

KIC 006851827

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 006851827-01 | OBS | No | 5.084977 | 132.001297 | 45.3 | 24.271 | 10.6 | 11.3 | 0.75 | 5492 | 0.52 | 155.92 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|----------|
| 006851827-01 | 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.

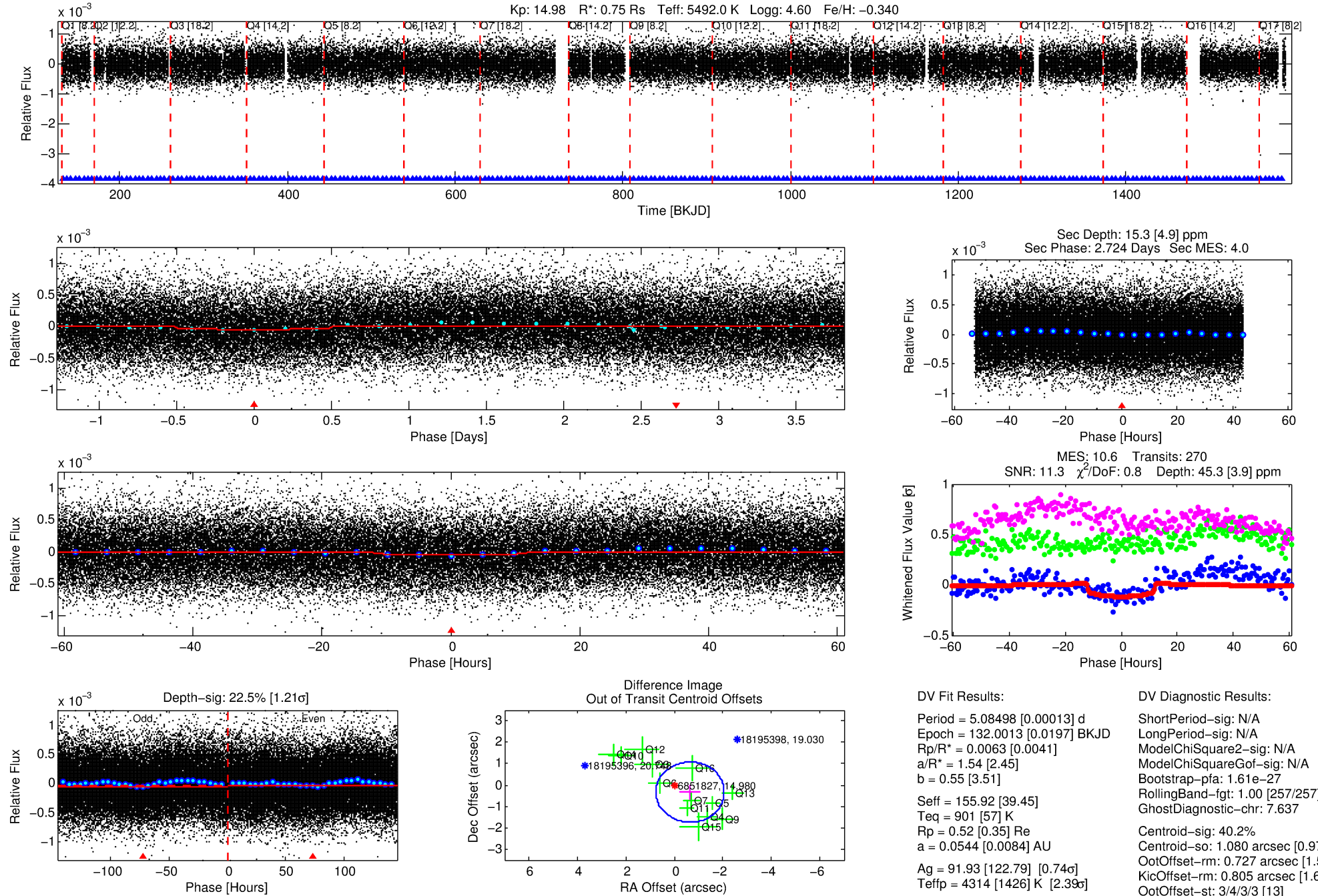
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006851827-01

No Significant Match Found

DV One-Page Summary

KIC: 6851827 Candidate: 1 of 1 Period: 5.085 d



DV Fit Results:

Period = 5.08498 [0.00013] d
Epoch = 132.0013 [0.0197] BKJD
Rp/R* = 0.0063 [0.0041]
a/R* = 1.54 [2.45]
b = 0.55 [3.51]
Seff = 155.92 [39.45]
Teq = 901 [57] K
Rp = 0.52 [0.35] Re
a = 0.0544 [0.0084] AU
Ag = 91.93 [122.79] [0.74 σ]
Teffp = 4314 [1426] K [2.39 σ]

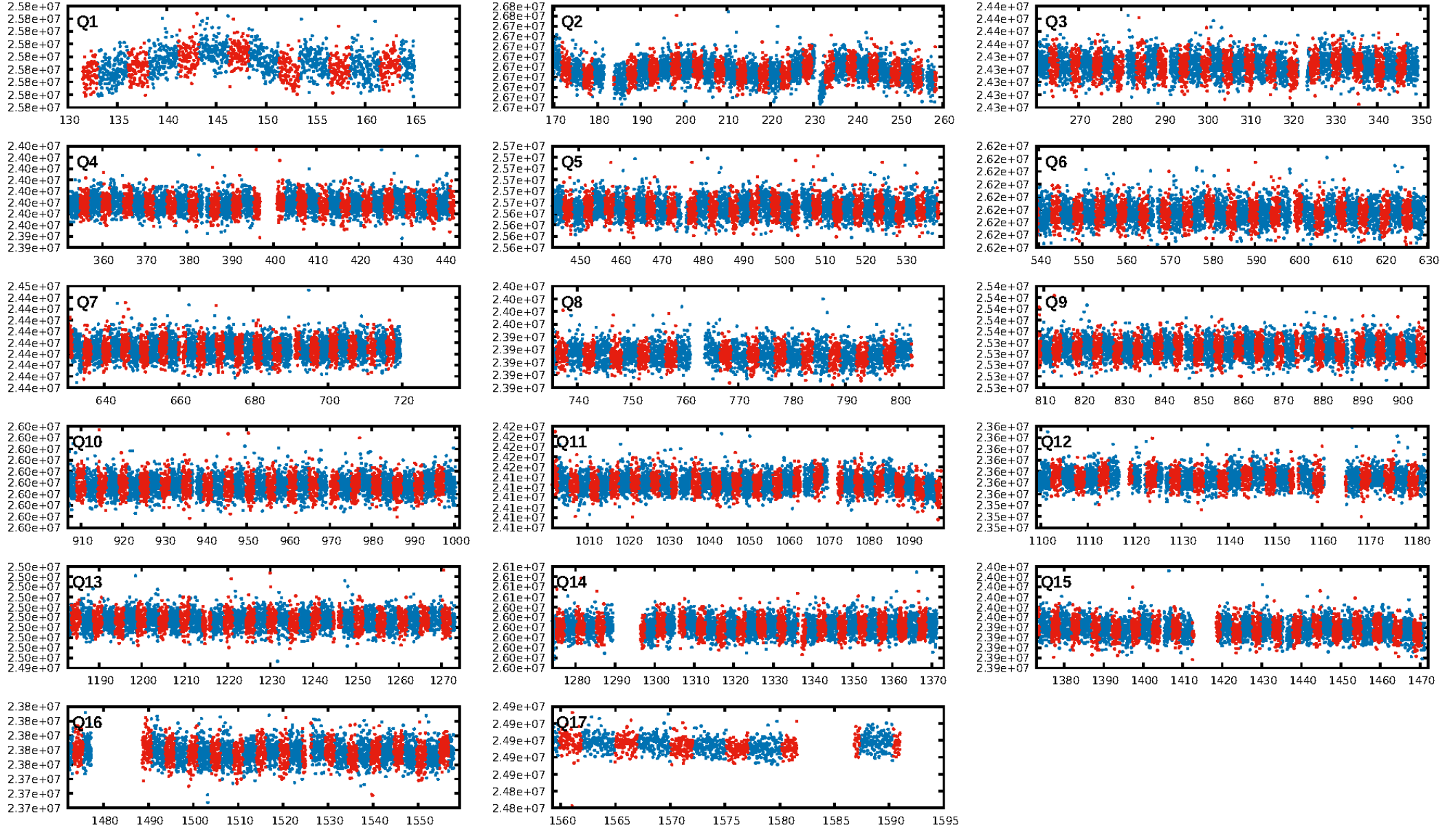
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.61e-27
RollingBand-fgt: 1.00 [257/257]
GhostDiagnostic-chr: 7.637
Centroid-sig: 40.2%
Centroid-so: 1.080 arcsec [0.97 σ]
OotOffset-rm: 0.727 arcsec [1.55 σ]
KicOffset-rm: 0.805 arcsec [1.62 σ]
OotOffset-st: 3/4/3/3 [13]
KicOffset-st: 3/4/3/3 [13]
DiffImageQuality-fgm: 0.85 [11/13]
DiffImageOverlap-fno: 1.00 [17/17]

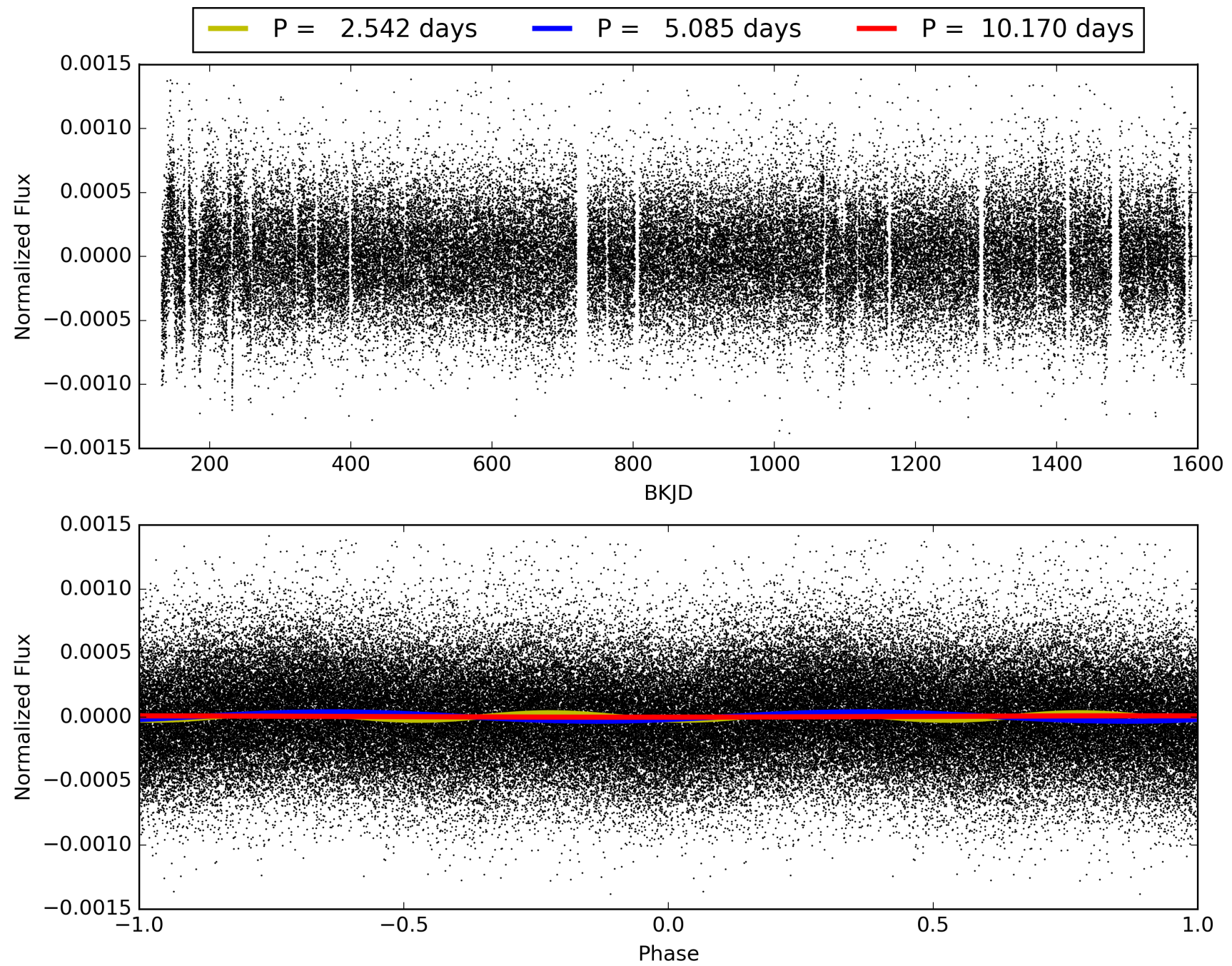
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:47:25 Z

