

KIC 005520547

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 005520547-01 | OBS | 2990.01 | 11.200648 | 137.504283 | 208.0 | 4.164 | 16.0 | 16.8 | 0.90 | 6038 | 1.54 | 101.16 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 005520547-01 | 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.

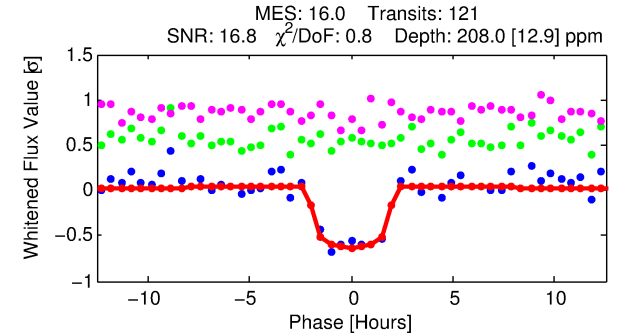
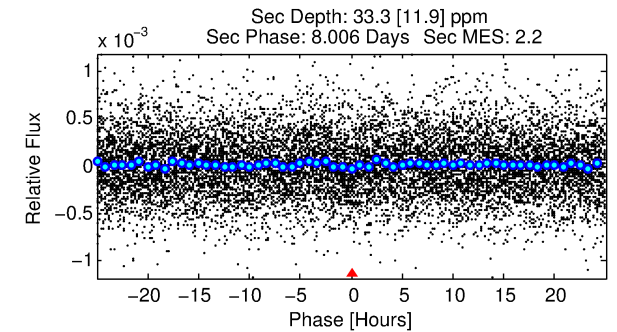
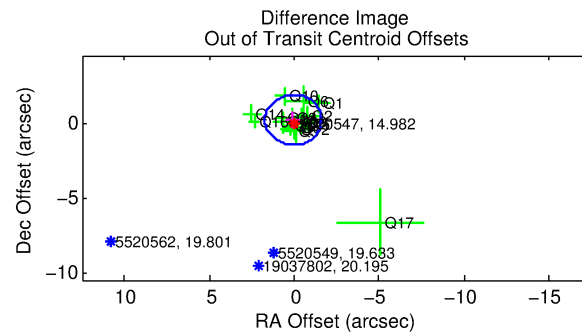
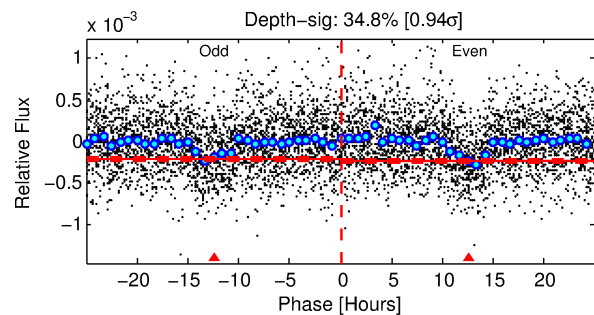
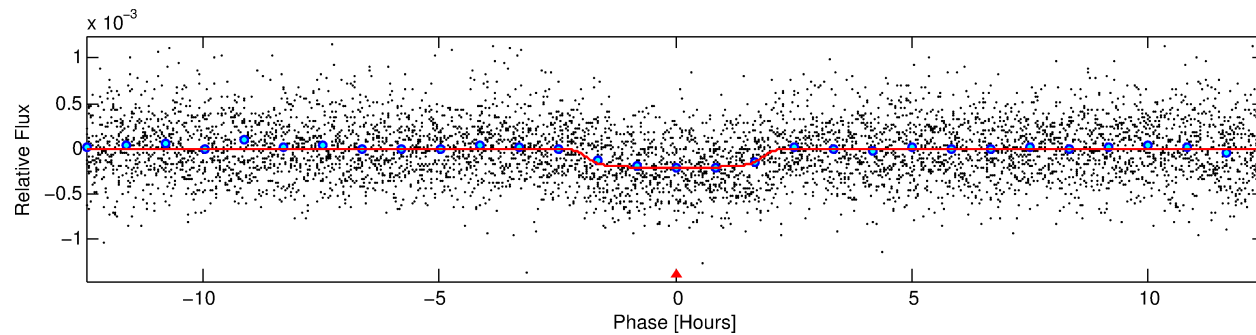
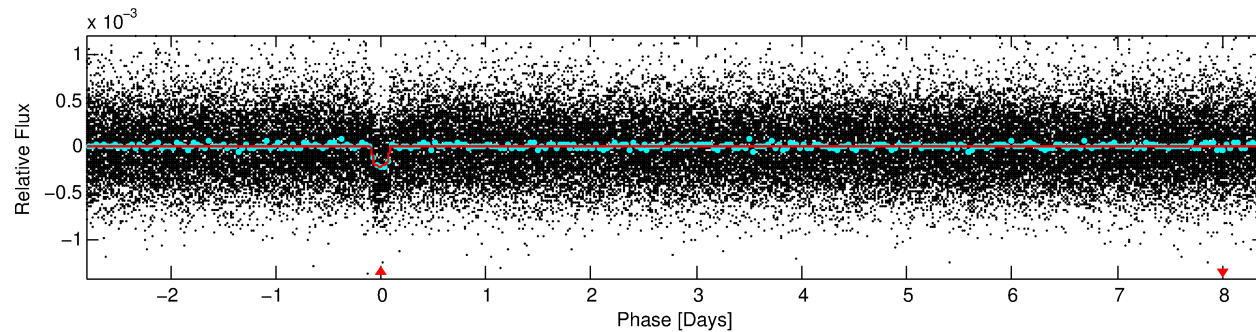
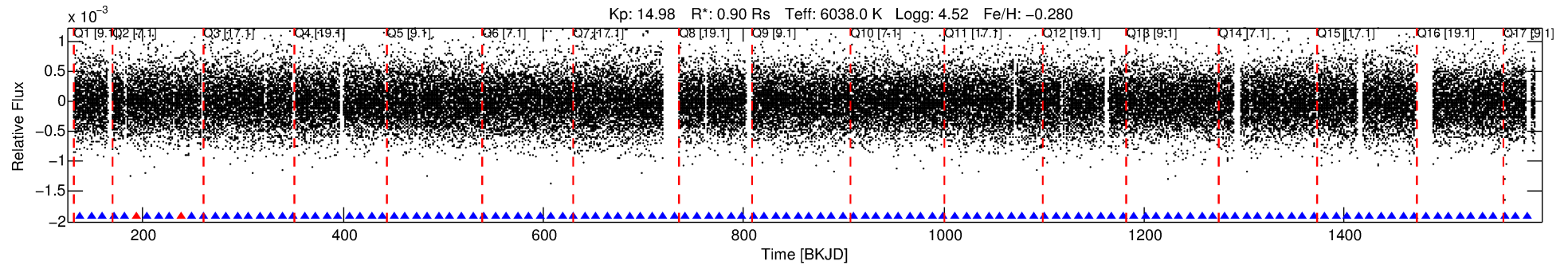
Ephemeris Match Information For 005520547-01

No Significant Match Found

DV One-Page Summary

KIC: 5520547 Candidate: 1 of 1 Period: 11.201 d

KOI: K02990.01 Corr: 0.953



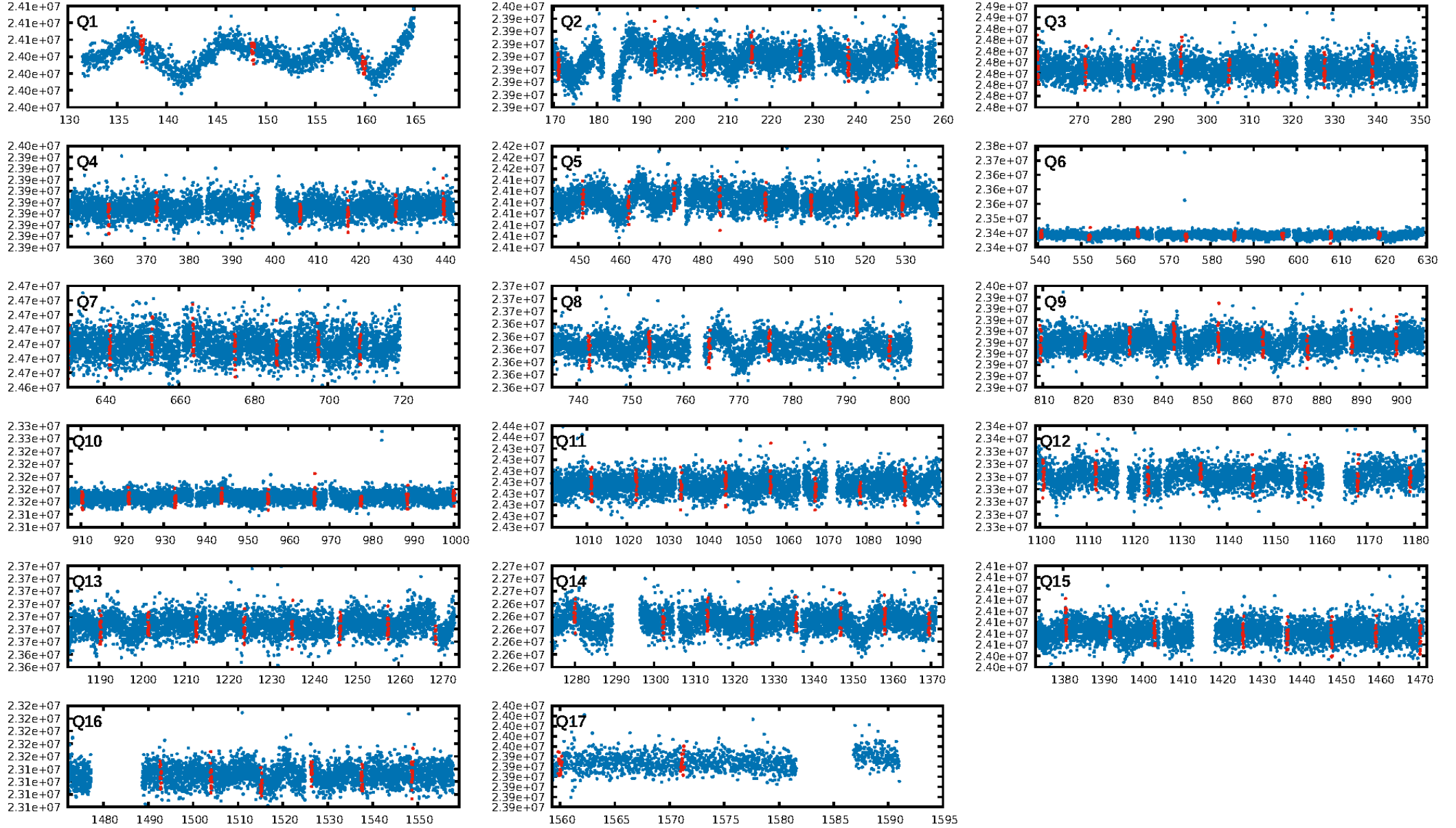
DV Fit Results:

