

KIC 006123861

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|------|-----------------------------|-----------------|------------------------|------------------------|
| 006123861-01 | OBS | No | 3.628732 | 132.234055 | 27.7 | 26.300 | 7.2 | 10.2 | 0.78 | 5509 | 0.41 | 297.66 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|-------------------------------|
| 006123861-01 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | LPP_DV—CENT_UNRESOLVED_OFFSET |

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

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

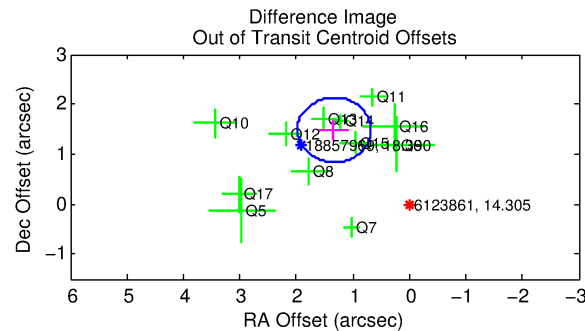
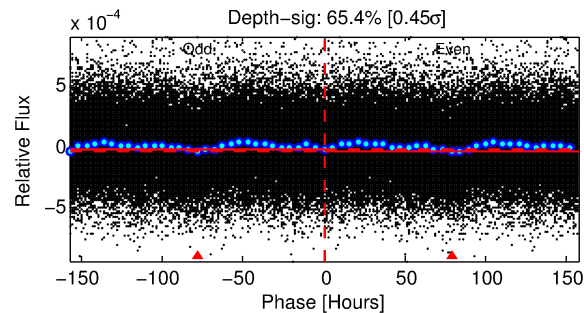
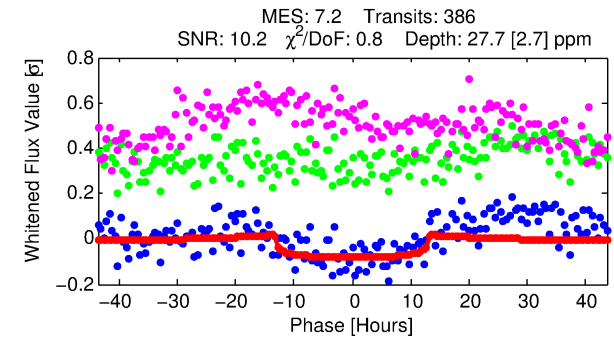
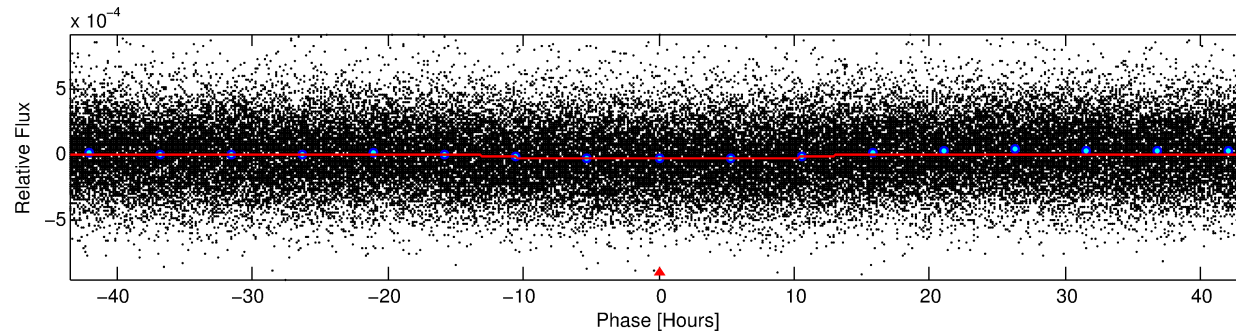
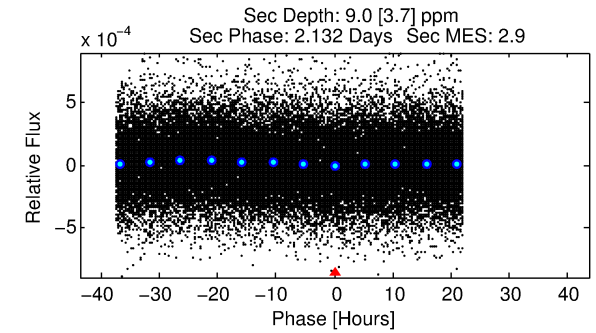
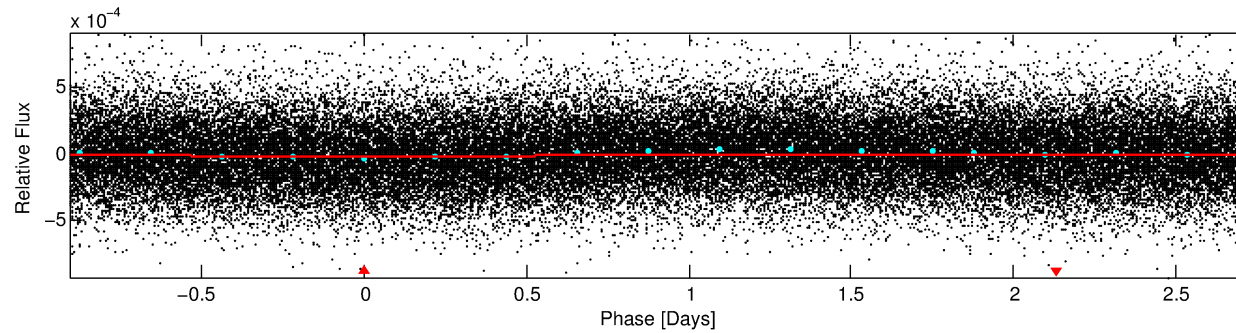
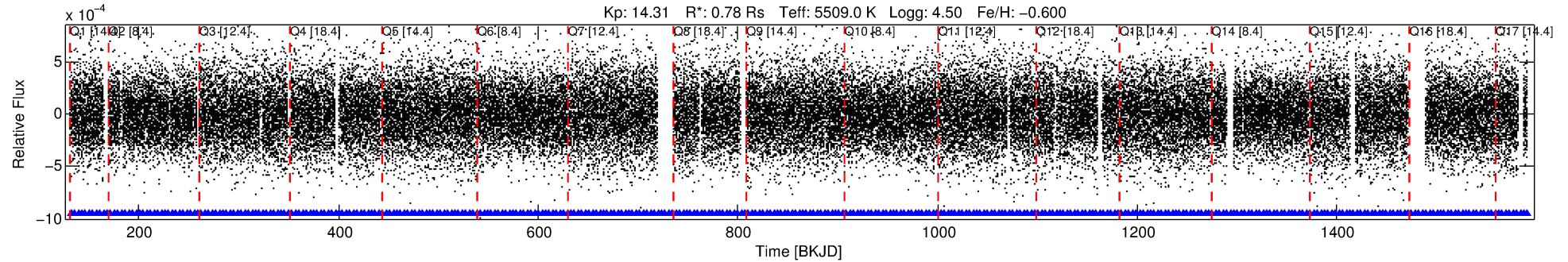
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006123861-01

No Significant Match Found

DV One-Page Summary

KIC: 6123861 Candidate: 1 of 1 Period: 3.629 d



DV Fit Results:

Period = 3.62873 [0.00010] d
Epoch = 132.2341 [0.0178] BKJD
Rp/R* = 0.0048 [0.0051]
a/R* = 1.24 [2.07]
b = 0.03 [142.58]
Seff = 297.66 [68.82]
Teq = 1059 [61] K
Rp = 0.41 [0.44] Re
a = 0.0413 [0.0055] AU
Ag = 50.66 [111.35] [0.45σ]
Teffp = 4369 [2394] K [1.38σ]

