

KIC 009832655

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 009832655-01 | OBS | No | 1.113852 | 131.826736 | 65.2 | 4.542 | 17.9 | 19.7 | 1.78 | 7261 | 1.69 | 12929.10 |
| 009832655-02 | OBS | No | 1.113911 | 132.192112 | 123.1 | 3.500 | 8.6 | -1.0 | 1.78 | 7261 | 2.00 | 12928.18 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 009832655-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 009832655-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS |

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

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

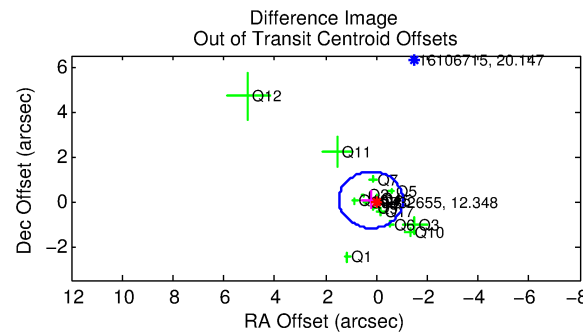
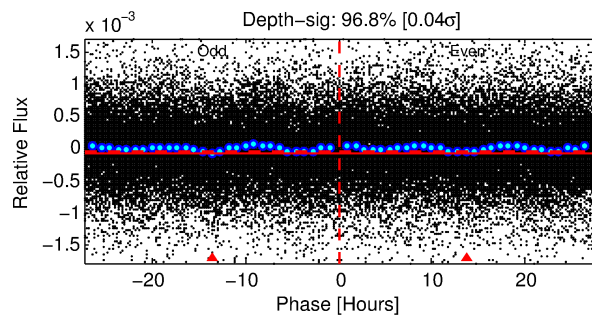
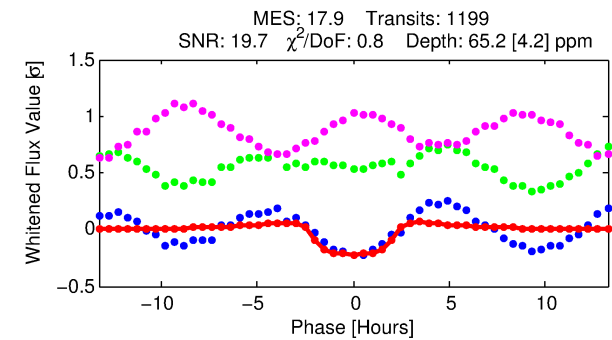
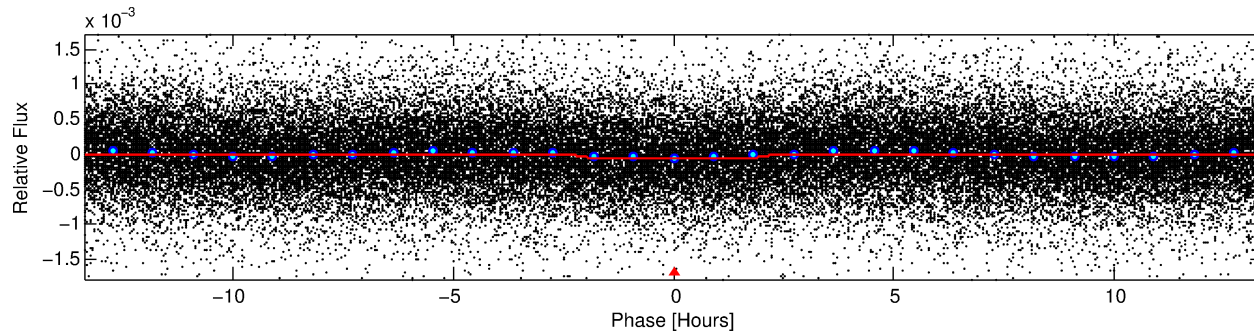
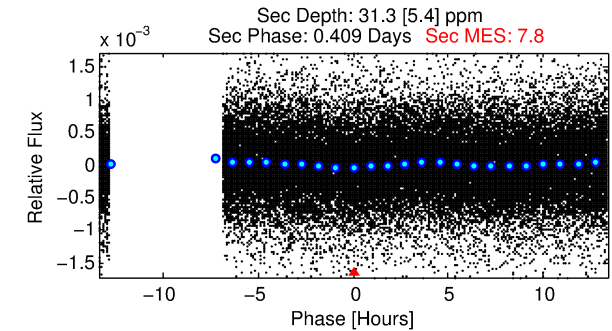
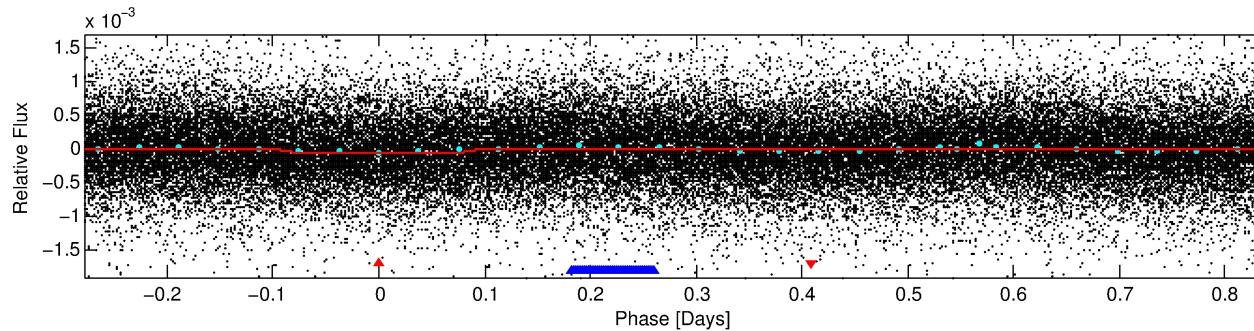
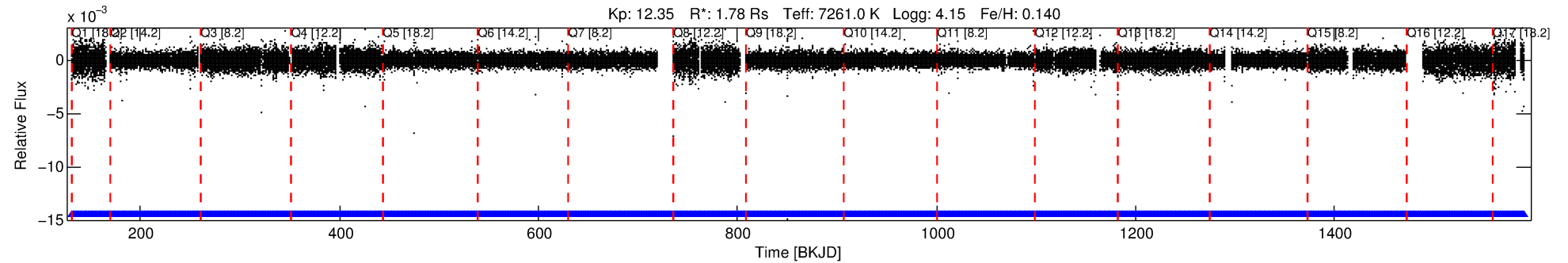
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009832655-01

No Significant Match Found

DV One-Page Summary

KIC: 9832655 Candidate: 1 of 2 Period: 1.114 d



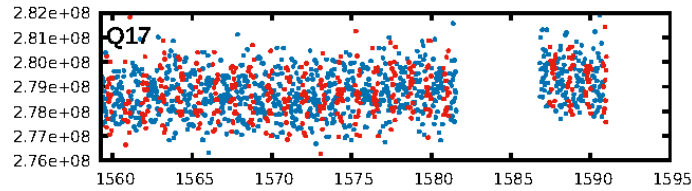
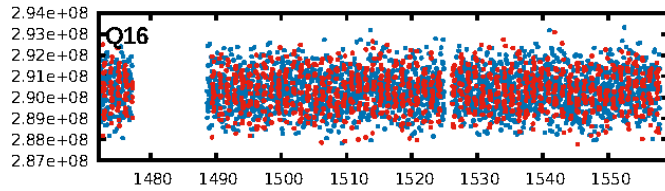
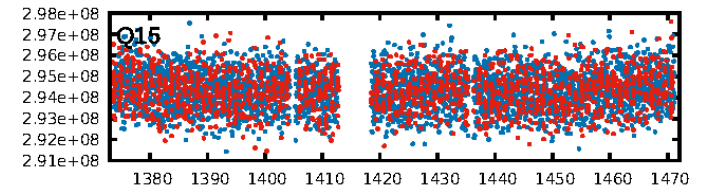
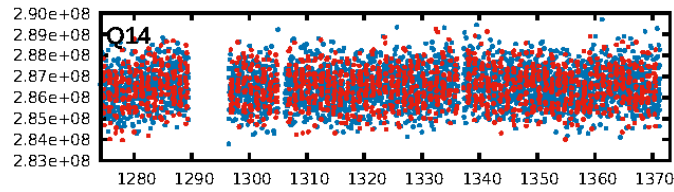
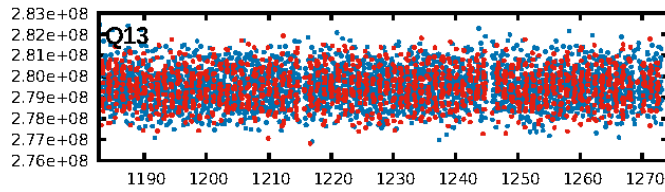
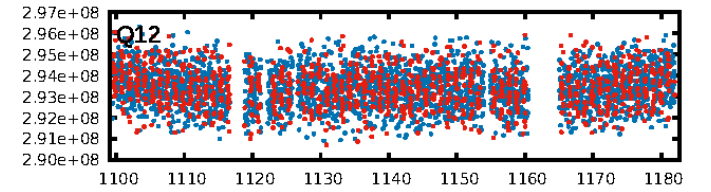
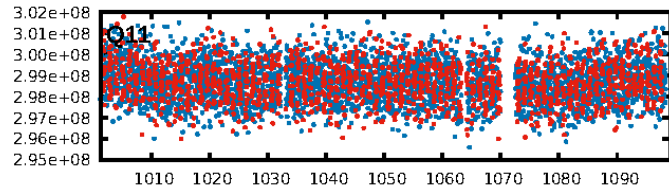
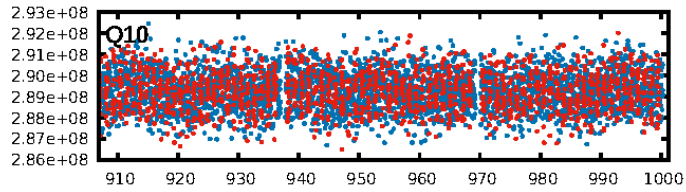
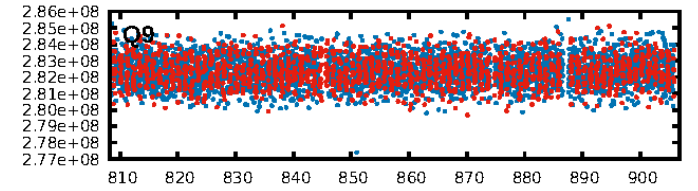
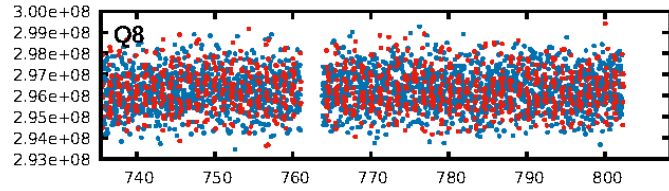
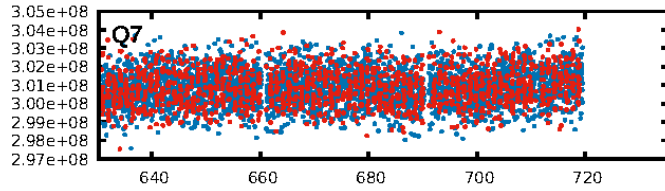
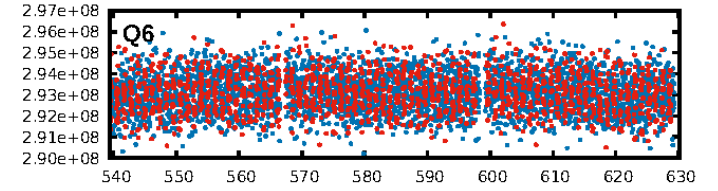
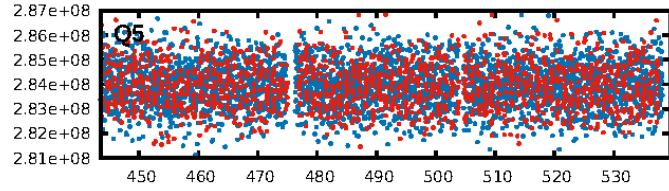
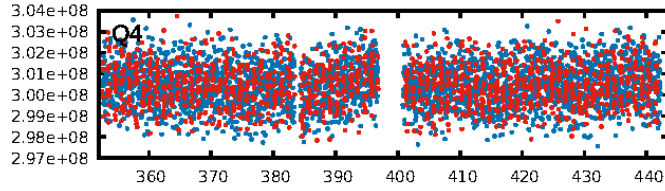
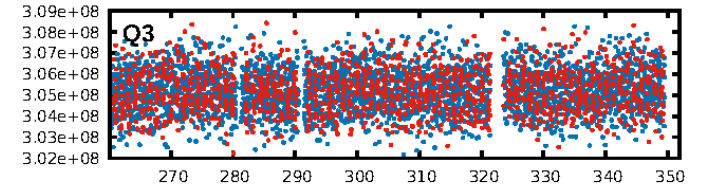
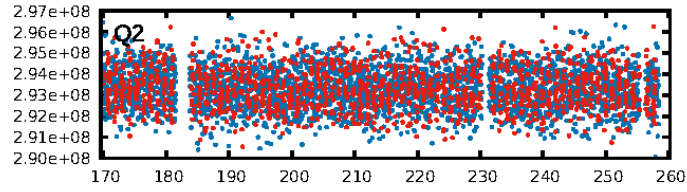
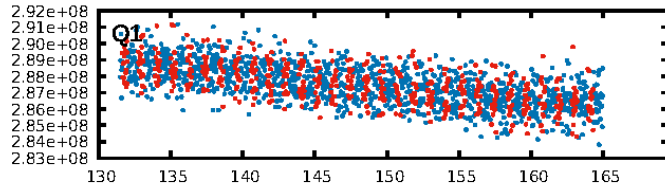
DV Fit Results:

Period = 1.11385 [0.00001] d
Epoch = 131.8267 [0.0030] BKJD
Rp/R* = 0.0087 [0.0022]
a/R* = 1.22 [0.66]
b = 0.92 [0.27]
Seff = 12929.10 [5123.82]
Teff = 2719 [269] K
Rp = 1.69 [0.69] Re
a = 0.0247 [0.0064] AU
Ag = 3.65 [2.37] [1.12σ]
Teffp = 5809 [820] K [3.58σ]

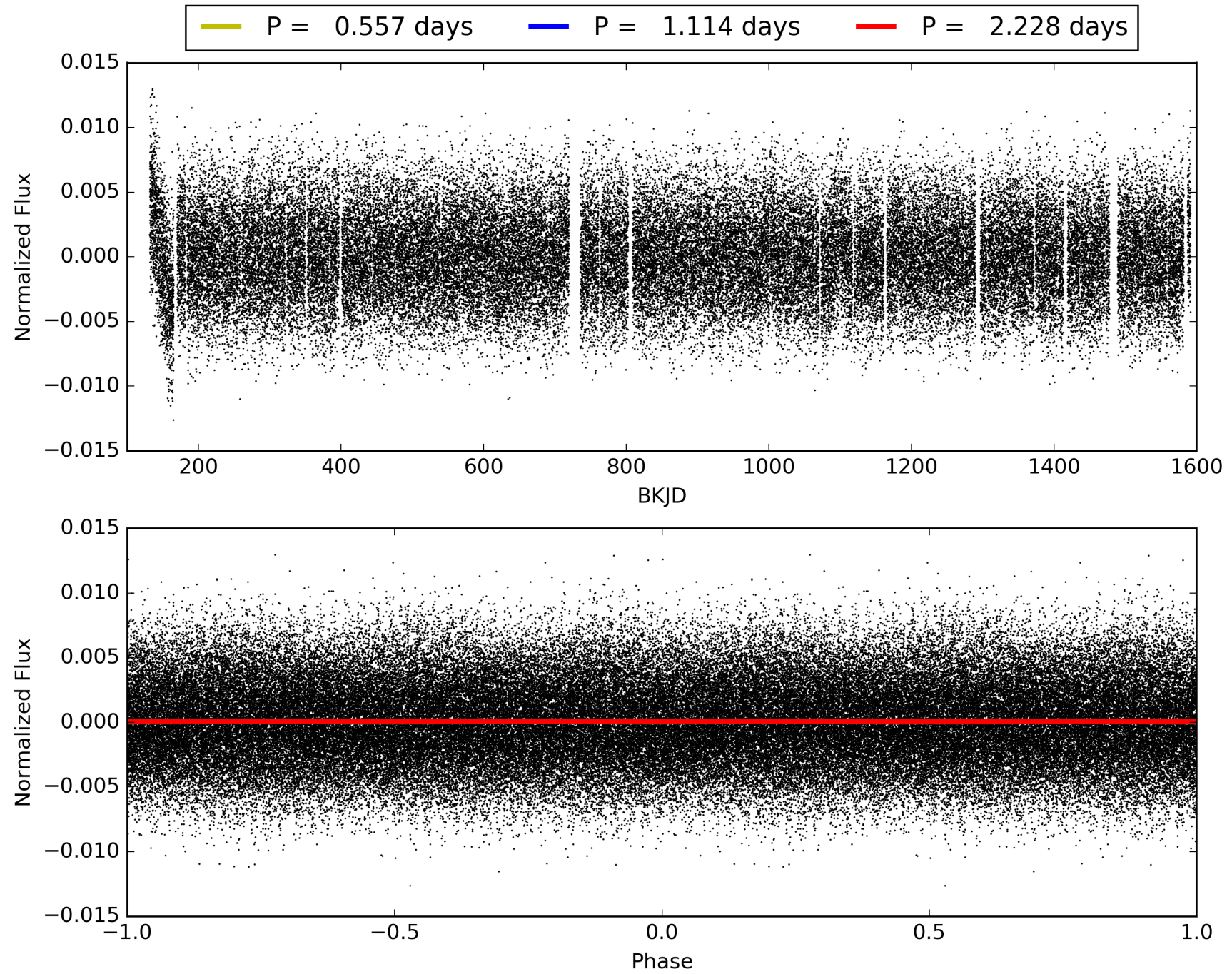
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.55e-76
RollingBand-fgt: 1.00 [1145/1145]
GhostDiagnostic-chr: 2.208
Centroid-sig: 11.5%
Centroid-so: 0.222 arcsec [1.25σ]
OotOffset-rm: 0.227 arcsec [0.54σ]
KicOffset-rm: 0.371 arcsec [0.80σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.81 [13/16]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 009832655-01, PDC Light Curves