Period = 11.20065 [0.00007] d
Epoch = 137.5043 [0.0052] BKJD
Rp/R* = 0.0157 [0.0030]
a/R* = 9.33 [9.03]
b = 0.91 [0.19]
Seff = 101.16 [36.20]
Teff = 809 [72] K
Rp = 1.54 [0.51] Re
a = 0.0974 [0.0226] AU
Ag = 73.54 [45.49] [1.59 σ]
Teffp = 3661 [487] K [5.79 σ]

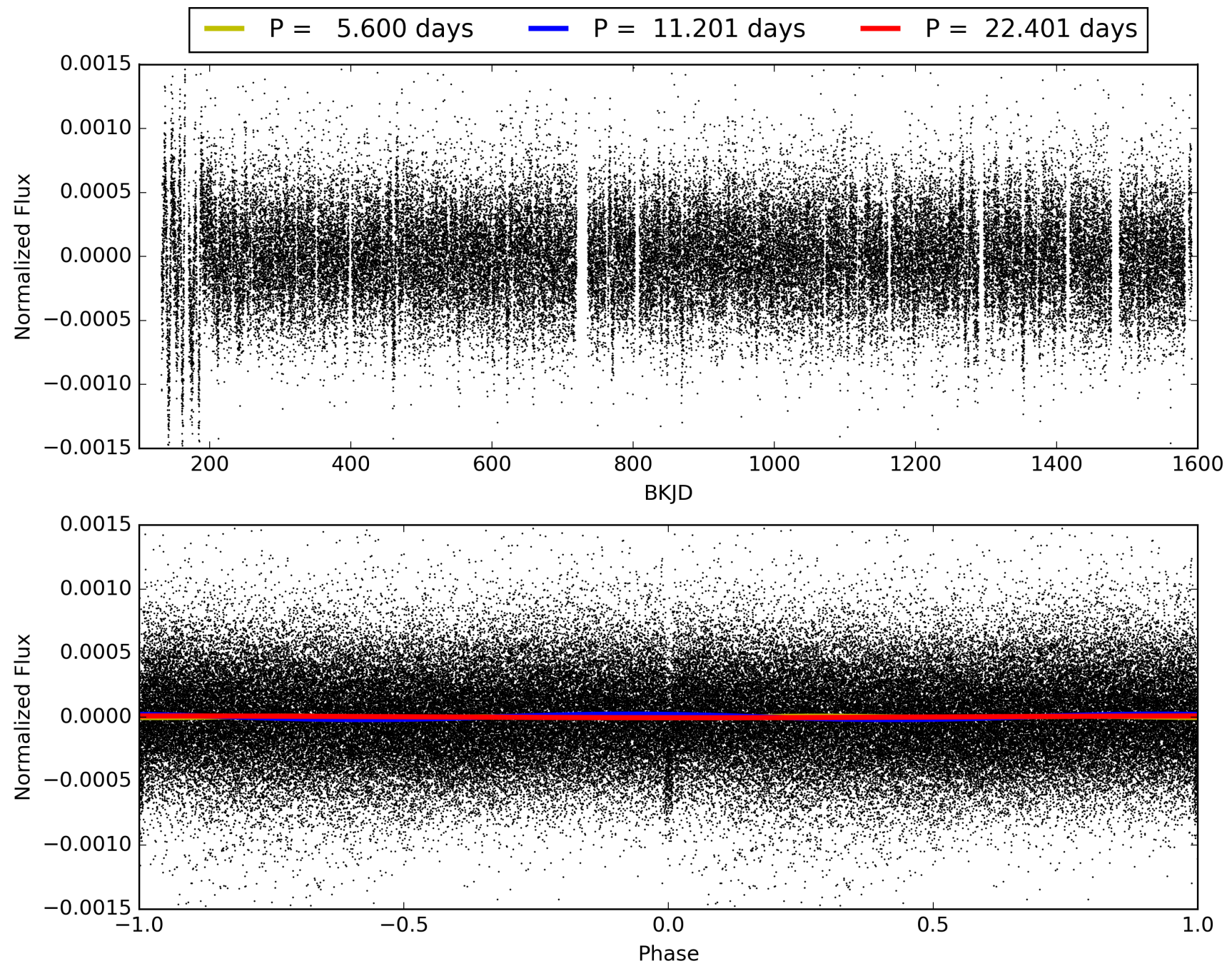
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.89e-56
RollingBand-fgt: 0.98 [114/116]
GhostDiagnostic-chr: 9.534
Centroid-sig: 56.5%
Centroid-so: 0.187 arcsec [0.24 σ]
OotOffset-rm: 0.196 arcsec [0.35 σ]
KicOffset-rm: 0.283 arcsec [0.96 σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005520547-01, PDC Light Curves

