

KIC 008176353

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008176353-01 | OBS | No | 369.113557 | 234.124998 | 796.0 | 32.009 | 10.7 | 11.3 | 0.93 | 6074 | 3.62 | 1.08 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|----------------------------------------------------------------------------------------------------|
| 008176353-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—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.

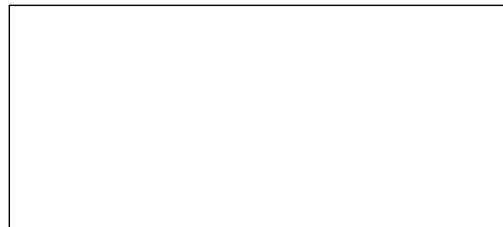
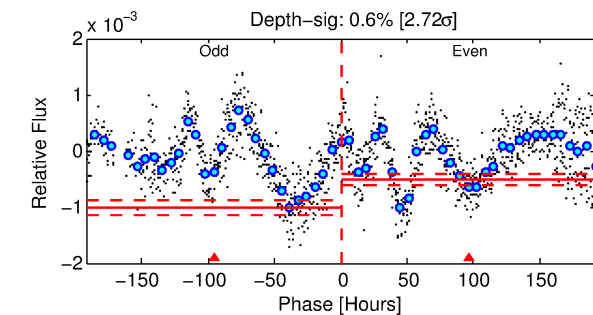
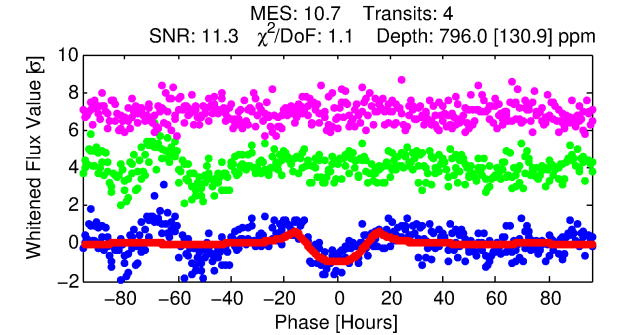
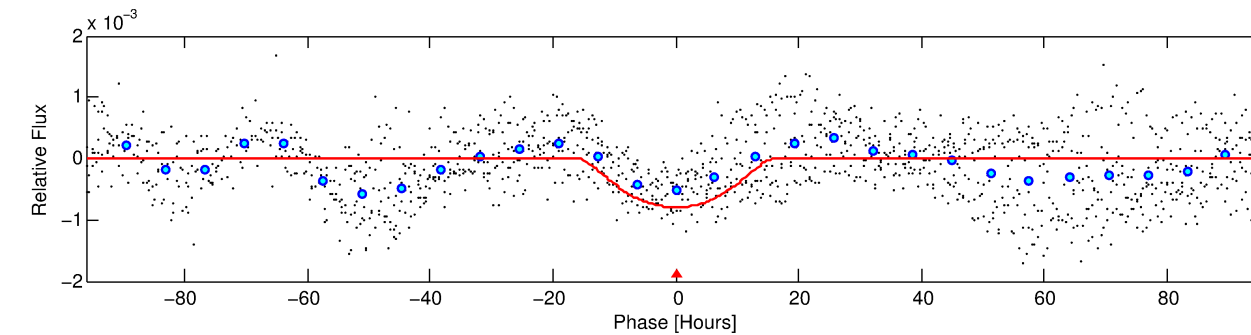
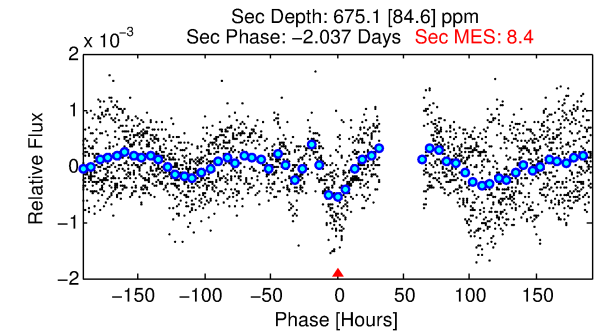
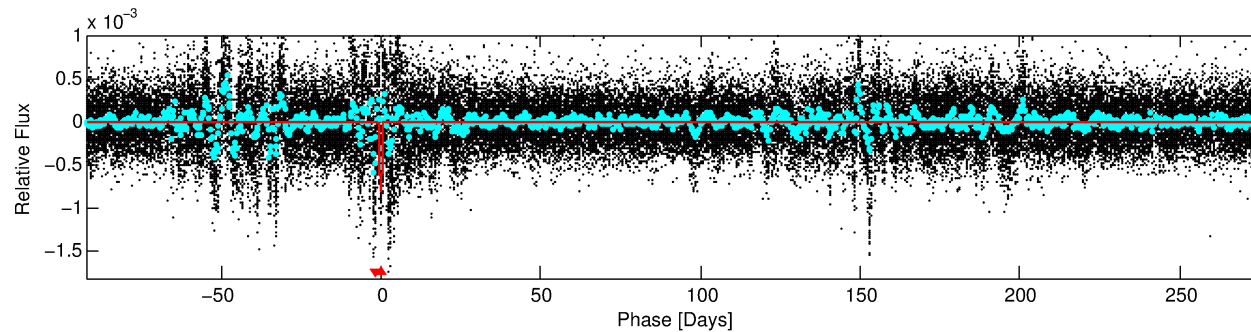
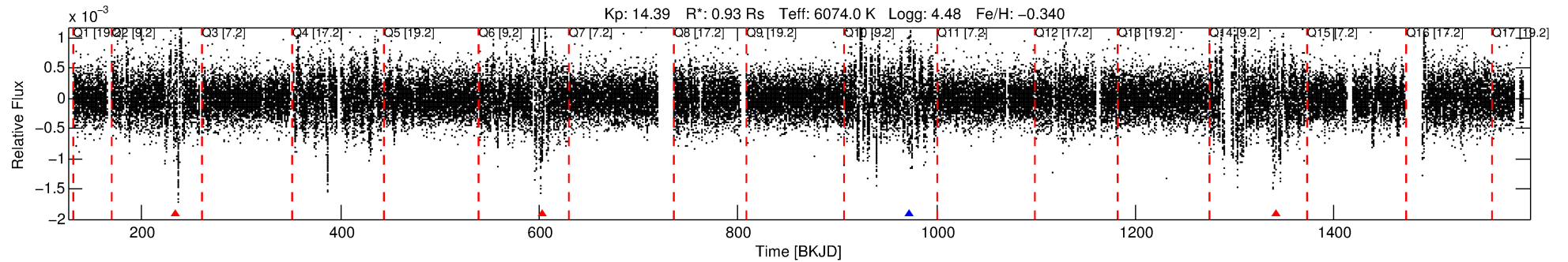
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008176353-01

No Significant Match Found

DV One-Page Summary

KIC: 8176353 Candidate: 1 of 1 Period: 369.114 d



DV Fit Results:

Period = 369.11356 [0.02215] d
Epoch = 234.1250 [0.0387] BKJD
Rp/R* = 0.0356 [0.0096]
a/R* = 31.00 [4.93]
b = 0.97 [0.02]
Seff = 1.08 [0.41]
Teq = 260 [25] K
Rp = 3.62 [1.43] Re
a = 0.9932 [0.2447] AU
Ag = 27932.09 [18568.28] [1.50σ]
Teffp = 5191 [738] K [6.68σ]

