

KIC 010206376

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 010206376-01 | OBS | No | 631.543320 | 185.739133 | 927.0 | 7.877 | 7.1 | 7.2 | 0.95 | 5900 | 3.06 | 0.45 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 010206376-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE—MOD_NONUNIQ_ALT—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.

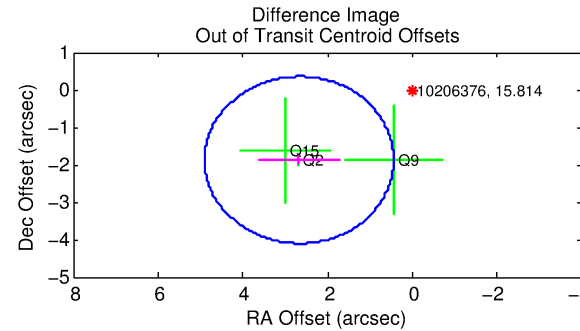
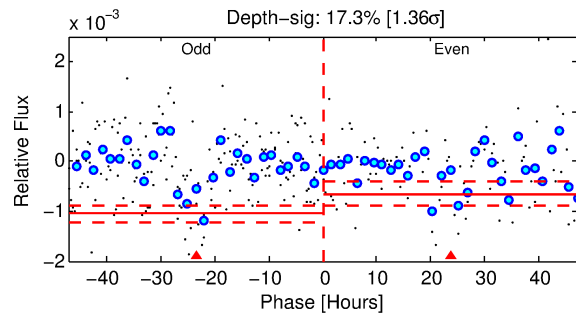
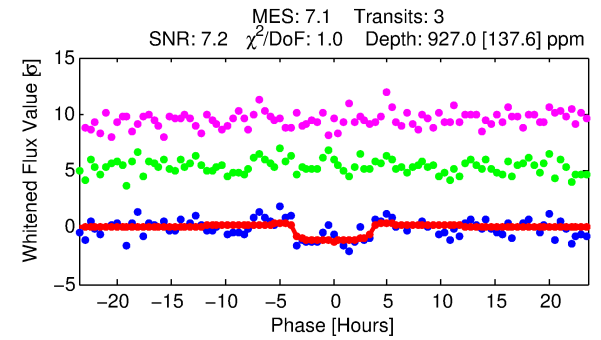
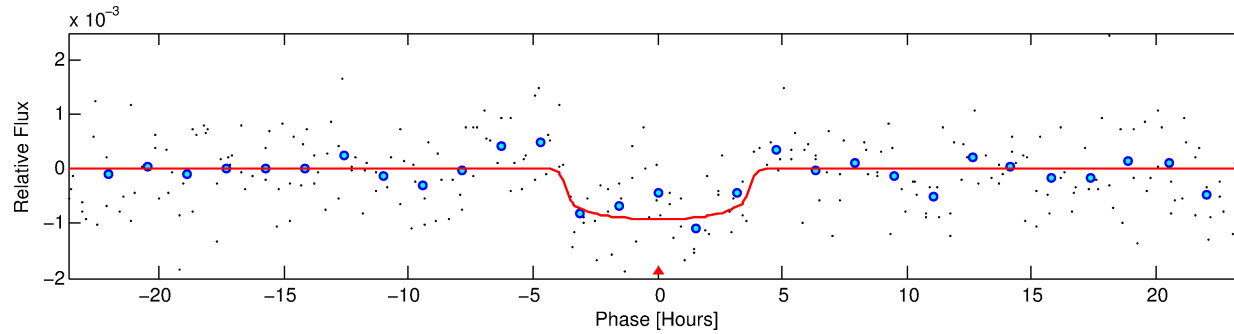
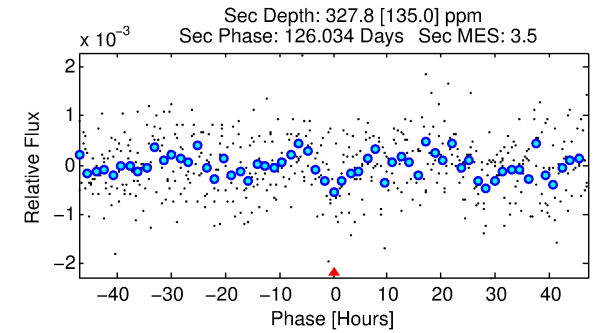
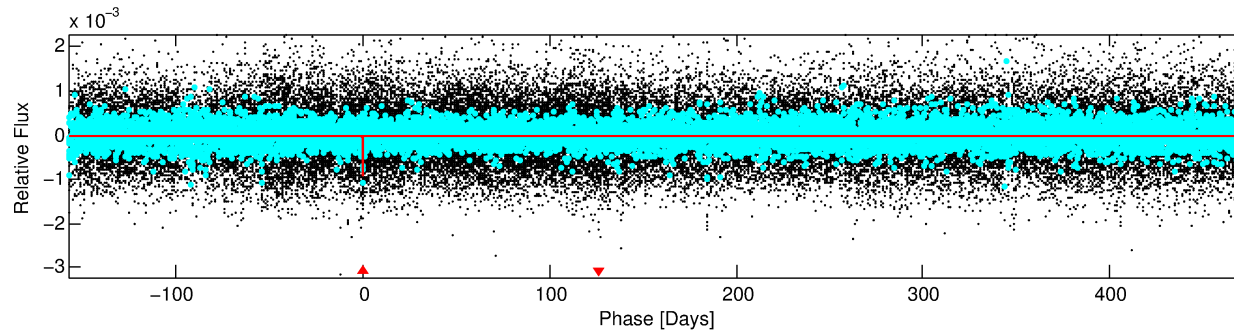
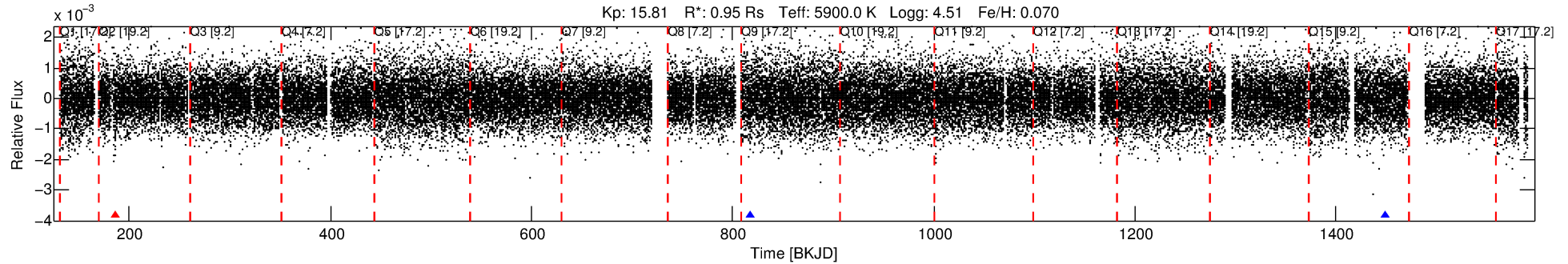
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010206376-01

No Significant Match Found

DV One-Page Summary

KIC: 10206376 Candidate: 1 of 1 Period: 631.543 d



DV Fit Results:

Period = 631.54332 [0.01194] d
Epoch = 185.7391 [0.0148] BKJD
Rp/R* = 0.0294 [0.0155]
a/R* = 484.99 [1113.98]
b = 0.66 [2.00]
Seff = 0.45 [0.16]
Teq = 209 [19] K
Rp = 3.06 [1.81] Re
a = 1.4715 [0.3389] AU
Ag = 41814.41 [49390.88] [0.85σ]
Teffp = 4626 [1317] K [3.35σ]

