

KIC 005193659

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 005193659-01 | OBS | 3323.01 | 14.319550 | 134.166791 | 241.1 | 4.354 | 10.8 | 11.8 | 1.37 | 5562 | 2.99 | 123.51 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 005193659-01 | OBS | PC | 0.99 | 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.

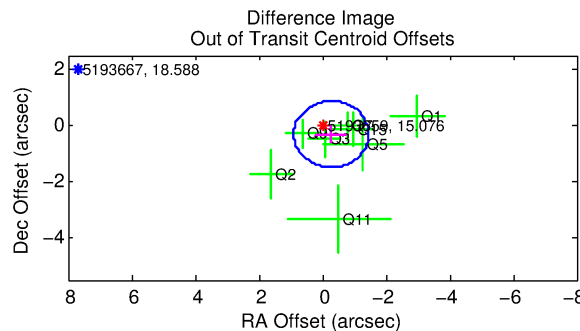
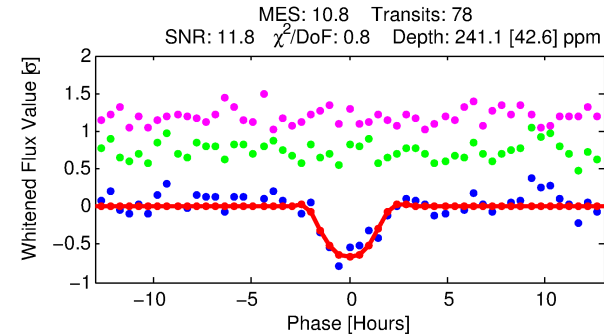
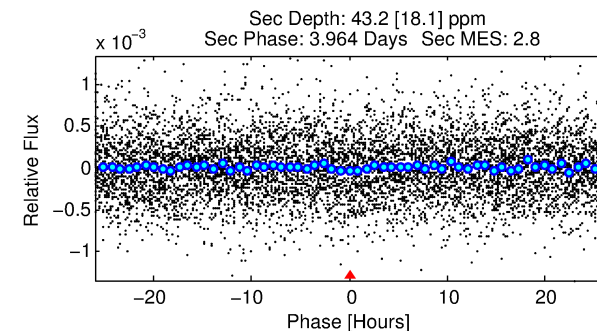
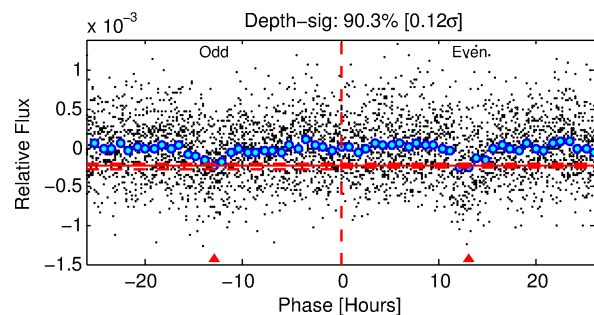
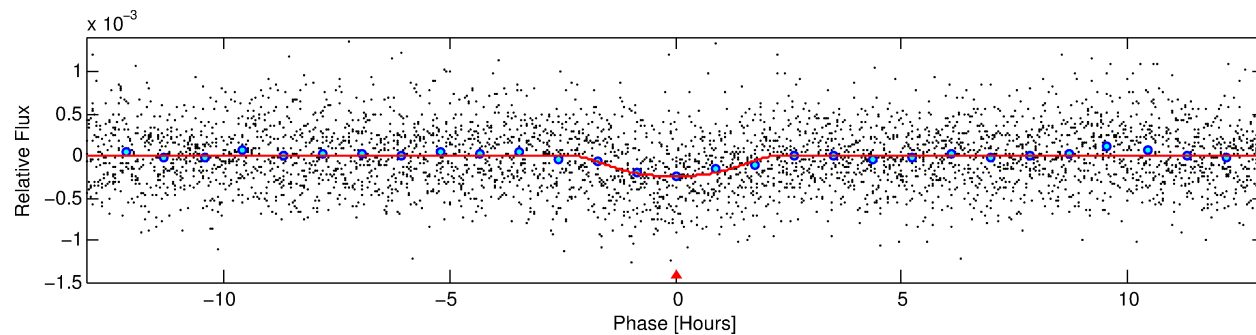
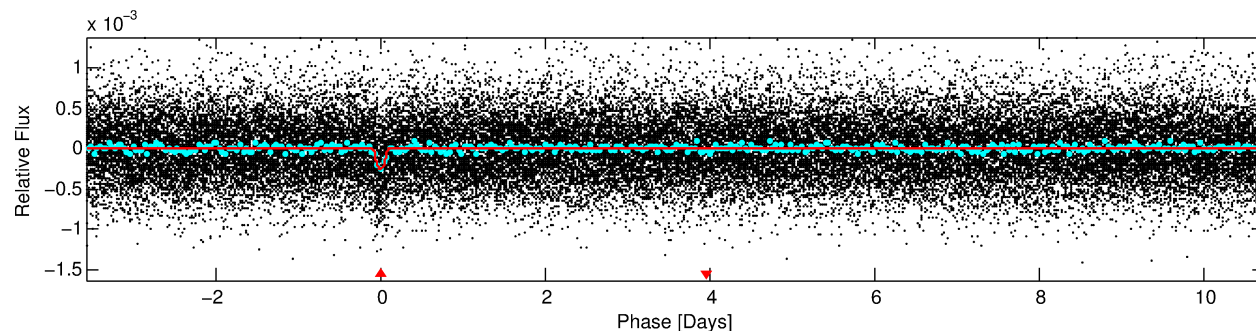
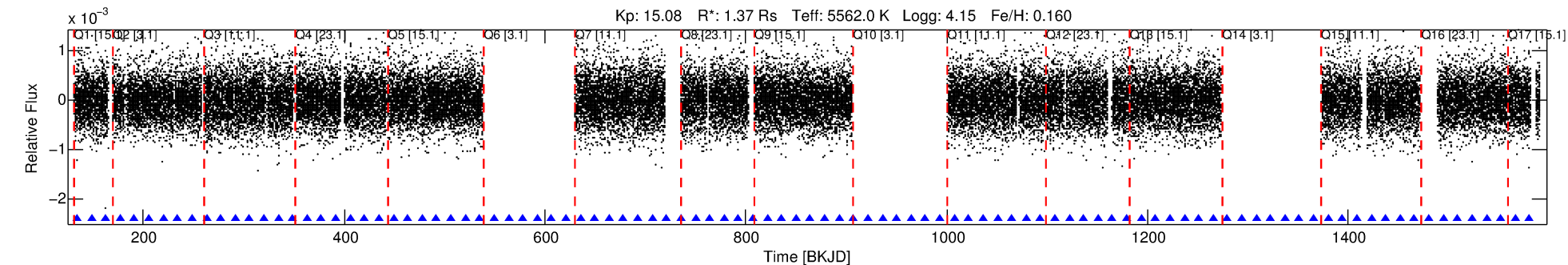
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005193659-01

No Significant Match Found

DV One-Page Summary

KIC: 5193659 Candidate: 1 of 1 Period: 14.320 d
KOI: K03323.01 Corr: 0.943



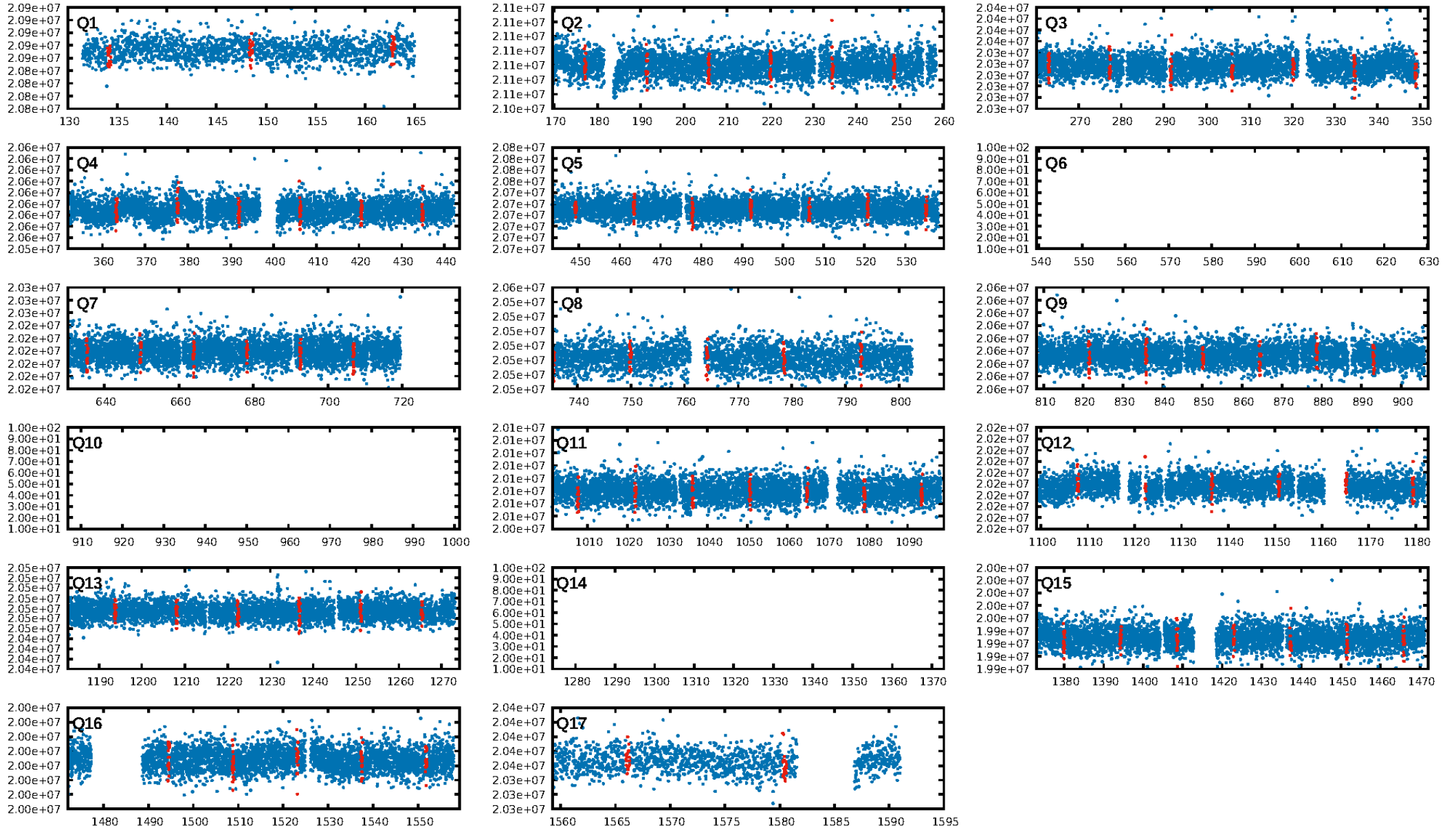
DV Fit Results:

Period = 14.31955 [0.00015] d
Epoch = 134.1668 [0.0081] BKJD
Rp/R* = 0.0200 [0.0027]
a/R* = 7.21 [1.46]
b = 0.98 [0.01]
Seff = 123.51 [41.69]
Teff = 850 [72] K
Rp = 2.99 [0.76] Re
a = 0.1144 [0.0238] AU
Ag = 34.74 [20.86] [1.62 σ]
Teffp = 3191 [402] K [5.74 σ]

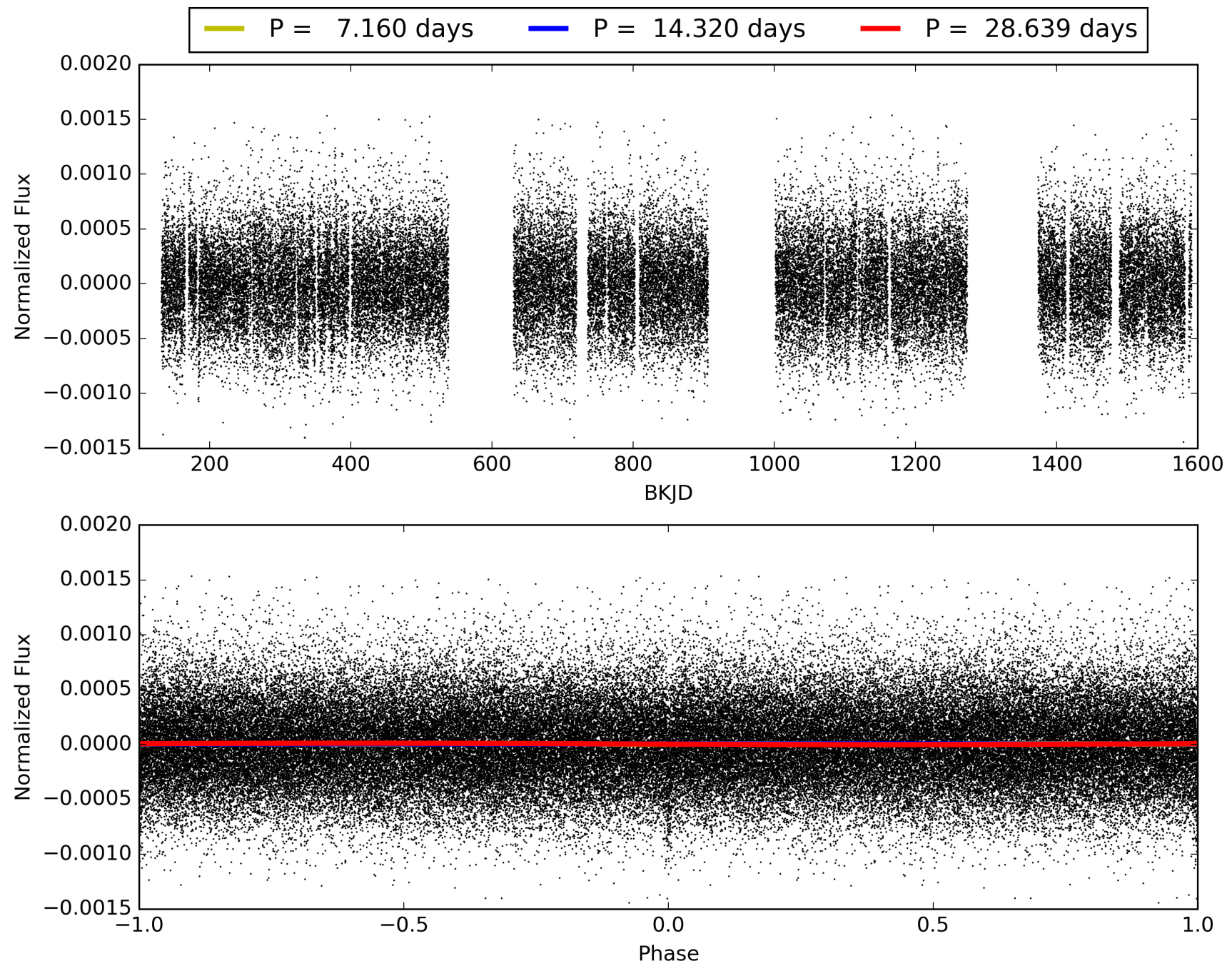
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.95e-27
RollingBand-fgt: 1.00 [73/73]
GhostDiagnostic-chr: 2.472
Centroid-sig: 53.3%
Centroid-so: 0.858 arcsec [0.75 σ]
OotOffset-rm: 0.410 arcsec [1.05 σ]
KicOffset-rm: 0.385 arcsec [1.00 σ]
OotOffset-st: 1/4/0/3 [8]
KicOffset-st: 1/4/0/3 [8]
DiffImageQuality-fgm: 0.50 [4/8]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 005193659-01, PDC Light Curves

