

KIC 008196226

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|------|-----------------------------|-----------------|------------------------|------------------------|
| 008196226-01 | OBS | 4634.01 | 4.027439 | 133.123947 | 88.9 | 1.434 | 9.8 | 11.5 | 1.04 | 6174 | 1.14 | 579.10 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 008196226-01 | OBS | PC | 1.00 | 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.

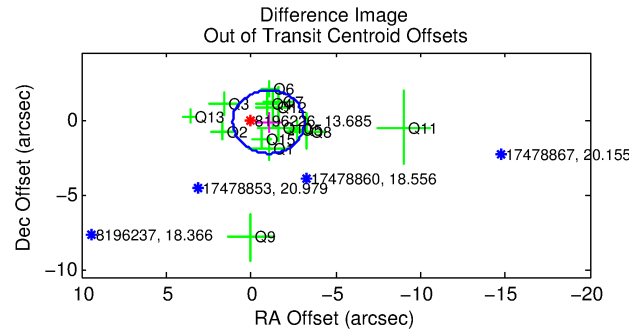
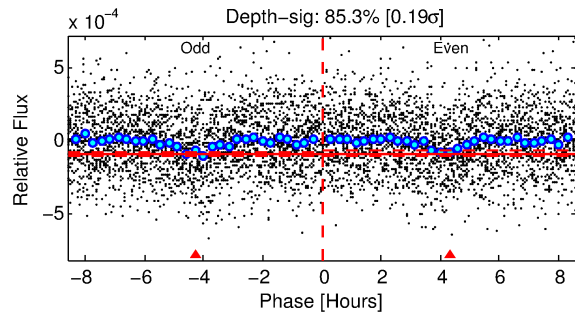
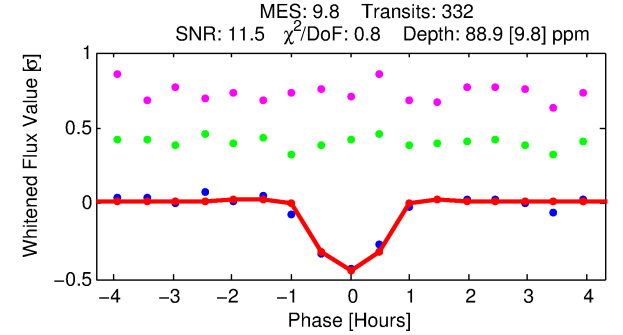
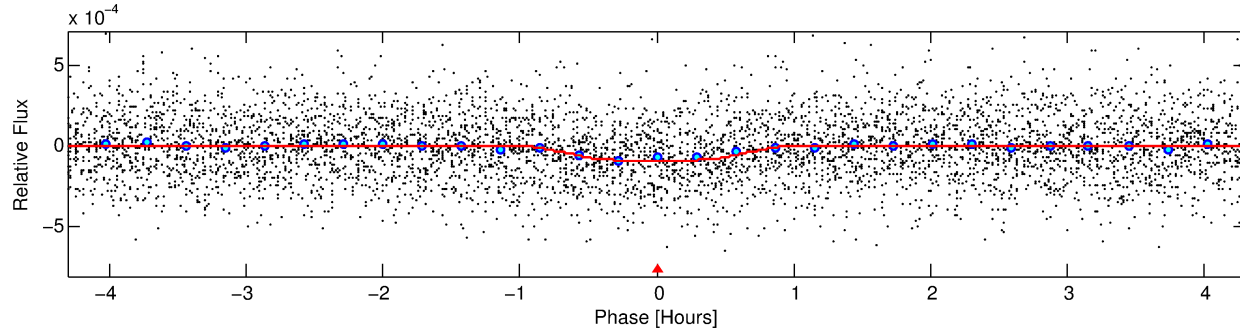
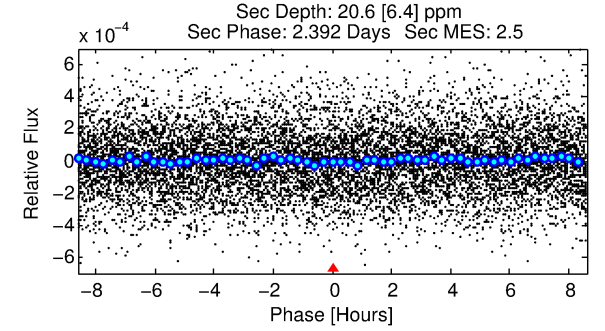
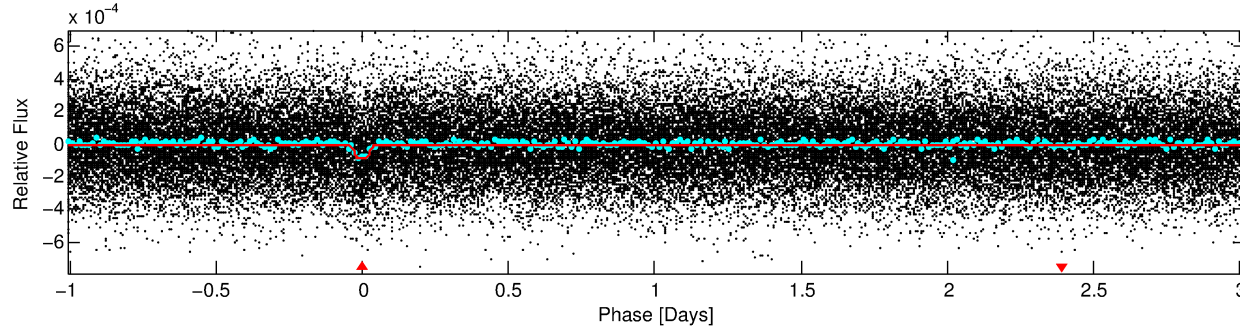
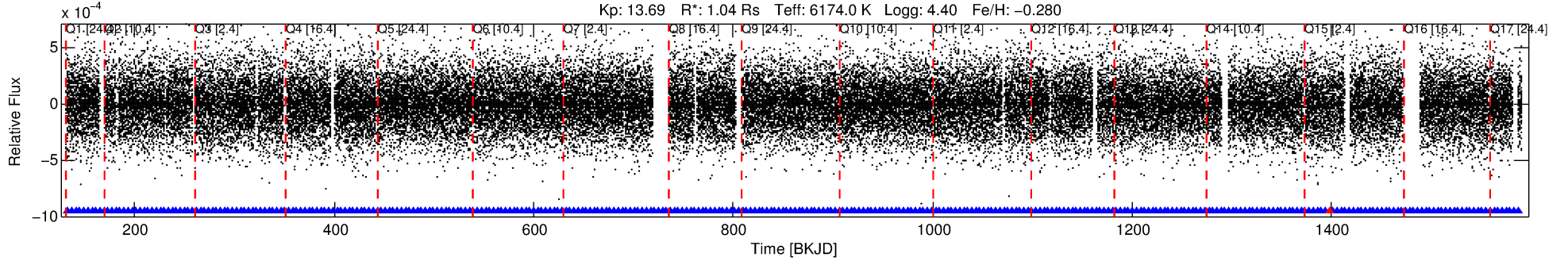
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008196226-01

No Significant Match Found

DV One-Page Summary

KIC: 8196226 Candidate: 1 of 1 Period: 4.027 d
KOI: K04634.01 Corr: 0.965



DV Fit Results:

Period = 4.02744 [0.00002] d
Epoch = 133.1239 [0.0026] BKJD
Rp/R* = 0.0100 [0.0058]
a/R* = 10.60 [32.79]
b = 0.88 [0.80]
Seff = 579.10 [223.90]
Teff = 1251 [121] K
Rp = 1.14 [0.75] Re
a = 0.0494 [0.0127] AU
Ag = 21.25 [26.50] [0.76σ]
Teffp = 4152 [1245] K [2.32σ]

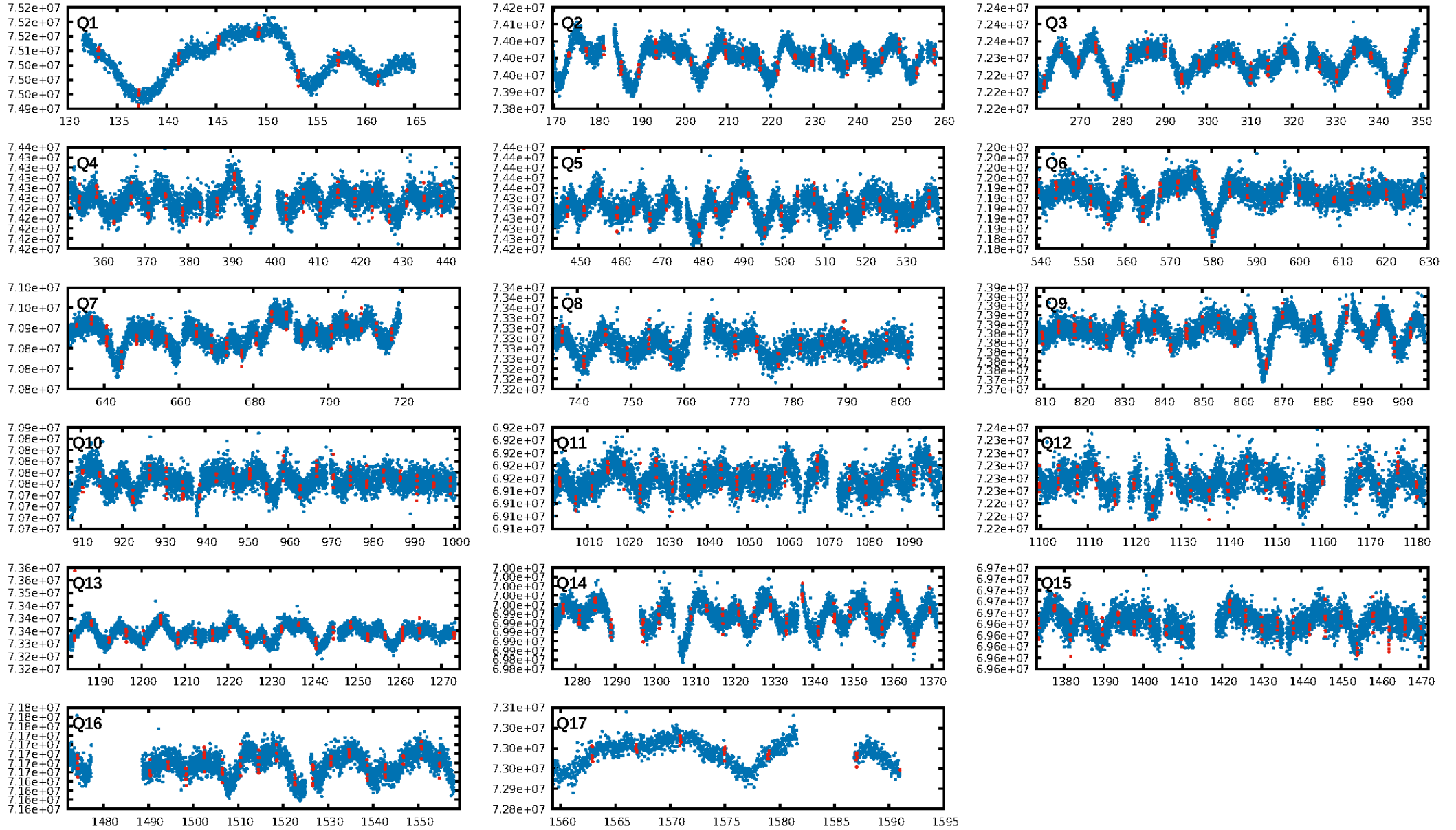
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.76e-23
RollingBand-fgt: 1.00 [317/318]
GhostDiagnostic-chr: 1.629
Centroid-sig: 13.8%
Centroid-so: 1.141 arcsec [0.92σ]
OotOffset-rm: 1.048 arcsec [1.49σ]
KicOffset-rm: 1.098 arcsec [1.51σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.57 [8/14]
DiffImageOverlap-fno: 1.00 [17/17]

