

KIC 006226908

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 006226908-01 | OBS | 4068.01 | 19.597155 | 135.274729 | 987.1 | 4.590 | 17.9 | 19.3 | 1.02 | 5569 | 3.82 | 47.99 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------------|
| 006226908-01 | OBS | FP | 0.40 | 0 | 1 | 0 | 0 | DEPTH_ODDEVEN_DV |

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 006226908-01

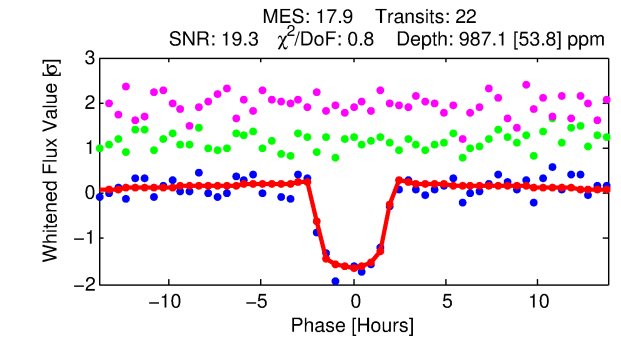
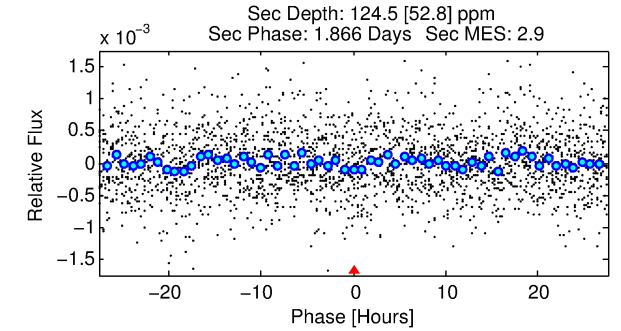
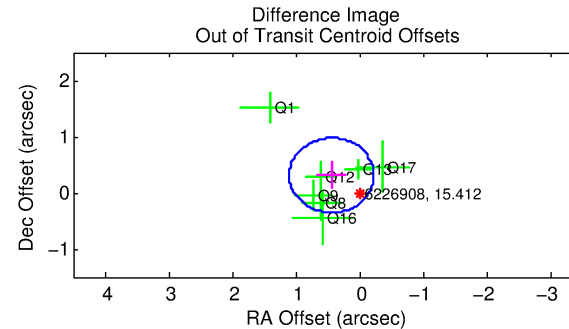
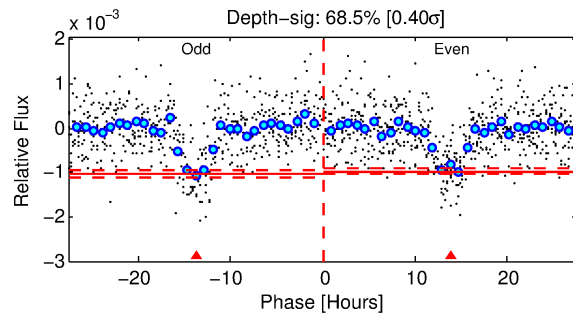
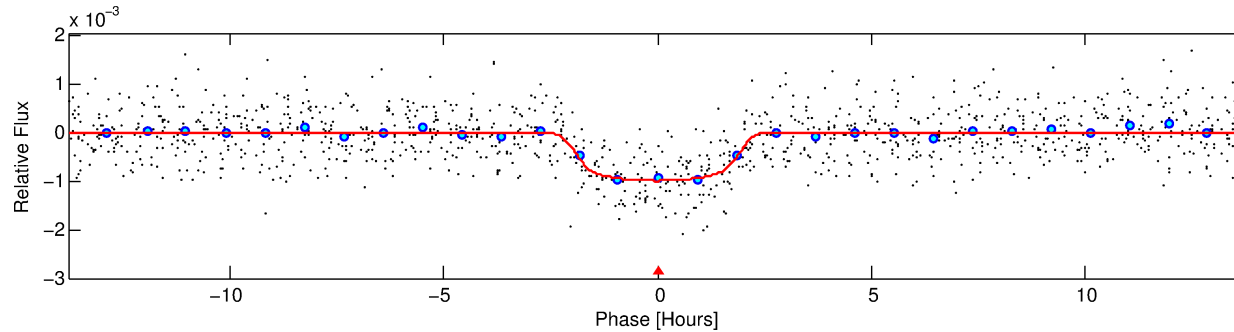
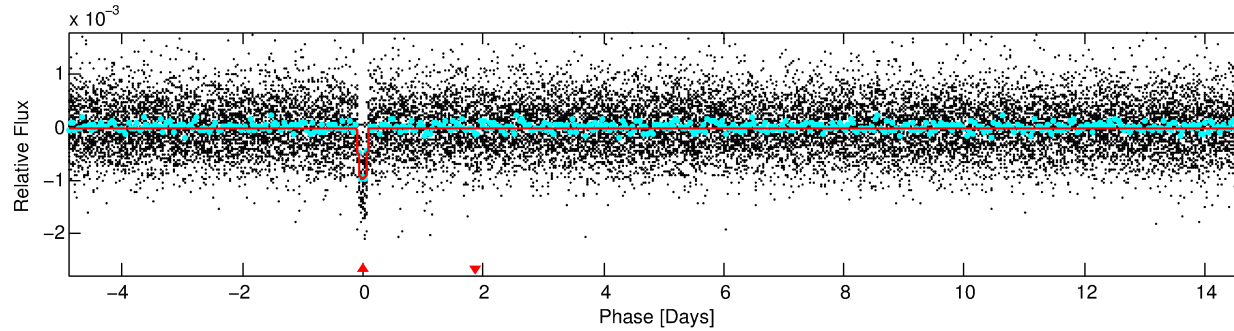
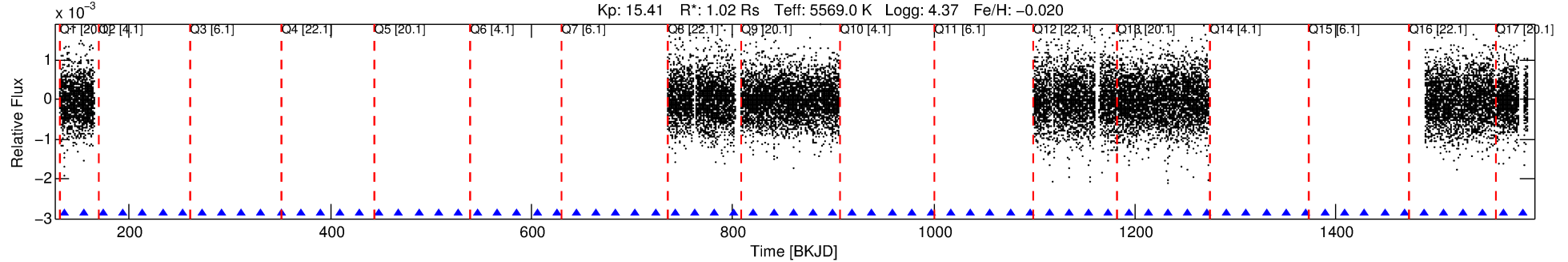
No Significant Match Found

DV One-Page Summary

KIC: 6226908 Candidate: 1 of 1 Period: 19.597 d

KOI: K04068.01 Corr: 0.932

Kp: 15.41 R*: 1.02 Rs Teff: 5569.0 K Logg: 4.37 Fe/H: -0.020



DV Fit Results:

Period = 19.59716 [0.00012] d
Epoch = 135.2747 [0.0059] BKJD
Rp/R* = 0.0344 [0.0025]
a/R* = 16.82 [4.68]
b = 0.90 [0.06]
Seff = 47.99 [18.08]
Teq = 671 [63] K
Rp = 3.82 [1.14] Re
a = 0.1365 [0.0331] AU
Ag = 87.56 [50.00] [1.73σ]
Teffp = 3174 [371] K [6.65σ]

