

KIC 010745365

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 010745365-01 | OBS | 4405.01 | 8.917146 | 139.620833 | 144.5 | 4.396 | 11.5 | 11.4 | 0.99 | 6210 | 1.38 | 178.19 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 010745365-01 | OBS | PC | 0.69 | 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.

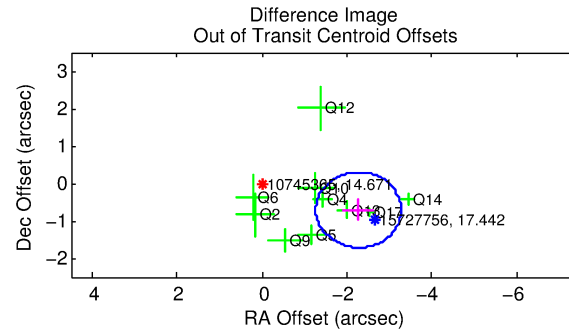
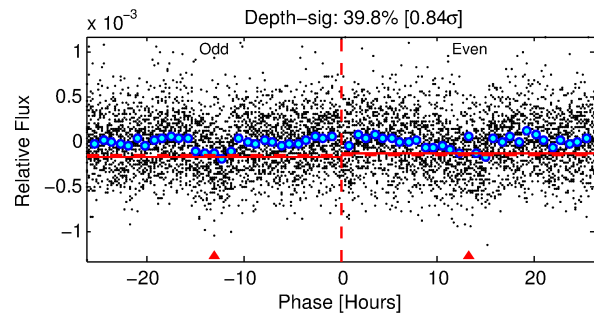
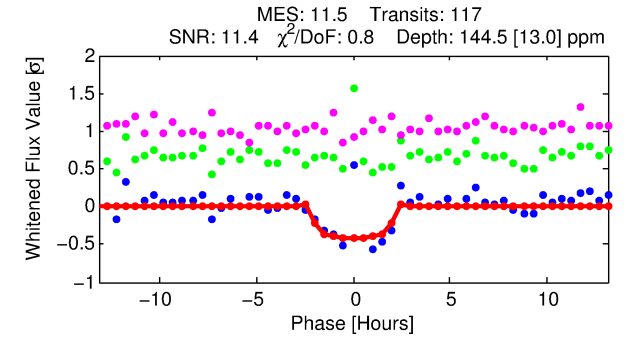
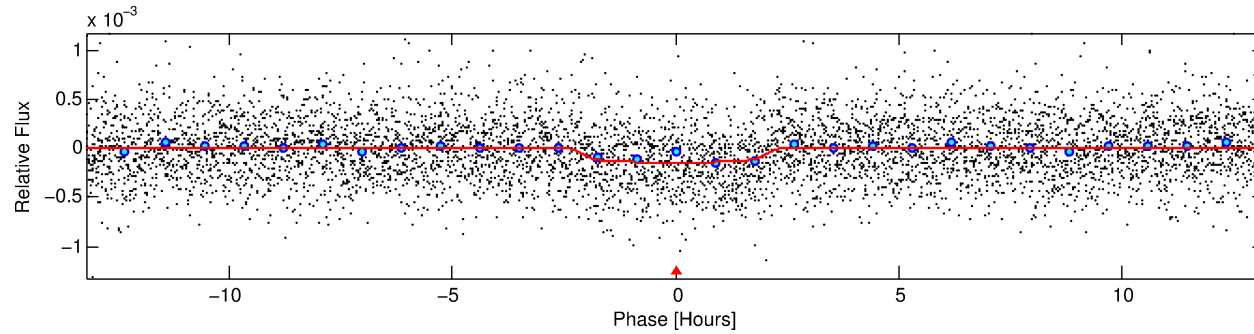
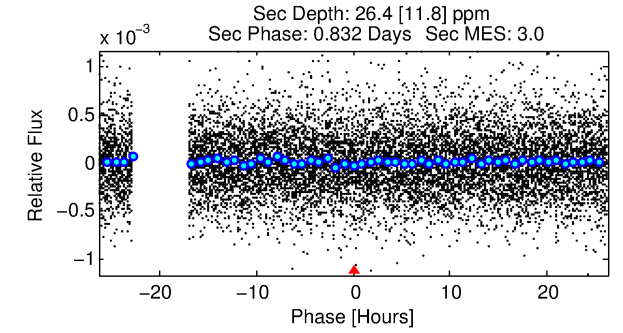
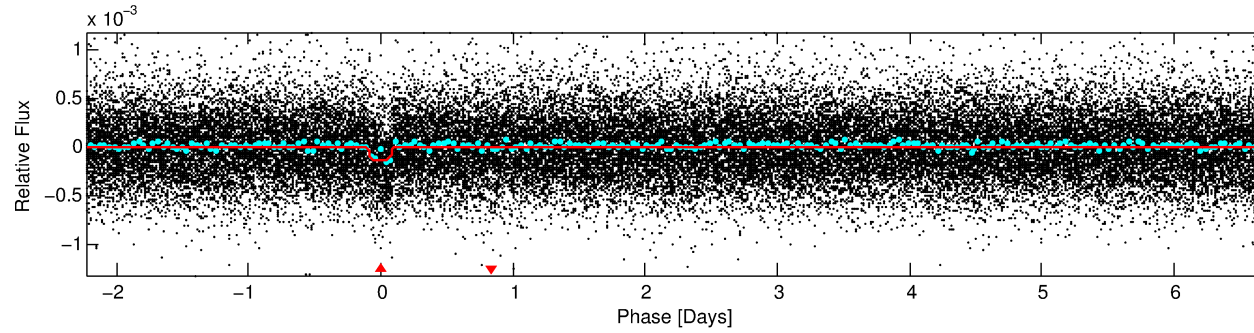
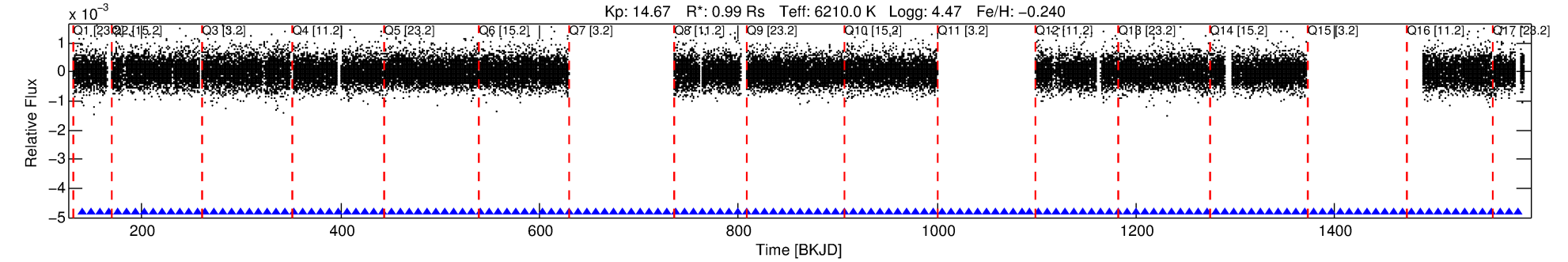
Ephemeris Match Information For 010745365-01

No Significant Match Found

DV One-Page Summary

KIC: 10745365 Candidate: 1 of 1 Period: 8.917 d

KOI: K04405.01 Corr: 0.962



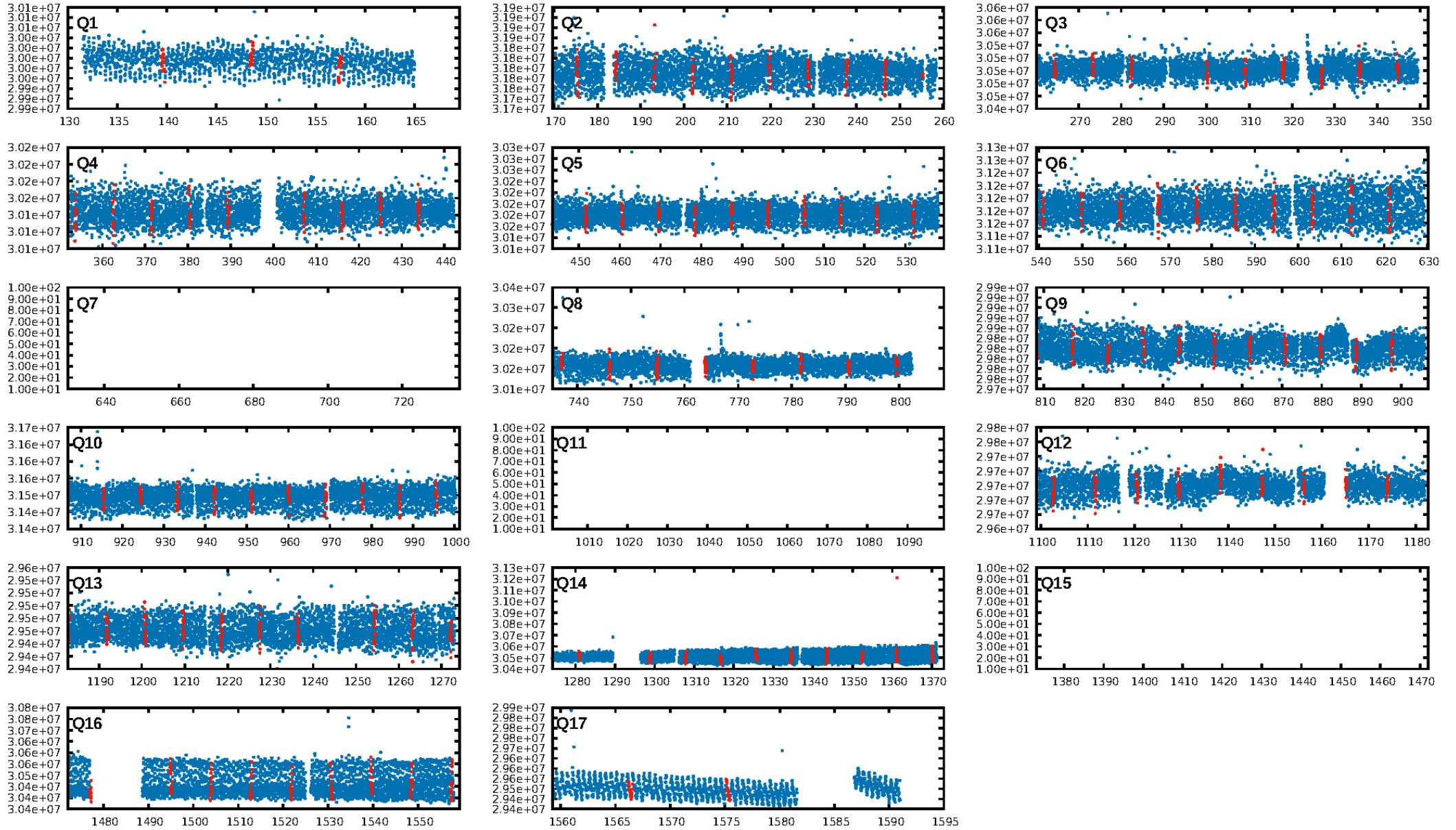
DV Fit Results:

Period = 8.91715 [0.00008] d
Epoch = 139.6208 [0.0065] BKJD
Rp/R* = 0.0128 [0.0044]
a/R* = 7.65 [14.05]
b = 0.89 [0.46]
Seff = 178.19 [74.89]
Teq = 932 [98] K
Rp = 1.38 [0.65] Re
a = 0.0853 [0.0232] AU
Ag = 55.75 [51.03] [1.07σ]
Teffp = 3936 [824] K [3.62σ]

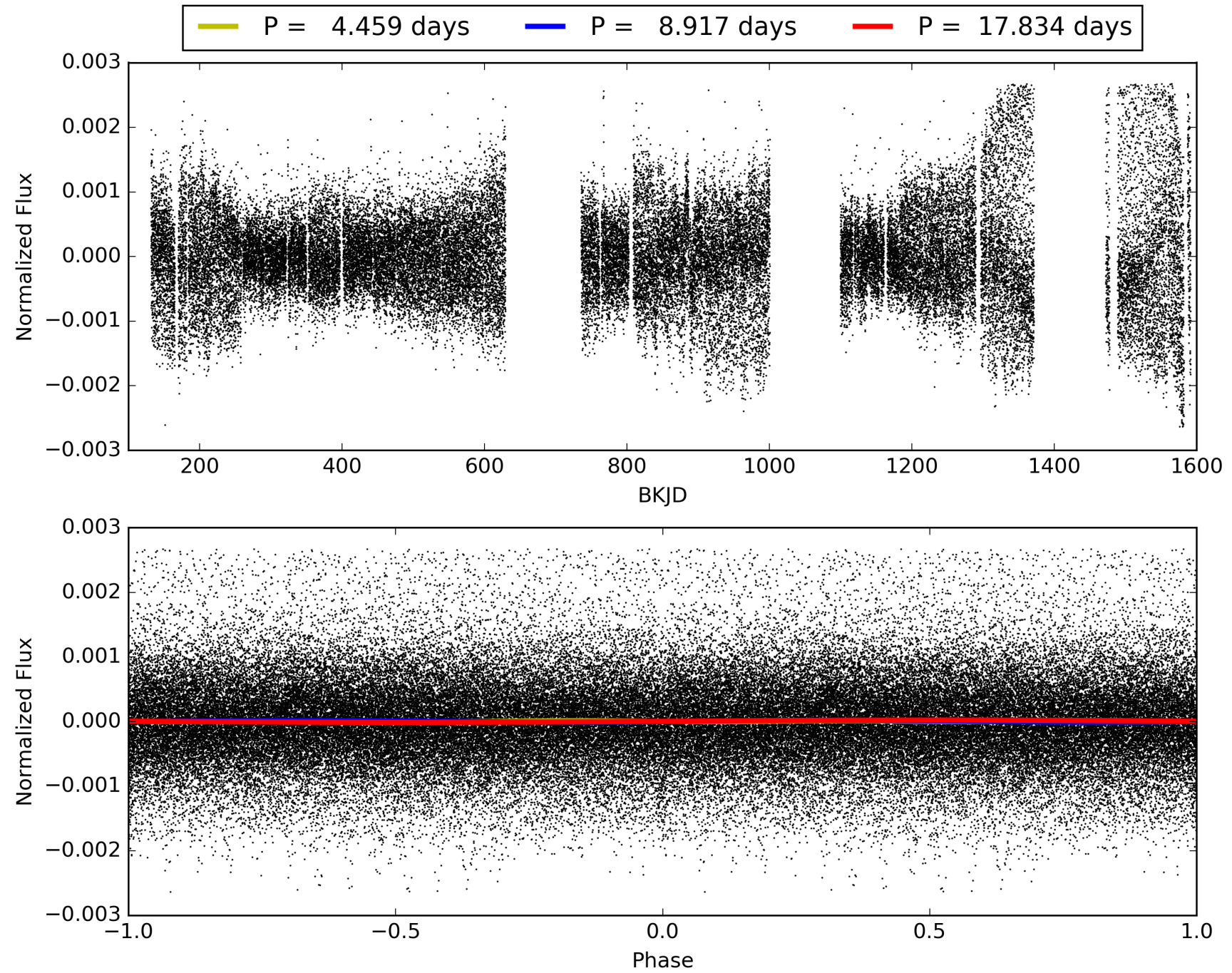
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.52e-29
RollingBand-fgt: 1.00 [112/112]
GhostDiagnostic-chr: 0.7095
Centroid-sig: 1.1%
Centroid-so: 1.907 arcsec [1.79σ]
OotOffset-rm: 2.384 arcsec [7.11σ]
KicOffset-rm: 2.434 arcsec [6.83σ]
OotOffset-st: 4/0/2/4 [10]
KicOffset-st: 4/0/2/4 [10]
DiffImageQuality-fgm: 1.00 [10/10]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 010745365-01, PDC Light Curves