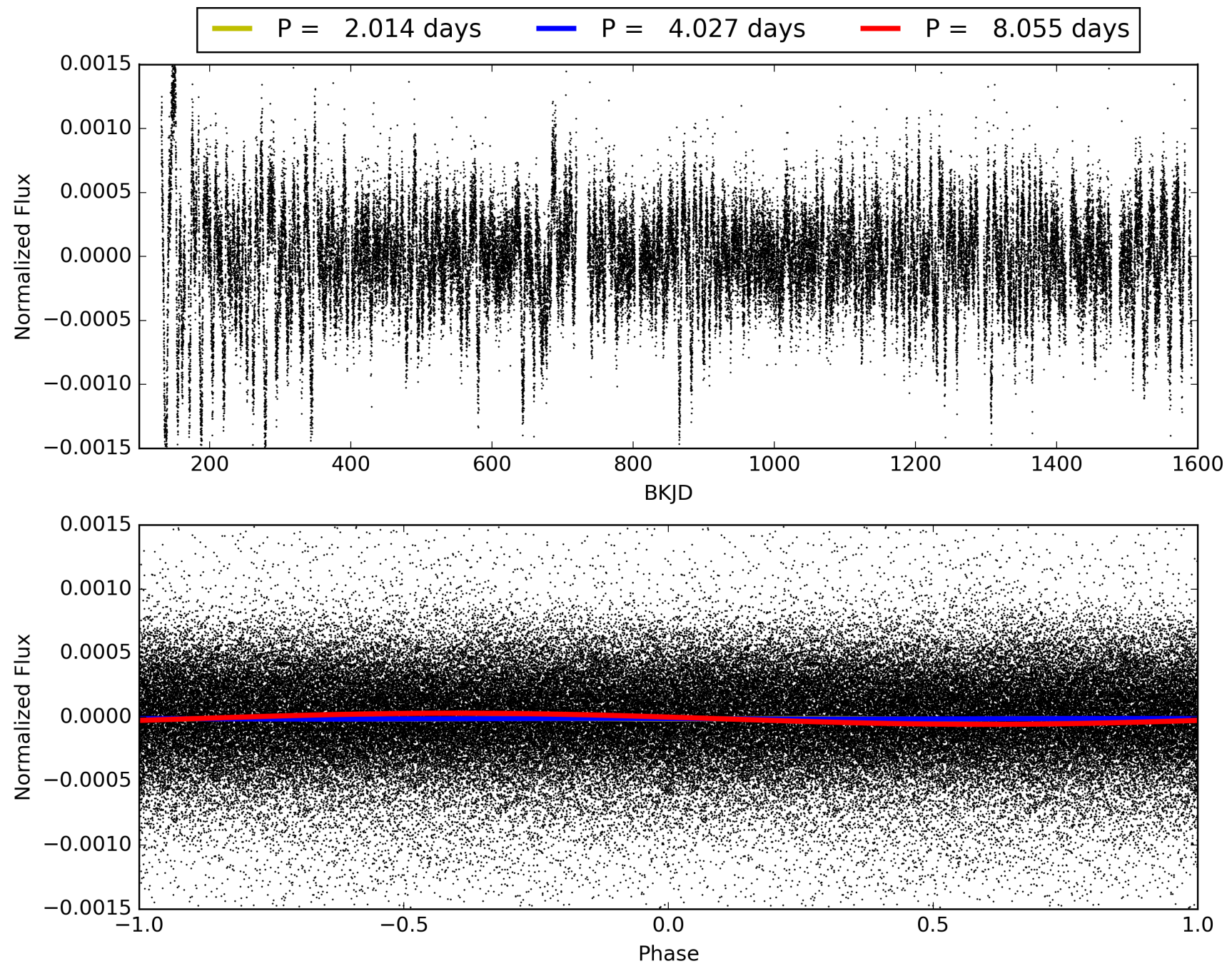
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:11:08 Z

