

KIC 006205228

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 006205228-01 | OBS | 1882.01 | 3.770591 | 133.390759 | 302.6 | 2.142 | 30.7 | 35.2 | 1.21 | 5714 | 2.51 | 619.66 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 006205228-01 | OBS | PC | 1.00 | 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.

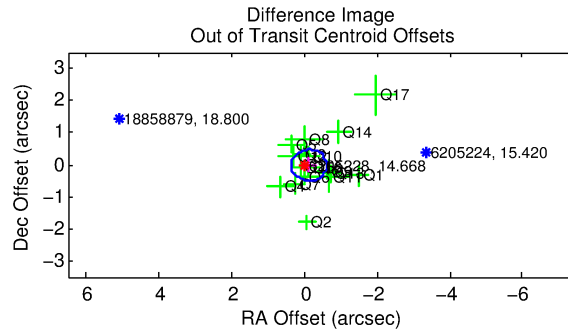
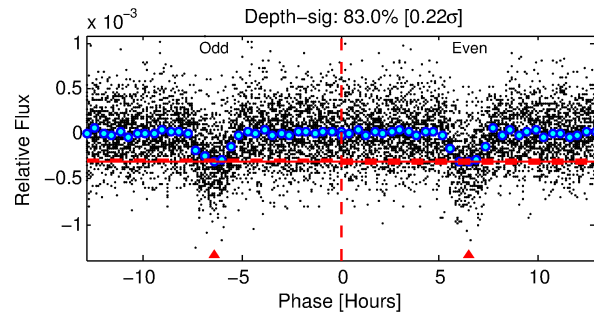
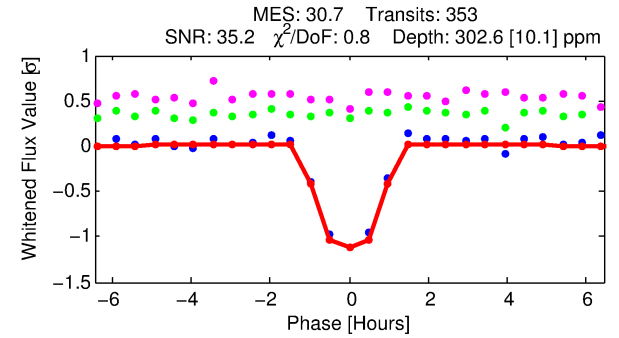
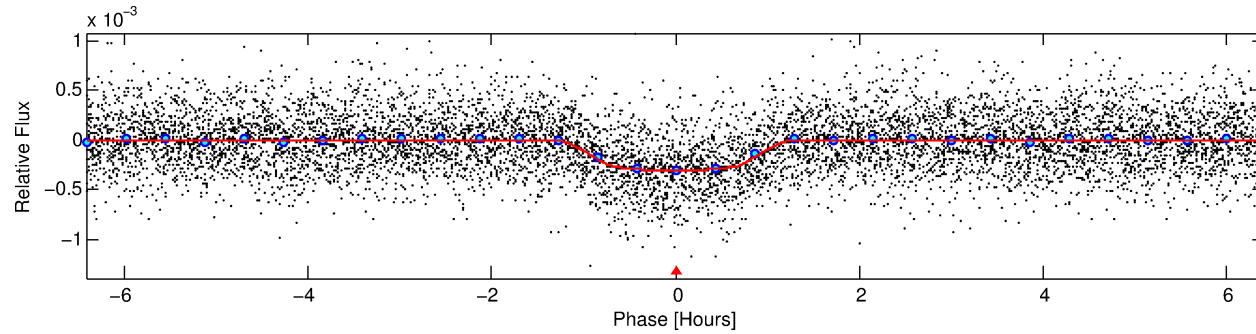
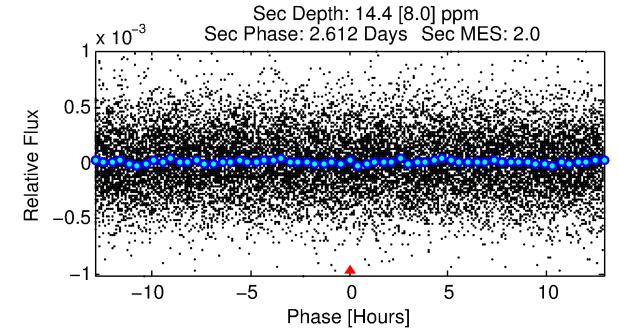
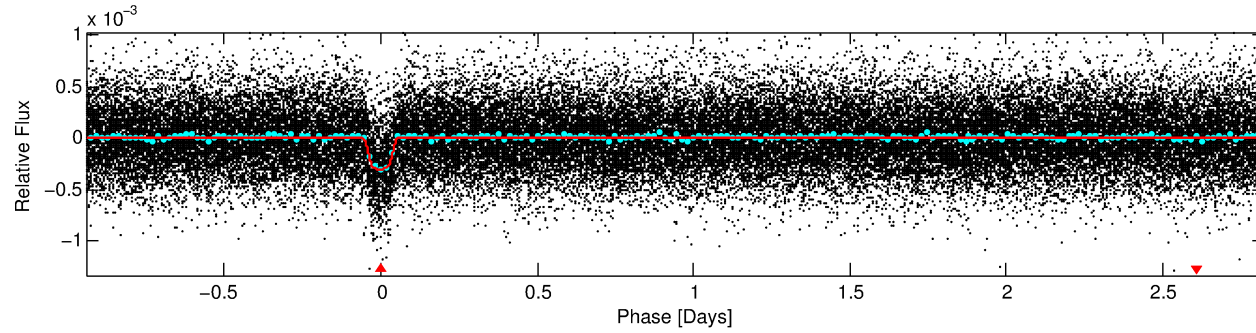
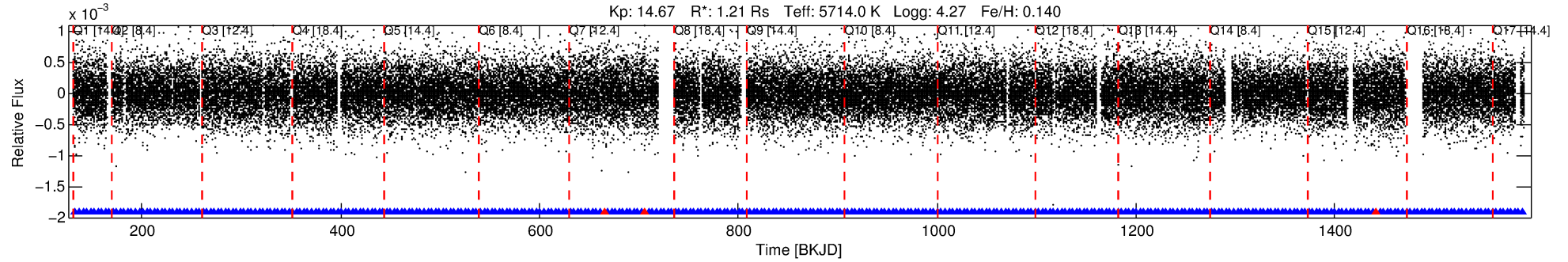
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006205228-01

No Significant Match Found

DV One-Page Summary

KIC: 6205228 Candidate: 1 of 1 Period: 3.771 d
KOI: K01882.01 Corr: 0.972



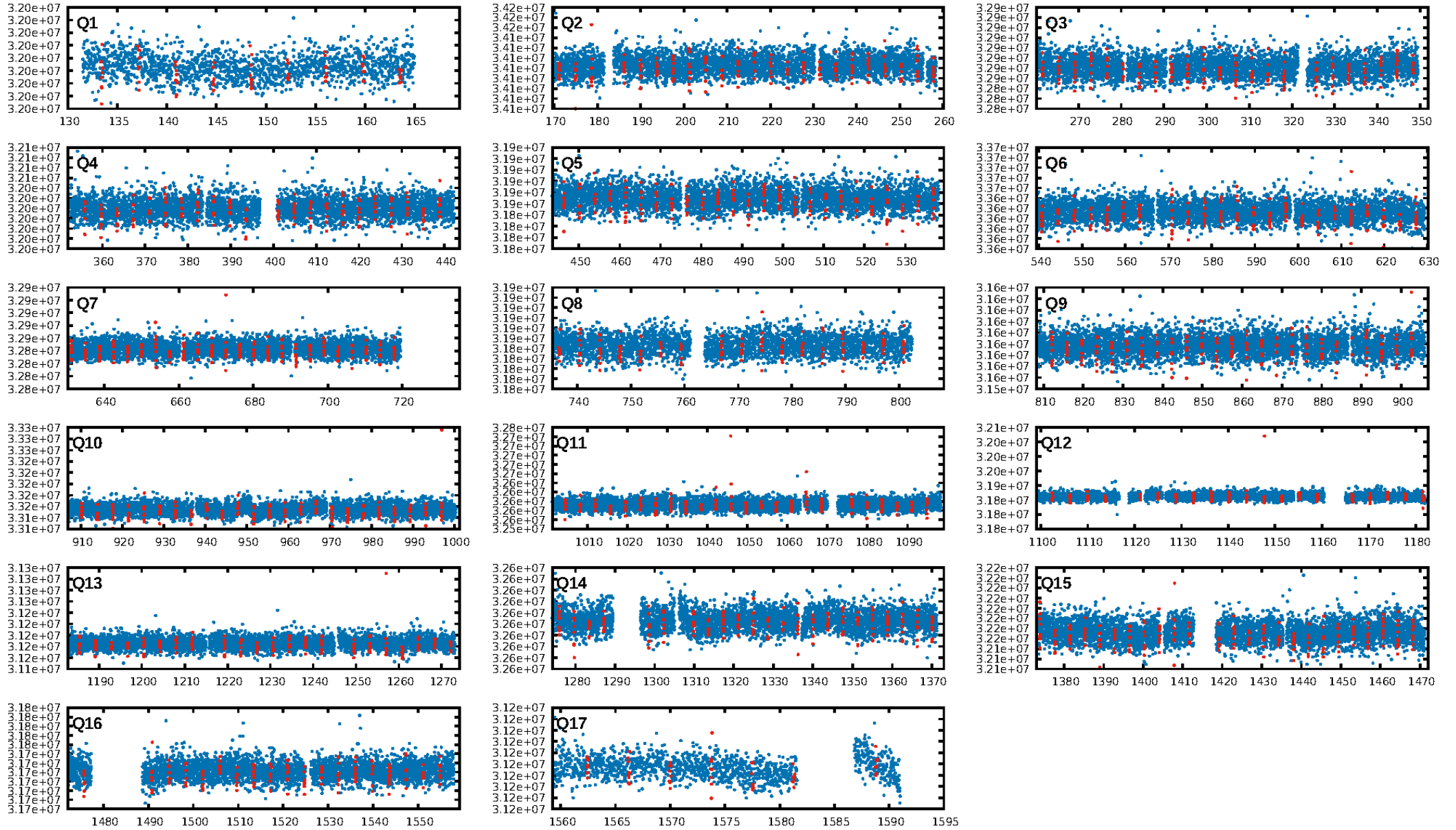
DV Fit Results:

Period = 3.77059 [0.00001] d
Epoch = 133.3908 [0.0011] BKJD
Rp/R* = 0.0190 [0.0037]
a/R* = 6.52 [5.70]
b = 0.90 [0.20]
Seff = 619.66 [165.80]
Teff = 1272 [85] K
Rp = 2.51 [0.63] Re
a = 0.0474 [0.0076] AU
Ag = 2.83 [2.05] [0.89σ]
Teffp = 2550 [433] K [2.90σ]

