

KIC 008742653

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 008742653-01 | OBS | No | 368.944166 | 175.661634 | 299.8 | 24.878 | 7.2 | 7.0 | 1.02 | 5908 | 1.85 | 1.08 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008742653-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_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.

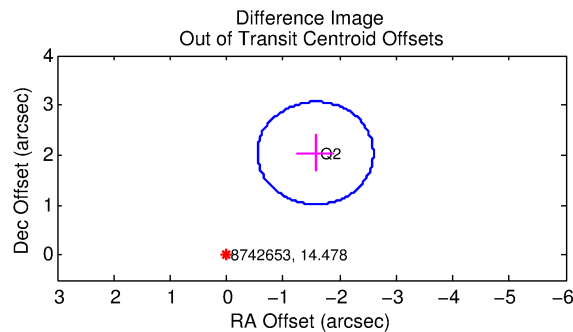
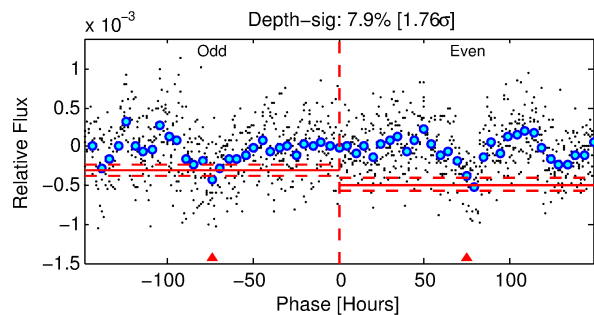
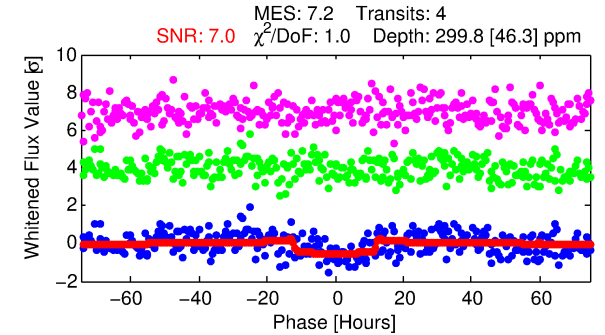
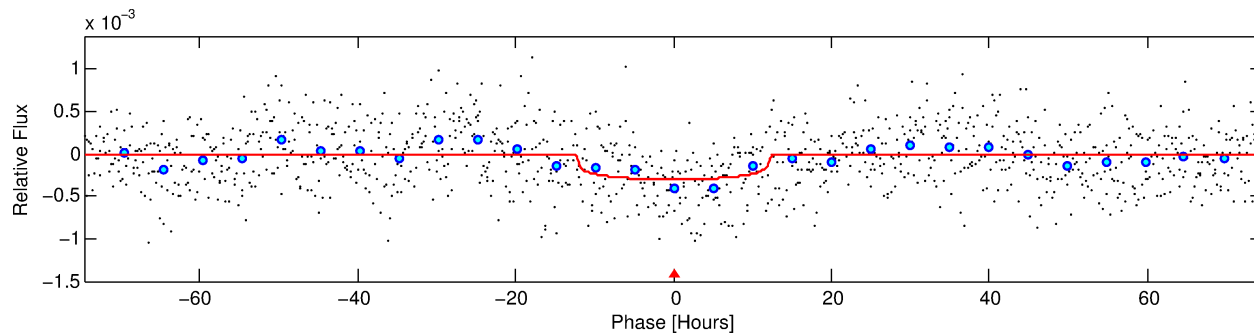
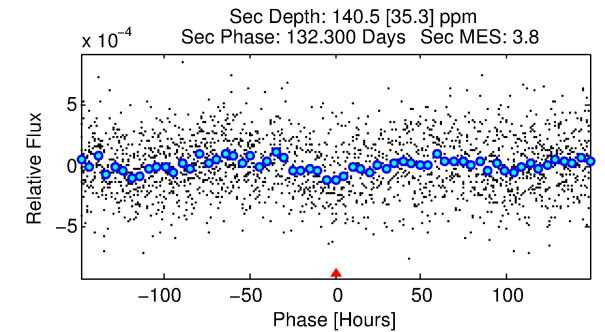
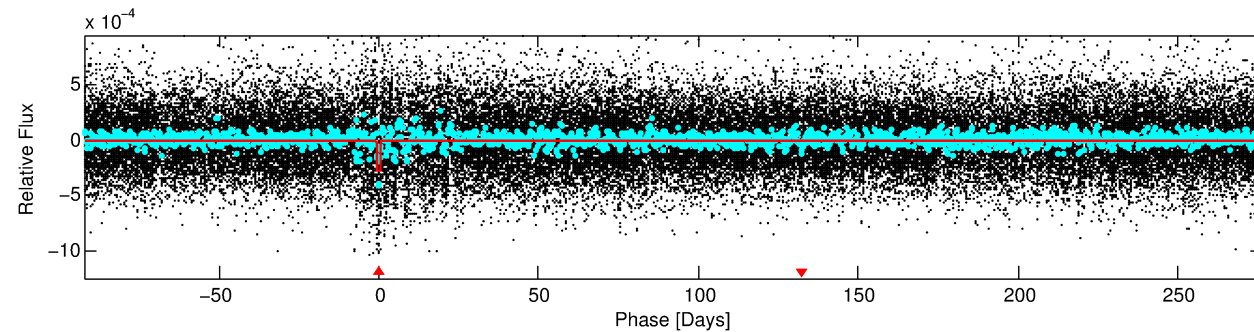
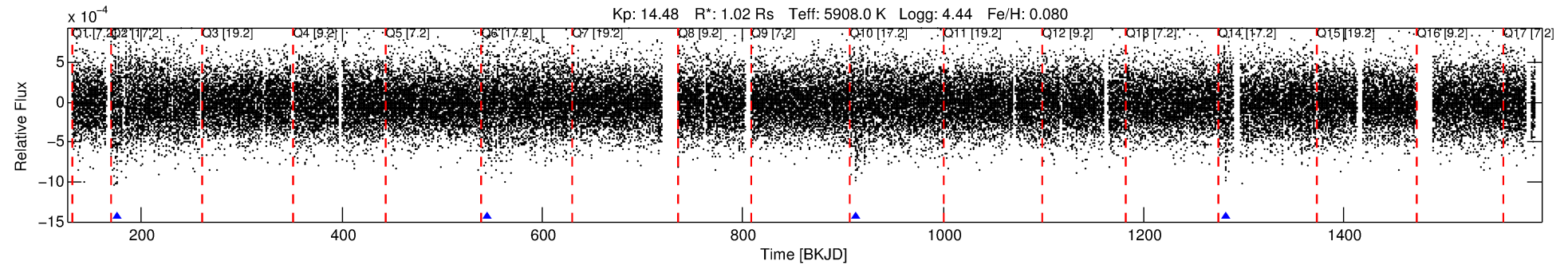
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008742653-01

No Significant Match Found

DV One-Page Summary

KIC: 8742653 Candidate: 1 of 1 Period: 368.944 d



DV Fit Results:

Period = 368.94417 [0.01533] d
Epoch = 175.6616 [0.0289] BKJD
Rp/R* = 0.0166 [0.0062]
a/R* = 91.19 [150.05]
b = 0.62 [1.63]
Seff = 1.08 [0.43]
Teq = 260 [26] K
Rp = 1.85 [0.88] Re
a = 1.0249 [0.2626] AU
Ag = 23751.89 [20735.34] [1.15σ]
Teffp = 4993 [995] K [4.75σ]

