

KIC 006026737

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 006026737-01 | OBS | 2949.01 | 10.174826 | 132.356397 | 54.6 | 5.499 | 10.0 | 11.3 | 1.34 | 5866 | 1.16 | 222.88 |
| 006026737-02 | OBS | 2949.02 | 3.750304 | 134.804965 | 34.8 | 2.941 | 8.4 | 8.7 | 1.34 | 5866 | 0.95 | 843.39 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 006026737-01 | OBS | PC | 0.93 | 0 | 0 | 0 | 0 | NO_COMMENT |
| 006026737-02 | OBS | PC | 0.76 | 0 | 0 | 0 | 0 | NO_COMMENT |

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

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

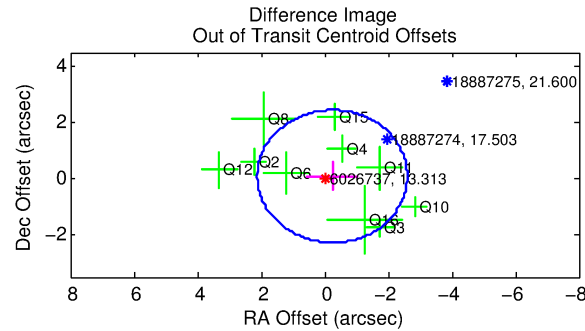
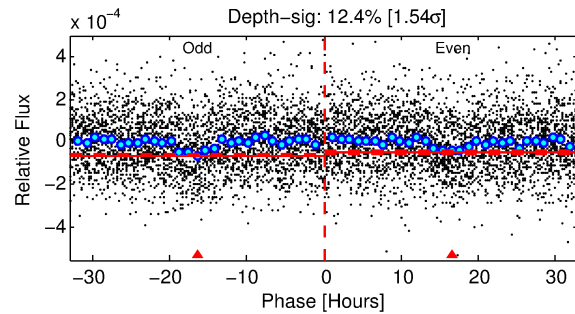
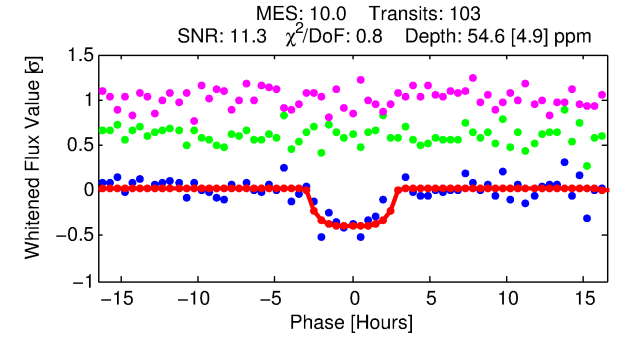
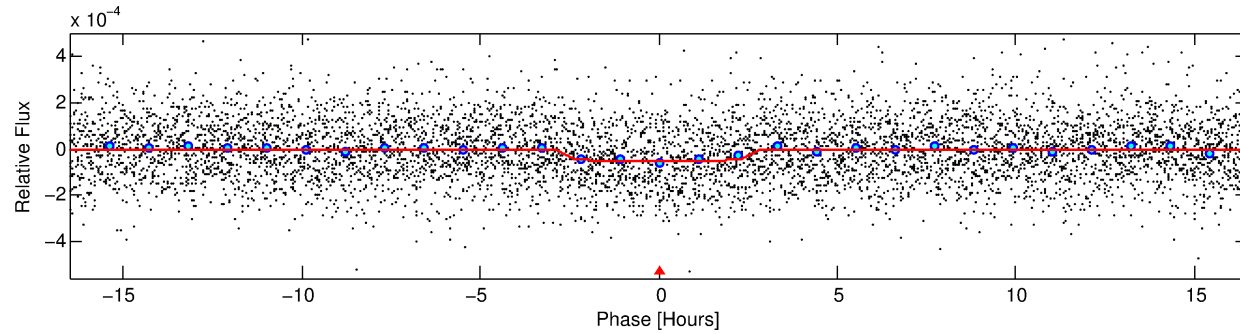
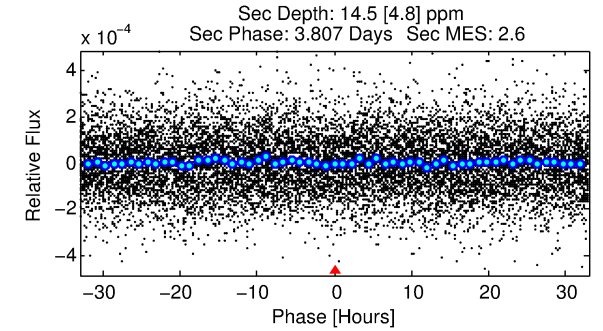
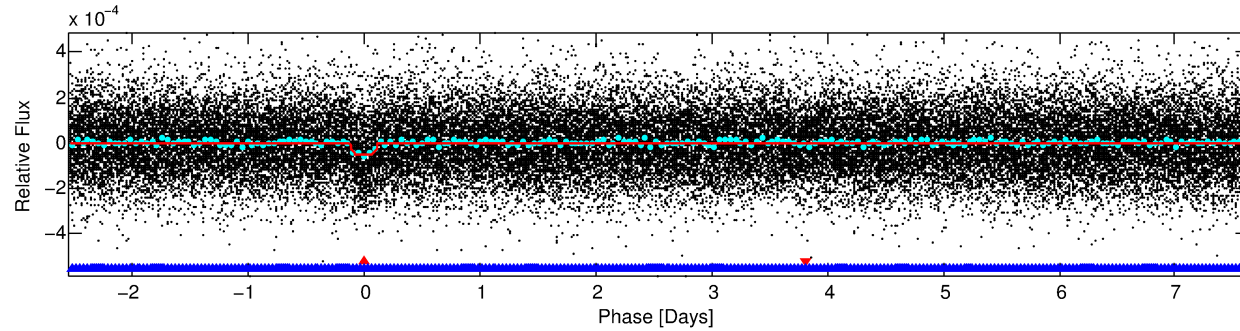
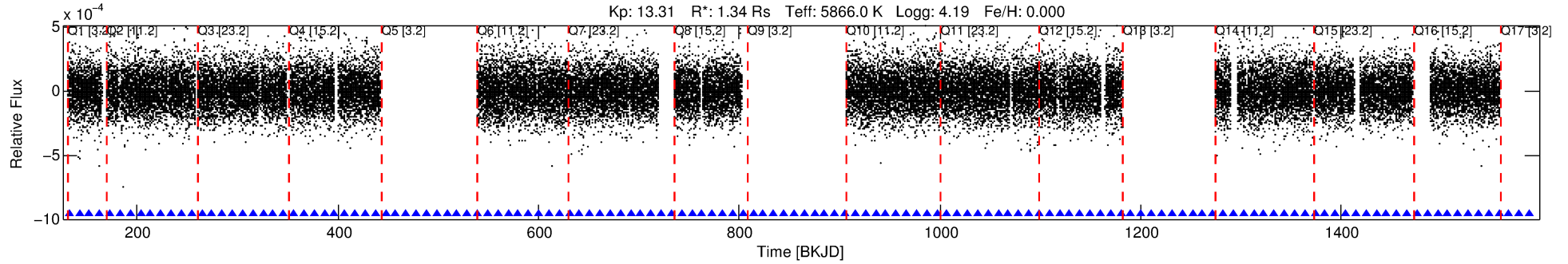
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006026737-01

No Significant Match Found

DV One-Page Summary

KIC: 6026737 Candidate: 1 of 2 Period: 10.175 d
KOI: K02949.01 Corr: 0.900



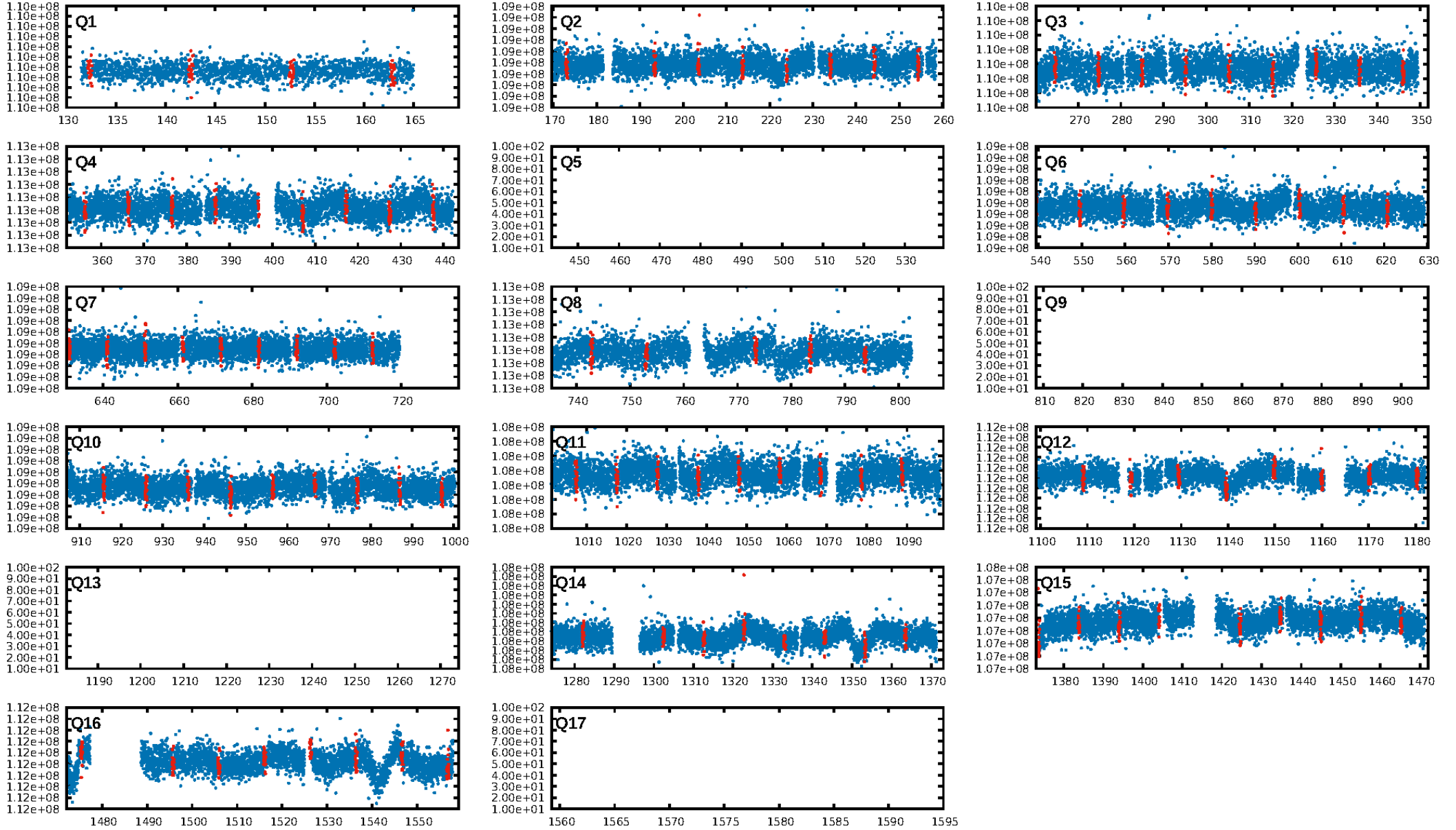
DV Fit Results:

Period = 10.17483 [0.00011] d
Epoch = 132.3564 [0.0082] BKJD
Rp/R* = 0.0079 [0.0036]
a/R* = 6.93 [15.14]
b = 0.88 [0.56]
Seff = 222.88 [64.77]
Teff = 985 [72] K
Rp = 1.16 [0.57] Re
a = 0.0924 [0.0164] AU
Ag = 51.17 [51.43] [0.98σ]
Teffp = 4074 [987] K [3.12σ]

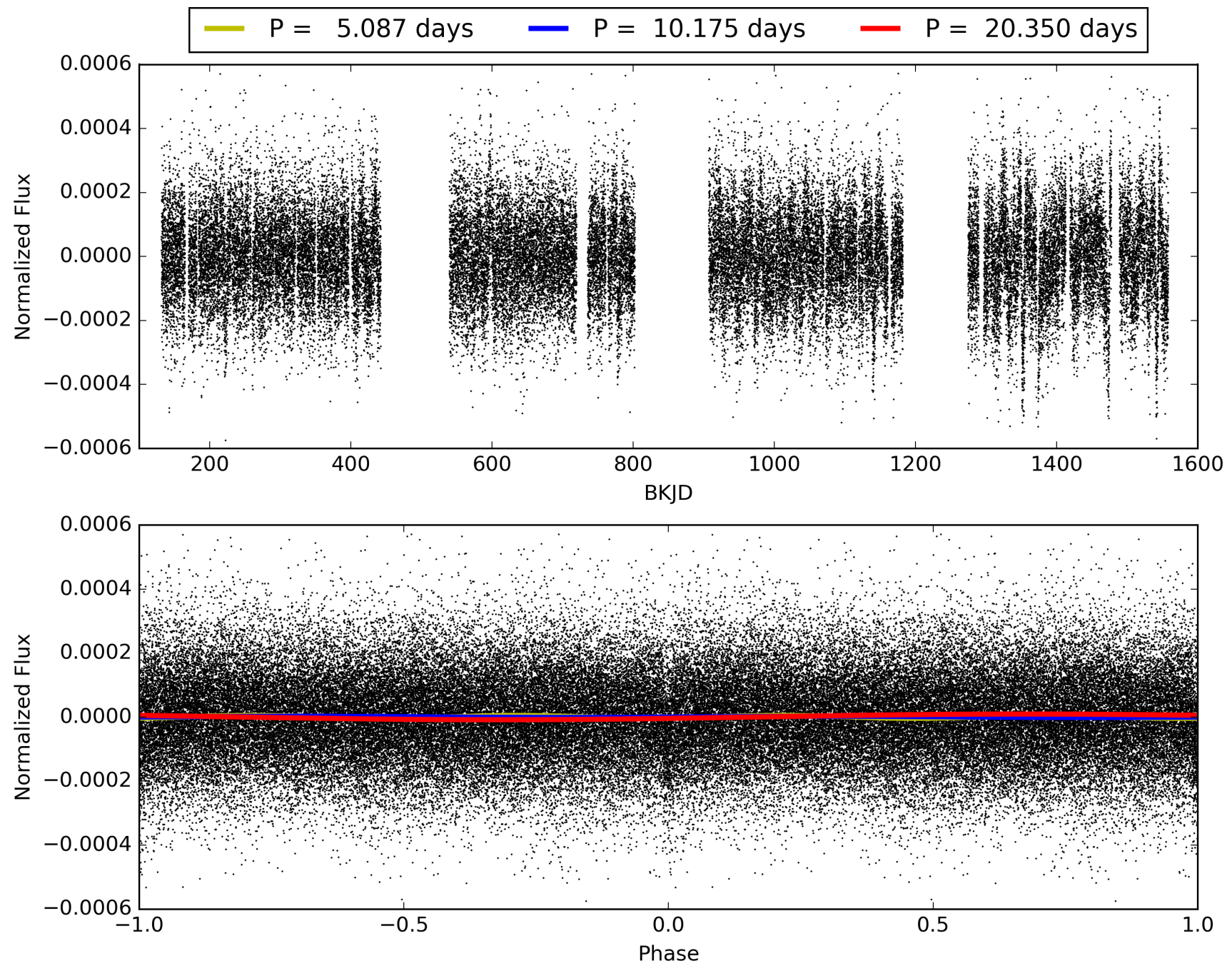
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [24.73σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.67e-24
RollingBand-fgt: 1.00 [99/99]
GhostDiagnostic-chr: -5.653
Centroid-sig: 48.2%
Centroid-so: 0.773 arcsec [0.72σ]
OotOffset-rm: 0.251 arcsec [0.32σ]
OotOffset-st: 3/3/4/0 [10]
KicOffset-rm: 0.410 arcsec [0.52σ]
KicOffset-st: 3/3/4/0 [10]
DiffImageQuality-fgm: 0.80 [8/10]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 006026737-01, PDC Light Curves

