

KIC 002855415

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 002855415-01 | OBS | No | 2.746233 | 132.879563 | 60.5 | 30.090 | 8.3 | 9.9 | 0.83 | 6068 | 0.65 | 599.55 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 002855415-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | SWEET_NTL—LPP_DV—LPP_ALT—CENT_FEW_DIFFS |

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

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

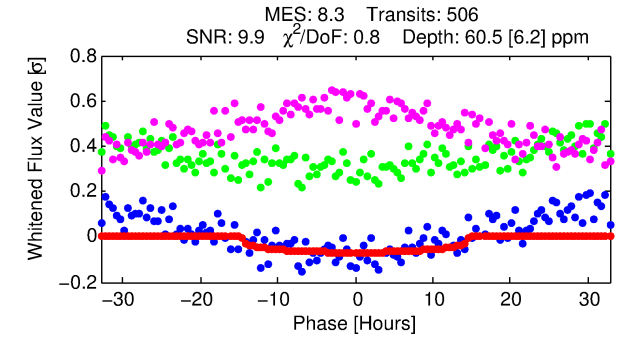
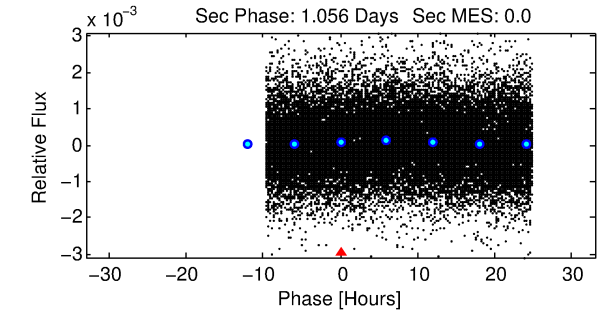
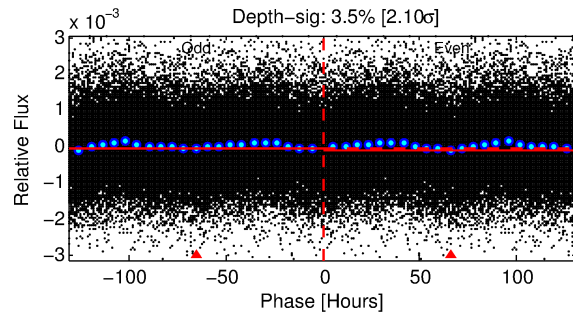
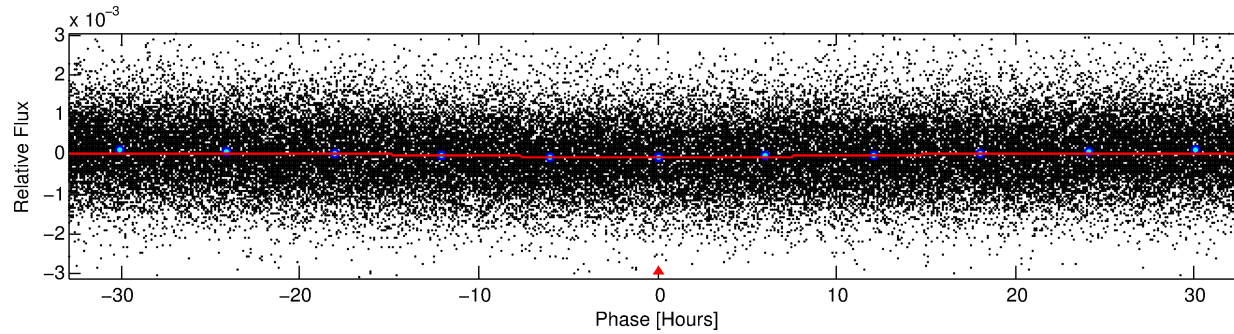
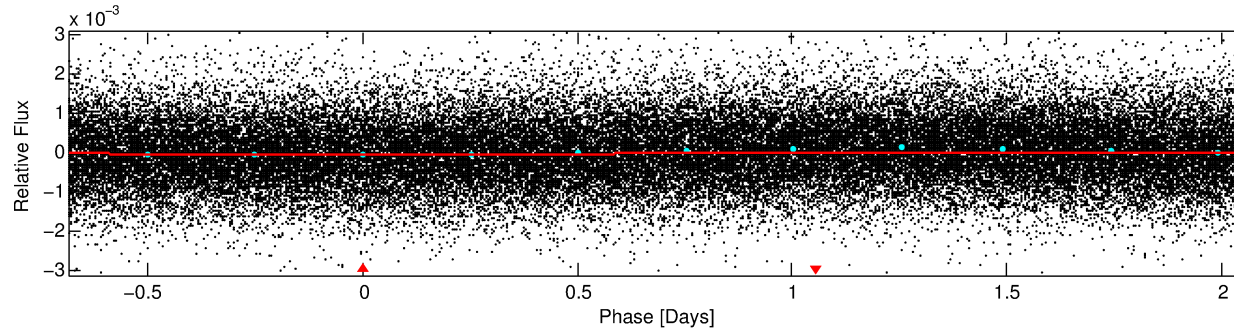
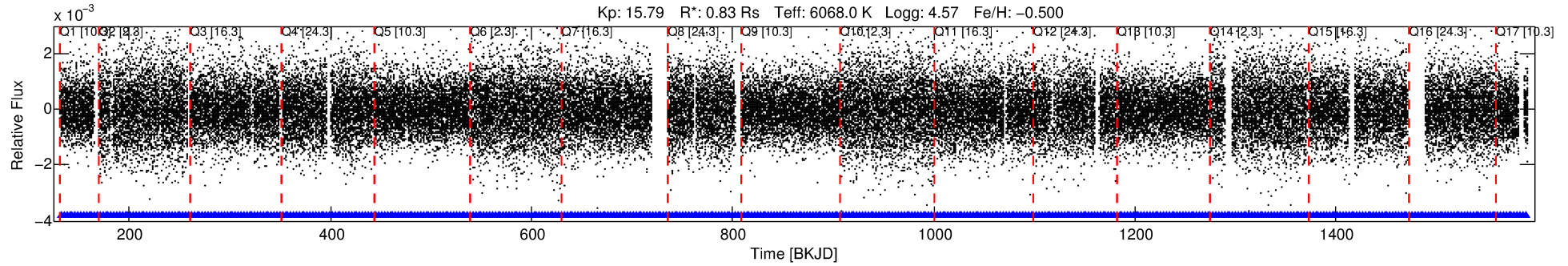
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002855415-01

No Significant Match Found

DV One-Page Summary

KIC: 2855415 Candidate: 1 of 1 Period: 2.746 d



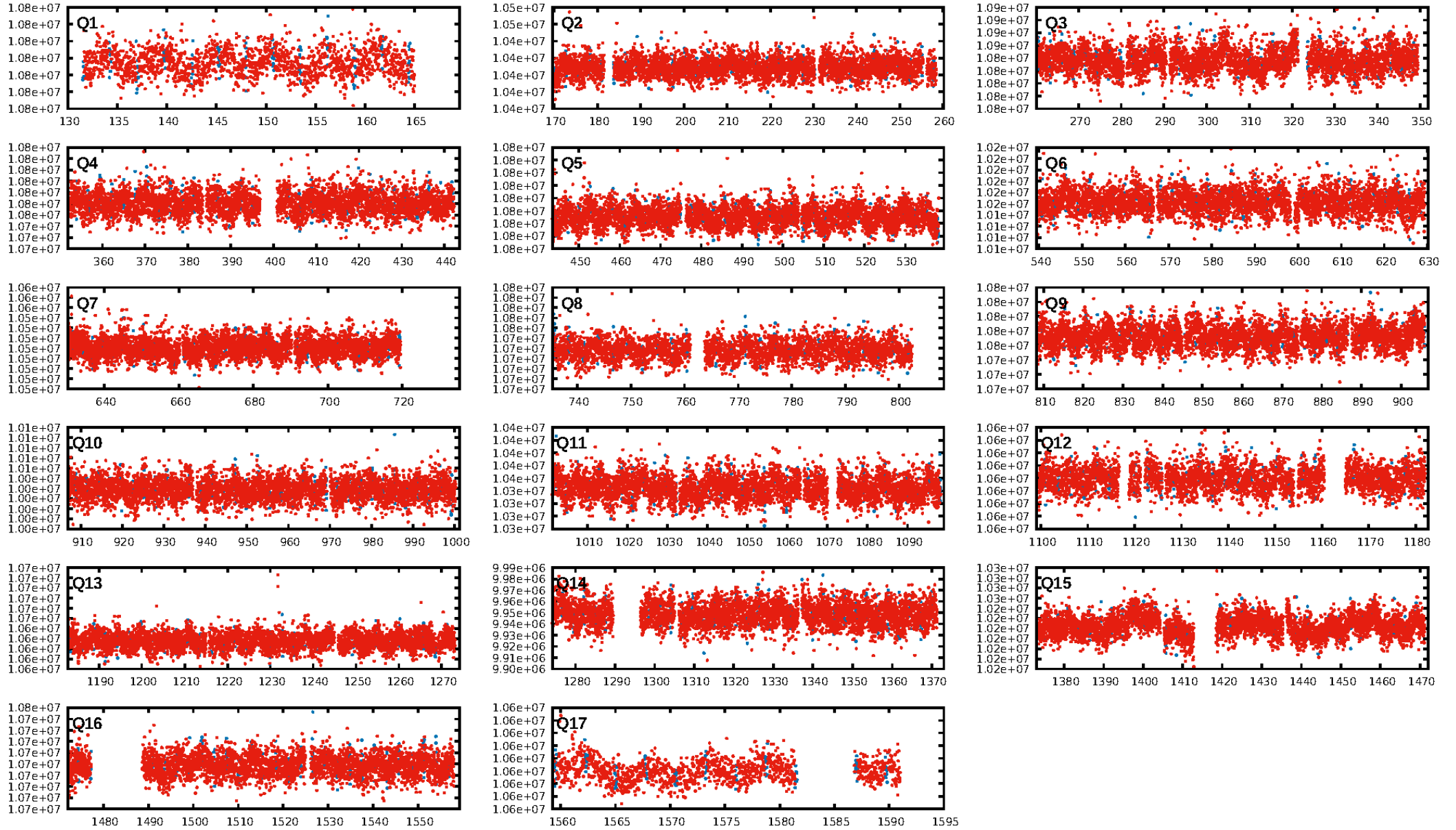
DV Fit Results:

Period = 2.74623 [0.00012] d
Epoch = 132.8796 [0.0318] BKJD
Rp/R* = 0.0071 [0.0032]
a/R* = 1.02 [0.07]
b = 0.04 [54.67]
Seff = 599.55 [224.72]
Teq = 1262 [118] K
Rp = 0.65 [0.34] Re
a = 0.0374 [0.0088] AU
Ag = N/A
Teffp = N/A

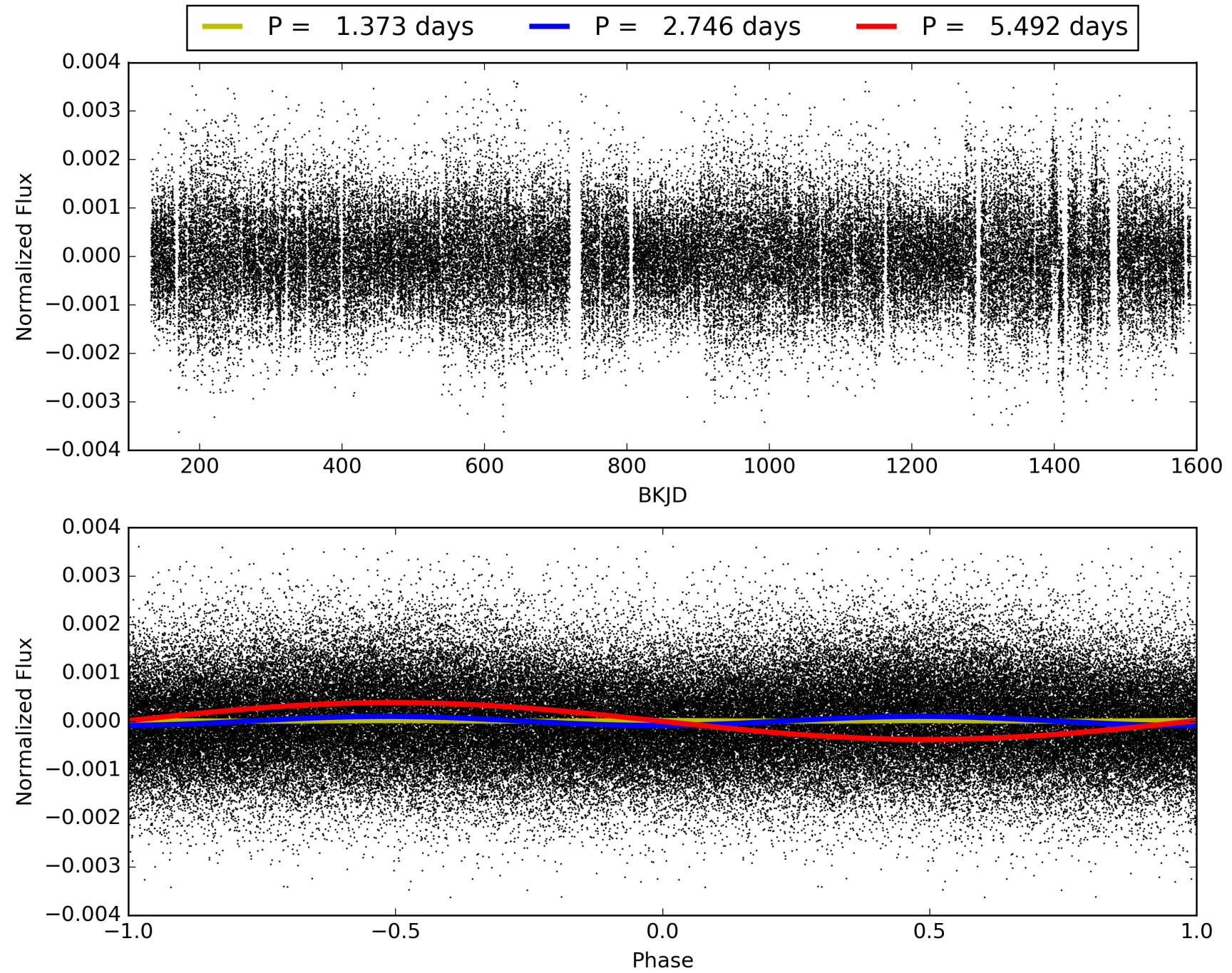
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [484/484]
GhostDiagnostic-chr: 1.006
Centroid-sig: 0.0%
Centroid-so: 3.653 arcsec [3.04 σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [17/17]

