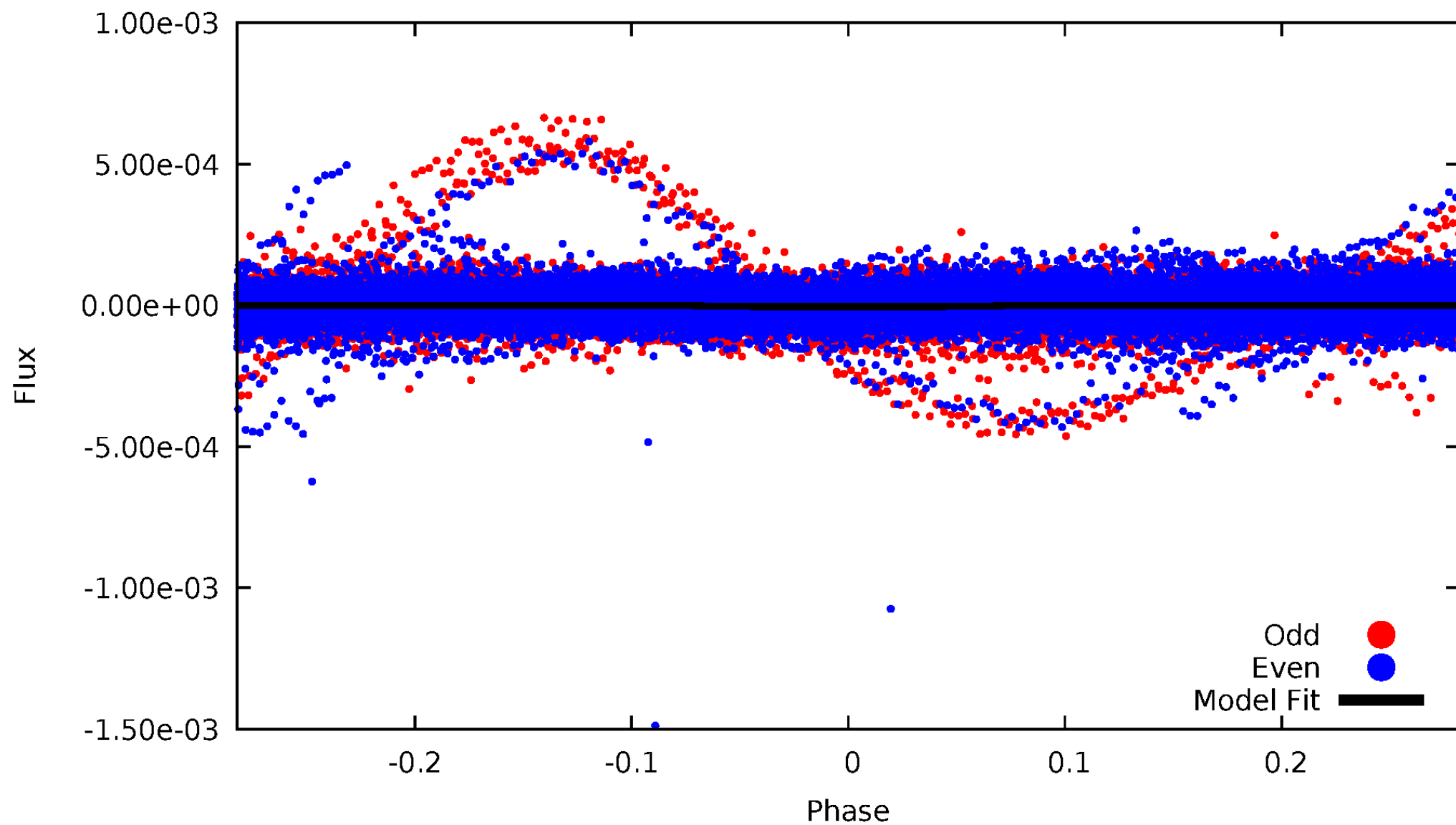


TCE 009651169-01



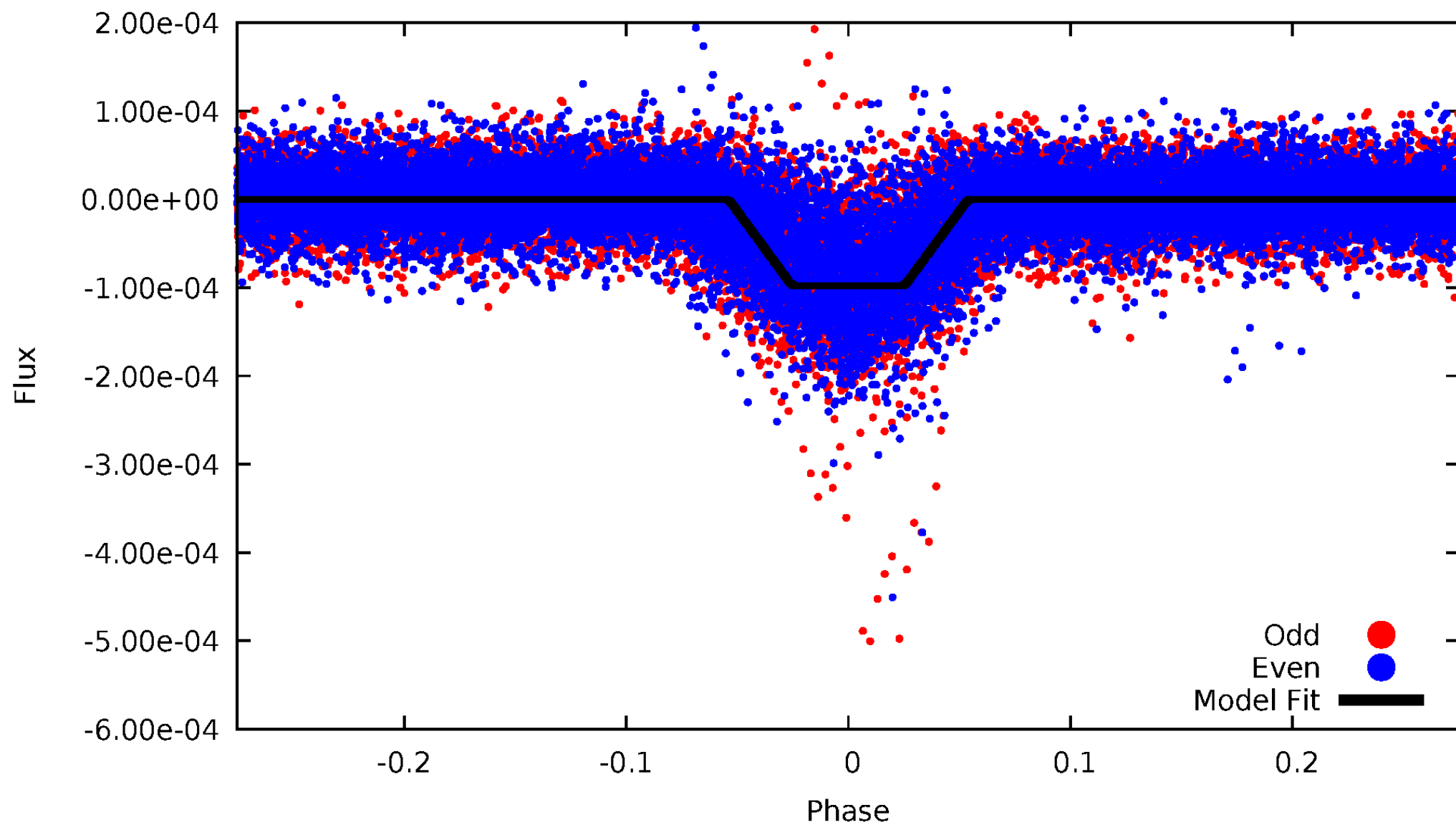
DV Odd/Even

TCE 009651169-01



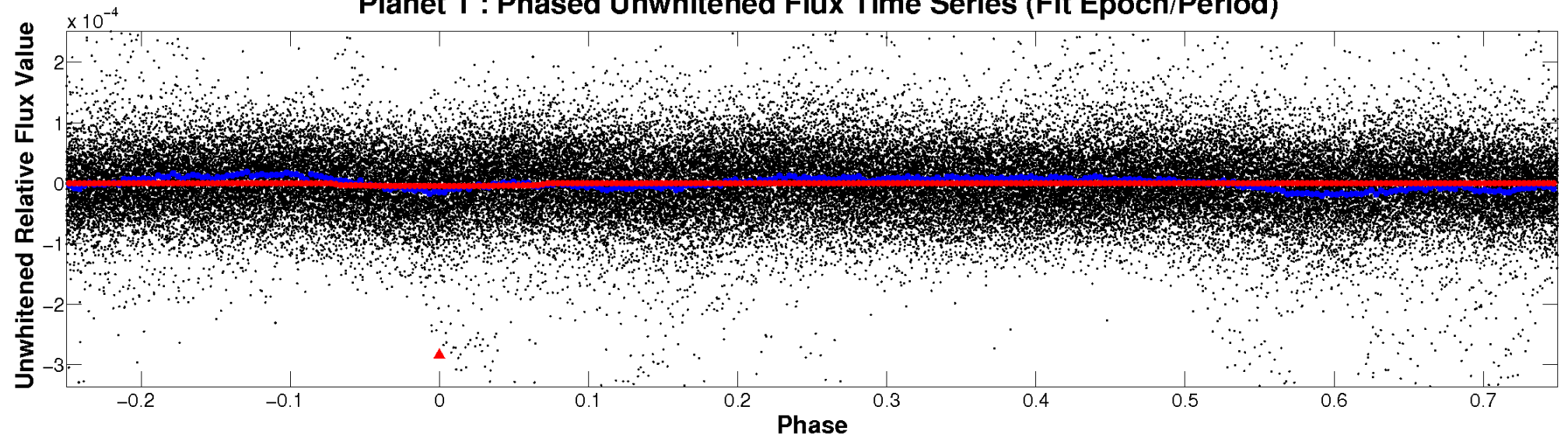
ALT Odd/Even

