

KIC 011860395

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 011860395-01 | OBS | 3445.01 | 82.304156 | 159.043538 | 737.2 | 15.049 | 16.5 | 18.8 | 1.43 | 5602 | 4.40 | 13.07 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 011860395-01 | OBS | PC | 0.86 | 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 011860395-01

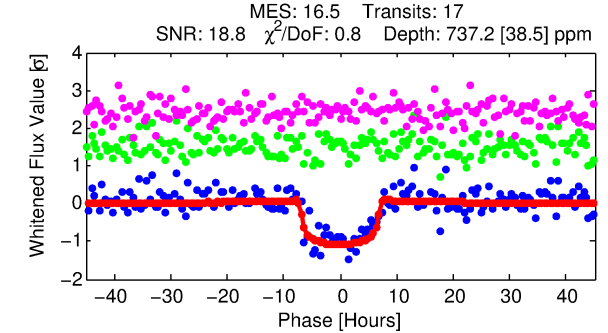
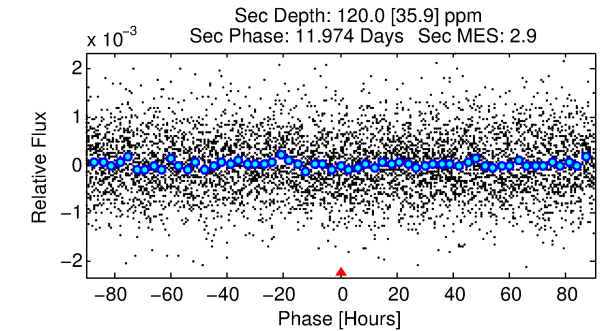
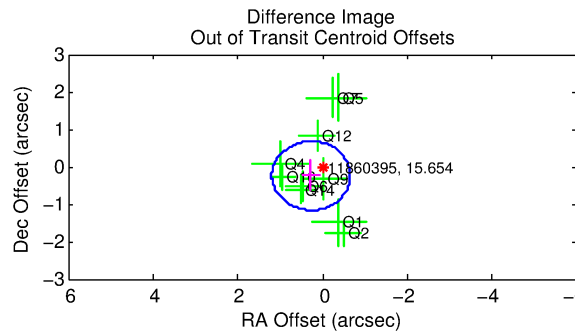
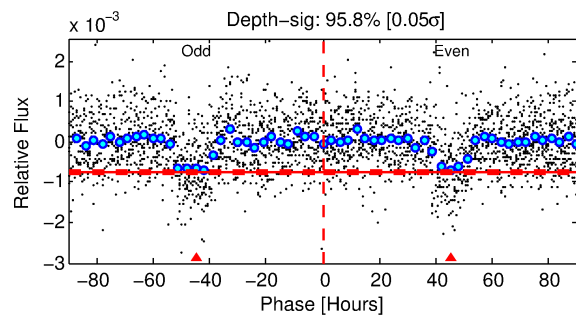
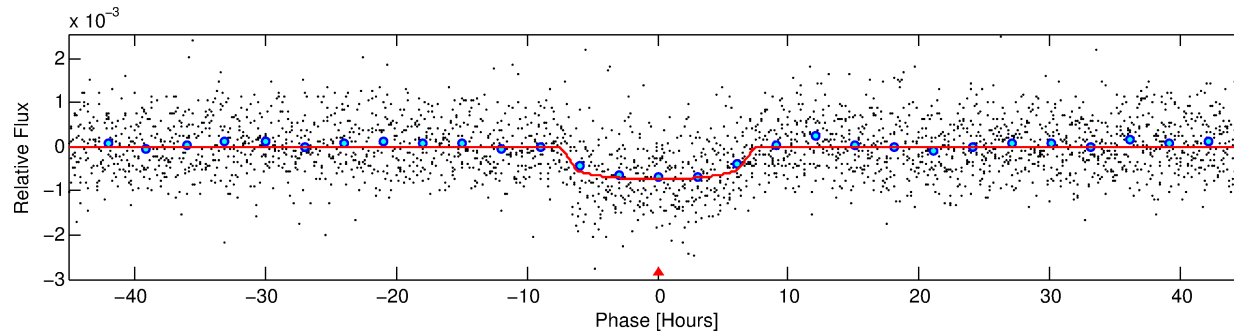
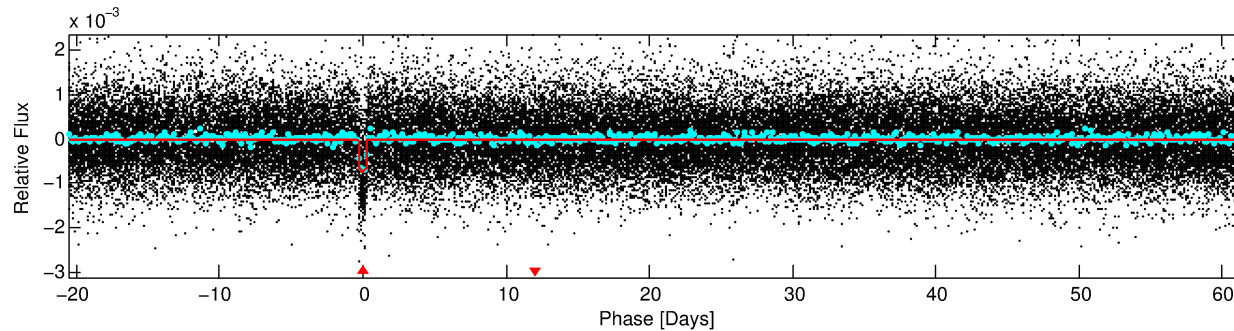
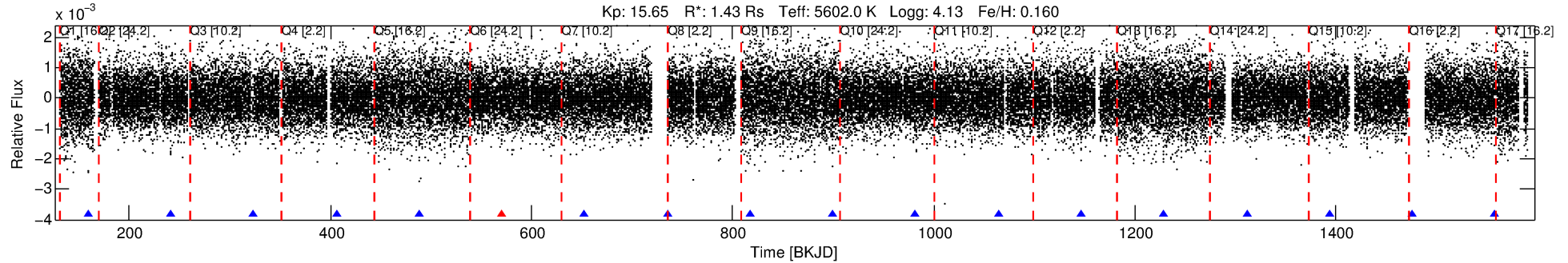
No Significant Match Found

DV One-Page Summary

KIC: 11860395 Candidate: 1 of 1 Period: 82.304 d

KOI: K03445.01 Corr: 0.959

Kp: 15.65 R*: 1.43 Rs Teff: 5602.0 K Logg: 4.13 Fe/H: 0.160



DV Fit Results:

Period = 82.30416 [0.00145] d
Epoch = 159.0435 [0.0135] BKJD
Rp/R* = 0.0283 [0.0025]
a/R* = 24.97 [8.99]
b = 0.84 [0.13]
Seff = 13.07 [4.42]
Teq = 485 [41] K
Rp = 4.40 [1.04] Re
a = 0.3703 [0.0774] AU
Ag = 468.04 [225.72] [2.07σ]
Teffp = 3487 [308] K [9.65σ]

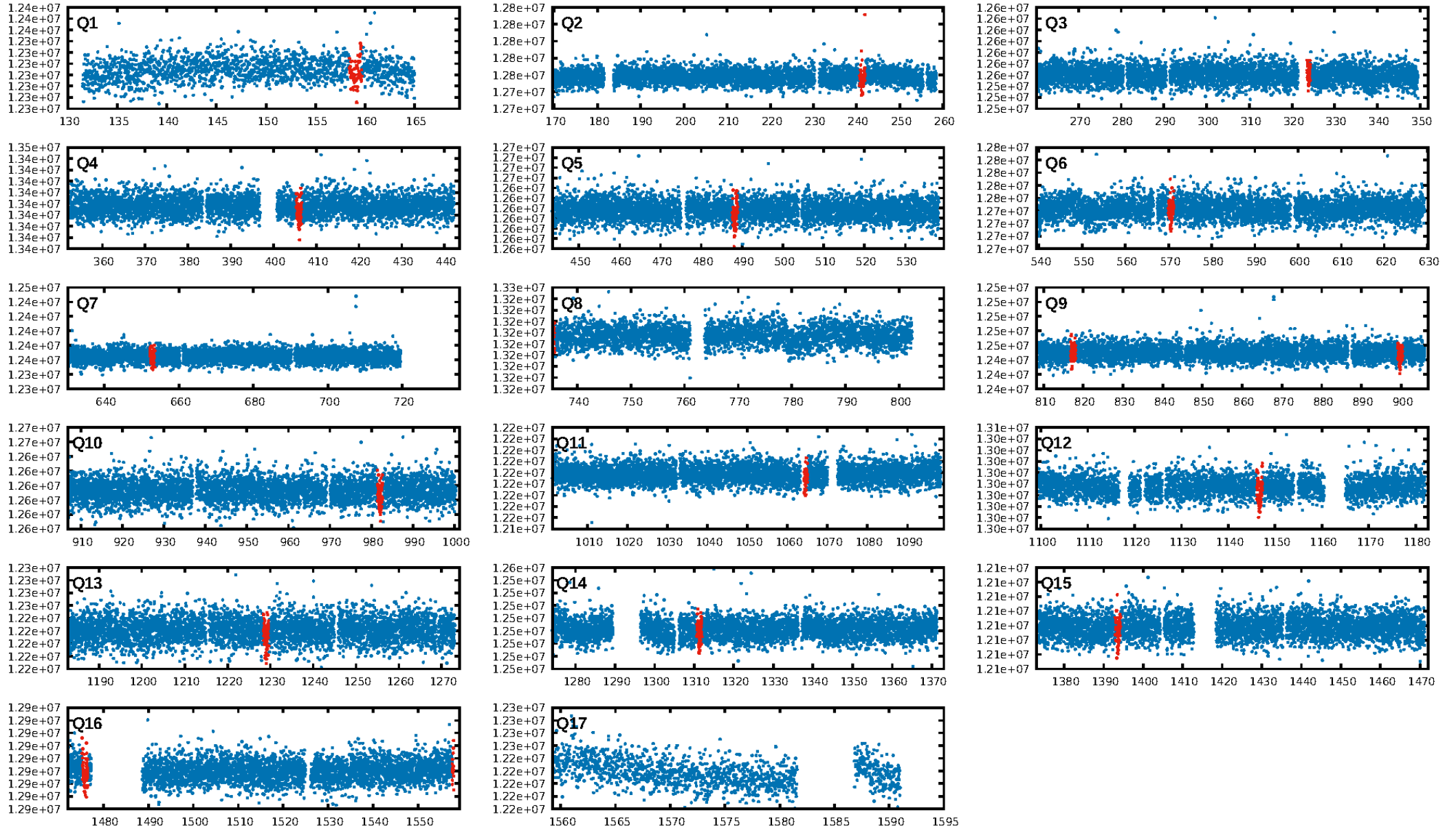
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.30e-58
RollingBand-fgt: 0.94 [15/16]
GhostDiagnostic-chr: -8.157
Centroid-sig: 49.6%
Centroid-so: 0.807 arcsec [1.01σ]
OotOffset-rm: 0.366 arcsec [1.19σ]
KicOffset-rm: 0.291 arcsec [0.97σ]
OotOffset-st: 4/1/2/3 [10]
KicOffset-st: 4/1/2/3 [10]
DiffImageQuality-fgm: 1.00 [10/10]
DiffImageOverlap-fno: 1.00 [10/10]