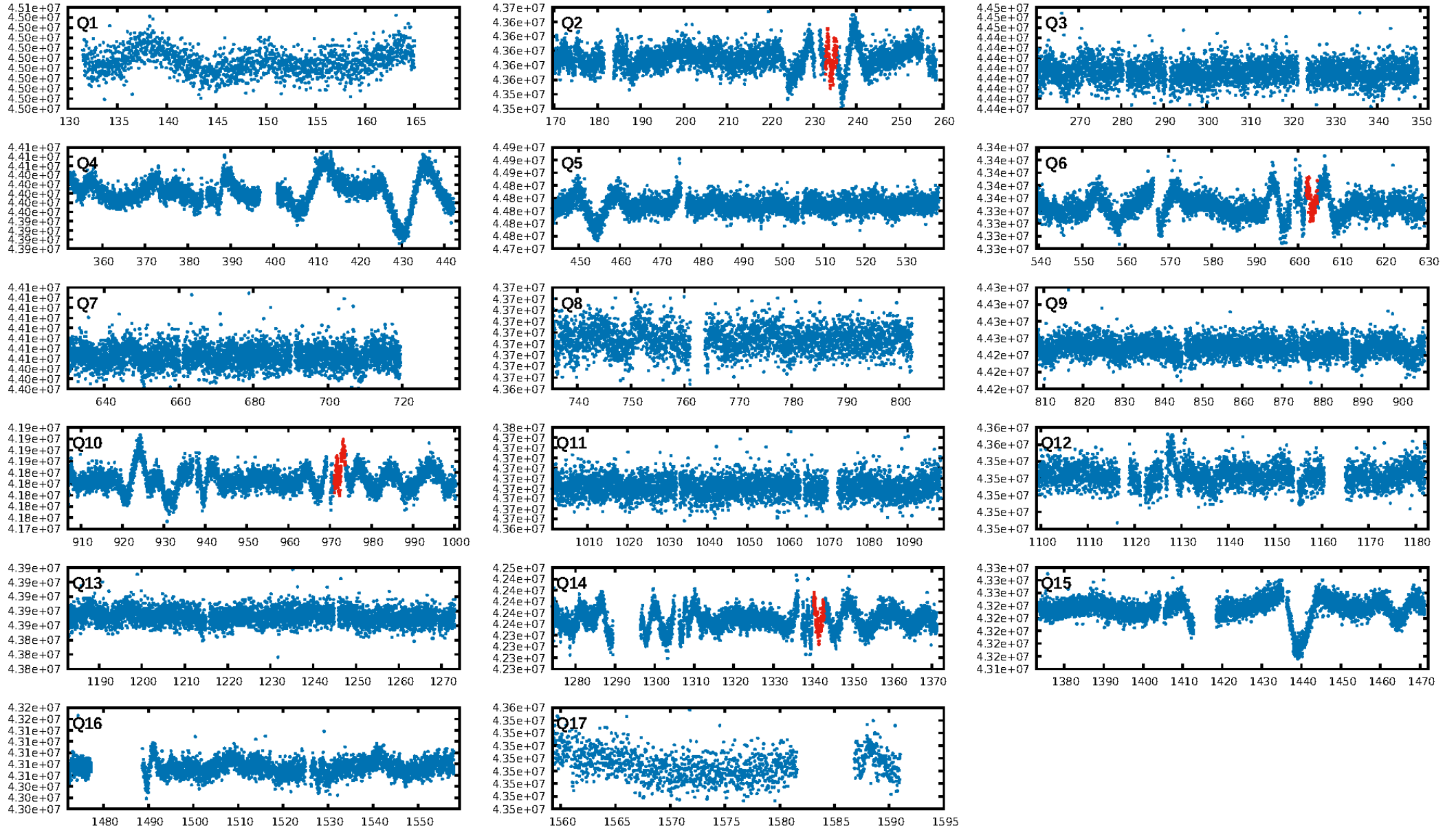
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.4%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 2.47e-12
RollingBand-fgt: 0.25 [1/4]
GhostDiagnostic-chr: 3.431
Centroid-sig: 0.4%
Centroid-so: 3.477 arcsec [2.19σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [2/2]

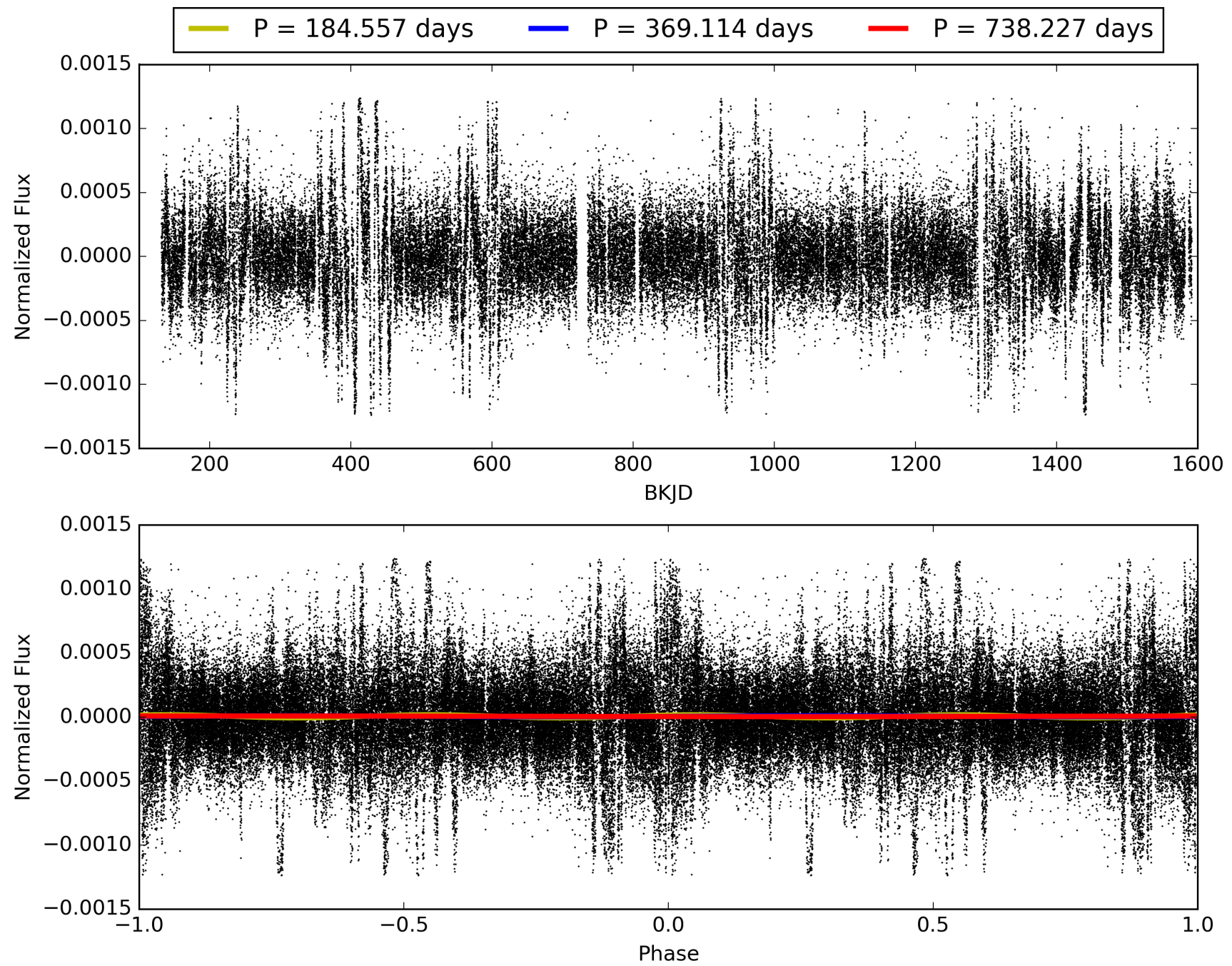
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:15:34 Z