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

TCE 006851827-01, PDC Light Curves

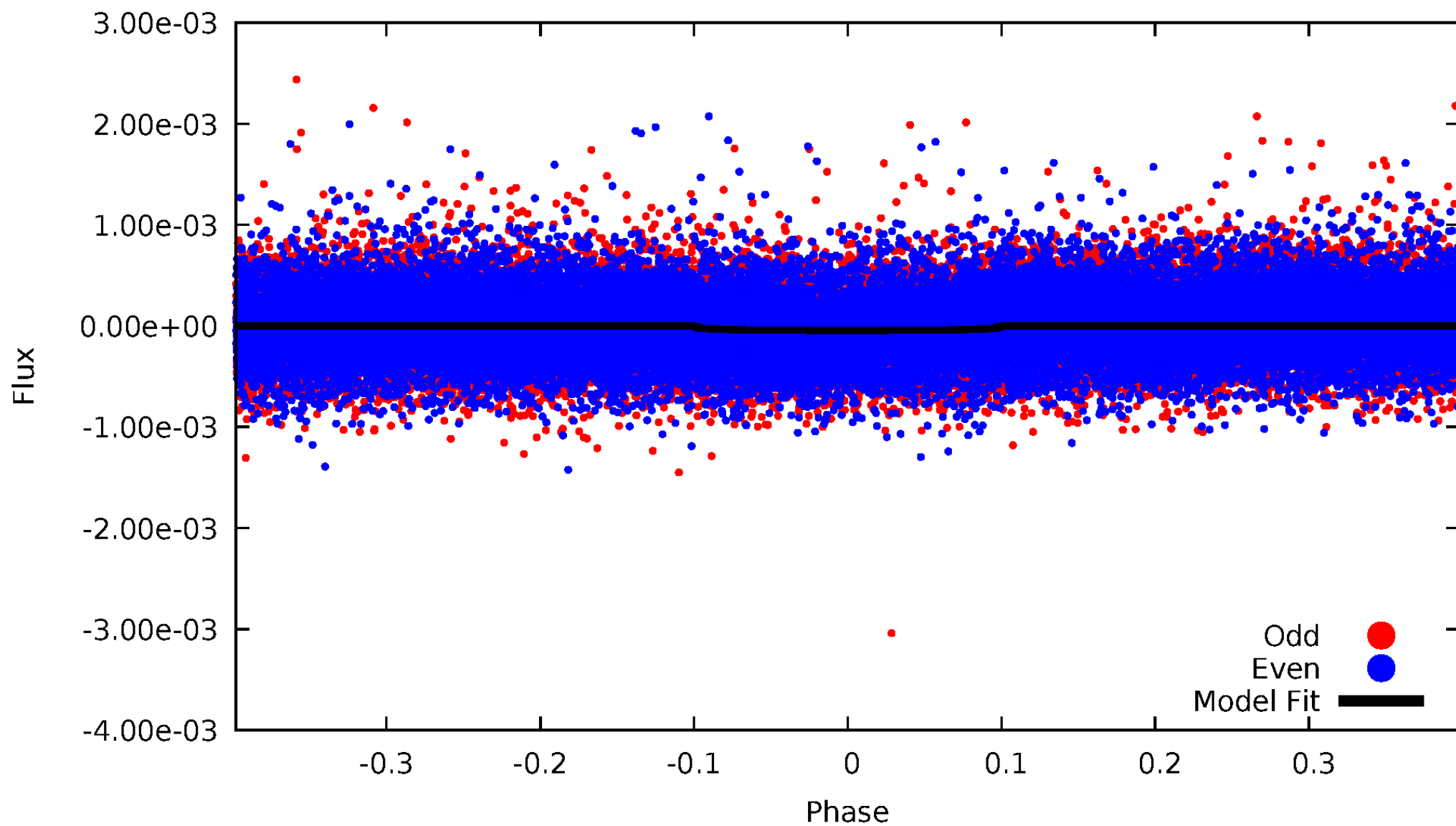


TCE 006851827-01



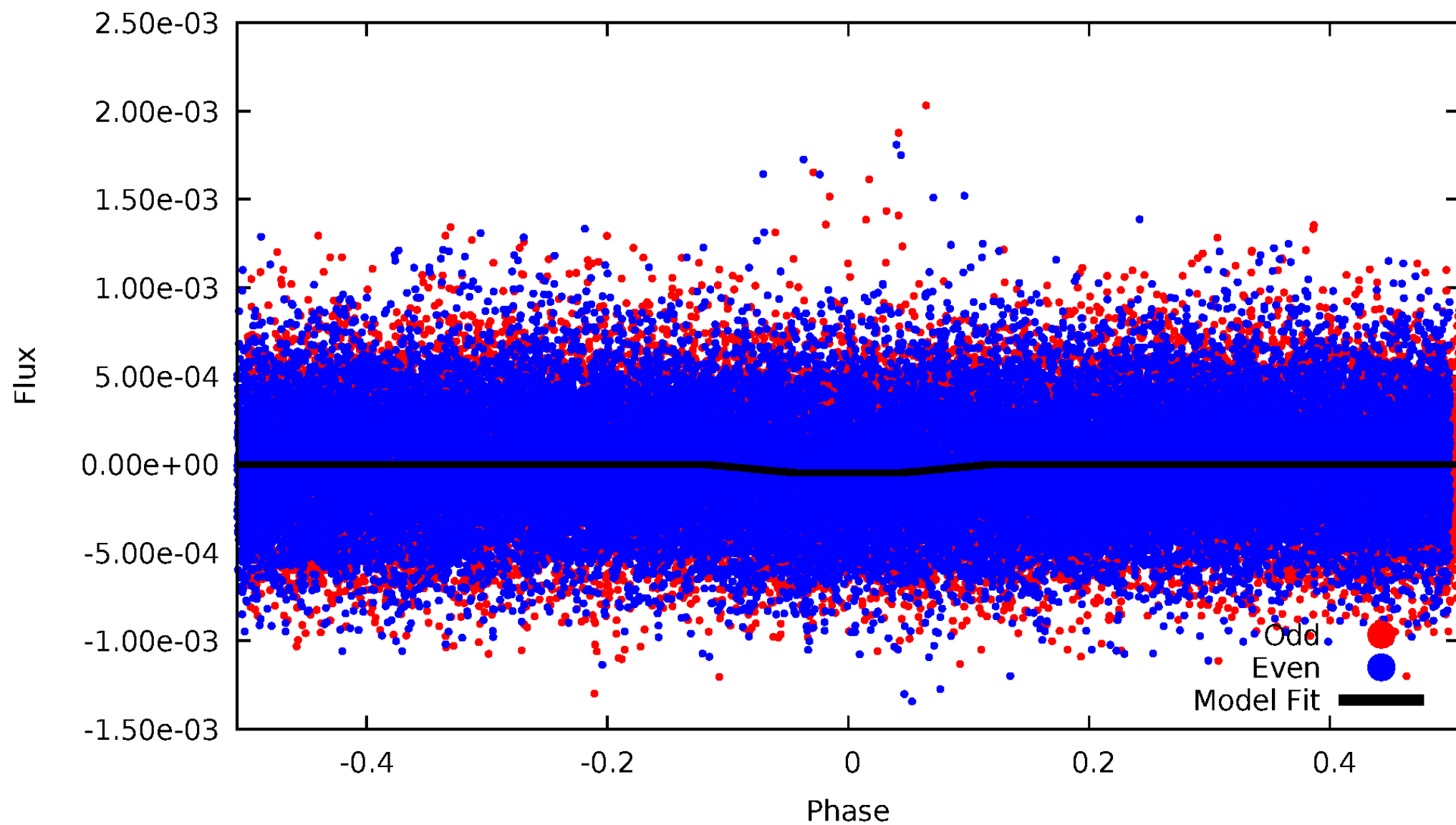
DV Odd/Even

TCE 006851827-01



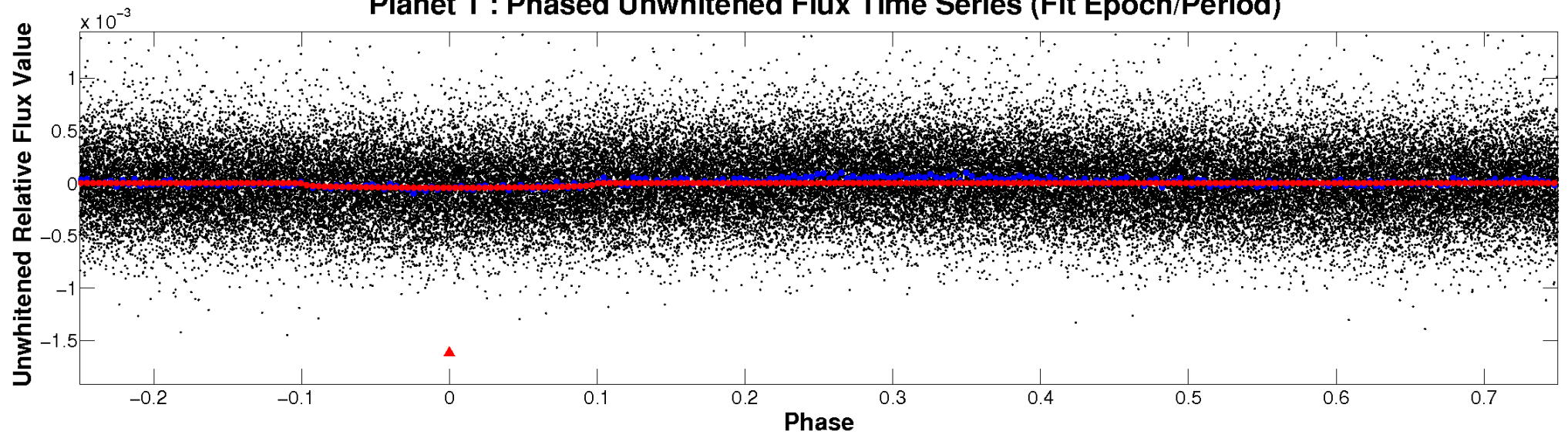
ALT Odd/Even

TCE 006851827-01

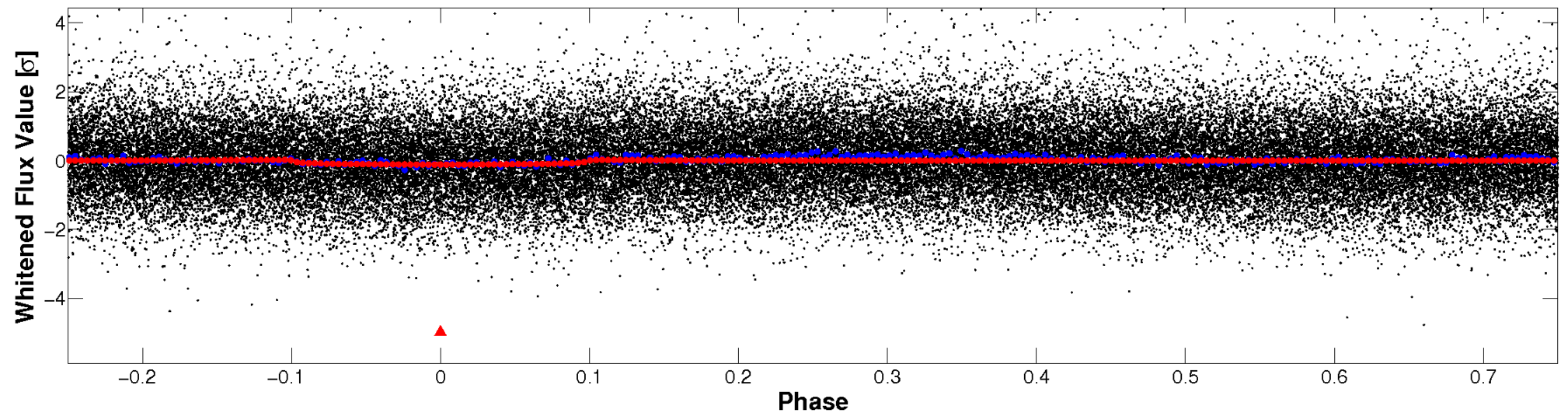


