

KIC 008092039

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|------|-----------------------------|-----------------|------------------------|------------------------|
| 008092039-01 | OBS | No | 374.366709 | 261.637544 | 416.0 | 41.677 | 8.6 | 10.8 | 0.85 | 5824 | 1.77 | 0.75 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008092039-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 1 | INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS—EPHEM_MATCH |

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.

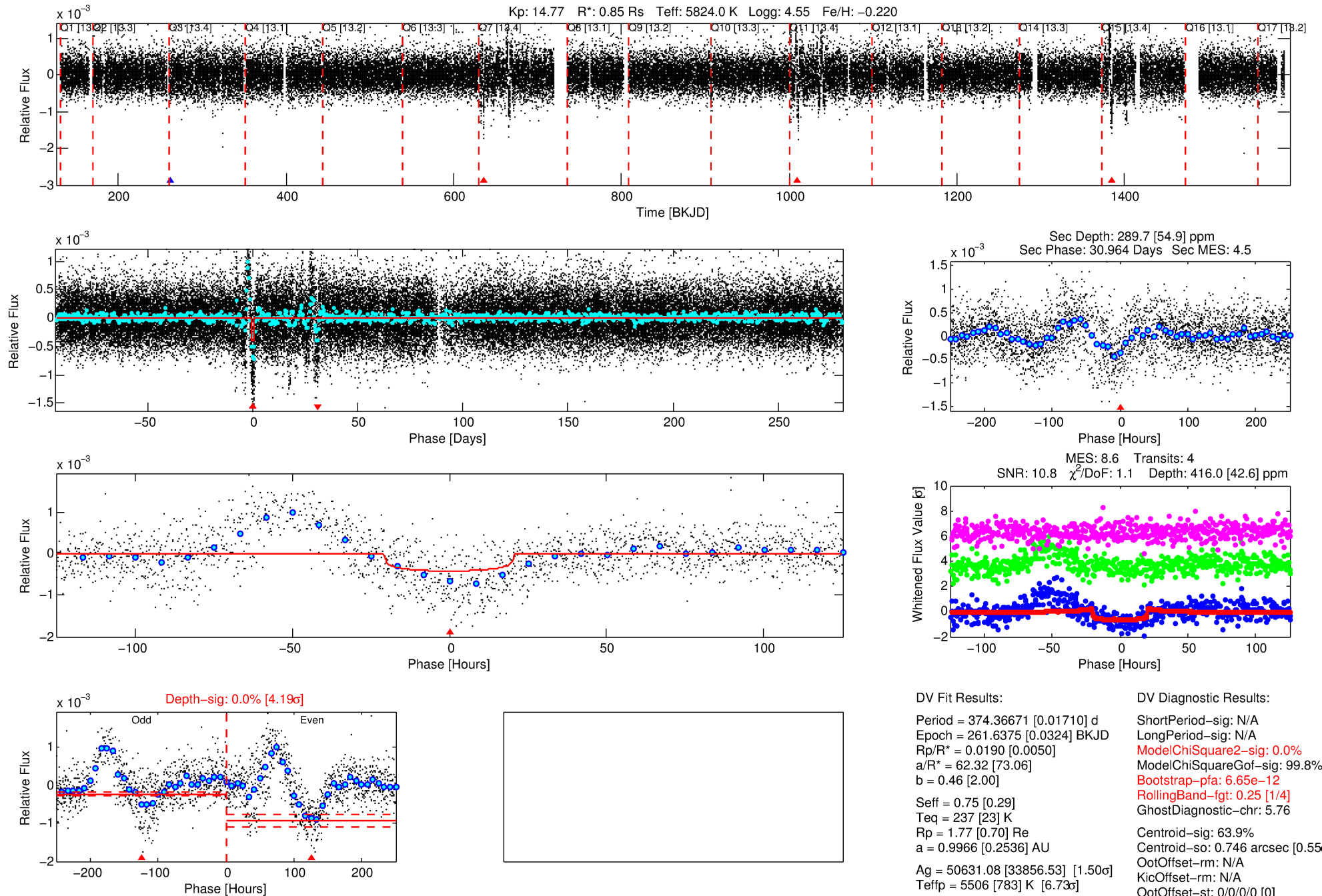
Ephemeris Match Information For 008092039-01

| TCE (1) | KIC | Parent (2) | Parent KIC | $P_1:P_2$ | Dist ($''$) | Δ Row | Δ Col | m_2 | m_1 | D_2/D_1 | Mechanism | Flag | σ_P | σ_T |
|--------------|---------|--------------|------------|-----------|---------------|--------------|--------------|-------|-------|-----------|-------------|------|------------|------------|
| 008092039-01 | 8092039 | 008229100-01 | 8229100 | 1:1 | 1194.3 | -300 | -3 | 15.19 | 14.76 | 1.54 | Col-Anomaly | 1 | 0.21 | 1.99 |

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 8092039 Candidate: 1 of 1 Period: 374.367 d



DV Fit Results:

Period = 374.36671 [0.01710] d
Epoch = 261.6375 [0.0324] BKJD
Rp/R* = 0.0190 [0.0050]
a/R* = 62.32 [73.06]
b = 0.46 [2.00]
Seff = 0.75 [0.29]
Teq = 237 [23] K
Rp = 1.77 [0.70] Re
a = 0.9966 [0.2536] AU
Ag = 50631.08 [33856.53] [1.50 σ]
Teffp = 5506 [783] K [6.73 σ]

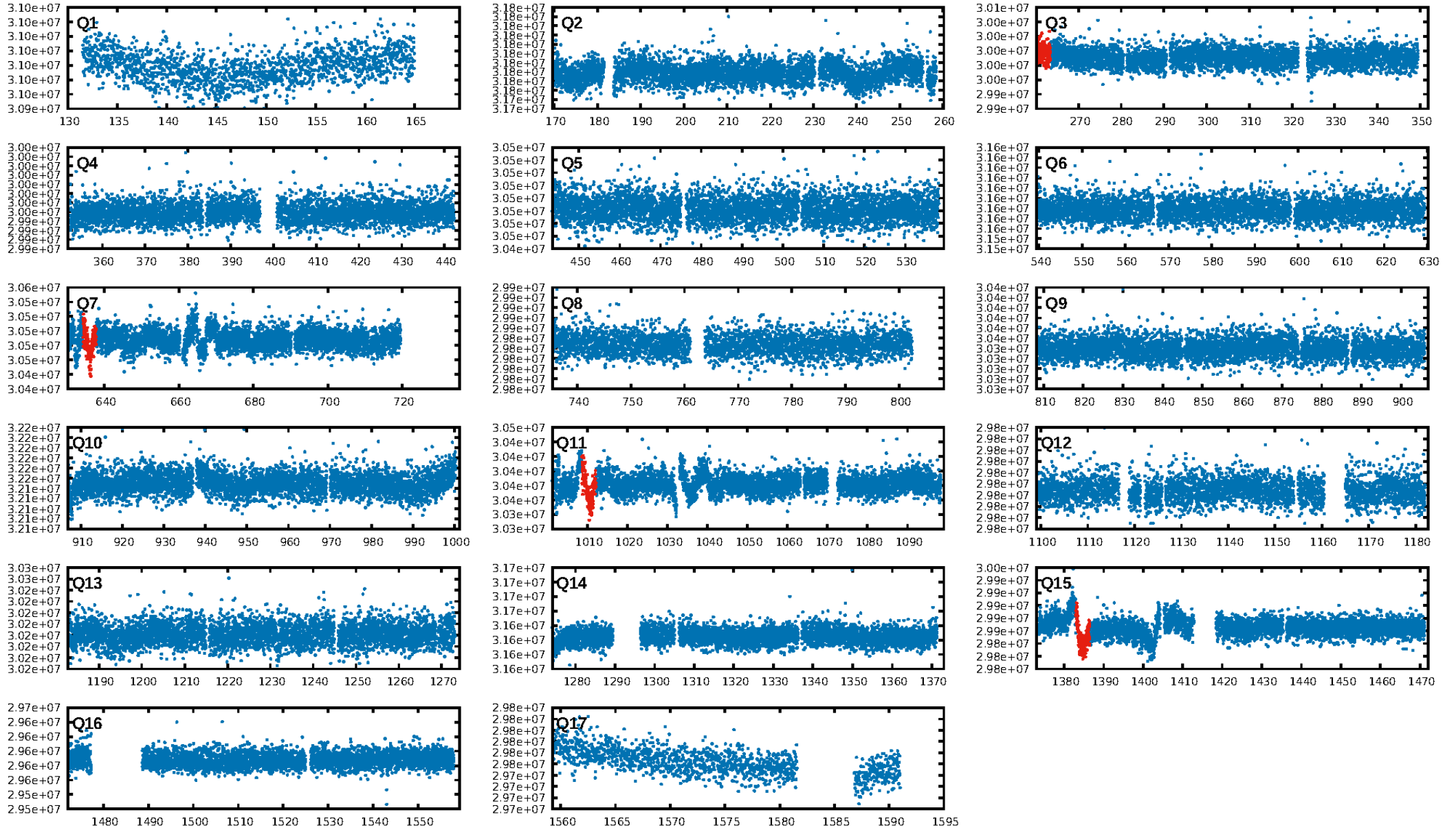
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 6.65e-12
RollingBand-fgt: 0.25 [1/4]
GhostDiagnostic-chr: 5.76
Centroid-sig: 63.9%
Centroid-so: 0.746 arcsec [0.55 σ]
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: N/A