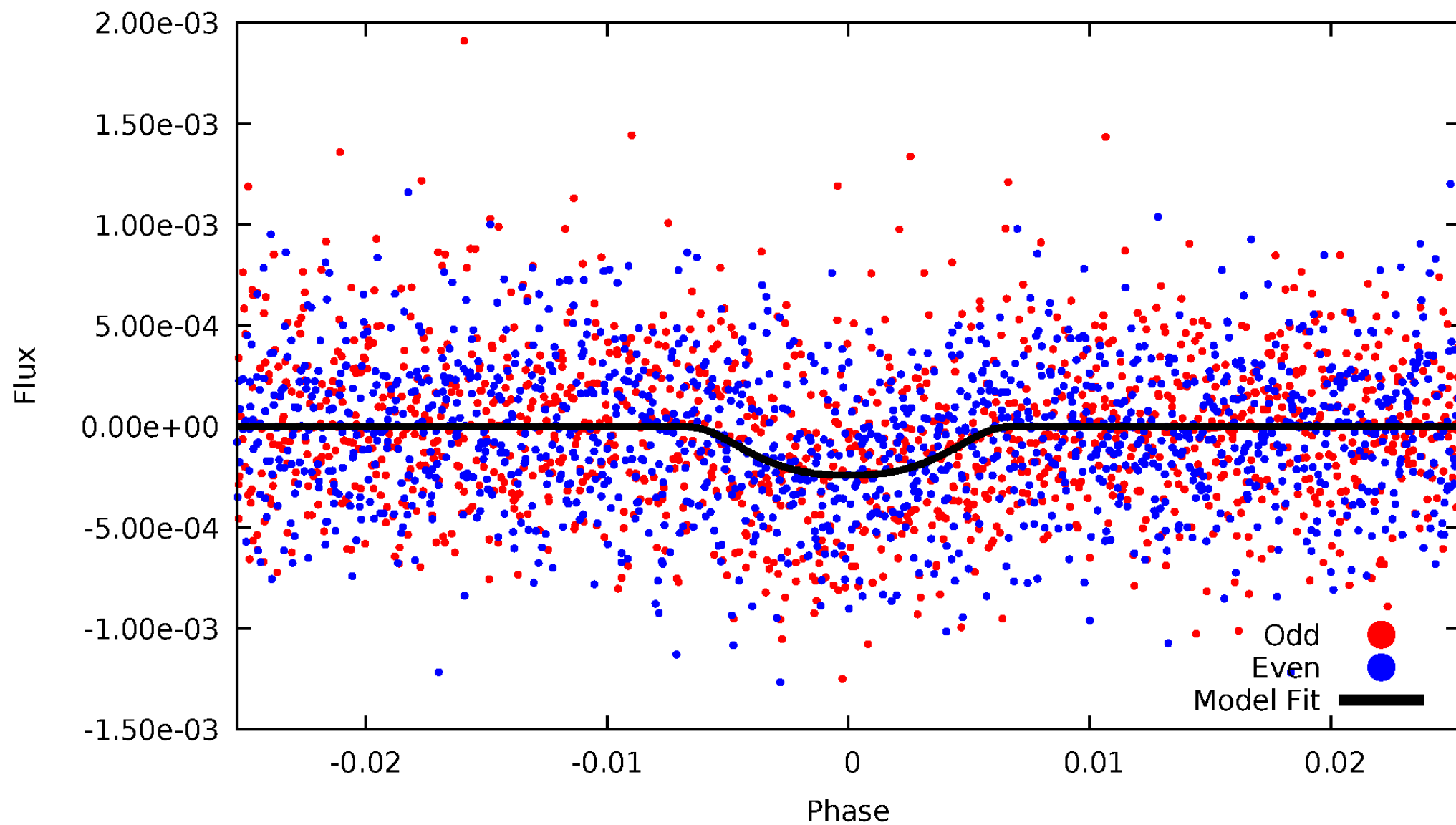


TCE 005193659-01



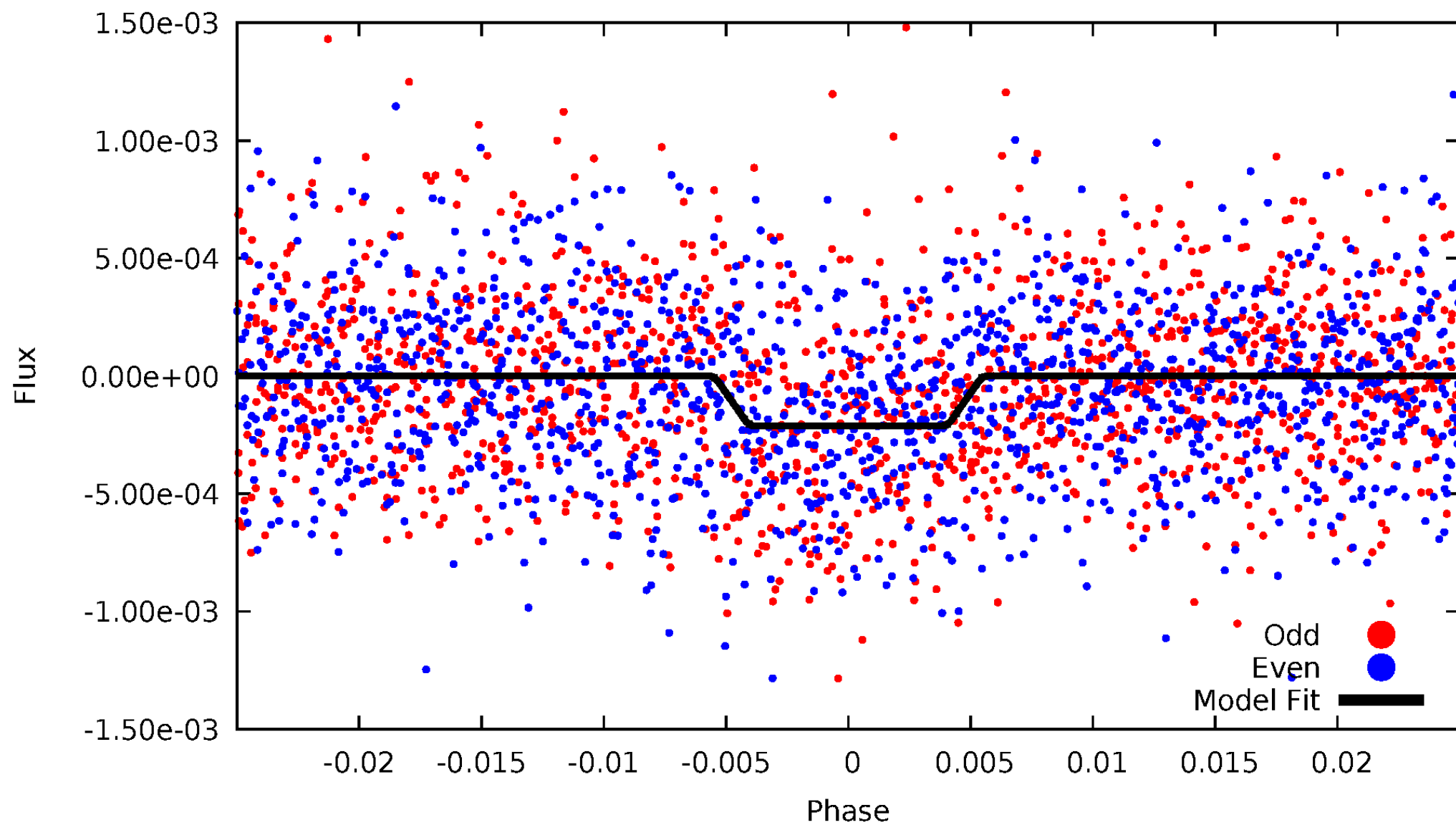
DV Odd/Even

TCE 005193659-01



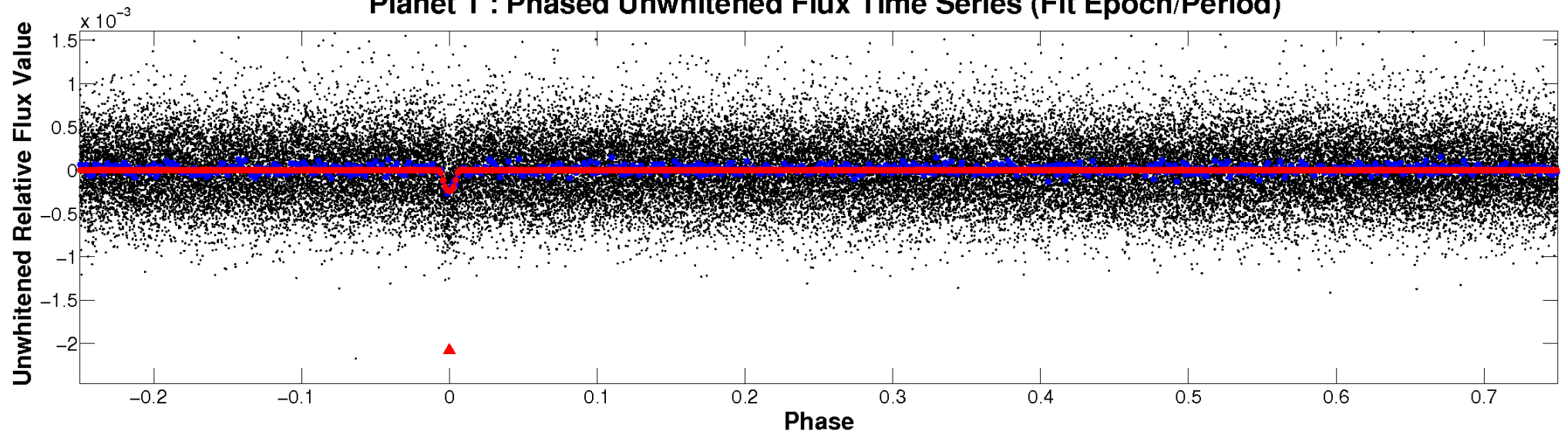
ALT Odd/Even

TCE 005193659-01

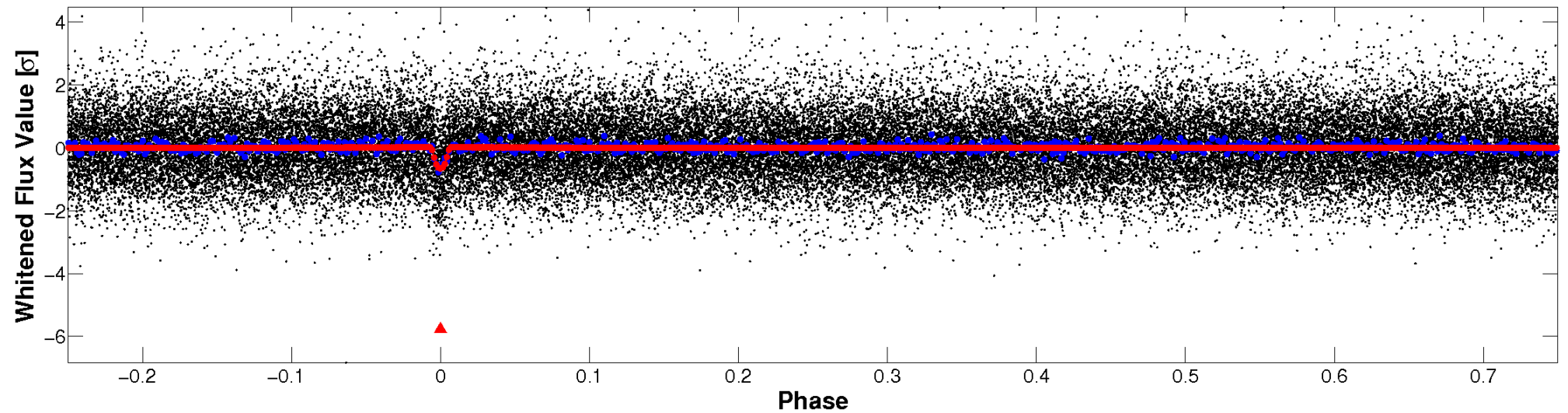


Non-Whitened Vs. Whitened Light Curve

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

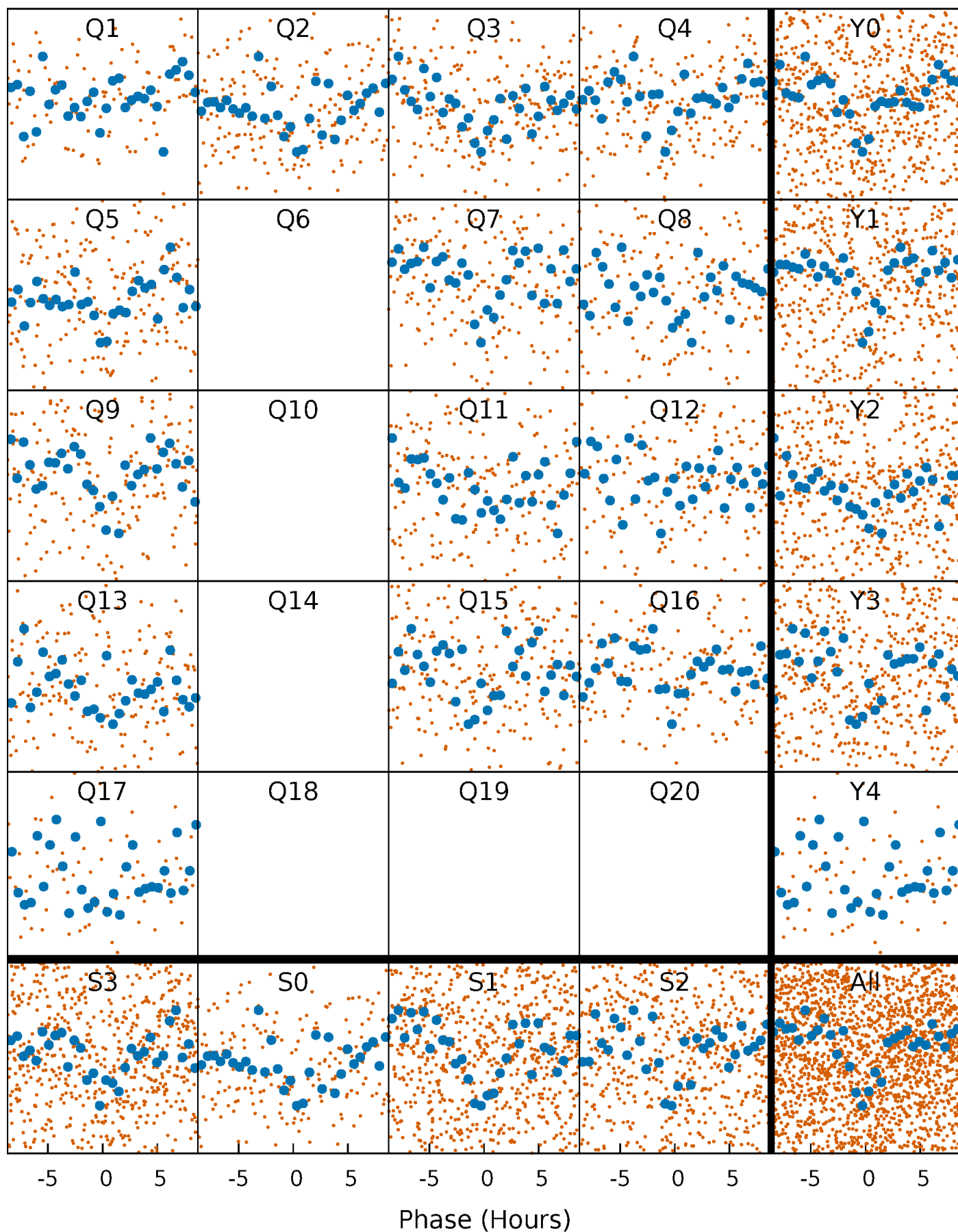


