

KIC 010063802

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 010063802-01 | OBS | 1888.01 | 120.018749 | 134.182377 | 954.1 | 11.752 | 29.1 | 30.9 | 1.47 | 6469 | 4.82 | 11.86 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 010063802-01 | OBS | PC | 0.98 | 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.

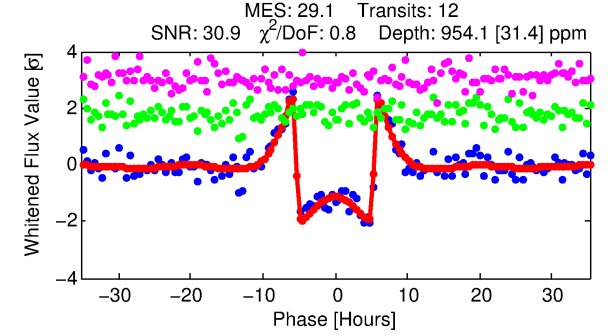
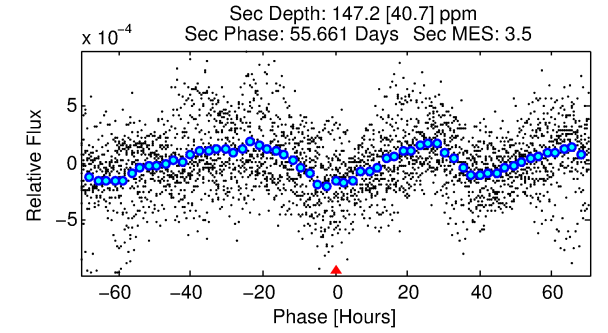
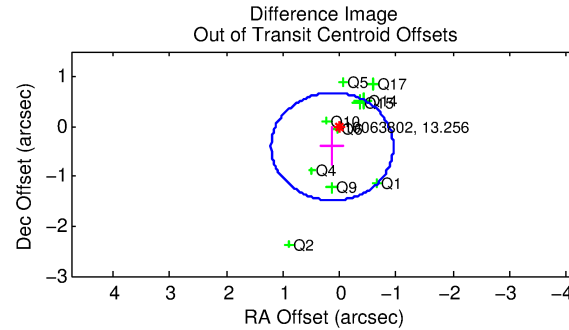
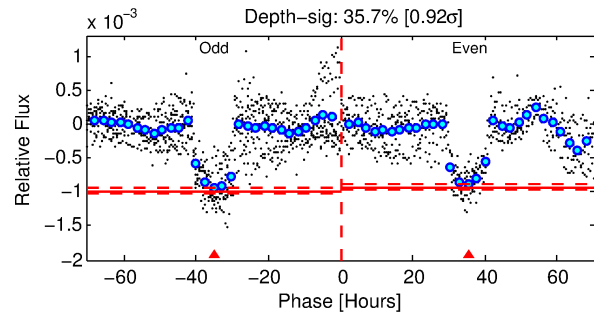
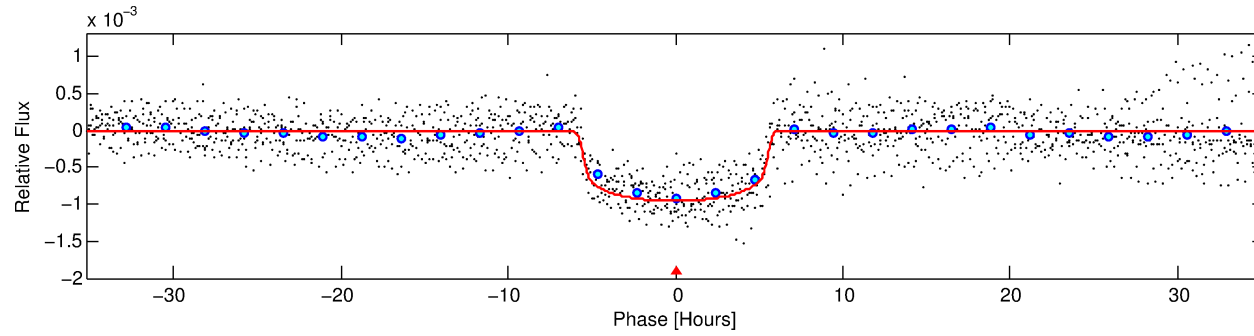
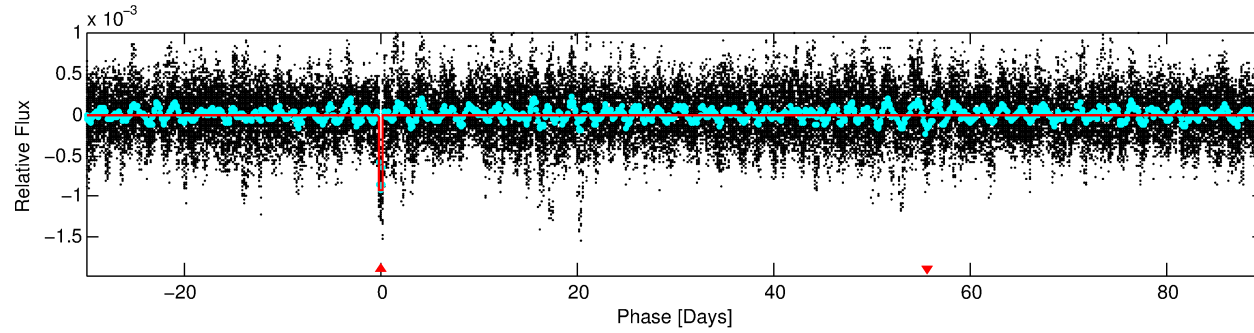
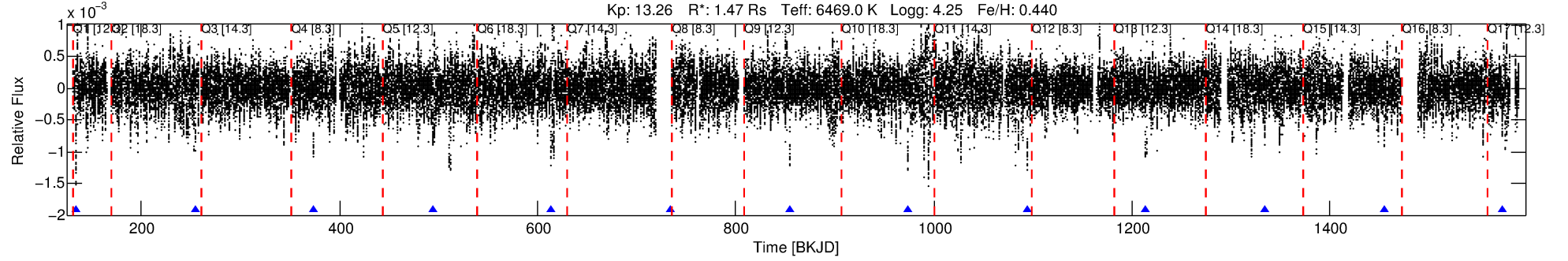
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010063802-01

No Significant Match Found

DV One-Page Summary

KIC: 10063802 Candidate: 1 of 1 Period: 120.019 d
KOI: K01888.01 Corr: 0.991



DV Fit Results:

Period = 120.01875 [0.00028] d
Epoch = 134.1824 [0.0021] BKJD
Rp/R* = 0.0301 [0.0010]
a/R* = 60.22 [7.93]
b = 0.68 [0.10]
Seff = 11.86 [2.56]
Teq = 473 [25] K
Rp = 4.82 [0.81] Re
a = 0.5335 [0.0721] AU
Ag = 991.89 [341.08] [2.91 σ]
Teffp = 4106 [308] K [11.76 σ]

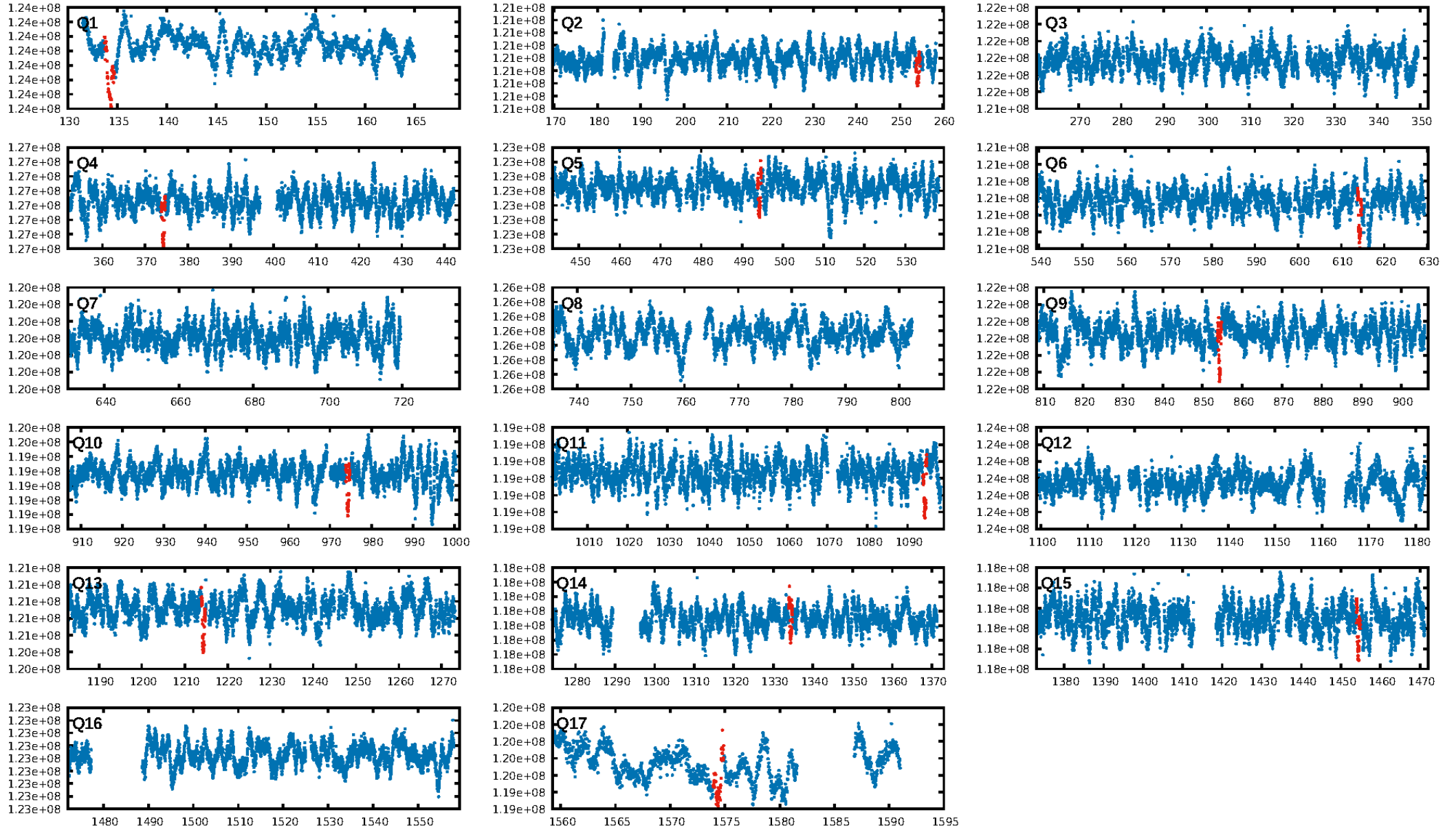
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 84.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.29e-162
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: 6.221
Centroid-sig: 0.3%
Centroid-so: 0.324 arcsec [2.64 σ]
OotOffset-rm: 0.429 arcsec [1.19 σ]
KicOffset-rm: 0.508 arcsec [1.39 σ]
OotOffset-st: 4/1/1/4 [10]
KicOffset-st: 4/1/1/4 [10]
DiffImageQuality-fgm: 1.00 [10/10]
DiffImageOverlap-fno: 1.00 [10/10]