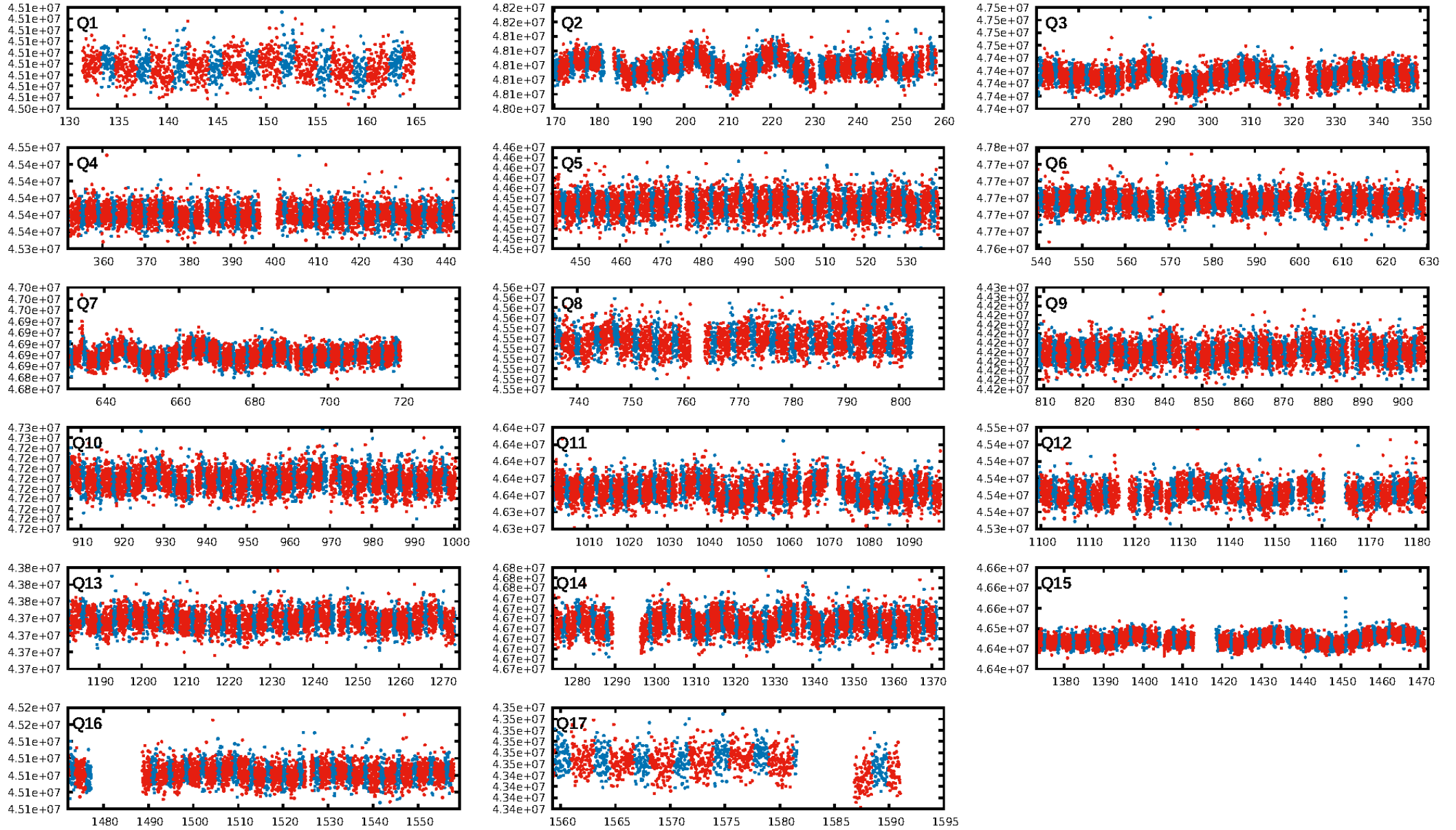
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [368/368]
GhostDiagnostic-chr: 1.206
Centroid-sig: 0.0%
Centroid-so: 3.960 arcsec [4.17σ]
OotOffset-rm: 1.998 arcsec [9.25σ]
KicOffset-rm: 1.962 arcsec [8.42σ]
OotOffset-st: 3/3/3 [12]
KicOffset-st: 3/3/3 [12]
DiffImageQuality-fgm: 0.75 [9/12]
DiffImageOverlap-fno: 1.00 [17/17]

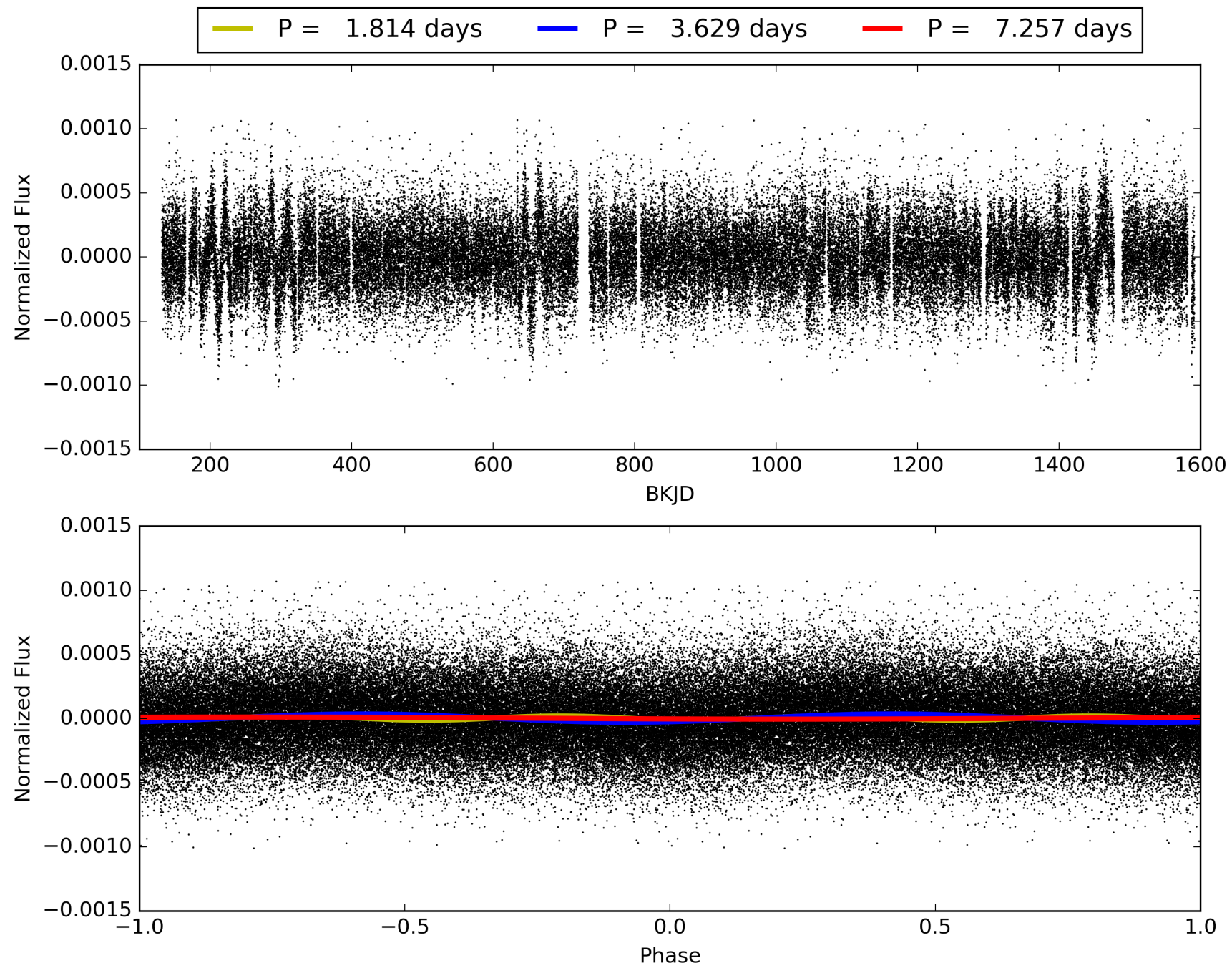
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:21:37 Z