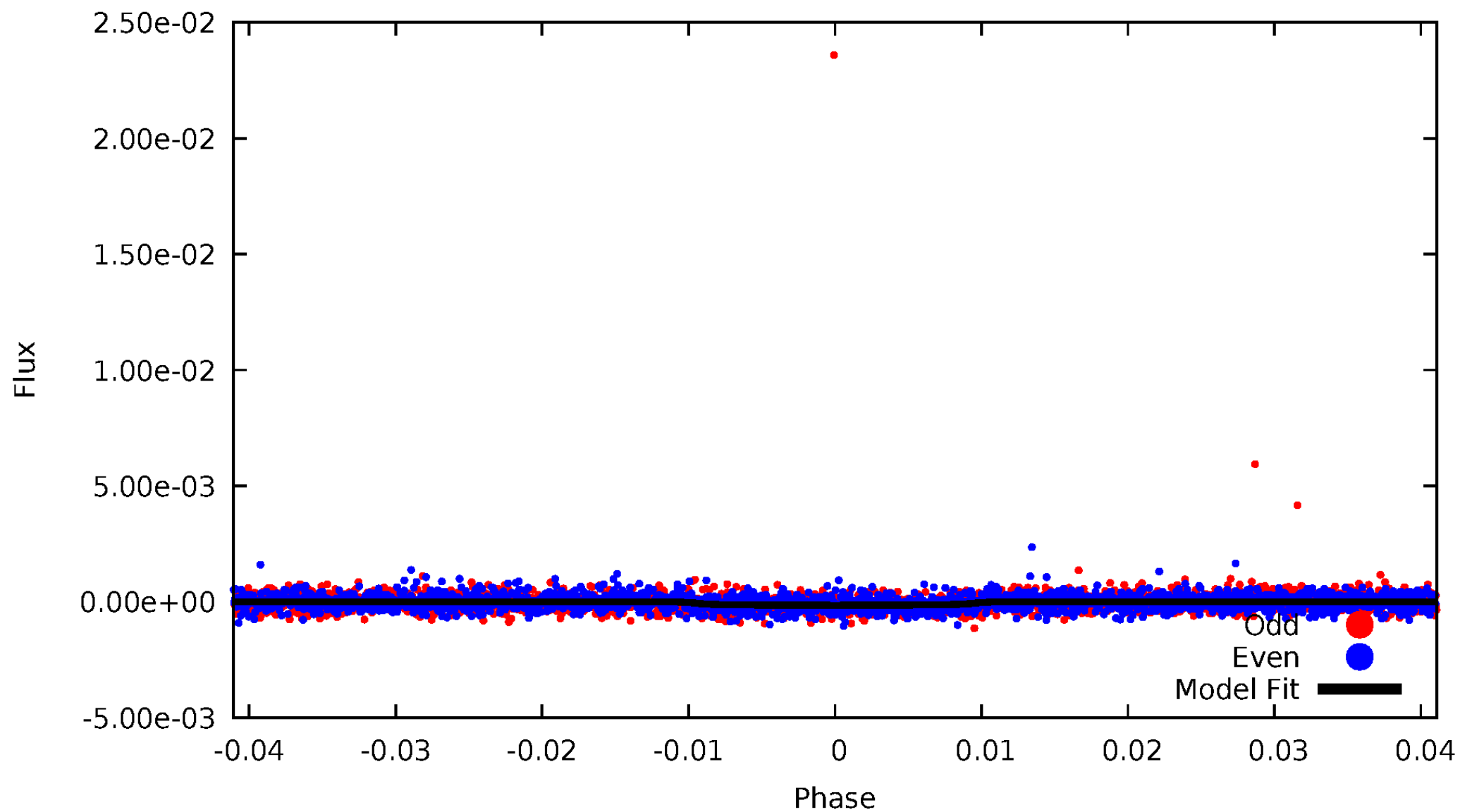


TCE 010745365-01



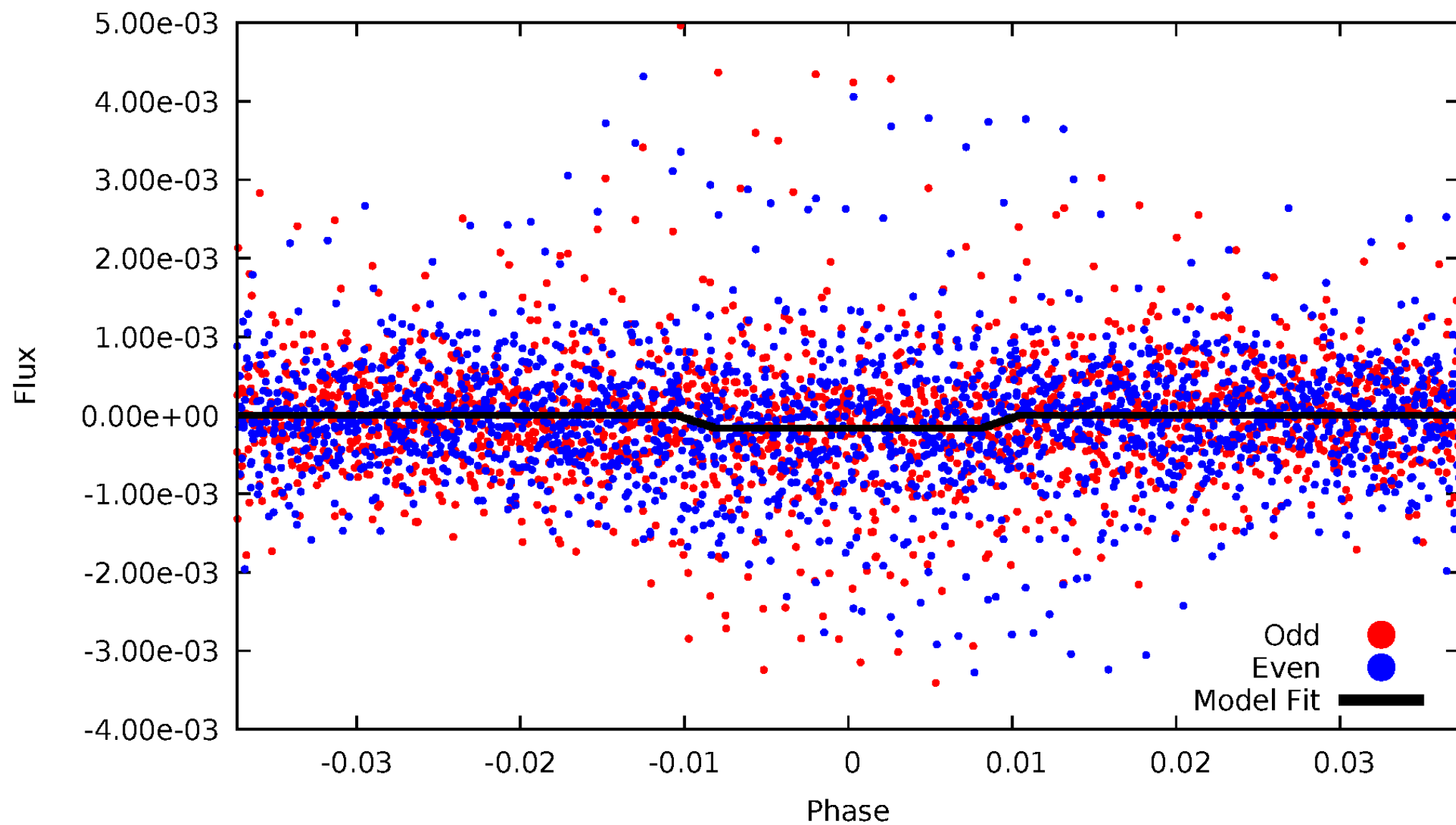
DV Odd/Even

TCE 010745365-01

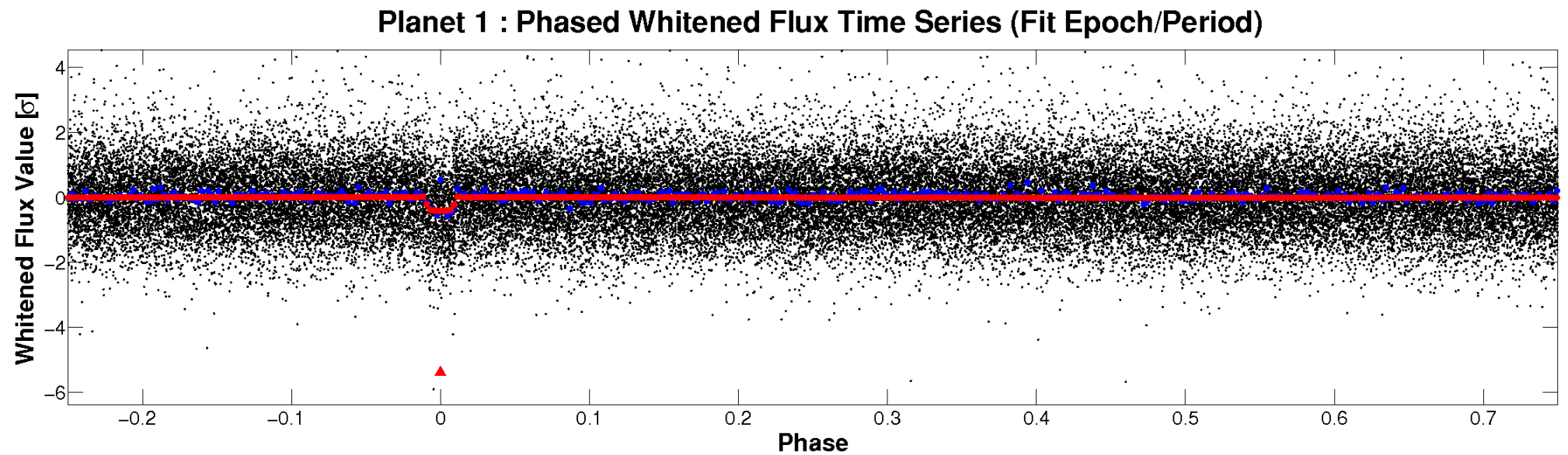
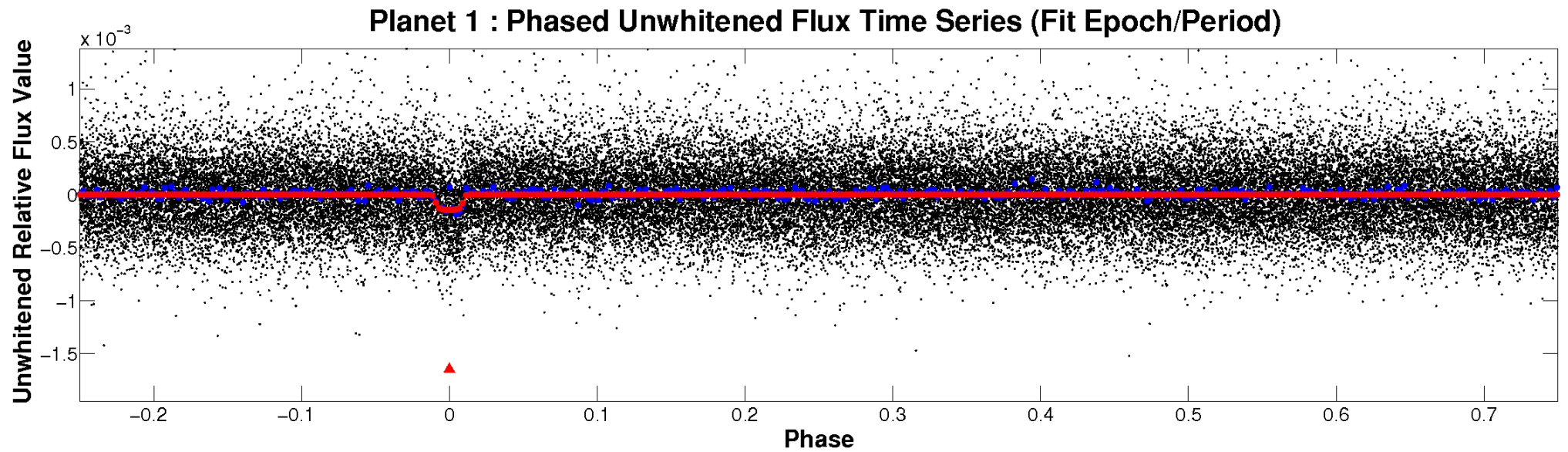


