

KIC 007959310

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 007959310-01 | OBS | 8150.01 | 350.547570 | 210.759588 | 217.5 | 19.270 | 8.3 | 7.0 | 1.50 | 6382 | 2.35 | 3.38 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 007959310-01 | OBS | FP | 0.02 | 1 | 0 | 0 | 0 | ALL_TRANS_CHASES—INCONSISTENT_TRANS—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.

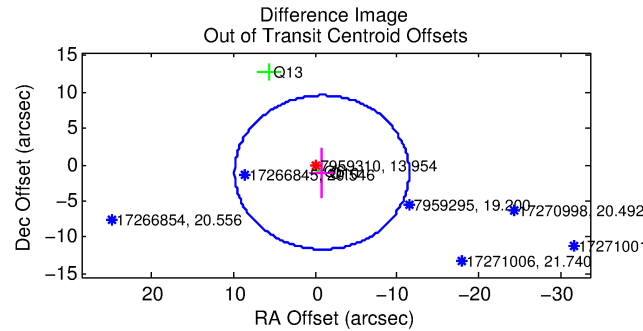
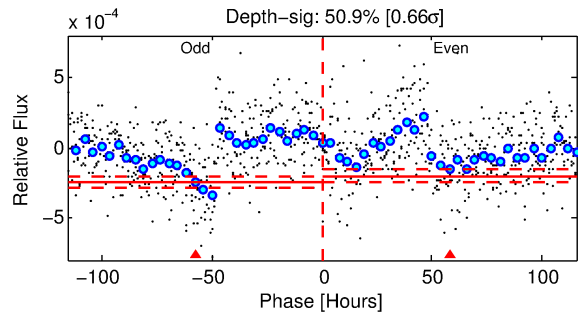
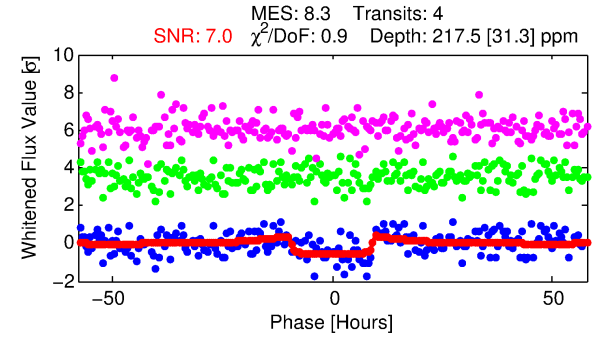
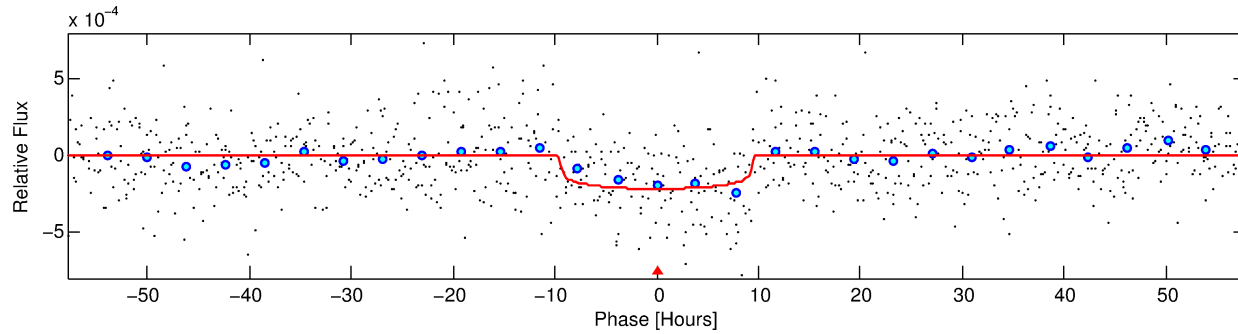
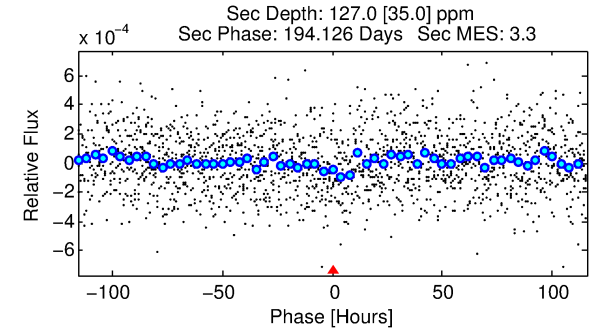
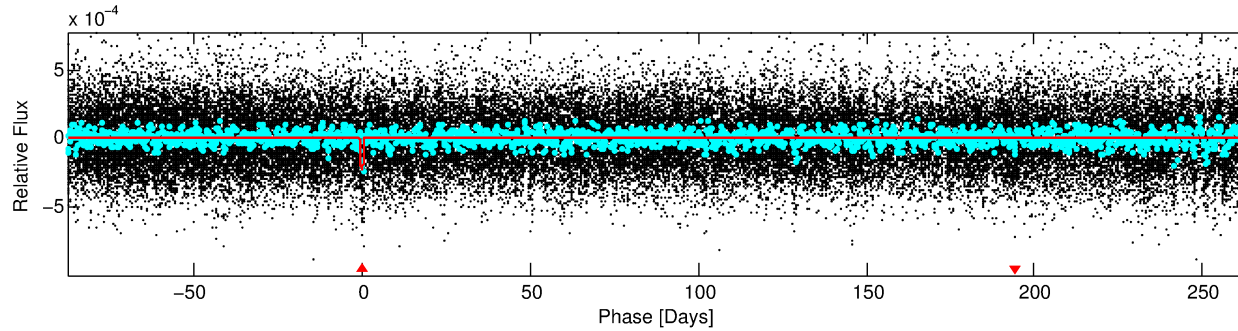
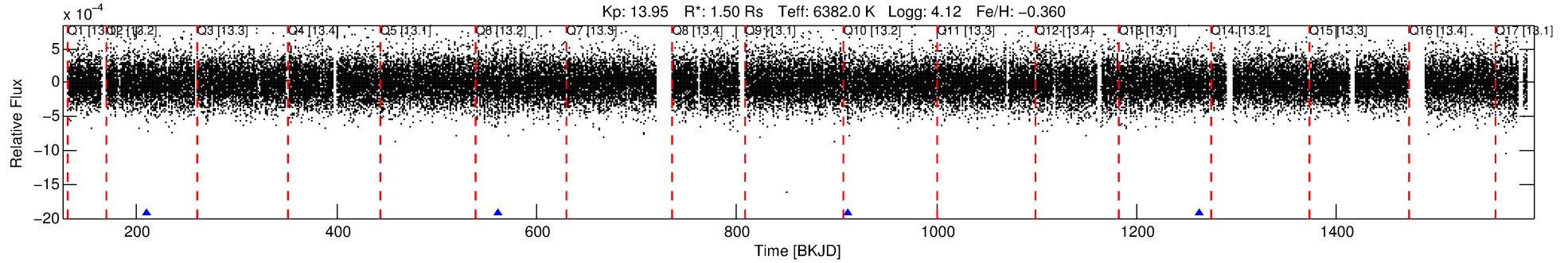
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007959310-01

No Significant Match Found

DV One-Page Summary

KIC: 7959310 Candidate: 1 of 1 Period: 350.548 d



DV Fit Results:

Period = 350.54757 [0.01095] d
Epoch = 210.7596 [0.0206] BKJD
Rp/R* = 0.0144 [0.0037]
a/R* = 105.20 [137.56]
b = 0.68 [1.06]
Seff = 3.38 [1.66]
Teq = 346 [42] K
Rp = 2.35 [0.95] Re
a = 0.9952 [0.2961] AU
Ag = 12508.42 [9423.58] [1.33σ]
Teffp = 5652 [842] K [6.29σ]