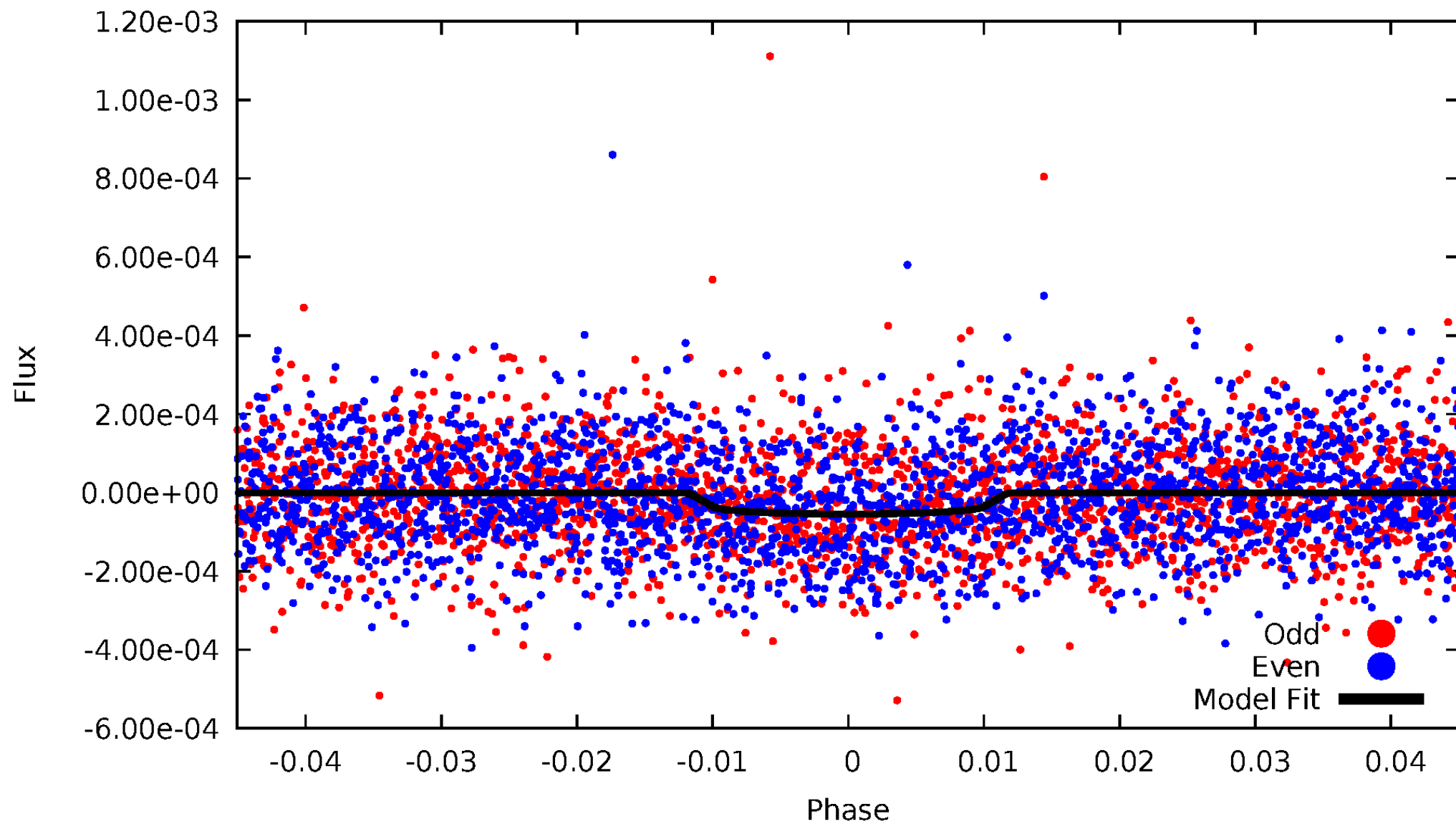


TCE 006026737-01



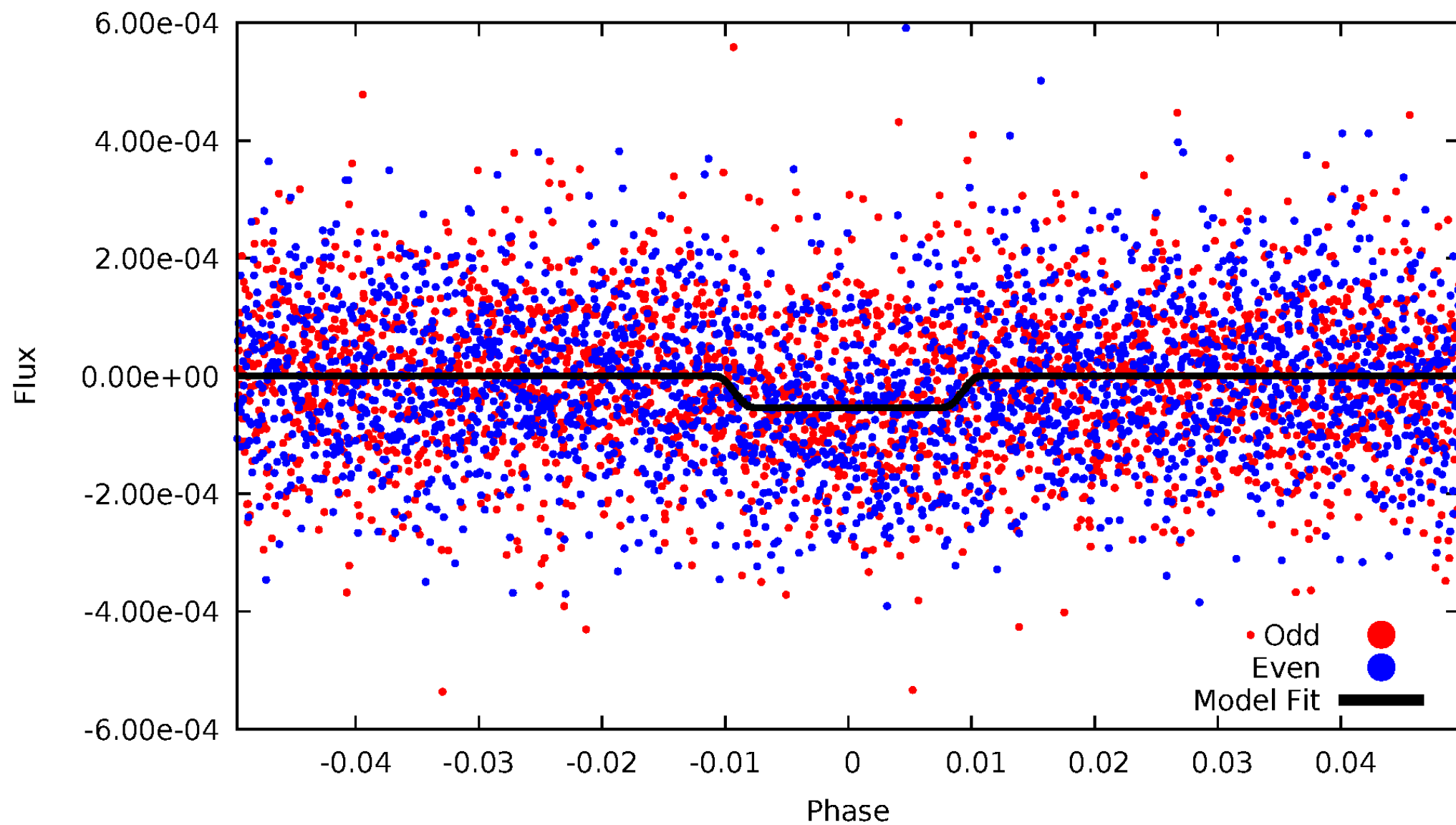
DV Odd/Even

TCE 006026737-01

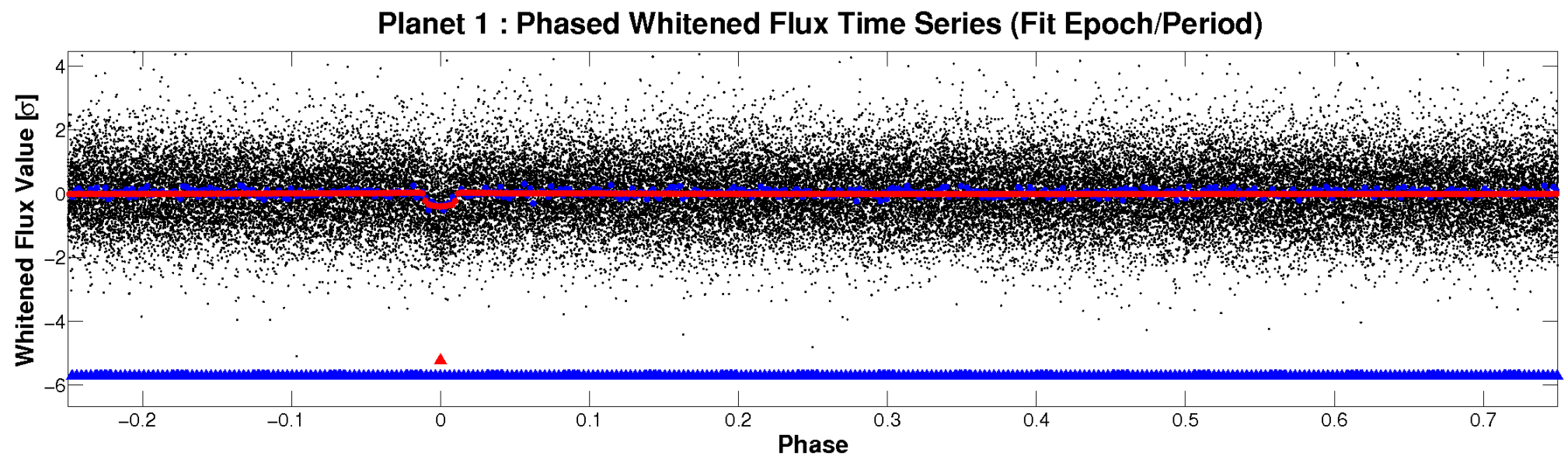
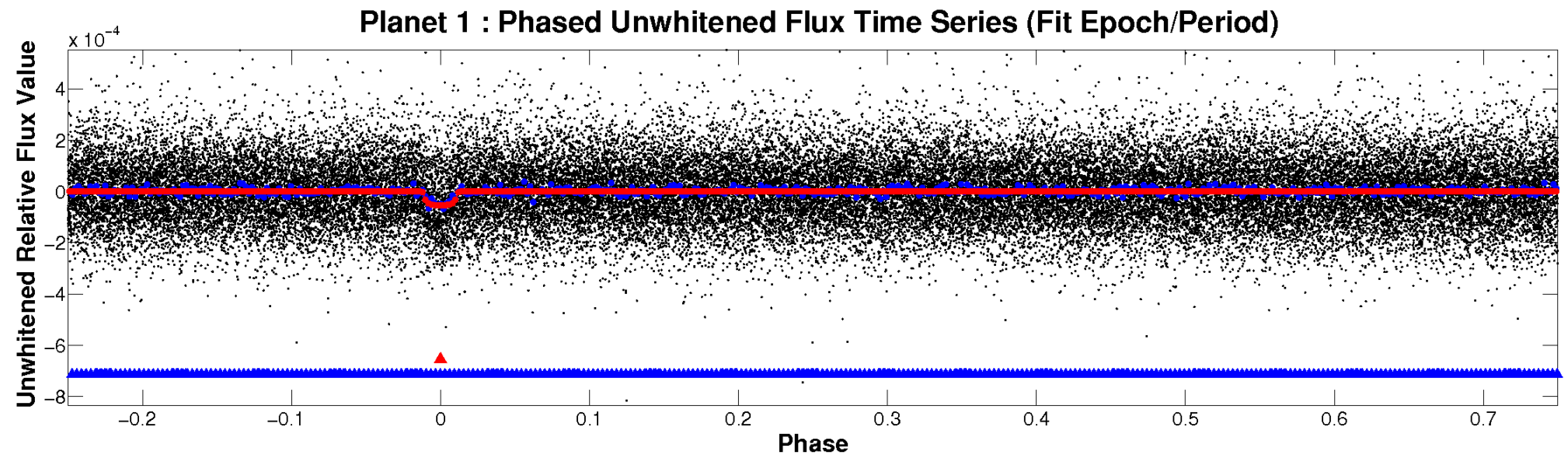


ALT Odd/Even

TCE 006026737-01

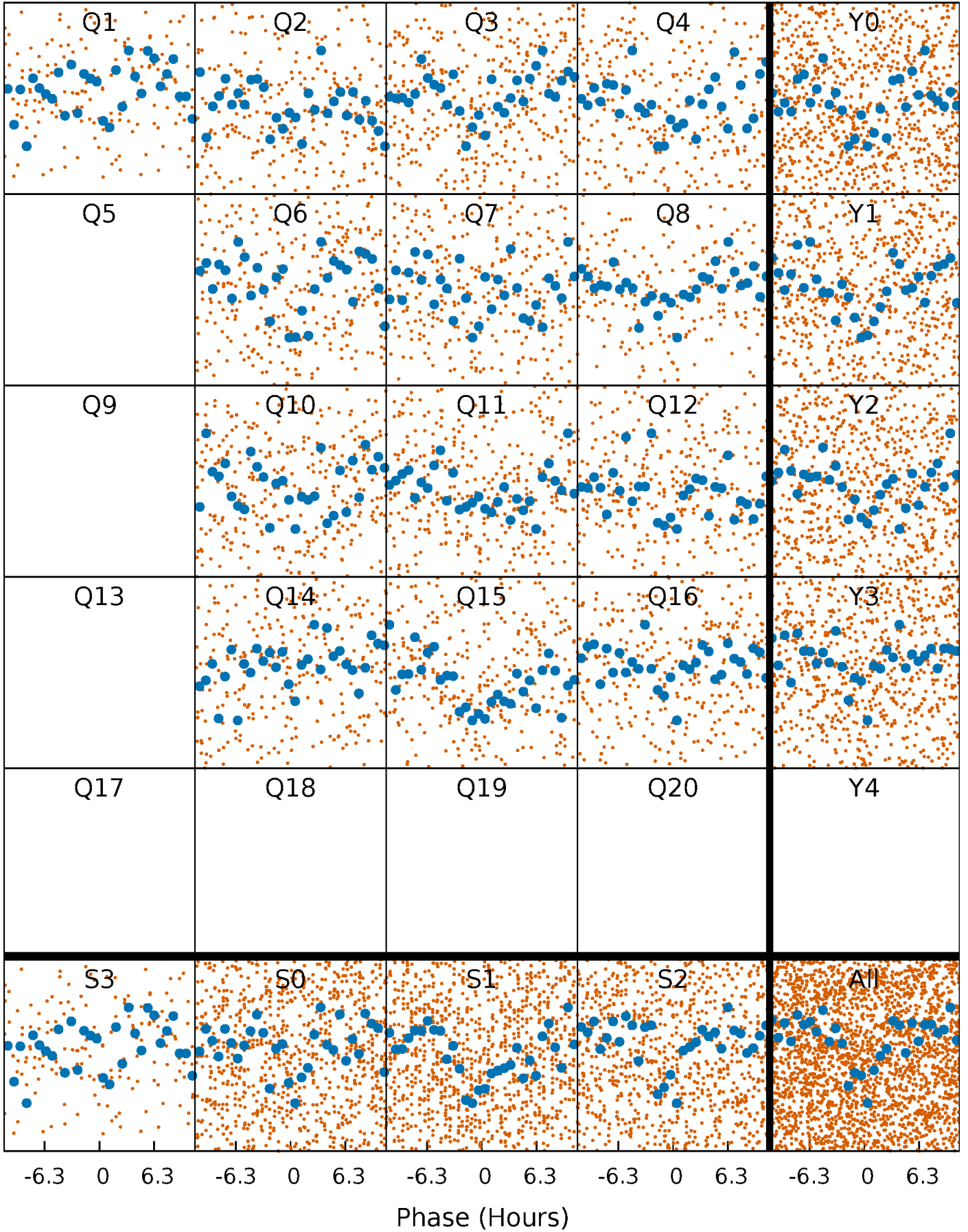


Non-Whitened Vs. Whitened Light Curve



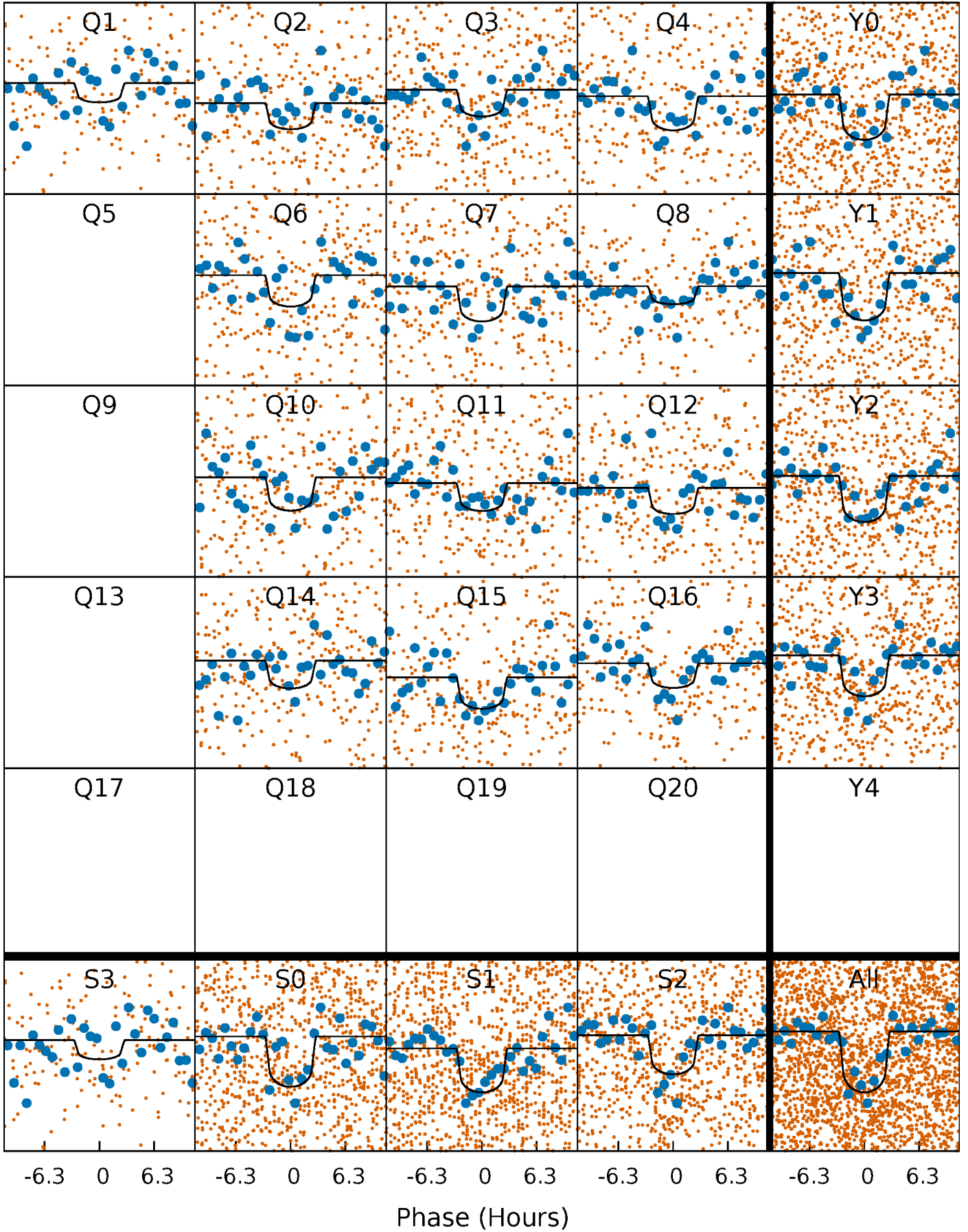
PDC Quarter-Phased Transit Curves

TCE 006026737-01 P= 10.174826 Days $T_0=132.356397$ (BKJD)



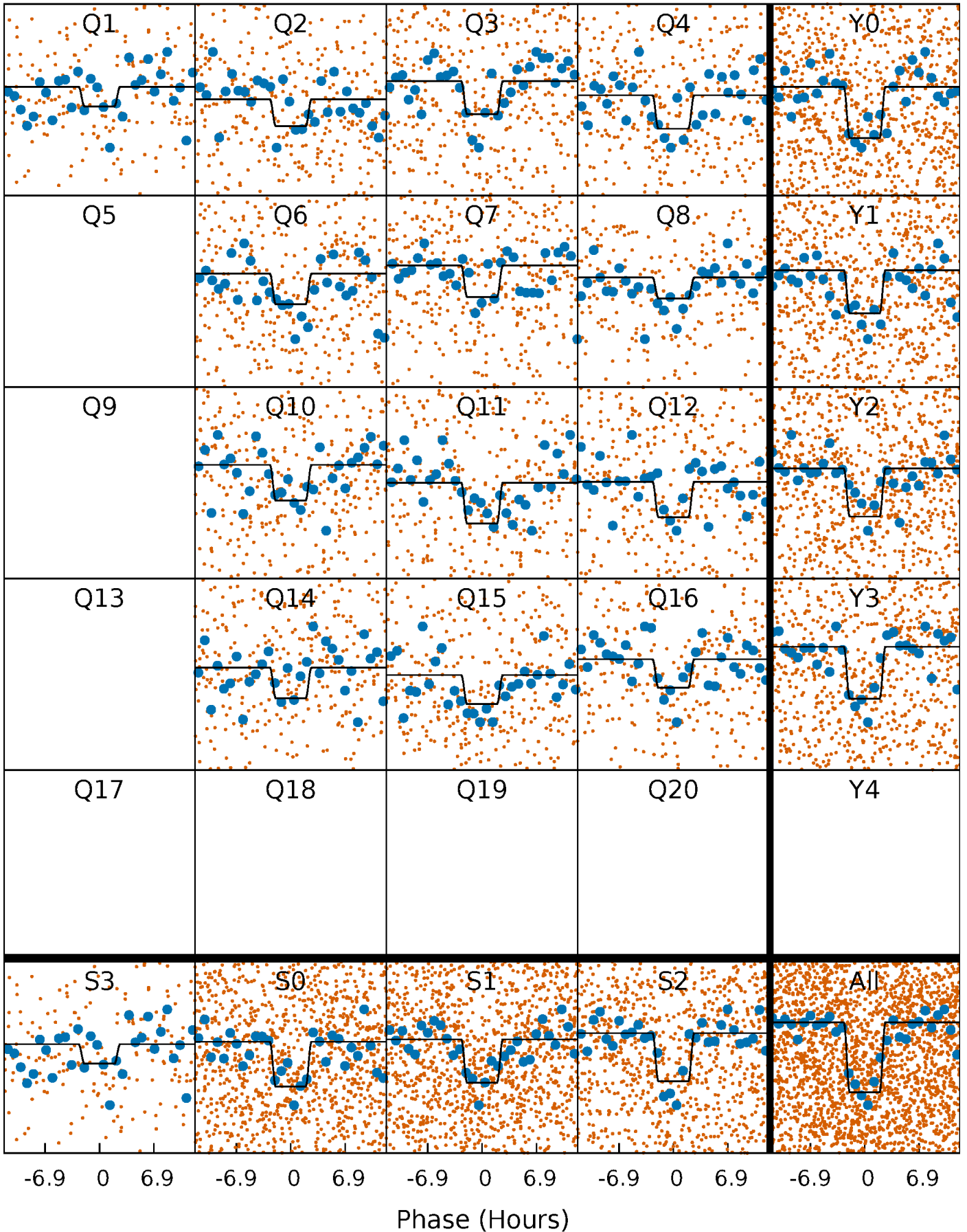
DV Quarter-Phased Transit Curves

TCE 006026737-01 P= 10.174826 Days $T_0=132.356397$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