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

TCE 008176353-01, PDC Light Curves

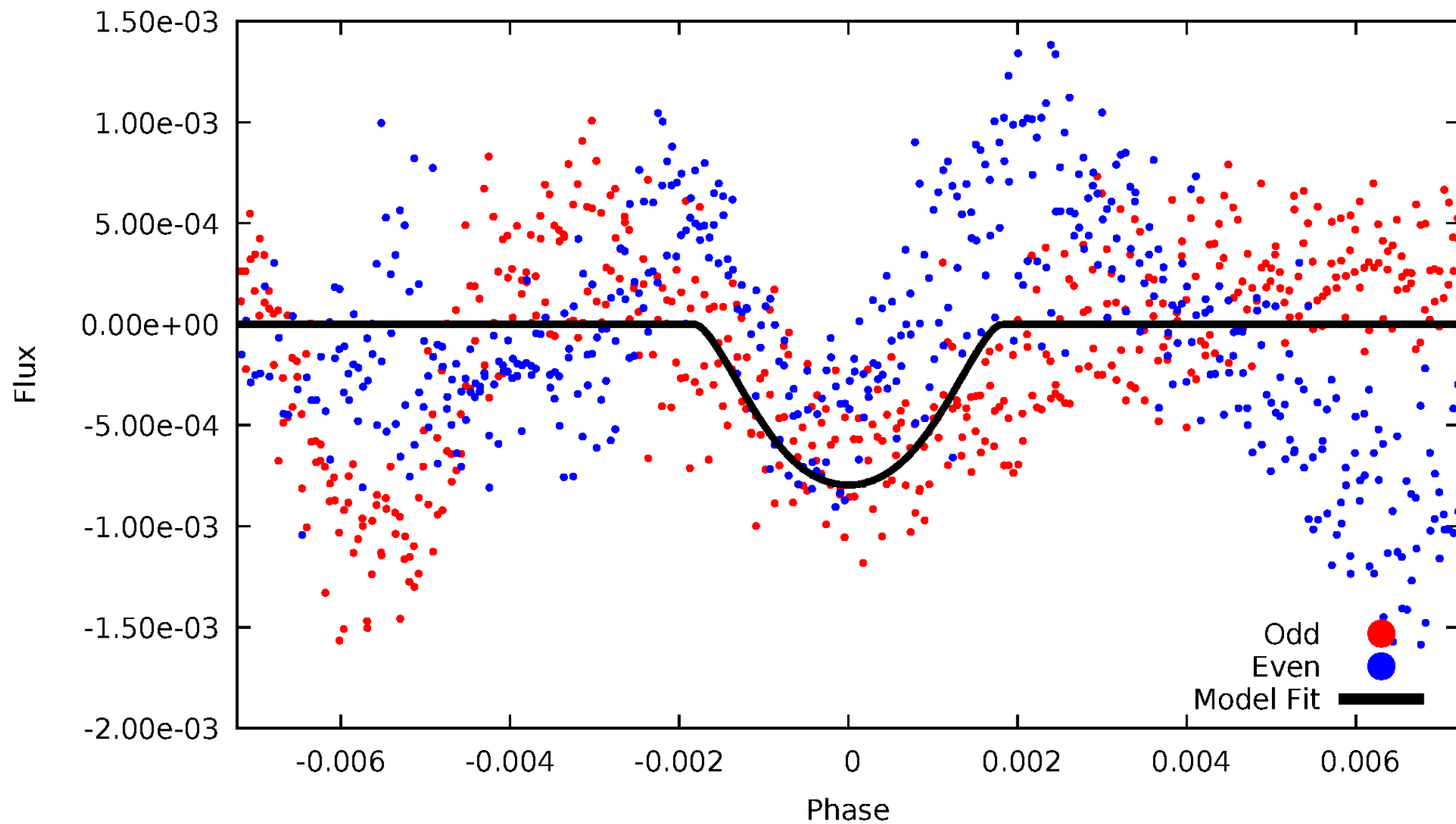


TCE 008176353-01



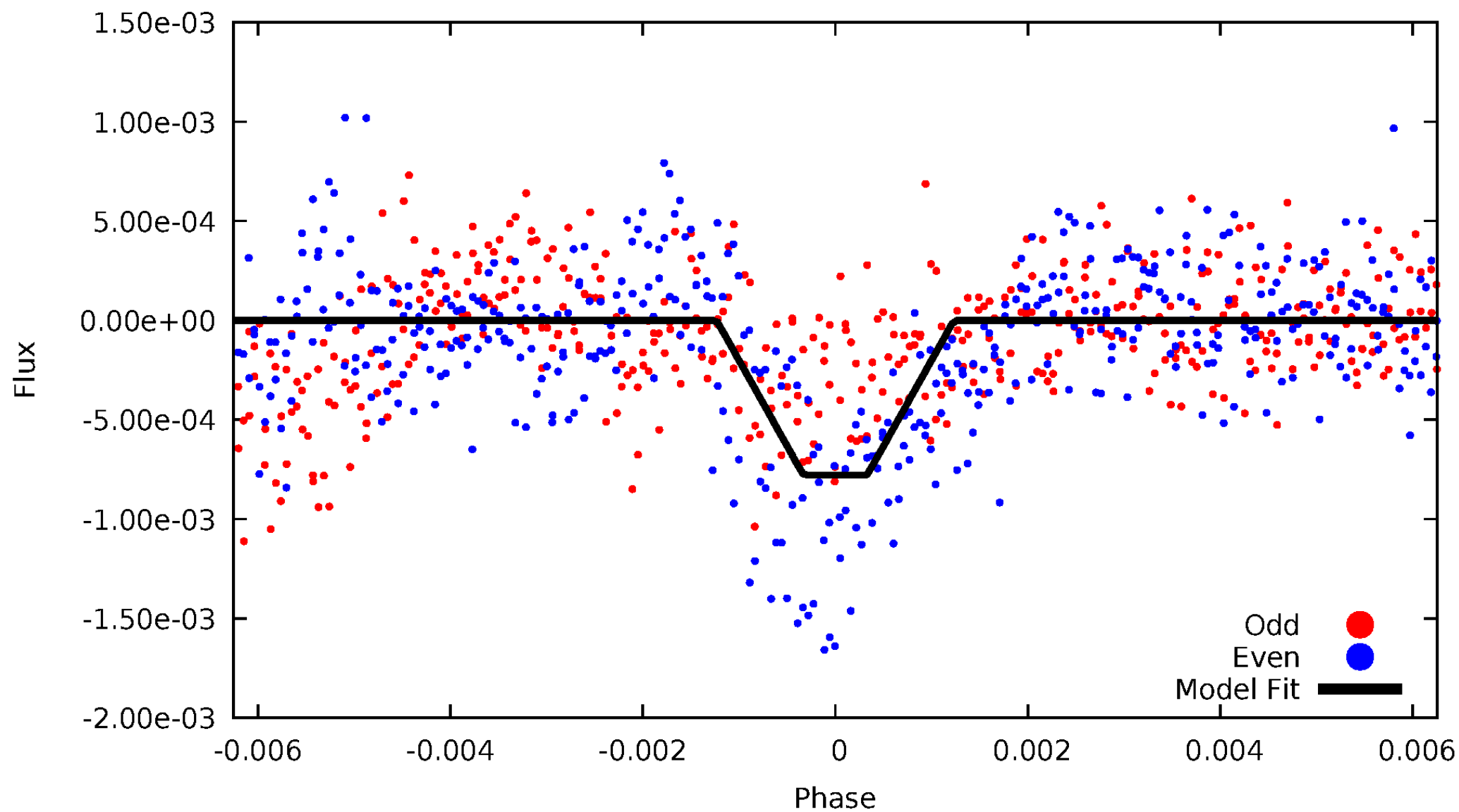
DV Odd/Even

TCE 008176353-01



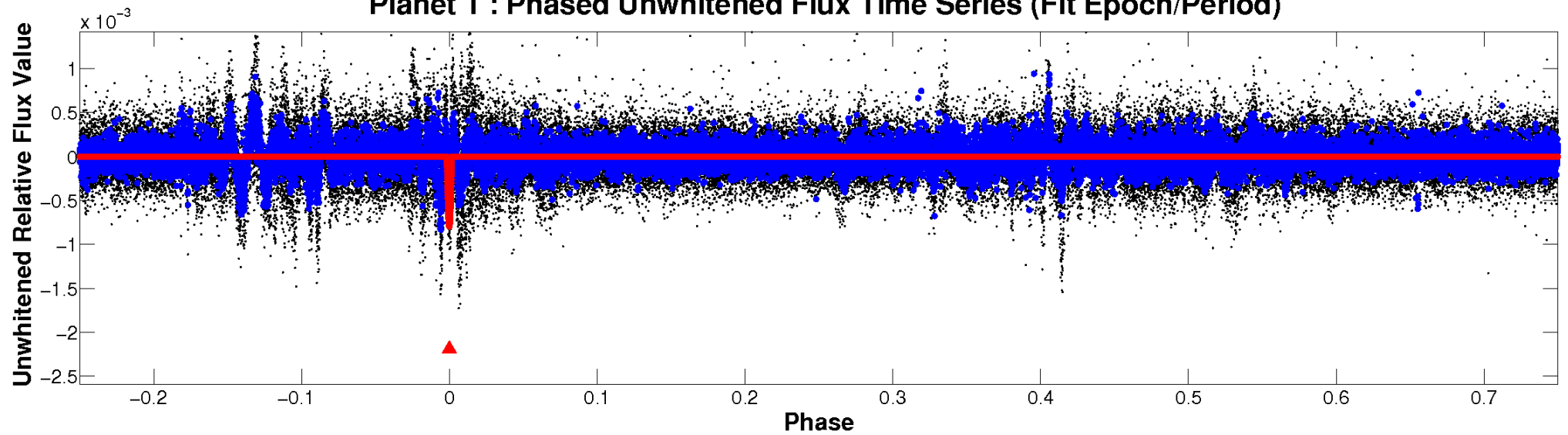
ALT Odd/Even