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

TCE 006123861-01, PDC Light Curves

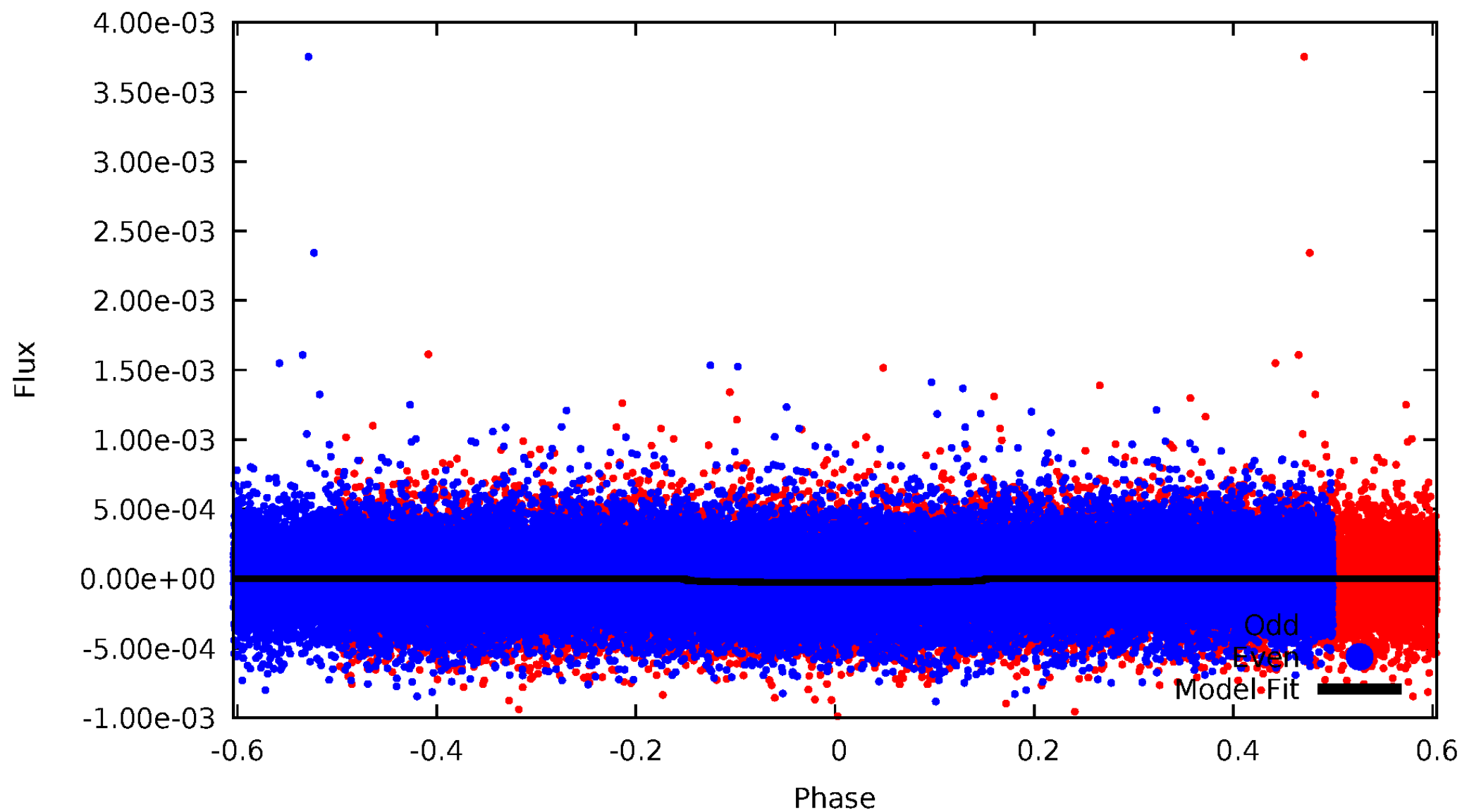


TCE 006123861-01



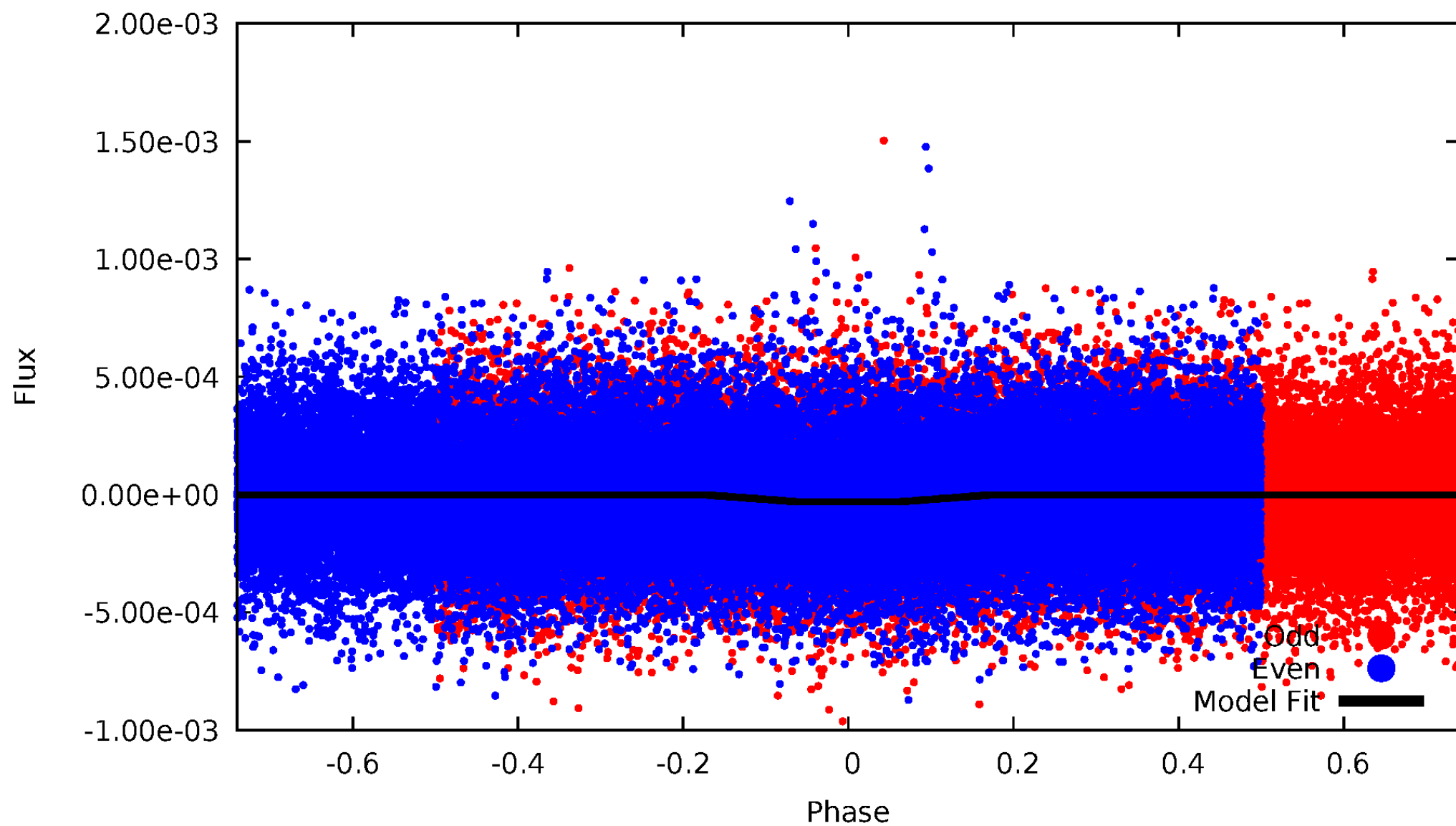
DV Odd/Even

TCE 006123861-01



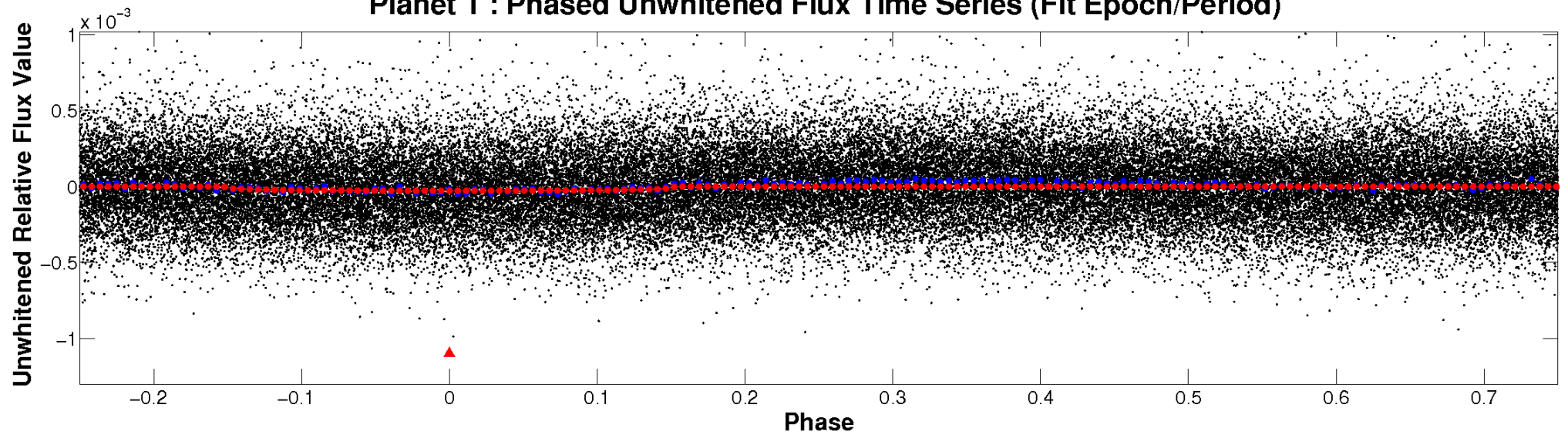
ALT Odd/Even

TCE 006123861-01

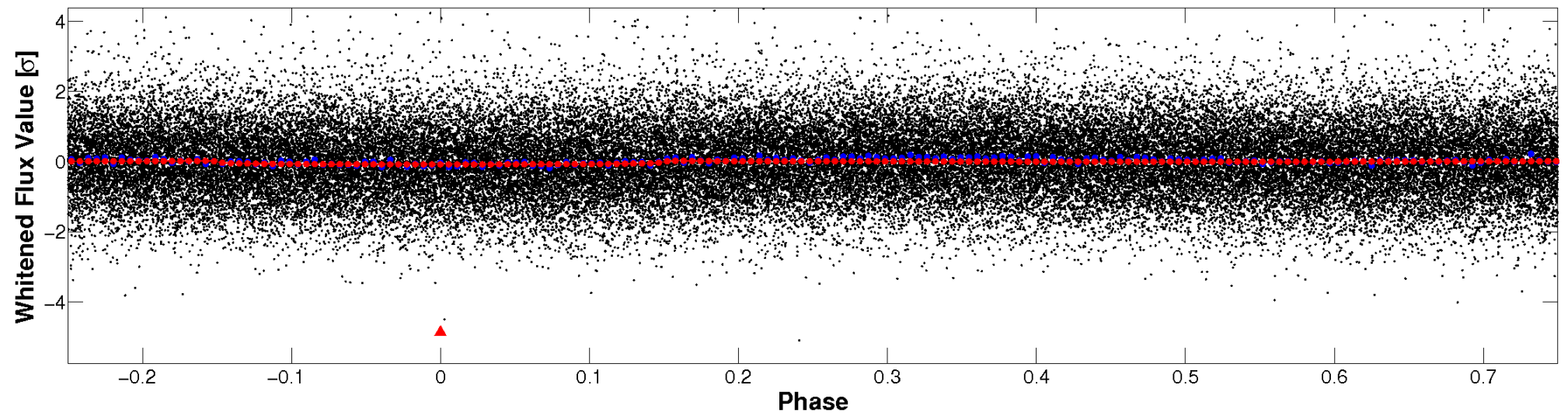


Non-Whitened Vs. Whitened Light Curve

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