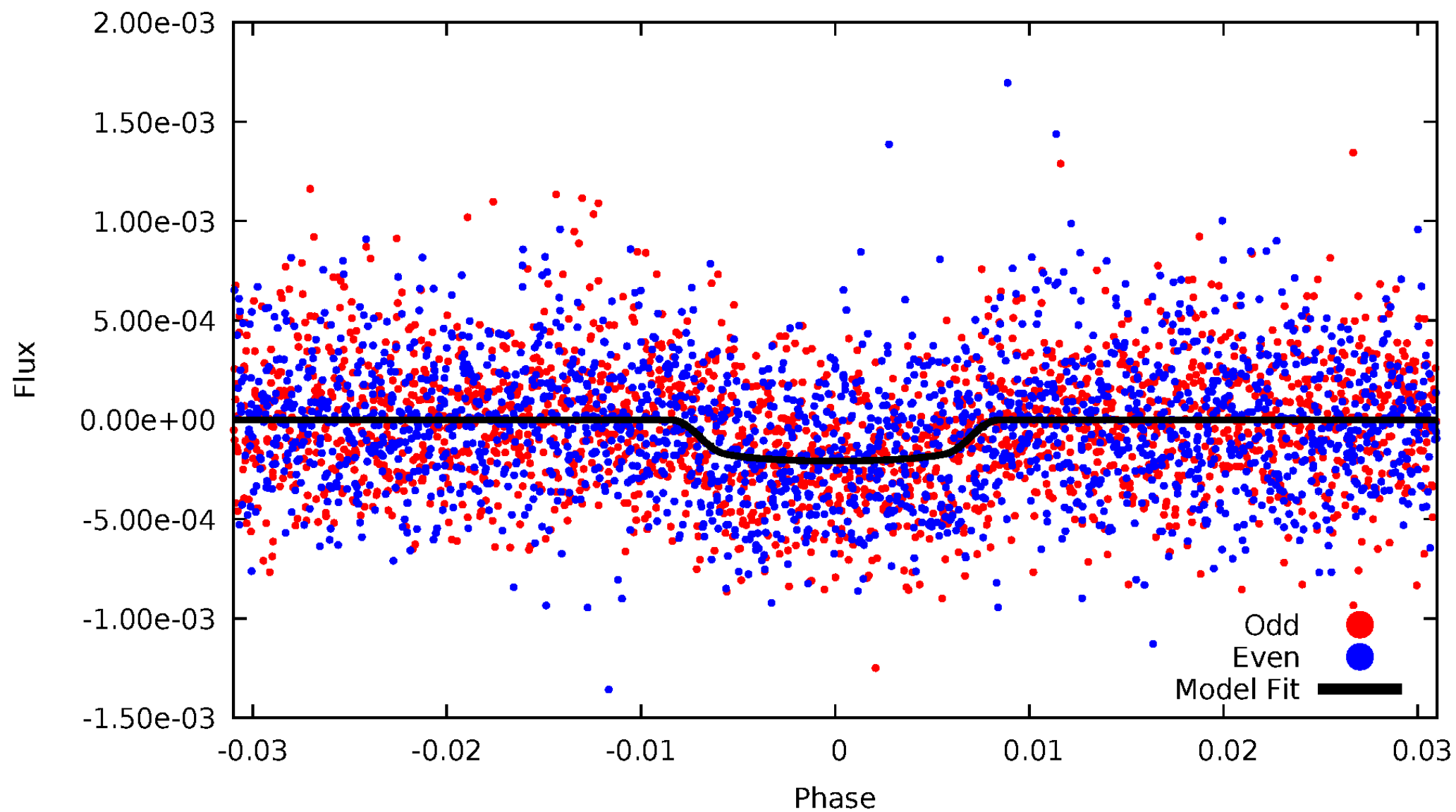


TCE 005520547-01



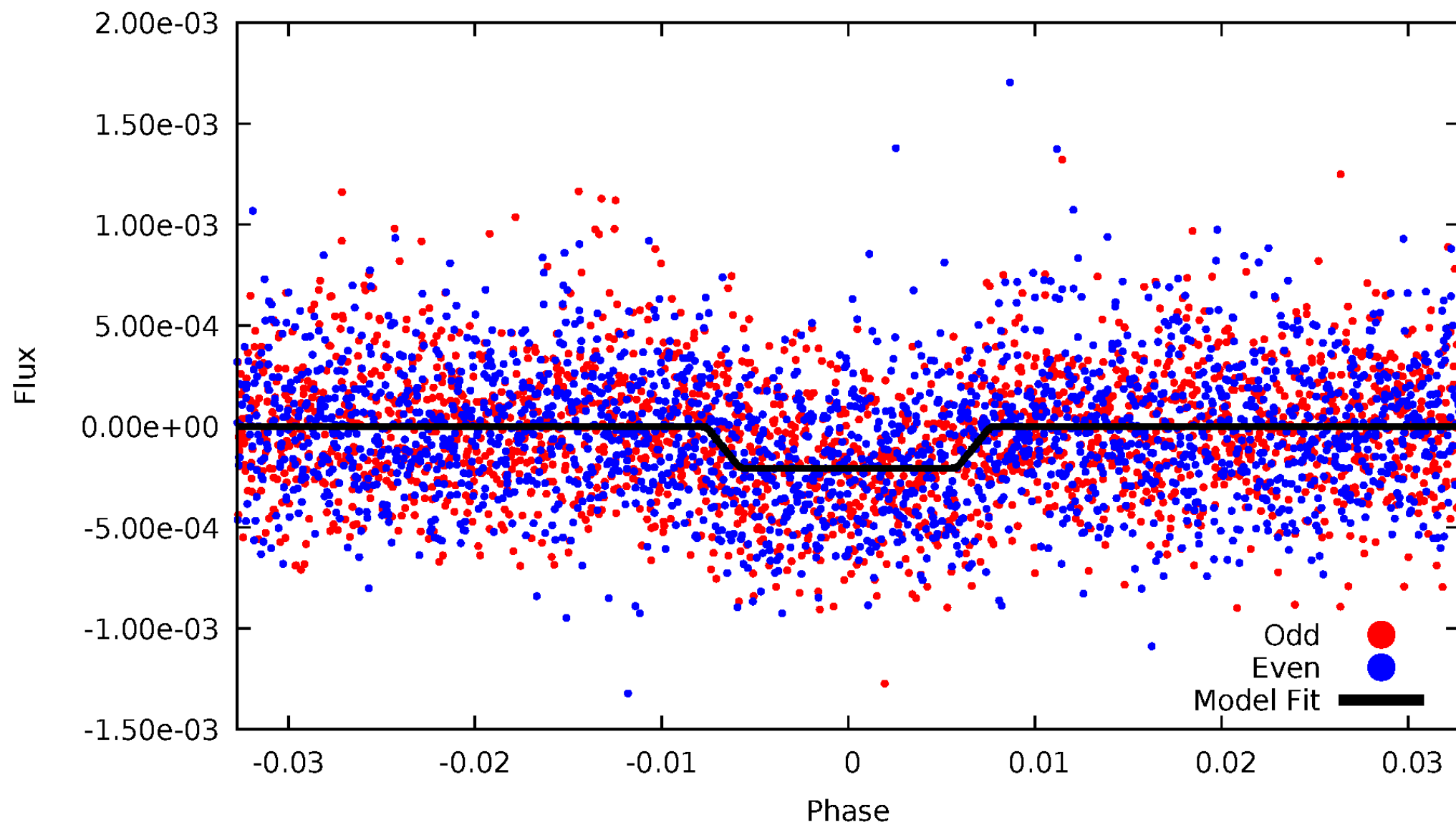
DV Odd/Even

TCE 005520547-01

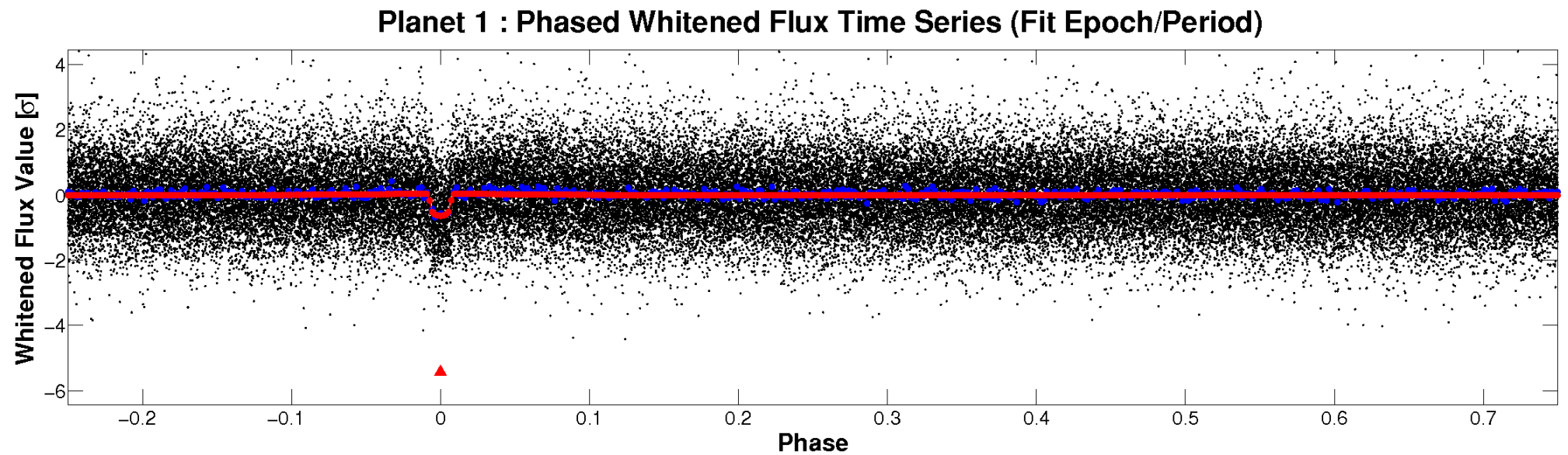
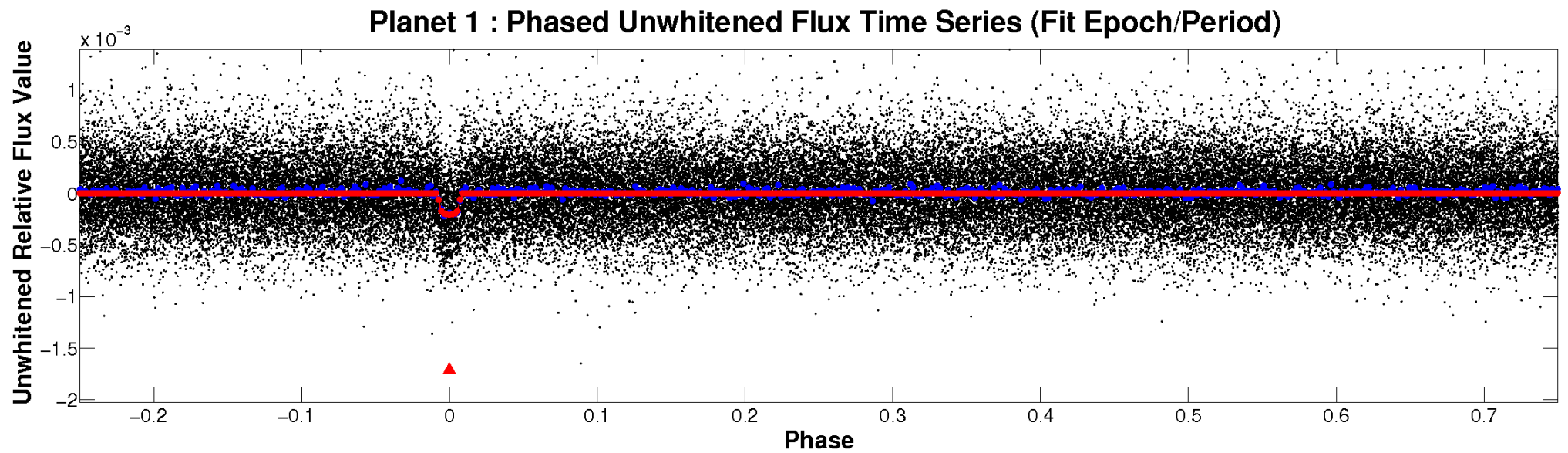