TCE 002855415-01, PDC Light Curves

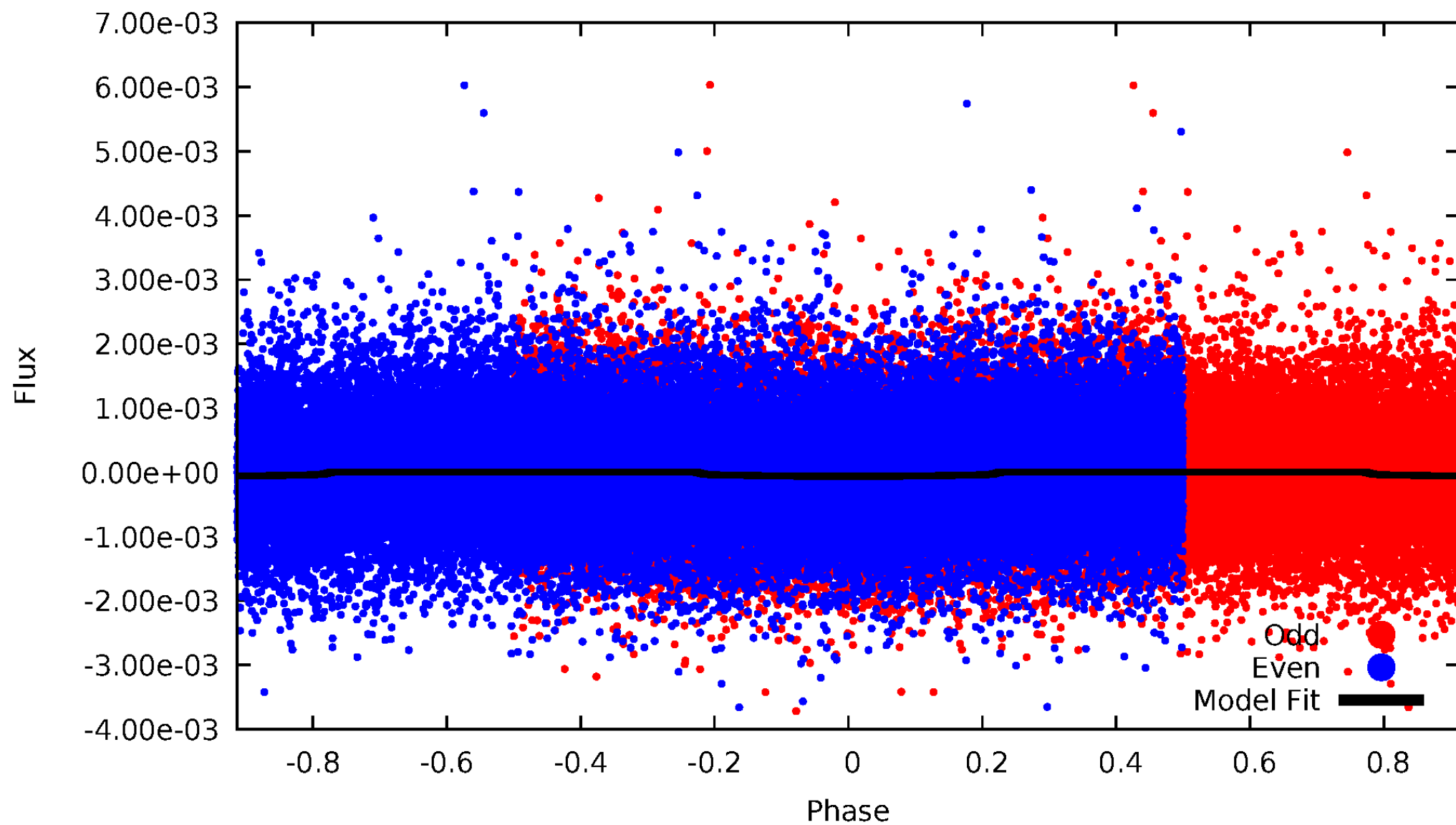


TCE 002855415-01



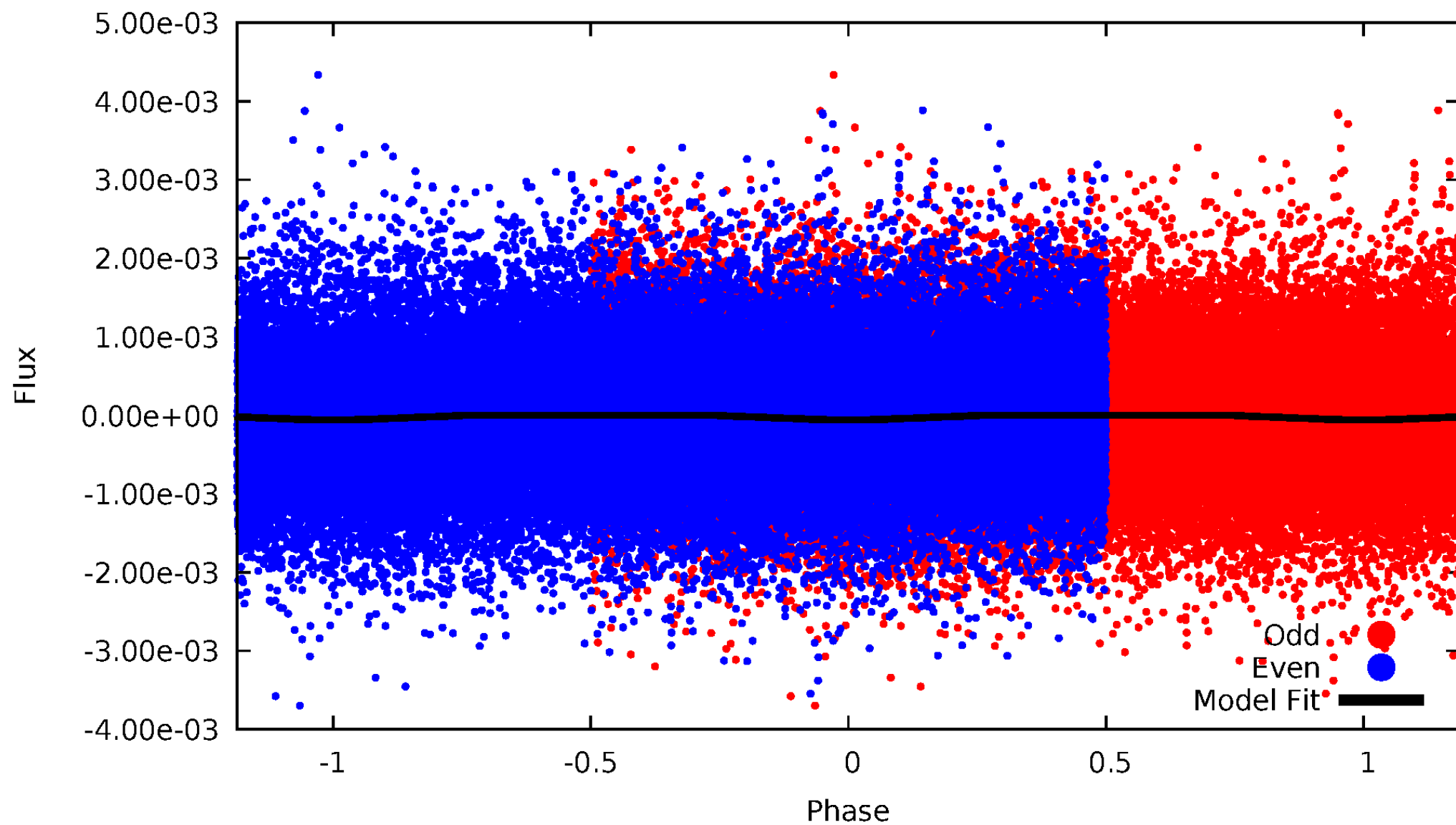
DV Odd/Even

TCE 002855415-01

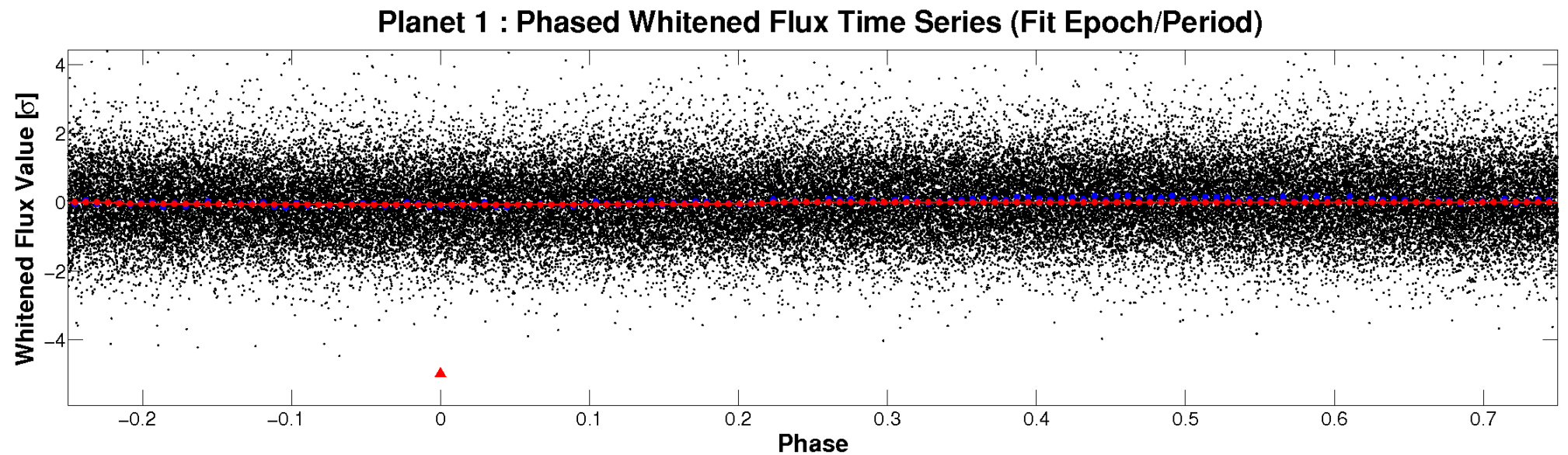
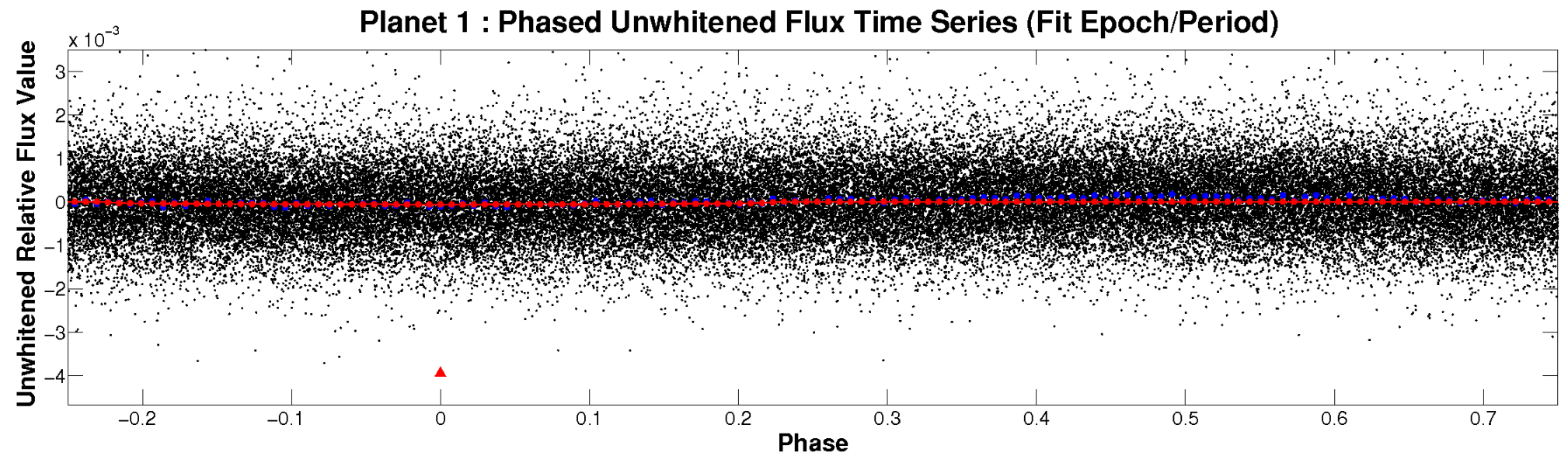


