

KIC 010977859

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 010977859-01 | OBS | No | 0.567783 | 132.020746 | 3.6 | 4.926 | 9.3 | 6.9 | 4.03 | 8180 | 0.79 | 0.00 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|-------------------------------|
| 010977859-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—CENT_SATURATED |

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

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

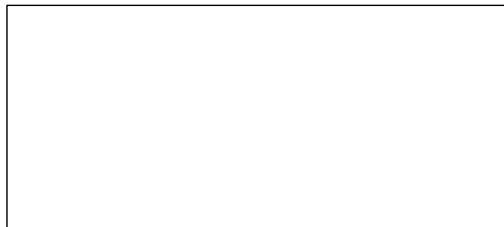
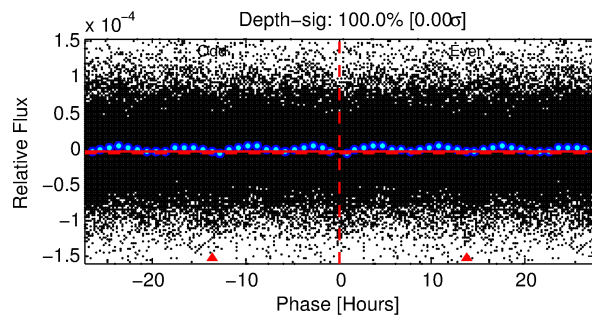
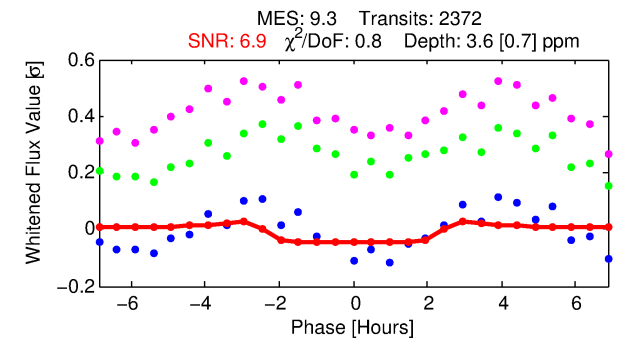
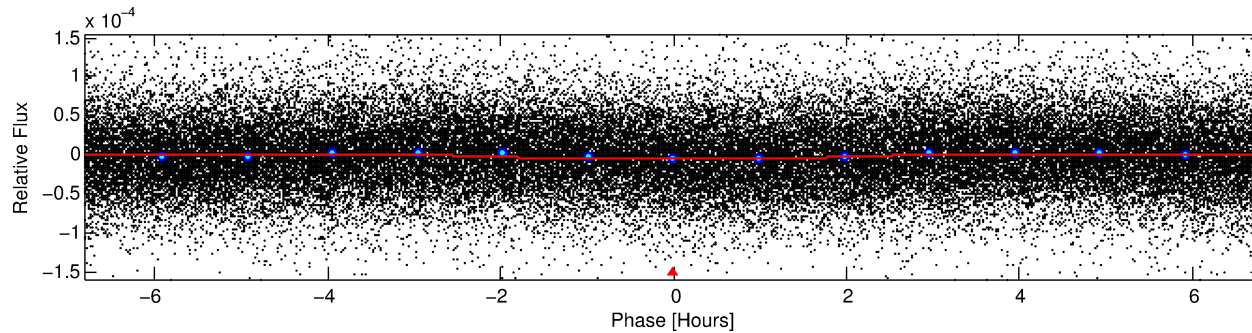
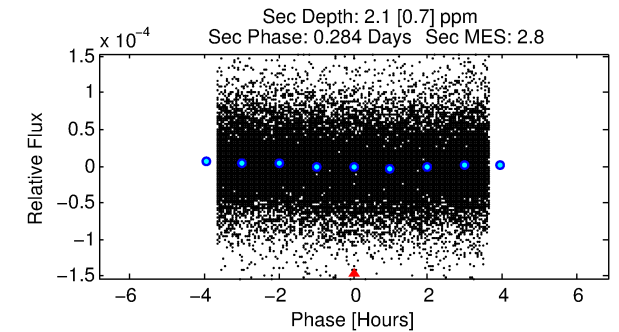
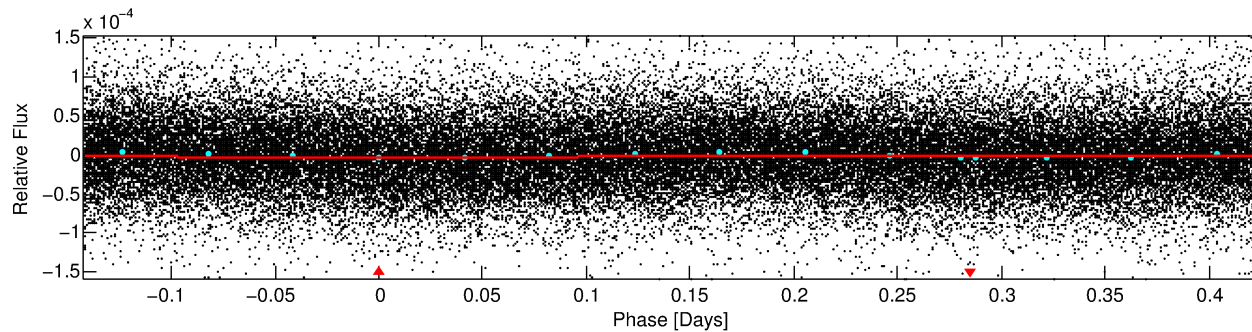
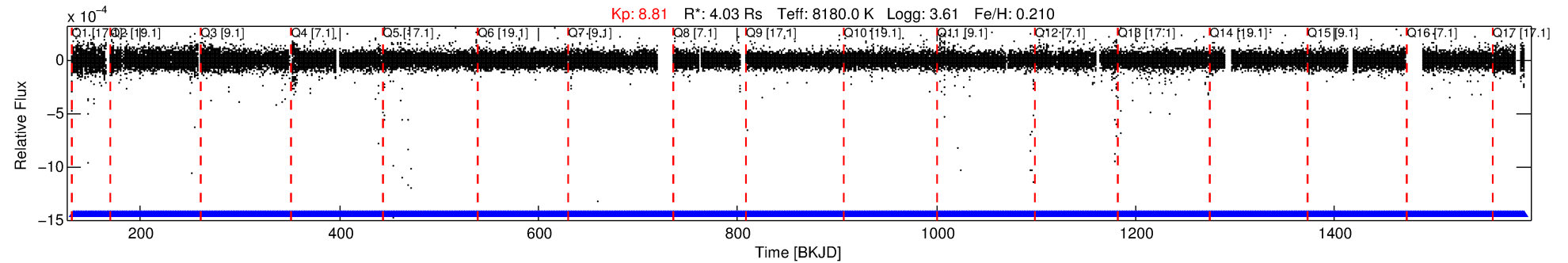
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010977859-01

