

KIC 011716844

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 011716844-01 | OBS | No | 281.721200 | 332.379626 | 290.9 | 6.638 | 7.5 | 7.4 | 2.97 | 5228 | 5.57 | 6.80 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 011716844-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_SKYE—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.

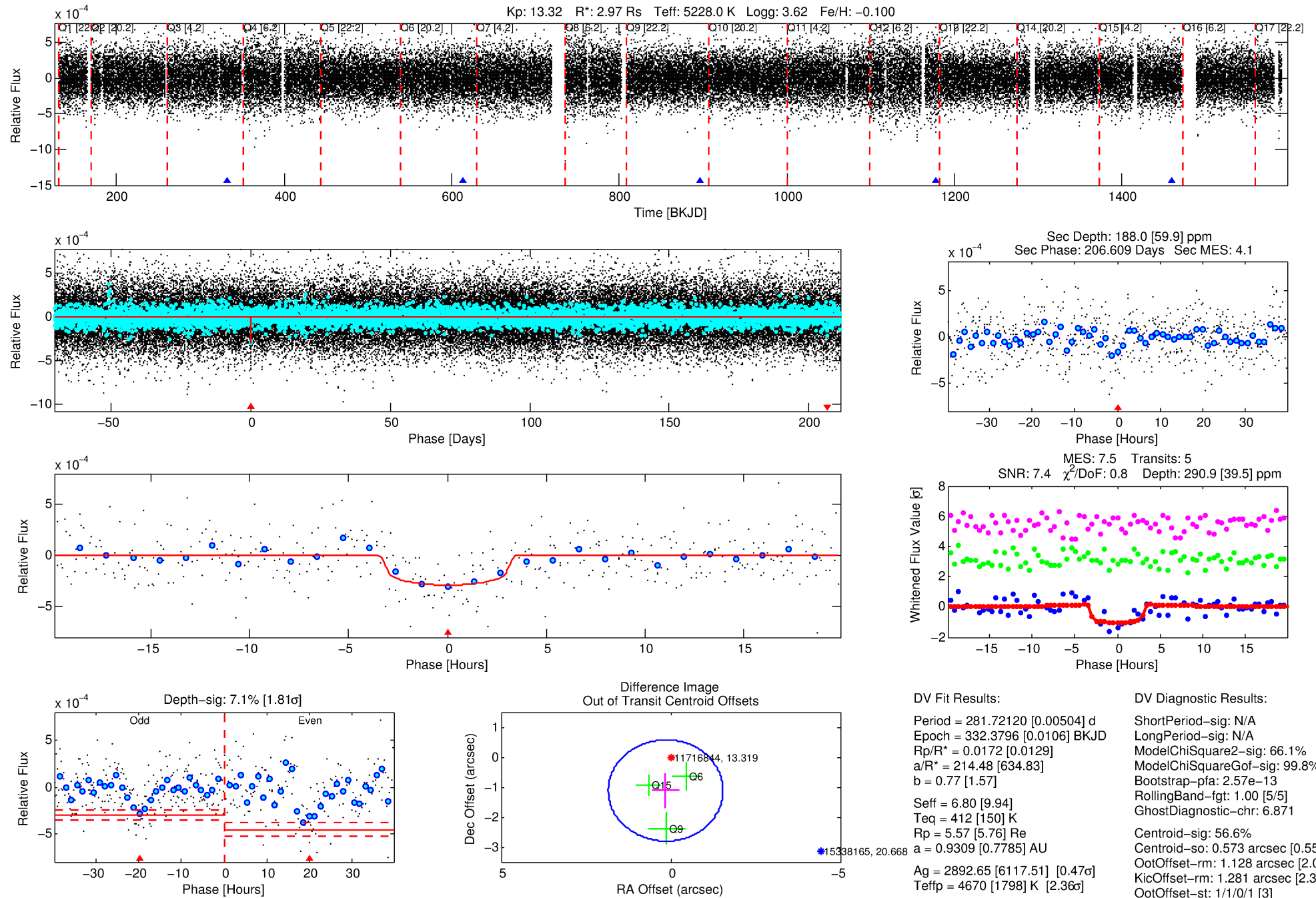
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011716844-01

No Significant Match Found

DV One-Page Summary

KIC: 11716844 Candidate: 1 of 1 Period: 281.721 d



DV Fit Results:

Period = 281.72120 [0.00504] d
Epoch = 332.3796 [0.0106] BKJD
Rp/R* = 0.0172 [0.0129]
a/R* = 214.48 [634.83]
b = 0.77 [1.57]
Seff = 6.80 [9.94]
Teq = 412 [150] K
Rp = 5.57 [5.76] Re
a = 0.9309 [0.7785] AU
Ag = 2892.65 [6117.51] [0.47σ]
Teffp = 4670 [1798] K [2.36σ]

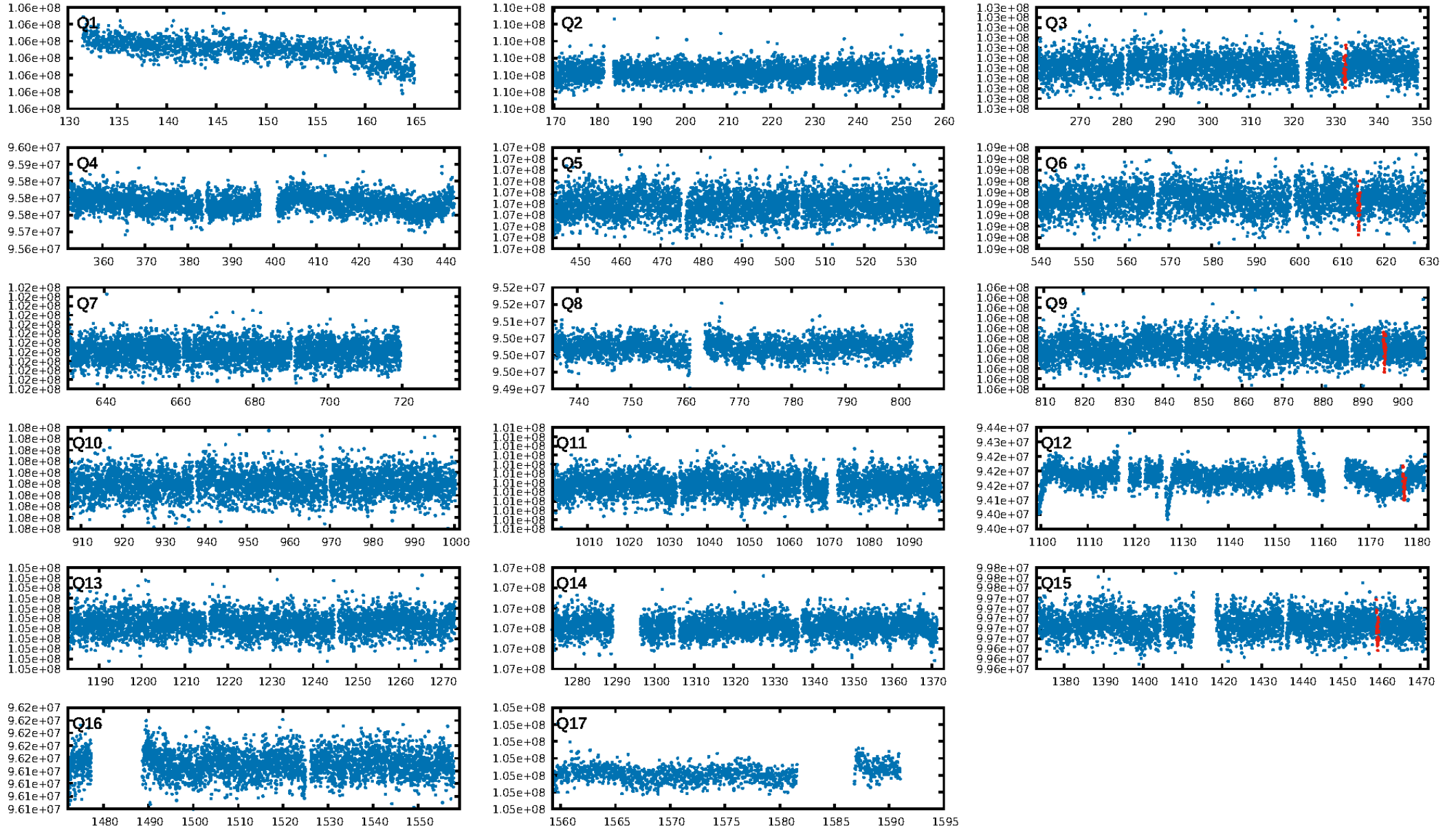
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 66.1%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 2.57e-13
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 6.871
Centroid-sig: 56.6%
Centroid-so: 0.573 arcsec [0.55σ]
OotOffset-rm: 1.128 arcsec [2.00σ]
KicOffset-rm: 1.281 arcsec [2.30σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [4/4]