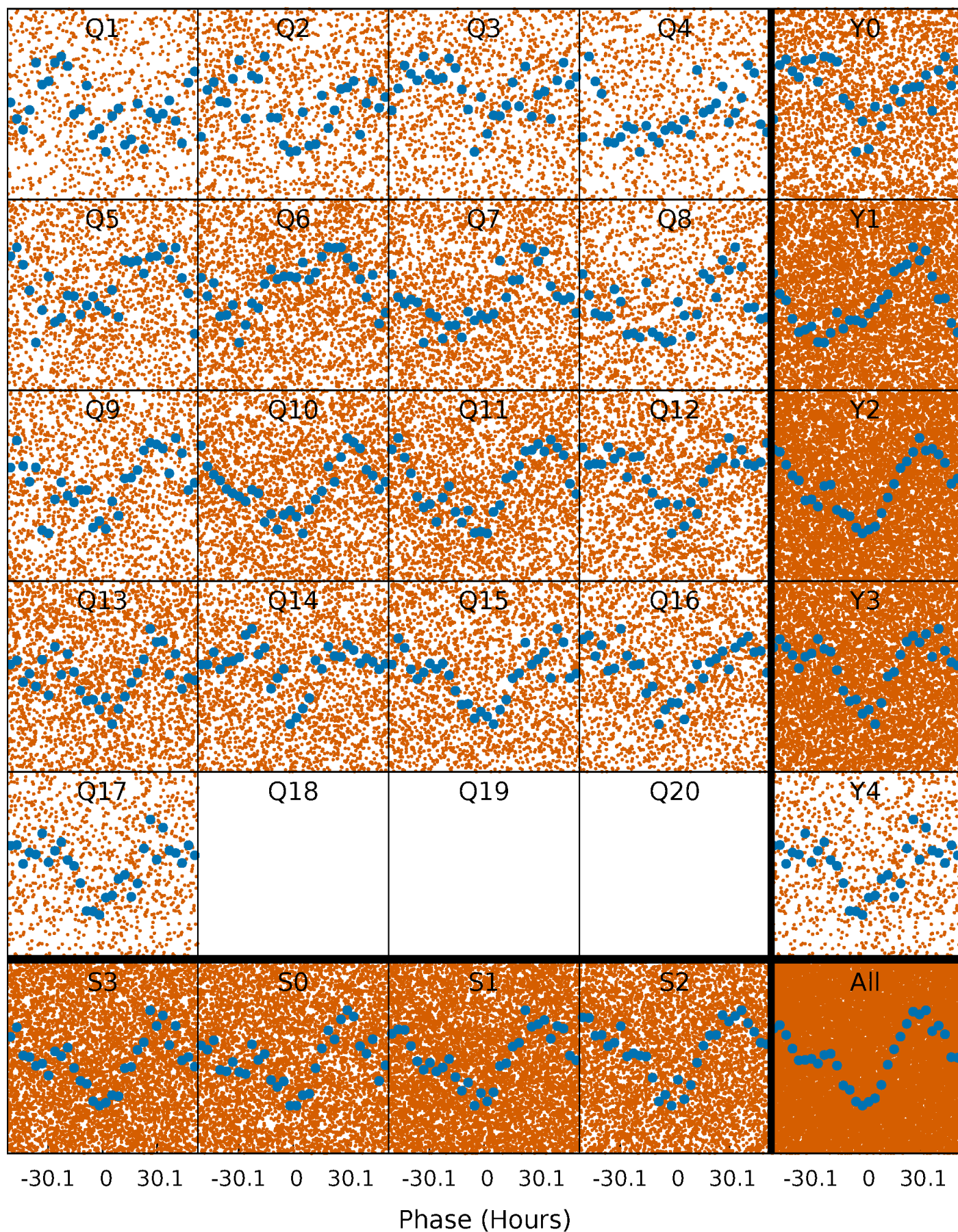


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



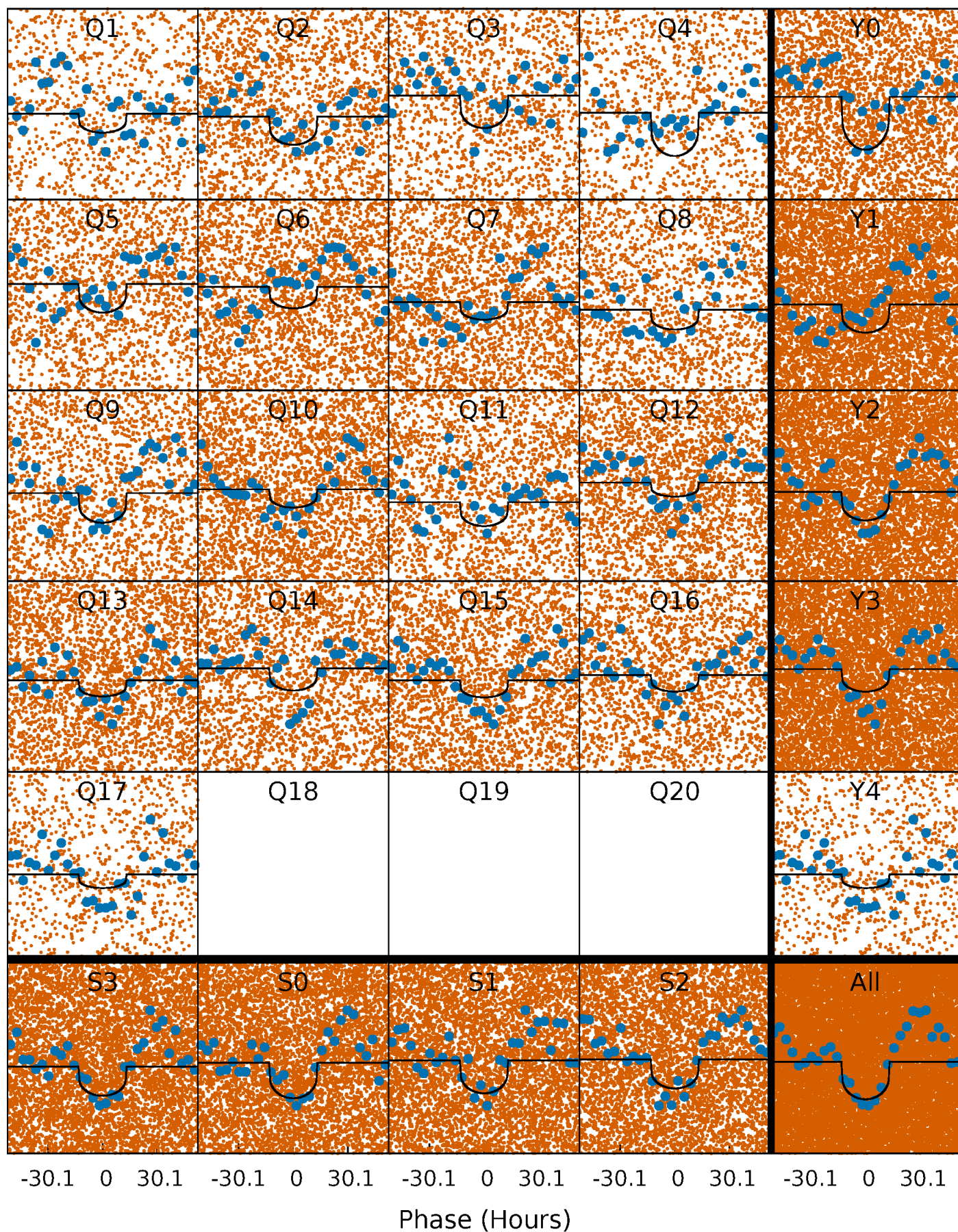
PDC Quarter-Phased Transit Curves

TCE 006123861-01 P= 3.628732 Days $T_0=132.234055$ (BKJD)



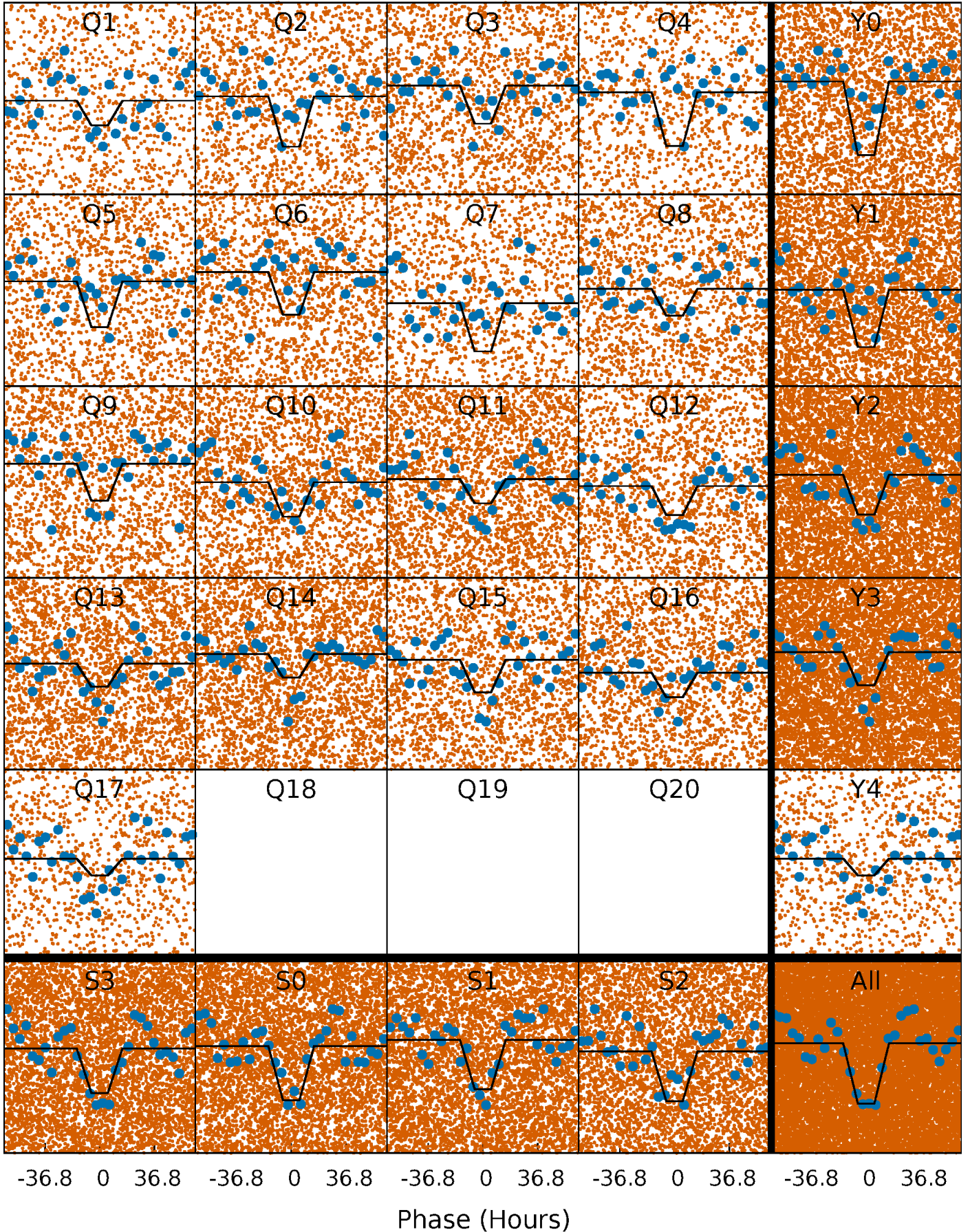
DV Quarter-Phased Transit Curves

TCE 006123861-01 P= 3.628732 Days $T_0=132.234055$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

