

KIC 005952457

Q1-17 DR25 TCE Parameters

| TCE | Run Type | KOI? | Period (Days) | Epoch (BKJD) | Depth (ppm) | Duration (Hours) | MES | SNR | R _★ (R _☉) | T _★ (K) | R _p (R _⊕) | S _p (S _⊕) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|----------------------------------|--------------------|----------------------------------|----------------------------------|
| 005952457-01 | OBS | 6637.01 | 0.905672 | 132.201230 | 95.6 | 1.236 | 10.0 | 11.7 | 0.74 | 4949 | 0.89 | 1100.39 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------------------|
| 005952457-01 | OBS | FP | 0.00 | 0 | 0 | 1 | 1 | HALO_GHOST—EPHEM_MATCH |

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.

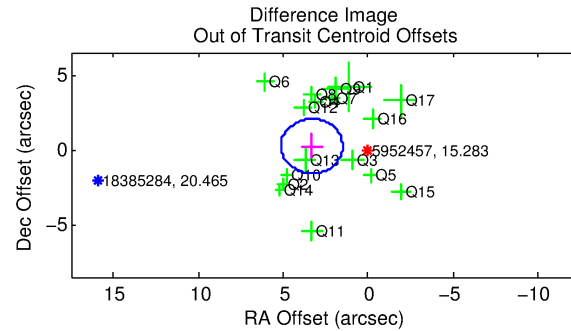
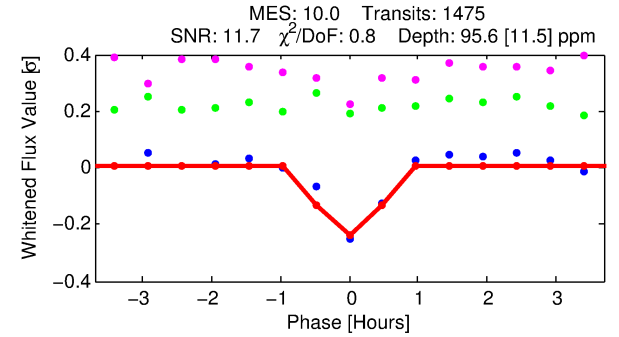
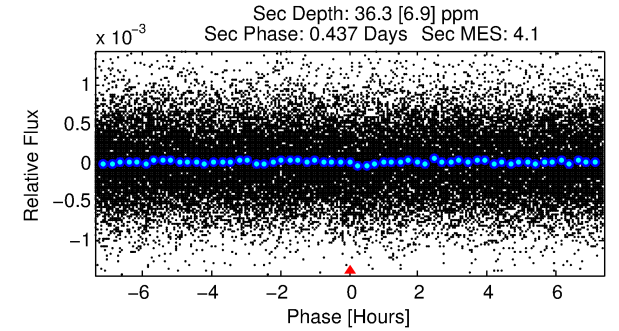
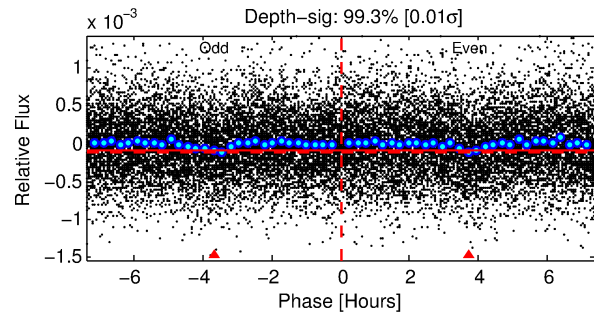
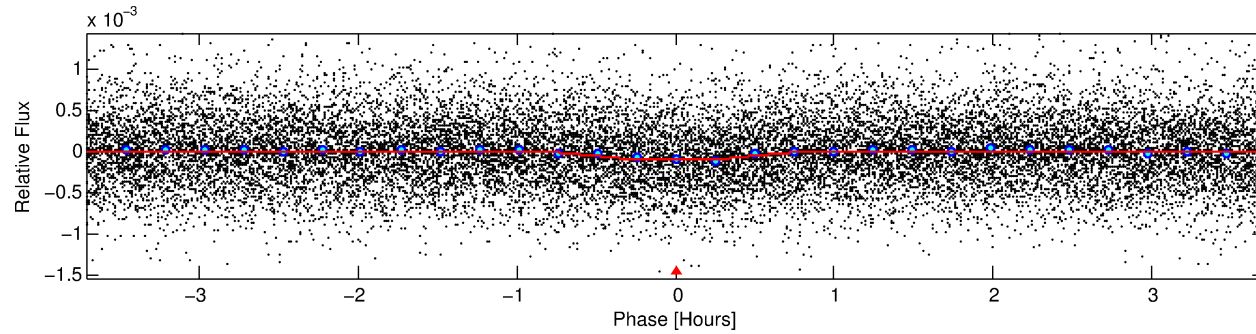
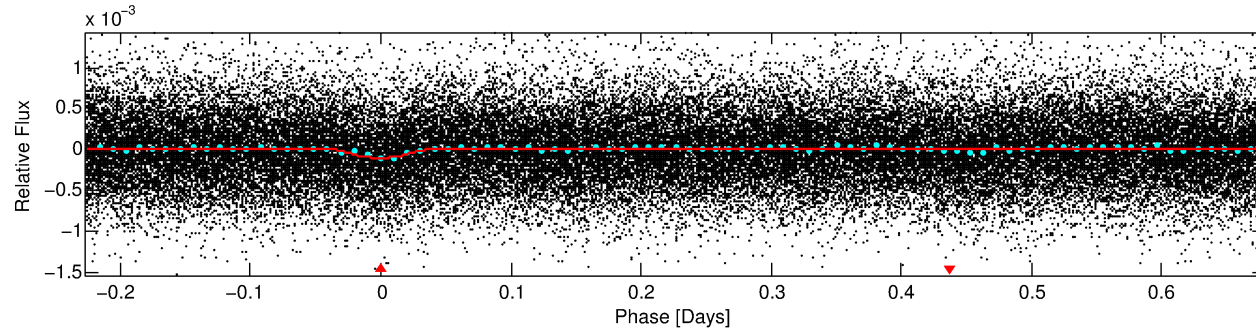
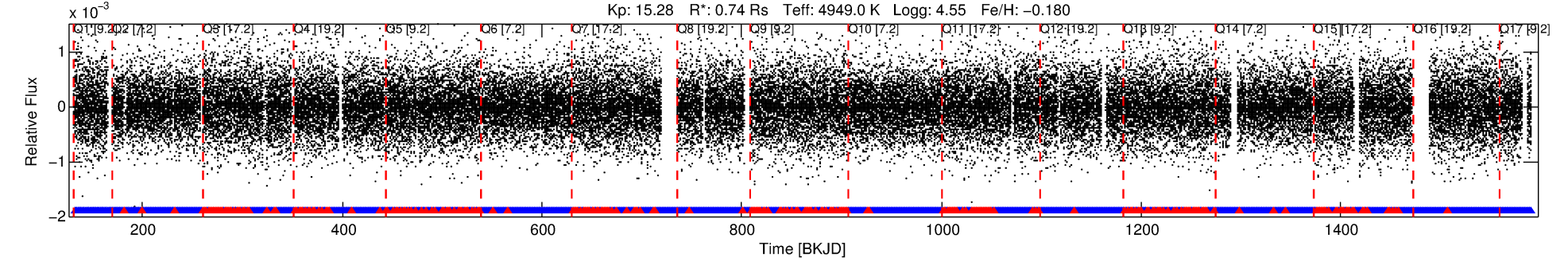
Ephemeris Match Information For 005952457-01

| TCE (1) | KIC | Parent (2) | Parent KIC | P ₁ :P ₂ | Dist (″) | ΔRow | ΔCol | m ₂ | m ₁ | D ₂ /D ₁ | Mechanism | Flag | σ _P | σ _T |
|--------------|---------|------------|------------|--------------------------------|----------|------|------|----------------|----------------|--------------------------------|------------|------|----------------|----------------|
| 005952457-01 | 5952457 | 6139.01 | 5952403 | 1:1 | 60.3 | -6 | -14 | 6.97 | 15.29 | 34.49 | Direct-PRF | 0 | 0.63 | 0.24 |

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant σ_P < 5.0 and σ_T < 5.0. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 5952457 Candidate: 1 of 1 Period: 0.906 d
KOI: K06637.01 Corr: 0.888



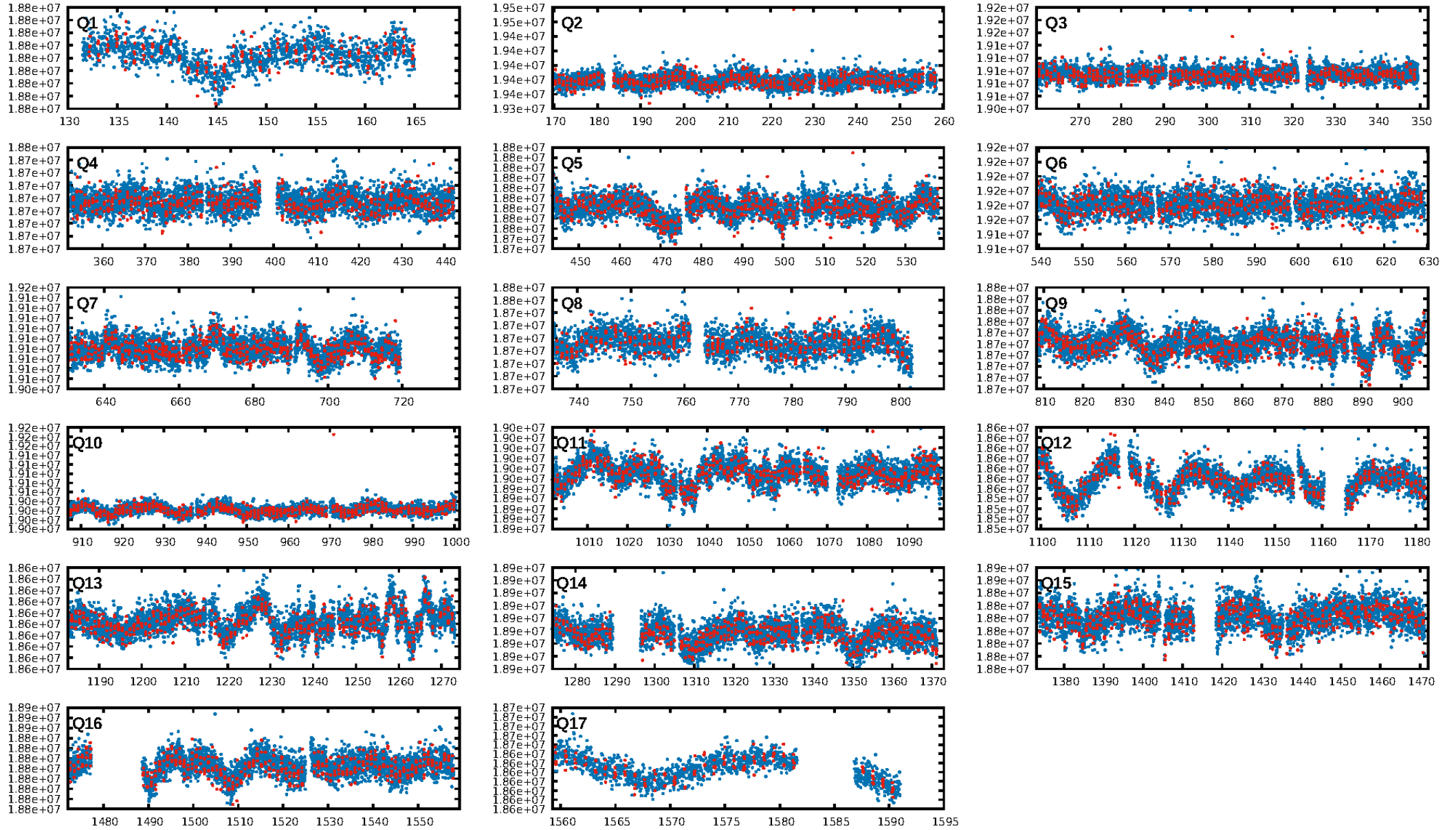
DV Fit Results:

Period = 0.90567 [0.00001] d
Epoch = 132.2012 [0.0017] BKJD
Rp/R* = 0.0110 [0.0101]
a/R* = 2.74 [8.73]
b = 0.90 [0.80]
Seff = 1100.39 [194.70]
Teff = 1469 [65] K
Rp = 0.89 [0.82] Re
a = 0.0164 [0.0014] AU
Ag = 6.79 [12.55] [0.46 σ]
Teffp = 3665 [1694] K [1.30 σ]

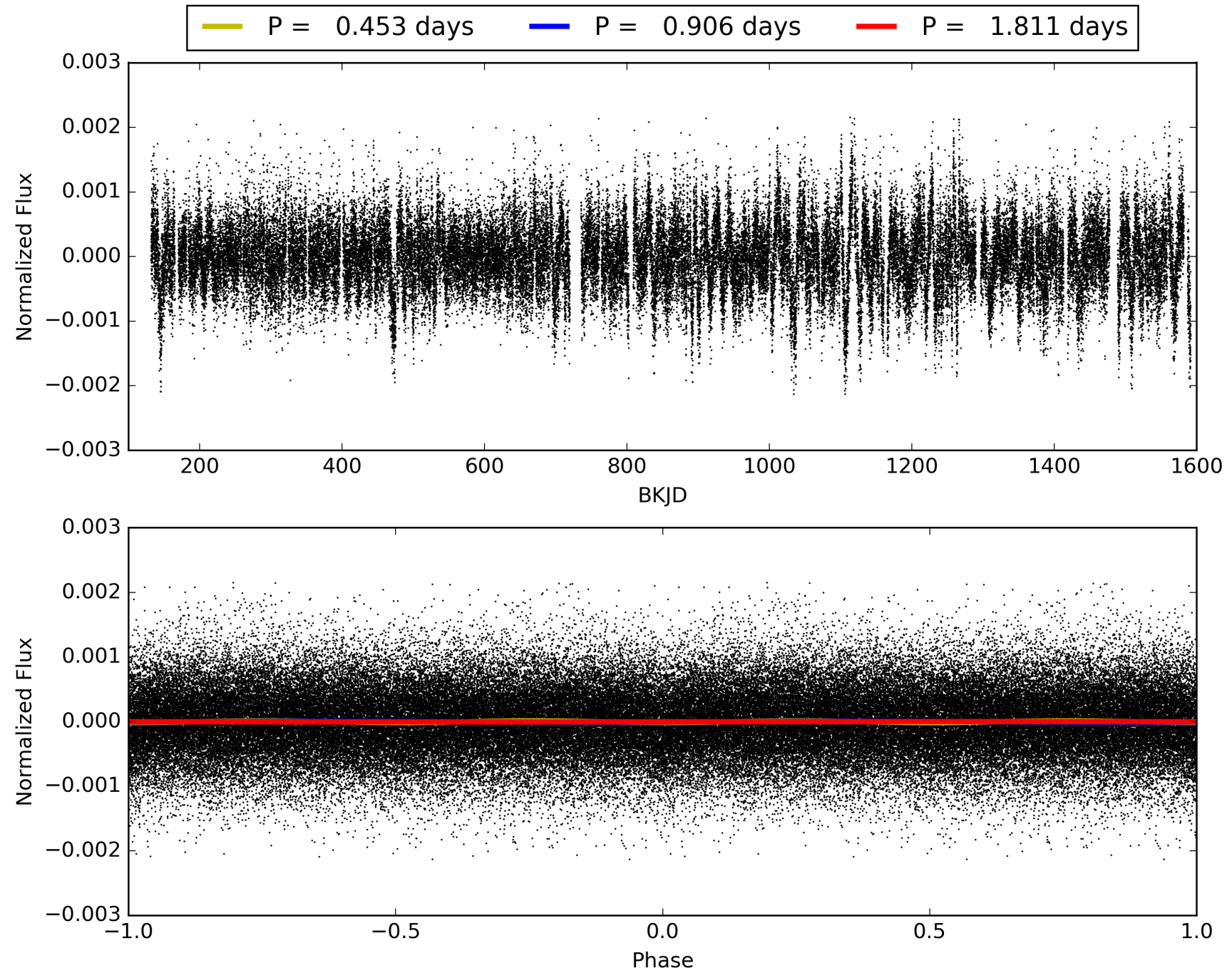
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.21e-23
RollingBand-fgt: 0.79 [1114/1409]
GhostDiagnostic-chr: 0.05549
Centroid-sig: 0.4%
Centroid-so: 2.530 arcsec [2.08 σ]
OotOffset-rm: 3.314 arcsec [5.47 σ]
KicOffset-rm: 3.361 arcsec [5.53 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.06 [1/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005952457-01, PDC Light Curves