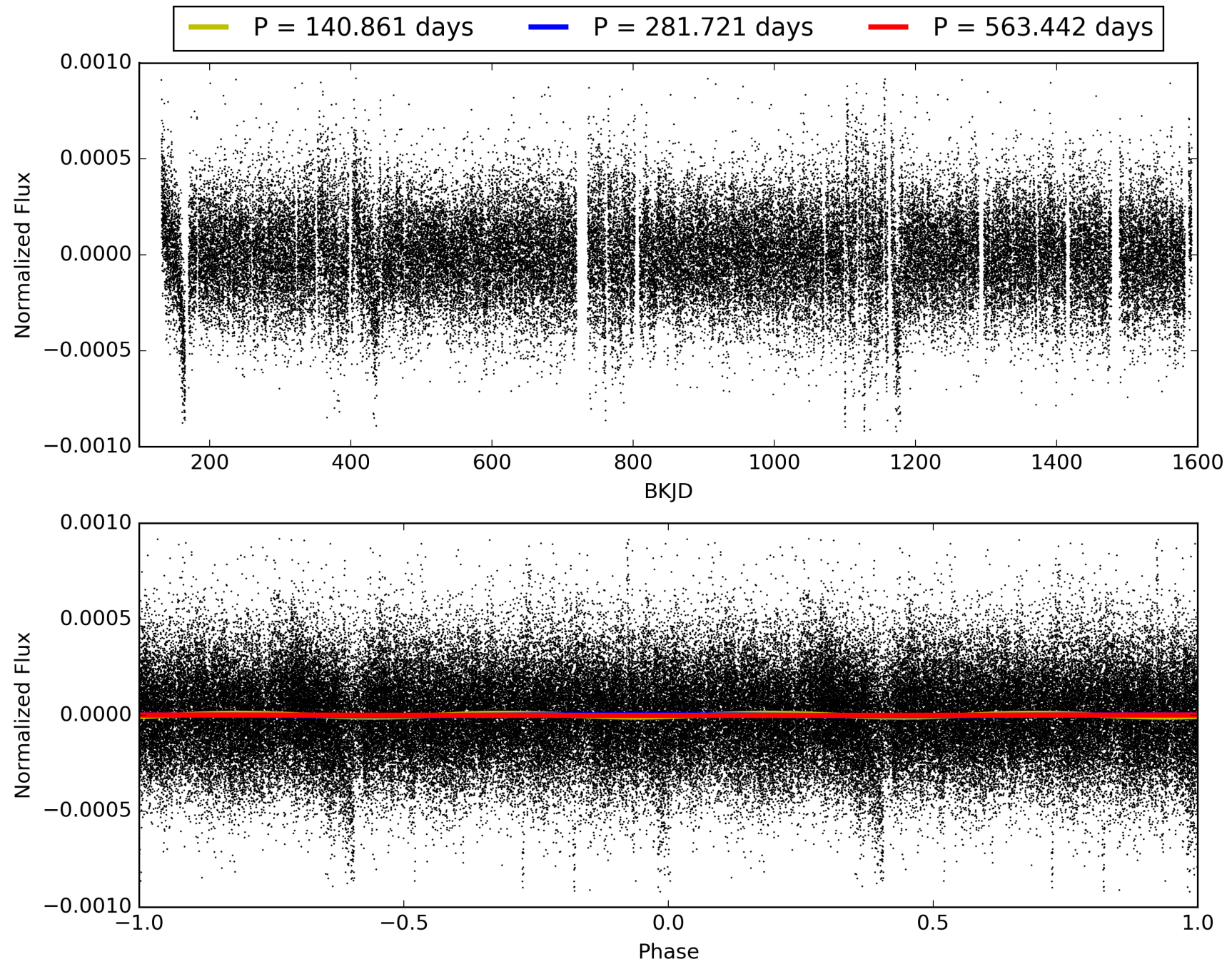
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:59:00 Z