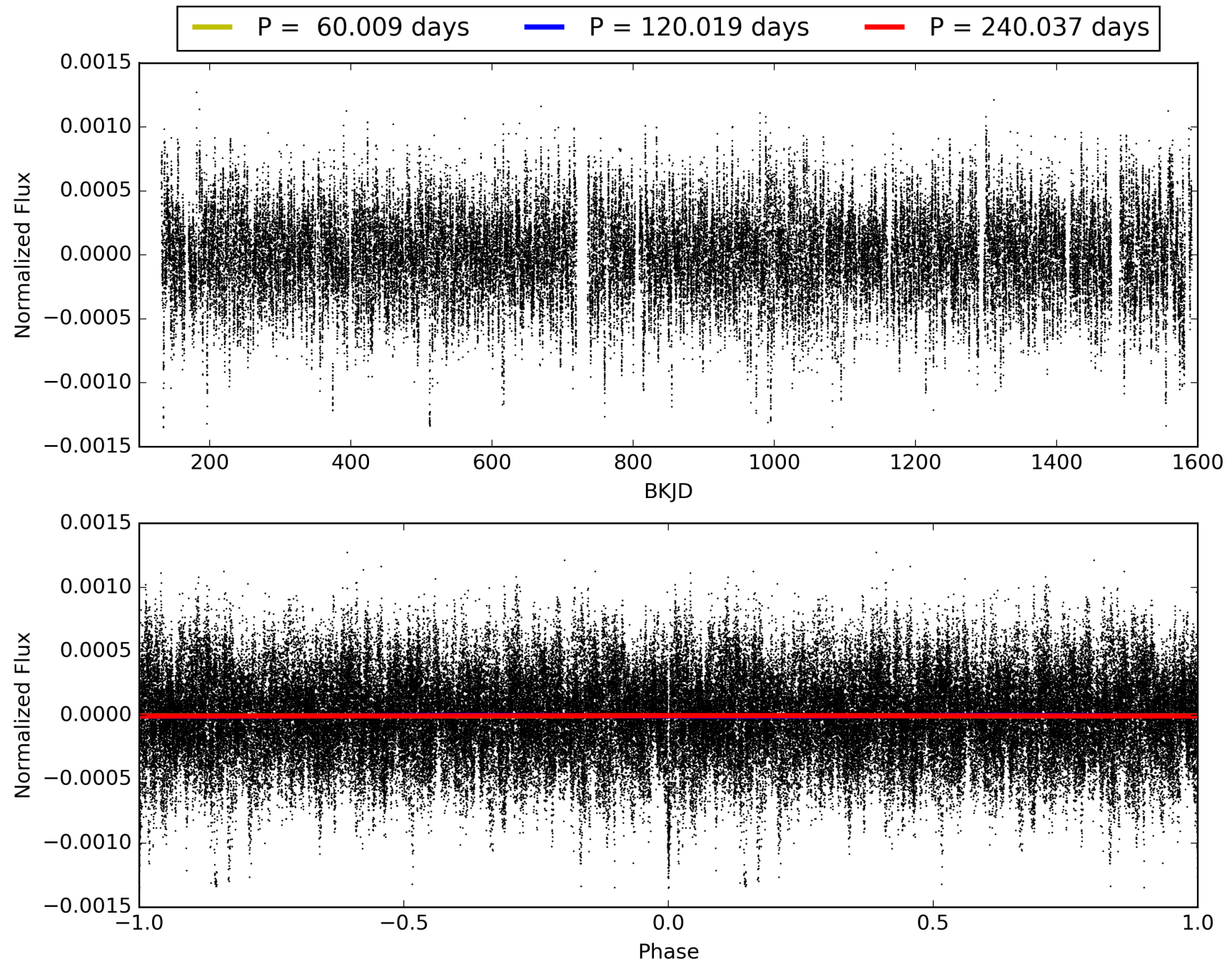
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:59:29 Z

