

KIC 011338091

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 011338091-01 | OBS | 8221.01 | 293.389999 | 308.684078 | 87.7 | 14.348 | 7.4 | 7.3 | 1.34 | 6392 | 1.46 | 3.44 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---------------------------------|
| 011338091-01 | OBS | FP | 0.09 | 1 | 0 | 0 | 0 | ALL_TRANS_CHASES—CENT_SATURATED |

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

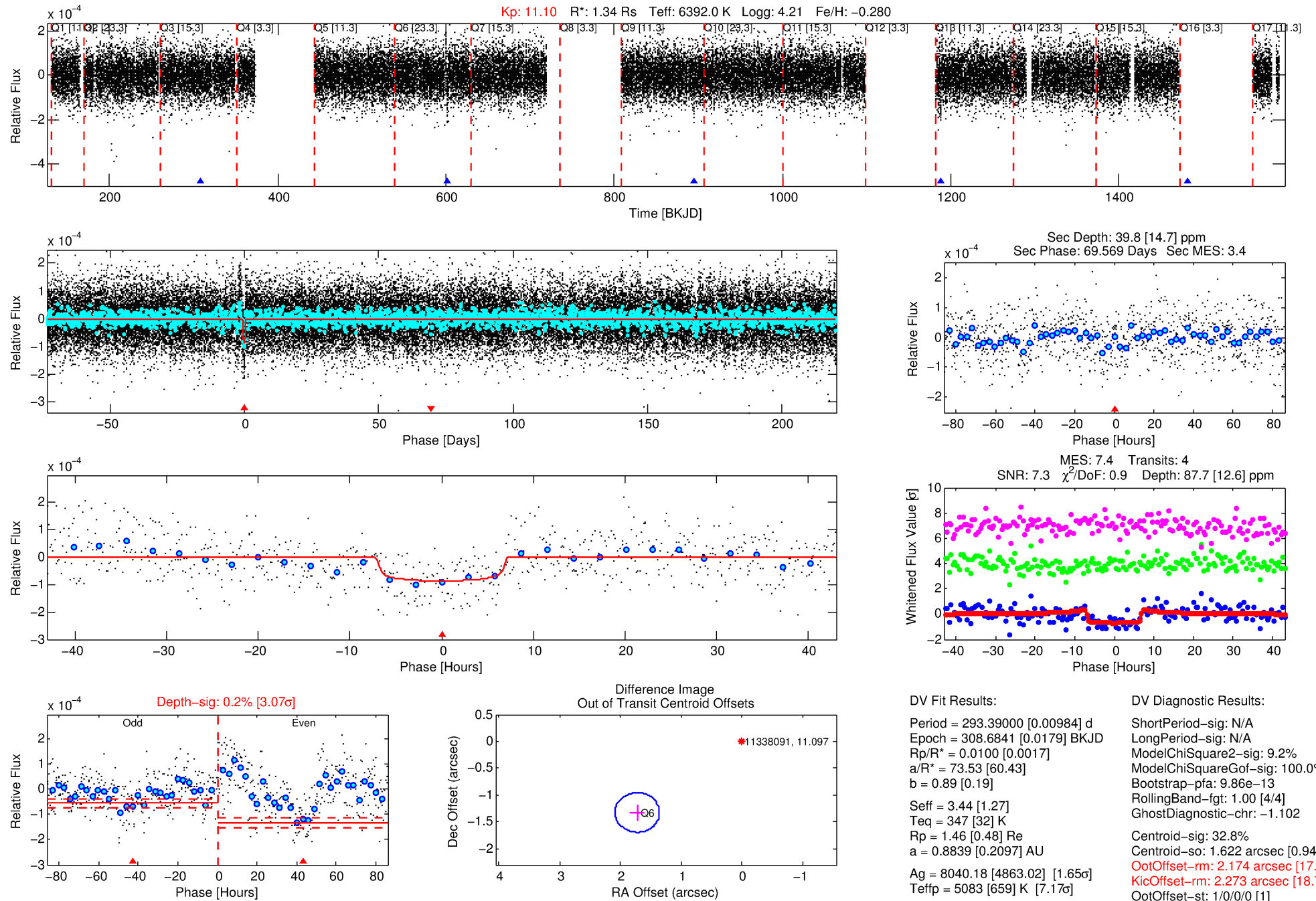
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011338091-01

No Significant Match Found

DV One-Page Summary

KIC: 11338091 Candidate: 1 of 1 Period: 293.390 d



DV Fit Results:

Period = 293.39000 [0.00984] d
Epoch = 308.6841 [0.0179] BKJD
Rp/R* = 0.0100 [0.0017]
a/R* = 73.53 [60.43]
b = 0.89 [0.19]
Seff = 3.44 [1.27]
Teq = 347 [32] K
Rp = 1.46 [0.48] Re
a = 0.8839 [0.2097] AU
Ag = 8040.18 [4863.02] [1.65σ]
Teff = 5083 [659] K [7.17σ]

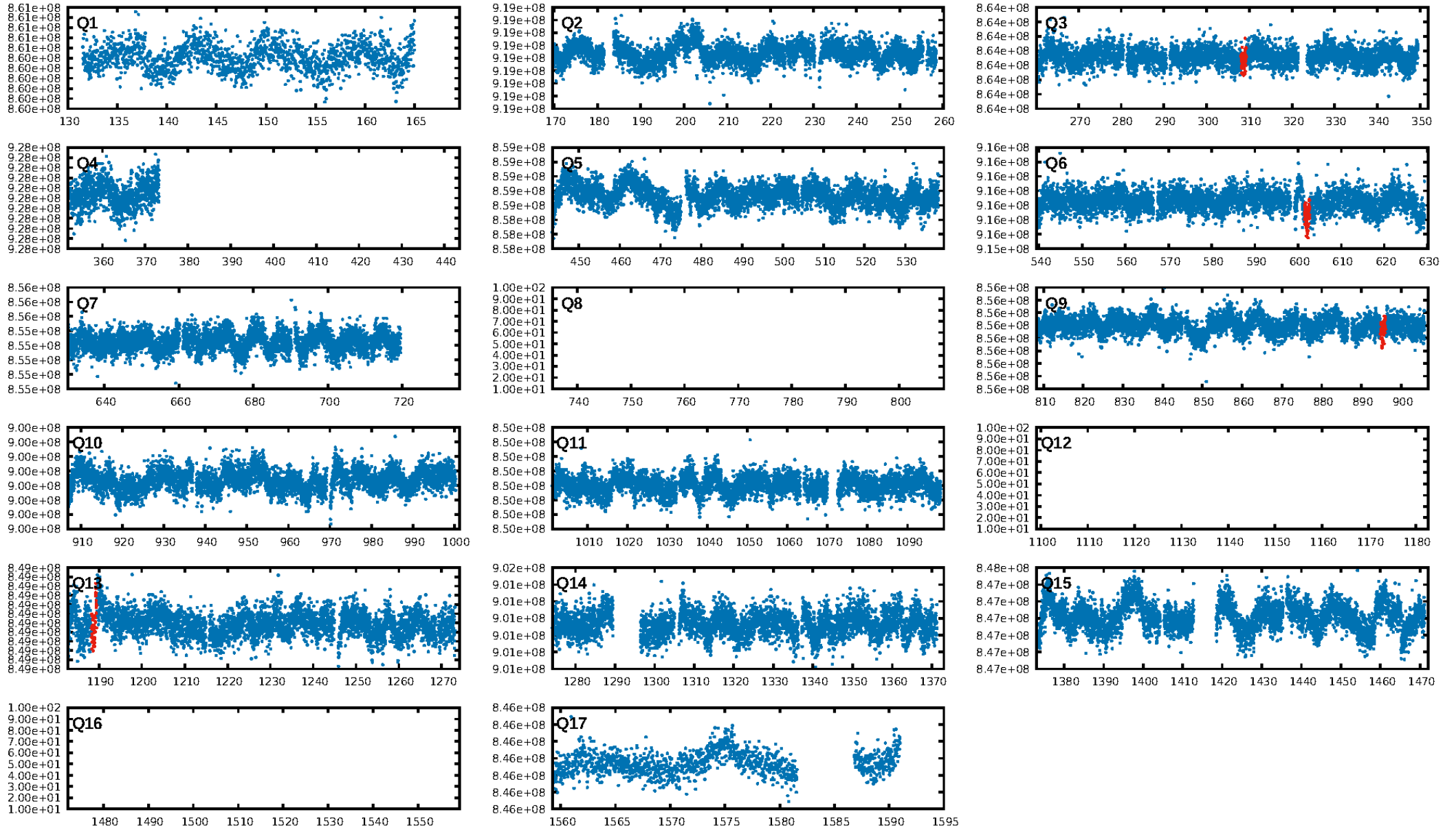
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 9.2%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 9.86e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.102
Centroid-sig: 32.8%
Centroid-so: 1.622 arcsec [0.94σ]
OotOffset-rm: 2.174 arcsec [17.76σ]
KicOffset-rm: 2.273 arcsec [18.73σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [3/3]

