

KIC 011407847

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 011407847-01 | OBS | 5895.01 | 11.830287 | 140.152605 | 132.5 | 8.470 | 10.4 | 10.7 | 0.96 | 5550 | 1.30 | 83.36 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 011407847-01 | OBS | PC | 0.95 | 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.

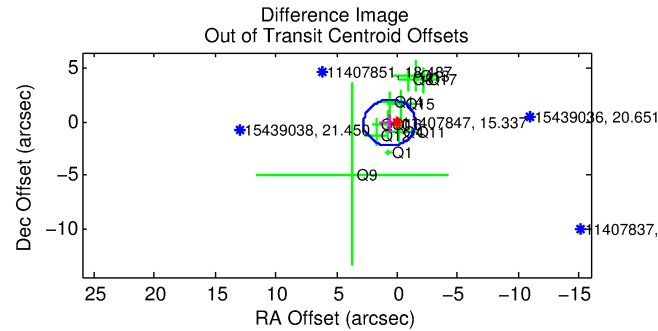
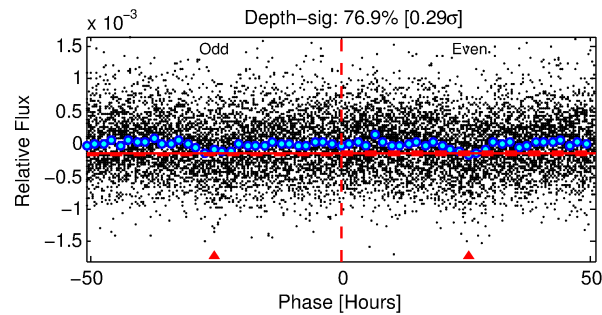
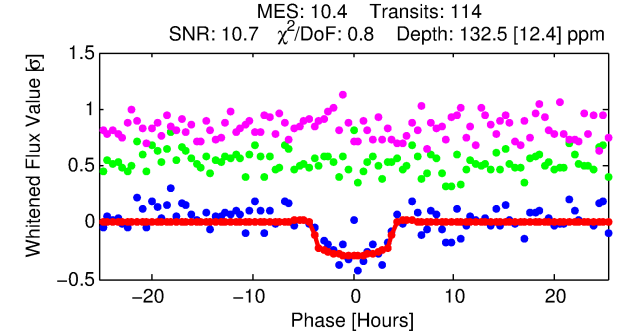
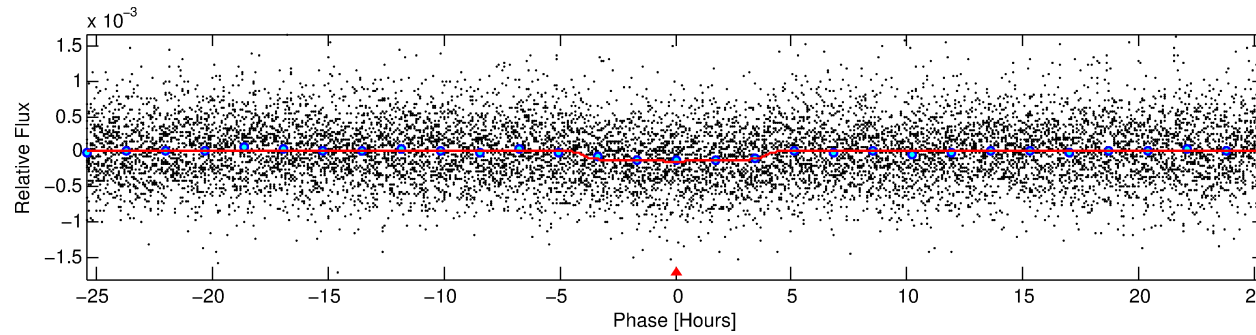
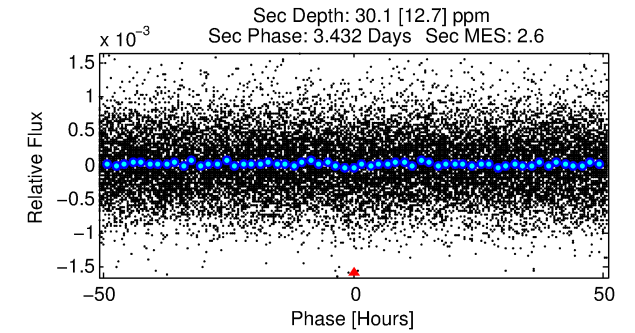
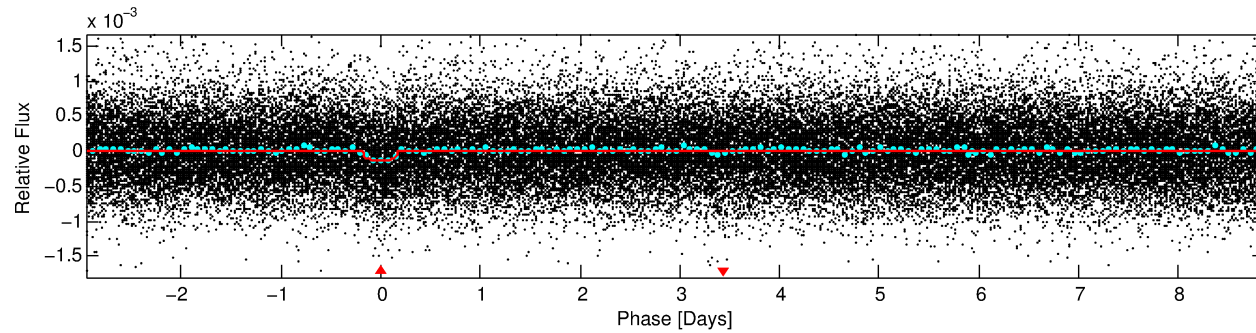
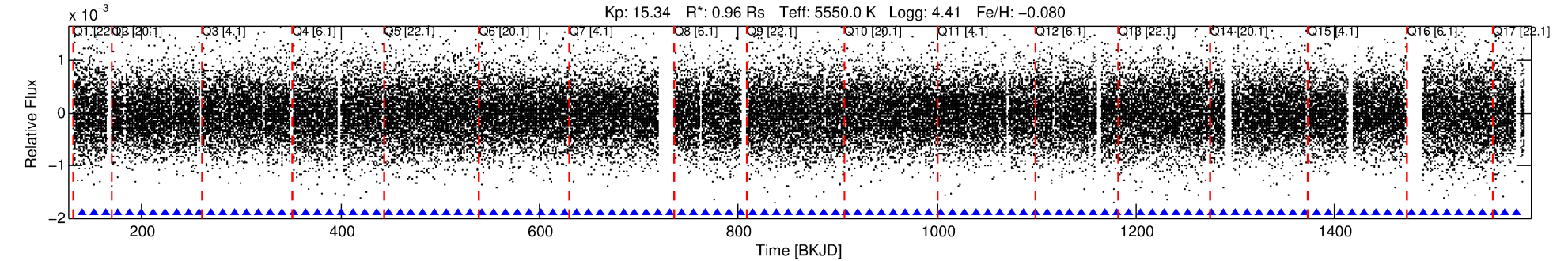
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011407847-01

No Significant Match Found

DV One-Page Summary

KIC: 11407847 Candidate: 1 of 1 Period: 11.830 d
KOI: K05895.01 Corr: 0.937



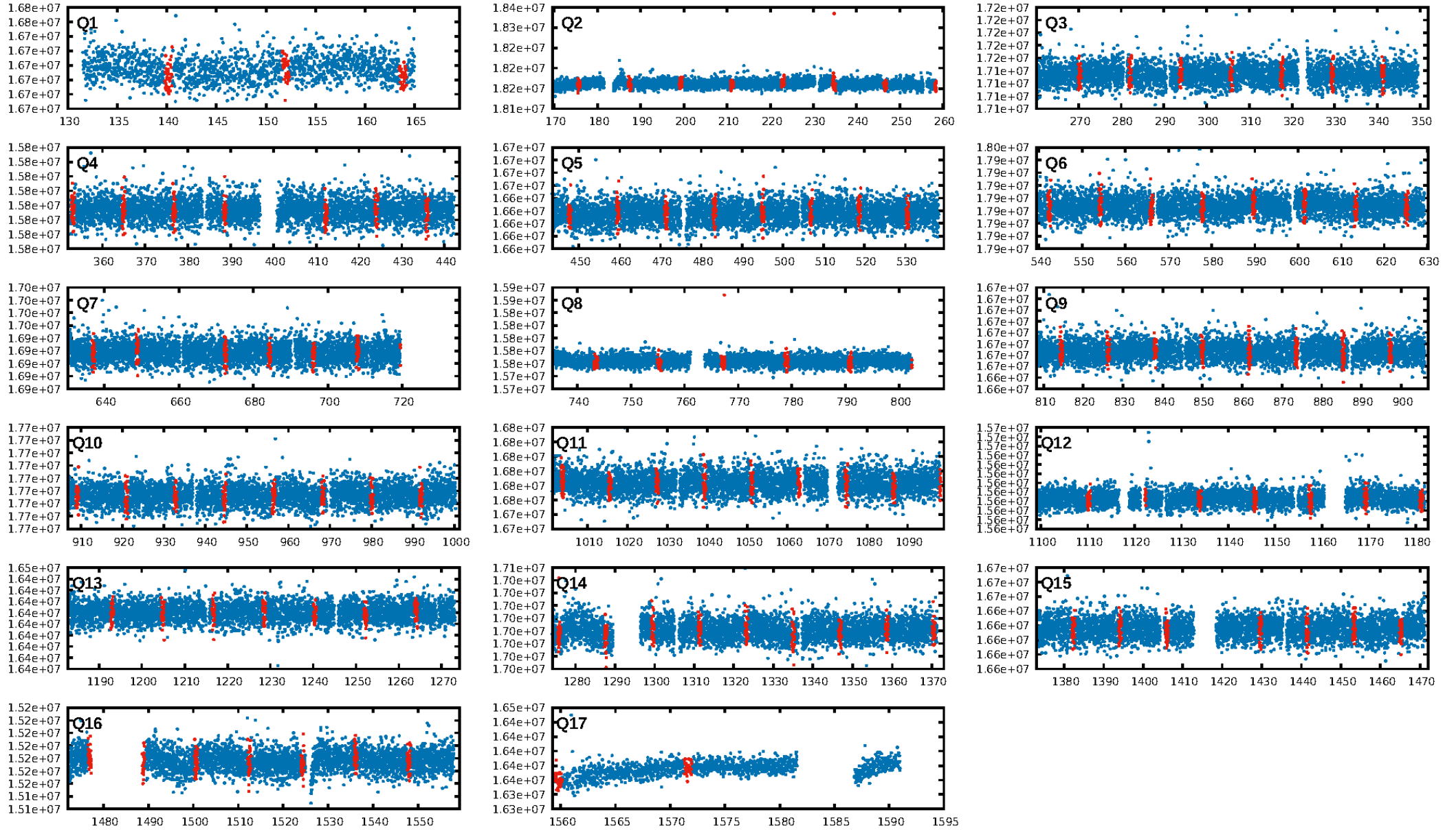
DV Fit Results:

Period = 11.83029 [0.00021] d
Epoch = 140.1526 [0.0141] BKJD
Rp/R* = 0.0125 [0.0036]
a/R* = 5.25 [6.59]
b = 0.89 [0.31]
Seff = 83.36 [29.35]
Teff = 770 [68] K
Rp = 1.30 [0.50] Re
a = 0.0967 [0.0213] AU
Ag = 91.30 [71.76] [1.26σ]
Teffp = 3682 [665] K [4.35σ]

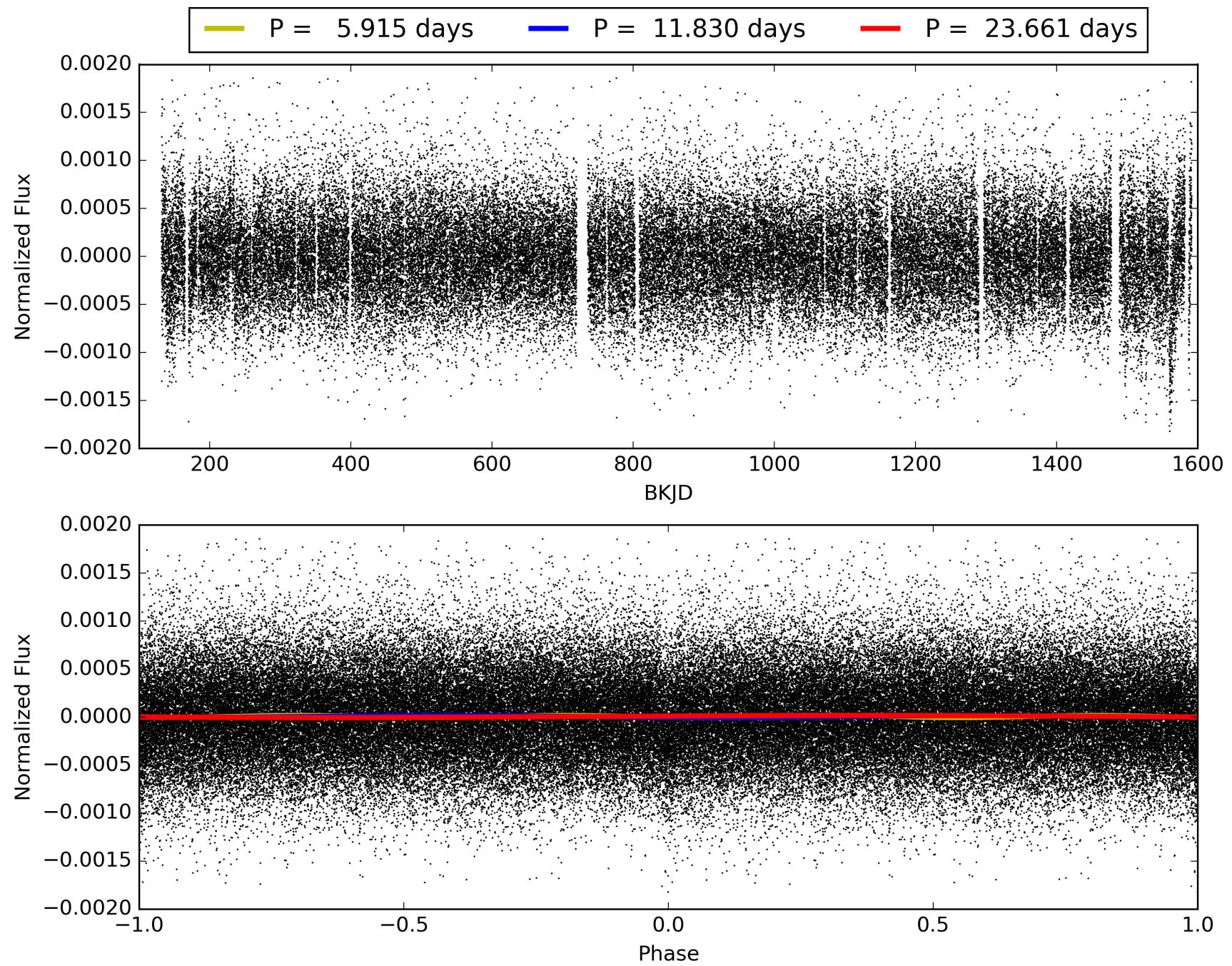
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.20e-25
RollingBand-fgt: 1.00 [109/109]
GhostDiagnostic-chr: 1.117
Centroid-sig: 70.6%
Centroid-so: 0.662 arcsec [0.50σ]
OotOffset-rm: 0.627 arcsec [0.87σ]
KicOffset-rm: 0.399 arcsec [0.56σ]
OotOffset-st: 2/2/4/4 [12]
KicOffset-st: 2/2/4/4 [12]
DiffImageQuality-fgm: 0.42 [5/12]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 011407847-01, PDC Light Curves