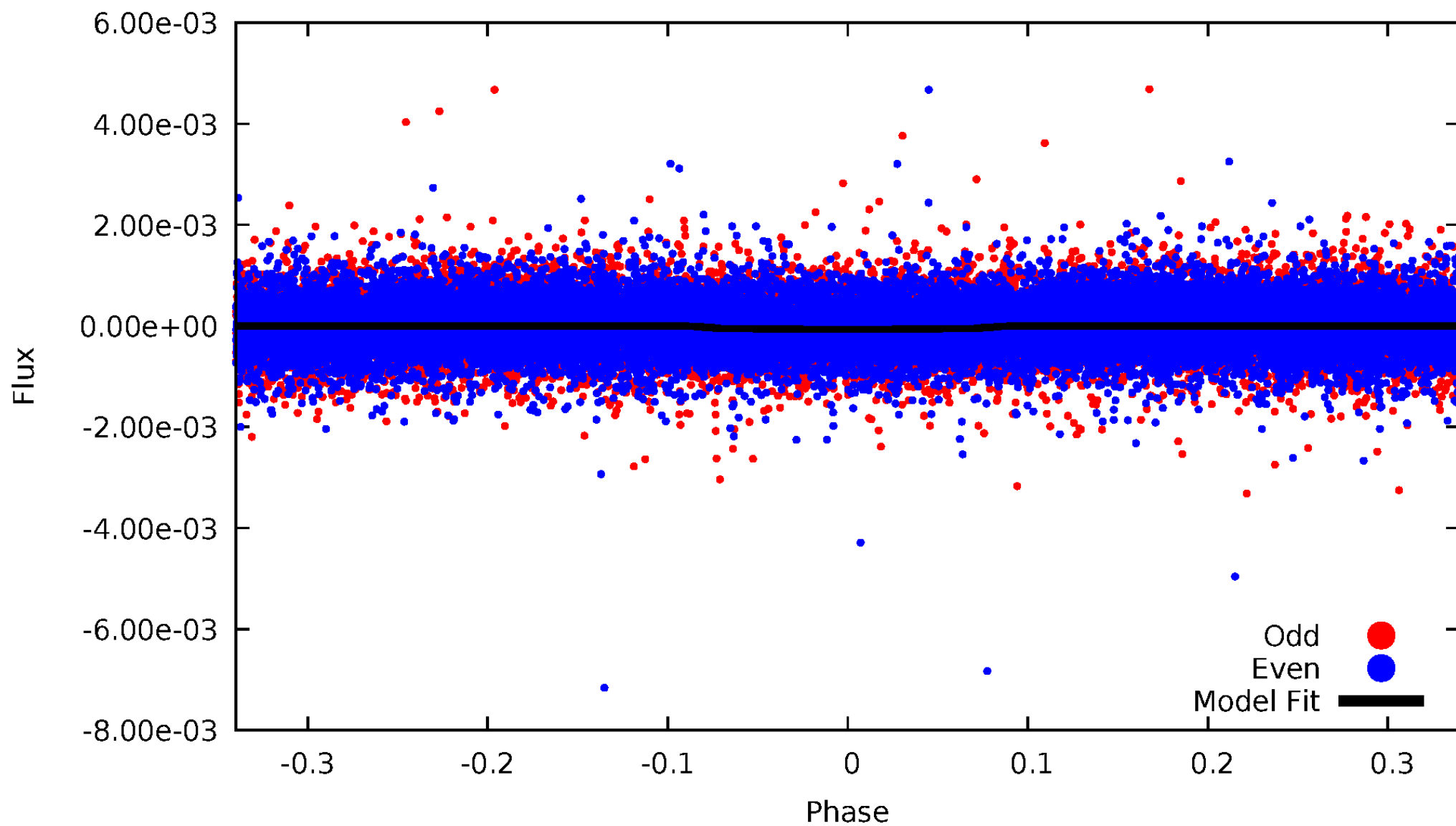


TCE 009832655-01



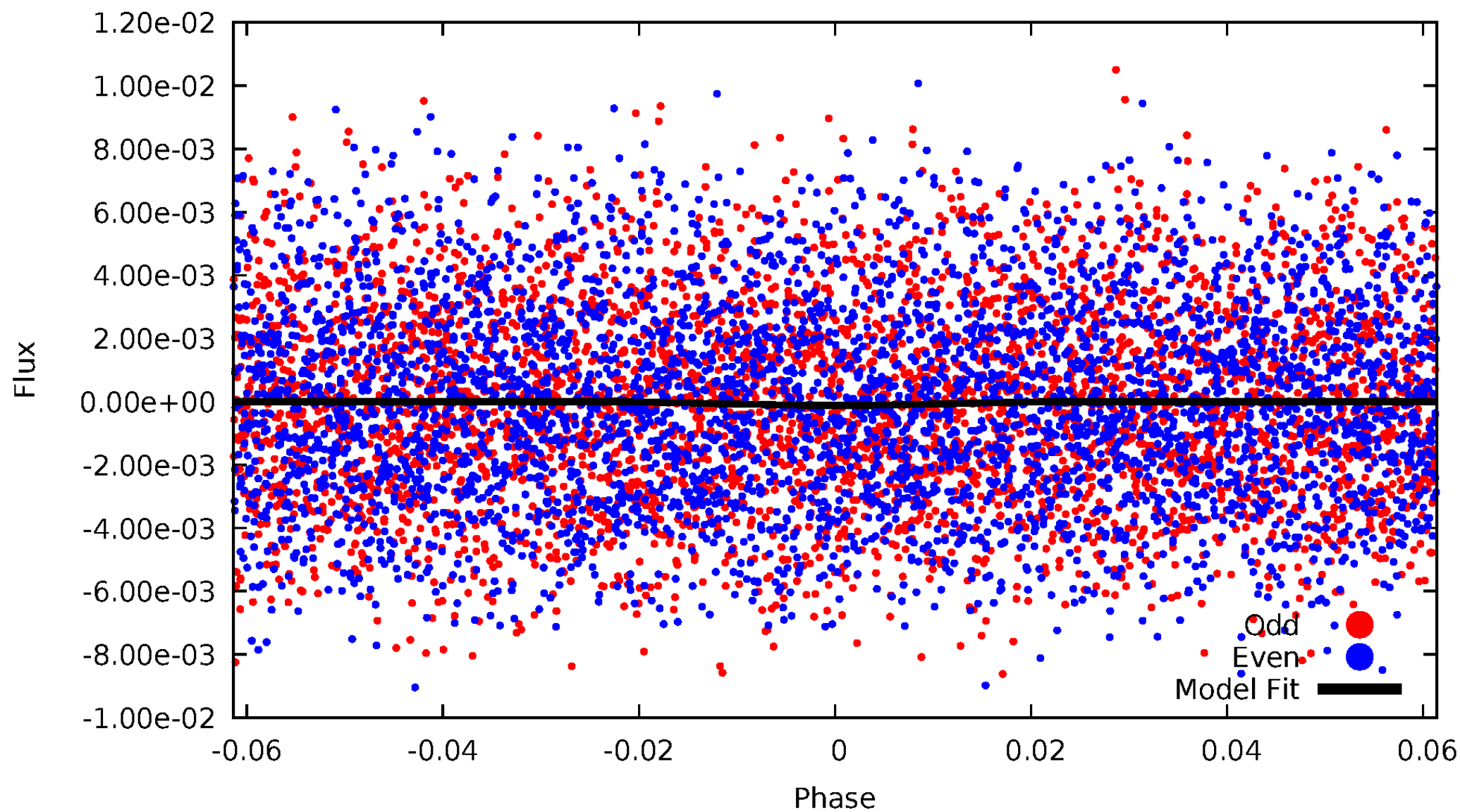
DV Odd/Even

TCE 009832655-01



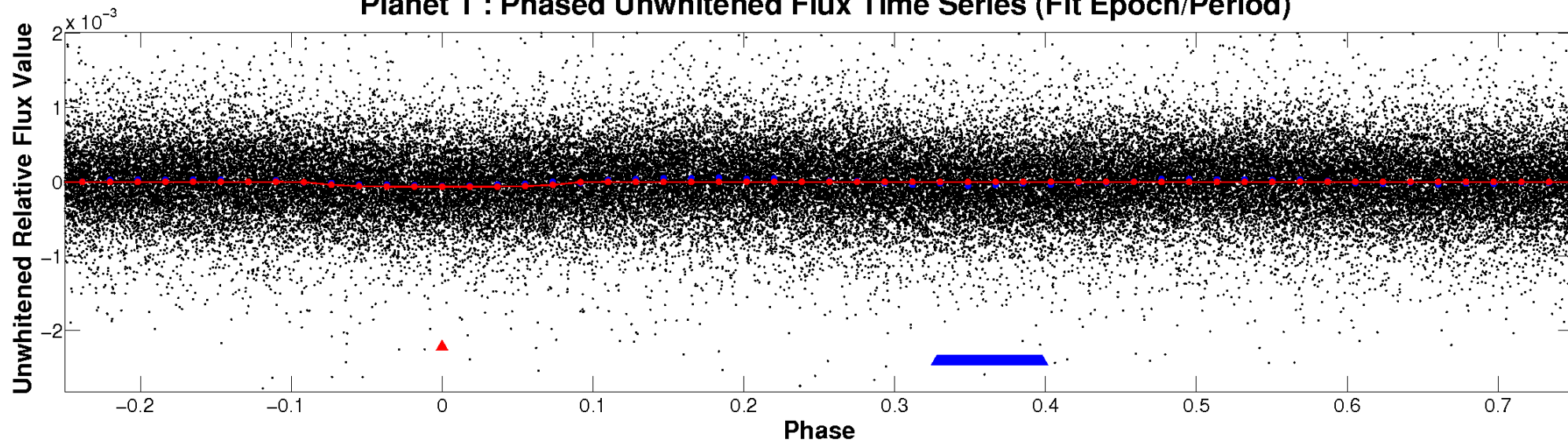
ALT Odd/Even

TCE 009832655-01

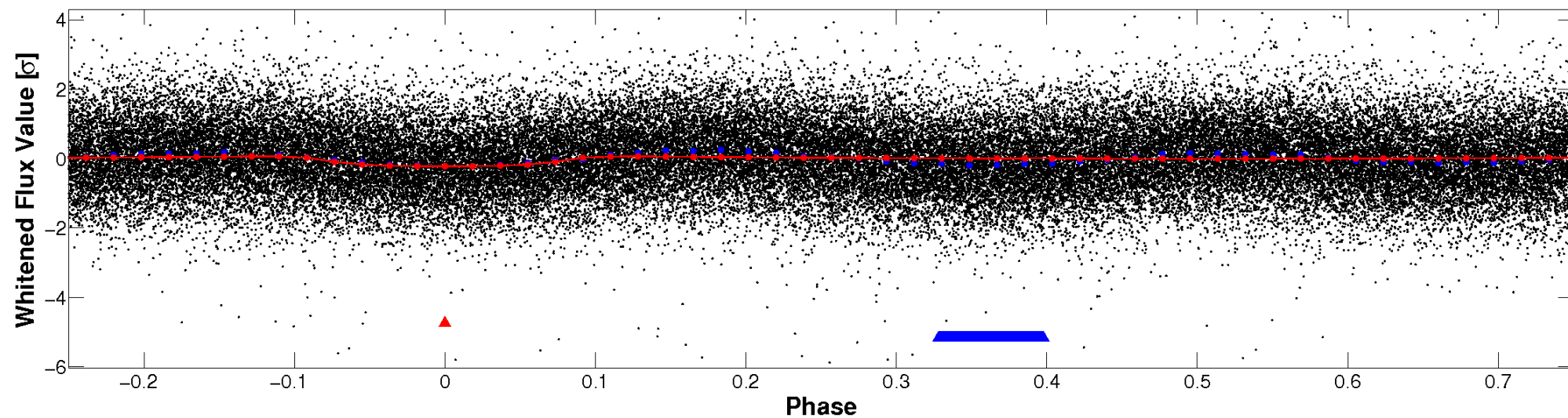


Non-Whitened Vs. Whitened Light Curve

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

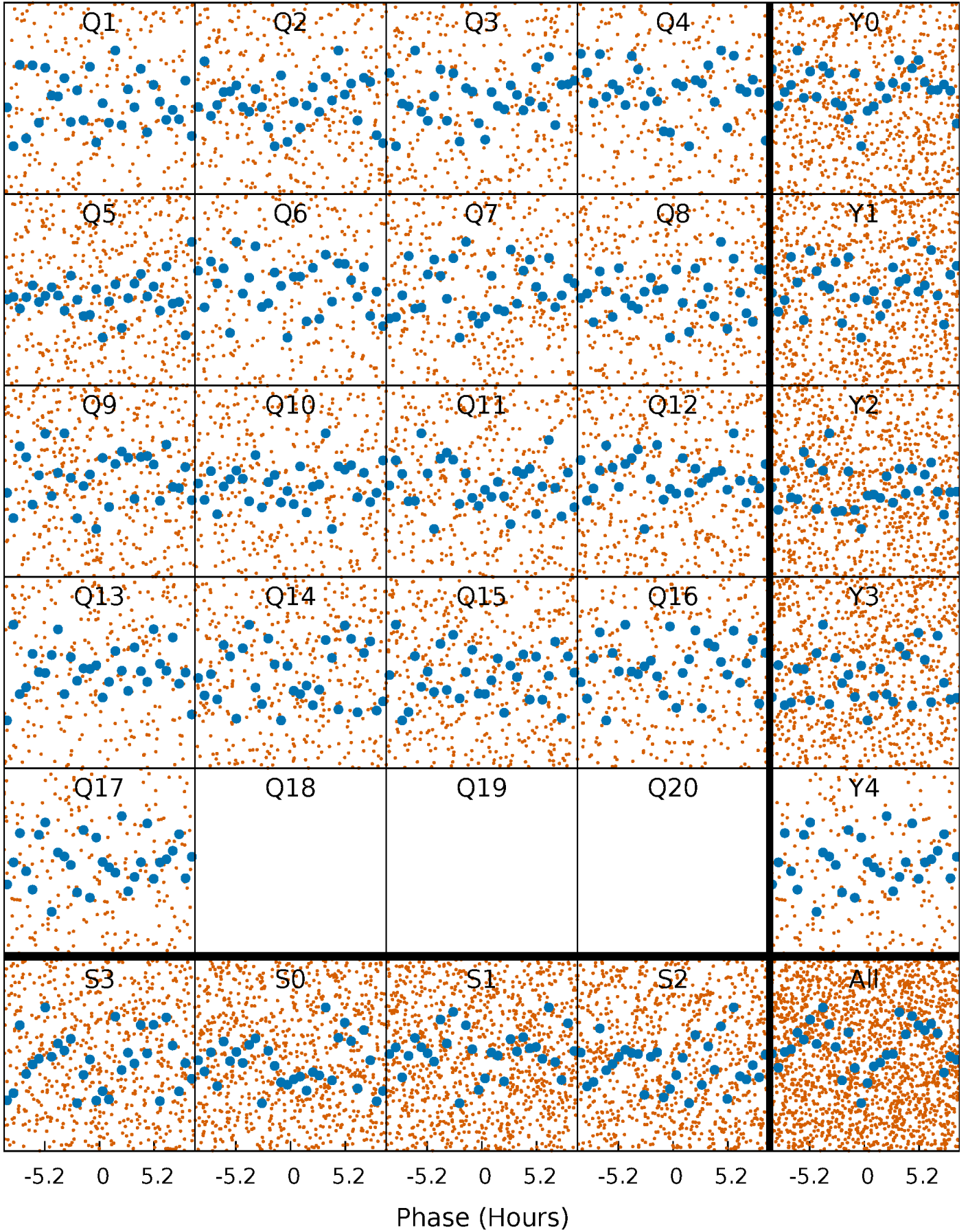


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



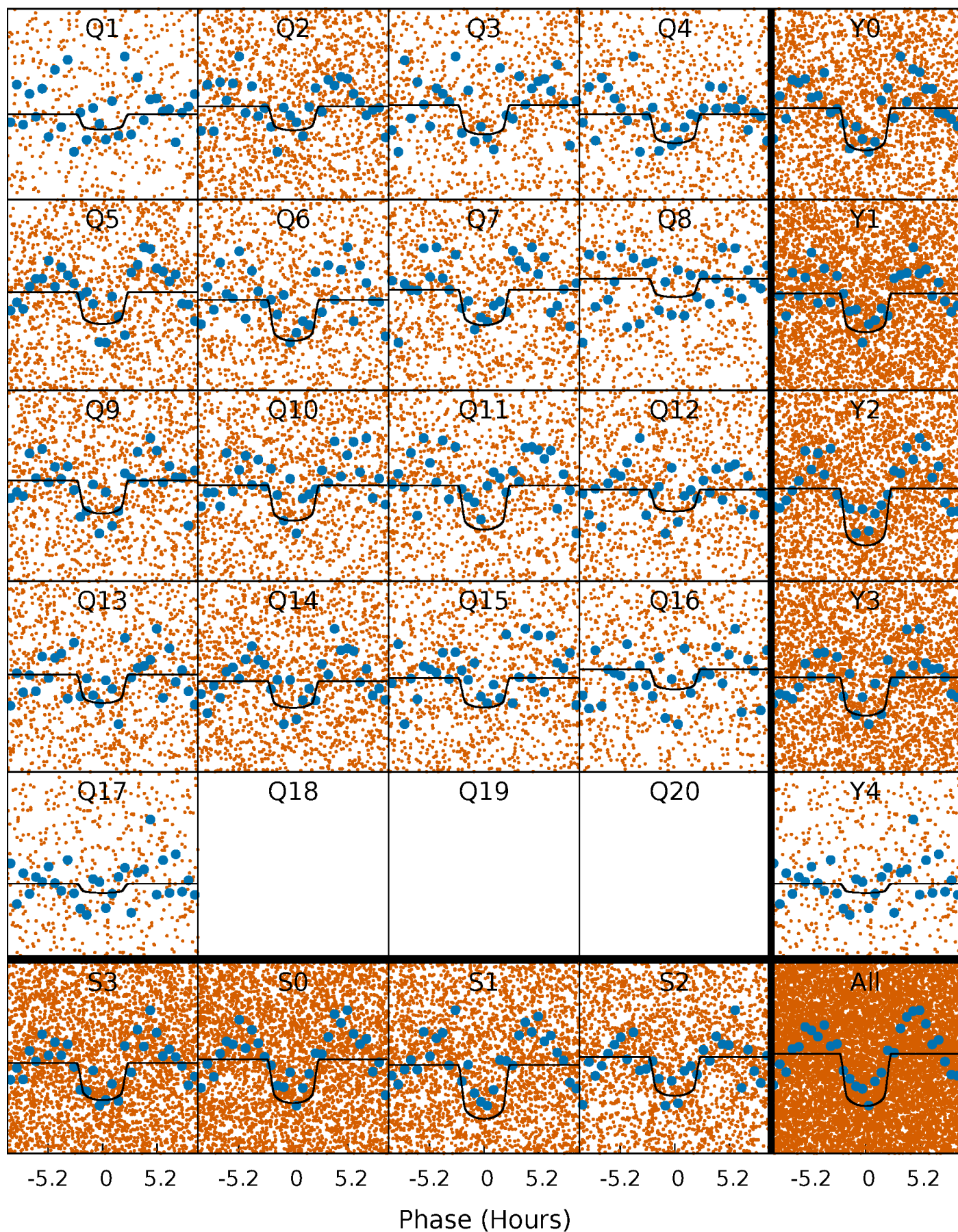
PDC Quarter-Phased Transit Curves

TCE 009832655-01 P= 1.113852 Days $T_0=131.826736$ (BKJD)



