

KIC 004171102

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 004171102-01 | OBS | No | 0.891554 | 132.381192 | 28.7 | 2.355 | 7.6 | 7.3 | 1.93 | 6840 | 1.21 | 16391.81 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 004171102-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |

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

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

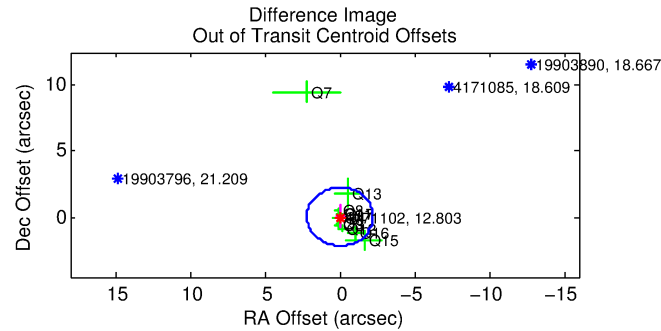
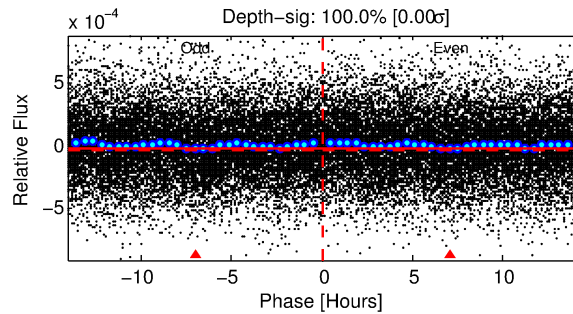
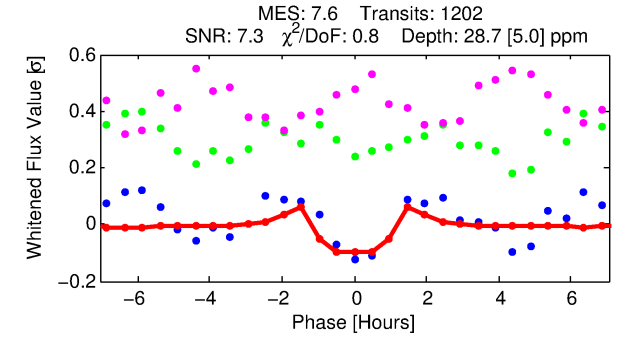
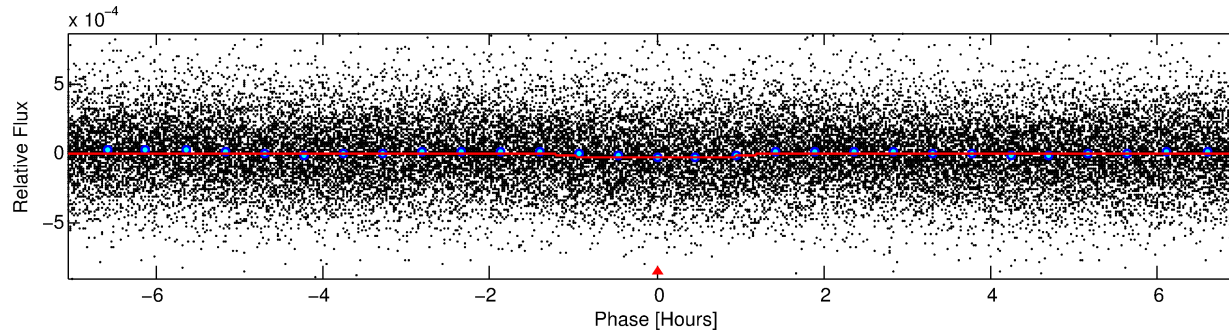
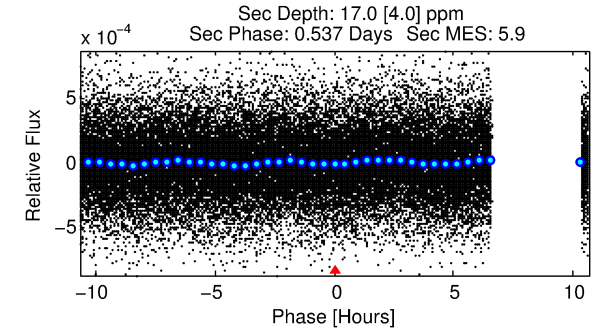
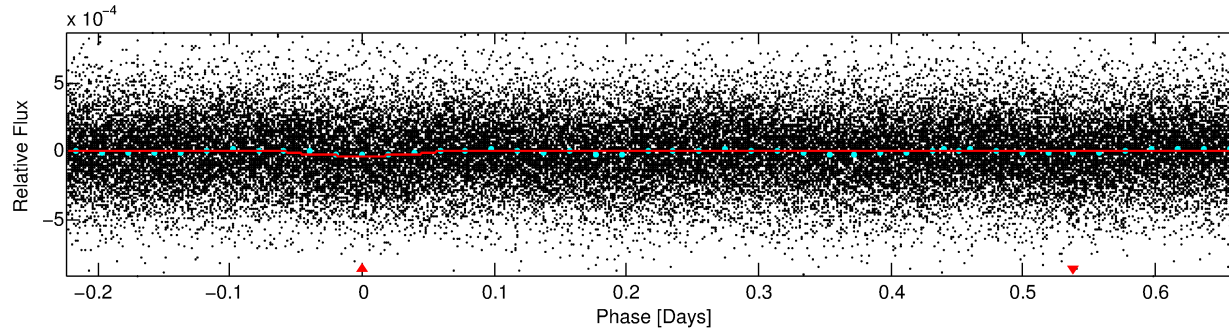
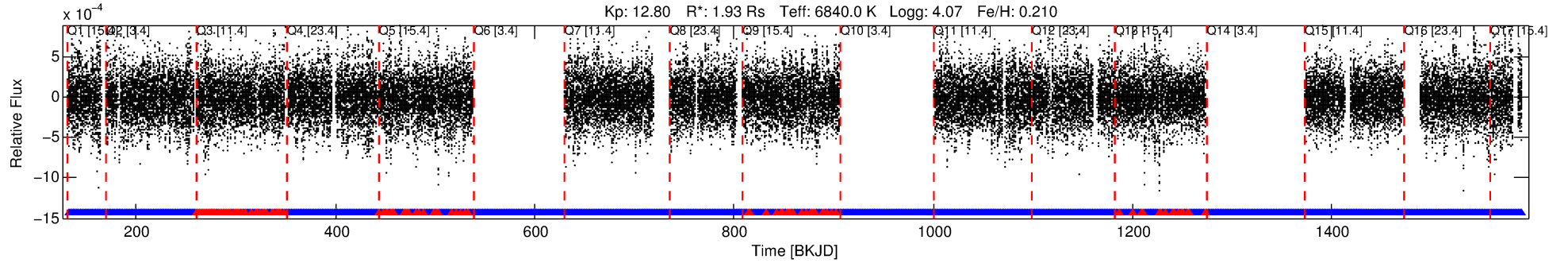
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004171102-01

No Significant Match Found

DV One-Page Summary

KIC: 4171102 Candidate: 1 of 1 Period: 0.892 d



DV Fit Results:

Period = 0.89155 [0.00001] d
Epoch = 132.3812 [0.0024] BKJD
Rp/R* = 0.0057 [0.0018]
a/R* = 1.60 [1.73]
b = 0.90 [0.38]
Seff = 16391.81 [3829.83]
Teq = 2885 [169] K
Rp = 1.21 [0.43] Re
a = 0.0211 [0.0032] AU
Ag = 2.87 [2.01] [0.93σ]
Teffp = 5804 [963] K [2.98σ]

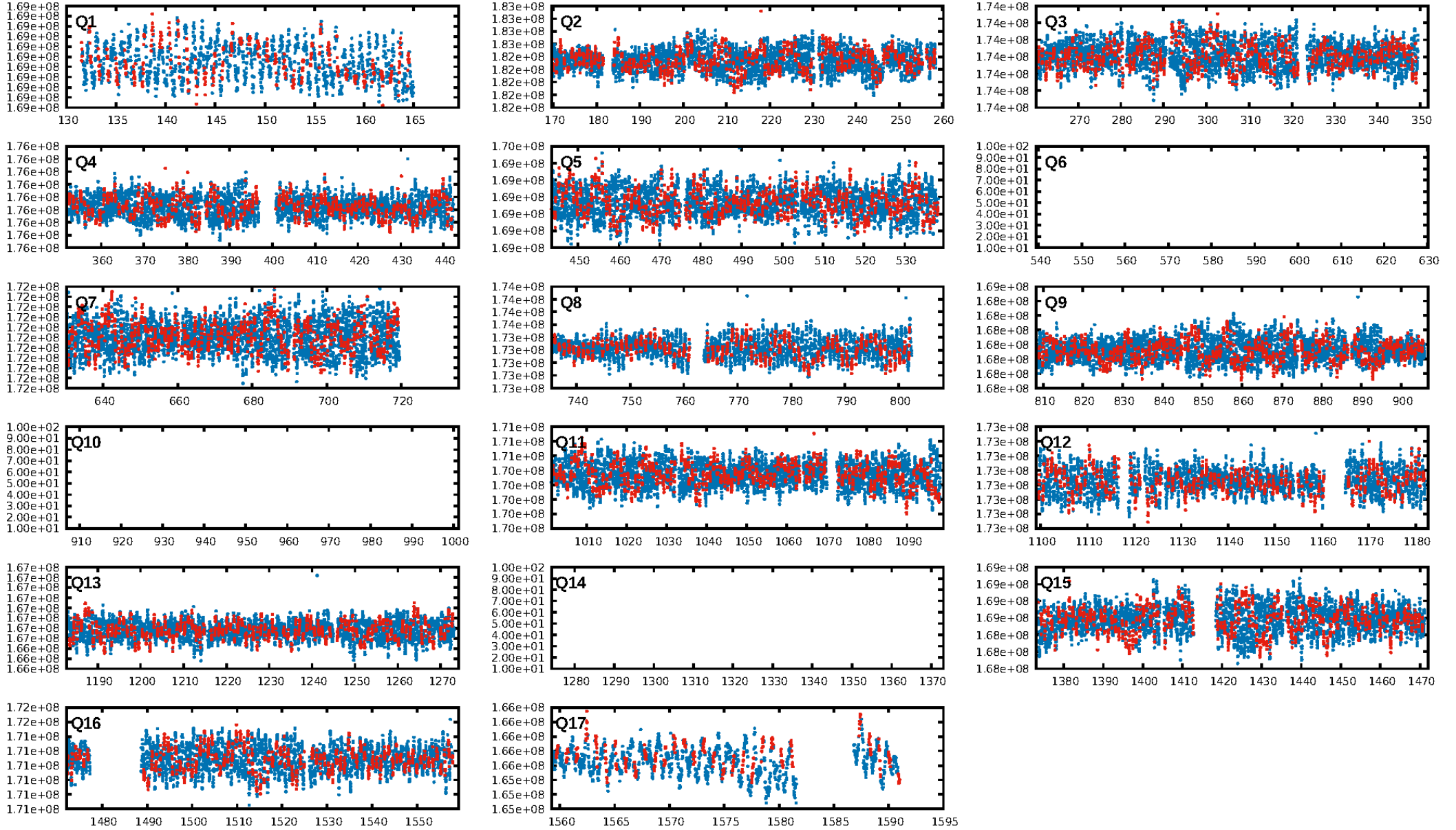
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.93e-15
RollingBand-fgt: 0.89 [1010/1134]
GhostDiagnostic-chr: 5.206
Centroid-sig: 16.5%
Centroid-so: 1.154 arcsec [1.29σ]
OotOffset-rm: 0.066 arcsec [0.09σ]
KicOffset-rm: 0.105 arcsec [0.21σ]
OotOffset-st: 0/4/4/3 [11]
KicOffset-st: 0/4/4/3 [11]
DiffImageQuality-fgm: 0.55 [6/11]
DiffImageOverlap-fno: 1.00 [14/14]

