

KIC 011720438

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 011720438-01 | OBS | No | 3.626577 | 131.726545 | 11.8 | 25.676 | 7.2 | 5.1 | 1.79 | 6940 | 0.67 | 3023.86 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|----------|
| 011720438-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

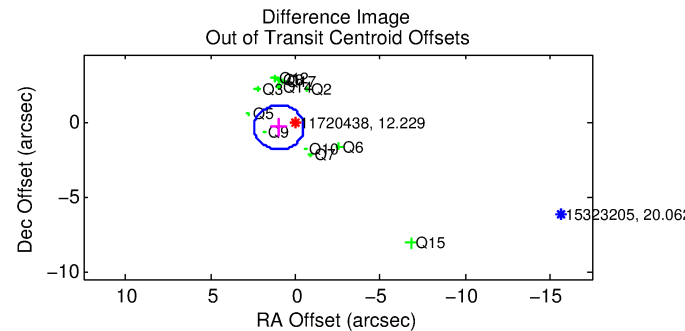
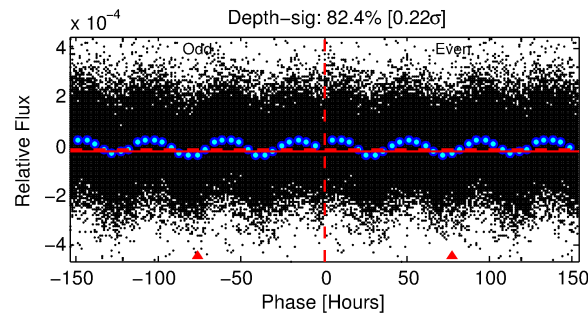
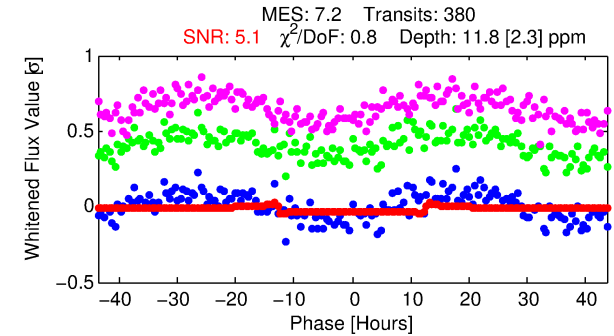
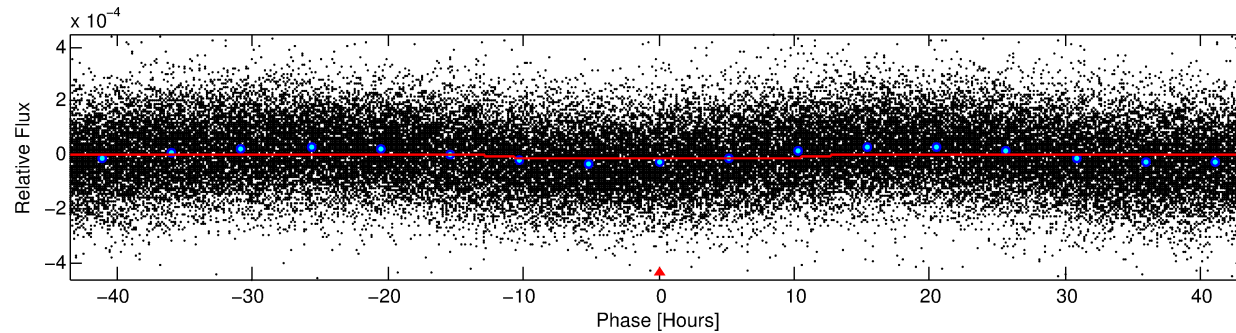
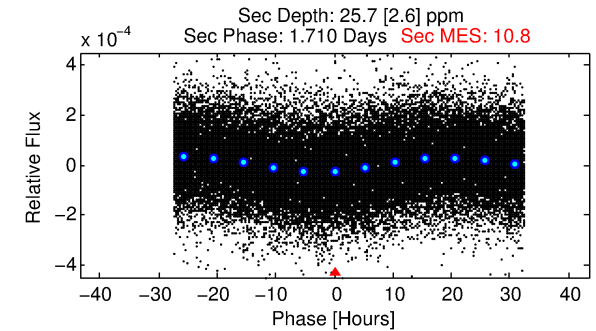
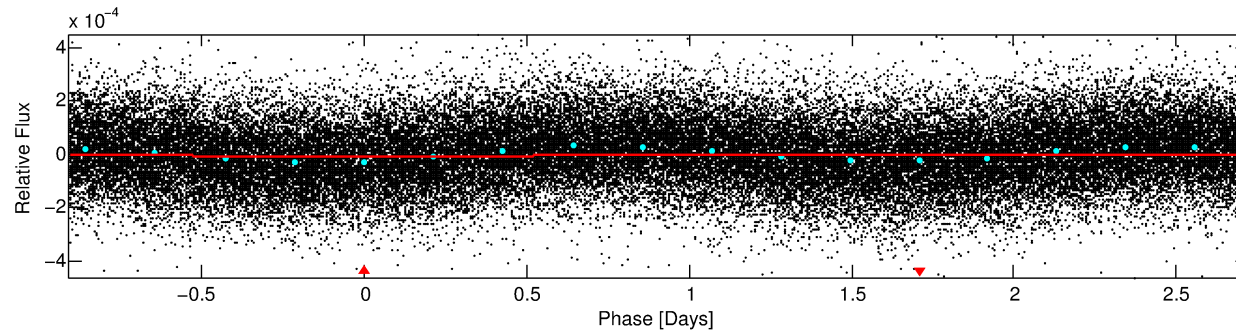
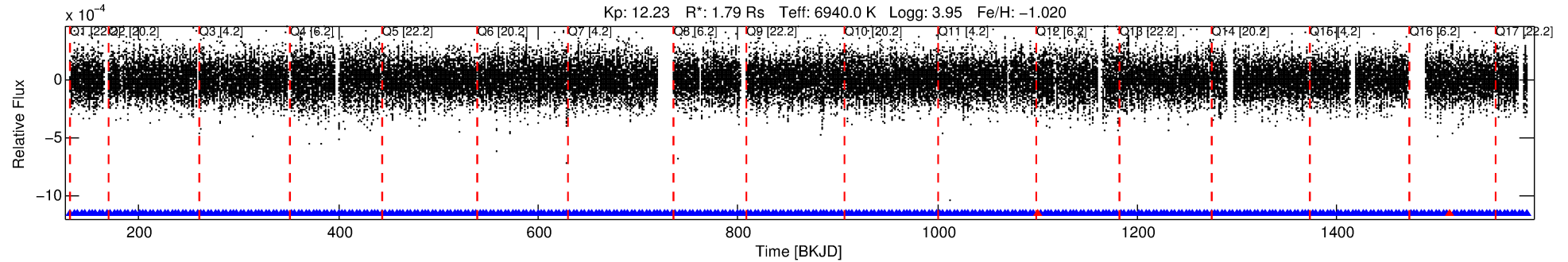
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011720438-01

No Significant Match Found

DV One-Page Summary

KIC: 11720438 Candidate: 1 of 1 Period: 3.627 d



DV Fit Results:

Period = 3.62658 [0.00008] d
Epoch = 131.7265 [0.0140] BKJD
Rp/R* = 0.0034 [0.0011]
a/R* = 1.12 [0.41]
b = 0.77 [1.03]
Seff = 3023.86 [1632.85]
Teq = 1891 [255] K
Rp = 0.67 [0.31] Re
a = 0.0470 [0.0153] AU
Ag = 69.17 [58.12] [1.17σ]
Teffp = 8431 [1414] K [4.55σ]