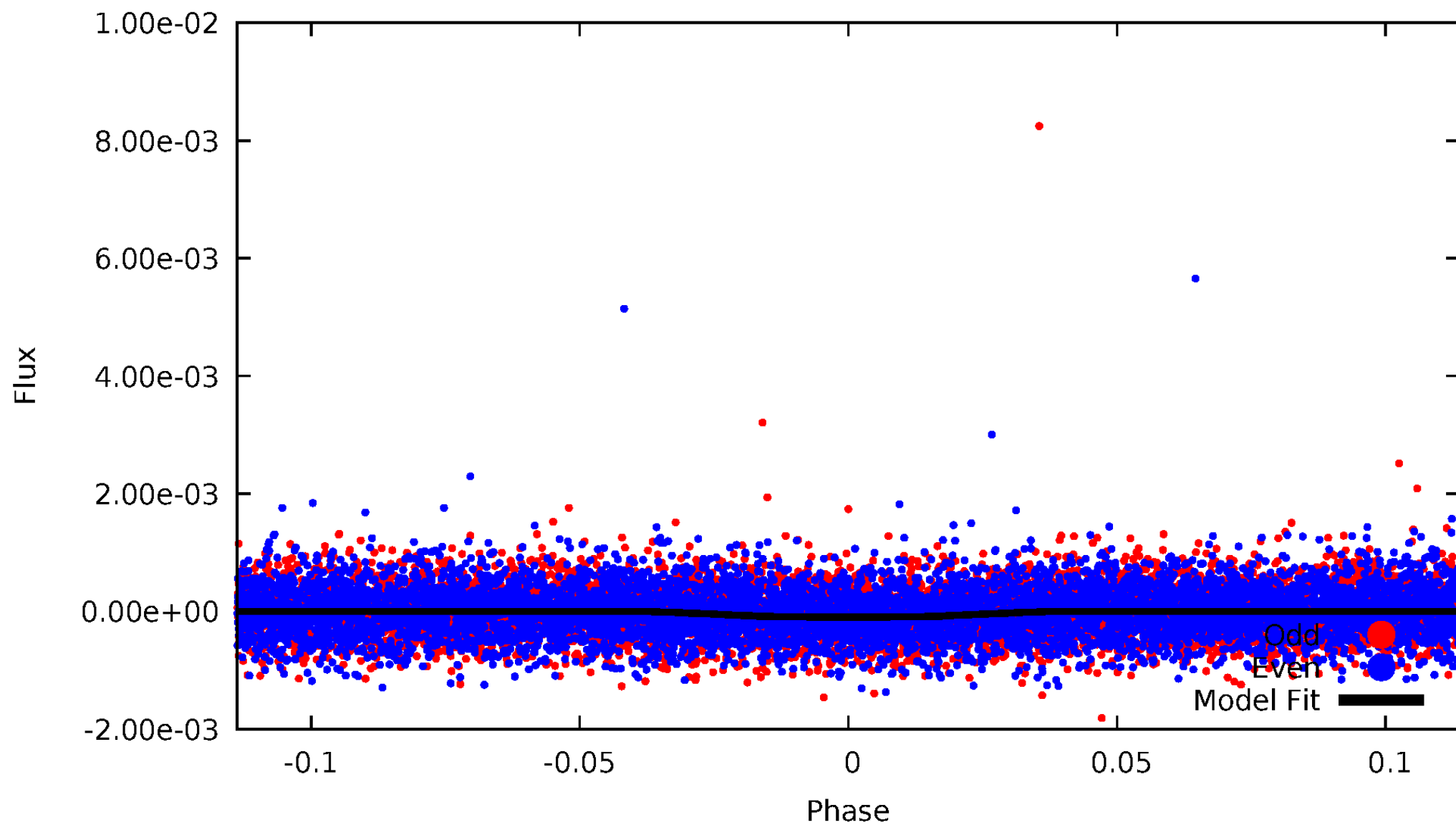


TCE 005952457-01



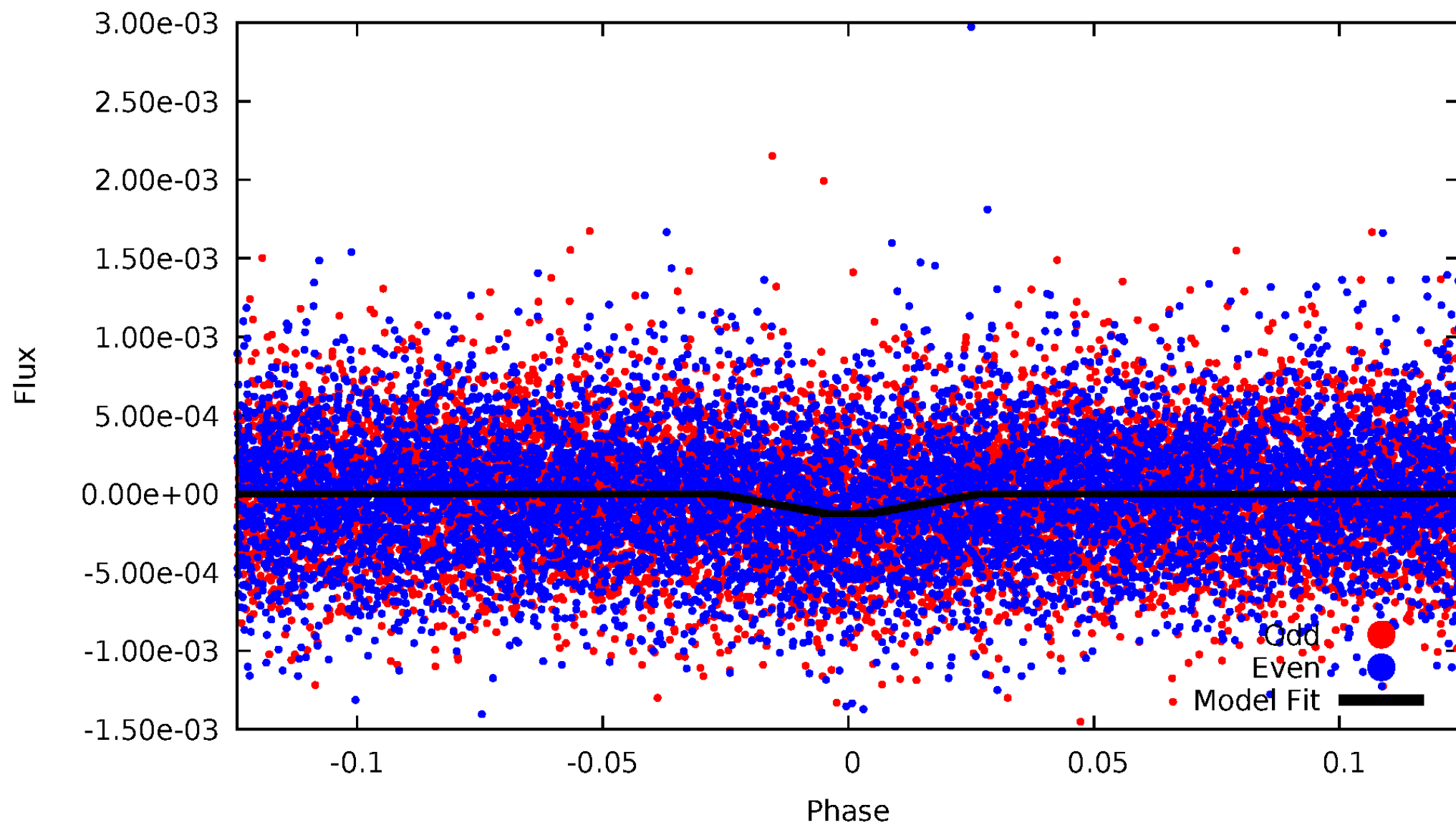
DV Odd/Even

TCE 005952457-01



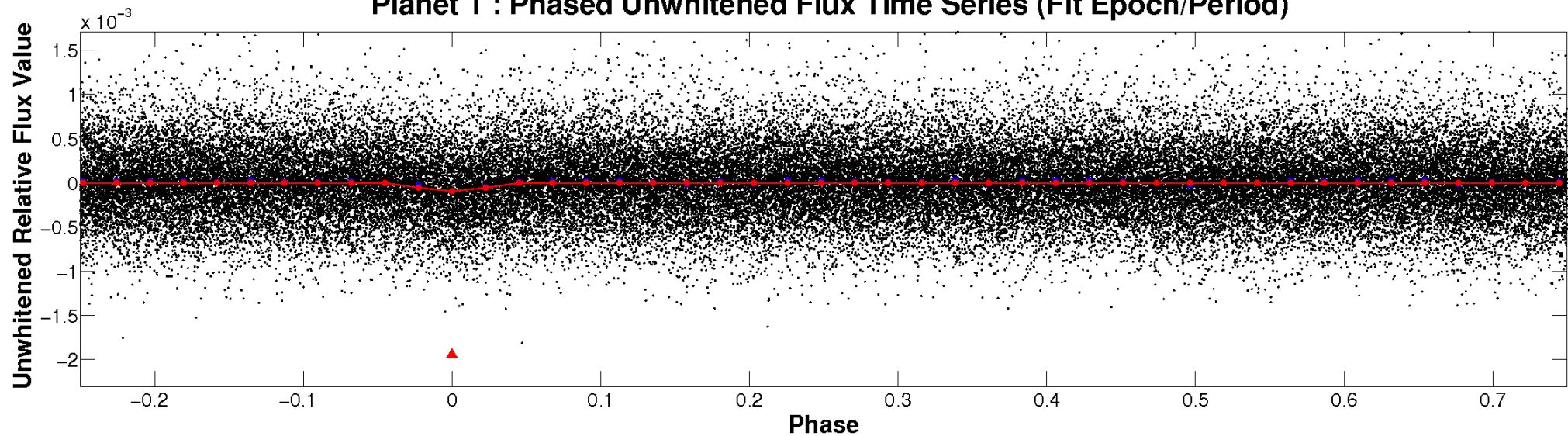
ALT Odd/Even

TCE 005952457-01

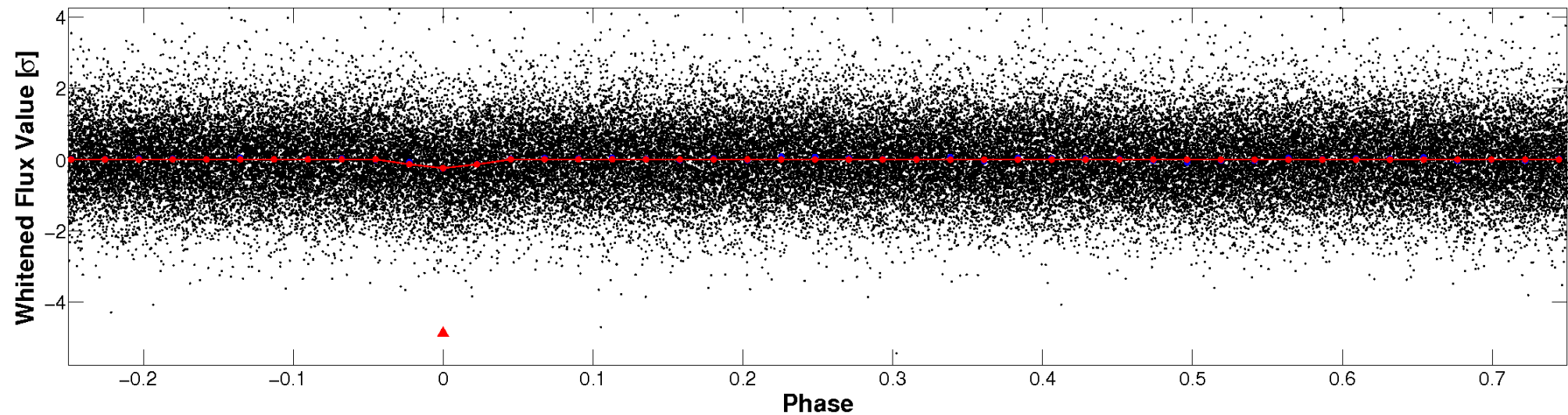


Non-Whitened Vs. Whitened Light Curve

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

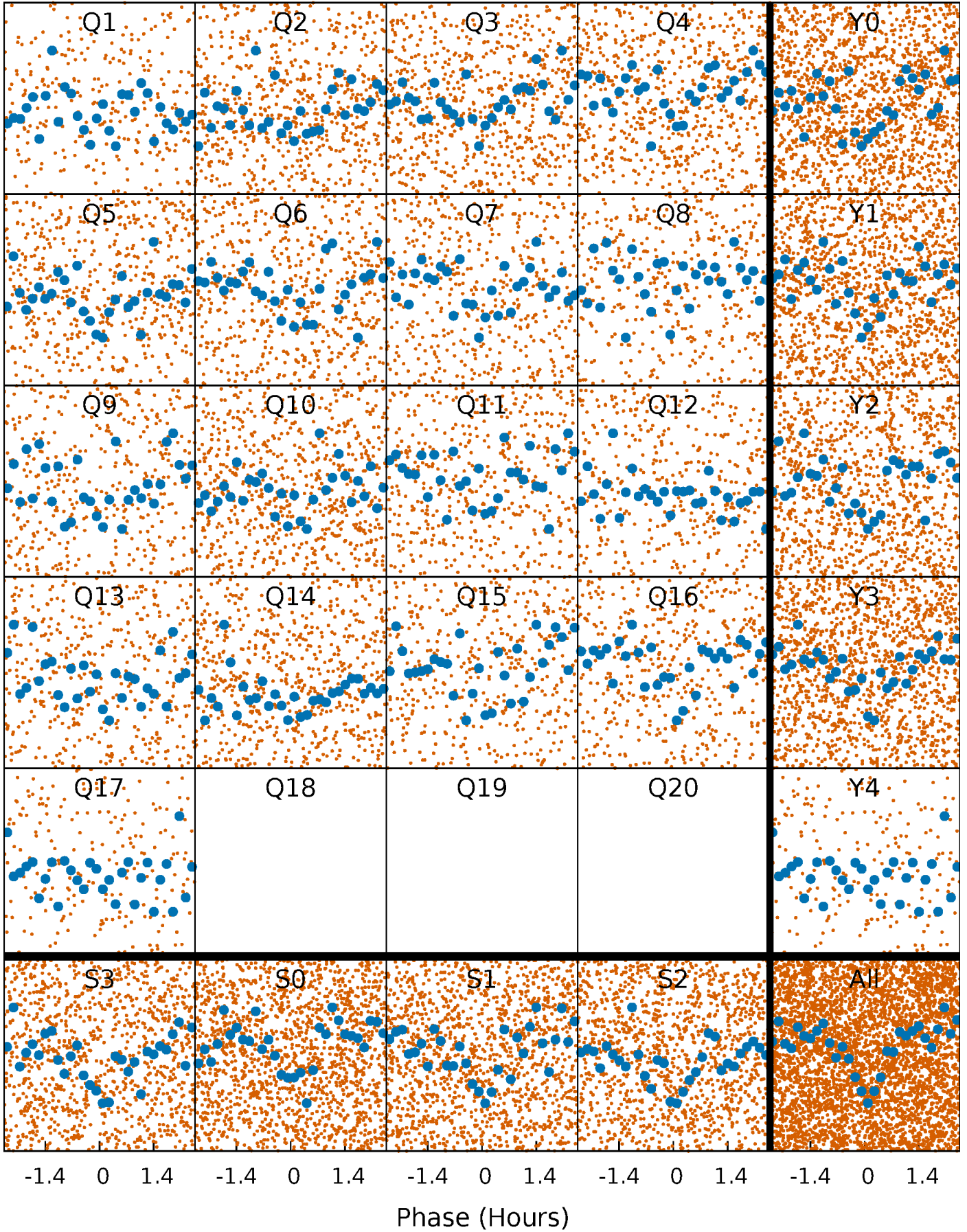


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