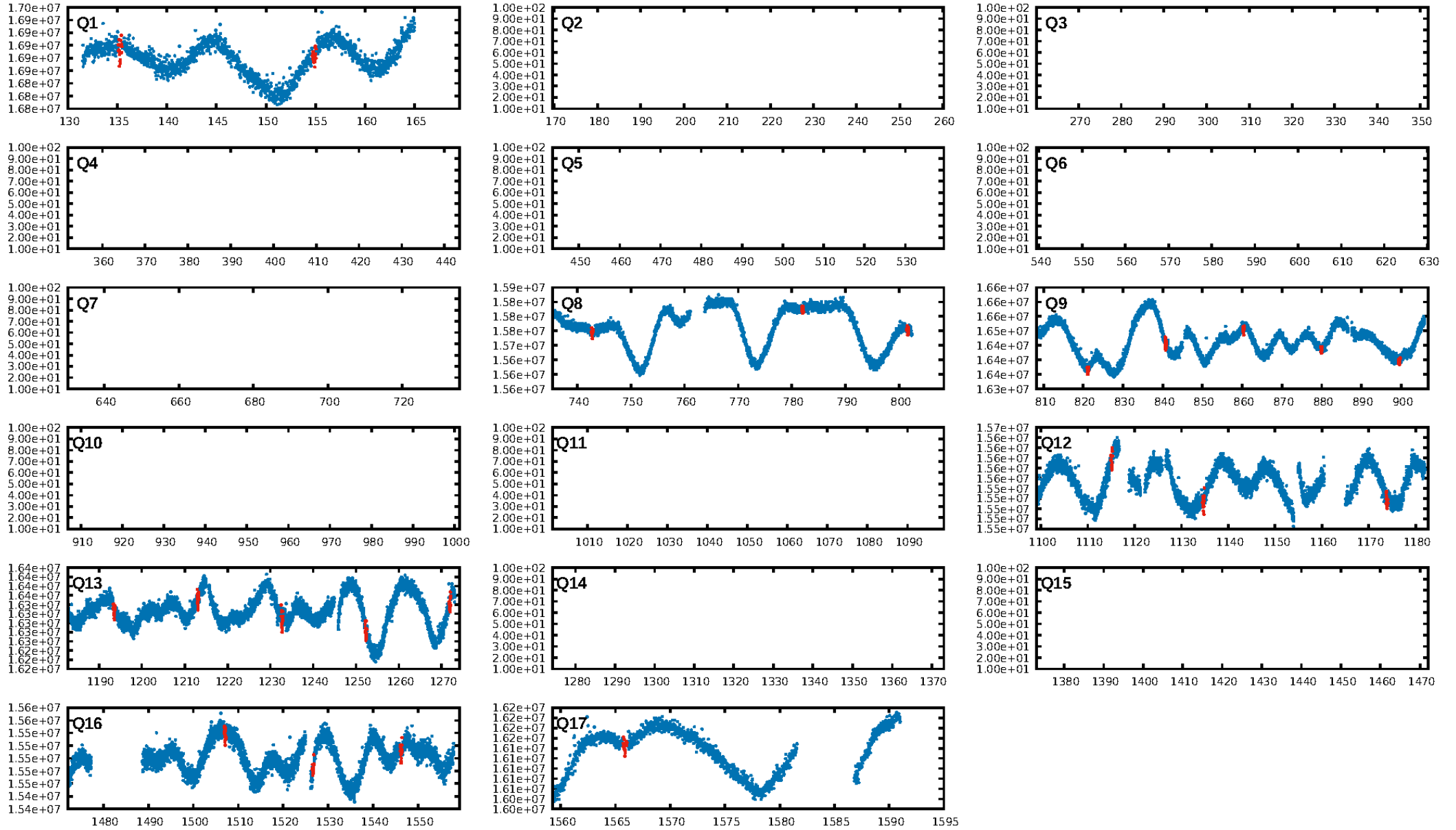
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 94.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.38e-62
RollingBand-fgt: 1.00 [19/19]
GhostDiagnostic-chr: 1.269
Centroid-sig: 0.4%
Centroid-so: 1.290 arcsec [2.25σ]
OotOffset-rm: 0.536 arcsec [2.42σ]
KicOffset-rm: 0.572 arcsec [2.32σ]
OotOffset-st: 0/0/3/4 [7]
KicOffset-st: 0/0/3/4 [7]
DiffImageQuality-fgm: 1.00 [7/7]
DiffImageOverlap-fno: 1.00 [7/7]

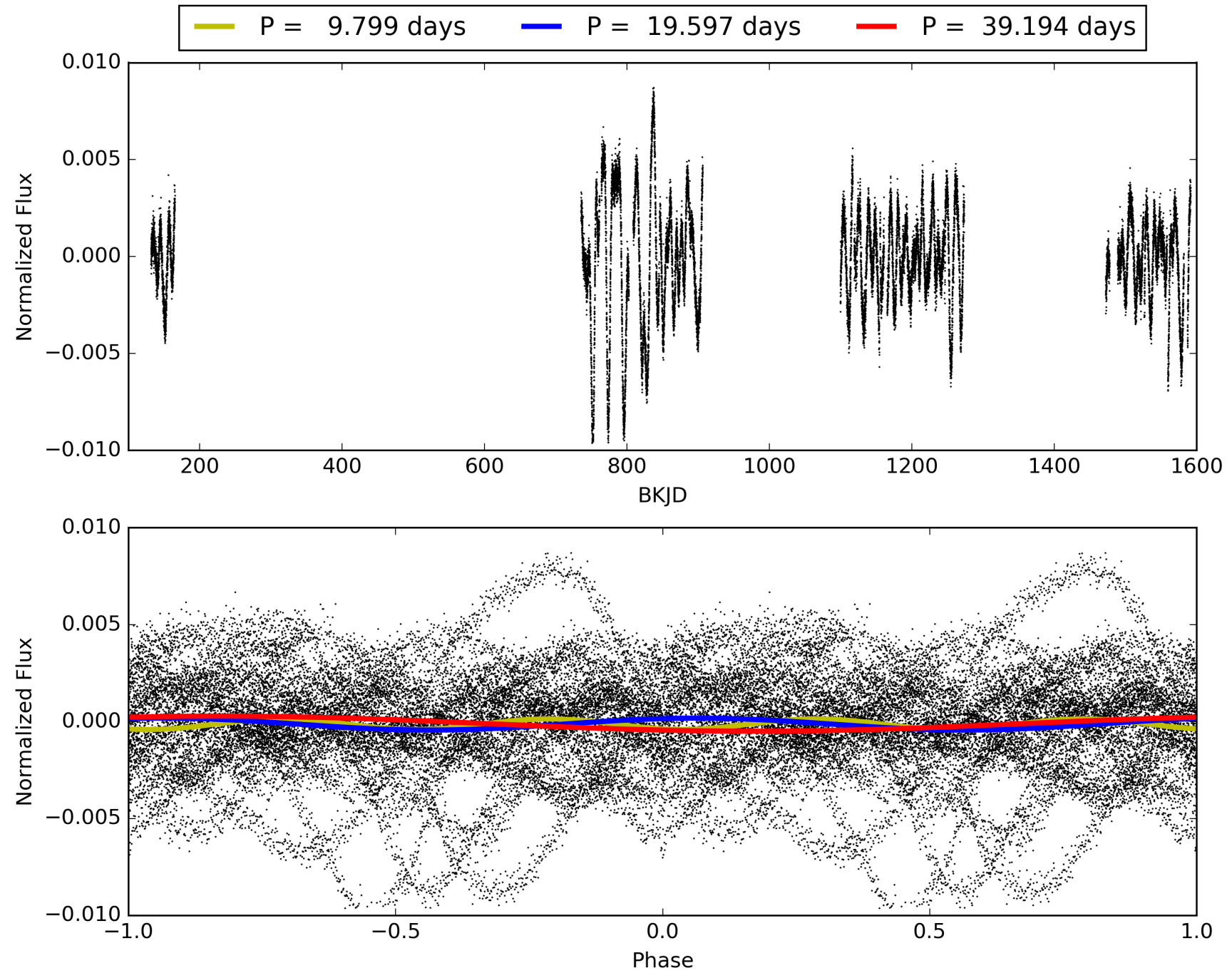
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:12:20 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006226908-01, PDC Light Curves