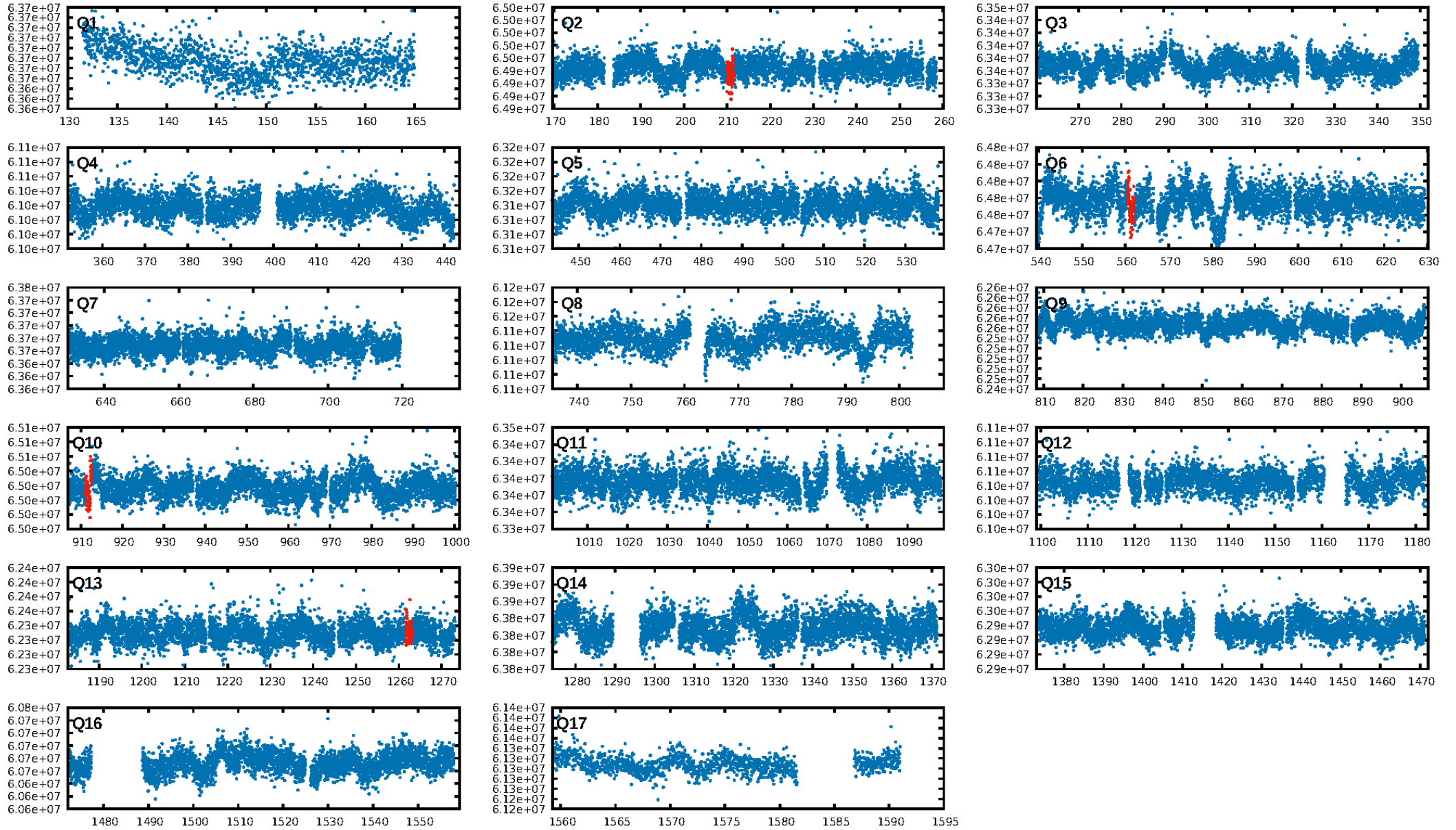
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.28e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 7.651
Centroid-sig: 3.4%
Centroid-so: 1.617 arcsec [1.26σ]
OotOffset-rm: 1.341 arcsec [0.38σ]
OotOffset-st: 2/0/0/1 [3]
KicOffset-rm: 1.610 arcsec [0.42σ]
KicOffset-st: 2/0/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [4/4]

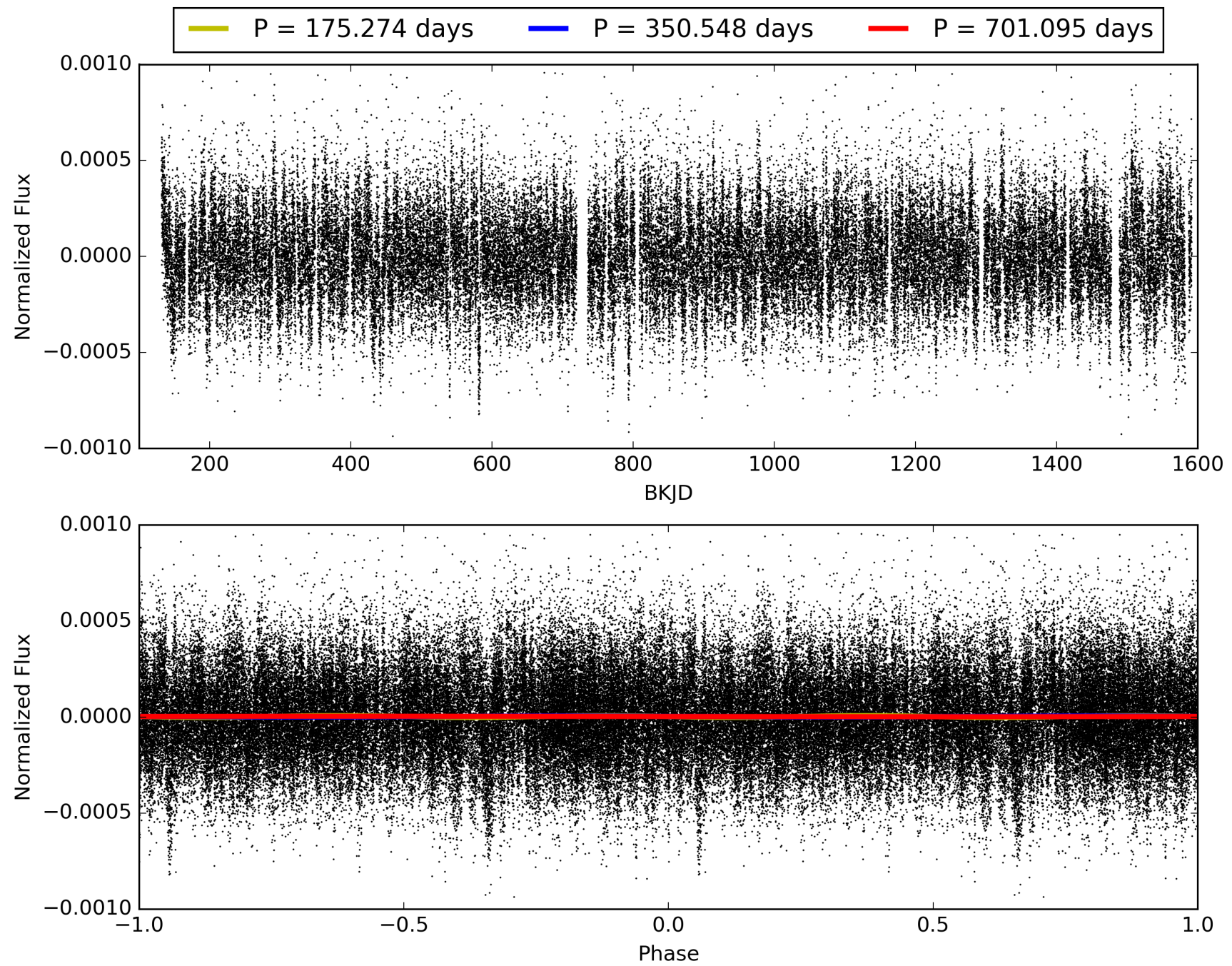
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:02:42 Z