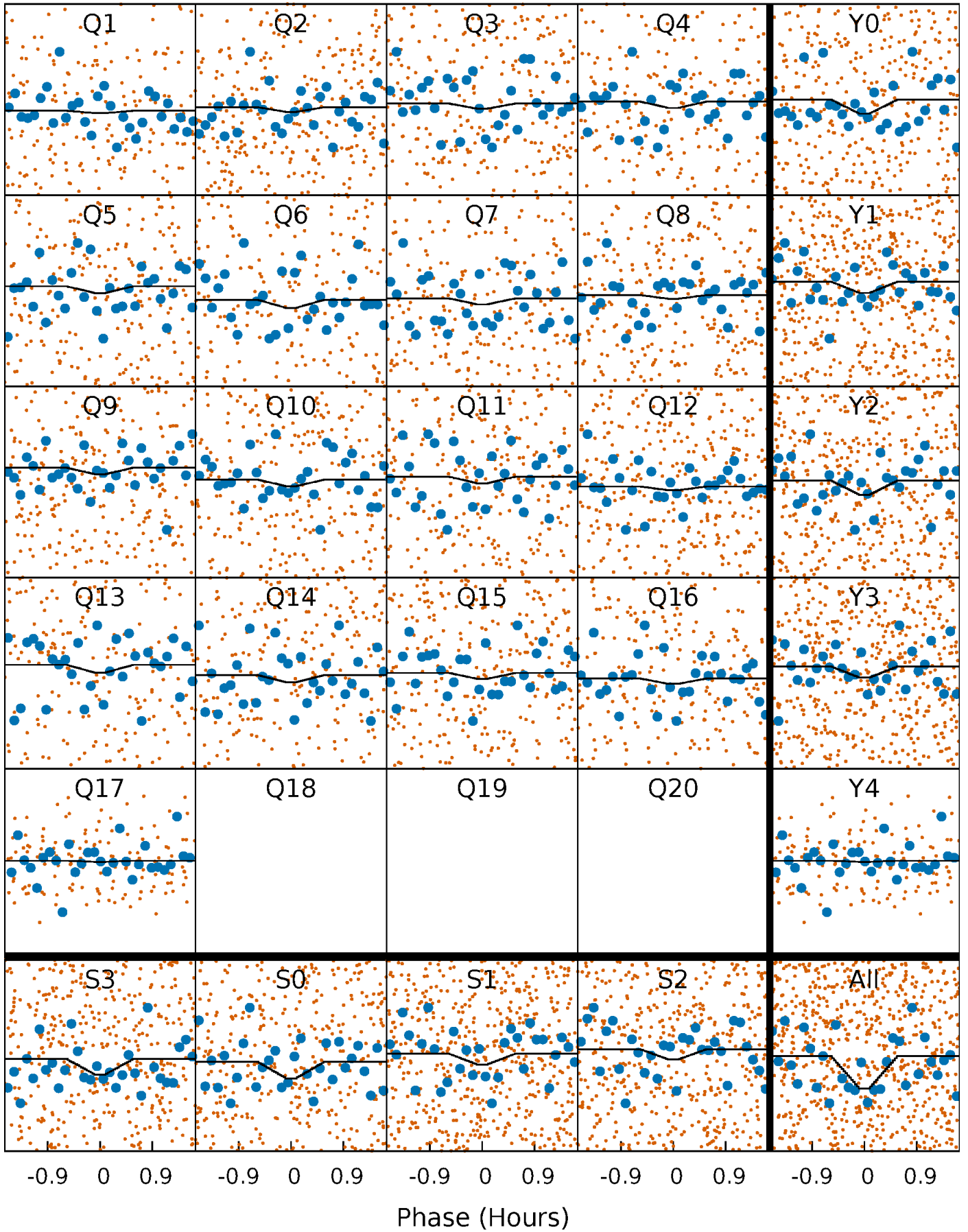
DV Quarter-Phased Transit Curves

TCE 009832655-01 P= 1.113852 Days $T_0=131.826736$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

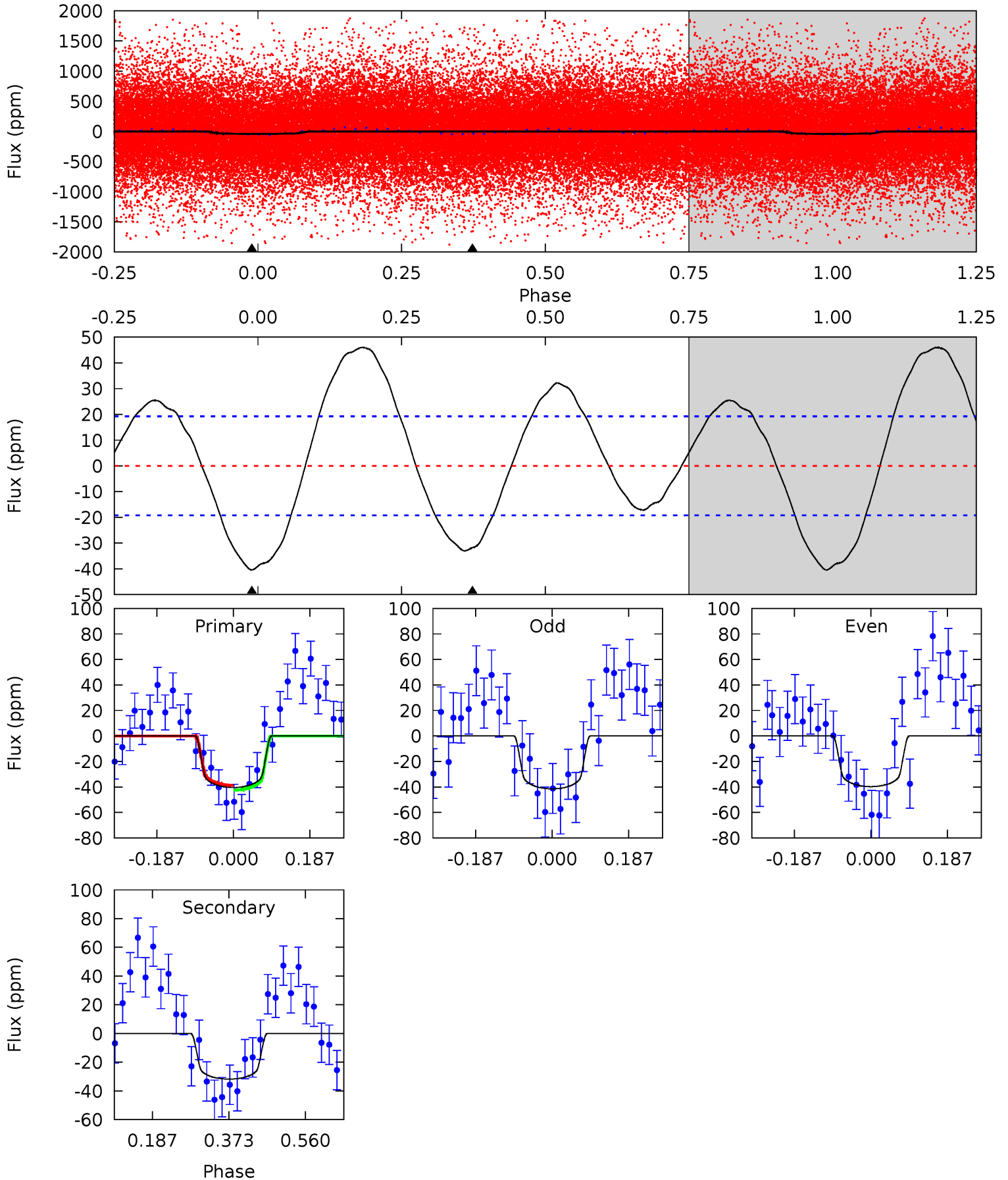
TCE 009832655-01 P= 1.113867 Days $T_0=131.819421$ (BKJD)



DV Model-Shift Uniqueness Test

009832655-01, P = 1.113852 Days, E = 130.712884 Days

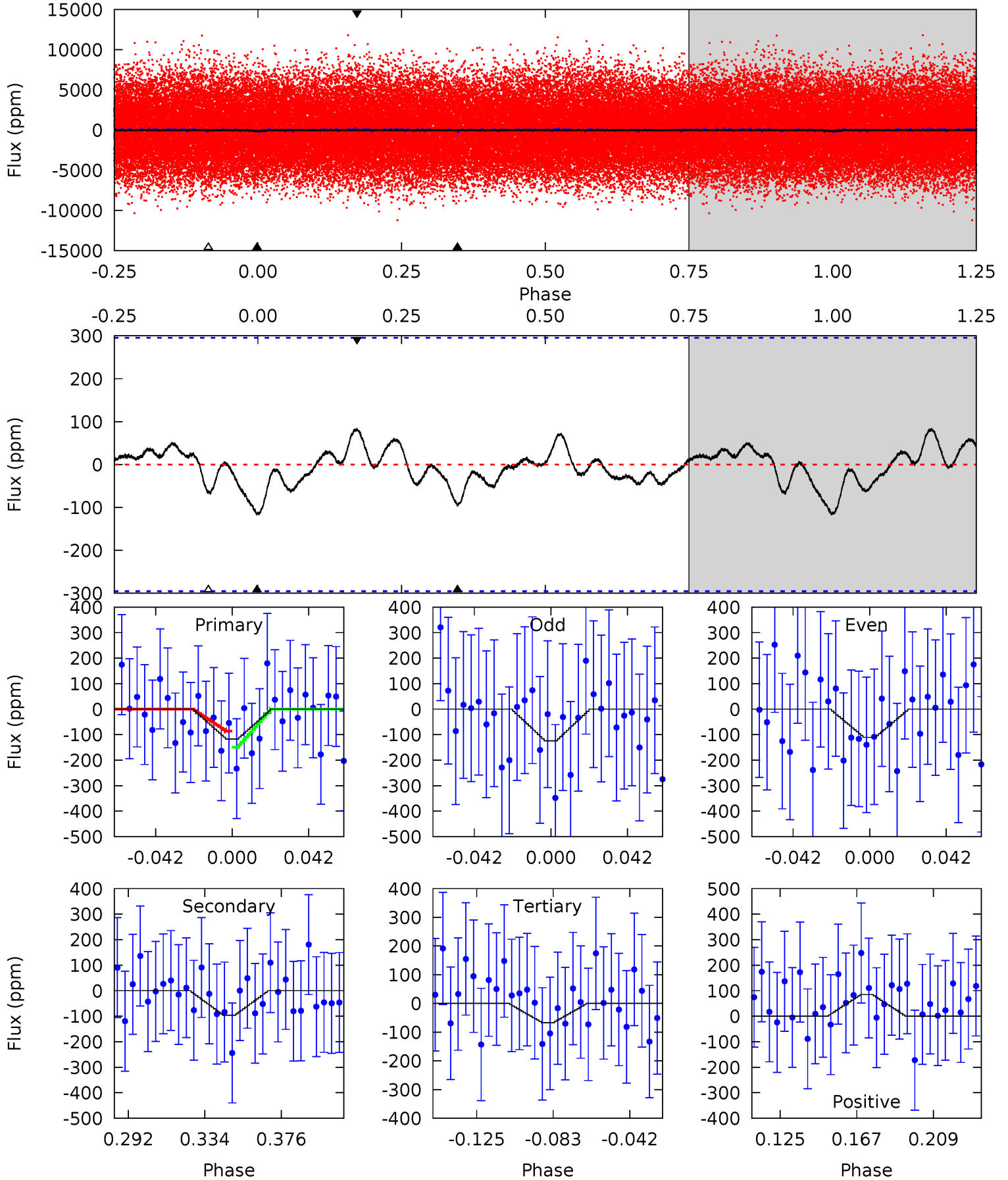
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 9.31 | 7.33 | 0 | 0 | 4.43 | 1.32 | 3.63 | 9.31 | 9.31 | 7.33 | 7.33 | 0.20 | 1.02 | 0.53 | 0.44 |



Alt Model-Shift Uniqueness Test

009832655-01, P = 1.113867 Days, E = 130.705554 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 1.88 | 1.55 | 1.07 | 1.36 | 4.74 | 2.04 | 0.52 | 0.81 | 0.52 | 0.48 | 0.19 | 0.11 | 0.94 | 0.42 | 0.51 |



Stellar Parameters For KIC 009832655

| | $T_{\text{eff}} (K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 7261^{+200}_{-300} | $4.146^{+0.102}_{-0.189}$ | $0.140^{+0.200}_{-0.350}$ | $1.777^{+0.569}_{-0.262}$ | $1.614^{+0.204}_{-0.226}$ | $0.405^{+0.200}_{-0.215}$ |
| | +3%/-4% | +2%/-5% | +143%/-250% | +32%/-15% | +13%/-14% | +49%/-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 009832655-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|--------------|------------------------|----------------------|------------------------|---------------------------|
| DV | -32 ± 4 | $1.71^{+0.55}_{-0.44}$ | 3812^{+280}_{-222} | 5643^{+1017}_{-696} | $3.491^{+3.291}_{-1.489}$ |
| Alt. | -96 ± 62 | $2.17^{+0.53}_{-0.48}$ | 3824^{+282}_{-228} | 6593^{+1589}_{-1701} | $6.043^{+7.232}_{-4.116}$ |

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

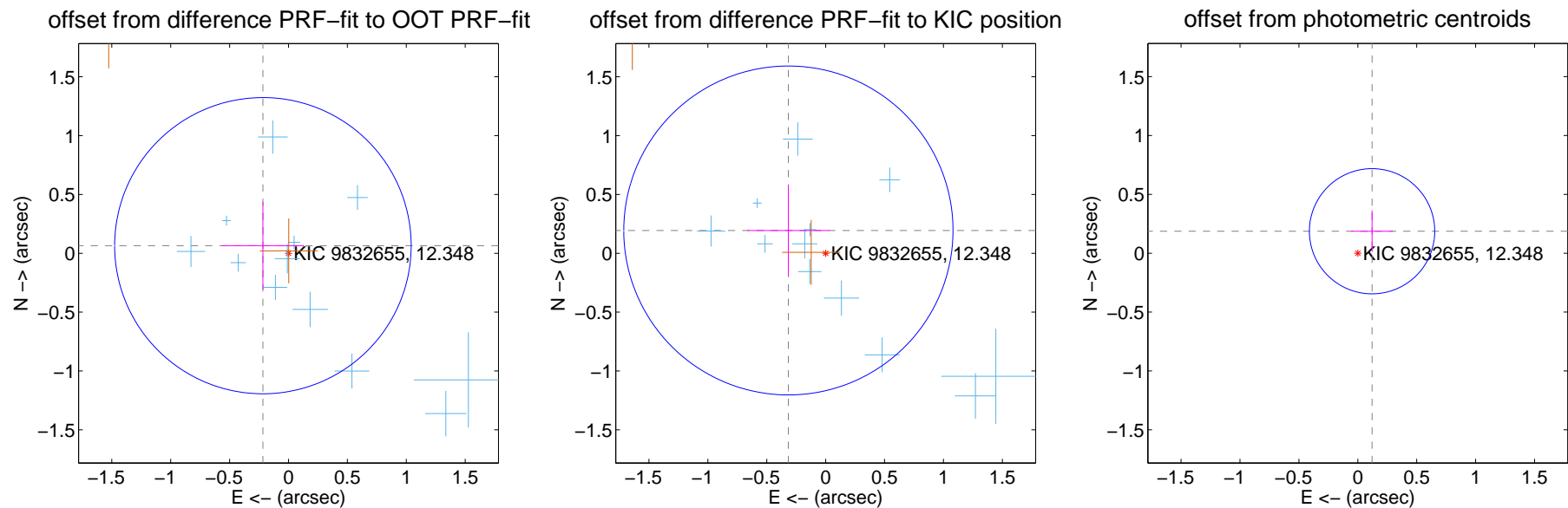
DV Centroid Data

Supplemental centroid analysis for 009832655-01. Kepler magnitude: 12.35. Transit SNR 19.69

There are 13 quarters with good PRF difference image offsets

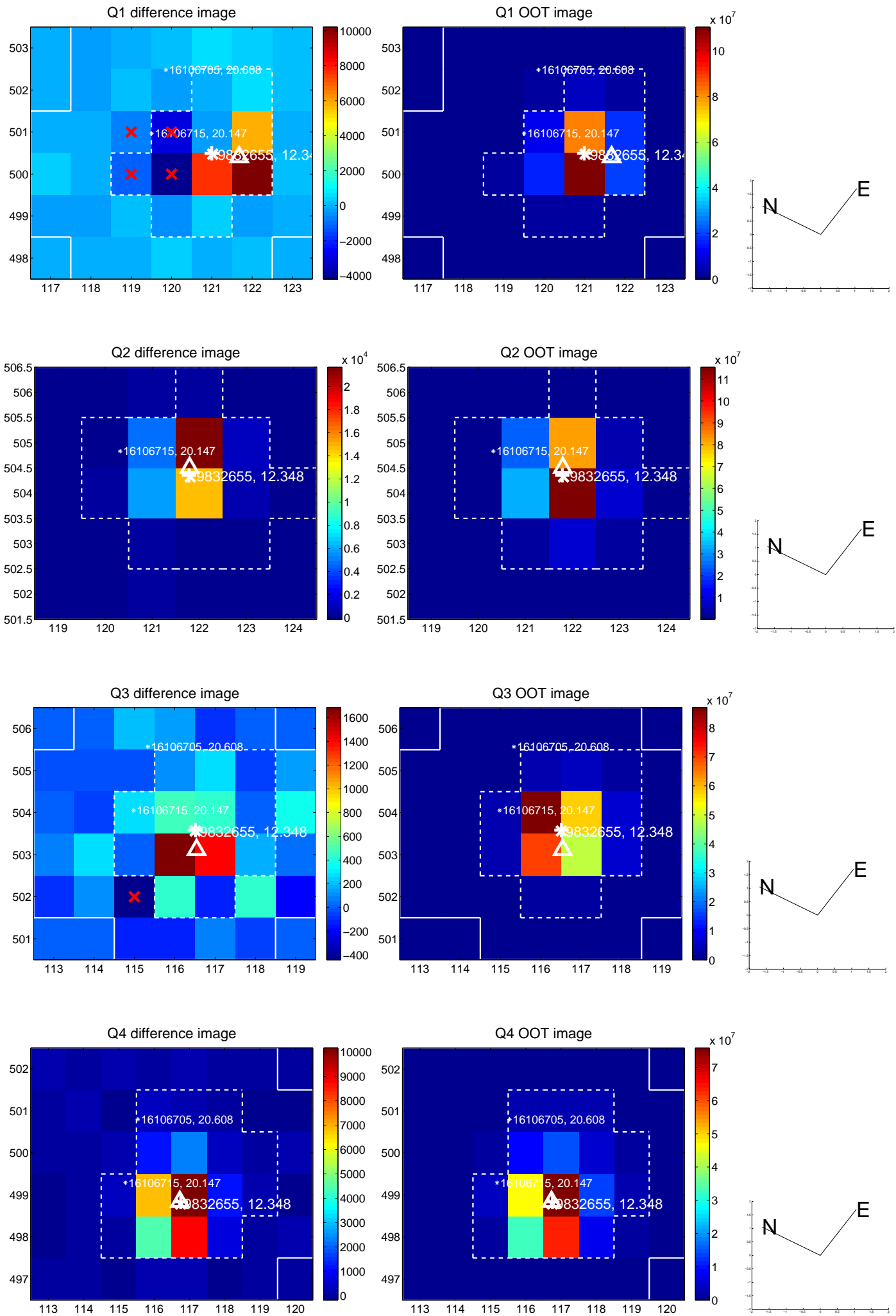
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.227 ± 0.420 | 0.54 | 0.217 ± 0.349 | 0.065 ± 0.372 |
| PRF-fit source offset from KIC position | 0.371 ± 0.466 | 0.80 | 0.316 ± 0.348 | 0.194 ± 0.384 |
| photometric centroid source offset | 0.22 ± 0.18 | 1.25 | -0.12 ± 0.18 | 0.19 ± 0.18 |

