

KIC 002584879

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 002584879-01 | OBS | No | 0.898098 | 131.711970 | 4.4 | 5.163 | 9.6 | 3.6 | 1.28 | 6392 | 0.27 | 7278.52 |
| 002584879-02 | OBS | No | 87.134713 | 142.506802 | 56.4 | 17.734 | 8.2 | 4.7 | 1.28 | 6392 | 1.10 | 16.33 |
| 002584879-04 | OBS | No | 111.838664 | 227.391886 | 94.4 | 1.937 | 9.6 | 4.0 | 1.28 | 6392 | 1.44 | 11.70 |
| 002584879-05 | OBS | No | 73.829513 | 171.325091 | 110.6 | 3.728 | 8.4 | 8.8 | 1.28 | 6392 | 1.53 | 20.36 |
| 002584879-06 | OBS | No | 34.989848 | 154.176402 | 135.8 | 1.606 | 8.3 | 9.0 | 1.28 | 6392 | 1.56 | 55.11 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 002584879-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED |
| 002584879-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED |
| 002584879-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED |
| 002584879-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED |
| 002584879-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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.

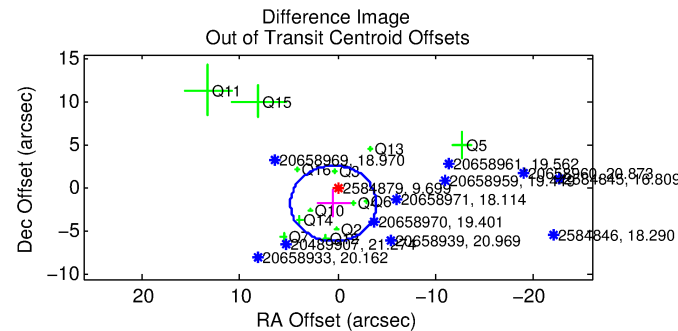
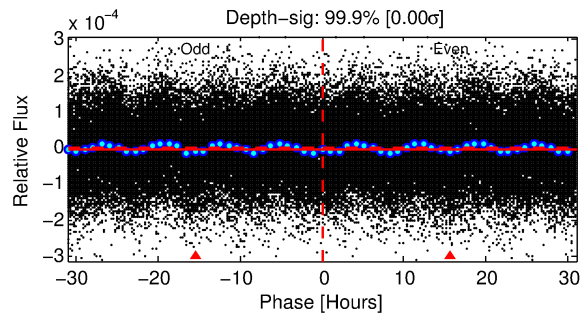
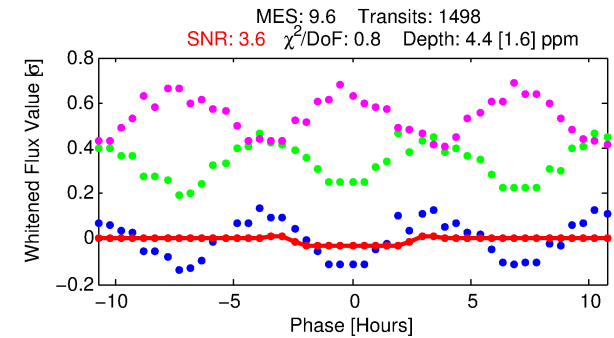
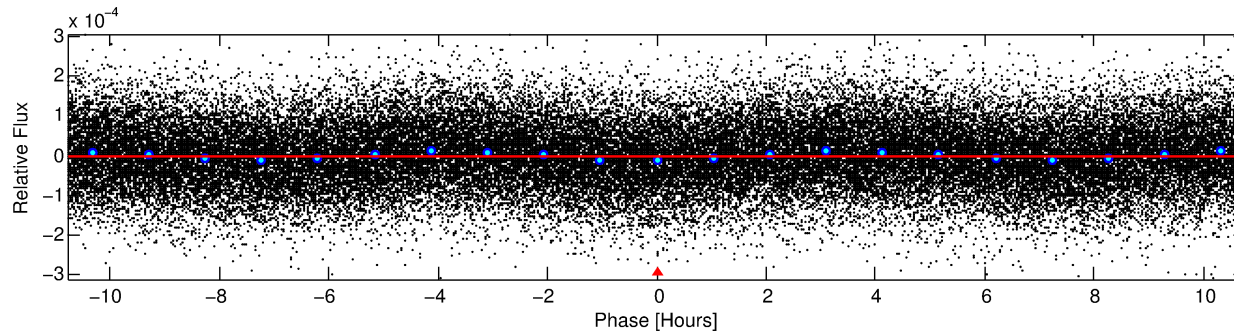
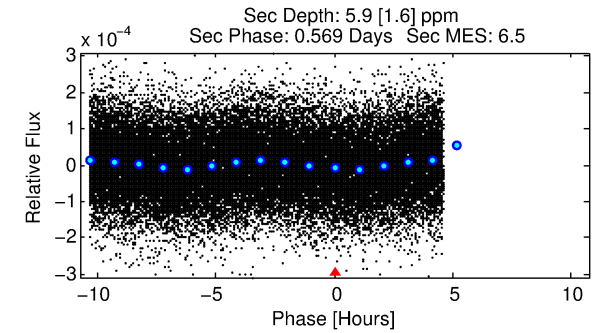
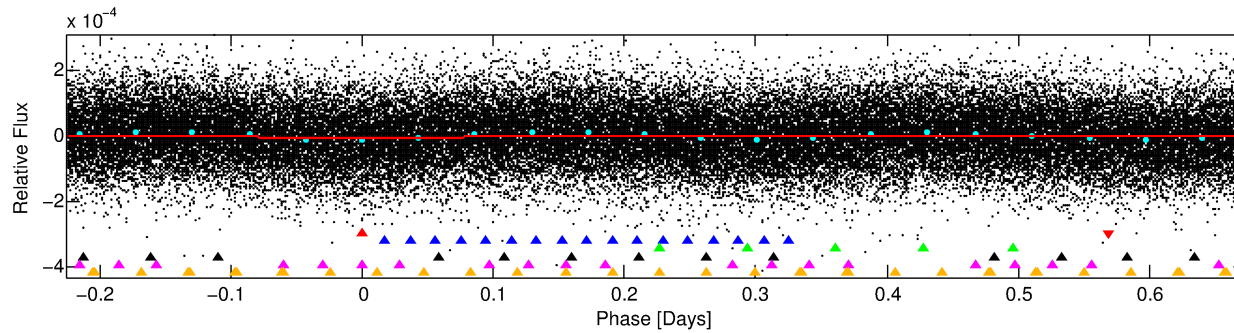
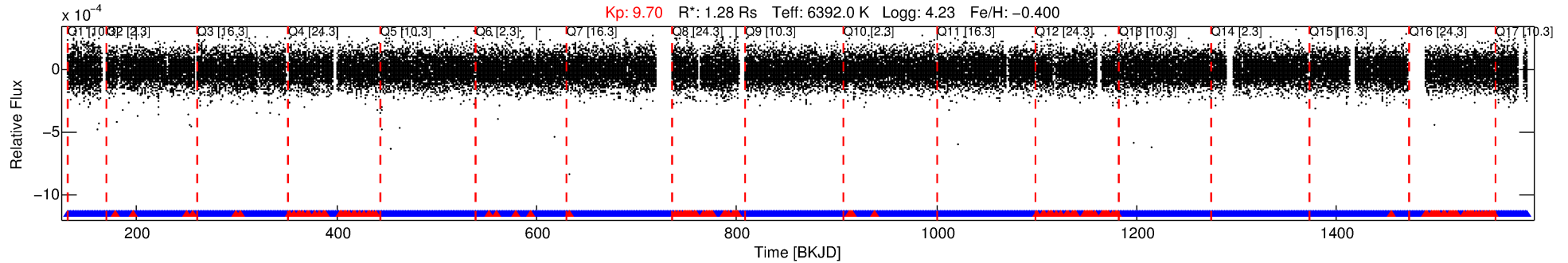
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002584879-01

No Significant Match Found

DV One-Page Summary

KIC: 2584879 Candidate: 1 of 6 Period: 0.898 d



DV Fit Results:

Period = 0.89810 [0.00003] d
Epoch = 131.7120 [0.0092] BKJD
Rp/R* = 0.0019 [0.0039]
a/R* = 1.46 [8.27]
b = 0.10 [105.66]
Seff = 7278.51 [2879.20]
Teq = 2355 [233] K
Rp = 0.27 [0.54] Re
a = 0.0184 [0.0045] AU
Ag = 15.20 [61.21] [0.23σ]
Teffp = 7190 [7215] K [0.67σ]

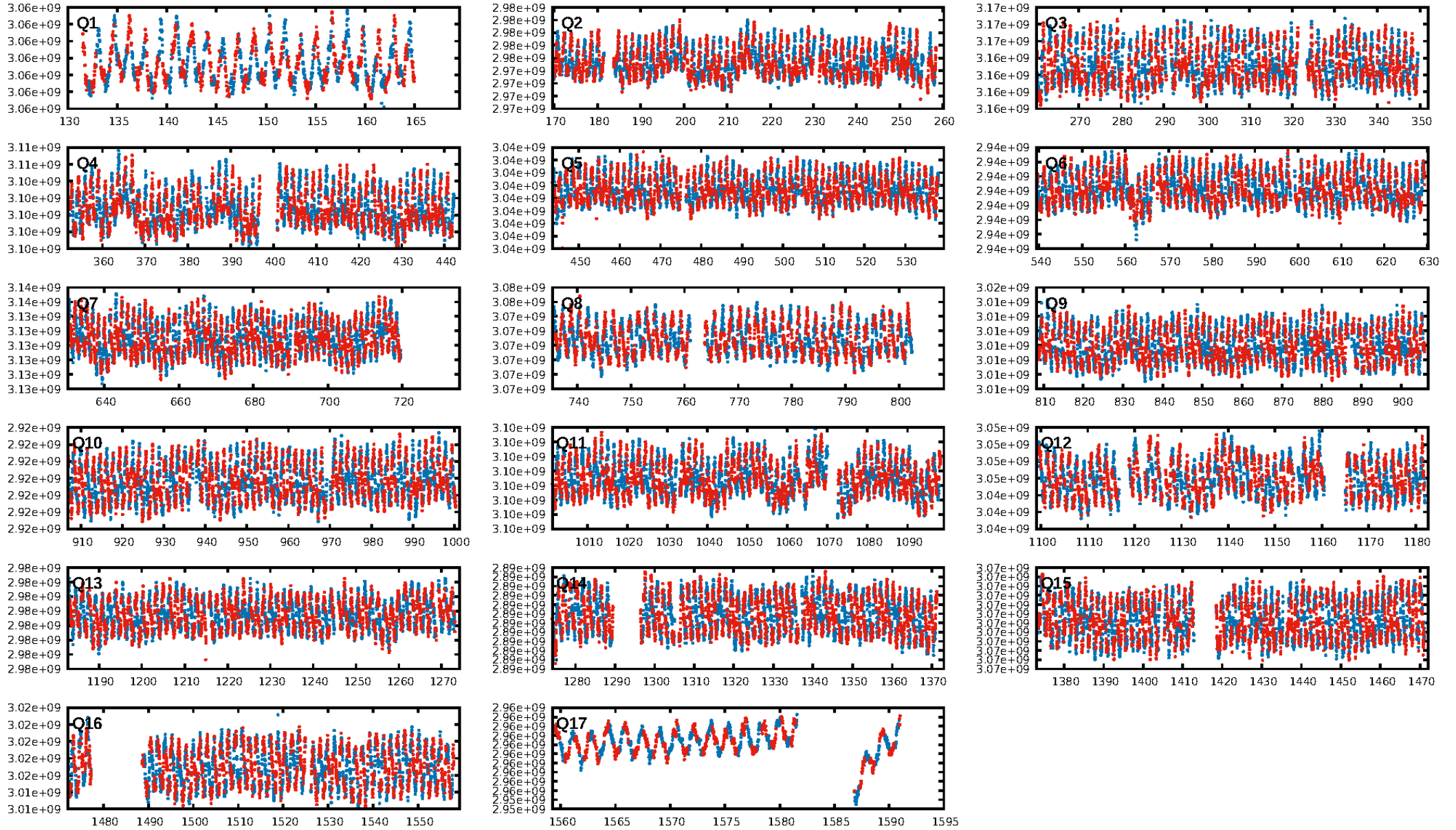
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [151.31σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.58e-15
RollingBand-fgt: 0.90 [1292/1431]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 1.827 arcsec [1.25σ]
KicOffset-rm: 1.899 arcsec [1.16σ]
OotOffset-st: 4/4/3/2 [13]
KicOffset-st: 4/4/3/2 [13]
DiffImageQuality-fgm: 0.08 [1/13]
DiffImageOverlap-fno: 1.00 [17/17]

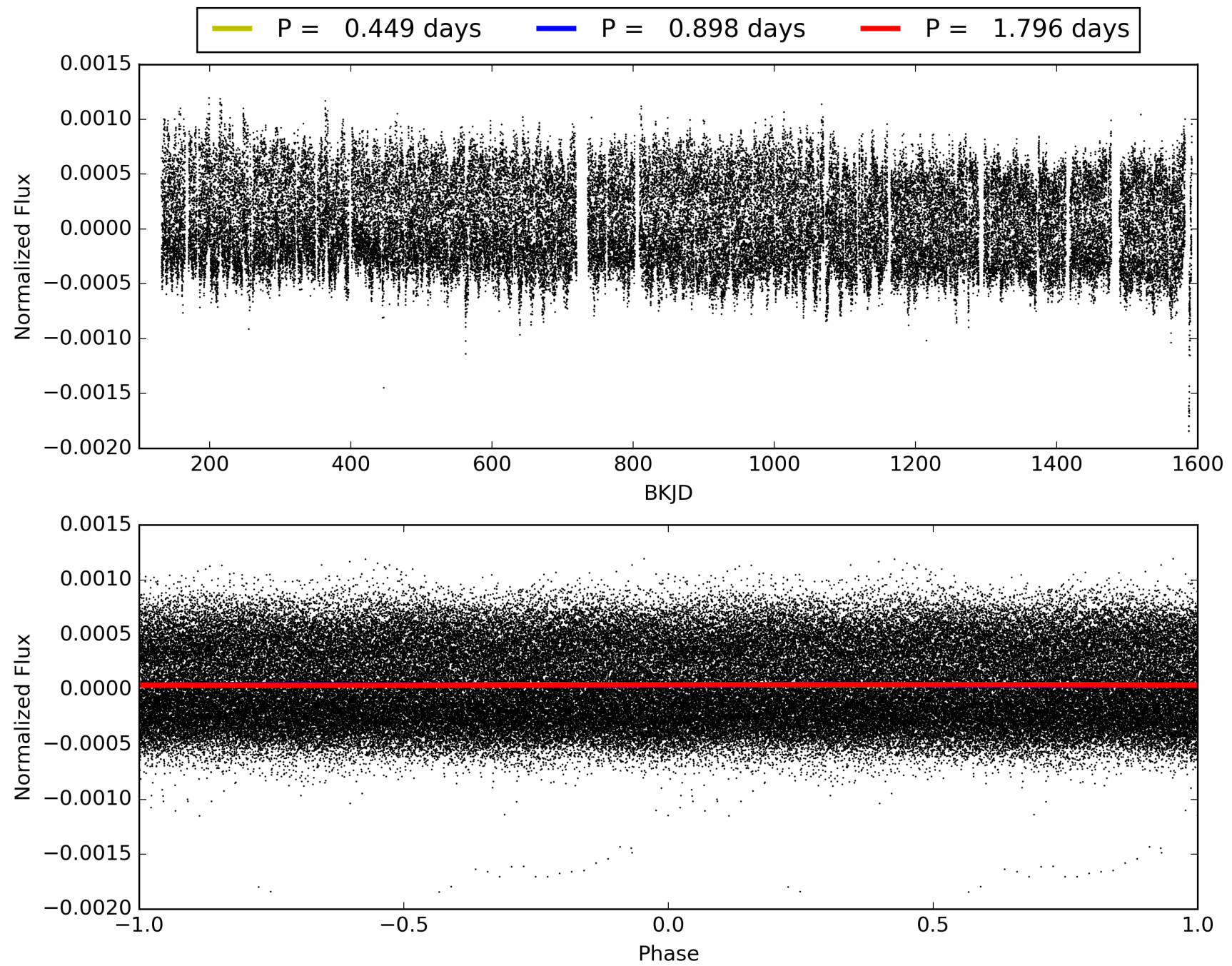
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:15:22 Z

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

TCE 002584879-01, PDC Light Curves

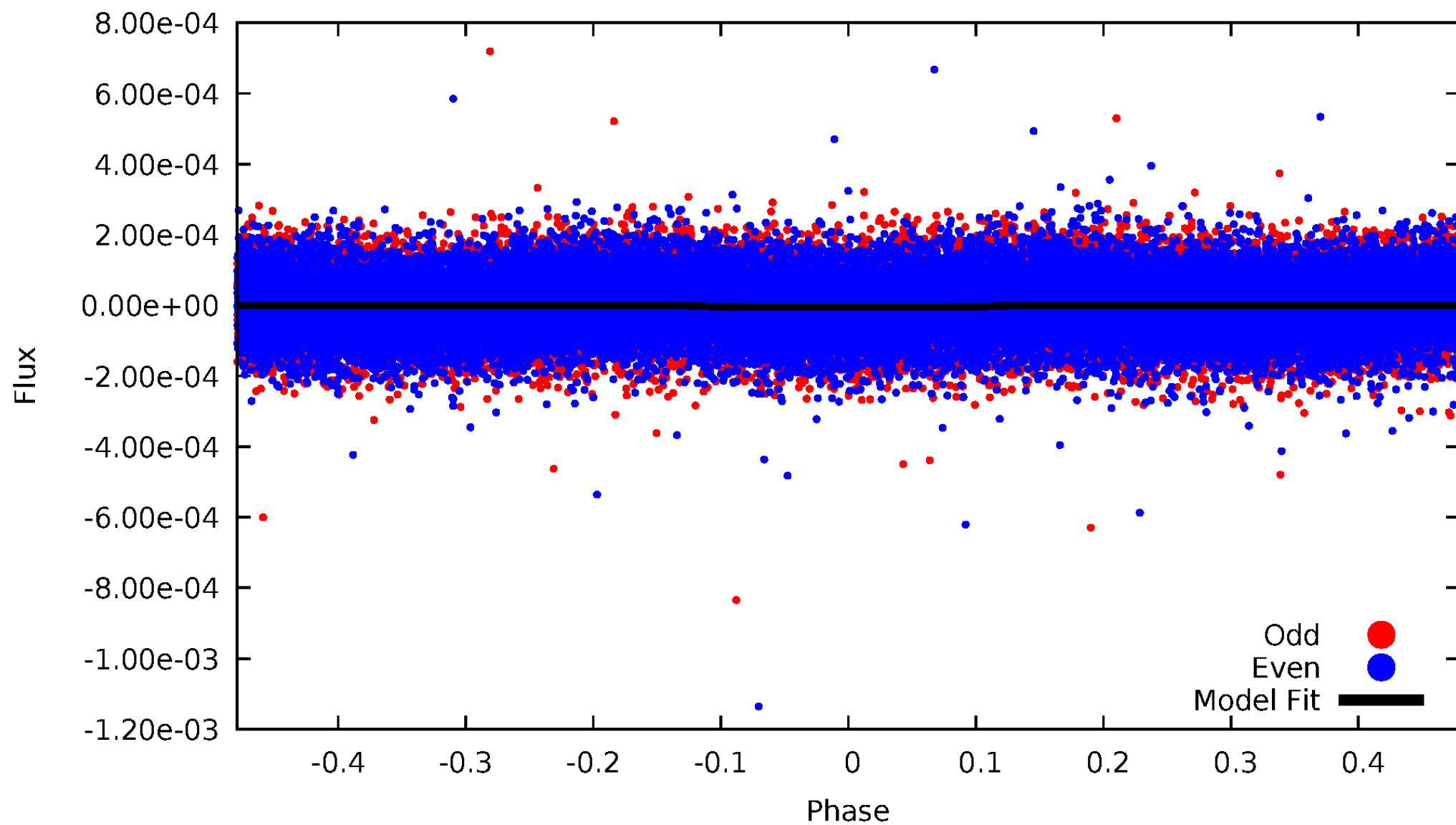


TCE 002584879-01



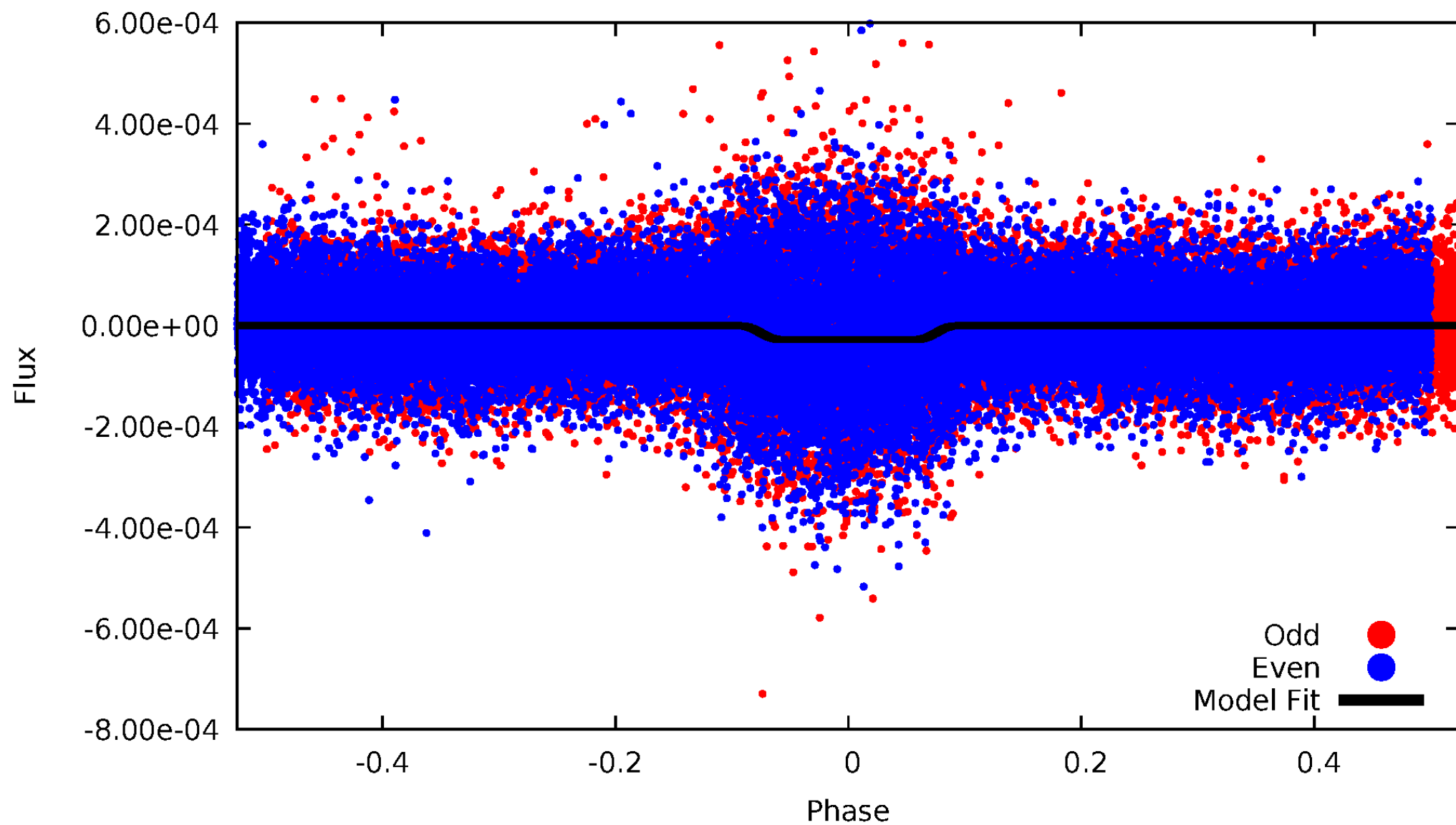
DV Odd/Even

TCE 002584879-01

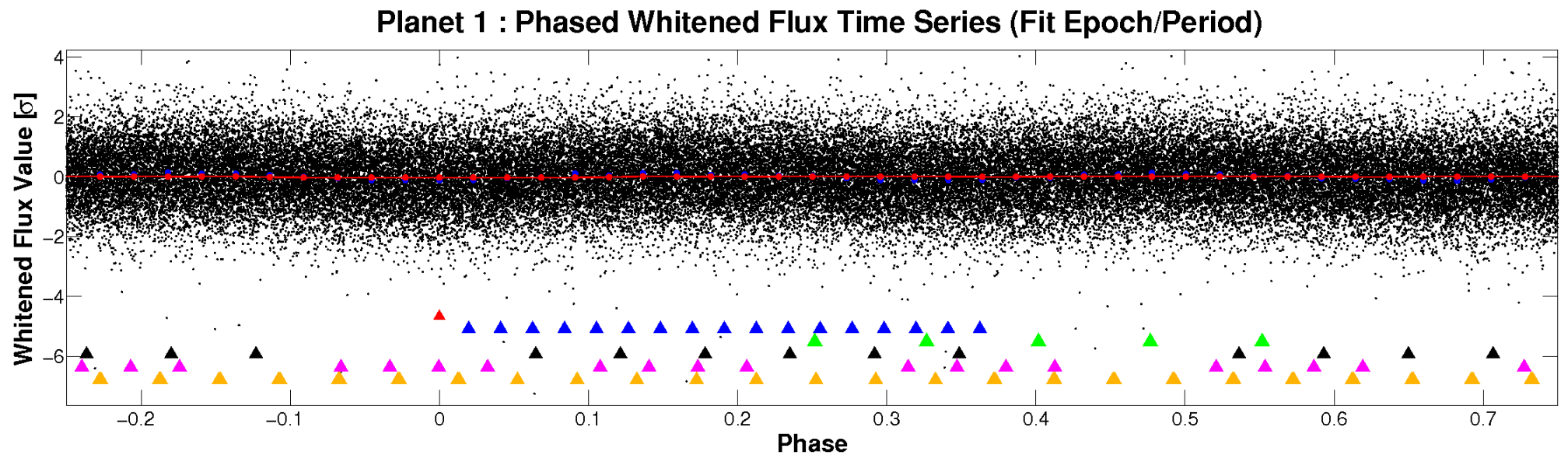
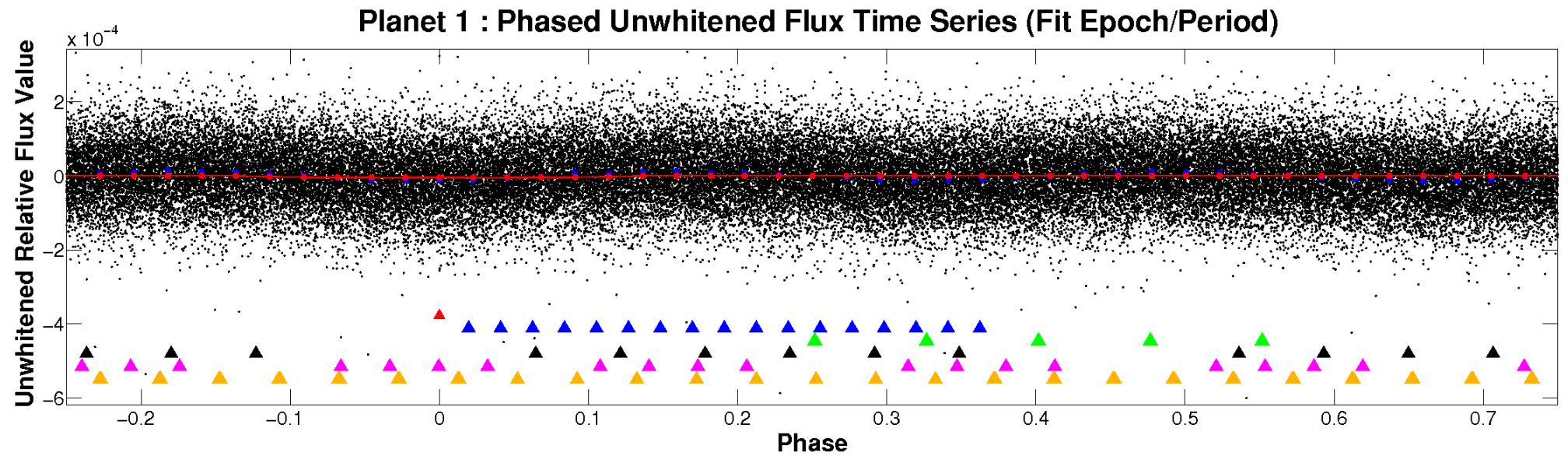


ALT Odd/Even

TCE 002584879-01

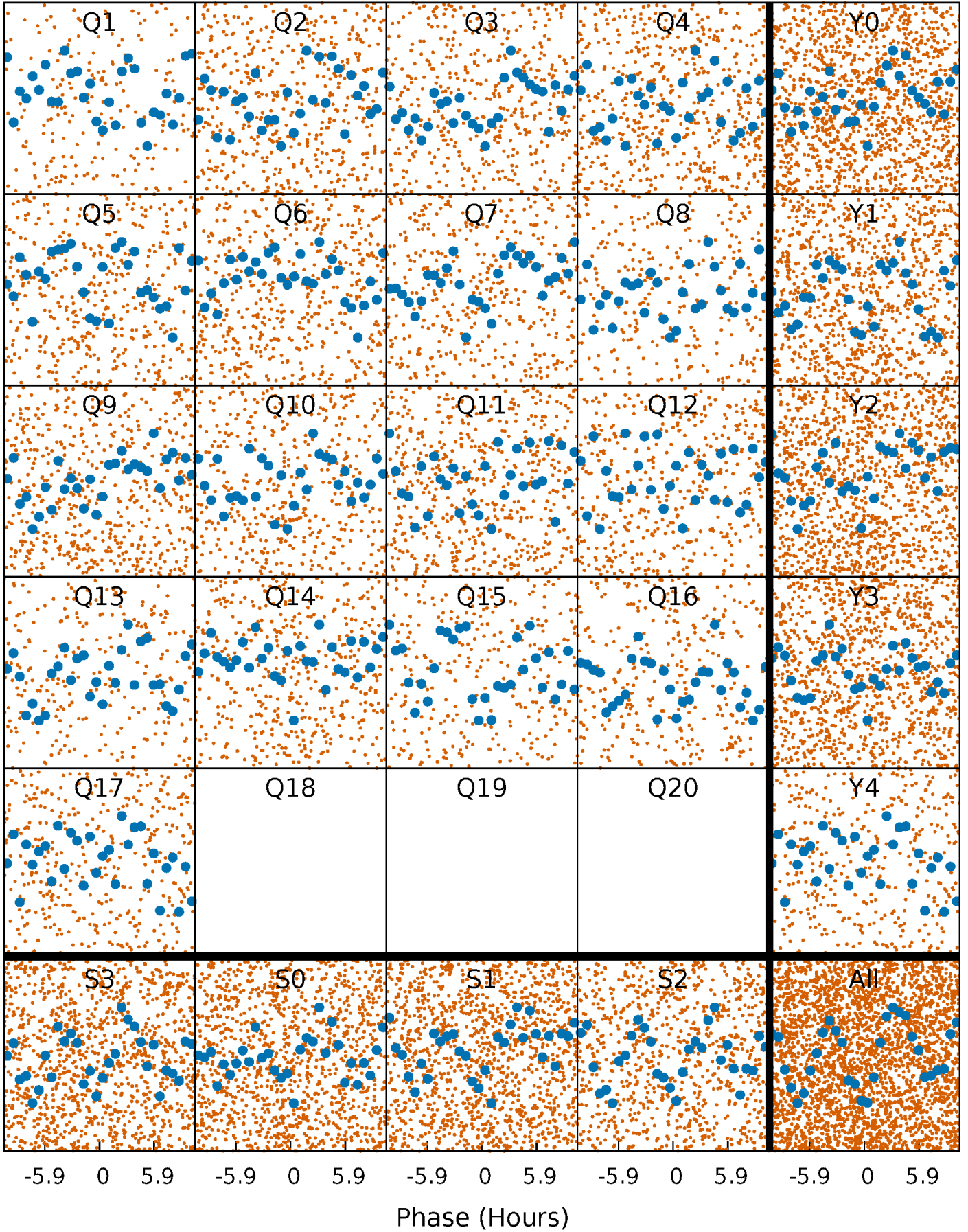


Non-Whitened Vs. Whitened Light Curve



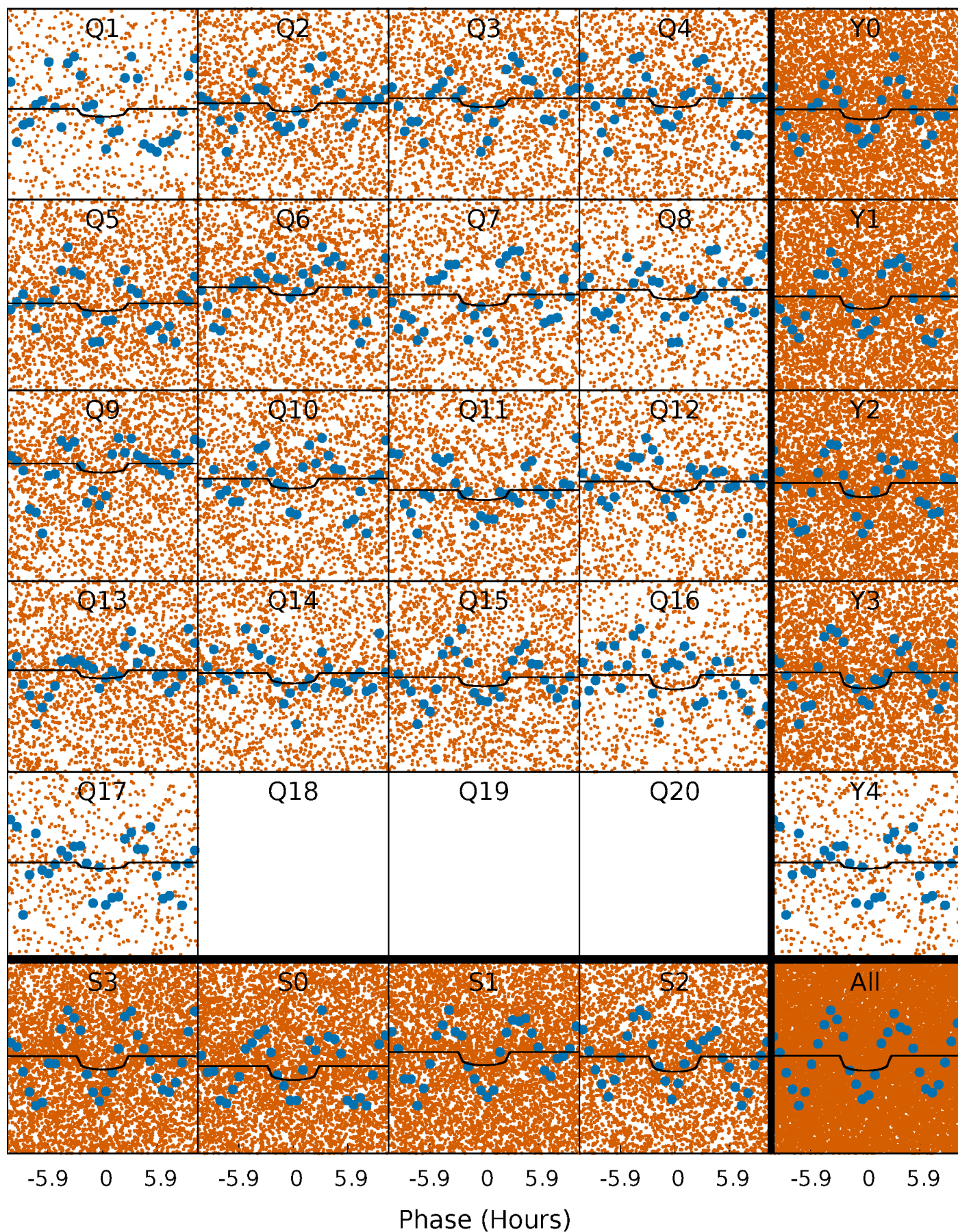
PDC Quarter-Phased Transit Curves

TCE 002584879-01 P= 0.898098 Days $T_0=131.711970$ (BKJD)



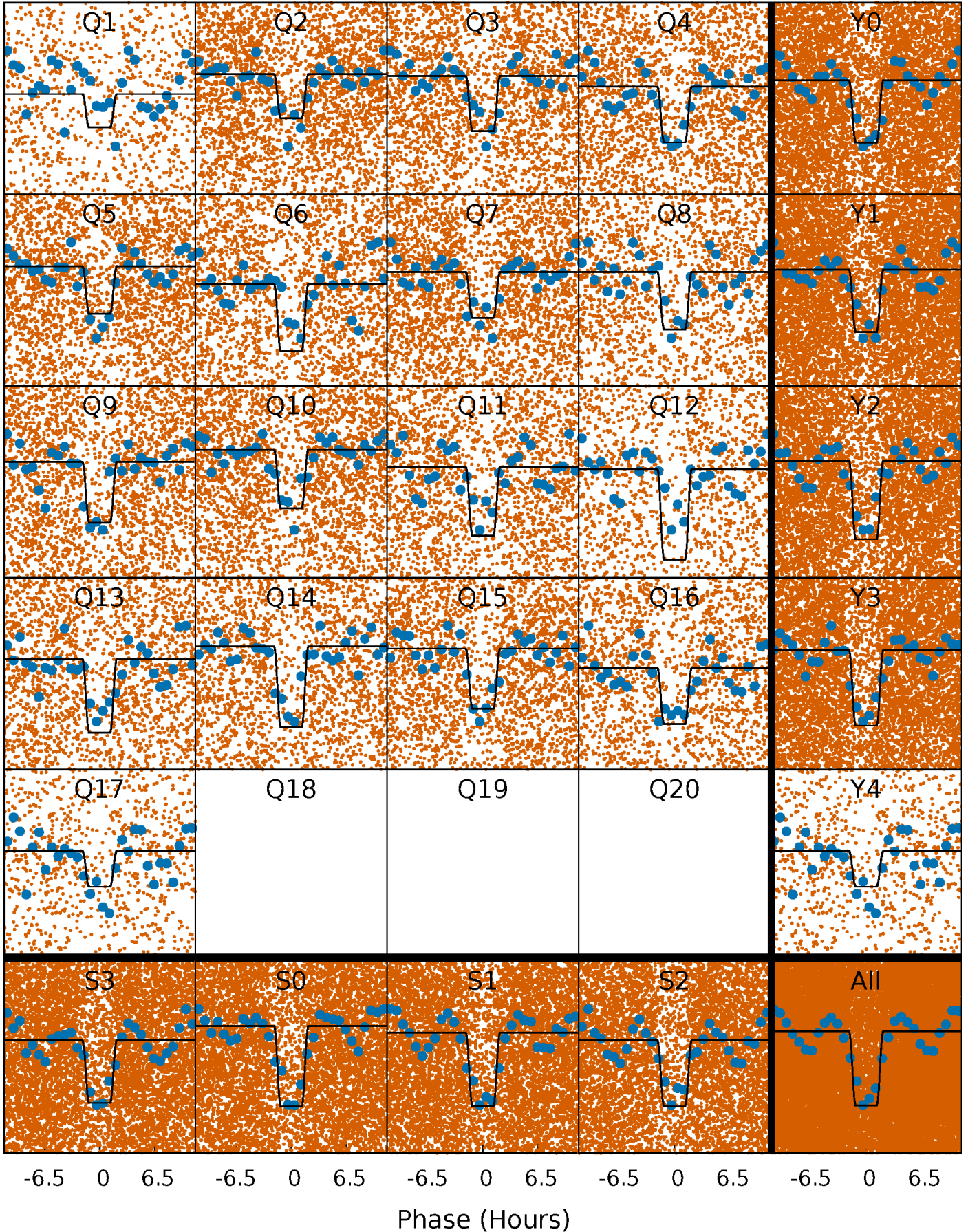
DV Quarter-Phased Transit Curves

TCE 002584879-01 P= 0.898098 Days $T_0=131.711970$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

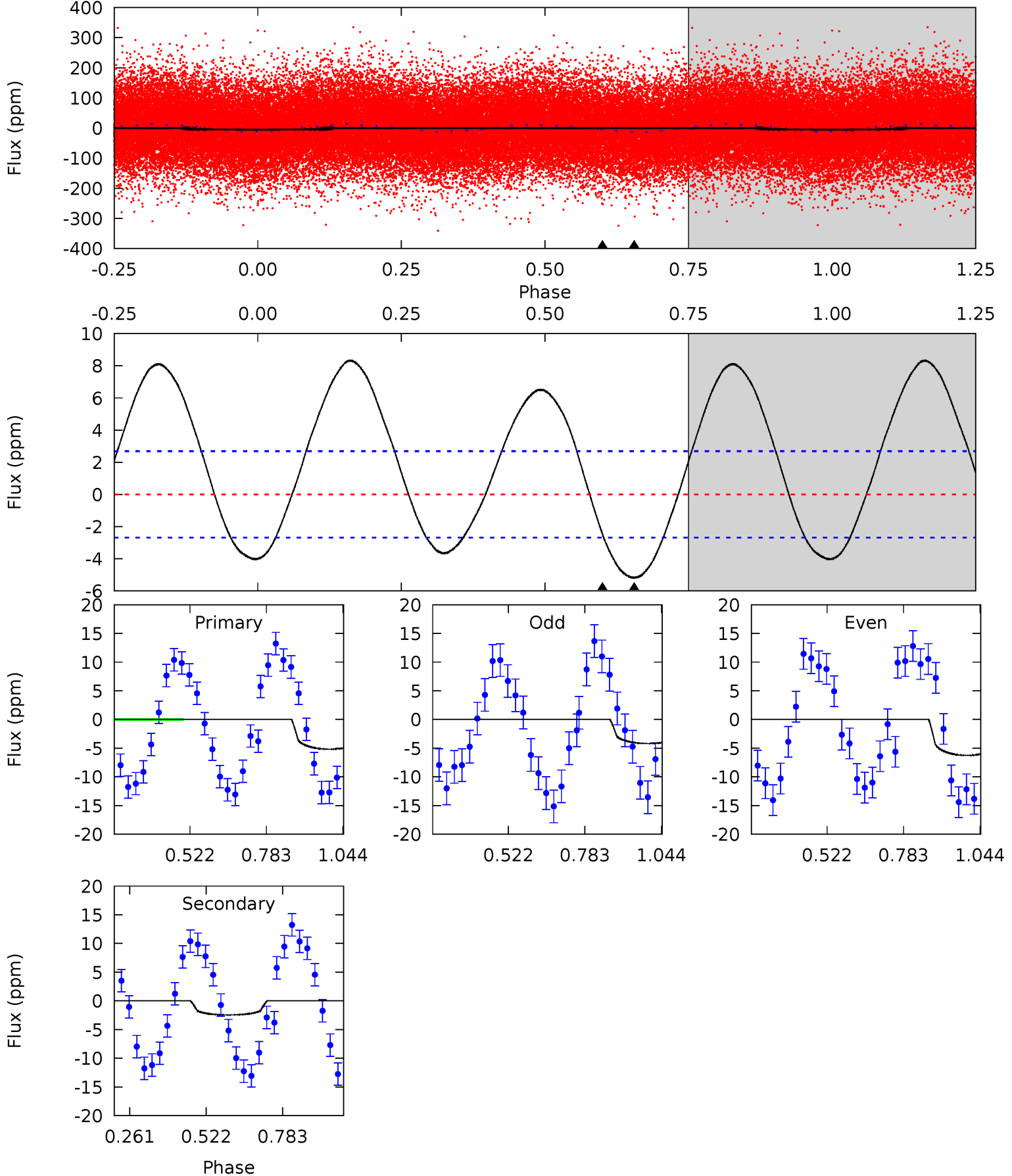
TCE 002584879-01 P= 0.898118 Days $T_0=131.687713$ (BKJD)



DV Model-Shift Uniqueness Test

002584879-01, P = 0.898098 Days, E = 130.813872 Days

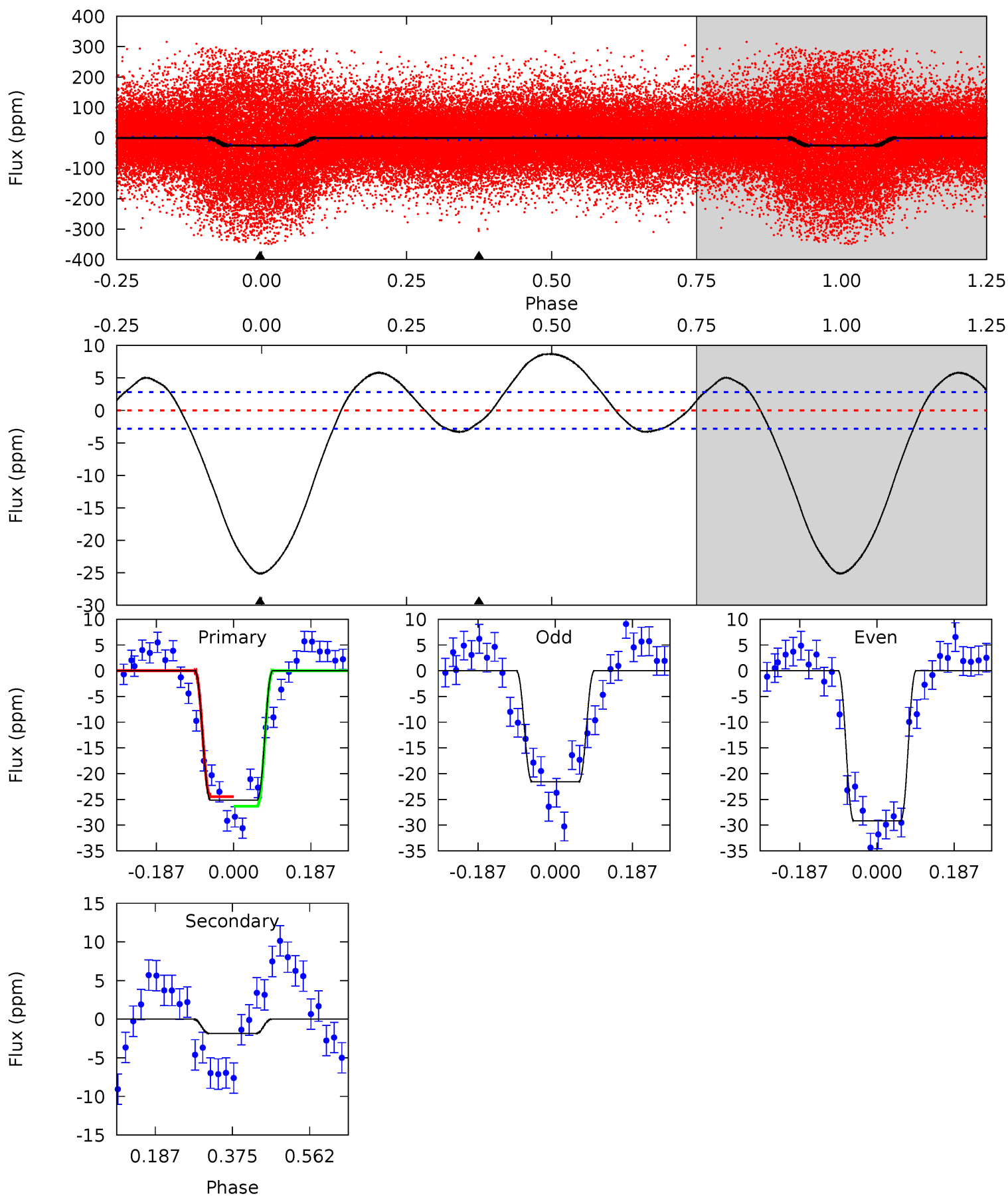
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.41 | 3.98 | 0 | 0 | 4.36 | 1.12 | 6.92 | 8.41 | 8.41 | 3.98 | 3.98 | 1.69 | 1.18 | 0.62 | 2.61 |



Alt Model-Shift Uniqueness Test

002584879-01, P = 0.898118 Days, E = 130.789595 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 39.5 | 2.92 | 0 | 0 | 4.43 | 1.32 | 4.59 | 39.5 | 39.5 | 2.92 | 2.92 | 5.97 | 0.91 | 0.26 | 1.48 |



Stellar Parameters For KIC 002584879

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6392^{+177}_{-244} | $4.233^{+0.204}_{-0.167}$ | $-0.400^{+0.300}_{-0.300}$ | $1.281^{+0.360}_{-0.294}$ | $1.022^{+0.171}_{-0.128}$ | $0.684^{+0.670}_{-0.344}$ |
| | +3%/-4% | +5%/-4% | +75%/-75% | +28%/-23% | +17%/-13% | +98%/-50% |
| Source | PHO54 | PHO54 | PHO54 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 002584879-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|-------------|------------------------|----------------------|------------------------|----------------------------|
| DV | -2 ± 1 | $0.48^{+0.42}_{-0.32}$ | 3263^{+244}_{-241} | 4363^{+3231}_{-1275} | $2.070^{+16.043}_{-1.556}$ |
| Alt. | -2 ± 1 | $0.81^{+0.55}_{-0.47}$ | 3263^{+252}_{-240} | 3066^{+1751}_{-5961} | $0.521^{+2.605}_{-0.347}$ |

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

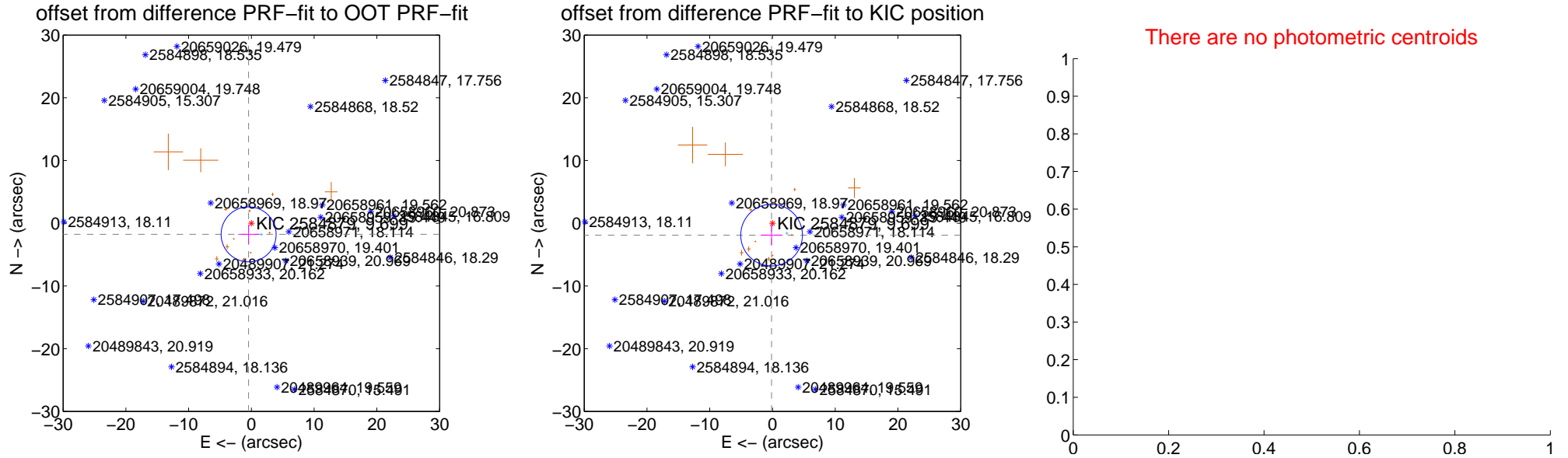
DV Centroid Data

Supplemental centroid analysis for 002584879-01. **Kepler magnitude: 9.70.** Transit SNR 3.55