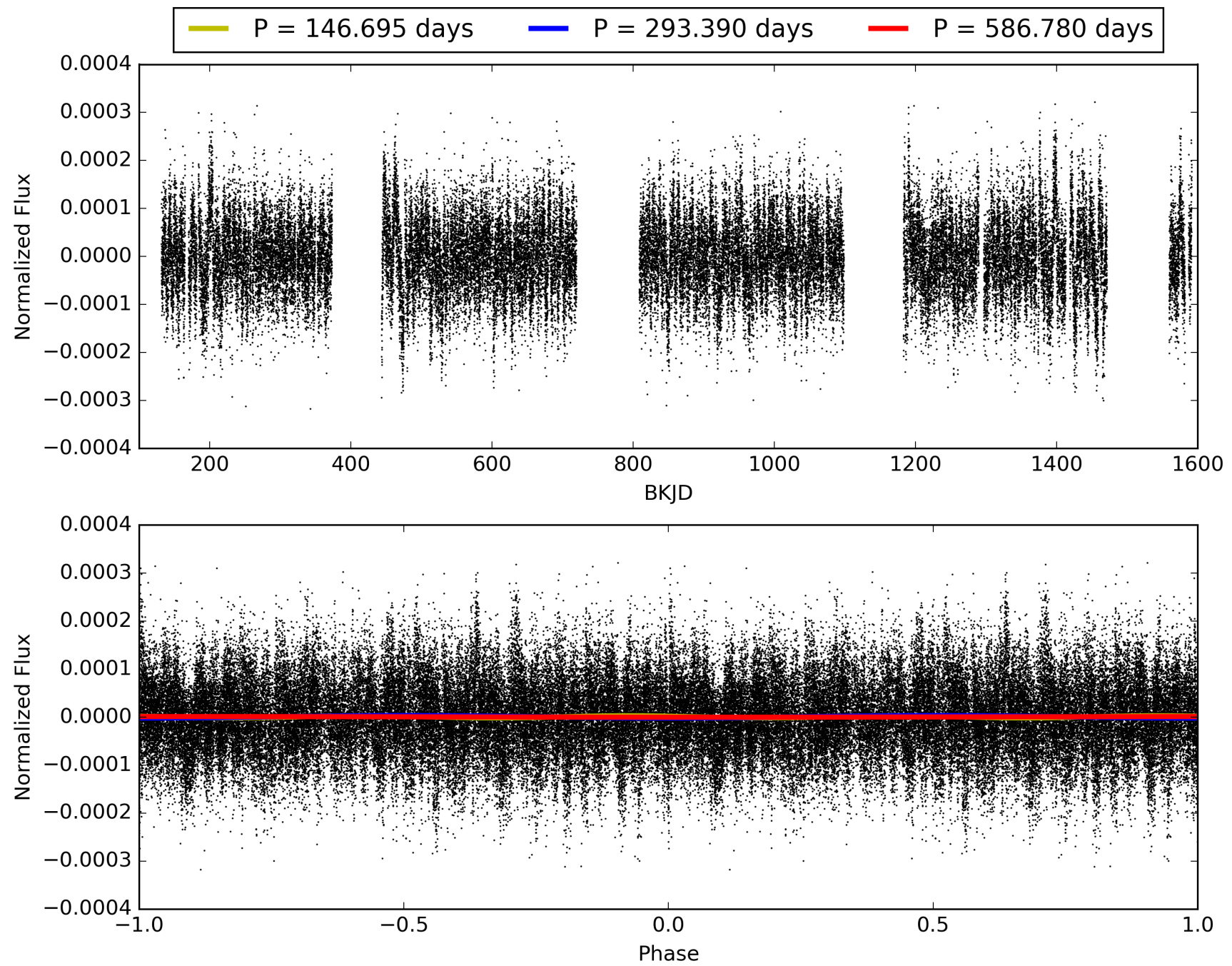
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:32:35 Z

