

KIC 010471167

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 010471167-01 | OBS | 7612.01 | 0.933673 | 131.608293 | 57.1 | 4.442 | 10.3 | 5.1 | 0.72 | 4753 | 0.52 | 835.96 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---------------------------------------------|
| 010471167-01 | OBS | FP | 0.00 | 0 | 0 | 1 | 1 | CENT_RESOLVED_OFFSET—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.

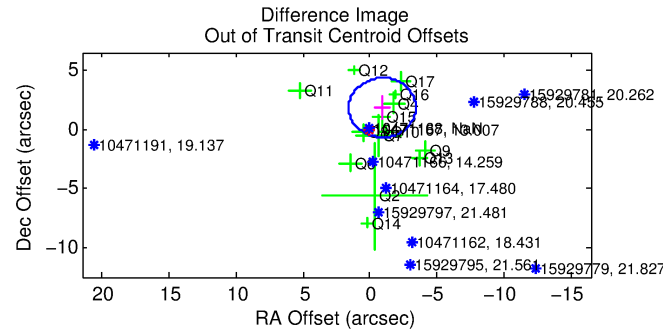
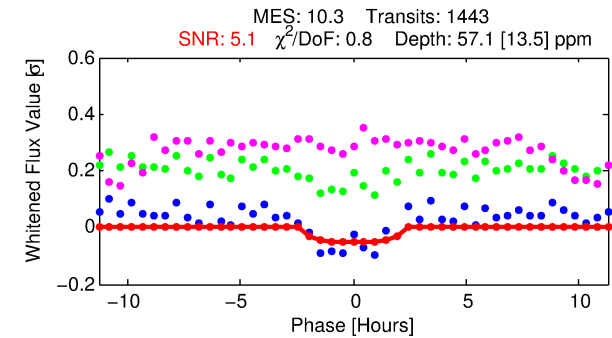
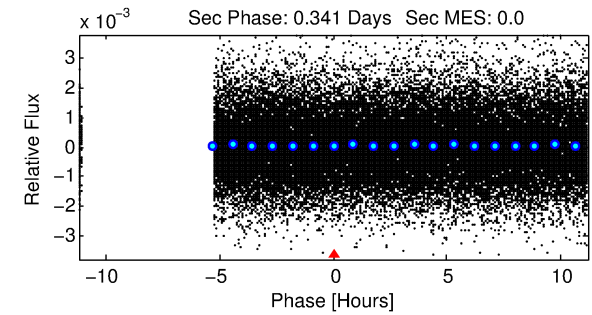
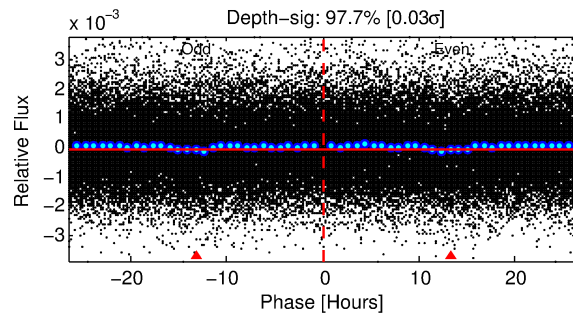
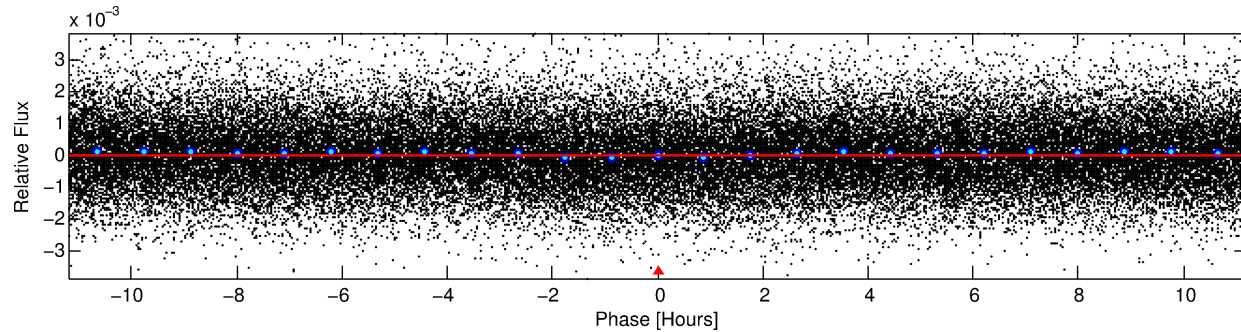
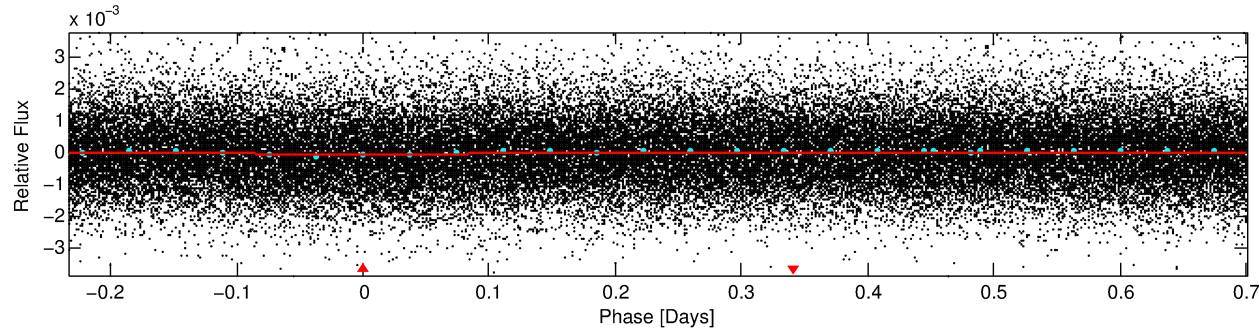
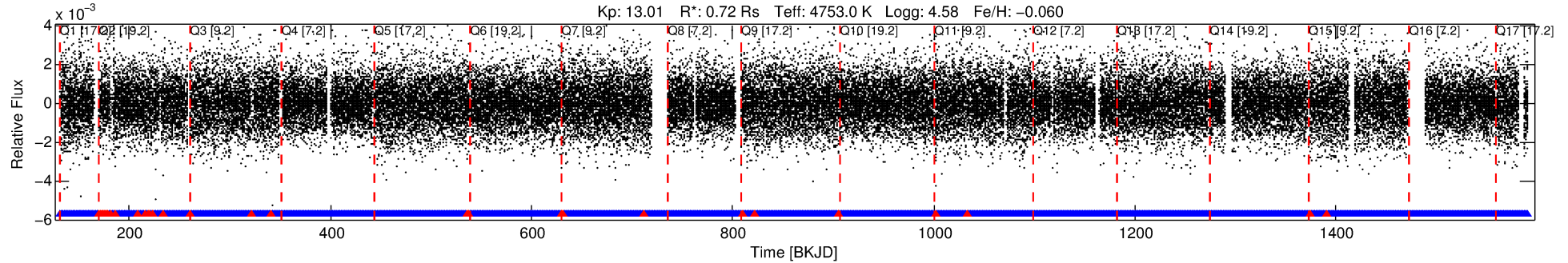
Ephemeris Match Information For 010471167-01

| TCE (1) | KIC | Parent (2) | Parent KIC | $P_1:P_2$ | Dist ($''$) | Δ Row | Δ Col | m_2 | m_1 | D_2/D_1 | Mechanism | Flag | σ_P | σ_T |
|--------------|----------|---------------|------------|-----------|---------------|--------------|--------------|-------|-------|-----------|------------|------|------------|------------|
| 010471167-01 | 10471167 | V2083-Cyg-pri | 10342012 | 1:2 | 1696.6 | 362 | -226 | 6.90 | 13.00 | 3479.30 | Direct-PRF | 0 | 0.01 | 0.00 |

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 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 $\sigma_P < 5.0$ and $\sigma_T < 5.0$. 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: 10471167 Candidate: 1 of 1 Period: 0.934 d
KOI: K07612.01 Corr: 0.867



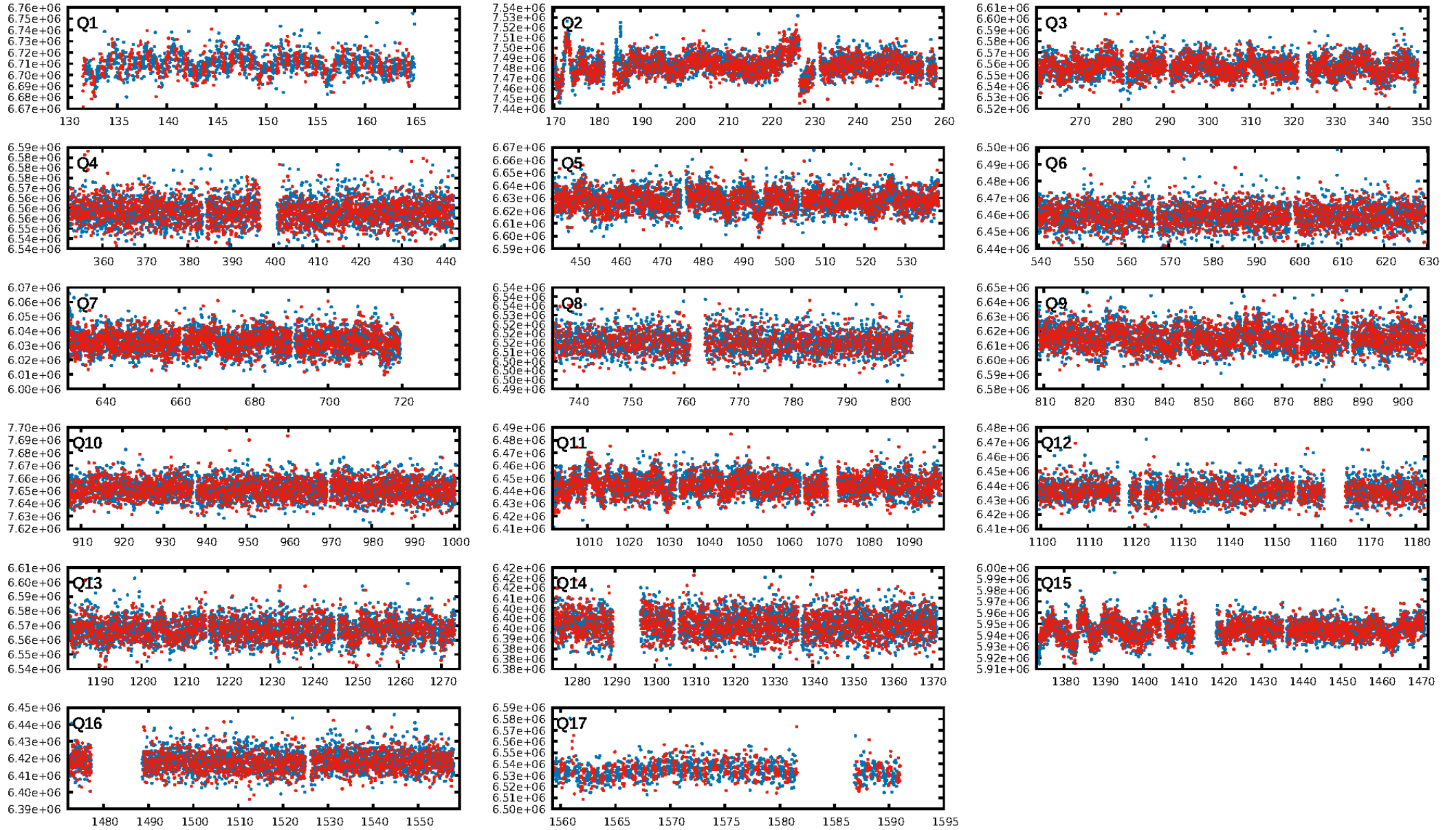
DV Fit Results:

Period = 0.93367 [0.00003] d
Epoch = 131.6083 [0.0113] BKJD
Rp/R* = 0.0067 [0.0169]
a/R* = 1.73 [9.10]
b = 0.00 [31300.32]
Seff = 835.96 [144.29]
Teff = 1371 [59] K
Rp = 0.52 [1.32] Re
a = 0.0168 [0.0012] AU
Ag = N/A
Teffp = N/A

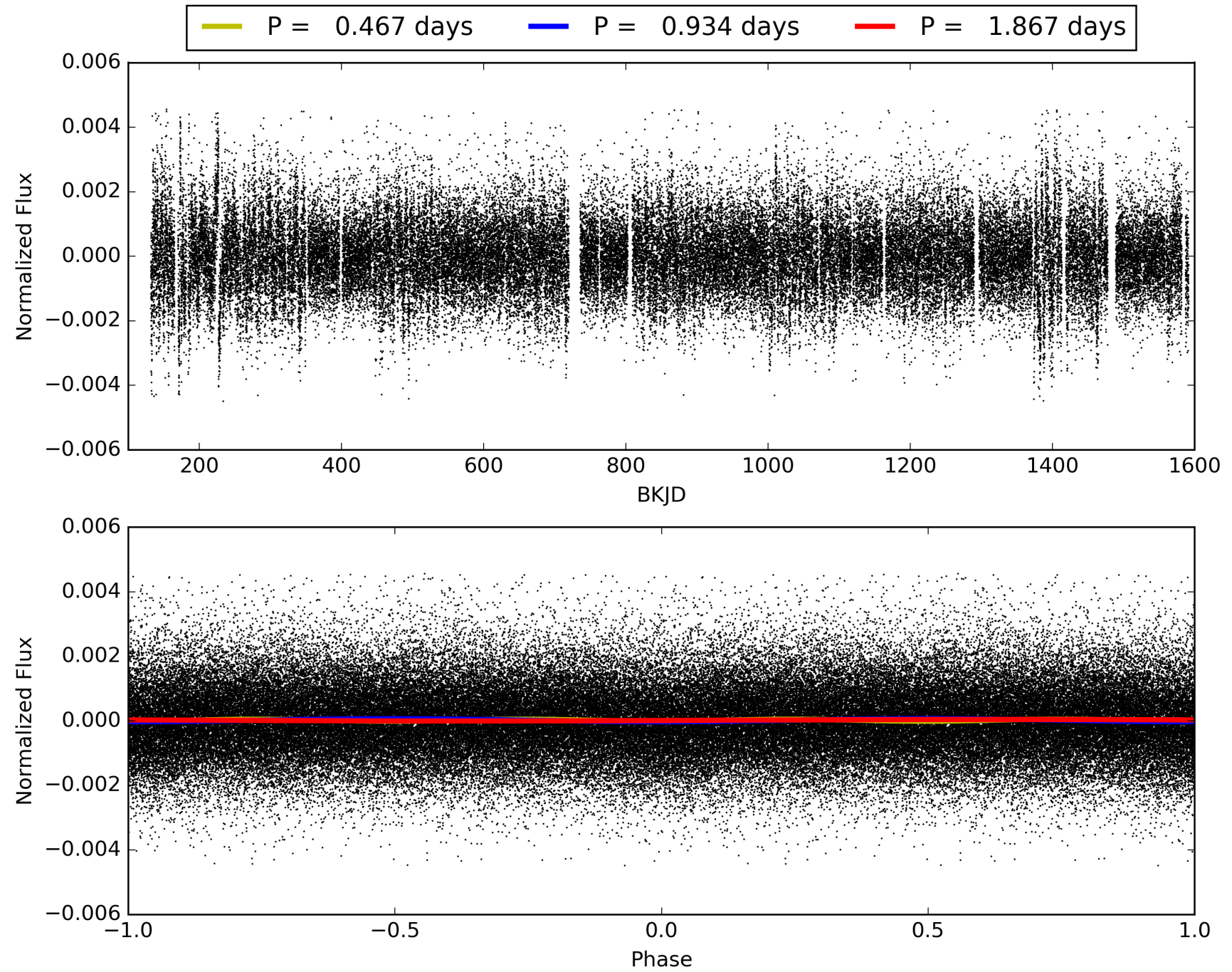
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.26e-25
RollingBand-fgt: 0.98 [1343/1377]
GhostDiagnostic-chr: 0.219
Centroid-sig: 0.0%
Centroid-so: 8.201 arcsec [3.90 σ]
OotOffset-rm: 2.036 arcsec [2.43 σ]
KicOffset-rm: 1.928 arcsec [2.49 σ]
OotOffset-st: 4/3/4/3 [14]
KicOffset-st: 4/3/4/3 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 010471167-01, PDC Light Curves

