

KIC 005546691

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 005546691-01 | OBS | 2587.01 | 12.945995 | 139.420814 | 154.4 | 9.781 | 13.3 | 12.8 | 0.87 | 6058 | 1.24 | 80.55 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 005546691-01 | 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.

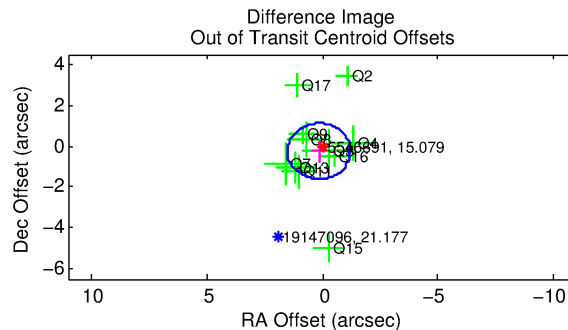
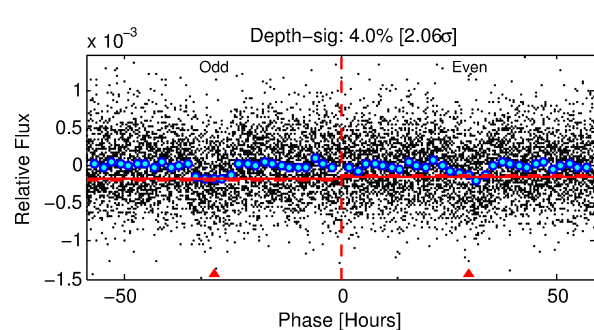
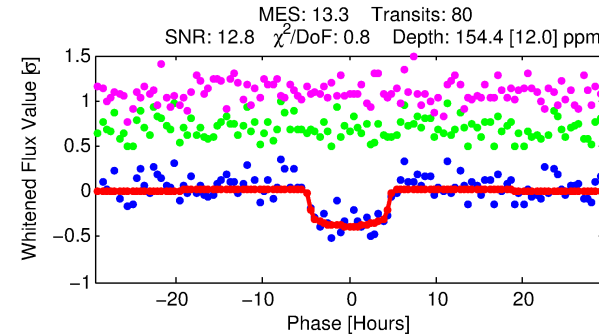
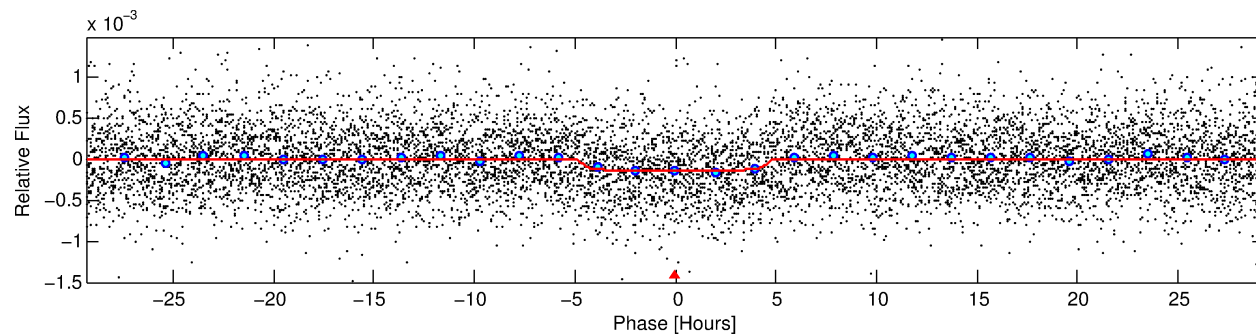
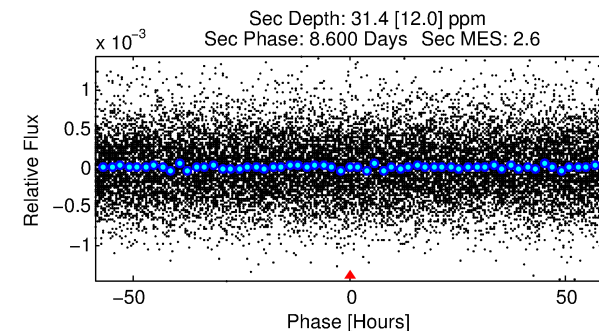
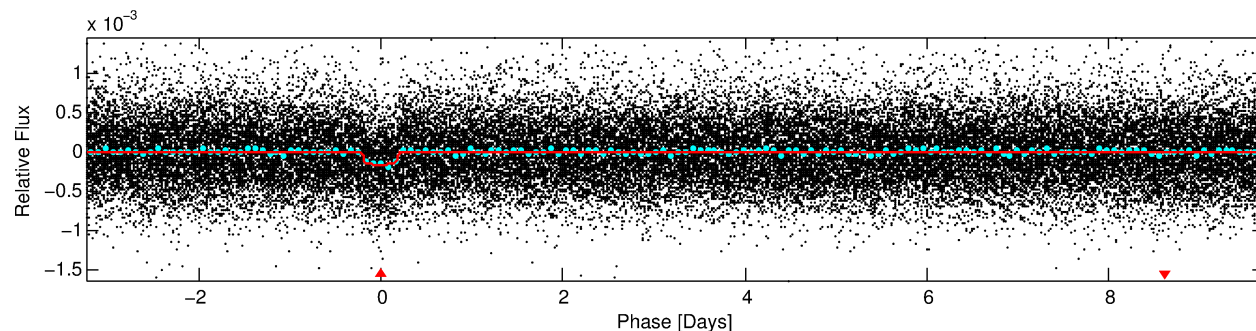
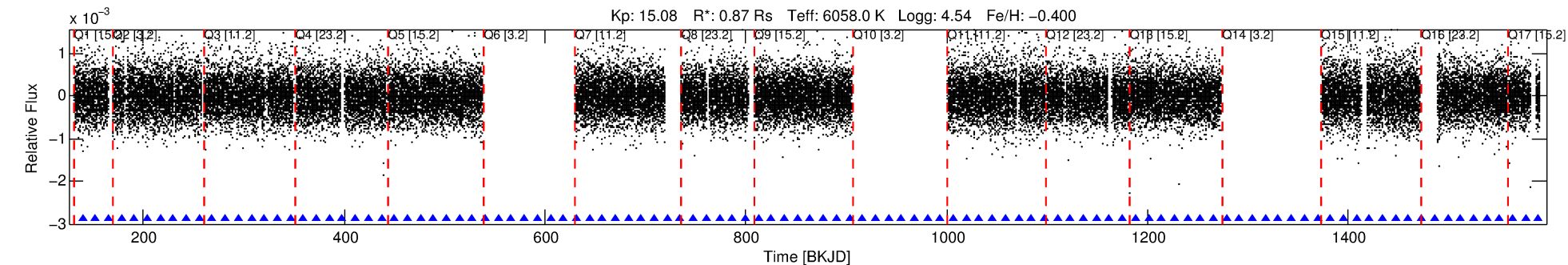
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005546691-01

No Significant Match Found

DV One-Page Summary

KIC: 5546691 Candidate: 1 of 1 Period: 12.946 d
KOI: K02587.01 Corr: 0.983



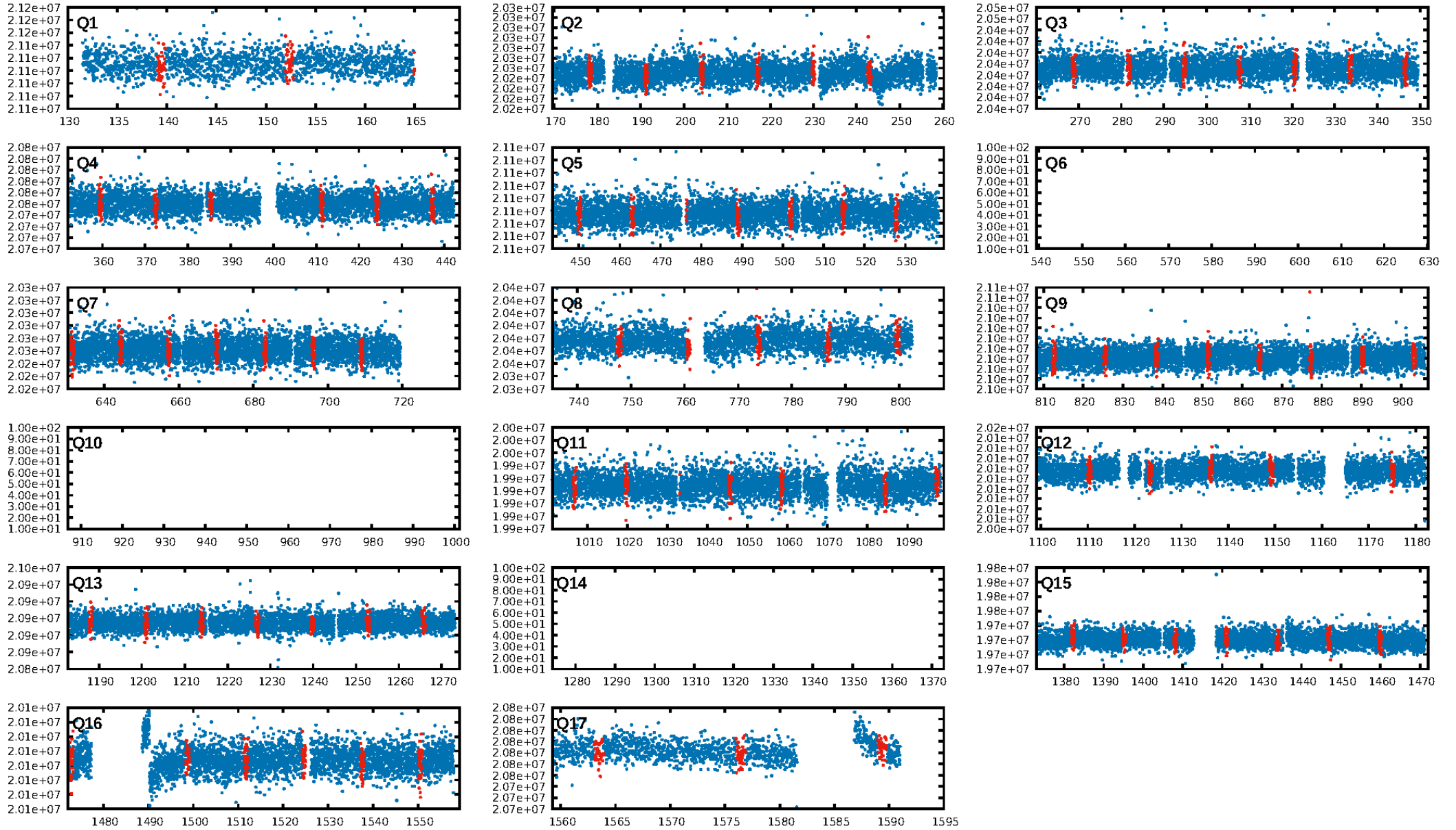
DV Fit Results:

Period = 12.94599 [0.00019] d
Epoch = 139.4208 [0.0121] BKJD
Rp/R* = 0.0131 [0.0024]
a/R* = 5.23 [4.85]
b = 0.88 [0.26]
Seff = 80.55 [28.51]
Teff = 764 [68] K
Rp = 1.24 [0.39] Re
a = 0.1061 [0.0234] AU
Ag = 126.32 [78.89] [1.59σ]
Teffp = 3960 [541] K [5.86σ]

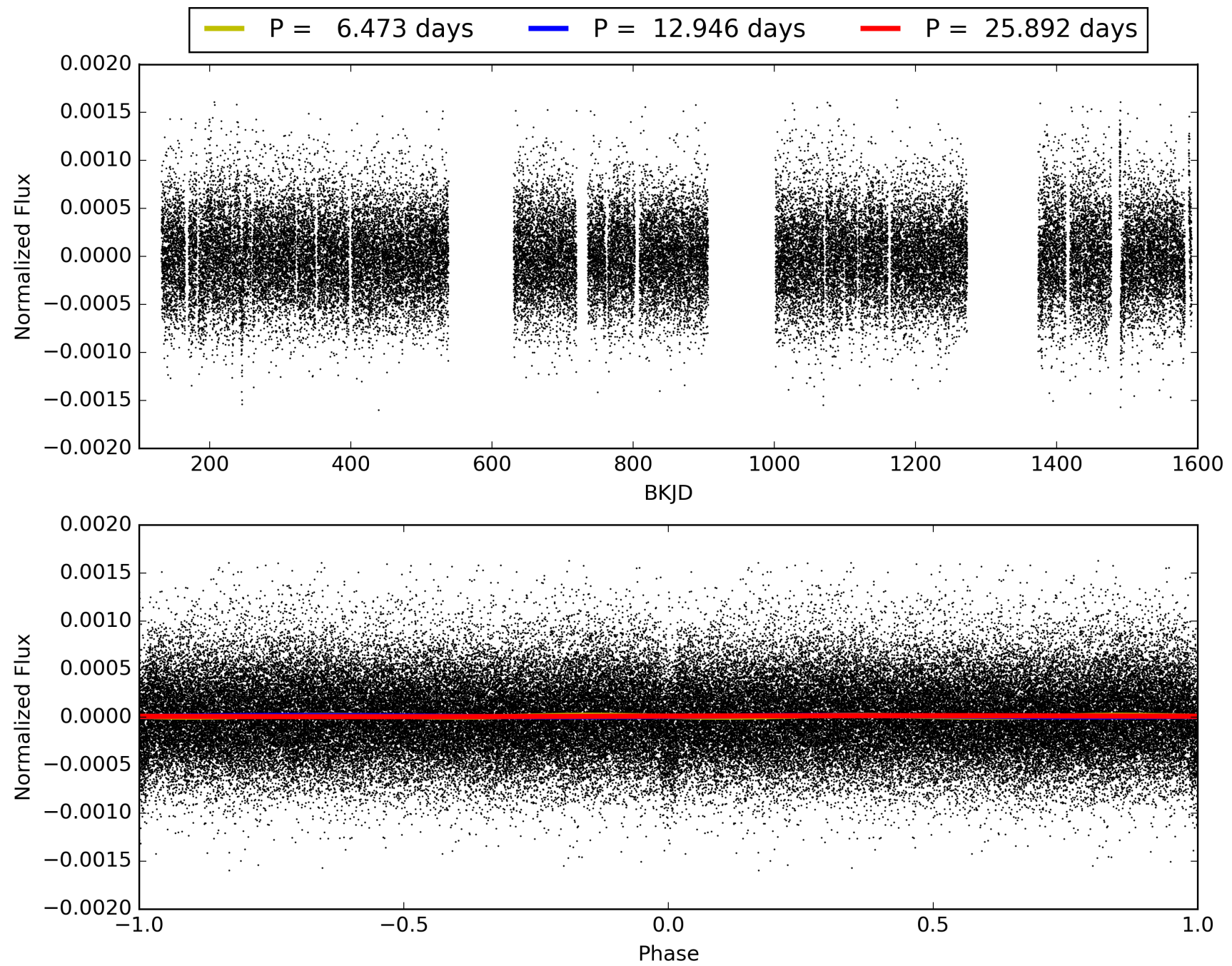
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.60e-38
RollingBand-fgt: 1.00 [75/75]
GhostDiagnostic-chr: 3.299
Centroid-sig: 81.0%
Centroid-so: 0.482 arcsec [0.43σ]
OotOffset-rm: 0.284 arcsec [0.62σ]
KicOffset-rm: 0.411 arcsec [0.79σ]
OotOffset-st: 1/4/3/4 [12]
KicOffset-st: 1/4/3/4 [12]
DiffImageQuality-fgm: 0.67 [8/12]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 005546691-01, PDC Light Curves