There are 1 quarters with good PRF difference image offsets

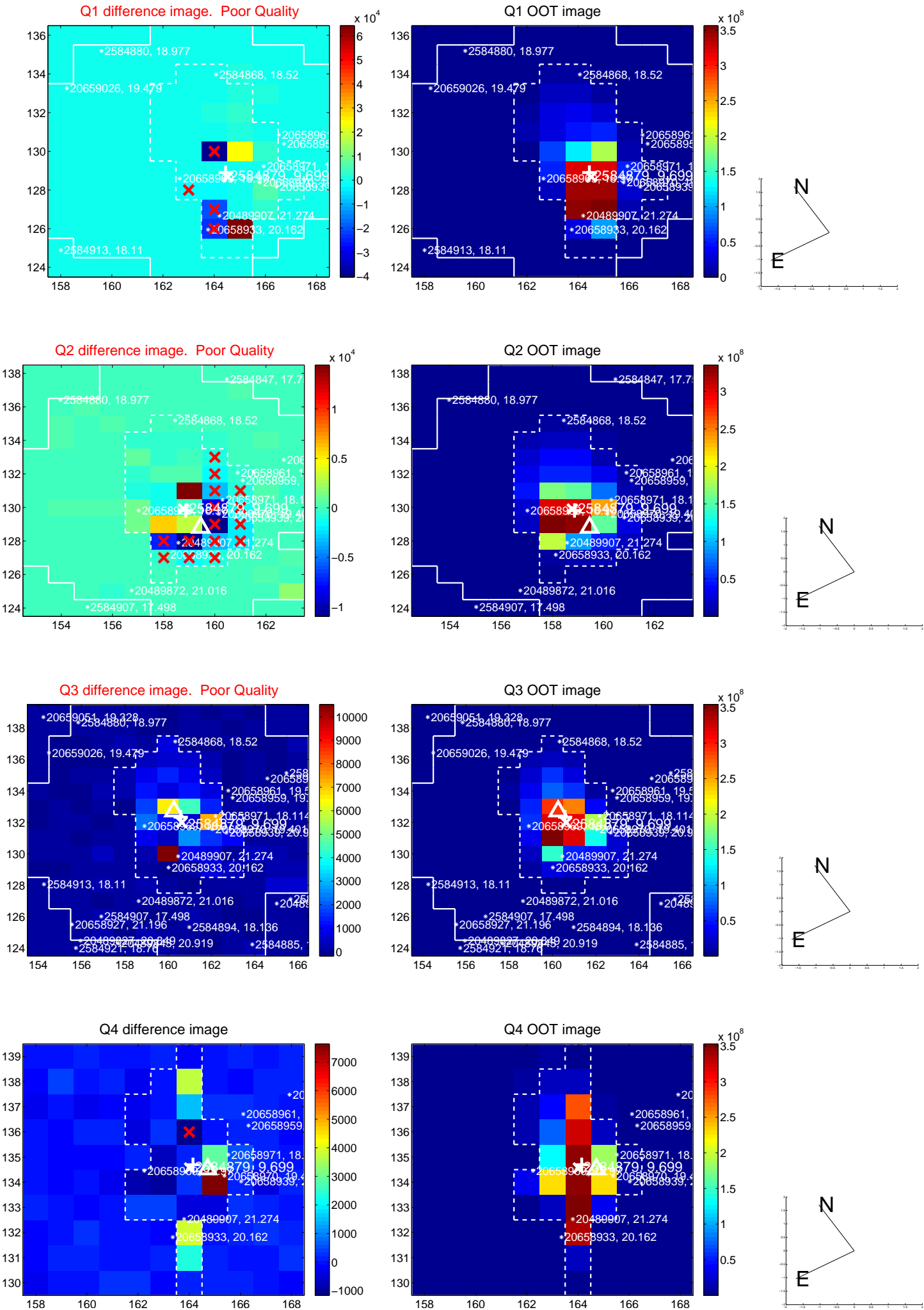
The direct PRF centroid is offset from the target star catalog position by about 0.65 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 1.827 ± 1.461 | 1.25 | 0.440 ± 1.654 | -1.773 ± 1.570 |
| PRF-fit source offset from KIC position | 1.899 ± 1.639 | 1.16 | 0.142 ± 1.758 | -1.893 ± 1.662 |
| photometric centroid source offset | — | — | — | — |

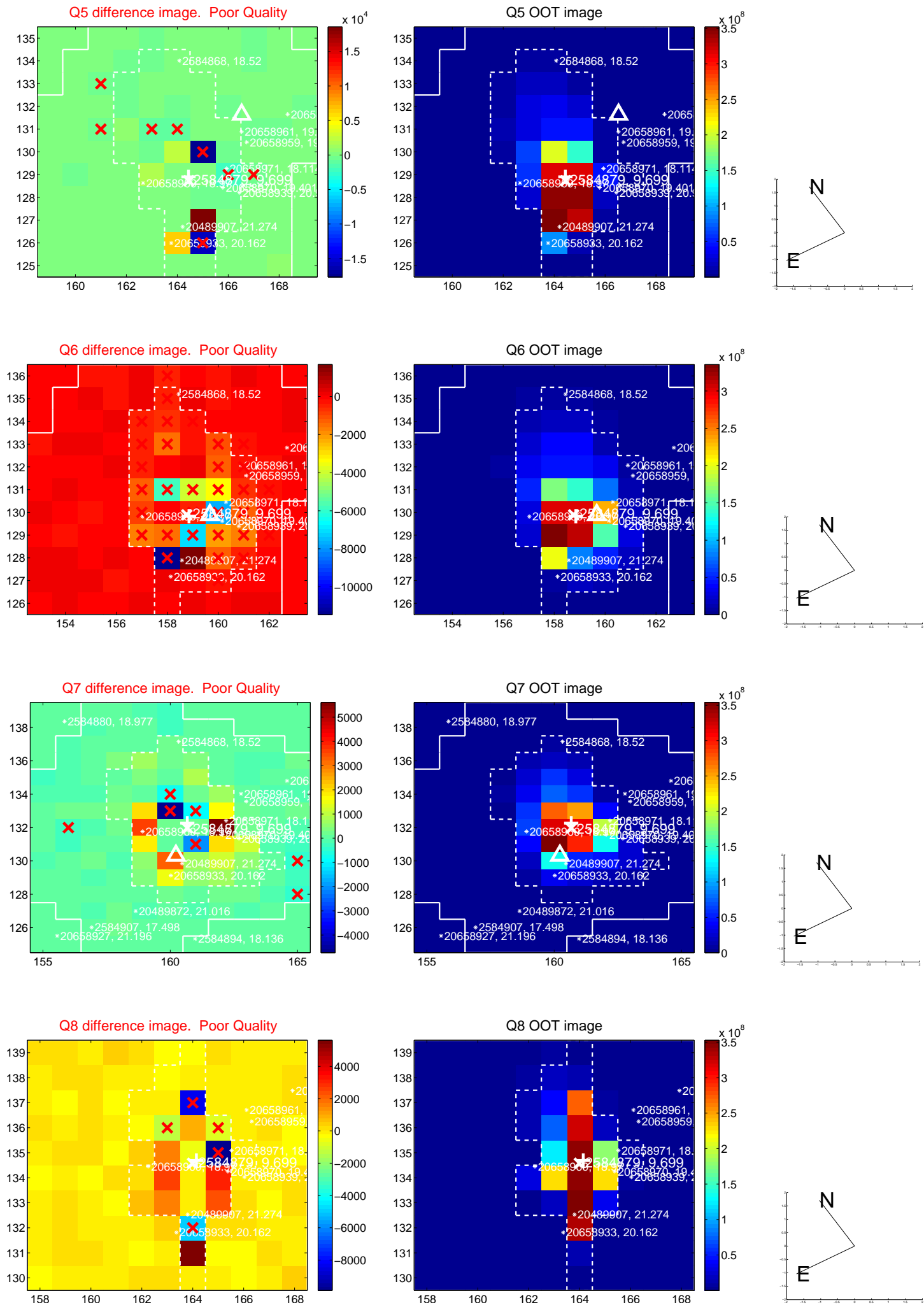


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

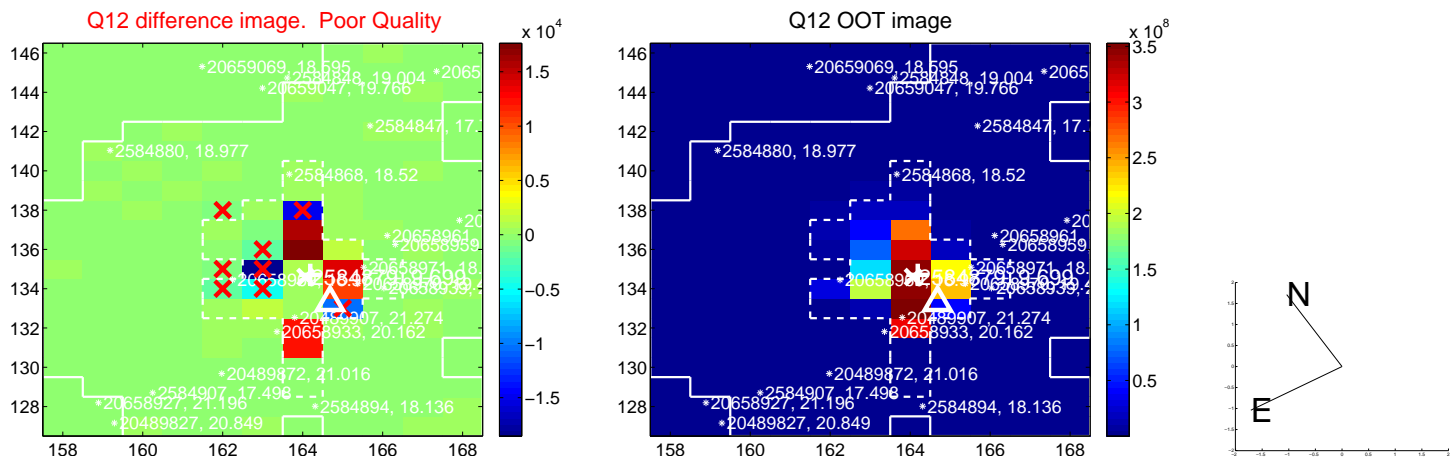
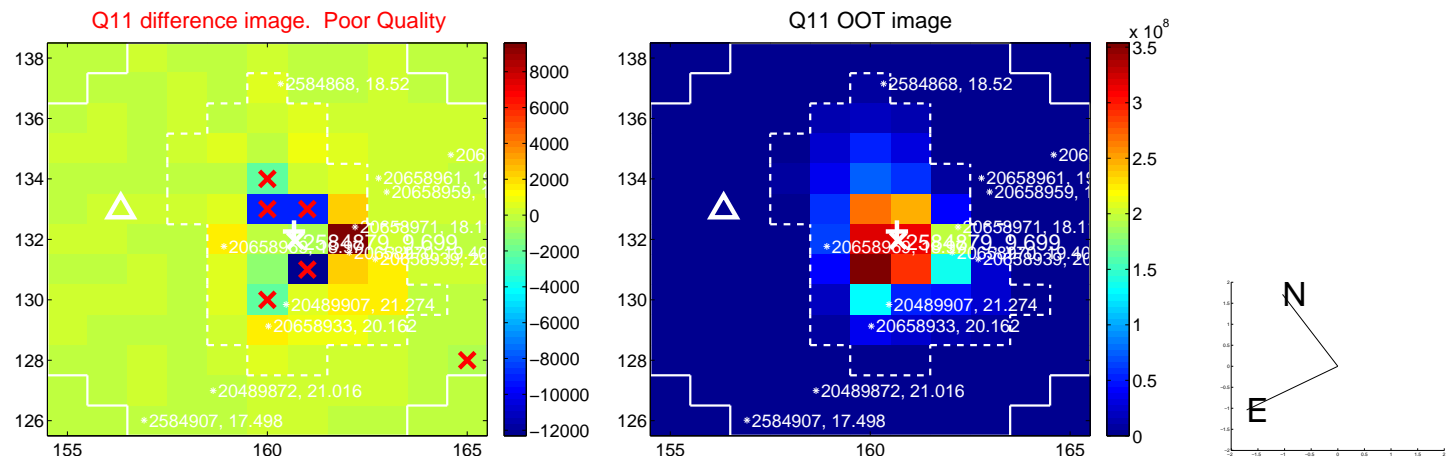
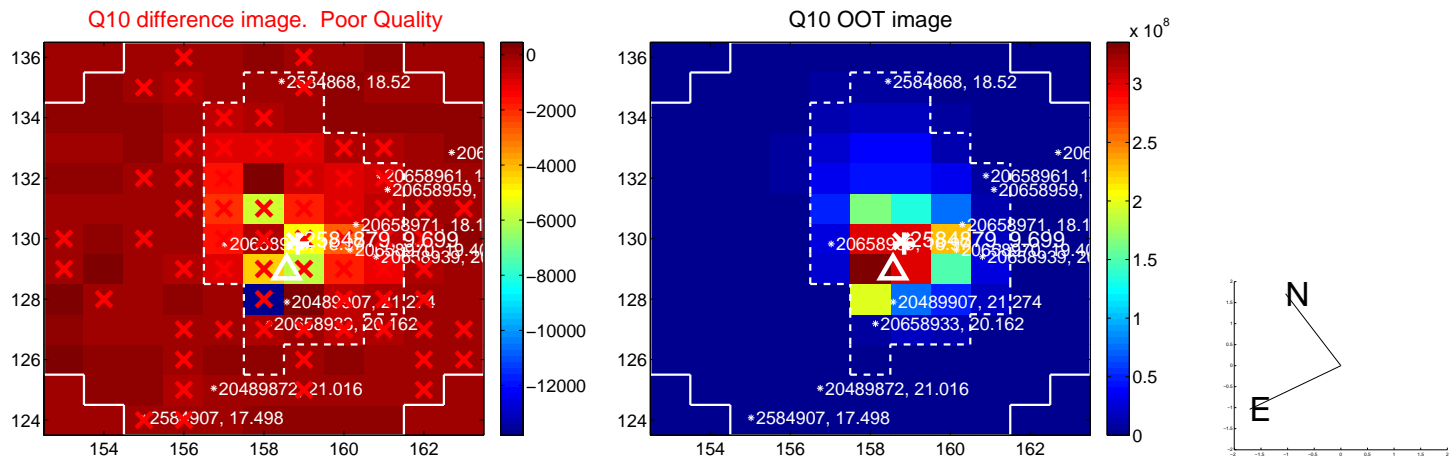
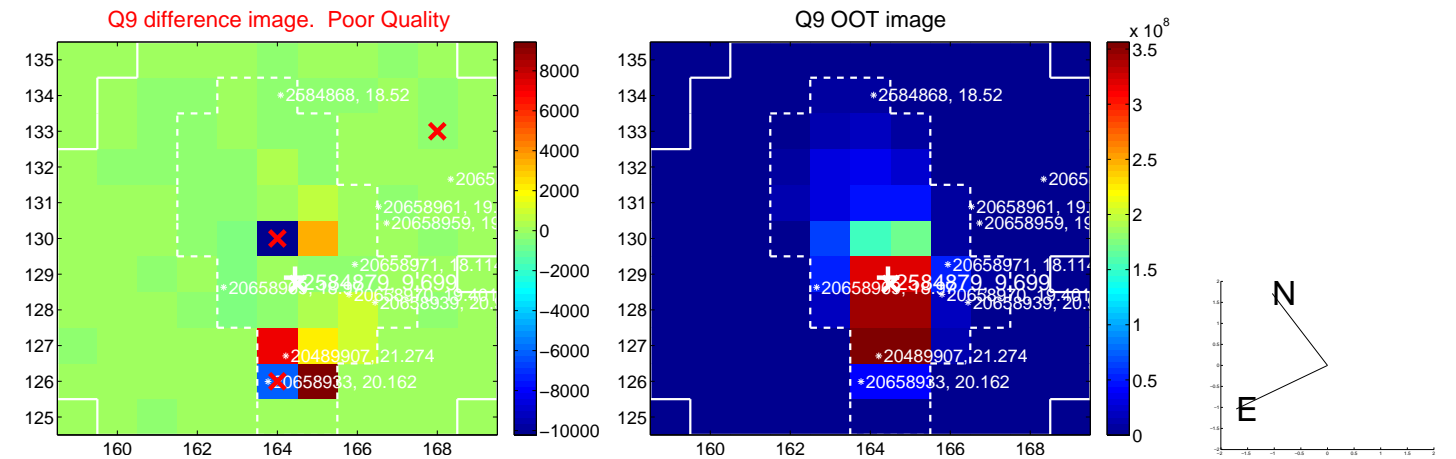
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



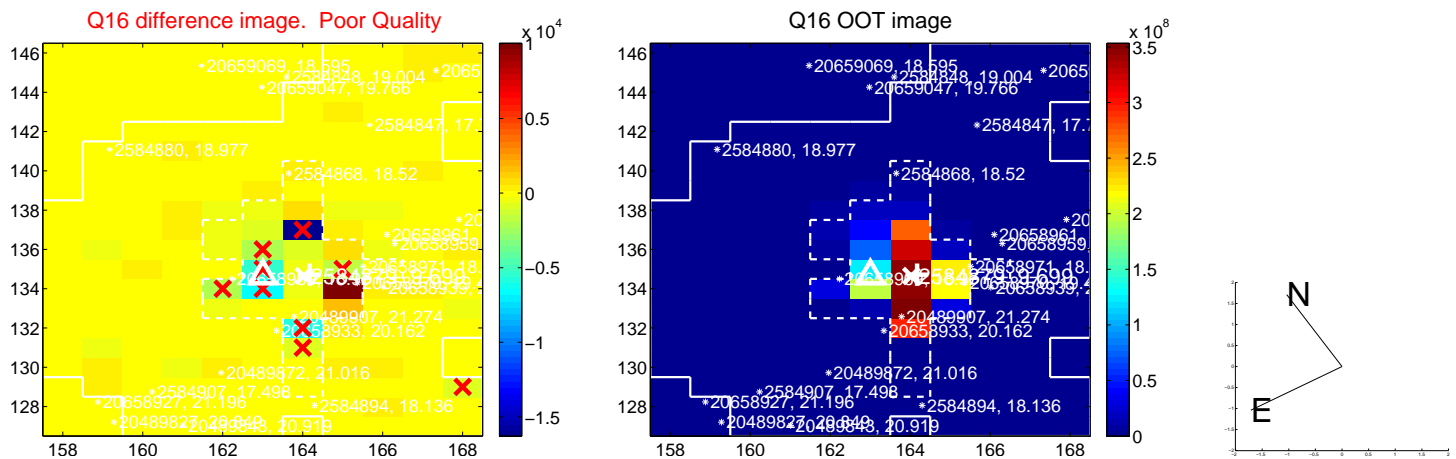
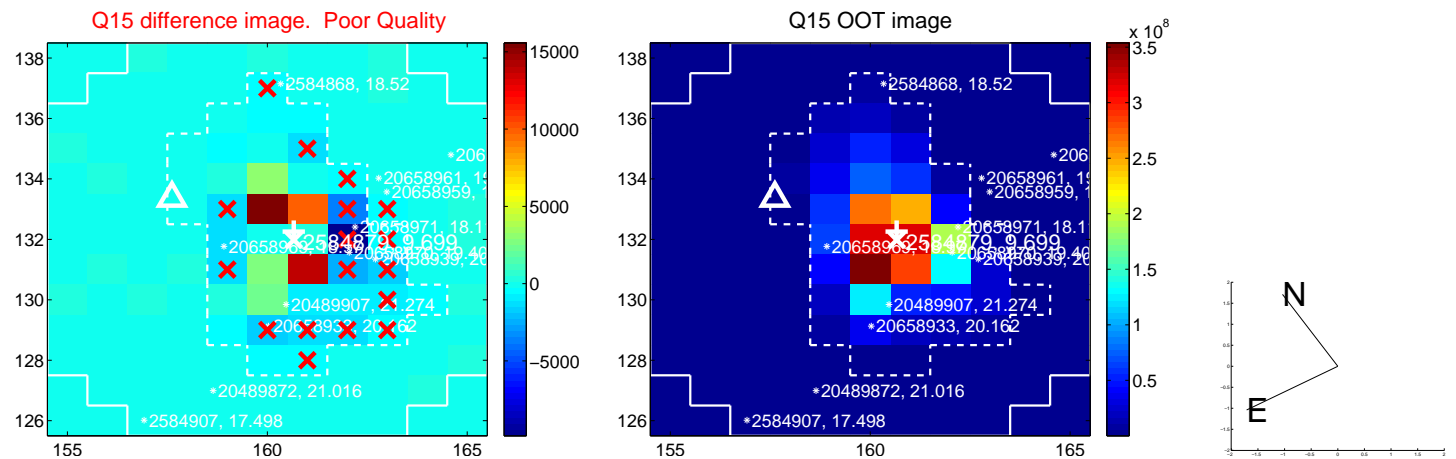
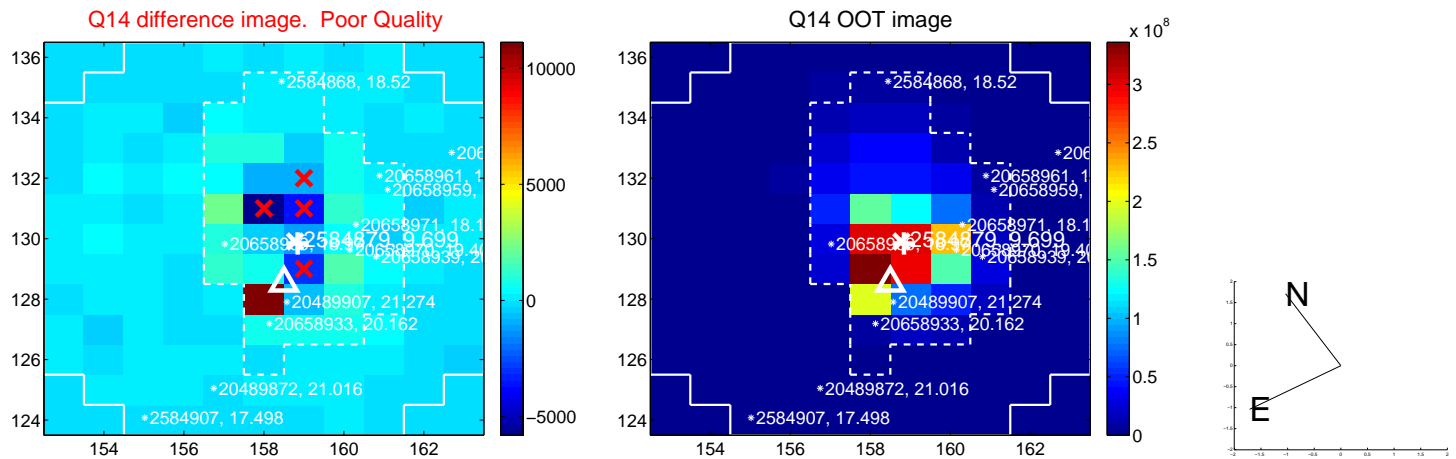
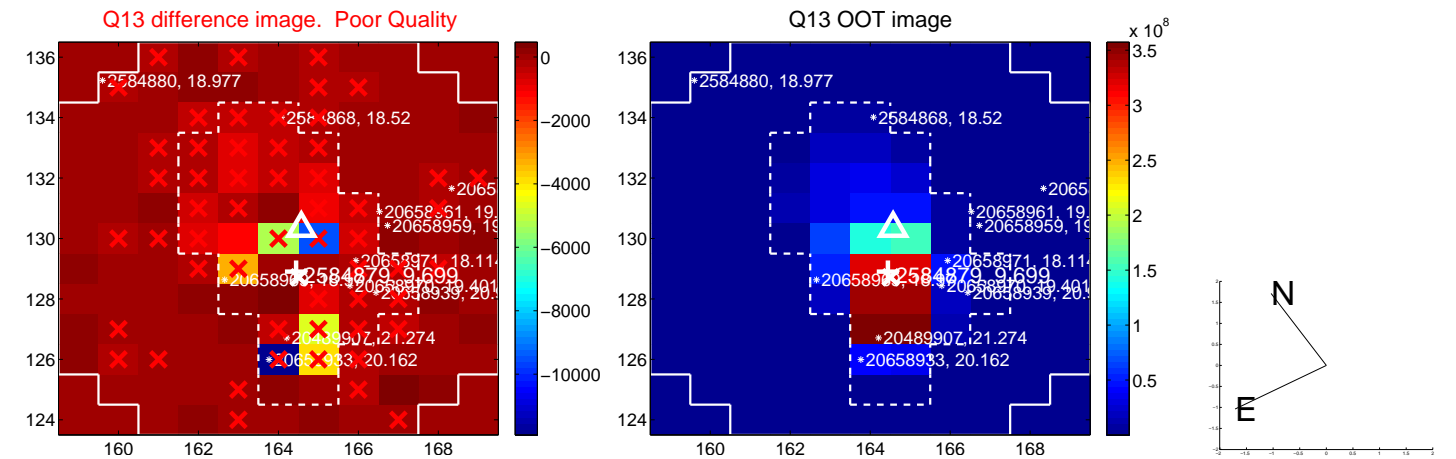
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



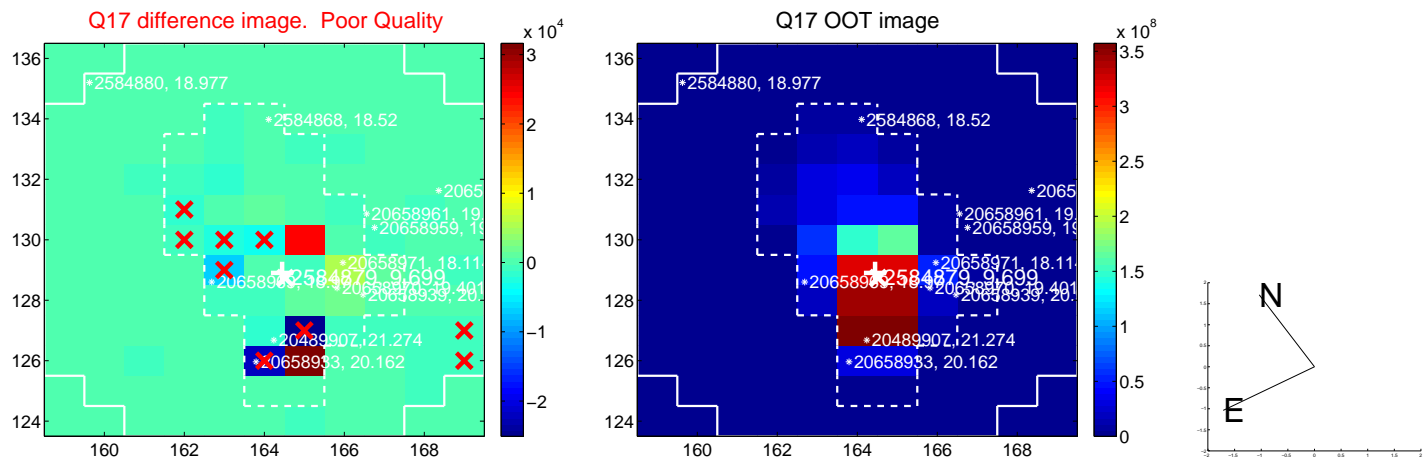
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



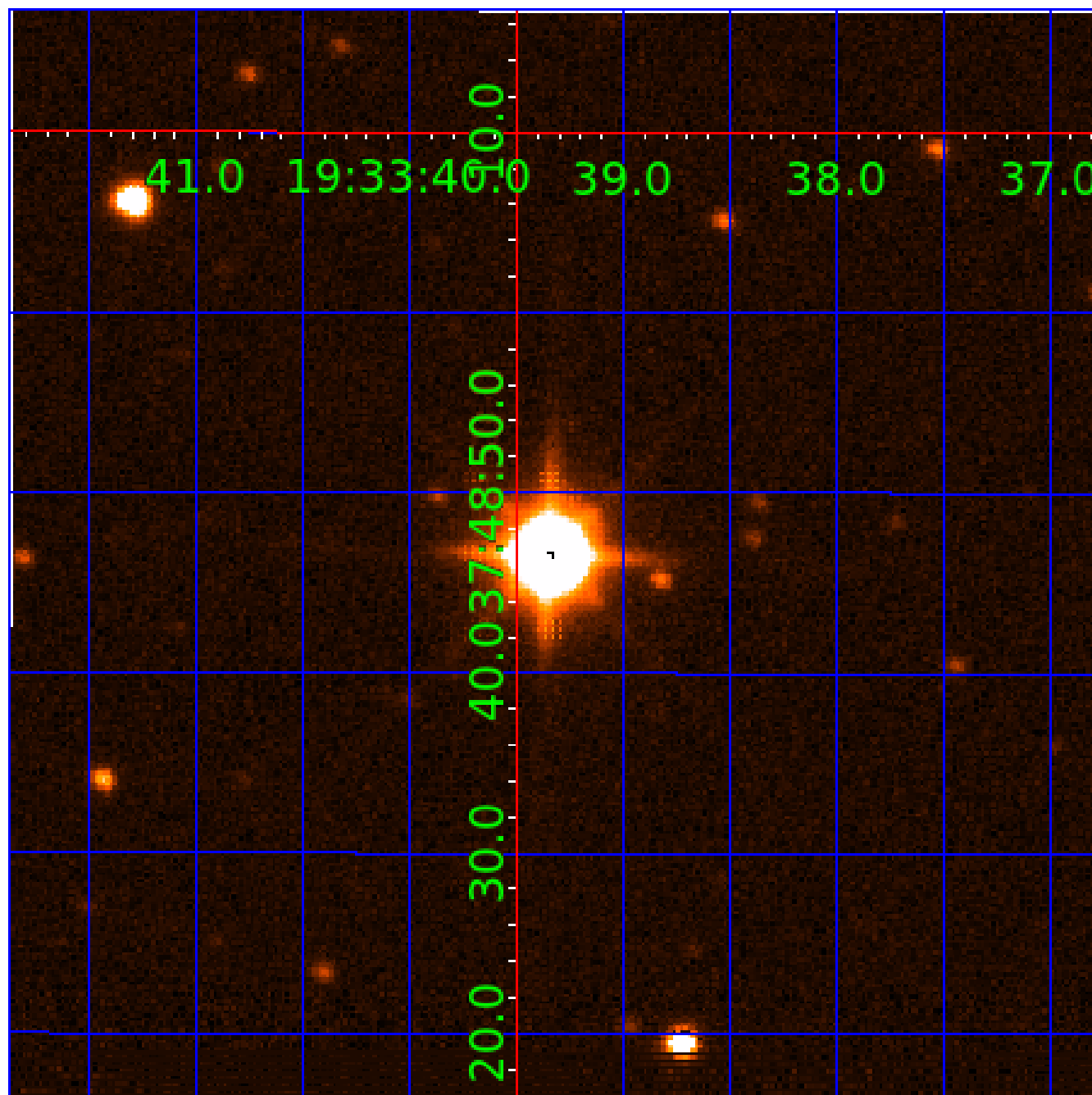
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 002584879

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 002584879-01 | OBS | No | 0.898098 | 131.711970 | 4.4 | 5.163 | 9.6 | 3.6 | 1.28 | 6392 | 0.27 | 7278.52 |
| 002584879-02 | OBS | No | 87.134713 | 142.506802 | 56.4 | 17.734 | 8.2 | 4.7 | 1.28 | 6392 | 1.10 | 16.33 |
| 002584879-04 | OBS | No | 111.838664 | 227.391886 | 94.4 | 1.937 | 9.6 | 4.0 | 1.28 | 6392 | 1.44 | 11.70 |
| 002584879-05 | OBS | No | 73.829513 | 171.325091 | 110.6 | 3.728 | 8.4 | 8.8 | 1.28 | 6392 | 1.53 | 20.36 |
| 002584879-06 | OBS | No | 34.989848 | 154.176402 | 135.8 | 1.606 | 8.3 | 9.0 | 1.28 | 6392 | 1.56 | 55.11 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 002584879-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED |
| 002584879-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED |
| 002584879-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED |
| 002584879-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED |
| 002584879-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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.

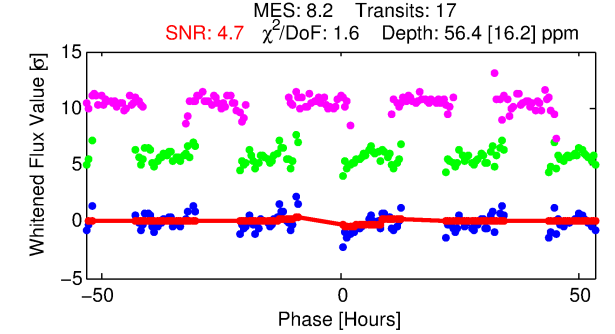
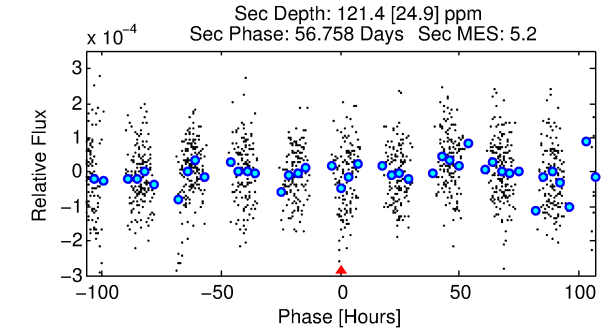
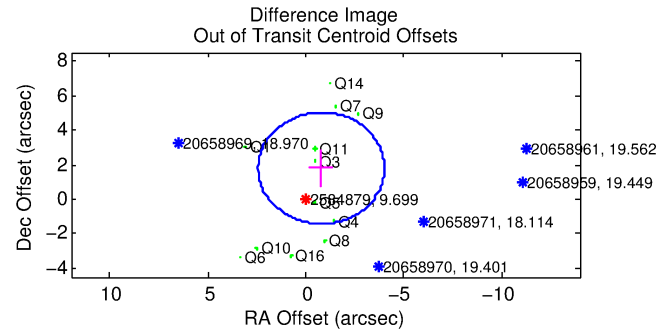
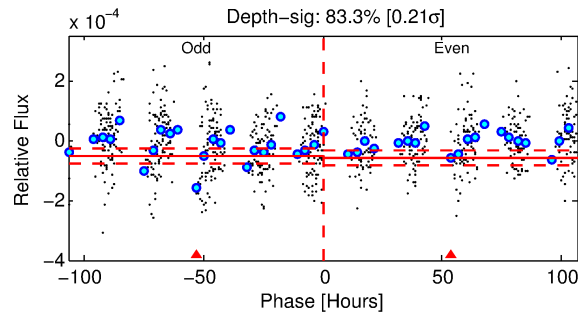
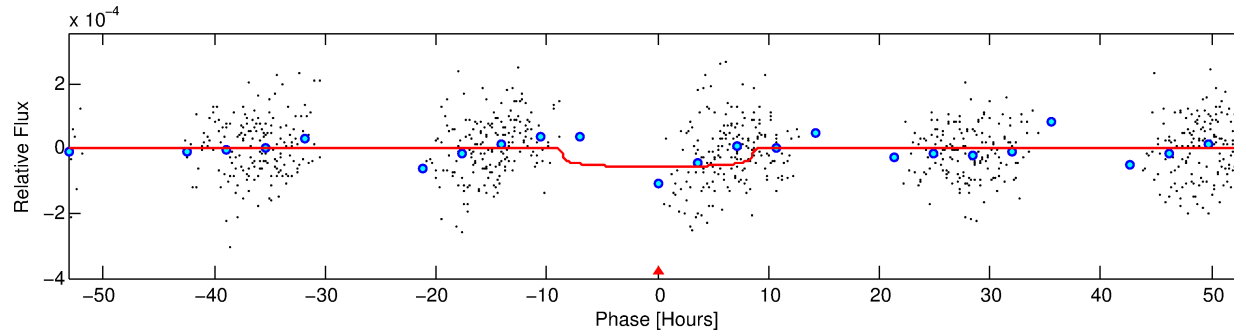
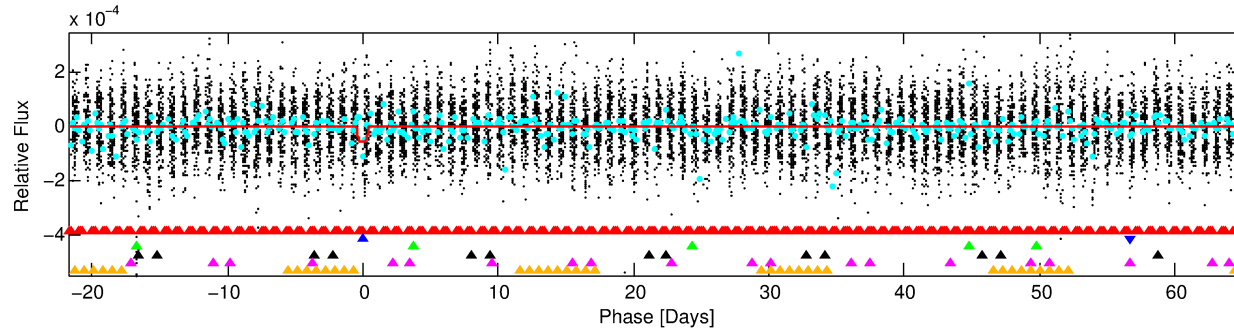
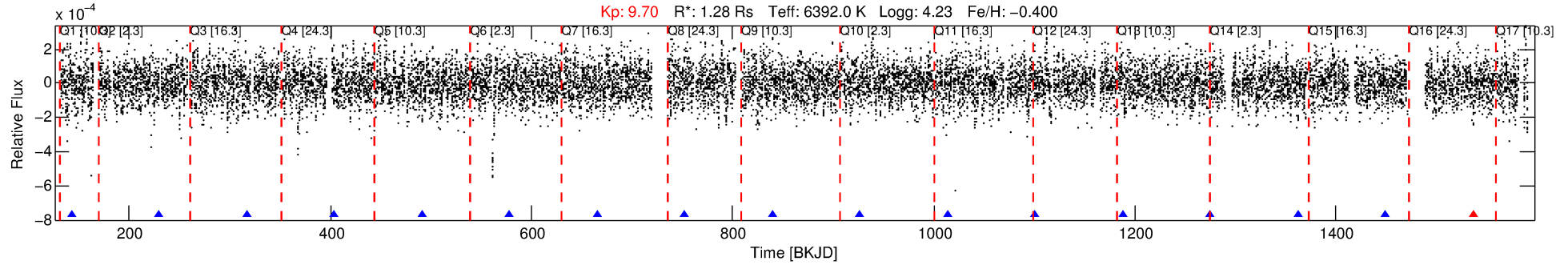
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002584879-02

No Significant Match Found

DV One-Page Summary

KIC: 2584879 Candidate: 2 of 6 Period: 87.135 d



DV Fit Results:

Period = 87.13471 [0.00522] d
Epoch = 142.5068 [0.0545] BKJD
 $R_p/R^* = 0.0079$ [0.0018]
 $a/R^* = 18.80$ [18.50]
 $b = 0.87$ [0.26]
 $\text{Seff} = 16.33$ [6.46]
 $T_{\text{eq}} = 513$ [51] K
 $R_p = 1.10$ [0.40] R_e
 $a = 0.3877$ [0.0947] AU
 $A_g = 8243.75$ [5174.93] [1.59 σ]
 $T_{\text{eff}} = 7551$ [1006] K [6.98 σ]

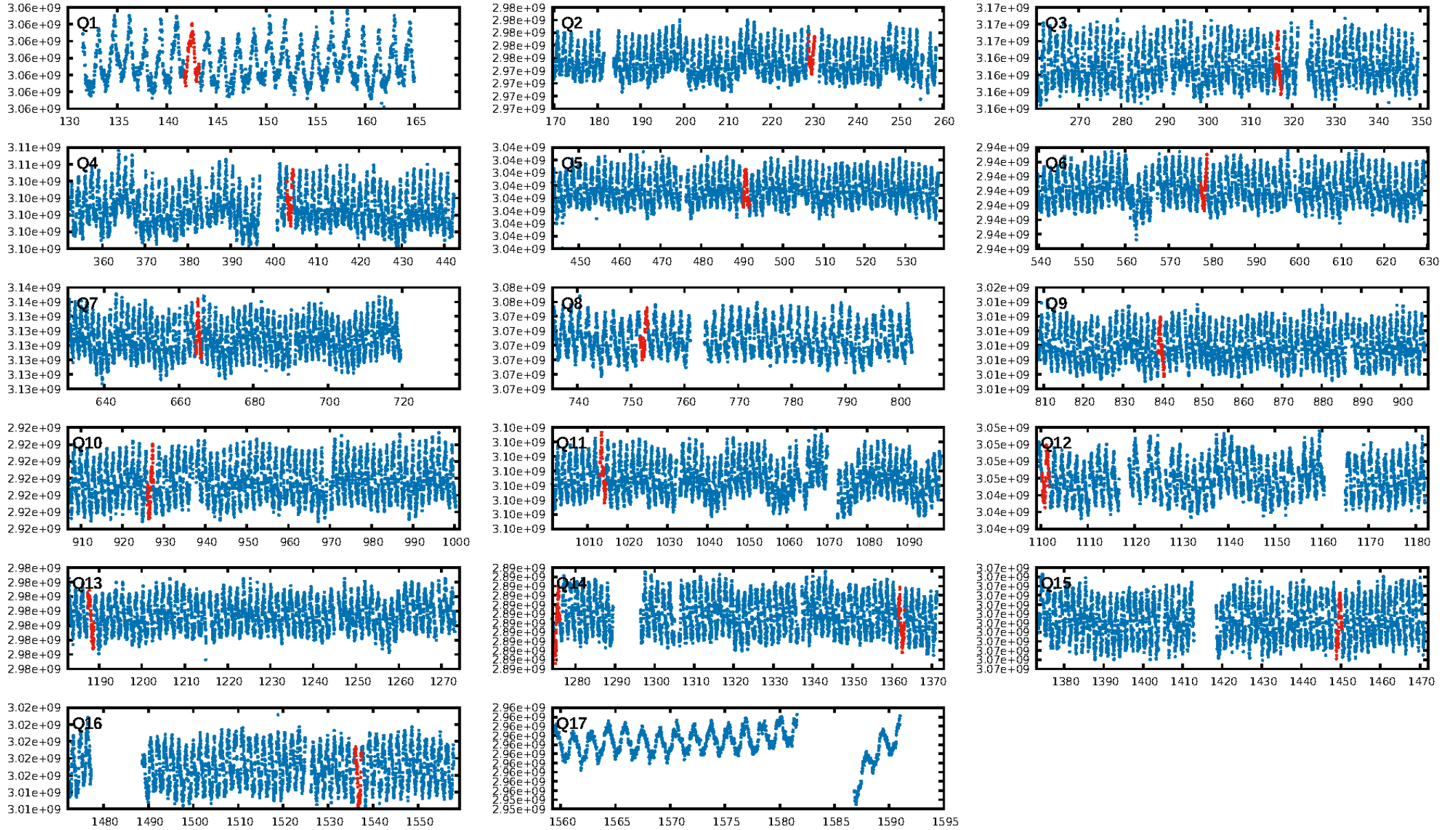
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.62 σ]
LongPeriod-sig: 100.0% [33.24 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.00e-08
RollingBand-fgt: 0.94 [15/16]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 1.150 arcsec [0.62 σ]
OotOffset-rm: 1.956 arcsec [1.82 σ]
KicOffset-rm: 2.573 arcsec [2.40 σ]
OotOffset-st: 3/3/3/3 [12]
KicOffset-st: 3/3/3/3 [12]
DiffImageQuality-fgm: 0.08 [1/12]
DiffImageOverlap-fno: 0.00 [0/12]

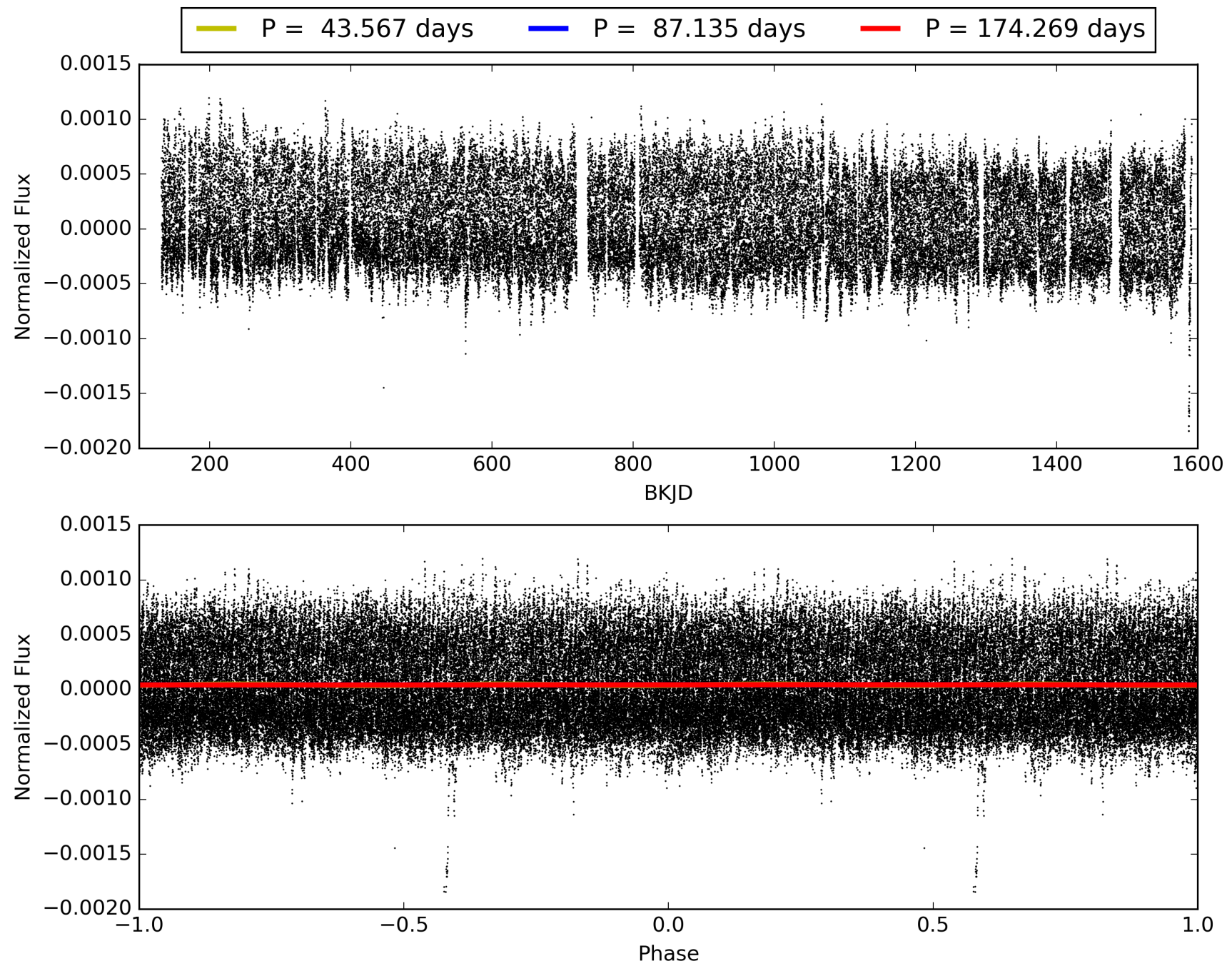
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 002584879-02, PDC Light Curves

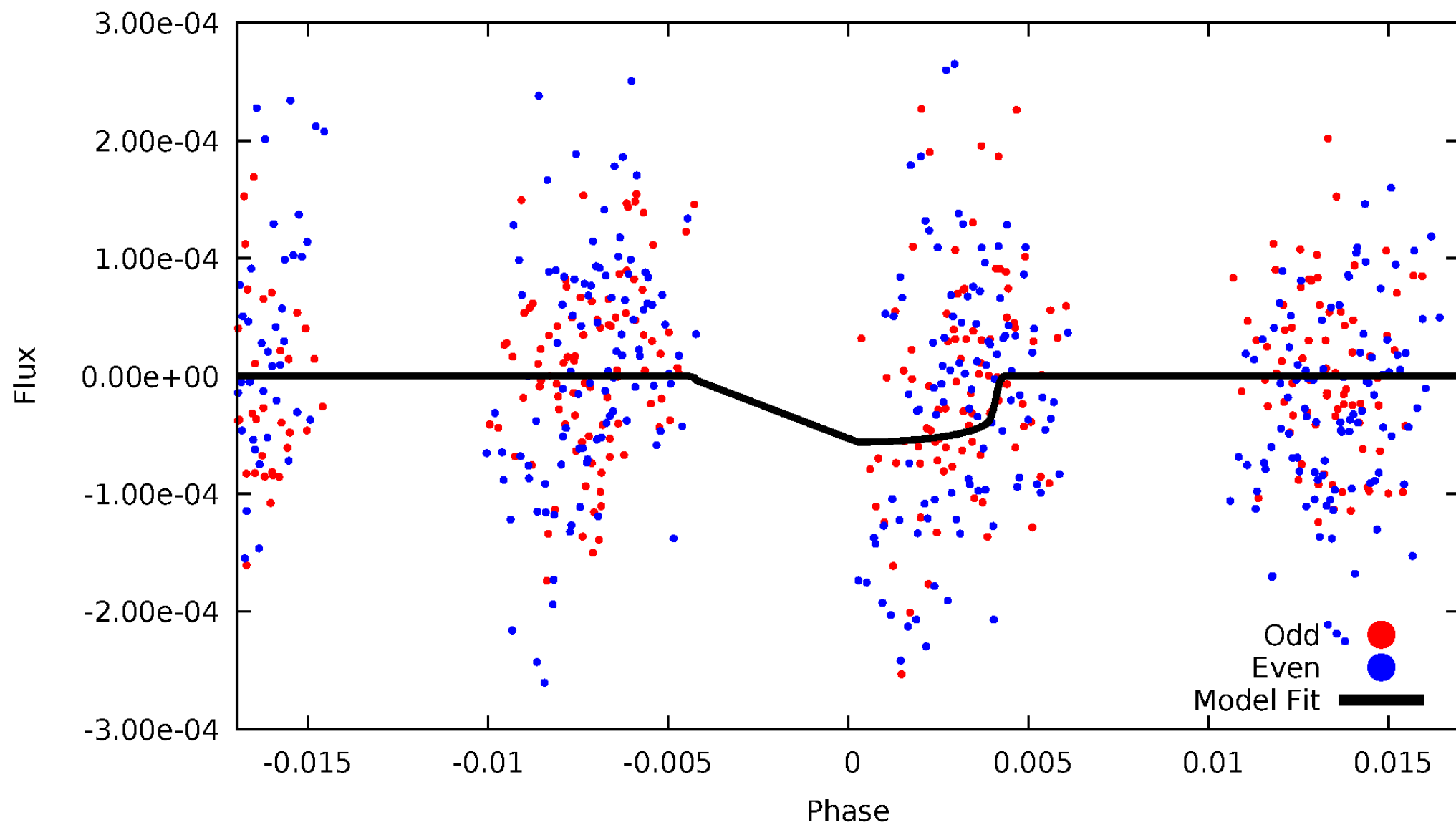


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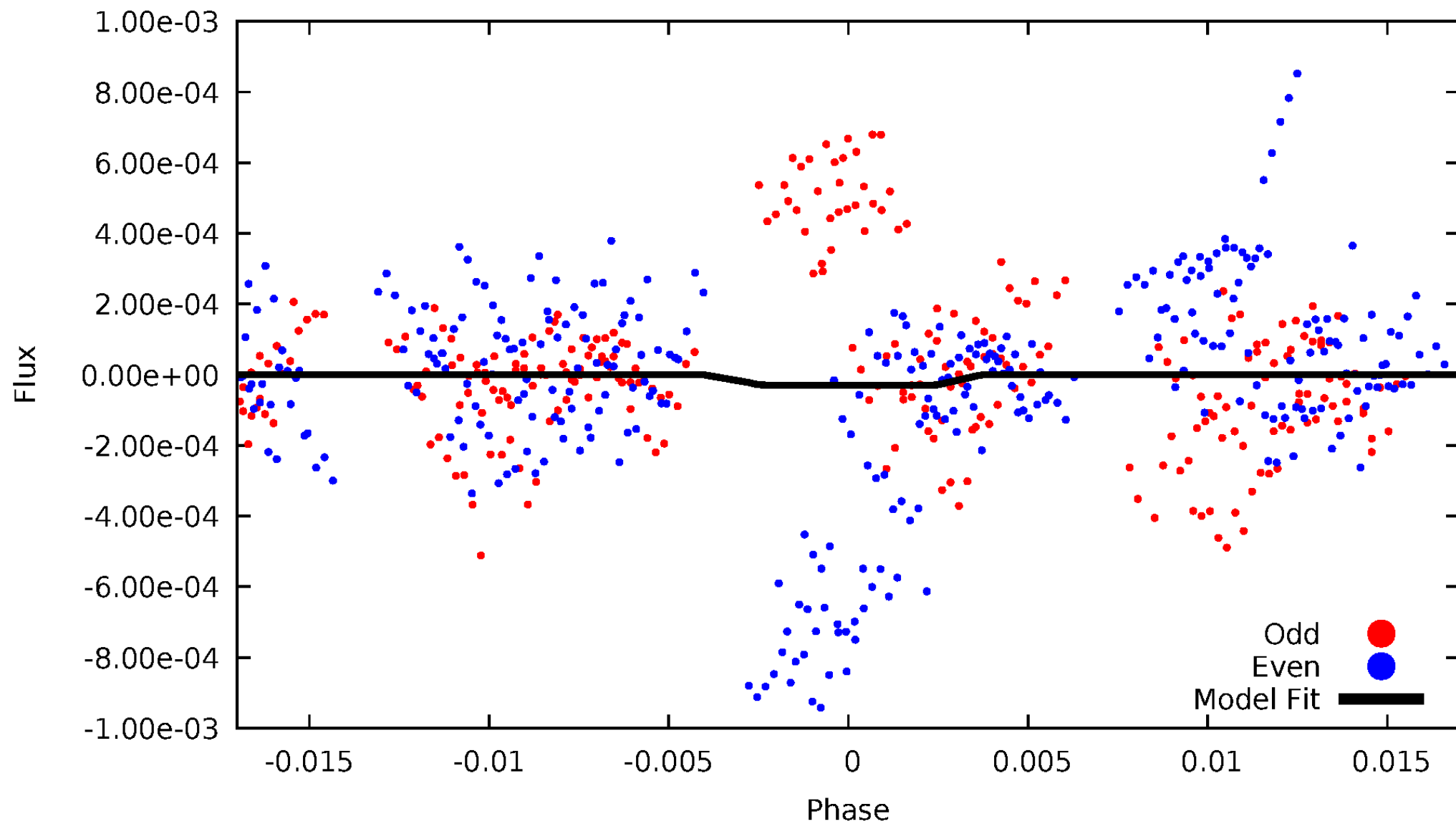
DV Odd/Even

