

KIC 011037128

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 011037128-01 | OBS | 4309.01 | 3.794894 | 134.395124 | 282.4 | 1.352 | 11.4 | 13.8 | 0.79 | 5883 | 1.62 | 325.99 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------------------|
| 011037128-01 | OBS | FP | 0.00 | 0 | 0 | 1 | 0 | CENT_UNRESOLVED_OFFSET |

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

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

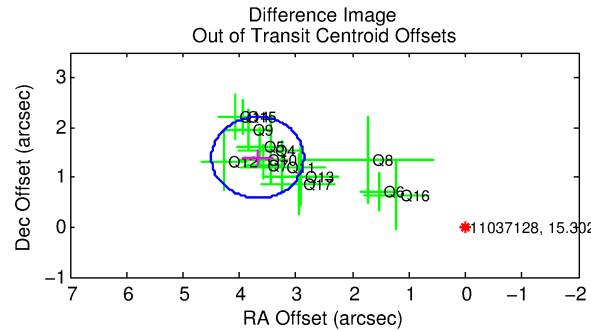
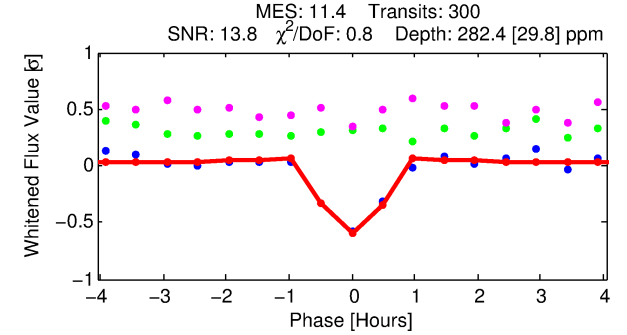
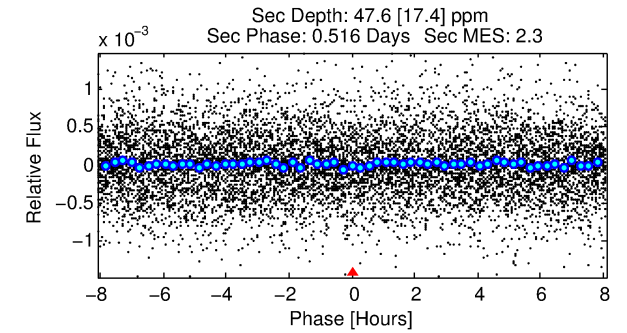
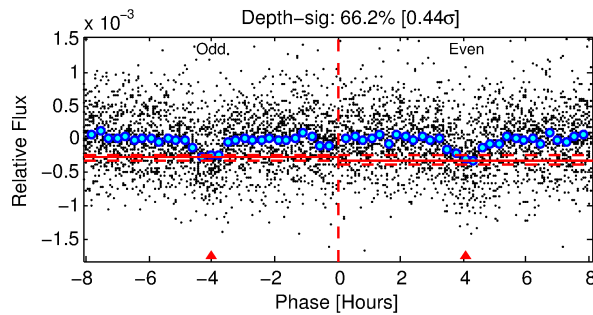
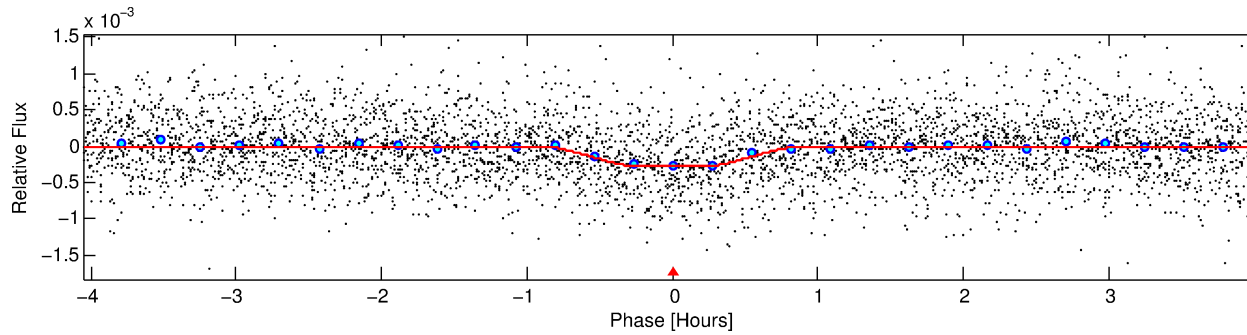
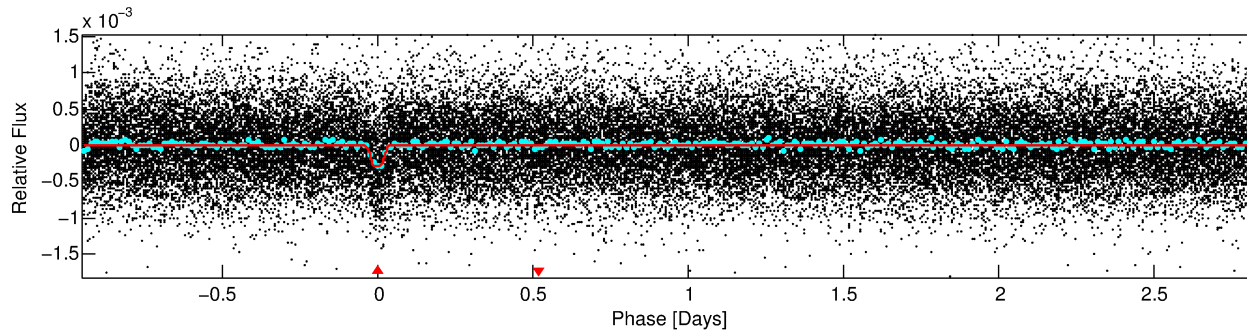
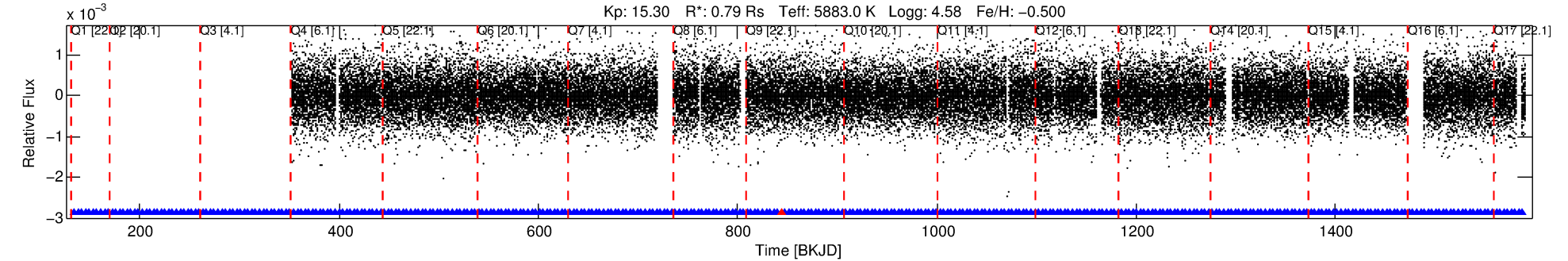
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011037128-01

No Significant Match Found

DV One-Page Summary

KIC: 11037128 Candidate: 1 of 1 Period: 3.795 d
KOI: K04309.01 Corr: 0.929



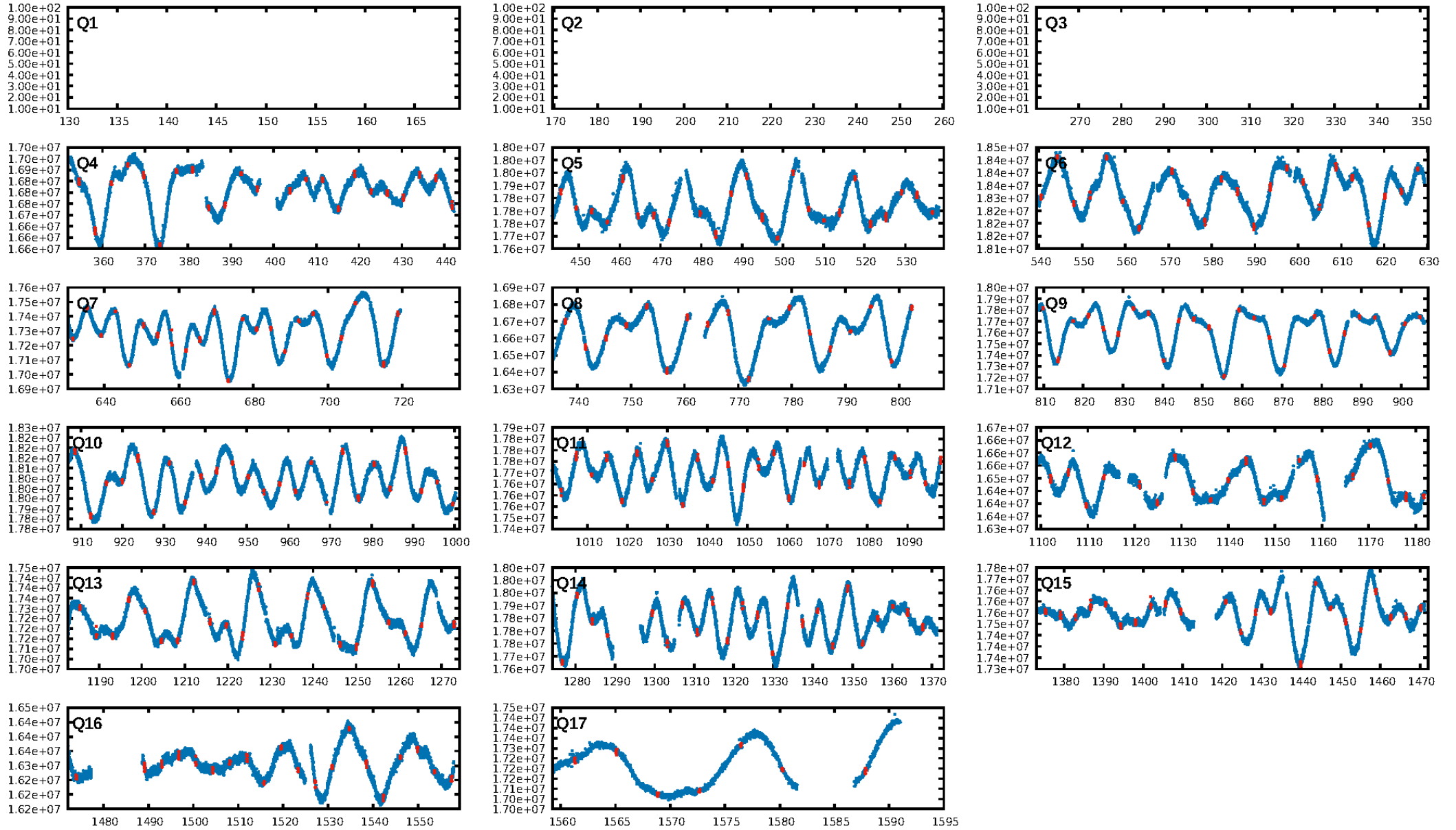
DV Fit Results:

Period = 3.79489 [0.00001] d
Epoch = 134.3951 [0.0019] BKJD
Rp/R* = 0.0187 [0.0066]
a/R* = 9.14 [16.25]
b = 0.93 [0.28]
Seff = 325.99 [117.96]
Teq = 1083 [98] K
Rp = 1.62 [0.72] Re
a = 0.0455 [0.0105] AU
Ag = 20.66 [17.74] [1.11 σ]
Teffp = 3572 [715] K [3.45 σ]

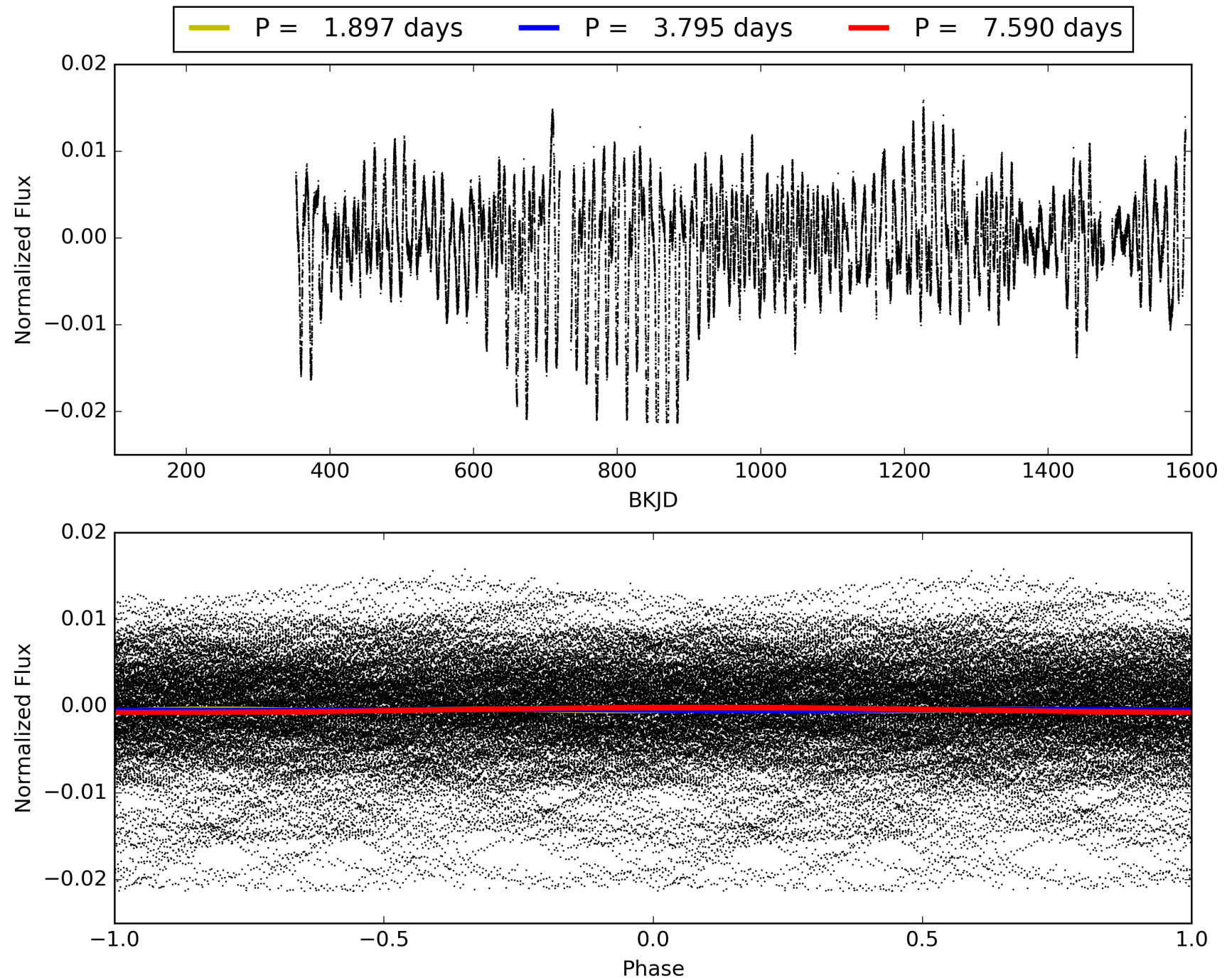
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.50e-28
RollingBand-fgt: 1.00 [292/293]
GhostDiagnostic-chr: 0.8316
Centroid-sig: 0.0%
Centroid-so: 2.799 arcsec [3.88 σ]
OotOffset-rm: 3.932 arcsec [14.46 σ]
KicOffset-rm: 3.859 arcsec [14.07 σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.93 [13/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 011037128-01, PDC Light Curves

