

KIC 008018769

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 008018769-01 | OBS | No | 1.393005 | 132.696397 | 26.8 | 7.332 | 9.9 | 9.9 | 4.39 | 6478 | 2.52 | 33196.84 |
| 008018769-02 | OBS | No | 187.688151 | 142.774384 | 246.6 | 18.224 | 10.7 | 8.1 | 4.39 | 6478 | 7.53 | 48.06 |
| 008018769-03 | OBS | No | 21.580518 | 142.903160 | 136.2 | 5.355 | 8.6 | 8.8 | 4.39 | 6478 | 6.01 | 859.58 |
| 008018769-04 | OBS | No | 153.753628 | 227.751237 | 128.8 | 13.438 | 8.6 | 4.6 | 4.39 | 6478 | 5.59 | 62.70 |
| 008018769-05 | OBS | No | 130.796065 | 204.601175 | 331.6 | 2.992 | 8.2 | 8.4 | 4.39 | 6478 | 8.76 | 77.79 |
| 008018769-06 | OBS | No | 126.030555 | 190.511494 | 186.4 | 16.507 | 7.8 | 7.1 | 4.39 | 6478 | 6.72 | 81.73 |
| 008018769-07 | OBS | No | 63.864375 | 176.660218 | 126.1 | 18.797 | 8.0 | 7.6 | 4.39 | 6478 | 5.50 | 202.31 |
| 008018769-09 | OBS | No | 127.543184 | 236.417562 | 163.1 | 13.304 | 7.9 | 6.4 | 4.39 | 6478 | 6.18 | 80.44 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008018769-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 008018769-02 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_UNRESOLVED_OFFSET |
| 008018769-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST |
| 008018769-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008018769-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT |
| 008018769-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS |
| 008018769-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008018769-09 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET |

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

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

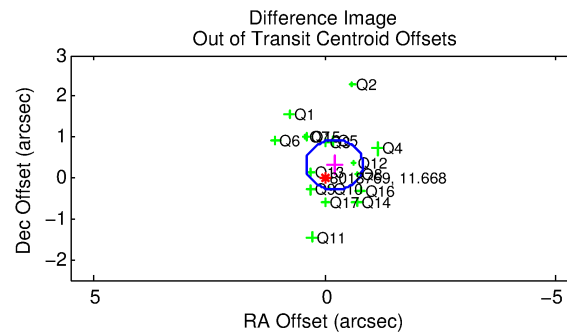
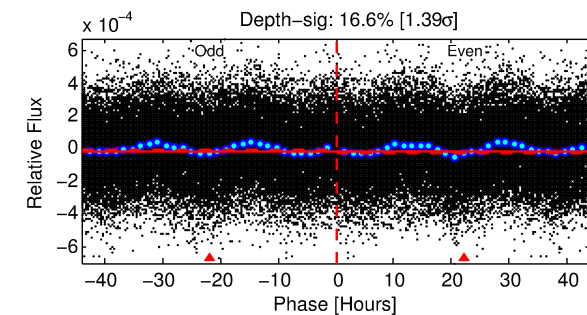
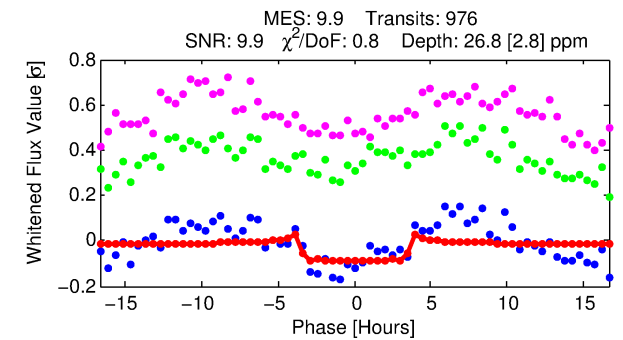
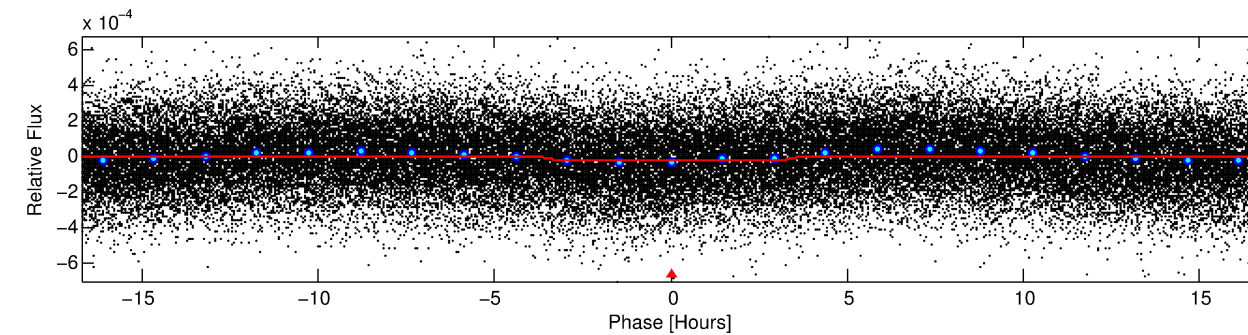
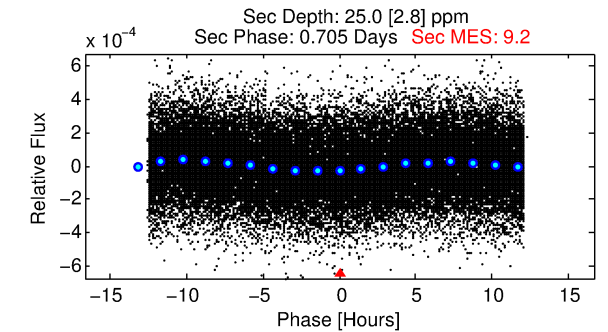
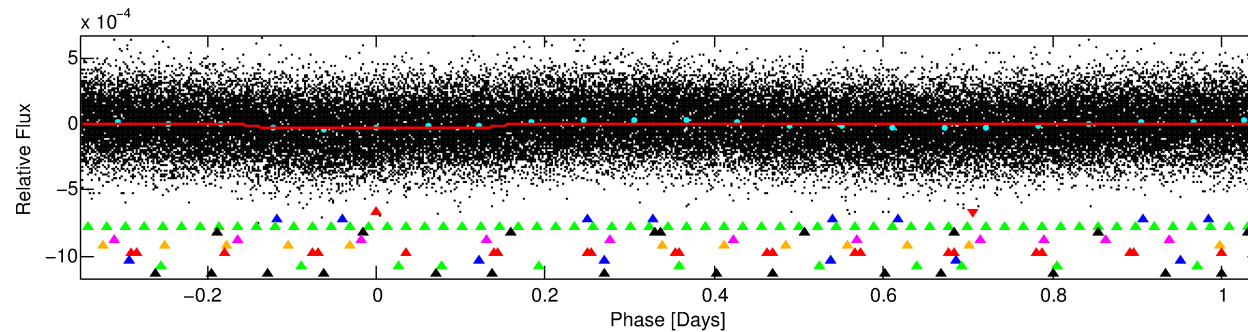
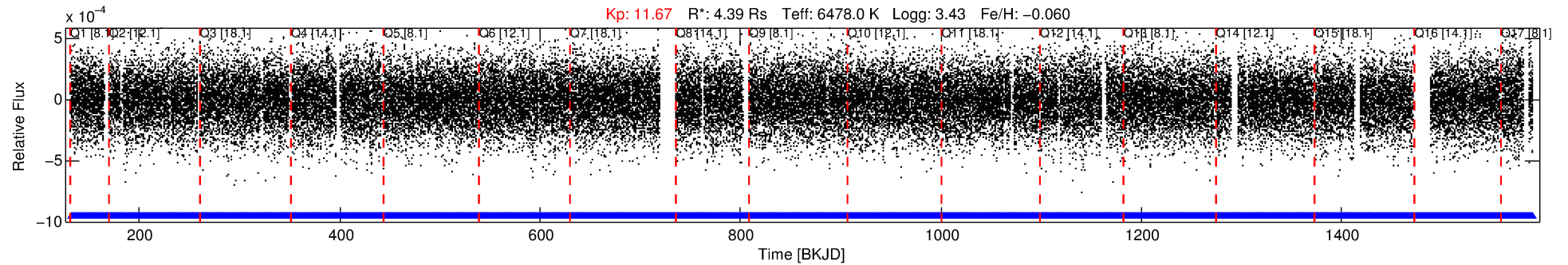
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008018769-01