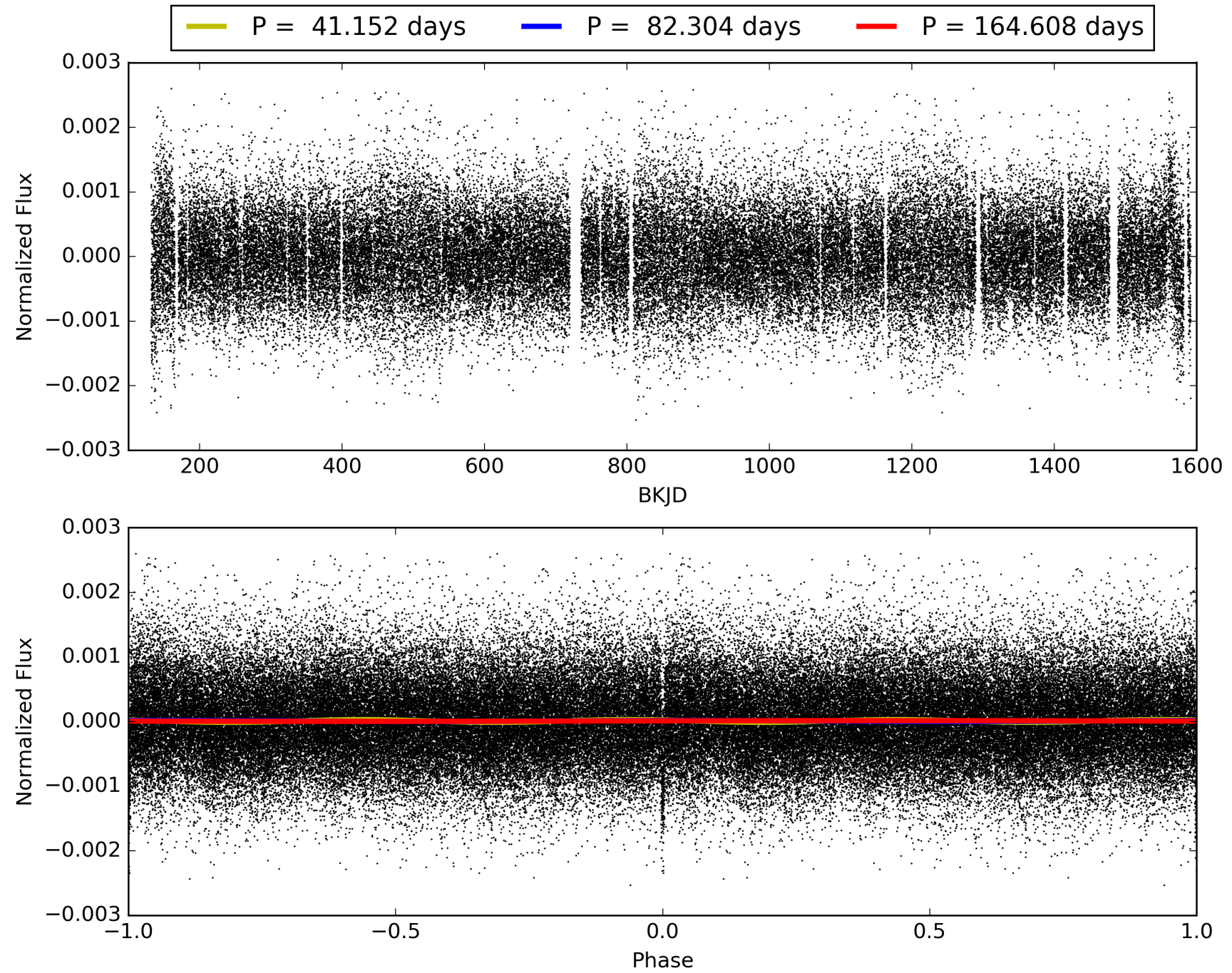
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:53:07 Z