TCE 002584879-02



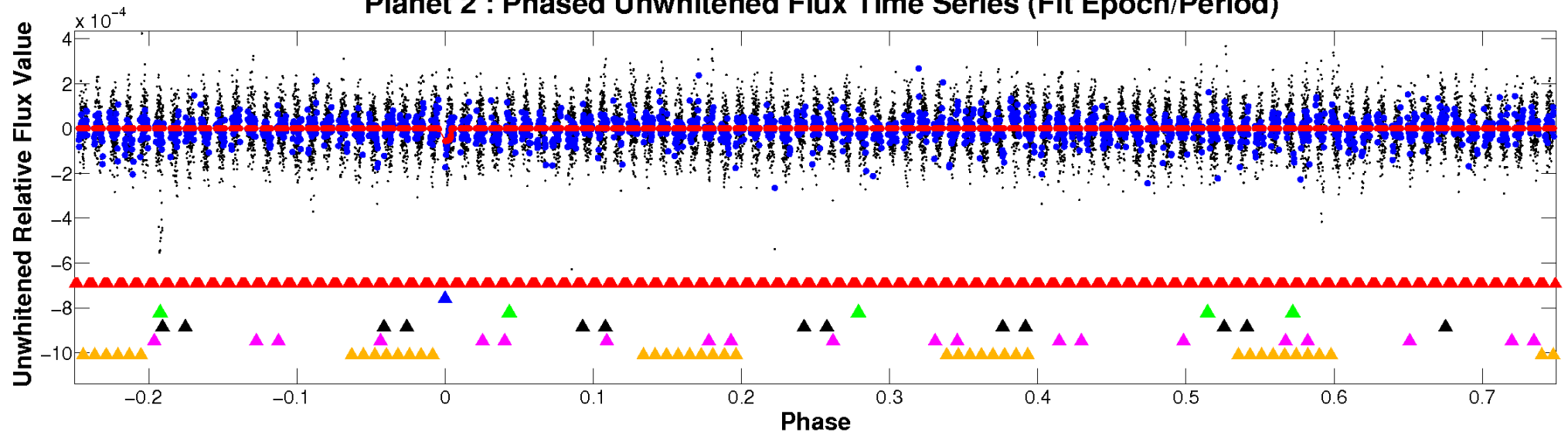
ALT Odd/Even

TCE 002584879-02

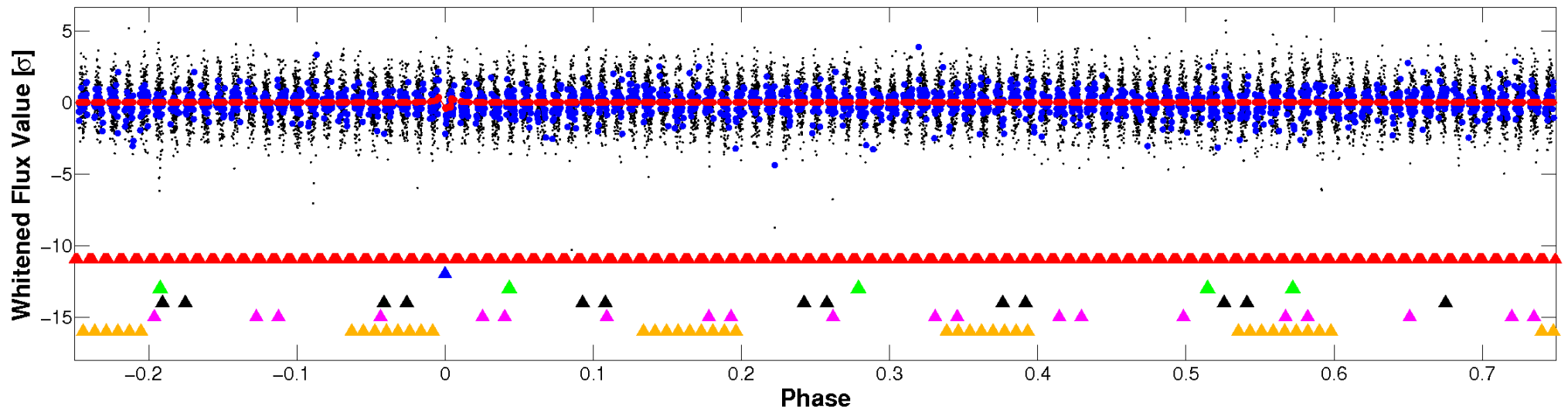


Non-Whitened Vs. Whitened Light Curve

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

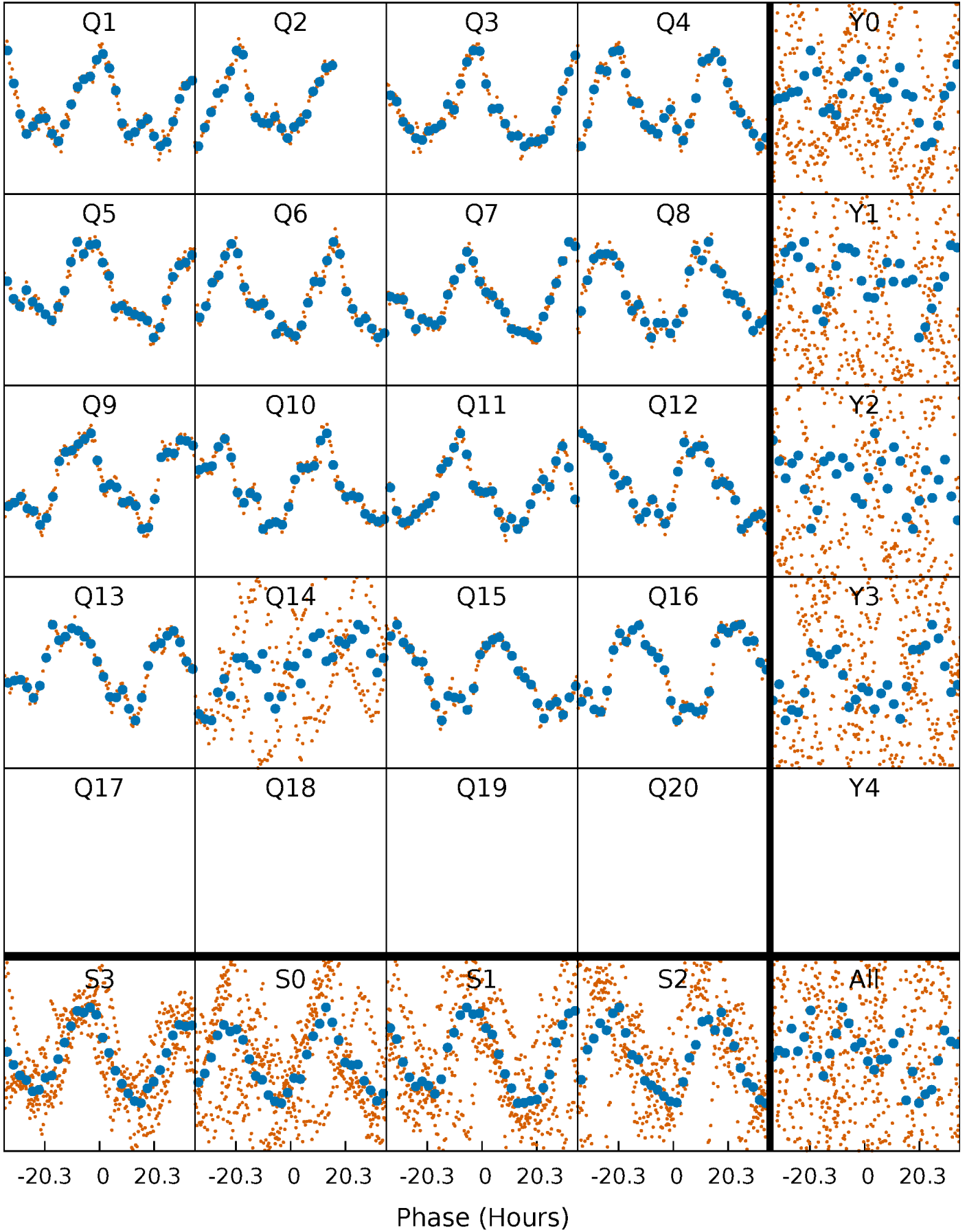


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



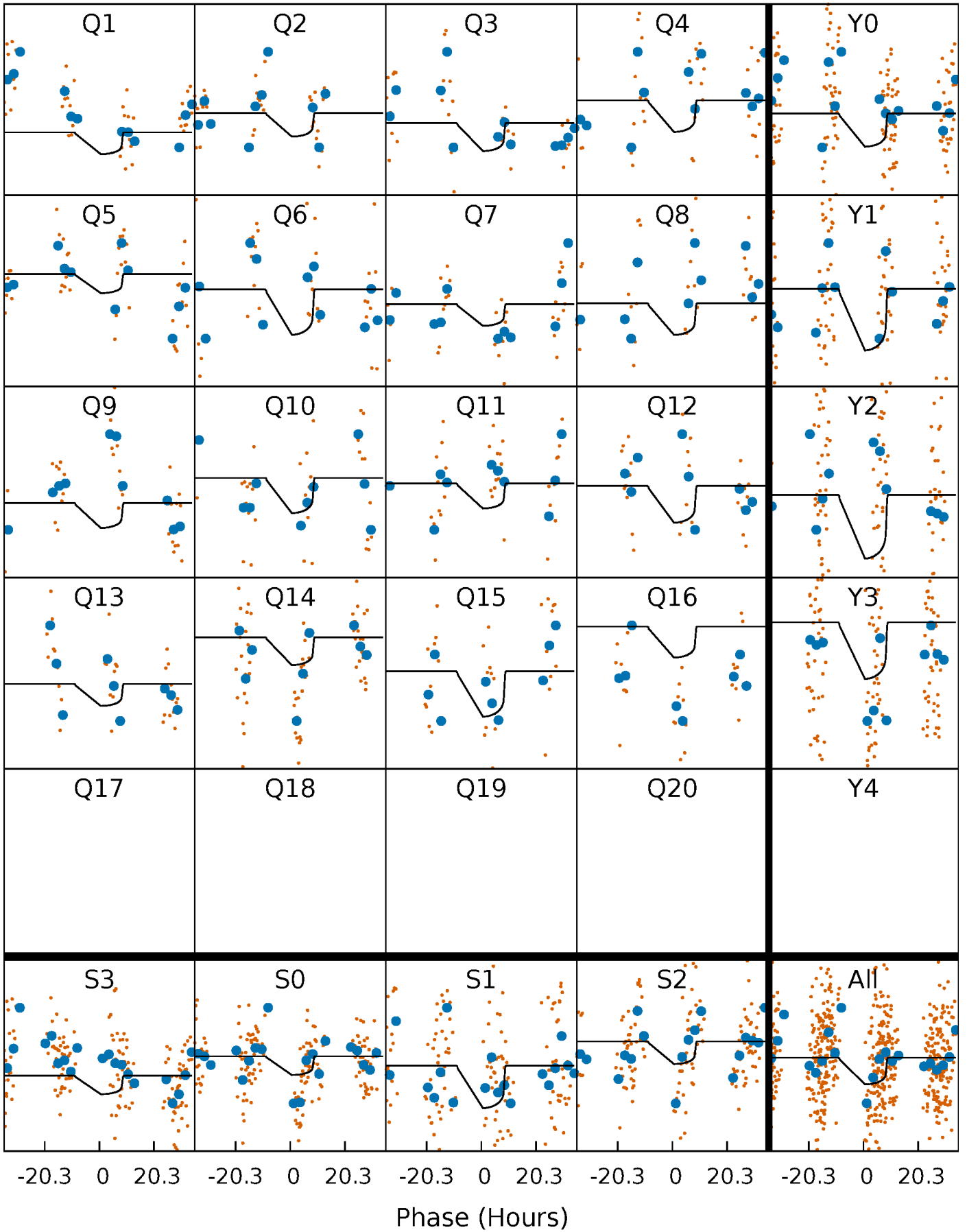
PDC Quarter-Phased Transit Curves

TCE 002584879-02 P= 87.134713 Days $T_0=142.506802$ (BKJD)



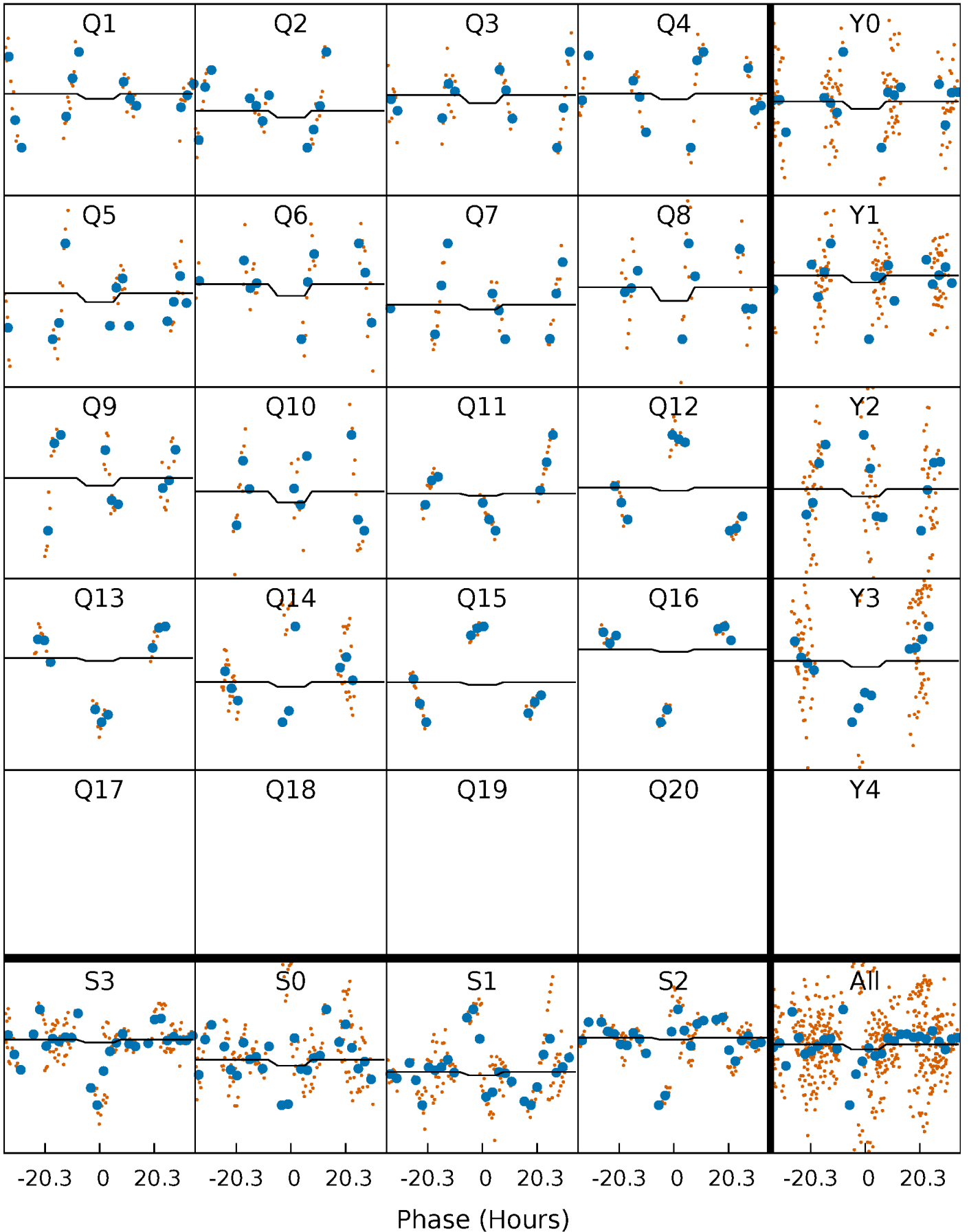
DV Quarter-Phased Transit Curves

TCE 002584879-02 P= 87.134713 Days $T_0=142.506802$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

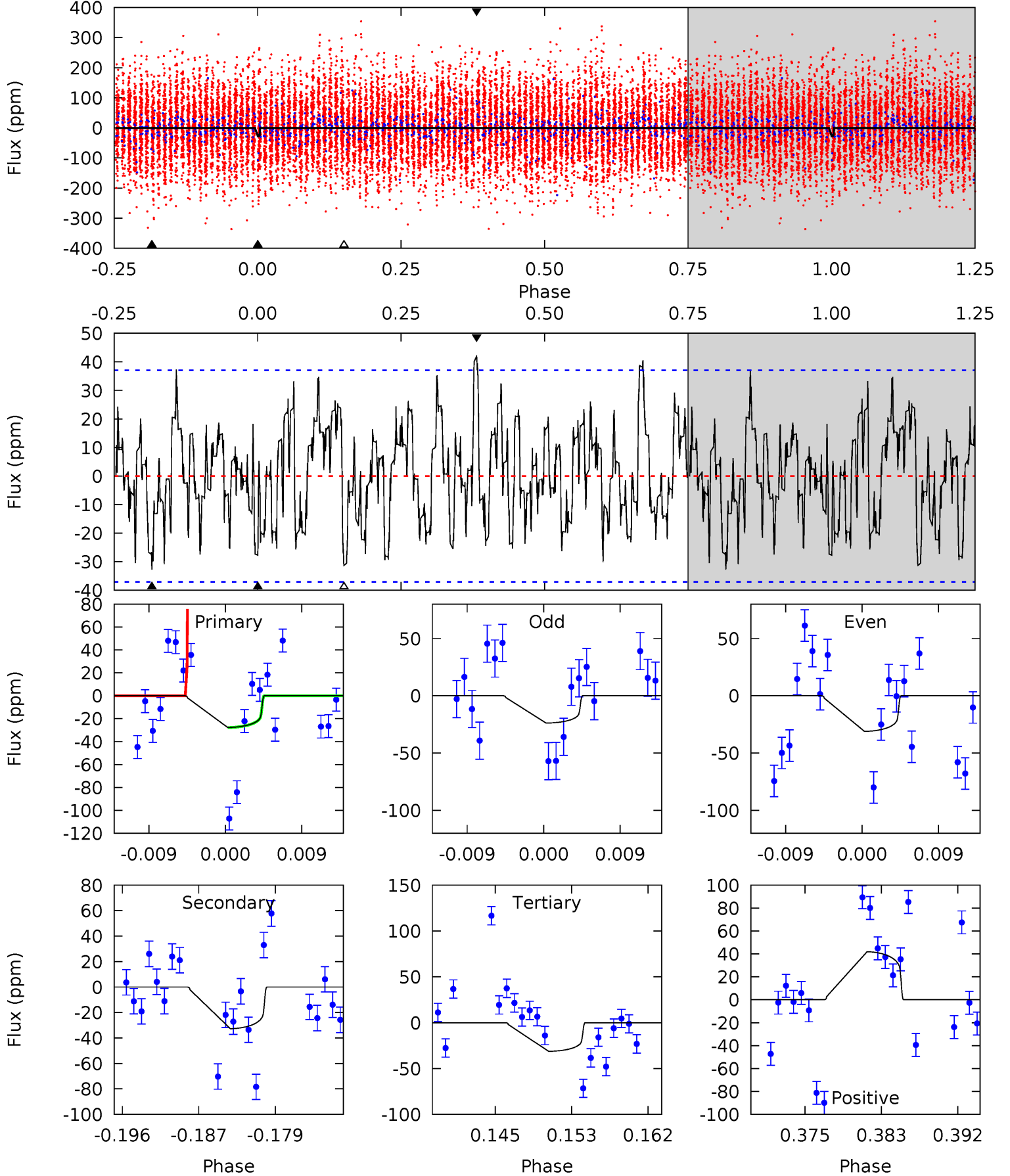
TCE 002584879-02 $P = 87.152418$ Days $T_0 = 142.489842$ (BKJD)



DV Model-Shift Uniqueness Test

002584879-02, P = 87.134713 Days, E = 55.372089 Days

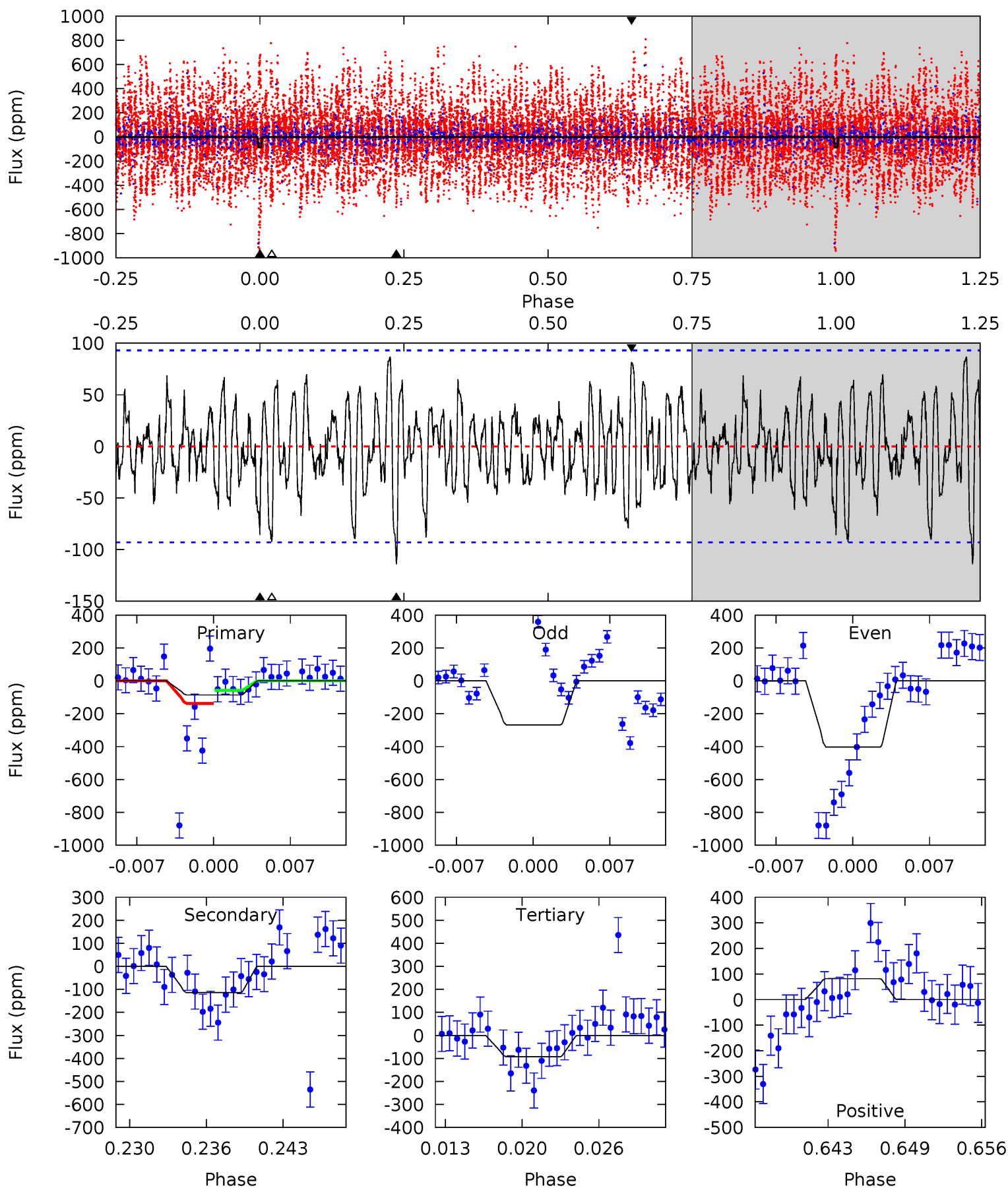
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 3.78 | 4.47 | 4.27 | 5.72 | 5.06 | 2.63 | 1.93 | -0.48 | -1.94 | 0.20 | -1.25 | 0.50 | 0.90 | 0.56 | 0.00 |



Alt Model-Shift Uniqueness Test

002584879-02, P = 87.152418 Days, E = 55.337424 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 4.72 | 6.27 | 5.07 | 4.48 | 5.11 | 2.72 | 1.65 | -0.35 | 0.24 | 1.20 | 1.79 | 3.77 | 3.86 | 0.43 | 1.98 |



Stellar Parameters For KIC 002584879

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6392^{+177}_{-244} | $4.233^{+0.204}_{-0.167}$ | $-0.400^{+0.300}_{-0.300}$ | $1.281^{+0.360}_{-0.294}$ | $1.022^{+0.171}_{-0.128}$ | $0.684^{+0.670}_{-0.344}$ |
| | +3%/-4% | +5%/-4% | +75%/-75% | +28%/-23% | +17%/-13% | +98%/-50% |
| Source | PHO54 | PHO54 | PHO54 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 002584879-02 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|------------------------|--------------------------|
| DV | -33 ± 7 | $1.07^{+0.32}_{-0.25}$ | 712^{+56}_{-54} | 5471^{+749}_{-620} | 2324^{+1715}_{-1027} |
| Alt. | -114 ± 18 | $0.73^{+0.31}_{-0.26}$ | 711^{+52}_{-54} | 9806^{+3878}_{-1891} | 18549^{+24018}_{-9815} |

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

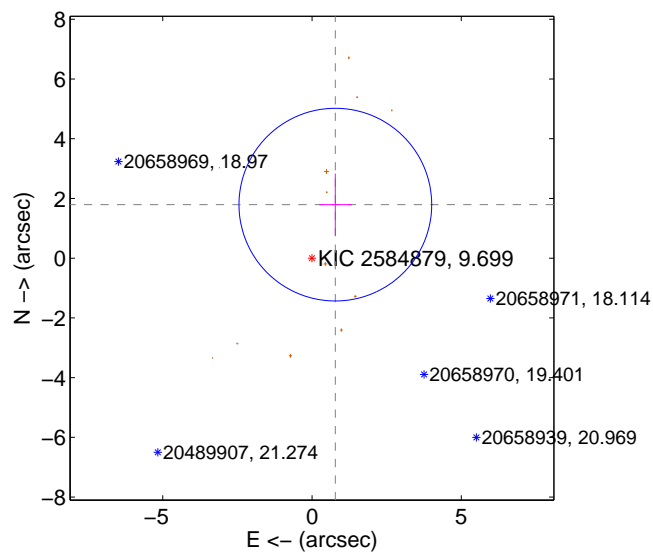
Supplemental centroid analysis for 002584879-02. **Kepler magnitude: 9.70.** Transit SNR 4.70

There are 1 quarters with good PRF difference image offsets

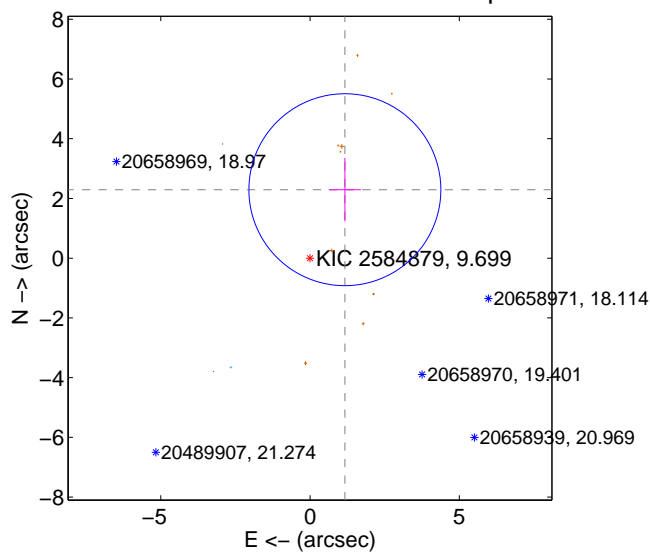
The direct PRF centroid is offset from the target star catalog position by about 0.62 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 1.956 ± 1.076 | 1.82 | -0.781 ± 0.550 | 1.793 ± 1.037 |
| PRF-fit source offset from KIC position | 2.573 ± 1.071 | 2.40 | -1.166 ± 0.533 | 2.293 ± 1.064 |
| photometric centroid source offset | 1.15 ± 1.87 | 0.62 | -0.64 ± 1.20 | 0.95 ± 2.10 |

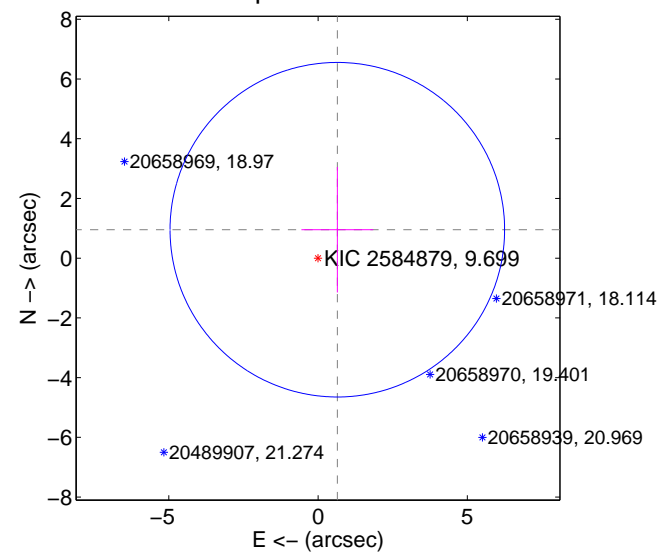
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

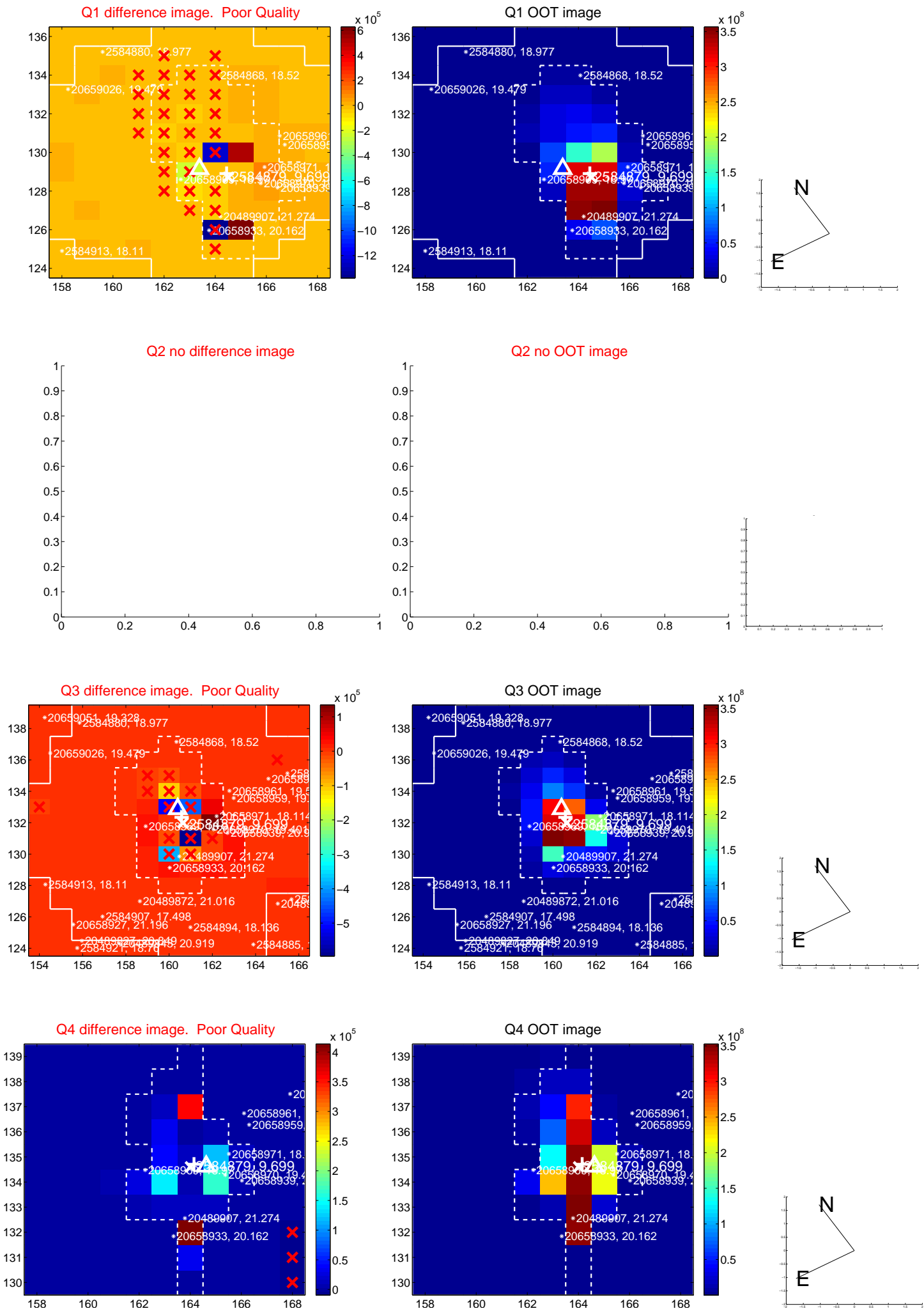


offset from photometric centroids

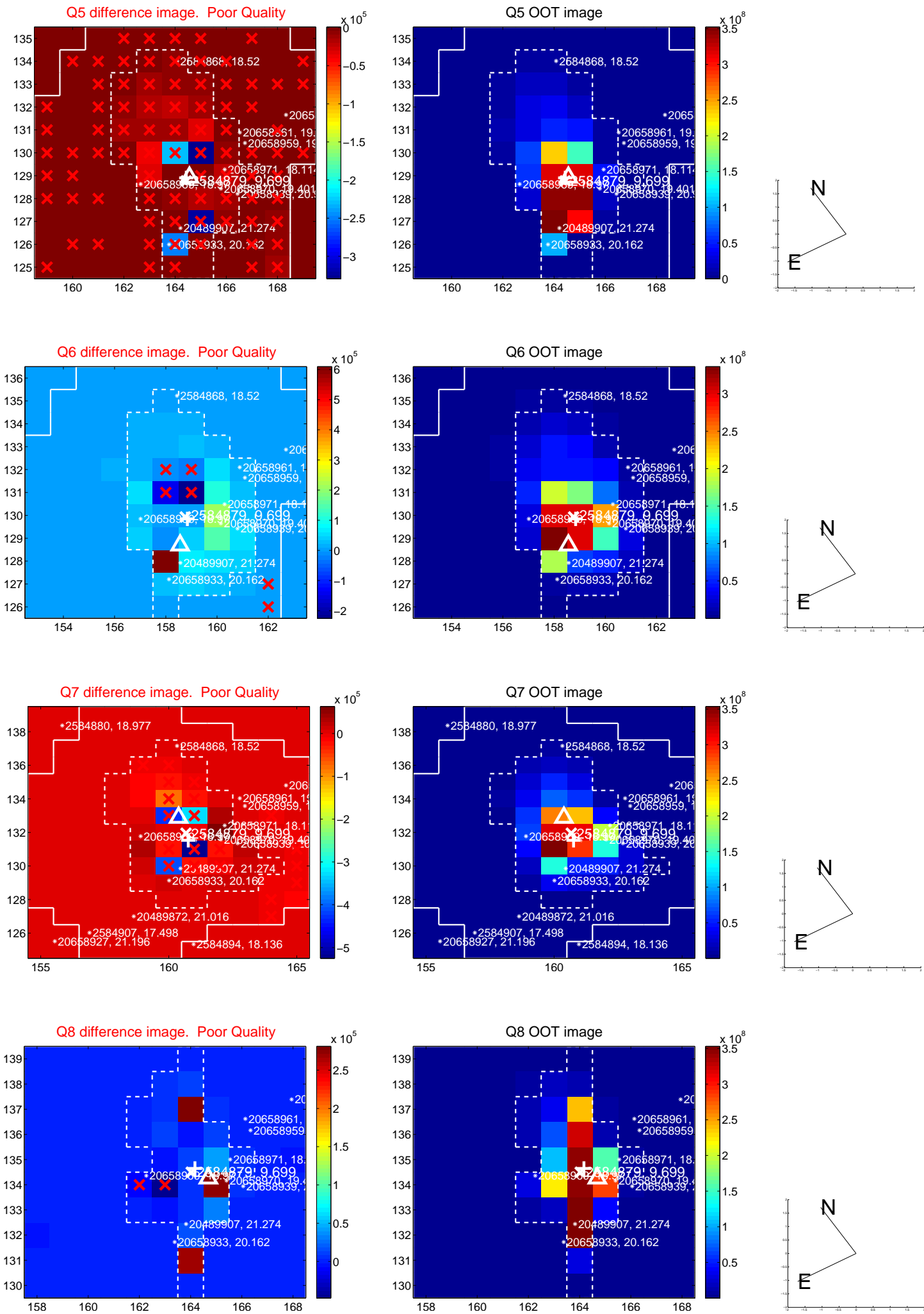


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

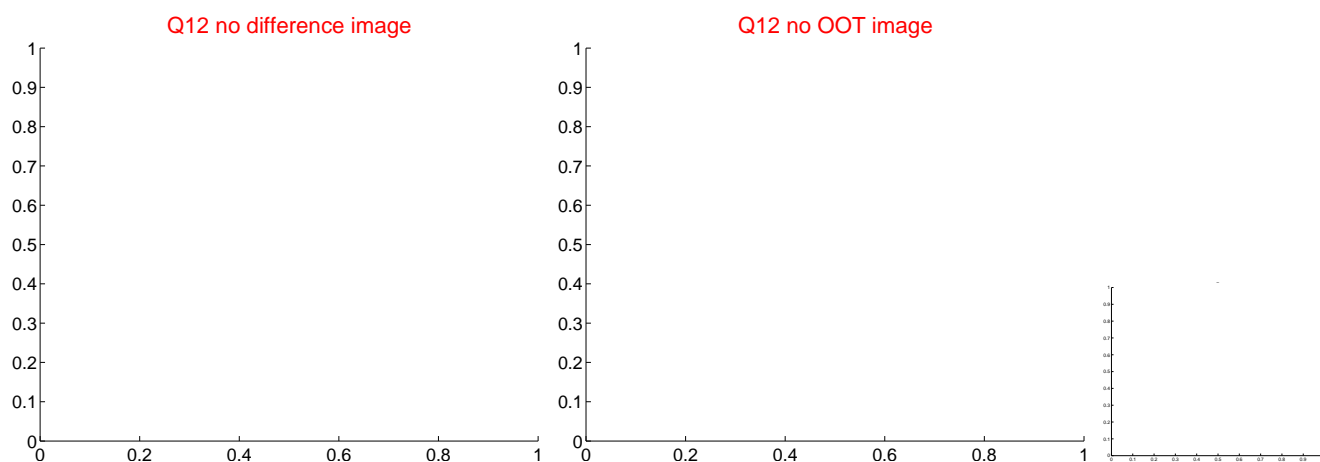
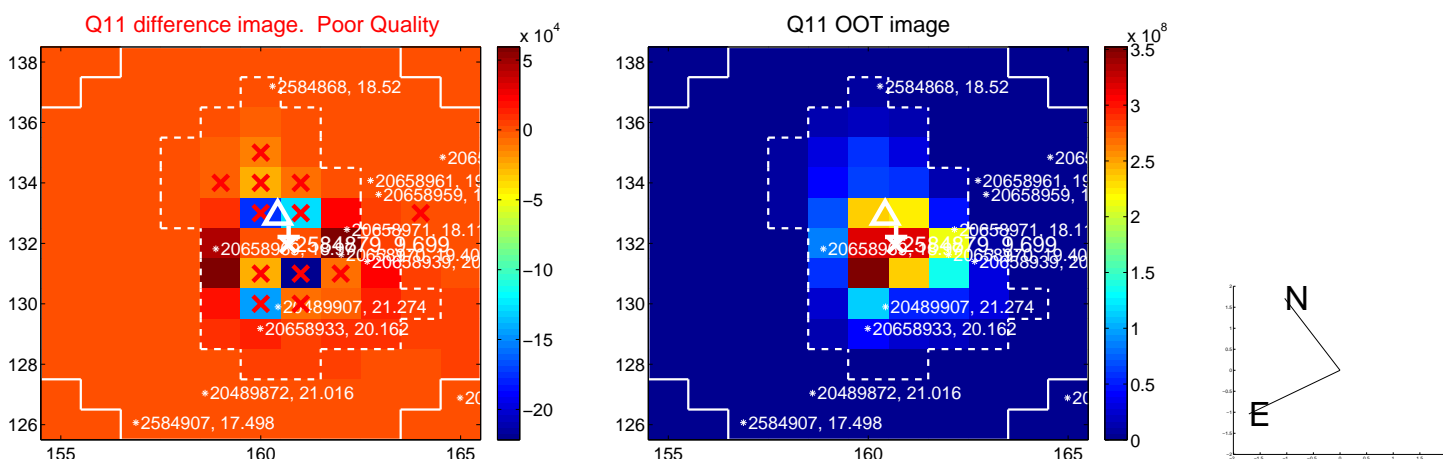
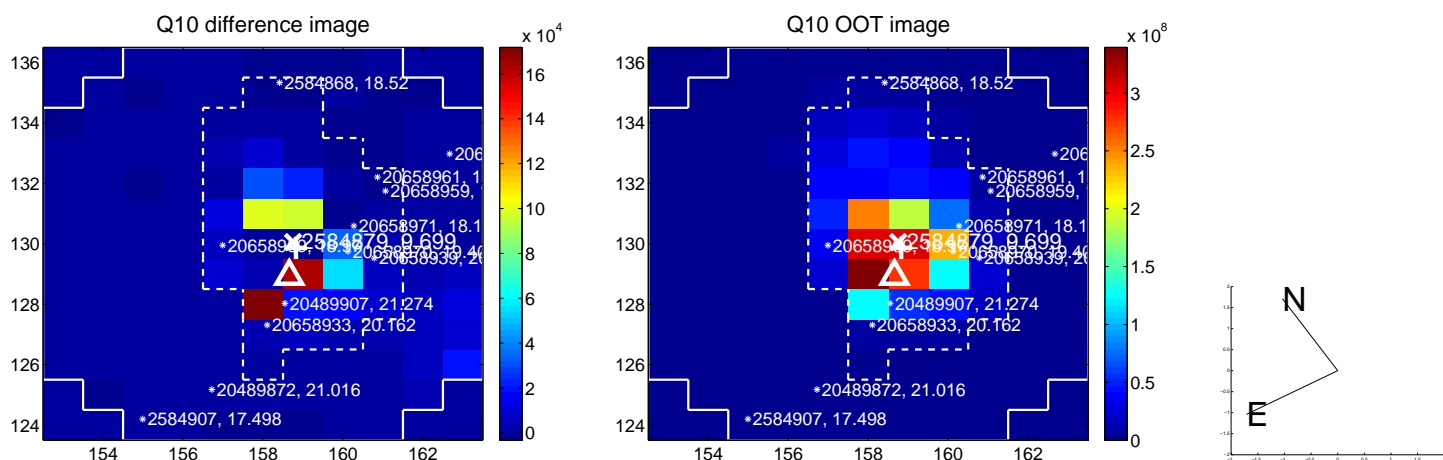
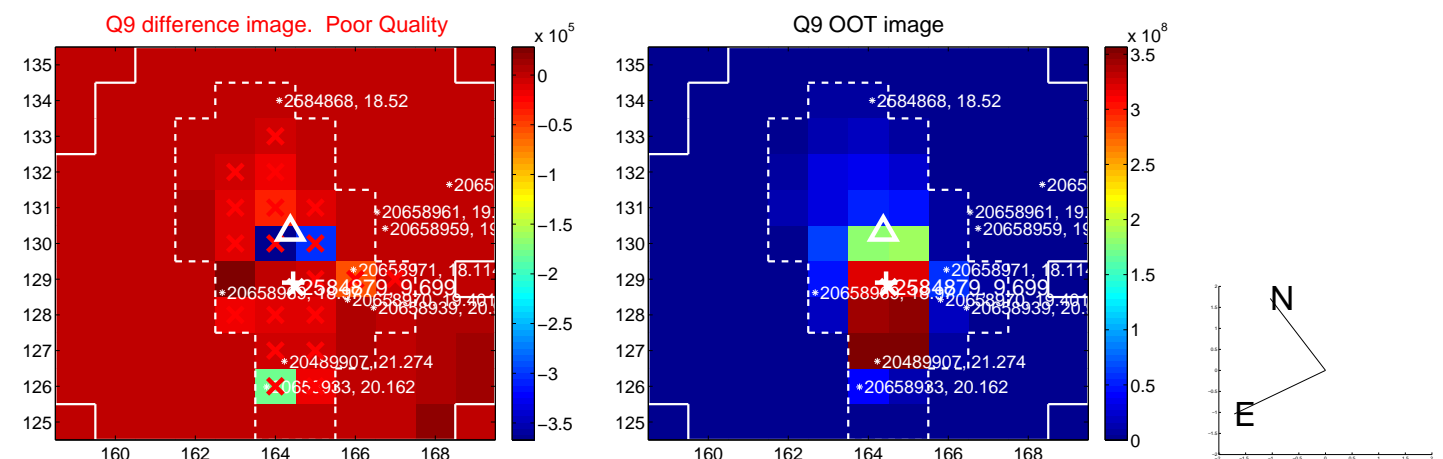
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



