

KIC 007215603

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 007215603-01 | OBS | 1618.01 | 2.364347 | 132.256942 | 27.2 | 3.452 | 18.2 | 19.3 | 1.54 | 6250 | 0.95 | 2233.80 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 007215603-01 | OBS | PC | 0.91 | 0 | 0 | 0 | 0 | NO_COMMENT |

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.

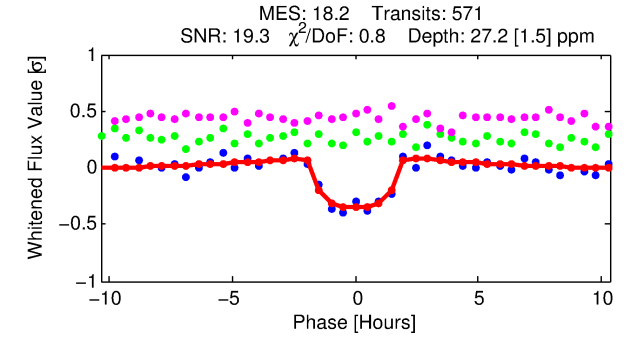
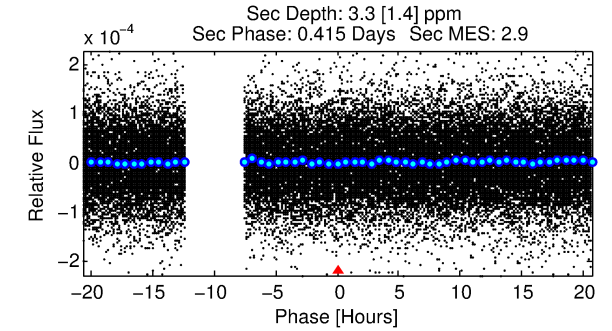
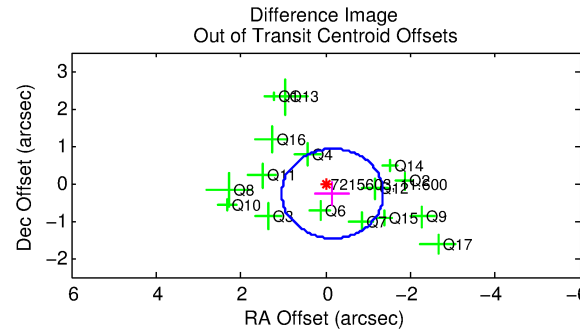
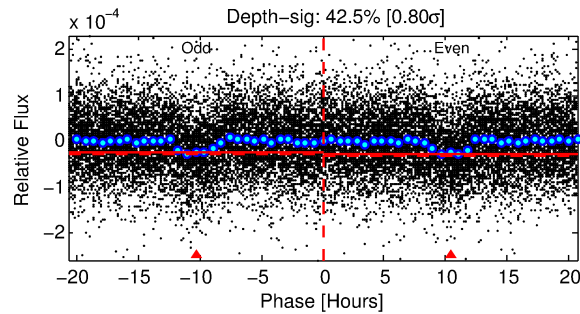
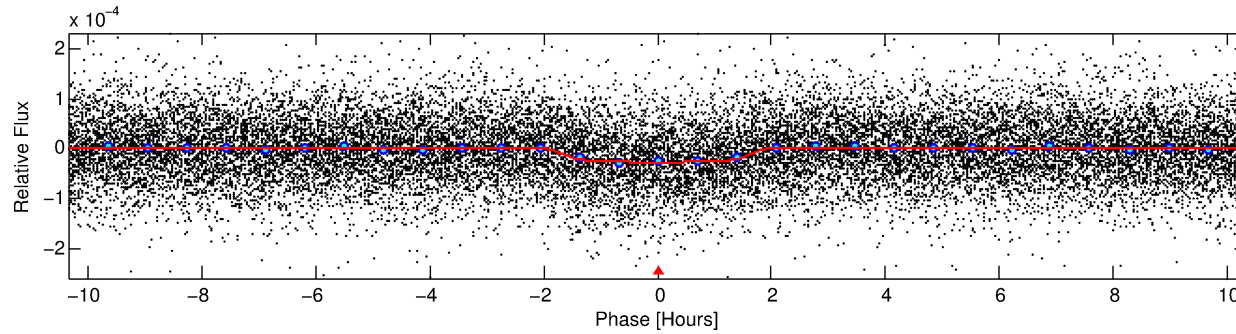
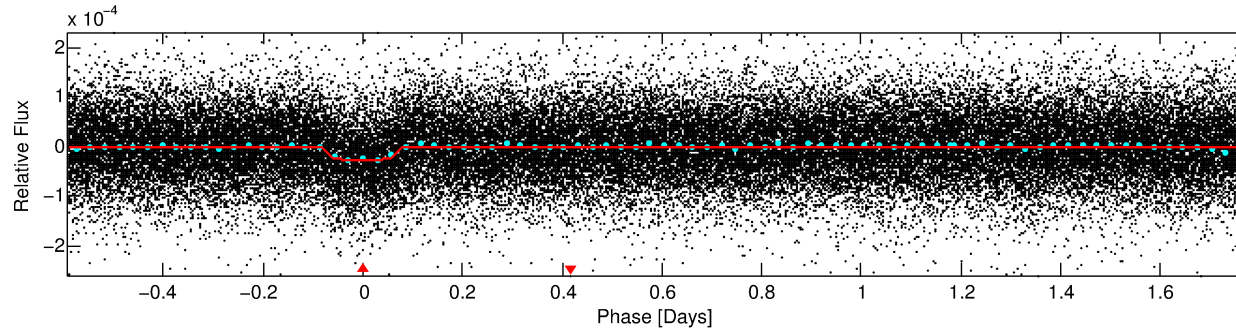
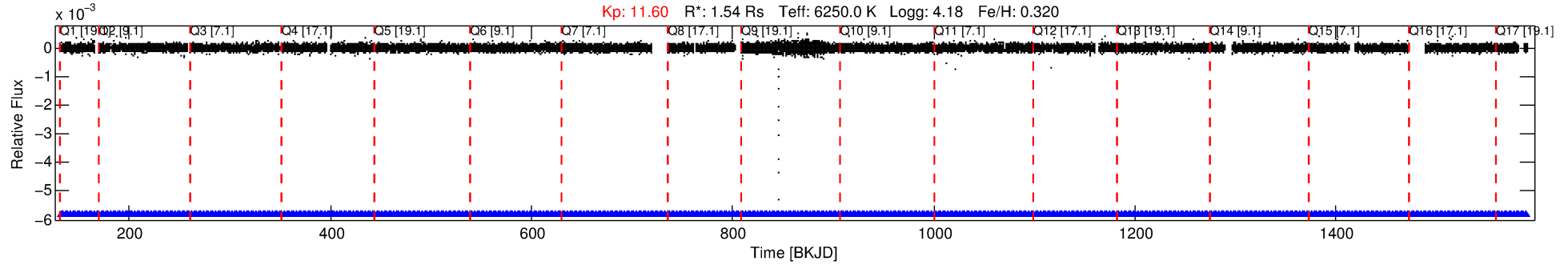
Ephemeris Match Information For 007215603-01

No Significant Match Found

DV One-Page Summary

KIC: 7215603 Candidate: 1 of 1 Period: 2.364 d

KOI: K01618.01 Corr: 0.970



DV Fit Results:

Period = 2.36435 [0.00001] d
Epoch = 132.2569 [0.0020] BKJD
Rp/R* = 0.0056 [0.0011]
a/R* = 2.52 [2.22]
b = 0.90 [0.22]
Seff = 2233.79 [132.41]
Teq = 1753 [26] K
Rp = 0.95 [0.19] Re
a = 0.0382 [0.0008] AU
Ag = 2.96 [1.74] [1.12 σ]
Teff = 3554 [525] K [3.42 σ]

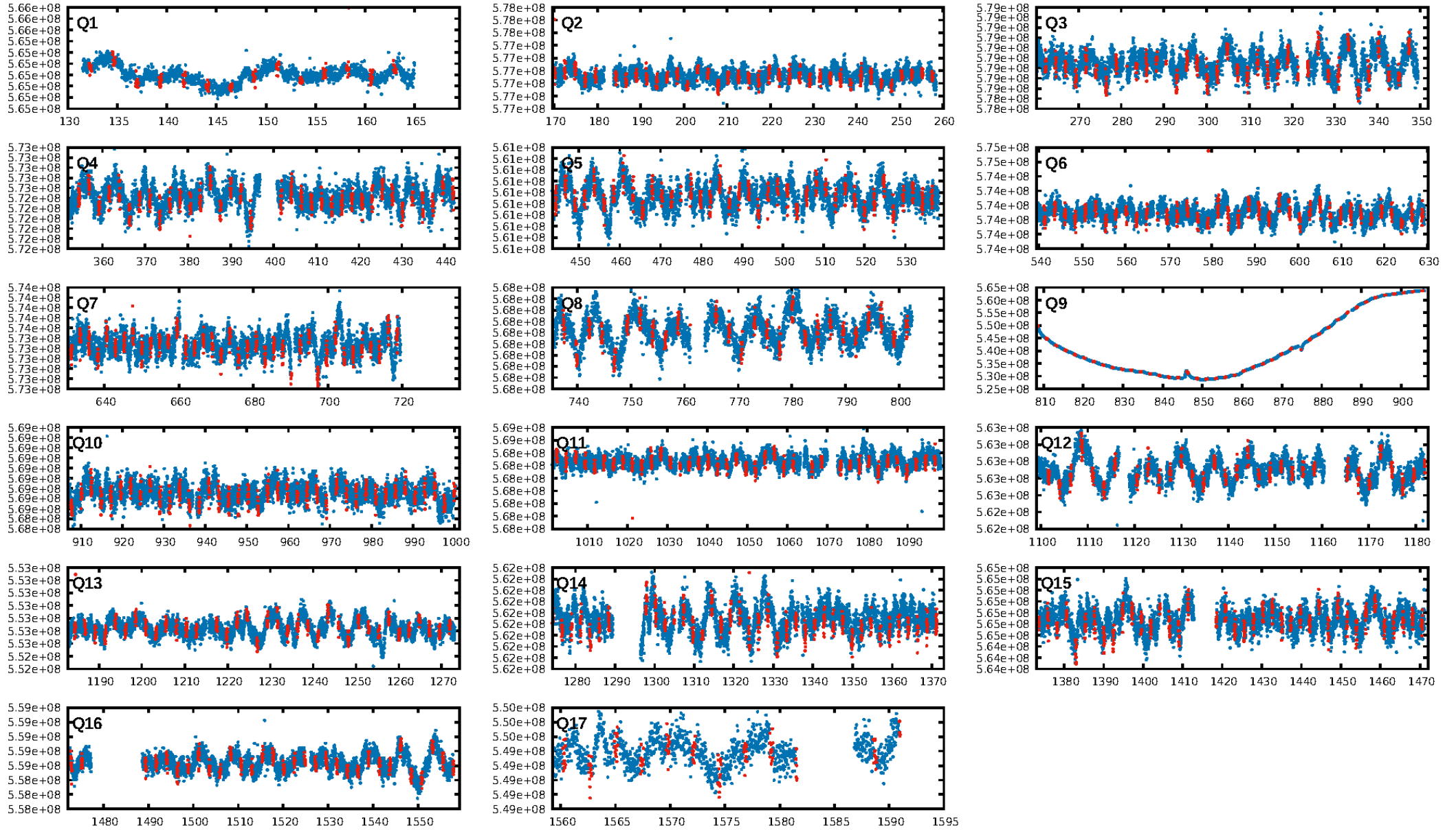
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.43e-67
RollingBand-fgt: 1.00 [545/545]
GhostDiagnostic-chr: 6.437
Centroid-sig: 2.2%
Centroid-so: 0.590 arcsec [1.33 σ]
OotOffset-rm: 0.319 arcsec [0.80 σ]
KicOffset-rm: 0.504 arcsec [1.27 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.81 [13/16]
DiffImageOverlap-fno: 1.00 [17/17]