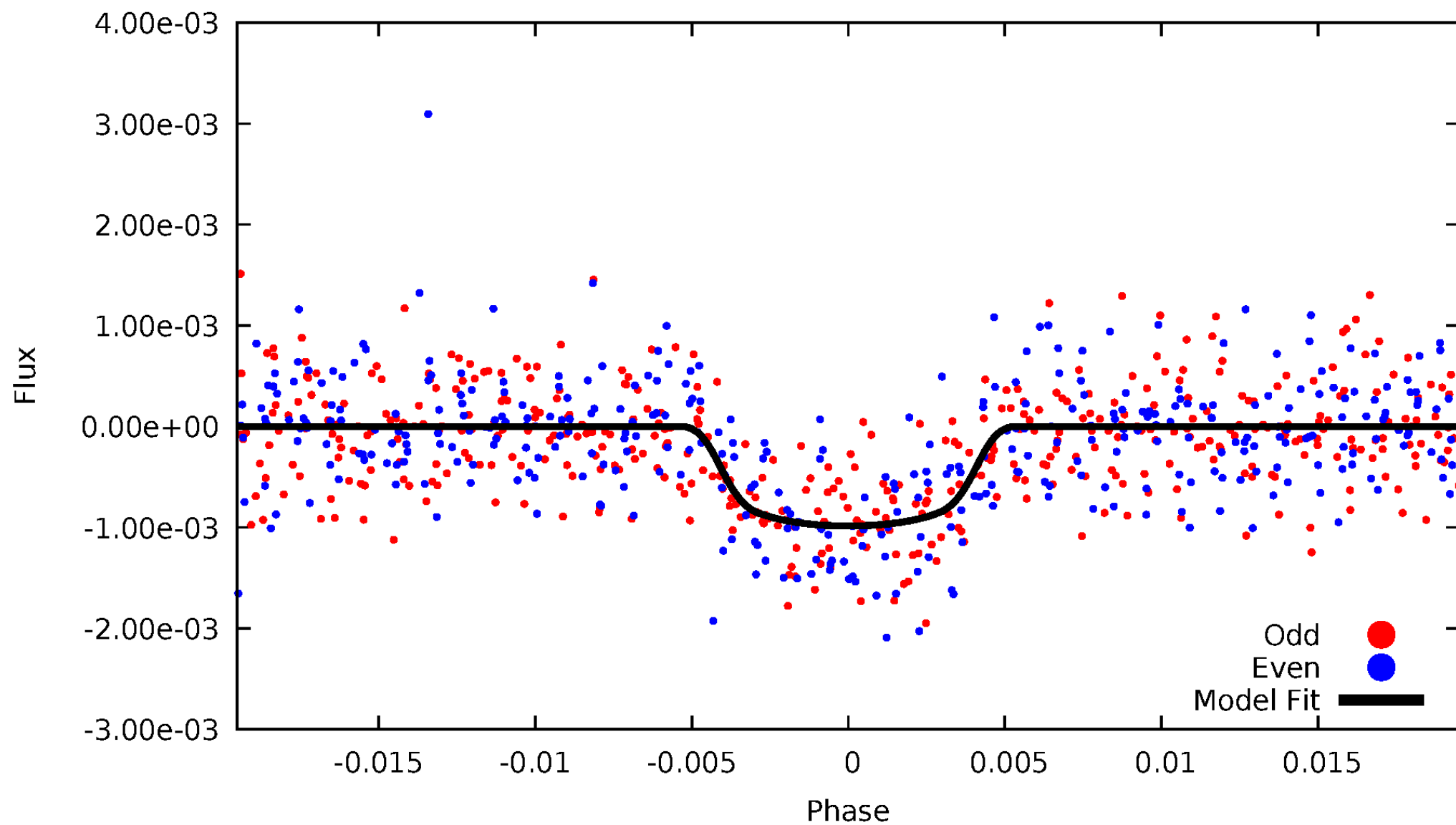


TCE 006226908-01



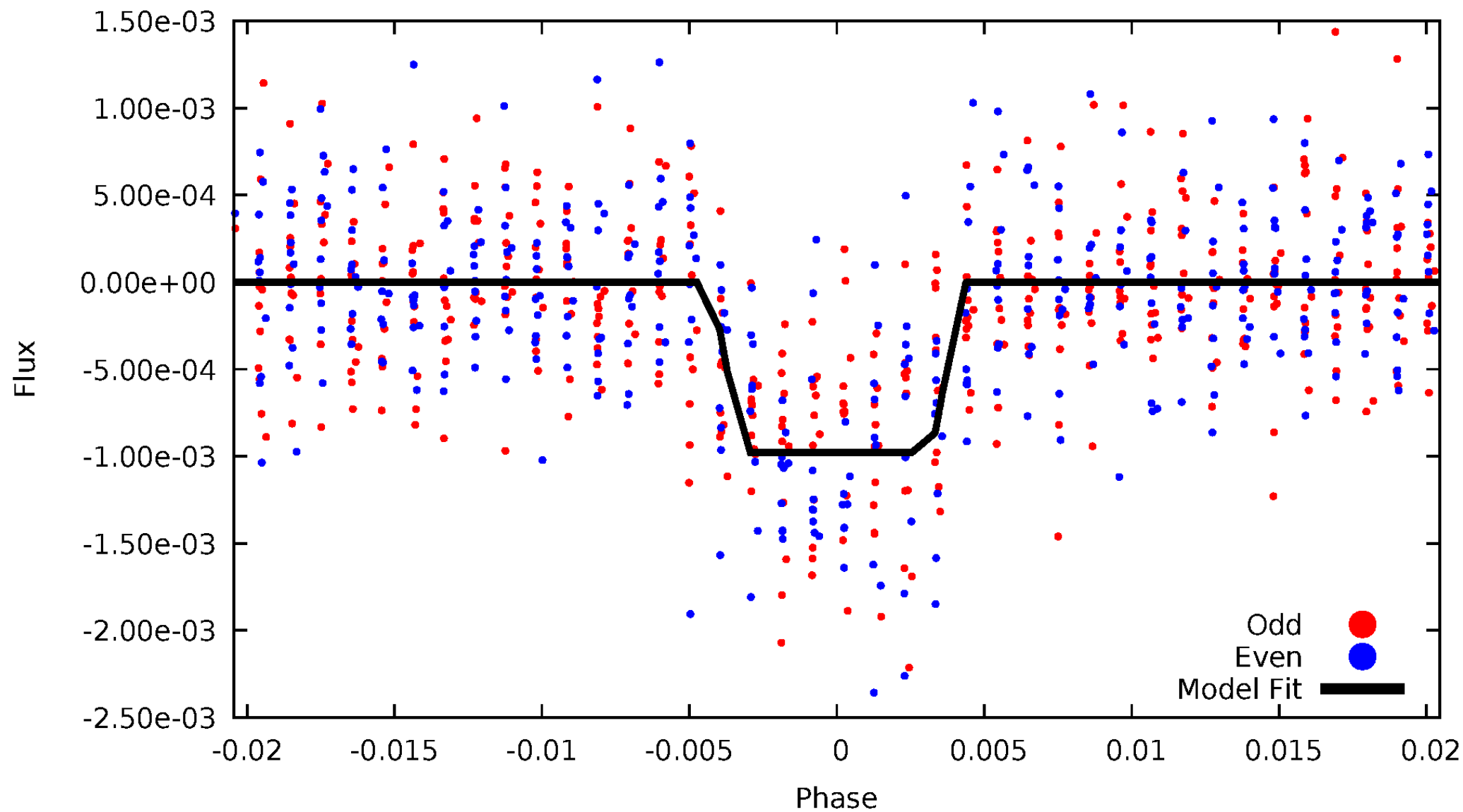
DV Odd/Even

TCE 006226908-01



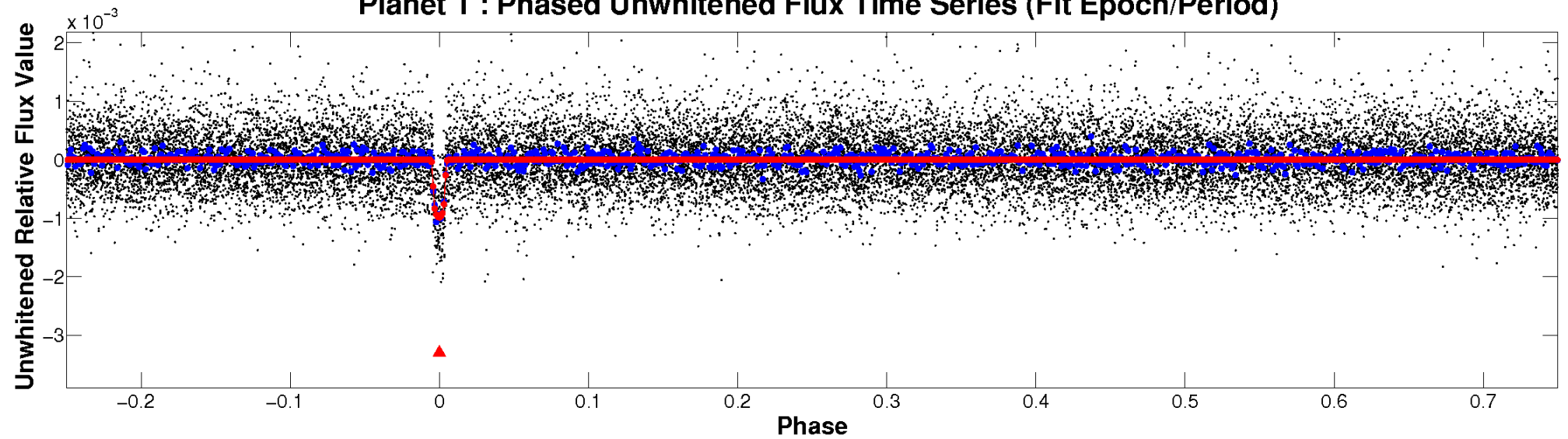
ALT Odd/Even

TCE 006226908-01

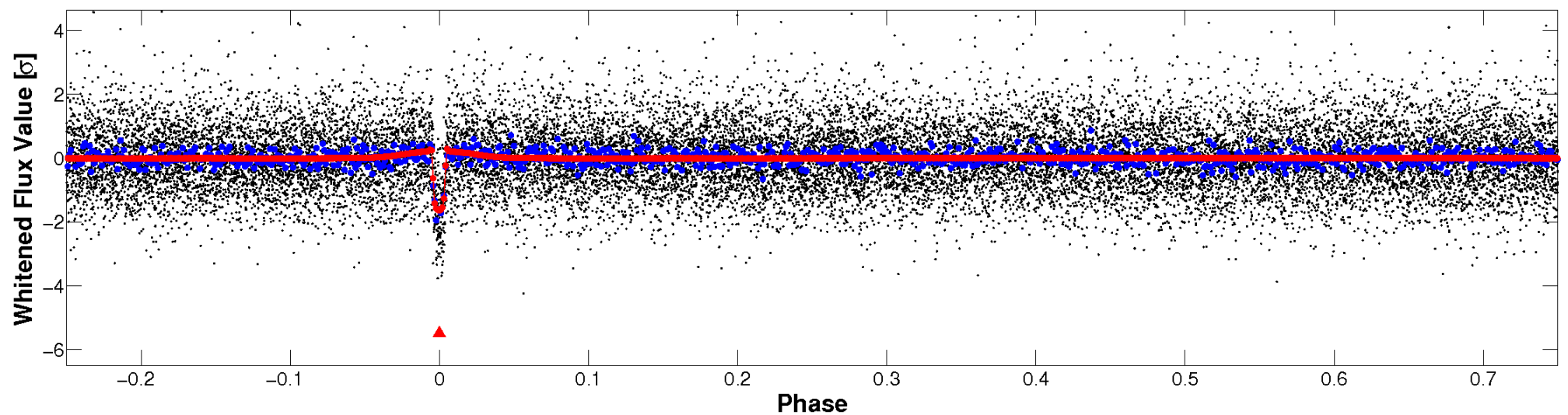


Non-Whitened Vs. Whitened Light Curve

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