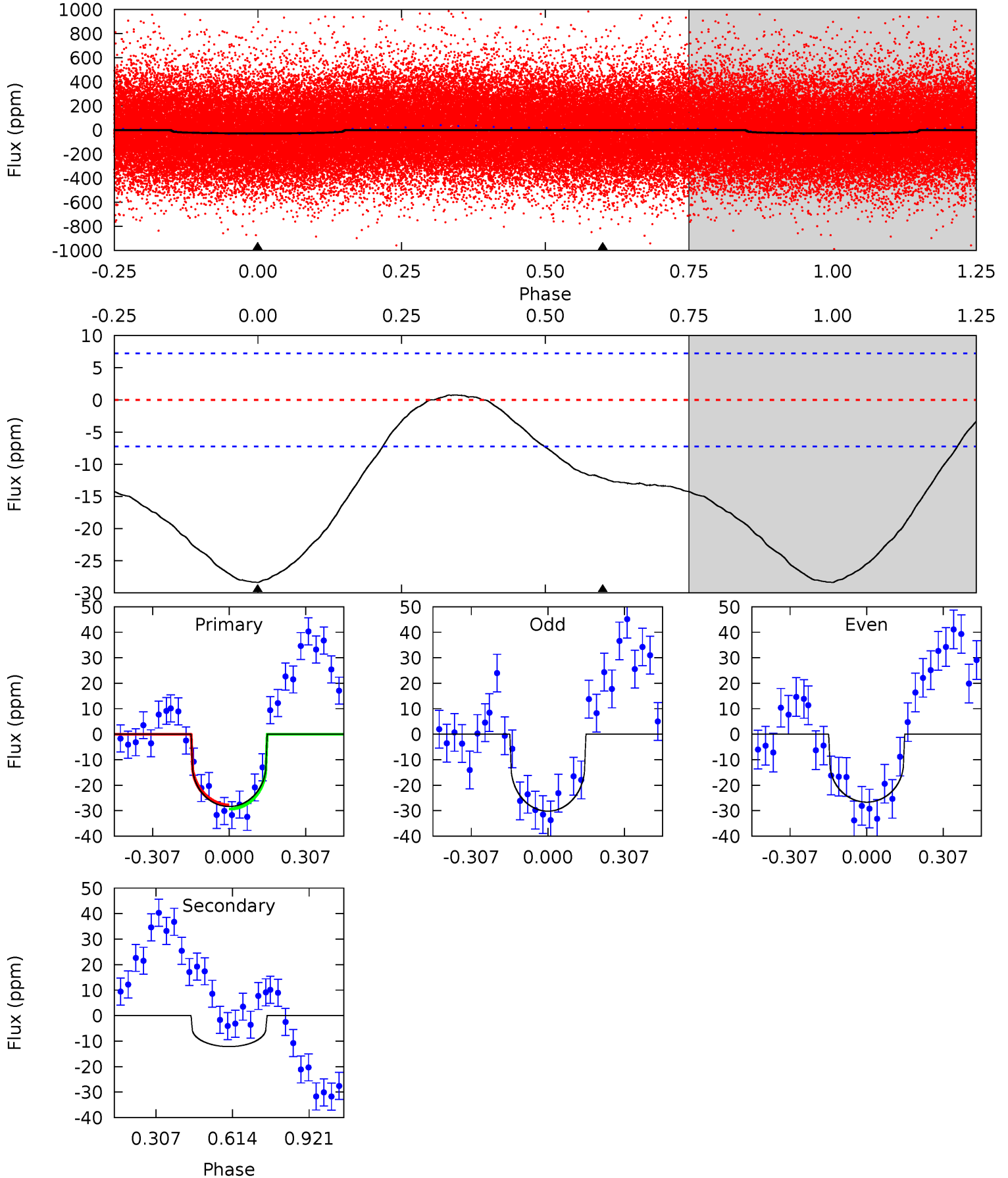
TCE 006123861-01 P= 3.629029 Days $T_0=132.235008$ (BKJD)



DV Model-Shift Uniqueness Test

006123861-01, P = 3.628732 Days, E = 128.605323 Days

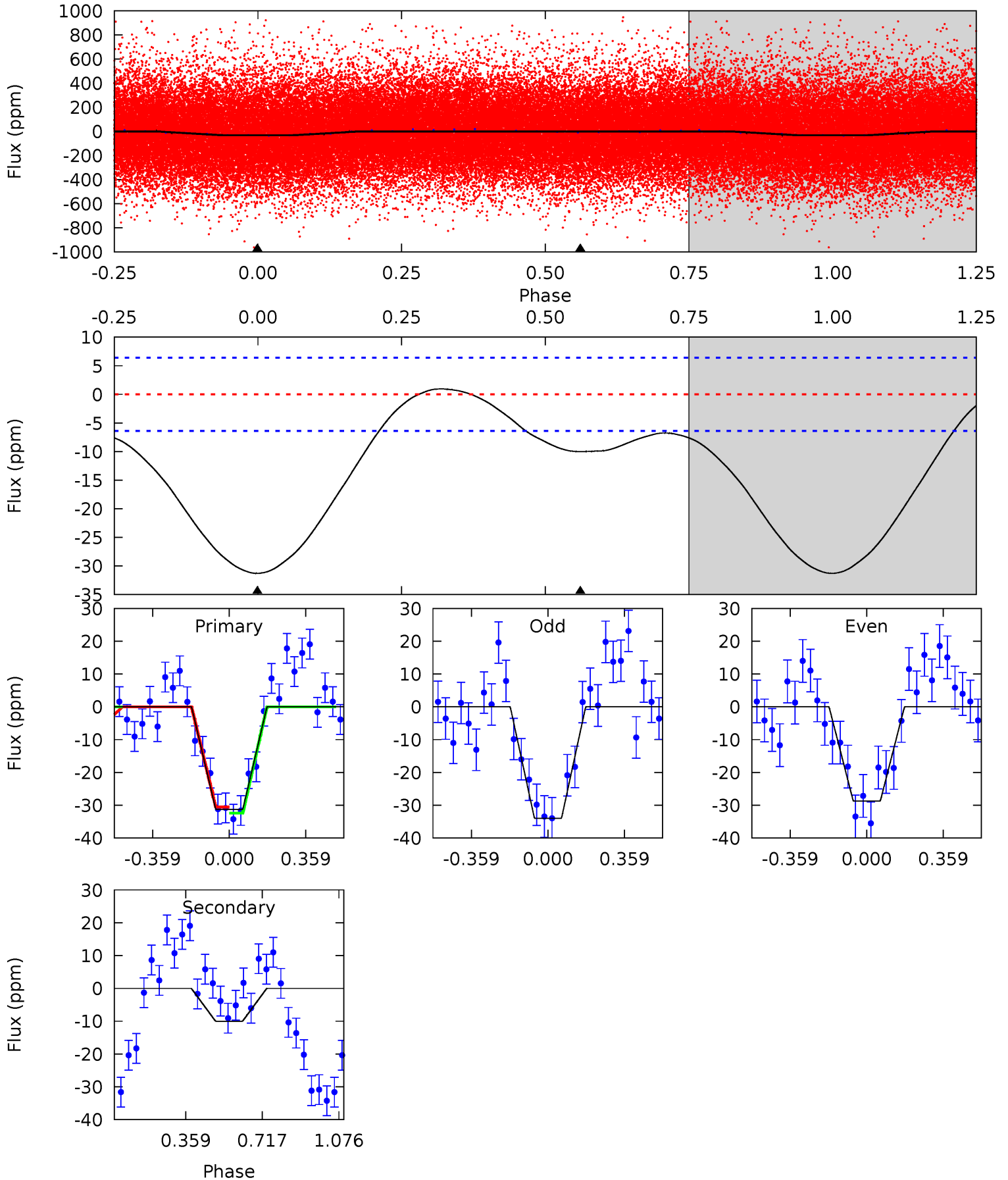
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 16.9 | 7.26 | 0 | 0 | 4.32 | 1.02 | 0.71 | 16.9 | 16.9 | 7.26 | 7.26 | 1.06 | 1.06 | 0.03 | 0.48 |



Alt Model-Shift Uniqueness Test

006123861-01, P = 3.629029 Days, E = 128.605979 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 21.0 | 6.71 | 0 | 0 | 4.29 | 0.92 | 1.00 | 21.0 | 21.0 | 6.71 | 6.71 | 1.78 | 1.40 | 0.03 | 0.64 |



Stellar Parameters For KIC 006123861

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5509^{+163}_{-147} | $4.502^{+0.110}_{-0.110}$ | $-0.600^{+0.350}_{-0.300}$ | $0.784^{+0.123}_{-0.101}$ | $0.713^{+0.103}_{-0.037}$ | $2.084^{+0.981}_{-0.663}$ |
| | +3%/-3% | +2%/-2% | +58%/-50% | +16%/-13% | +14%/-5% | +47%/-32% |
| 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 006123861-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|--------------------|-----------------------|-------------------|
| DV | -12 ± 2 | $0.52^{+0.39}_{-0.35}$ | 1478^{+71}_{-67} | 4385^{+2915}_{-823} | 43^{+342}_{-29} |
| Alt. | -10 ± 1 | $0.54^{+0.40}_{-0.34}$ | 1477^{+72}_{-64} | 4168^{+1986}_{-752} | 31^{+188}_{-21} |