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

TCE 010063802-01, PDC Light Curves

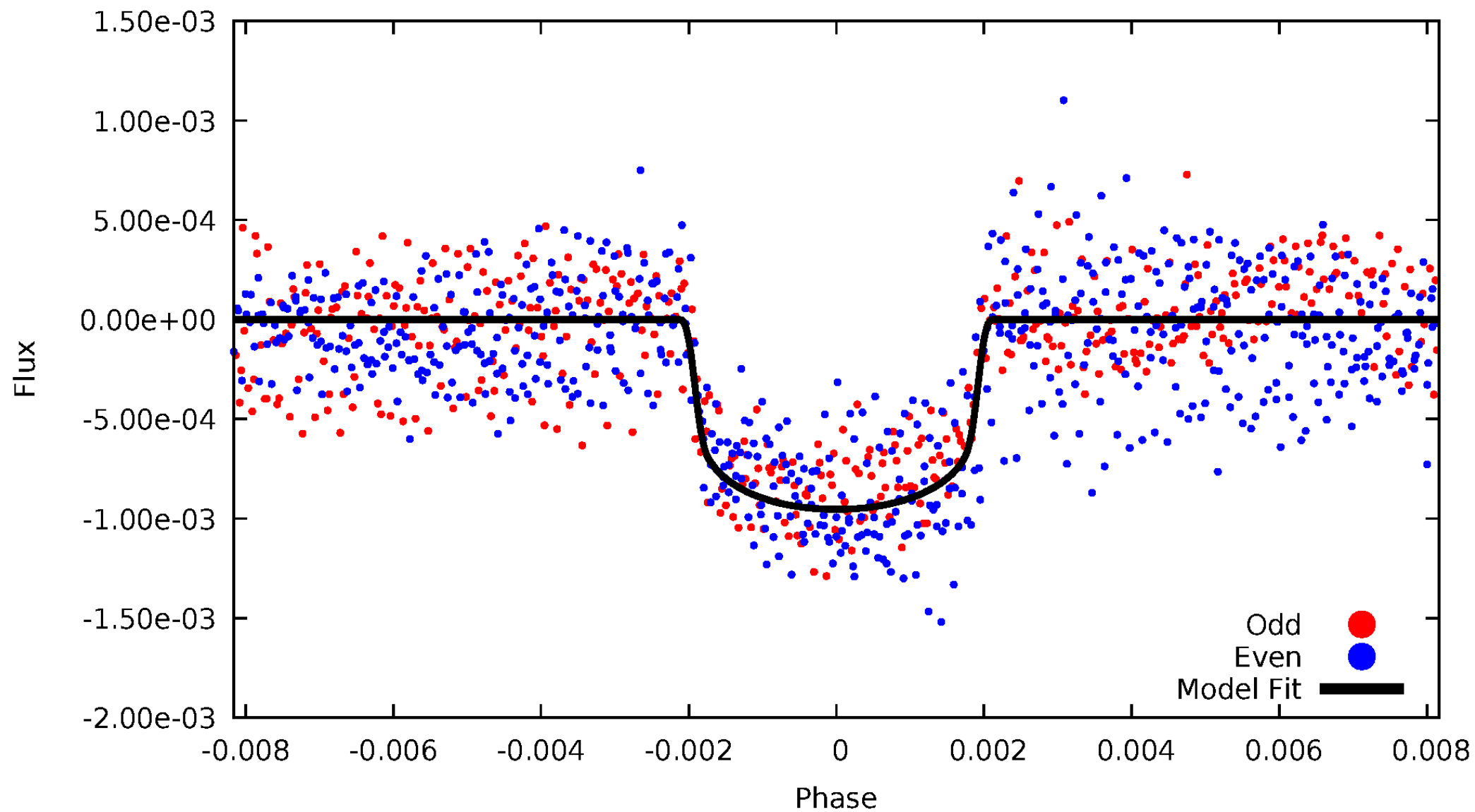


TCE 010063802-01



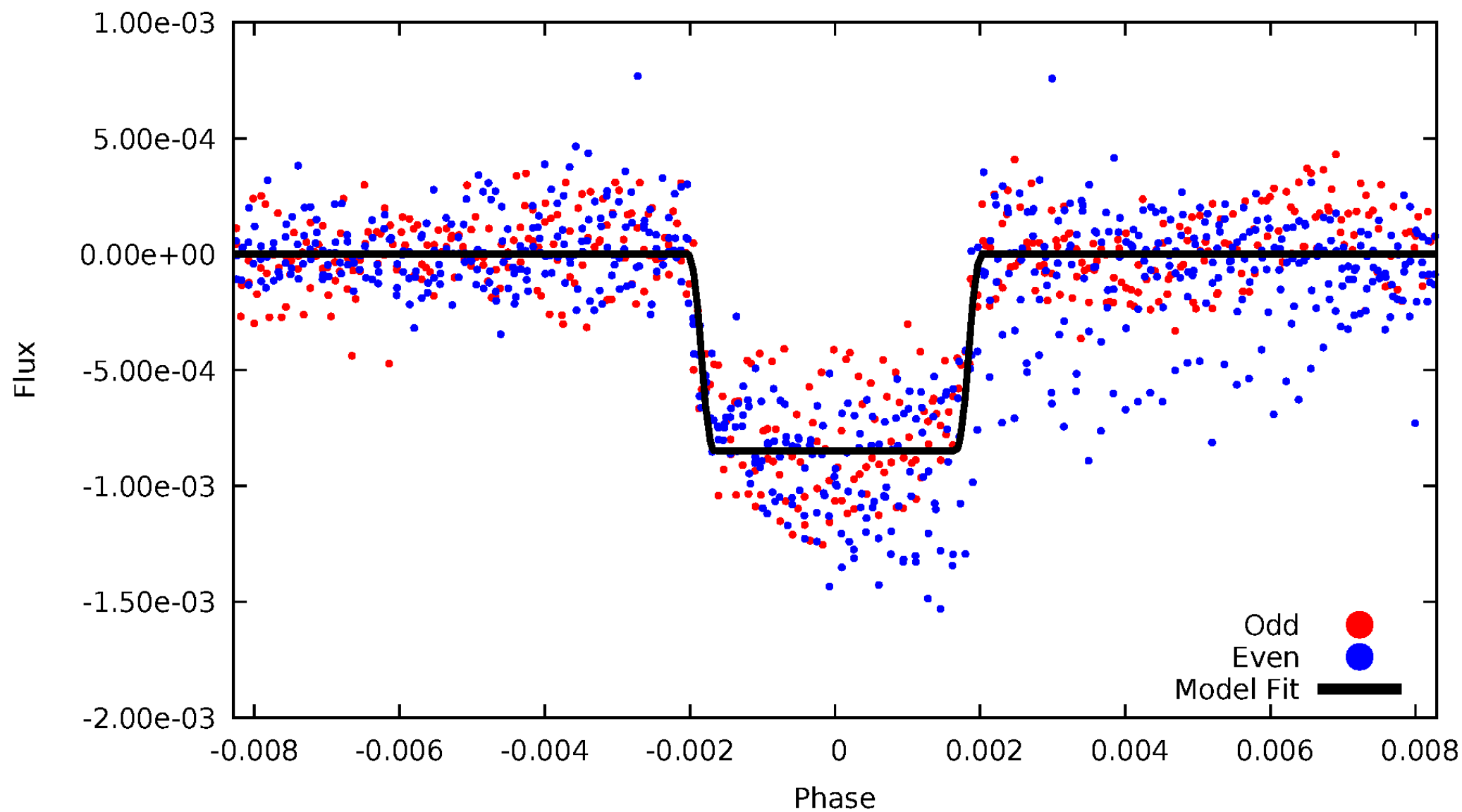
DV Odd/Even

TCE 010063802-01



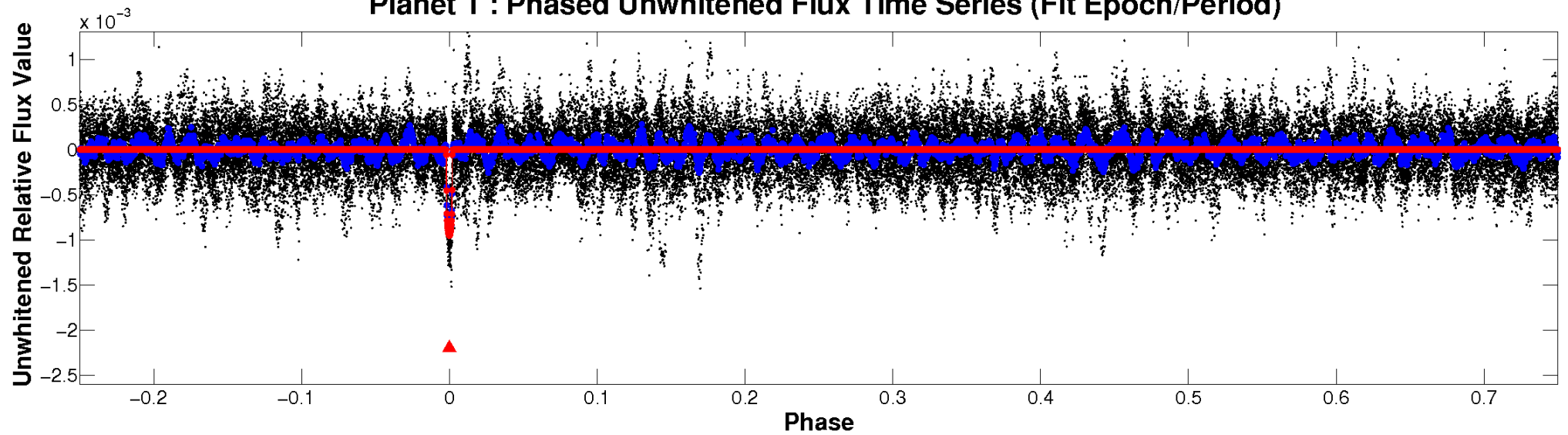
ALT Odd/Even

TCE 010063802-01

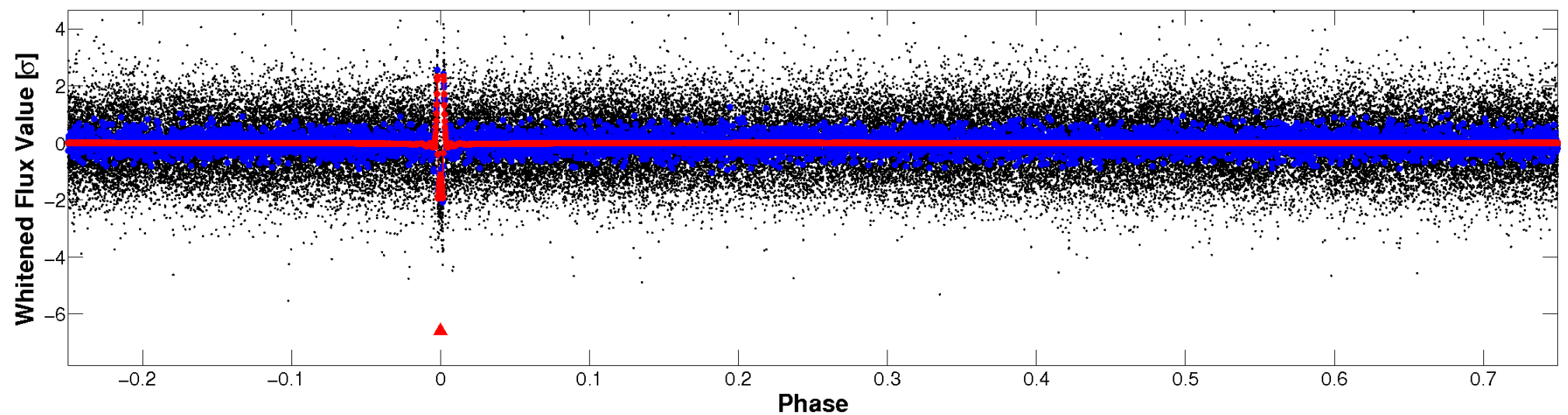


Non-Whitened Vs. Whitened Light Curve

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