ALT Odd/Even

TCE 010745365-01

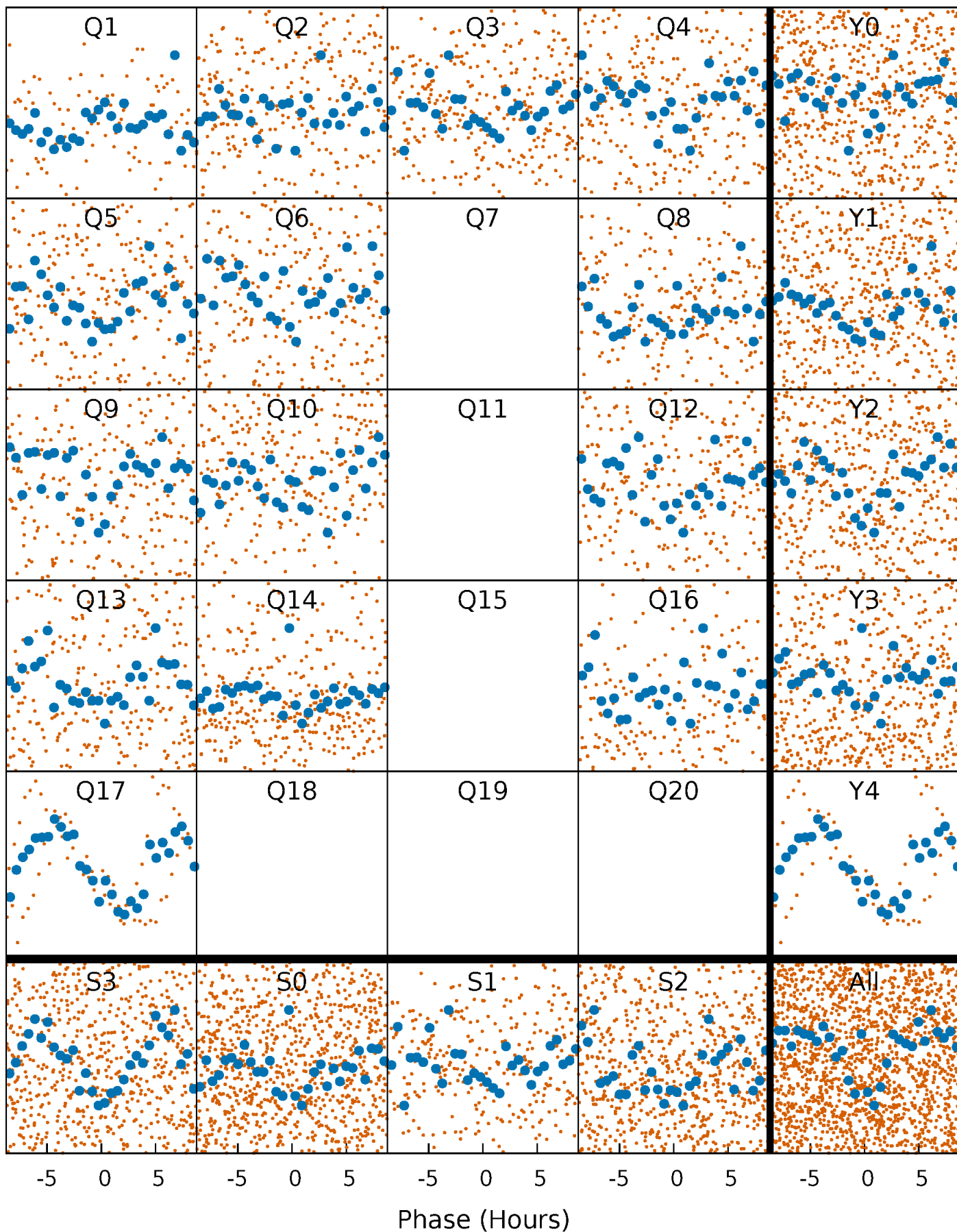


Non-Whitened Vs. Whitened Light Curve



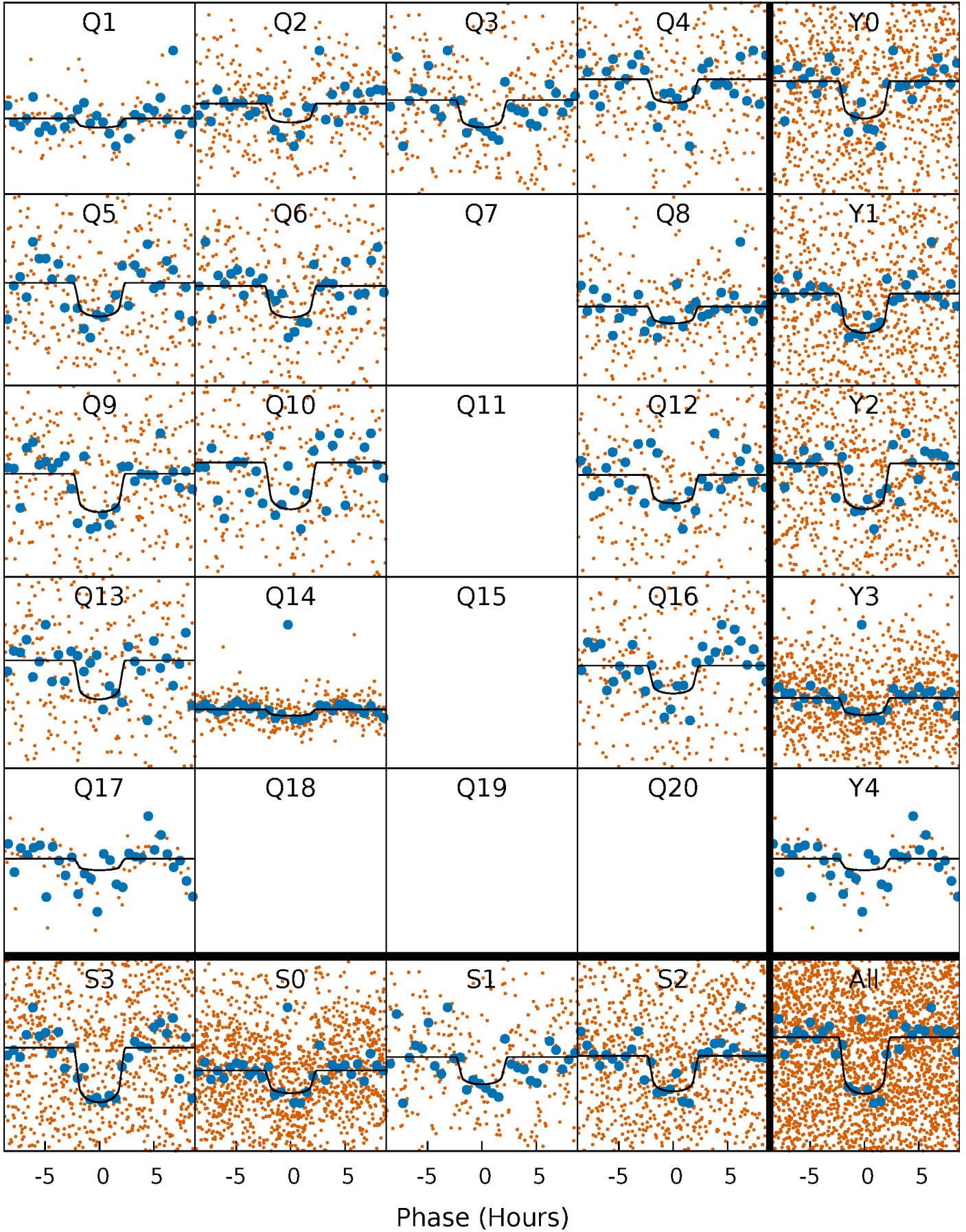
PDC Quarter-Phased Transit Curves

TCE 010745365-01 P= 8.917146 Days $T_0=139.620833$ (BKJD)



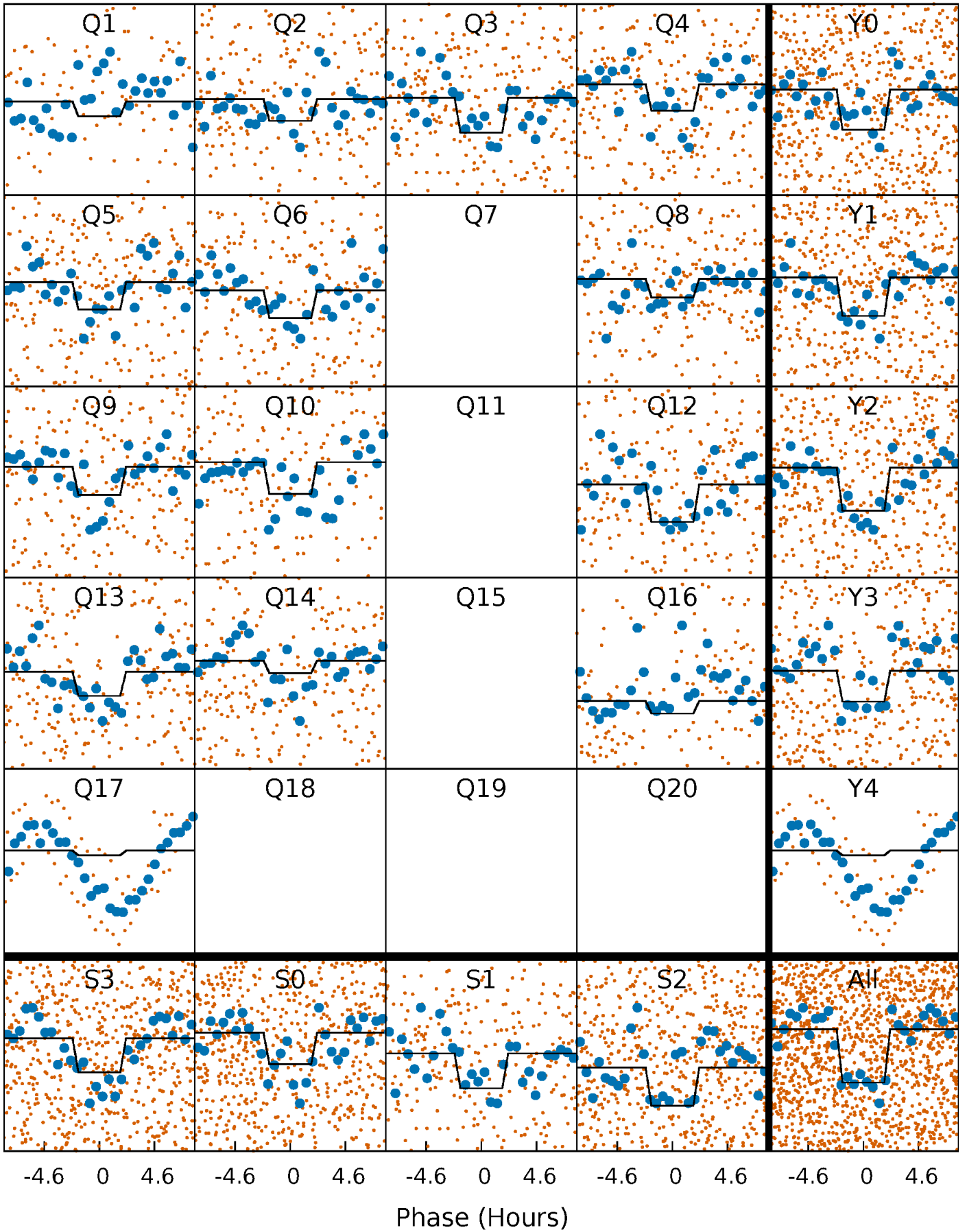
DV Quarter-Phased Transit Curves

TCE 010745365-01 P= 8.917146 Days $T_0=139.620833$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

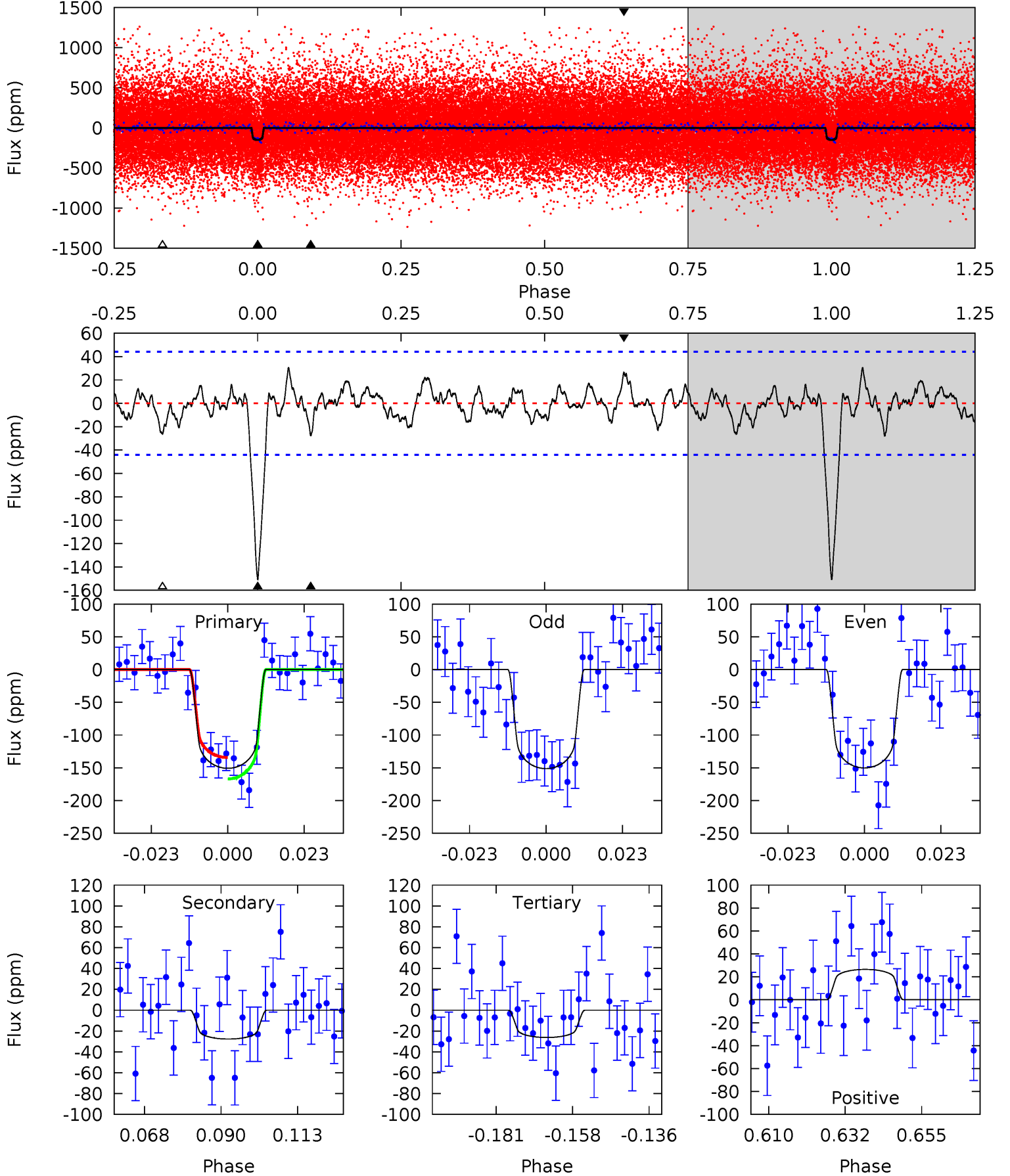
TCE 010745365-01 P= 8.917204 Days $T_0=139.617797$ (BKJD)