ALT Odd/Even

TCE 002855415-01

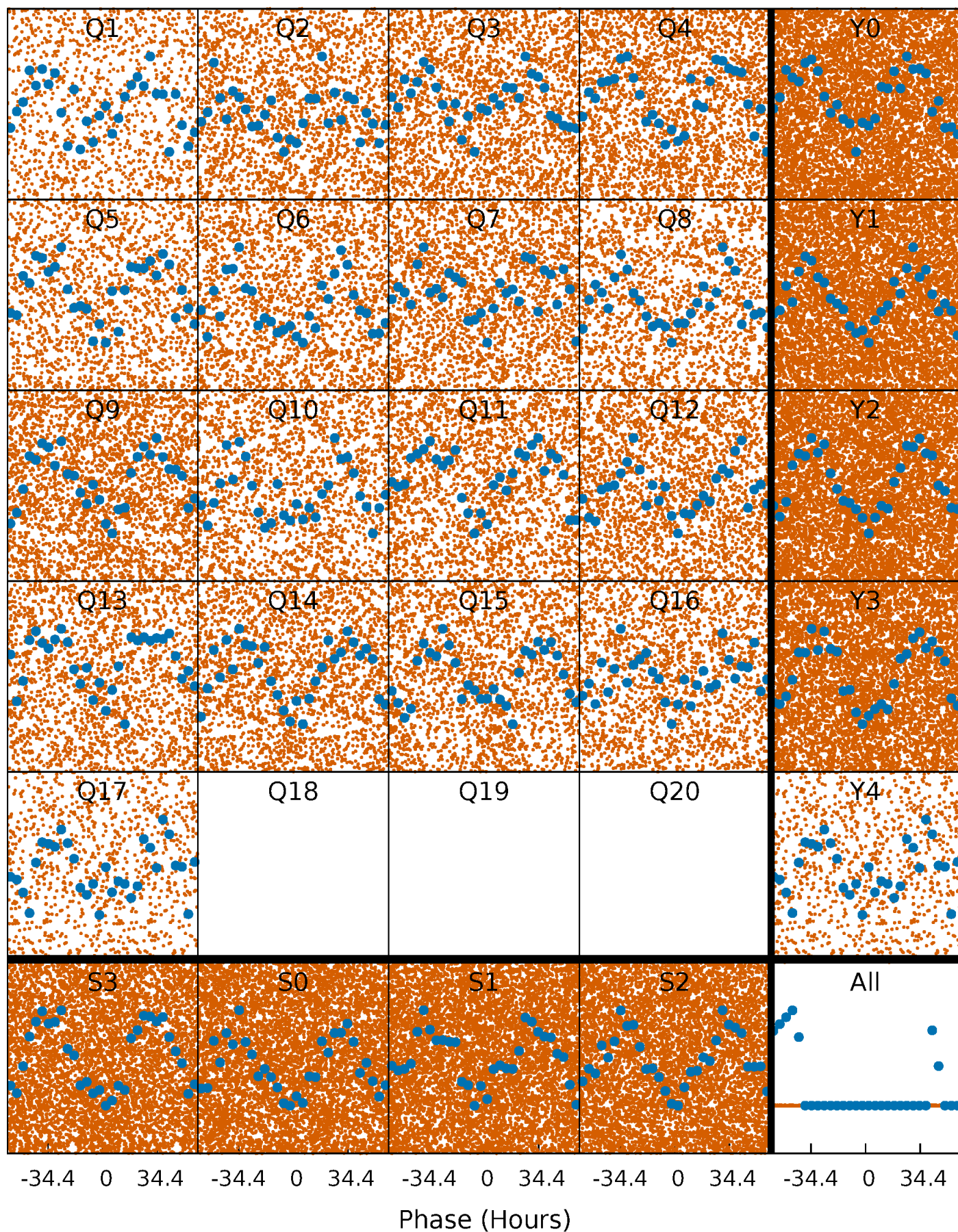


Non-Whitened Vs. Whitened Light Curve



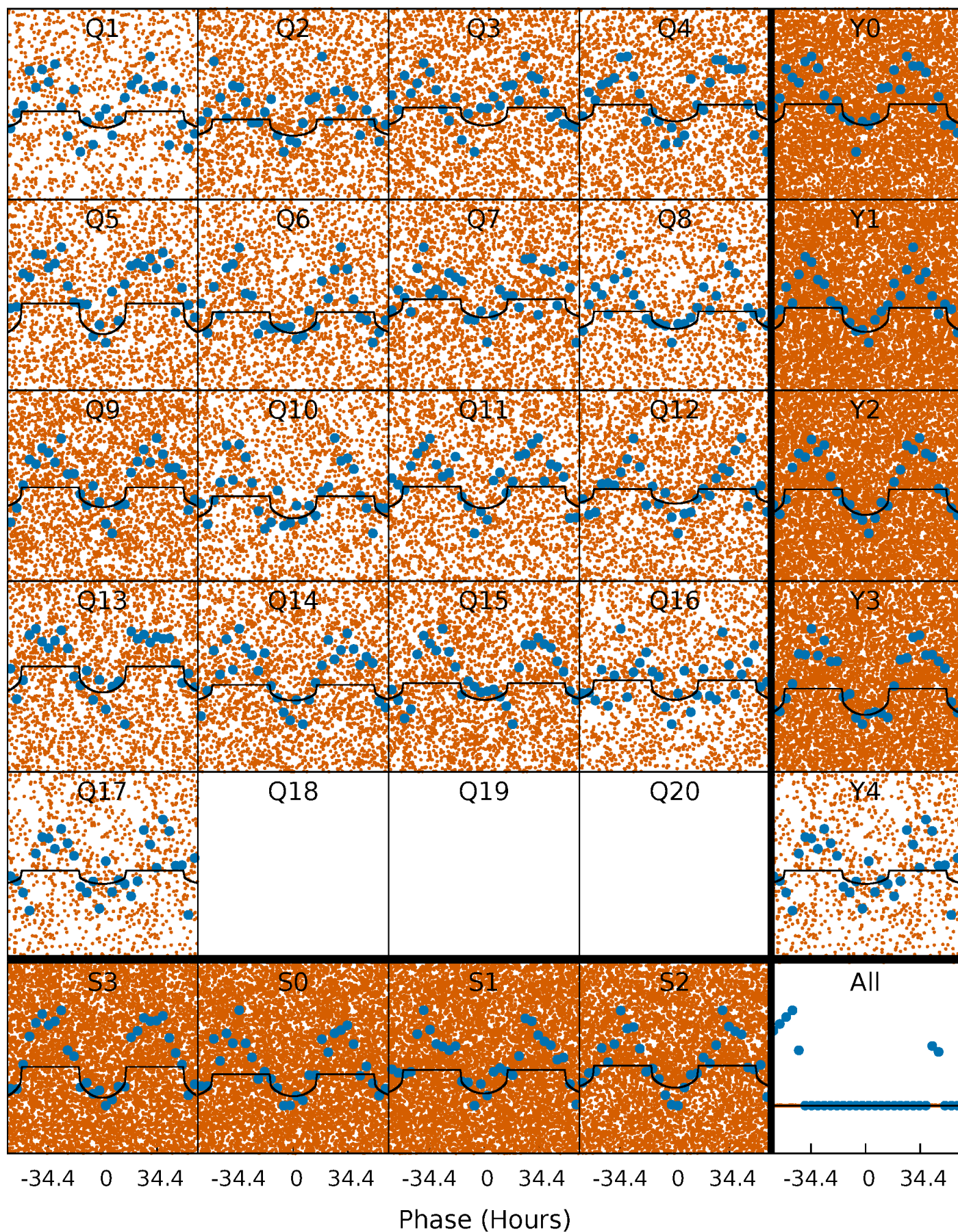
PDC Quarter-Phased Transit Curves

TCE 002855415-01 P= 2.746233 Days $T_0=132.879563$ (BKJD)



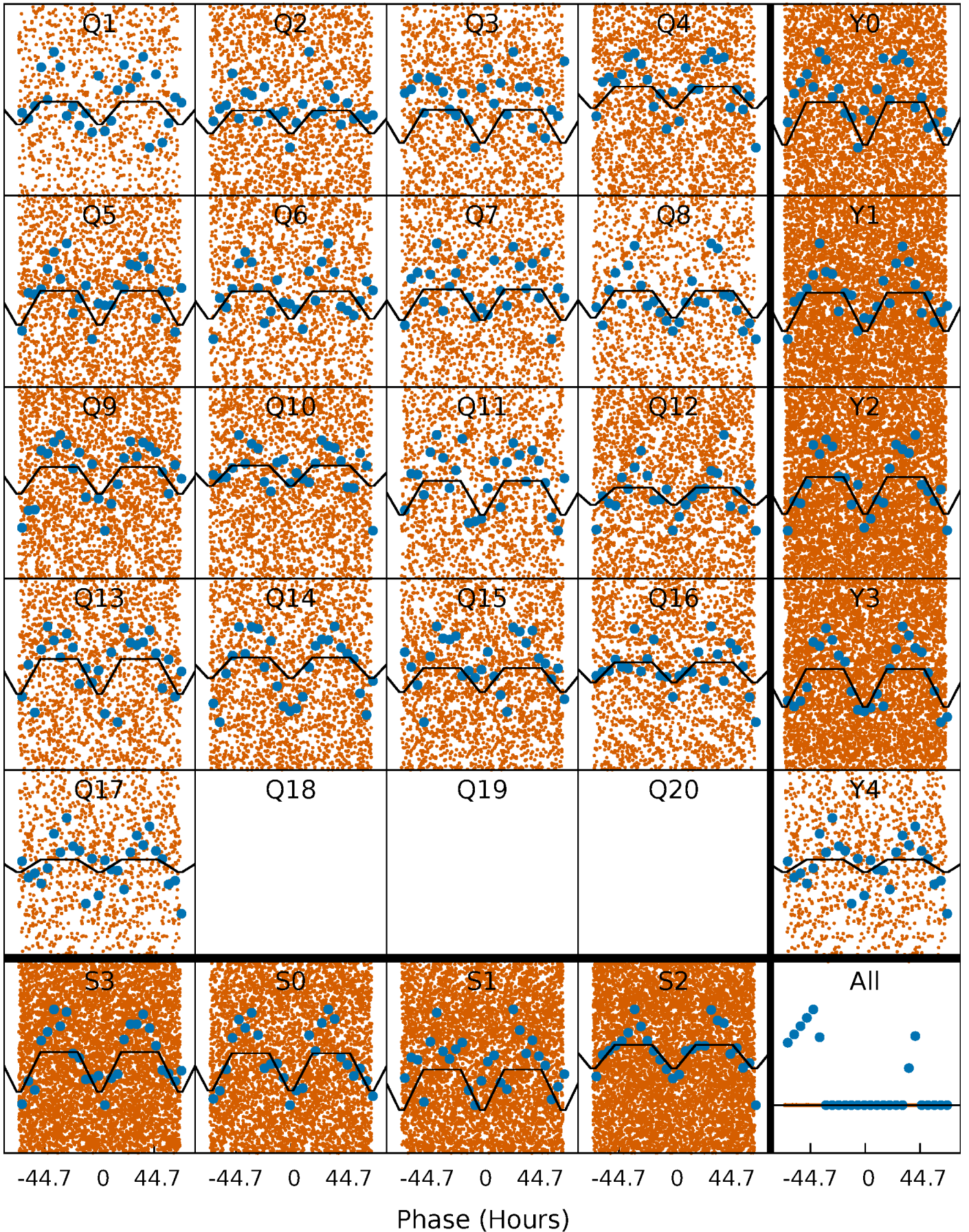
DV Quarter-Phased Transit Curves

TCE 002855415-01 P= 2.746233 Days $T_0=132.879563$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

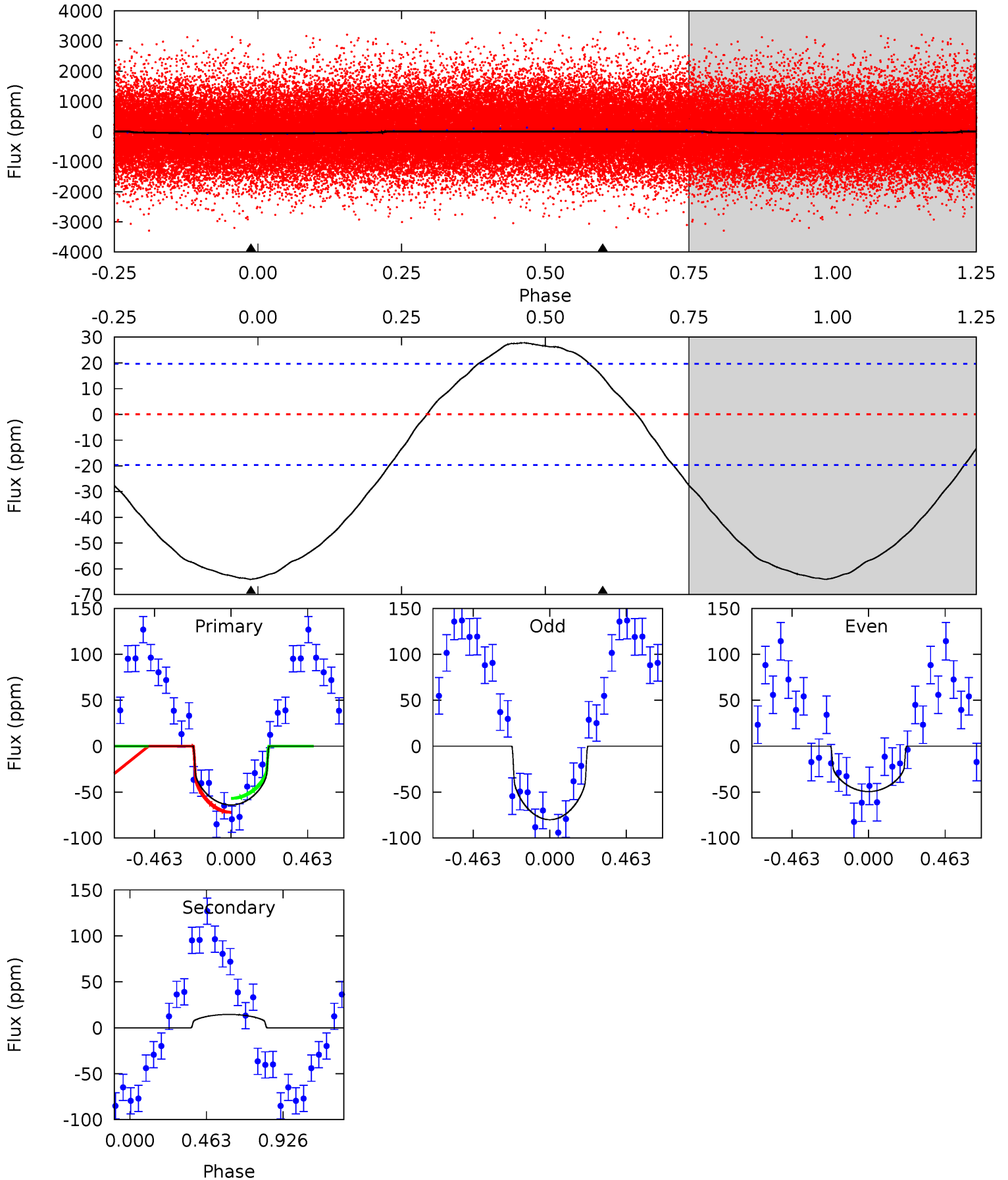
TCE 002855415-01 P= 2.746028 Days $T_0=132.934884$ (BKJD)