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

TCE 011860395-01, PDC Light Curves

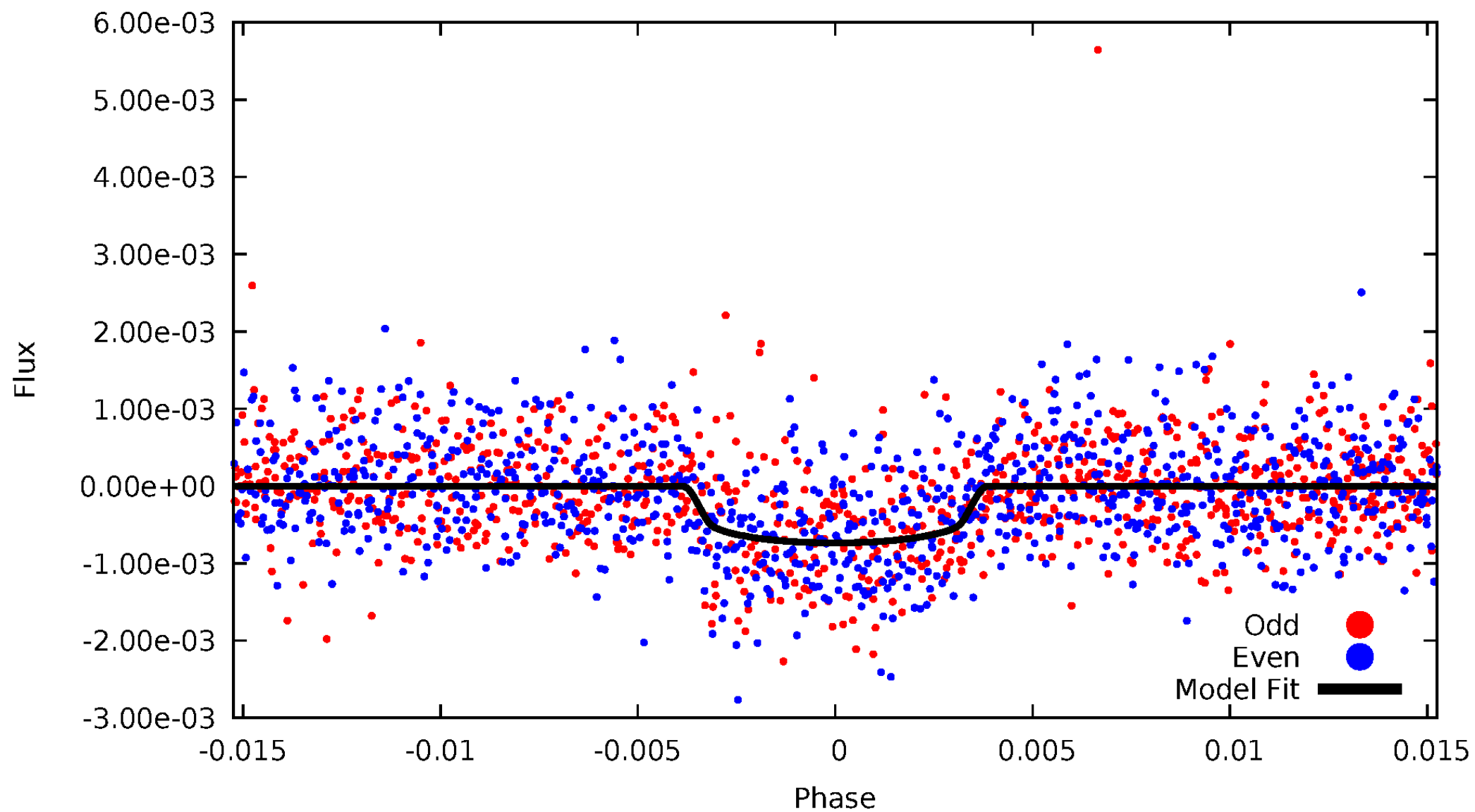


TCE 011860395-01



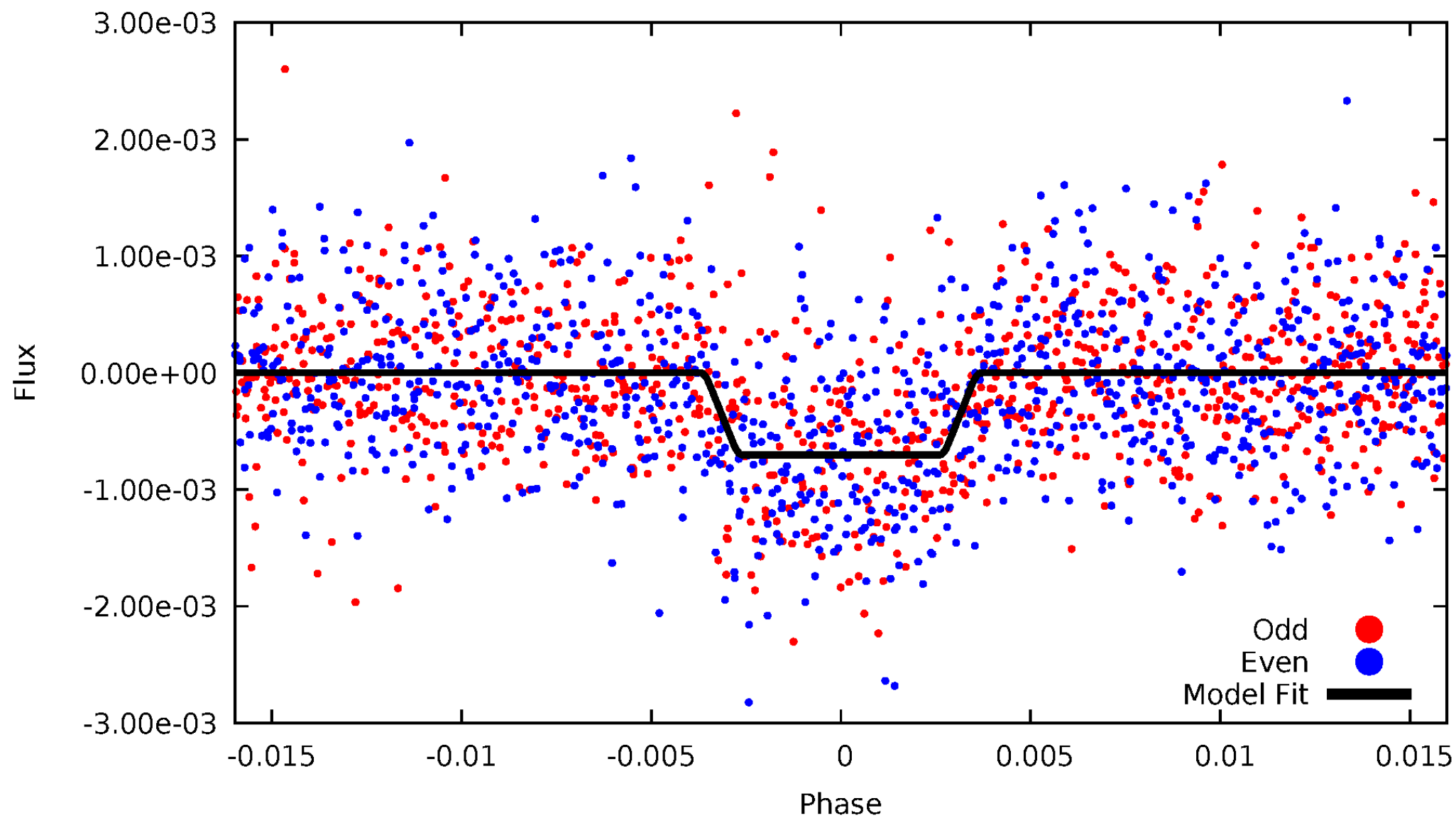
DV Odd/Even

TCE 011860395-01



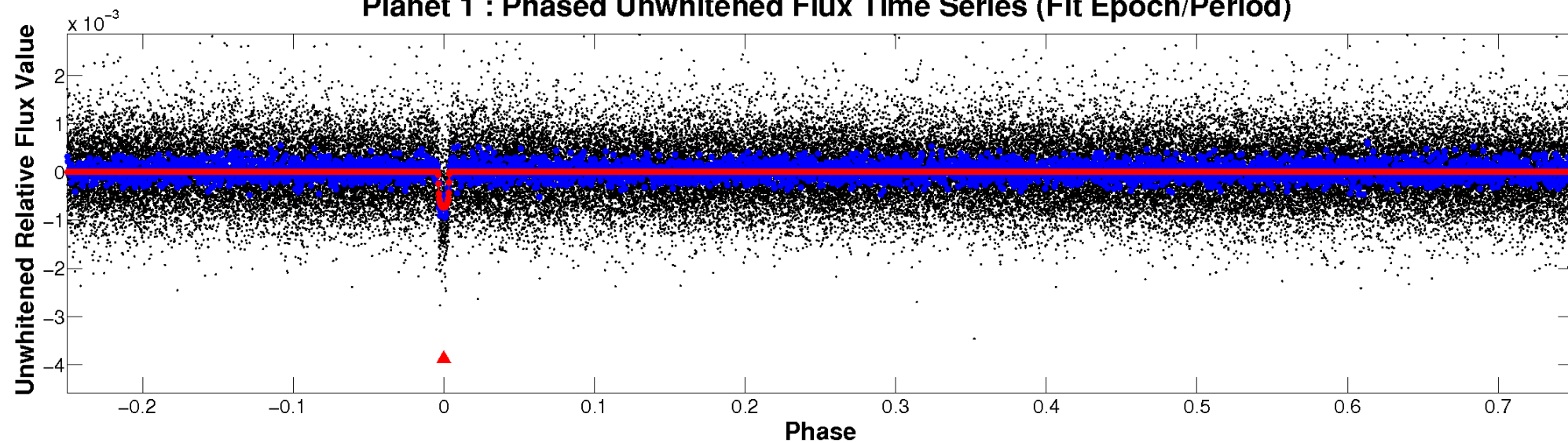
ALT Odd/Even

TCE 011860395-01

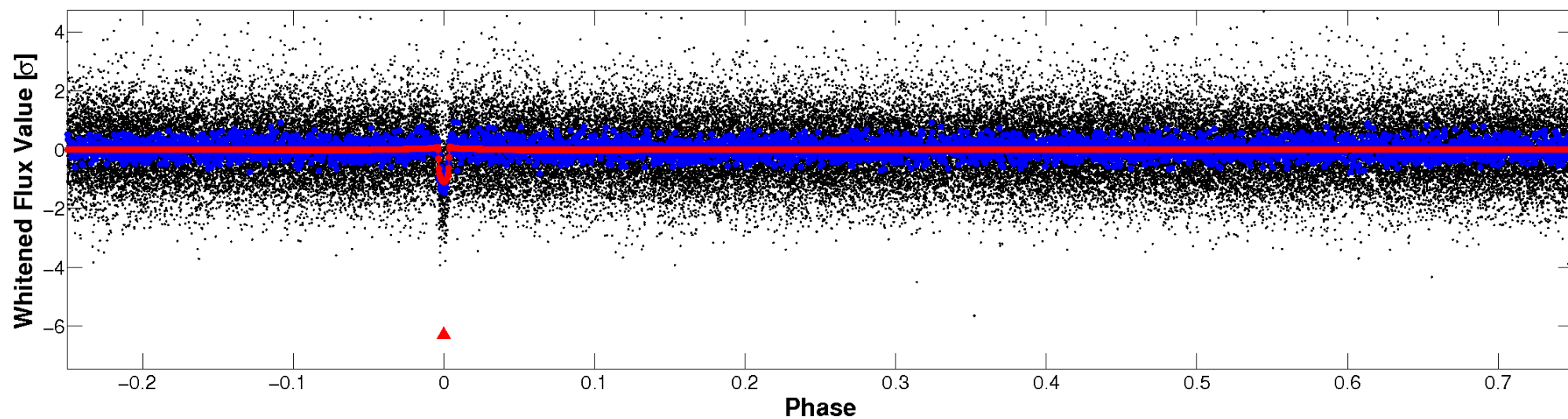


Non-Whitened Vs. Whitened Light Curve

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

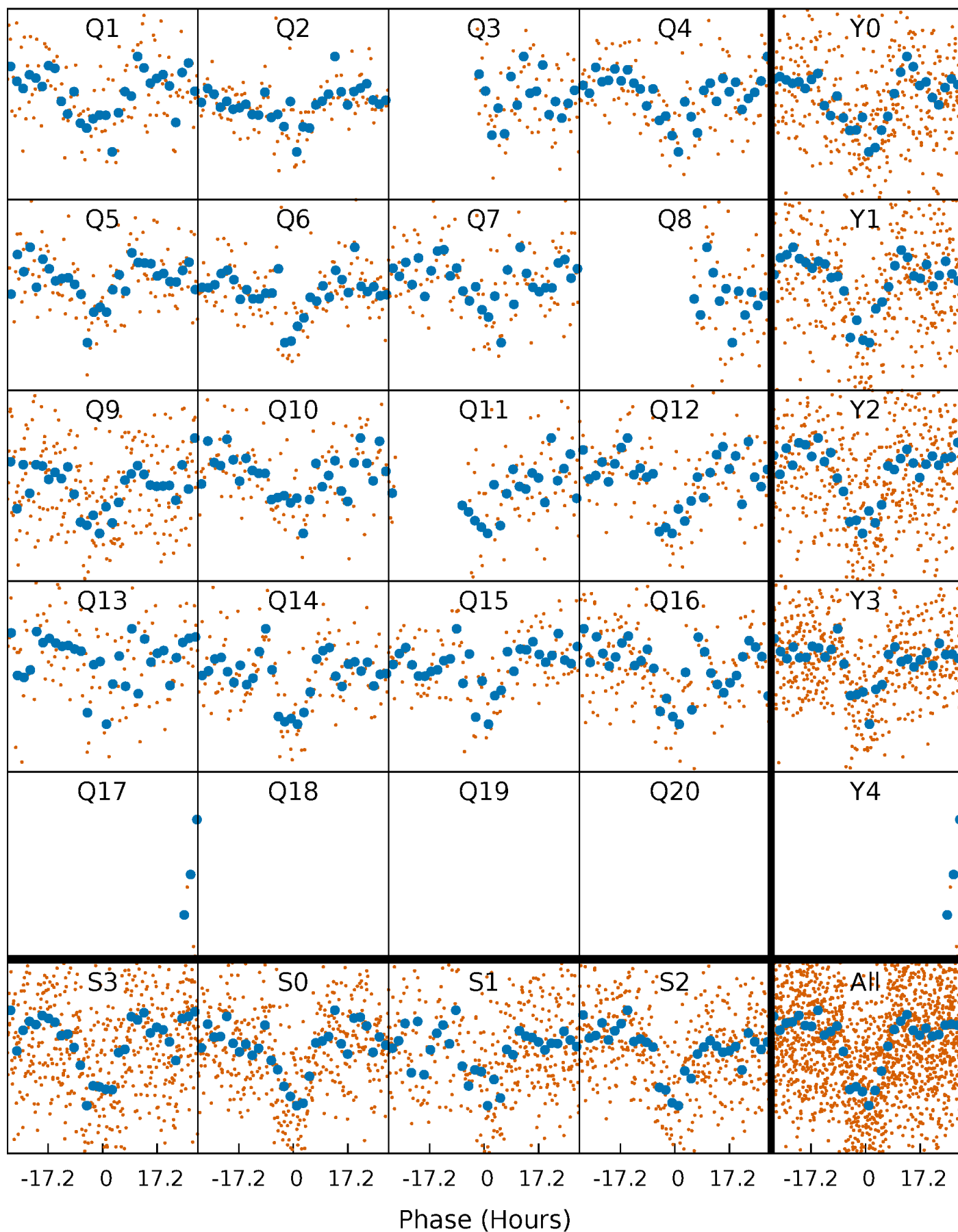