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

TCE 008196226-01, PDC Light Curves

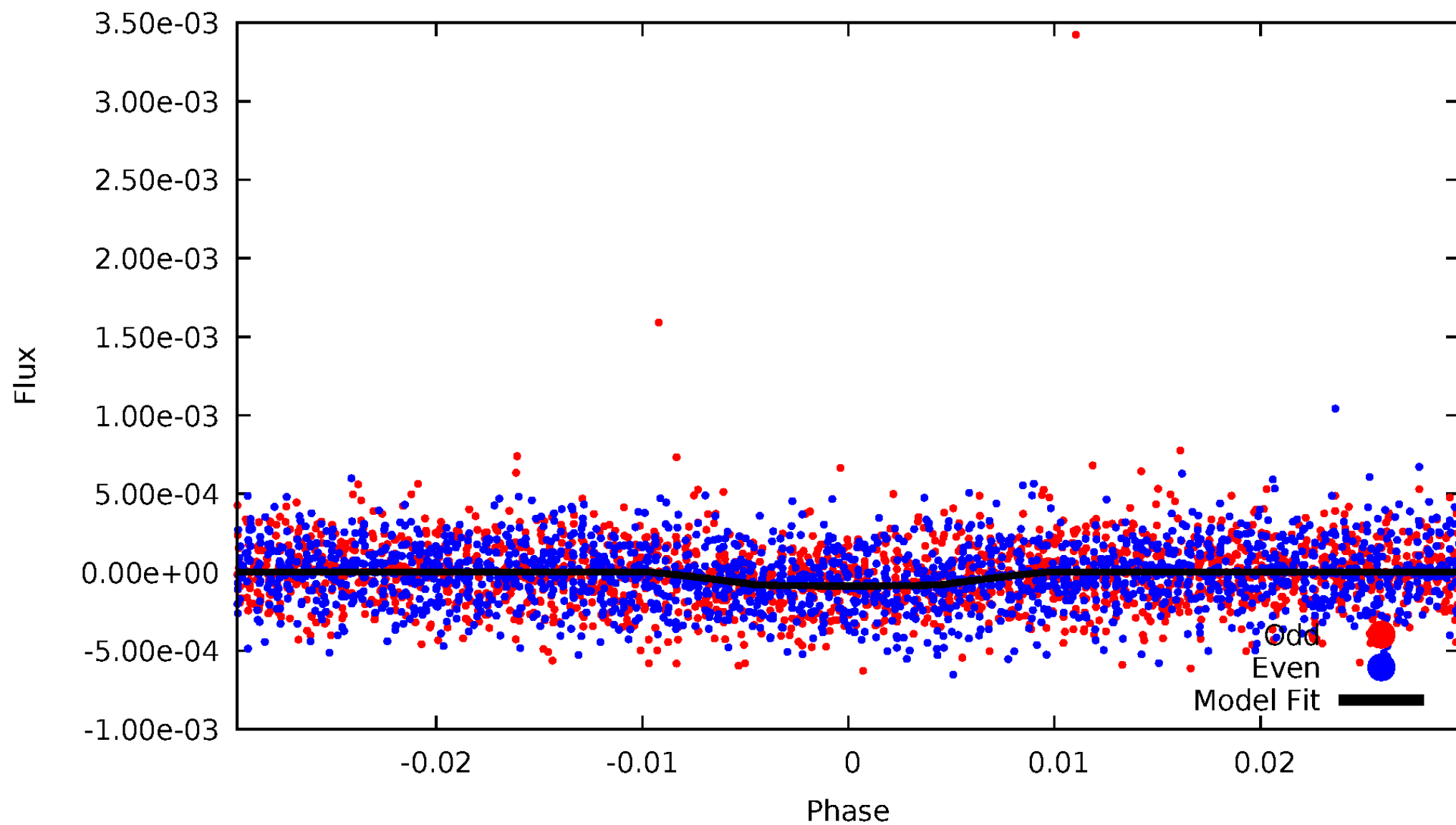


TCE 008196226-01



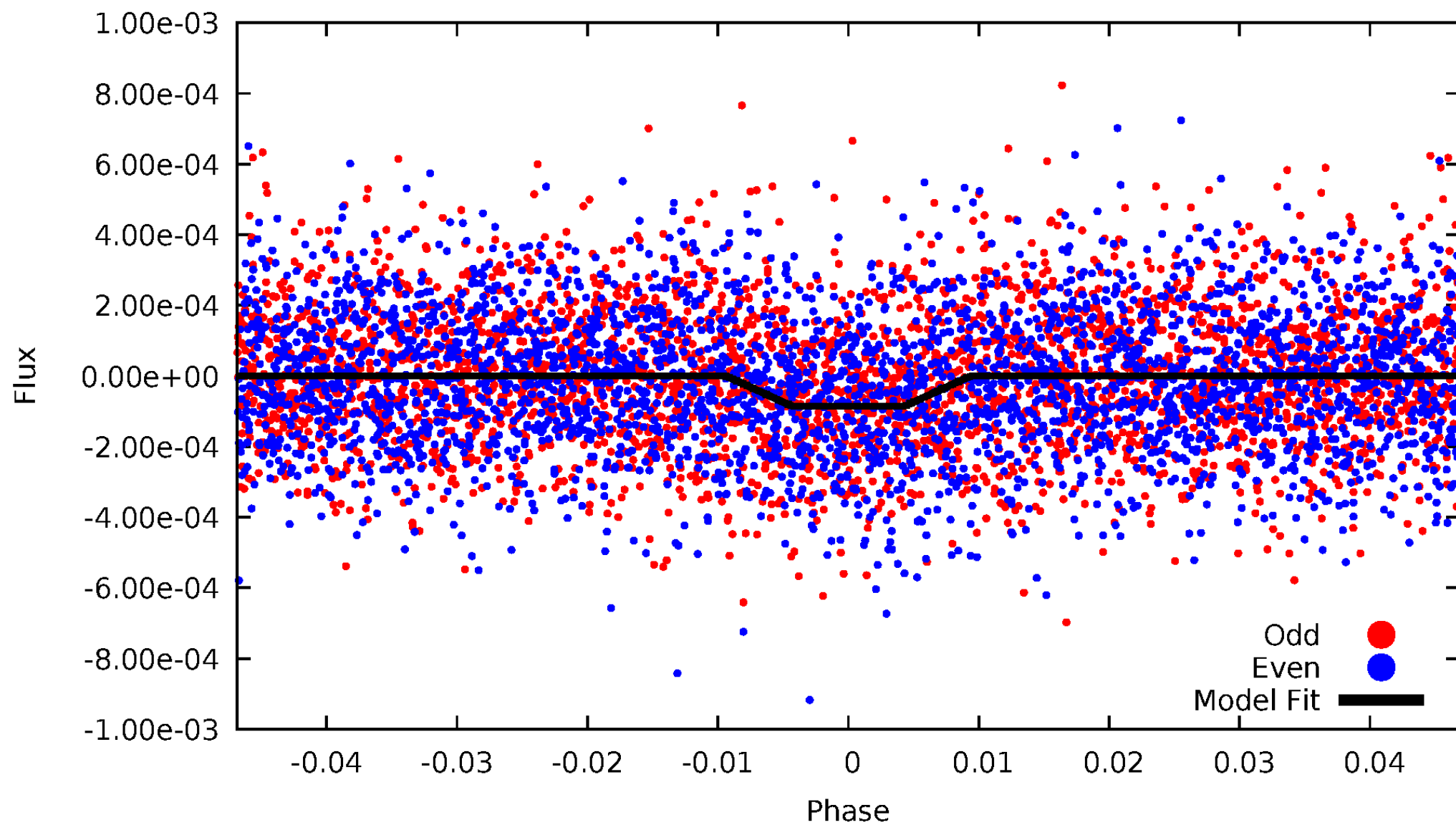
DV Odd/Even

TCE 008196226-01



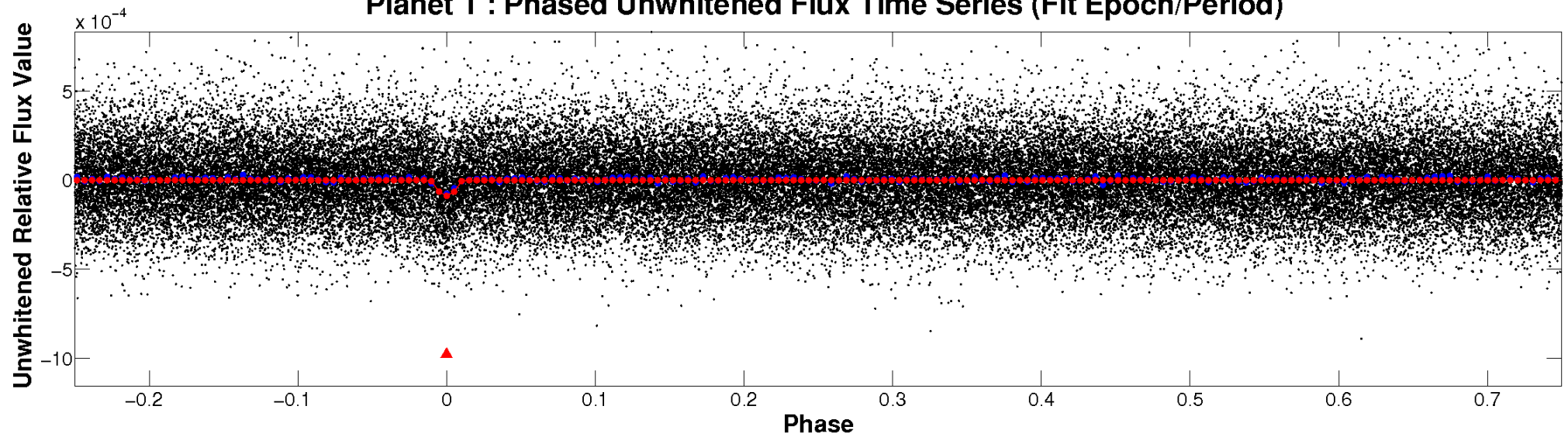
ALT Odd/Even

TCE 008196226-01

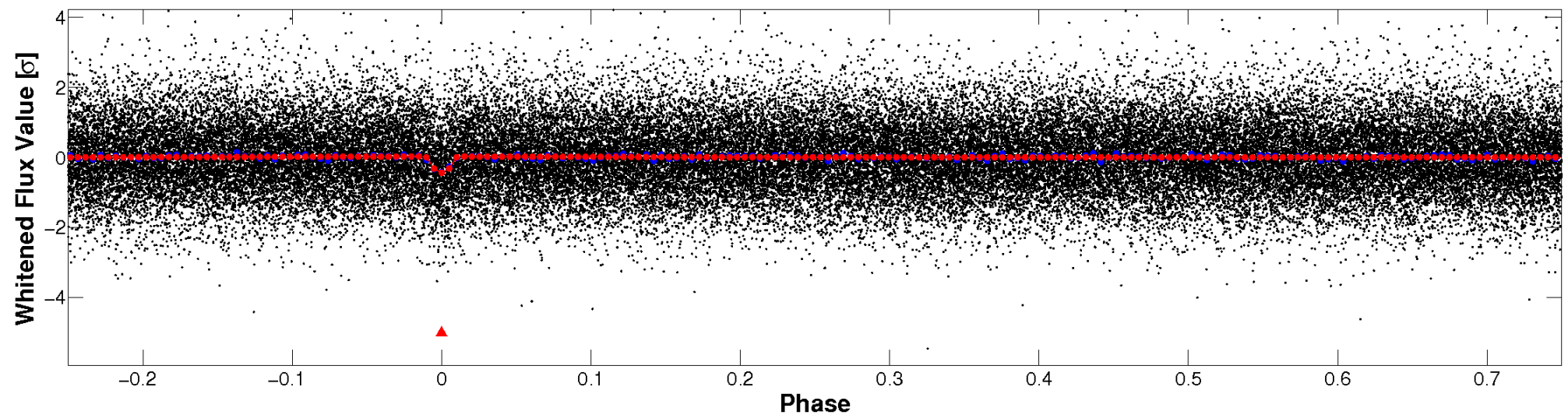


Non-Whitened Vs. Whitened Light Curve

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