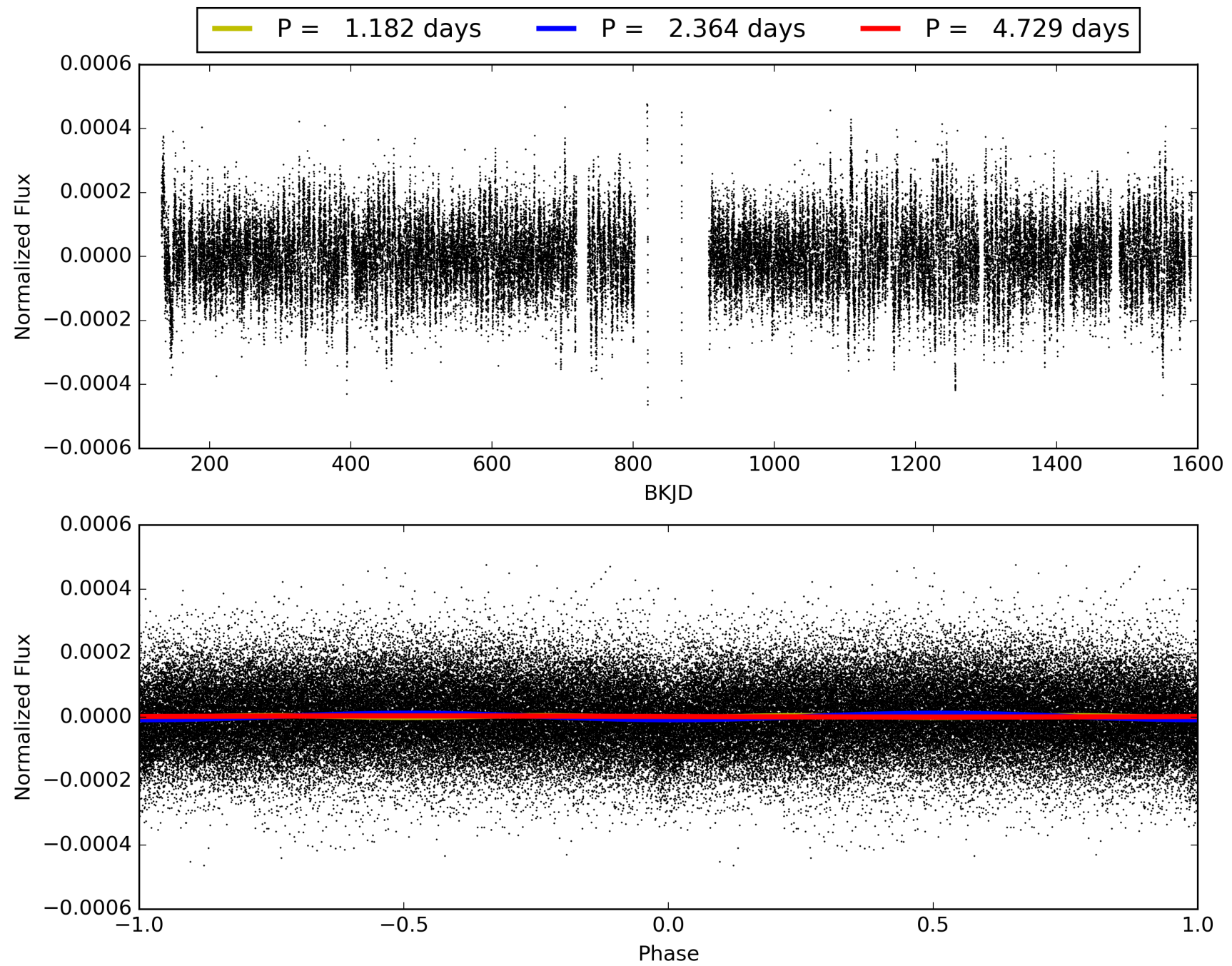
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:29:00 Z

