

KIC 010226343

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 _⊕) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|-----|------|----------------------------------|--------------------|----------------------------------|----------------------------------|
| 010226343-01 | OBS | 7994.01 | 0.660650 | 131.698494 | 1242.6 | 1.500 | 8.9 | -1.0 | 1.22 | 6520 | 4.32 | 9211.00 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--------------------------------|
| 010226343-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 1 | LPP_DV—CENT_NOFITS—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.

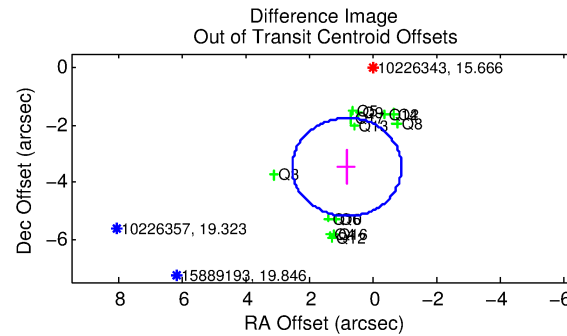
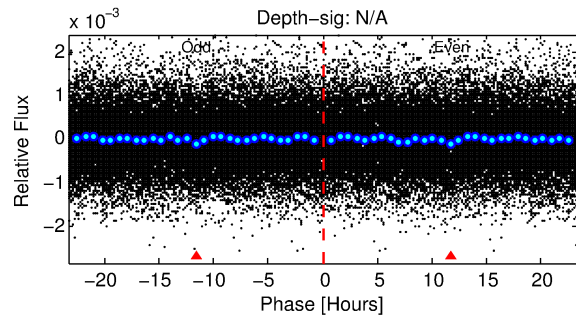
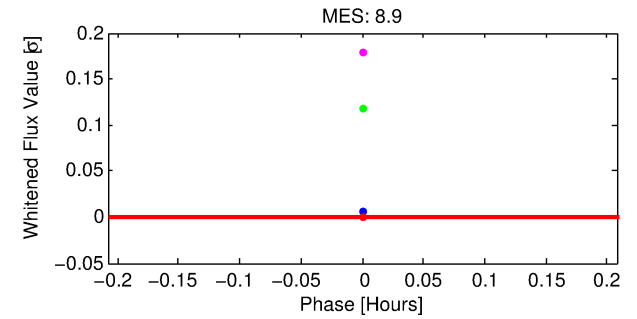
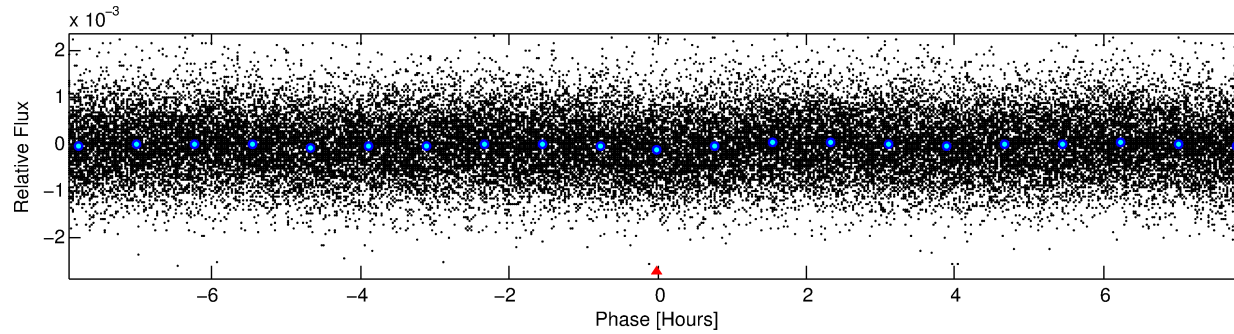
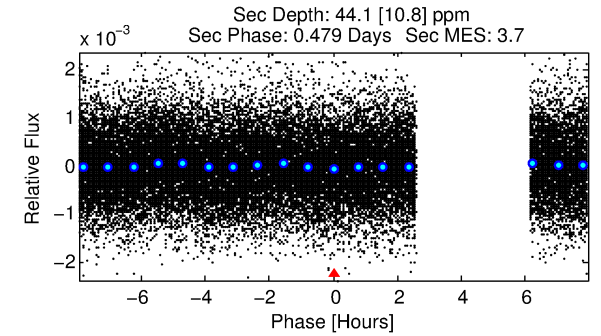
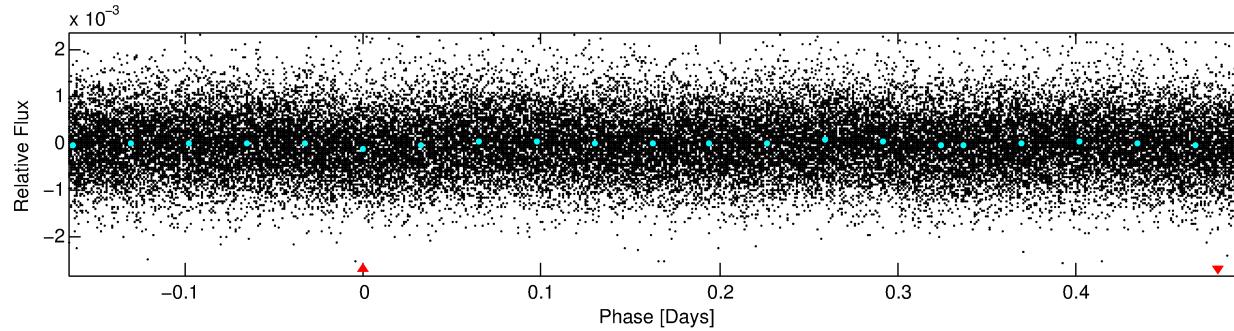
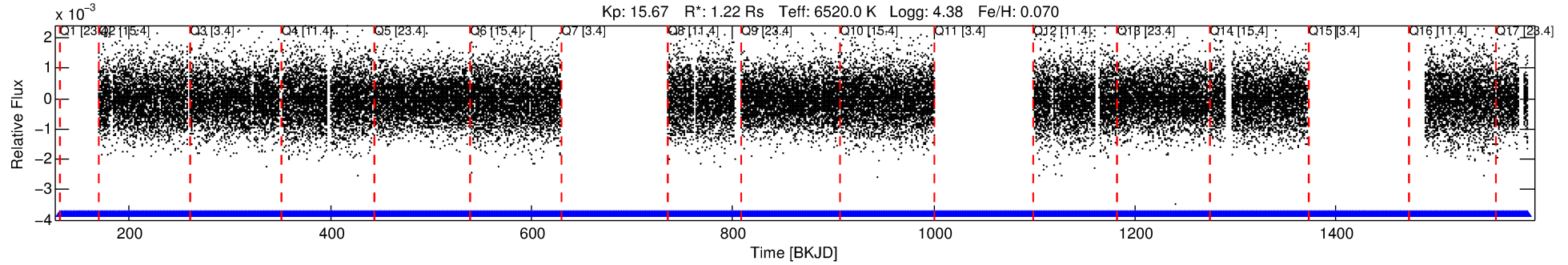
Ephemeris Match Information For 010226343-01

| 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 |
|--------------|----------|---------------|------------|--------------------------------|----------|------|------|----------------|----------------|--------------------------------|------------|------|----------------|----------------|
| 010226343-01 | 10226343 | 010226388-pri | 10226388 | 1:1 | 72.3 | 14 | -12 | 10.77 | 15.66 | 205.55 | Direct-PRF | 0 | 1.16 | 0.98 |

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: 10226343 Candidate: 1 of 1 Period: 0.661 d



TPS TCE Results:

Period = 0.66065 d
Epoch = 131.6985 BKJD

DV fit results are unavailable

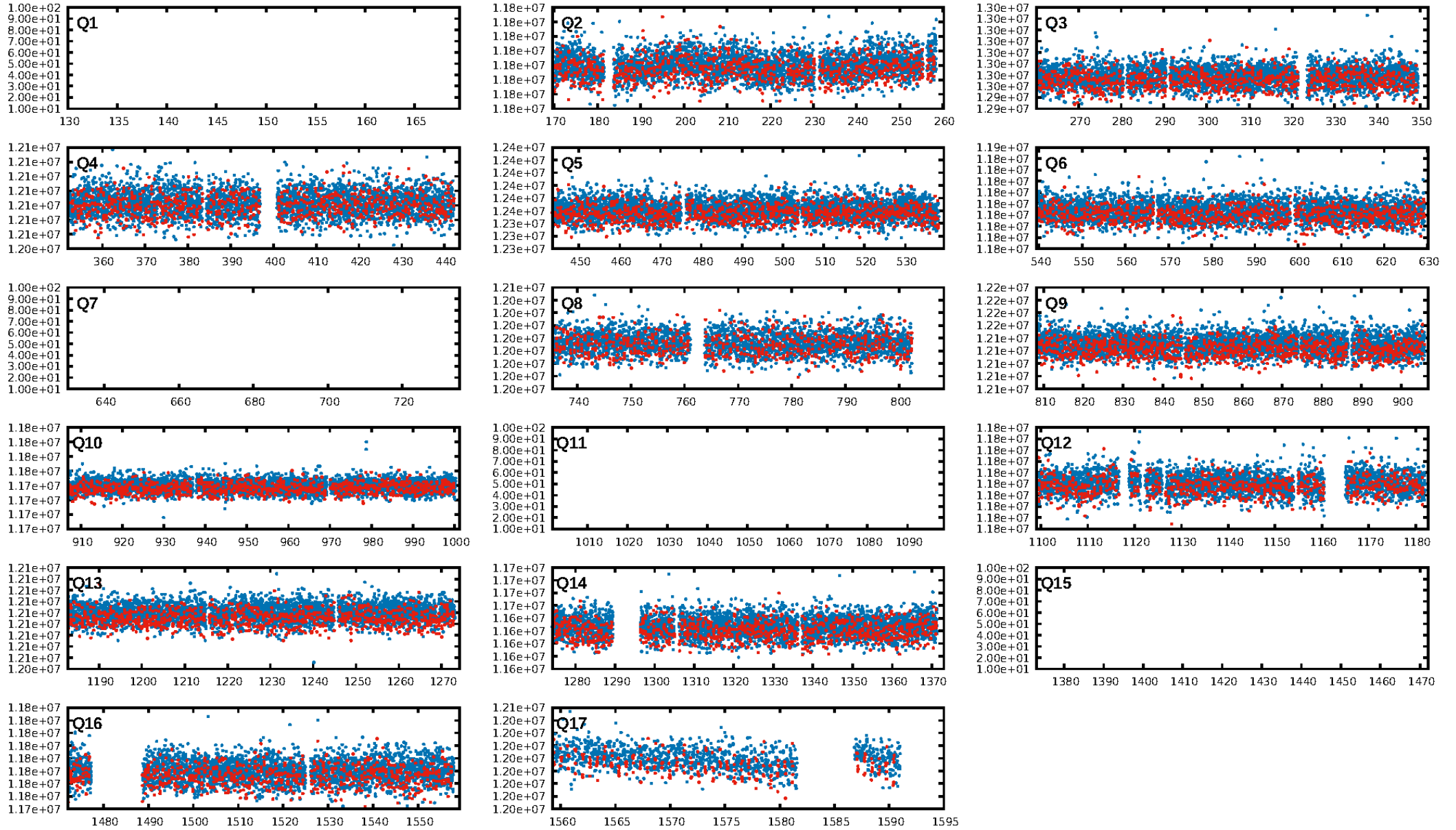
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.42e-20
RollingBand-fgt: 1.00 [1532/1532]
GhostDiagnostic-chr: 0.4081
Centroid-sig: 56.3%
Centroid-so: 0.263 arcsec [0.91σ]
OotOffset-rm: 3.575 arcsec [6.23σ]
KicOffset-rm: 3.412 arcsec [5.91σ]
OotOffset-st: 4/1/4/4 [13]
KicOffset-st: 4/1/4/4 [13]
DiffImageQuality-fgm: 0.08 [1/13]
DiffImageOverlap-fno: 1.00 [13/13]