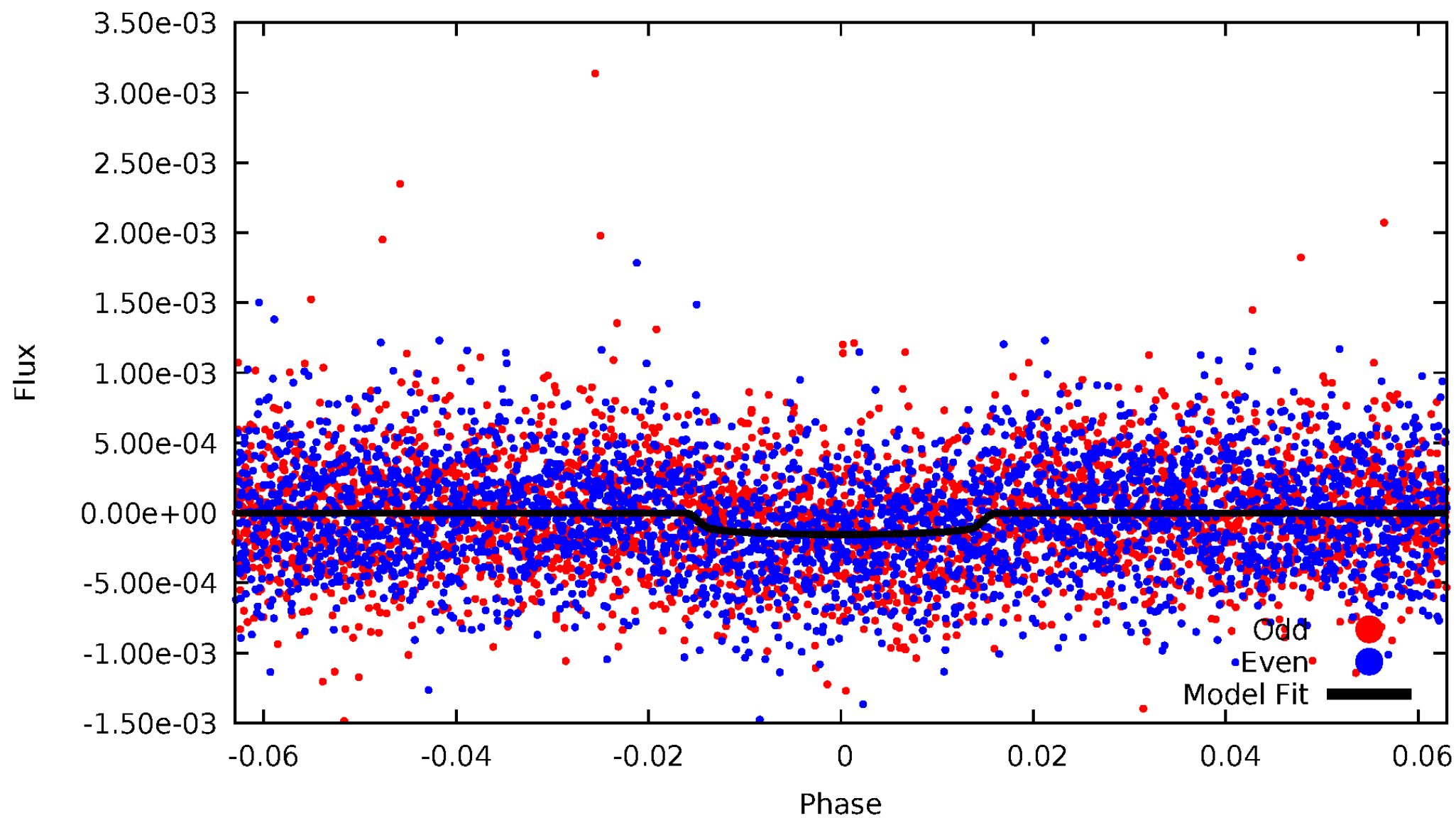


TCE 005546691-01



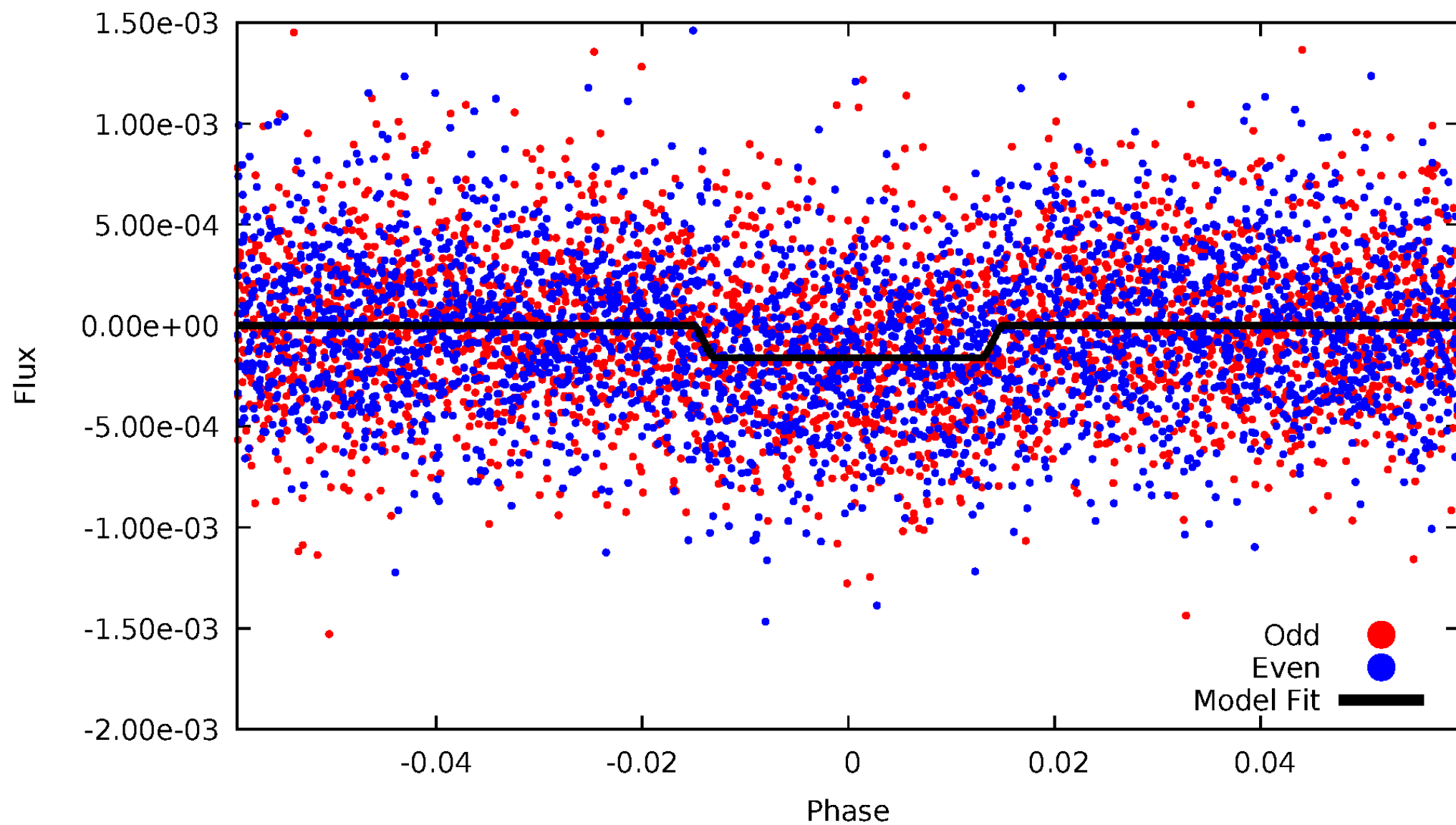
DV Odd/Even

TCE 005546691-01



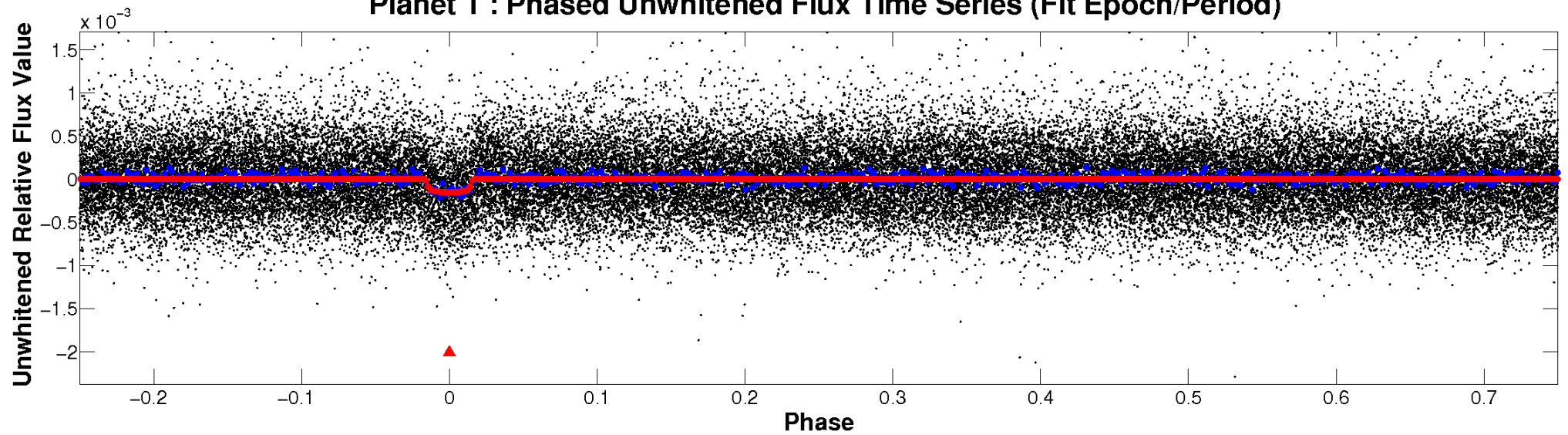
ALT Odd/Even

TCE 005546691-01

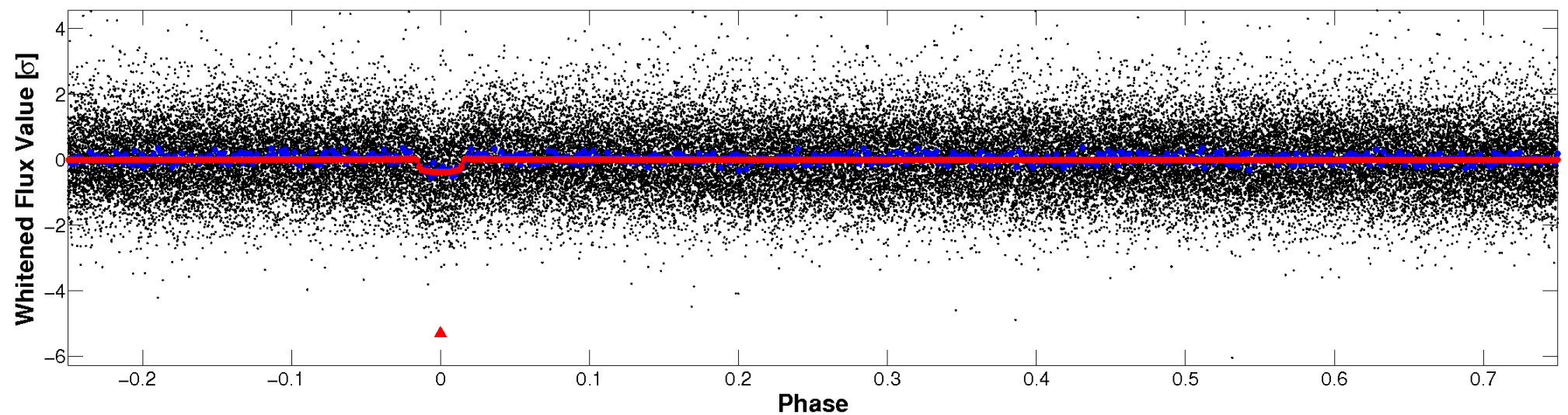


Non-Whitened Vs. Whitened Light Curve

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

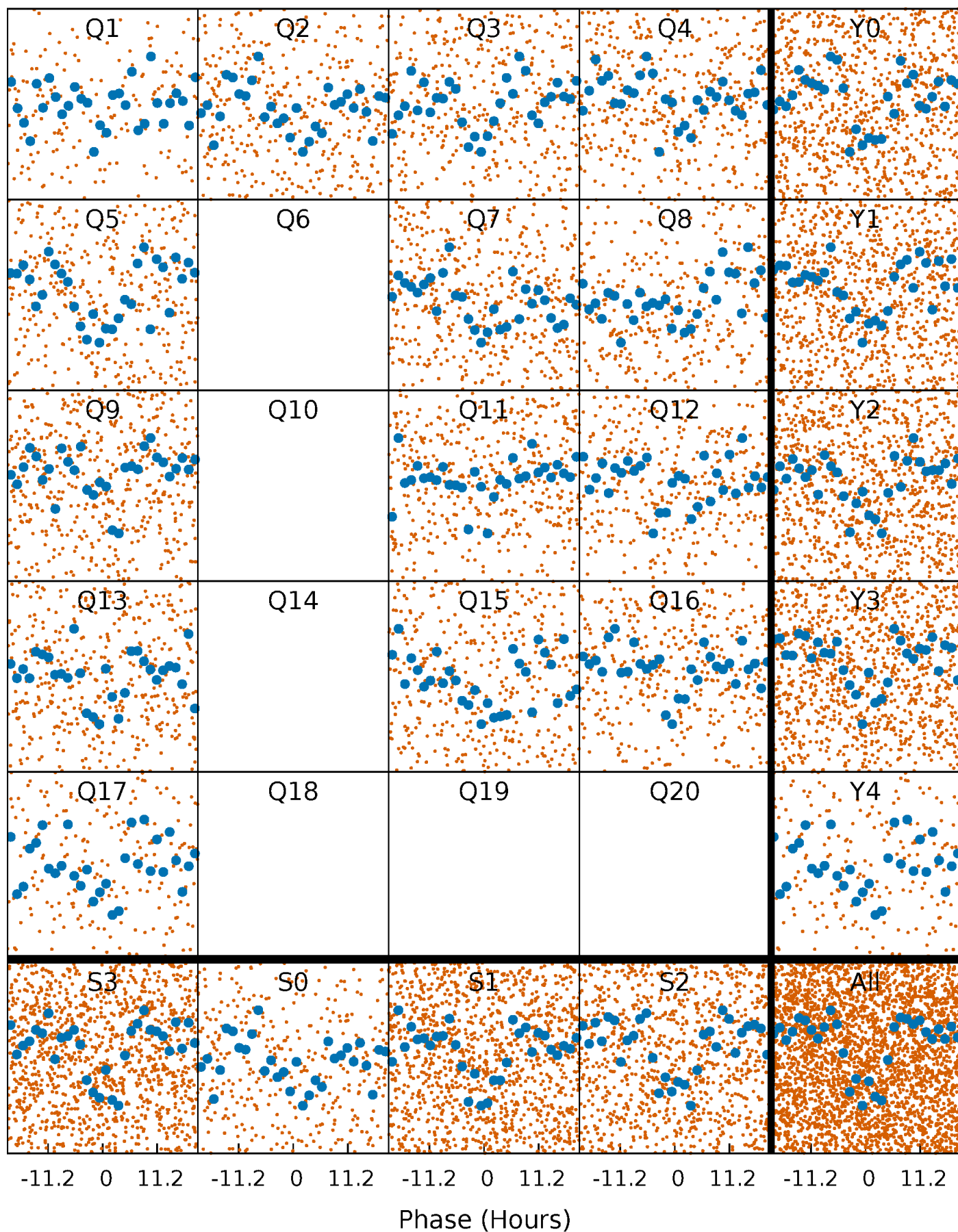