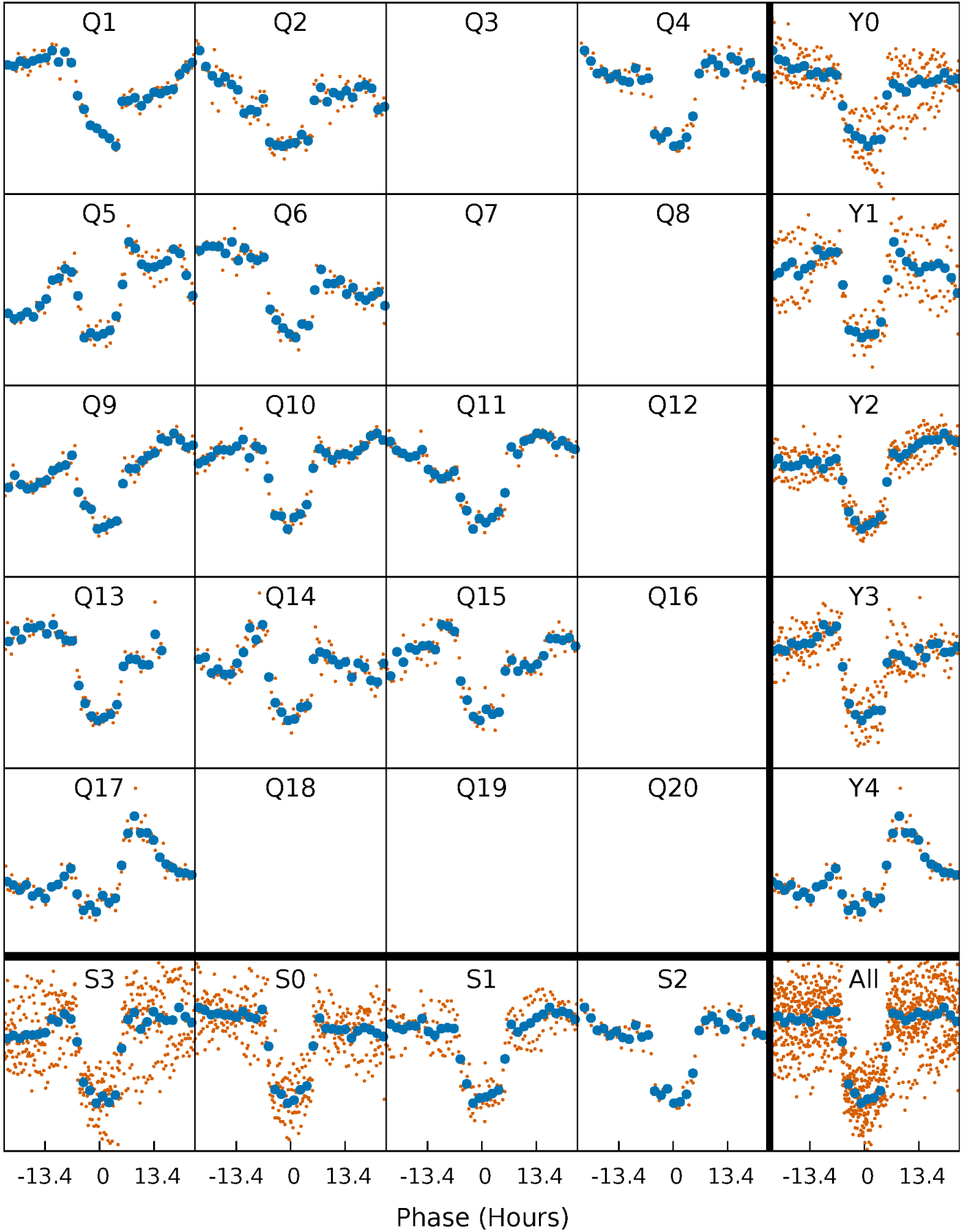


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



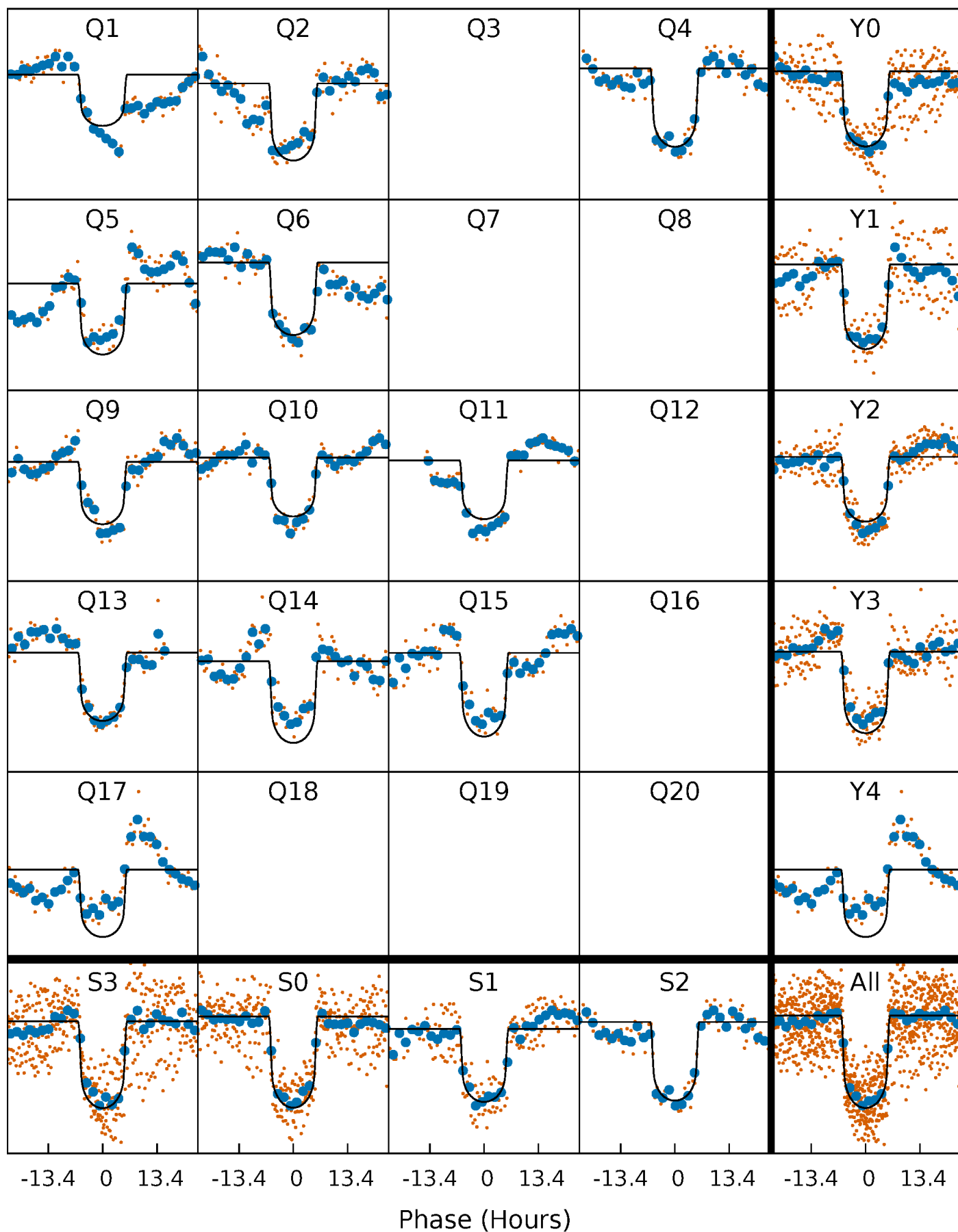
PDC Quarter-Phased Transit Curves

TCE 010063802-01 P=120.018749 Days $T_0=134.182377$ (BKJD)



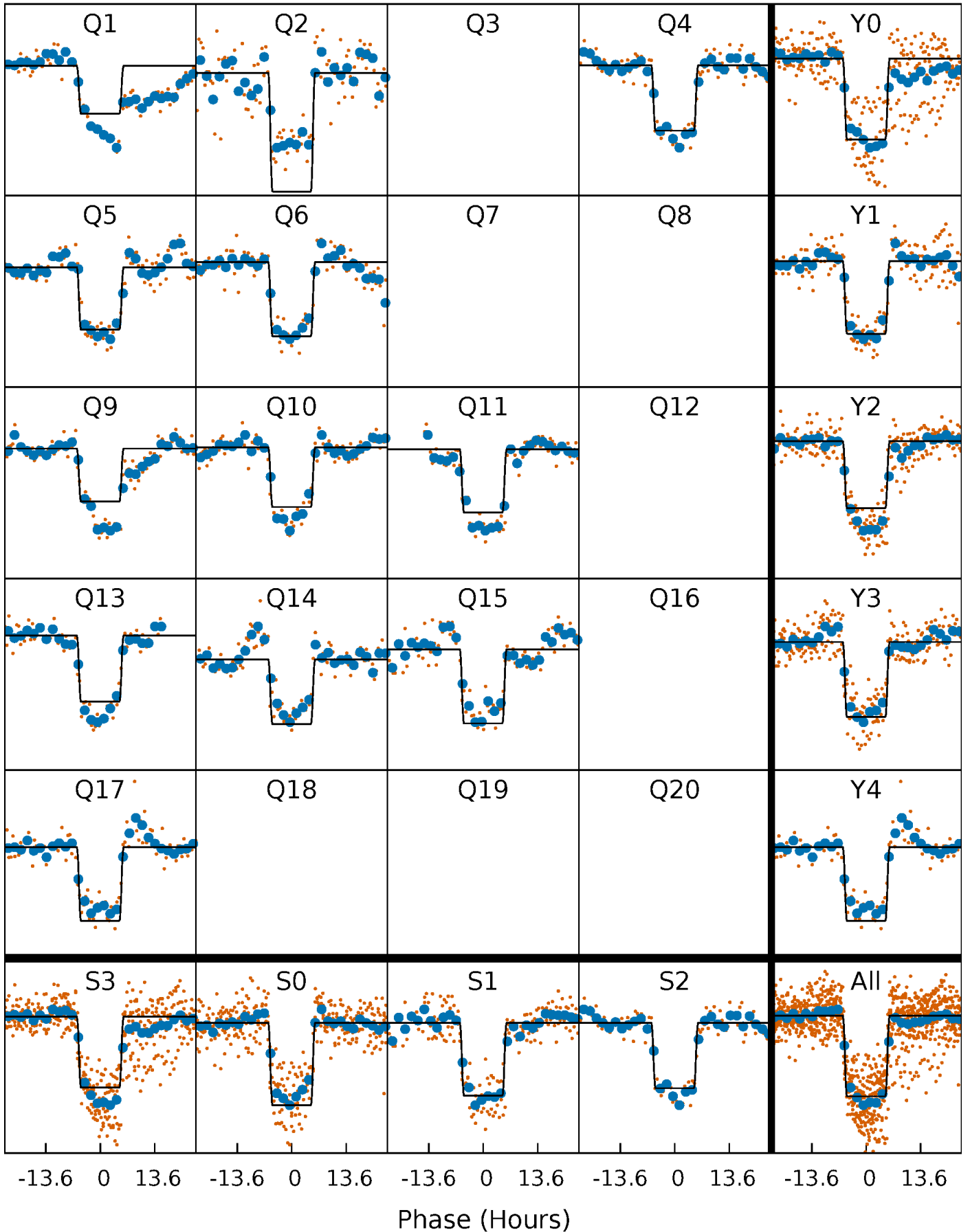
DV Quarter-Phased Transit Curves

TCE 010063802-01 P=120.018749 Days $T_0=134.182377$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