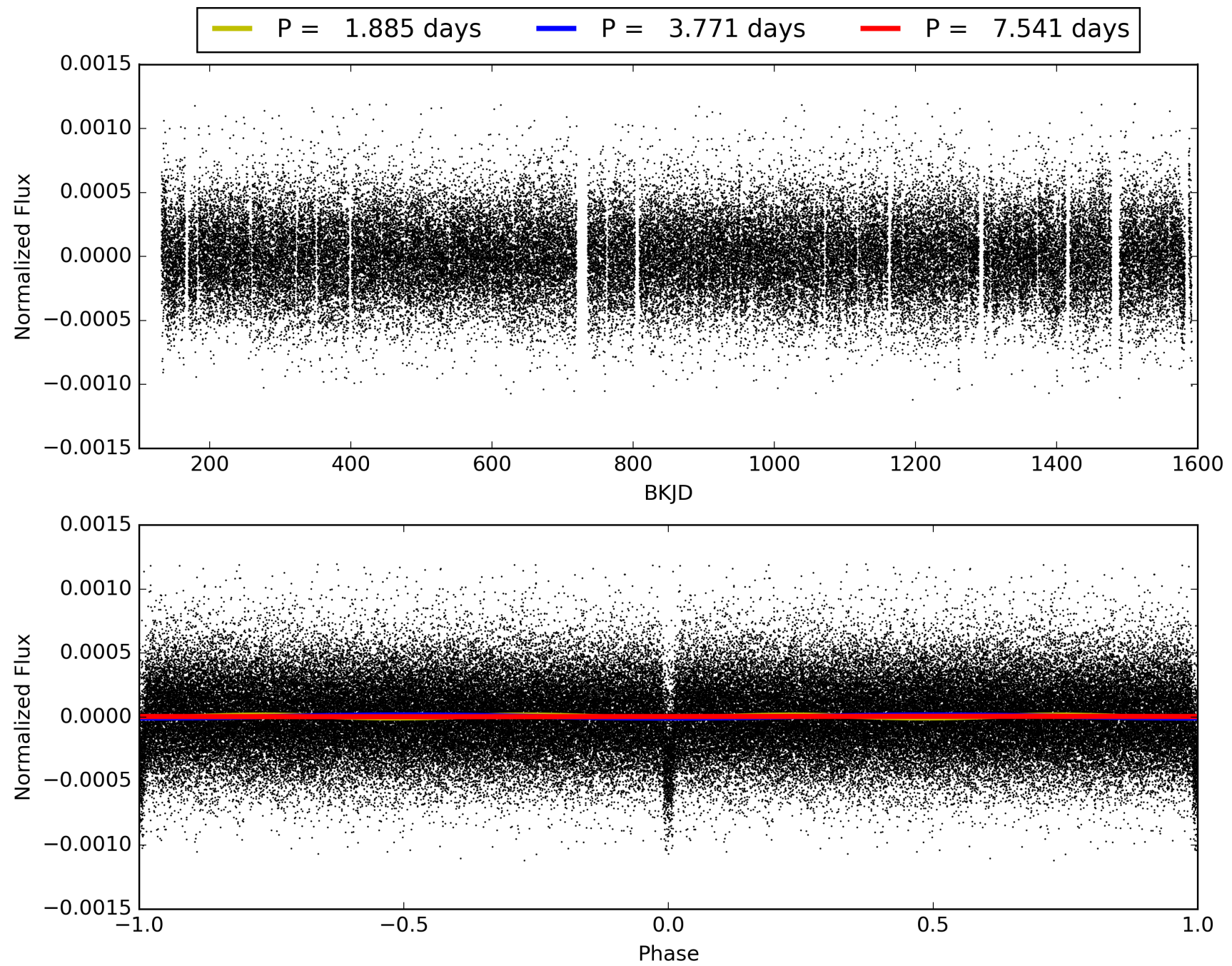
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.90e-203
RollingBand-fgt: 0.99 [334/337]
GhostDiagnostic-chr: 4.049
Centroid-sig: 3.2%
Centroid-so: 0.600 arcsec [1.70σ]
OotOffset-rm: 0.133 arcsec [0.82σ]
KicOffset-rm: 0.173 arcsec [0.98σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 006205228-01, PDC Light Curves