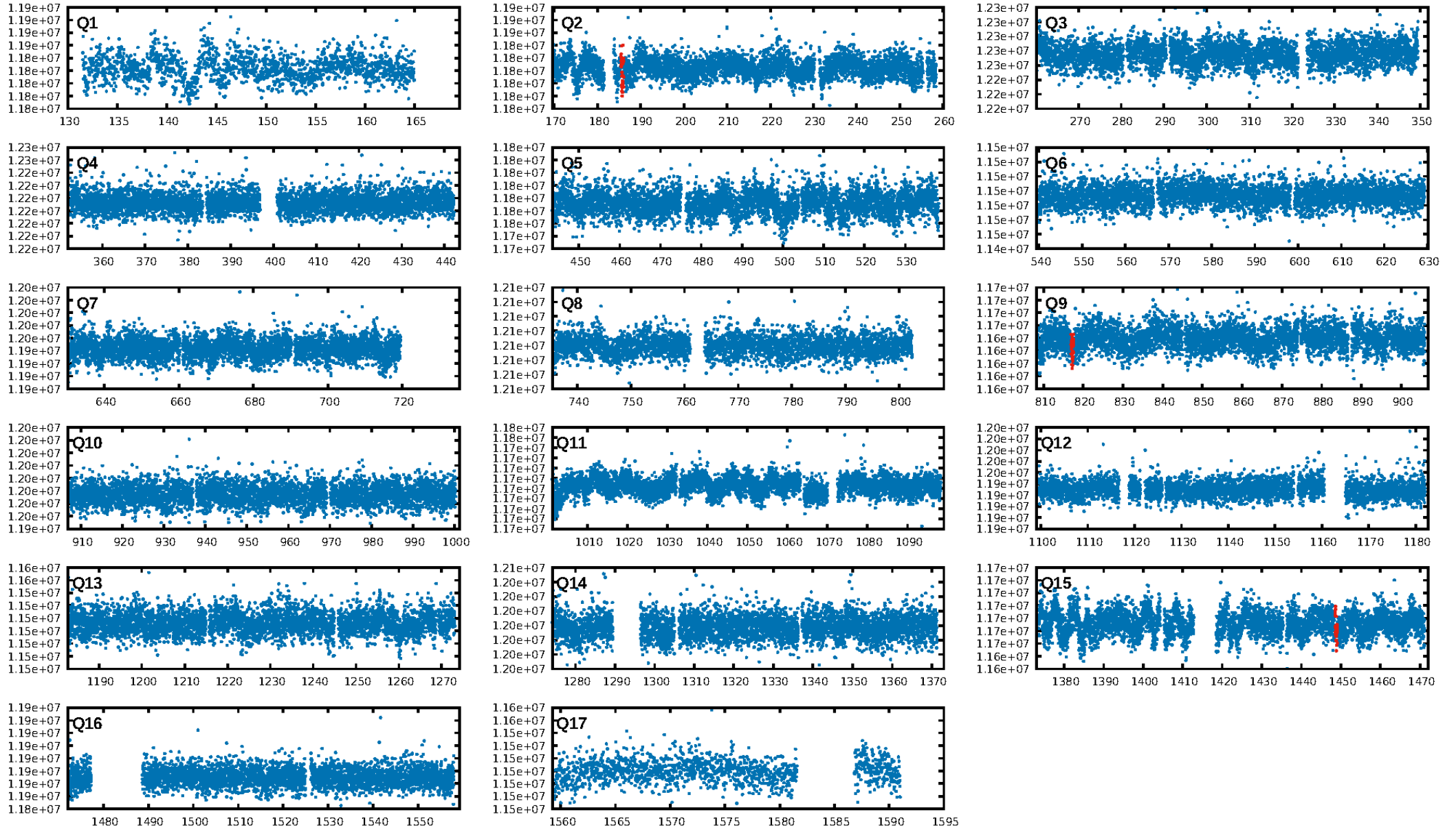
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 27.8%
ModelChiSquareGof-sig: 97.9%
Bootstrap-pfa: 7.75e-10
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: 0.9944
Centroid-sig: 49.9%
Centroid-so: 0.938 arcsec [0.50σ]
OotOffset-rm: 3.263 arcsec [4.39σ]
KicOffset-rm: 3.166 arcsec [5.45σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

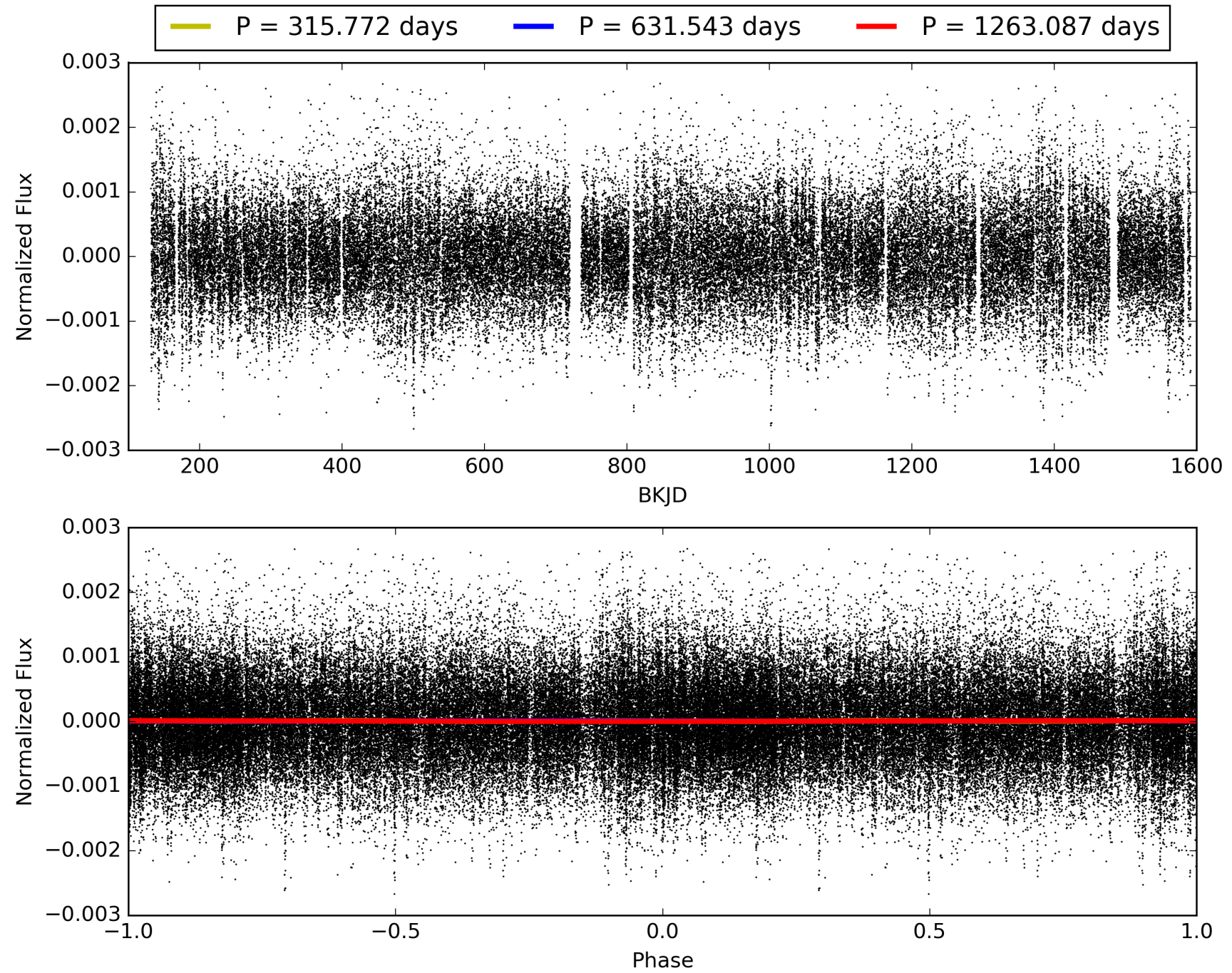
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:33:29 Z