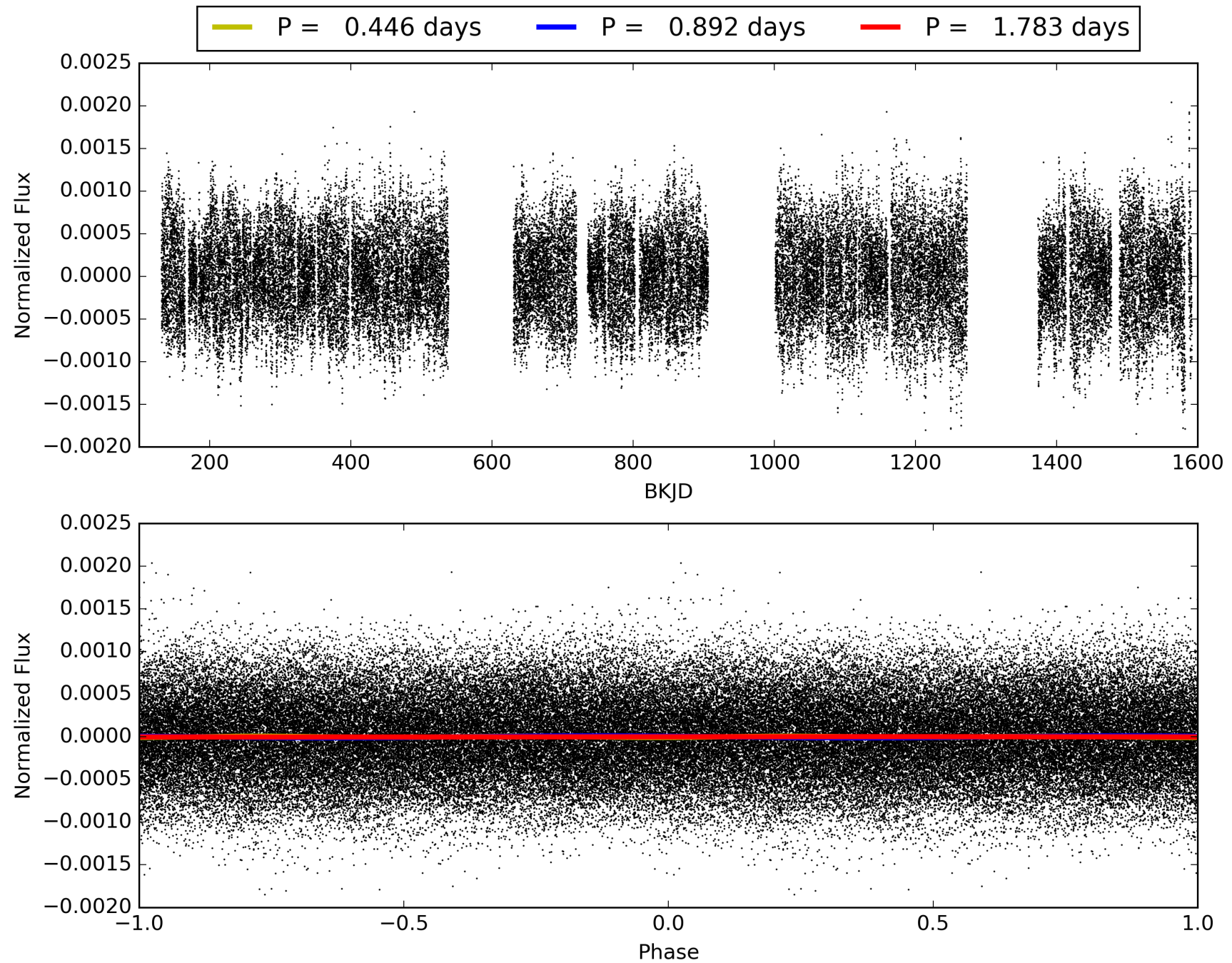
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:27:01 Z