No Significant Match Found

DV One-Page Summary

KIC: 8018769 Candidate: 1 of 10 Period: 1.393 d



DV Fit Results:

Period = 1.39301 [0.00002] d
Epoch = 132.6964 [0.0040] BKJD
 R_p/R^* = 0.0053 [0.0014]
 a/R^* = 1.24 [0.65]
 b = 0.81 [0.65]
 S_{eff} = 33196.84 [20502.42]
 T_{eq} = 3442 [531] K
 R_p = 2.52 [1.17] R_e
 a = 0.0303 [0.0113] AU
 A_g = 1.98 [1.63] [0.60σ]
 T_{eff} = 6313 [889] K [2.77σ]

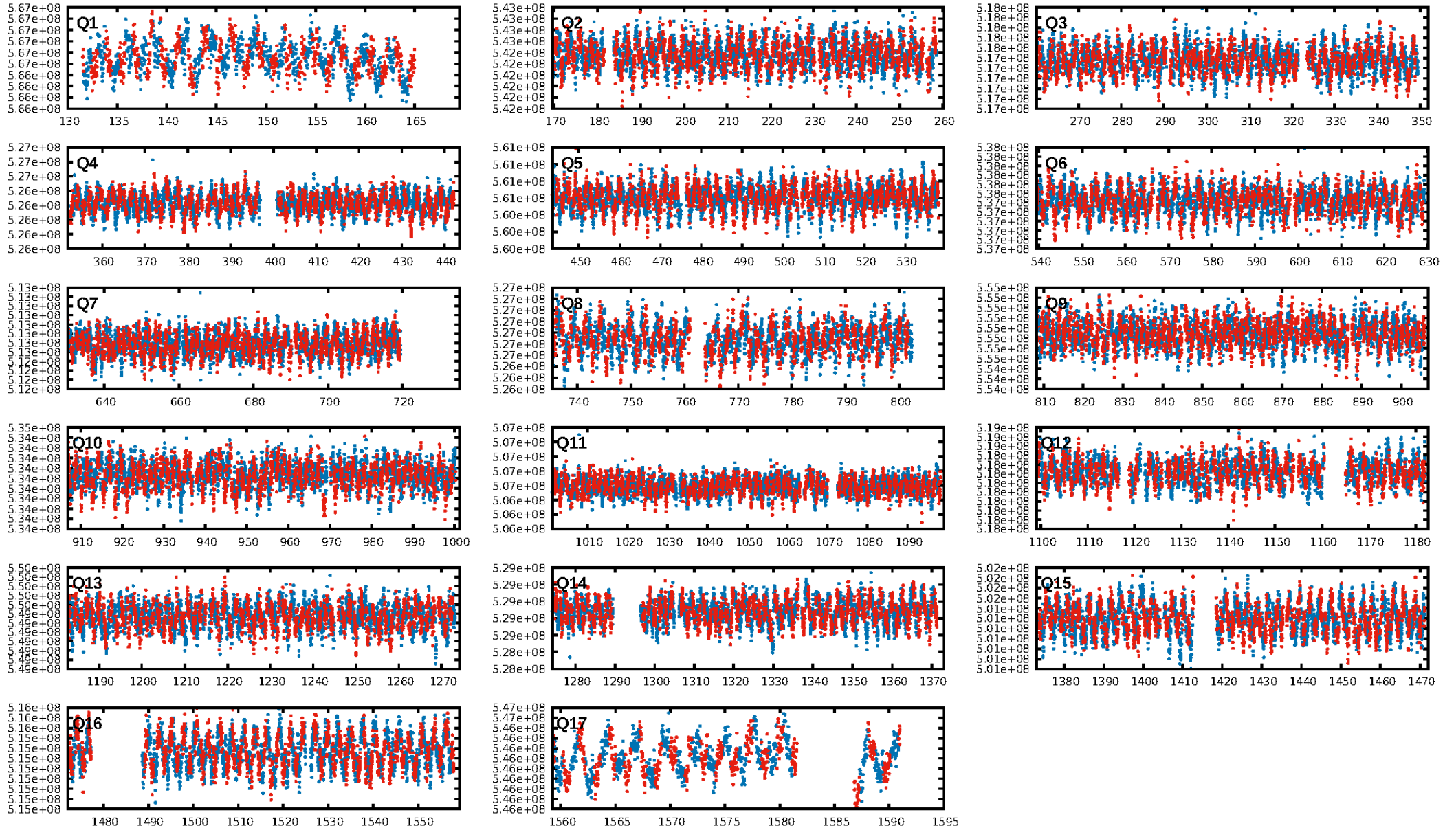
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [53.36σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [932/932]
GhostDiagnostic-chr: 1.646
Centroid-sig: 29.8%
Centroid-so: 0.211 arcsec [0.84σ]
OotOffset-rm: 0.383 arcsec [1.88σ]
KicOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 1.00 [17/17]