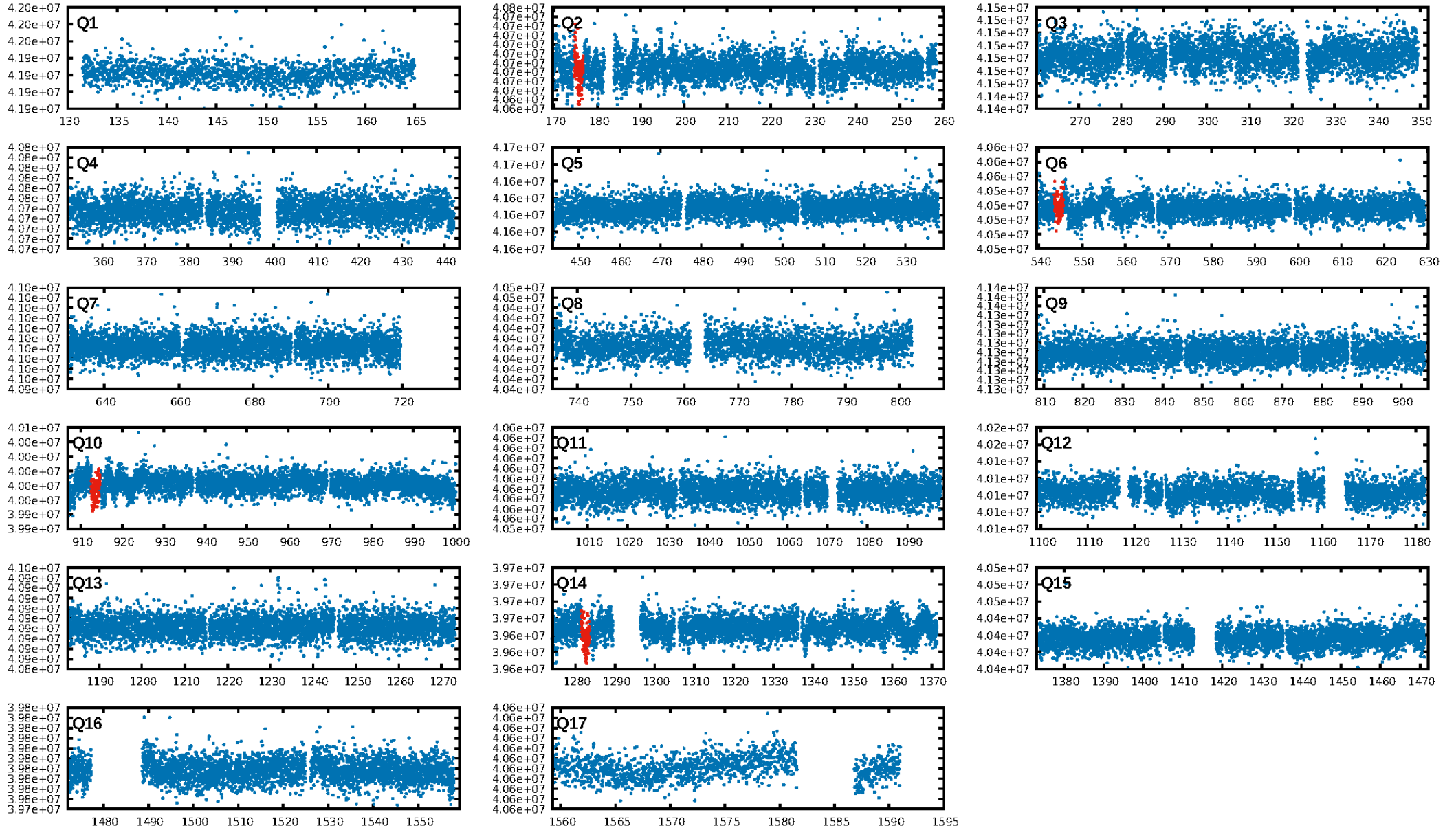
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 13.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.14e-10
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 17.41
Centroid-sig: 31.9%
Centroid-so: 1.706 arcsec [0.87σ]
OotOffset-rm: 2.575 arcsec [7.52σ]
KicOffset-rm: 2.538 arcsec [7.42σ]
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]

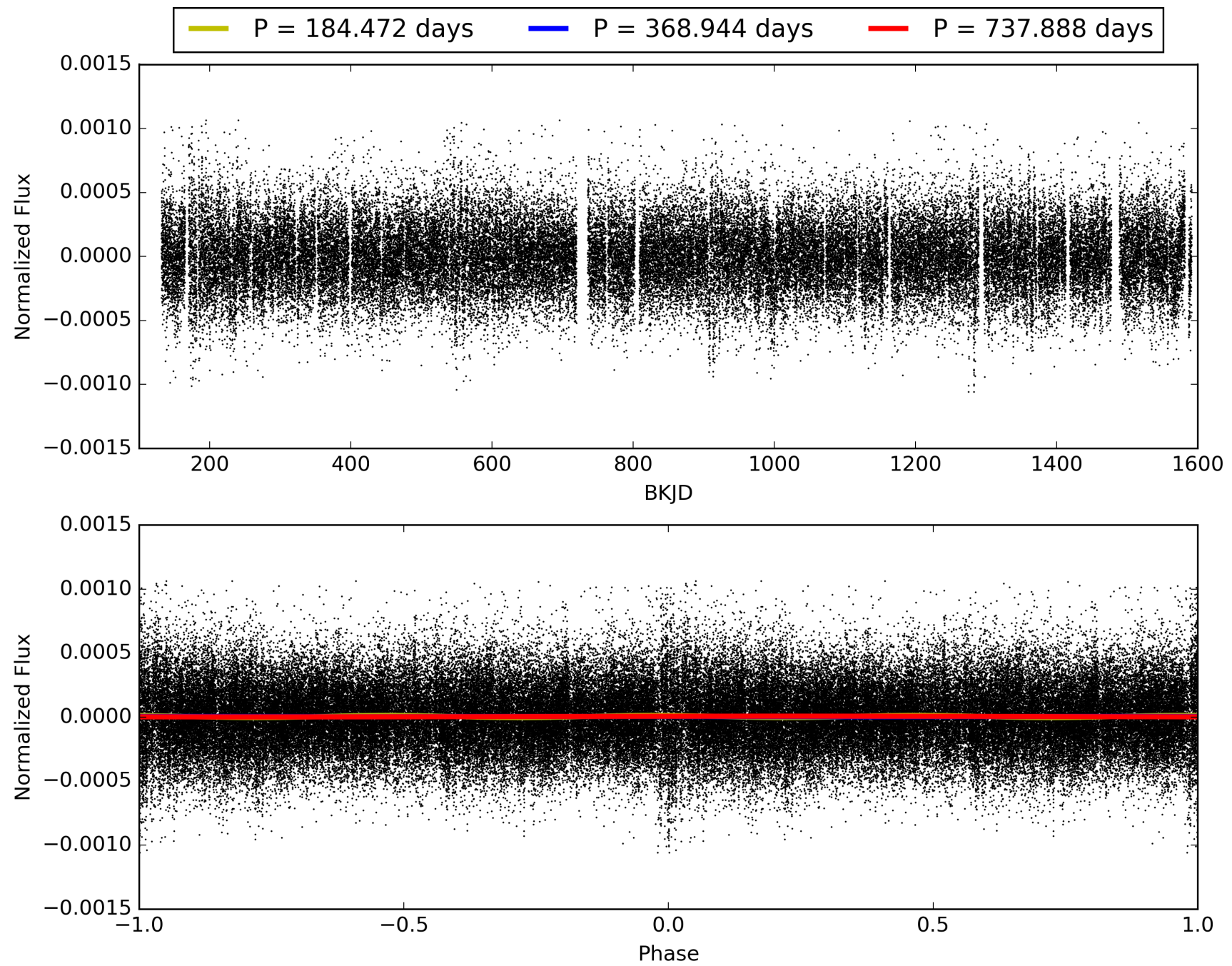
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:44:31 Z

