

KIC 004383044

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 004383044-01 | OBS | No | 225.570849 | 310.953908 | 388.5 | 7.087 | 7.4 | 7.3 | 1.04 | 6217 | 2.31 | 2.75 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|----------------------------------------------------------|
| 004383044-01 | OBS | FP | 0.06 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—MOD_NONUNIQ_ALT—CENT_KIC_POS |

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

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

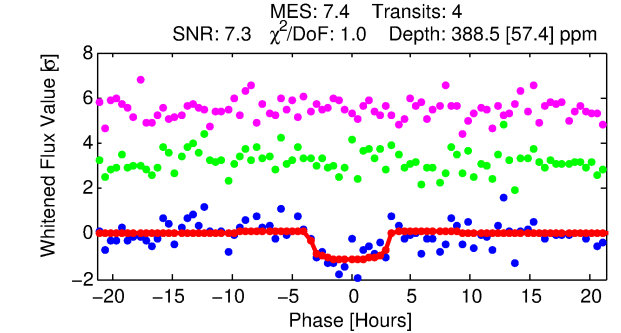
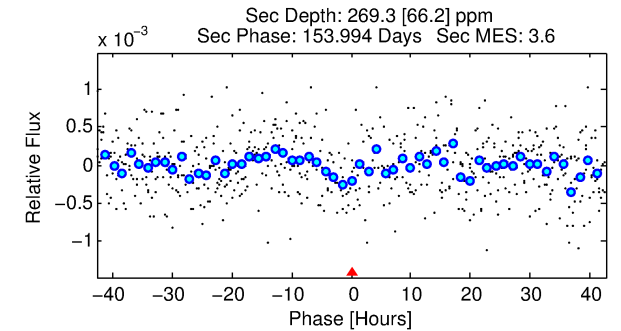
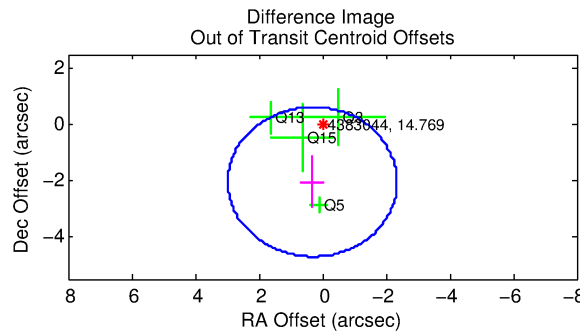
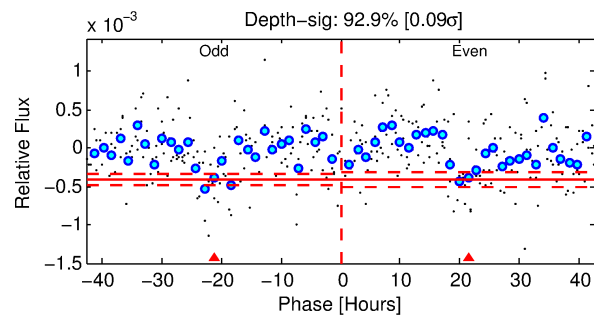
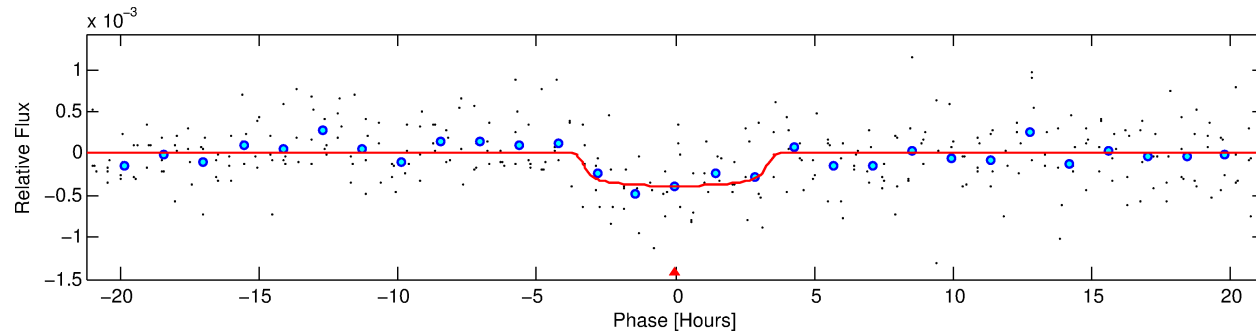
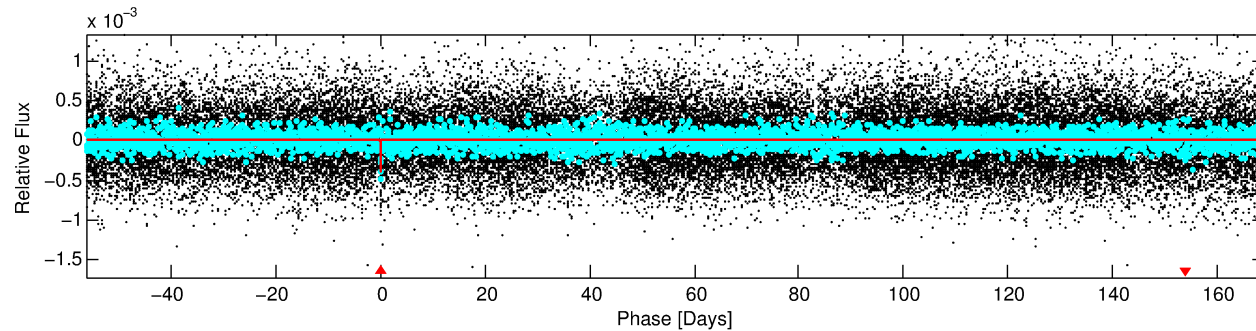
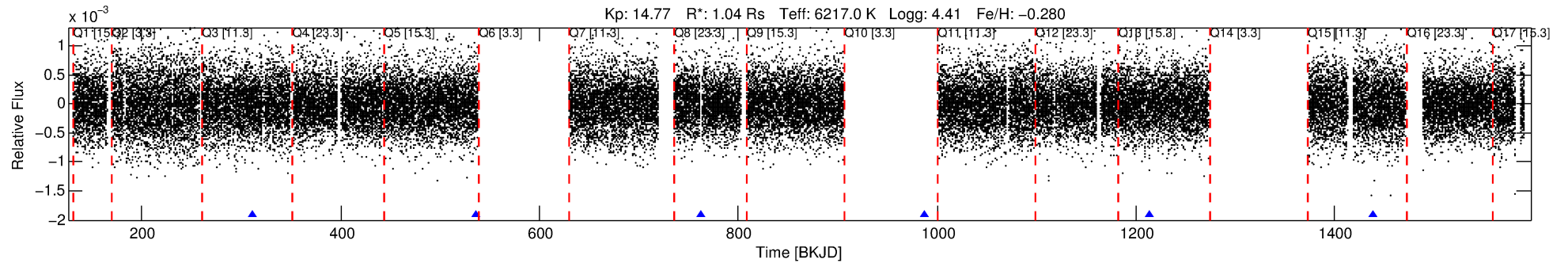
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004383044-01