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

TCE 004171102-01, PDC Light Curves

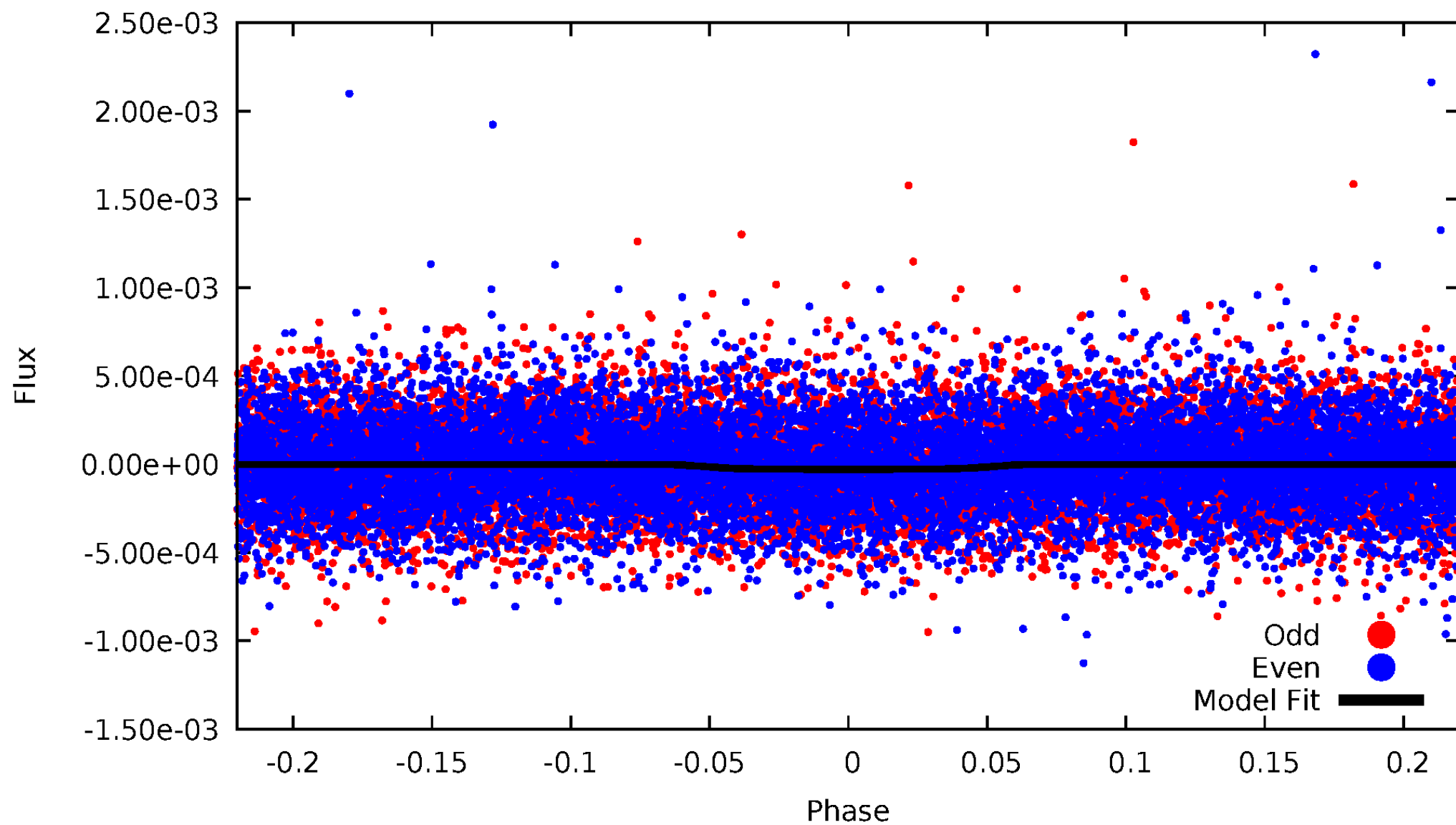


TCE 004171102-01



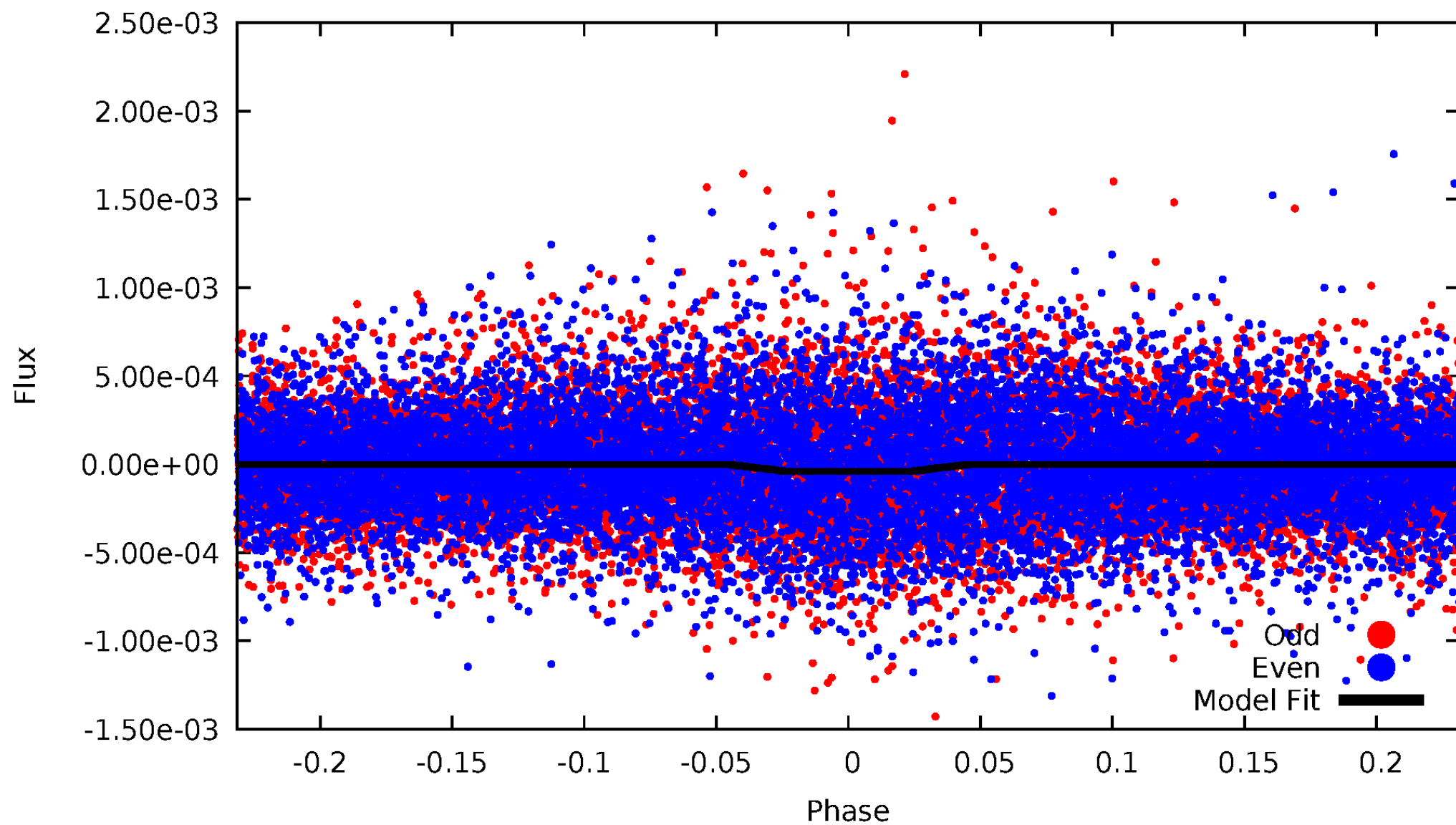
DV Odd/Even

TCE 004171102-01



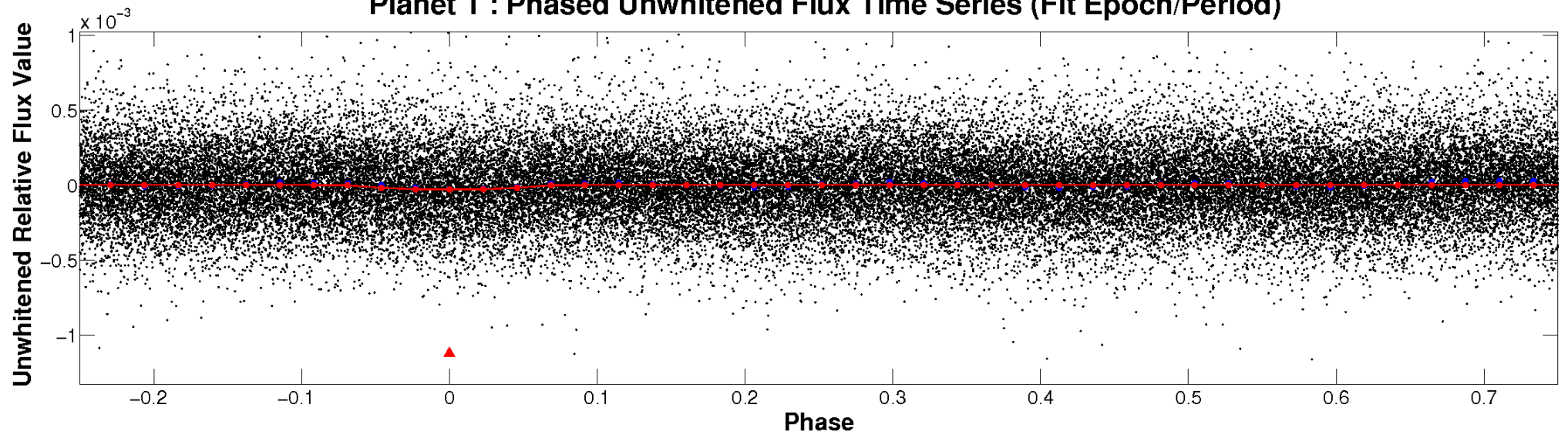
ALT Odd/Even

TCE 004171102-01

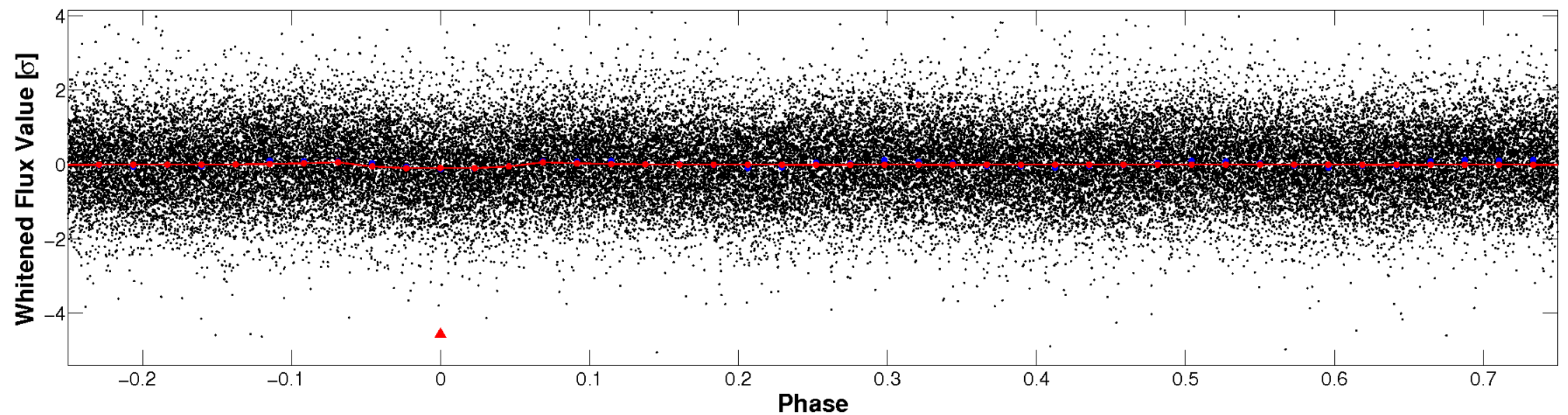


Non-Whitened Vs. Whitened Light Curve

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

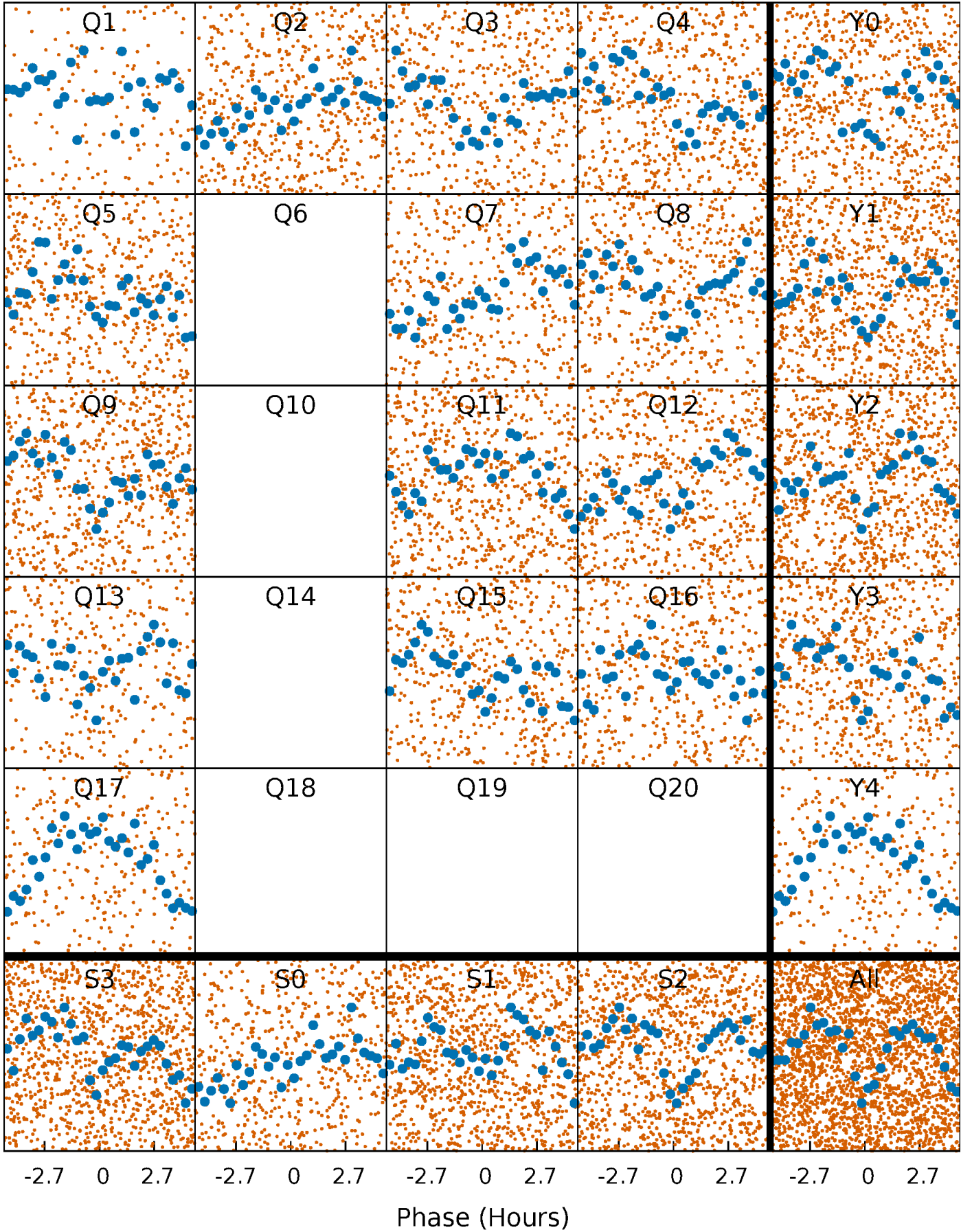