No Significant Match Found

DV One-Page Summary

KIC: 10977859 Candidate: 1 of 1 Period: 0.568 d



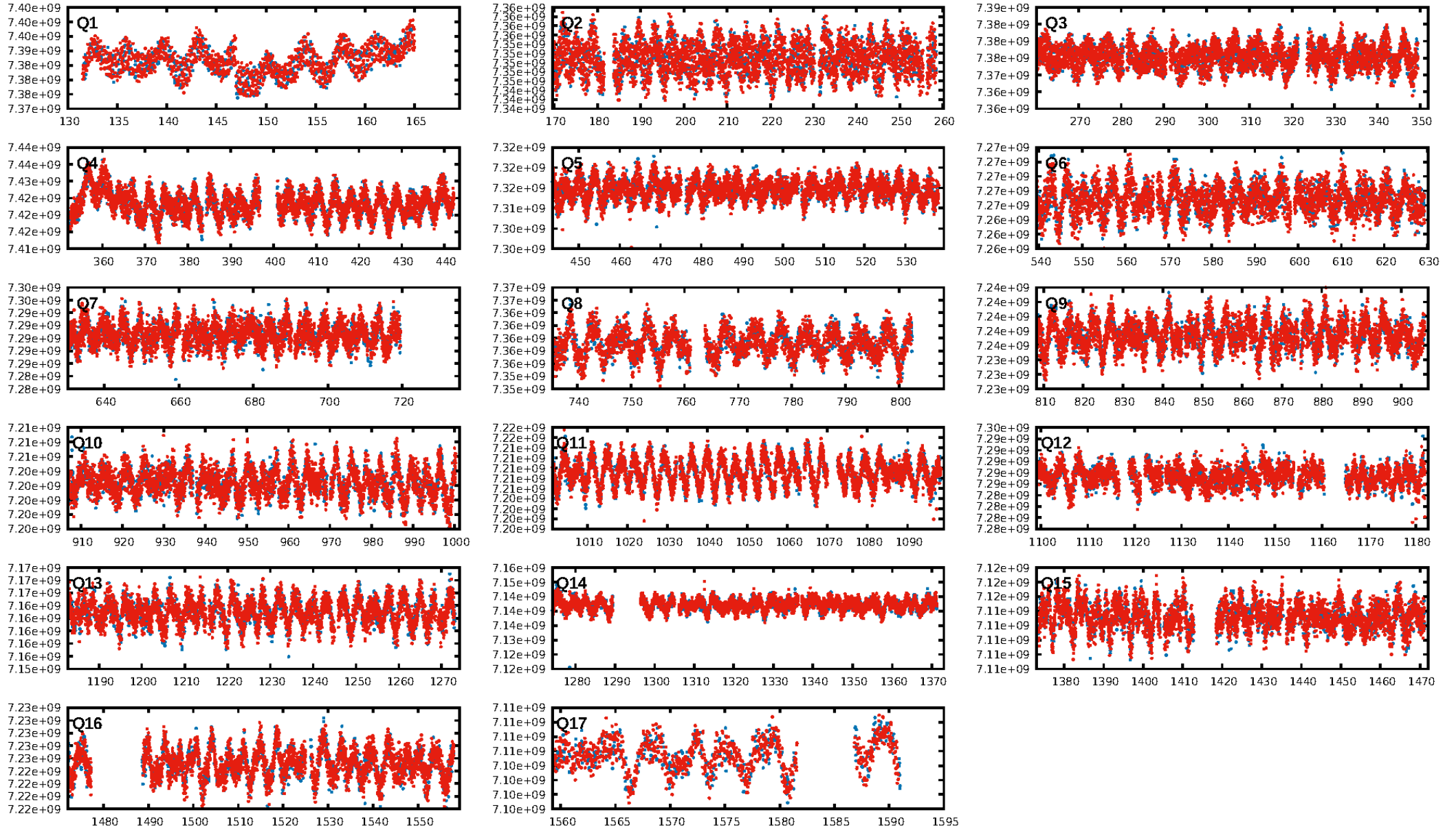
DV Fit Results:

Period = 0.56778 [0.00001] d
Epoch = 132.0207 [0.0046] BKJD
Rp/R* = 0.0018 [0.0011]
a/R* = 1.08 [0.59]
b = 0.45 [6.54]
Seff = N/A
Teq = N/A
Rp = 0.79 [0.54] Re
a = N/A
Ag = N/A
Teffp = N/A

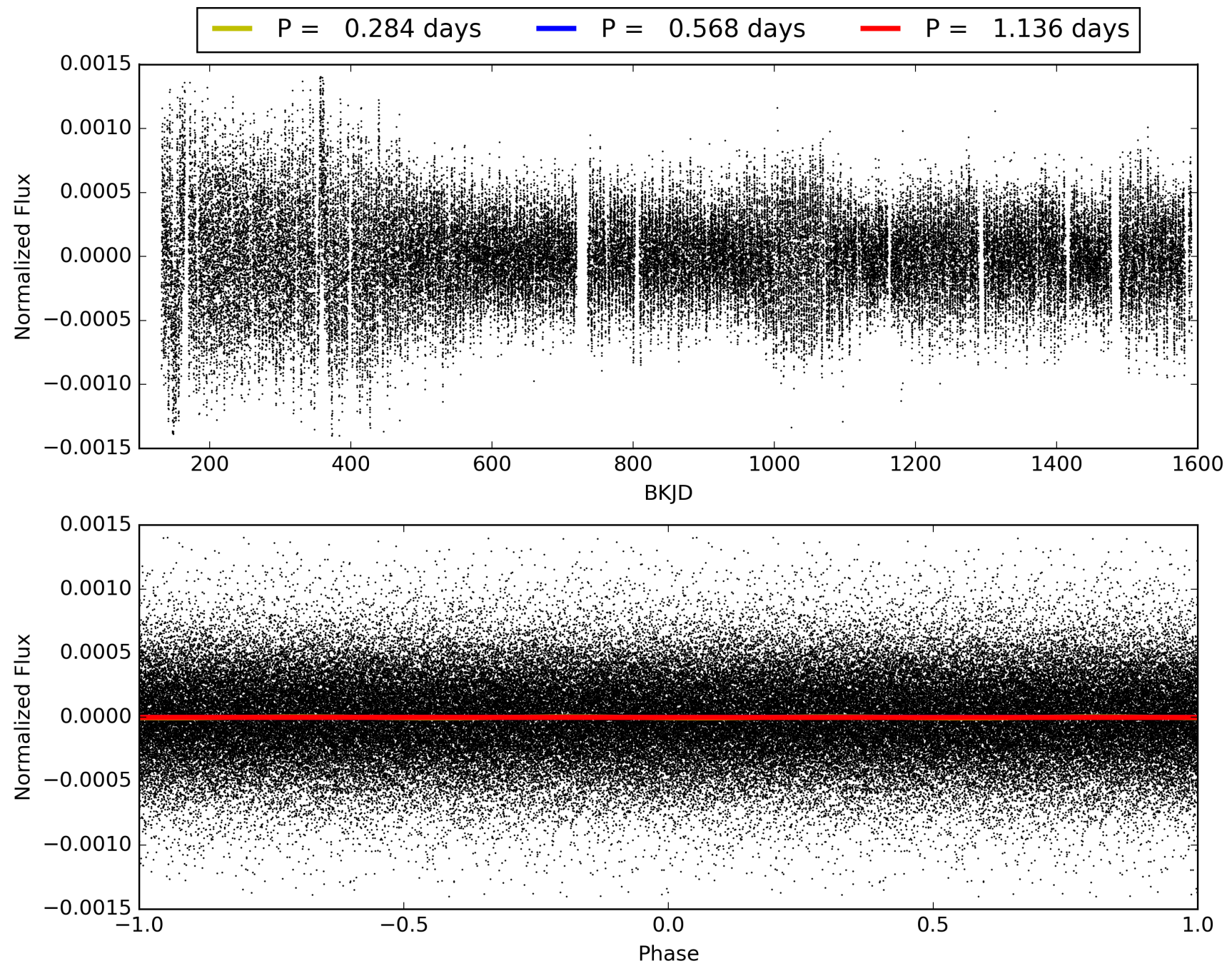
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2265/2265]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
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 010977859-01, PDC Light Curves