DV Model-Shift Uniqueness Test

002855415-01, P = 2.746233 Days, E = 130.133330 Days

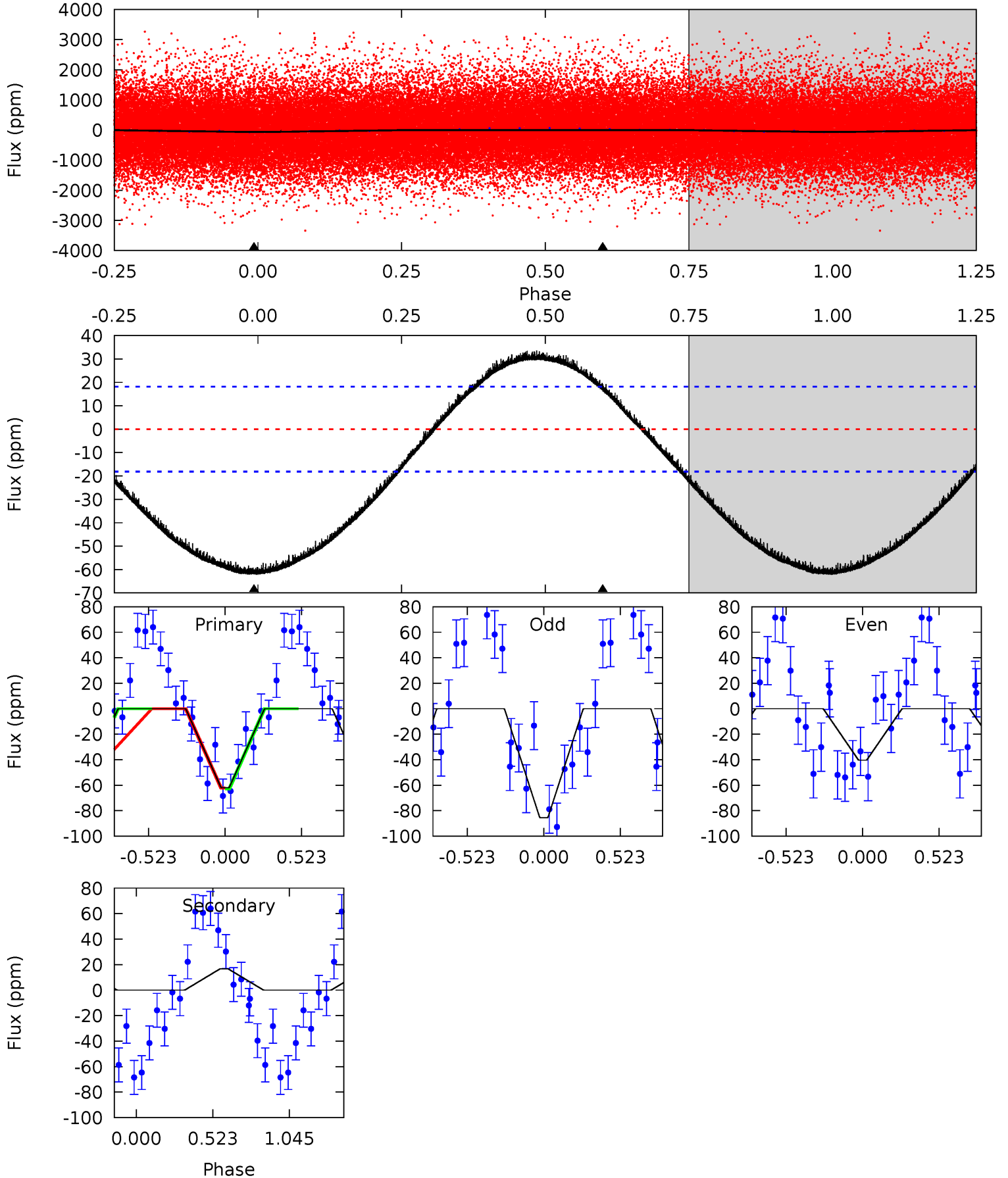
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 13.8 | -3.12 | 0 | 0 | 4.23 | 0.73 | 1.75 | 13.8 | 13.8 | -3.12 | -3.12 | 3.31 | 1.02 | 0.30 | 1.64 |



Alt Model-Shift Uniqueness Test

002855415-01, P = 2.746028 Days, E = 130.188856 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.3 | -3.86 | 0 | 0 | 4.20 | 0.64 | 1.95 | 14.3 | 14.3 | -3.86 | -3.86 | 5.25 | 1.33 | 0.35 | 0.10 |



Stellar Parameters For KIC 002855415

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6068^{+181}_{-200} | $4.565^{+0.035}_{-0.196}$ | $-0.500^{+0.250}_{-0.300}$ | $0.831^{+0.225}_{-0.075}$ | $0.931^{+0.097}_{-0.119}$ | $2.285^{+0.441}_{-1.160}$ |
| | +3%/-3% | +1%/-4% | +50%/-60% | +27%/-9% | +10%/-13% | +19%/-51% |
| 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 002855415-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|---------------------|------------------------|-------------------------------|
| DV | 14 ± 5 | $0.70^{+0.29}_{-0.31}$ | 1807^{+115}_{-89} | -4539^{+618}_{-1307} | $-21.913^{+12.455}_{-49.998}$ |
| Alt. | 17 ± 4 | $0.75^{+0.33}_{-0.32}$ | 1802^{+113}_{-81} | -4575^{+600}_{-1216} | $-22.795^{+12.565}_{-47.153}$ |

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 $A_{obs} \gg 1.0$

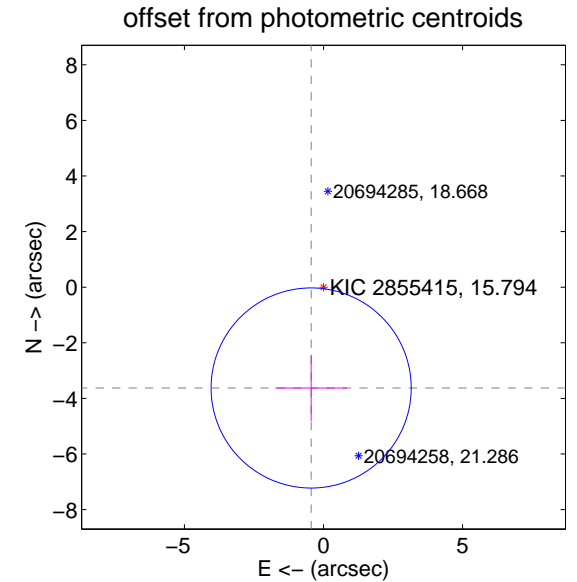
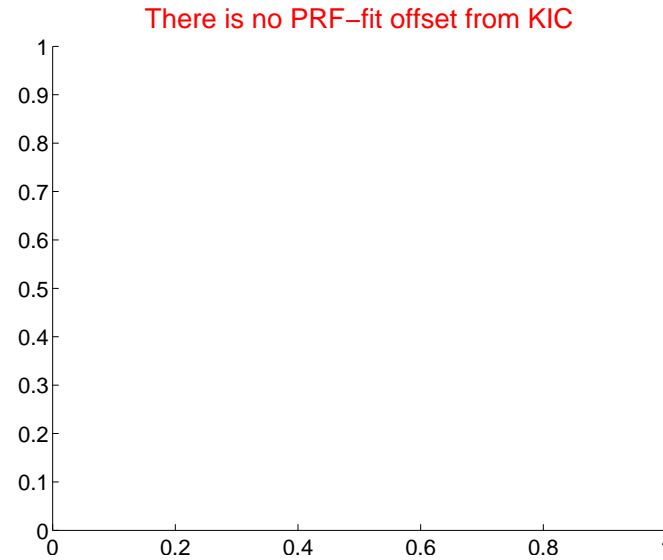
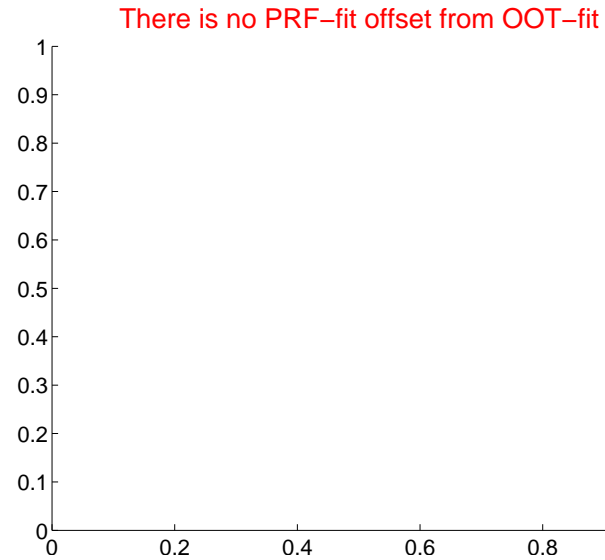
DV Centroid Data

Supplemental centroid analysis for 002855415-01. Kepler magnitude: 15.79. Transit SNR 9.95