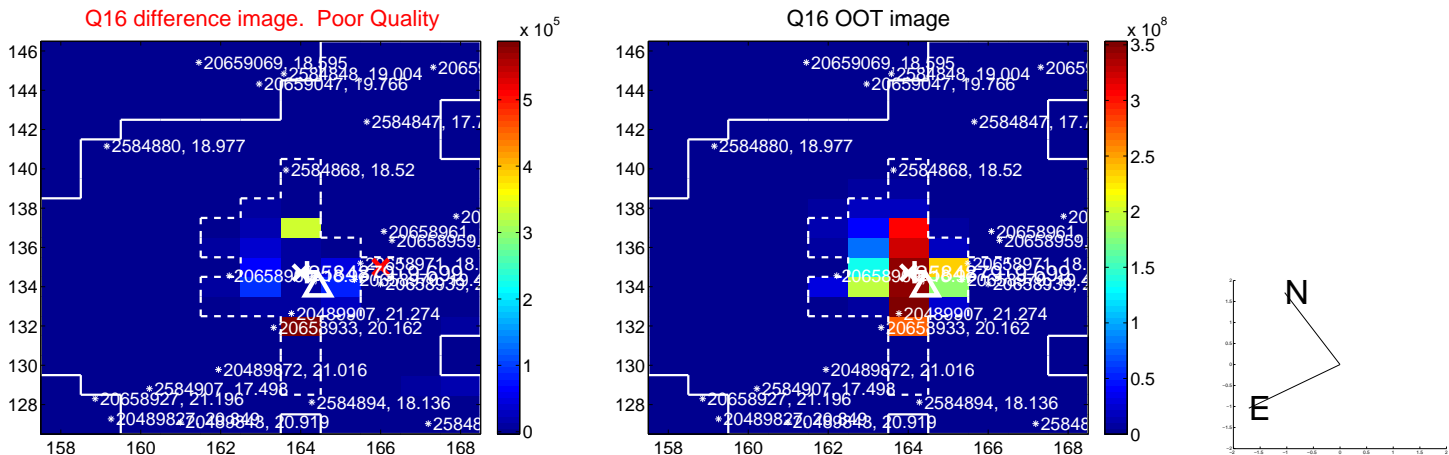
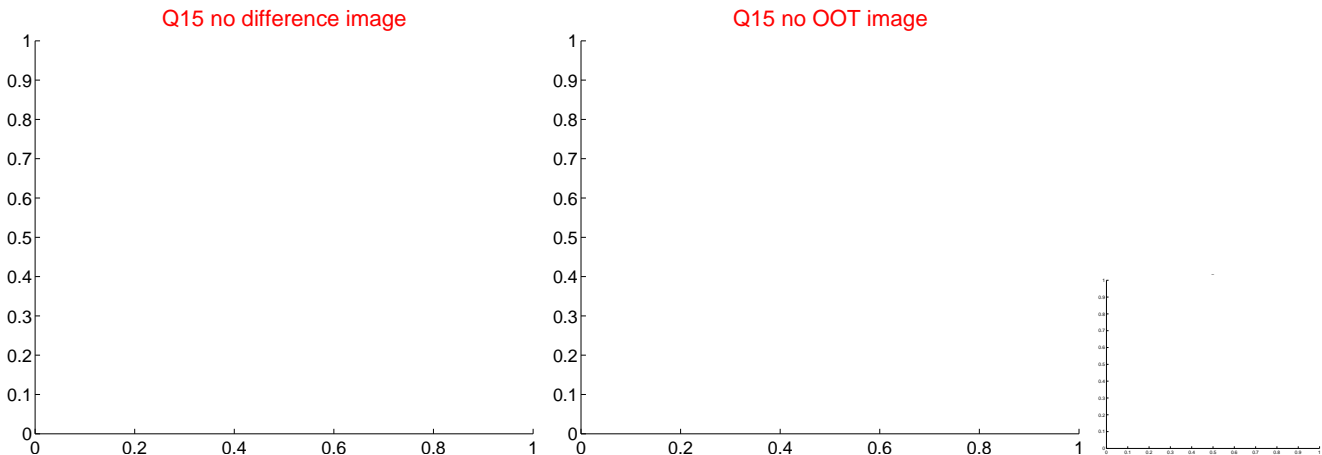
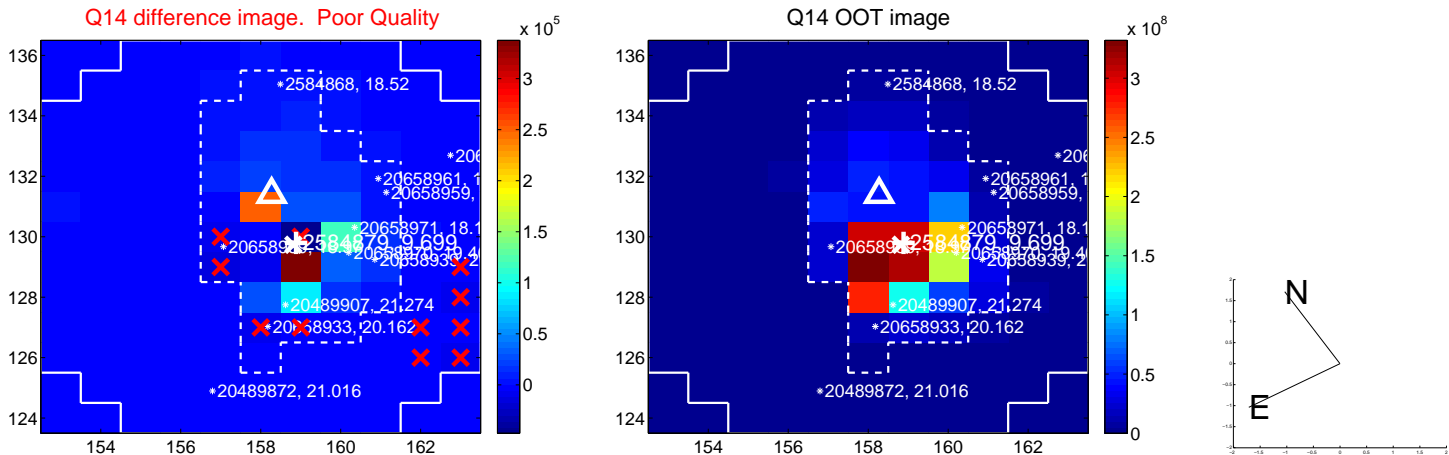
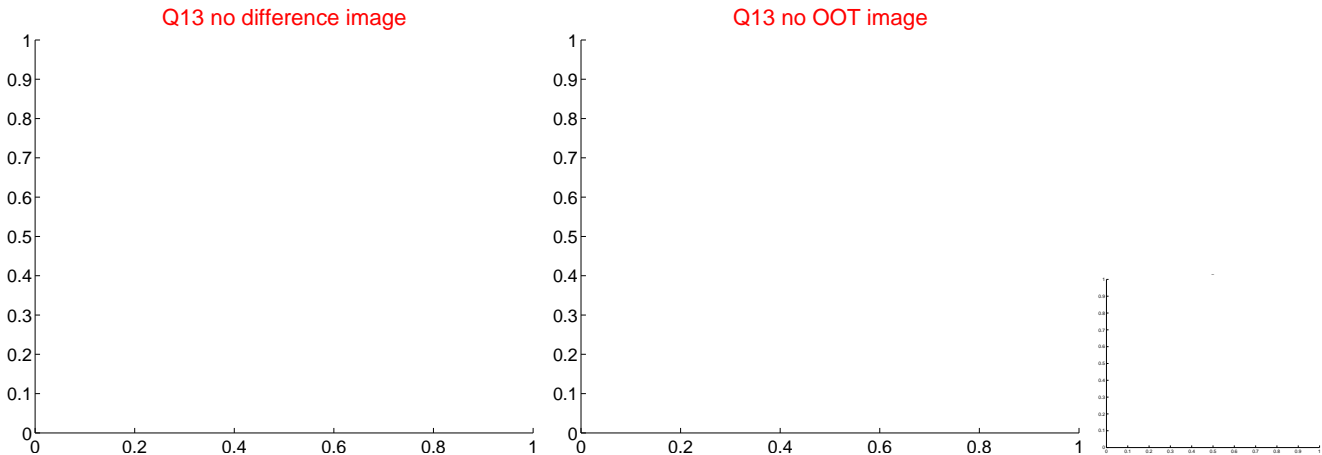
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



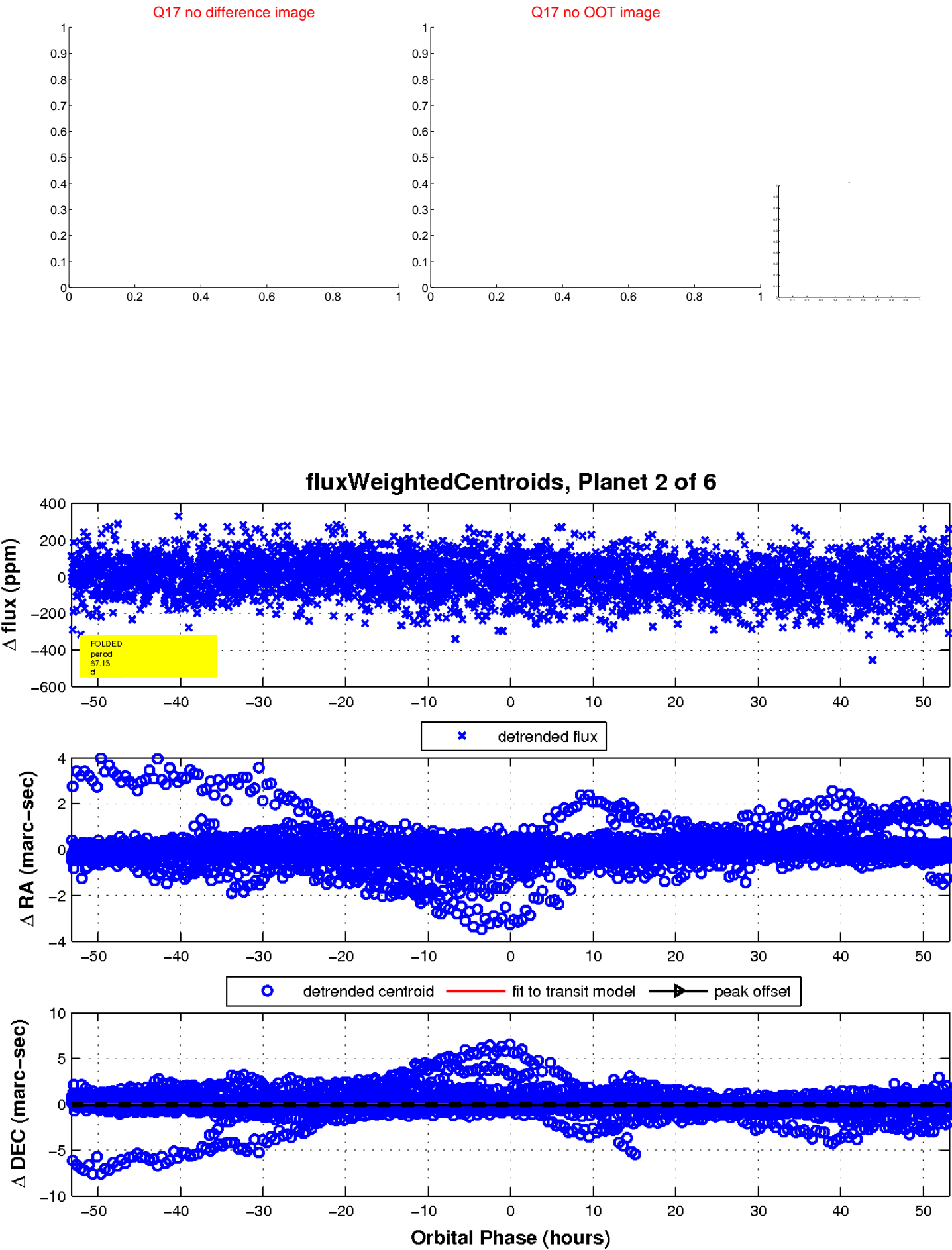
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

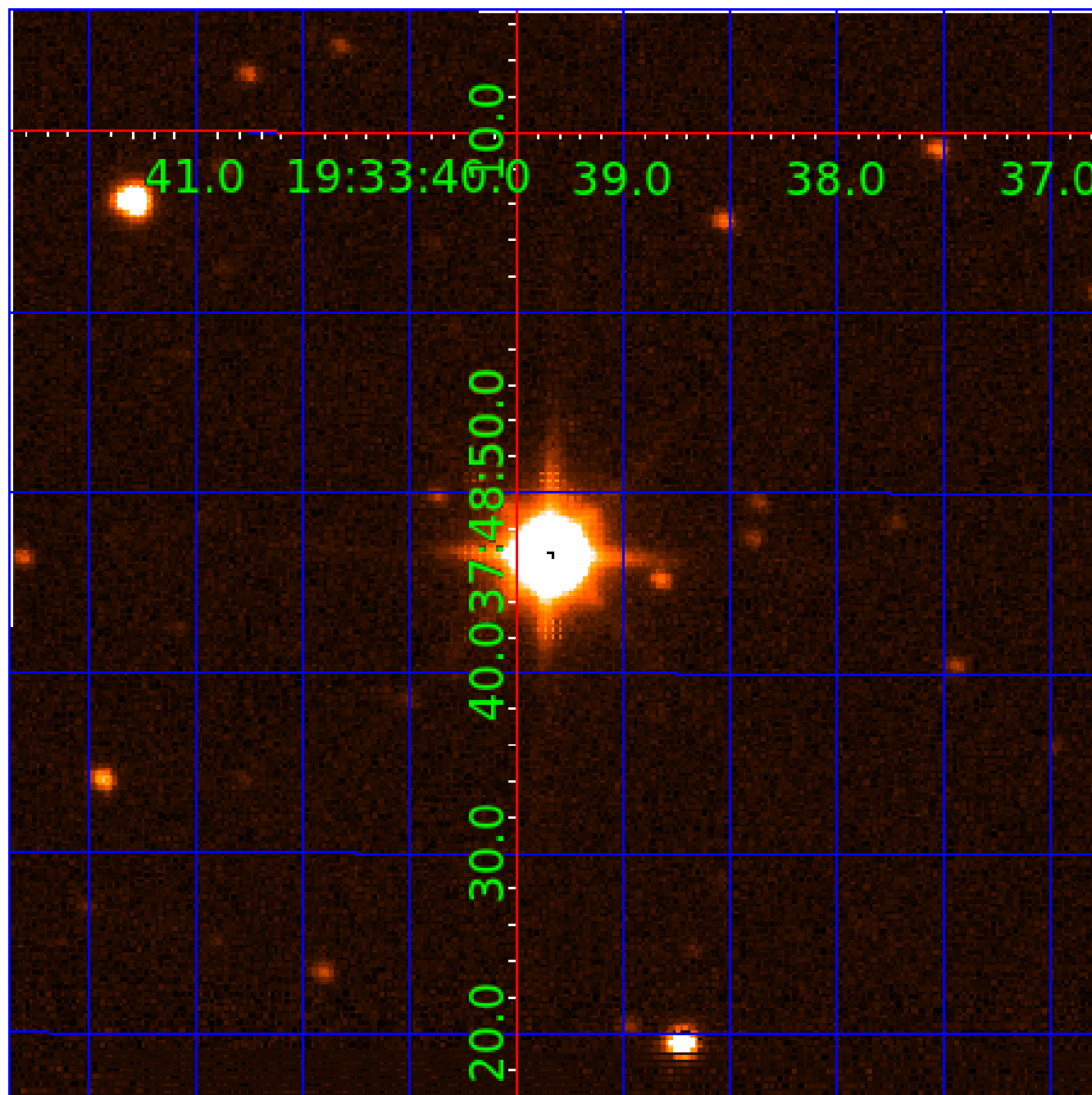


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002584879

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 002584879-01 | OBS | No | 0.898098 | 131.711970 | 4.4 | 5.163 | 9.6 | 3.6 | 1.28 | 6392 | 0.27 | 7278.52 |
| 002584879-02 | OBS | No | 87.134713 | 142.506802 | 56.4 | 17.734 | 8.2 | 4.7 | 1.28 | 6392 | 1.10 | 16.33 |
| 002584879-04 | OBS | No | 111.838664 | 227.391886 | 94.4 | 1.937 | 9.6 | 4.0 | 1.28 | 6392 | 1.44 | 11.70 |
| 002584879-05 | OBS | No | 73.829513 | 171.325091 | 110.6 | 3.728 | 8.4 | 8.8 | 1.28 | 6392 | 1.53 | 20.36 |
| 002584879-06 | OBS | No | 34.989848 | 154.176402 | 135.8 | 1.606 | 8.3 | 9.0 | 1.28 | 6392 | 1.56 | 55.11 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 002584879-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED |
| 002584879-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED |
| 002584879-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED |
| 002584879-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED |
| 002584879-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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.

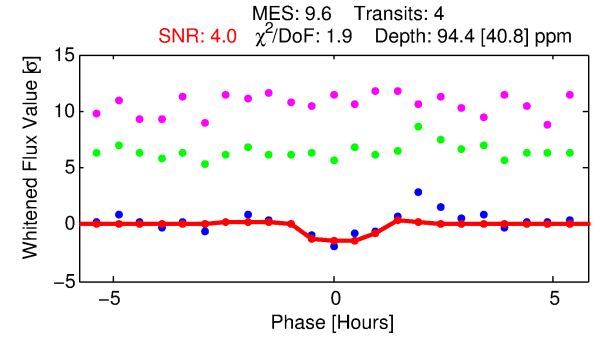
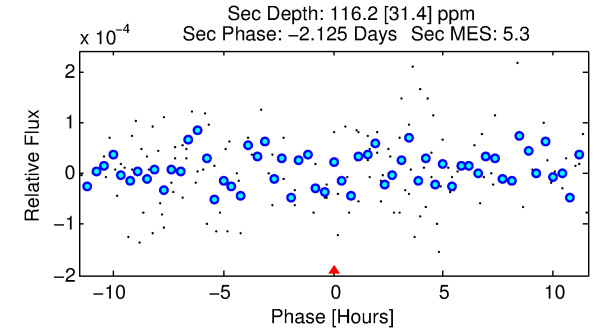
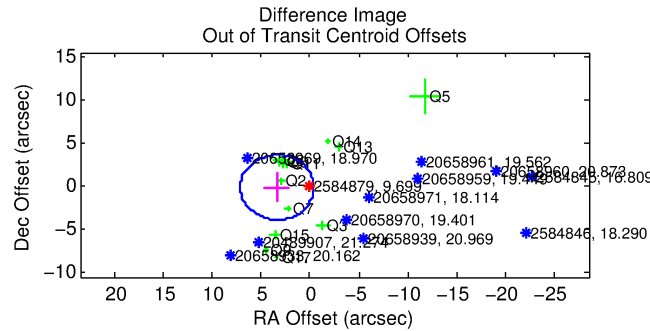
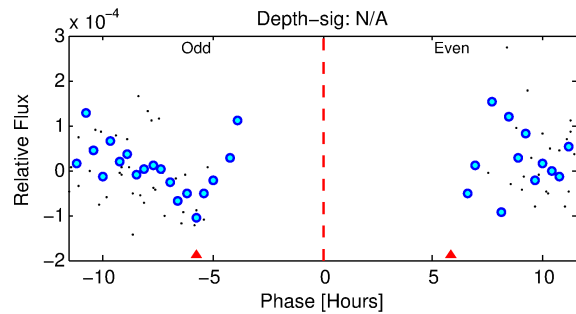
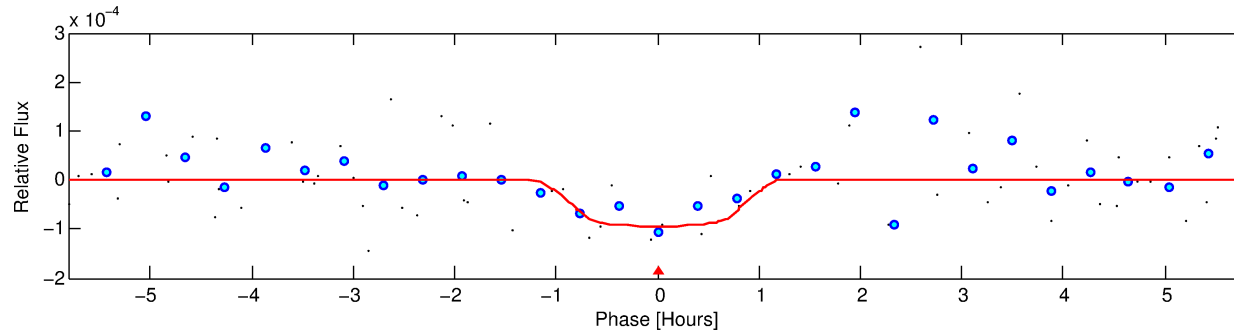
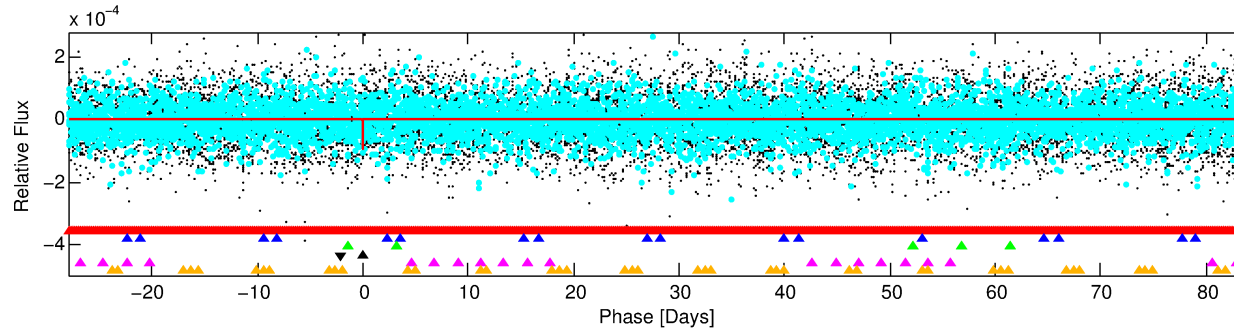
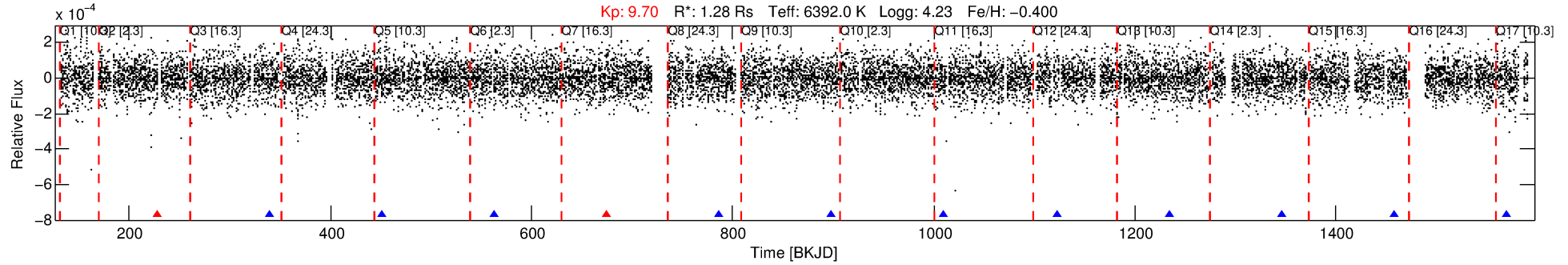
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002584879-04

No Significant Match Found

DV One-Page Summary

KIC: 2584879 Candidate: 4 of 6 Period: 111.839 d



DV Fit Results:

Period = 111.83866 [0.00280] d
Epoch = 227.3919 [0.0141] BKJD
 $R_p/R^* = 0.0103$ [0.0254]
 $a/R^* = 214.87$ [2964.06]
 $b = 0.89$ [3.45]
 $\text{Seff} = 11.70$ [4.63]
 $T_{\text{eq}} = 472$ [47] K
 $R_p = 1.44$ [3.57] R_e
 $a = 0.4579$ [0.1118] AU
 $A_g = 6462.08$ [31984.64] [0.20σ]
 $T_{\text{eff}} = 6538$ [8072] K [0.75σ]

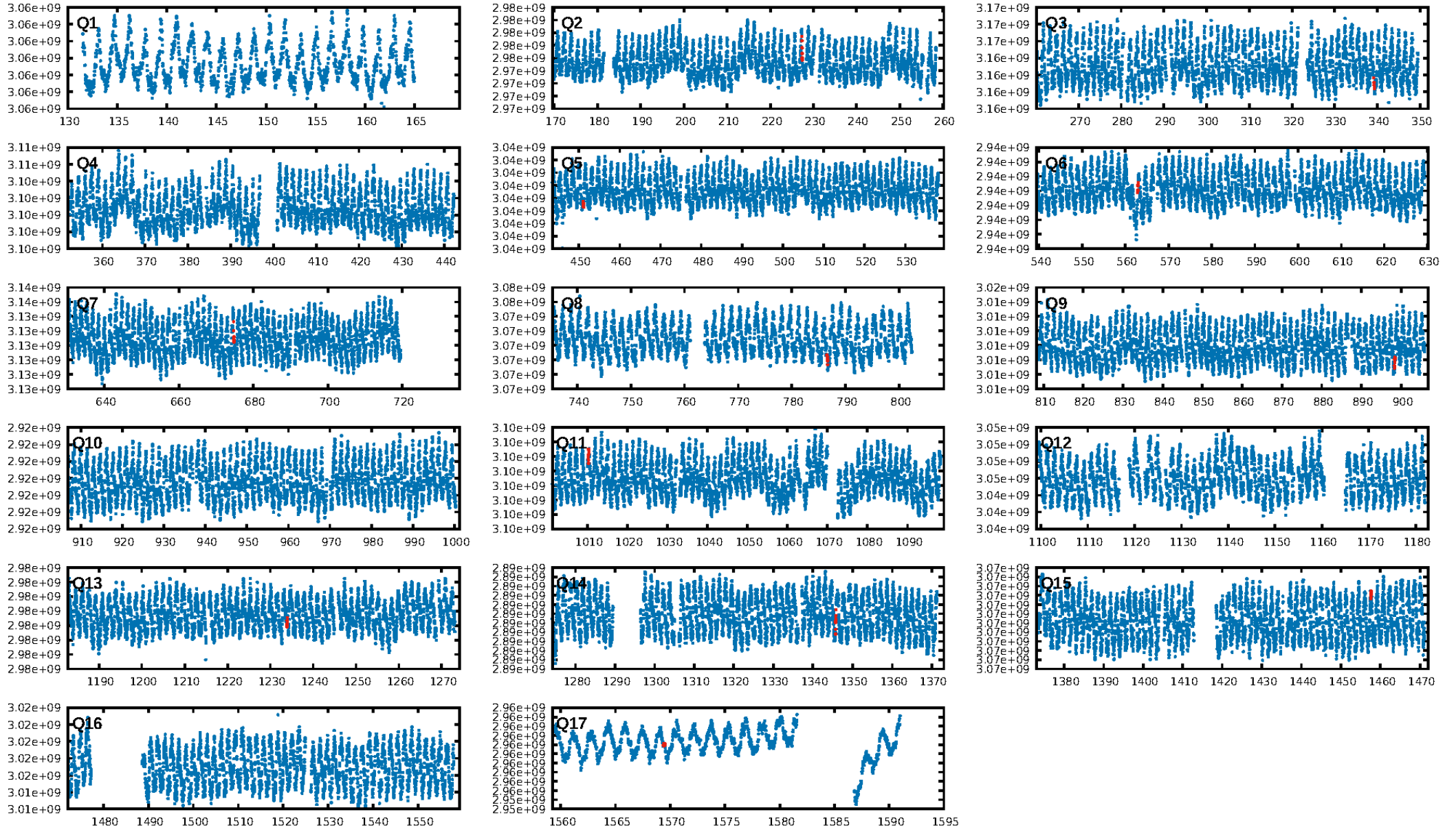
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [33.24σ]
LongPeriod-sig: 100.0% [859.57σ]
ModelChiSquare2-sig: 34.2%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.60e-12
RollingBand-fgt: 0.50 [2/4]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 1.156 arcsec [0.69σ]
OotOffset-rm: 3.380 arcsec [2.70σ]
KicOffset-rm: 3.291 arcsec [2.24σ]
OotOffset-st: 3/4/1/4 [12]
KicOffset-st: 3/4/1/4 [12]
DiffImageQuality-fgm: 0.17 [2/12]
DiffImageOverlap-fno: 0.17 [2/12]

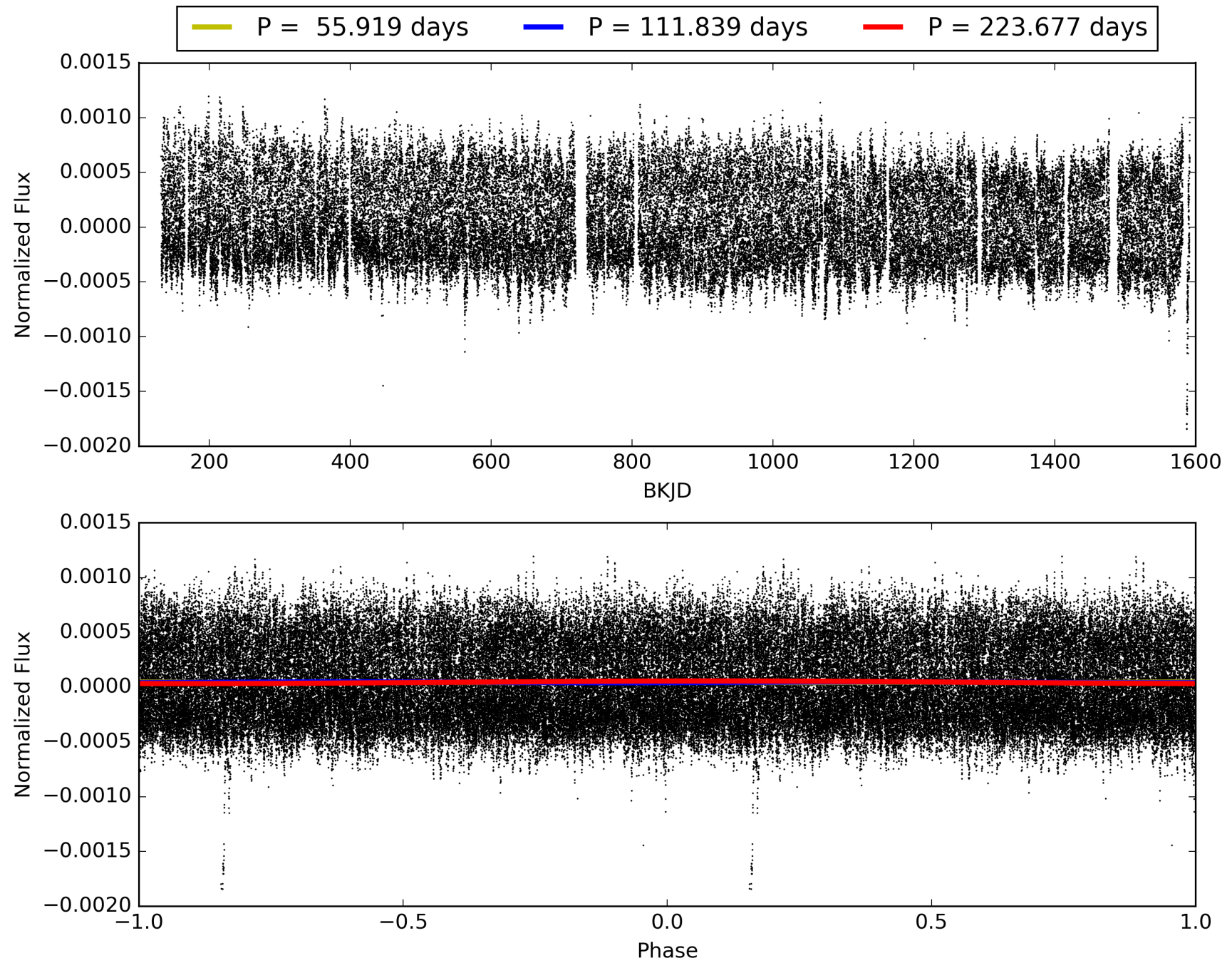
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:15:44 Z

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

TCE 002584879-04, PDC Light Curves

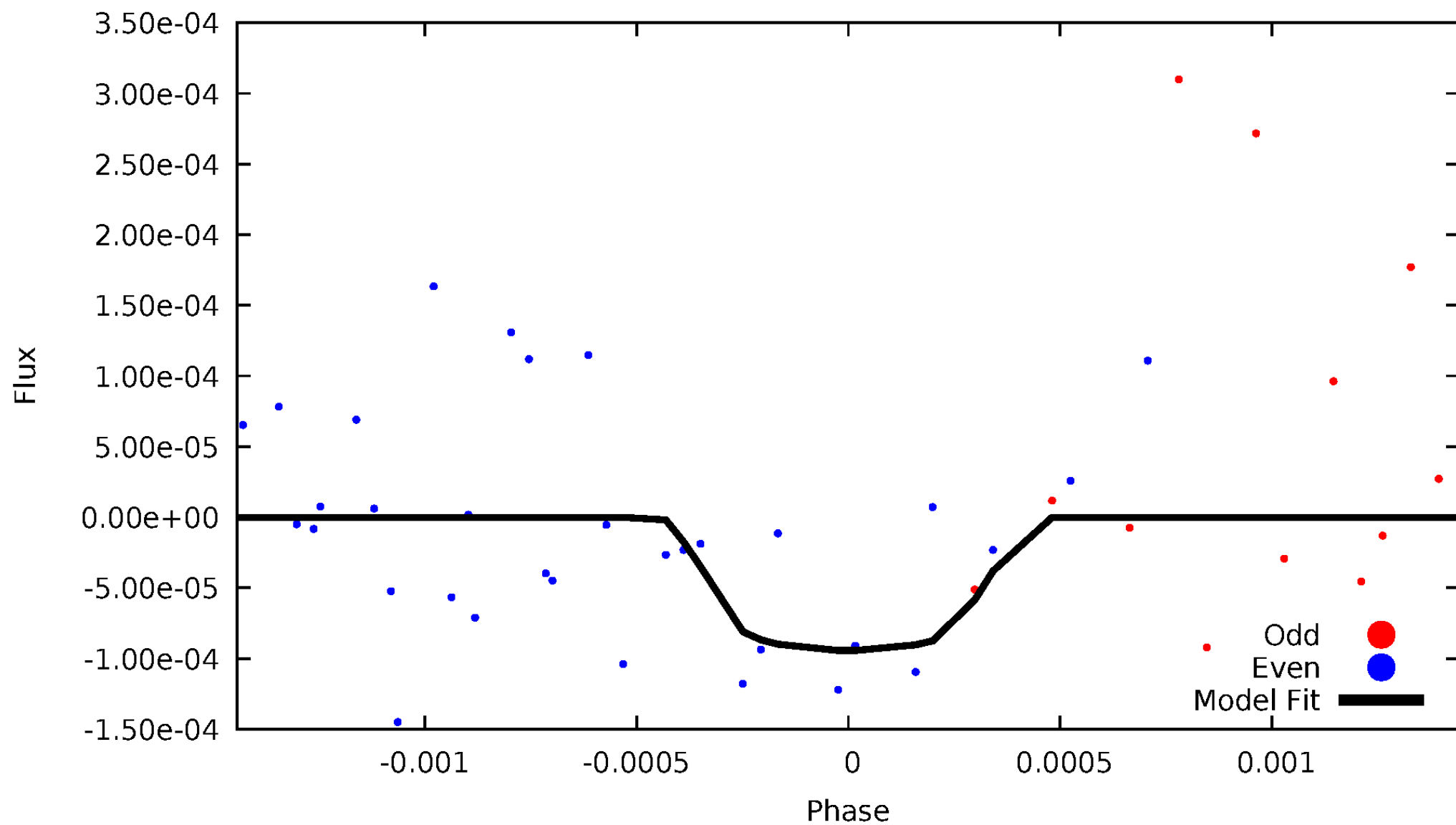


TCE 002584879-04



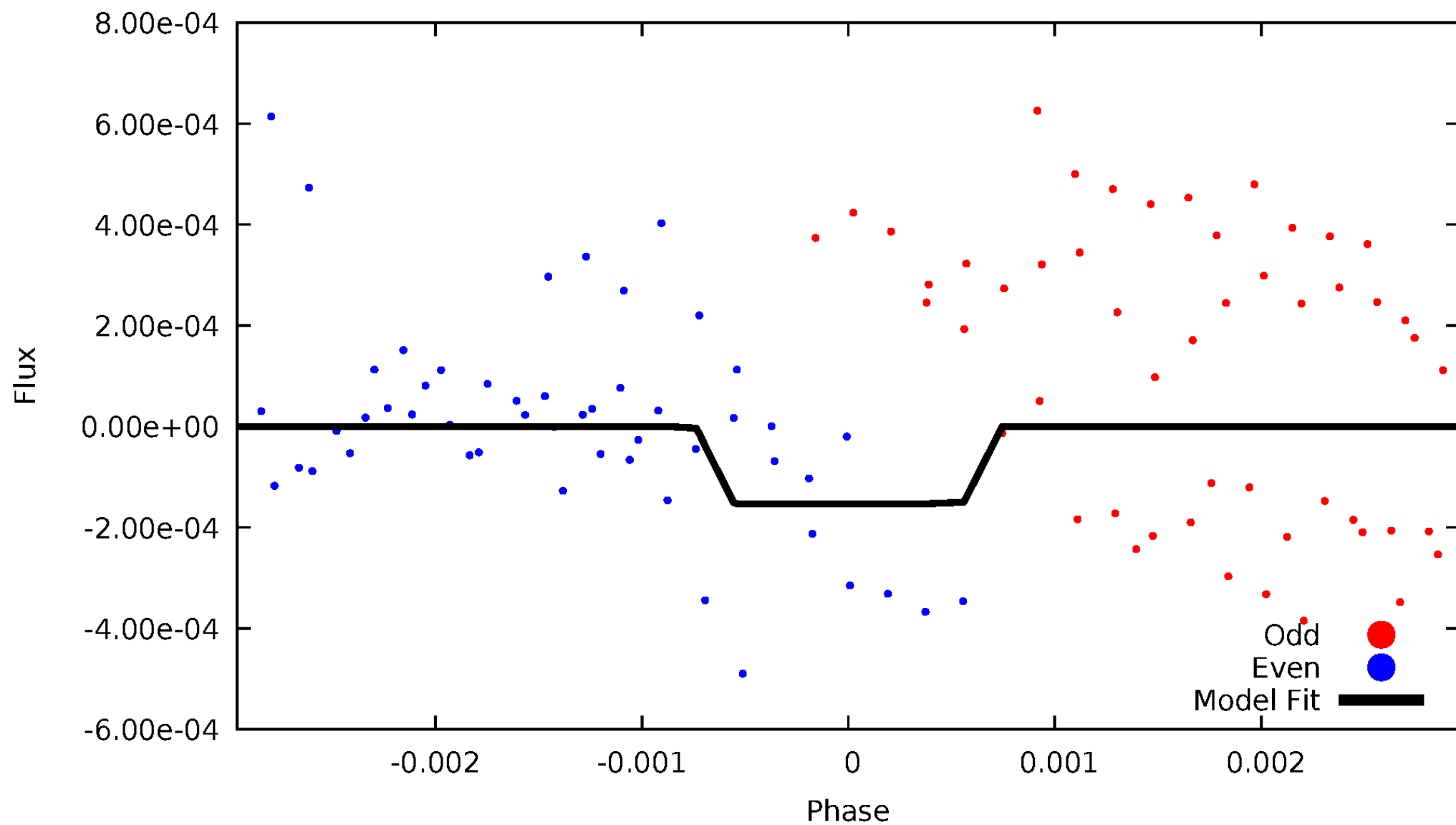
DV Odd/Even

TCE 002584879-04



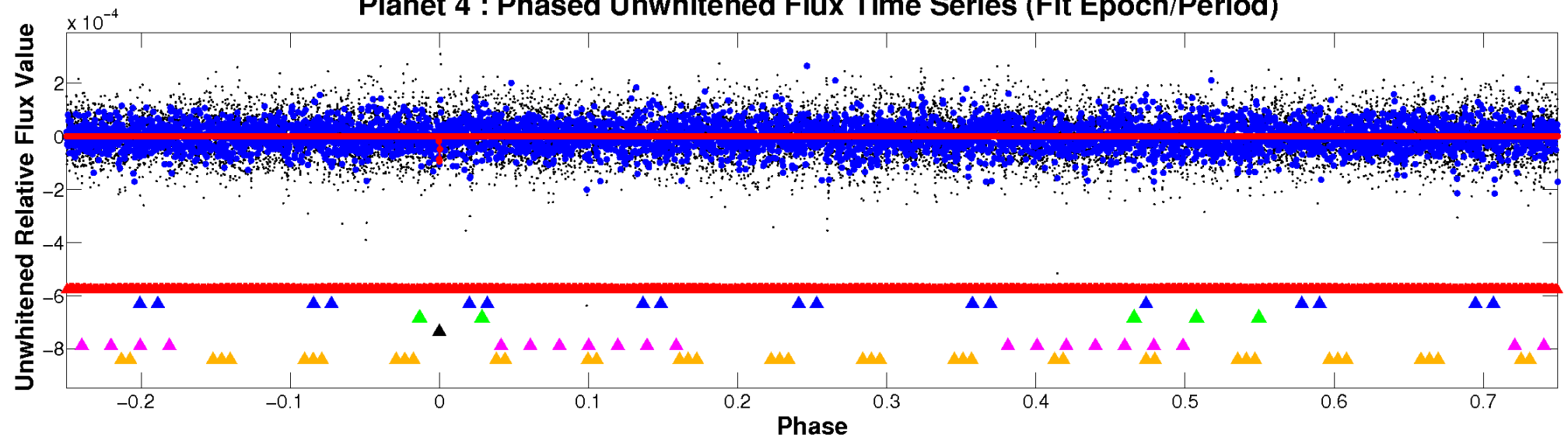
ALT Odd/Even

TCE 002584879-04

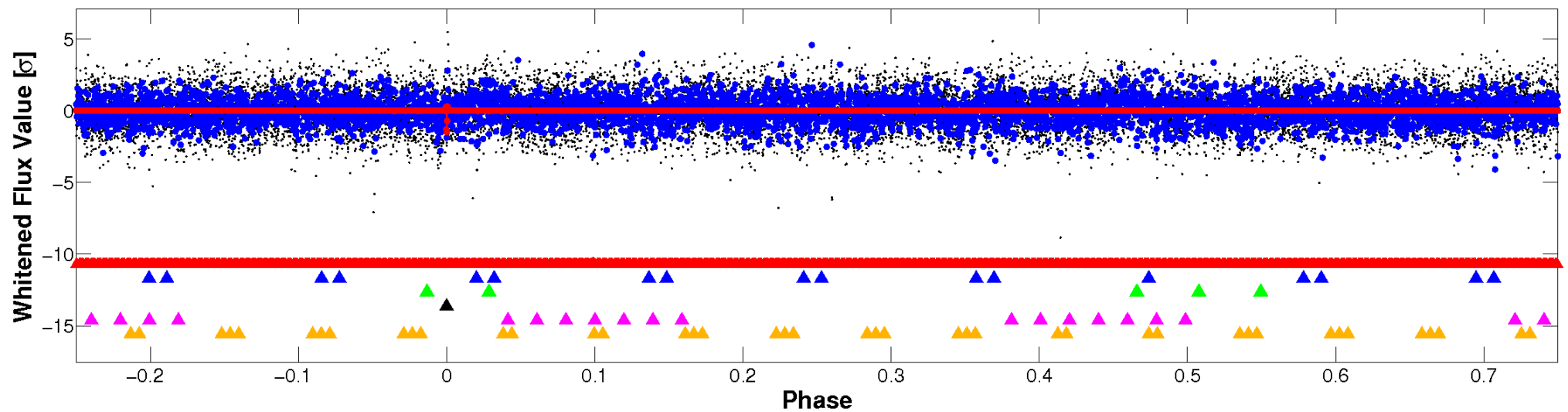


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

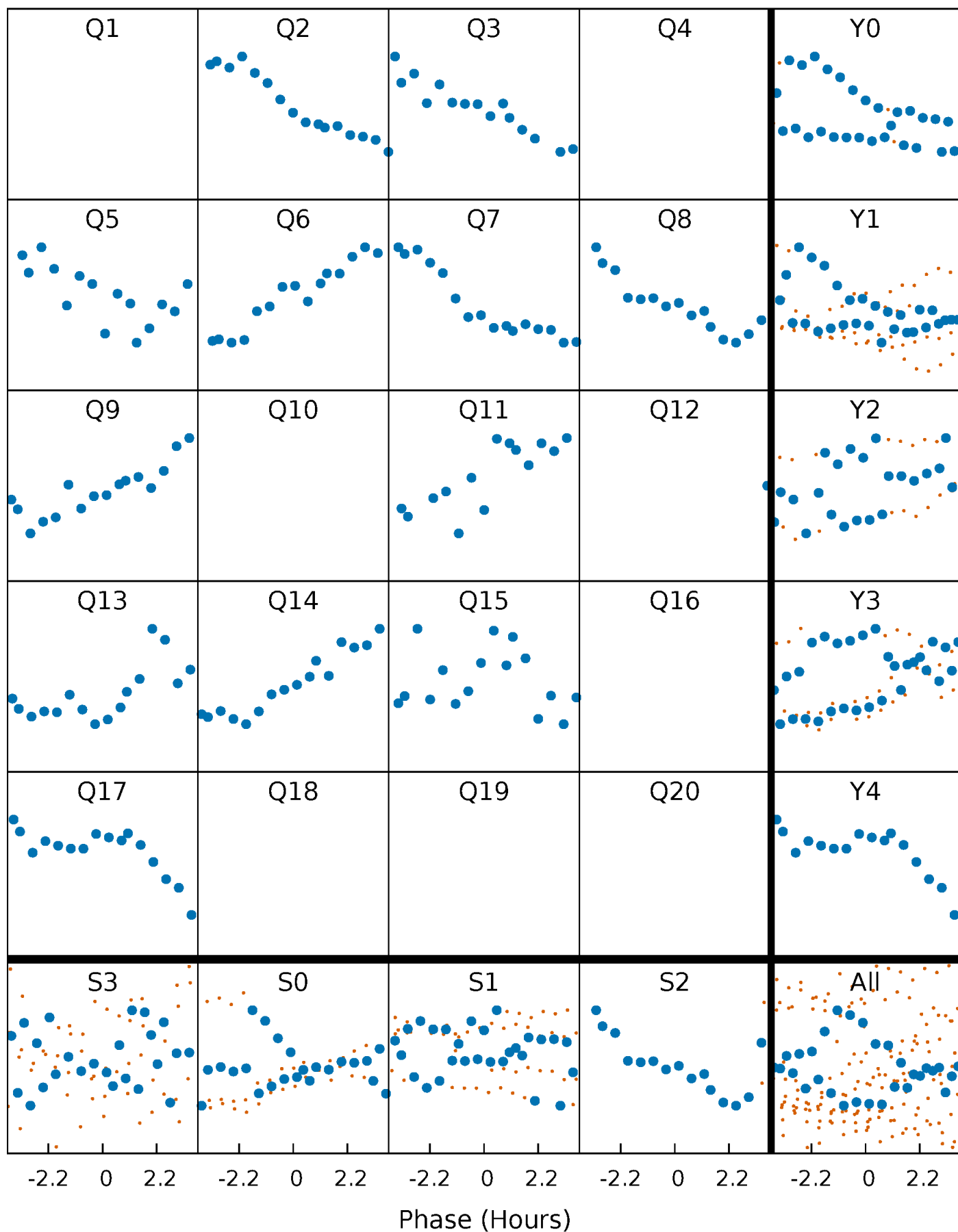


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



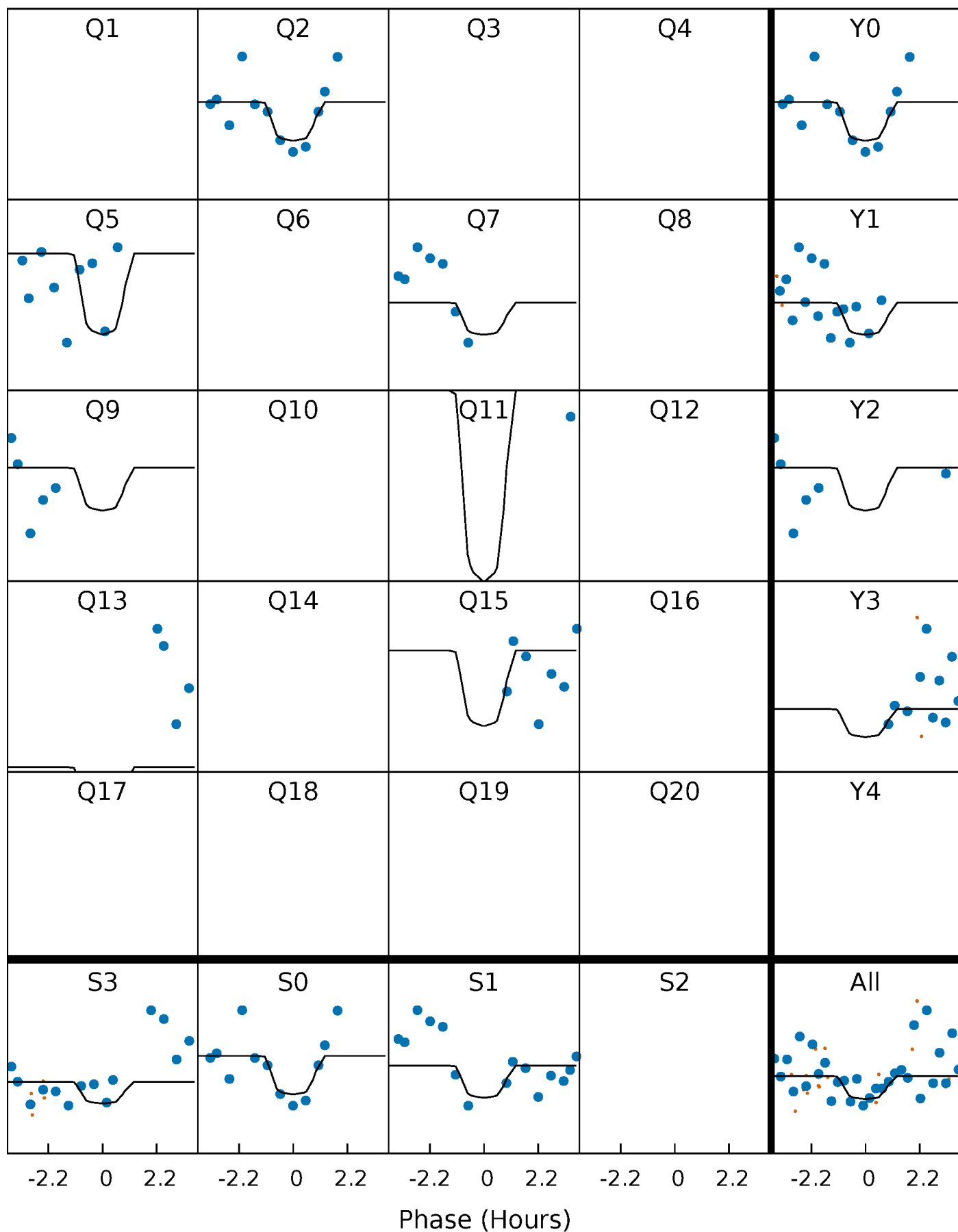
PDC Quarter-Phased Transit Curves

TCE 002584879-04 P=111.838663 Days $T_0=227.391886$ (BKJD)



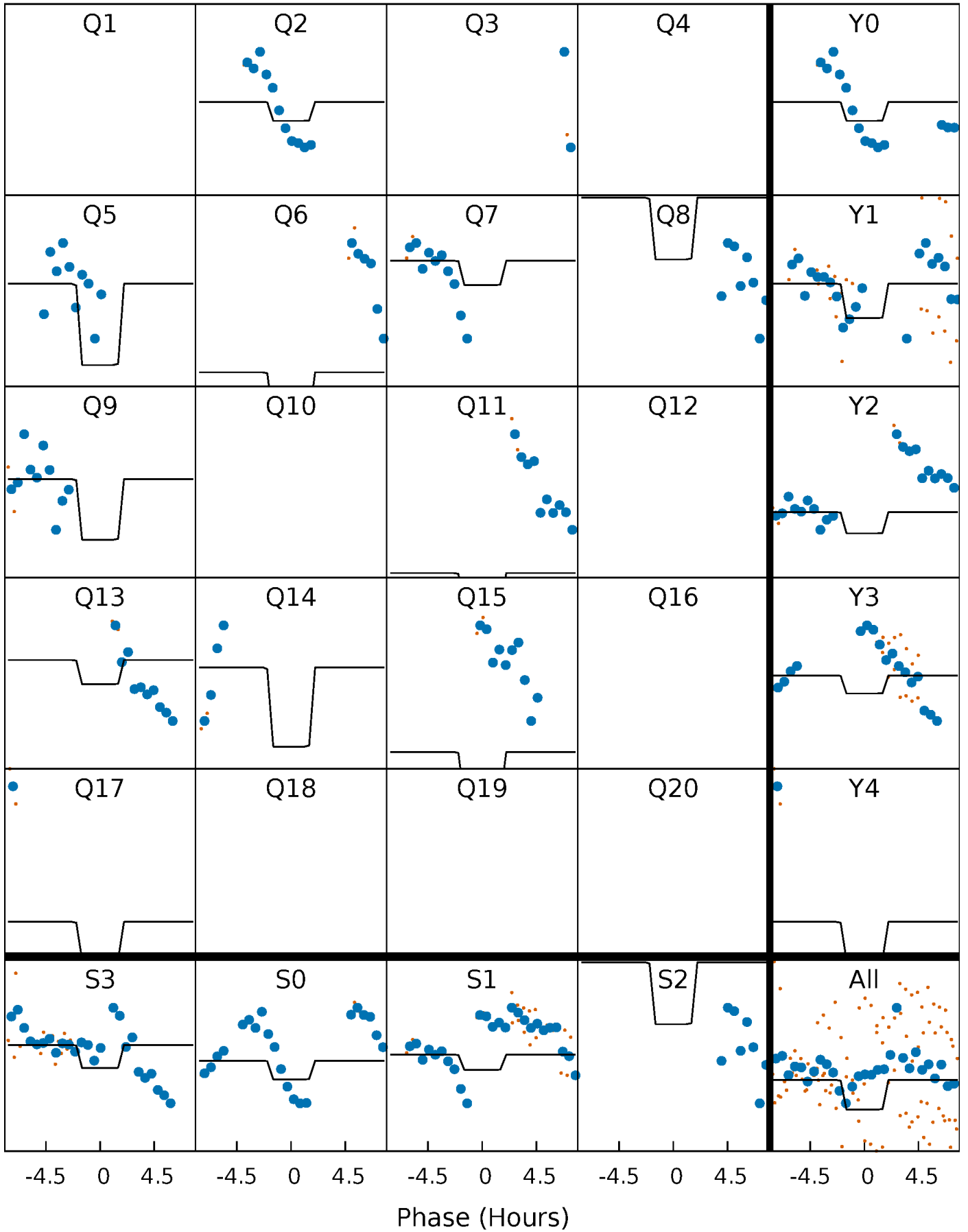
DV Quarter-Phased Transit Curves

TCE 002584879-04 P=111.838663 Days $T_0=227.391886$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