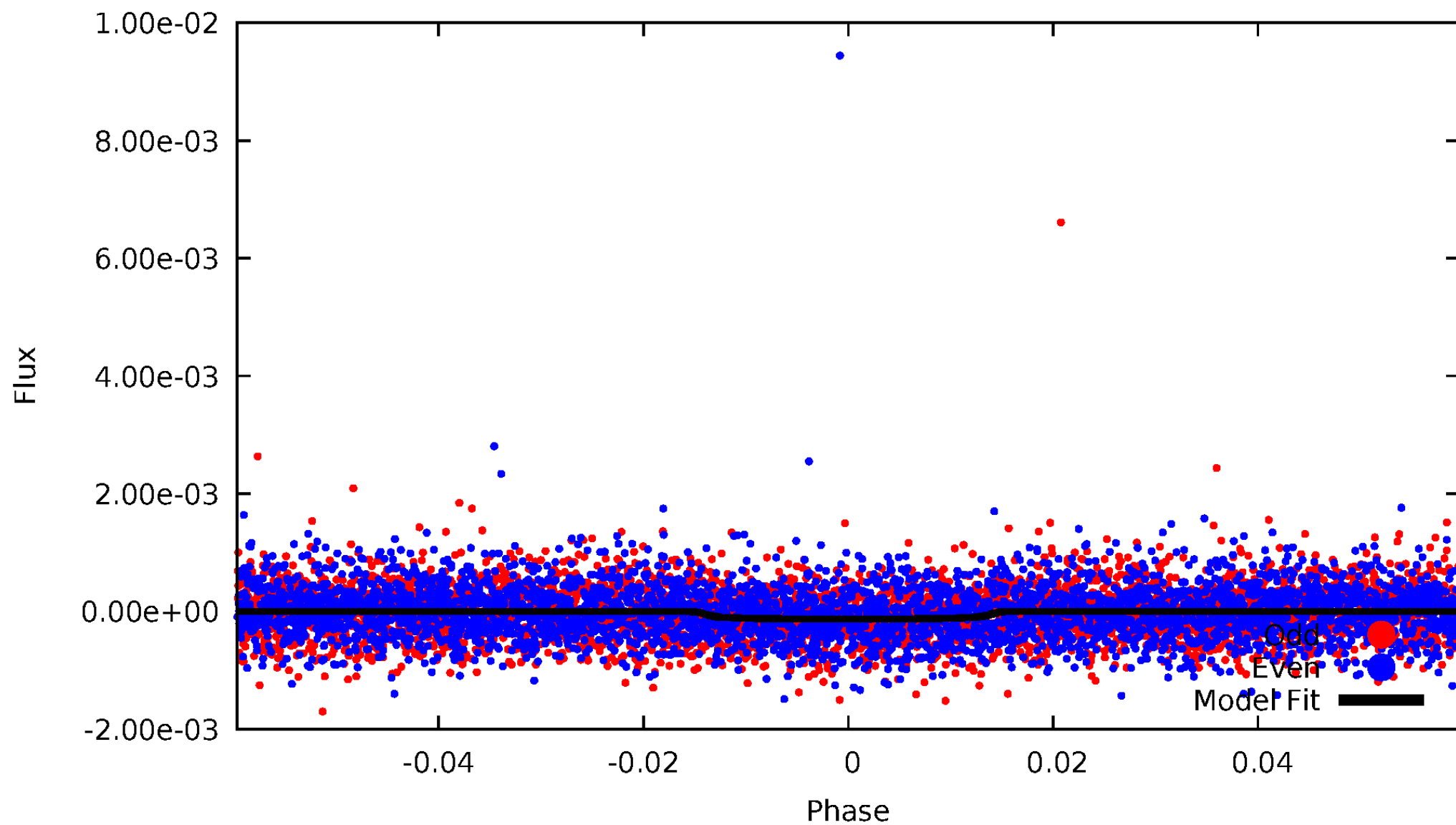


TCE 011407847-01



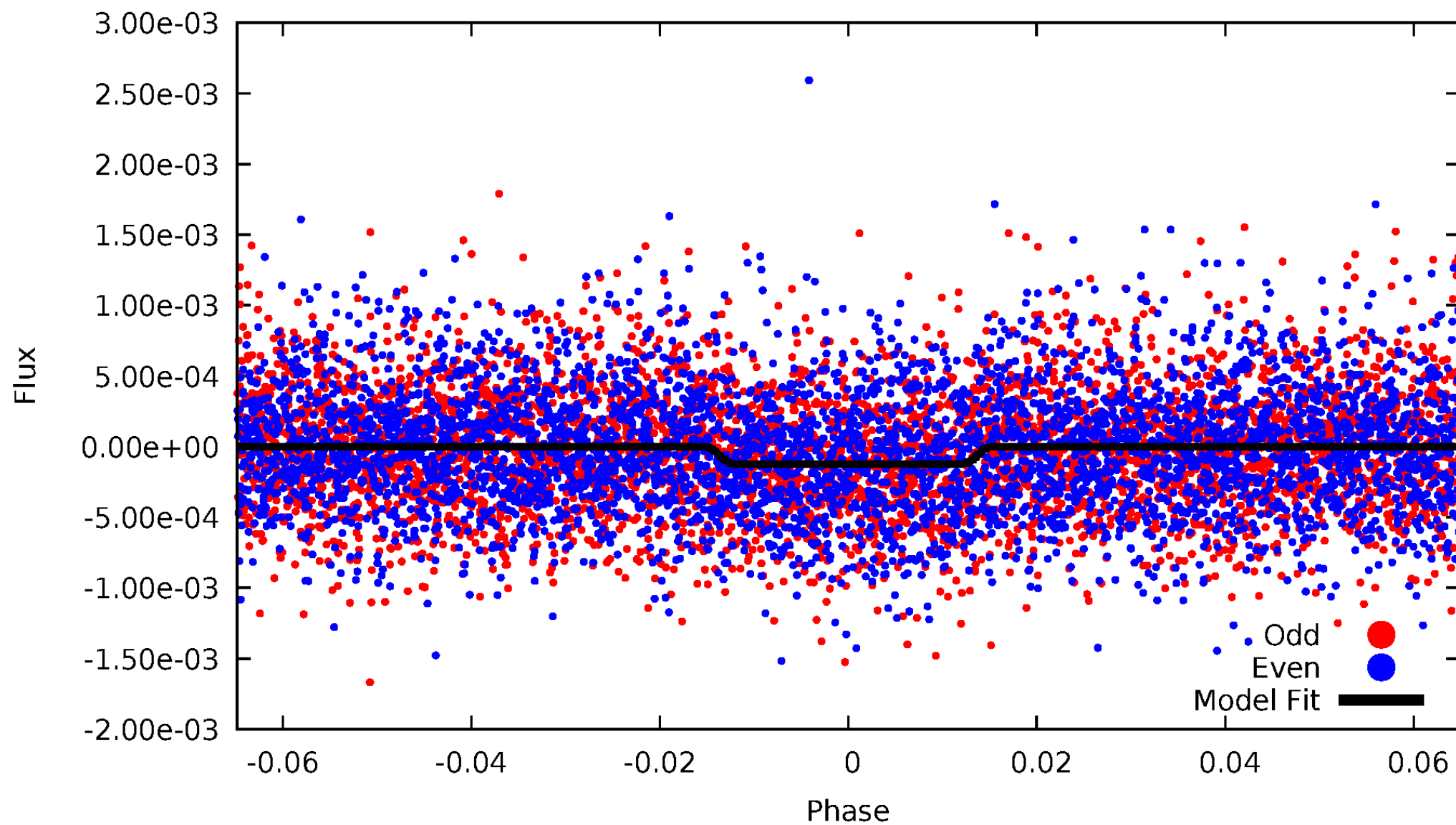
DV Odd/Even

TCE 011407847-01



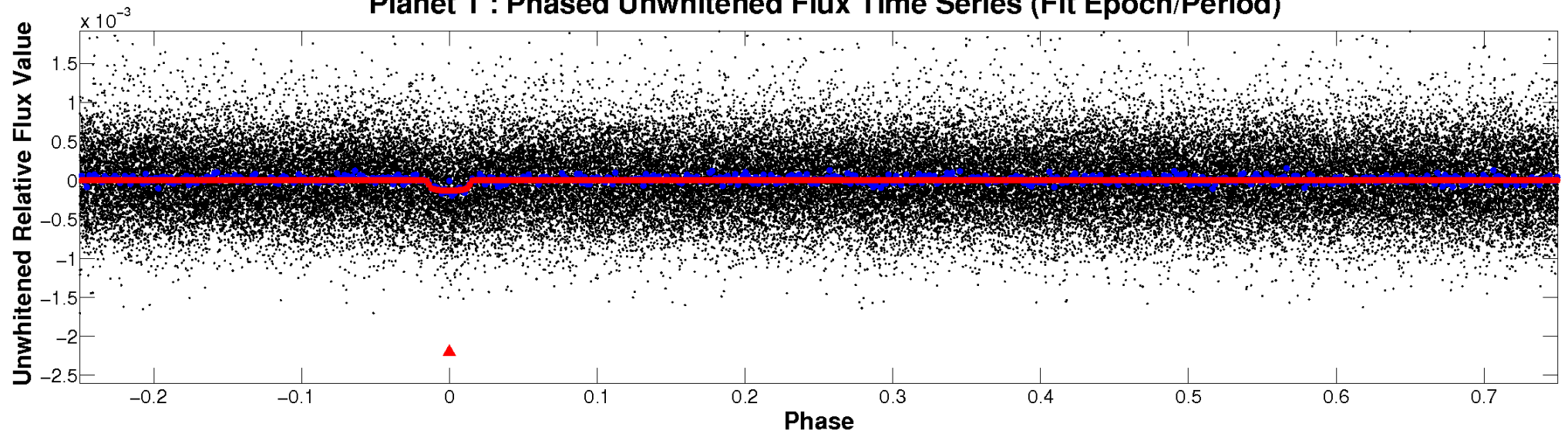
ALT Odd/Even

TCE 011407847-01

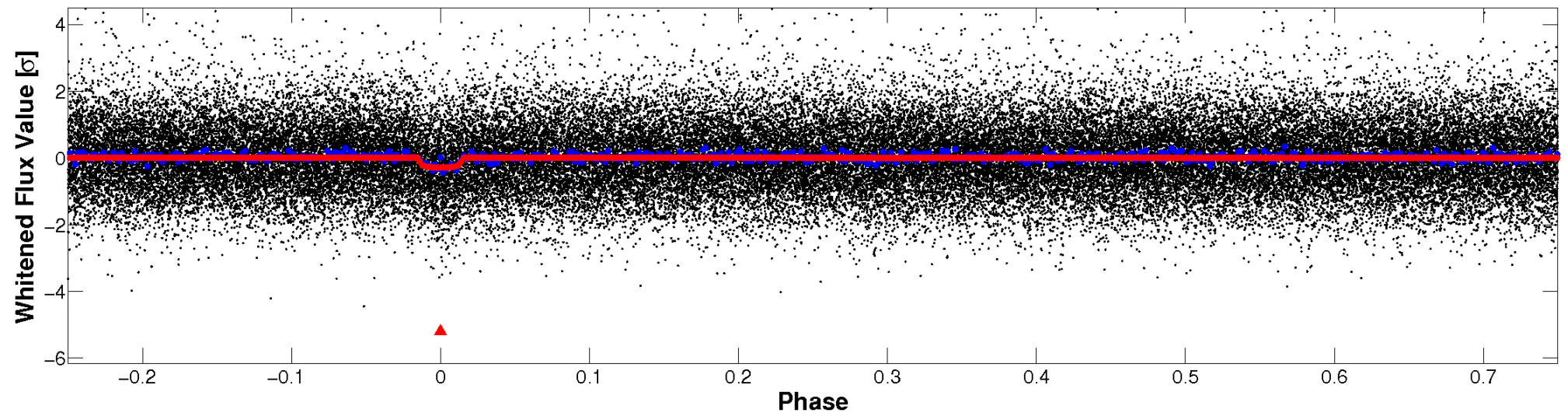


Non-Whitened Vs. Whitened Light Curve

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

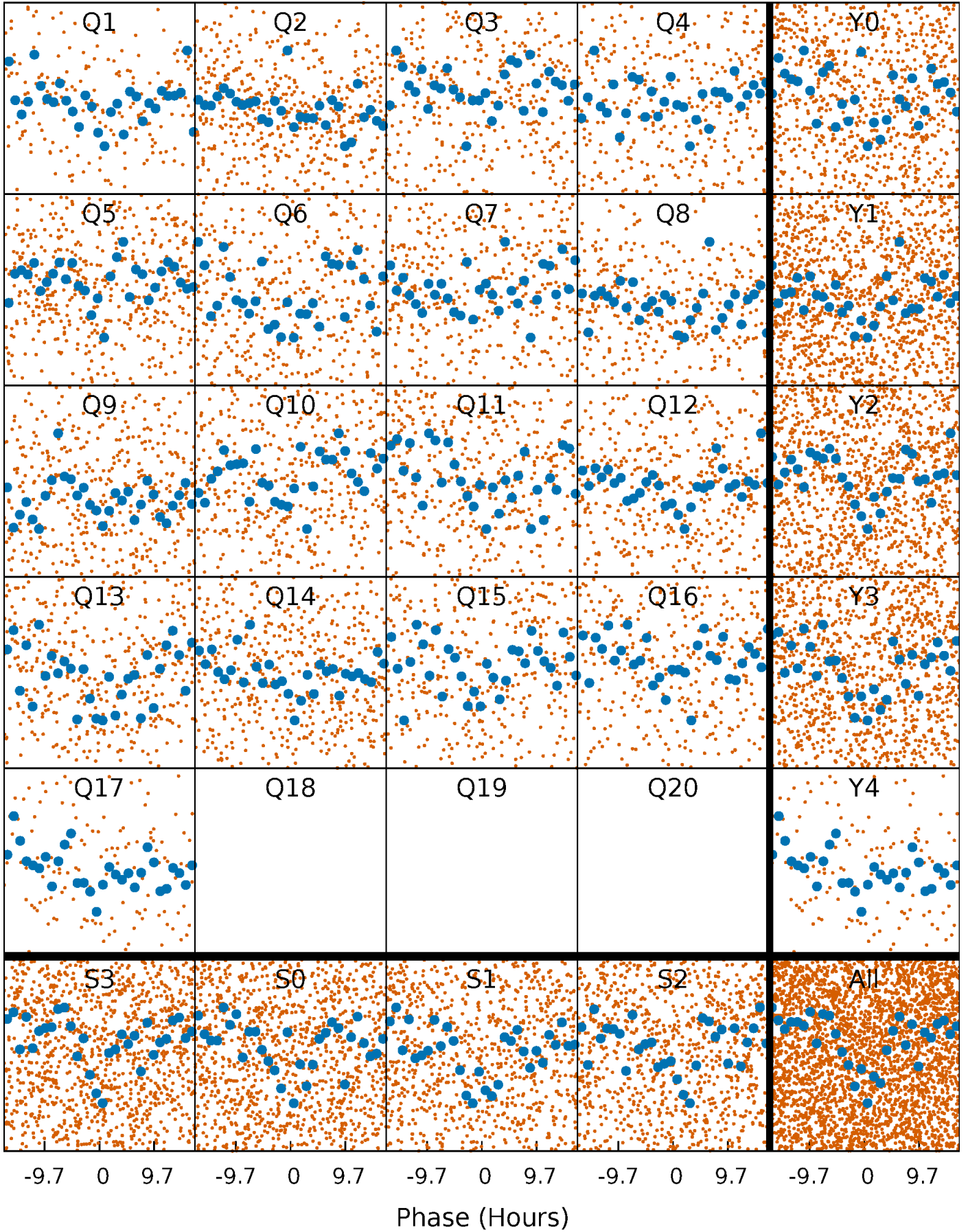


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