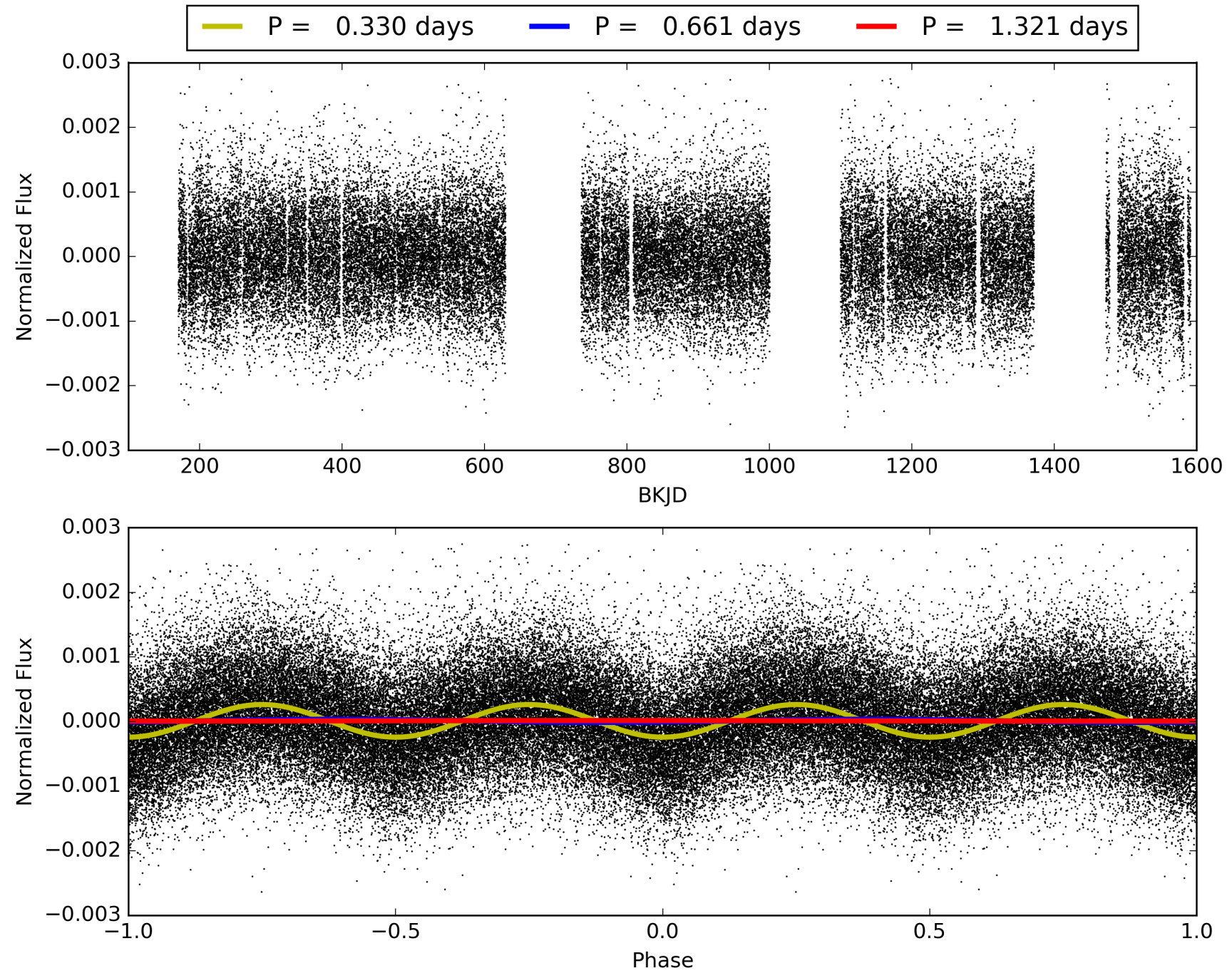
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 10:08:42 Z