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

TCE 007959310-01, PDC Light Curves

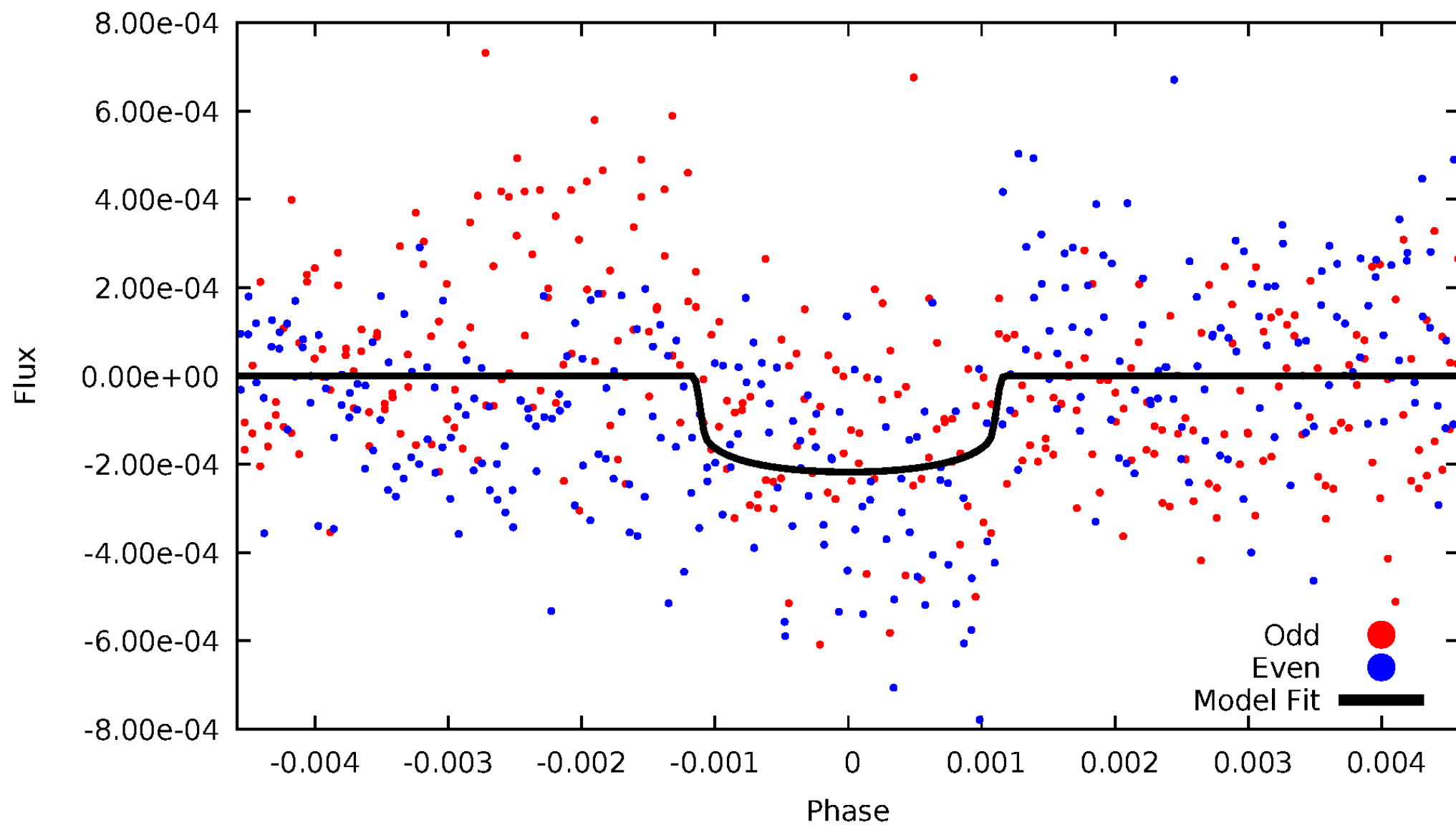


TCE 007959310-01



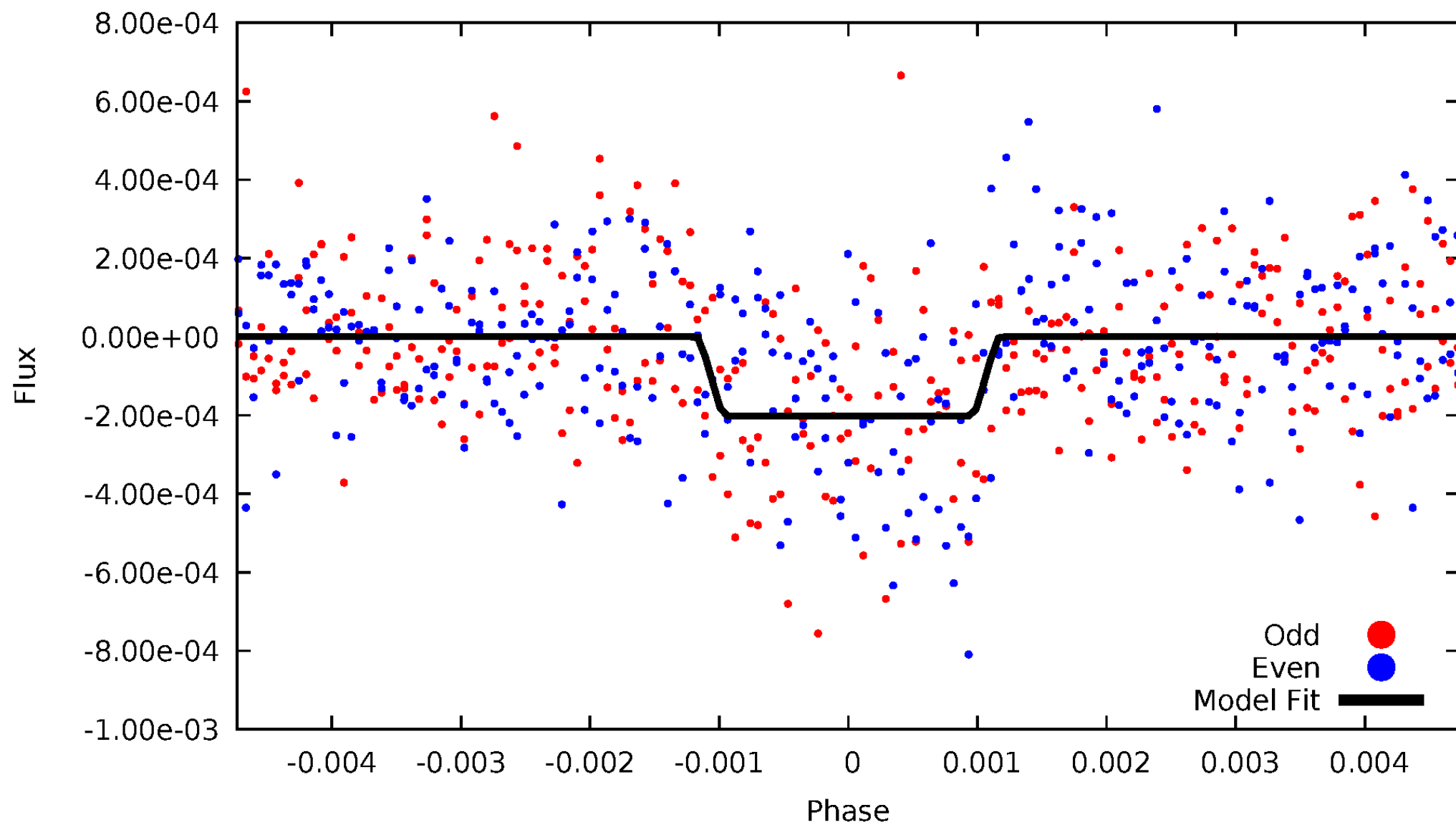
DV Odd/Even

TCE 007959310-01



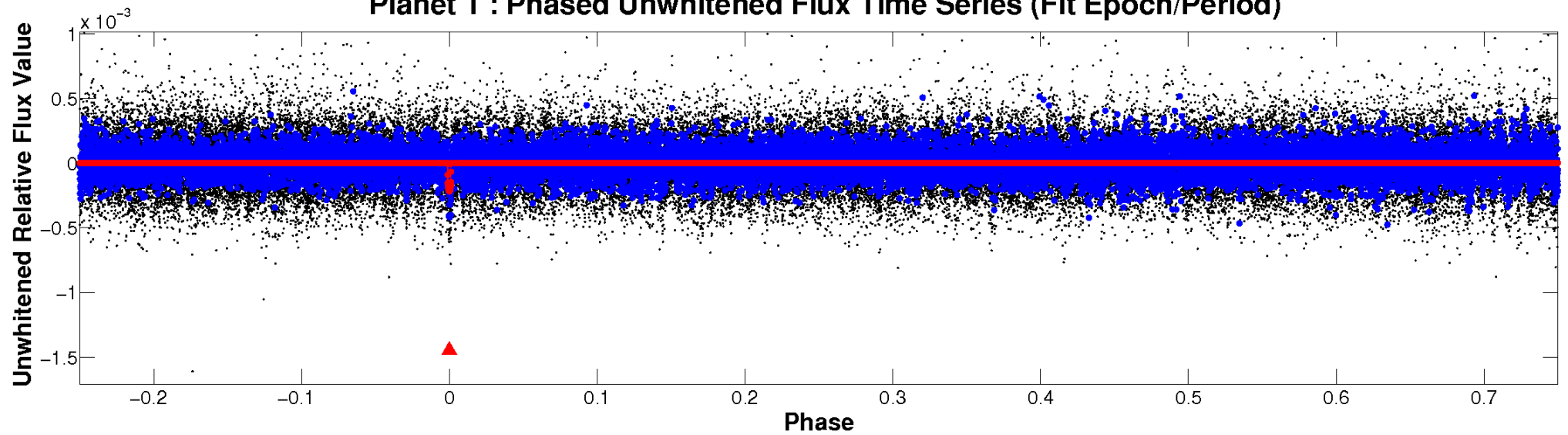
ALT Odd/Even

TCE 007959310-01

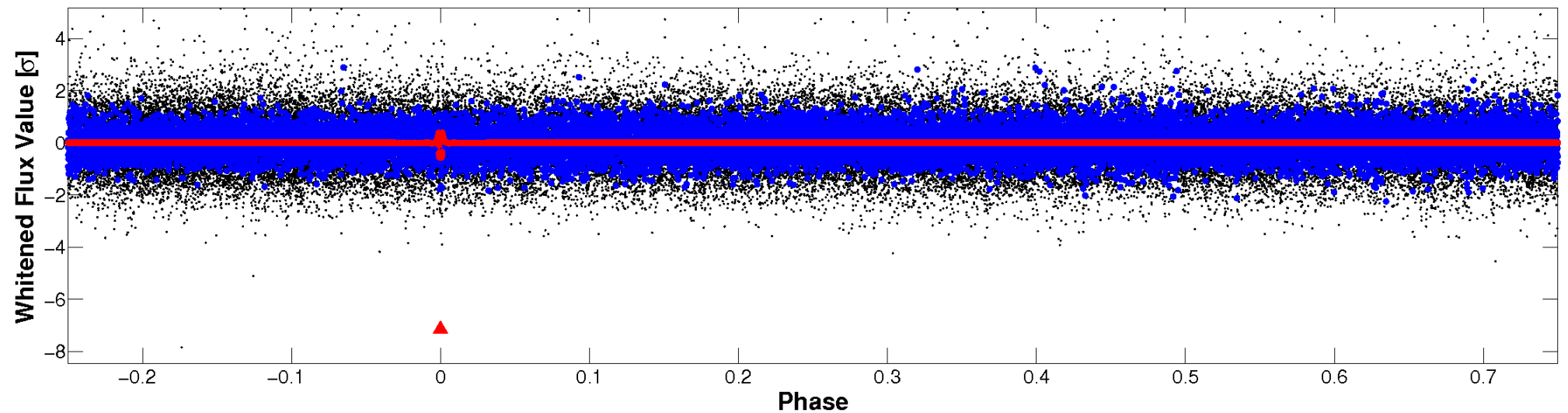