TCE 008176353-01

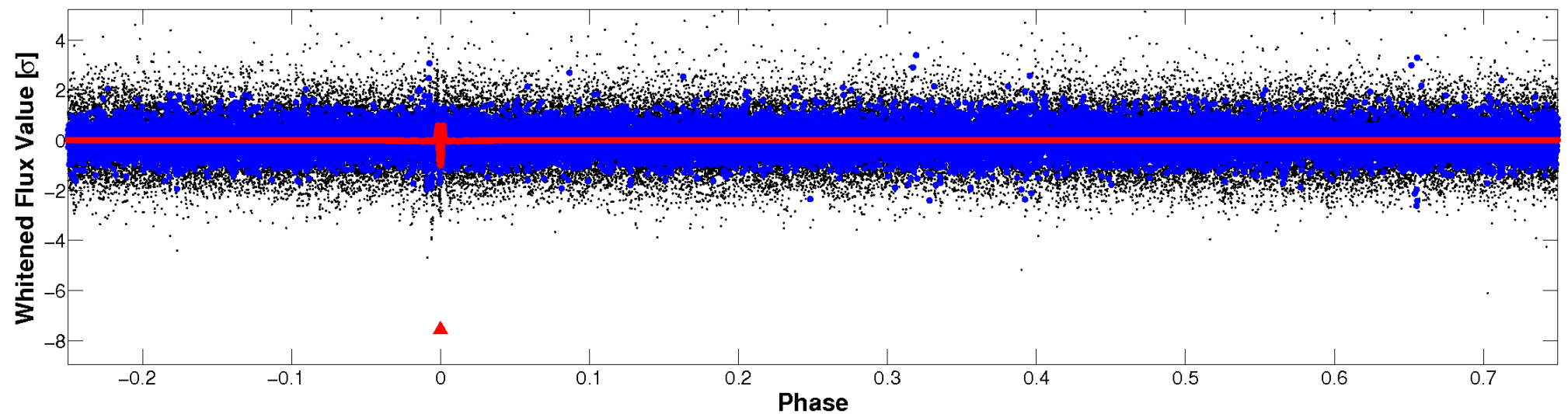


Non-Whitened Vs. Whitened Light Curve

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

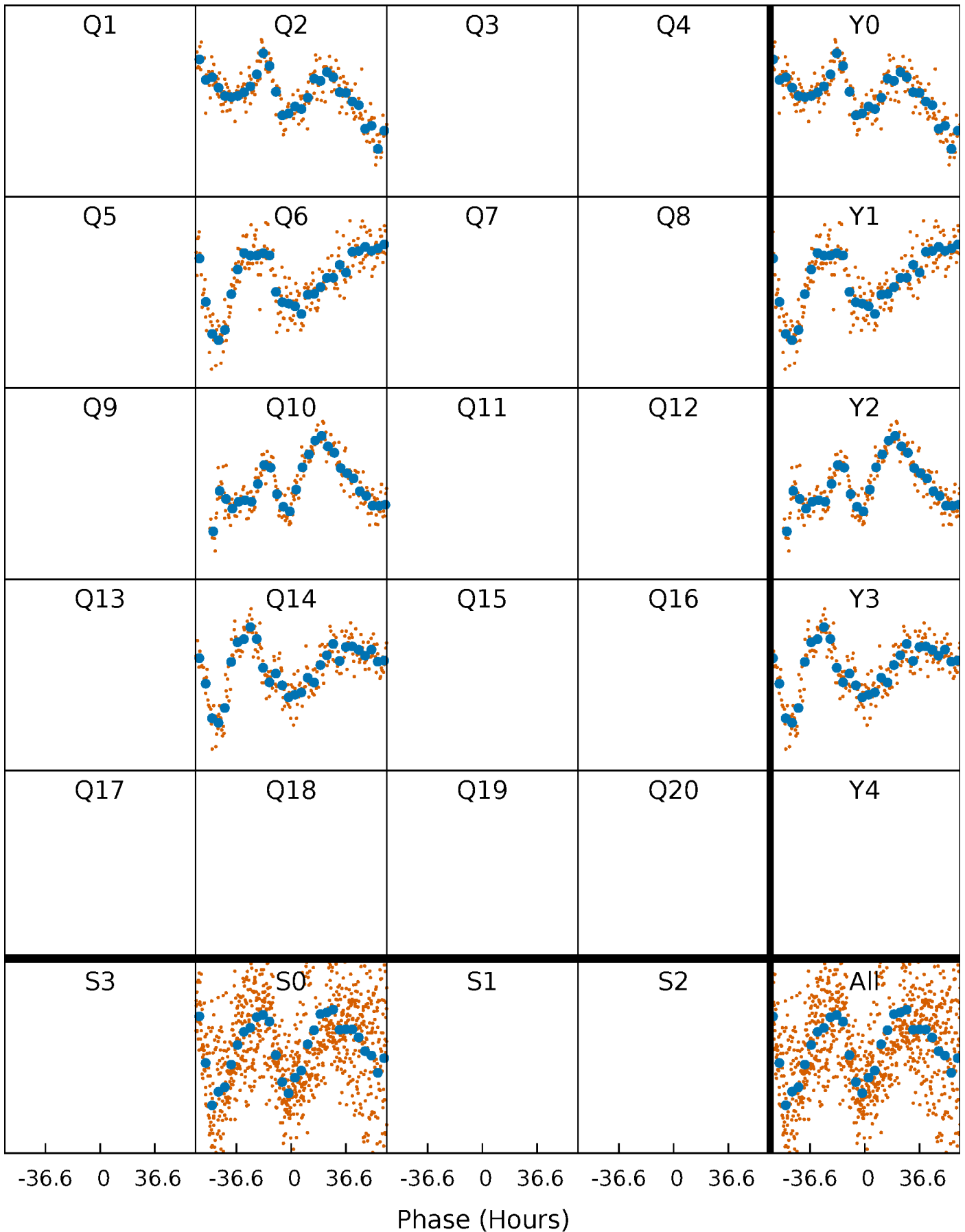


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



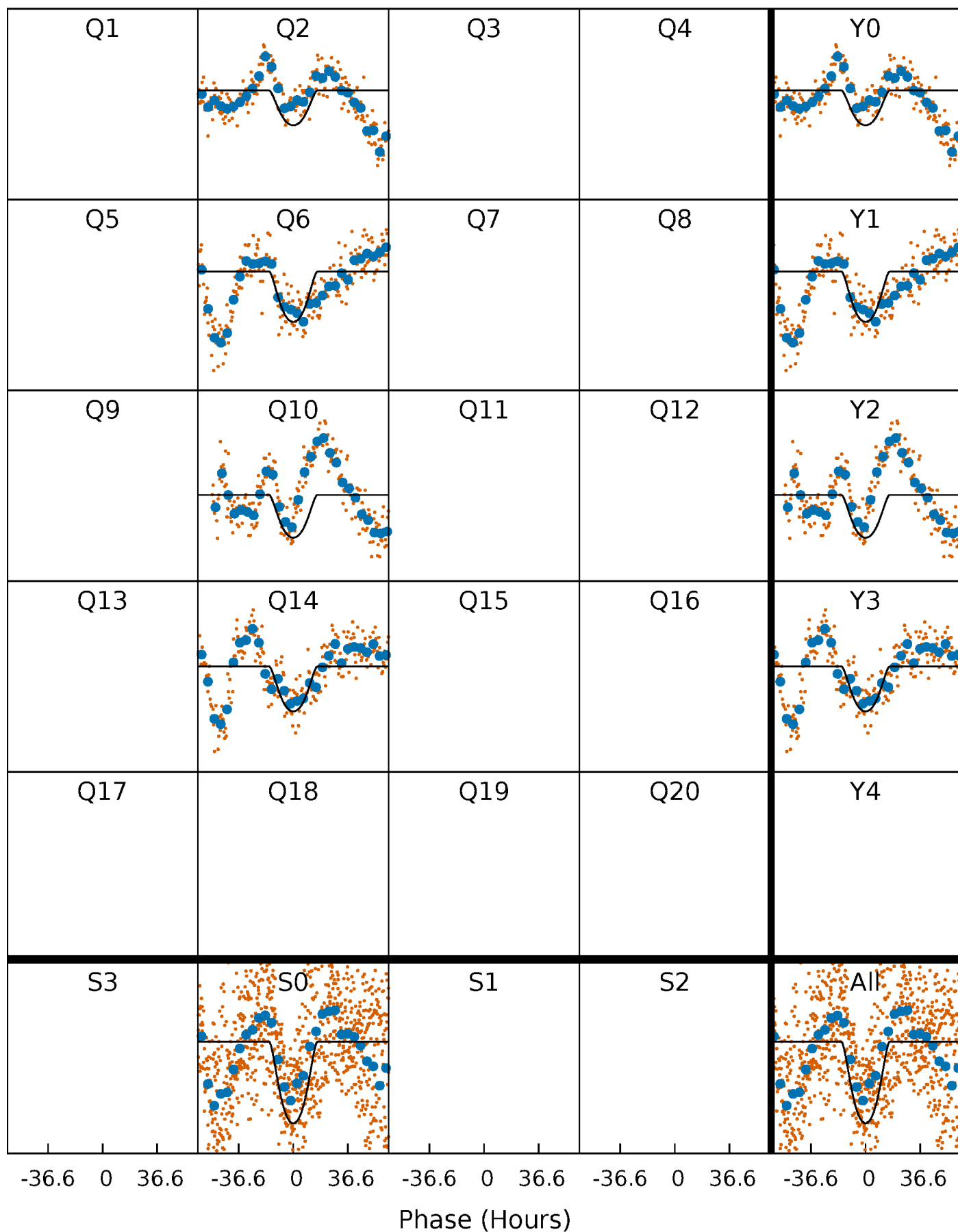