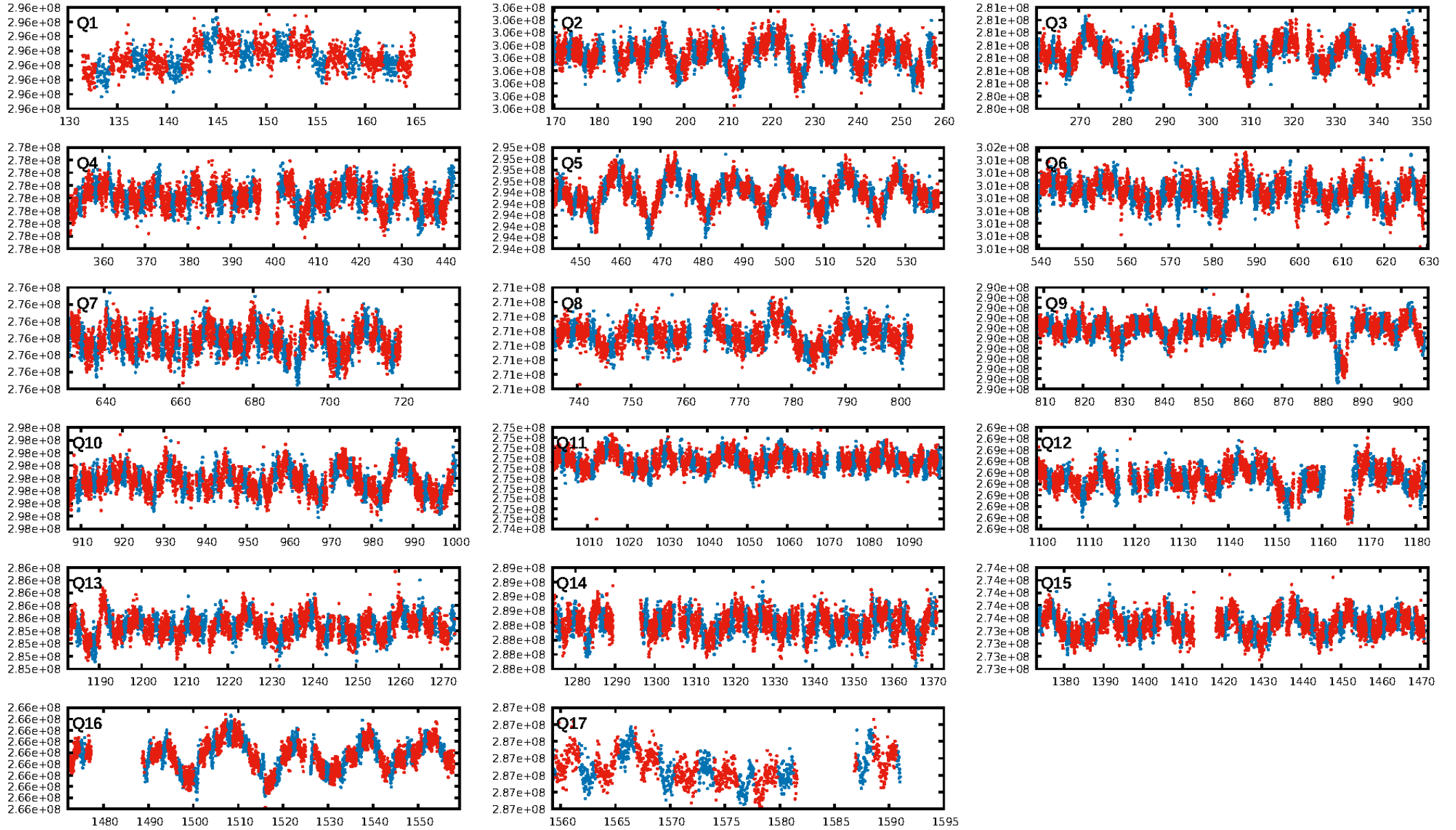
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [361/363]
GhostDiagnostic-chr: 2.129
Centroid-sig: 7.8%
Centroid-so: 1.352 arcsec [1.22σ]
OotOffset-rm: 1.042 arcsec [2.12σ]
KicOffset-rm: 1.086 arcsec [2.25σ]
OotOffset-st: 4/3/2/3 [12]
KicOffset-st: 4/3/2/3 [12]
DiffImageQuality-fgm: 0.58 [7/12]
DiffImageOverlap-fno: 1.00 [17/17]

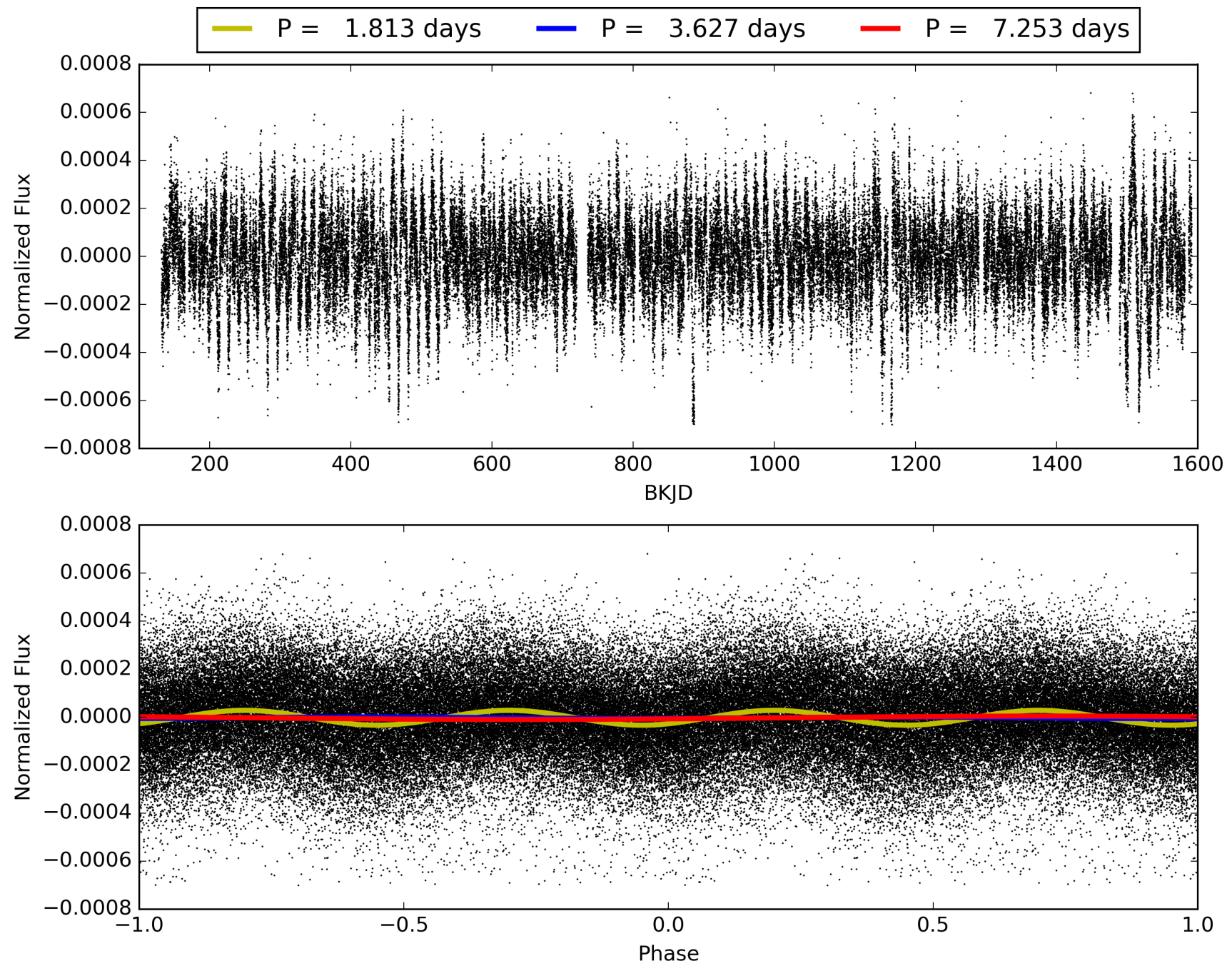
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:30:45 Z