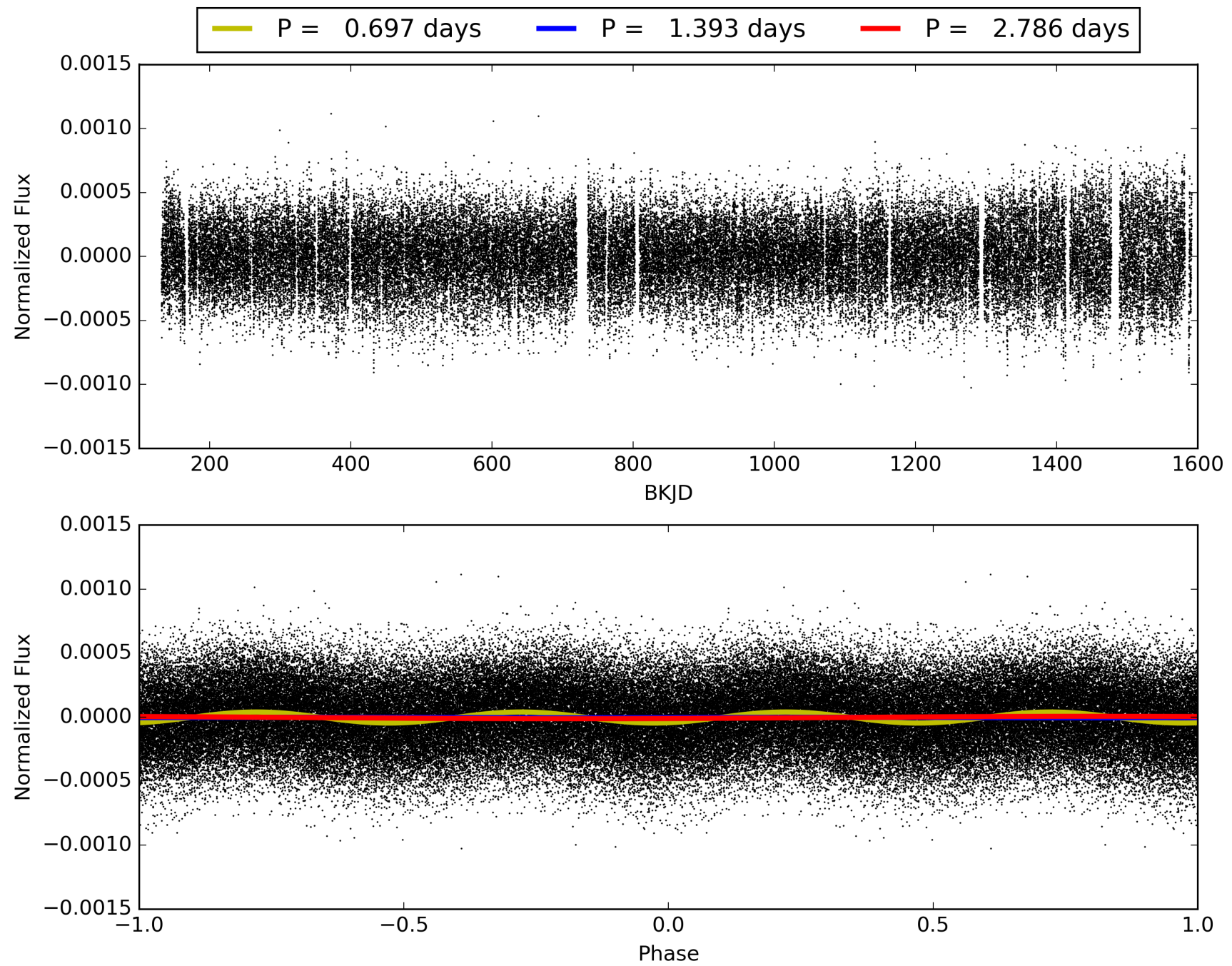
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 04:18:06 Z