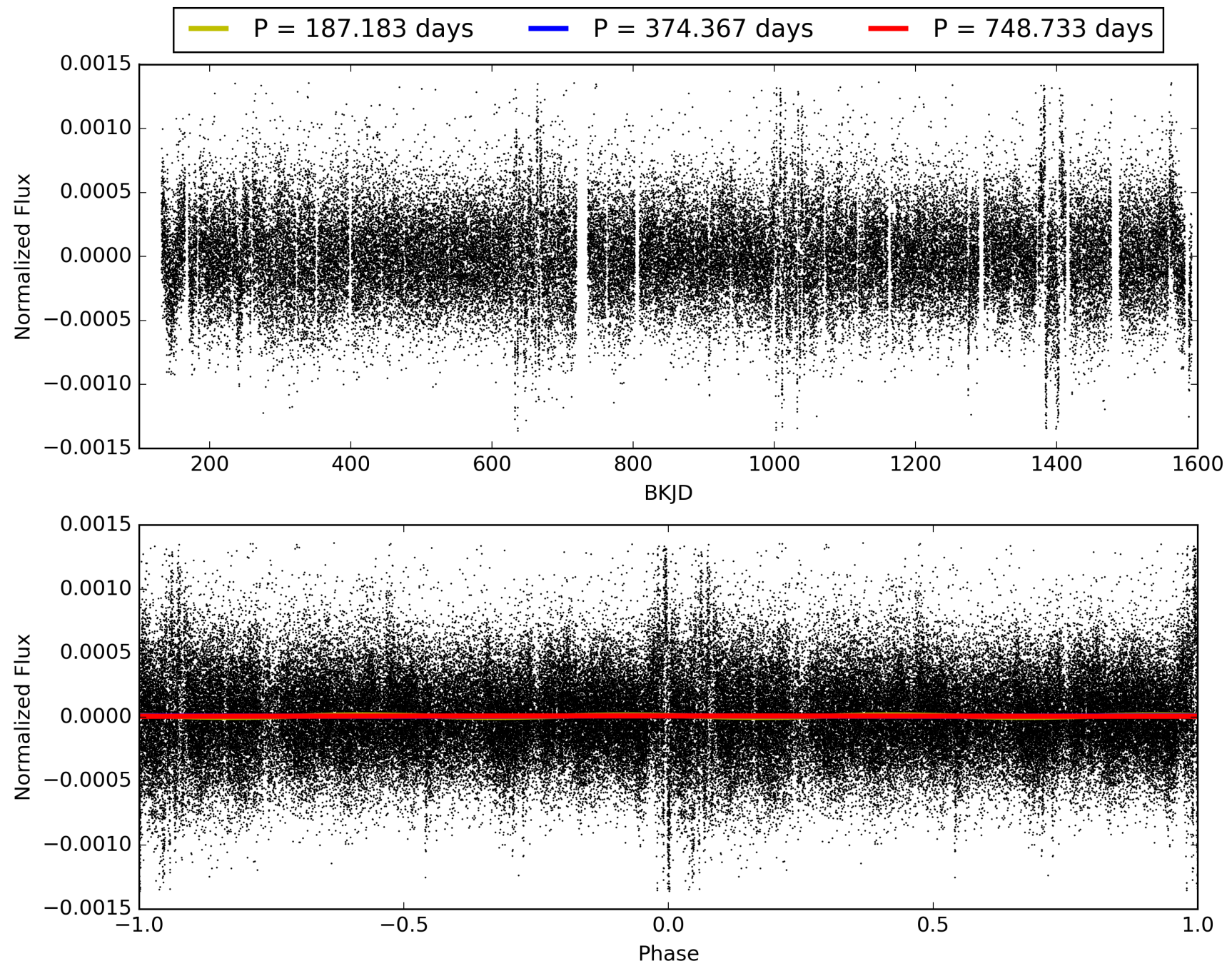
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:33:19 Z