Non-Whitened Vs. Whitened Light Curve

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

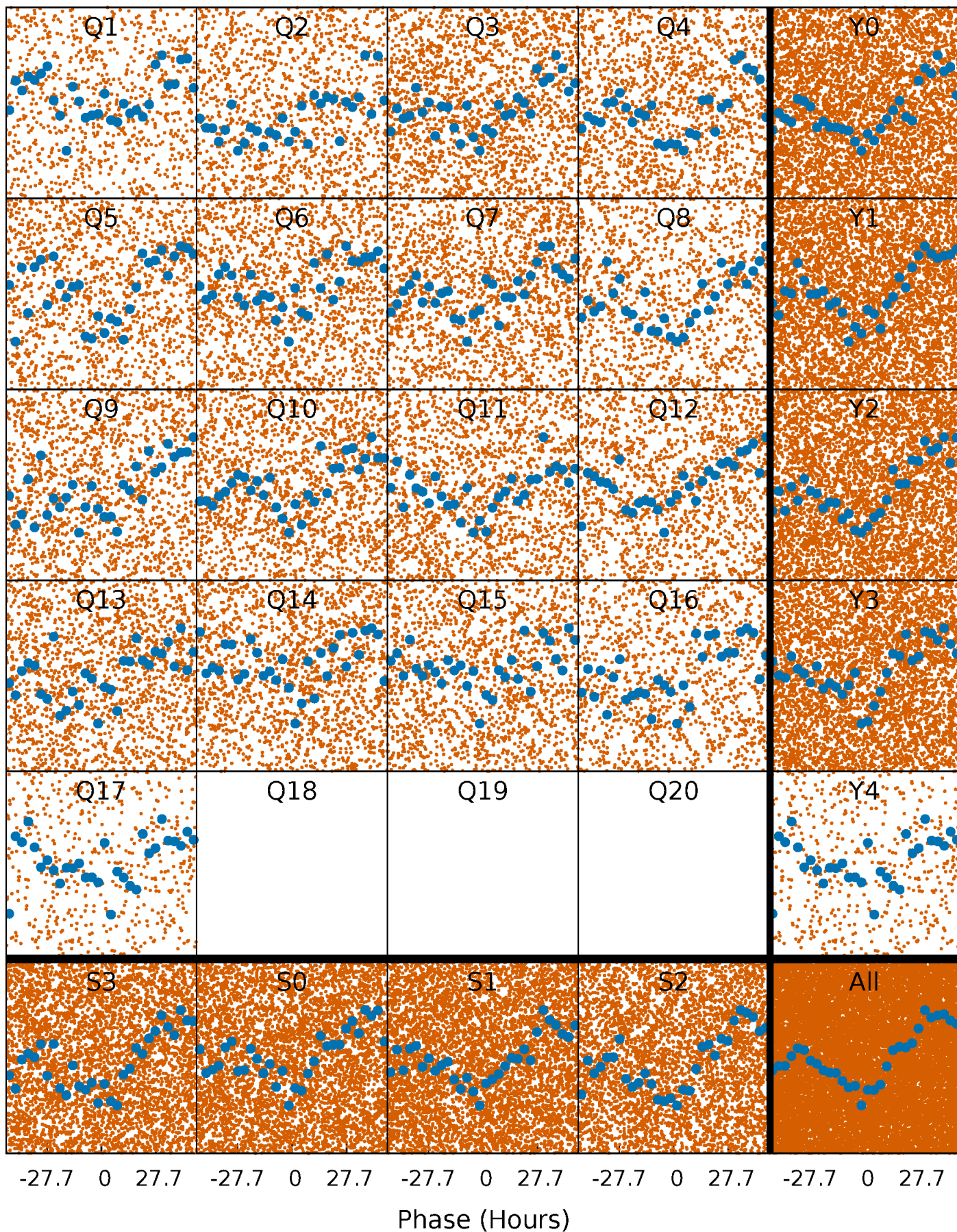


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



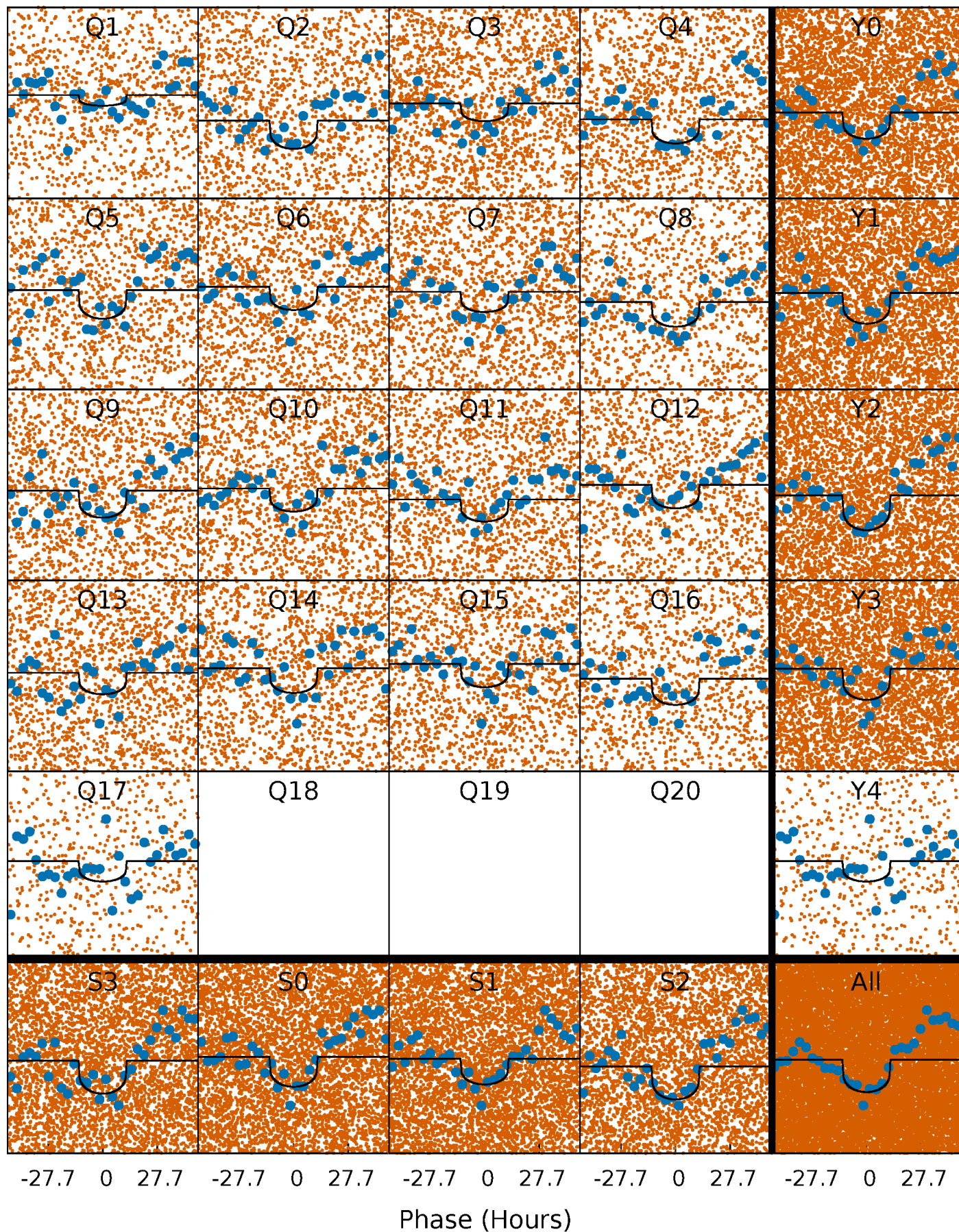
PDC Quarter-Phased Transit Curves

TCE 006851827-01 P= 5.084977 Days $T_0=132.001297$ (BKJD)