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

TCE 011338091-01, PDC Light Curves

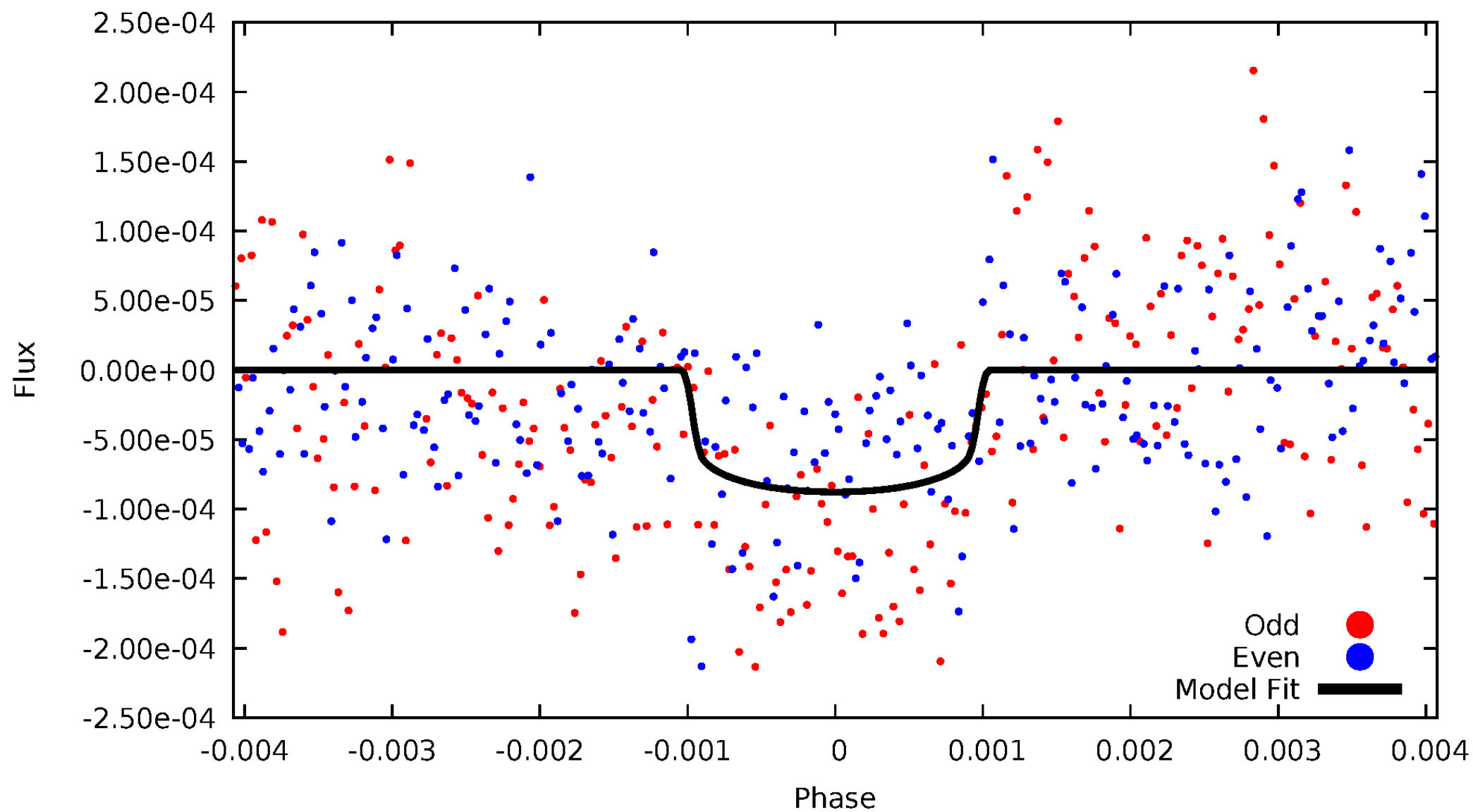


TCE 011338091-01



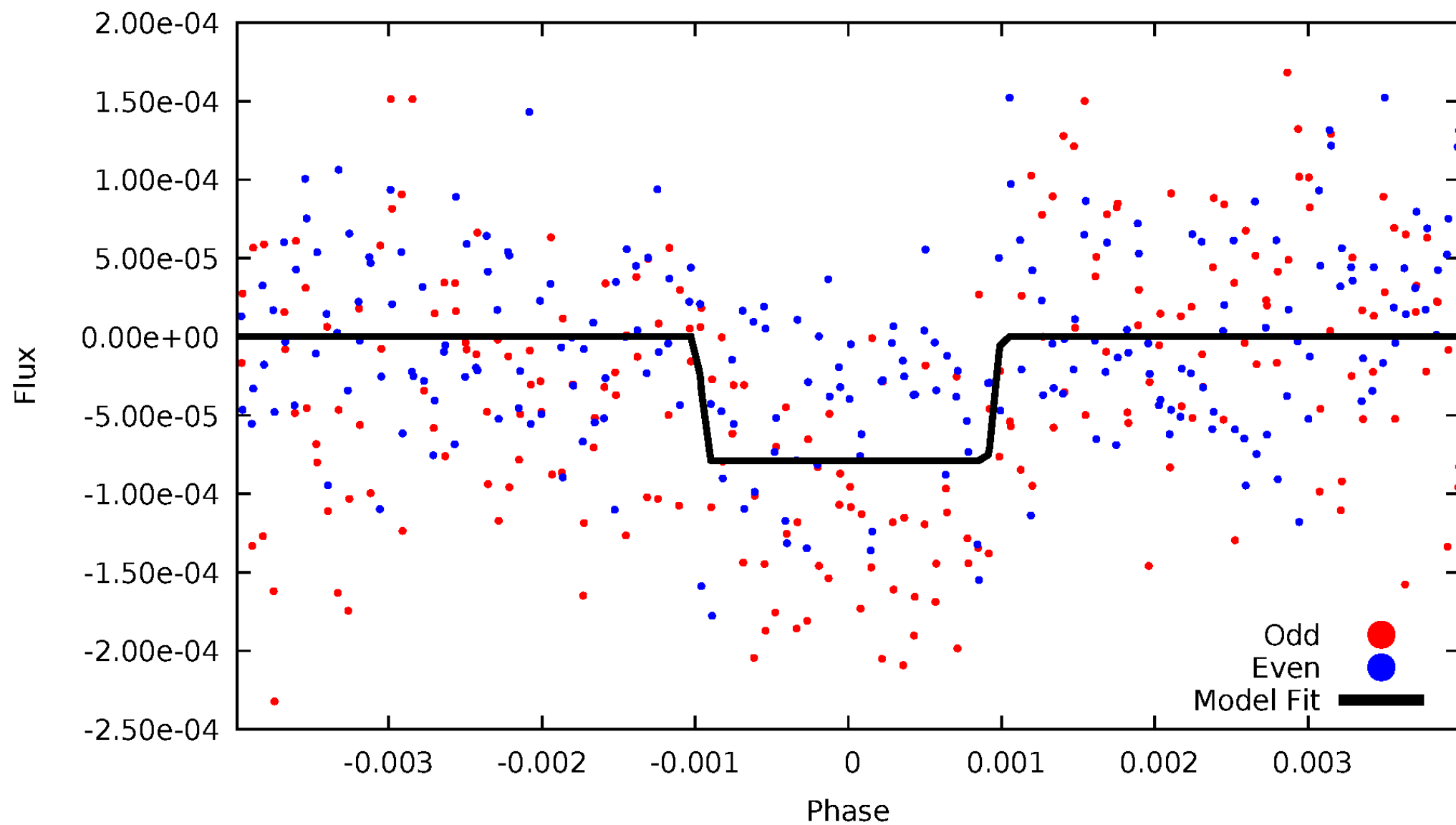
DV Odd/Even

TCE 011338091-01



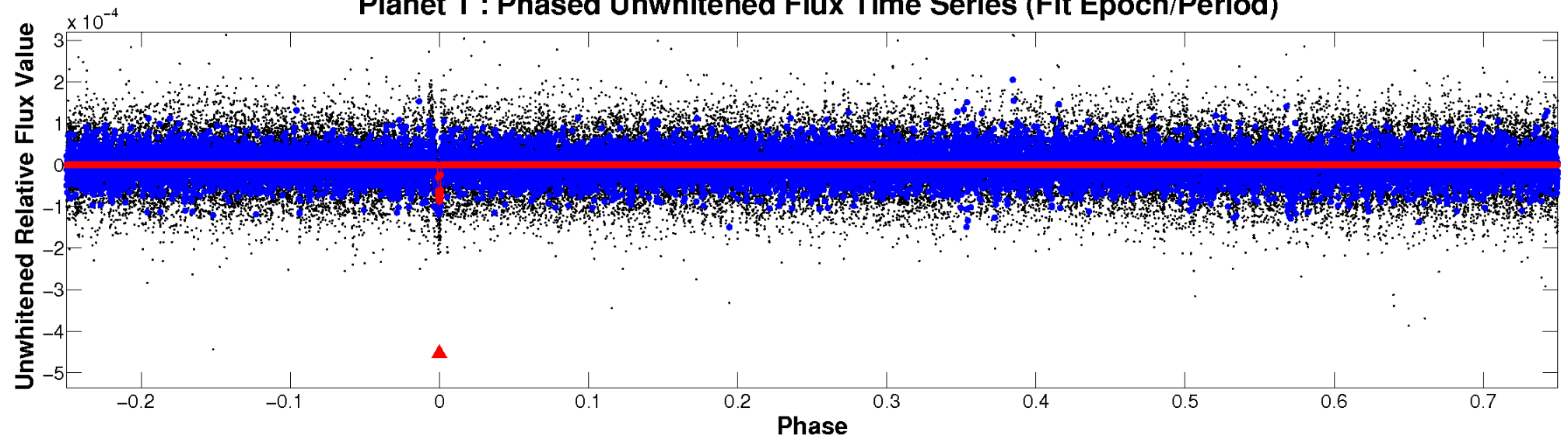
ALT Odd/Even

TCE 011338091-01

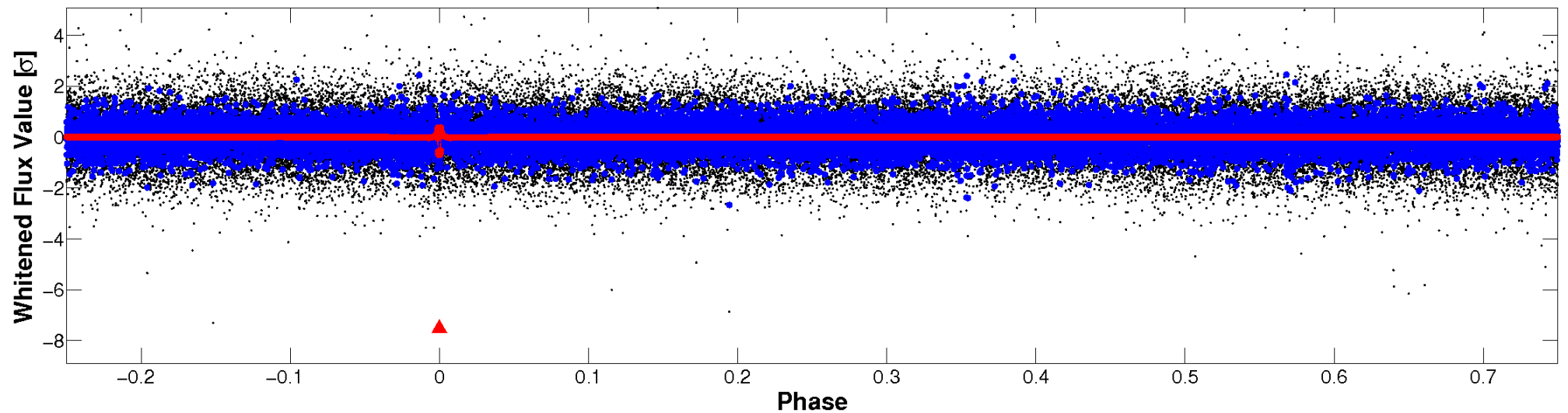


Non-Whitened Vs. Whitened Light Curve

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