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

TCE 007215603-01, PDC Light Curves

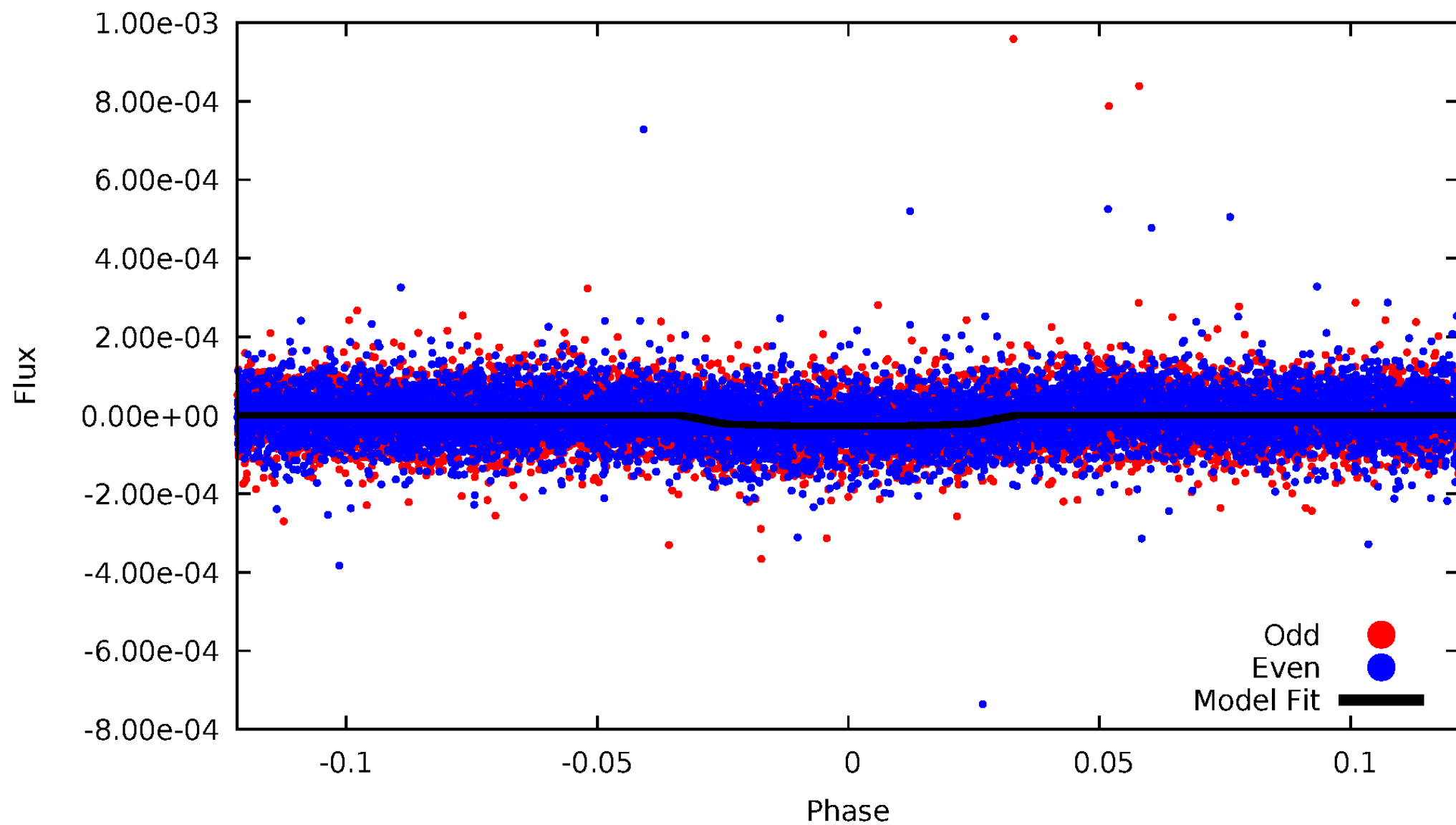


TCE 007215603-01



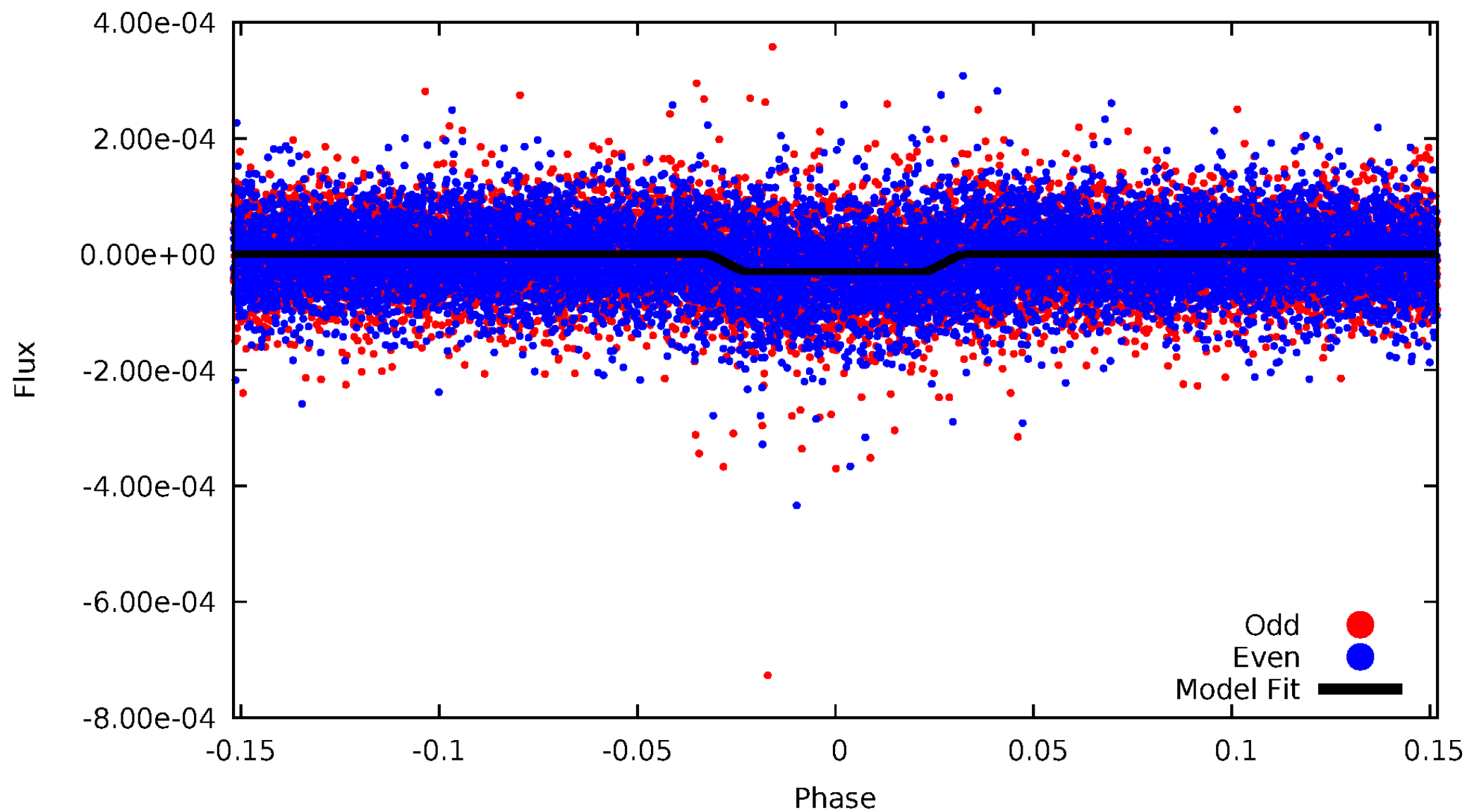
DV Odd/Even

TCE 007215603-01



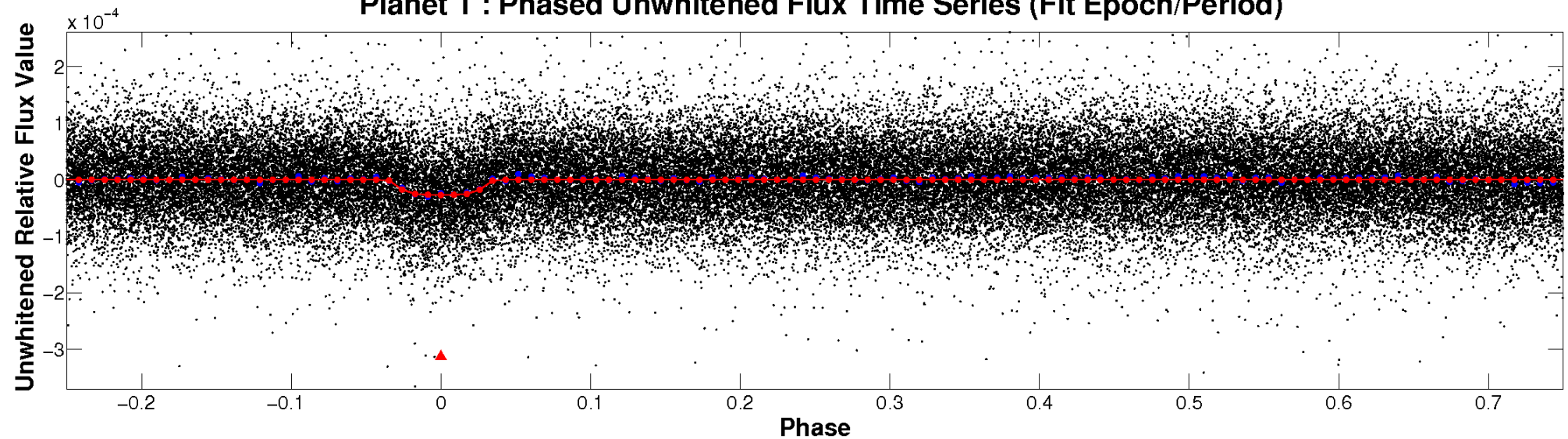
ALT Odd/Even

TCE 007215603-01

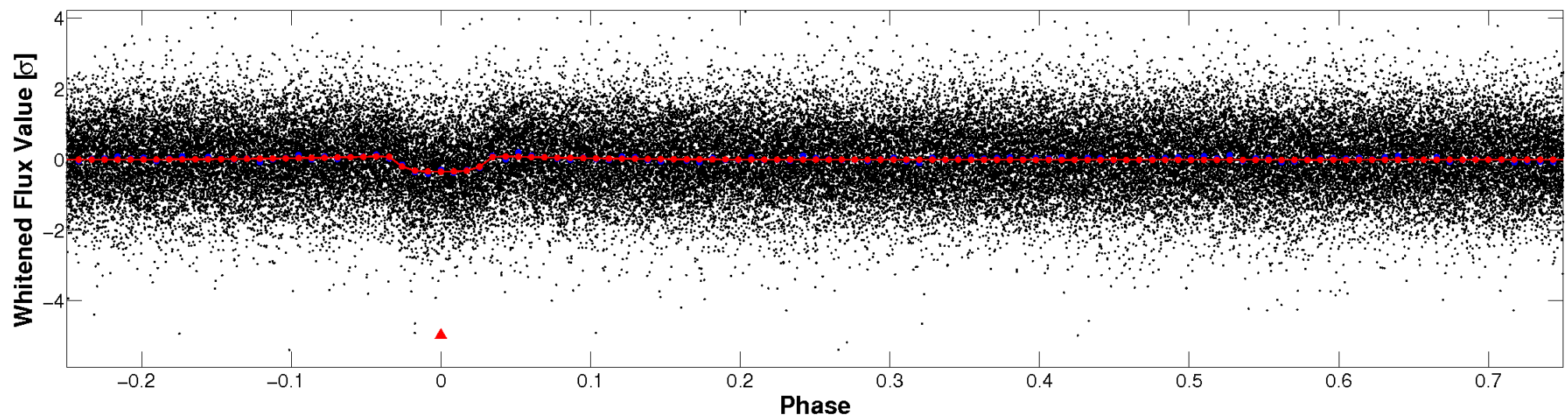


Non-Whitened Vs. Whitened Light Curve

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

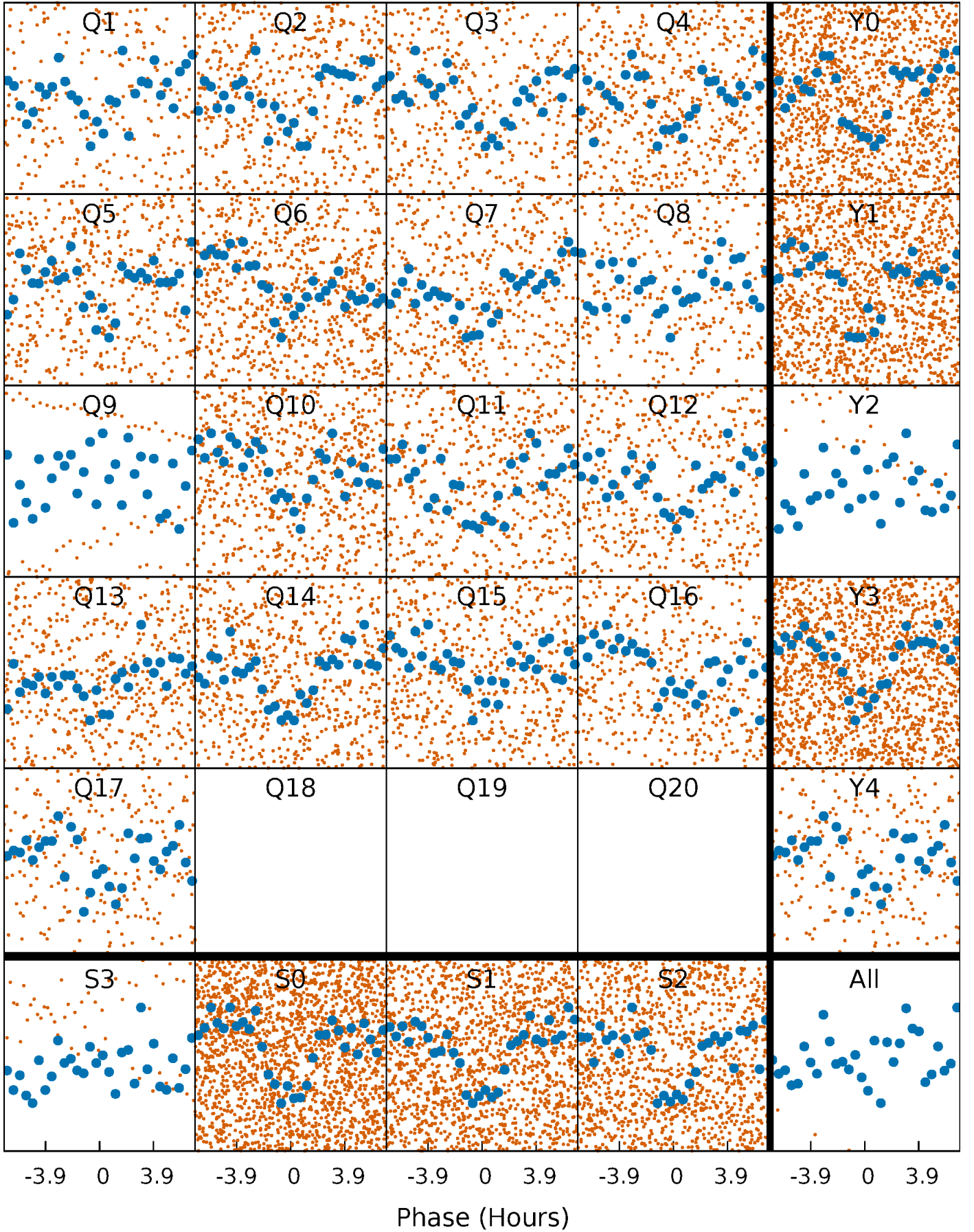


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



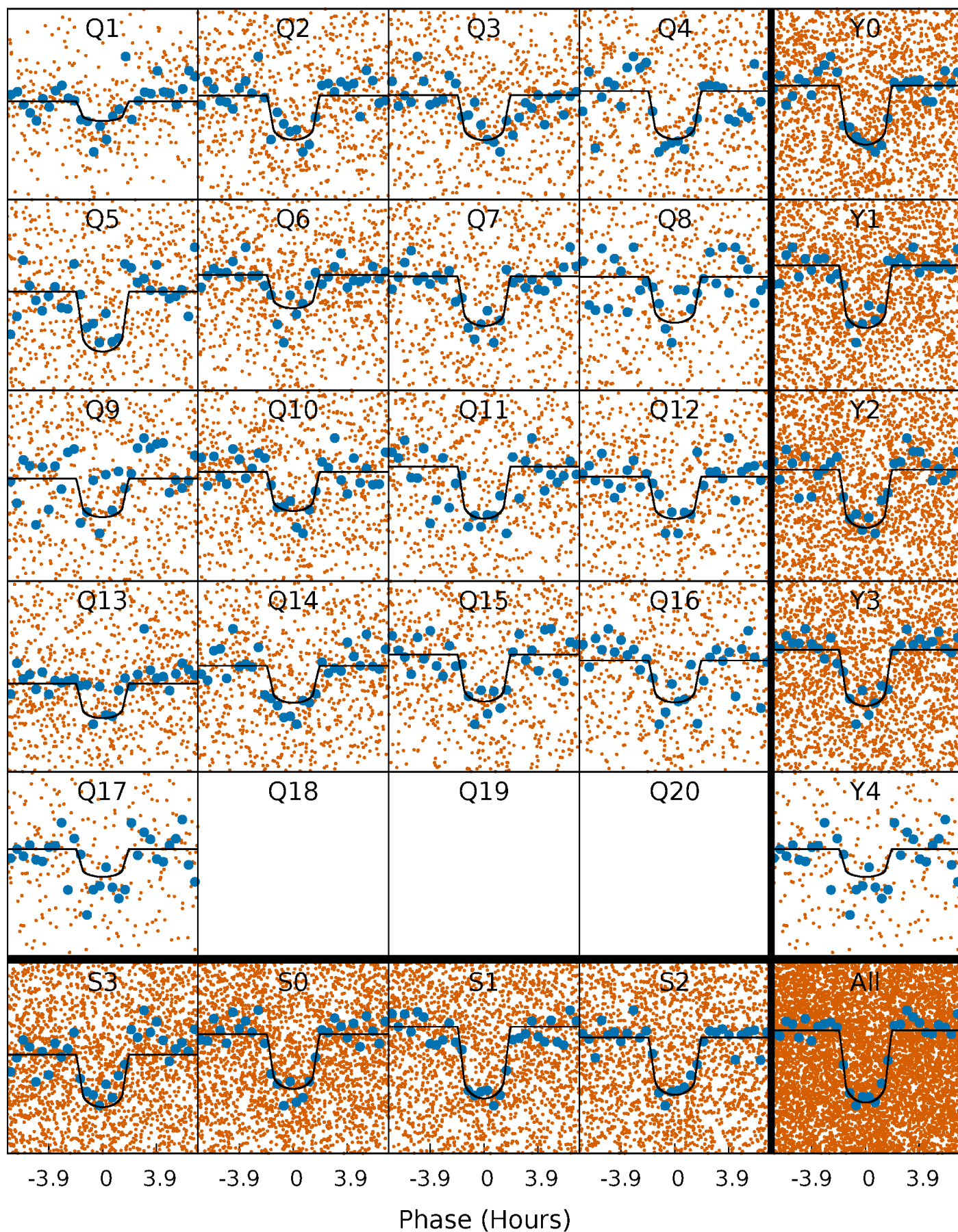
PDC Quarter-Phased Transit Curves

TCE 007215603-01 P= 2.364347 Days $T_0=132.256942$ (BKJD)