DV Model-Shift Uniqueness Test

010745365-01, P = 8.917146 Days, E = 130.703687 Days

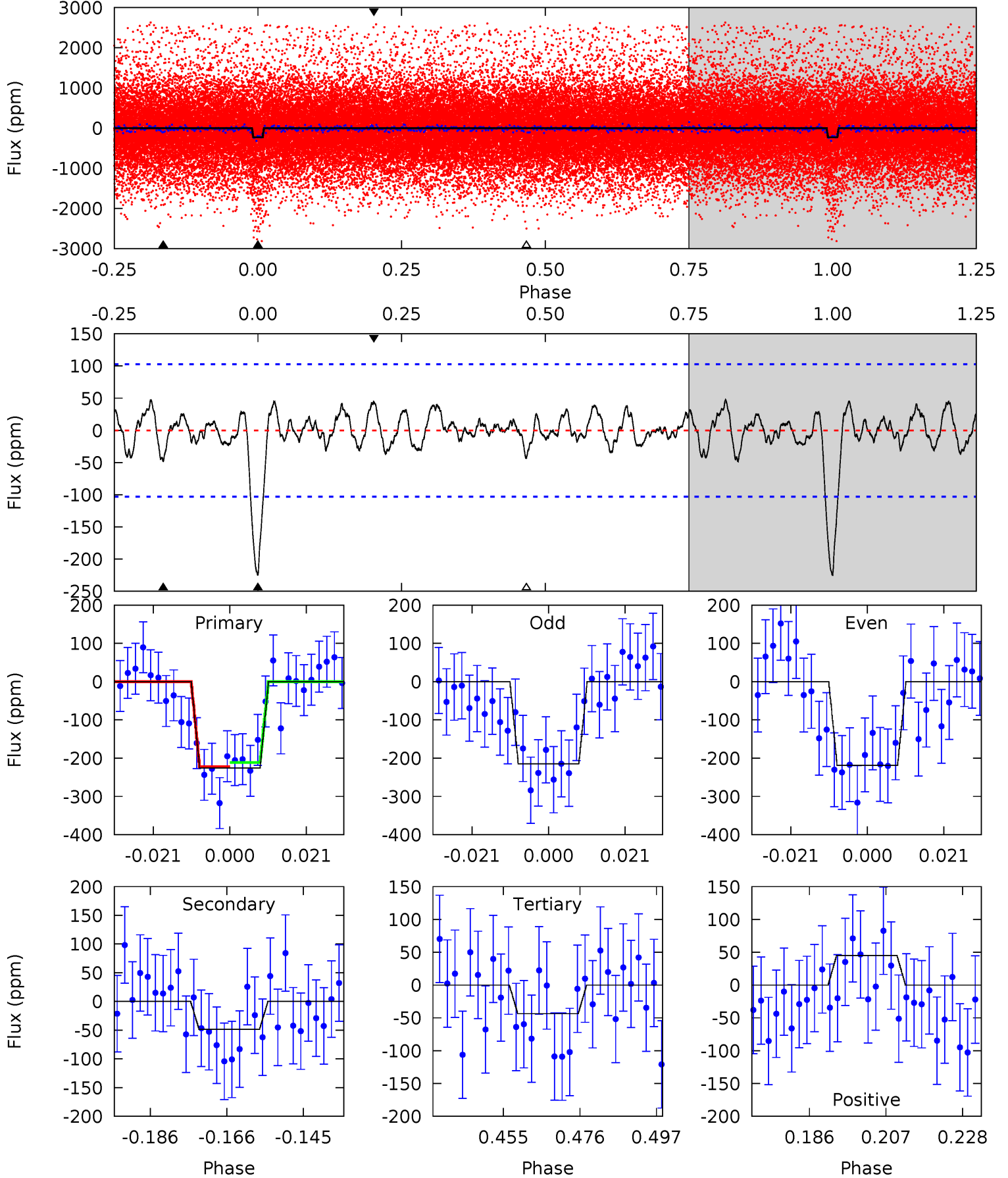
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 16.6 | 3.05 | 2.89 | 2.92 | 4.87 | 2.28 | 1.09 | 13.7 | 13.7 | 0.16 | 0.13 | 0.06 | 0.81 | 0.17 | 1.81 |



Alt Model-Shift Uniqueness Test

010745365-01, P = 8.917204 Days, E = 130.700593 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.7 | 2.31 | 2.07 | 2.13 | 4.88 | 2.31 | 0.89 | 8.64 | 8.58 | 0.24 | 0.18 | 0.11 | 1.07 | 0.18 | 0.28 |



Stellar Parameters For KIC 010745365

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6210^{+175}_{-219} | $4.467^{+0.054}_{-0.216}$ | $-0.240^{+0.250}_{-0.350}$ | $0.986^{+0.320}_{-0.107}$ | $1.035^{+0.147}_{-0.134}$ | $1.523^{+0.442}_{-0.817}$ |
| | +3%/-4% | +1%/-5% | +104%/-146% | +32%/-11% | +14%/-13% | +29%/-54% |
| 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 010745365-01 / KOI 4405.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|--------------|------------------------|----------------------|-----------------------|-------------------|
| DV | -28 ± 9 | $1.41^{+0.63}_{-0.48}$ | 1326^{+107}_{-68} | 4198^{+866}_{-507} | 50^{+77}_{-27} |
| Alt. | -49 ± 21 | $1.43^{+0.54}_{-0.55}$ | 1330^{+87}_{-72} | 4706^{+1116}_{-659} | 92^{+158}_{-51} |

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

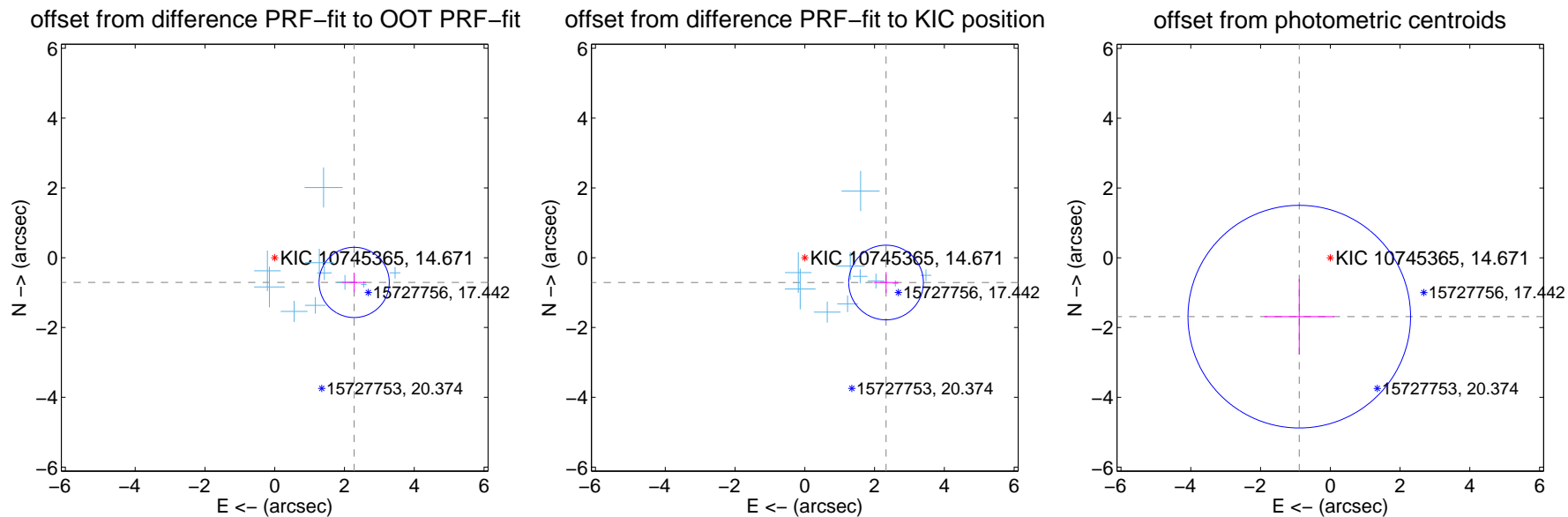
DV Centroid Data

Supplemental centroid analysis for 010745365-01. Kepler magnitude: 14.67. Transit SNR 11.41

There are 10 quarters with good PRF difference image offsets

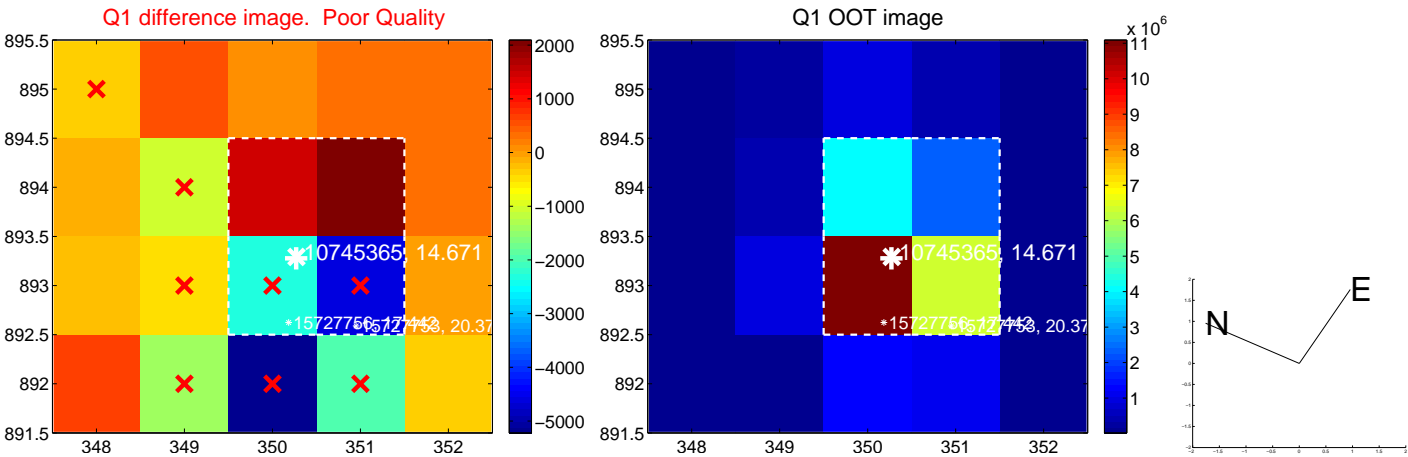
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 2.384 ± 0.335 | 7.11 | -2.277 ± 0.344 | -0.708 ± 0.282 |
| PRF-fit source offset from KIC position | 2.434 ± 0.357 | 6.83 | -2.328 ± 0.355 | -0.711 ± 0.298 |
| photometric centroid source offset | 1.91 ± 1.06 | 1.79 | 0.89 ± 1.00 | -1.69 ± 1.08 |