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

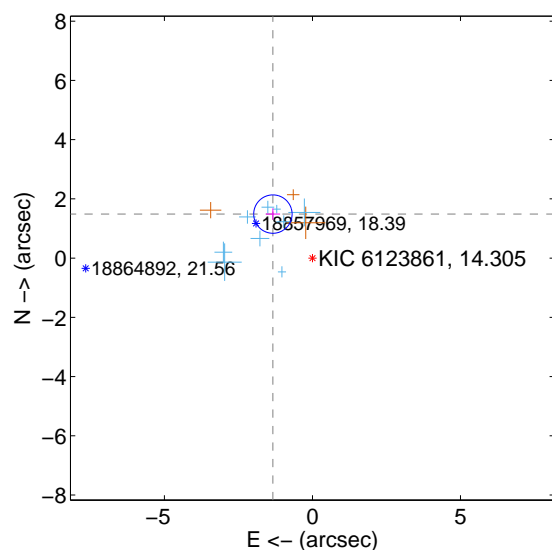
Supplemental centroid analysis for 006123861-01. Kepler magnitude: 14.30. Transit SNR 10.25

There are 9 quarters with good PRF difference image offsets

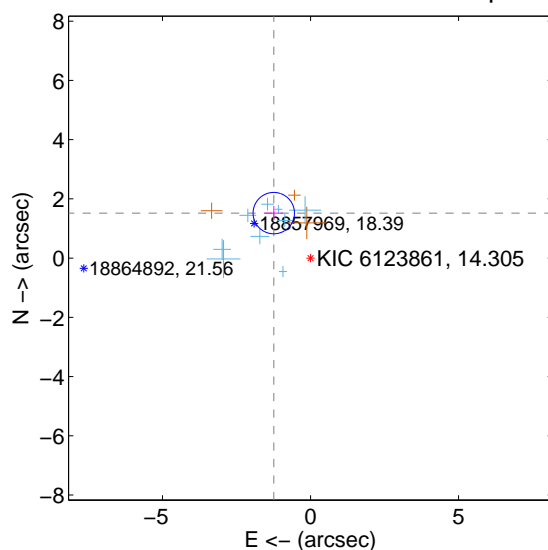
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 1.998 ± 0.216 | 9.25 | 1.335 ± 0.242 | 1.486 ± 0.193 |
| PRF-fit source offset from KIC position | 1.962 ± 0.233 | 8.42 | 1.241 ± 0.314 | 1.519 ± 0.241 |
| photometric centroid source offset | 3.96 ± 0.95 | 4.17 | 2.90 ± 0.98 | 2.70 ± 0.92 |

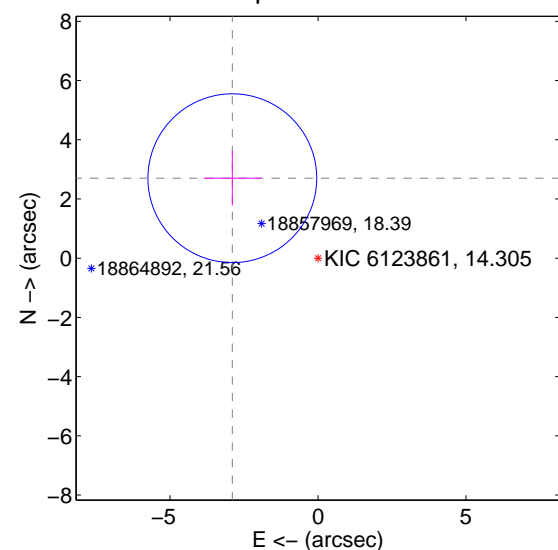
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

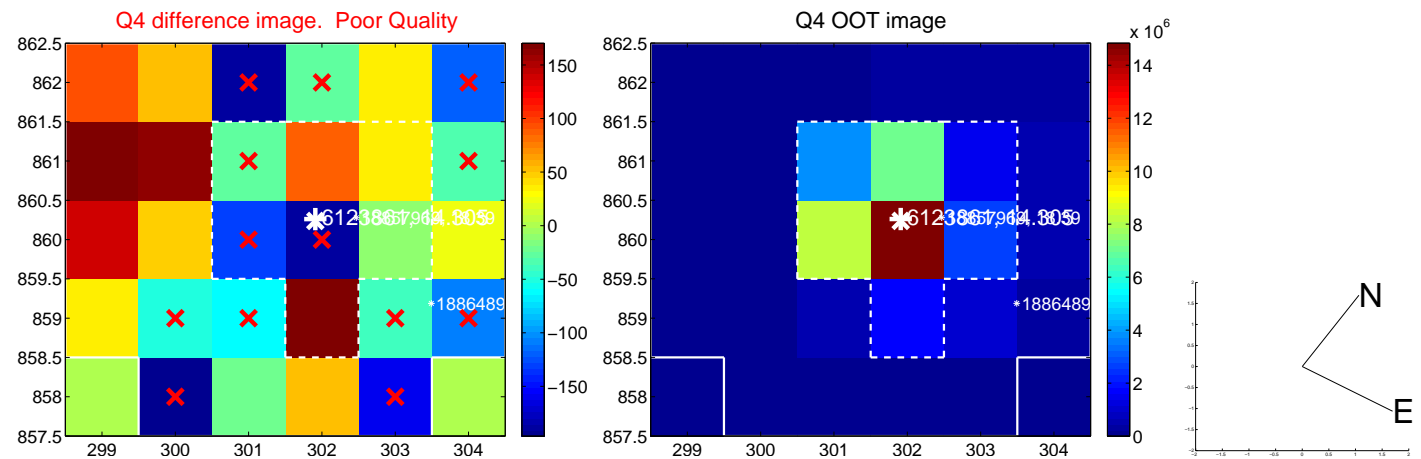
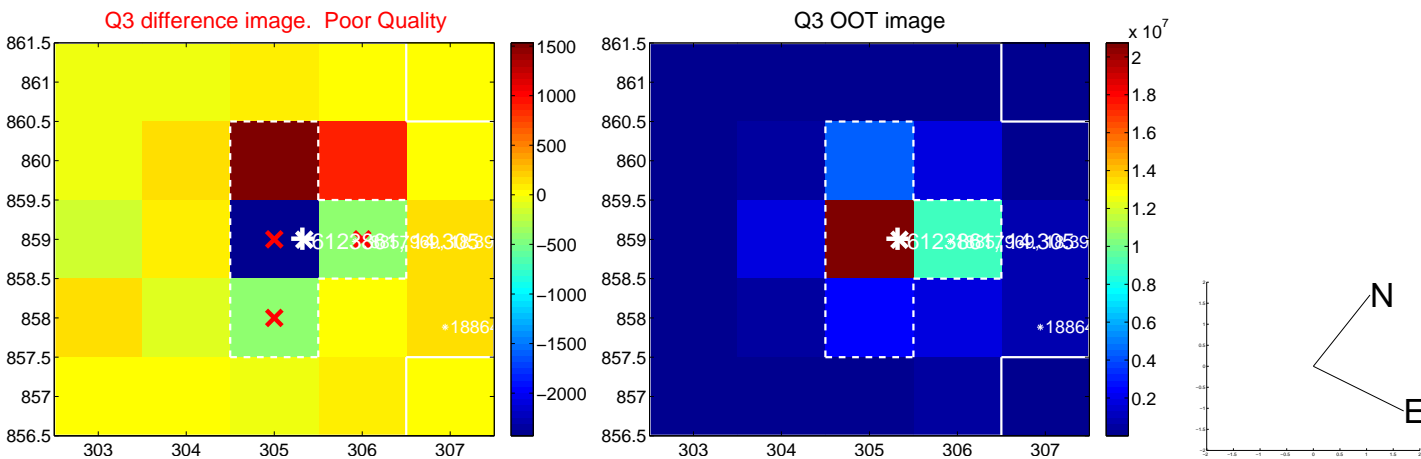
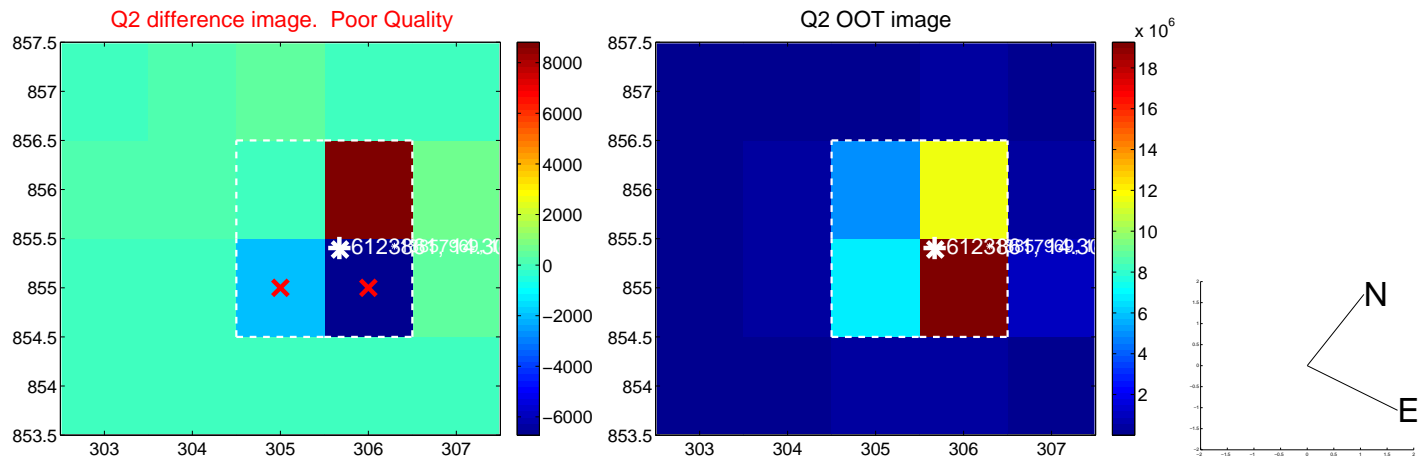
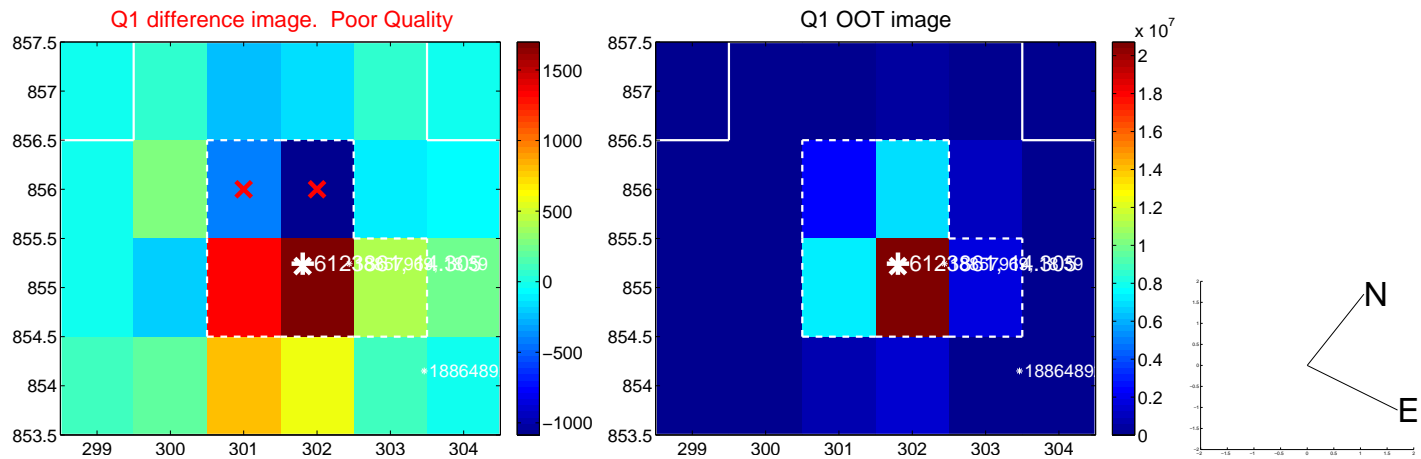