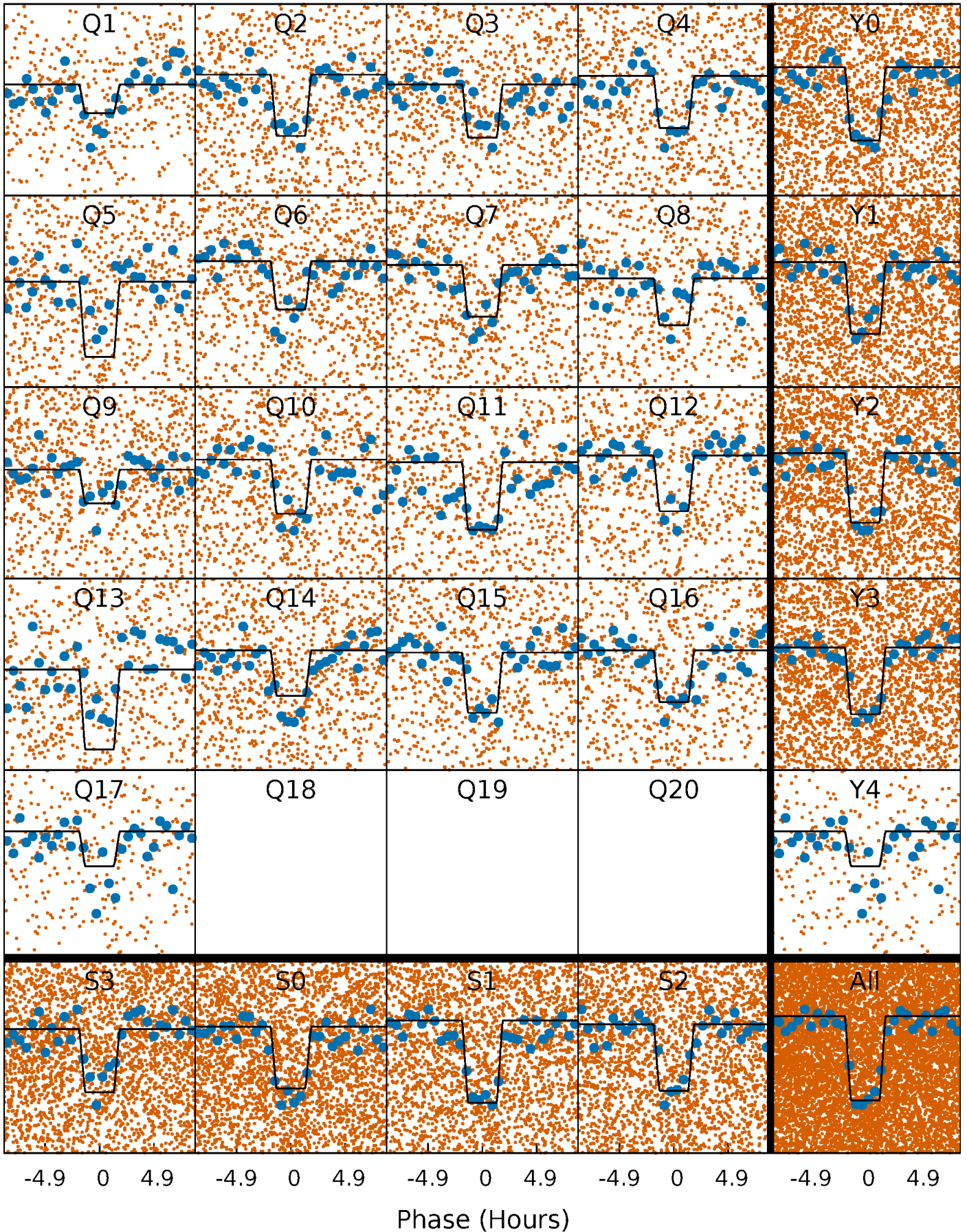
DV Quarter-Phased Transit Curves

TCE 007215603-01 P= 2.364347 Days $T_0=132.256942$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

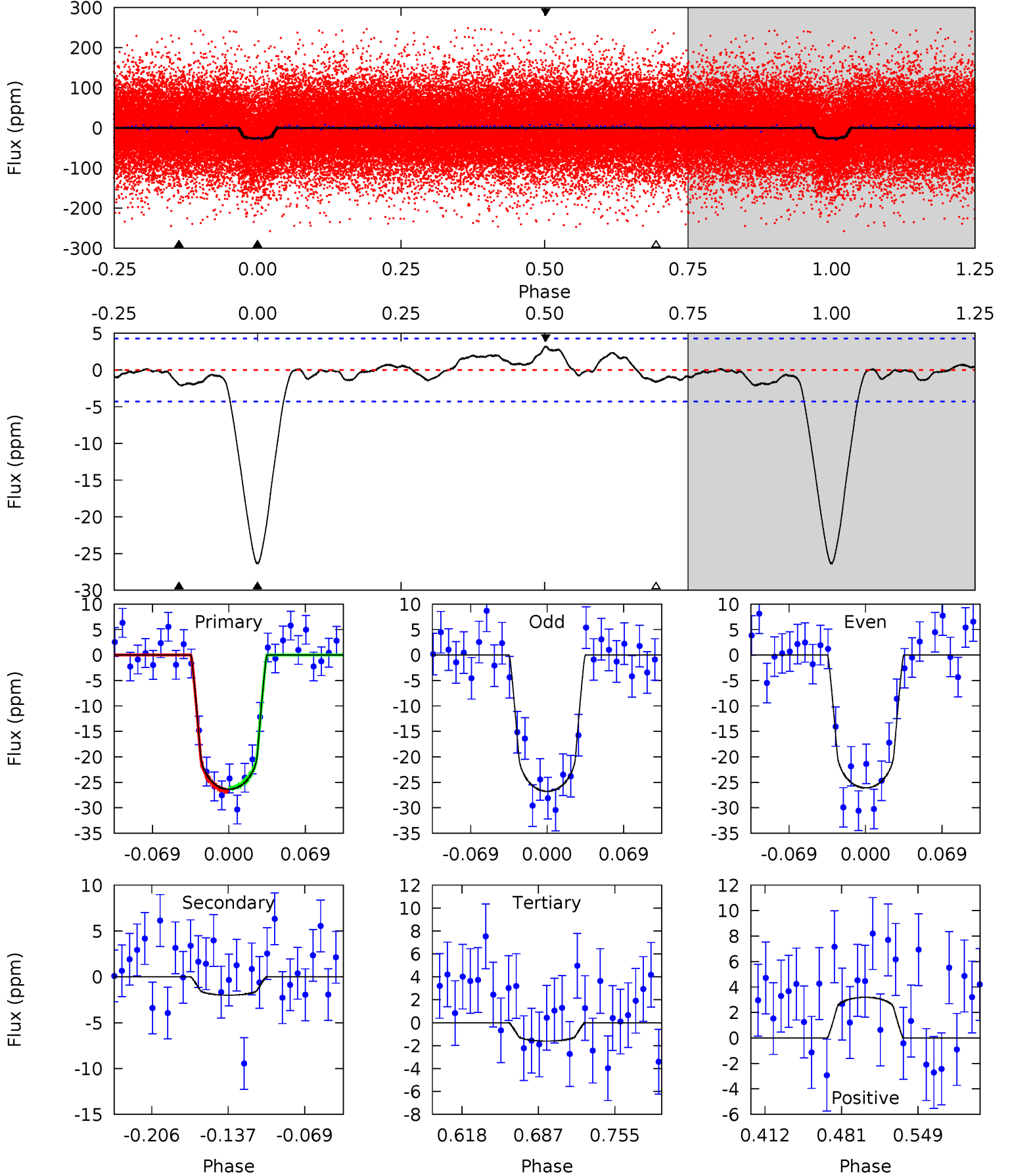
TCE 007215603-01 P= 2.364332 Days $T_0=132.260955$ (BKJD)



DV Model-Shift Uniqueness Test

007215603-01, P = 2.364347 Days, E = 129.892595 Days

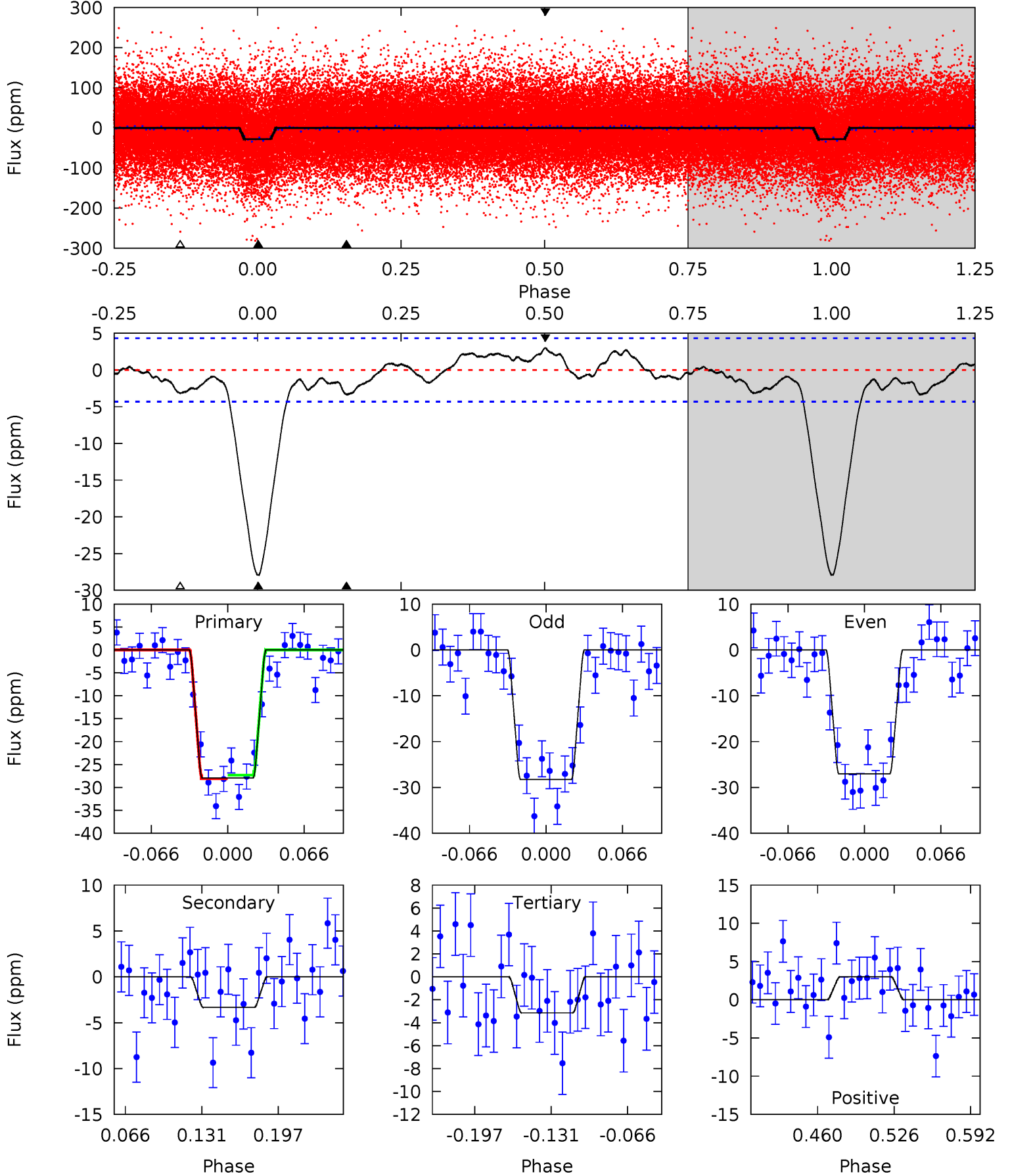
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 28.6 | 2.17 | 1.75 | 3.47 | 4.64 | 1.82 | 1.29 | 26.8 | 25.1 | 0.42 | -1.30 | 0.37 | 0.96 | 0.11 | 0.29 |