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

TCE 008018769-01, PDC Light Curves

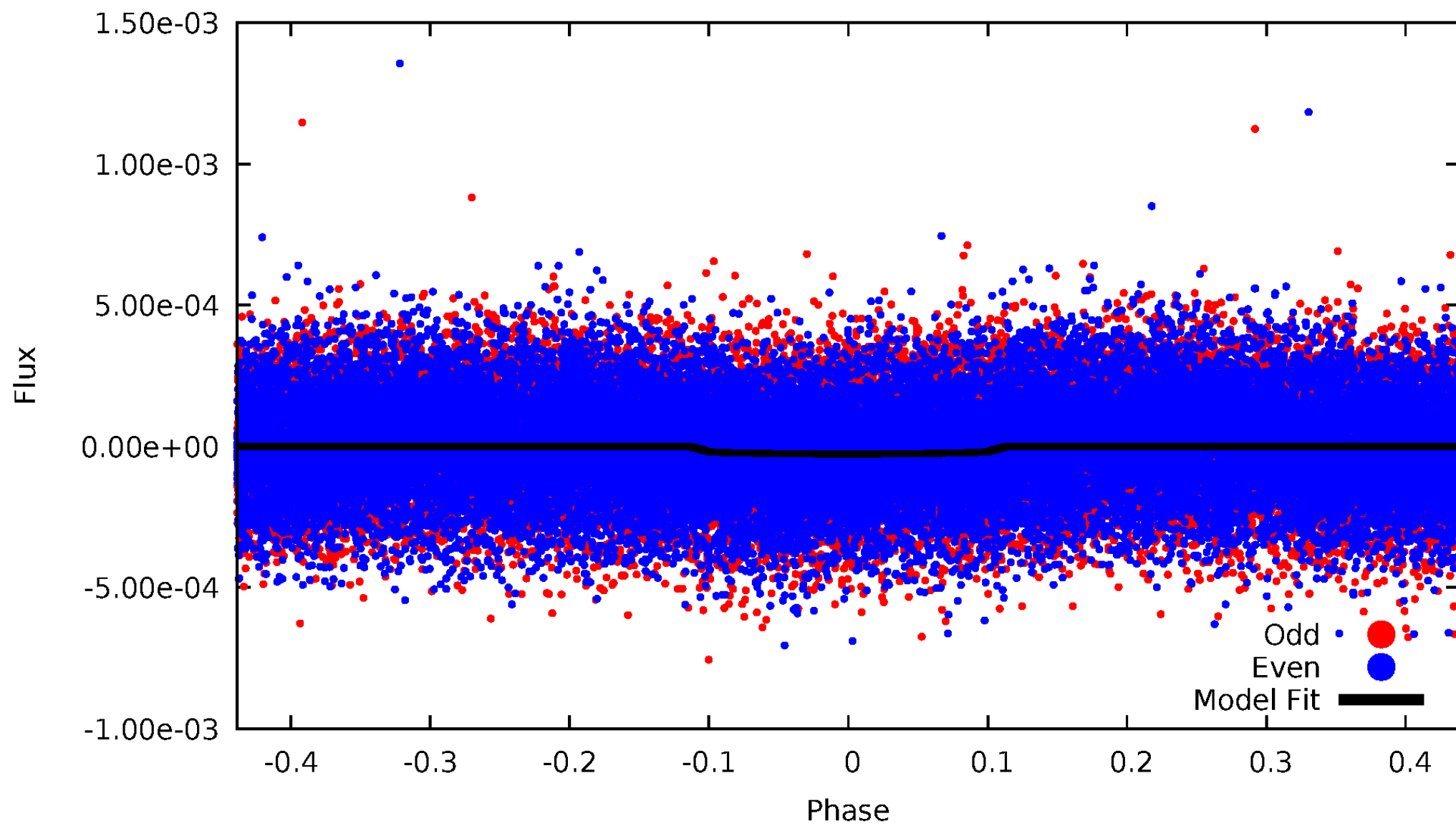


TCE 008018769-01