offset from photometric centroids

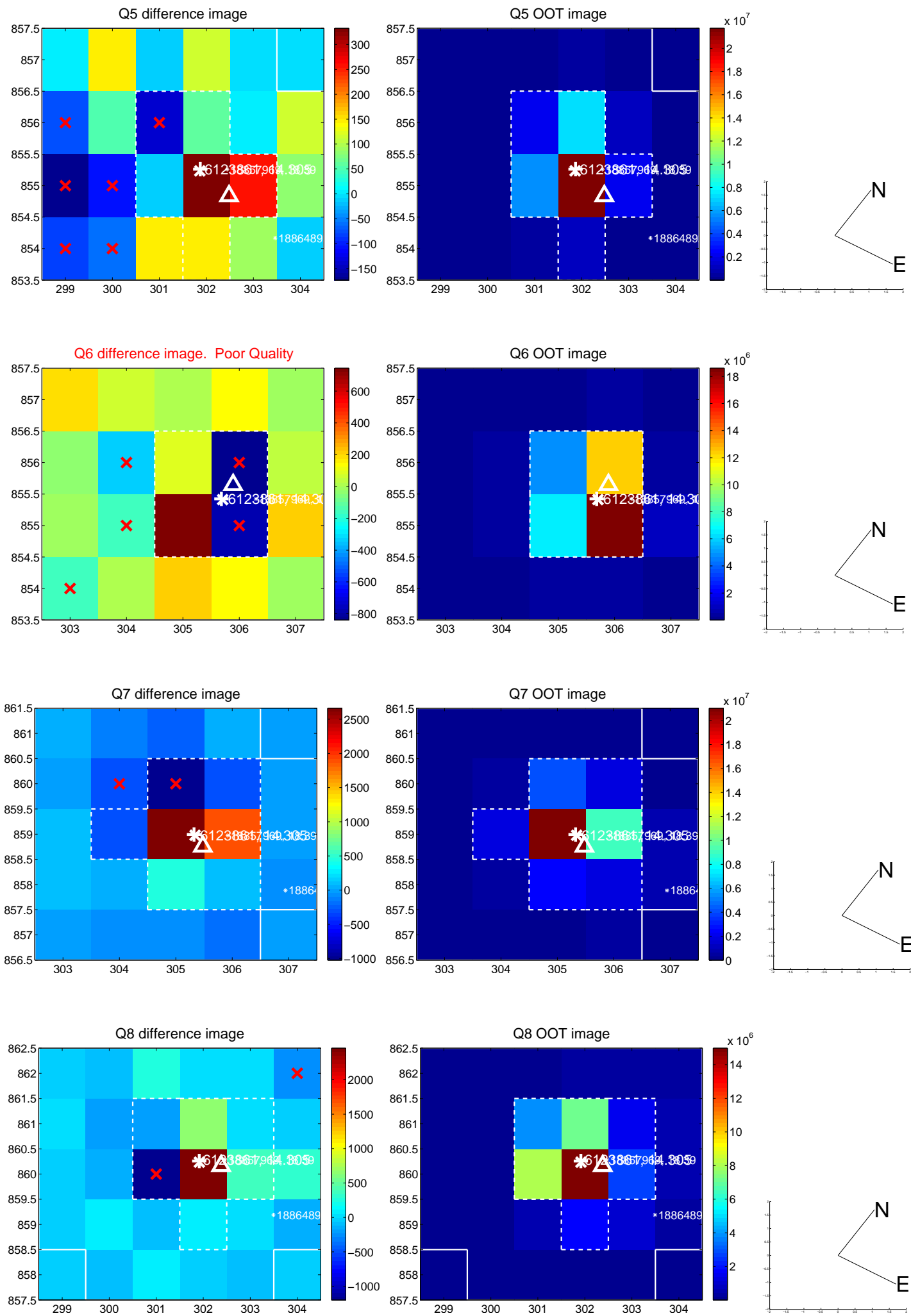


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

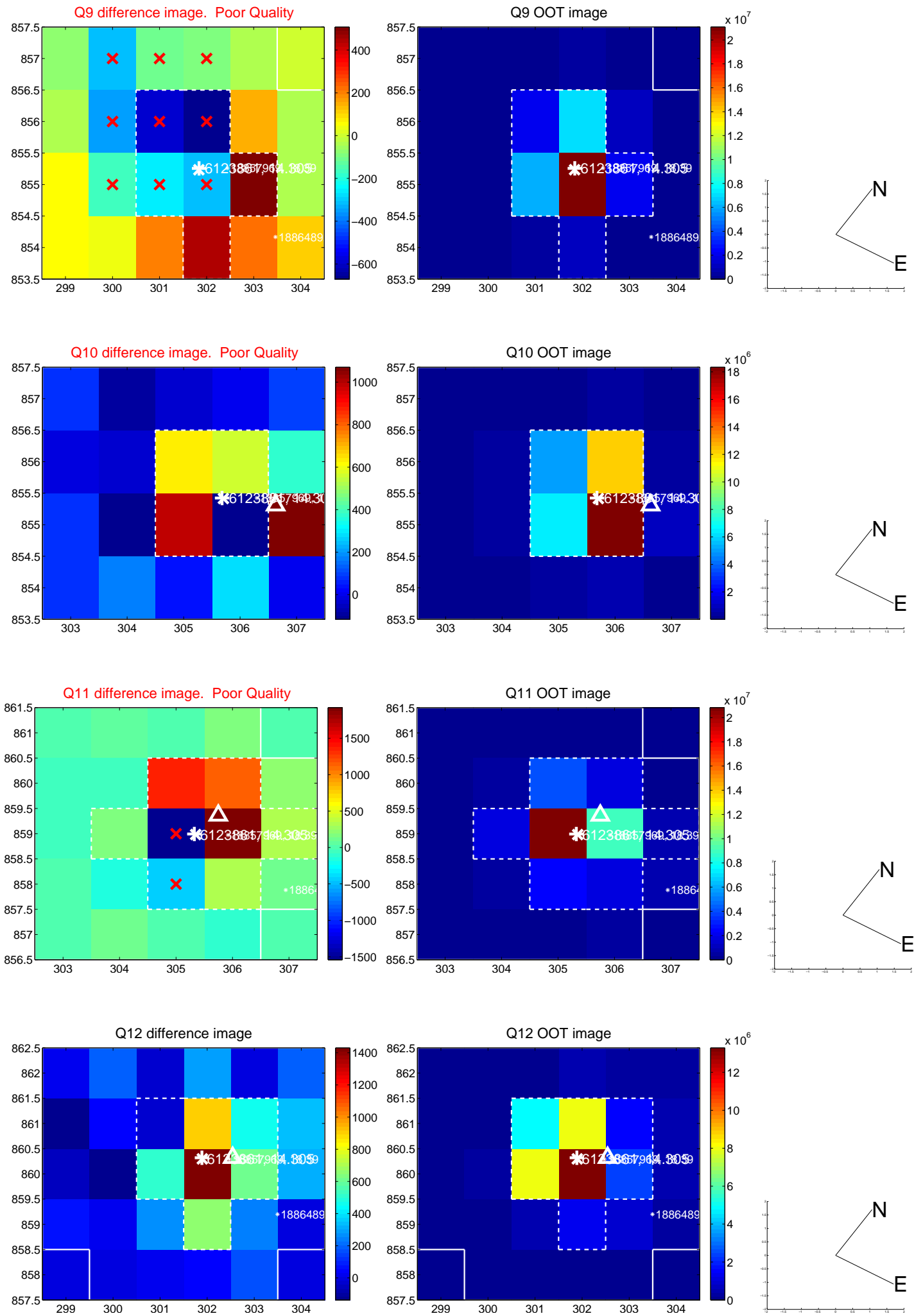
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