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

TCE 008092039-01, PDC Light Curves

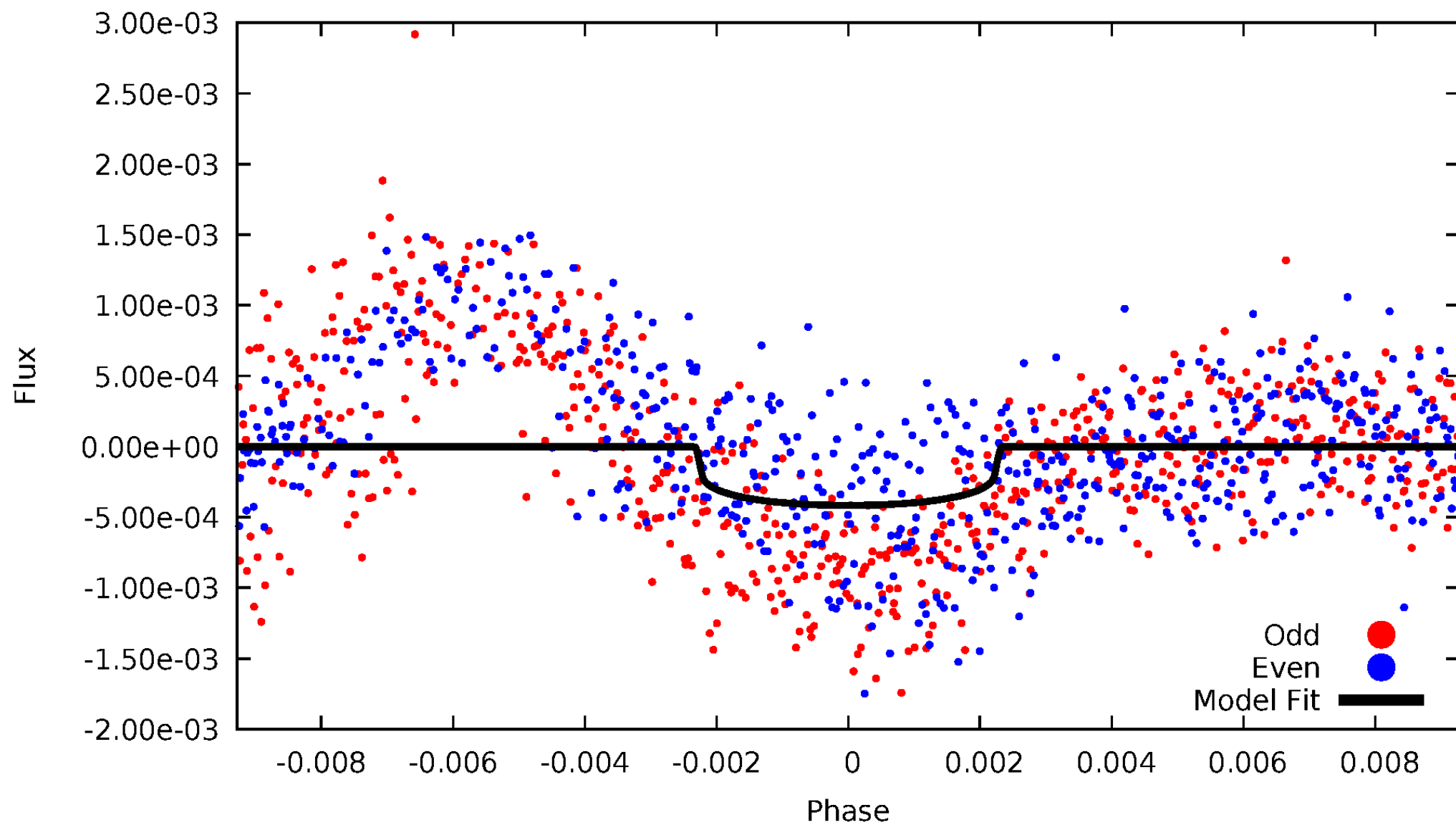


TCE 008092039-01



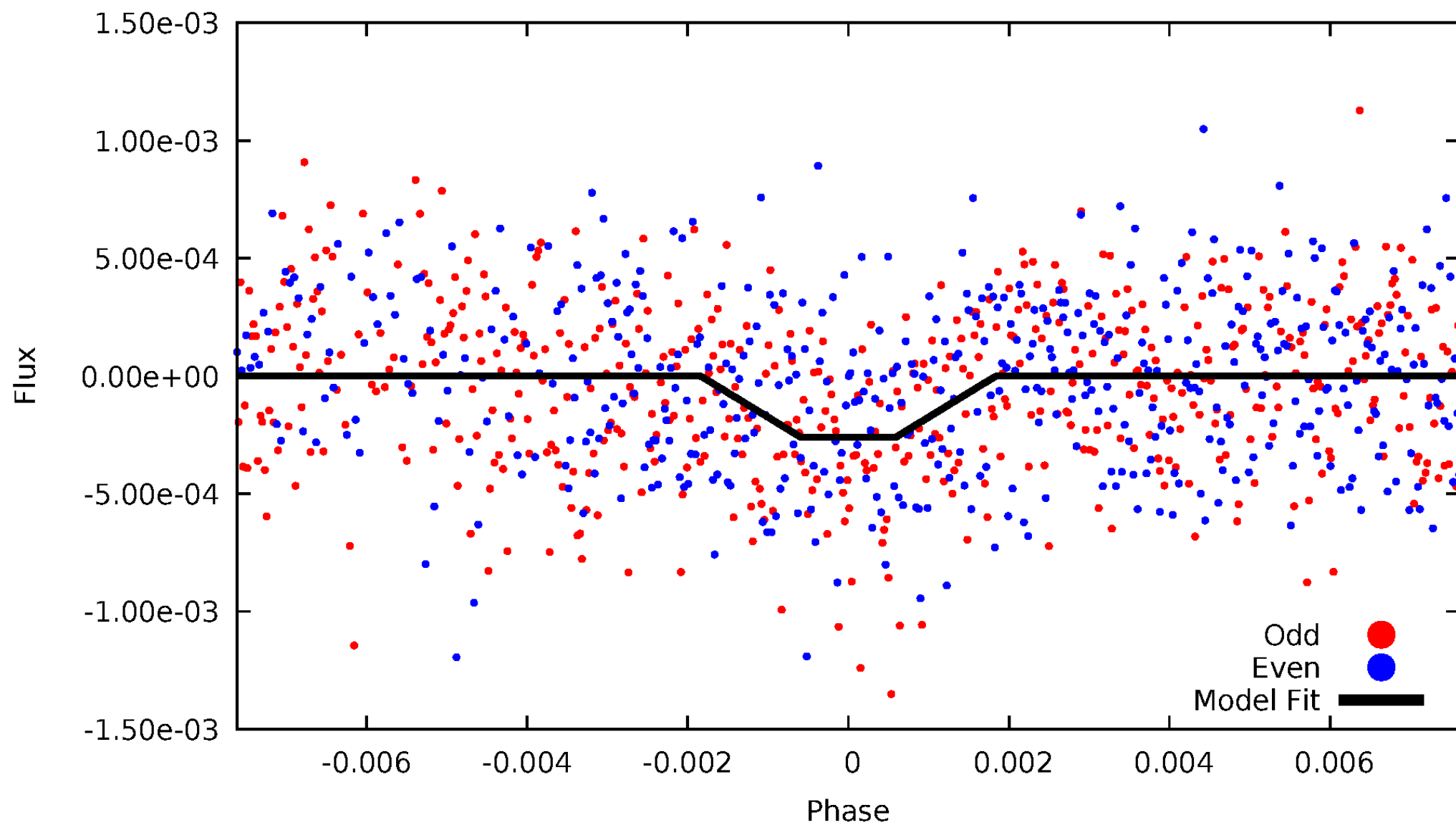
DV Odd/Even

TCE 008092039-01



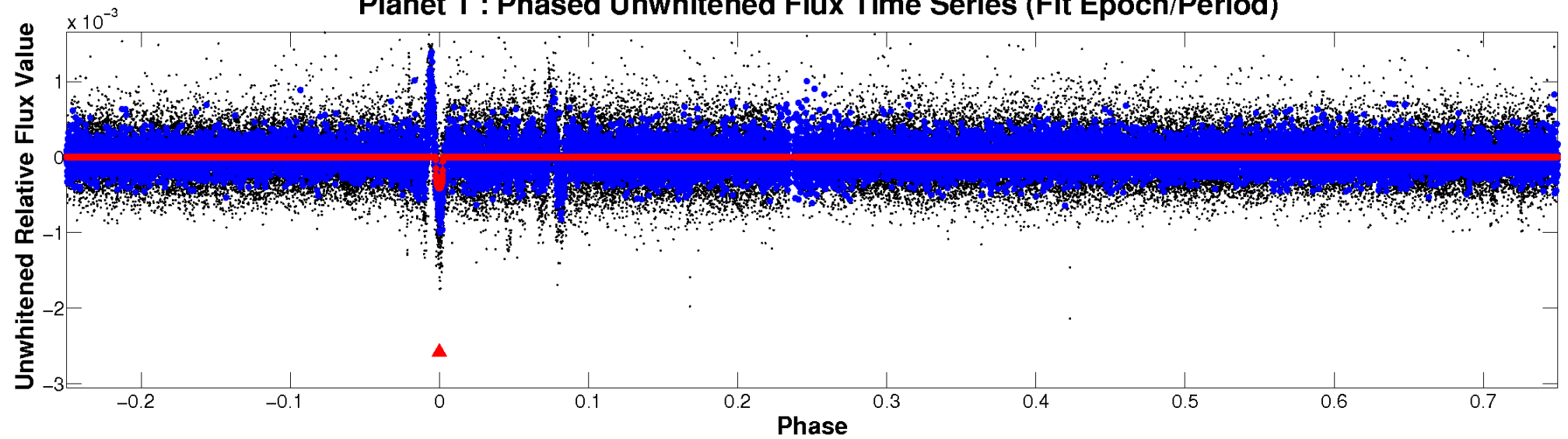
ALT Odd/Even

TCE 008092039-01

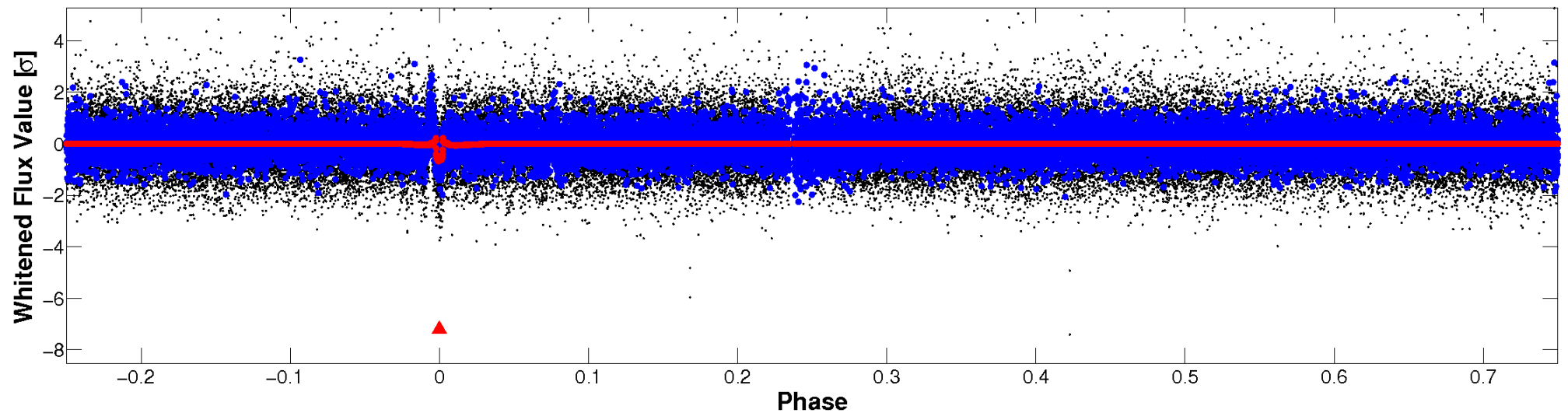


Non-Whitened Vs. Whitened Light Curve