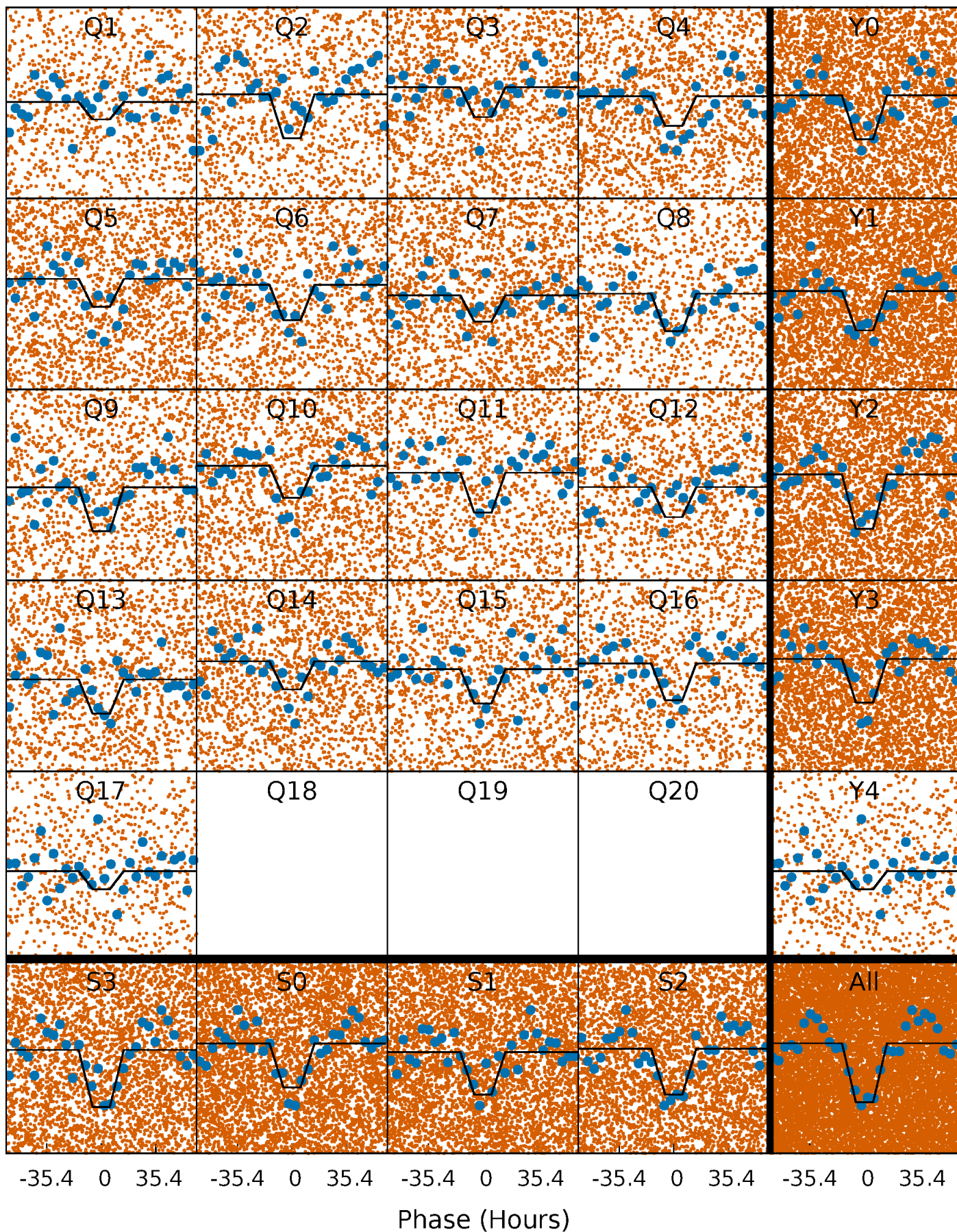
DV Quarter-Phased Transit Curves

TCE 006851827-01 P= 5.084977 Days $T_0=132.001297$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

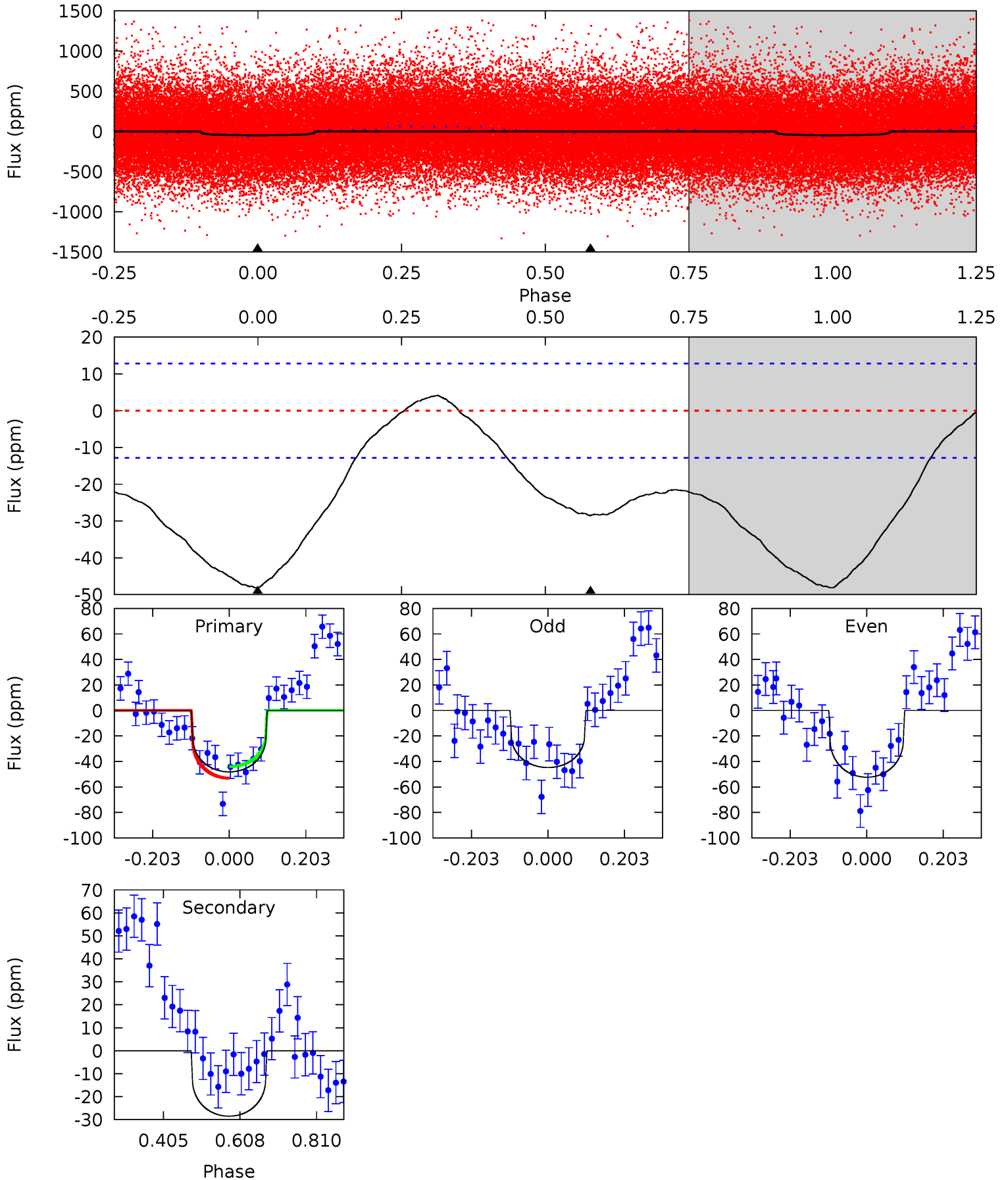
TCE 006851827-01 P= 5.085413 Days $T_0=131.989499$ (BKJD)



DV Model-Shift Uniqueness Test

006851827-01, P = 5.084977 Days, E = 126.916320 Days

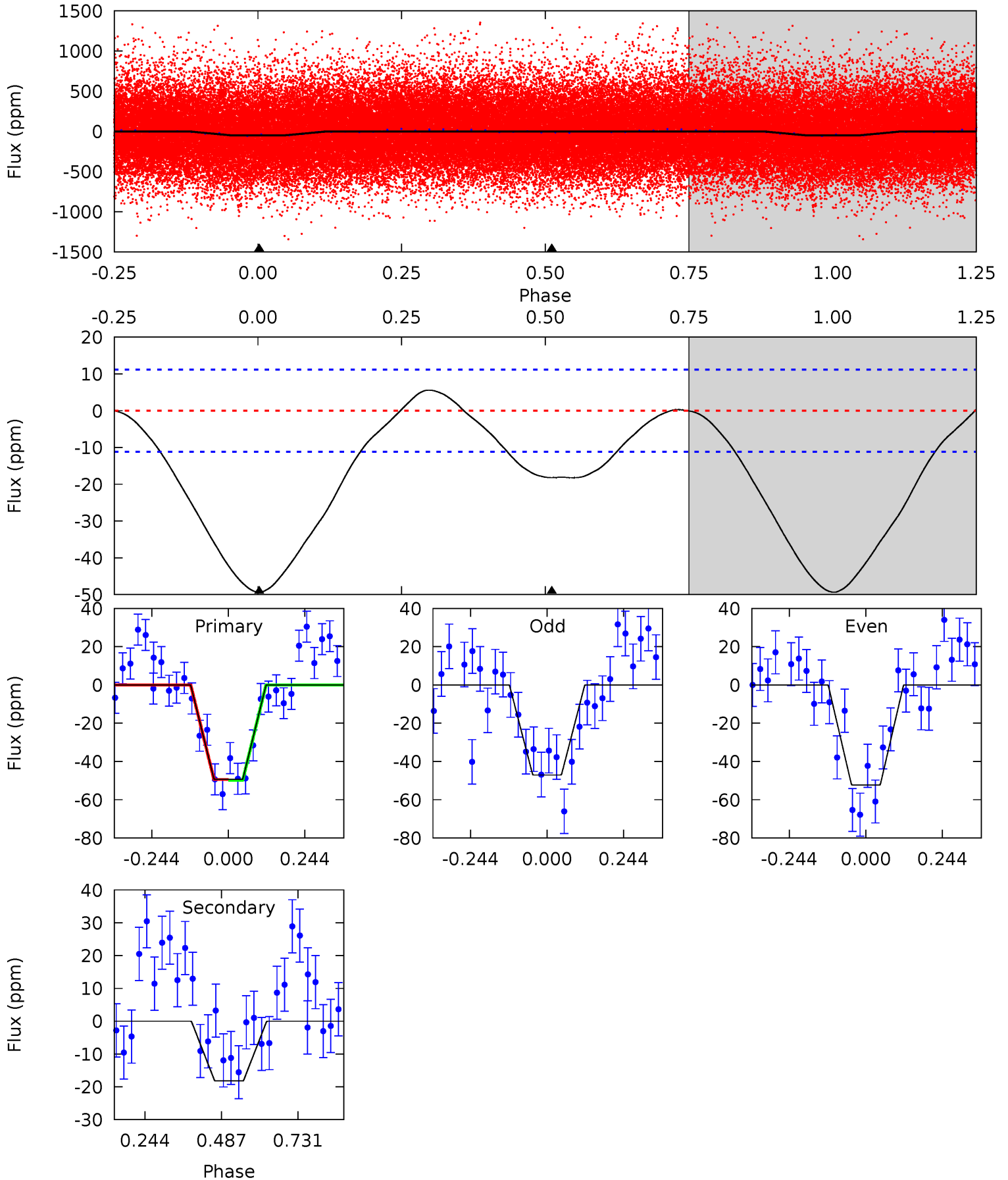
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 16.6 | 9.81 | 0 | 0 | 4.41 | 1.27 | 2.53 | 16.6 | 16.6 | 9.81 | 9.81 | 1.30 | 1.06 | 0.08 | 1.57 |



Alt Model-Shift Uniqueness Test

006851827-01, P = 5.085413 Days, E = 126.904086 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 19.3 | 7.12 | 0 | 0 | 4.37 | 1.17 | 0.87 | 19.3 | 19.3 | 7.12 | 7.12 | 1.02 | 1.10 | 0.10 | 0.07 |