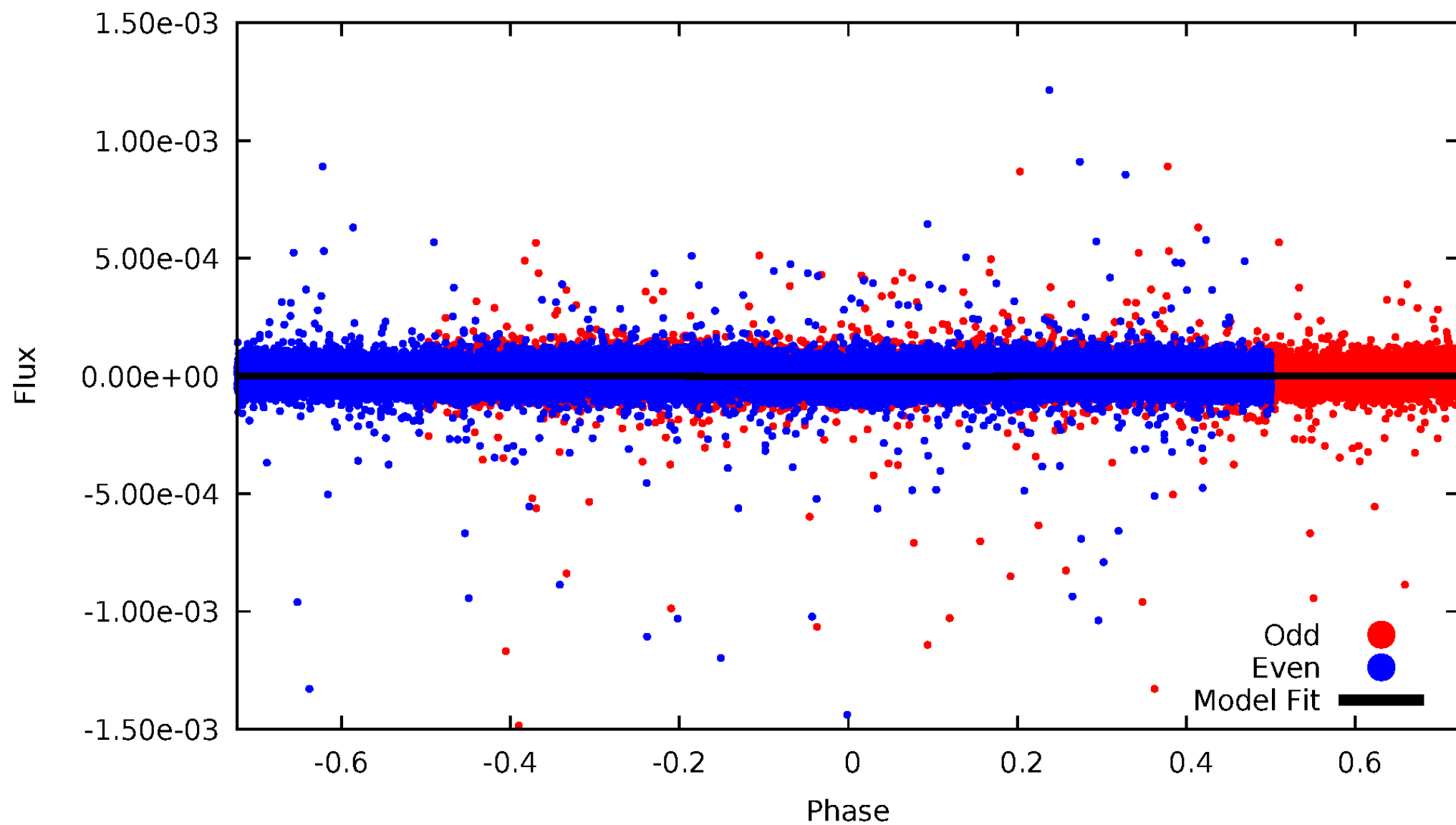


TCE 010977859-01



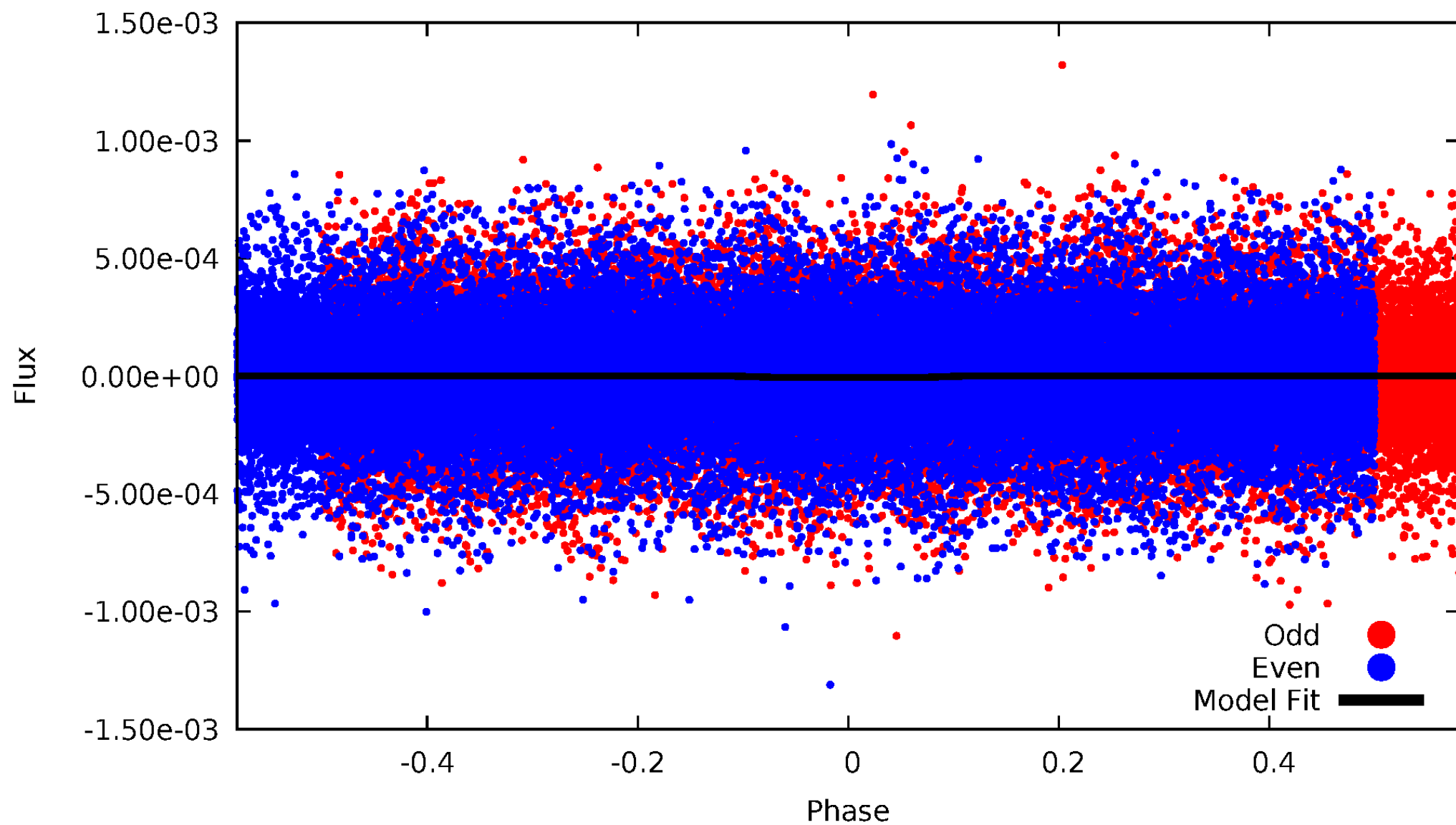
DV Odd/Even

TCE 010977859-01



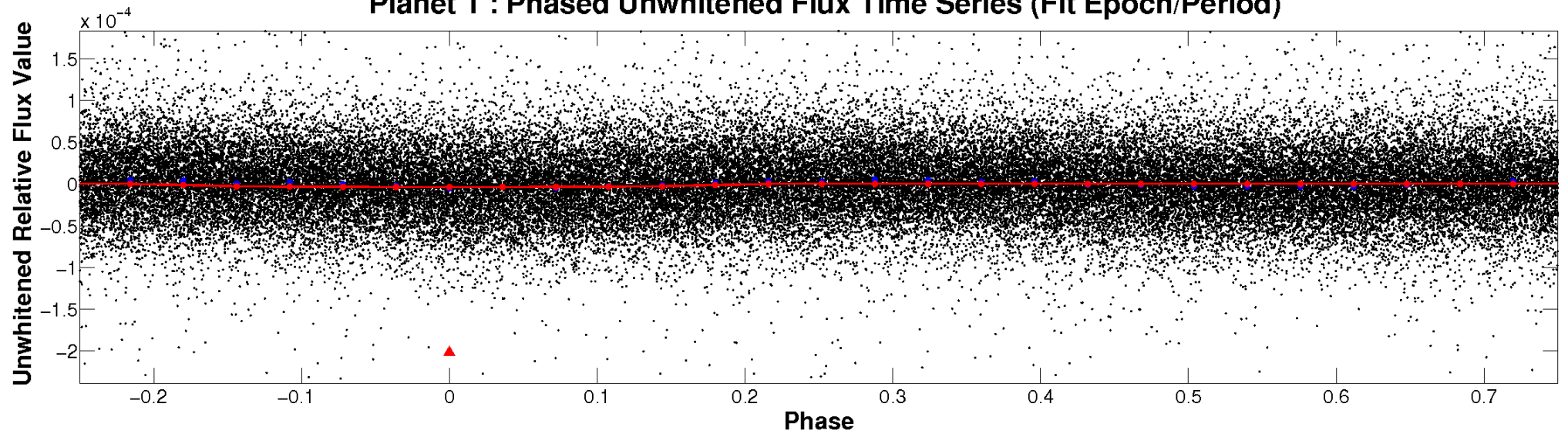
ALT Odd/Even

TCE 010977859-01

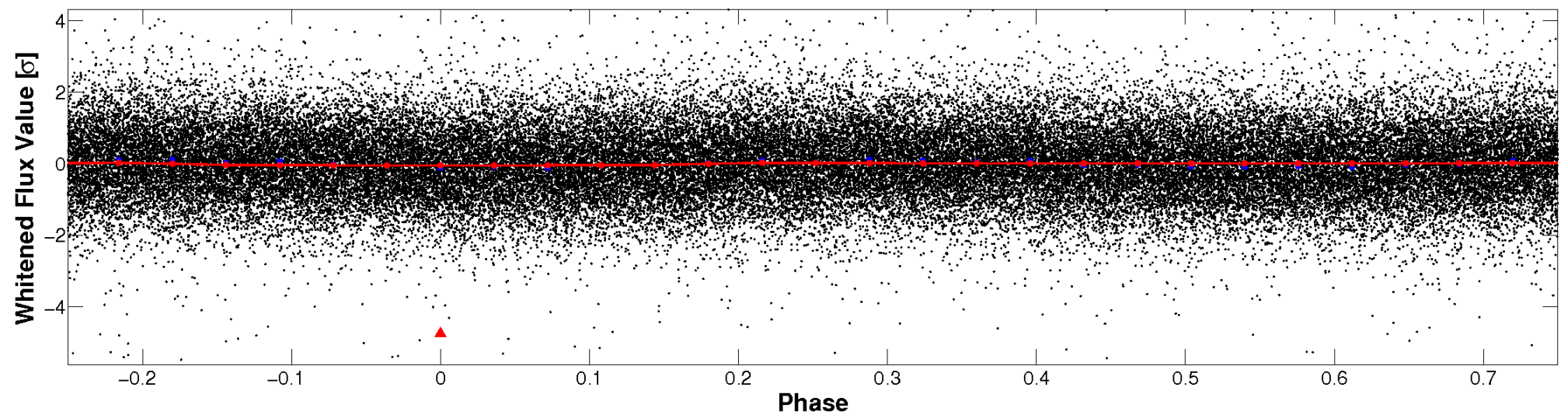


Non-Whitened Vs. Whitened Light Curve