Alt Model-Shift Uniqueness Test

007215603-01, P = 2.364332 Days, E = 129.896623 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 30.1 | 3.59 | 3.39 | 3.24 | 4.65 | 1.84 | 1.66 | 26.7 | 26.9 | 0.20 | 0.36 | 0.65 | 1.05 | 0.10 | 0.42 |



Stellar Parameters For KIC 007215603

| | $T_{\text{eff}}(K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 6250^{+75}_{-82} | $4.184^{+0.013}_{-0.011}$ | $0.320^{+0.100}_{-0.150}$ | $1.543^{+0.031}_{-0.044}$ | $1.326^{+0.045}_{-0.056}$ | $0.508^{+0.029}_{-0.023}$ |
| | +1%/-1% | +0%/-0% | +31%/-47% | +2%/-3% | +3%/-4% | +6%/-5% |
| Source | SPE72 | AST8 | SPE72 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 007215603-01 / KOI 1618.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|----------------------|---------------------------|
| DV | -2 ± 1 | $0.96^{+0.19}_{-0.21}$ | 2448^{+31}_{-33} | 3466^{+451}_{-441} | $1.728^{+1.633}_{-0.846}$ |
| Alt. | -3 ± 1 | $0.92^{+0.20}_{-0.18}$ | 2447^{+32}_{-33} | 3862^{+395}_{-331} | $3.066^{+2.079}_{-1.152}$ |

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 $A_{\text{obs}} \gg 1.0$

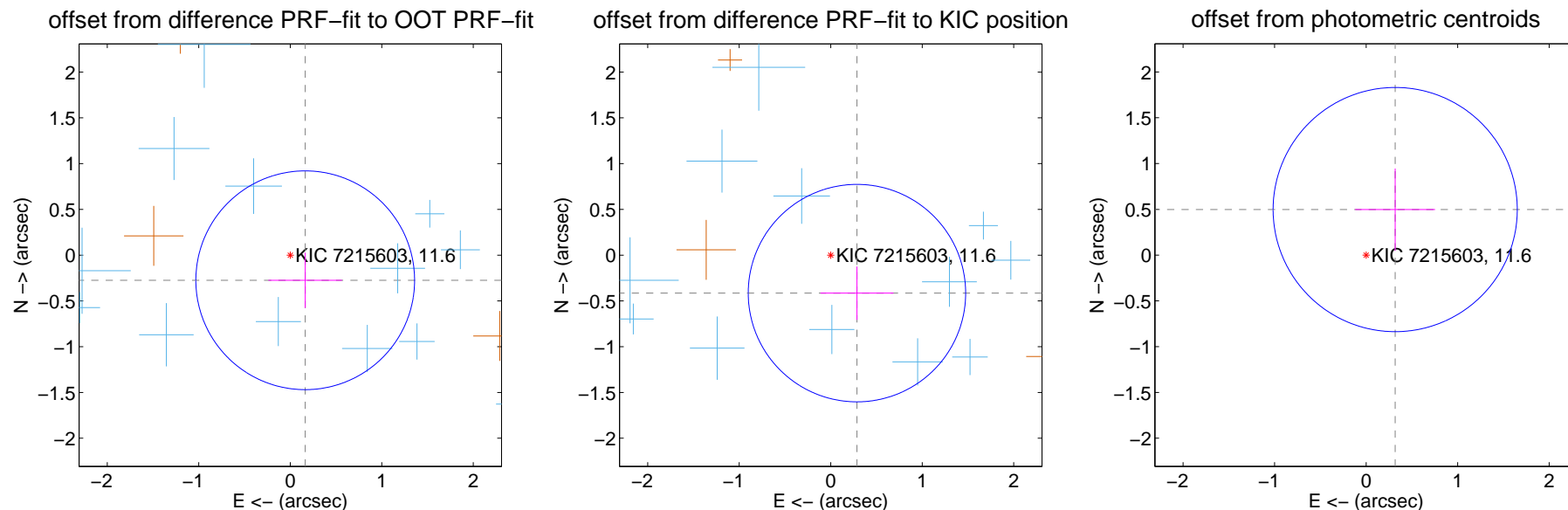
DV Centroid Data

Supplemental centroid analysis for 007215603-01. **Kepler magnitude: 11.60.** Transit SNR 19.32

There are 13 quarters with good PRF difference image offsets

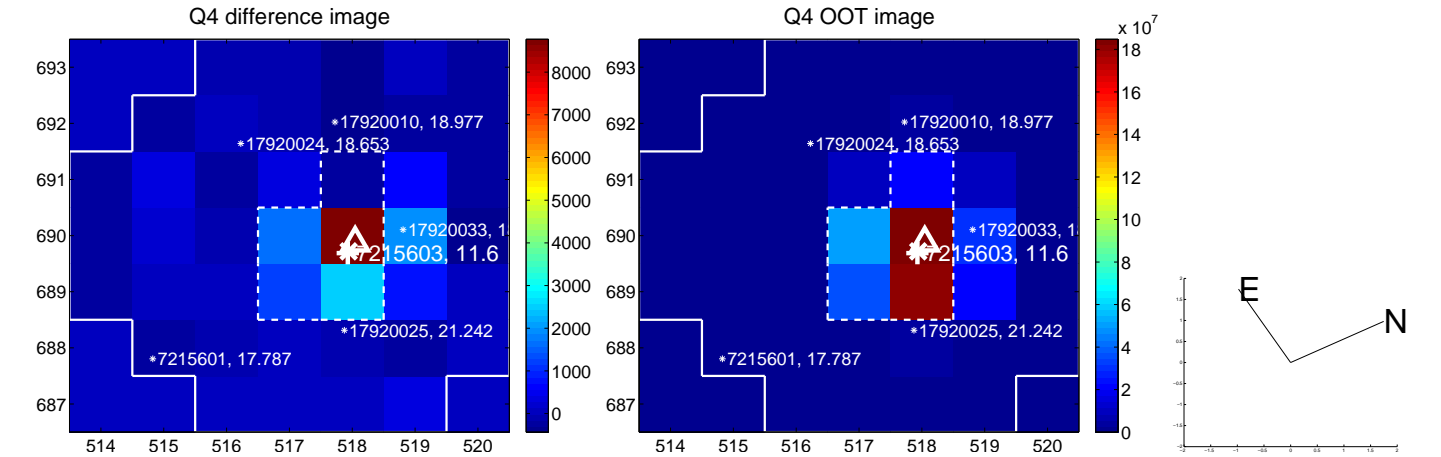
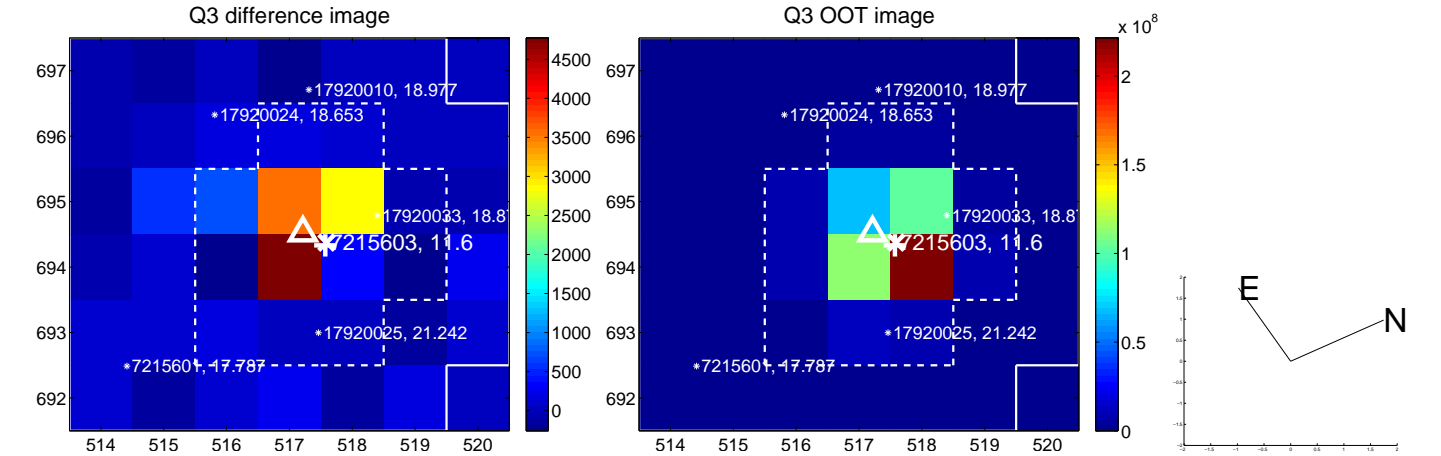
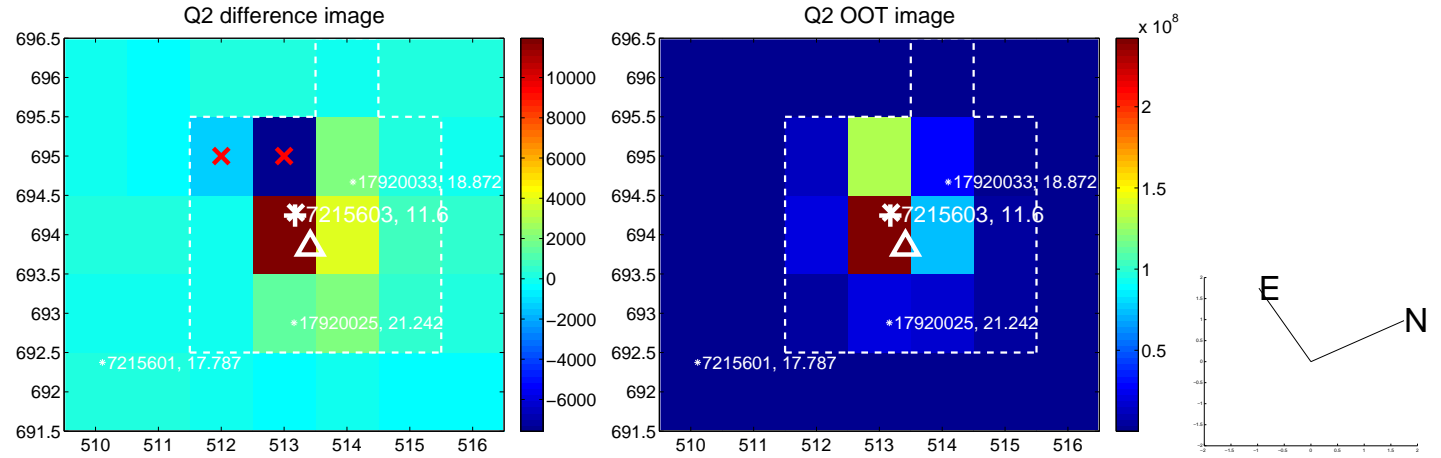
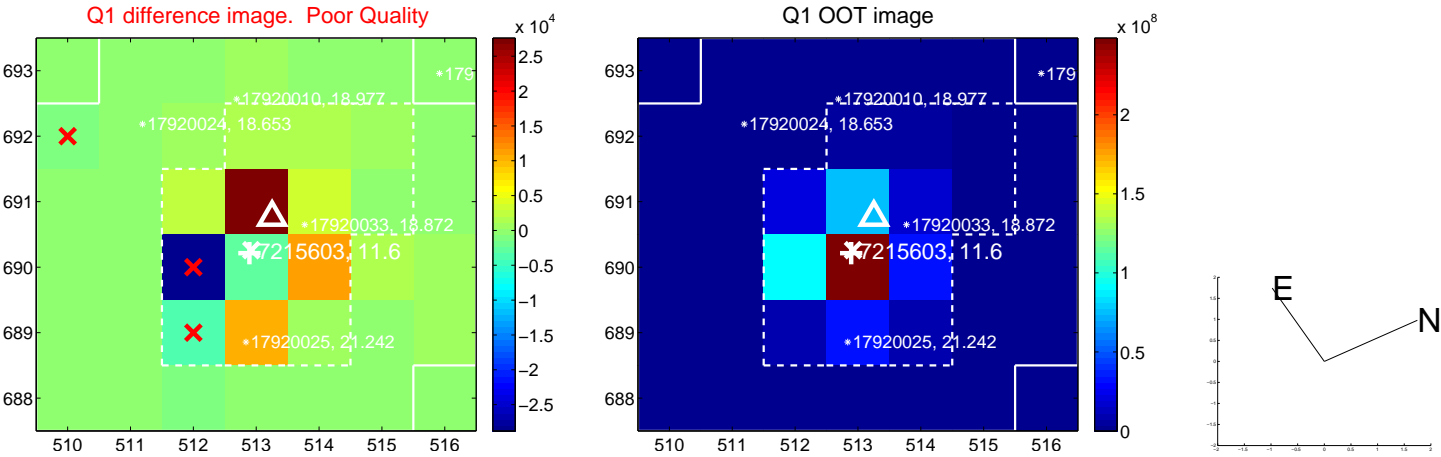
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.319 ± 0.398 | 0.80 | -0.163 ± 0.402 | -0.274 ± 0.302 |
| PRF-fit source offset from KIC position | 0.504 ± 0.396 | 1.27 | -0.287 ± 0.398 | -0.415 ± 0.291 |
| photometric centroid source offset | 0.59 ± 0.44 | 1.33 | -0.32 ± 0.44 | 0.50 ± 0.45 |

