

KIC 010679429

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 010679429-01 | OBS | No | 0.578542 | 132.049968 | 165.9 | 1.797 | 14.4 | 11.1 | 1.75 | 7587 | 2.58 | 35720.58 |
| 010679429-02 | OBS | No | 0.578536 | 131.763005 | 150.2 | 3.721 | 12.4 | 12.8 | 1.75 | 7587 | 2.48 | 35721.11 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------------------|
| 010679429-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT |
| 010679429-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—SAME_NTL_PERIOD |

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

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

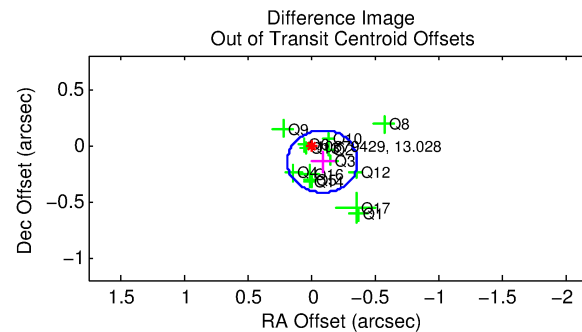
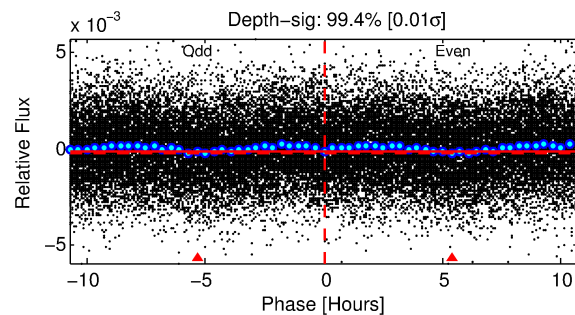
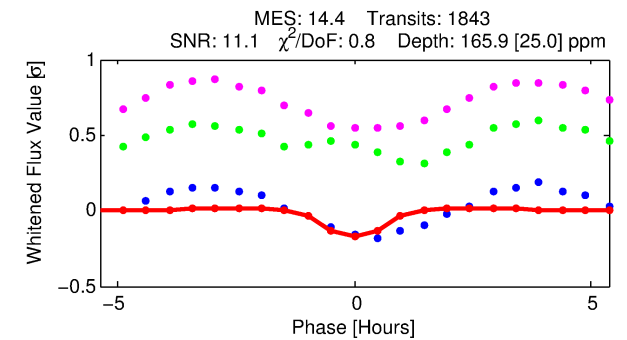
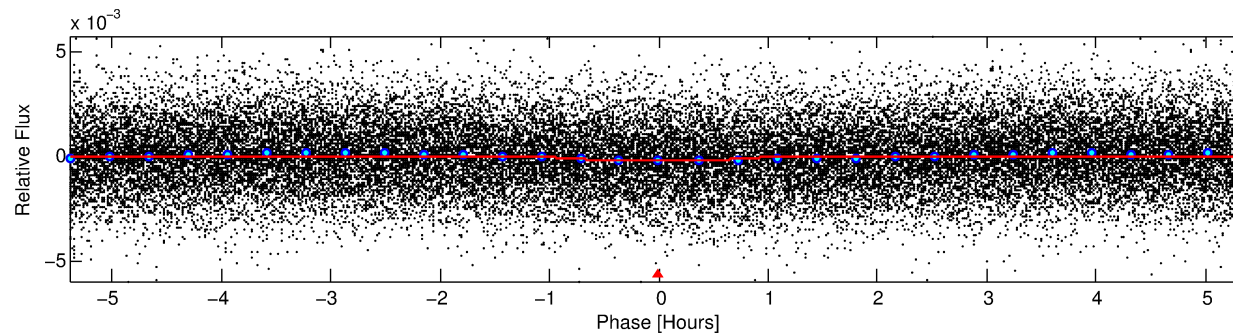
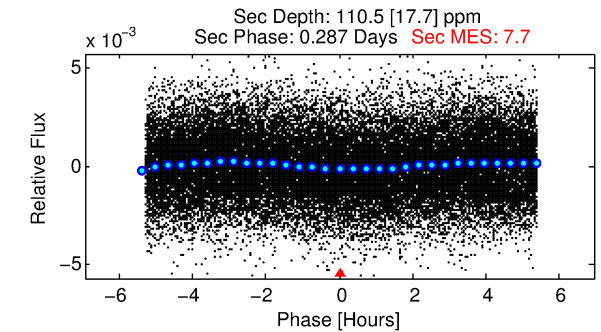
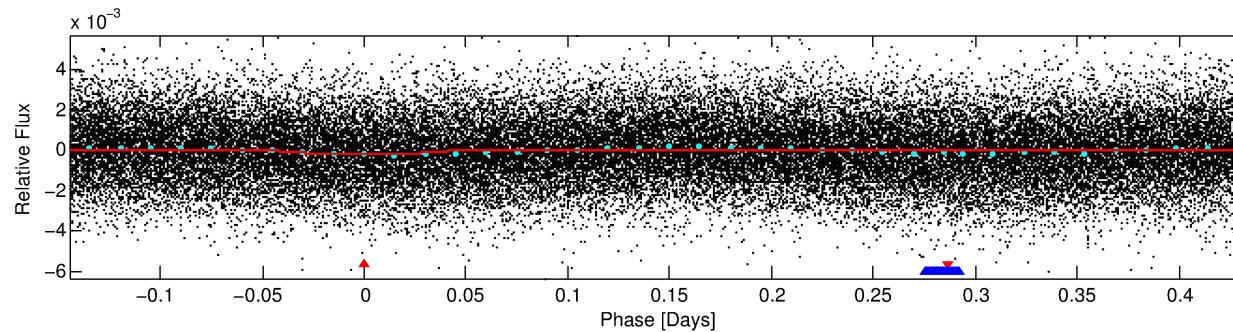
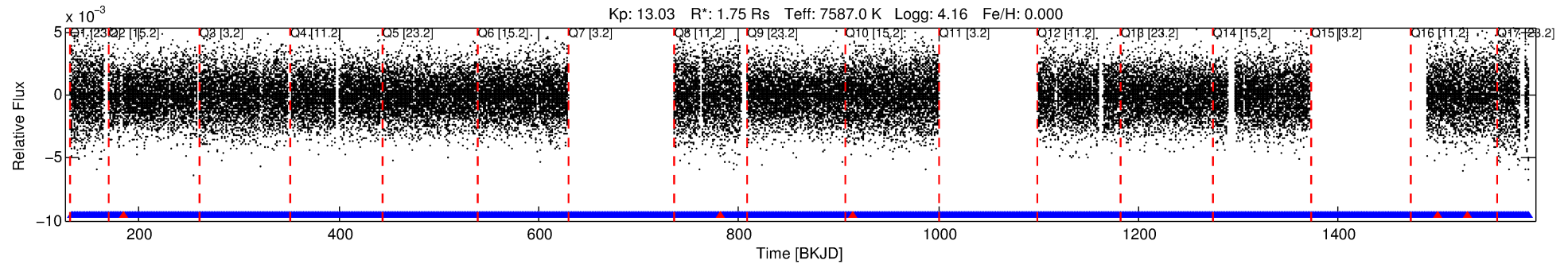
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010679429-01

No Significant Match Found

DV One-Page Summary

KIC: 10679429 Candidate: 1 of 2 Period: 0.579 d



DV Fit Results:

Period = 0.57854 [0.00001] d
Epoch = 132.0500 [0.0027] BKJD
Rp/R* = 0.0135 [0.0120]
a/R* = 1.53 [5.15]
b = 0.88 [1.46]
Seff = 35720.58 [14627.20]
Teq = 3506 [359] K
Rp = 2.58 [2.44] Re
a = 0.0160 [0.0042] AU
Ag = 2.32 [4.23] [0.31σ]
Teffp = 6689 [2999] K [1.05σ]

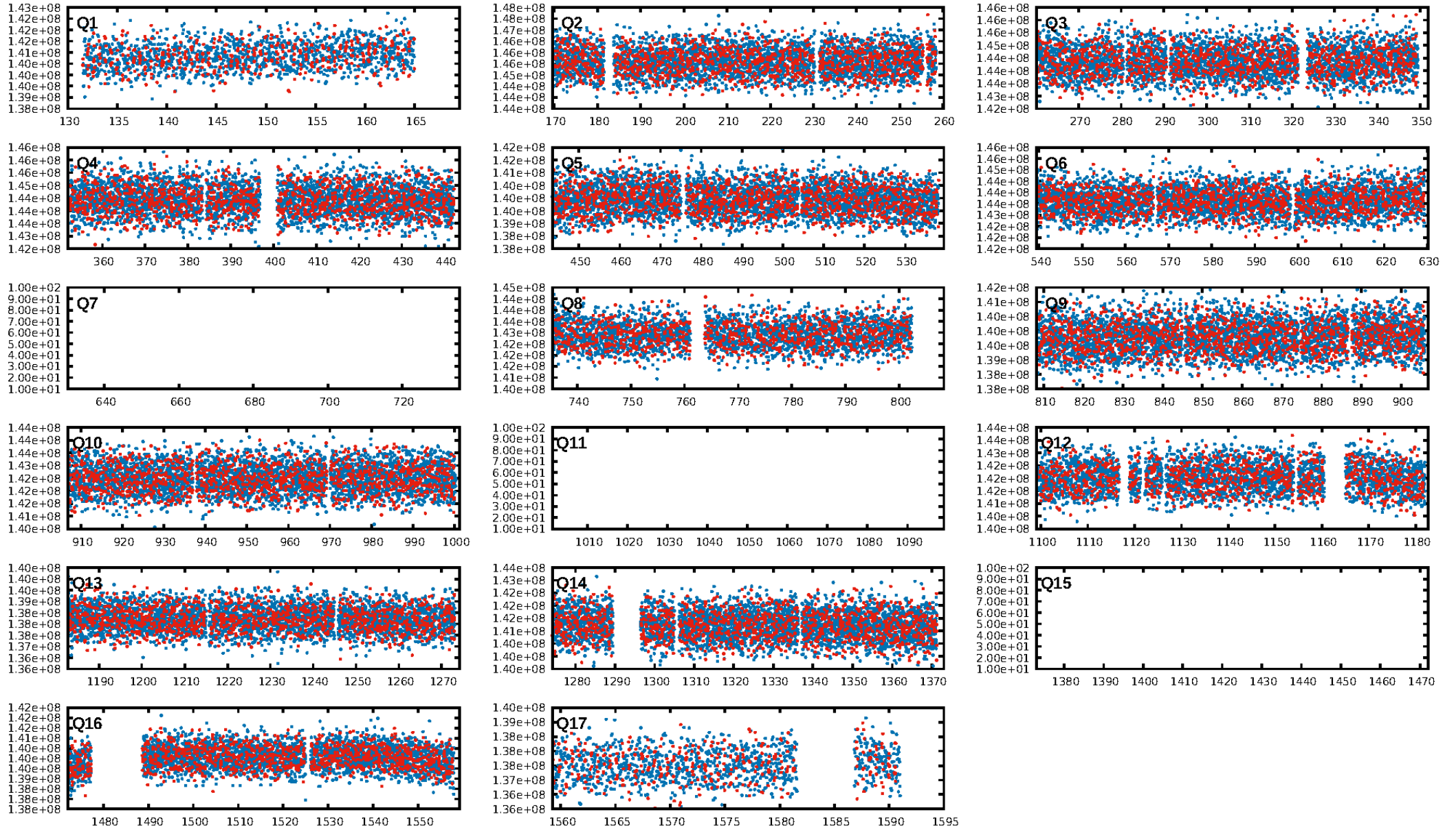
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1733/1738]
GhostDiagnostic-chr: 1.042
Centroid-sig: 19.4%
Centroid-so: 0.330 arcsec [2.58σ]
OotOffset-rm: 0.170 arcsec [1.85σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-rm: 0.289 arcsec [2.93σ]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

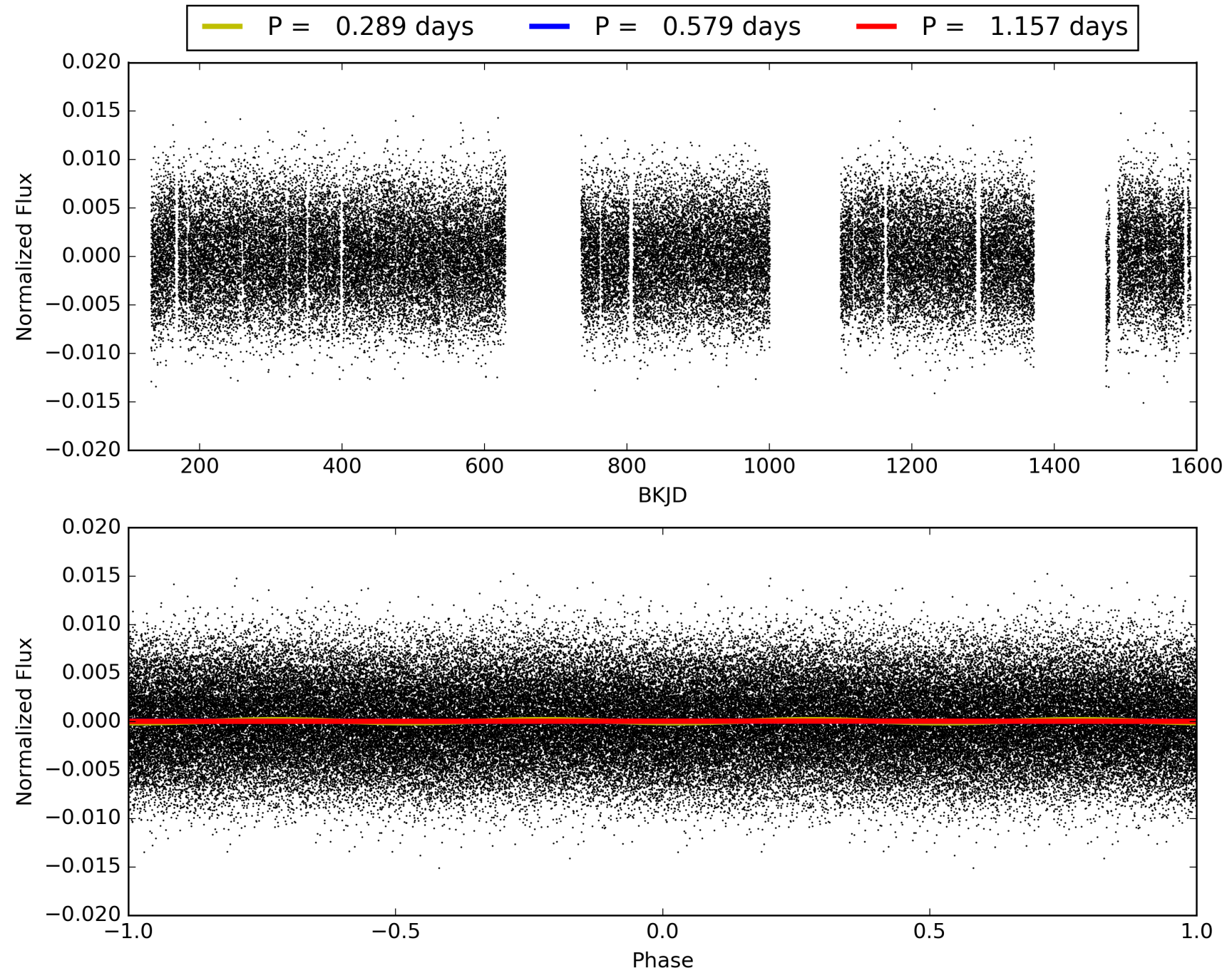
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:36:43 Z