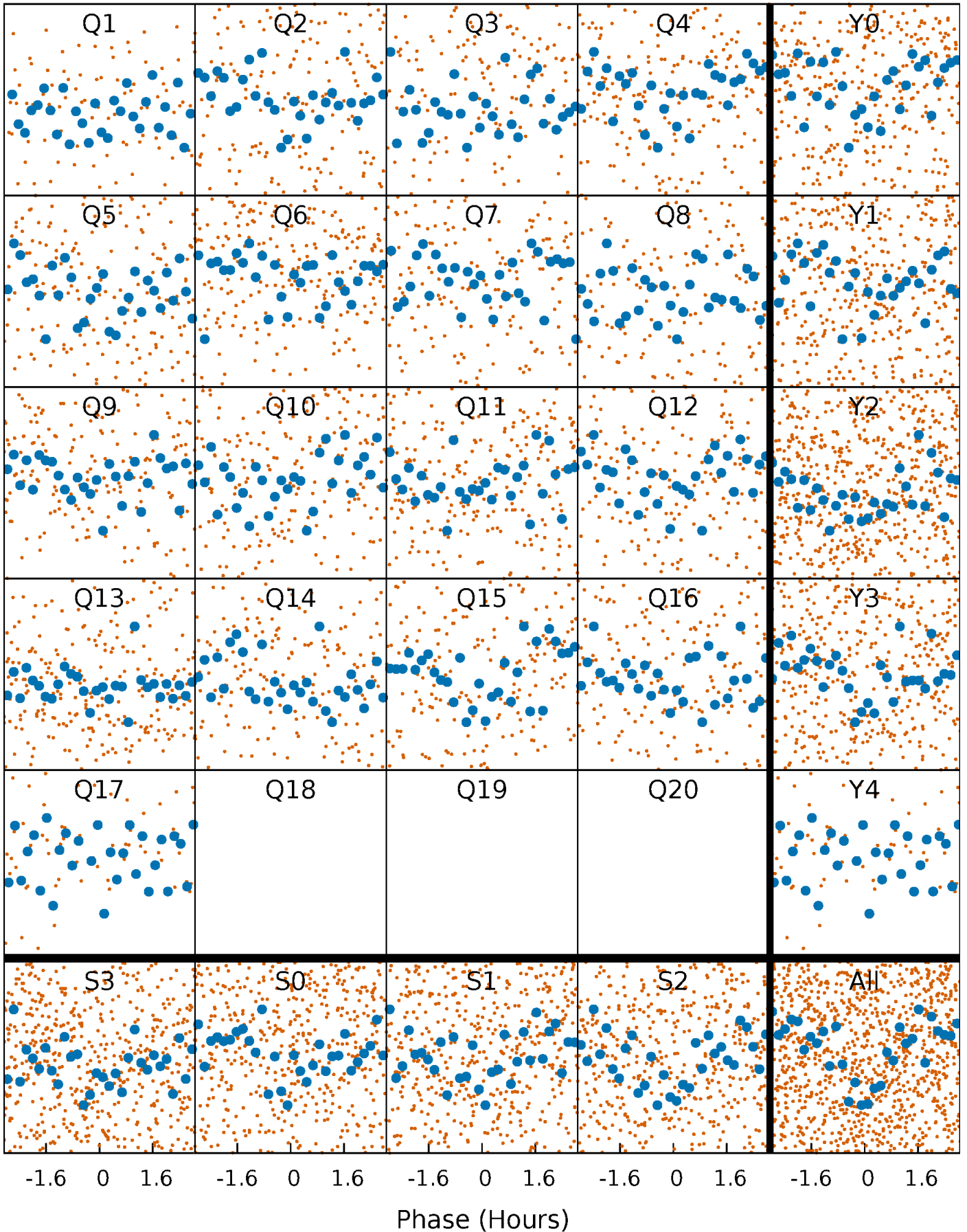


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



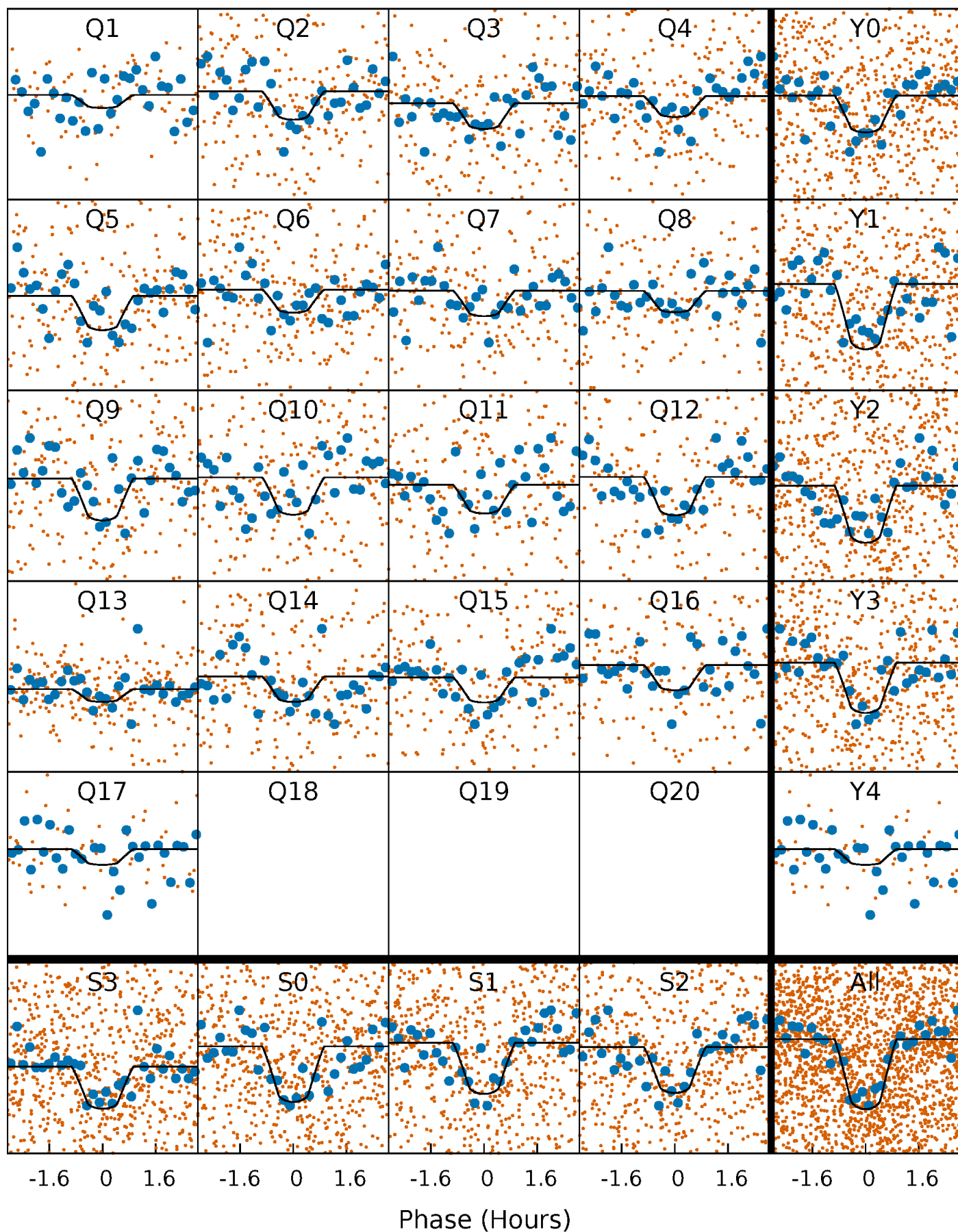
PDC Quarter-Phased Transit Curves

TCE 008196226-01 P= 4.027439 Days $T_0=133.123947$ (BKJD)



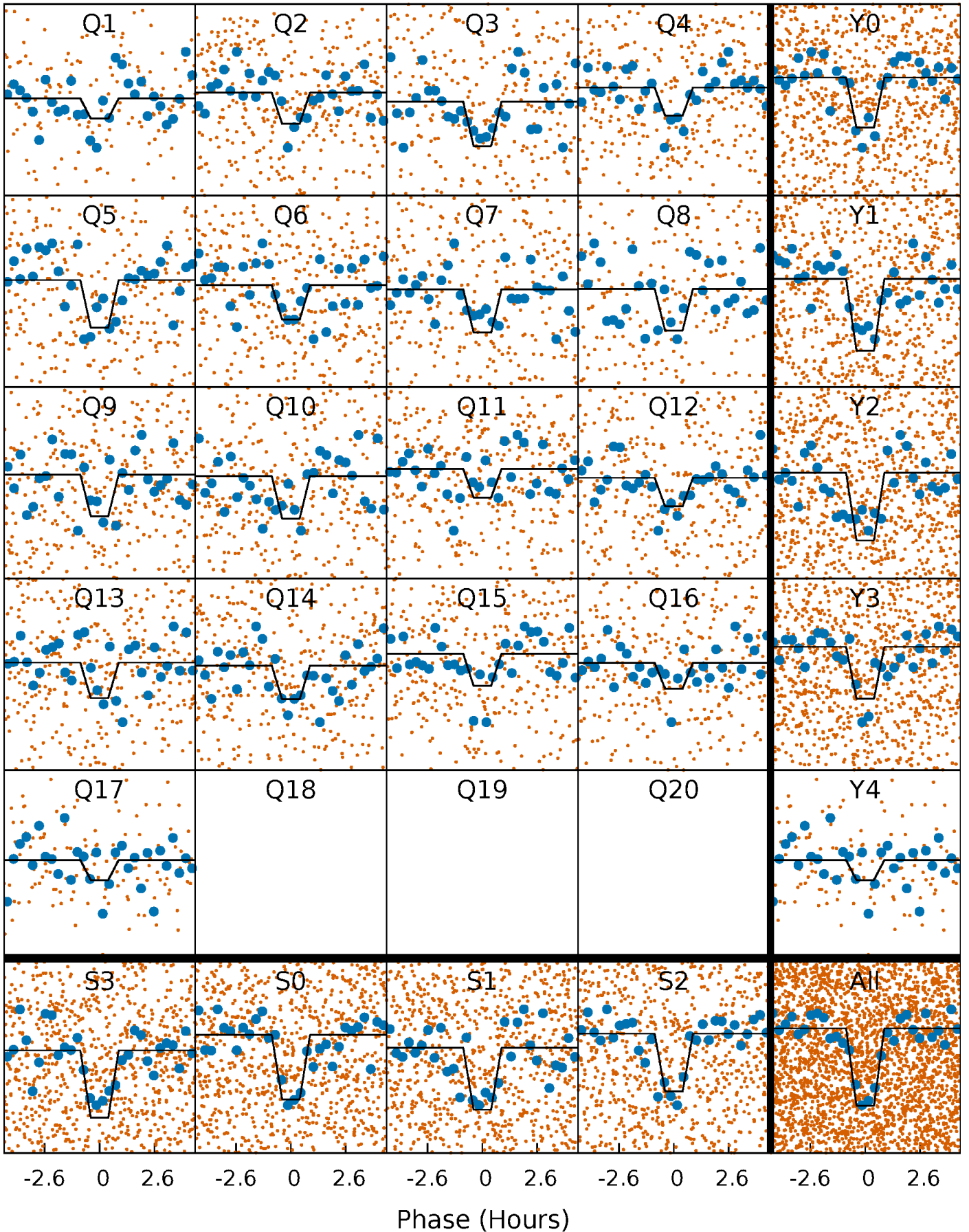
DV Quarter-Phased Transit Curves

TCE 008196226-01 P= 4.027439 Days $T_0=133.123947$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