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

TCE 010226343-01, PDC Light Curves

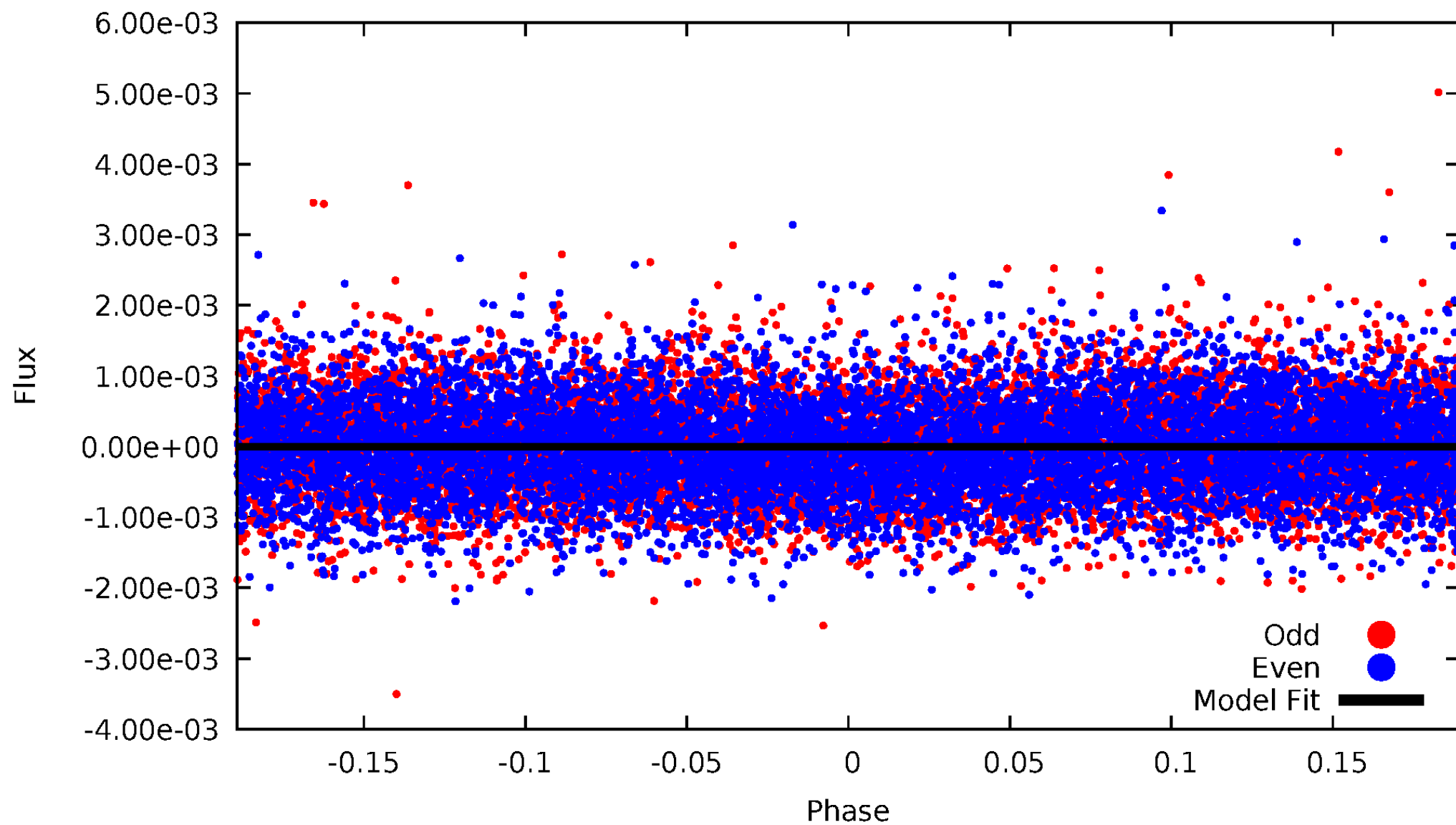


TCE 010226343-01



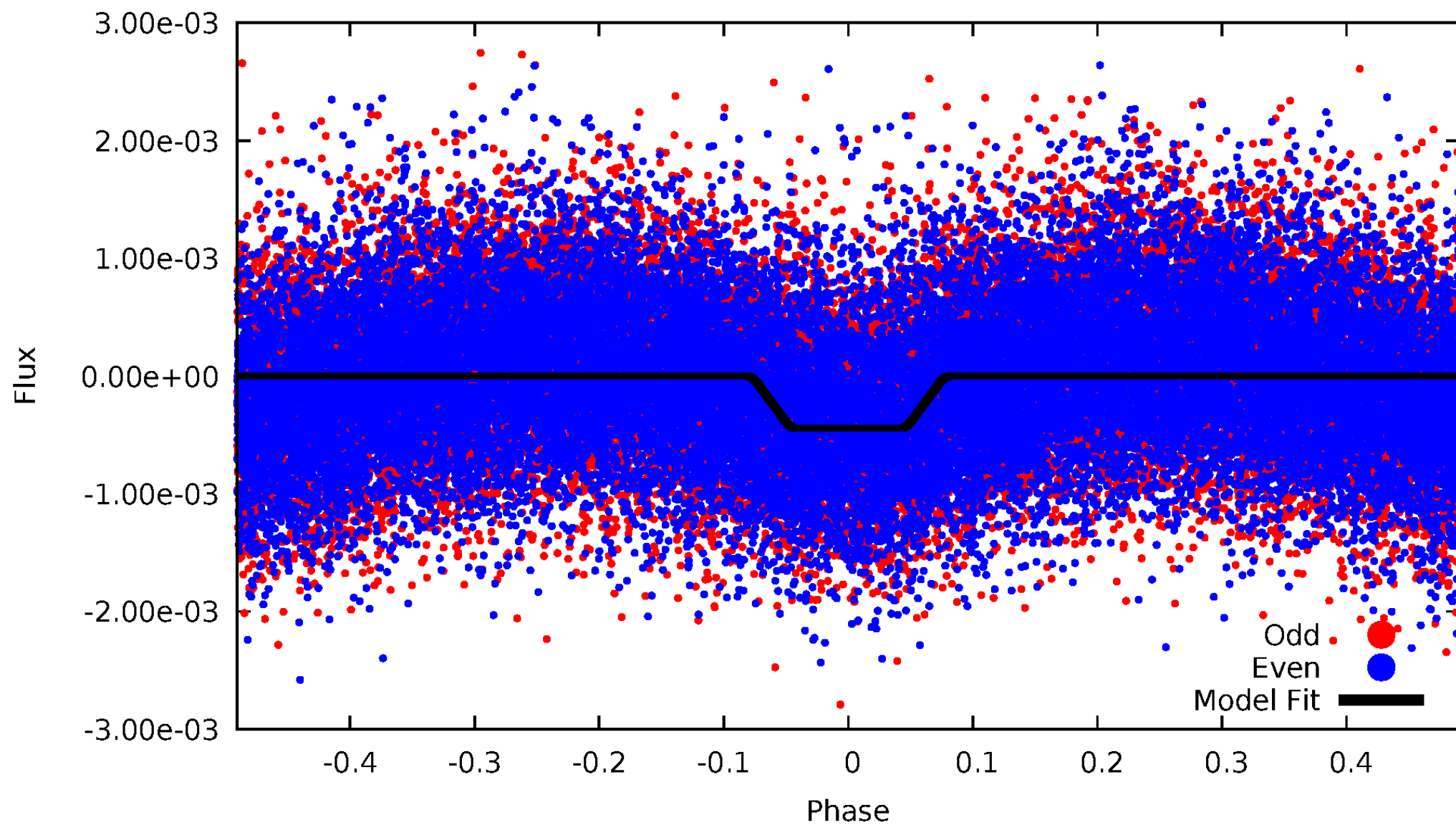
DV Odd/Even

TCE 010226343-01

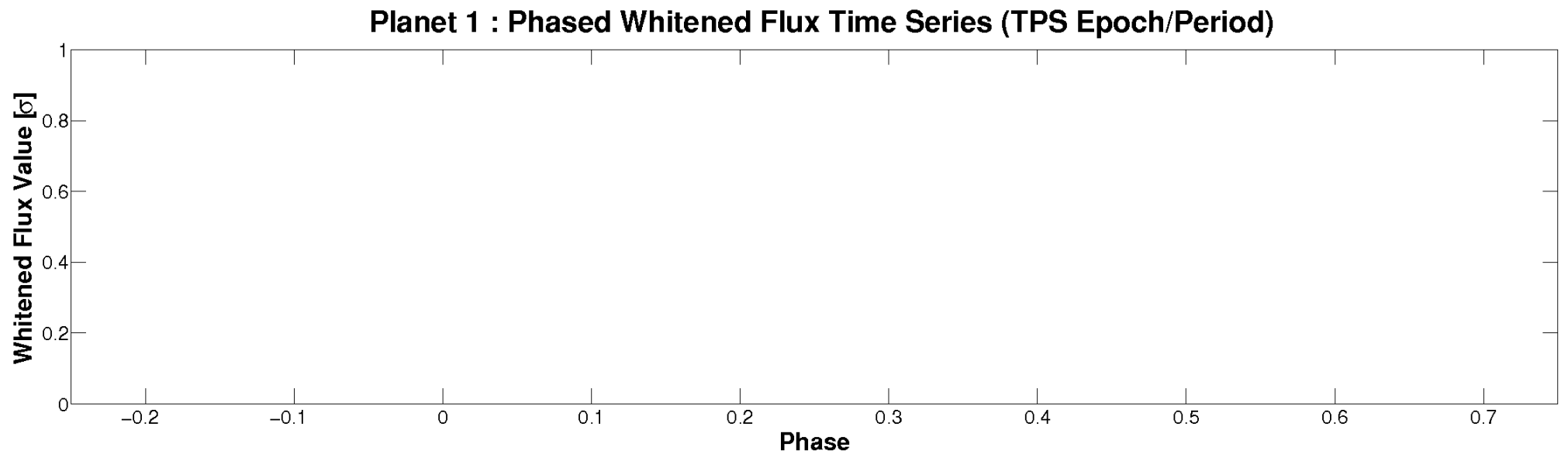
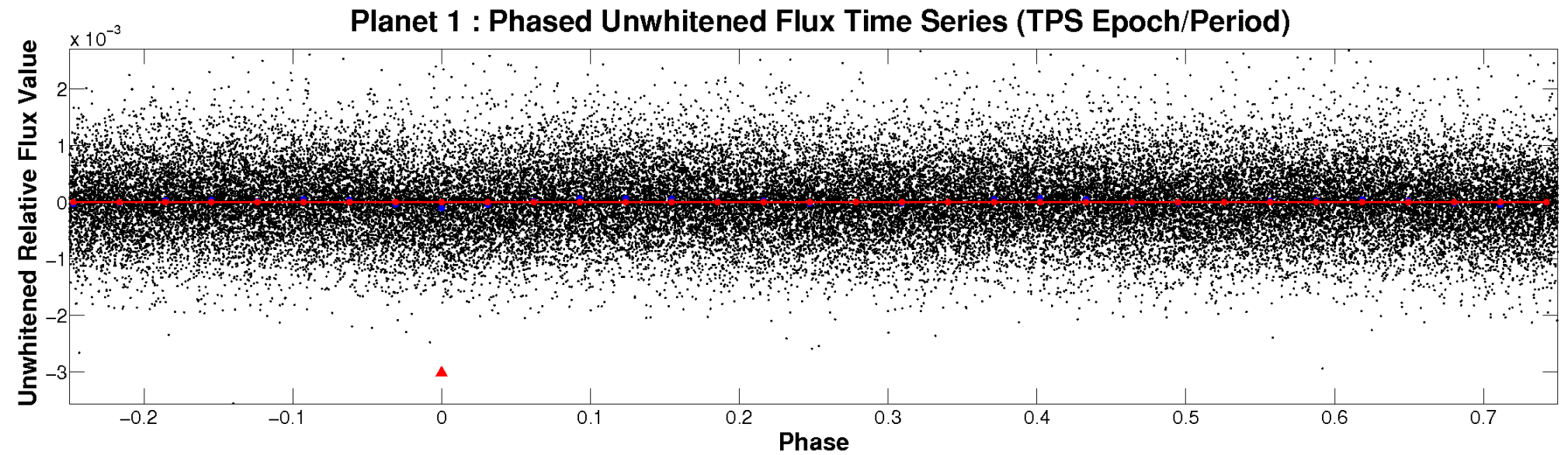