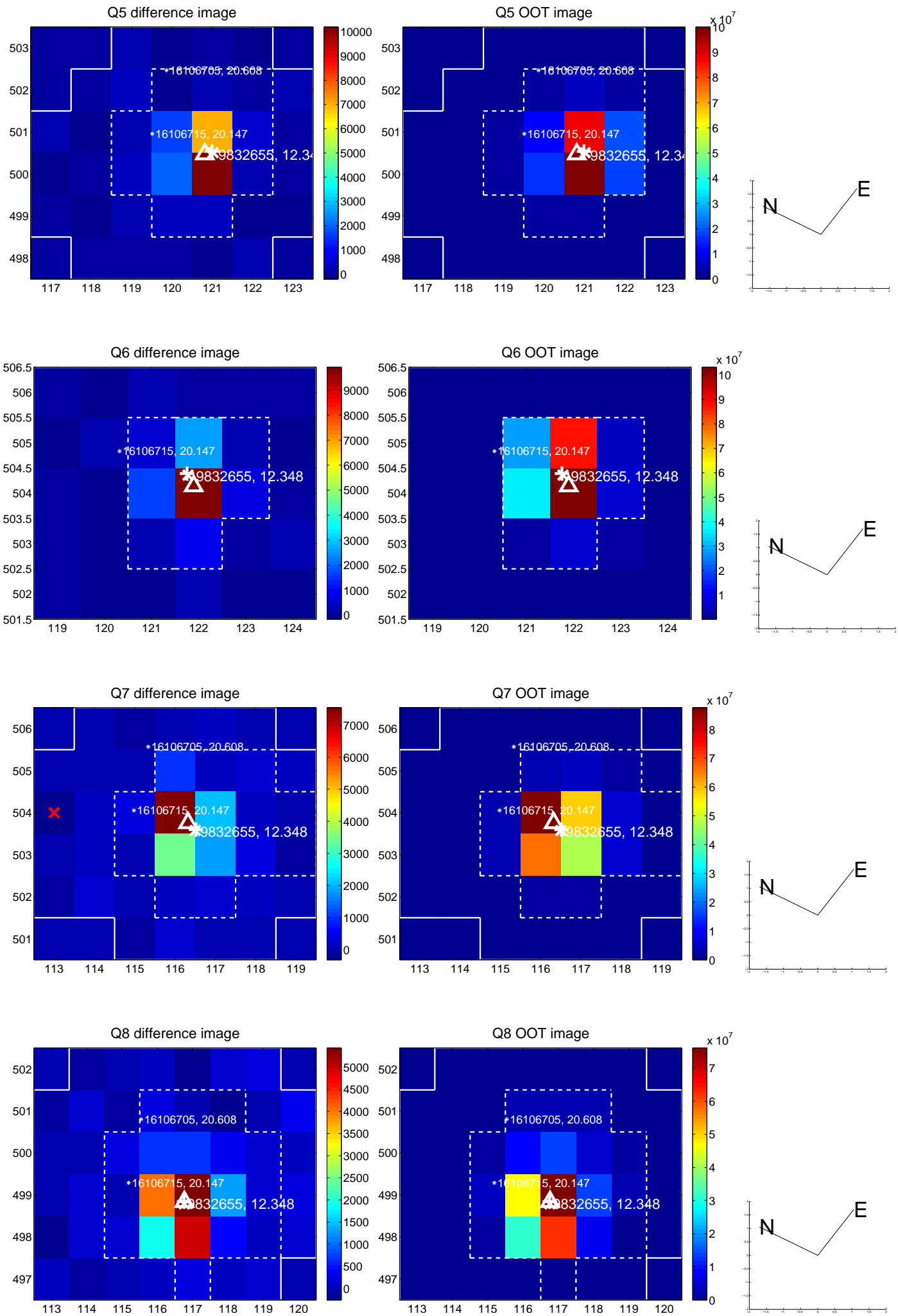


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

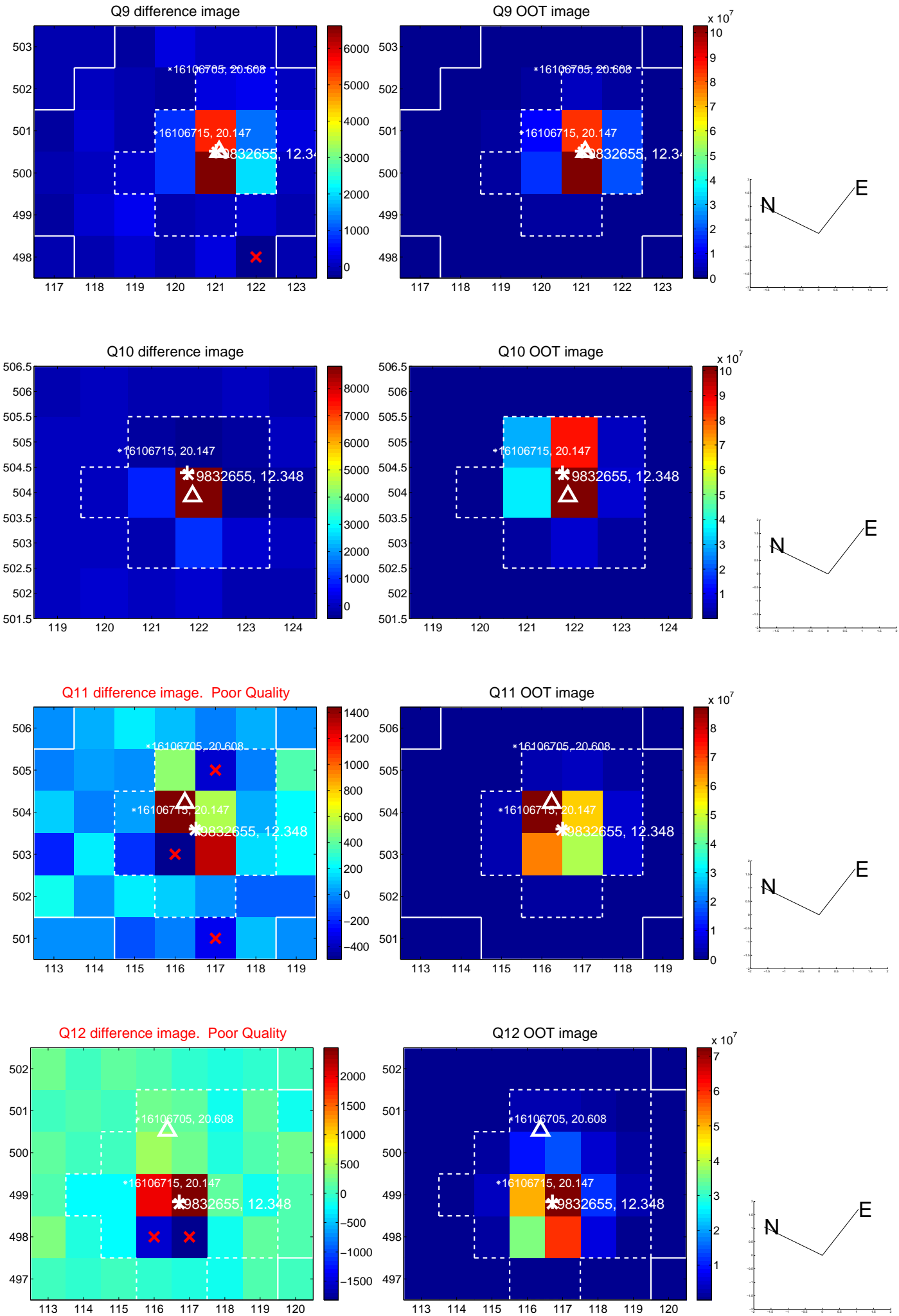
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



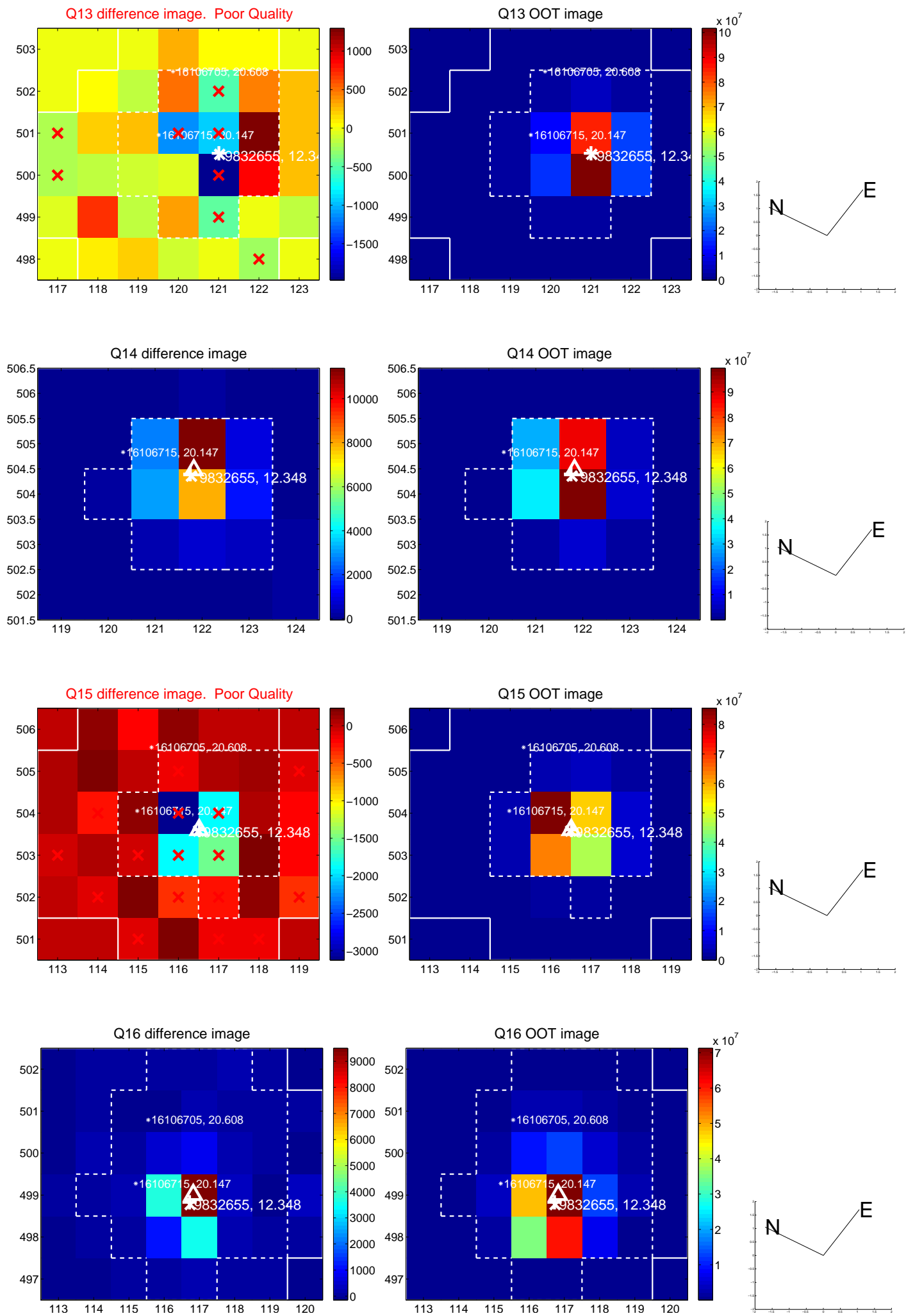
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



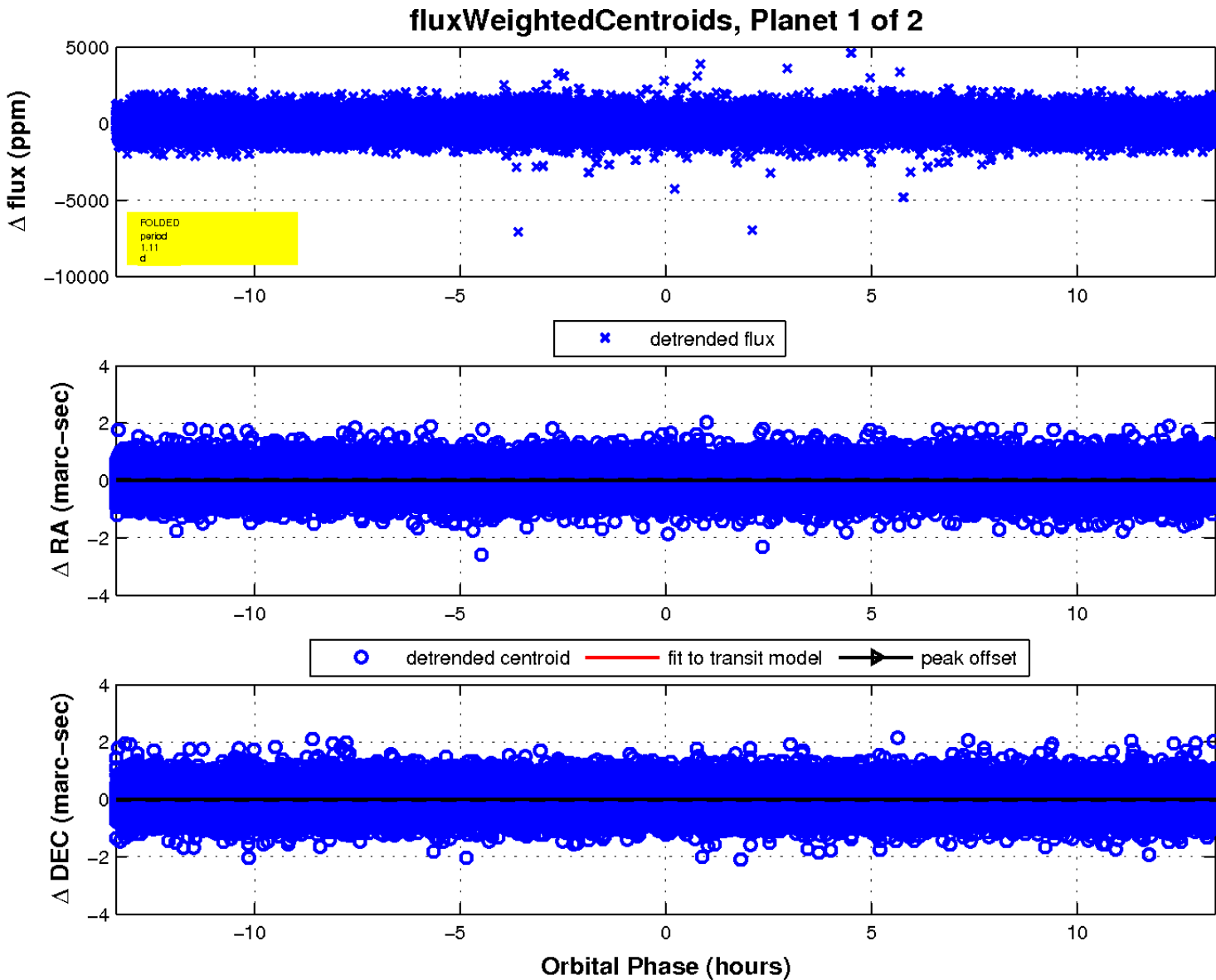
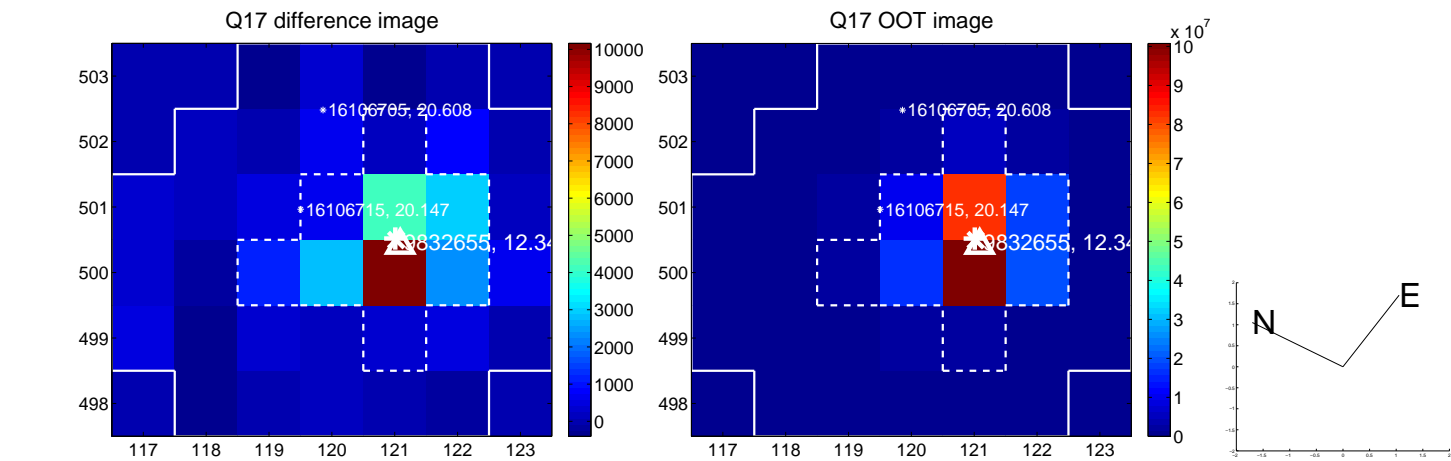
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

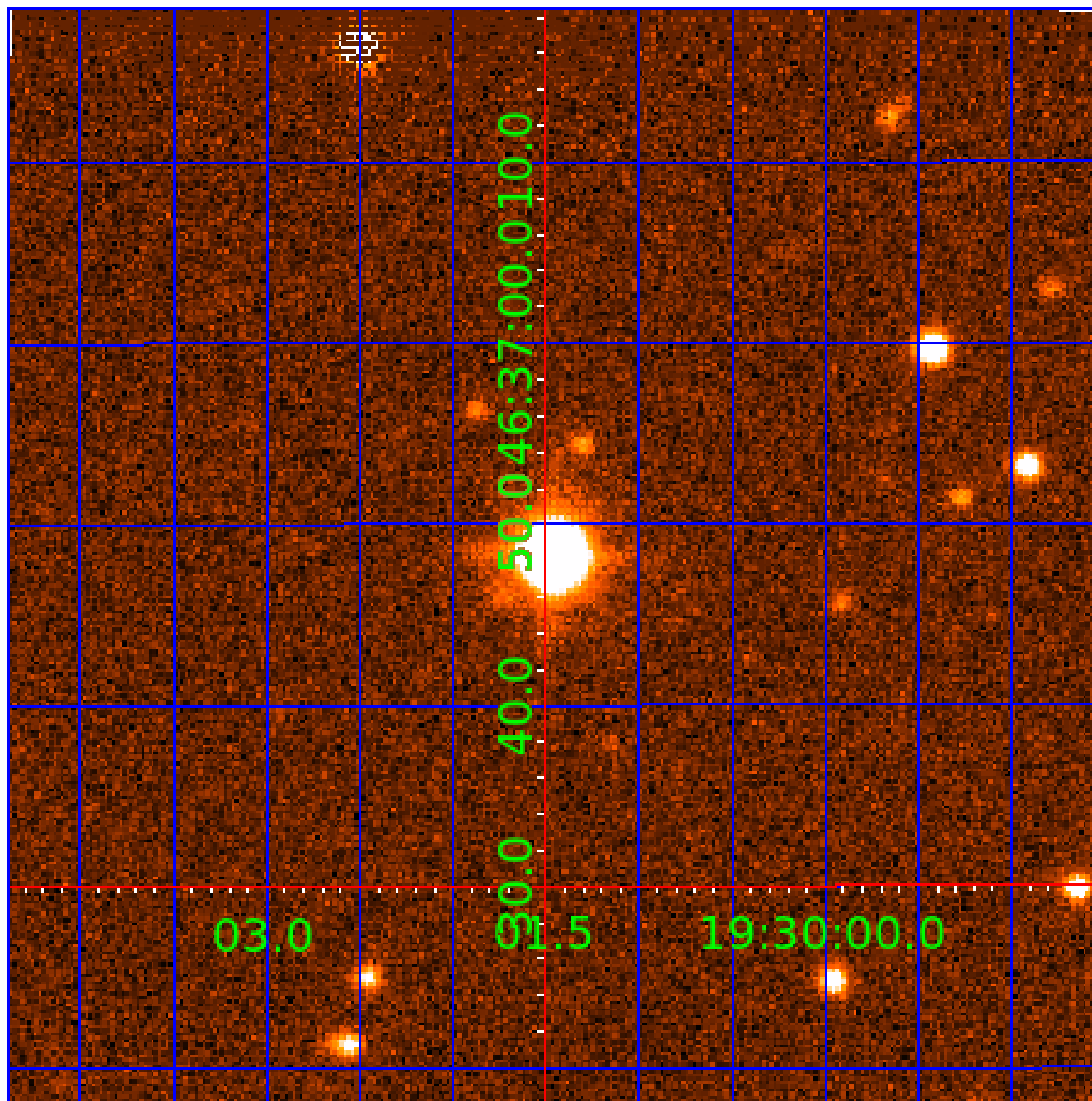


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009832655

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 009832655-01 | OBS | No | 1.113852 | 131.826736 | 65.2 | 4.542 | 17.9 | 19.7 | 1.78 | 7261 | 1.69 | 12929.10 |
| 009832655-02 | OBS | No | 1.113911 | 132.192112 | 123.1 | 3.500 | 8.6 | -1.0 | 1.78 | 7261 | 2.00 | 12928.18 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 009832655-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 009832655-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS |