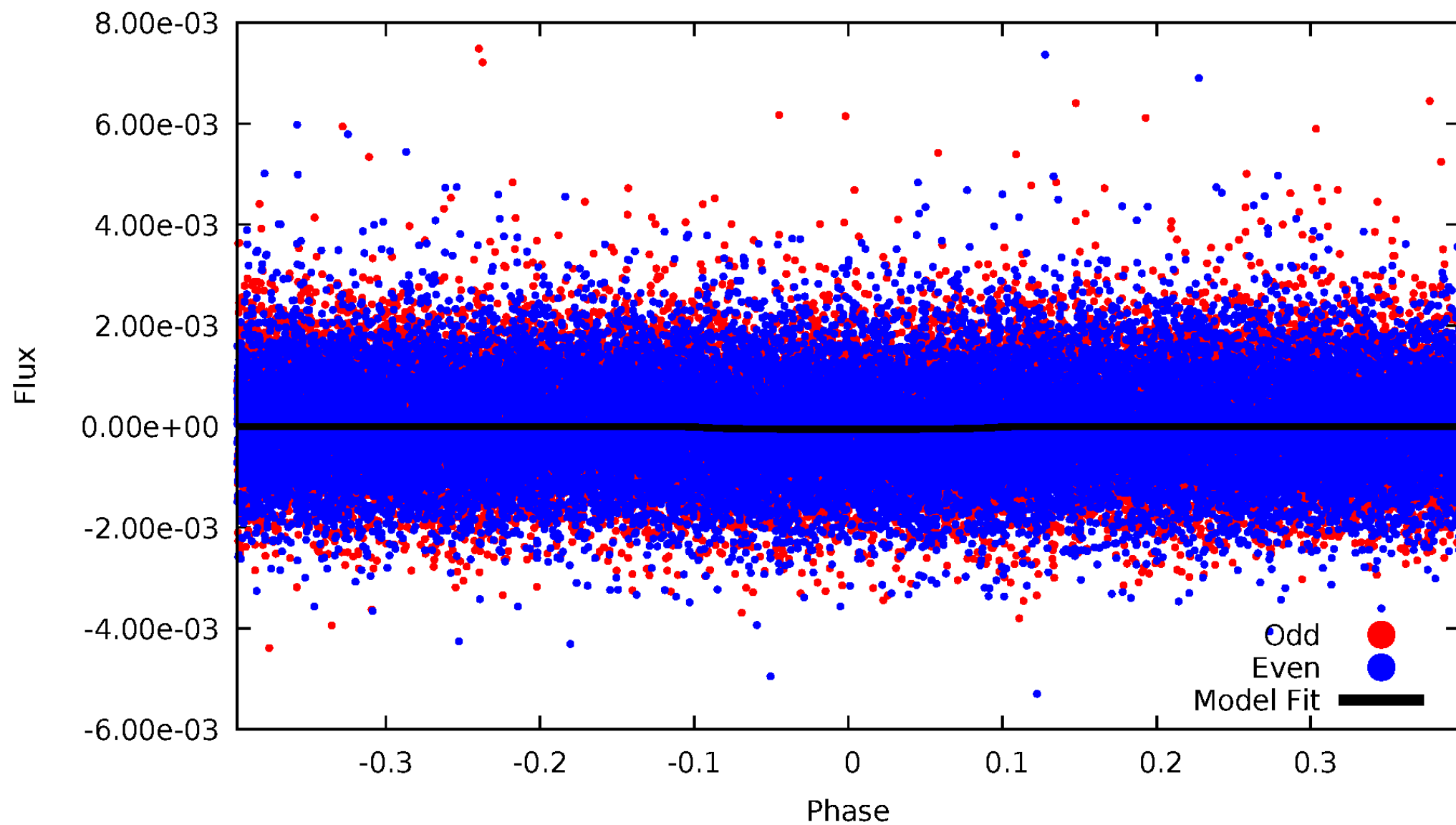


TCE 010471167-01



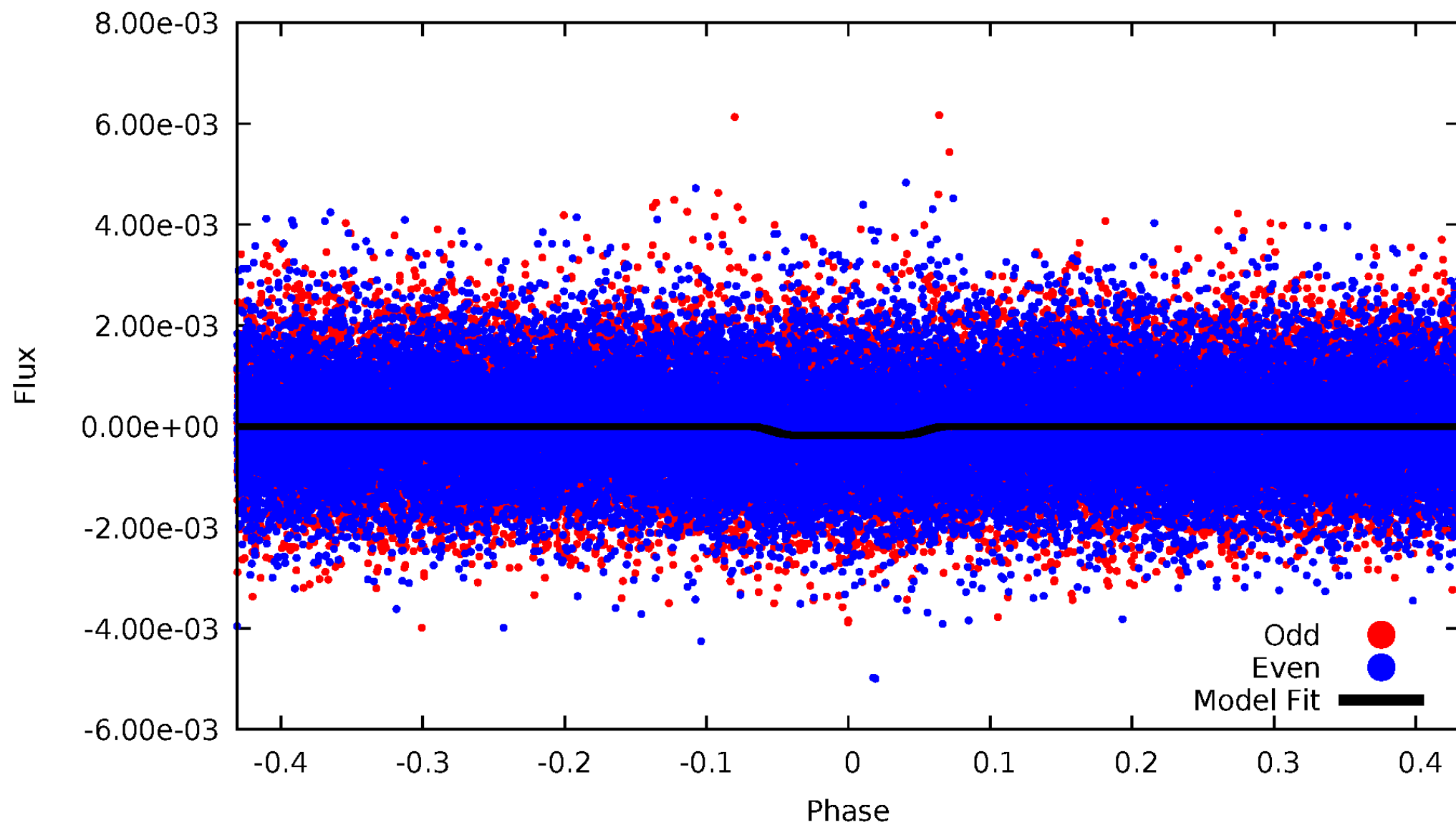
DV Odd/Even

TCE 010471167-01



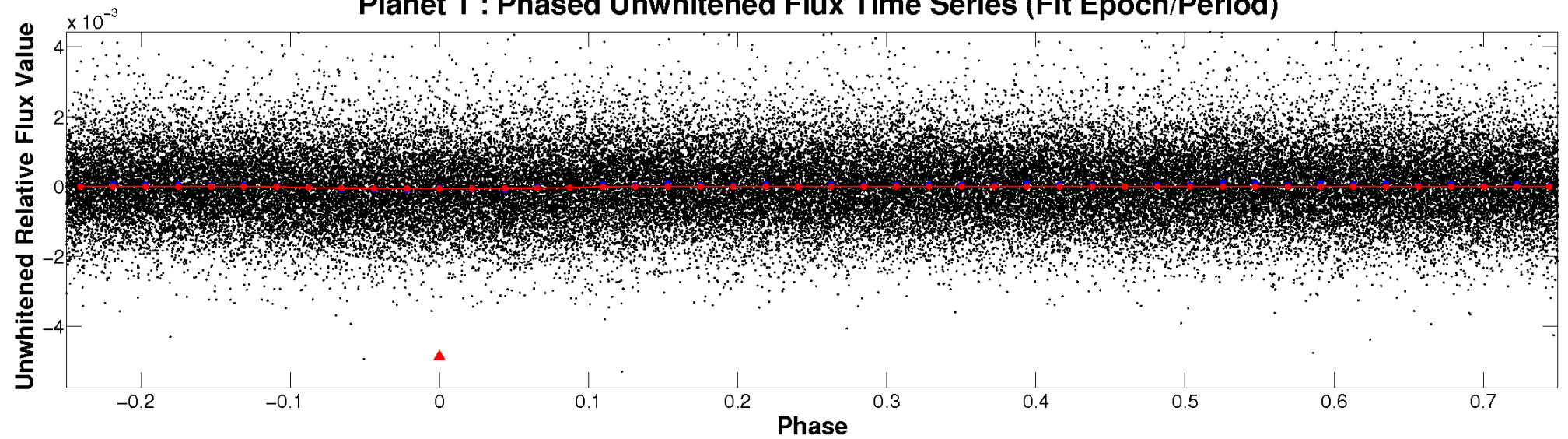
ALT Odd/Even

TCE 010471167-01

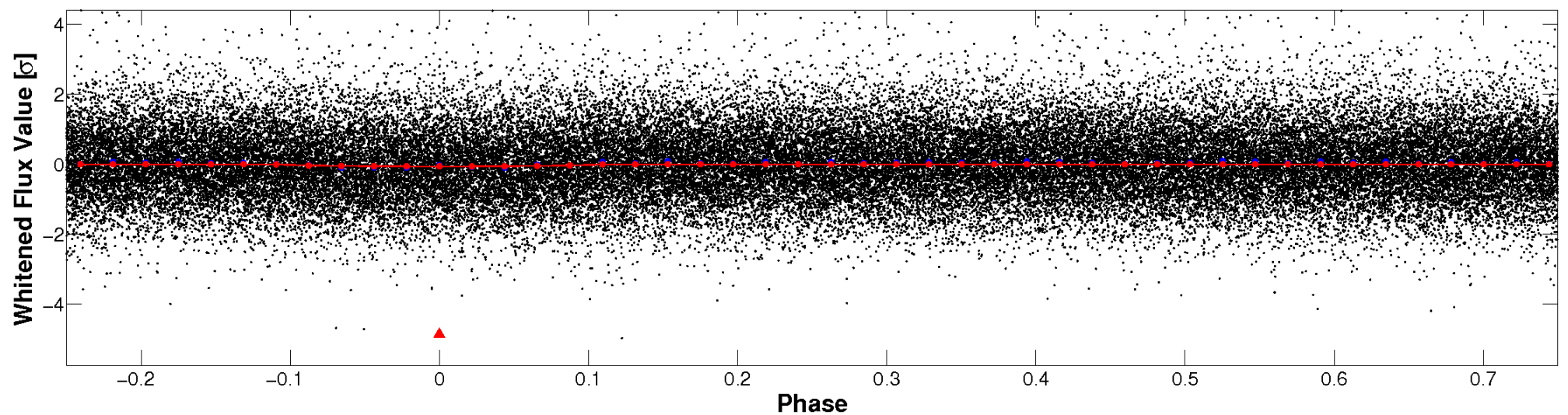


Non-Whitened Vs. Whitened Light Curve

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

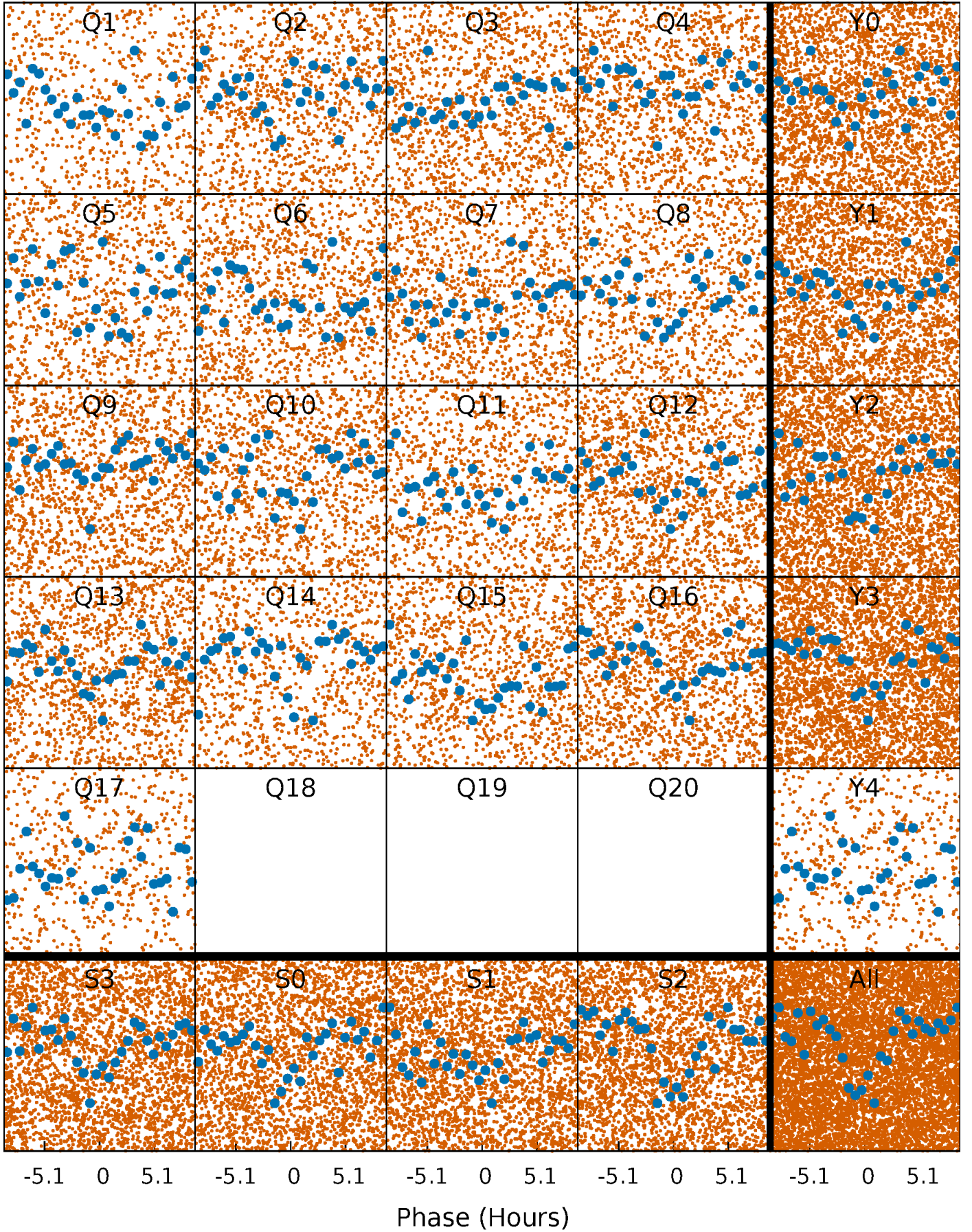