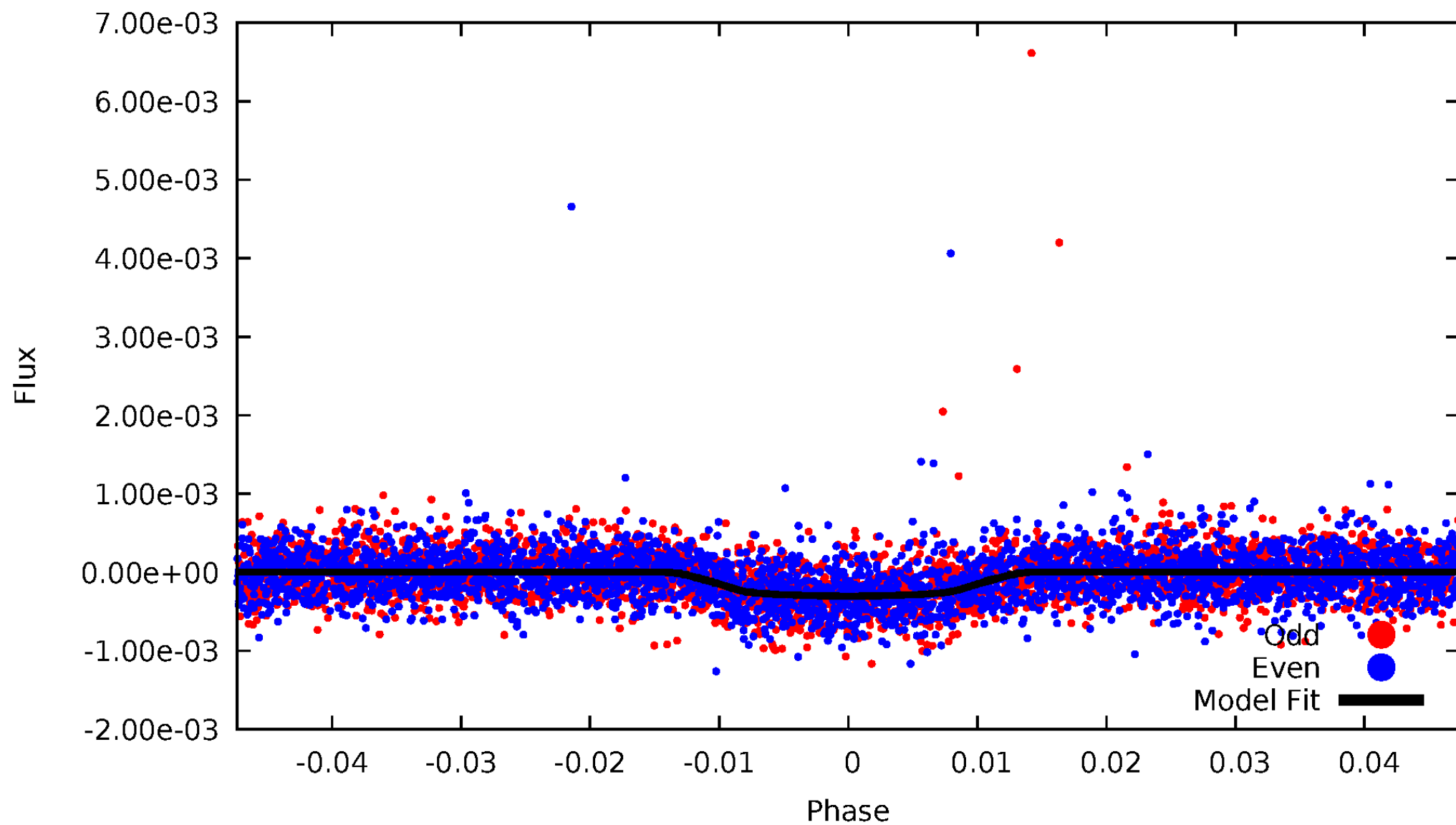


TCE 006205228-01



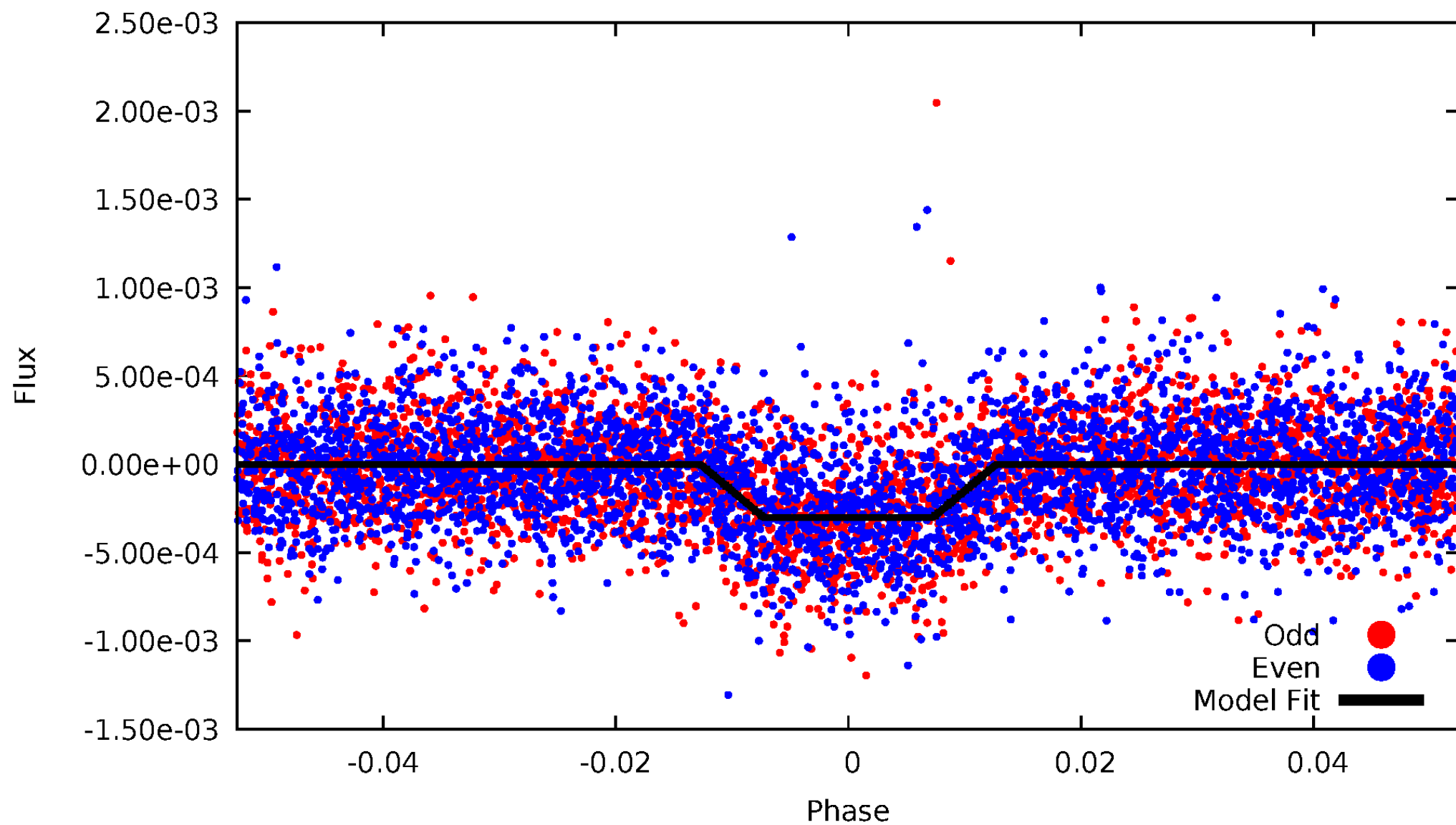
DV Odd/Even

TCE 006205228-01

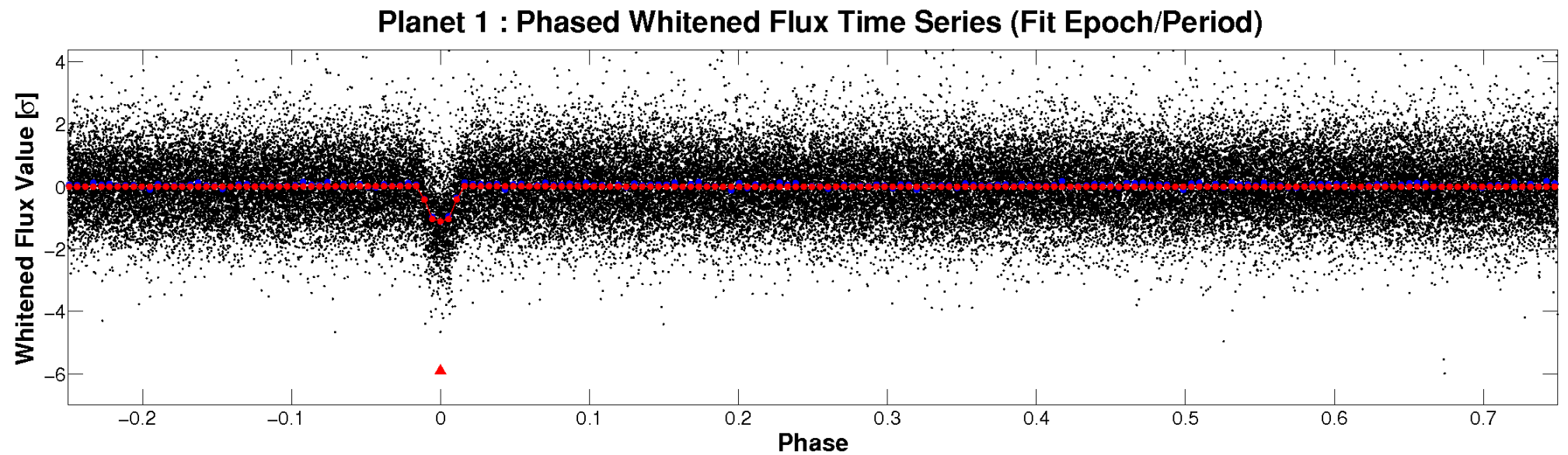
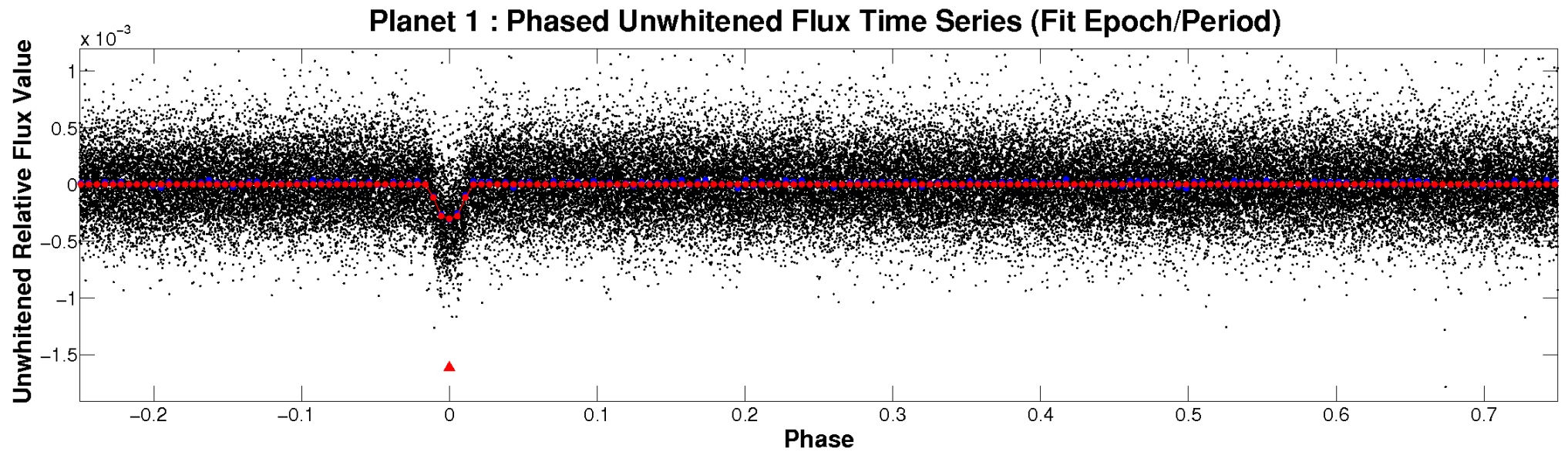


ALT Odd/Even

TCE 006205228-01

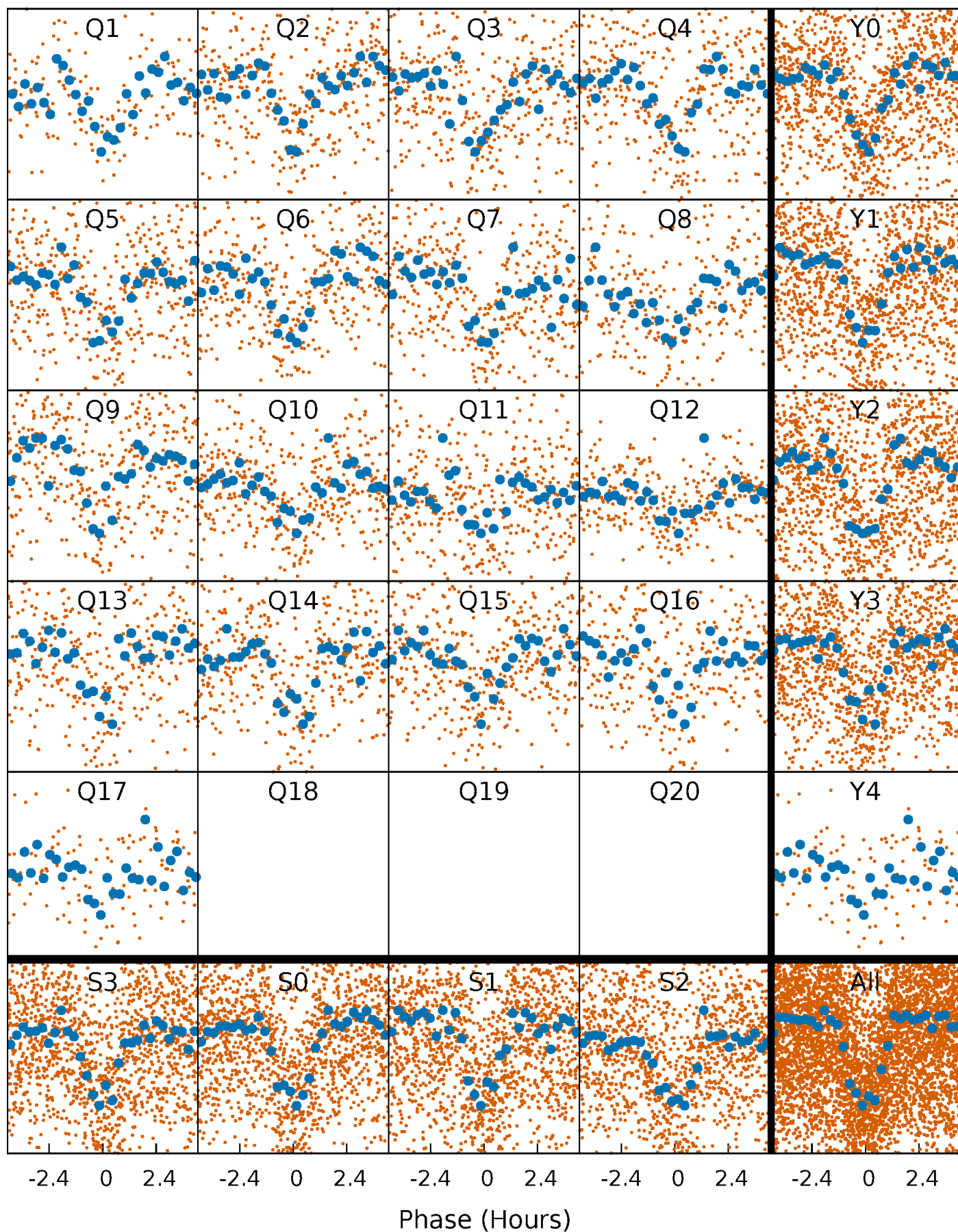


Non-Whitened Vs. Whitened Light Curve



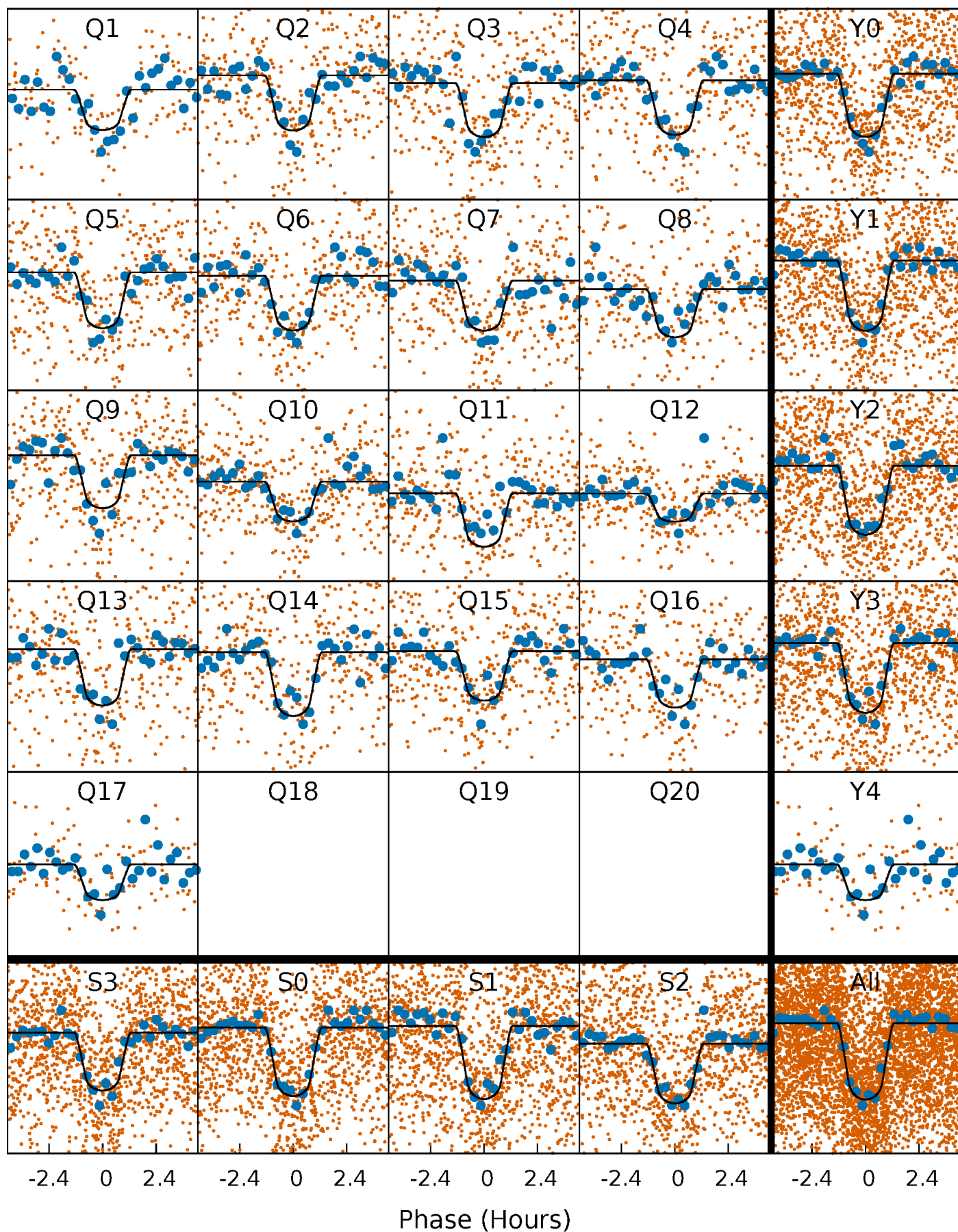
PDC Quarter-Phased Transit Curves

TCE 006205228-01 P= 3.770591 Days $T_0=133.390759$ (BKJD)