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

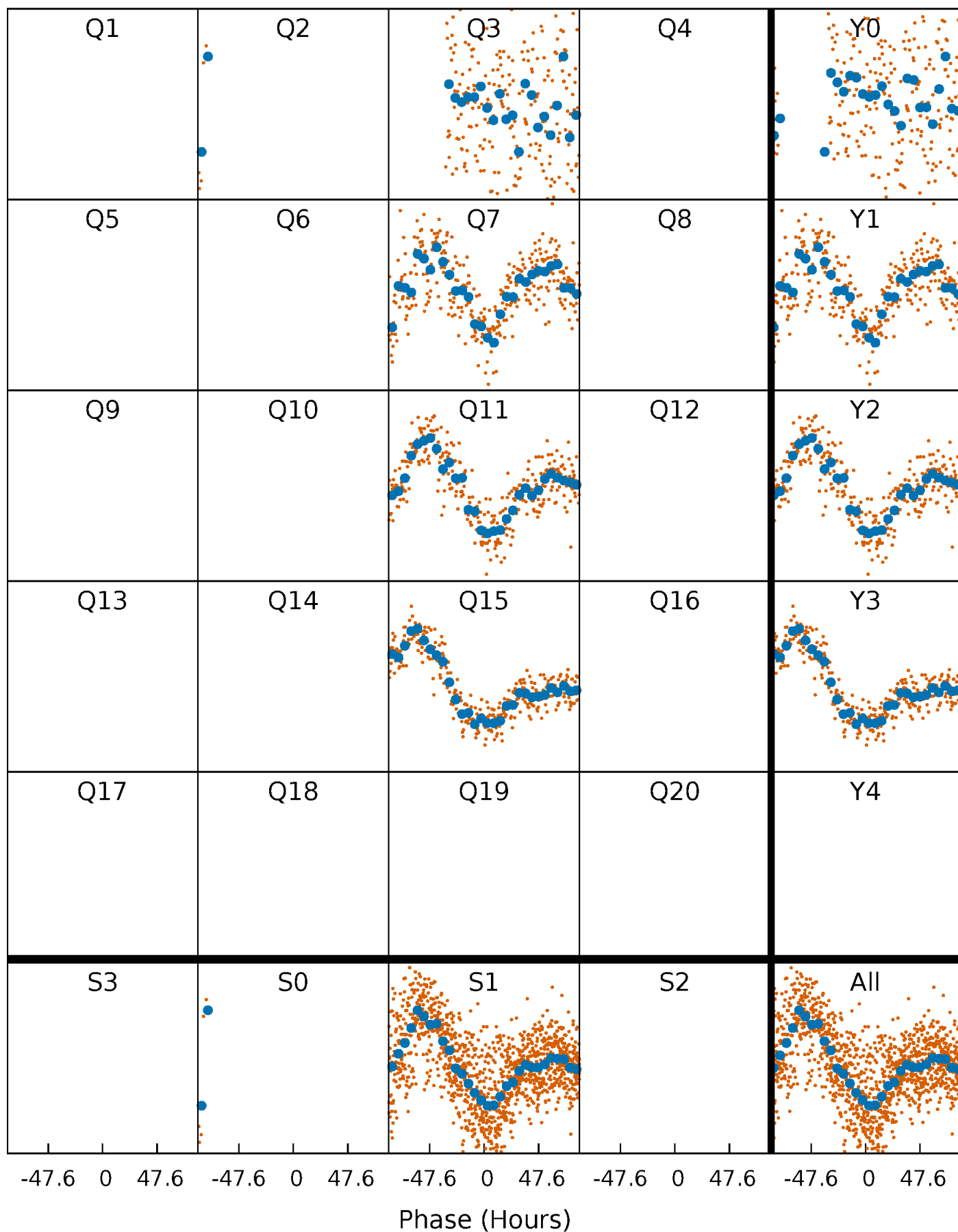


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



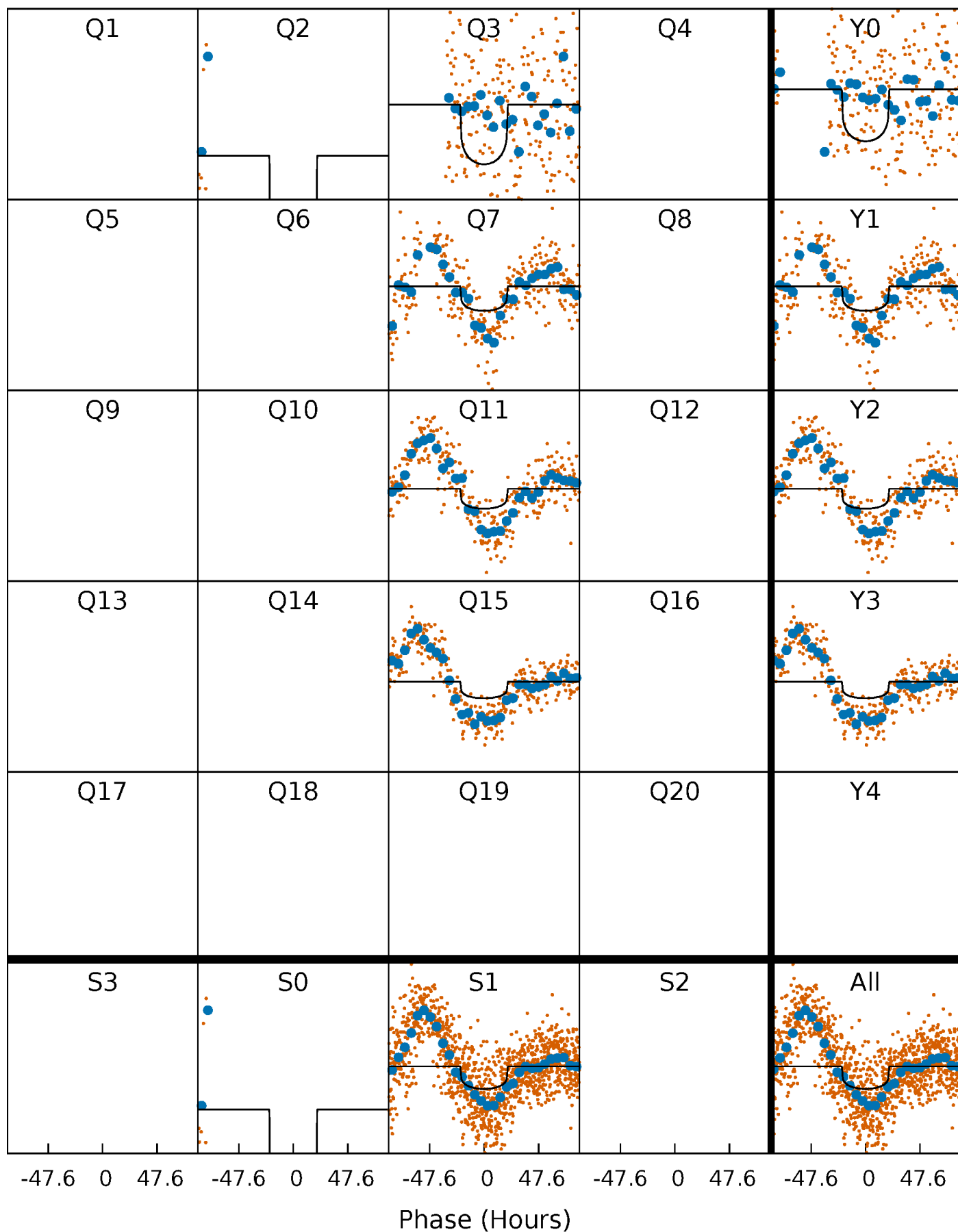
PDC Quarter-Phased Transit Curves

TCE 008092039-01 P=374.366709 Days $T_0=261.637544$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008092039-01 P=374.366709 Days $T_0=261.637544$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

