

KIC 008223655

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008223655-01 | OBS | 5488.01 | 280.160425 | 286.938194 | 13445.8 | 2.695 | 53.8 | 53.1 | 0.80 | 5387 | 13.13 | 0.74 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------------------------|
| 008223655-01 | OBS | FP | 0.00 | 0 | 1 | 0 | 0 | DEEP_V_SHAPED—CENT_FEW_DIFFS |

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 008223655-01

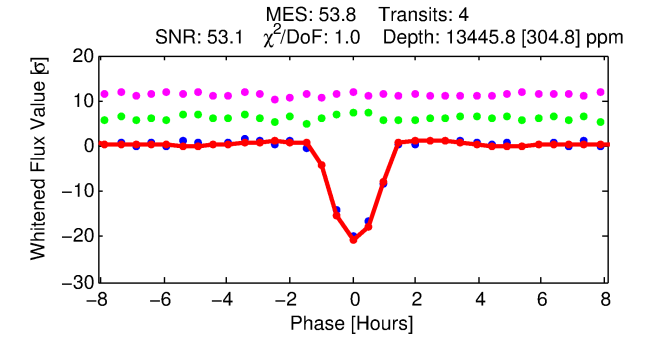
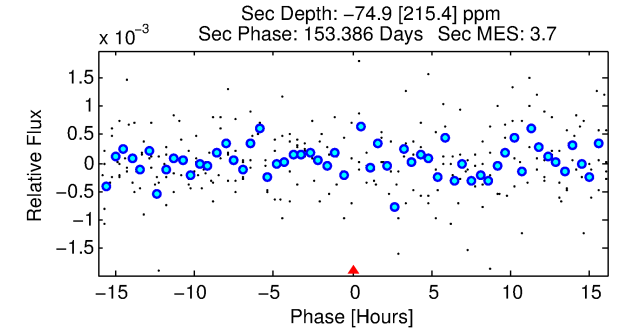
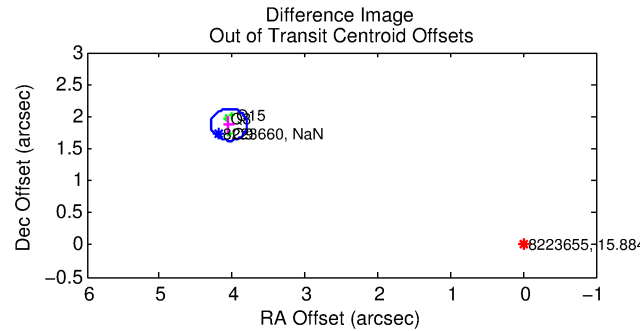
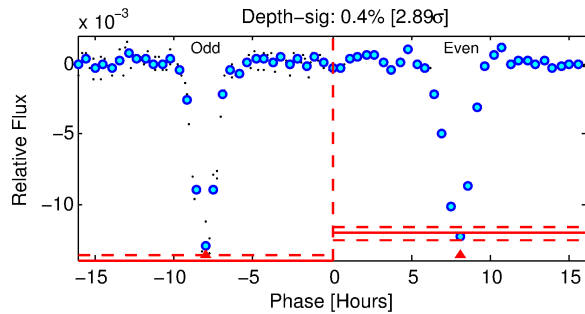
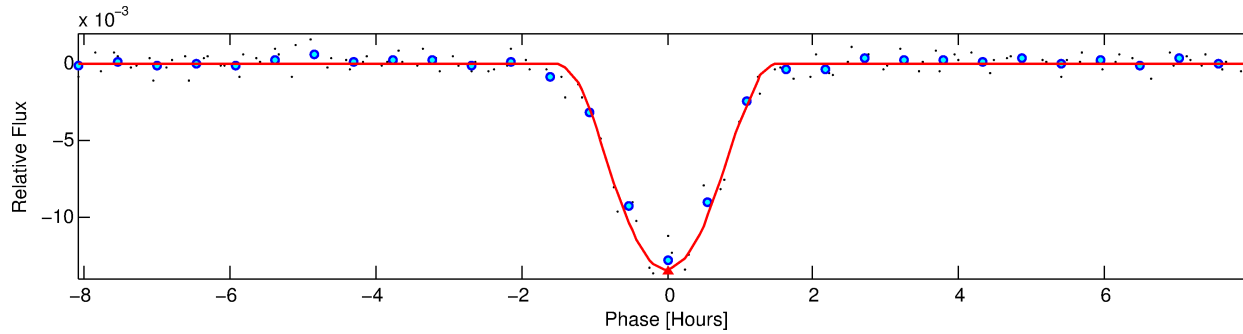
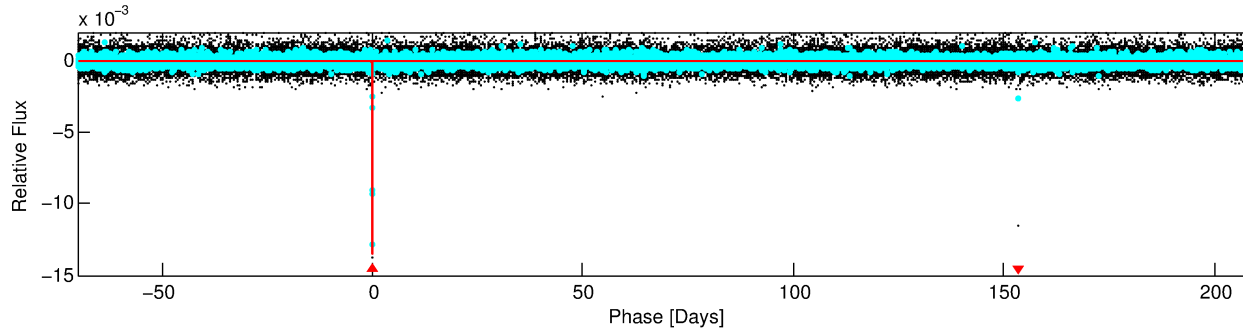
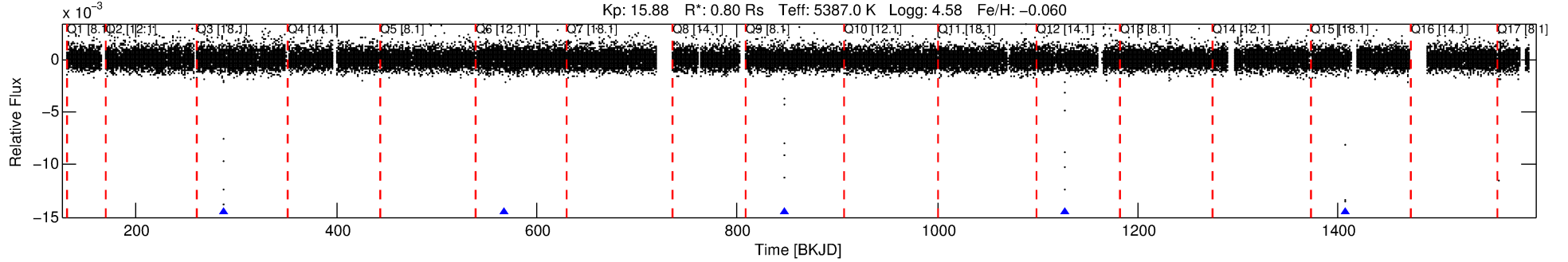
No Significant Match Found

DV One-Page Summary

KIC: 8223655 Candidate: 1 of 1 Period: 280.160 d

KOI: K05488.01 Corr: 0.964

Kp: 15.88 R*: 0.80 Rs Teff: 5387.0 K Logg: 4.58 Fe/H: -0.060



DV Fit Results:

Period = 280.16043 [0.00042] d
Epoch = 286.9382 [0.0012] BKJD
Rp/R* = 0.1506 [0.0504]
a/R* = 535.86 [48.78]
b = 0.93 [0.09]
Seff = 0.74 [0.19]
Teq = 237 [15] K
Rp = 13.13 [5.02] Re
a = 0.8054 [0.1235] AU
Ag = N/A
Teffp = N/A