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

TCE 010206376-01, PDC Light Curves

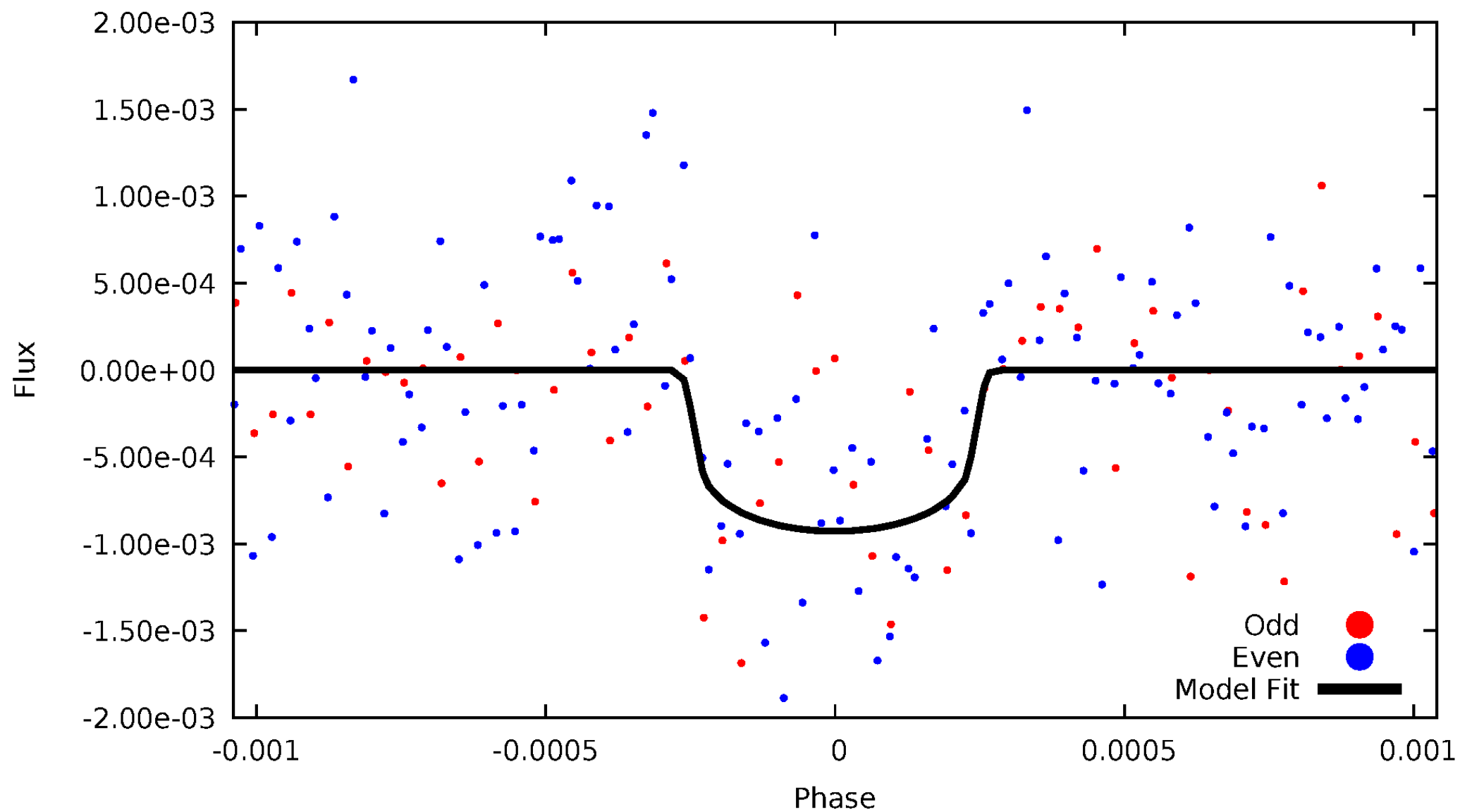


TCE 010206376-01



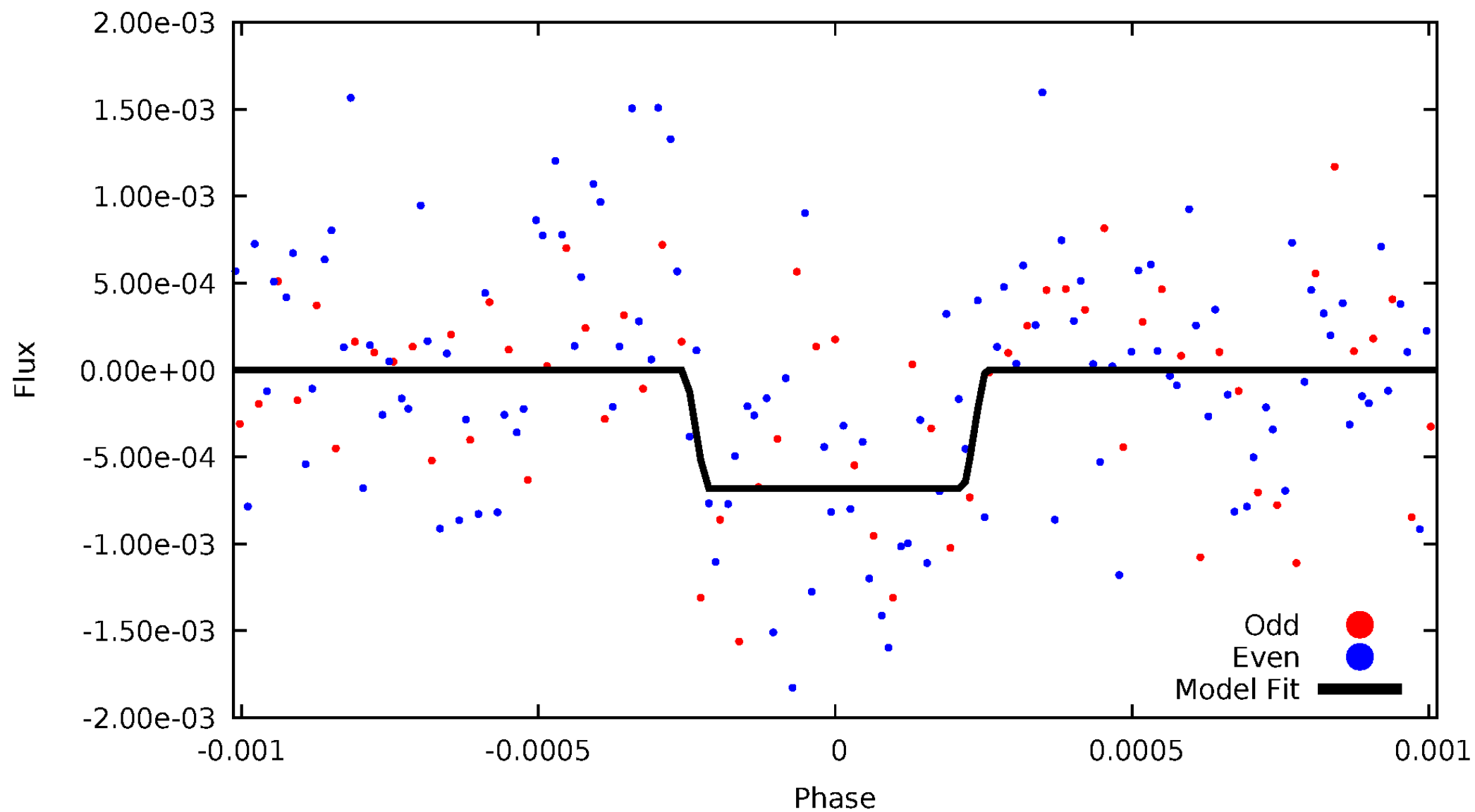
DV Odd/Even

TCE 010206376-01

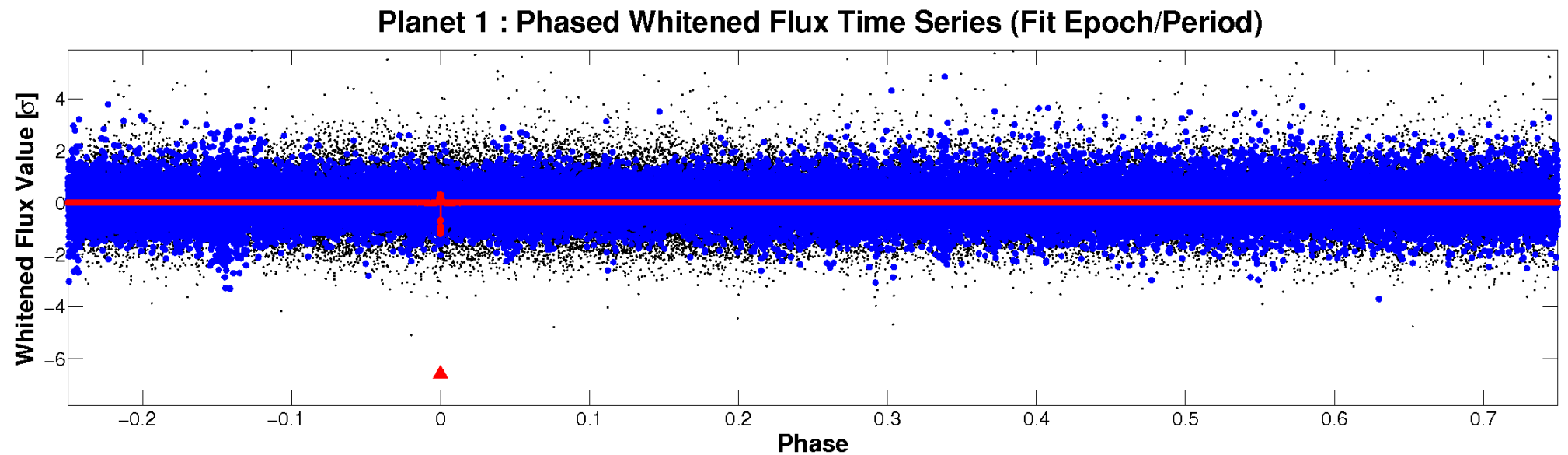
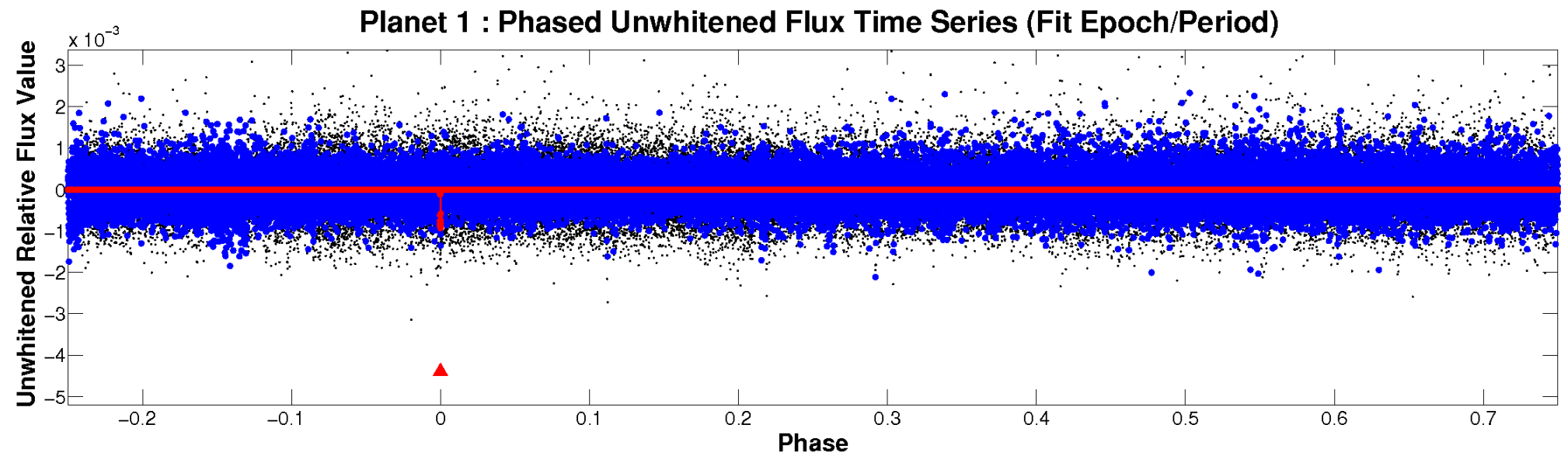