ALT Odd/Even

TCE 005520547-01

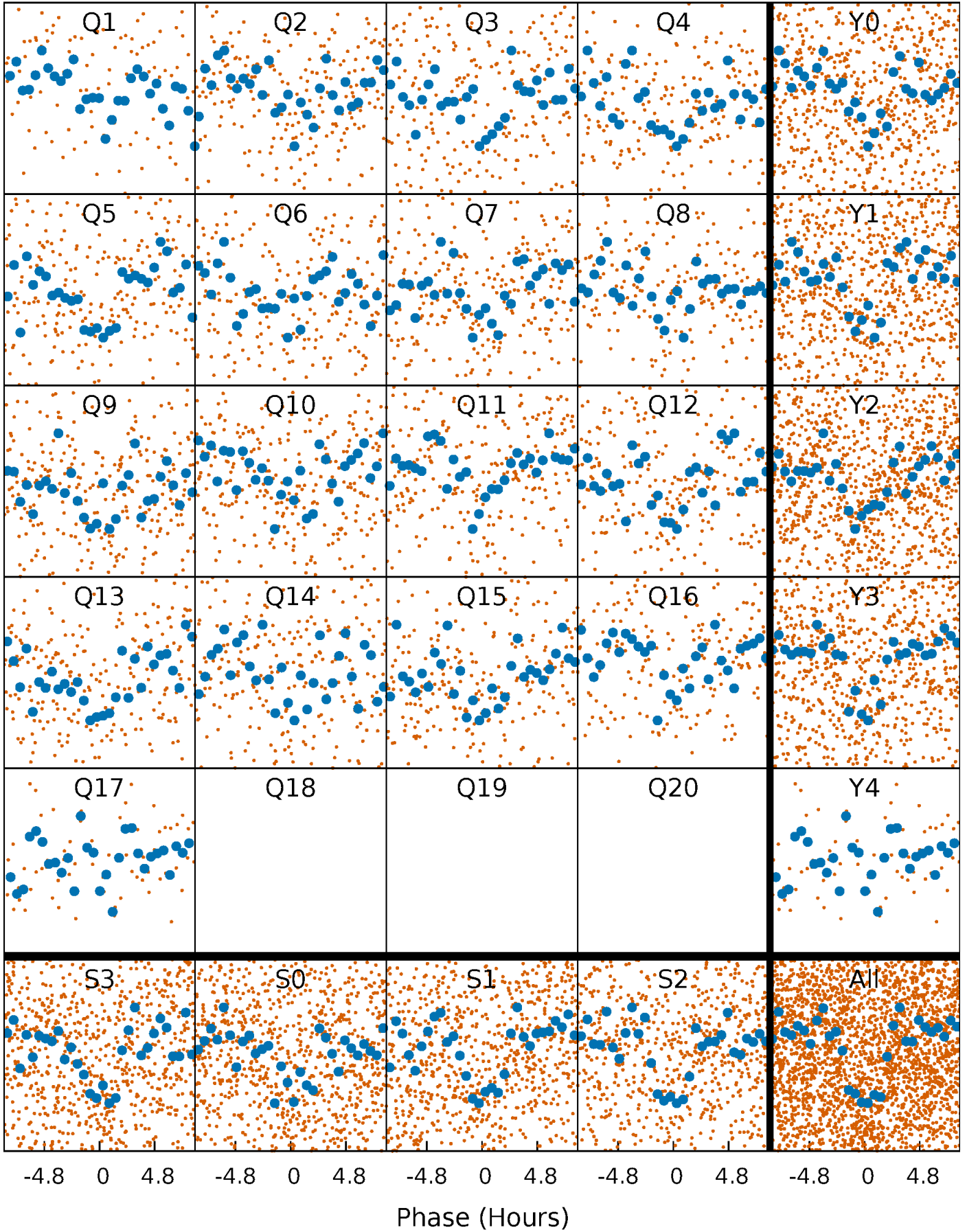


Non-Whitened Vs. Whitened Light Curve



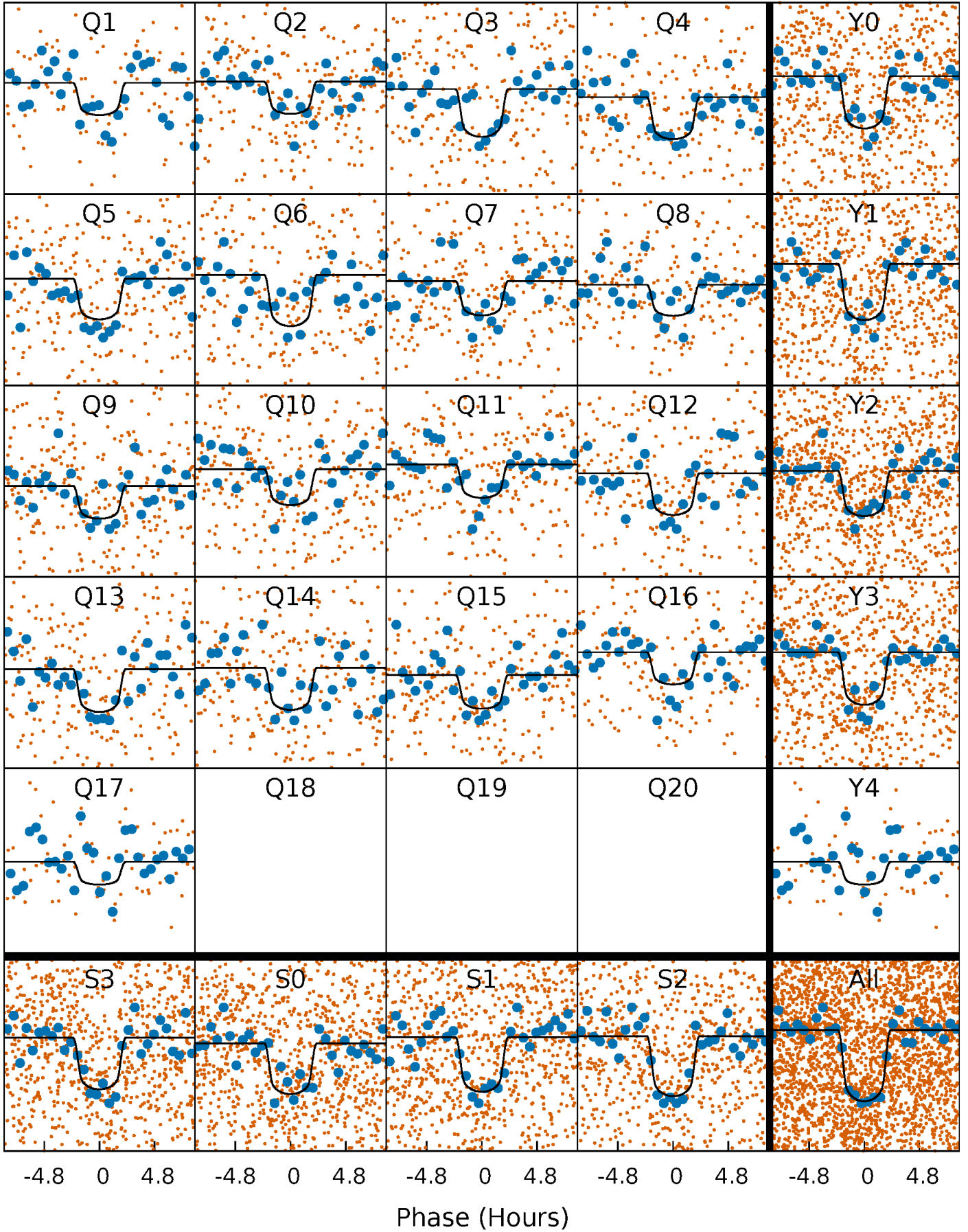
PDC Quarter-Phased Transit Curves

TCE 005520547-01 P= 11.200648 Days $T_0=137.504283$ (BKJD)



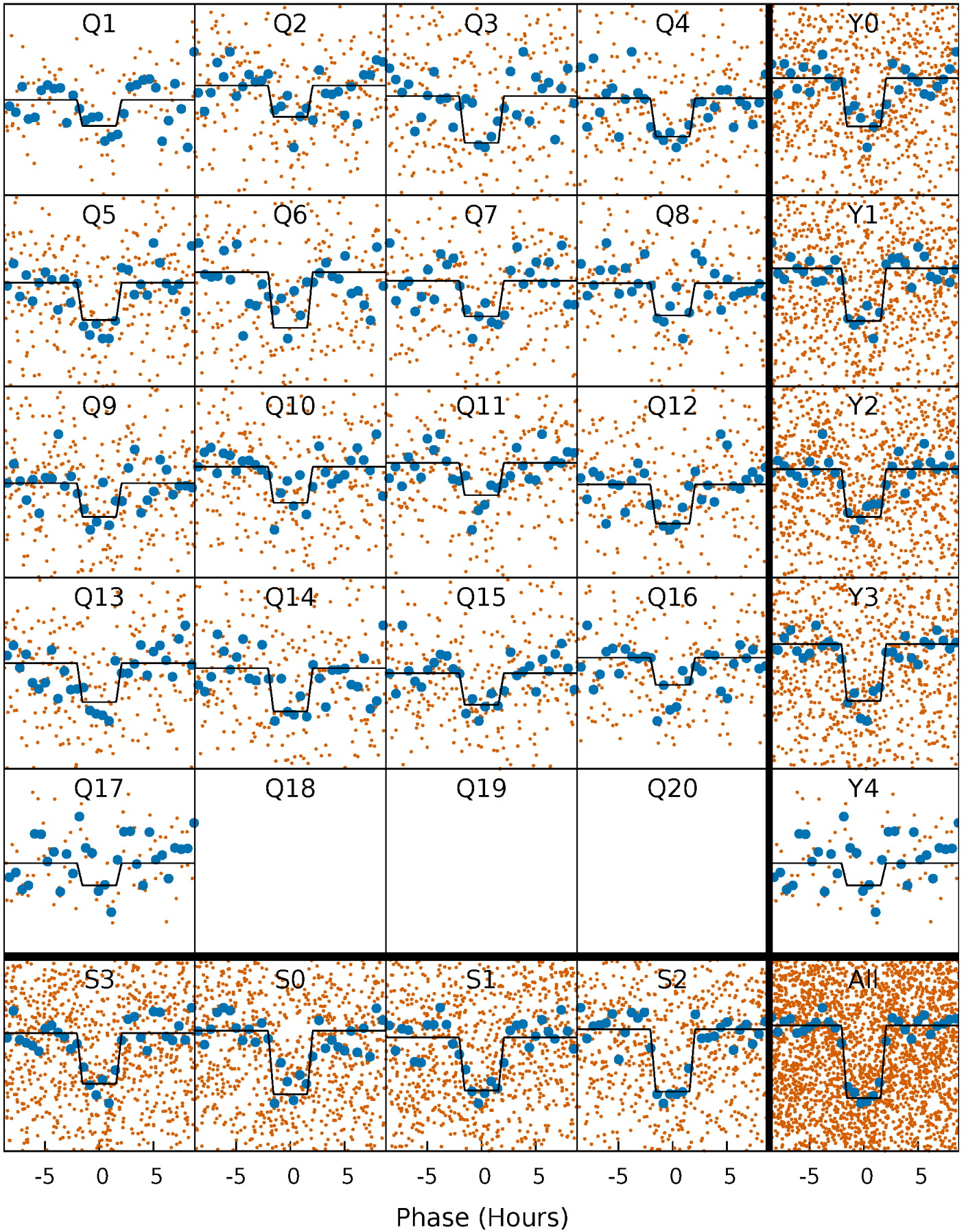
DV Quarter-Phased Transit Curves

TCE 005520547-01 P= 11.200648 Days $T_0=137.504283$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

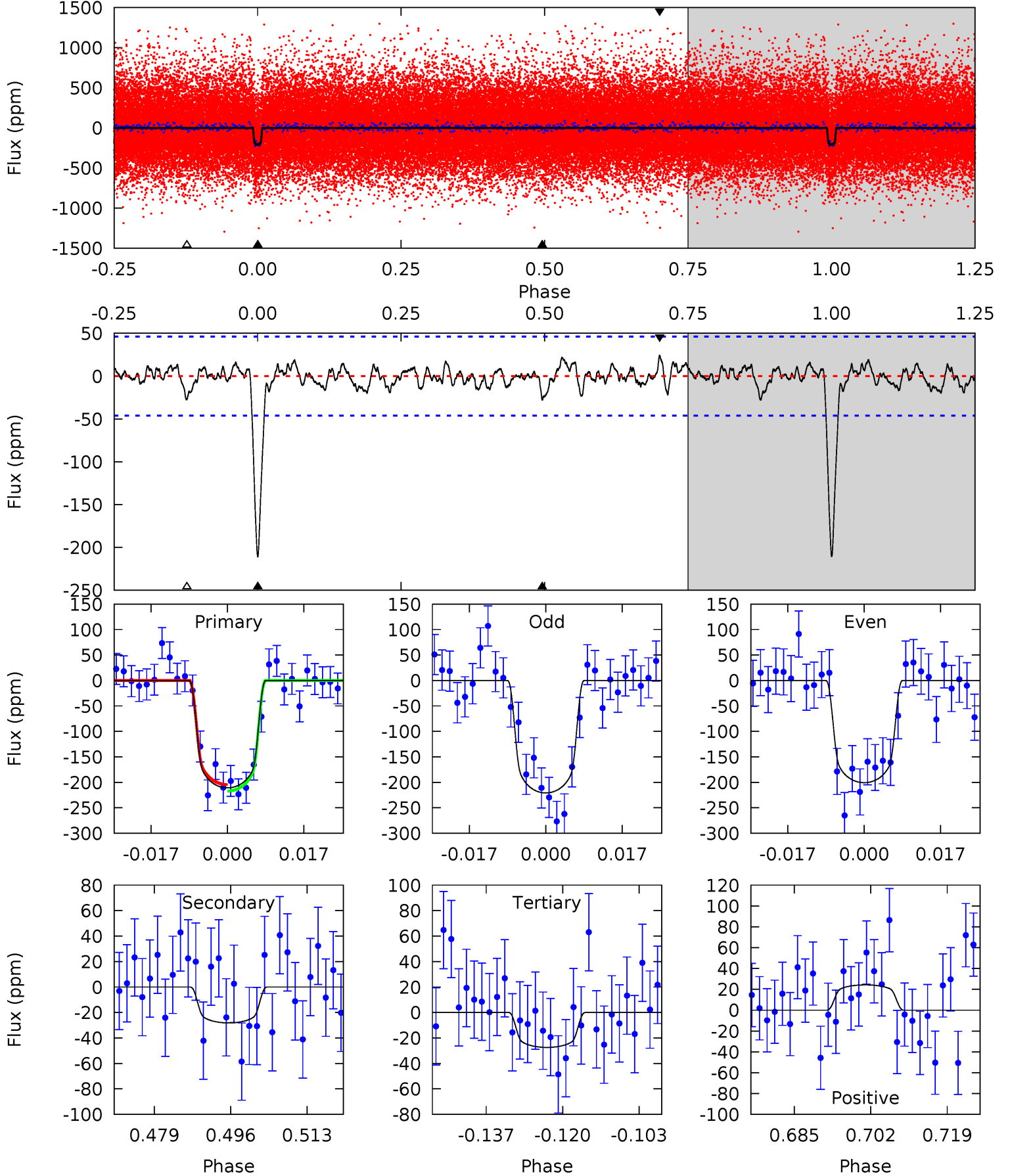
TCE 005520547-01 P= 11.200670 Days $T_0=137.505049$ (BKJD)