ALT Odd/Even

TCE 010226343-01

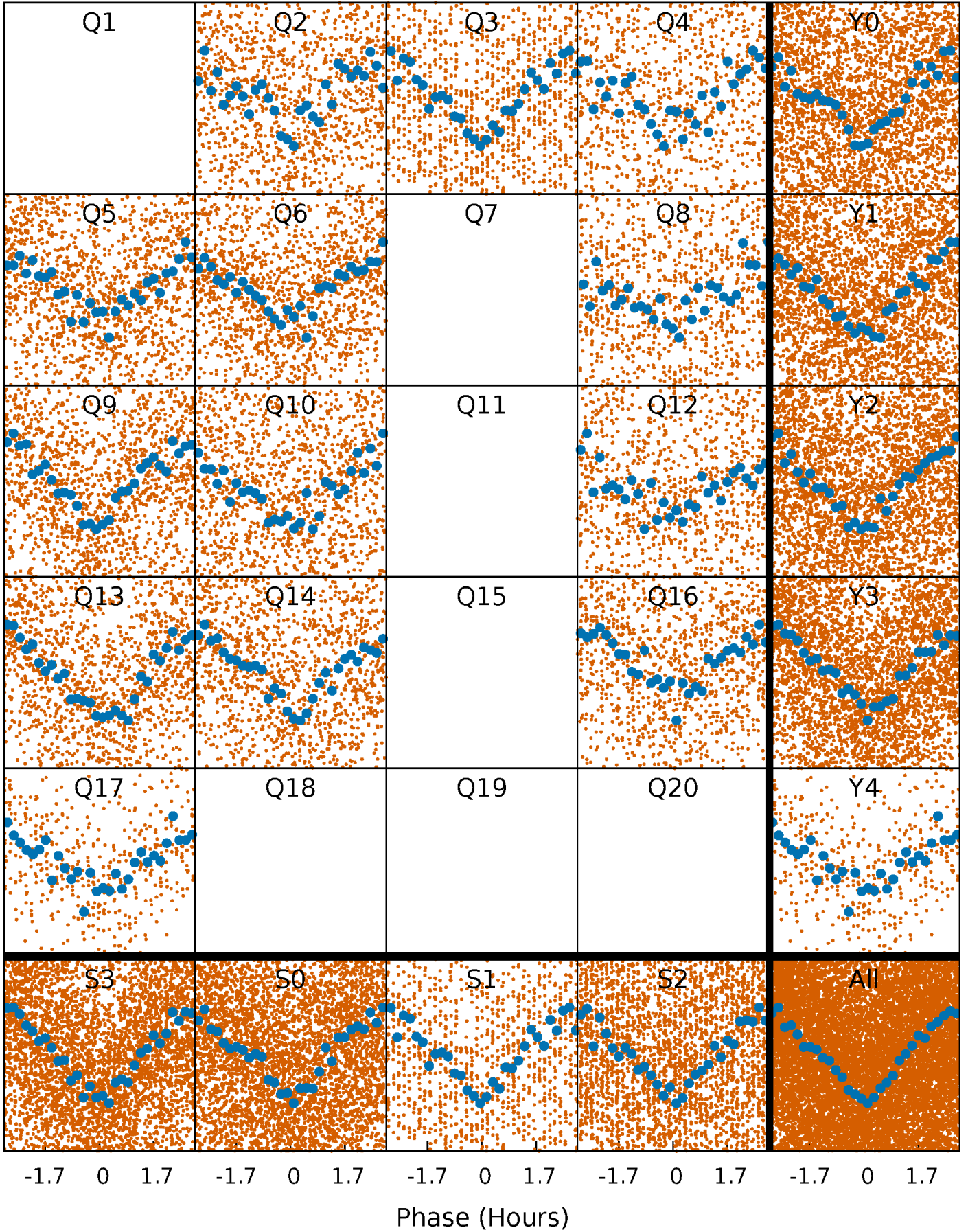


Non-Whitened Vs. Whitened Light Curve



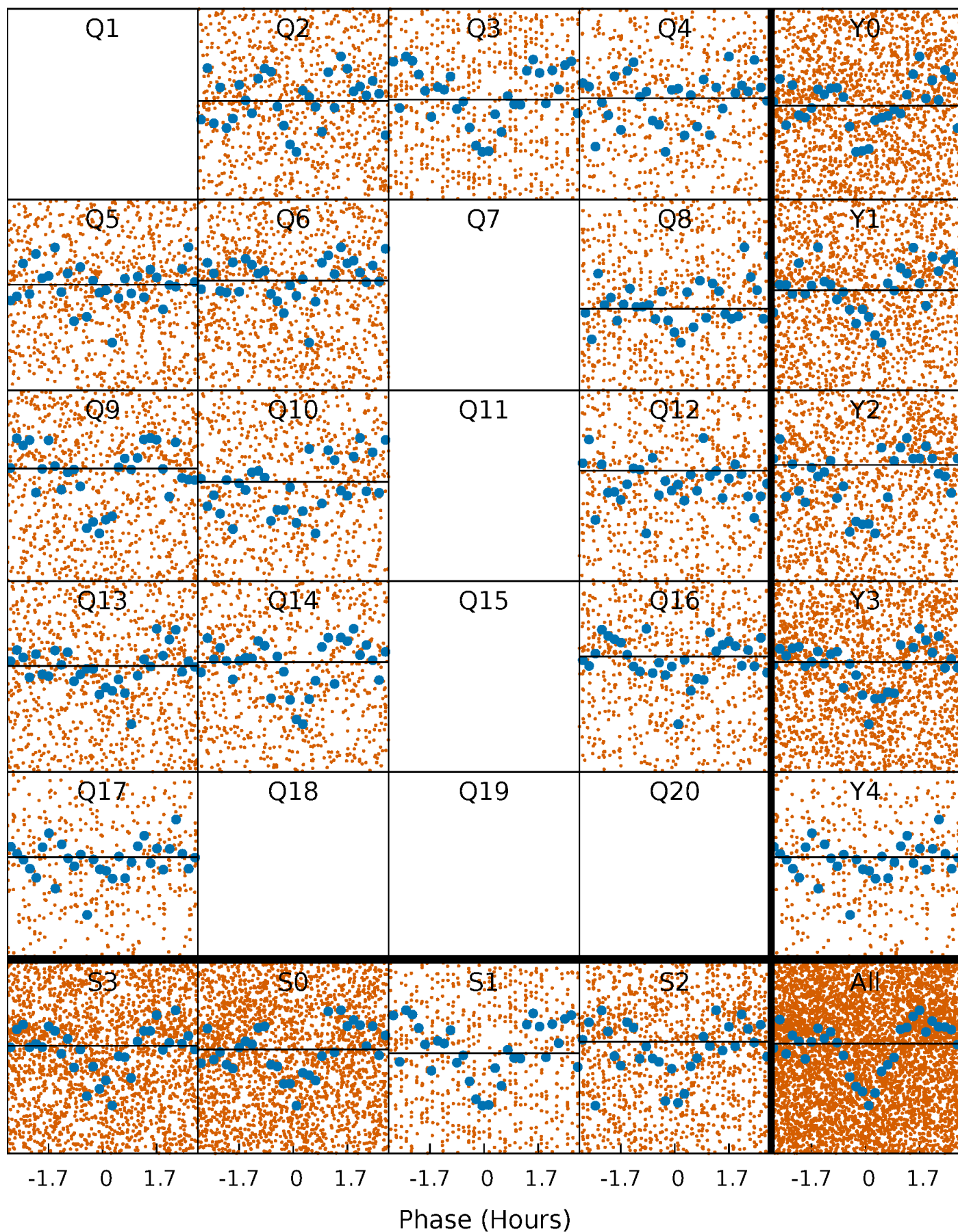
PDC Quarter-Phased Transit Curves

TCE 010226343-01 P= 0.660650 Days $T_0=131.698494$ (BKJD)



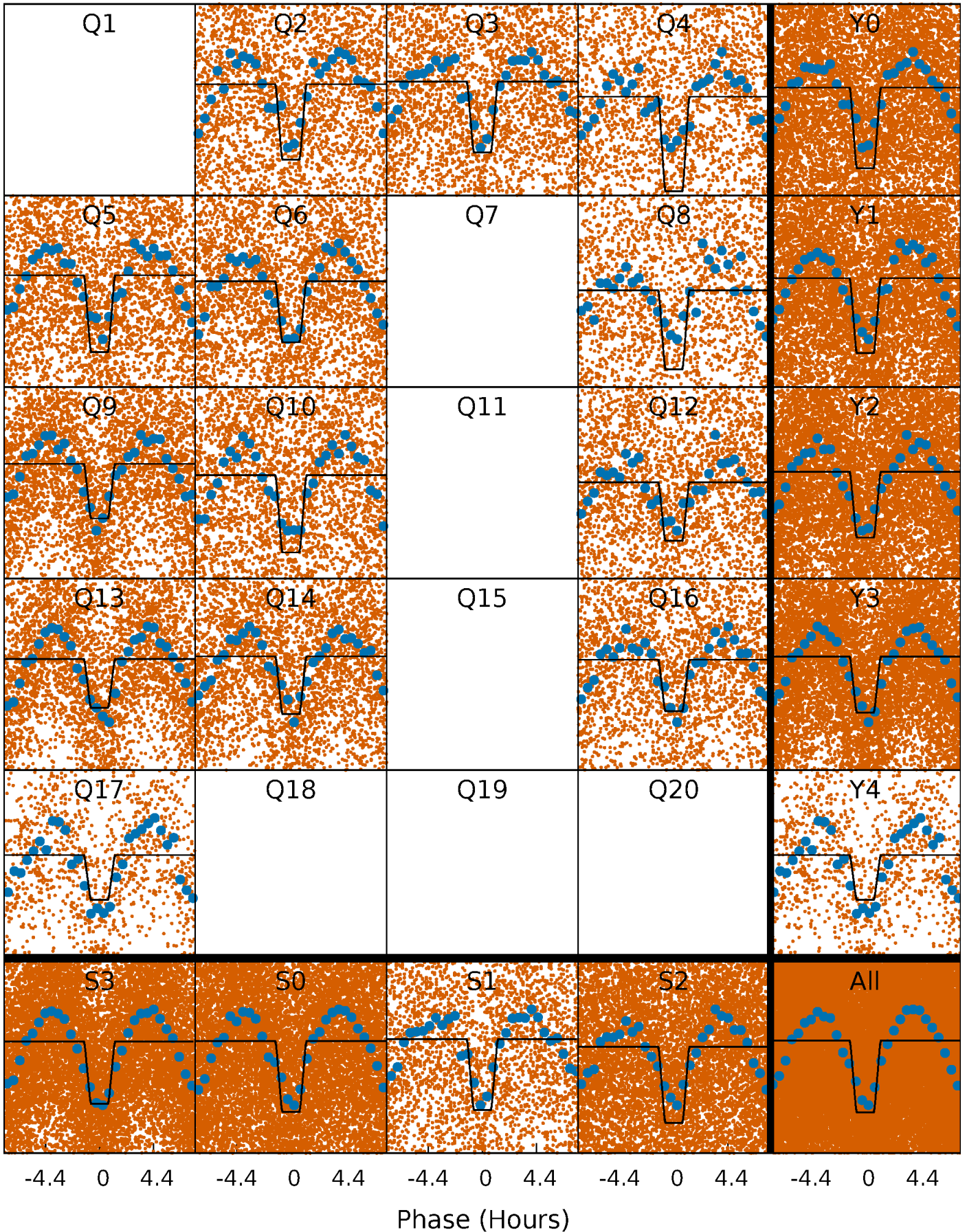
DV Quarter-Phased Transit Curves

TCE 010226343-01 P= 0.660650 Days $T_0=131.698494$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

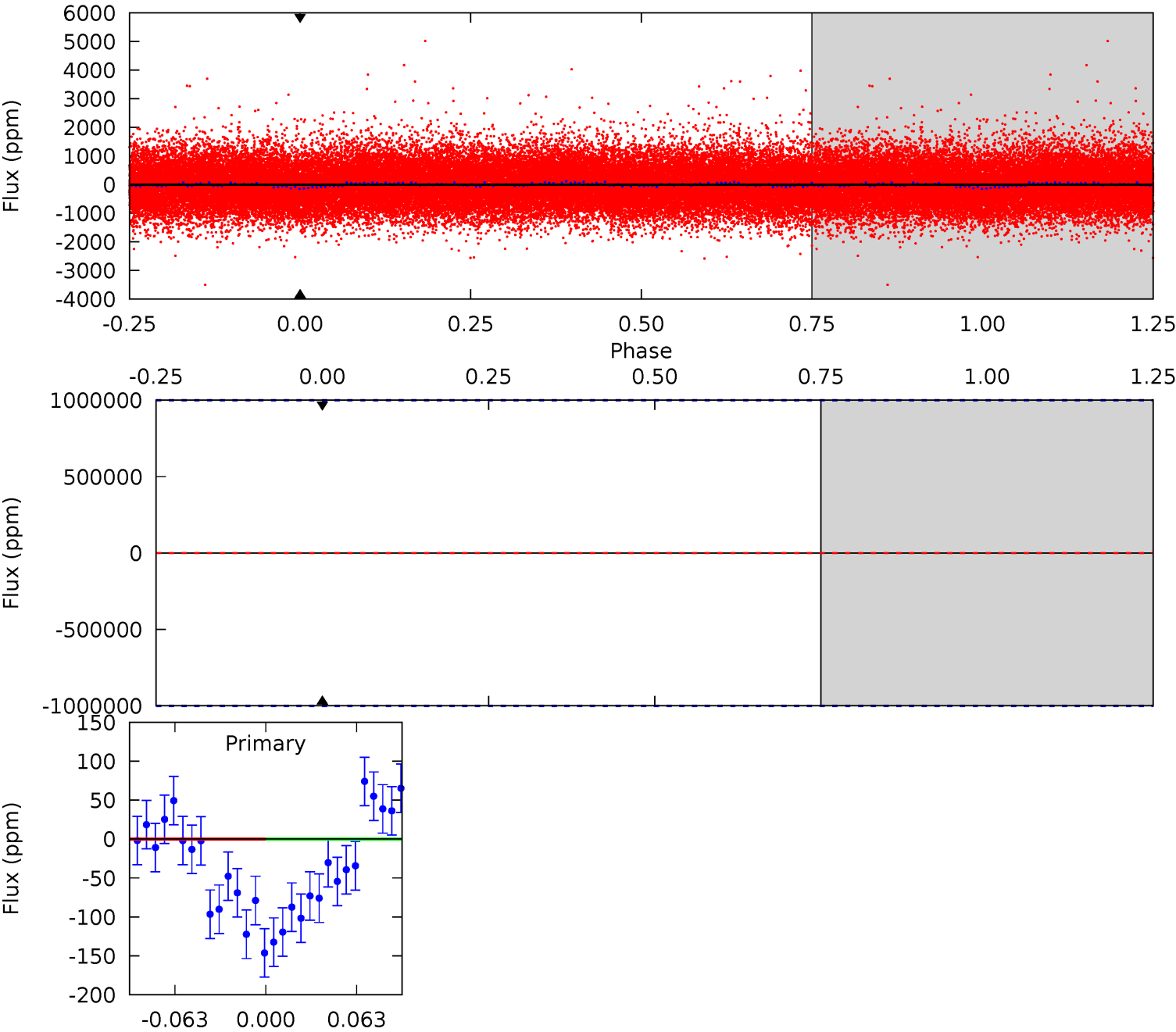
TCE 010226343-01 P= 0.660650 Days $T_0=131.697574$ (BKJD)