ALT Odd/Even

TCE 010206376-01

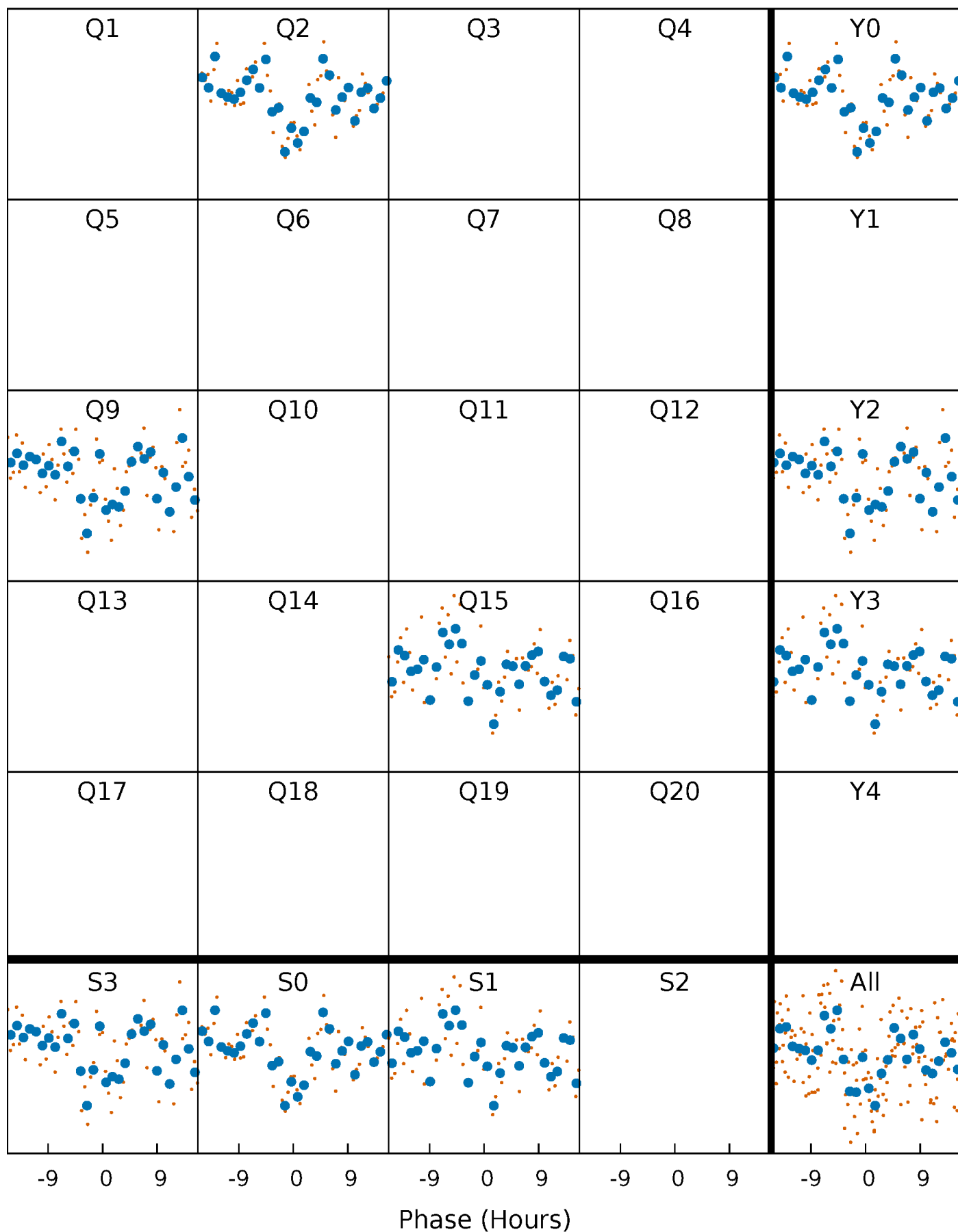


Non-Whitened Vs. Whitened Light Curve



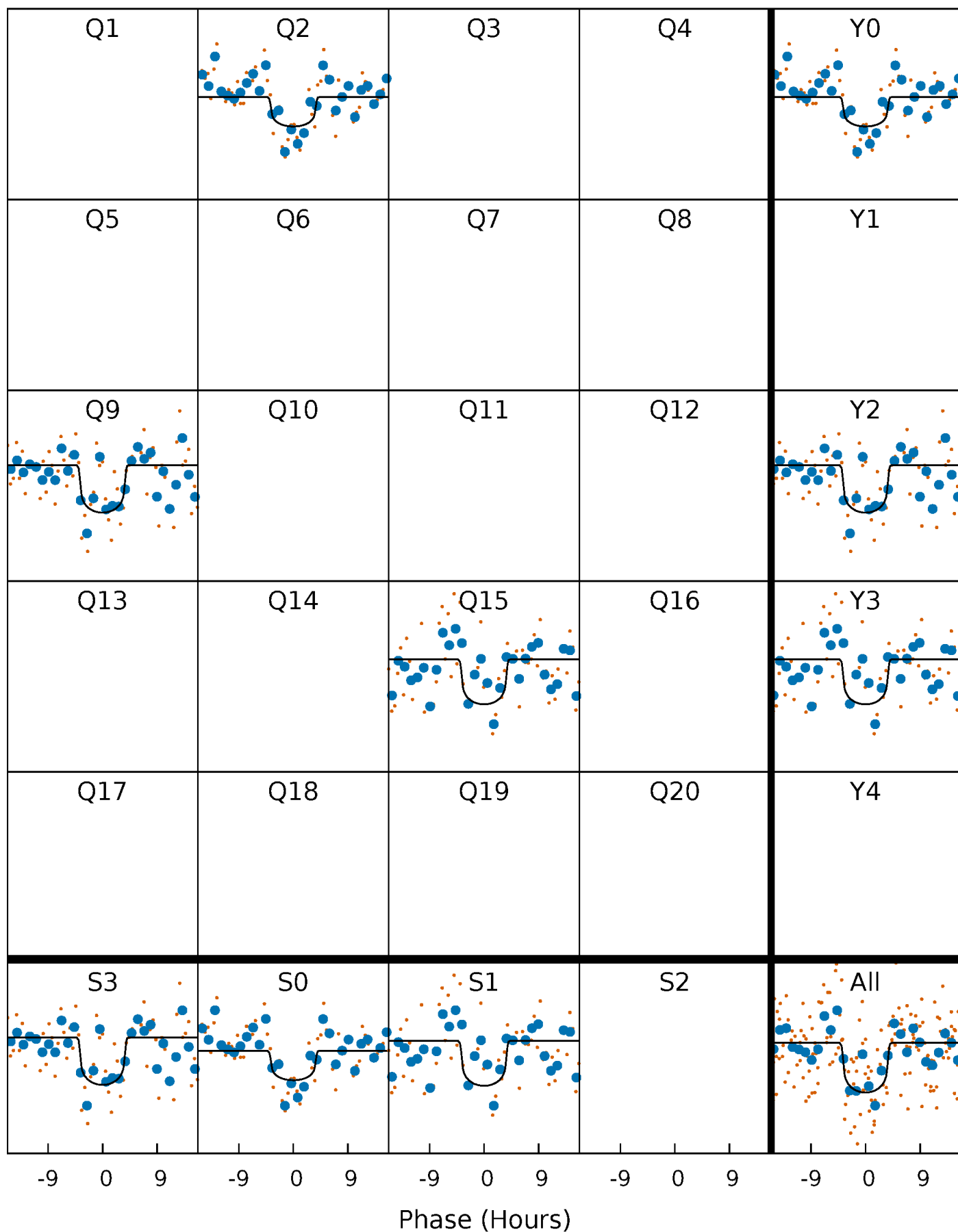
PDC Quarter-Phased Transit Curves

TCE 010206376-01 P=631.543320 Days $T_0=185.739133$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010206376-01 P=631.543320 Days $T_0=185.739133$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

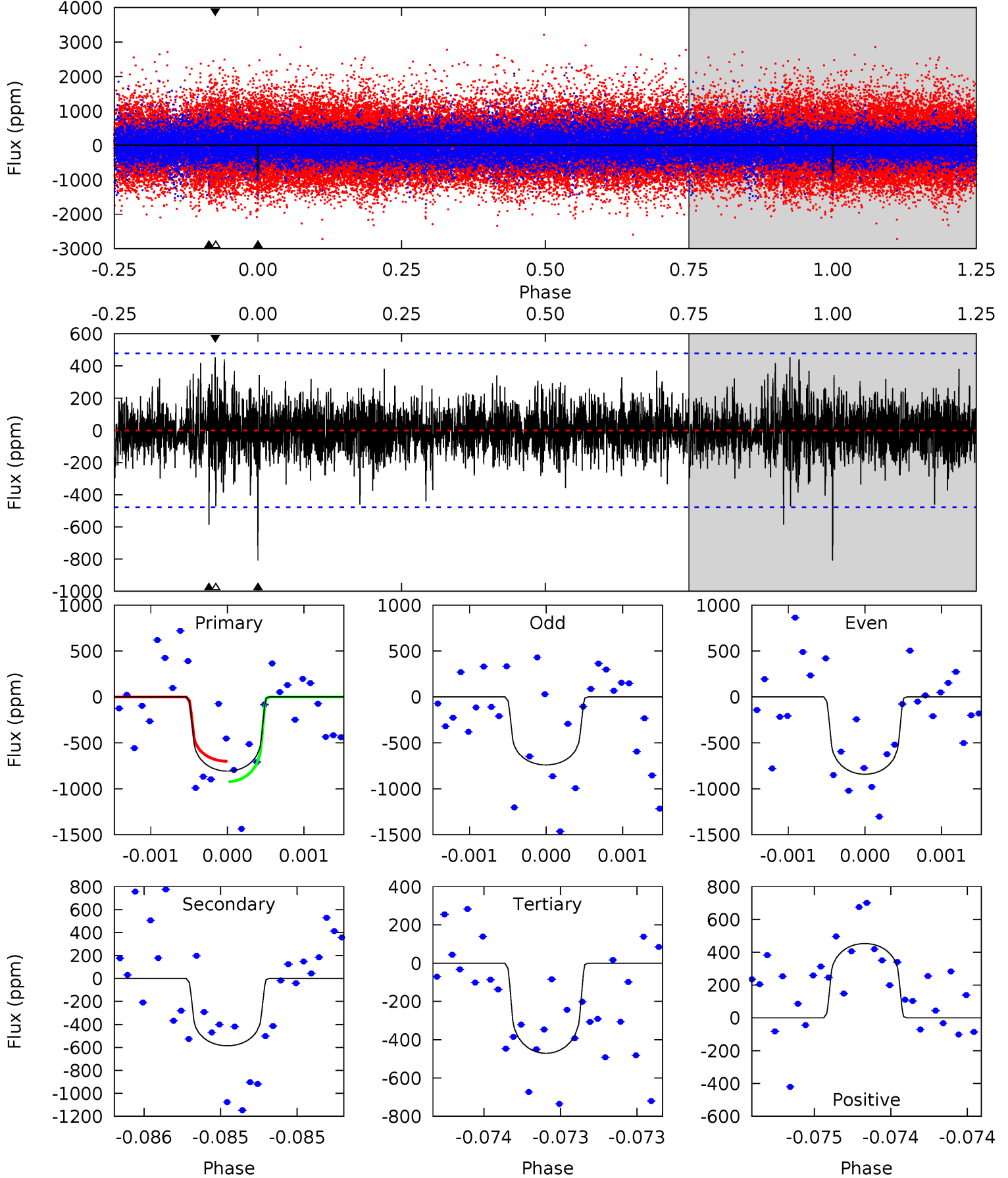
TCE 010206376-01 P=631.553661 Days $T_0=185.728469$ (BKJD)