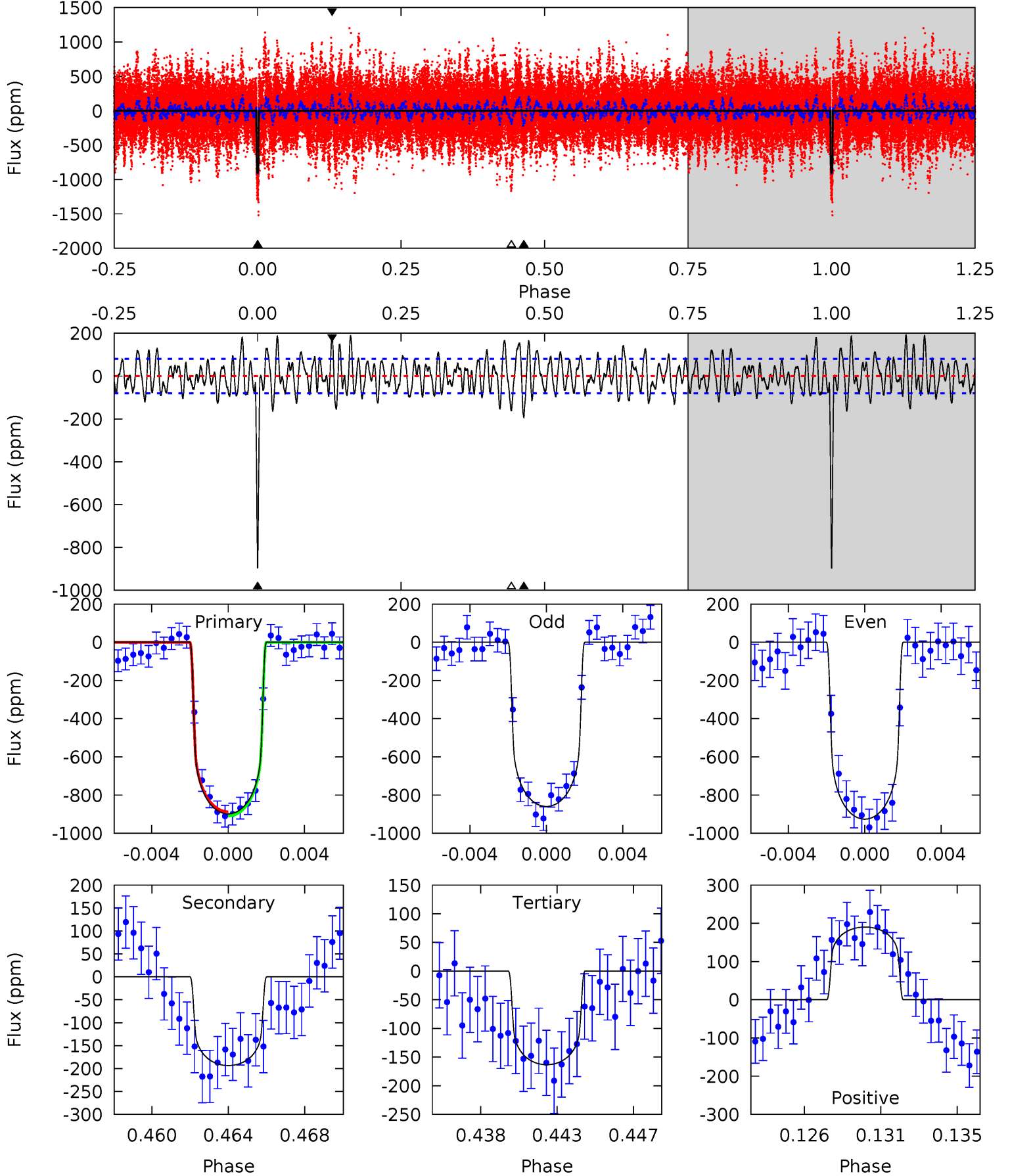
TCE 010063802-01 P=120.019920 Days $T_0=134.178697$ (BKJD)



DV Model-Shift Uniqueness Test

010063802-01, $P = 120.018749$ Days, $E = 14.163628$ Days

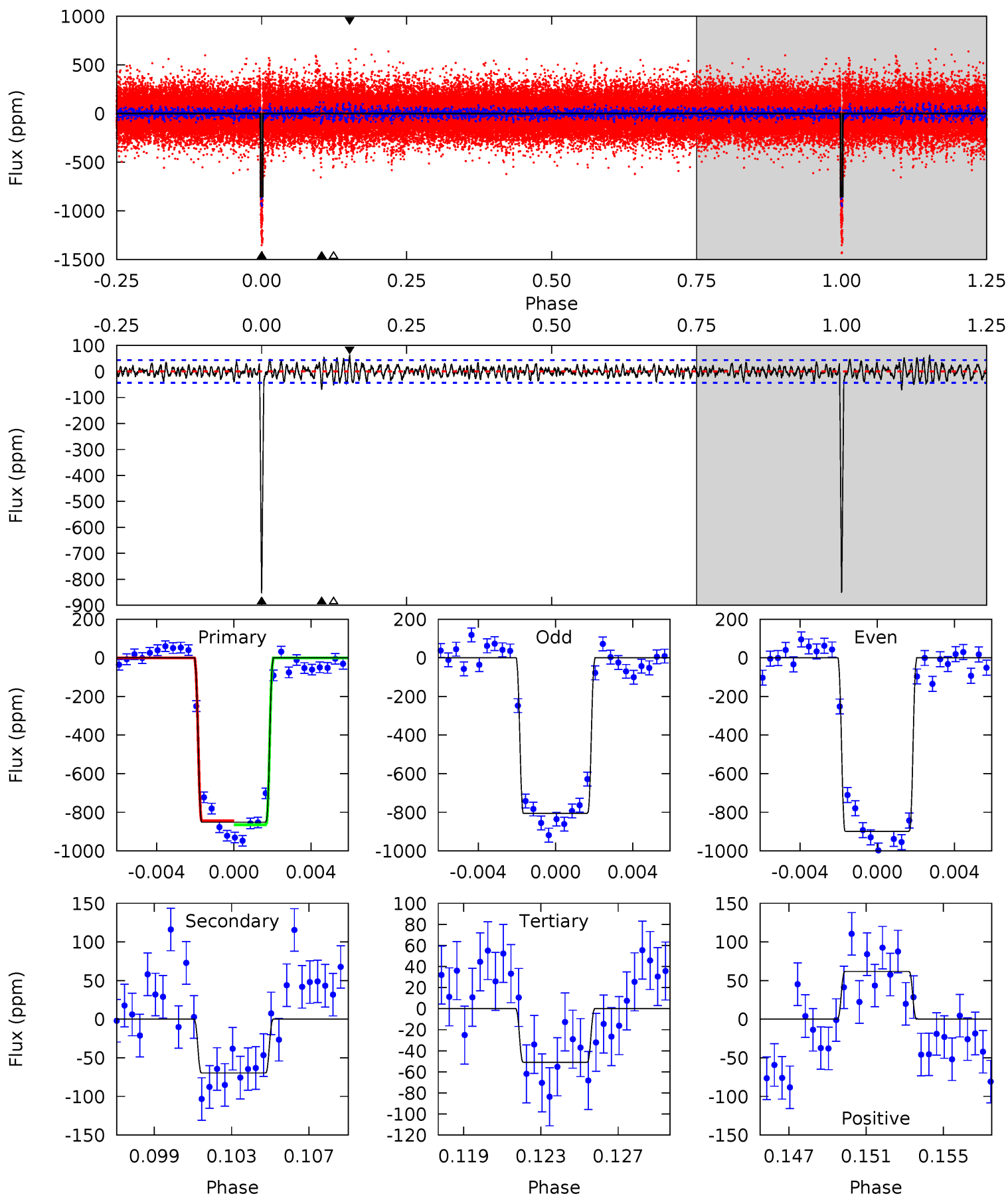
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 57.8 | 12.5 | 10.5 | 12.2 | 5.19 | 2.86 | 4.26 | 47.3 | 45.6 | 1.94 | 0.20 | 2.10 | 0.94 | 0.17 | 0.72 |



Alt Model-Shift Uniqueness Test

010063802-01, $P = 120.019920$ Days, $E = 14.158777$ Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 101.9 | 8.34 | 6.09 | 7.39 | 5.20 | 2.88 | 1.87 | 95.8 | 94.5 | 2.25 | 0.95 | 5.54 | 0.98 | 0.07 | 1.24 |



Stellar Parameters For KIC 010063802

| | $T_{\text{eff}}(K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 6469^{+103}_{-154} | $4.253^{+0.048}_{-0.104}$ | $0.440^{+0.050}_{-0.150}$ | $1.467^{+0.240}_{-0.111}$ | $1.406^{+0.086}_{-0.086}$ | $0.627^{+0.147}_{-0.216}$ |
| | +2%/-2% | +1%/-2% | +11%/-34% | +16%/-8% | +6%/-6% | +23%/-34% |
| Source | SPE59 | SPE59 | SPE59 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 010063802-01 / KOI 1888.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|----------------------|----------------------|
| DV | -193 ± 16 | $4.89^{+0.39}_{-0.29}$ | 664^{+26}_{-19} | 4556^{+110}_{-118} | 1264^{+188}_{-204} |
| Alt. | -70 ± 8 | $4.72^{+0.39}_{-0.29}$ | 665^{+24}_{-22} | 3825^{+103}_{-100} | 482^{+89}_{-83} |