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

TCE 010679429-01, PDC Light Curves

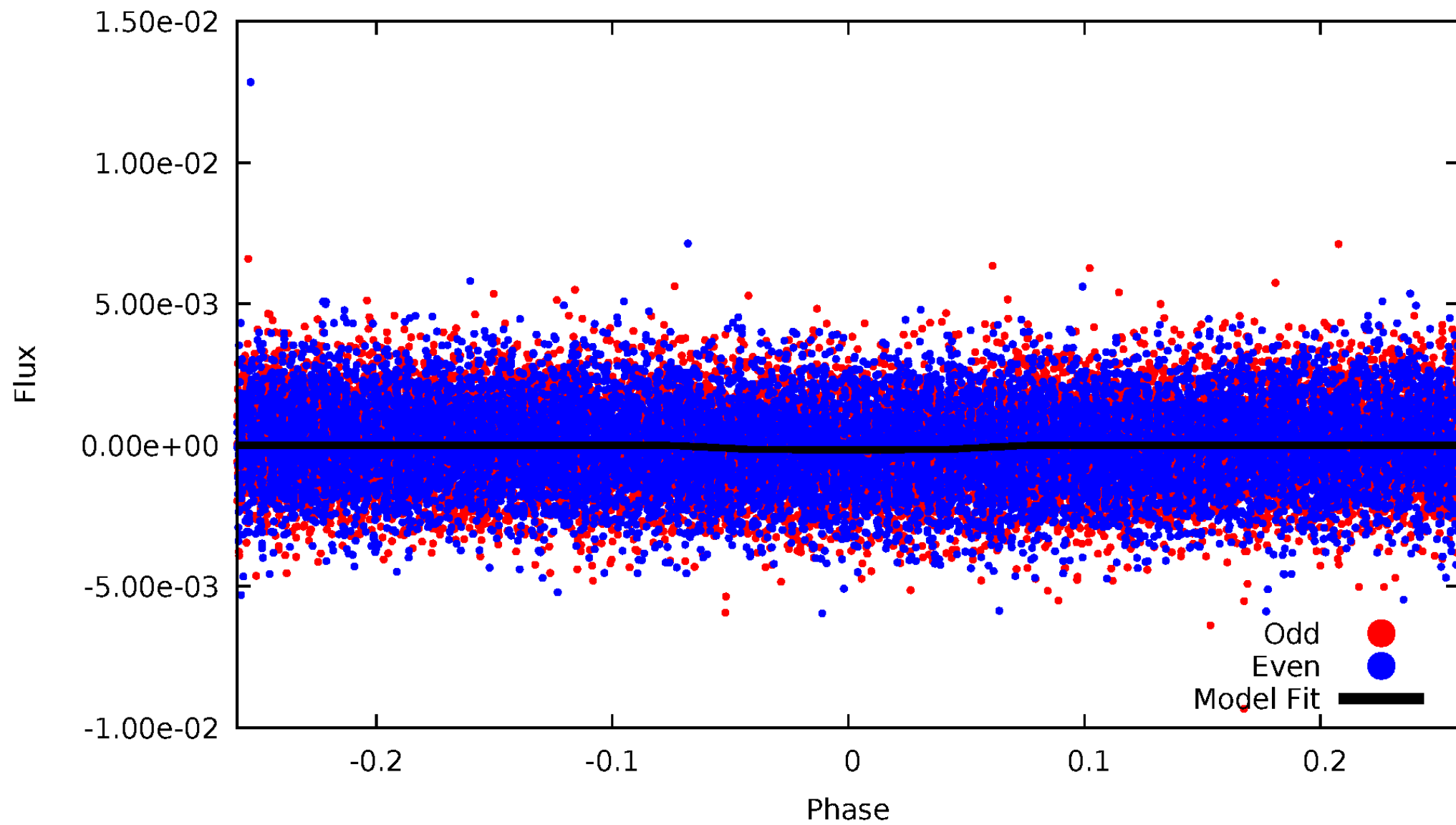


TCE 010679429-01



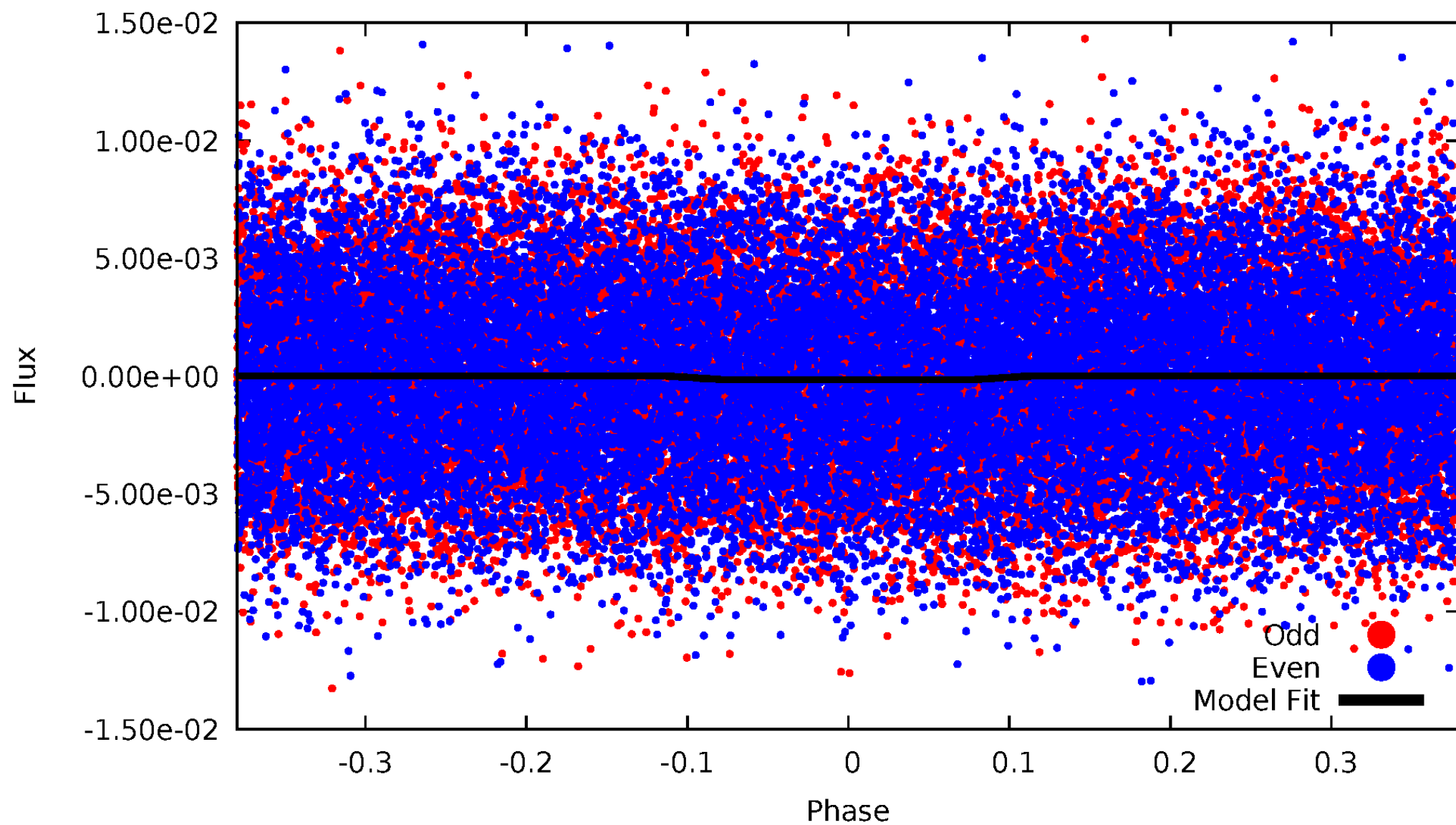
DV Odd/Even

TCE 010679429-01



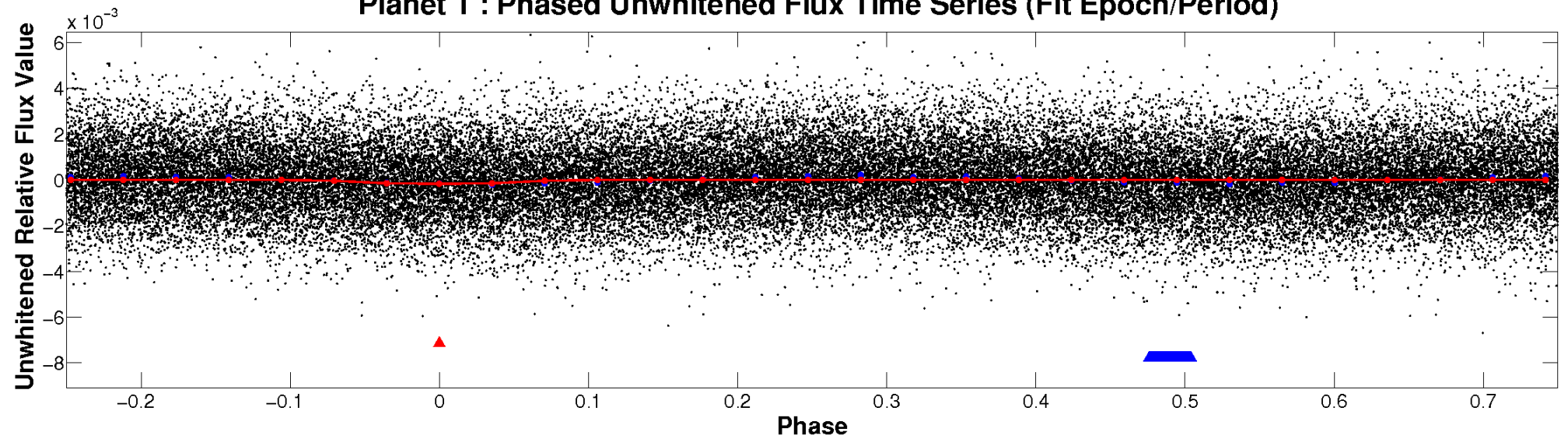
ALT Odd/Even

TCE 010679429-01

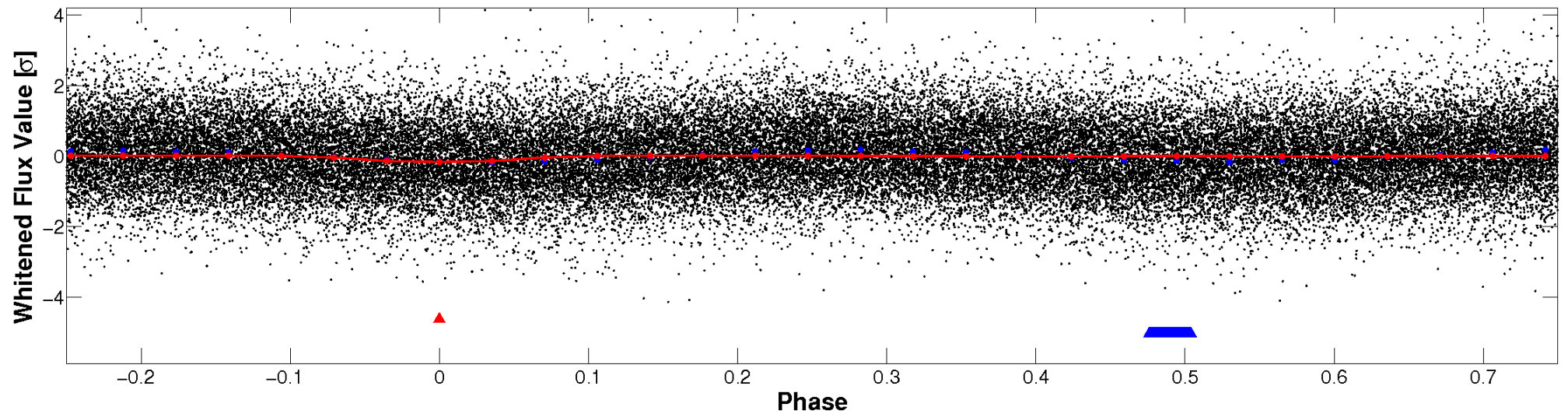


Non-Whitened Vs. Whitened Light Curve

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

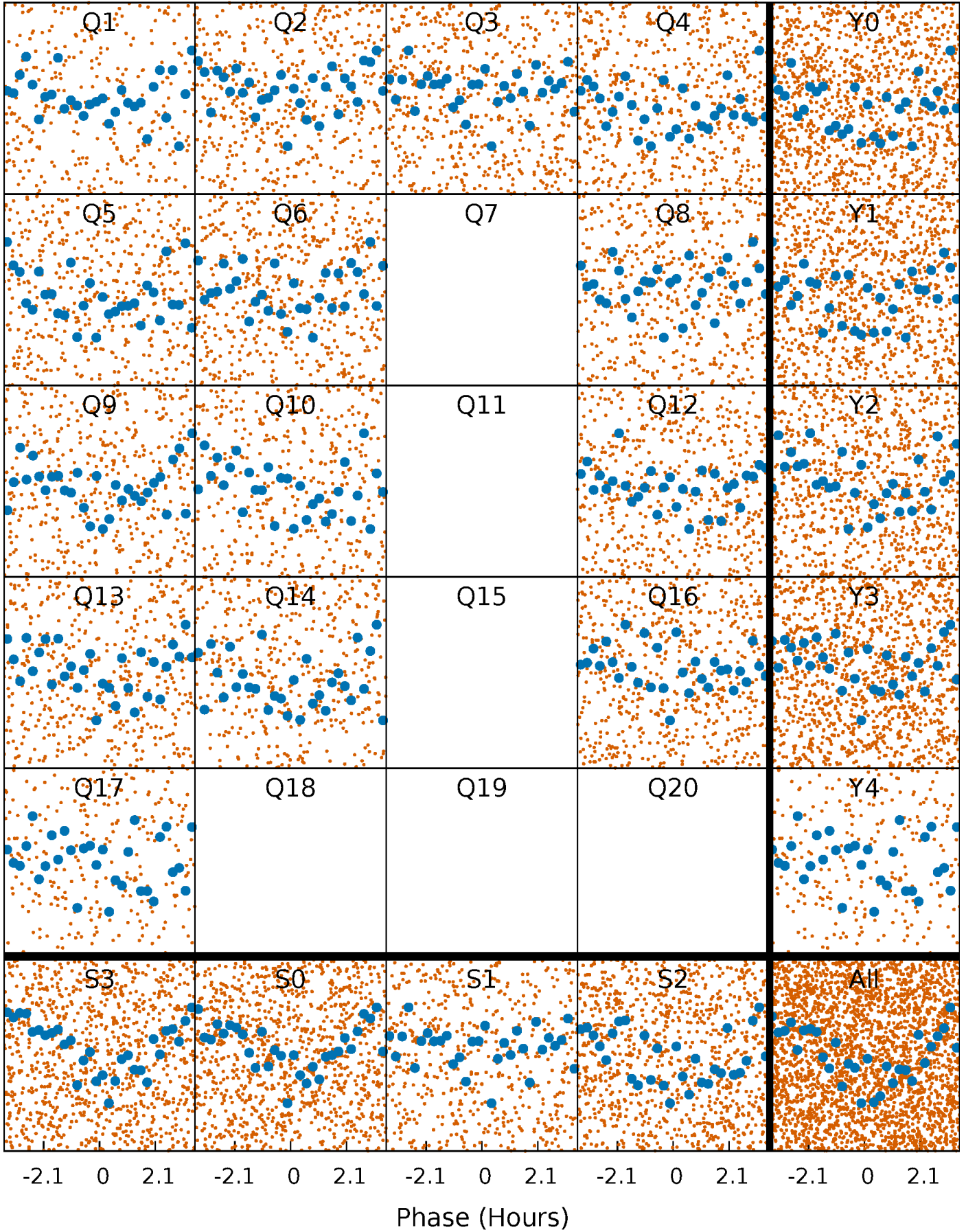


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



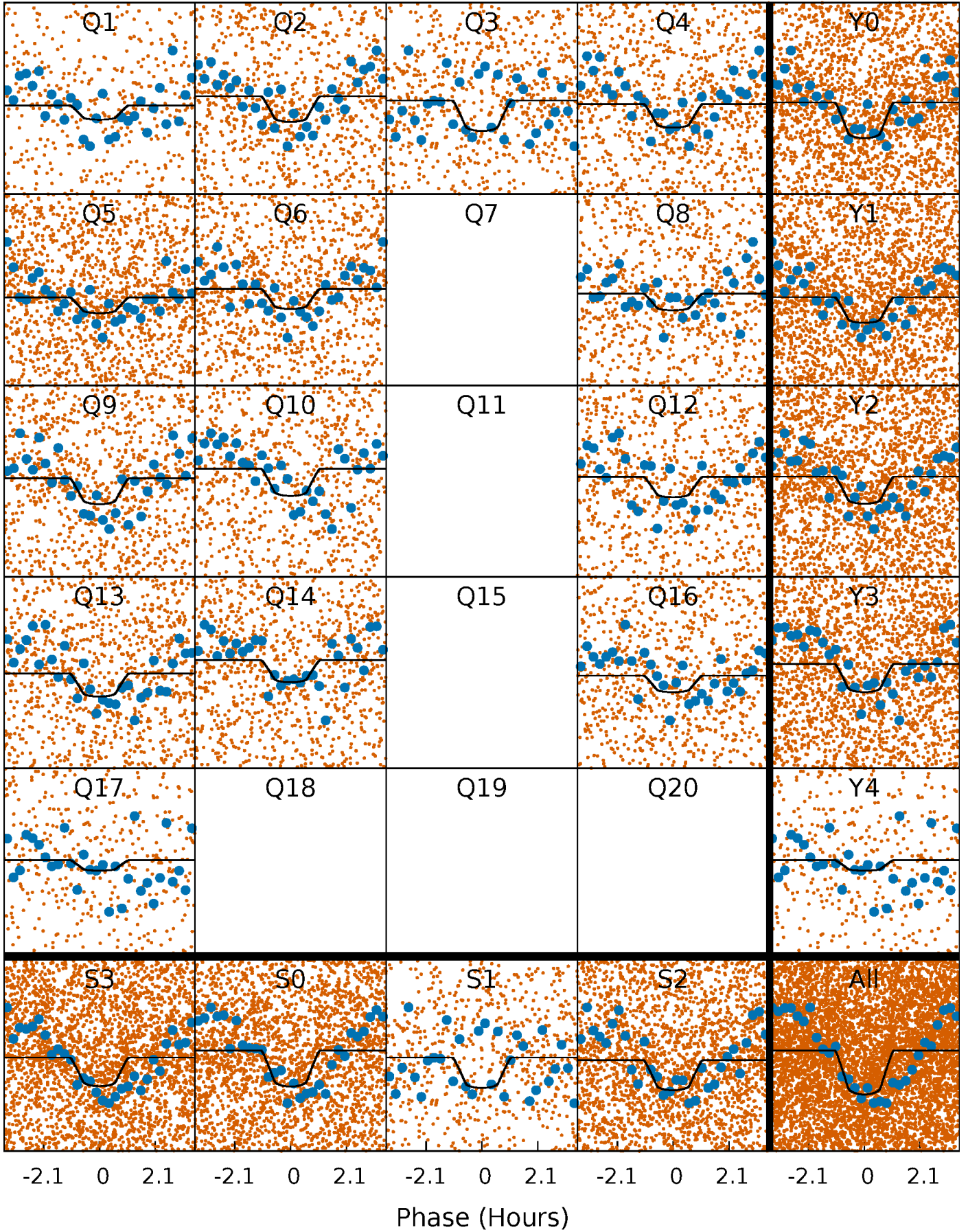
PDC Quarter-Phased Transit Curves

TCE 010679429-01 P= 0.578542 Days $T_0=132.049968$ (BKJD)



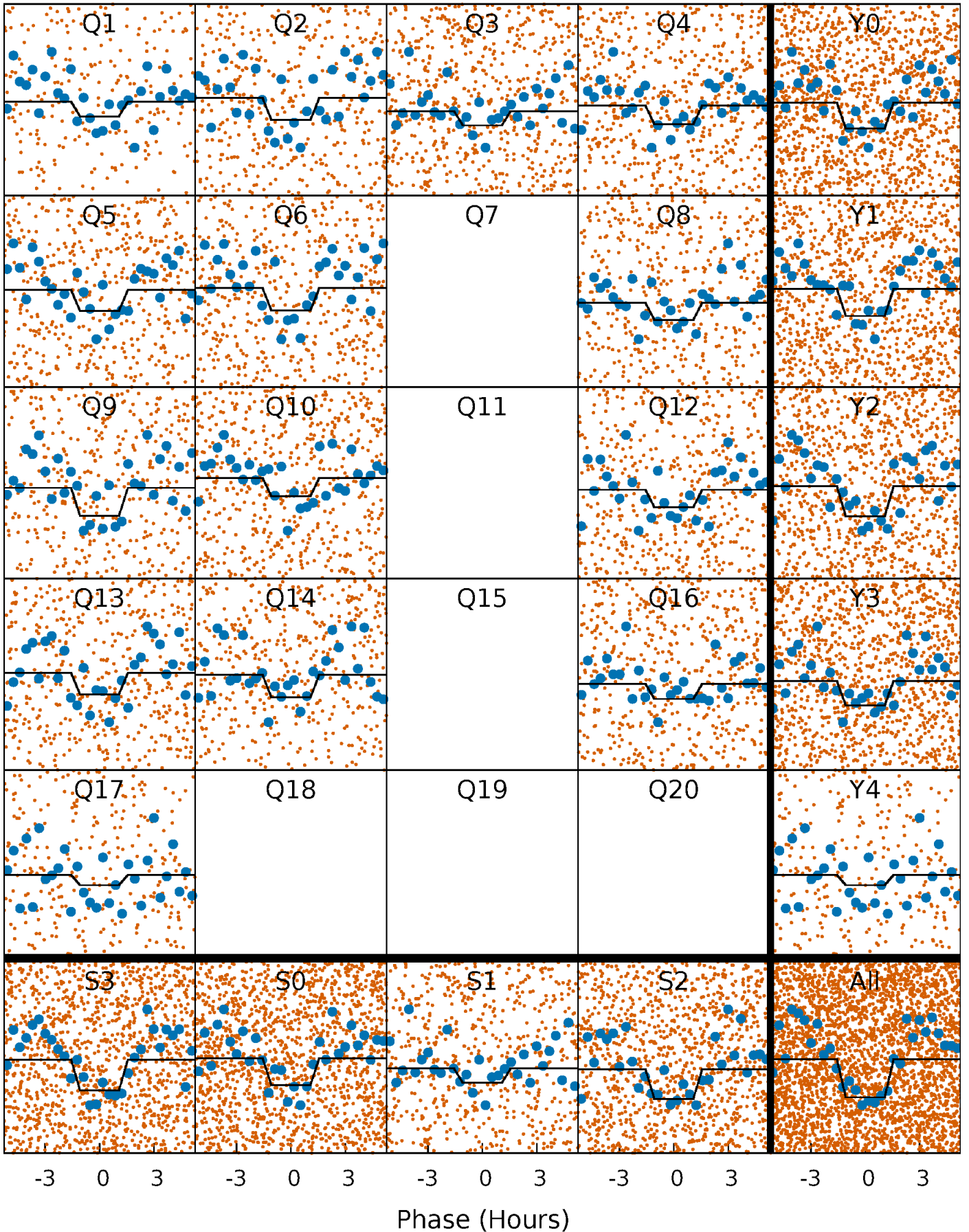
DV Quarter-Phased Transit Curves

TCE 010679429-01 P= 0.578542 Days $T_0=132.049968$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