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



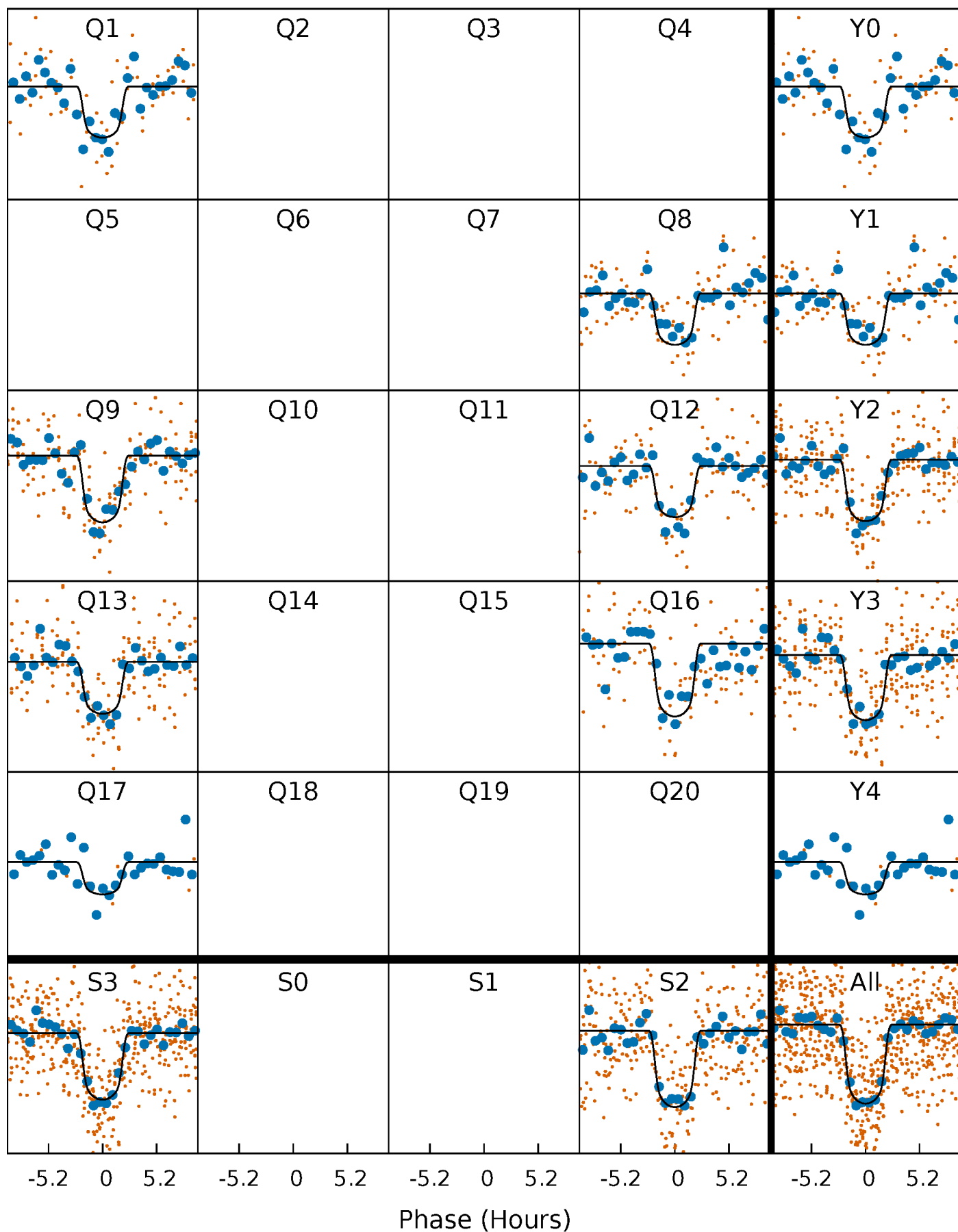
PDC Quarter-Phased Transit Curves

TCE 006226908-01 P= 19.597155 Days $T_0=135.274729$ (BKJD)



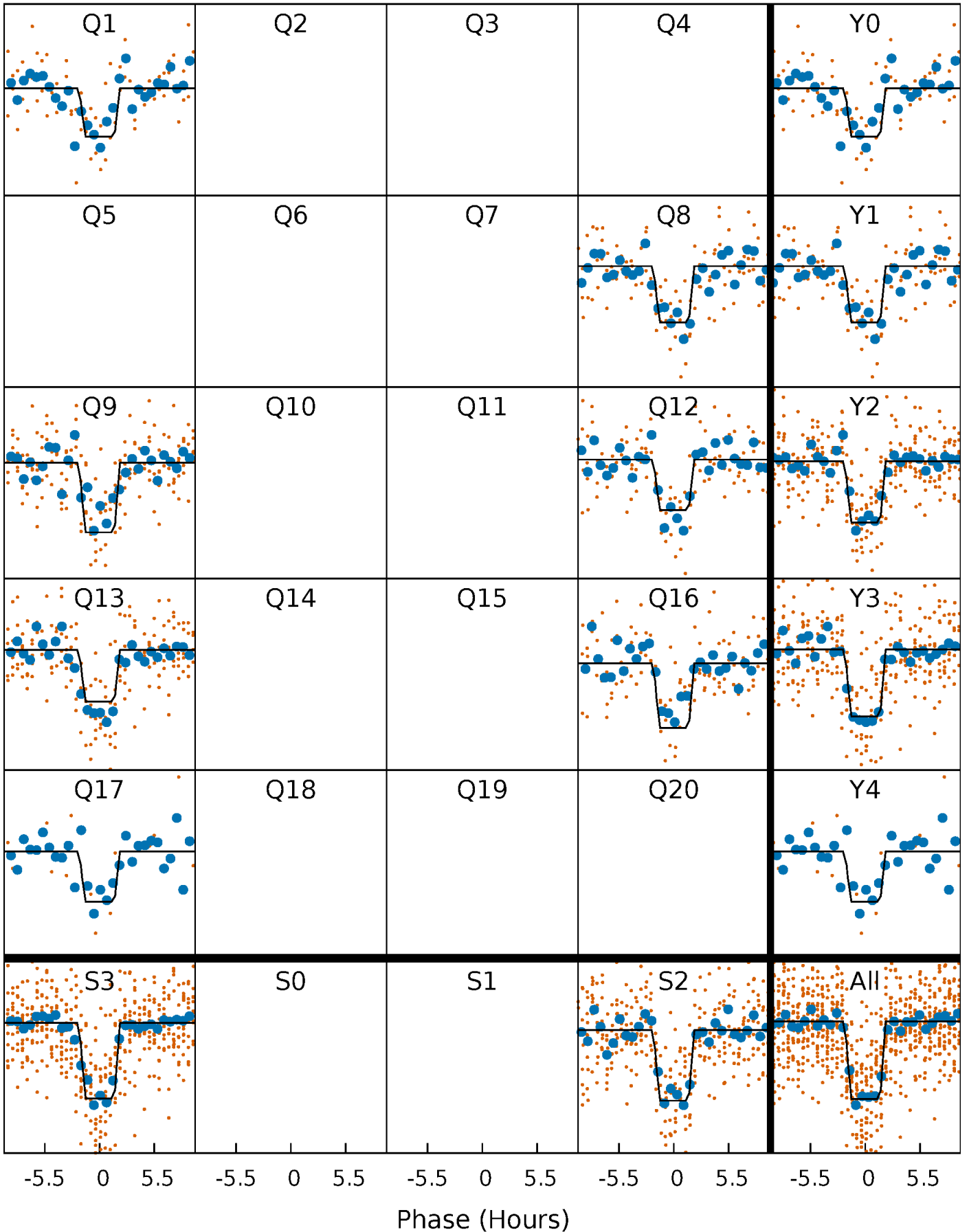
DV Quarter-Phased Transit Curves

TCE 006226908-01 P= 19.597155 Days $T_0=135.274729$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

