

KIC 008748670

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|------|-----------------------------|-----------------|------------------------|------------------------|
| 008748670-01 | OBS | No | 2.115901 | 133.437616 | 51.5 | 18.163 | 9.6 | 13.5 | 0.91 | 5970 | 0.65 | 902.65 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|----------|
| 008748670-01 | 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.

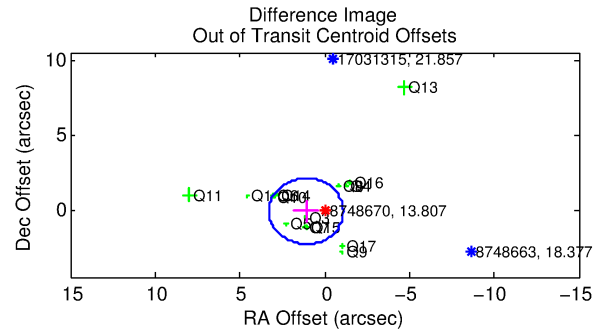
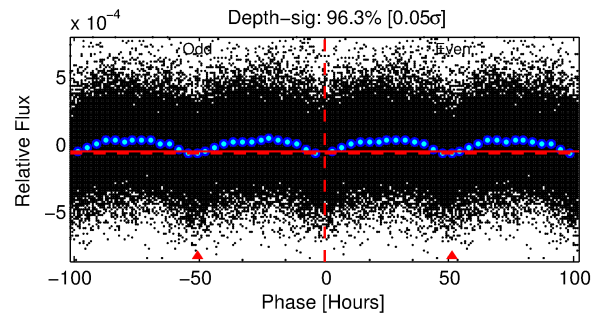
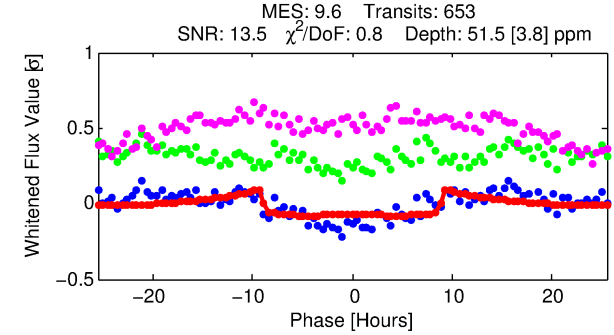
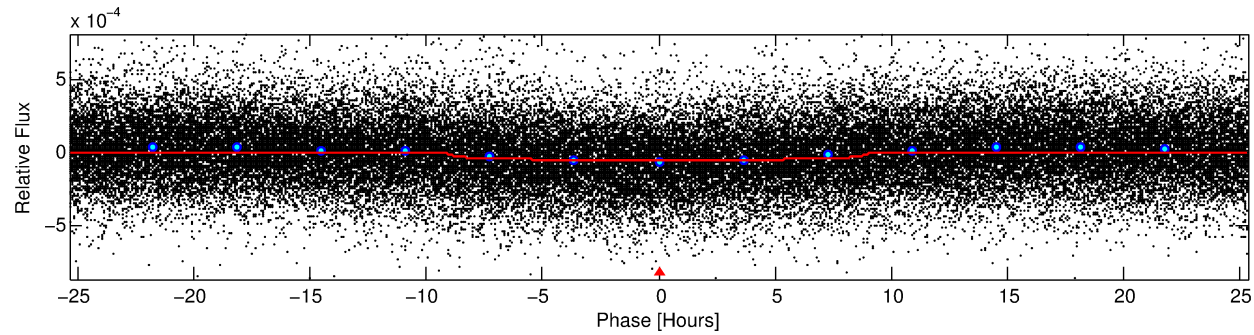
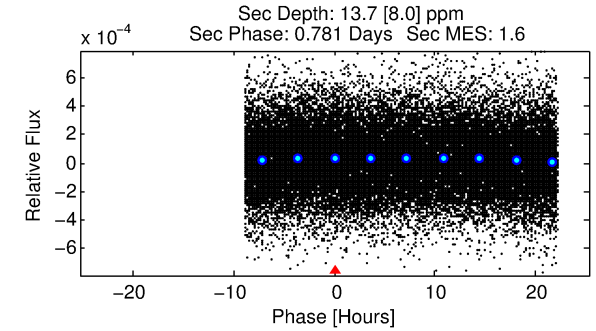
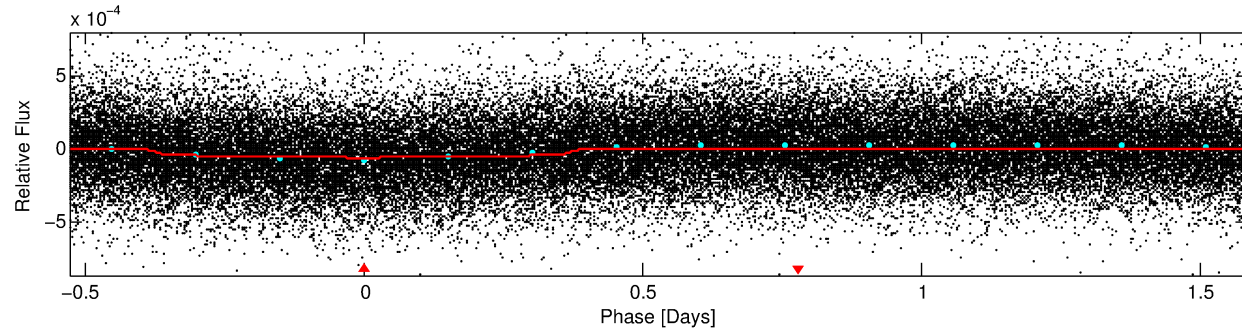
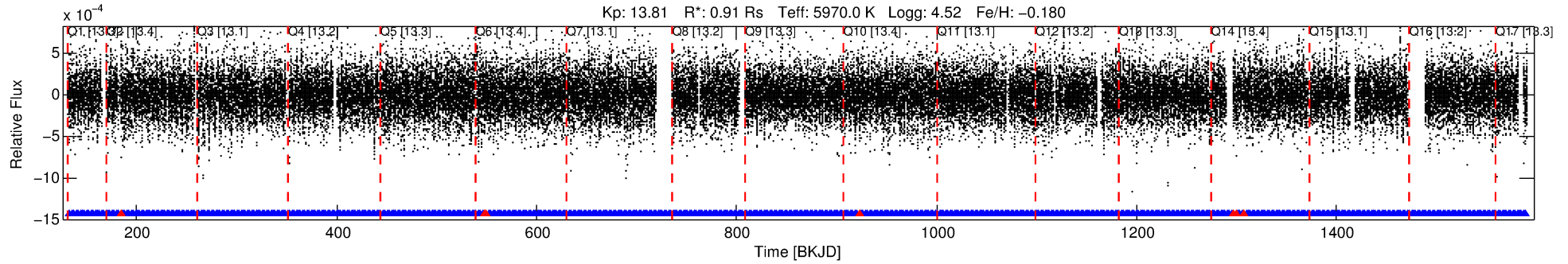
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008748670-01

No Significant Match Found

DV One-Page Summary

KIC: 8748670 Candidate: 1 of 1 Period: 2.116 d



DV Fit Results:

Period = 2.11590 [0.00002] d
Epoch = 133.4376 [0.0049] BKJD
Rp/R* = 0.0065 [0.0029]
a/R* = 1.12 [0.46]
b = 0.06 [37.89]
Seff = 902.65 [349.95]
Teq = 1398 [135] K
Rp = 0.65 [0.34] Re
a = 0.0322 [0.0081] AU
Ag = 18.64 [20.77] [0.85σ]
Teffp = 4490 [1188] K [2.59σ]