TCE 009651169-01

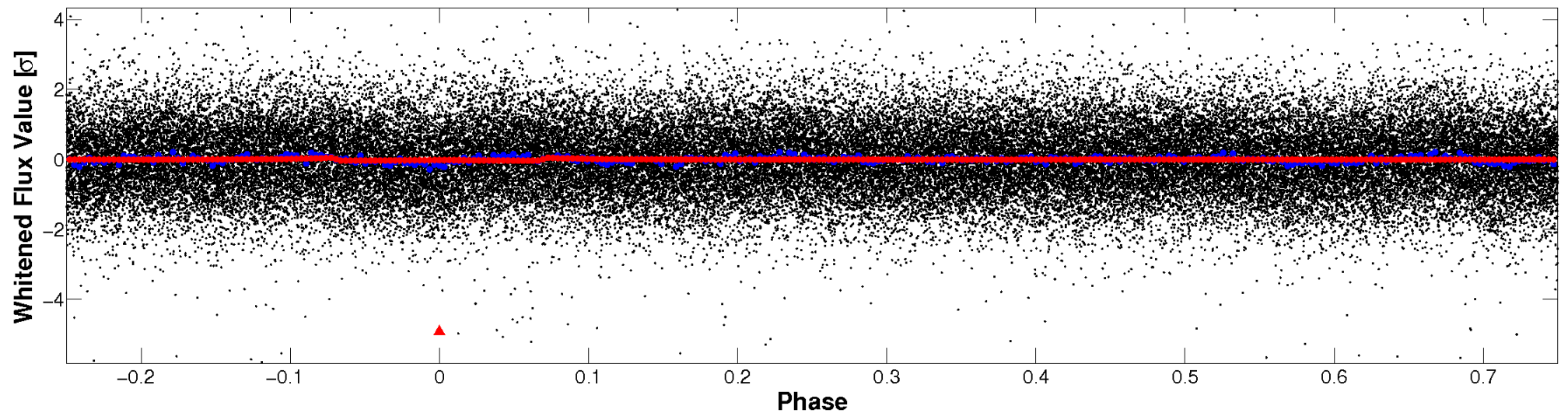


Non-Whitened Vs. Whitened Light Curve

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

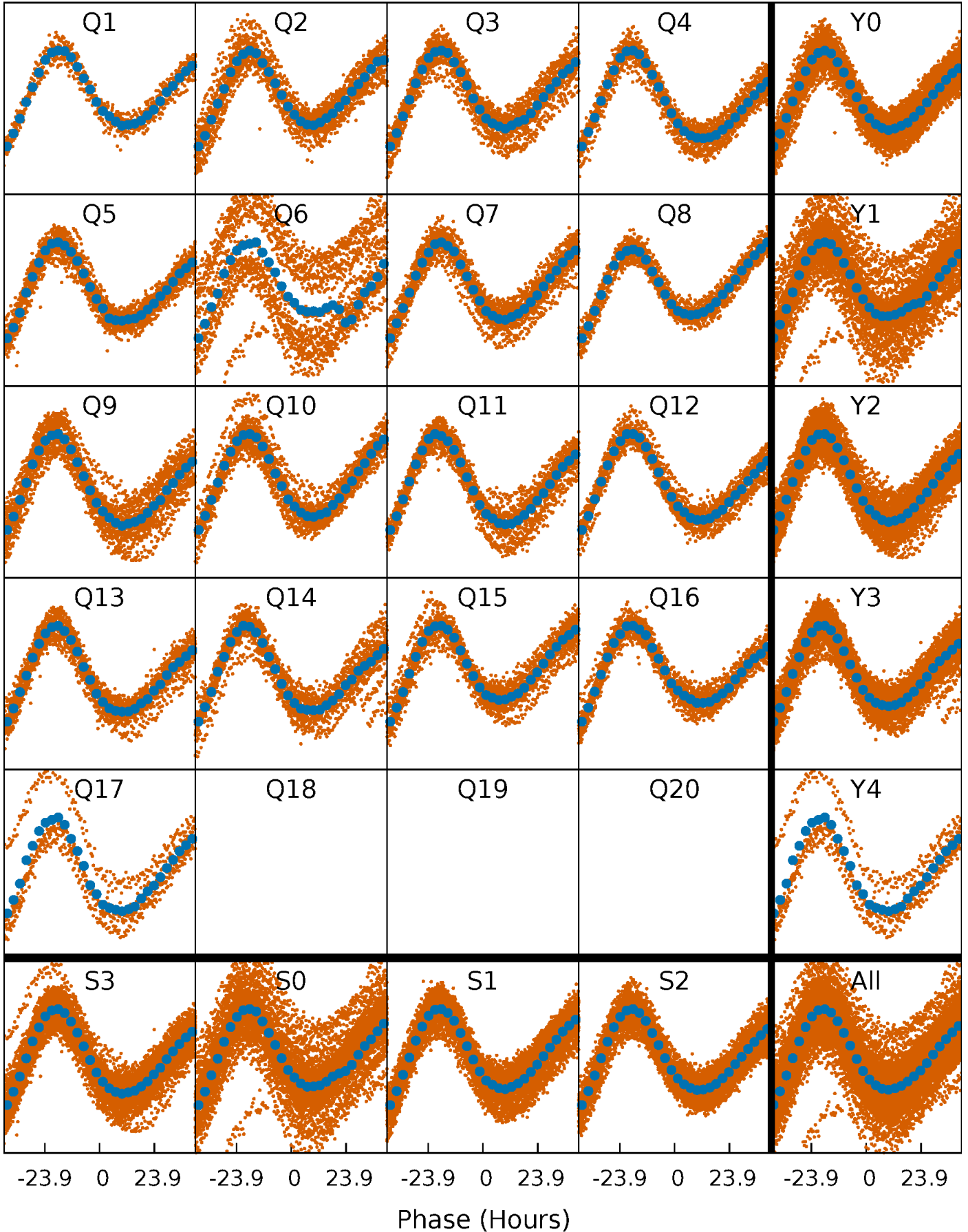