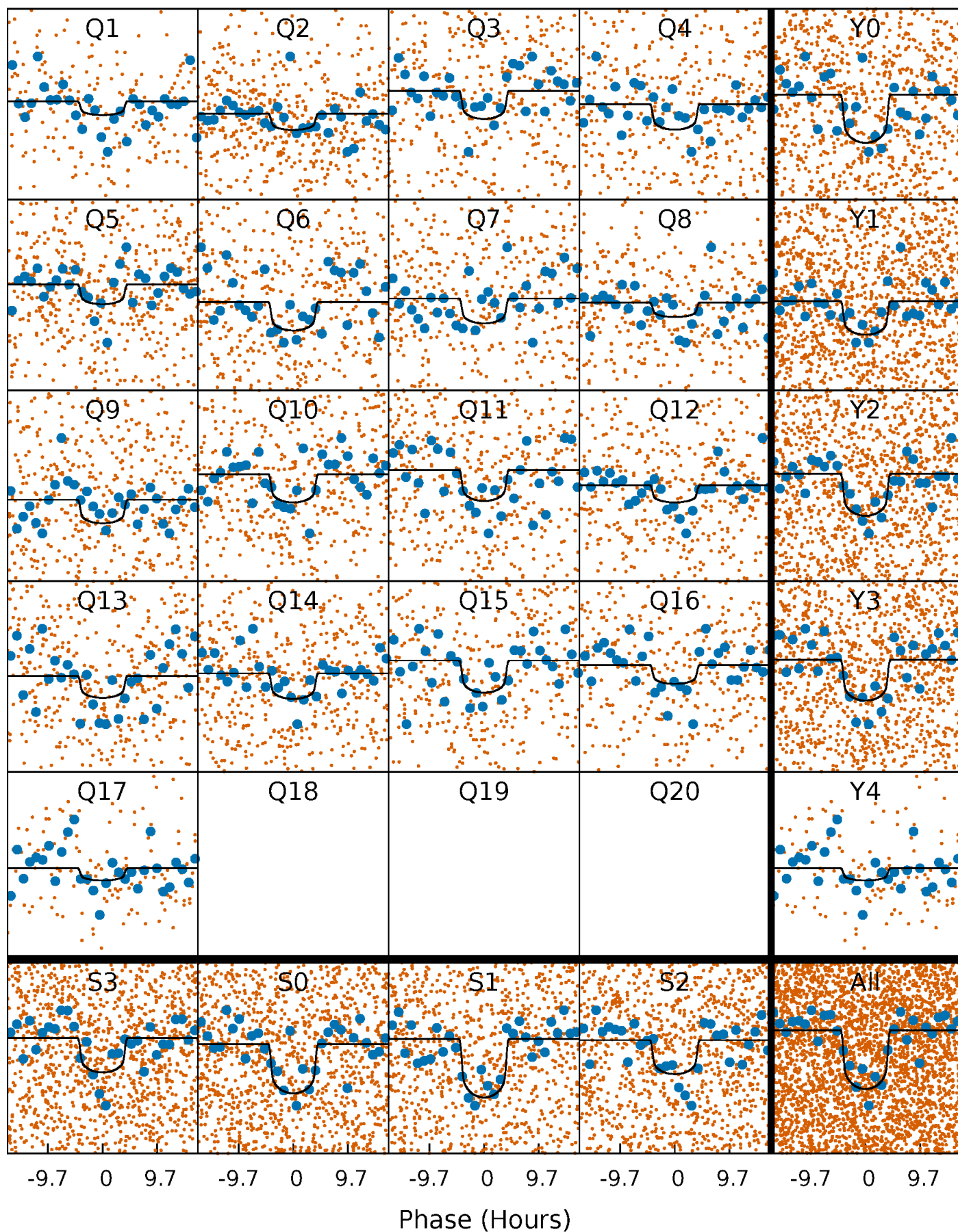
PDC Quarter-Phased Transit Curves

TCE 011407847-01 P= 11.830287 Days $T_0=140.152605$ (BKJD)



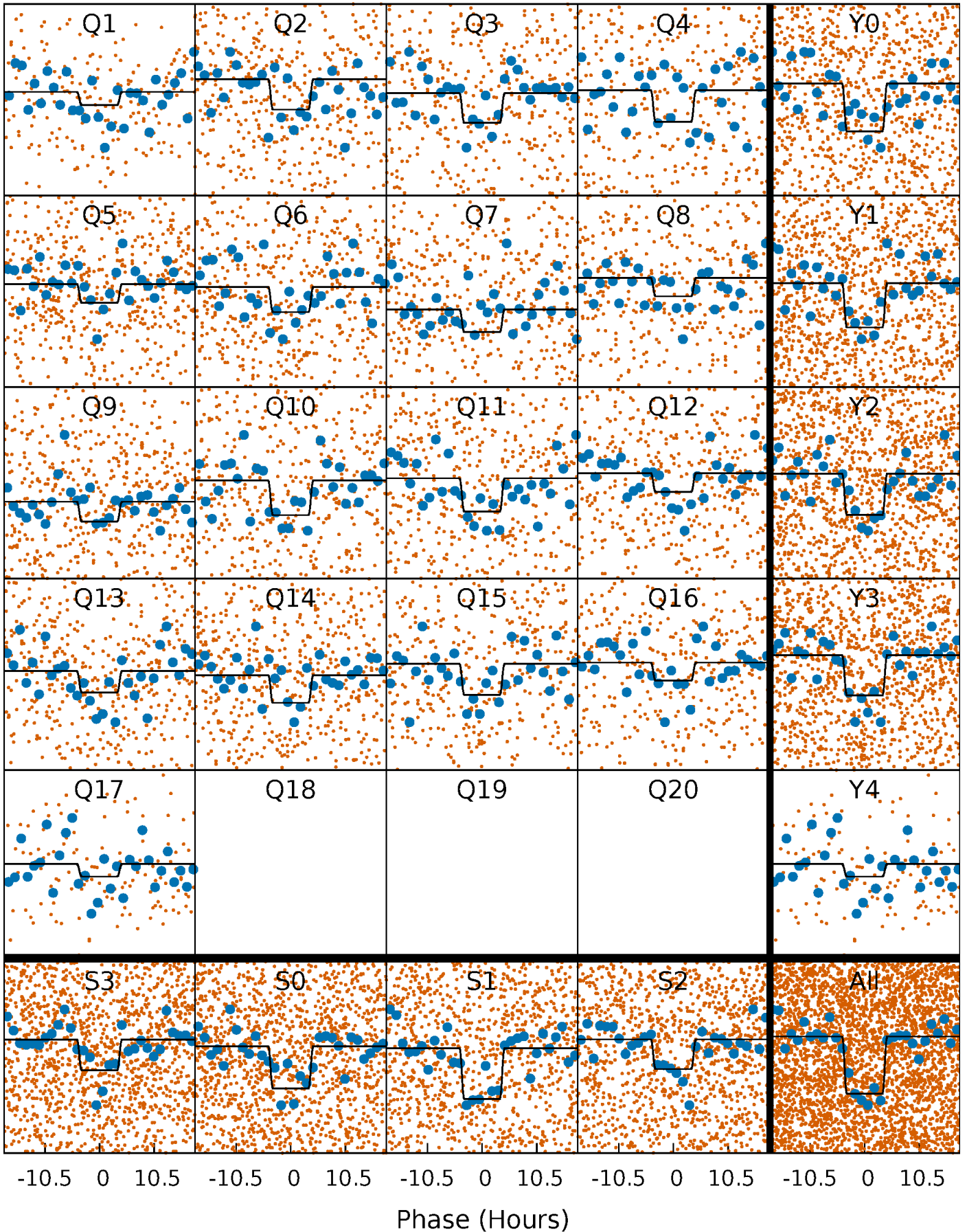
DV Quarter-Phased Transit Curves

TCE 011407847-01 P= 11.830287 Days $T_0=140.152605$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

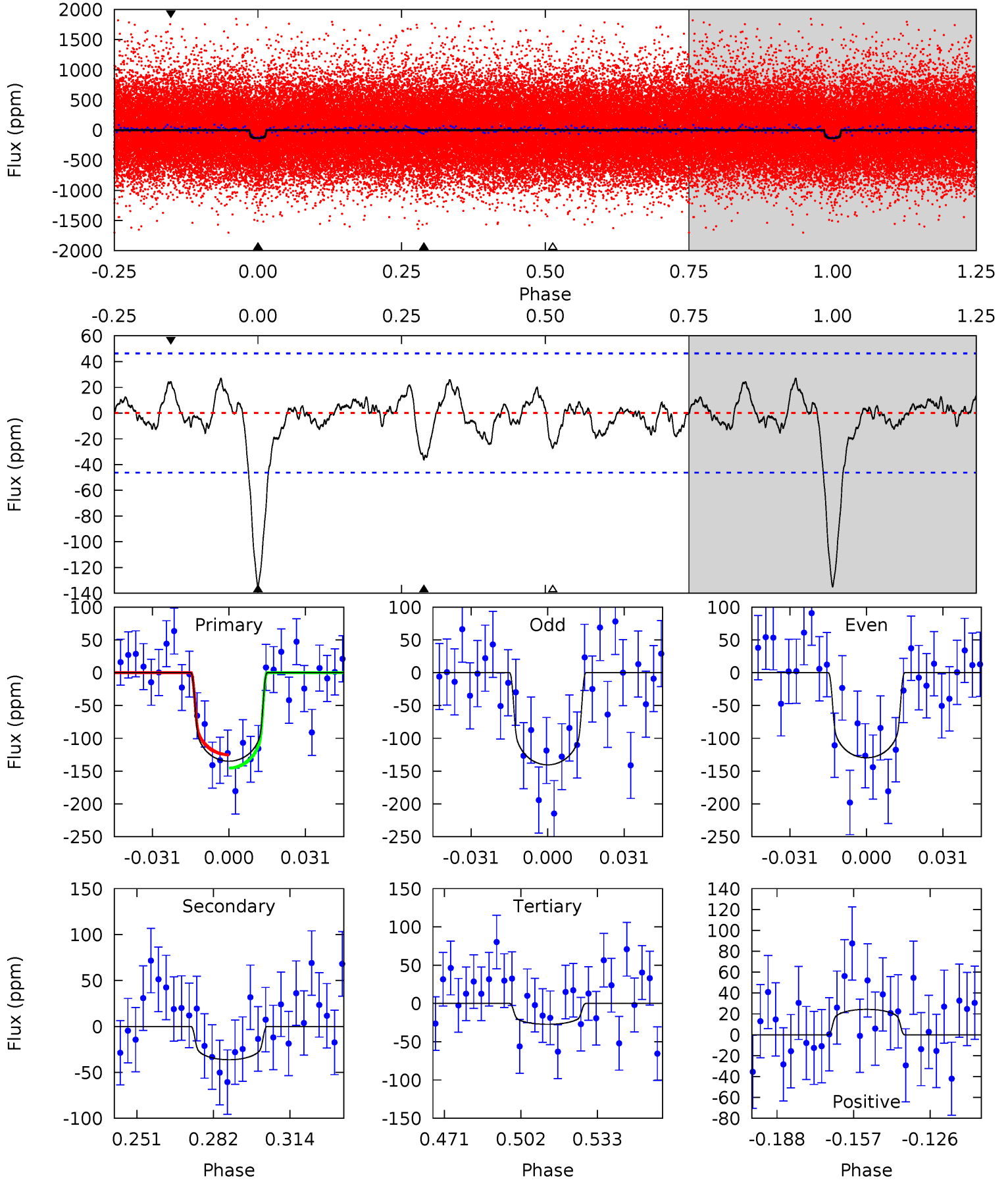
TCE 011407847-01 P= 11.830577 Days $T_0=140.128771$ (BKJD)