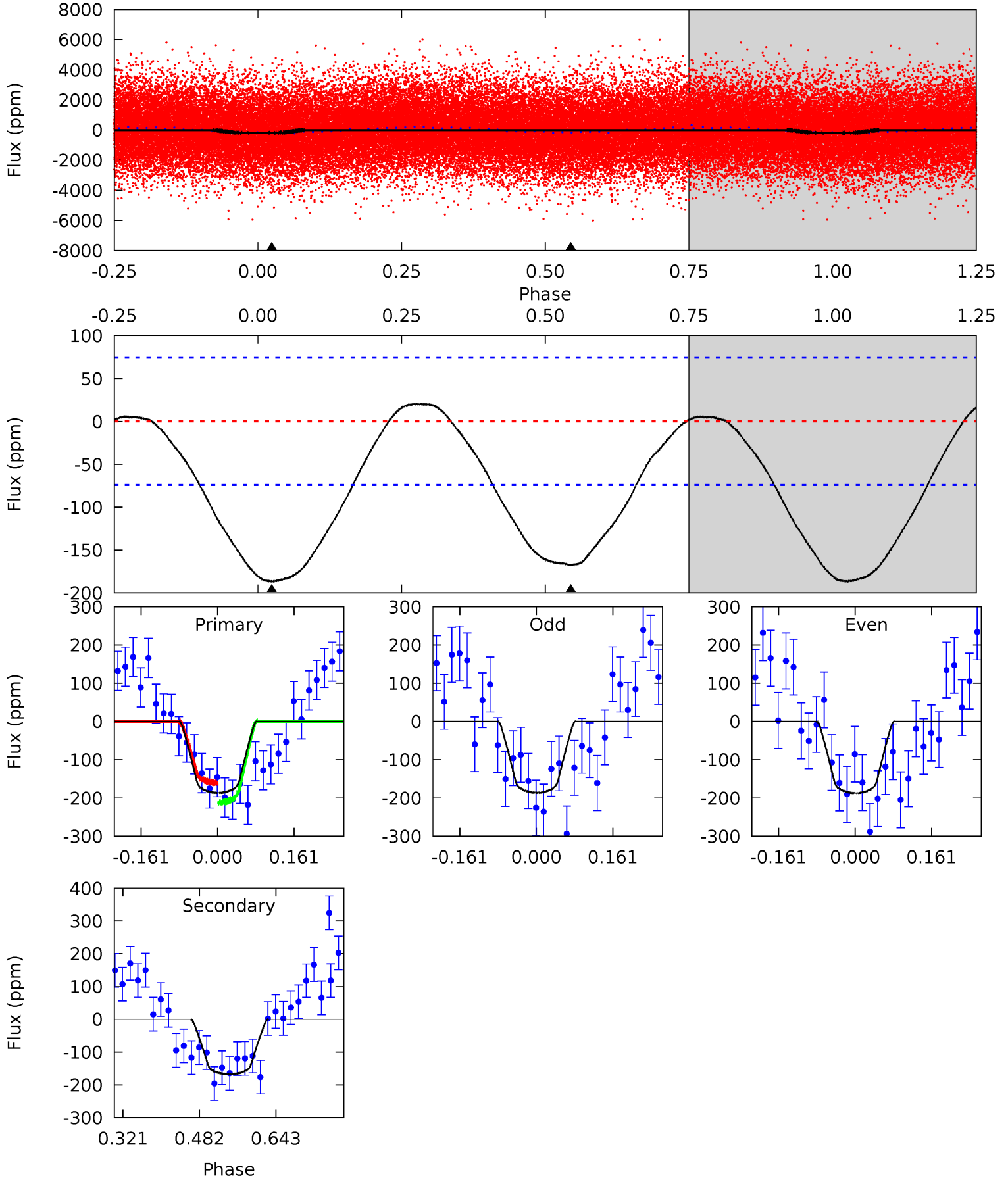
TCE 010679429-01 P= 0.578557 Days $T_0=132.047926$ (BKJD)



DV Model-Shift Uniqueness Test

010679429-01, P = 0.578542 Days, E = 131.471426 Days

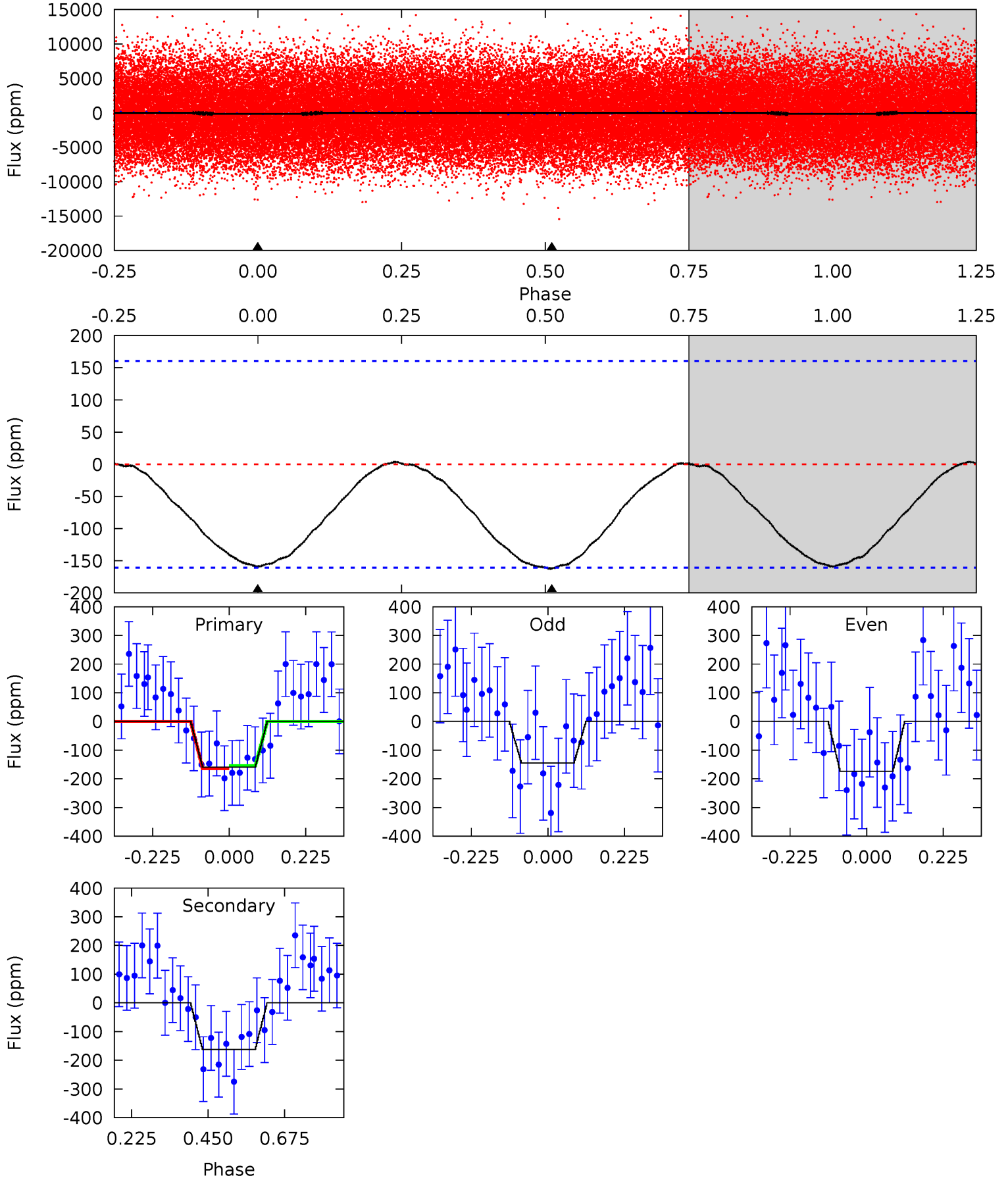
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.3 | 10.1 | 0 | 0 | 4.46 | 1.40 | 1.07 | 11.3 | 11.3 | 10.1 | 10.1 | 0.03 | 0.98 | 0.10 | 1.56 |



Alt Model-Shift Uniqueness Test

010679429-01, P = 0.578557 Days, E = 131.469369 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 4.36 | 4.45 | 0 | 0 | 4.39 | 1.21 | 0.07 | 4.36 | 4.36 | 4.45 | 4.45 | 0.40 | 0.97 | 0.03 | 0.15 |



Stellar Parameters For KIC 010679429

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 7587^{+209}_{-340} | $4.161^{+0.105}_{-0.195}$ | $0.000^{+0.200}_{-0.350}$ | $1.751^{+0.563}_{-0.303}$ | $1.621^{+0.220}_{-0.242}$ | $0.425^{+0.211}_{-0.224}$ |
| | +3%/-4% | +3%/-5% | +inf%/-inf% | +32%/-17% | +14%/-15% | +50%/-53% |
| Source | KIC0 | 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 010679429-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|------------------------|----------------------------|
| DV | -168 ± 17 | $3.01^{+2.15}_{-1.87}$ | 4927^{+390}_{-310} | 6521^{+6738}_{-1730} | $2.483^{+14.353}_{-1.620}$ |
| Alt. | -163 ± 37 | $2.79^{+2.41}_{-1.78}$ | 4933^{+377}_{-305} | 6757^{+7515}_{-2052} | $2.707^{+17.511}_{-1.896}$ |

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 $A_{obs} \gg 1.0$

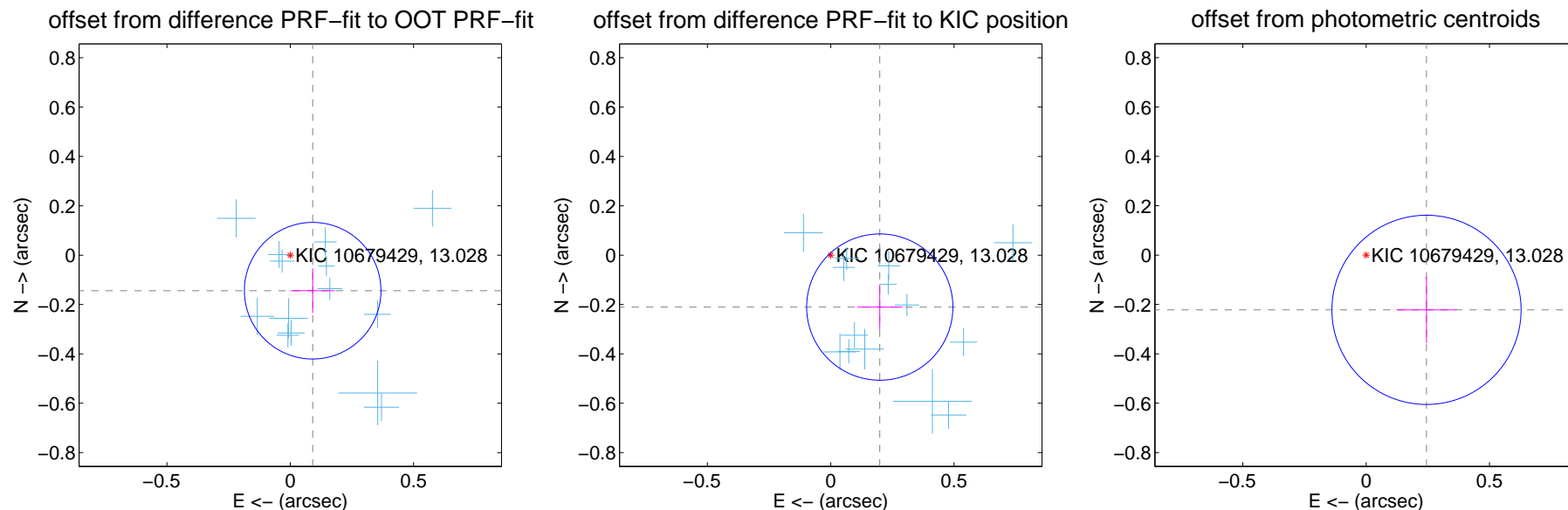
DV Centroid Data

Supplemental centroid analysis for 010679429-01. Kepler magnitude: 13.03. Transit SNR 11.13

There are 14 quarters with good PRF difference image offsets

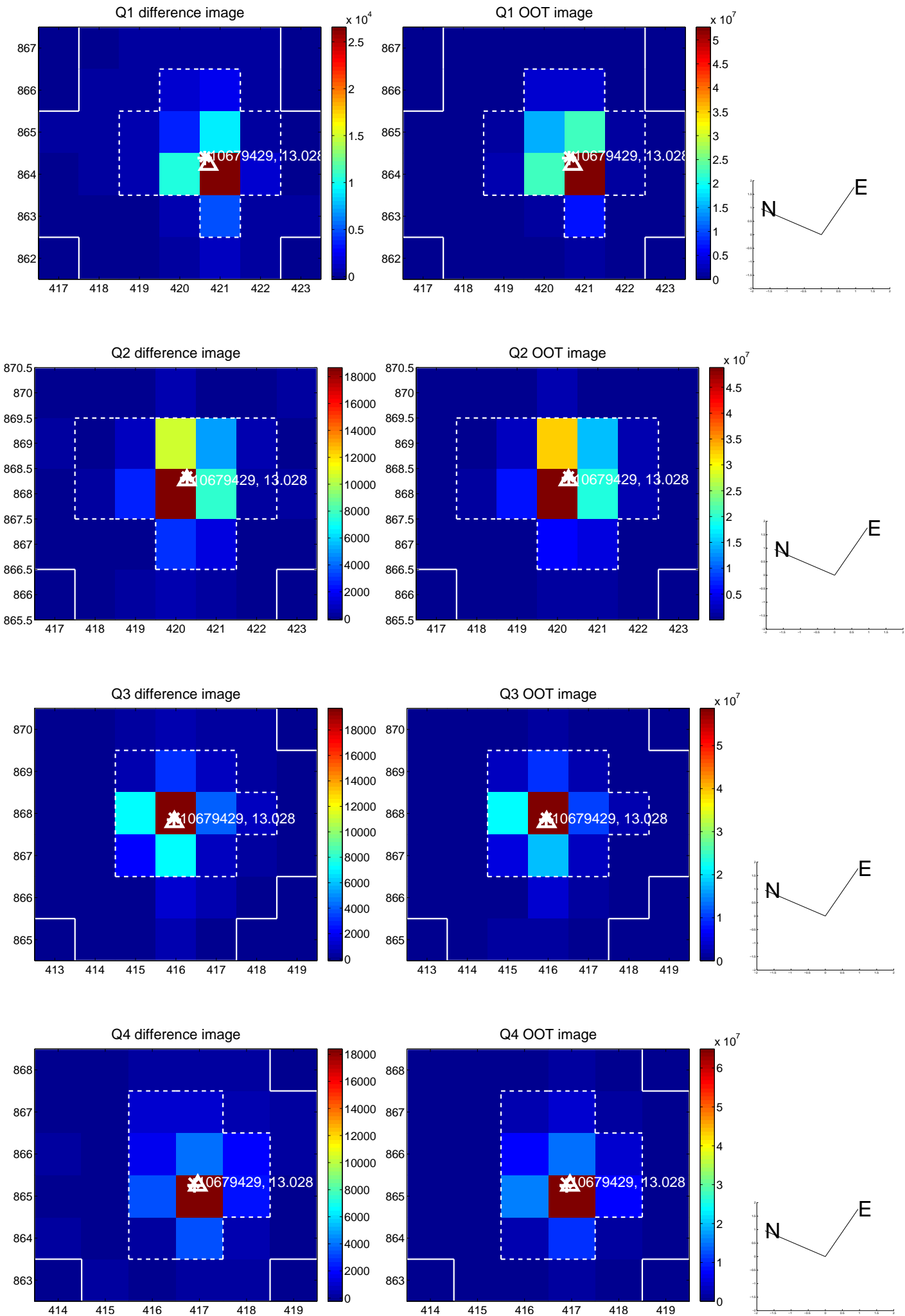
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.170 ± 0.092 | 1.85 | -0.091 ± 0.089 | -0.144 ± 0.090 |
| PRF-fit source offset from KIC position | 0.289 ± 0.099 | 2.93 | -0.199 ± 0.092 | -0.210 ± 0.092 |
| photometric centroid source offset | 0.33 ± 0.13 | 2.58 | -0.24 ± 0.12 | -0.22 ± 0.13 |