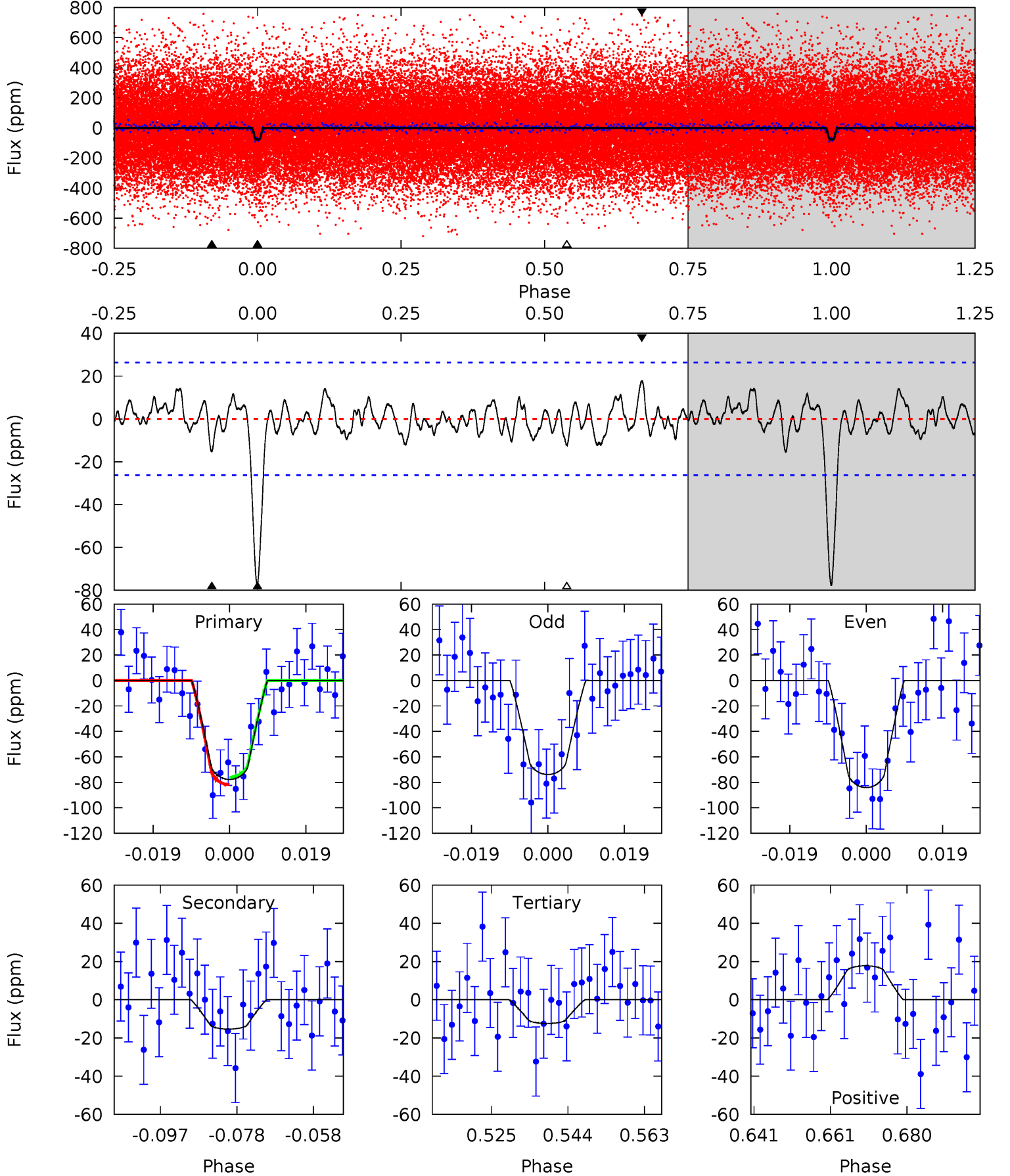
TCE 008196226-01 P= 4.027454 Days $T_0=133.119081$ (BKJD)



DV Model-Shift Uniqueness Test

008196226-01, P = 4.027439 Days, E = 129.096508 Days

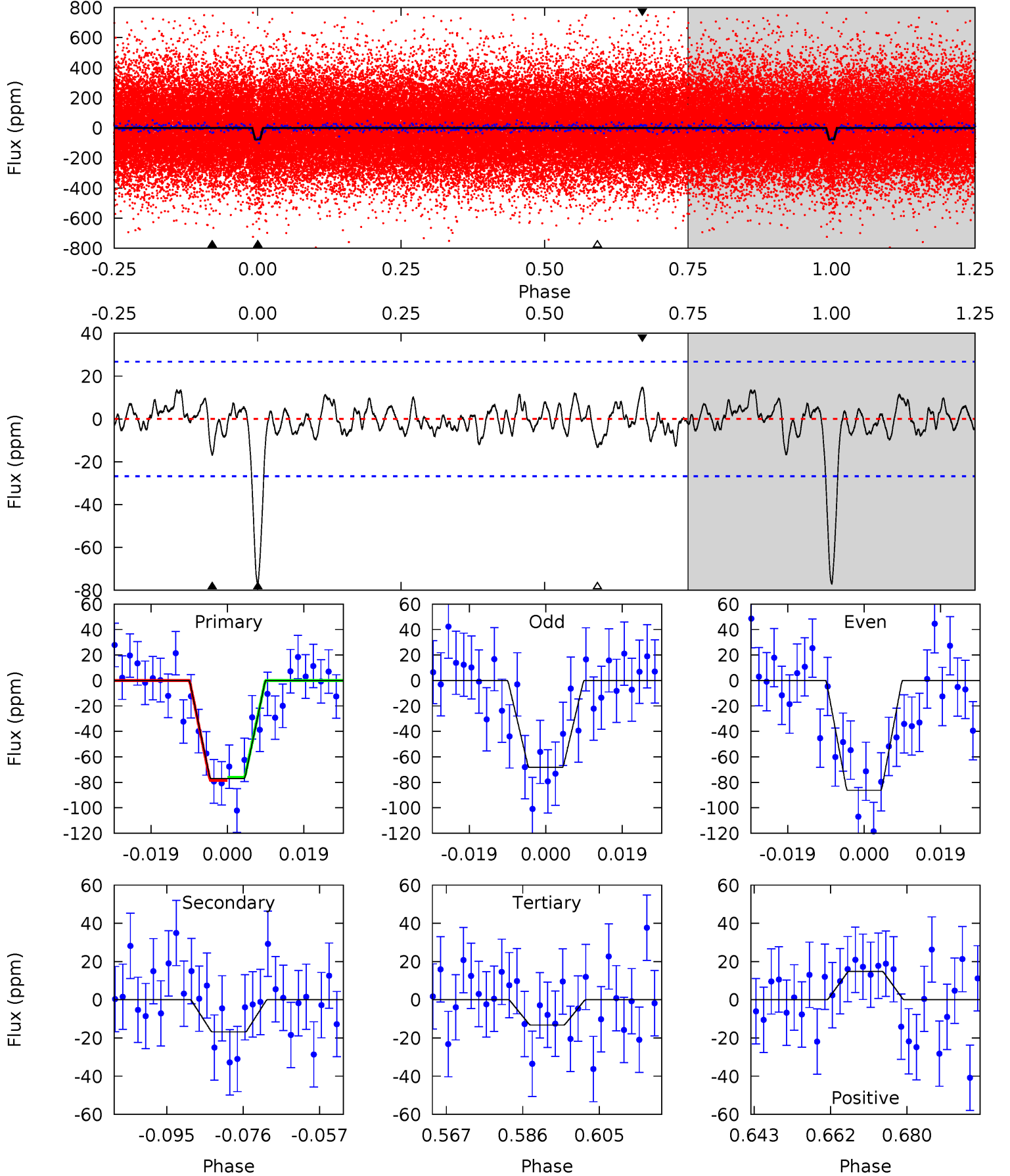
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.5 | 2.86 | 2.31 | 3.31 | 4.90 | 2.34 | 1.07 | 12.2 | 11.2 | 0.55 | -0.45 | 0.96 | 0.97 | 0.19 | 0.55 |



Alt Model-Shift Uniqueness Test

008196226-01, P = 4.027454 Days, E = 129.091627 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.1 | 3.08 | 2.42 | 2.72 | 4.90 | 2.35 | 0.98 | 11.7 | 11.4 | 0.65 | 0.36 | 1.65 | 1.25 | 0.16 | 0.23 |



Stellar Parameters For KIC 008196226

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6174^{+175}_{-197} | $4.398^{+0.105}_{-0.195}$ | $-0.280^{+0.300}_{-0.300}$ | $1.041^{+0.326}_{-0.140}$ | $0.987^{+0.147}_{-0.120}$ | $1.231^{+0.566}_{-0.621}$ |
| | +3%/-3% | +2%/-4% | +107%/-107% | +31%/-13% | +15%/-12% | +46%/-50% |
| 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 008196226-01 / KOI 4634.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|------------------|
| DV | -15 ± 5 | $1.26^{+0.71}_{-0.62}$ | 1767^{+137}_{-103} | 3963^{+1235}_{-599} | 12^{+37}_{-8} |
| Alt. | -17 ± 5 | $1.13^{+0.71}_{-0.60}$ | 1769^{+114}_{-98} | 4202^{+1689}_{-629} | 17^{+65}_{-10} |

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 $A_{obs} \gg 1.0$

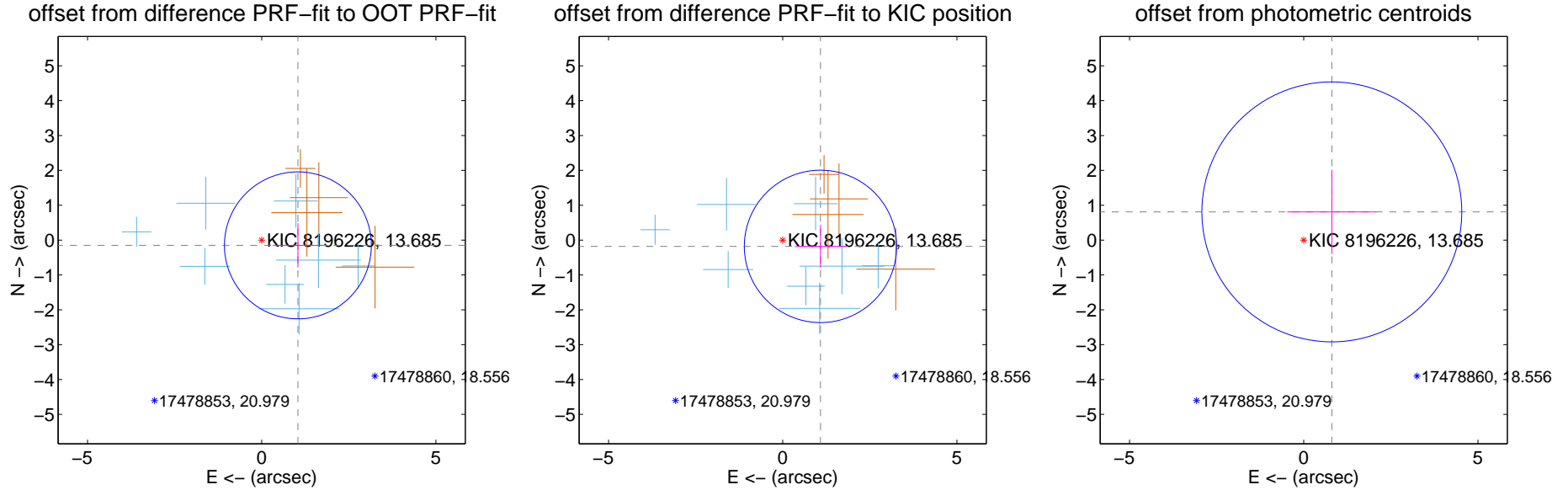
DV Centroid Data

Supplemental centroid analysis for 008196226-01. Kepler magnitude: 13.69. Transit SNR 11.54