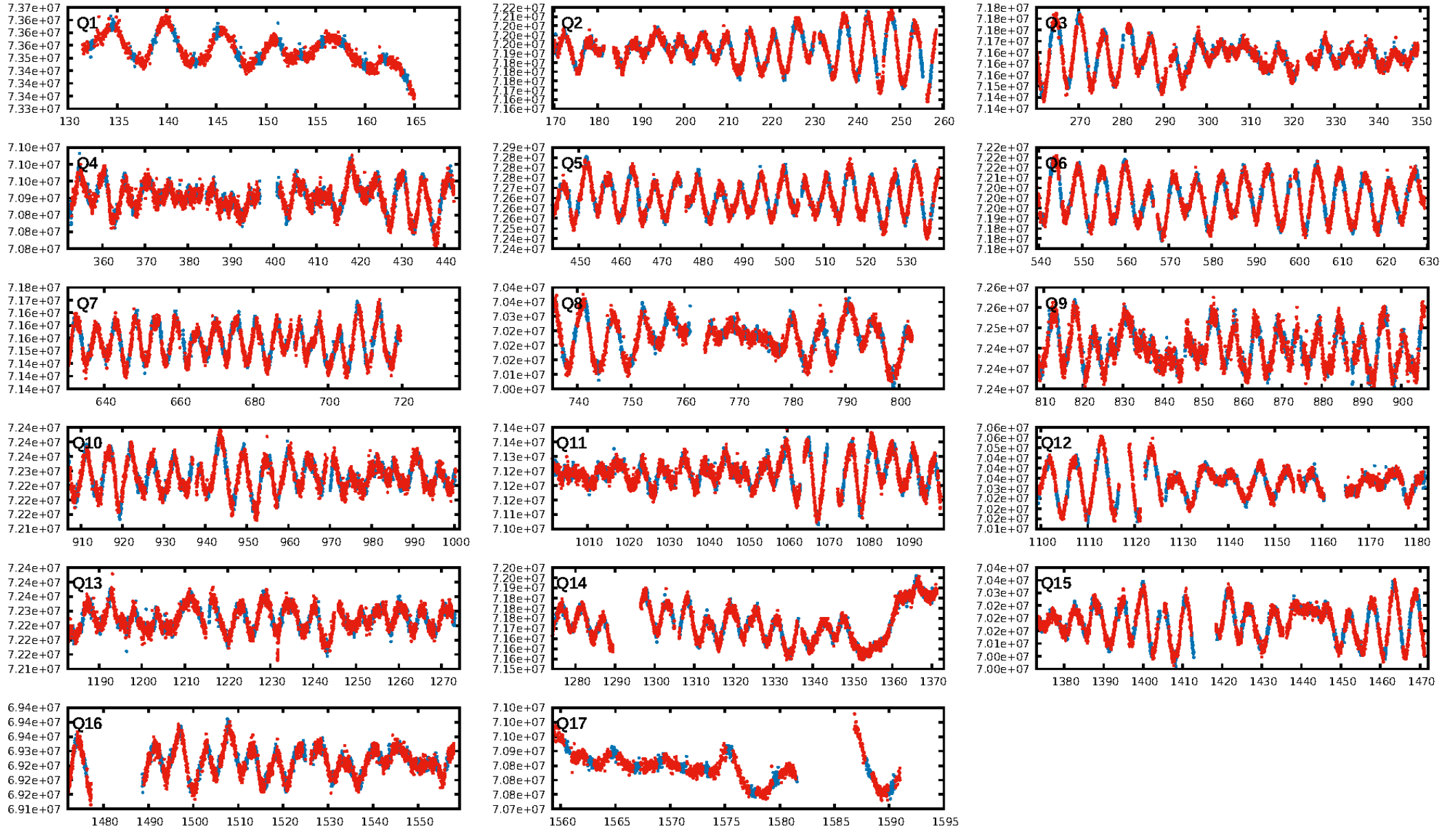
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [615/622]
GhostDiagnostic-chr: 0.8723
Centroid-sig: 0.0%
Centroid-so: 1.510 arcsec [3.62σ]
OotOffset-rm: 1.100 arcsec [1.50σ]
KicOffset-rm: 1.142 arcsec [1.37σ]
OotOffset-st: 3/4/3/5 [15]
KicOffset-st: 3/4/3/5 [15]
DiffImageQuality-fgm: 0.40 [6/15]
DiffImageOverlap-fno: 1.00 [17/17]

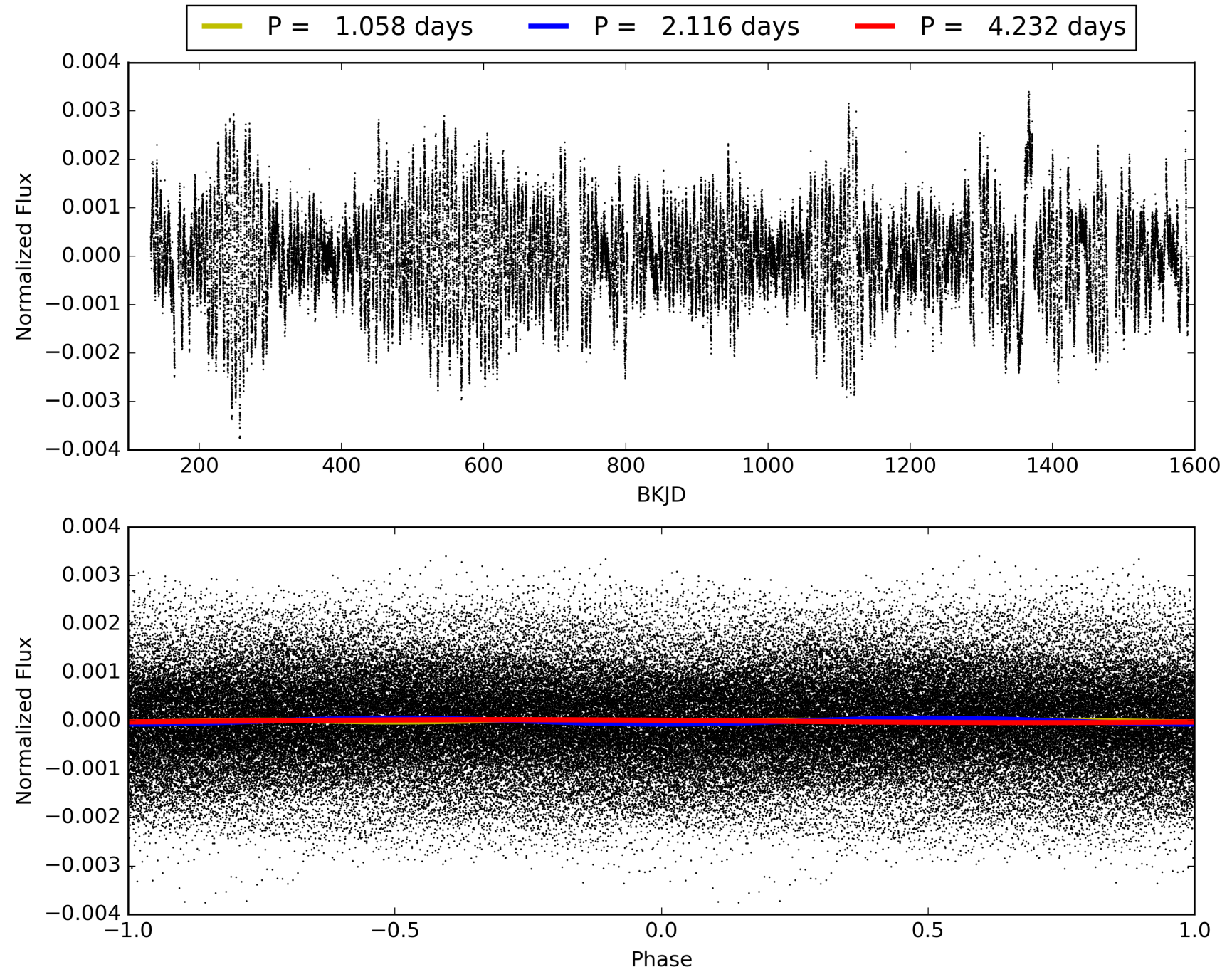
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:26:29 Z