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

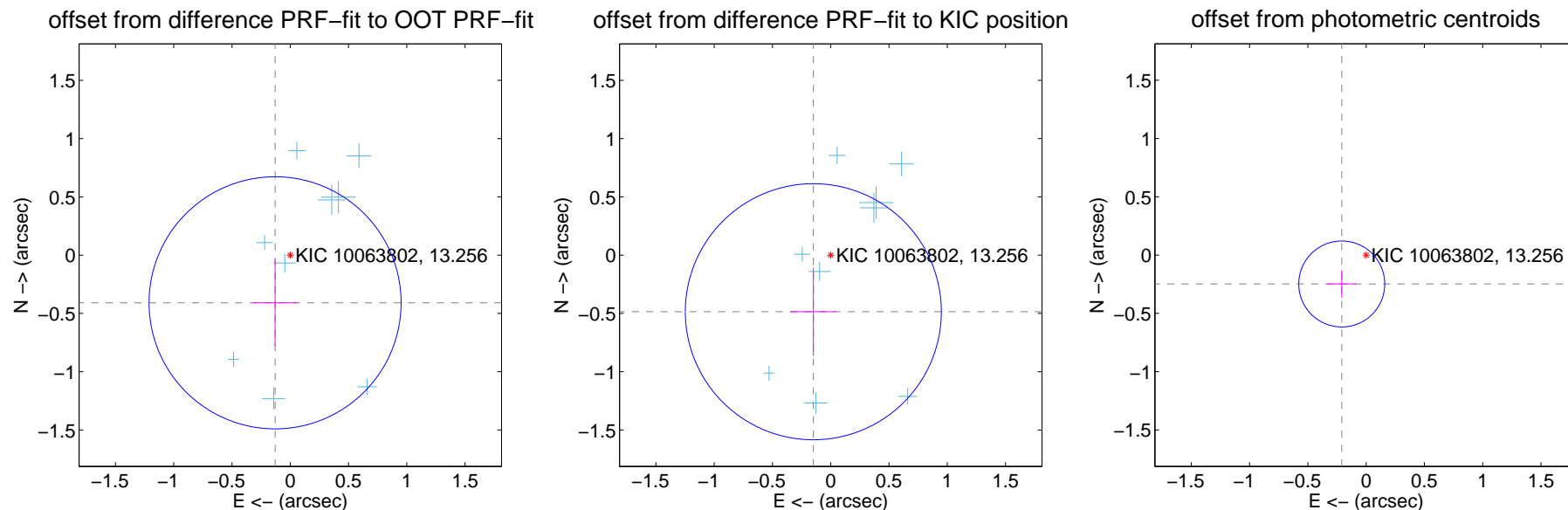
DV Centroid Data

Supplemental centroid analysis for 010063802-01. Kepler magnitude: 13.26. Transit SNR 30.93

There are 10 quarters with good PRF difference image offsets

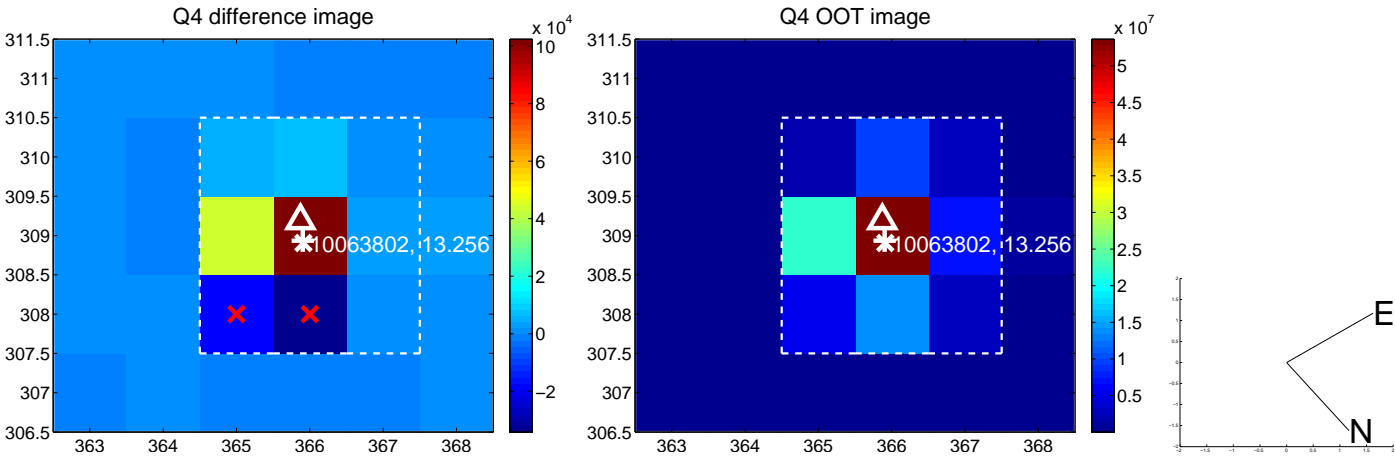
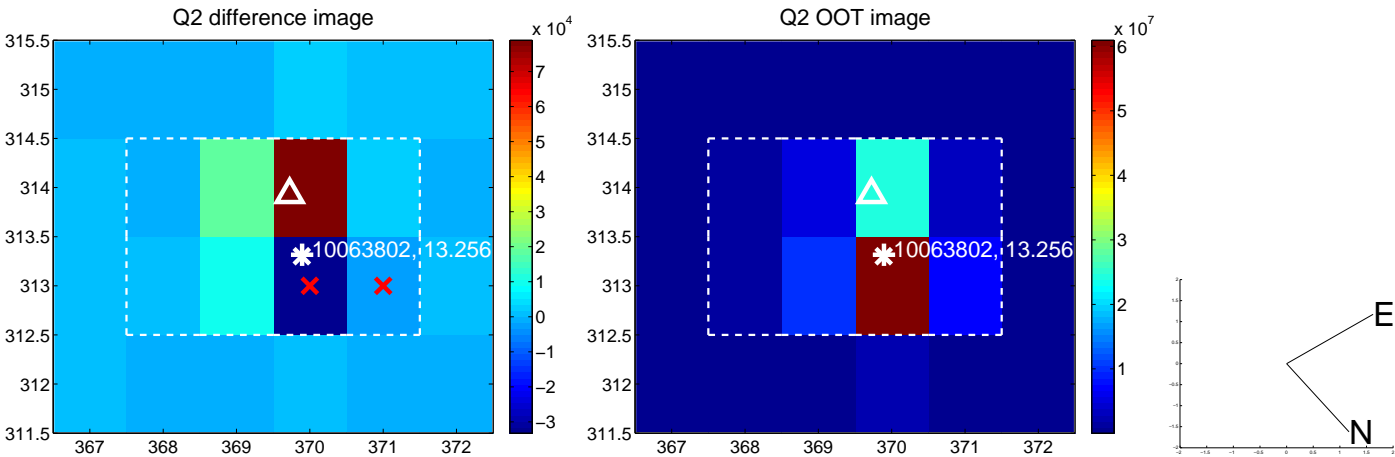
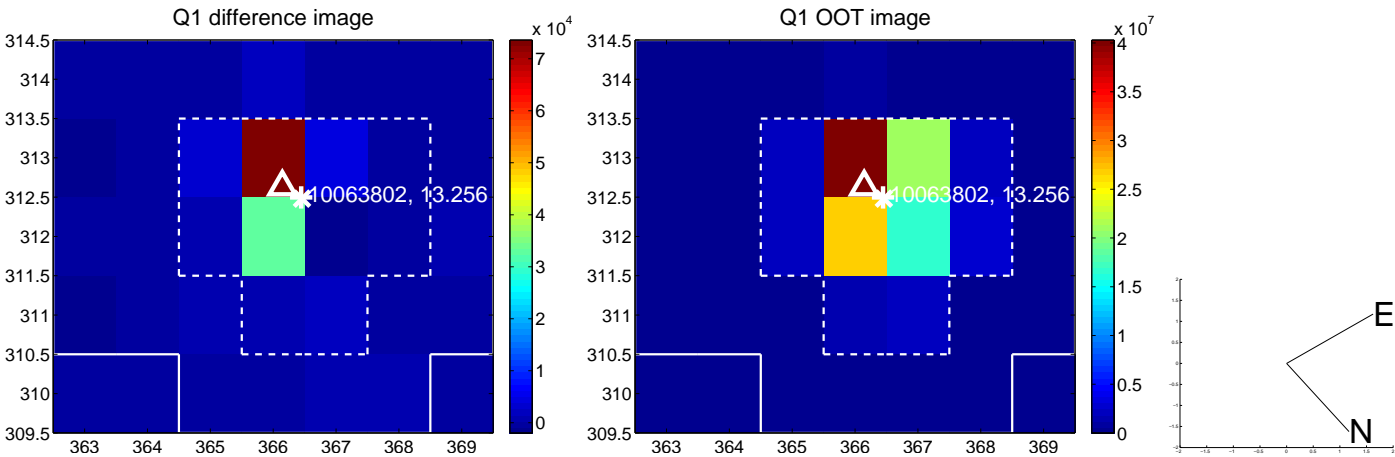
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.429 ± 0.361 | 1.19 | 0.130 ± 0.188 | -0.409 ± 0.374 |
| PRF-fit source offset from KIC position | 0.508 ± 0.366 | 1.39 | 0.149 ± 0.195 | -0.486 ± 0.378 |
| photometric centroid source offset | 0.32 ± 0.12 | 2.64 | 0.21 ± 0.13 | -0.25 ± 0.12 |

