

KIC 007362355

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 007362355-01 | OBS | No | 0.566742 | 131.864120 | 12.7 | 3.913 | 12.5 | 6.1 | 1.11 | 5819 | 0.41 | 7691.11 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 007362355-01 | OBS | FP | 0.00 | 1 | 0 | 1 | 1 | LPP_DV—CENT_KIC_POS—HALO_GHOST—EPHEM_MATCH |

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.

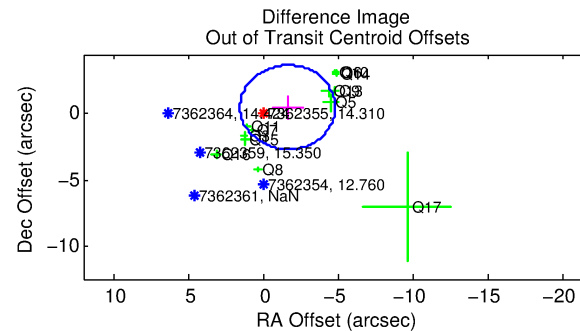
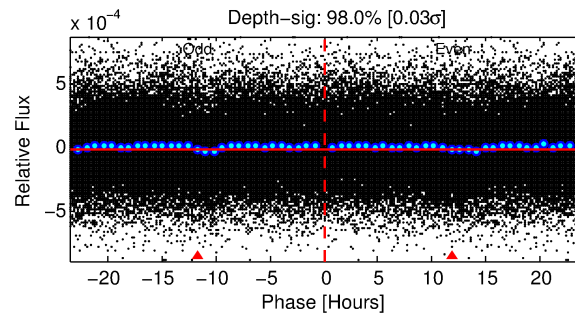
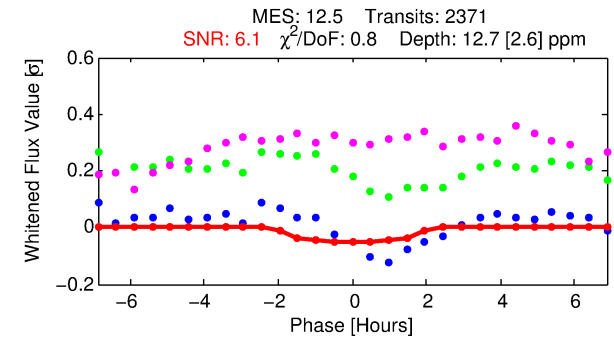
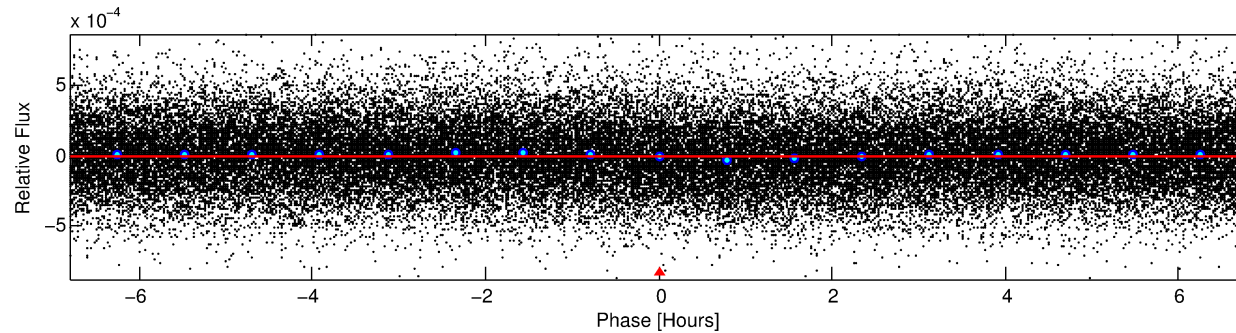
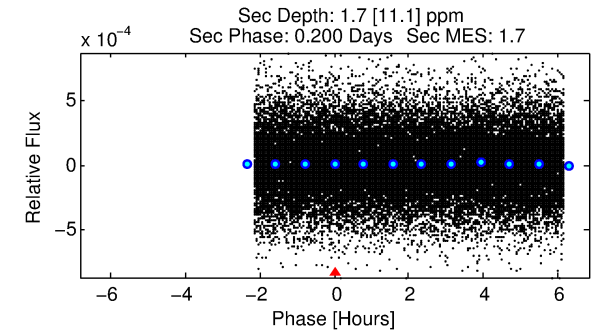
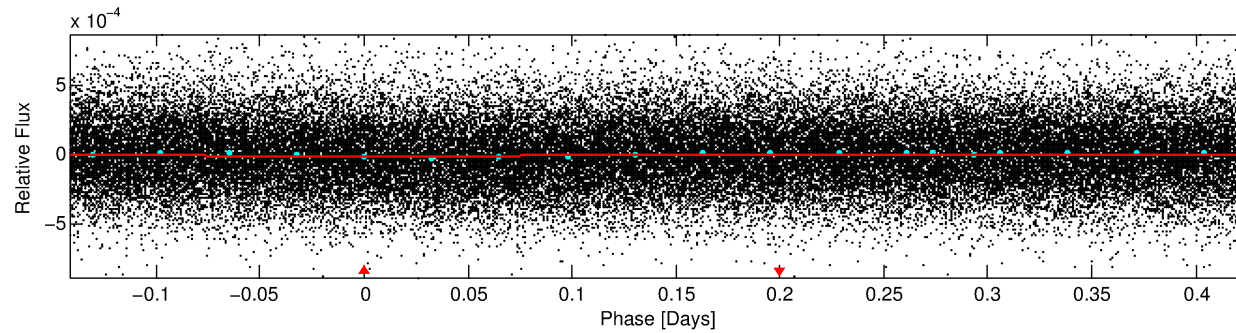
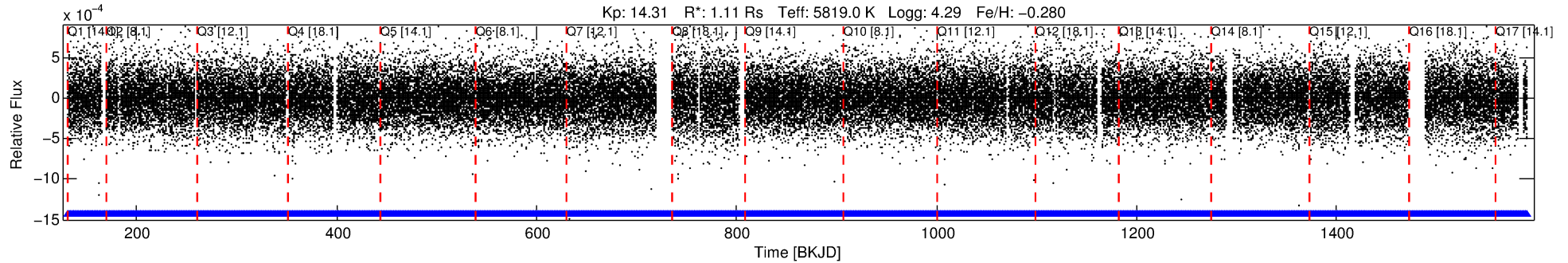
Ephemeris Match Information For 007362355-01

| TCE (1) | KIC | Parent (2) | Parent KIC | P ₁ :P ₂ | Dist ($''$) | Δ Row | Δ Col | m ₂ | m ₁ | D ₂ /D ₁ | Mechanism | Flag | σ_P | σ_T |
|--------------|---------|------------|------------|--------------------------------|---------------|--------------|--------------|----------------|----------------|--------------------------------|------------|------|------------|------------|
| 007362355-01 | 7362355 | RR-Lyr-pri | 7198959 | 1:1 | 868.4 | 10 | 218 | 7.86 | 14.31 | 47946.00 | Direct-PRF | 0 | 1.12 | 21.95 |

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7362355 Candidate: 1 of 1 Period: 0.567 d



DV Fit Results:

Period = 0.56674 [0.00002] d
Epoch = 131.8641 [0.0075] BKJD
Rp/R* = 0.0033 [0.0044]
a/R* = 1.21 [2.37]
b = 0.50 [9.21]
Seff = 7691.11 [2888.19]
Teq = 2388 [224] K
Rp = 0.41 [0.54] Re
a = 0.0128 [0.0031] AU
Ag = 0.91 [6.56] [-0.01σ]
Teffp = 3606 [6492] K [0.19σ]

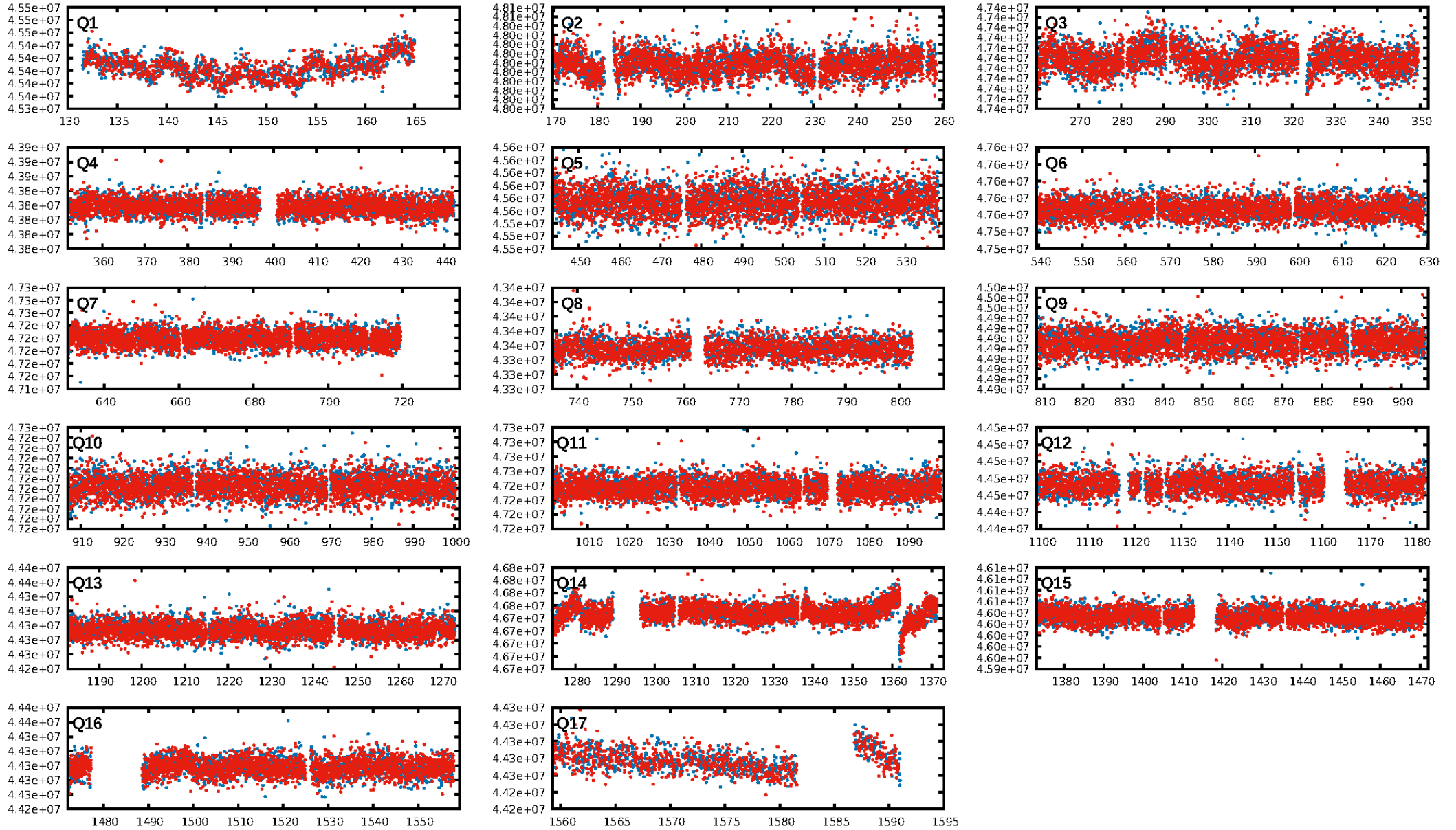
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.56e-12
RollingBand-fgt: 1.00 [2265/2265]
GhostDiagnostic-chr: 0.1743
Centroid-sig: 0.0%
Centroid-so: 3.824 arcsec [2.60σ]
OotOffset-rm: 1.730 arcsec [1.63σ]
KicOffset-rm: 0.305 arcsec [0.33σ]
OotOffset-st: 3/4/2/4 [13]
KicOffset-st: 3/4/2/4 [13]
DiffImageQuality-fgm: 0.23 [3/13]
DiffImageOverlap-fno: 1.00 [17/17]