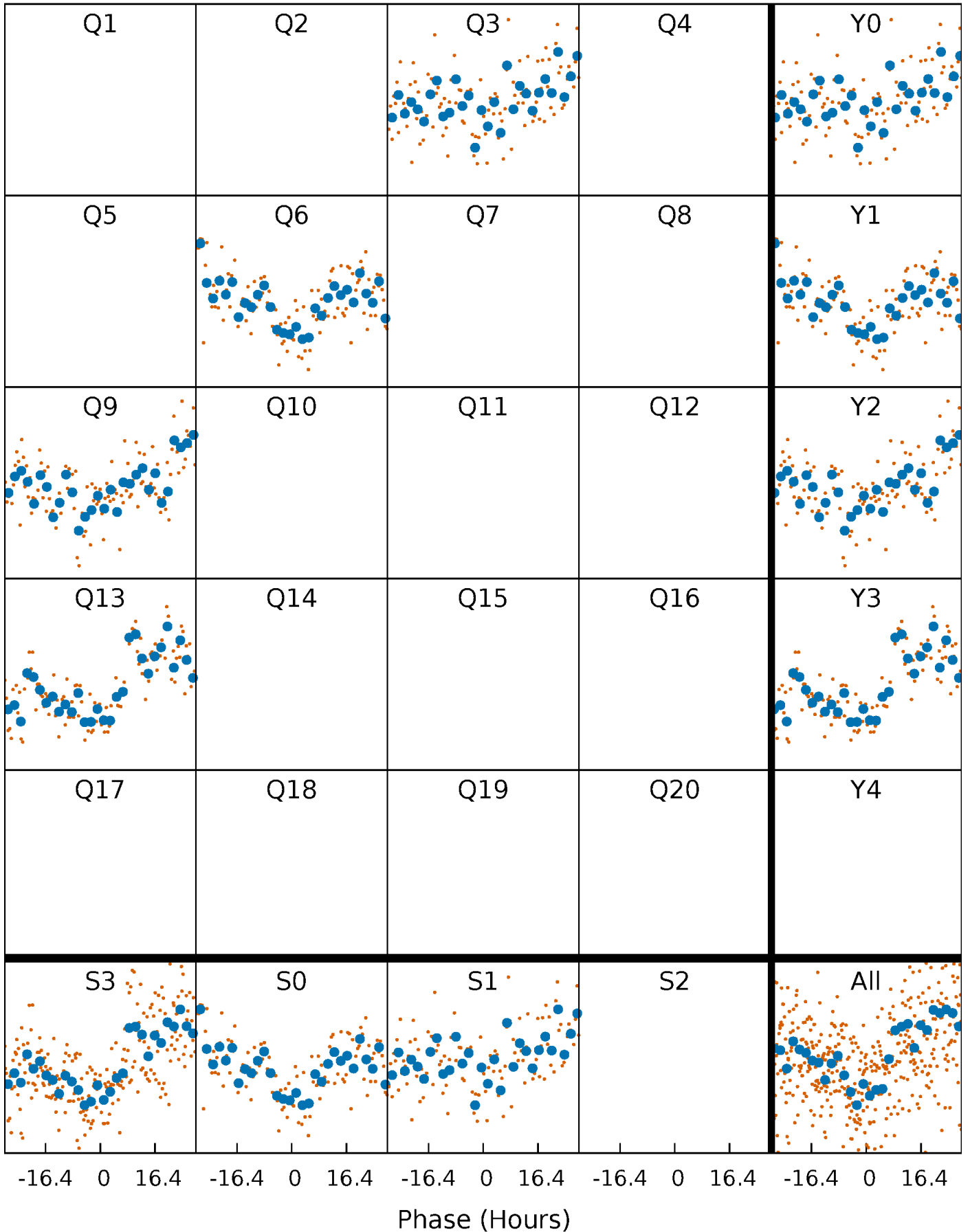


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



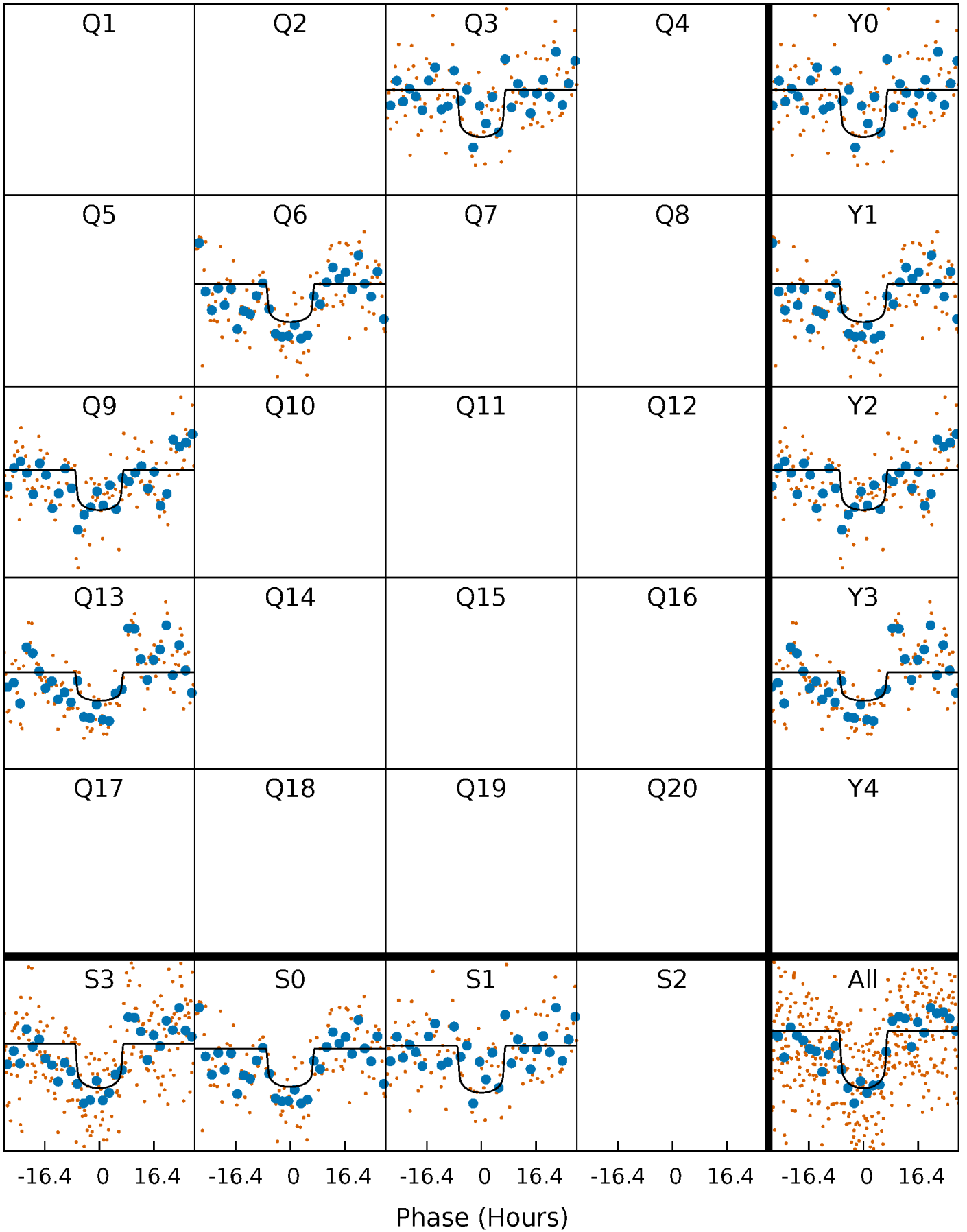
PDC Quarter-Phased Transit Curves

TCE 011338091-01 $P=293.389999$ Days $T_0=308.684078$ (BKJD)



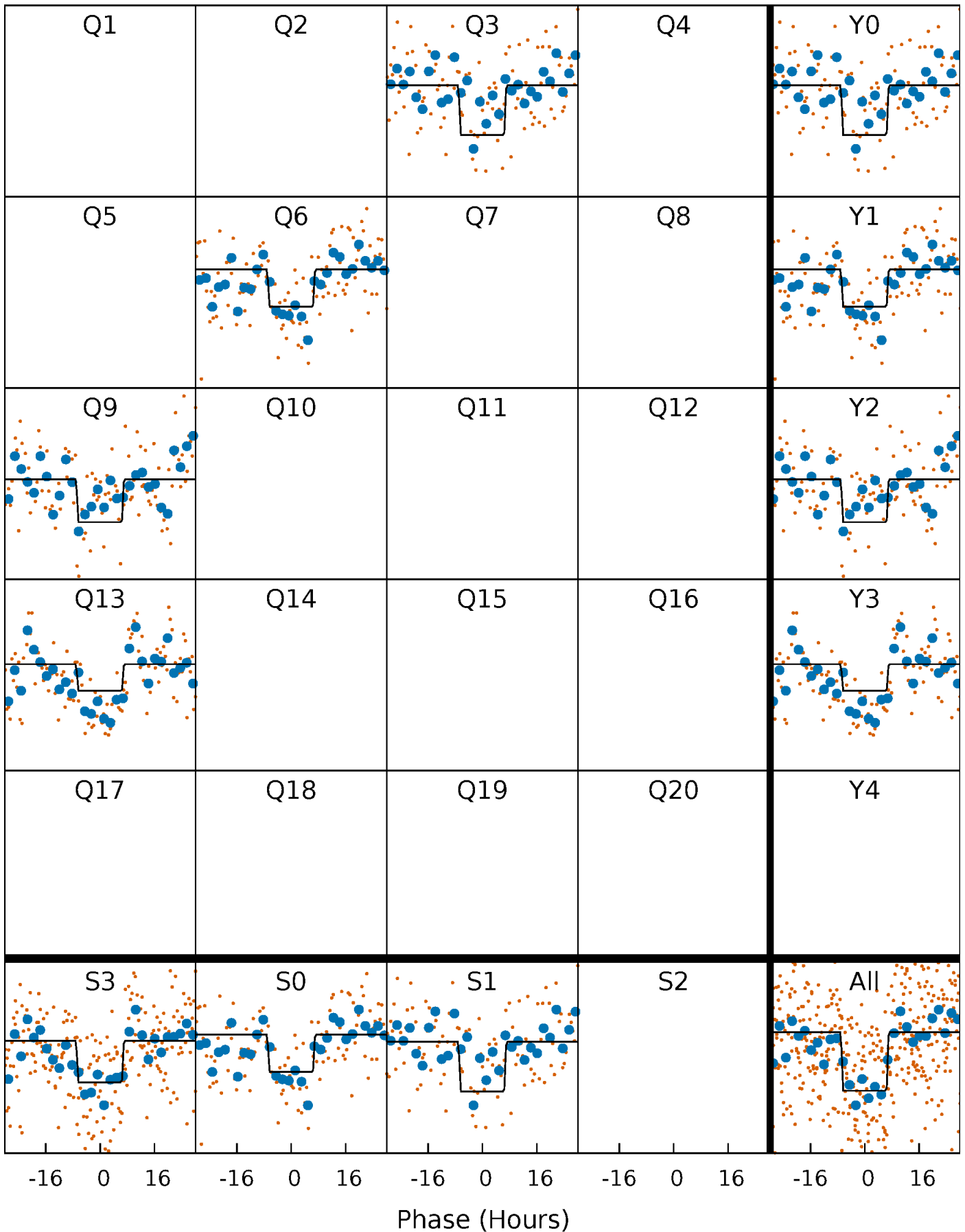
DV Quarter-Phased Transit Curves

TCE 011338091-01 P=293.389999 Days $T_0=308.684078$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