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



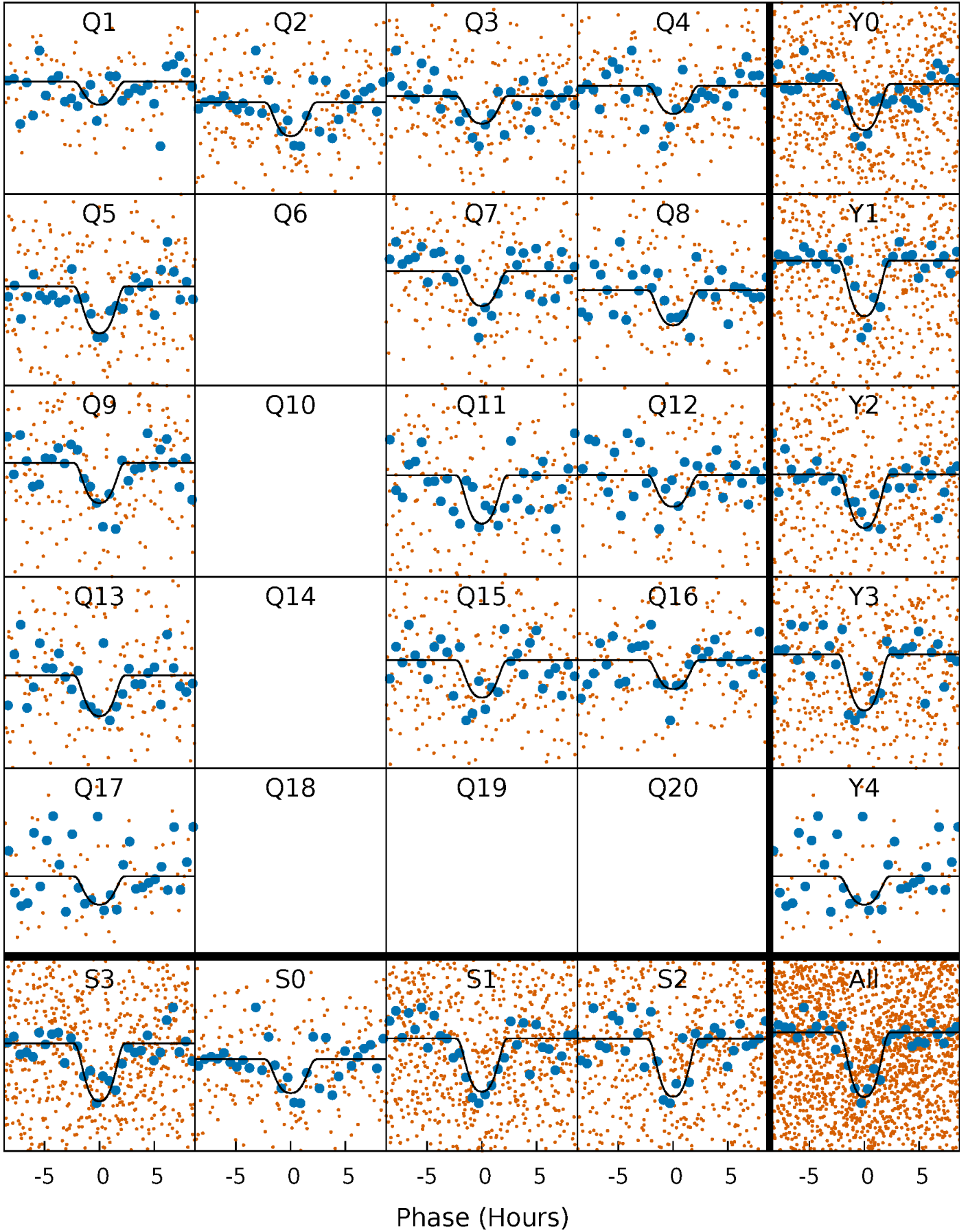
PDC Quarter-Phased Transit Curves

TCE 005193659-01 P= 14.319550 Days $T_0=134.166791$ (BKJD)



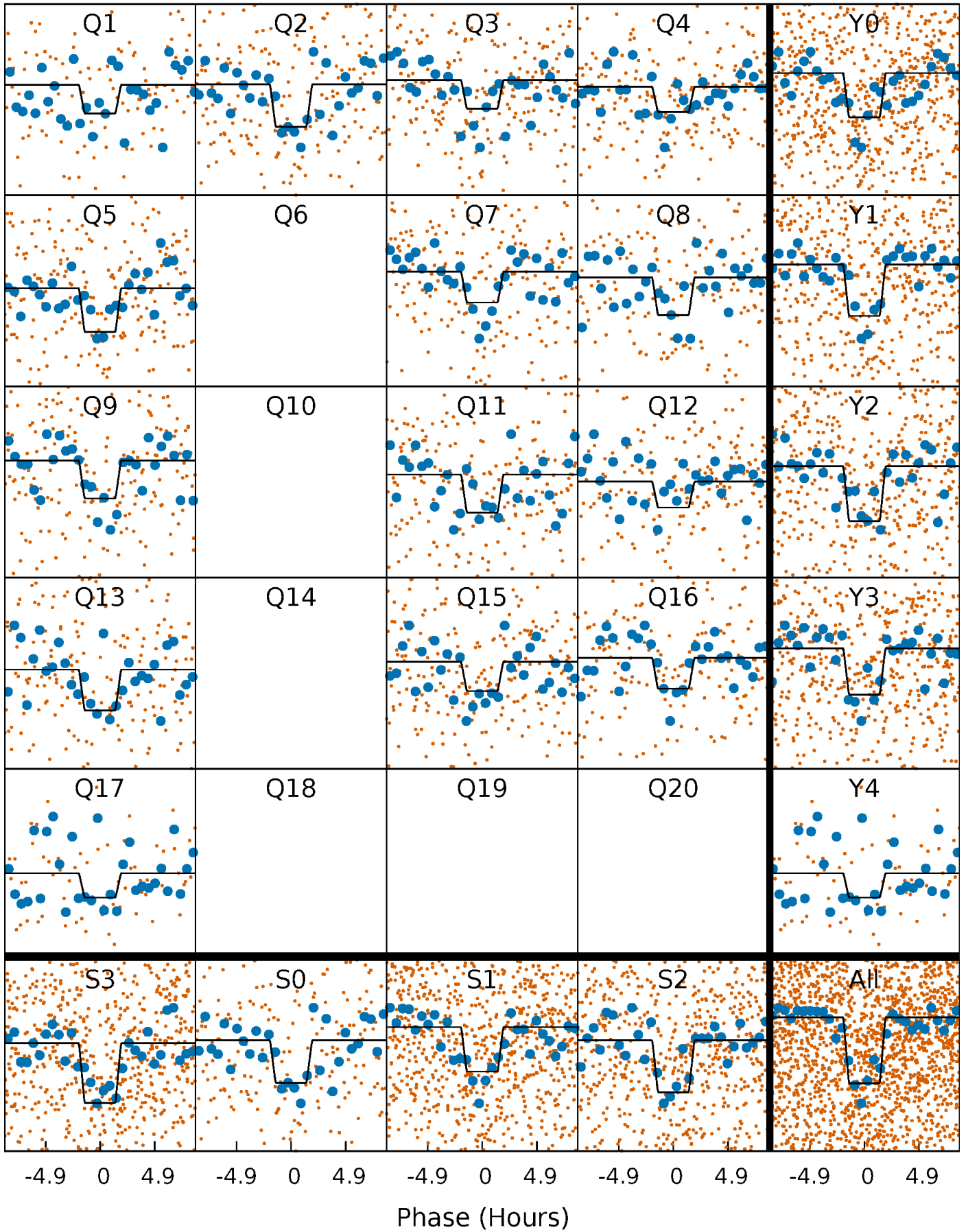
DV Quarter-Phased Transit Curves

TCE 005193659-01 P= 14.319550 Days $T_0=134.166791$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