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

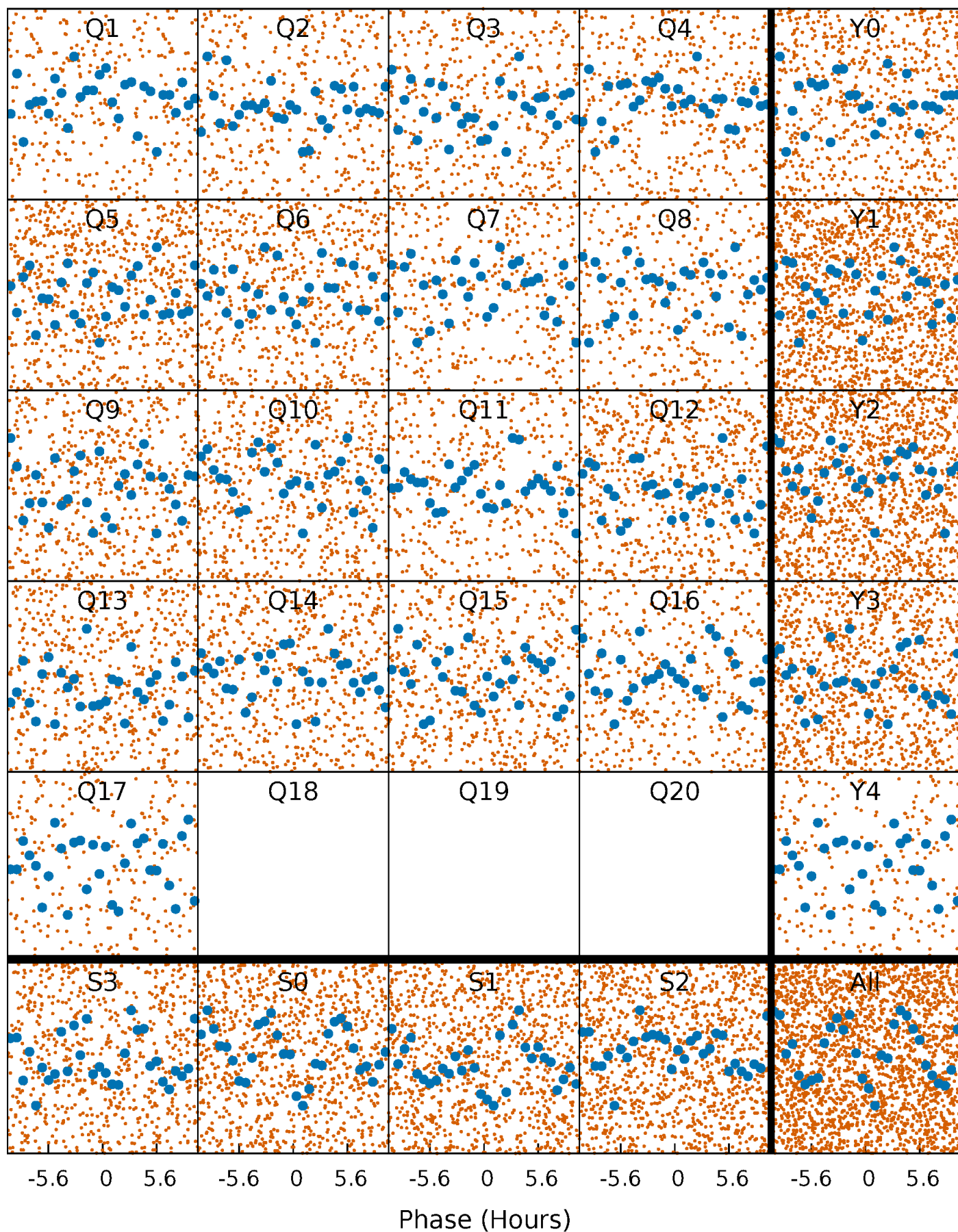


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



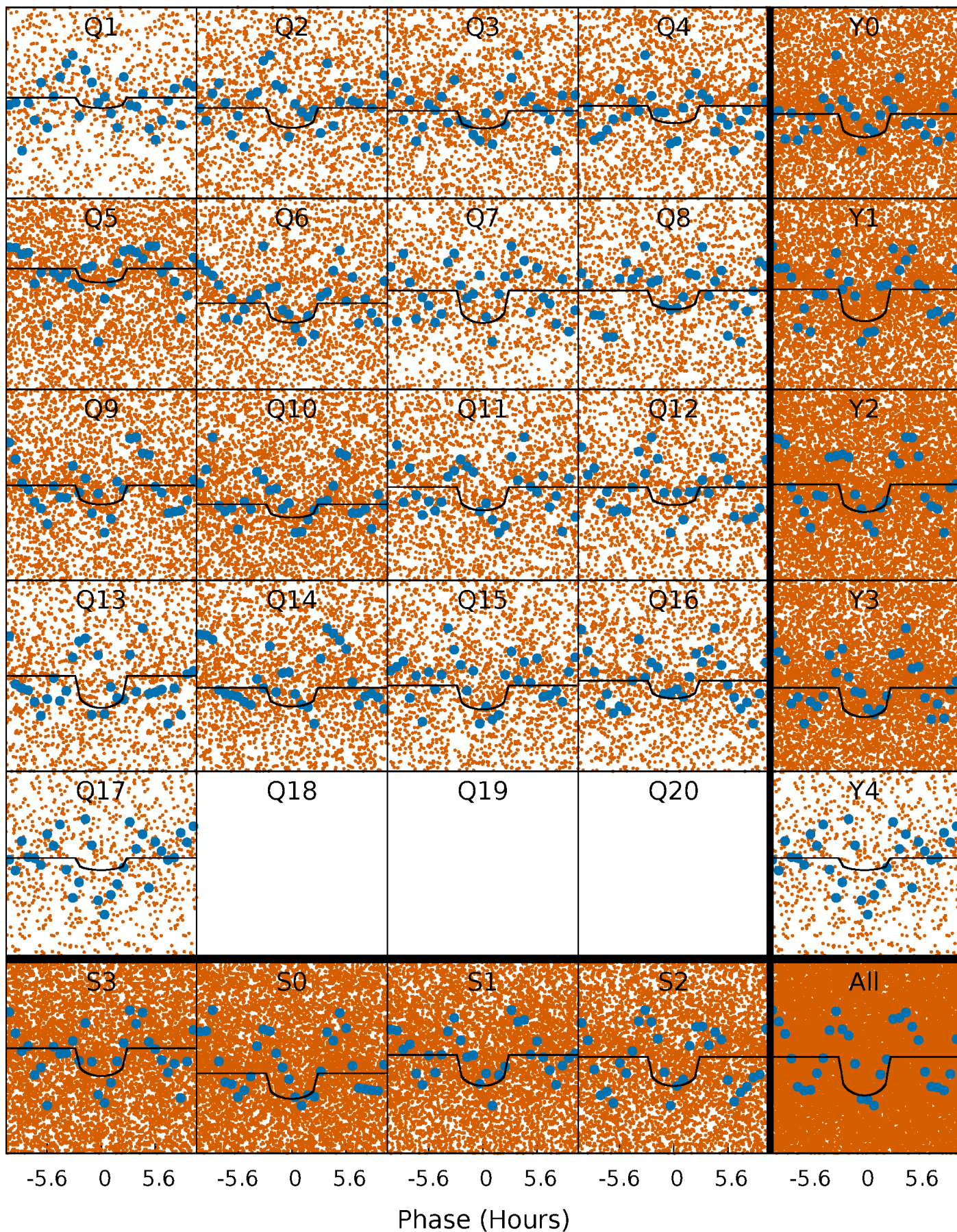
PDC Quarter-Phased Transit Curves

TCE 010977859-01 P= 0.567783 Days $T_0=132.020747$ (BKJD)