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



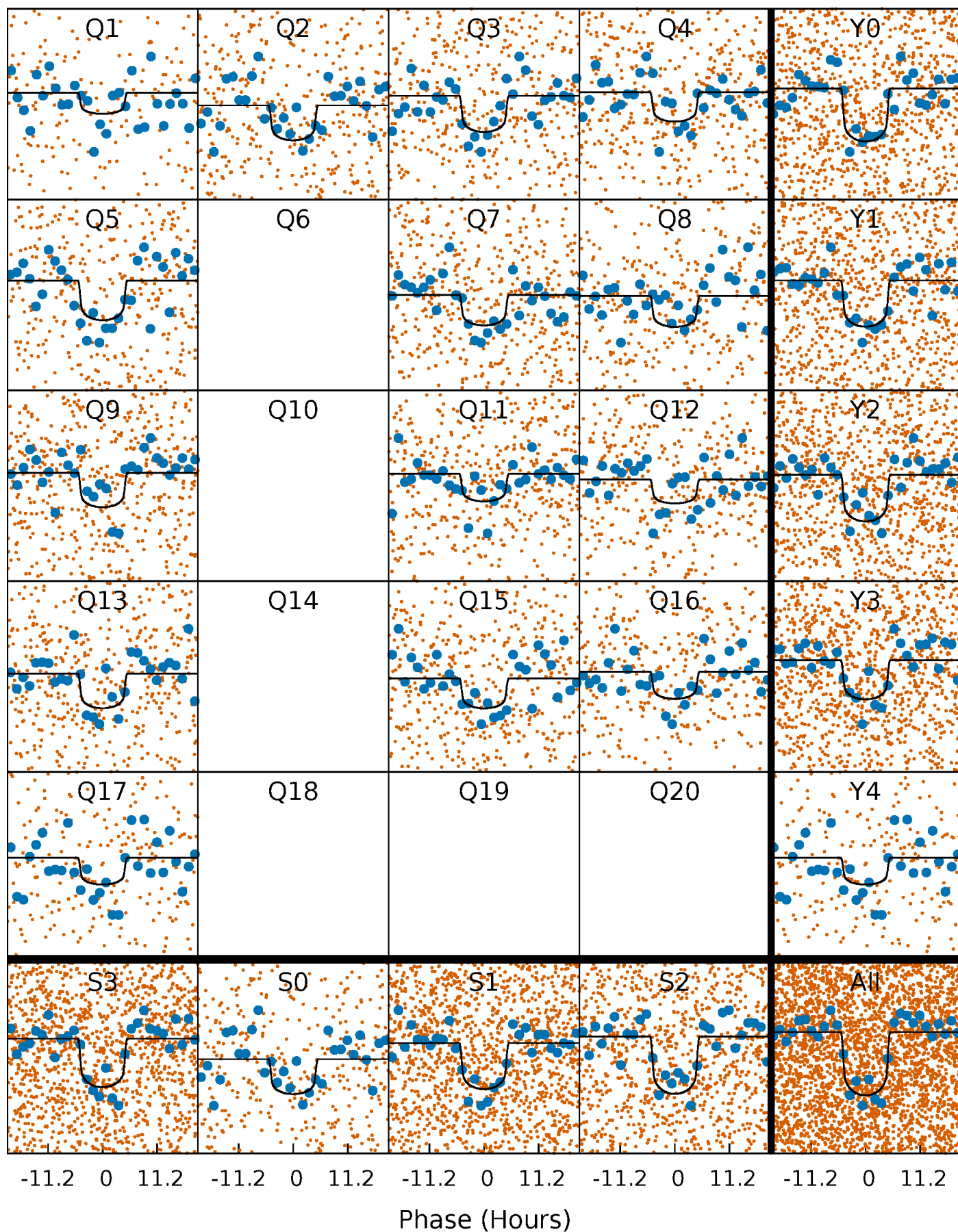
PDC Quarter-Phased Transit Curves

TCE 005546691-01 P= 12.945995 Days $T_0=139.420815$ (BKJD)



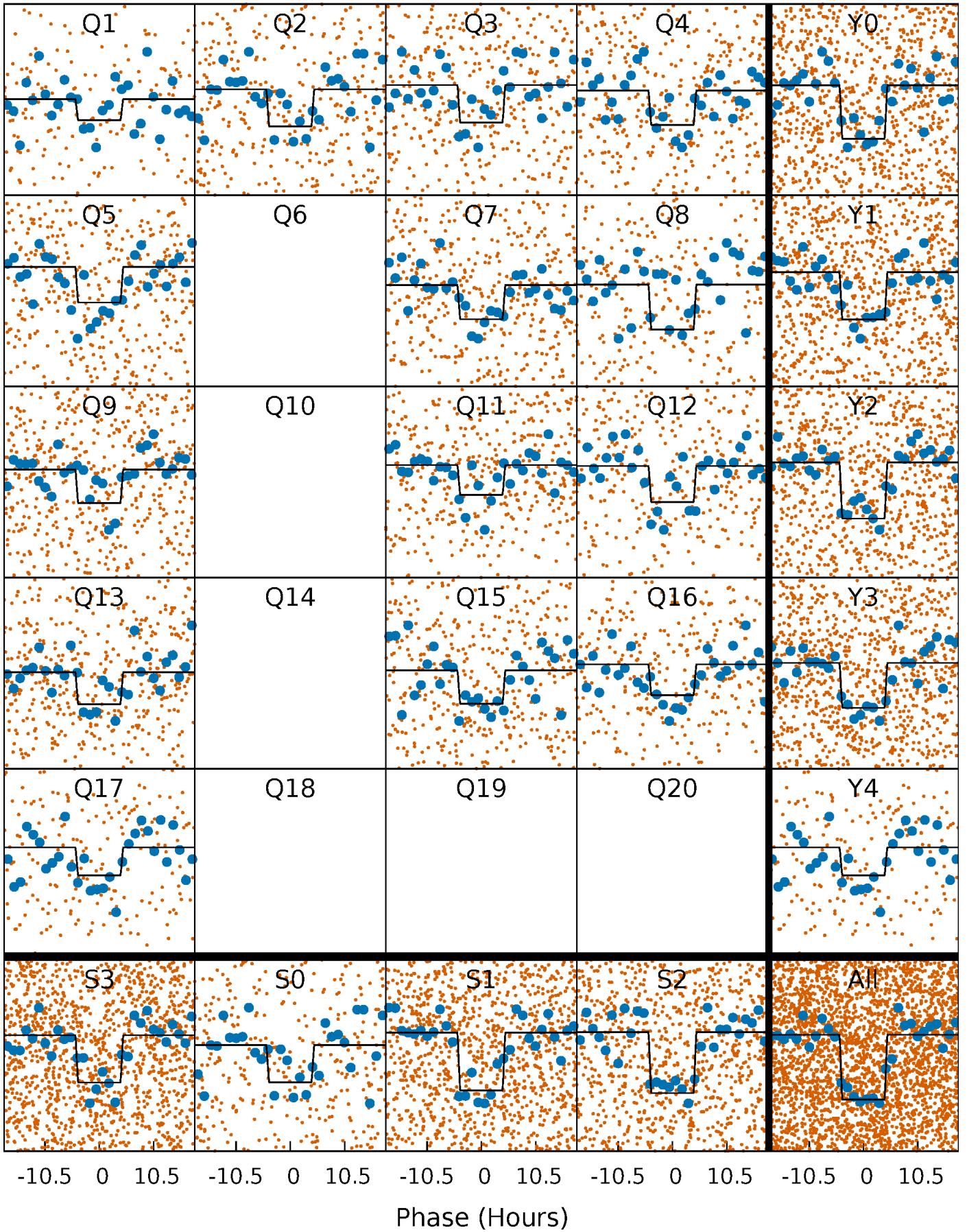
DV Quarter-Phased Transit Curves

TCE 005546691-01 P= 12.945995 Days $T_0=139.420815$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