DV Model-Shift Uniqueness Test

005520547-01, P = 11.200648 Days, E = 126.303635 Days

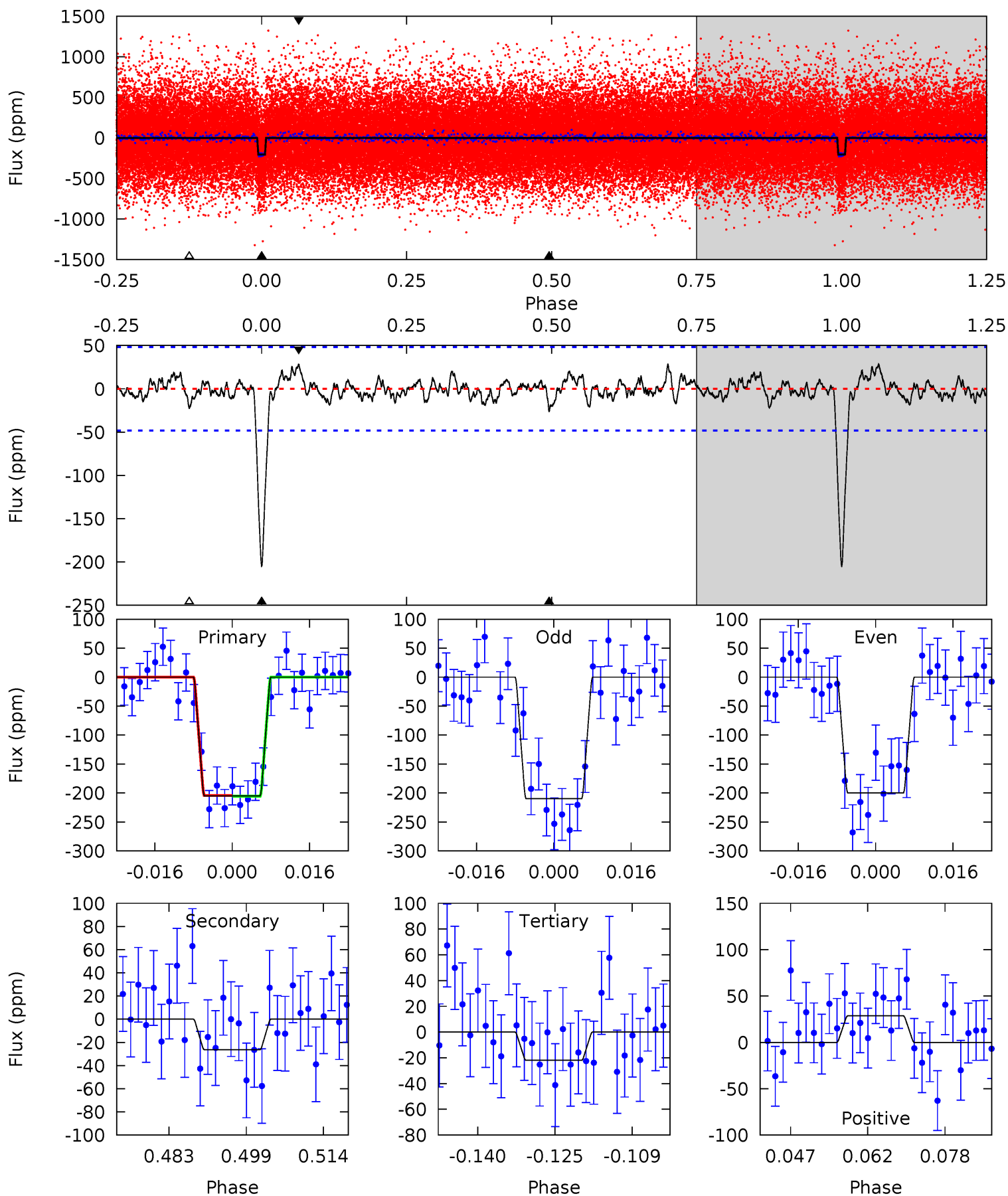
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 22.5 | 3.01 | 2.93 | 2.60 | 4.92 | 2.38 | 0.95 | 19.6 | 20.0 | 0.08 | 0.42 | 1.08 | 0.98 | 0.10 | 0.68 |



Alt Model-Shift Uniqueness Test

005520547-01, P = 11.200670 Days, E = 126.304379 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 21.0 | 2.70 | 2.25 | 2.93 | 4.94 | 2.42 | 0.92 | 18.7 | 18.1 | 0.45 | -0.23 | 0.50 | 0.97 | 0.12 | 0.06 |



Stellar Parameters For KIC 005520547

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6038^{+163}_{-181} | $4.524^{+0.046}_{-0.184}$ | $-0.280^{+0.300}_{-0.300}$ | $0.898^{+0.248}_{-0.083}$ | $0.982^{+0.120}_{-0.120}$ | $1.912^{+0.359}_{-0.955}$ |
| | +3%/-3% | +1%/-4% | +107%/-107% | +28%/-9% | +12%/-12% | +19%/-50% |
| 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 005520547-01 / KOI 2990.01

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|--------------|------------------------|----------------------|----------------------|------------------|
| DV | -28 ± 9 | $1.61^{+0.37}_{-0.36}$ | 1153^{+67}_{-54} | 3858^{+378}_{-335} | 56^{+41}_{-25} |
| Alt. | -26 ± 10 | $1.48^{+0.36}_{-0.32}$ | 1154^{+67}_{-50} | 3919^{+436}_{-363} | 60^{+53}_{-28} |

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

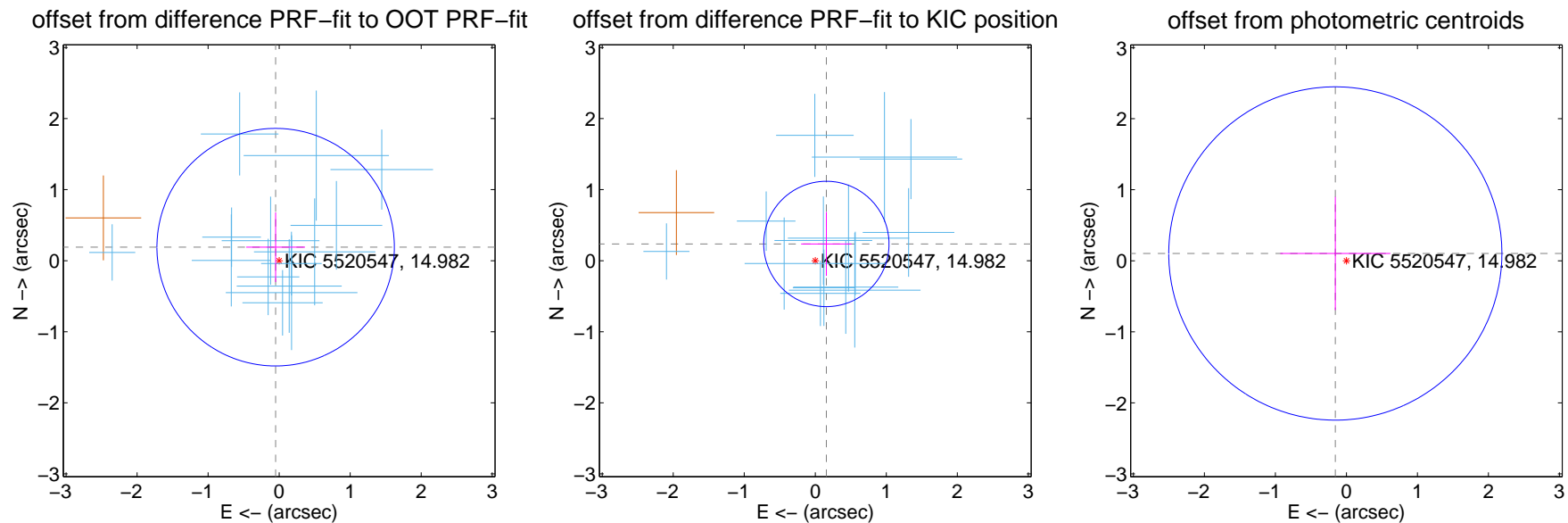
DV Centroid Data

Supplemental centroid analysis for 005520547-01. Kepler magnitude: 14.98. Transit SNR 16.81