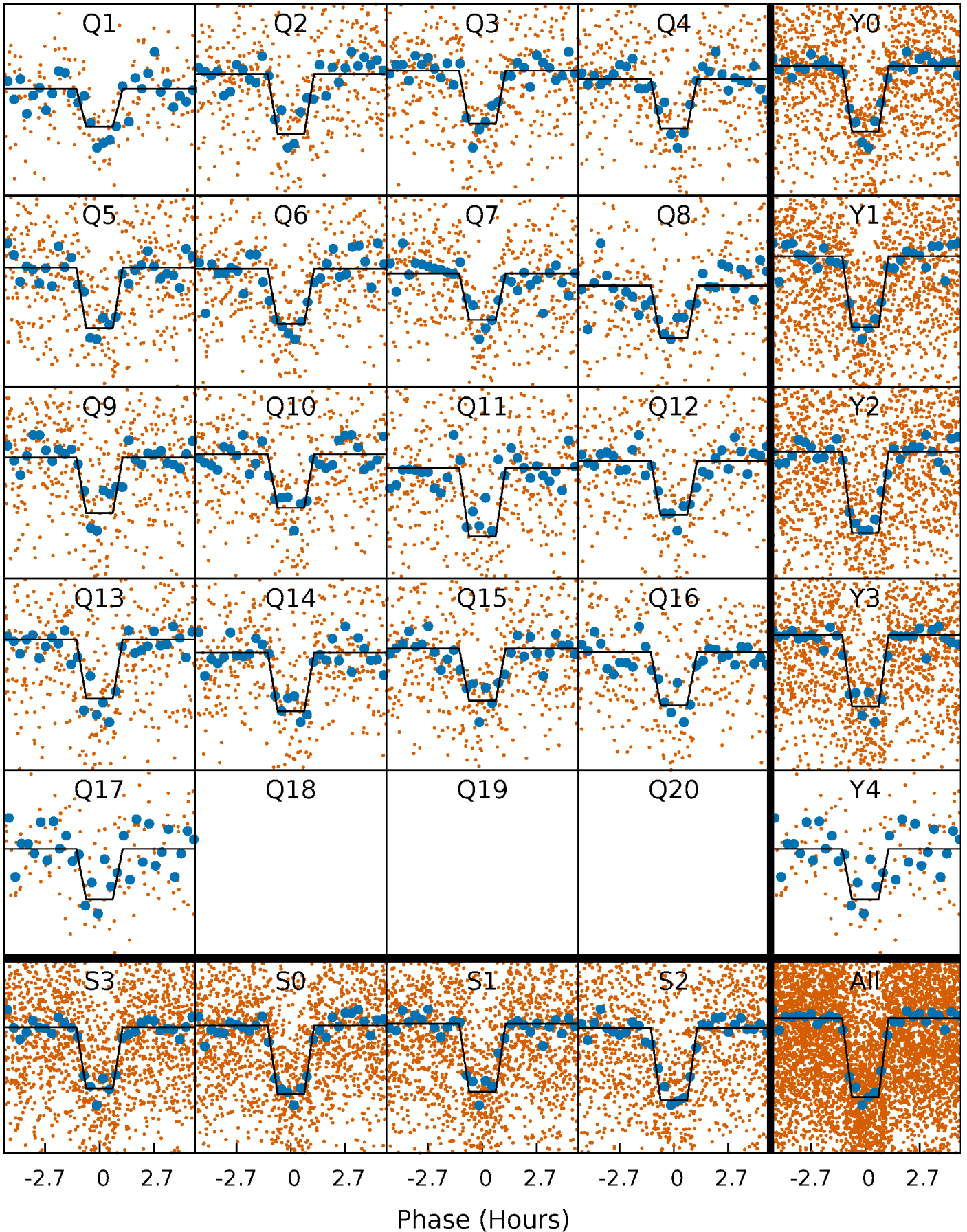
DV Quarter-Phased Transit Curves

TCE 006205228-01 P= 3.770591 Days $T_0=133.390759$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

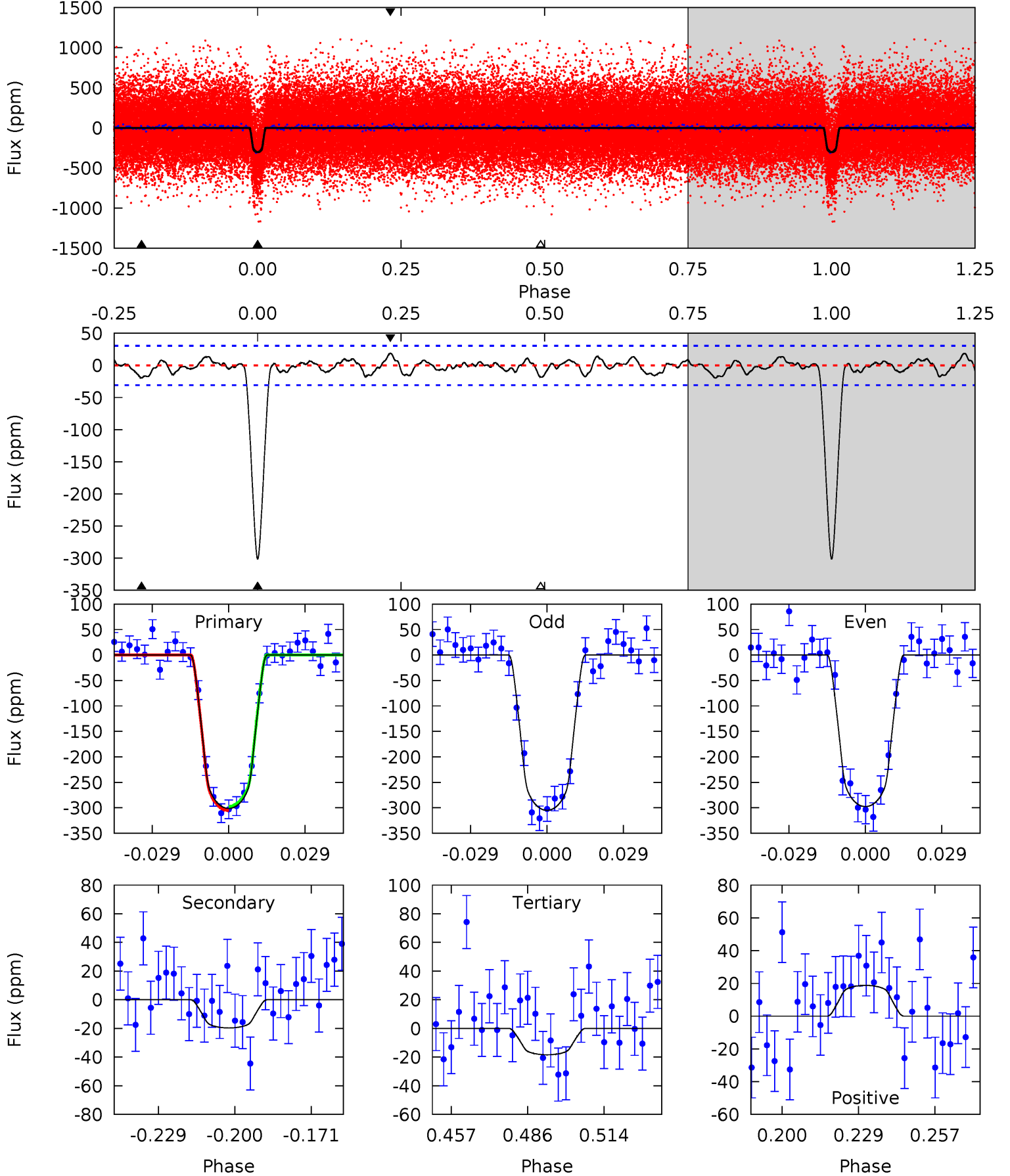
TCE 006205228-01 P= 3.770583 Days $T_0=133.391909$ (BKJD)



DV Model-Shift Uniqueness Test

006205228-01, P = 3.770591 Days, E = 129.620168 Days

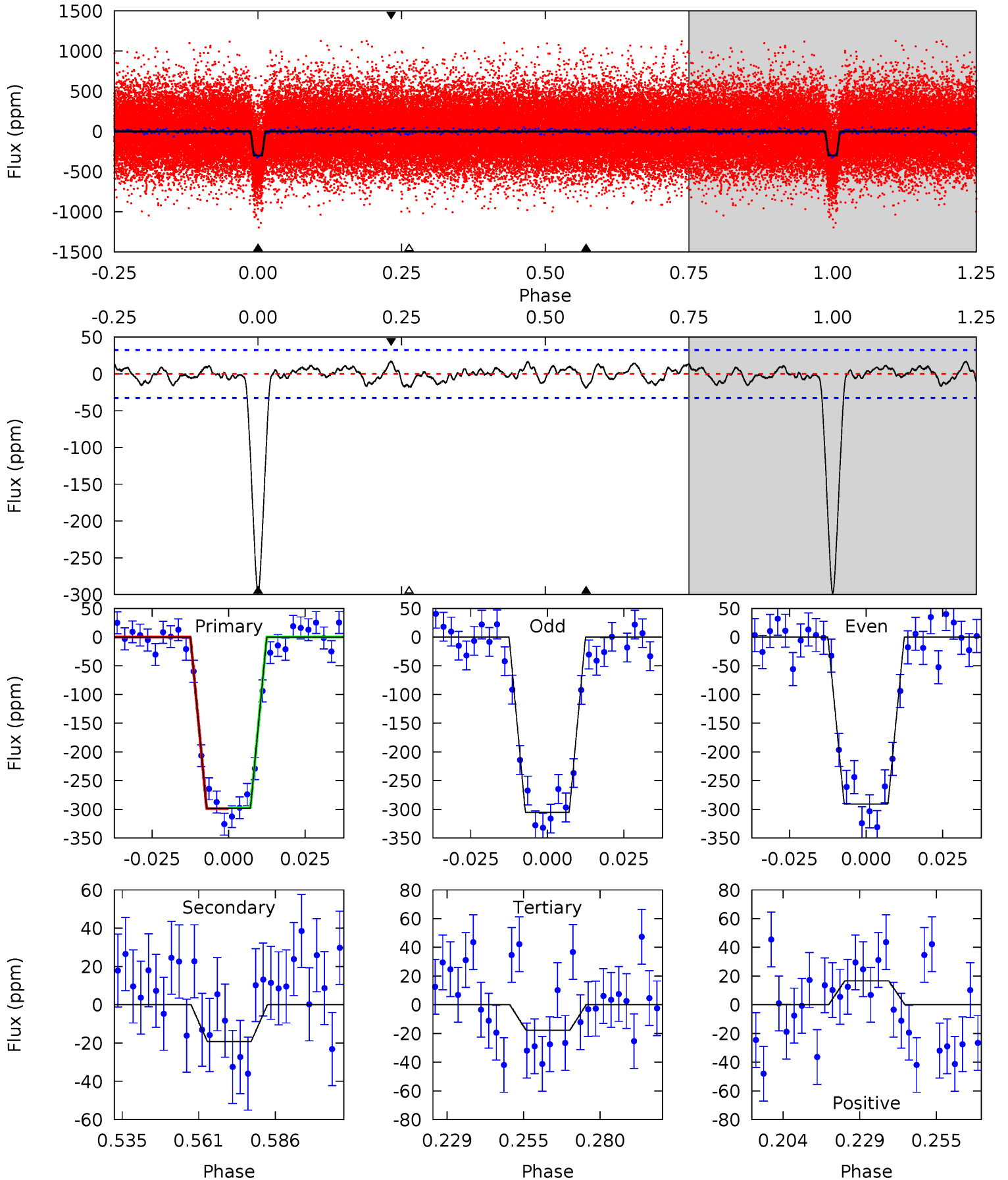
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 47.4 | 3.10 | 2.90 | 2.96 | 4.82 | 2.19 | 1.17 | 44.5 | 44.5 | 0.20 | 0.14 | 0.58 | 0.95 | 0.06 | 0.60 |