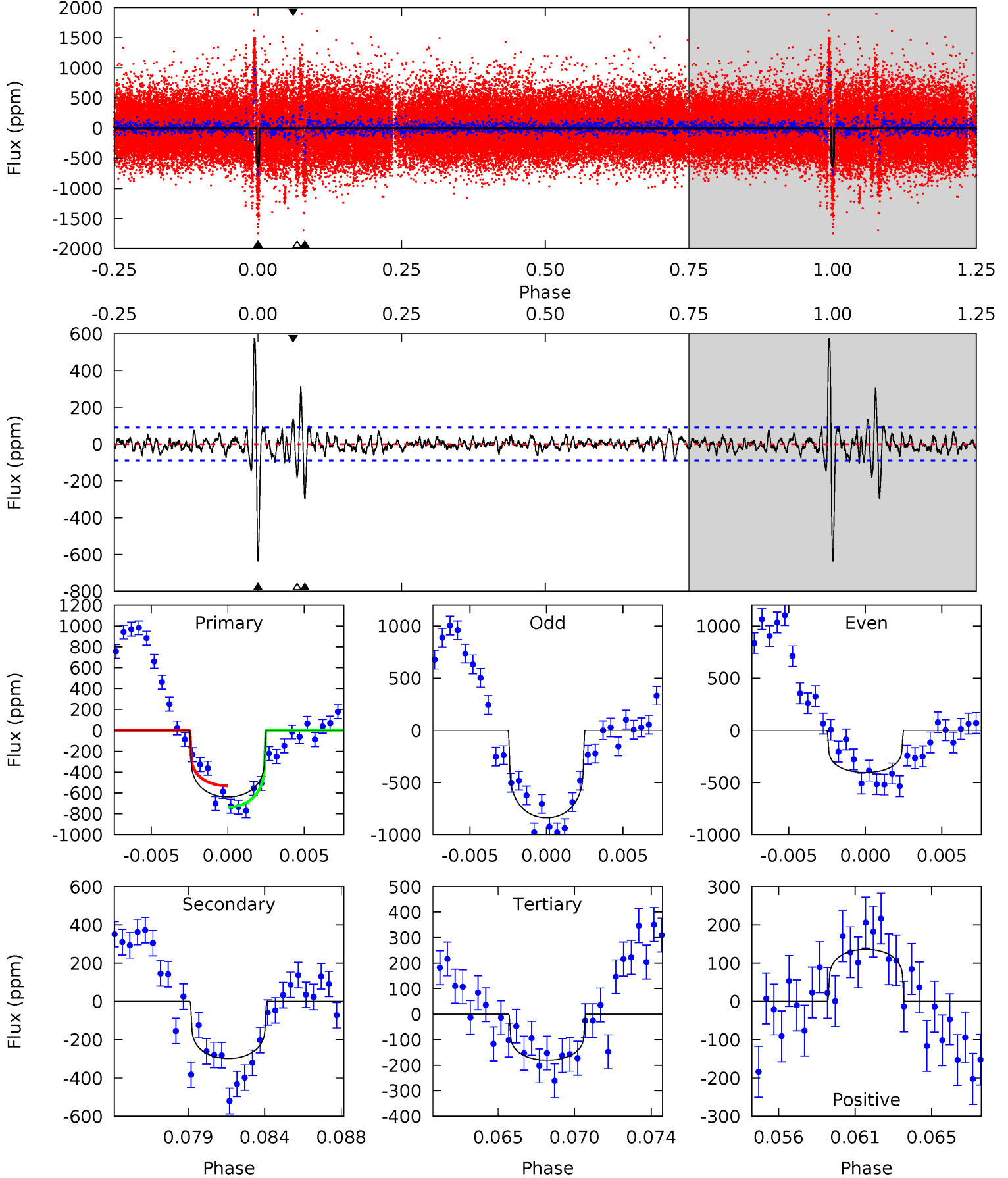
TCE 008092039-01 P=374.553966 Days $T_0=261.551063$ (BKJD)



DV Model-Shift Uniqueness Test

008092039-01, P = 374.366709 Days, E = 261.637544 Days

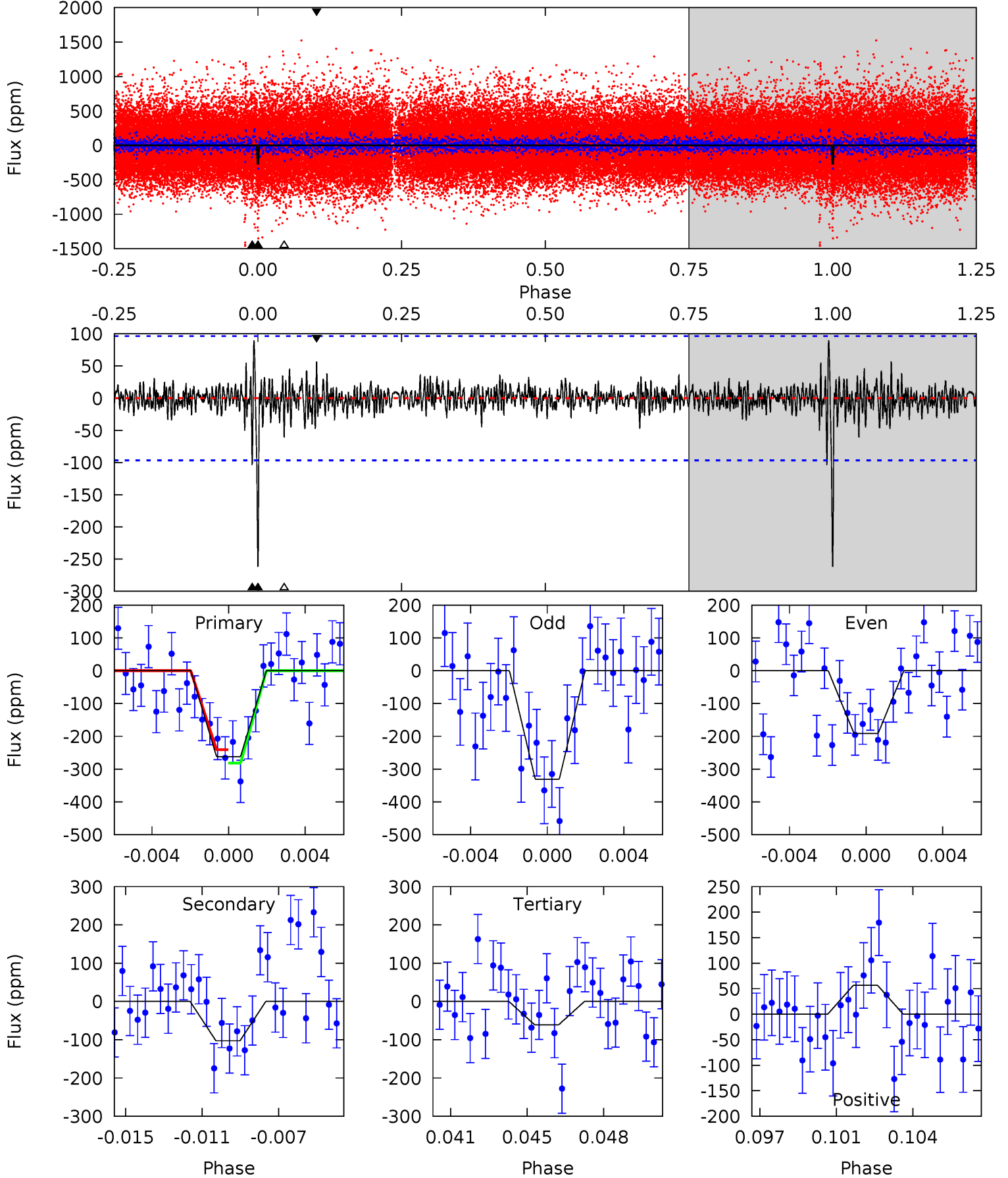
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 36.8 | 17.2 | 10.4 | 7.87 | 5.17 | 2.83 | 2.63 | 26.4 | 29.0 | 6.82 | 9.34 | 12.6 | 0.87 | 0.47 | 5.87 |