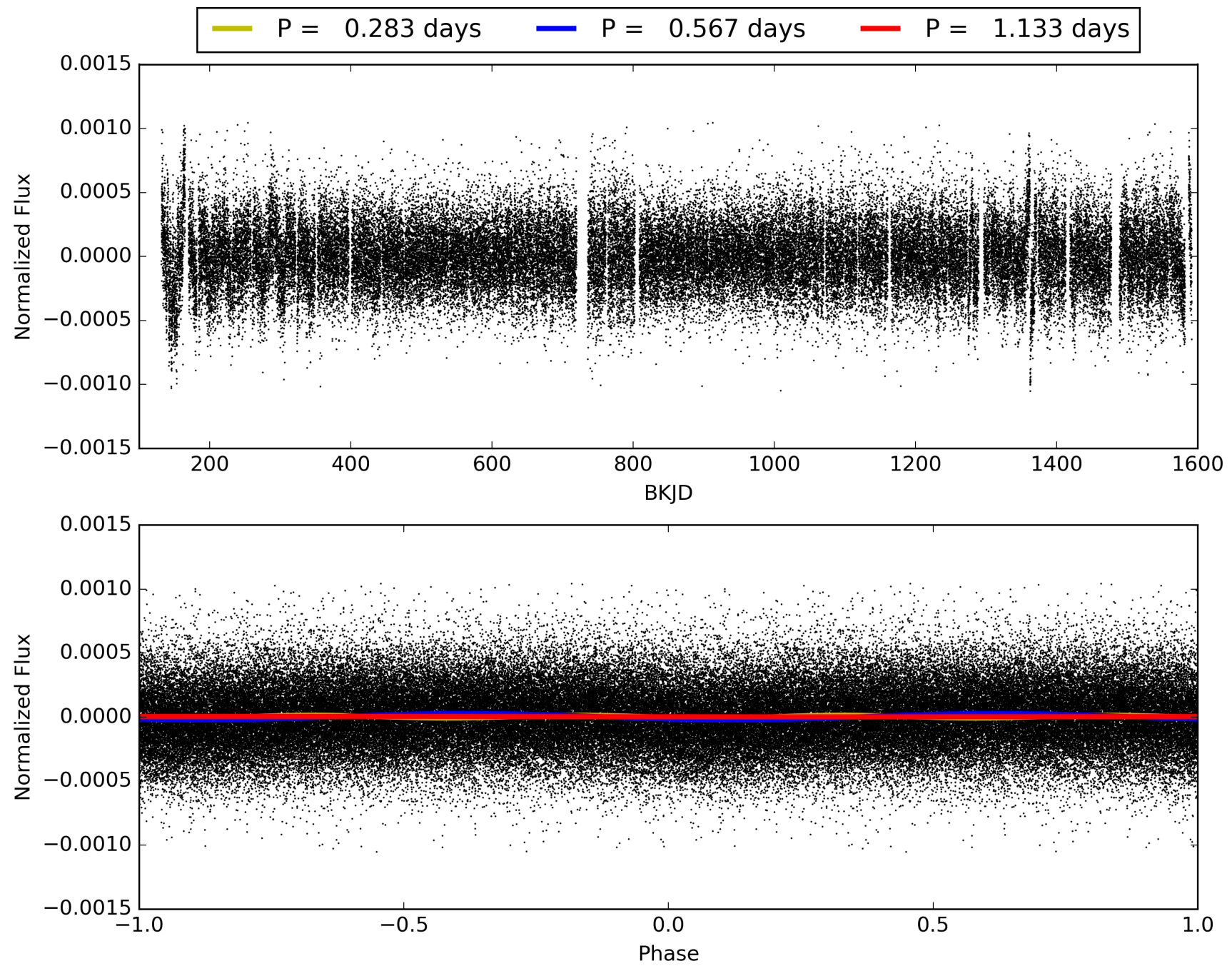
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:16:48 Z