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



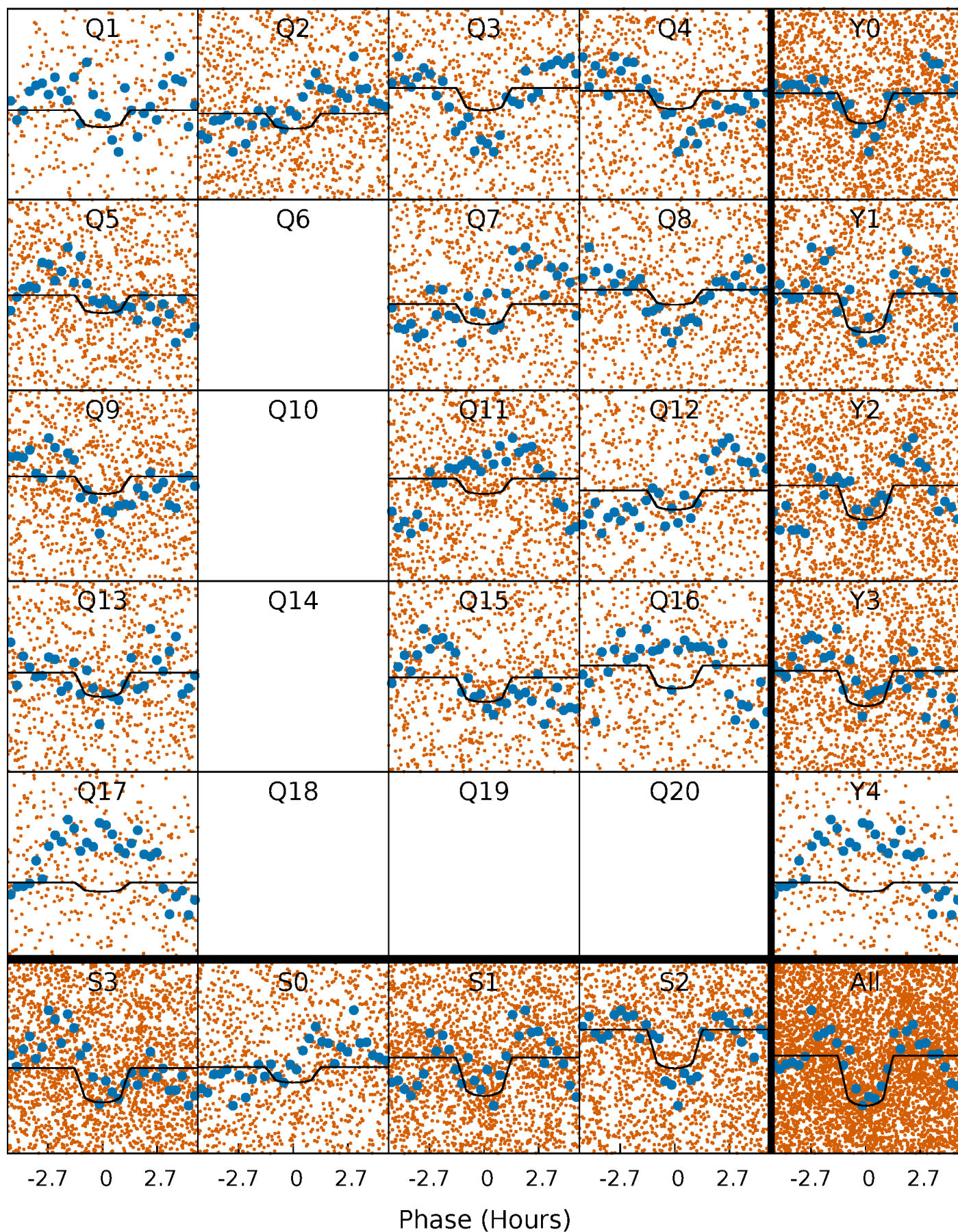
PDC Quarter-Phased Transit Curves

TCE 004171102-01 P= 0.891554 Days $T_0=132.381192$ (BKJD)



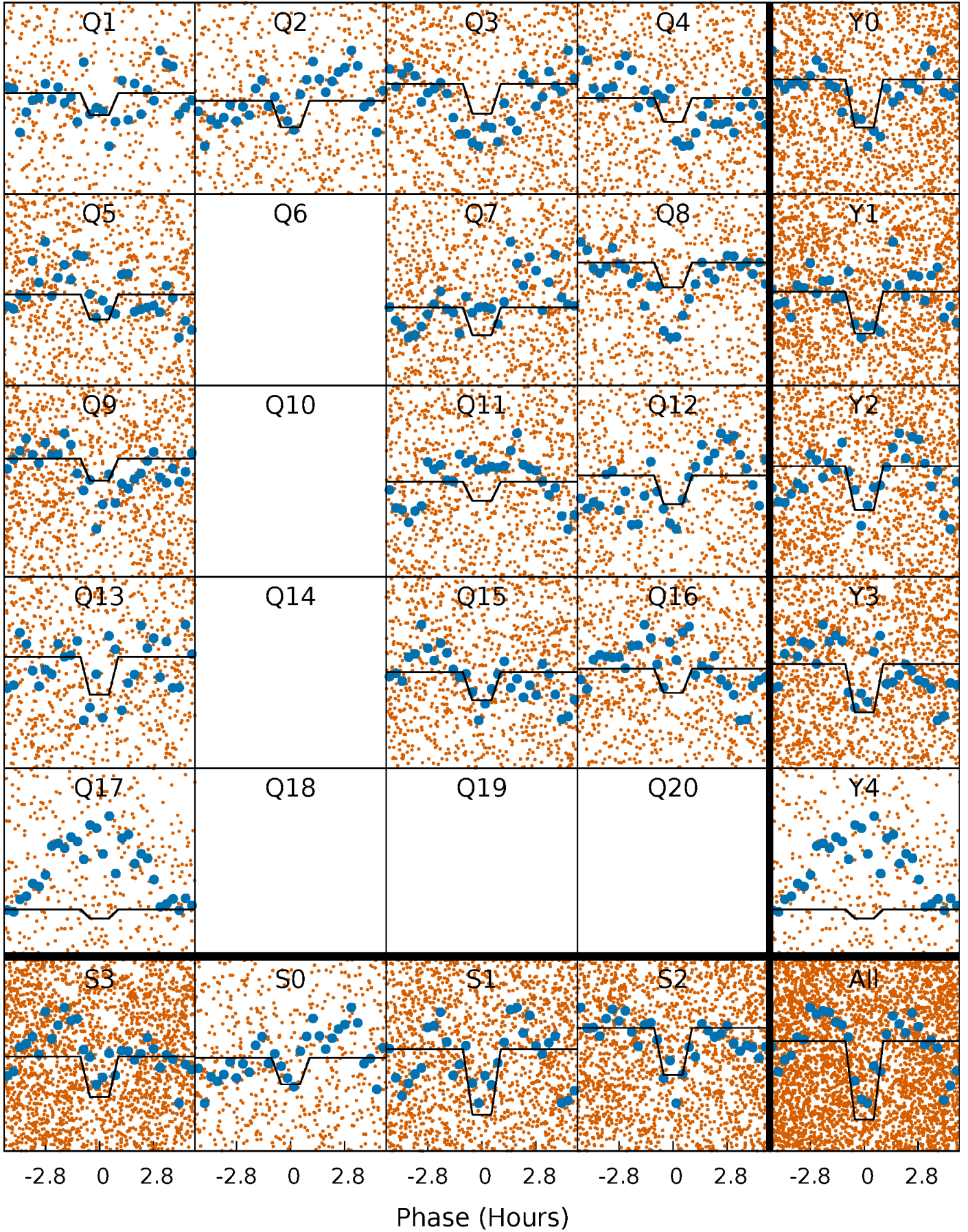
DV Quarter-Phased Transit Curves

TCE 004171102-01 P= 0.891554 Days $T_0=132.381192$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

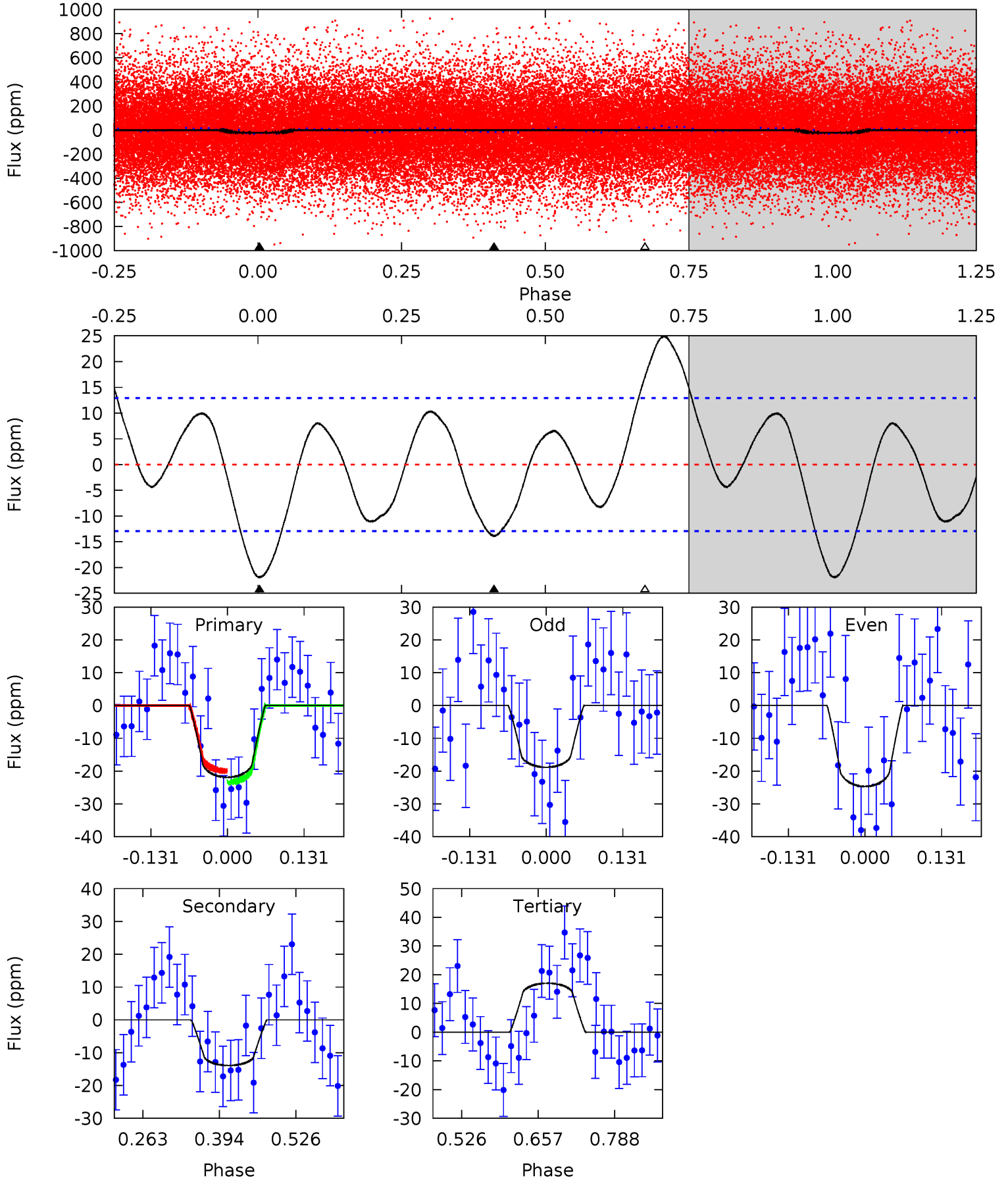
TCE 004171102-01 P= 0.891558 Days $T_0=132.381131$ (BKJD)