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

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

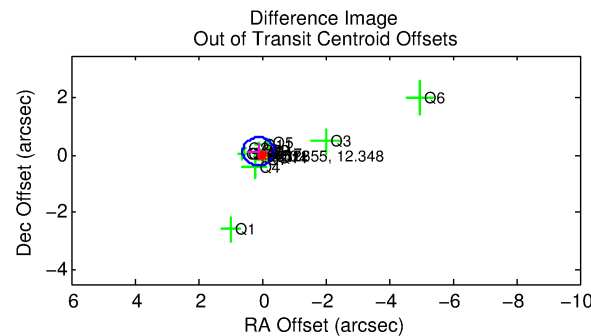
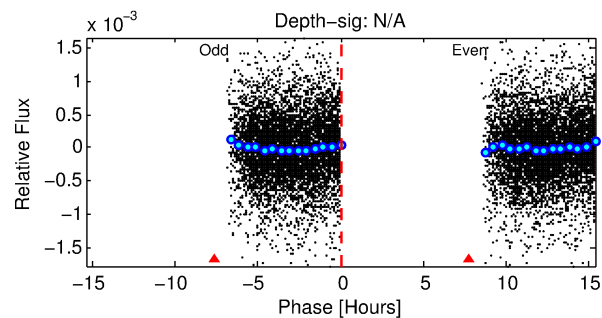
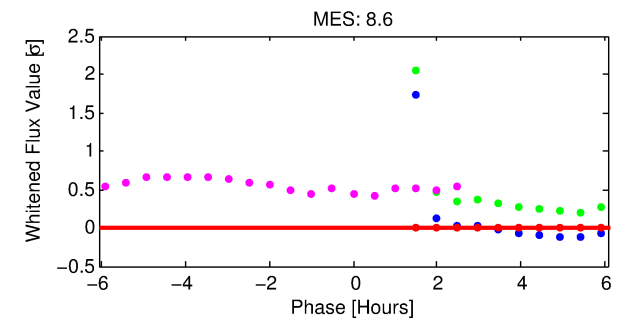
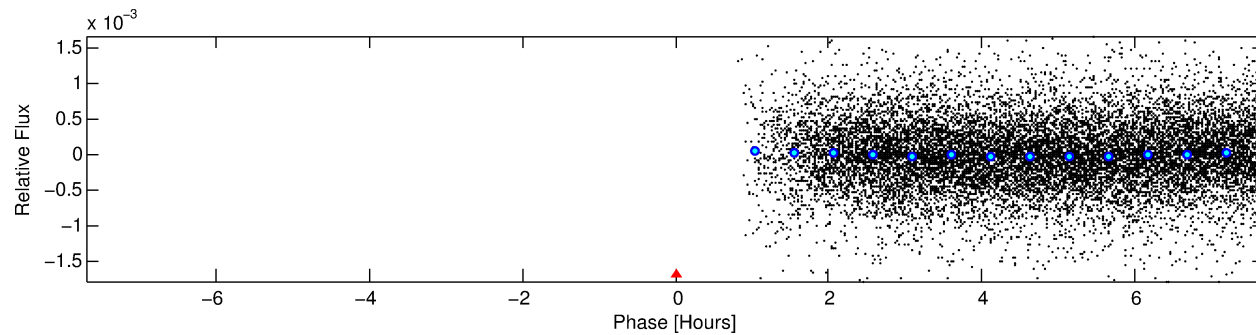
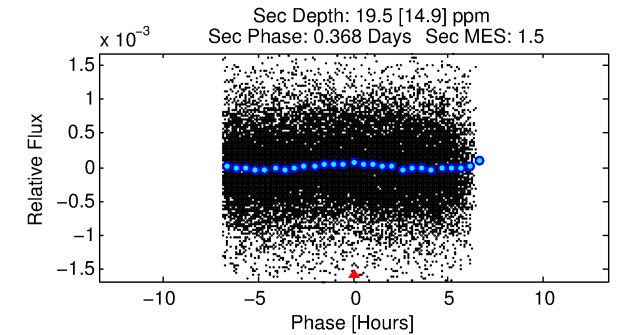
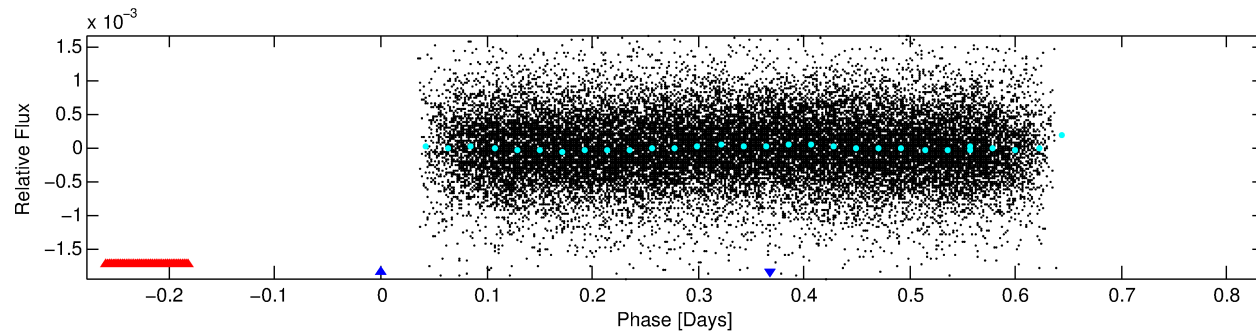
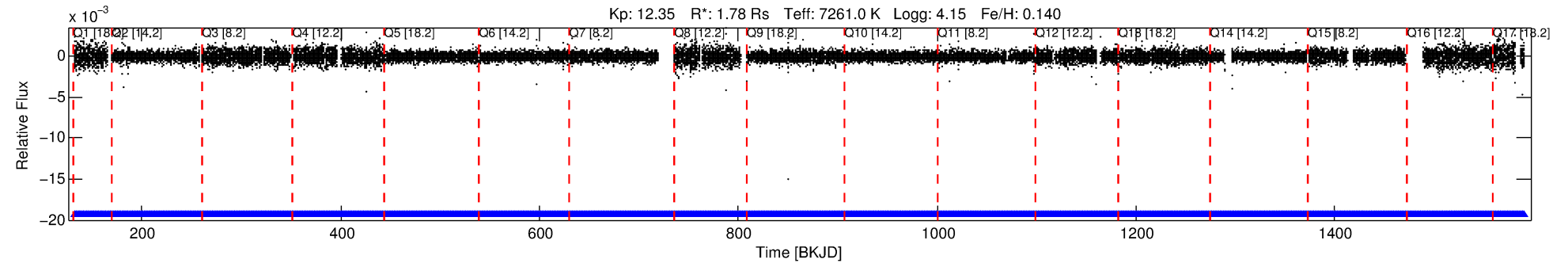
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009832655-02

No Significant Match Found

DV One-Page Summary

KIC: 9832655 Candidate: 2 of 2 Period: 1.114 d



TPS TCE Results:

Period = 1.11391 d
Epoch = 132.1921 BKJD

DV fit results are unavailable

DV Diagnostic Results:

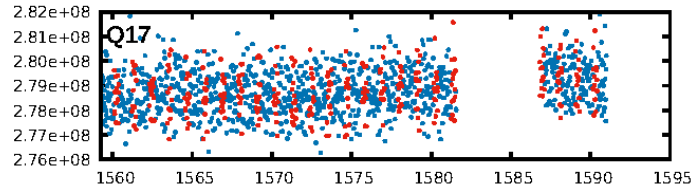
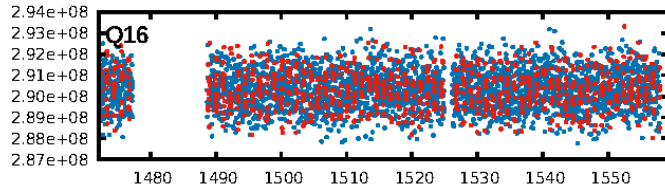
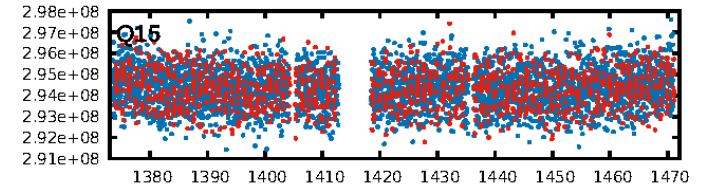
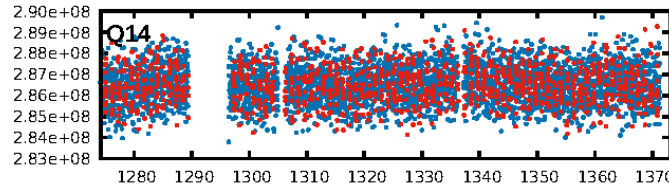
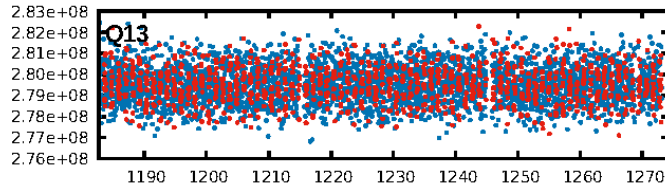
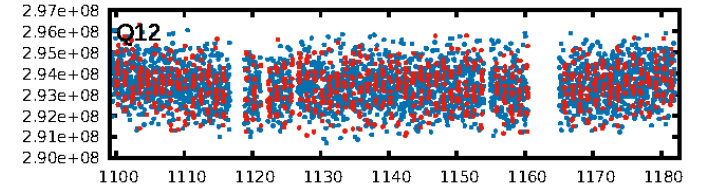
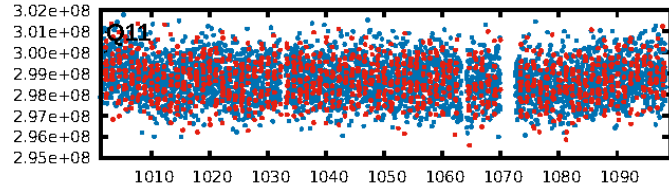
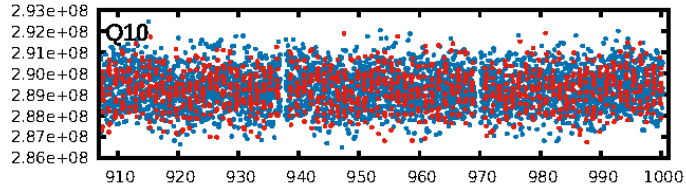
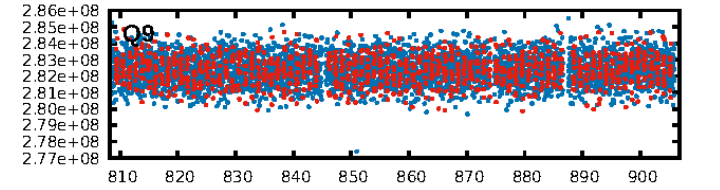
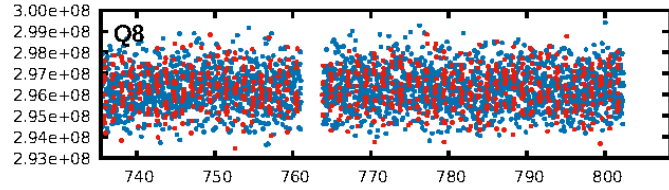
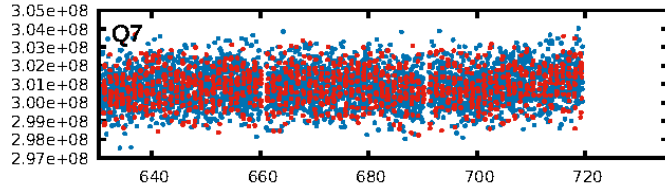
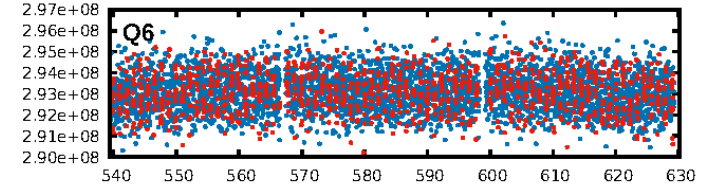
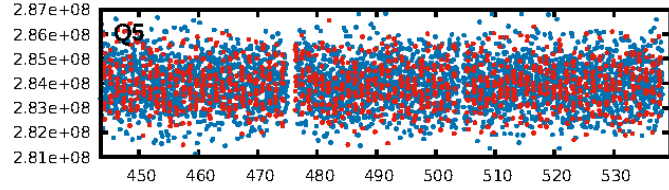
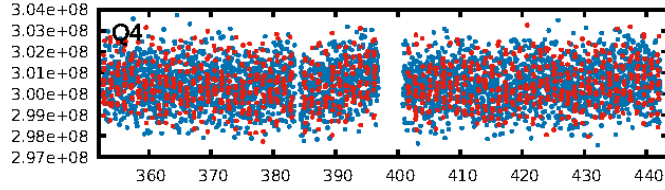
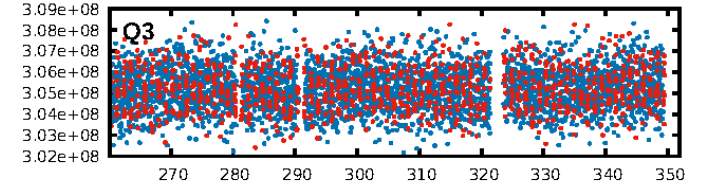
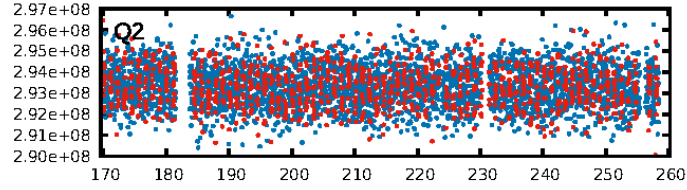
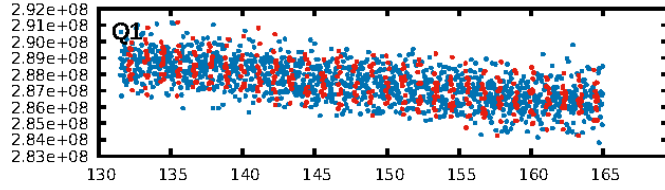
ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.01e-18
RollingBand-fgt: 1.00 [258/258]
GhostDiagnostic-chr: -3.434

Centroid-sig: 6.5%
Centroid-so: 0.262 arcsec [2.24σ]
OotOffset-rm: 0.184 arcsec [1.12σ]
KicOffset-rm: 0.339 arcsec [2.15σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.00 [0/16]
DiffImageOverlap-fno: 0.00 [0/17]

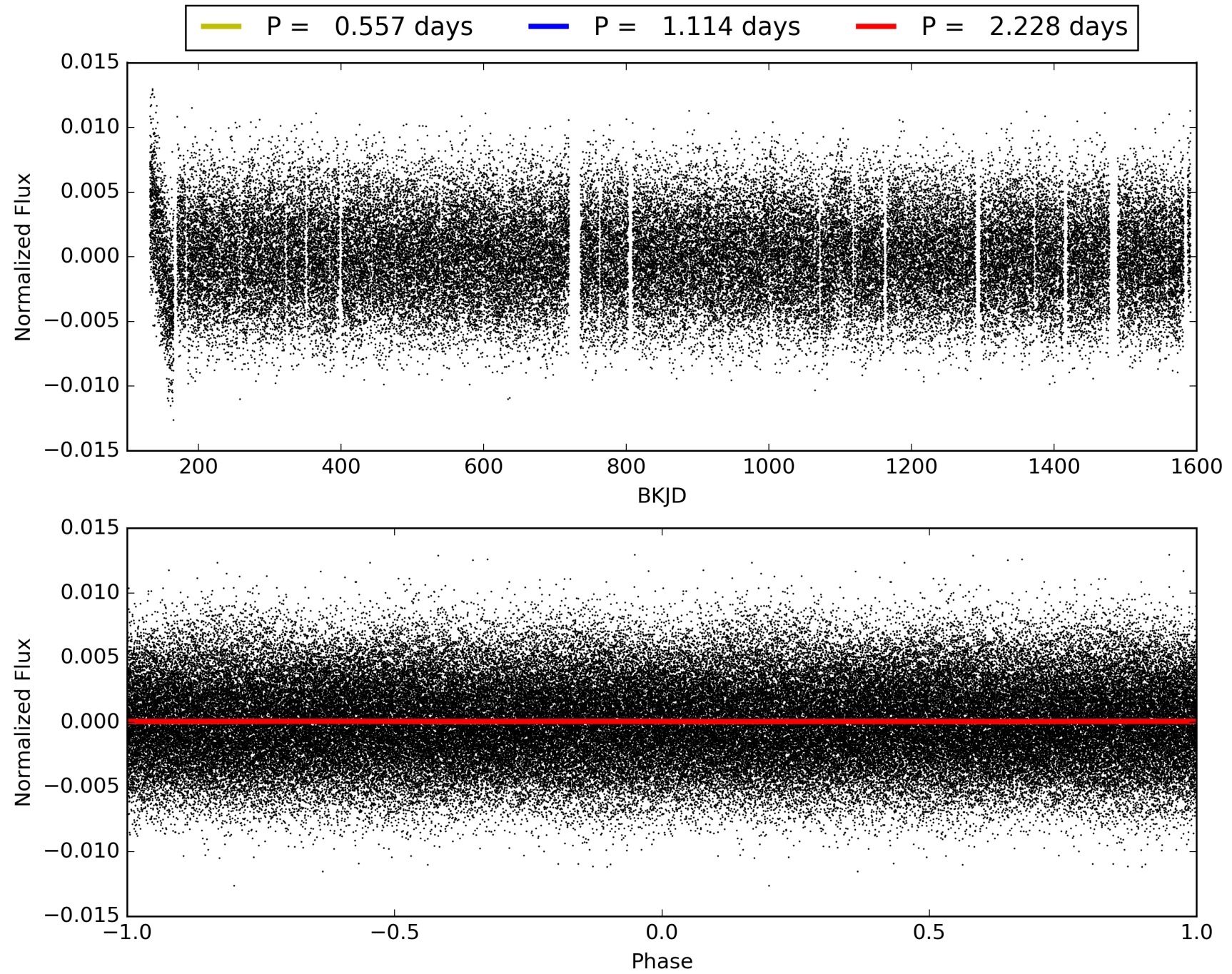
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:33:13 Z