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

TCE 007362355-01, PDC Light Curves

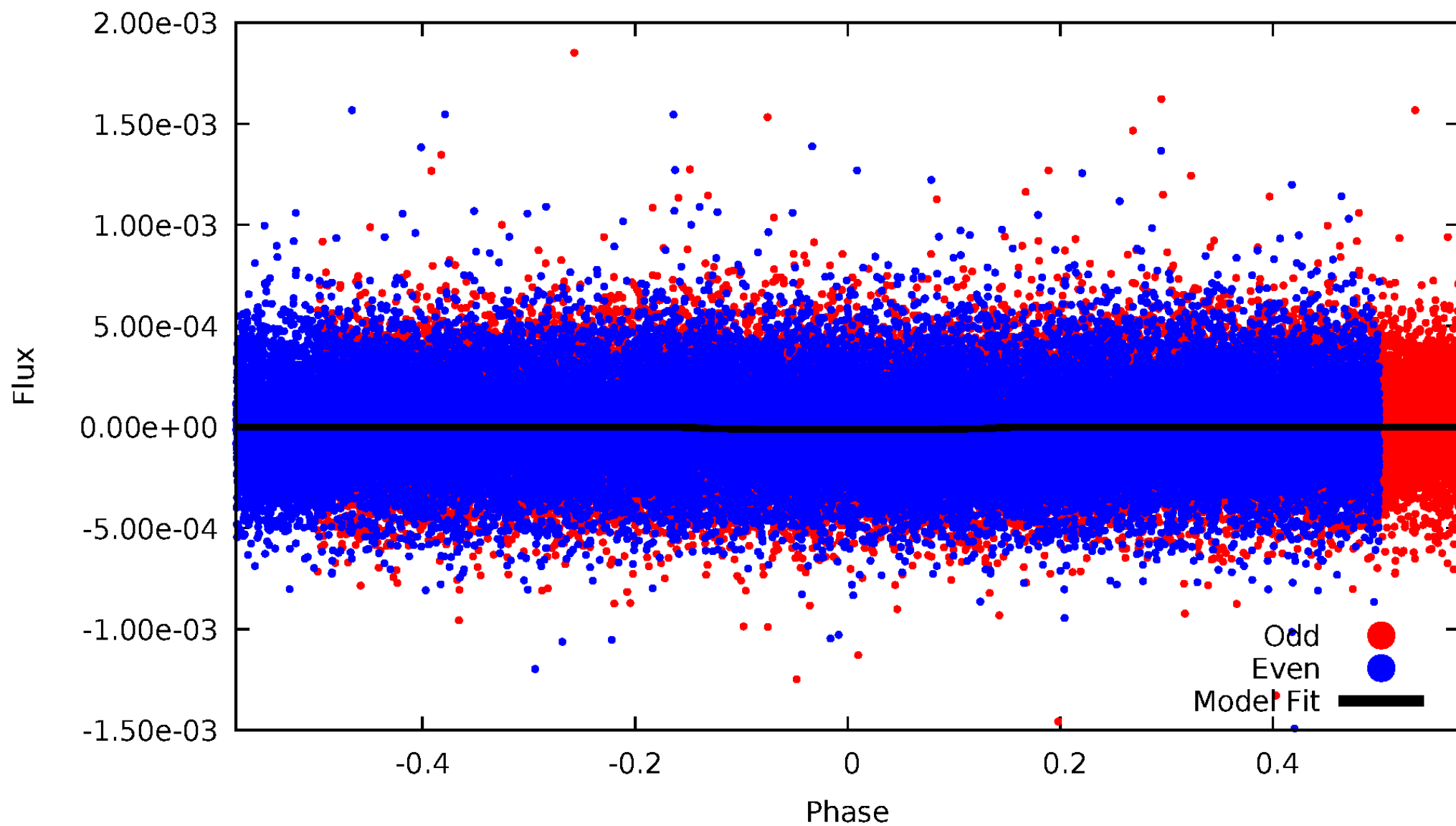


TCE 007362355-01



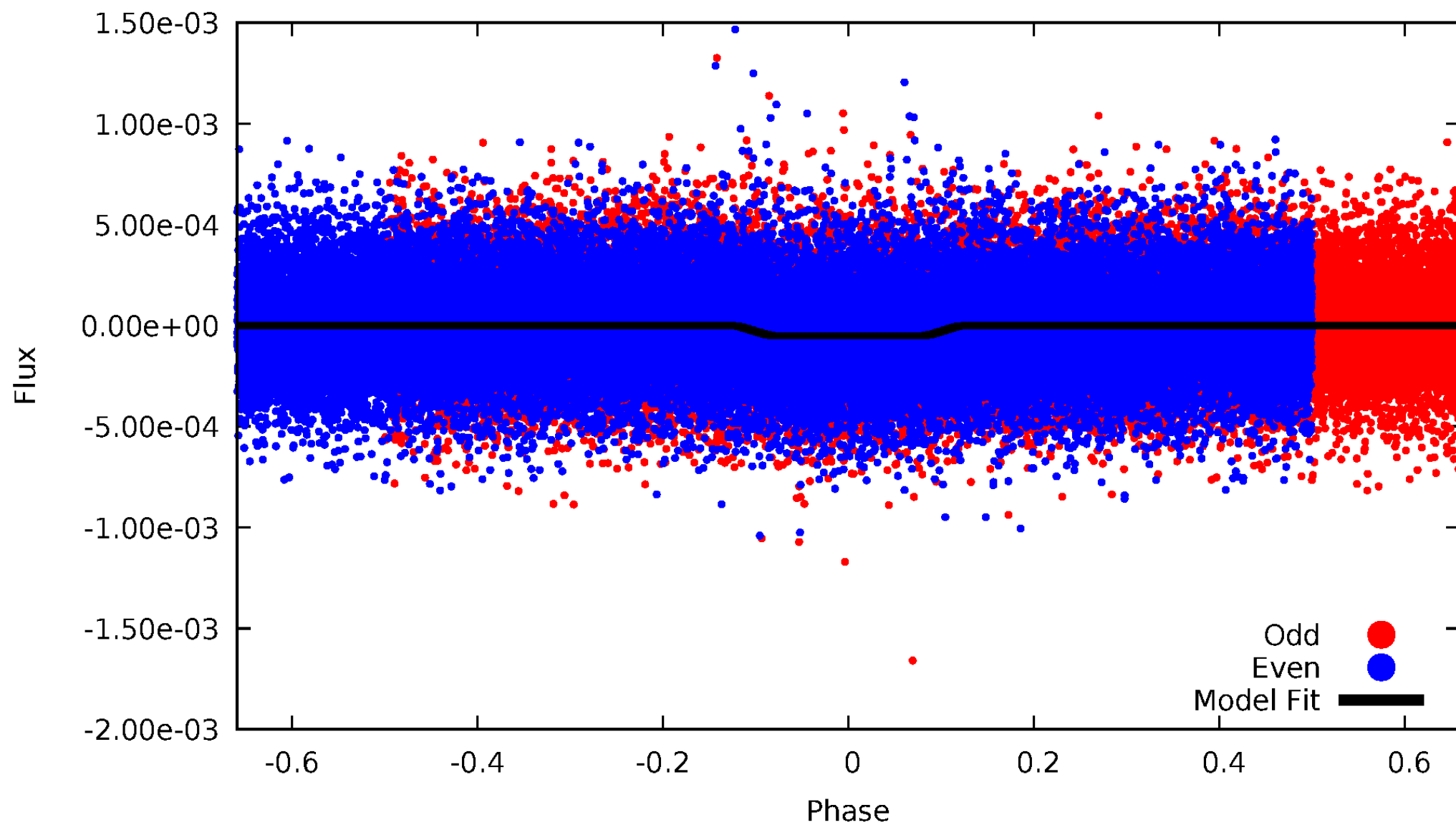
DV Odd/Even

TCE 007362355-01

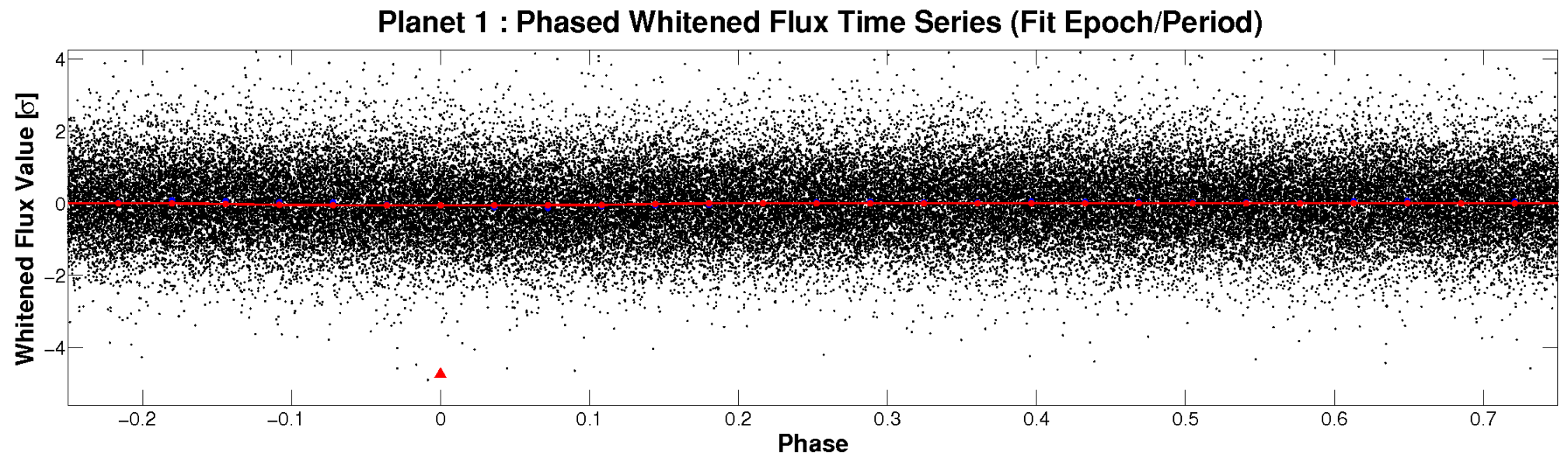
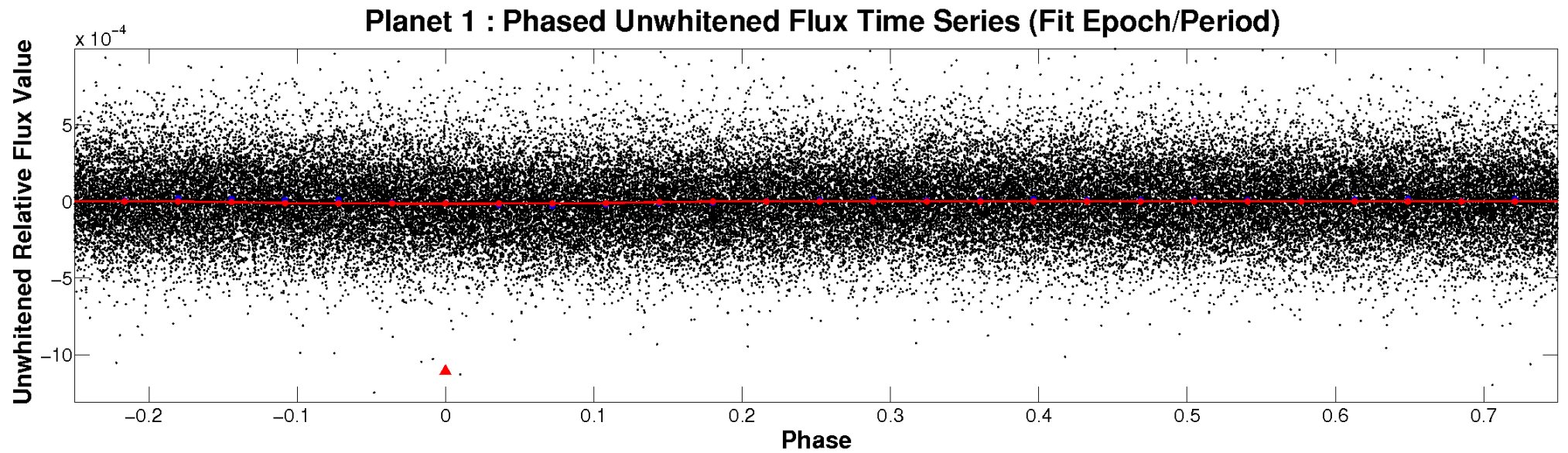


ALT Odd/Even

TCE 007362355-01

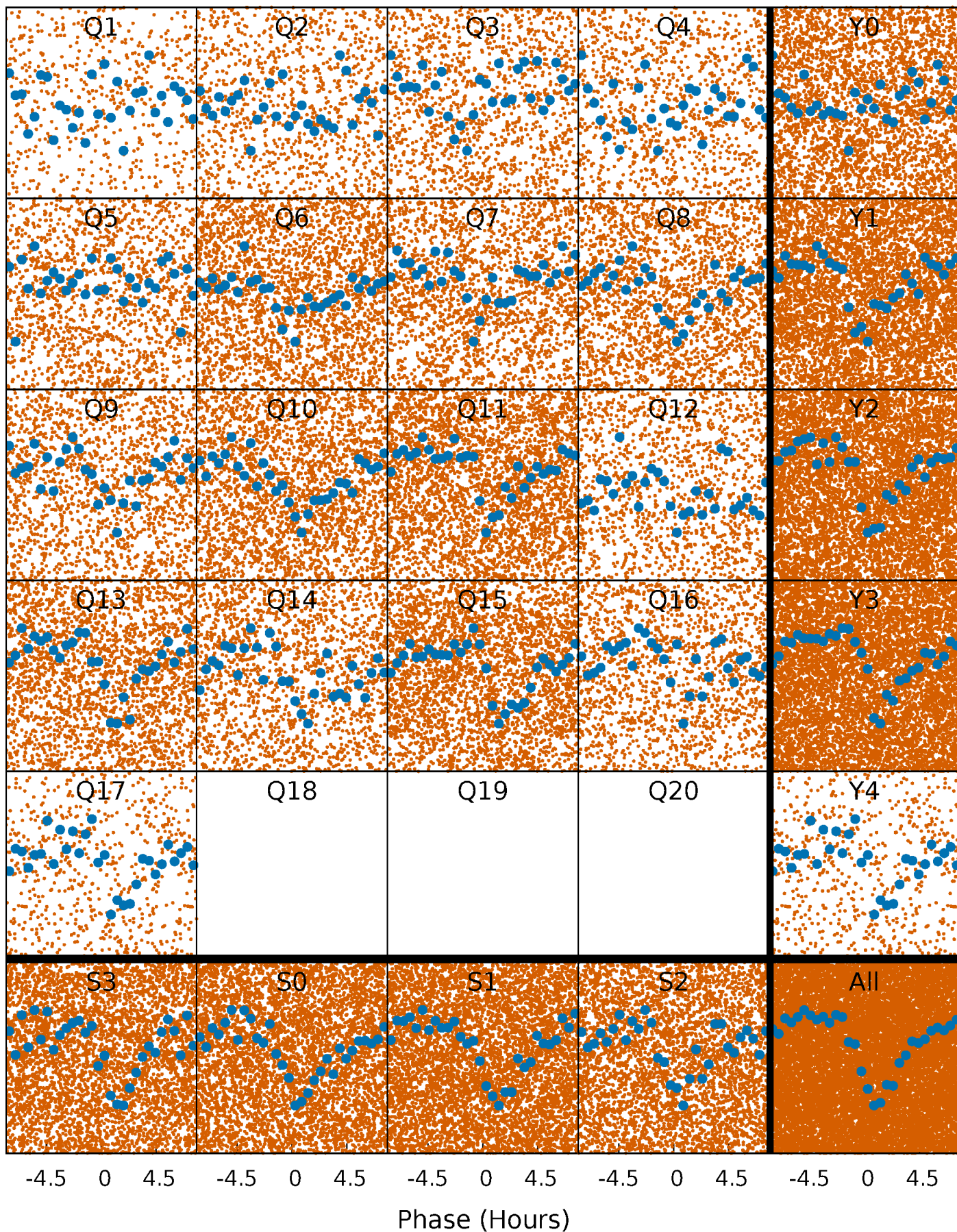


Non-Whitened Vs. Whitened Light Curve



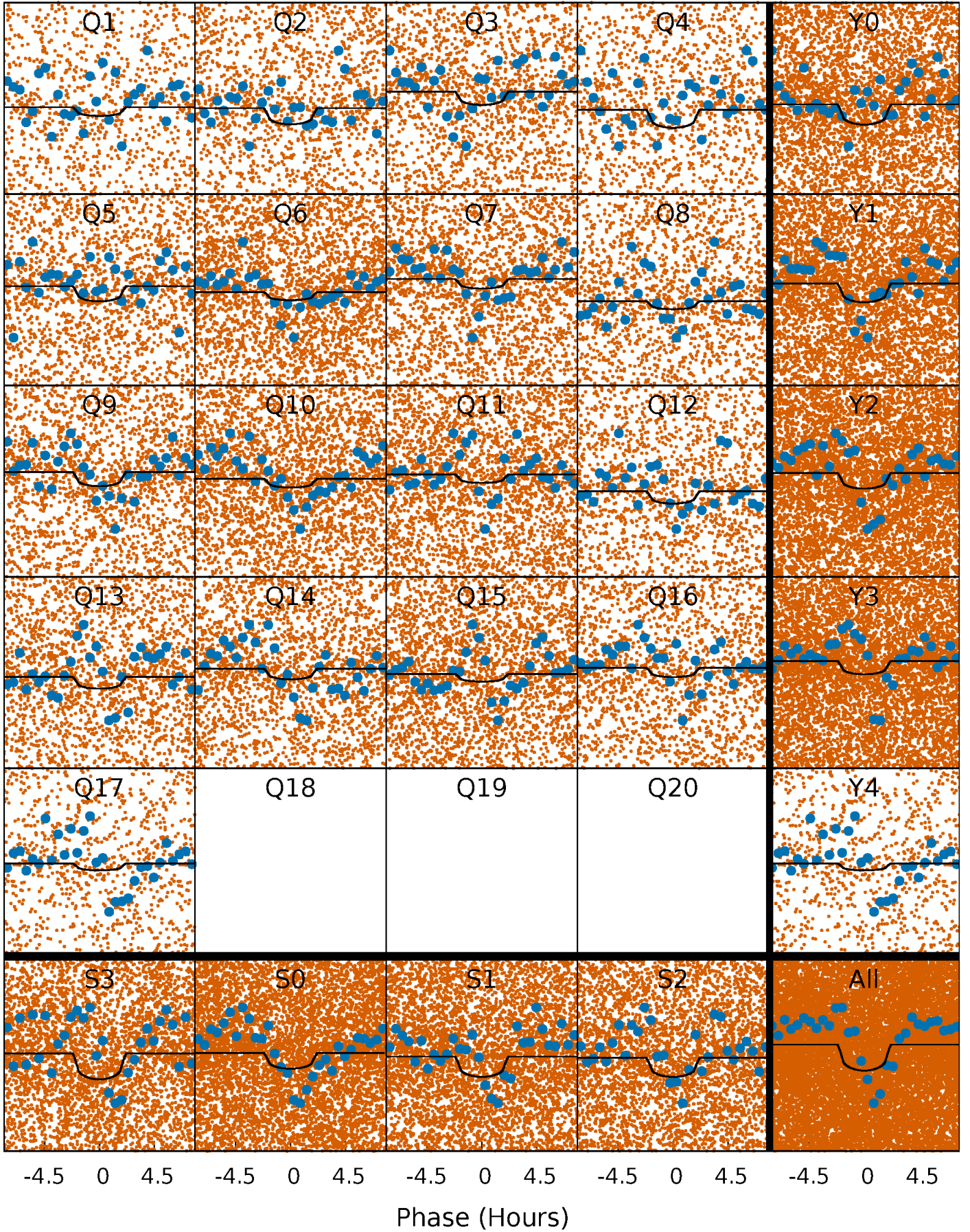
PDC Quarter-Phased Transit Curves

TCE 007362355-01 P= 0.566742 Days $T_0=131.864120$ (BKJD)