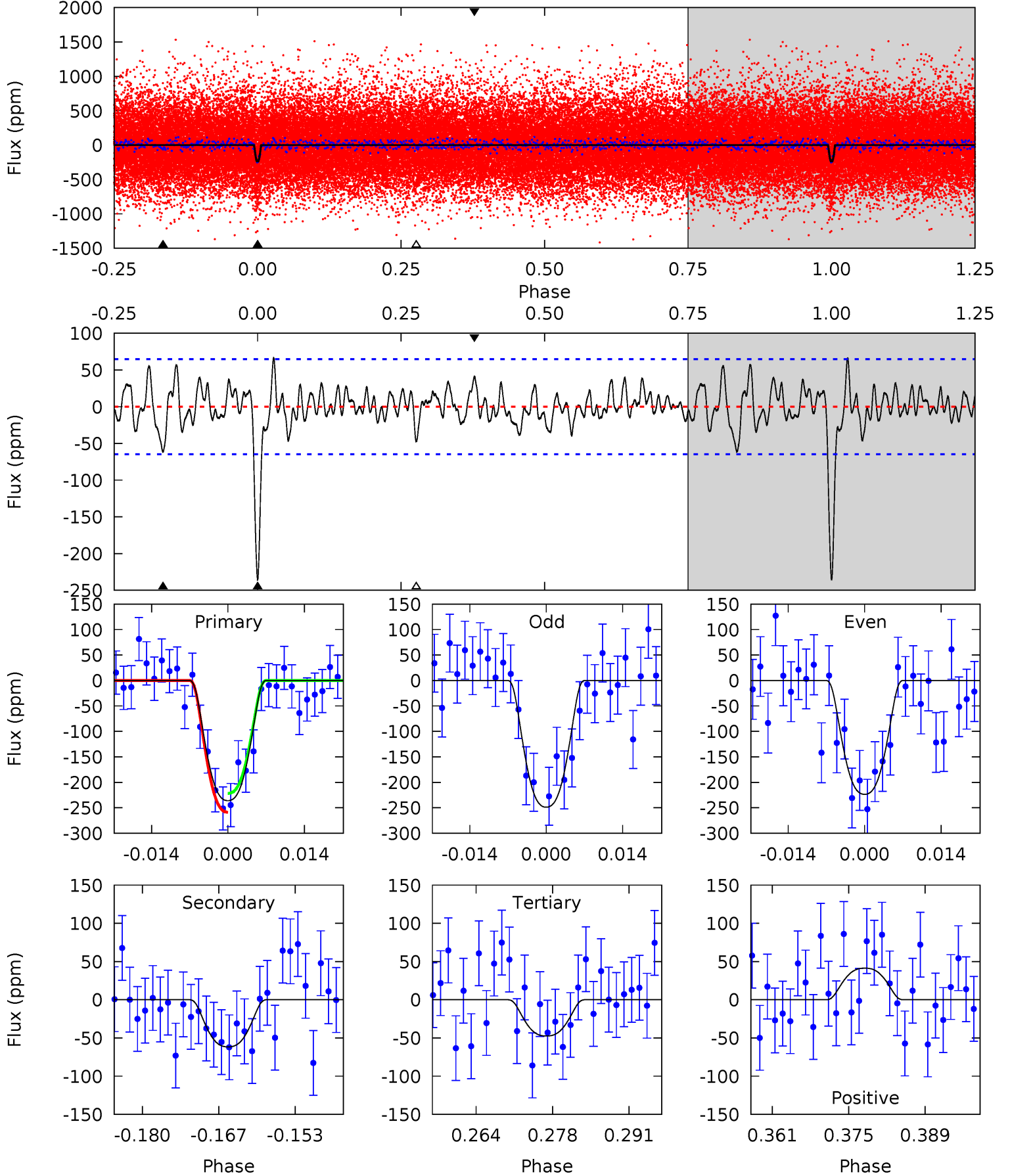
TCE 005193659-01 P= 14.319534 Days $T_0=134.170827$ (BKJD)



DV Model-Shift Uniqueness Test

005193659-01, $P = 14.319550$ Days, $E = 119.847241$ Days

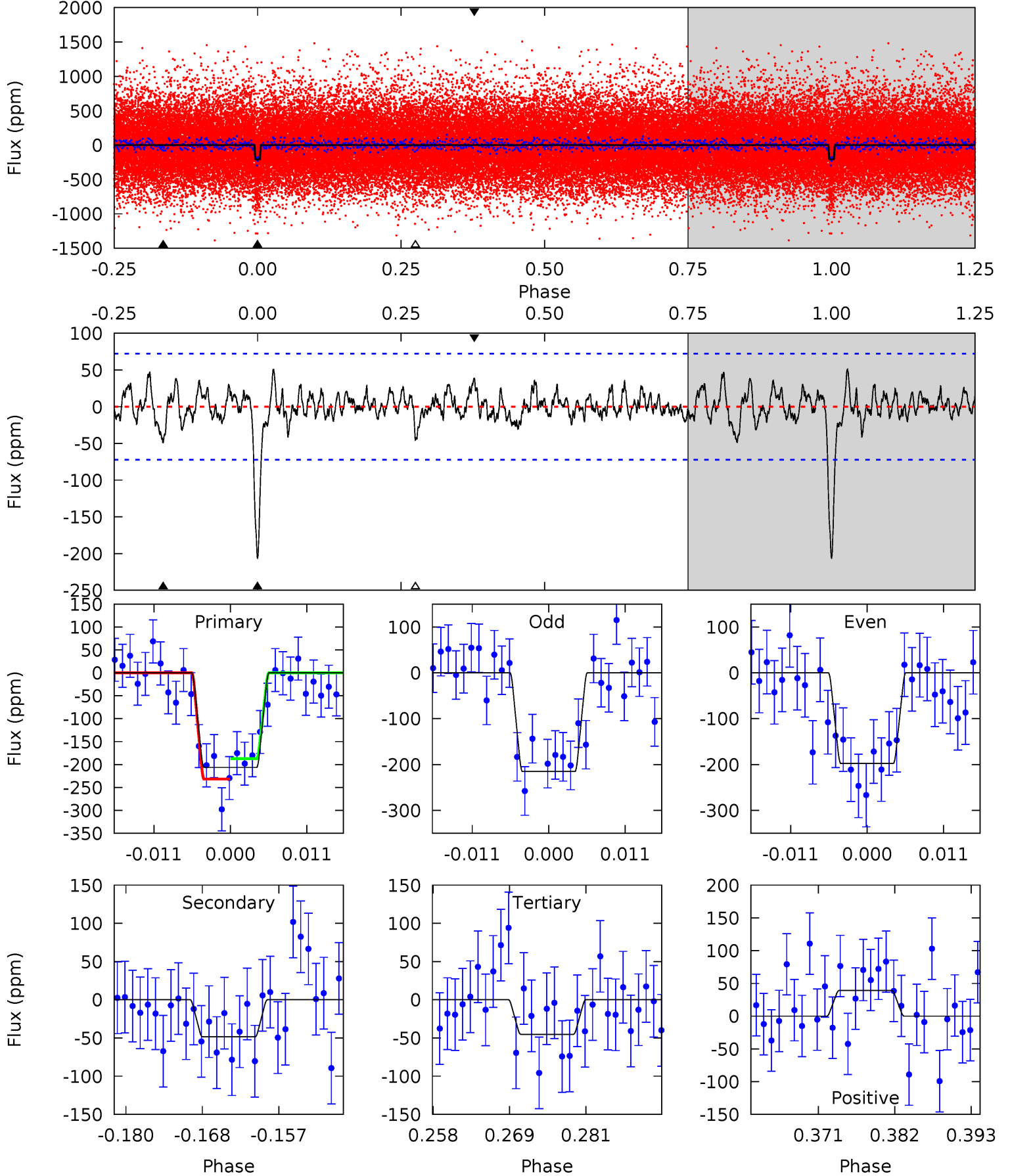
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 18.1 | 4.72 | 3.63 | 3.17 | 4.96 | 2.46 | 1.41 | 14.4 | 14.9 | 1.09 | 1.55 | 0.97 | 0.91 | 0.22 | 1.42 |



Alt Model-Shift Uniqueness Test

005193659-01, P = 14.319534 Days, E = 119.851293 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.3 | 3.37 | 3.13 | 2.71 | 5.00 | 2.54 | 1.04 | 11.2 | 11.6 | 0.23 | 0.66 | 0.61 | 0.93 | 0.20 | 1.54 |



Stellar Parameters For KIC 005193659

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 5562^{+83}_{-75} | $4.151^{+0.195}_{-0.105}$ | $0.160^{+0.150}_{-0.100}$ | $1.373^{+0.216}_{-0.297}$ | $0.973^{+0.068}_{-0.056}$ | $0.529^{+0.535}_{-0.167}$ |
| | +1%/-1% | +5%/-3% | +94%/-62% | +16%/-22% | +7%/-6% | +101%/-32% |
| 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 005193659-01 / KOI 3323.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|--------------|------------------------|--------------------|----------------------|------------------|
| DV | -62 ± 13 | $2.93^{+0.54}_{-0.54}$ | 1178^{+61}_{-67} | 3842^{+248}_{-217} | 52^{+29}_{-18} |
| Alt. | -49 ± 14 | $2.15^{+0.45}_{-0.46}$ | 1184^{+56}_{-75} | 4108^{+422}_{-342} | 75^{+58}_{-30} |

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

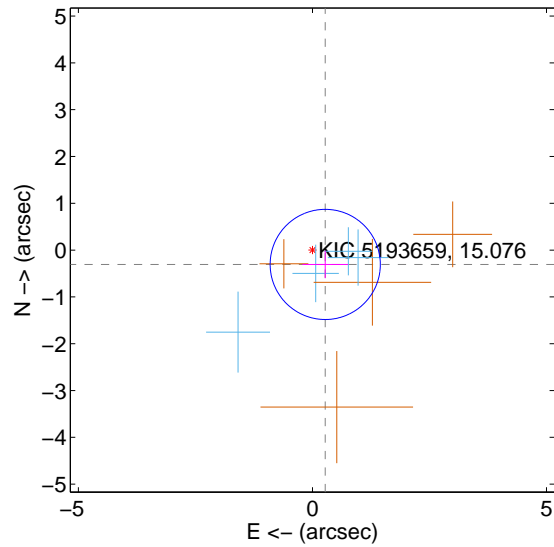
Supplemental centroid analysis for 005193659-01. Kepler magnitude: 15.08. Transit SNR 11.81

There are 4 quarters with good PRF difference image offsets

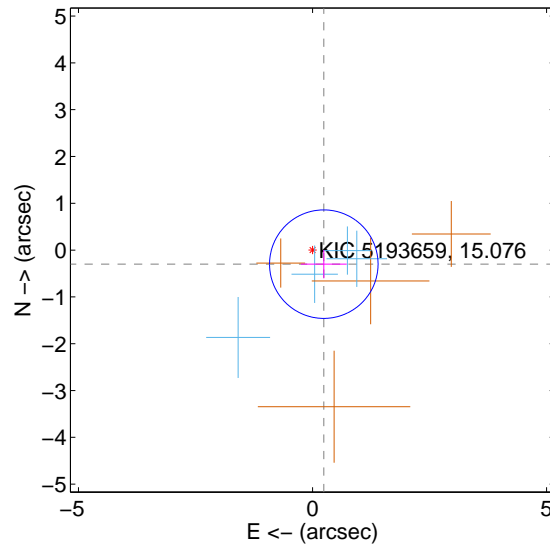
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.410 ± 0.392 | 1.05 | -0.273 ± 0.489 | -0.306 ± 0.293 |
| PRF-fit source offset from KIC position | 0.385 ± 0.386 | 1.00 | -0.241 ± 0.489 | -0.300 ± 0.302 |
| photometric centroid source offset | 0.86 ± 1.15 | 0.75 | -0.85 ± 1.15 | 0.14 ± 1.13 |