Alt Model-Shift Uniqueness Test

008092039-01, P = 374.553966 Days, E = 261.551063 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 | 5.55 | 3.29 | 3.07 | 5.21 | 2.90 | 0.76 | 10.8 | 11.1 | 2.27 | 2.49 | 3.78 | 0.92 | 0.26 | 1.11 |



Stellar Parameters For KIC 008092039

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5824^{+145}_{-174} | $4.552^{+0.036}_{-0.204}$ | $-0.220^{+0.300}_{-0.300}$ | $0.851^{+0.256}_{-0.080}$ | $0.944^{+0.110}_{-0.110}$ | $2.156^{+0.428}_{-1.115}$ |
| | +2%/-3% | +1%/-4% | +136%/-136% | +30%/-9% | +12%/-12% | +20%/-52% |
| 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 008092039-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|-------------------|----------------------|---------------------------|
| DV | -298 ± 17 | $1.84^{+0.56}_{-0.47}$ | 339^{+23}_{-14} | 5570^{+852}_{-534} | 46615^{+38499}_{-18502} |
| Alt. | -103 ± 19 | $1.55^{+0.58}_{-0.48}$ | 340^{+22}_{-15} | 4745^{+837}_{-507} | 22059^{+26149}_{-10140} |

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

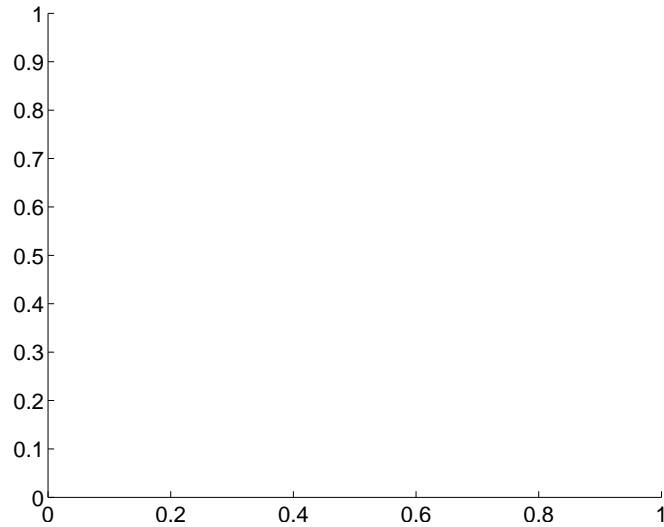
Supplemental centroid analysis for 008092039-01. Kepler magnitude: 14.77. Transit SNR 10.78

There are 0 quarters with good PRF difference image offsets

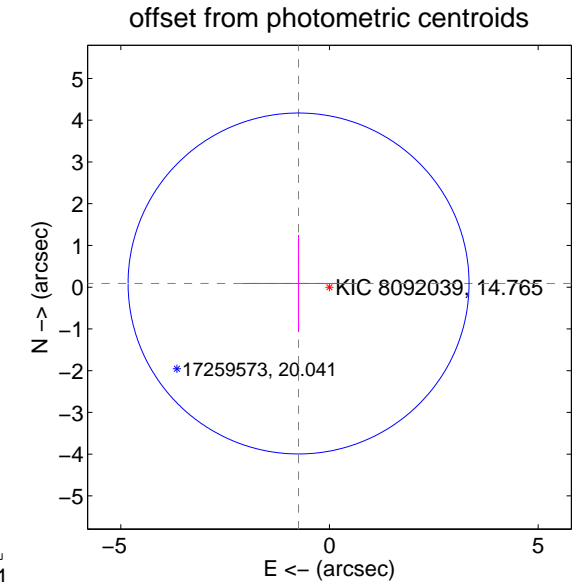
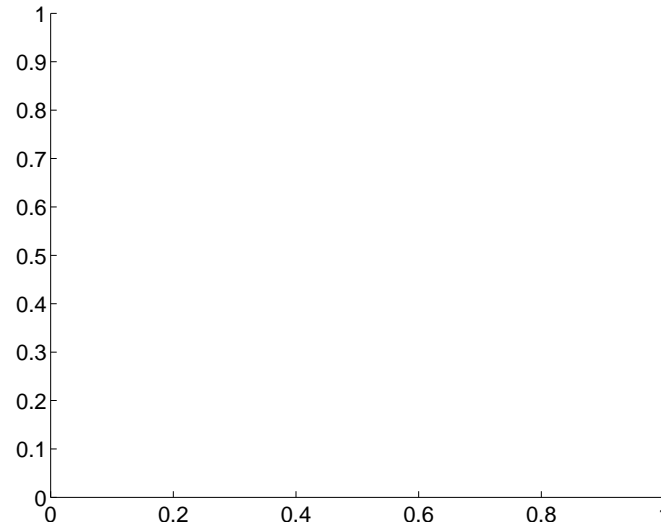
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

| | 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 | 0.75 ± 1.36 | 0.55 | 0.74 ± 1.36 | 0.09 ± 1.16 |