Stellar Parameters For KIC 006851827

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5492^{+165}_{-148} | $4.604^{+0.030}_{-0.120}$ | $-0.340^{+0.300}_{-0.300}$ | $0.752^{+0.141}_{-0.061}$ | $0.841^{+0.080}_{-0.098}$ | $2.791^{+0.445}_{-0.943}$ |
| | +3%/-3% | +1%/-3% | +88%/-88% | +19%/-8% | +10%/-12% | +16%/-34% |
| 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 006851827-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|--------------------|
| DV | -29 ± 3 | $0.57^{+0.34}_{-0.31}$ | 1282^{+65}_{-48} | 4975^{+2367}_{-858} | 139^{+567}_{-85} |
| Alt. | -18 ± 3 | $0.60^{+0.33}_{-0.32}$ | 1283^{+55}_{-48} | 4449^{+1873}_{-693} | 83^{+313}_{-50} |

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

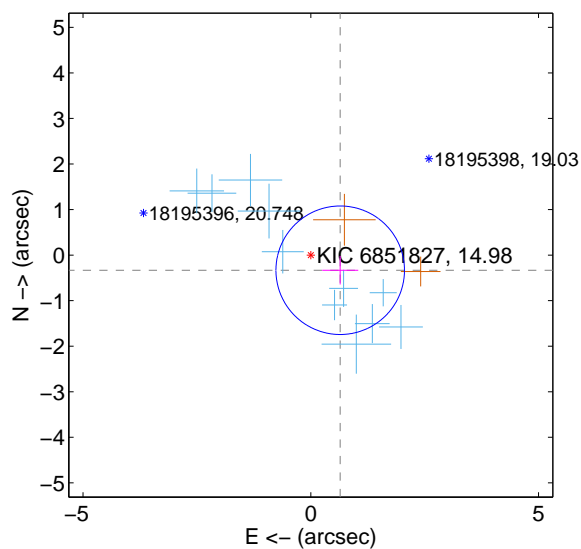
Supplemental centroid analysis for 006851827-01. Kepler magnitude: 14.98. Transit SNR 11.33

There are 11 quarters with good PRF difference image offsets

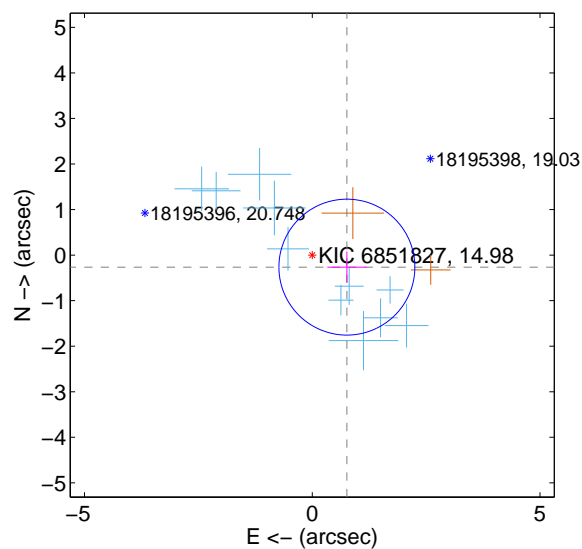
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.727 ± 0.470 | 1.55 | -0.646 ± 0.395 | -0.333 ± 0.313 |
| PRF-fit source offset from KIC position | 0.805 ± 0.497 | 1.62 | -0.761 ± 0.429 | -0.264 ± 0.343 |
| photometric centroid source offset | 1.08 ± 1.12 | 0.97 | 1.07 ± 1.12 | -0.17 ± 1.12 |

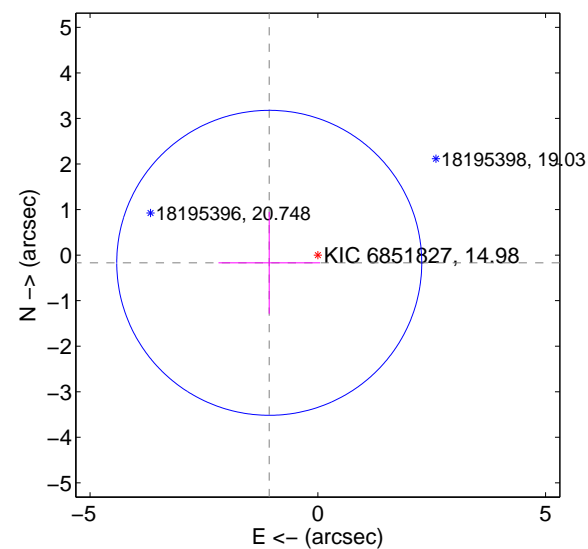
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

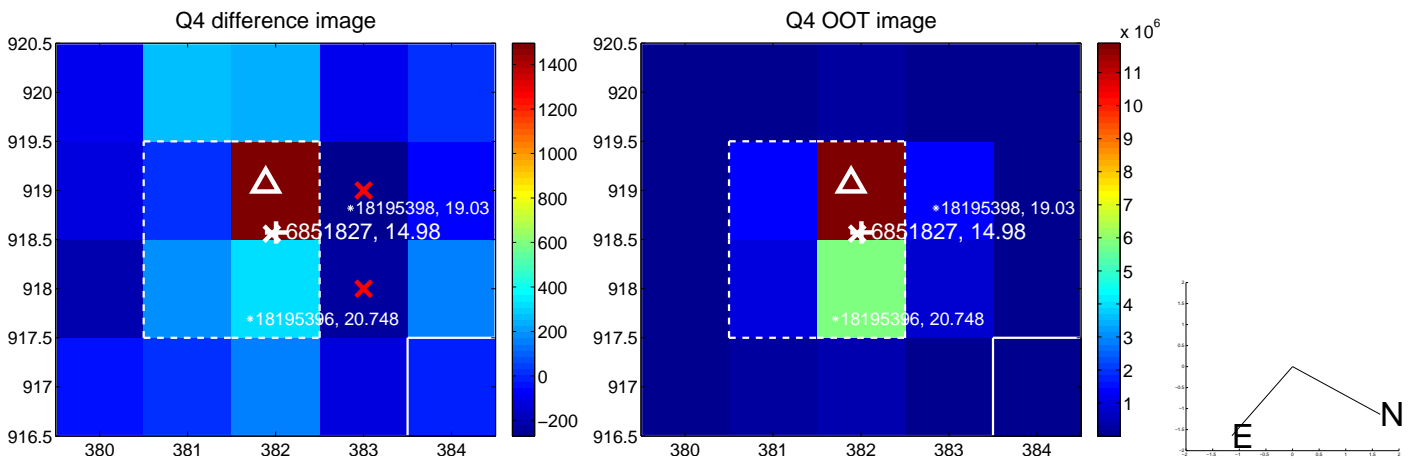
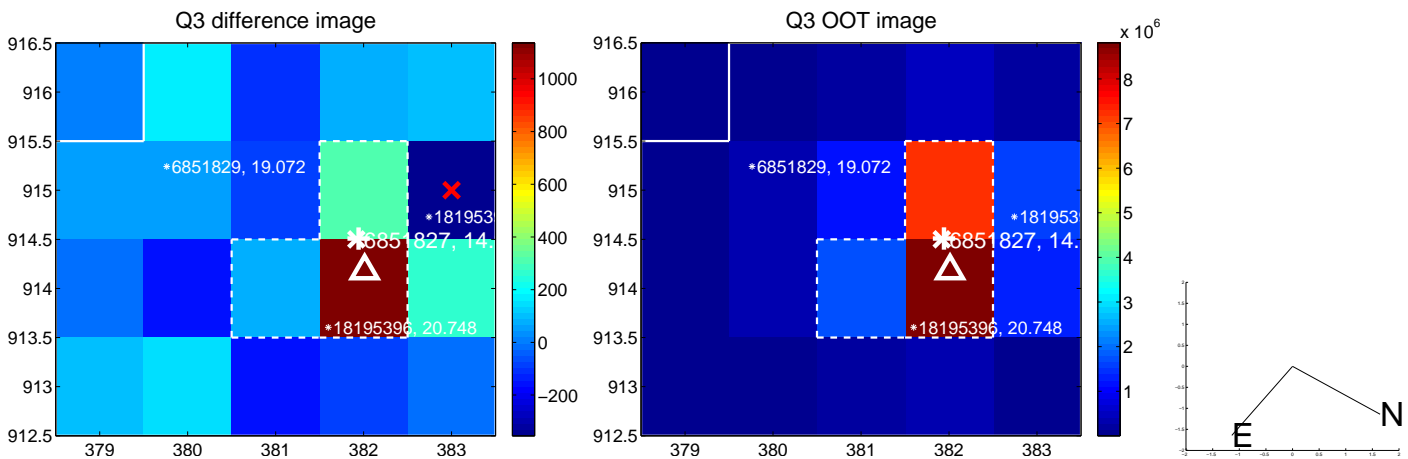
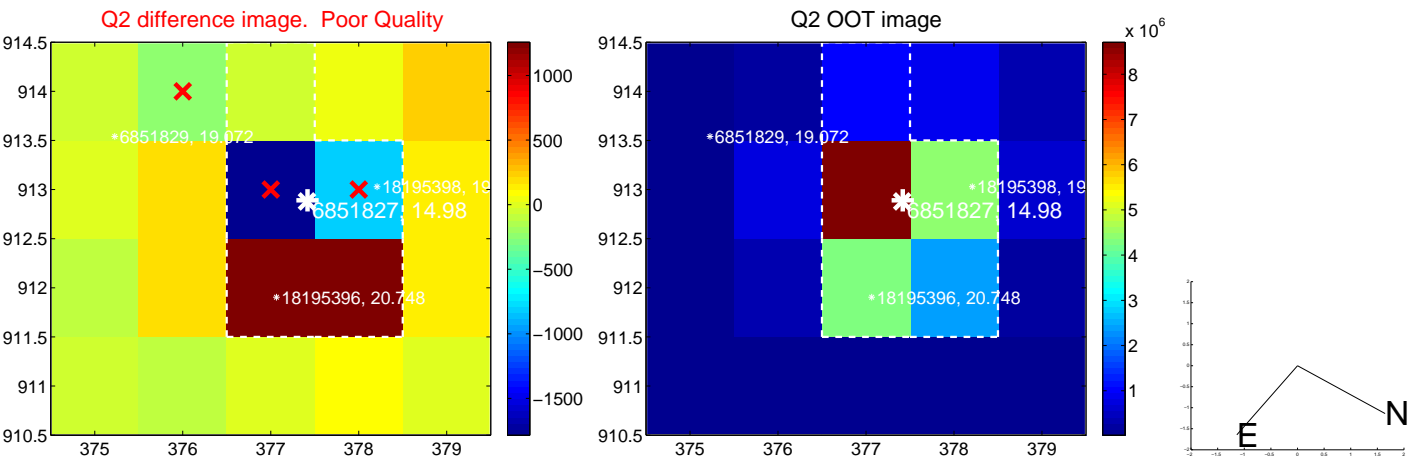
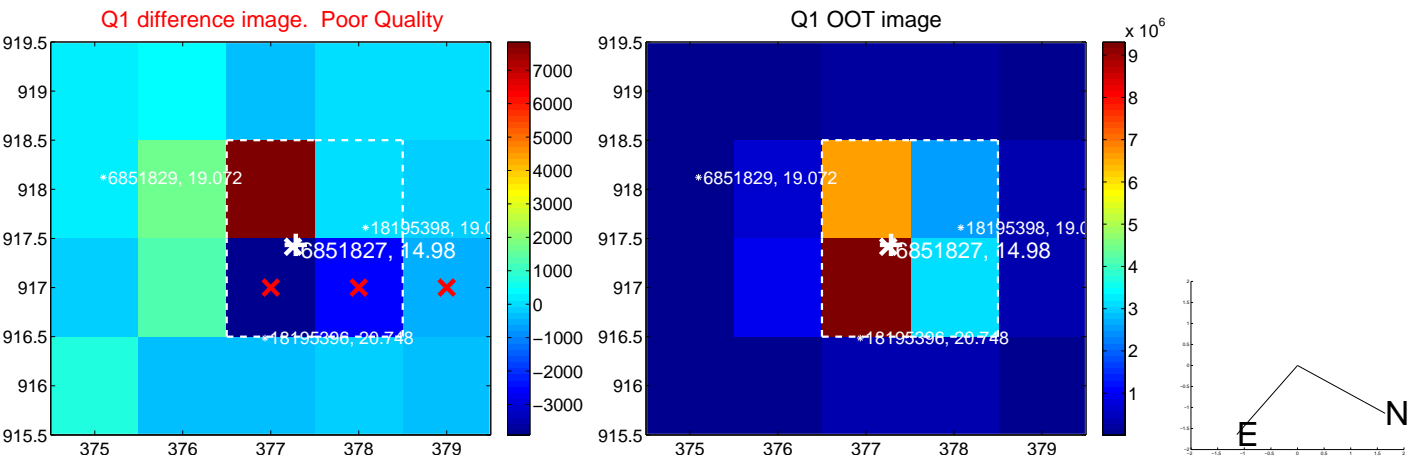