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

TCE 011720438-01, PDC Light Curves

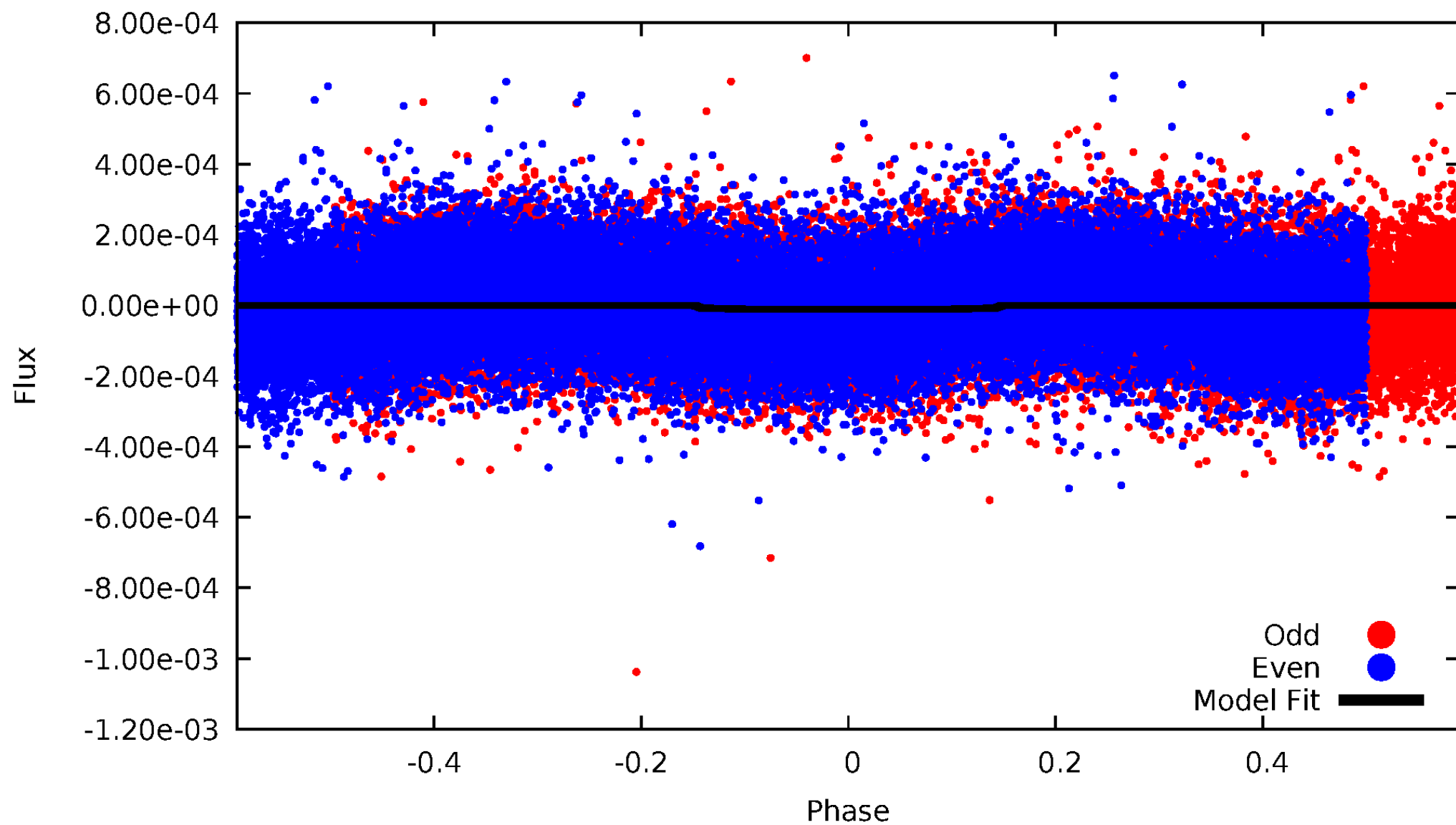


TCE 011720438-01



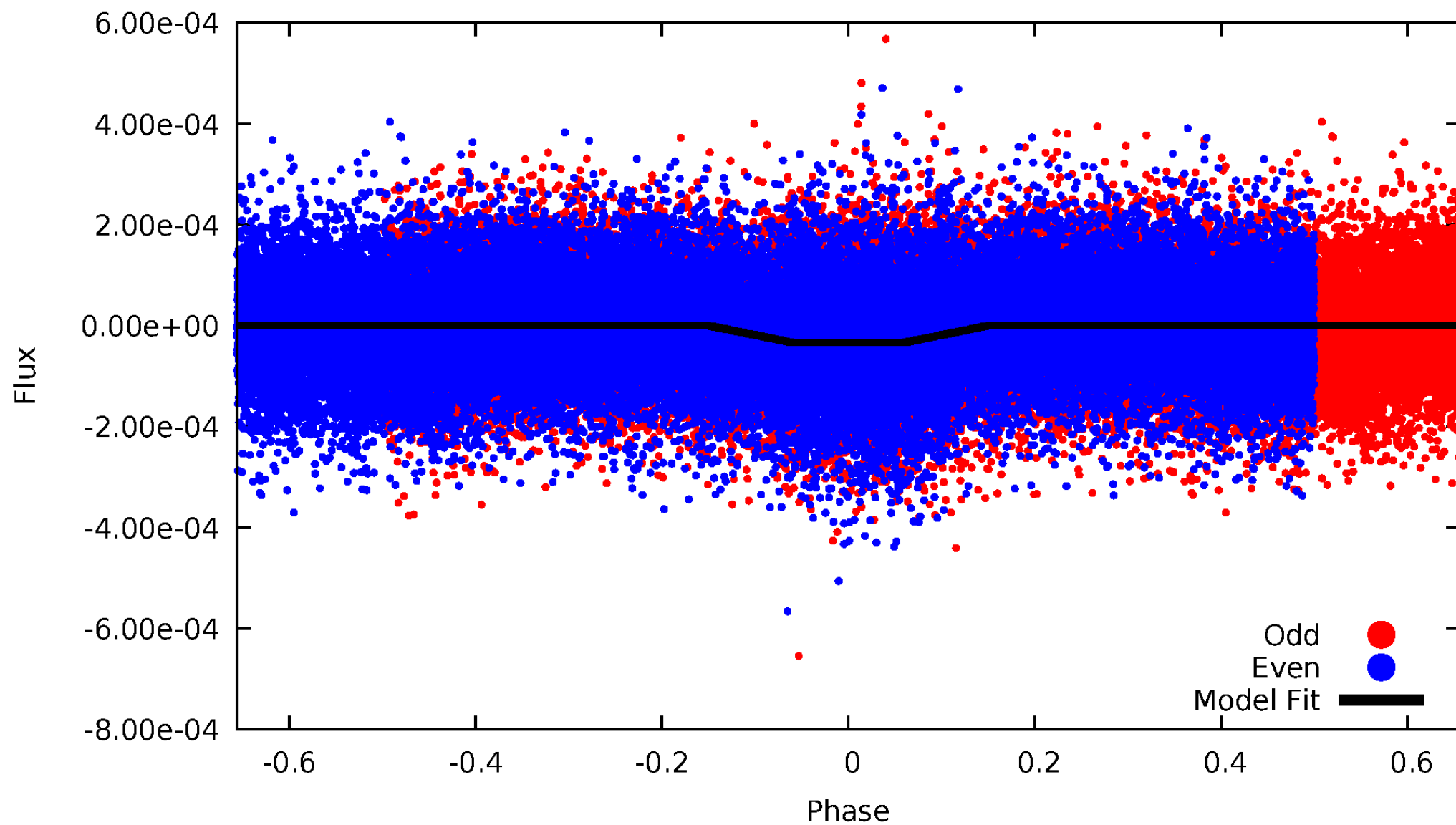
DV Odd/Even

TCE 011720438-01



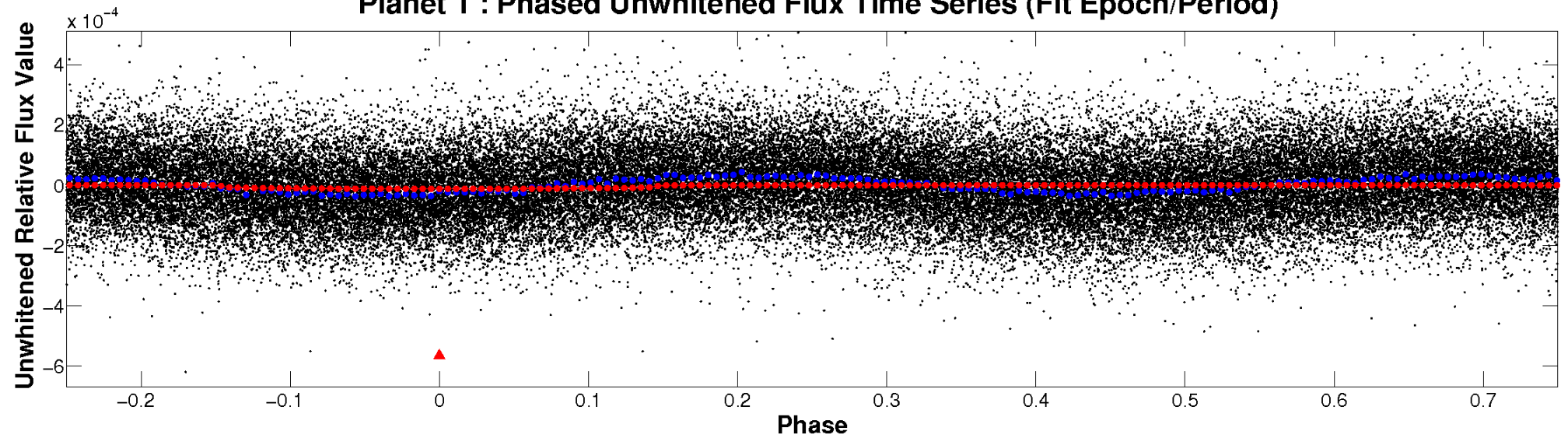
ALT Odd/Even

TCE 011720438-01

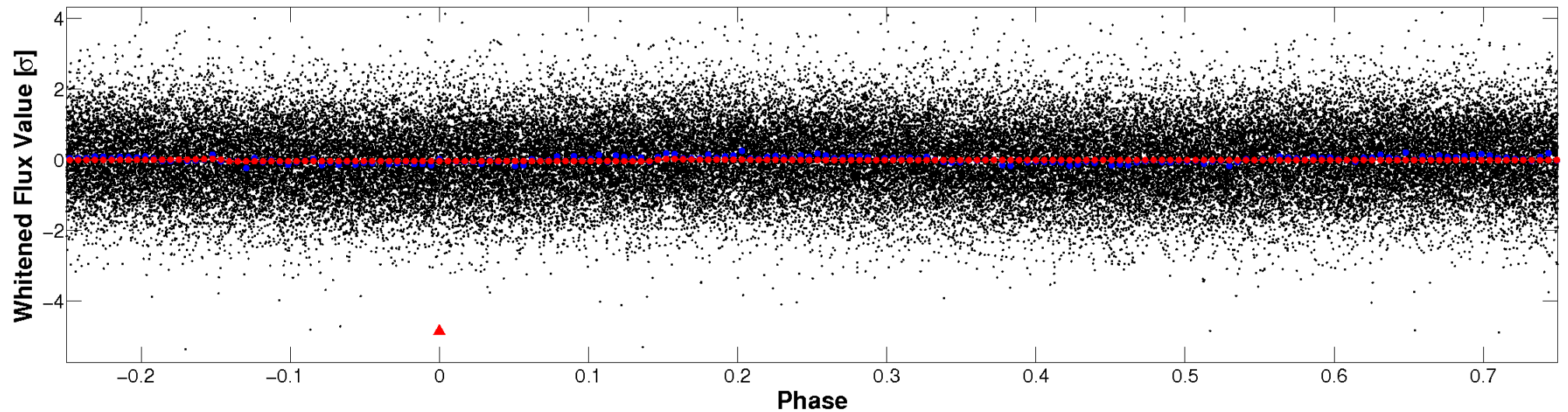


Non-Whitened Vs. Whitened Light Curve

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