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



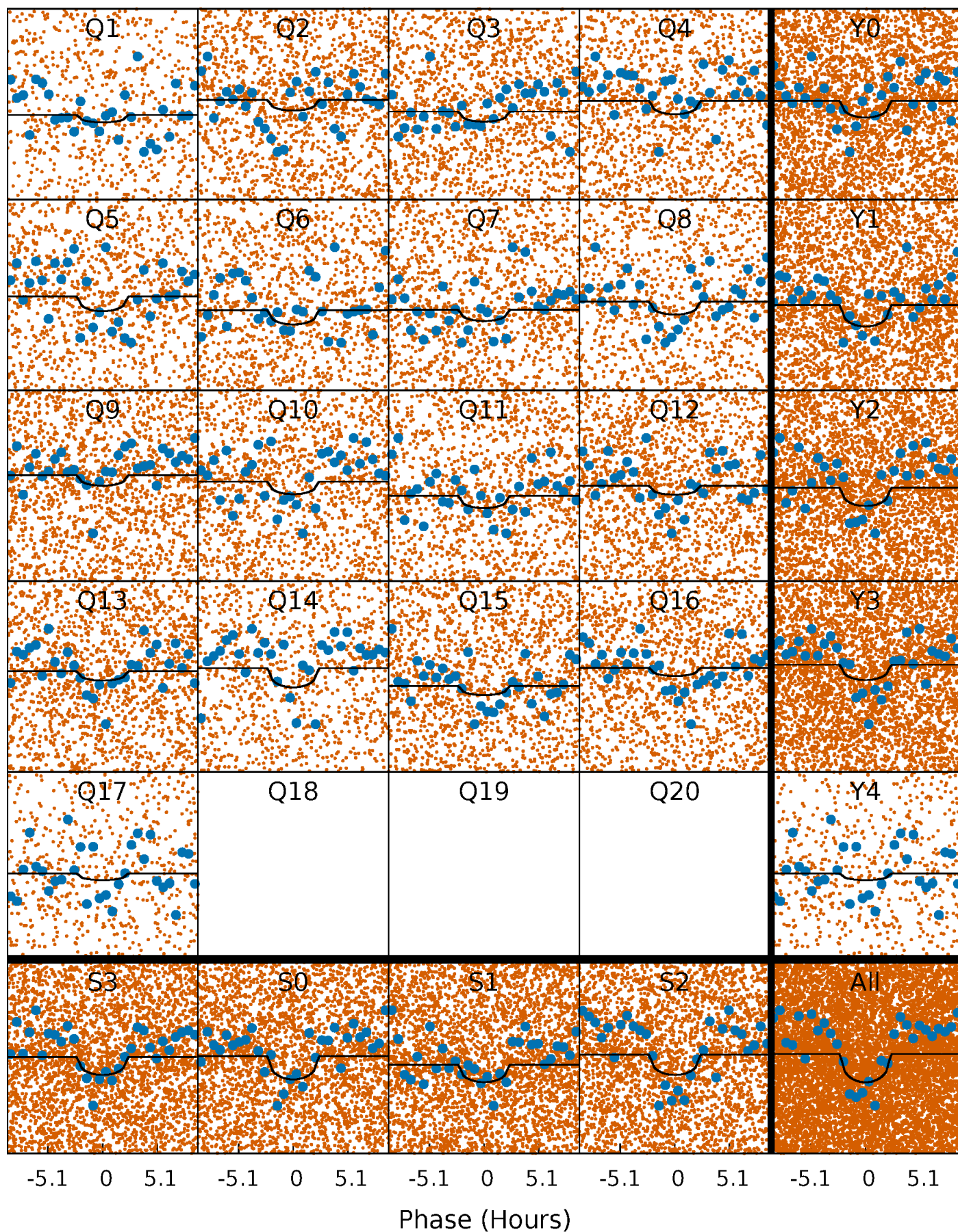
PDC Quarter-Phased Transit Curves

TCE 010471167-01 P= 0.933673 Days $T_0=131.608293$ (BKJD)



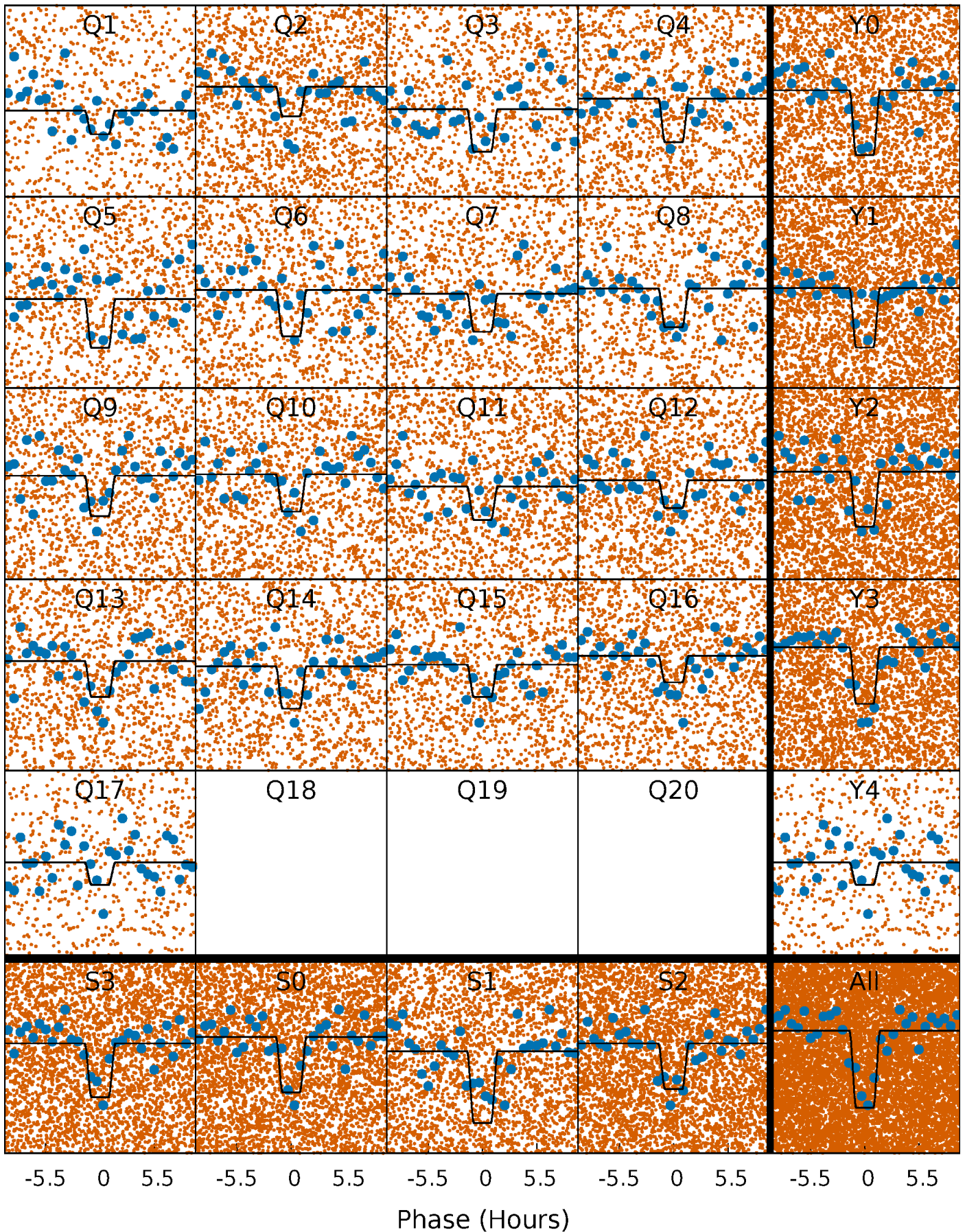
DV Quarter-Phased Transit Curves

TCE 010471167-01 P= 0.933673 Days $T_0=131.608293$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