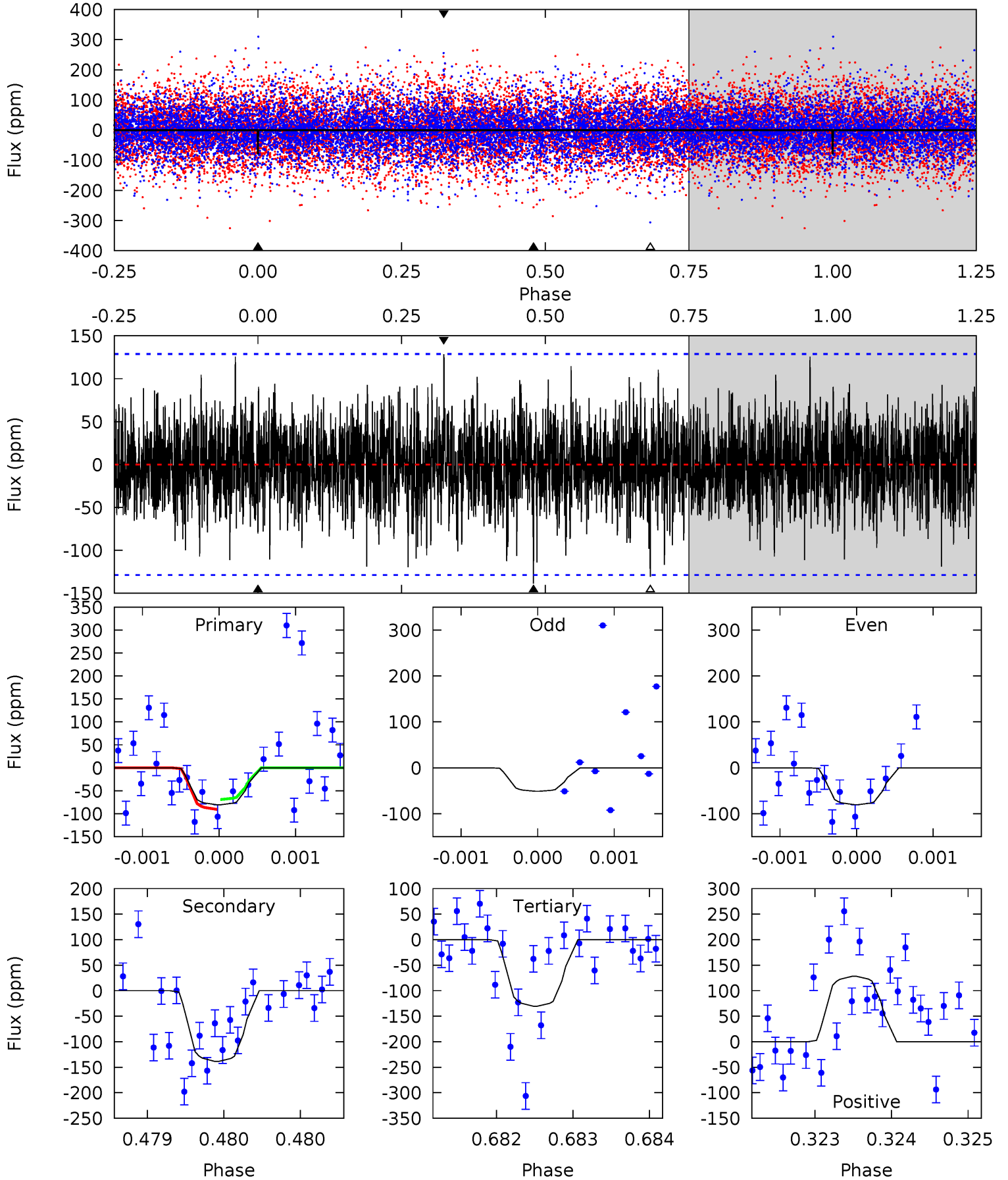
TCE 002584879-04 $P=111.841782$ Days $T_0=227.408742$ (BKJD)



DV Model-Shift Uniqueness Test

002584879-04, P = 111.838663 Days, E = 115.553223 Days

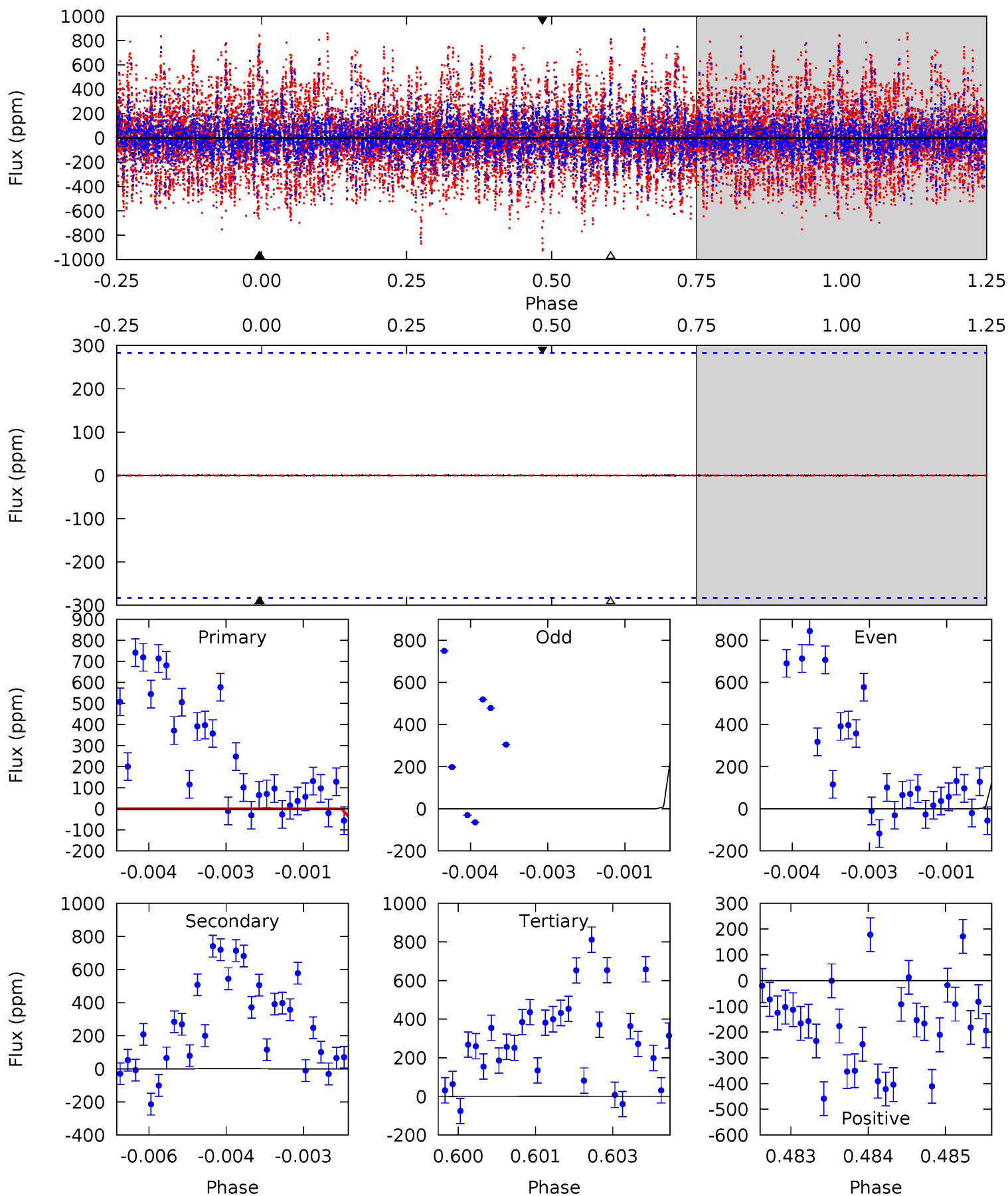
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 3.42 | 5.90 | 5.55 | 5.46 | 5.48 | 3.33 | 1.46 | -2.13 | -2.04 | 0.35 | 0.44 | 0.37 | 0.86 | 0.48 | 0.45 |



Alt Model-Shift Uniqueness Test

002584879-04, P = 111.841782 Days, E = 115.566960 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 | 0.02 | 0.02 | 0.01 | 5.38 | 3.18 | 0.00 | -0.02 | -0.01 | 0.00 | 0.01 | 1.20 | 1.47 | 0.39 | 0.03 |



Stellar Parameters For KIC 002584879

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6392^{+177}_{-244} | $4.233^{+0.204}_{-0.167}$ | $-0.400^{+0.300}_{-0.300}$ | $1.281^{+0.360}_{-0.294}$ | $1.022^{+0.171}_{-0.128}$ | $0.684^{+0.670}_{-0.344}$ |
| | +3%/-4% | +5%/-4% | +75%/-75% | +28%/-23% | +17%/-13% | +98%/-50% |
| Source | PHO54 | PHO54 | PHO54 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 002584879-04 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|------------------------|---------------------------------|
| DV | -139 ± 24 | $3.00^{+2.94}_{-2.01}$ | 656^{+46}_{-46} | 4826^{+3534}_{-1046} | 1712^{+13157}_{-1267} |
| Alt. | -1 ± 53 | $3.39^{+3.11}_{-2.38}$ | 656^{+49}_{-44} | 1735^{+2627}_{-6051} | $1.424^{+1077.983}_{-1013.896}$ |

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

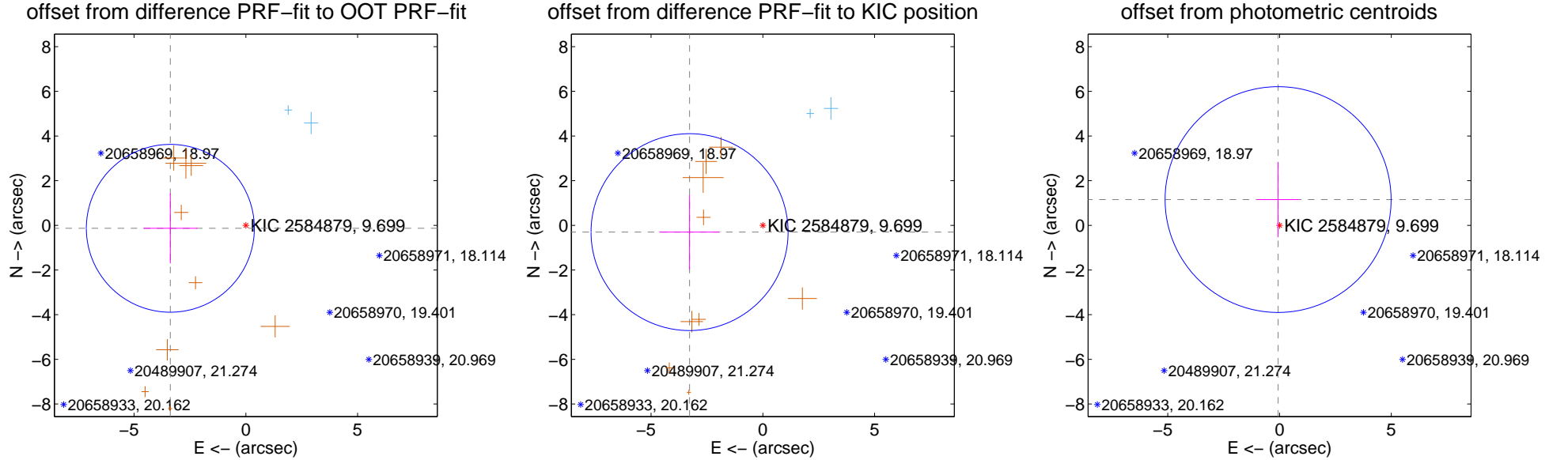
DV Centroid Data

Supplemental centroid analysis for 002584879-04. **Kepler magnitude: 9.70.** Transit SNR 3.96

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.74 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 3.380 ± 1.252 | 2.70 | 3.377 ± 1.210 | -0.133 ± 1.571 |
| PRF-fit source offset from KIC position | 3.291 ± 1.469 | 2.24 | 3.277 ± 1.351 | -0.304 ± 1.666 |
| photometric centroid source offset | 1.16 ± 1.68 | 0.69 | 0.06 ± 0.93 | 1.15 ± 1.69 |



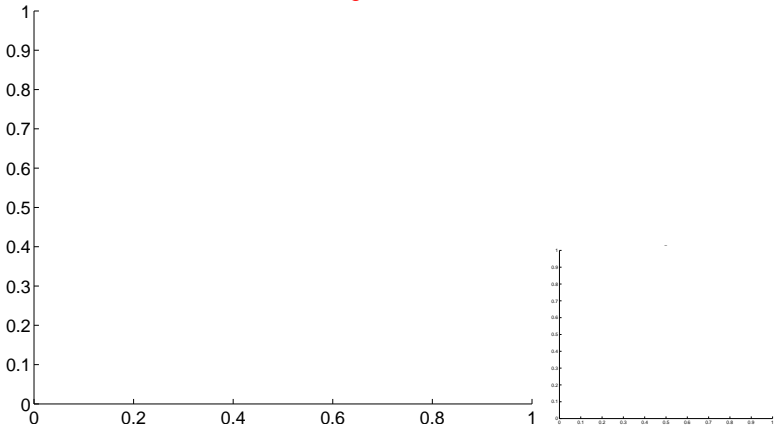
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

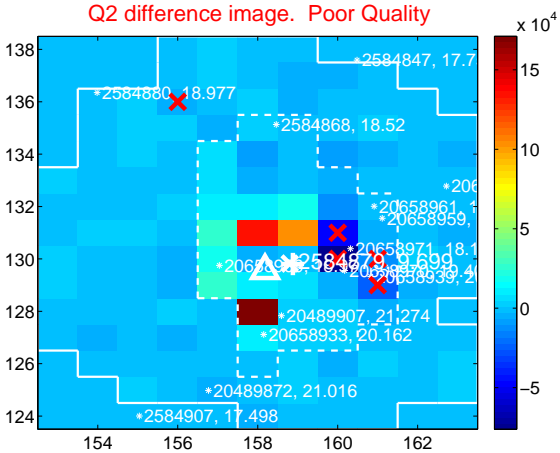
Q1 no difference image



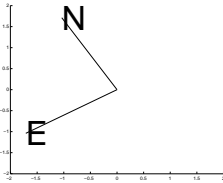
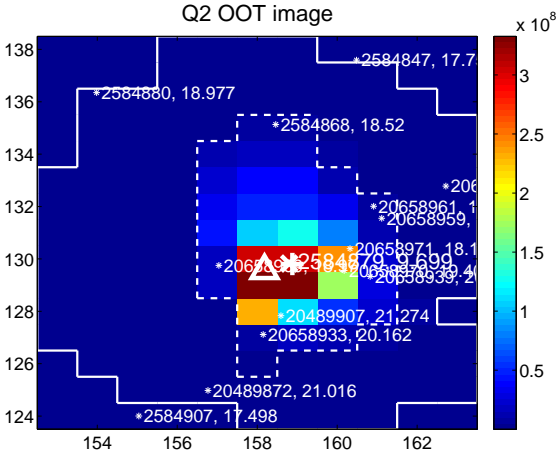
Q1 no OOT image



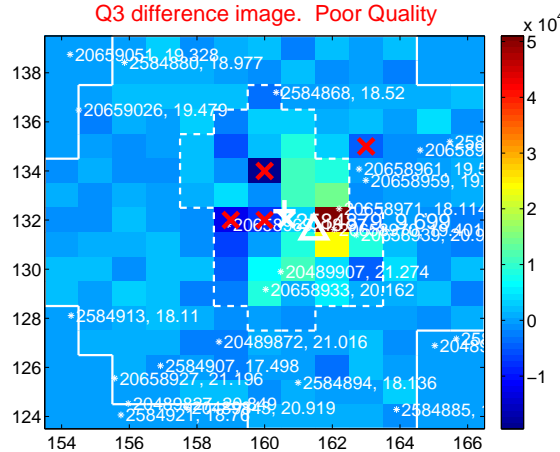
Q2 difference image. Poor Quality



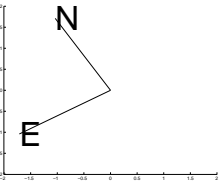
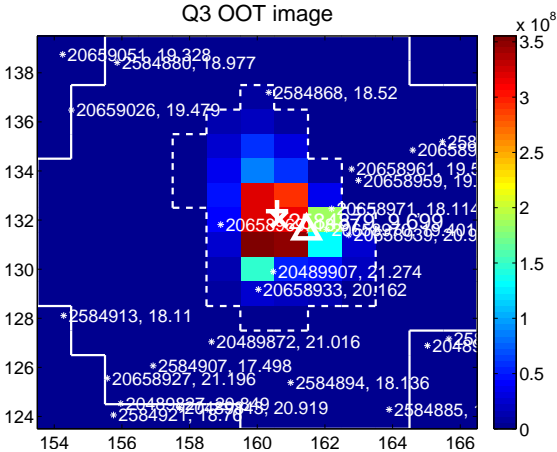
Q2 OOT image



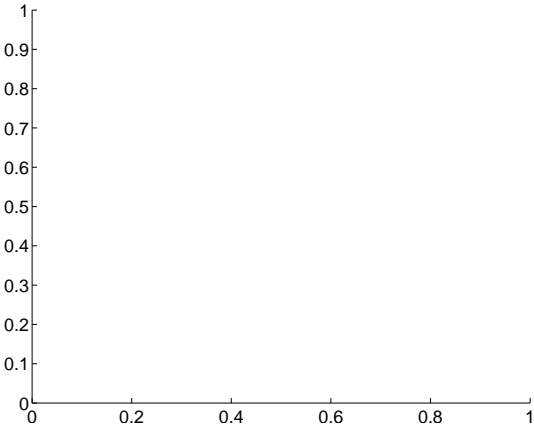
Q3 difference image. Poor Quality



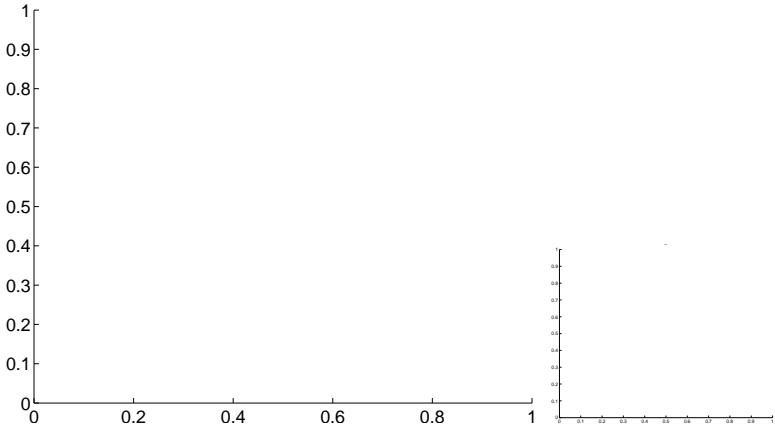
Q3 OOT image



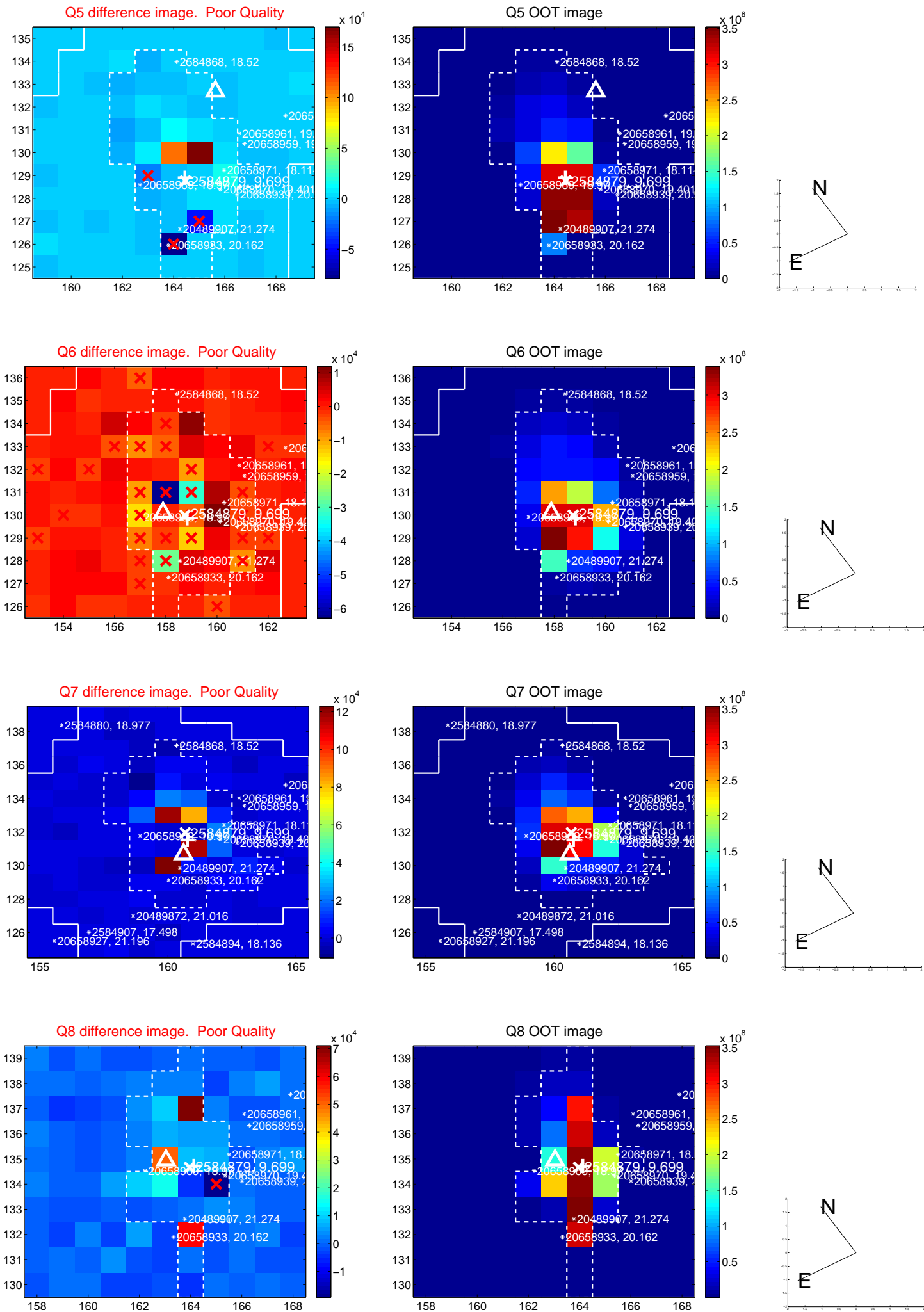
Q4 no difference image



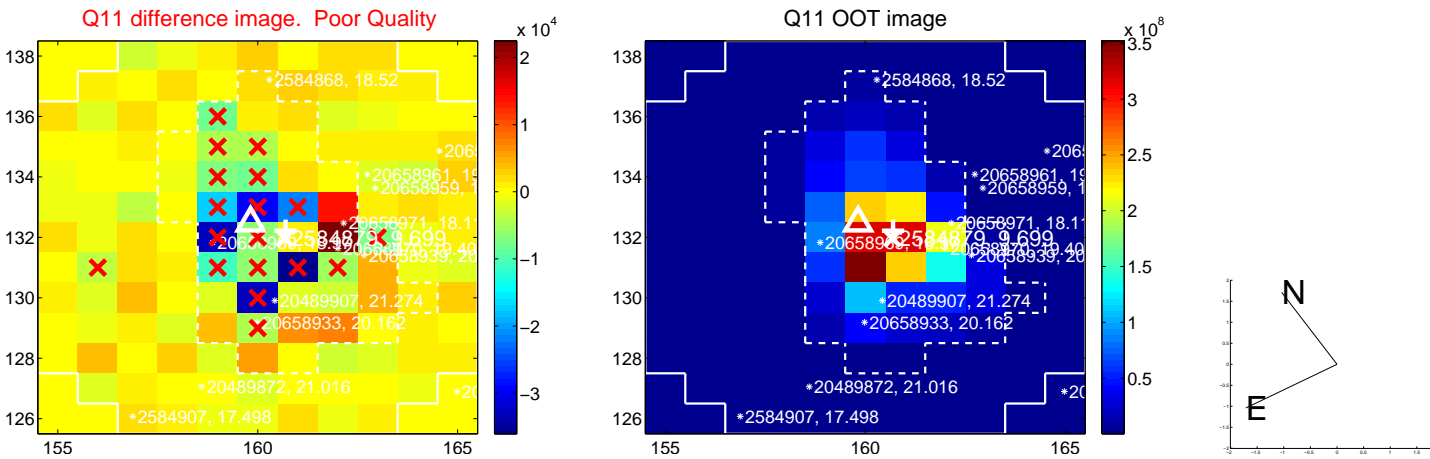
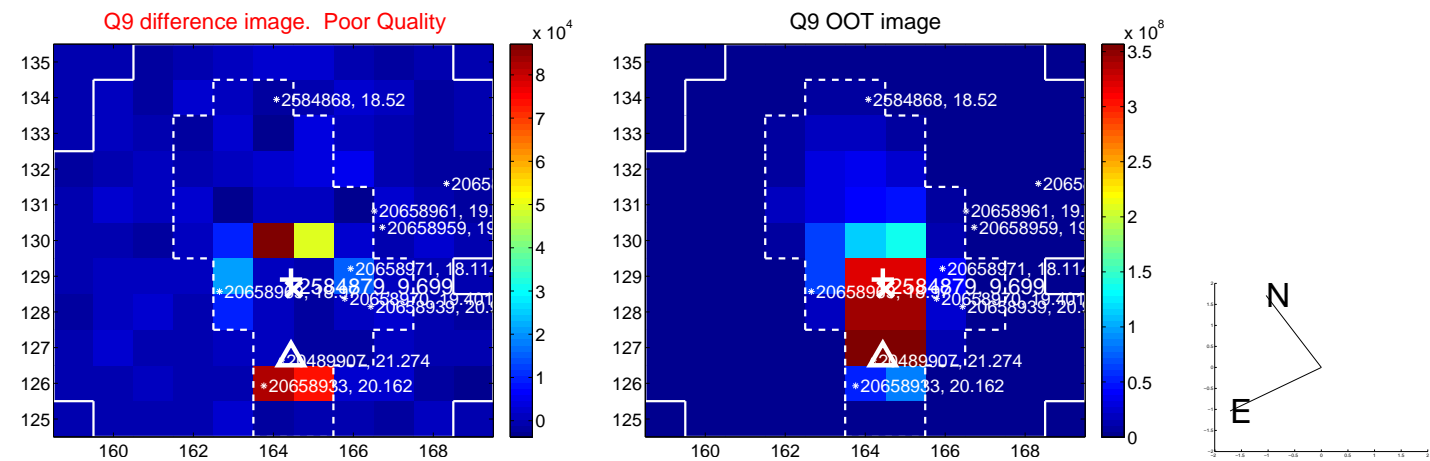
Q4 no OOT image



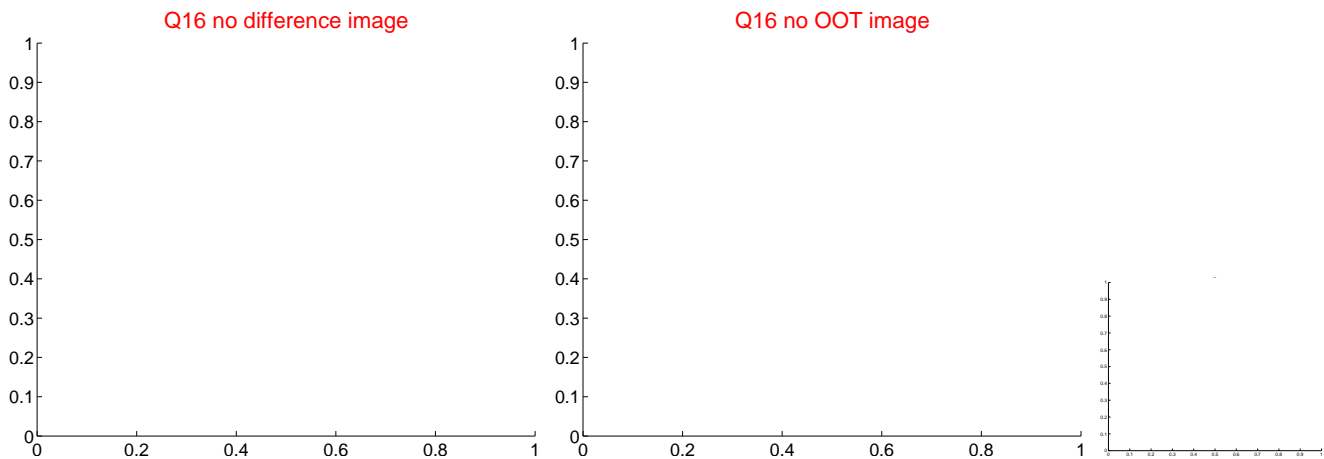
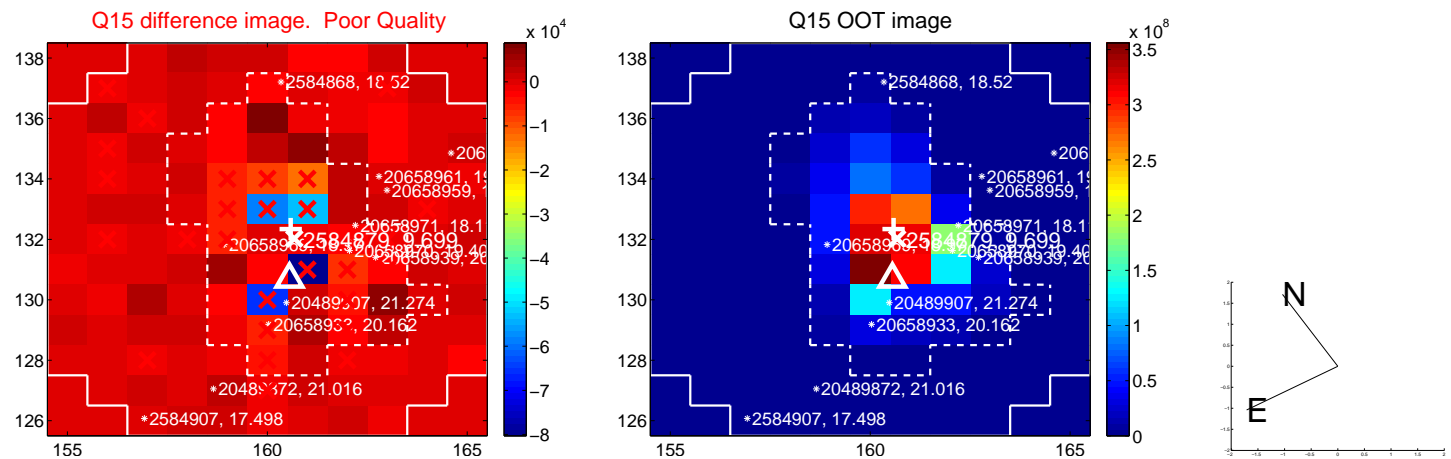
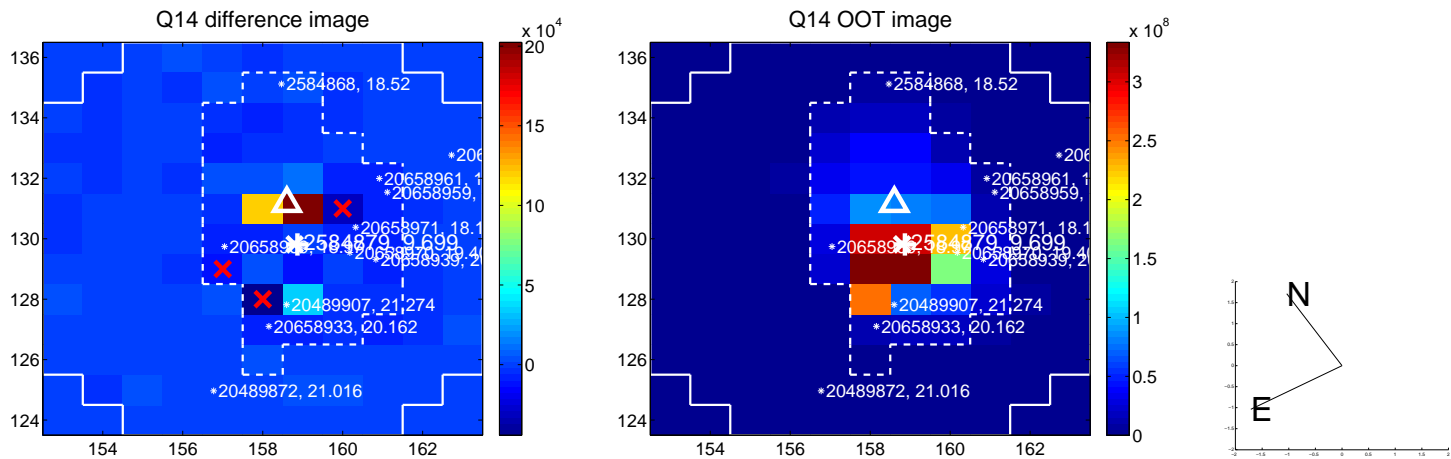
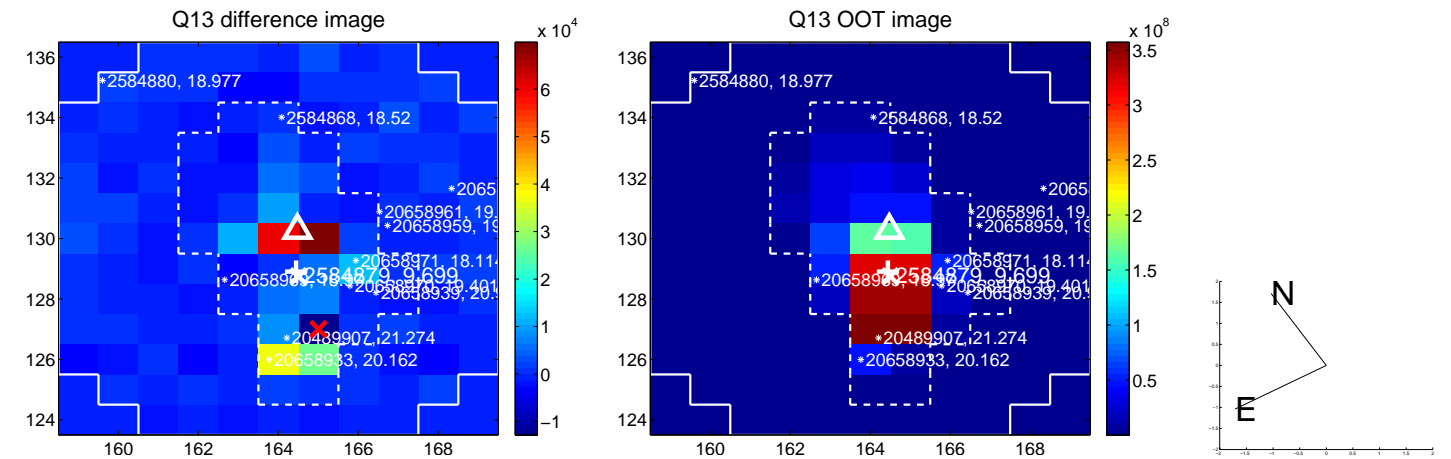
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



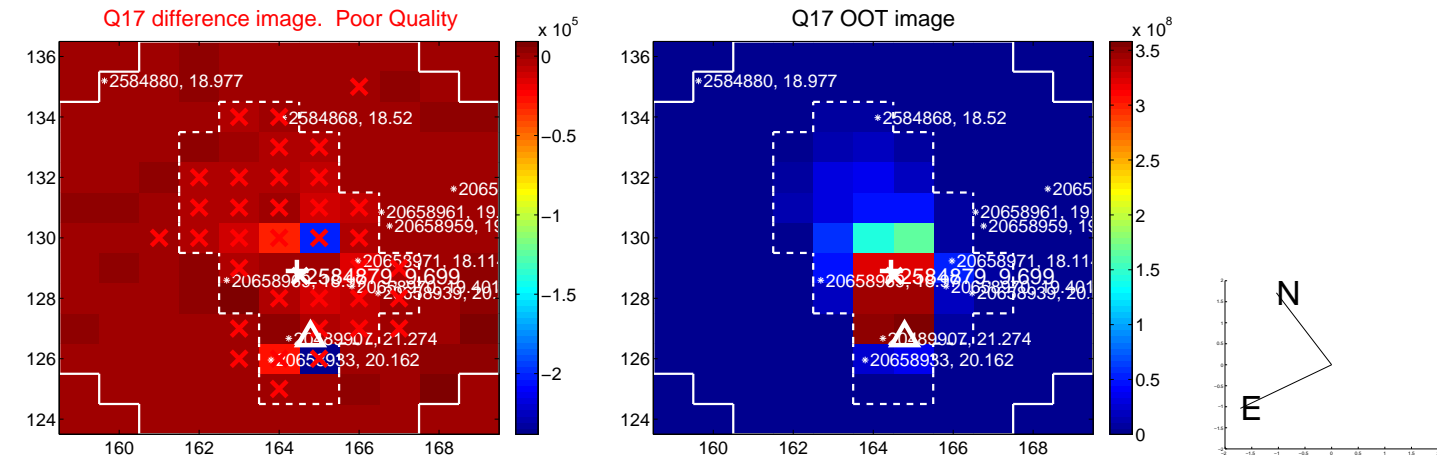
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



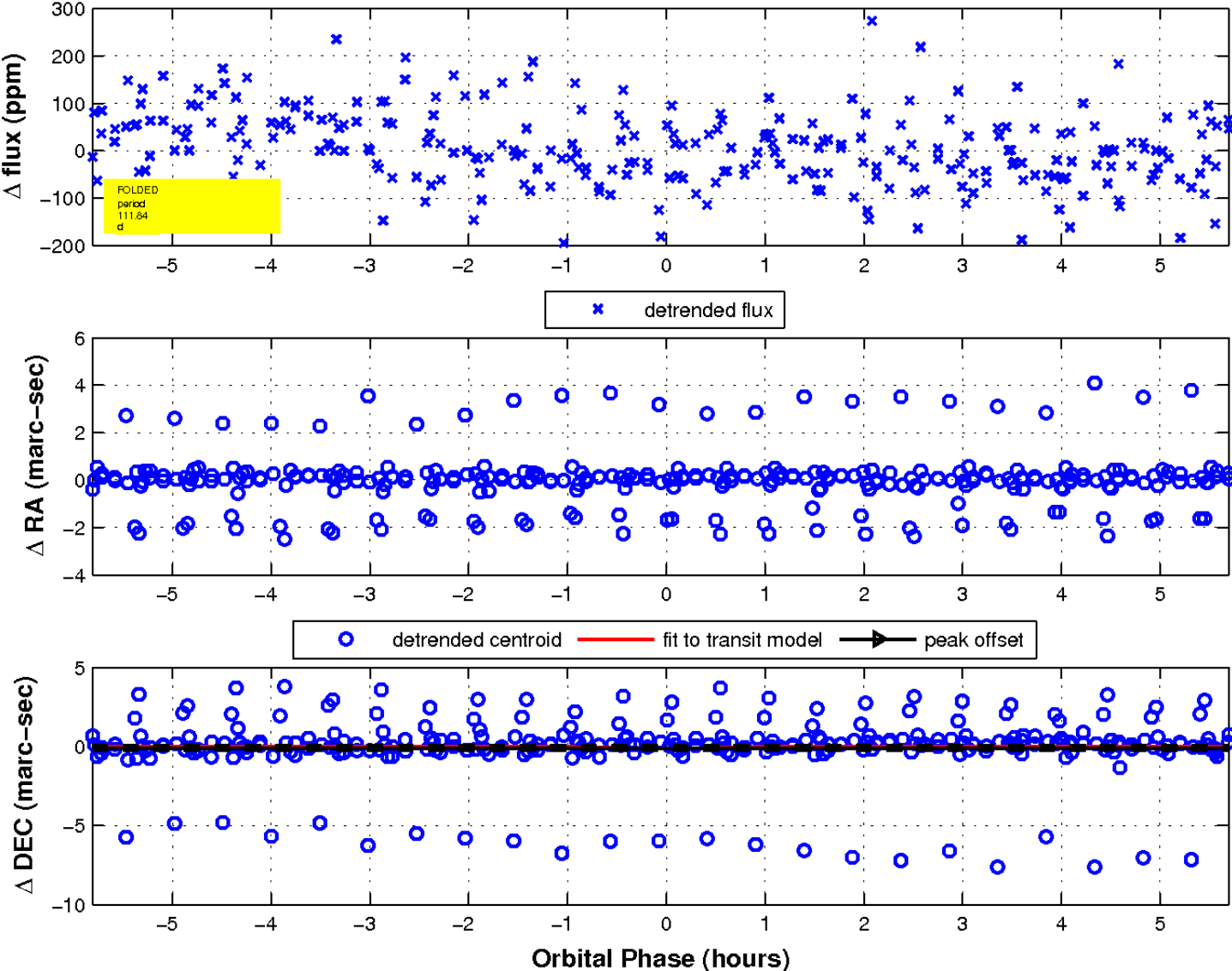
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

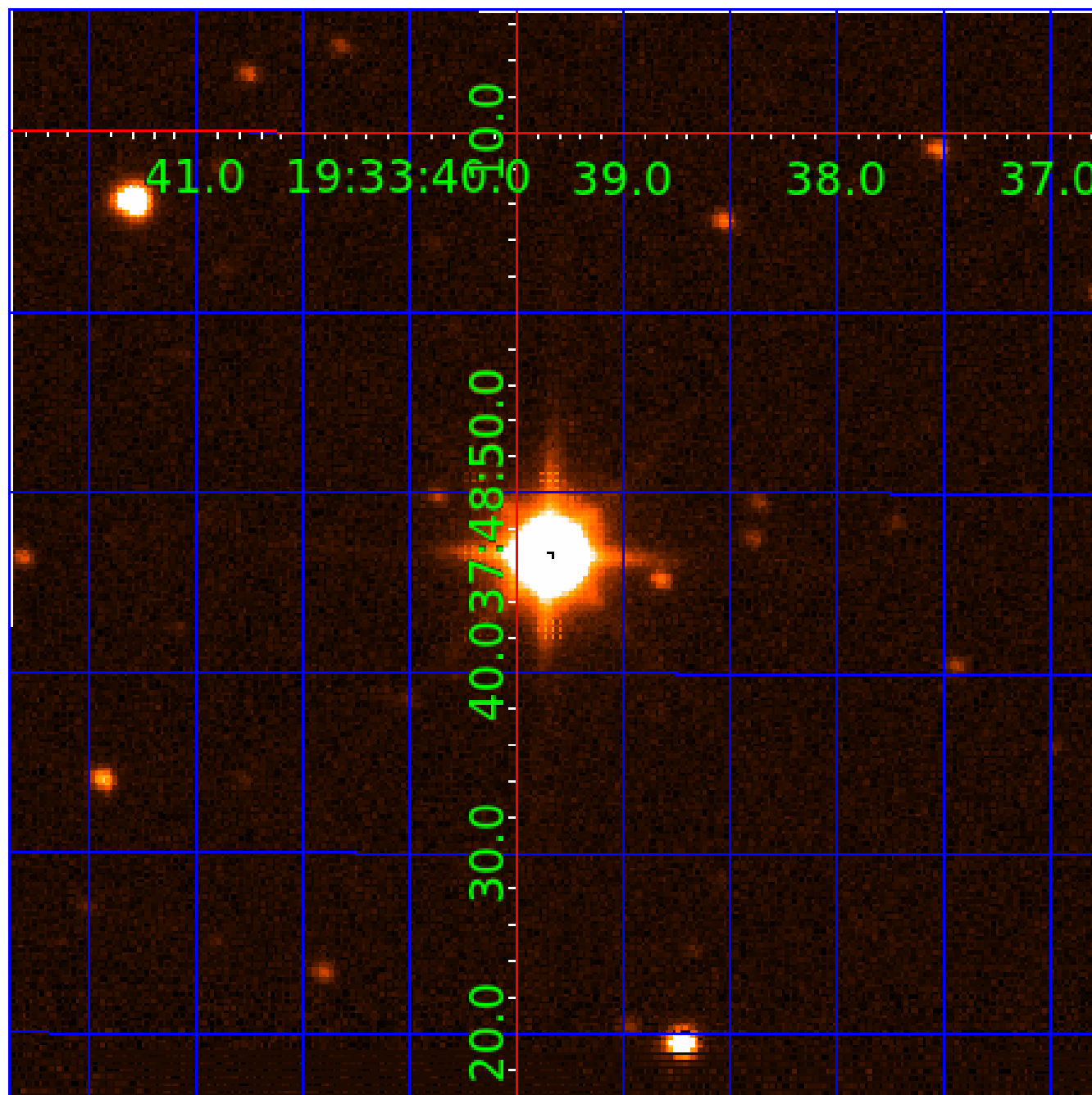


fluxWeightedCentroids, Planet 4 of 6



UKIRT Image

Declination



KIC 002584879

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 002584879-01 | OBS | No | 0.898098 | 131.711970 | 4.4 | 5.163 | 9.6 | 3.6 | 1.28 | 6392 | 0.27 | 7278.52 |
| 002584879-02 | OBS | No | 87.134713 | 142.506802 | 56.4 | 17.734 | 8.2 | 4.7 | 1.28 | 6392 | 1.10 | 16.33 |
| 002584879-04 | OBS | No | 111.838664 | 227.391886 | 94.4 | 1.937 | 9.6 | 4.0 | 1.28 | 6392 | 1.44 | 11.70 |
| 002584879-05 | OBS | No | 73.829513 | 171.325091 | 110.6 | 3.728 | 8.4 | 8.8 | 1.28 | 6392 | 1.53 | 20.36 |
| 002584879-06 | OBS | No | 34.989848 | 154.176402 | 135.8 | 1.606 | 8.3 | 9.0 | 1.28 | 6392 | 1.56 | 55.11 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 002584879-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED |
| 002584879-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED |
| 002584879-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED |
| 002584879-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED |
| 002584879-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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.