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

TCE 009832655-02, PDC Light Curves

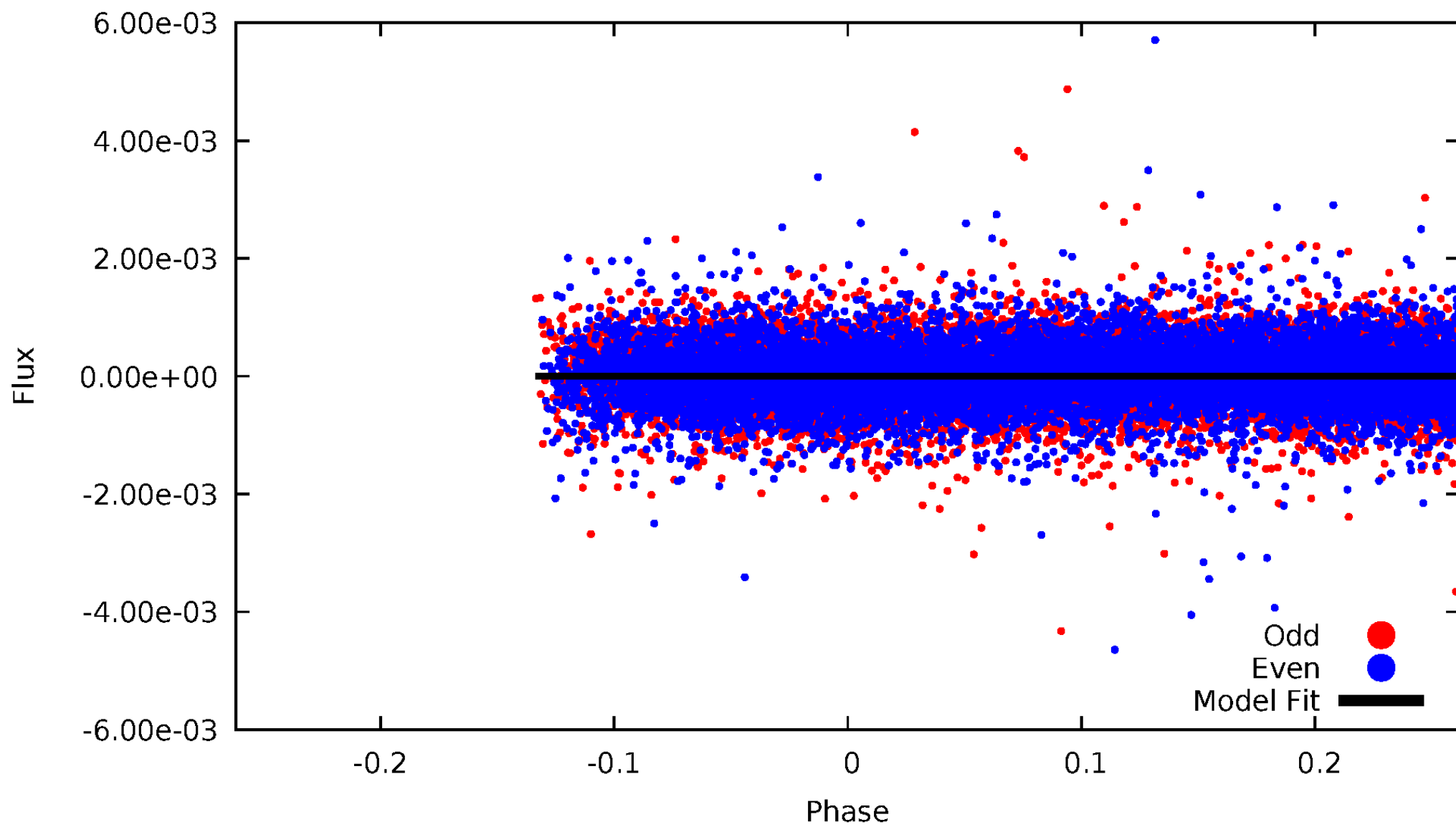


TCE 009832655-02



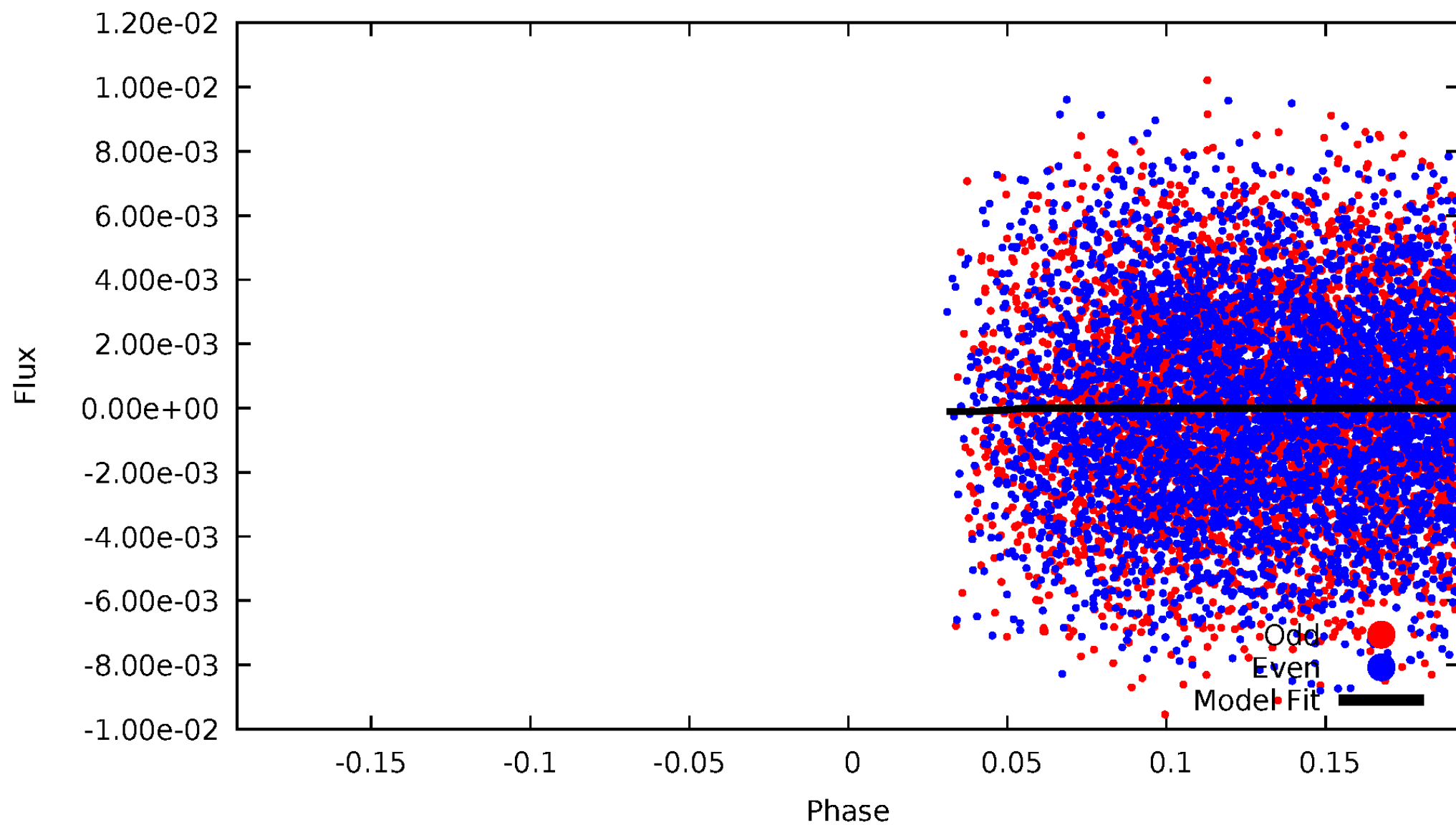
DV Odd/Even

TCE 009832655-02



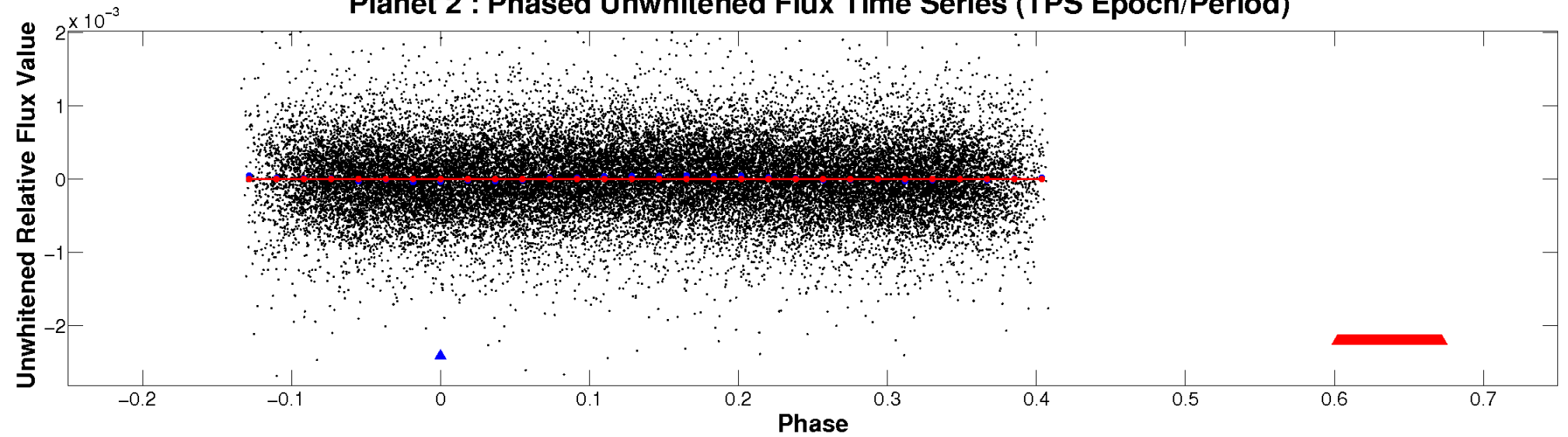
ALT Odd/Even

TCE 009832655-02

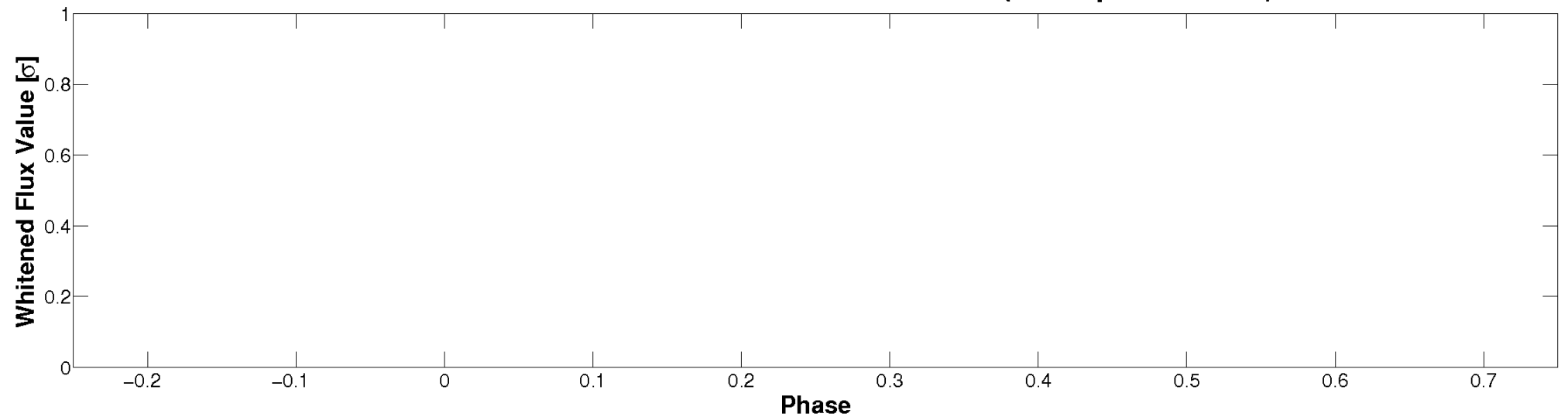


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

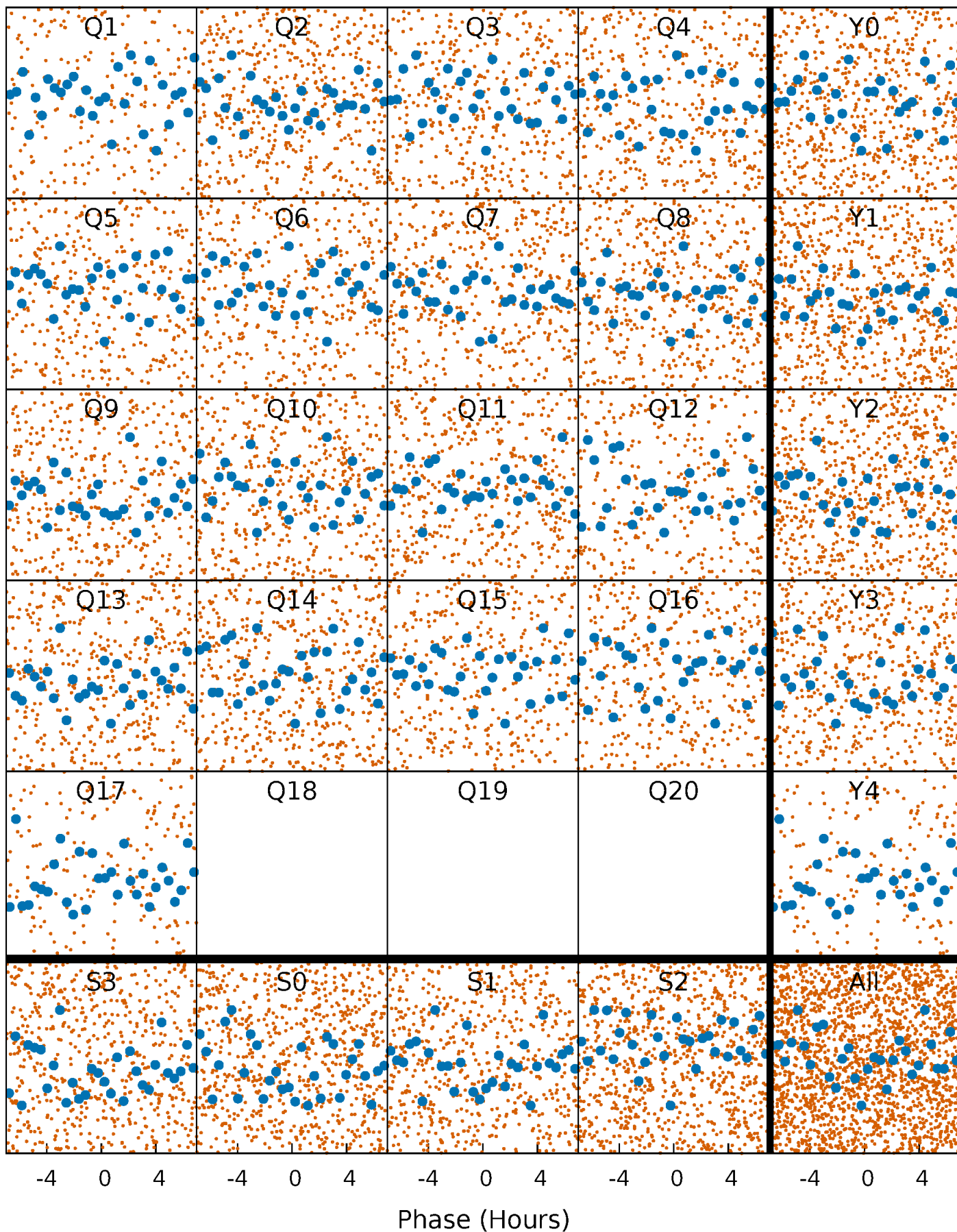


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



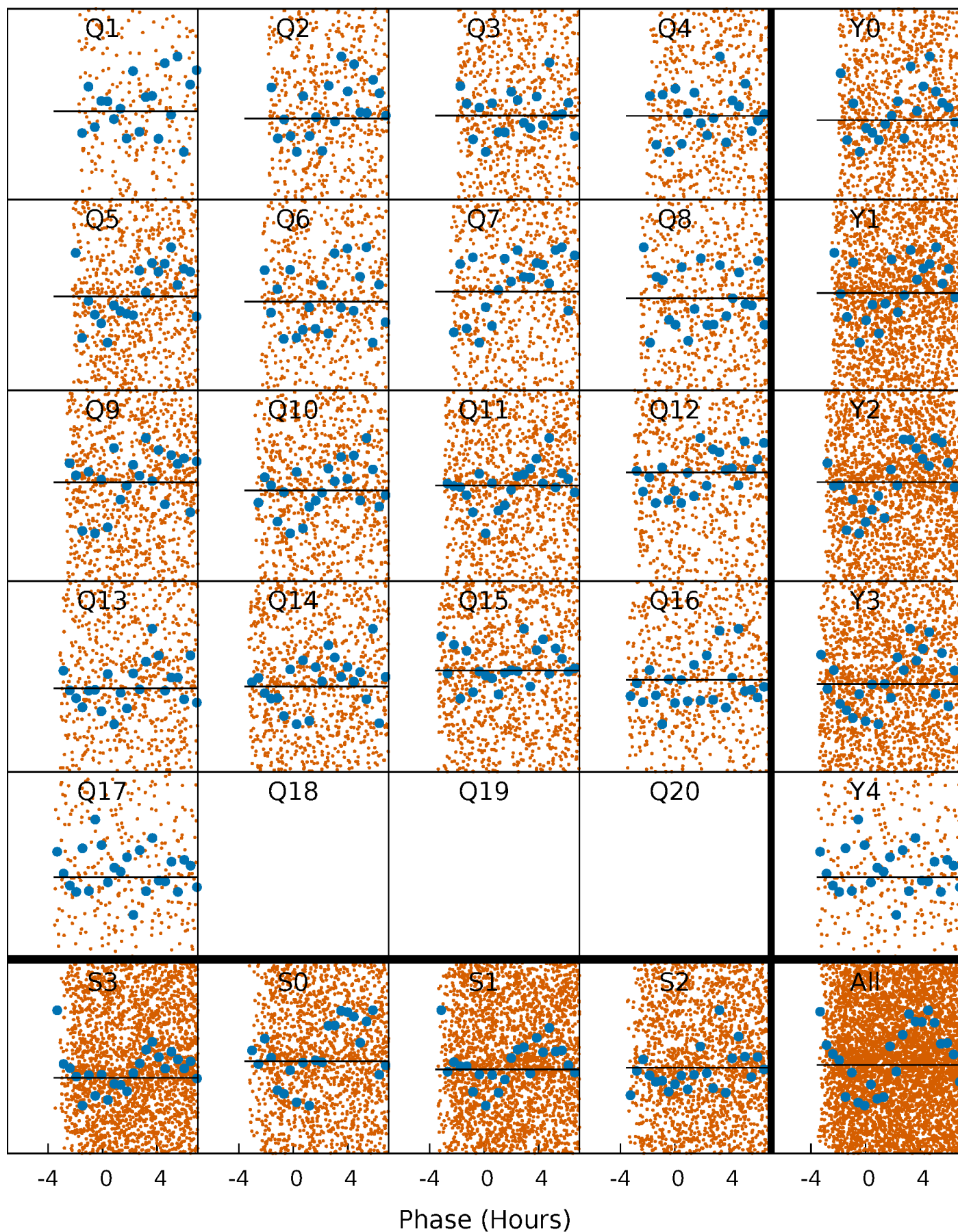
PDC Quarter-Phased Transit Curves

TCE 009832655-02 P= 1.113911 Days $T_0=132.192113$ (BKJD)



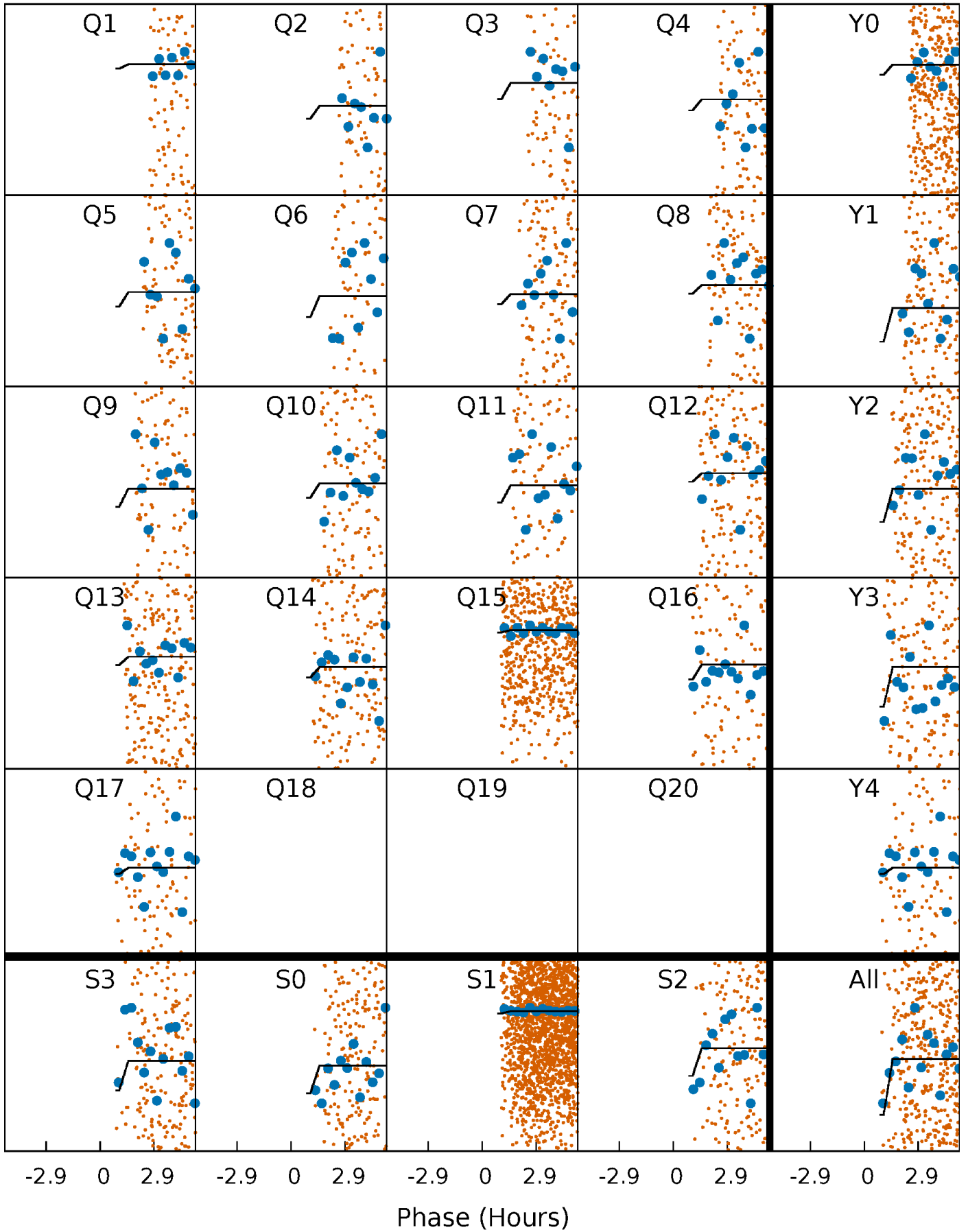
DV Quarter-Phased Transit Curves

TCE 009832655-02 P= 1.113911 Days $T_0=132.192113$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