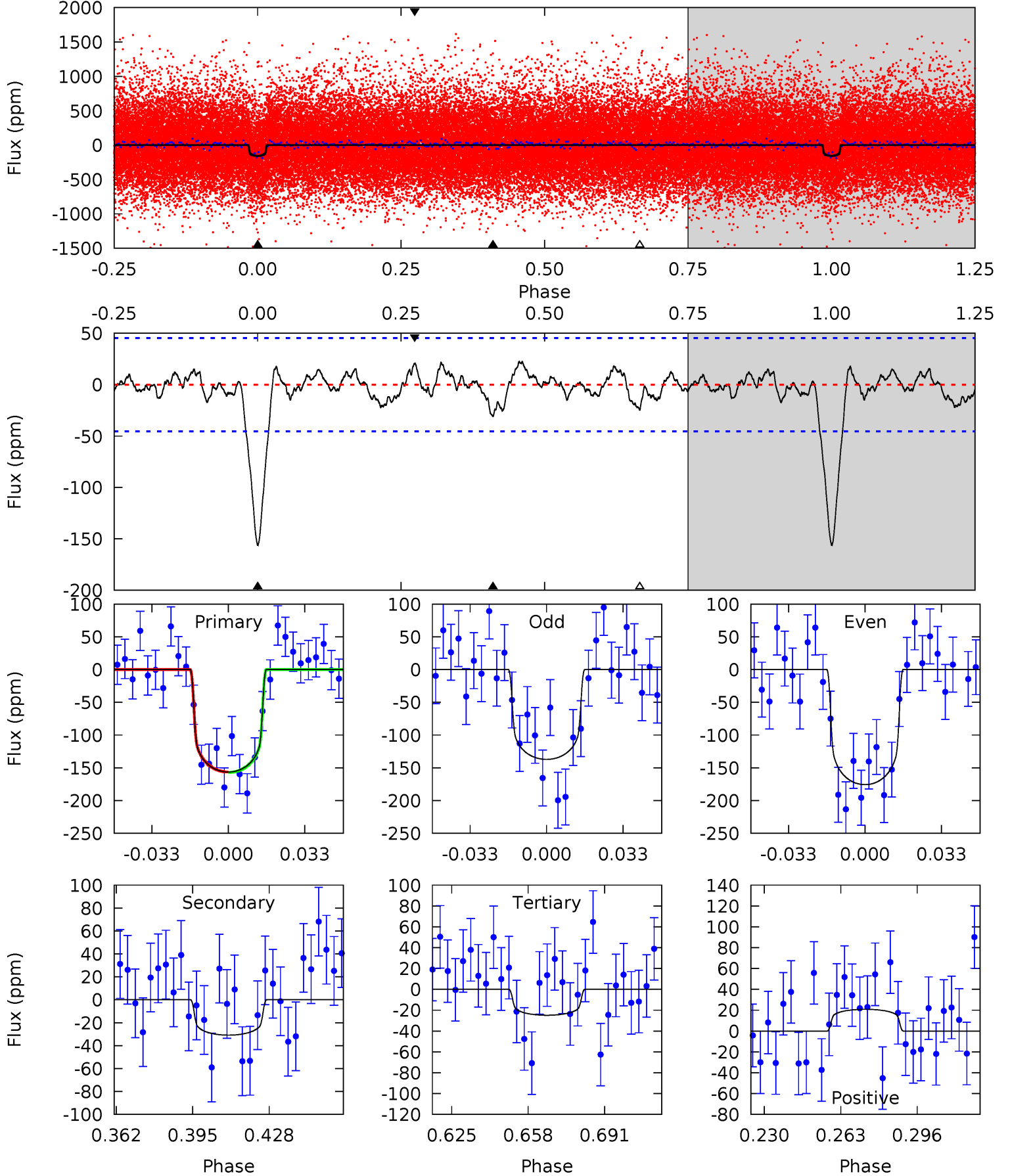
TCE 005546691-01 P= 12.945625 Days $T_0=139.440879$ (BKJD)



DV Model-Shift Uniqueness Test

005546691-01, $P = 12.945995$ Days, $E = 126.474820$ Days

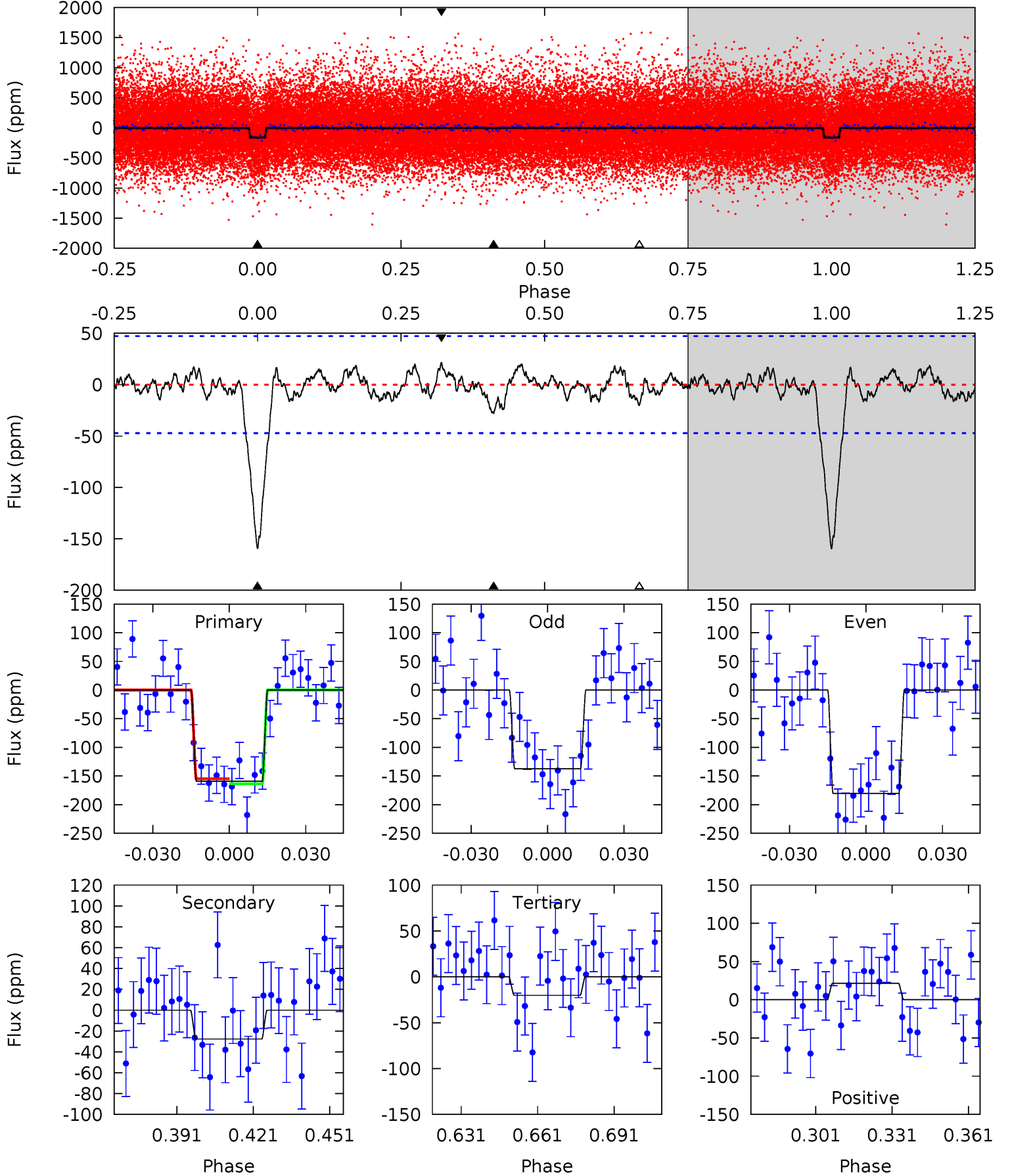
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 16.5 | 3.26 | 2.63 | 2.20 | 4.79 | 2.13 | 0.99 | 13.9 | 14.3 | 0.63 | 1.06 | 2.04 | 0.93 | 0.13 | 0.04 |



Alt Model-Shift Uniqueness Test

005546691-01, P = 12.945625 Days, E = 126.495254 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 16.2 | 2.82 | 2.05 | 2.19 | 4.81 | 2.17 | 0.86 | 14.2 | 14.0 | 0.77 | 0.63 | 2.21 | 0.98 | 0.12 | 0.43 |



Stellar Parameters For KIC 005546691

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6058^{+161}_{-197} | $4.540^{+0.046}_{-0.184}$ | $-0.400^{+0.300}_{-0.300}$ | $0.867^{+0.220}_{-0.078}$ | $0.950^{+0.094}_{-0.130}$ | $2.052^{+0.483}_{-0.960}$ |
| | +3%/-3% | +1%/-4% | +75%/-75% | +25%/-9% | +10%/-14% | +24%/-47% |
| 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 005546691-01 / KOI 2587.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|--------------|------------------------|----------------------|----------------------|-------------------|
| DV | -31 ± 9 | $1.29^{+0.26}_{-0.25}$ | 1086^{+66}_{-51} | 4171^{+417}_{-335} | 108^{+77}_{-42} |
| Alt. | -28 ± 10 | $1.26^{+0.30}_{-0.25}$ | 1089^{+73}_{-50} | 4130^{+470}_{-407} | 103^{+76}_{-50} |

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

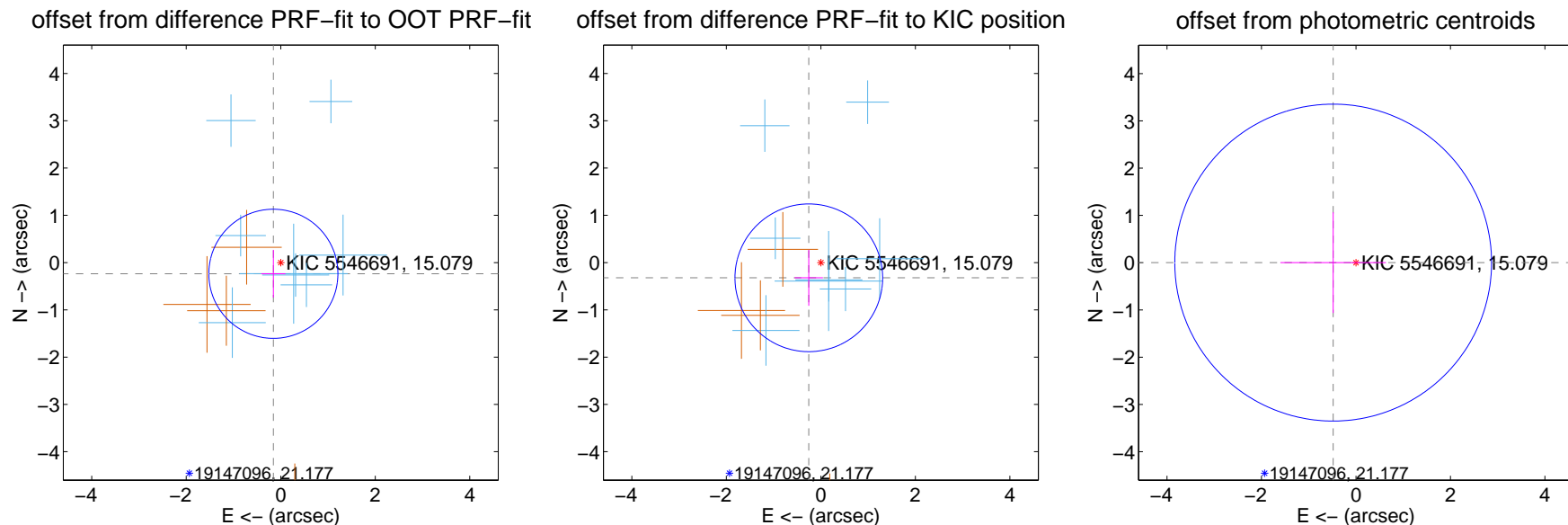
DV Centroid Data

Supplemental centroid analysis for 005546691-01. Kepler magnitude: 15.08. Transit SNR 12.83