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

TCE 011716844-01, PDC Light Curves

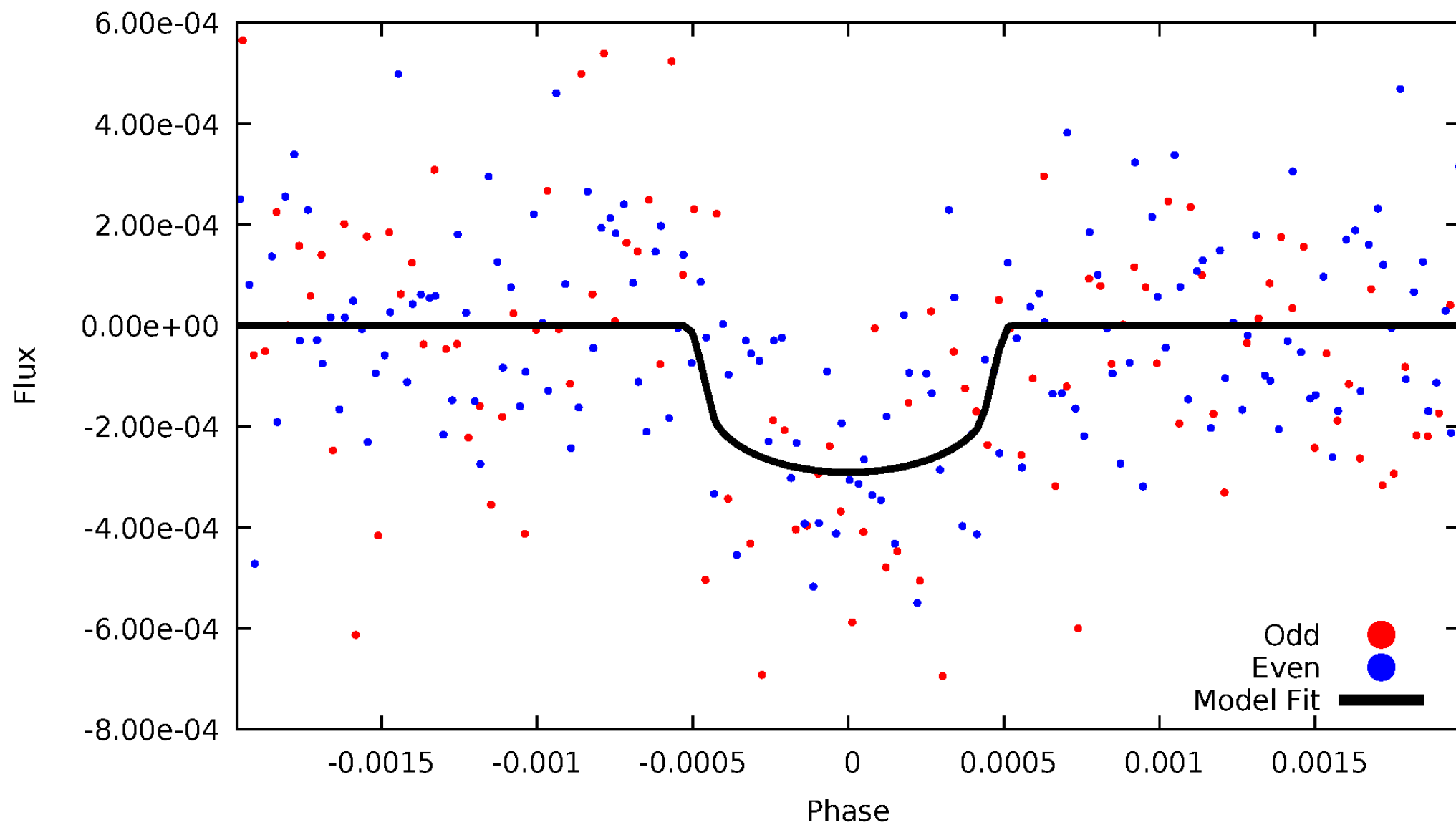


TCE 011716844-01



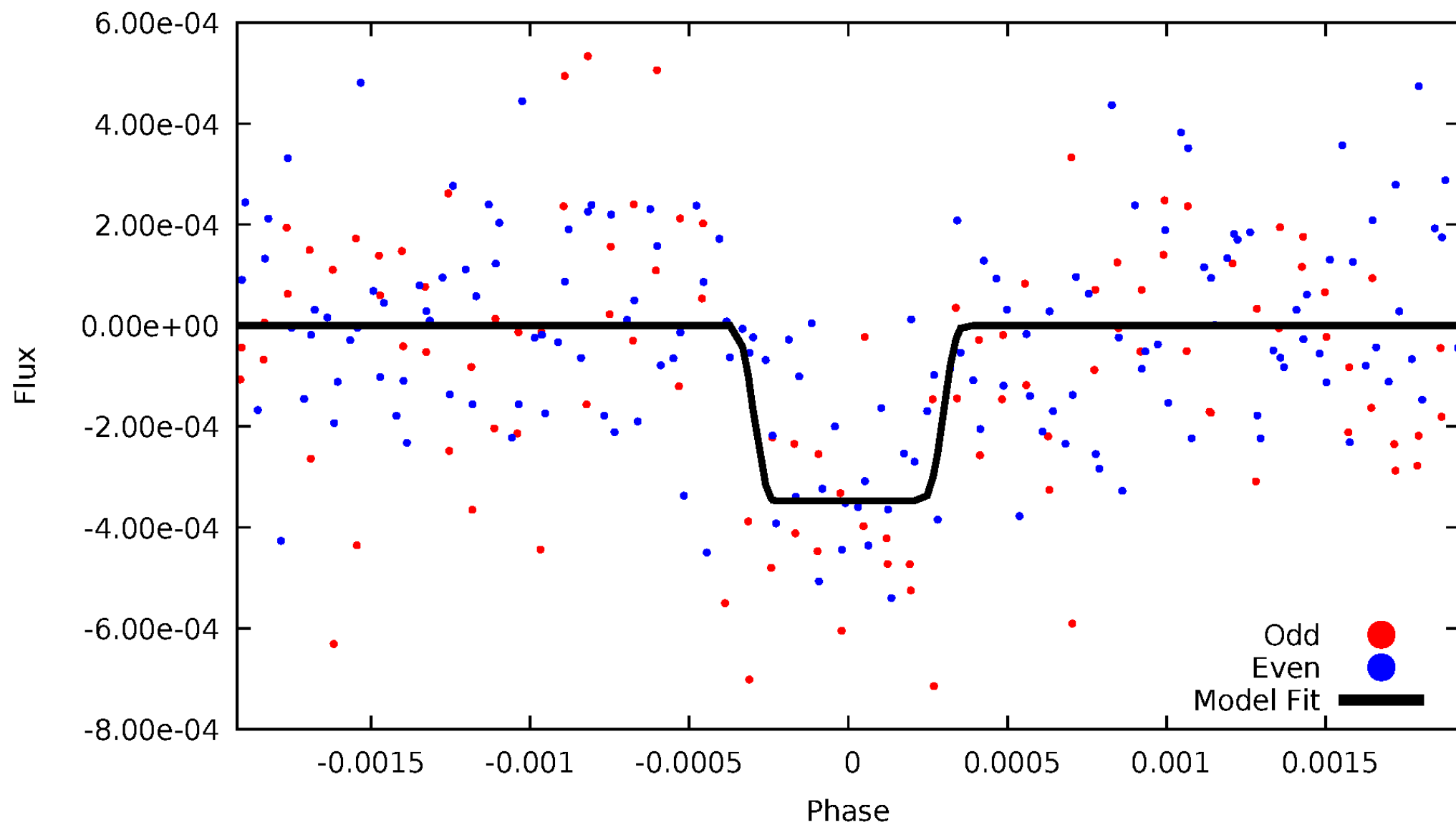
DV Odd/Even

TCE 011716844-01



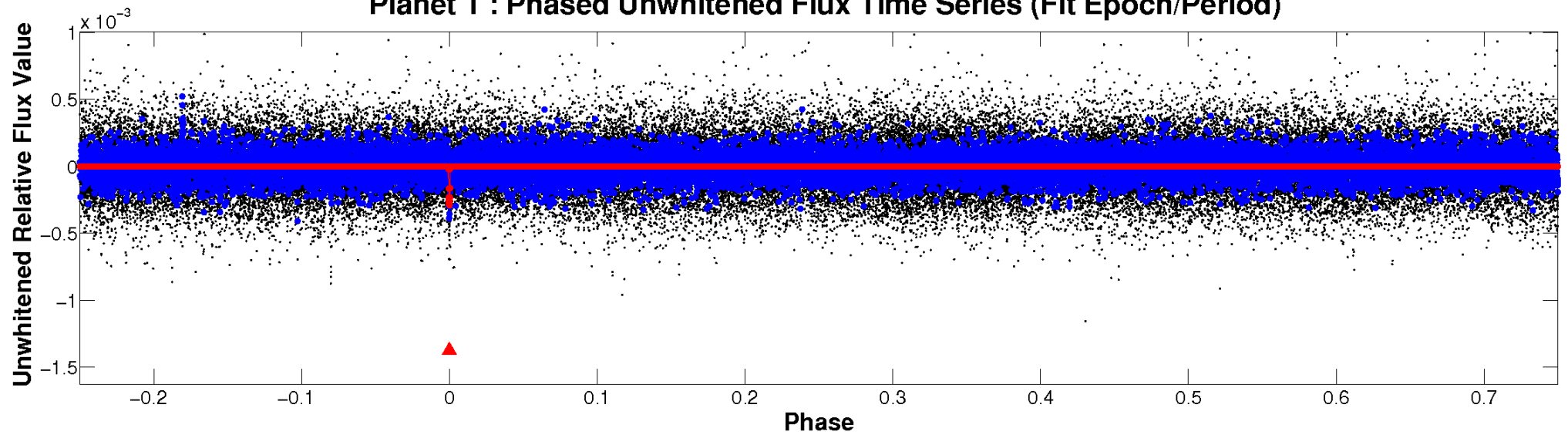
ALT Odd/Even

TCE 011716844-01

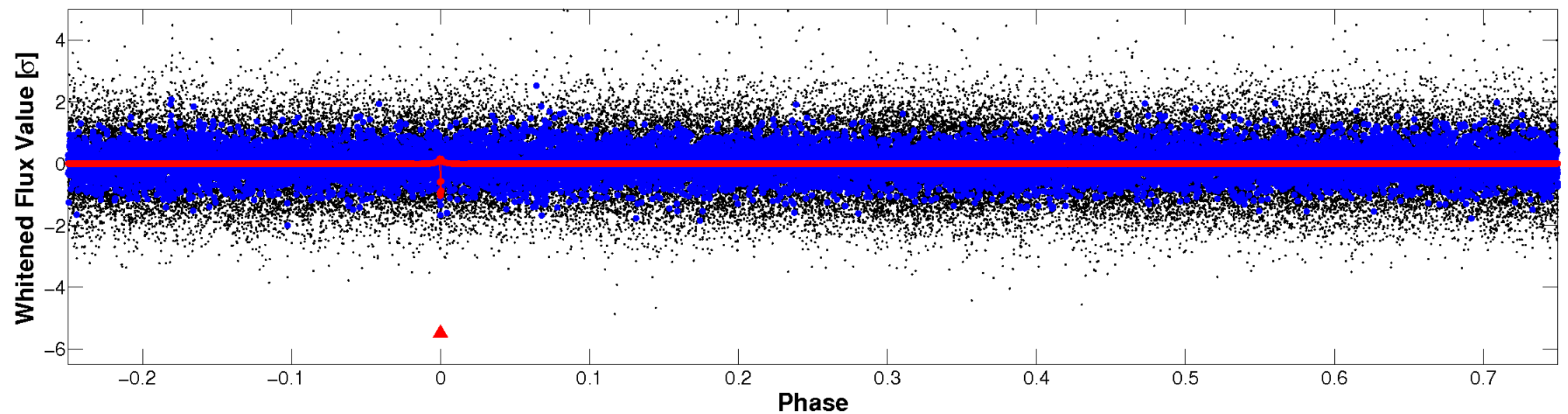


Non-Whitened Vs. Whitened Light Curve

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

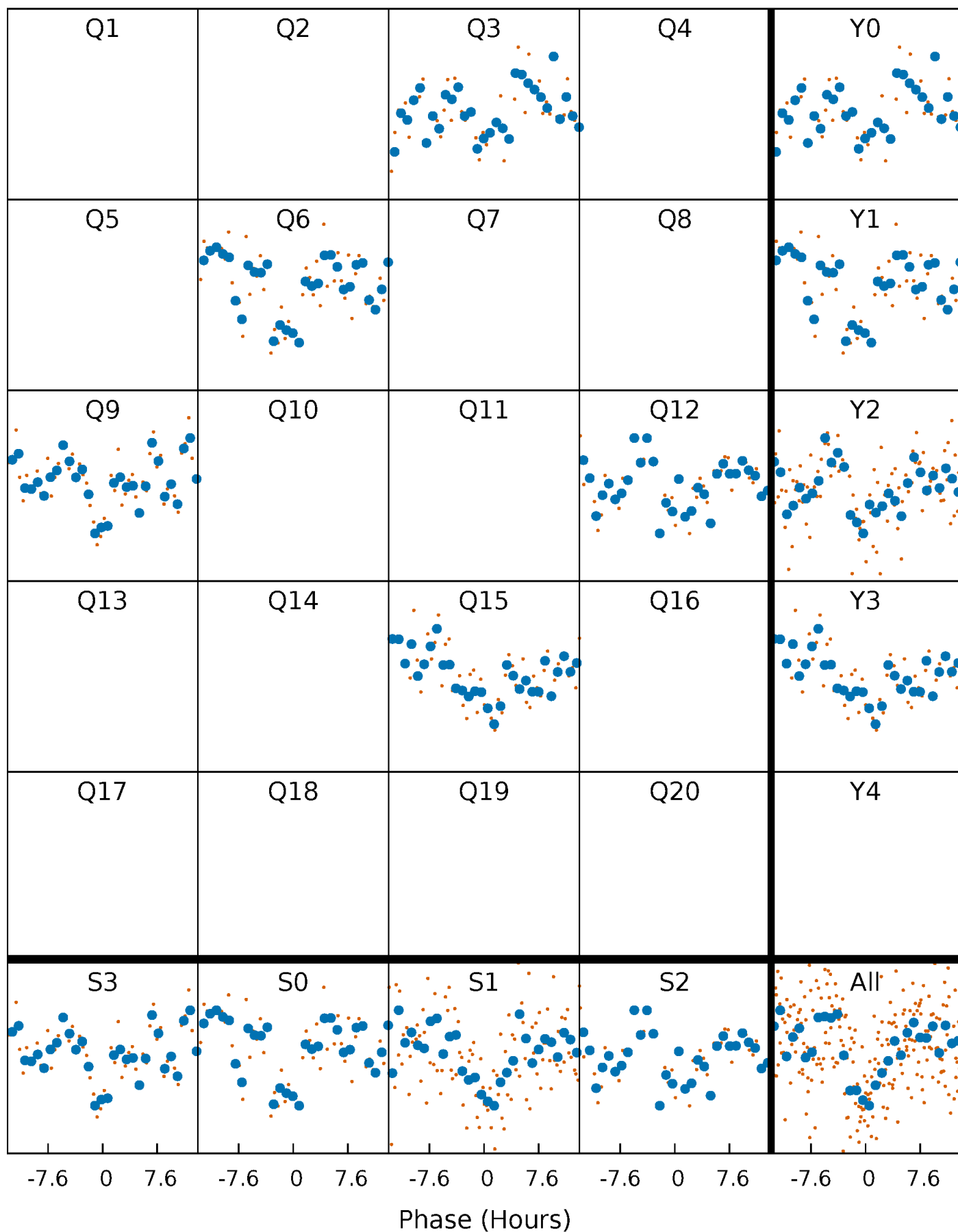