DV Model-Shift Uniqueness Test

011407847-01, P = 11.830287 Days, E = 128.322318 Days

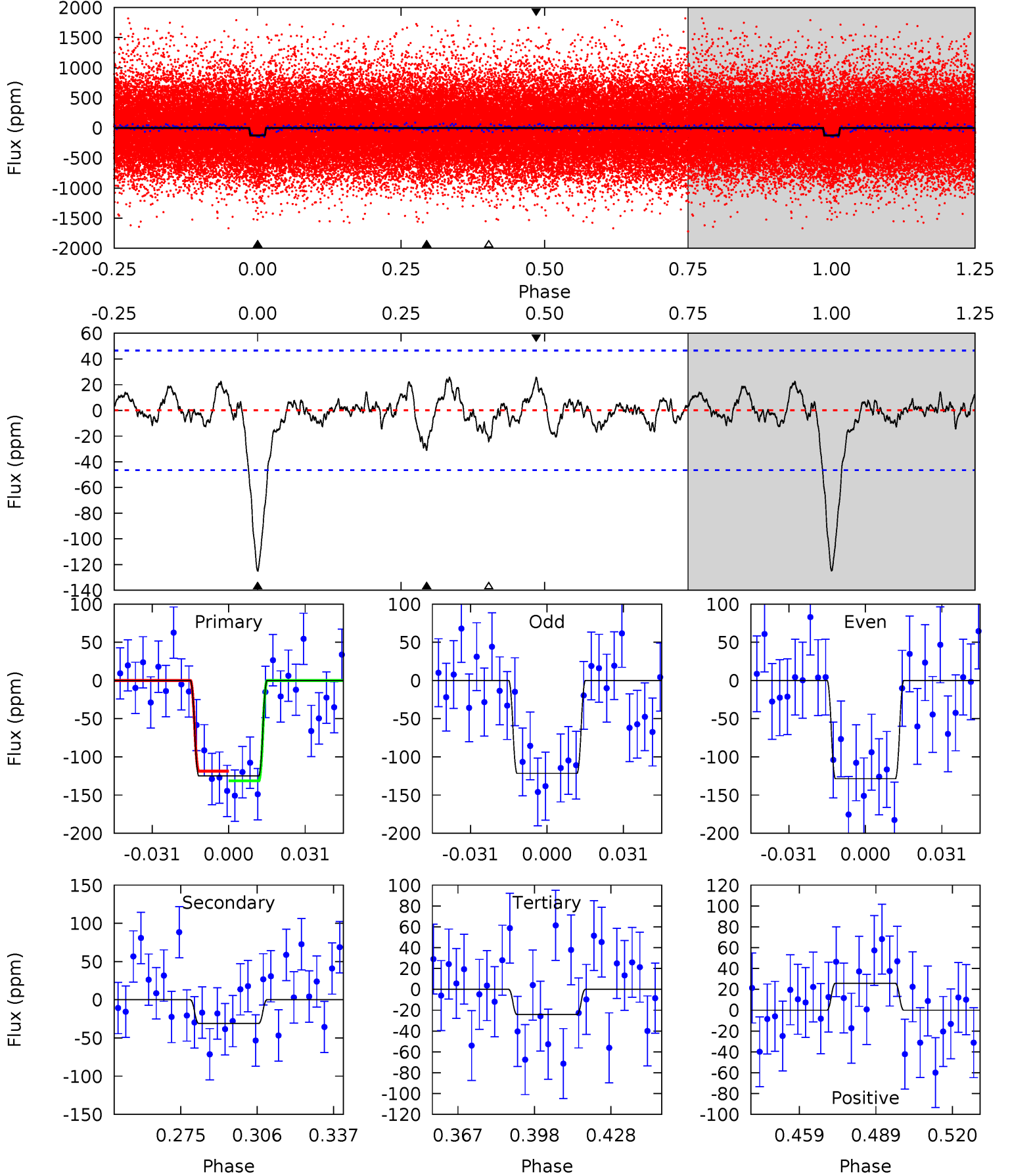
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.0 | 3.76 | 2.82 | 2.53 | 4.80 | 2.15 | 1.08 | 11.2 | 11.5 | 0.94 | 1.24 | 0.56 | 0.94 | 0.17 | 1.05 |



Alt Model-Shift Uniqueness Test

011407847-01, $P = 11.830577$ Days, $E = 128.298194$ Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 12.9 | 3.20 | 2.50 | 2.67 | 4.81 | 2.16 | 0.94 | 10.4 | 10.2 | 0.70 | 0.54 | 0.36 | 0.99 | 0.17 | 0.66 |



Stellar Parameters For KIC 011407847

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5550^{+166}_{-166} | $4.411^{+0.124}_{-0.186}$ | $-0.080^{+0.300}_{-0.300}$ | $0.958^{+0.241}_{-0.141}$ | $0.862^{+0.111}_{-0.074}$ | $1.383^{+0.778}_{-0.678}$ |
| | +3%/-3% | +3%/-4% | +375%/-375% | +25%/-15% | +13%/-9% | +56%/-49% |
| 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 011407847-01 / KOI 5895.01

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|--------------|------------------------|--------------------|----------------------|--------------------|
| DV | -36 ± 10 | $1.35^{+0.43}_{-0.40}$ | 1084^{+76}_{-58} | 4090^{+621}_{-410} | 99^{+117}_{-46} |
| Alt. | -31 ± 10 | $1.21^{+0.42}_{-0.43}$ | 1088^{+79}_{-61} | 4163^{+795}_{-481} | 109^{+170}_{-56} |

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

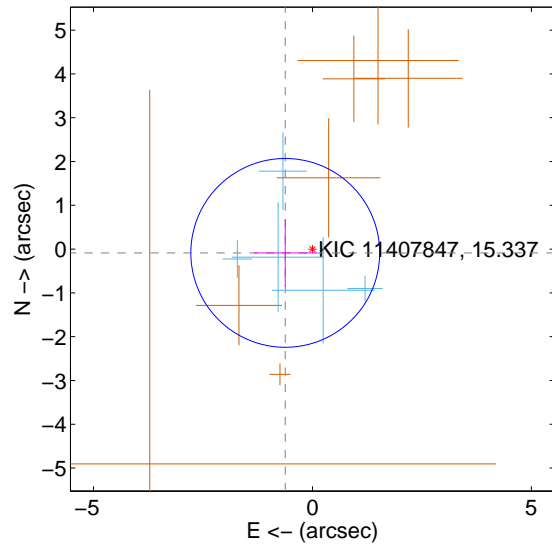
Supplemental centroid analysis for 011407847-01. Kepler magnitude: 15.34. Transit SNR 10.74

There are 5 quarters with good PRF difference image offsets

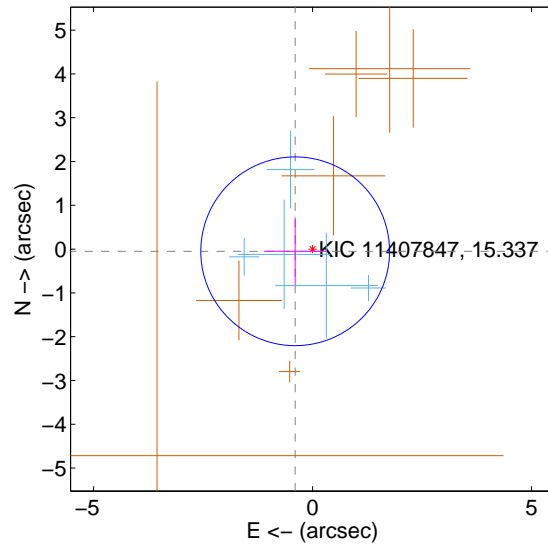
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.627 ± 0.718 | 0.87 | 0.621 ± 0.717 | -0.086 ± 0.767 |
| PRF-fit source offset from KIC position | 0.399 ± 0.718 | 0.56 | 0.396 ± 0.717 | -0.050 ± 0.767 |
| photometric centroid source offset | 0.66 ± 1.31 | 0.50 | 0.32 ± 1.26 | 0.58 ± 1.33 |

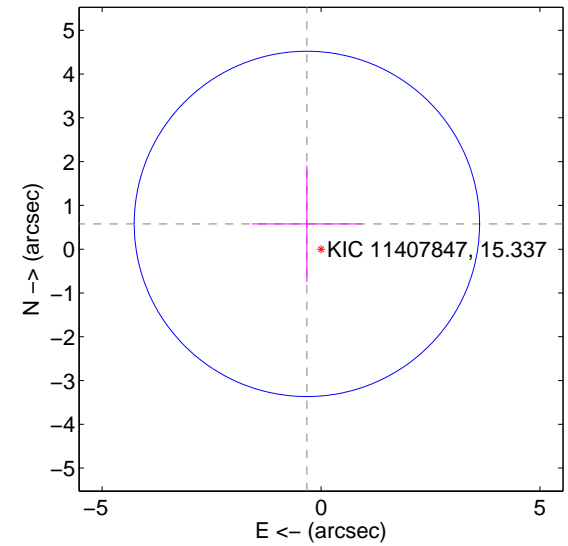
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