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



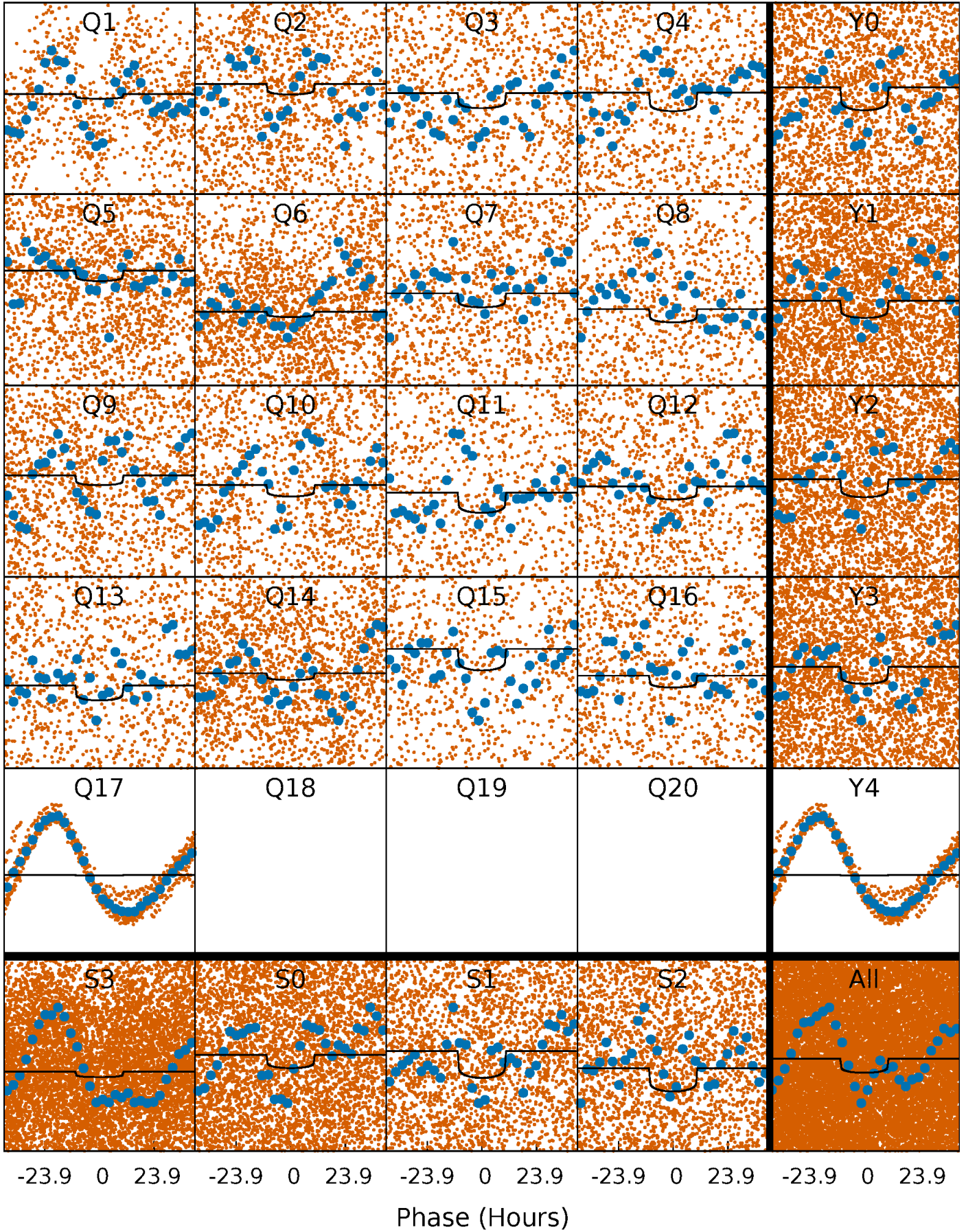
PDC Quarter-Phased Transit Curves

TCE 009651169-01 P= 6.180165 Days $T_0=136.853848$ (BKJD)