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



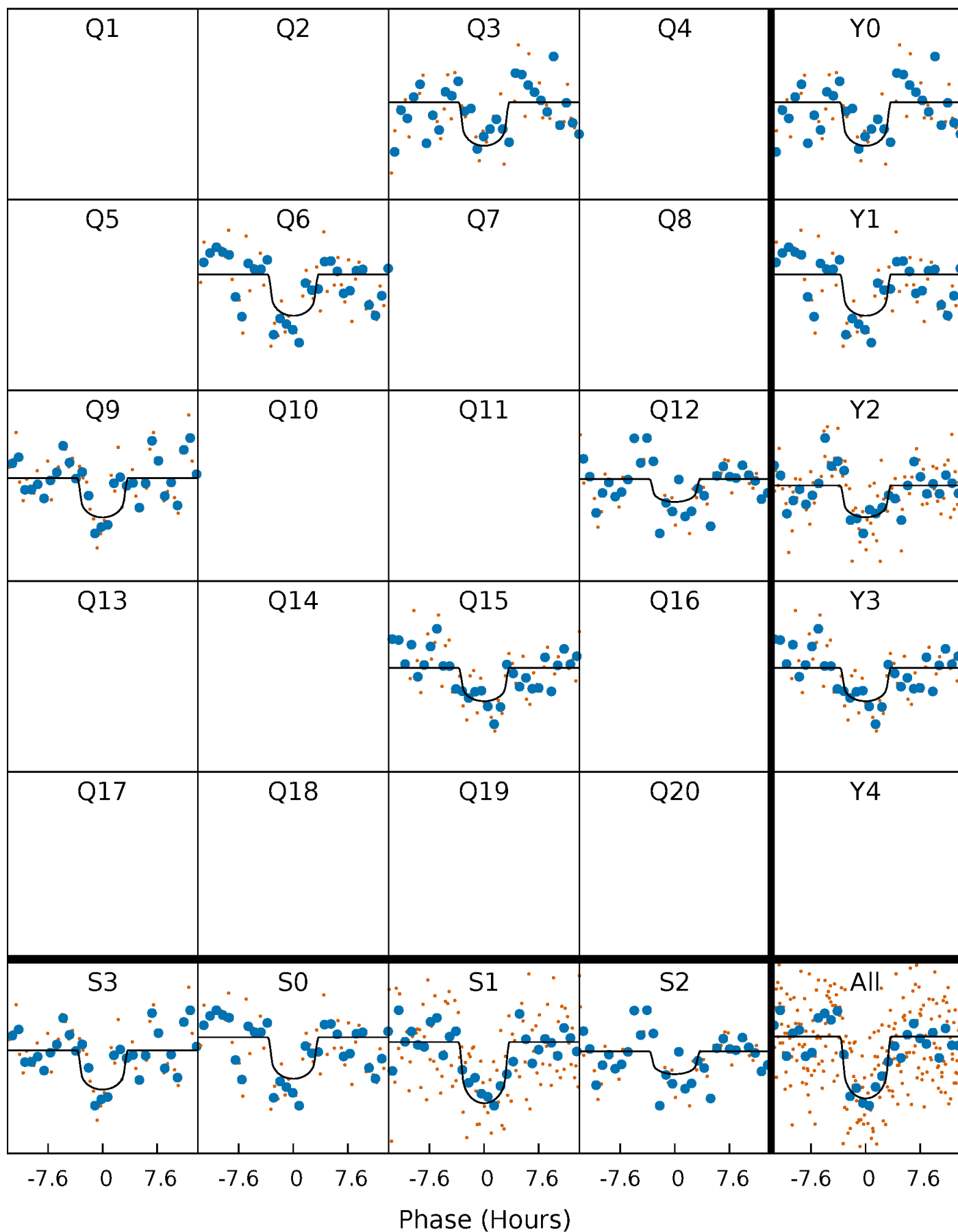
PDC Quarter-Phased Transit Curves

TCE 011716844-01 P=281.721200 Days $T_0=332.379626$ (BKJD)



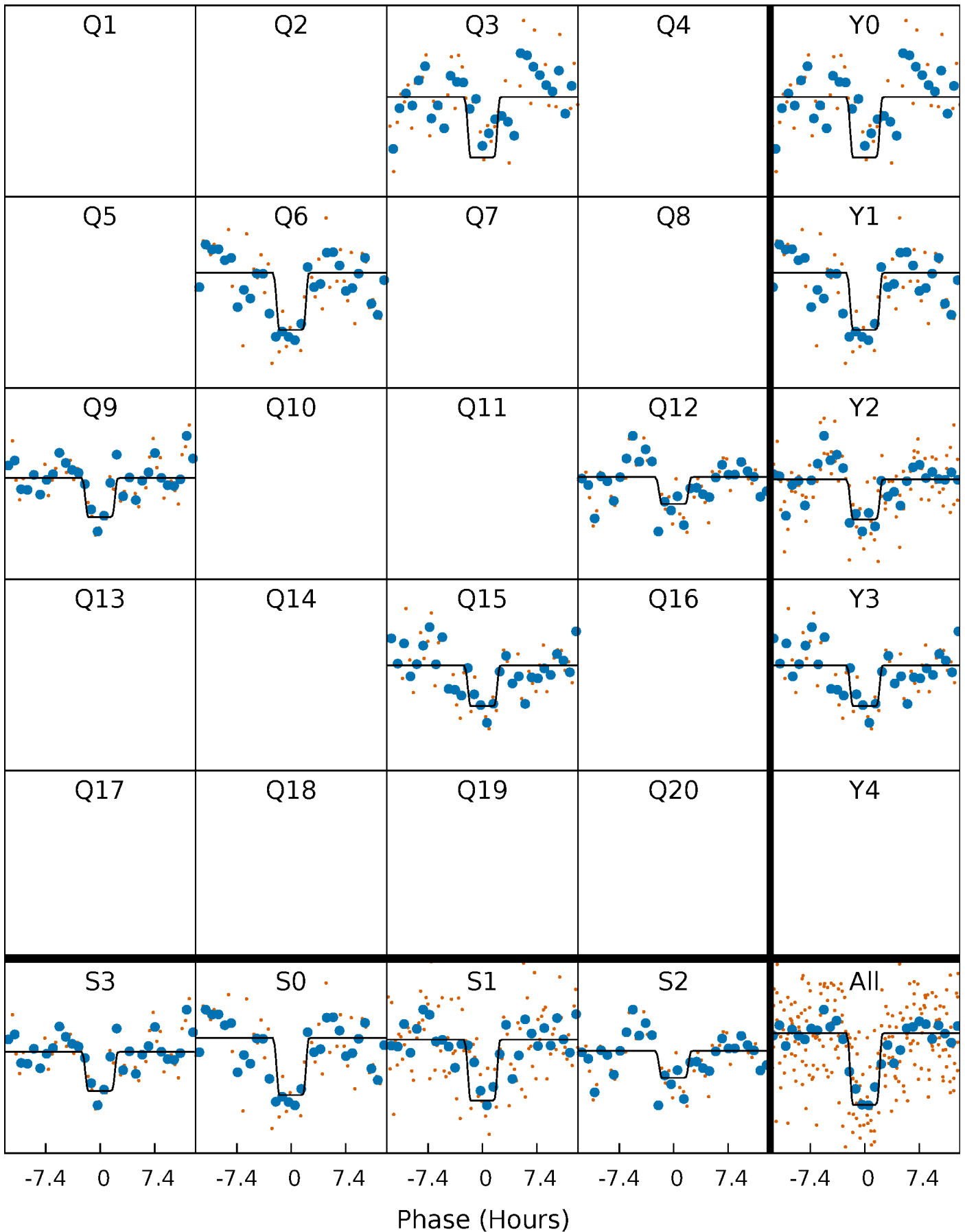
DV Quarter-Phased Transit Curves

TCE 011716844-01 P=281.721200 Days $T_0=332.379626$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

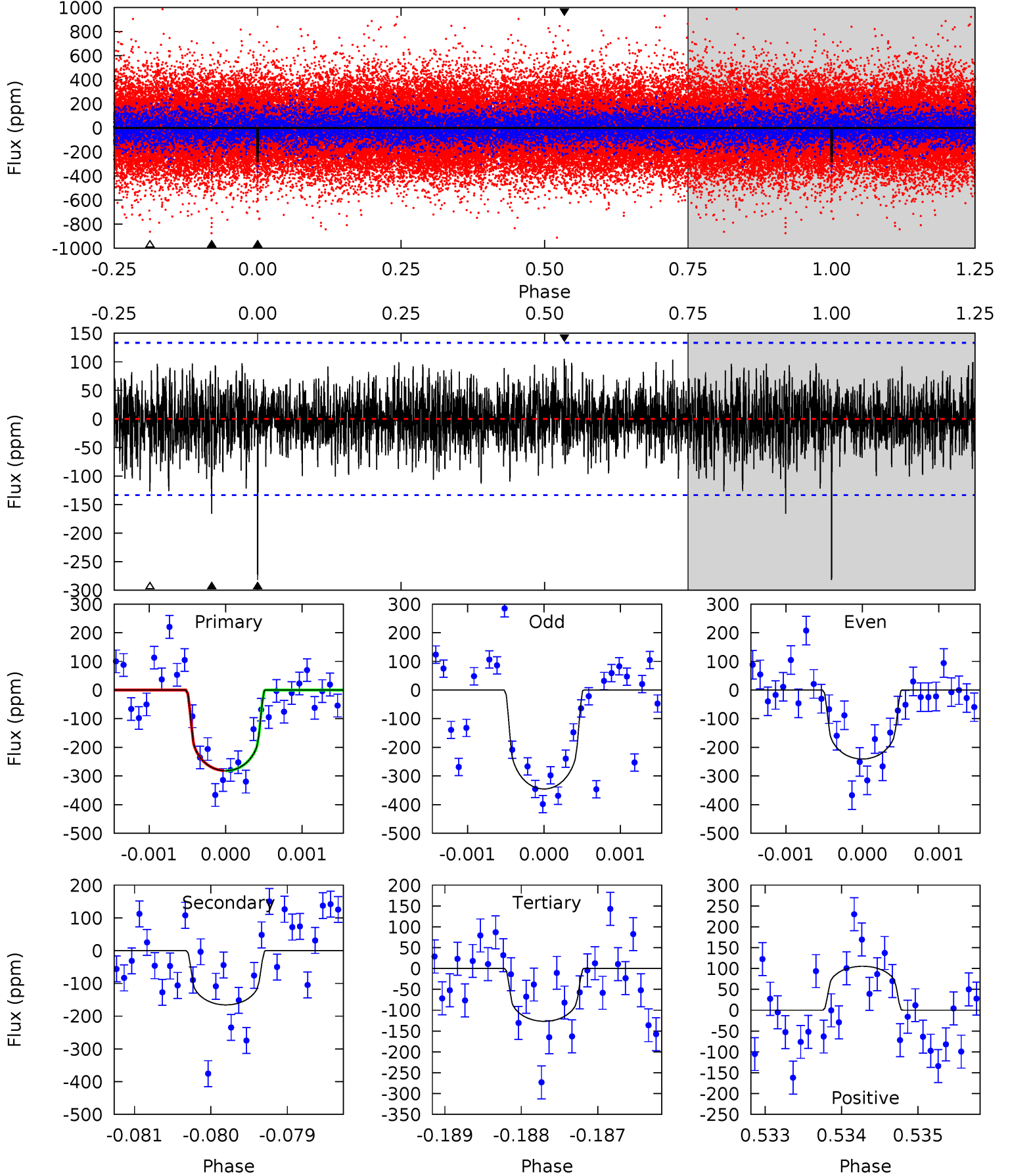
TCE 011716844-01 P=281.736053 Days $T_0=332.344517$ (BKJD)