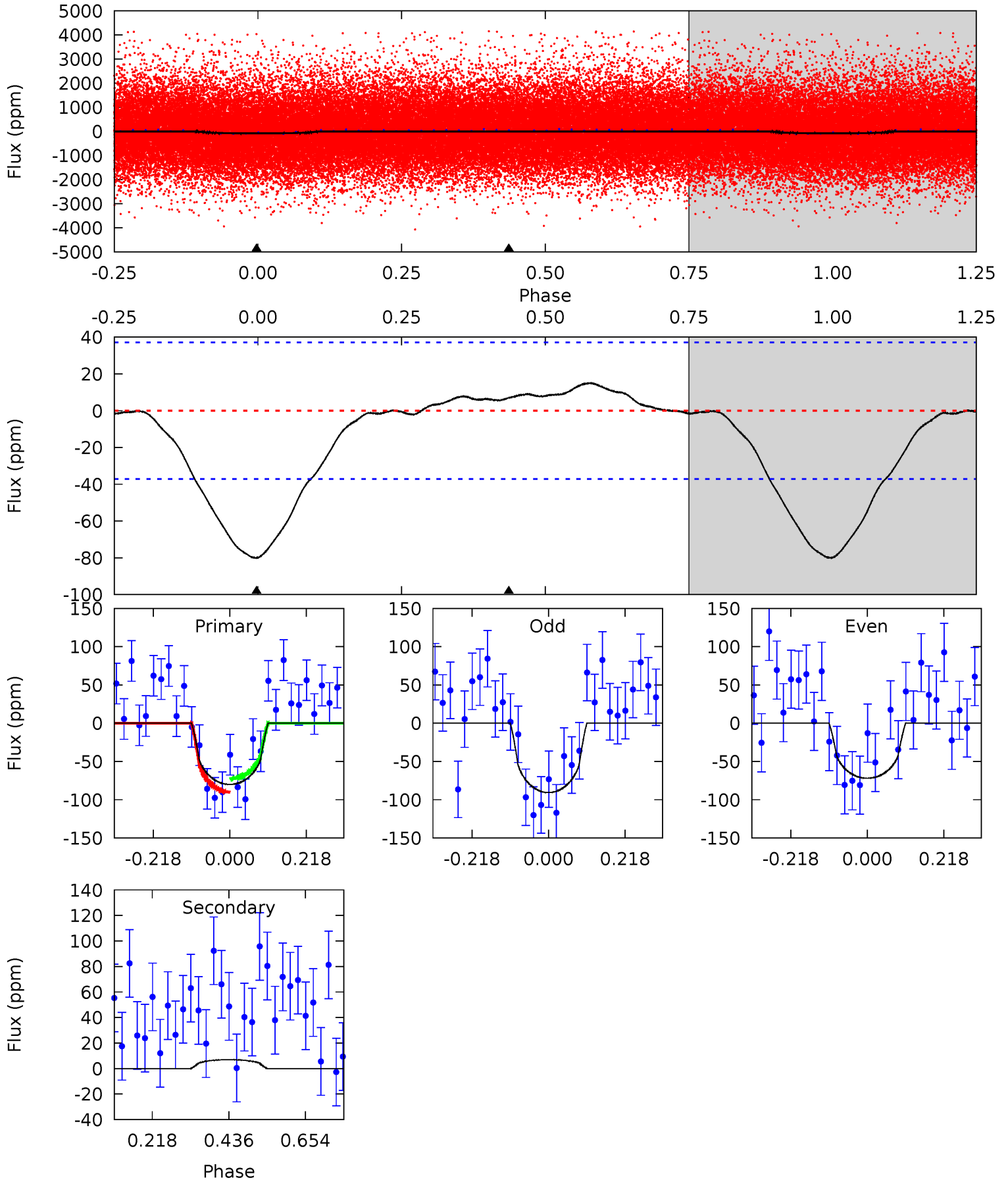
TCE 010471167-01 P= 0.933740 Days $T_0=131.536402$ (BKJD)



DV Model-Shift Uniqueness Test

010471167-01, P = 0.933673 Days, E = 130.674620 Days

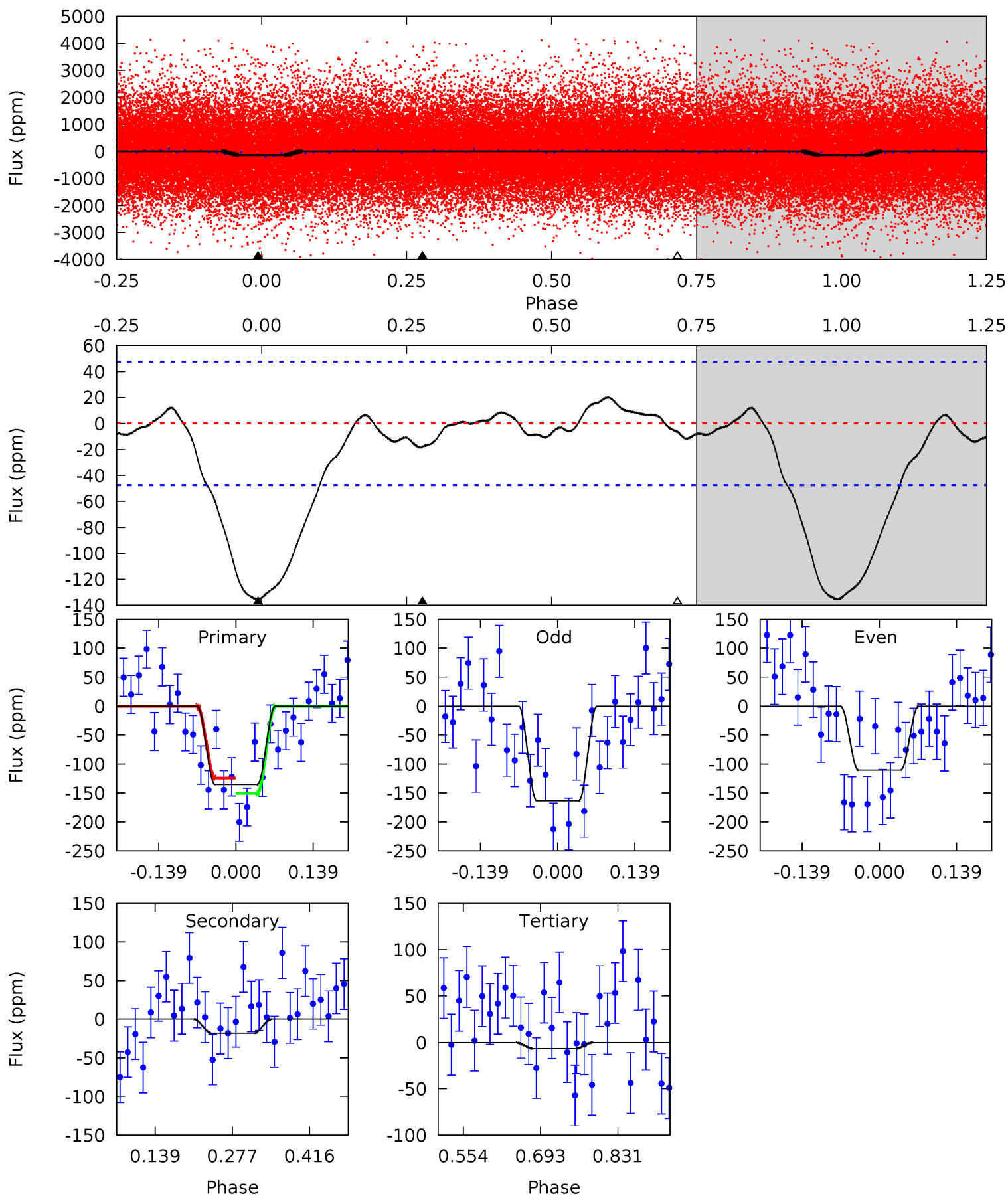
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 9.48 | -0.83 | 0 | 0 | 4.40 | 1.23 | 0.21 | 9.48 | 9.48 | -0.83 | -0.83 | 1.11 | 0.96 | 0.16 | 1.03 |



Alt Model-Shift Uniqueness Test

010471167-01, P = 0.933740 Days, E = 130.602662 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 12.8 | 1.70 | 0.62 | 0 | 4.50 | 1.48 | 0.87 | 12.2 | 12.8 | 1.08 | 1.70 | 2.50 | 0.94 | 0.13 | 1.25 |



Stellar Parameters For KIC 010471167

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|-------------------------------------------|
| | 4753^{+170}_{-170} | $4.585^{+0.050}_{-0.036}$ | $-0.060^{+0.300}_{-0.300}$ | $0.717^{+0.057}_{-0.063}$ | $0.720^{+0.071}_{-0.058}$ | $2.752^{+0.639}_{-0.399}$ |
| | +4%/-4% | +1%/-1% | +500%/-500% | +8%/-9% | +10%/-8% | +23%/-15% |
| Source | PHO54 | PHO54 | PHO54 | DSEP | | |

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010471167-01 / KOI 7612.01

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|--------------|------------------------|--------------------|------------------------|----------------------------|
| DV | 7 ± 8 | $1.12^{+1.06}_{-0.72}$ | 1913^{+77}_{-72} | -2748^{+482}_{-933} | $-0.588^{+0.719}_{-5.441}$ |
| Alt. | -18 ± 11 | $1.41^{+1.10}_{-0.88}$ | 1914^{+71}_{-77} | 2753^{+1132}_{-4771} | $1.194^{+7.776}_{-0.950}$ |