No Significant Match Found

DV One-Page Summary

KIC: 4383044 Candidate: 1 of 1 Period: 225.571 d



DV Fit Results:

Period = 225.57085 [0.00511] d
Epoch = 310.9539 [0.0175] BKJD
Rp/R* = 0.0203 [0.0099]
a/R* = 141.07 [359.18]
b = 0.84 [0.90]
Seff = 2.75 [1.10]
Teq = 328 [33] K
Rp = 2.31 [1.33] Re
a = 0.7255 [0.1892] AU
Ag = 14661.61 [15653.37] [0.94 σ]
Teffp = 5584 [1409] K [3.73 σ]

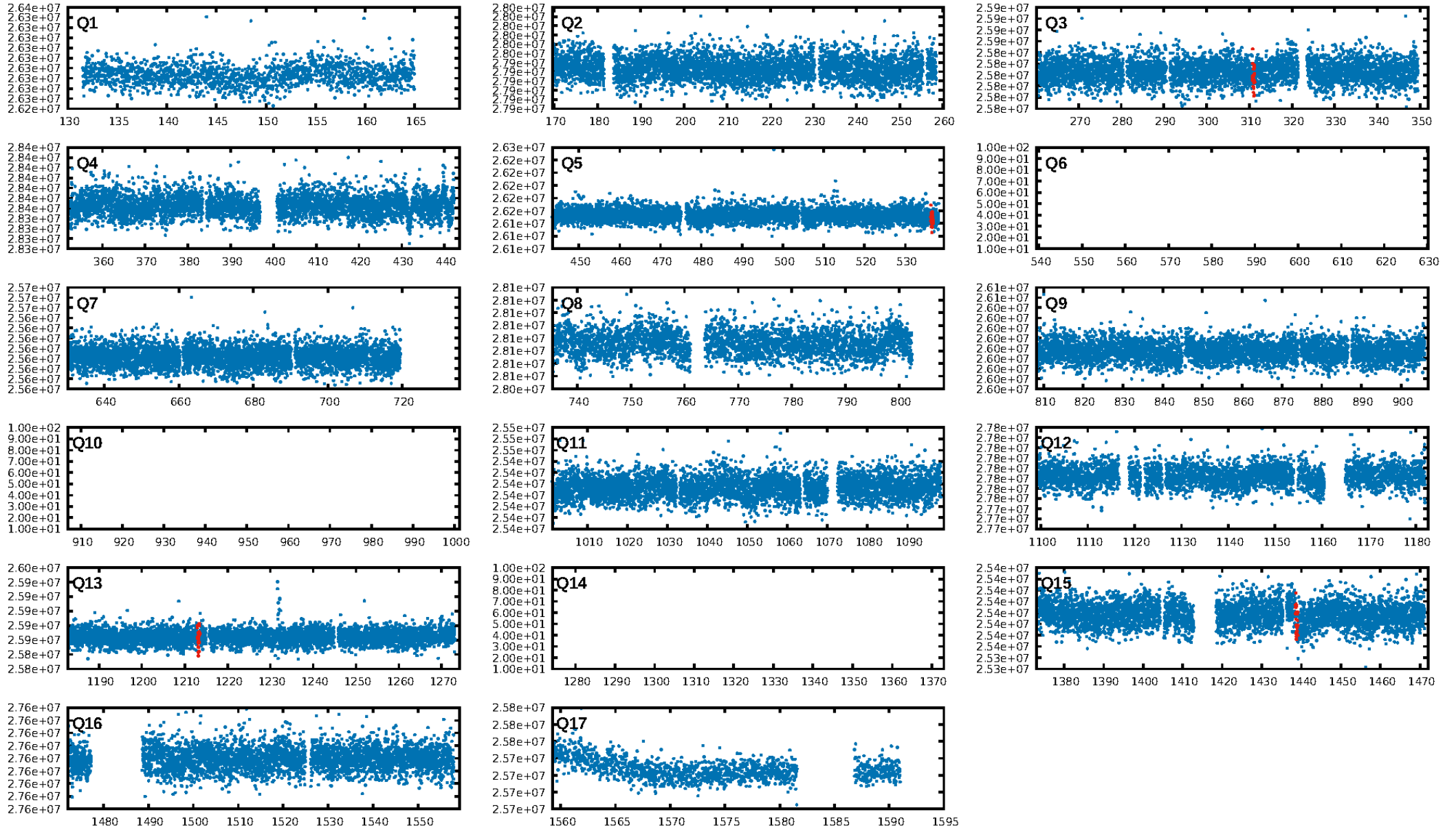
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 97.0%
ModelChiSquareGof-sig: 96.7%
Bootstrap-pfa: 5.90e-15
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.3705
Centroid-sig: 0.9%
Centroid-so: 3.328 arcsec [1.76 σ]
OotOffset-rm: 2.069 arcsec [2.33 σ]
KicOffset-rm: 2.037 arcsec [2.16 σ]
OotOffset-st: 0/2/0/2 [4]
KicOffset-st: 0/2/0/2 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [4/4]

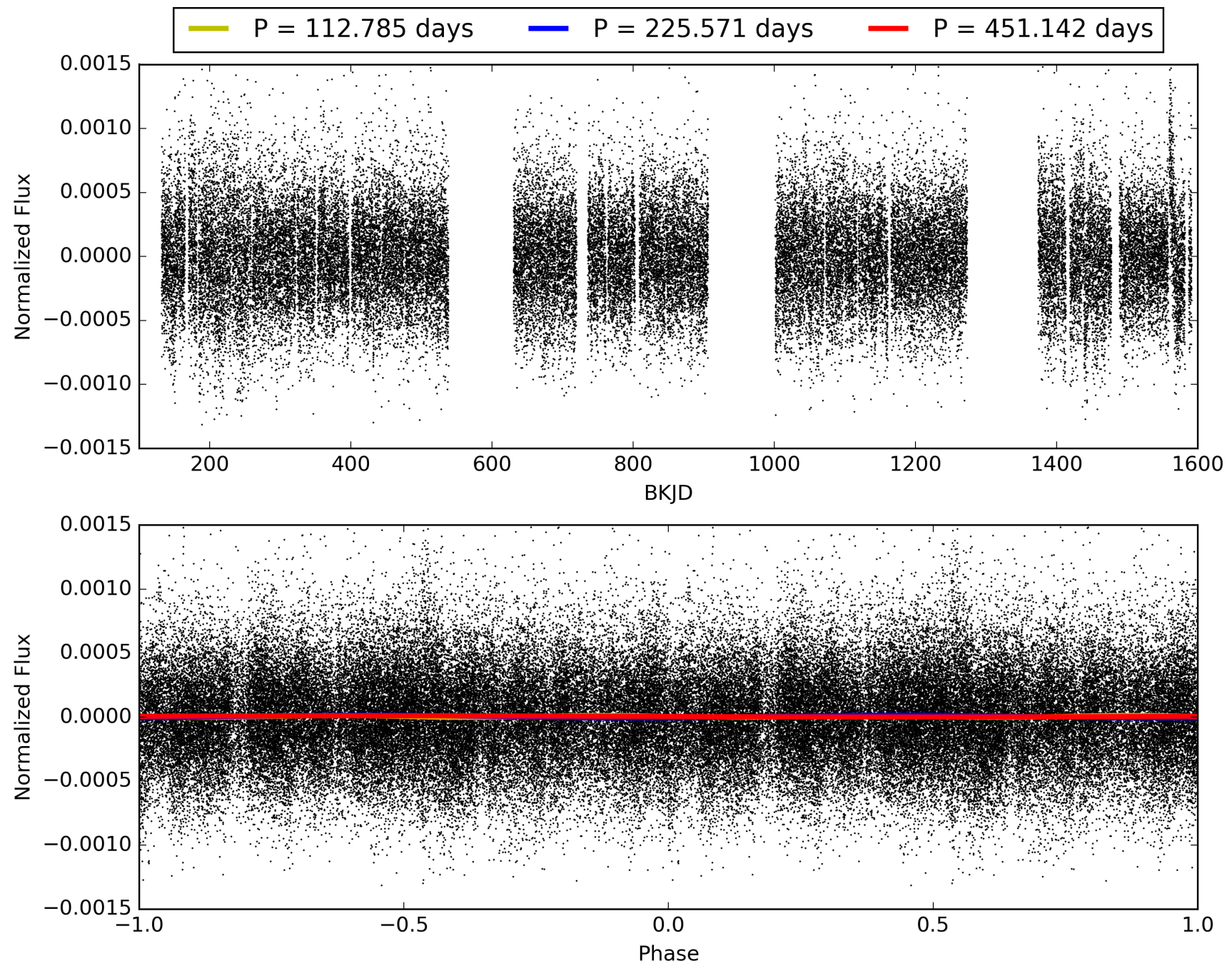
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:55:00 Z