DV Model-Shift Uniqueness Test

011716844-01, $P = 281.721200$ Days, $E = 50.658426$ Days

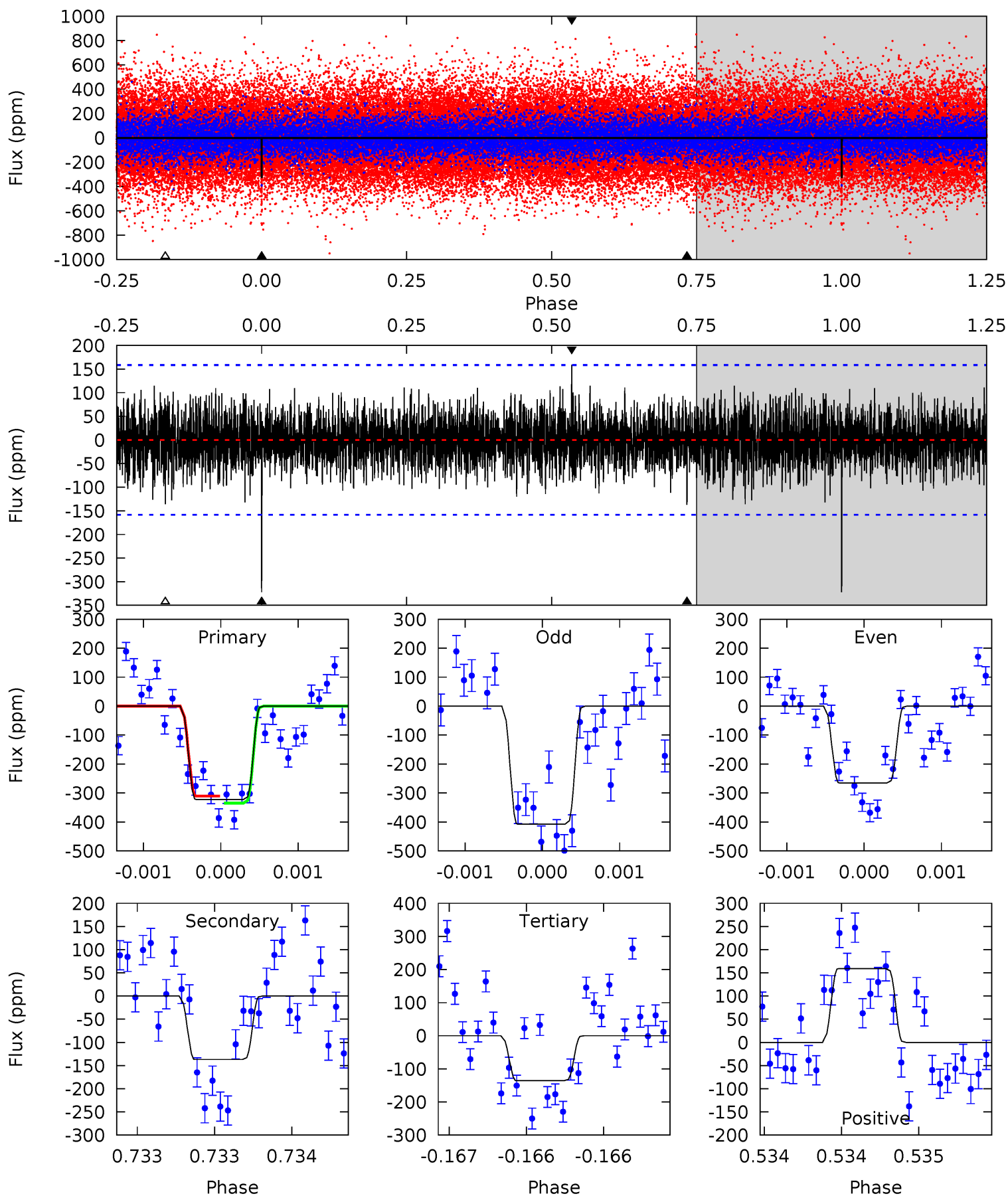
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.5 | 6.77 | 5.18 | 4.31 | 5.45 | 3.29 | 1.47 | 6.34 | 7.21 | 1.59 | 2.46 | 2.06 | 0.90 | 0.27 | 0.01 |



Alt Model-Shift Uniqueness Test

011716844-01, P = 281.736053 Days, E = 50.608464 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.2 | 4.77 | 4.72 | 5.53 | 5.51 | 3.39 | 1.31 | 6.49 | 5.68 | 0.04 | -0.76 | 2.41 | 0.92 | 0.33 | 0.43 |



Stellar Parameters For KIC 011716844

| | $T_{\text{eff}}(K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5228^{+172}_{-157} | $3.625^{+0.896}_{-0.224}$ | $-0.100^{+0.300}_{-0.300}$ | $2.968^{+0.908}_{-2.119}$ | $1.356^{+0.202}_{-0.504}$ | $0.073^{+1.892}_{-0.041}$ |
| | +3%/-3% | +25%/-6% | +300%/-300% | +31%/-71% | +15%/-37% | +2591%/-57% |
| 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 011716844-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|------------------------|--------------------|-----------------------|-------------------------|
| DV | -166 ± 24 | $5.17^{+4.79}_{-3.13}$ | 568^{+55}_{-112} | 4412^{+2149}_{-684} | 2896^{+15647}_{-2096} |
| Alt. | -137 ± 29 | $5.51^{+4.39}_{-3.38}$ | 566^{+63}_{-108} | 4197^{+1748}_{-659} | 2052^{+10410}_{-1436} |

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 $A_{obs} \gg 1.0$

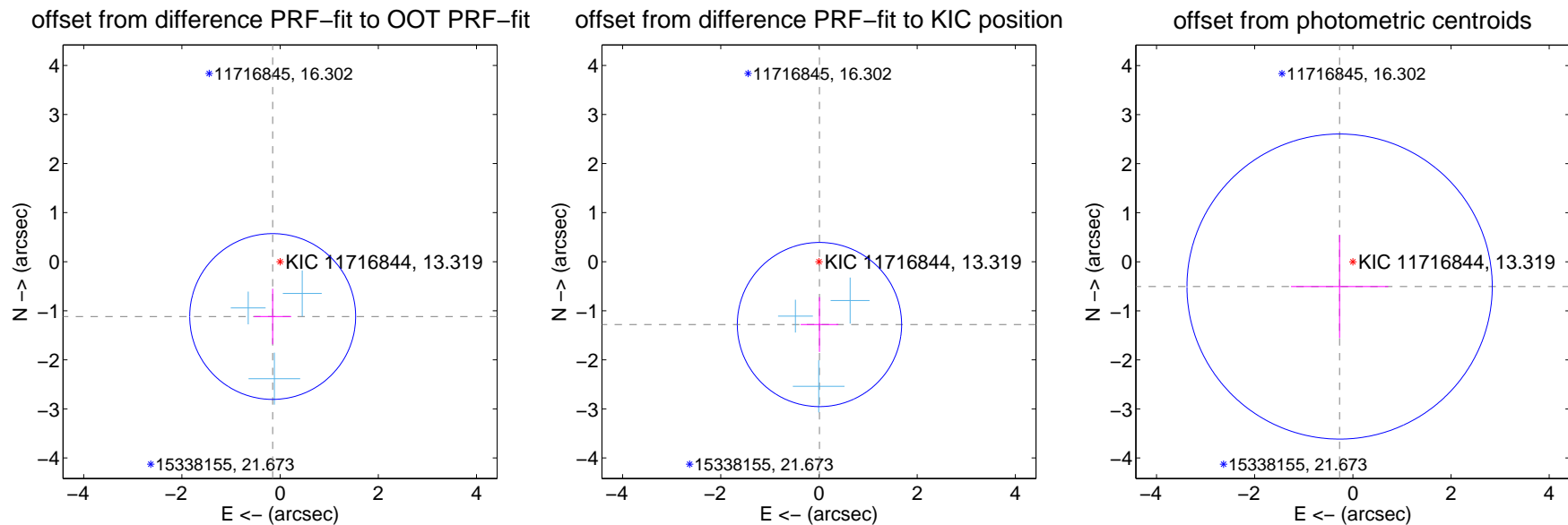
DV Centroid Data

Supplemental centroid analysis for 011716844-01. Kepler magnitude: 13.32. Transit SNR 7.35

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

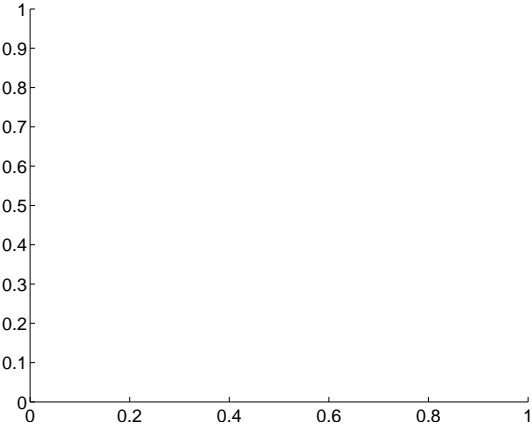
| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 1.128 ± 0.563 | 2.00 | 0.151 ± 0.378 | -1.117 ± 0.566 |
| PRF-fit source offset from KIC position | 1.281 ± 0.558 | 2.30 | -0.010 ± 0.384 | -1.281 ± 0.558 |
| photometric centroid source offset | 0.57 ± 1.04 | 0.55 | 0.27 ± 0.99 | -0.51 ± 1.05 |