Non-Whitened Vs. Whitened Light Curve

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

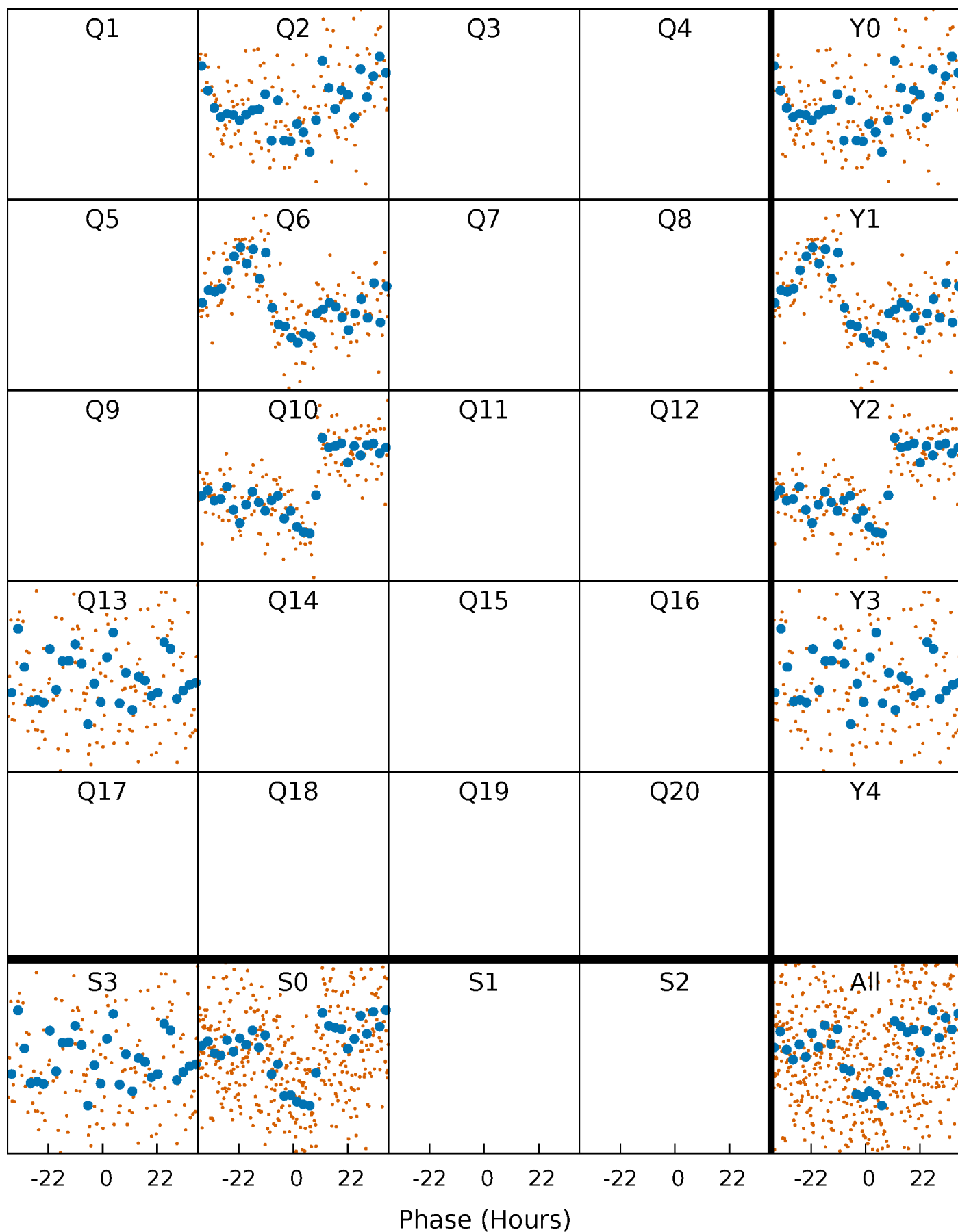


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



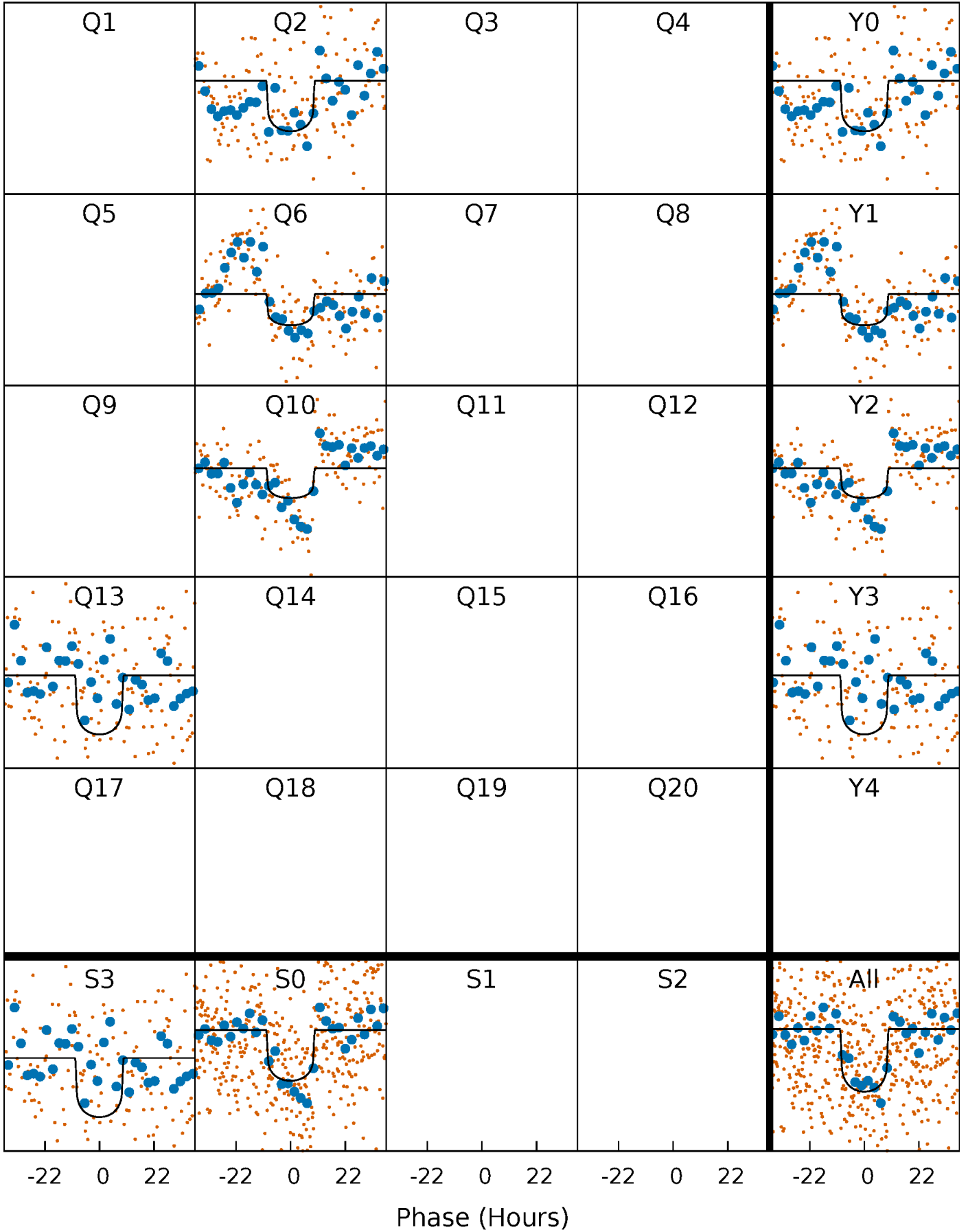
PDC Quarter-Phased Transit Curves

TCE 007959310-01 P=350.547570 Days $T_0=210.759588$ (BKJD)