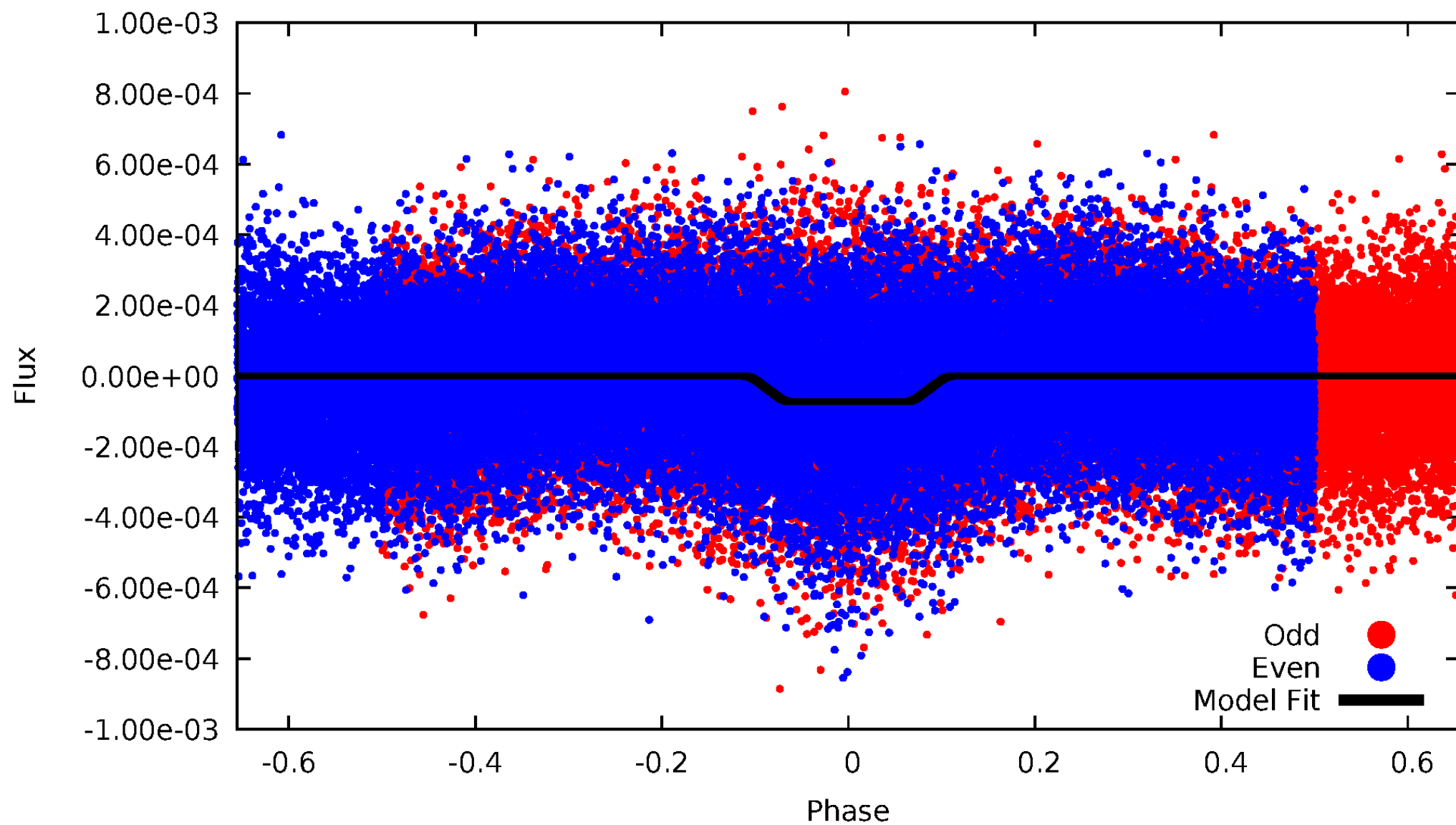
DV Odd/Even

TCE 008018769-01

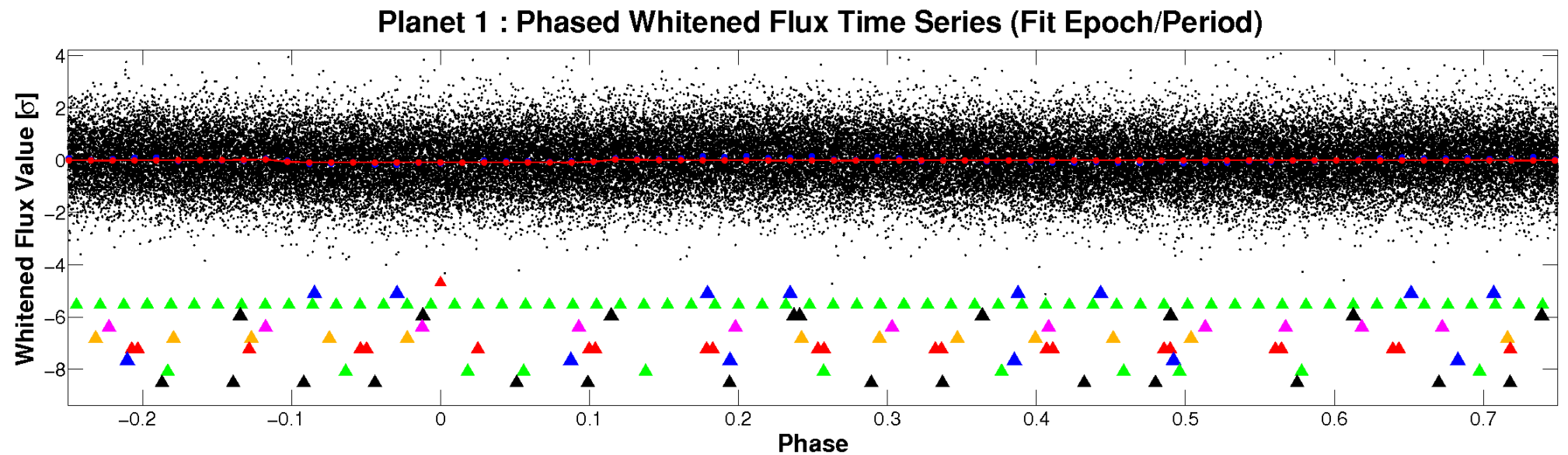
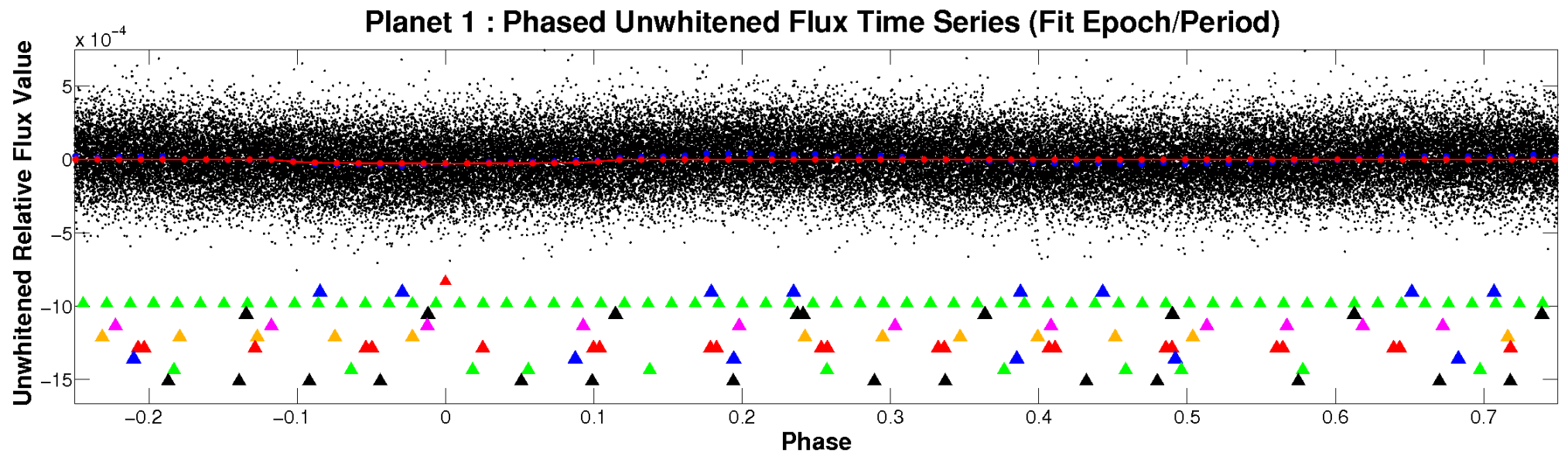