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

TCE 004383044-01, PDC Light Curves

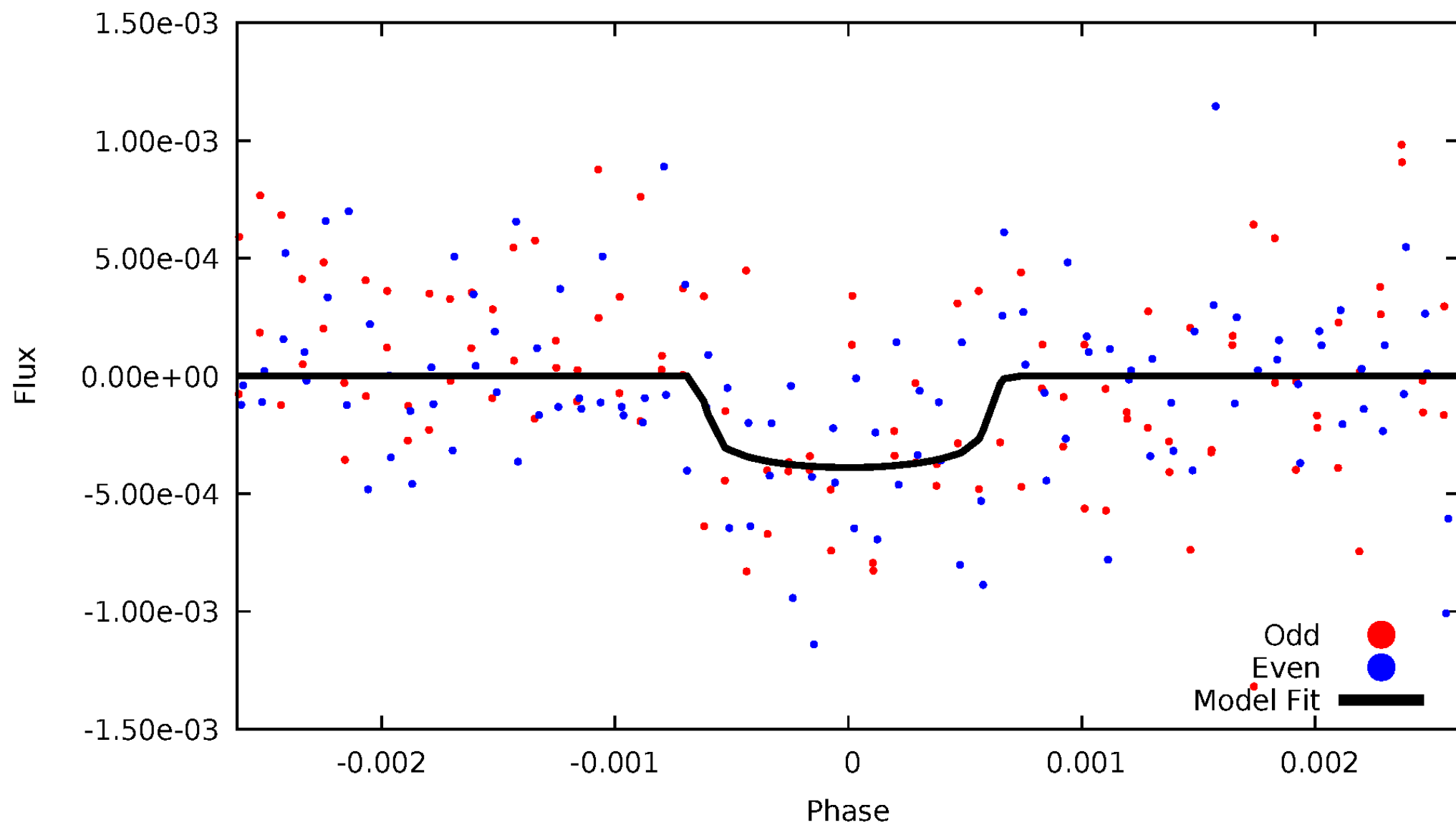


TCE 004383044-01