Alt Model-Shift Uniqueness Test

006205228-01, P = 3.770583 Days, E = 129.621326 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 44.3 | 2.85 | 2.63 | 2.48 | 4.84 | 2.23 | 1.10 | 41.6 | 41.8 | 0.21 | 0.37 | 1.10 | 1.01 | 0.05 | 0.11 |



Stellar Parameters For KIC 006205228

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|---------------------------|---------------------------|---------------------------|---------------------------|-------------------------------------------|
| | 5714^{+77}_{-77} | $4.274^{+0.156}_{-0.104}$ | $0.140^{+0.150}_{-0.150}$ | $1.208^{+0.193}_{-0.193}$ | $0.999^{+0.077}_{-0.058}$ | $0.799^{+0.520}_{-0.271}$ |
| | +1%/-1% | +4%/-2% | +107%/-107% | +16%/-16% | +8%/-6% | +65%/-34% |
| Source | SPE90 | SPE90 | SPE90 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 006205228-01 / KOI 1882.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|----------------------|---------------------------|
| DV | -20 ± 6 | $2.49^{+0.55}_{-0.48}$ | 1768^{+80}_{-84} | 3257^{+287}_{-265} | $3.924^{+2.685}_{-1.735}$ |
| Alt. | -19 ± 7 | $2.26^{+0.56}_{-0.54}$ | 1771^{+75}_{-78} | 3357^{+351}_{-299} | $4.669^{+3.690}_{-2.077}$ |

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

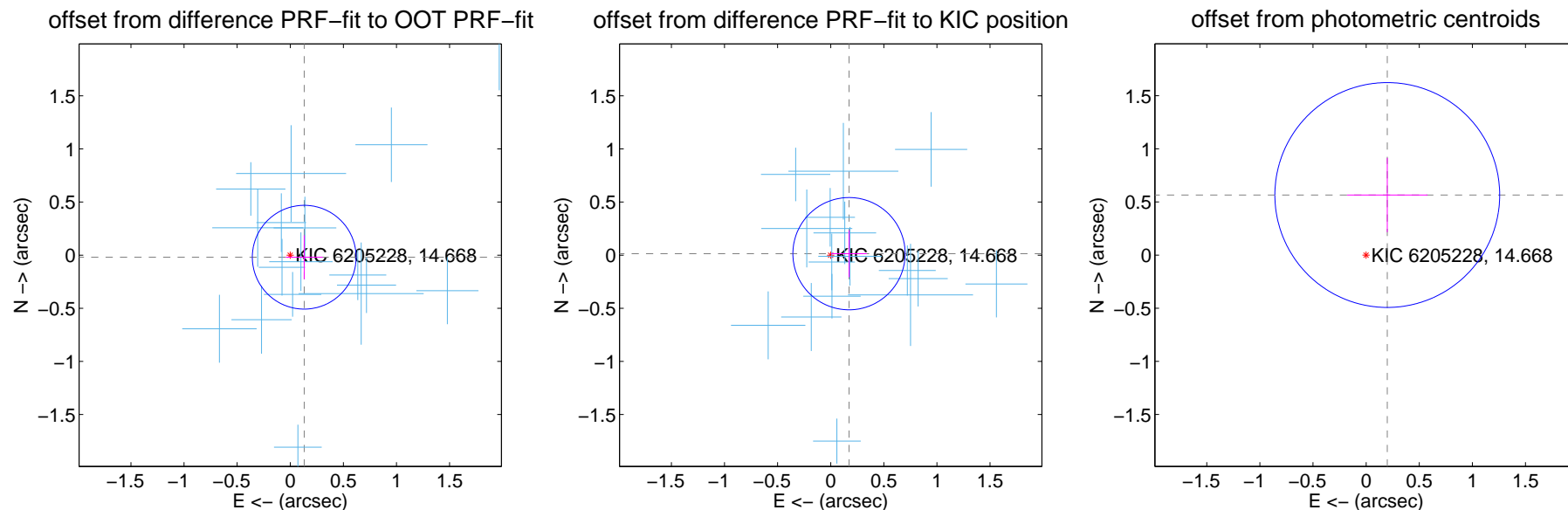
DV Centroid Data

Supplemental centroid analysis for 006205228-01. Kepler magnitude: 14.67. Transit SNR 35.24

There are 17 quarters with good PRF difference image offsets

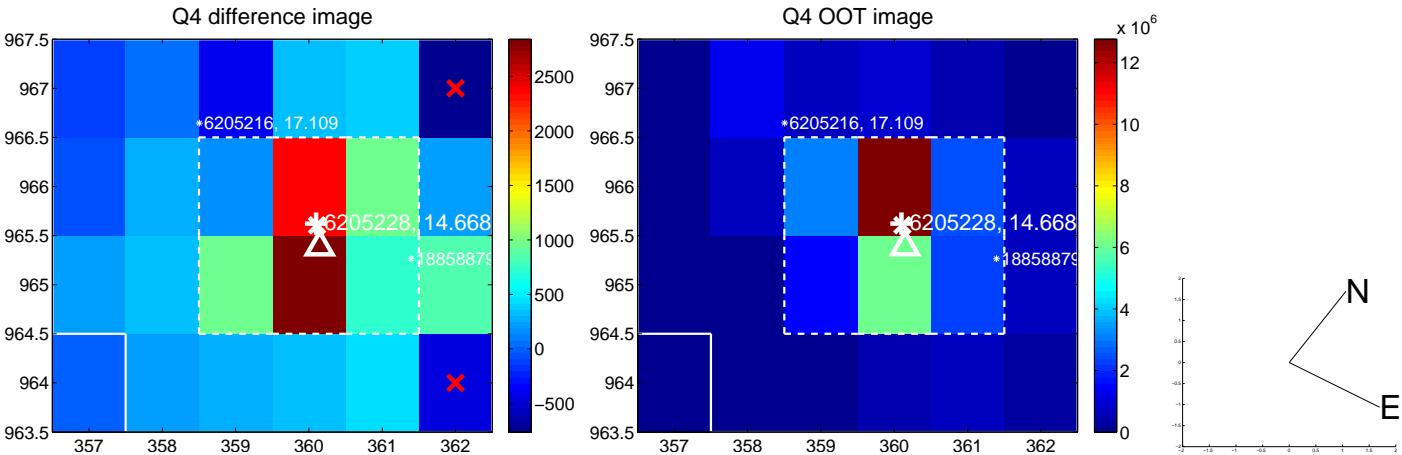
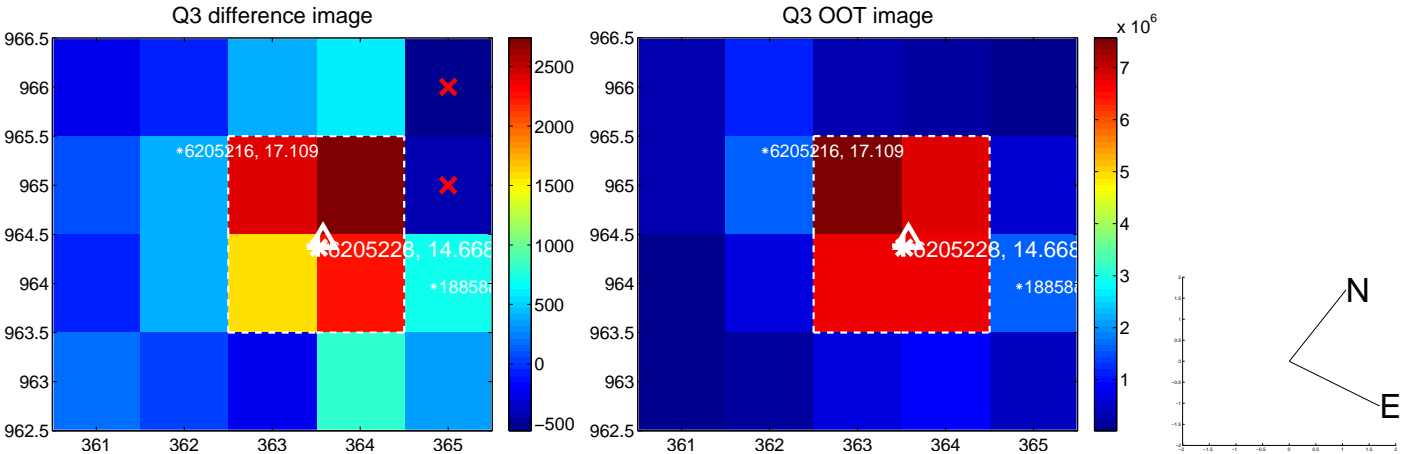
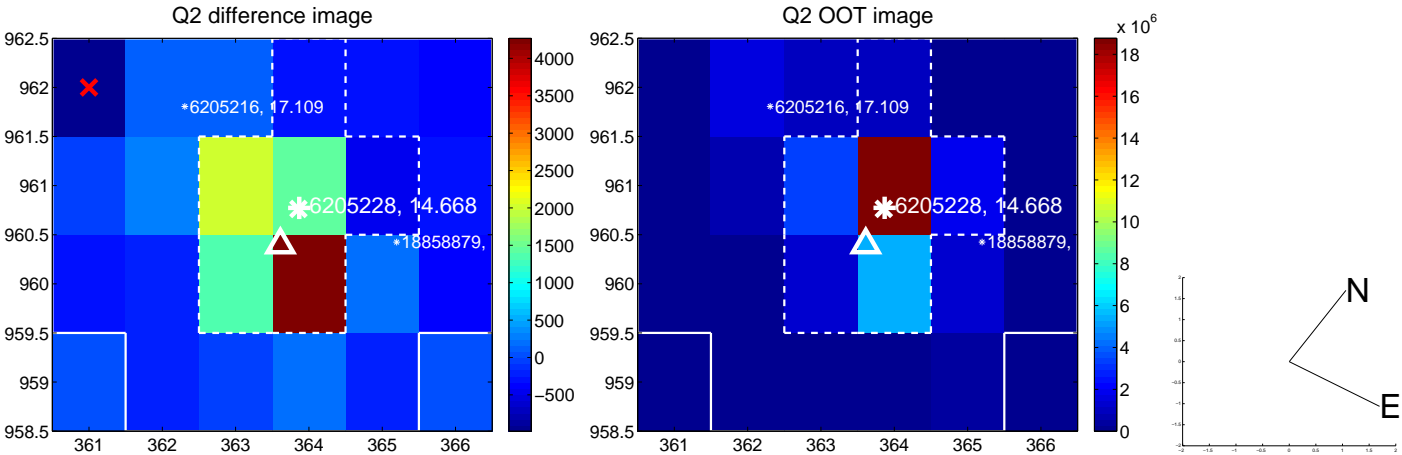
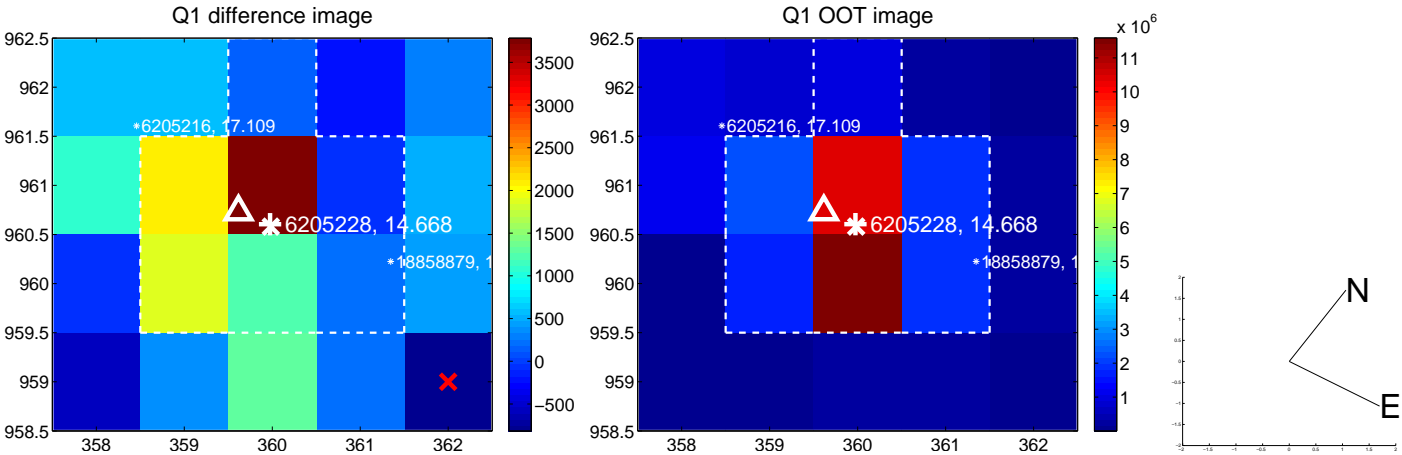
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|-----------------------------------------|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.133 ± 0.163 | 0.82 | -0.131 ± 0.175 | -0.019 ± 0.207 |
| PRF-fit source offset from KIC position | 0.173 ± 0.176 | 0.98 | -0.172 ± 0.168 | 0.014 ± 0.220 |
| photometric centroid source offset | 0.60 ± 0.35 | 1.70 | -0.20 ± 0.38 | 0.57 ± 0.35 |