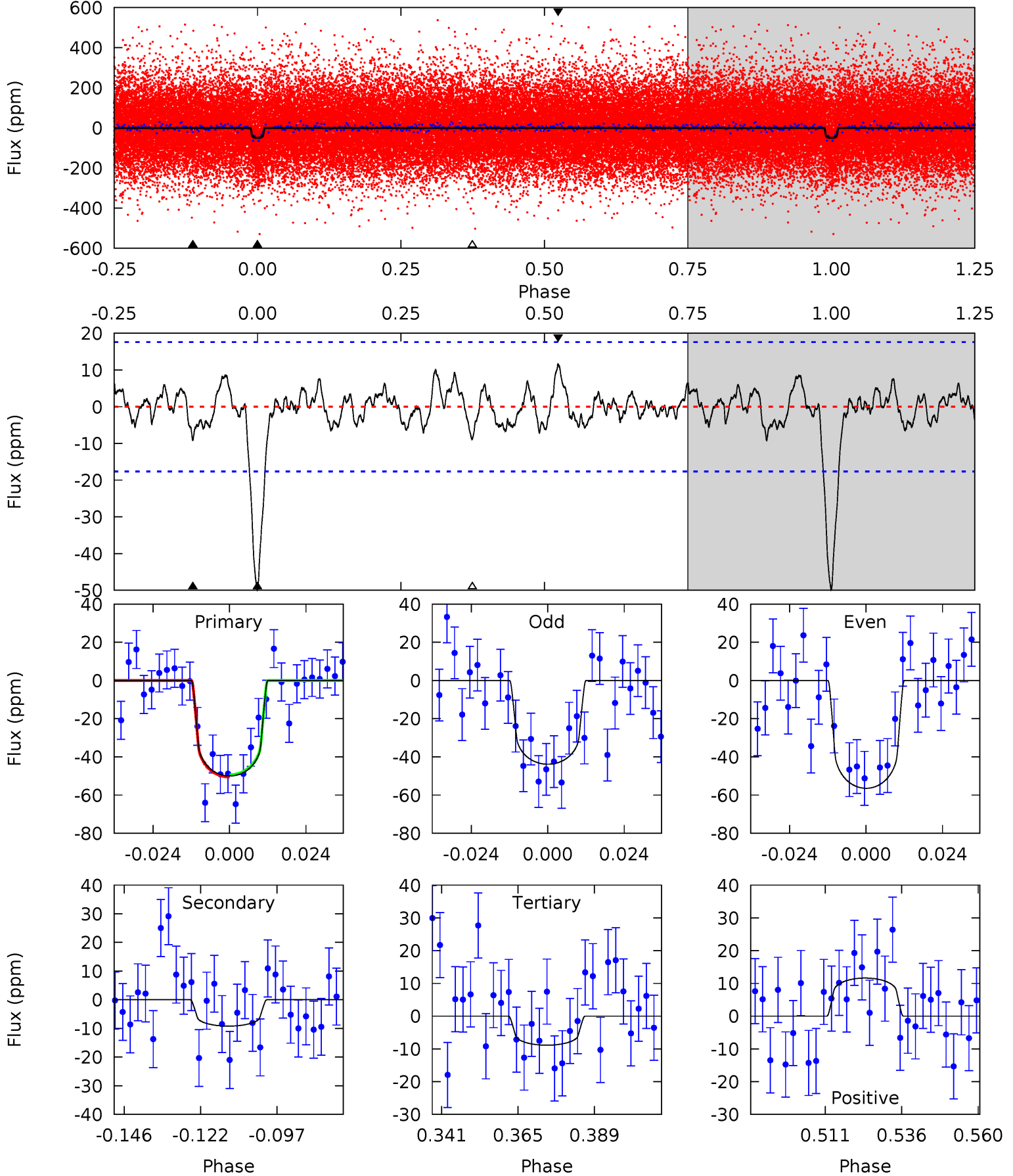
TCE 006026737-01 P= 10.174921 Days $T_0=132.339824$ (BKJD)



DV Model-Shift Uniqueness Test

006026737-01, P = 10.174826 Days, E = 122.181571 Days

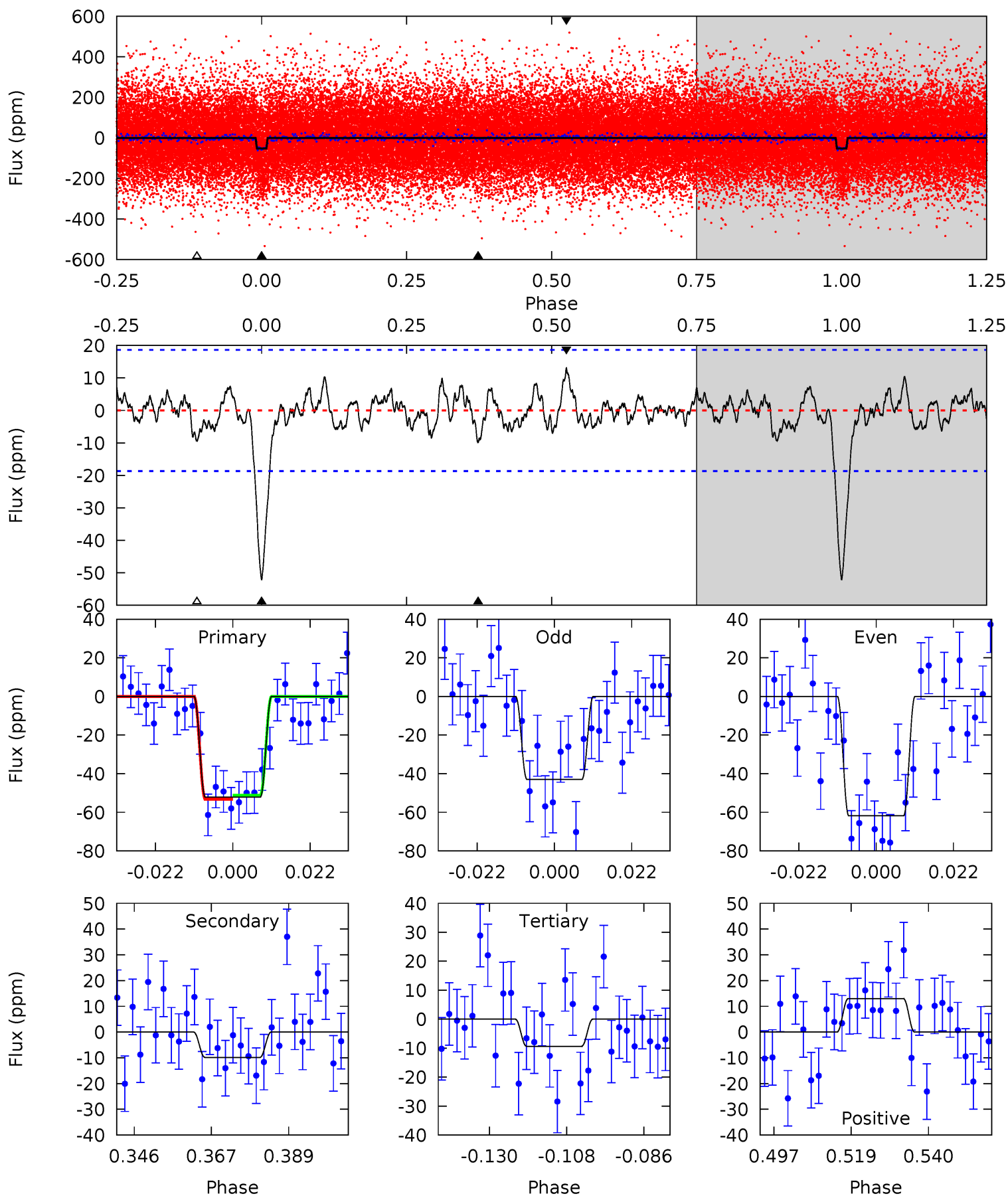
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 13.8 | 2.53 | 2.44 | 3.20 | 4.85 | 2.25 | 1.04 | 11.3 | 10.6 | 0.09 | -0.67 | 1.74 | 0.97 | 0.19 | 0.14 |



Alt Model-Shift Uniqueness Test

006026737-01, P = 10.174921 Days, E = 122.164903 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 13.6 | 2.57 | 2.44 | 3.40 | 4.88 | 2.30 | 1.01 | 11.2 | 10.2 | 0.13 | -0.83 | 2.46 | 0.98 | 0.20 | 0.27 |



Stellar Parameters For KIC 006026737

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 5866^{+105}_{-117} | $4.191^{+0.162}_{-0.108}$ | $0.000^{+0.150}_{-0.150}$ | $1.339^{+0.209}_{-0.256}$ | $1.016^{+0.101}_{-0.070}$ | $0.596^{+0.489}_{-0.197}$ |
| | +2%/-2% | +4%/-3% | +inf%/-inf% | +16%/-19% | +10%/-7% | +82%/-33% |
| Source | SPE59 | SPE59 | SPE59 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 006026737-01 / KOI 2949.01

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-------------|------------------------|--------------------|-----------------------|-------------------|
| DV | -9 ± 4 | $1.19^{+0.52}_{-0.51}$ | 1372^{+67}_{-76} | 3906^{+887}_{-539} | 31^{+60}_{-19} |
| Alt. | -10 ± 4 | $1.07^{+0.55}_{-0.49}$ | 1370^{+65}_{-76} | 4039^{+1139}_{-611} | 37^{+102}_{-22} |

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

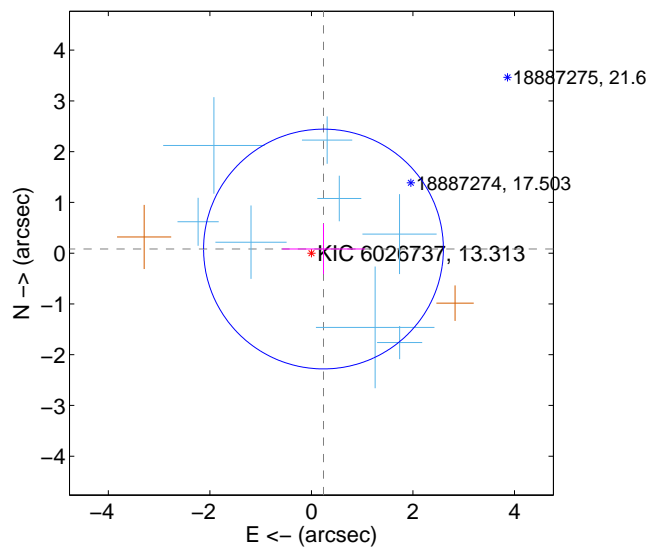
Supplemental centroid analysis for 006026737-01. Kepler magnitude: 13.31. Transit SNR 11.28

There are 8 quarters with good PRF difference image offsets

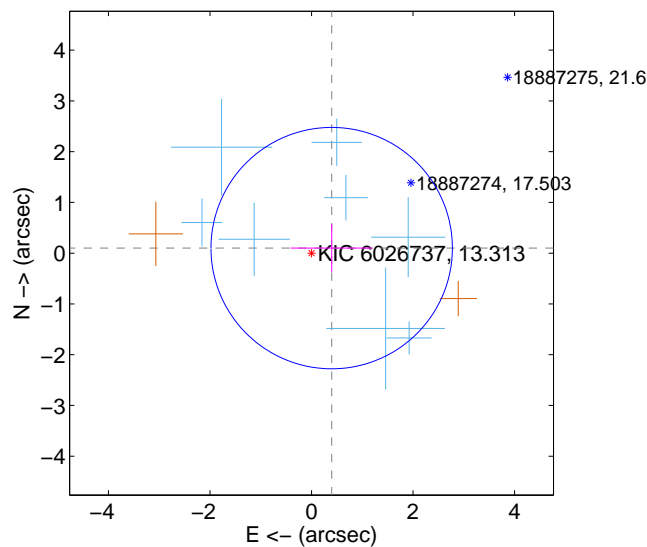
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 0.251 ± 0.787 | 0.32 | -0.238 ± 0.815 | 0.082 ± 0.496 |
| PRF-fit source offset from KIC position | 0.410 ± 0.793 | 0.52 | -0.397 ± 0.808 | 0.100 ± 0.478 |
| photometric centroid source offset | 0.77 ± 1.07 | 0.72 | 0.77 ± 1.07 | 0.06 ± 1.07 |

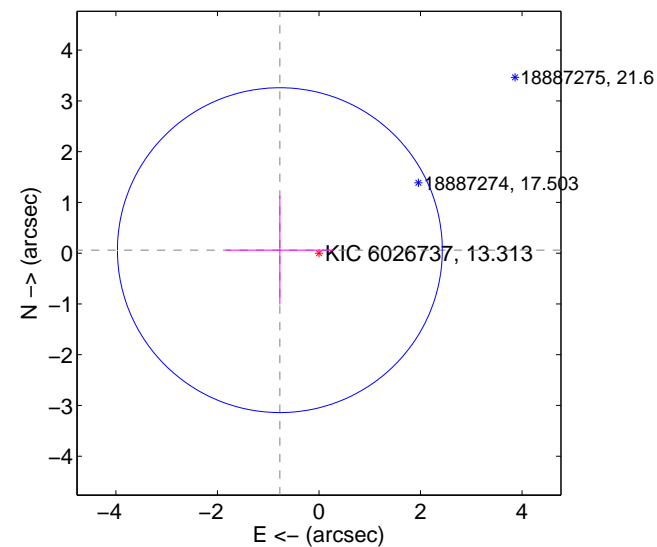
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

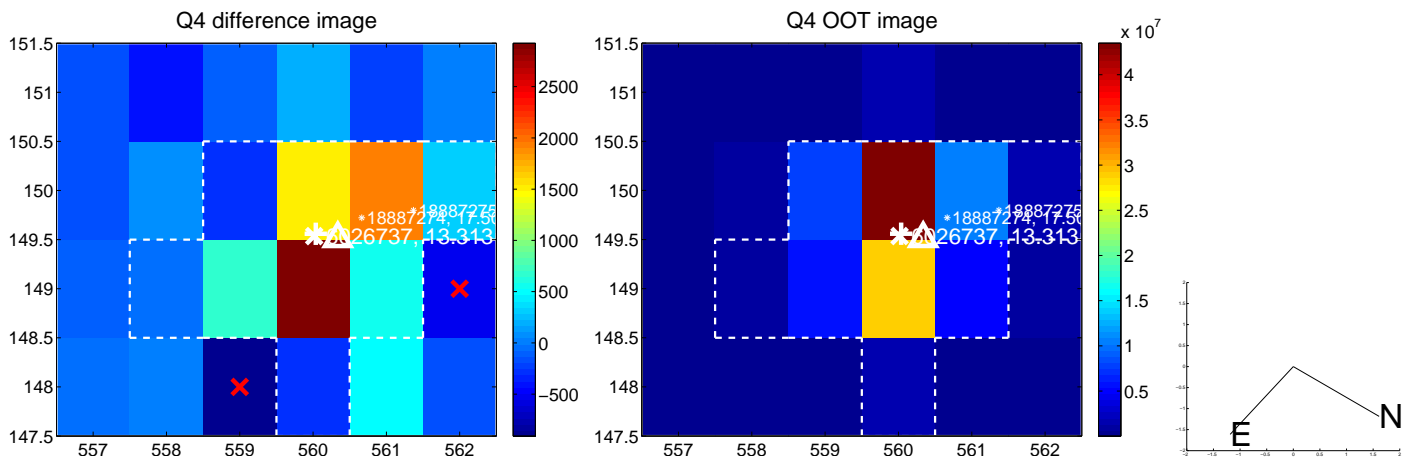
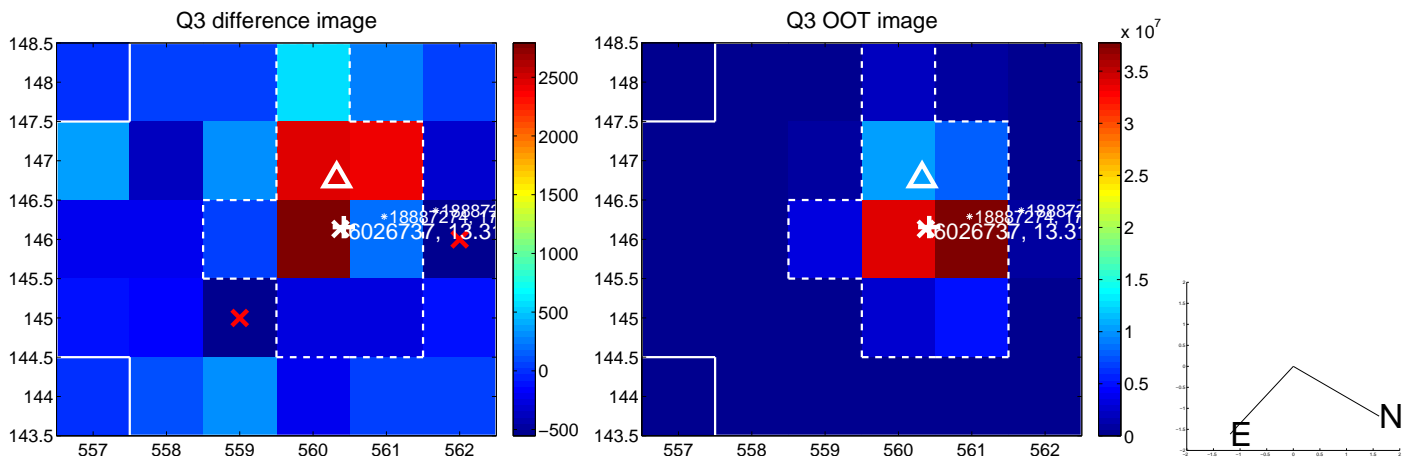
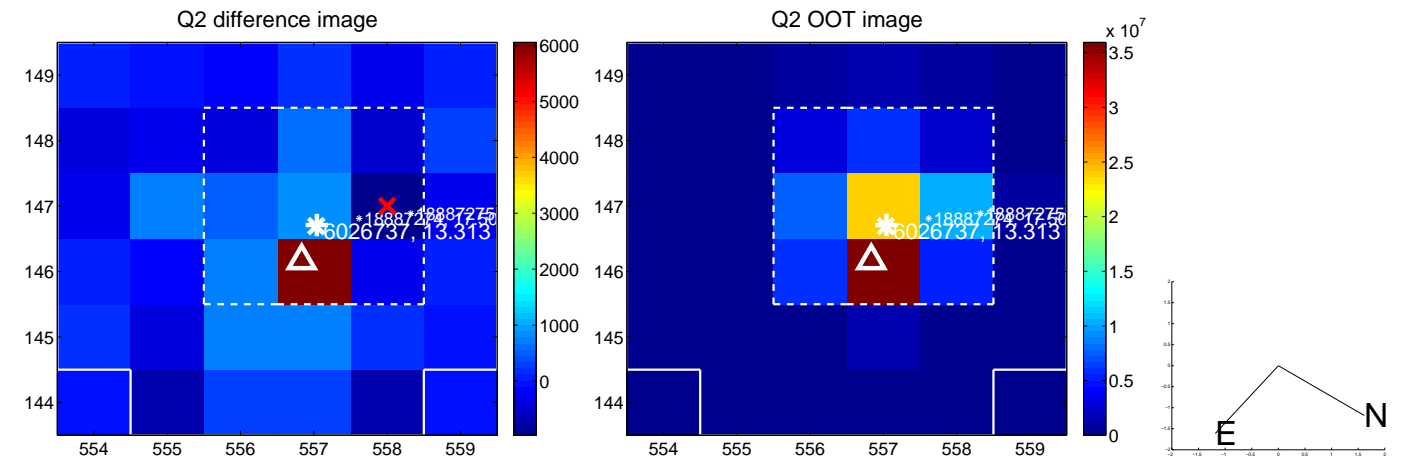
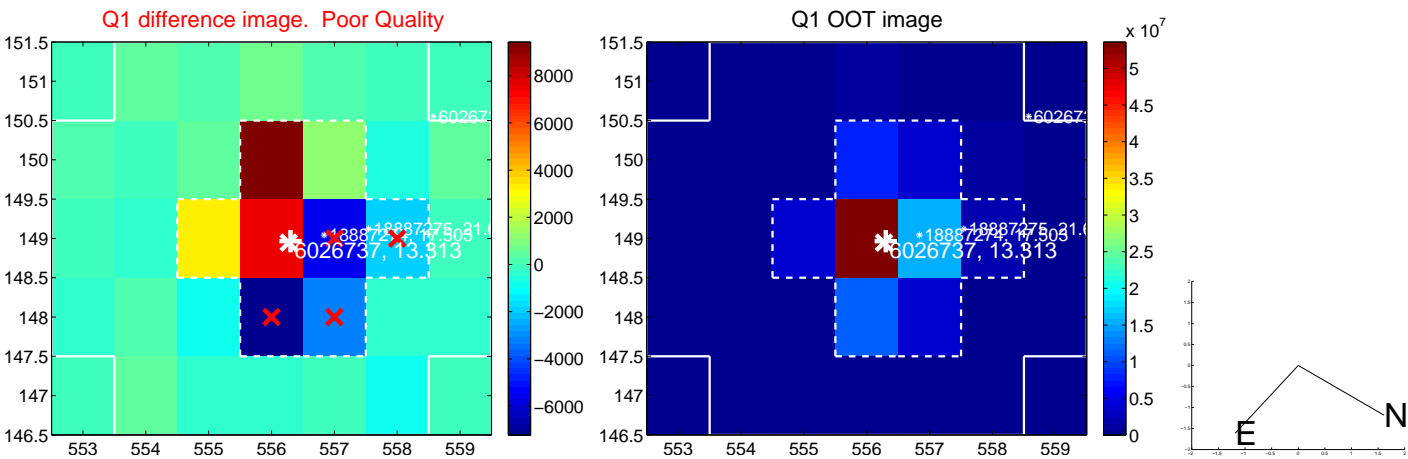