There are 8 quarters with good PRF difference image offsets

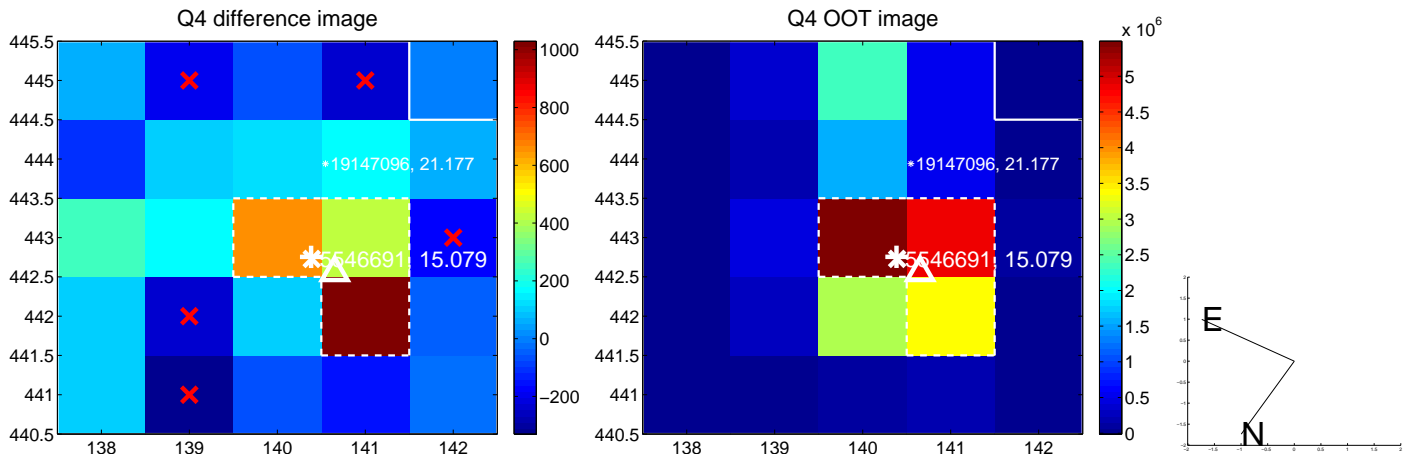
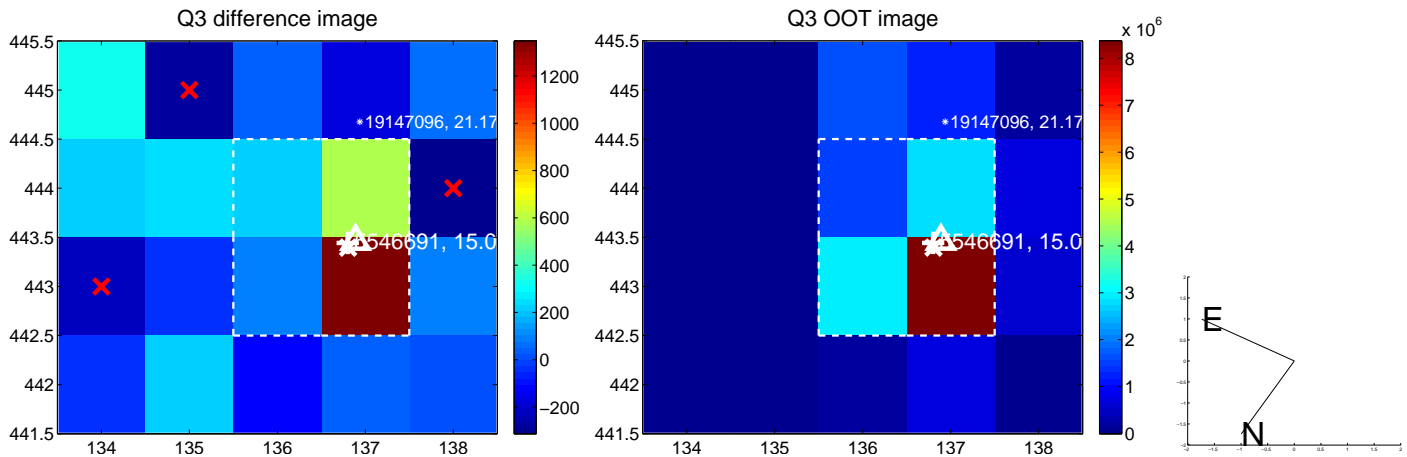
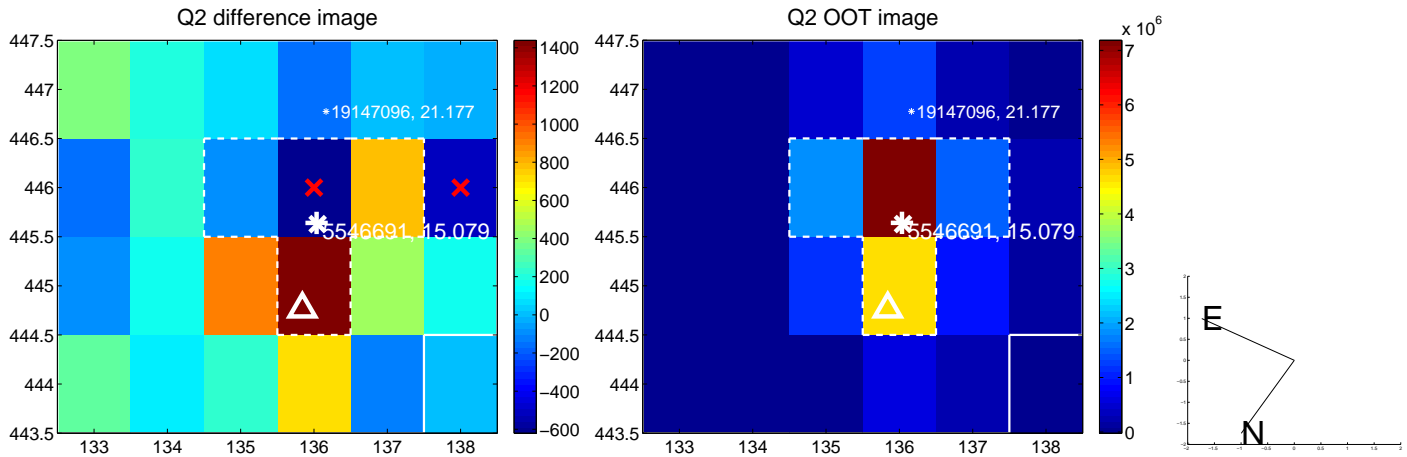
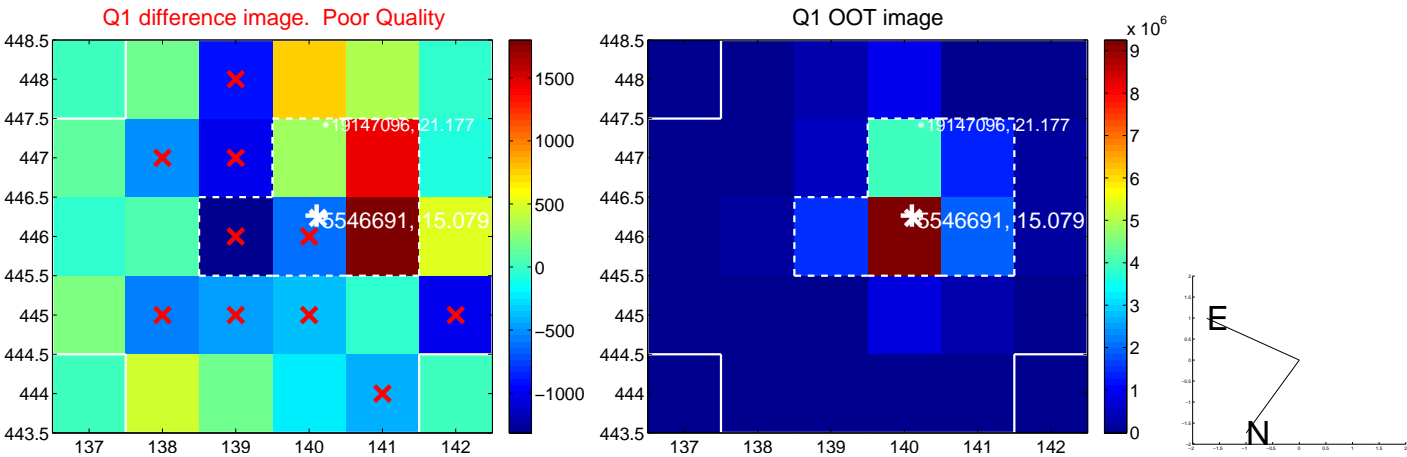
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.284 ± 0.455 | 0.62 | 0.157 ± 0.256 | -0.237 ± 0.505 |
| PRF-fit source offset from KIC position | 0.411 ± 0.521 | 0.79 | 0.255 ± 0.301 | -0.322 ± 0.592 |
| photometric centroid source offset | 0.48 ± 1.12 | 0.43 | 0.48 ± 1.12 | 0.00 ± 1.06 |