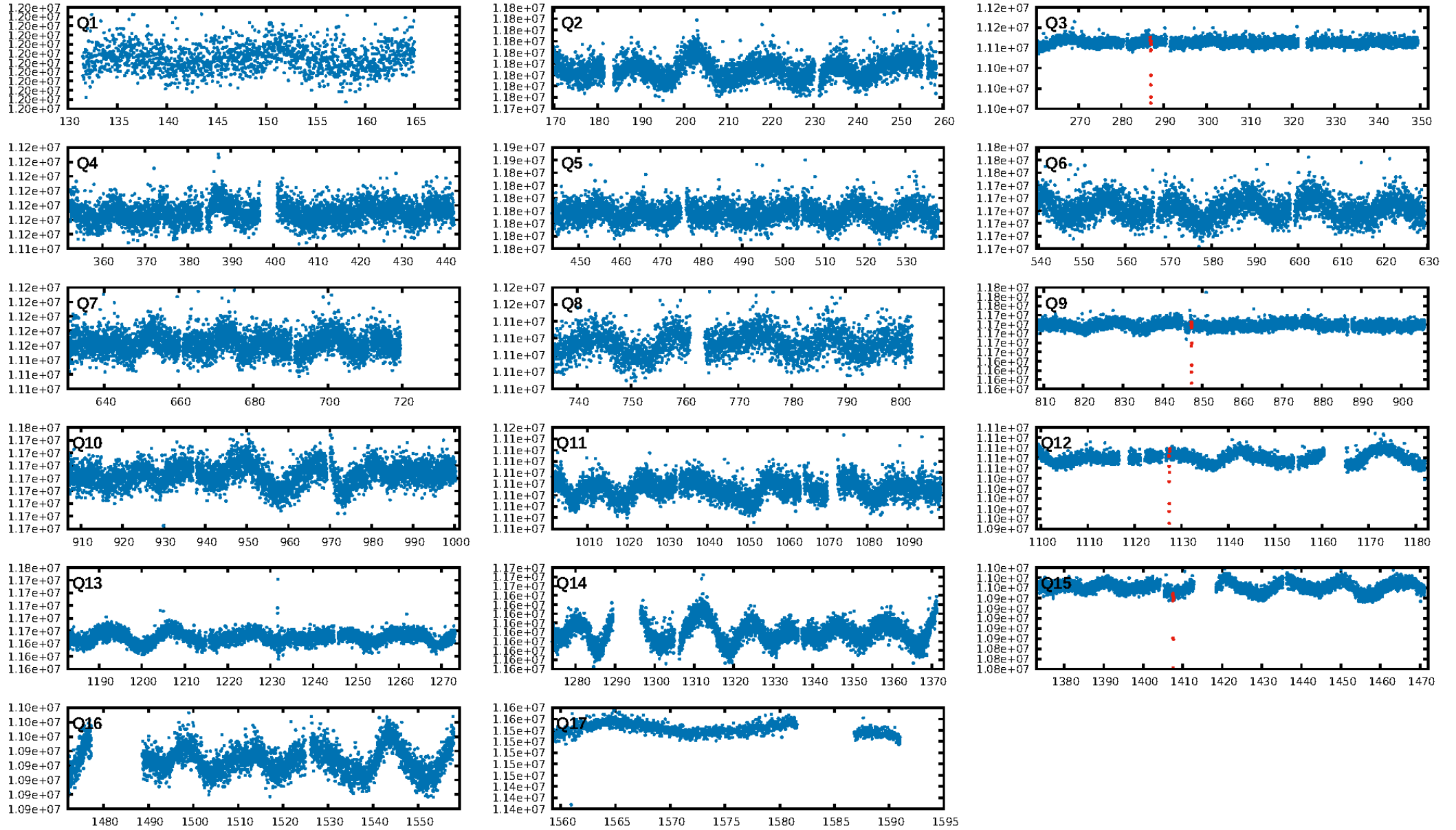
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 72.3%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.5033
Centroid-sig: 0.0%
Centroid-so: 6.664 arcsec [31.58σ]
OotOffset-rm: 4.457 arcsec [53.95σ]
KicOffset-rm: 4.484 arcsec [46.13σ]
OotOffset-st: 0/2/0/1 [3]
KicOffset-st: 0/2/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

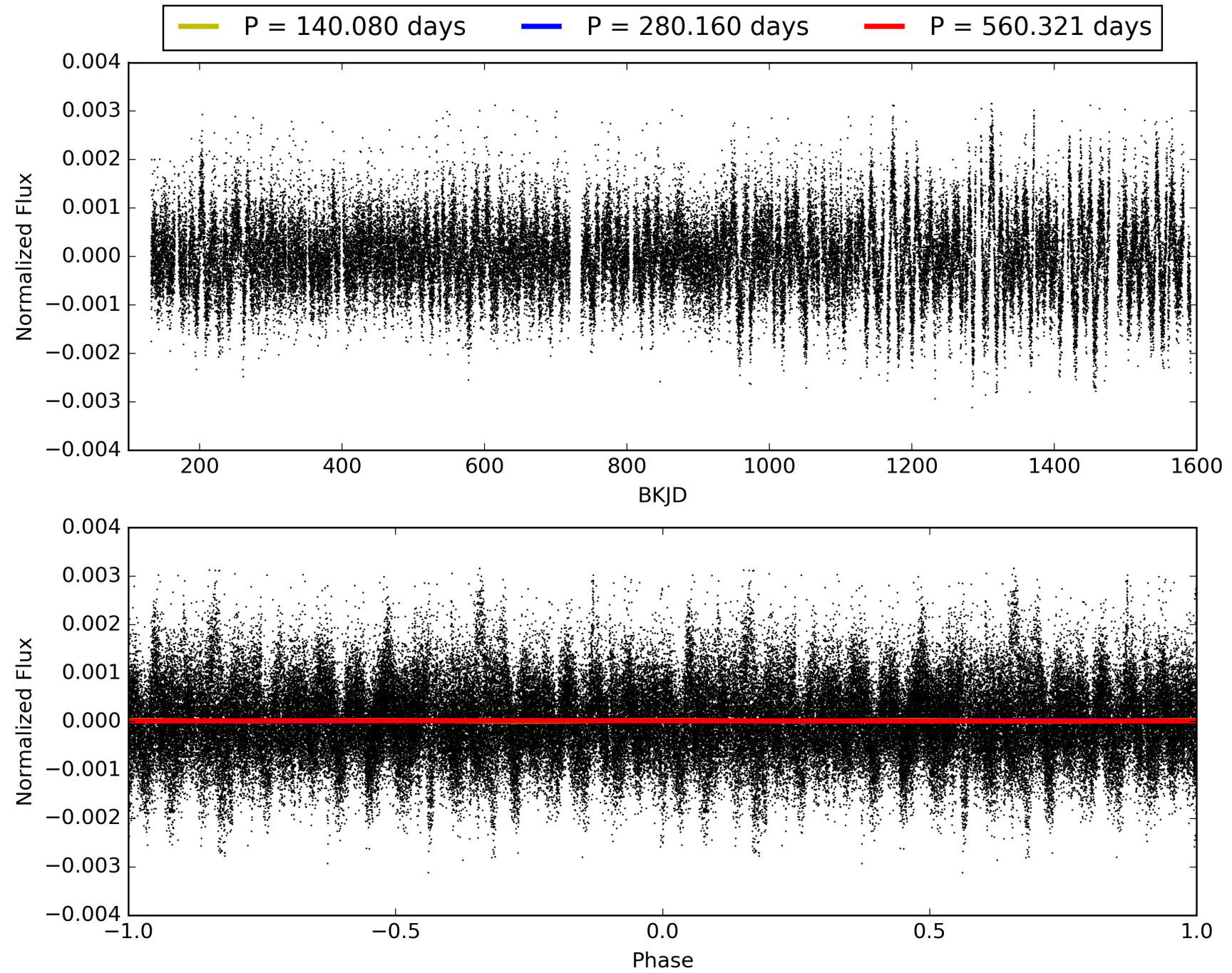
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:55:24 Z