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

TCE 008742653-01, PDC Light Curves

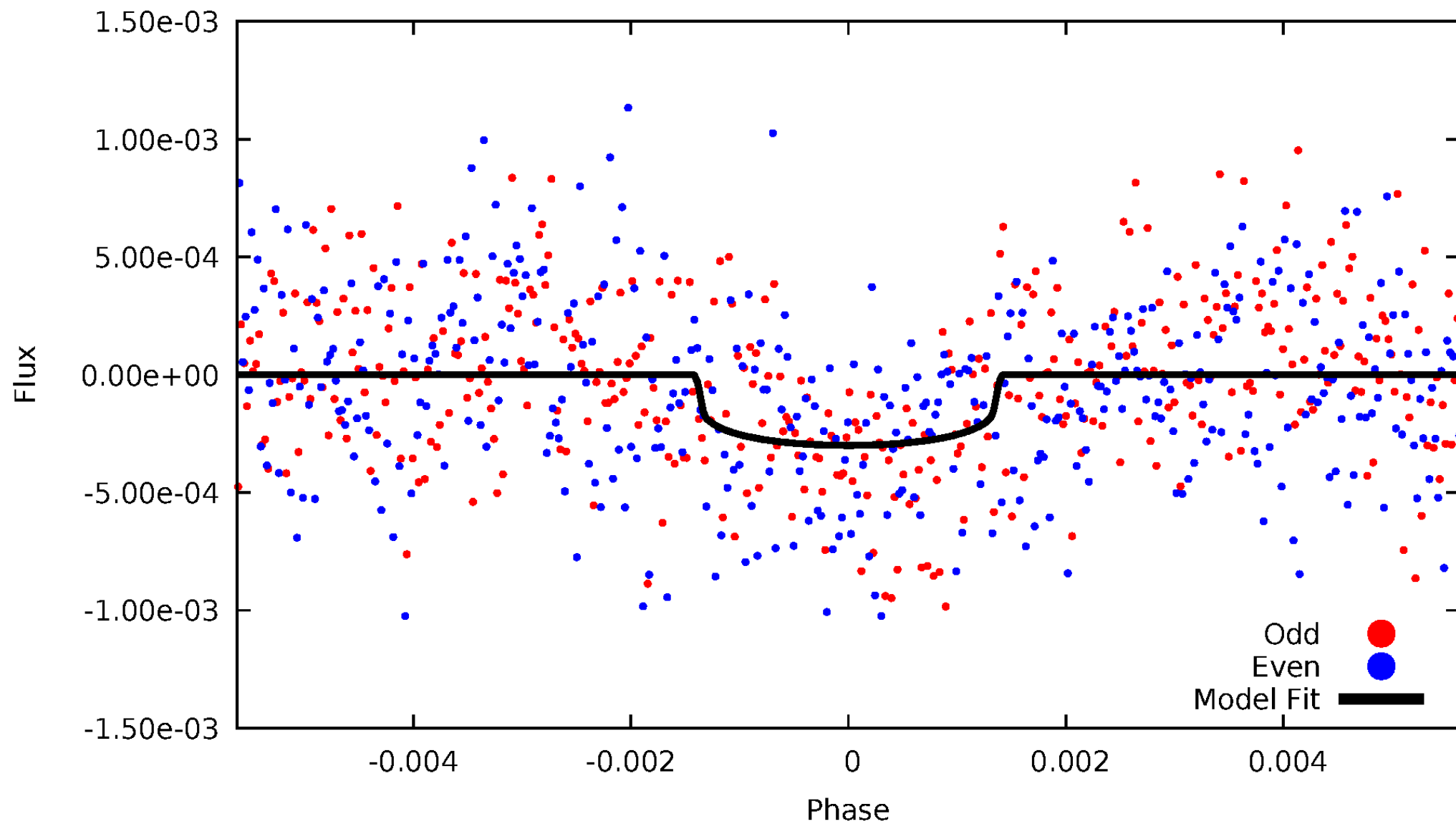


TCE 008742653-01



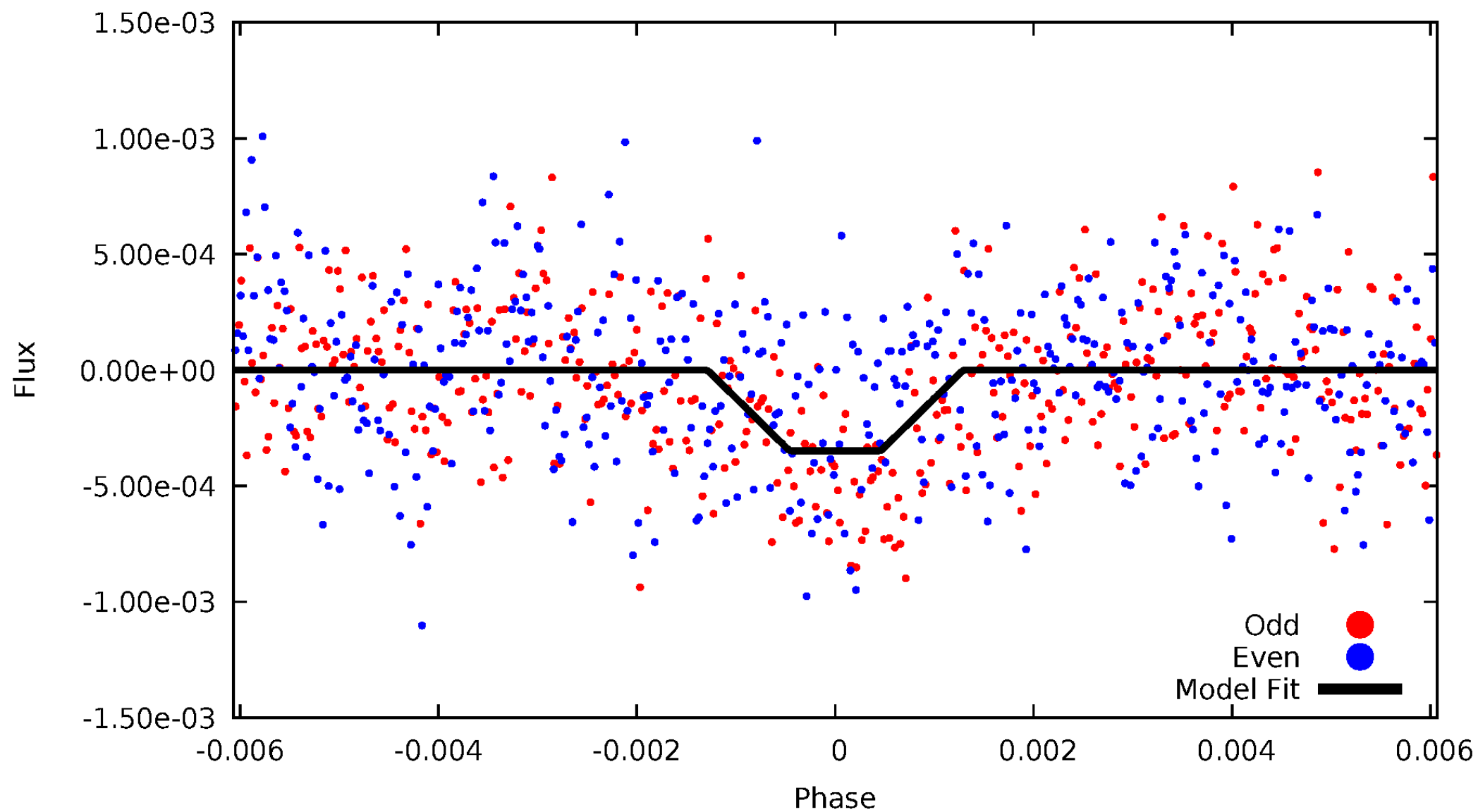
DV Odd/Even

TCE 008742653-01



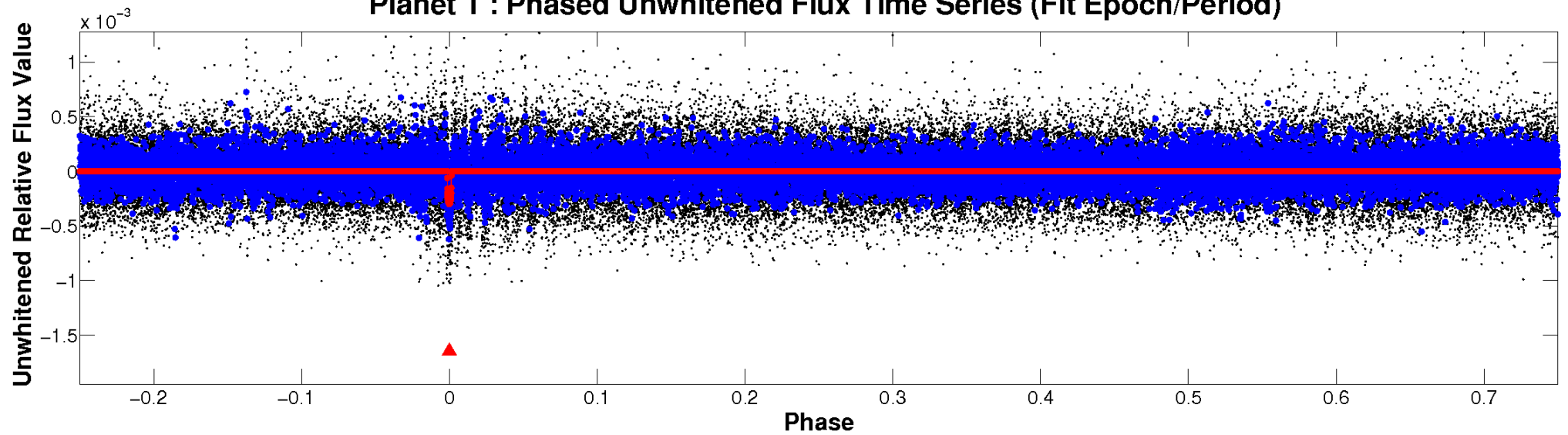
ALT Odd/Even

TCE 008742653-01

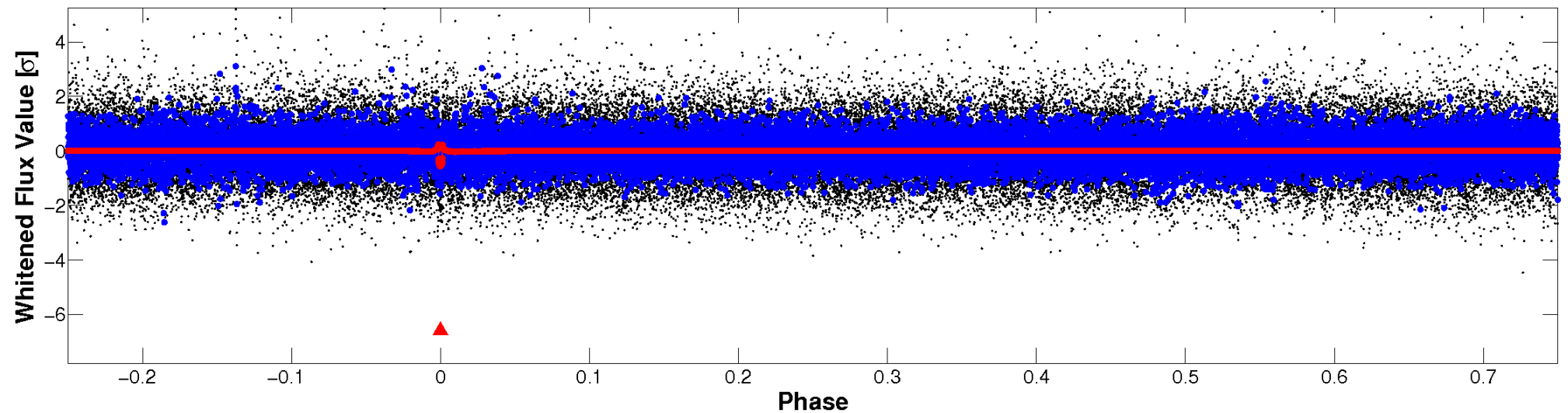


Non-Whitened Vs. Whitened Light Curve

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 008742653-01 P=368.944166 Days $T_0=175.661634$ (BKJD)