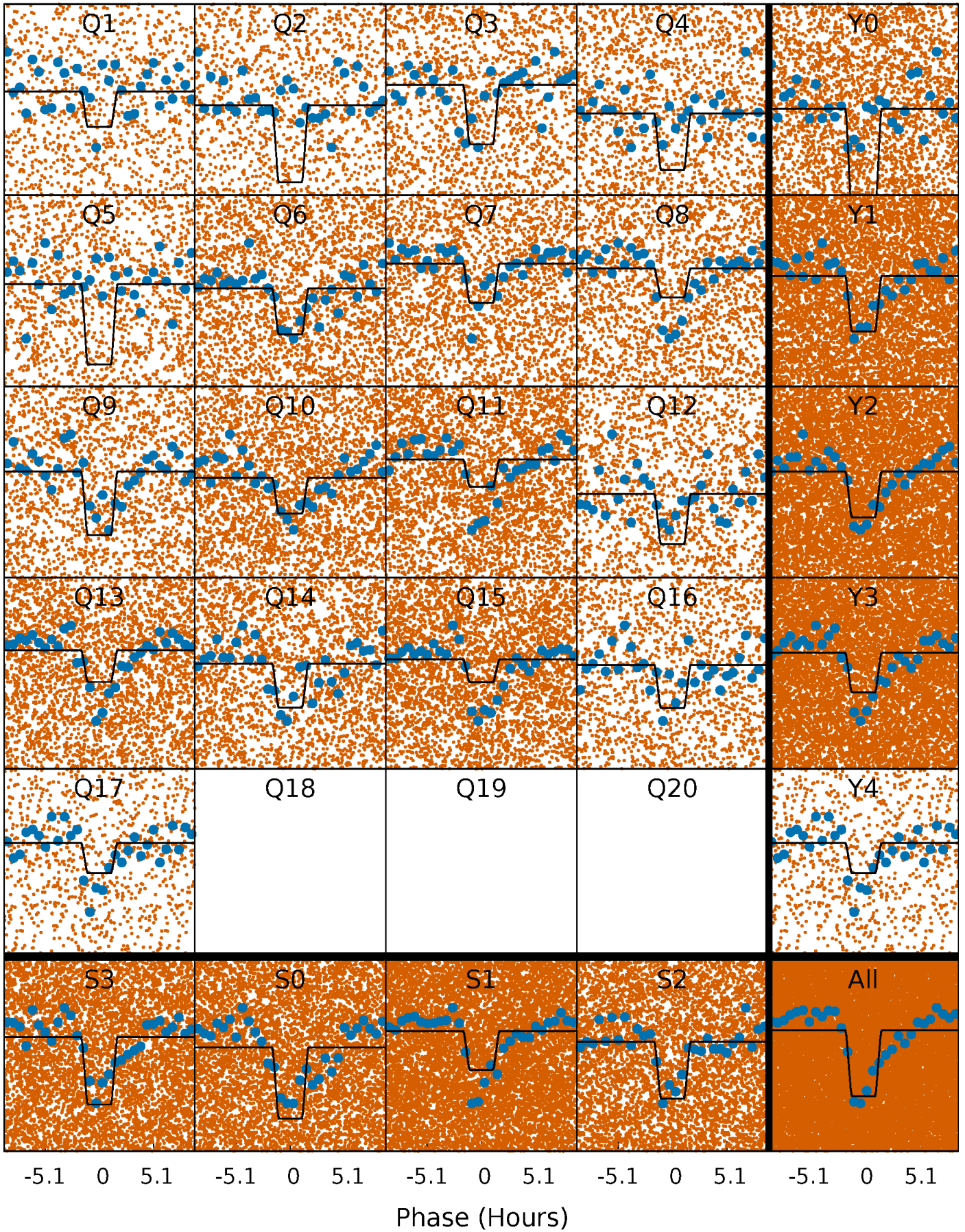
DV Quarter-Phased Transit Curves

TCE 007362355-01 P= 0.566742 Days $T_0=131.864120$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

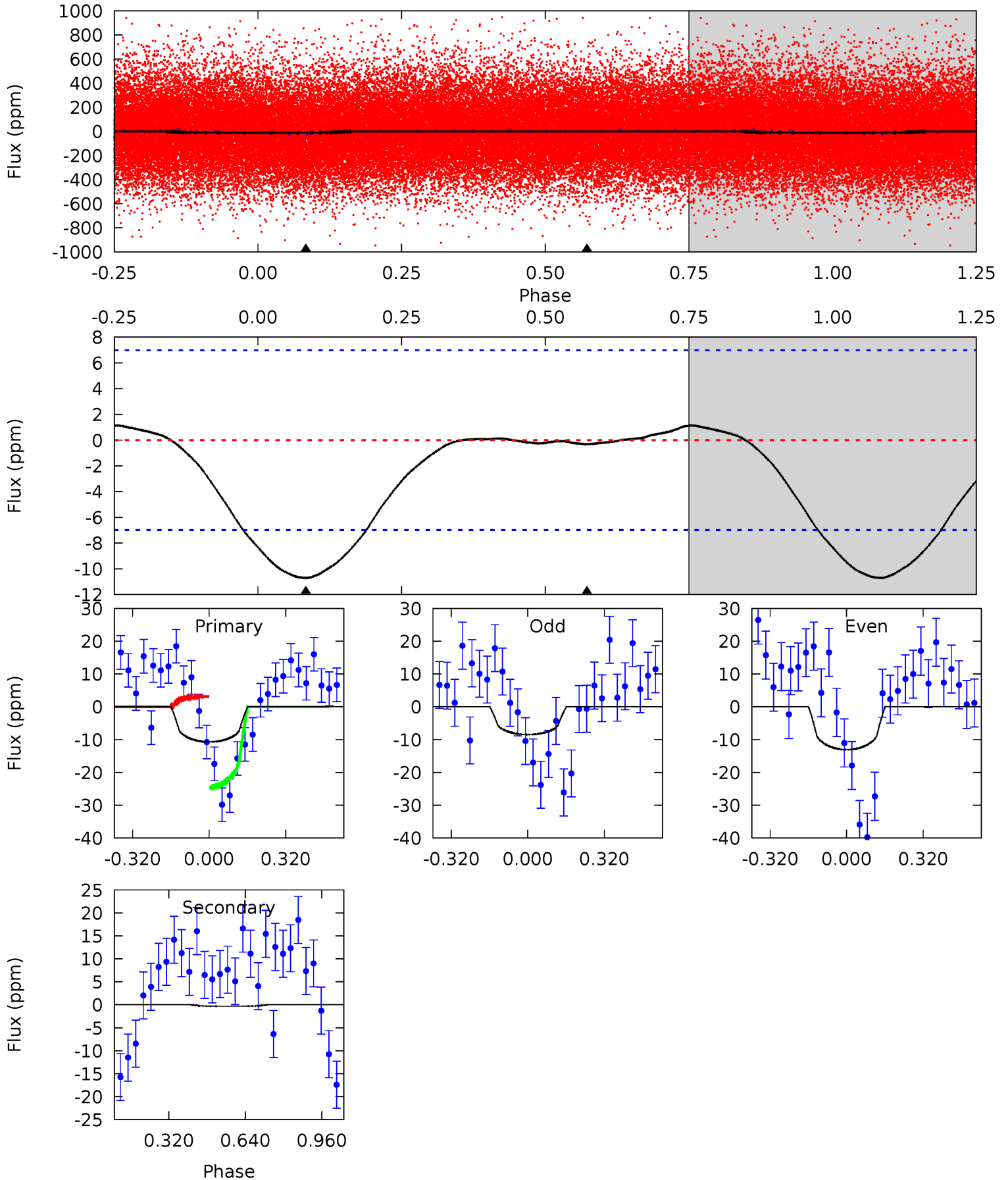
TCE 007362355-01 P= 0.566795 Days $T_0=131.817913$ (BKJD)



DV Model-Shift Uniqueness Test

007362355-01, P = 0.566742 Days, E = 131.297378 Days

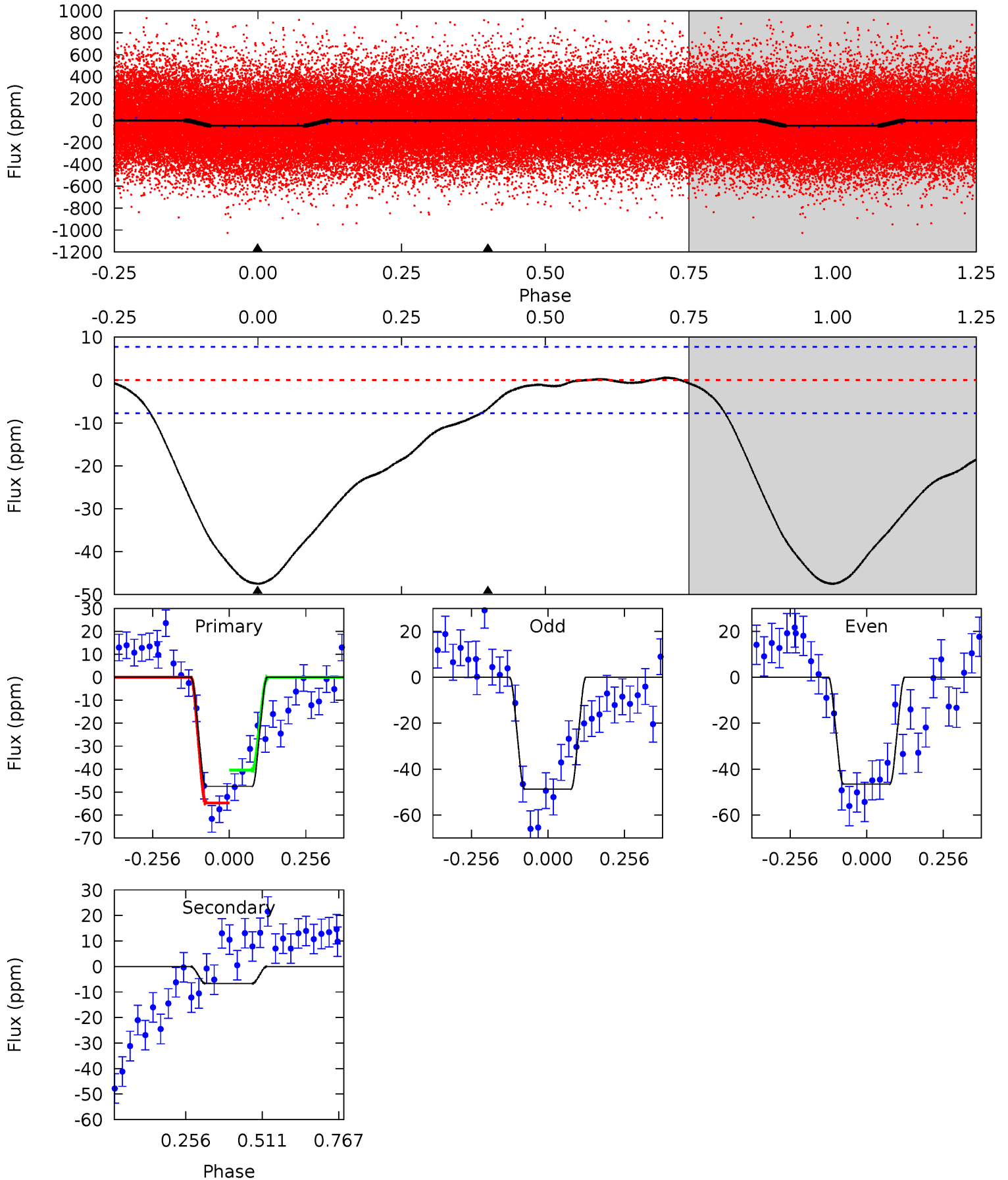
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.62 | 0.20 | 0 | 0 | 4.31 | 0.99 | 0.30 | 6.62 | 6.62 | 0.20 | 0.20 | 1.42 | 0.97 | 0.10 | 6.72 |