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

TCE 008223655-01, PDC Light Curves

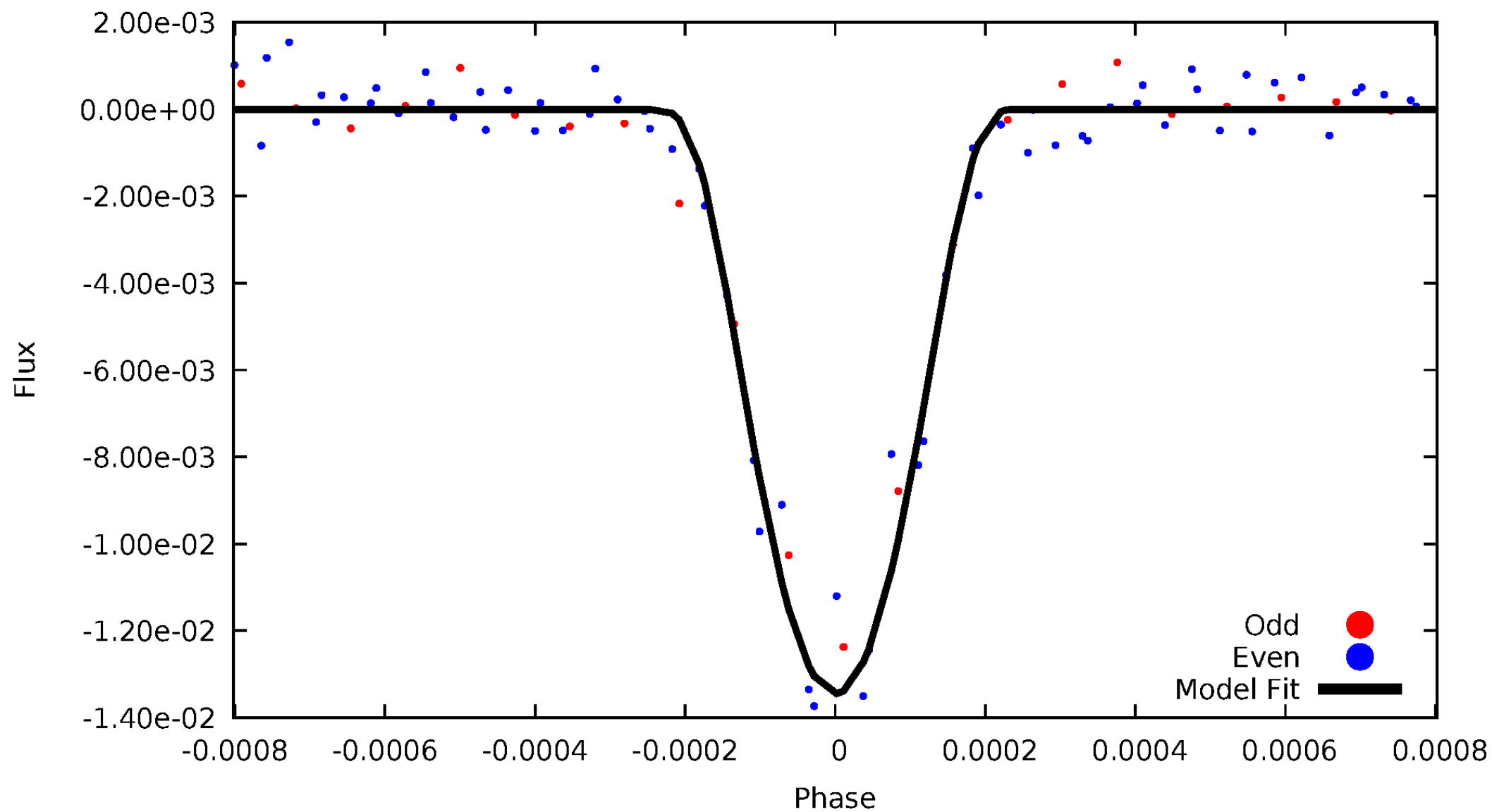


TCE 008223655-01



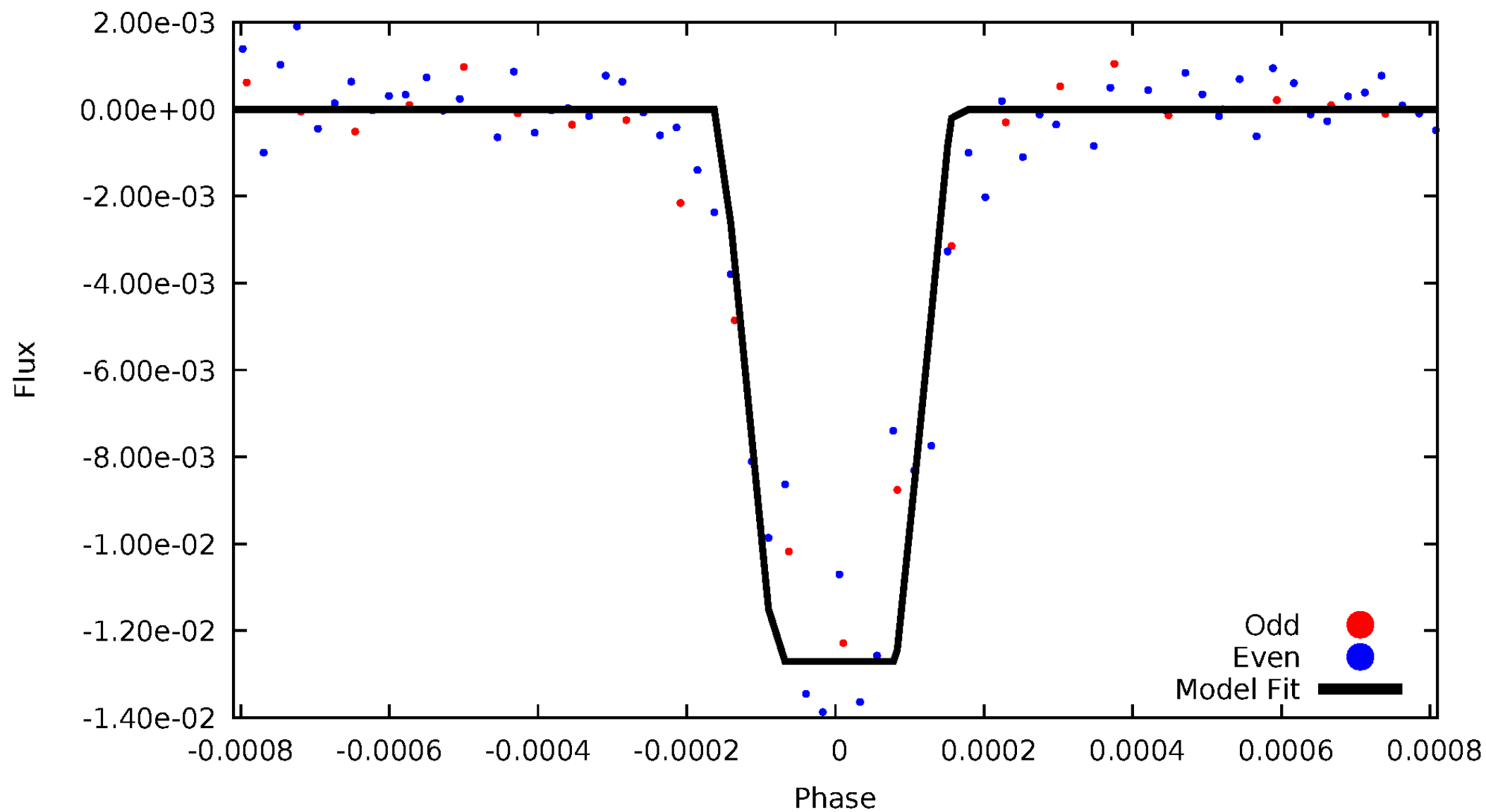
DV Odd/Even

TCE 008223655-01



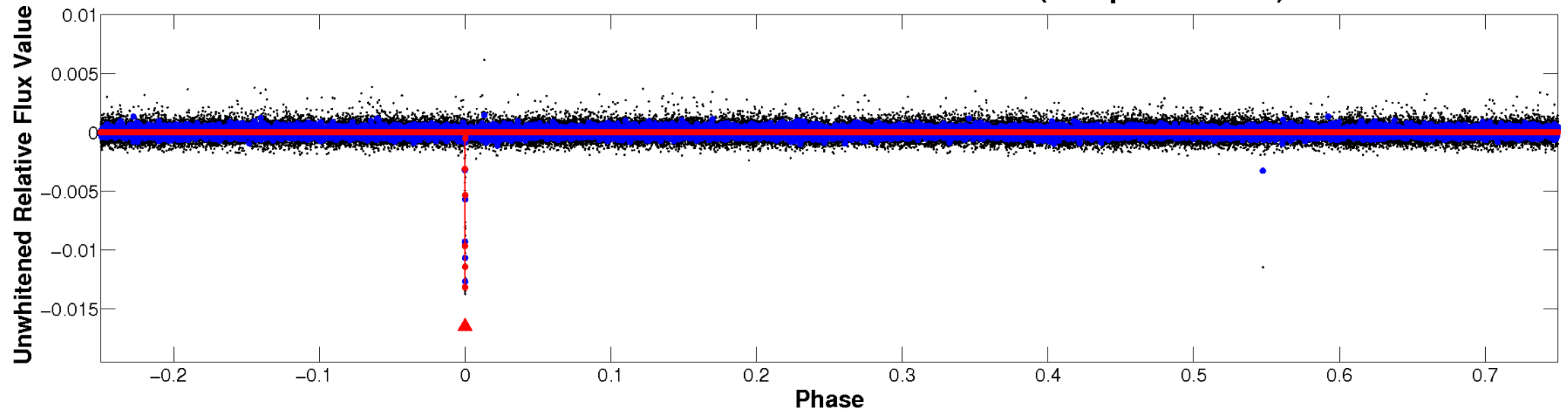
ALT Odd/Even

TCE 008223655-01

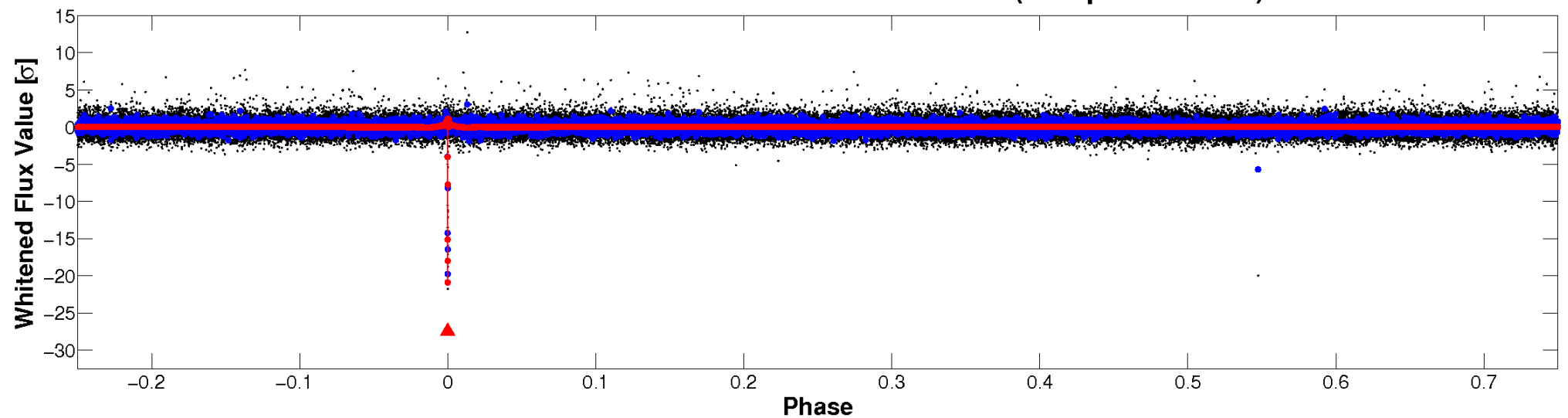


Non-Whitened Vs. Whitened Light Curve

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