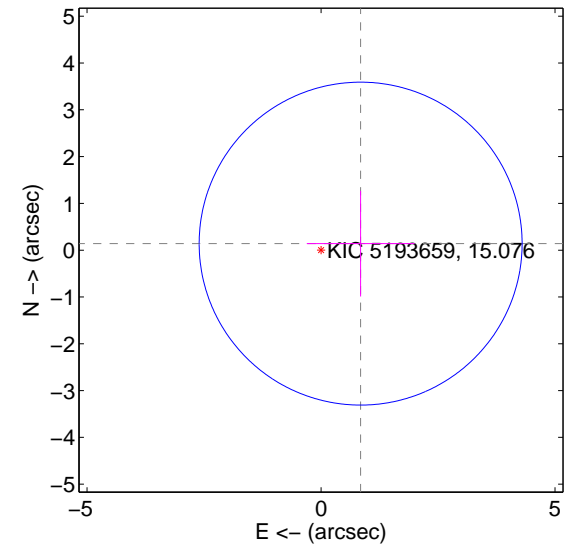
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

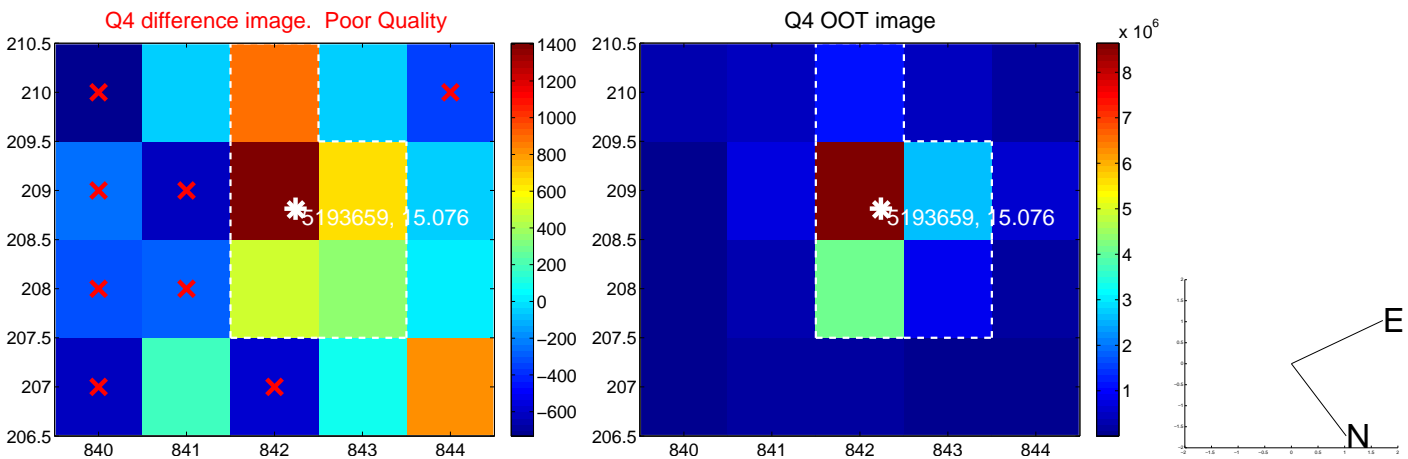
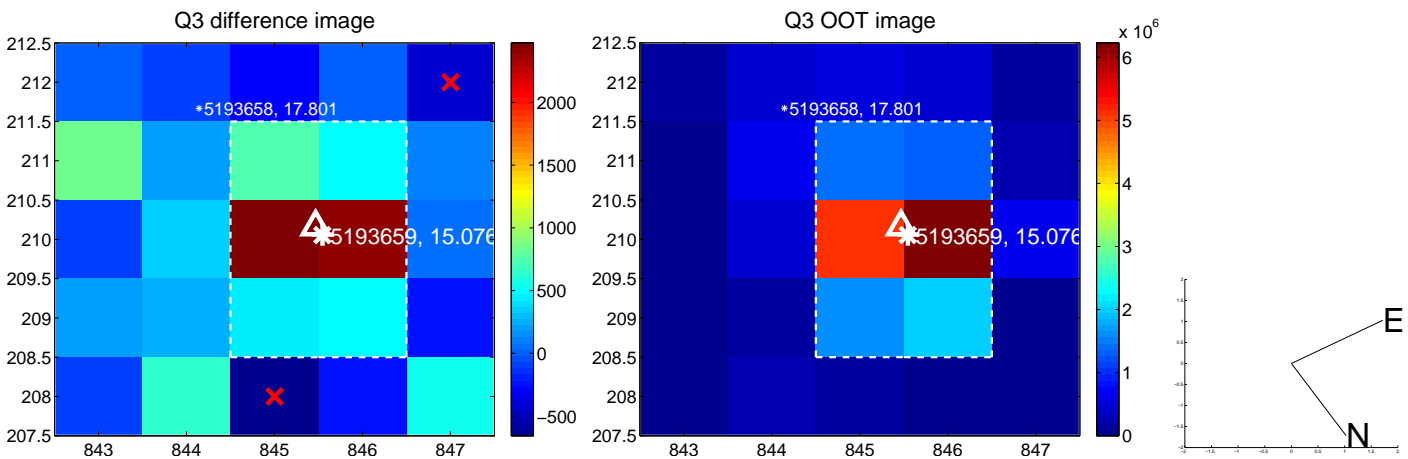
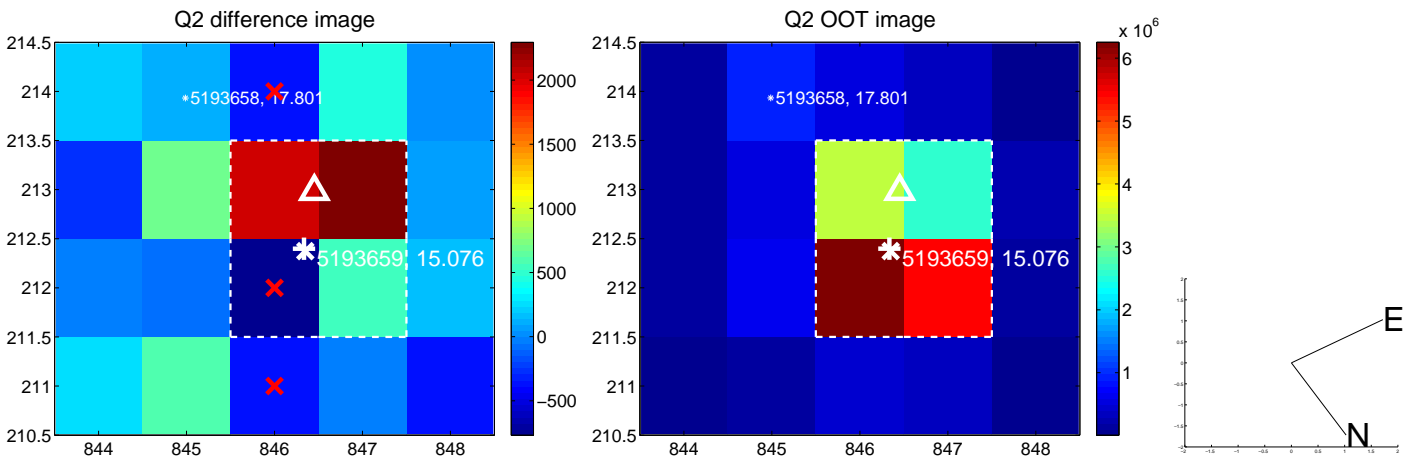
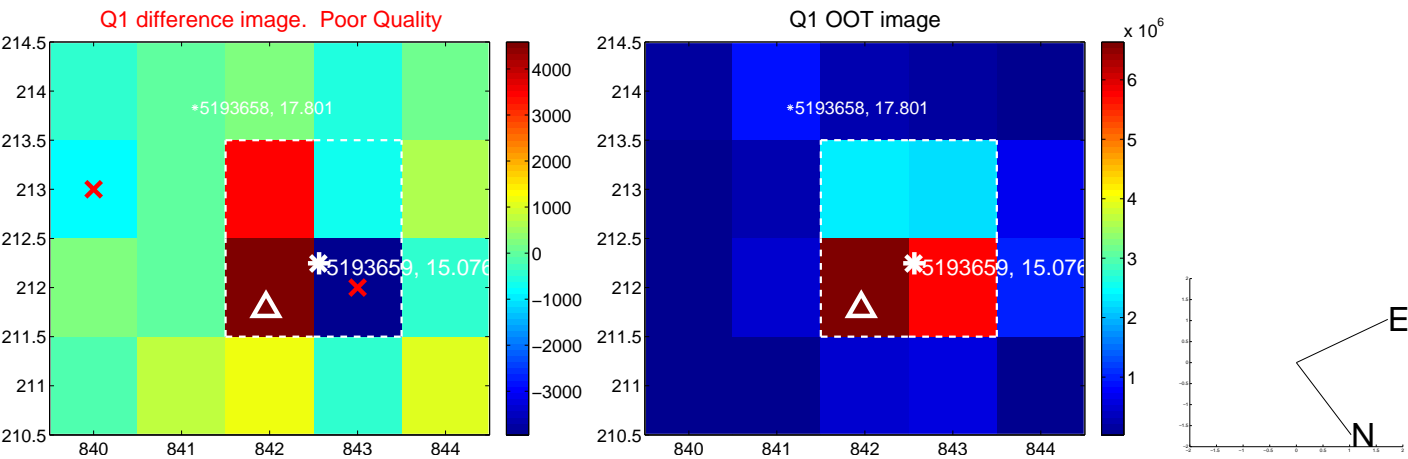