Alt Model-Shift Uniqueness Test

007362355-01, P = 0.566795 Days, E = 131.251118 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 26.8 | 3.78 | 0 | 0 | 4.36 | 1.14 | 0.23 | 26.8 | 26.8 | 3.78 | 3.78 | 0.61 | 0.96 | 0.01 | 4.00 |



Stellar Parameters For KIC 007362355

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5819^{+157}_{-157} | $4.290^{+0.200}_{-0.180}$ | $-0.280^{+0.300}_{-0.300}$ | $1.110^{+0.312}_{-0.256}$ | $0.876^{+0.131}_{-0.080}$ | $0.903^{+0.933}_{-0.462}$ |
| | +3%/-3% | +5%/-4% | +107%/-107% | +28%/-23% | +15%/-9% | +103%/-51% |
| 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 007362355-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|------------------------|---------------------------|
| DV | -0 ± 2 | $0.54^{+0.50}_{-0.34}$ | 3338^{+247}_{-239} | -3178^{+7084}_{-684} | $0.058^{+1.057}_{-0.512}$ |
| Alt. | -7 ± 2 | $0.87^{+0.61}_{-0.48}$ | 3337^{+240}_{-244} | 3478^{+1593}_{-5885} | $0.770^{+3.110}_{-0.500}$ |

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

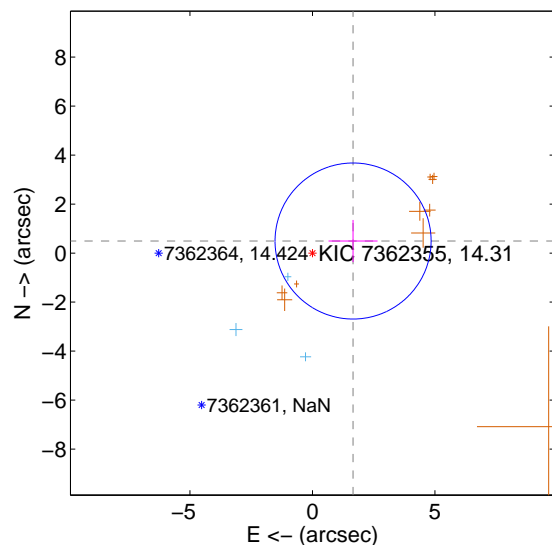
Supplemental centroid analysis for 007362355-01. Kepler magnitude: 14.31. Transit SNR 6.06

There are 3 quarters with good PRF difference image offsets

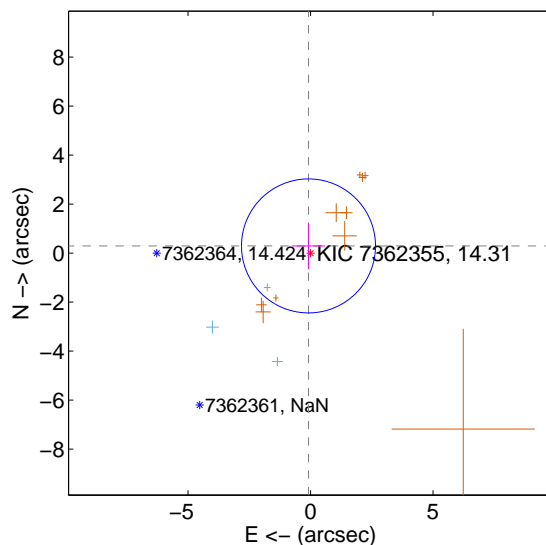
The OOT PRF centroid is offset from the target star catalog position by about 3.41 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 1.730 ± 1.062 | 1.63 | -1.659 ± 1.001 | 0.493 ± 0.860 |
| PRF-fit source offset from KIC position | 0.305 ± 0.912 | 0.33 | 0.083 ± 0.678 | 0.293 ± 0.952 |
| photometric centroid source offset | 3.82 ± 1.47 | 2.60 | -3.07 ± 1.64 | 2.28 ± 1.08 |

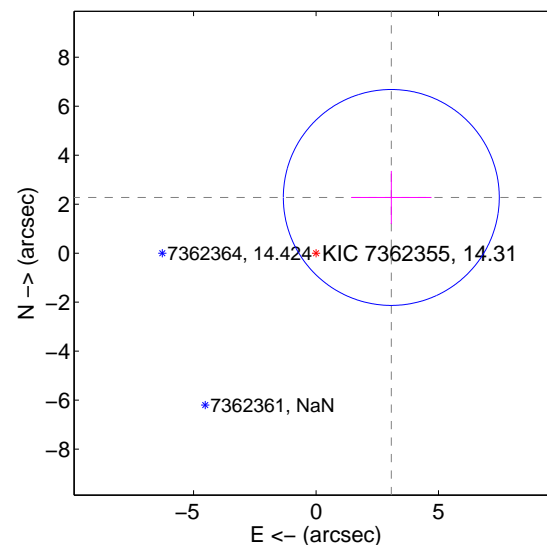
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

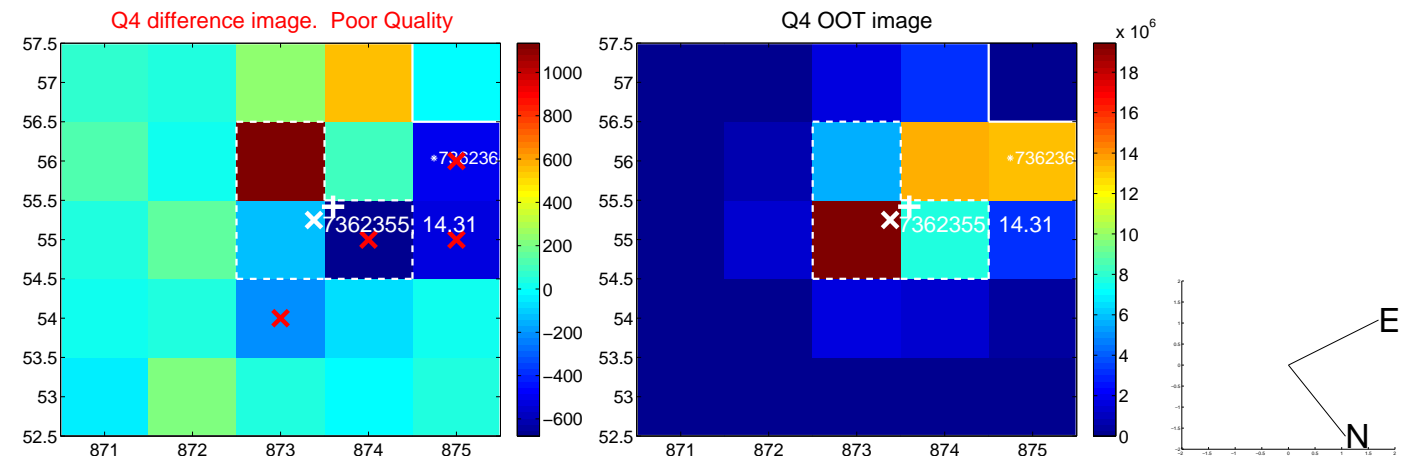
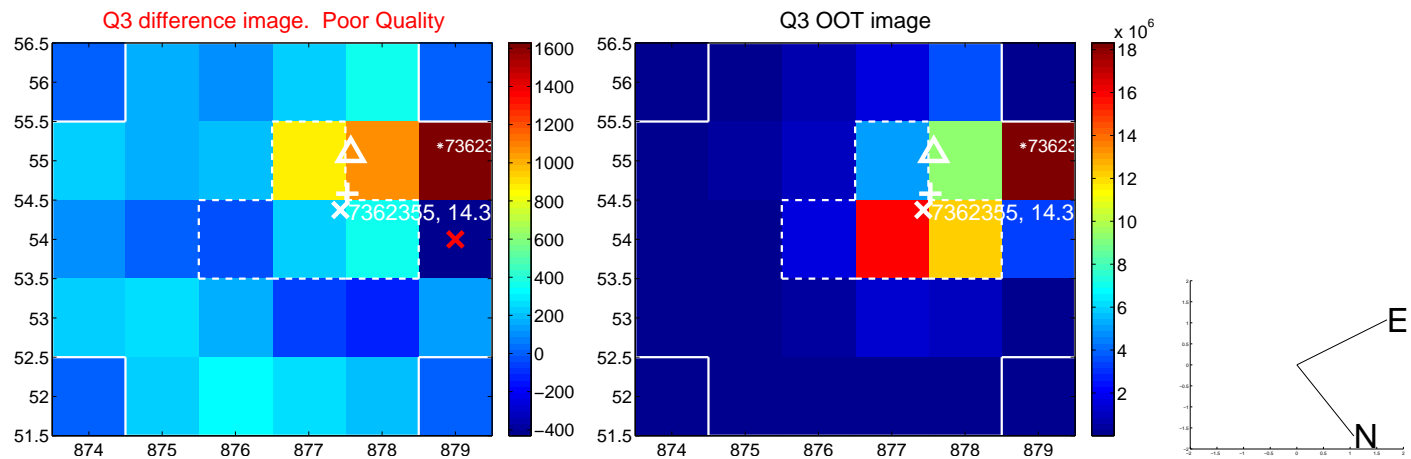
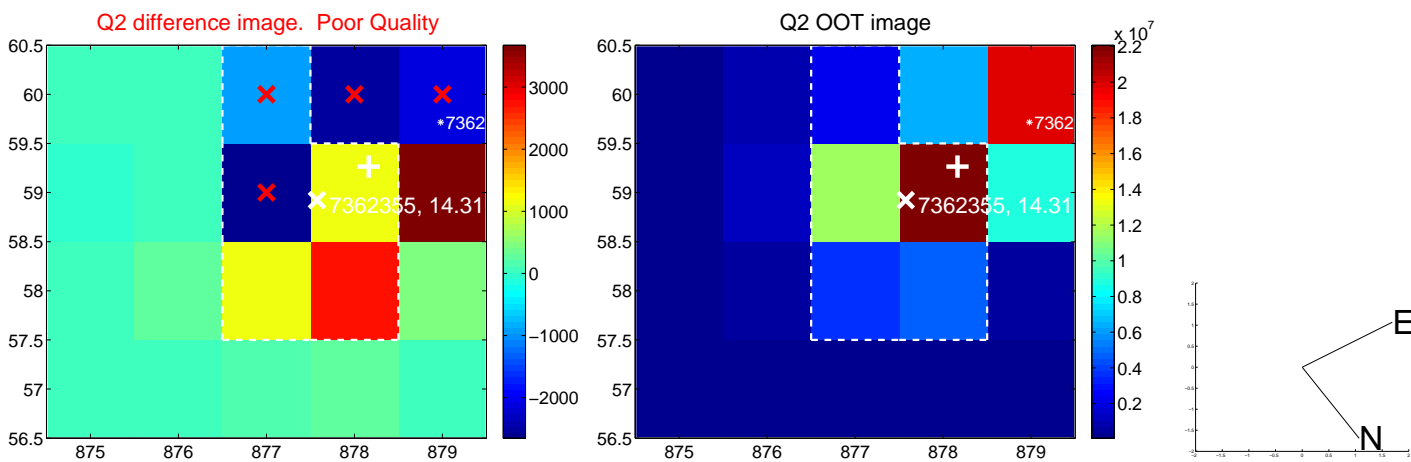
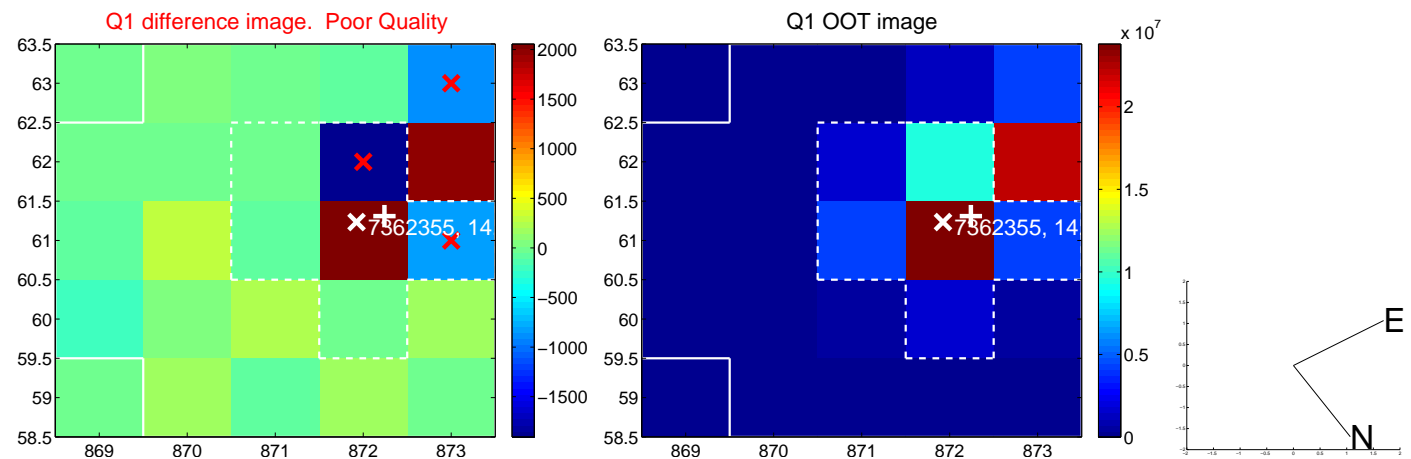