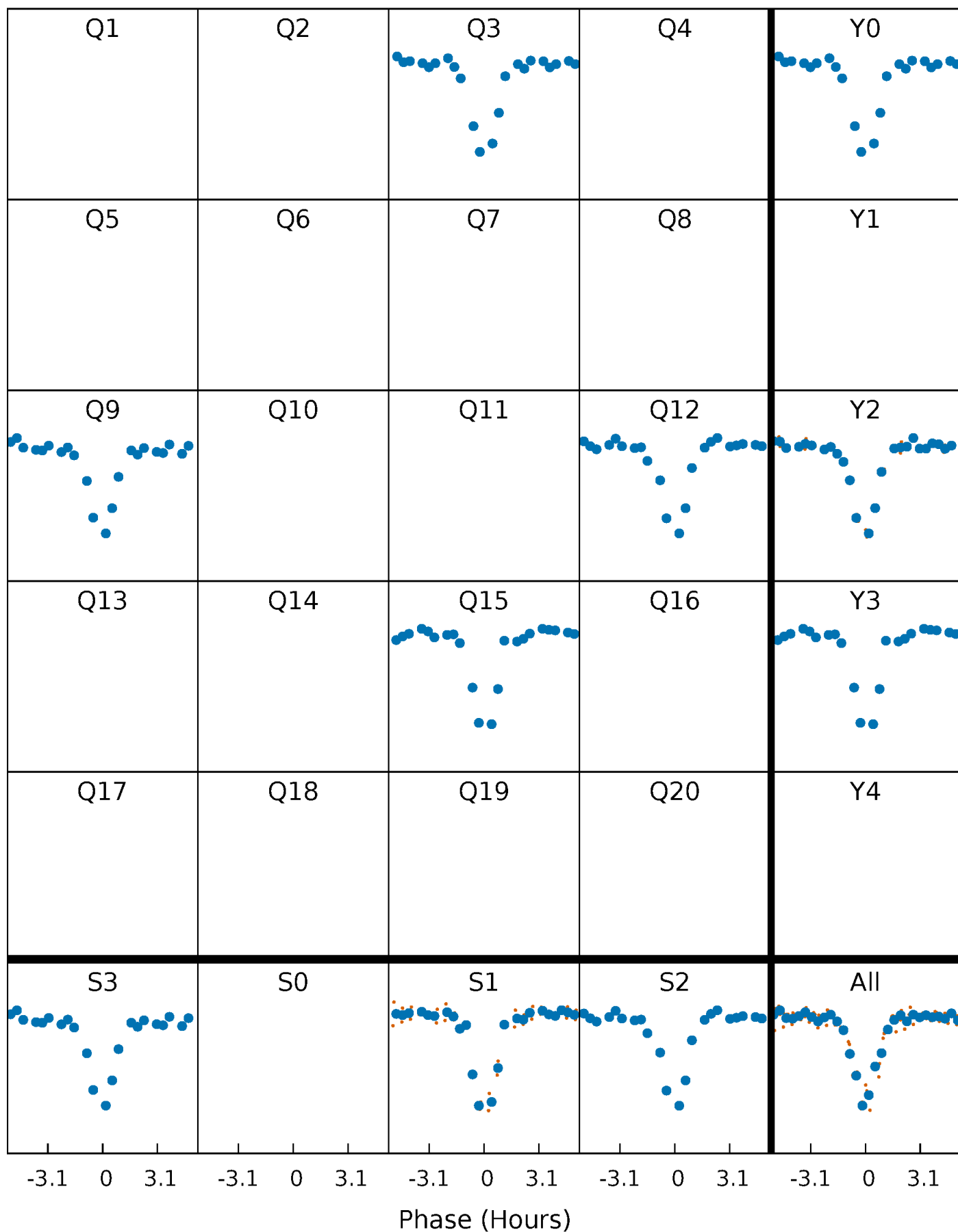


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



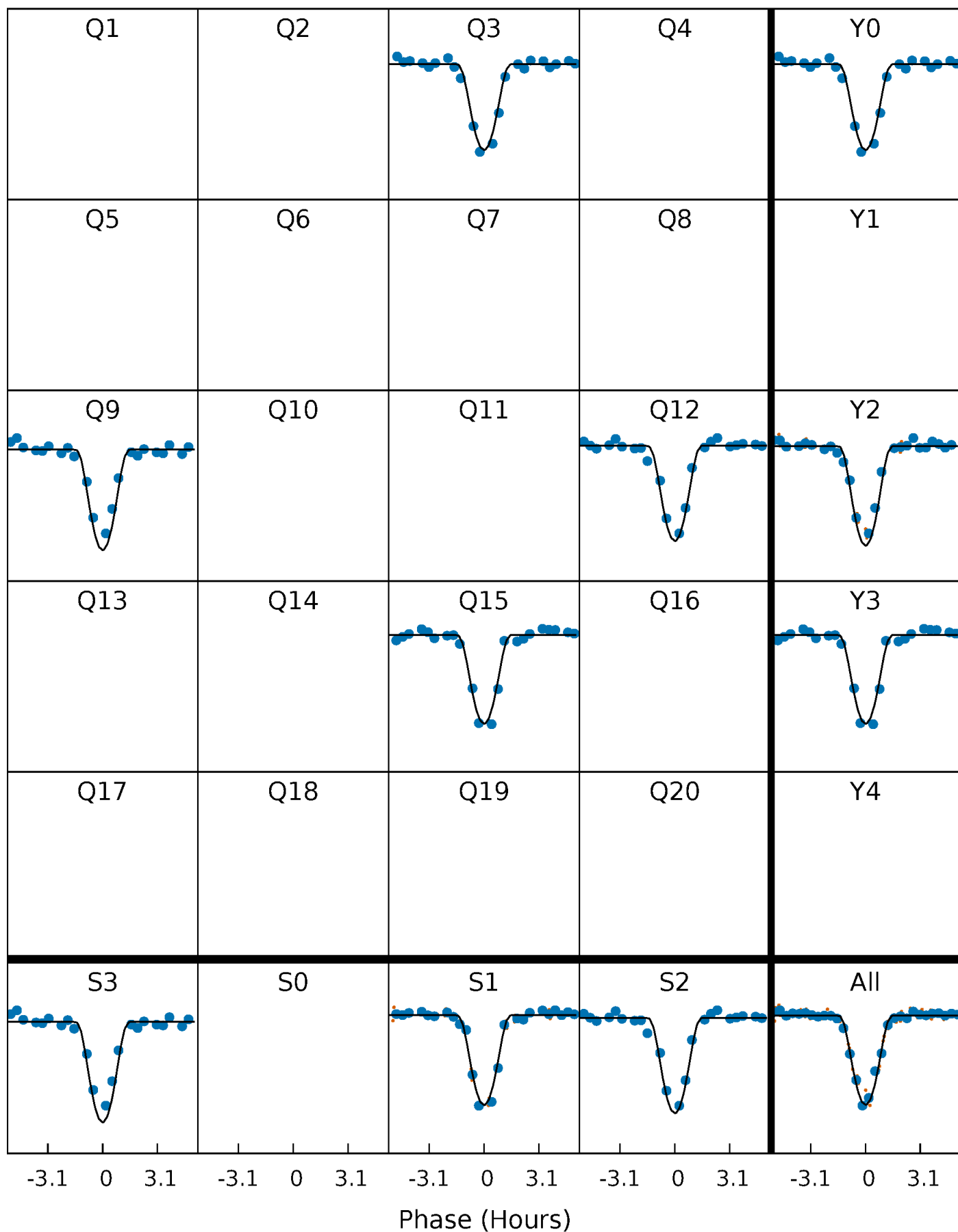
PDC Quarter-Phased Transit Curves

TCE 008223655-01 P=280.160425 Days $T_0=286.938195$ (BKJD)



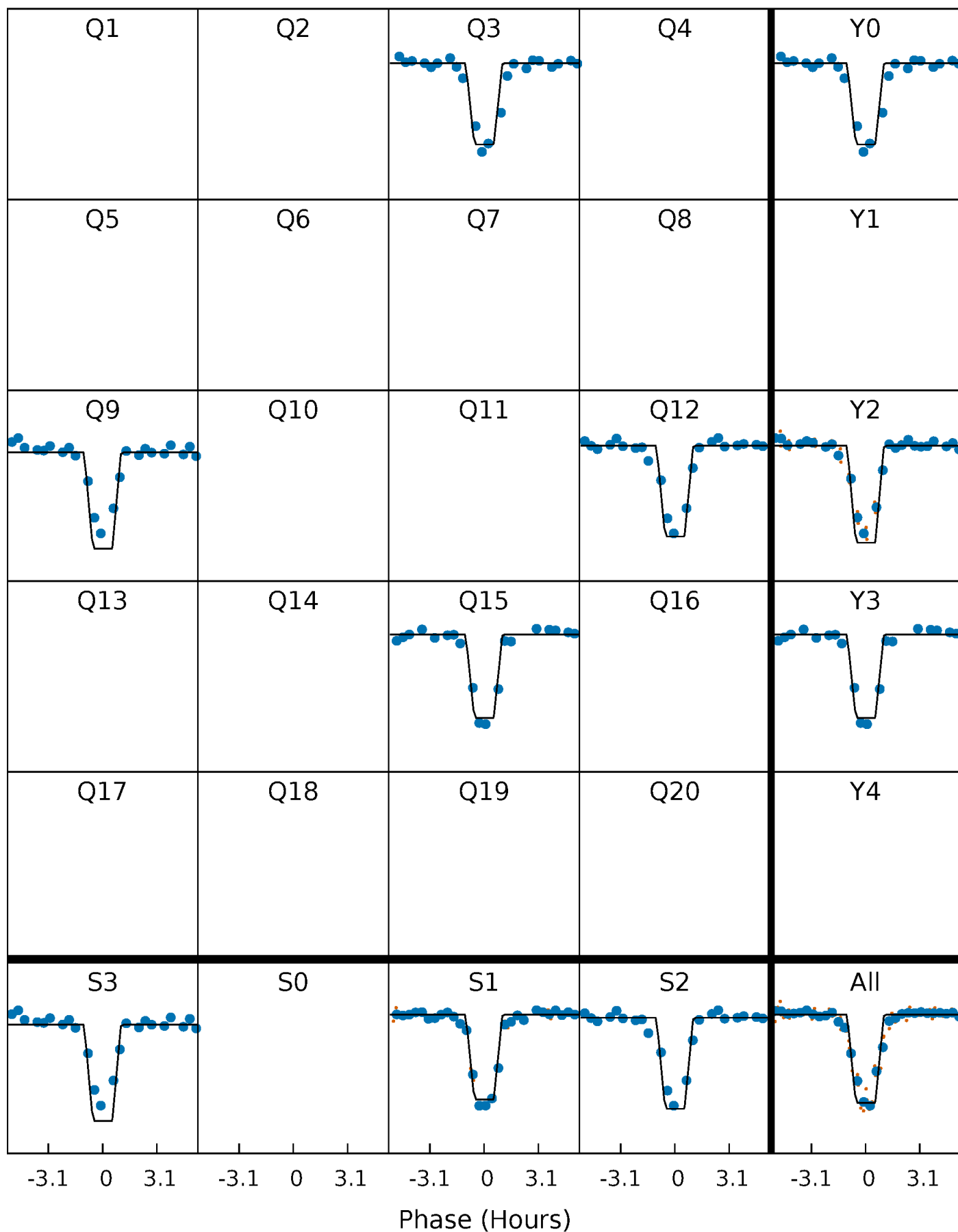
DV Quarter-Phased Transit Curves

TCE 008223655-01 P=280.160425 Days $T_0=286.938195$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