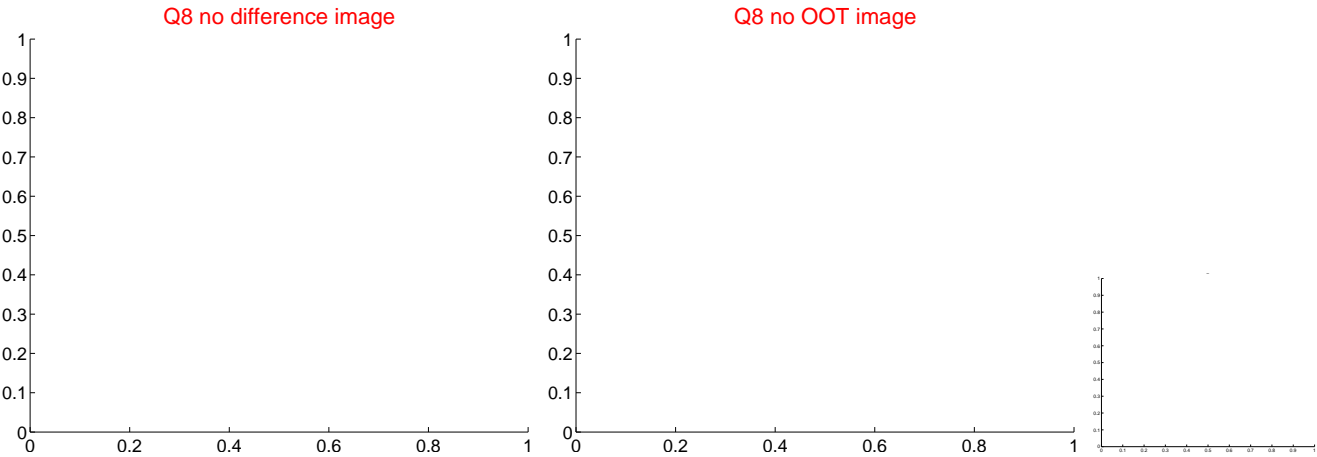
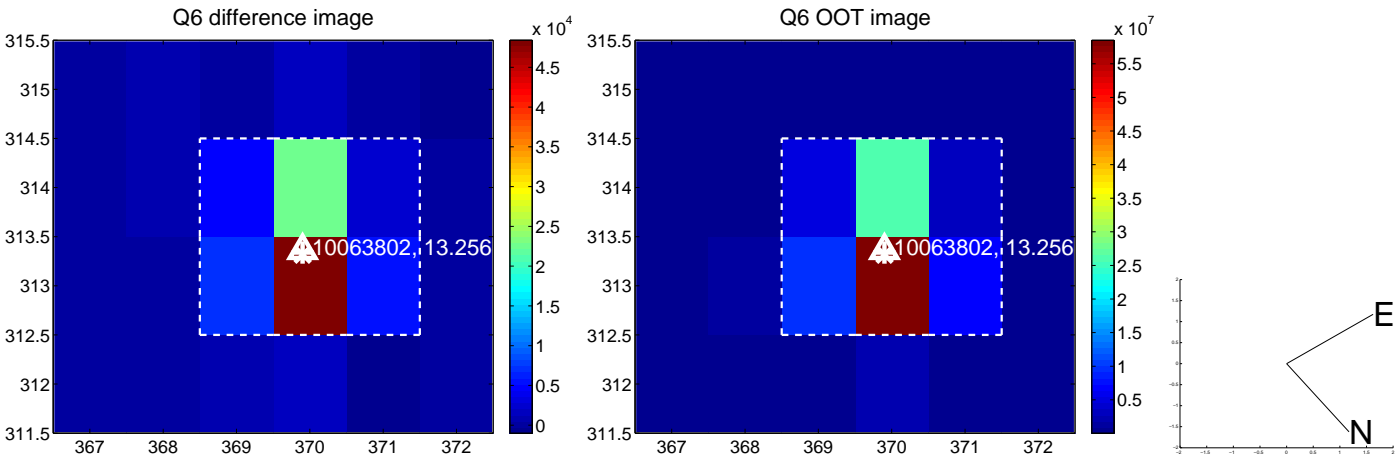
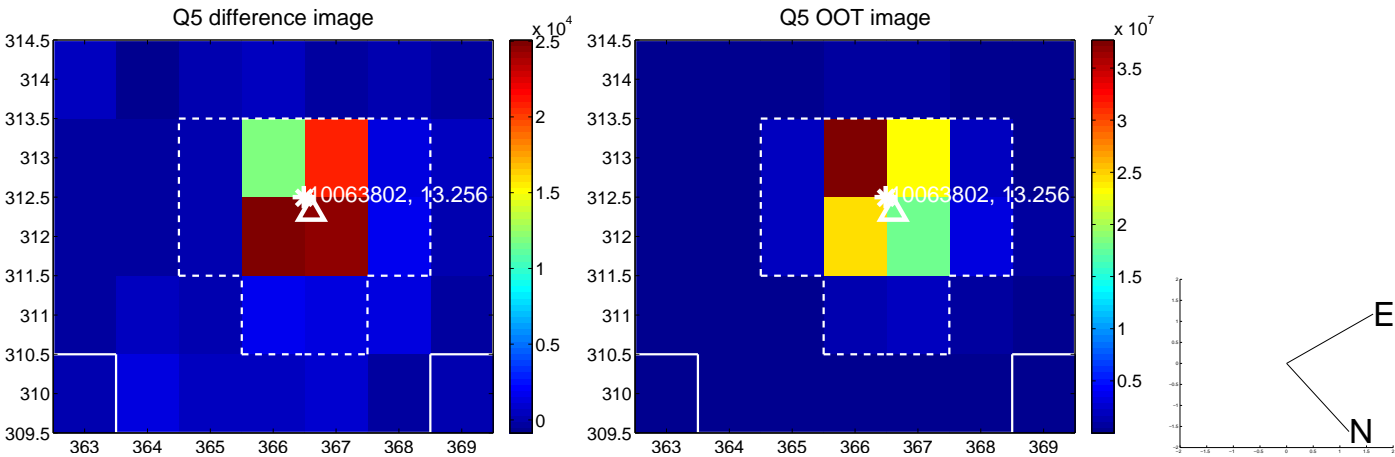


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

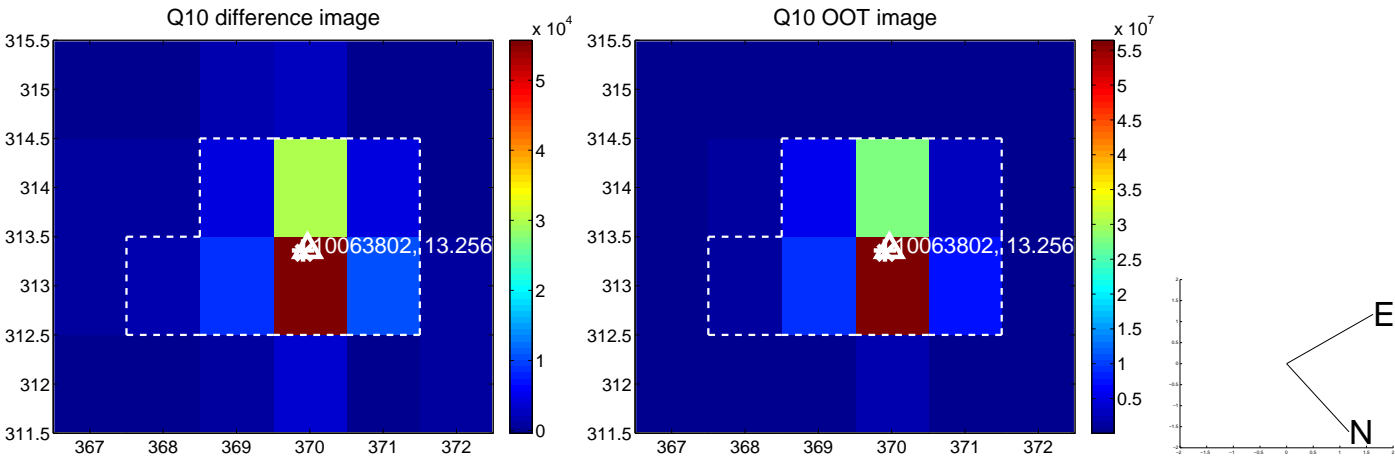
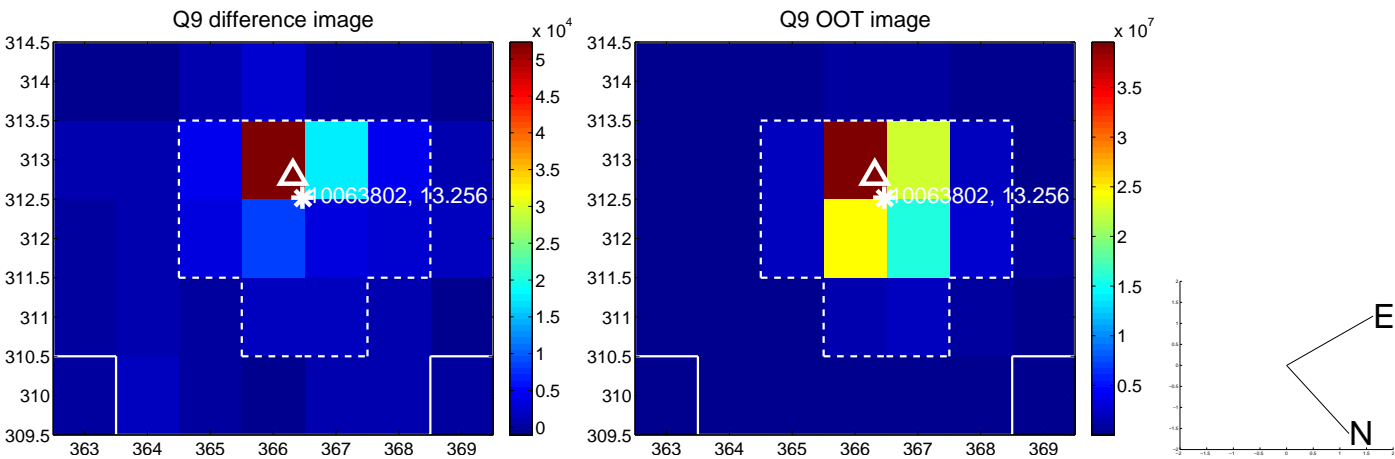
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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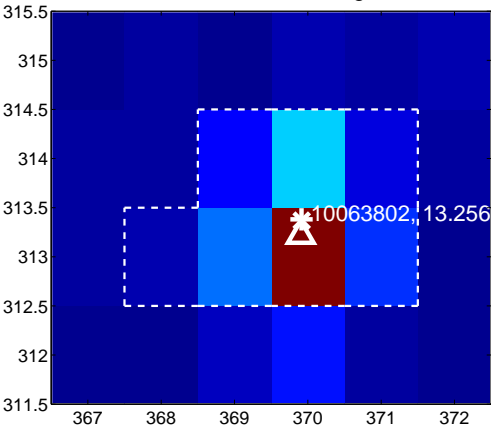
Q13 no difference image



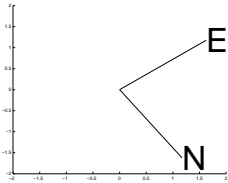
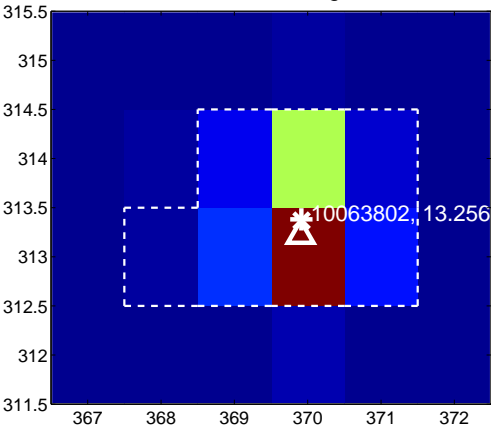
Q13 no OOT image