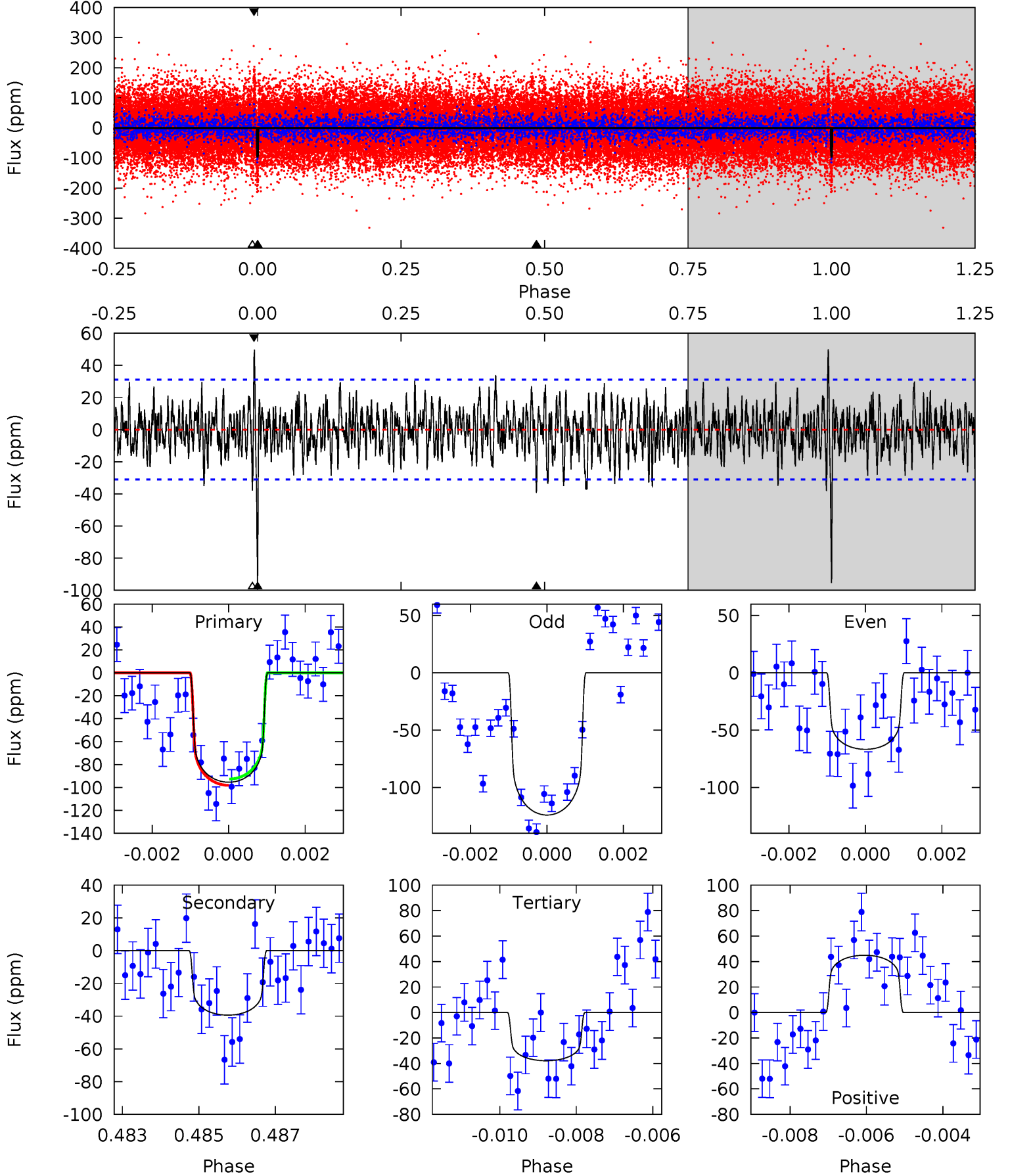
TCE 011338091-01 P=293.385055 Days $T_0=308.689027$ (BKJD)



DV Model-Shift Uniqueness Test

011338091-01, $P = 293.389999$ Days, $E = 15.294079$ Days

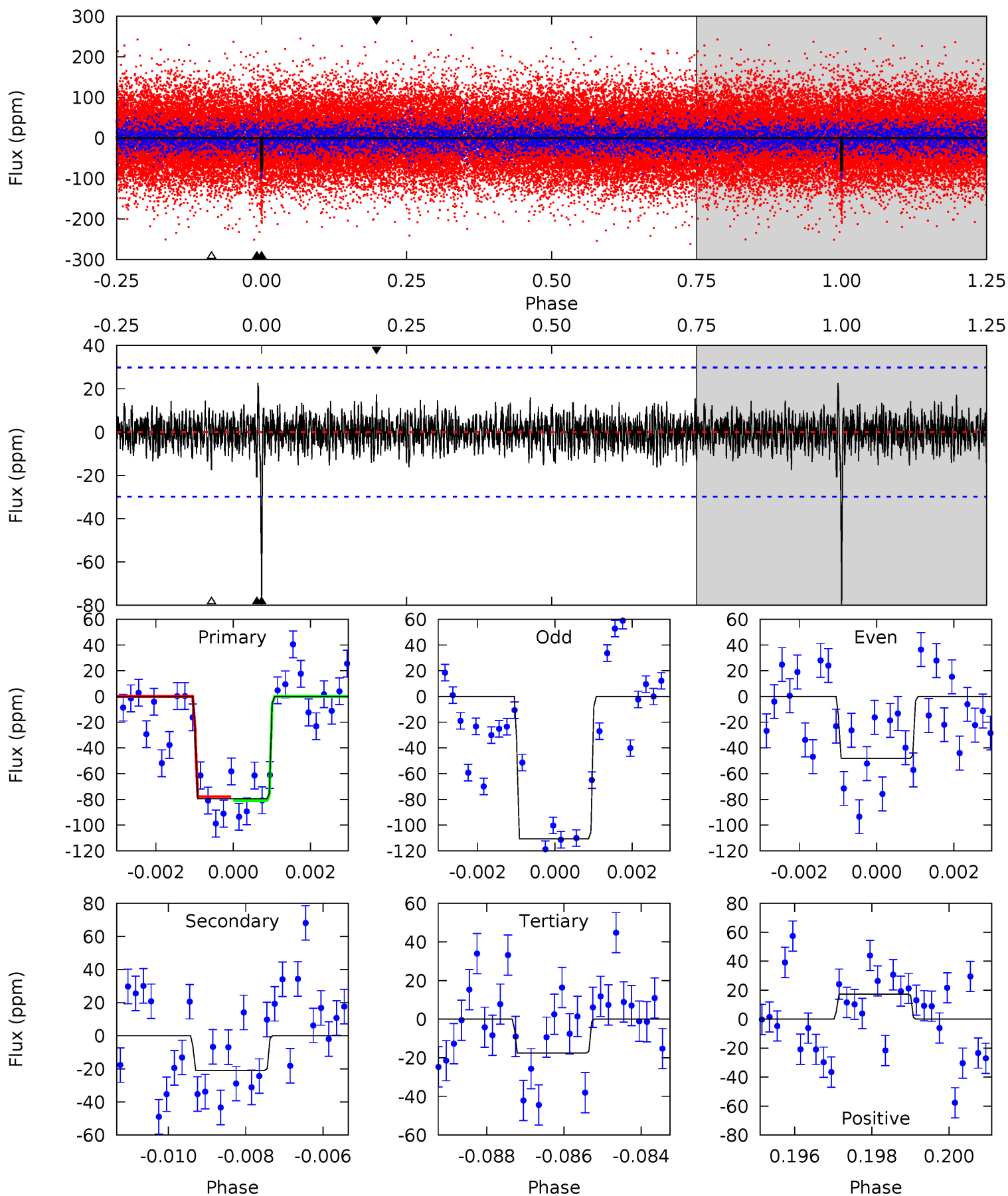
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 16.3 | 6.75 | 6.49 | 7.70 | 5.32 | 3.08 | 2.01 | 9.86 | 8.65 | 0.26 | -0.95 | 4.91 | 0.94 | 0.34 | 0.47 |