offset from photometric centroids

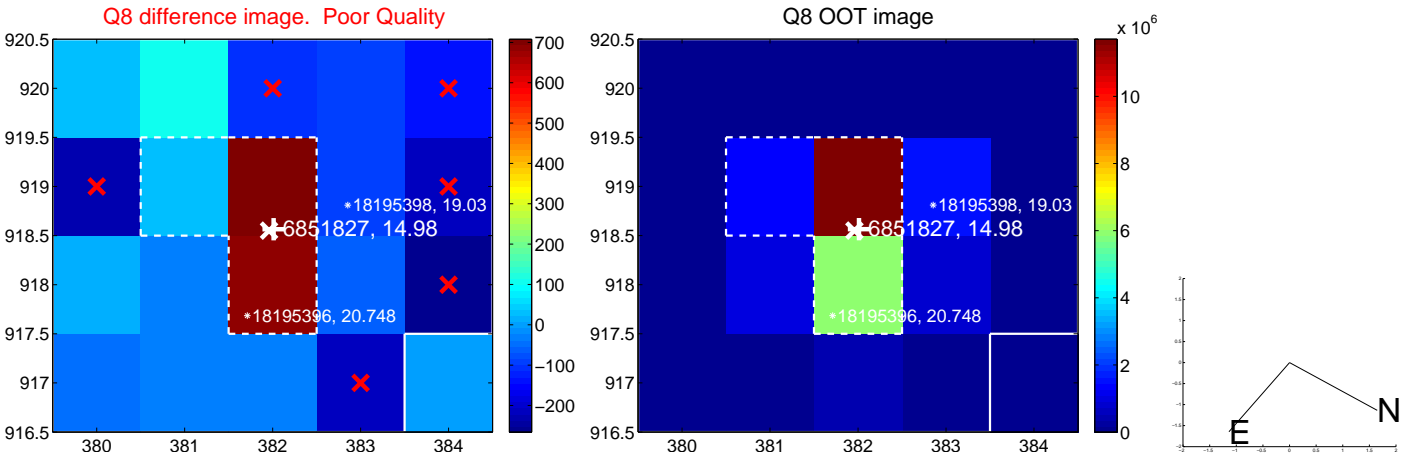
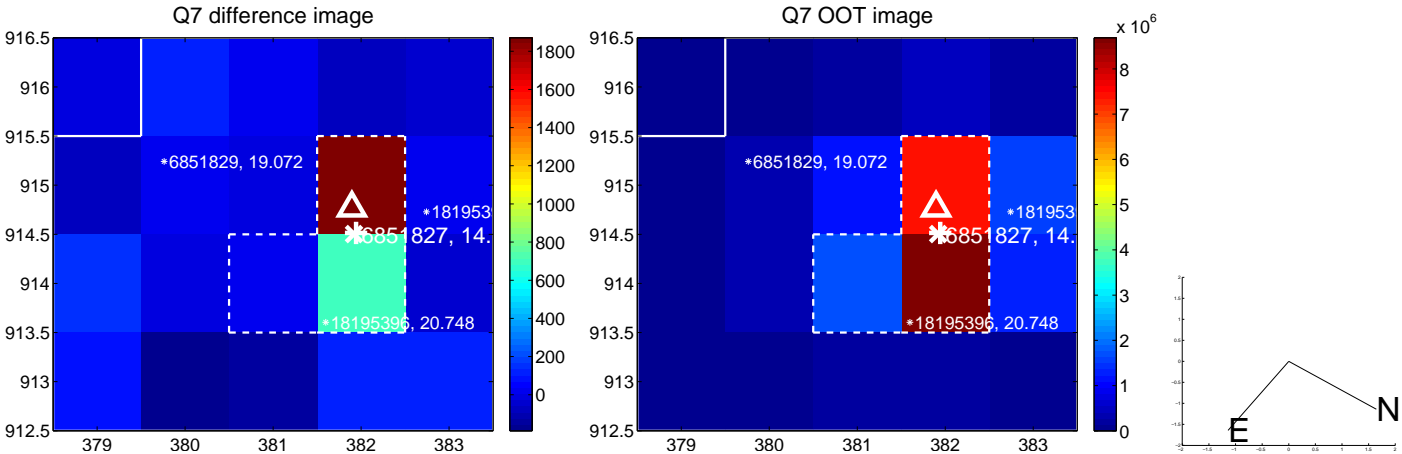
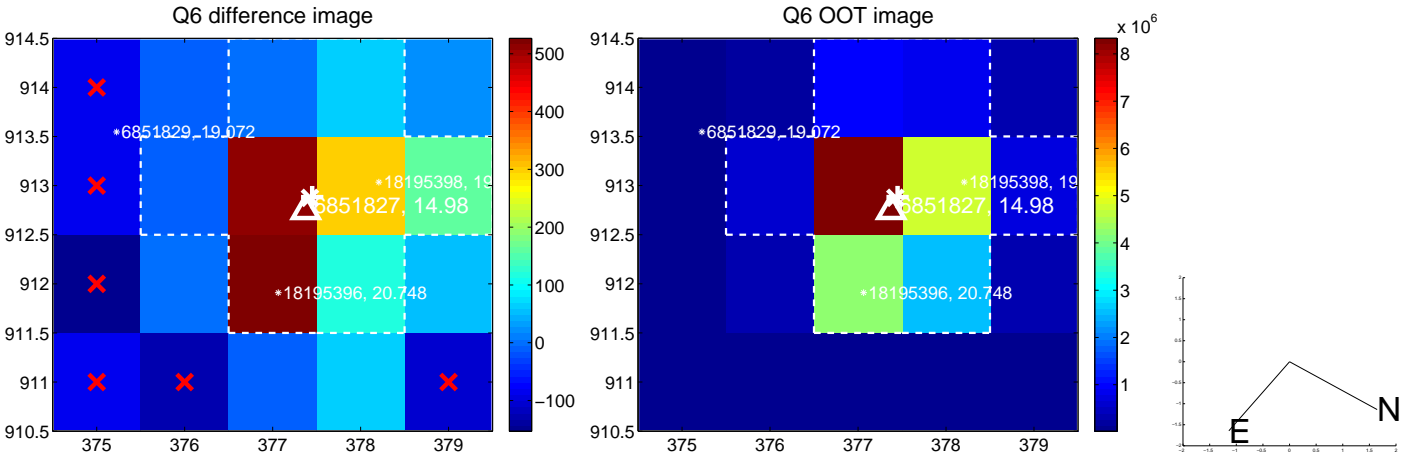
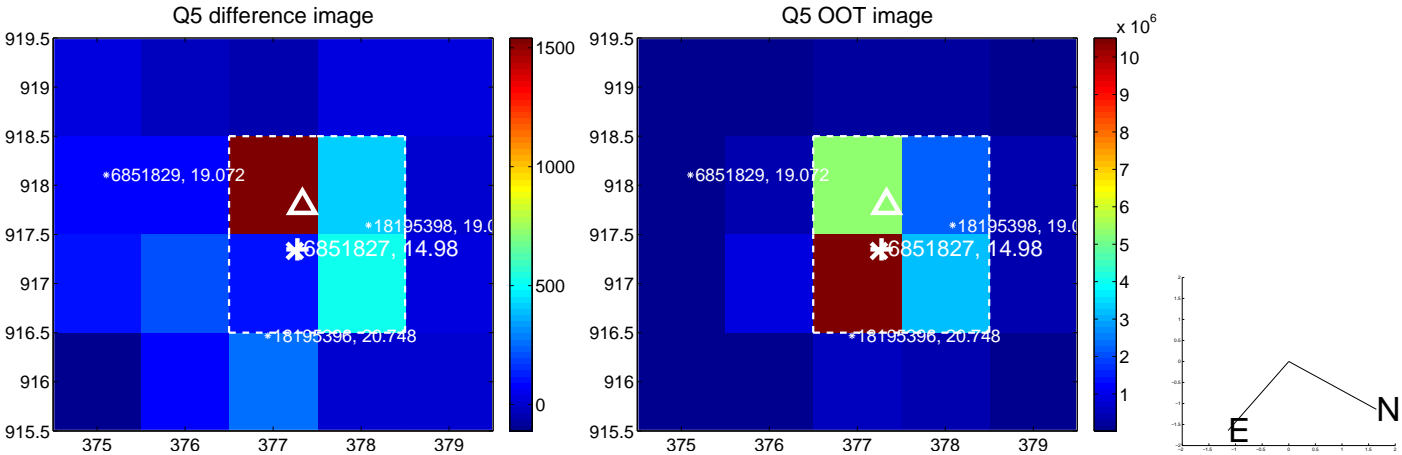