DV Model-Shift Uniqueness Test

010226343-01, P = 0.660650 Days, E = 131.698494 Days

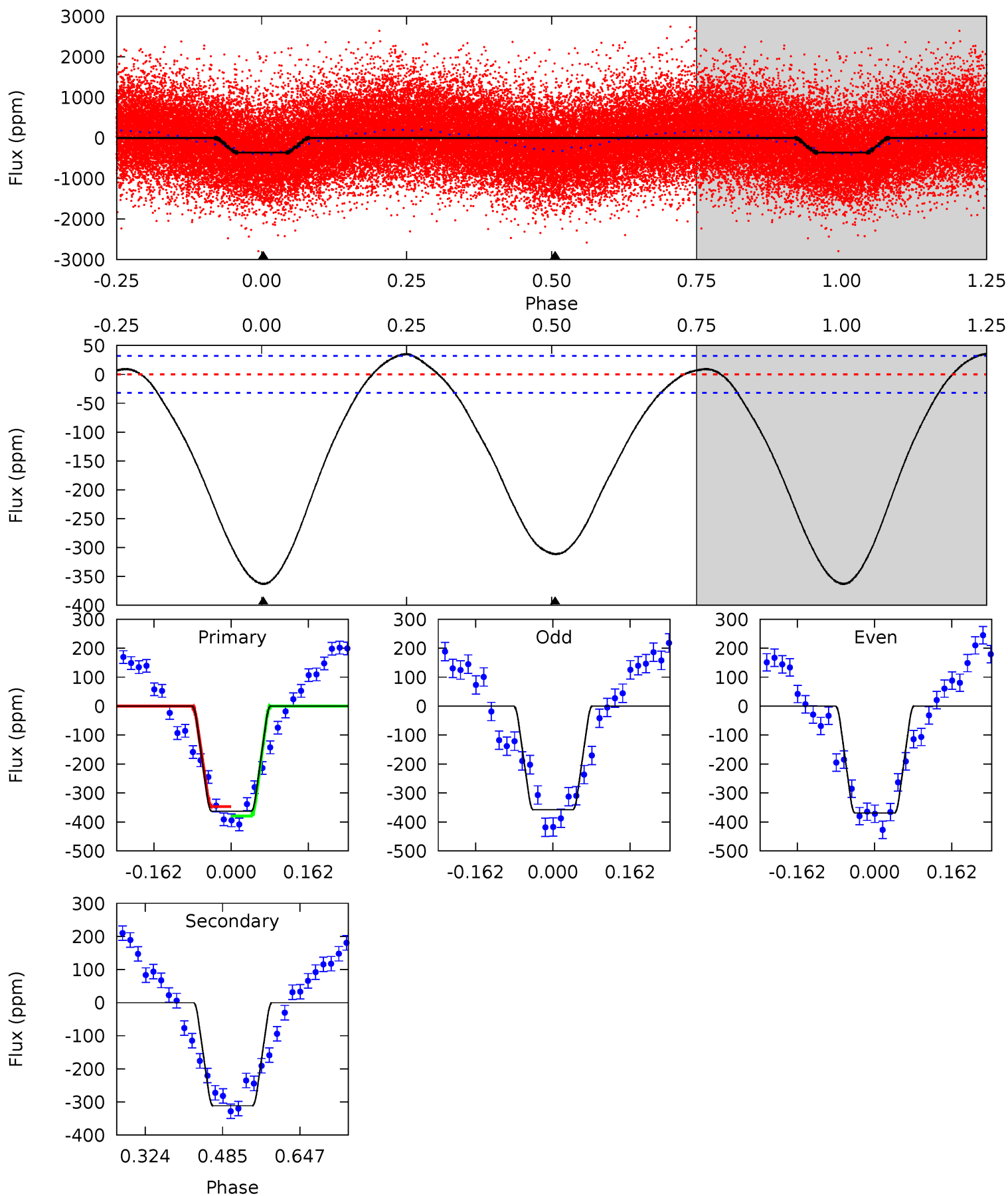
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0 | 0 | 0 | 0 | 1.00 | 1.00 | 1.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Alt Model-Shift Uniqueness Test

010226343-01, P = 0.660650 Days, E = 131.697574 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 50.7 | 43.5 | 0 | 0 | 4.46 | 1.40 | 3.43 | 50.7 | 50.7 | 43.5 | 43.5 | 0.81 | 0.97 | 0.09 | 2.29 |



Stellar Parameters For KIC 010226343

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 6520^{+180}_{-270} | $4.375^{+0.062}_{-0.200}$ | $0.070^{+0.250}_{-0.300}$ | $1.215^{+0.362}_{-0.155}$ | $1.279^{+0.154}_{-0.205}$ | $1.005^{+0.288}_{-0.538}$ |
| | +3%/-4% | +1%/-5% | +357%/-429% | +30%/-13% | +12%/-16% | +29%/-54% |
| 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 010226343-01 / KOI 7994.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-----------------|--------------------------|----------------------|--------------------------|-------------------------------|
| DV | 0 ± 1000000 | $11.10^{+10.77}_{-7.23}$ | 3529^{+265}_{-188} | 4715^{+21798}_{-27395} | $2.057^{+219.228}_{-162.469}$ |
| Alt. | -311 ± 7 | $10.16^{+11.72}_{-7.03}$ | 3552^{+239}_{-200} | 2955^{+2611}_{-6192} | $0.416^{+3.979}_{-0.324}$ |

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

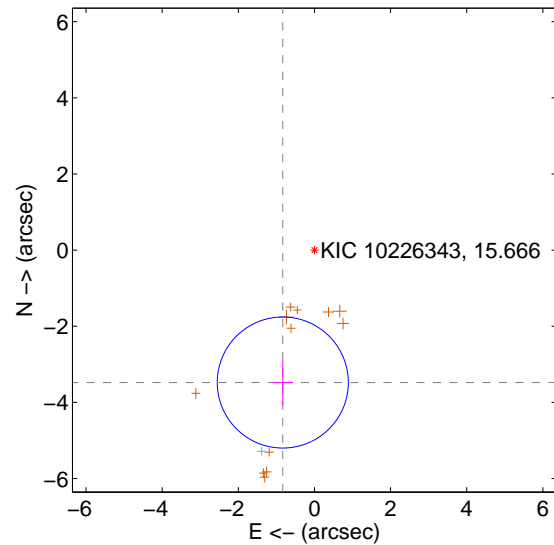
Supplemental centroid analysis for 010226343-01. Kepler magnitude: 15.67. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

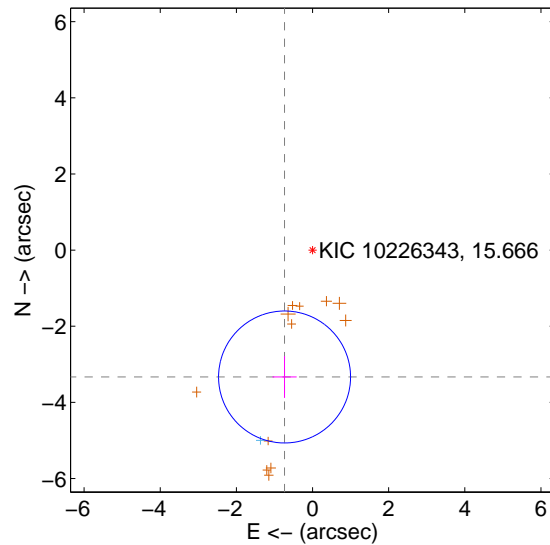
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 3.575 ± 0.574 | 6.23 | 0.831 ± 0.266 | -3.477 ± 0.586 |
| PRF-fit source offset from KIC position | 3.412 ± 0.578 | 5.91 | 0.734 ± 0.316 | -3.332 ± 0.549 |
| photometric centroid source offset | 0.26 ± 0.29 | 0.91 | 0.25 ± 0.29 | -0.07 ± 0.32 |

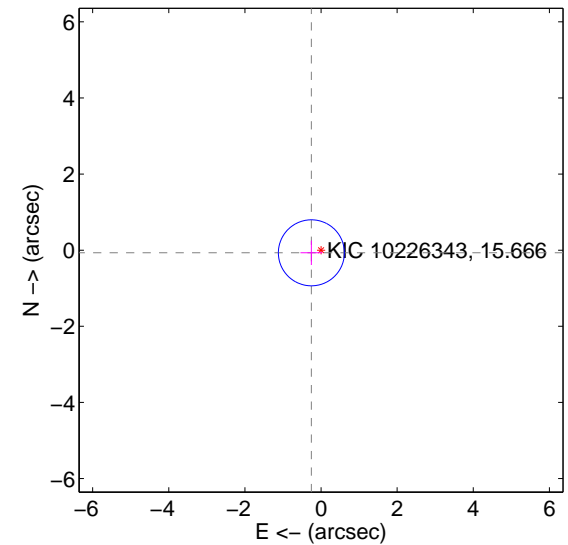
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