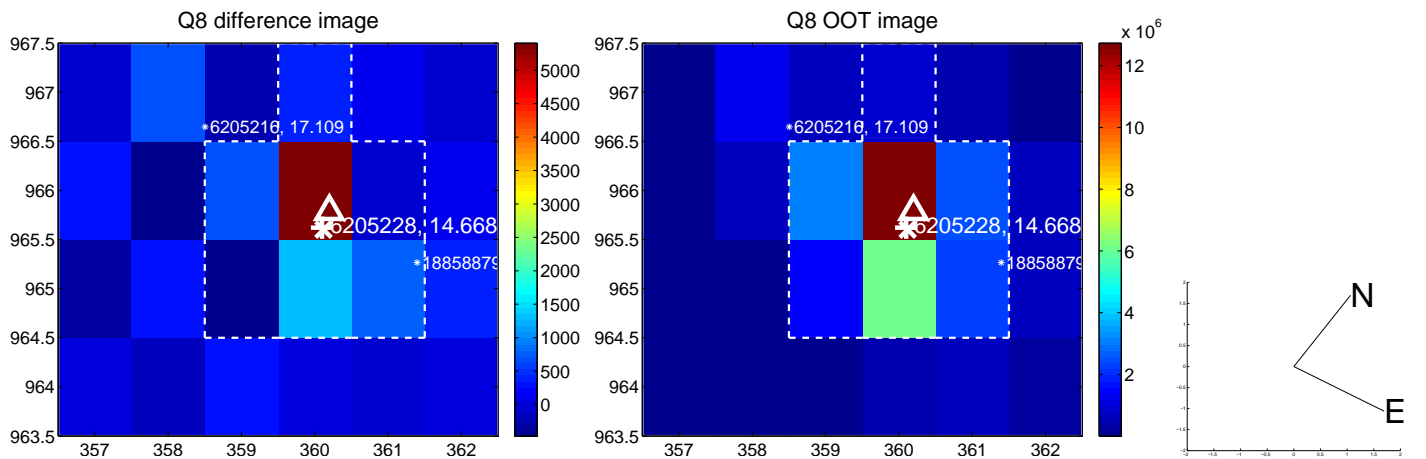
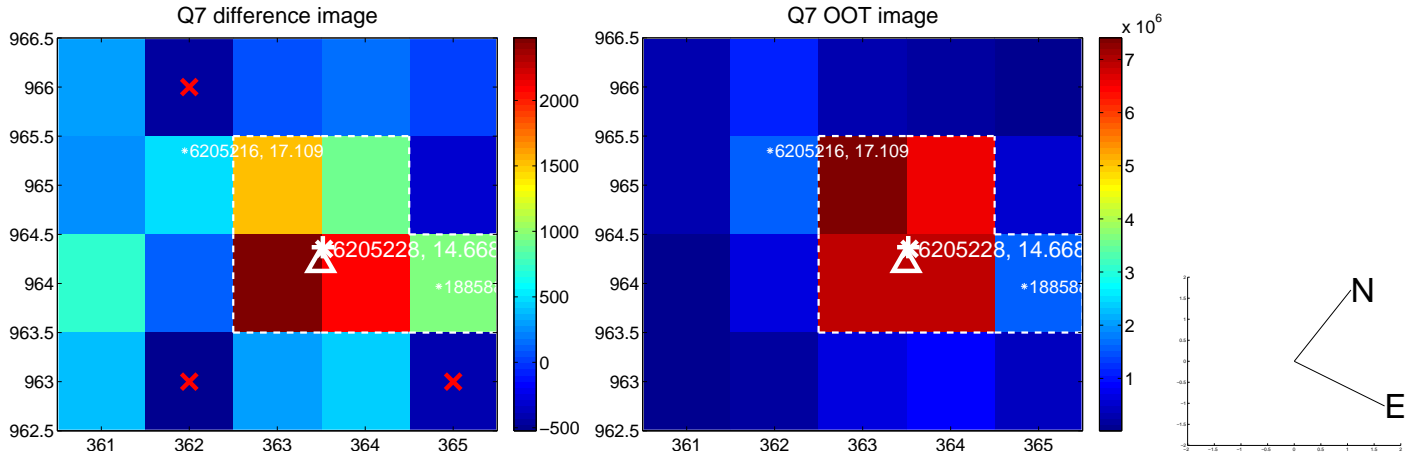
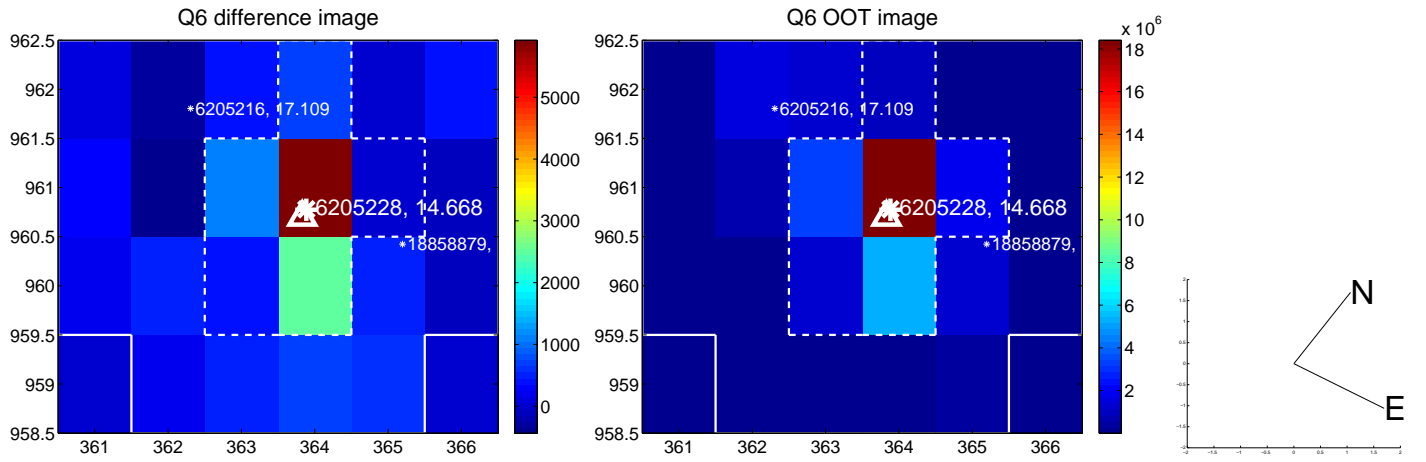
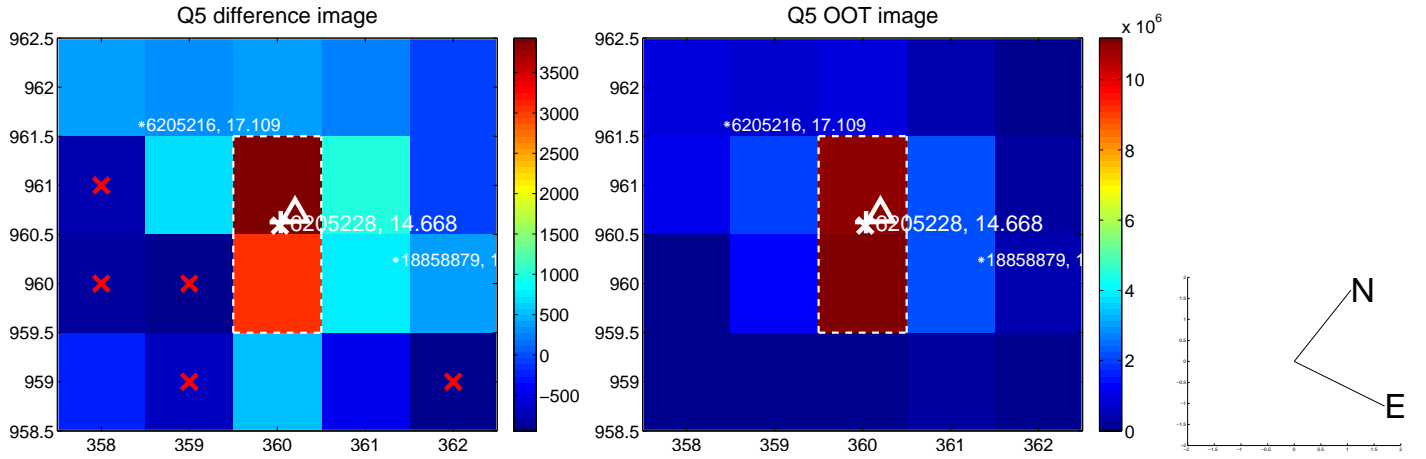