DV Model-Shift Uniqueness Test

004171102-01, P = 0.891554 Days, E = 131.489638 Days

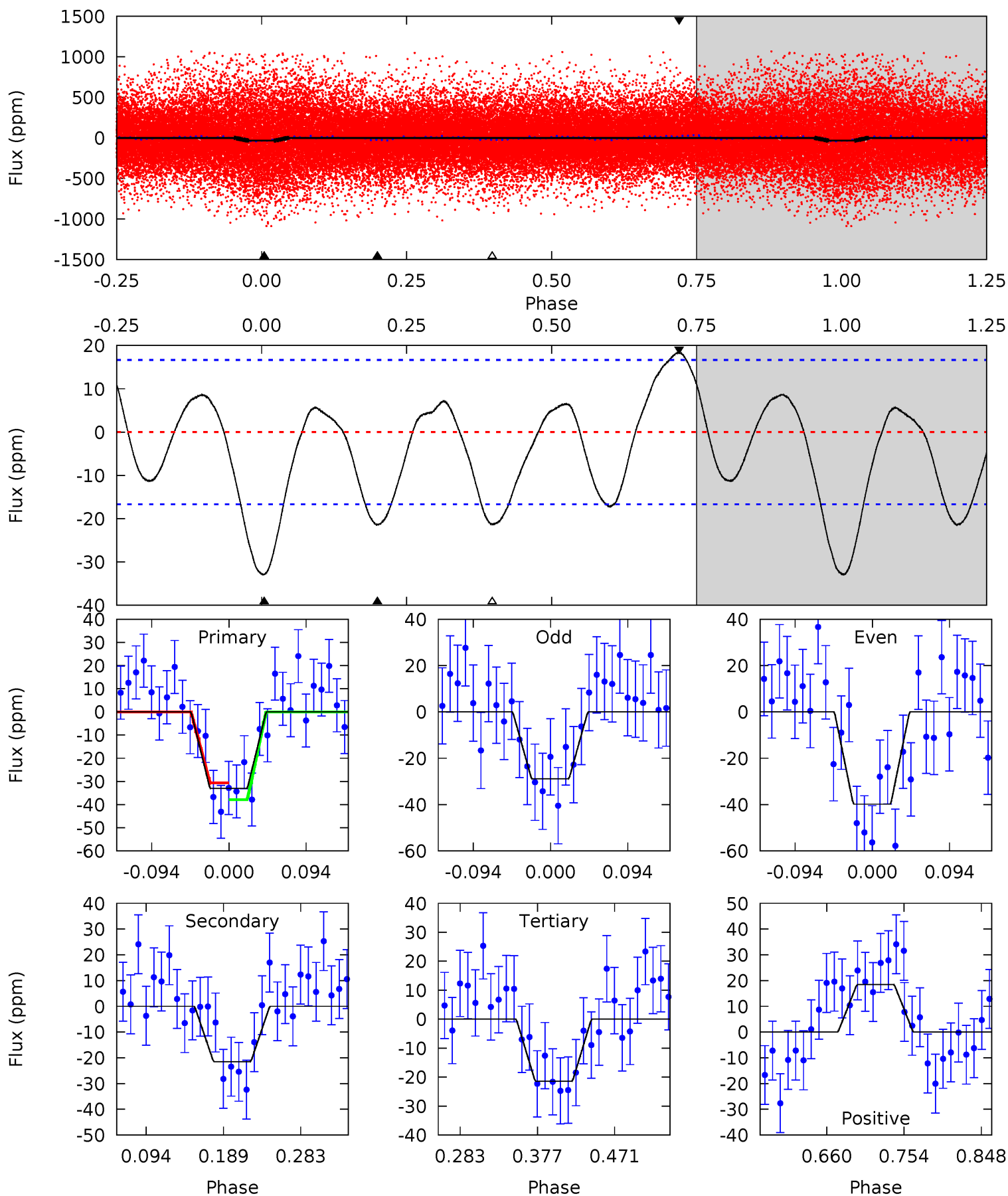
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.63 | 4.84 | -5.94 | 0 | 4.51 | 1.51 | 3.60 | 13.6 | 7.63 | 10.8 | 4.84 | 1.02 | 0.77 | 0.53 | 0.61 |



Alt Model-Shift Uniqueness Test

004171102-01, P = 0.891558 Days, E = 131.489573 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 9.05 | 5.90 | 5.87 | 5.07 | 4.58 | 1.67 | 2.92 | 3.18 | 3.99 | 0.03 | 0.83 | 1.49 | 0.70 | 0.36 | 0.99 |



Stellar Parameters For KIC 004171102

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|---------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 6840^{+72}_{-92} | $4.065^{+0.126}_{-0.103}$ | $0.210^{+0.150}_{-0.150}$ | $1.930^{+0.346}_{-0.315}$ | $1.578^{+0.111}_{-0.136}$ | $0.309^{+0.172}_{-0.102}$ |
| | +1%/-1% | +3%/-3% | +71%/-71% | +18%/-16% | +7%/-9% | +56%/-33% |
| Source | SPE68 | SPE68 | SPE68 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 004171102-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|---------------------------|
| DV | -14 ± 3 | $1.19^{+0.42}_{-0.40}$ | 4018^{+168}_{-180} | 5348^{+1264}_{-805} | $2.427^{+2.957}_{-1.191}$ |
| Alt. | -21 ± 4 | $1.33^{+0.41}_{-0.40}$ | 4012^{+164}_{-172} | 5575^{+1257}_{-650} | $2.837^{+3.155}_{-1.135}$ |

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

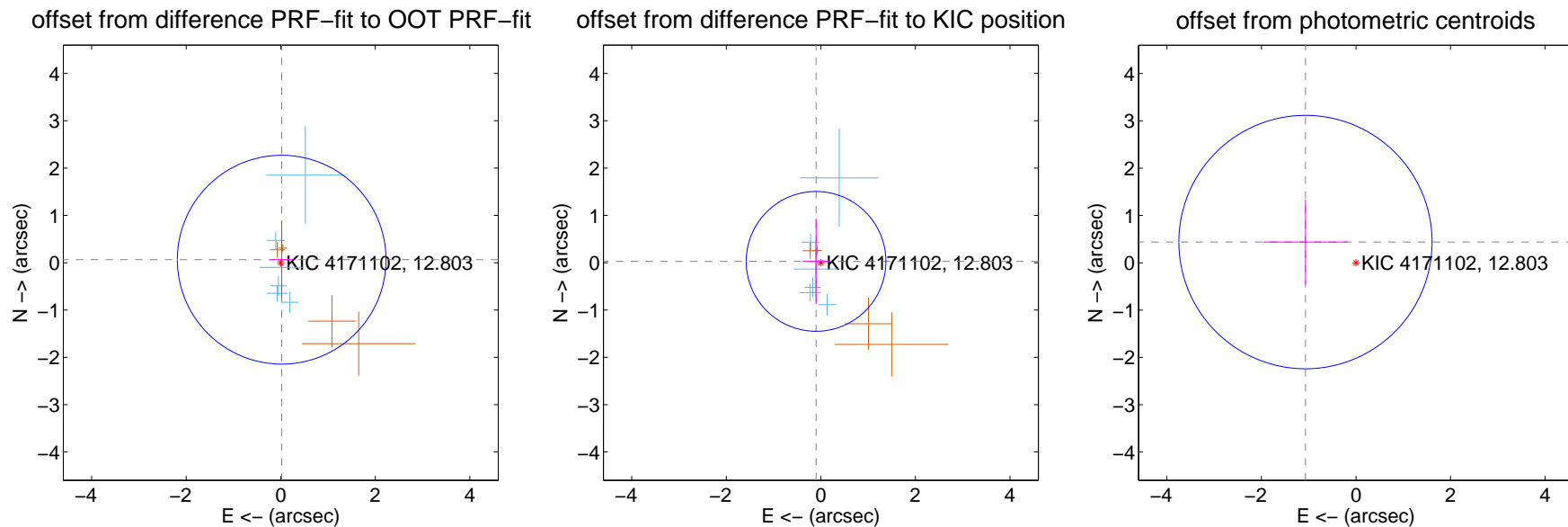
DV Centroid Data

Supplemental centroid analysis for 004171102-01. Kepler magnitude: 12.80. Transit SNR 7.35