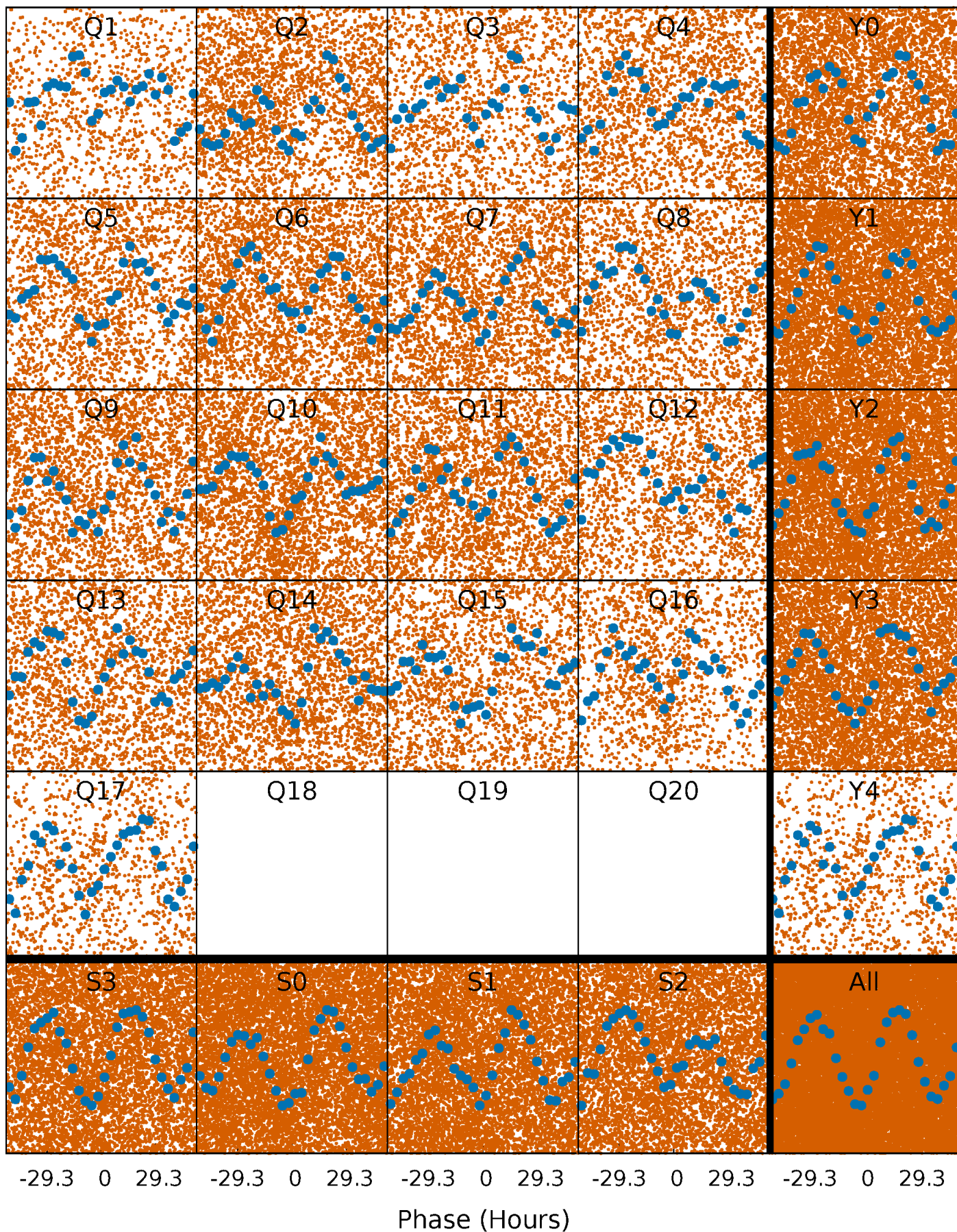


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



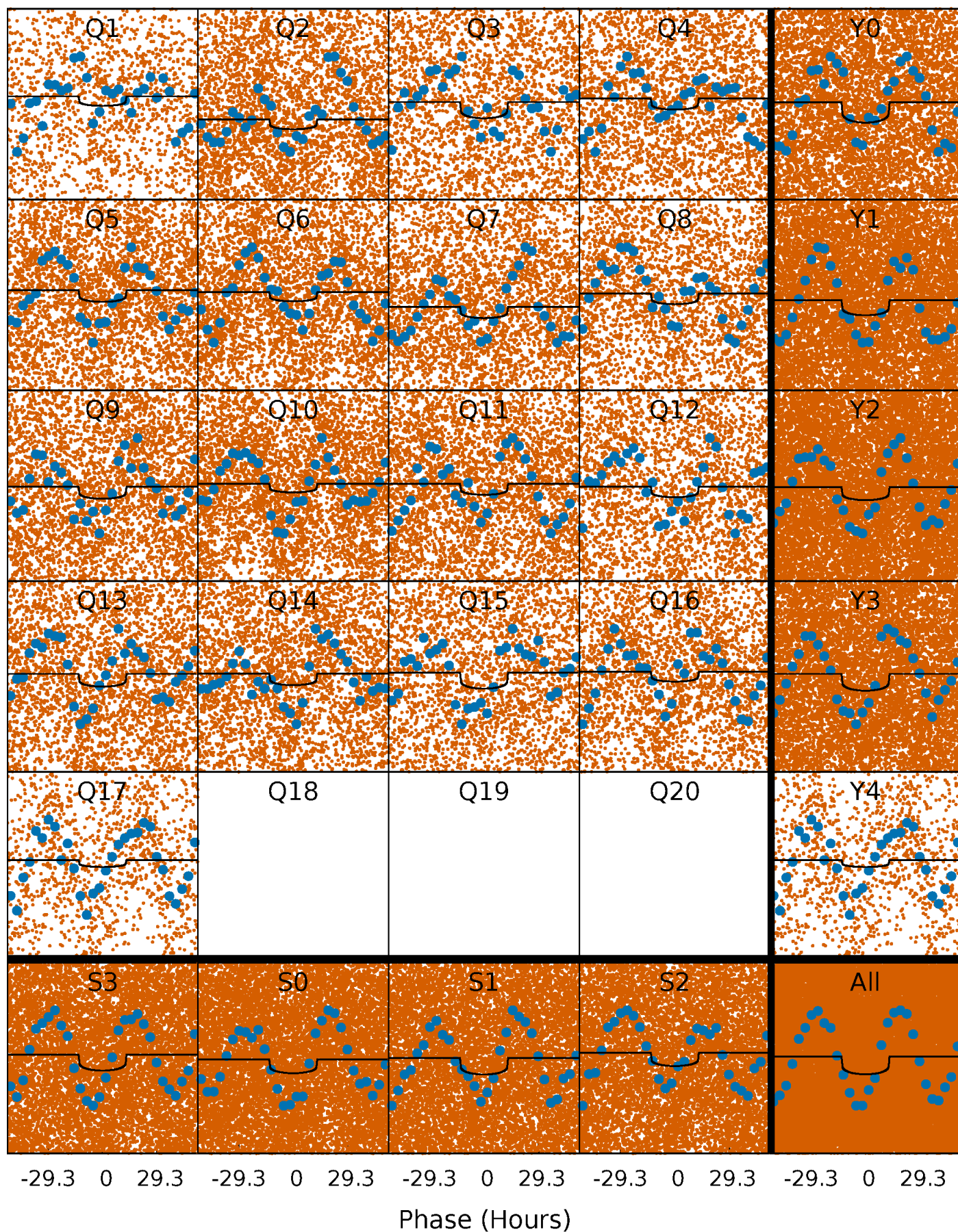
PDC Quarter-Phased Transit Curves

TCE 011720438-01 P= 3.626577 Days $T_0=131.726545$ (BKJD)



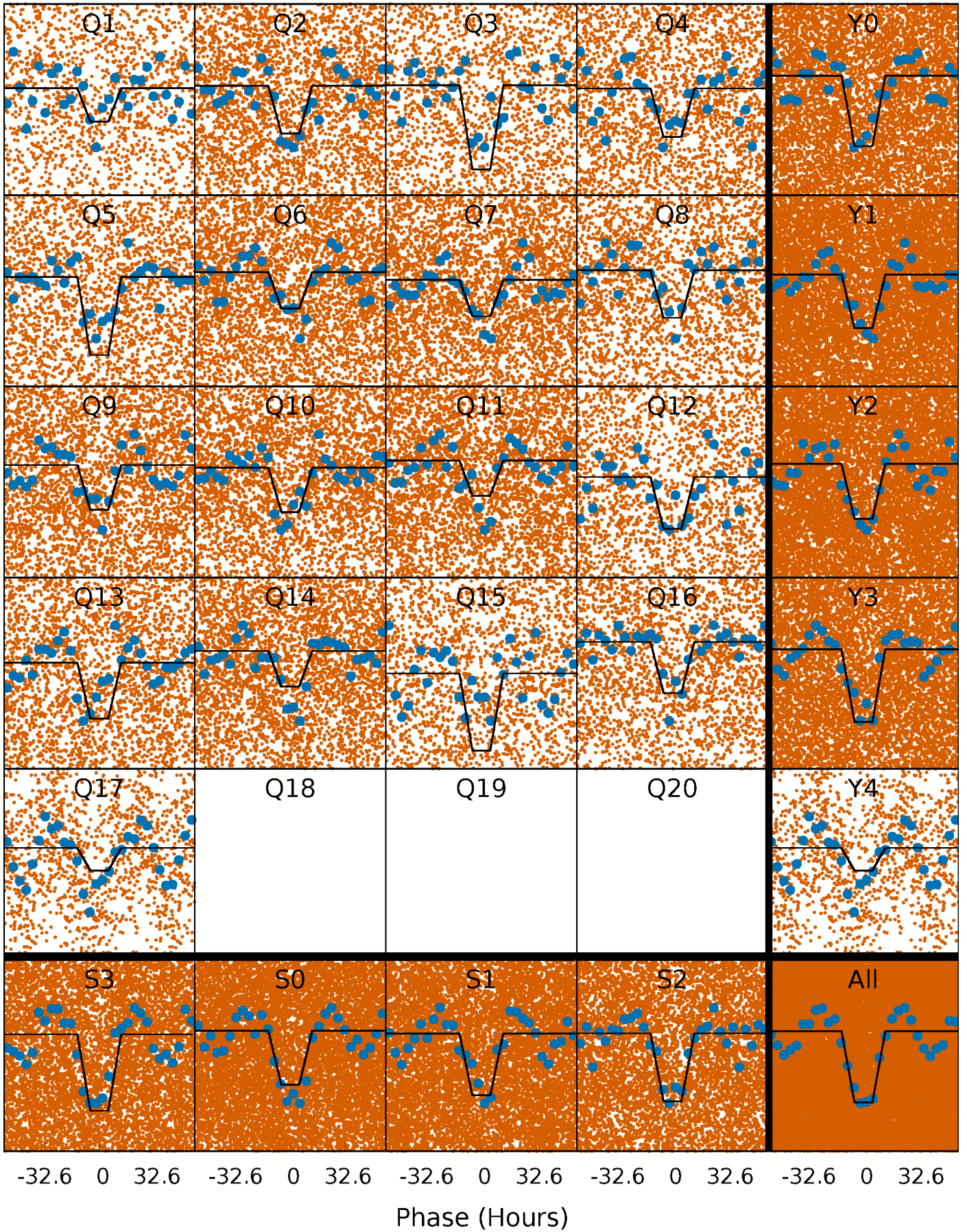
DV Quarter-Phased Transit Curves

TCE 011720438-01 P= 3.626577 Days $T_0=131.726545$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