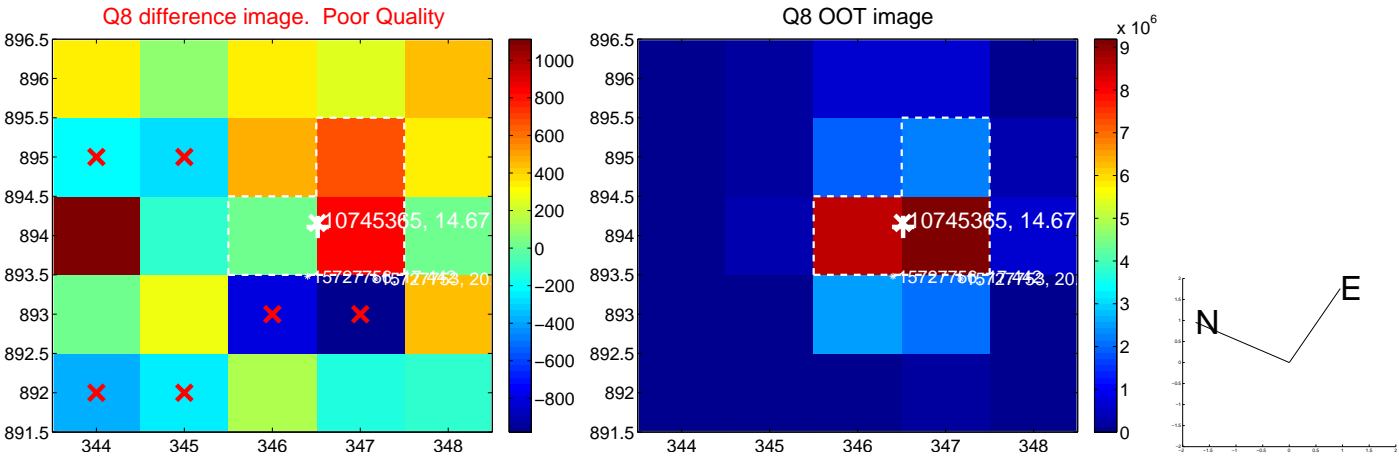
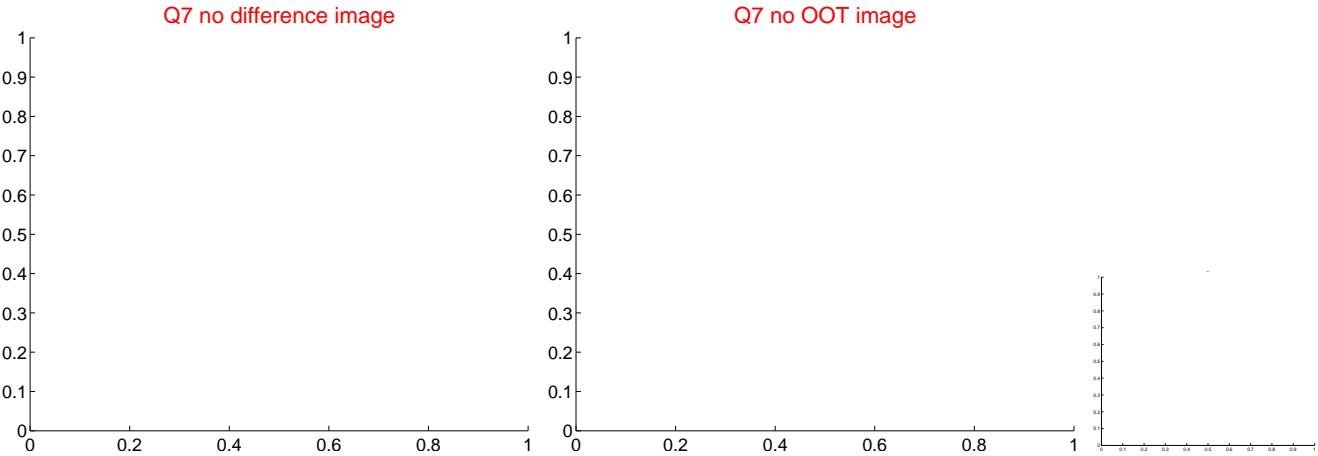
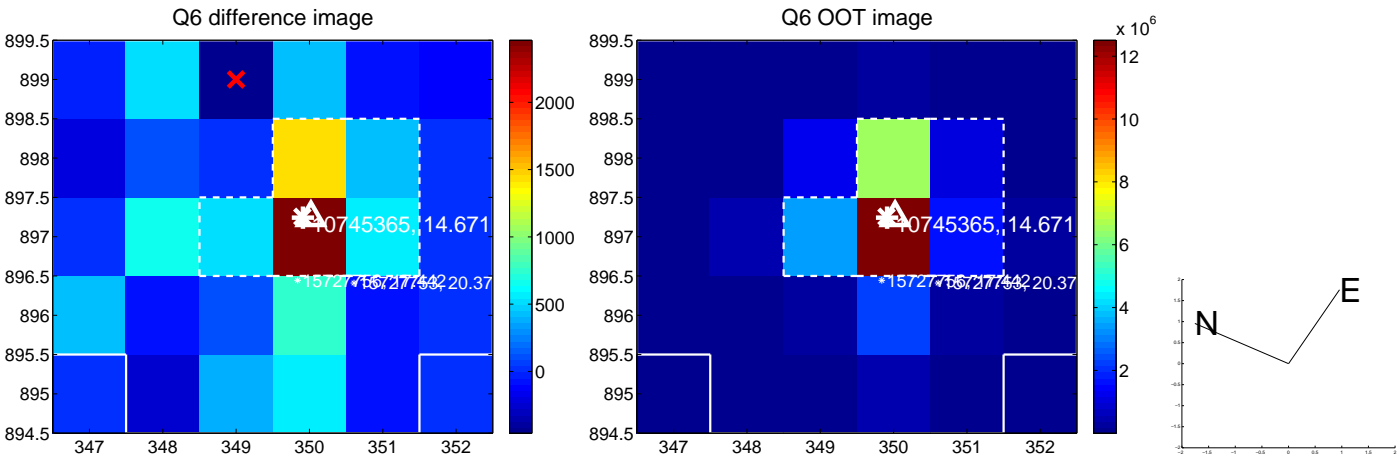
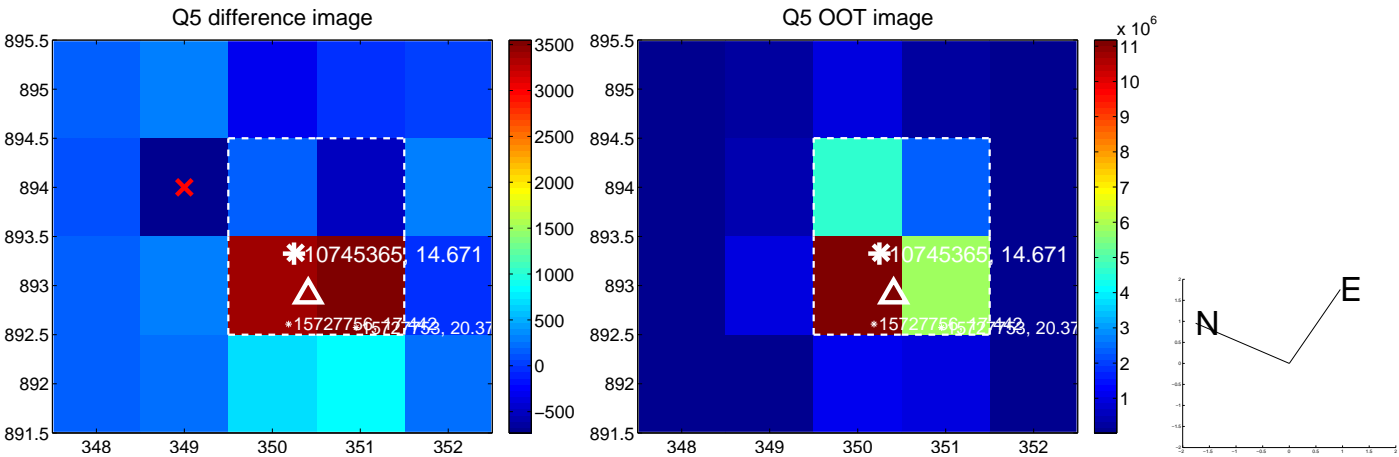