PDC Quarter-Phased Transit Curves

TCE 008176353-01 P=369.113557 Days $T_0=234.124998$ (BKJD)



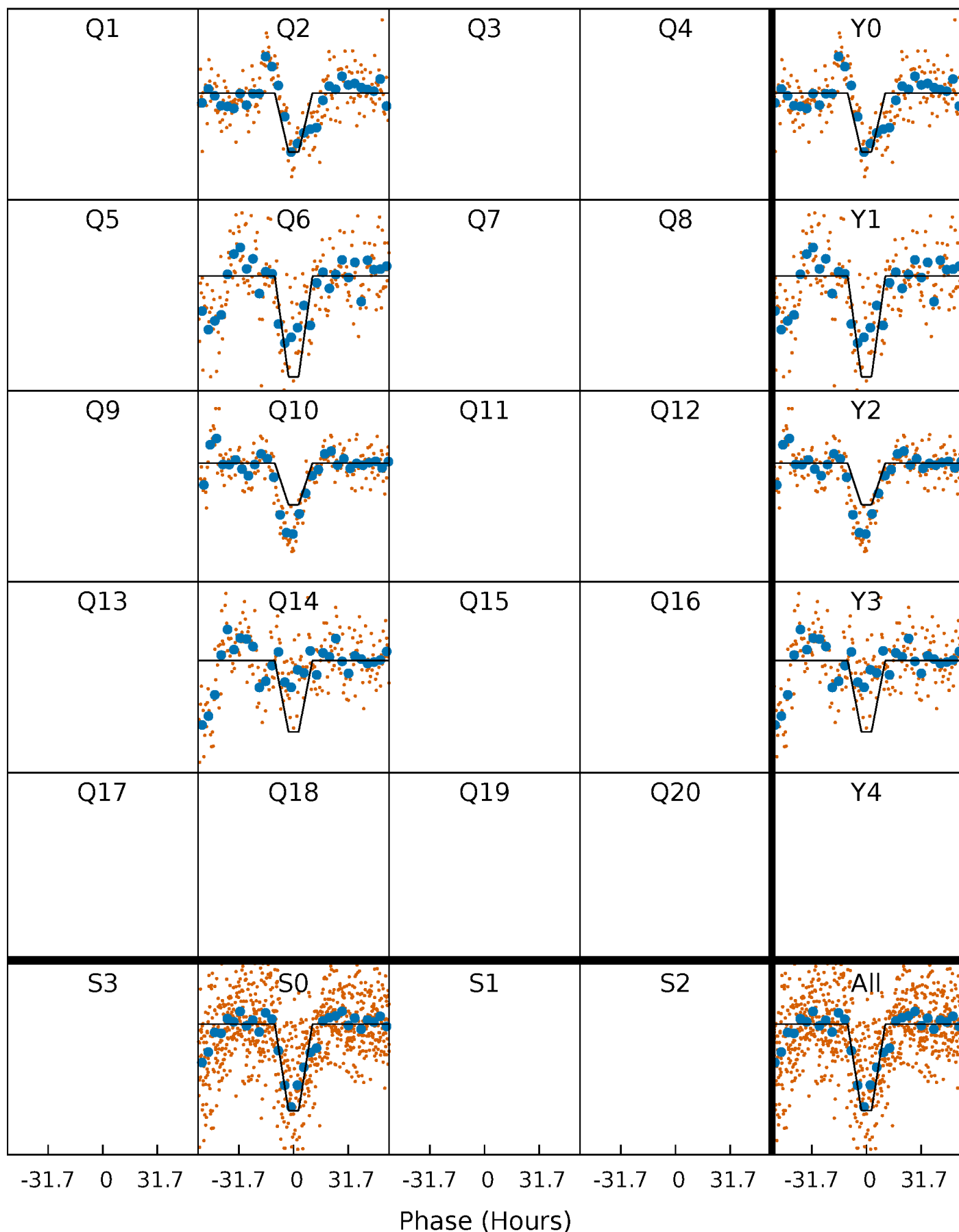
DV Quarter-Phased Transit Curves

TCE 008176353-01 P=369.113557 Days $T_0=234.124998$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