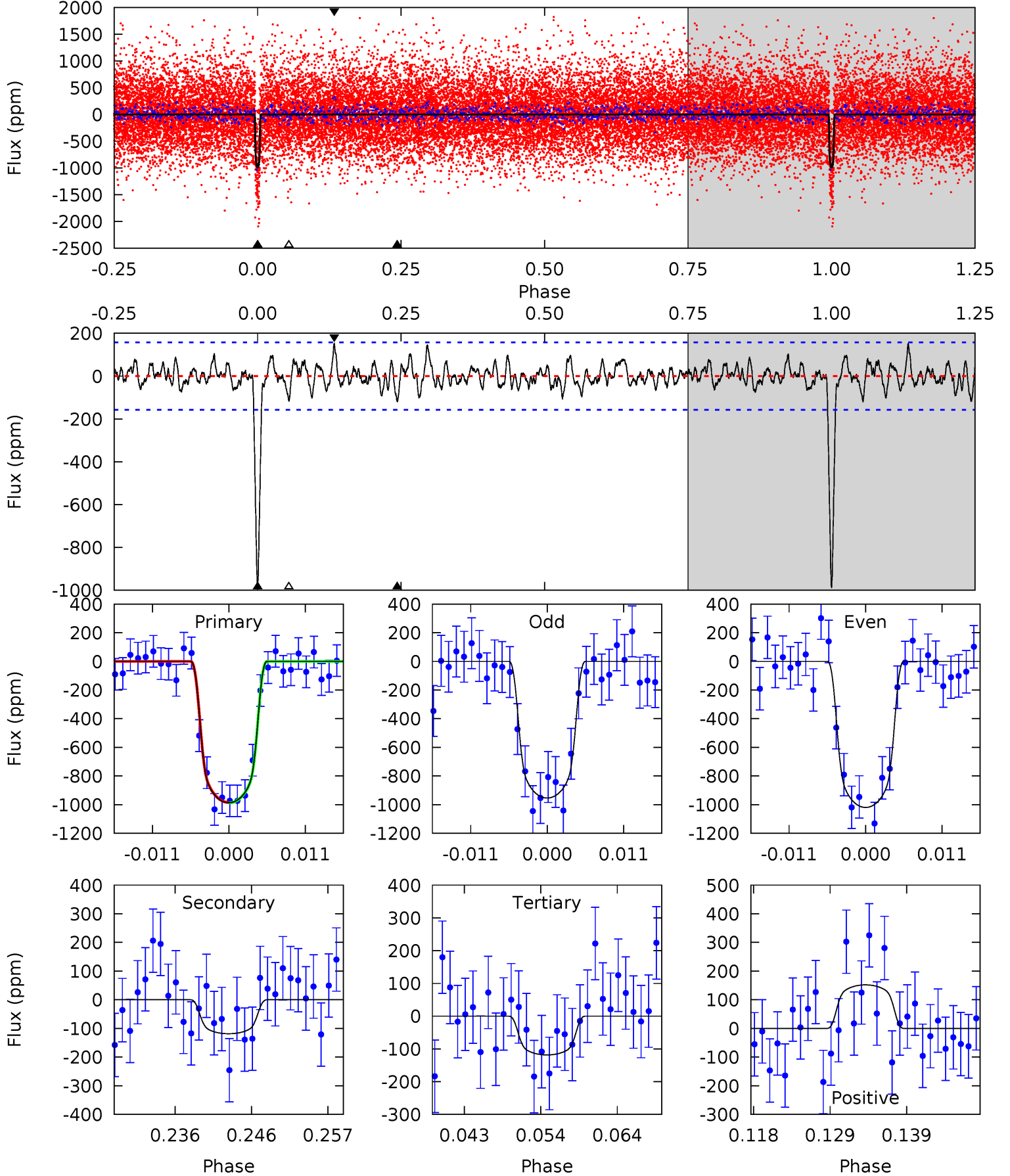
TCE 006226908-01 P= 19.596912 Days $T_0=135.287554$ (BKJD)



DV Model-Shift Uniqueness Test

006226908-01, $P = 19.597155$ Days, $E = 115.677574$ Days

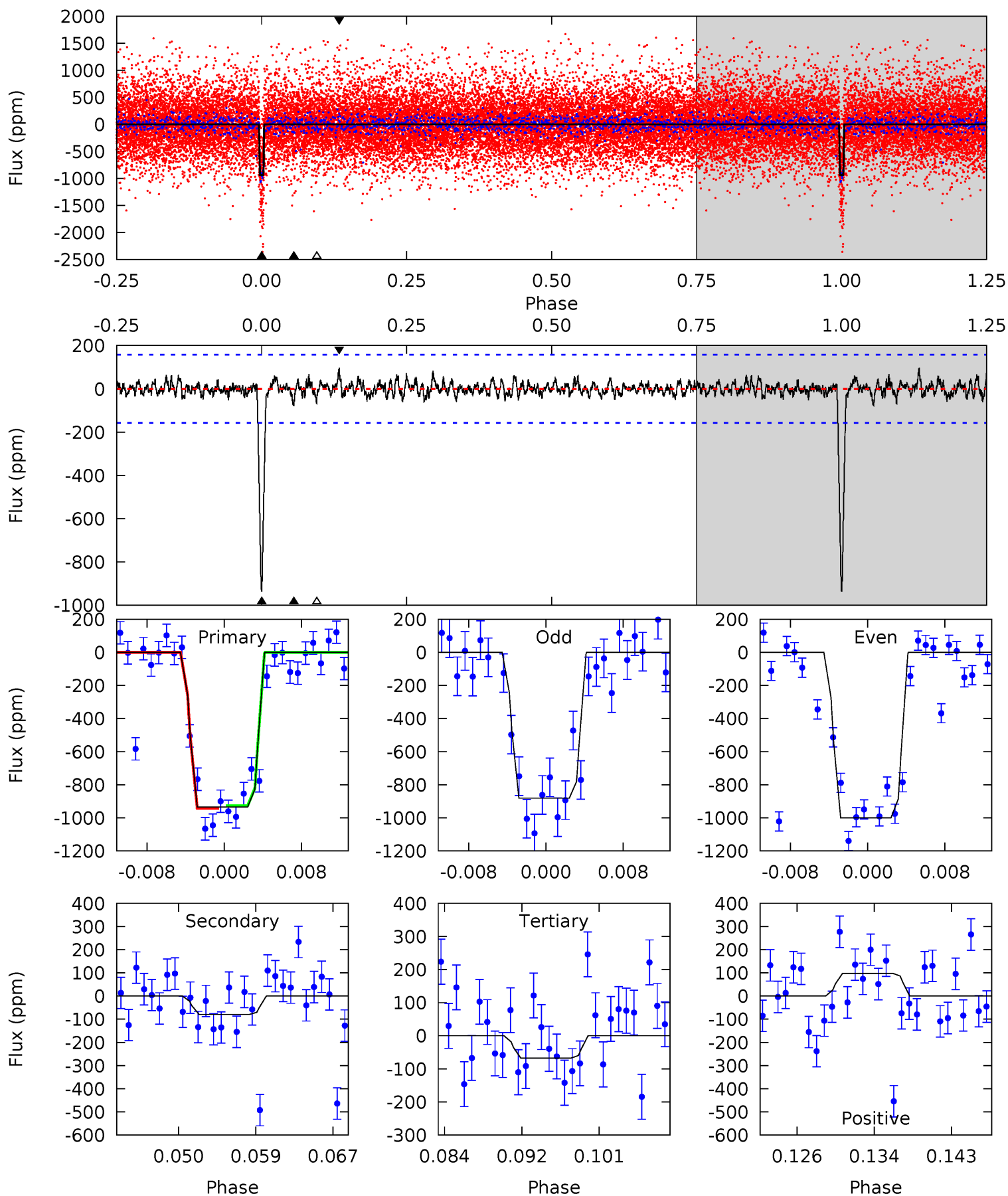
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 31.4 | 3.77 | 3.77 | 4.83 | 5.01 | 2.55 | 1.32 | 27.6 | 26.5 | 0.00 | -1.06 | 1.04 | 1.04 | 0.13 | 0.04 |



Alt Model-Shift Uniqueness Test

006226908-01, P = 19.596912 Days, E = 115.690642 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 30.0 | 2.56 | 2.17 | 3.14 | 5.06 | 2.64 | 0.74 | 27.9 | 26.9 | 0.39 | -0.58 | 1.91 | 1.08 | 0.09 | 0.26 |



Stellar Parameters For KIC 006226908

| | $T_{\text{eff}} (K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5569^{+182}_{-182} | $4.368^{+0.158}_{-0.193}$ | $-0.020^{+0.250}_{-0.300}$ | $1.019^{+0.294}_{-0.181}$ | $0.883^{+0.120}_{-0.074}$ | $1.176^{+0.889}_{-0.587}$ |
| | +3%/-3% | +4%/-4% | +1250%/-1500% | +29%/-18% | +14%/-8% | +76%/-50% |
| Source | KIC0 | 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 006226908-01 / KOI 4068.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|----------------------|------------------|
| DV | -119 ± 31 | $3.86^{+0.64}_{-0.52}$ | 938^{+81}_{-65} | 3567^{+188}_{-198} | 79^{+41}_{-27} |
| Alt. | -79 ± 31 | $3.53^{+0.67}_{-0.52}$ | 941^{+75}_{-60} | 3442^{+239}_{-256} | 64^{+35}_{-29} |