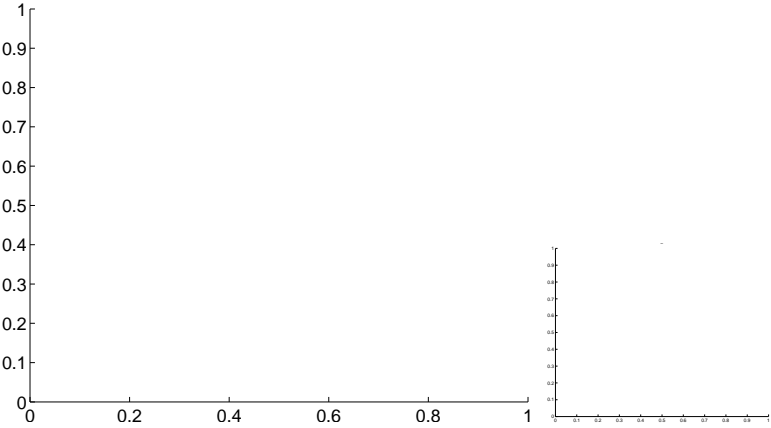
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

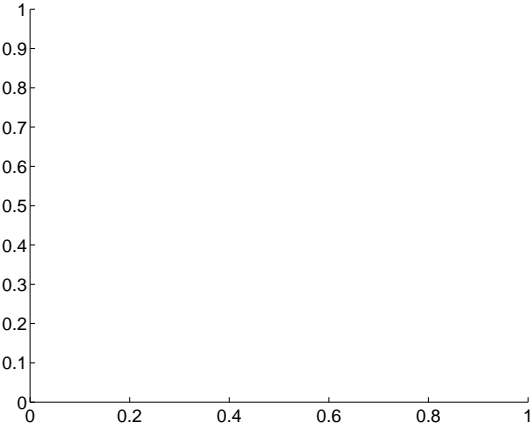
Q1 no difference image



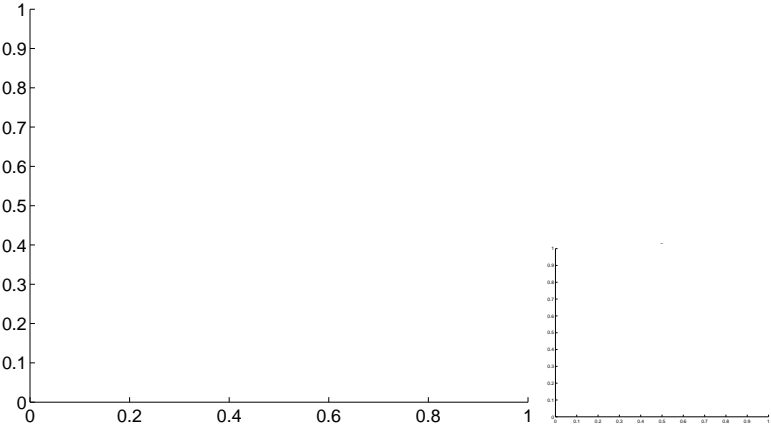
Q1 no OOT image



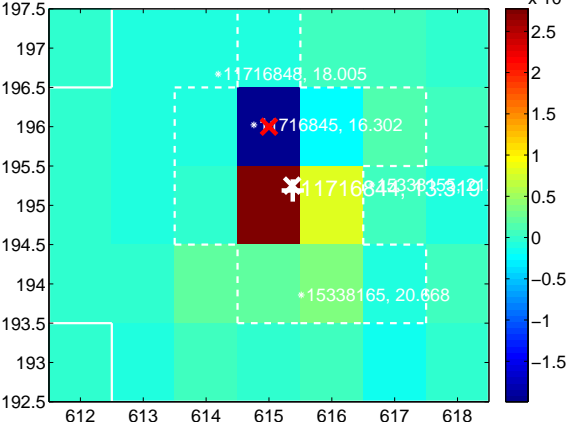
Q2 no difference image



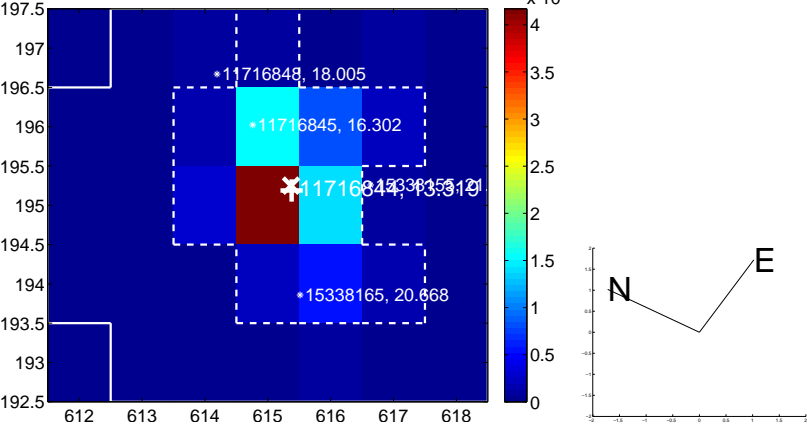
Q2 no OOT image



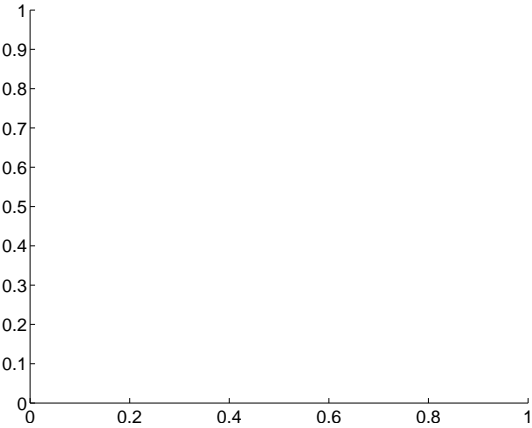
Q3 difference image. Poor Quality



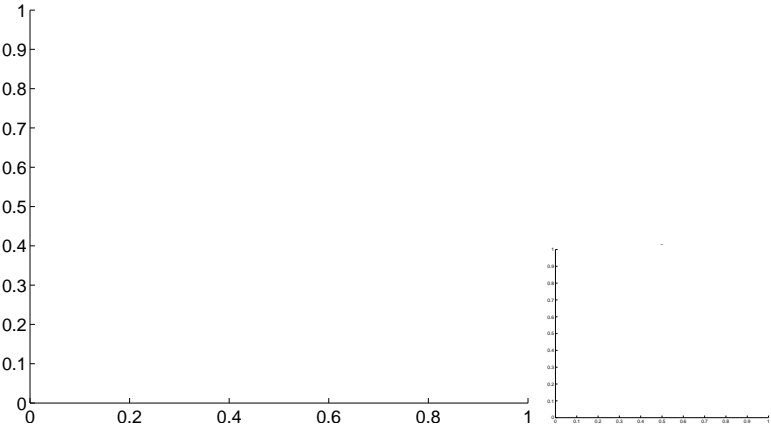
Q3 OOT image



Q4 no difference image

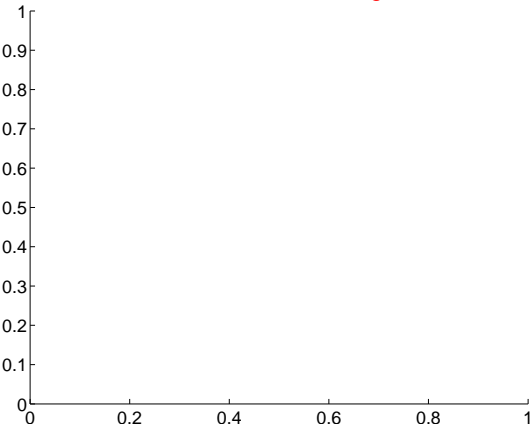


Q4 no OOT image

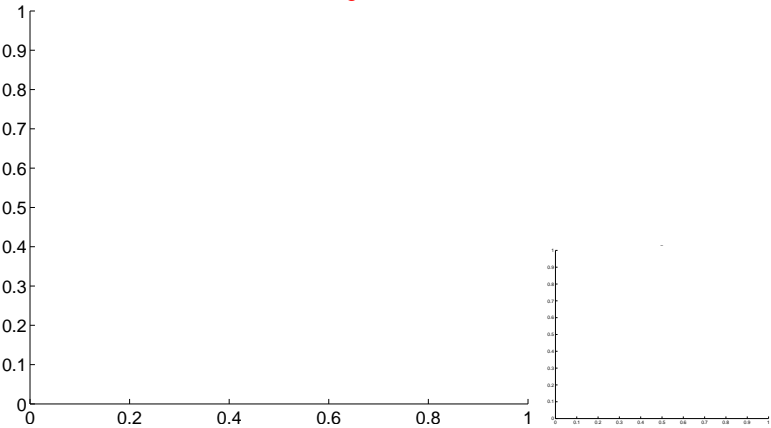


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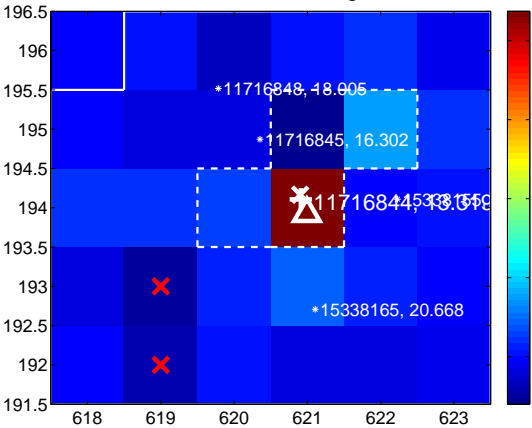
Q5 no difference image



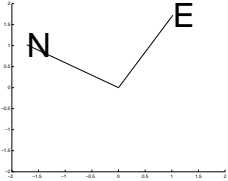
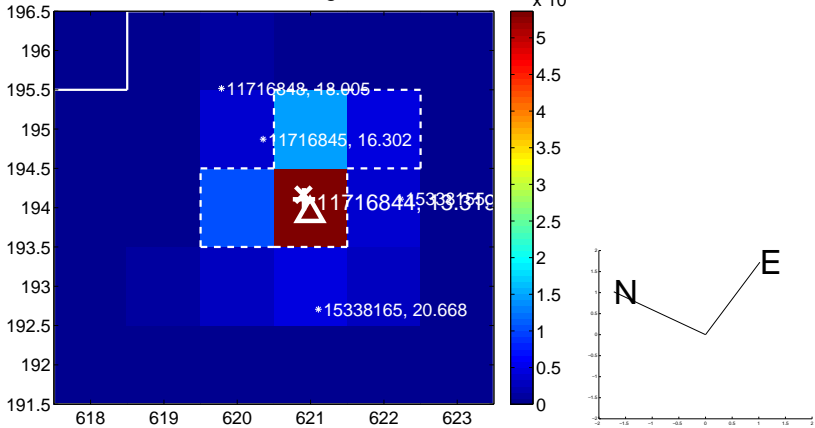
Q5 no OOT image