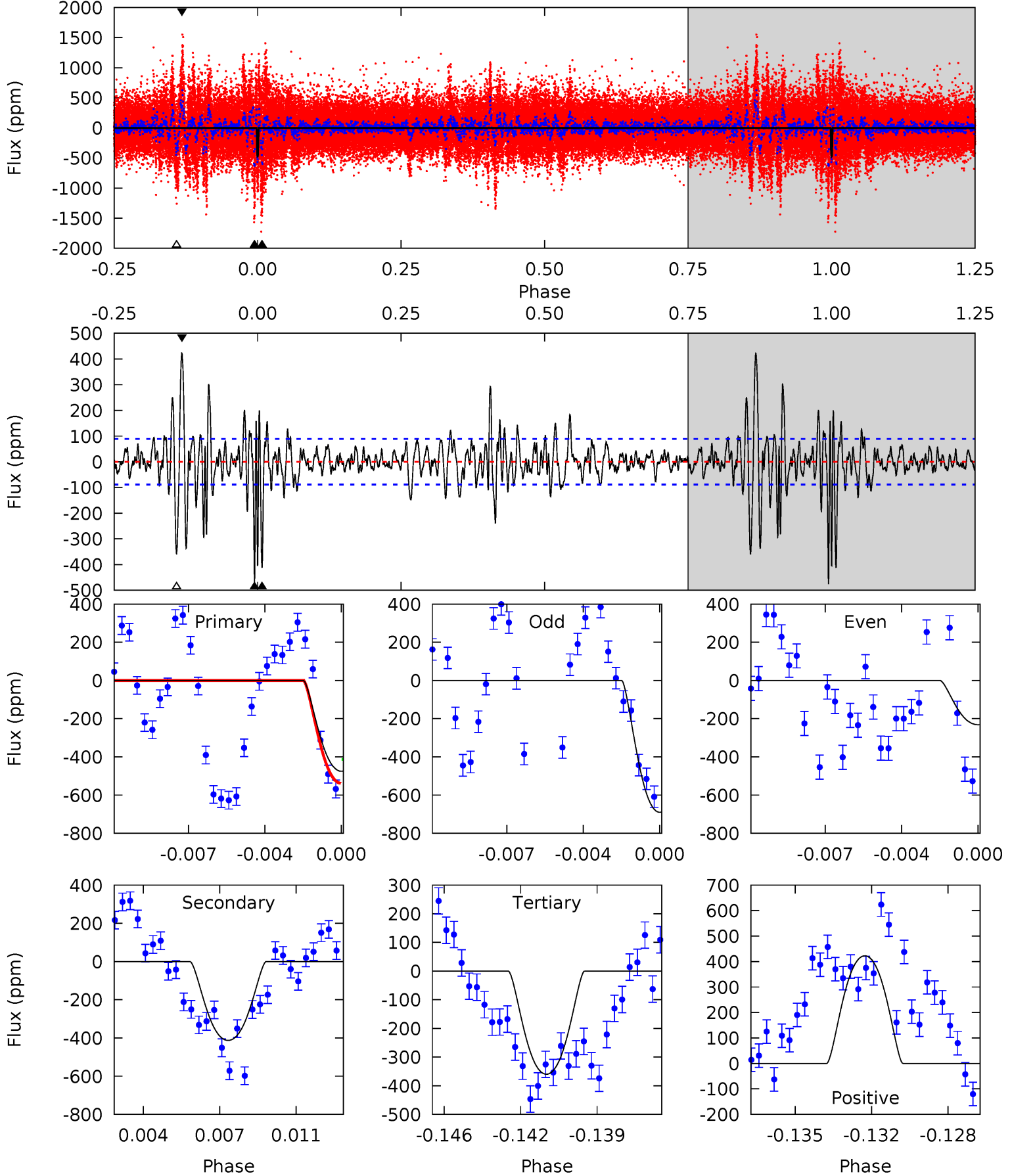
TCE 008176353-01 P=369.193562 Days $T_0=233.950770$ (BKJD)



DV Model-Shift Uniqueness Test

008176353-01, P = 369.113557 Days, E = 234.124998 Days

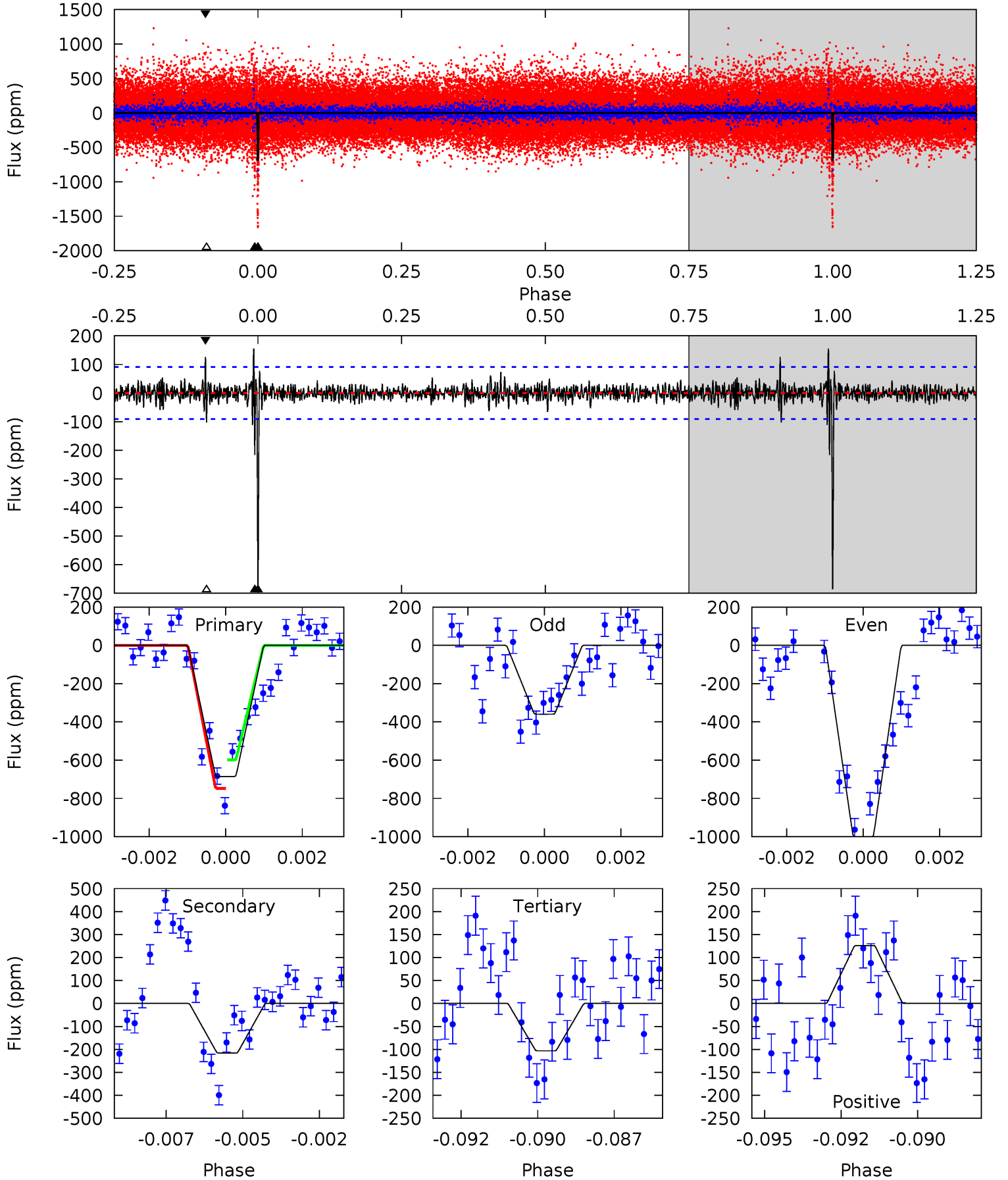
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 28.0 | 24.3 | 21.2 | 24.9 | 5.22 | 2.91 | 4.42 | 6.80 | 3.12 | 3.11 | -0.58 | 13.4 | 1.00 | 0.47 | 3.69 |



Alt Model-Shift Uniqueness Test

008176353-01, P = 369.193562 Days, E = 233.950770 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 39.8 | 12.5 | 5.98 | 7.32 | 5.29 | 3.02 | 1.08 | 33.8 | 32.4 | 6.55 | 5.21 | 18.8 | 1.14 | 0.18 | 4.33 |