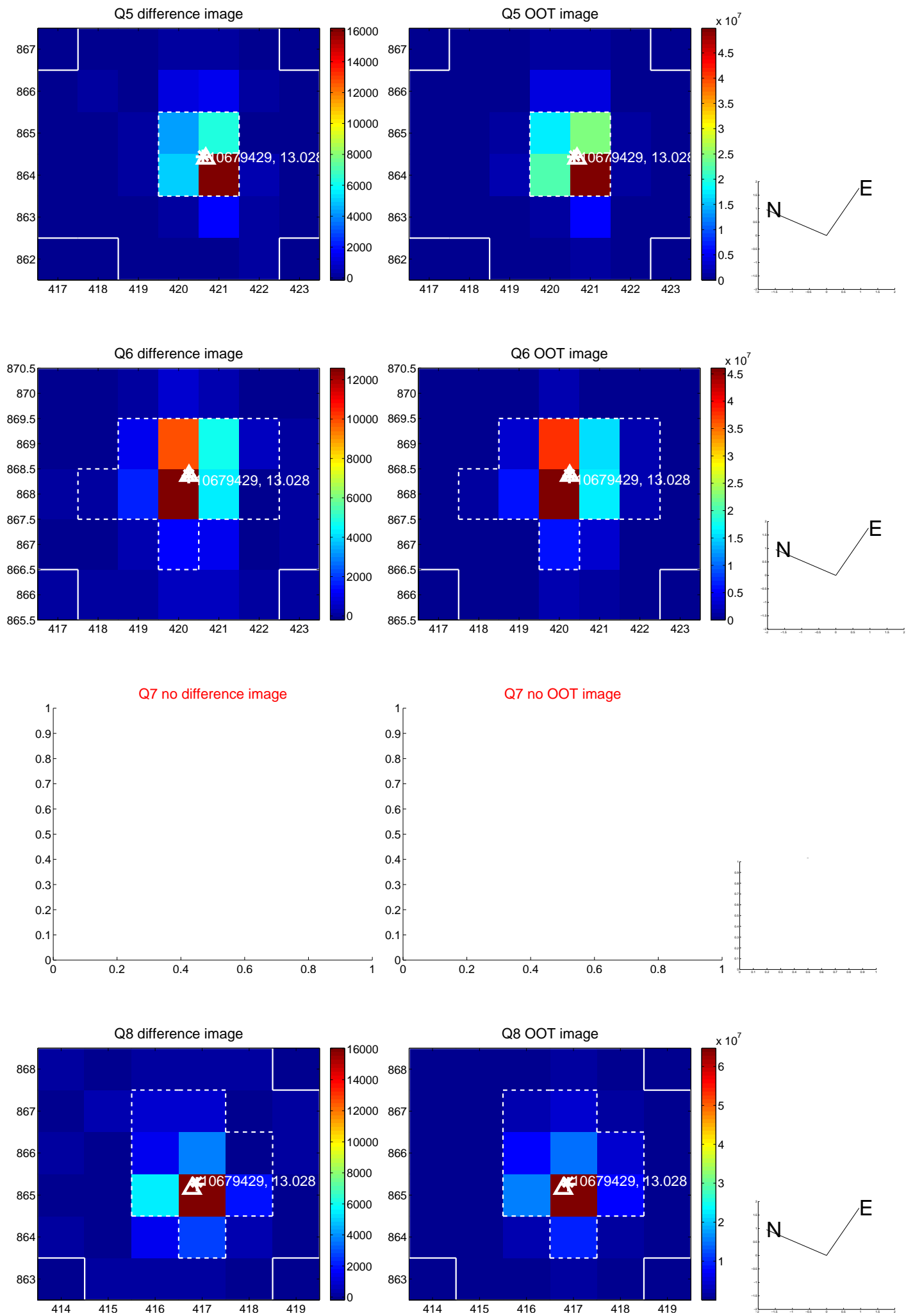


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

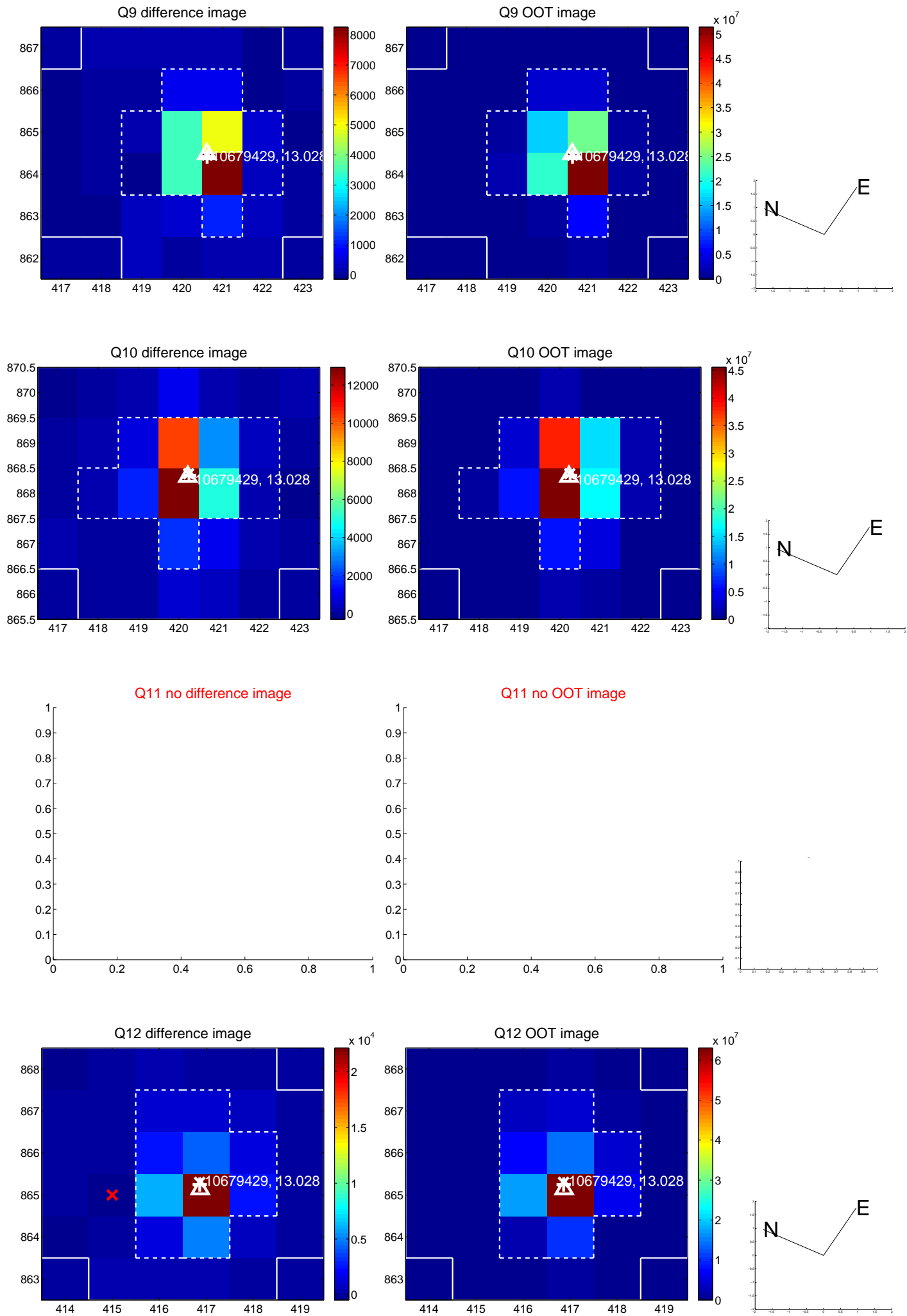
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



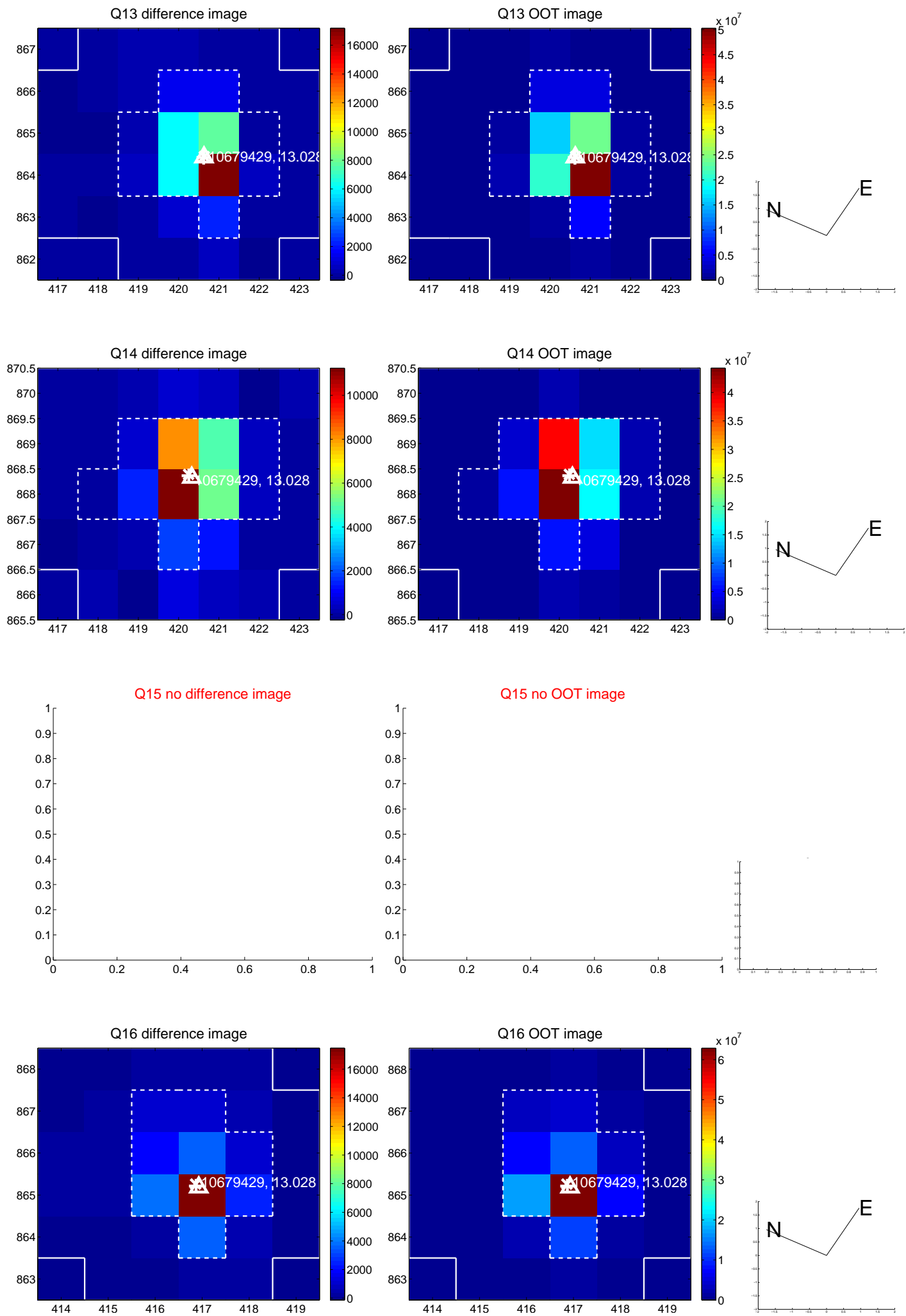
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



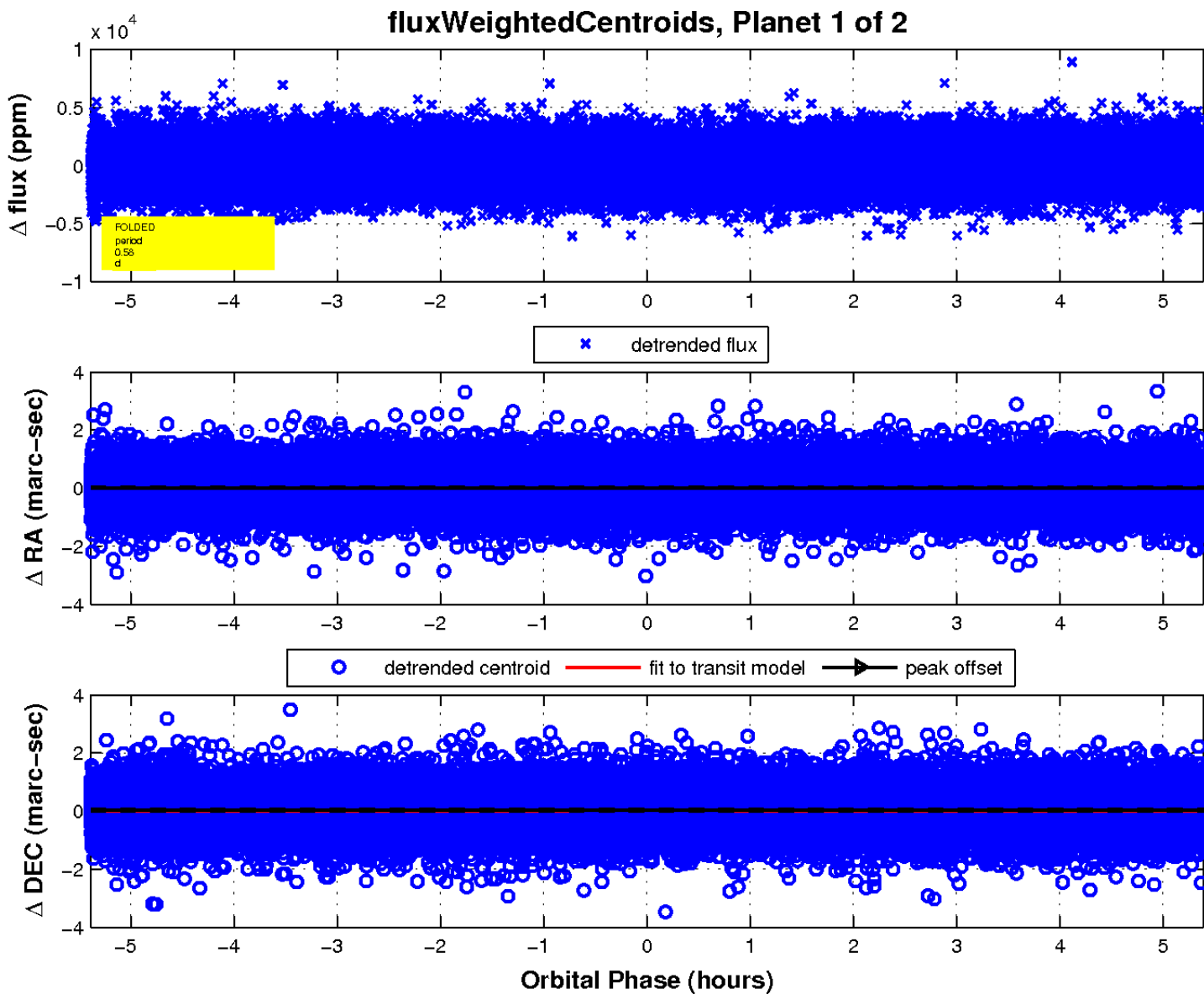
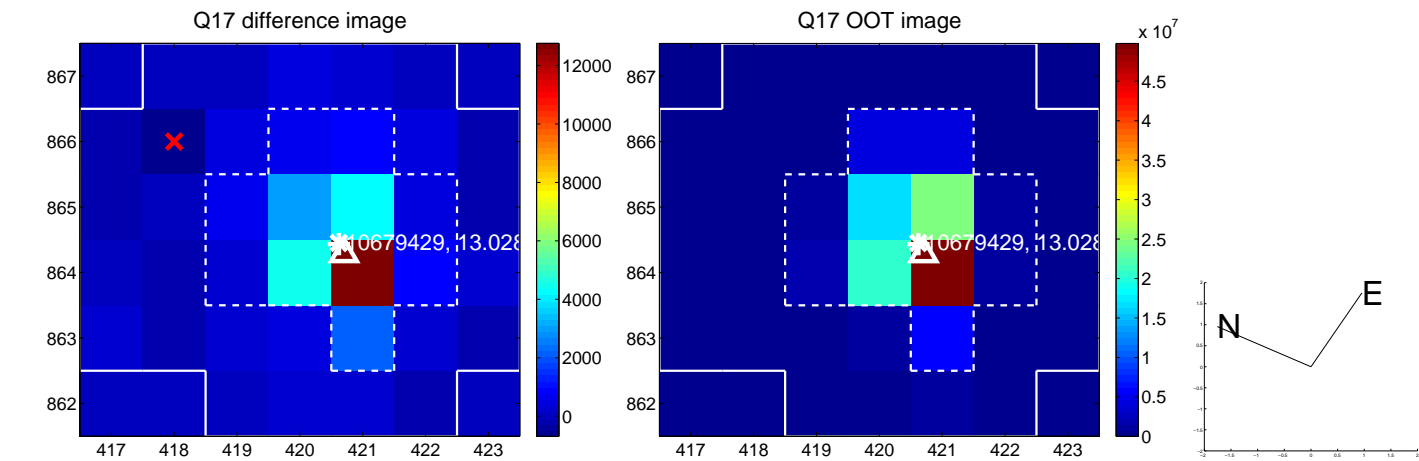
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

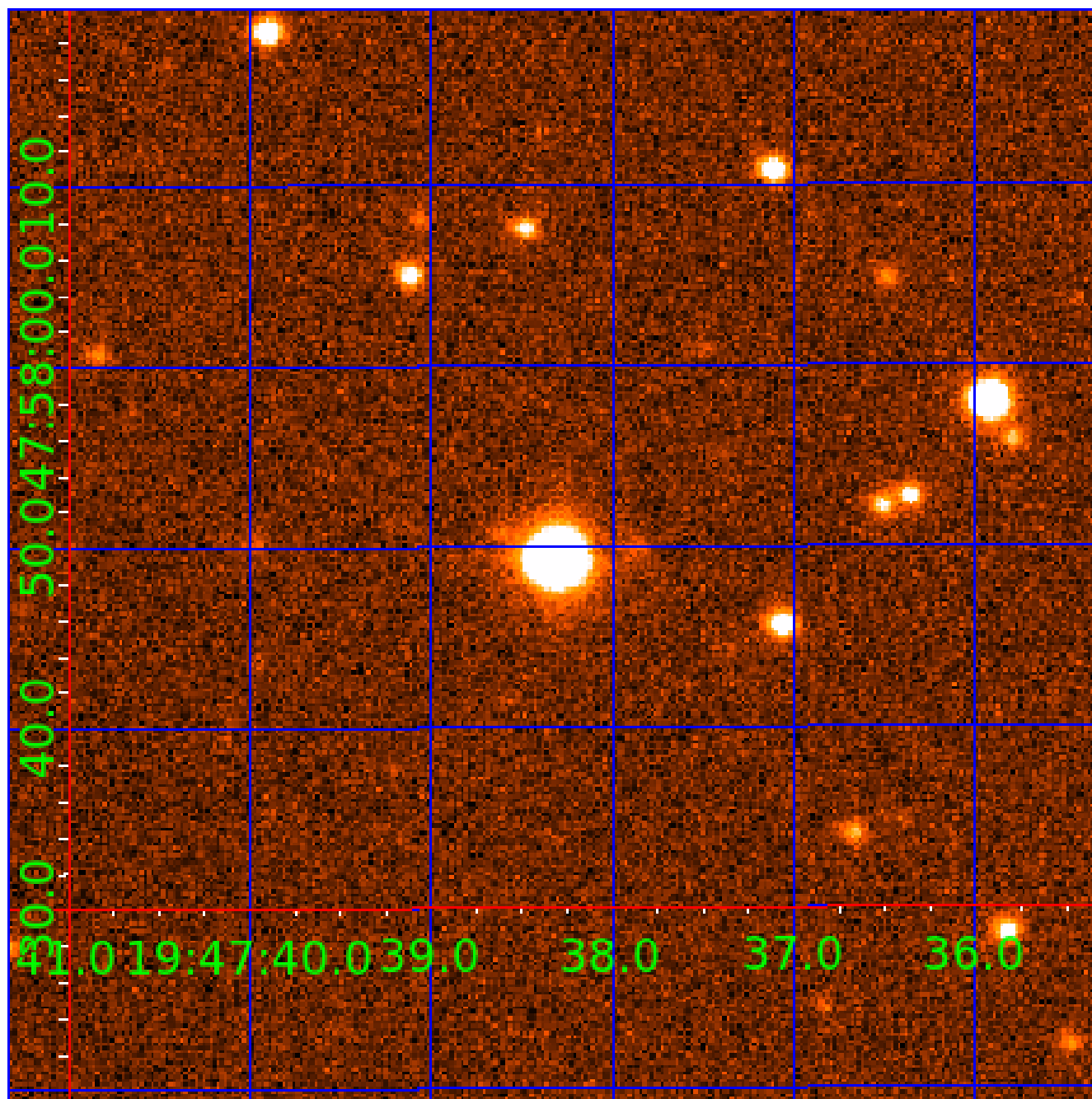


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010679429

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 010679429-01 | OBS | No | 0.578542 | 132.049968 | 165.9 | 1.797 | 14.4 | 11.1 | 1.75 | 7587 | 2.58 | 35720.58 |
| 010679429-02 | OBS | No | 0.578536 | 131.763005 | 150.2 | 3.721 | 12.4 | 12.8 | 1.75 | 7587 | 2.48 | 35721.11 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------------------|
| 010679429-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT |
| 010679429-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—SAME_NTL_PERIOD |