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

TCE 008748670-01, PDC Light Curves

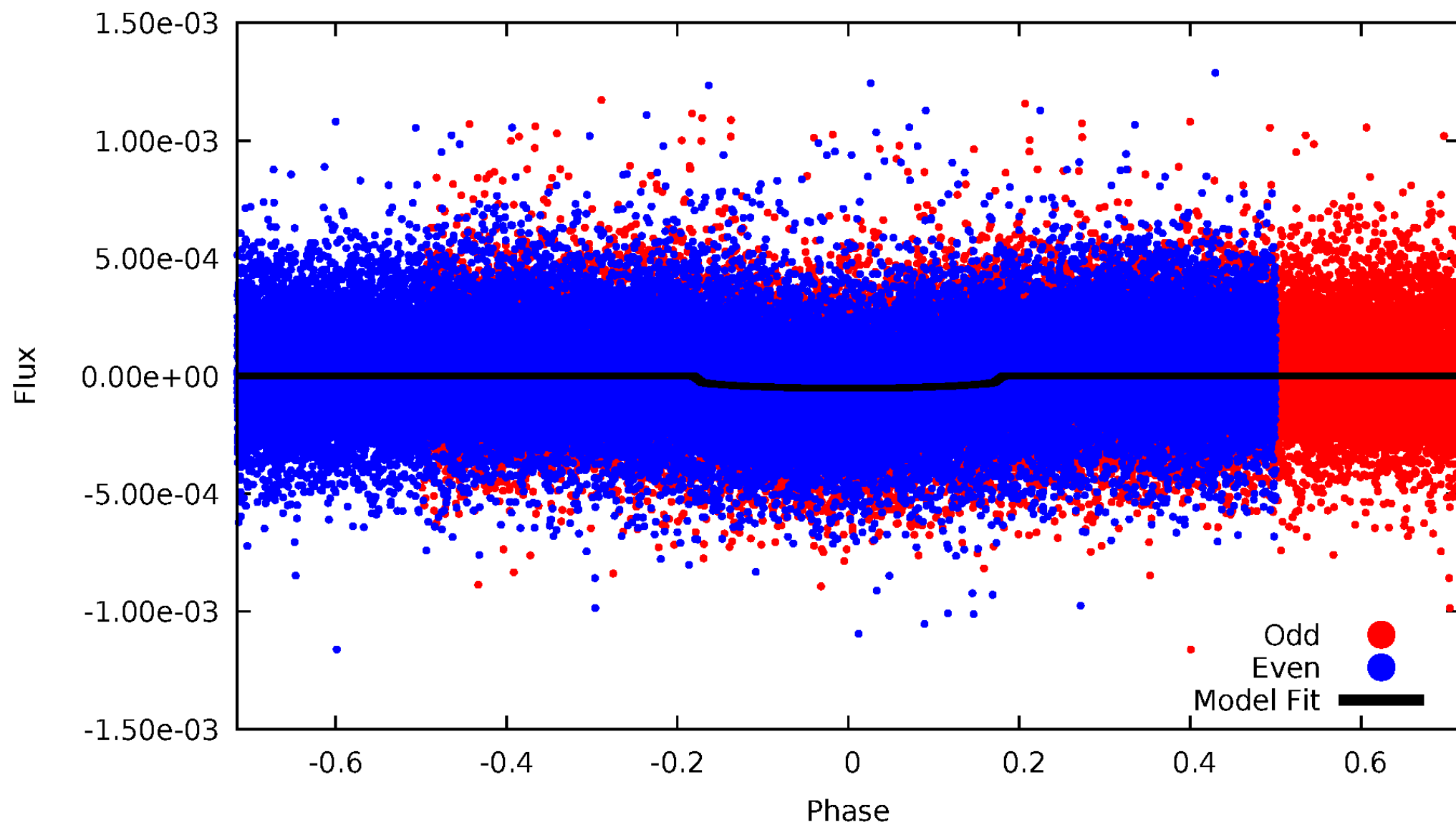


TCE 008748670-01



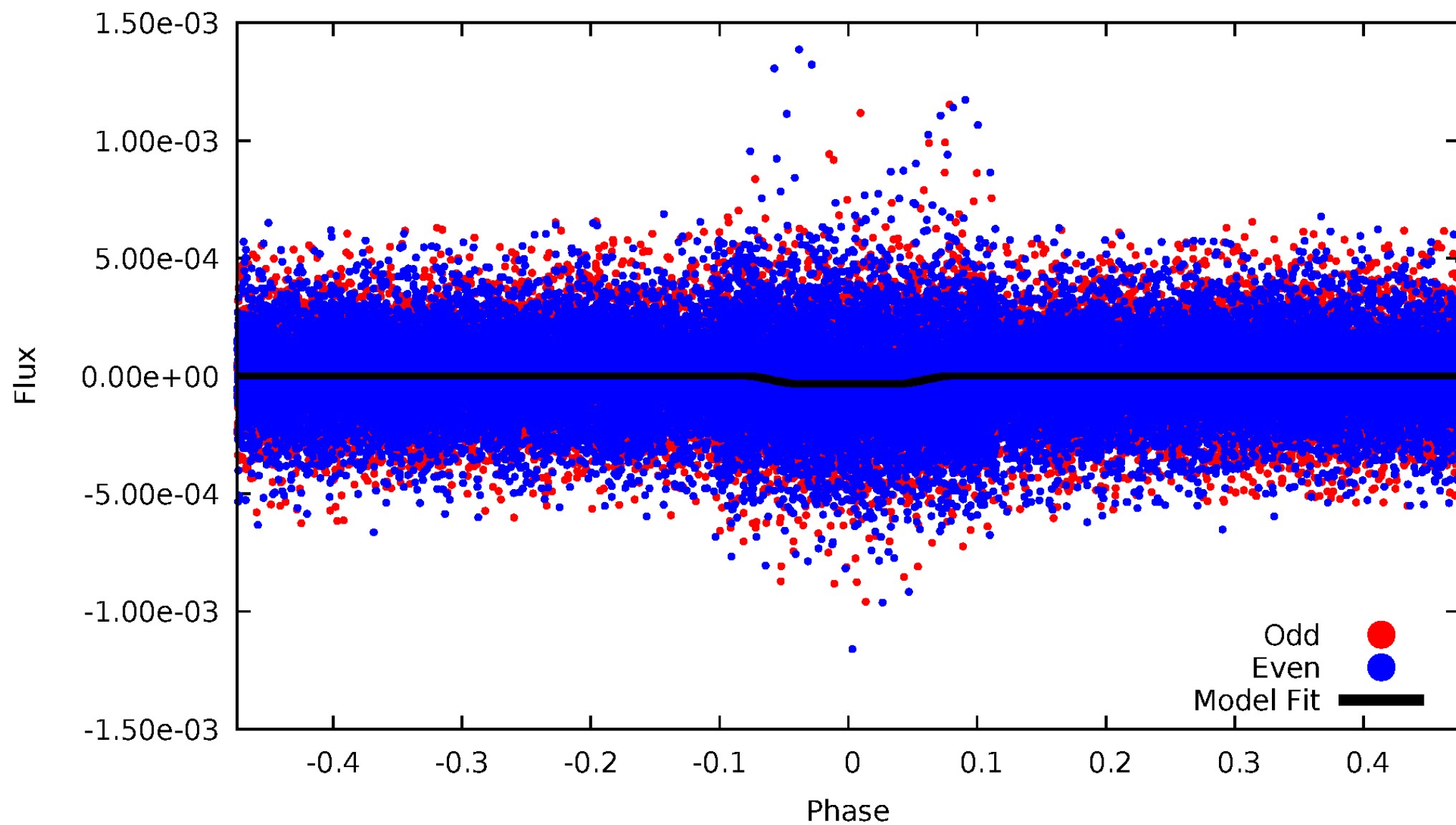
DV Odd/Even

TCE 008748670-01

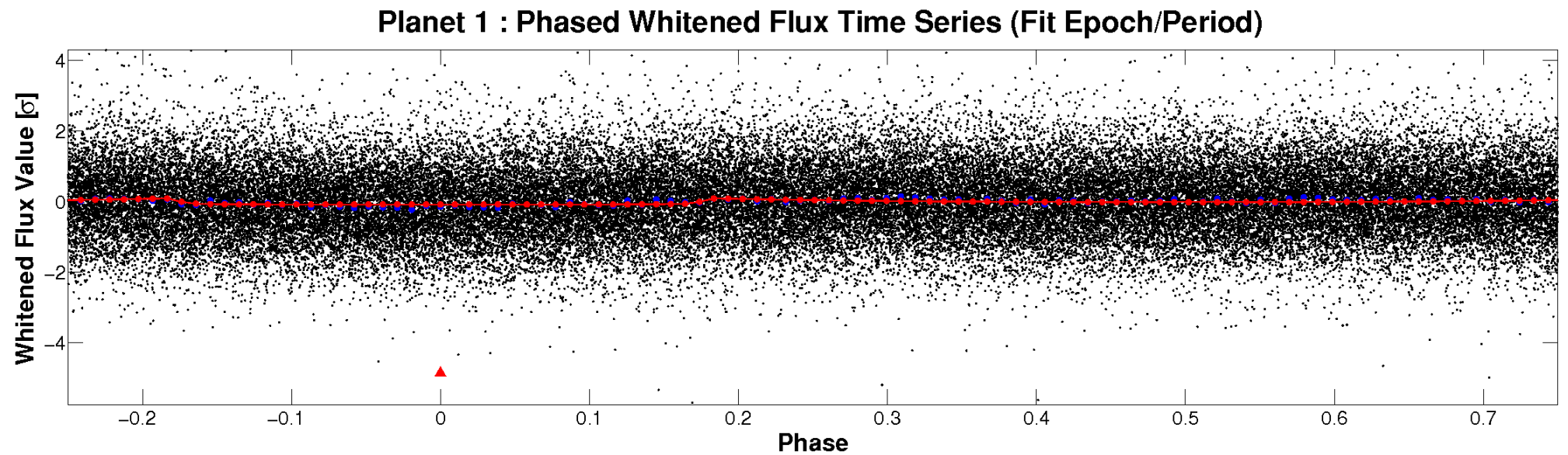
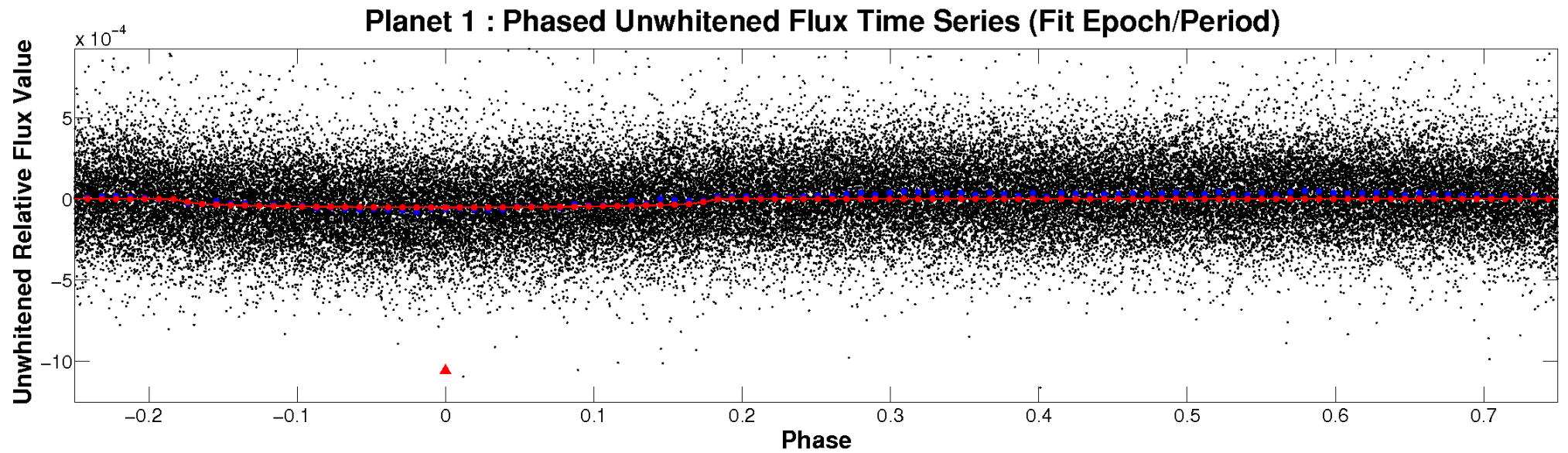