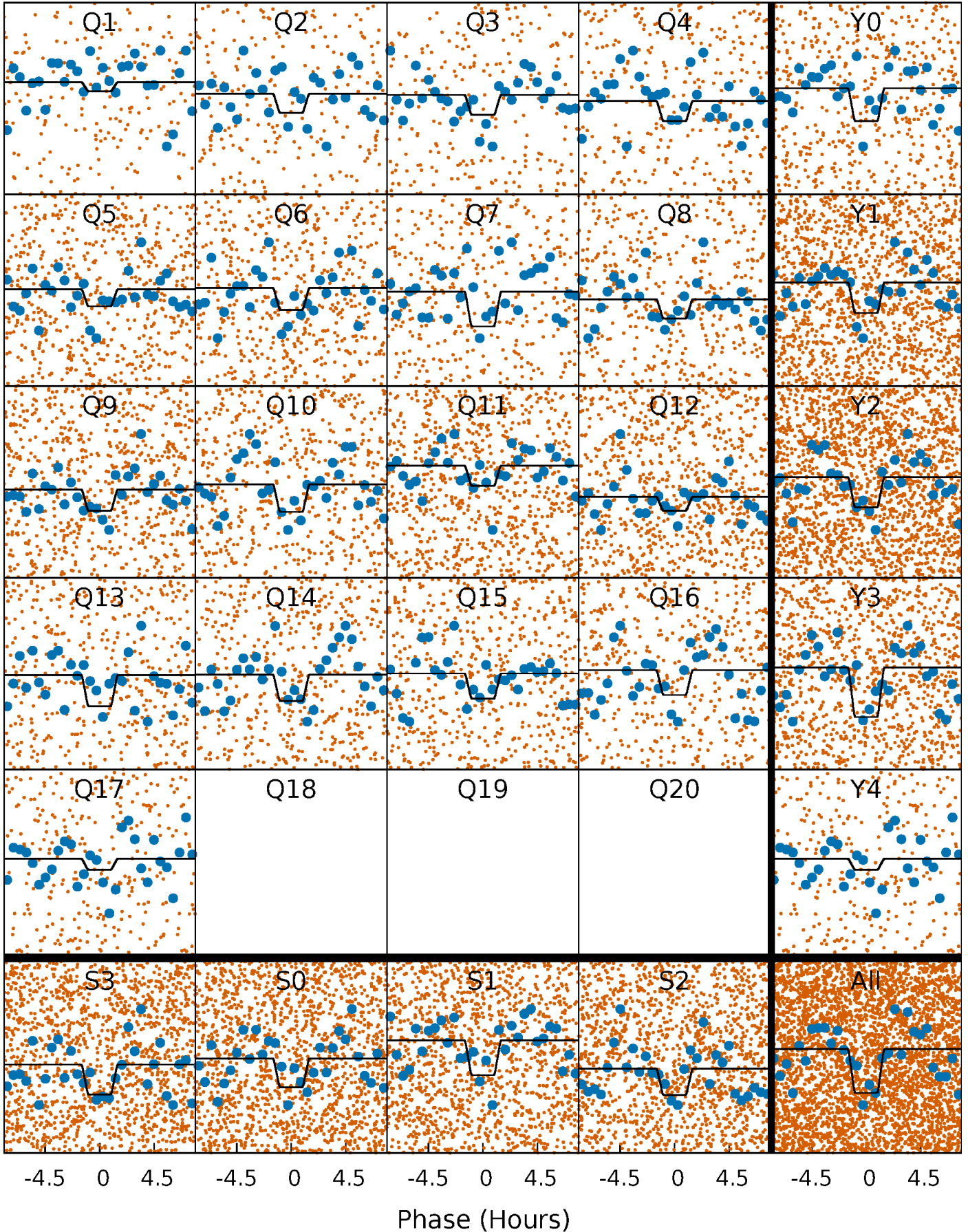
DV Quarter-Phased Transit Curves

TCE 010977859-01 P= 0.567783 Days $T_0=132.020747$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

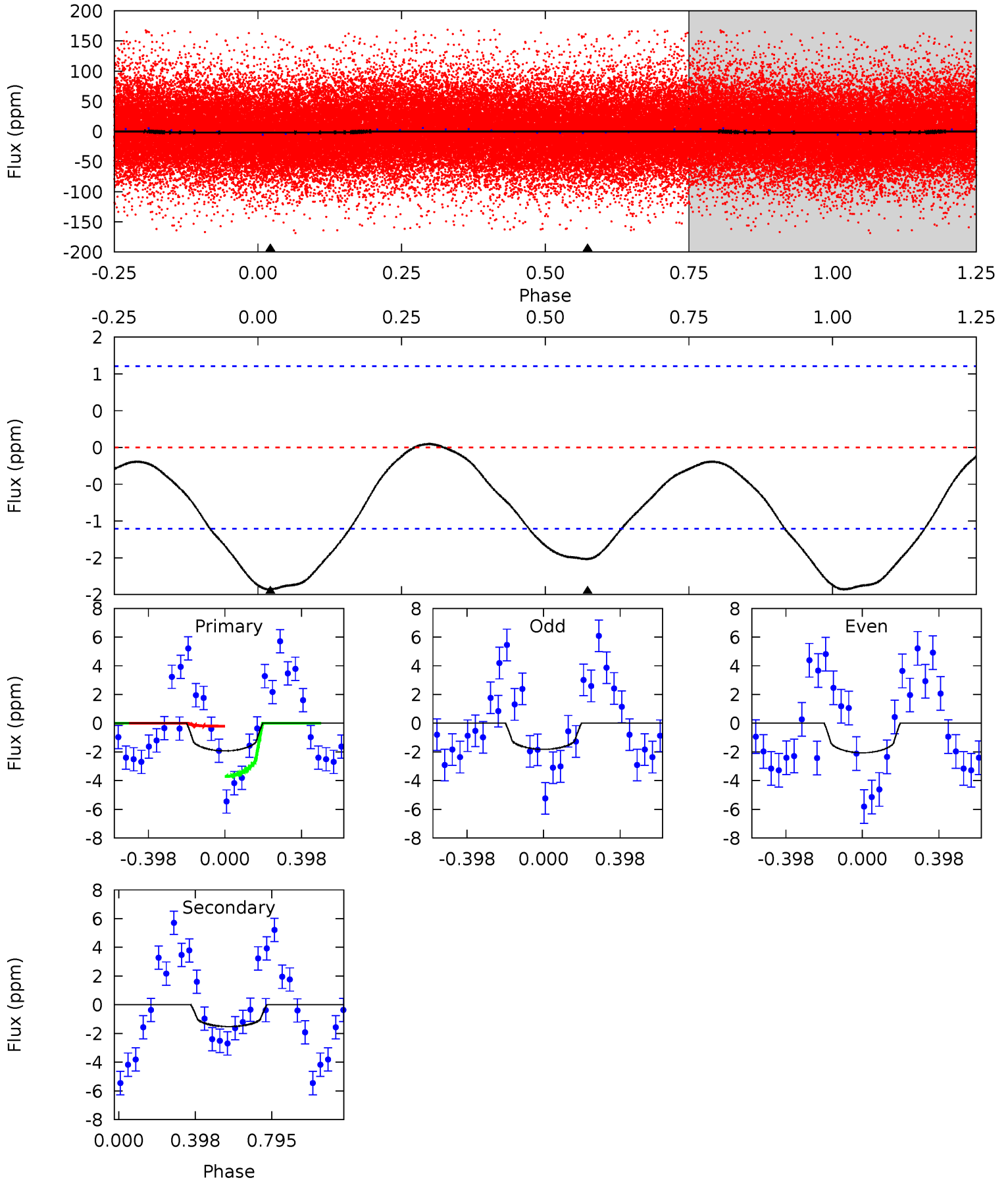
TCE 010977859-01 P= 0.567799 Days $T_0=132.020746$ (BKJD)