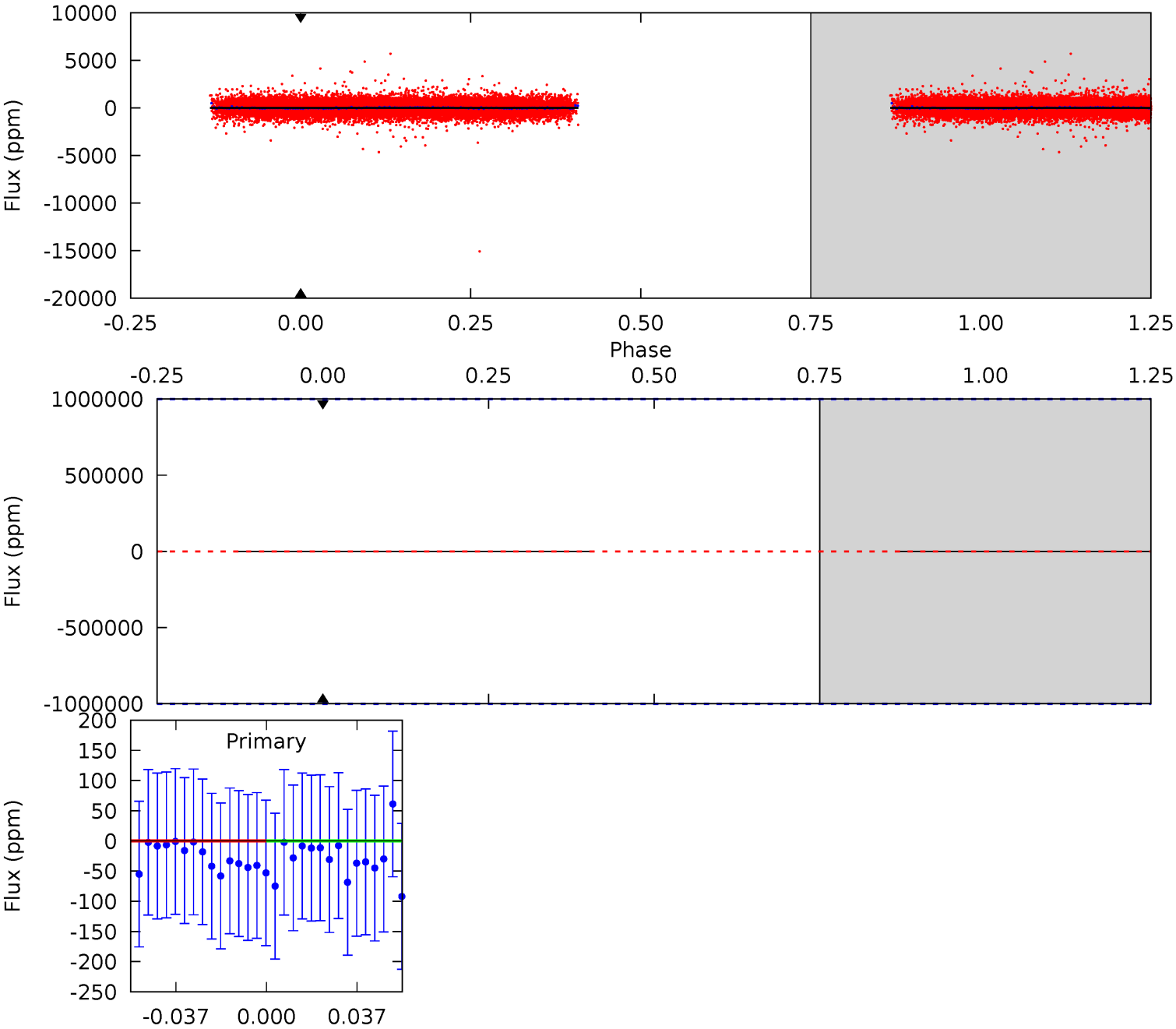
TCE 009832655-02 P= 1.113911 Days $T_0=132.008807$ (BKJD)



DV Model-Shift Uniqueness Test

009832655-02, P = 1.113911 Days, E = 131.078202 Days

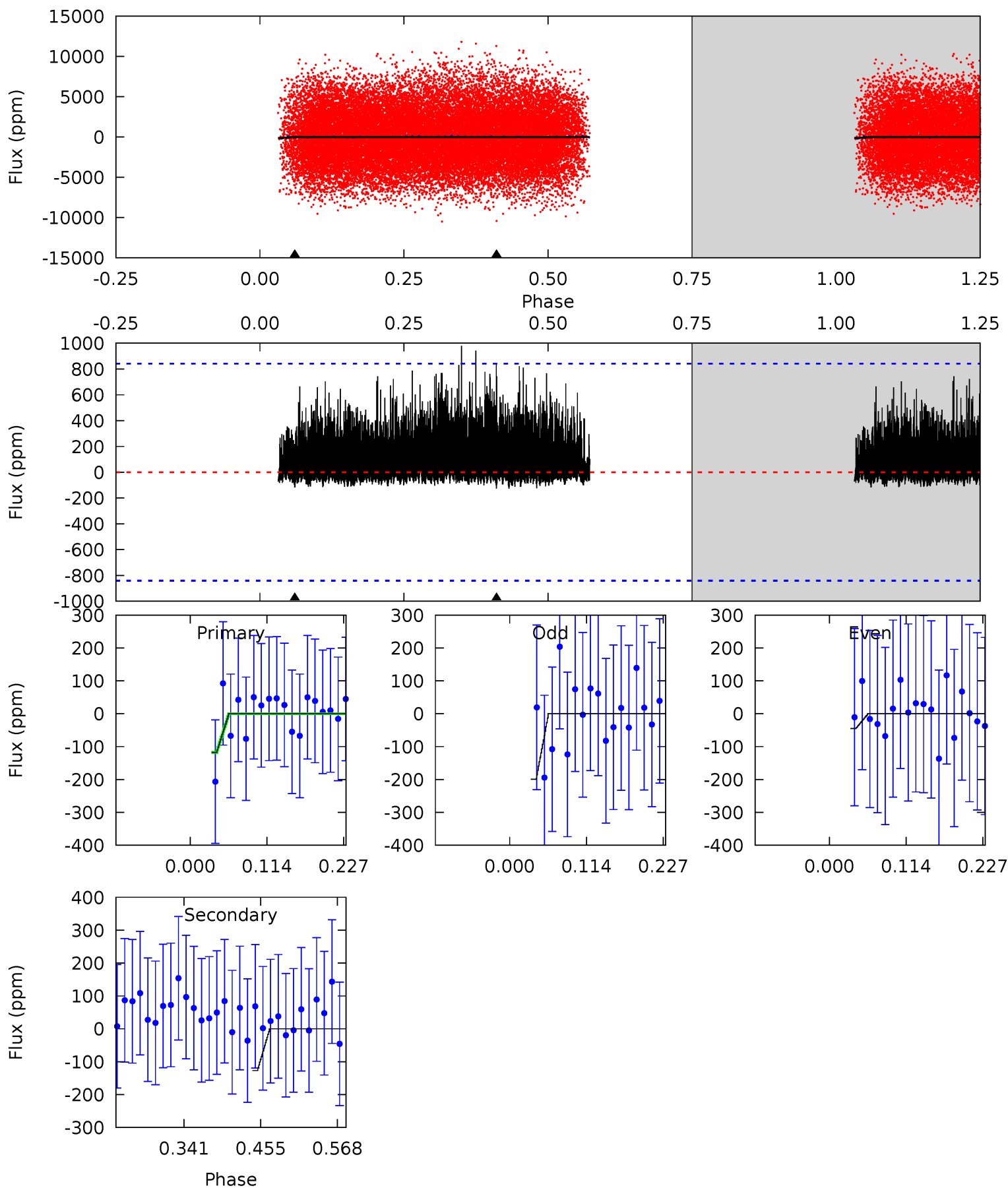
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0 | 0 | 0 | 0 | 1.00 | 1.00 | 1.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



Alt Model-Shift Uniqueness Test

009832655-02, P = 1.113911 Days, E = 130.894896 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 0.64 | 0.68 | 0 | 0 | 4.54 | 1.58 | 0.53 | 0.64 | 0.64 | 0.68 | 0.68 | 0.41 | 0.40 | 0.89 | 0 |



Stellar Parameters For KIC 009832655

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 7261^{+200}_{-300} | $4.146^{+0.102}_{-0.189}$ | $0.140^{+0.200}_{-0.350}$ | $1.777^{+0.569}_{-0.262}$ | $1.614^{+0.204}_{-0.226}$ | $0.405^{+0.200}_{-0.215}$ |
| | +3%/-4% | +2%/-5% | +143%/-250% | +32%/-15% | +13%/-14% | +49%/-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 009832655-02 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-----------------|---------------------------|----------------------|--------------------------|-------------------------------|
| DV | 0 ± 1000000 | $14.71^{+14.94}_{-10.14}$ | 3832^{+306}_{-235} | 5423^{+39742}_{-38670} | $3.589^{+341.551}_{-243.763}$ |
| Alt. | -127 ± 185 | $15.37^{+15.62}_{-11.18}$ | 3827^{+308}_{-226} | -3286^{+8035}_{-482} | $0.113^{+1.577}_{-0.161}$ |

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

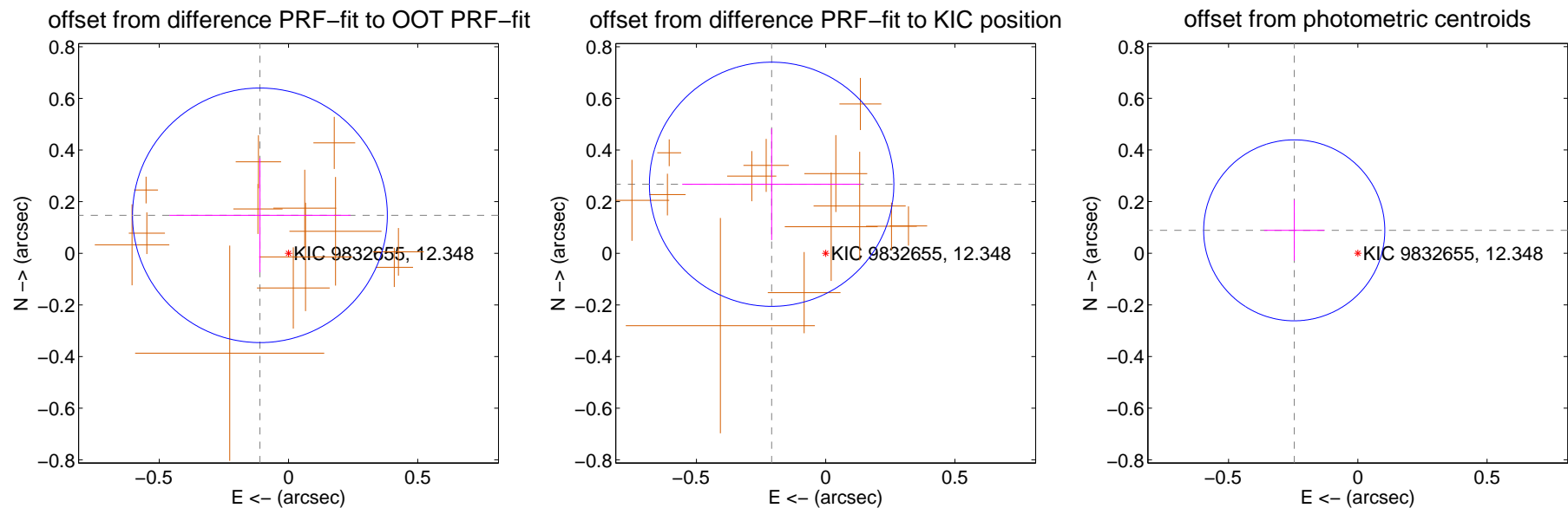
DV Centroid Data

Supplemental centroid analysis for 009832655-02. Kepler magnitude: 12.35. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

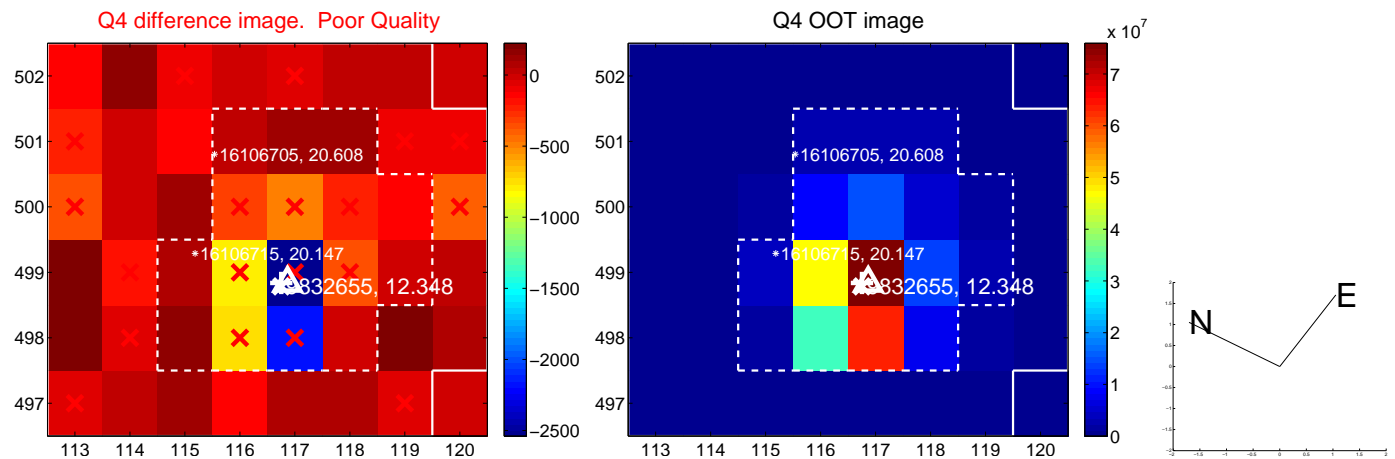
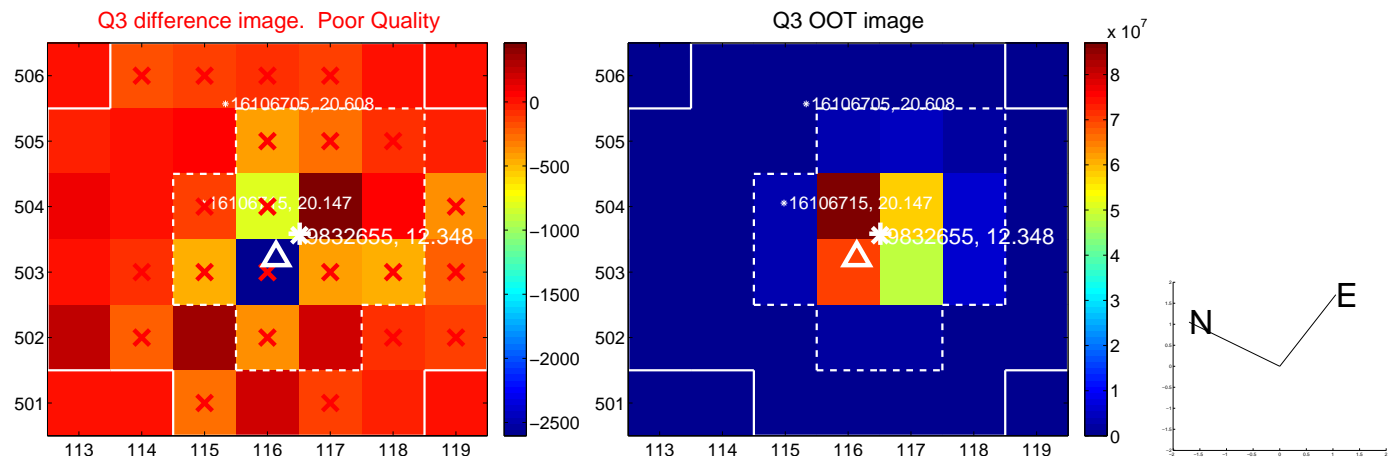
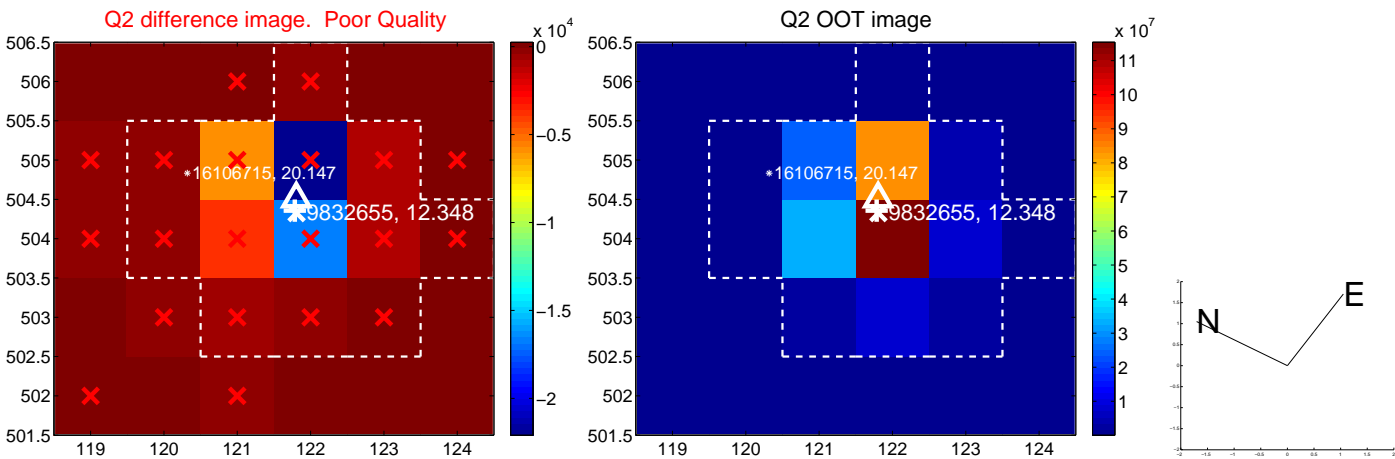
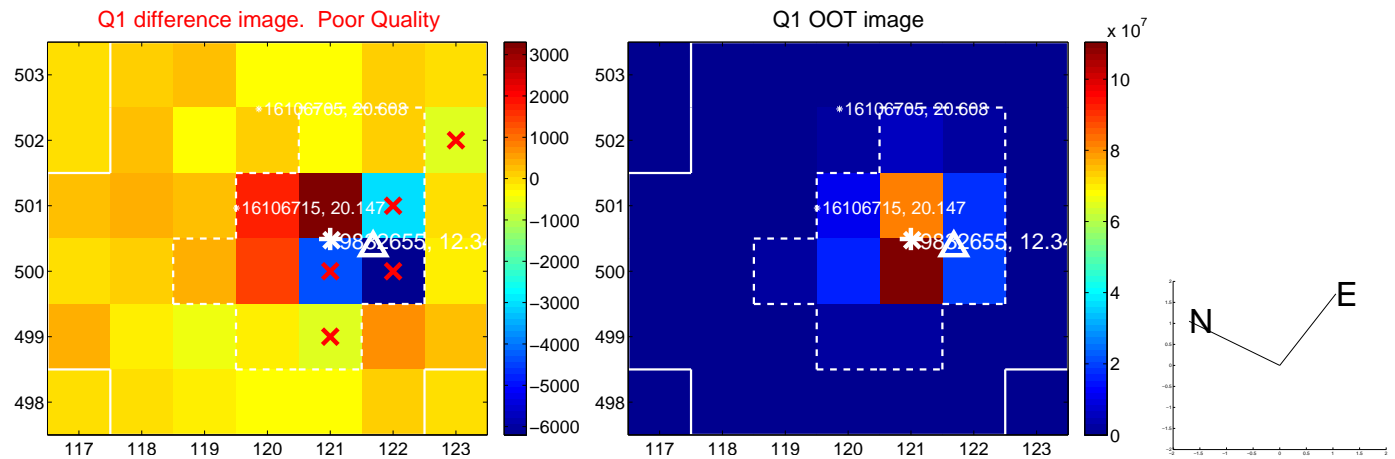
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.184 ± 0.164 | 1.12 | 0.111 ± 0.351 | 0.147 ± 0.220 |
| PRF-fit source offset from KIC position | 0.339 ± 0.158 | 2.15 | 0.209 ± 0.346 | 0.267 ± 0.216 |
| photometric centroid source offset | 0.26 ± 0.12 | 2.24 | 0.25 ± 0.12 | 0.09 ± 0.12 |