ALT Odd/Even

TCE 008748670-01

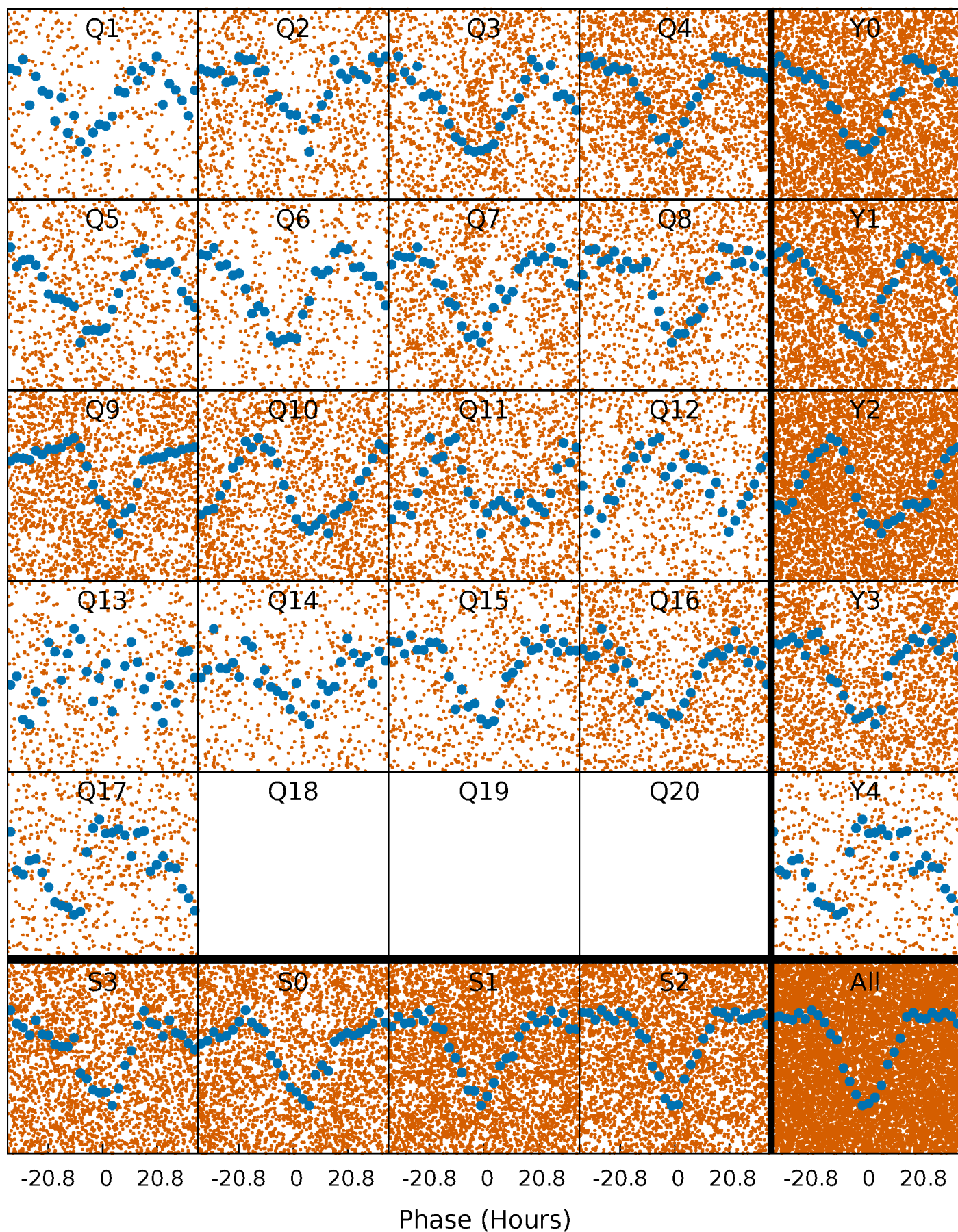


Non-Whitened Vs. Whitened Light Curve



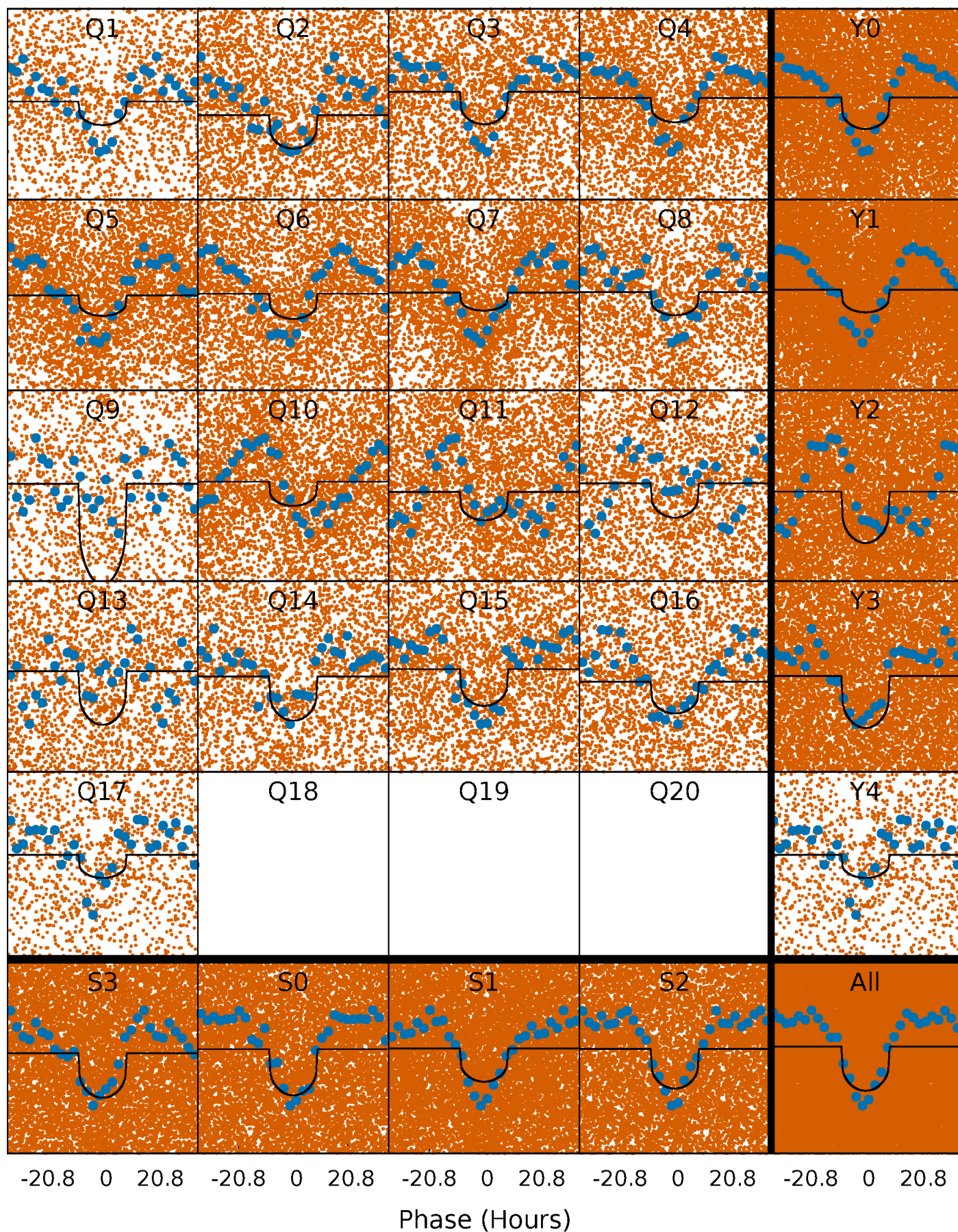
PDC Quarter-Phased Transit Curves

TCE 008748670-01 P= 2.115901 Days $T_0=133.437616$ (BKJD)