There is no PRF-fit offset from OOT-fit

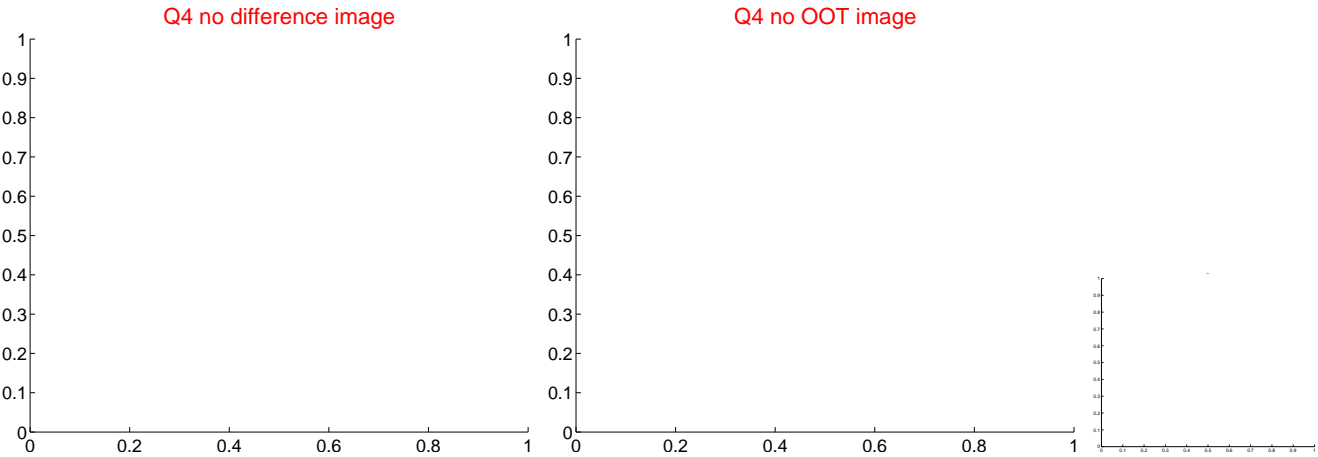
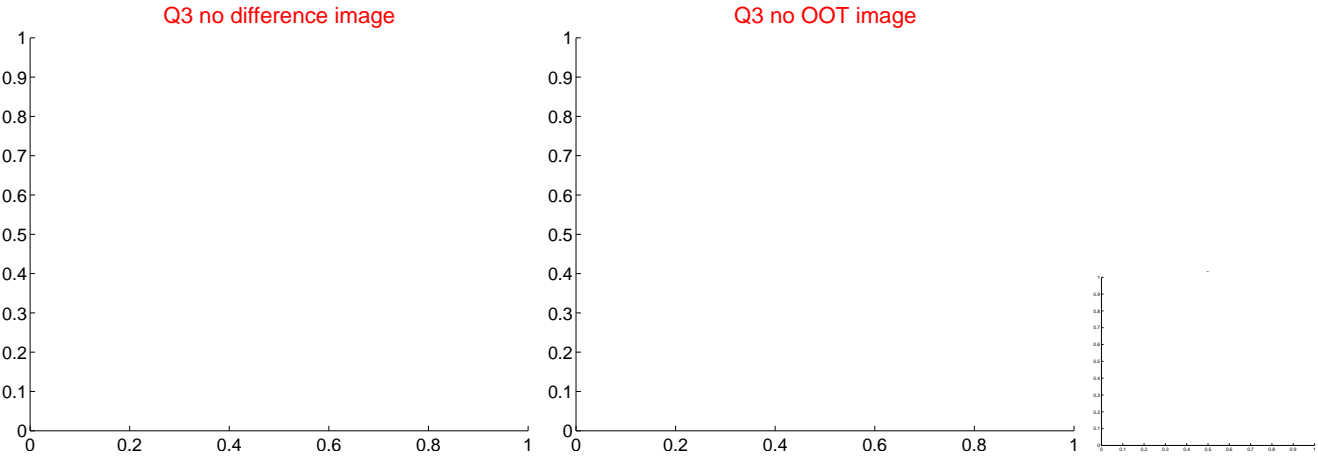
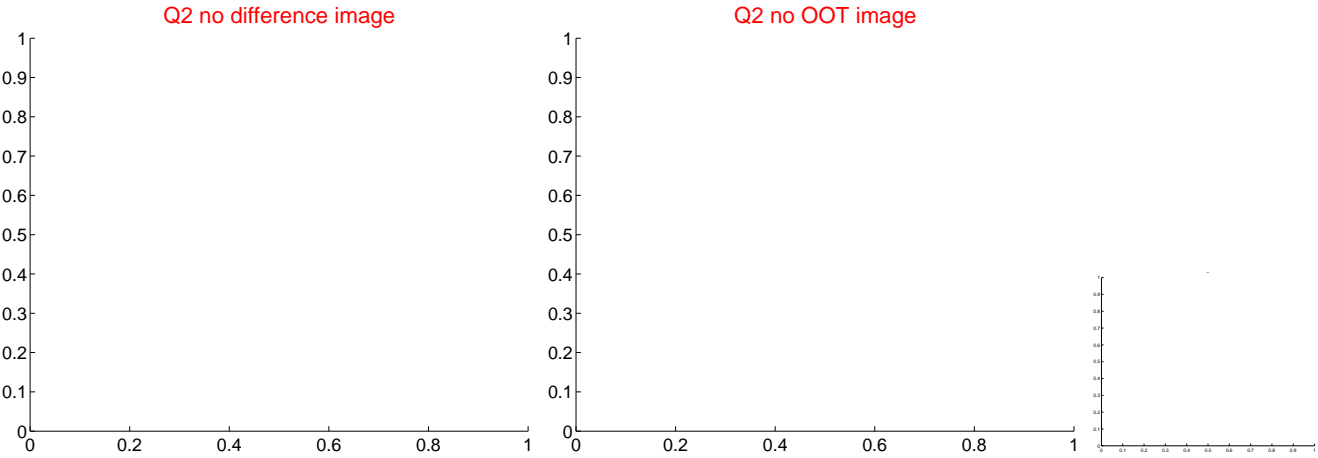
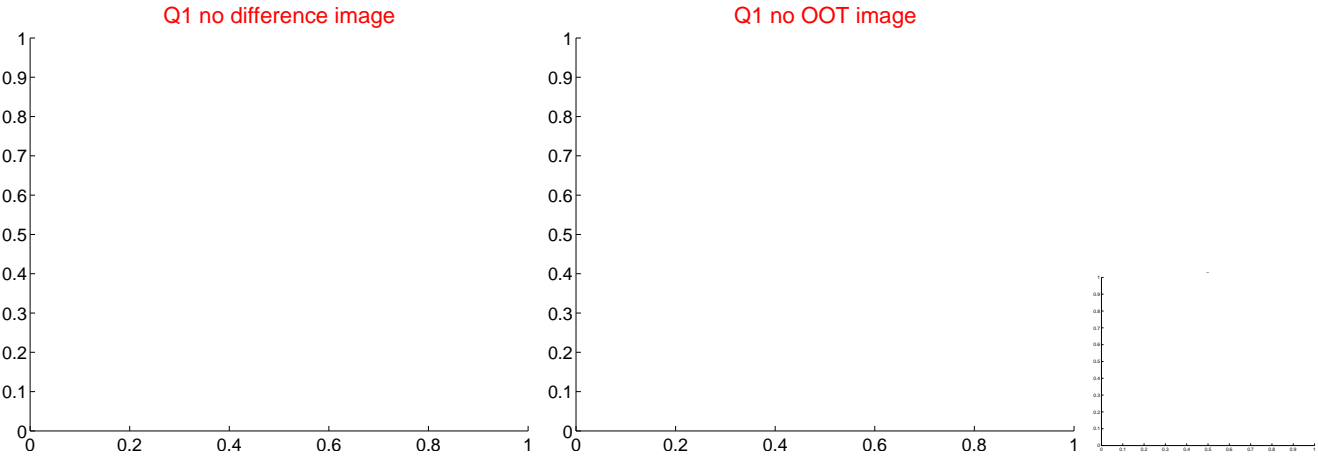