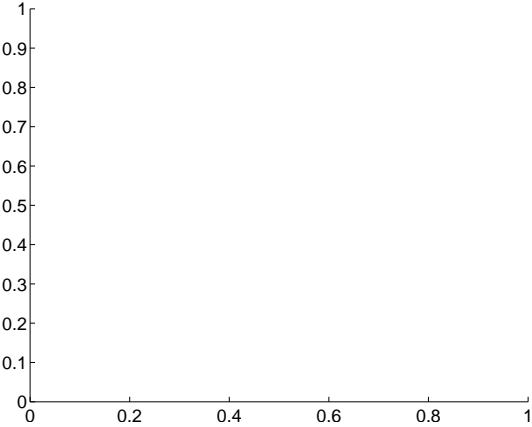
Q6 difference image



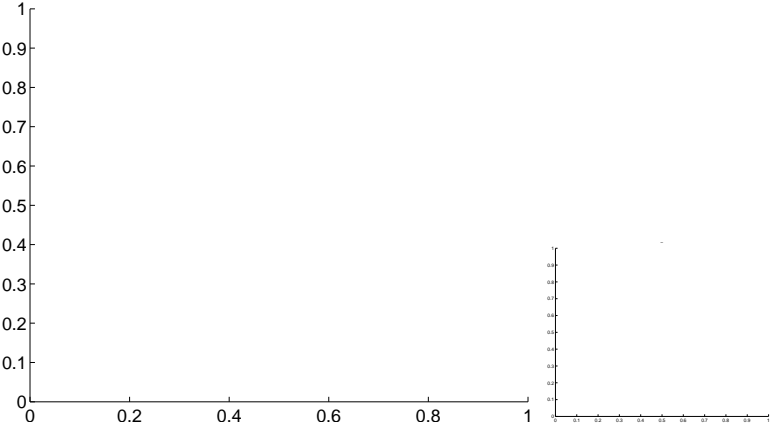
Q6 OOT image



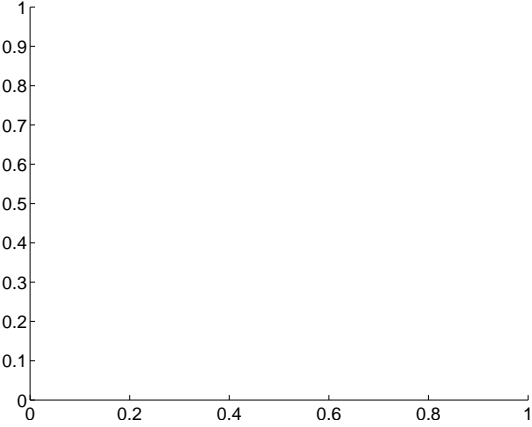
Q7 no difference image



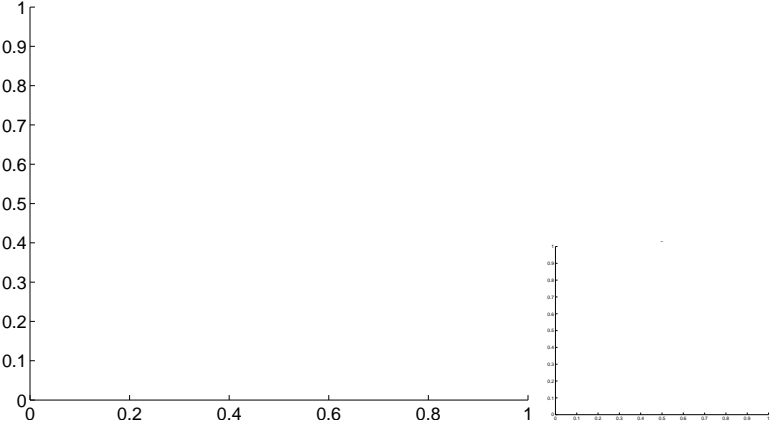
Q7 no OOT image



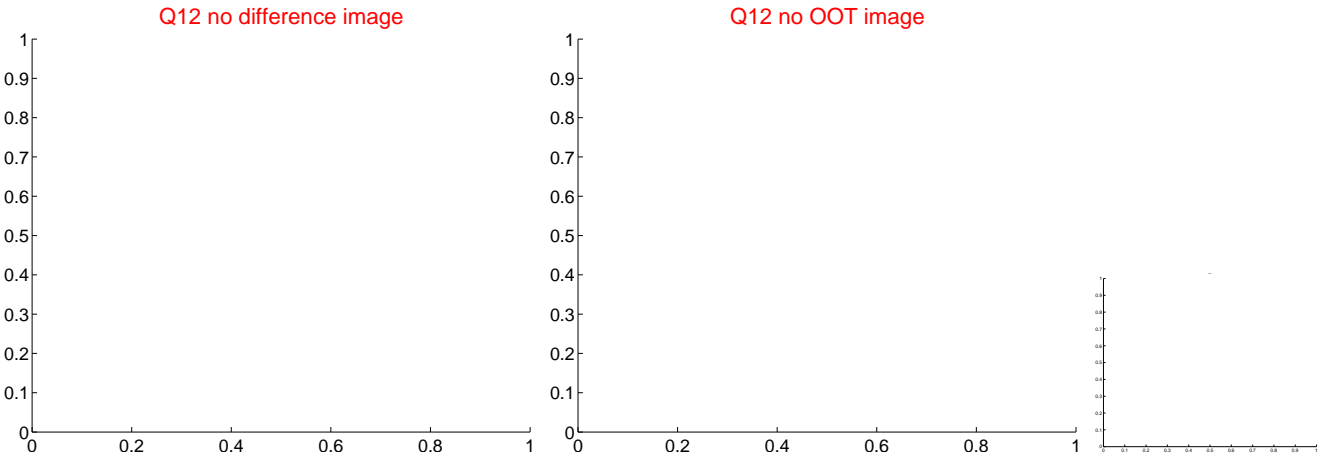
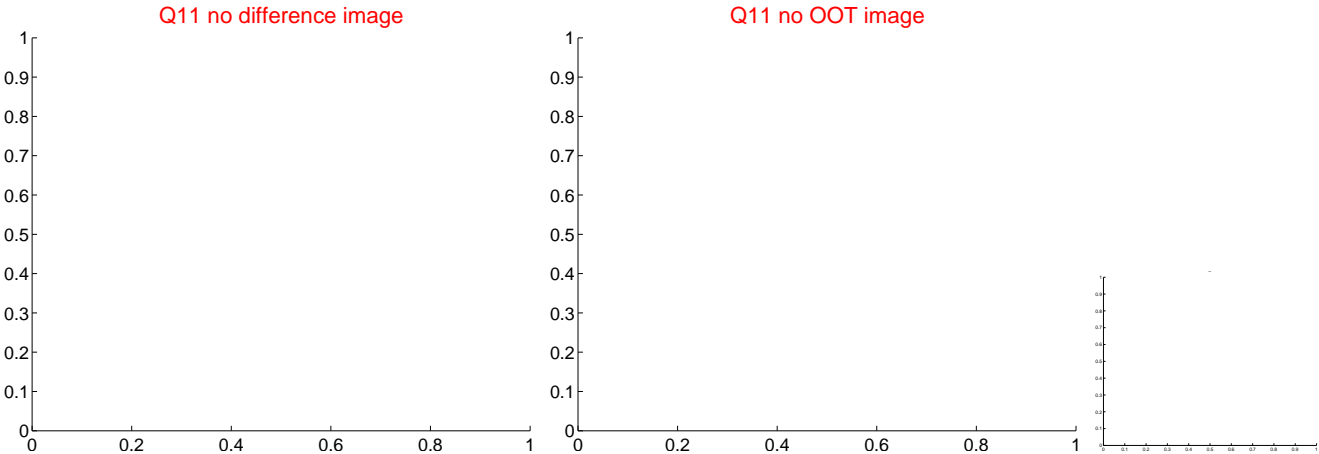
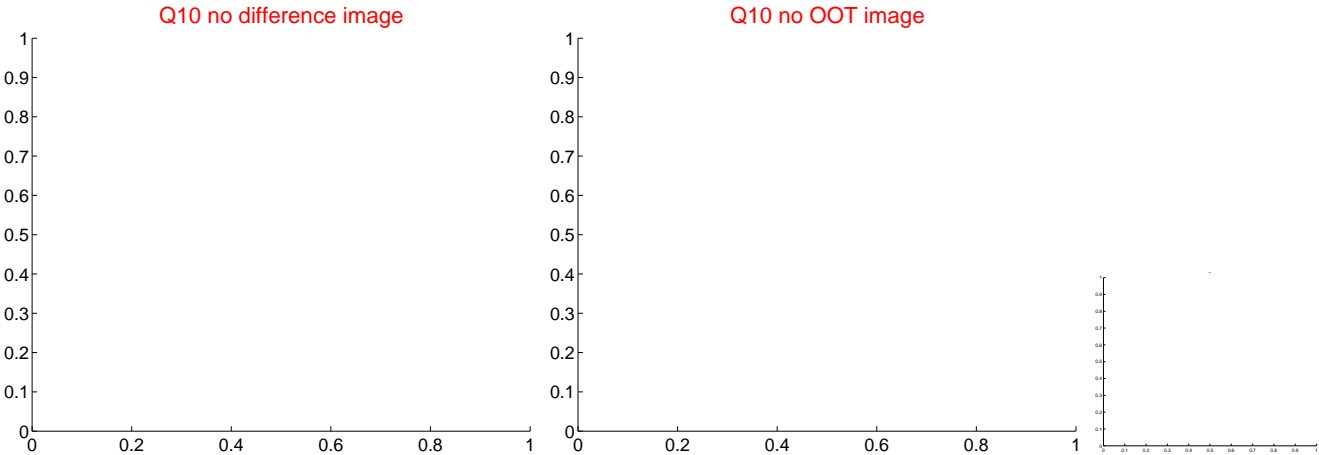
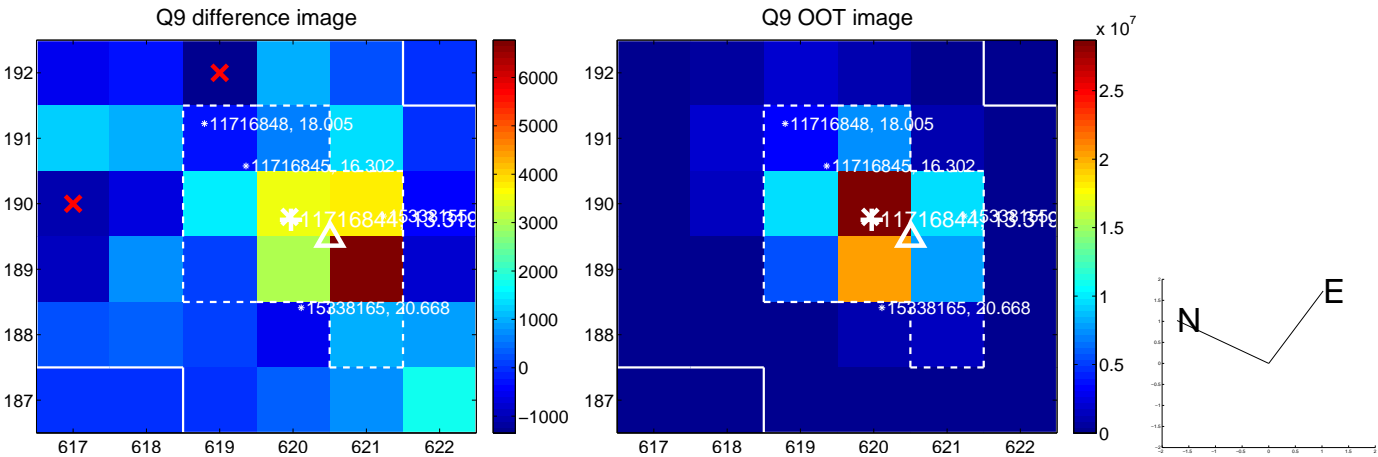
Q8 no difference image