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

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

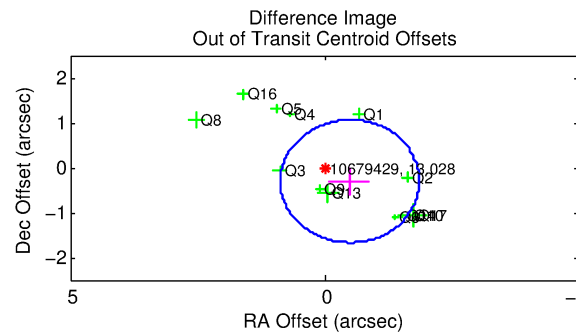
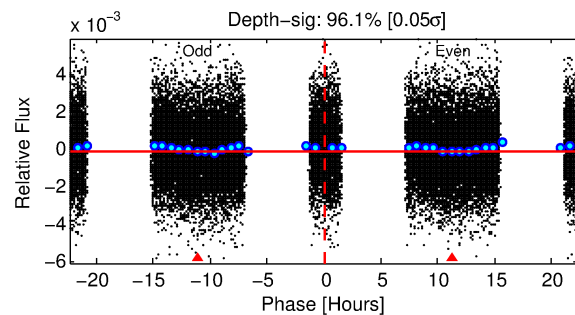
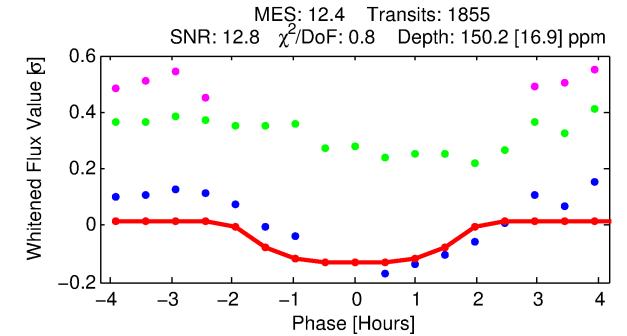
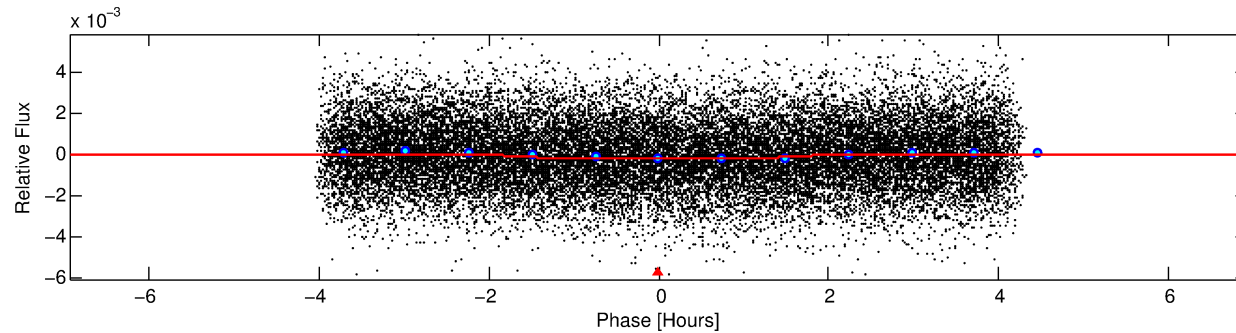
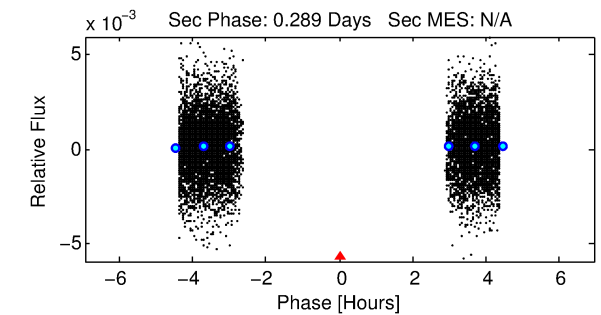
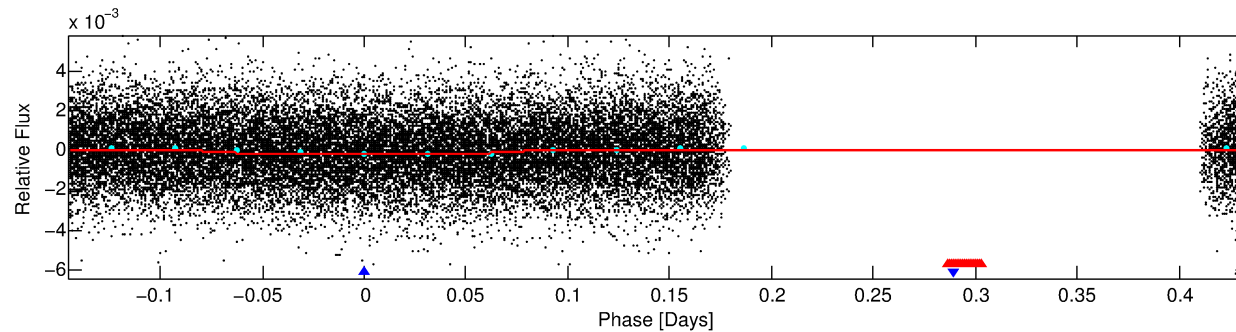
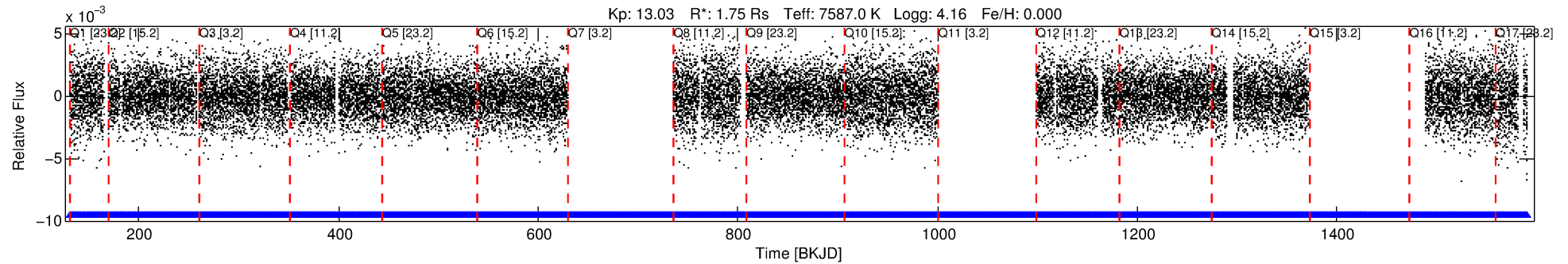
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010679429-02

No Significant Match Found

DV One-Page Summary

KIC: 10679429 Candidate: 2 of 2 Period: 0.579 d



DV Fit Results:

Period = 0.57854 [0.00001] d
Epoch = 131.7630 [0.0037] BKJD
Rp/R* = 0.0130 [0.0045]
a/R* = 1.09 [0.41]
b = 0.90 [0.48]
Seff = 35721.11 [14627.42]
Teq = 3506 [359] K
Rp = 2.48 [1.18] Re
a = 0.0160 [0.0042] AU

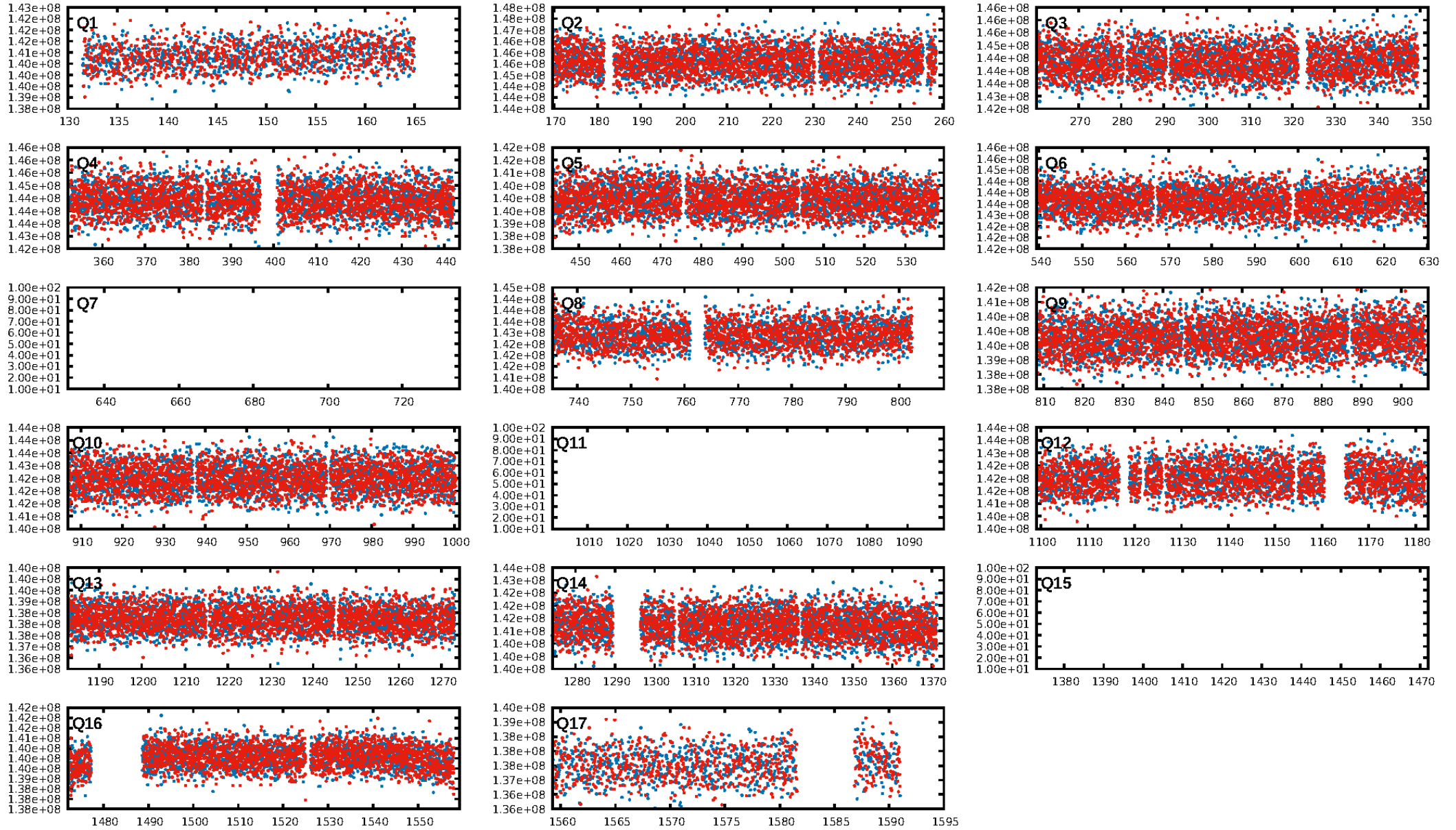
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1750/1750]
GhostDiagnostic-chr: 2.57
Centroid-sig: 1.1%
Centroid-so: 0.344 arcsec [3.42σ]
OotOffset-rm: 0.579 arcsec [1.27σ]
KicOffset-rm: 0.710 arcsec [1.58σ]
OotOffset-st: 4/1/3/5 [13]
KicOffset-st: 4/1/3/5 [13]
DiffImageQuality-fgm: 0.92 [12/13]
DiffImageOverlap-fno: 0.00 [0/14]

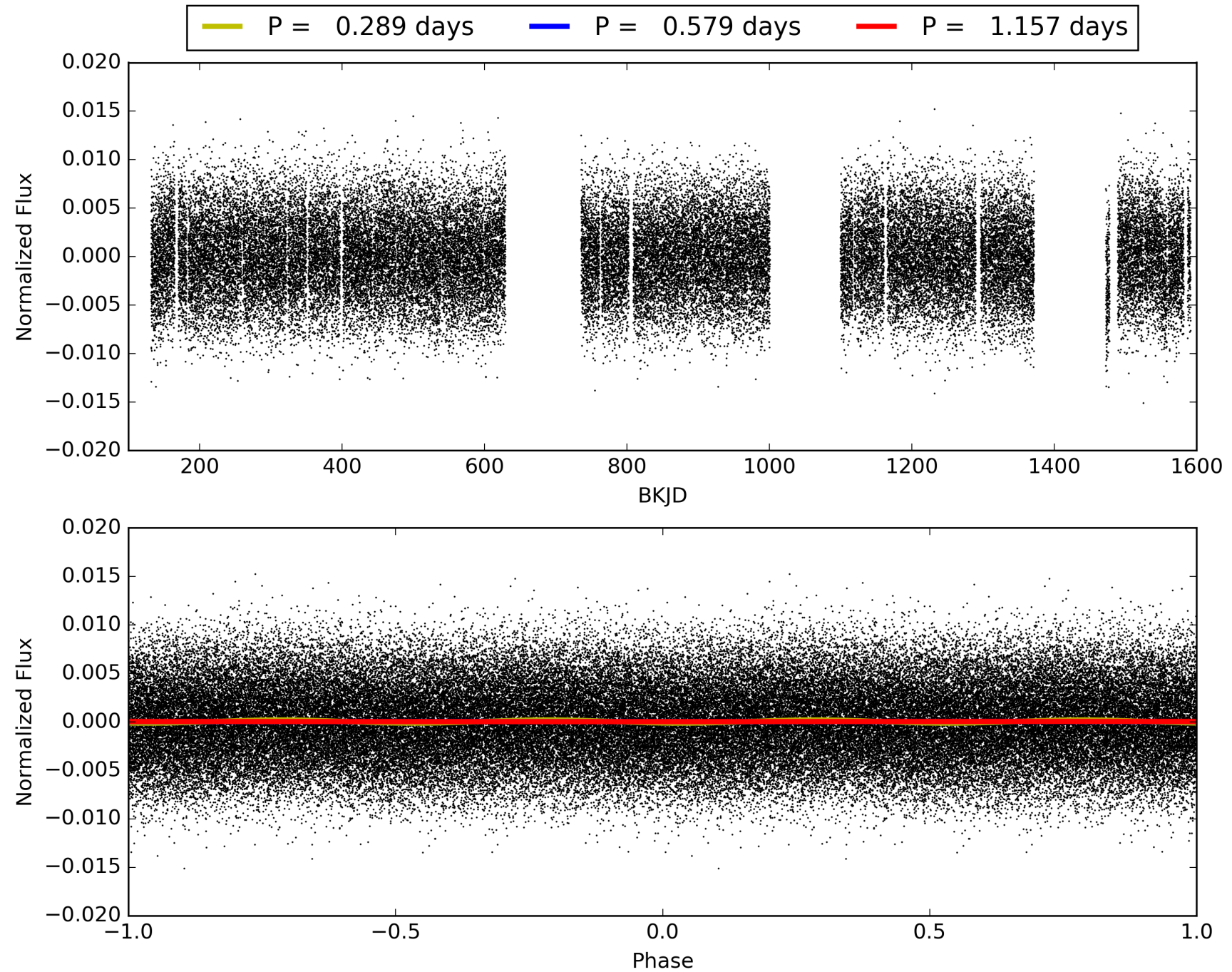
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:36:56 Z