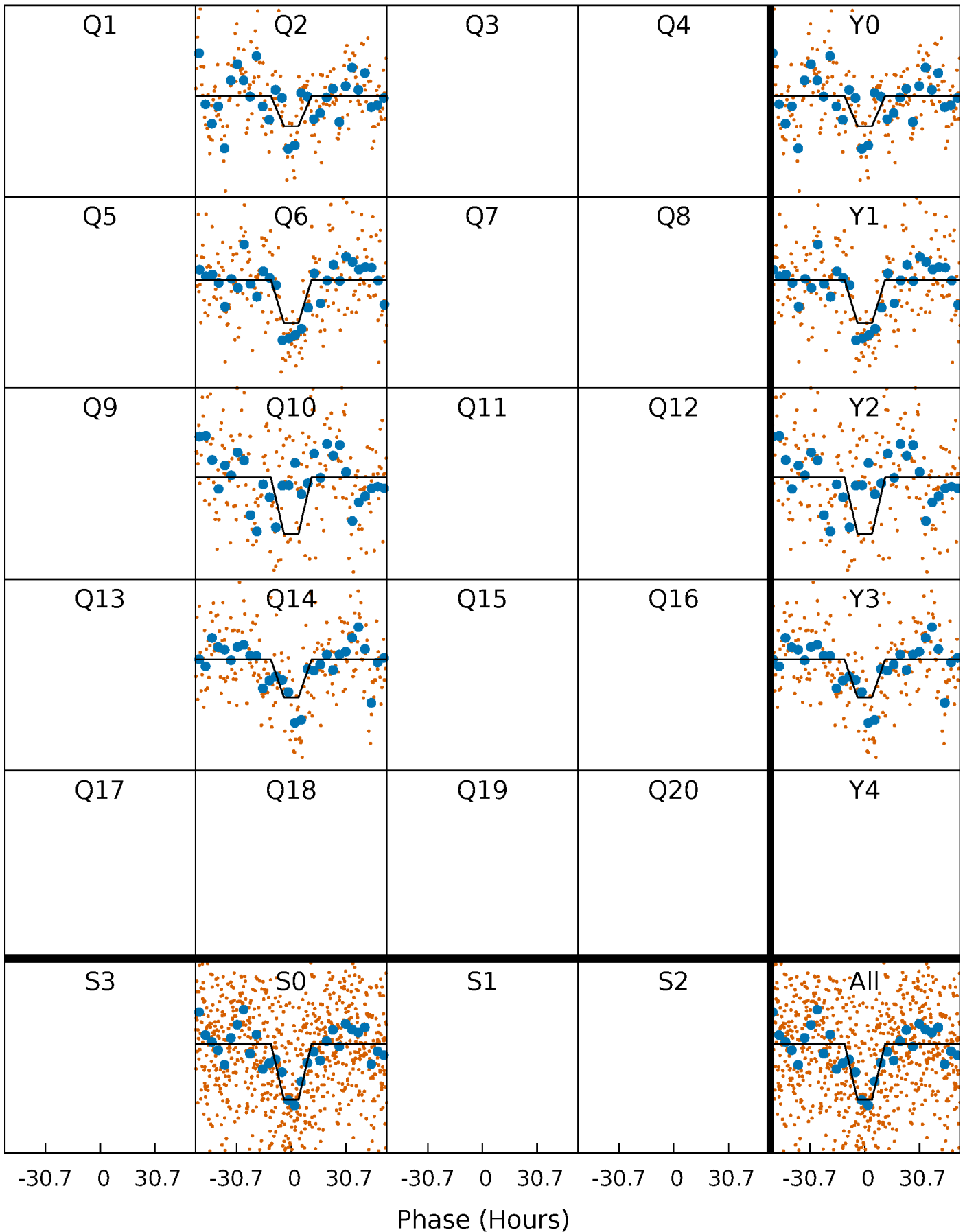
DV Quarter-Phased Transit Curves

TCE 008742653-01 P=368.944166 Days $T_0=175.661634$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

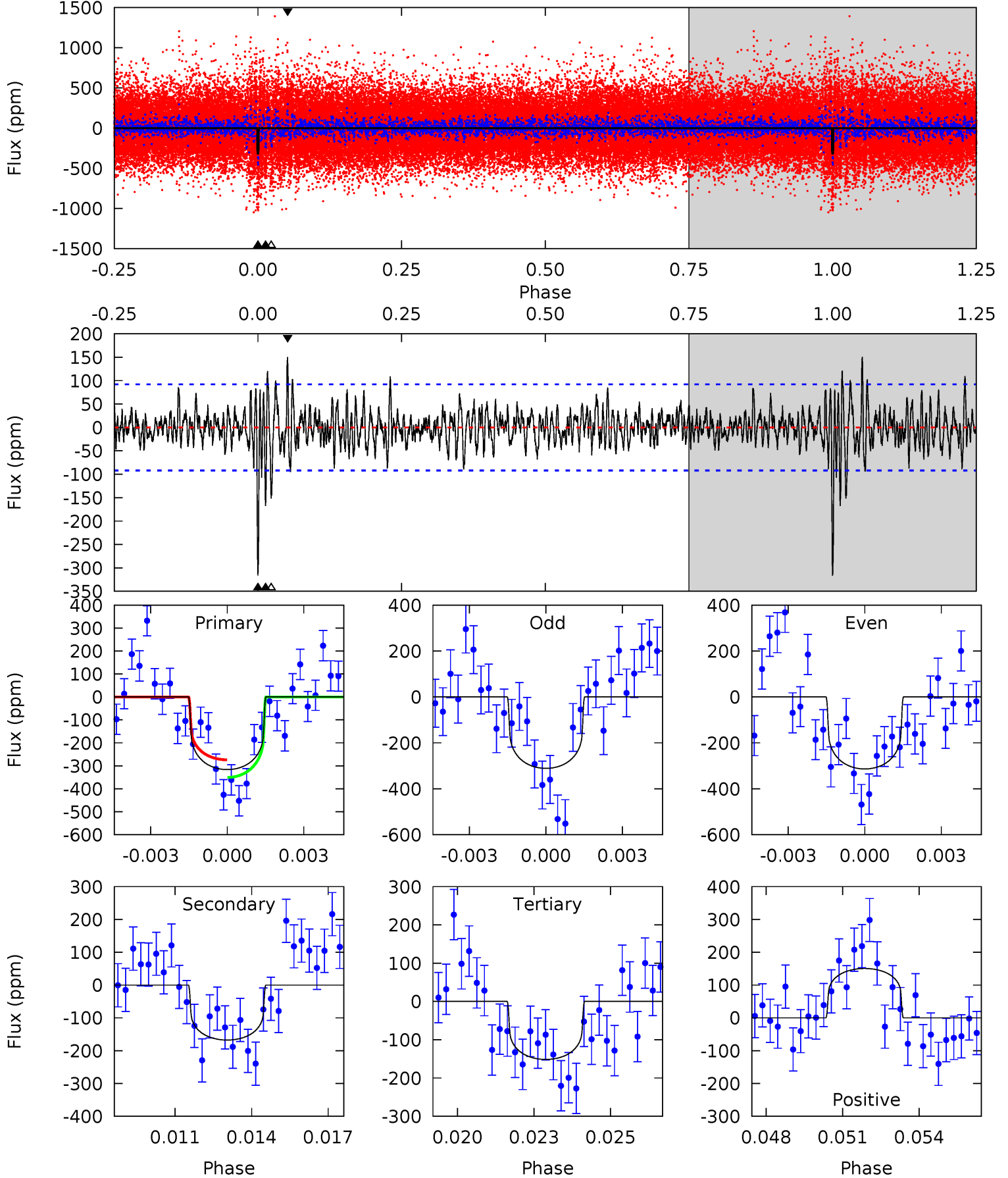
TCE 008742653-01 P=368.955171 Days $T_0=175.696322$ (BKJD)