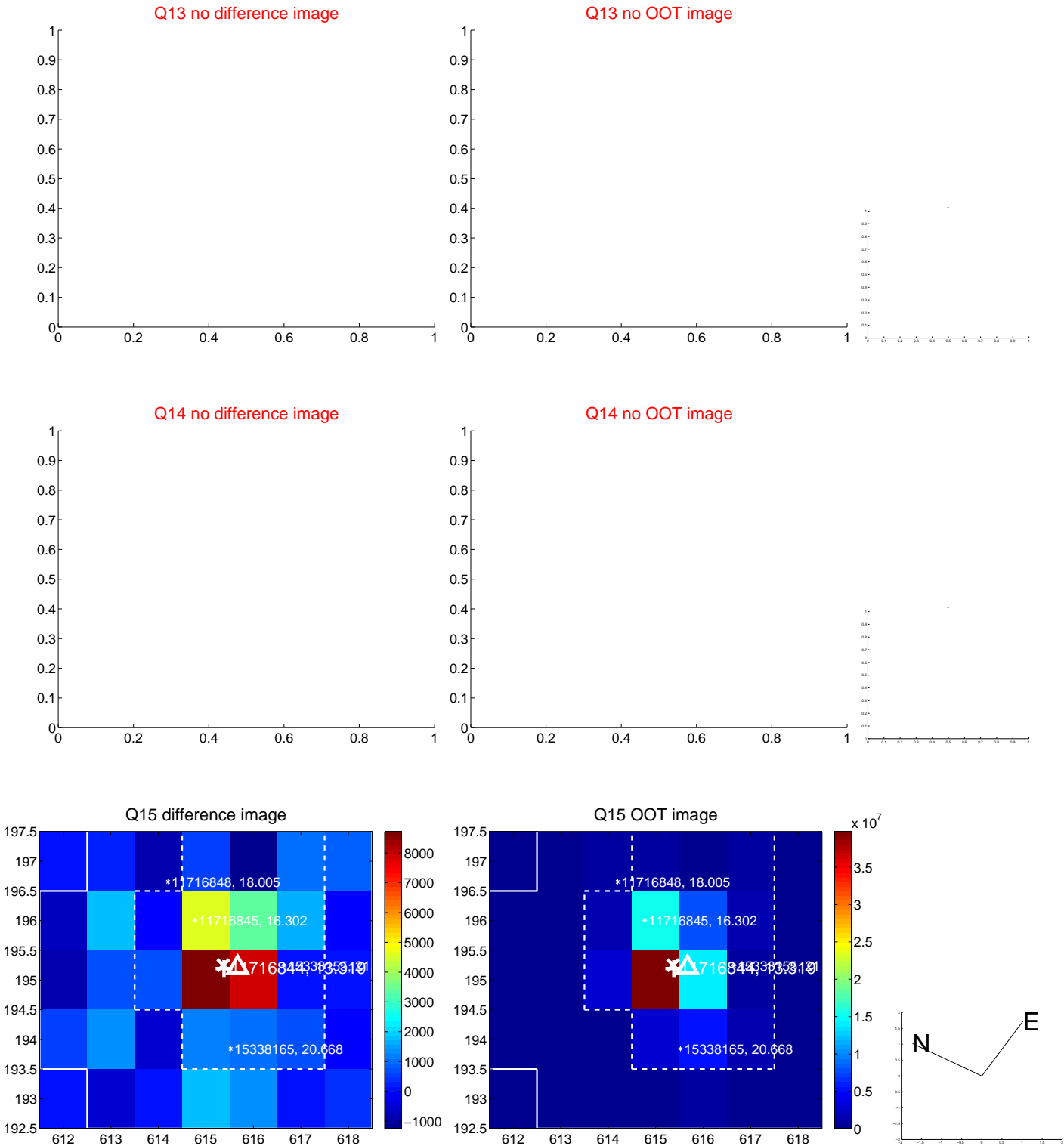
Q8 no OOT image



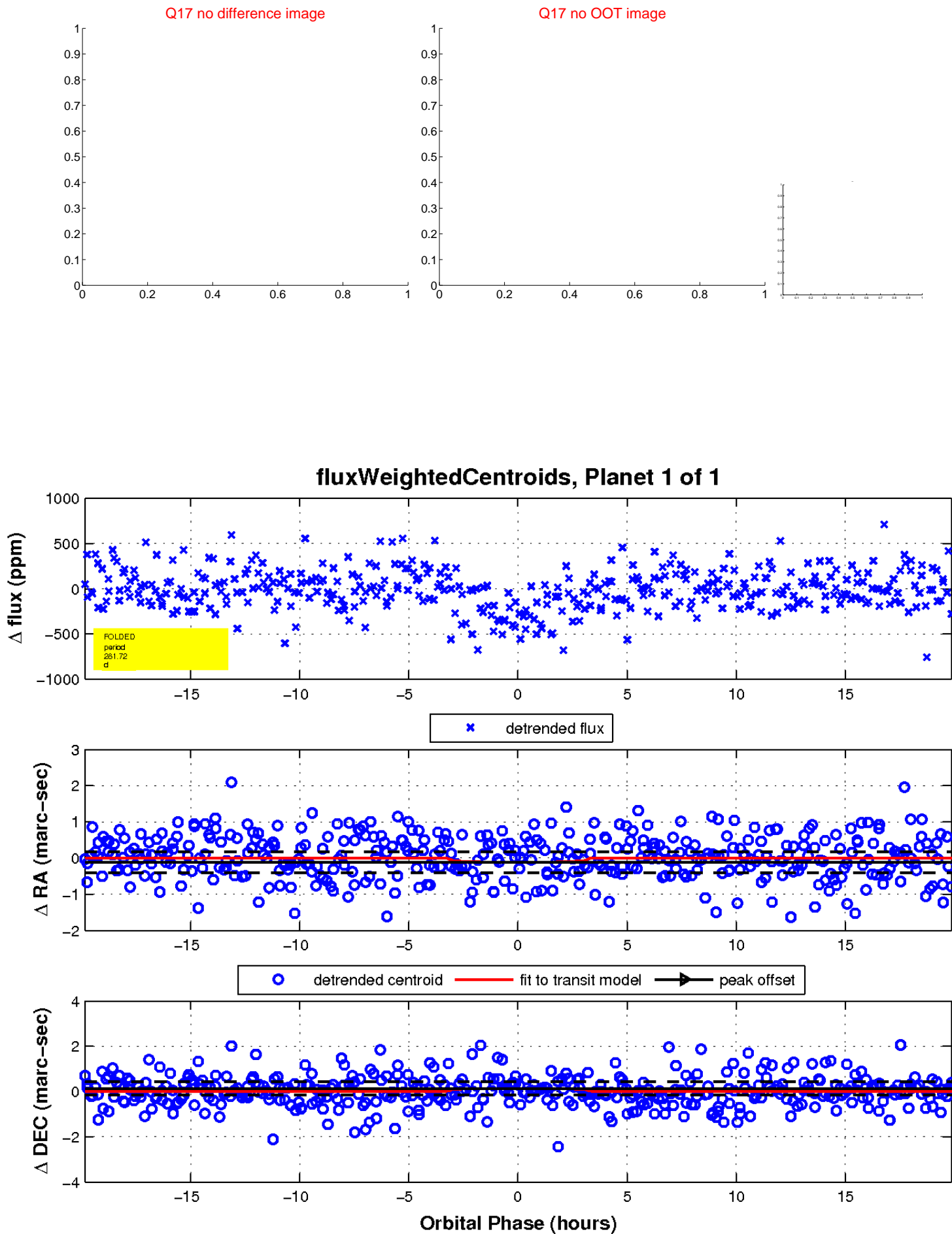
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