There are 0 quarters with good PRF difference image offsets

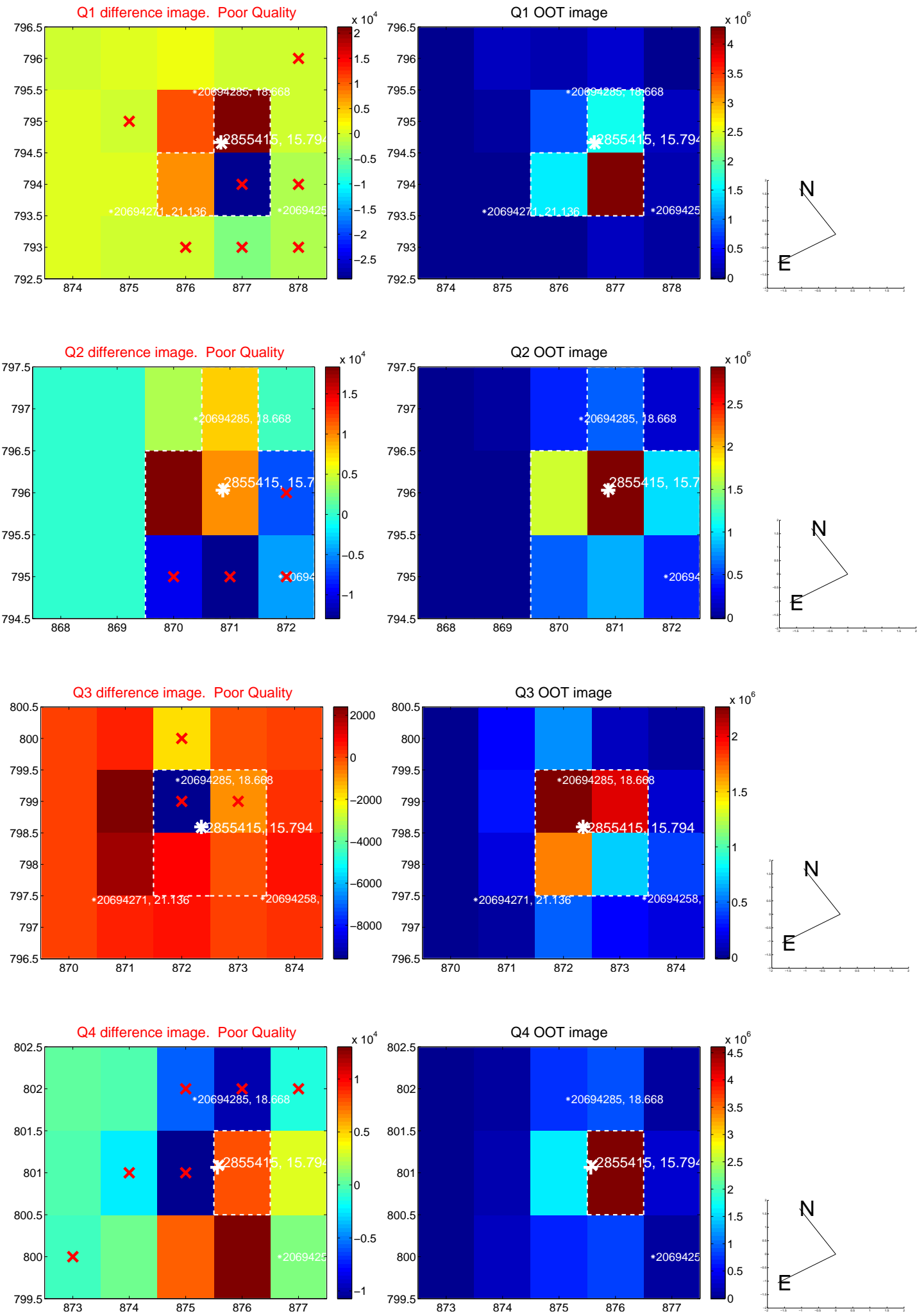
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-----------------|------------------|
| PRF-fit source offset from OOT | — | — | — | — |
| PRF-fit source offset from KIC position | — | — | — | — |
| photometric centroid source offset | 3.65 ± 1.20 | 3.04 | 0.44 ± 1.29 | -3.63 ± 1.20 |

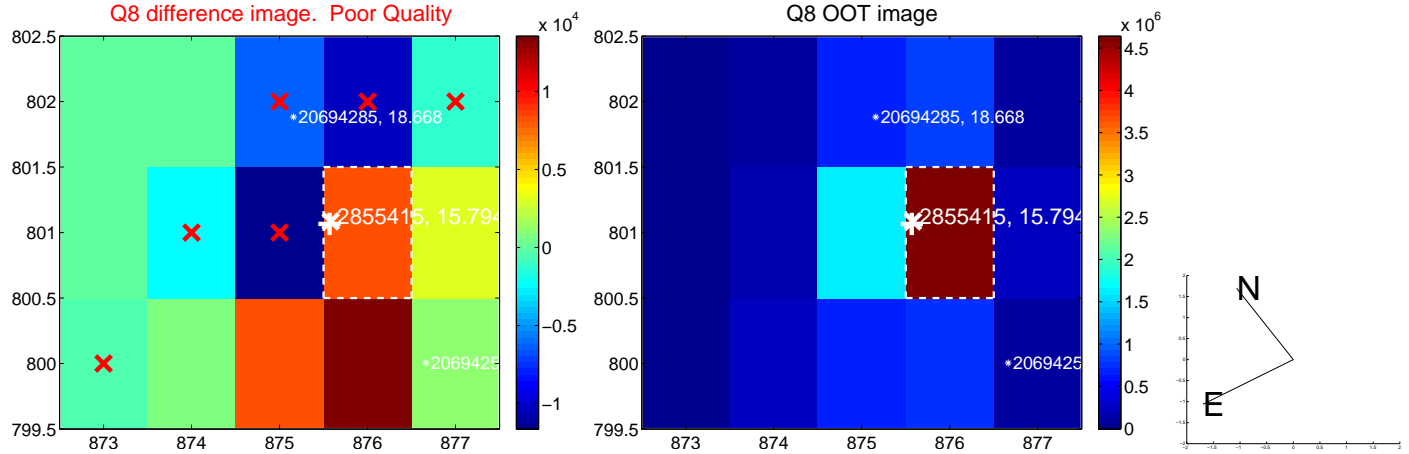
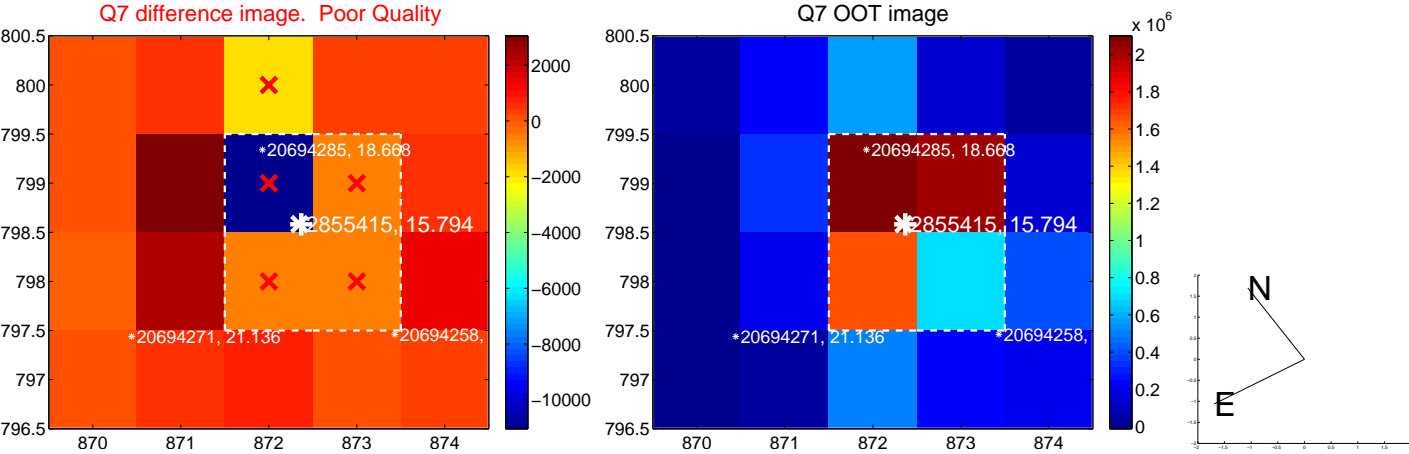
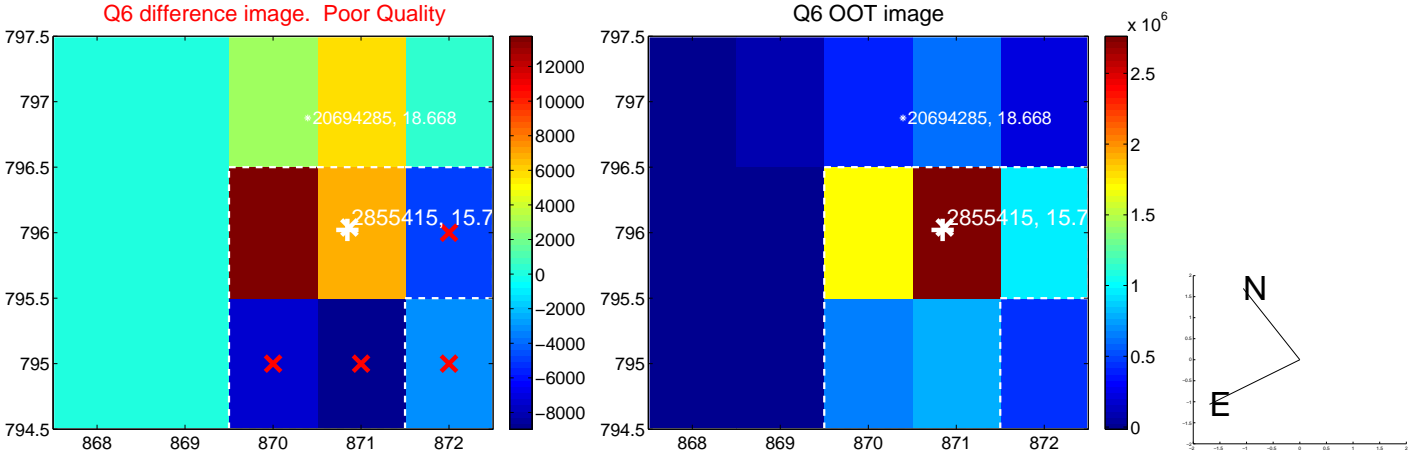
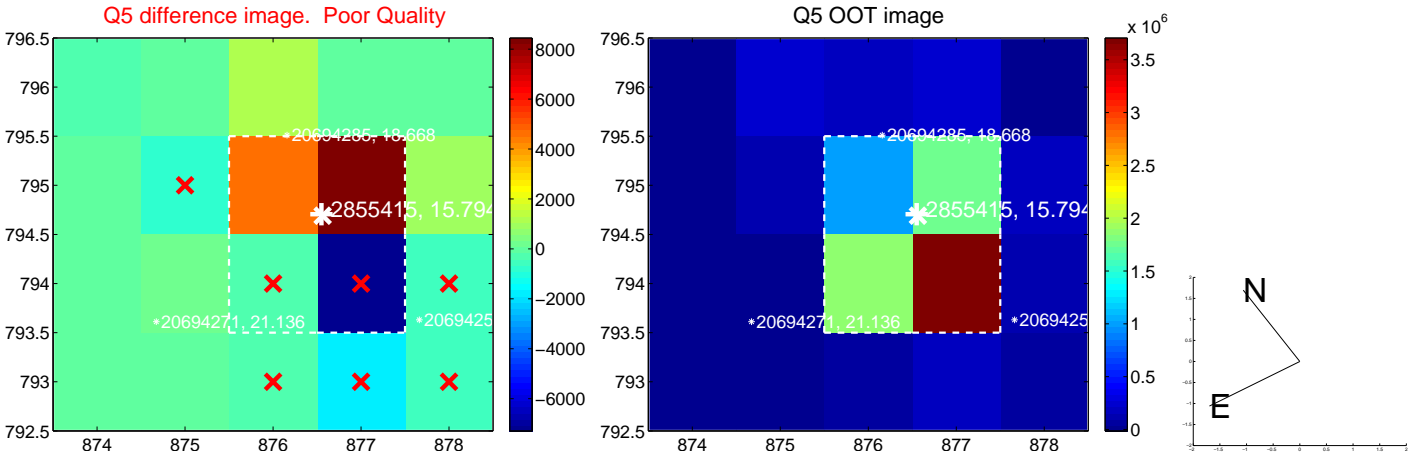