DV Model-Shift Uniqueness Test

008742653-01, P = 368.944166 Days, E = 175.661634 Days

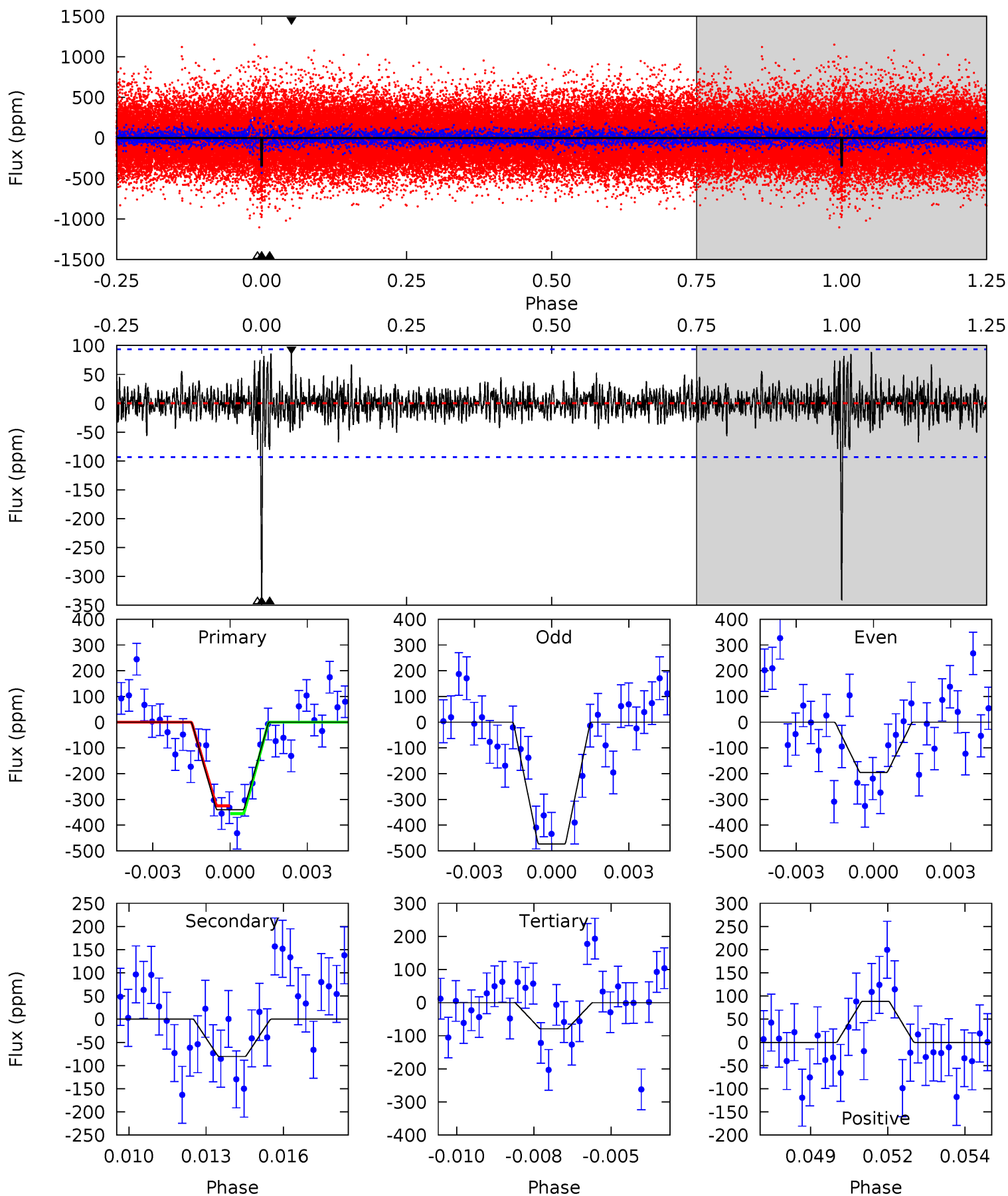
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 18.1 | 9.58 | 8.66 | 8.60 | 5.26 | 2.99 | 1.78 | 9.43 | 9.48 | 0.92 | 0.98 | 0.07 | 1.04 | 0.32 | 2.19 |



Alt Model-Shift Uniqueness Test

008742653-01, P = 368.955171 Days, E = 175.696322 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 19.2 | 4.55 | 4.48 | 5.01 | 5.28 | 3.01 | 1.05 | 14.7 | 14.2 | 0.07 | -0.45 | 7.90 | 0.86 | 0.21 | 0.86 |



Stellar Parameters For KIC 008742653

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 5908^{+158}_{-193} | $4.443^{+0.070}_{-0.210}$ | $0.080^{+0.250}_{-0.300}$ | $1.021^{+0.305}_{-0.109}$ | $1.053^{+0.127}_{-0.127}$ | $1.393^{+0.400}_{-0.739}$ |
| | +3%/-3% | +2%/-5% | +312%/-375% | +30%/-11% | +12%/-12% | +29%/-53% |
| 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 008742653-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|------------------------|-------------------|-----------------------|---------------------------|
| DV | -168 ± 17 | $1.94^{+0.77}_{-0.73}$ | 369^{+27}_{-18} | 5243^{+1208}_{-680} | 25354^{+38537}_{-12364} |
| Alt. | -80 ± 18 | $2.12^{+0.81}_{-0.70}$ | 368^{+28}_{-18} | 4355^{+731}_{-509} | 10256^{+12461}_{-5306} |

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

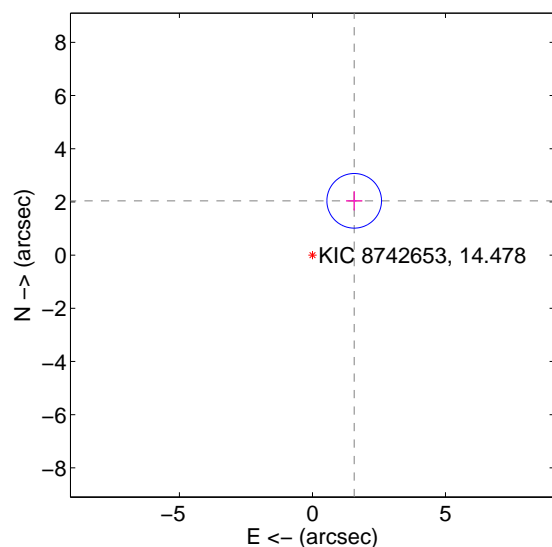
Supplemental centroid analysis for 008742653-01. Kepler magnitude: 14.48. Transit SNR 6.98

There are 0 quarters with good PRF difference image offsets

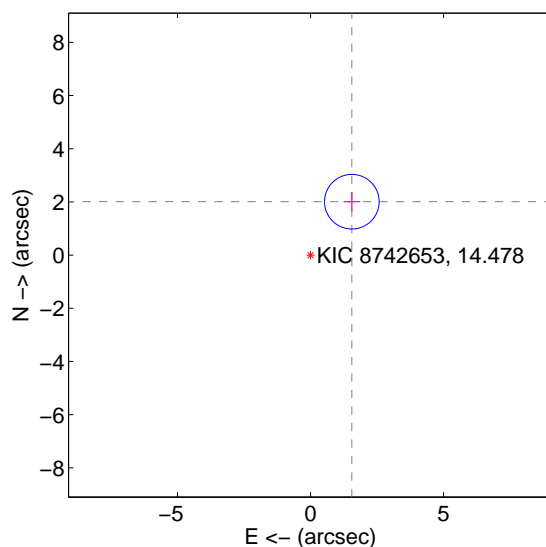
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 2.575 ± 0.342 | 7.52 | -1.570 ± 0.307 | 2.041 ± 0.362 |
| PRF-fit source offset from KIC position | 2.538 ± 0.342 | 7.42 | -1.553 ± 0.307 | 2.007 ± 0.362 |
| photometric centroid source offset | 1.71 ± 1.96 | 0.87 | 0.55 ± 1.66 | -1.61 ± 1.99 |

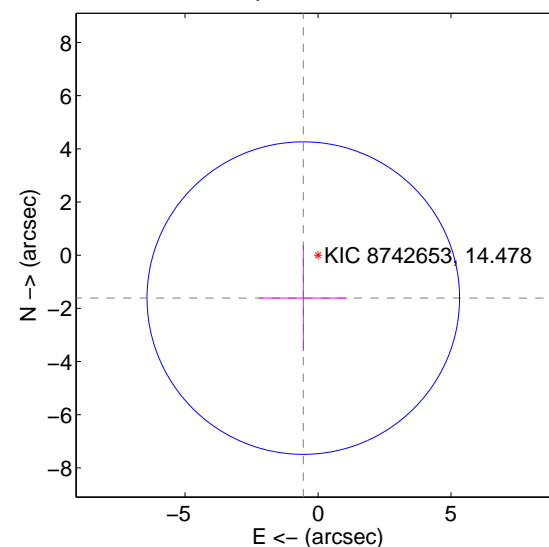
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