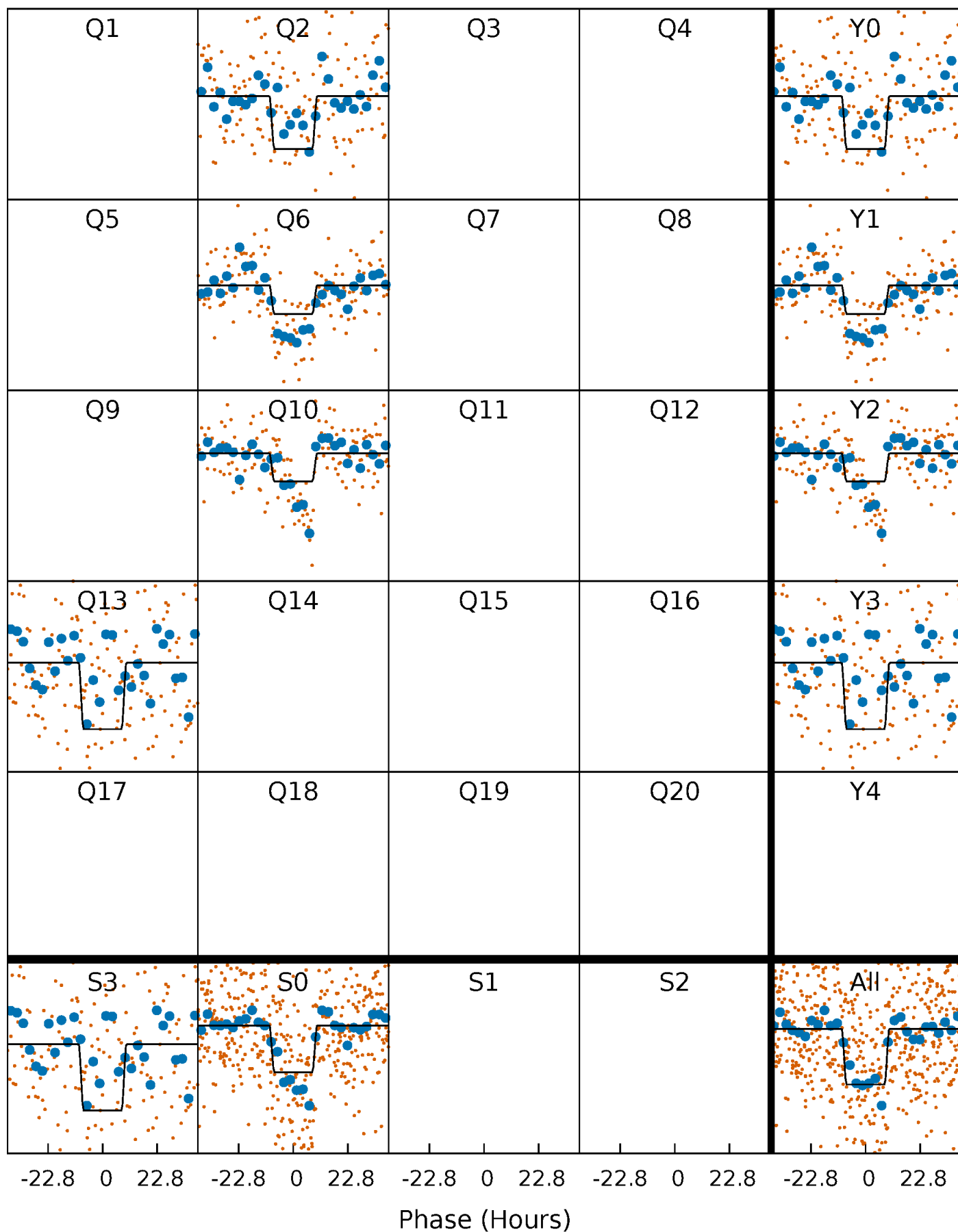
DV Quarter-Phased Transit Curves

TCE 007959310-01 P=350.547570 Days $T_0=210.759588$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

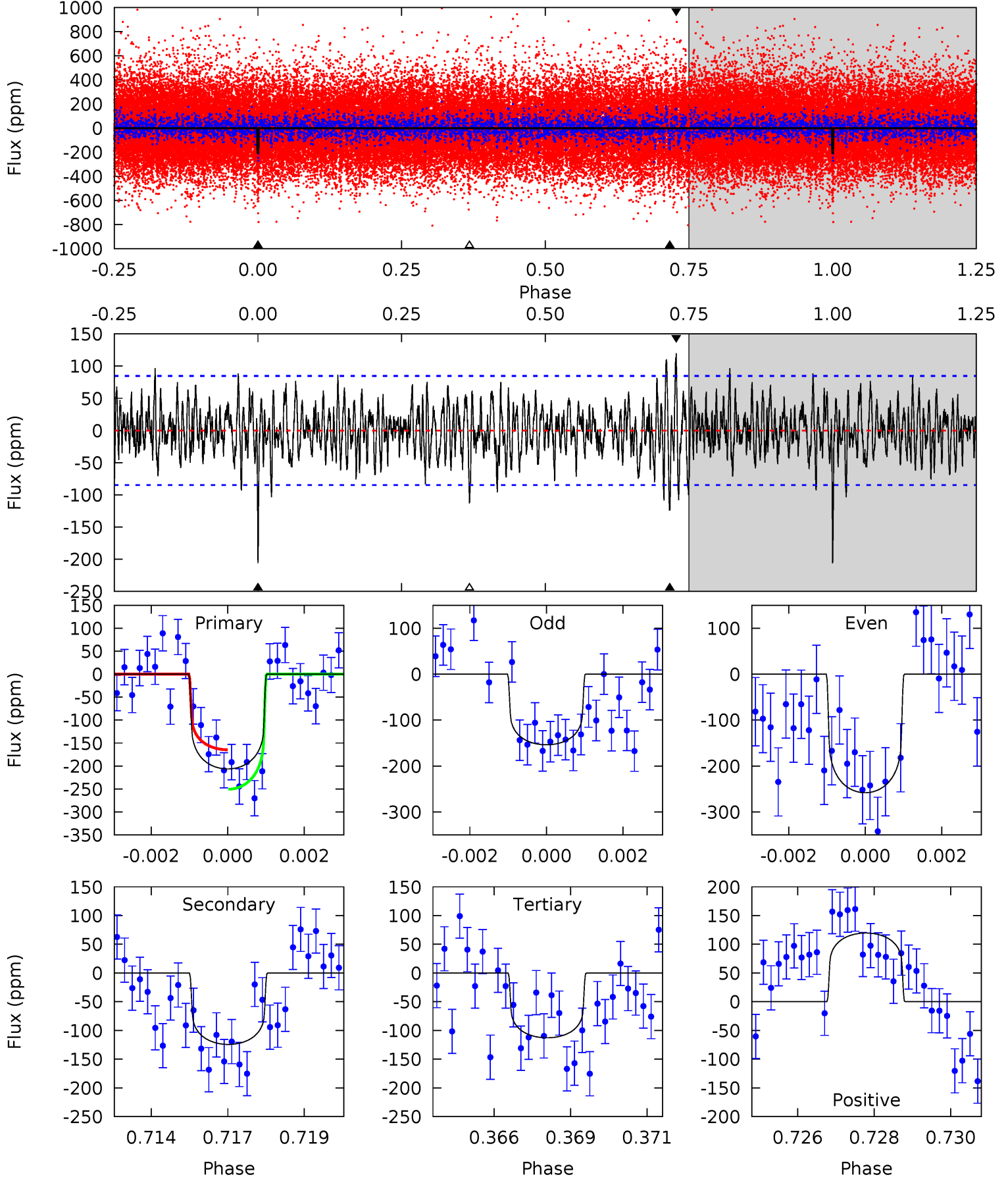
TCE 007959310-01 P=350.558155 Days $T_0=210.756728$ (BKJD)



DV Model-Shift Uniqueness Test

007959310-01, P = 350.547570 Days, E = 210.759588 Days

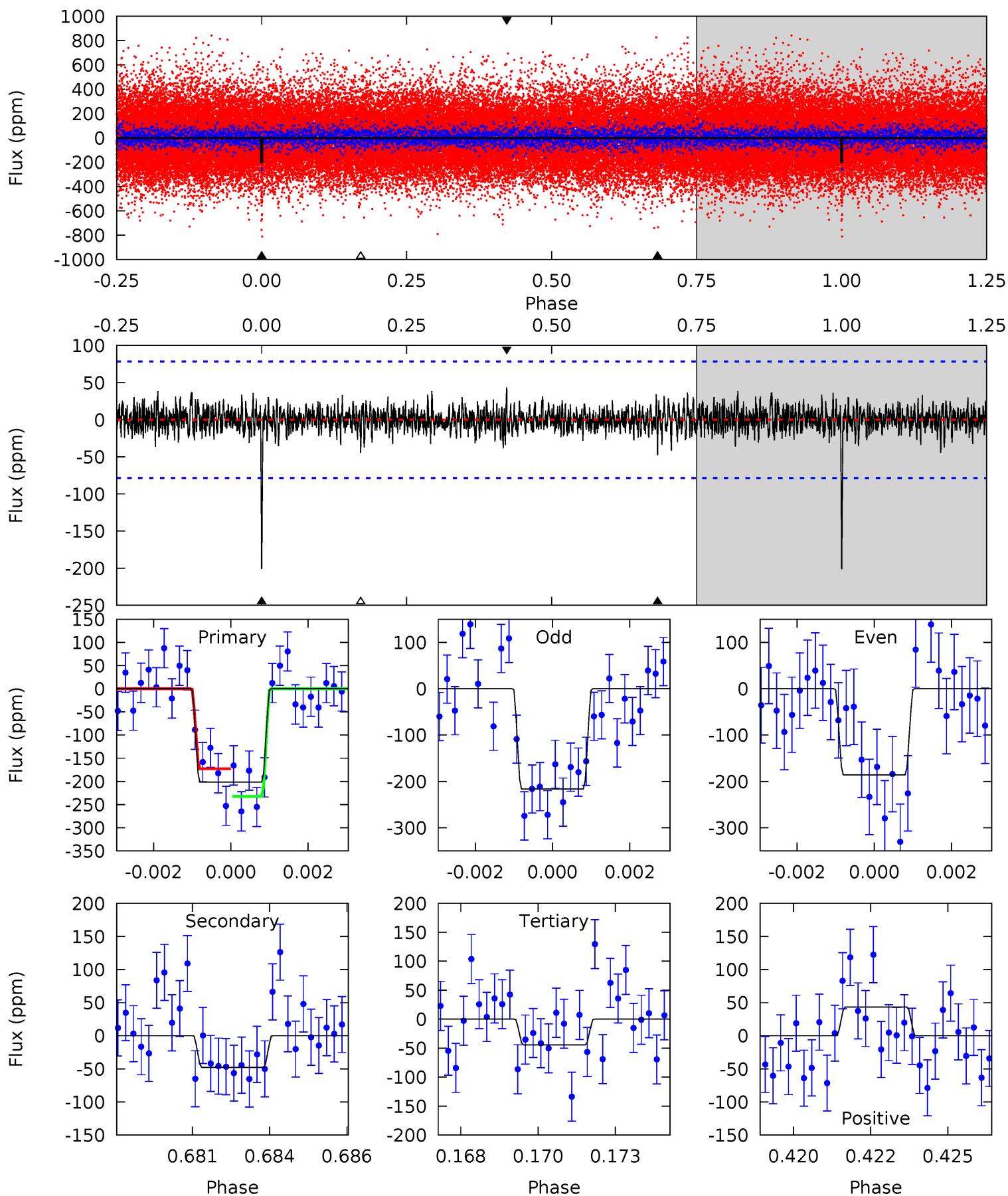
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 12.9 | 7.77 | 7.05 | 7.48 | 5.30 | 3.05 | 2.06 | 5.85 | 5.42 | 0.72 | 0.29 | 3.28 | 0.91 | 0.37 | 2.70 |