There are 6 quarters with good PRF difference image offsets

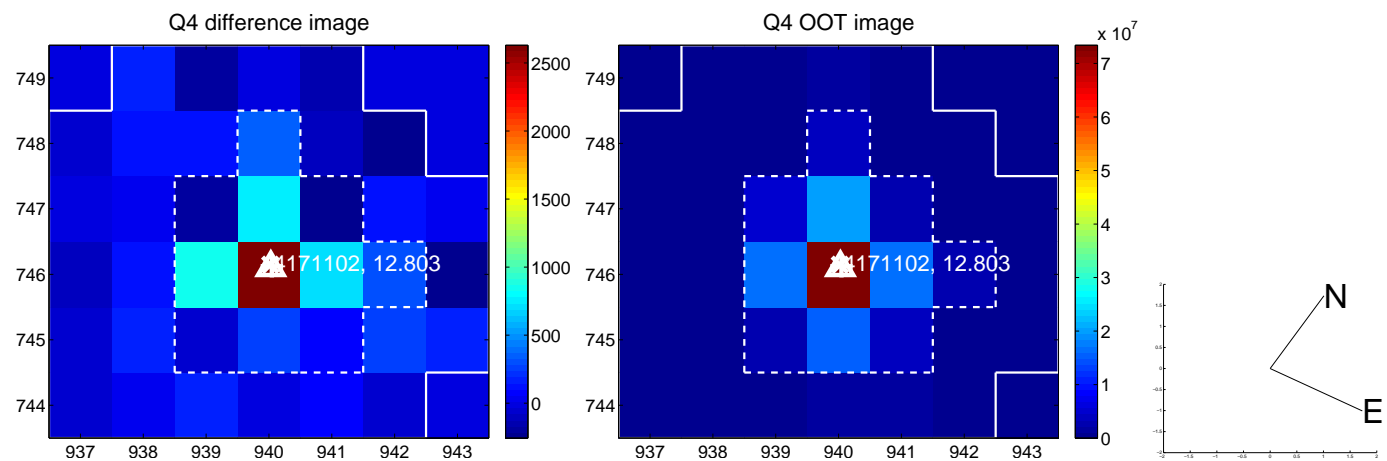
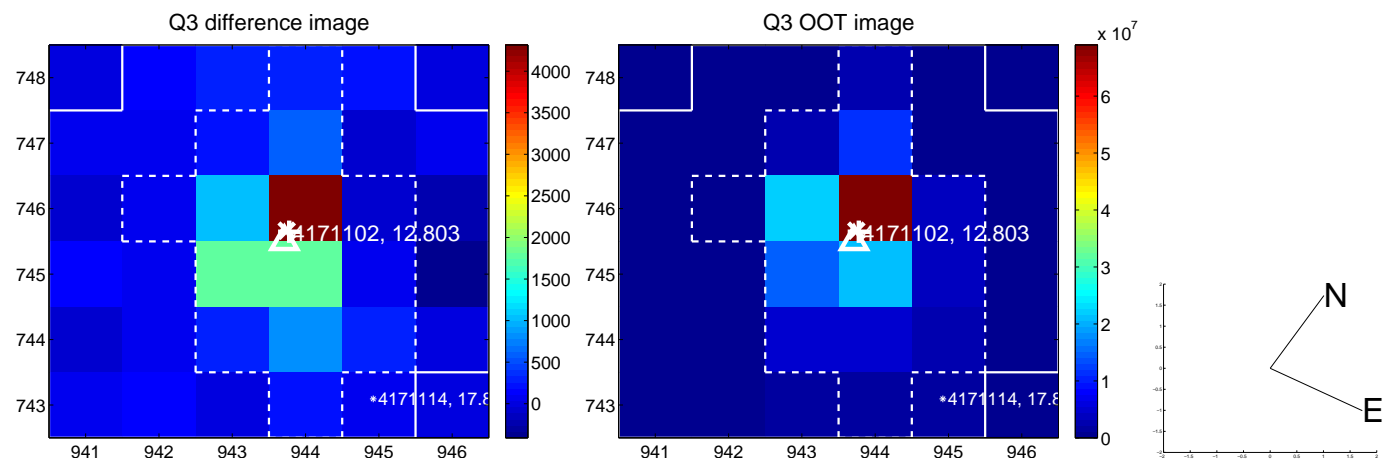
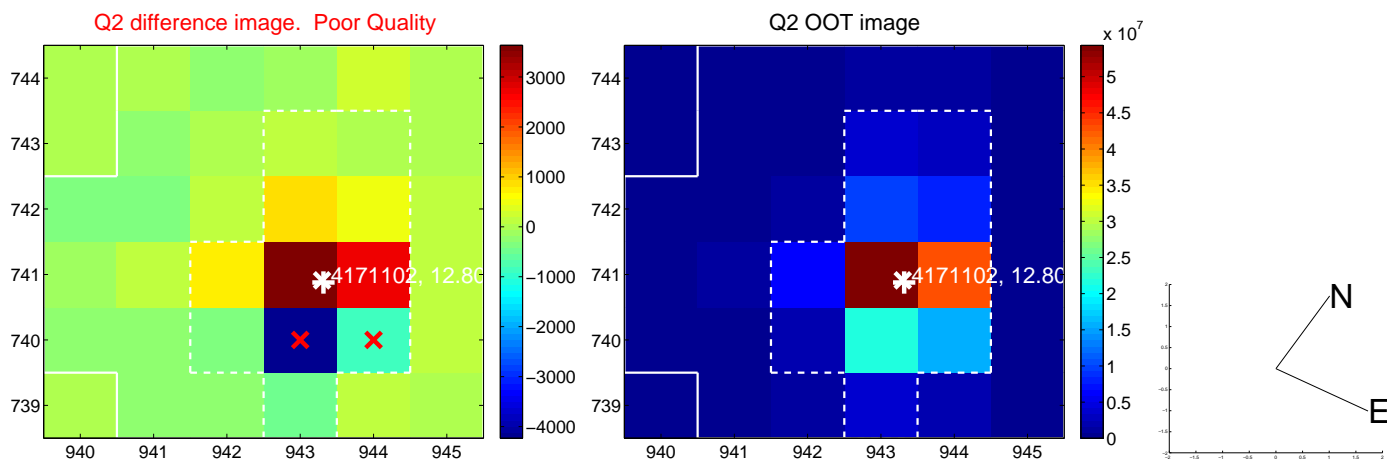
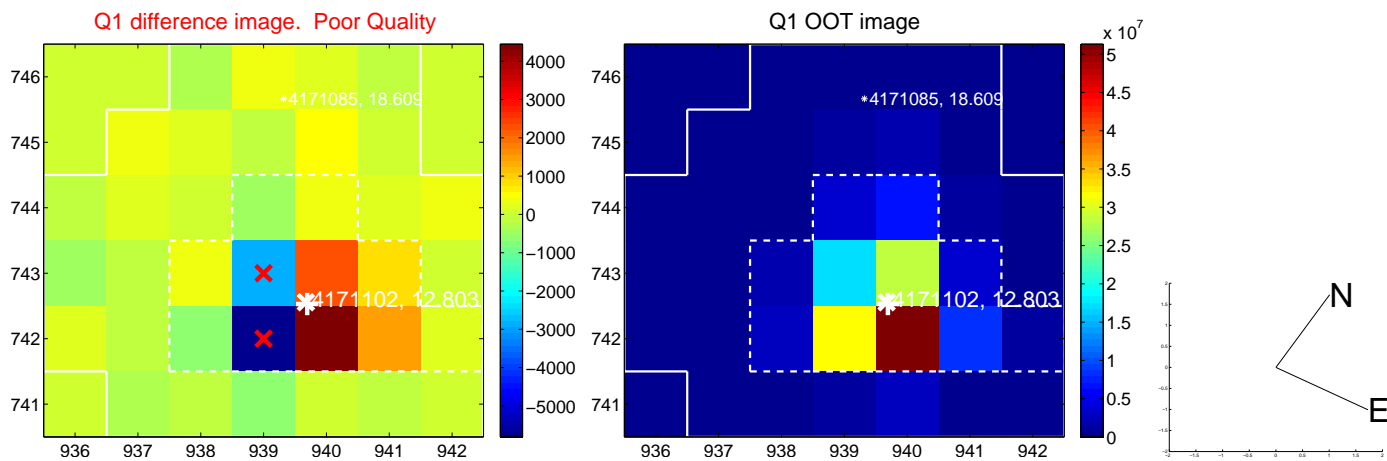
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 0.066 ± 0.736 | 0.09 | -0.020 ± 0.246 | 0.063 ± 0.827 |
| PRF-fit source offset from KIC position | 0.105 ± 0.492 | 0.21 | 0.102 ± 0.288 | 0.028 ± 0.902 |
| photometric centroid source offset | 1.15 ± 0.89 | 1.29 | 1.07 ± 0.89 | 0.44 ± 0.90 |

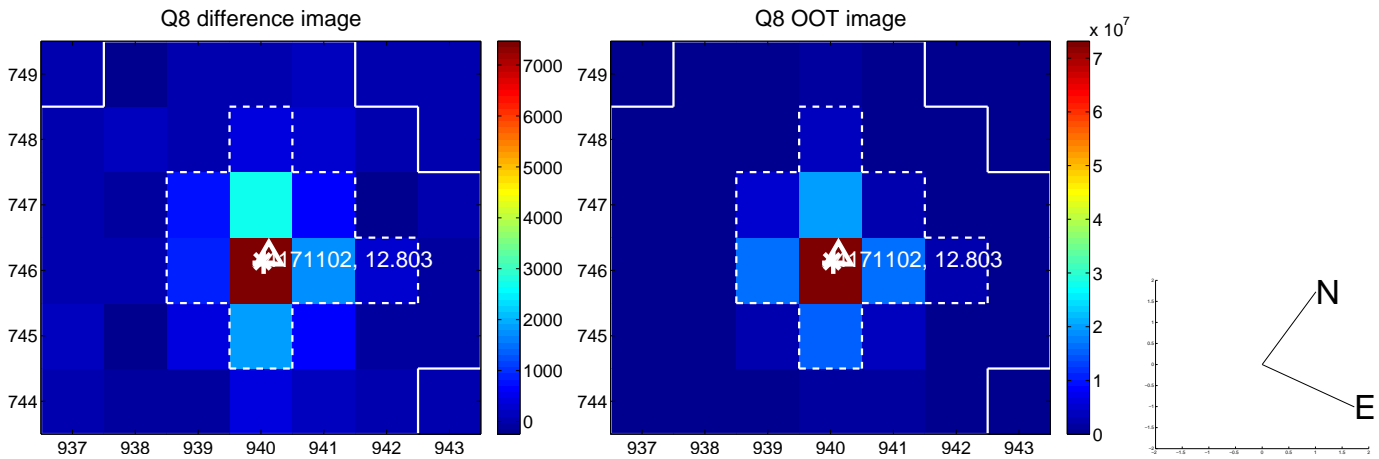
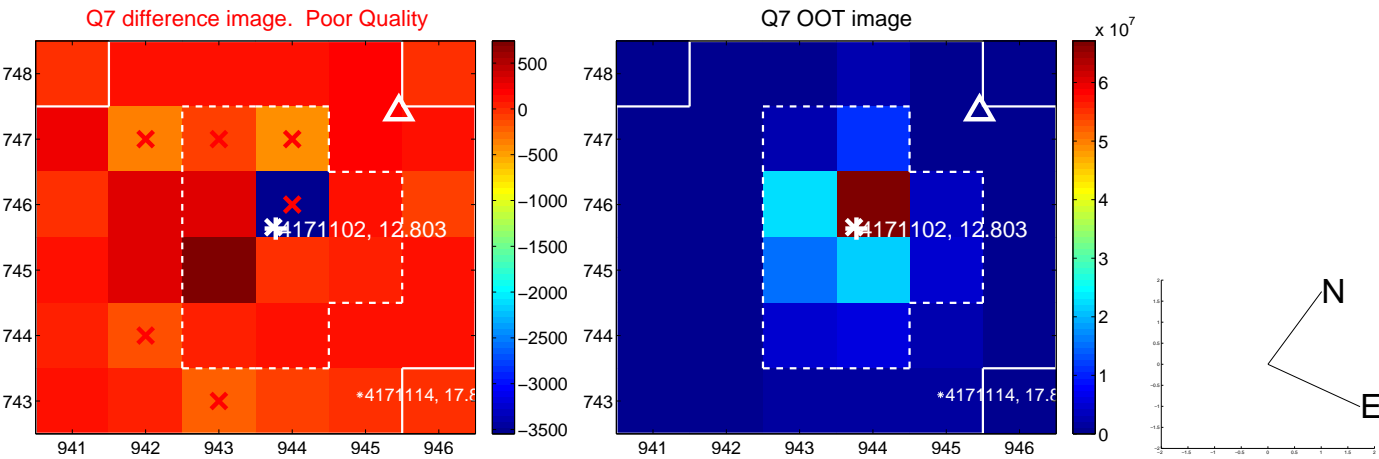
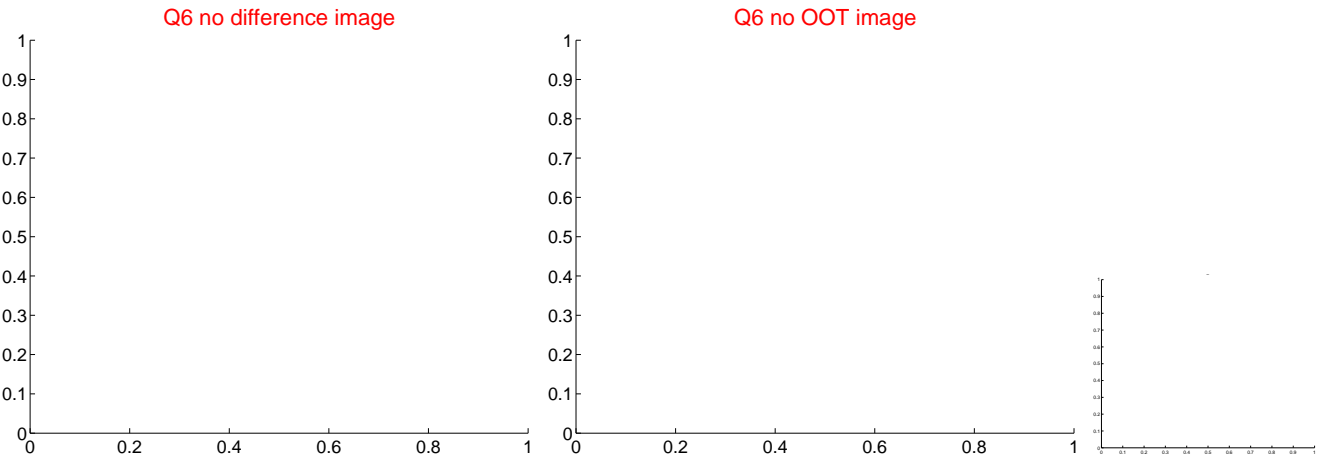
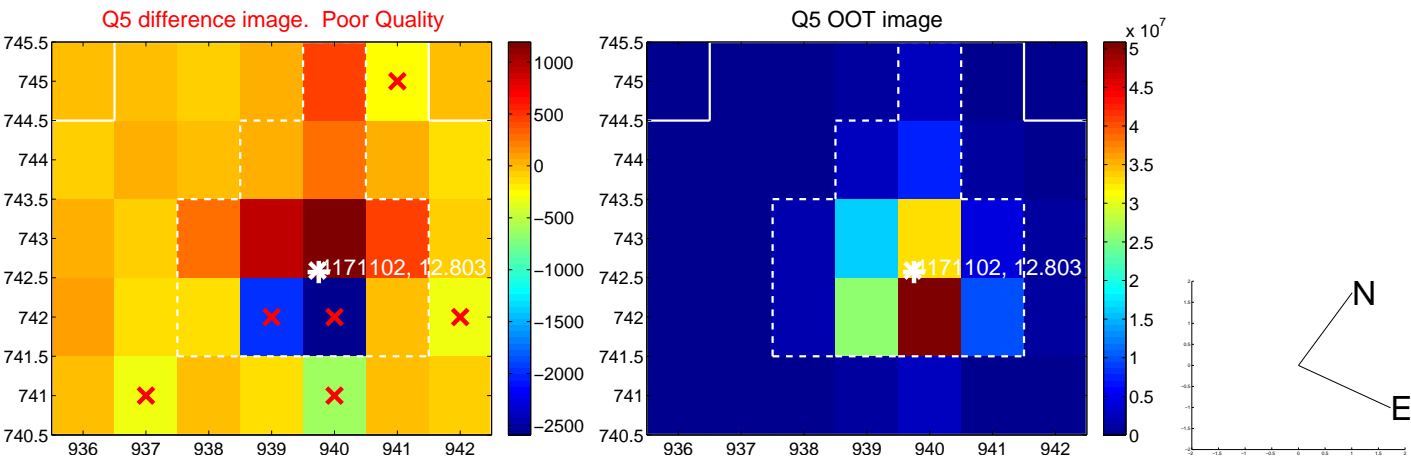