DV Model-Shift Uniqueness Test

010977859-01, P = 0.567783 Days, E = 131.452964 Days

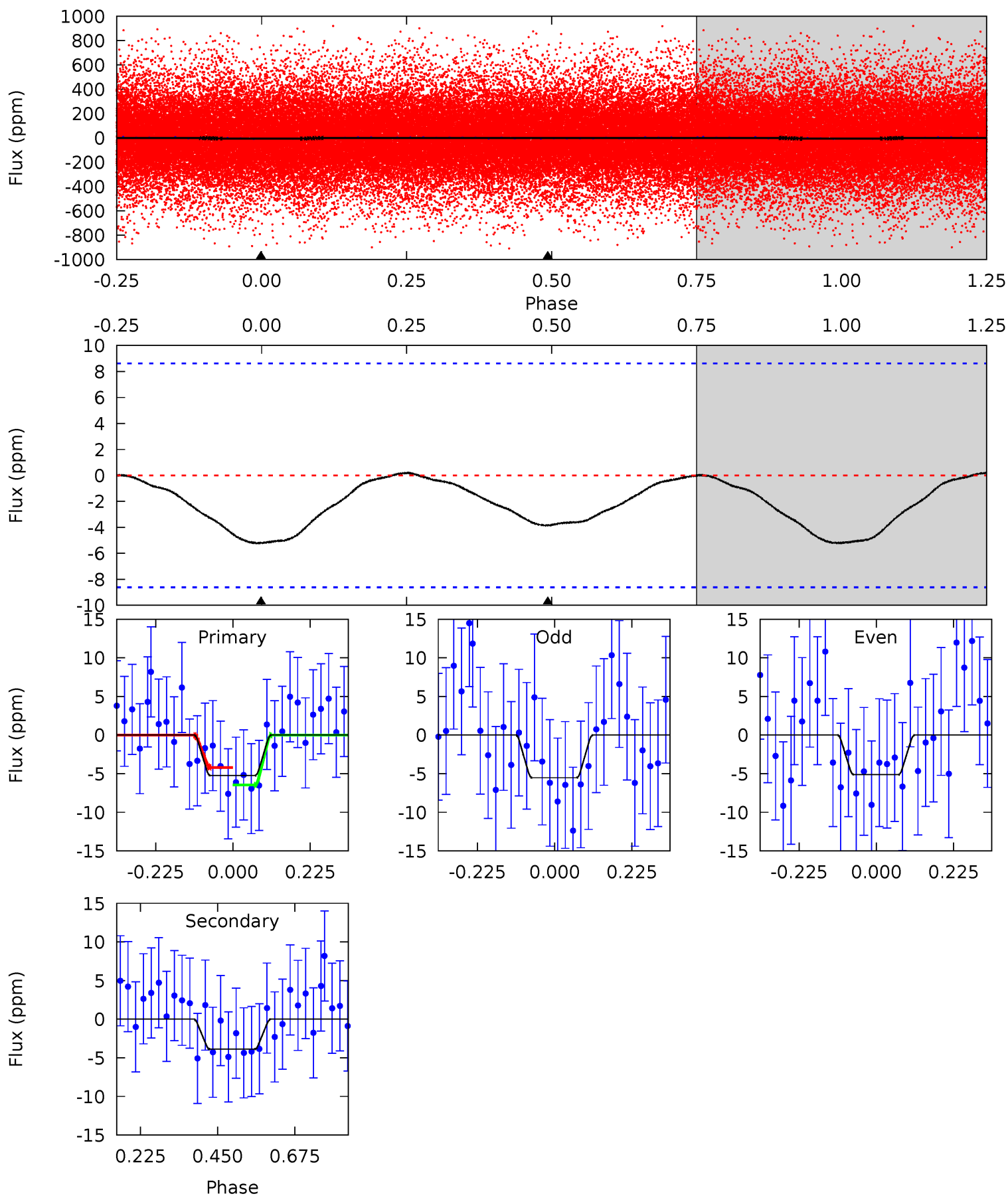
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.46 | 5.87 | 0 | 0 | 4.27 | 0.85 | 0.19 | 7.46 | 7.46 | 5.87 | 5.87 | 0.47 | 0.87 | 0.03 | 6.78 |



Alt Model-Shift Uniqueness Test

010977859-01, P = 0.567799 Days, E = 131.452947 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 2.67 | 1.98 | 0 | 0 | 4.39 | 1.21 | 0.06 | 2.67 | 2.67 | 1.98 | 1.98 | 0.10 | 0.65 | 0.04 | 0.58 |



Stellar Parameters For KIC 010977859

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 8180^{+163}_{-163} | $3.611^{+0.196}_{-0.084}$ | $0.210^{+0.150}_{-0.150}$ | $4.034^{+0.624}_{-0.937}$ | $2.424^{+0.263}_{-0.215}$ | $0.052^{+0.053}_{-0.017}$ |
| | +2%/-2% | +5%/-2% | +71%/-71% | +15%/-23% | +11%/-9% | +101%/-32% |
| Source | SPE4 | SPE4 | SPE4 | DSEP | | |

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010977859-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|-------------------------|---------------------------|
| DV | -2 ± 0 | $0.79^{+0.51}_{-0.43}$ | 7463^{+370}_{-473} | 4940^{+4848}_{-9928} | $0.437^{+1.576}_{-0.274}$ |
| Alt. | -4 ± 2 | $1.06^{+0.50}_{-0.48}$ | 7456^{+356}_{-472} | 5898^{+4127}_{-10509} | $0.615^{+1.576}_{-0.404}$ |

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 $A_{\text{obs}} \gg 1.0$

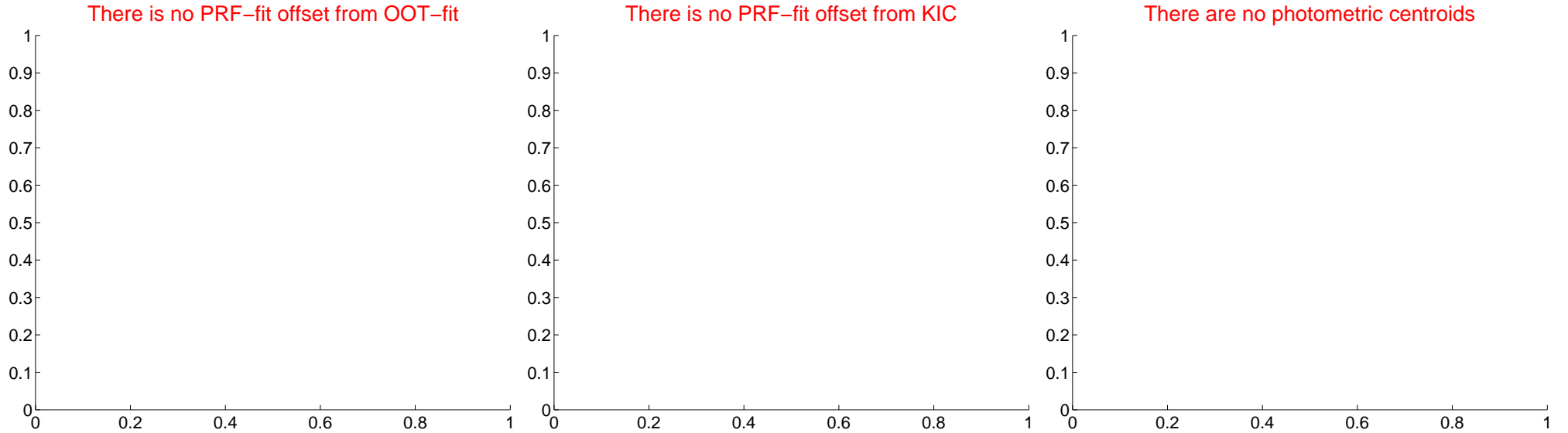
DV Centroid Data

Supplemental centroid analysis for 010977859-01. **Kepler magnitude: 8.81.** Transit SNR 6.88