There are 8 quarters with good PRF difference image offsets

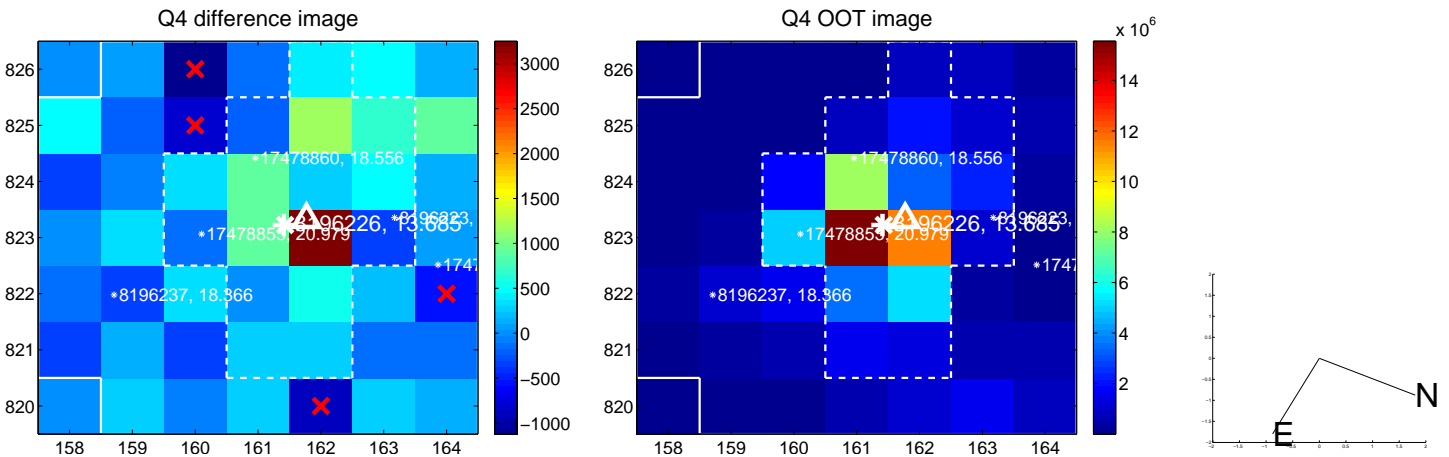
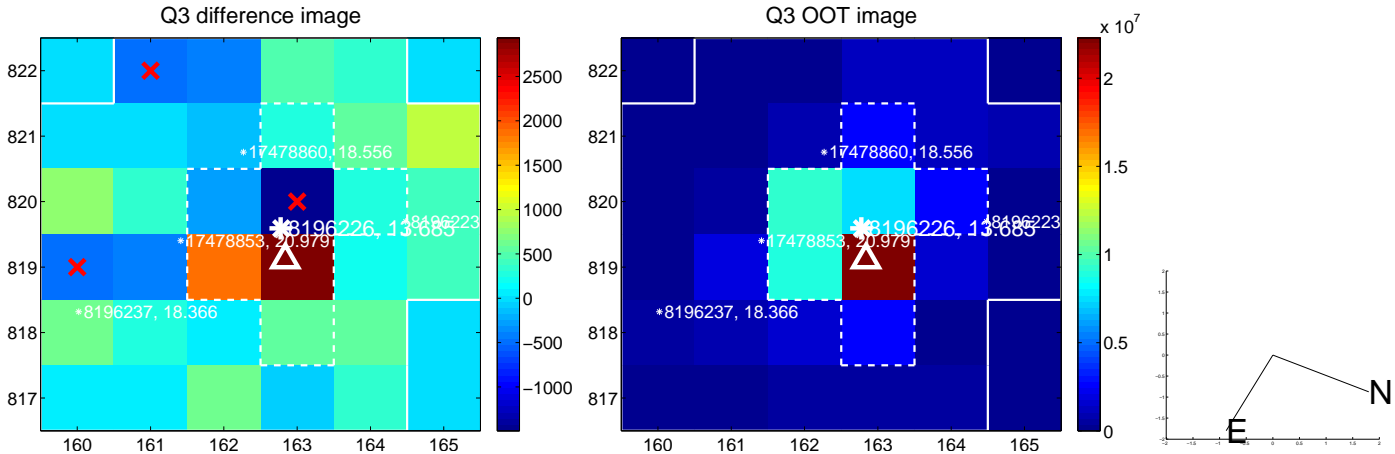
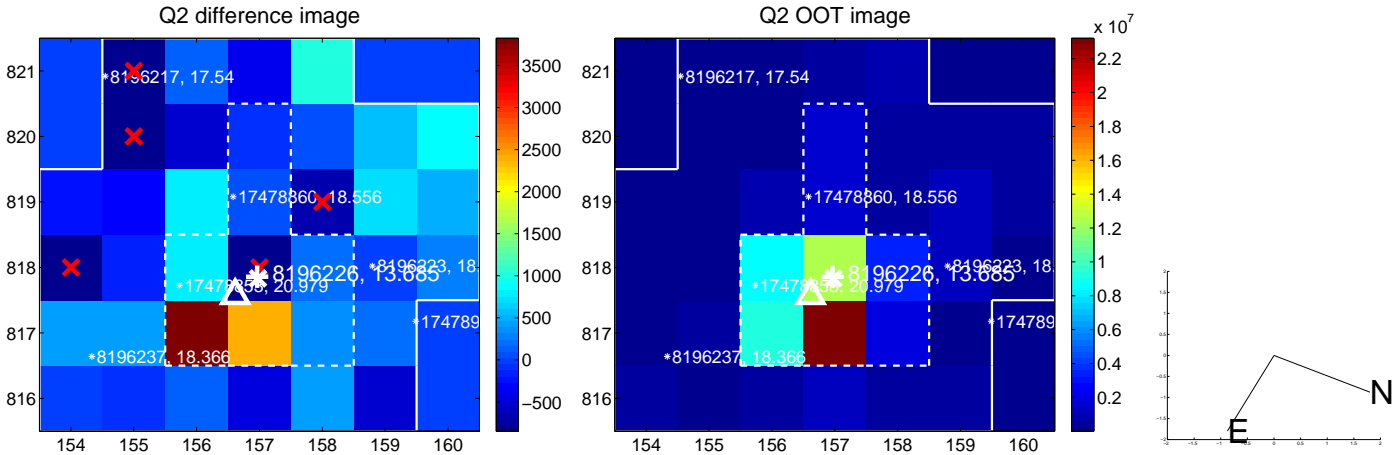
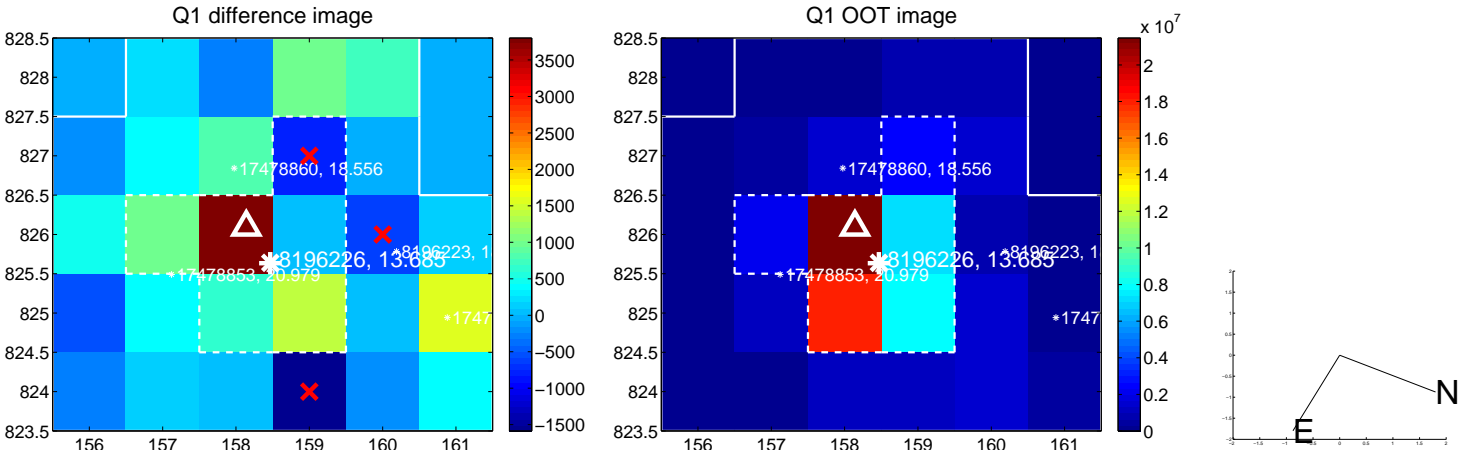
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 1.048 ± 0.703 | 1.49 | -1.037 ± 0.719 | -0.151 ± 0.633 |
| PRF-fit source offset from KIC position | 1.098 ± 0.729 | 1.51 | -1.083 ± 0.733 | -0.180 ± 0.616 |
| photometric centroid source offset | 1.14 ± 1.24 | 0.92 | -0.80 ± 1.28 | 0.81 ± 1.21 |