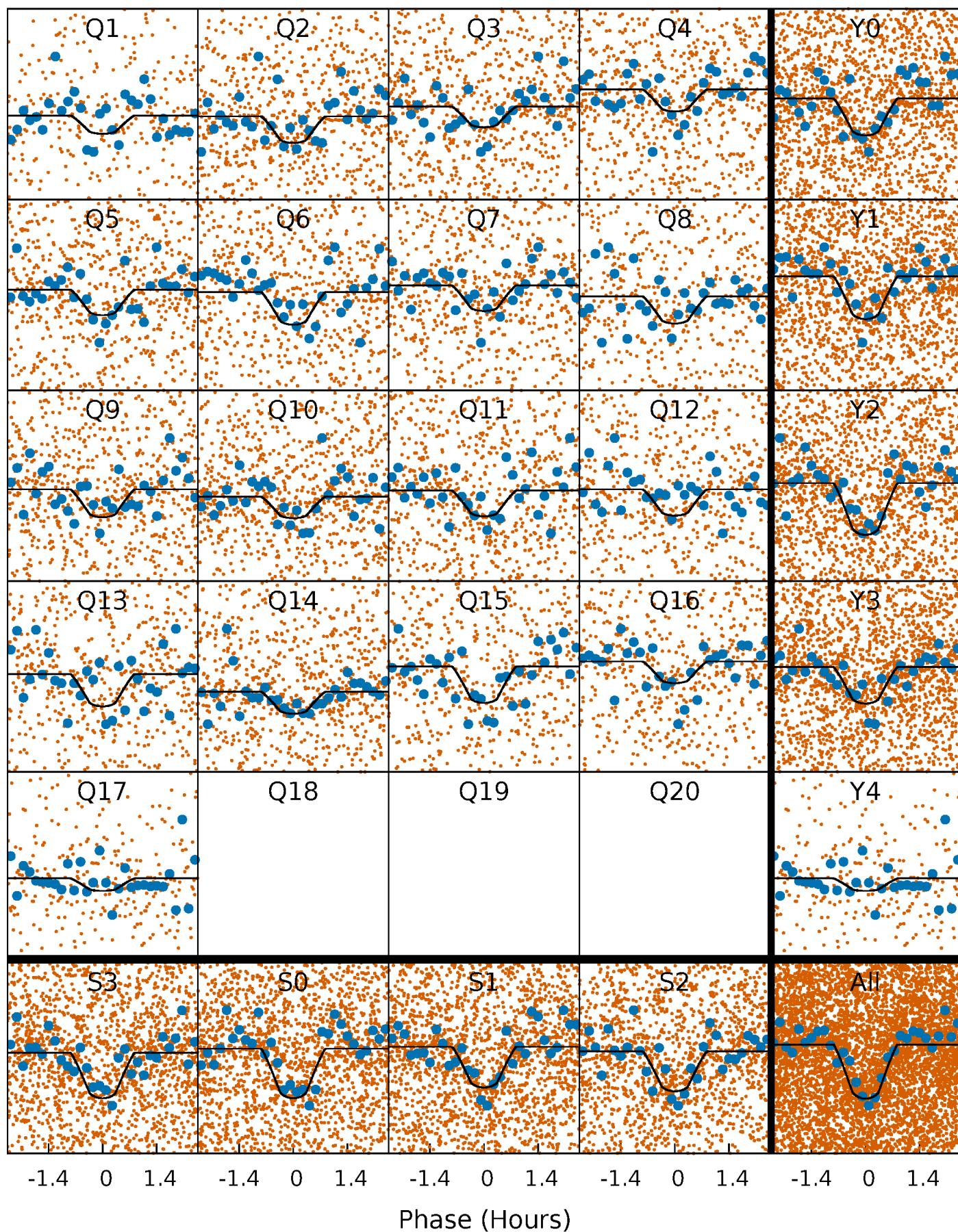
PDC Quarter-Phased Transit Curves

TCE 005952457-01 P= 0.905672 Days $T_0=132.201230$ (BKJD)



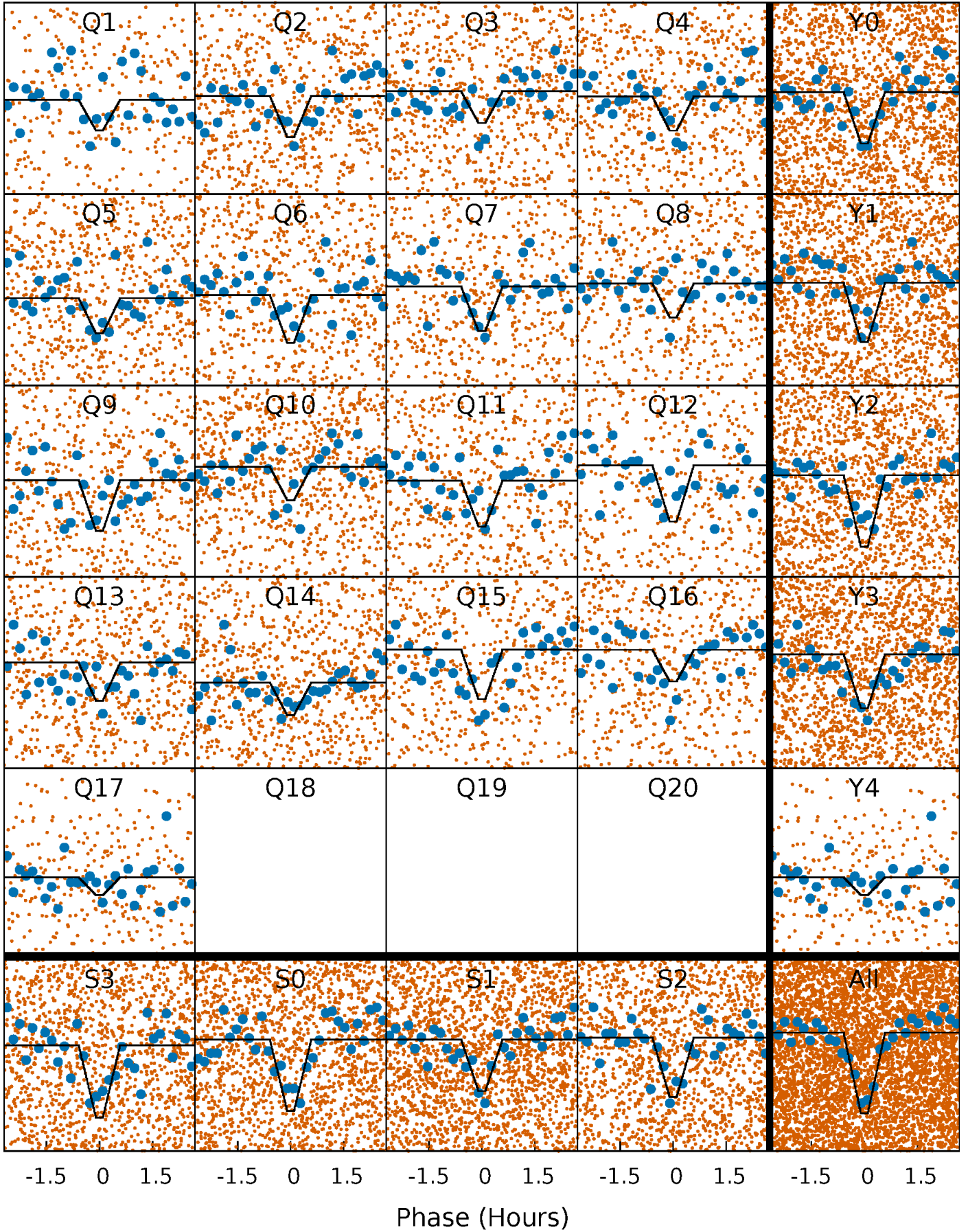
DV Quarter-Phased Transit Curves

TCE 005952457-01 P= 0.905672 Days $T_0=132.201230$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

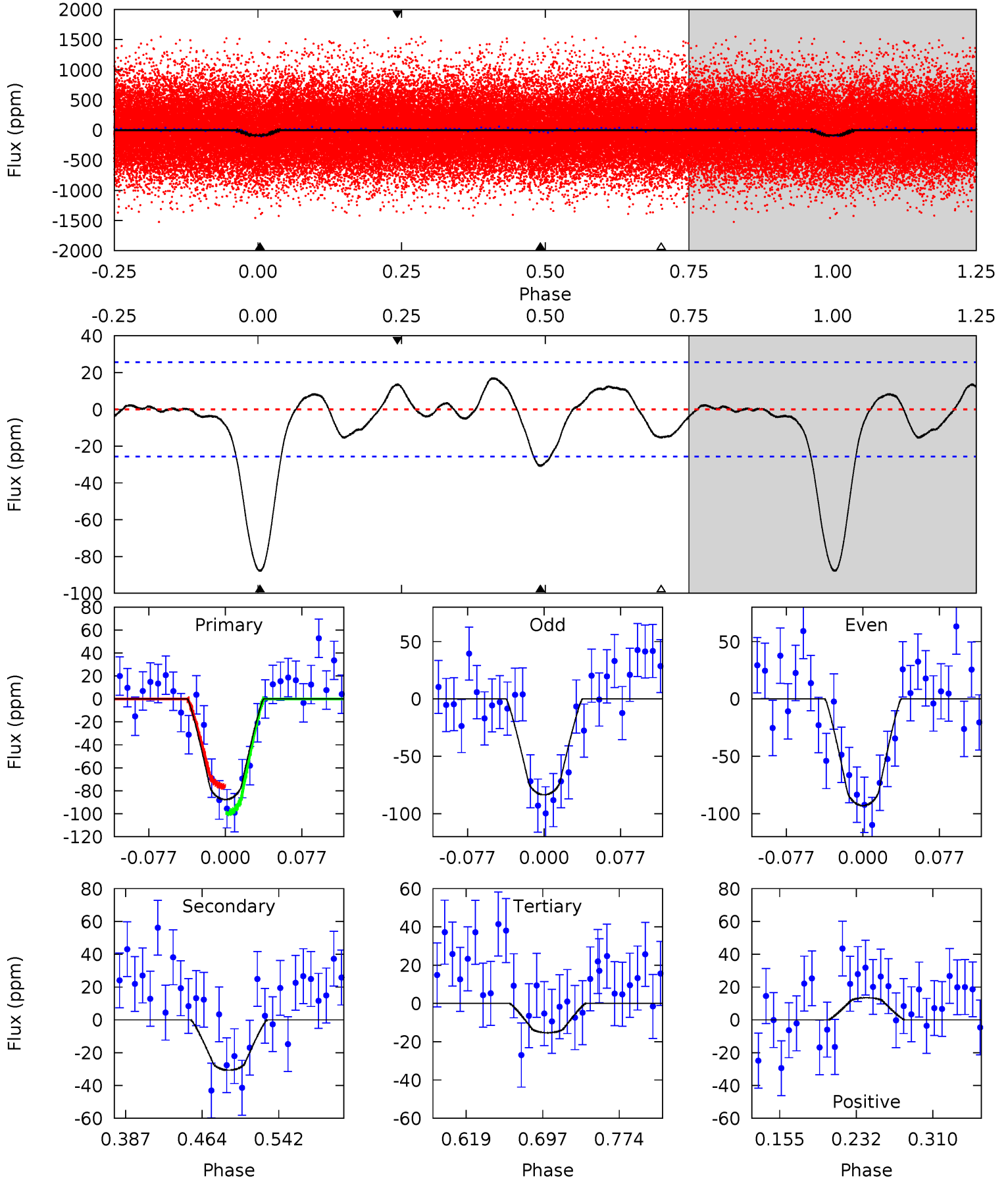
TCE 005952457-01 P= 0.905677 Days $T_0=132.200842$ (BKJD)