Alt Model-Shift Uniqueness Test

007959310-01, P = 350.558155 Days, E = 210.756728 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 13.6 | 3.22 | 3.01 | 2.93 | 5.30 | 3.04 | 0.80 | 10.6 | 10.7 | 0.22 | 0.30 | 1.03 | 1.04 | 0.18 | 2.01 |



Stellar Parameters For KIC 007959310

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6382^{+175}_{-194} | $4.115^{+0.280}_{-0.151}$ | $-0.360^{+0.300}_{-0.300}$ | $1.500^{+0.421}_{-0.463}$ | $1.068^{+0.177}_{-0.145}$ | $0.446^{+0.681}_{-0.203}$ |
| | +3%/-3% | +7%/-4% | +83%/-83% | +28%/-31% | +17%/-14% | +153%/-46% |
| 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 007959310-01 / KOI 8150.01

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|----------------------|----------------------|--------------------------|
| DV | -124 ± 16 | $2.27^{+0.76}_{-0.62}$ | 478^{+39}_{-42} | 5601^{+883}_{-536} | 13193^{+13576}_{-5724} |
| Alt. | -48 ± 15 | $2.23^{+0.71}_{-0.63}$ | 477^{+33}_{-42} | 4592^{+679}_{-525} | 5069^{+5665}_{-2570} |

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

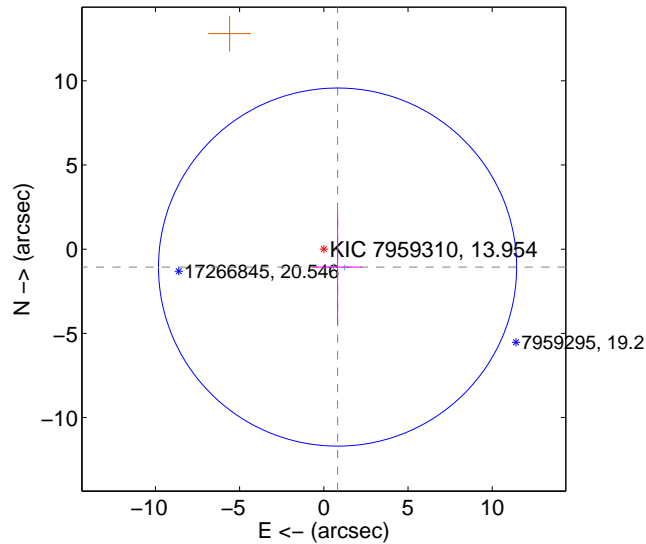
Supplemental centroid analysis for 007959310-01. Kepler magnitude: 13.95. Transit SNR 7.00

There are 2 quarters with good PRF difference image offsets

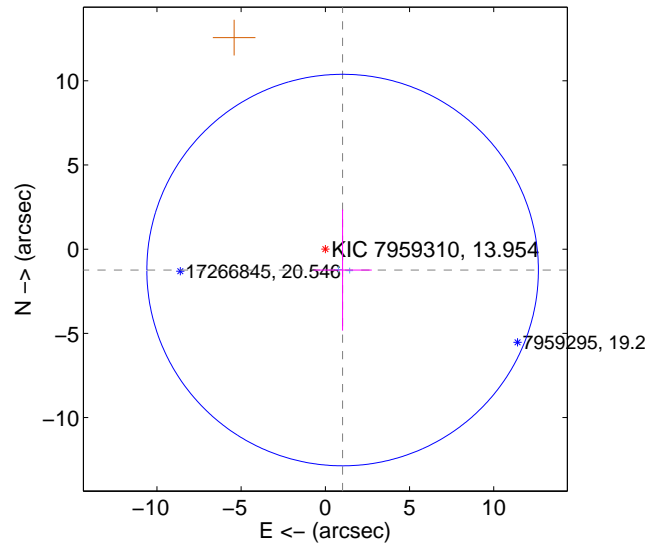
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 1.341 ± 3.544 | 0.38 | -0.817 ± 1.465 | -1.064 ± 3.346 |
| PRF-fit source offset from KIC position | 1.610 ± 3.875 | 0.42 | -1.026 ± 1.732 | -1.240 ± 3.600 |
| photometric centroid source offset | 1.62 ± 1.28 | 1.26 | 0.13 ± 1.08 | 1.61 ± 1.28 |

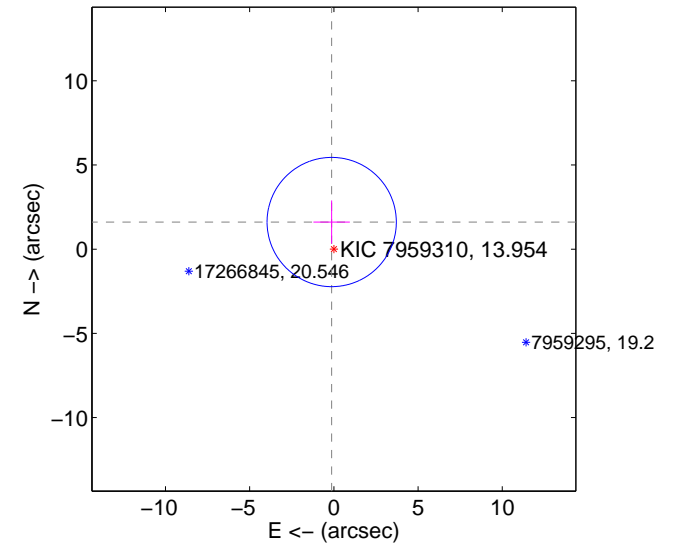
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