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

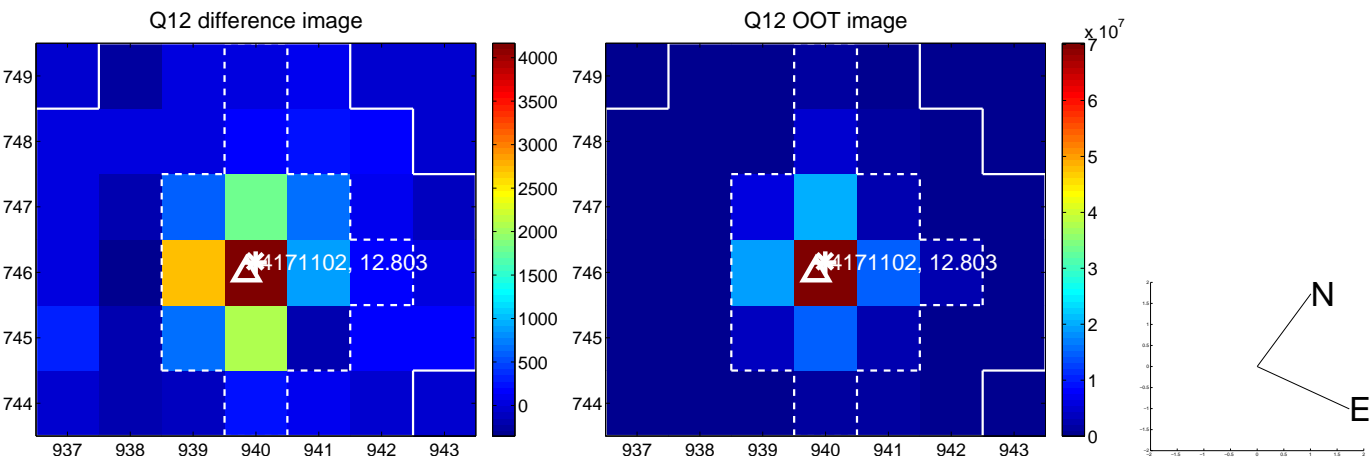
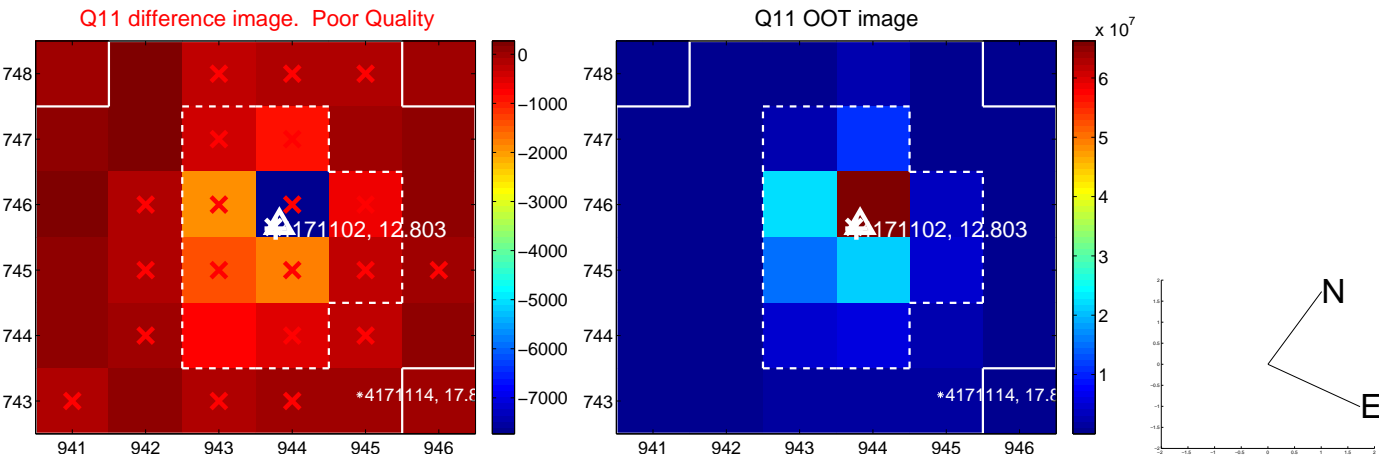
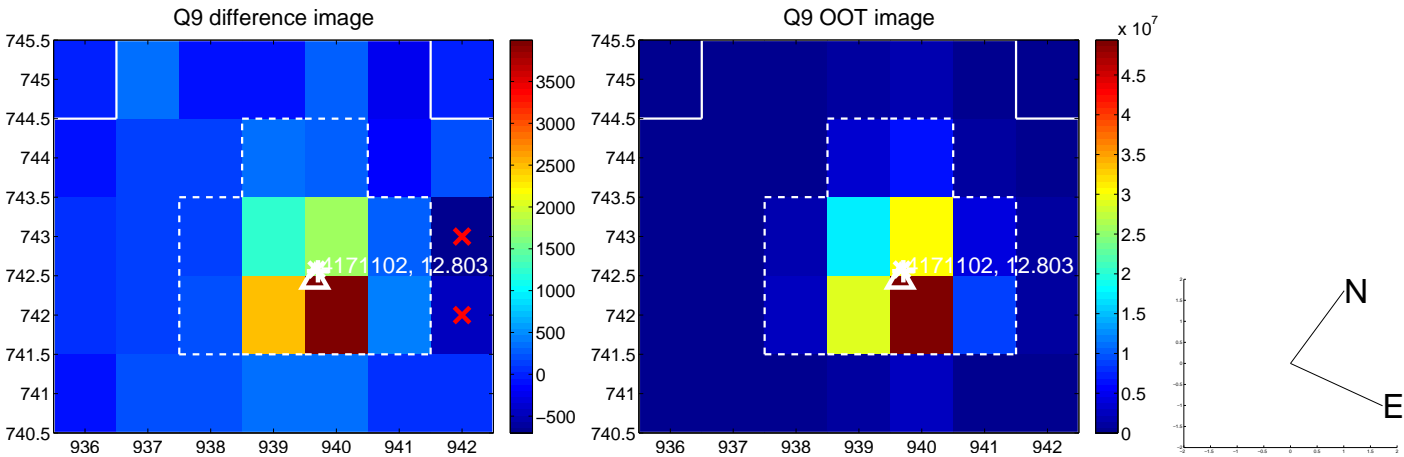
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