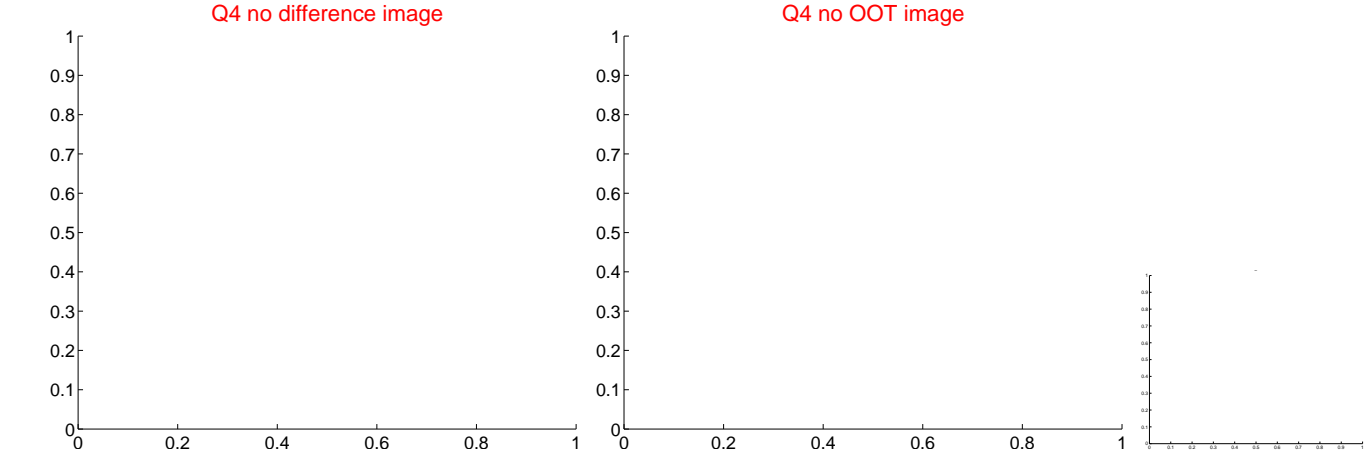
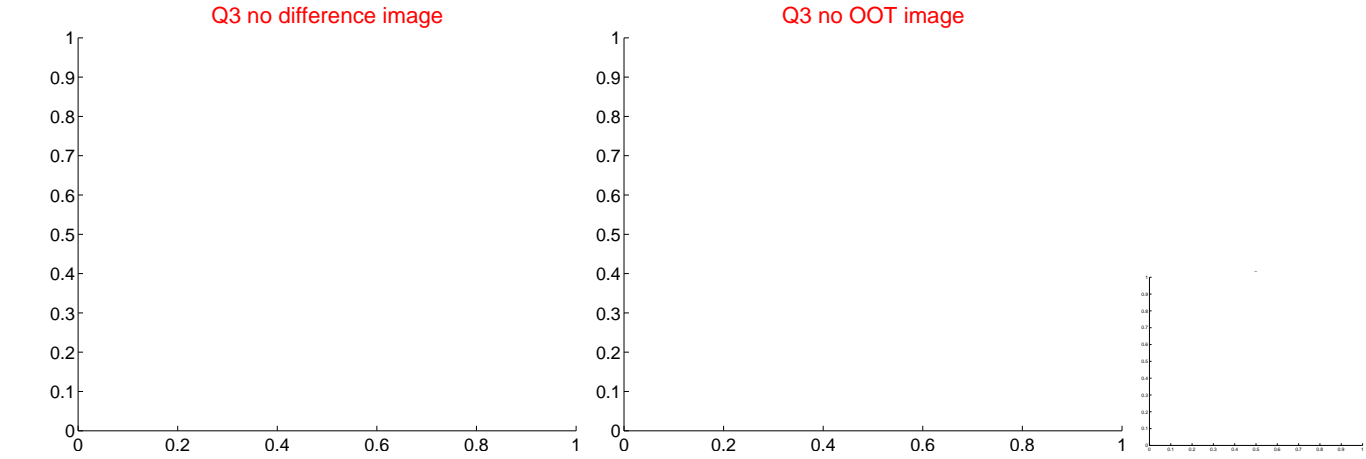
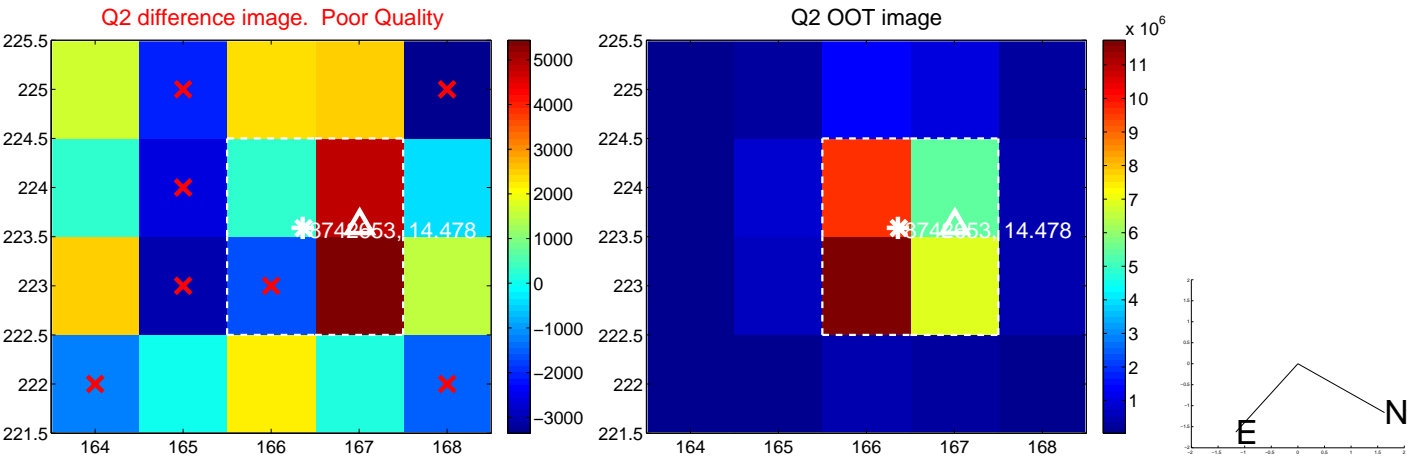
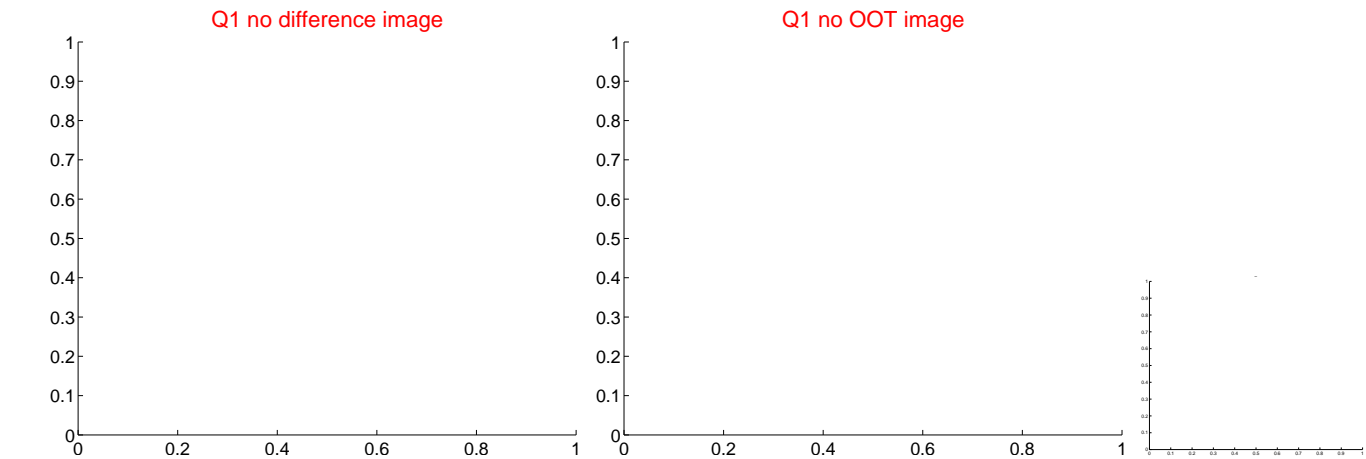