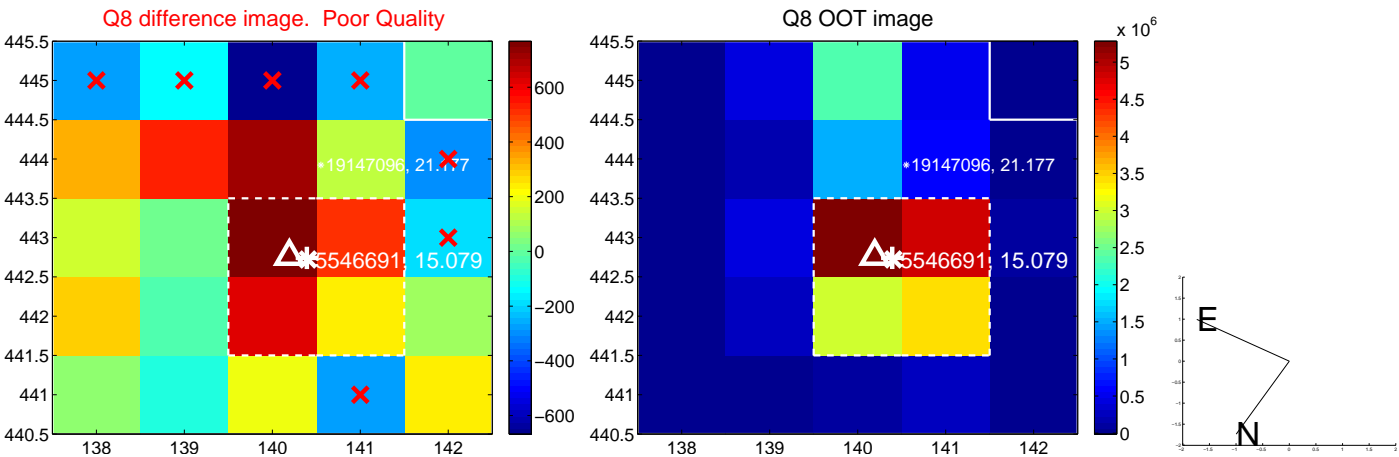
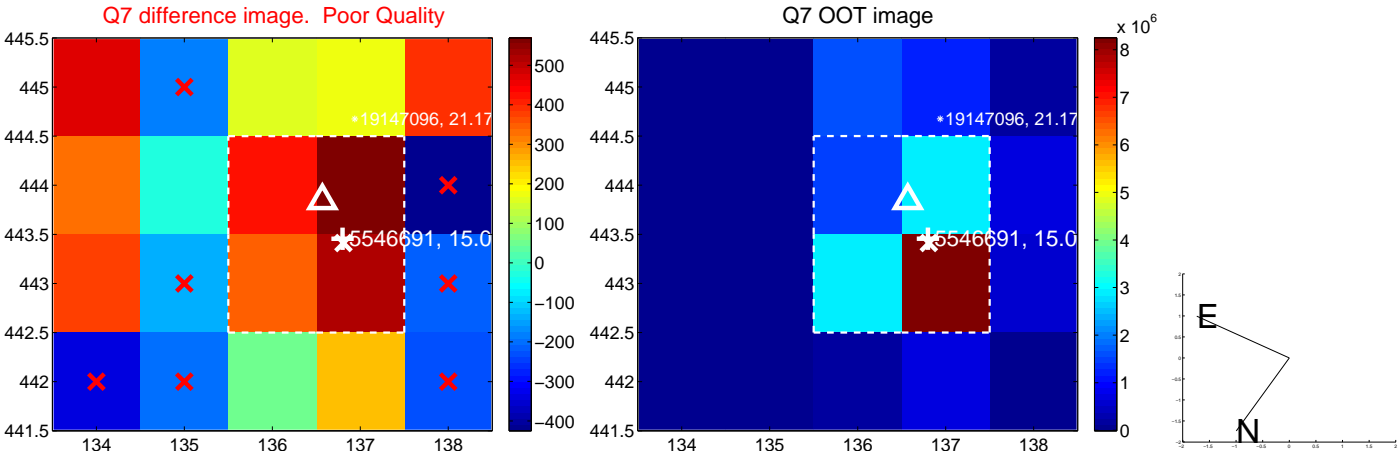
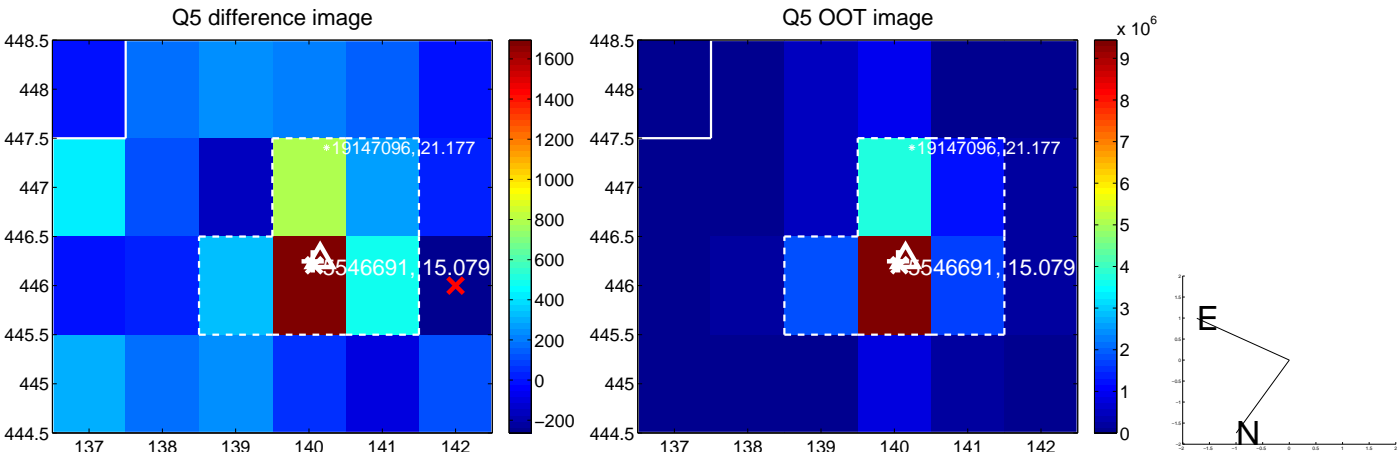


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

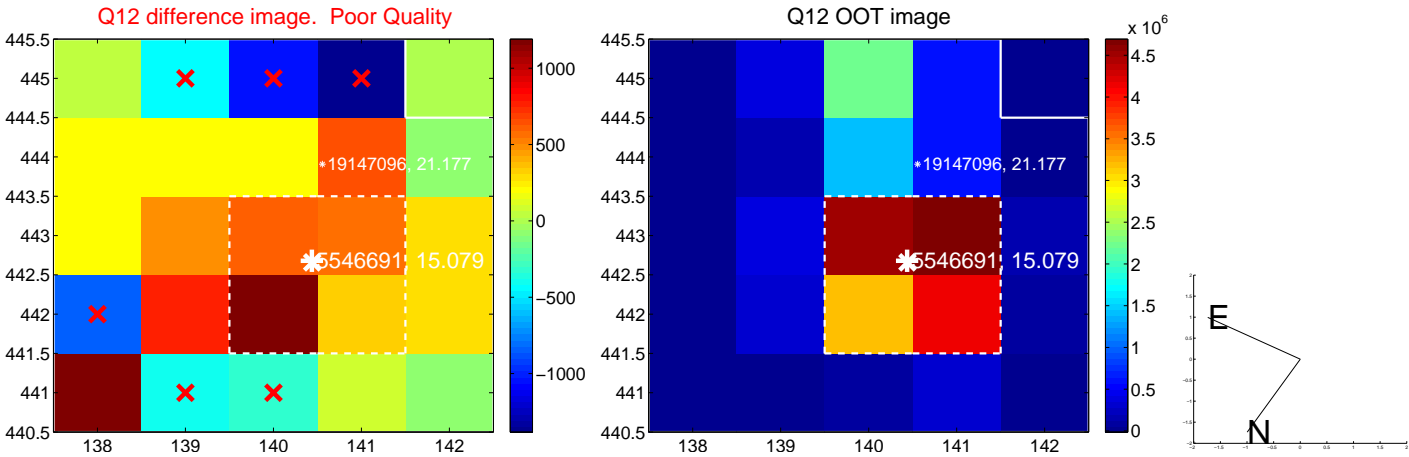
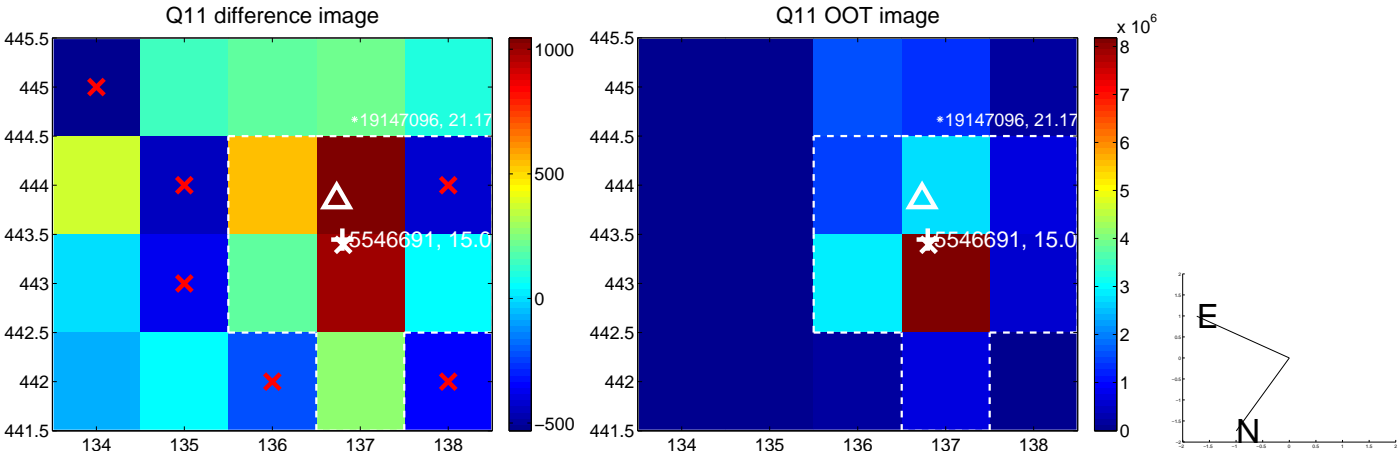
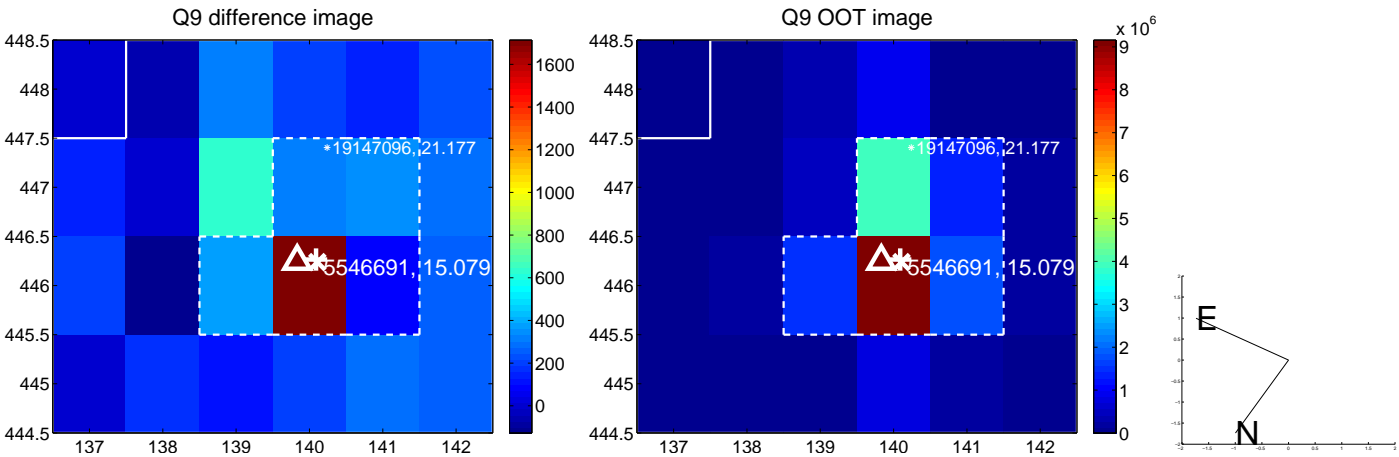
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