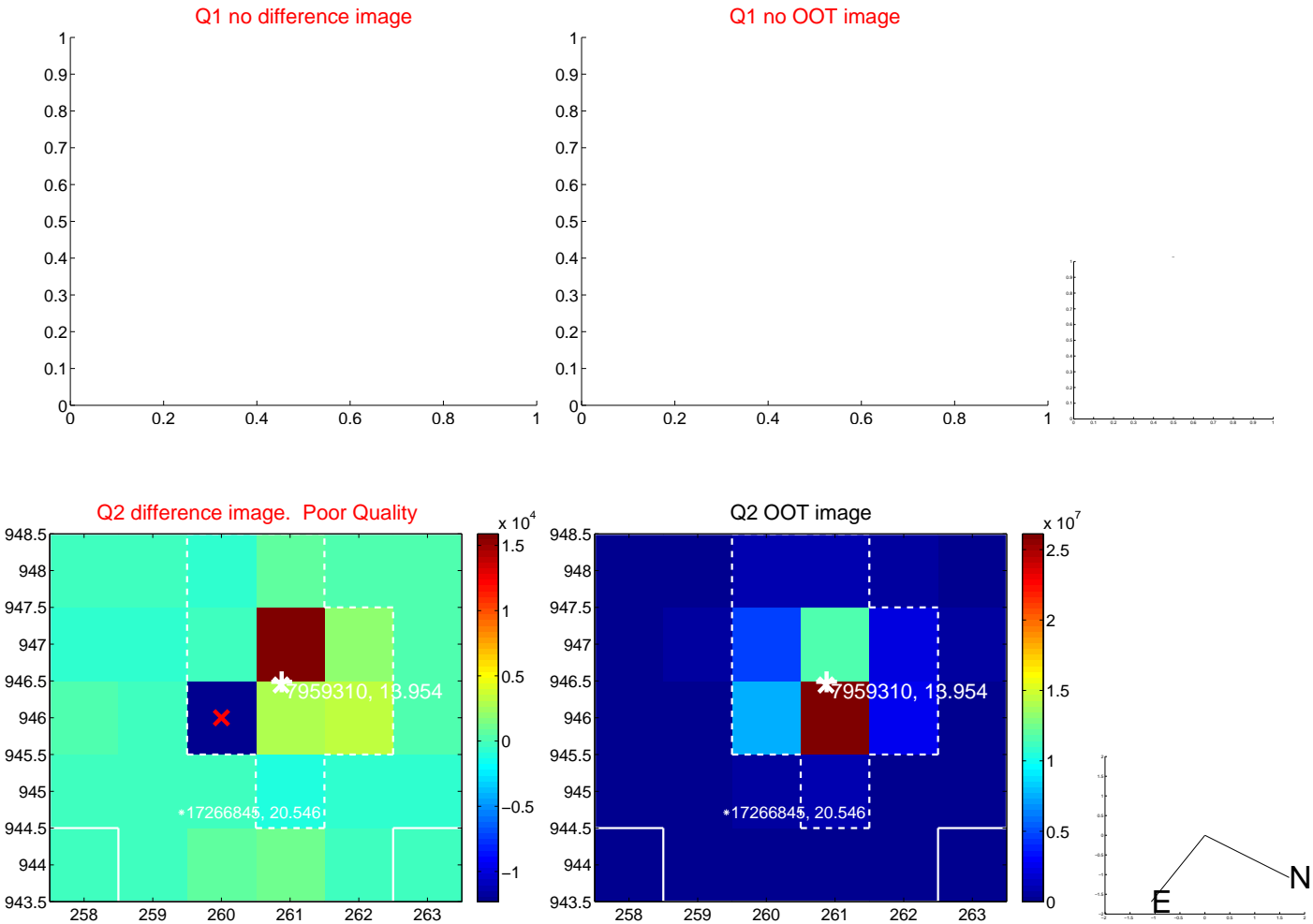


offset from photometric centroids

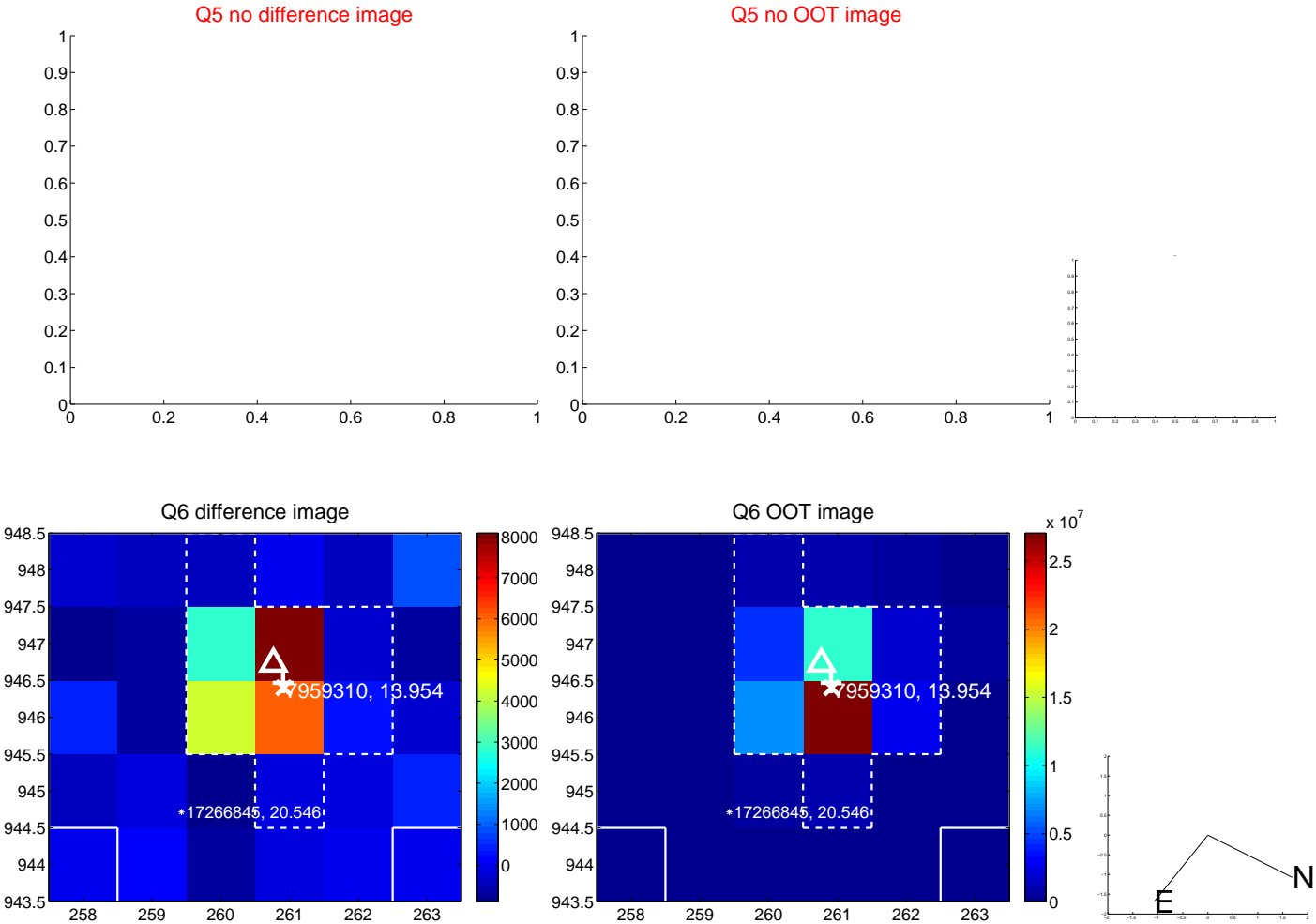


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

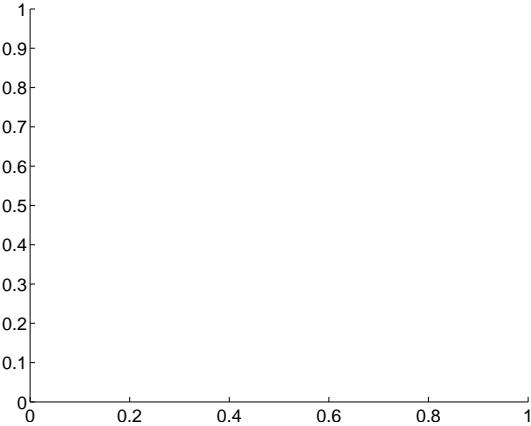


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

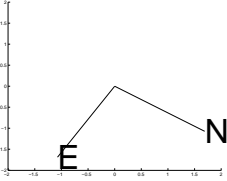
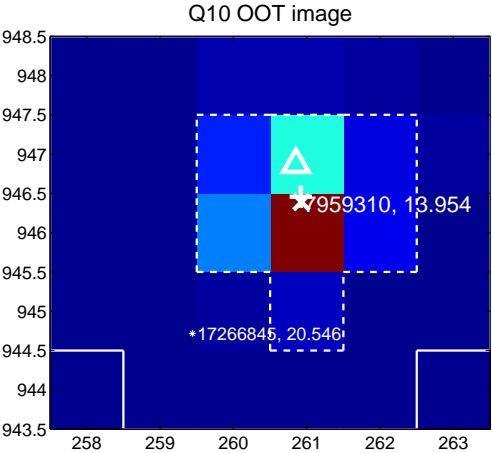
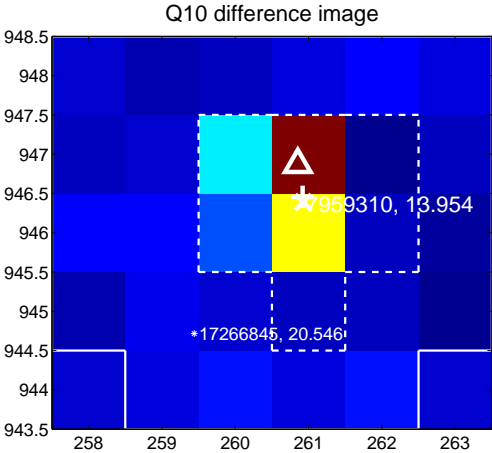
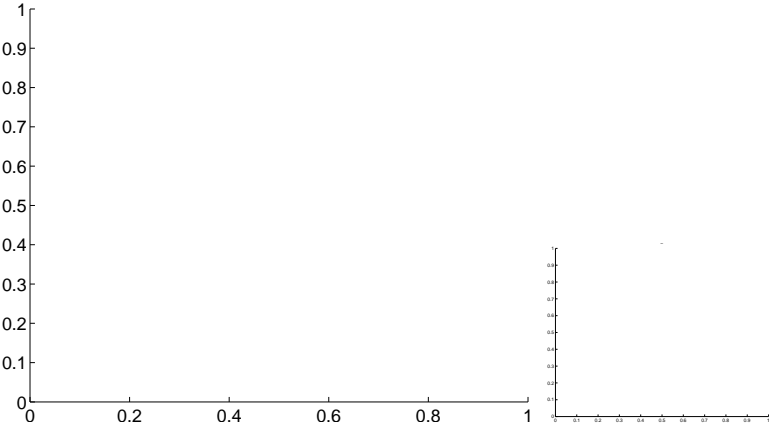