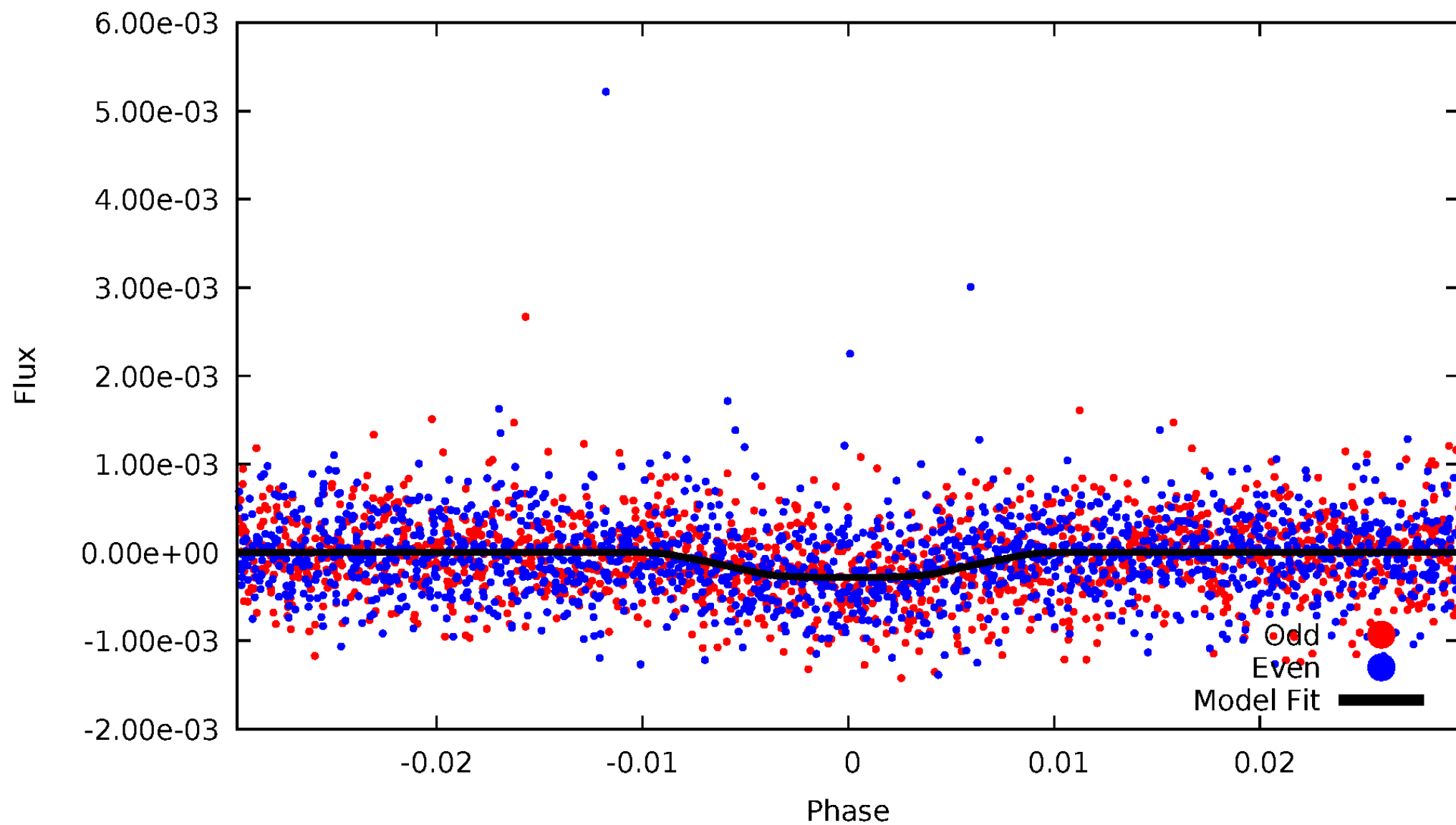


TCE 011037128-01



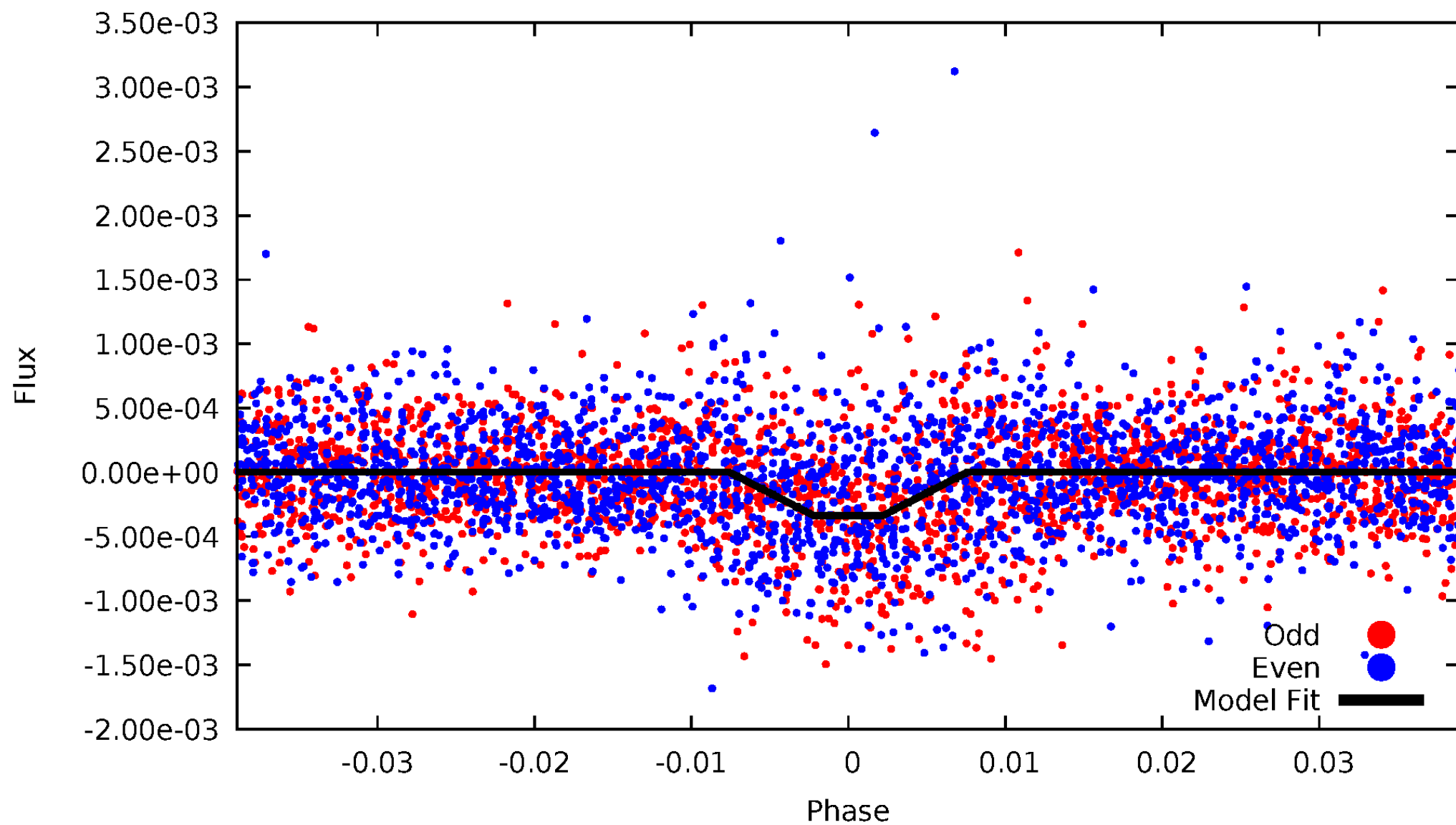
DV Odd/Even

TCE 011037128-01

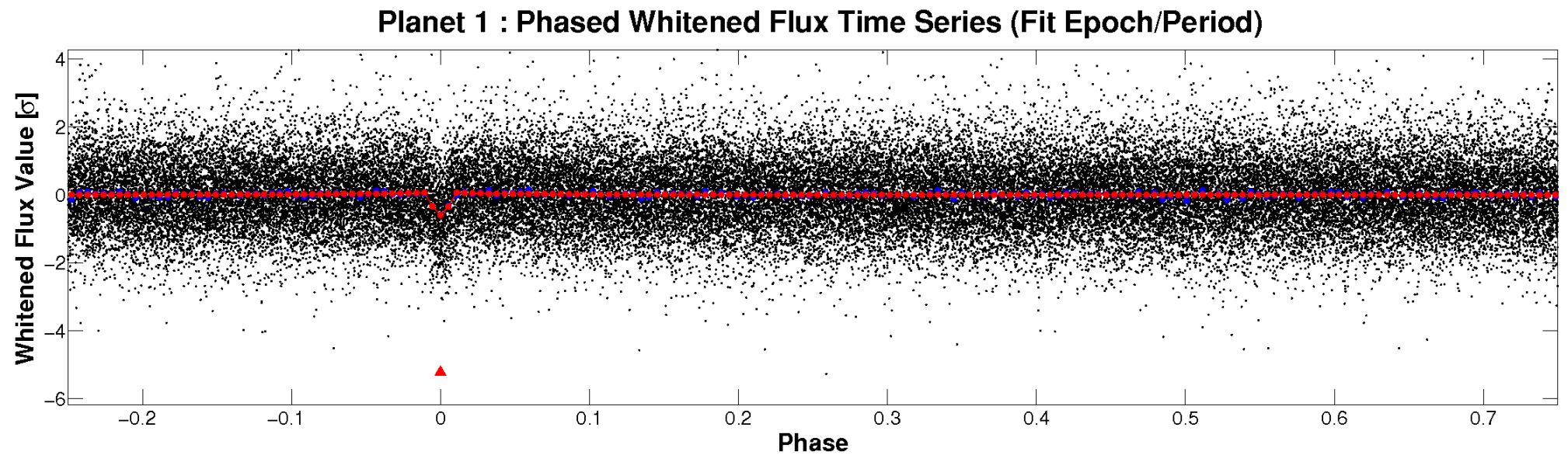
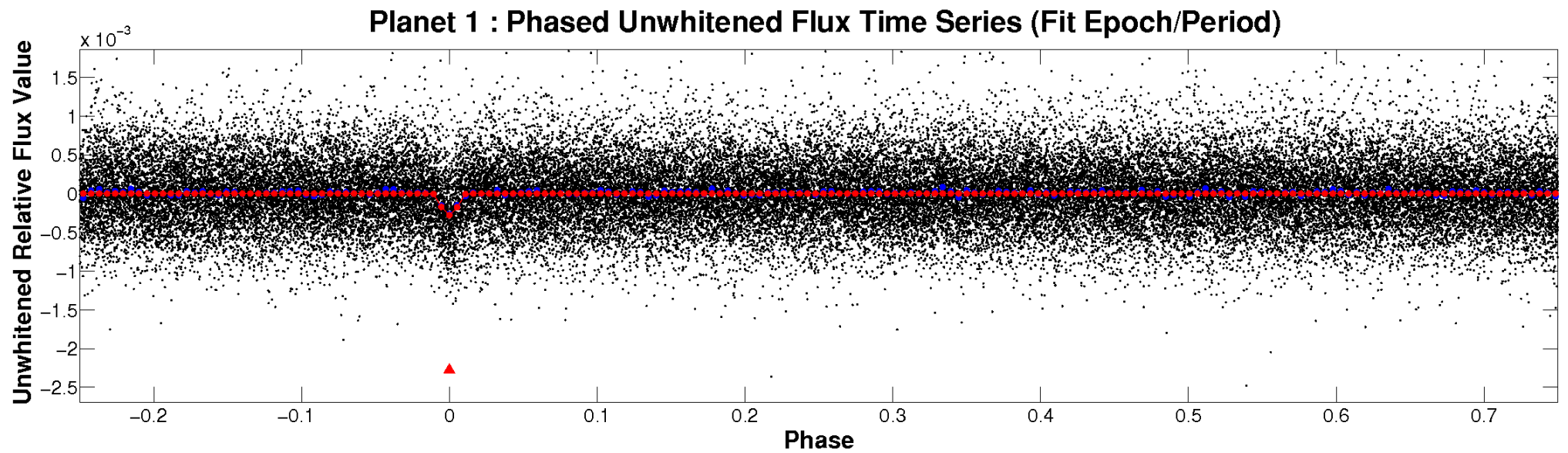