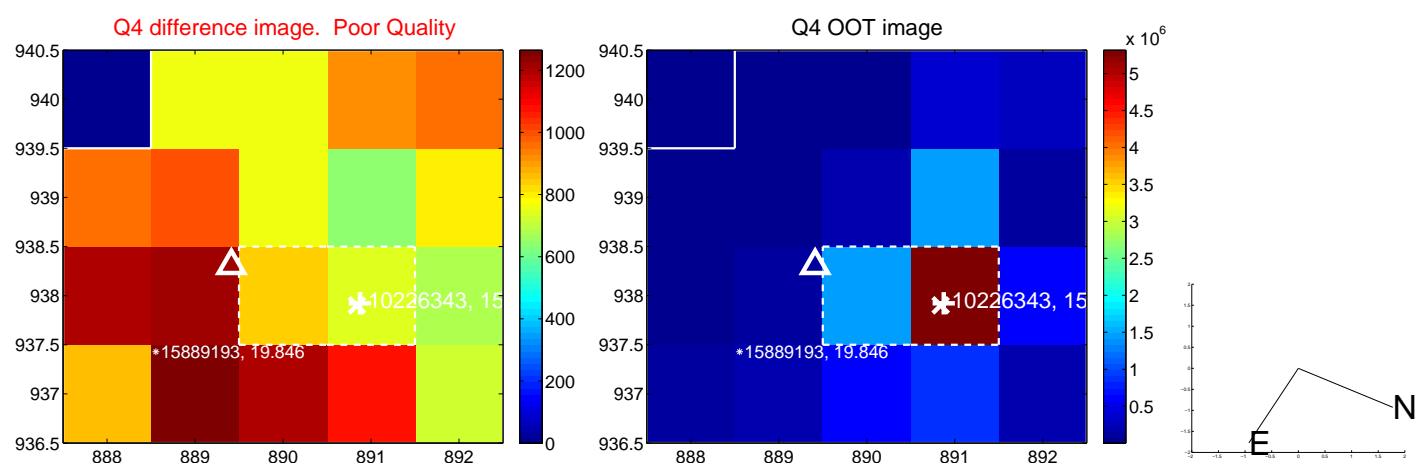
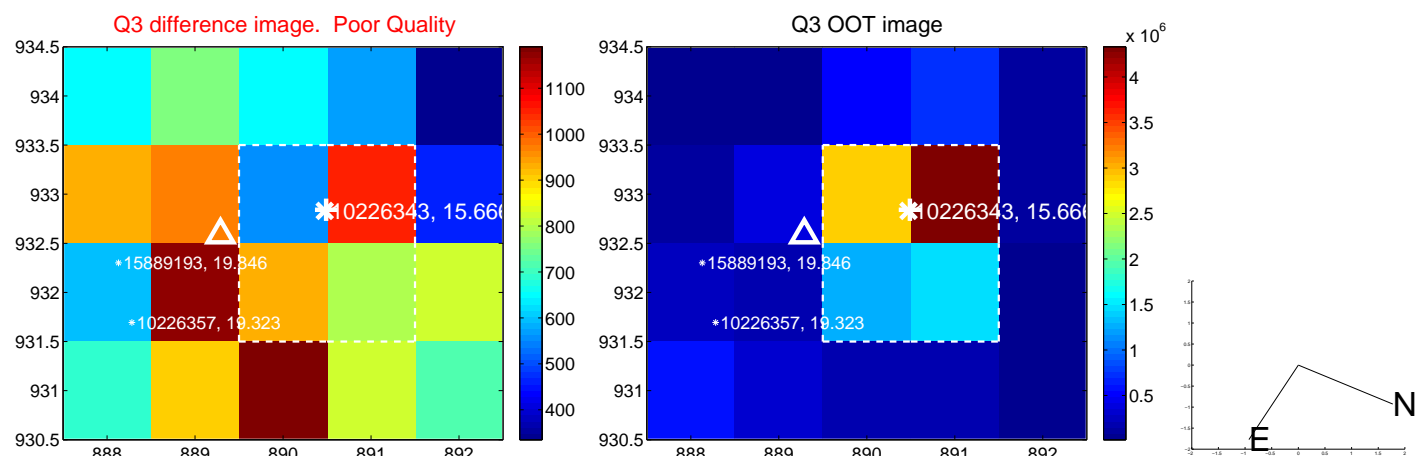
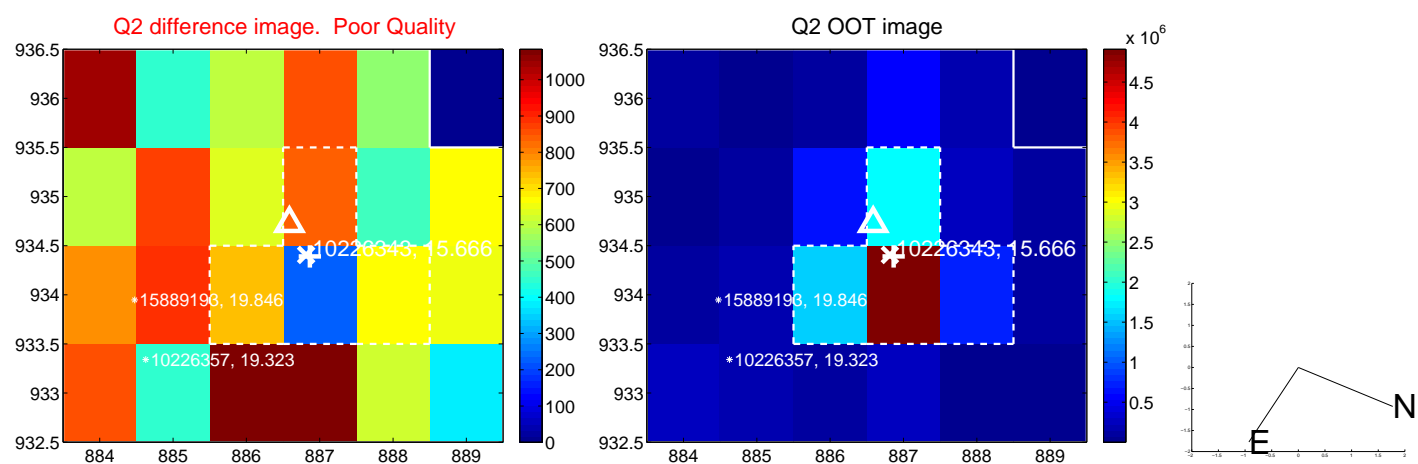
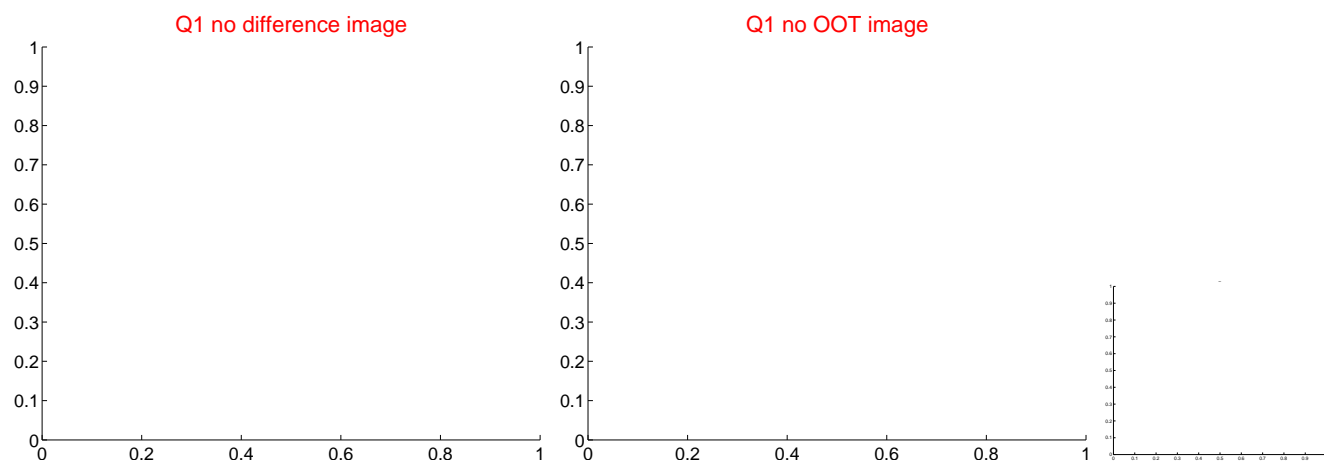


offset from photometric centroids

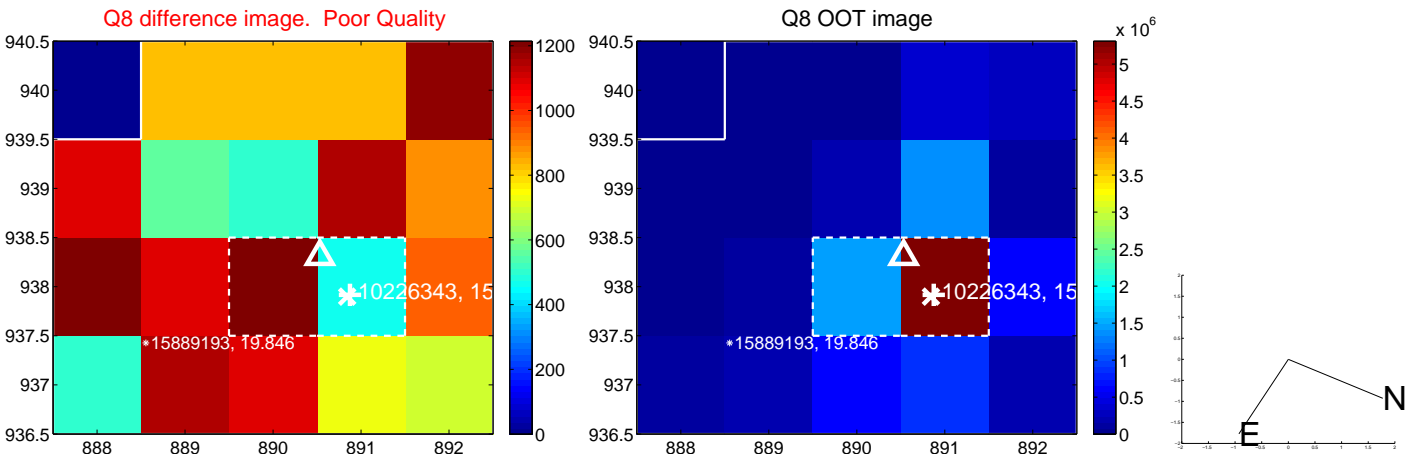
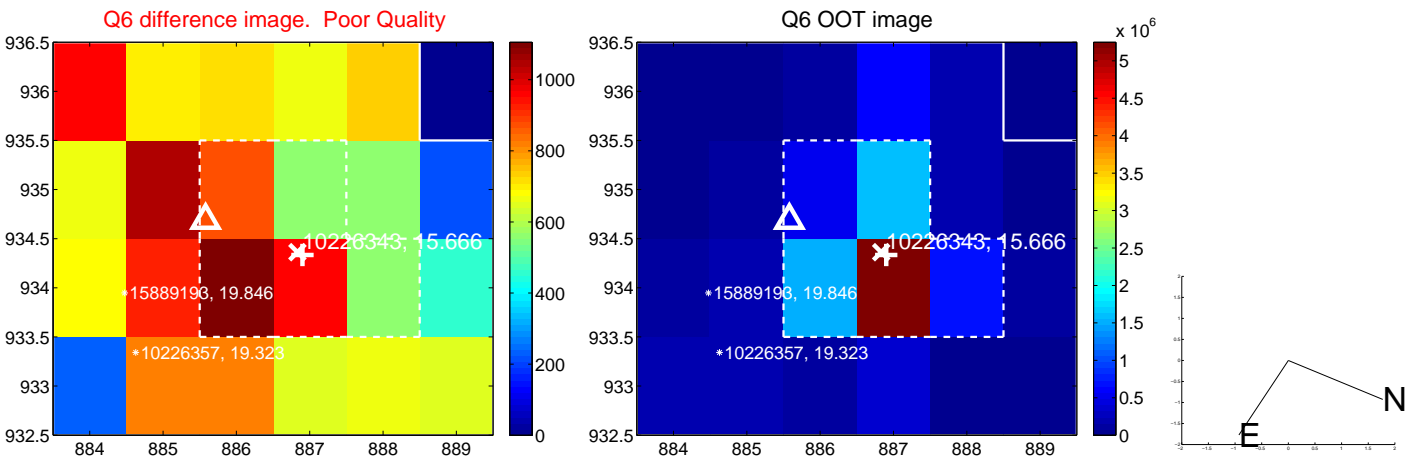
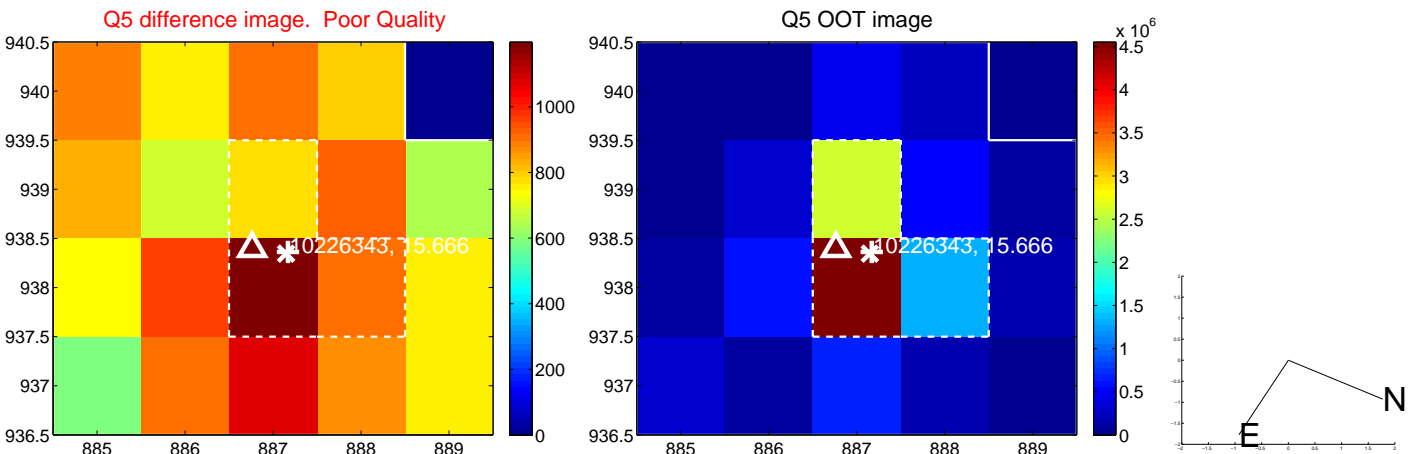