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



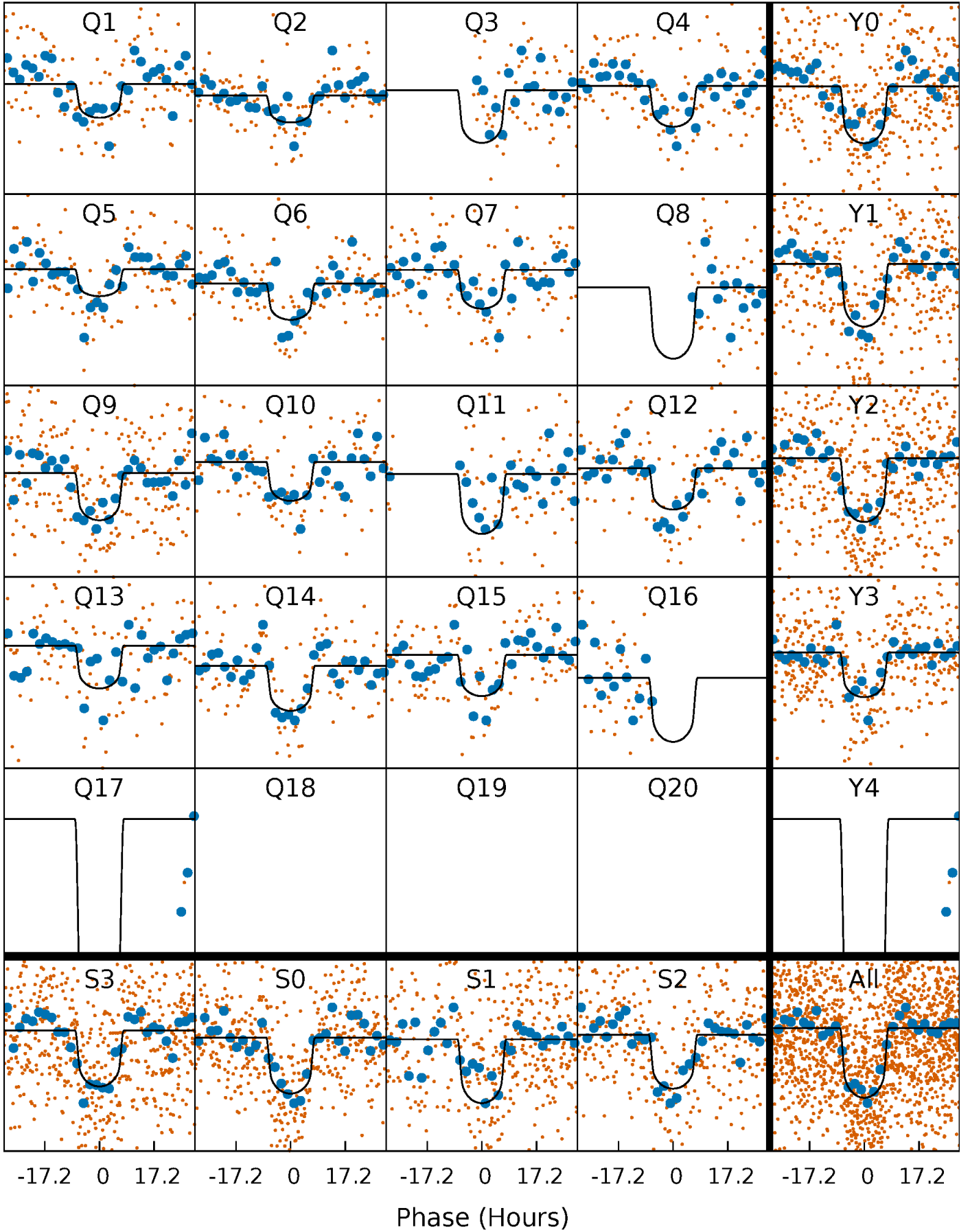
PDC Quarter-Phased Transit Curves

TCE 011860395-01 P= 82.304156 Days $T_0=159.043538$ (BKJD)



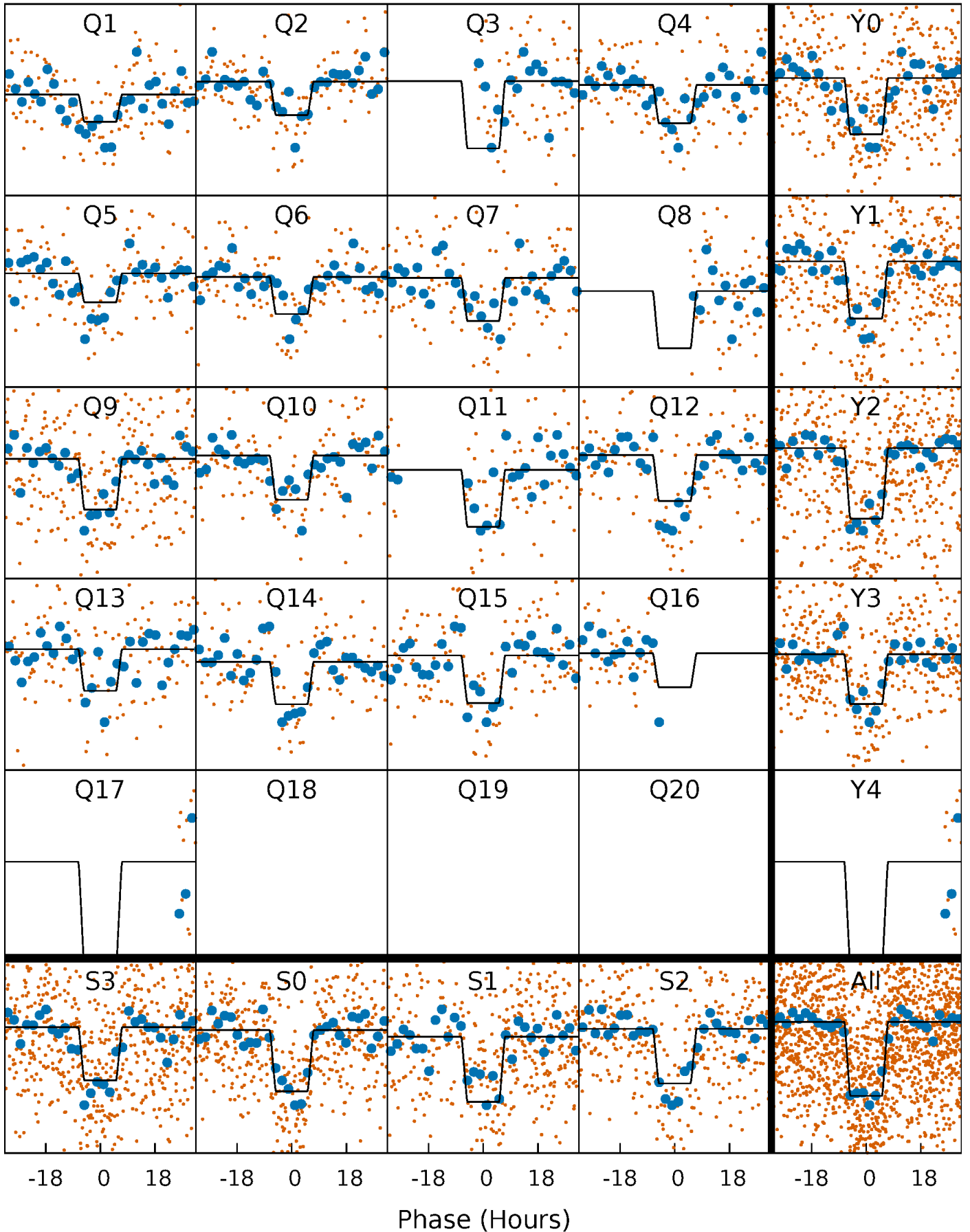
DV Quarter-Phased Transit Curves

TCE 011860395-01 P= 82.304156 Days $T_0=159.043538$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

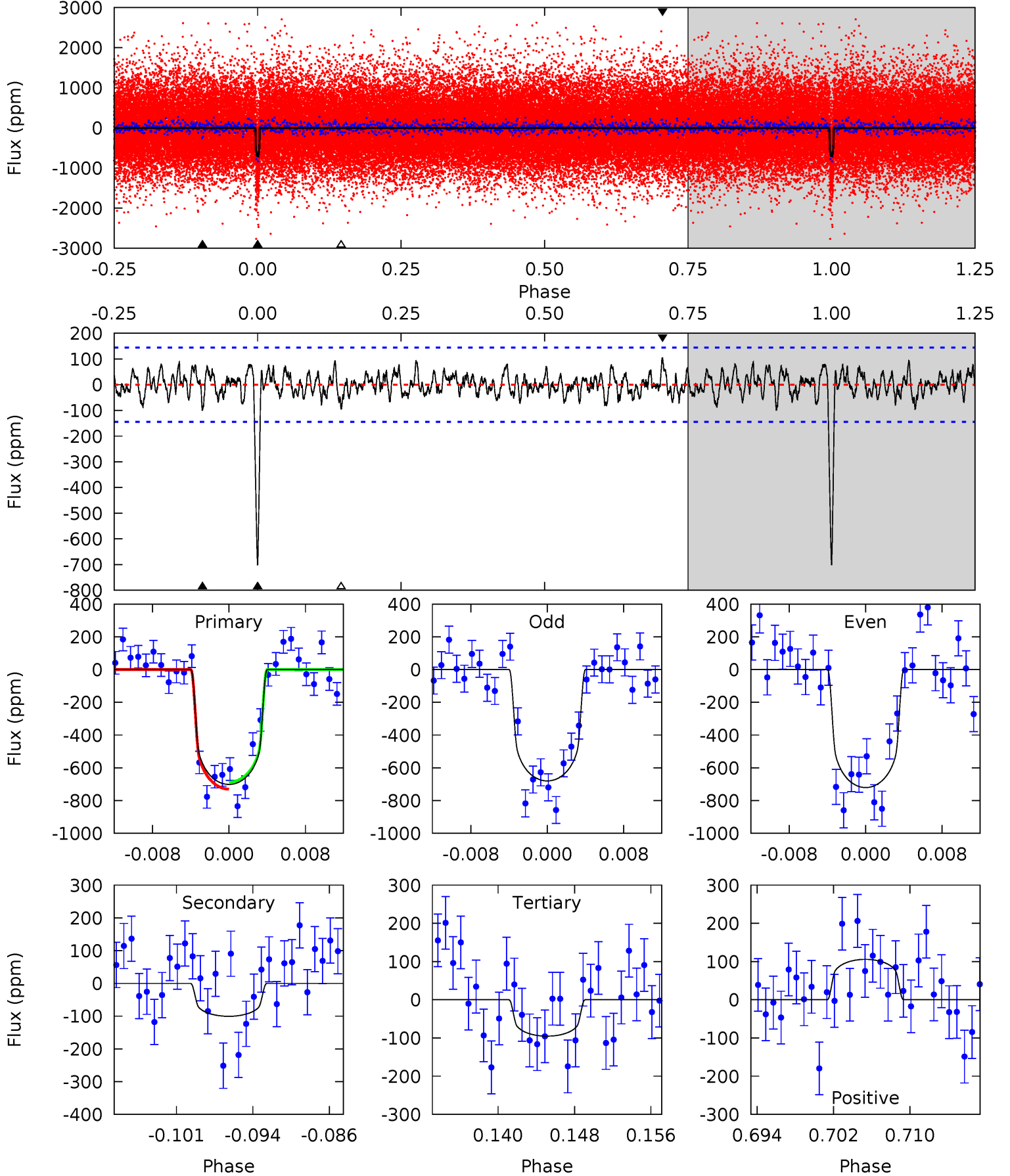
TCE 011860395-01 P= 82.303632 Days $T_0=159.042944$ (BKJD)