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

TCE 010679429-02, PDC Light Curves

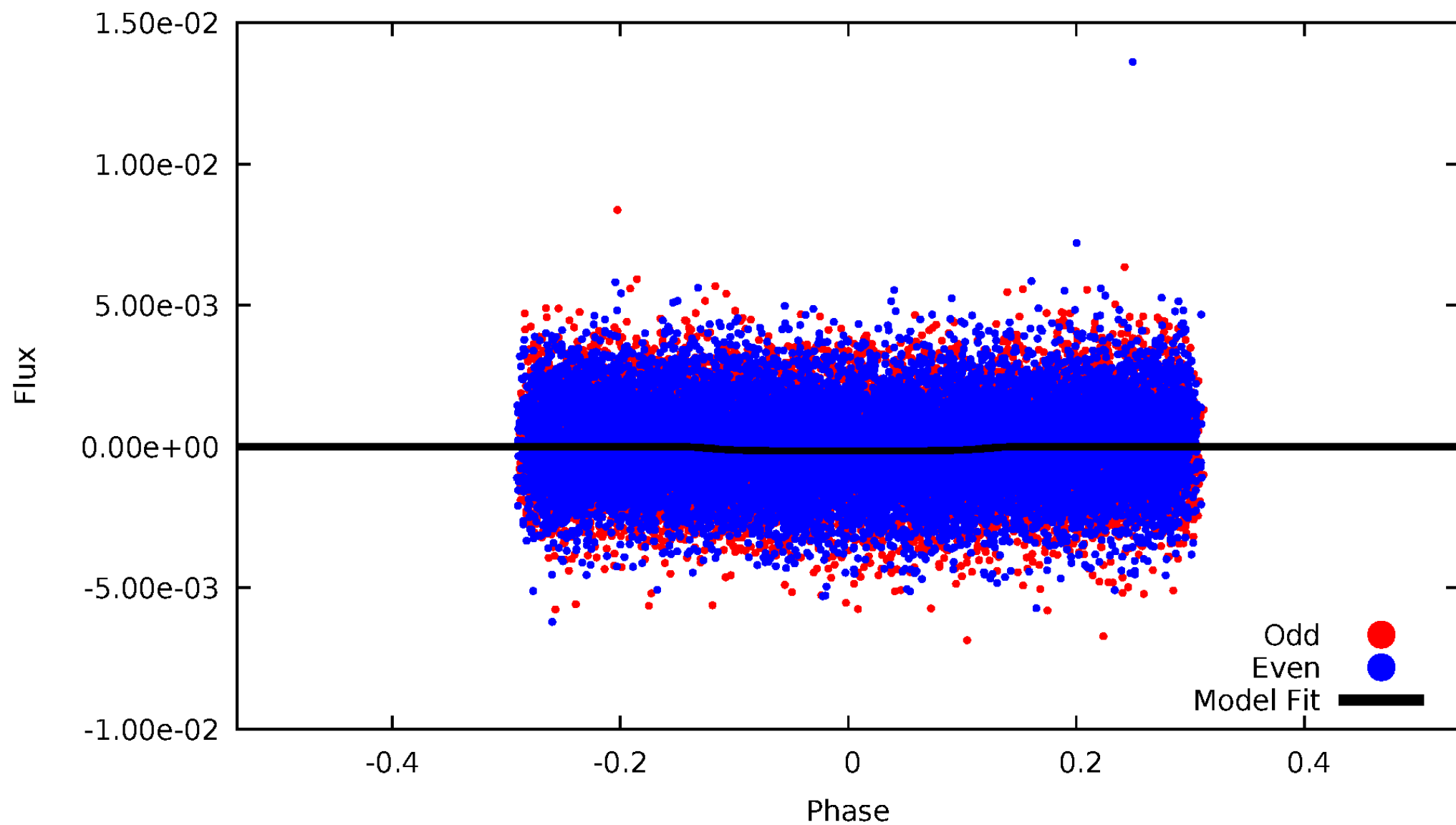


TCE 010679429-02



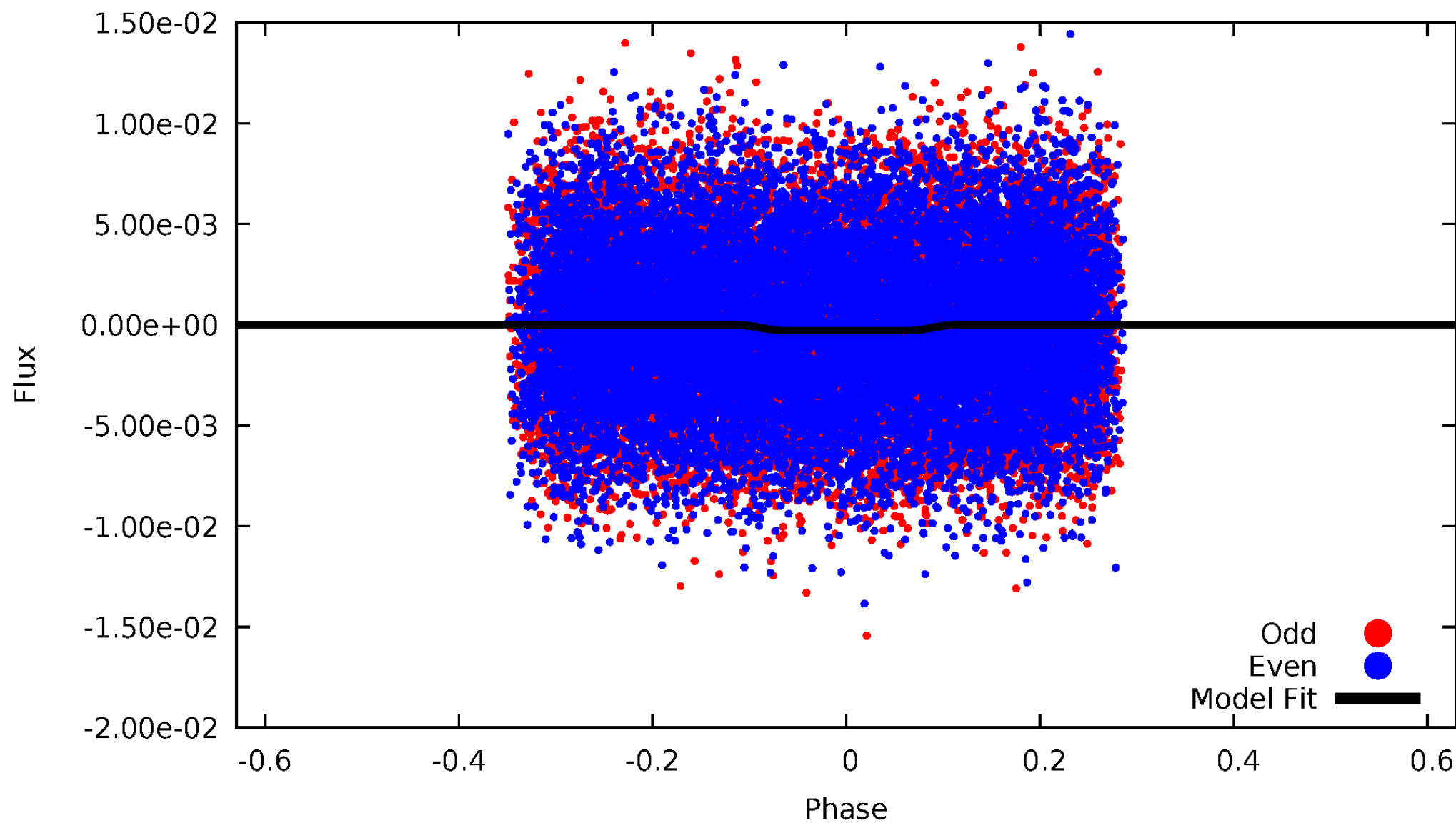
DV Odd/Even

TCE 010679429-02



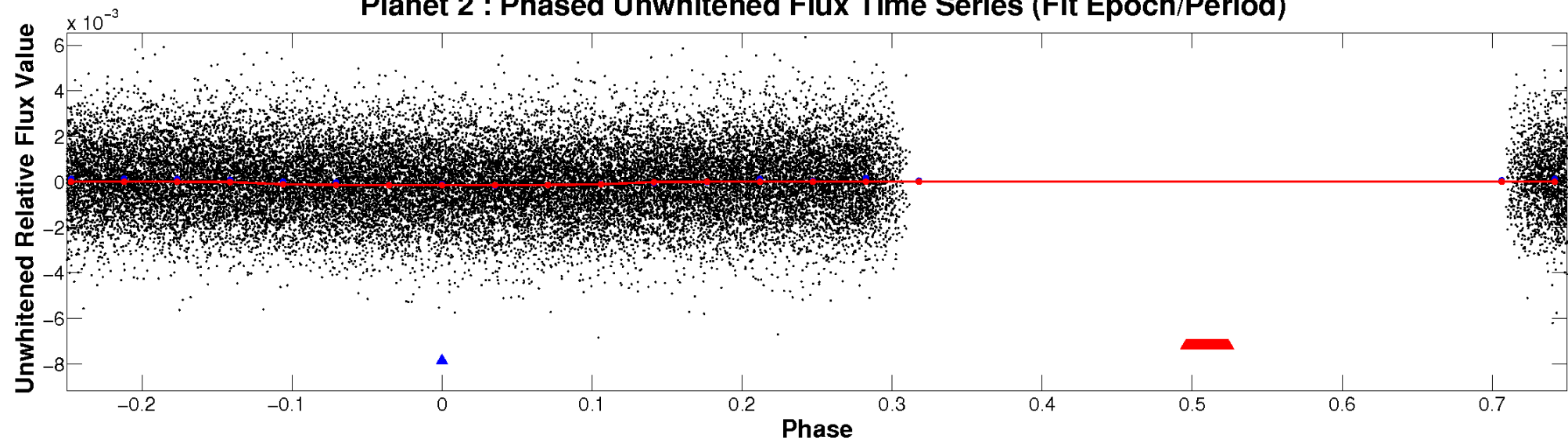
ALT Odd/Even

TCE 010679429-02

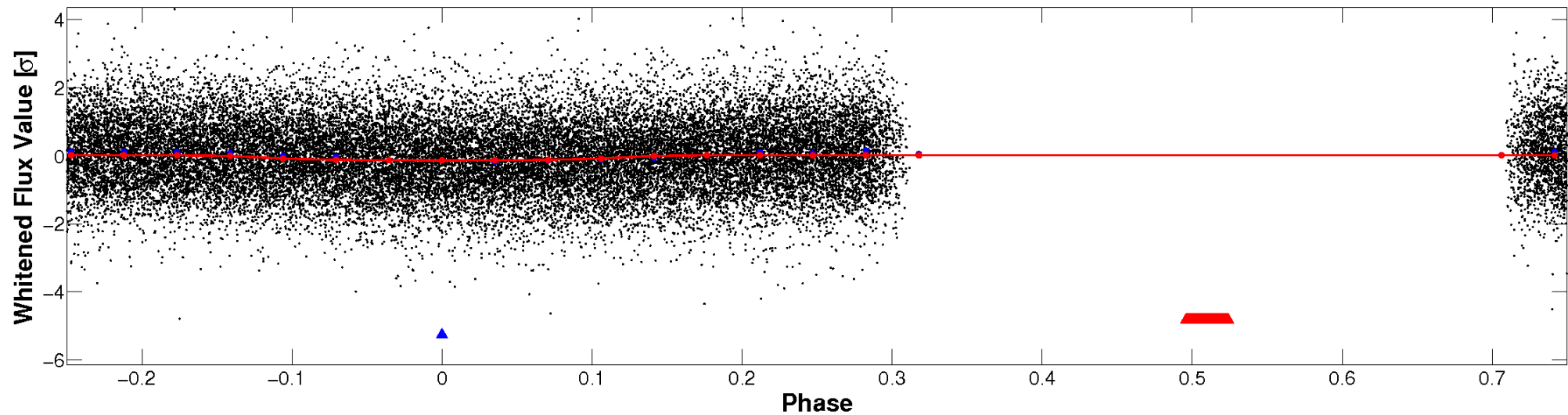


Non-Whitened Vs. Whitened Light Curve

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

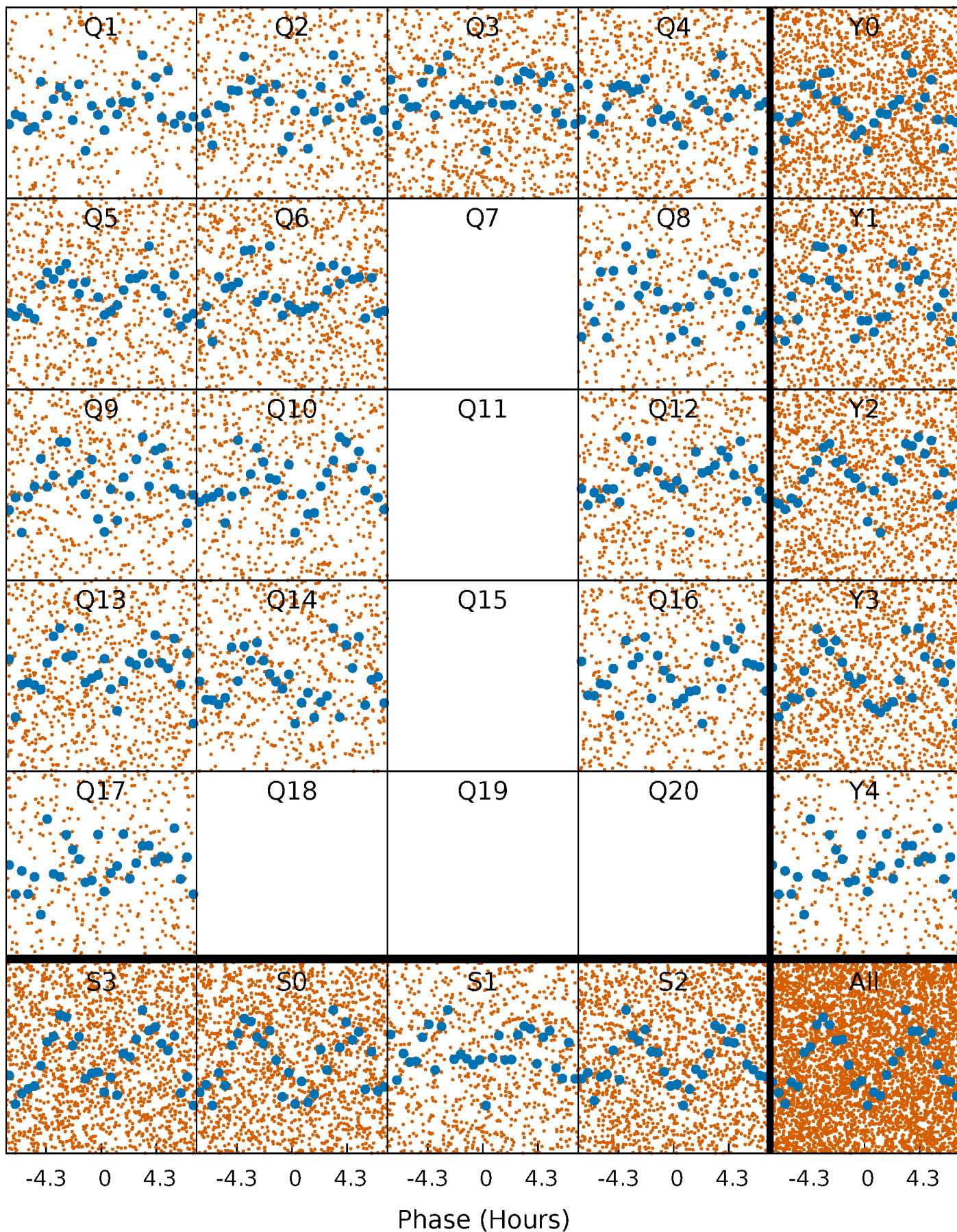


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



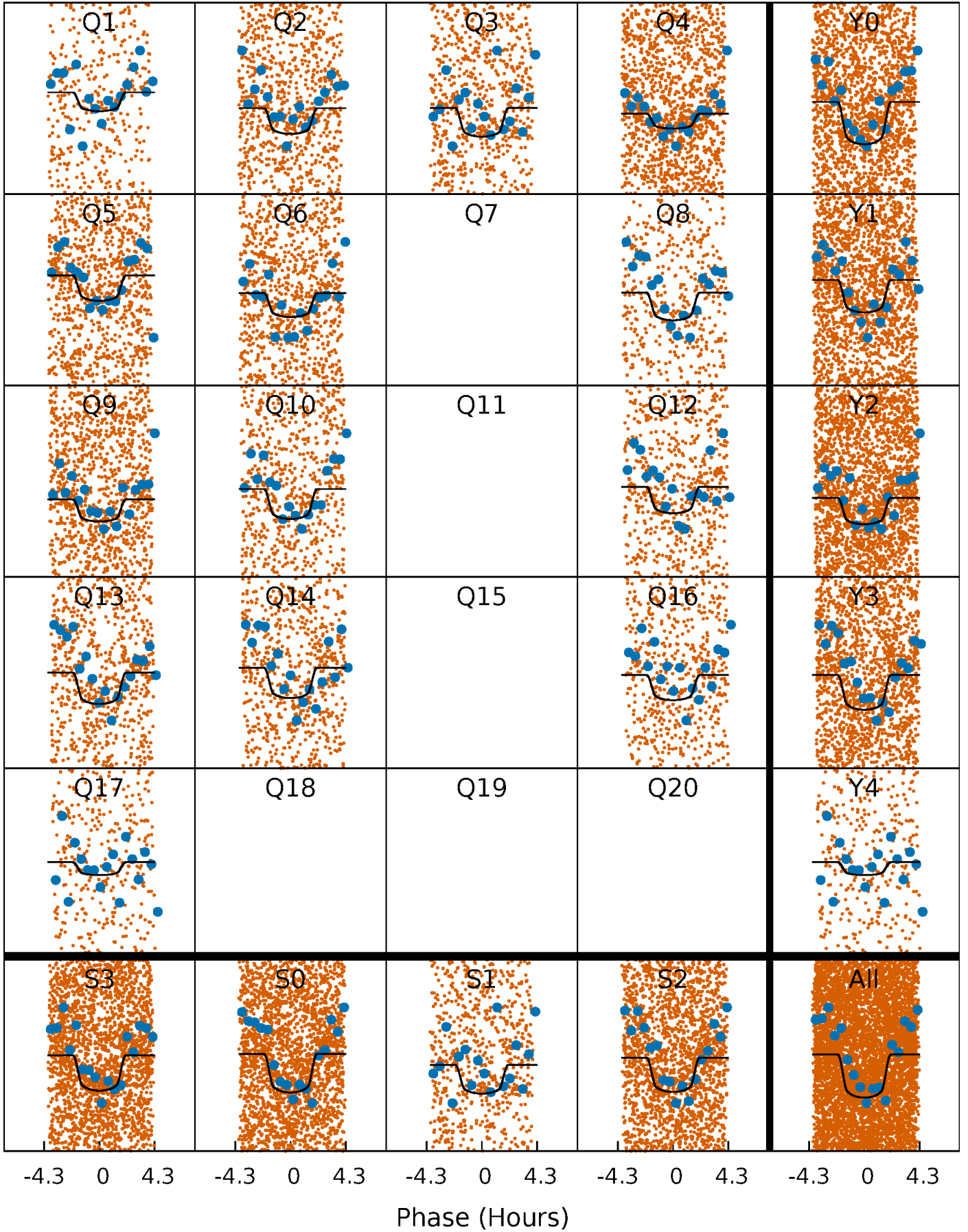
PDC Quarter-Phased Transit Curves

TCE 010679429-02 P= 0.578536 Days $T_0=131.763005$ (BKJD)



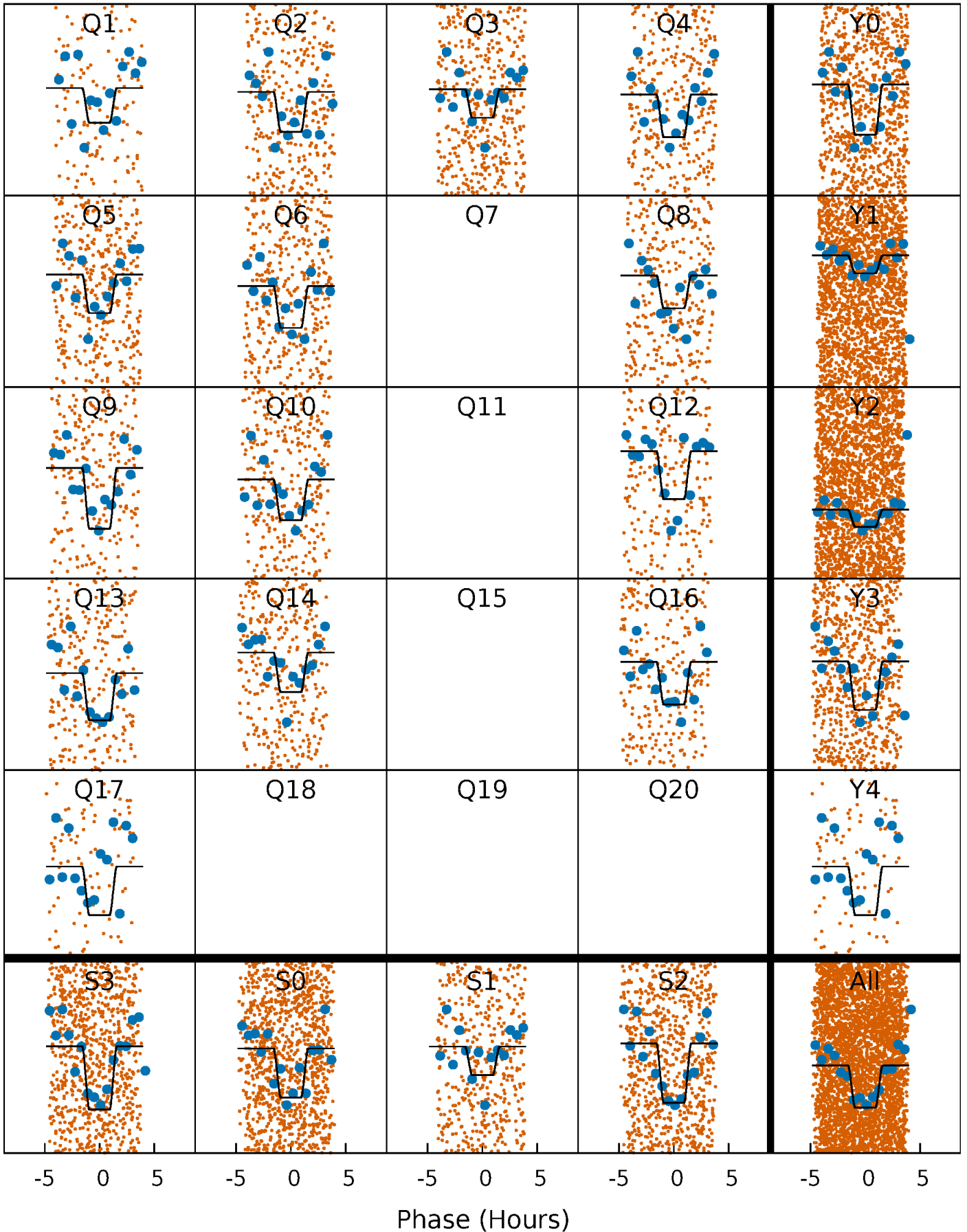
DV Quarter-Phased Transit Curves

TCE 010679429-02 P= 0.578536 Days $T_0=131.763005$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