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

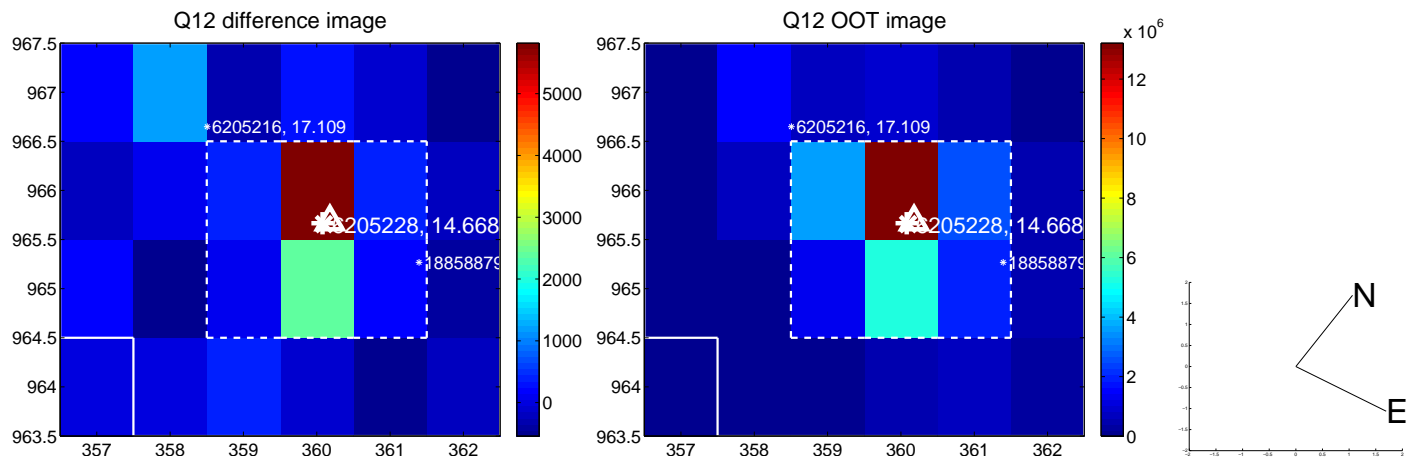
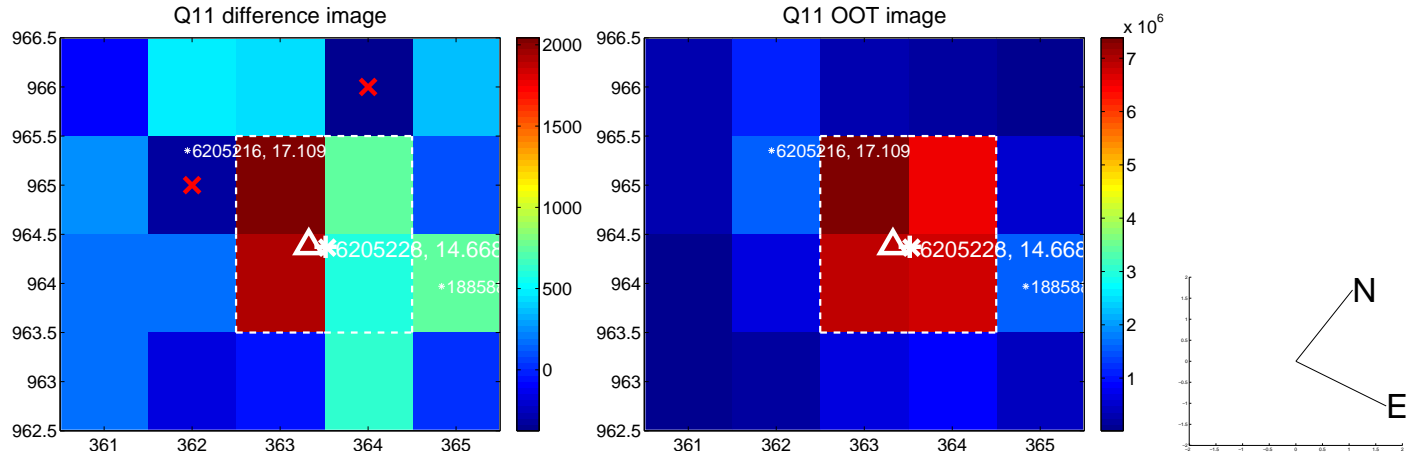
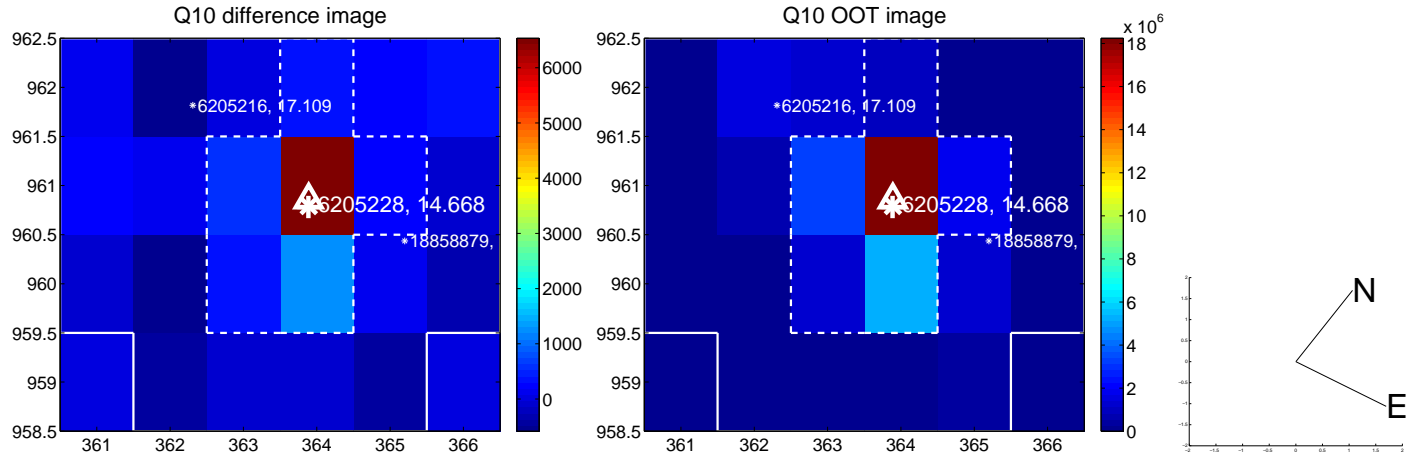
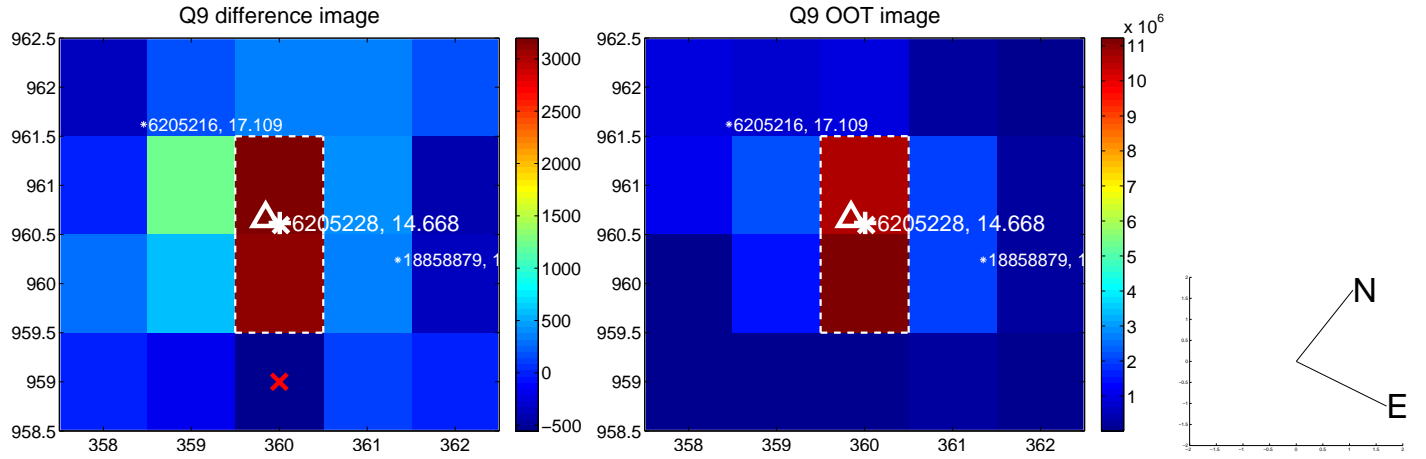
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