There are 14 quarters with good PRF difference image offsets

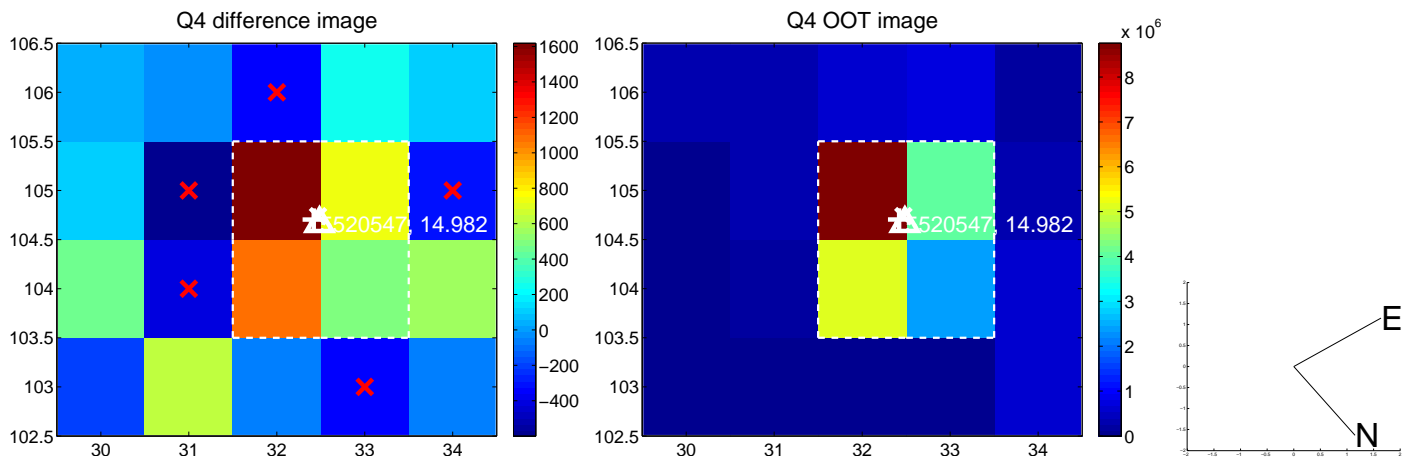
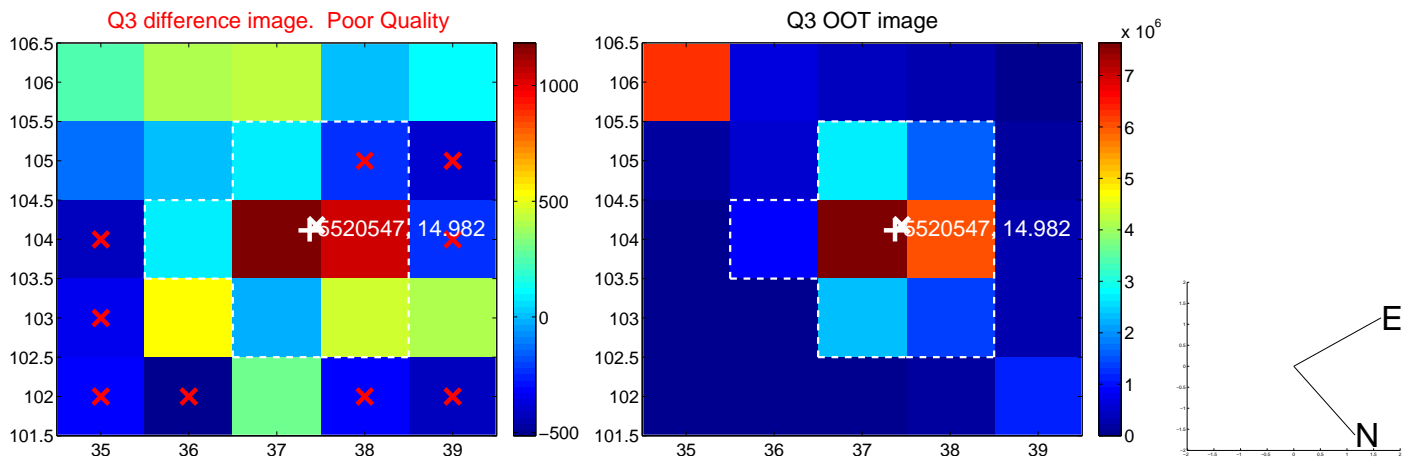
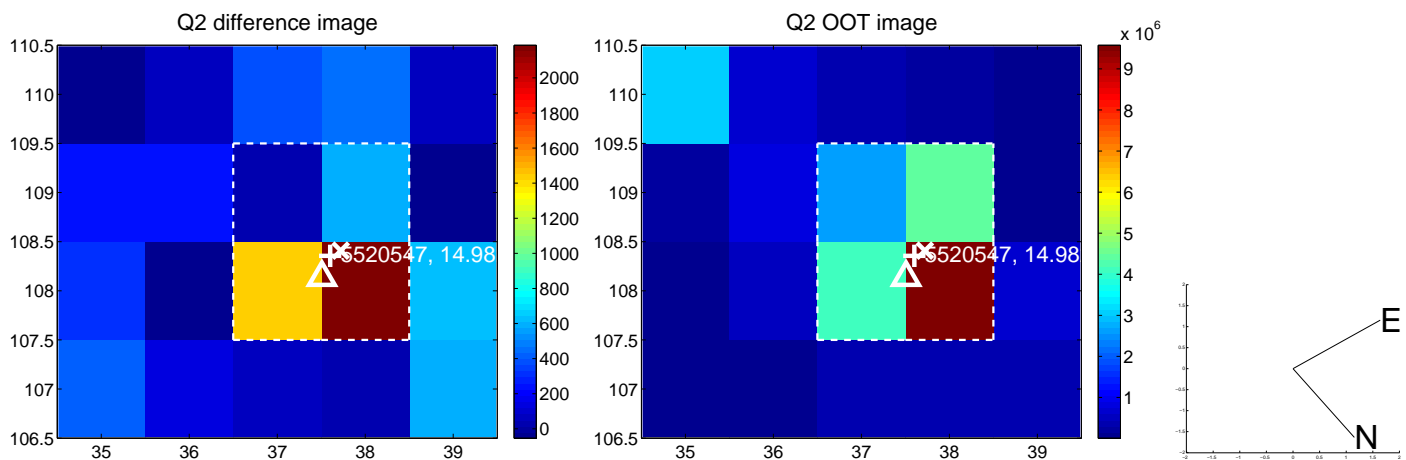
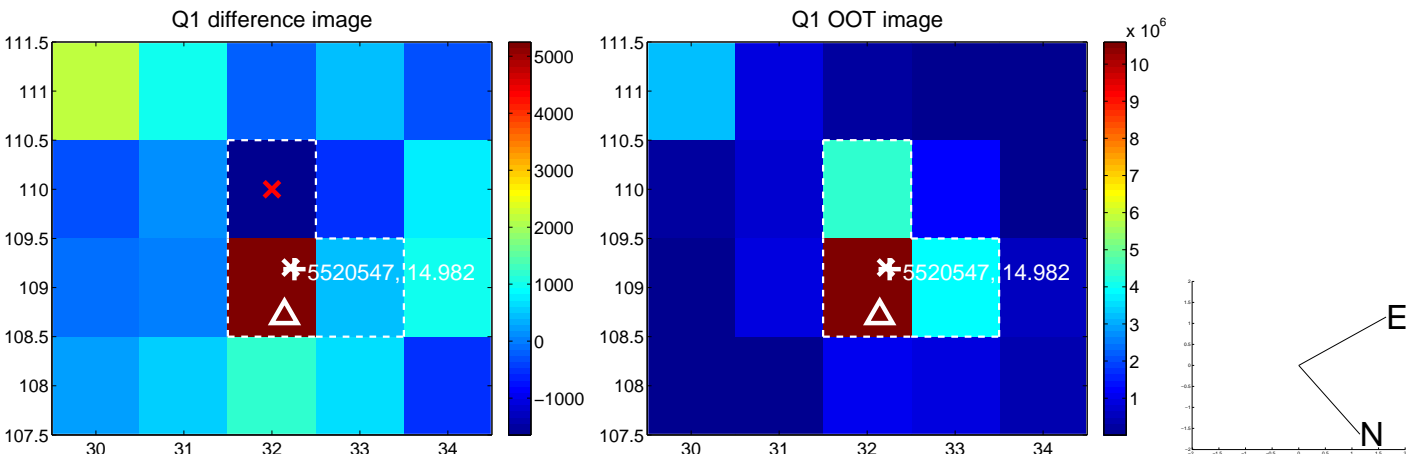
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 0.196 ± 0.557 | 0.35 | 0.049 ± 0.414 | 0.190 ± 0.489 |
| PRF-fit source offset from KIC position | 0.283 ± 0.294 | 0.96 | -0.156 ± 0.356 | 0.235 ± 0.450 |
| photometric centroid source offset | 0.19 ± 0.78 | 0.24 | 0.16 ± 0.78 | 0.10 ± 0.80 |