offset from photometric centroids

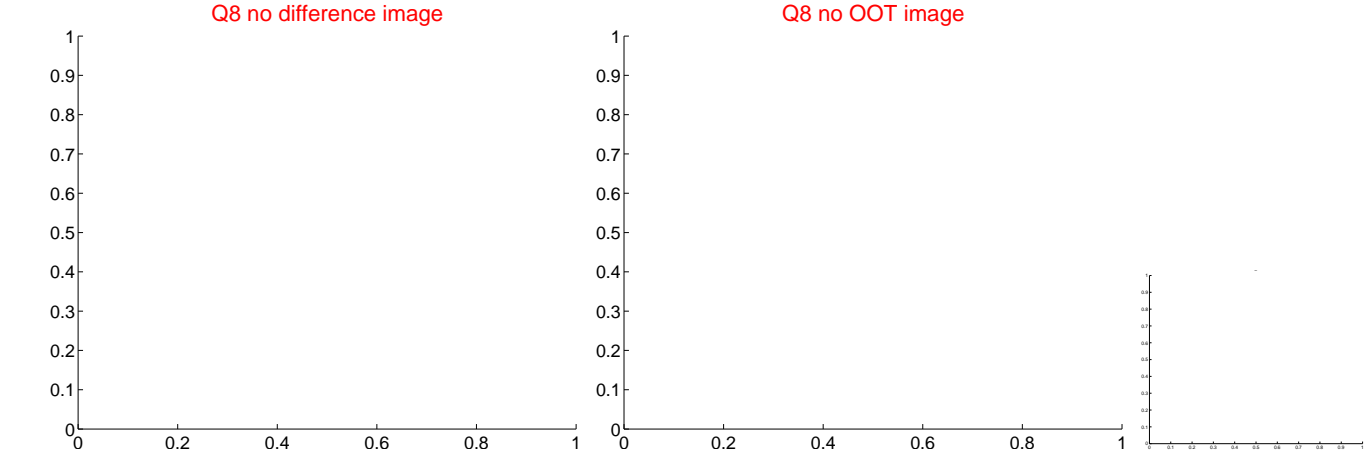
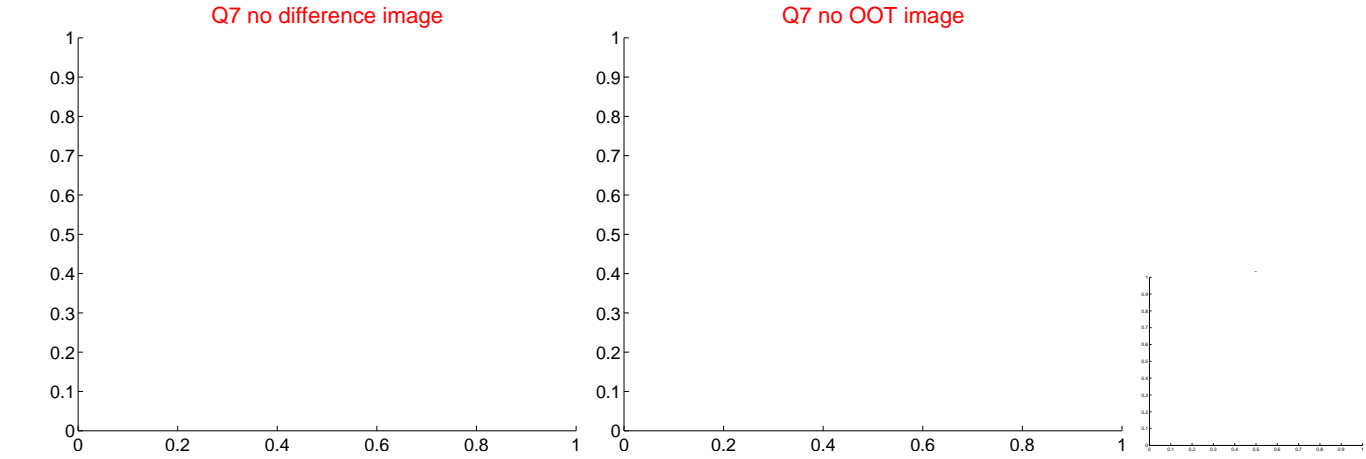
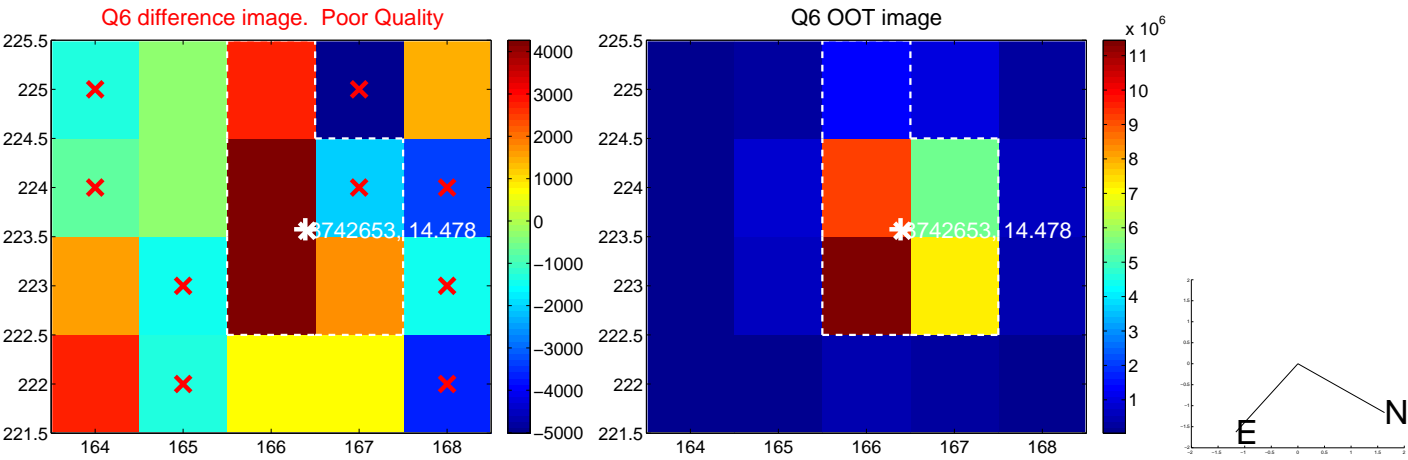
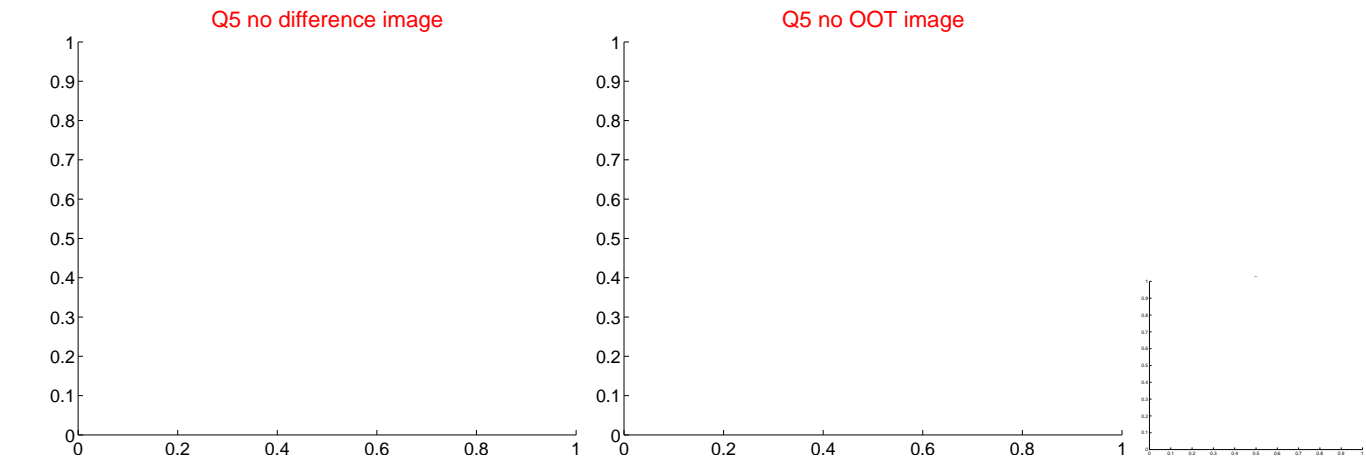