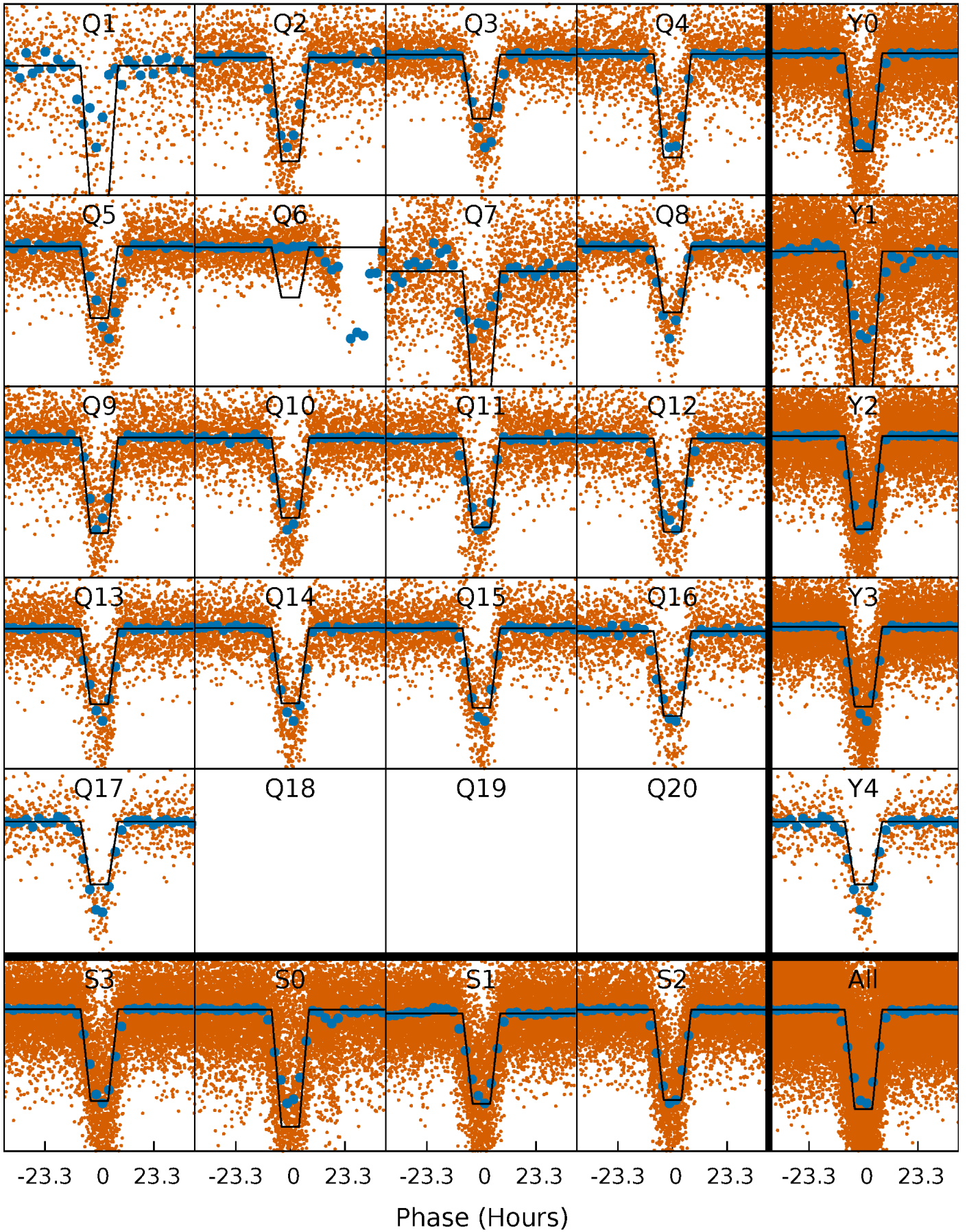
DV Quarter-Phased Transit Curves

TCE 009651169-01 P= 6.180165 Days $T_0=136.853848$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

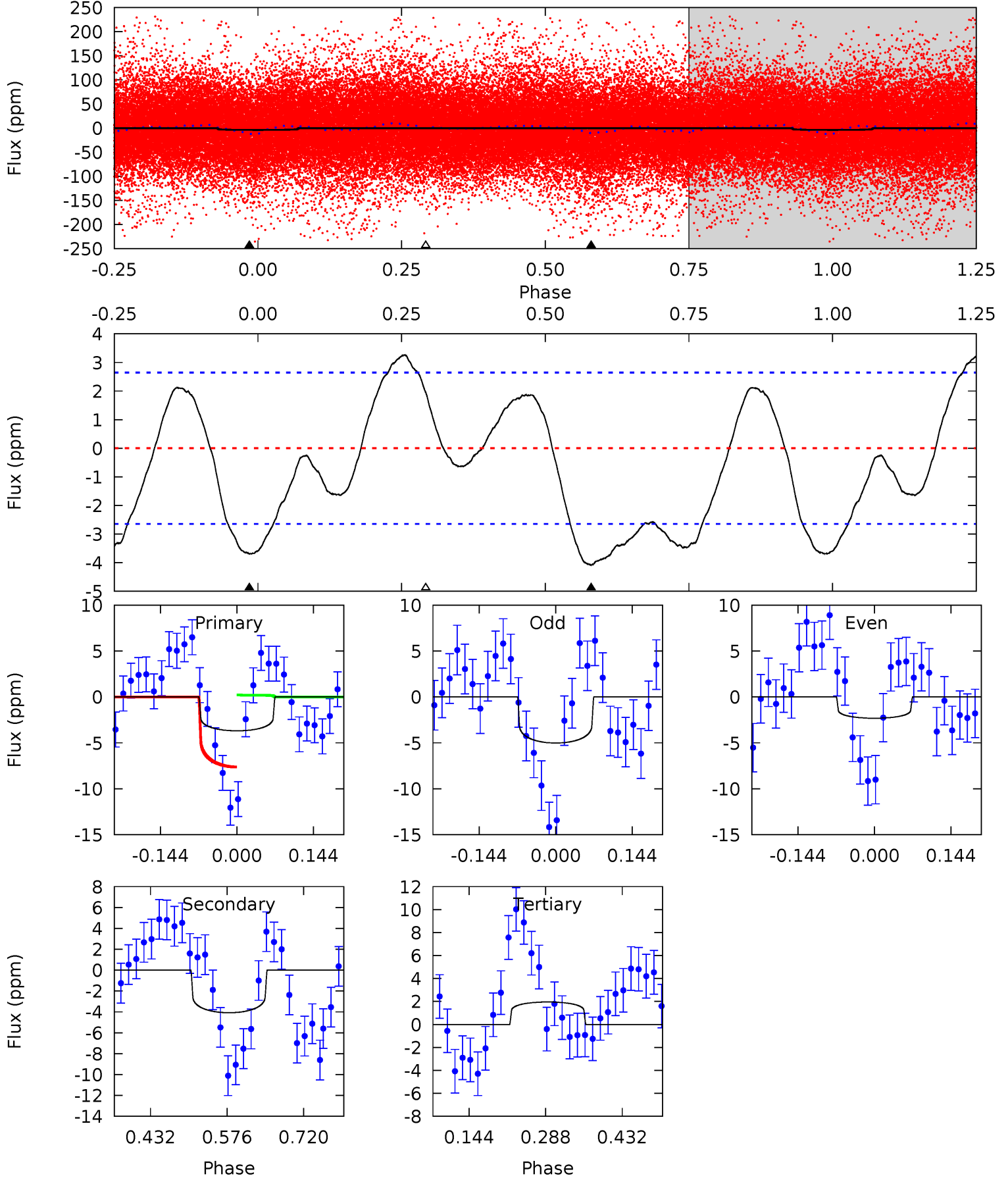
TCE 009651169-01 P= 6.179803 Days $T_0=136.890595$ (BKJD)