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

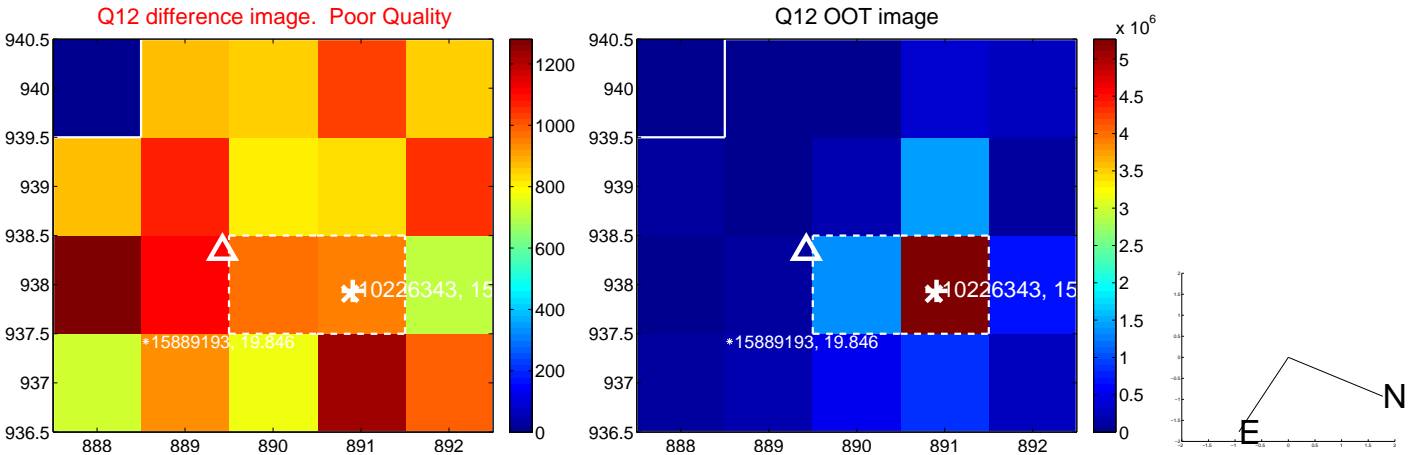
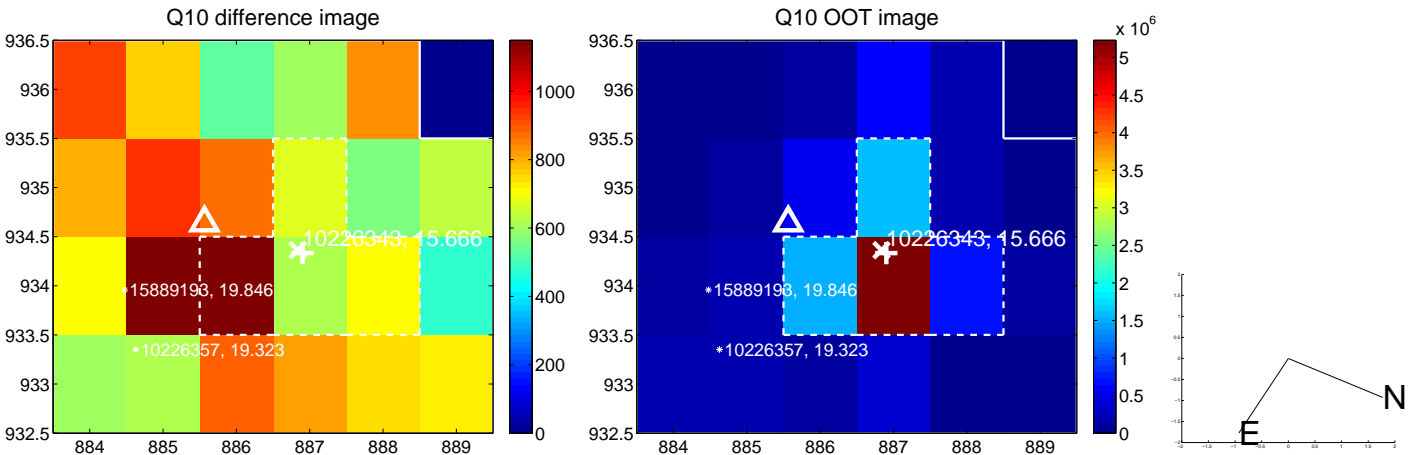
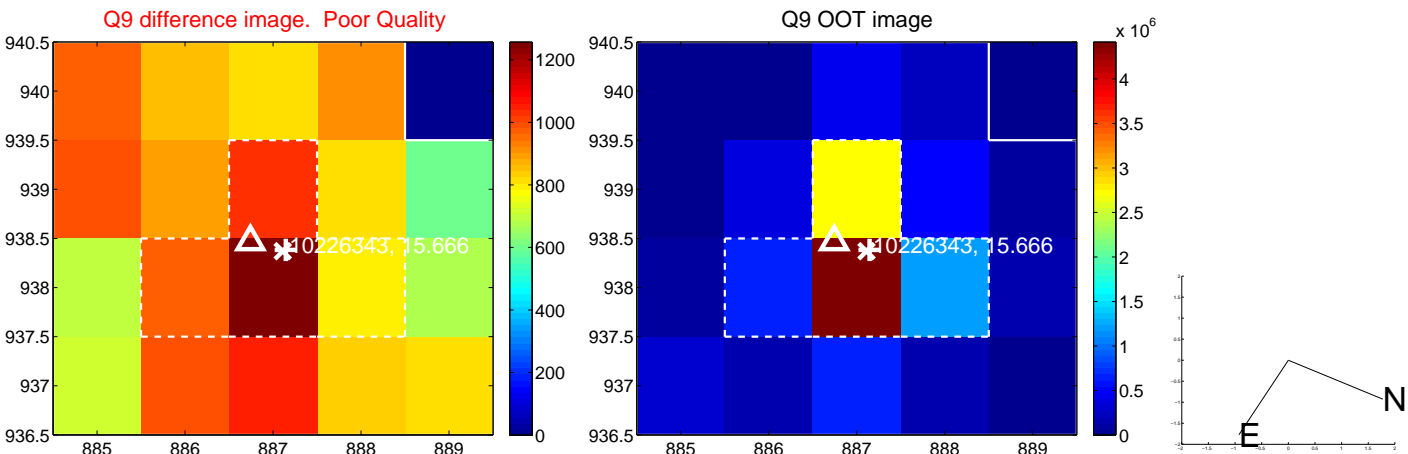
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