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

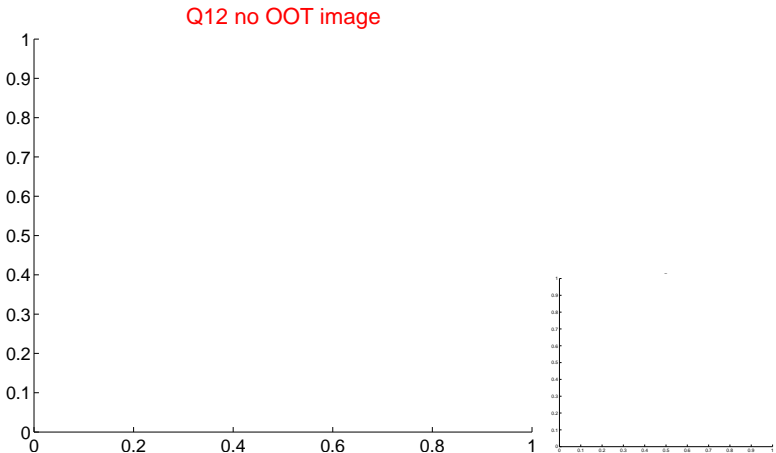
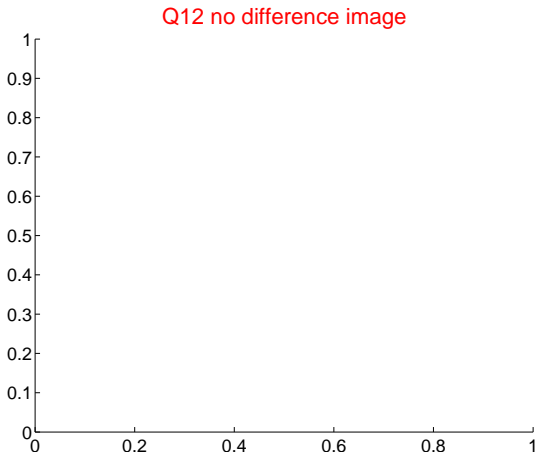
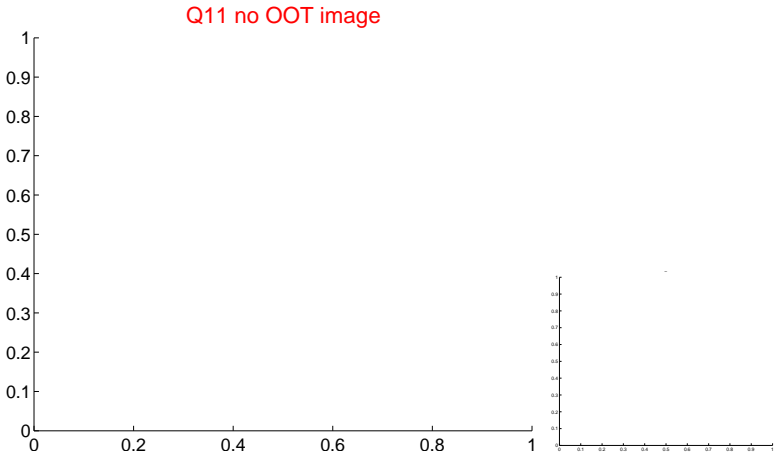
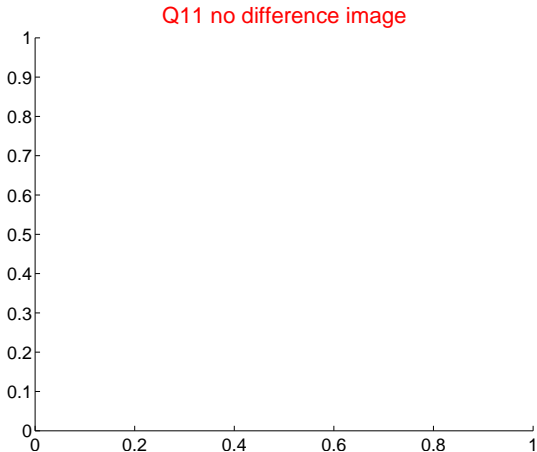
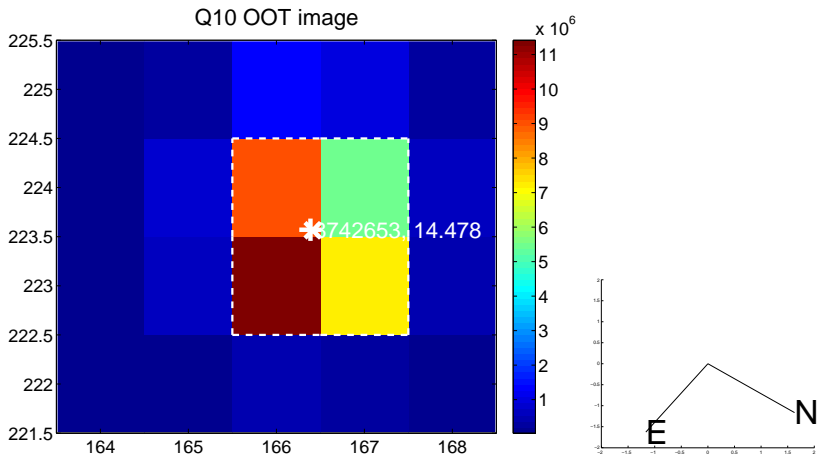
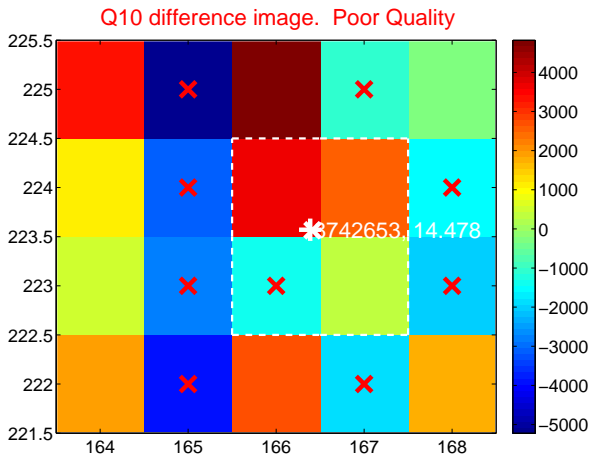
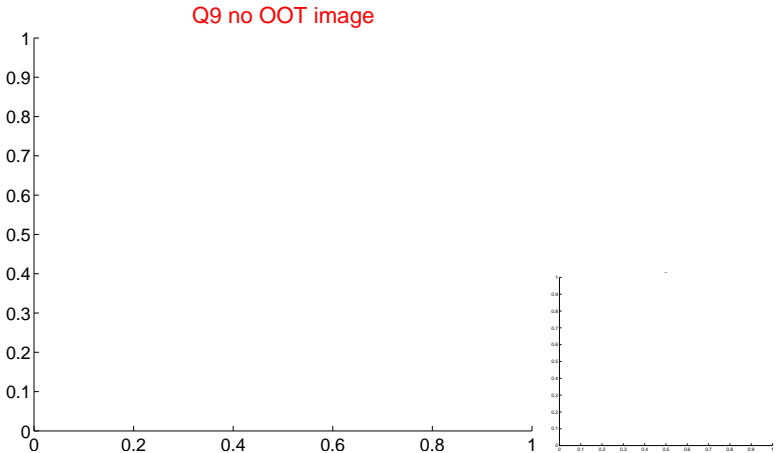
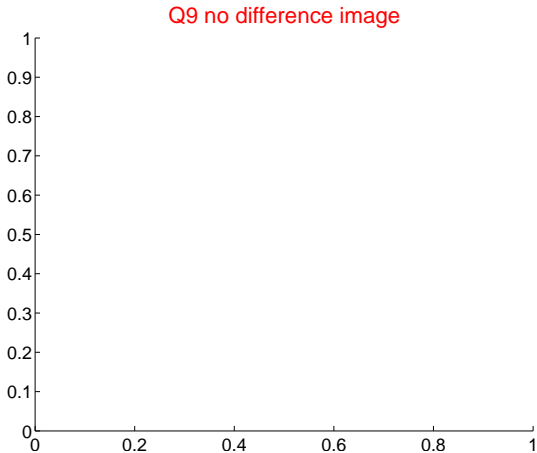
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



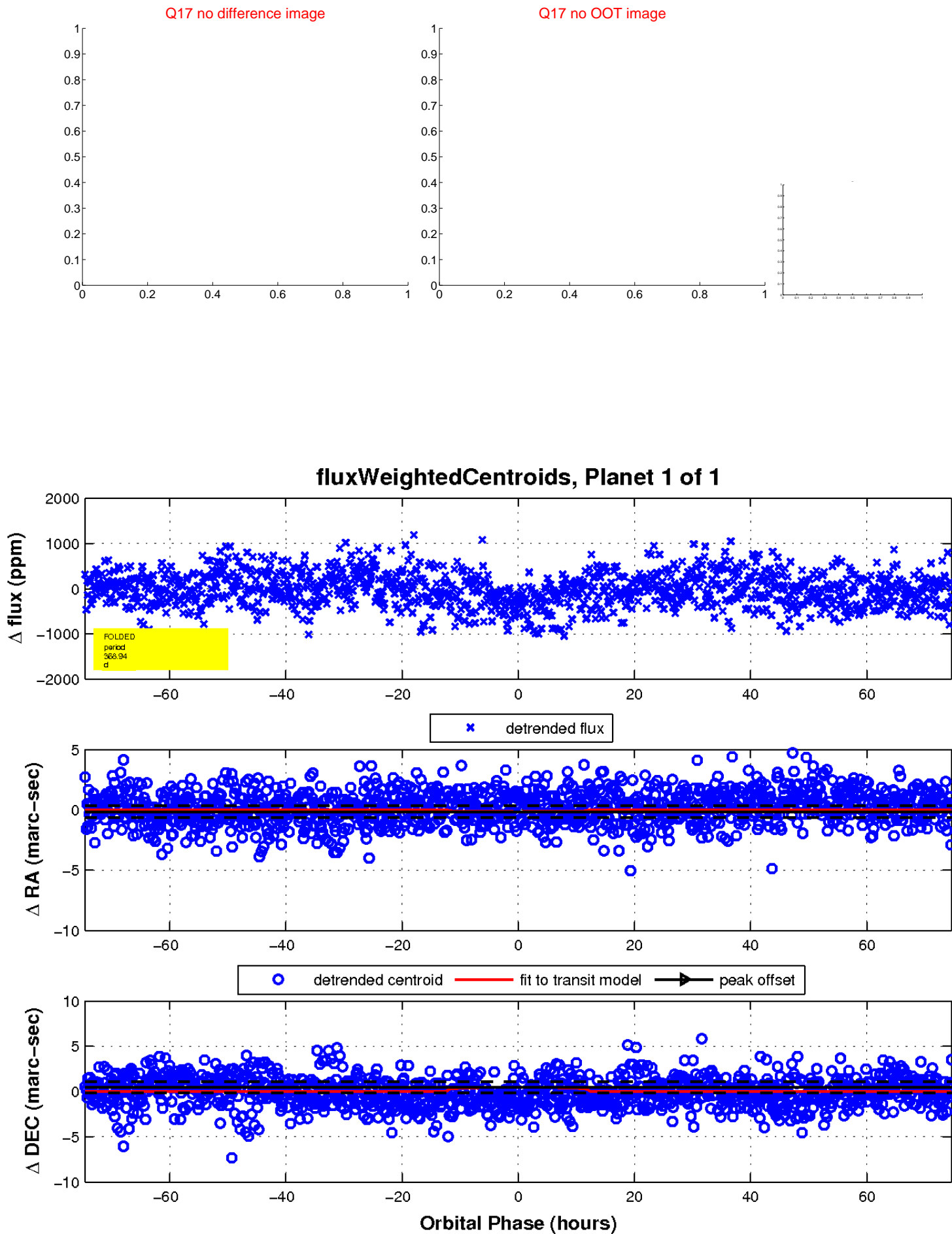
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



UKIRT Image

Declination