offset from photometric centroids

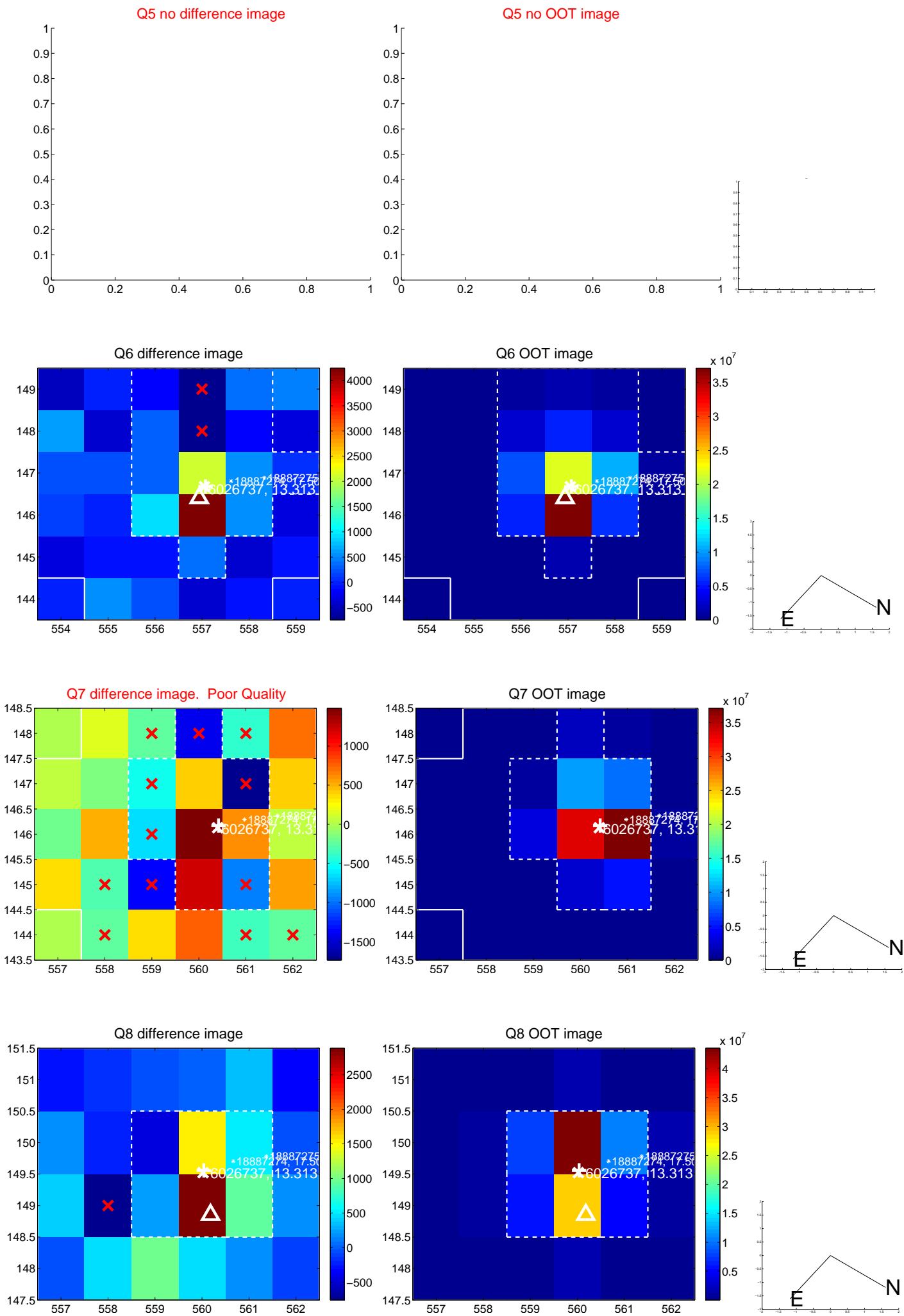


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

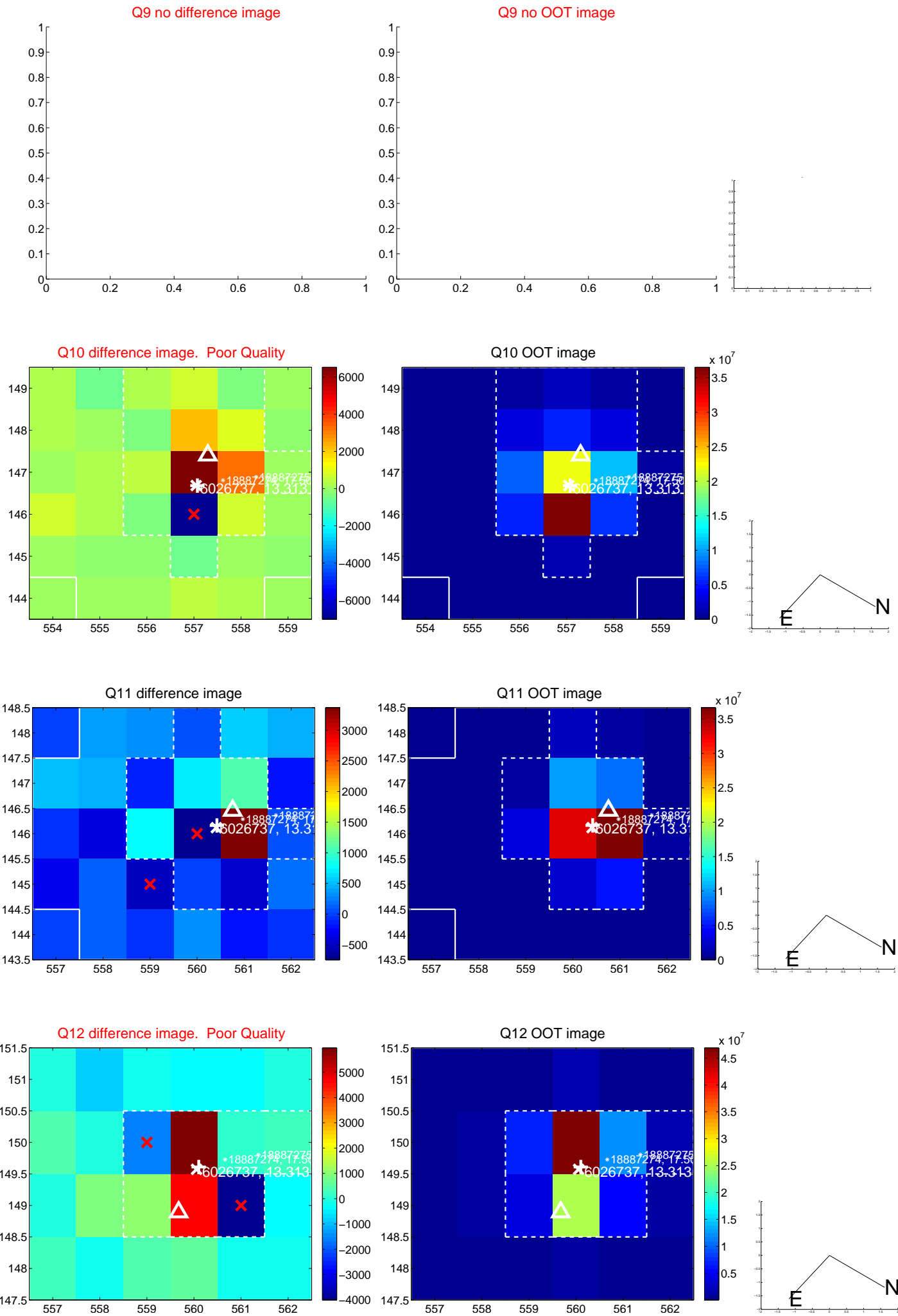
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



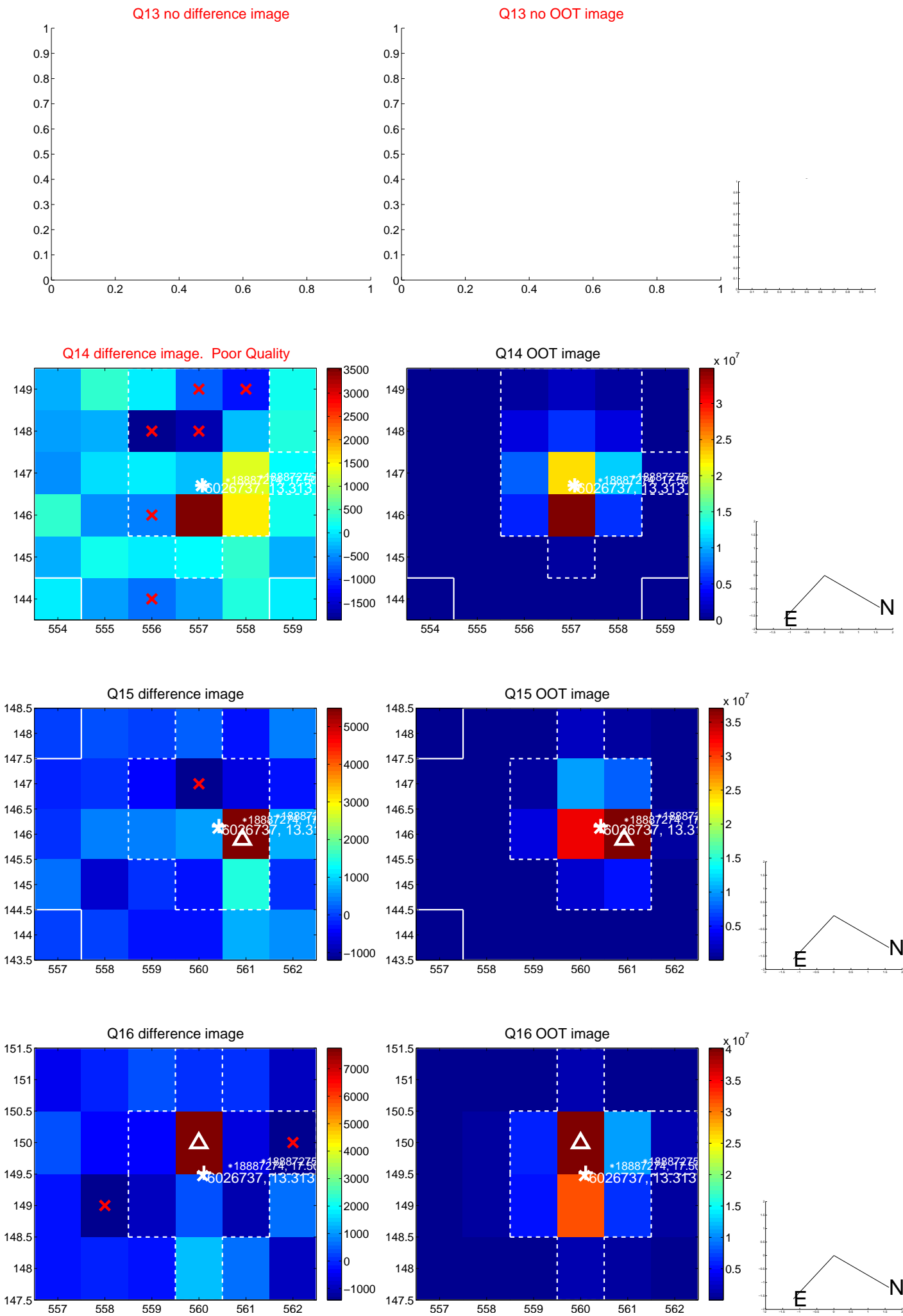
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



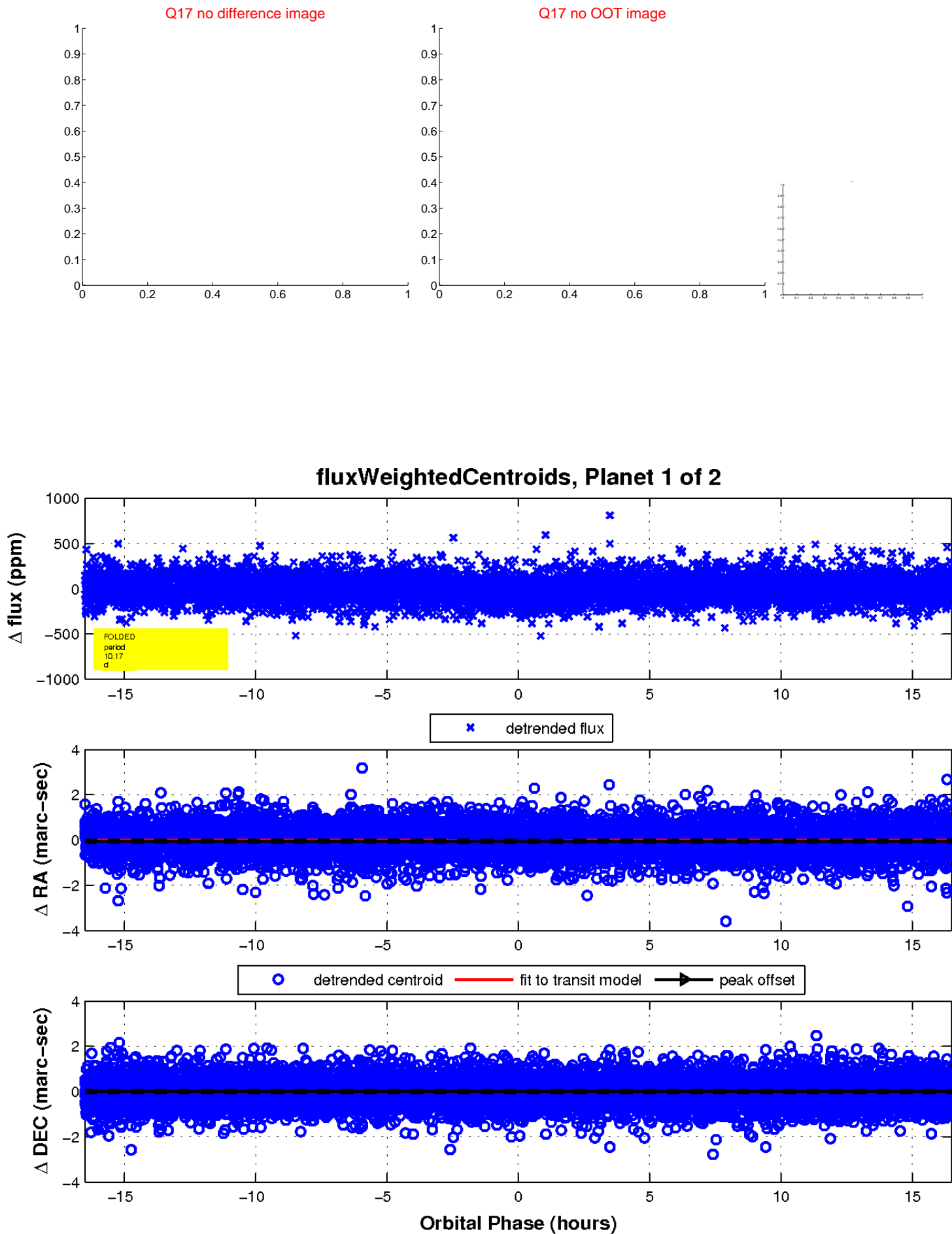
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