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

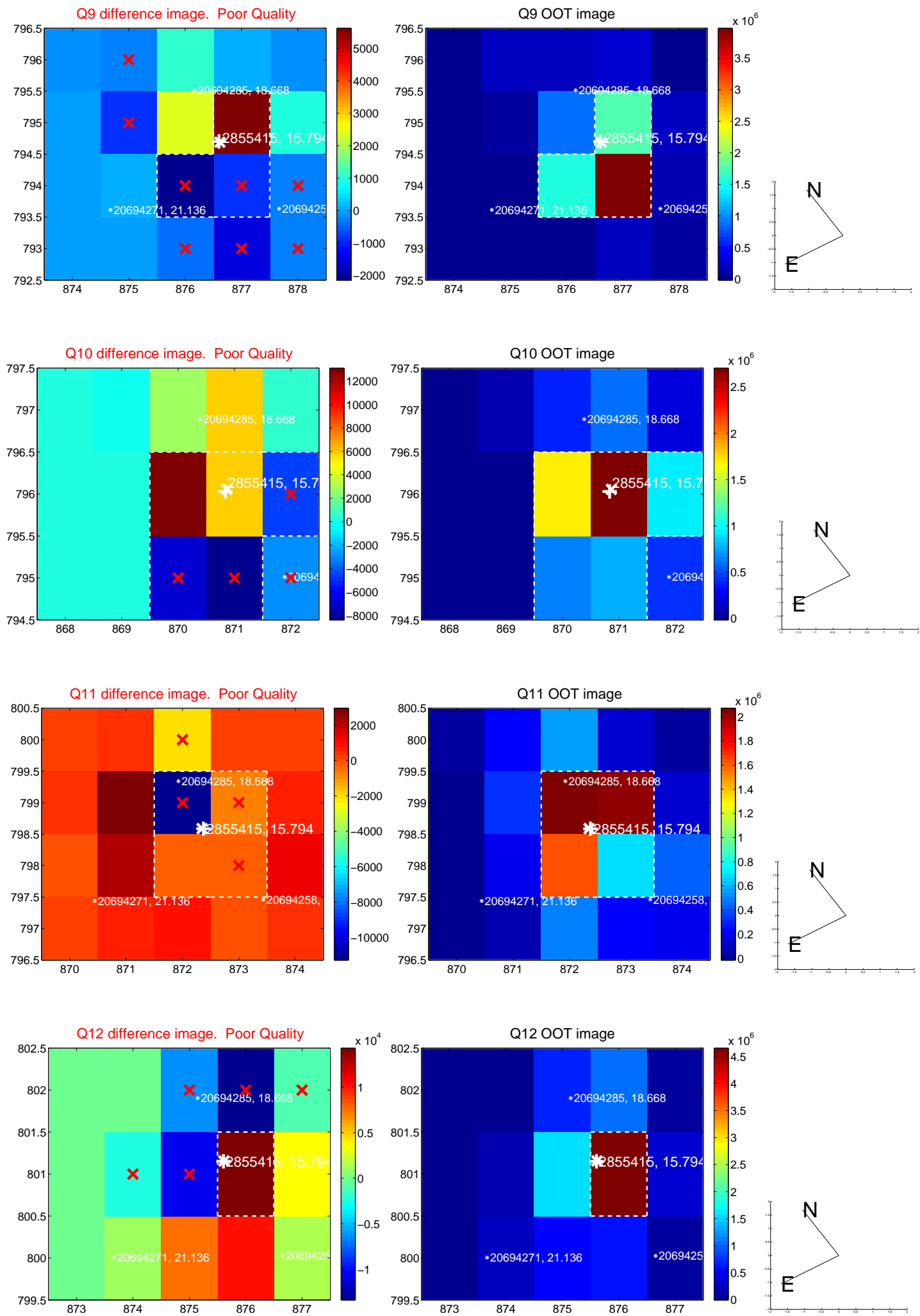
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