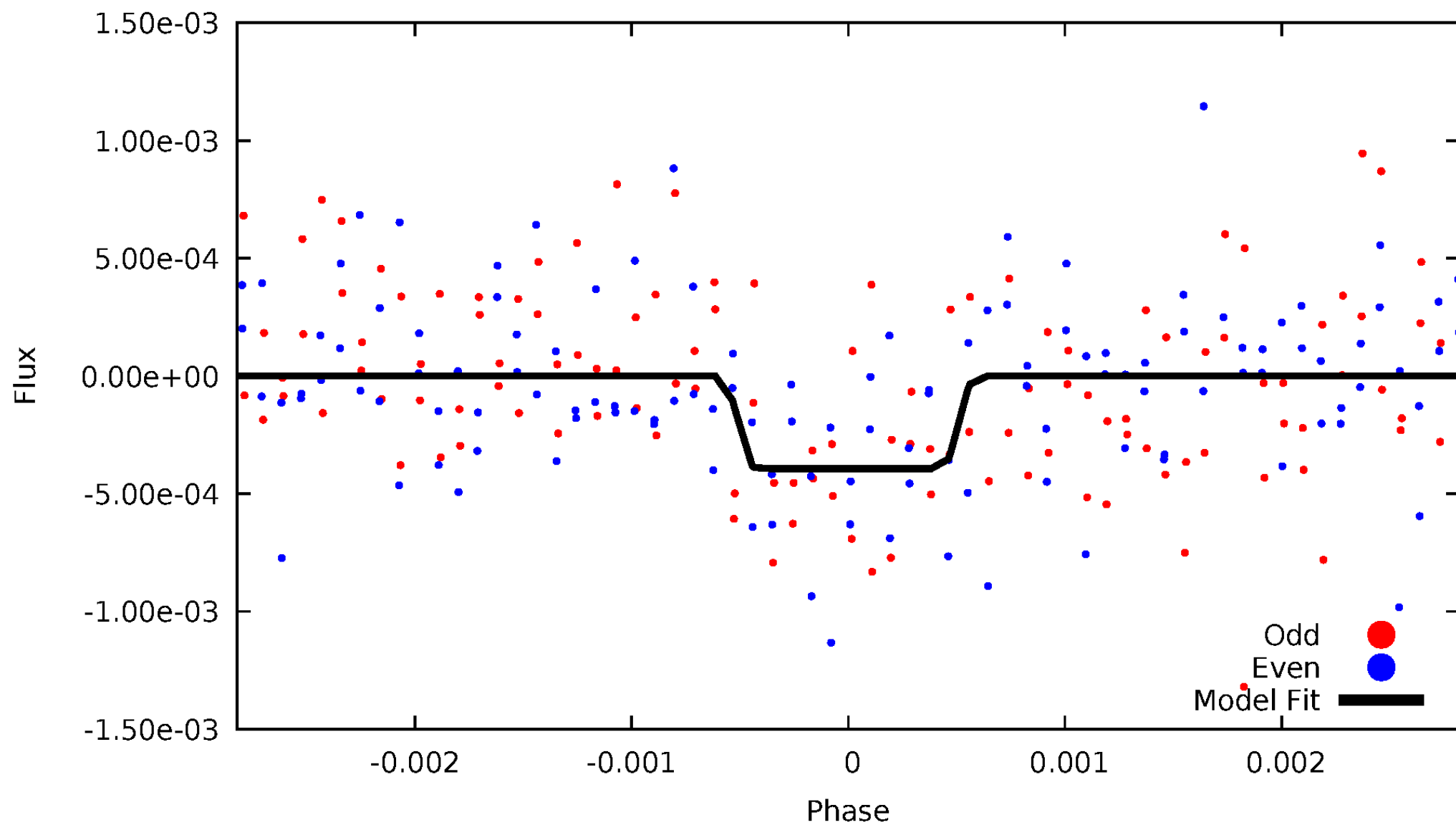
DV Odd/Even

TCE 004383044-01

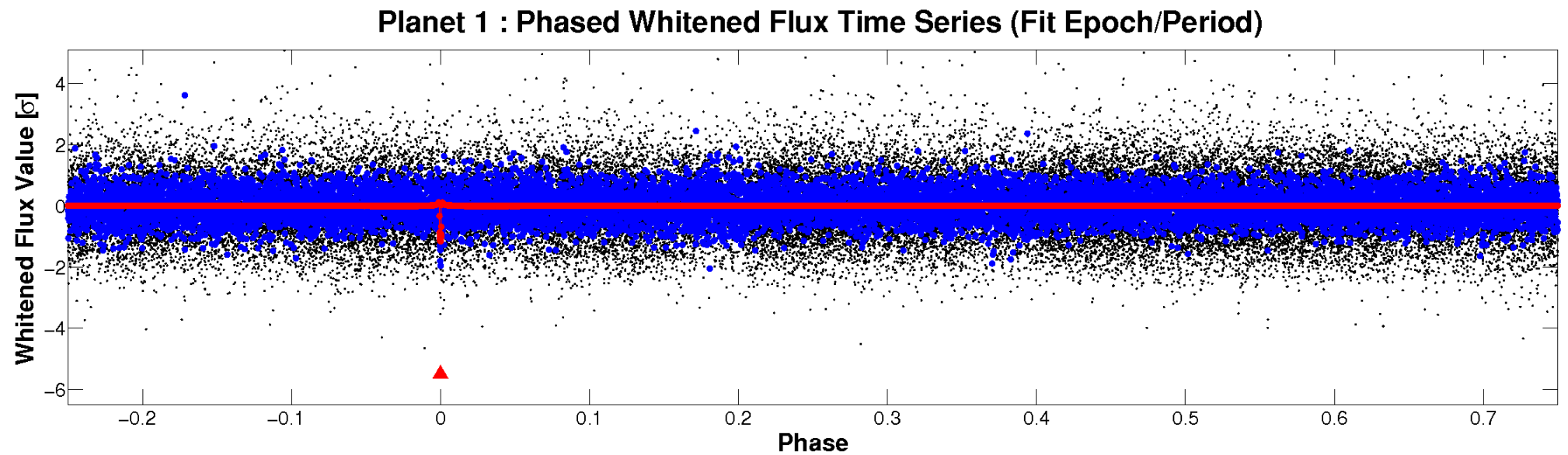
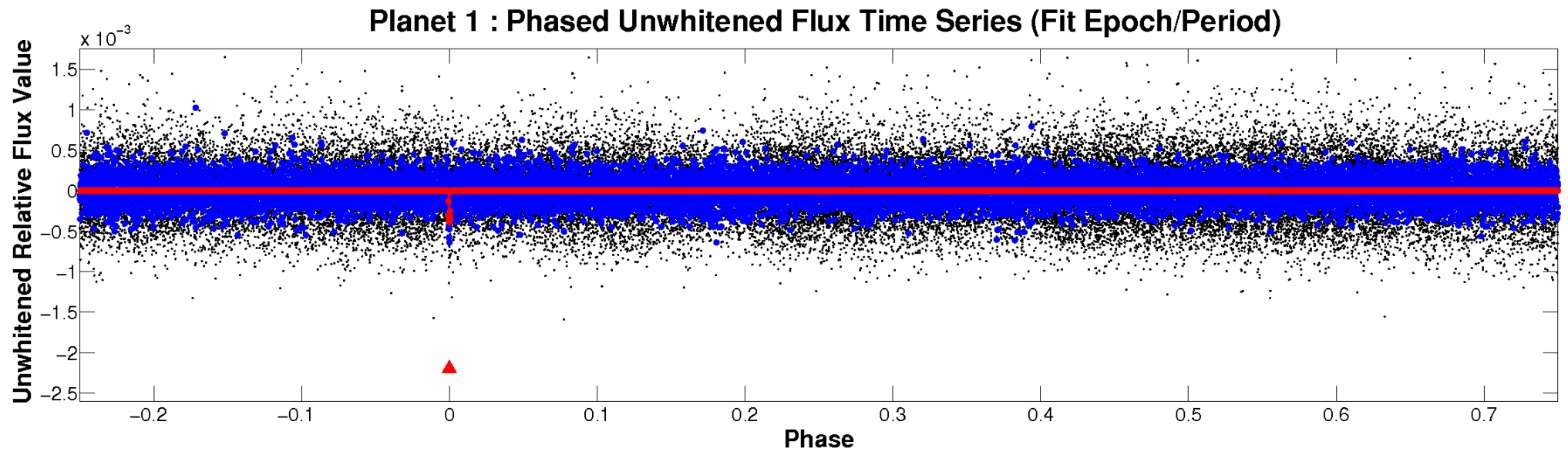