DV Model-Shift Uniqueness Test

010206376-01, P = 631.543320 Days, E = 185.739133 Days

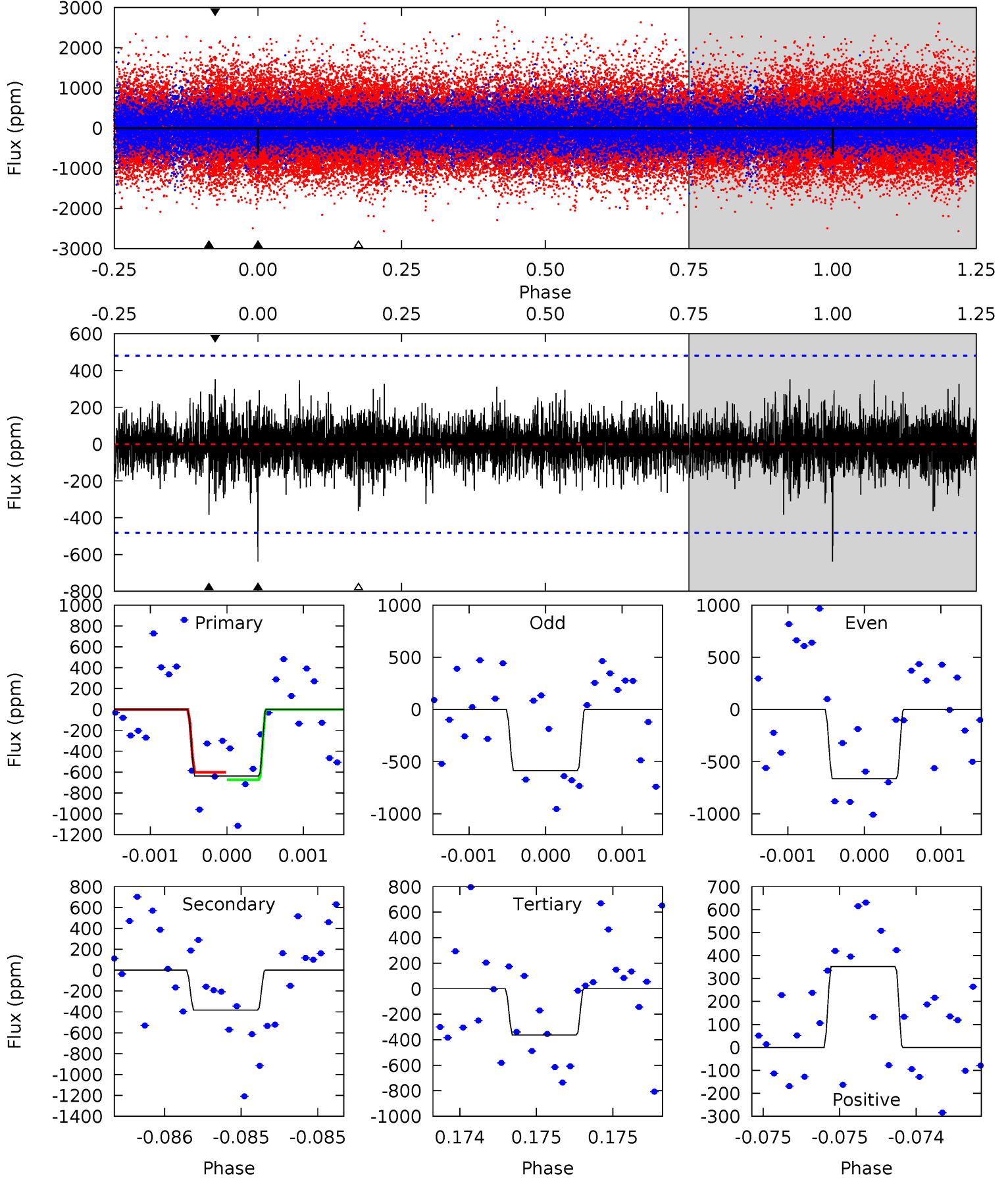
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 9.40 | 6.82 | 5.48 | 5.27 | 5.56 | 3.47 | 1.25 | 3.93 | 4.13 | 1.34 | 1.55 | 0.56 | 1.09 | 0.36 | 1.30 |



Alt Model-Shift Uniqueness Test

010206376-01, P = 631.553661 Days, E = 185.728469 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.39 | 4.43 | 4.20 | 4.08 | 5.57 | 3.48 | 0.99 | 3.19 | 3.31 | 0.23 | 0.35 | 0.42 | 1.09 | 0.36 | 0.41 |



Stellar Parameters For KIC 010206376

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 5900^{+156}_{-191} | $4.509^{+0.033}_{-0.187}$ | $0.070^{+0.250}_{-0.300}$ | $0.951^{+0.257}_{-0.086}$ | $1.065^{+0.100}_{-0.137}$ | $1.745^{+0.308}_{-0.792}$ |
| | +3%/-3% | +1%/-4% | +357%/-429% | +27%/-9% | +9%/-13% | +18%/-45% |
| 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 010206376-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|------------------------|-------------------|-----------------------|----------------------------|
| DV | -586 ± 86 | $3.32^{+1.68}_{-1.63}$ | 298^{+18}_{-13} | 5273^{+2176}_{-805} | $61219^{+172171}_{-34215}$ |
| Alt. | -383 ± 86 | $2.92^{+1.59}_{-1.56}$ | 299^{+18}_{-14} | 5091^{+2367}_{-855} | $51572^{+201959}_{-31265}$ |

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

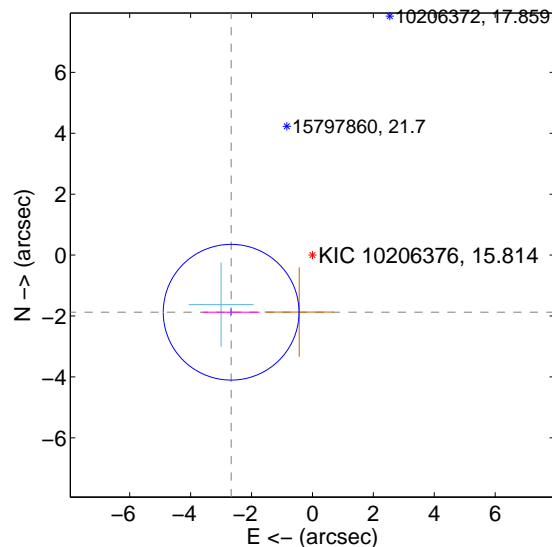
Supplemental centroid analysis for 010206376-01. Kepler magnitude: 15.81. Transit SNR 7.19

There are 2 quarters with good PRF difference image offsets

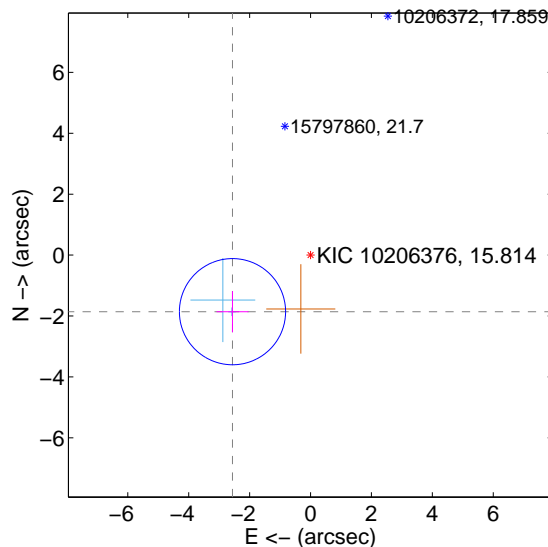
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 3.263 ± 0.743 | 4.39 | 2.670 ± 0.939 | -1.876 ± 0.095 |
| PRF-fit source offset from KIC position | 3.166 ± 0.581 | 5.45 | 2.563 ± 0.524 | -1.858 ± 0.677 |
| photometric centroid source offset | 0.94 ± 1.89 | 0.50 | 0.60 ± 1.96 | -0.72 ± 1.85 |

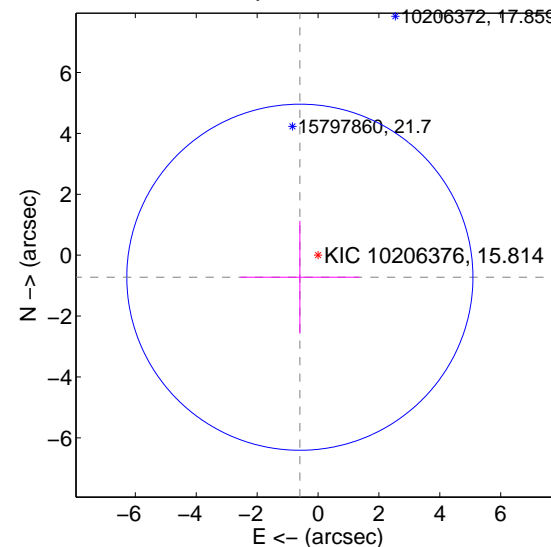
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