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

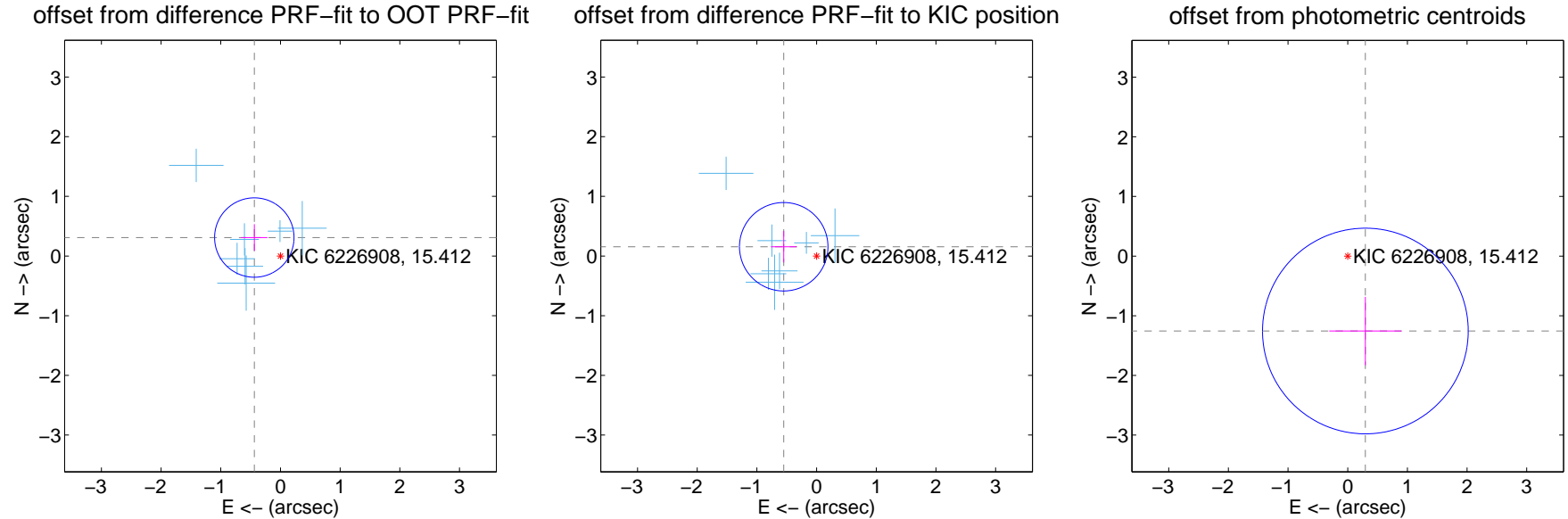
DV Centroid Data

Supplemental centroid analysis for 006226908-01. Kepler magnitude: 15.41. Transit SNR 19.27

There are 7 quarters with good PRF difference image offsets

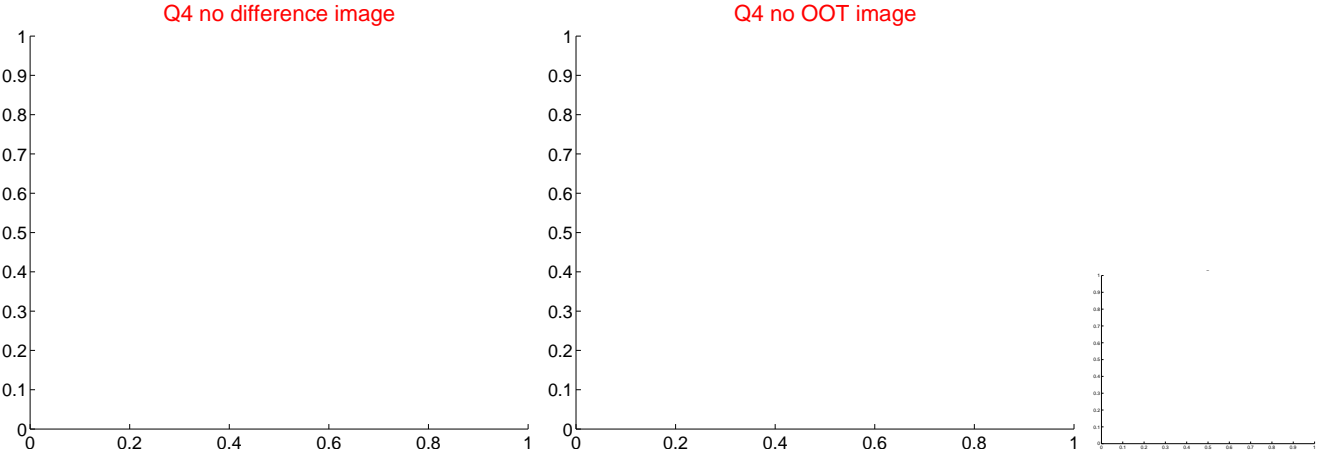
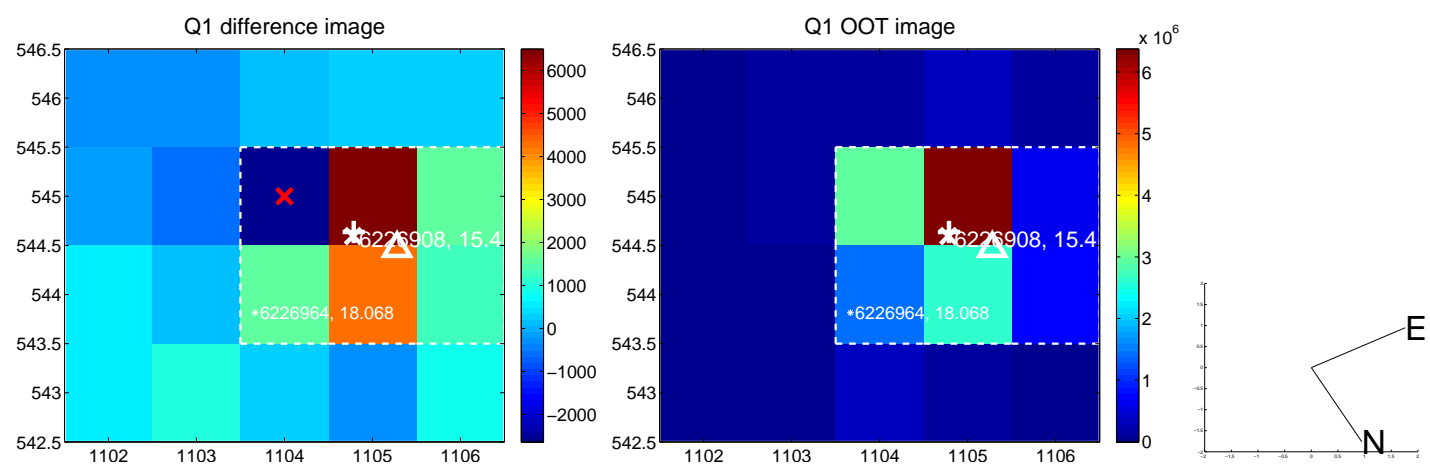
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.536 ± 0.222 | 2.42 | 0.438 ± 0.221 | 0.310 ± 0.224 |
| PRF-fit source offset from KIC position | 0.572 ± 0.247 | 2.32 | 0.550 ± 0.216 | 0.155 ± 0.262 |
| photometric centroid source offset | 1.29 ± 0.57 | 2.25 | -0.30 ± 0.61 | -1.26 ± 0.57 |