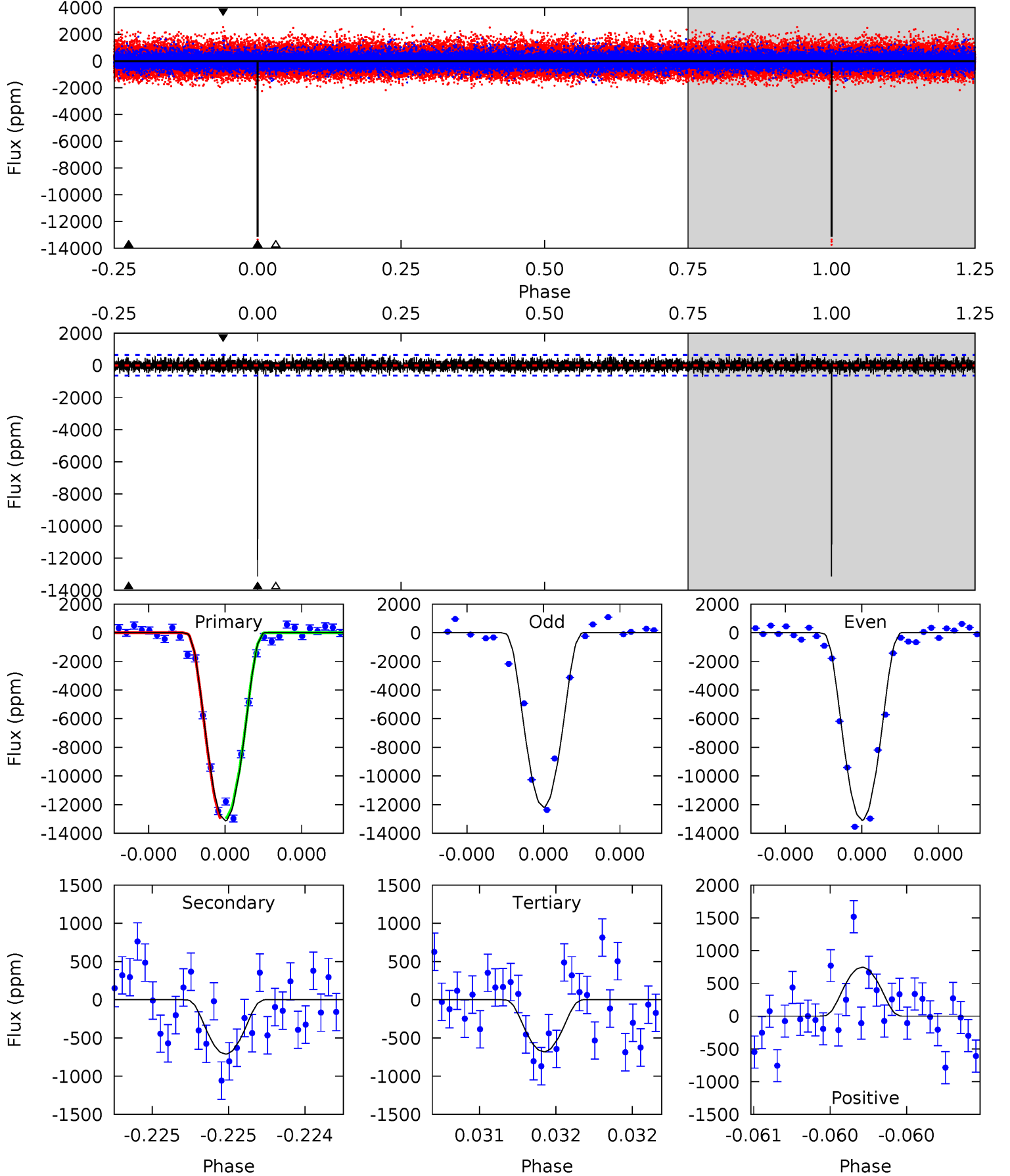
TCE 008223655-01 P=280.161500 Days $T_0=286.935113$ (BKJD)



DV Model-Shift Uniqueness Test

008223655-01, P = 280.160425 Days, E = 6.777770 Days

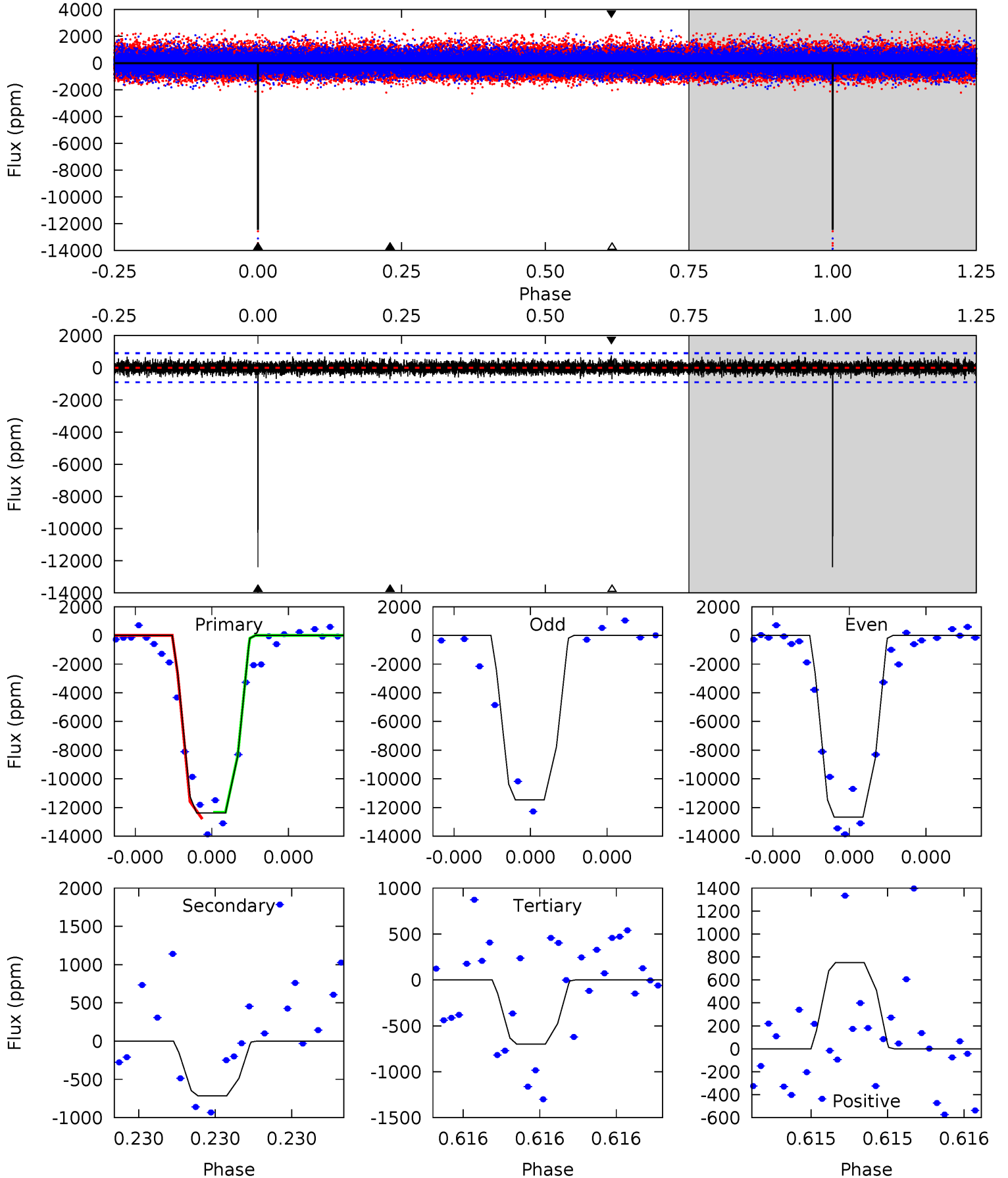
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 114.3 | 6.19 | 5.93 | 6.50 | 5.59 | 3.51 | 1.56 | 108.3 | 107.8 | 0.26 | -0.31 | 3.46 | 0.98 | 0.05 | 0.15 |



Alt Model-Shift Uniqueness Test

008223655-01, P = 280.161500 Days, E = 6.773613 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 77.9 | 4.49 | 4.39 | 4.72 | 5.65 | 3.60 | 1.16 | 73.5 | 73.1 | 0.10 | -0.22 | 2.85 | 0.98 | 0.06 | 0 |



Stellar Parameters For KIC 008223655

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|-------------------------------------------|
| | 5387^{+160}_{-160} | $4.581^{+0.030}_{-0.120}$ | $-0.060^{+0.300}_{-0.300}$ | $0.799^{+0.147}_{-0.063}$ | $0.892^{+0.072}_{-0.099}$ | $2.465^{+0.397}_{-0.889}$ |
| | +3%/-3% | +1%/-3% | +500%/-500% | +18%/-8% | +8%/-11% | +16%/-36% |
| 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 008223655-01 / KOI 5488.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|----------------|-------------------------|----------------------|----------------------|------------------------|
| DV | -711 ± 115 | $13.37^{+4.85}_{-4.26}$ | 336^{+15}_{-13} | 2948^{+342}_{-246} | 1394^{+1570}_{-663} |
| Alt. | -715 ± 159 | $10.37^{+4.83}_{-4.64}$ | 336^{+17}_{-13} | 3175^{+707}_{-339} | 2313^{+5431}_{-1282} |