offset from photometric centroids

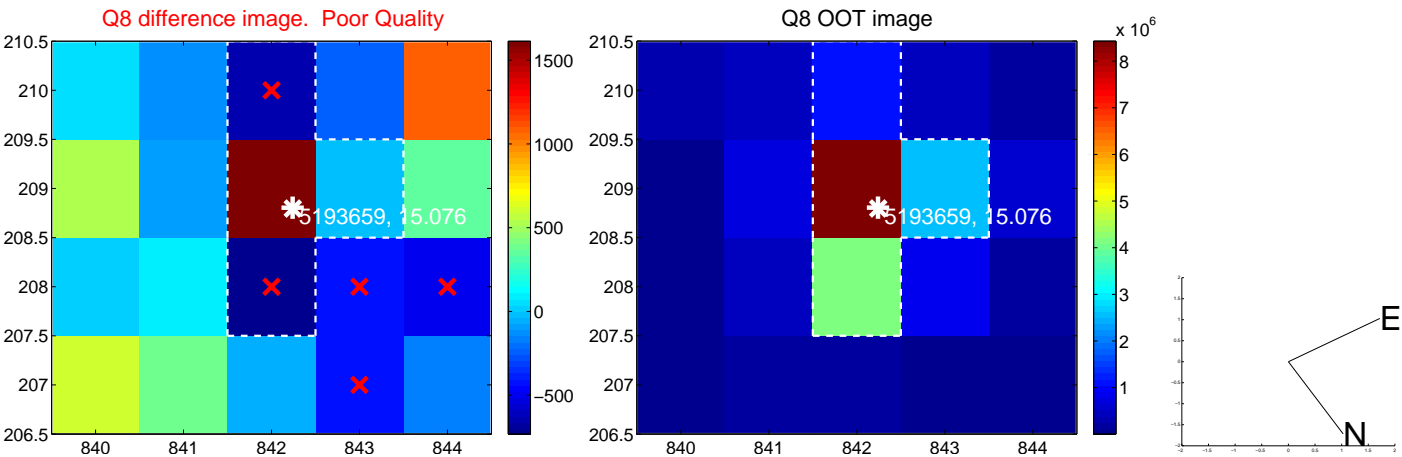
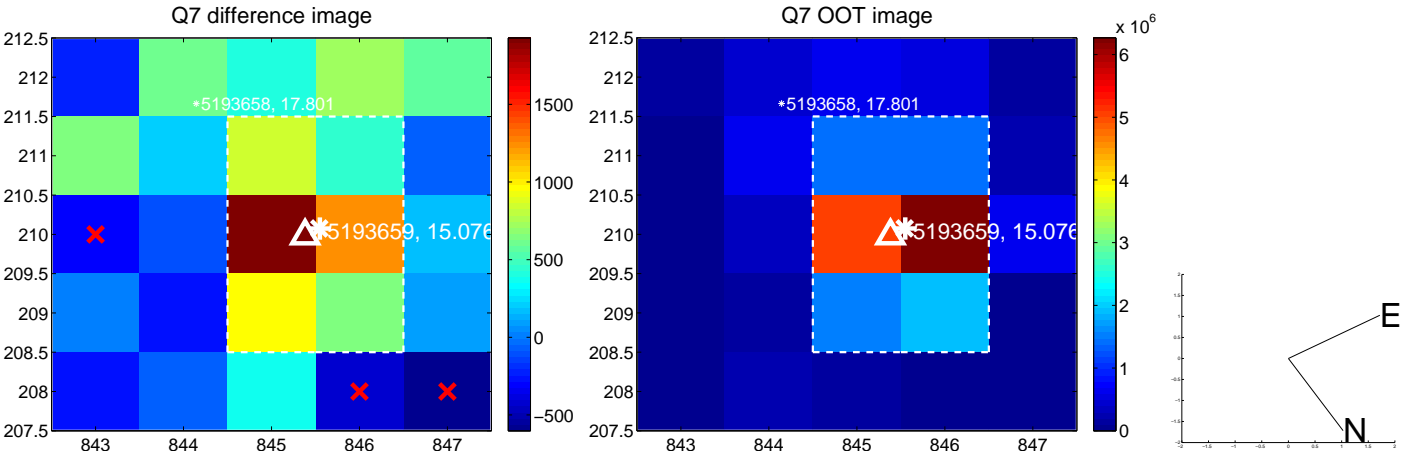
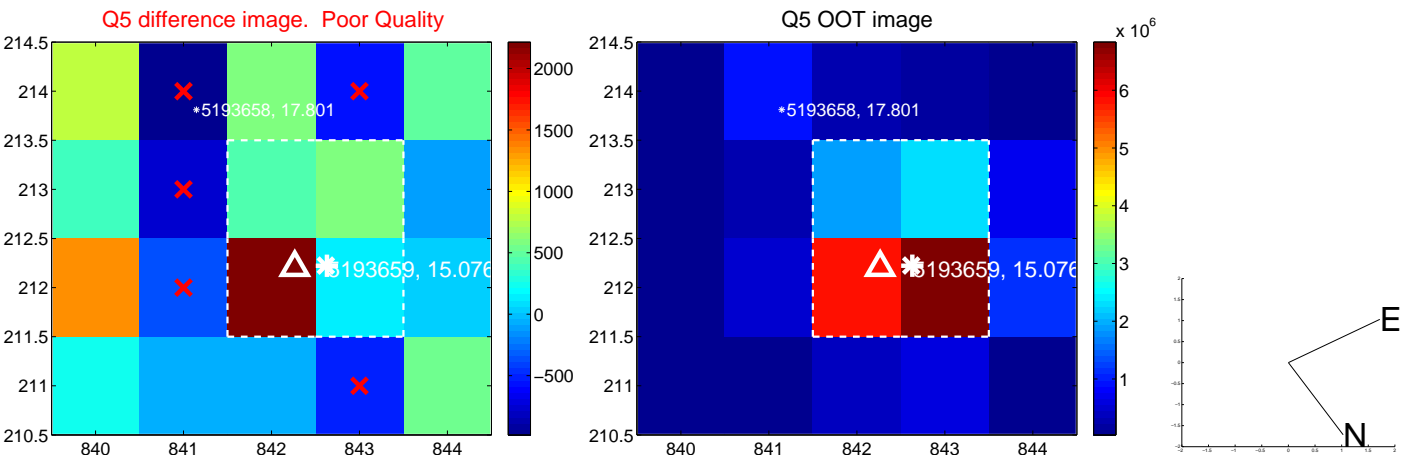


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

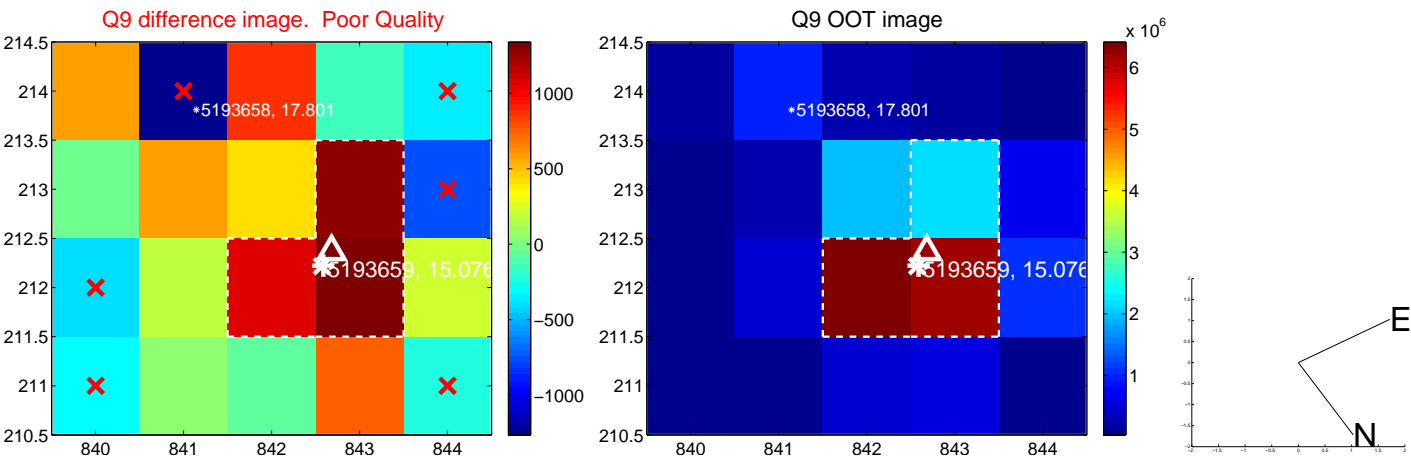
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