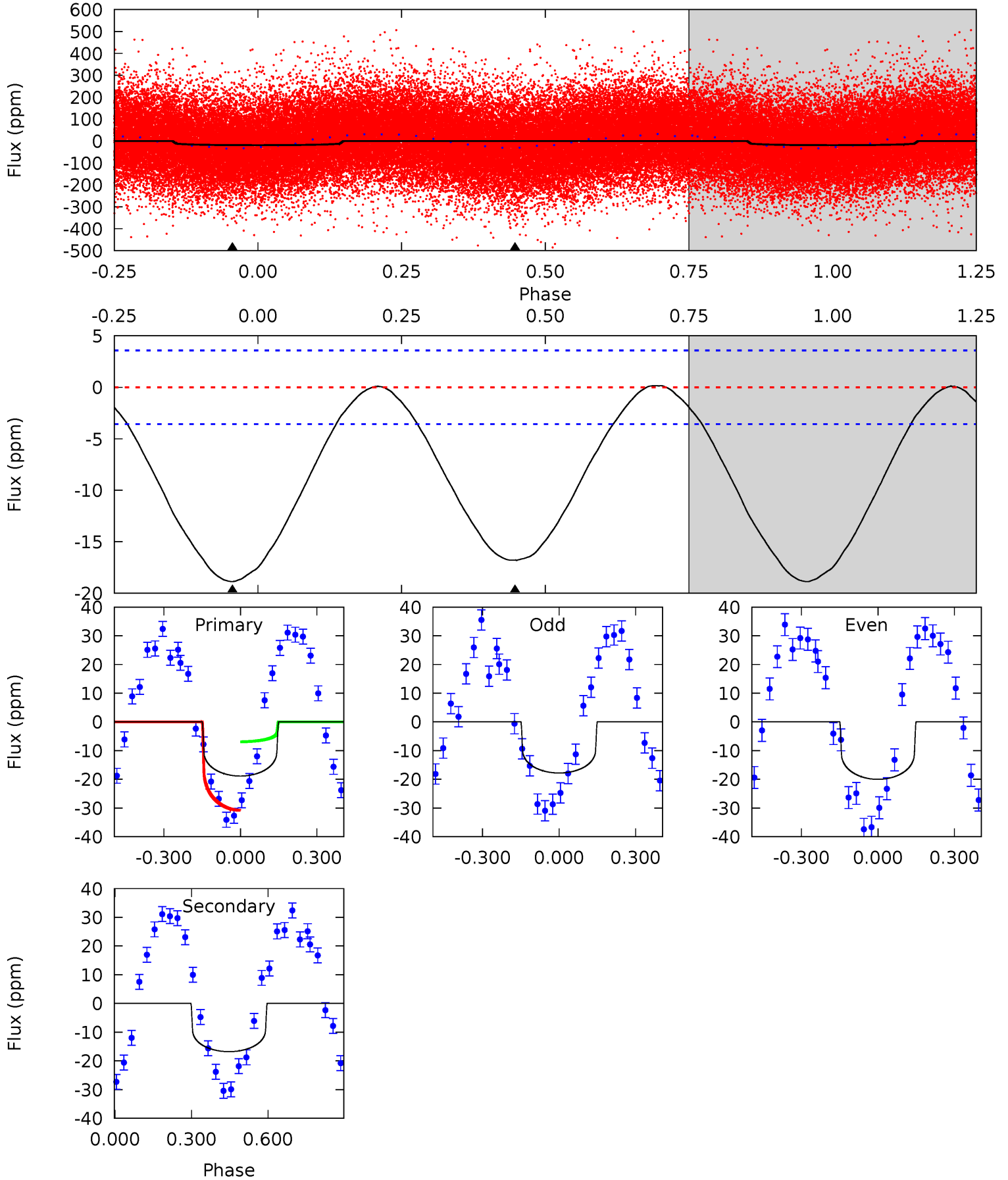
TCE 011720438-01 P= 3.626546 Days $T_0=131.652018$ (BKJD)



DV Model-Shift Uniqueness Test

011720438-01, P = 3.626577 Days, E = 128.099968 Days

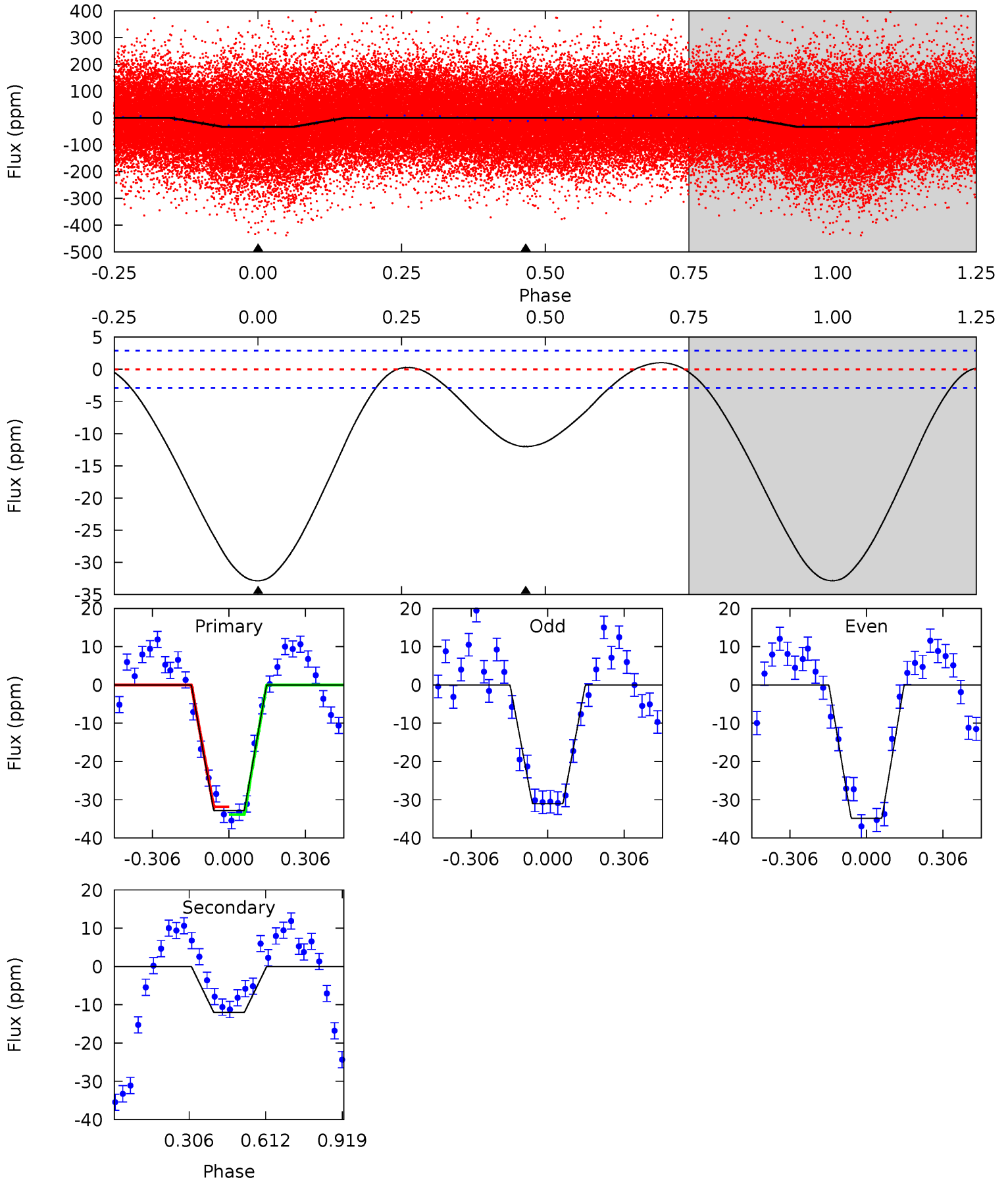
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 22.8 | 20.3 | 0 | 0 | 4.33 | 1.04 | 0.31 | 22.8 | 22.8 | 20.3 | 20.3 | 1.33 | 0.96 | 0.01 | 14.7 |



Alt Model-Shift Uniqueness Test

011720438-01, P = 3.626546 Days, E = 128.025472 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 49.3 | 18.0 | 0 | 0 | 4.32 | 1.02 | 1.52 | 49.3 | 49.3 | 18.0 | 18.0 | 2.89 | 1.02 | 0.03 | 1.49 |