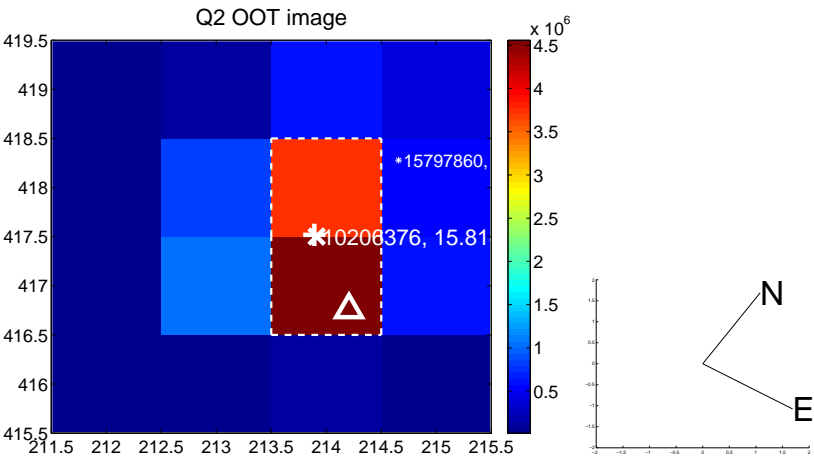
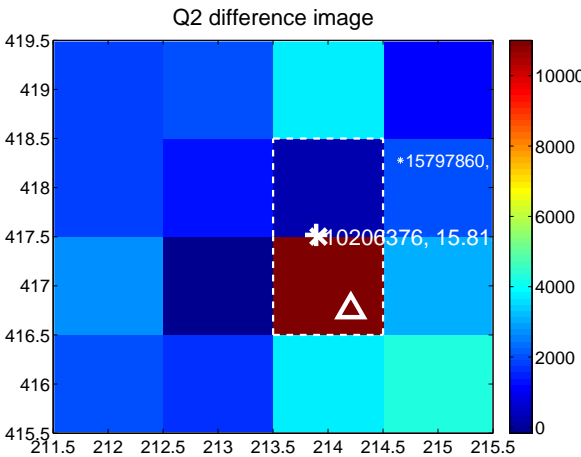
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