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

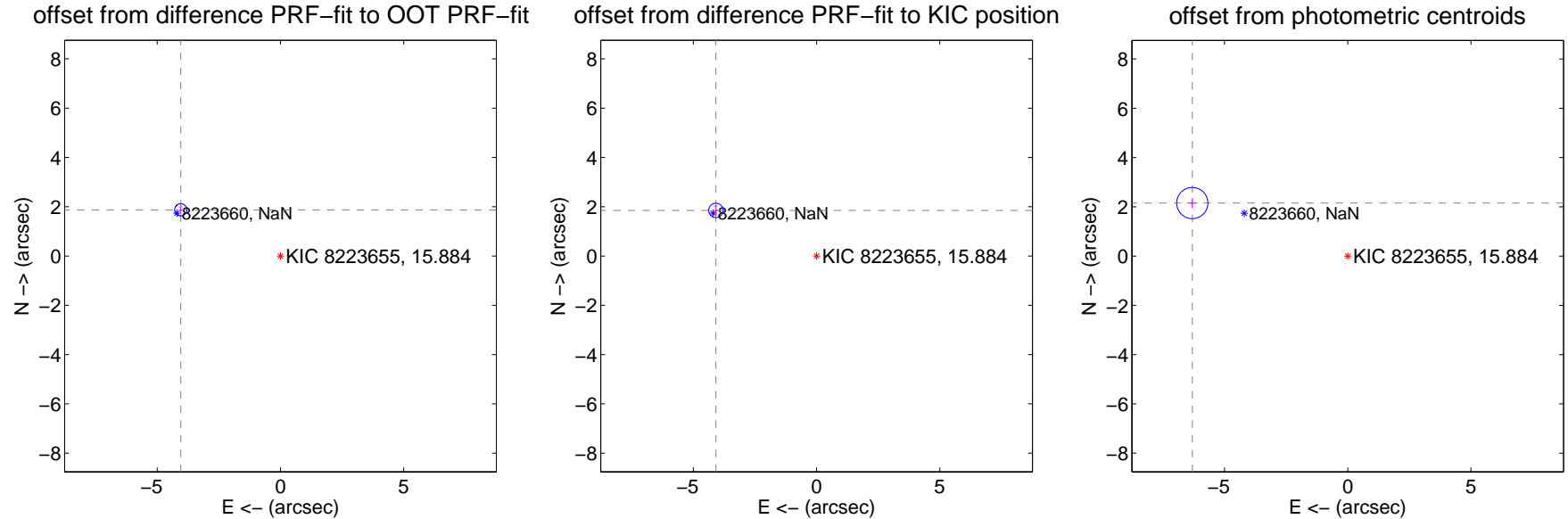
DV Centroid Data

Supplemental centroid analysis for 008223655-01. Kepler magnitude: 15.88. Transit SNR 53.11

There are 3 quarters with good PRF difference image offsets

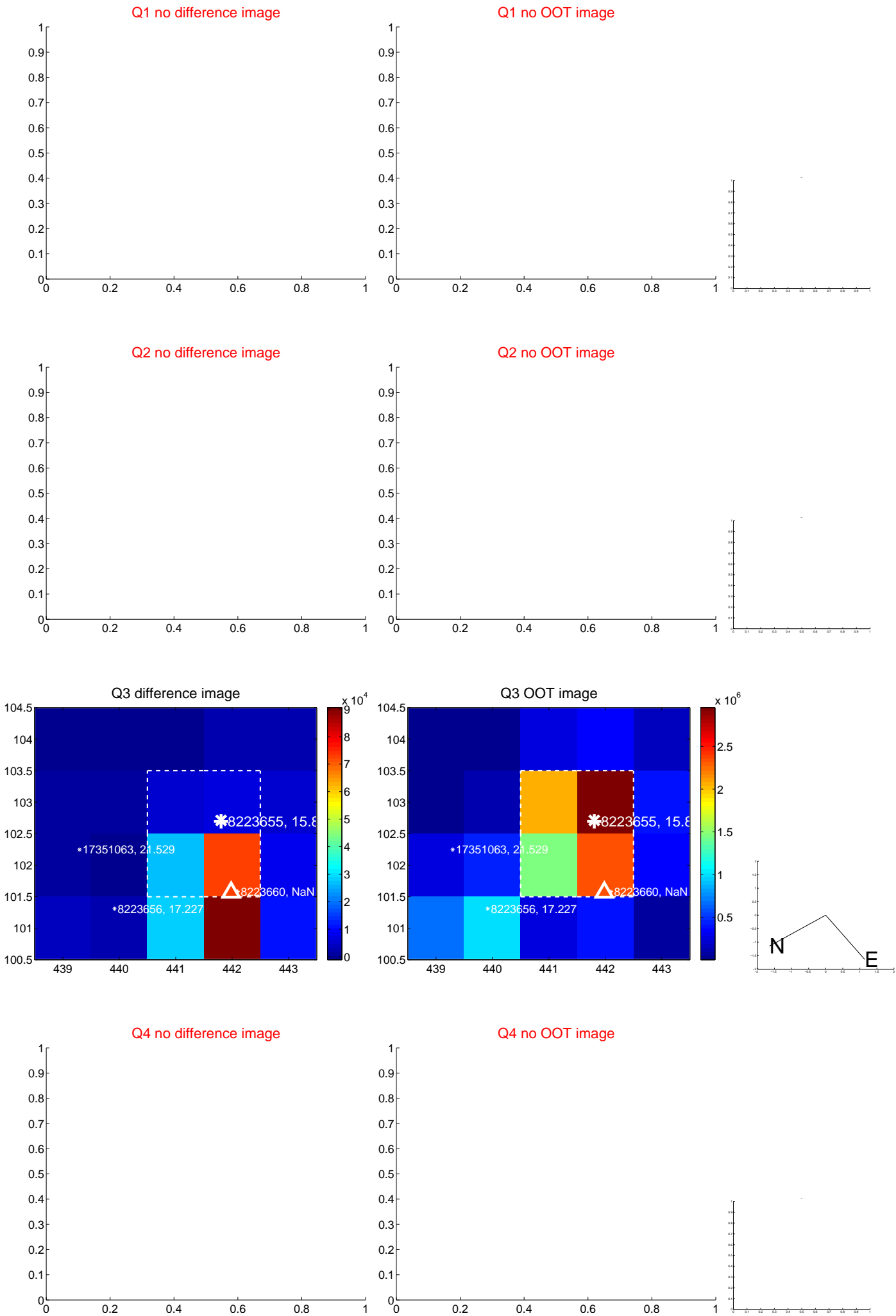
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|-----------------------------------------|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 4.457 ± 0.083 | 53.95 | 4.044 ± 0.069 | 1.873 ± 0.127 |
| PRF-fit source offset from KIC position | 4.484 ± 0.097 | 46.13 | 4.085 ± 0.071 | 1.851 ± 0.176 |
| photometric centroid source offset | 6.66 ± 0.21 | 31.58 | 6.31 ± 0.21 | 2.15 ± 0.20 |