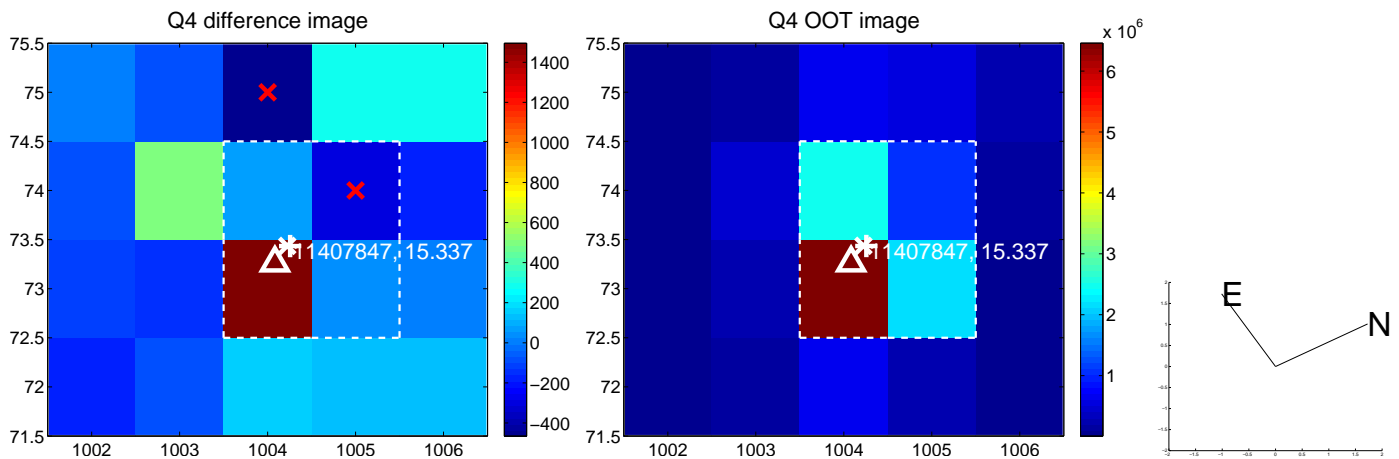
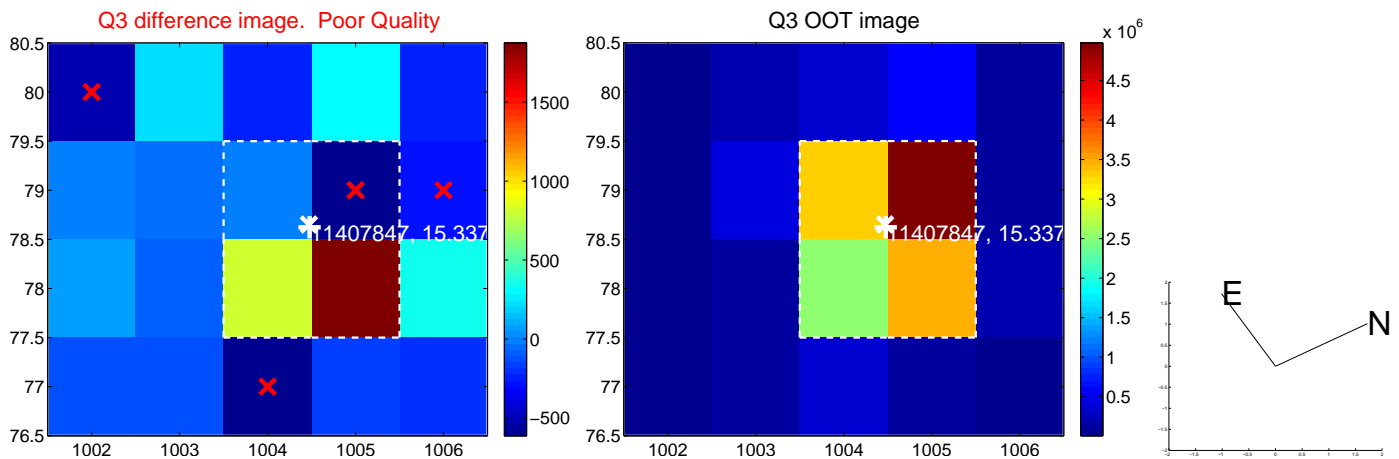
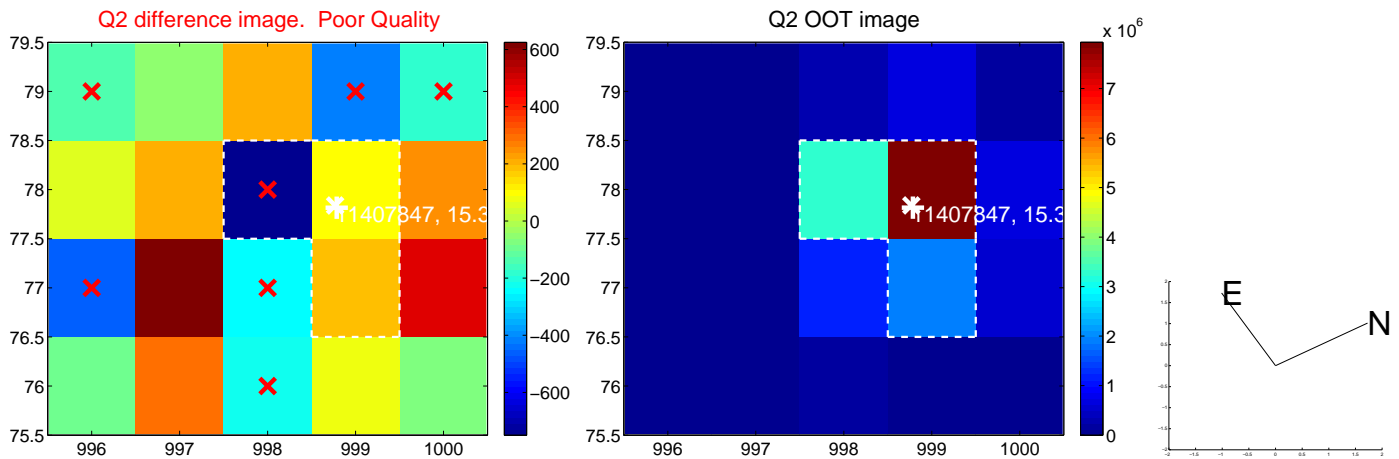
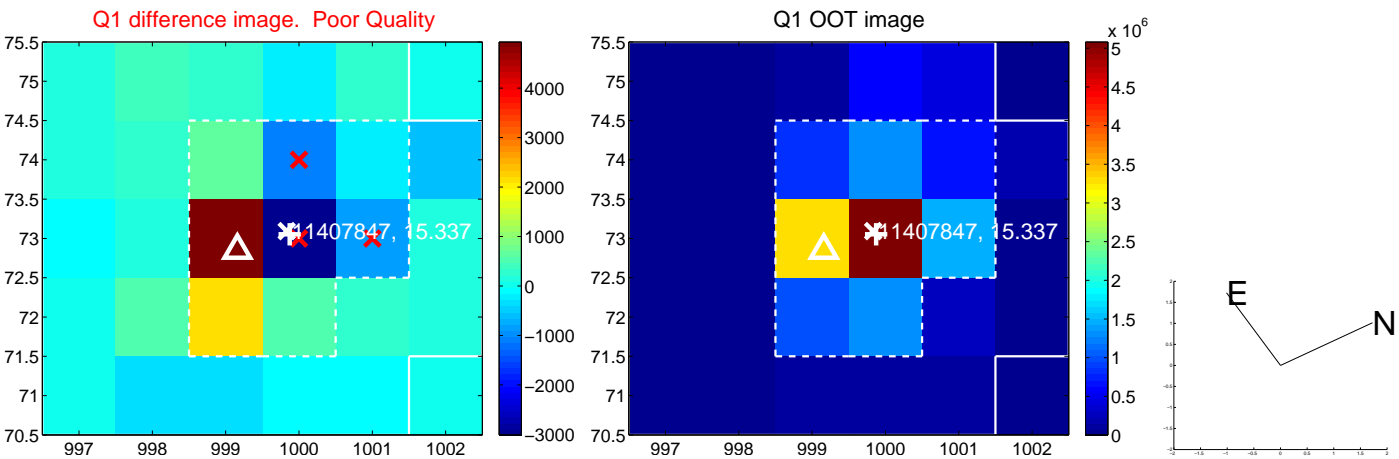