Alt Model-Shift Uniqueness Test

011338091-01, $P = 293.385055$ Days, $E = 15.303972$ Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.2 | 3.72 | 3.12 | 3.07 | 5.33 | 3.10 | 0.95 | 11.1 | 11.1 | 0.60 | 0.65 | 5.58 | 1.11 | 0.22 | 0.28 |



Stellar Parameters For KIC 011338091

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6392^{+181}_{-227} | $4.213^{+0.185}_{-0.185}$ | $-0.280^{+0.250}_{-0.300}$ | $1.340^{+0.382}_{-0.313}$ | $1.067^{+0.177}_{-0.129}$ | $0.625^{+0.626}_{-0.317}$ |
| | +3%/-4% | +4%/-4% | +89%/-107% | +29%/-23% | +17%/-12% | +100%/-51% |
| Source | PHO54 | PHO54 | PHO54 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 011338091-01 / KOI 8221.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|-------------------|----------------------|------------------------|
| DV | -39 ± 6 | $1.46^{+0.33}_{-0.30}$ | 484^{+39}_{-37} | 5104^{+512}_{-376} | 7962^{+4621}_{-2933} |
| Alt. | -21 ± 6 | $1.30^{+0.34}_{-0.31}$ | 485^{+38}_{-34} | 4711^{+526}_{-443} | 5291^{+4094}_{-2331} |

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 $A_{obs} \gg 1.0$

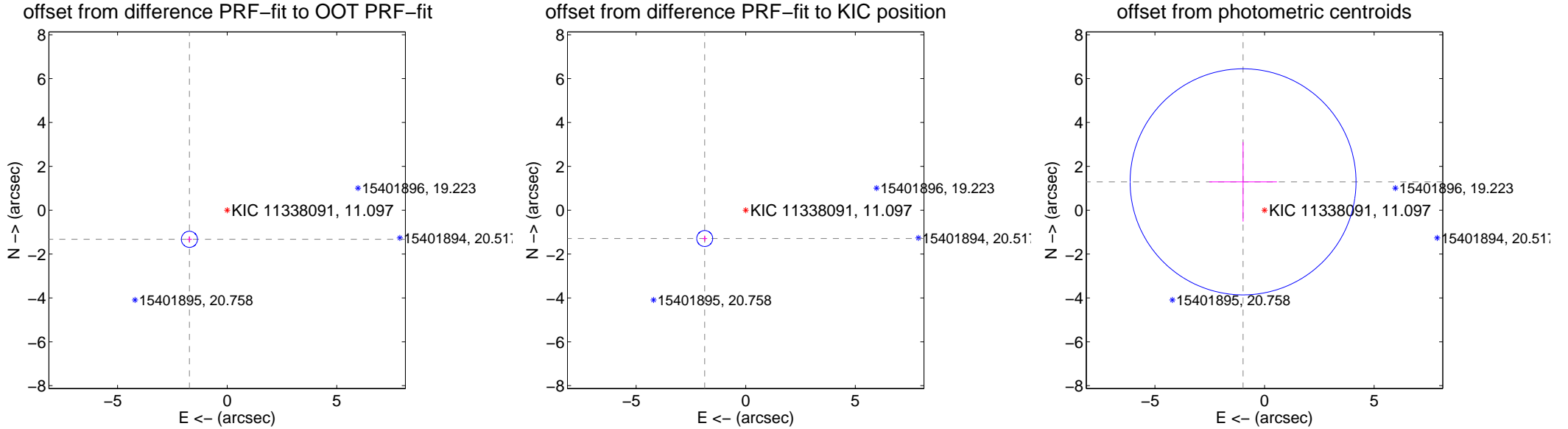
DV Centroid Data

Supplemental centroid analysis for 011338091-01. **Kepler magnitude: 11.10.** Transit SNR 7.30

There are 0 quarters with good PRF difference image offsets

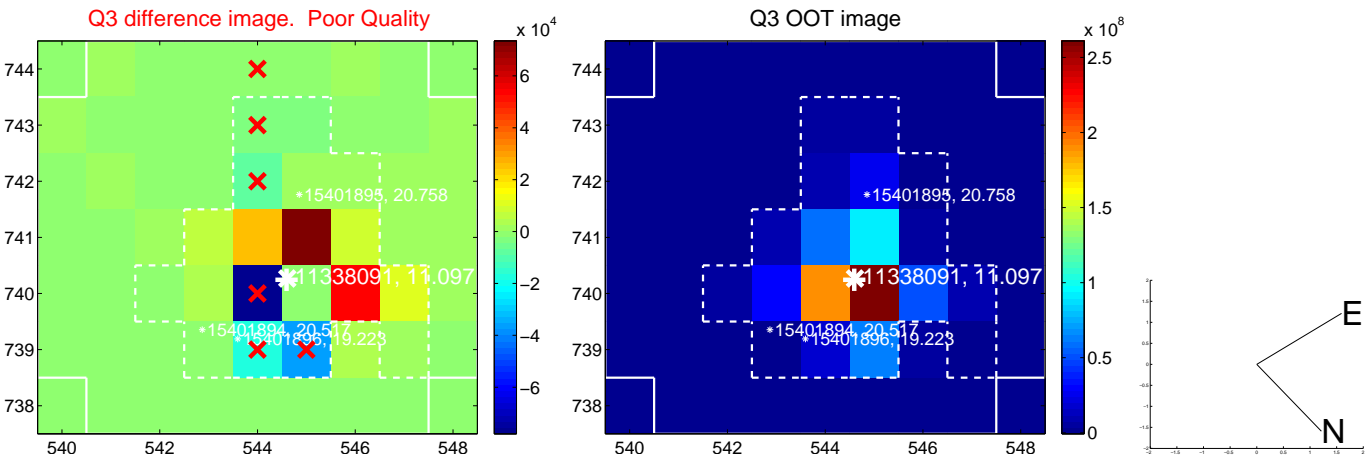
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 2.174 ± 0.122 | 17.76 | 1.722 ± 0.114 | -1.327 ± 0.135 |
| PRF-fit source offset from KIC position | 2.273 ± 0.121 | 18.73 | 1.871 ± 0.114 | -1.291 ± 0.135 |
| photometric centroid source offset | 1.62 ± 1.72 | 0.94 | 0.98 ± 1.54 | 1.29 ± 1.81 |