DV Model-Shift Uniqueness Test

005952457-01, P = 0.905672 Days, E = 131.295558 Days

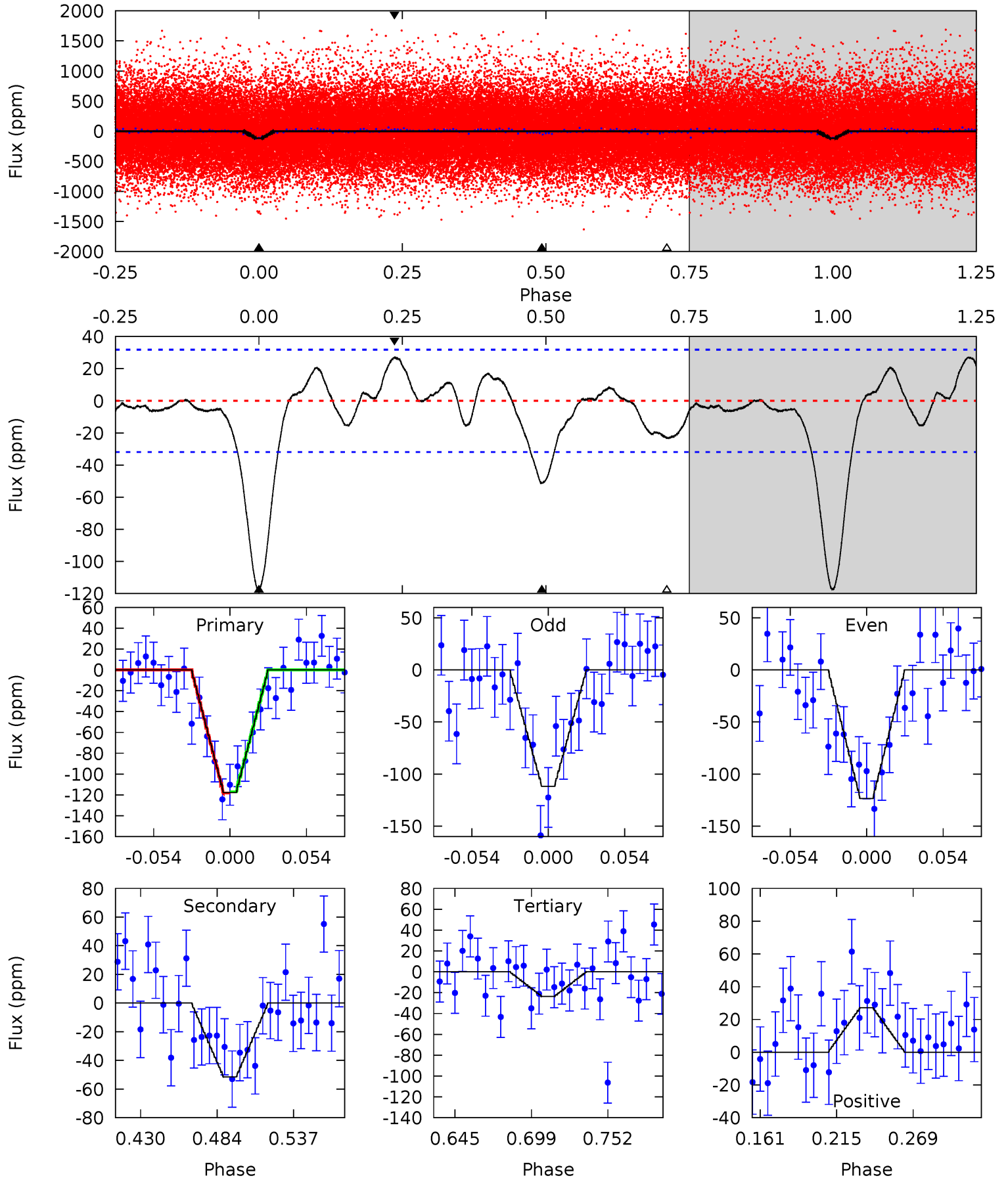
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 15.8 | 5.52 | 2.76 | 2.43 | 4.62 | 1.77 | 1.42 | 13.0 | 13.4 | 2.77 | 3.09 | 0.85 | 0.89 | 0.16 | 2.10 |



Alt Model-Shift Uniqueness Test

005952457-01, P = 0.905677 Days, E = 131.295165 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 17.3 | 7.59 | 3.47 | 4.00 | 4.69 | 1.93 | 1.61 | 13.8 | 13.3 | 4.12 | 3.60 | 0.87 | 0.95 | 0.19 | 0.09 |



Stellar Parameters For KIC 005952457

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 4949^{+151}_{-136} | $4.552^{+0.072}_{-0.044}$ | $-0.180^{+0.300}_{-0.300}$ | $0.741^{+0.065}_{-0.072}$ | $0.715^{+0.093}_{-0.050}$ | $2.472^{+0.741}_{-0.396}$ |
| | +3%/-3% | +2%/-1% | +167%/-167% | +9%/-10% | +13%/-7% | +30%/-16% |
| 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 005952457-01 / KOI 6637.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|----------------------------|
| DV | -31 ± 6 | $1.04^{+0.70}_{-0.63}$ | 2044^{+73}_{-76} | 3560^{+1589}_{-594} | $4.039^{+24.038}_{-2.586}$ |
| Alt. | -52 ± 7 | $1.02^{+0.77}_{-0.62}$ | 2045^{+73}_{-78} | 3926^{+1946}_{-682} | $7.356^{+44.212}_{-4.931}$ |

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

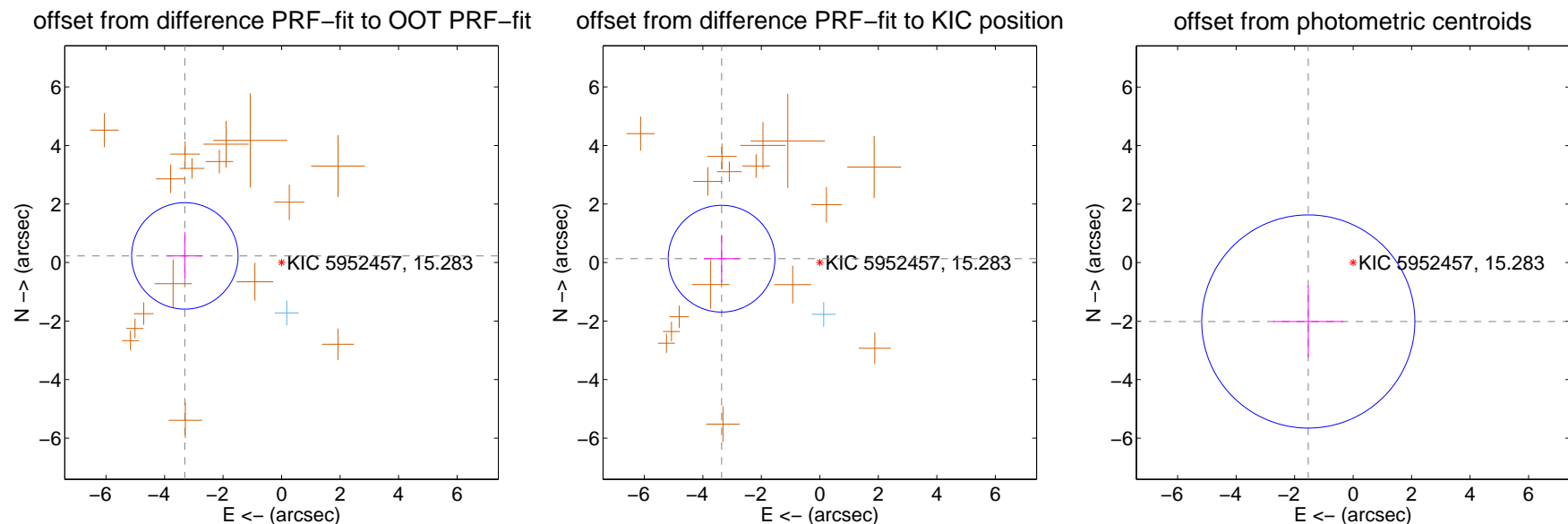
DV Centroid Data

Supplemental centroid analysis for 005952457-01. Kepler magnitude: 15.28. Transit SNR 11.72

There are 1 quarters with good PRF difference image offsets

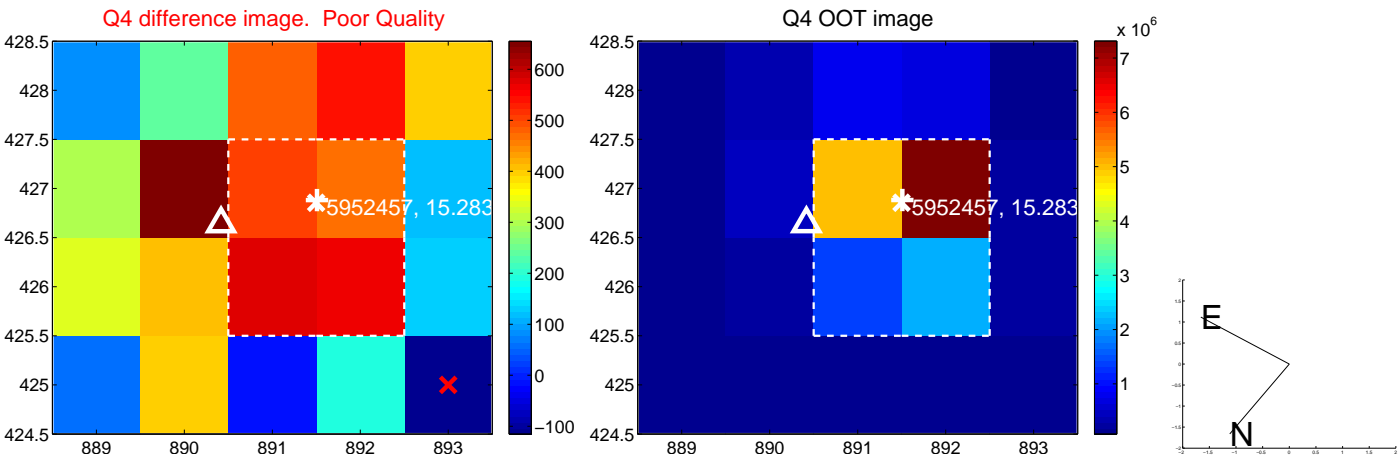
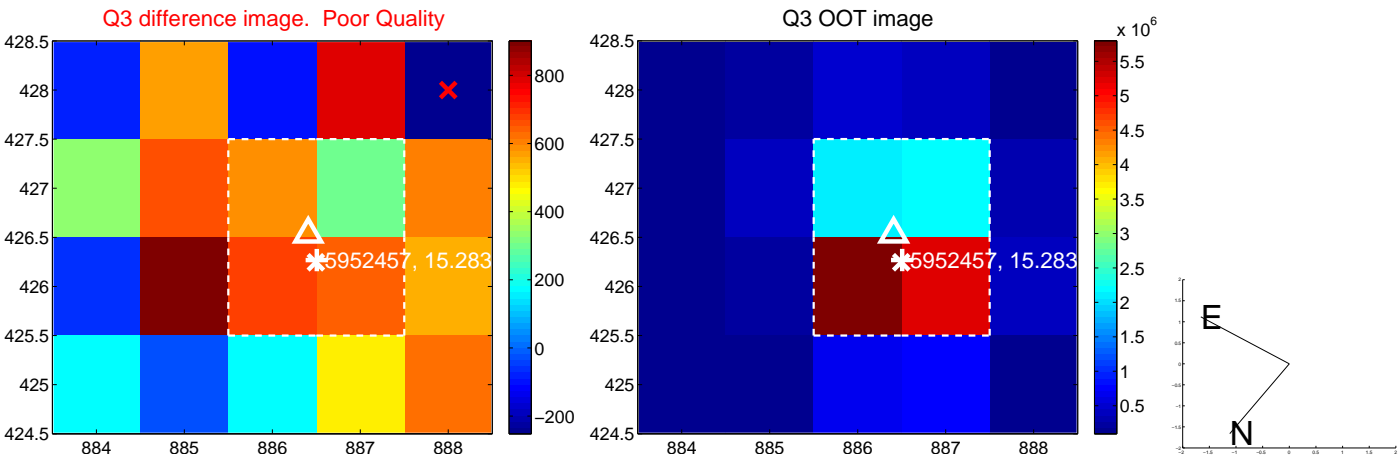
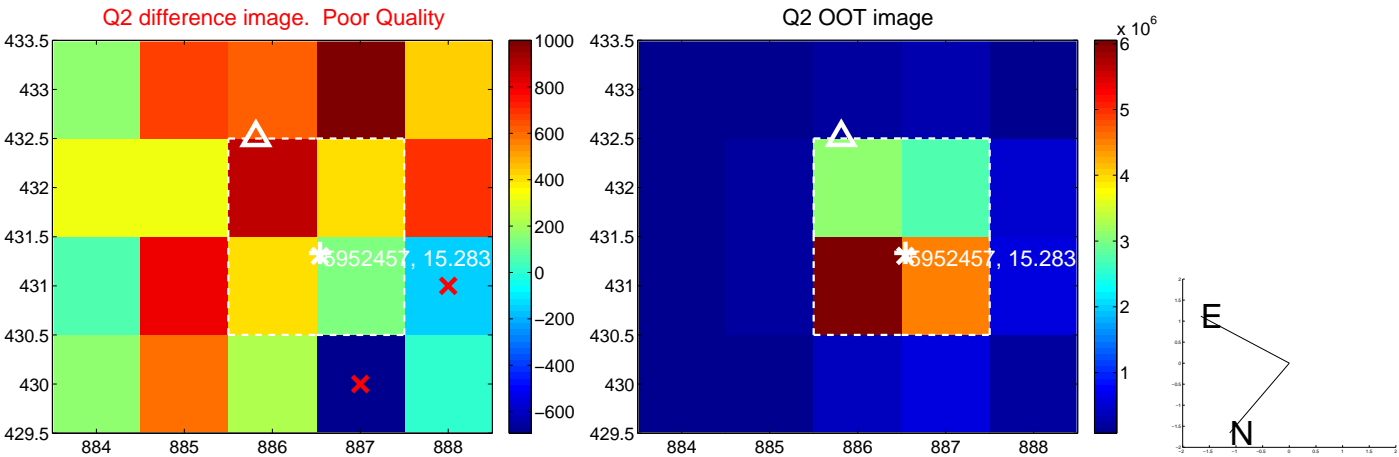
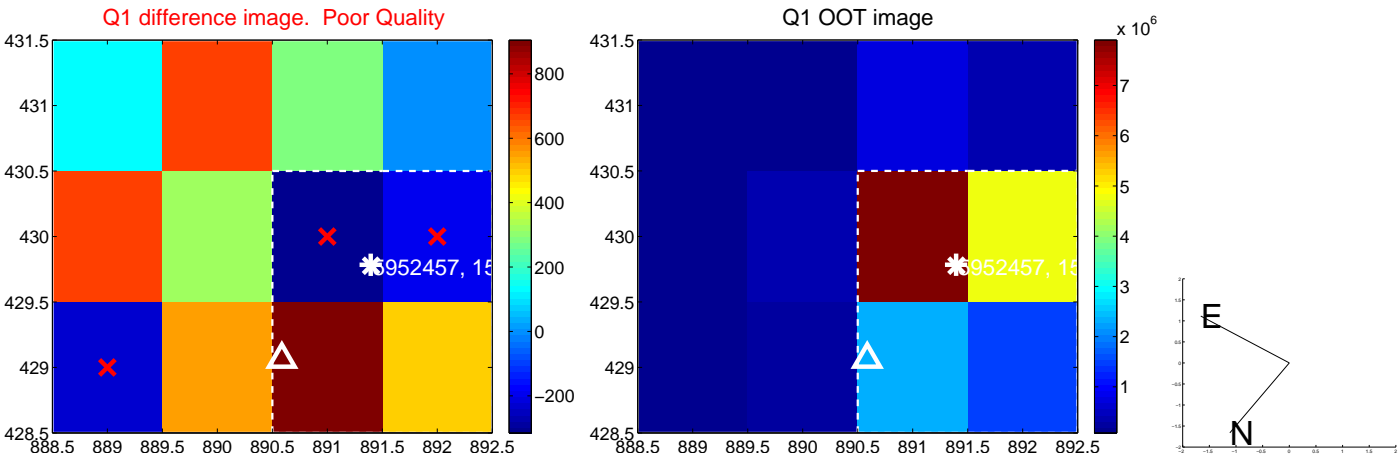
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 3.314 ± 0.606 | 5.47 | 3.307 ± 0.605 | 0.227 ± 0.810 |
| PRF-fit source offset from KIC position | 3.361 ± 0.608 | 5.53 | 3.359 ± 0.608 | 0.131 ± 0.810 |
| photometric centroid source offset | 2.53 ± 1.21 | 2.08 | 1.53 ± 1.21 | -2.01 ± 1.22 |