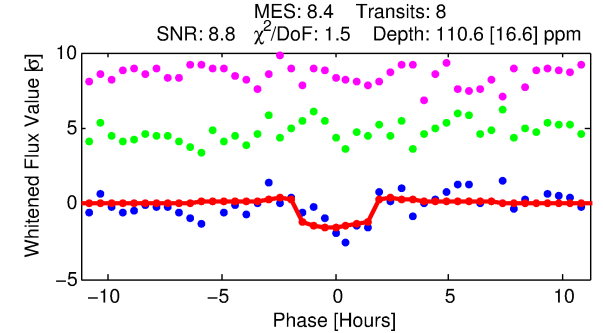
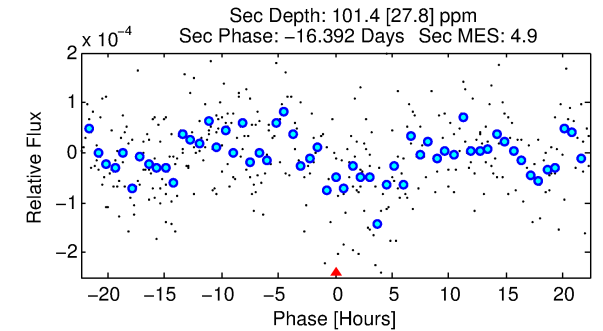
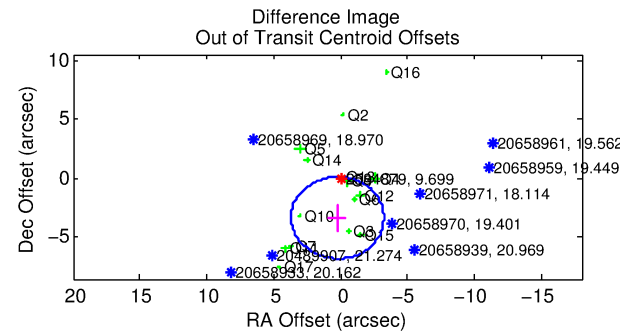
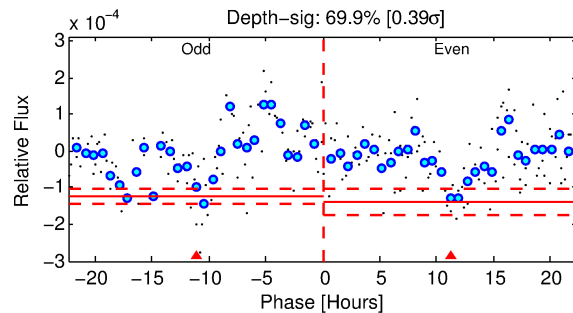
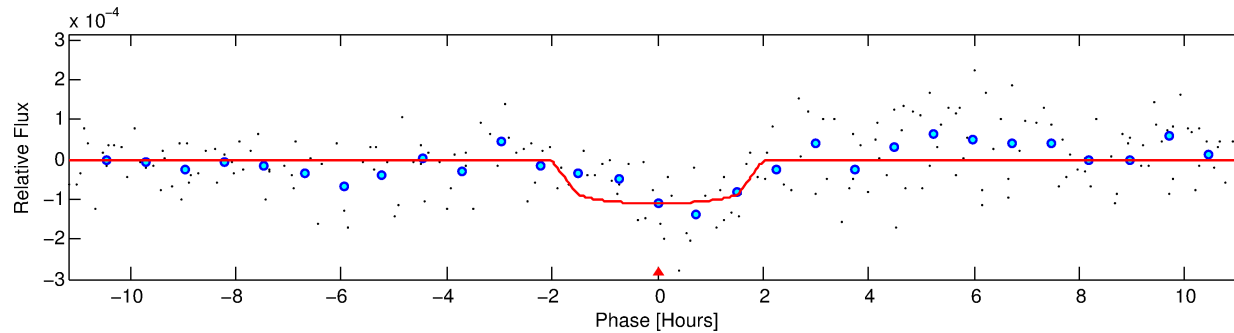
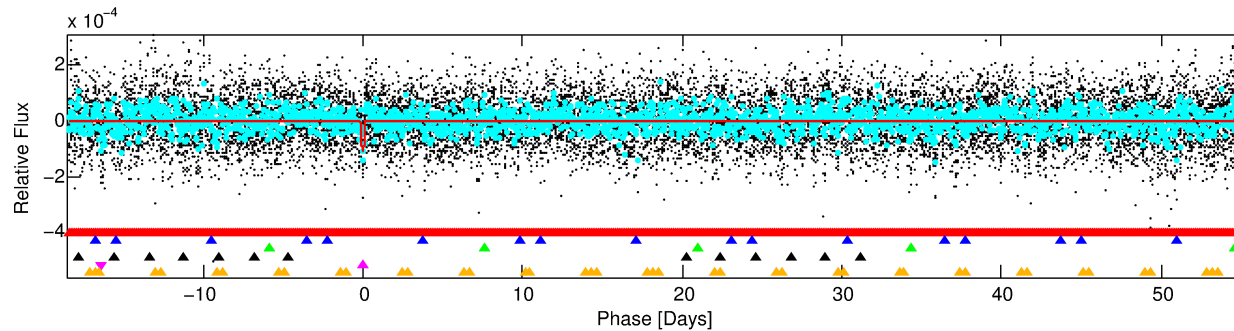
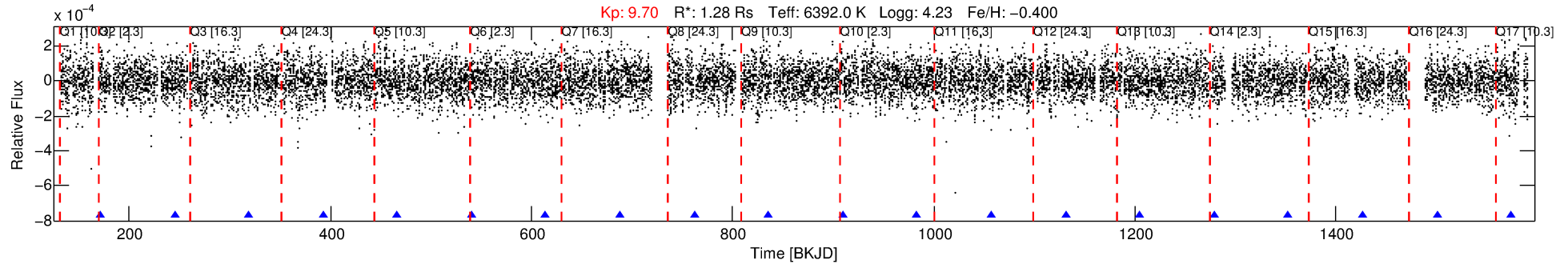
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002584879-05

No Significant Match Found

DV One-Page Summary

KIC: 2584879 Candidate: 5 of 6 Period: 73.830 d



DV Fit Results:

Period = 73.82951 [0.00087] d
Epoch = 171.3251 [0.0079] BKJD
Rp/R* = 0.0110 [0.0055]
a/R* = 80.28 [222.69]
b = 0.86 [0.84]
Seff = 20.36 [8.05]
Teq = 542 [54] K
Rp = 1.53 [0.88] Re
a = 0.3472 [0.0848] AU
Ag = 2859.99 [3149.45] [0.91σ]
Teffp = 6124 [1608] K [3.47σ]

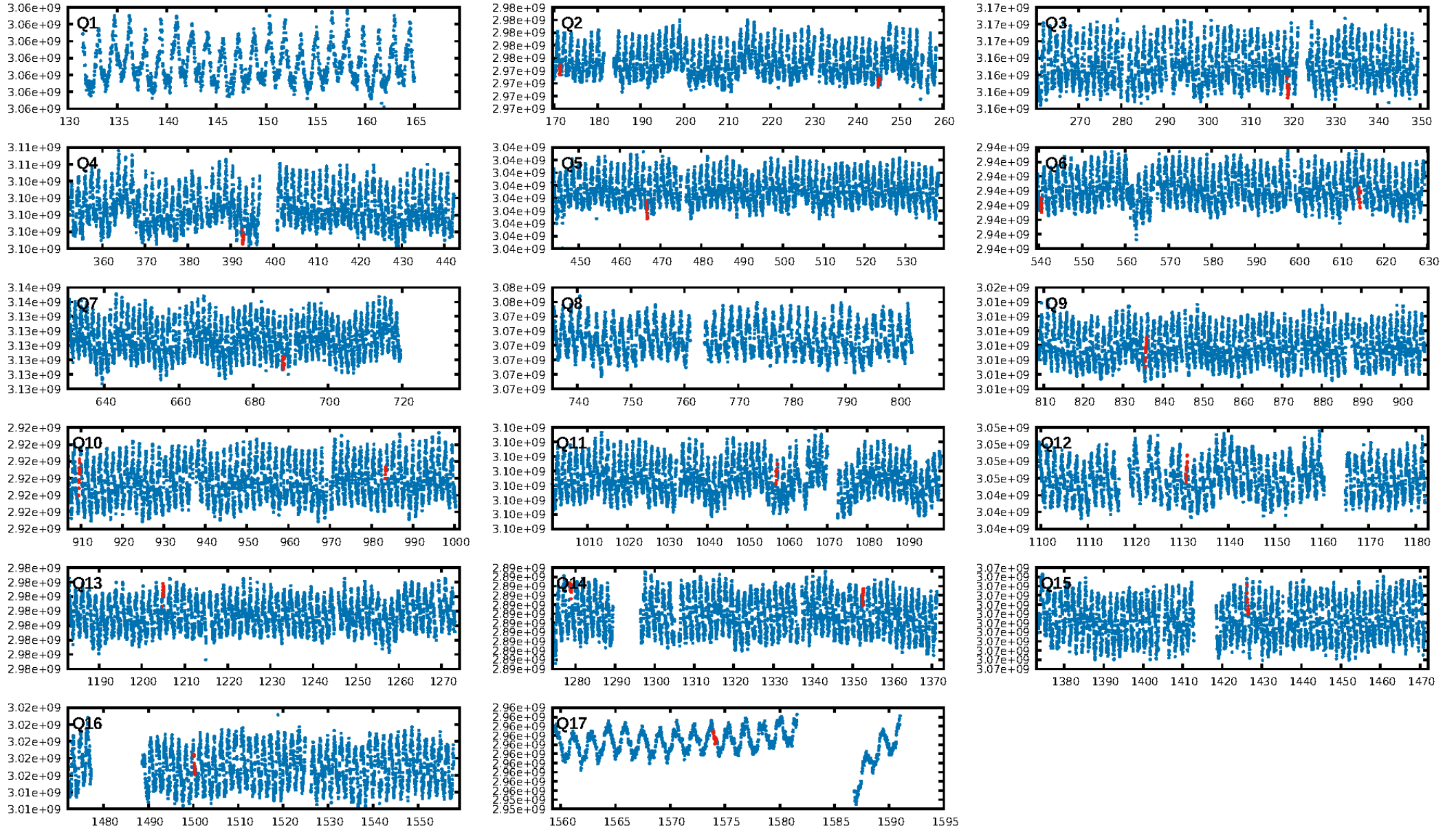
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [229.66σ]
LongPeriod-sig: 100.0% [17.62σ]
ModelChiSquare2-sig: 10.2%
ModelChiSquareGof-sig: 98.7%
Bootstrap-pfa: 4.88e-09
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 0.495 arcsec [0.72σ]
OotOffset-rm: 3.334 arcsec [2.89σ]
KicOffset-rm: 2.996 arcsec [2.90σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.13 [2/15]
DiffImageOverlap-fno: 0.00 [0/15]

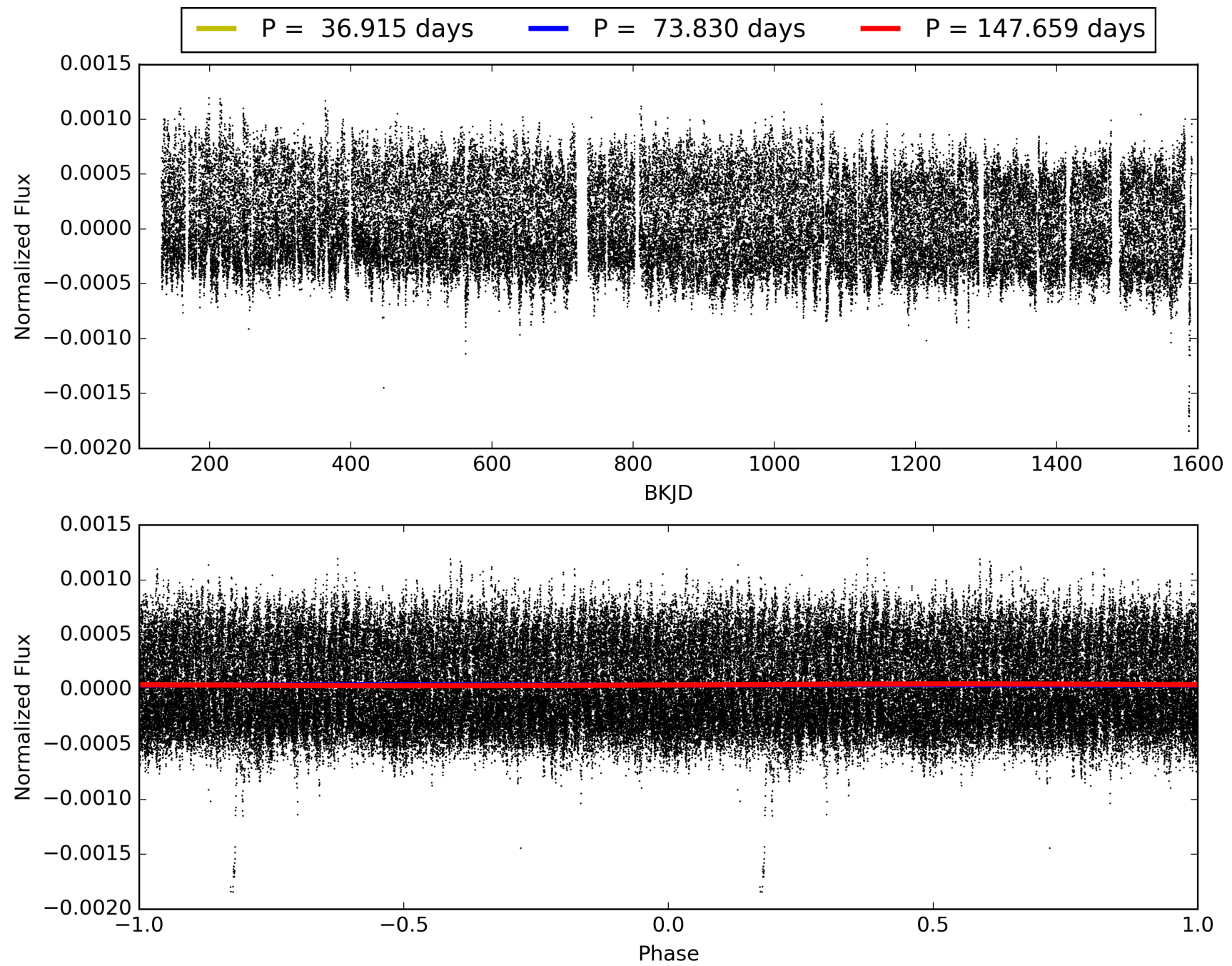
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:15:48 Z

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

TCE 002584879-05, PDC Light Curves

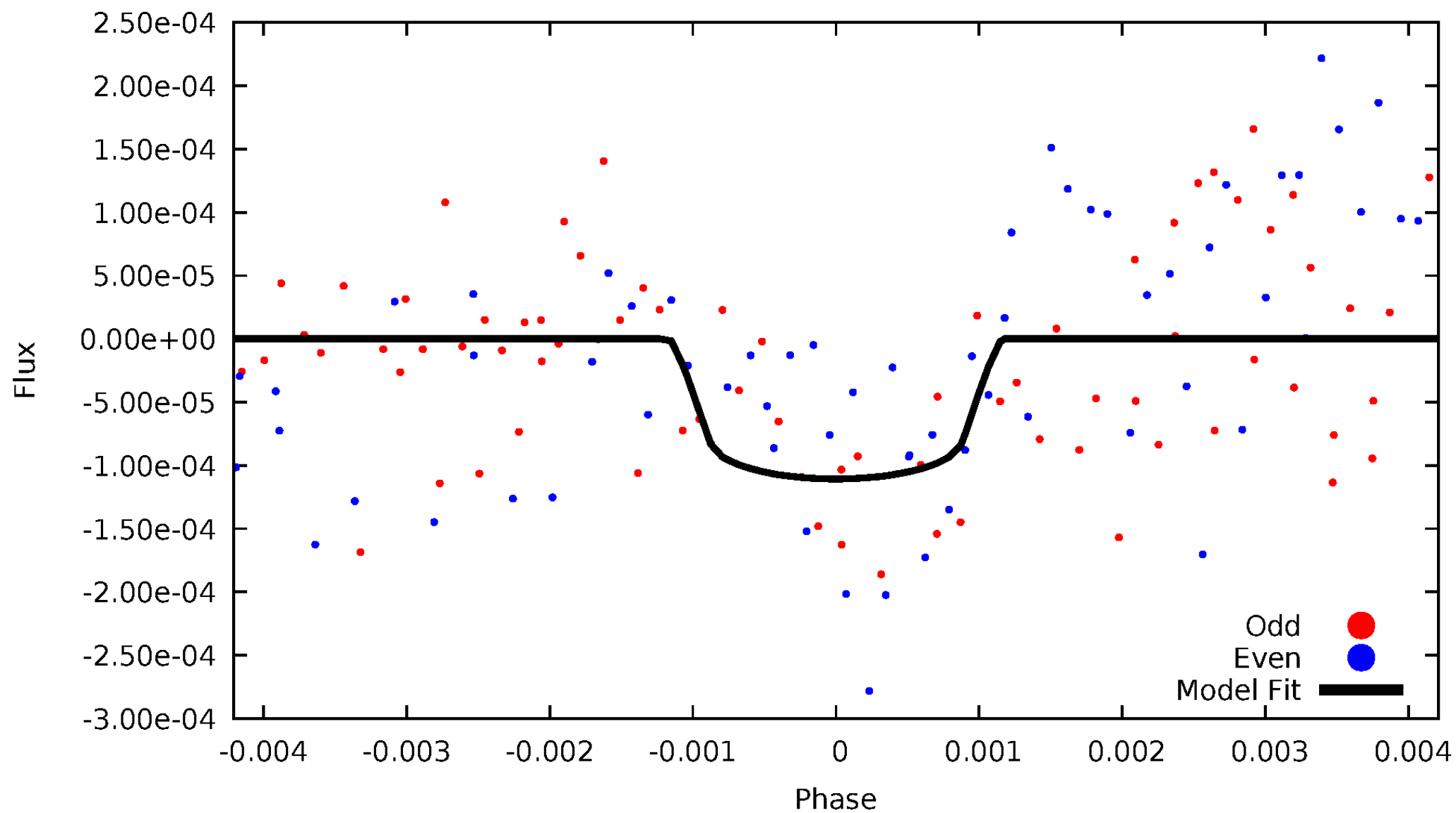


TCE 002584879-05



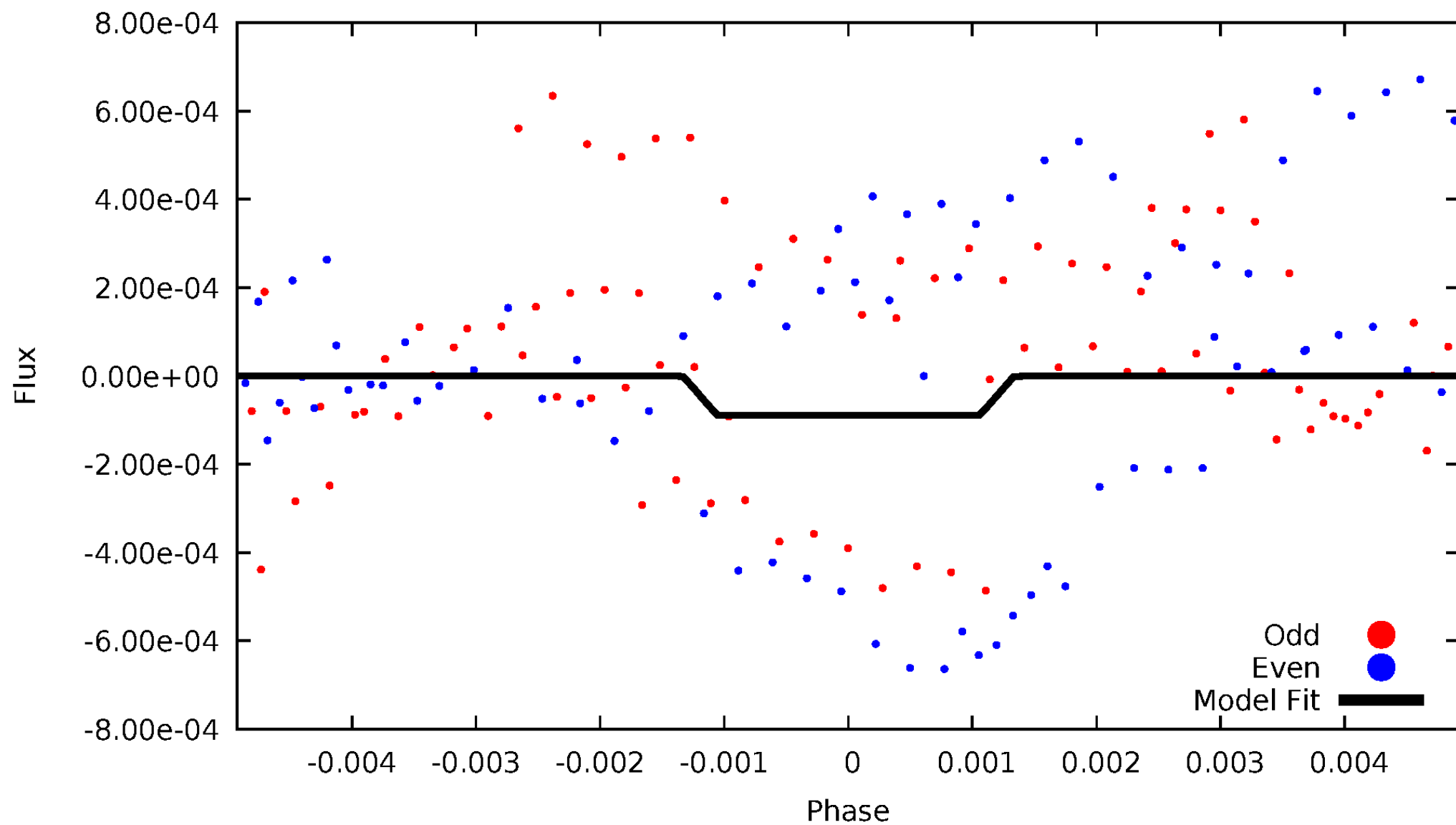
DV Odd/Even

TCE 002584879-05



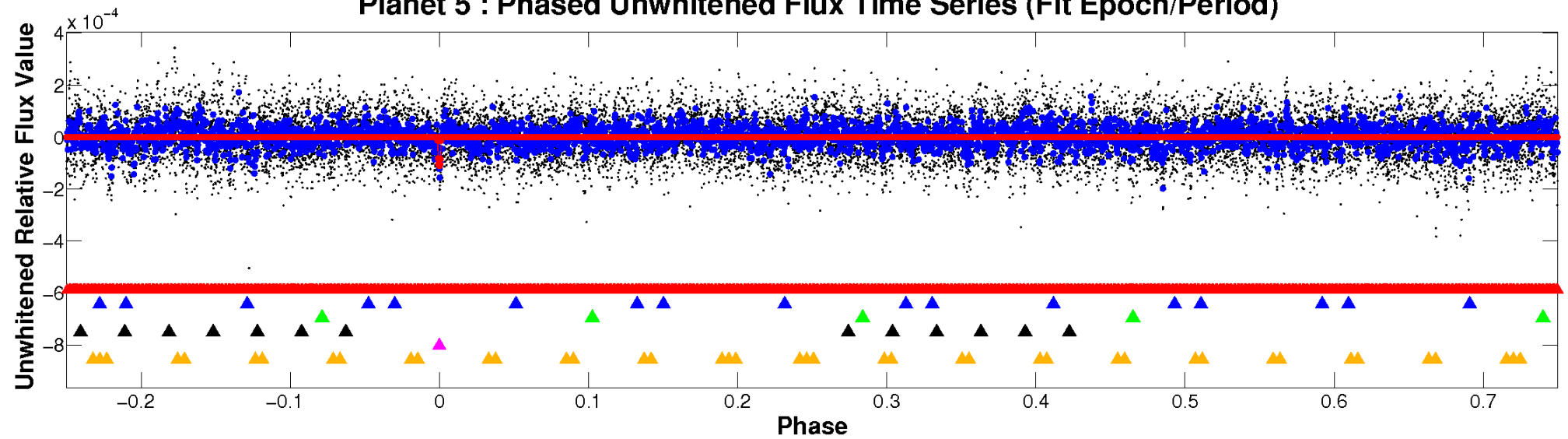
ALT Odd/Even

TCE 002584879-05

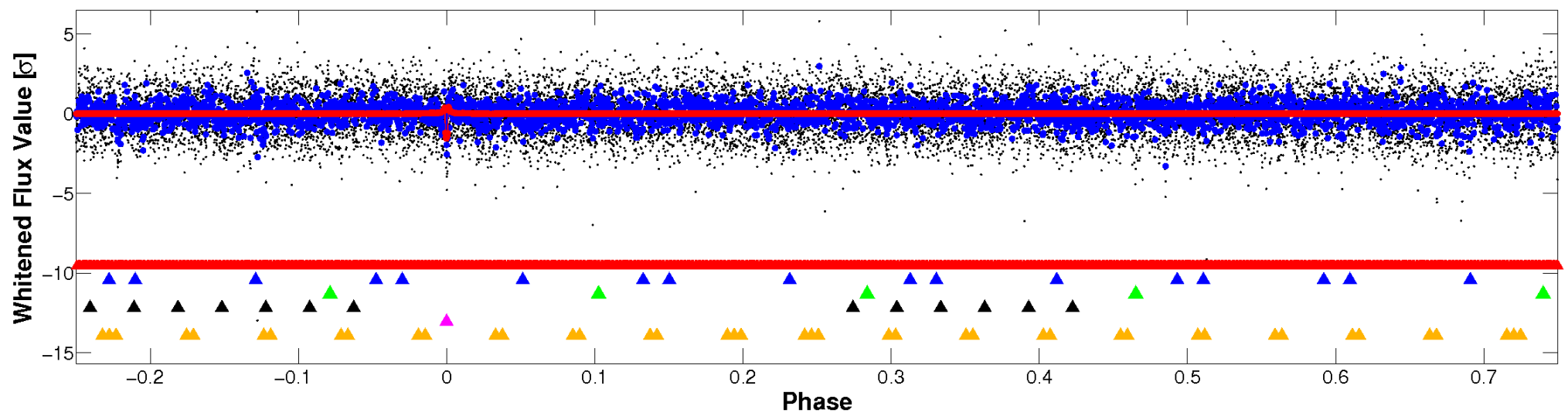


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

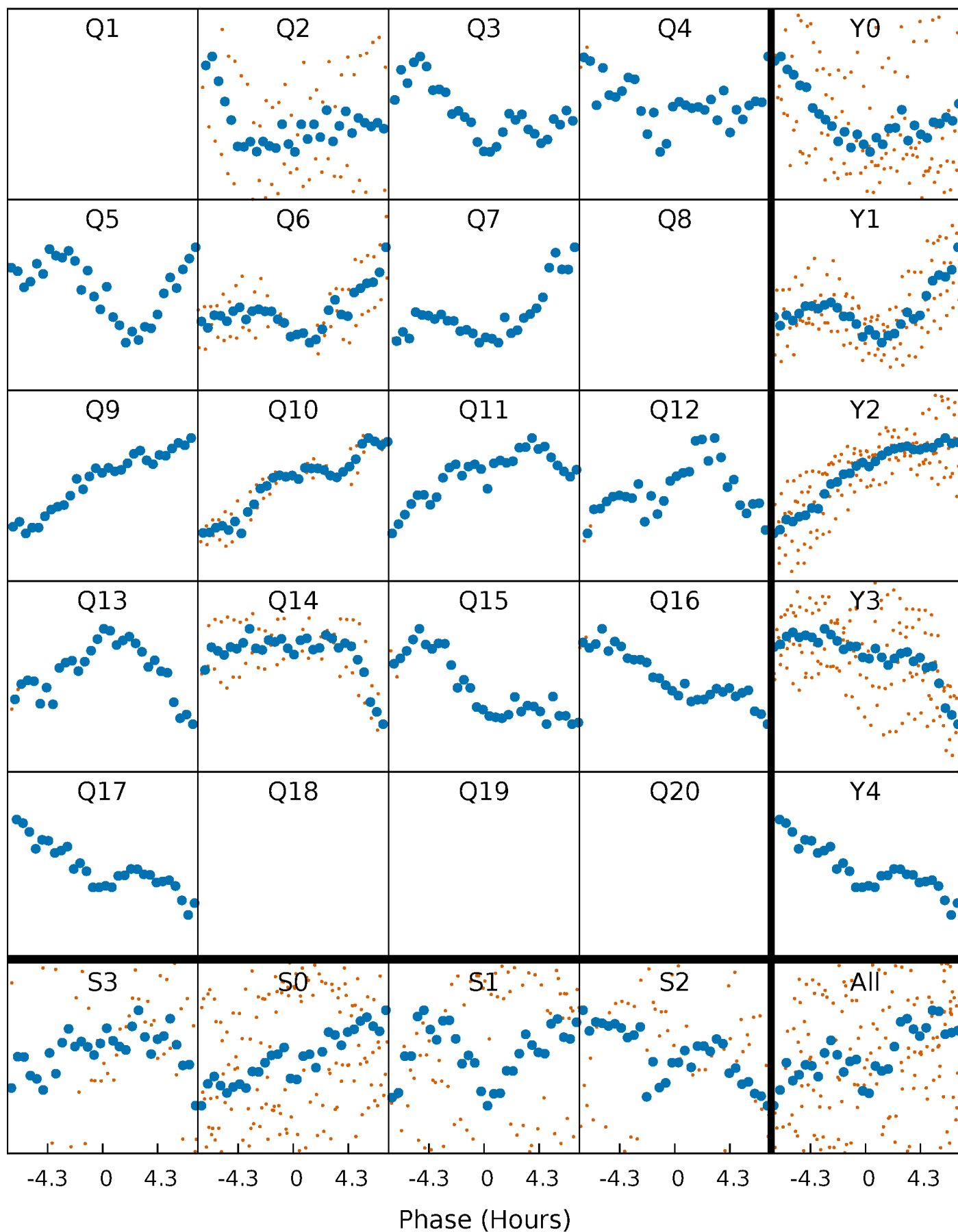


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



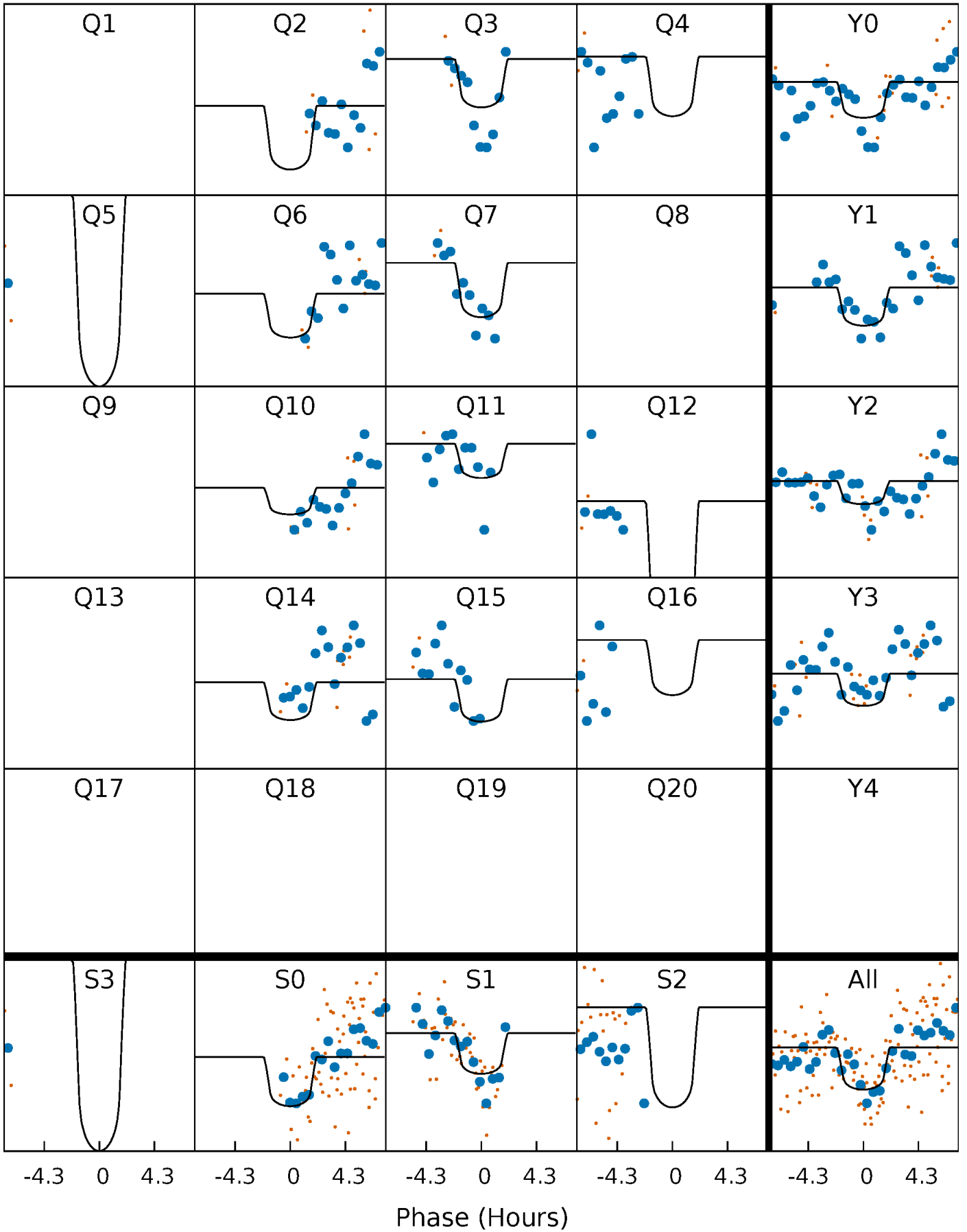
PDC Quarter-Phased Transit Curves

TCE 002584879-05 $P = 73.829513$ Days $T_0 = 171.325091$ (BKJD)



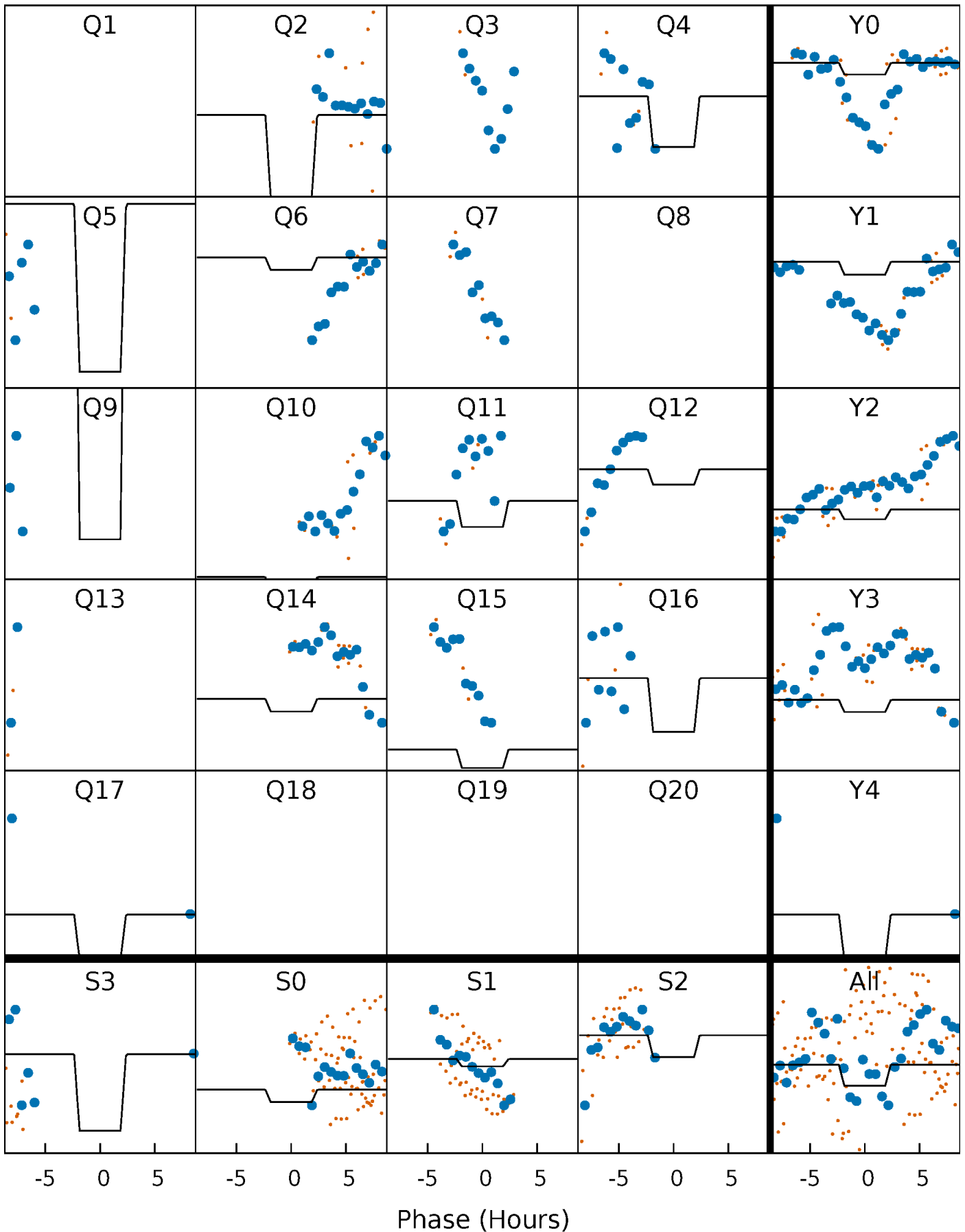
DV Quarter-Phased Transit Curves

TCE 002584879-05 P= 73.829513 Days $T_0=171.325091$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

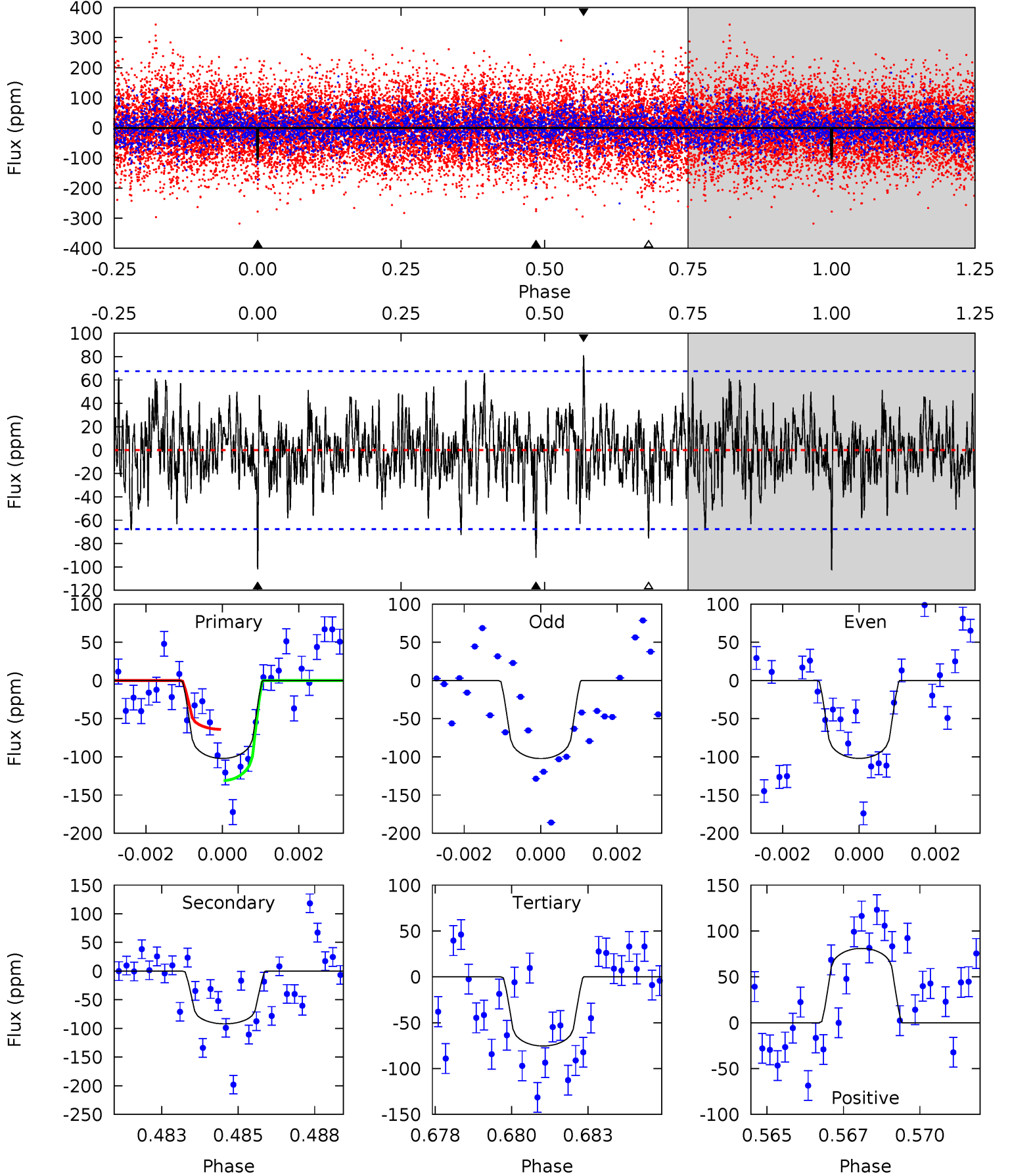
TCE 002584879-05 P= 73.829893 Days $T_0=171.292888$ (BKJD)



DV Model-Shift Uniqueness Test

002584879-05, P = 73.829513 Days, E = 97.495578 Days

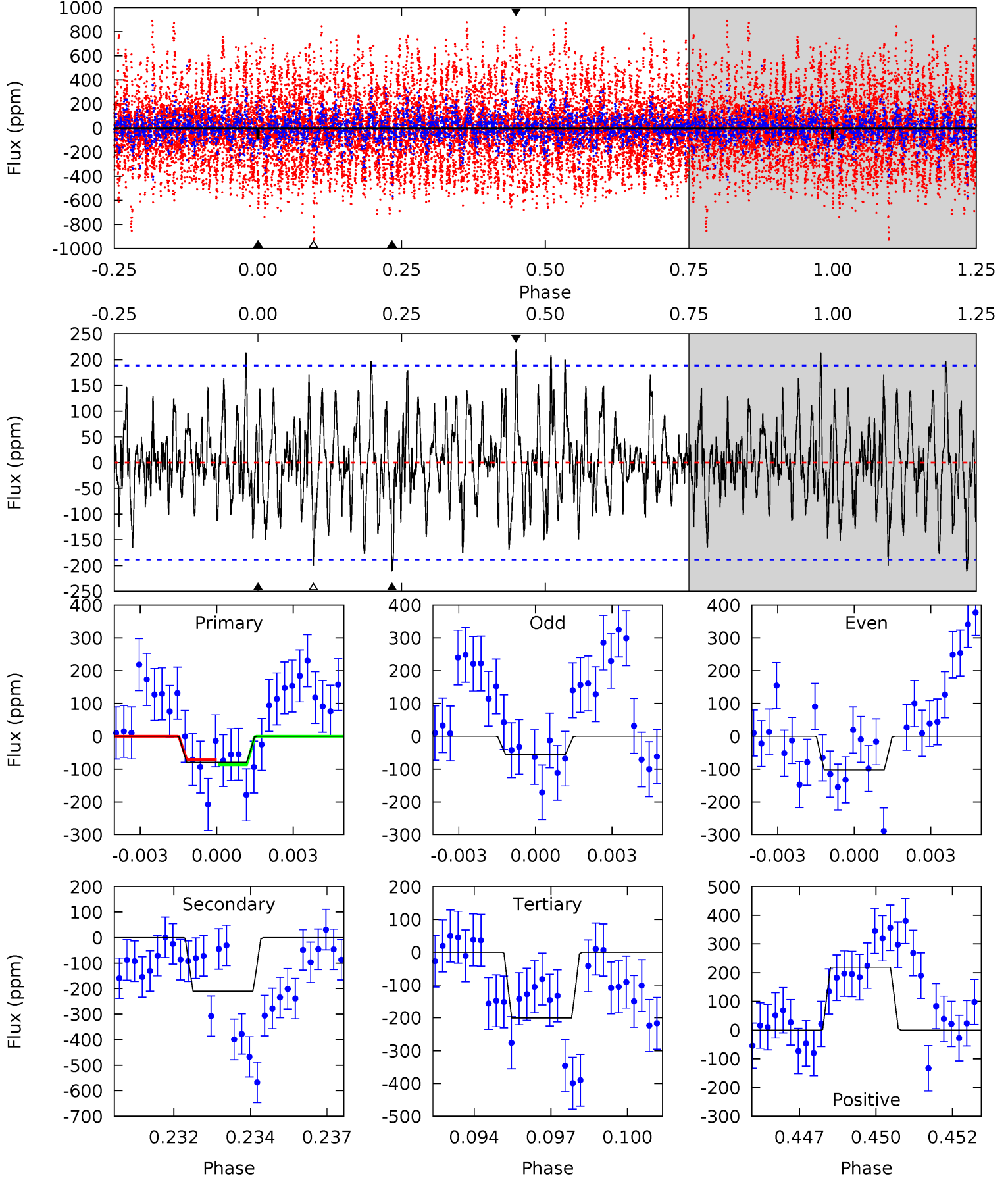
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.02 | 7.23 | 5.93 | 6.37 | 5.31 | 3.06 | 1.72 | 2.09 | 1.65 | 1.31 | 0.87 | 0.01 | 0.94 | 0.44 | 2.59 |



Alt Model-Shift Uniqueness Test

002584879-05, P = 73.829893 Days, E = 97.462995 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-------|-------|------|
| 2.22 | 5.86 | 5.61 | 6.13 | 5.27 | 3.00 | 1.87 | -3.38 | -3.91 | 0.25 | -0.27 | 0.66 | -1.91 | 0.51 | 0.22 |



Stellar Parameters For KIC 002584879

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6392^{+177}_{-244} | $4.233^{+0.204}_{-0.167}$ | $-0.400^{+0.300}_{-0.300}$ | $1.281^{+0.360}_{-0.294}$ | $1.022^{+0.171}_{-0.128}$ | $0.684^{+0.670}_{-0.344}$ |
| | +3%/-4% | +5%/-4% | +75%/-75% | +28%/-23% | +17%/-13% | +98%/-50% |
| Source | PHO54 | PHO54 | PHO54 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 002584879-05 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|------------------------|-------------------------|
| DV | -92 ± 13 | $1.55^{+0.81}_{-0.68}$ | 749^{+60}_{-51} | 5853^{+2108}_{-943} | 2487^{+5593}_{-1403} |
| Alt. | -210 ± 36 | $1.32^{+0.87}_{-0.65}$ | 750^{+56}_{-58} | 8037^{+5227}_{-1885} | 8033^{+22631}_{-5121} |

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

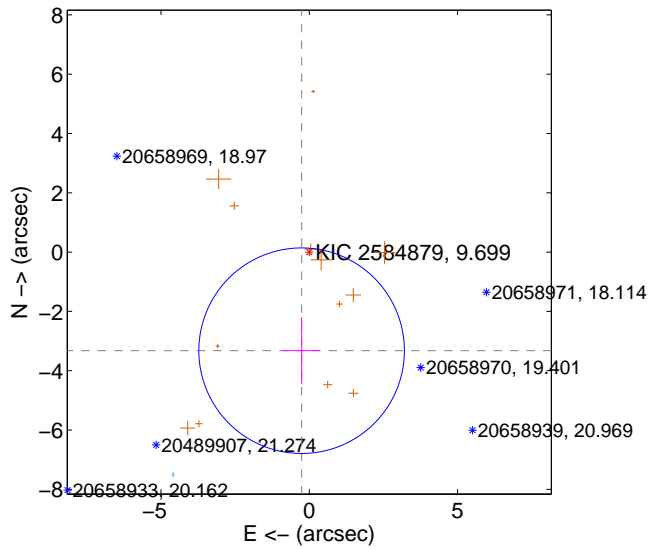
Supplemental centroid analysis for 002584879-05. **Kepler magnitude: 9.70.** Transit SNR 8.78

There are 2 quarters with good PRF difference image offsets

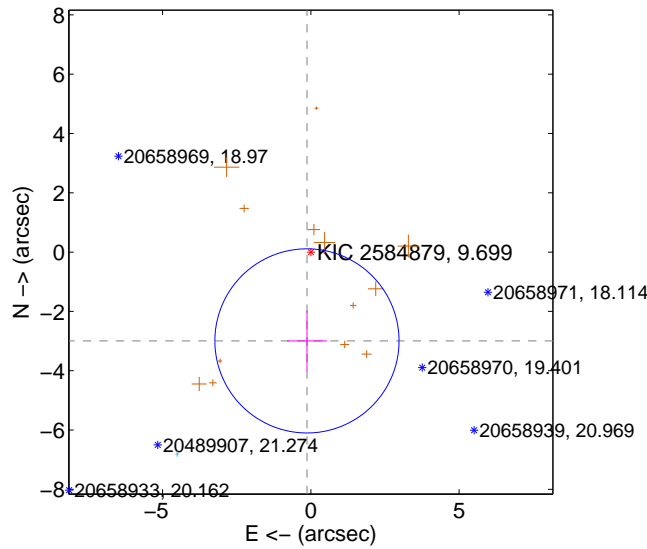
The direct PRF centroid is offset from the target star catalog position by about 0.70 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 3.334 ± 1.155 | 2.89 | 0.259 ± 0.622 | -3.324 ± 1.134 |
| PRF-fit source offset from KIC position | 2.996 ± 1.035 | 2.90 | 0.131 ± 0.675 | -2.993 ± 1.020 |
| photometric centroid source offset | 0.49 ± 0.68 | 0.72 | -0.47 ± 0.63 | 0.15 ± 1.10 |

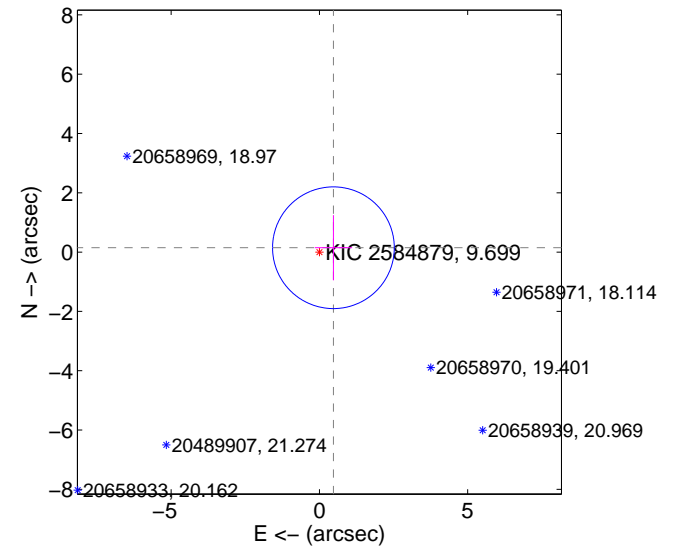
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