ALT Odd/Even

TCE 004383044-01



Non-Whitened Vs. Whitened Light Curve



PDC Quarter-Phased Transit Curves

TCE 004383044-01 P=225.570849 Days $T_0=310.953908$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 004383044-01 P=225.570849 Days $T_0=310.953908$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

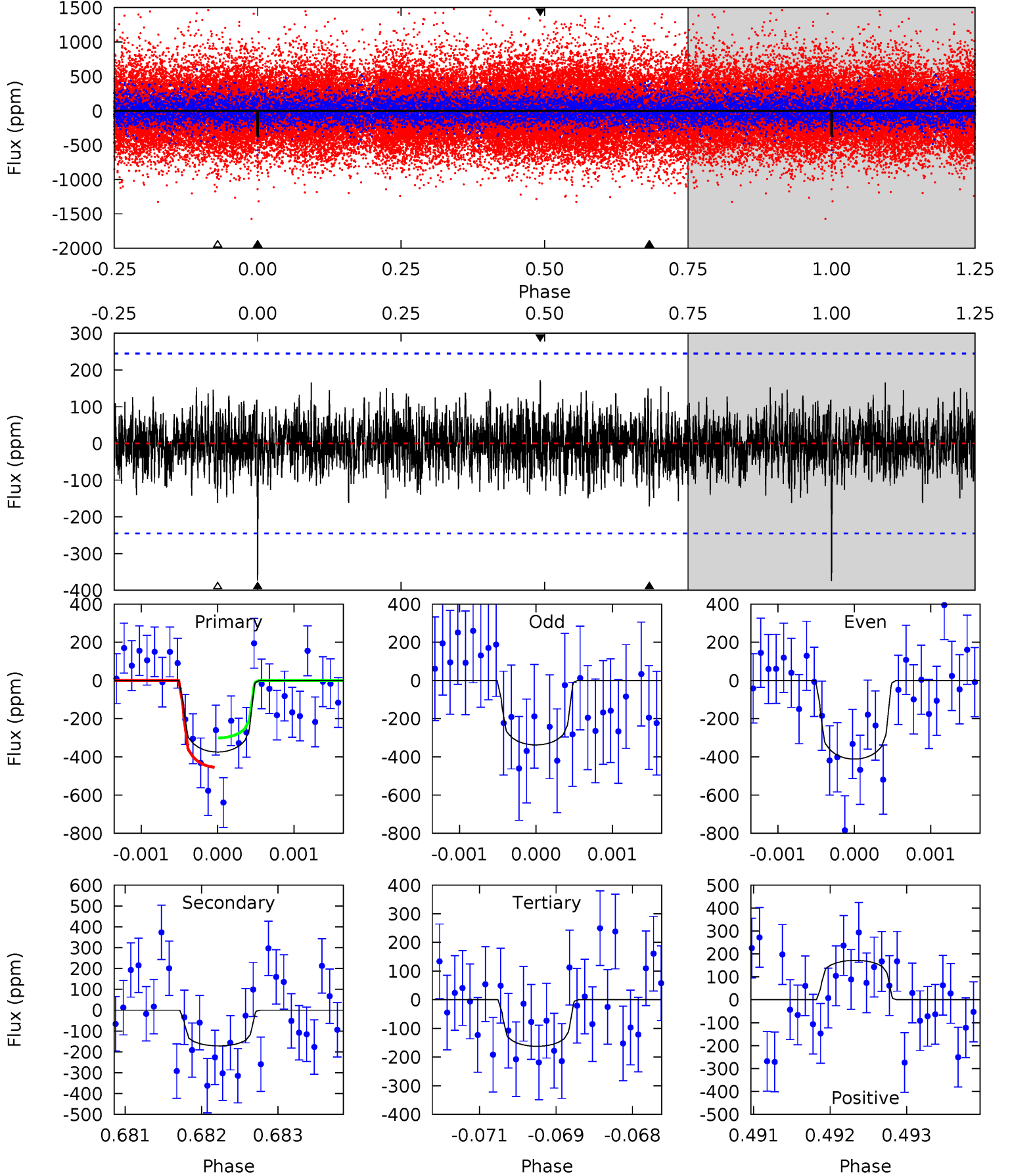
TCE 004383044-01 P=225.566069 Days $T_0=310.957735$ (BKJD)



DV Model-Shift Uniqueness Test

004383044-01, P = 225.570849 Days, E = 85.383059 Days

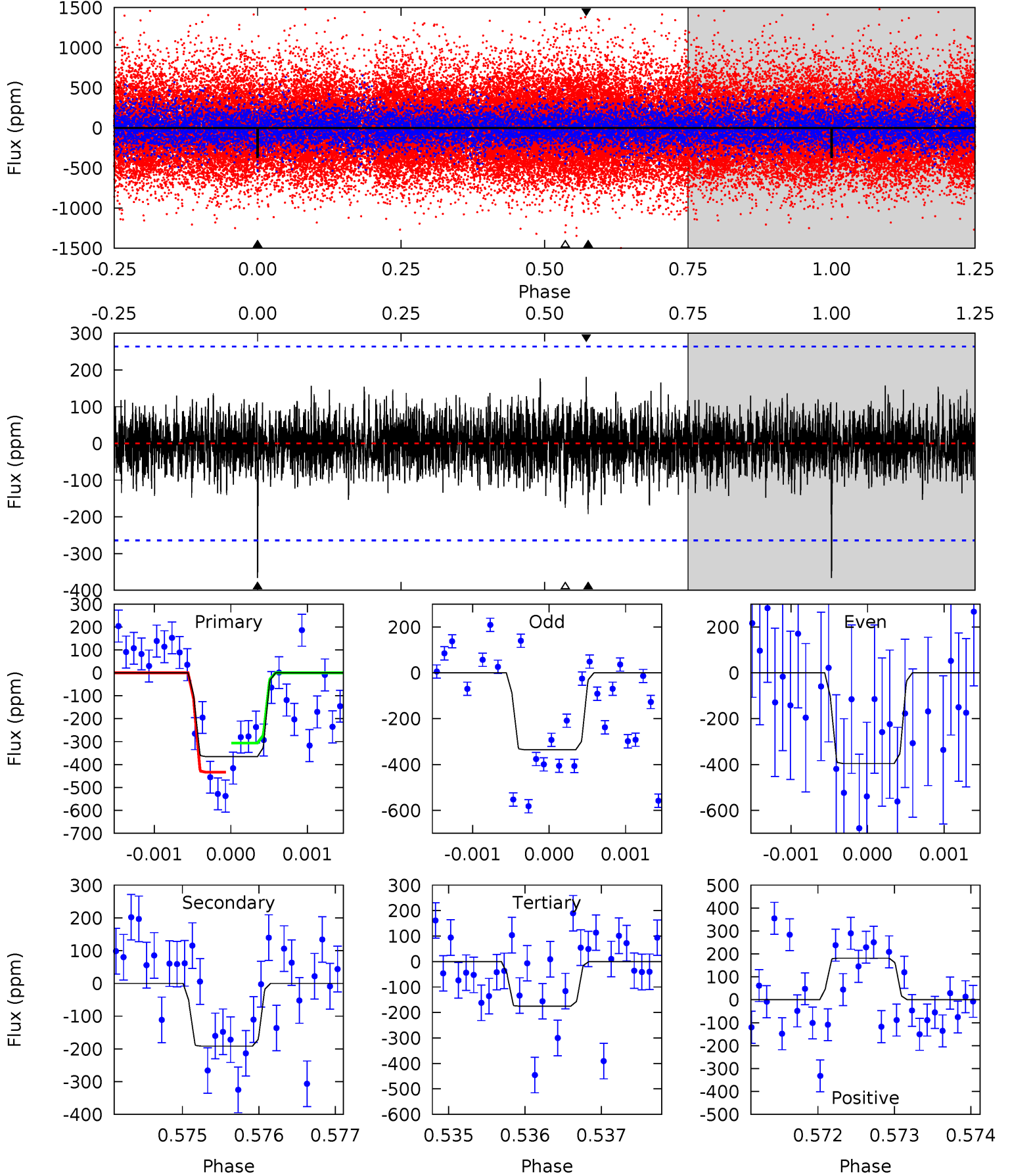
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.25 | 3.77 | 3.58 | 3.78 | 5.40 | 3.20 | 1.10 | 4.67 | 4.47 | 0.20 | -0.01 | 0.82 | 0.96 | 0.31 | 1.68 |