Stellar Parameters For KIC 011720438

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6940^{+189}_{-231} | $3.953^{+0.308}_{-0.103}$ | $-1.020^{+0.350}_{-0.250}$ | $1.792^{+0.324}_{-0.603}$ | $1.052^{+0.143}_{-0.117}$ | $0.257^{+0.536}_{-0.094}$ |
| | +3%/-3% | +8%/-3% | +34%/-25% | +18%/-34% | +14%/-11% | +208%/-36% |
| Source | PHO1 | FLK73 | 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 011720438-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-------------|------------------------|----------------------|------------------------|------------------|
| DV | -17 ± 1 | $0.63^{+0.25}_{-0.22}$ | 2598^{+165}_{-245} | 7653^{+2386}_{-1180} | 52^{+65}_{-25} |
| Alt. | -12 ± 1 | $1.07^{+0.29}_{-0.24}$ | 2599^{+157}_{-229} | 5357^{+600}_{-434} | 13^{+9}_{-5} |

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 $A_{obs} \gg 1.0$

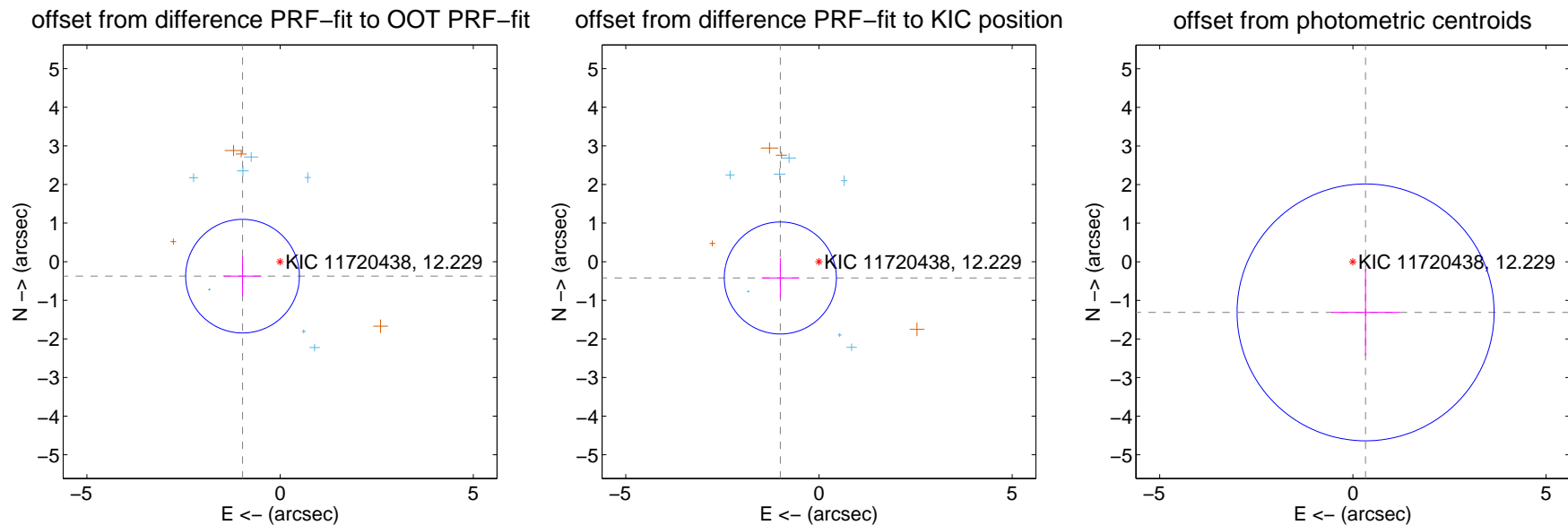
DV Centroid Data

Supplemental centroid analysis for 011720438-01. Kepler magnitude: 12.23. Transit SNR 5.13

There are 7 quarters with good PRF difference image offsets

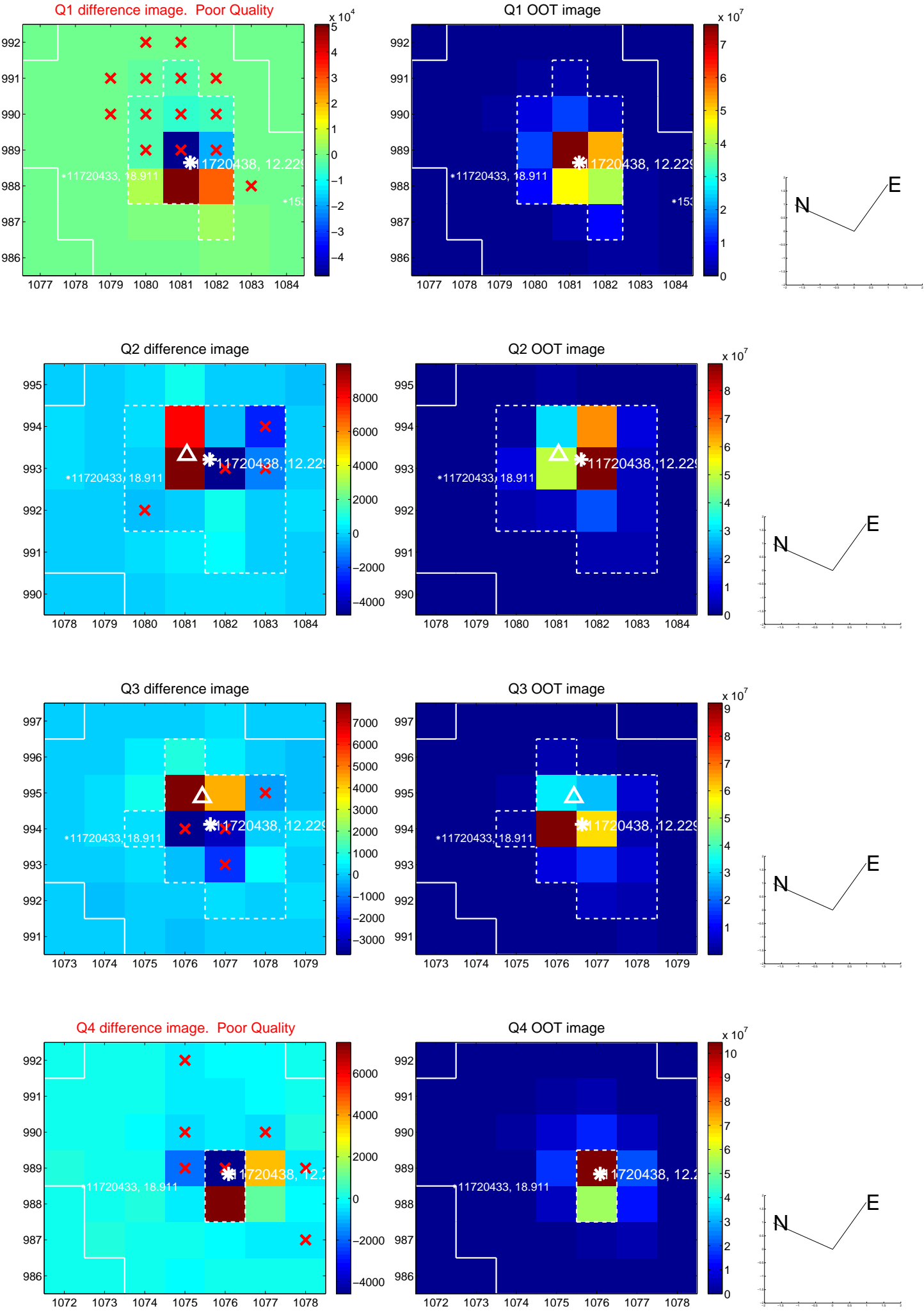
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 1.042 ± 0.491 | 2.12 | 0.972 ± 0.488 | -0.374 ± 0.511 |
| PRF-fit source offset from KIC position | 1.086 ± 0.484 | 2.25 | 1.000 ± 0.478 | -0.422 ± 0.514 |
| photometric centroid source offset | 1.35 ± 1.11 | 1.22 | -0.33 ± 0.88 | -1.31 ± 1.12 |