ALT Odd/Even

TCE 011037128-01

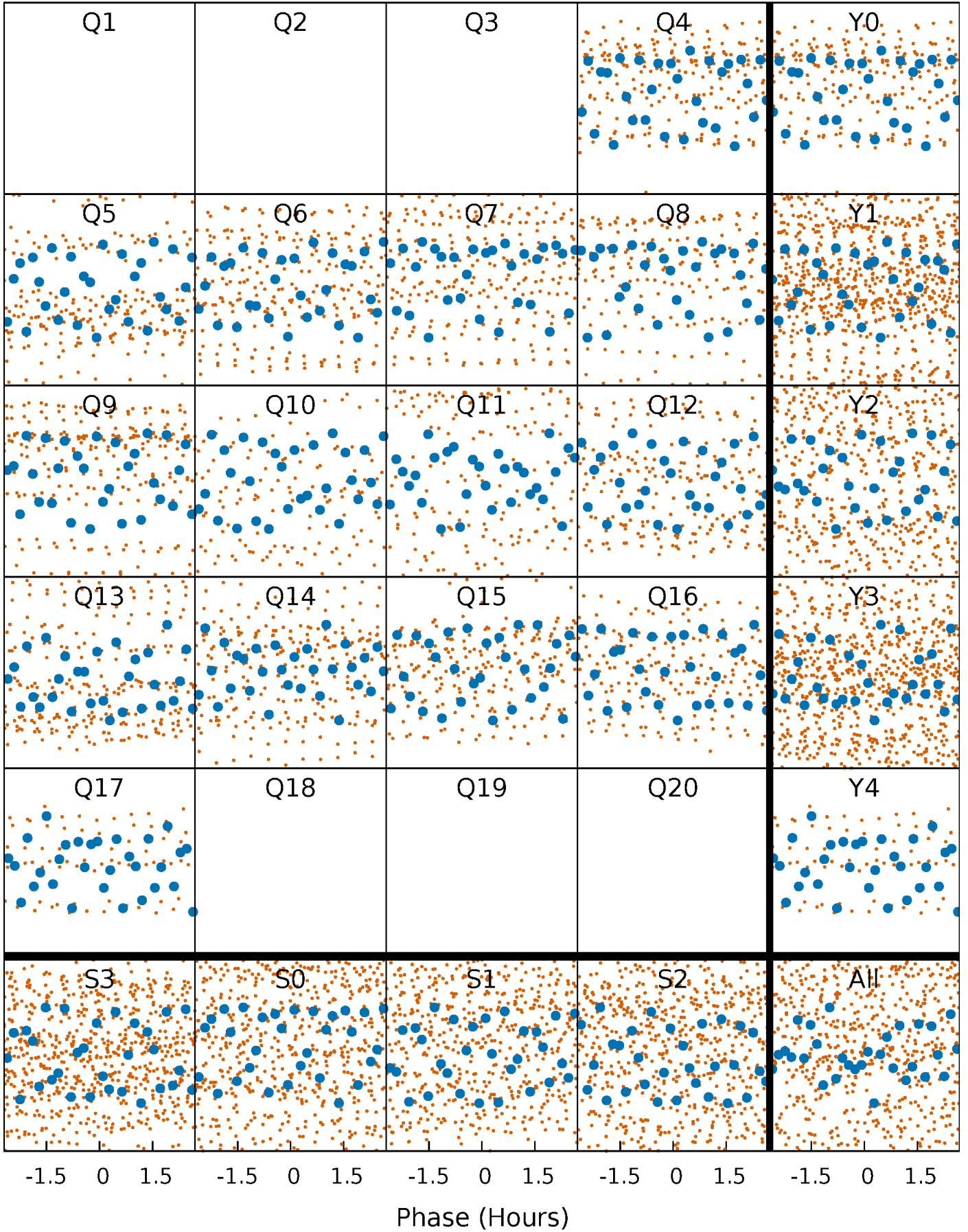


Non-Whitened Vs. Whitened Light Curve



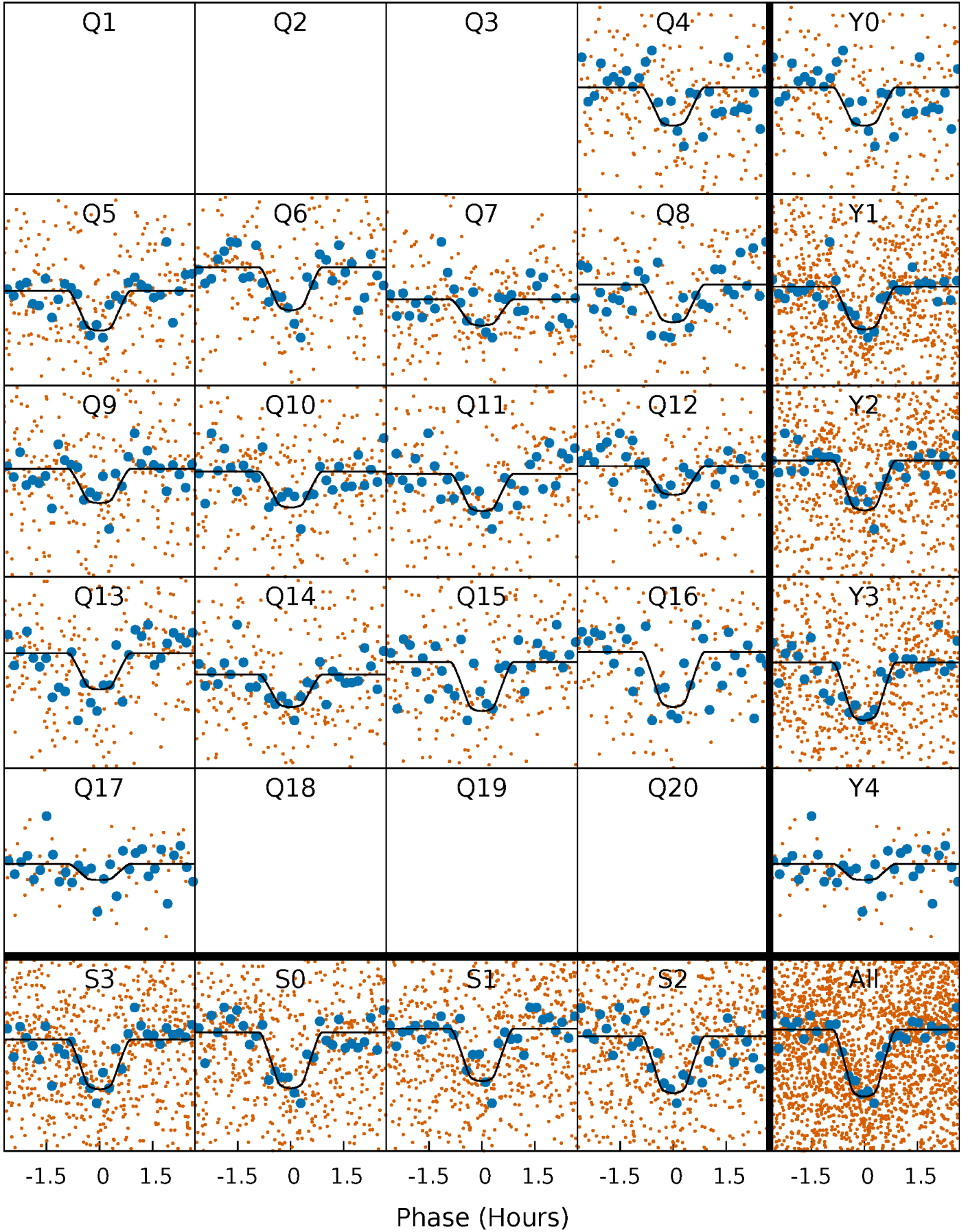
PDC Quarter-Phased Transit Curves

TCE 011037128-01 P= 3.794894 Days $T_0=134.395124$ (BKJD)



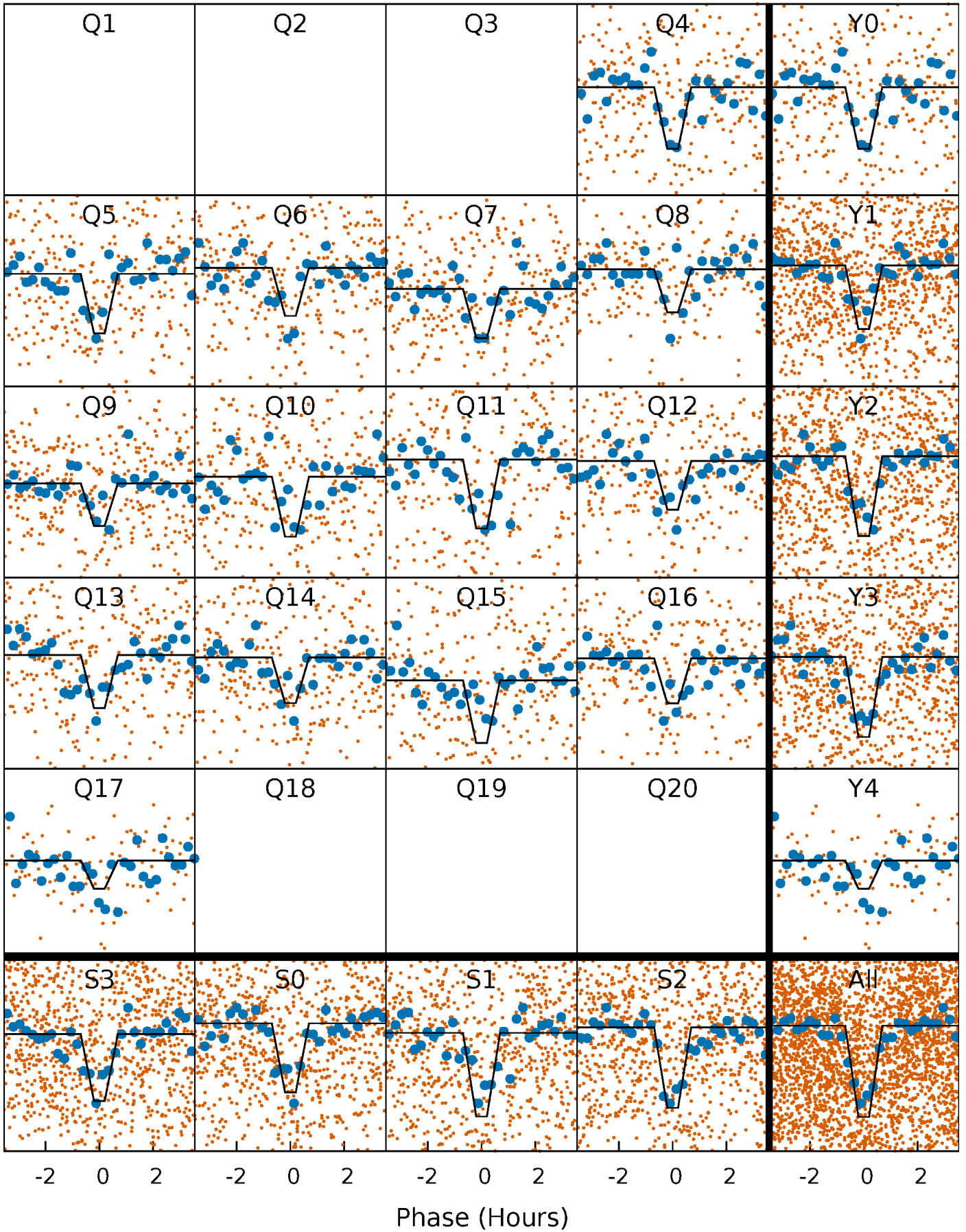
DV Quarter-Phased Transit Curves

TCE 011037128-01 P= 3.794894 Days $T_0=134.395124$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

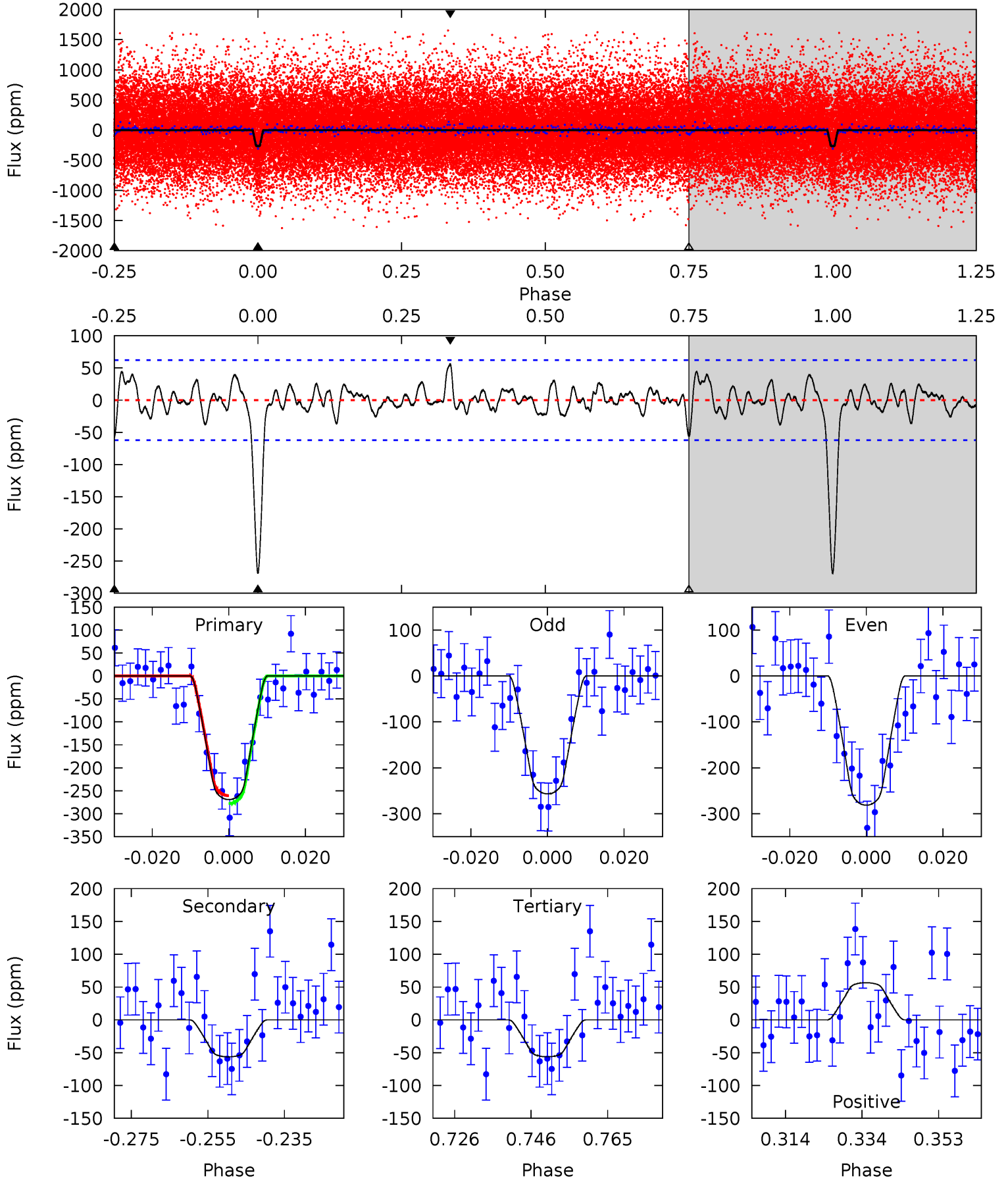
TCE 011037128-01 P= 3.794842 Days $T_0=134.406536$ (BKJD)