There are 0 quarters with good PRF difference image offsets

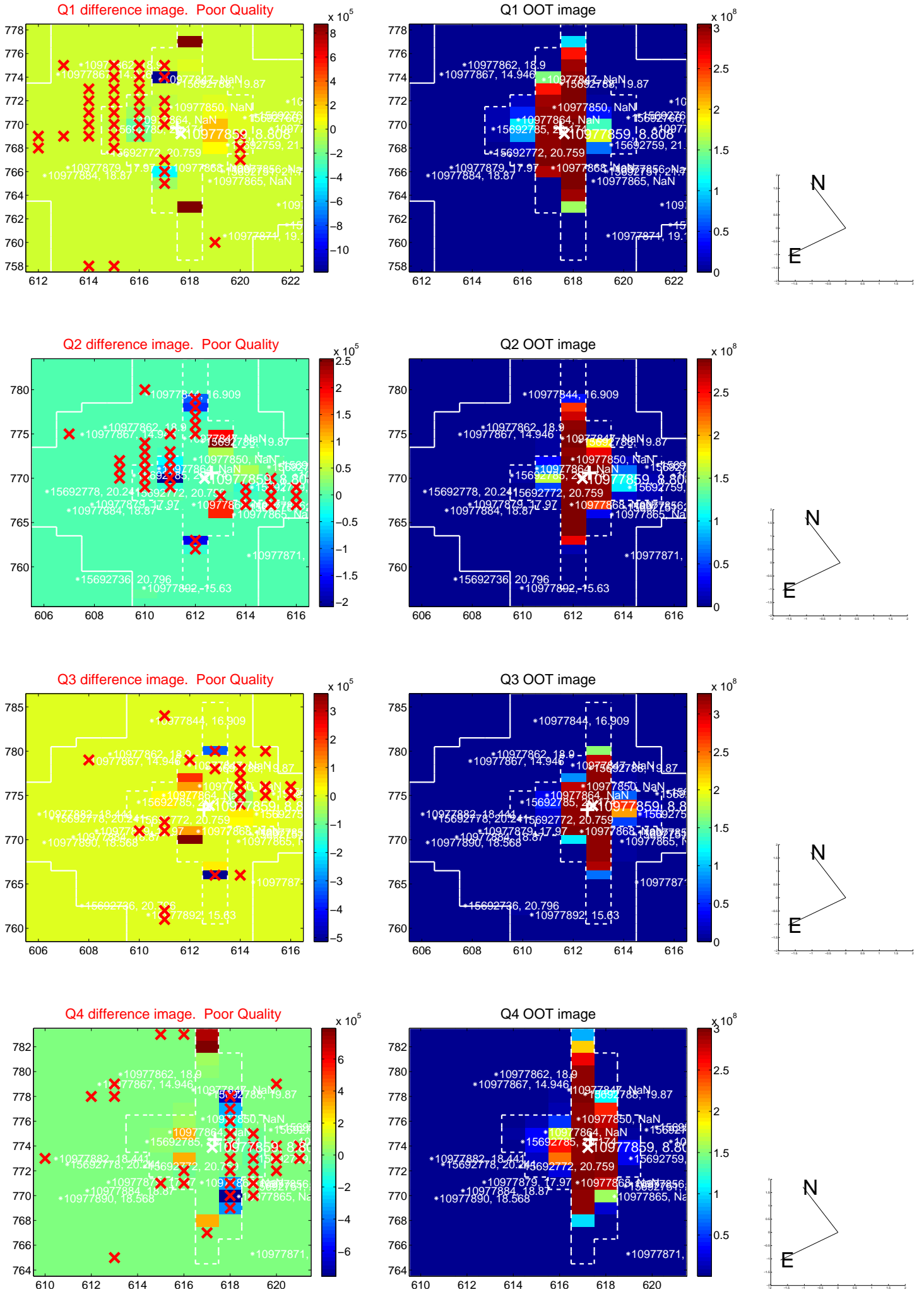
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