offset from photometric centroids

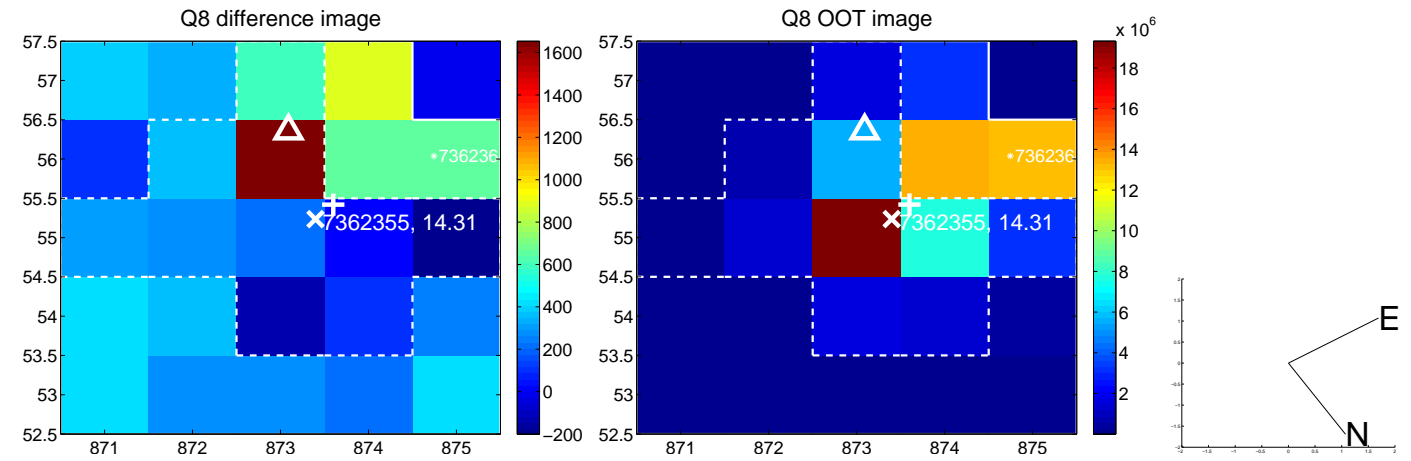
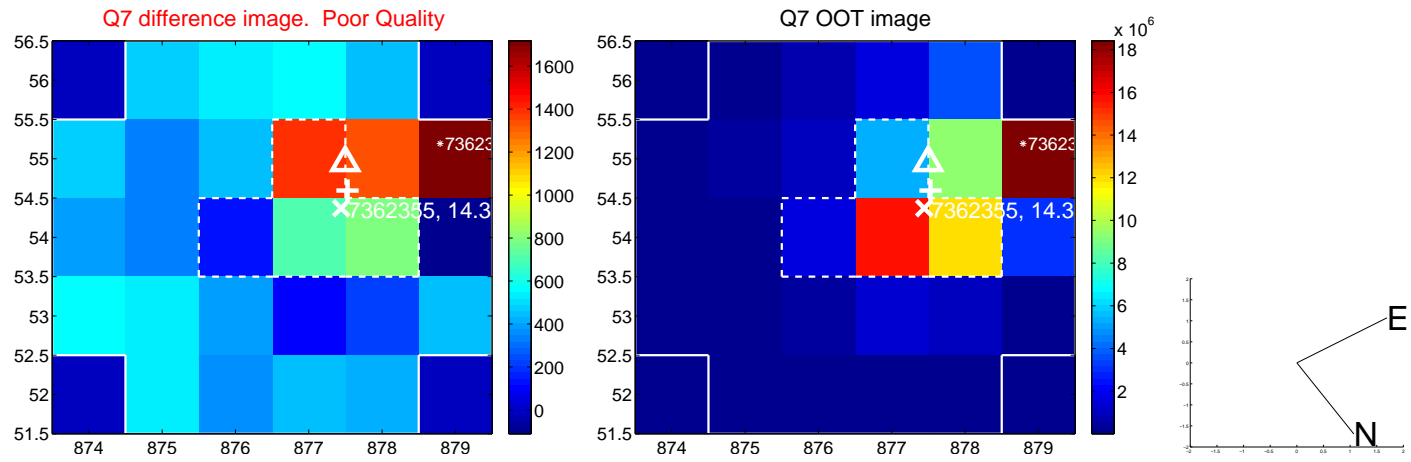
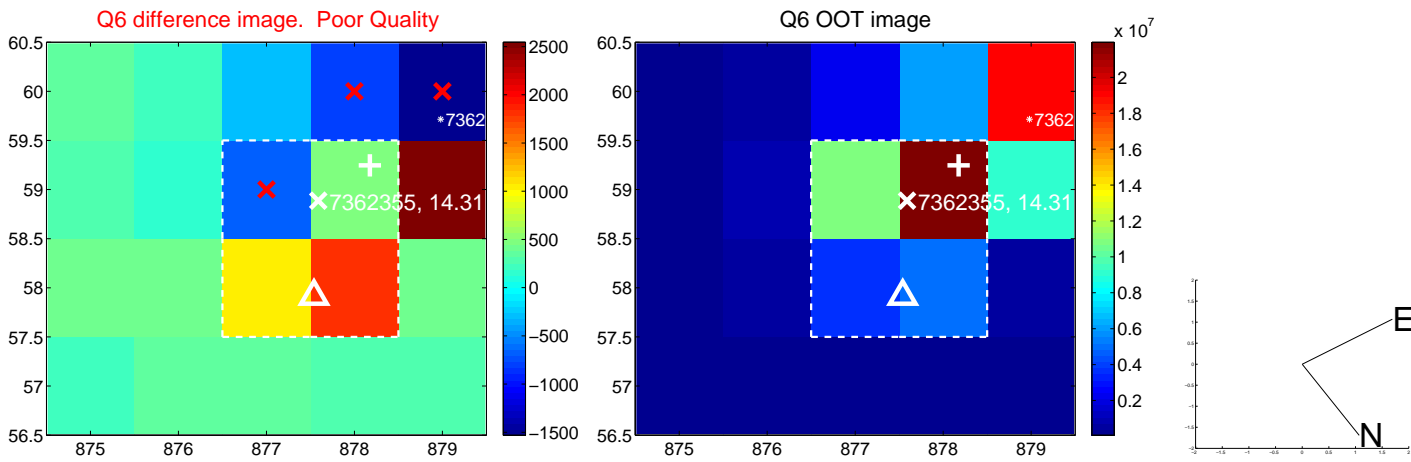
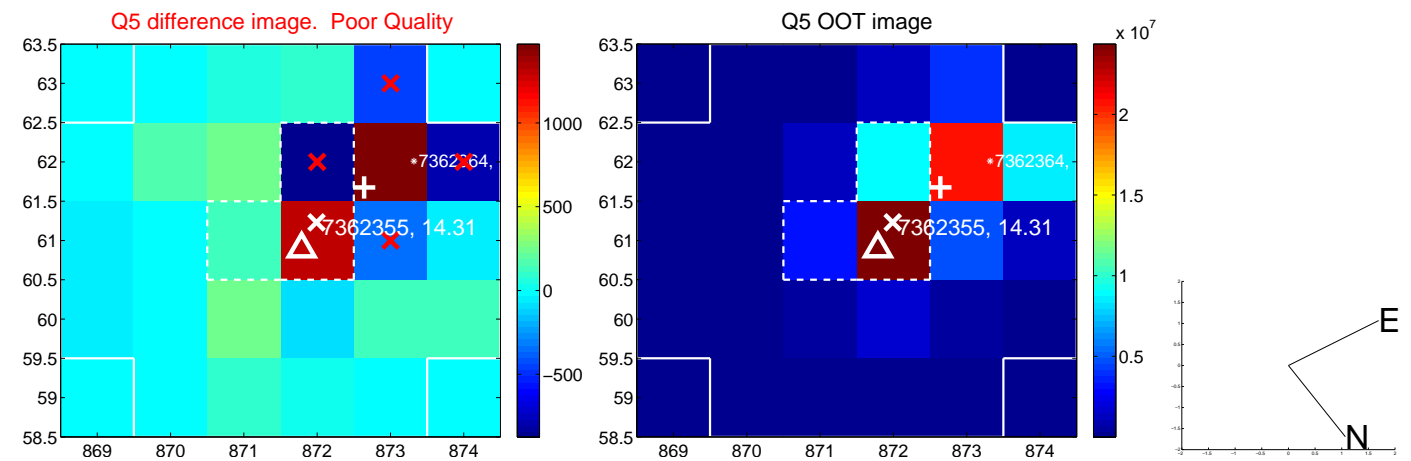