DV Model-Shift Uniqueness Test

011037128-01, P = 3.794894 Days, E = 134.395124 Days

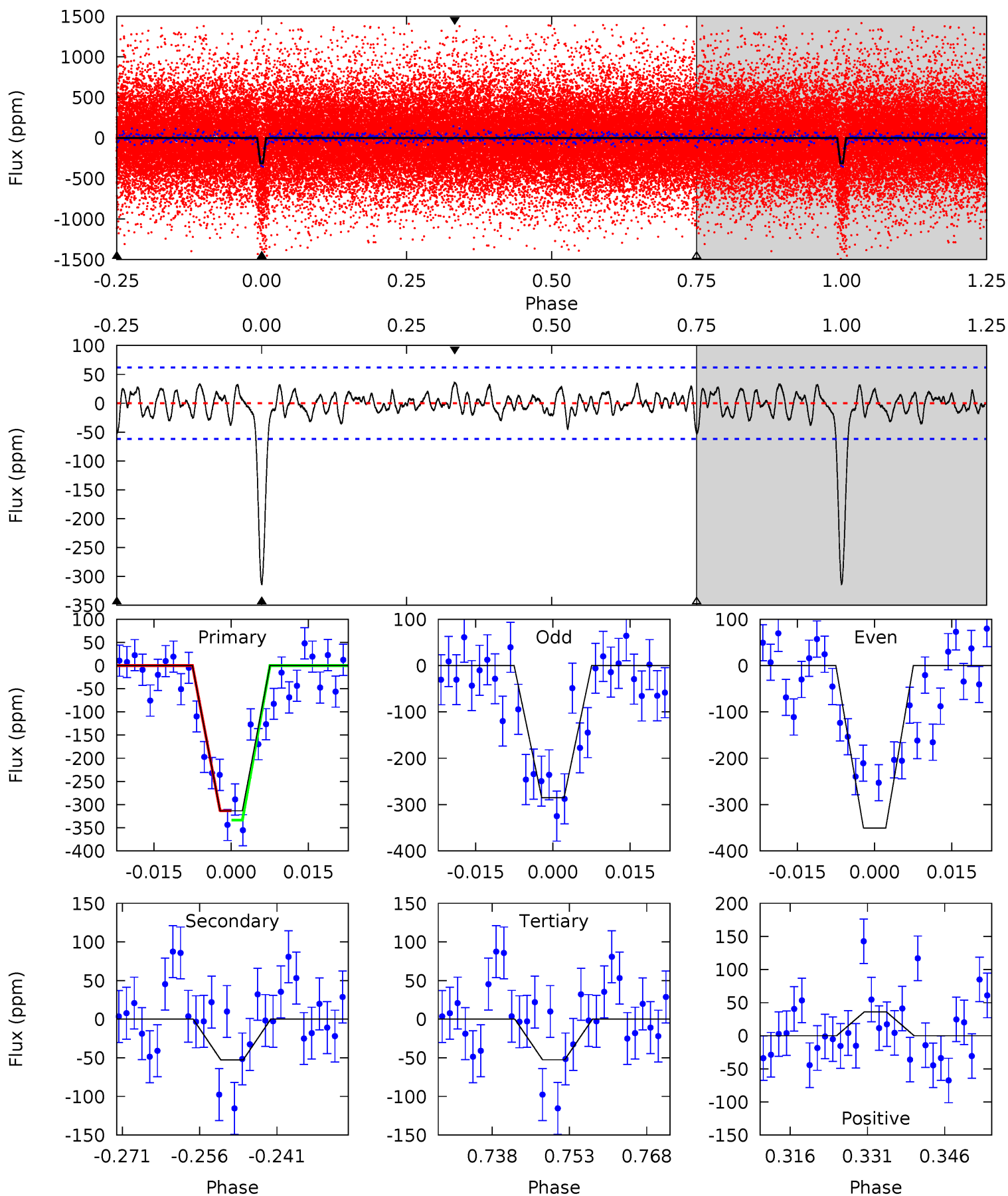
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 21.2 | 4.44 | 4.43 | 4.46 | 4.90 | 2.33 | 1.22 | 16.8 | 16.7 | 0.01 | -0.02 | 0.97 | 0.99 | 0.17 | 0.67 |



Alt Model-Shift Uniqueness Test

011037128-01, P = 3.794842 Days, E = 134.406536 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 25.0 | 4.21 | 4.19 | 2.87 | 4.95 | 2.43 | 1.18 | 20.8 | 22.1 | 0.02 | 1.34 | 2.60 | 0.91 | 0.10 | 0.81 |



Stellar Parameters For KIC 011037128

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5883^{+177}_{-195} | $4.580^{+0.035}_{-0.184}$ | $-0.500^{+0.300}_{-0.300}$ | $0.793^{+0.218}_{-0.058}$ | $0.881^{+0.087}_{-0.106}$ | $2.484^{+0.453}_{-1.204}$ |
| | +3%/-3% | +1%/-4% | +60%/-60% | +27%/-7% | +10%/-12% | +18%/-48% |
| Source | KIC0 | 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 011037128-01 / KOI 4309.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|--------------|------------------------|---------------------|----------------------|------------------|
| DV | -56 ± 13 | $1.72^{+0.63}_{-0.62}$ | 1549^{+94}_{-71} | 4009^{+707}_{-431} | 21^{+29}_{-11} |
| Alt. | -53 ± 13 | $1.66^{+0.63}_{-0.61}$ | 1542^{+109}_{-65} | 4008^{+712}_{-452} | 21^{+30}_{-10} |

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 $A_{obs} \gg 1.0$

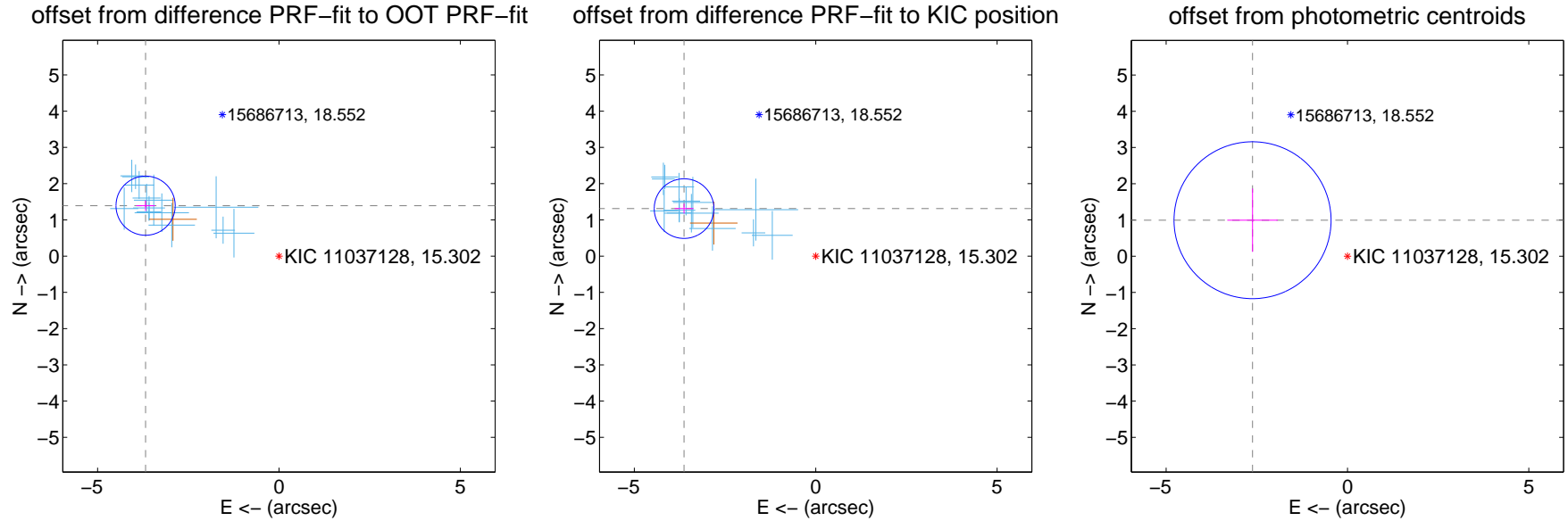
DV Centroid Data

Supplemental centroid analysis for 011037128-01. Kepler magnitude: 15.30. Transit SNR 13.82

There are 13 quarters with good PRF difference image offsets

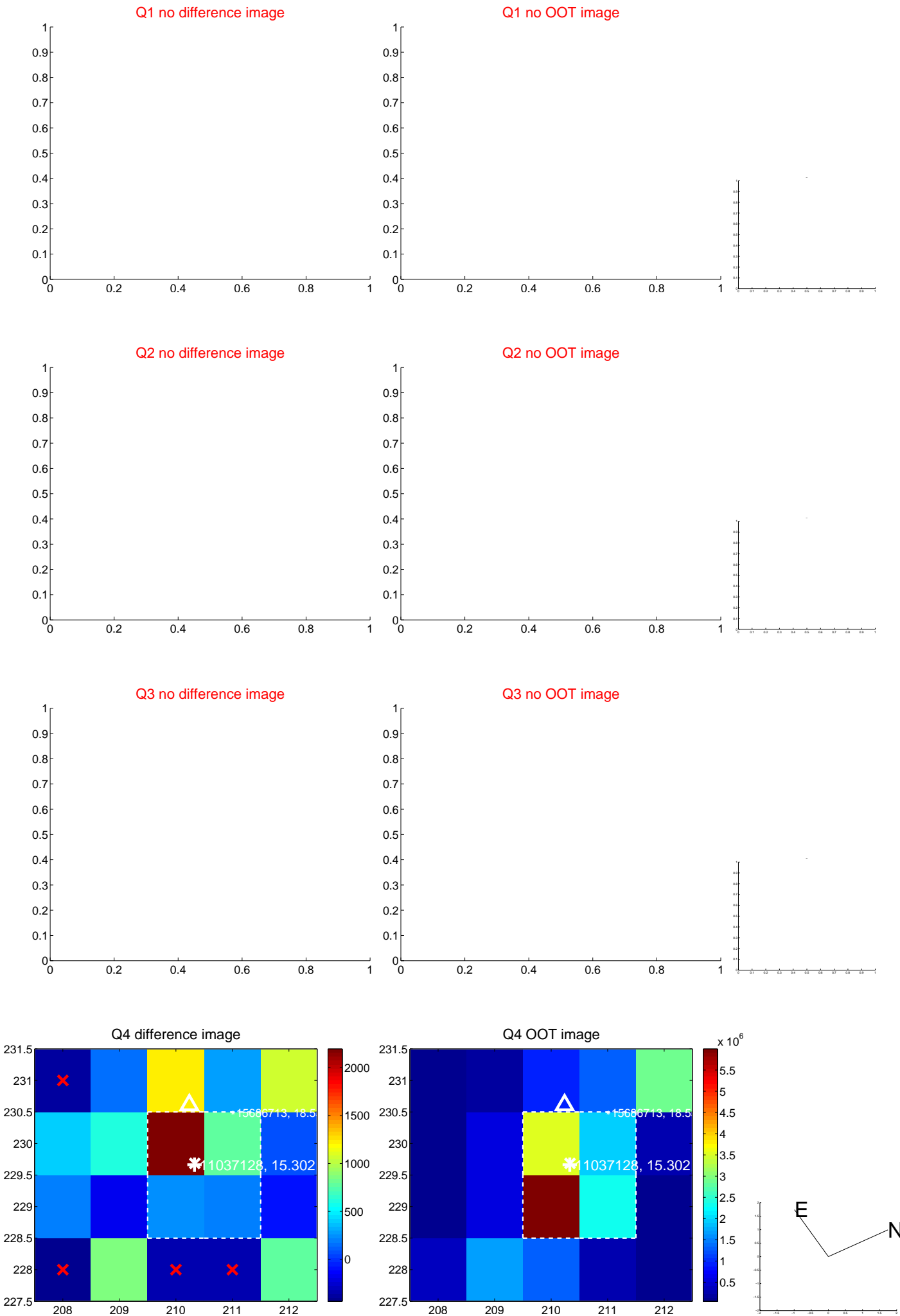
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 3.932 ± 0.272 | 14.46 | 3.677 ± 0.256 | 1.392 ± 0.145 |
| PRF-fit source offset from KIC position | 3.859 ± 0.274 | 14.07 | 3.629 ± 0.259 | 1.311 ± 0.137 |
| photometric centroid source offset | 2.80 ± 0.72 | 3.88 | 2.62 ± 0.70 | 0.99 ± 0.87 |