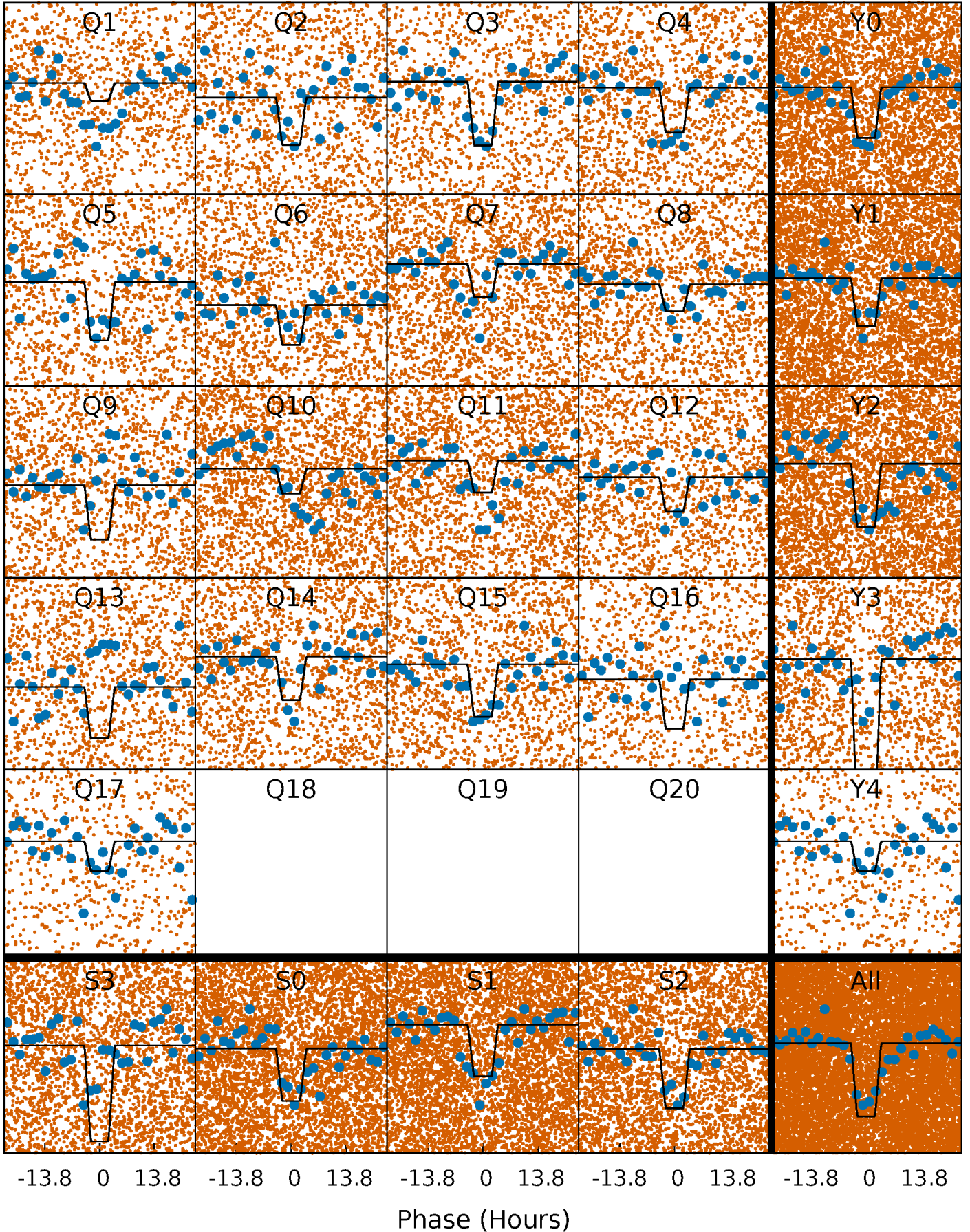
DV Quarter-Phased Transit Curves

TCE 008748670-01 P= 2.115901 Days $T_0=133.437616$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

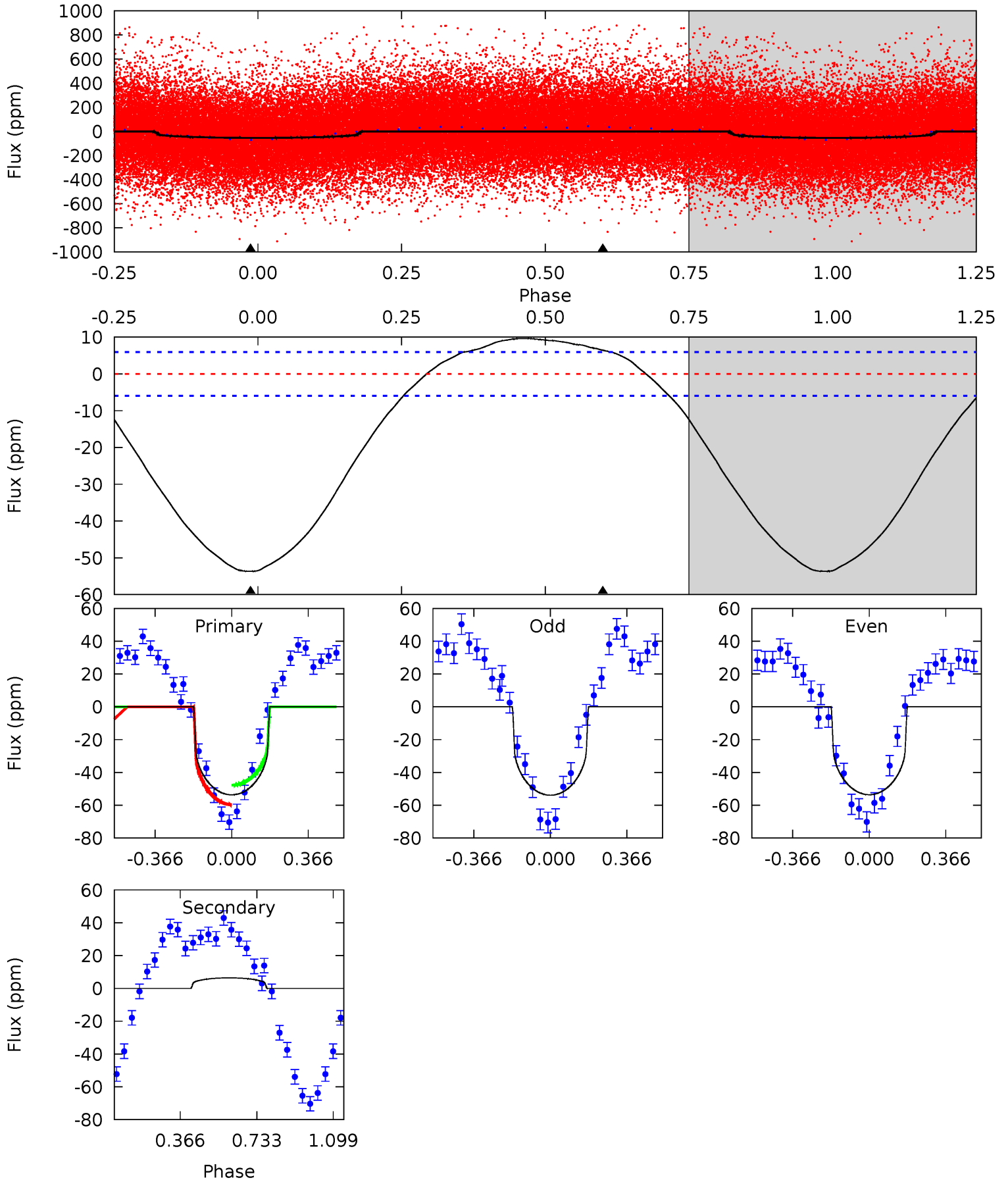
TCE 008748670-01 P= 2.115749 Days $T_0=133.444729$ (BKJD)



DV Model-Shift Uniqueness Test

008748670-01, P = 2.115901 Days, E = 131.321715 Days

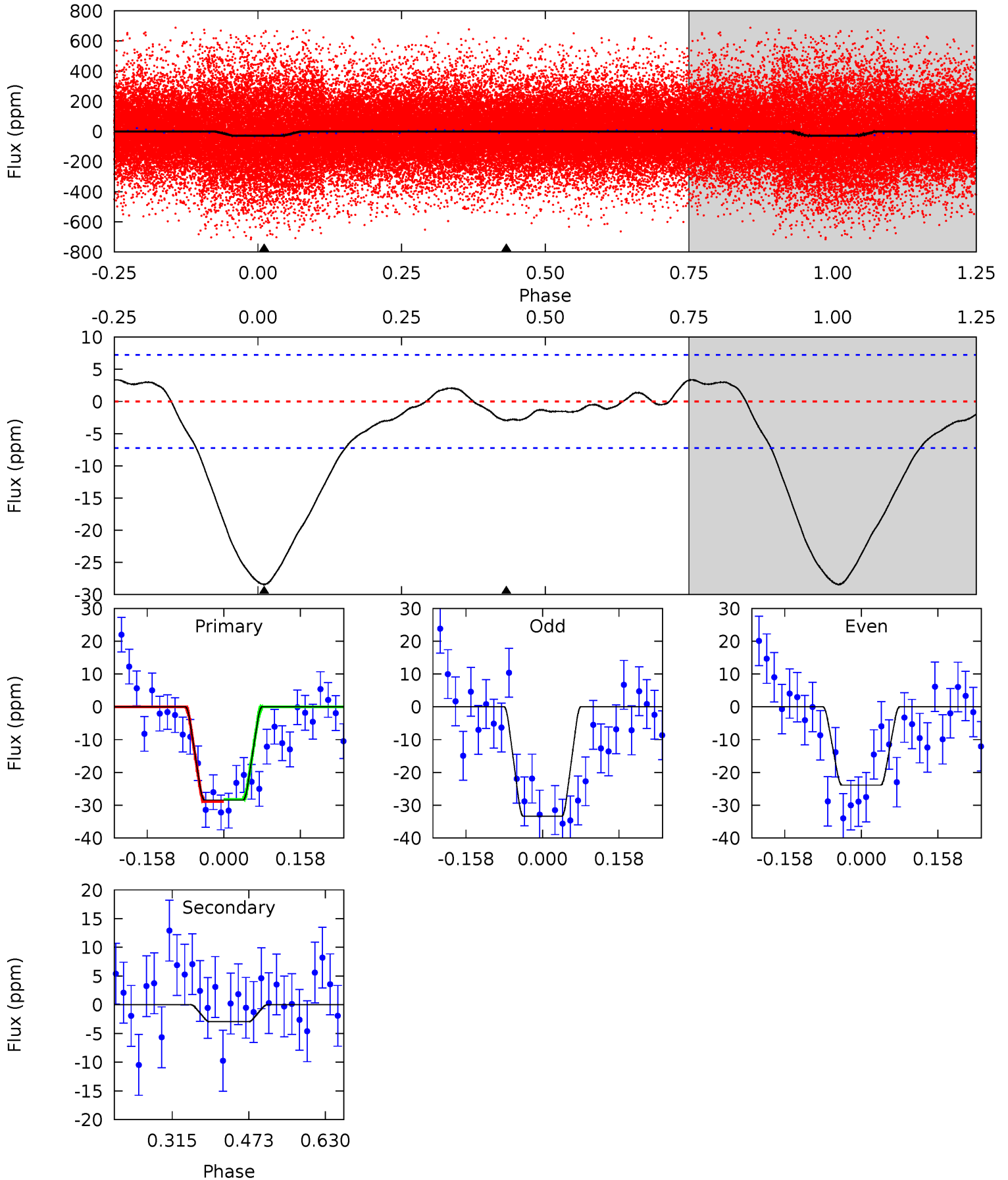
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 38.7 | -4.64 | 0 | 0 | 4.28 | 0.90 | 2.74 | 38.7 | 38.7 | -4.64 | -4.64 | 0.11 | 1.11 | 0.15 | 4.39 |