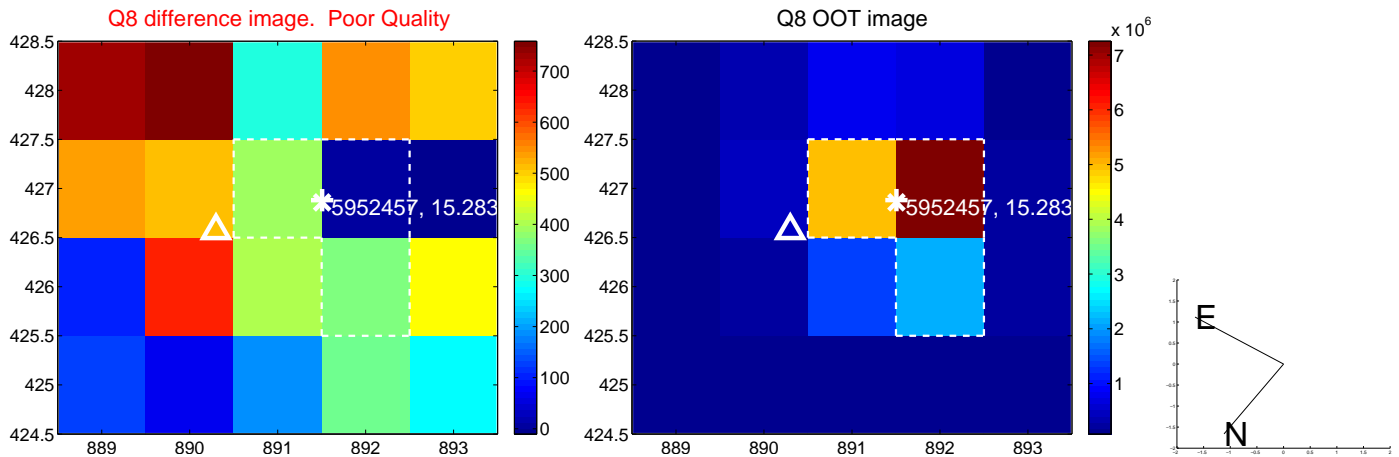
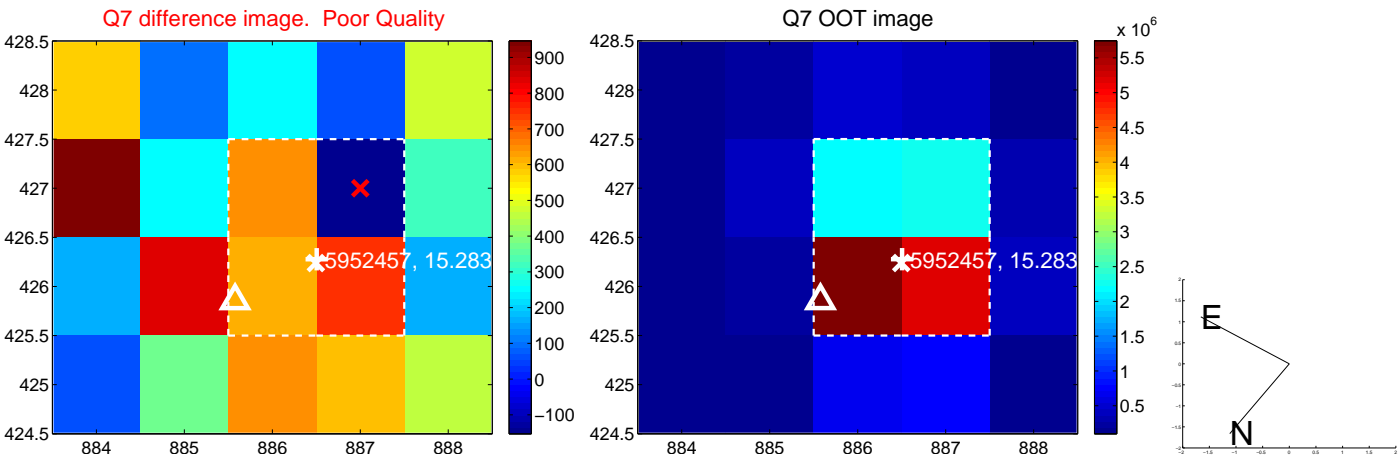
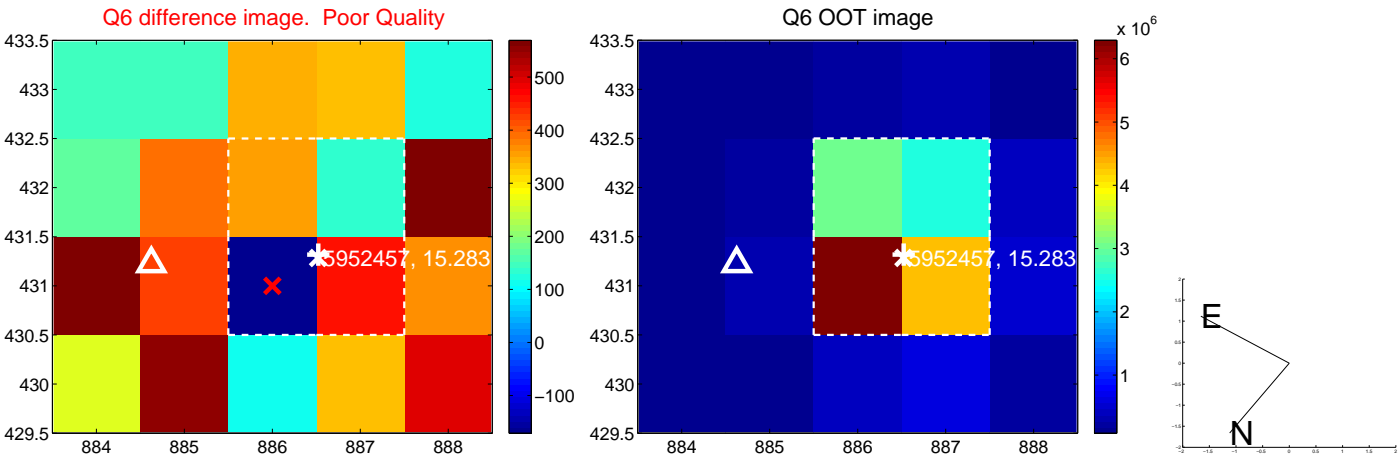
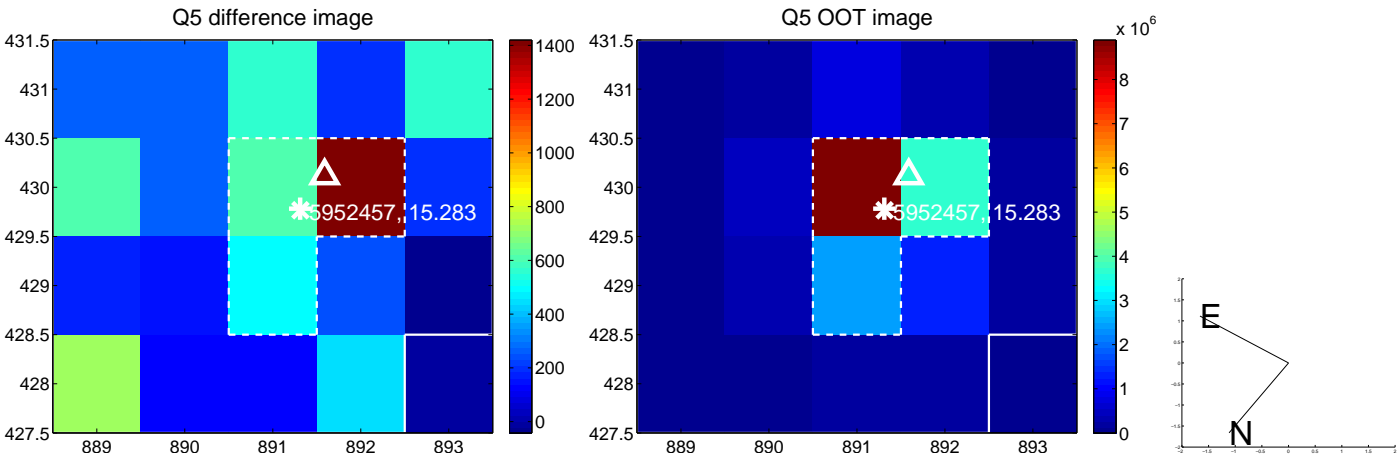