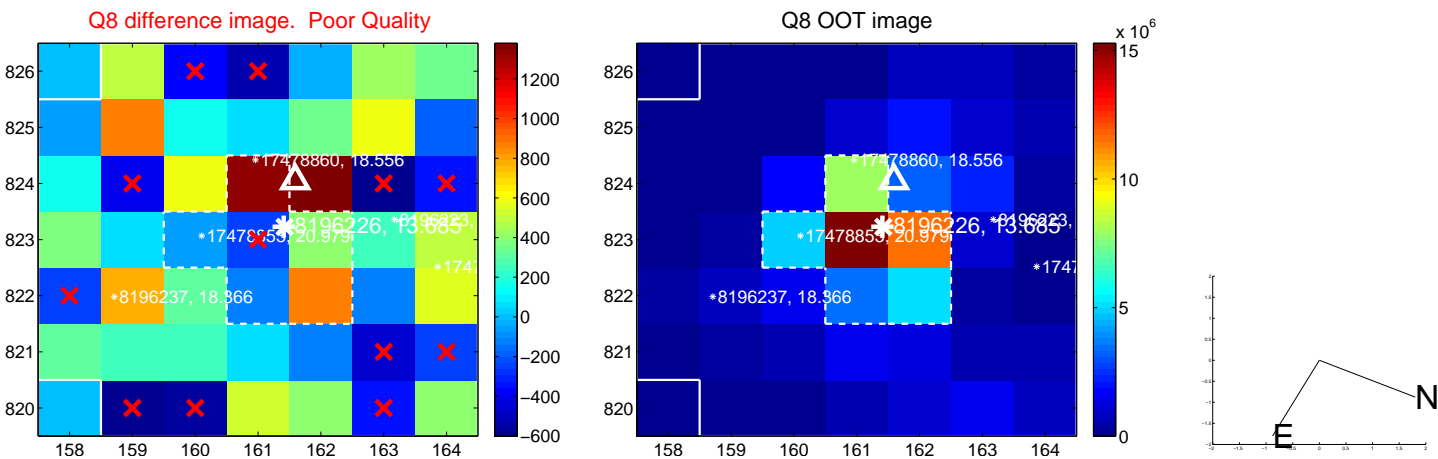
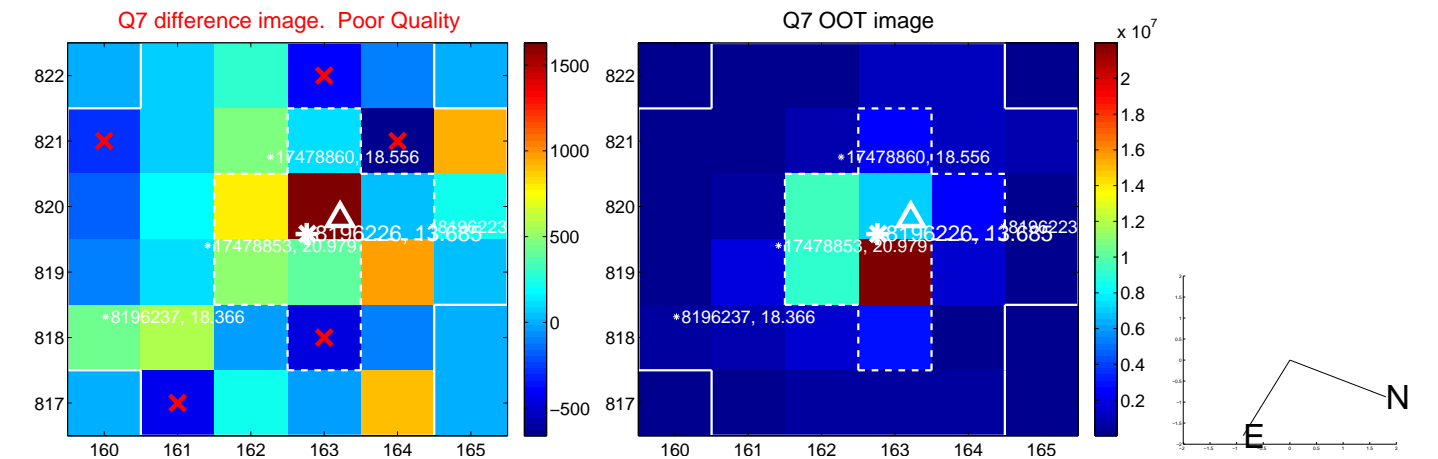
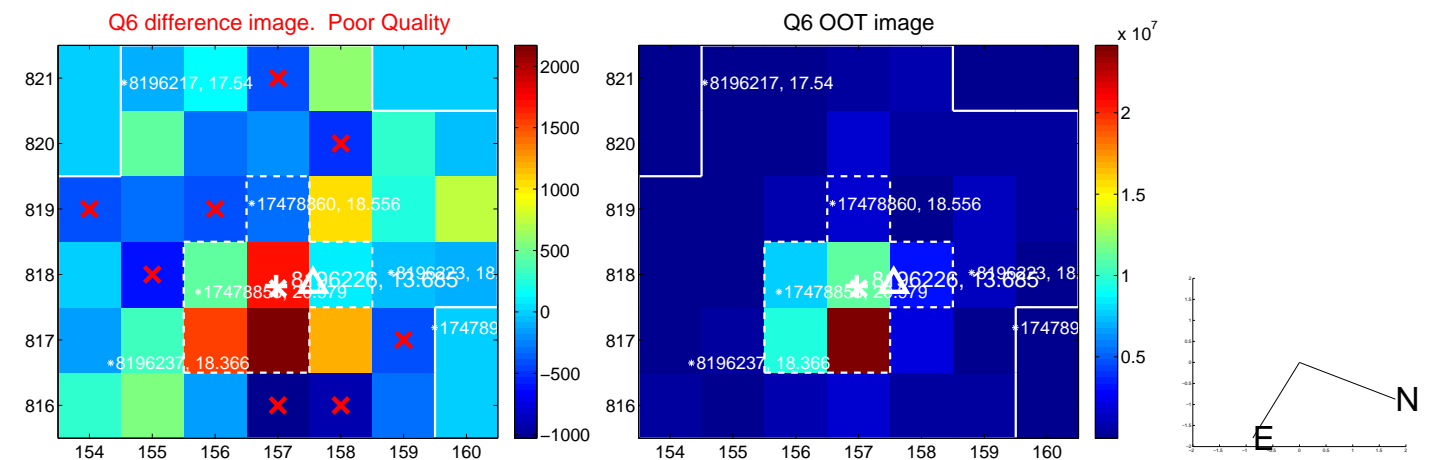
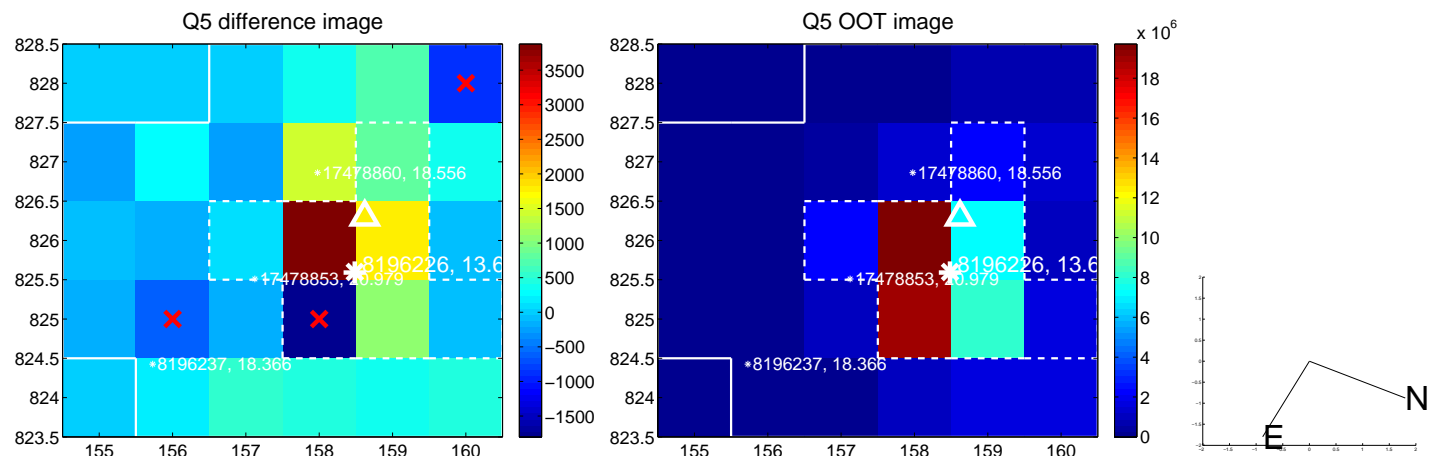