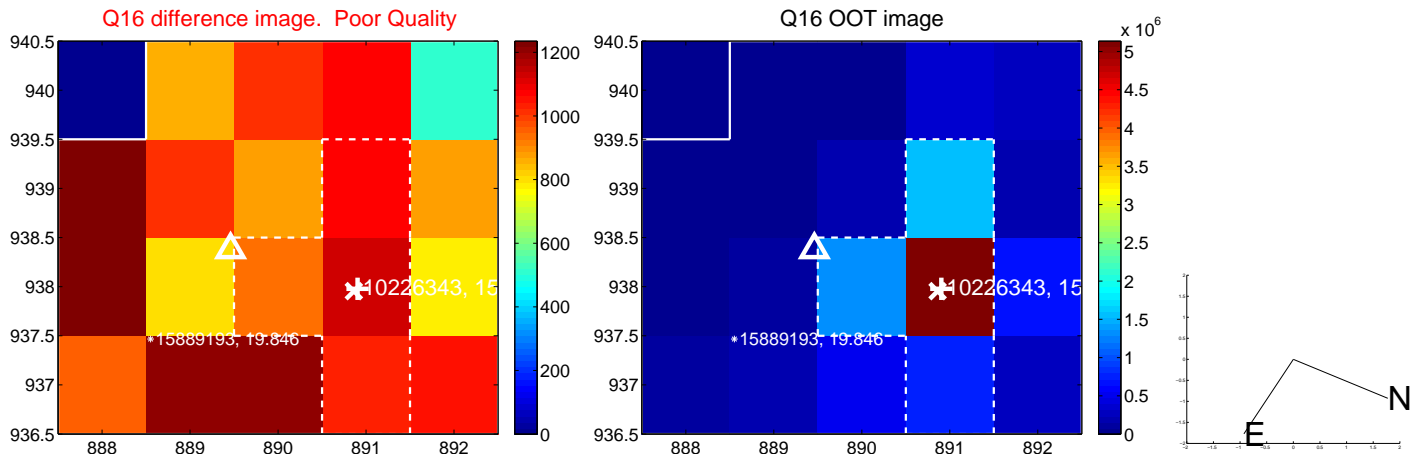
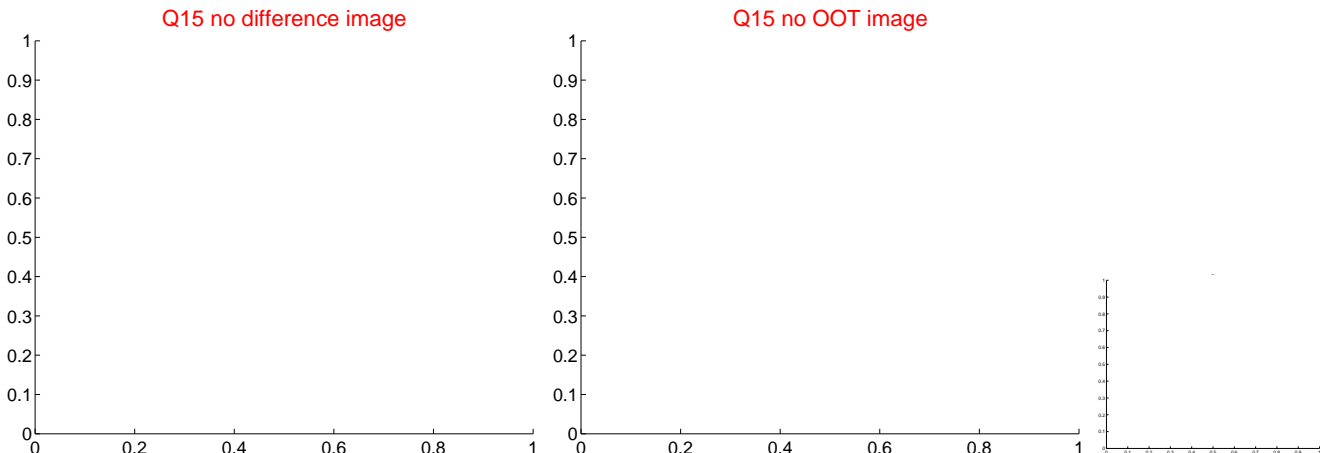
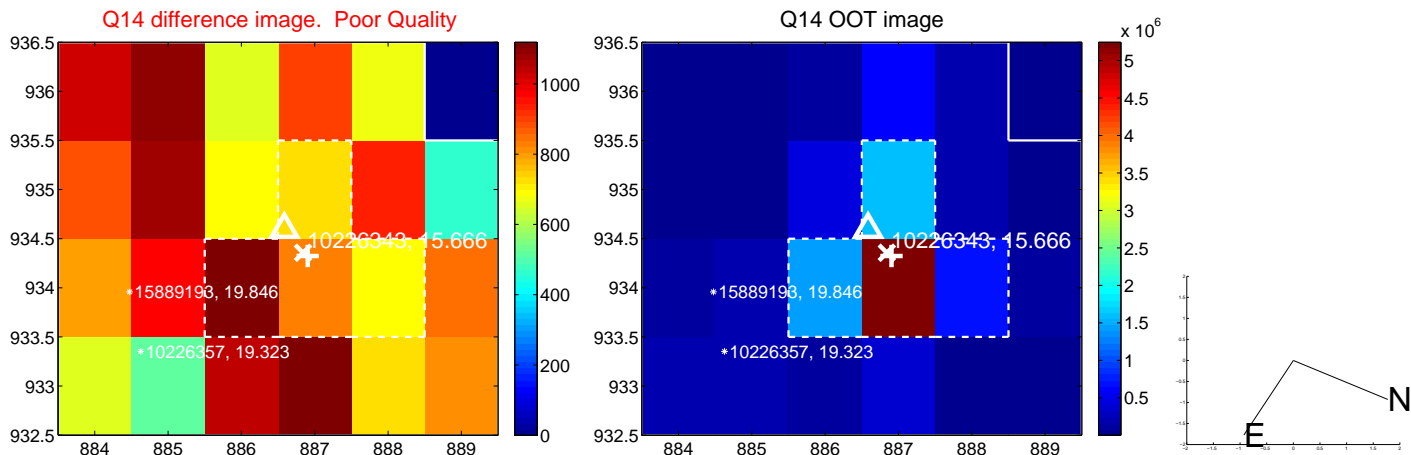
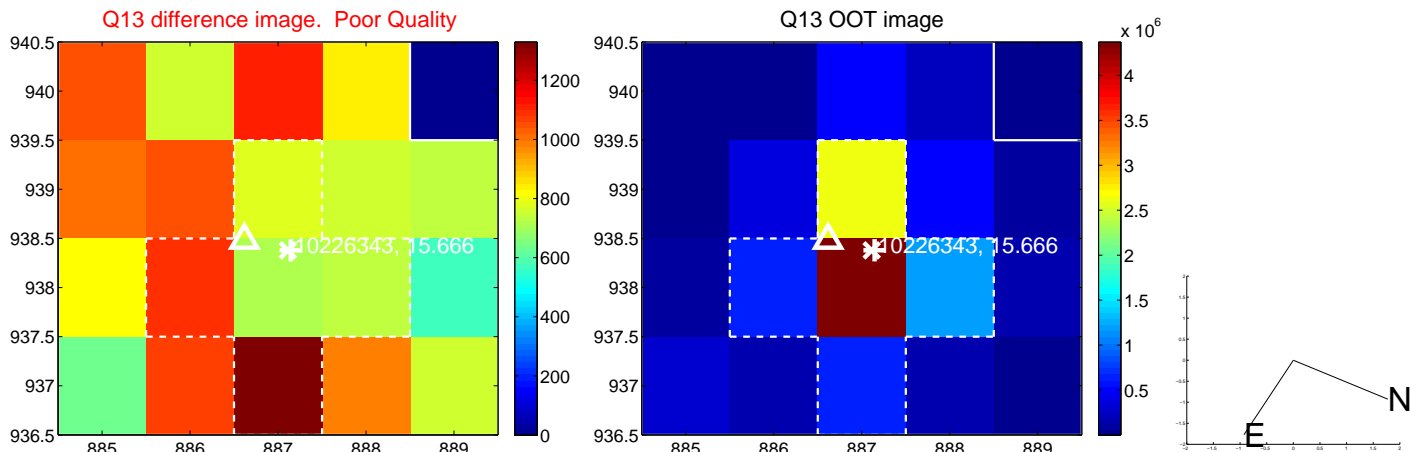
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



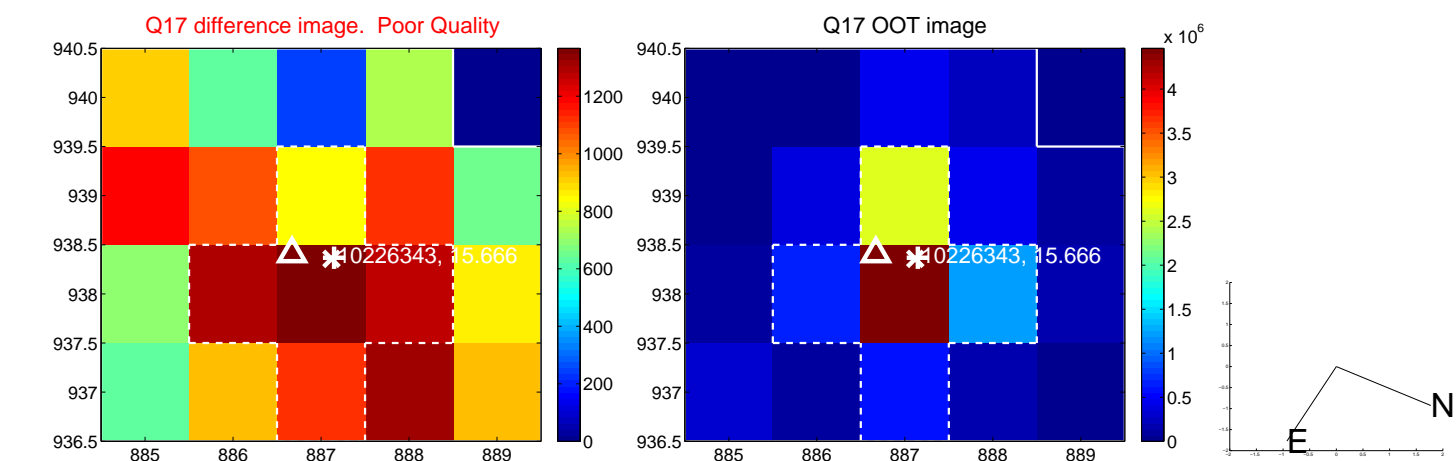
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



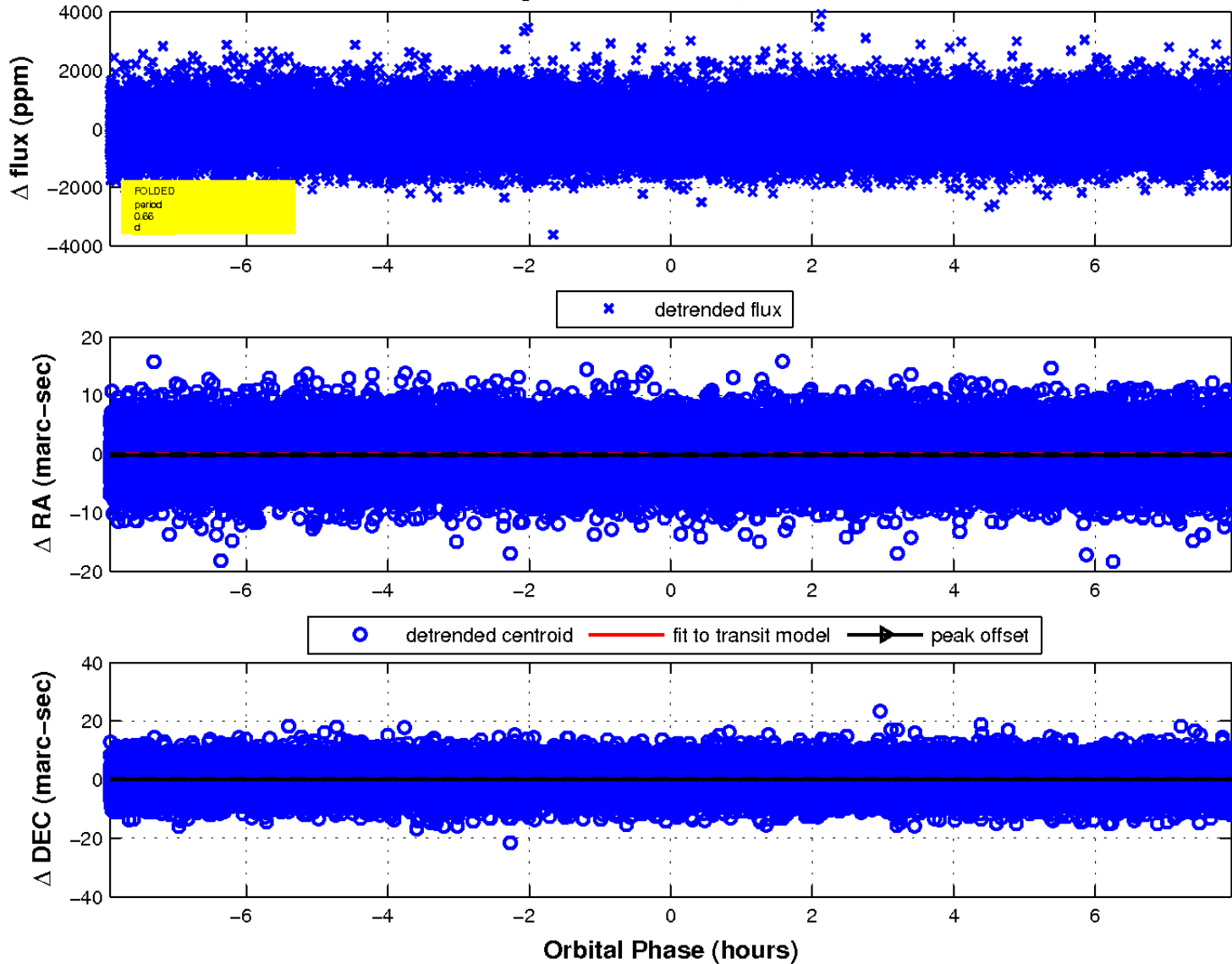
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