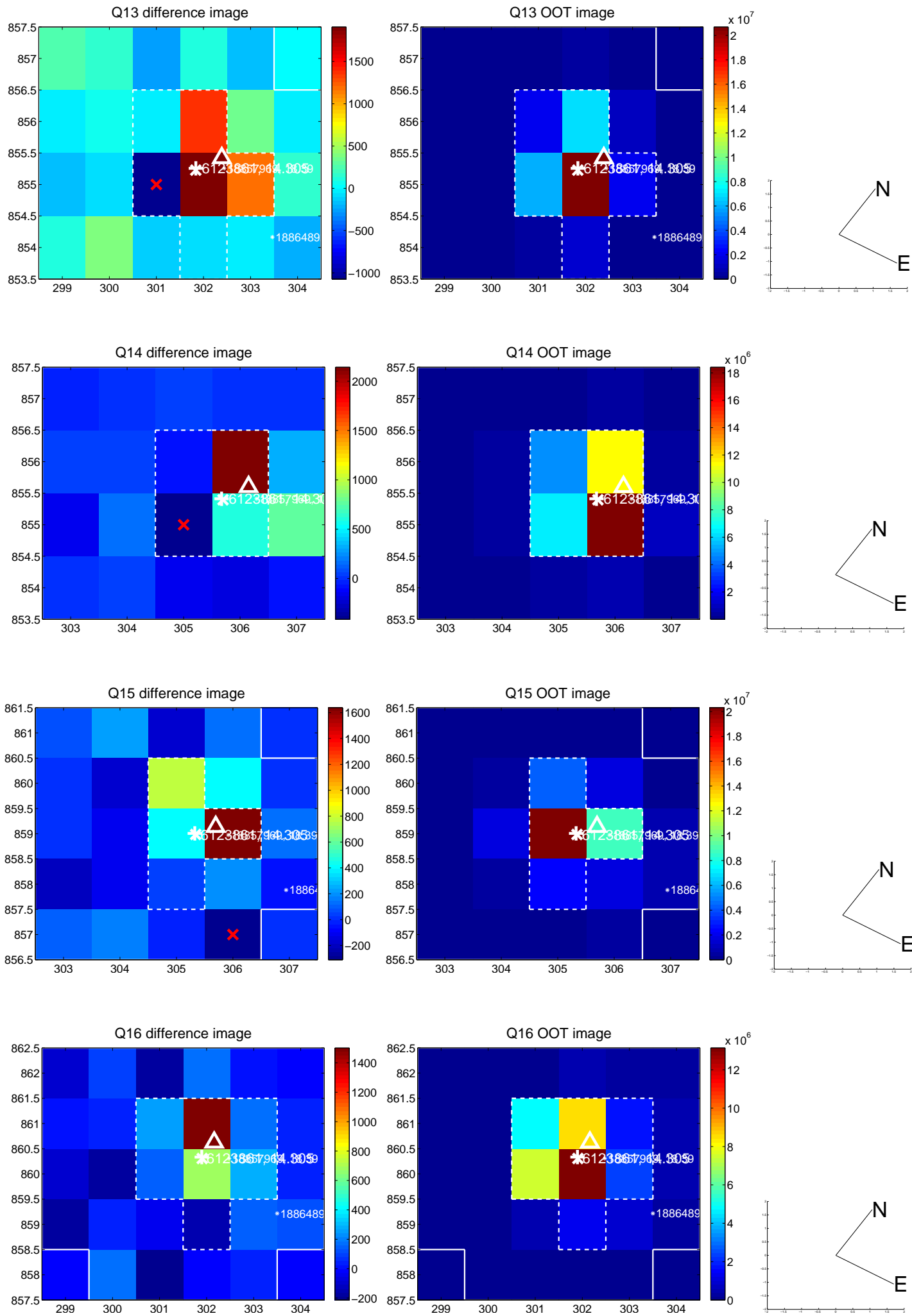
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



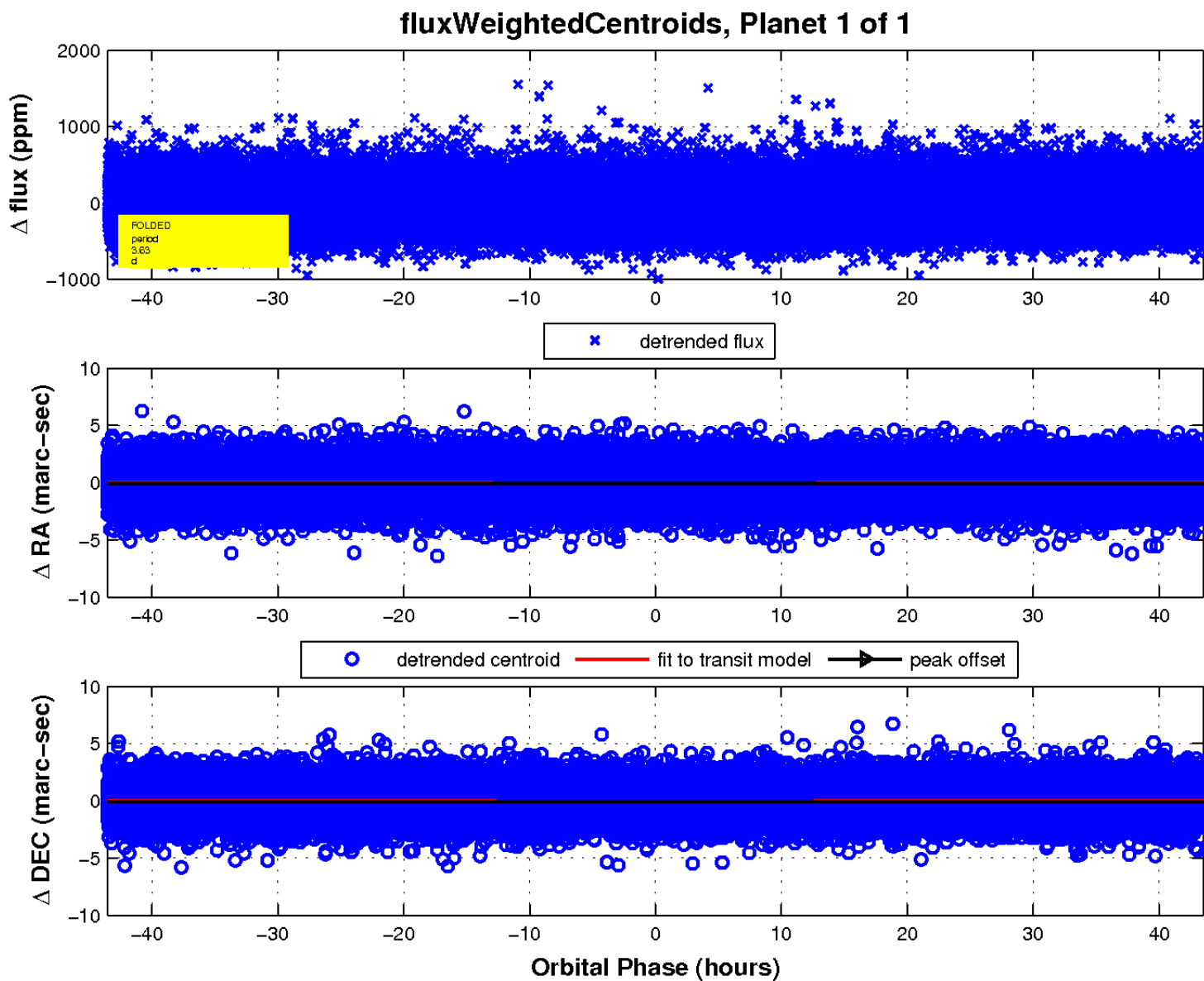
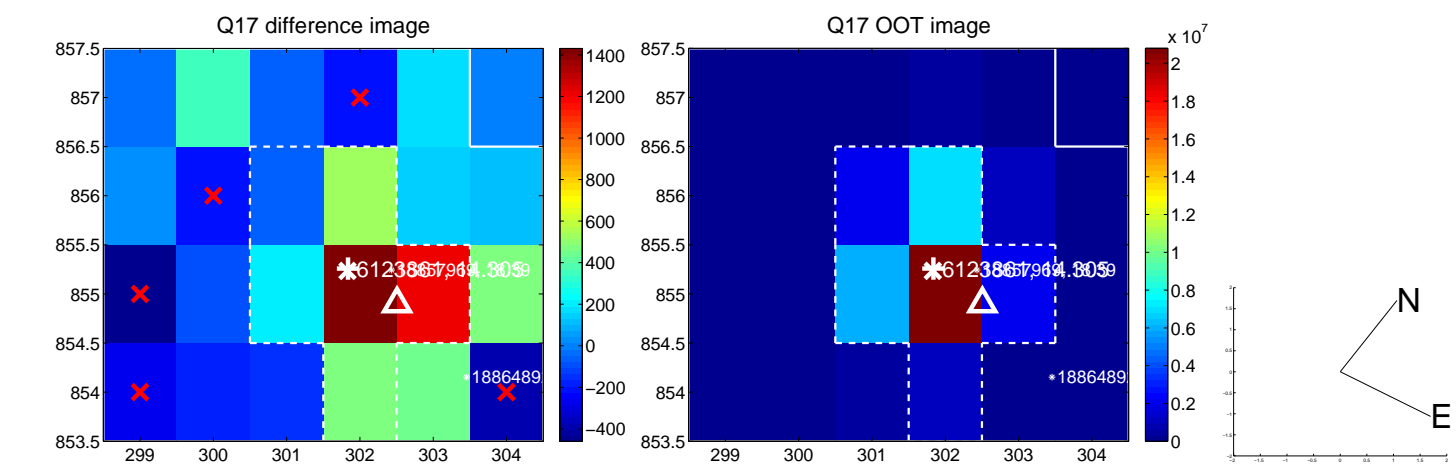
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