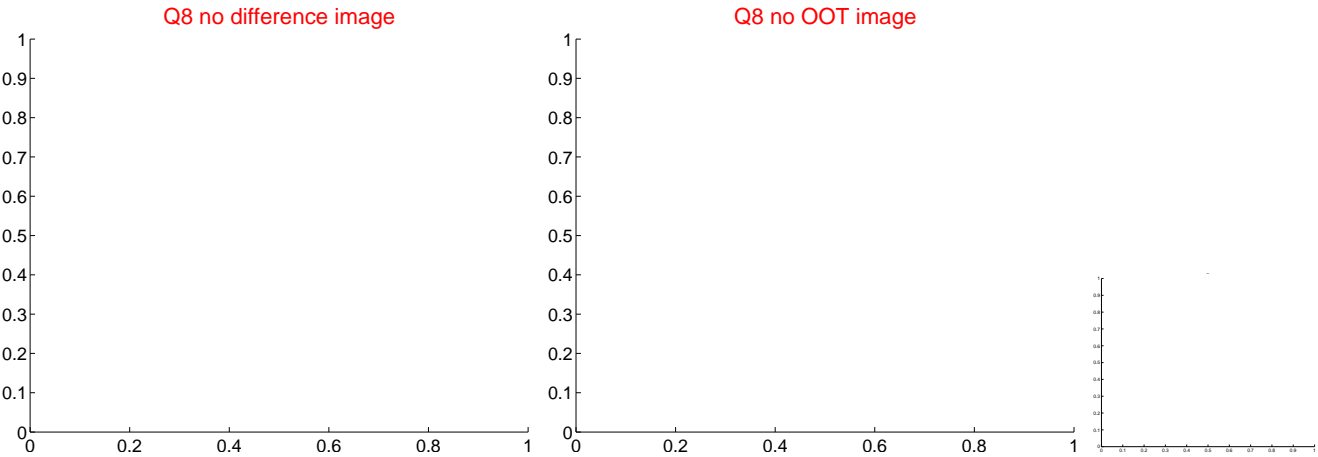
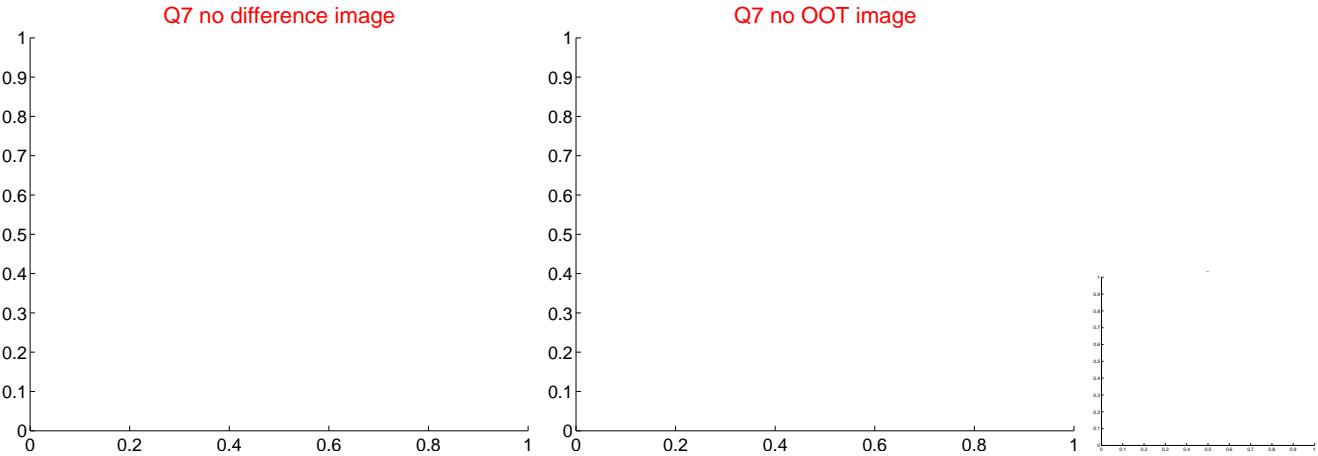
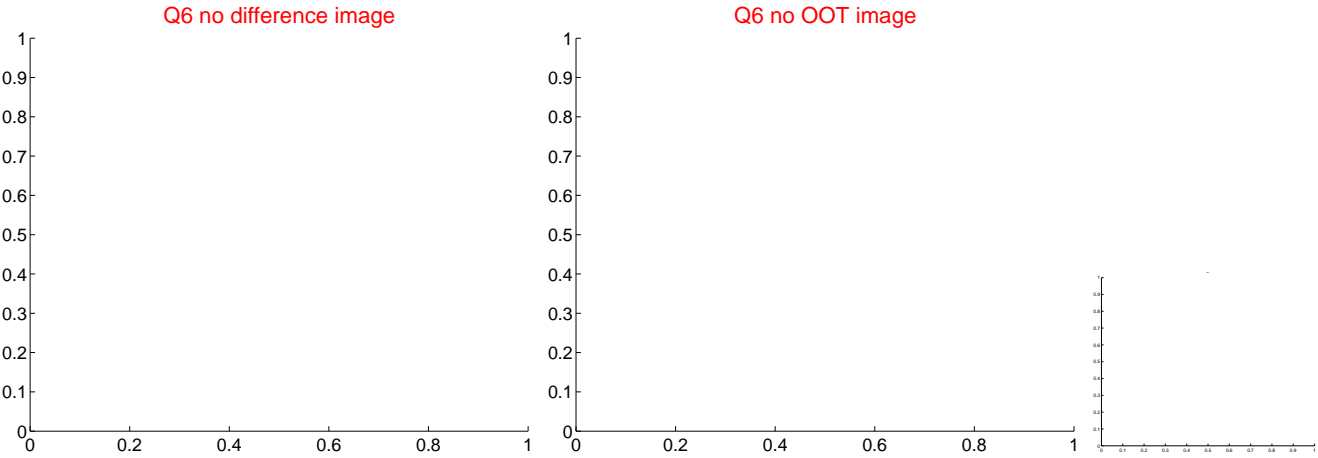
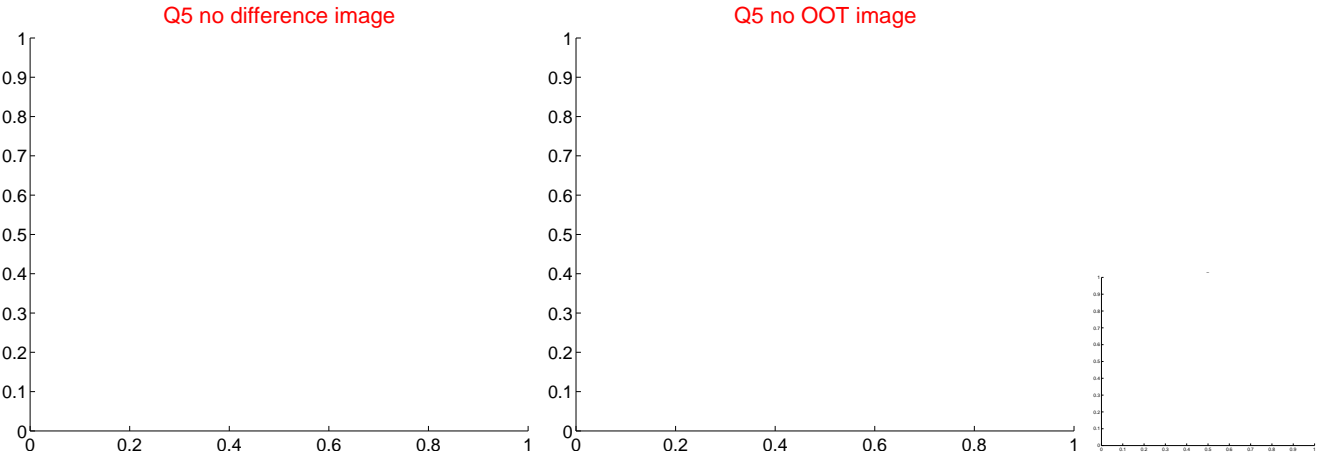


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

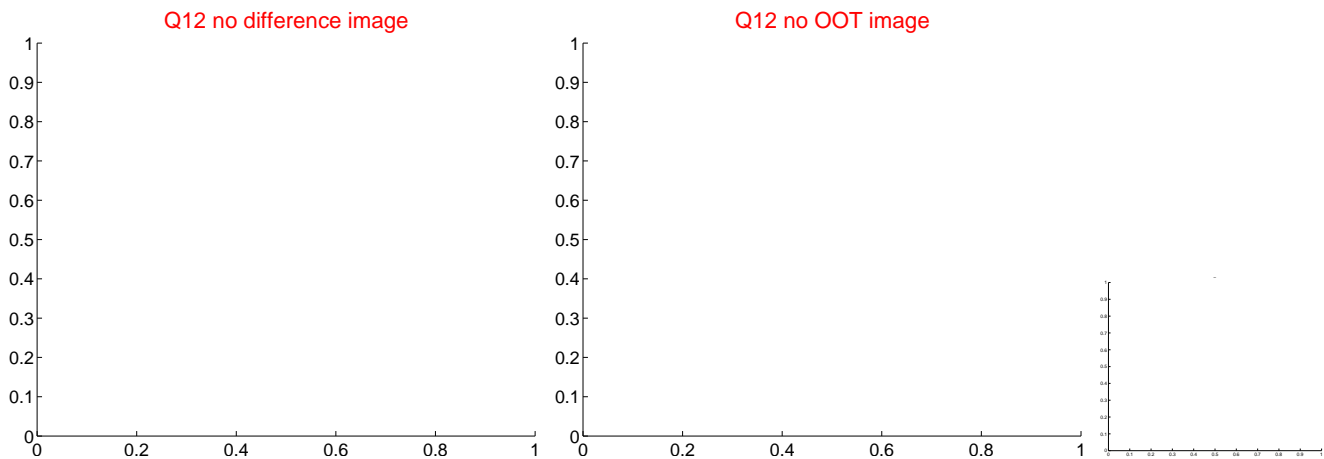
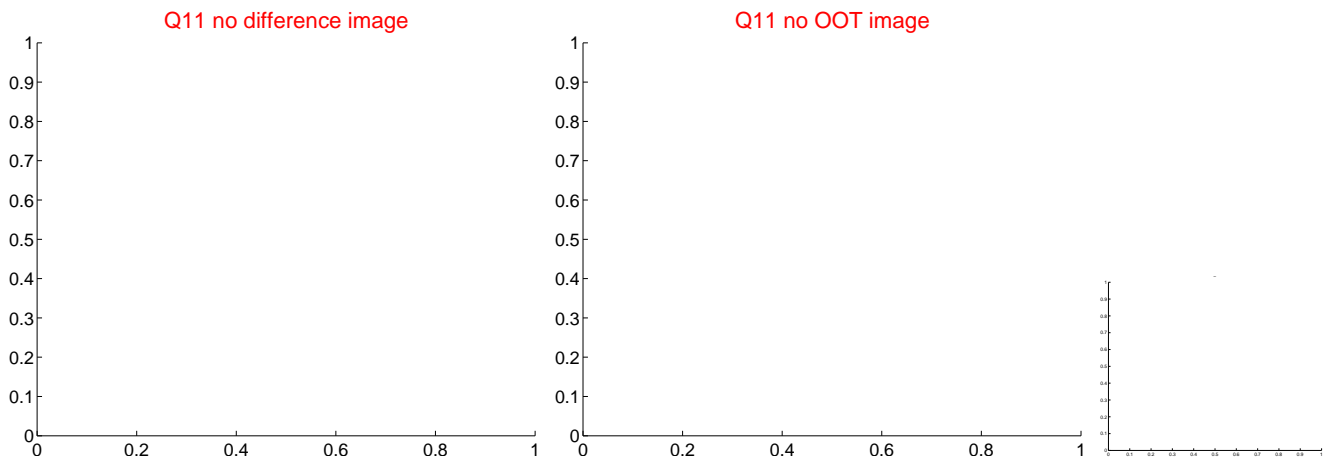
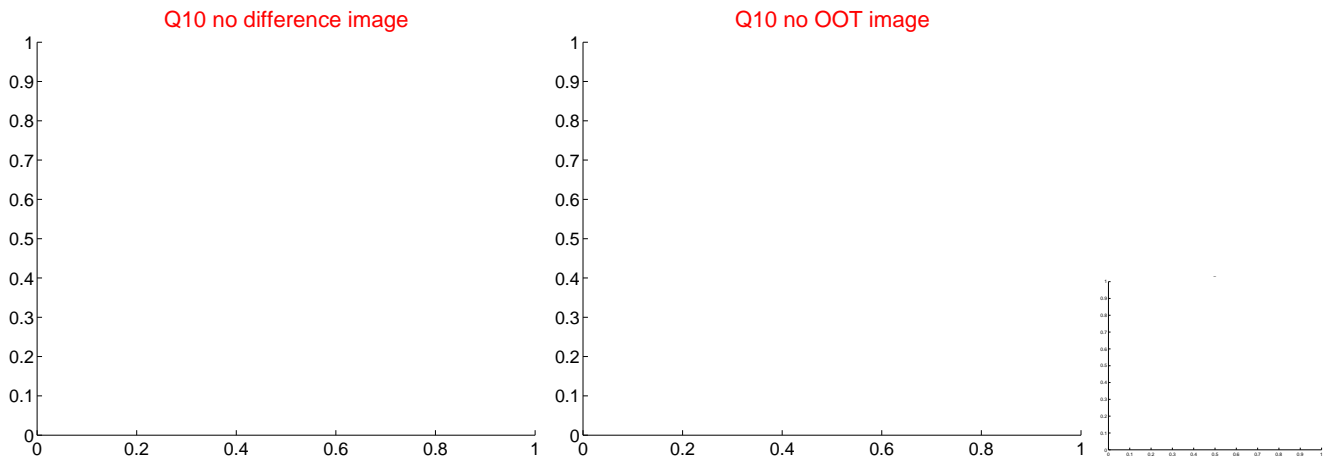
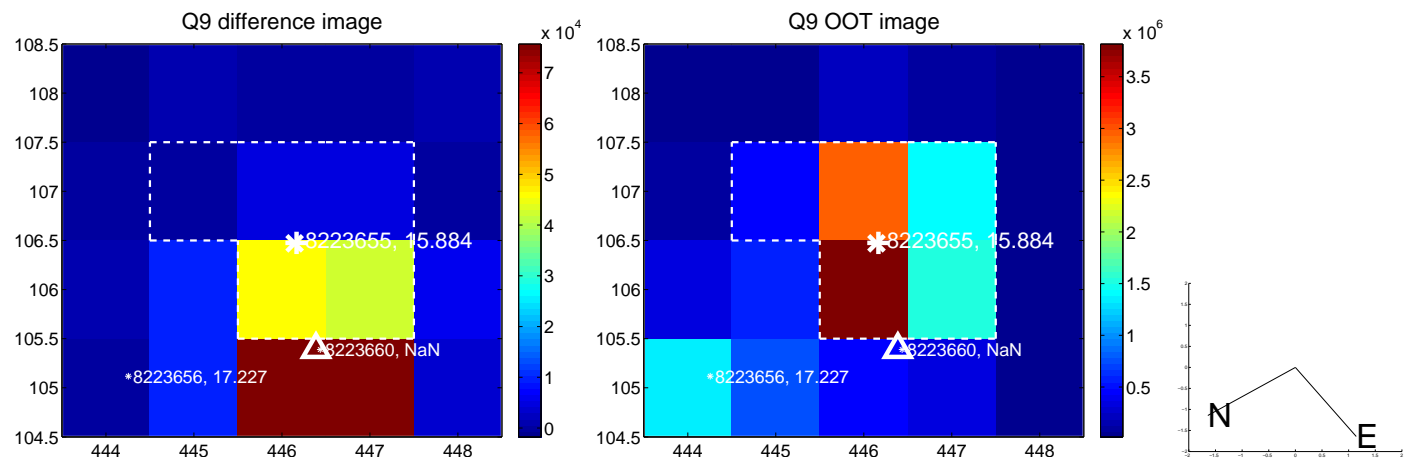
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