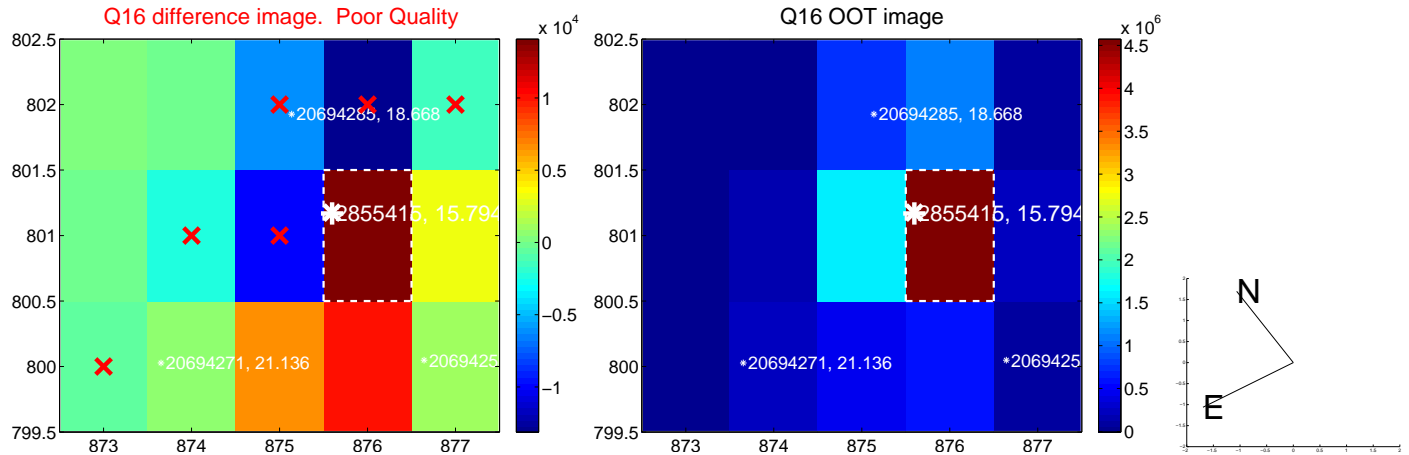
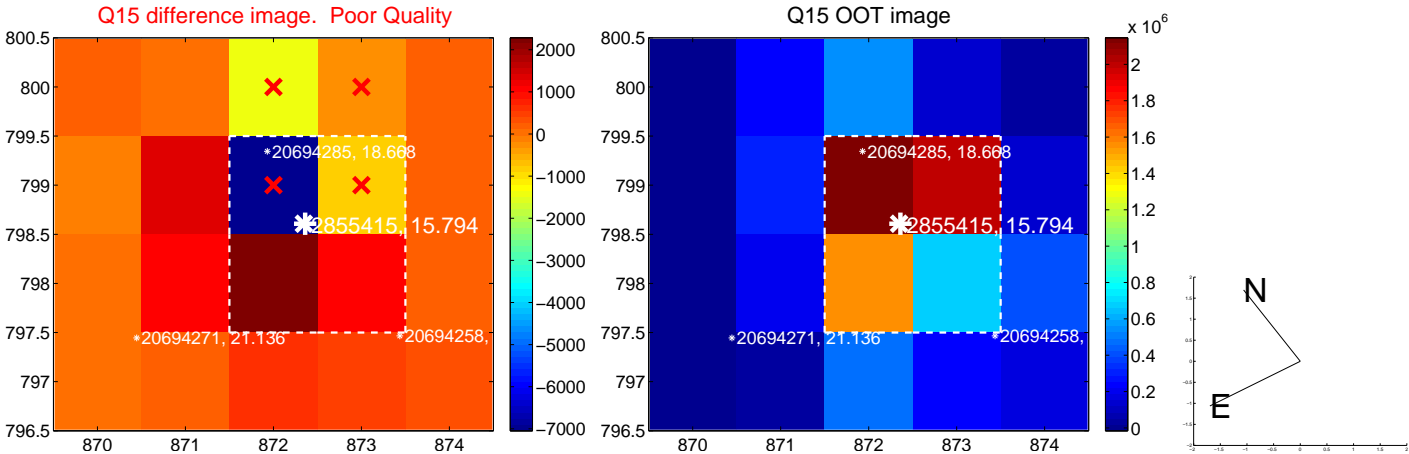
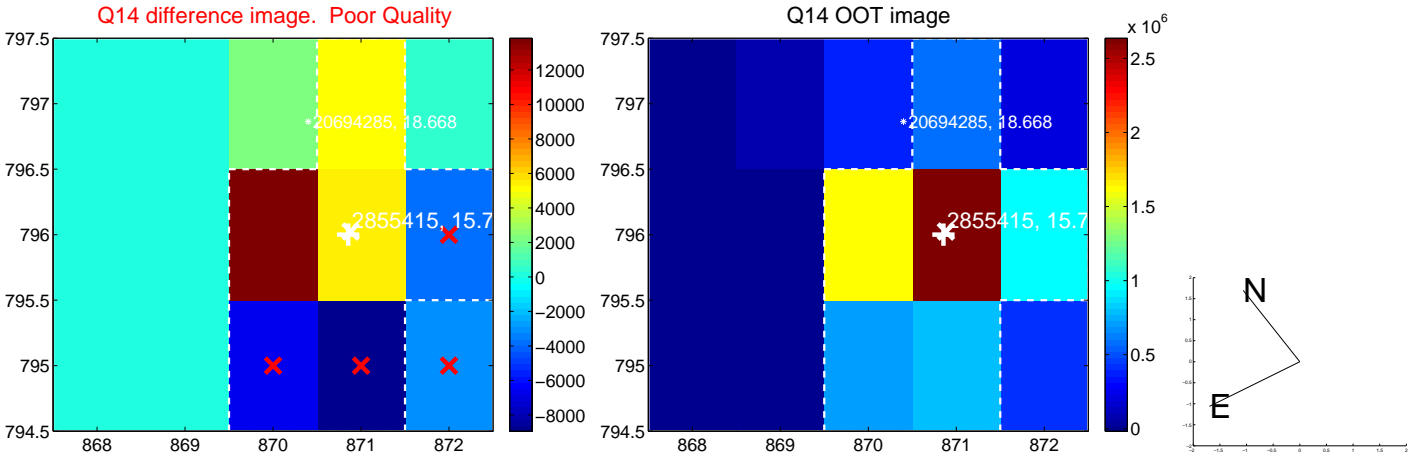
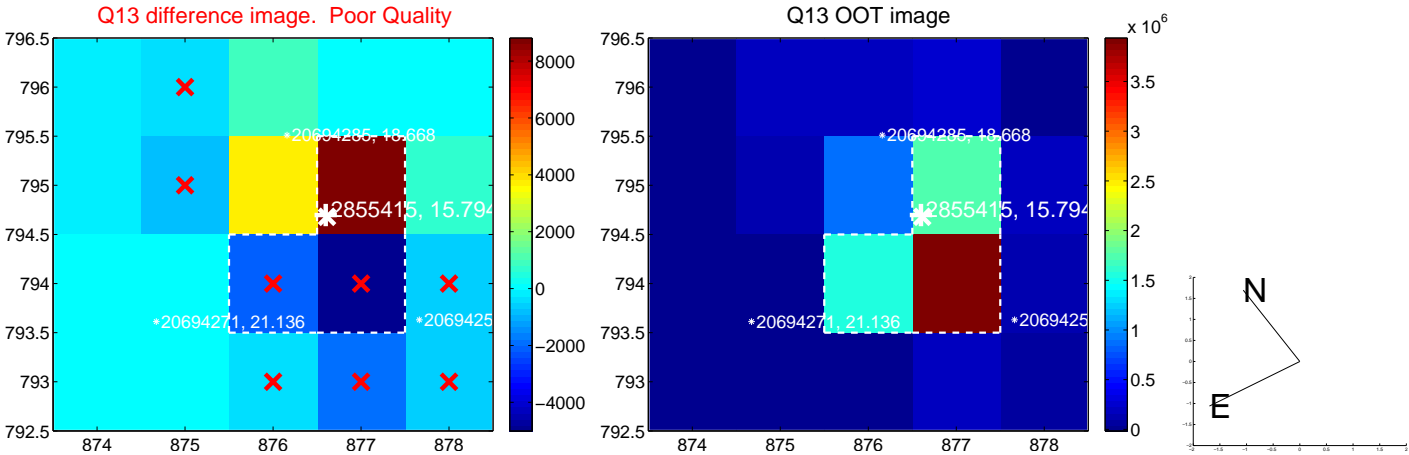
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



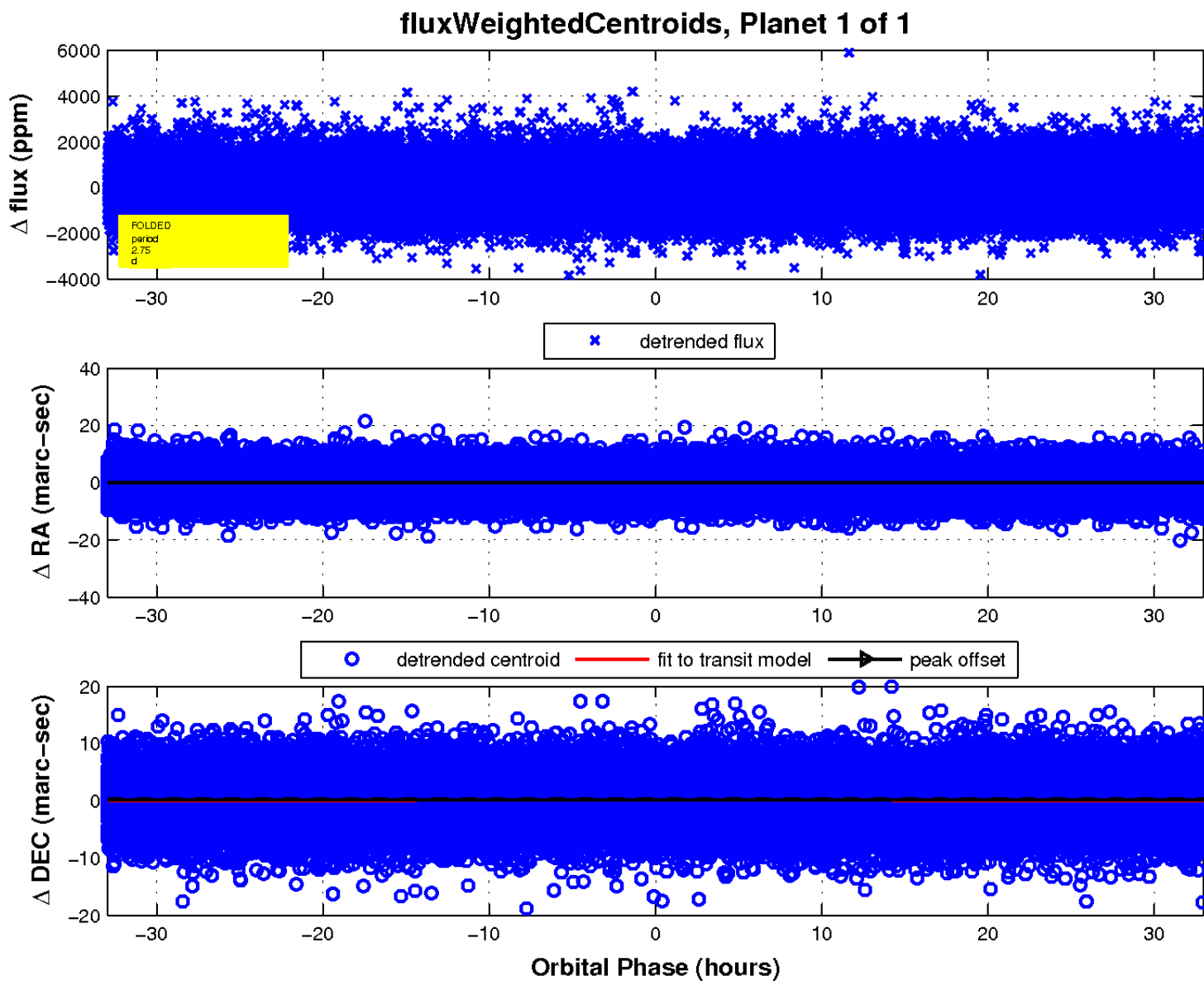
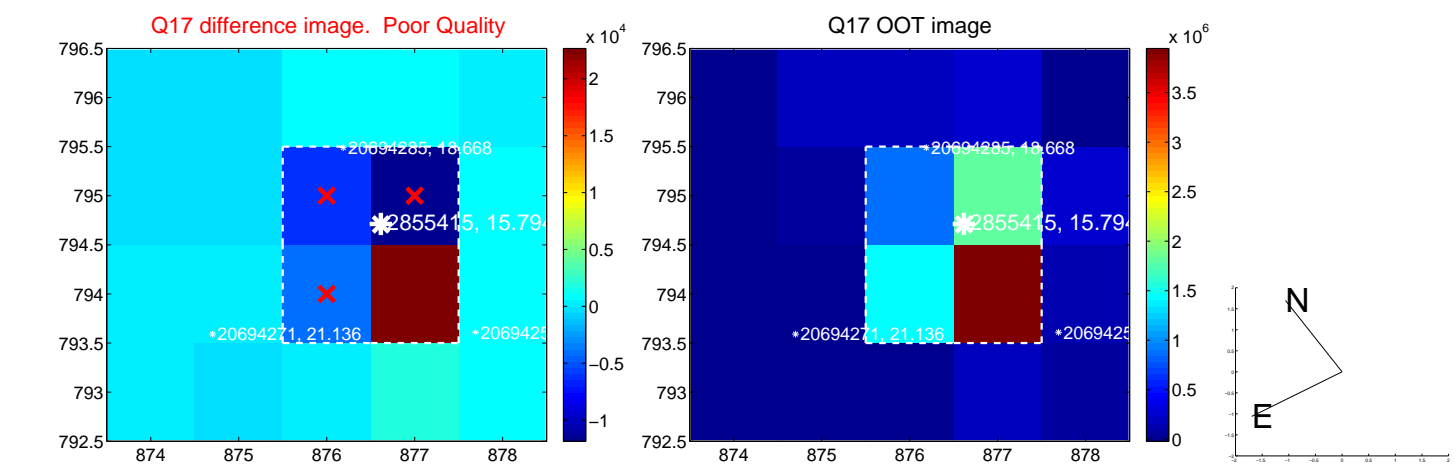
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UKIRT Image

Declination