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

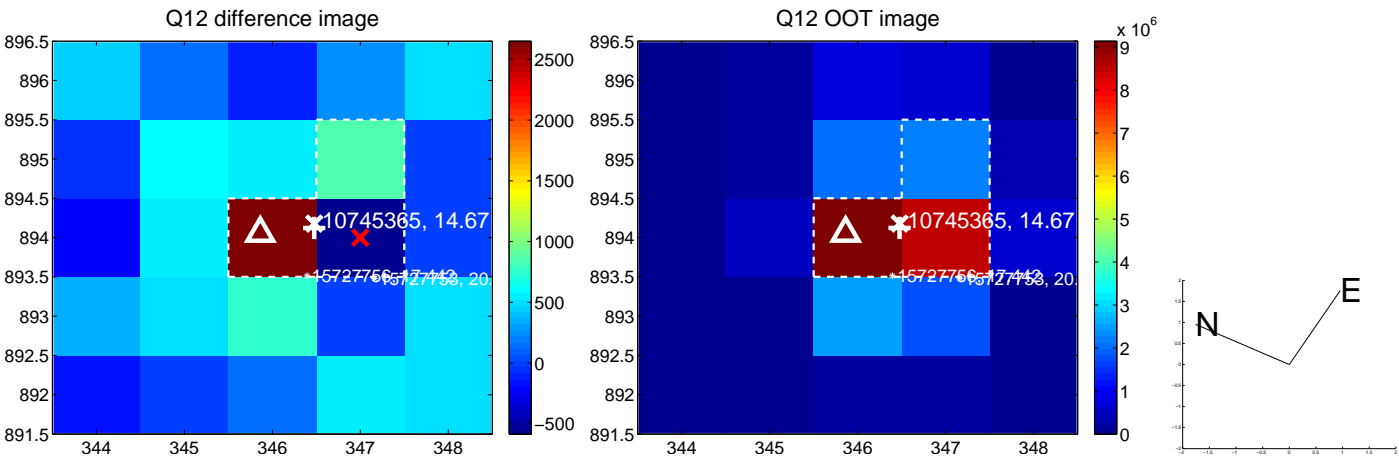
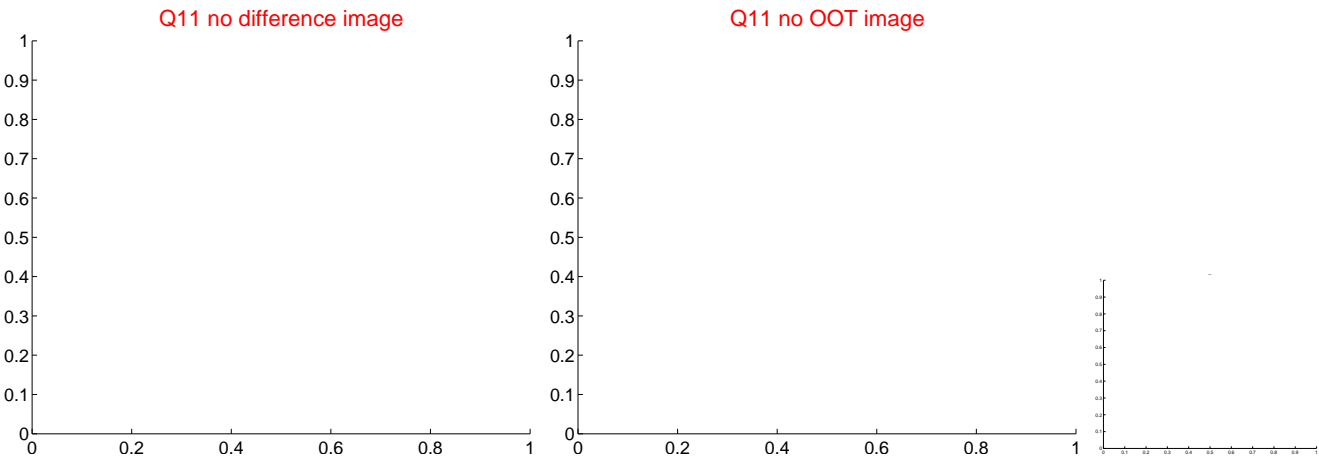
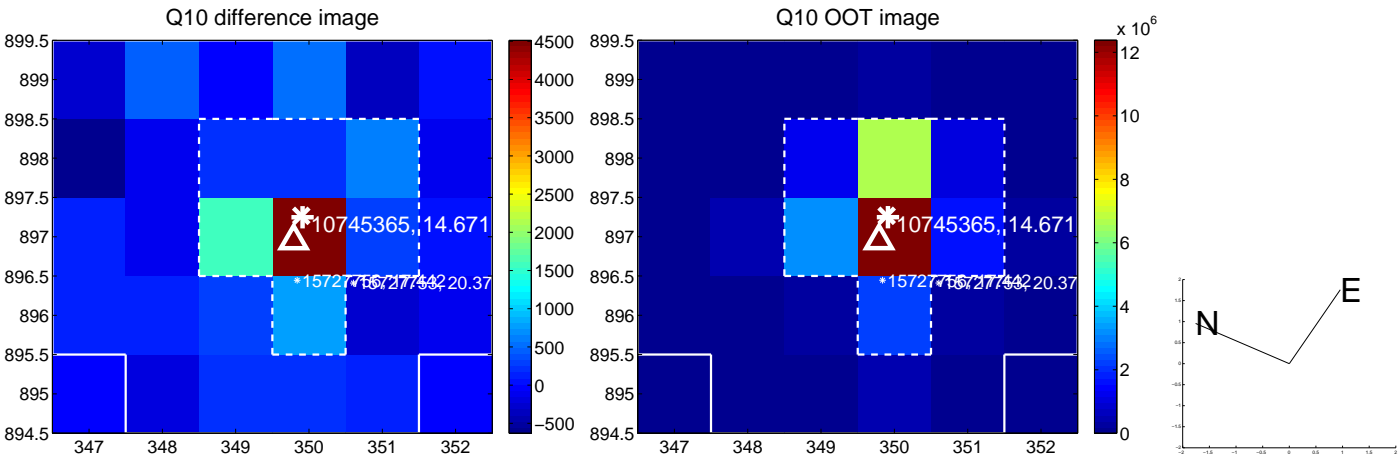
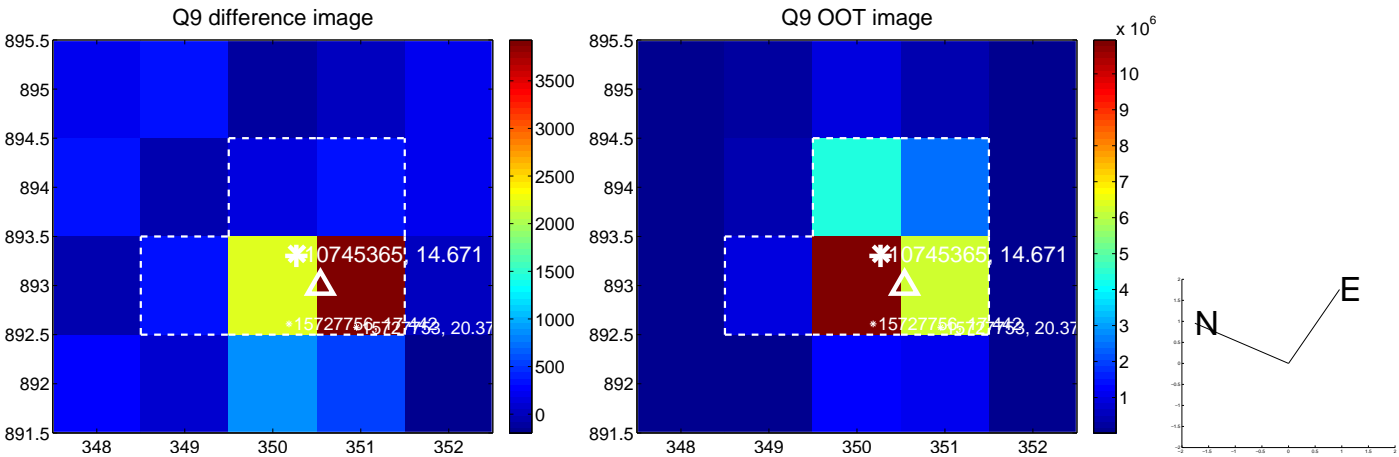
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