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

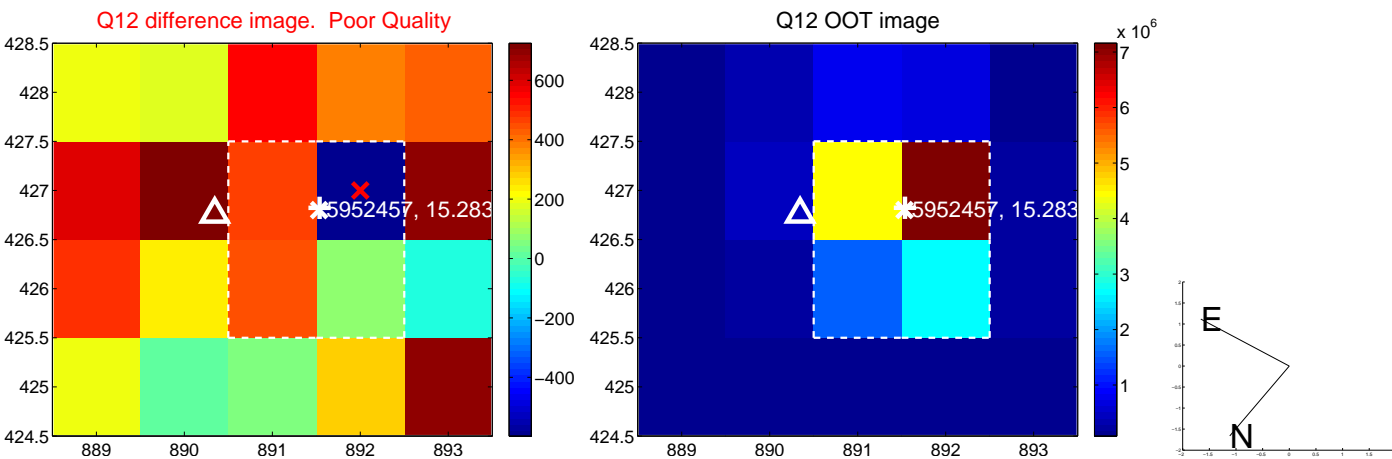
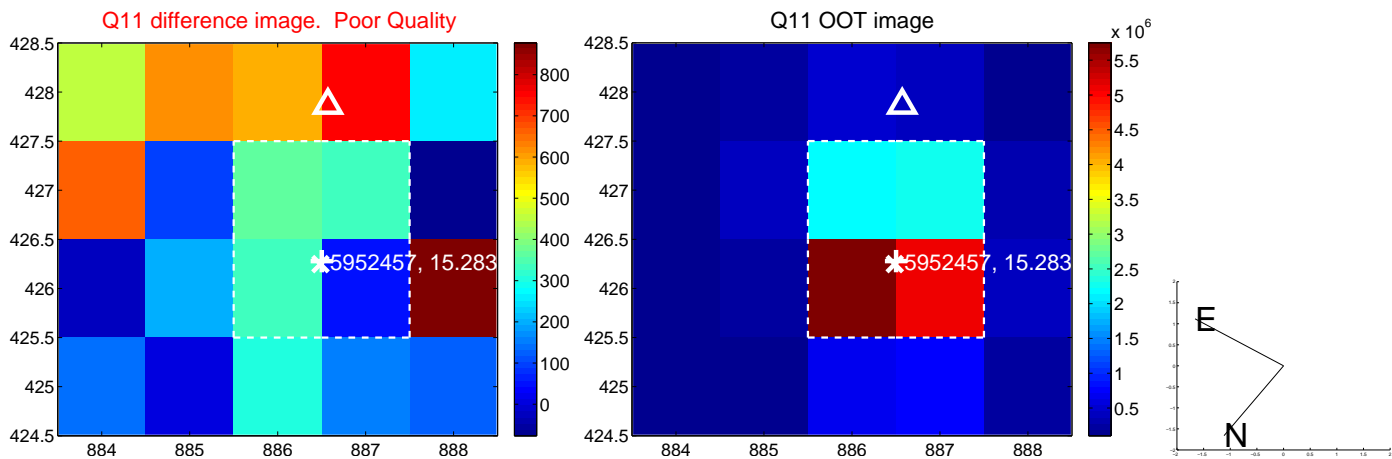
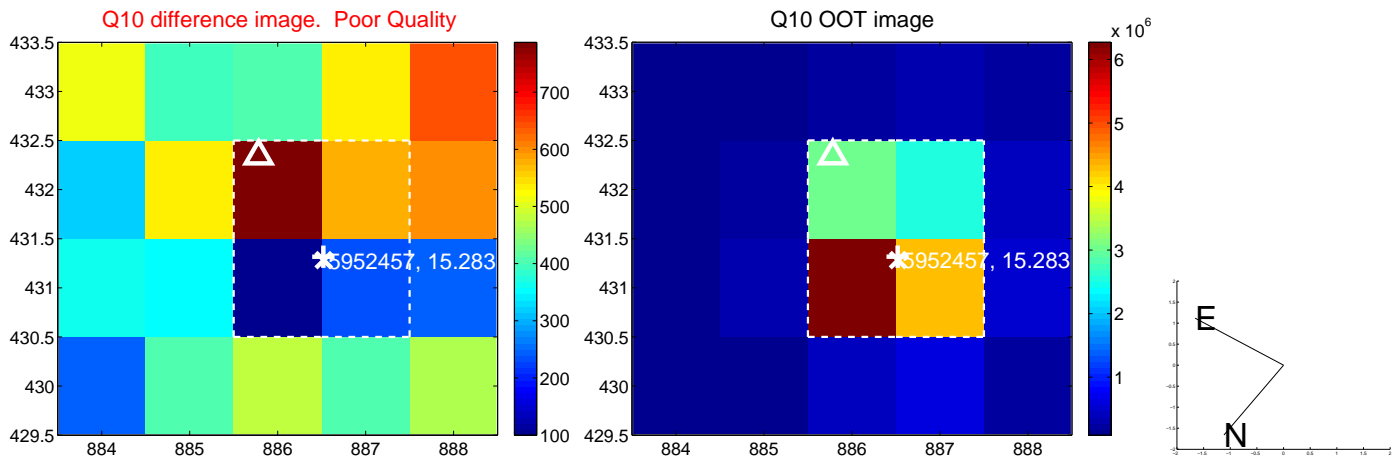
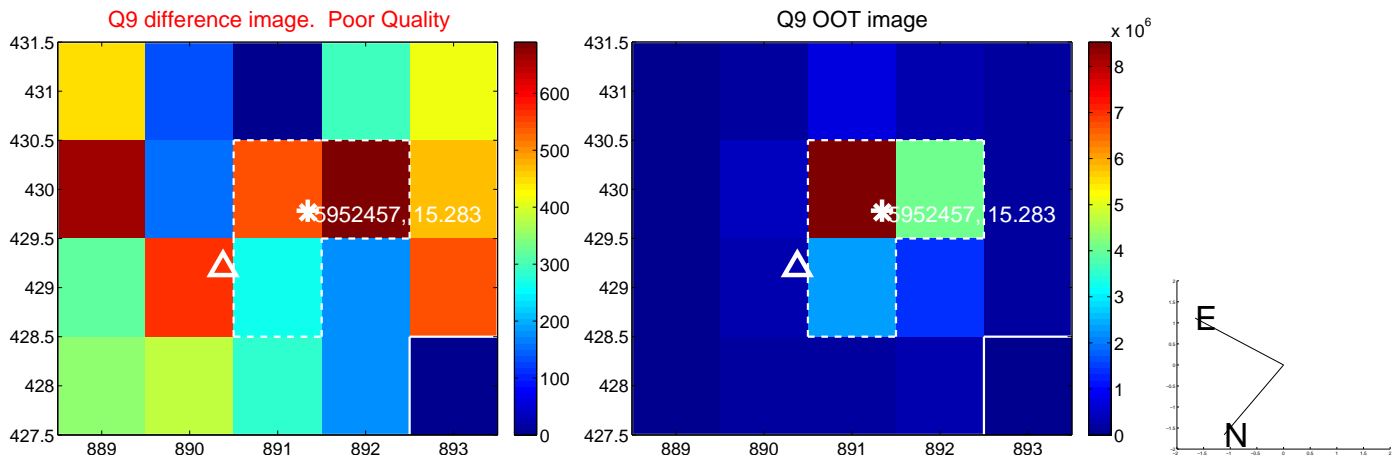
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