Alt Model-Shift Uniqueness Test

004383044-01, P = 225.566069 Days, E = 85.391666 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.53 | 3.95 | 3.61 | 3.73 | 5.43 | 3.26 | 0.99 | 3.92 | 3.80 | 0.34 | 0.21 | 0.62 | 1.06 | 0.33 | 1.31 |



Stellar Parameters For KIC 004383044

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|-----------------------------------------------|
| | 6217^{+197}_{-219} | $4.405^{+0.087}_{-0.203}$ | $-0.280^{+0.250}_{-0.300}$ | $1.039^{+0.326}_{-0.140}$ | $0.998^{+0.160}_{-0.107}$ | $1.253^{+0.566}_{-0.621}$ |
| | +3%/-4% | +2%/-5% | +89%/-107% | +31%/-13% | +16%/-11% | +45%/-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 004383044-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|----------------------|-----------------------|--------------------------|
| DV | -171 ± 45 | $2.40^{+1.33}_{-1.11}$ | 467^{+35}_{-26} | 5050^{+1665}_{-836} | 8201^{+18965}_{-4970} |
| Alt. | -192 ± 49 | $2.29^{+1.26}_{-1.10}$ | 465^{+36}_{-27} | 5272^{+2131}_{-890} | 10478^{+28889}_{-6386} |

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

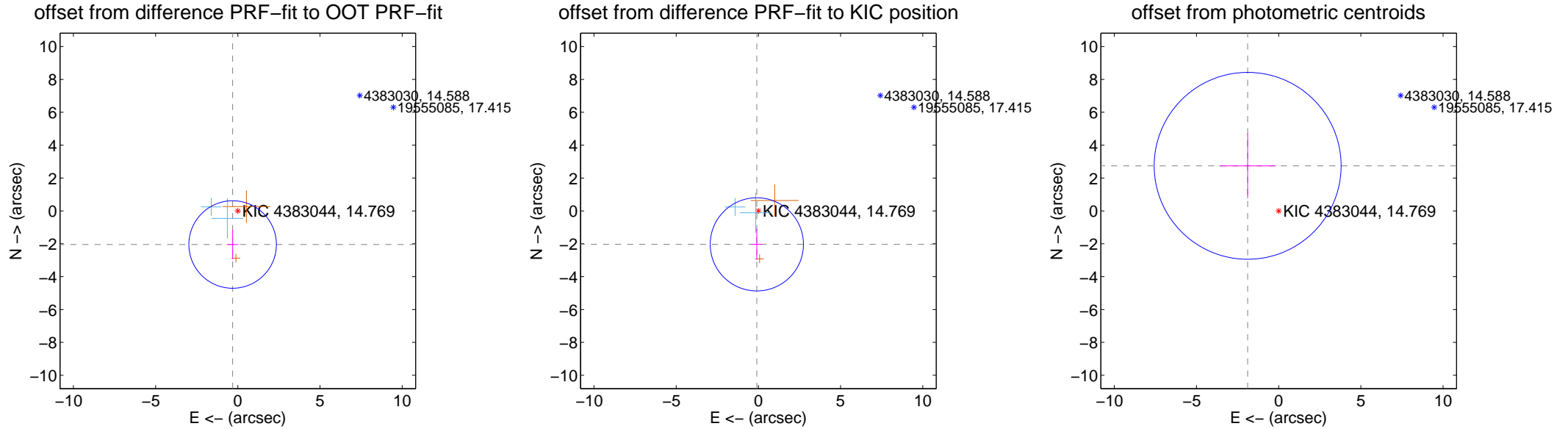
DV Centroid Data

Supplemental centroid analysis for 004383044-01. Kepler magnitude: 14.77. Transit SNR 7.35

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.58 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|-----------------------------------------|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 2.069 ± 0.887 | 2.33 | 0.315 ± 0.350 | -2.044 ± 0.896 |
| PRF-fit source offset from KIC position | 2.037 ± 0.945 | 2.16 | 0.094 ± 0.349 | -2.035 ± 0.946 |
| photometric centroid source offset | 3.33 ± 1.89 | 1.76 | 1.89 ± 1.72 | 2.74 ± 1.97 |



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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