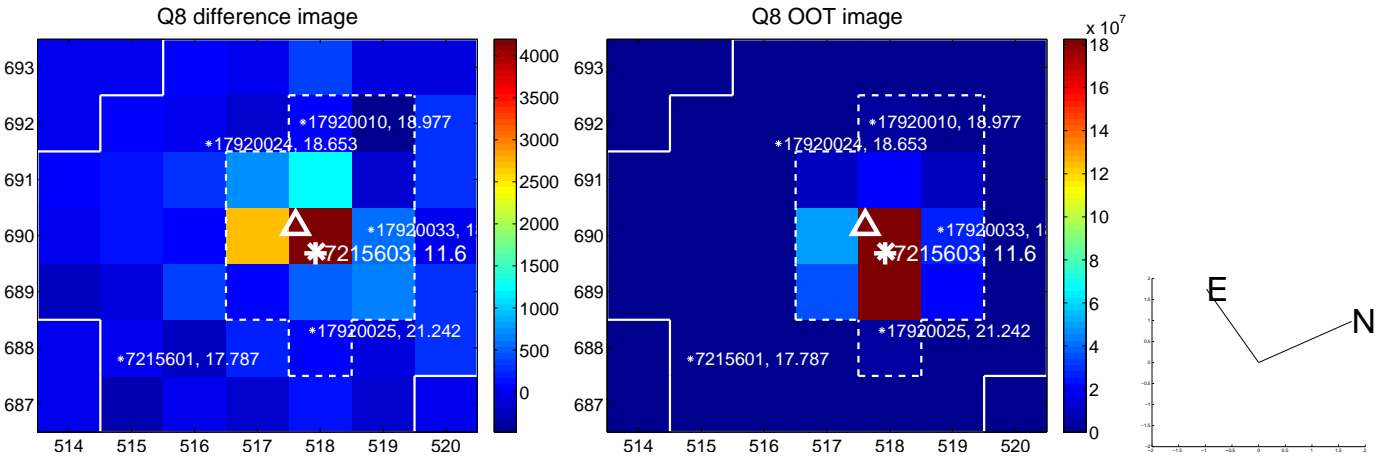
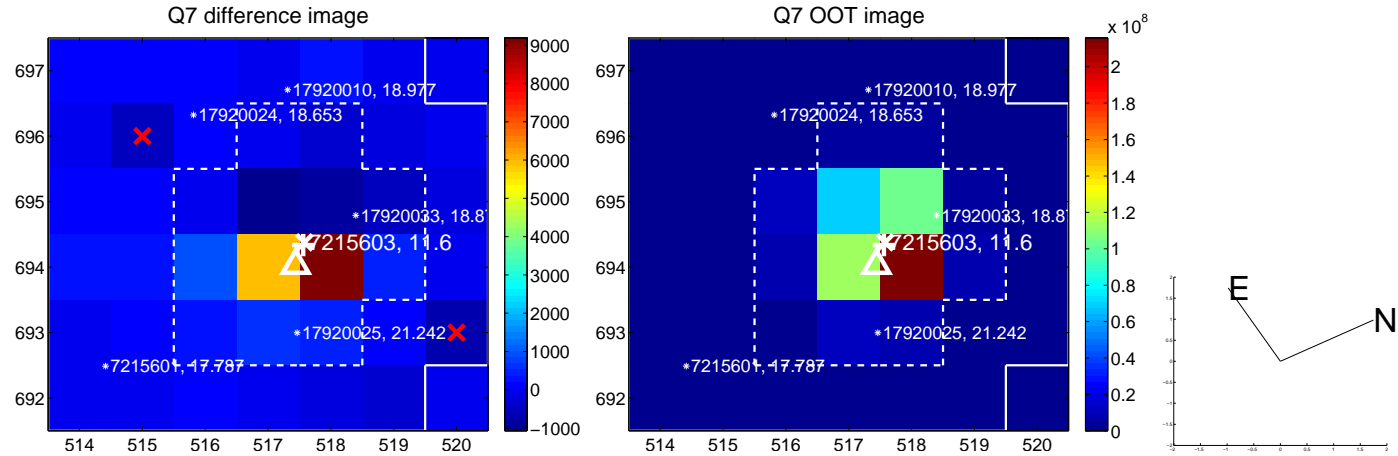
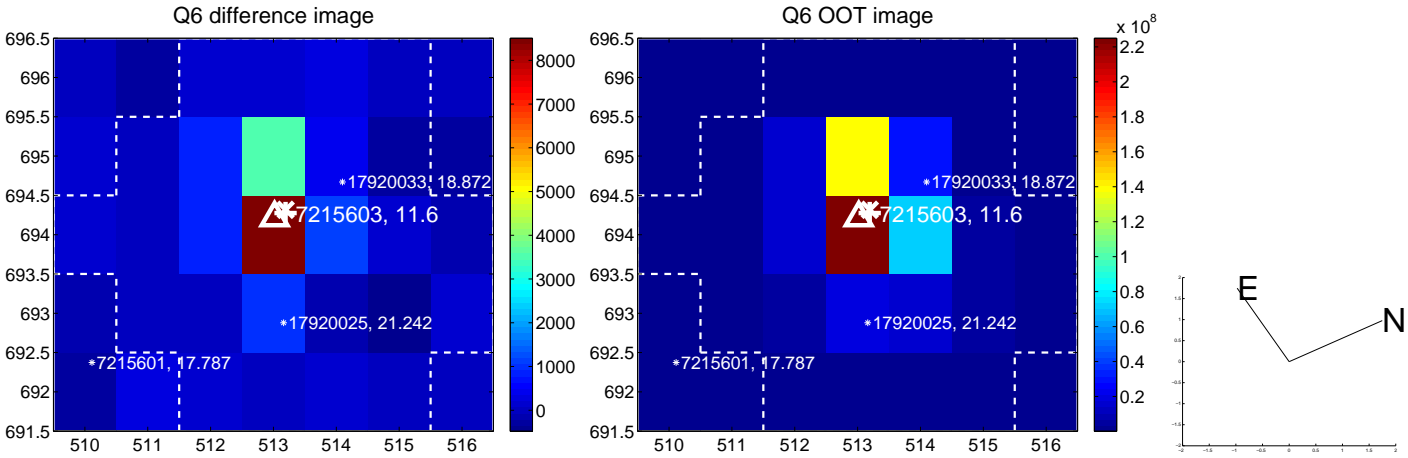
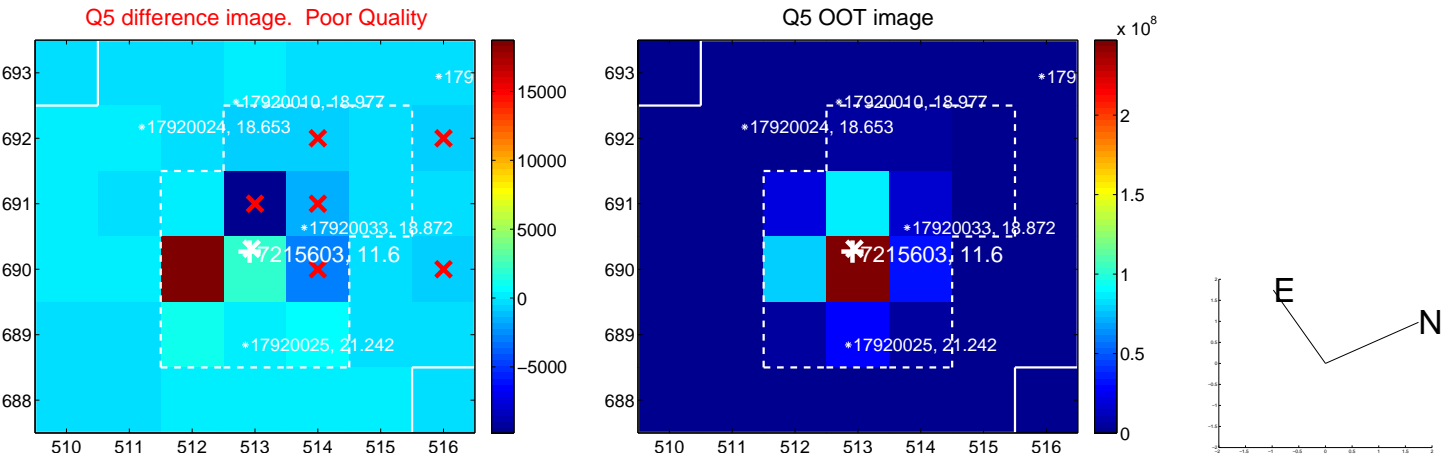