DV Model-Shift Uniqueness Test

011860395-01, P = 82.304156 Days, E = 76.739382 Days

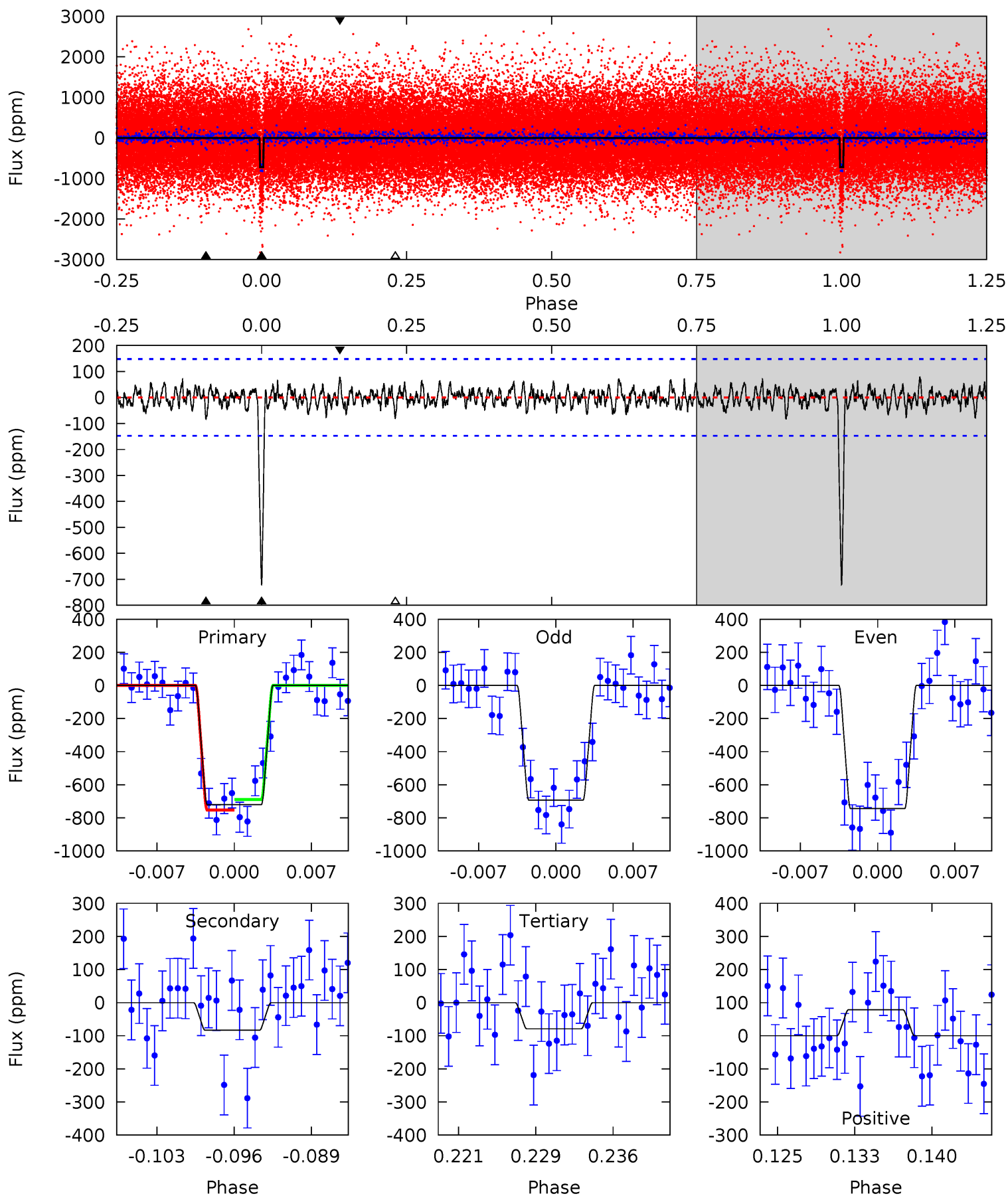
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 24.6 | 3.53 | 3.34 | 3.71 | 5.07 | 2.66 | 1.24 | 21.3 | 20.9 | 0.18 | -0.18 | 0.71 | 0.99 | 0.13 | 0.75 |



Alt Model-Shift Uniqueness Test

011860395-01, P = 82.303632 Days, E = 76.739312 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 24.8 | 2.88 | 2.73 | 2.71 | 5.08 | 2.68 | 0.92 | 22.1 | 22.1 | 0.15 | 0.17 | 0.87 | 1.03 | 0.10 | 1.10 |



Stellar Parameters For KIC 011860395

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 5602^{+84}_{-75} | $4.130^{+0.195}_{-0.090}$ | $0.160^{+0.150}_{-0.150}$ | $1.425^{+0.208}_{-0.312}$ | $0.997^{+0.079}_{-0.072}$ | $0.486^{+0.486}_{-0.152}$ |
| | +1%/-1% | +5%/-2% | +94%/-94% | +15%/-22% | +8%/-7% | +100%/-31% |
| Source | SPE90 | SPE90 | SPE90 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 011860395-01 / KOI 3445.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|------------------------|-------------------|----------------------|---------------------|
| DV | -100 ± 28 | $4.29^{+0.59}_{-0.55}$ | 674^{+26}_{-40} | 3732^{+214}_{-228} | 403^{+202}_{-133} |
| Alt. | -84 ± 29 | $4.03^{+0.56}_{-0.54}$ | 672^{+30}_{-39} | 3688^{+231}_{-276} | 383^{+195}_{-152} |

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 $A_{obs} \gg 1.0$

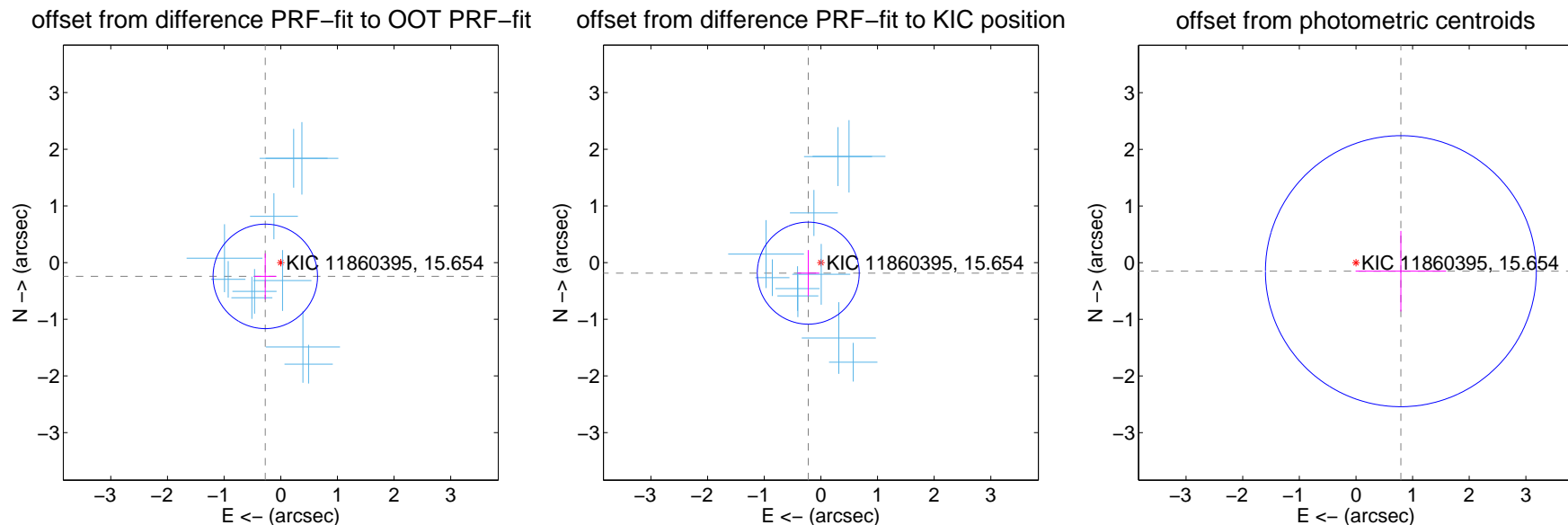
DV Centroid Data

Supplemental centroid analysis for 011860395-01. Kepler magnitude: 15.65. Transit SNR 18.78