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

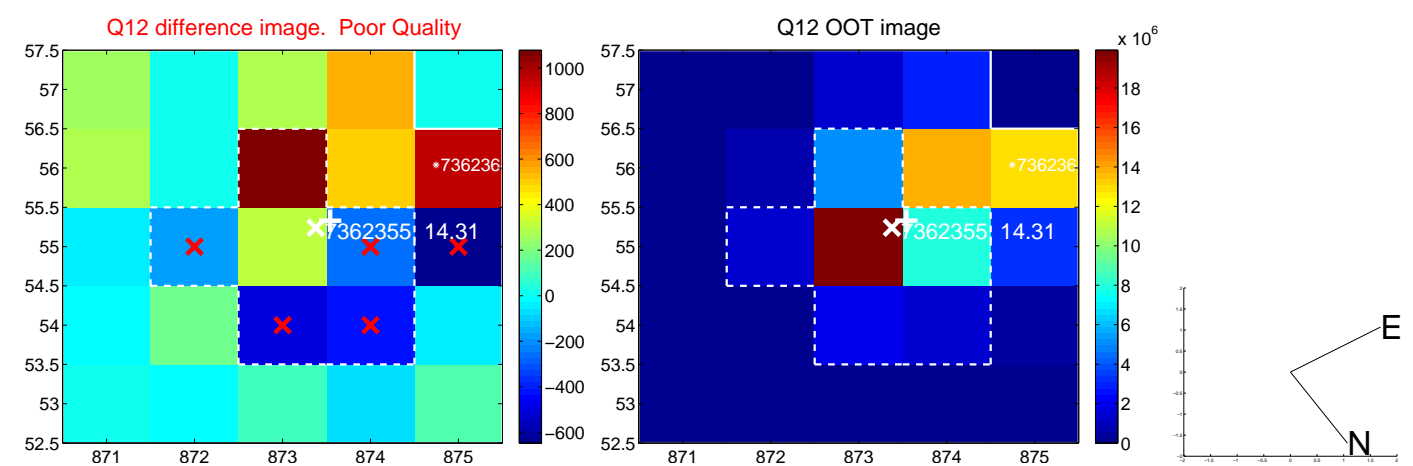
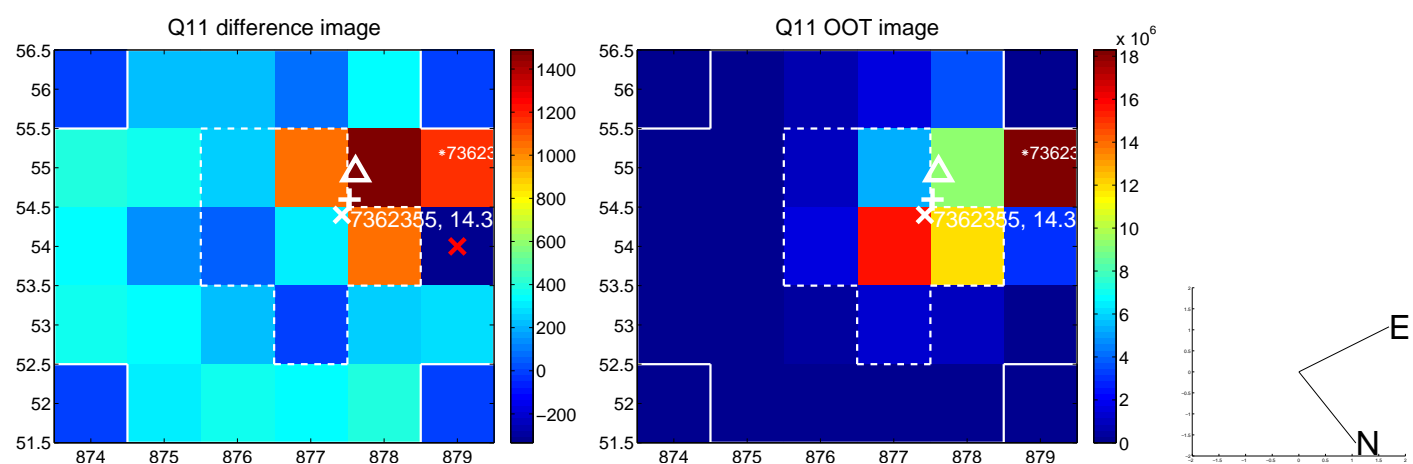
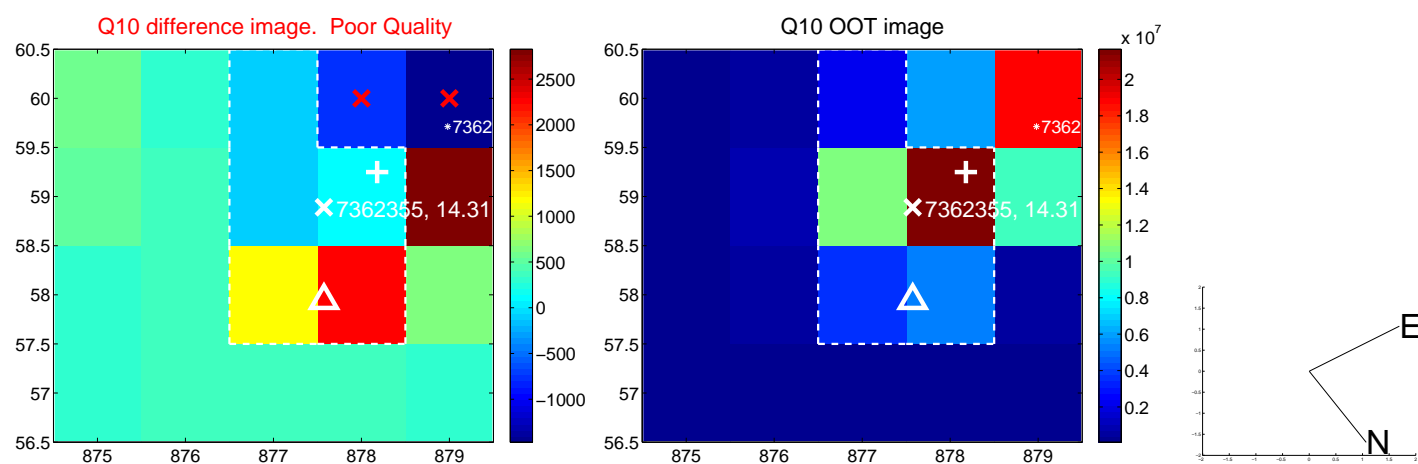
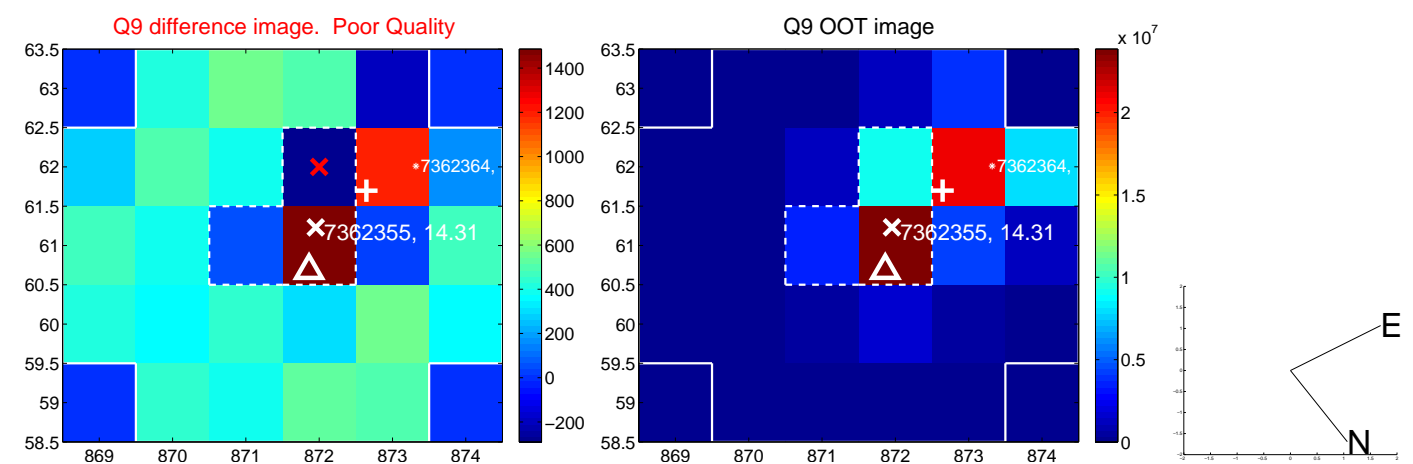
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