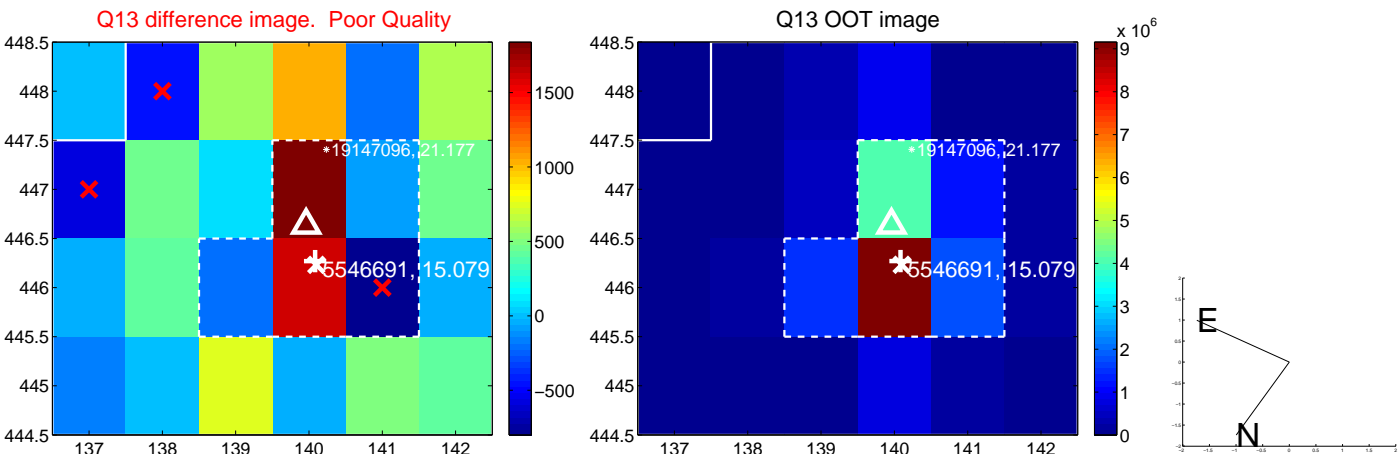
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



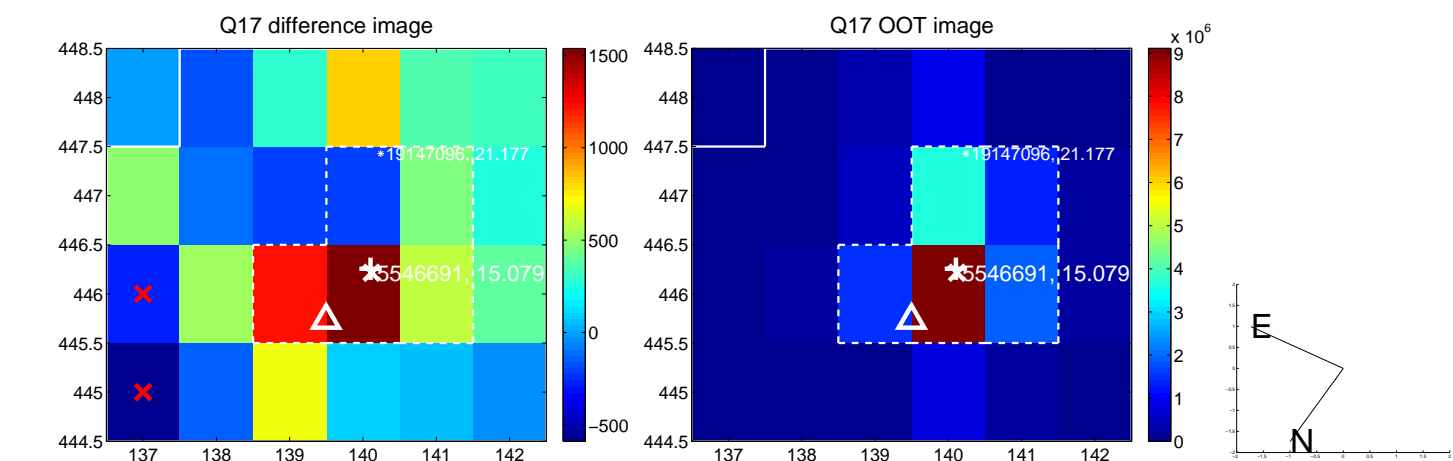
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



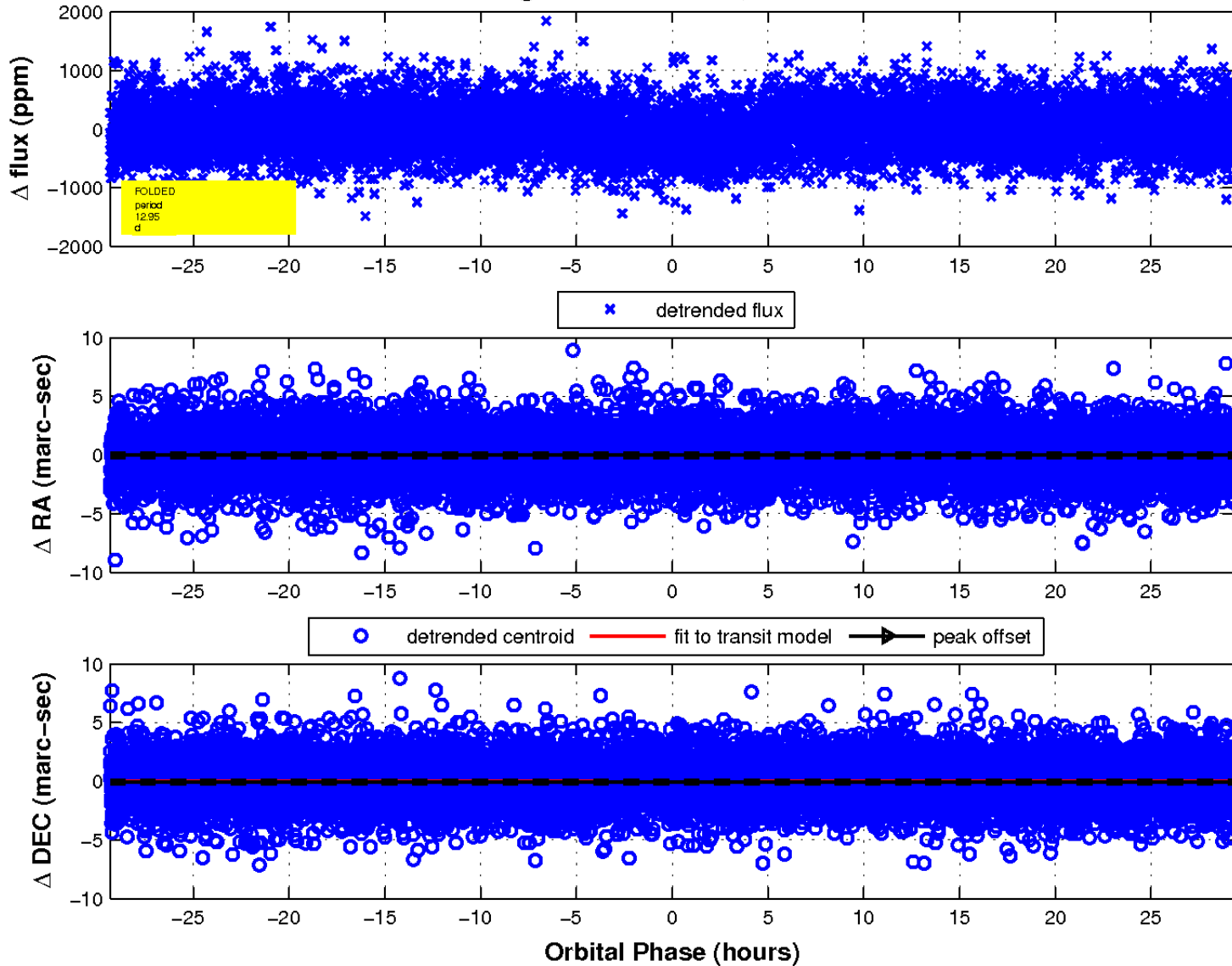
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