Q1 no difference image



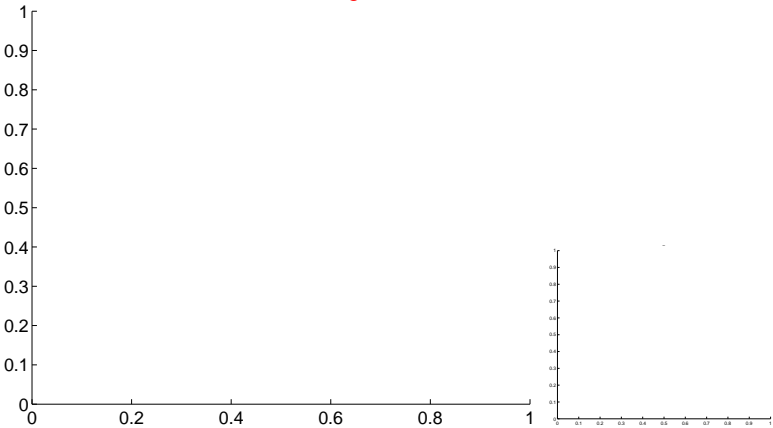
Q1 no OOT image



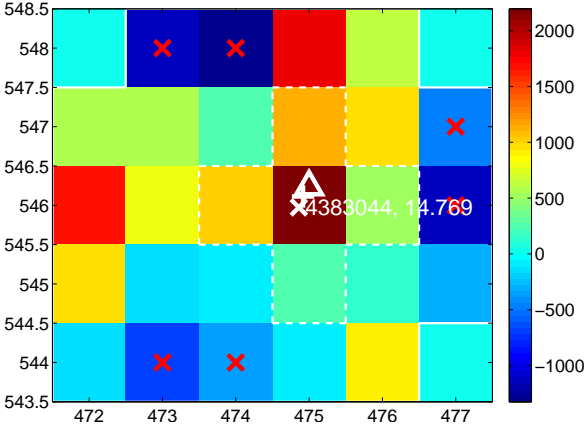
Q2 no difference image



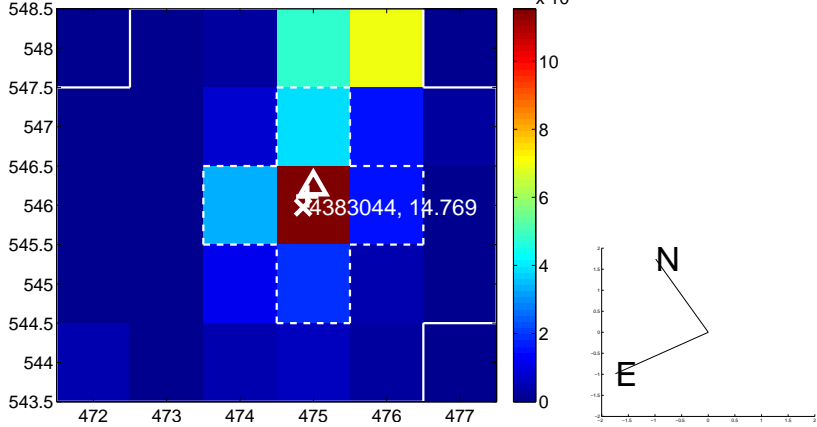
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