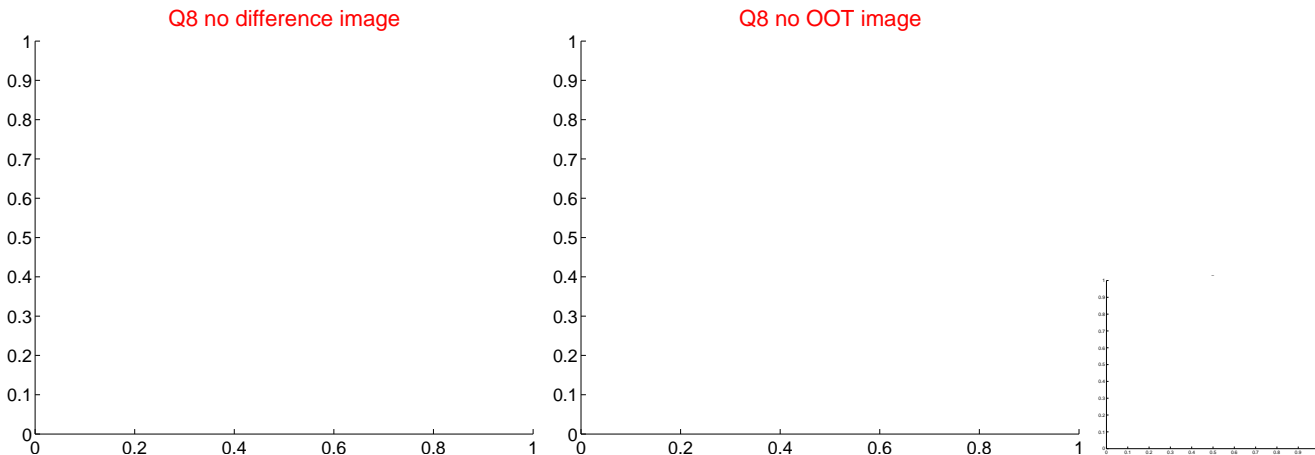
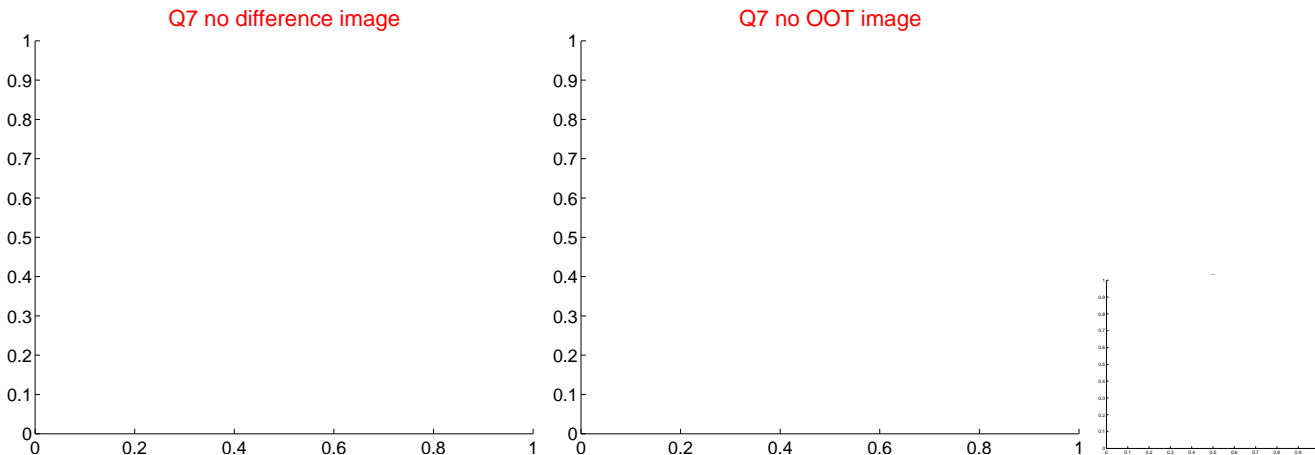
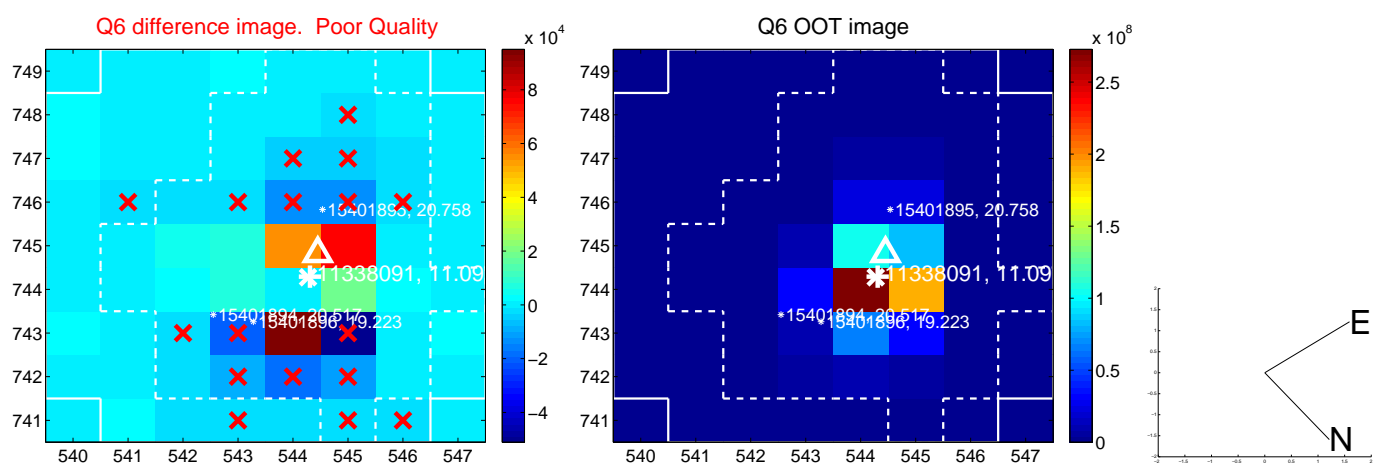
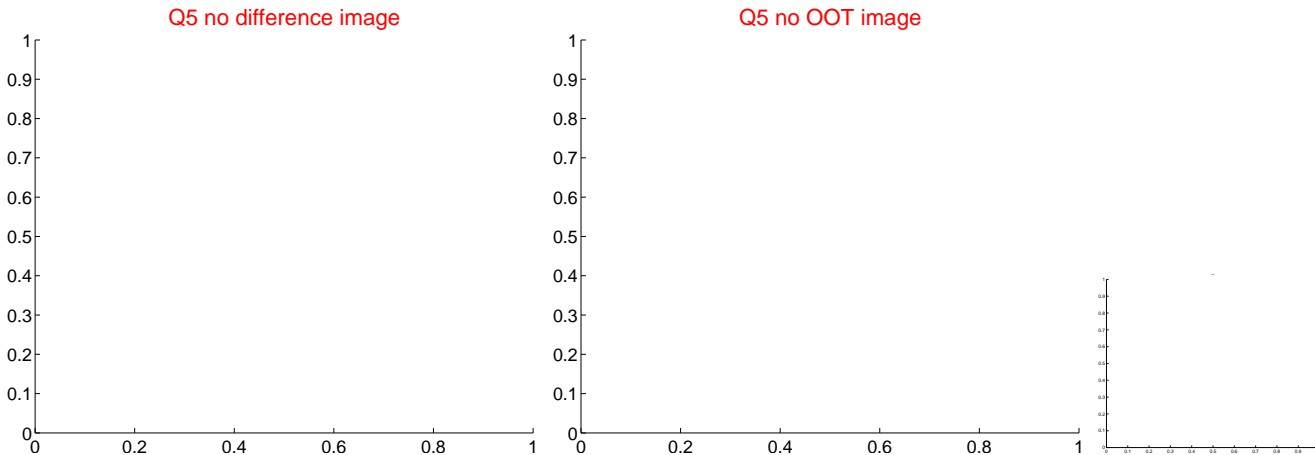