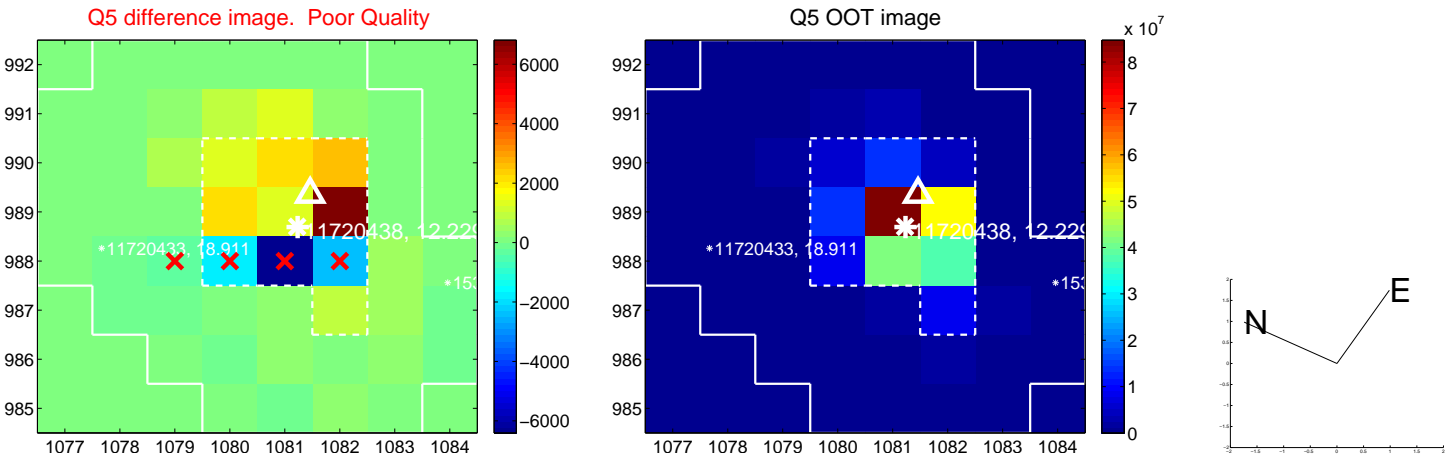


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

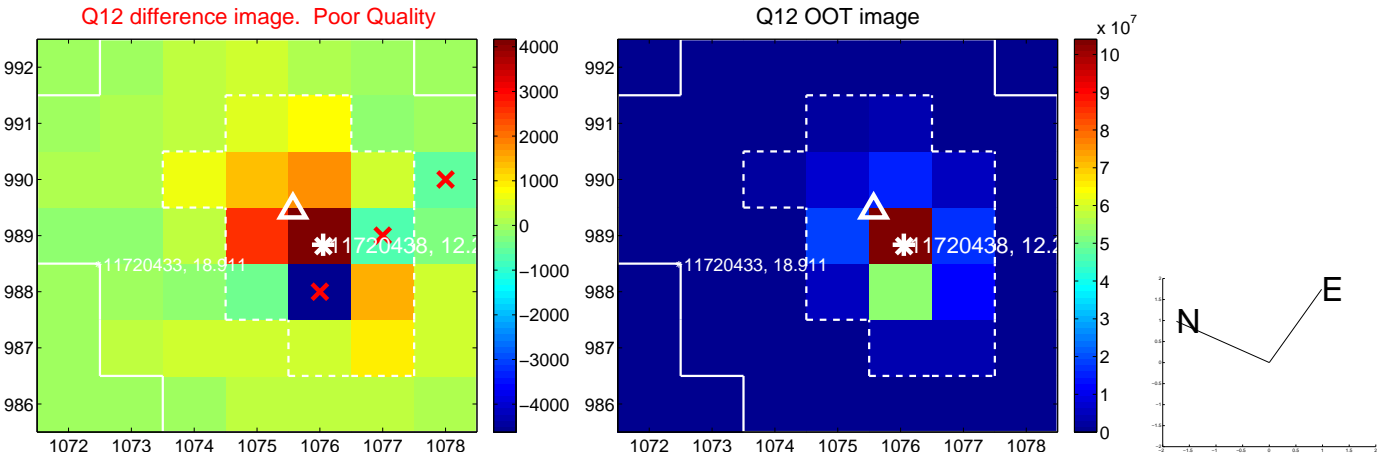
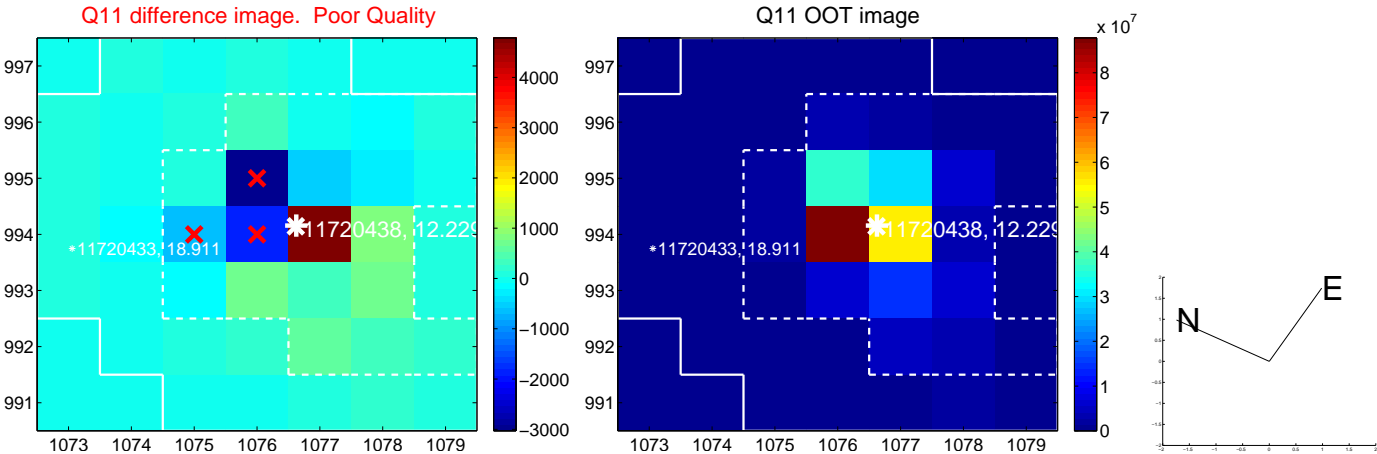
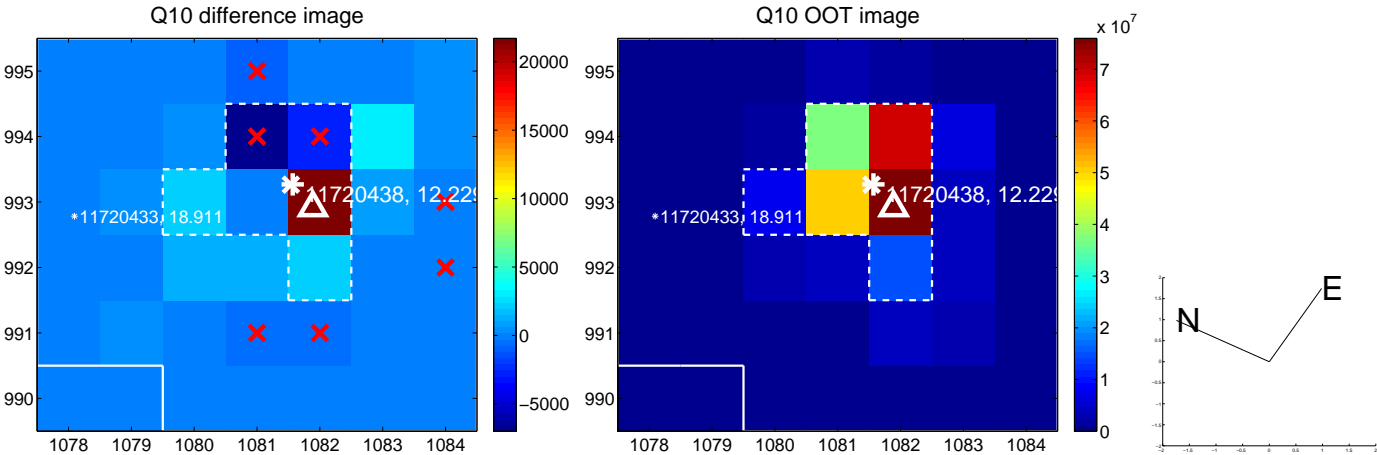
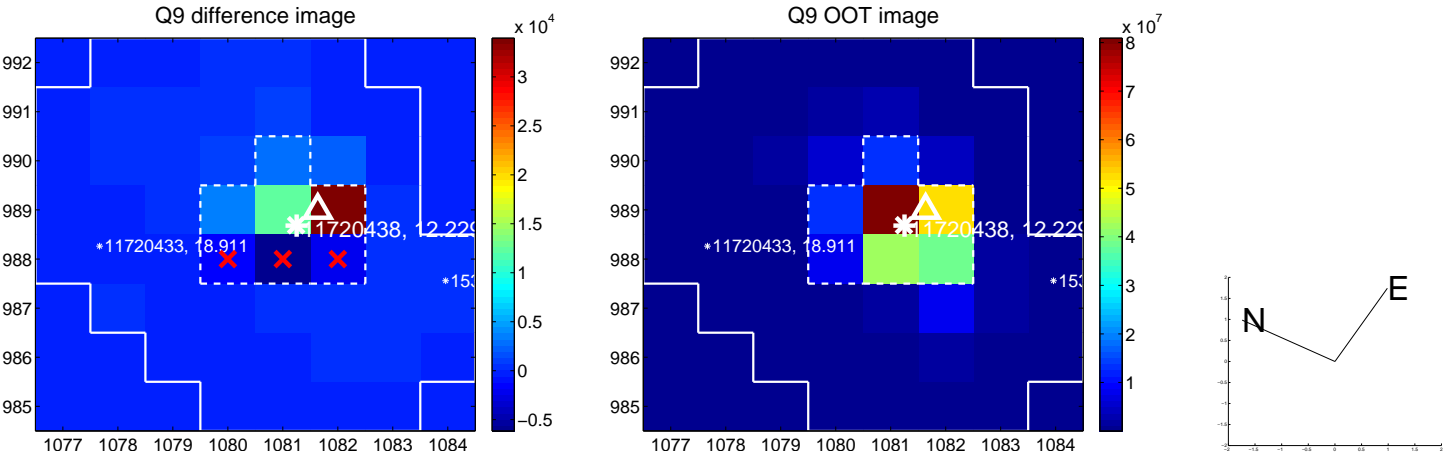
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