There are 10 quarters with good PRF difference image offsets

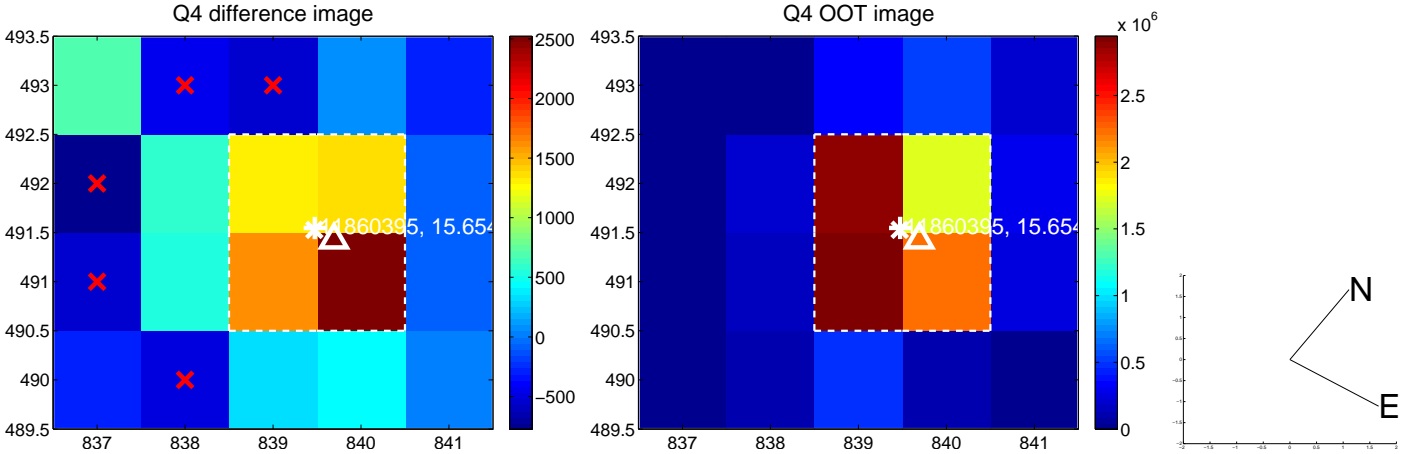
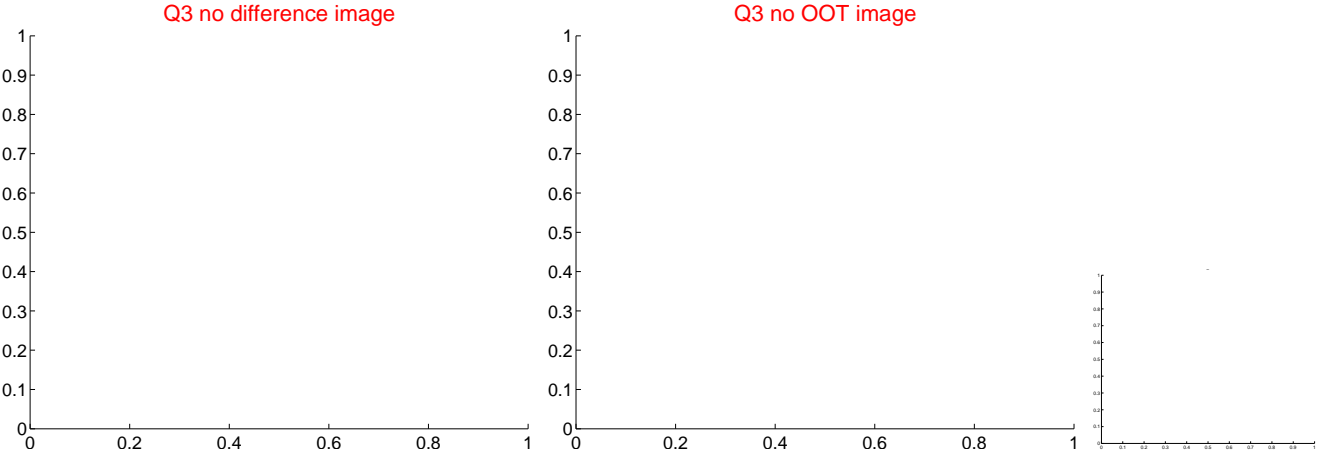
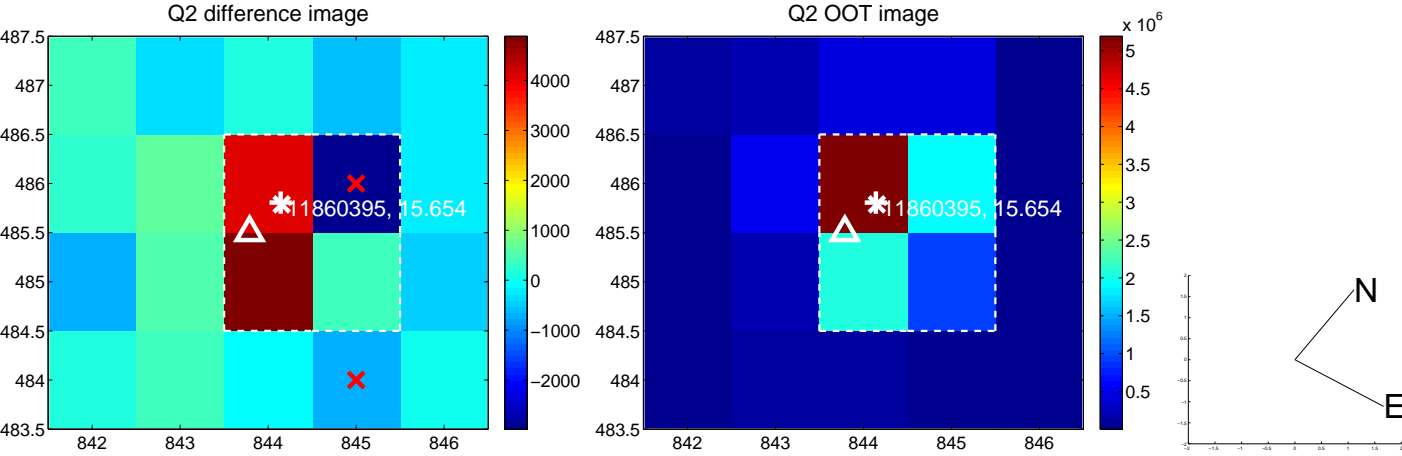
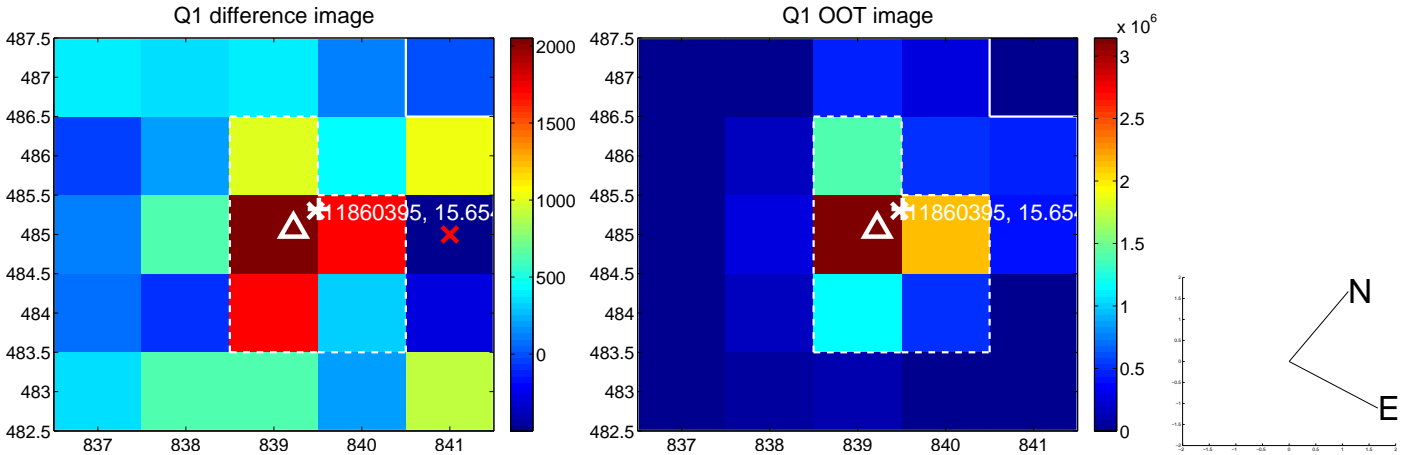
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.366 ± 0.307 | 1.19 | 0.273 ± 0.196 | -0.243 ± 0.406 |
| PRF-fit source offset from KIC position | 0.291 ± 0.300 | 0.97 | 0.223 ± 0.195 | -0.187 ± 0.405 |
| photometric centroid source offset | 0.81 ± 0.80 | 1.01 | -0.79 ± 0.80 | -0.15 ± 0.71 |