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

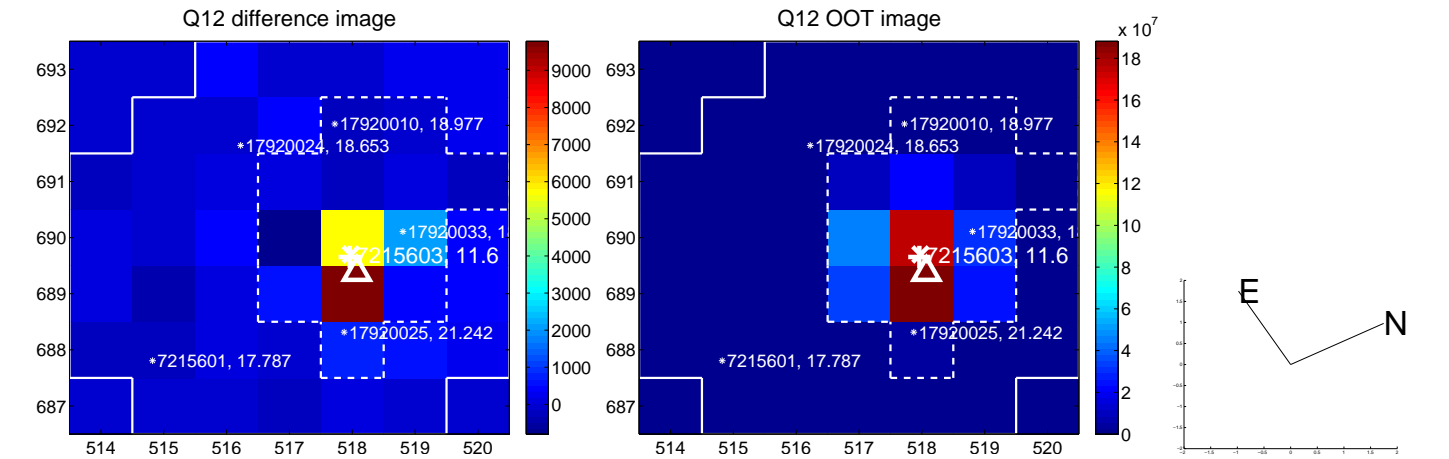
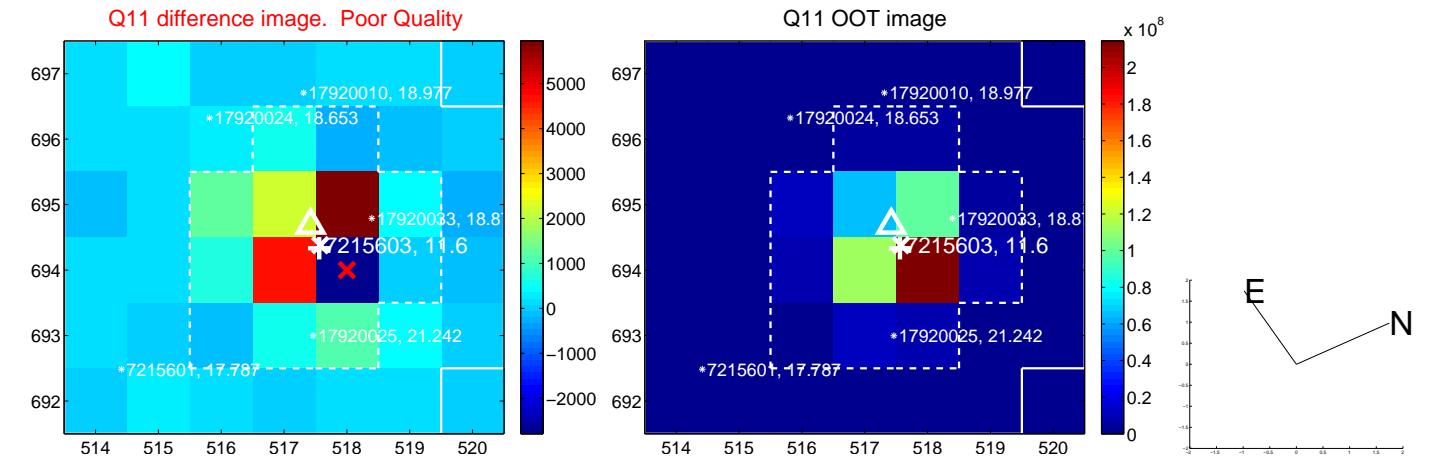
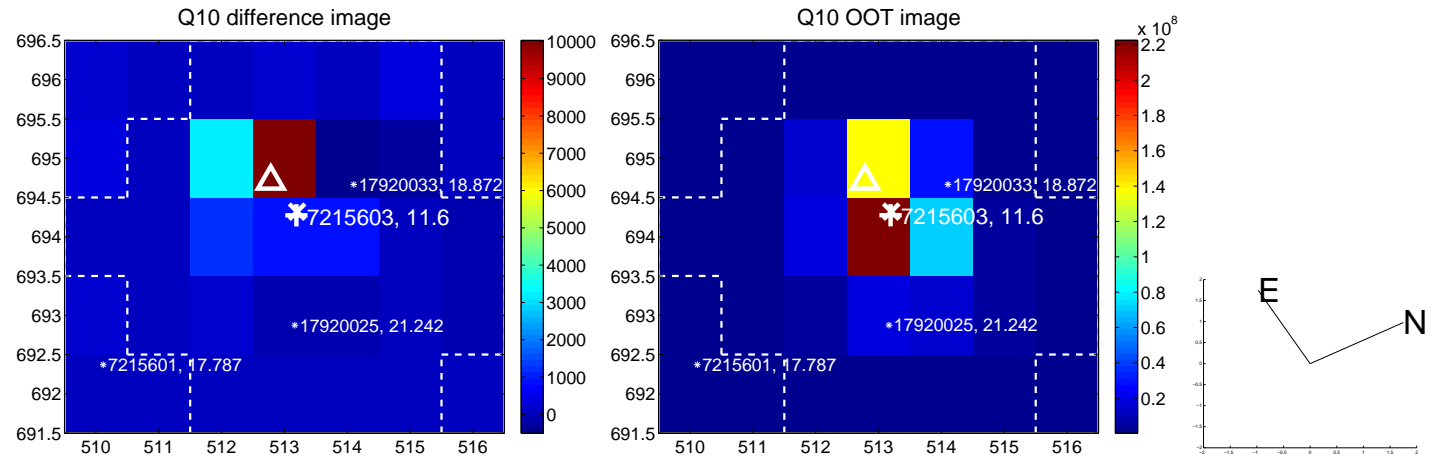
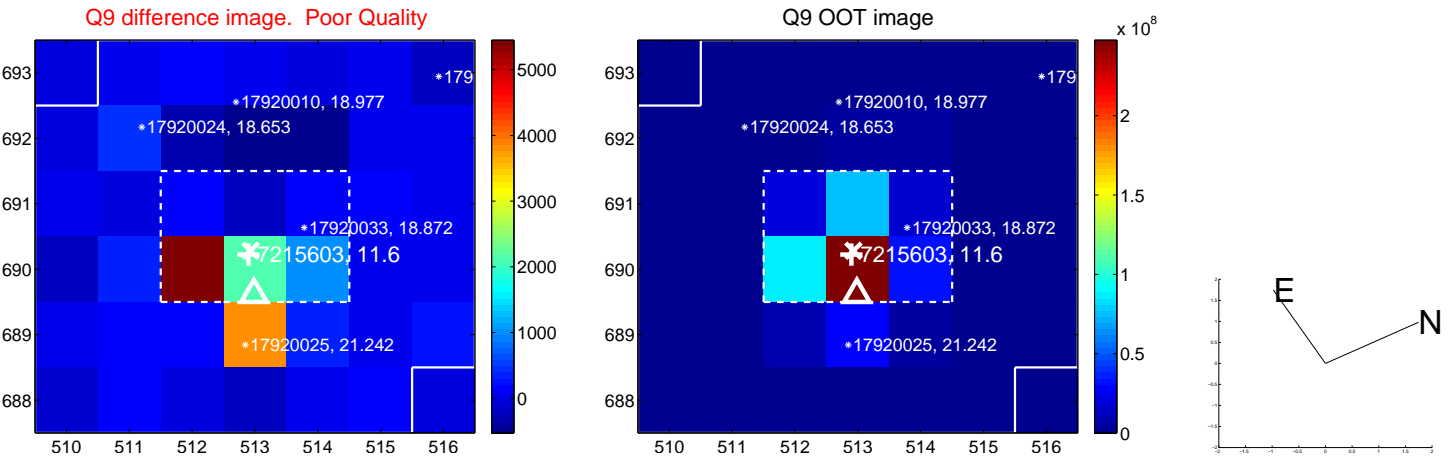
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