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 $A_{obs} \gg 1.0$

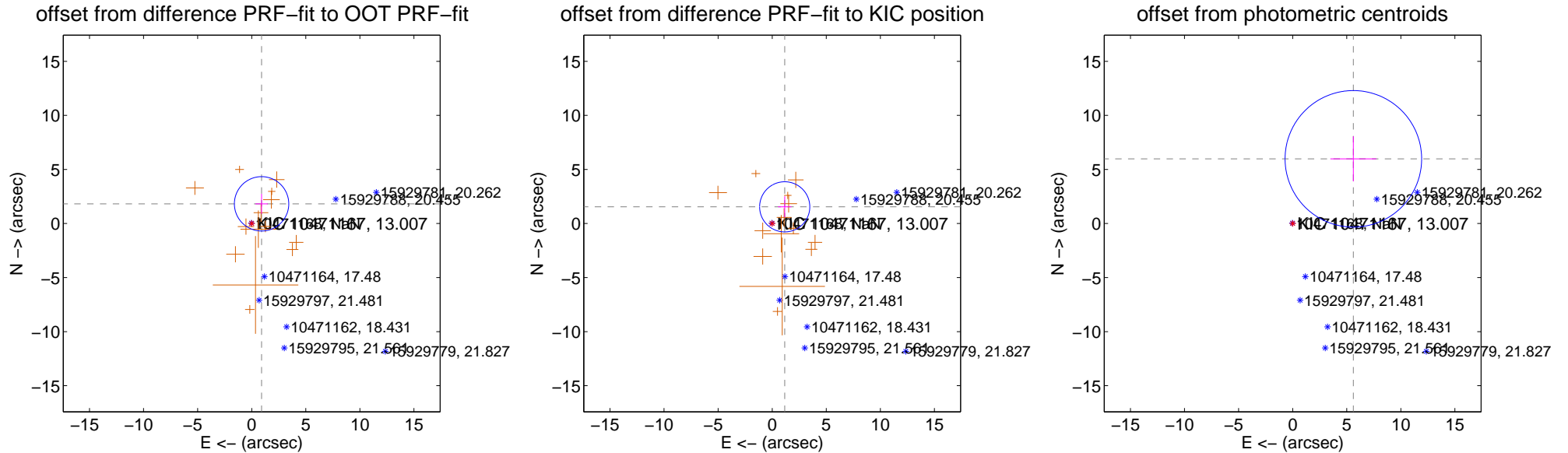
DV Centroid Data

Supplemental centroid analysis for 010471167-01. Kepler magnitude: 13.01. Transit SNR 5.07

There are 0 quarters with good PRF difference image offsets

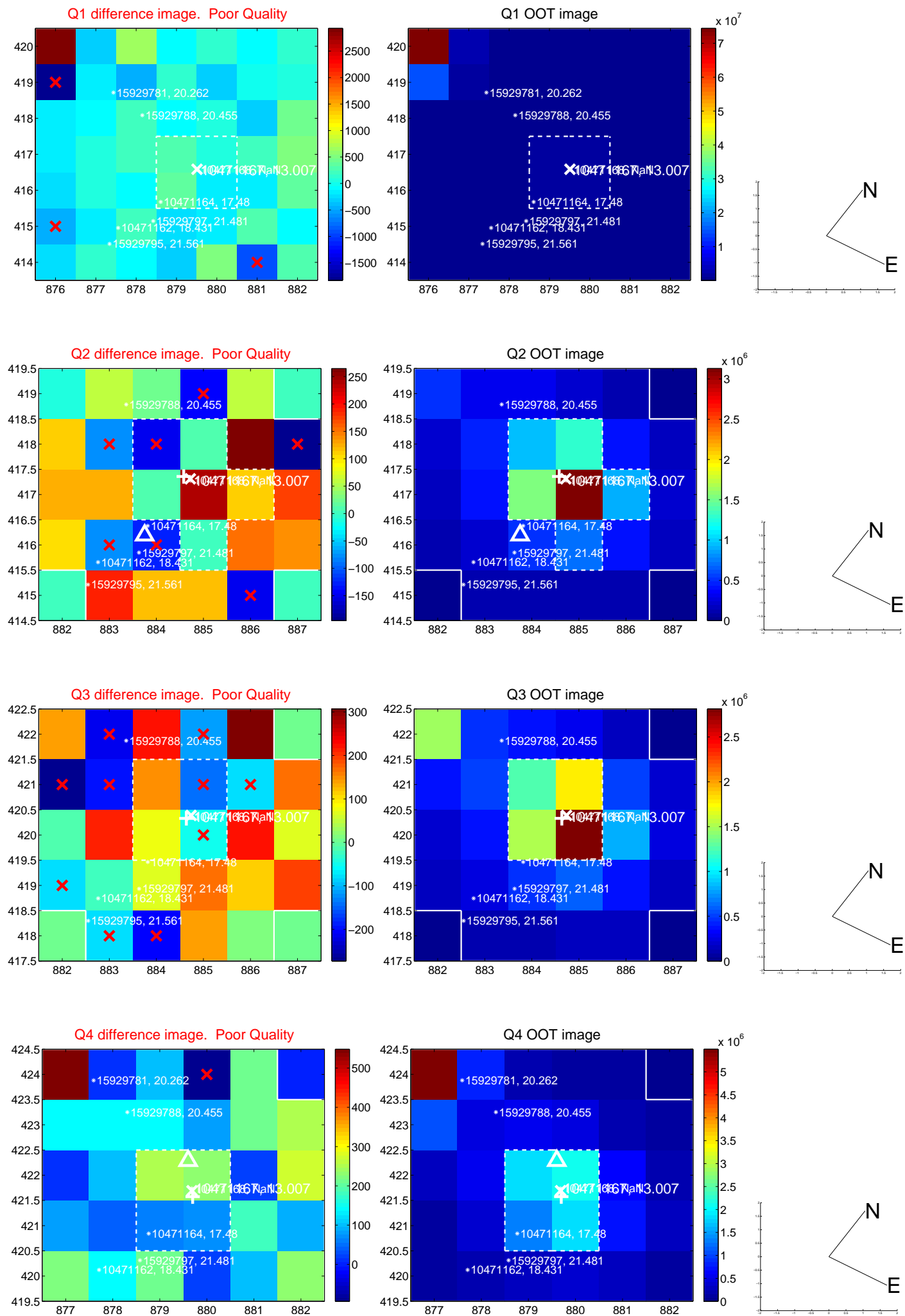
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|-----------------------------------------|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 2.036 ± 0.838 | 2.43 | -0.911 ± 0.576 | 1.821 ± 0.925 |
| PRF-fit source offset from KIC position | 1.928 ± 0.773 | 2.49 | -1.157 ± 0.621 | 1.543 ± 0.976 |
| photometric centroid source offset | 8.20 ± 2.10 | 3.90 | -5.61 ± 2.13 | 5.98 ± 2.09 |