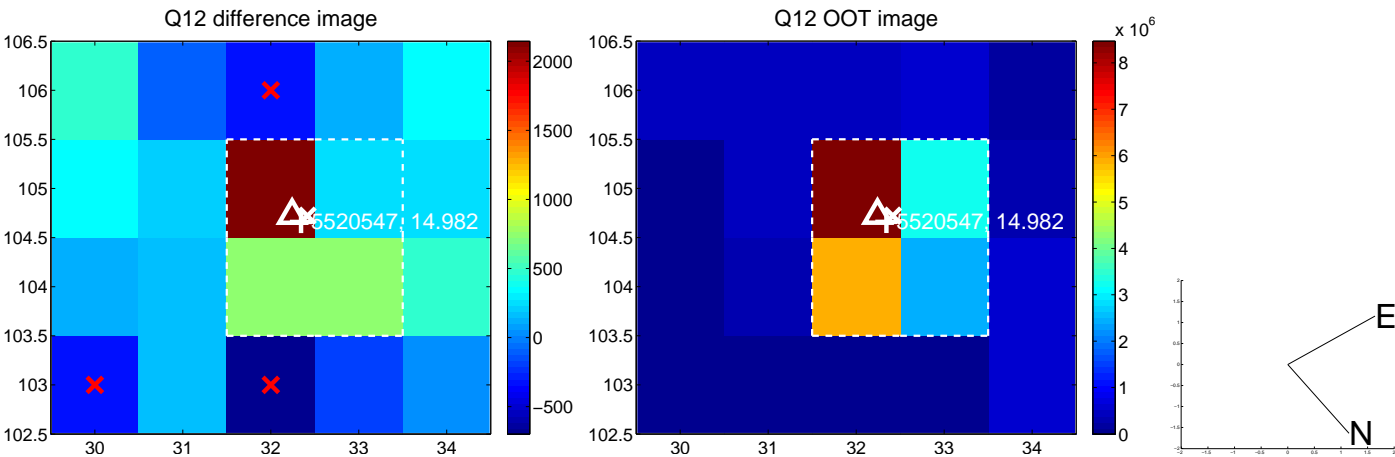
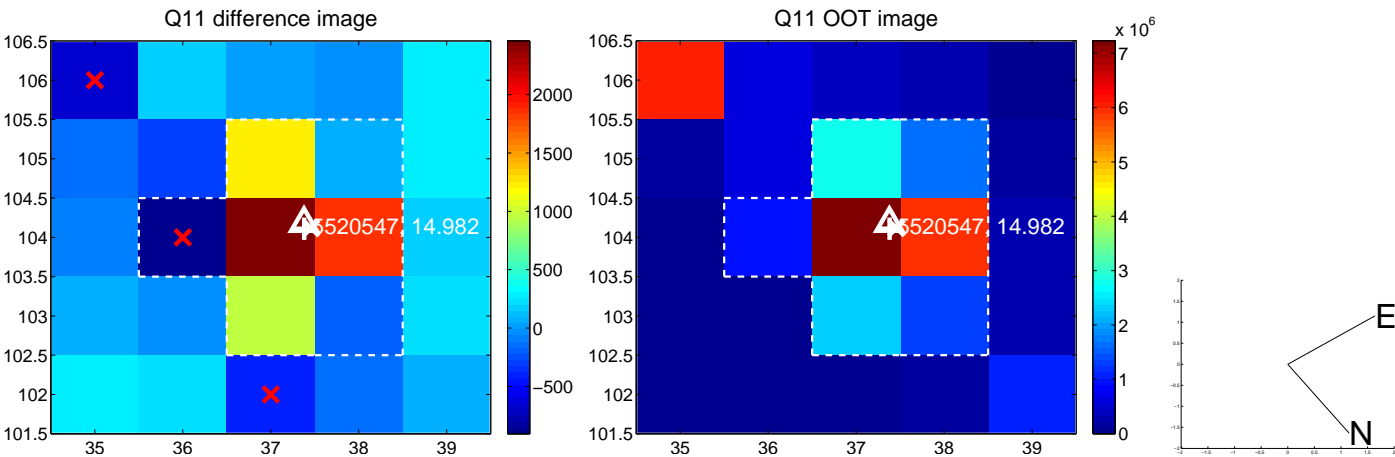
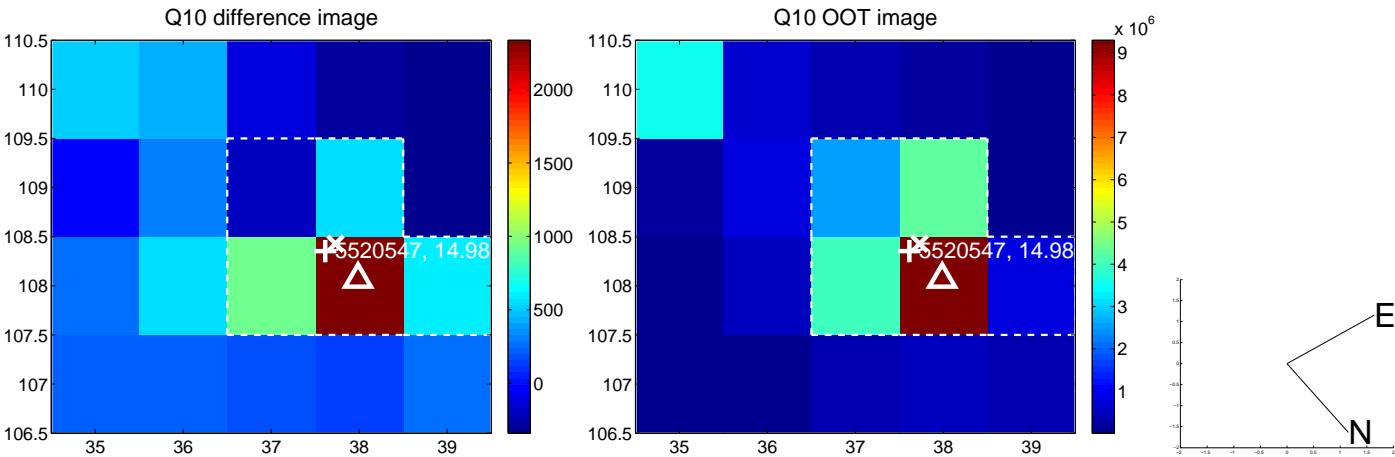
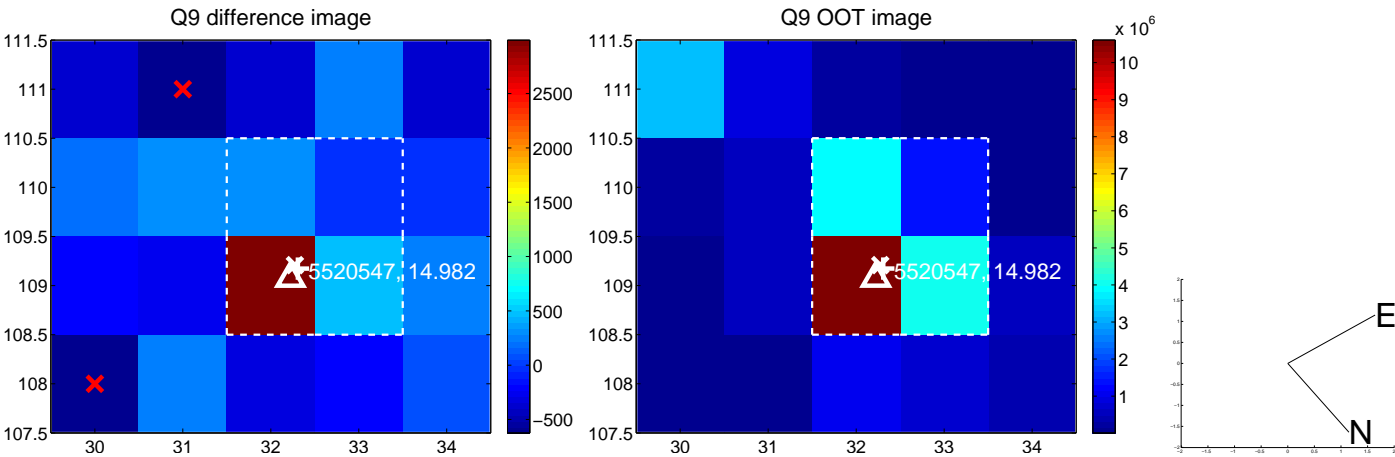