DV Model-Shift Uniqueness Test

009651169-01, P = 6.180165 Days, E = 130.673683 Days

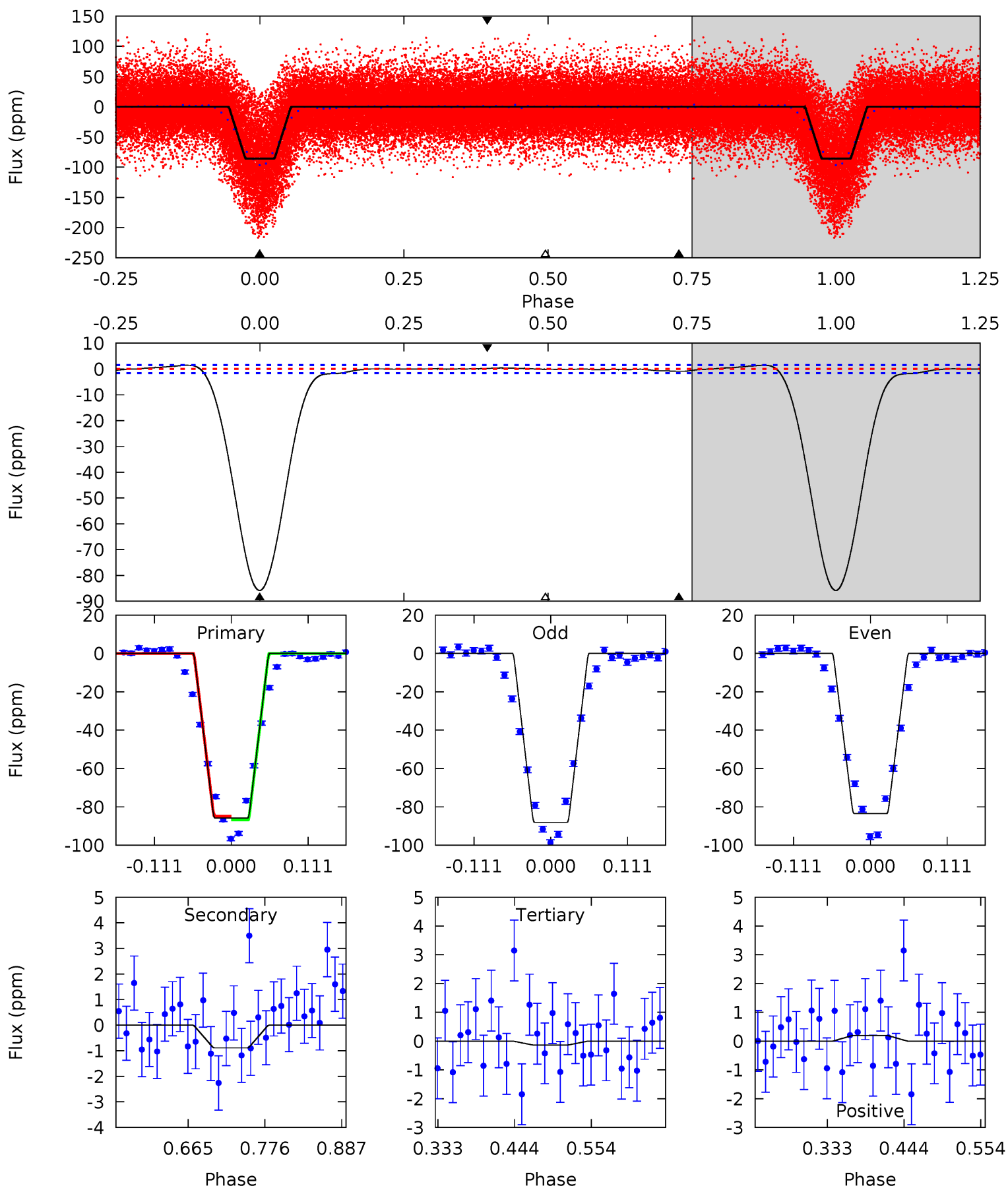
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.26 | 6.92 | -3.31 | 0 | 4.49 | 1.46 | 3.23 | 9.57 | 6.26 | 10.2 | 6.92 | 2.32 | 1.68 | 0.44 | 6.51 |



Alt Model-Shift Uniqueness Test

009651169-01, P = 6.179803 Days, E = 130.710792 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 251.8 | 2.61 | 0.40 | 0.58 | 4.54 | 1.59 | 1.85 | 251.4 | 251.2 | 2.22 | 2.03 | 6.72 | 0.99 | 0.02 | 2.87 |



Stellar Parameters For KIC 009651169

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 7552^{+210}_{-315} | $3.707^{+0.441}_{-0.073}$ | $-0.040^{+0.200}_{-0.350}$ | $3.207^{+0.364}_{-1.455}$ | $1.912^{+0.105}_{-0.445}$ | $0.082^{+0.319}_{-0.020}$ |
| | +3%/-4% | +12%/-2% | +500%/-875% | +11%/-45% | +5%/-23% | +390%/-25% |
| Source | KIC0 | 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 009651169-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|---------------------------|
| DV | -4 ± 1 | $0.70^{+0.18}_{-0.20}$ | 2818^{+202}_{-298} | 7148^{+1064}_{-767} | 30^{+28}_{-12} |
| Alt. | -1 ± 0 | $3.31^{+0.40}_{-0.87}$ | 2814^{+191}_{-351} | 1982^{+772}_{-4633} | $0.309^{+0.256}_{-0.127}$ |