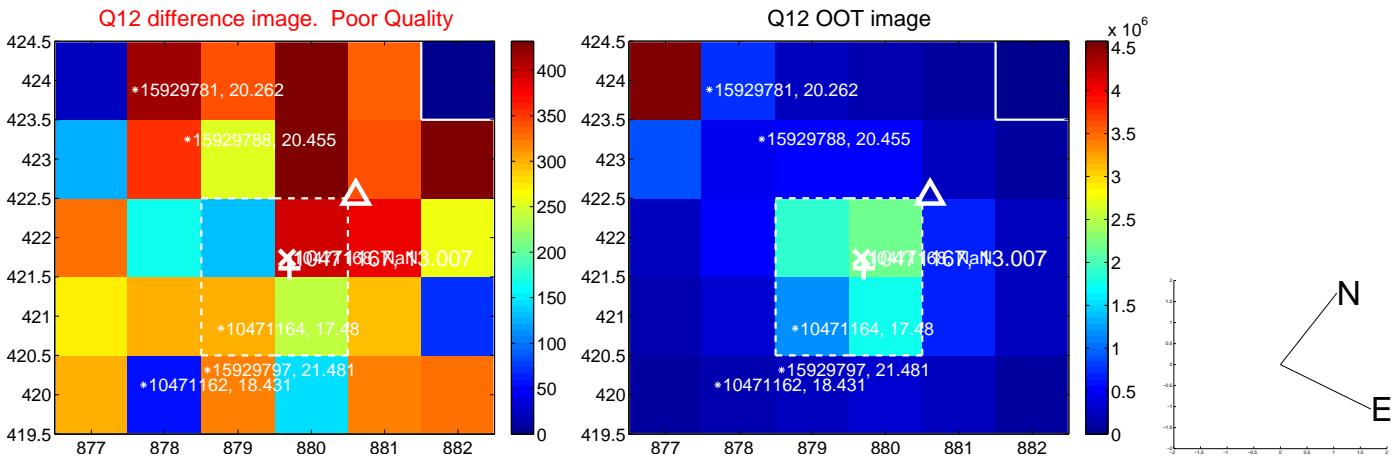
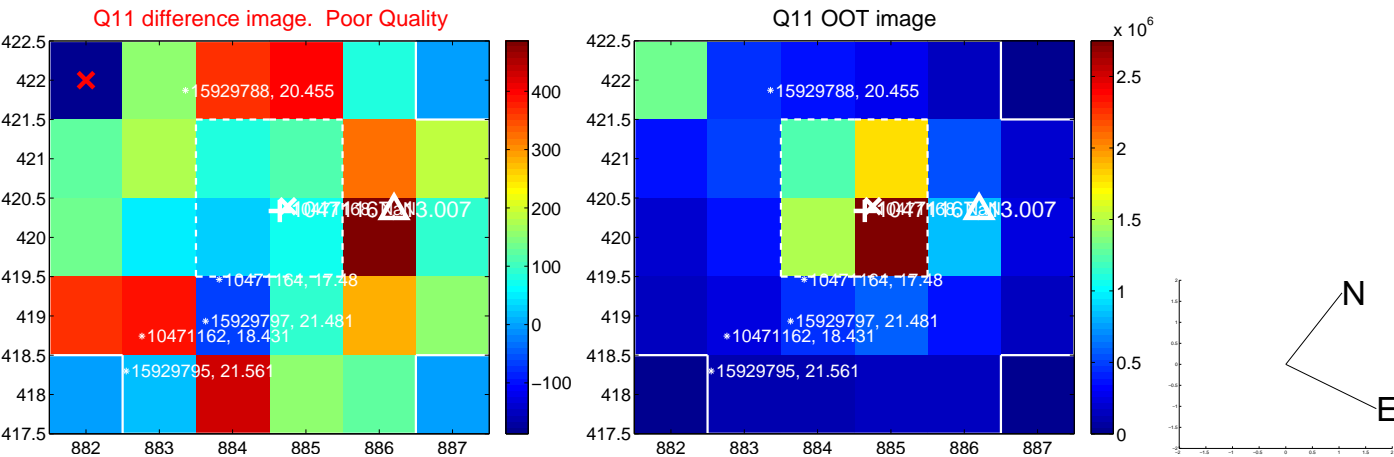
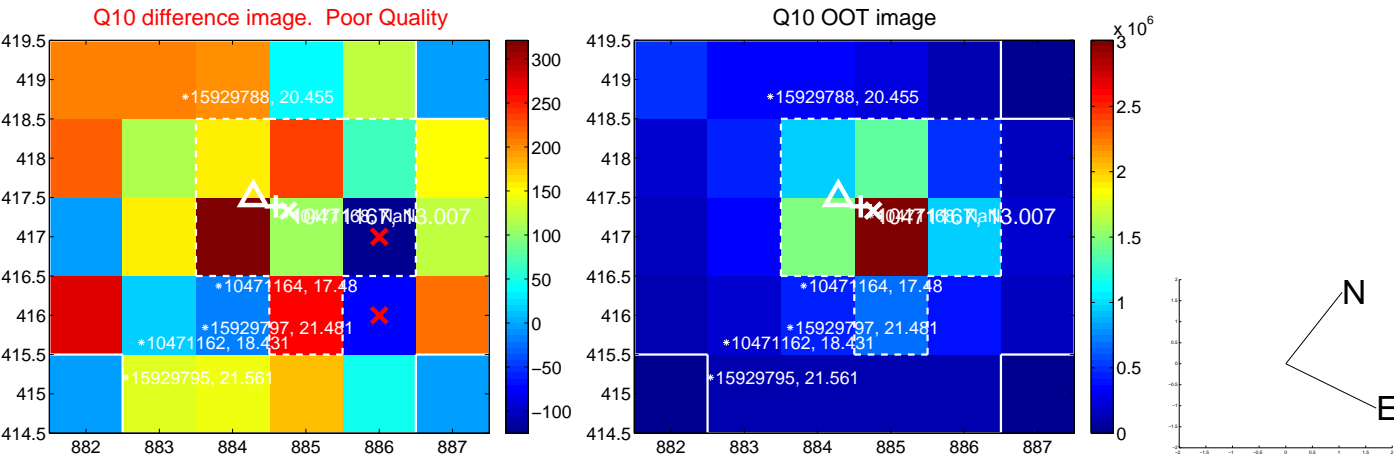
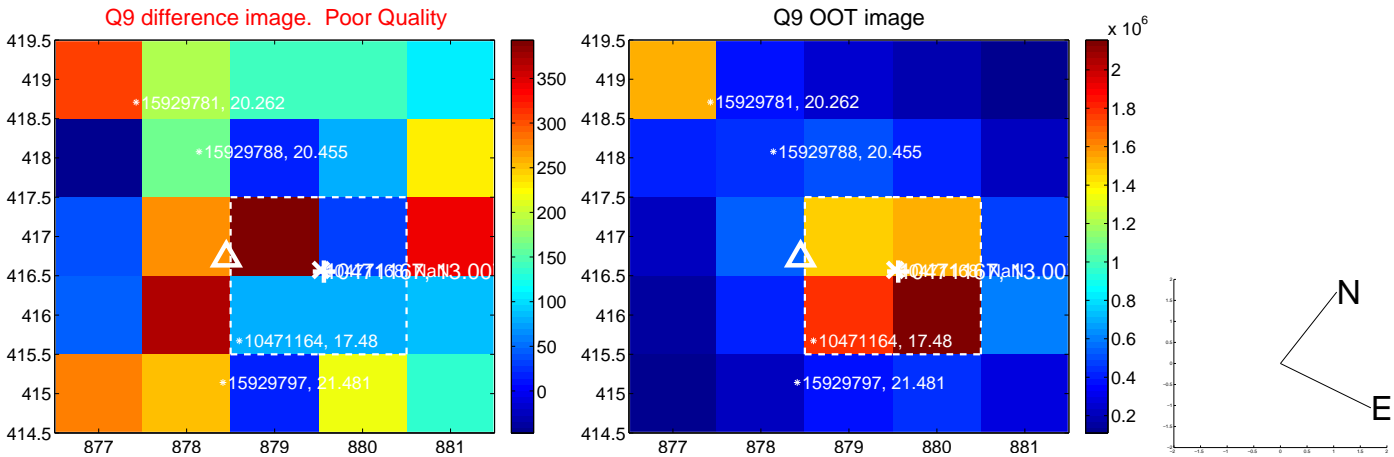


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

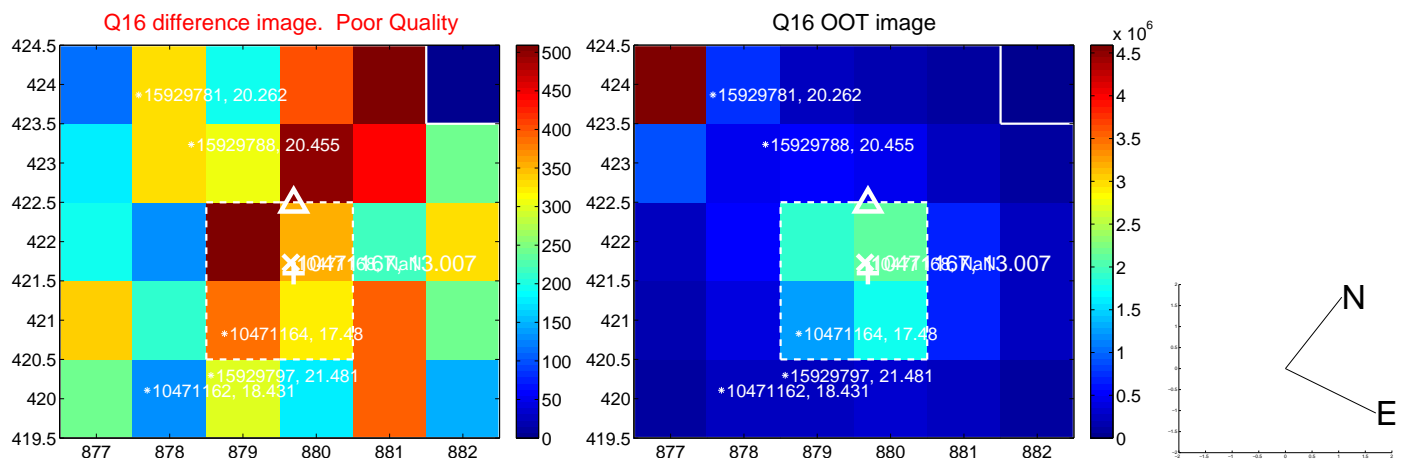
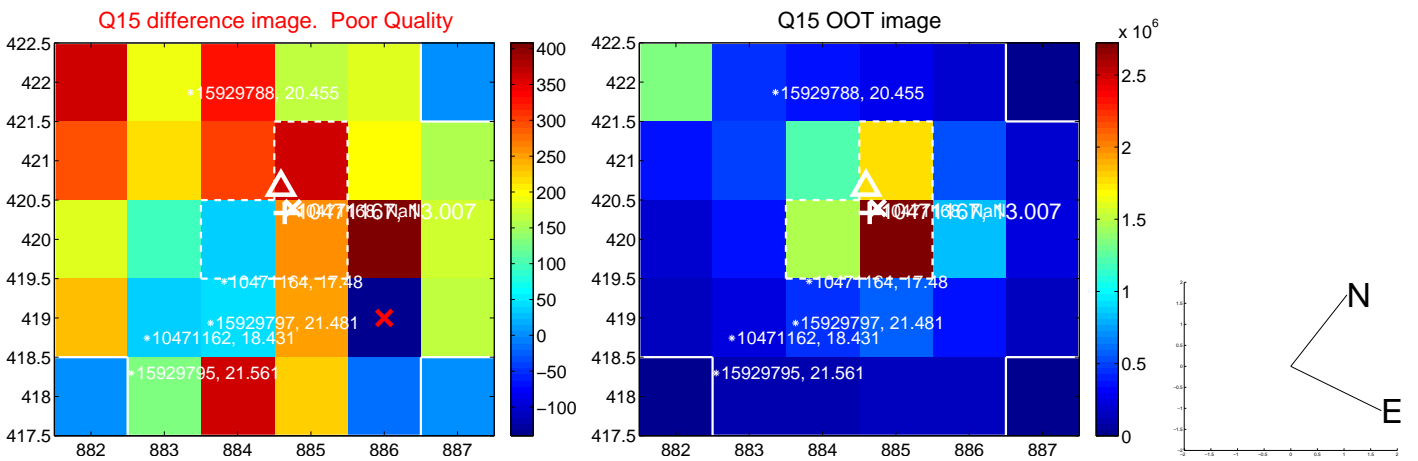
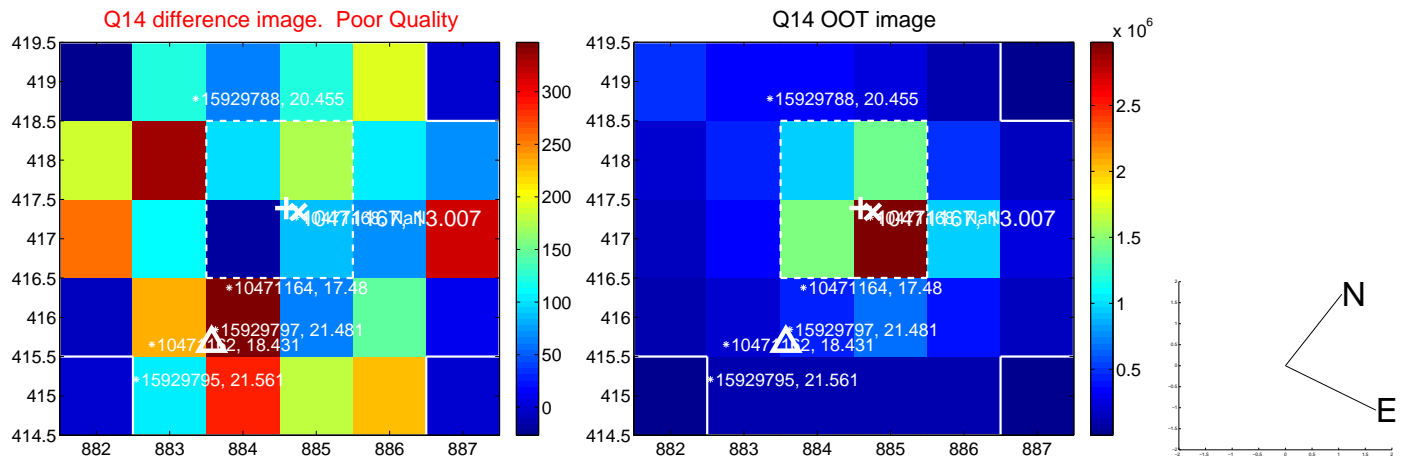
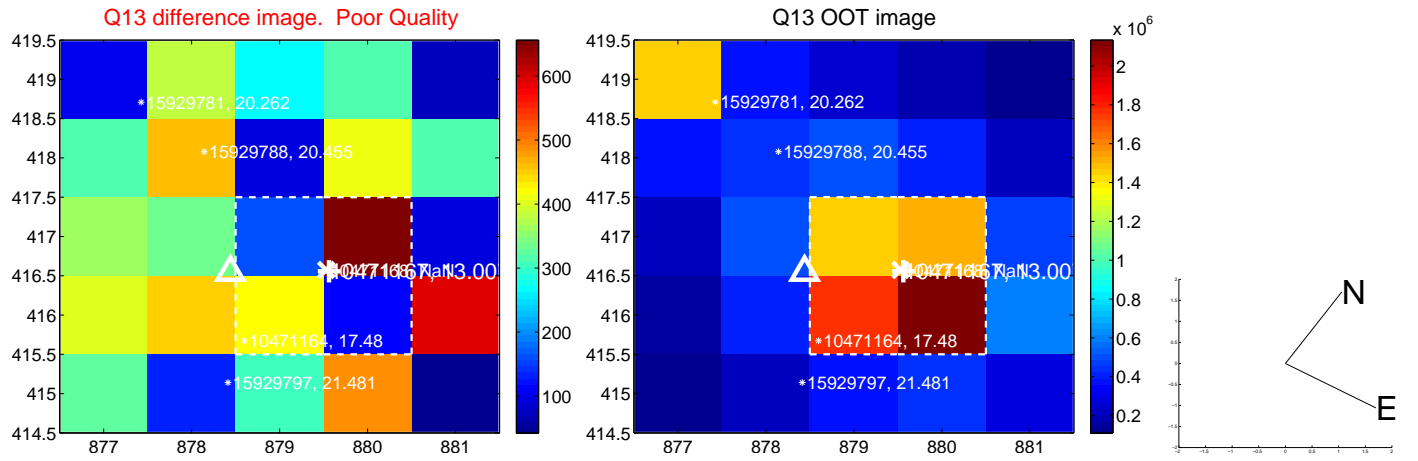
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