offset from photometric centroids

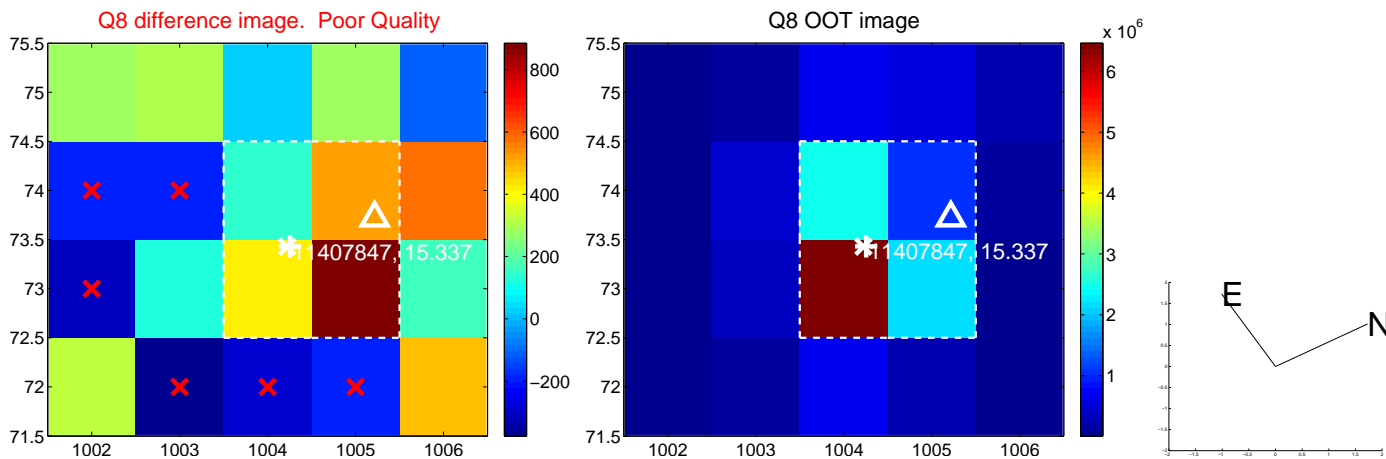
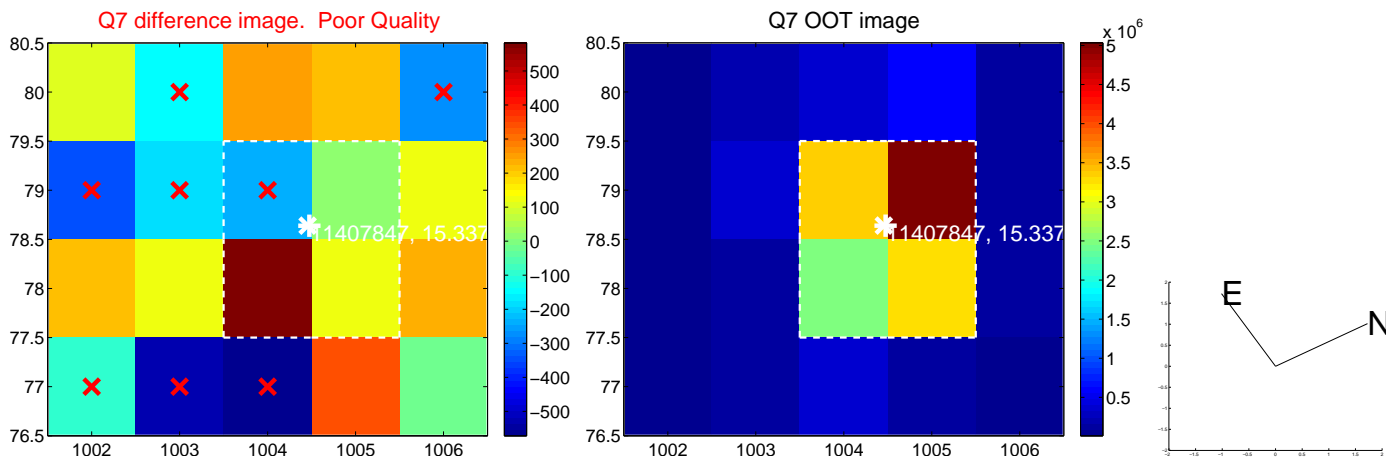
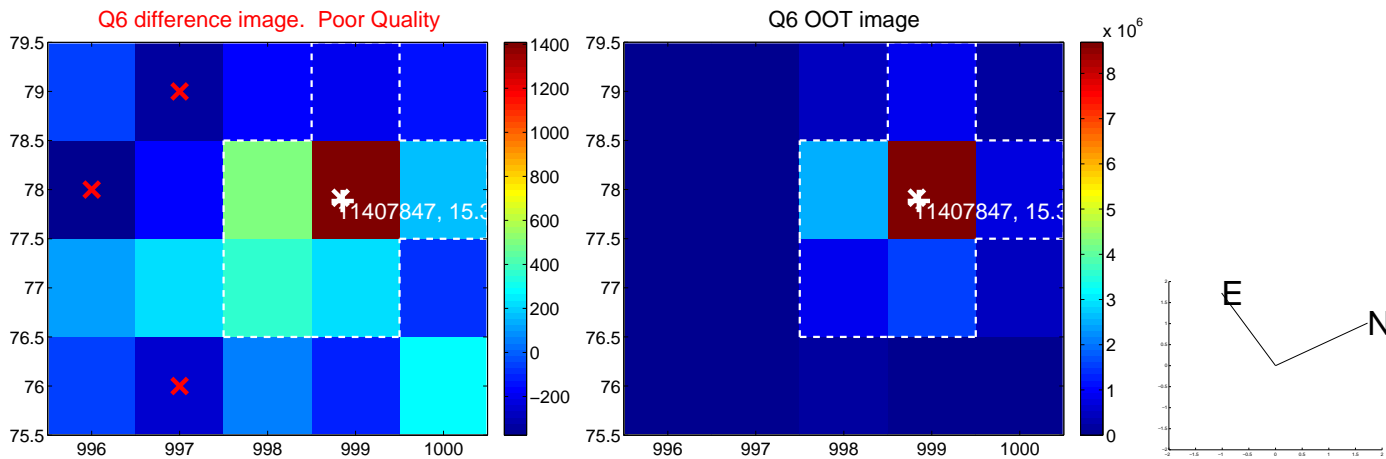
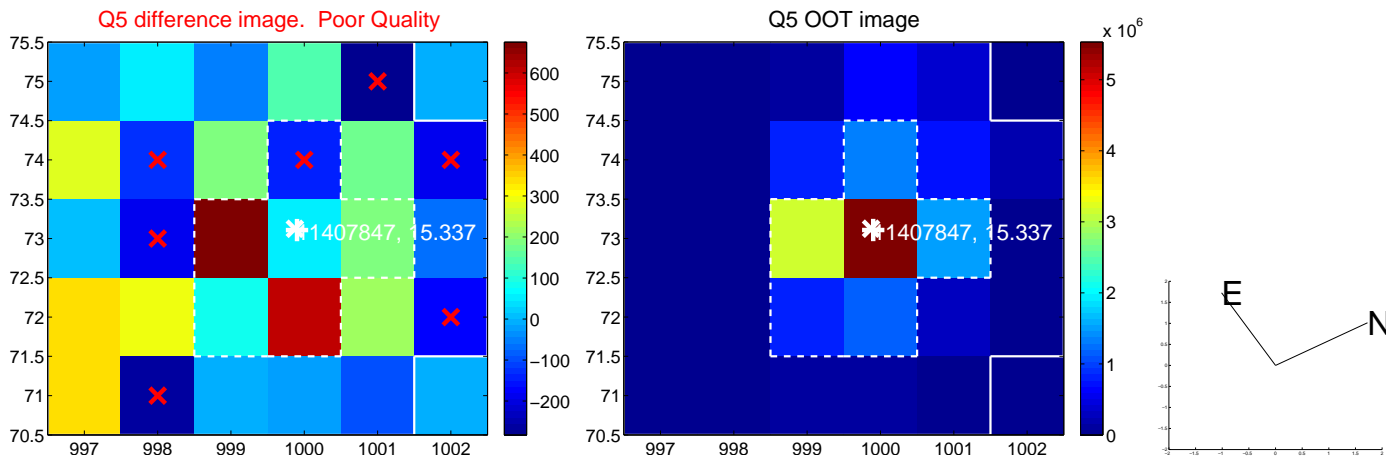


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

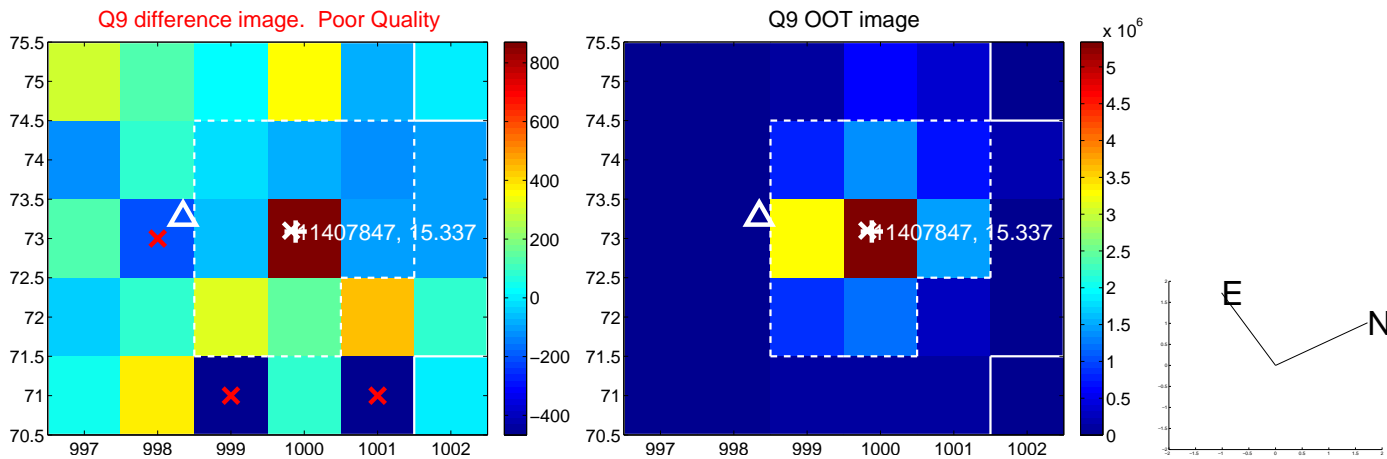
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