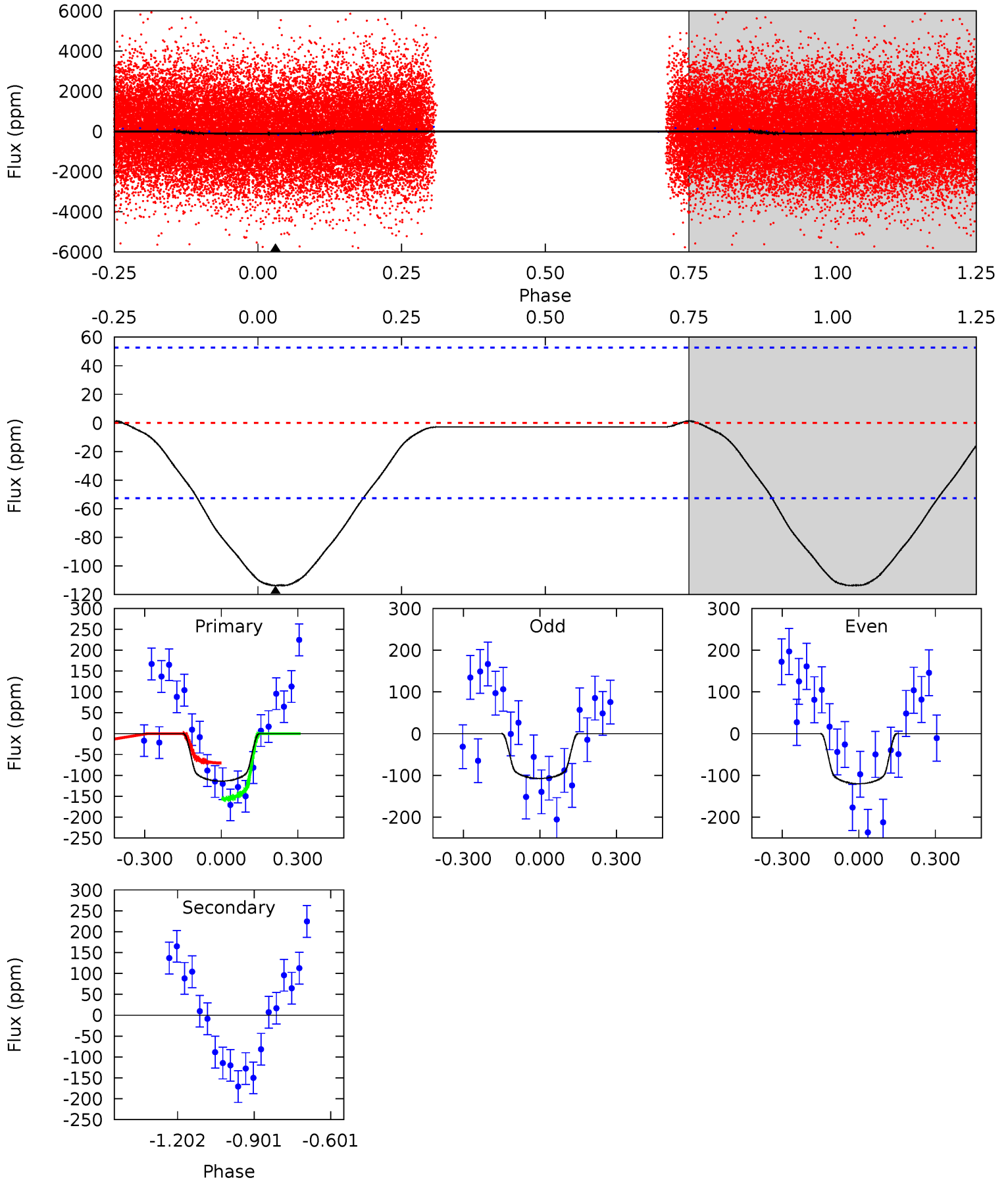
TCE 010679429-02 $P = 0.578557$ Days $T_0 = 131.761067$ (BKJD)



DV Model-Shift Uniqueness Test

010679429-02, P = 0.578536 Days, E = 131.184469 Days

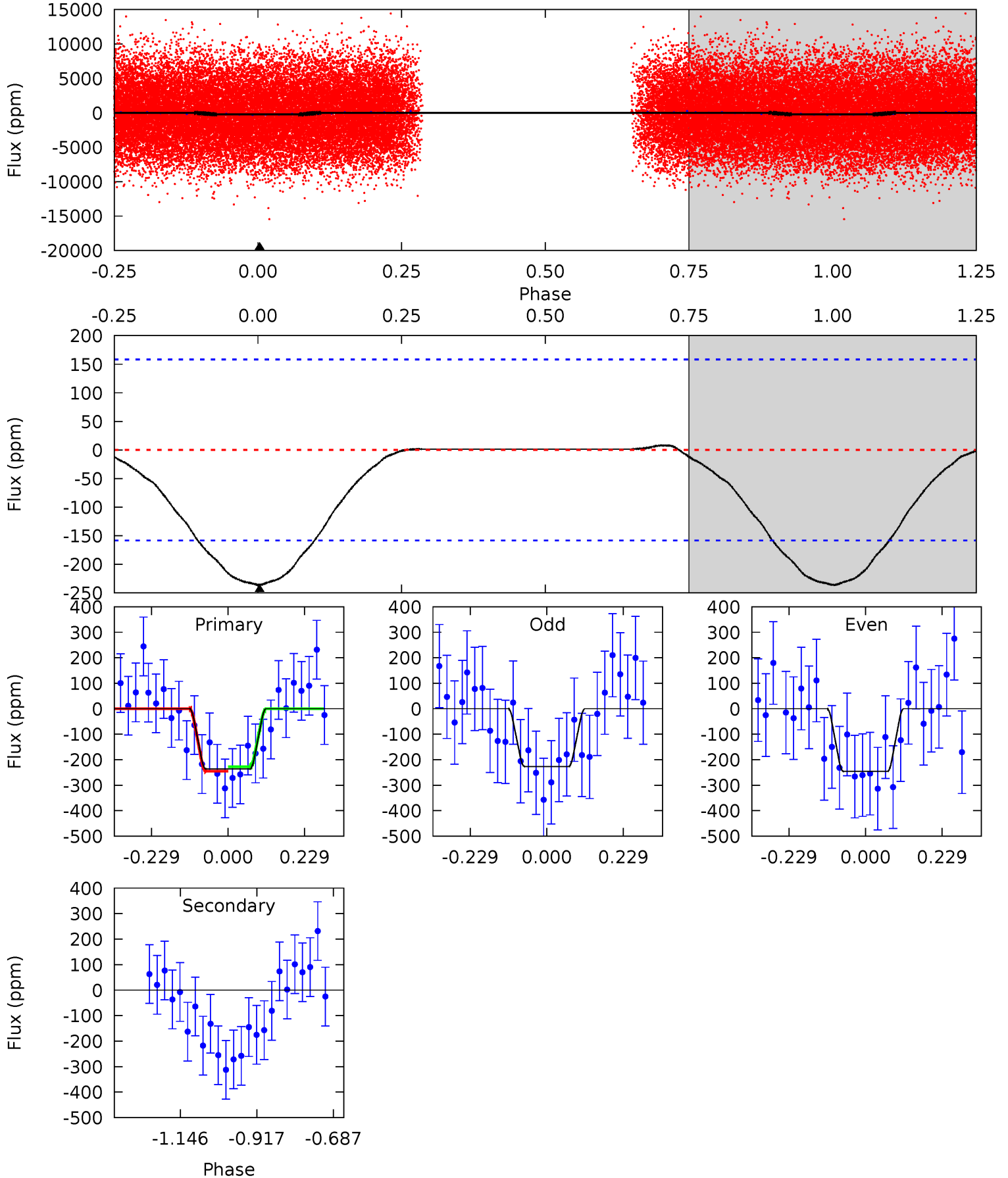
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 9.34 | 0 | 0 | 0 | 4.33 | 1.04 | 0.14 | 9.34 | 9.34 | 0 | 0 | 0.53 | 0.94 | 0.01 | 3.50 |



Alt Model-Shift Uniqueness Test

010679429-02, P = 0.578557 Days, E = 131.182510 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.55 | 0 | 0 | 0 | 4.39 | 1.20 | 0.27 | 6.55 | 6.55 | 0 | 0 | 0.26 | 0.96 | 0.03 | 0.24 |



Stellar Parameters For KIC 010679429

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 7587^{+209}_{-340} | $4.161^{+0.105}_{-0.195}$ | $0.000^{+0.200}_{-0.350}$ | $1.751^{+0.563}_{-0.303}$ | $1.621^{+0.220}_{-0.242}$ | $0.425^{+0.211}_{-0.224}$ |
| | +3%/-4% | +3%/-5% | +inf%/-inf% | +32%/-17% | +14%/-15% | +50%/-53% |
| Source | KIC0 | 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 010679429-02 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|------------------------|----------------------------|
| DV | 0 ± 12 | $2.53^{+0.99}_{-0.92}$ | 4918^{+401}_{-262} | -4235^{+1621}_{-700} | $0.008^{+0.279}_{-0.329}$ |
| Alt. | 0 ± 36 | $3.21^{+1.14}_{-0.95}$ | 4933^{+376}_{-311} | -4318^{+8225}_{-887} | $-0.019^{+0.504}_{-0.507}$ |

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 $A_{obs} \gg 1.0$

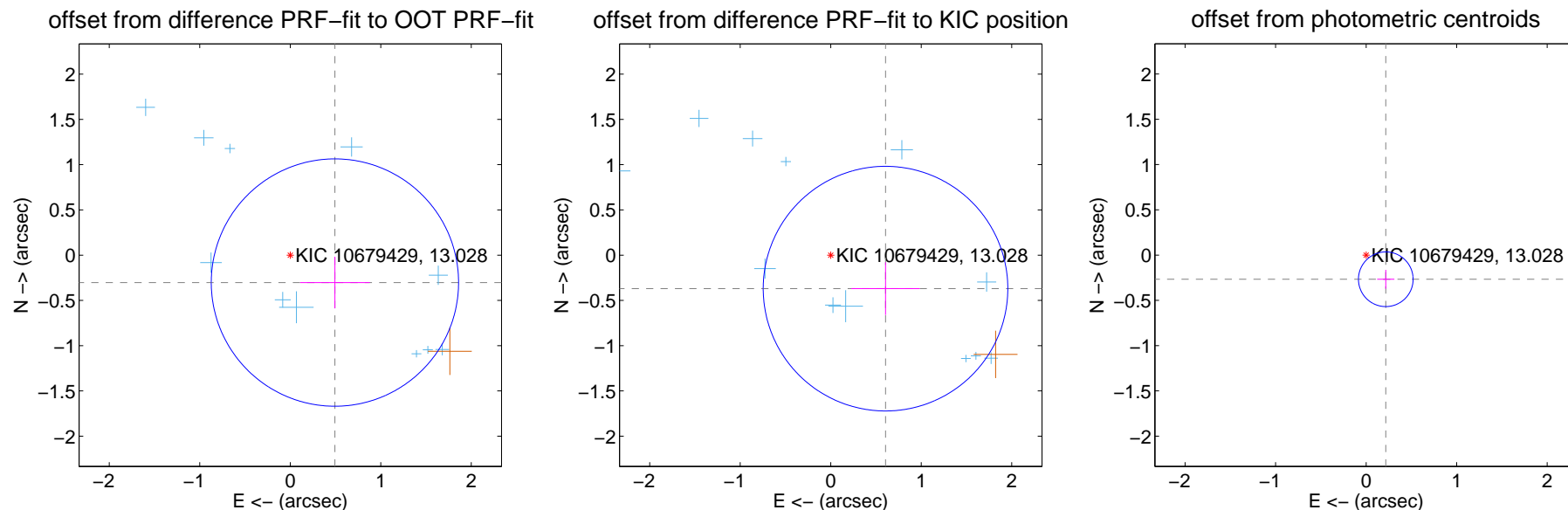
DV Centroid Data

Supplemental centroid analysis for 010679429-02. Kepler magnitude: 13.03. Transit SNR 12.83

There are 12 quarters with good PRF difference image offsets

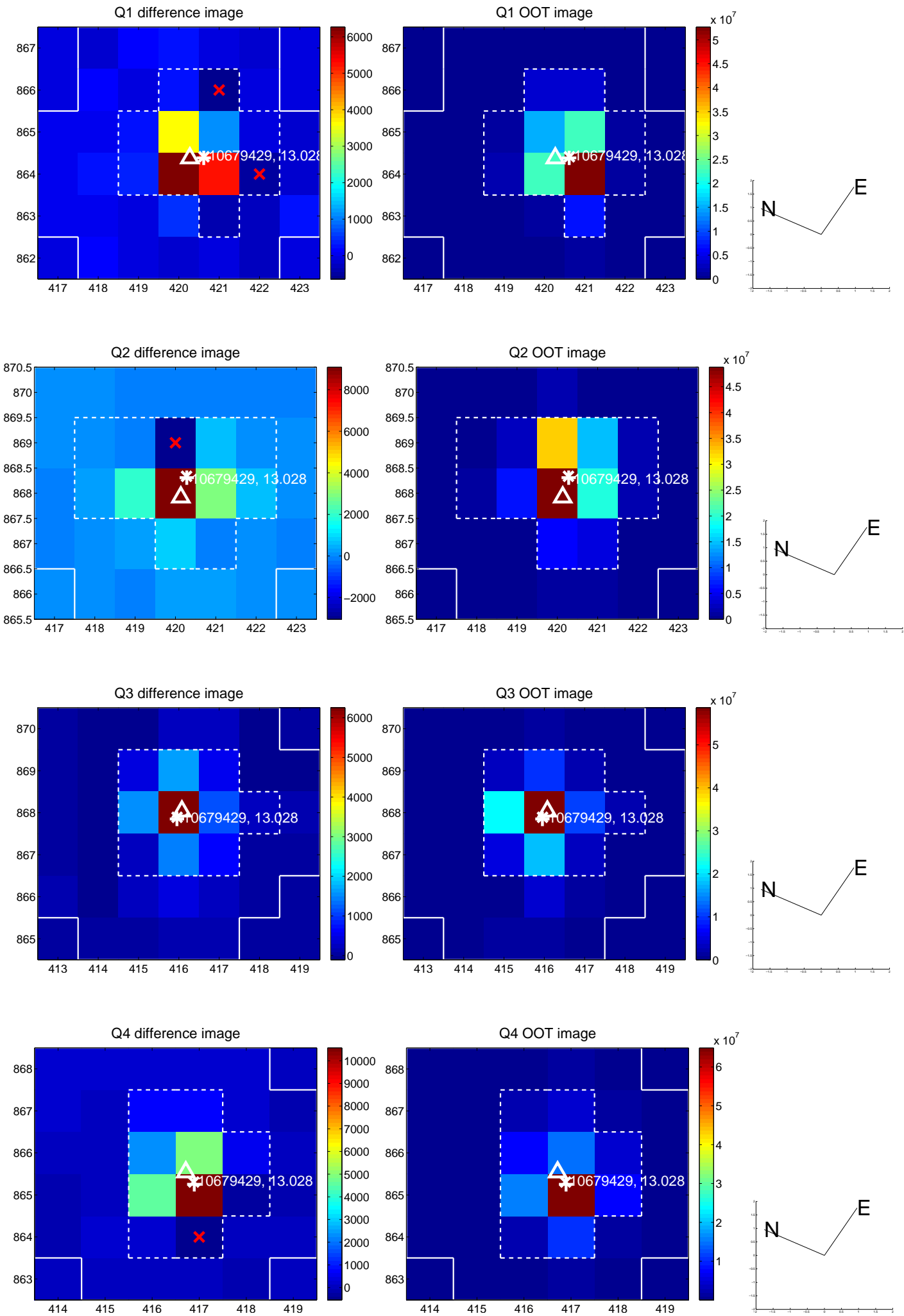
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.579 ± 0.456 | 1.27 | -0.494 ± 0.385 | -0.303 ± 0.286 |
| PRF-fit source offset from KIC position | 0.710 ± 0.451 | 1.58 | -0.606 ± 0.379 | -0.370 ± 0.291 |
| photometric centroid source offset | 0.34 ± 0.10 | 3.42 | -0.22 ± 0.09 | -0.27 ± 0.10 |