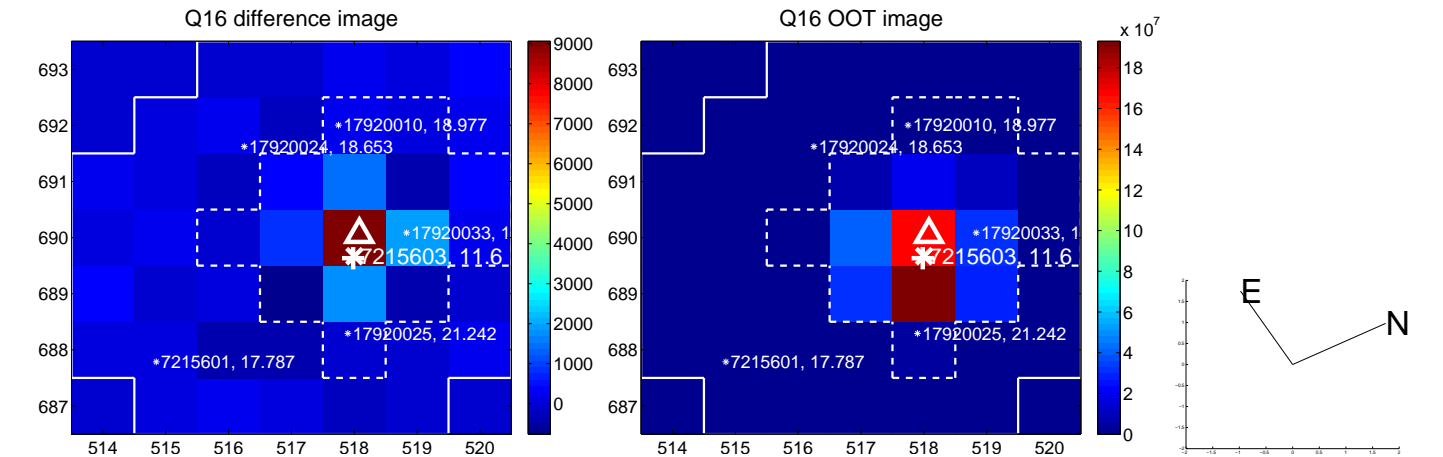
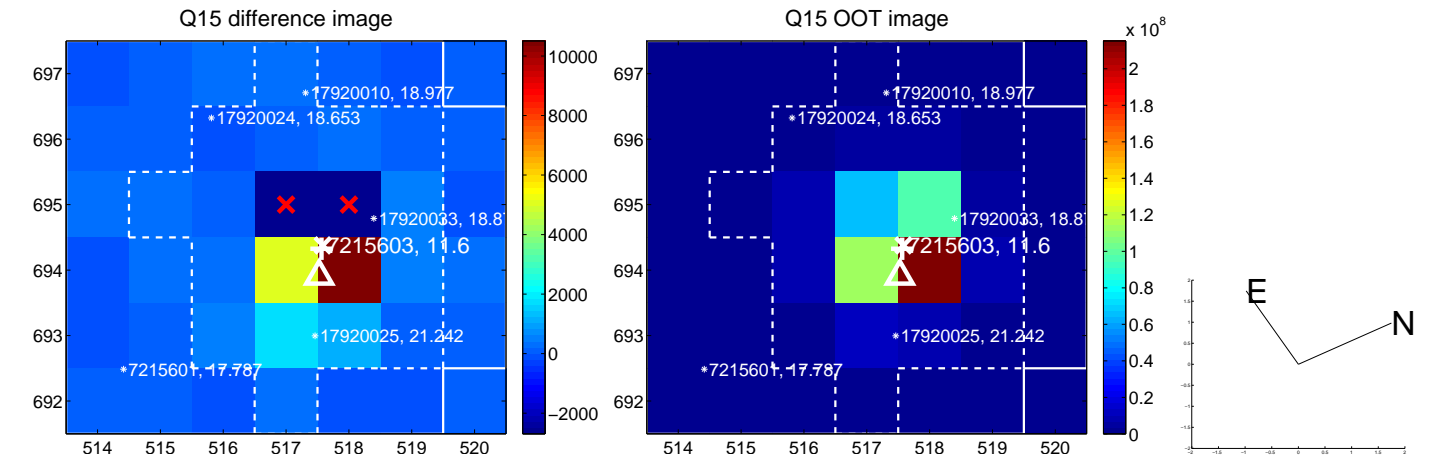
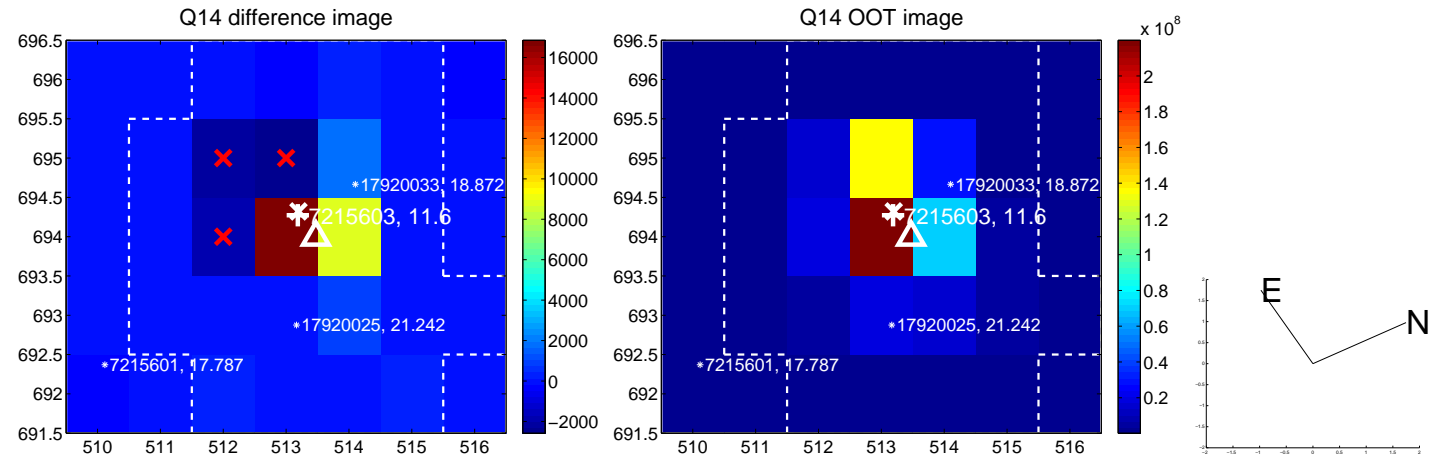
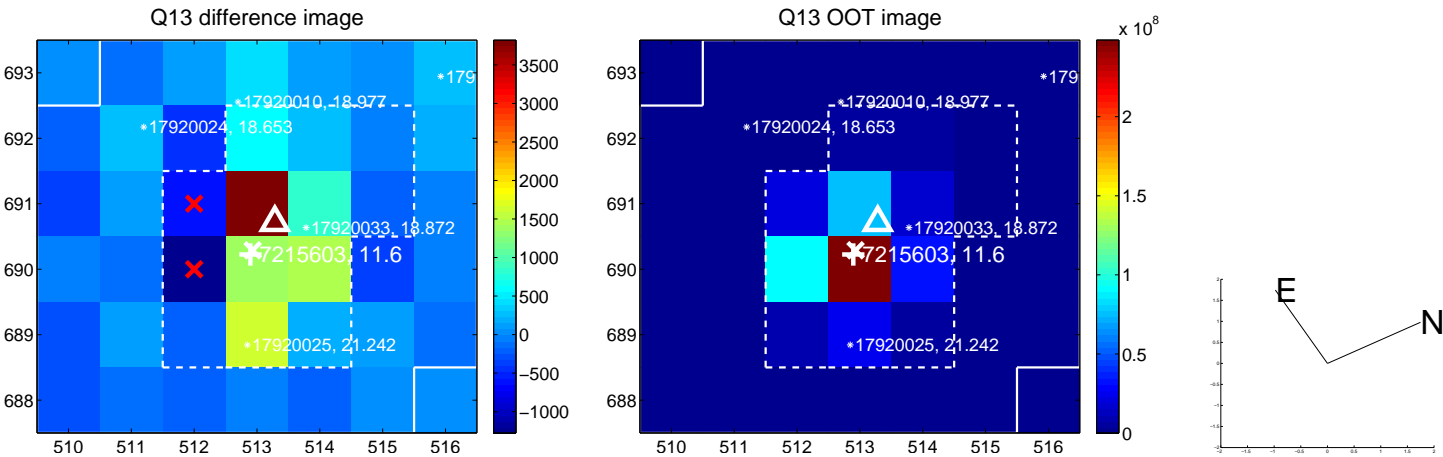
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



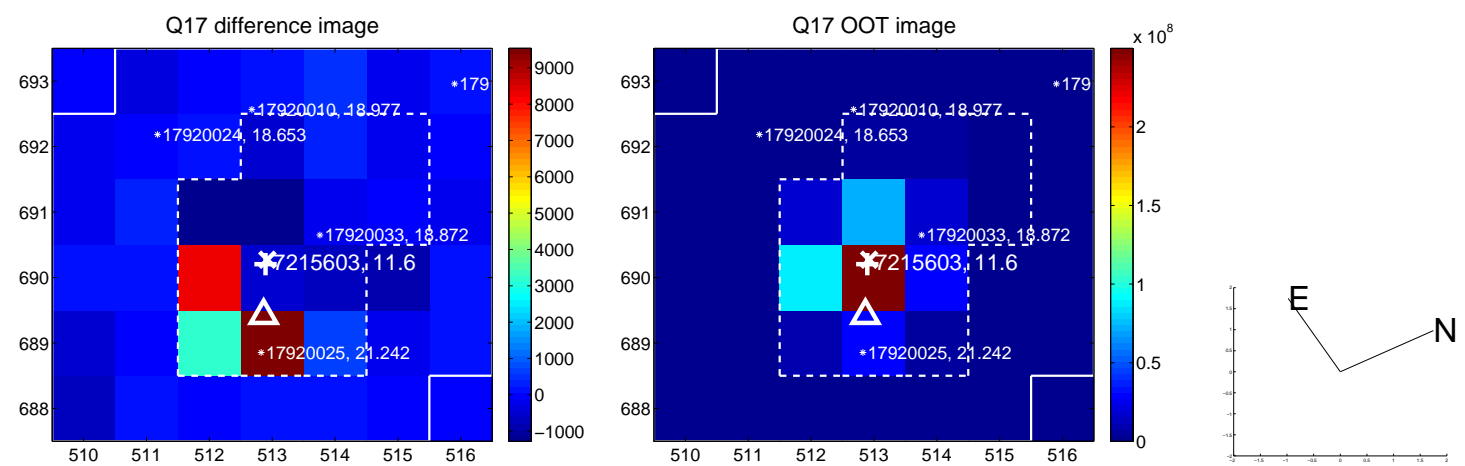
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



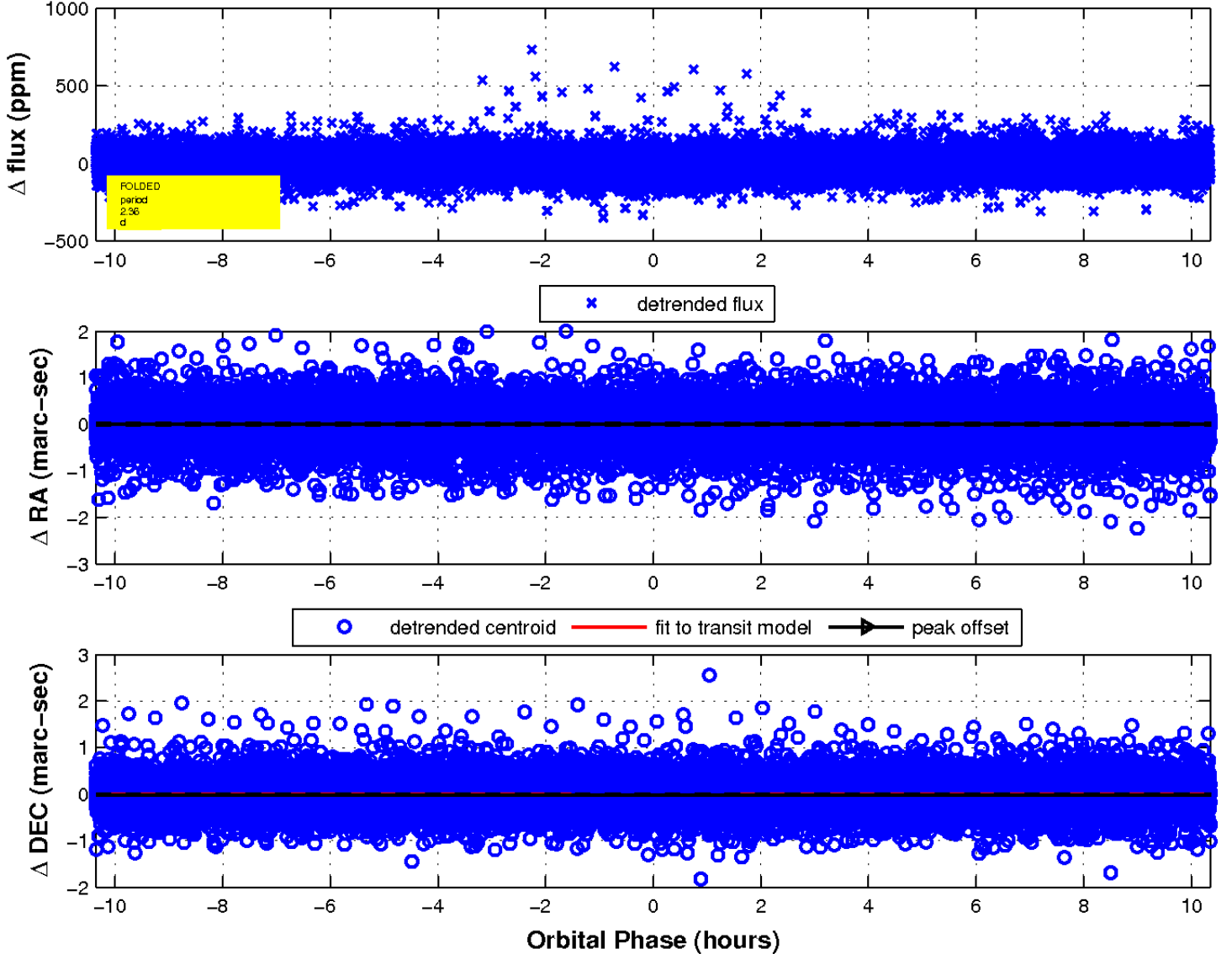
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