ALT Odd/Even

TCE 008018769-01

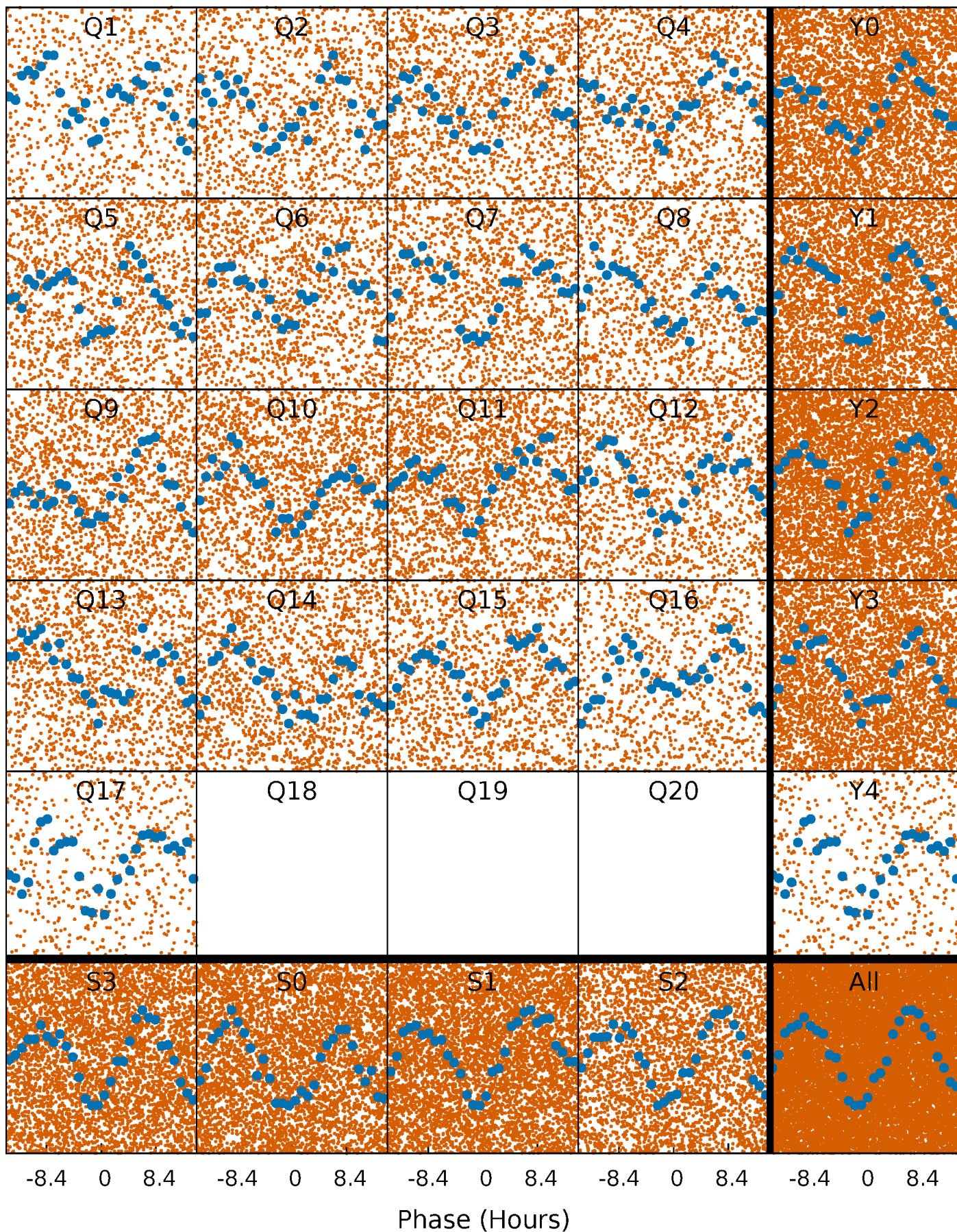


Non-Whitened Vs. Whitened Light Curve



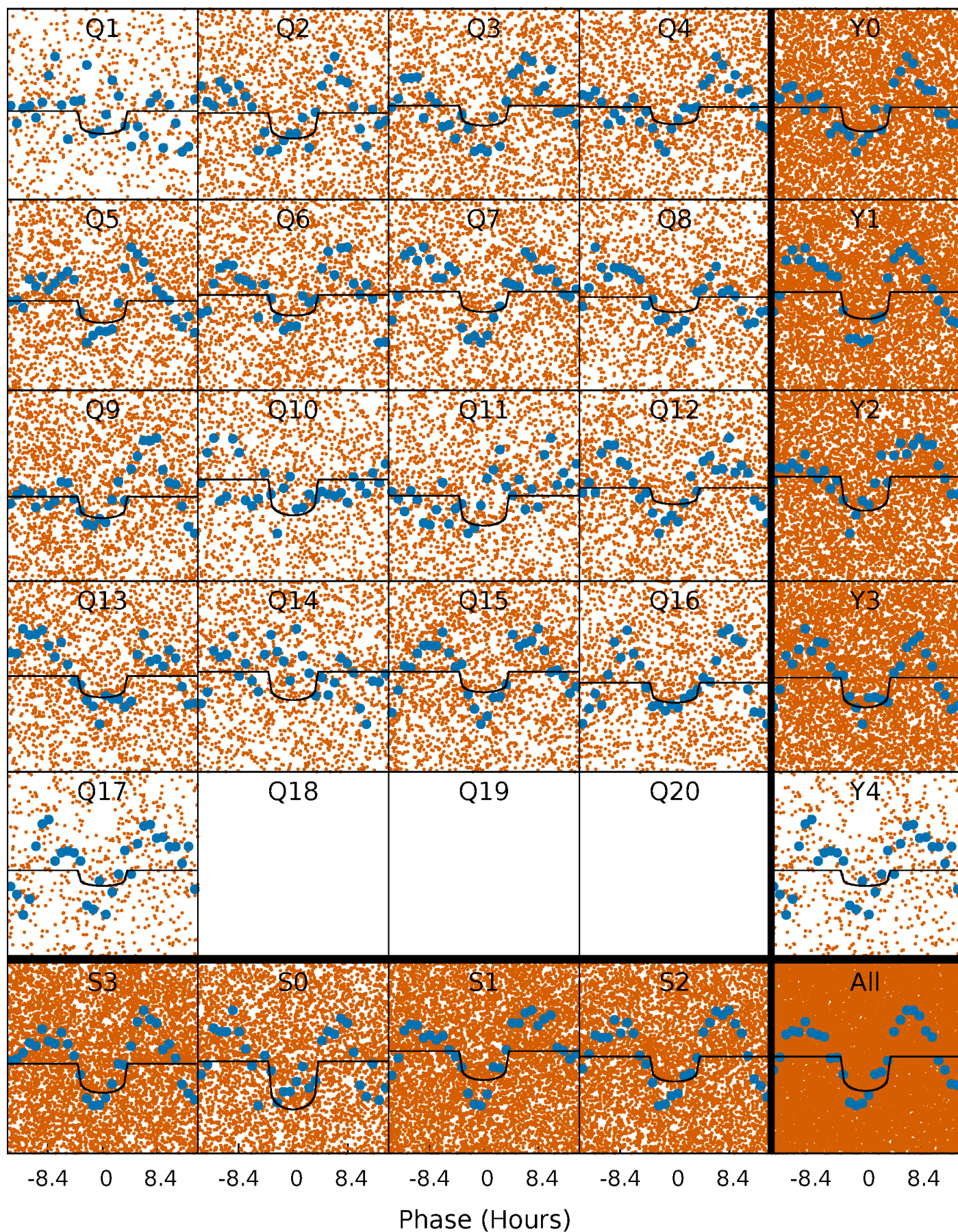
PDC Quarter-Phased Transit Curves

TCE 008018769-01 P= 1.393005 Days $T_0=132.696397$ (BKJD)