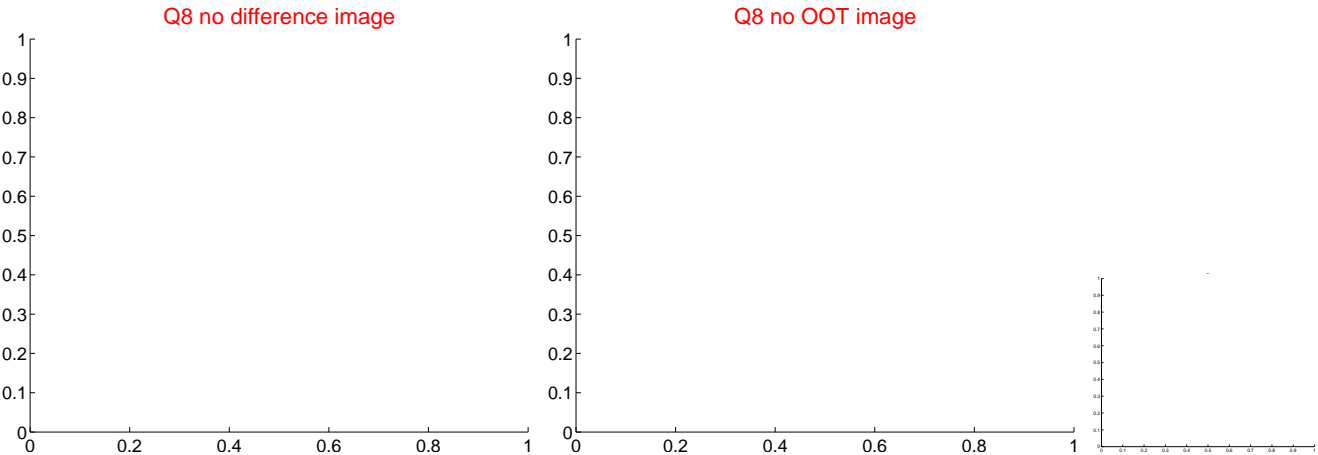
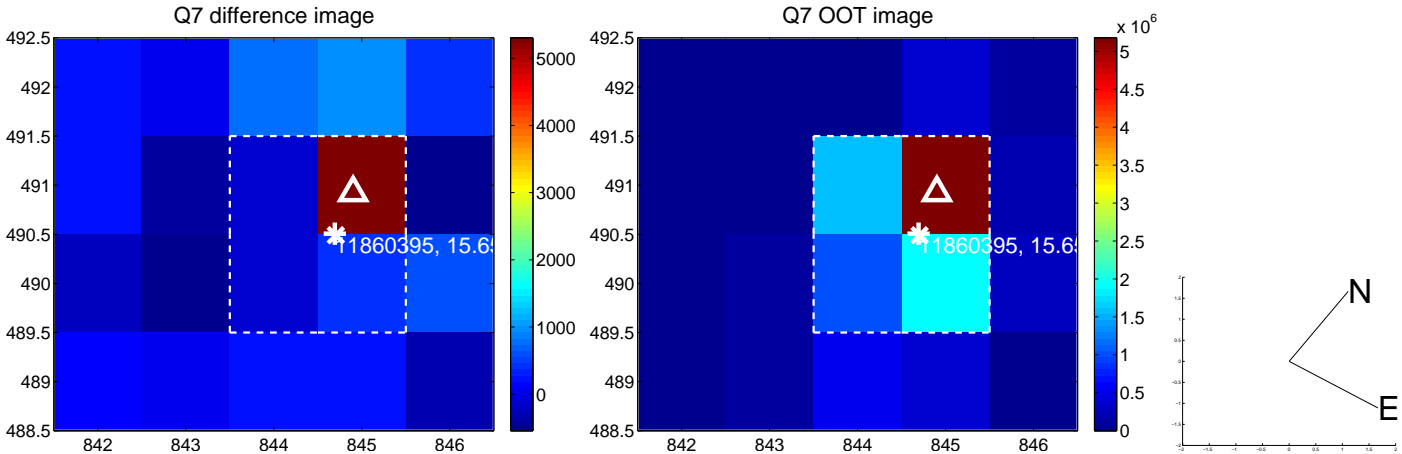
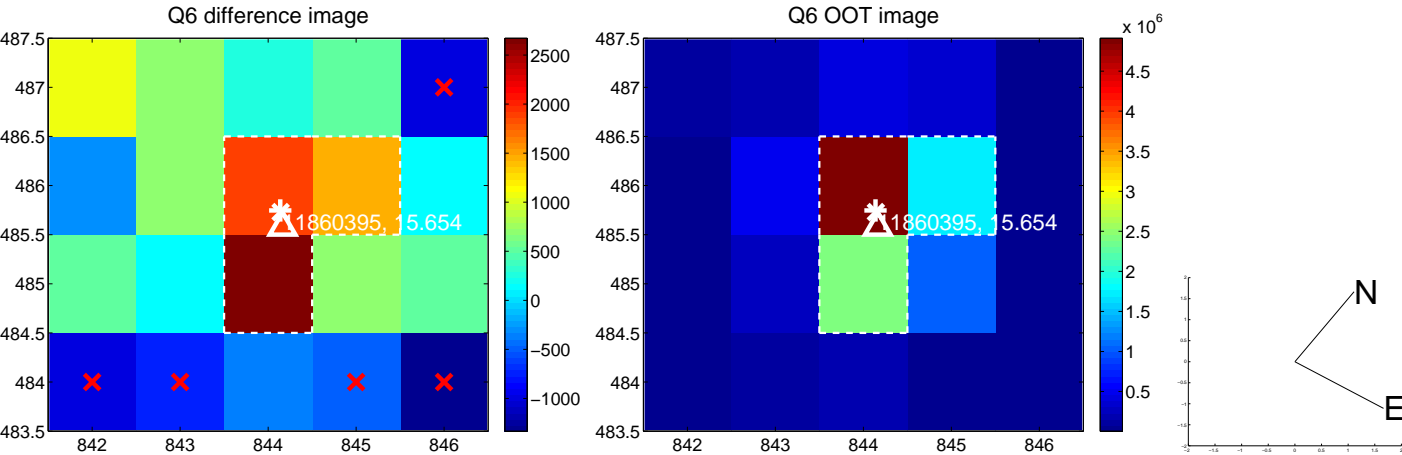
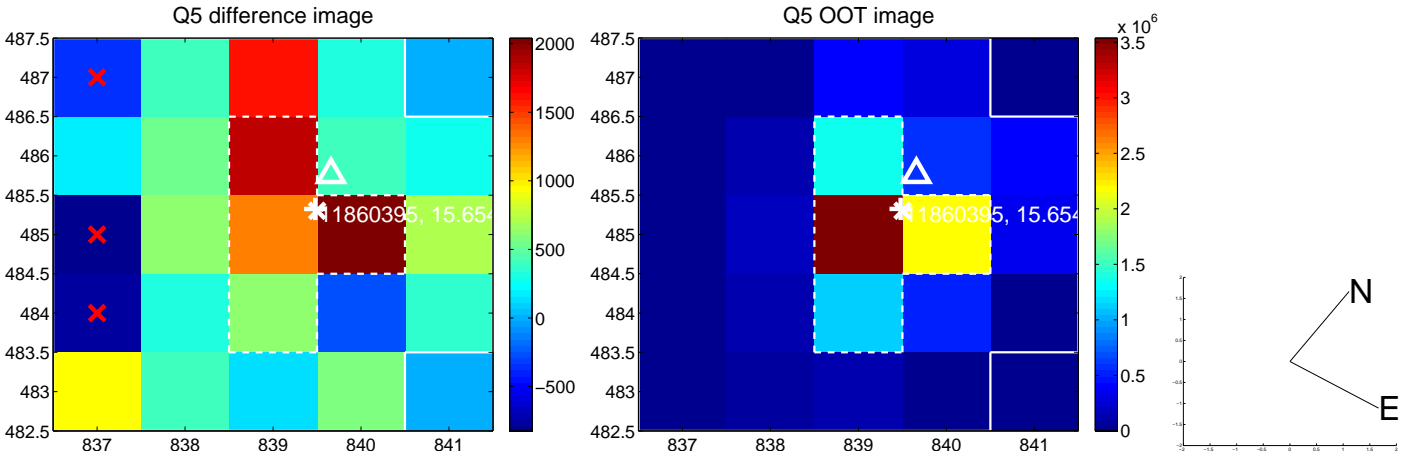


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

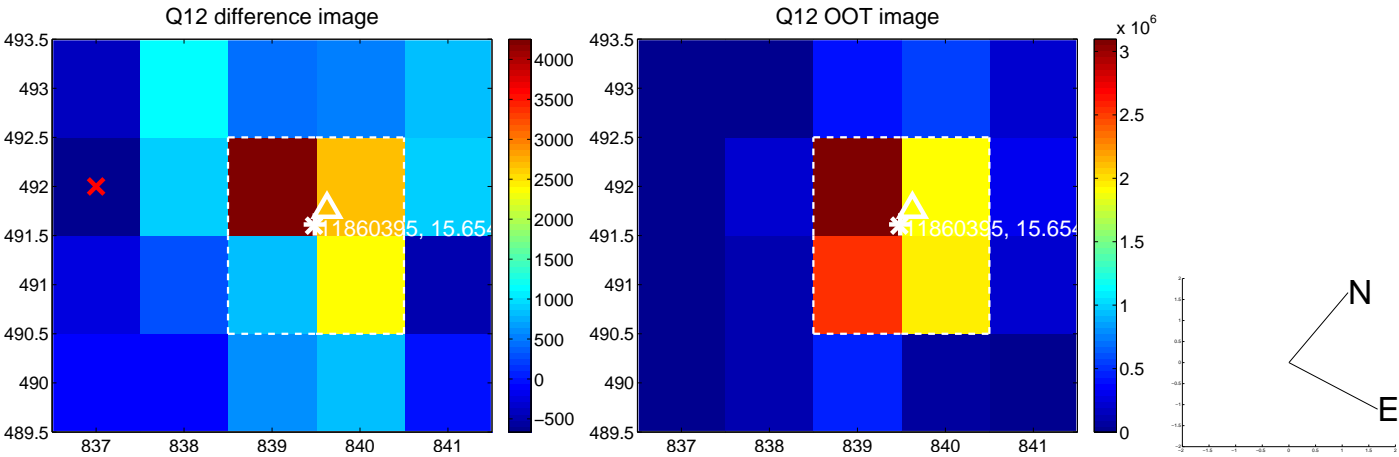
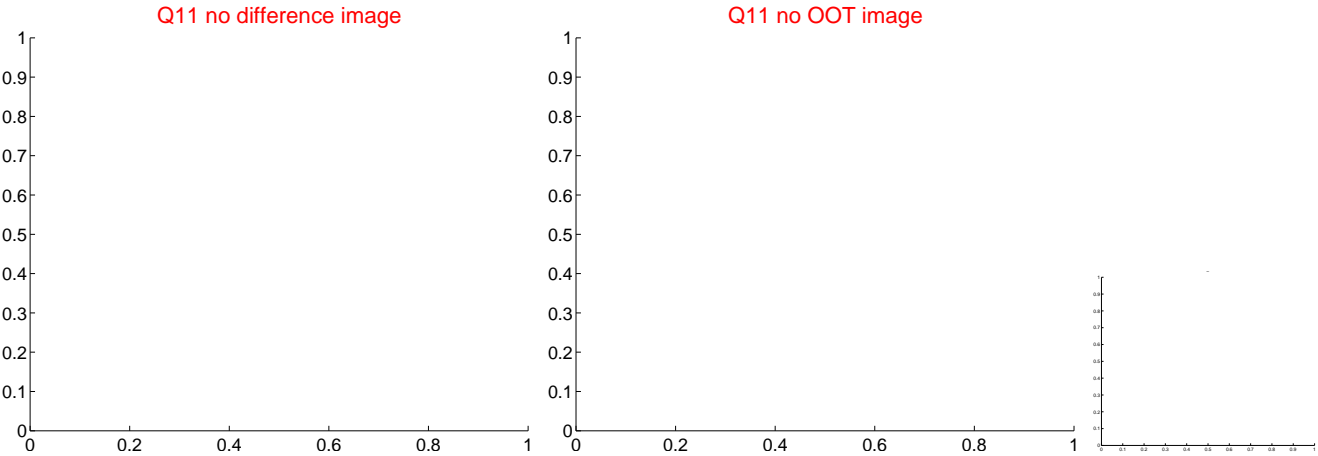
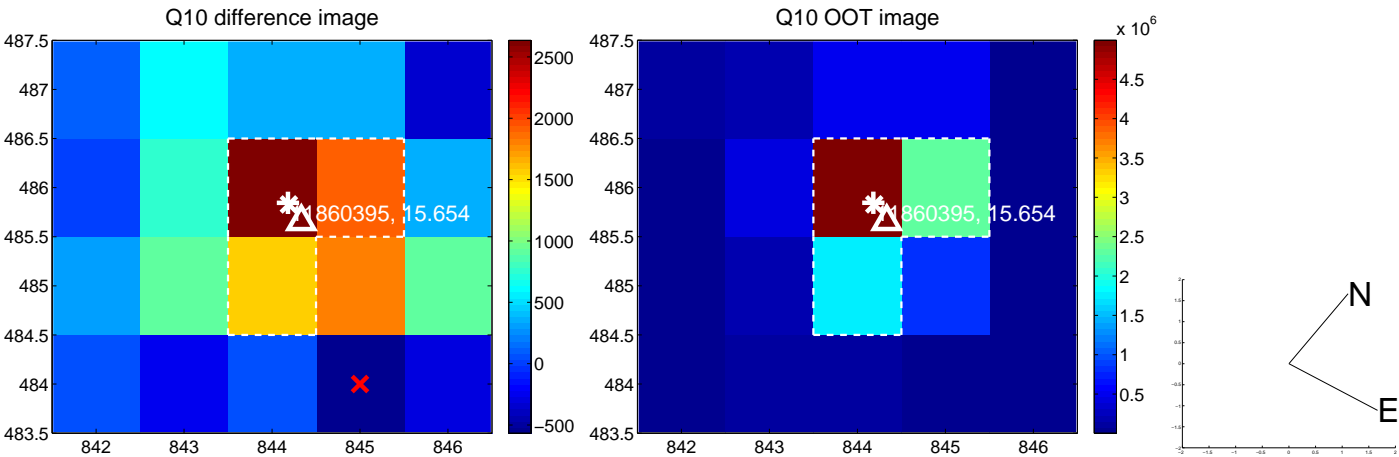
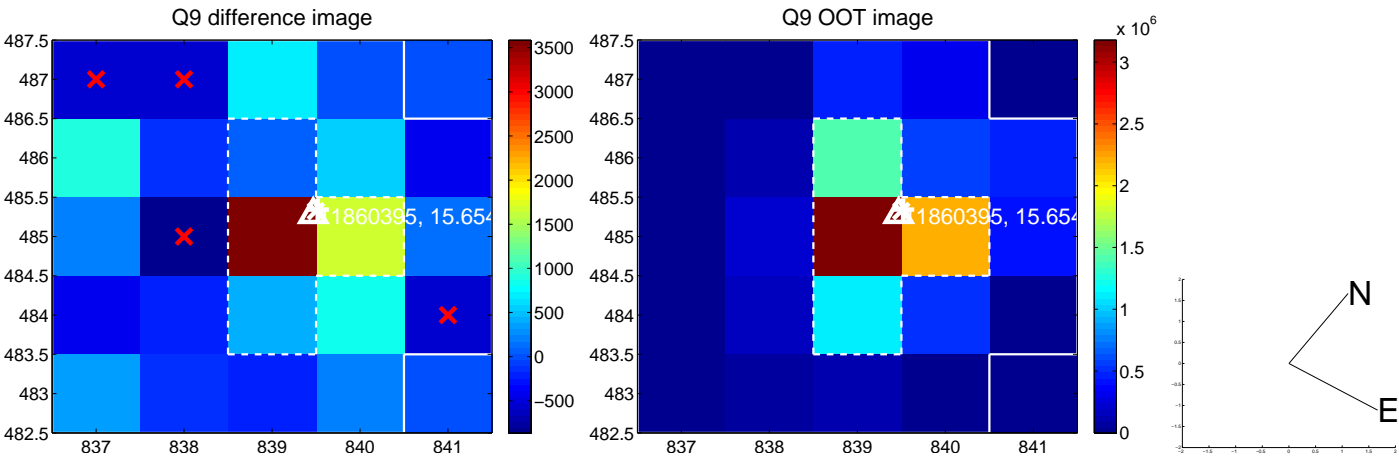
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