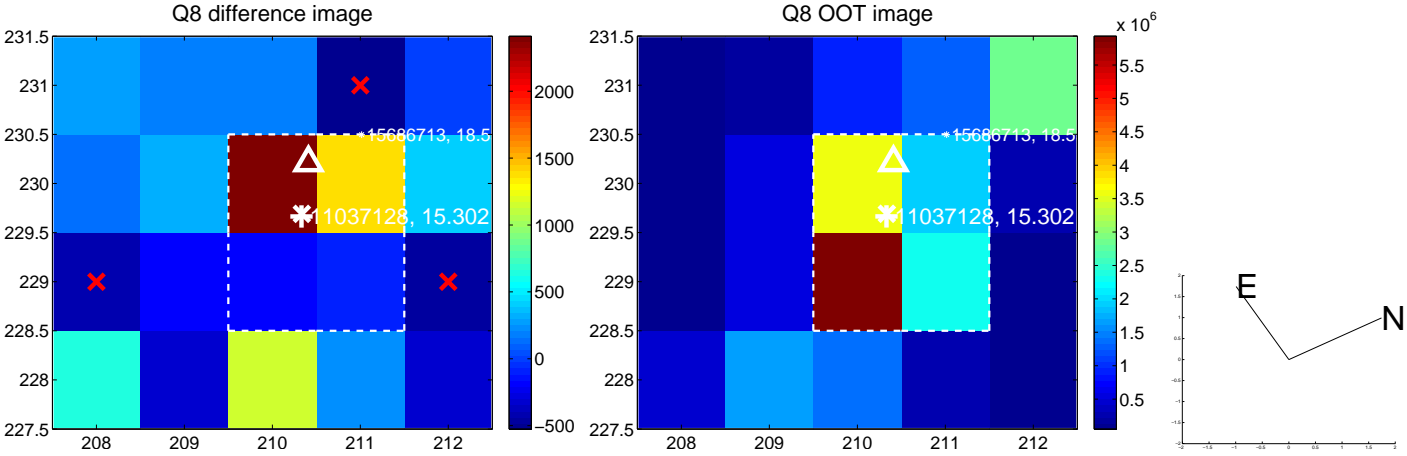
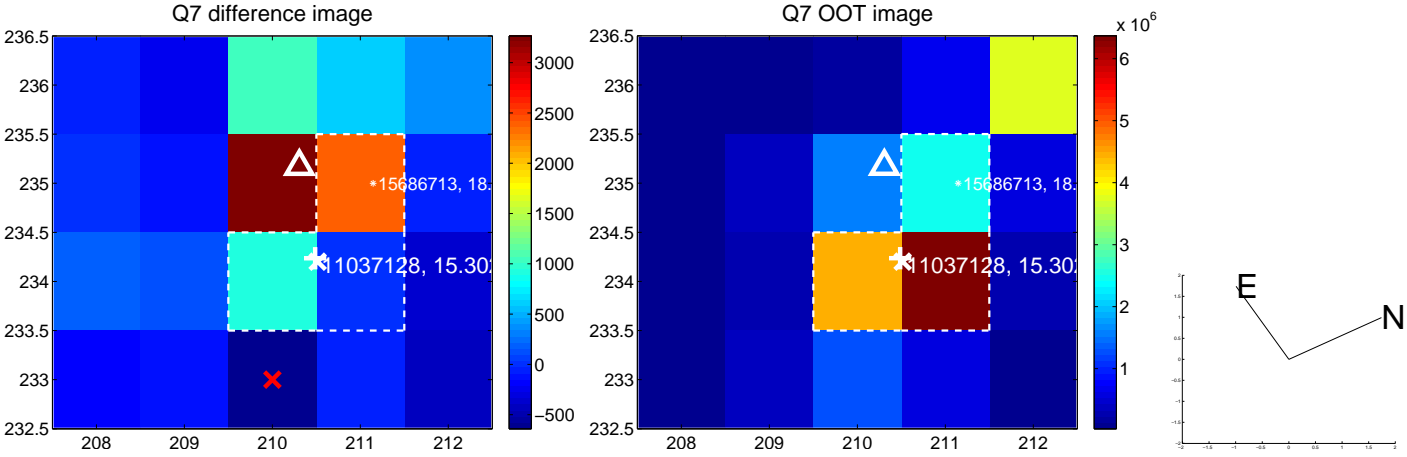
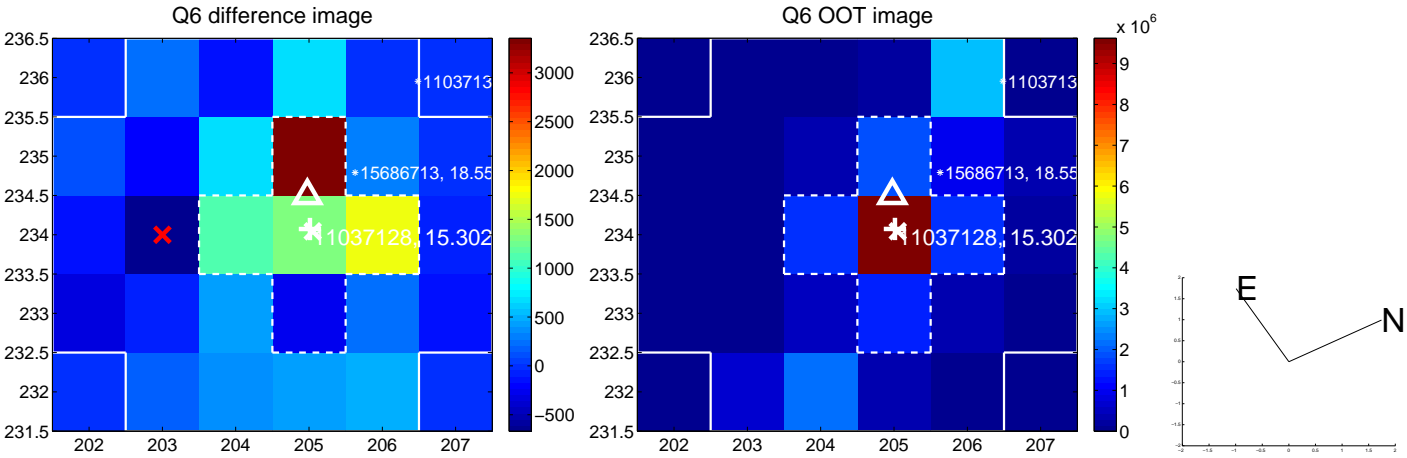
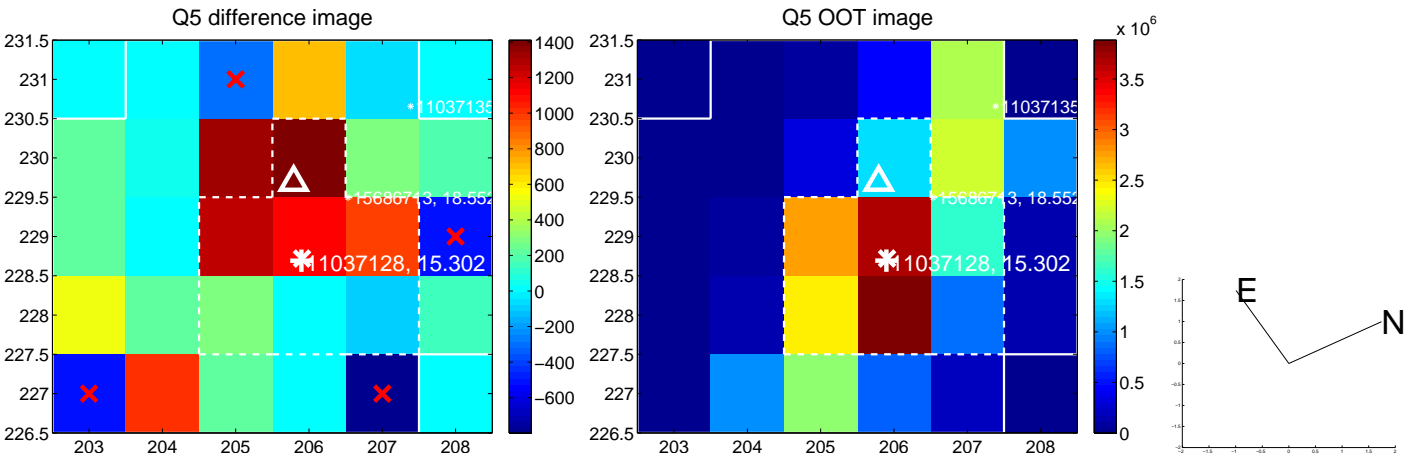