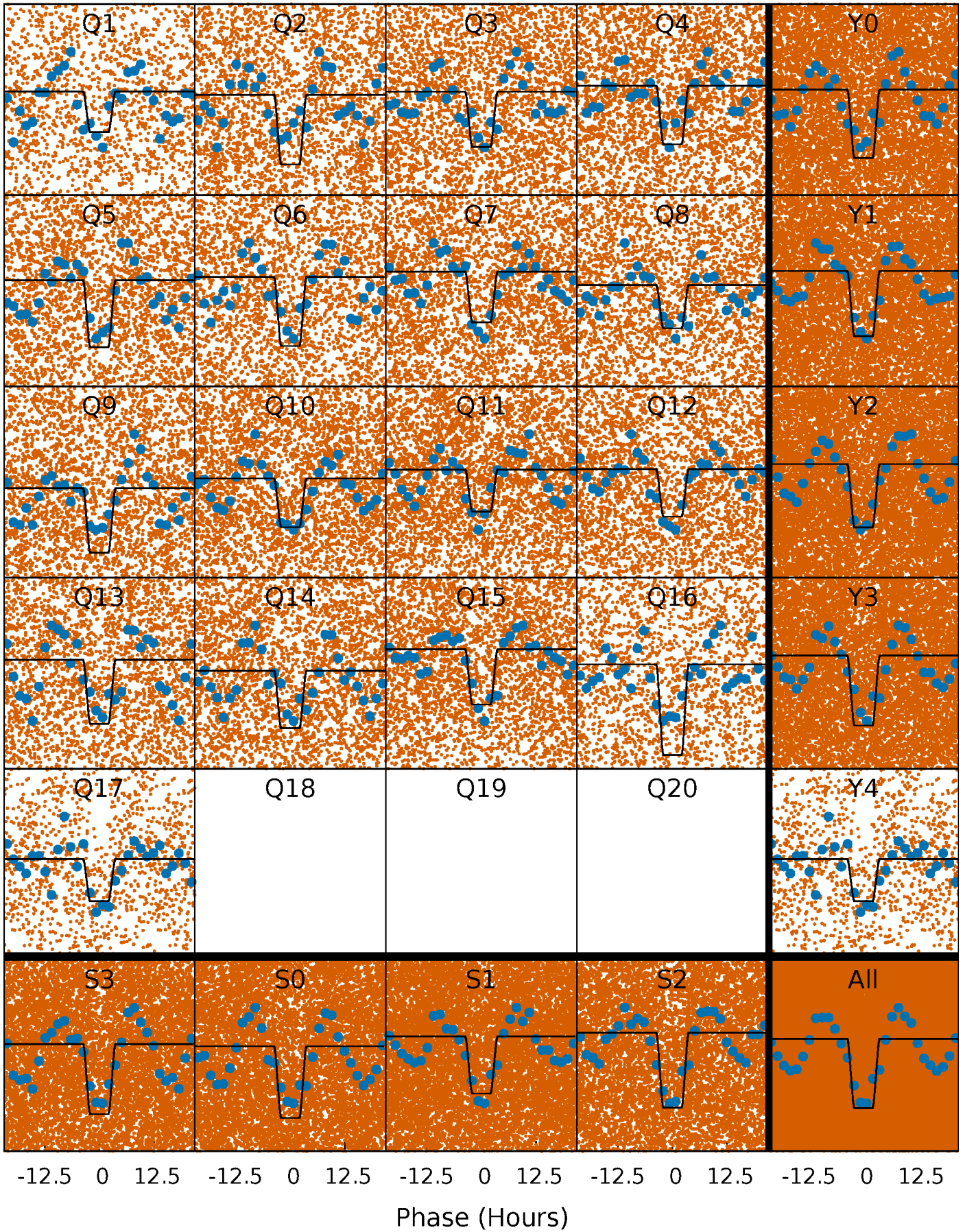
DV Quarter-Phased Transit Curves

TCE 008018769-01 P= 1.393005 Days $T_0=132.696397$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

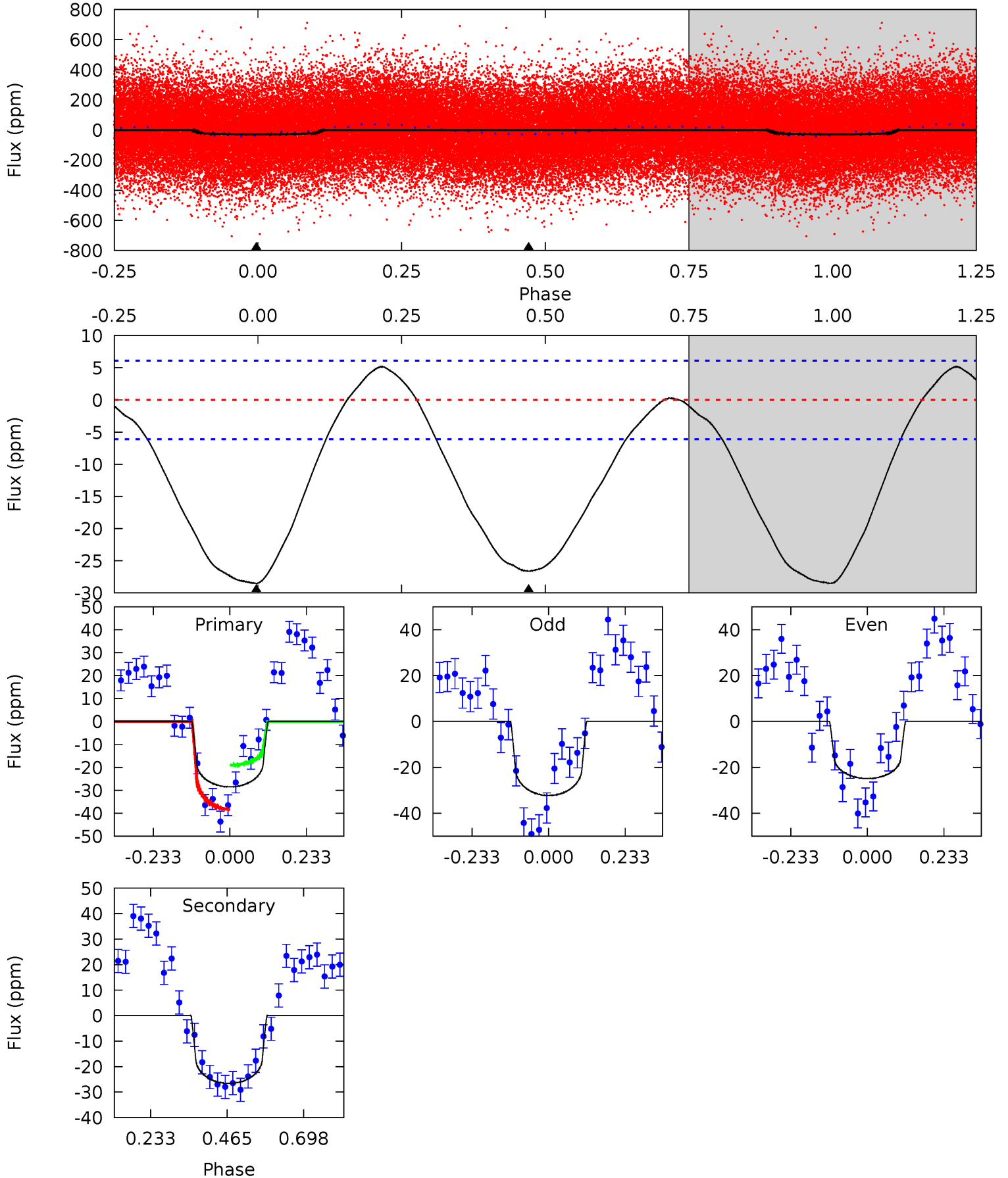
TCE 008018769-01 P= 1.393015 Days $T_0=132.651896$ (BKJD)