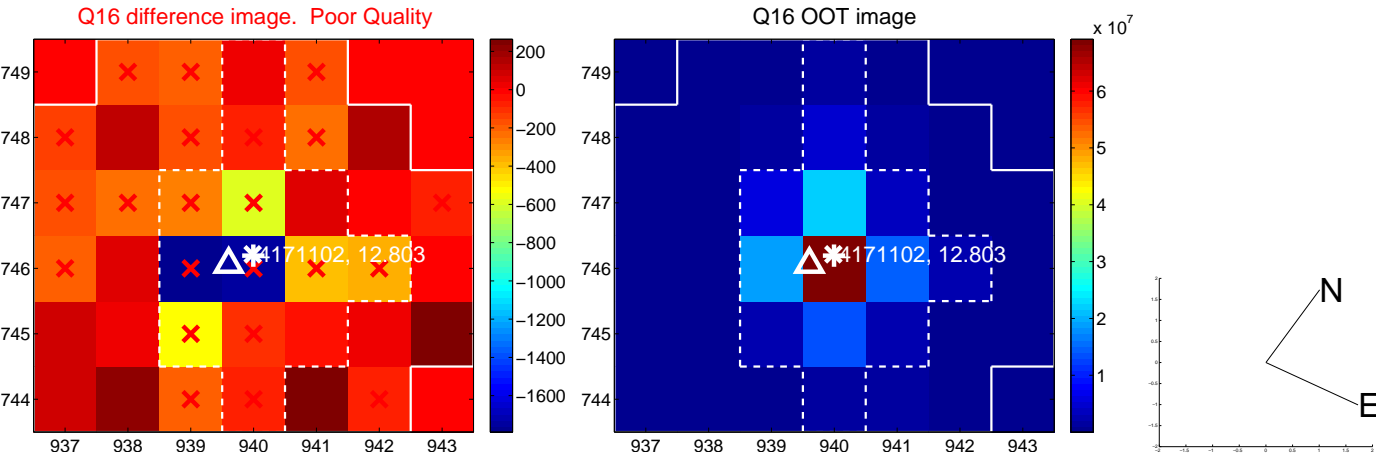
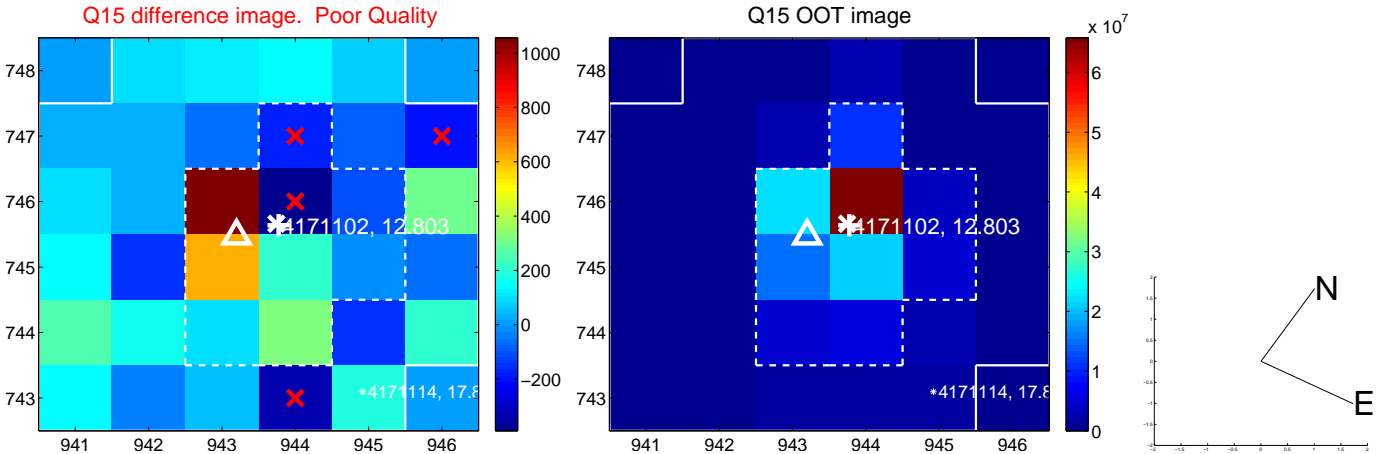
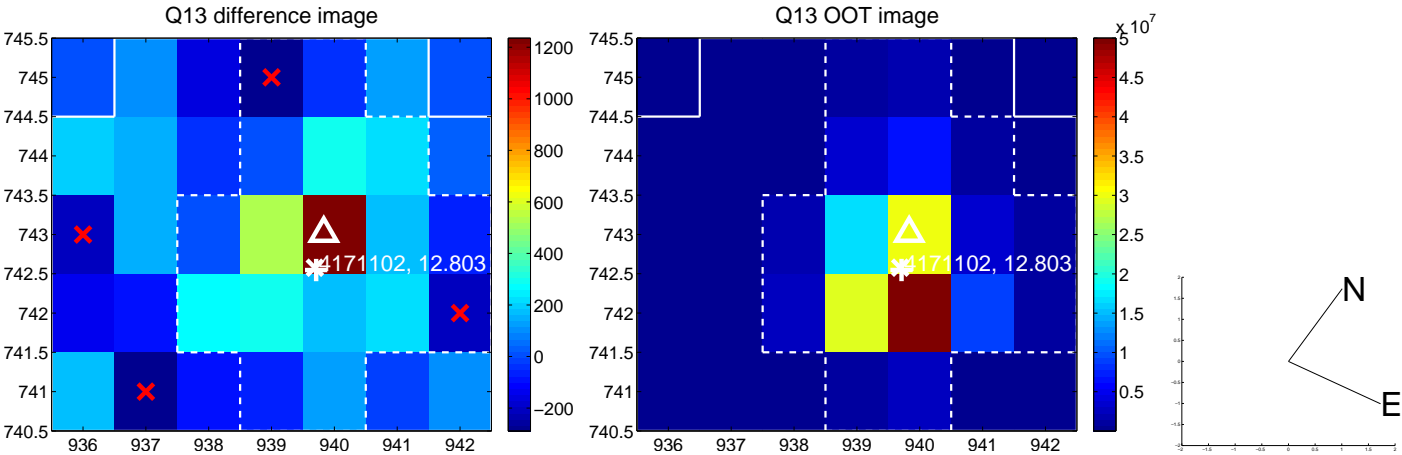
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



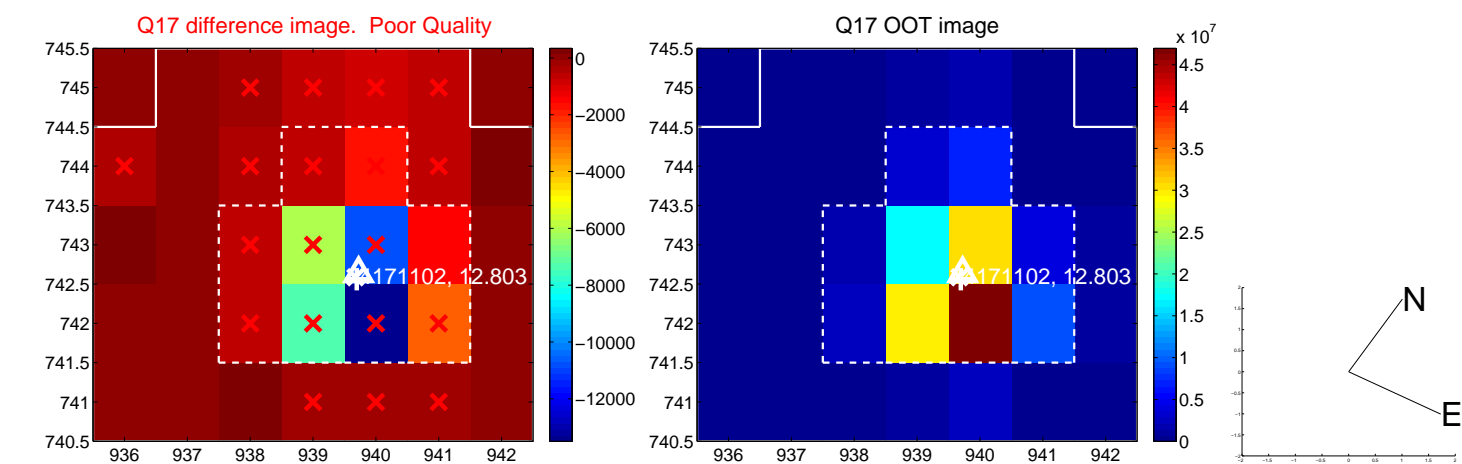
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



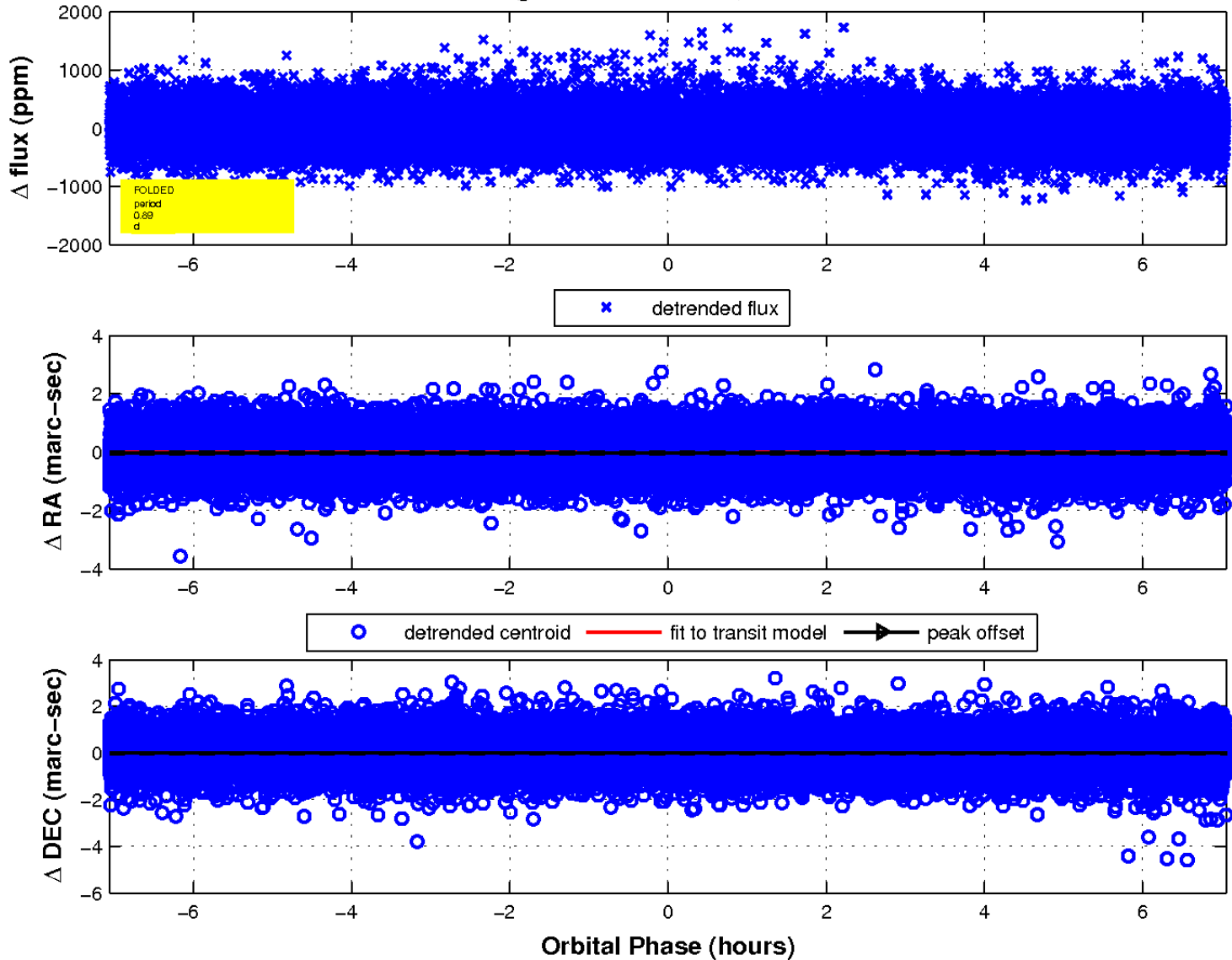
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