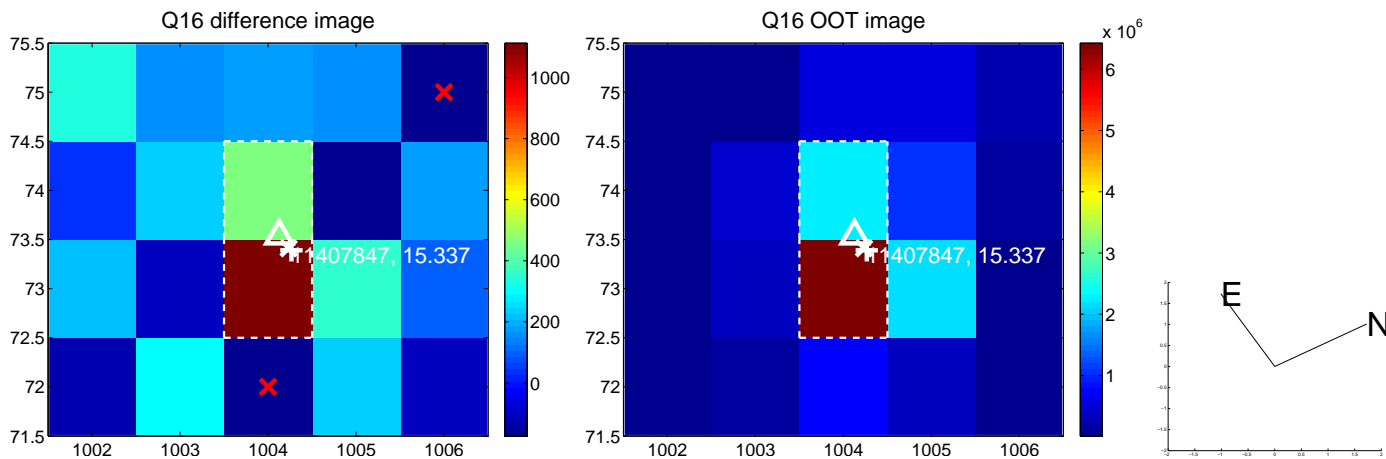
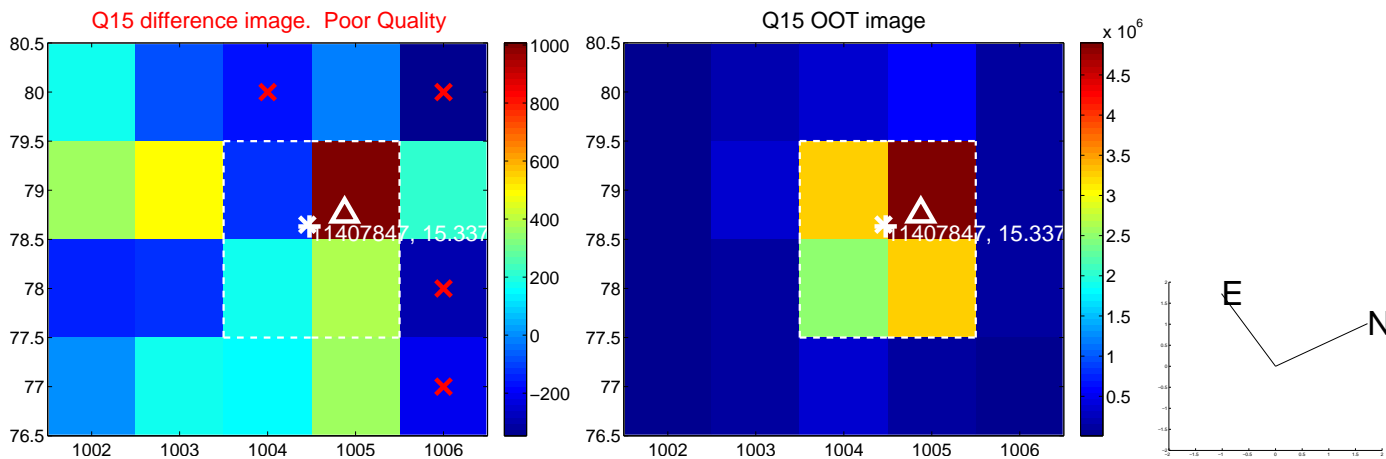
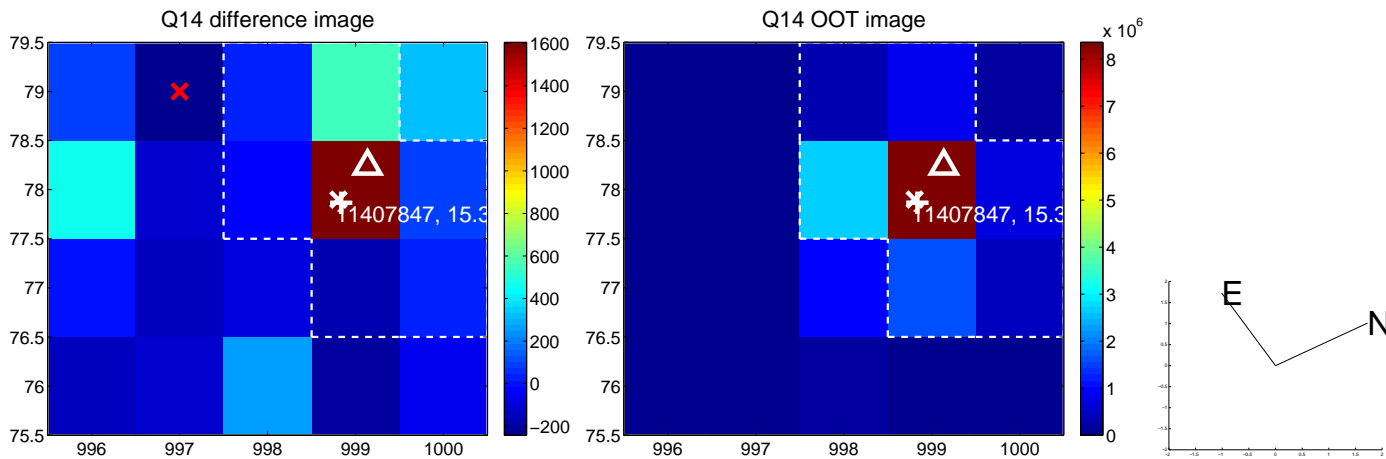
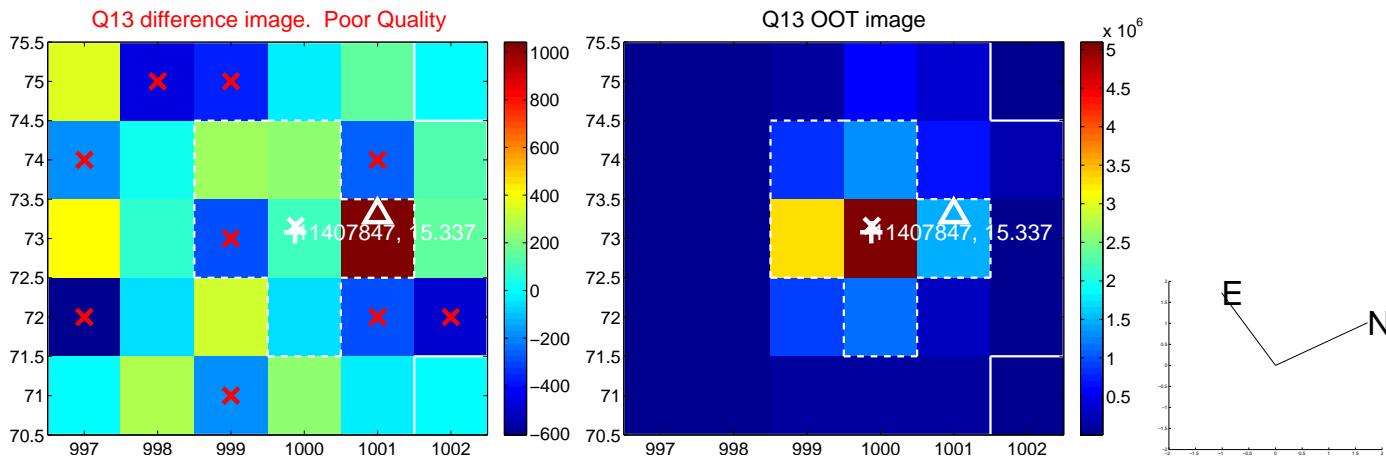
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



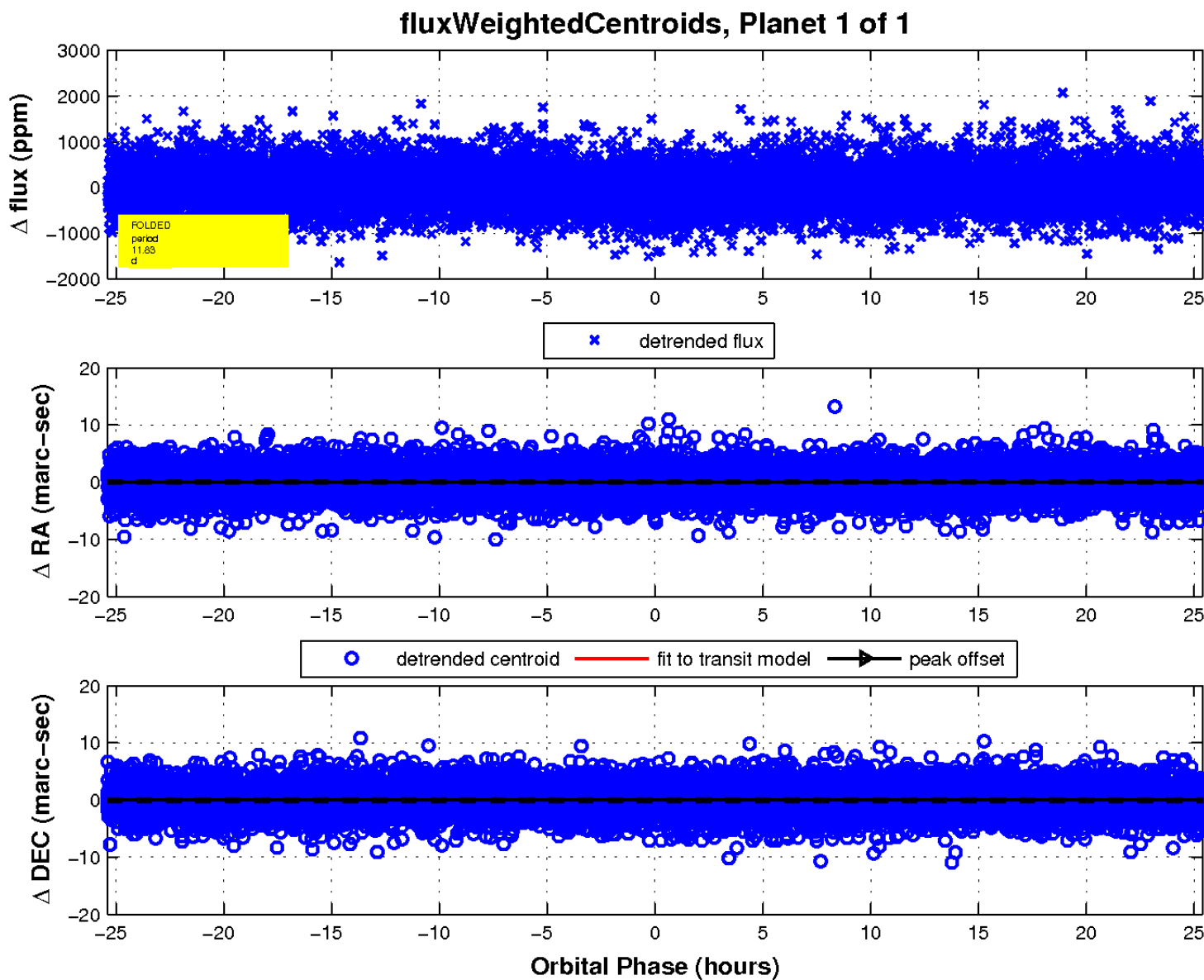
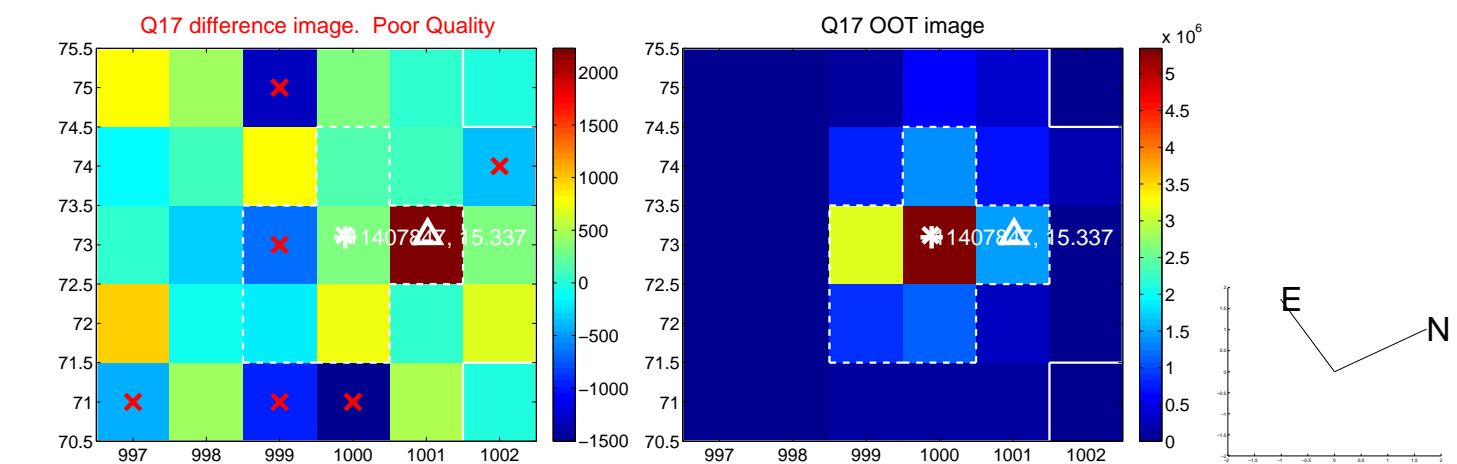
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