Stellar Parameters For KIC 008176353

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|-------------------------------------------|
| | 6074^{+182}_{-182} | $4.480^{+0.067}_{-0.202}$ | $-0.340^{+0.300}_{-0.300}$ | $0.933^{+0.268}_{-0.096}$ | $0.957^{+0.119}_{-0.119}$ | $1.661^{+0.566}_{-0.819}$ |
| | +3%/-3% | +1%/-5% | +88%/-88% | +29%/-10% | +12%/-12% | +34%/-49% |
| 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 008176353-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|------------------------|-------------------|----------------------|--------------------------|
| DV | -413 ± 17 | $3.69^{+1.10}_{-1.03}$ | 369^{+24}_{-18} | 4768^{+759}_{-456} | 16260^{+15099}_{-6684} |
| Alt. | -216 ± 17 | $2.93^{+1.11}_{-1.04}$ | 369^{+26}_{-18} | 4583^{+914}_{-500} | 13422^{+18858}_{-6401} |

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

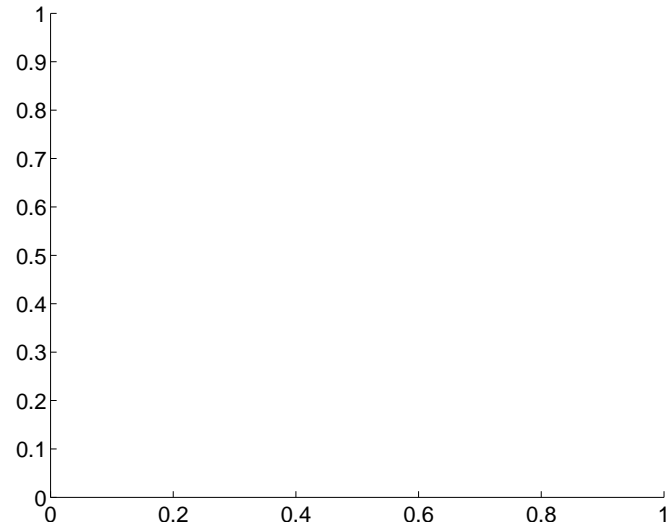
Supplemental centroid analysis for 008176353-01. Kepler magnitude: 14.39. Transit SNR 11.35

There are 0 quarters with good PRF difference image offsets

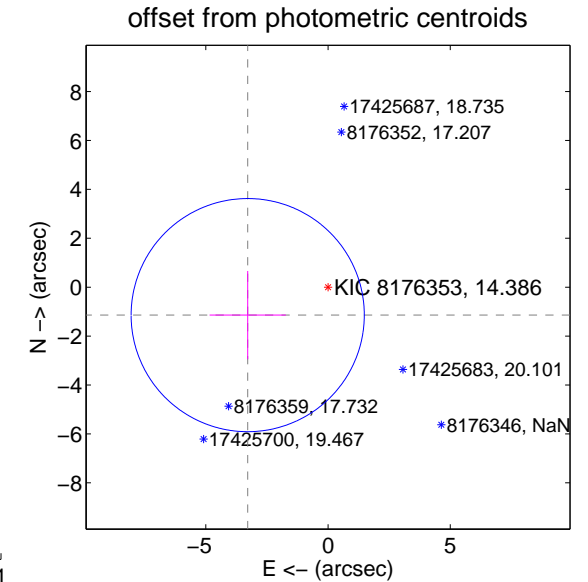
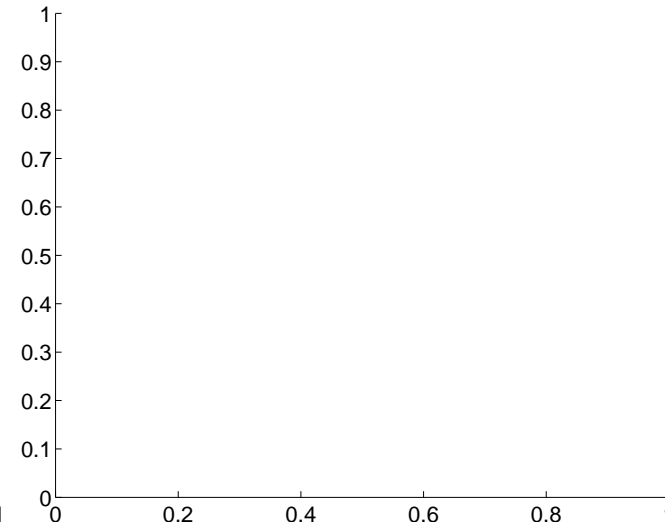
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|-----------------------------------------|--------------------|---------------------|-----------------|------------------|
| PRF-fit source offset from OOT | — | — | — | — |
| PRF-fit source offset from KIC position | — | — | — | — |
| photometric centroid source offset | 3.48 ± 1.59 | 2.19 | 3.28 ± 1.56 | -1.14 ± 1.81 |