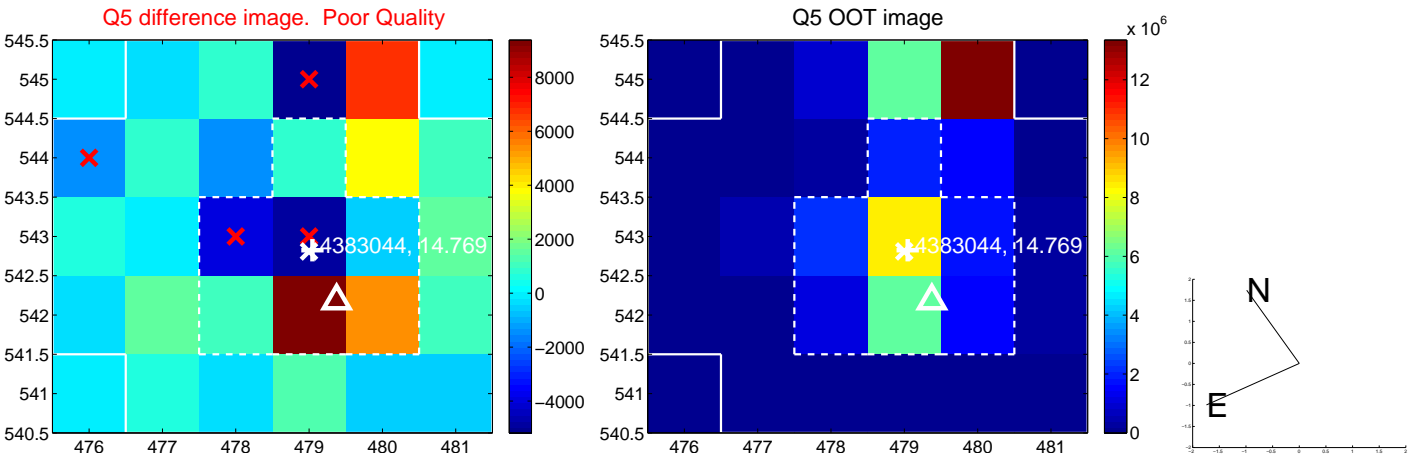
Q4 no difference image



Q4 no OOT image



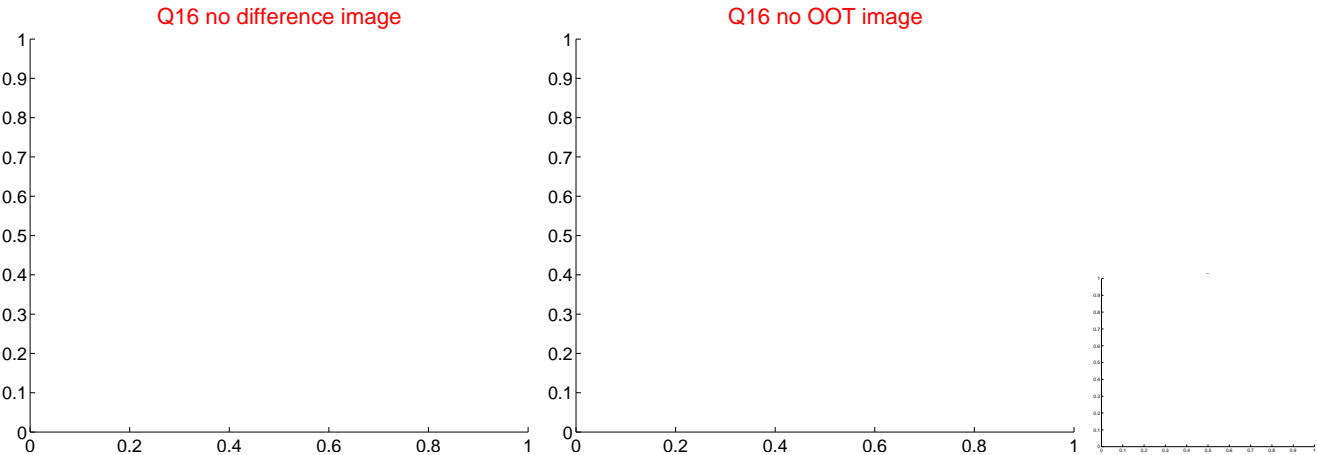
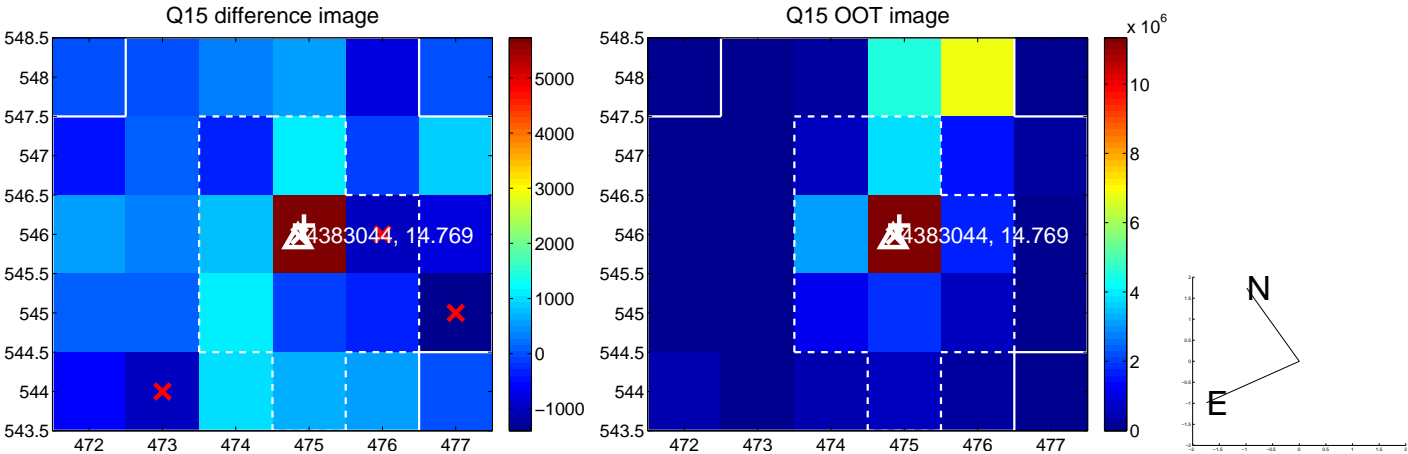
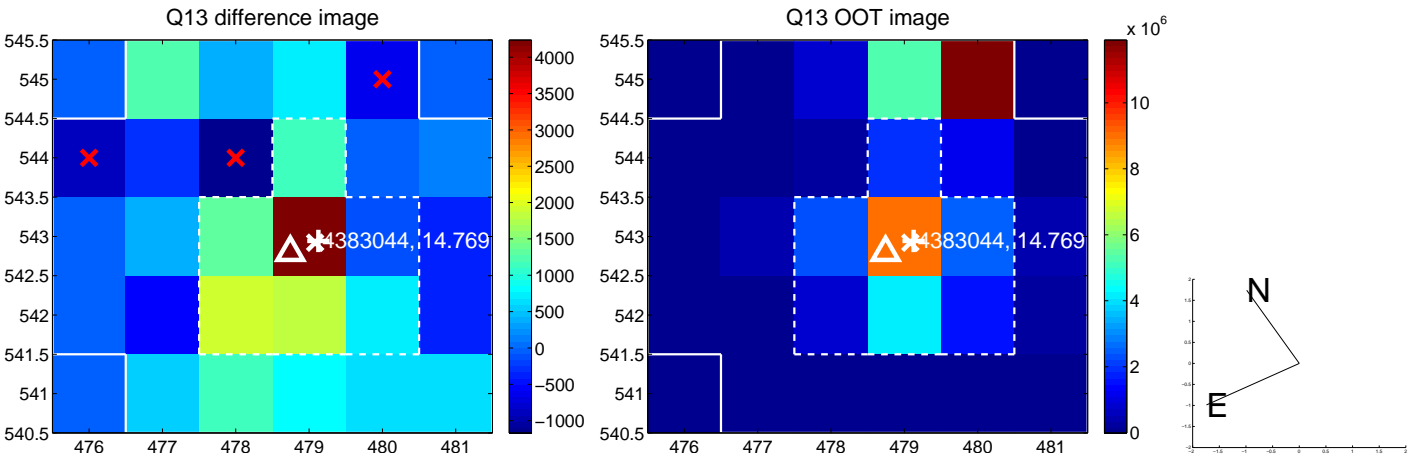
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



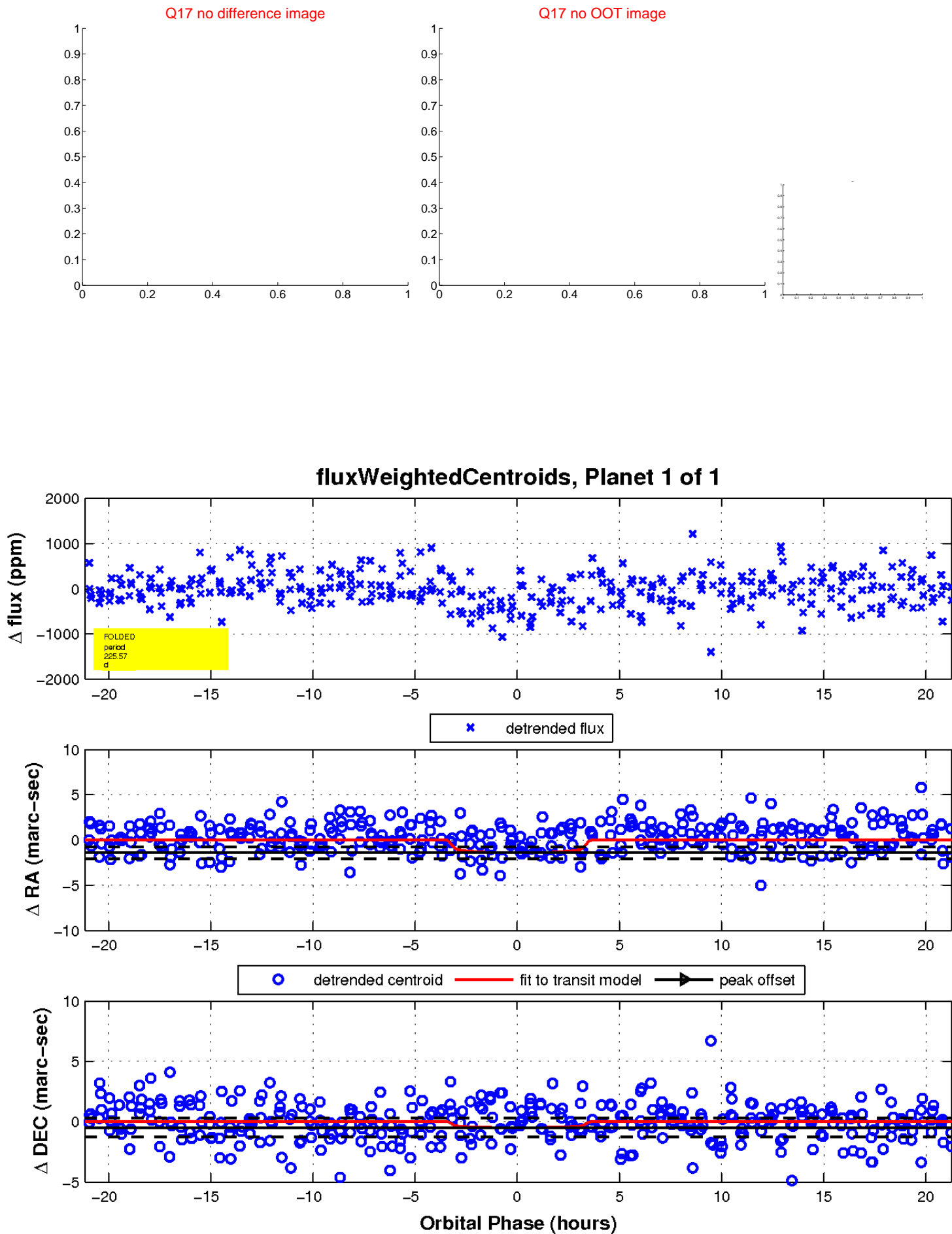
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UKIRT Image

Declination