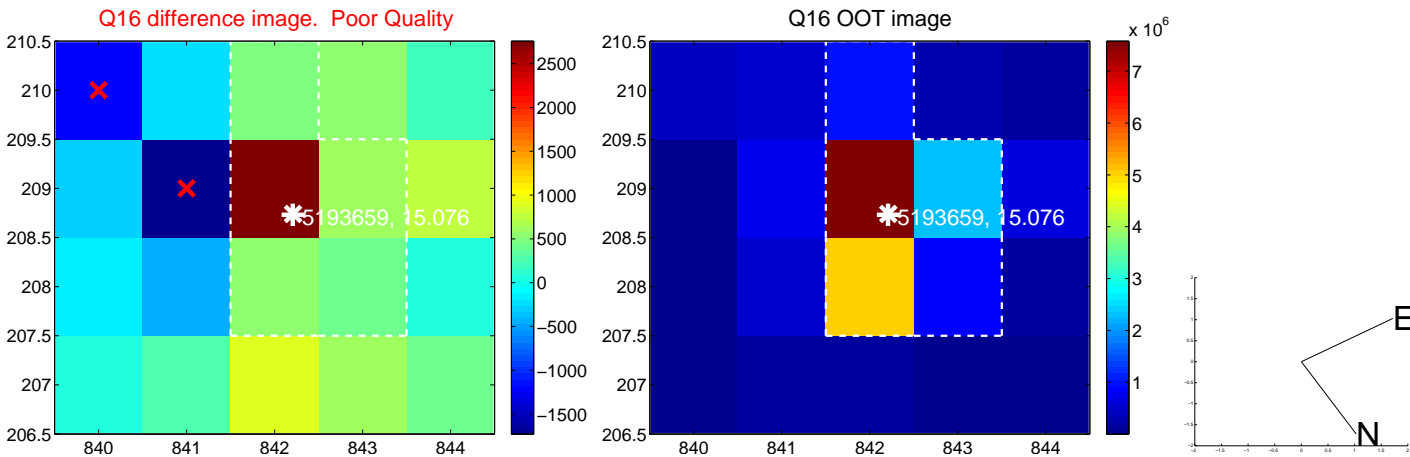
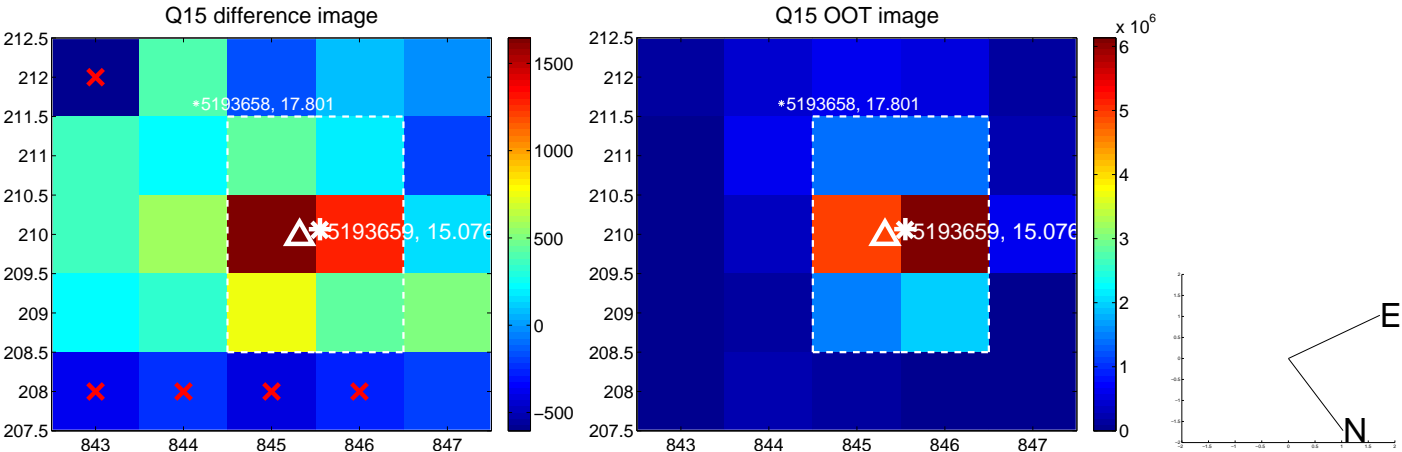
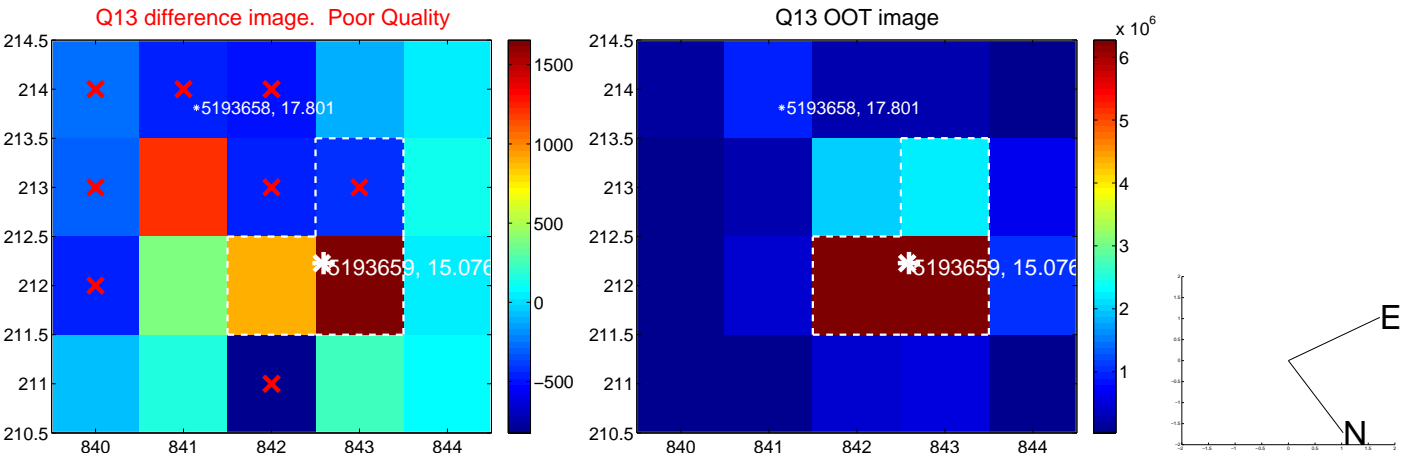
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



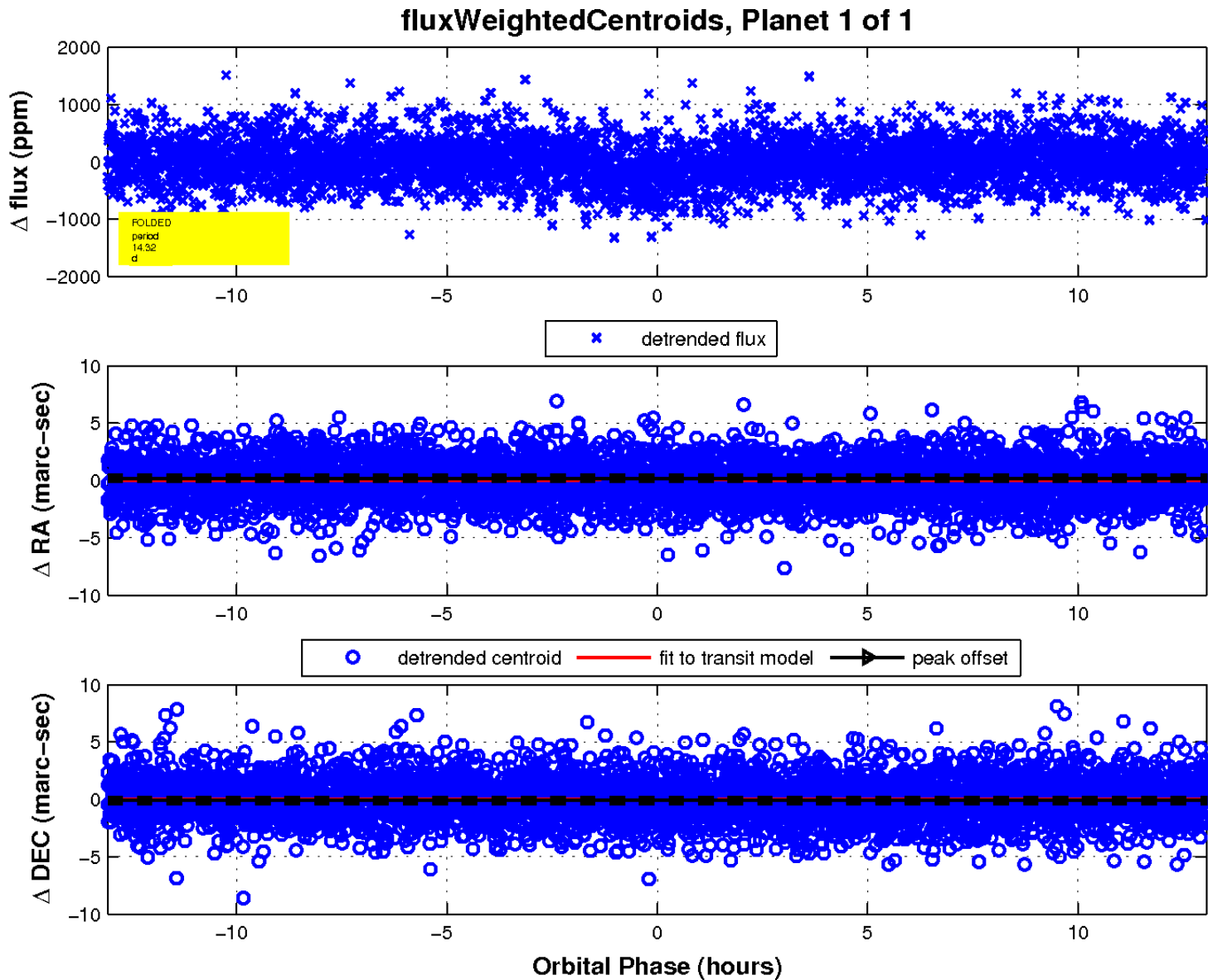
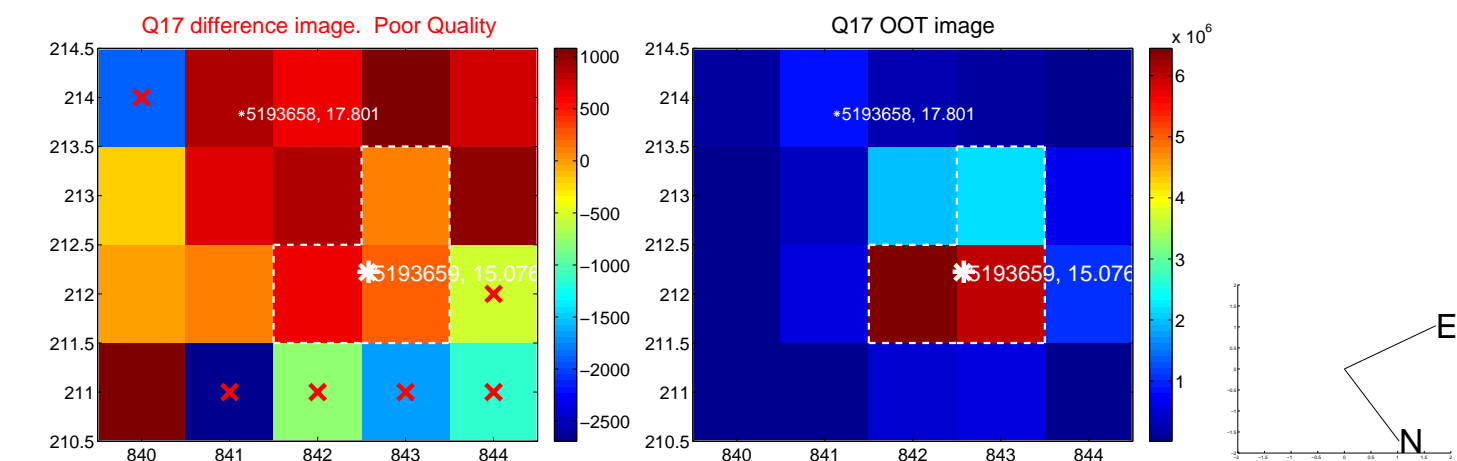
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