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 $A_{obs} \gg 1.0$

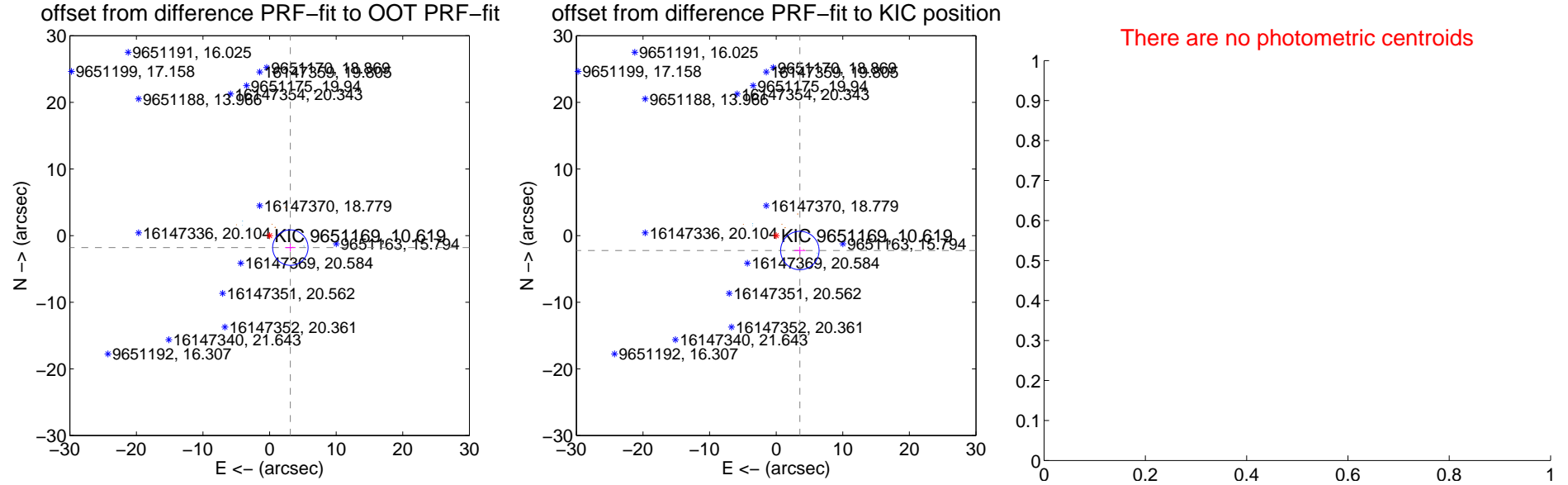
DV Centroid Data

Supplemental centroid analysis for 009651169-01. **Kepler magnitude: 10.62.** Transit SNR 3.27

There are 7 quarters with good PRF difference image offsets

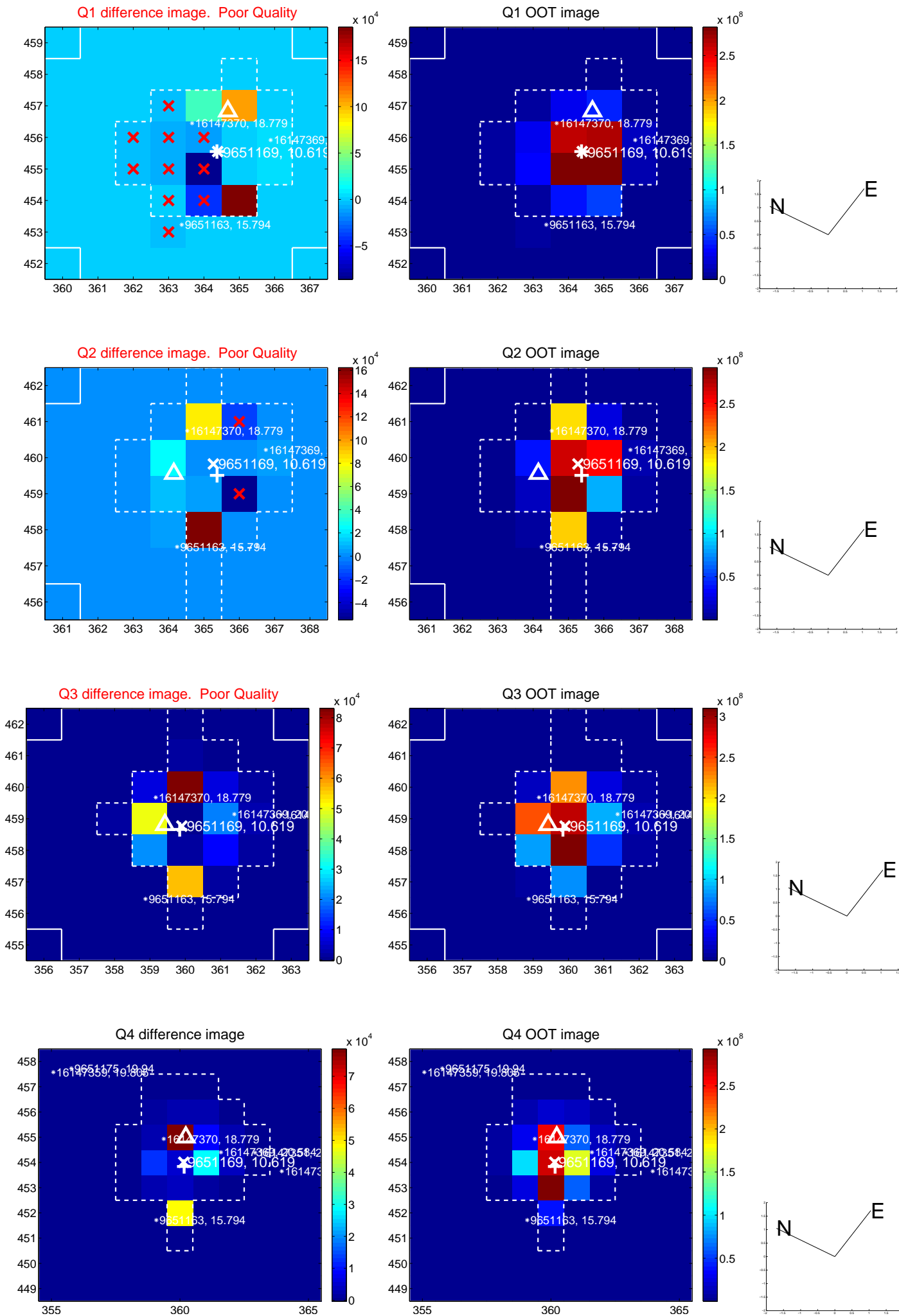
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 3.602 \pm 0.887 | 4.06 | -3.120 \pm 0.782 | -1.801 \pm 0.557 |
| PRF-fit source offset from KIC position | 4.199 \pm 0.962 | 4.37 | -3.555 \pm 0.853 | -2.235 \pm 0.571 |
| photometric centroid source offset | — | — | — | — |