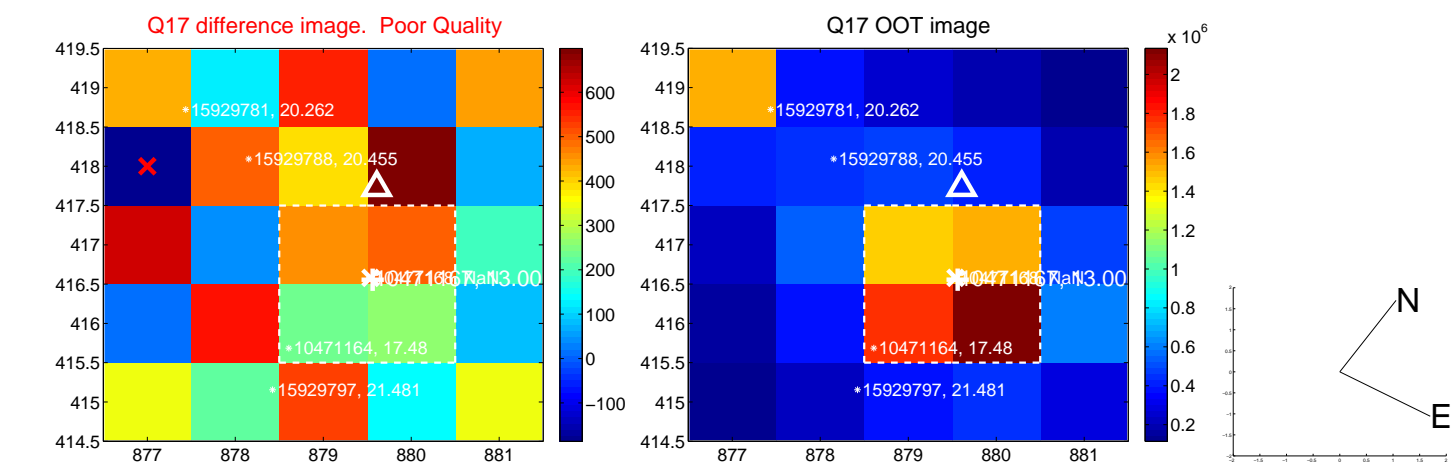
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



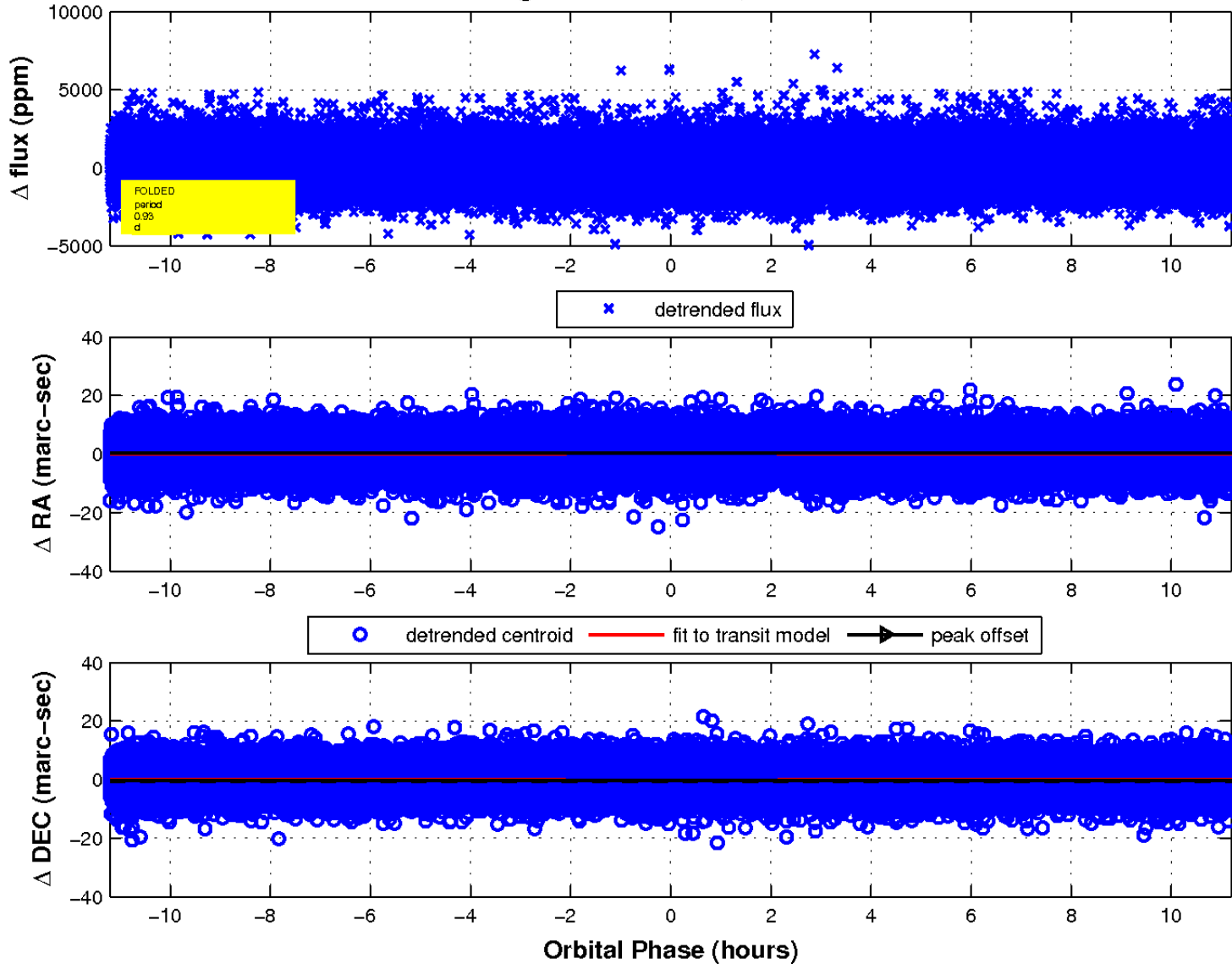
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