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

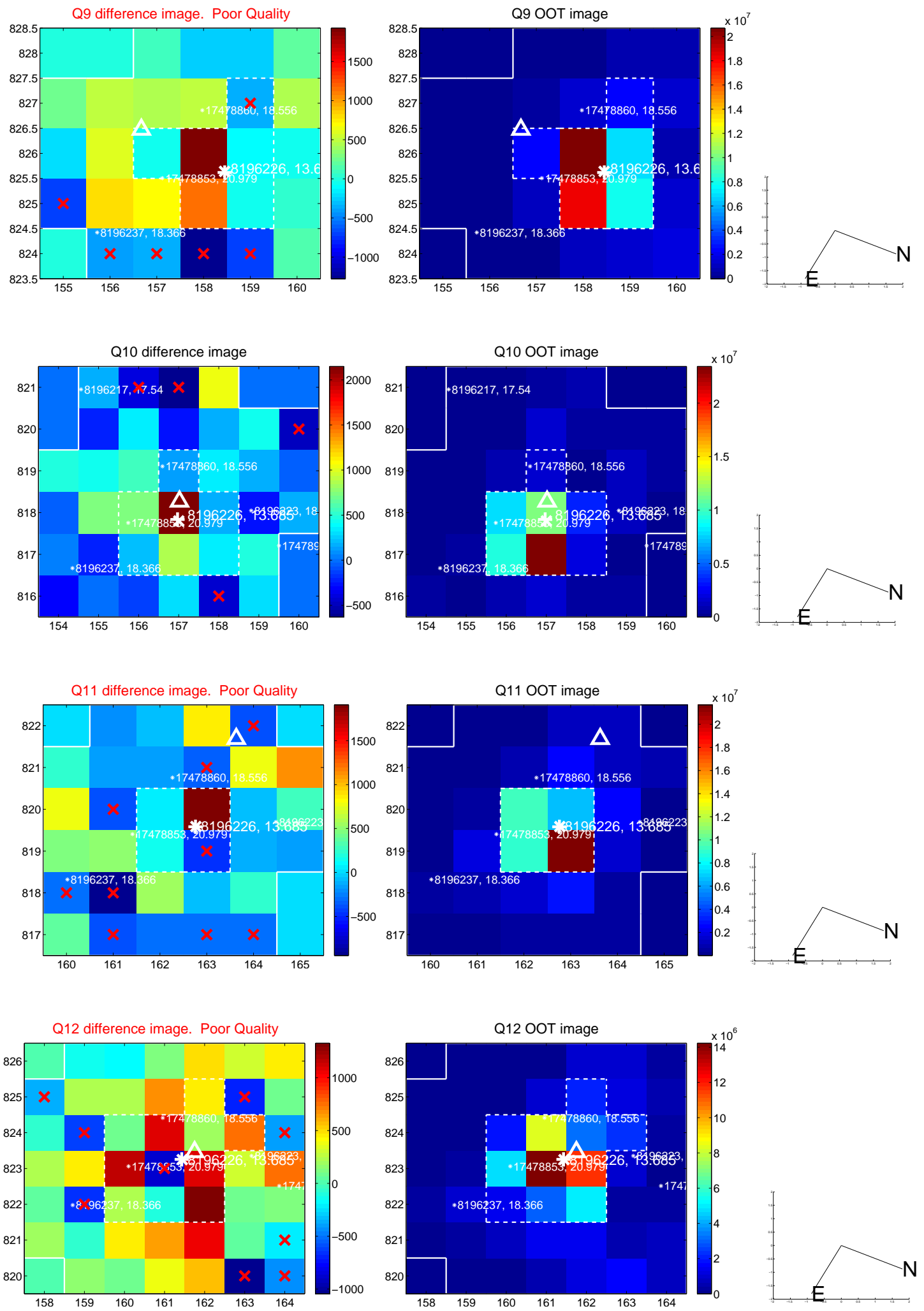
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



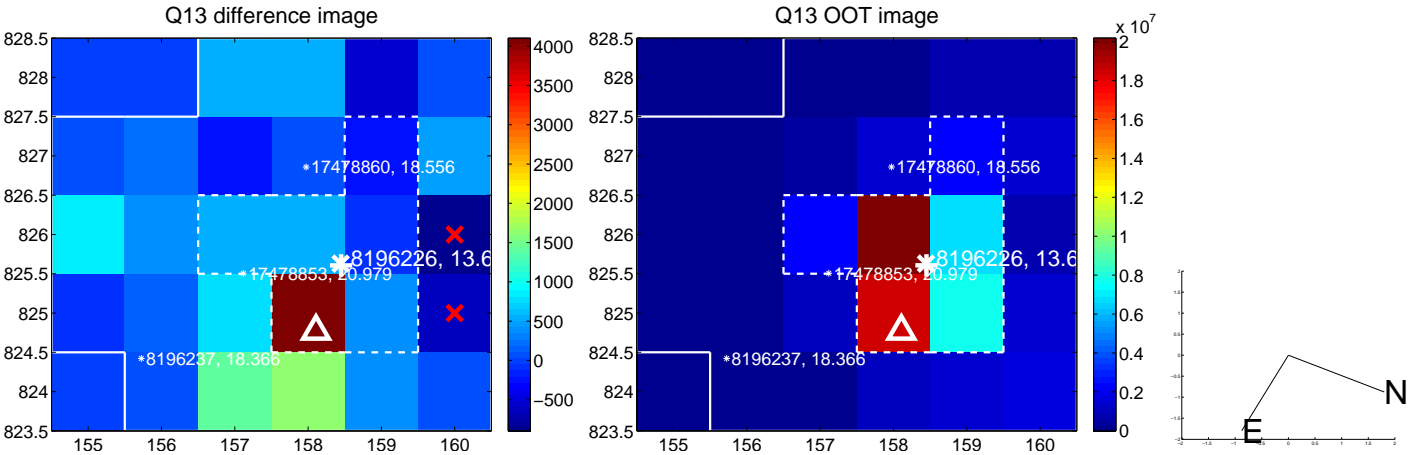
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



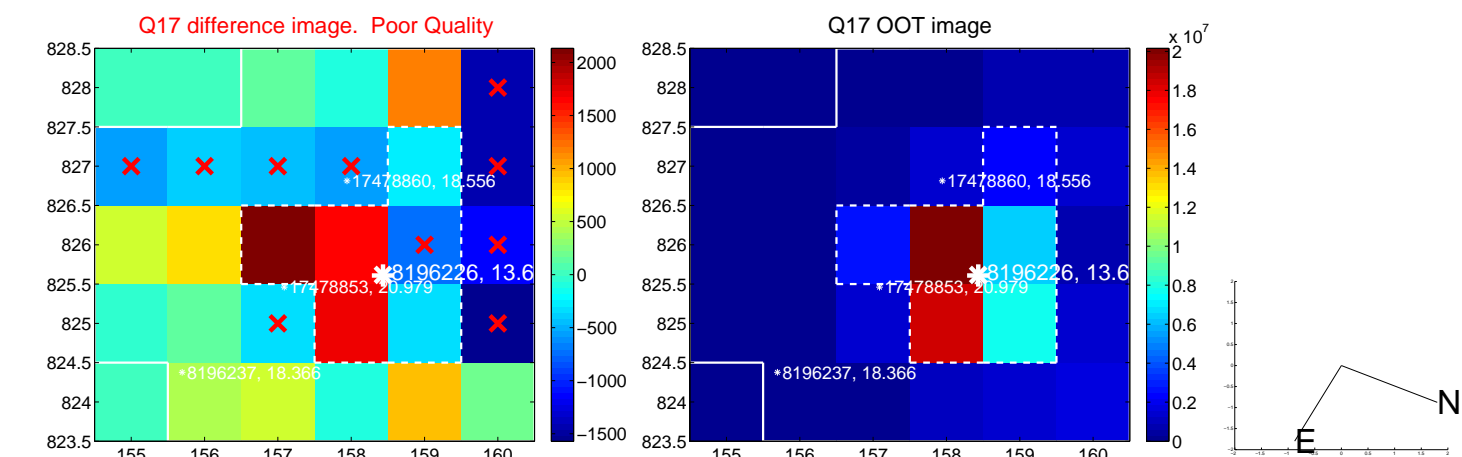
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



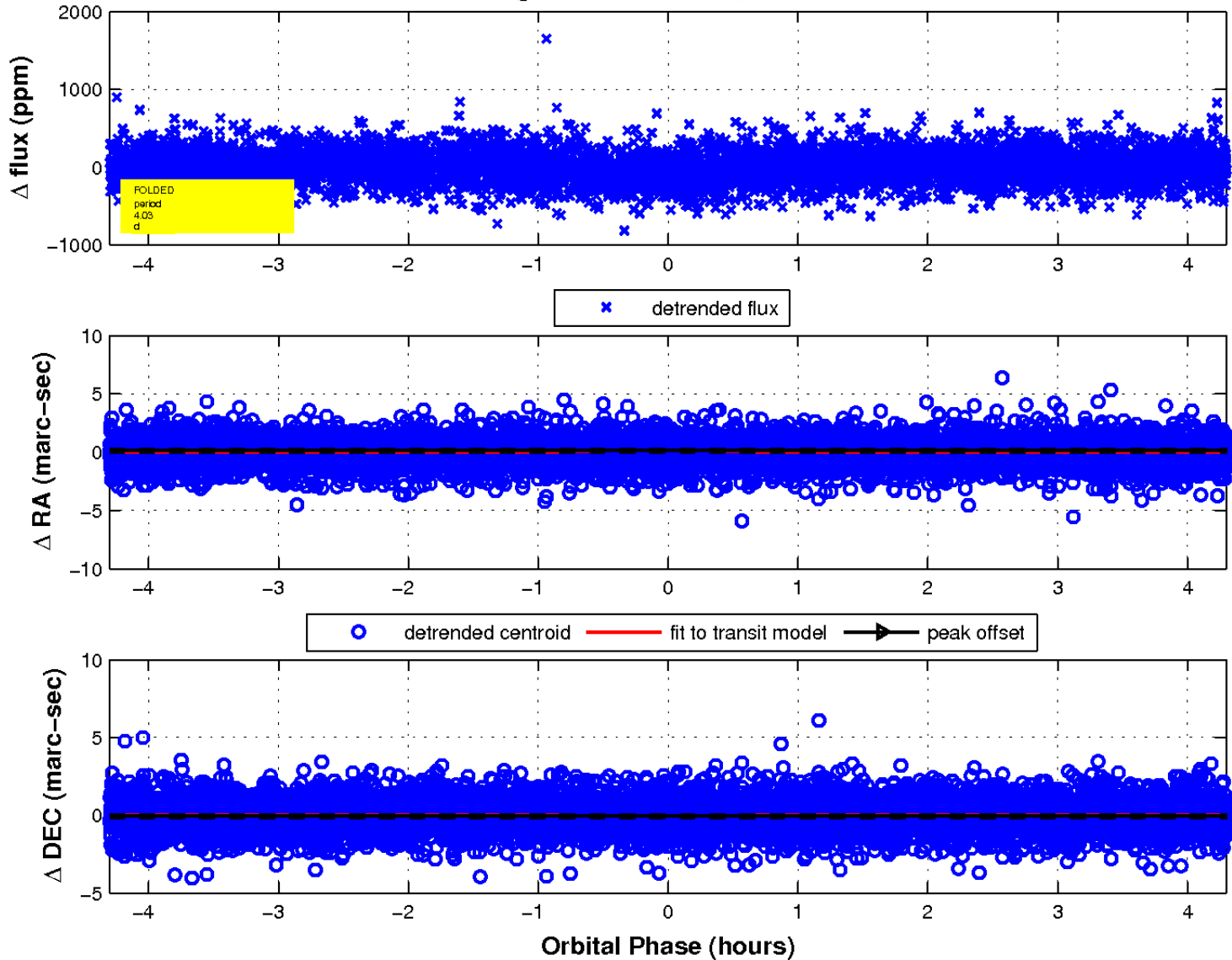
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