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

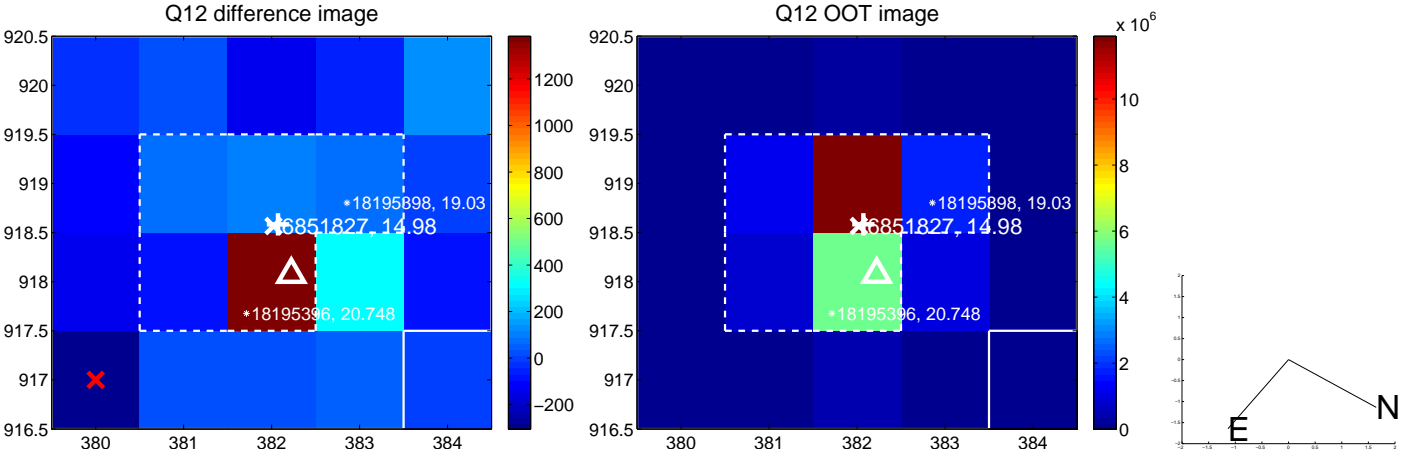
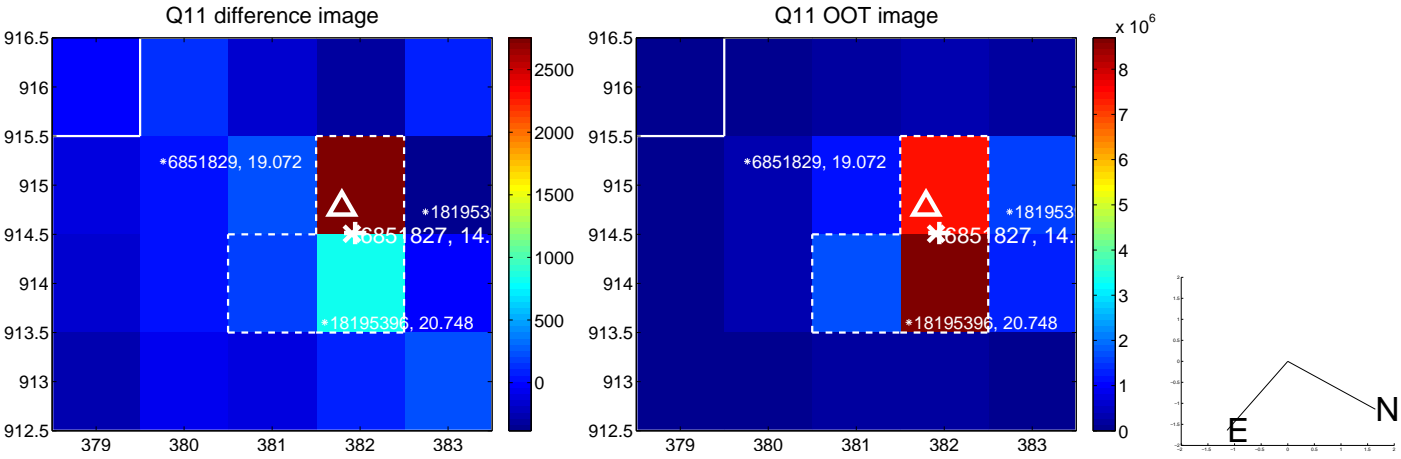
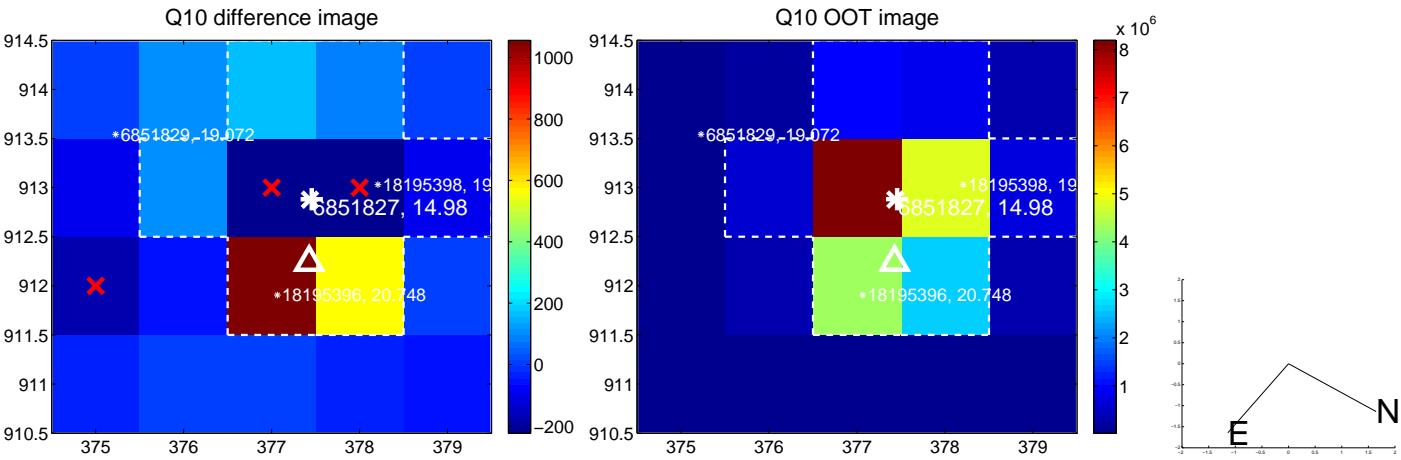
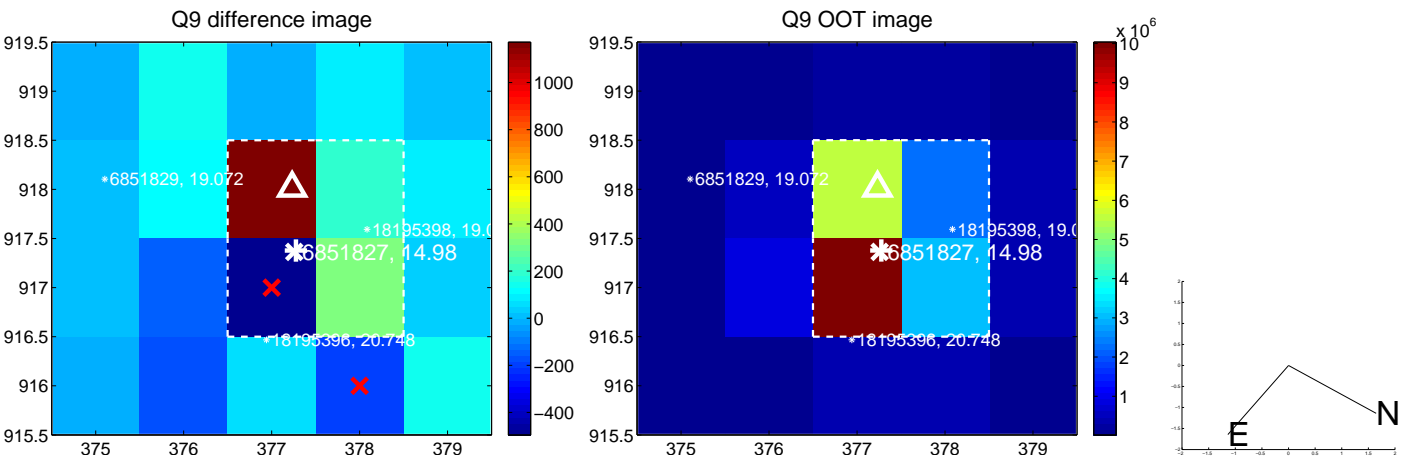
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