Alt Model-Shift Uniqueness Test

008748670-01, P = 2.115749 Days, E = 131.328980 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 17.5 | 1.82 | 0 | 0 | 4.47 | 1.41 | 1.49 | 17.5 | 17.5 | 1.82 | 1.82 | 2.89 | 1.05 | 0.11 | 0.19 |



Stellar Parameters For KIC 008748670

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 5970^{+161}_{-179} | $4.521^{+0.048}_{-0.204}$ | $-0.180^{+0.300}_{-0.300}$ | $0.908^{+0.265}_{-0.088}$ | $0.996^{+0.121}_{-0.121}$ | $1.877^{+0.383}_{-0.987}$ |
| | +3%/-3% | +1%/-5% | +167%/-167% | +29%/-10% | +12%/-12% | +20%/-53% |
| 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 008748670-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|---------------------|-----------------------|-----------------------------|
| DV | 6 ± 1 | $0.69^{+0.35}_{-0.30}$ | 1994^{+138}_{-93} | -4037^{+488}_{-932} | $-7.351^{+3.989}_{-16.683}$ |
| Alt. | -3 ± 2 | $0.61^{+0.29}_{-0.30}$ | 2001^{+141}_{-98} | 3552^{+1071}_{-642} | $4.040^{+11.775}_{-2.796}$ |

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 $A_{obs} \gg 1.0$

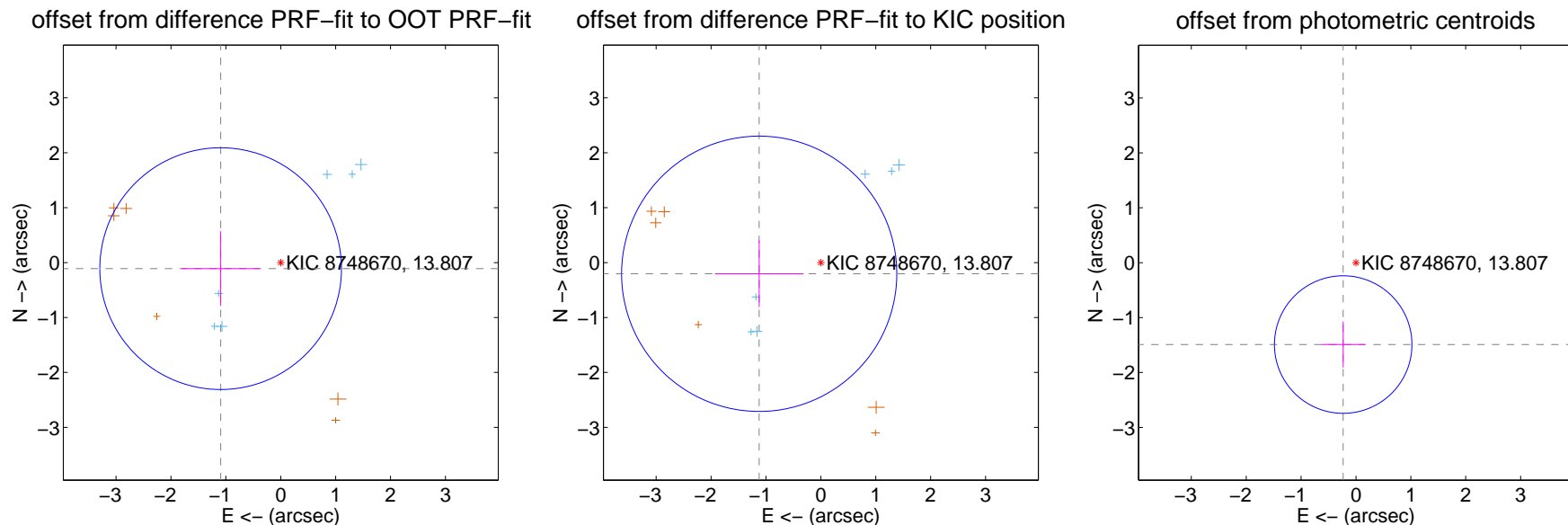
DV Centroid Data

Supplemental centroid analysis for 008748670-01. Kepler magnitude: 13.81. Transit SNR 13.53

There are 6 quarters with good PRF difference image offsets

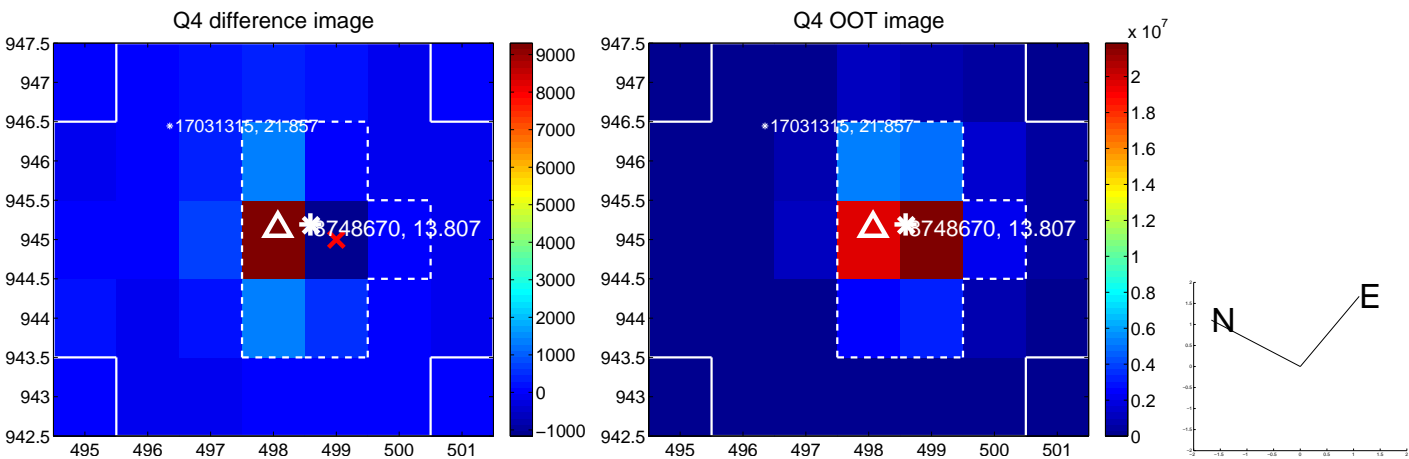
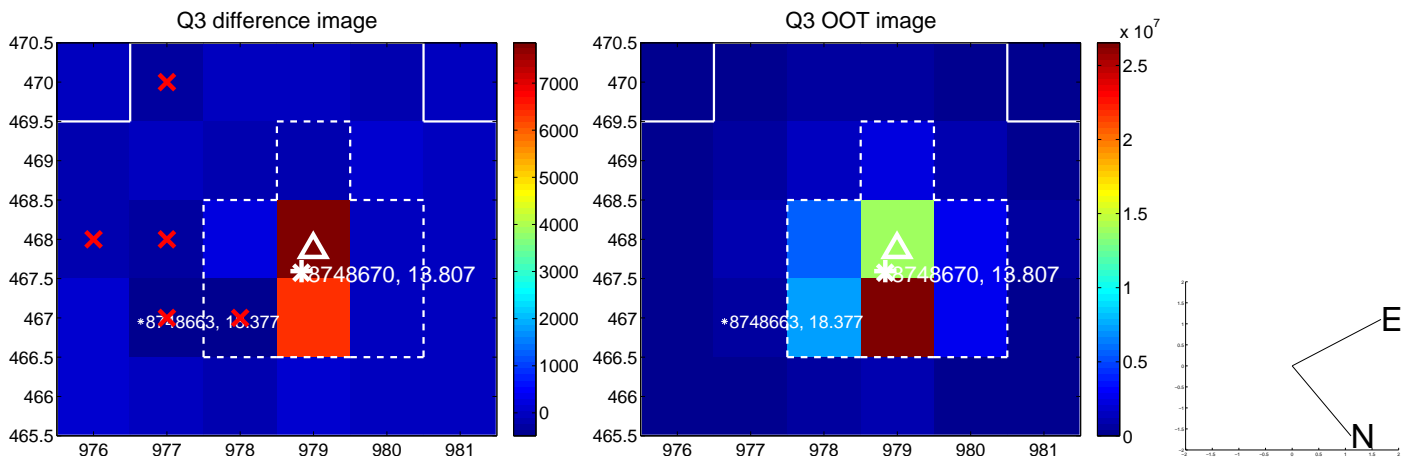
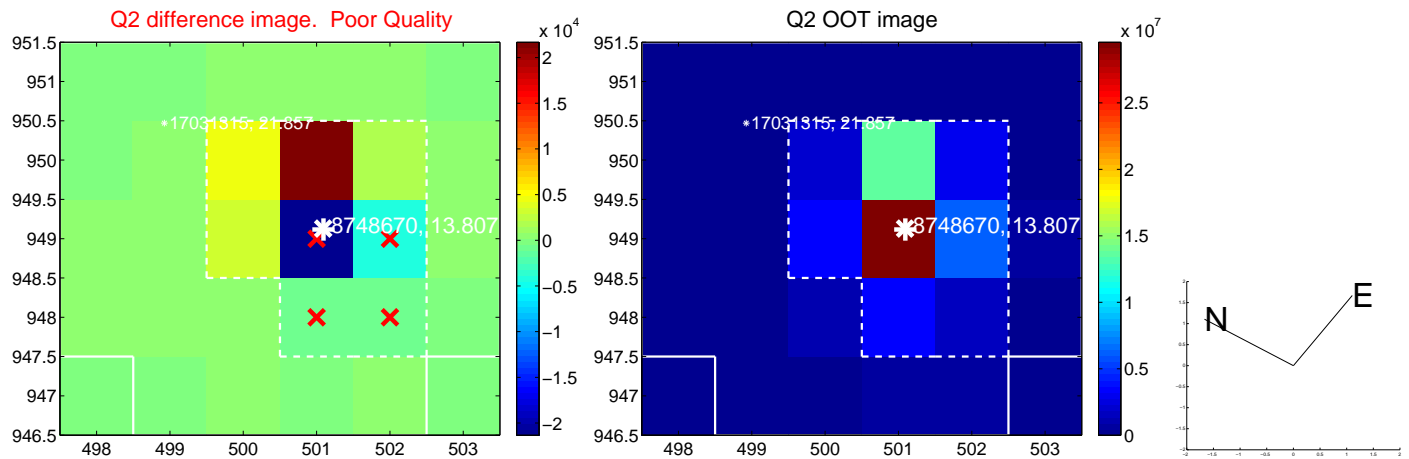
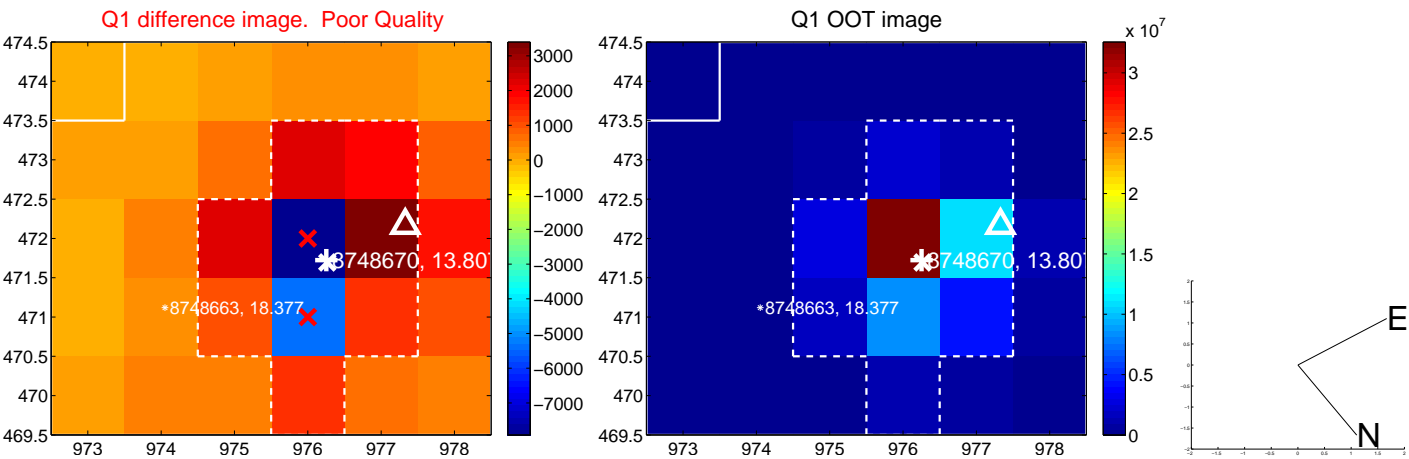
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 1.100 ± 0.734 | 1.50 | 1.095 ± 0.712 | -0.110 ± 0.679 |
| PRF-fit source offset from KIC position | 1.142 ± 0.836 | 1.37 | 1.124 ± 0.806 | -0.204 ± 0.606 |
| photometric centroid source offset | 1.51 ± 0.42 | 3.62 | 0.23 ± 0.40 | -1.49 ± 0.42 |