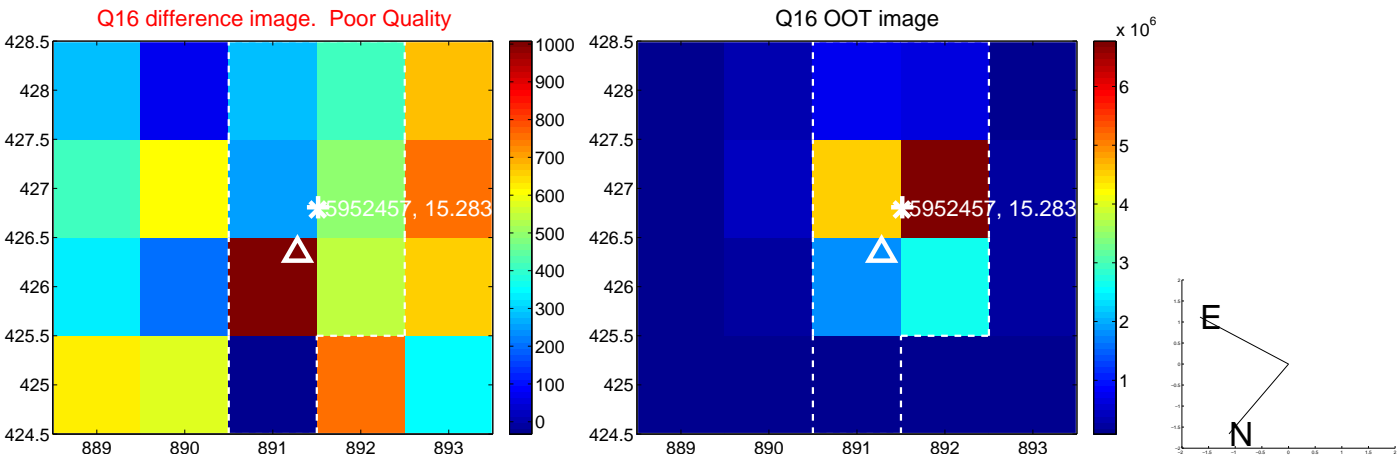
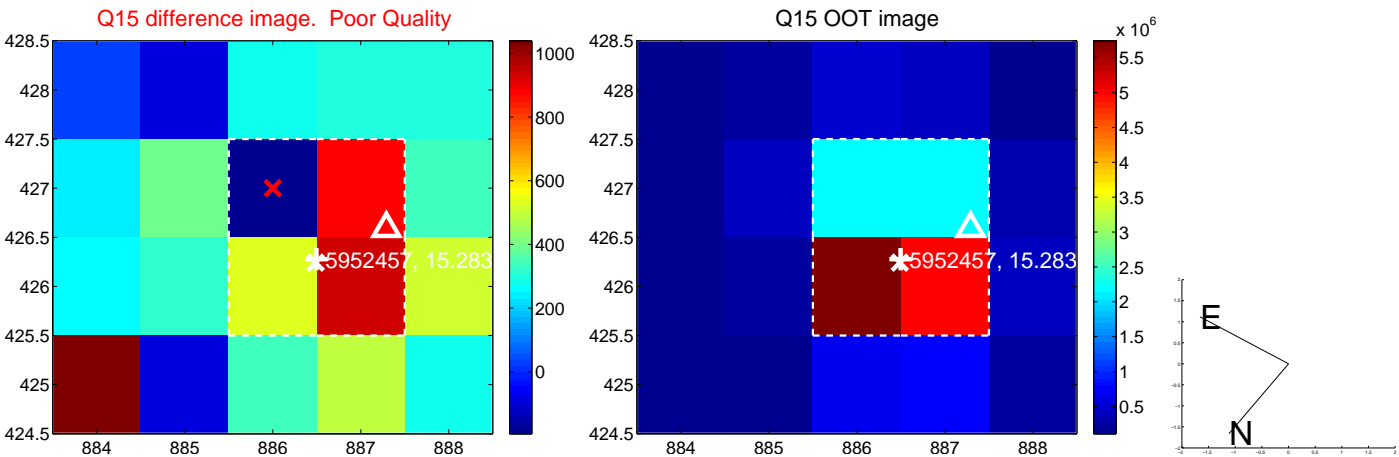
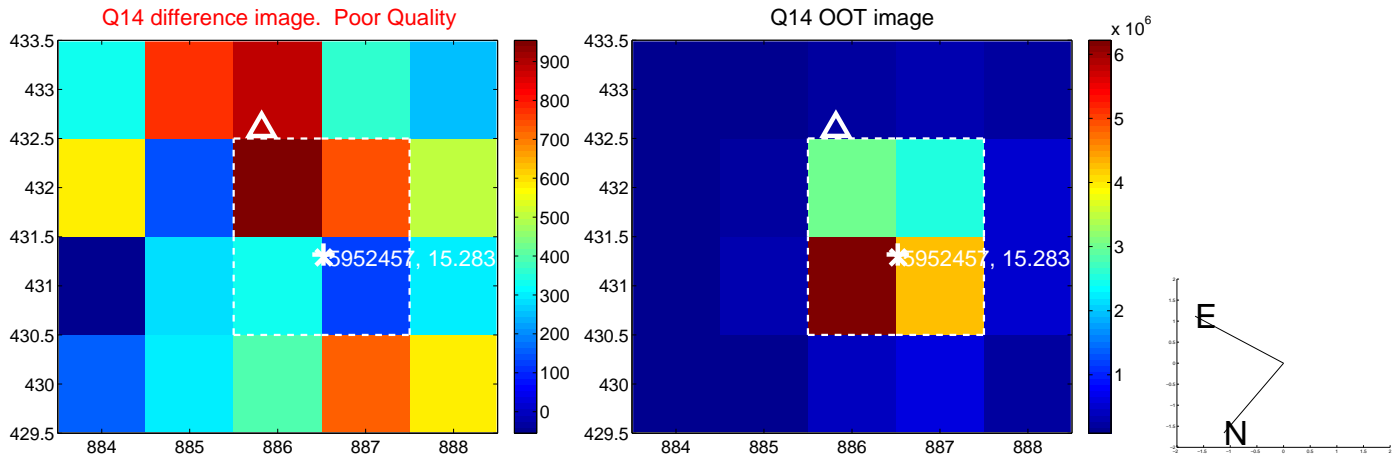
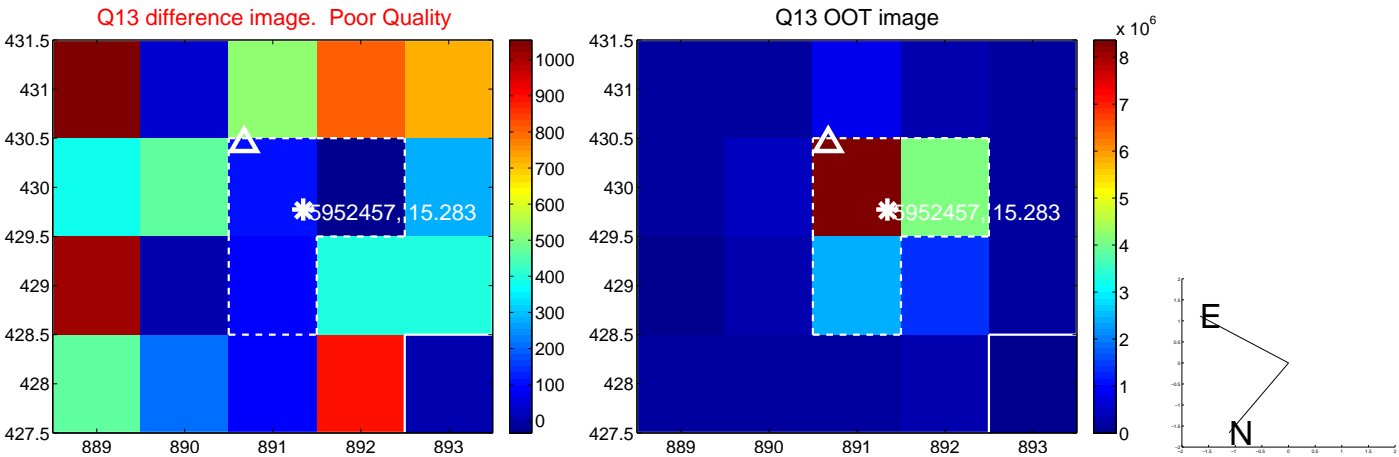
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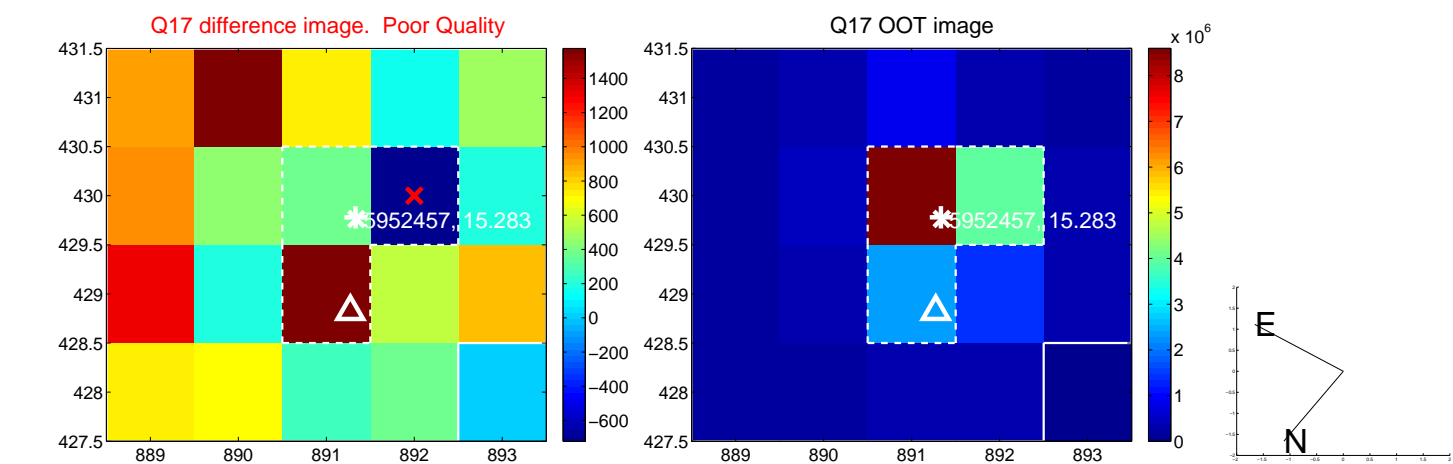
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



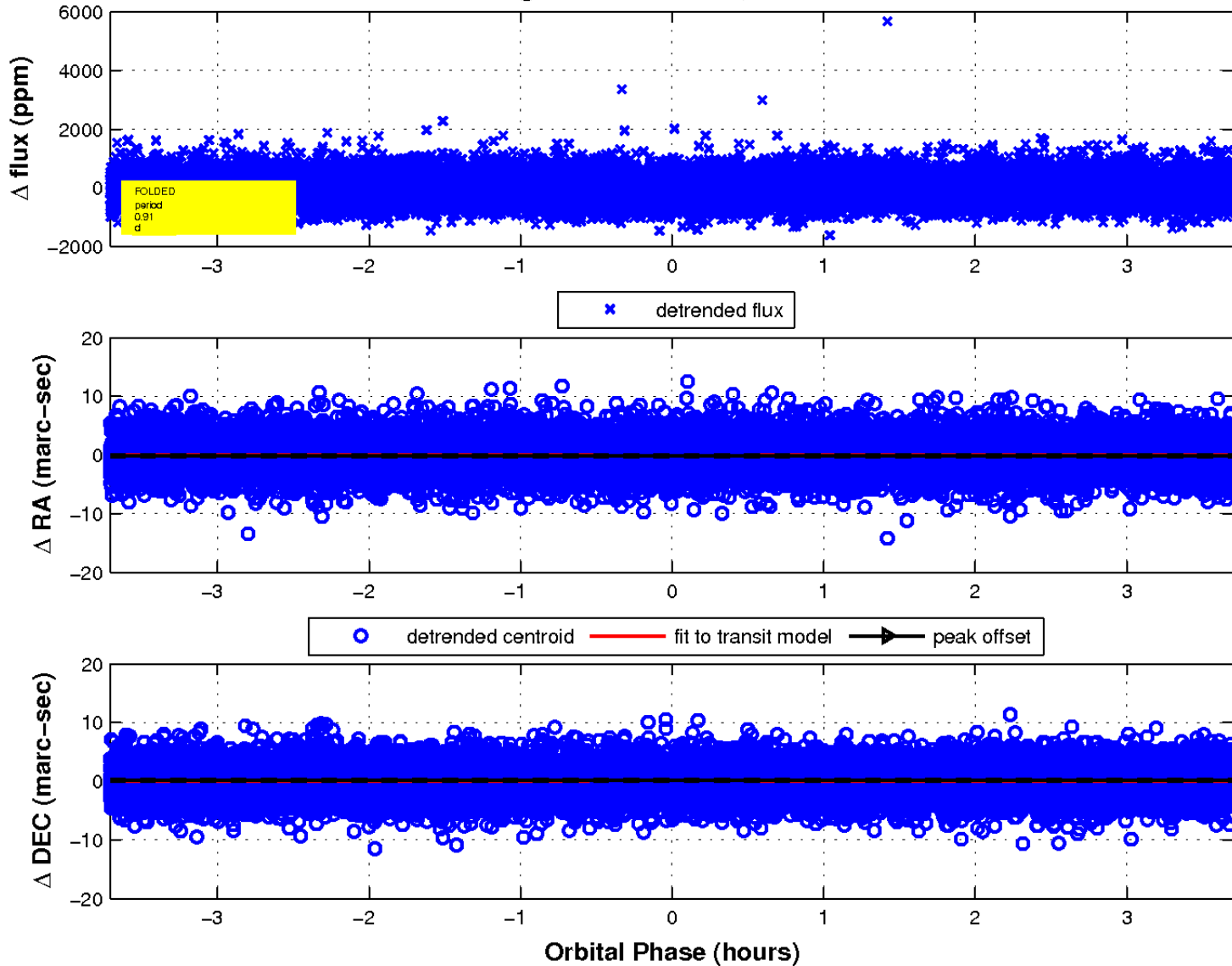
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