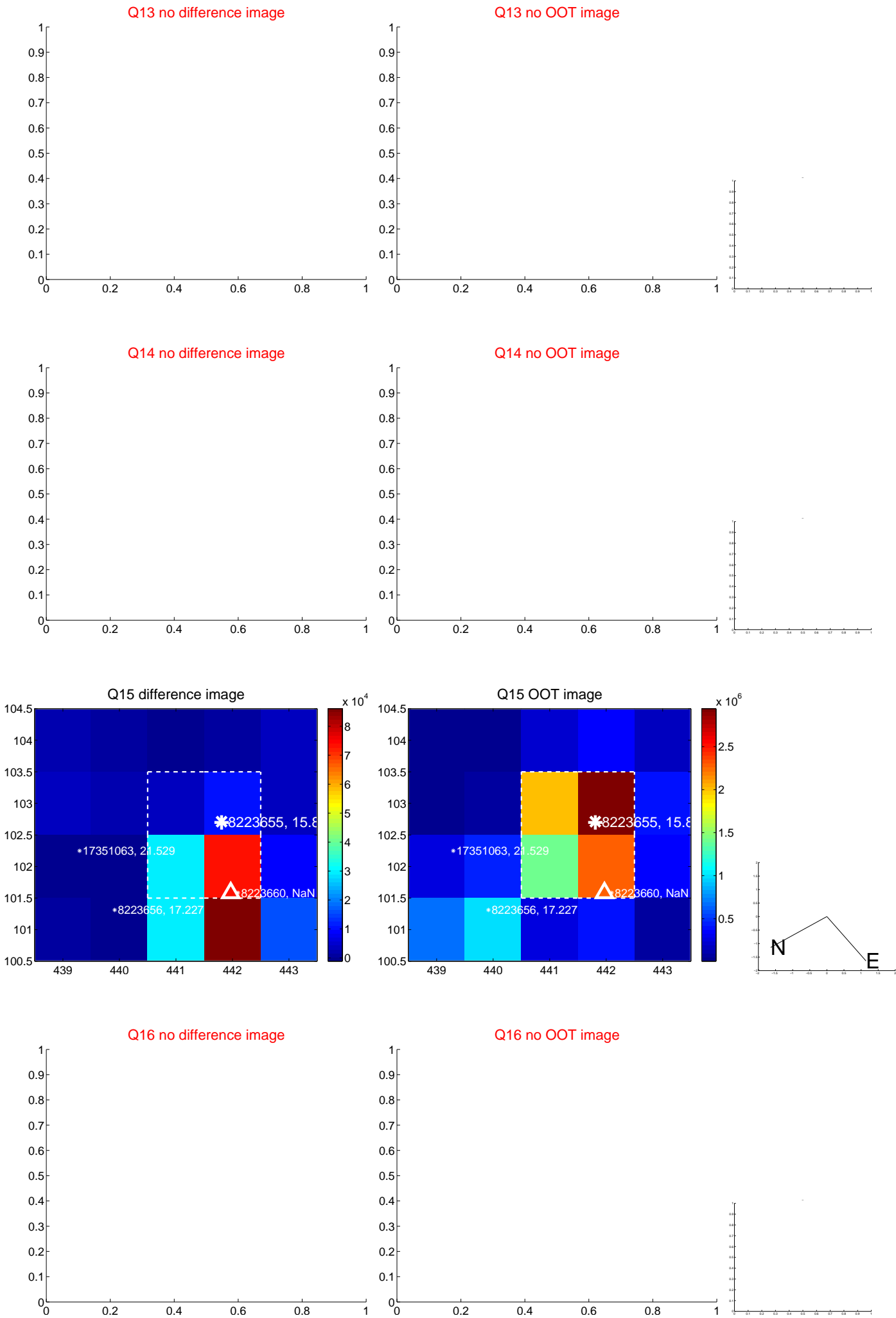
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



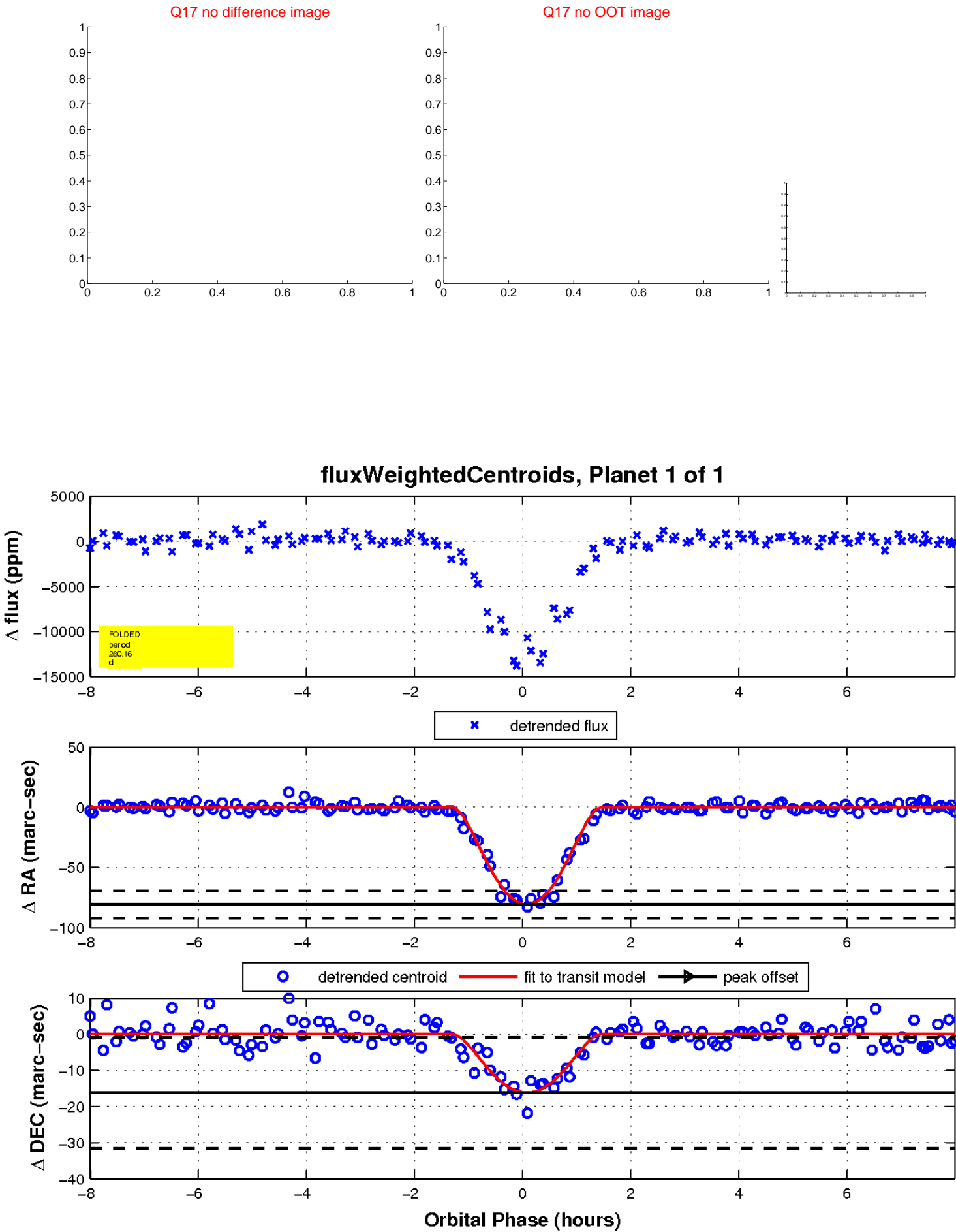
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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.



UKIRT Image

Declination