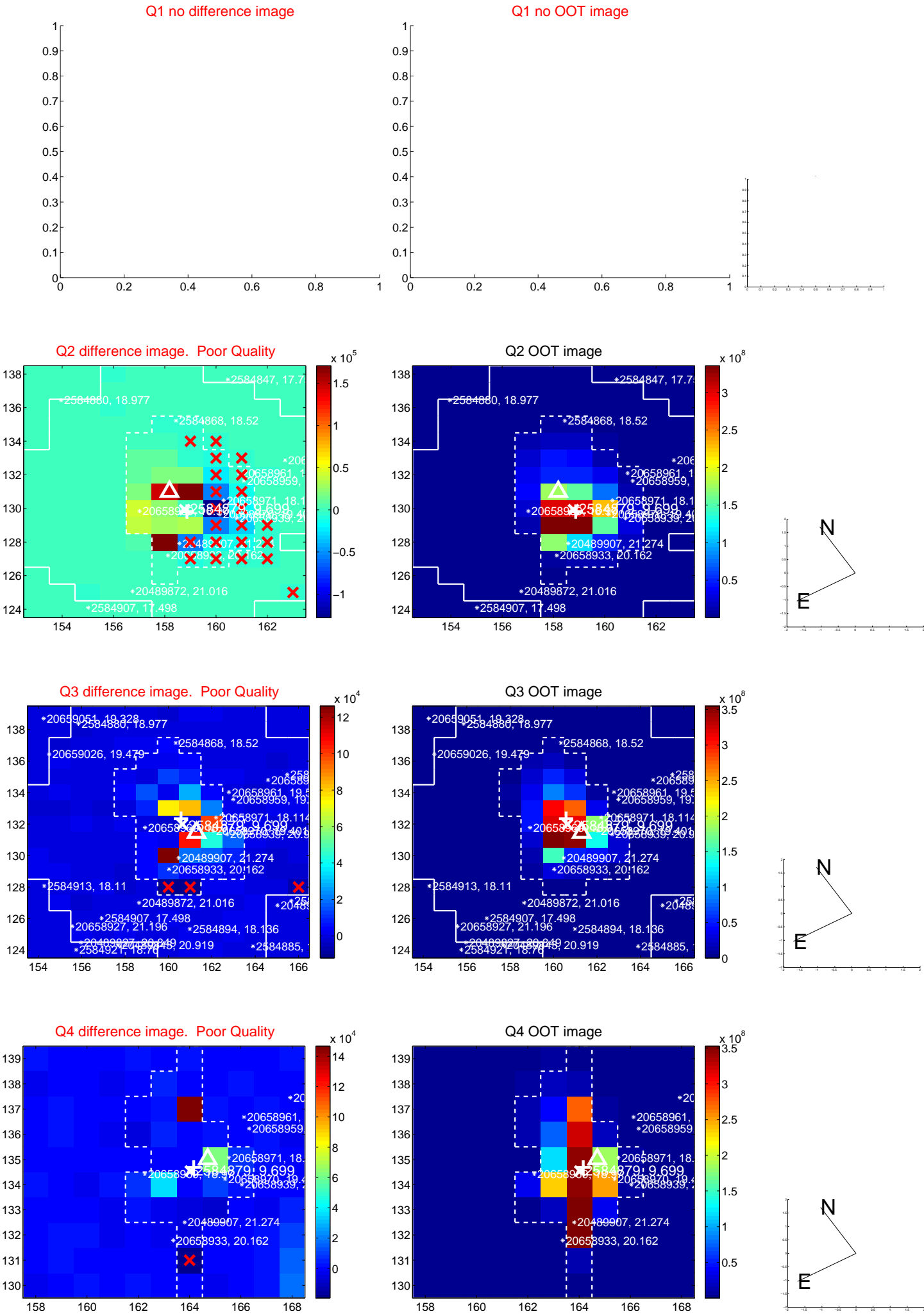


offset from photometric centroids

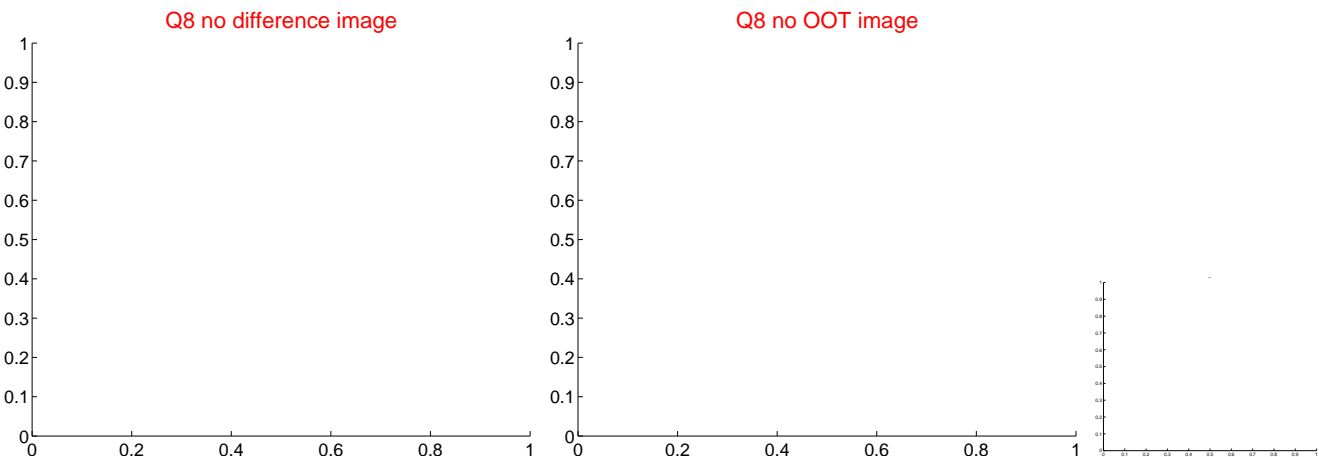
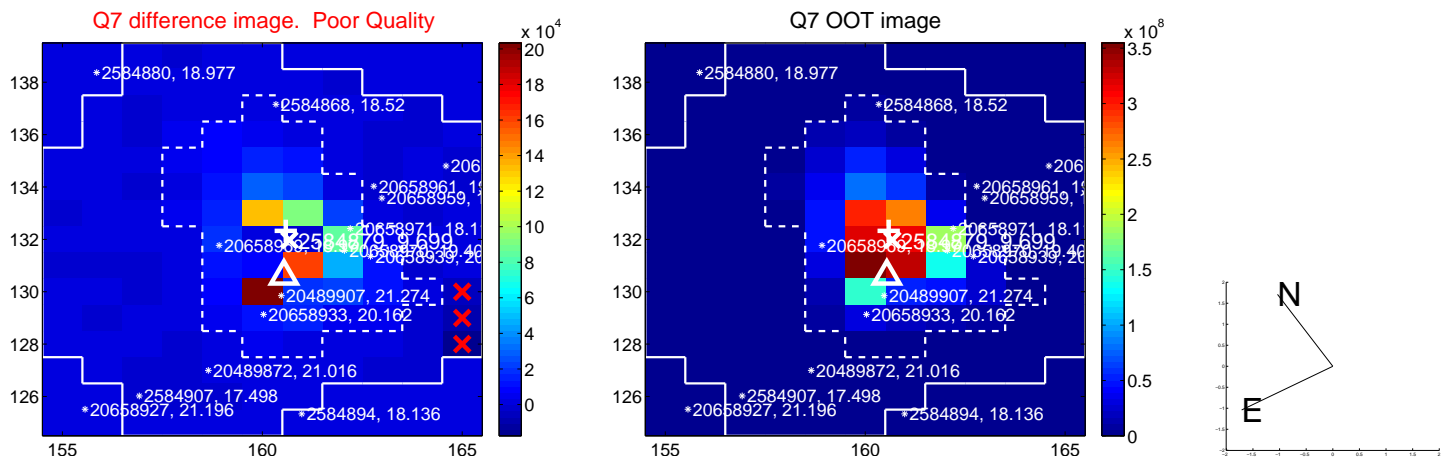
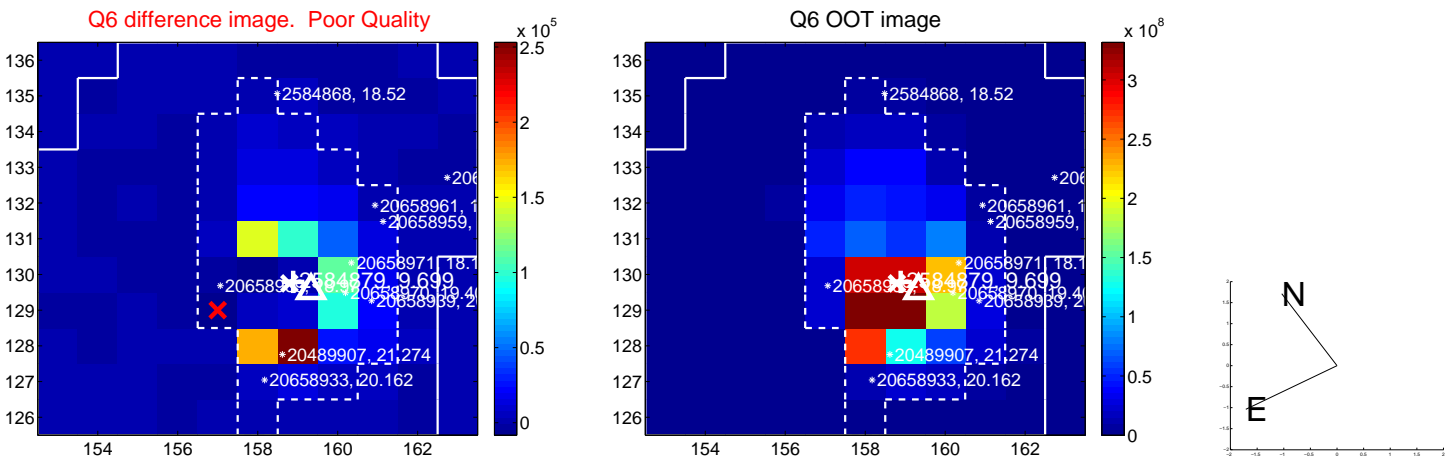
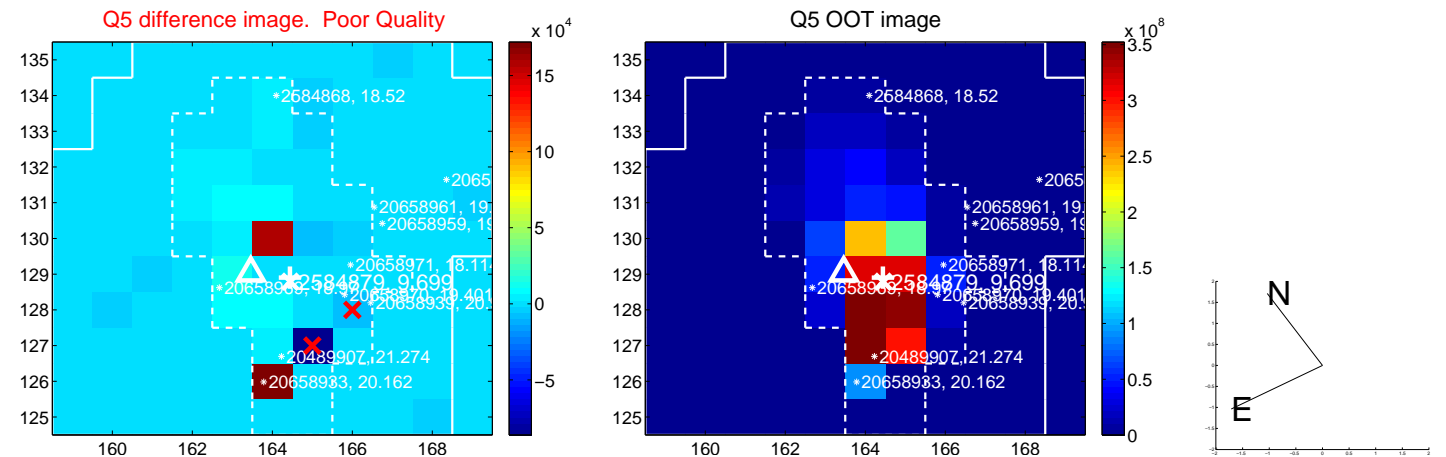


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

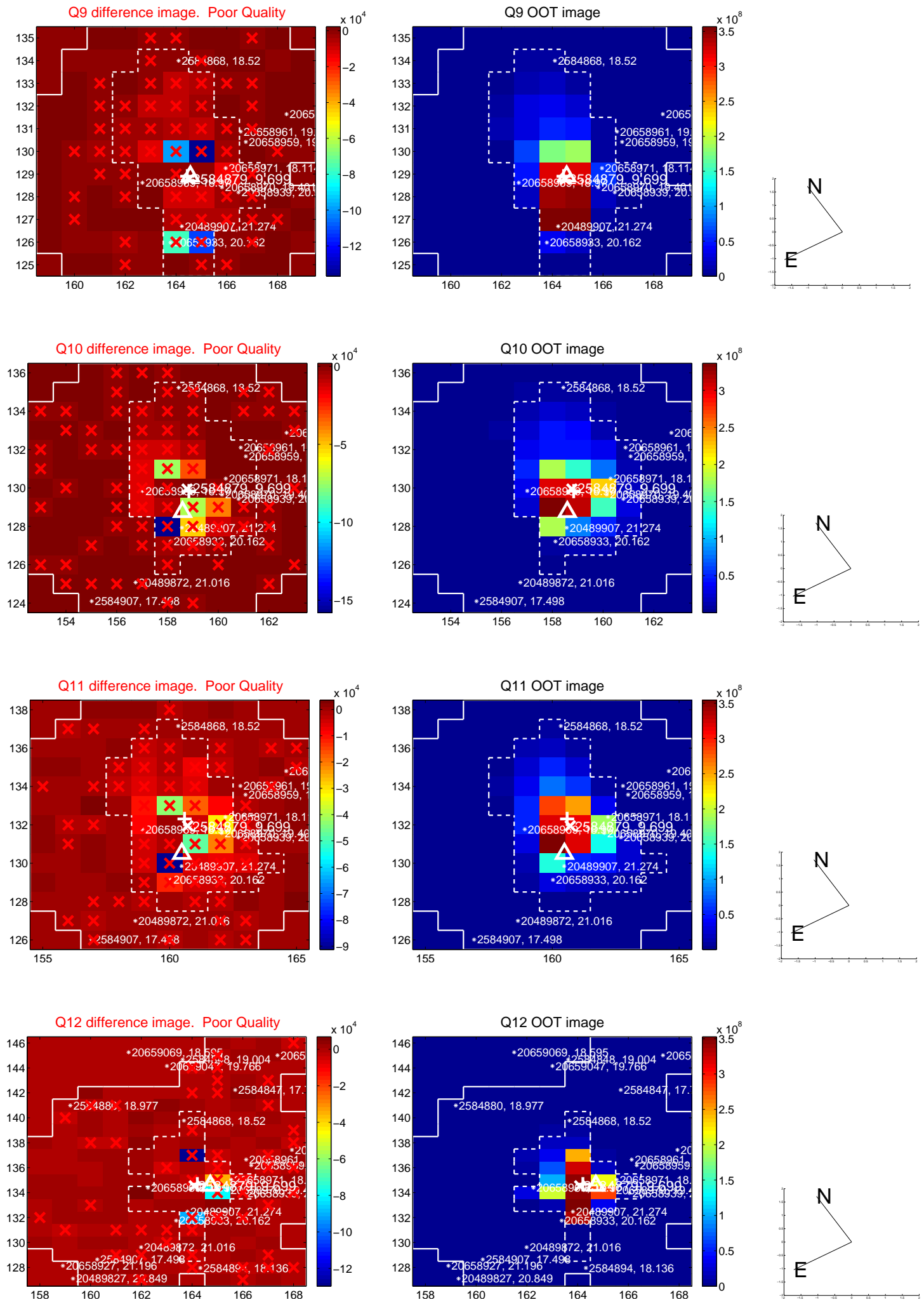
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



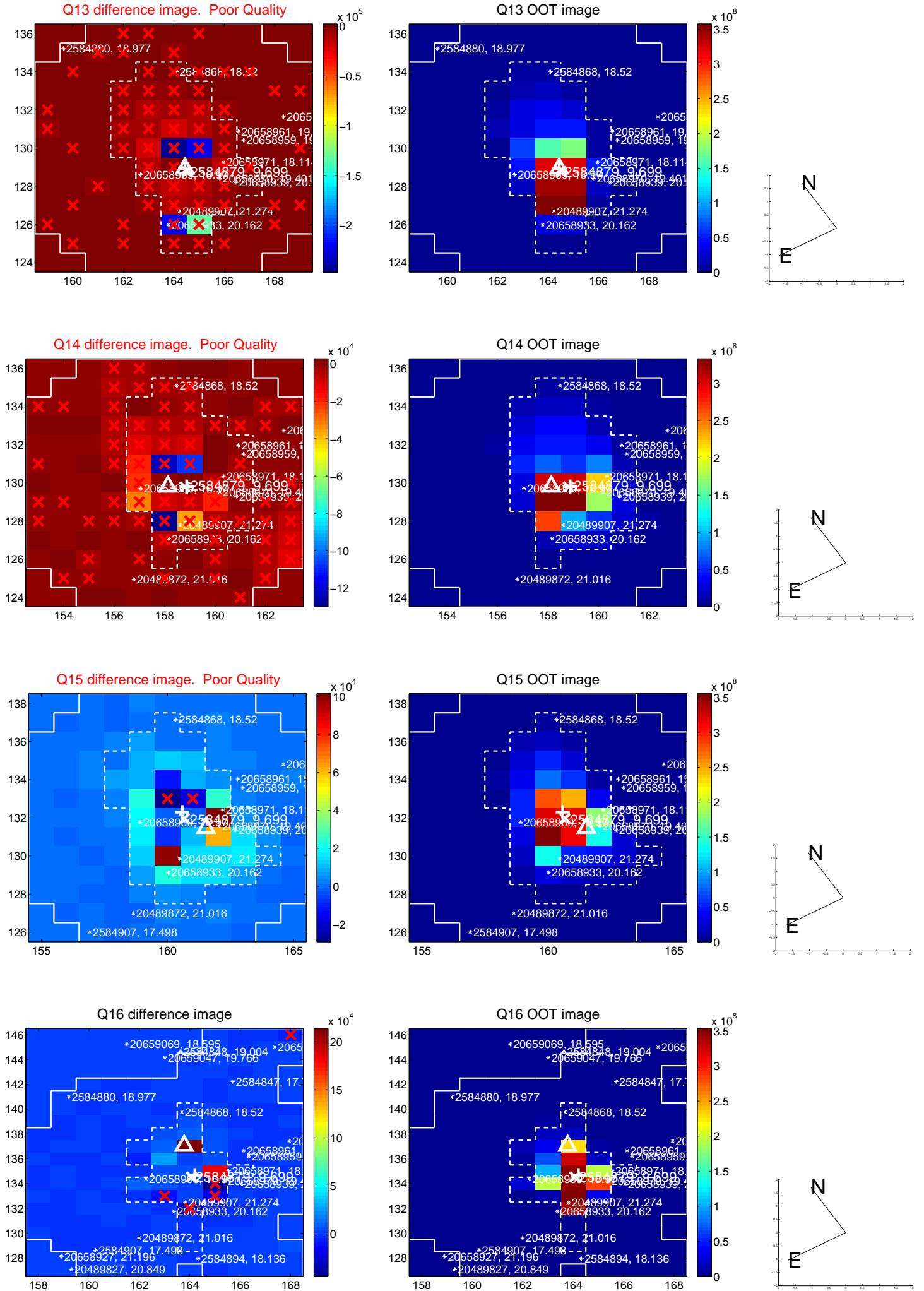
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



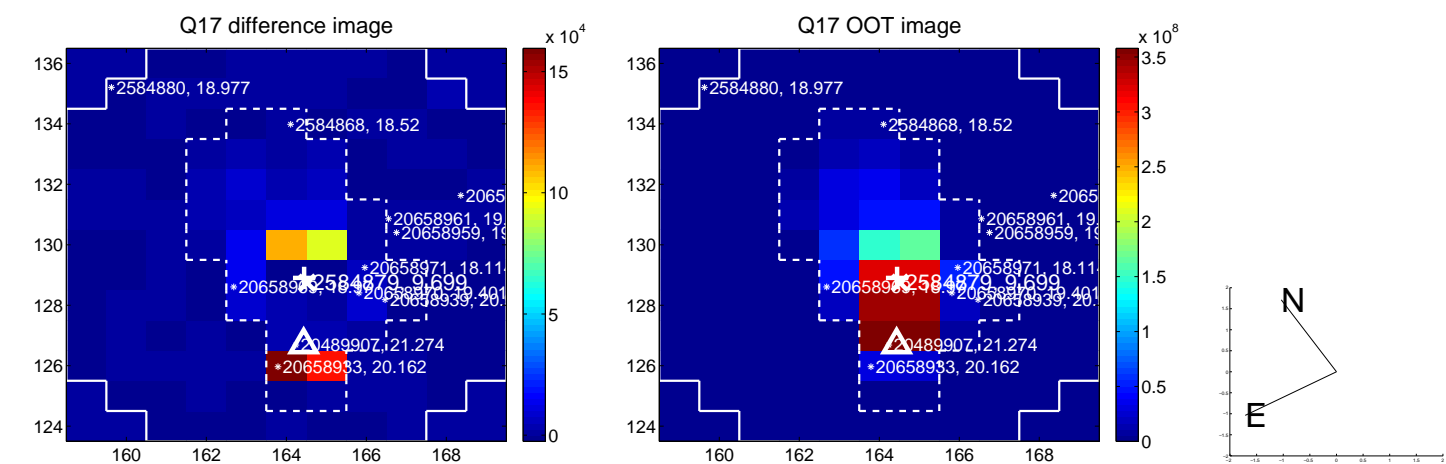
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



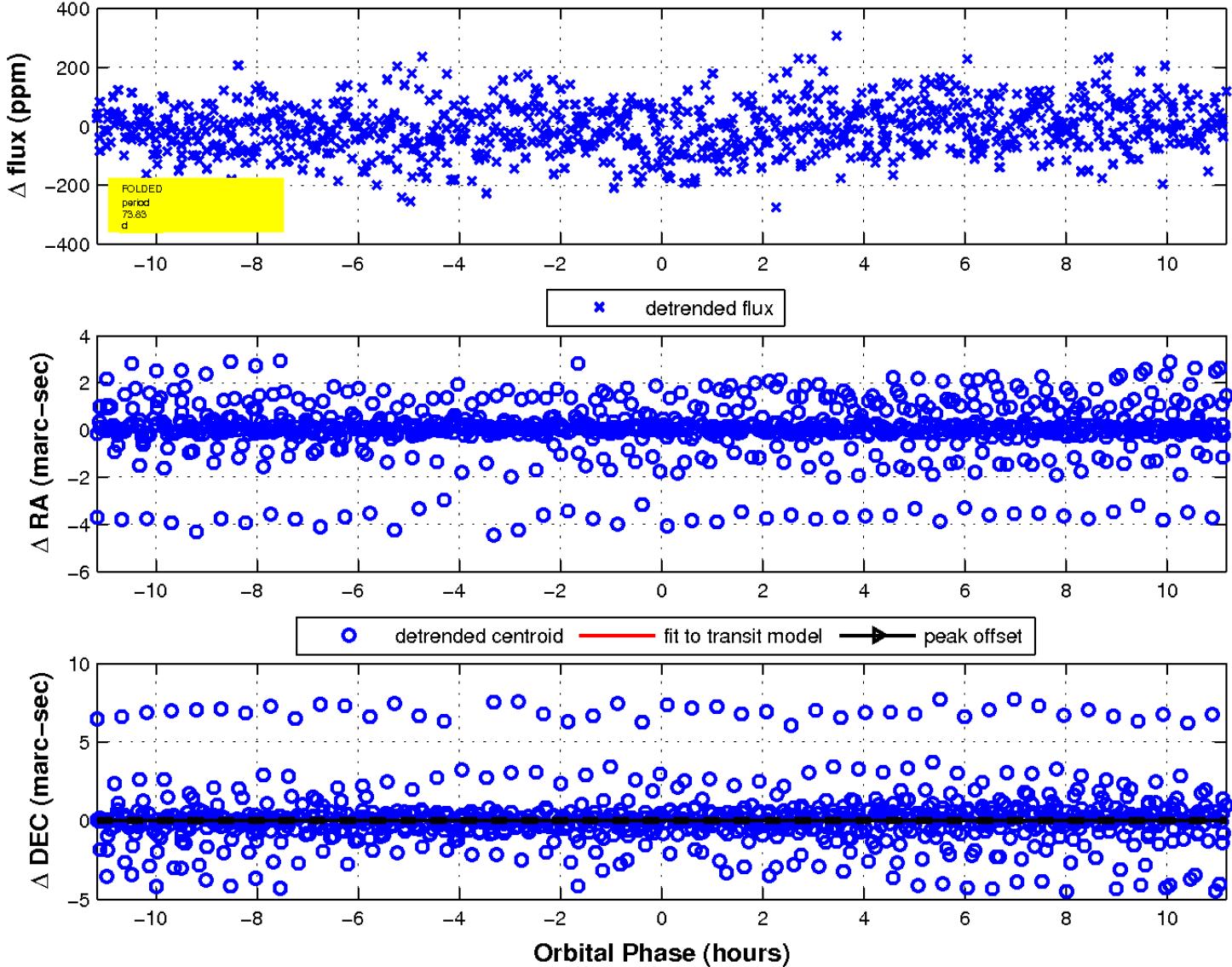
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

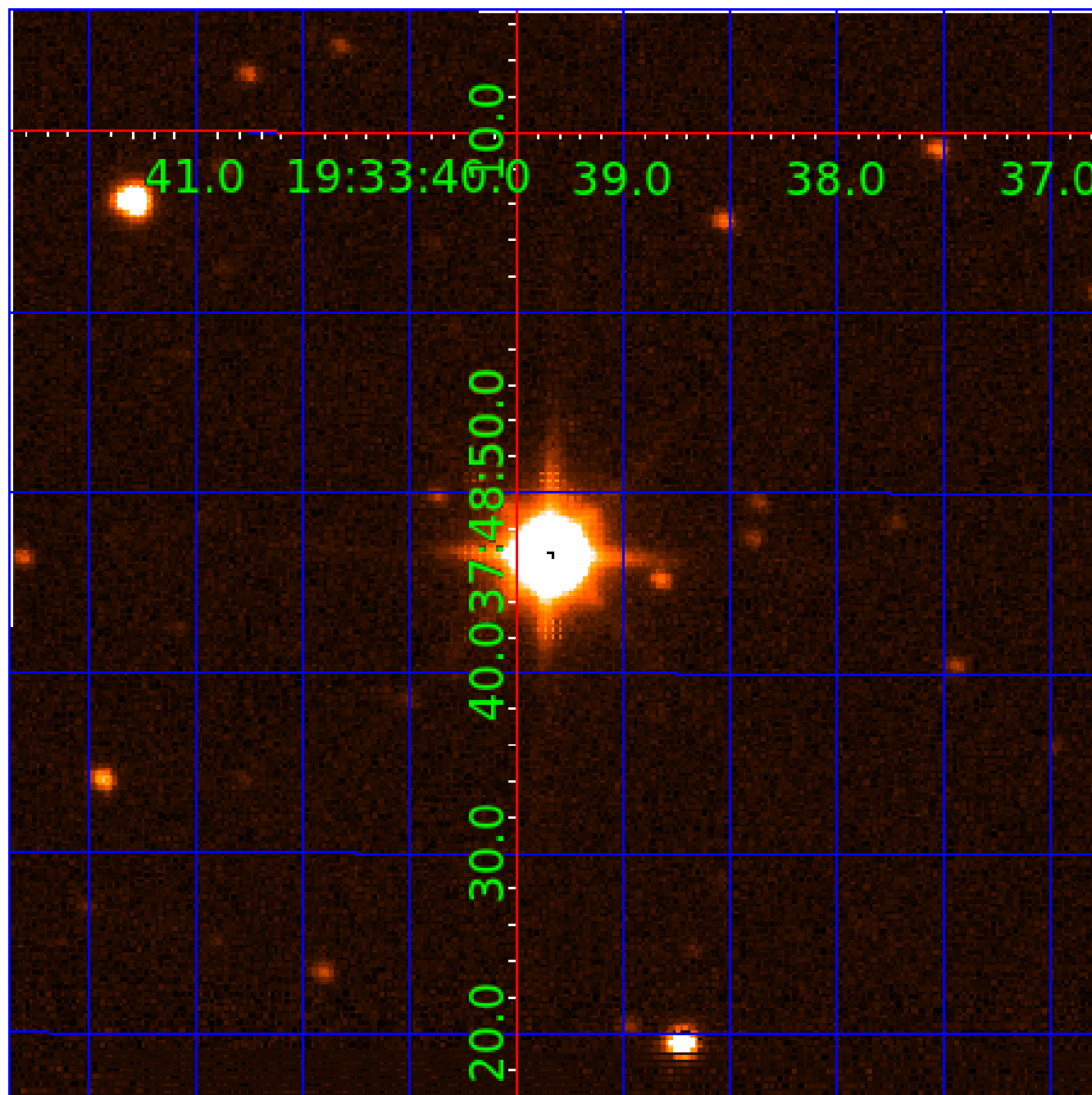


fluxWeightedCentroids, Planet 5 of 6



UKIRT Image

Declination



KIC 002584879

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 002584879-01 | OBS | No | 0.898098 | 131.711970 | 4.4 | 5.163 | 9.6 | 3.6 | 1.28 | 6392 | 0.27 | 7278.52 |
| 002584879-02 | OBS | No | 87.134713 | 142.506802 | 56.4 | 17.734 | 8.2 | 4.7 | 1.28 | 6392 | 1.10 | 16.33 |
| 002584879-04 | OBS | No | 111.838664 | 227.391886 | 94.4 | 1.937 | 9.6 | 4.0 | 1.28 | 6392 | 1.44 | 11.70 |
| 002584879-05 | OBS | No | 73.829513 | 171.325091 | 110.6 | 3.728 | 8.4 | 8.8 | 1.28 | 6392 | 1.53 | 20.36 |
| 002584879-06 | OBS | No | 34.989848 | 154.176402 | 135.8 | 1.606 | 8.3 | 9.0 | 1.28 | 6392 | 1.56 | 55.11 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 002584879-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED |
| 002584879-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED |
| 002584879-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED |
| 002584879-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED |
| 002584879-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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.

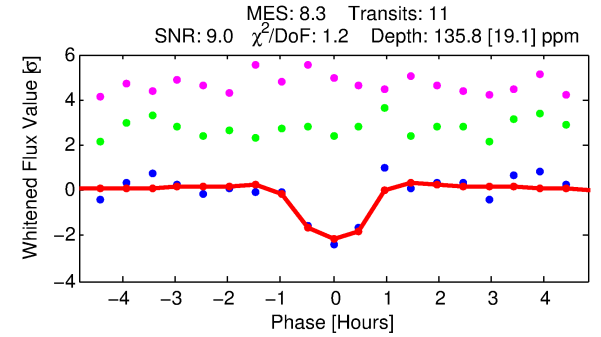
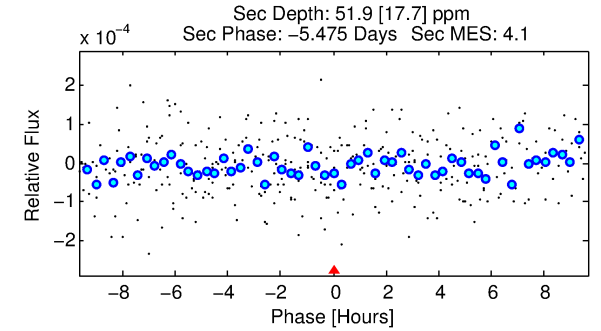
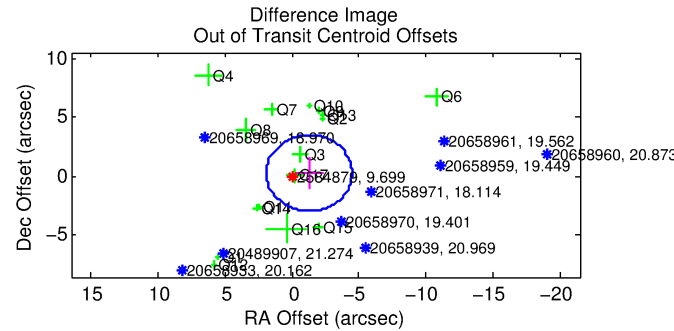
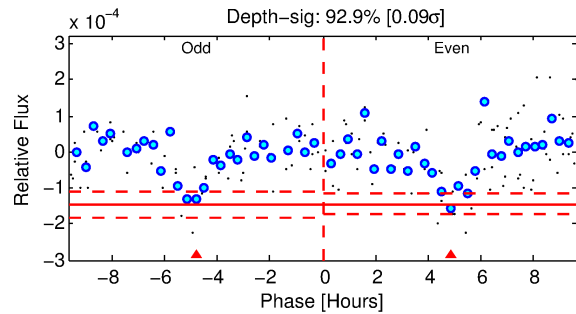
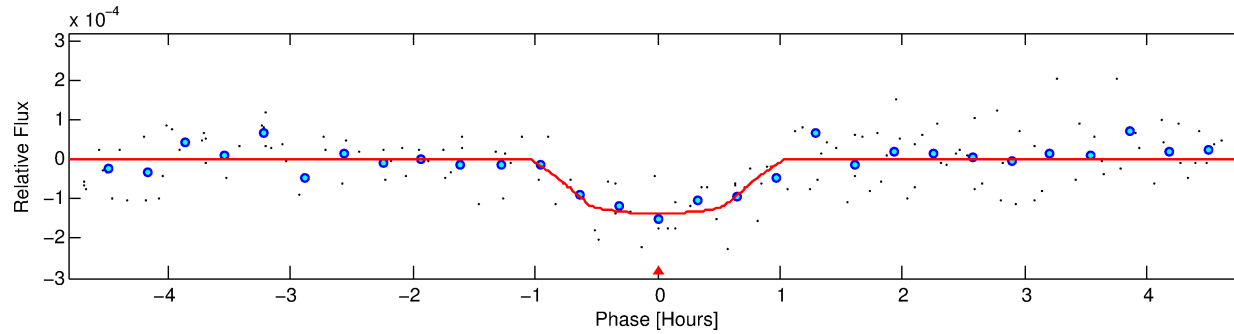
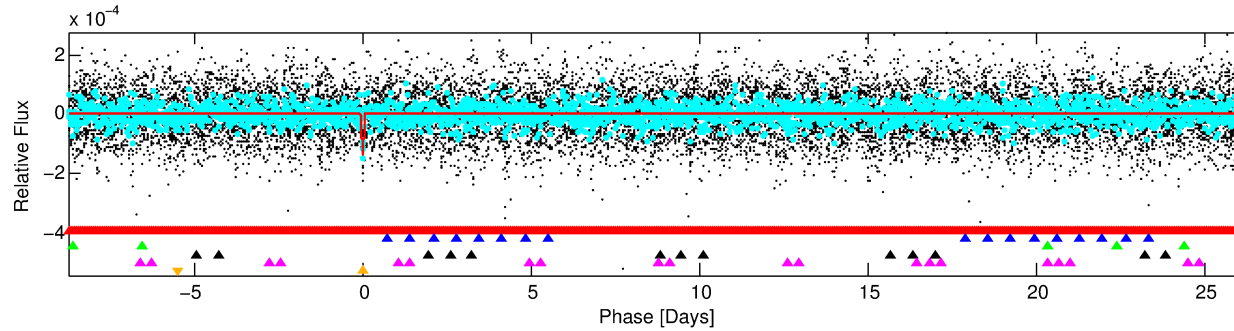
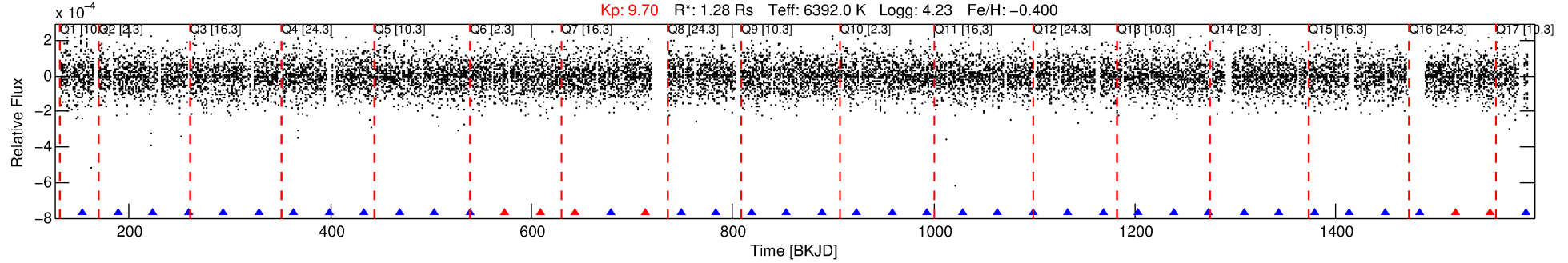
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002584879-06

No Significant Match Found

DV One-Page Summary

KIC: 2584879 Candidate: 6 of 6 Period: 34.990 d



DV Fit Results:

Period = 34.98985 [0.00024] d
Epoch = 154.1764 [0.0059] BKJD
 R_p/R^* = 0.0111 [0.0049]
 a/R^* = 140.64 [313.76]
 b = 0.56 [2.87]
 Seff = 55.11 [21.80]
 T_{eq} = 695 [69] K
 R_p = 1.56 [0.81] R_e
 a = 0.2110 [0.0515] AU
 A_g = 524.40 [526.60] [0.99 σ]
 T_{eff} = 5140 [1218] K [3.64 σ]

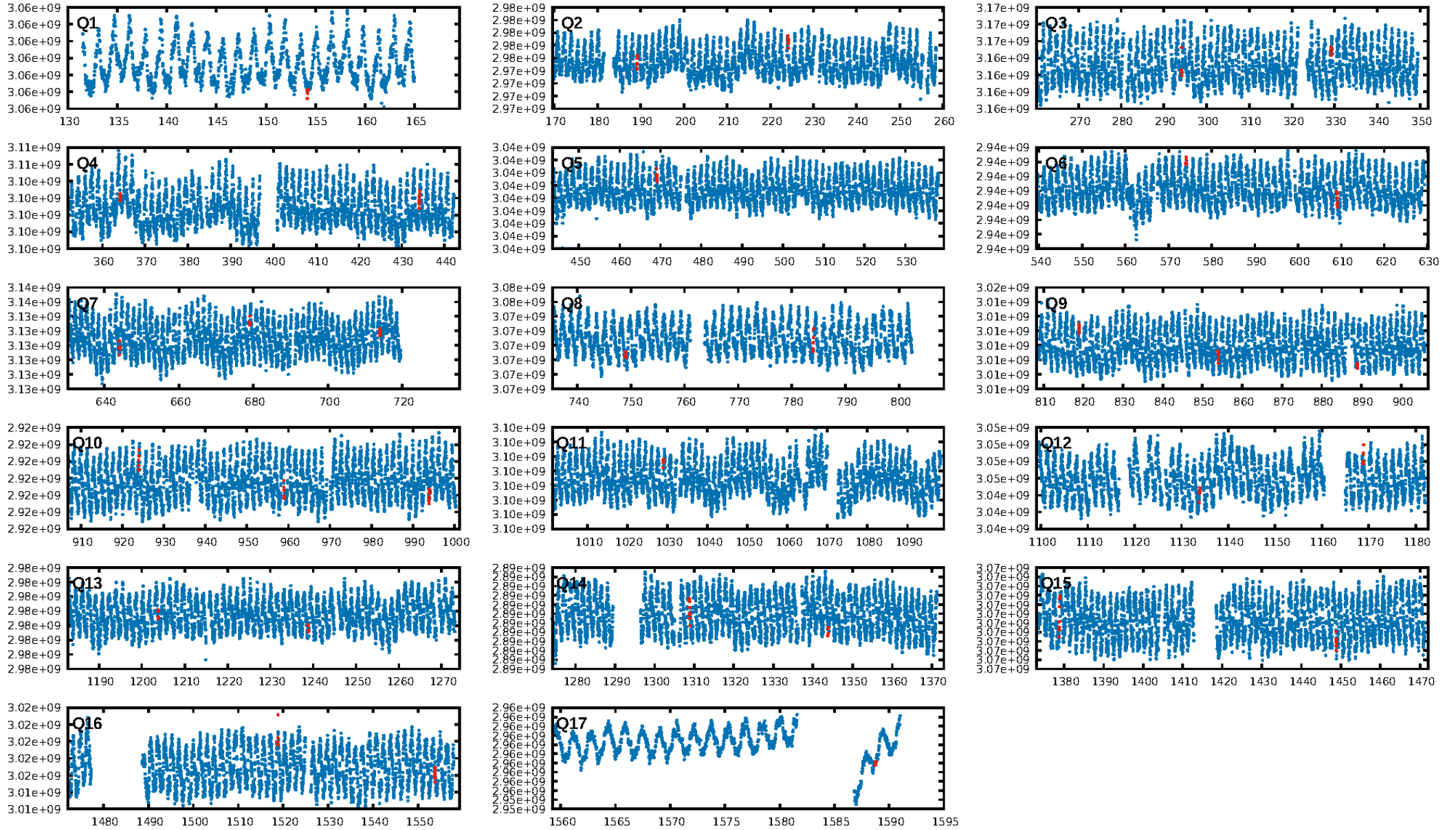
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [151.31 σ]
LongPeriod-sig: 100.0% [229.66 σ]
ModelChiSquare2-sig: 92.6%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 3.00e-09
RollingBand-fgt: 0.40 [4/10]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 0.172 arcsec [0.34 σ]
OotOffset-rm: 1.298 arcsec [1.21 σ]
KicOffset-rm: 1.407 arcsec [1.41 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.06 [1/16]
DiffImageOverlap-fno: 0.24 [4/17]

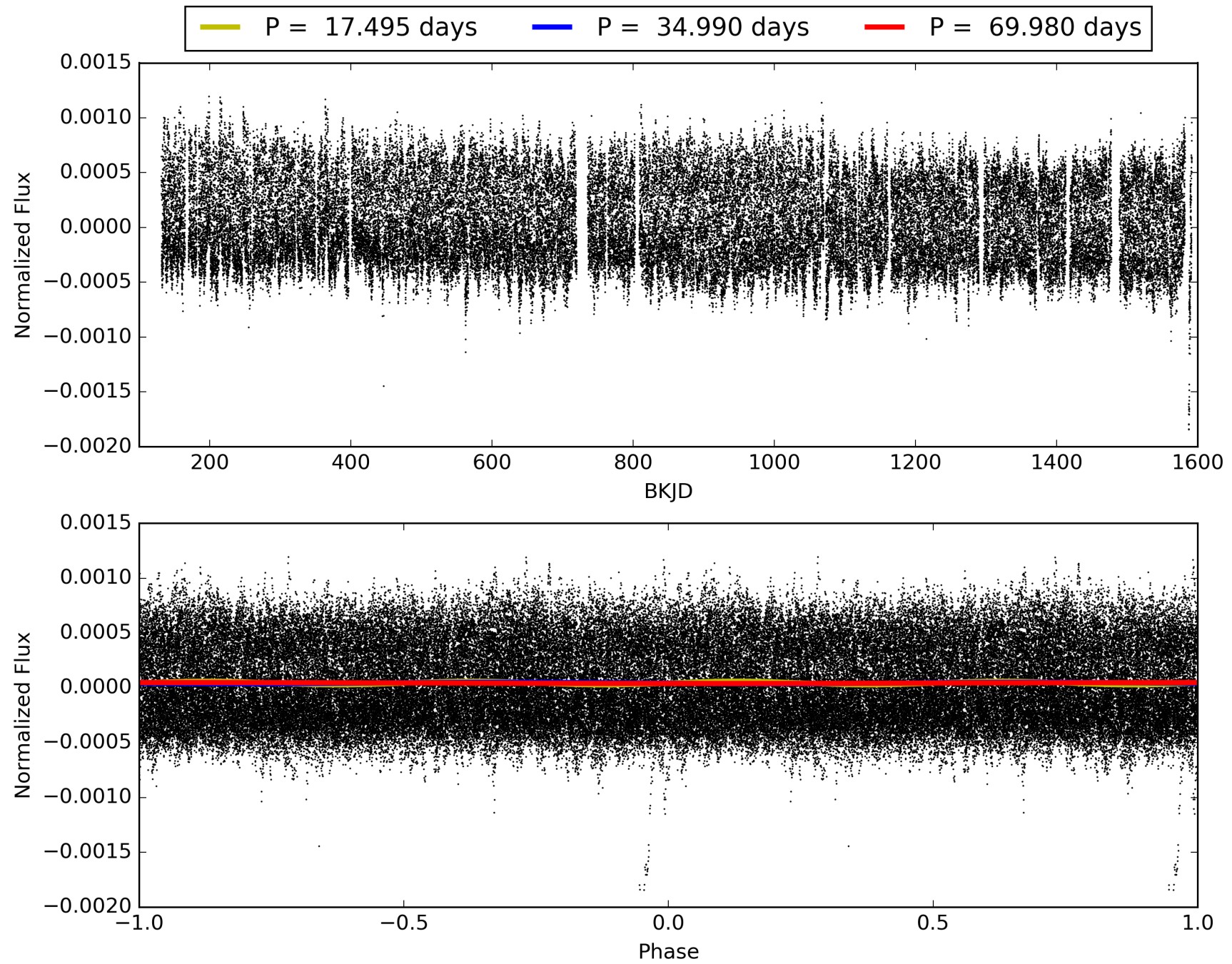
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:15:53 Z