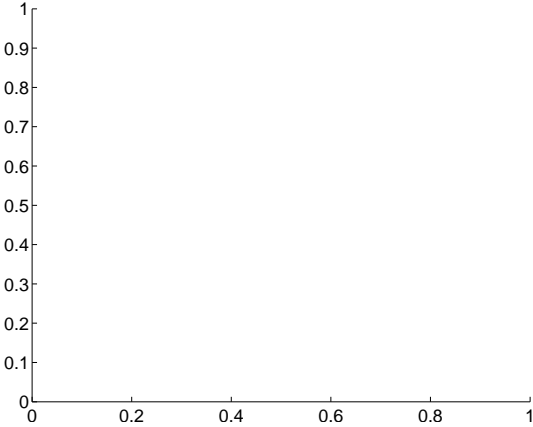
Q1 no difference image



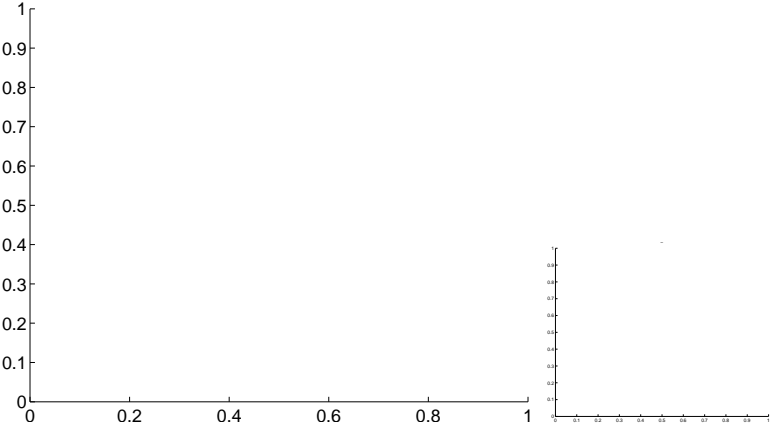
Q1 no OOT image



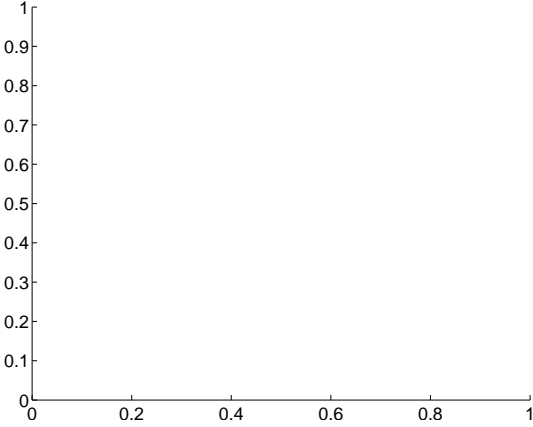
Q3 no difference image



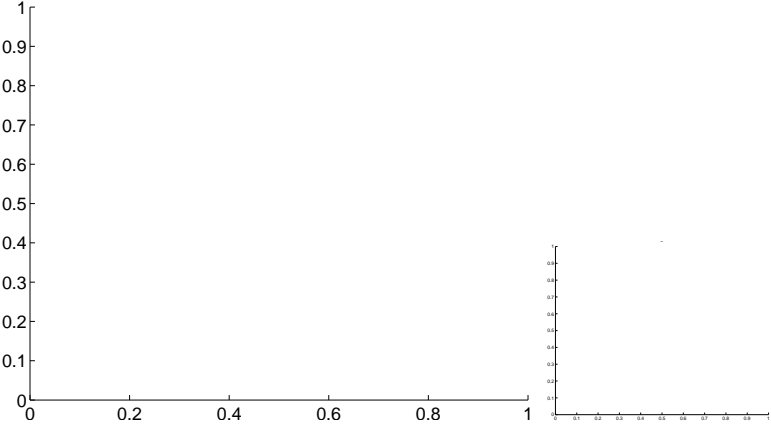
Q3 no OOT image