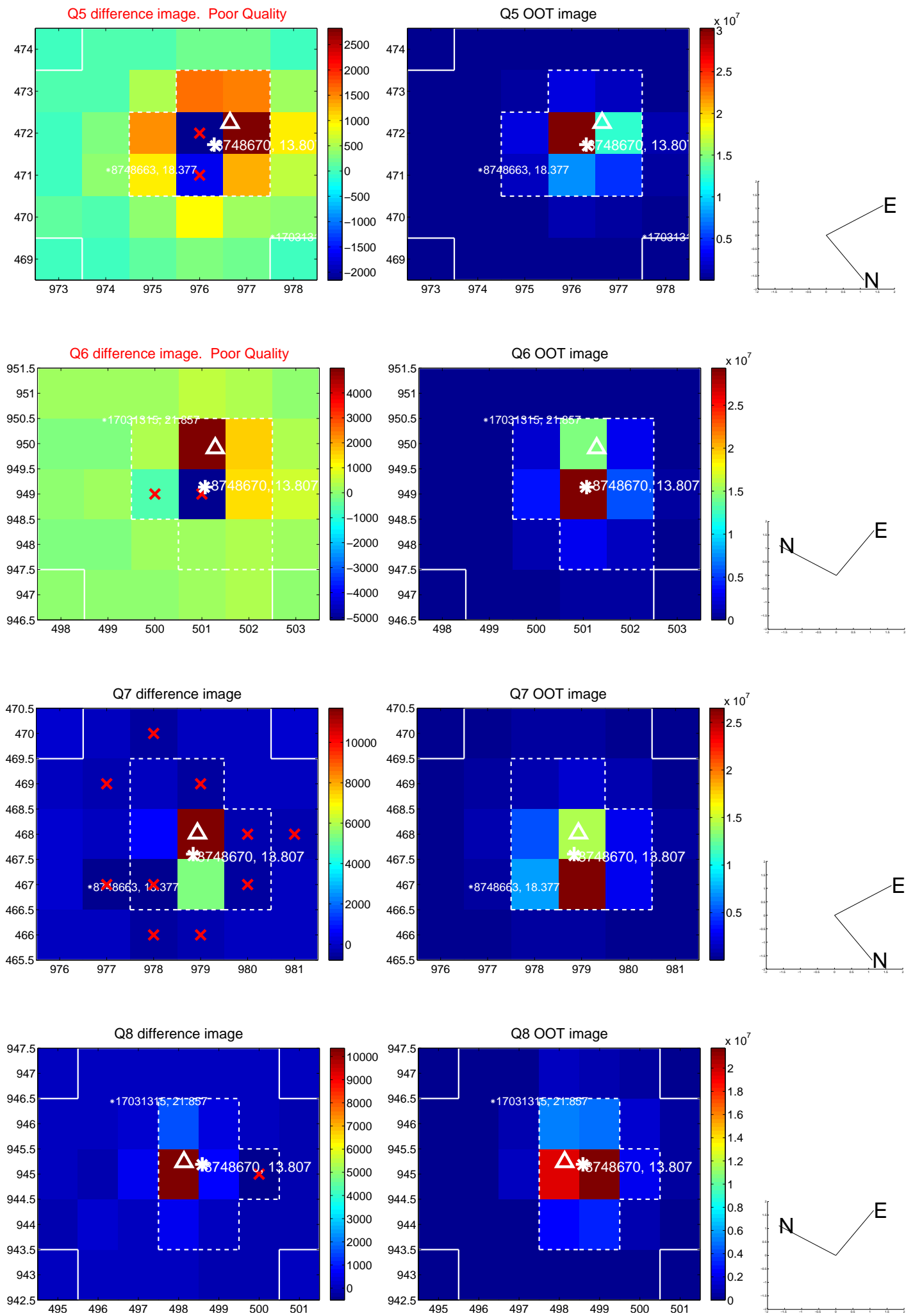


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

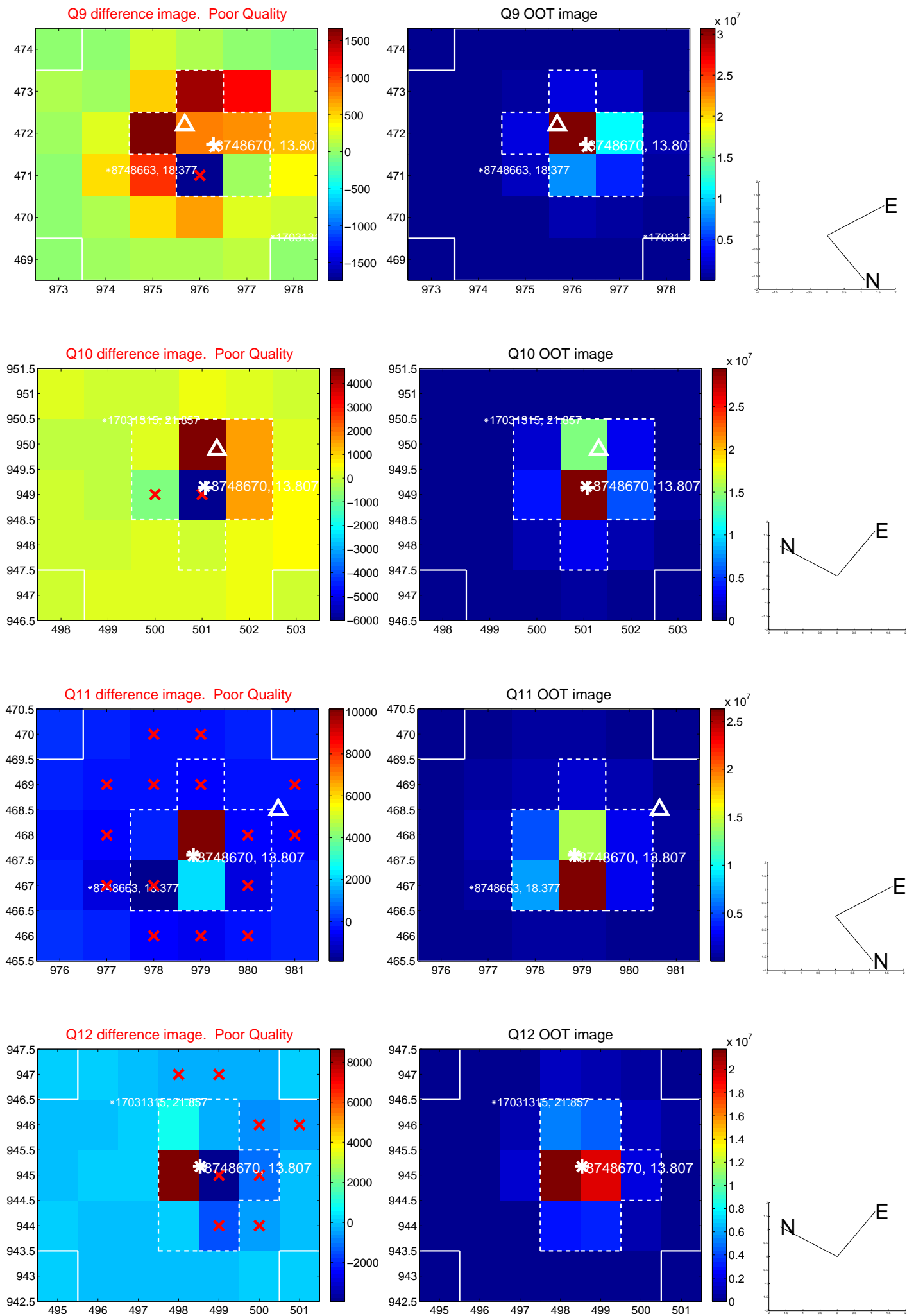
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