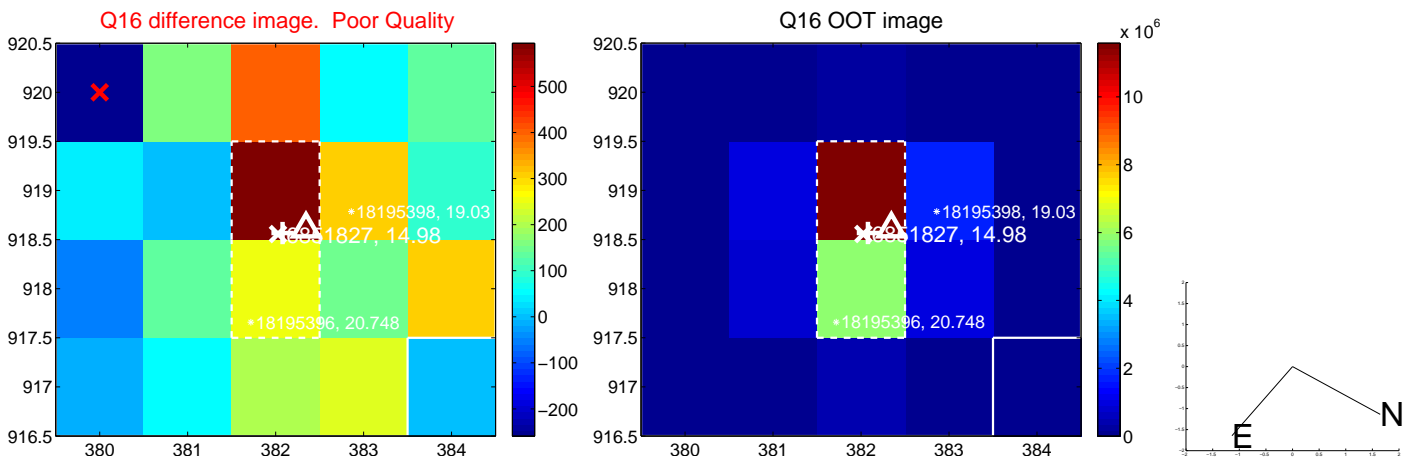
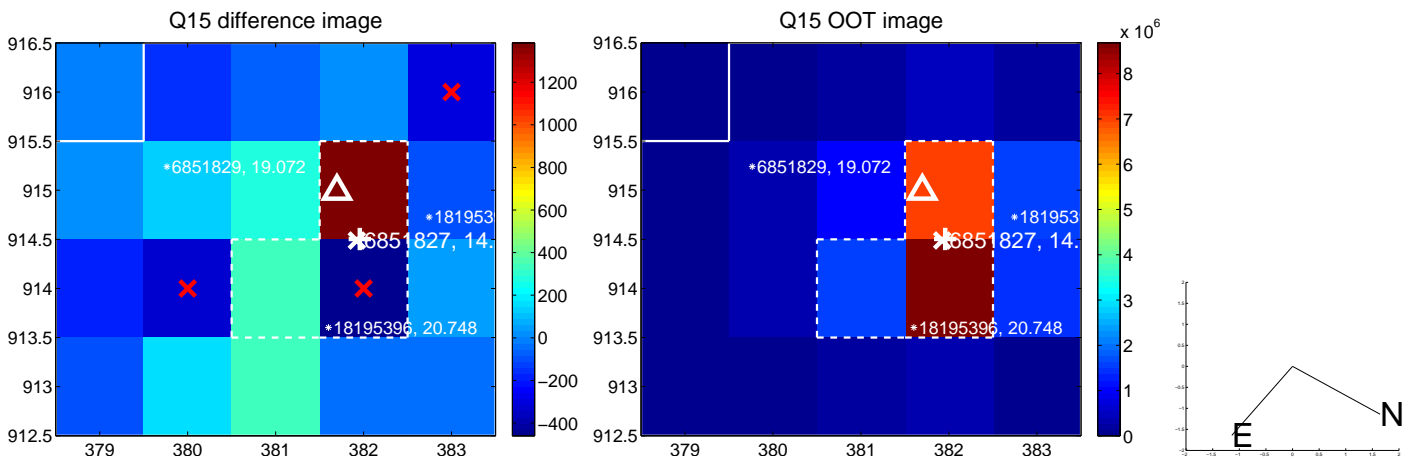
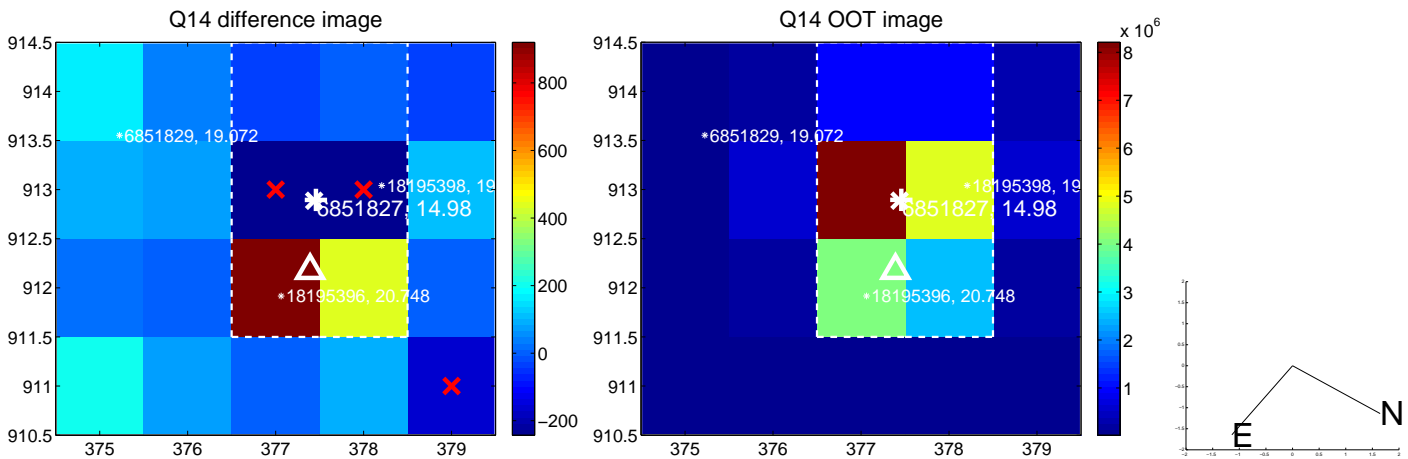
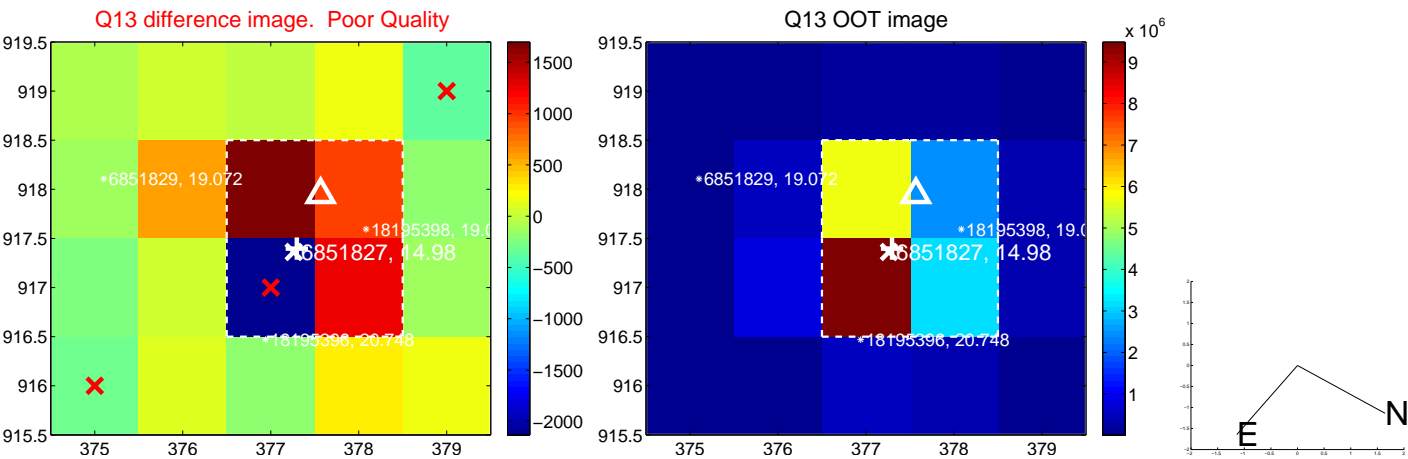
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



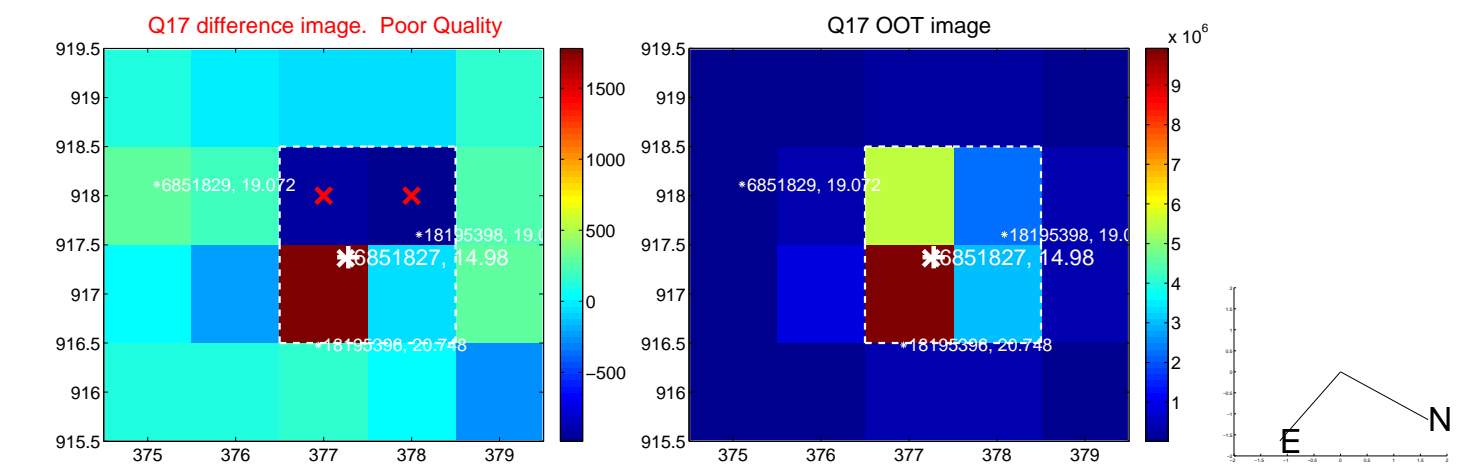
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



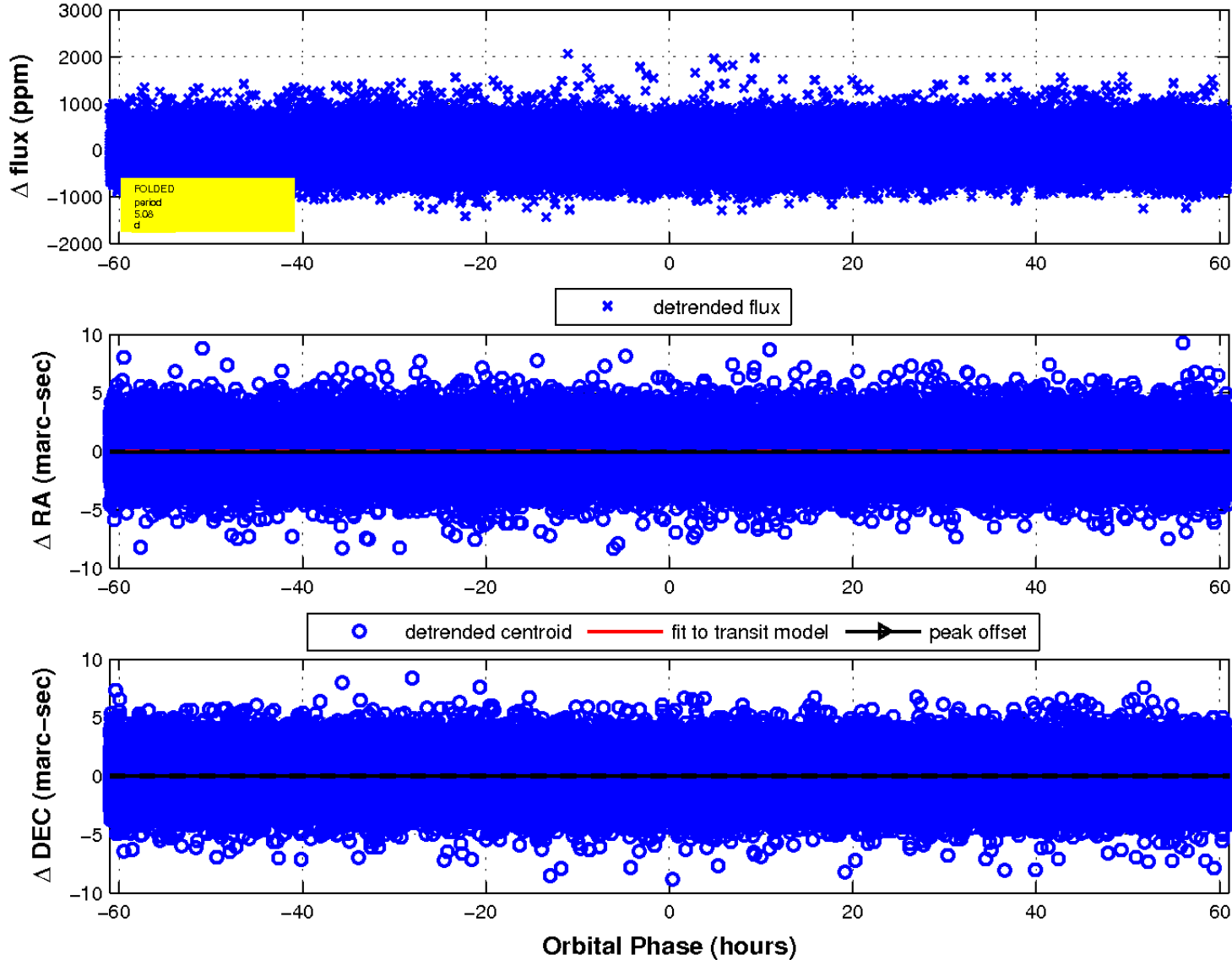
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