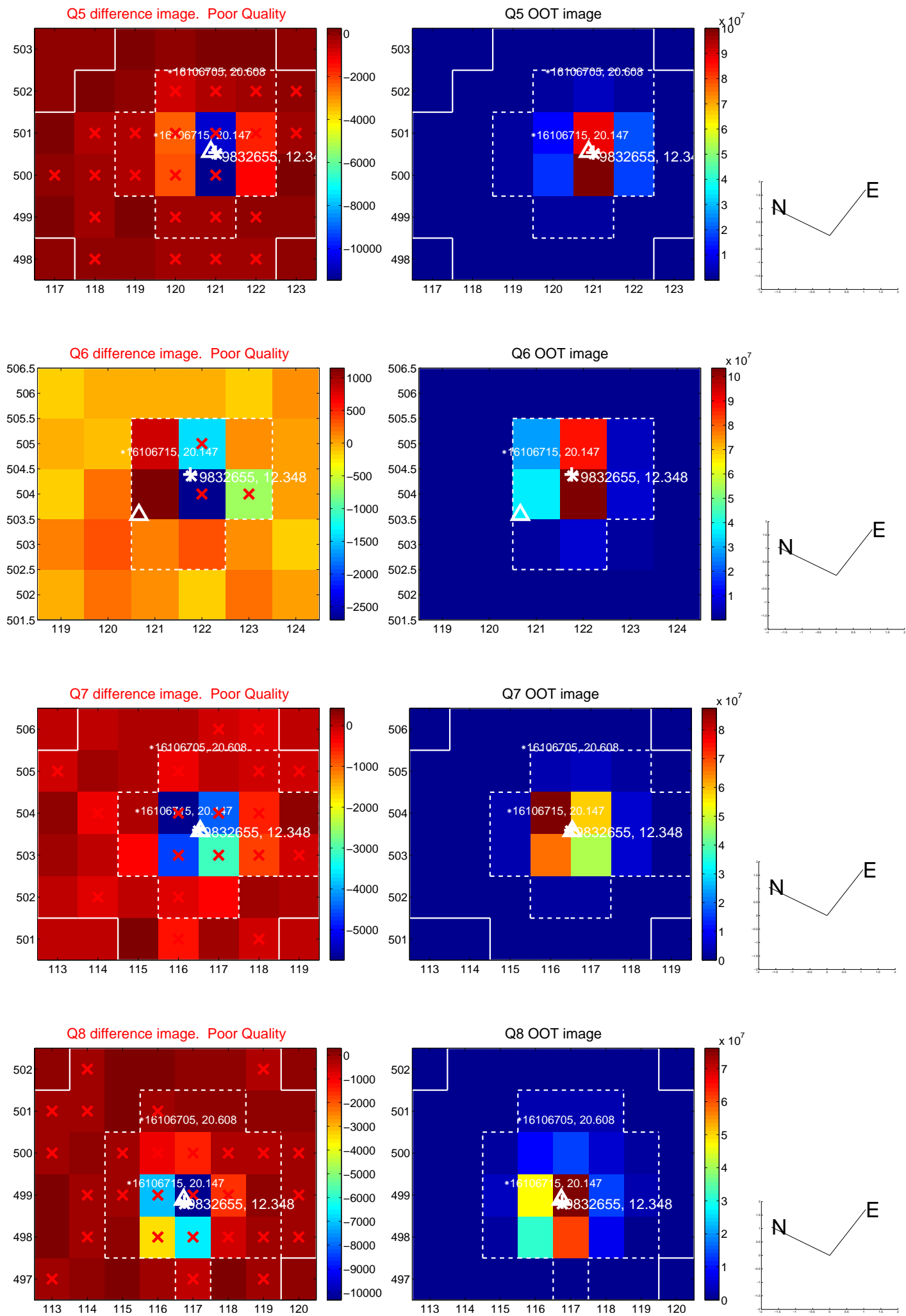


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000 are from the UKIRT catalog.

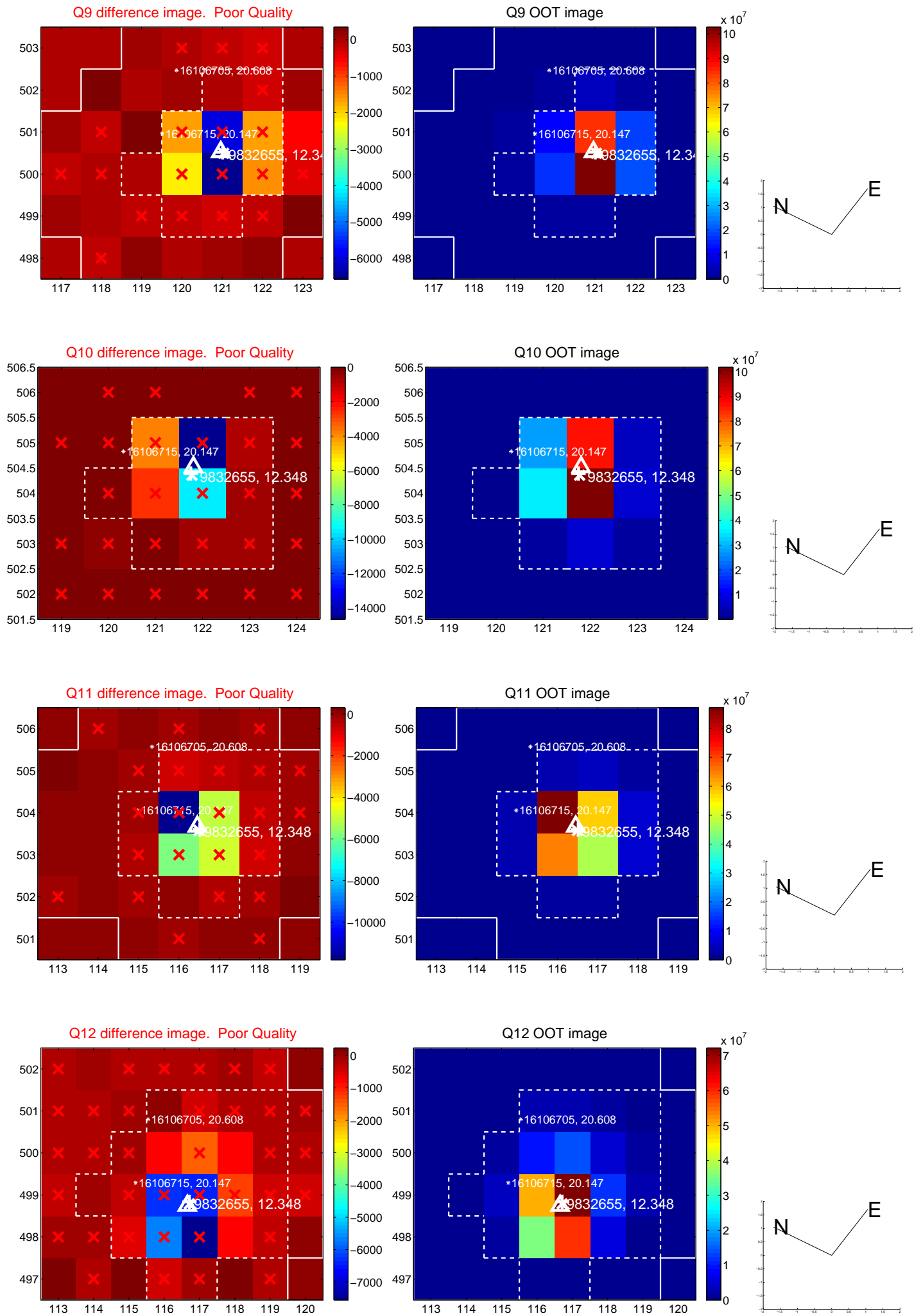
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



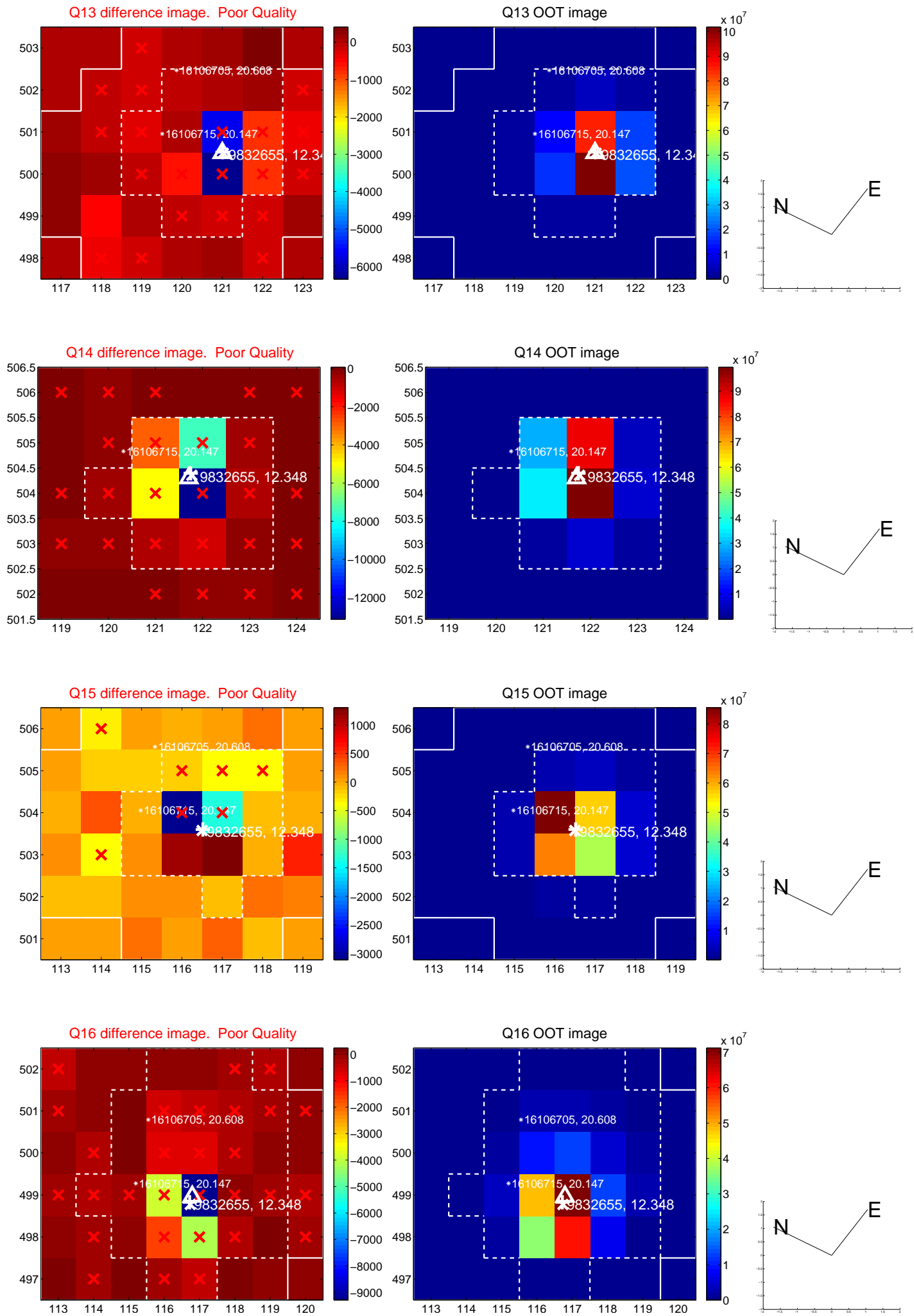
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



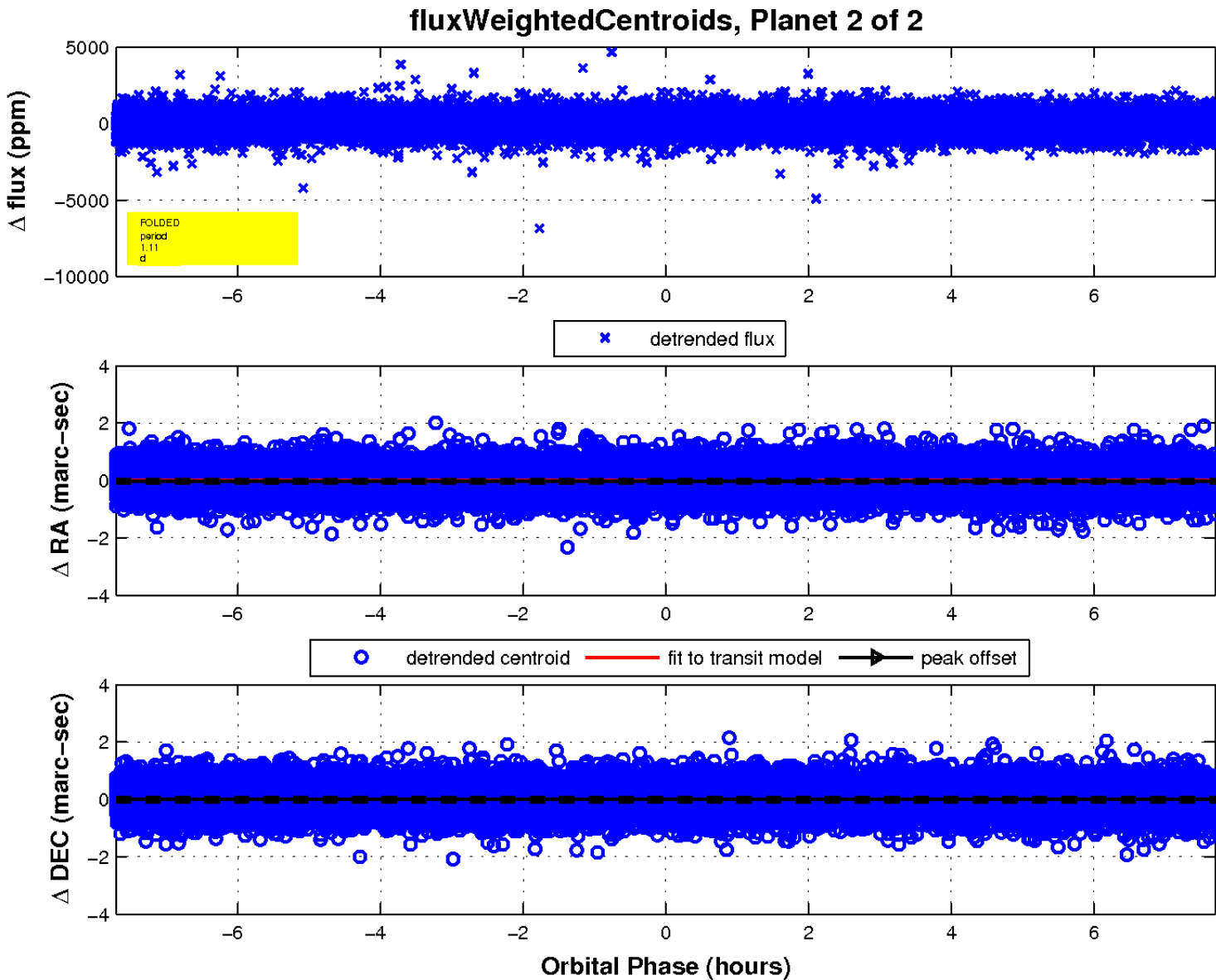
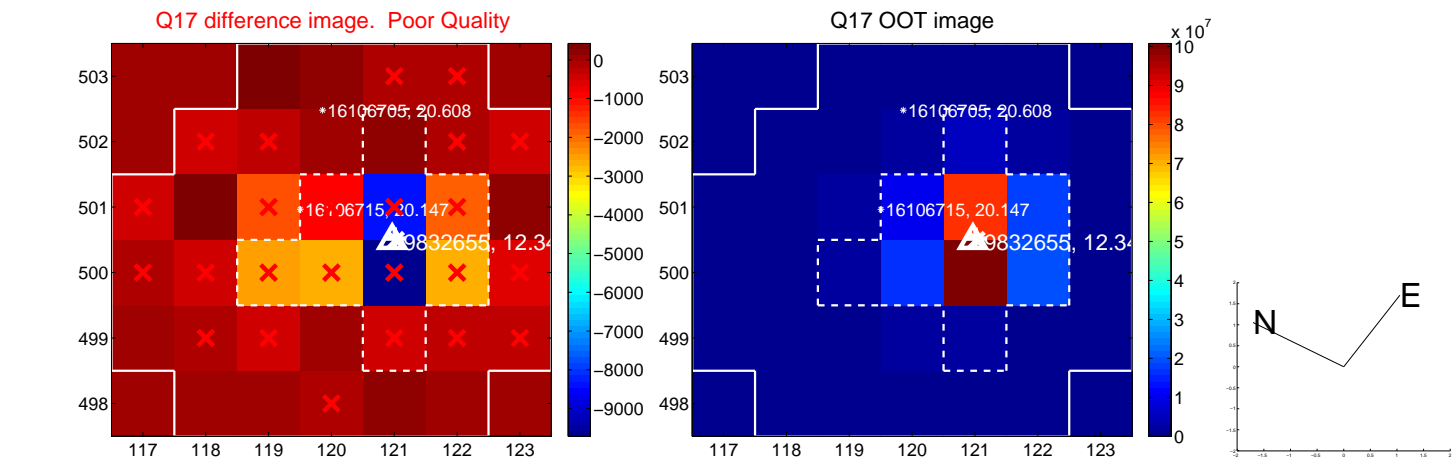
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



This astronomical image shows a field of stars against a dark background. A blue grid is overlaid on the image, with green text labels indicating coordinates. The labels are as follows:

- Top center: 50 046:37:00.010.0
- Bottom left: 03.0
- Bottom center: 50.0 40.0 30.0 1.5
- Bottom right: 19:30:00.0

Declination