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

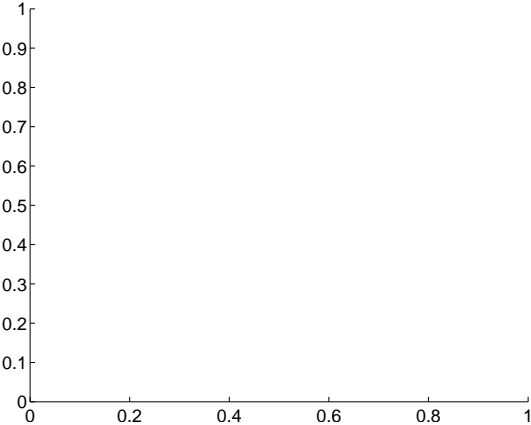
Q9 no difference image



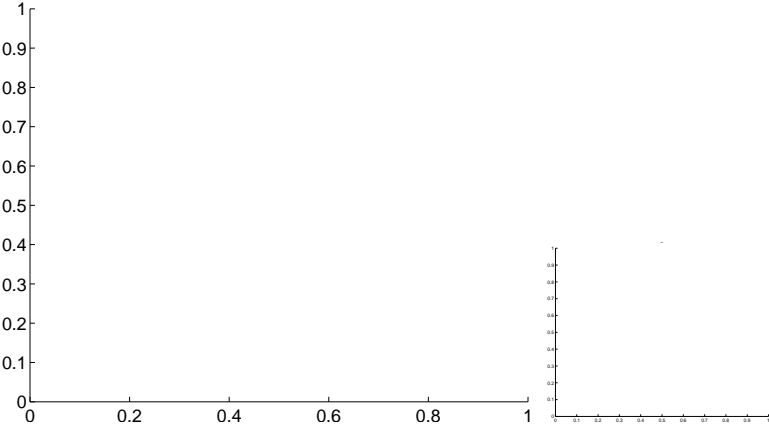
Q9 no OOT image



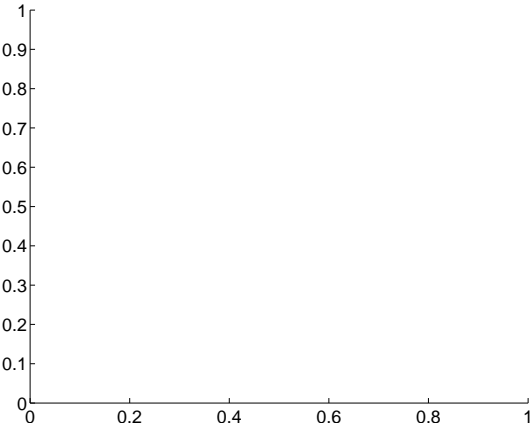
Q11 no difference image



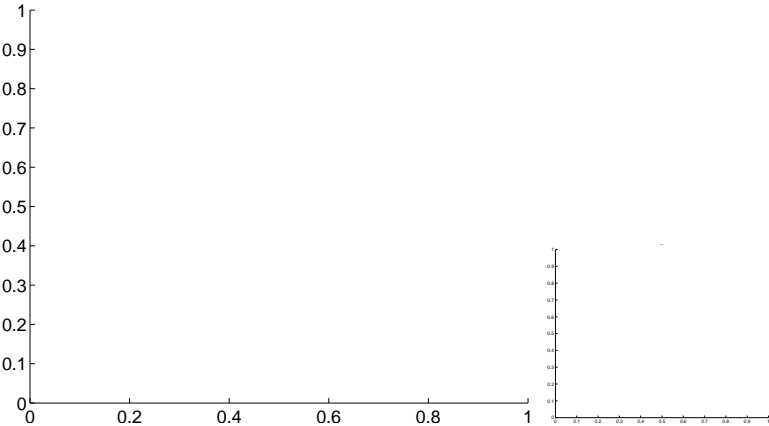
Q11 no OOT image



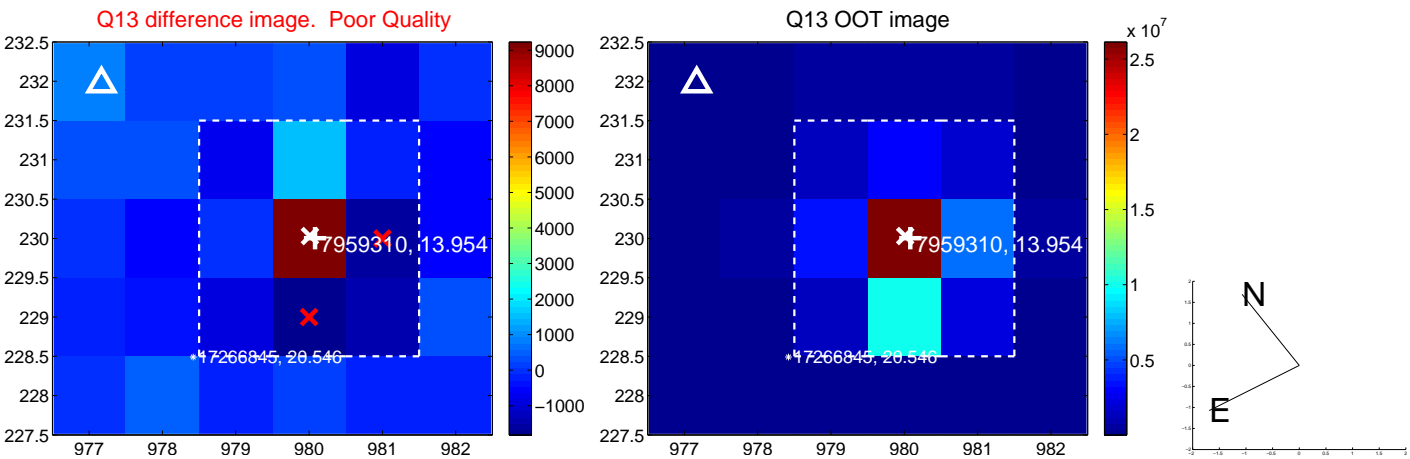
Q12 no difference image



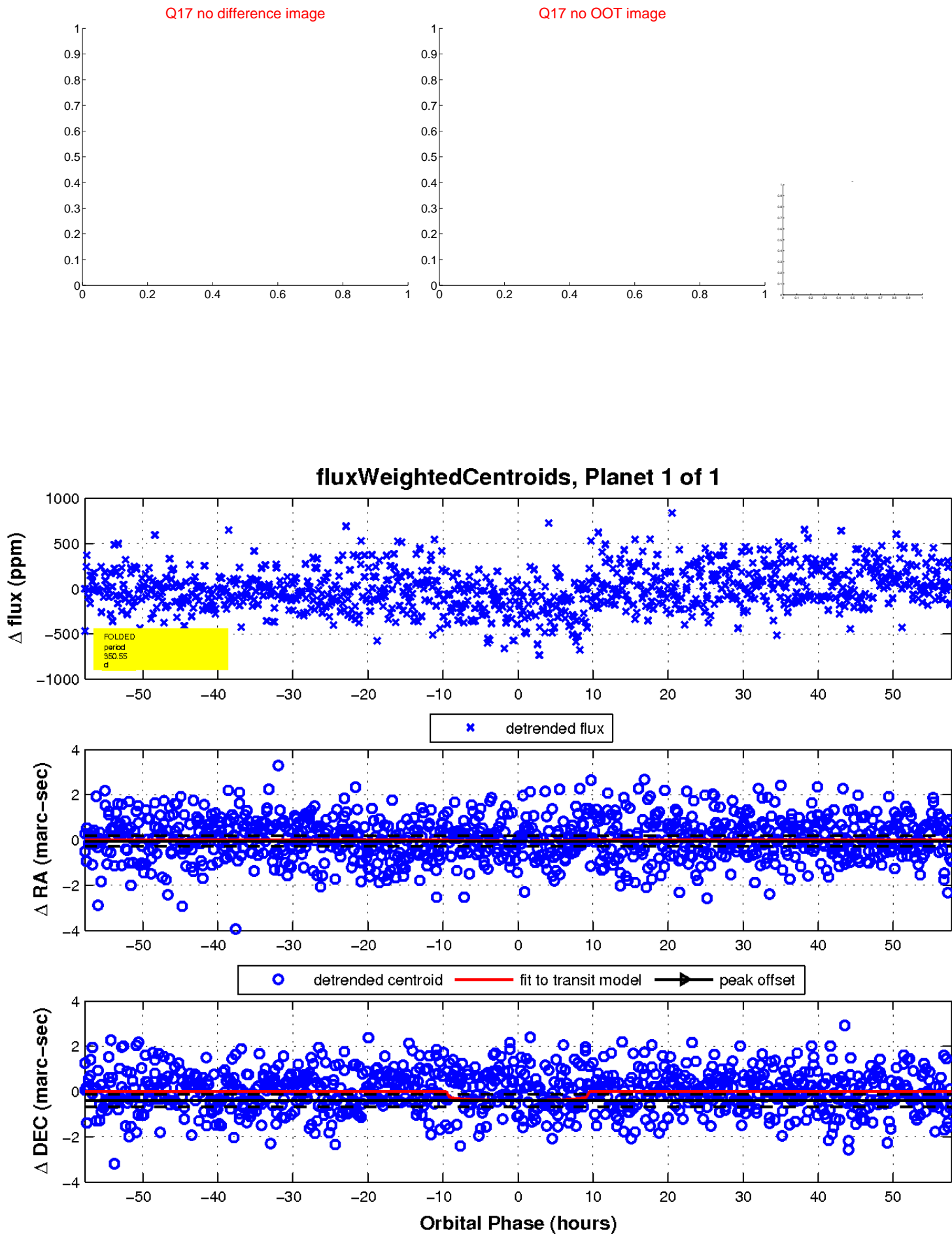
Q12 no OOT image



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