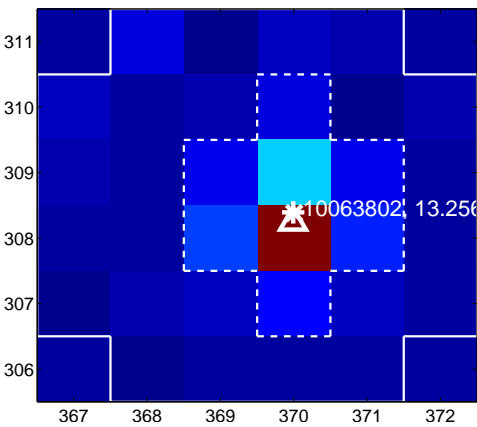
Q14 difference image



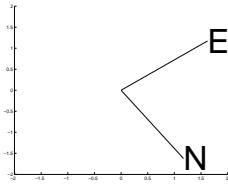
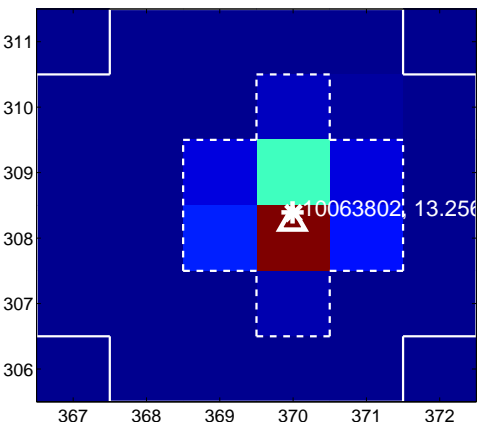
Q14 OOT image



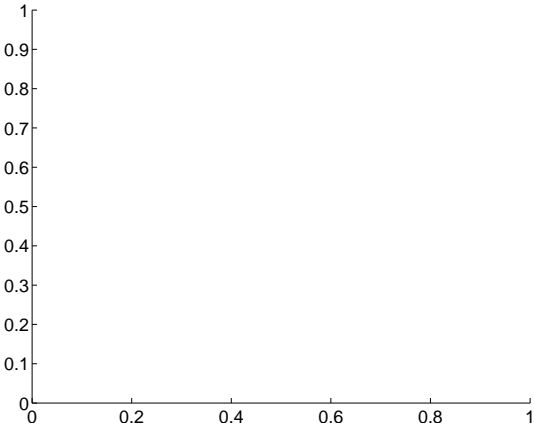
Q15 difference image



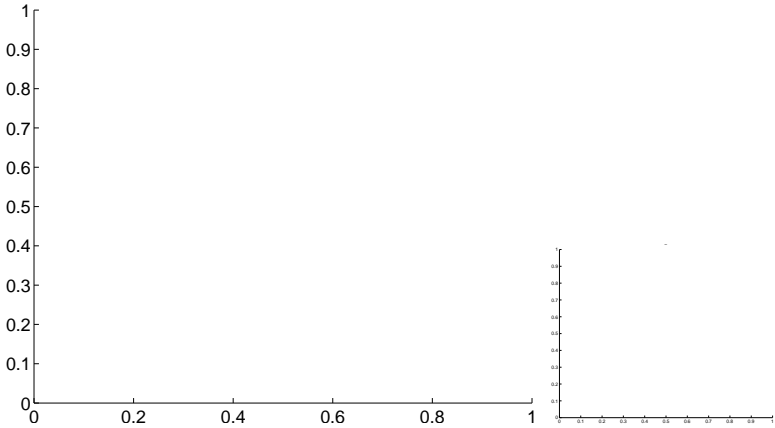
Q15 OOT image



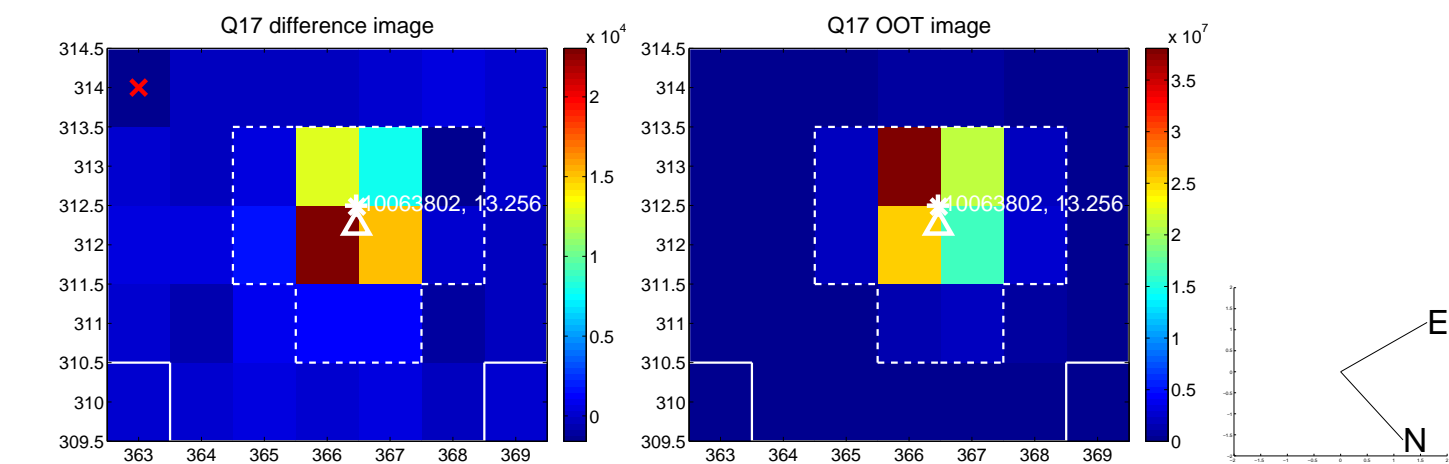
Q16 no difference image



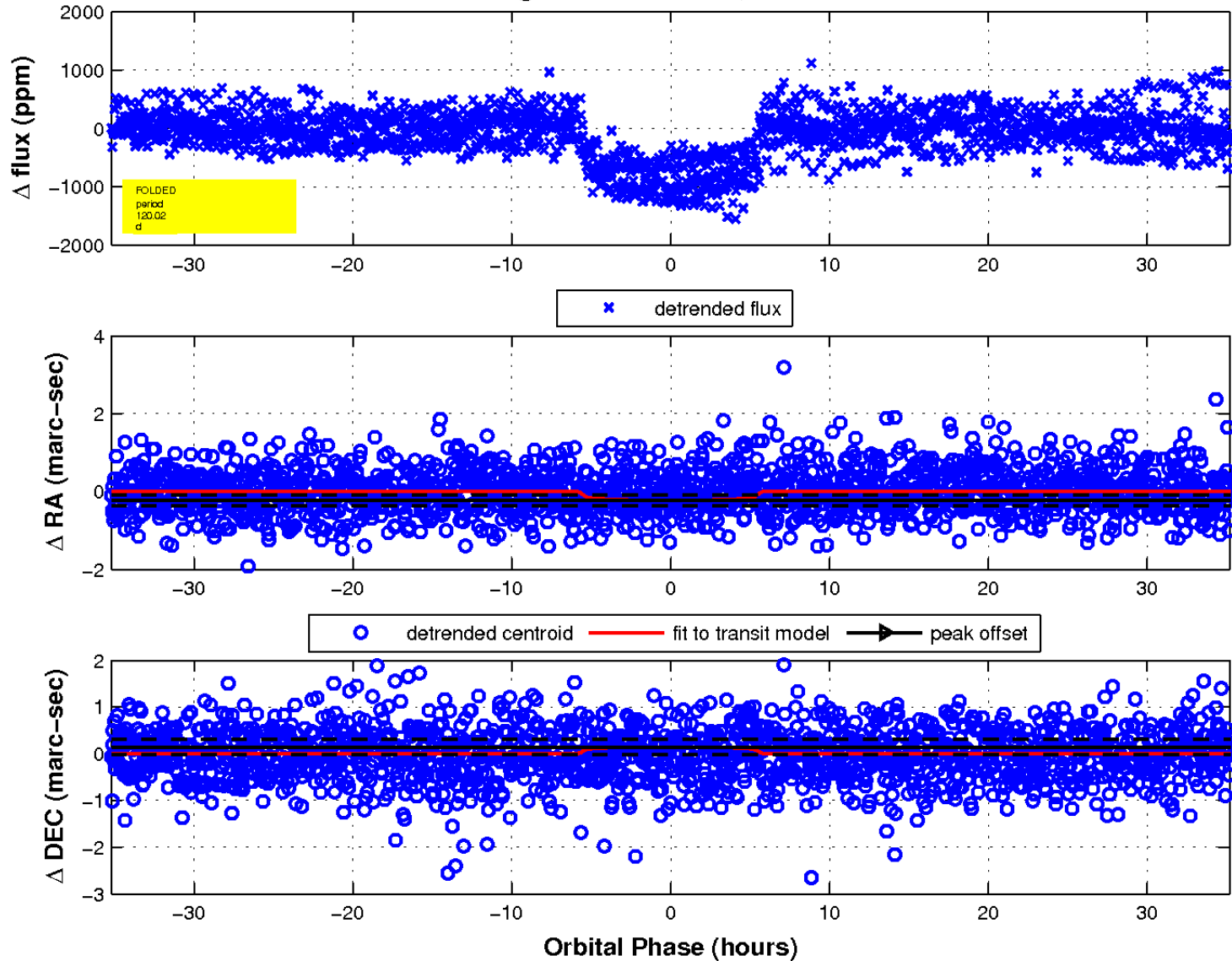
Q16 no OOT image



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