Q4 no difference image



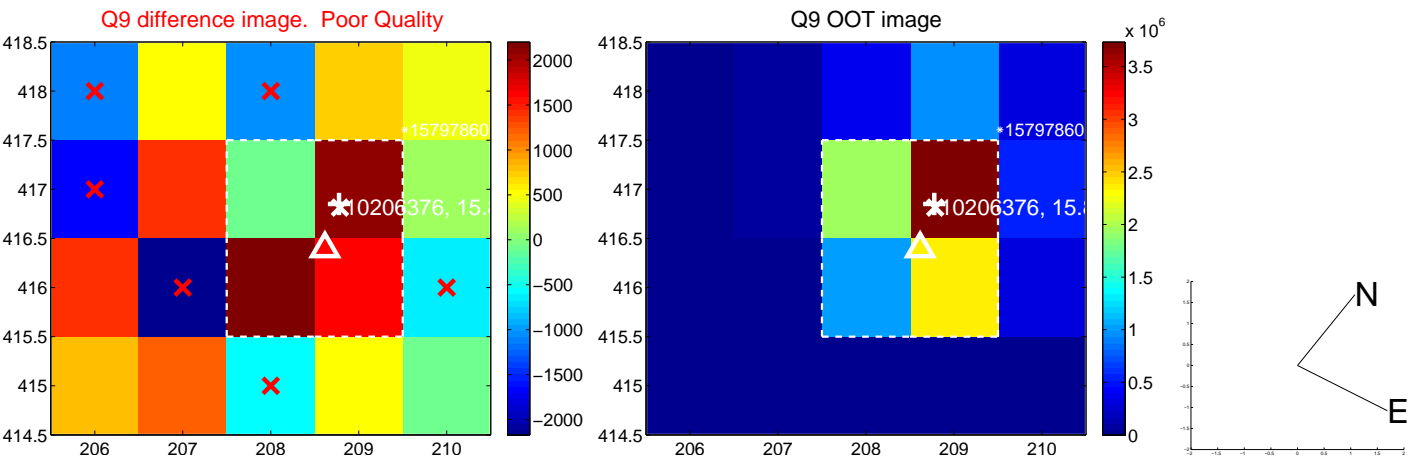
Q4 no OOT image



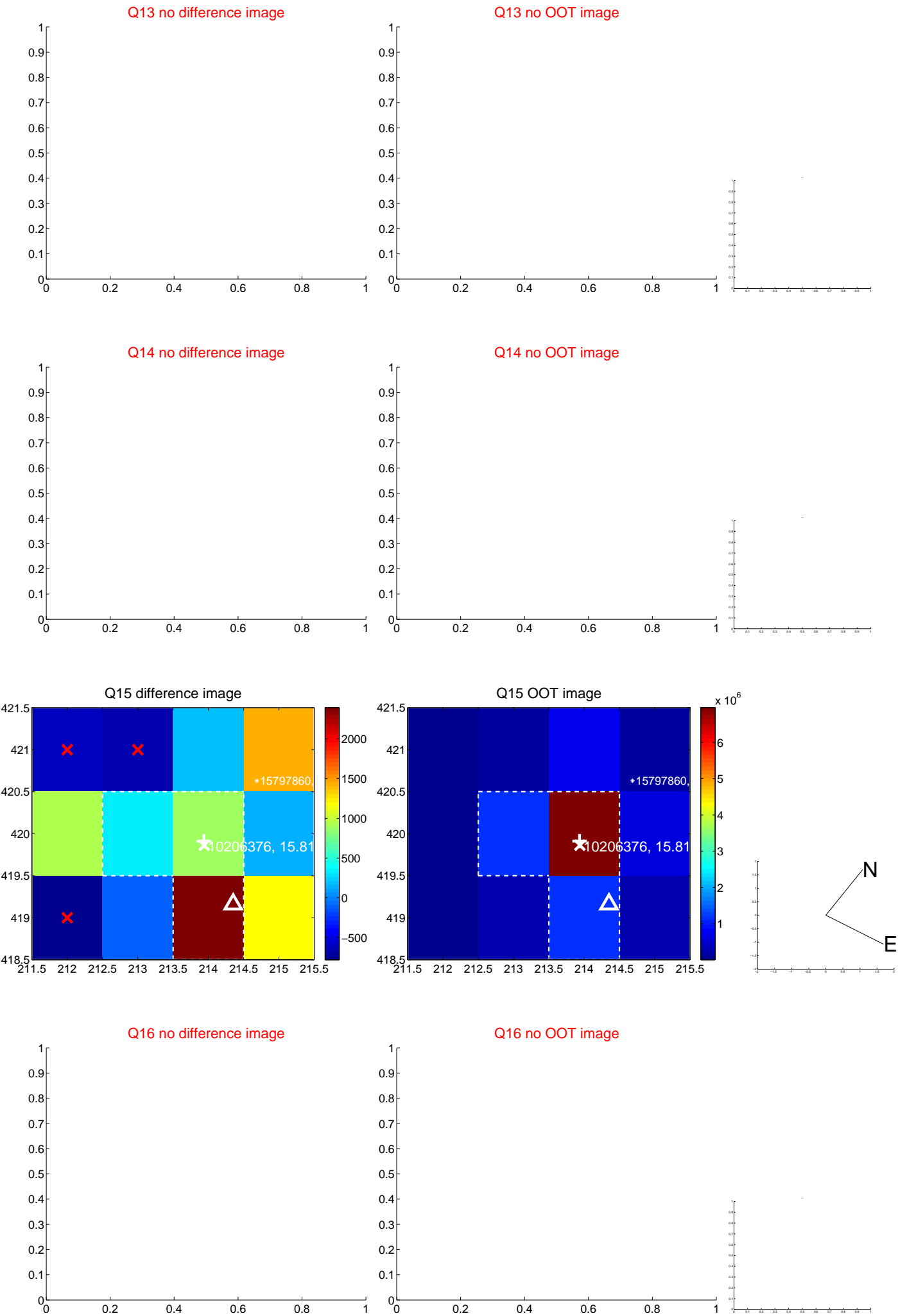
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



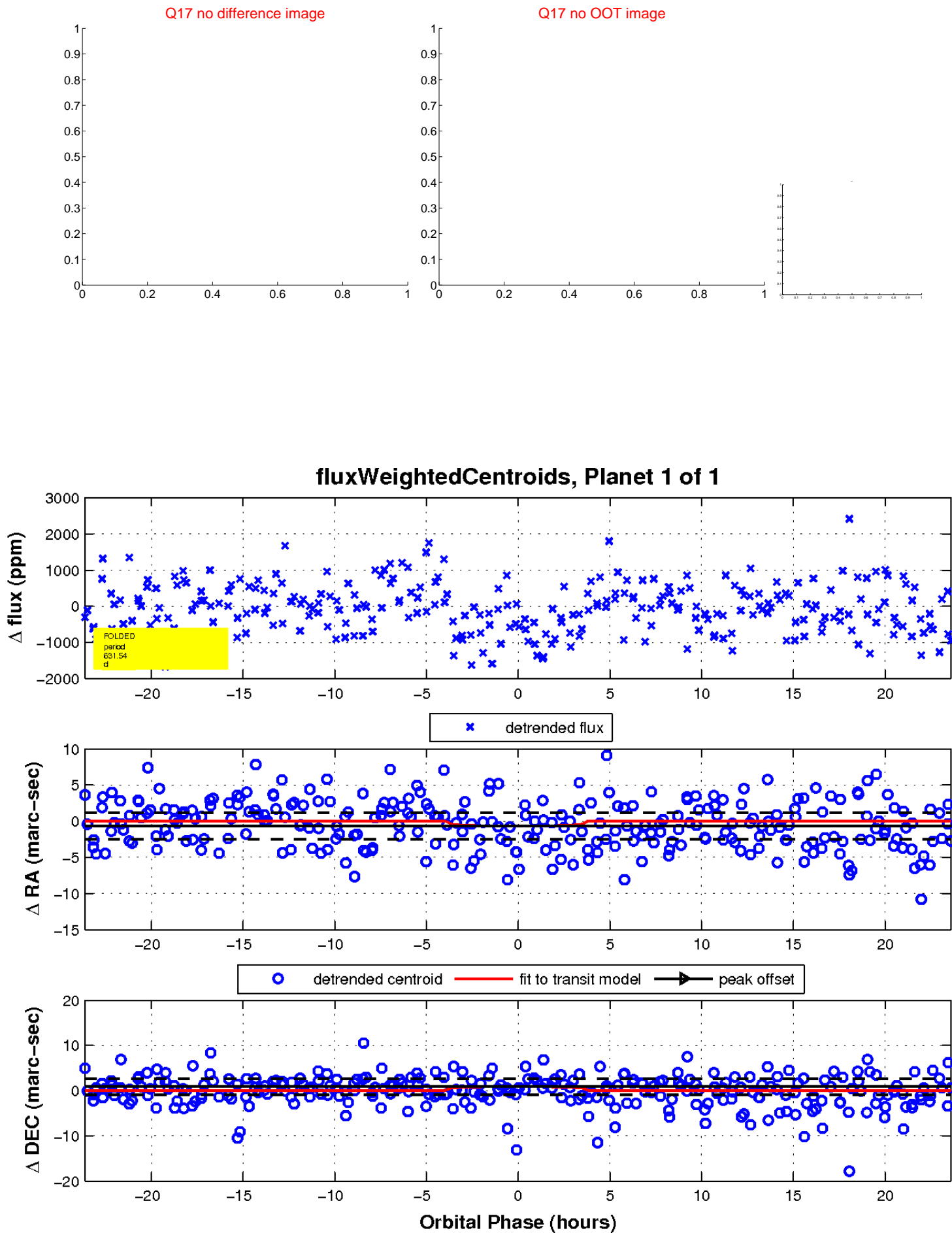
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