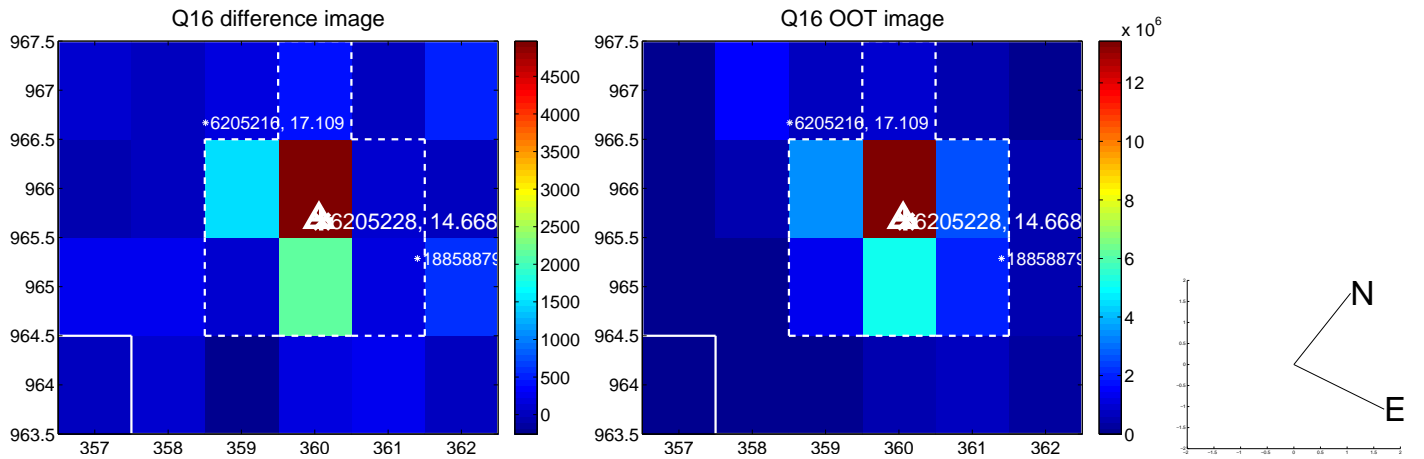
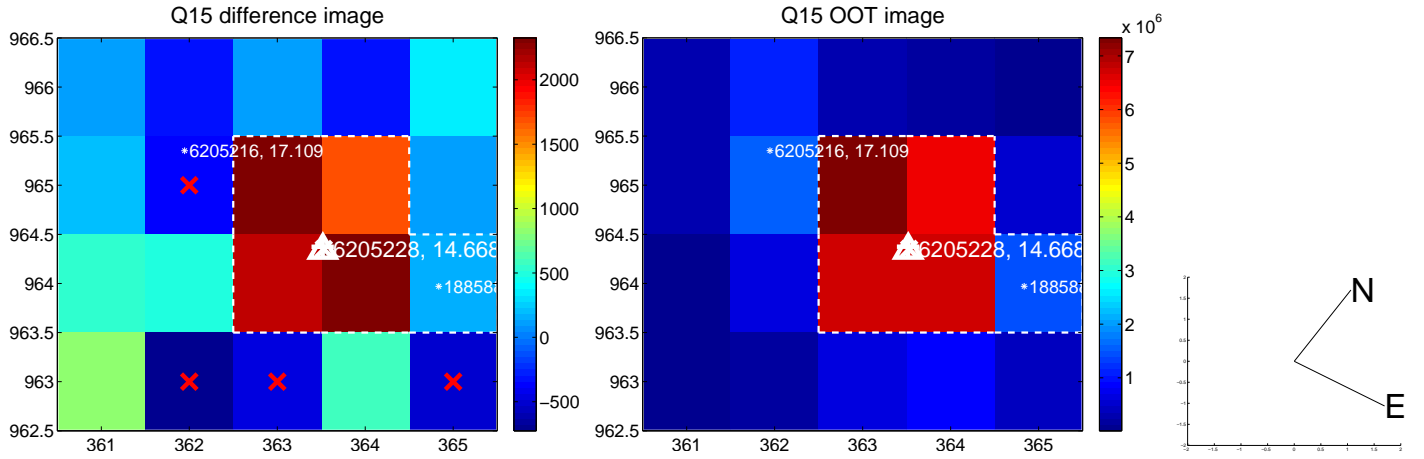
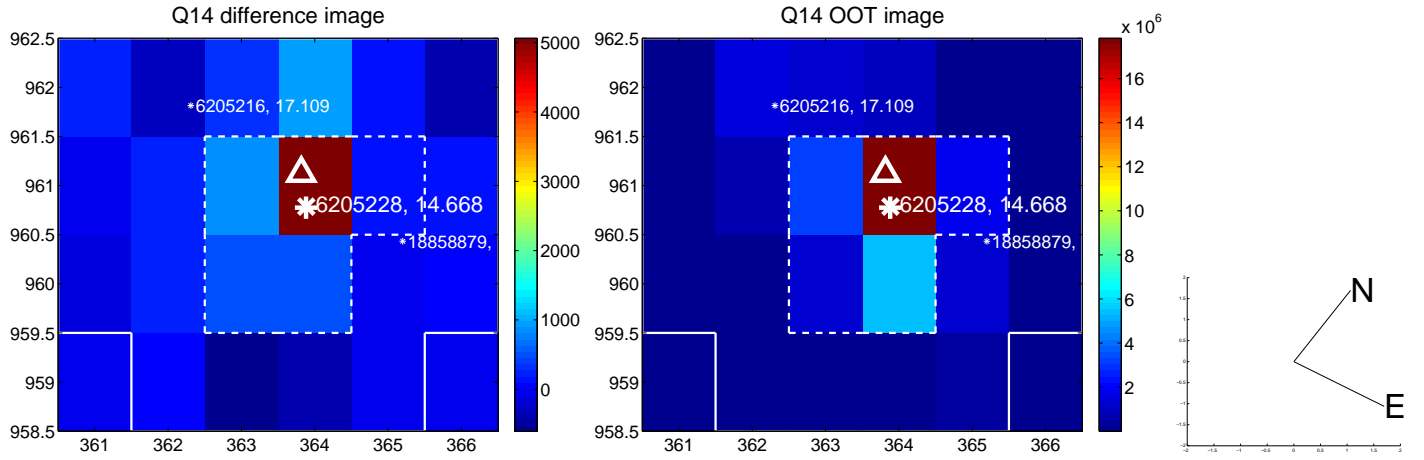
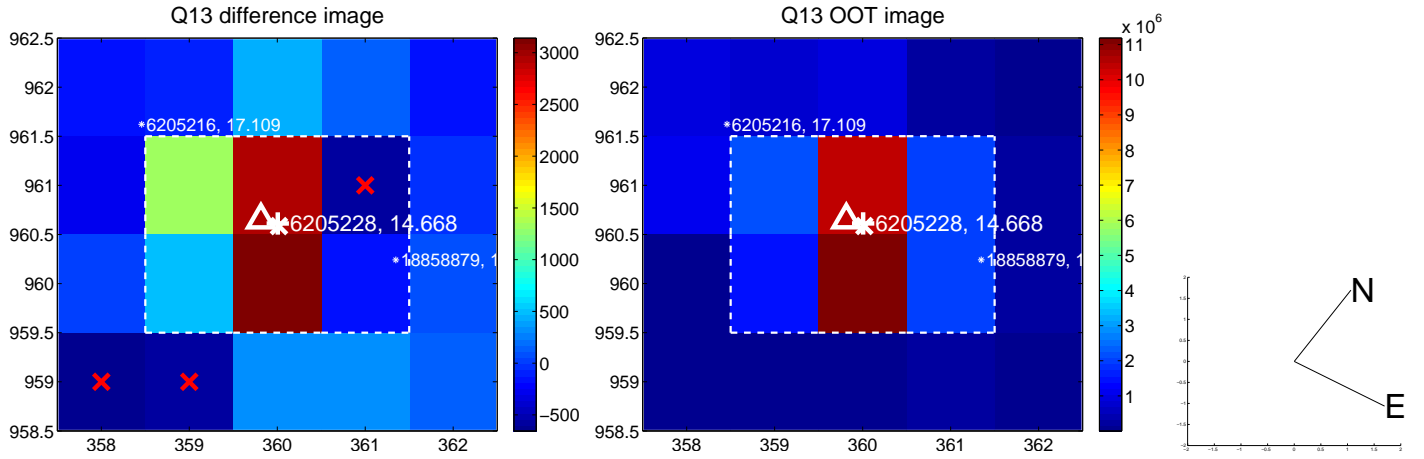
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



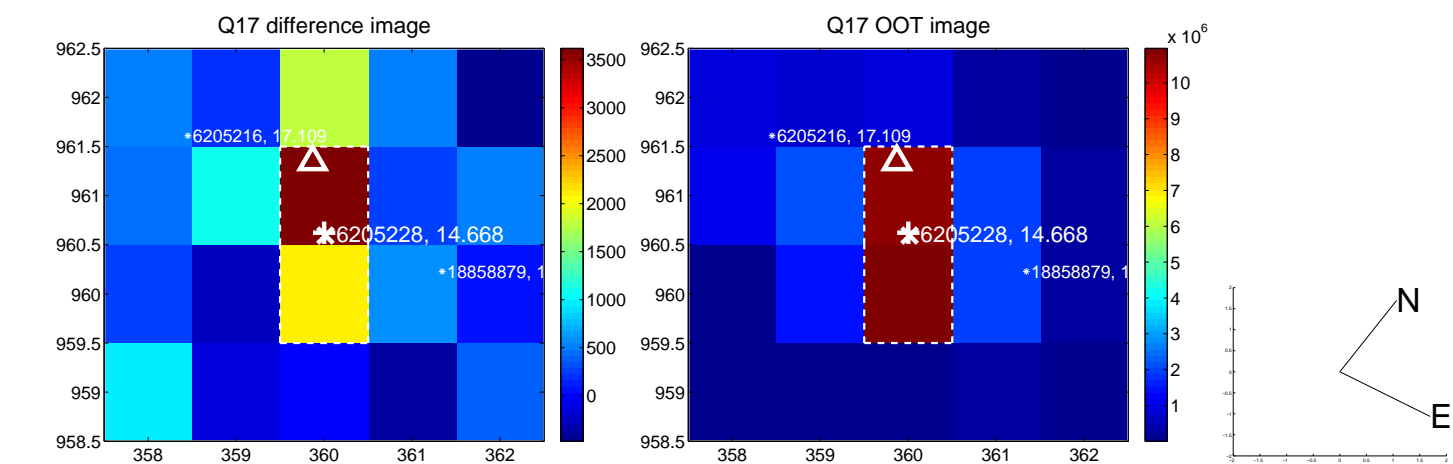
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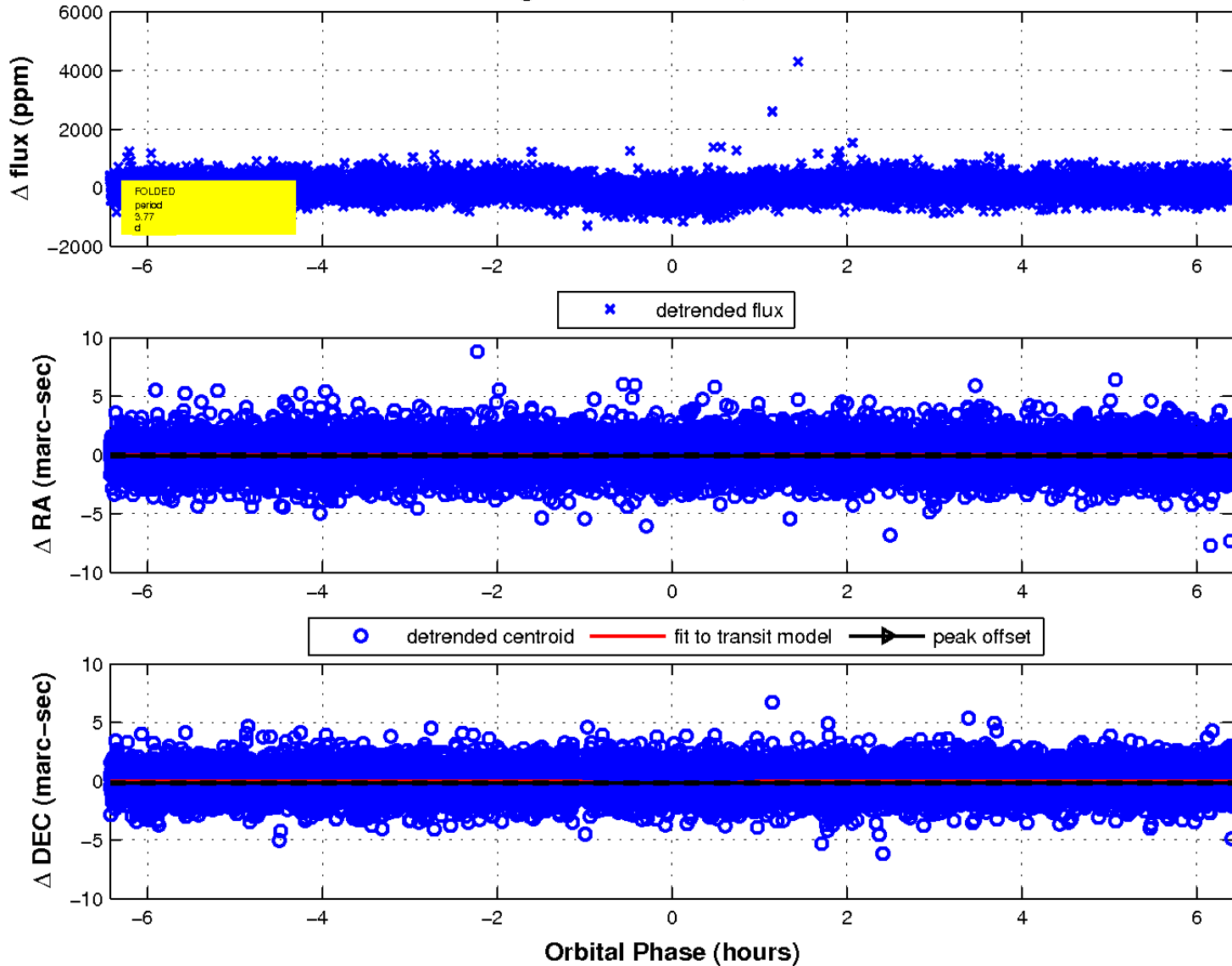
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