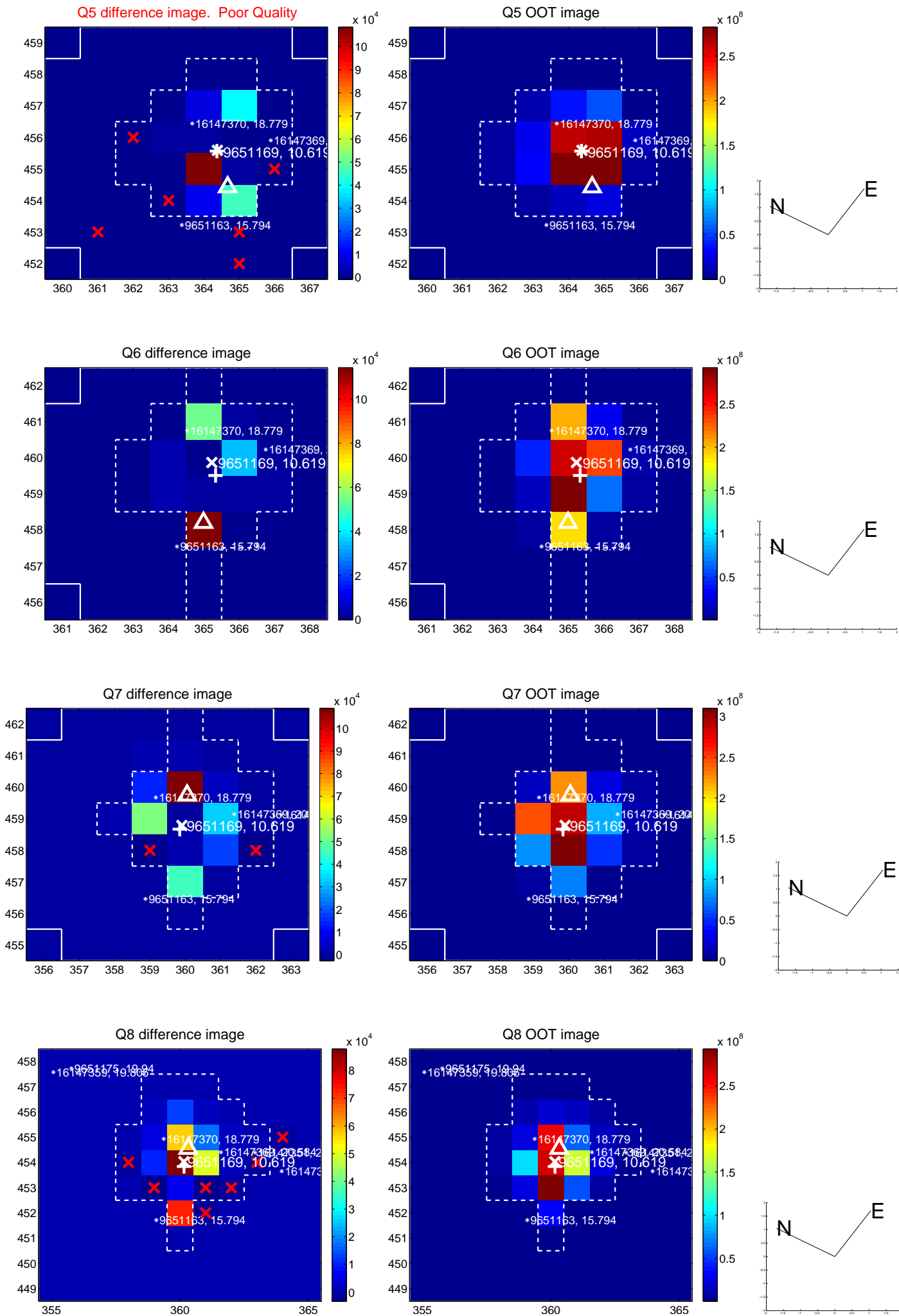


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

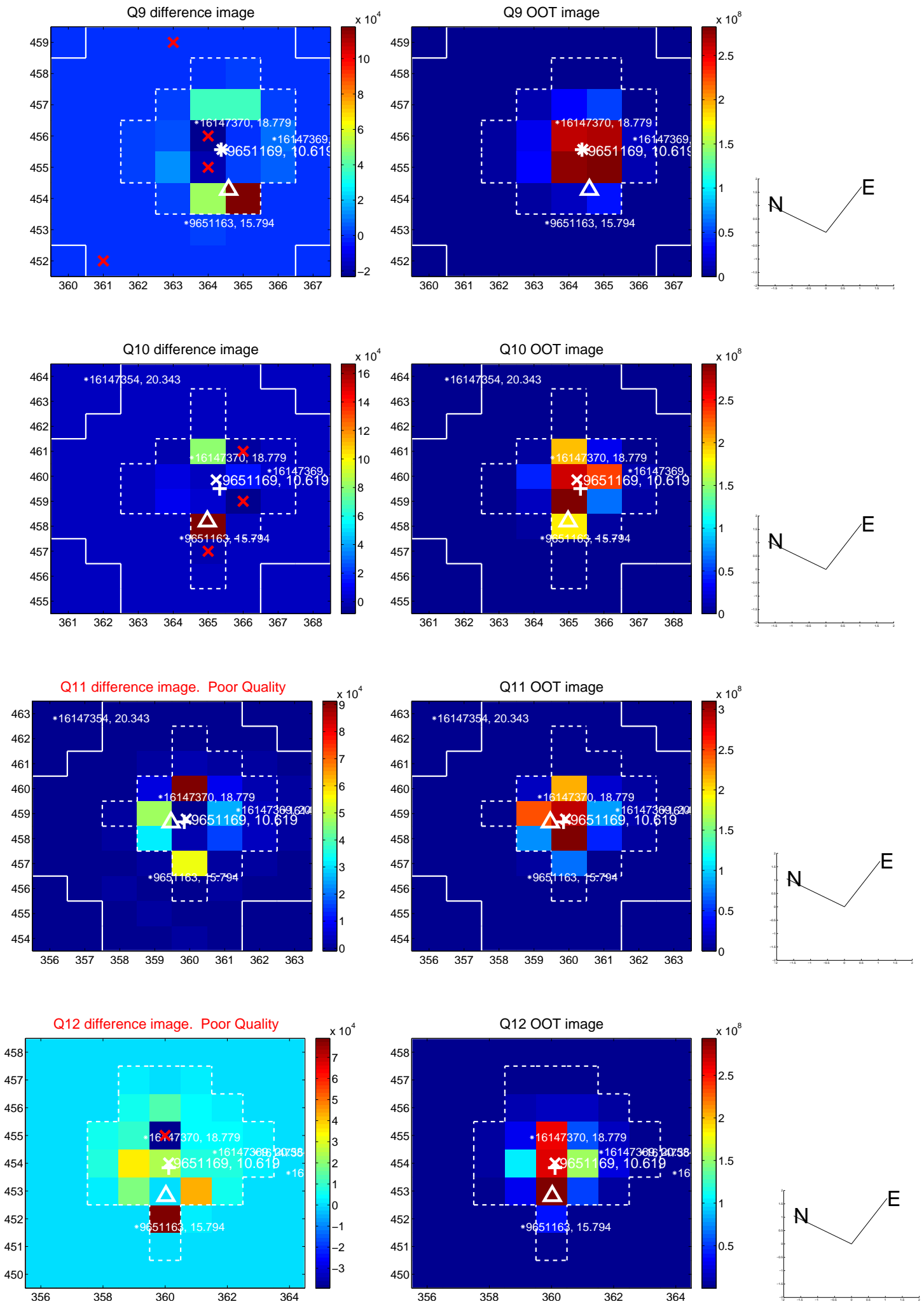
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