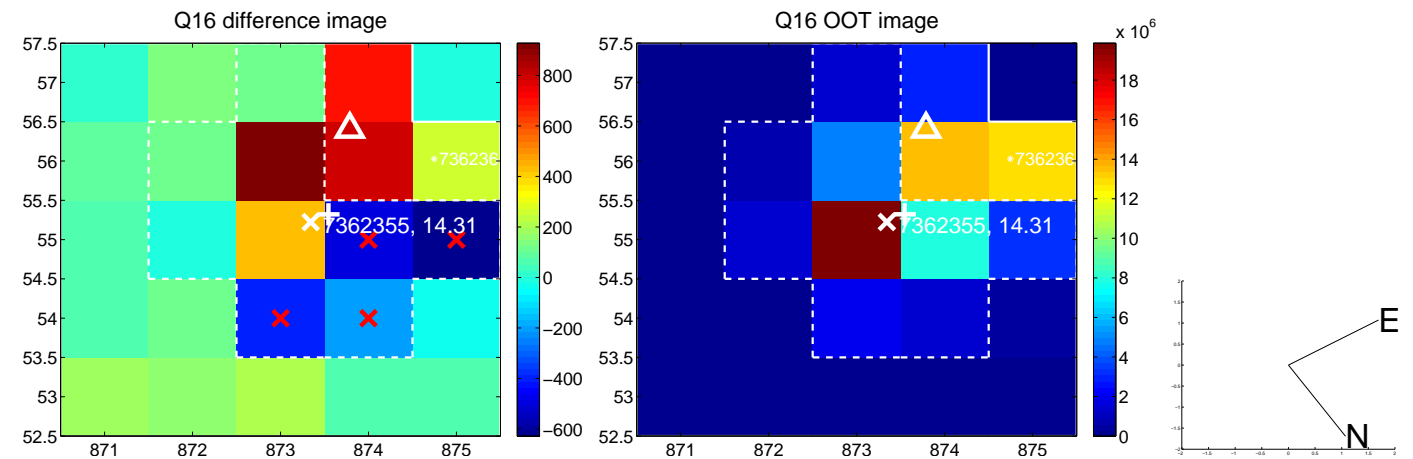
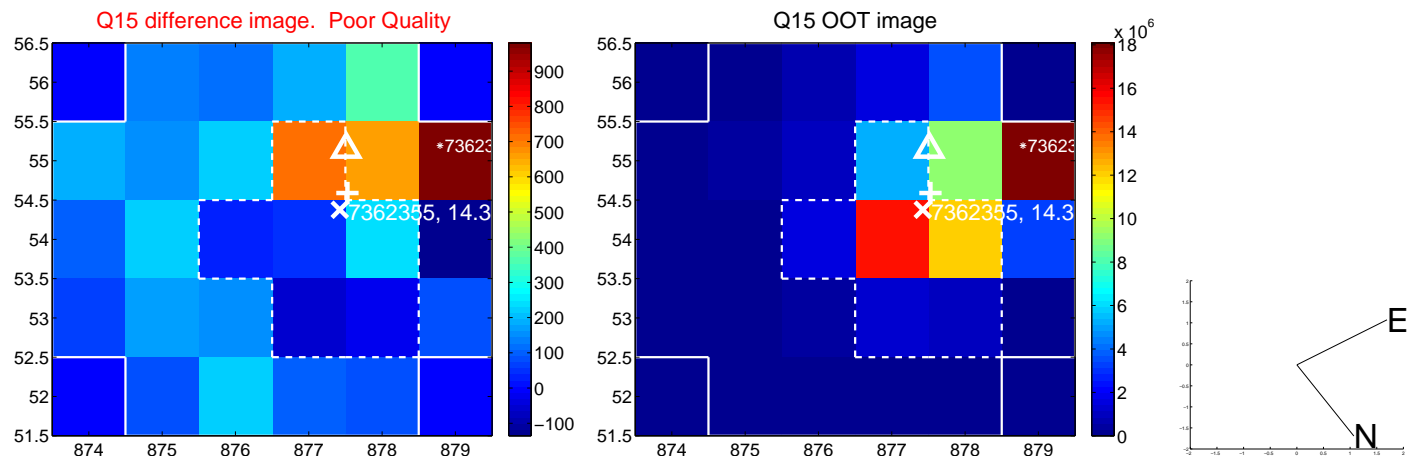
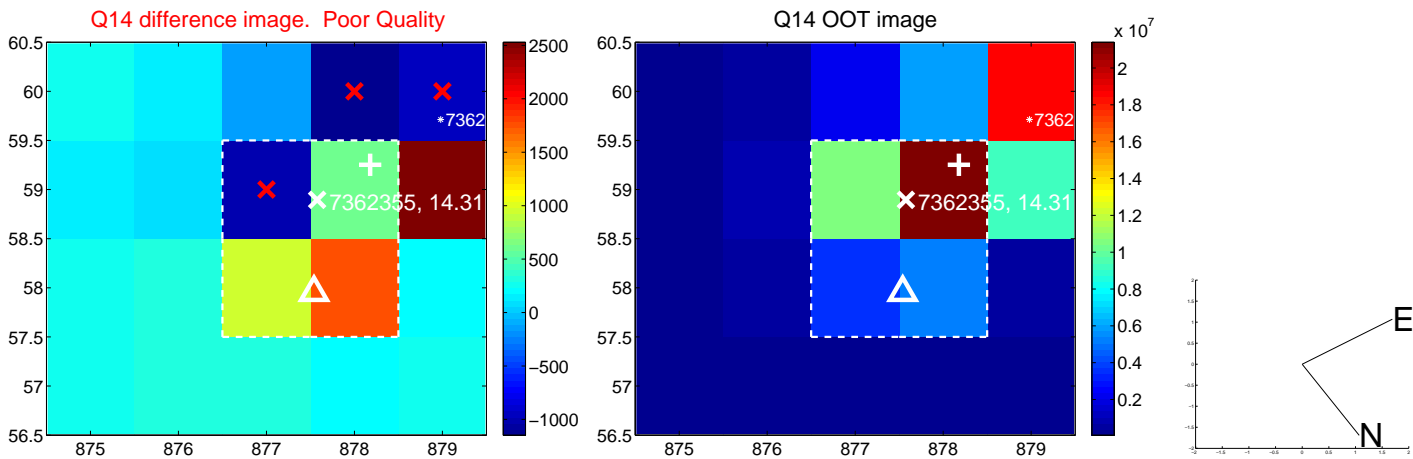
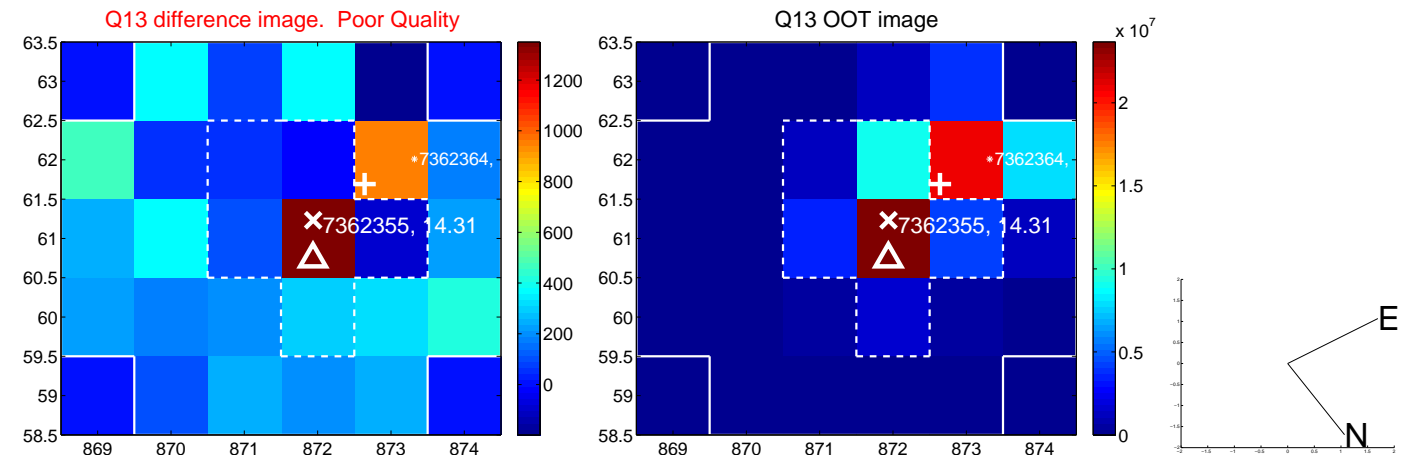
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



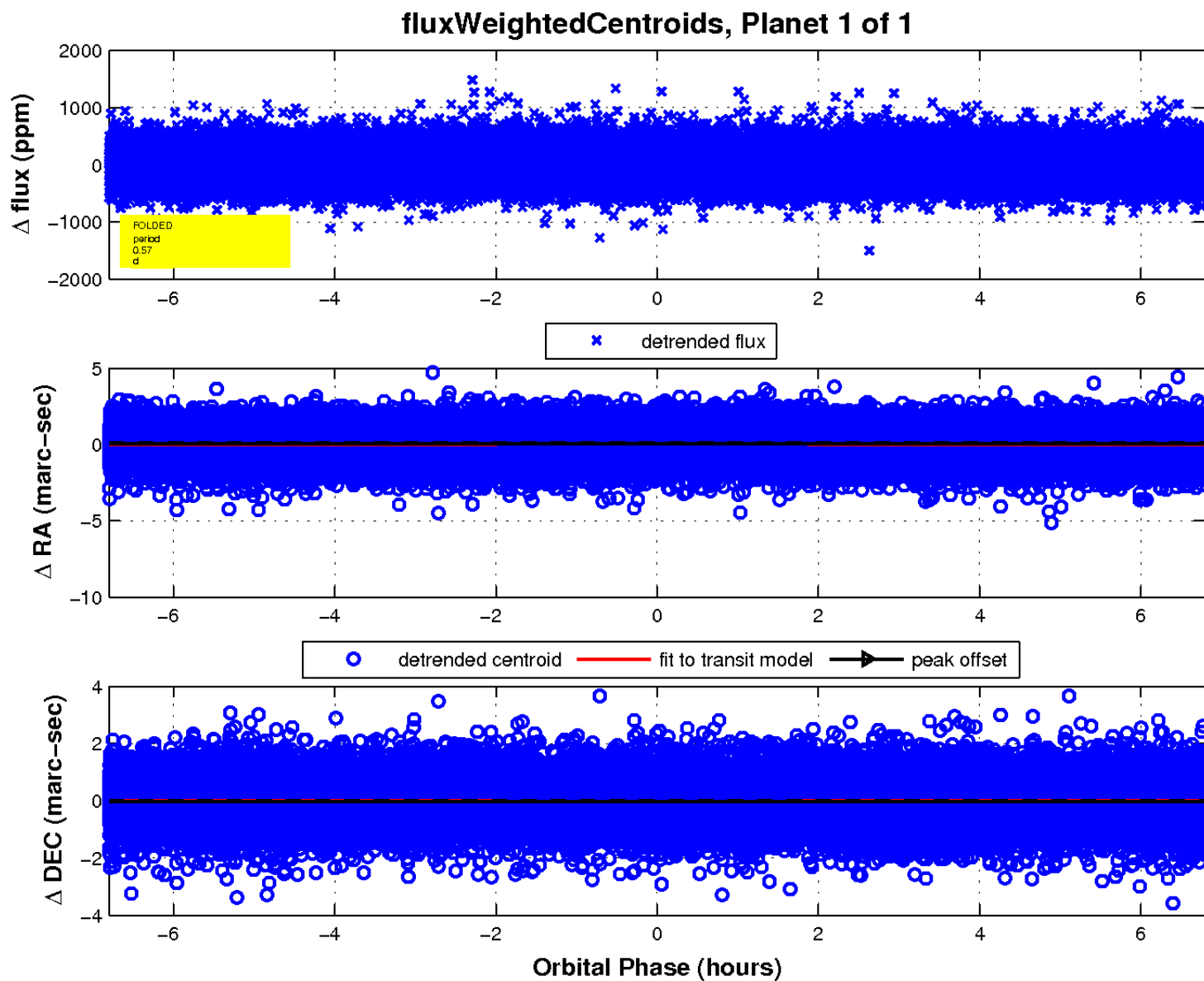
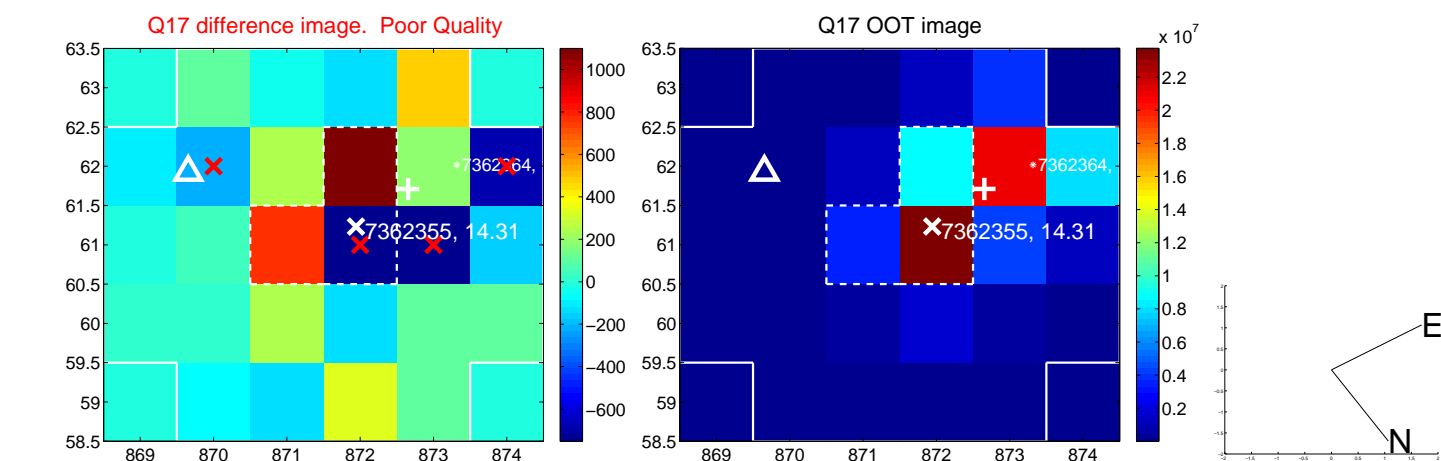
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