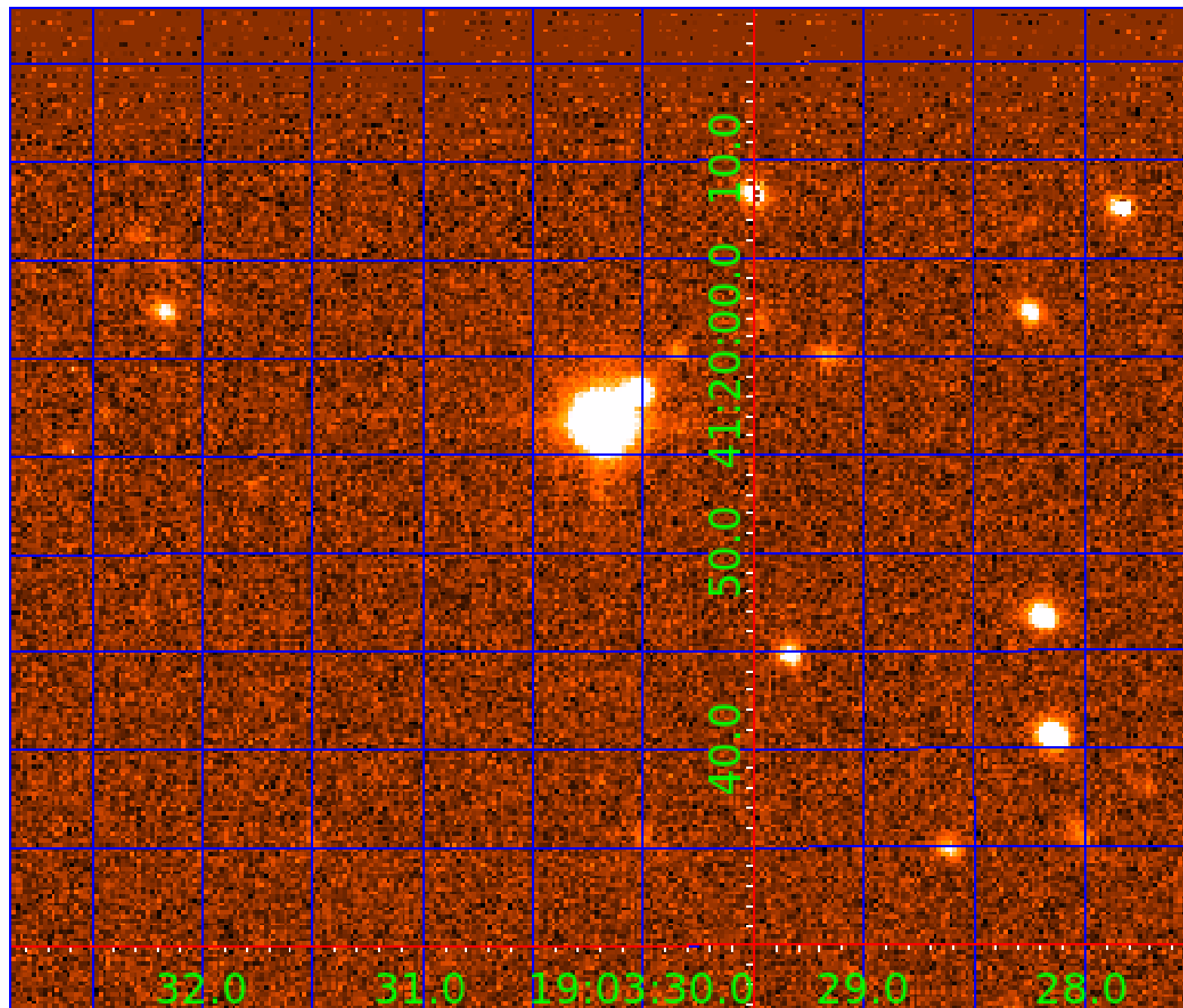


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006026737

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}) |
|--------------|----------|---------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 006026737-01 | OBS | 2949.01 | 10.174826 | 132.356397 | 54.6 | 5.499 | 10.0 | 11.3 | 1.34 | 5866 | 1.16 | 222.88 |
| 006026737-02 | OBS | 2949.02 | 3.750304 | 134.804965 | 34.8 | 2.941 | 8.4 | 8.7 | 1.34 | 5866 | 0.95 | 843.39 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|------------|
| 006026737-01 | OBS | PC | 0.93 | 0 | 0 | 0 | 0 | NO_COMMENT |
| 006026737-02 | OBS | PC | 0.76 | 0 | 0 | 0 | 0 | NO_COMMENT |

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

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

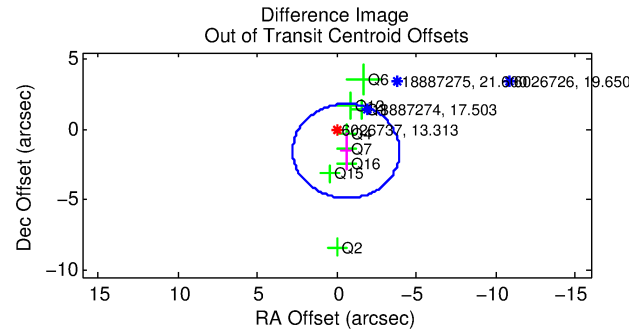
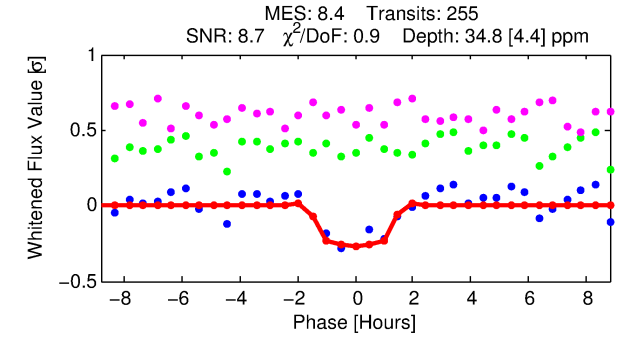
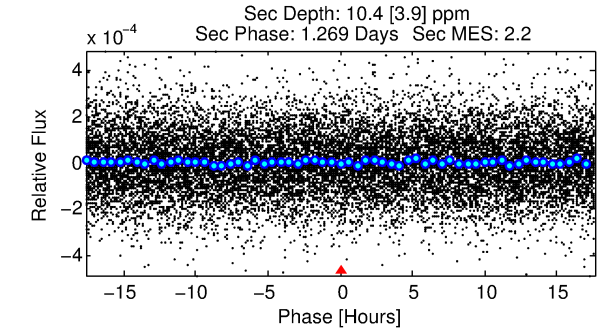
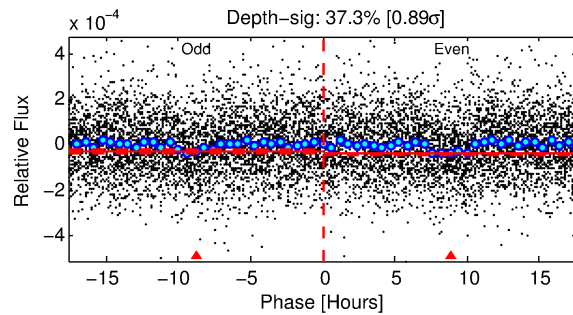
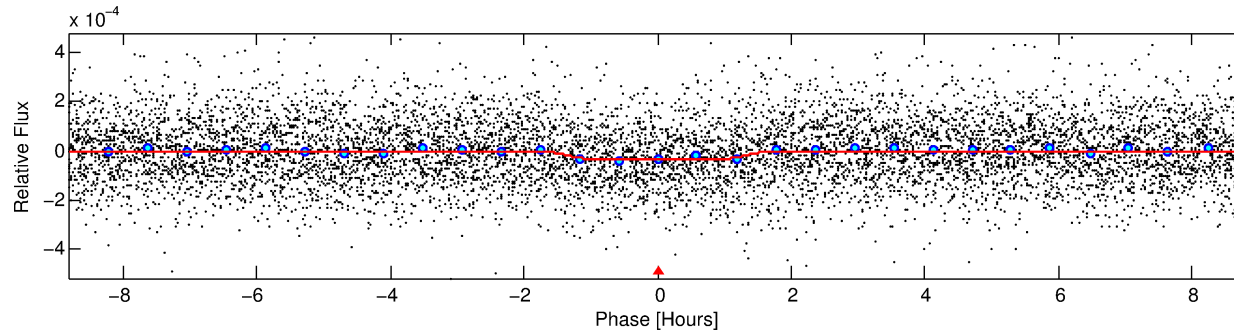
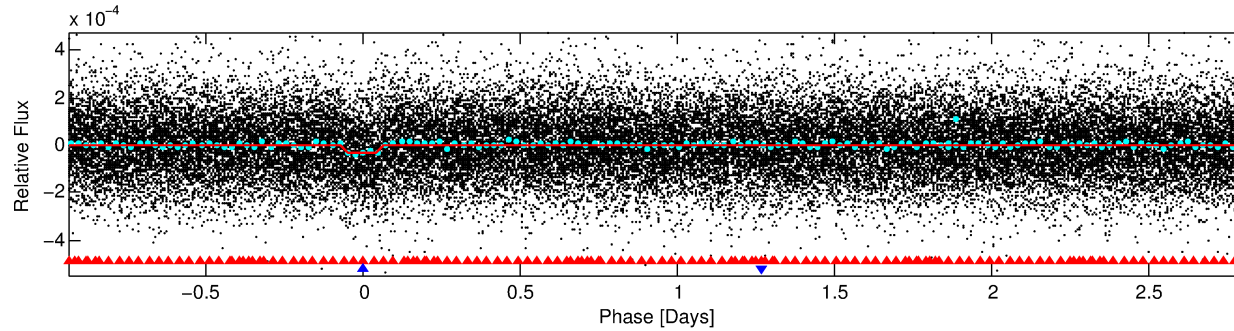
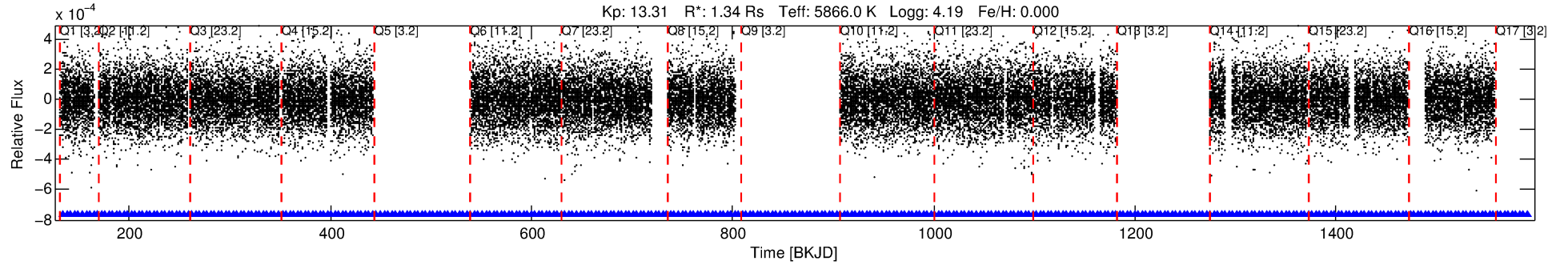
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006026737-02

No Significant Match Found

DV One-Page Summary

KIC: 6026737 Candidate: 2 of 2 Period: 3.750 d
KOI: K02949.02 Corr: 0.950



DV Fit Results:

Period = 3.75030 [0.00003] d
Epoch = 134.8050 [0.0055] BKJD
Rp/R* = 0.0065 [0.0039]
a/R* = 4.15 [11.91]
b = 0.92 [0.54]
Seff = 843.39 [245.09]
Teq = 1374 [100] K
Rp = 0.95 [0.60] Re
a = 0.0475 [0.0085] AU
Ag = 14.17 [18.25] [0.72 σ]
Teffp = 4122 [1298] K [2.11 σ]

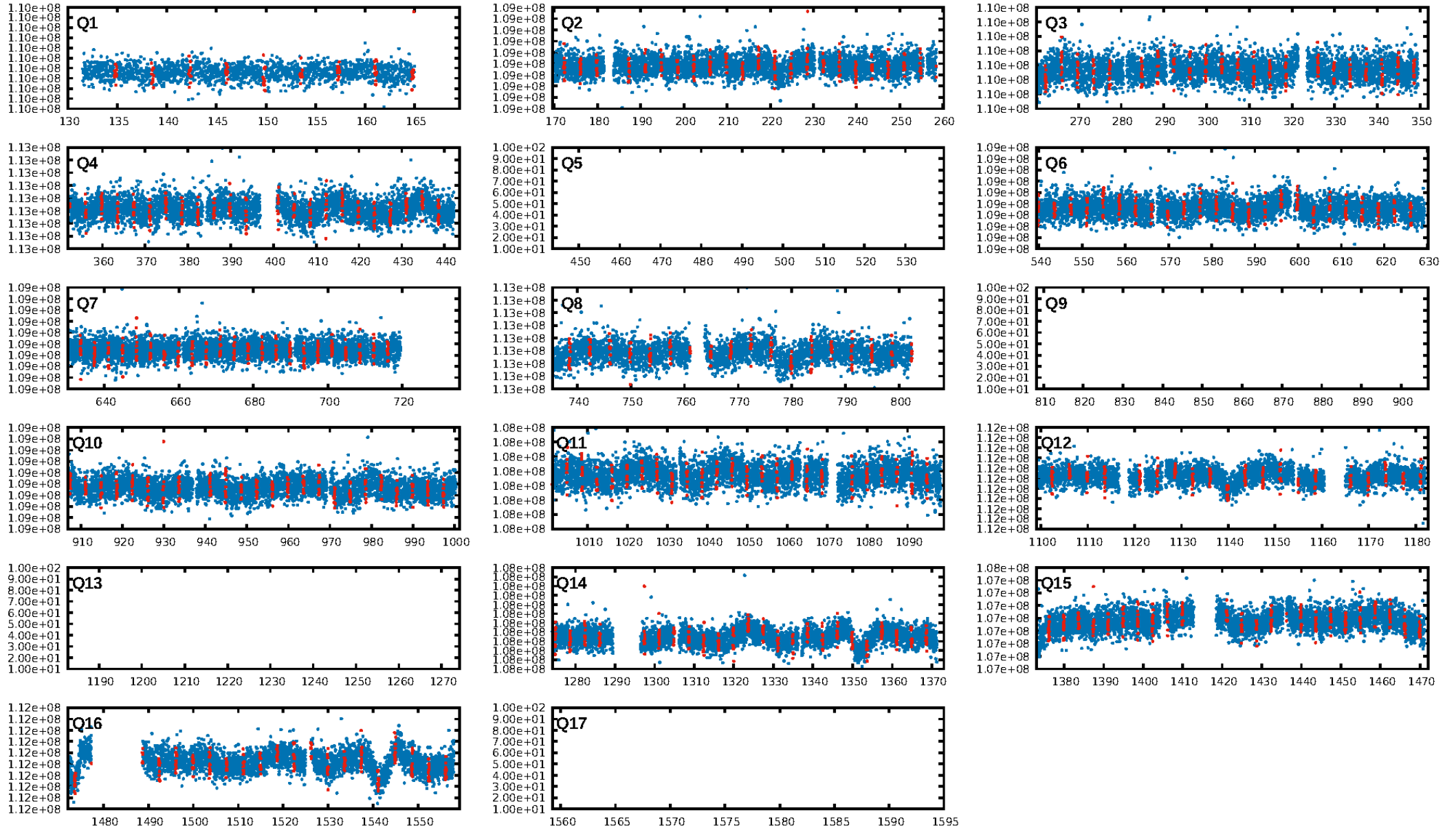
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [24.73 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.13e-17
RollingBand-fgt: 1.00 [247/247]
GhostDiagnostic-chr: 1.924
Centroid-sig: 1.8%
Centroid-so: 2.441 arcsec [1.83 σ]
OotOffset-rm: 1.644 arcsec [1.47 σ]
KicOffset-rm: 1.728 arcsec [1.56 σ]
OotOffset-st: 2/3/3/0 [8]
KicOffset-st: 2/3/3/0 [8]
DiffImageQuality-fgm: 0.75 [6/8]
DiffImageOverlap-fno: 1.00 [13/13]

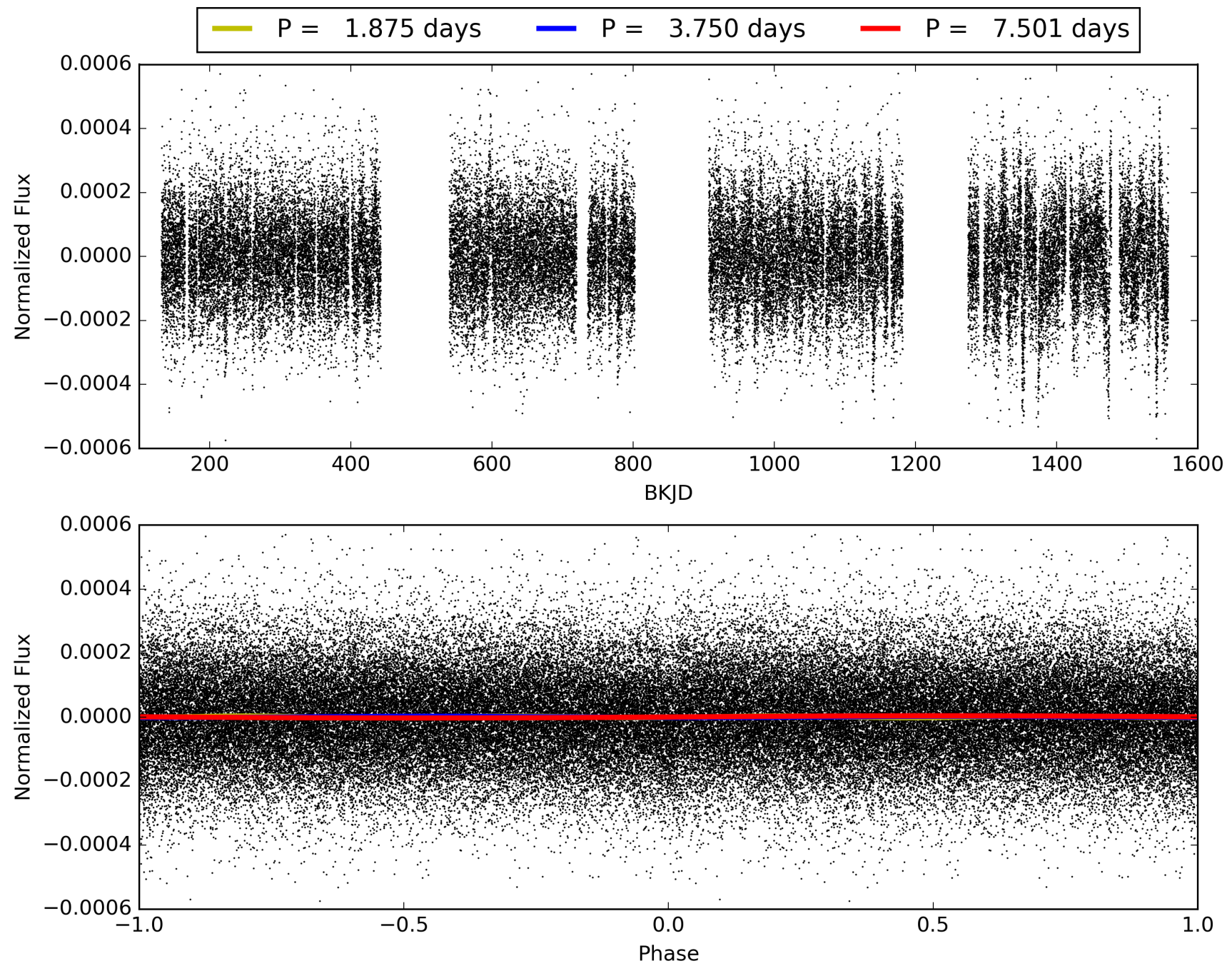
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 02:02:06 Z