There is no PRF-fit offset from KIC

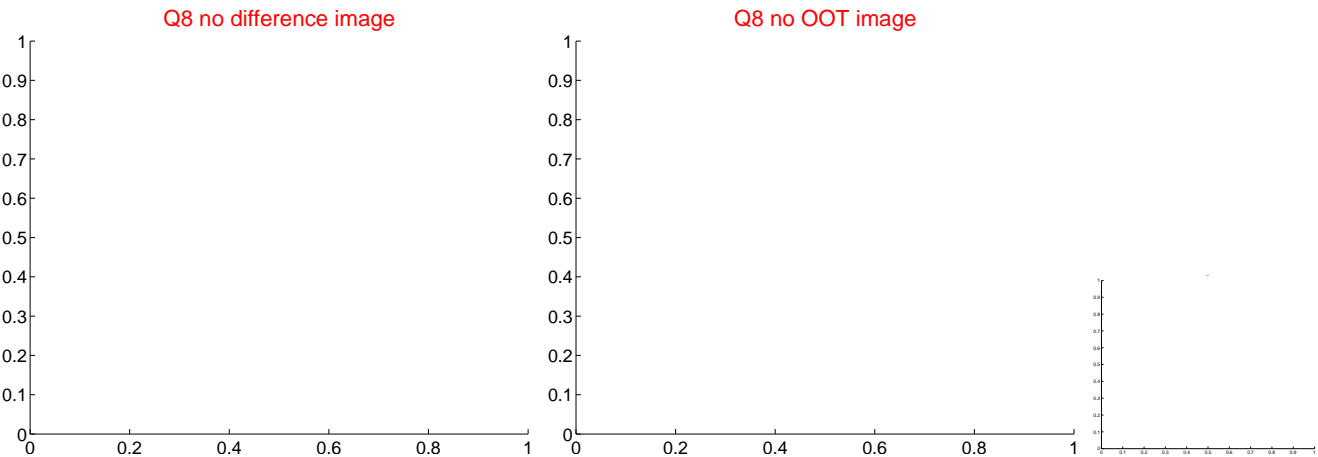
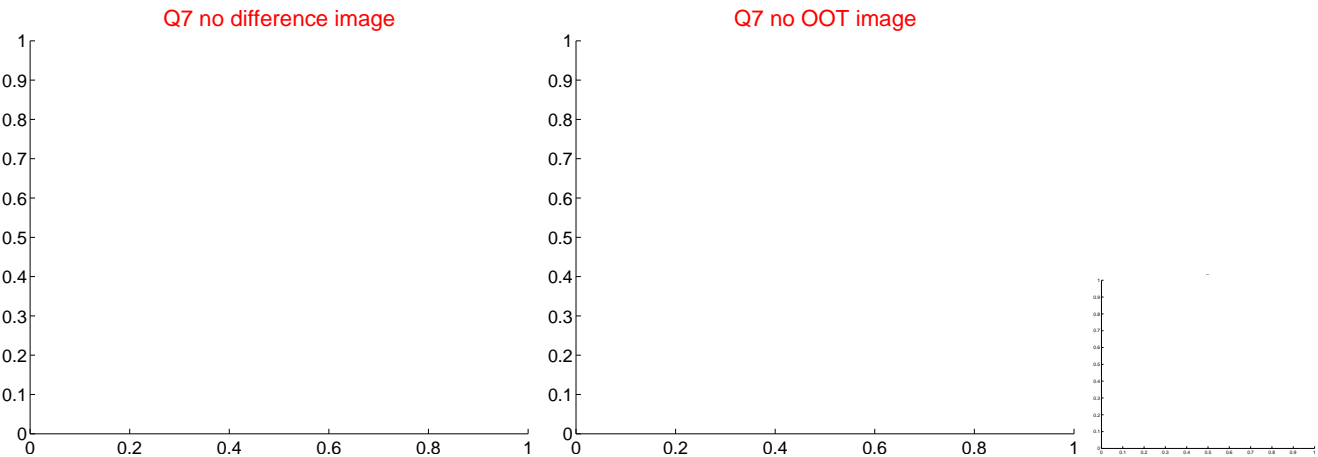
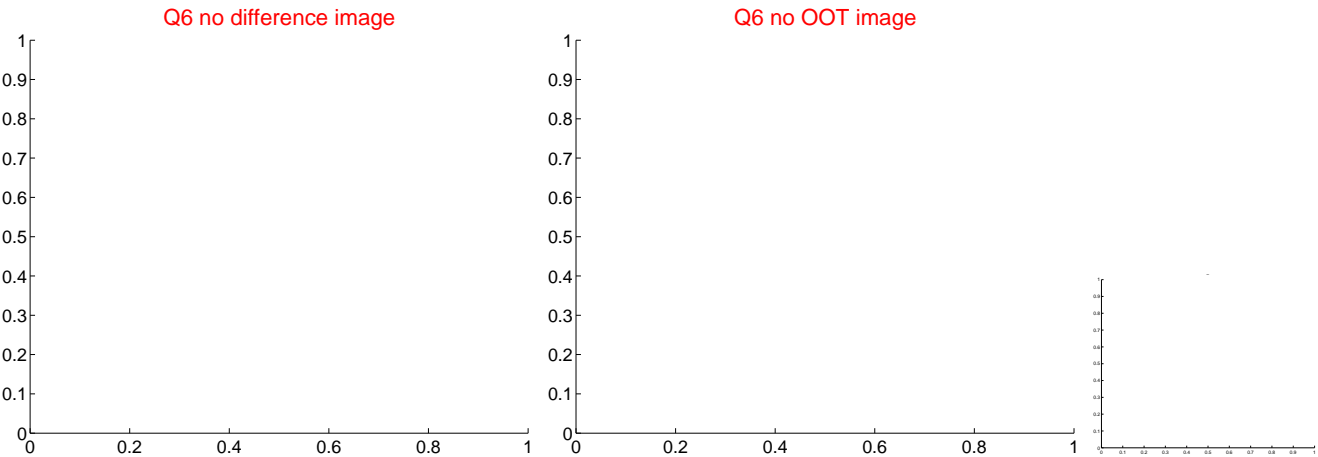
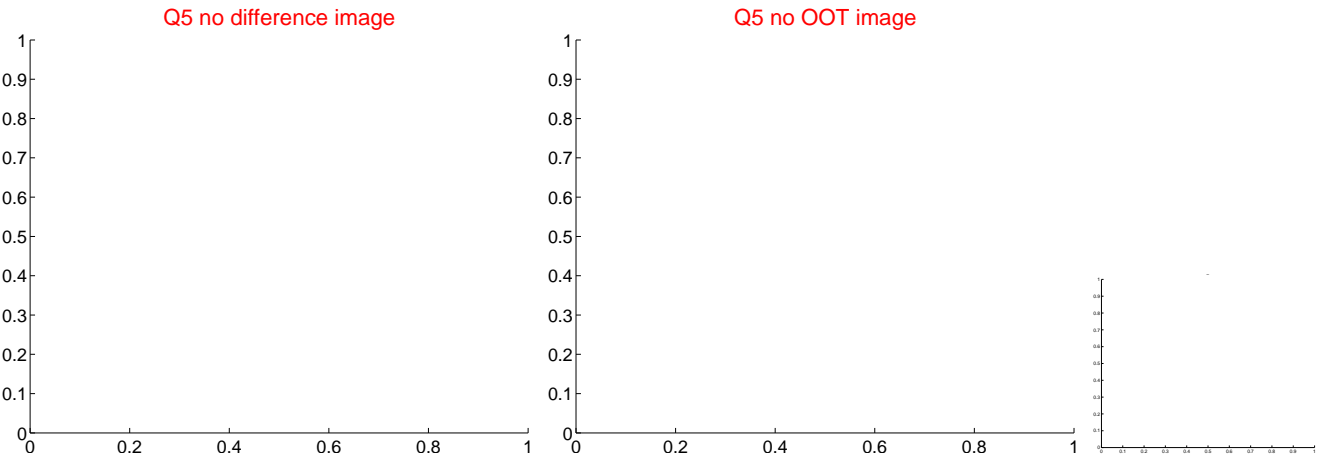


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



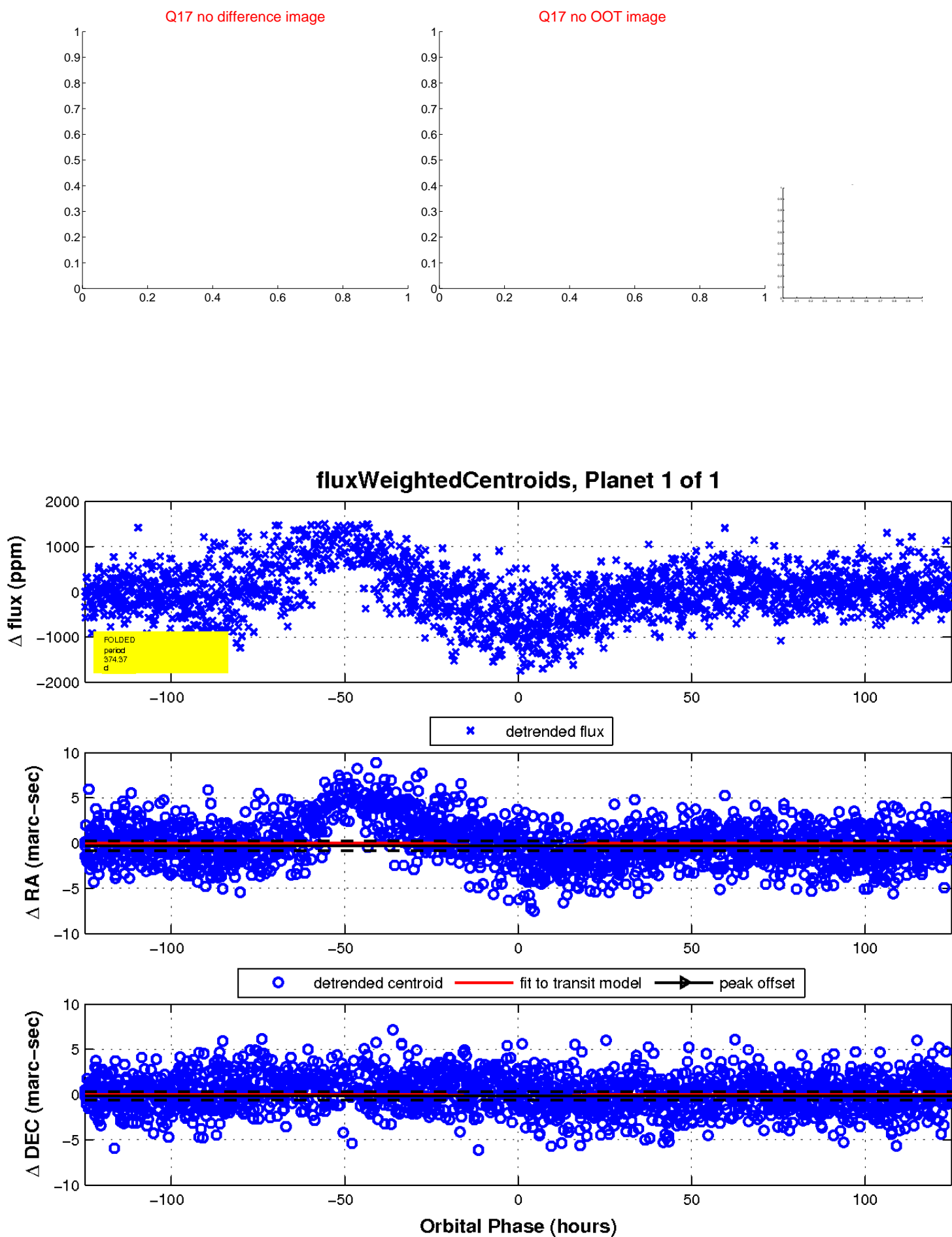
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