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC

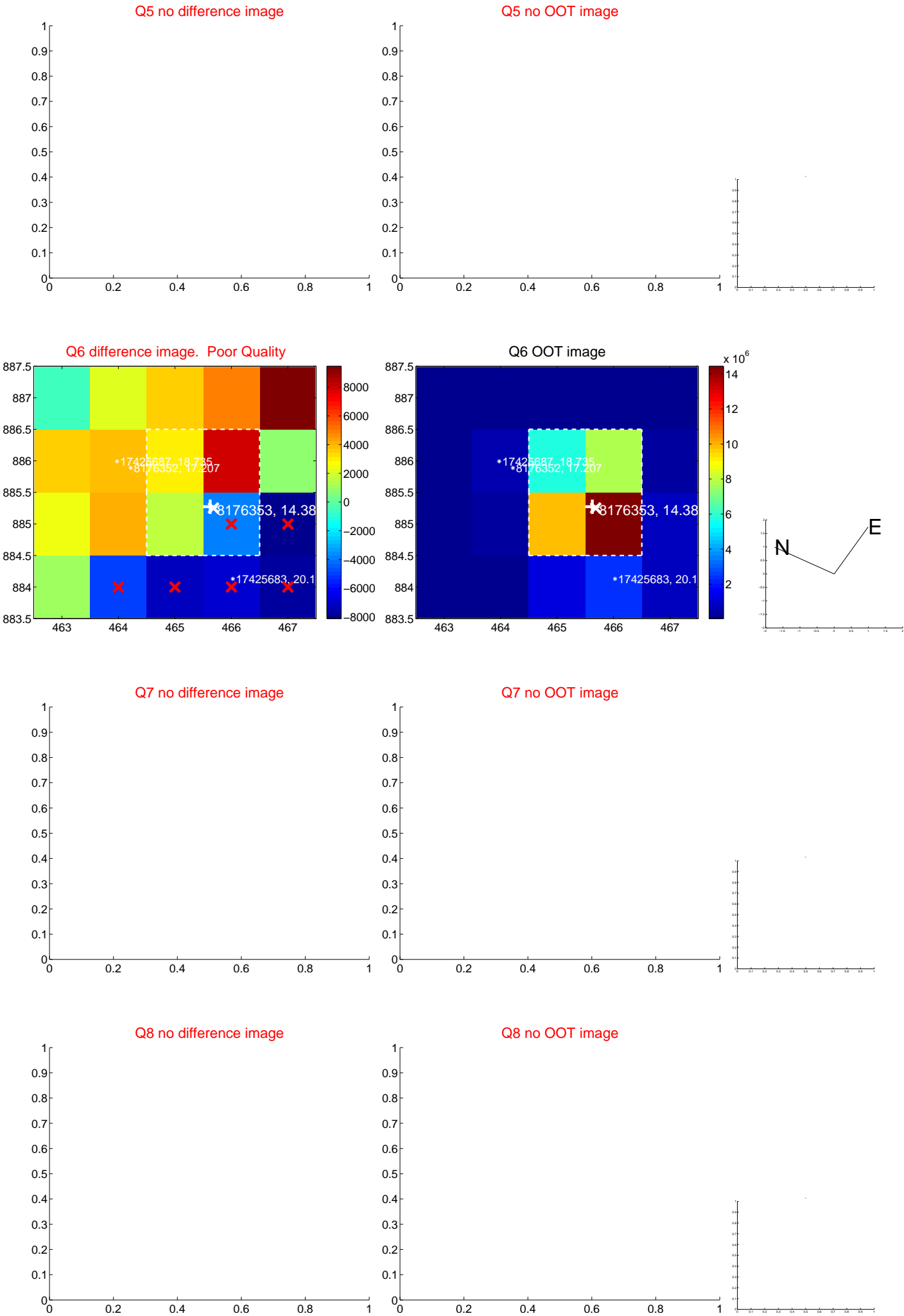


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



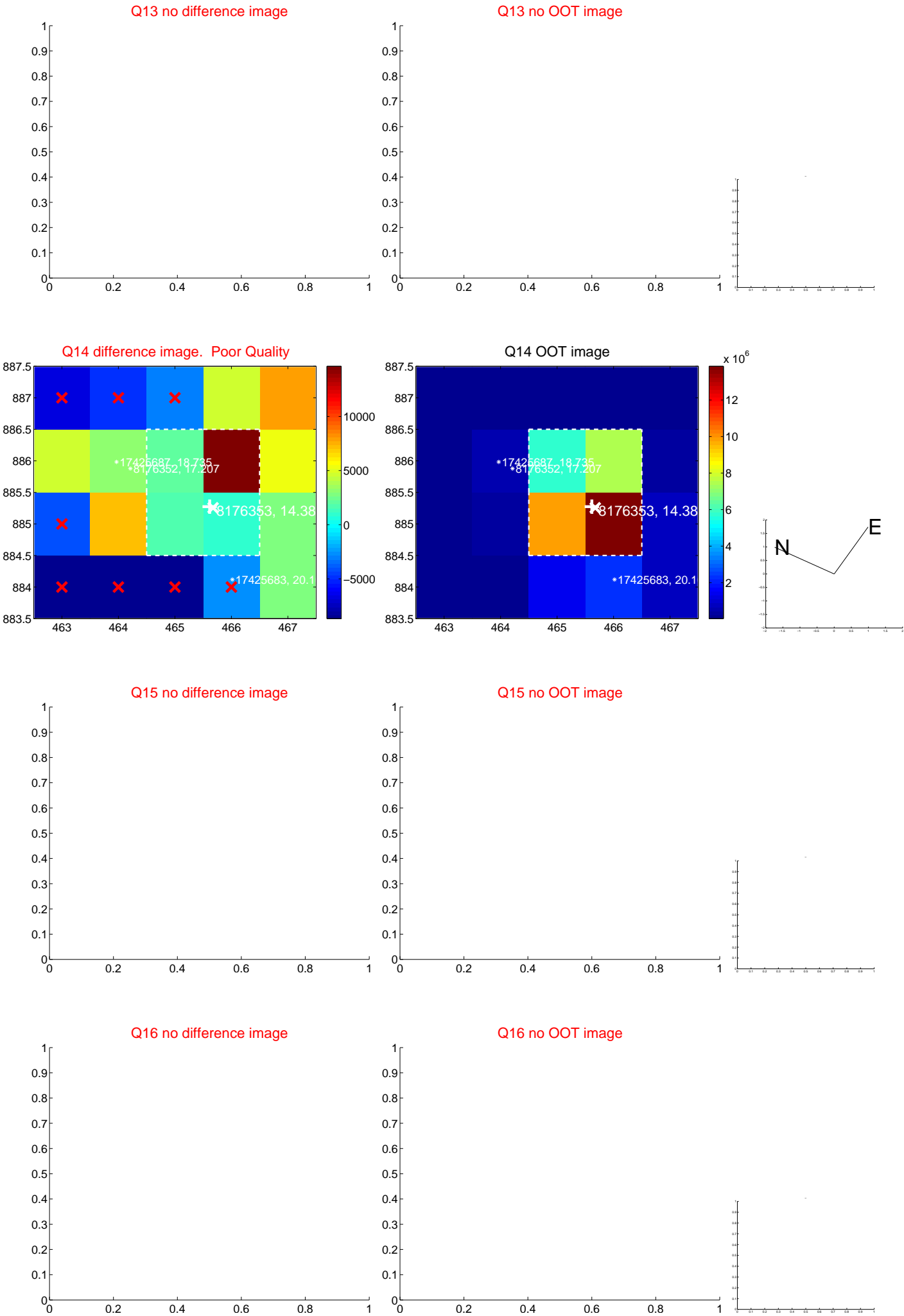
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



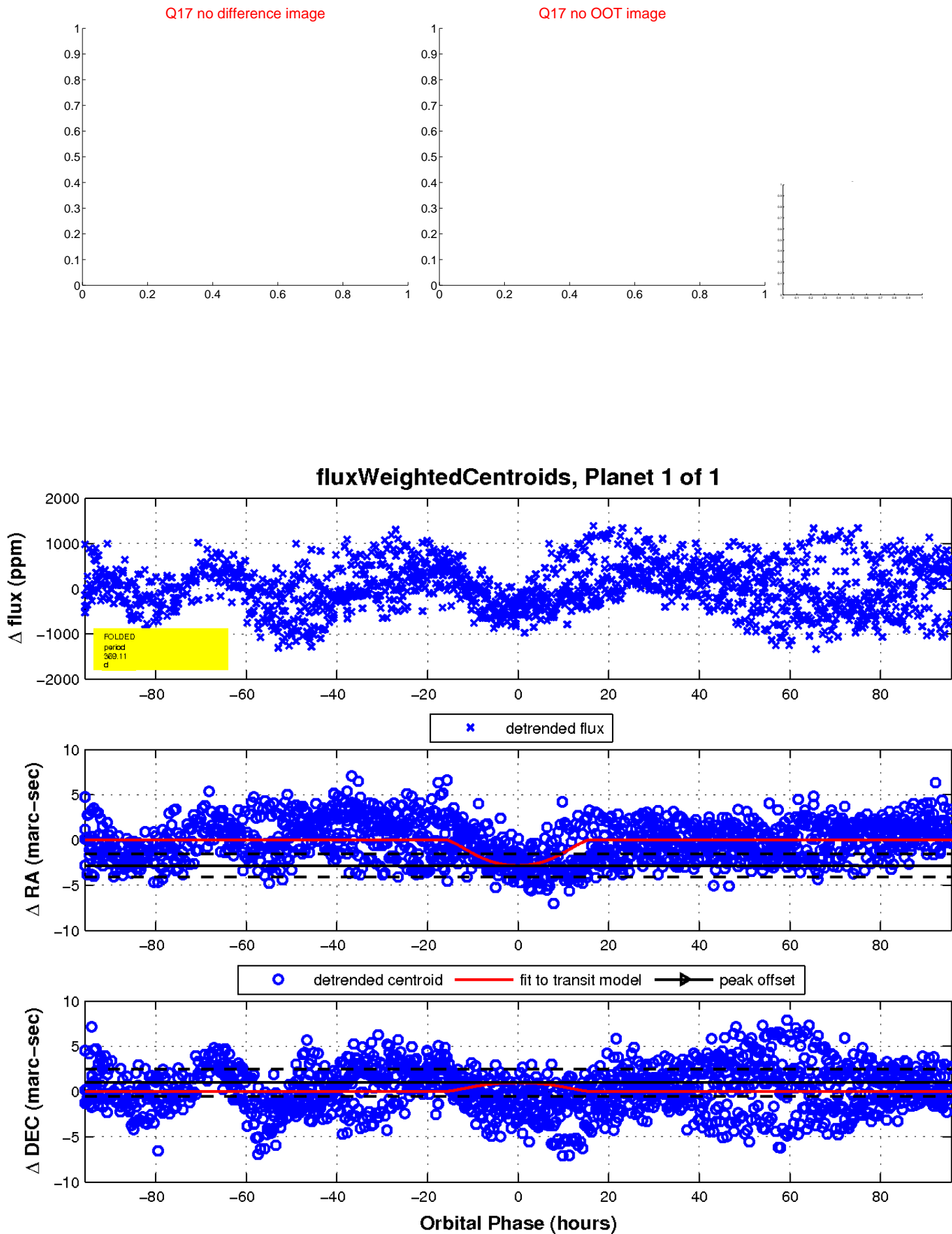
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