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

TCE 006026737-02, PDC Light Curves

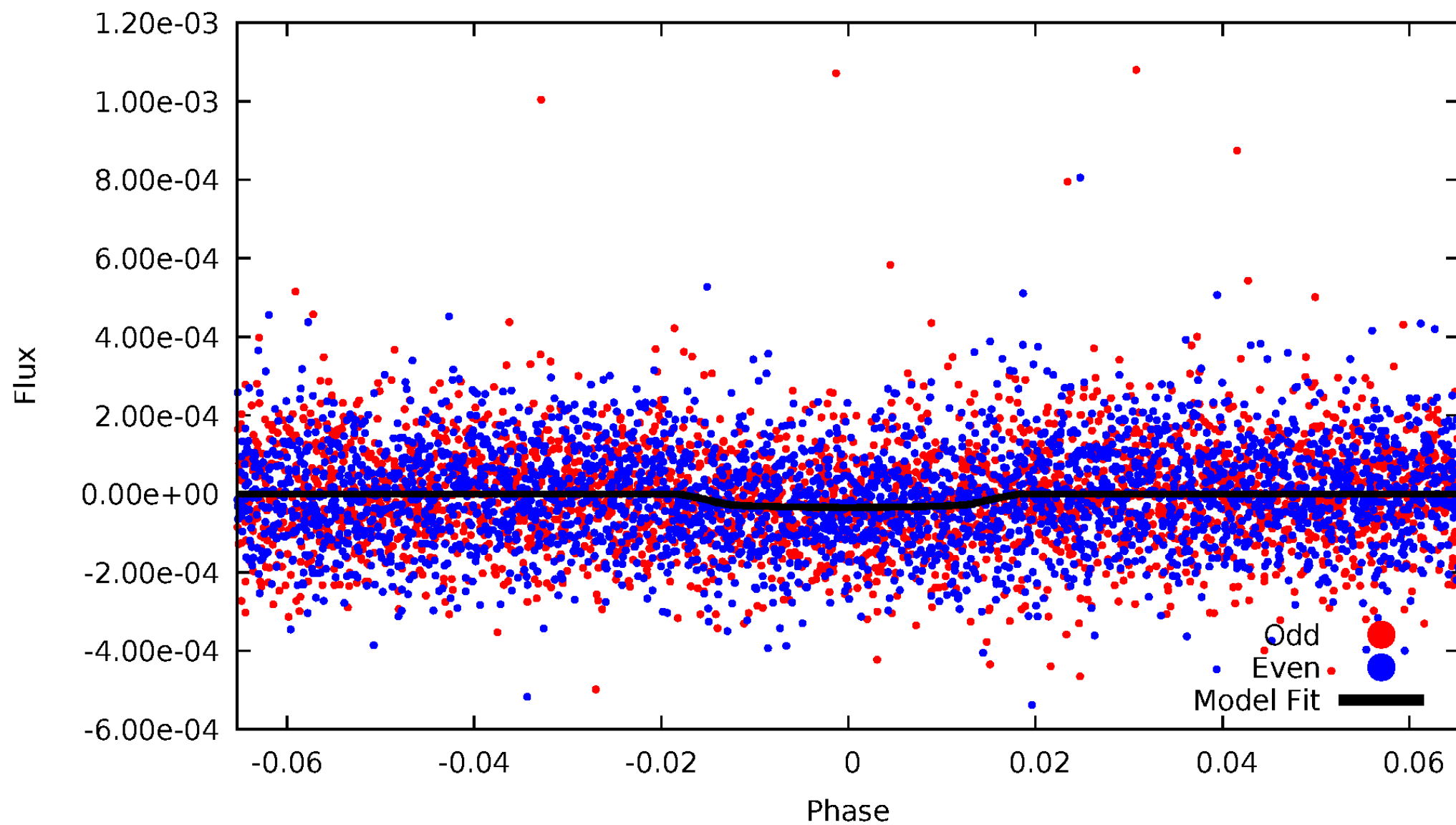


TCE 006026737-02



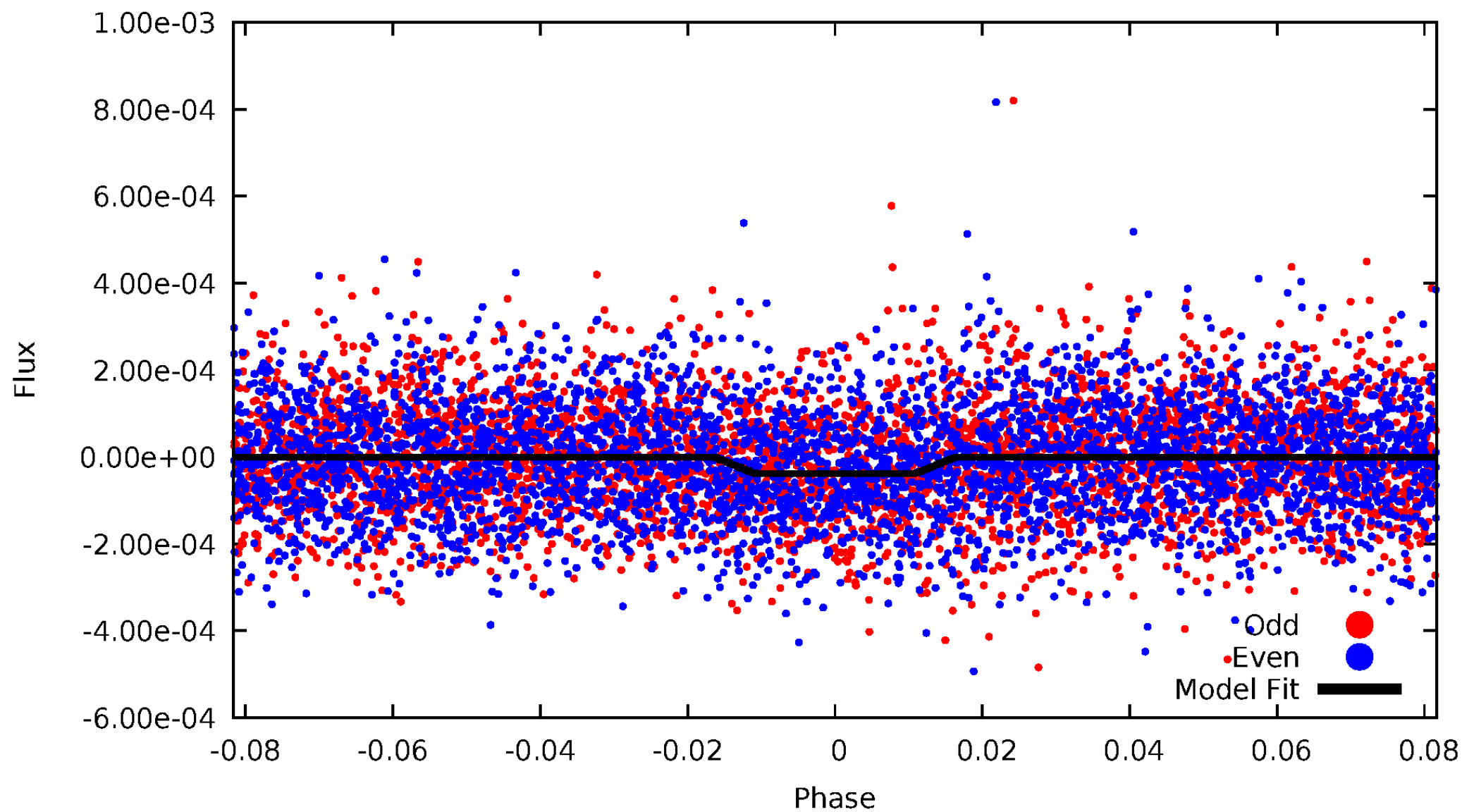
DV Odd/Even

TCE 006026737-02



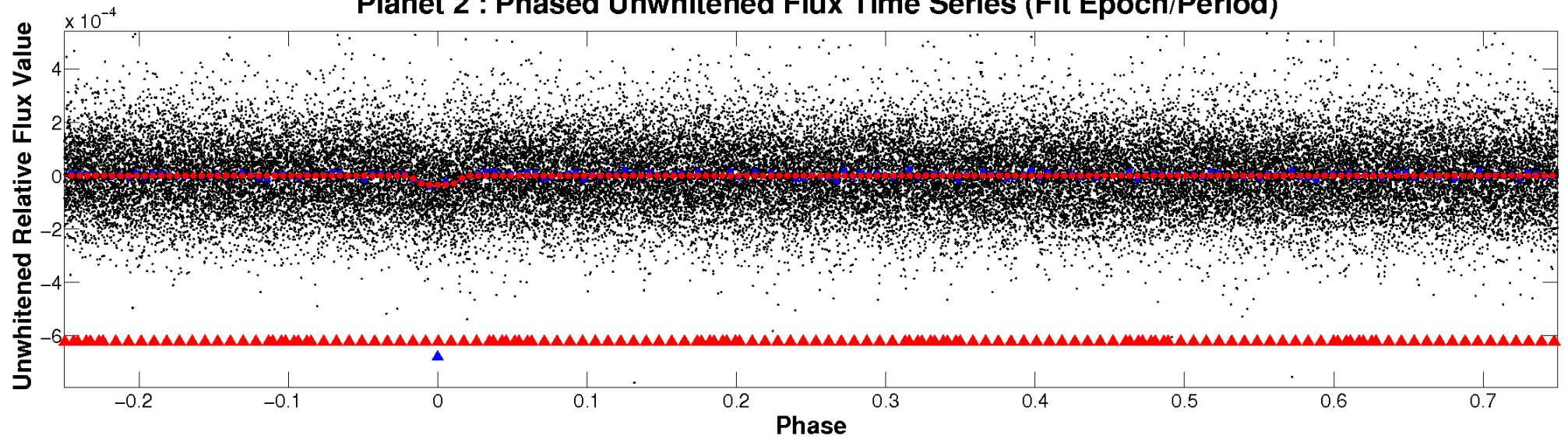
ALT Odd/Even

TCE 006026737-02

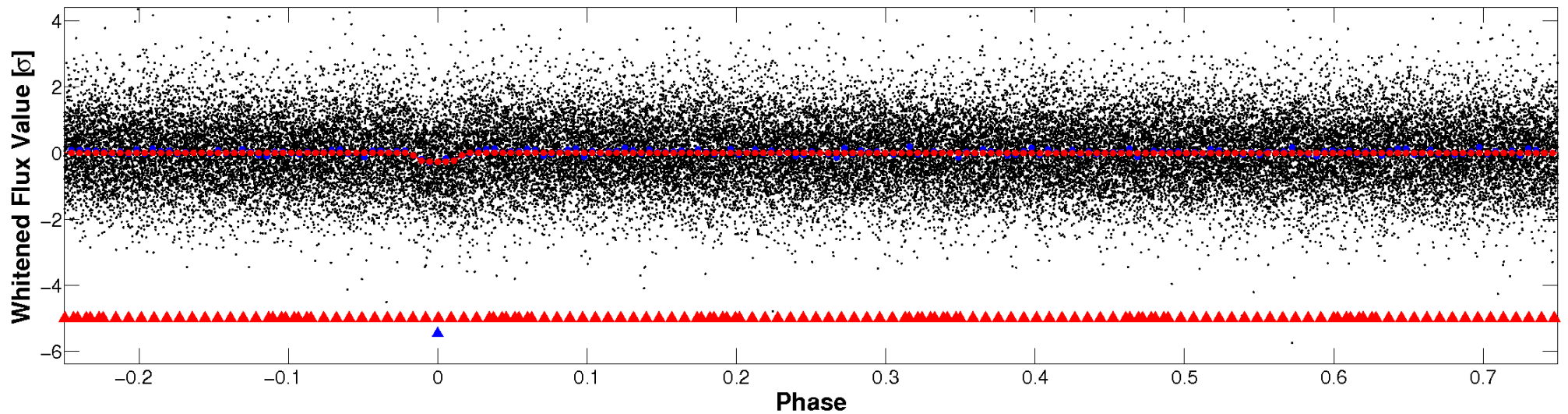


Non-Whitened Vs. Whitened Light Curve

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

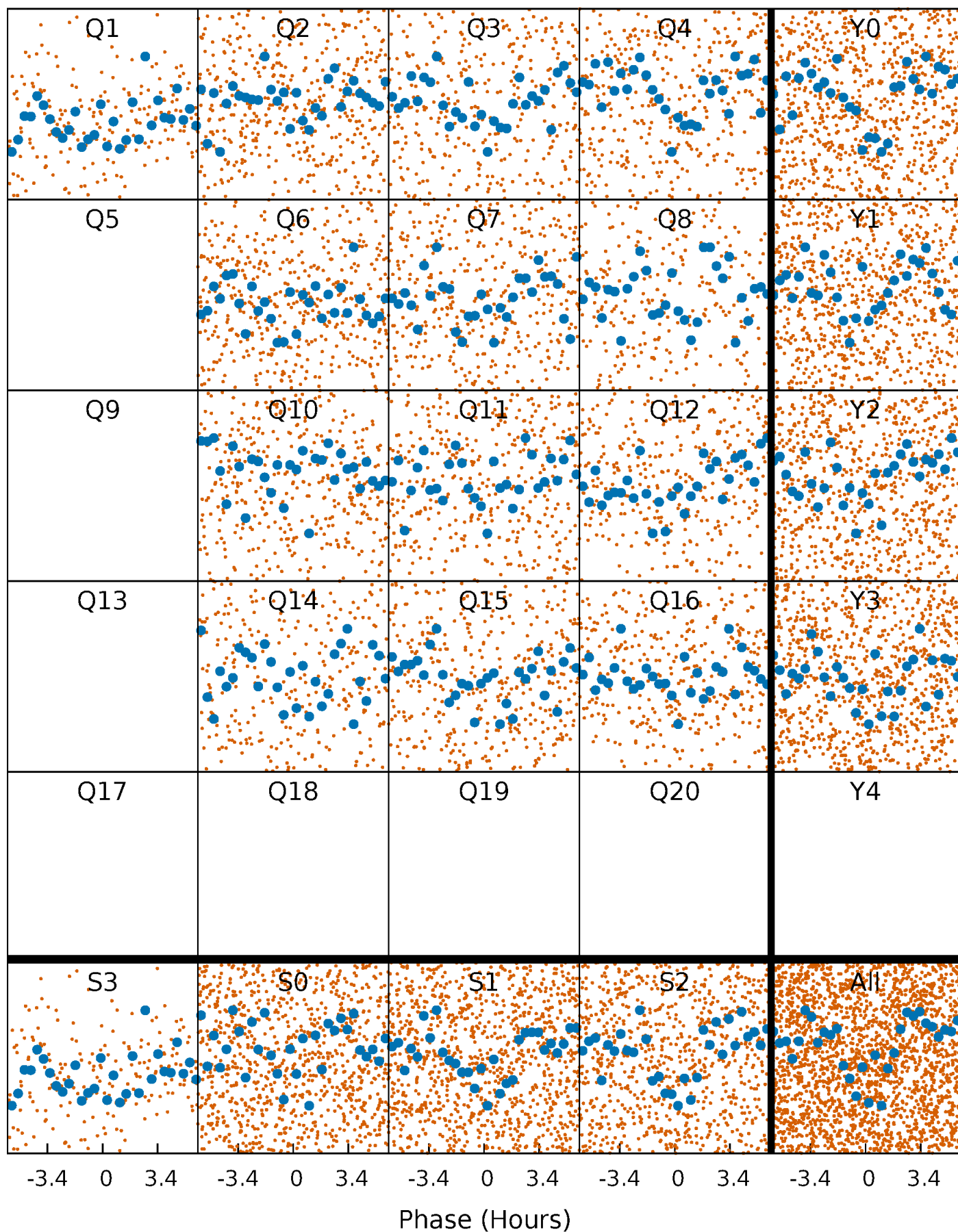


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



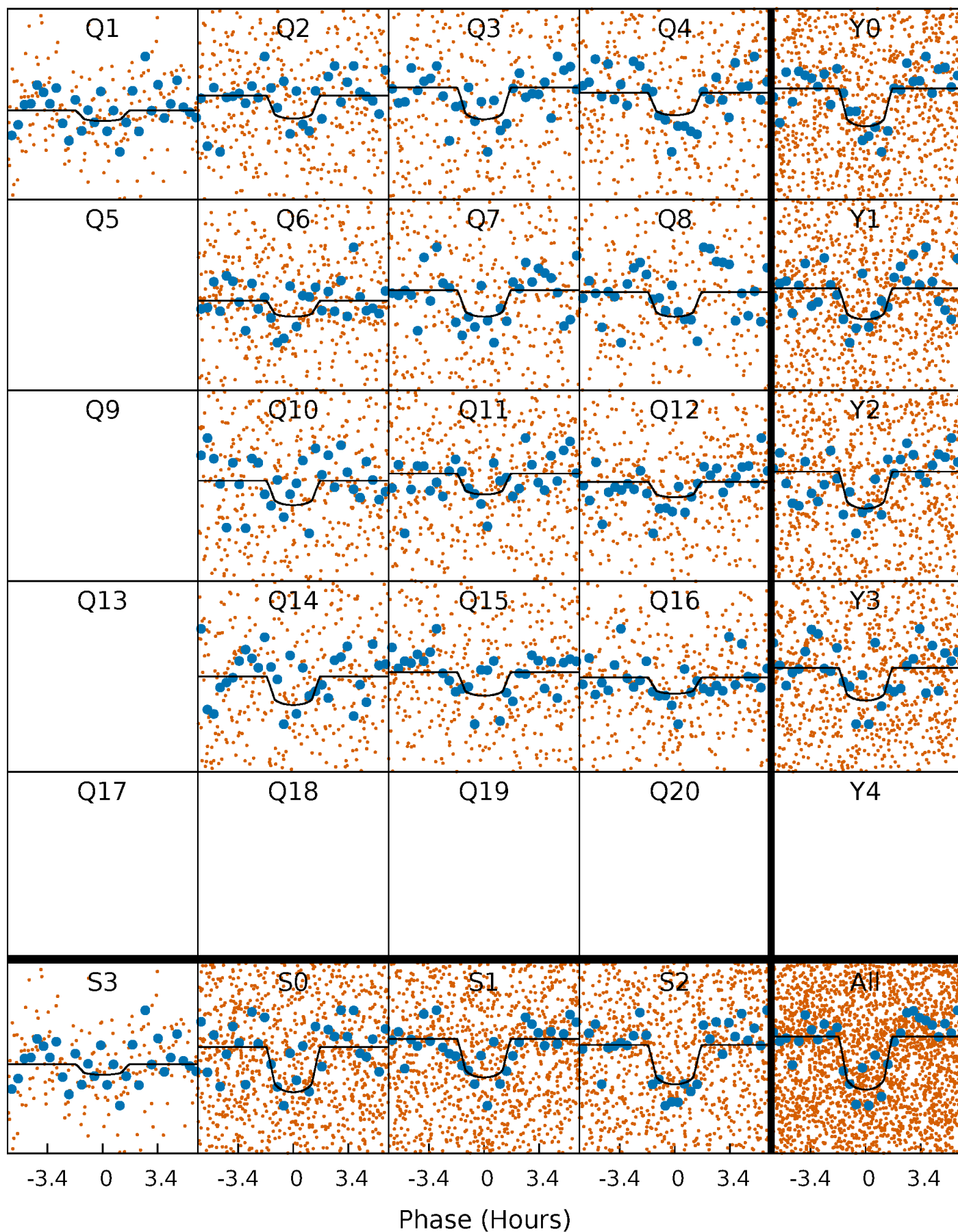
PDC Quarter-Phased Transit Curves

TCE 006026737-02 P= 3.750304 Days $T_0=134.804965$ (BKJD)