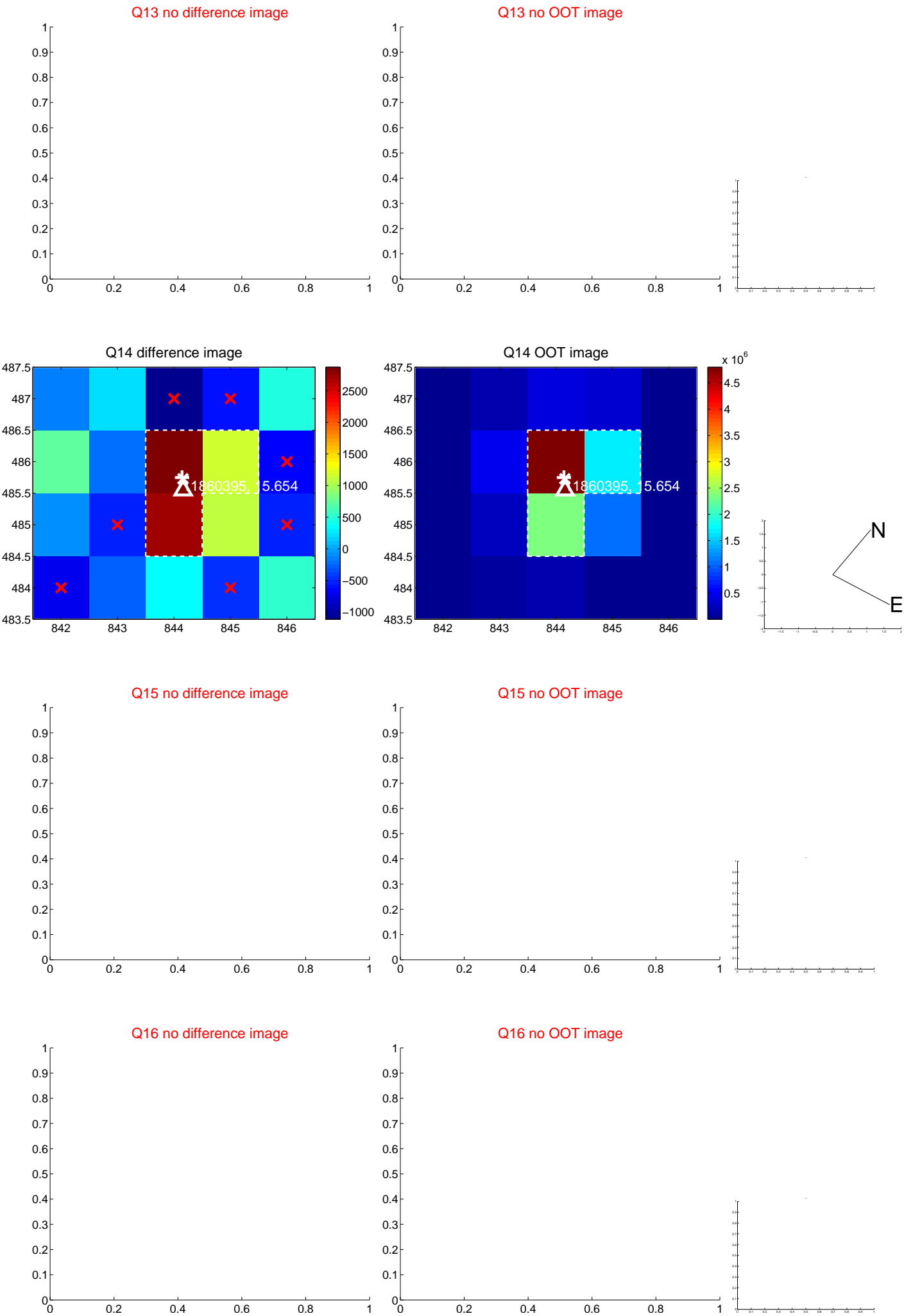
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



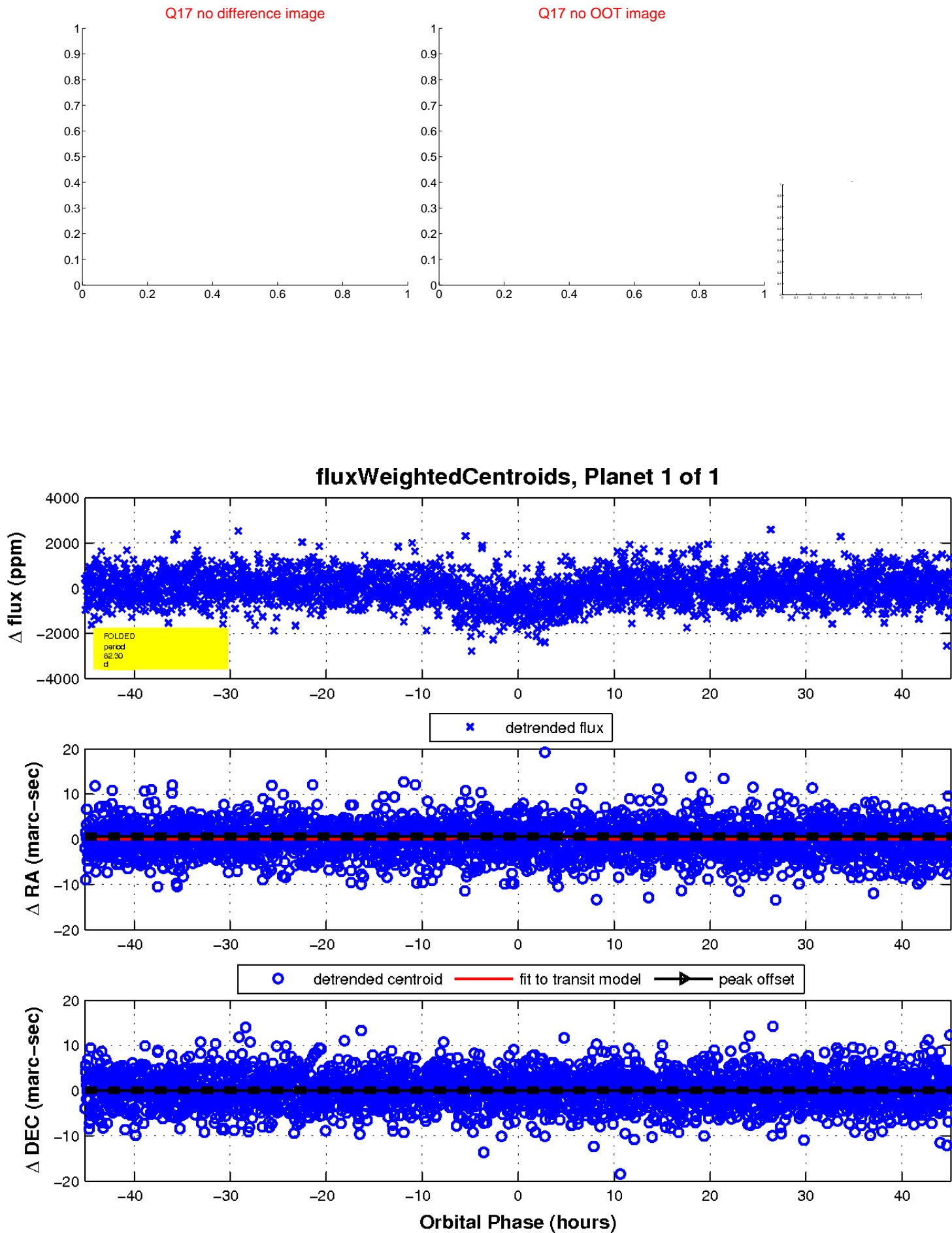
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