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

TCE 002584879-06, PDC Light Curves

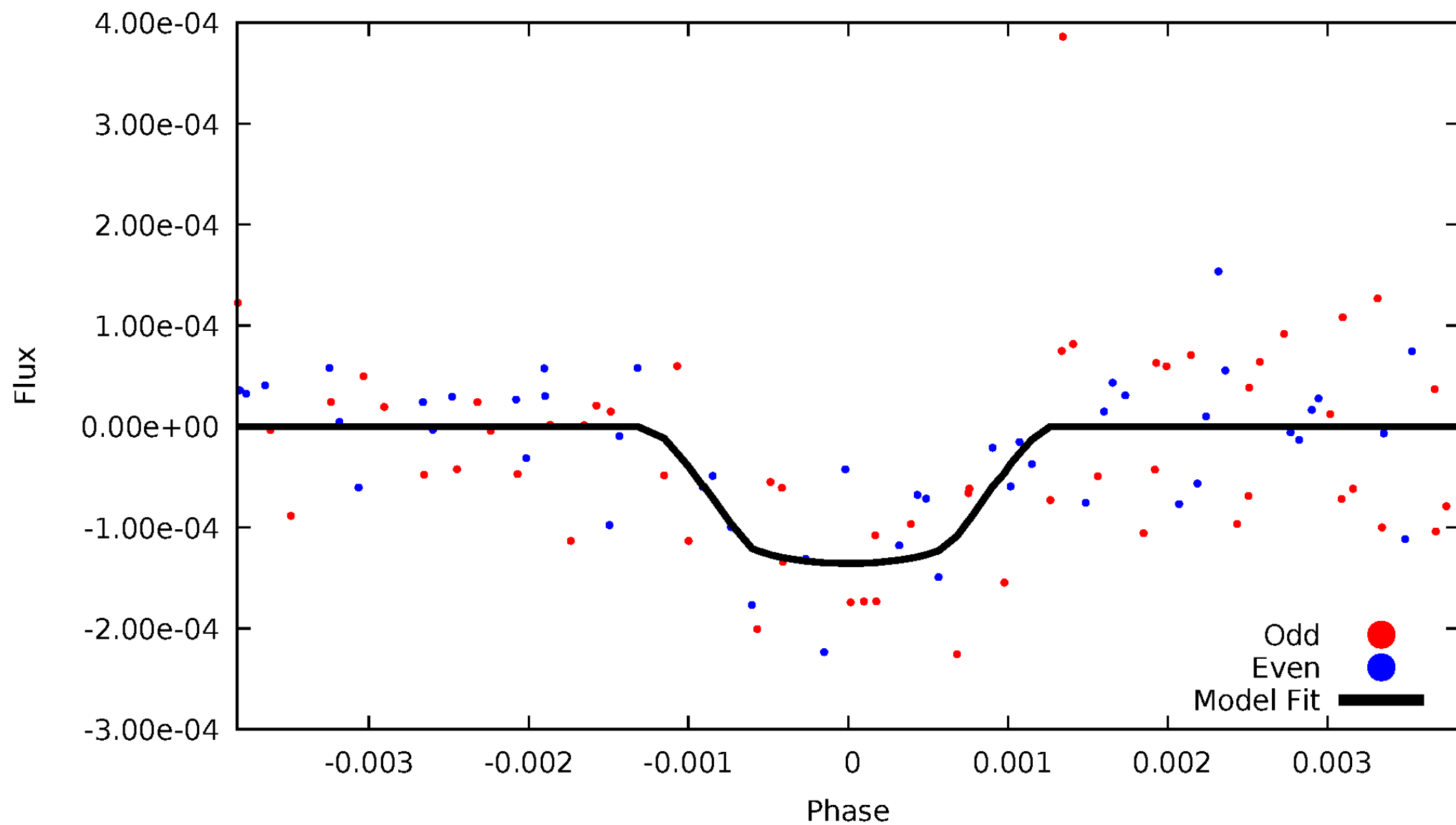


TCE 002584879-06



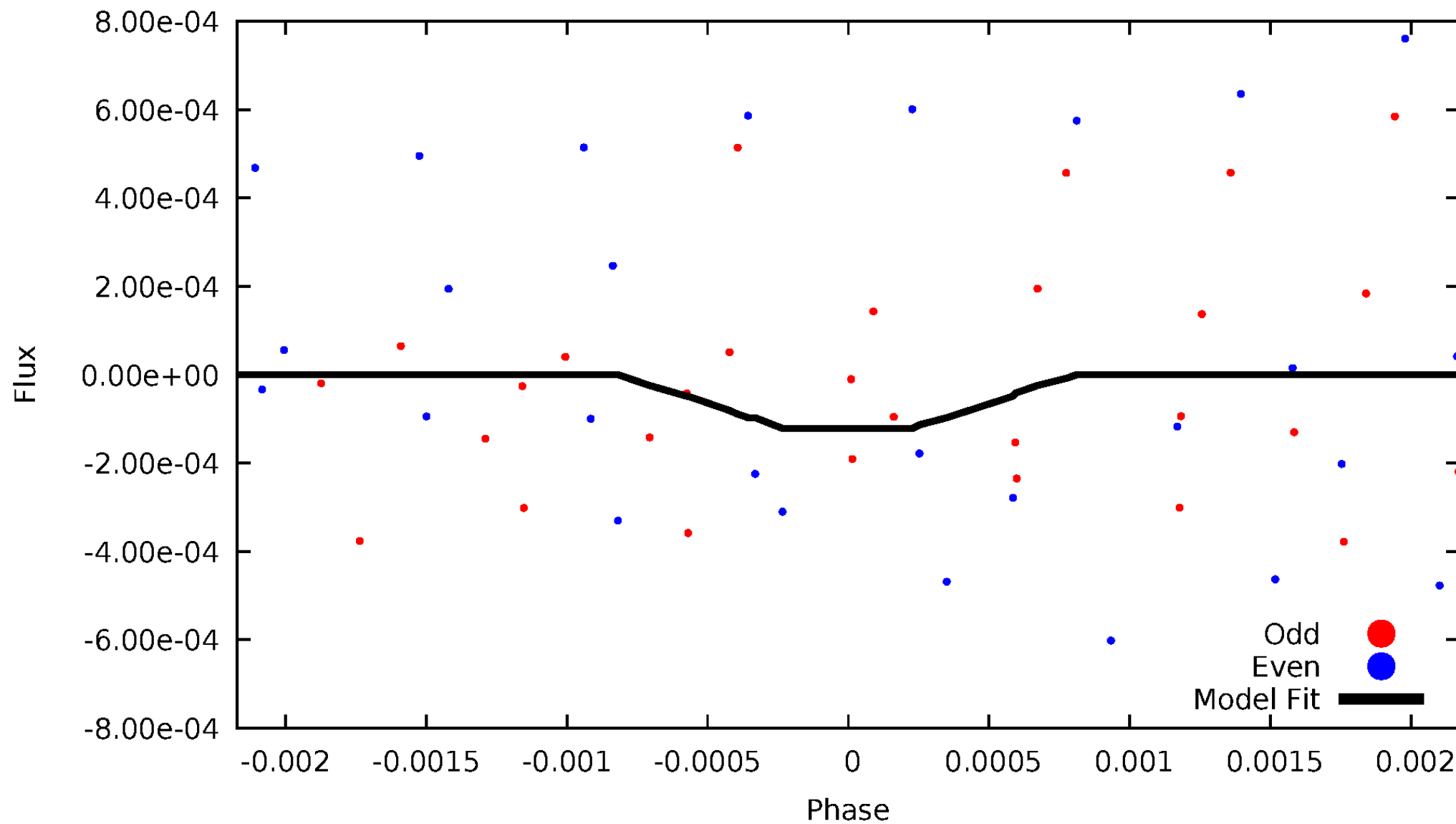
DV Odd/Even

TCE 002584879-06



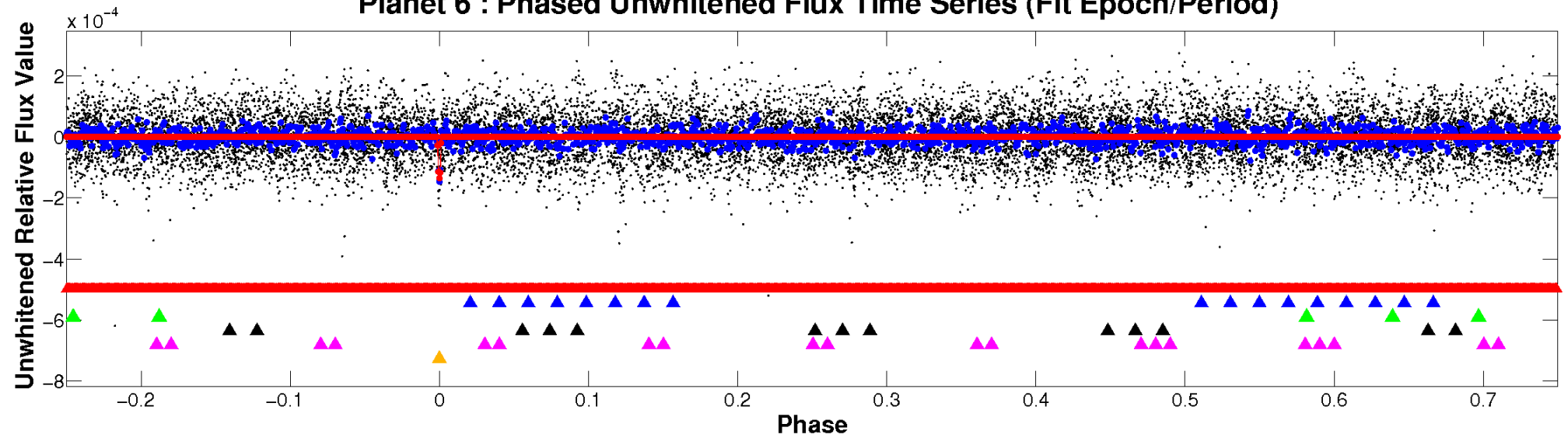
ALT Odd/Even

TCE 002584879-06

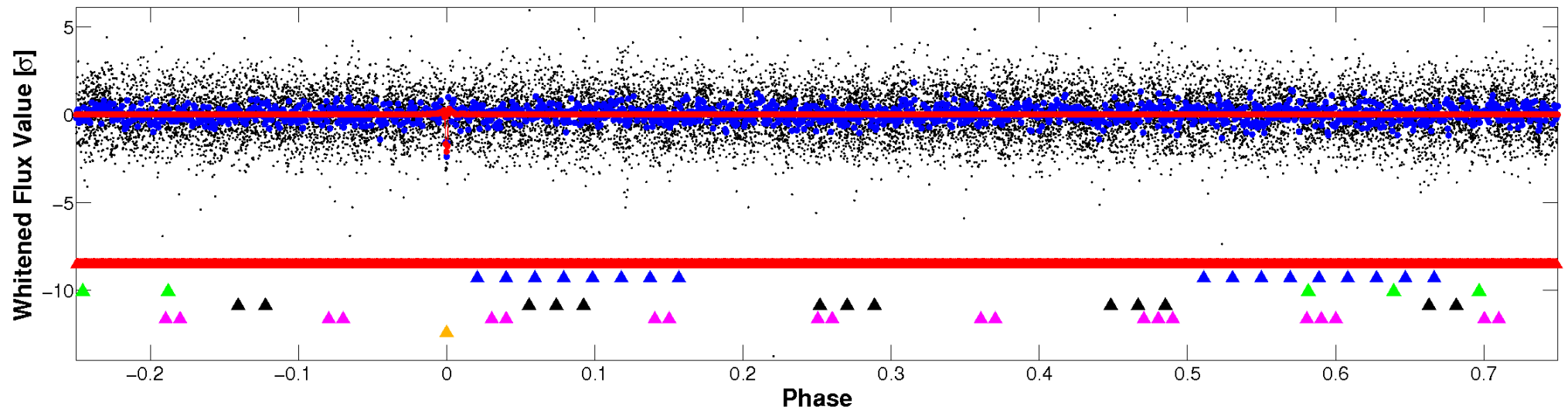


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

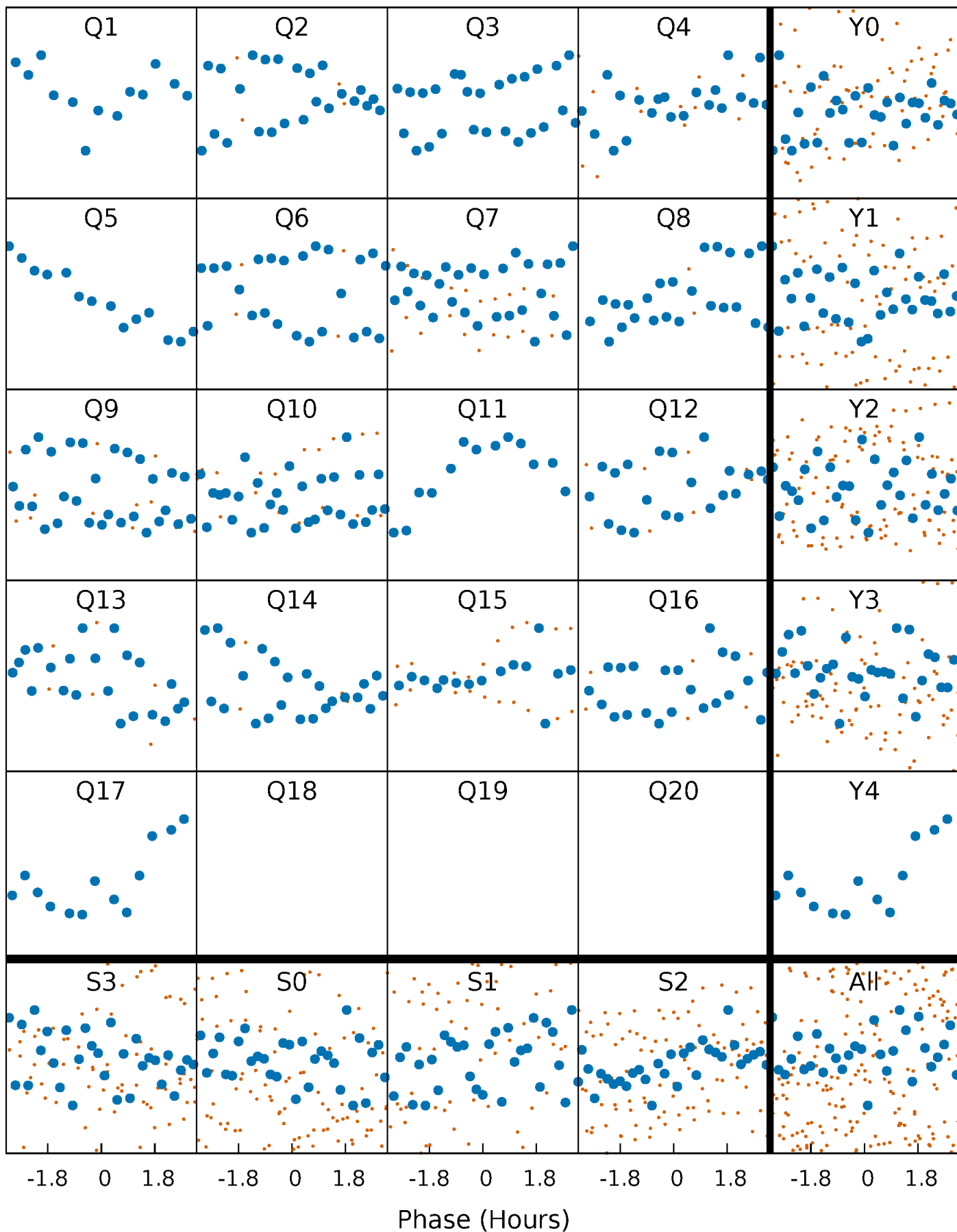


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



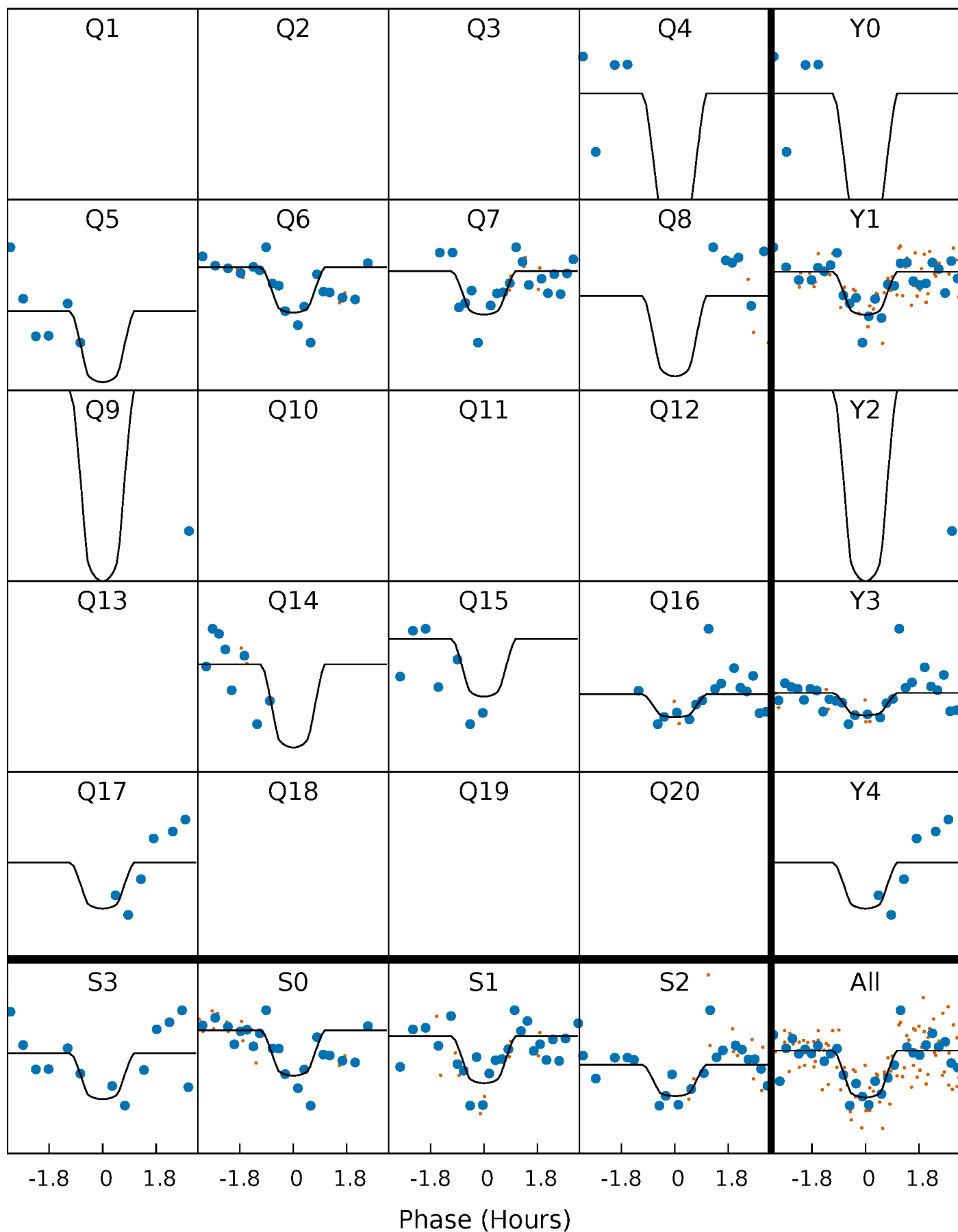
PDC Quarter-Phased Transit Curves

TCE 002584879-06 P= 34.989848 Days $T_0=154.176402$ (BKJD)



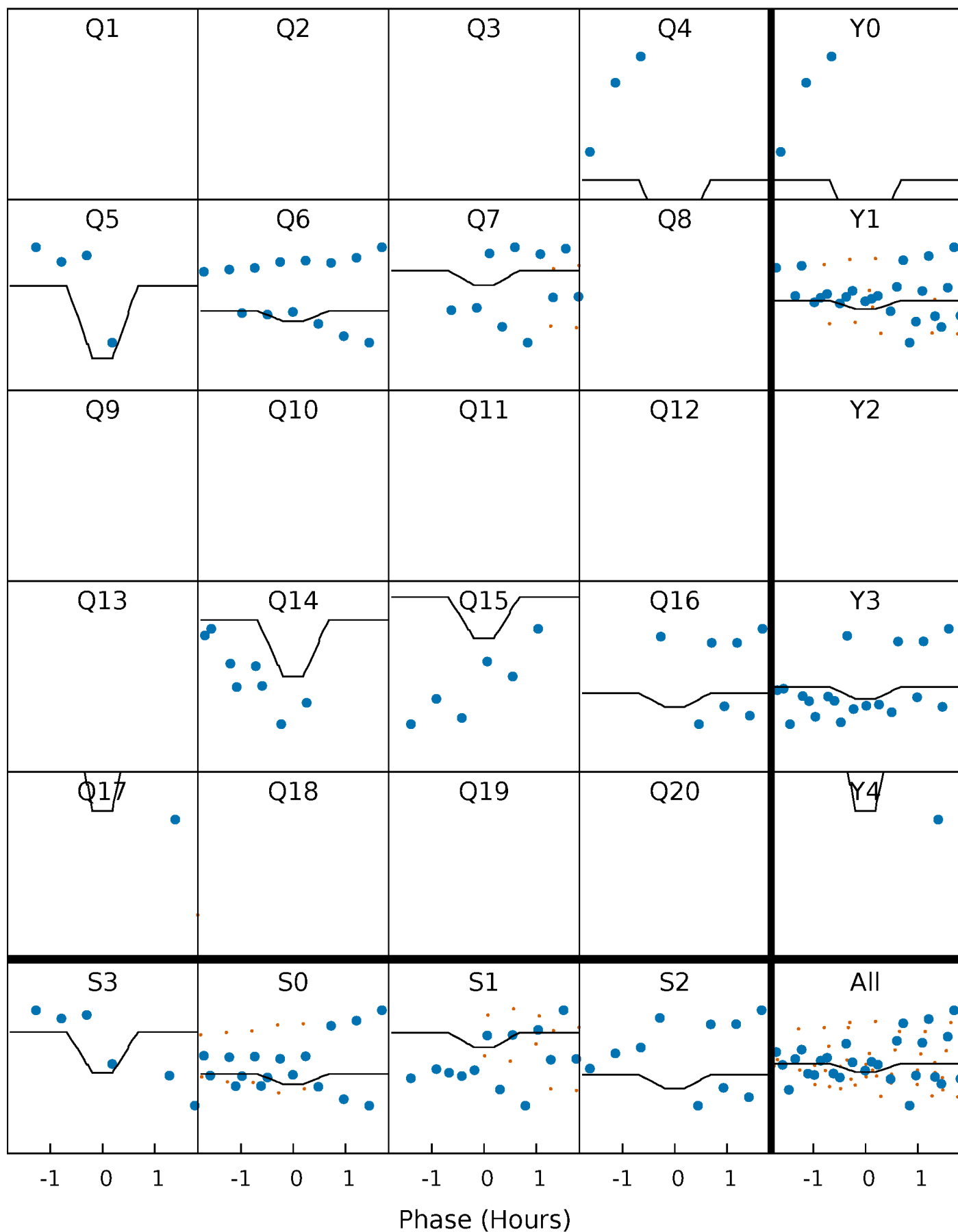
DV Quarter-Phased Transit Curves

TCE 002584879-06 P= 34.989848 Days $T_0=154.176402$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

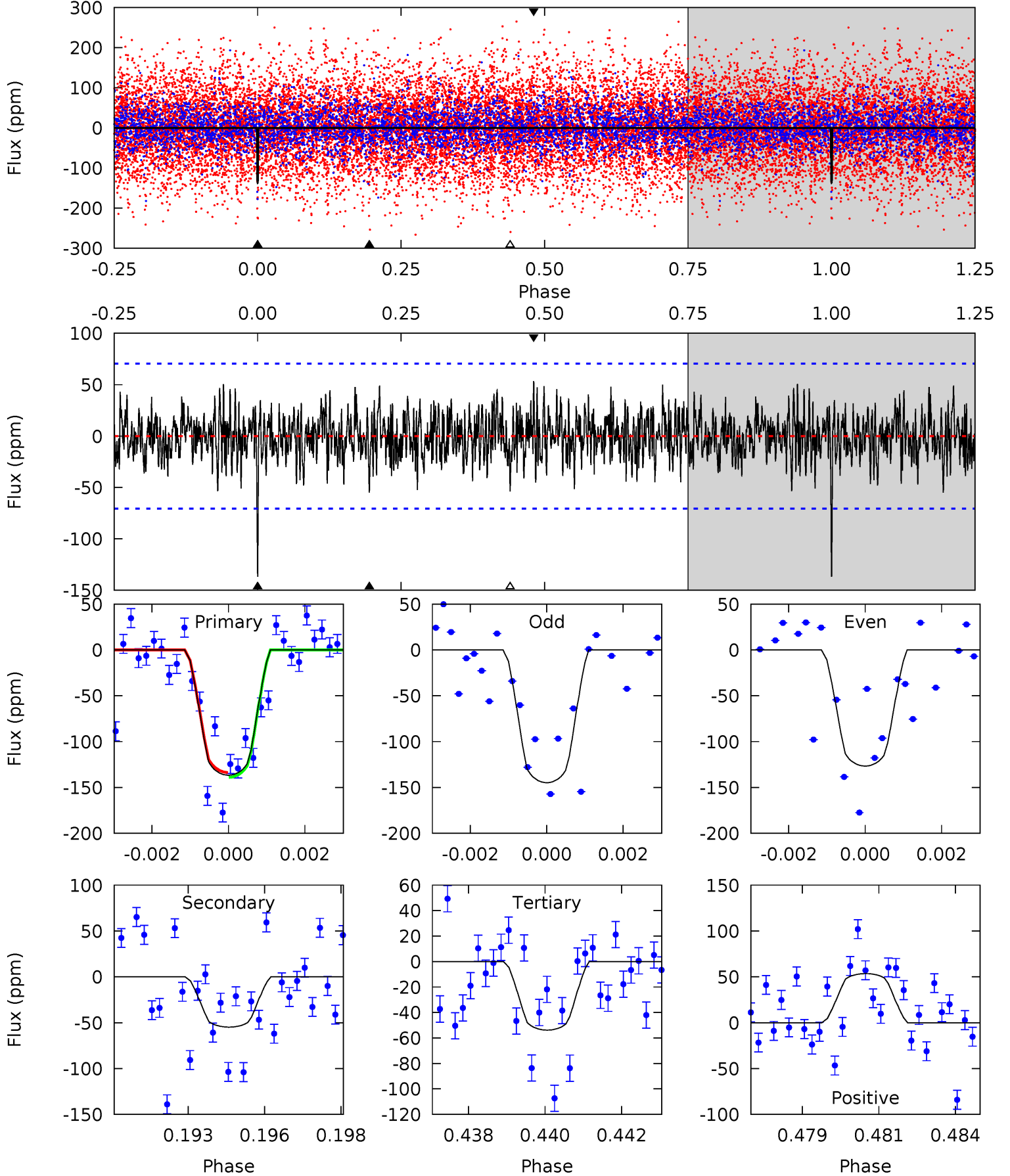
TCE 002584879-06 P= 34.989709 Days $T_0=154.140394$ (BKJD)



DV Model-Shift Uniqueness Test

002584879-06, P = 34.989848 Days, E = 119.186554 Days

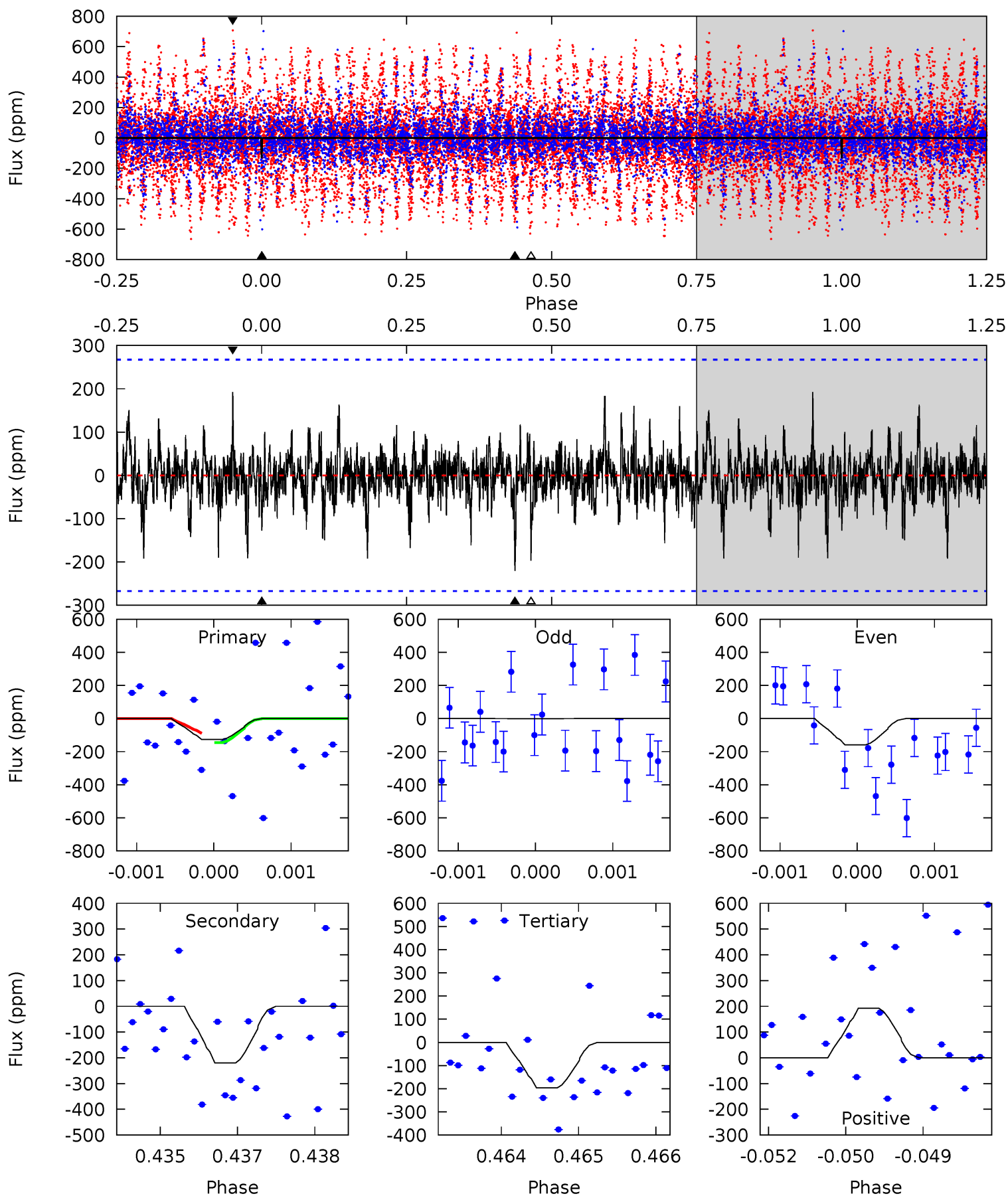
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.3 | 4.12 | 4.05 | 4.03 | 5.30 | 3.05 | 1.35 | 6.23 | 6.25 | 0.07 | 0.10 | 0.69 | 0.96 | 0.28 | 0.20 |



Alt Model-Shift Uniqueness Test

002584879-06, P = 34.989709 Days, E = 119.150685 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-------|-------|------|
| 2.56 | 4.43 | 3.96 | 3.87 | 5.38 | 3.18 | 0.89 | -1.40 | -1.31 | 0.47 | 0.56 | 1.57 | -1.20 | 0.47 | 0.56 |



Stellar Parameters For KIC 002584879

| | $T_{\text{eff}} (K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M (M_{\odot})$ | $\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|--|
| | 6392^{+177}_{-244} | $4.233^{+0.204}_{-0.167}$ | $-0.400^{+0.300}_{-0.300}$ | $1.281^{+0.360}_{-0.294}$ | $1.022^{+0.171}_{-0.128}$ | $0.684^{+0.670}_{-0.344}$ |
| | +3%/-4% | +5%/-4% | +75%/-75% | +28%/-23% | +17%/-13% | +98%/-50% |
| Source | PHO54 | PHO54 | PHO54 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 002584879-06 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|------------------------|------------------------|
| DV | -55 ± 13 | $1.58^{+0.68}_{-0.71}$ | 962^{+73}_{-67} | 5188^{+1782}_{-731} | 545^{+1277}_{-302} |
| Alt. | -220 ± 50 | $1.53^{+0.78}_{-0.69}$ | 963^{+73}_{-78} | 7465^{+3240}_{-1458} | 2277^{+5417}_{-1288} |

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

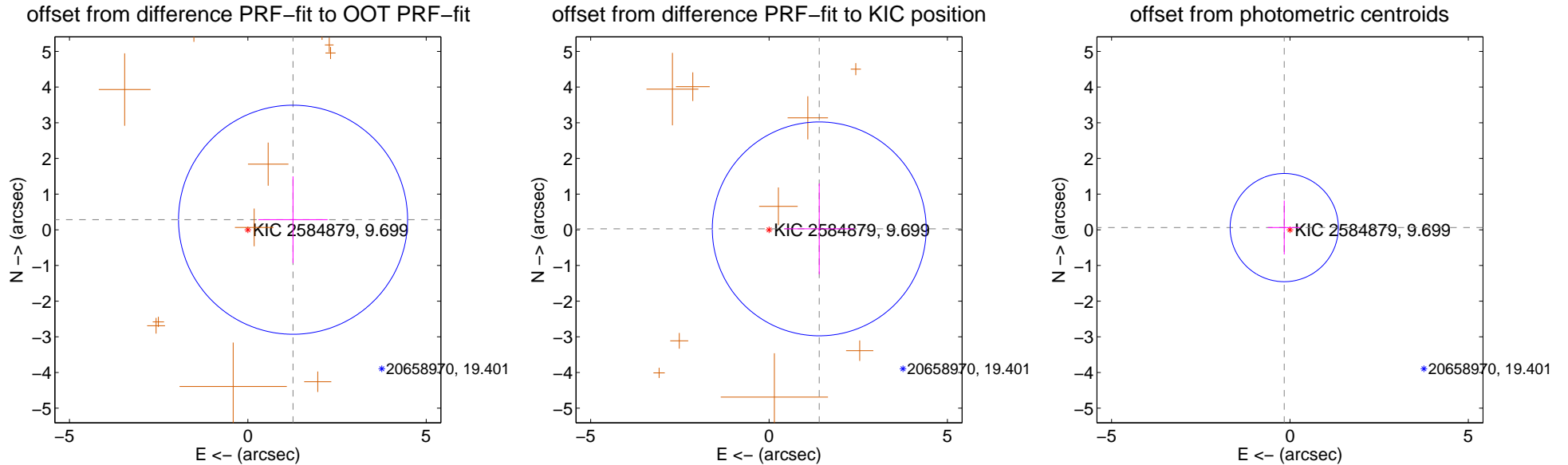
DV Centroid Data

Supplemental centroid analysis for 002584879-06. **Kepler magnitude: 9.70.** Transit SNR 9.02

There are 1 quarters with good PRF difference image offsets

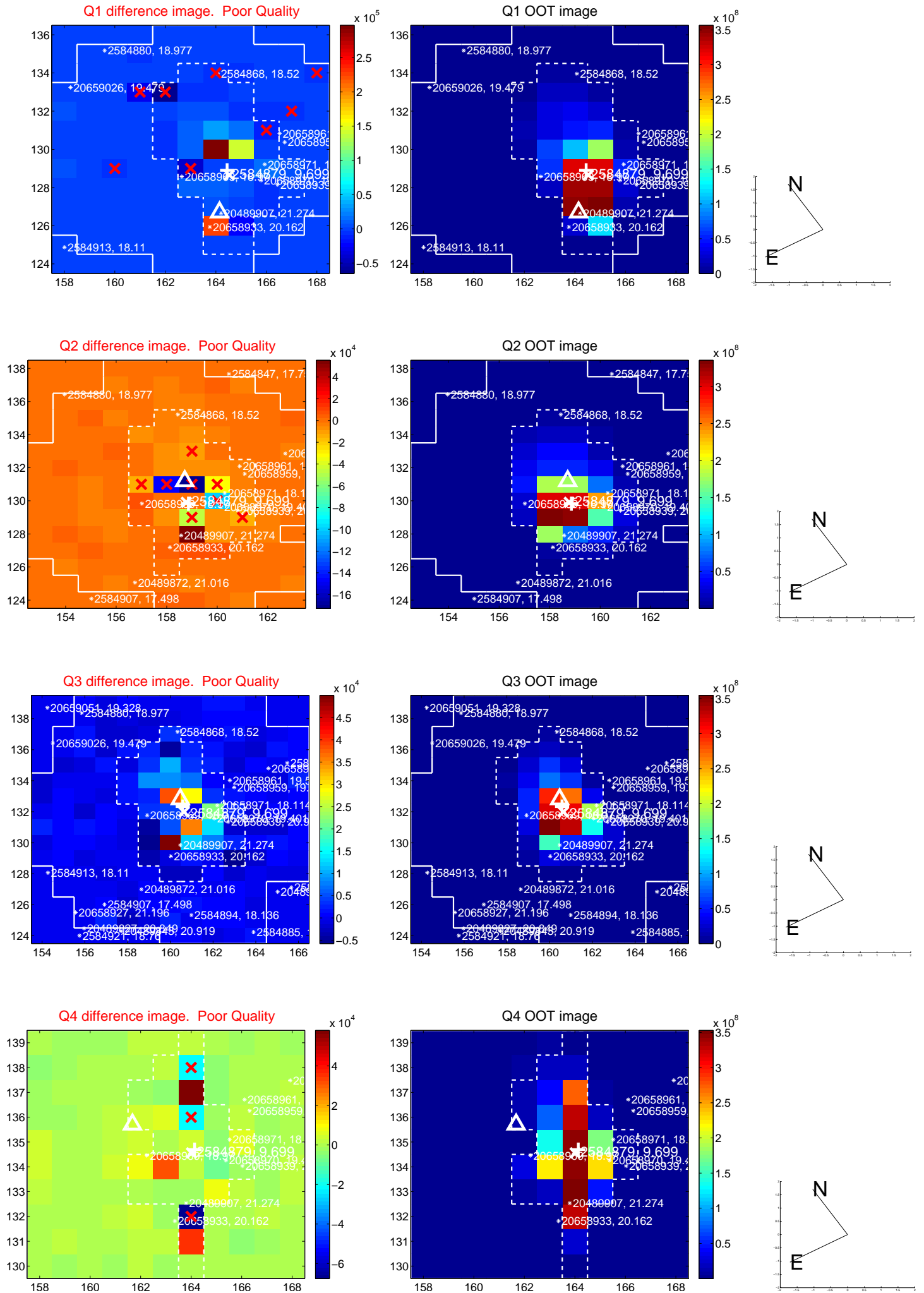
The direct PRF centroid is offset from the target star catalog position by about 0.60 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 1.298 ± 1.070 | 1.21 | -1.267 ± 0.970 | 0.282 ± 1.214 |
| PRF-fit source offset from KIC position | 1.407 ± 0.999 | 1.41 | -1.407 ± 0.989 | 0.026 ± 1.270 |
| photometric centroid source offset | 0.17 ± 0.51 | 0.34 | 0.16 ± 0.46 | 0.06 ± 0.76 |

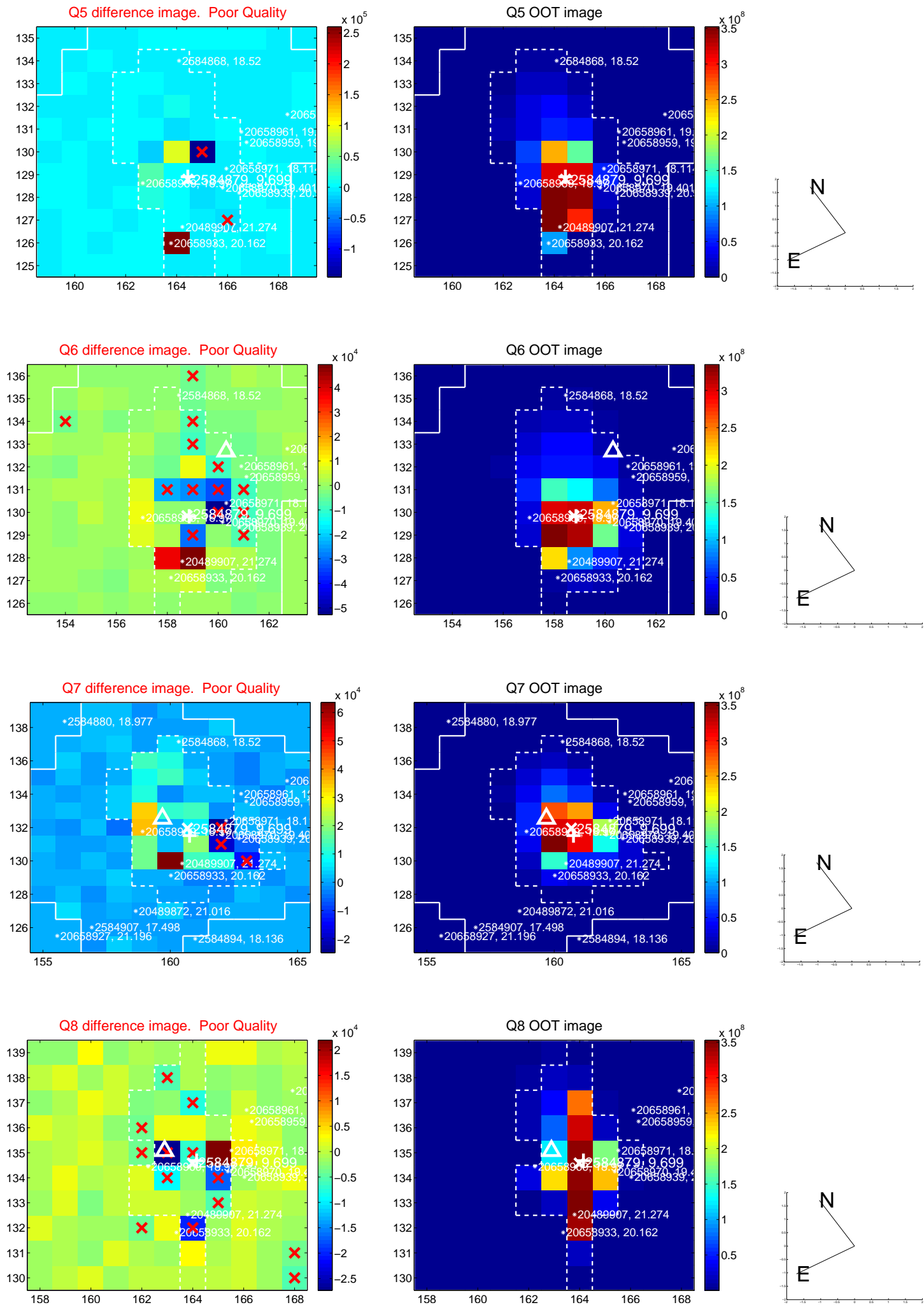


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

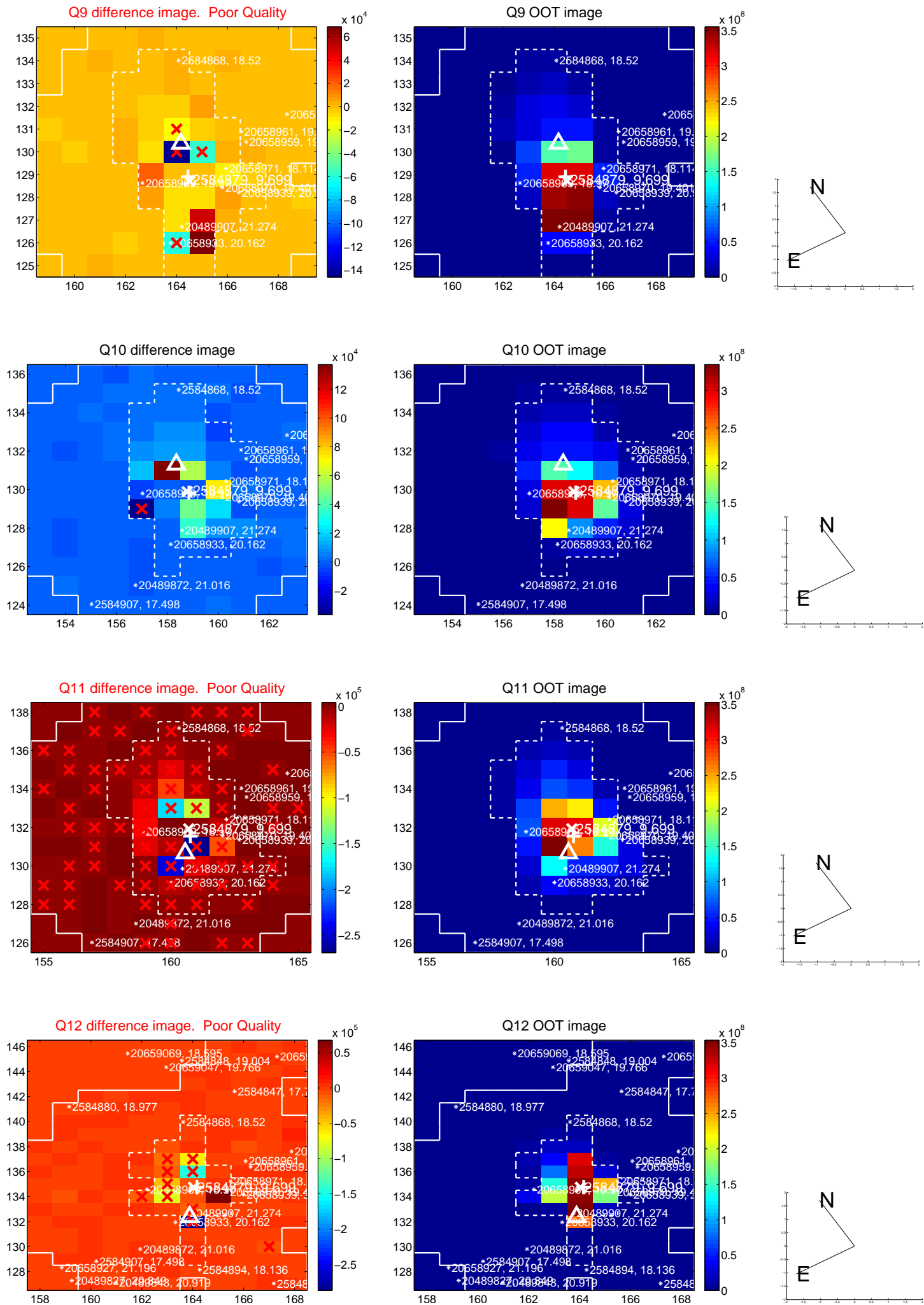
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



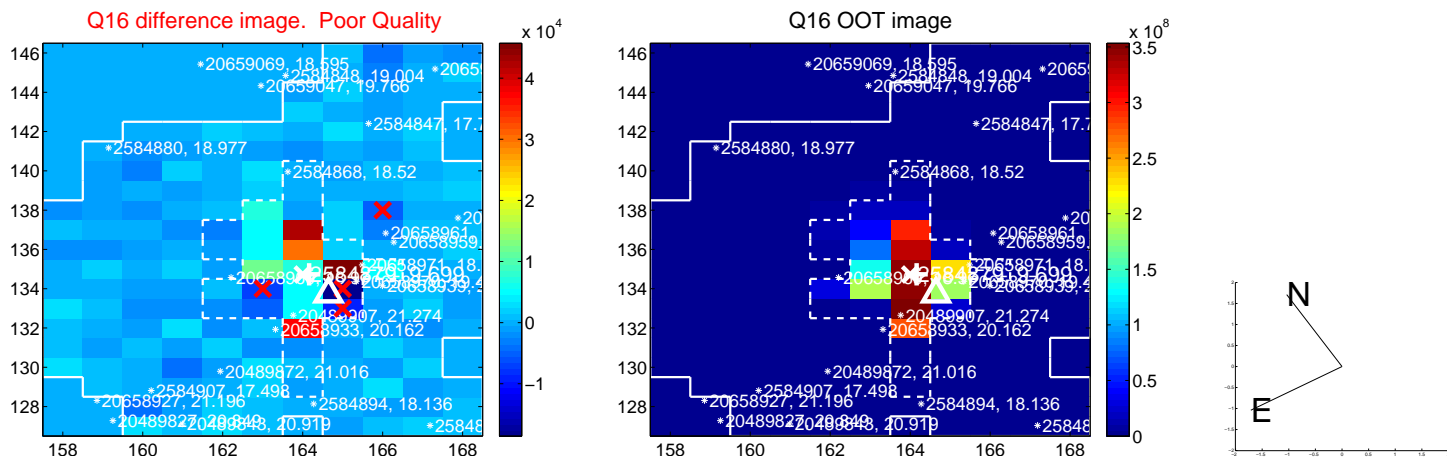
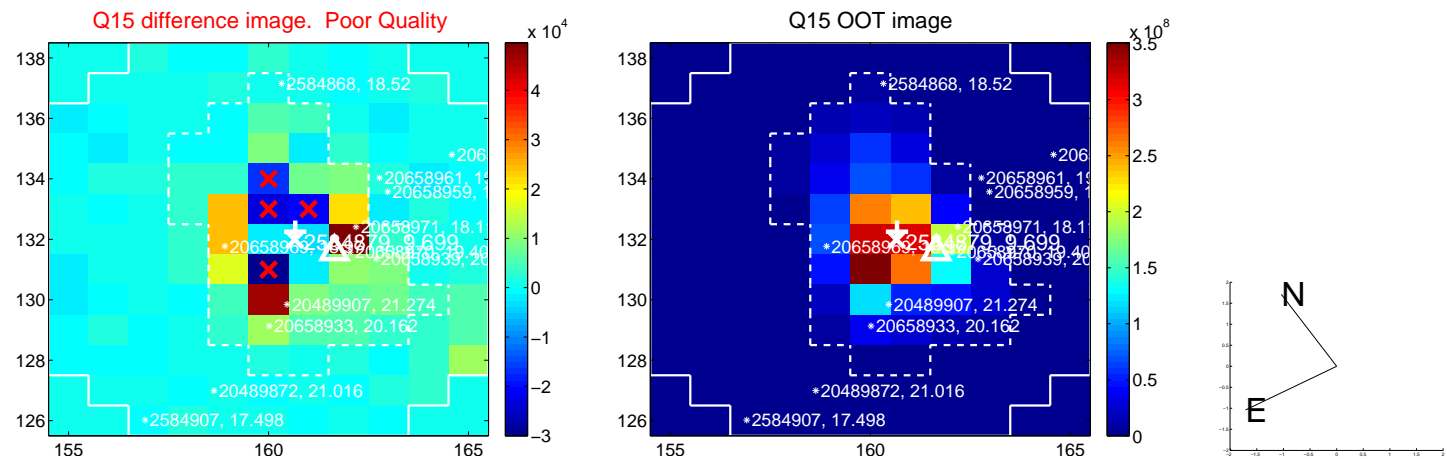
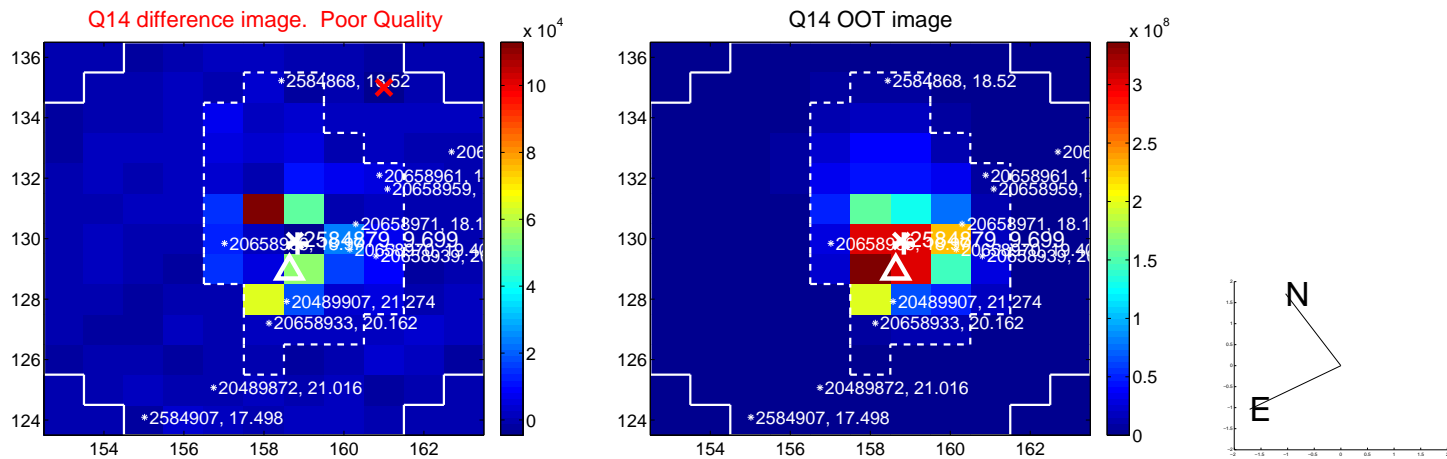
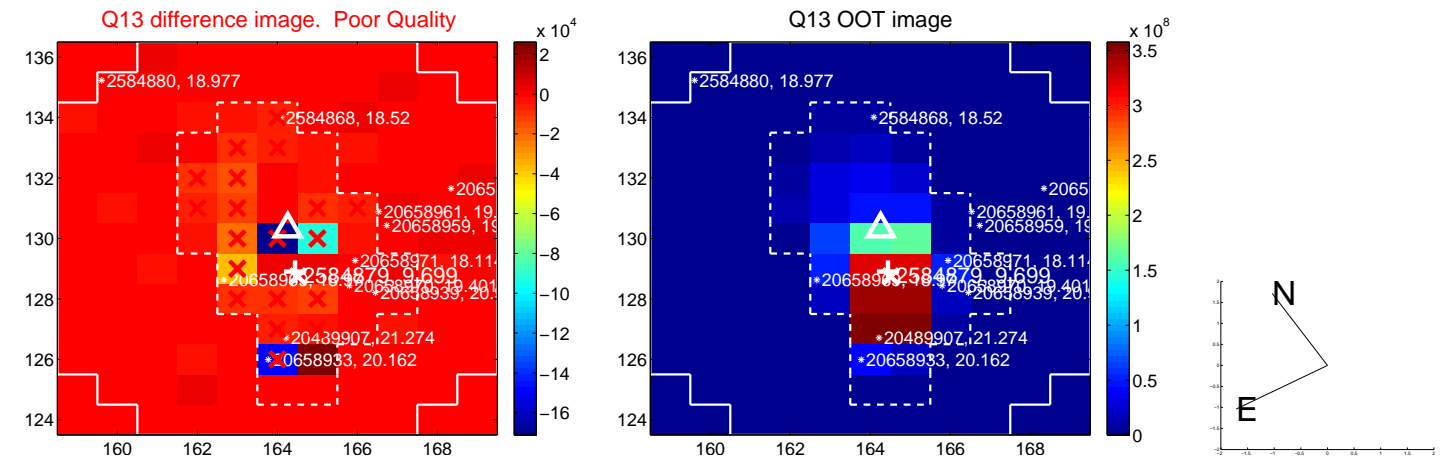
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



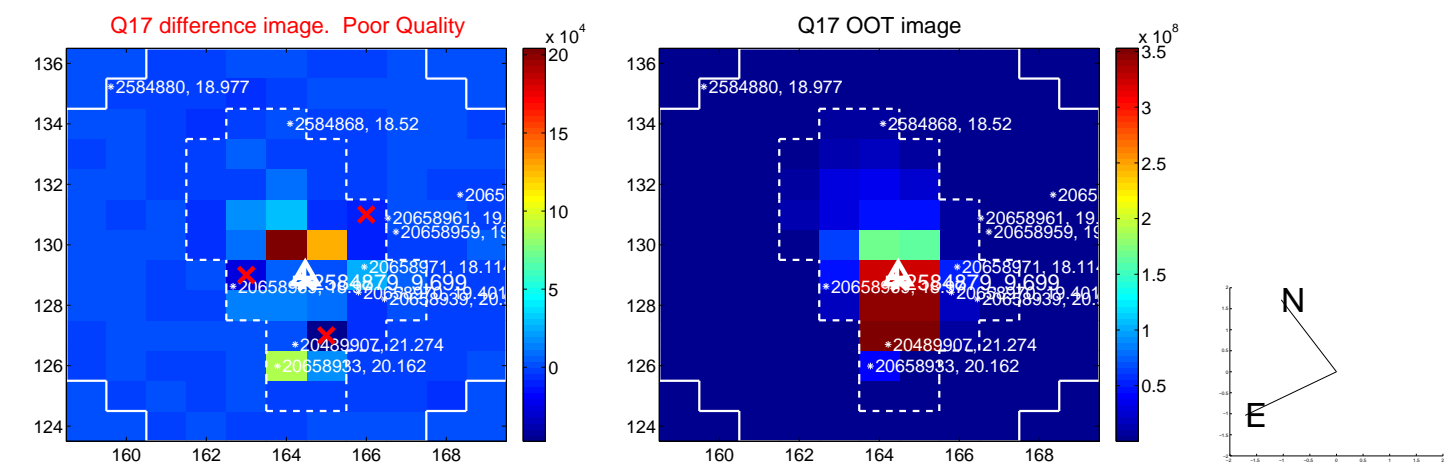
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



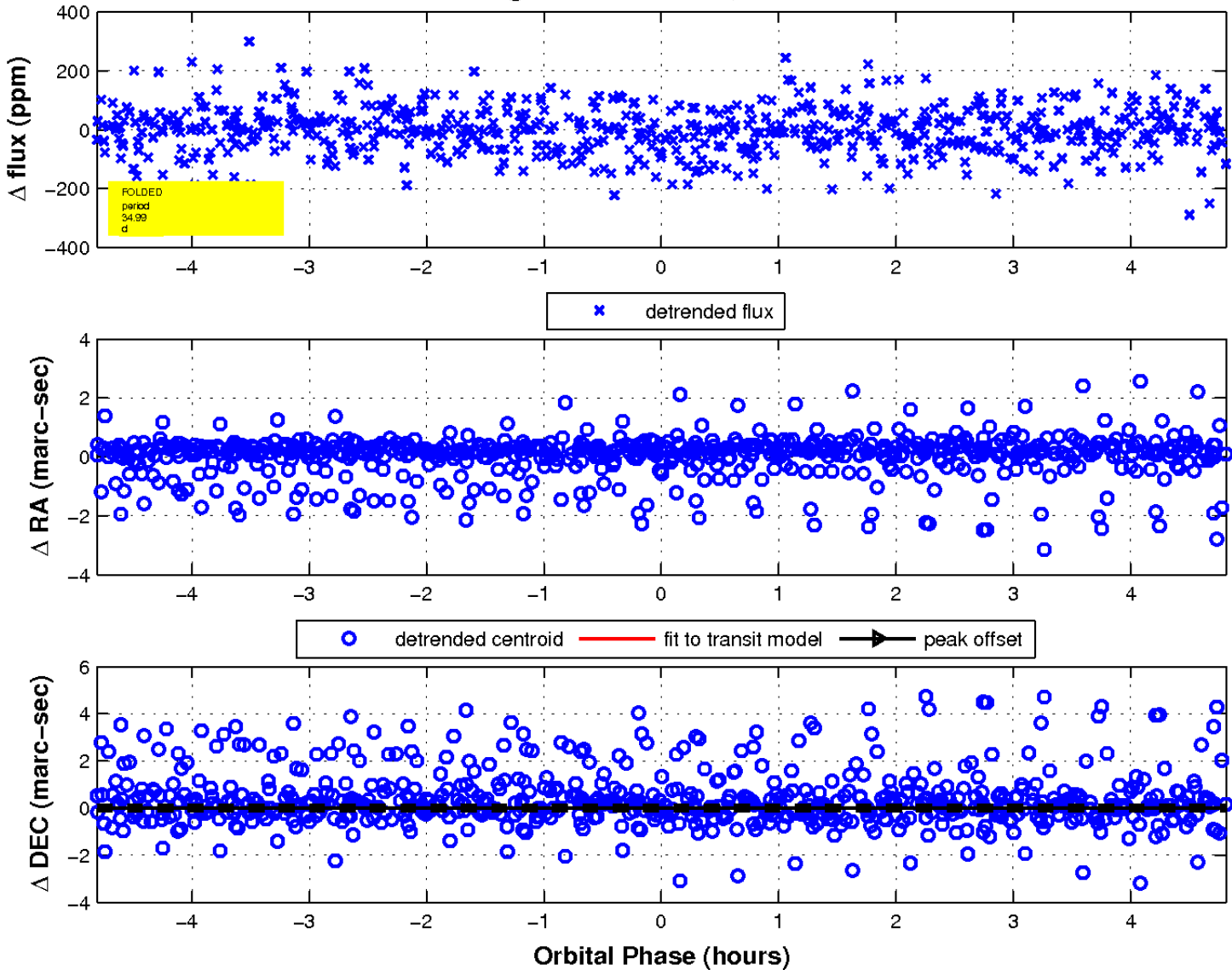
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 6 of 6



UKIRT Image

Declination