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

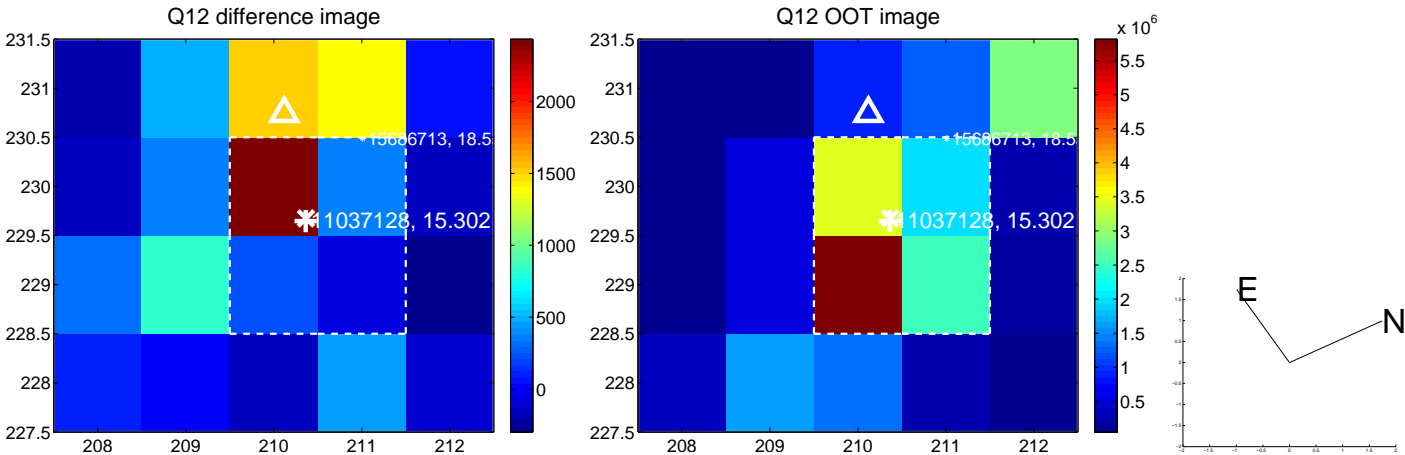
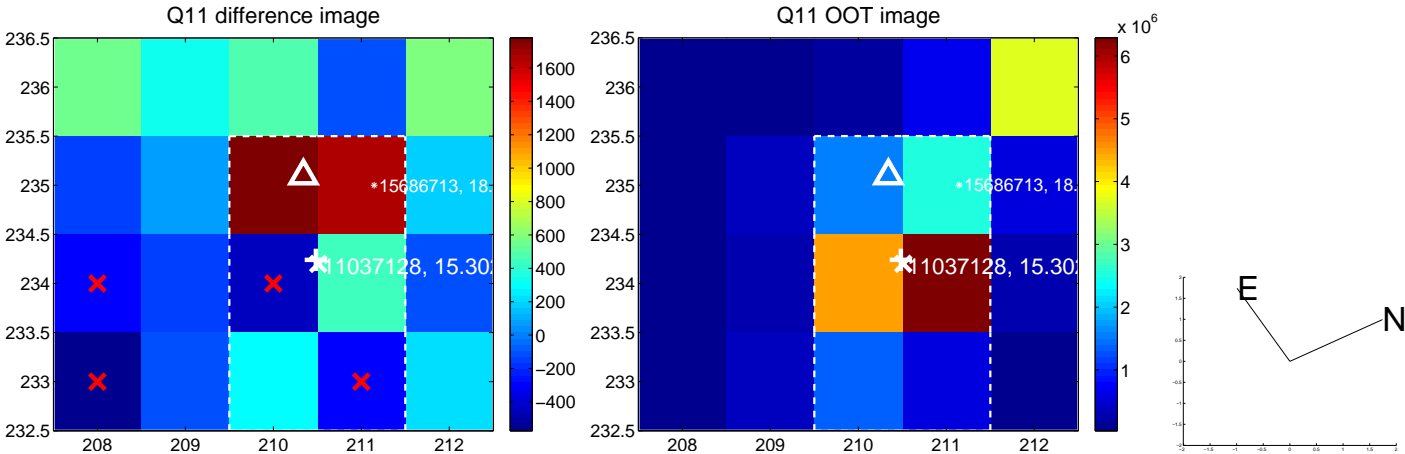
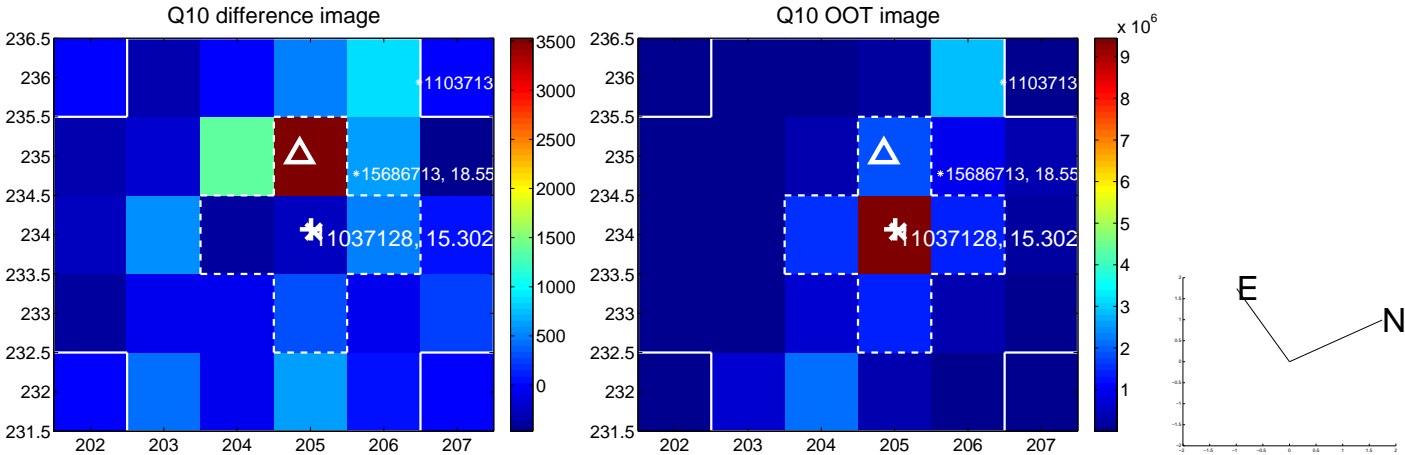
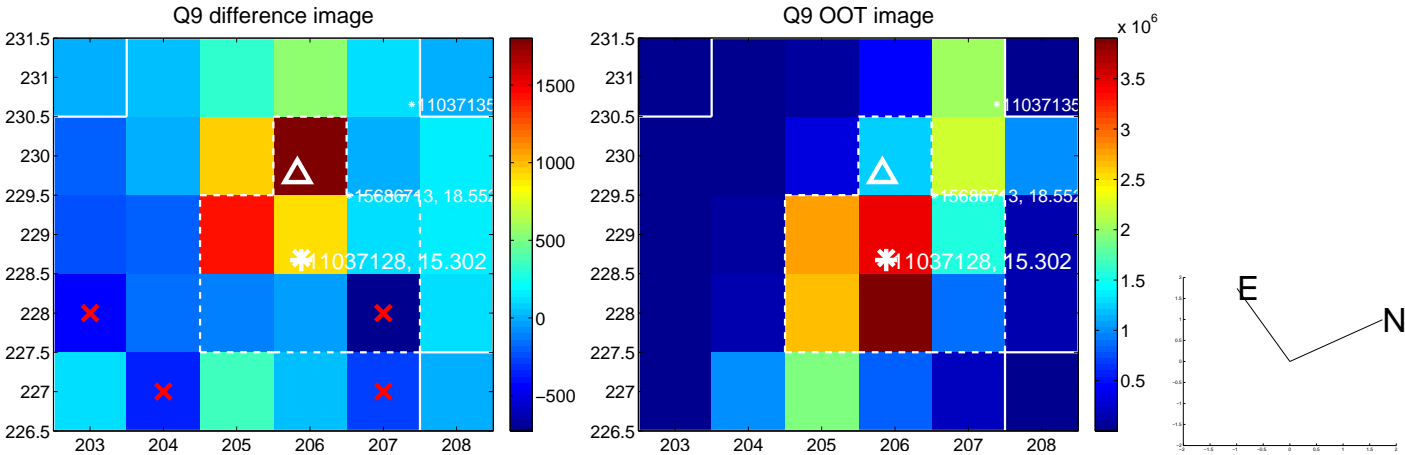
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