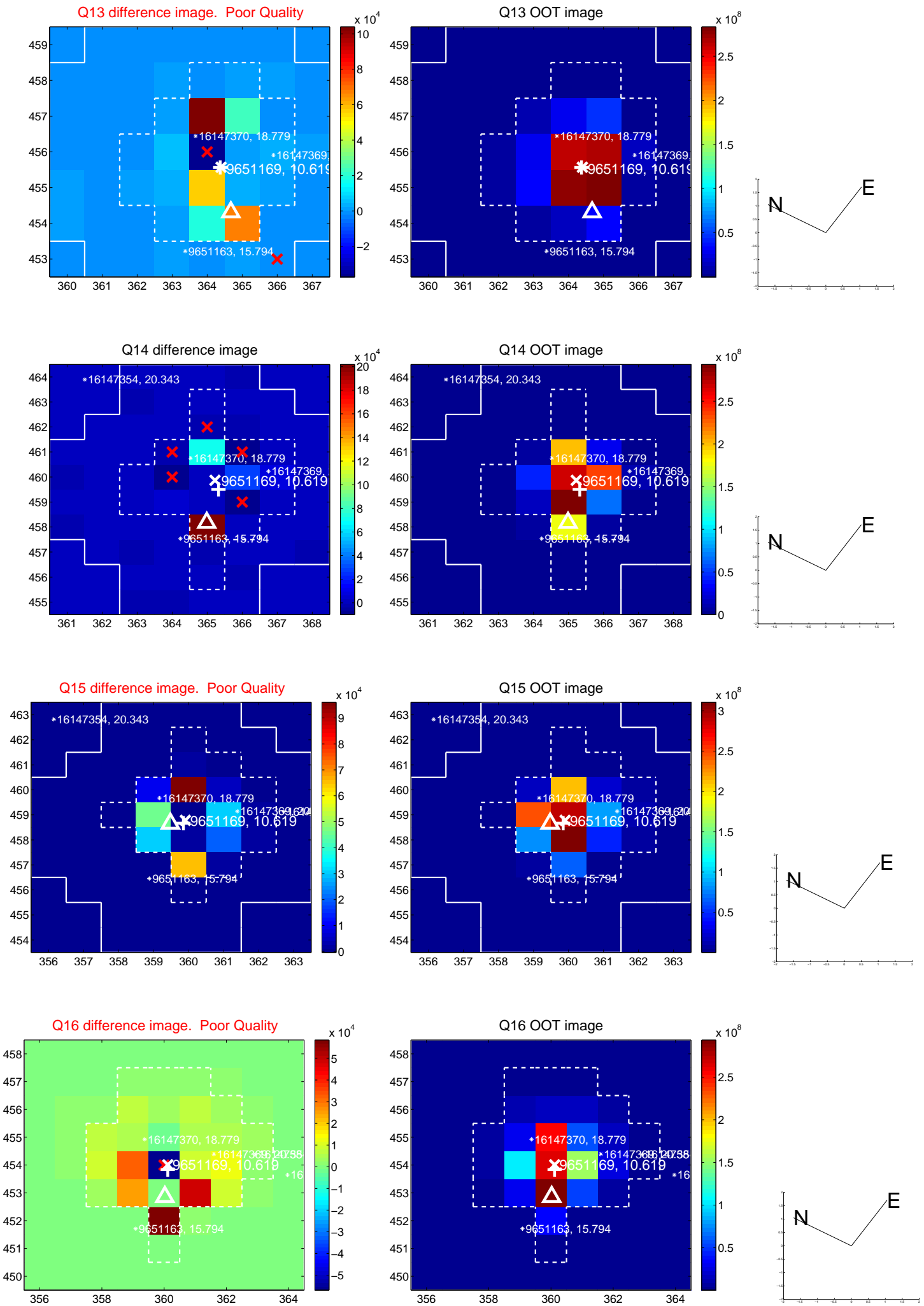
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



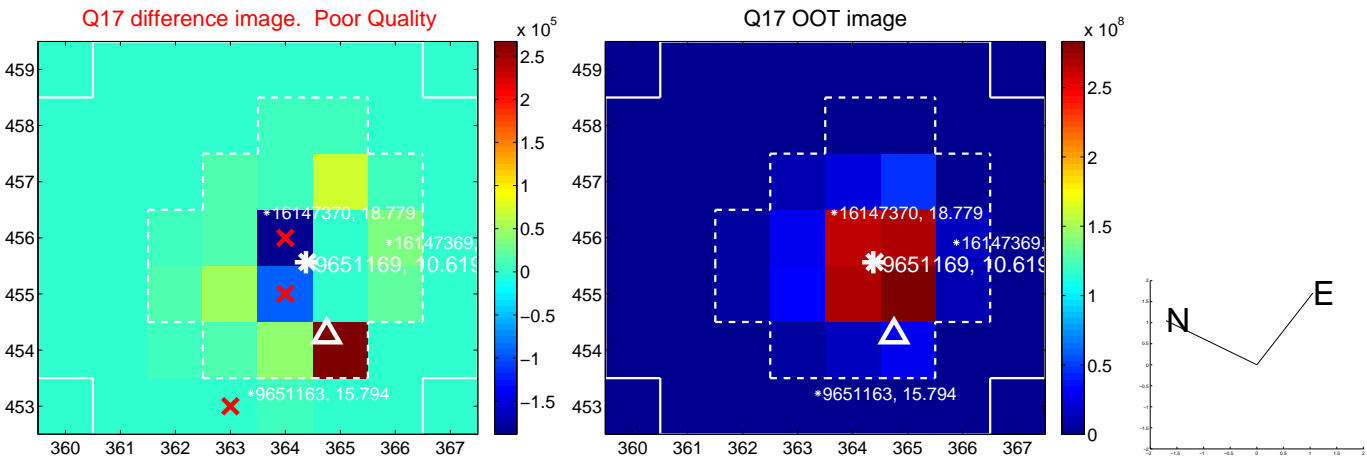
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