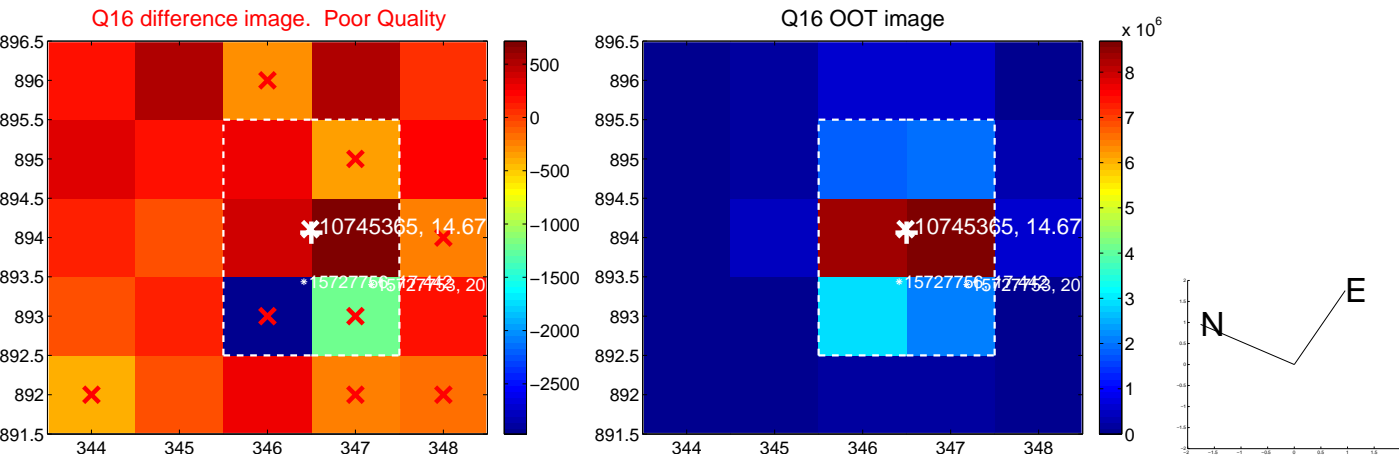
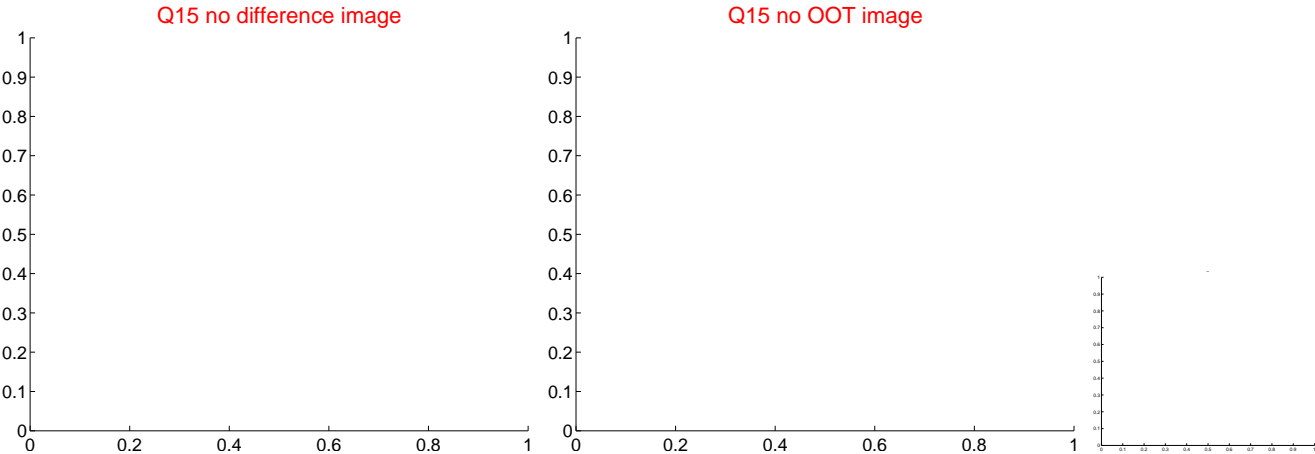
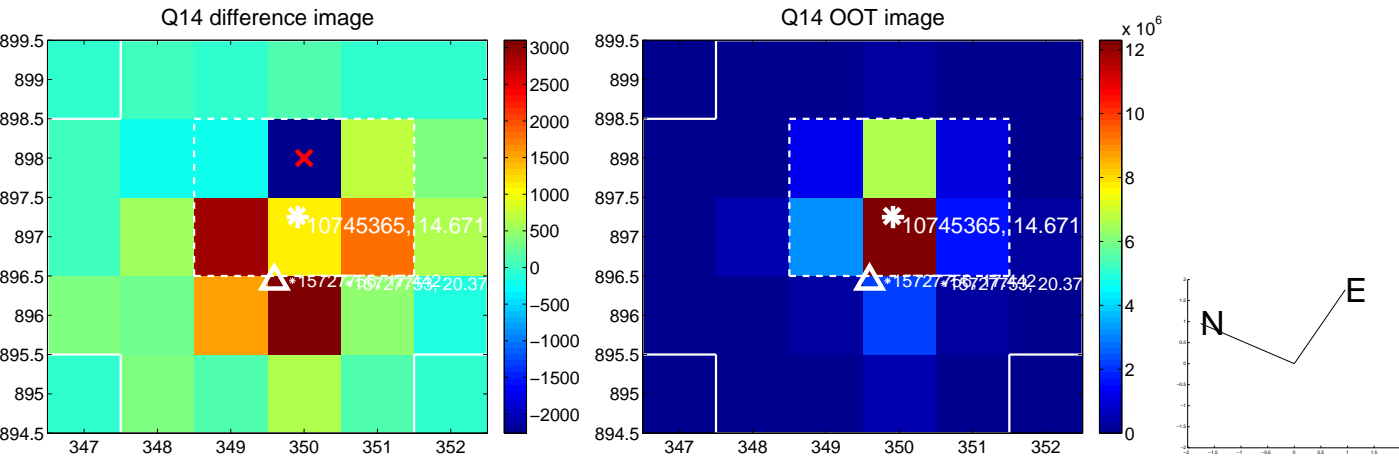
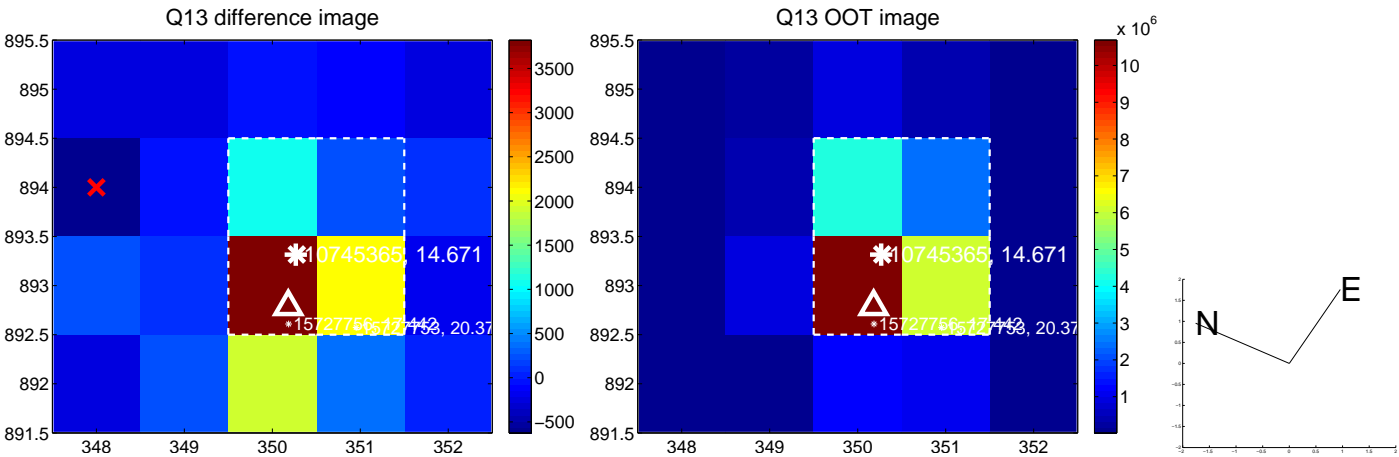
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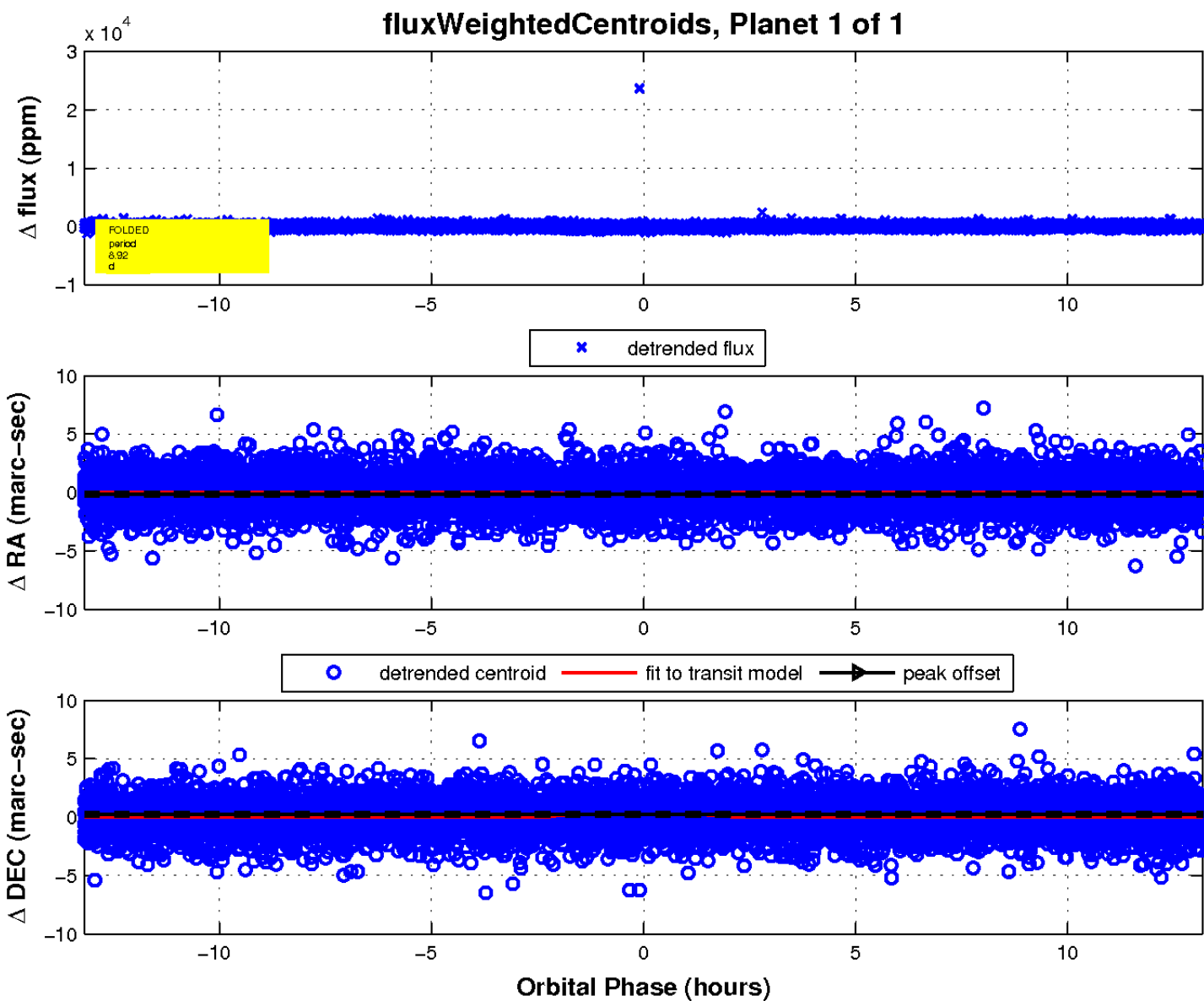
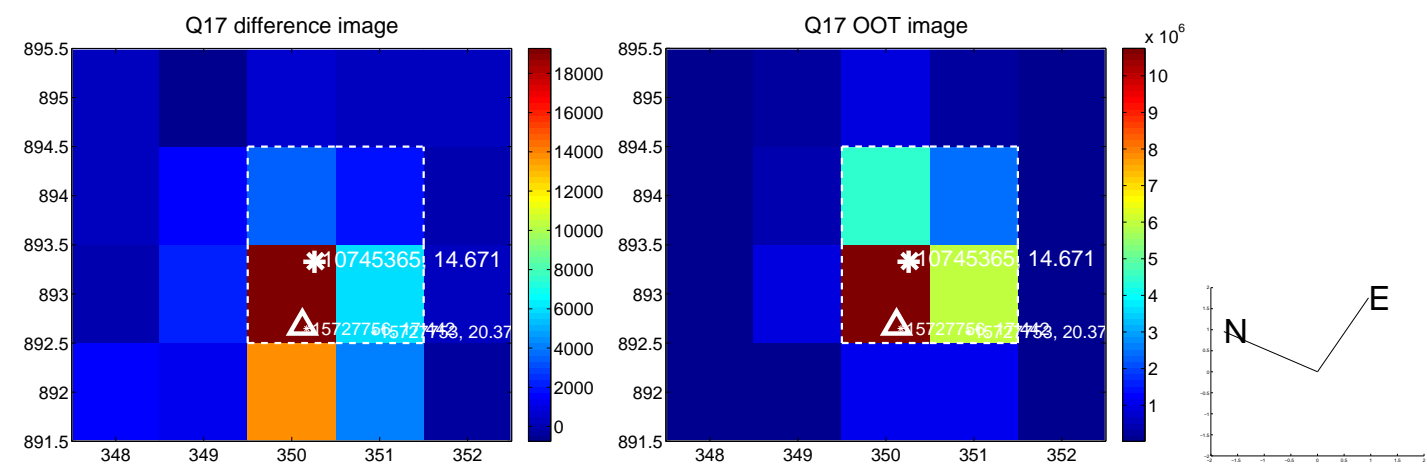
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UKIRT Image

Declination