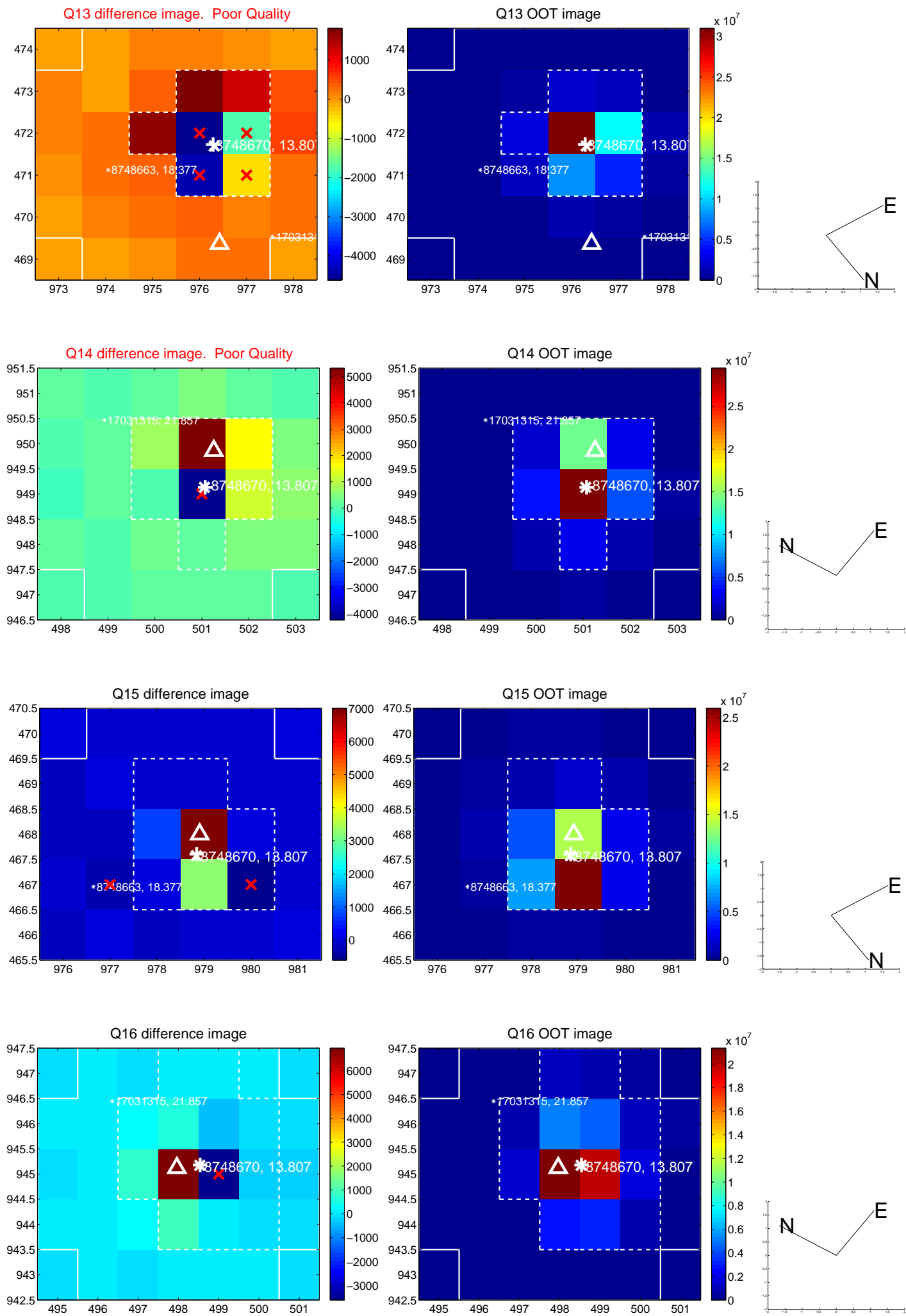
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



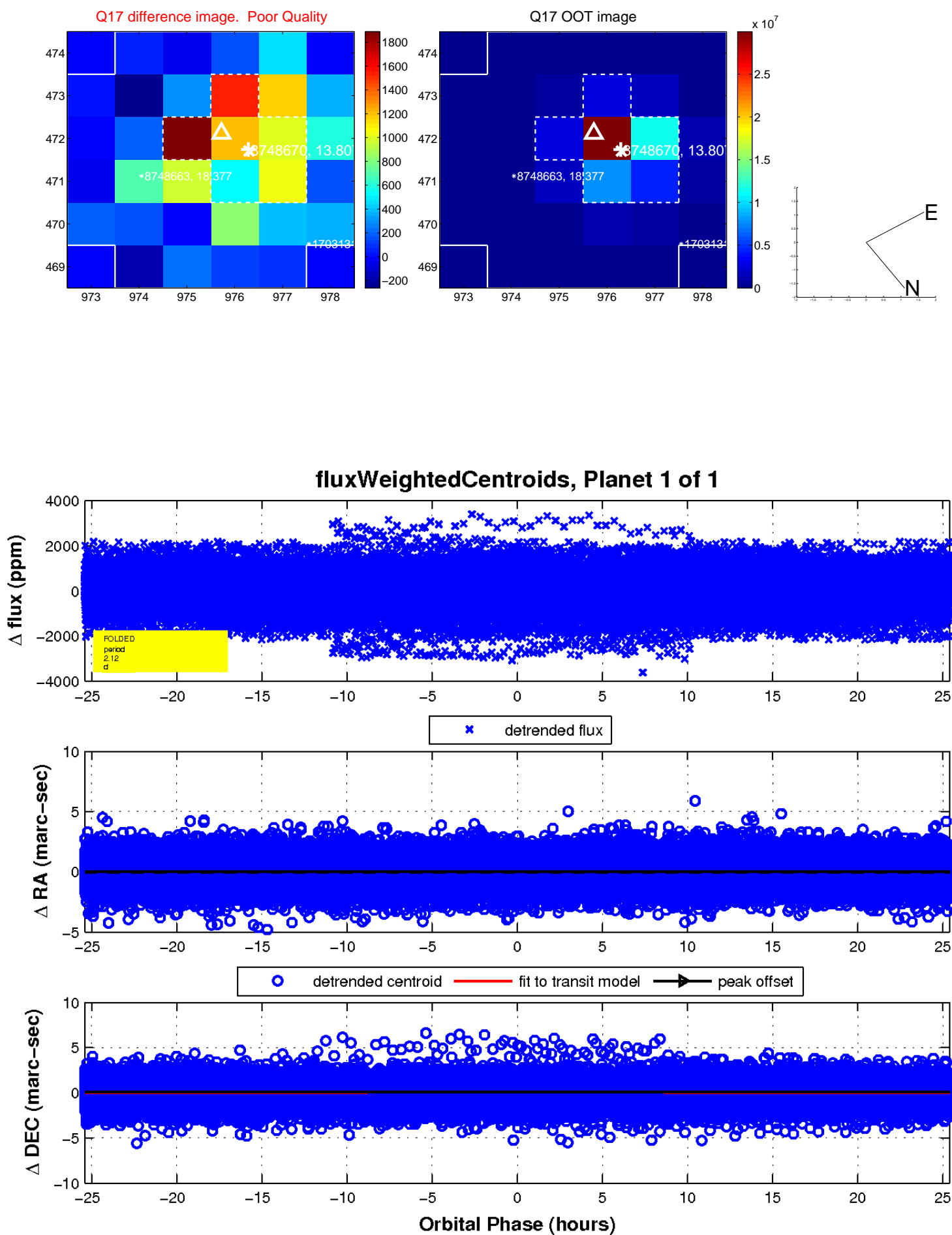
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