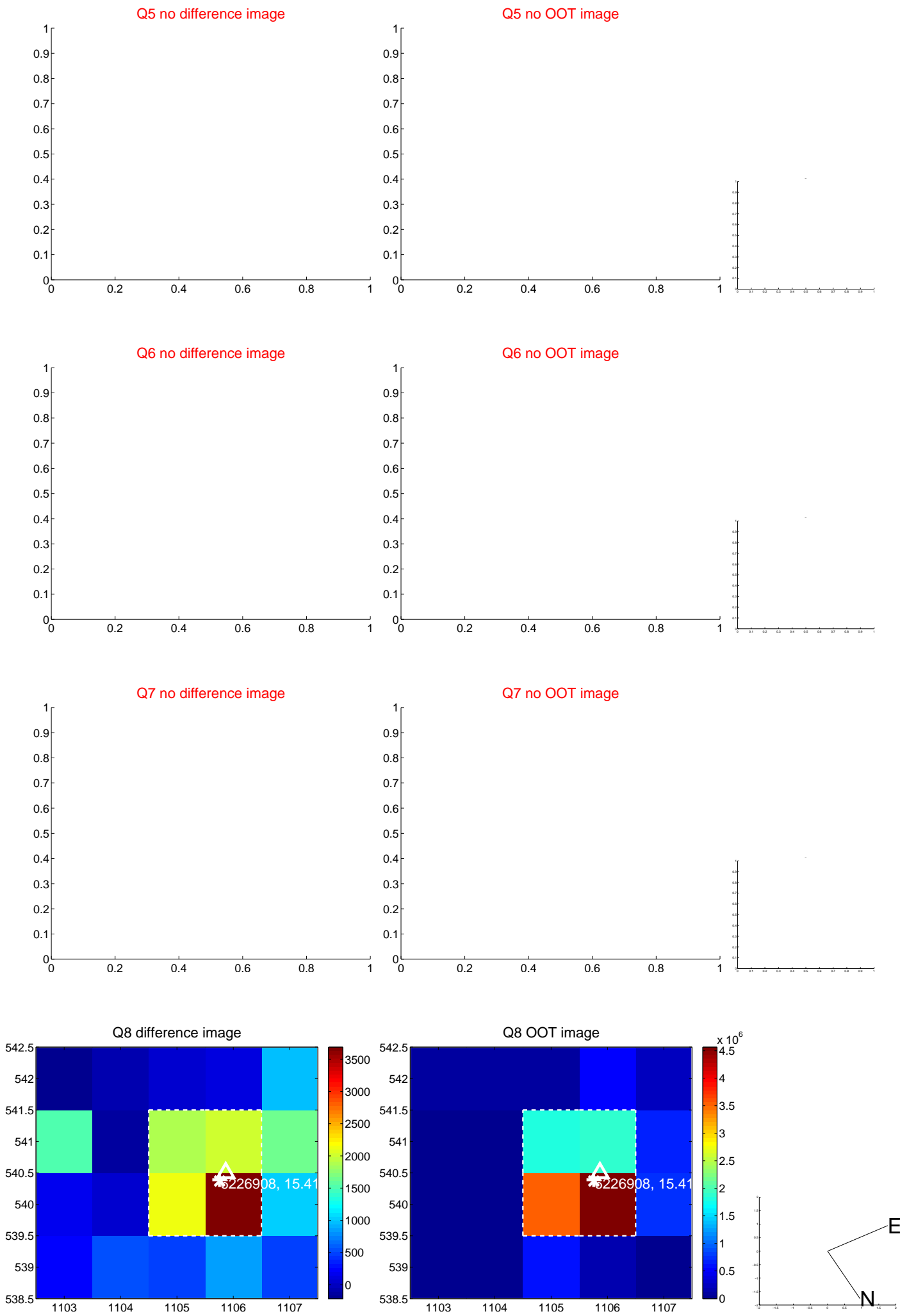


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

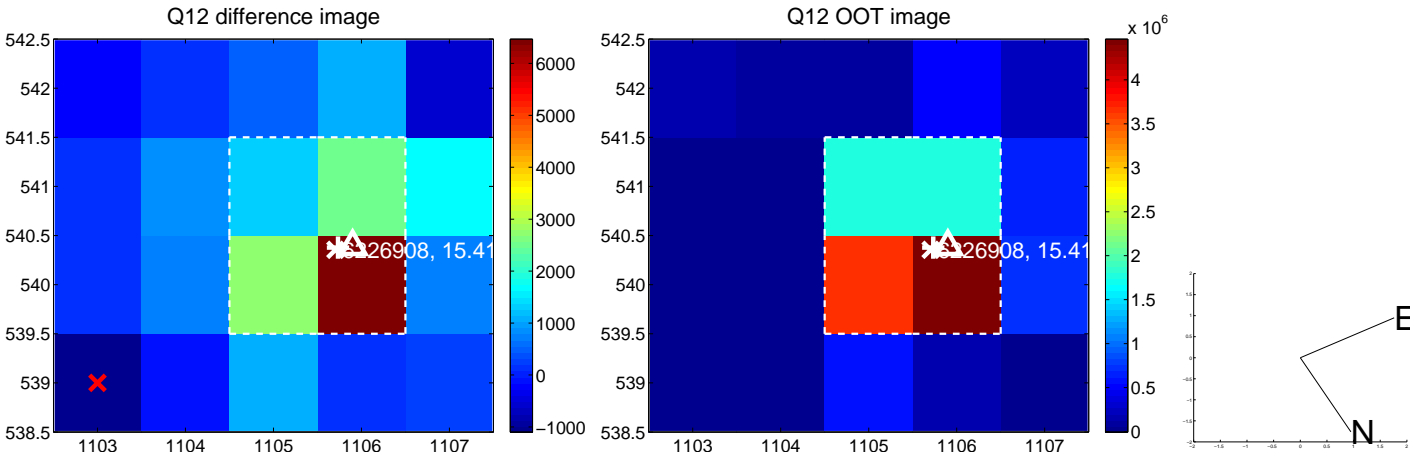
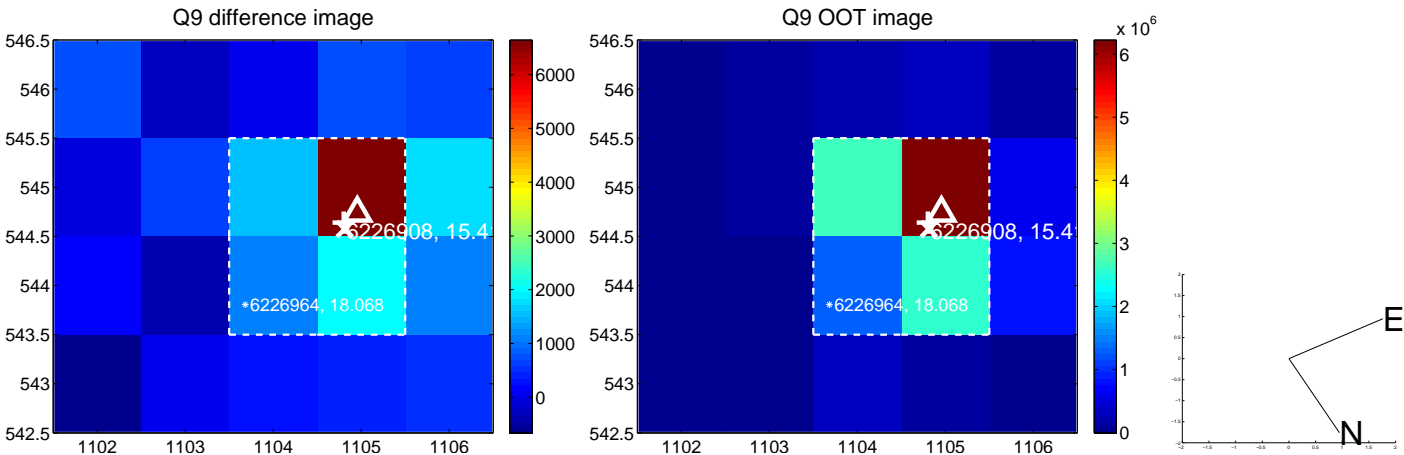
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