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

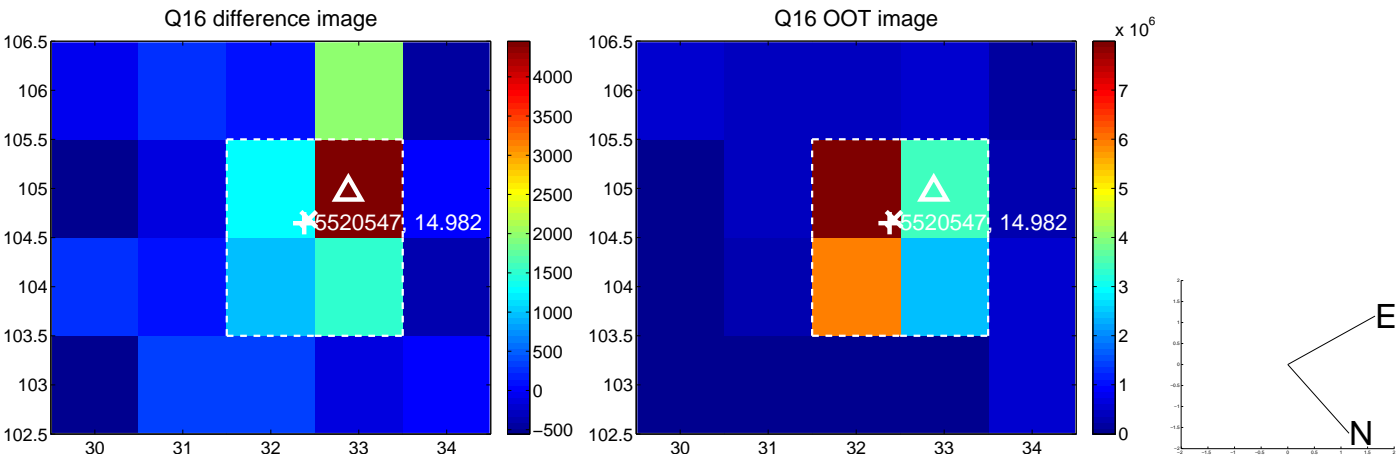
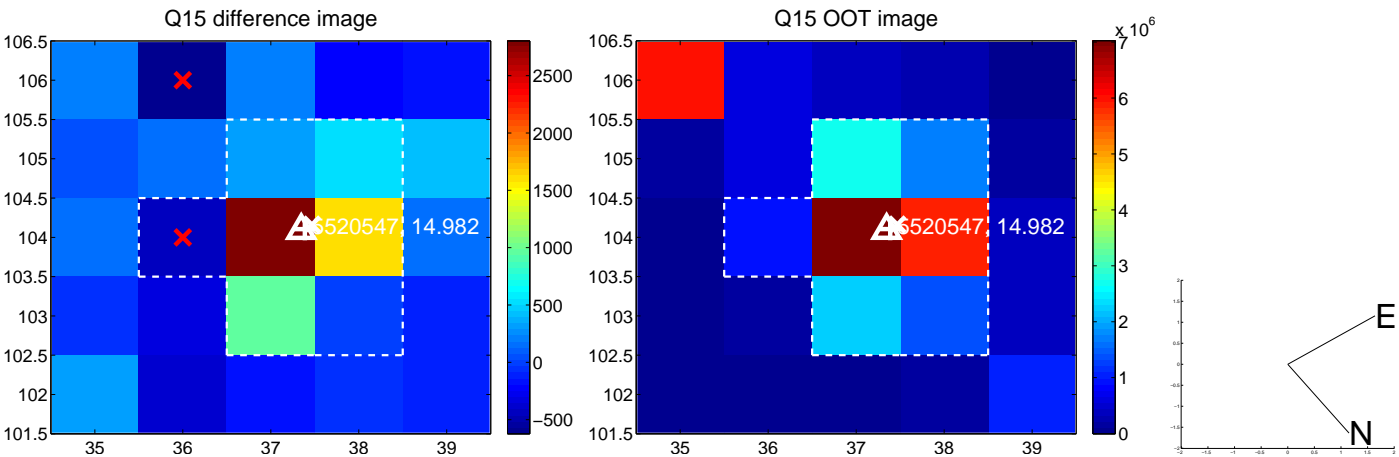
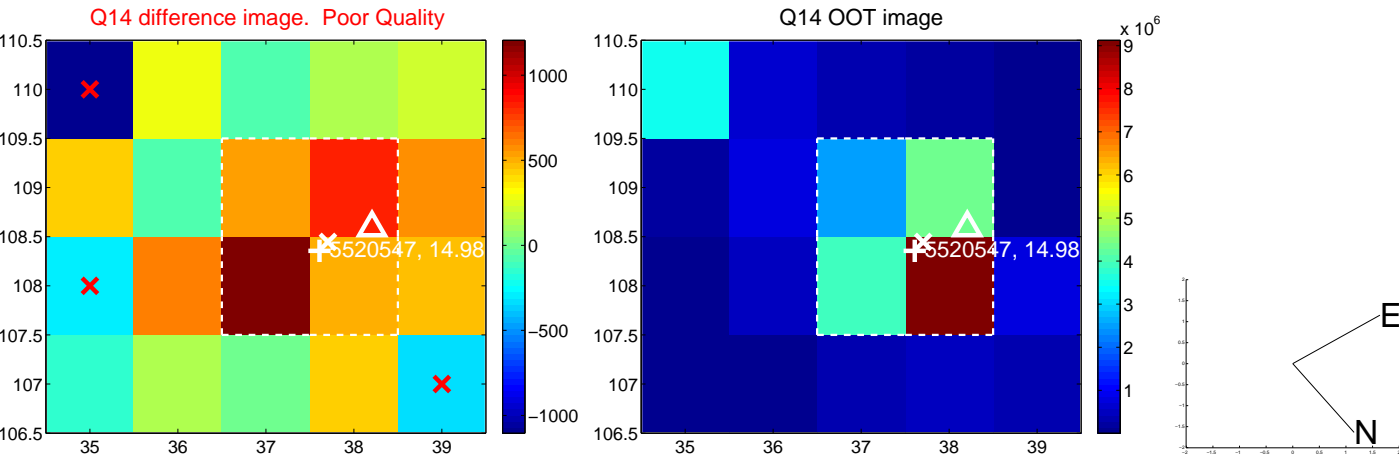
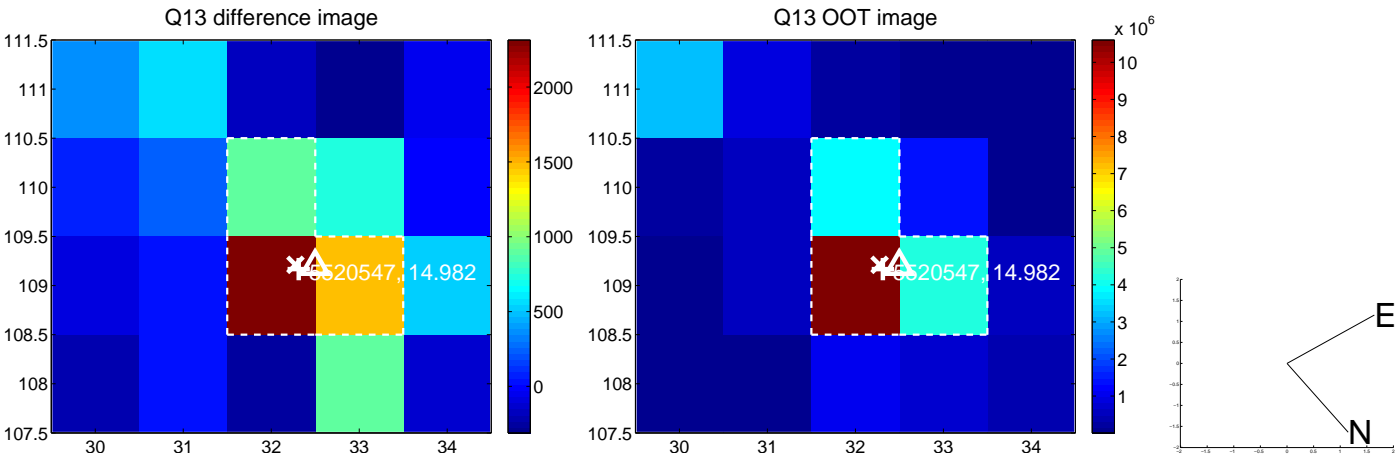
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



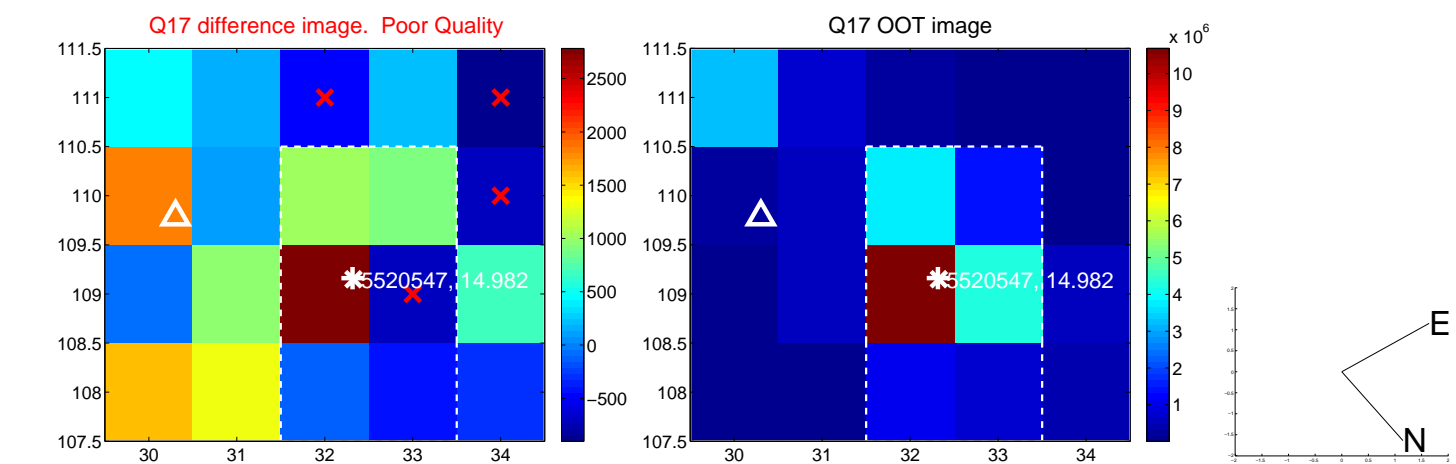
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



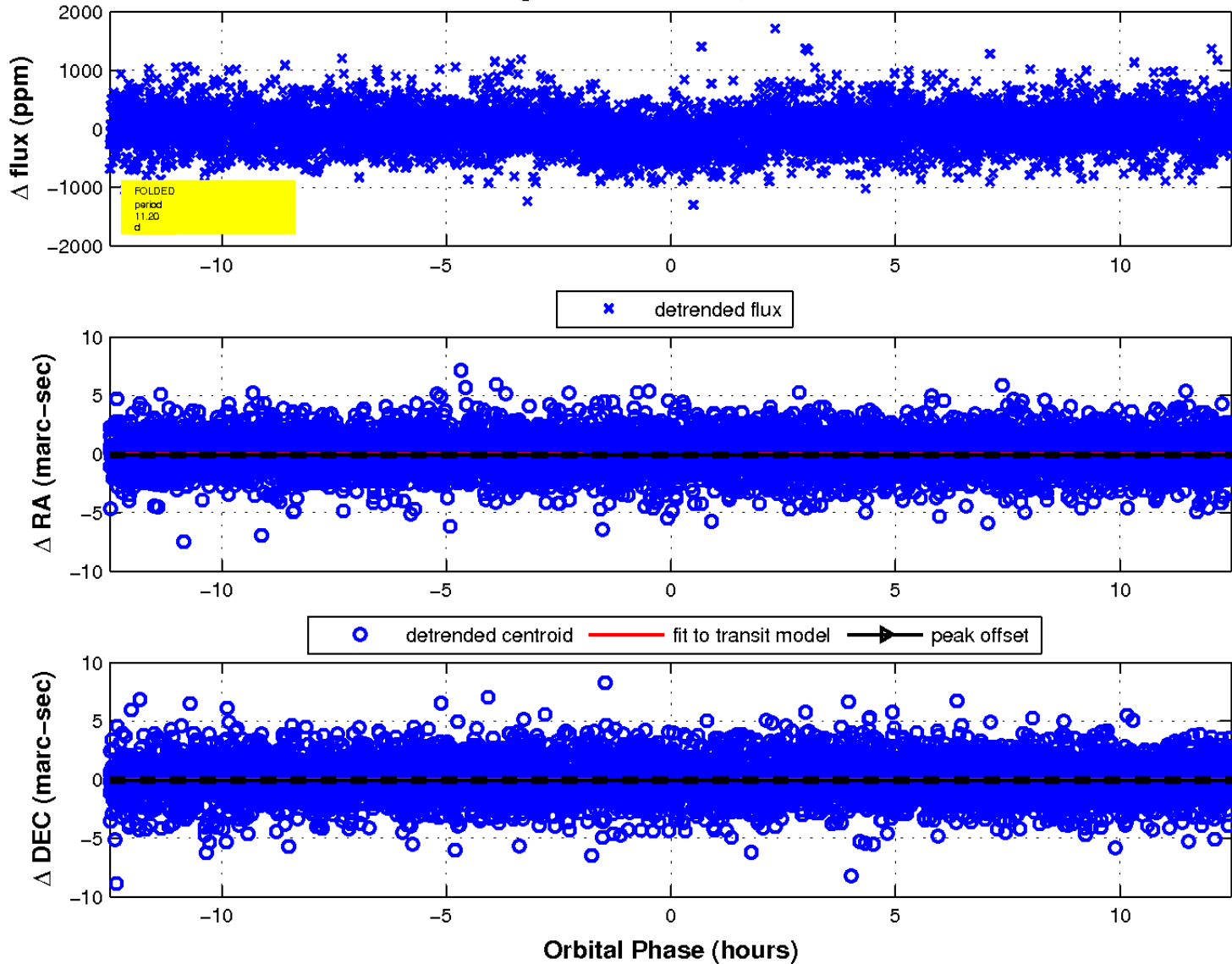
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