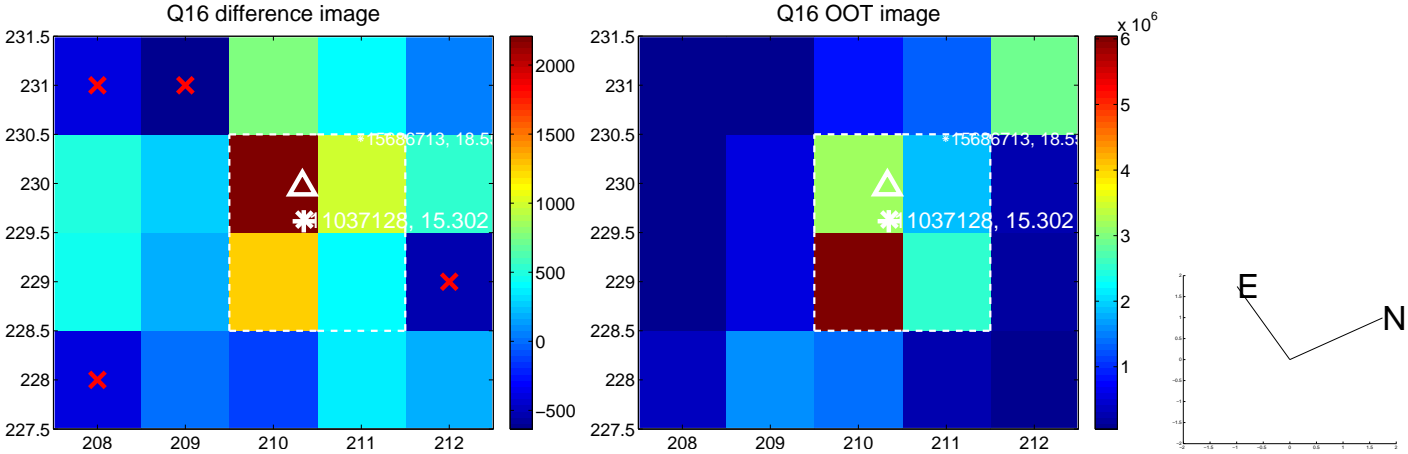
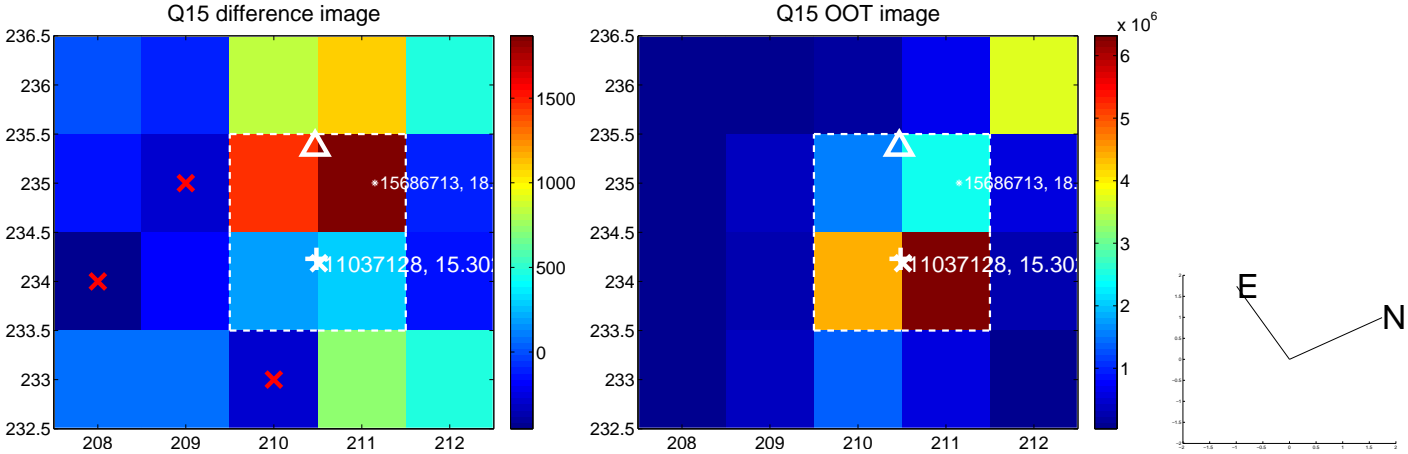
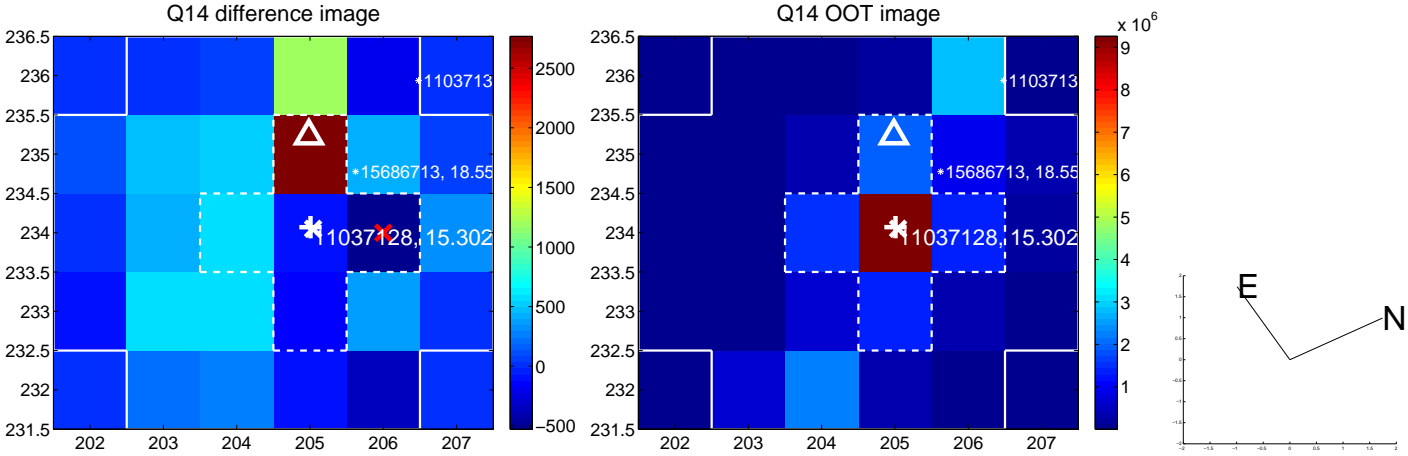
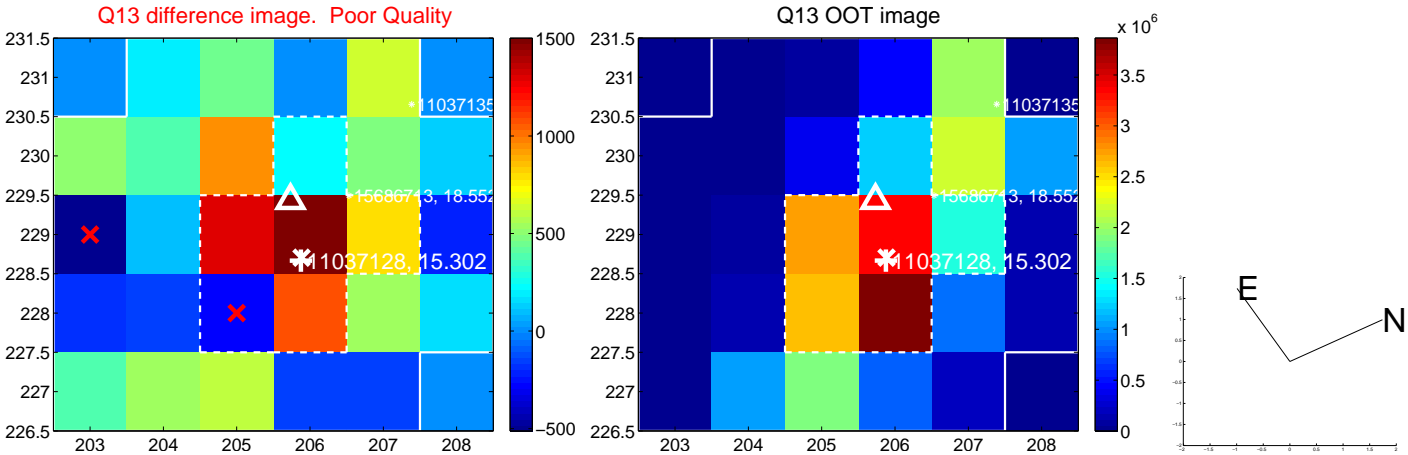
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



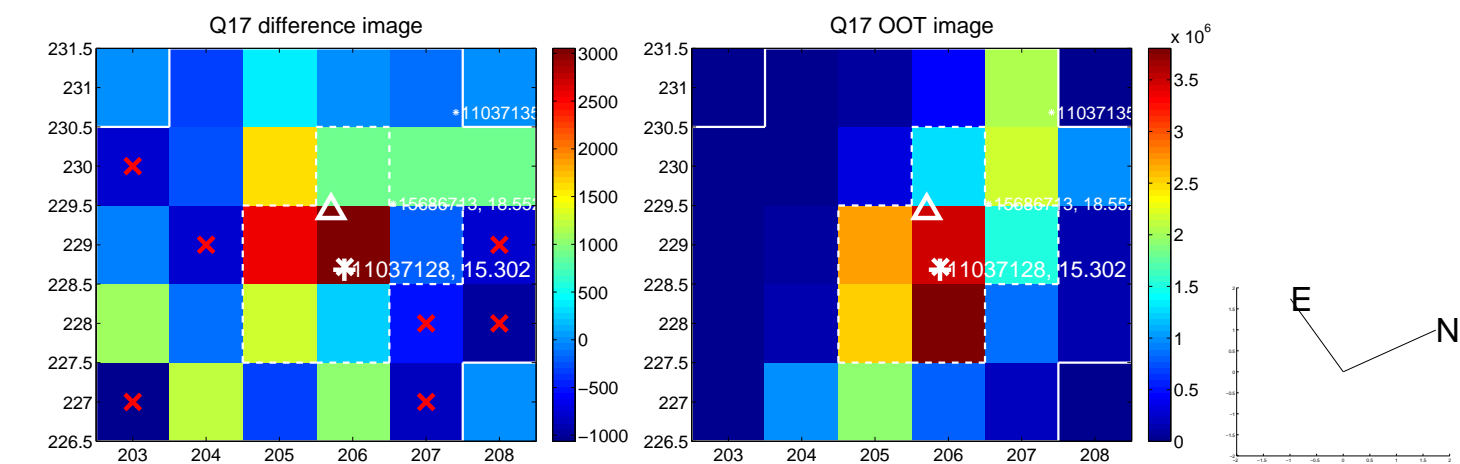
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



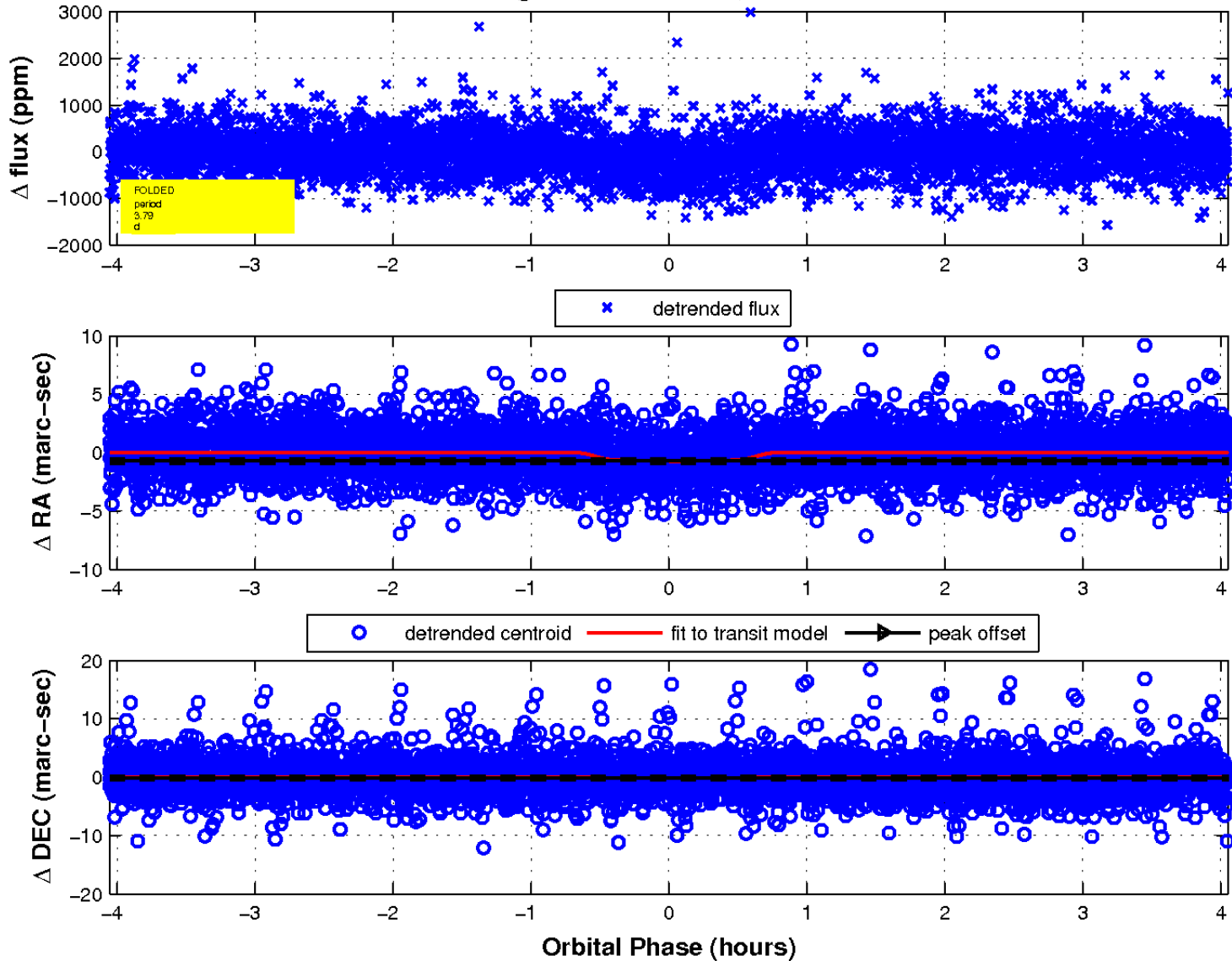
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