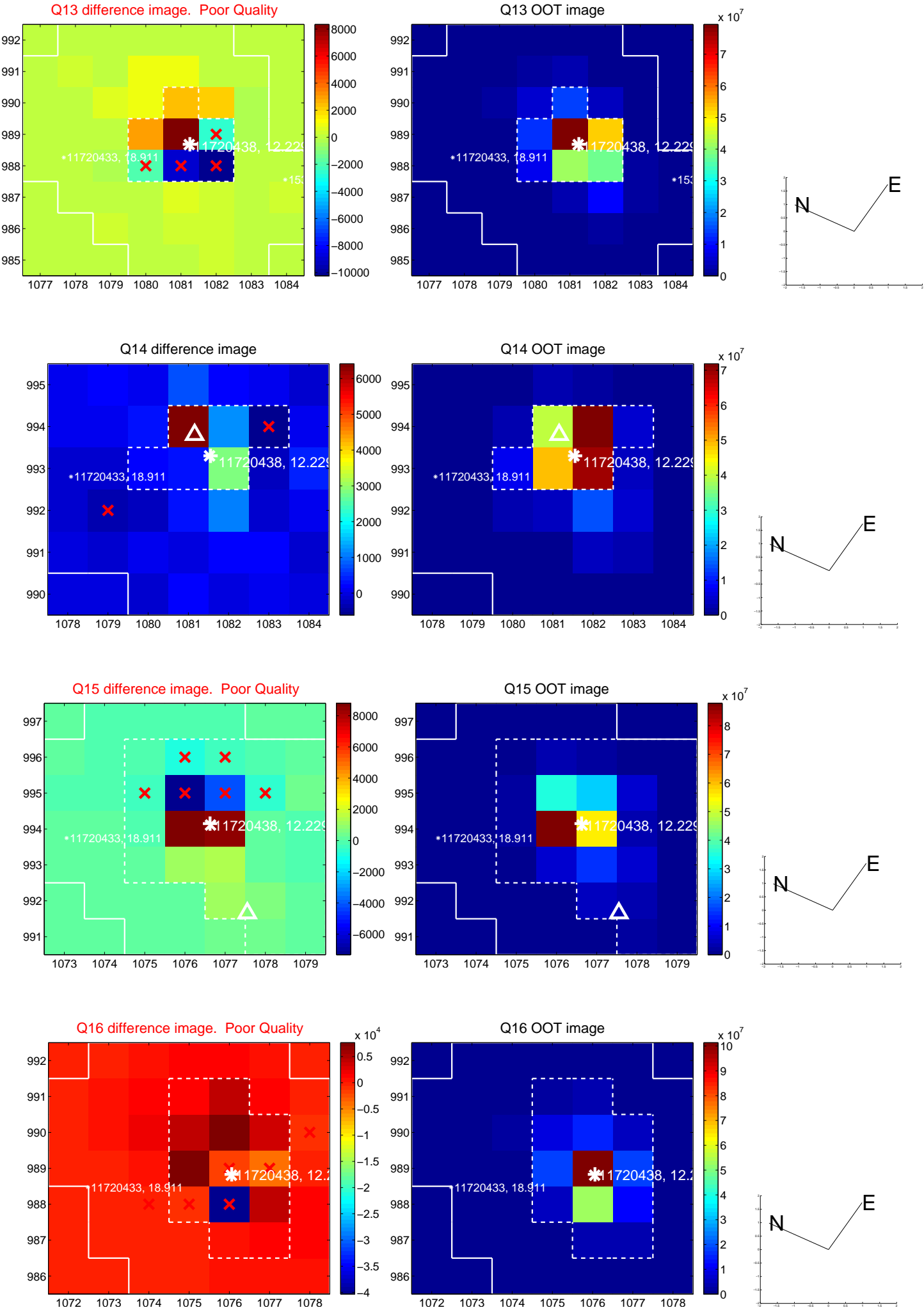
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



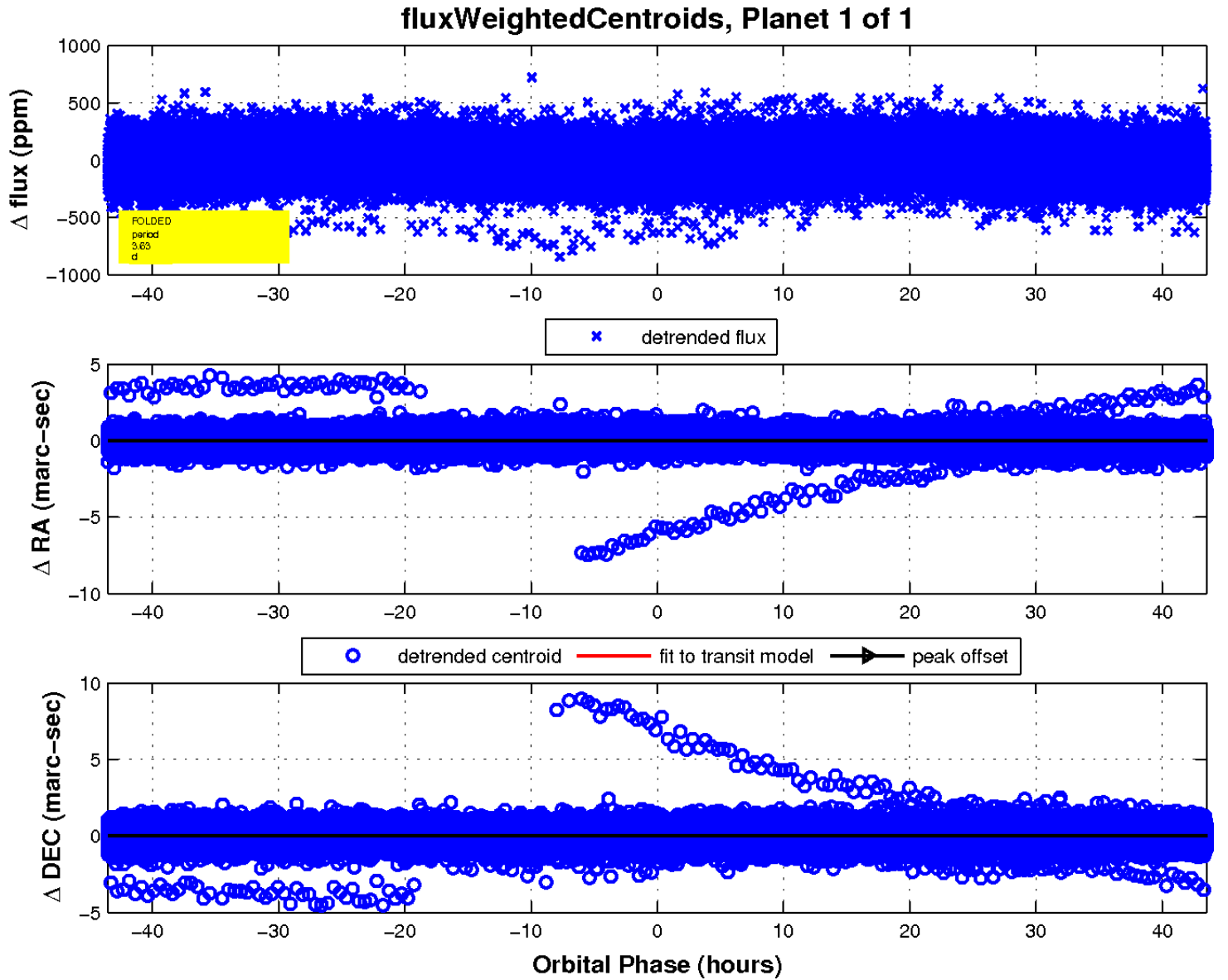
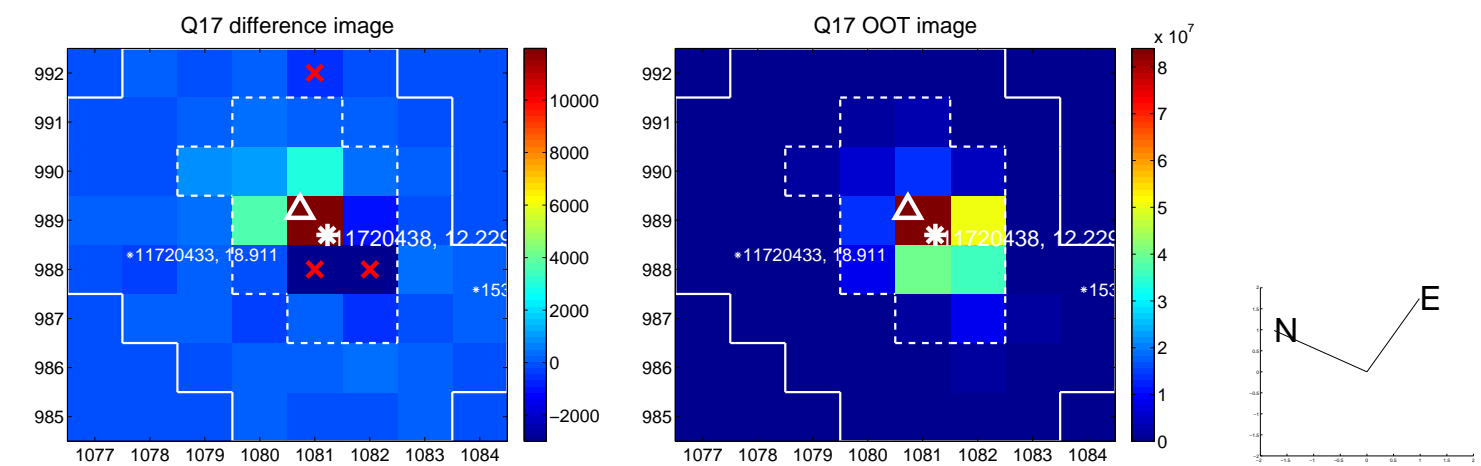
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