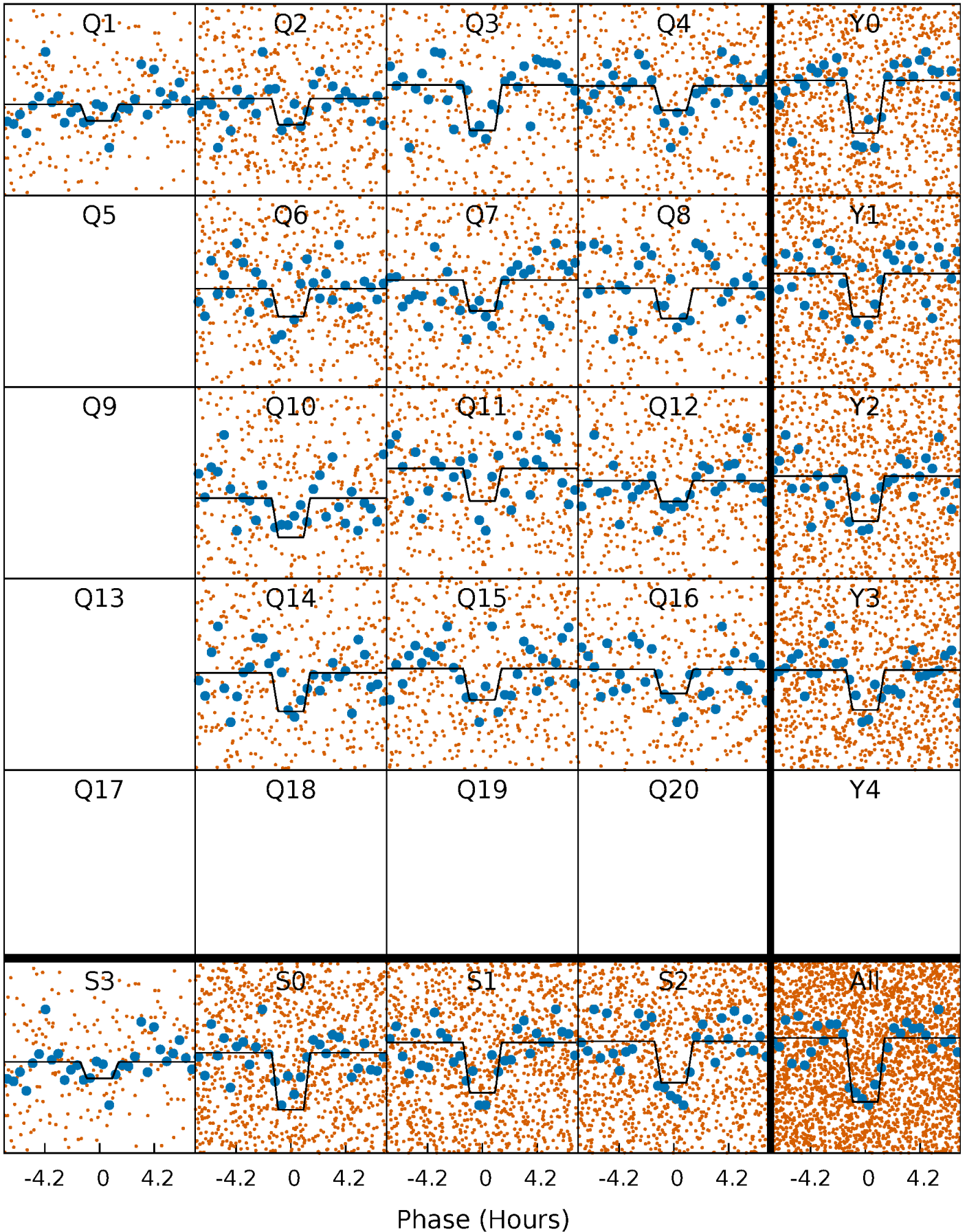
DV Quarter-Phased Transit Curves

TCE 006026737-02 P= 3.750304 Days $T_0=134.804965$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

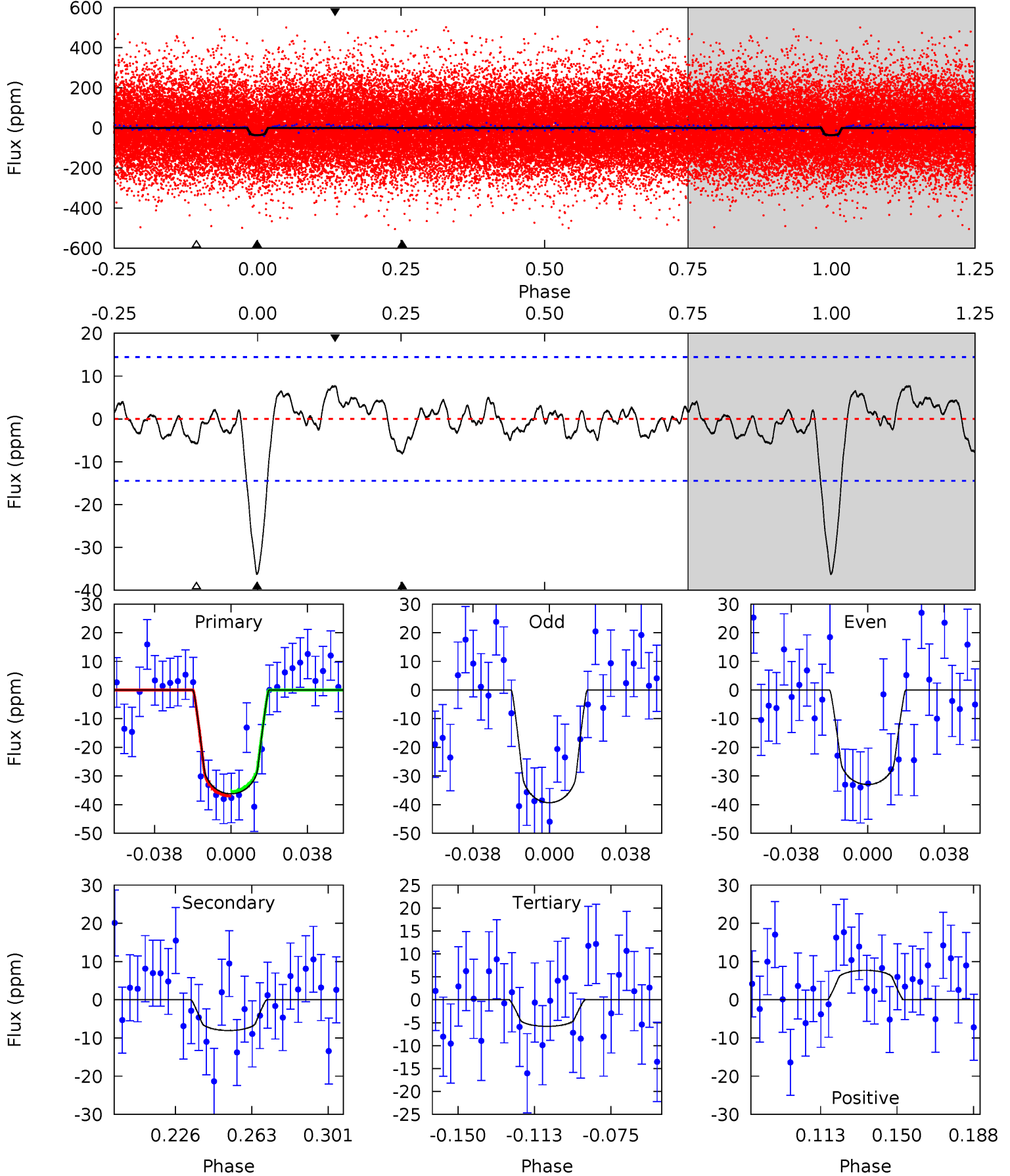
TCE 006026737-02 P= 3.750229 Days $T_0=134.817876$ (BKJD)



DV Model-Shift Uniqueness Test

006026737-02, P = 3.750304 Days, E = 131.054661 Days

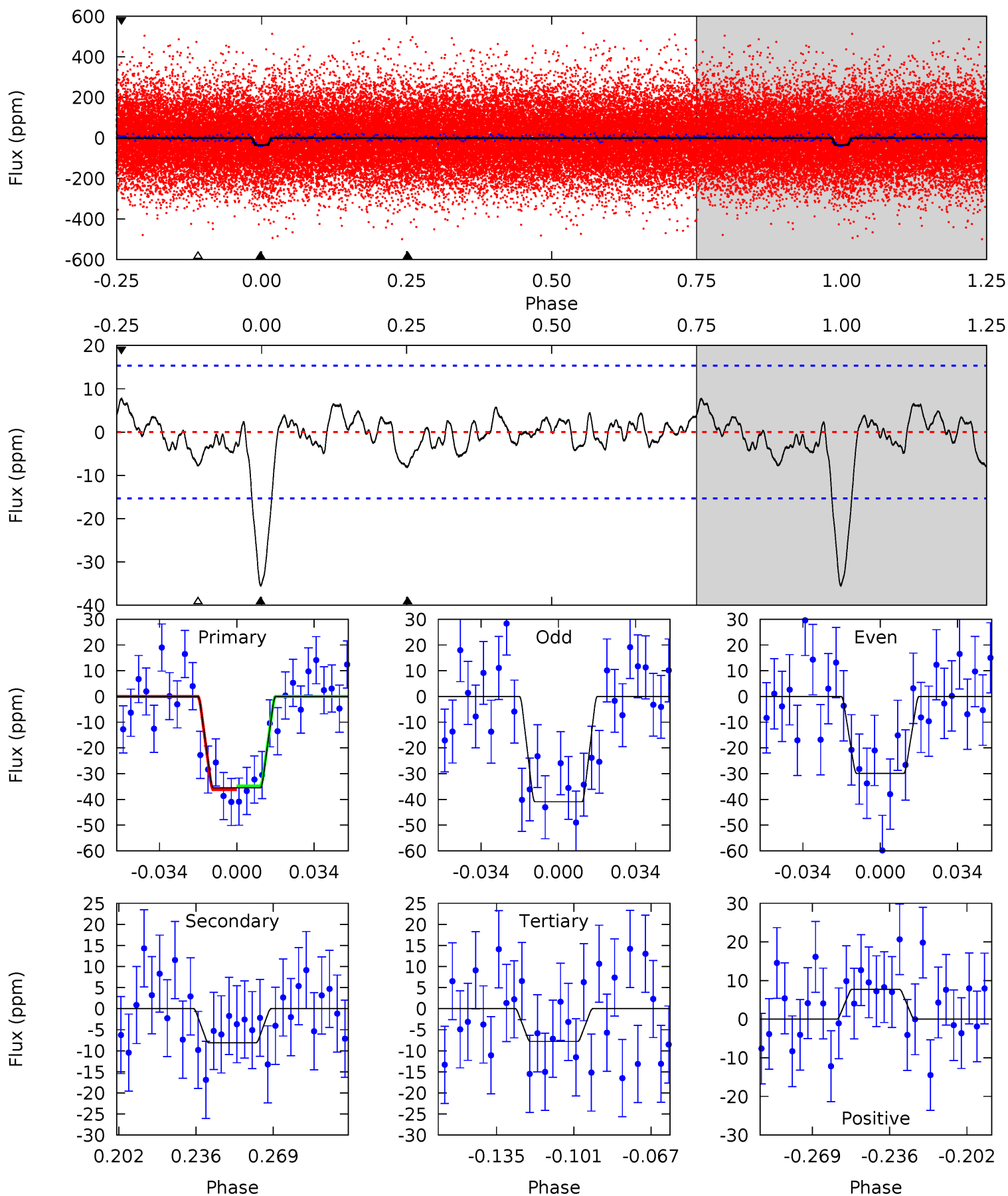
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.9 | 2.66 | 1.91 | 2.54 | 4.77 | 2.08 | 0.94 | 10.0 | 9.41 | 0.74 | 0.12 | 1.05 | 1.04 | 0.18 | 0.25 |



Alt Model-Shift Uniqueness Test

006026737-02, P = 3.750229 Days, E = 131.067647 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.1 | 2.53 | 2.43 | 2.41 | 4.79 | 2.12 | 0.93 | 8.64 | 8.66 | 0.10 | 0.12 | 1.72 | 0.98 | 0.18 | 0.22 |



Stellar Parameters For KIC 006026737

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|---------------------------|---------------------------|---------------------------|---|
| | 5866^{+105}_{-117} | $4.191^{+0.162}_{-0.108}$ | $0.000^{+0.150}_{-0.150}$ | $1.339^{+0.209}_{-0.256}$ | $1.016^{+0.101}_{-0.070}$ | $0.596^{+0.489}_{-0.197}$ |
| | +2%/-2% | +4%/-3% | +inf%/-inf% | +16%/-19% | +10%/-7% | +82%/-33% |
| Source | SPE59 | SPE59 | SPE59 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 006026737-02 / KOI 2949.02

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-------------|------------------------|---------------------|-----------------------|-----------------|
| DV | -8 ± 3 | $0.98^{+0.52}_{-0.50}$ | 1912^{+91}_{-101} | 4055^{+1422}_{-653} | 10^{+36}_{-7} |
| Alt. | -8 ± 3 | $0.92^{+0.63}_{-0.52}$ | 1913^{+91}_{-98} | 4109^{+1709}_{-727} | 11^{+48}_{-7} |

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 $A_{obs} \gg 1.0$

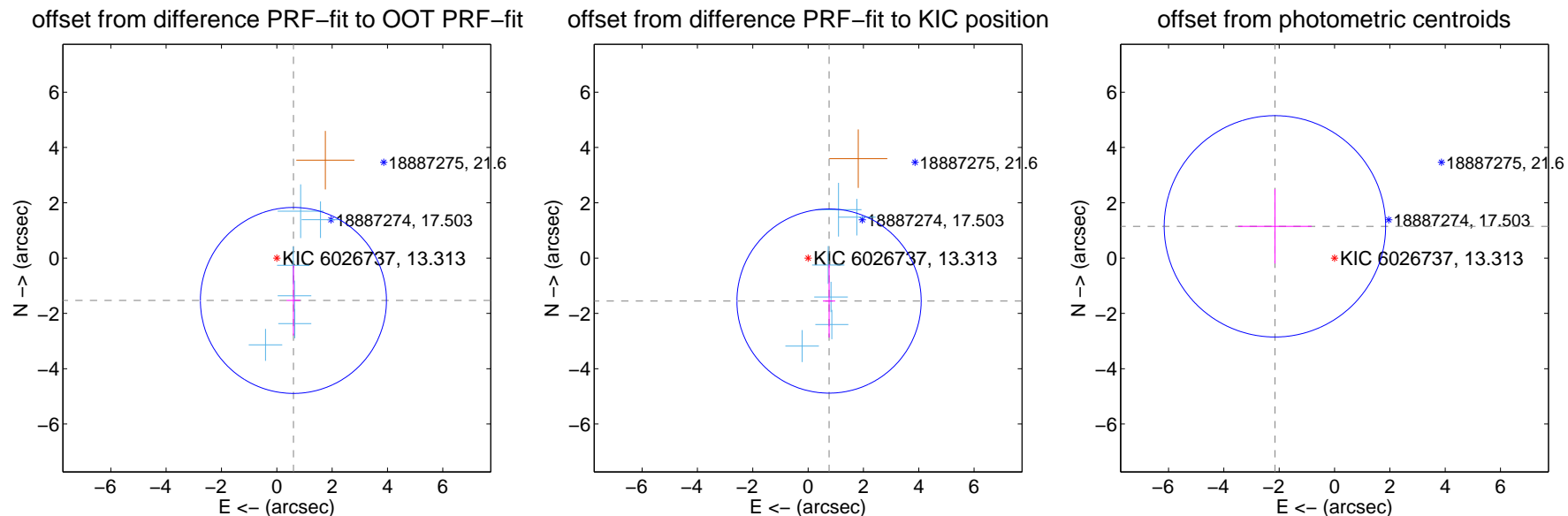
DV Centroid Data

Supplemental centroid analysis for 006026737-02. Kepler magnitude: 13.31. Transit SNR 8.71