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

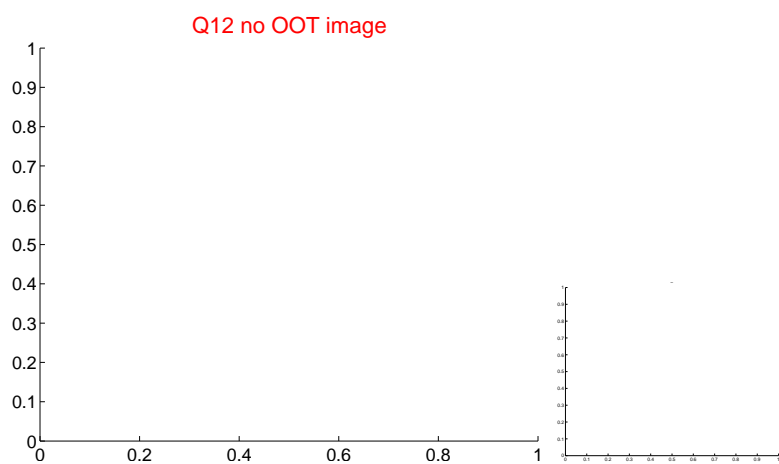
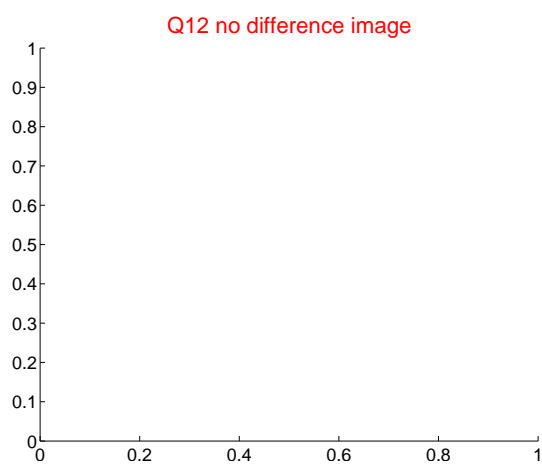
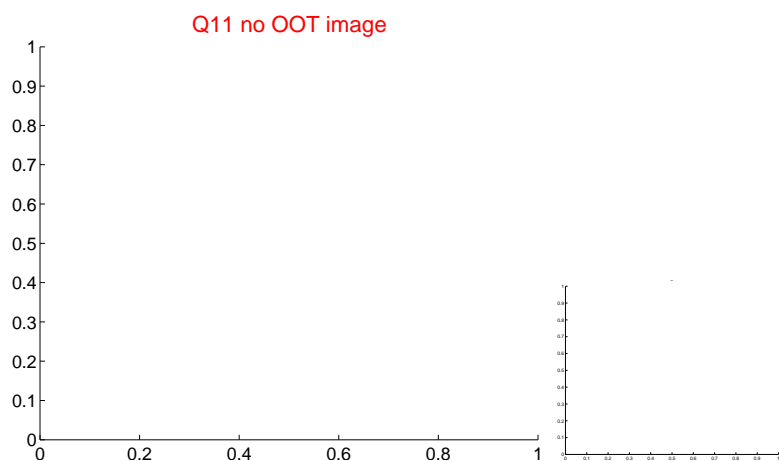
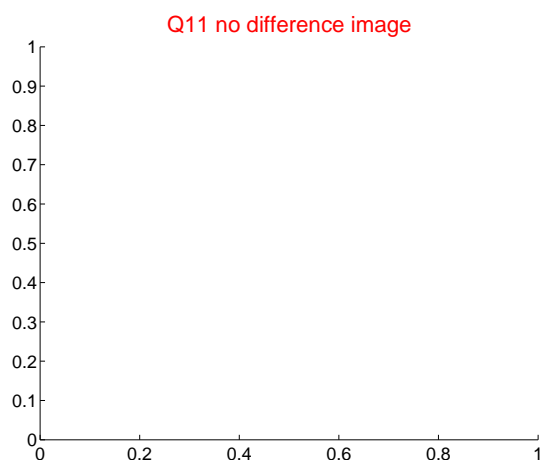
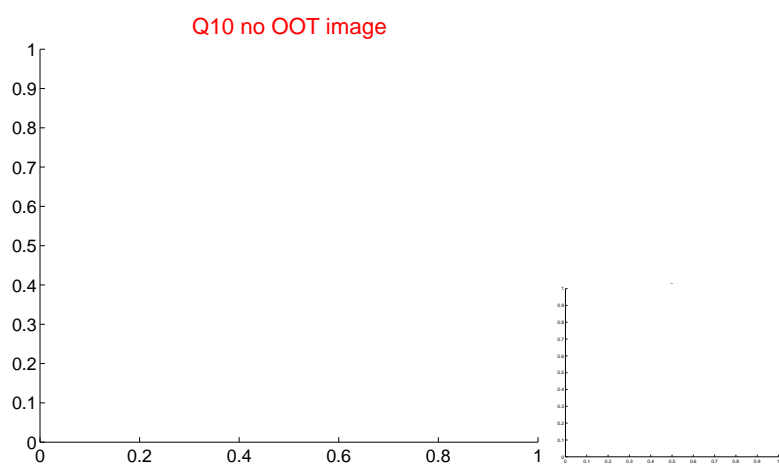
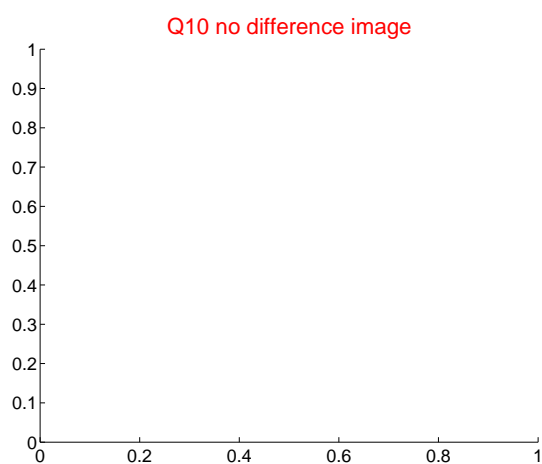
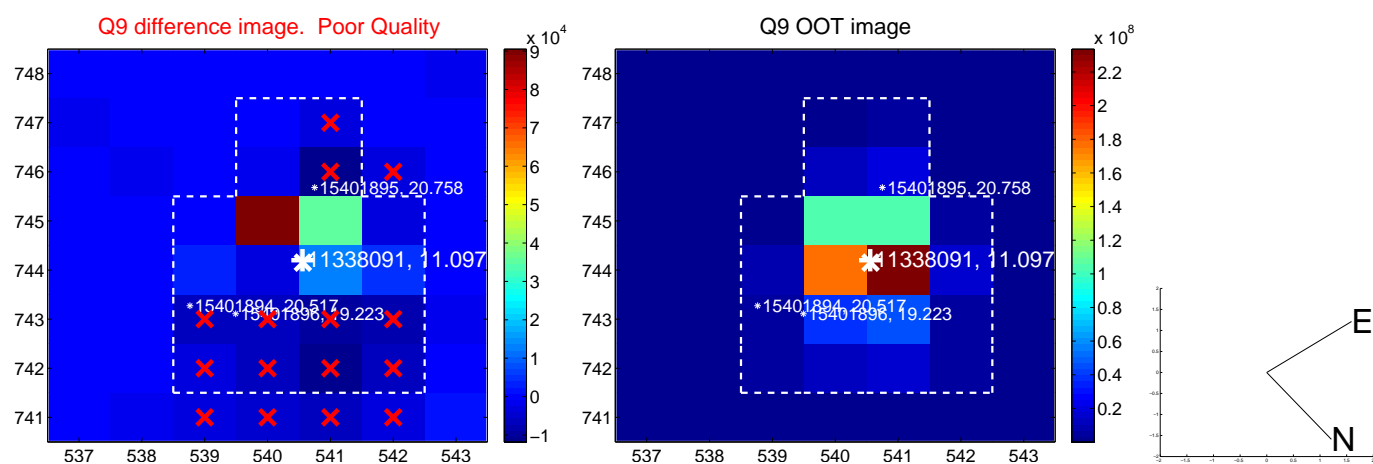
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



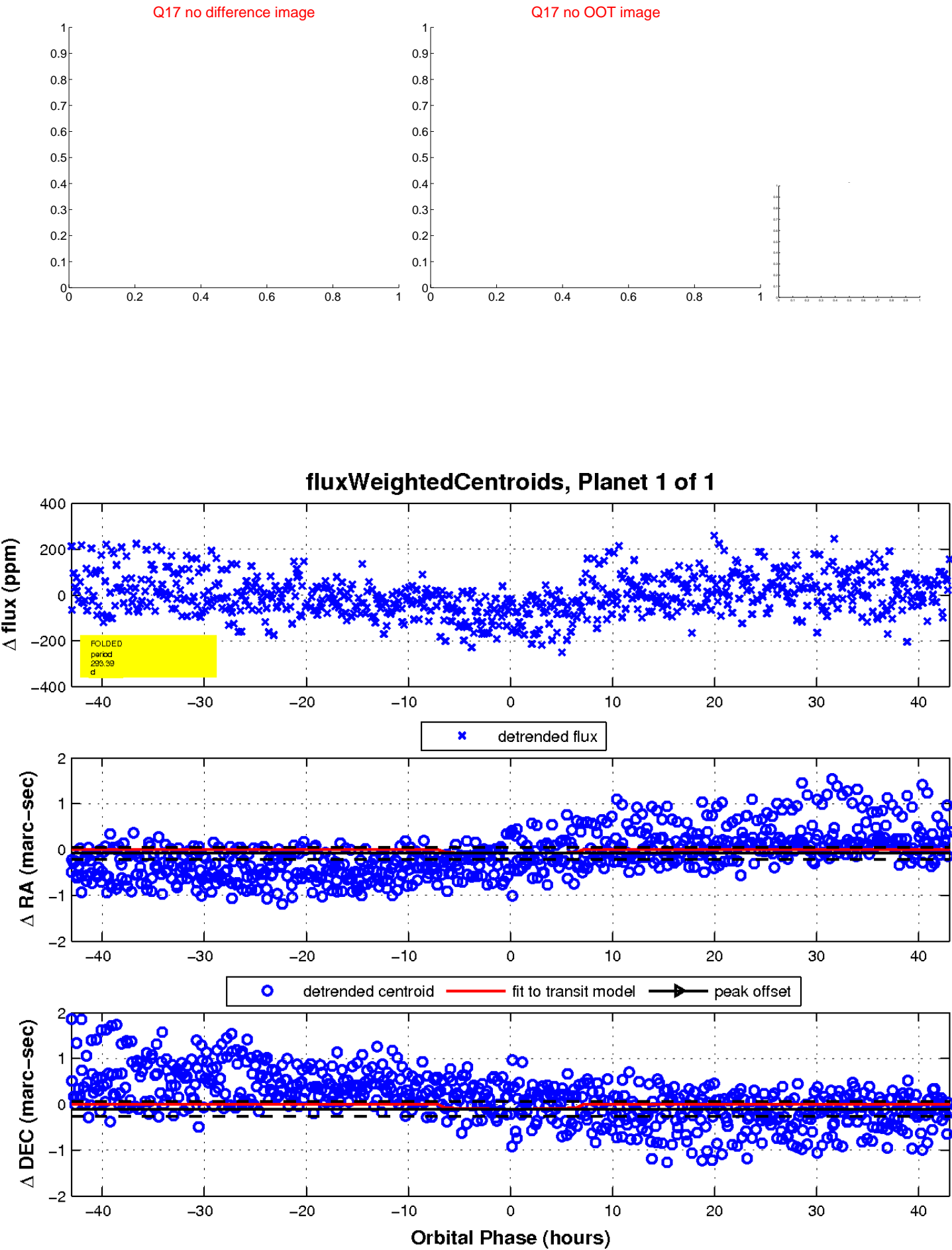
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



UKIRT Image

Declination