| | 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 | — | — | — | — |

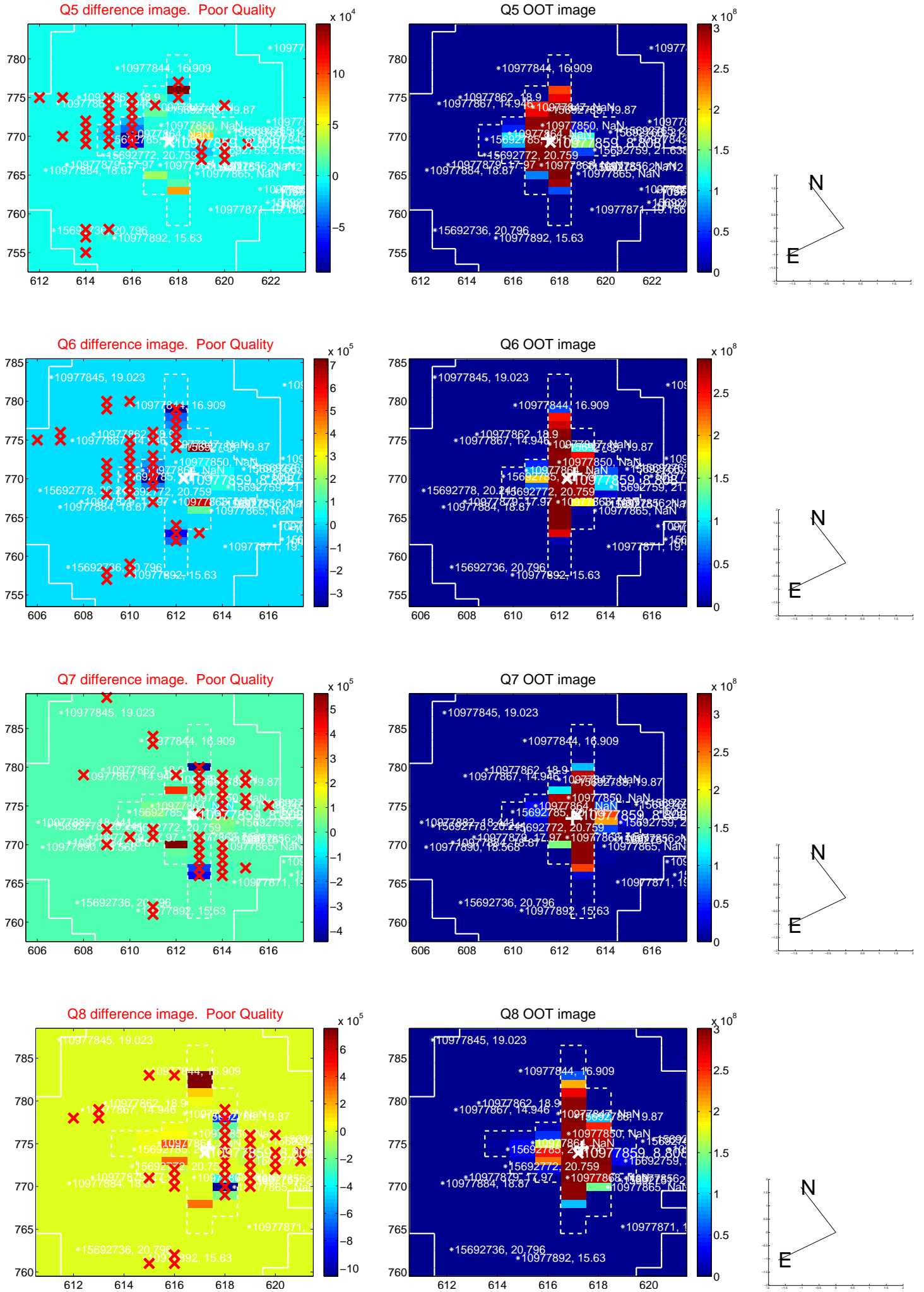


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

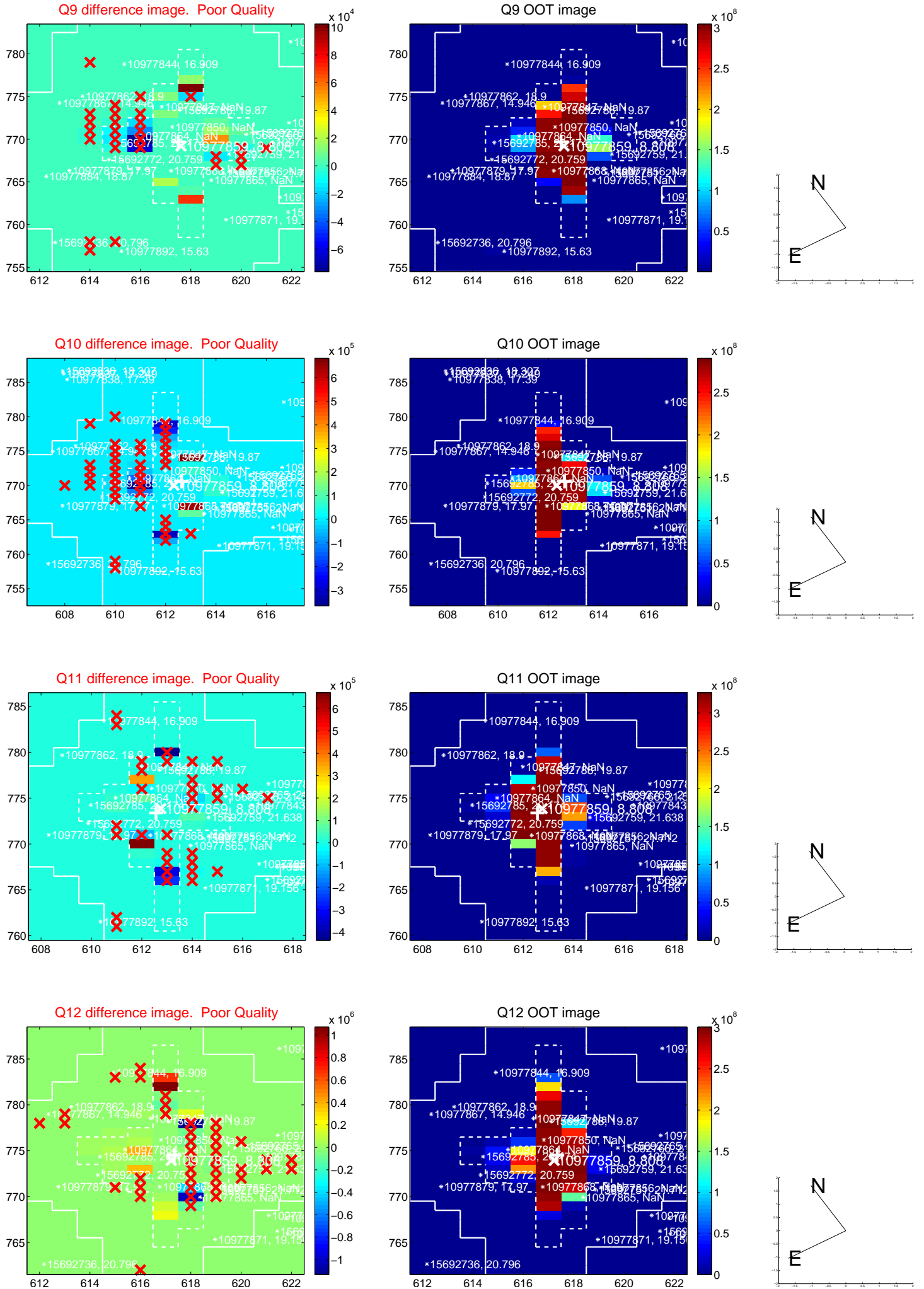
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



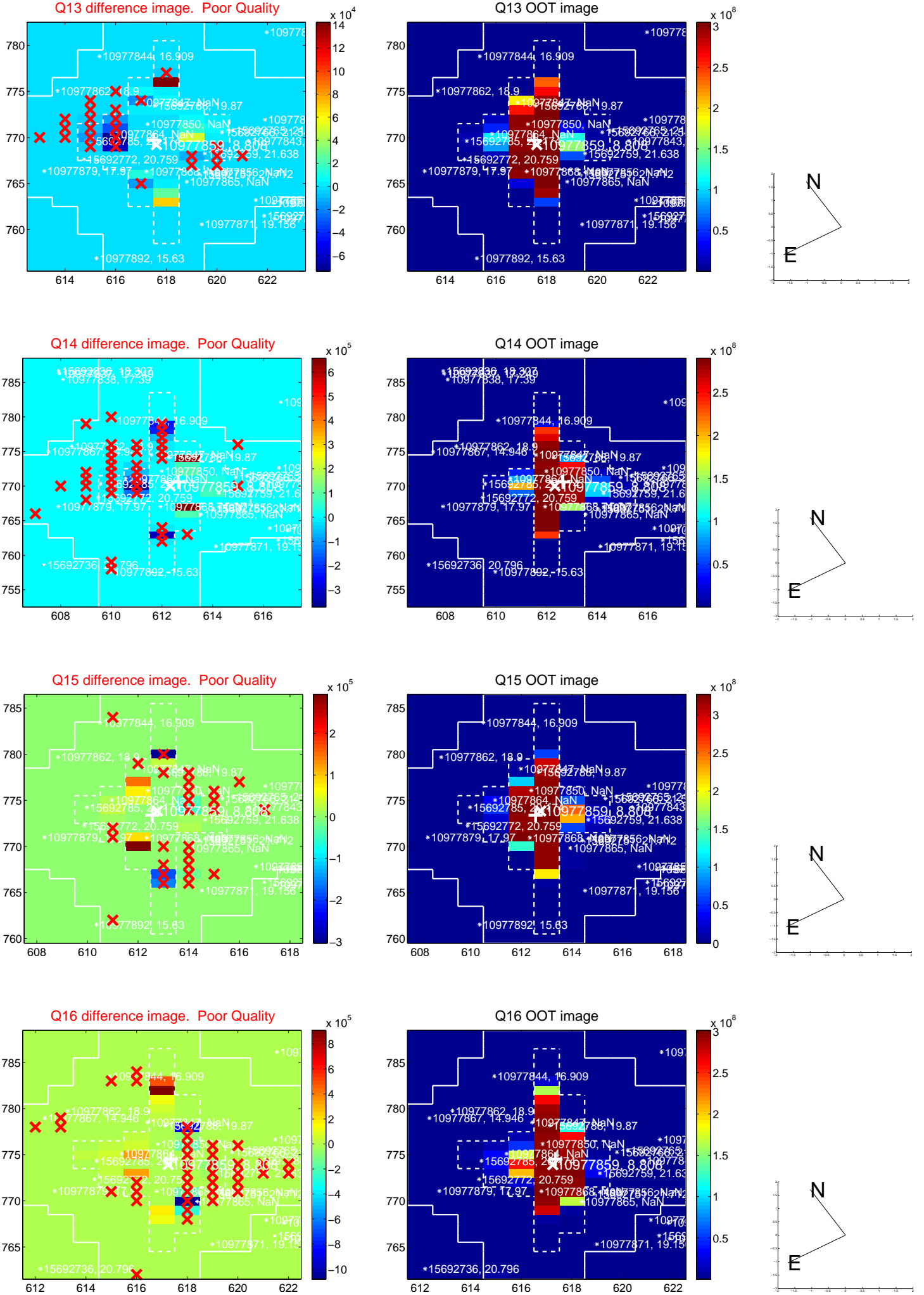
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



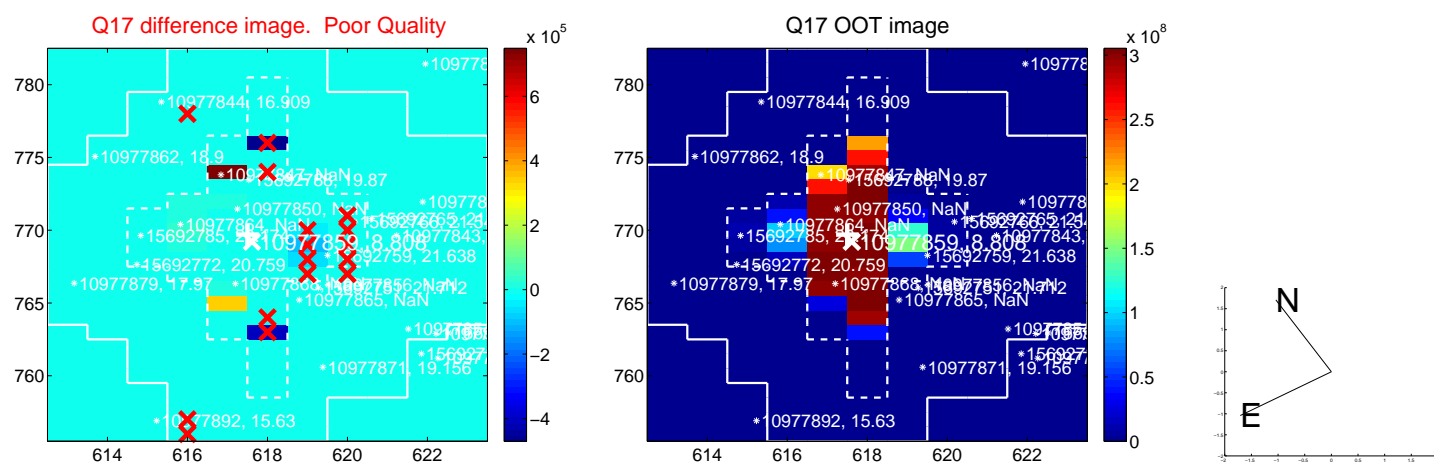
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



folded centroid time series figure for this object.



UKIRT Image