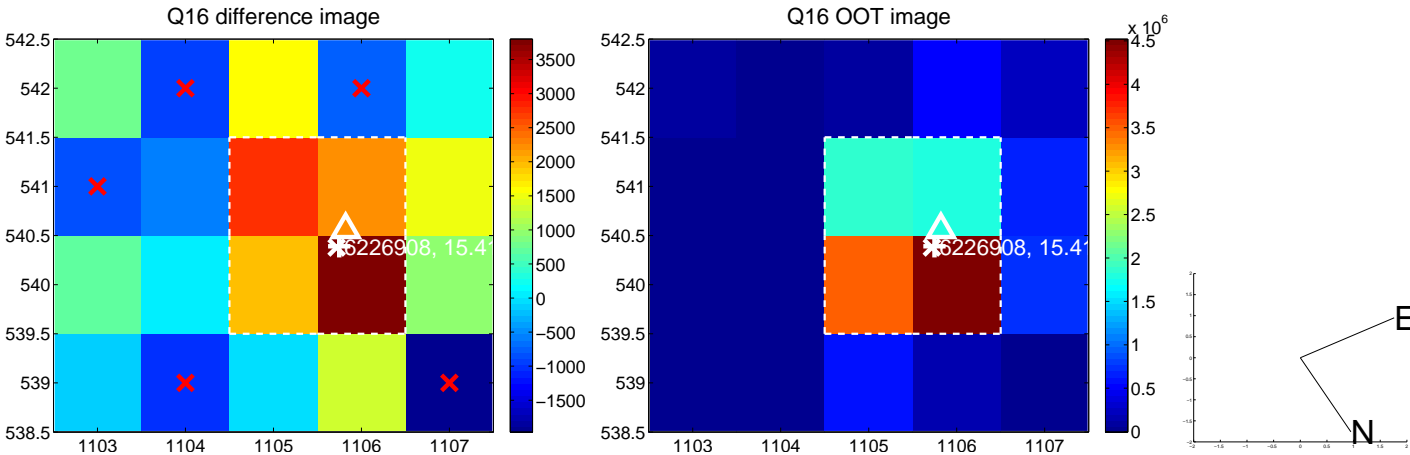
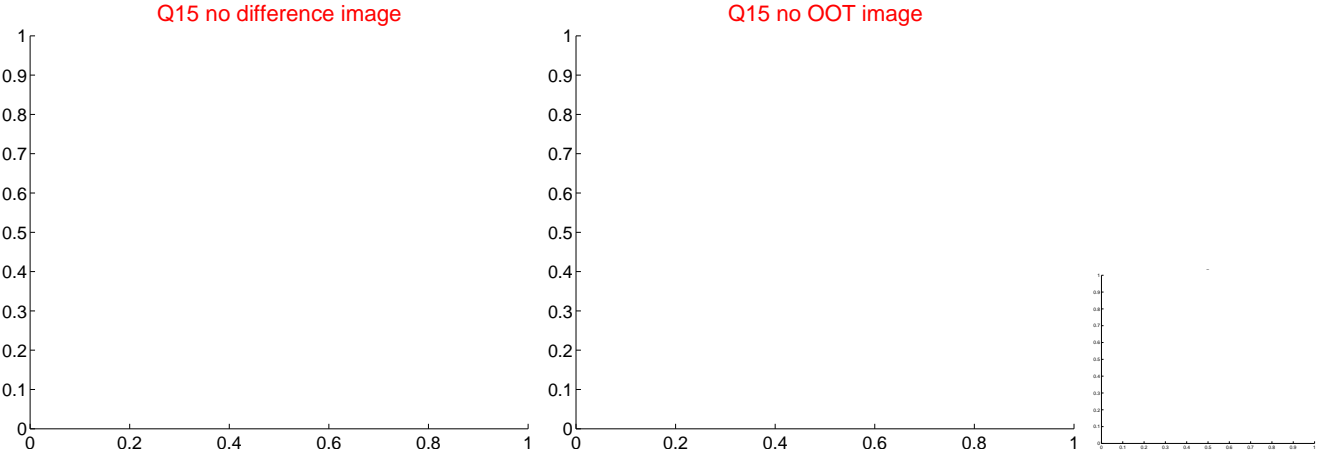
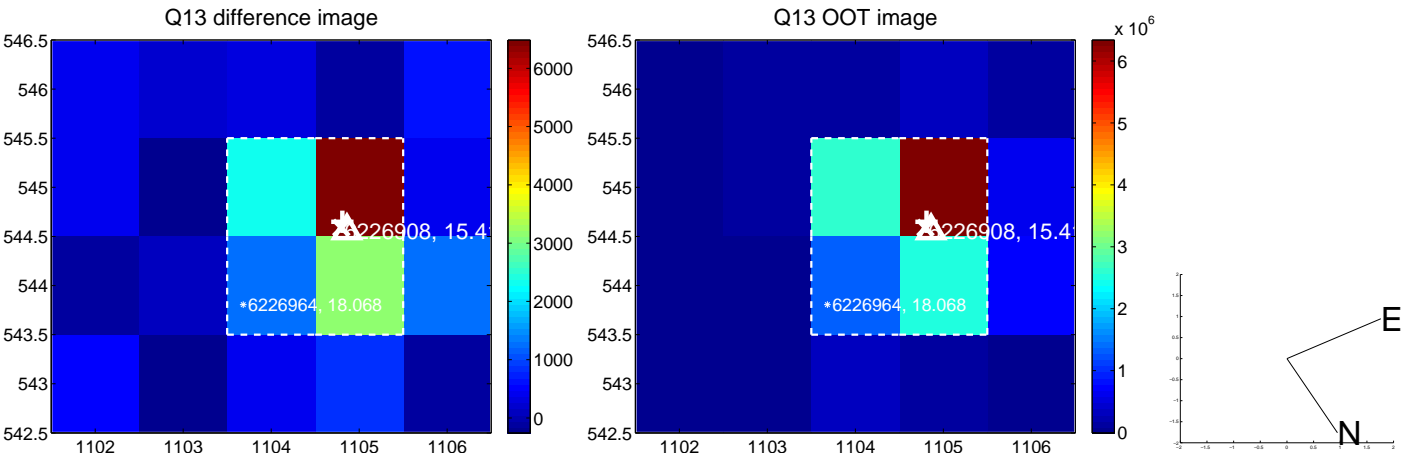
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



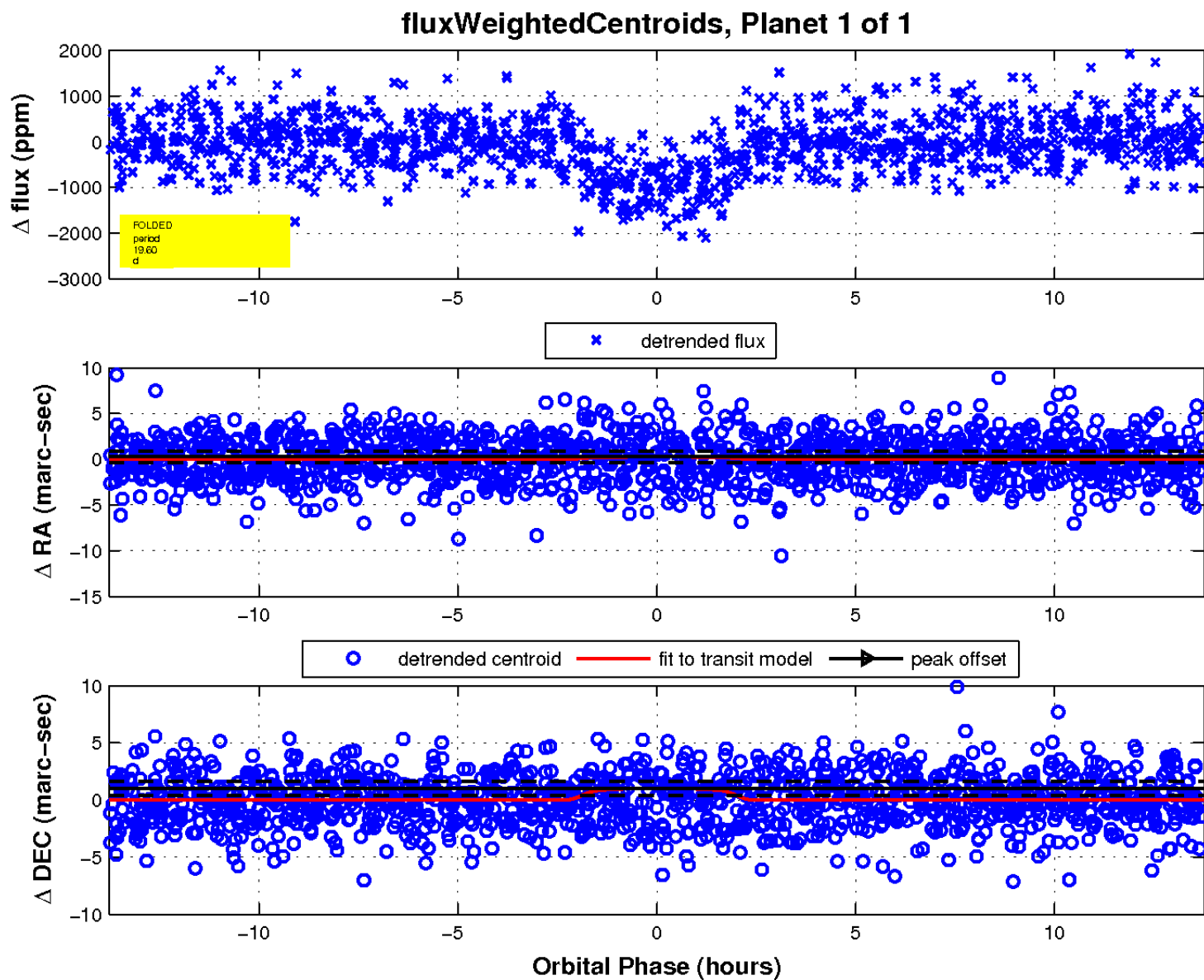
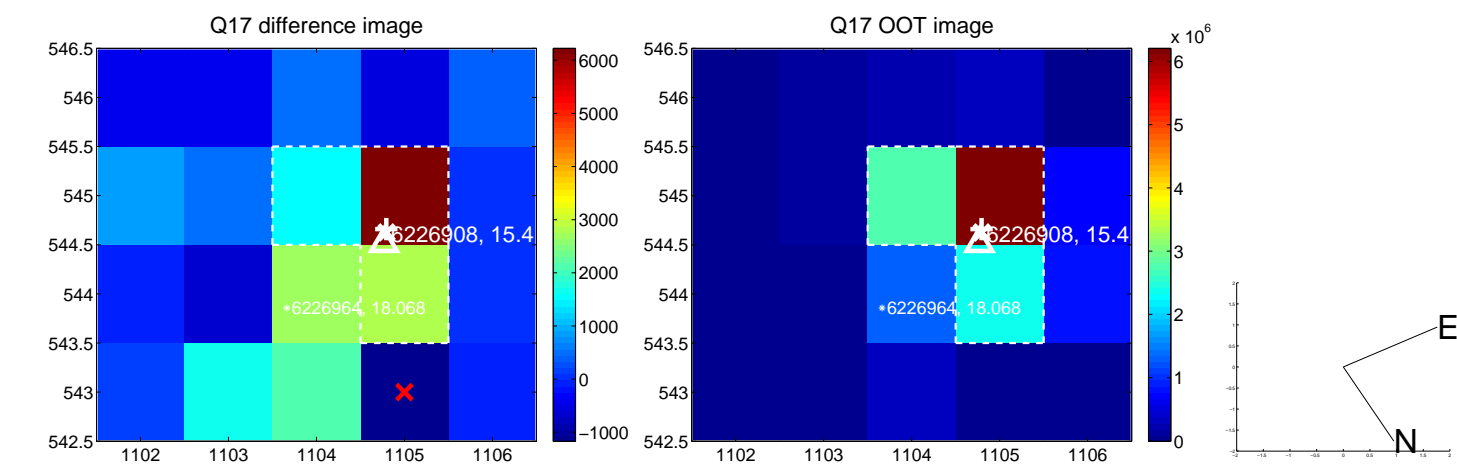
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