There are 6 quarters with good PRF difference image offsets

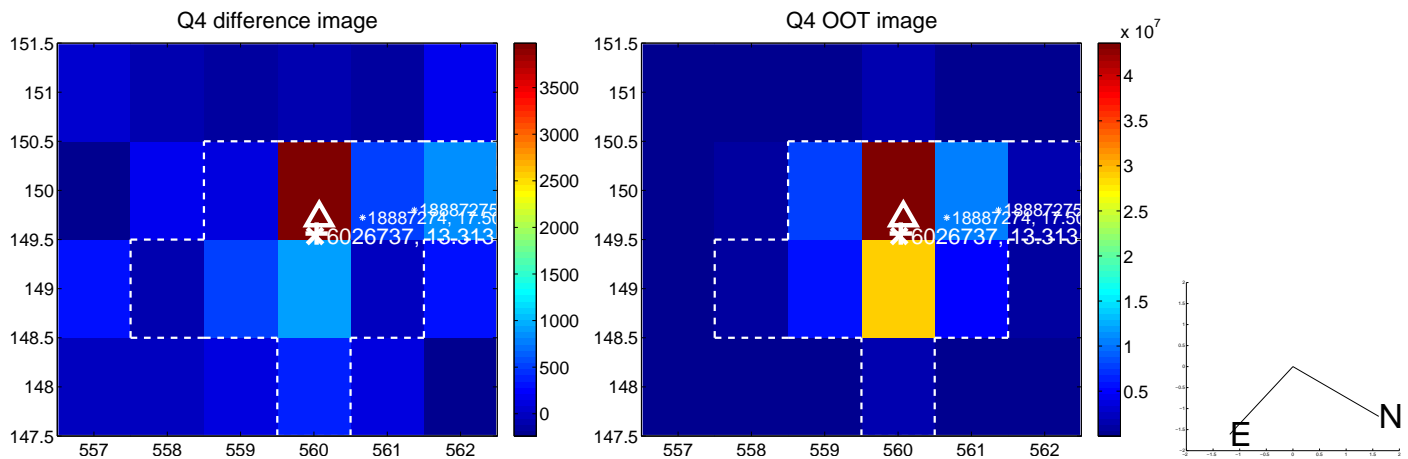
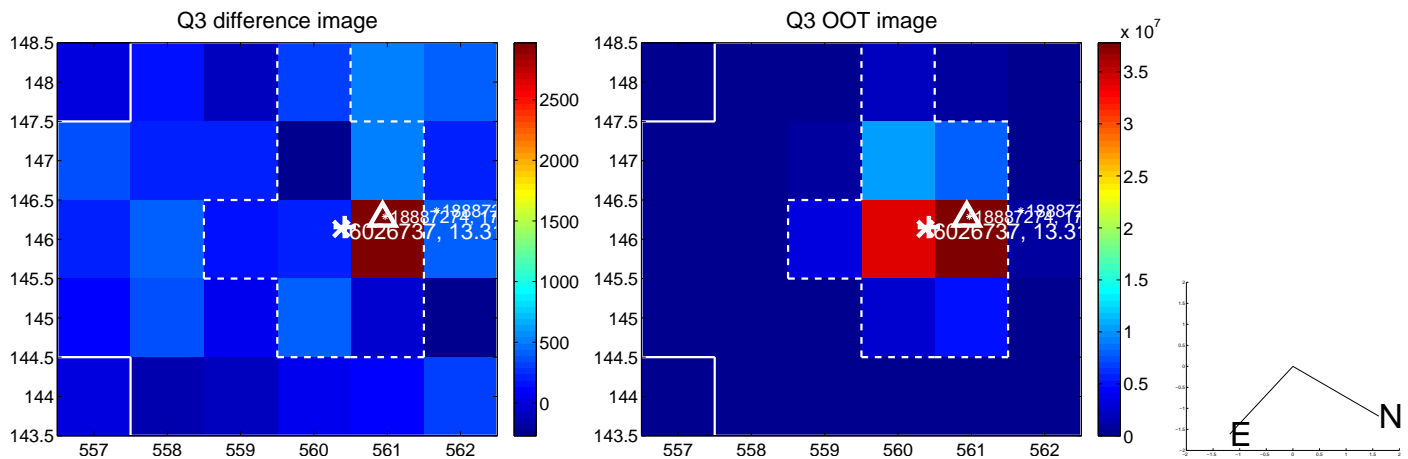
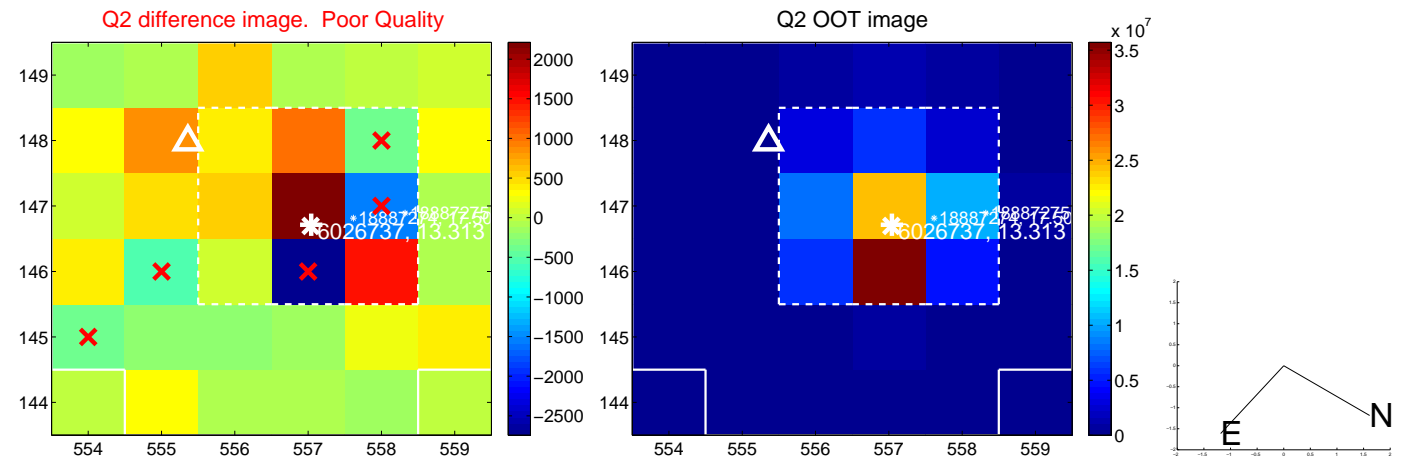
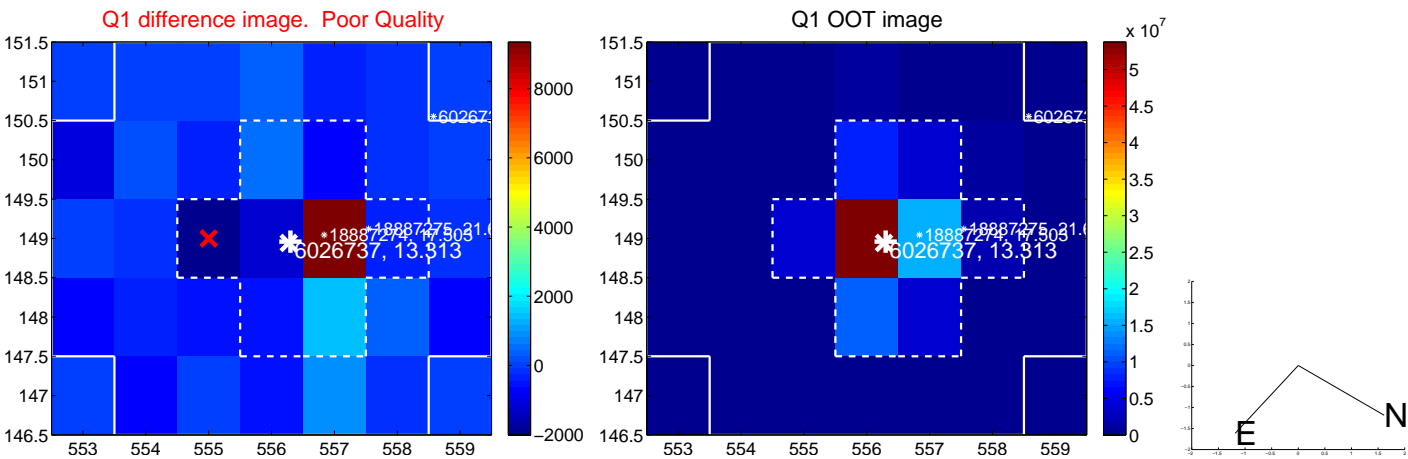
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 1.644 ± 1.121 | 1.47 | -0.600 ± 0.248 | -1.531 ± 1.271 |
| PRF-fit source offset from KIC position | 1.728 ± 1.110 | 1.56 | -0.758 ± 0.222 | -1.553 ± 1.320 |
| photometric centroid source offset | 2.44 ± 1.33 | 1.83 | 2.15 ± 1.33 | 1.15 ± 1.35 |

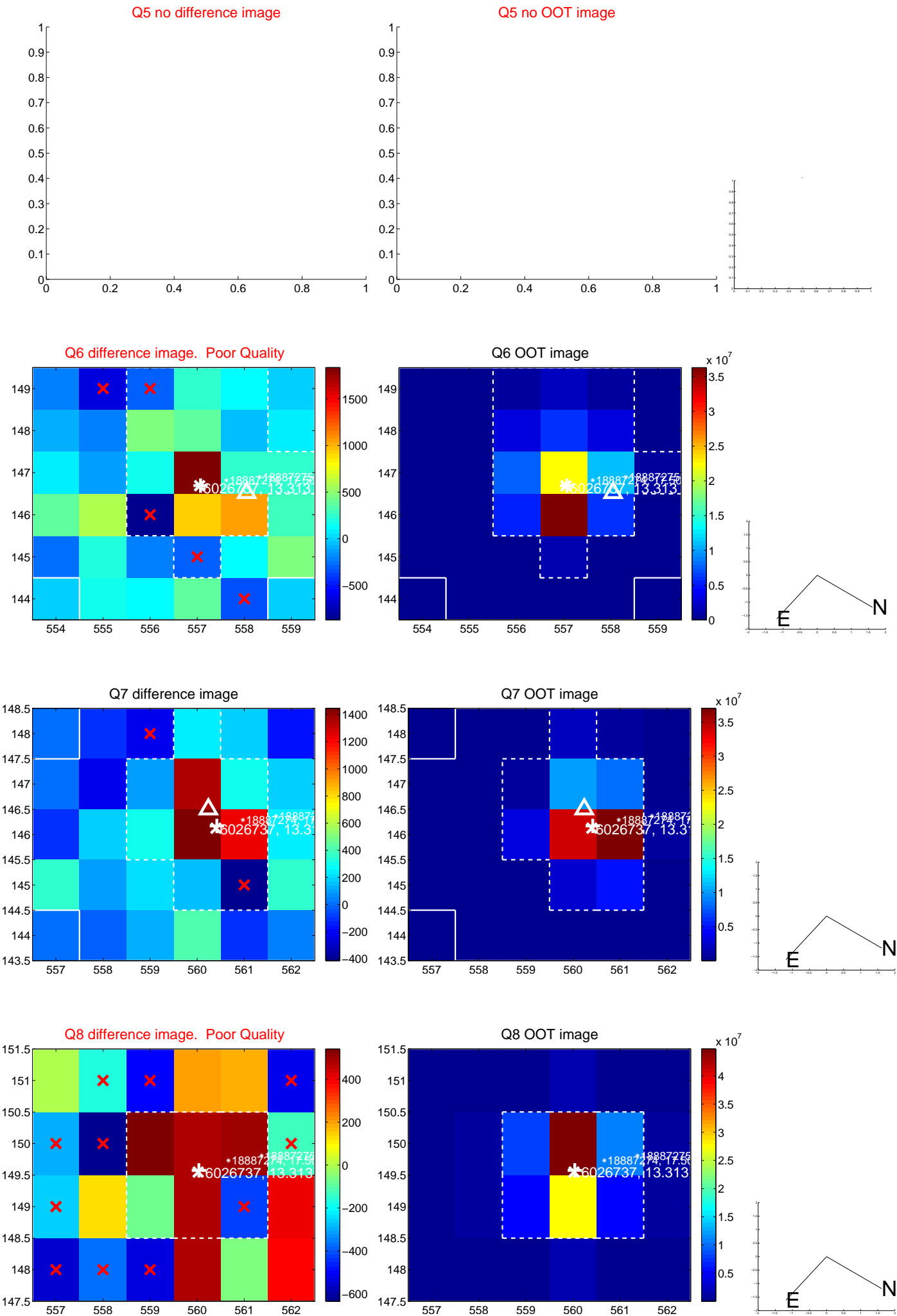


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

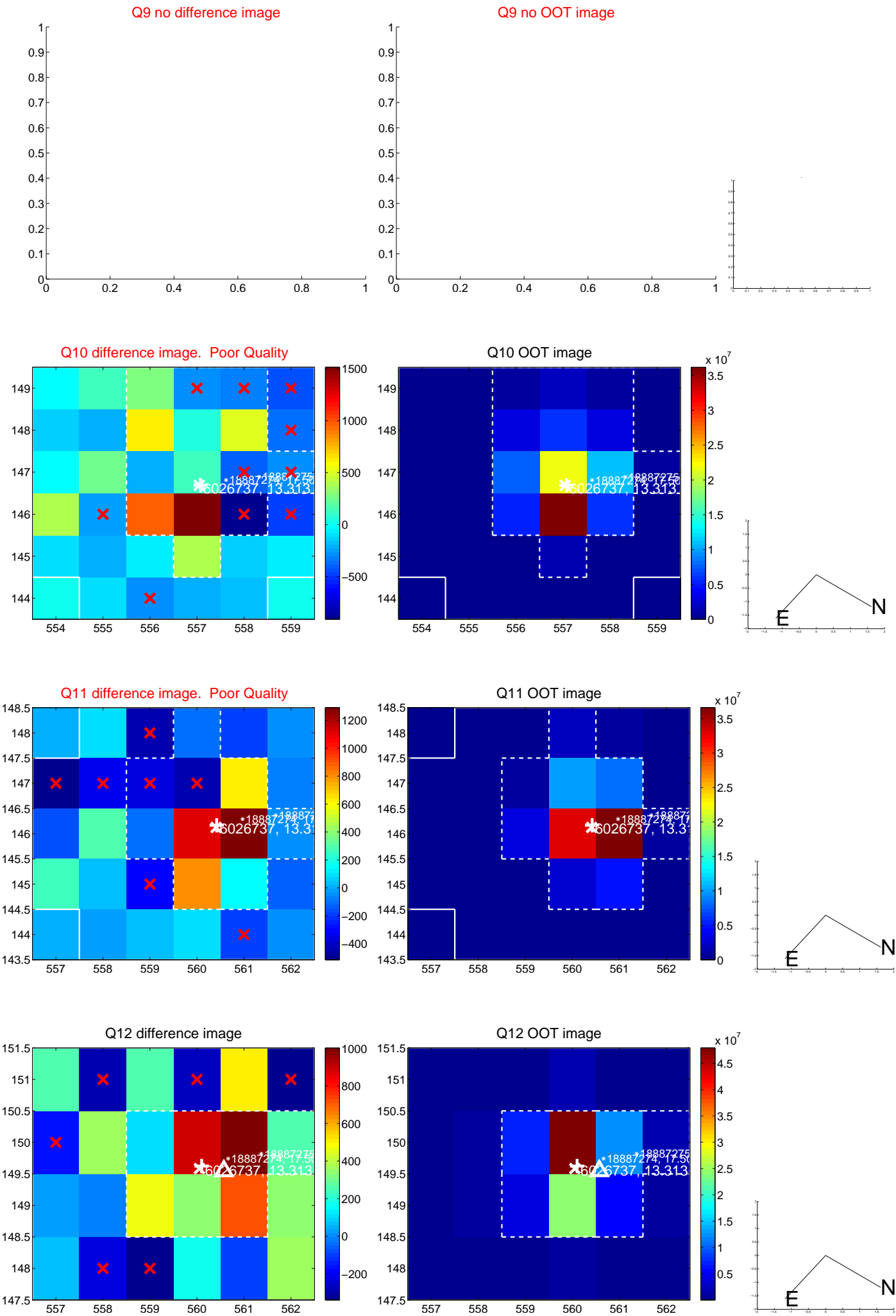
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



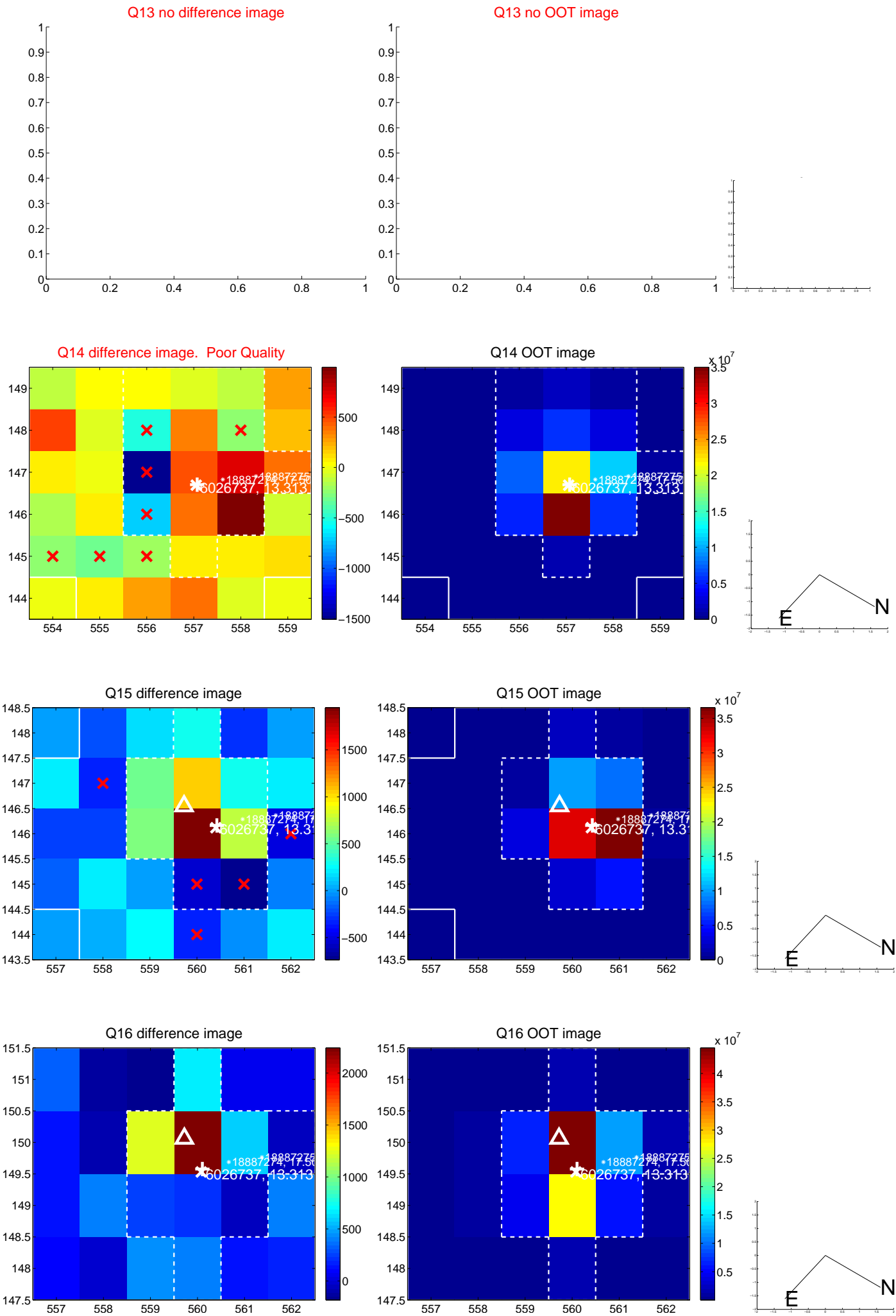
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



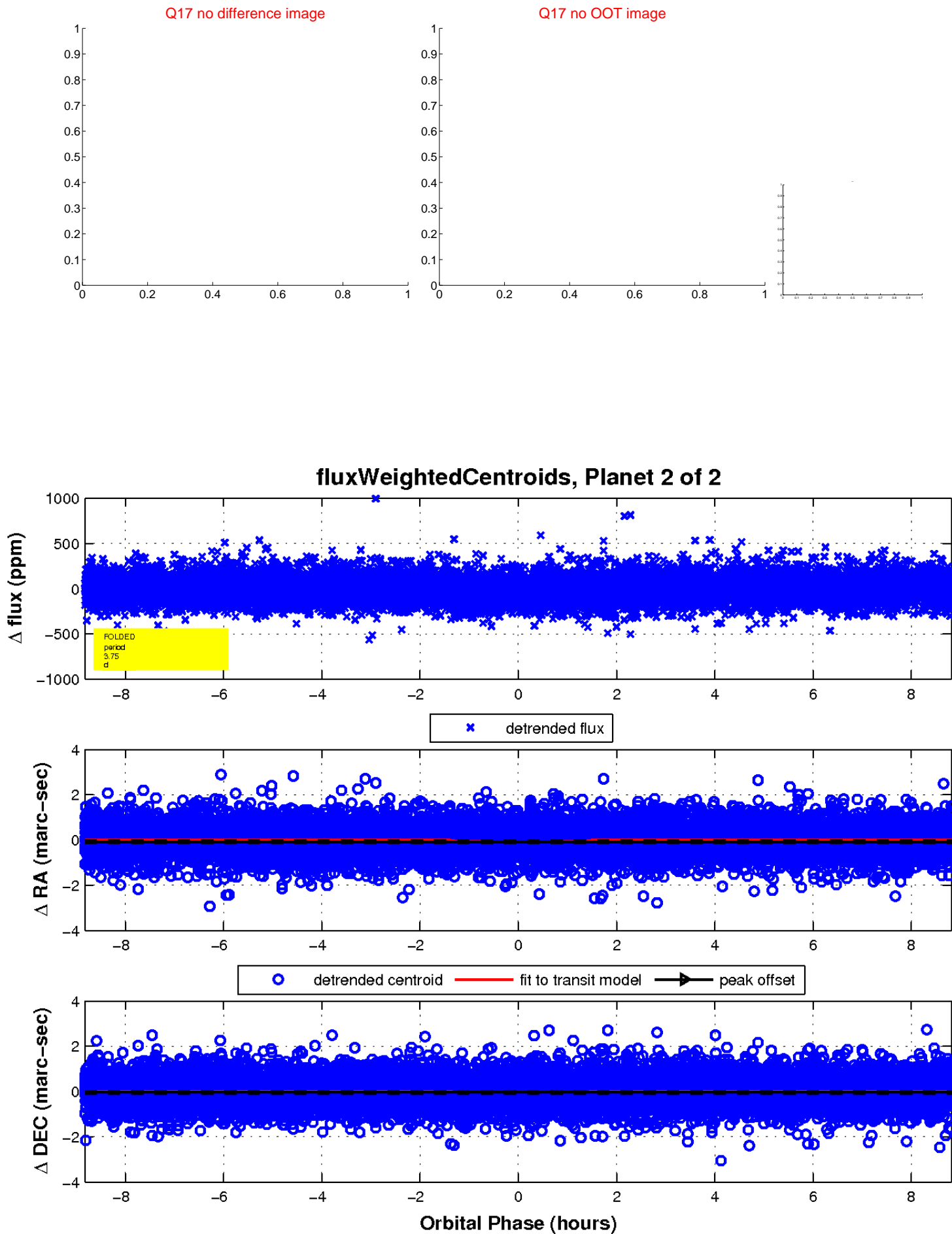
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