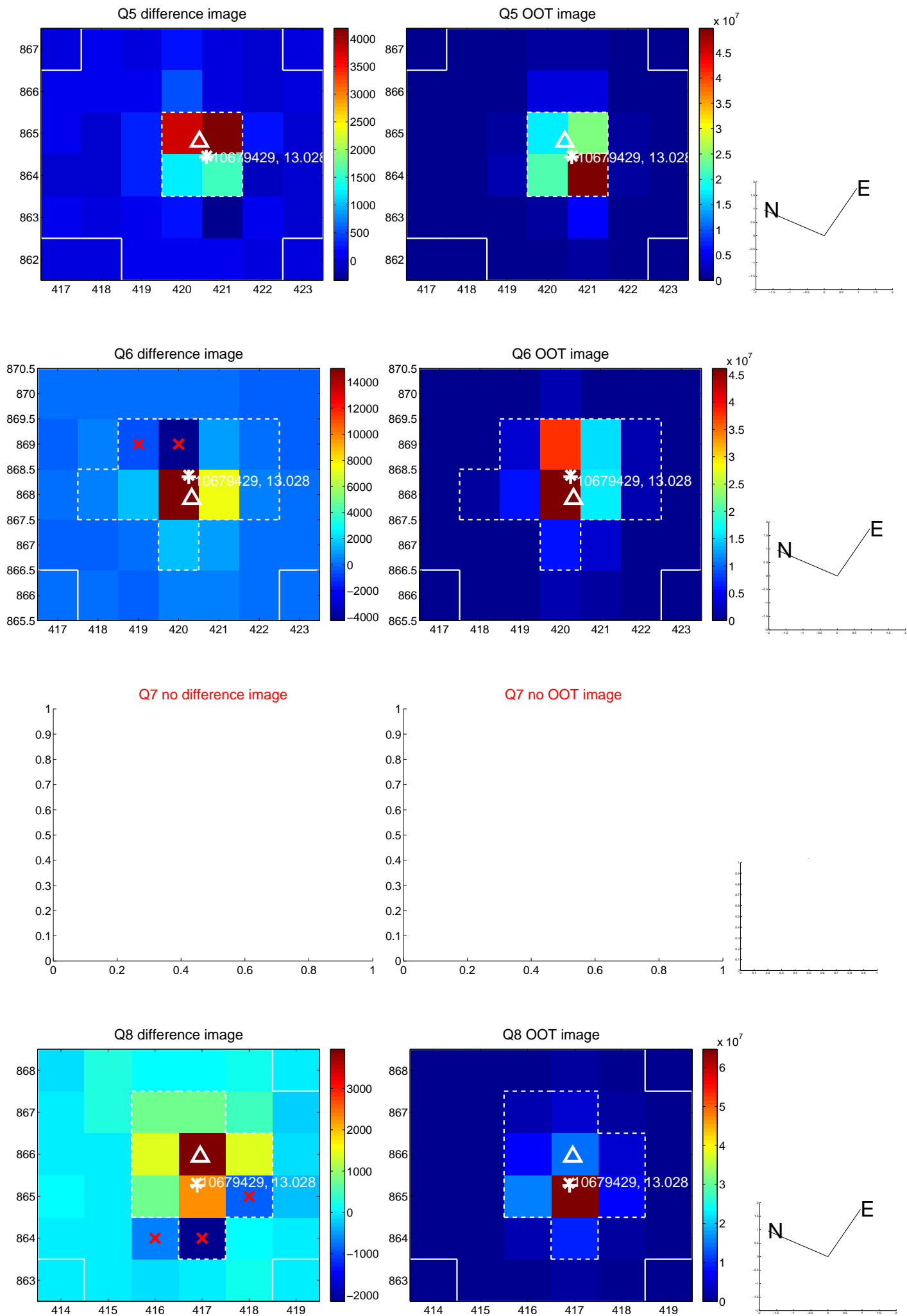


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

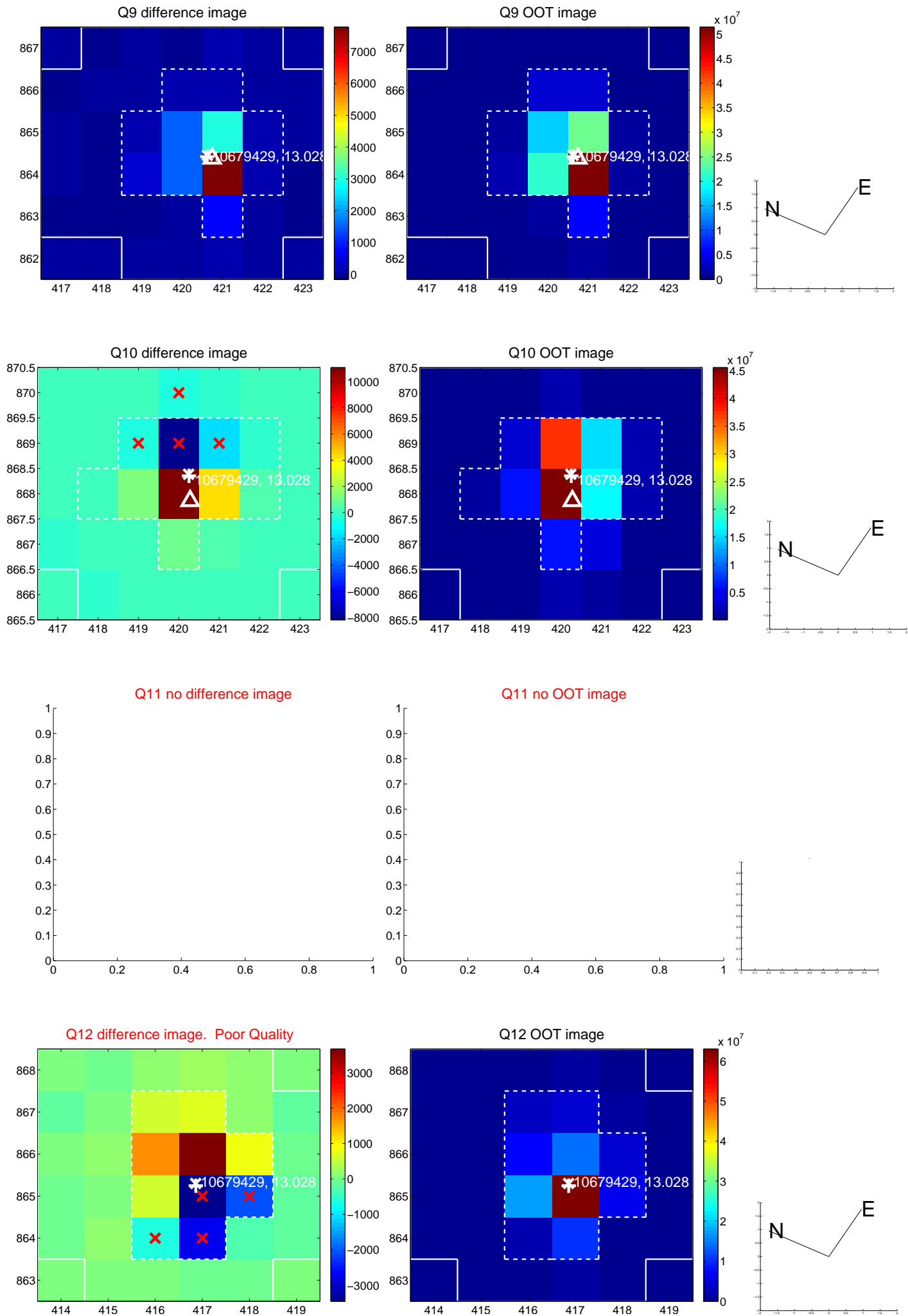
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



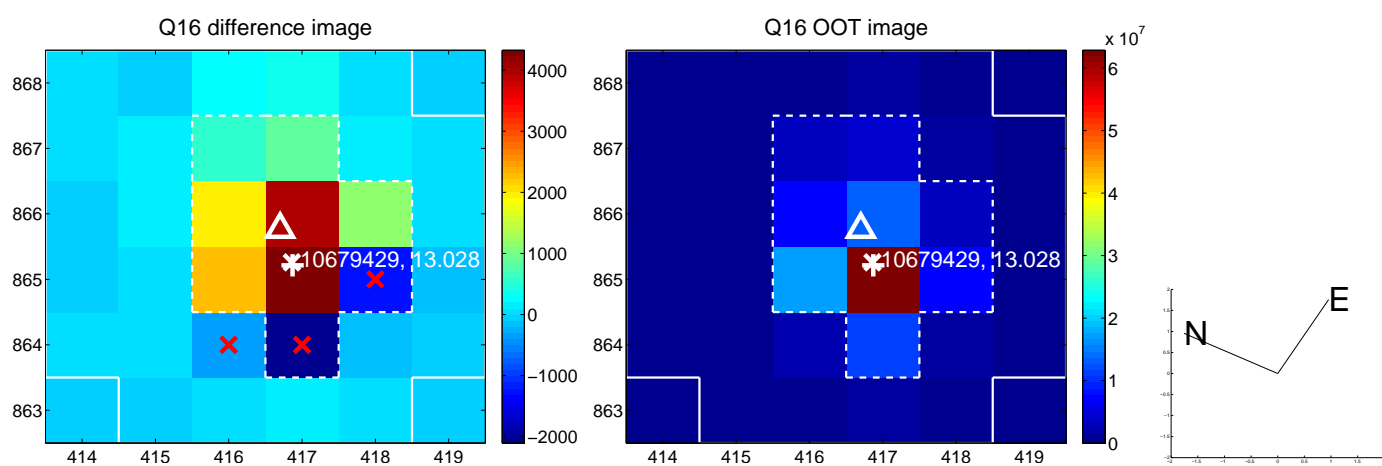
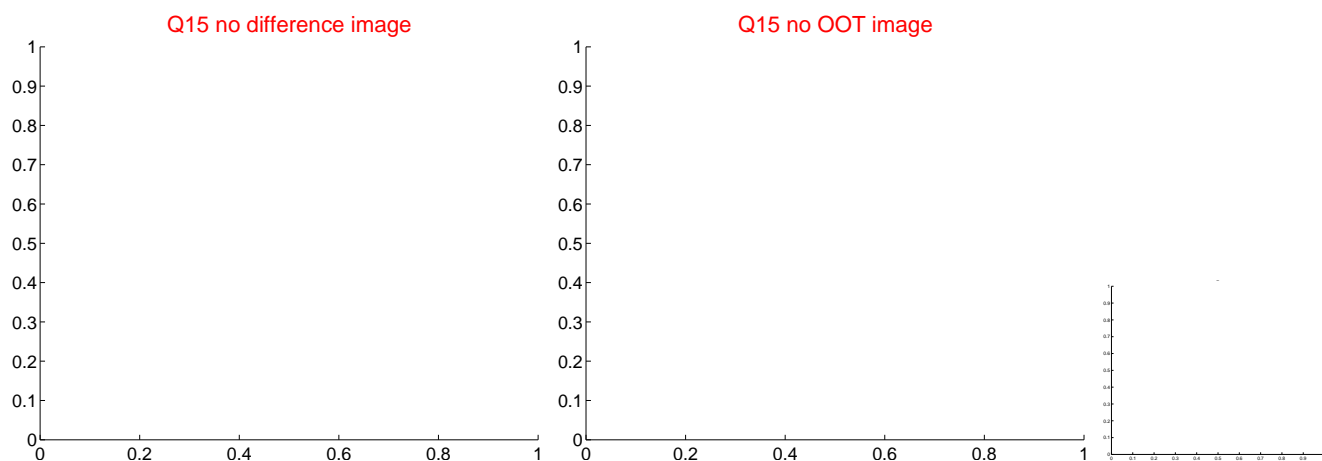
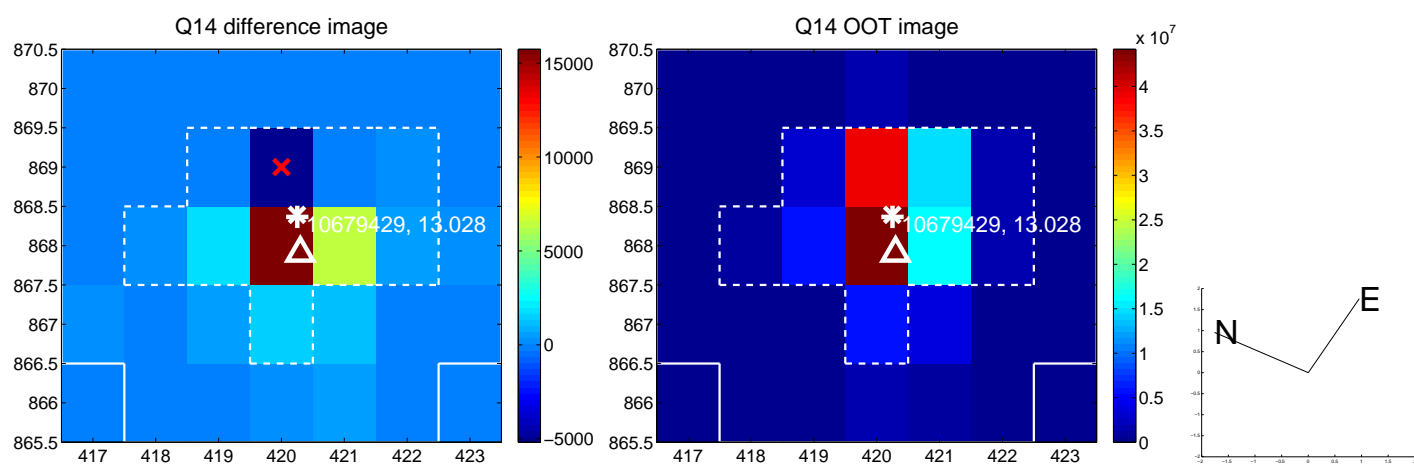
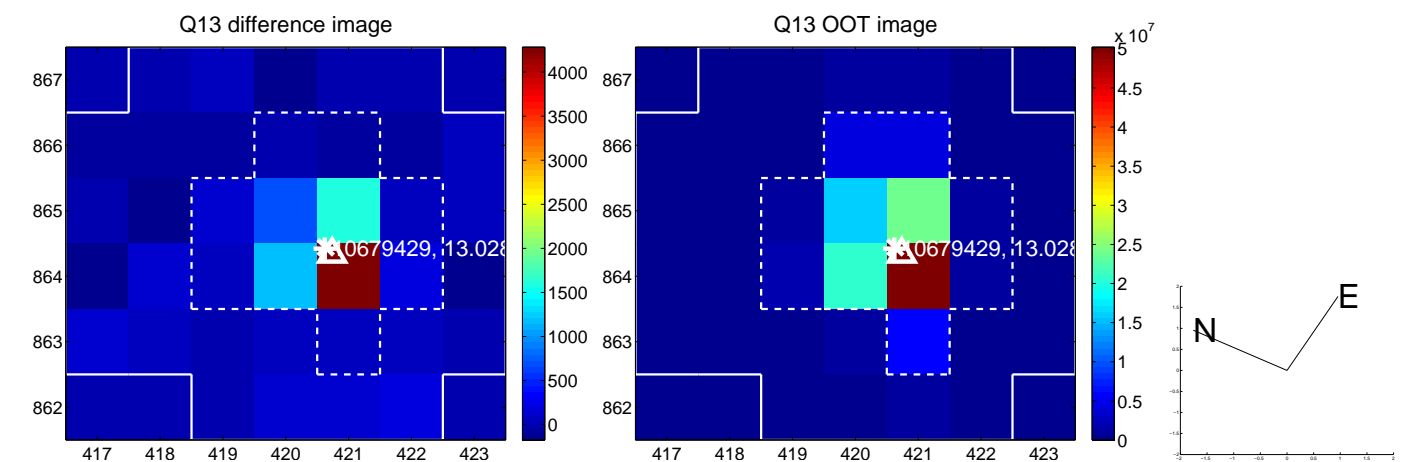
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



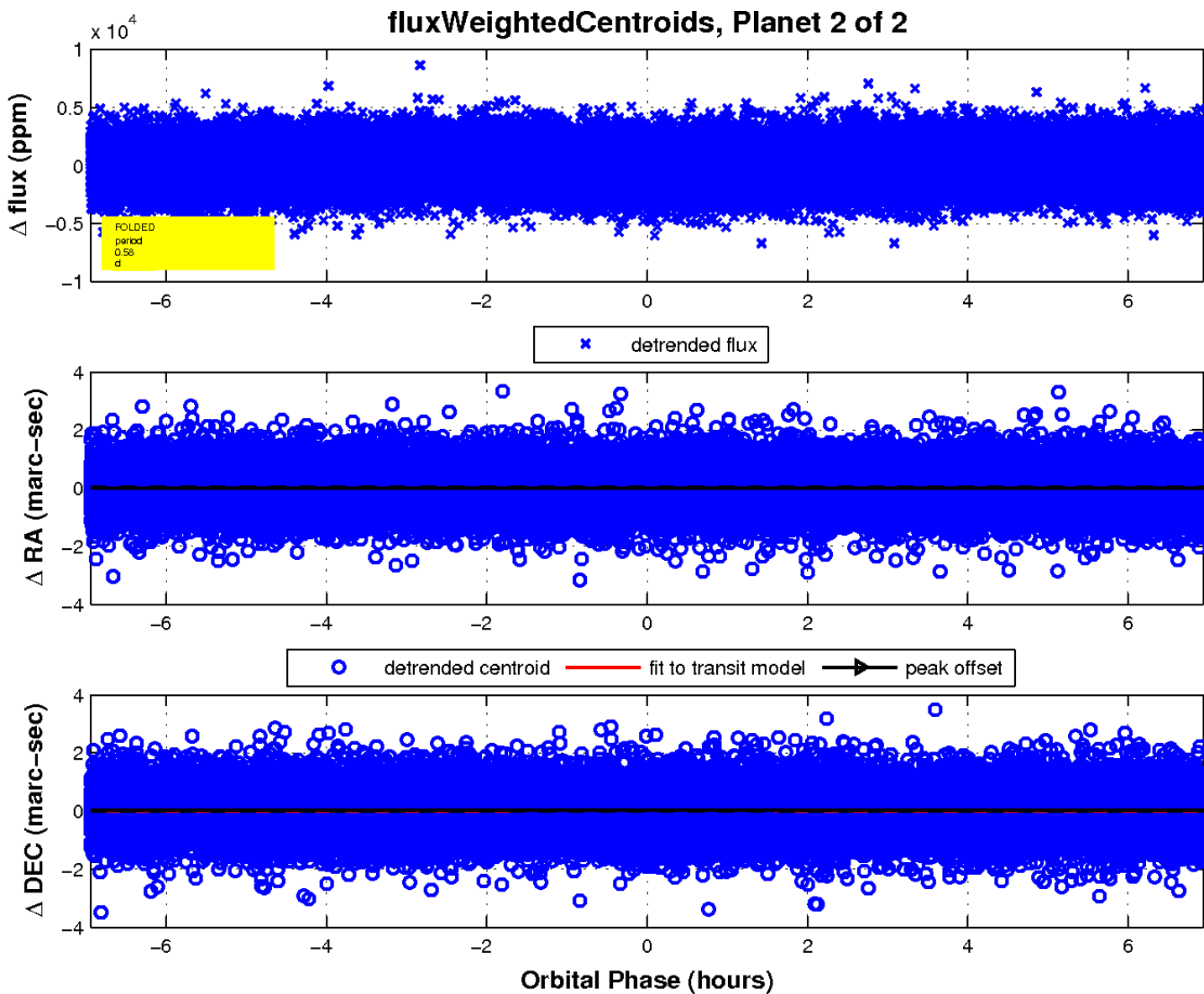
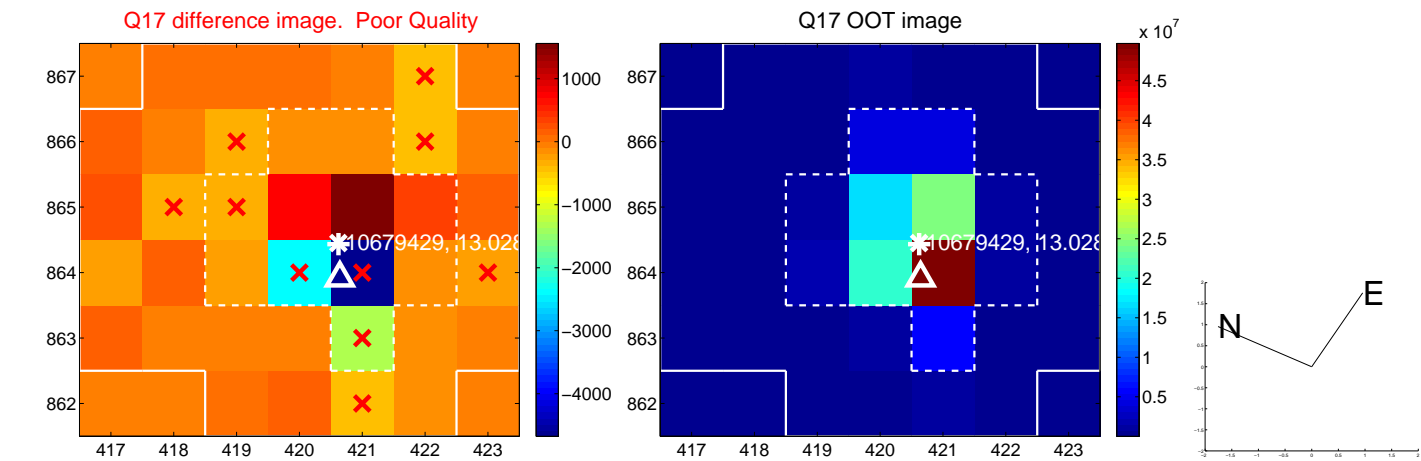
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