DV Model-Shift Uniqueness Test

008018769-01, P = 1.393005 Days, E = 131.303392 Days

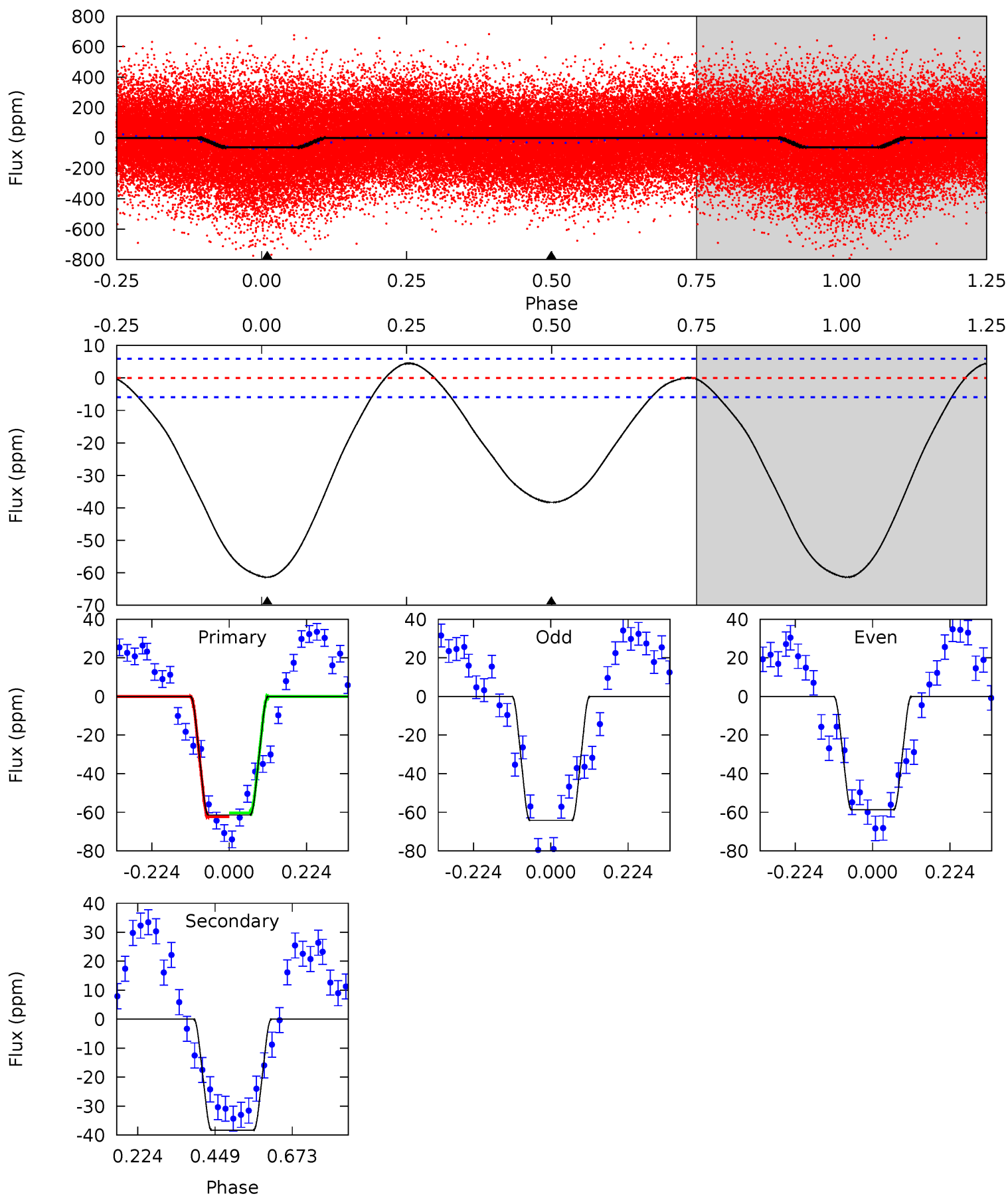
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 20.5 | 19.1 | 0 | 0 | 4.38 | 1.19 | 1.62 | 20.5 | 20.5 | 19.1 | 19.1 | 2.64 | 1.08 | 0.15 | 6.92 |



Alt Model-Shift Uniqueness Test

008018769-01, P = 1.393015 Days, E = 131.258881 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 45.5 | 28.4 | 0 | 0 | 4.39 | 1.22 | 2.27 | 45.5 | 45.5 | 28.4 | 28.4 | 2.04 | 1.10 | 0.07 | 0.75 |



Stellar Parameters For KIC 008018769

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6478^{+146}_{-179} | $3.433^{+0.360}_{-0.090}$ | $-0.060^{+0.300}_{-0.250}$ | $4.391^{+0.594}_{-1.664}$ | $1.908^{+0.094}_{-0.375}$ | $0.032^{+0.087}_{-0.009}$ |
| | +2%/-3% | +10%/-3% | +500%/-417% | +14%/-38% | +5%/-20% | +275%/-28% |
| Source | PHO1 | FLK73 | KIC0 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 008018769-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-------------|------------------------|----------------------|-----------------------|---------------------------|
| DV | -27 ± 1 | $2.33^{+0.80}_{-0.77}$ | 4710^{+279}_{-465} | 6143^{+1325}_{-803} | $2.404^{+2.937}_{-1.055}$ |
| Alt. | -38 ± 1 | $3.81^{+0.94}_{-0.88}$ | 4716^{+280}_{-460} | 5211^{+592}_{-483} | $1.312^{+0.887}_{-0.455}$ |

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

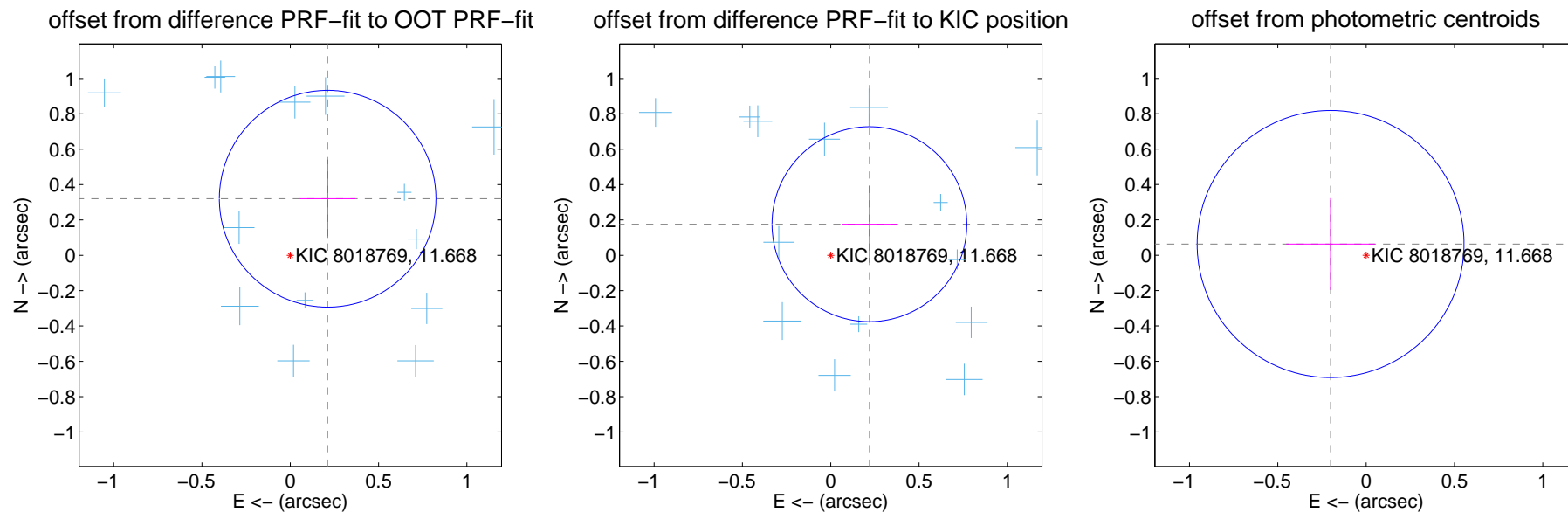
DV Centroid Data

Supplemental centroid analysis for 008018769-01. **Kepler magnitude: 11.67.** Transit SNR 9.90

There are 16 quarters with good PRF difference image offsets

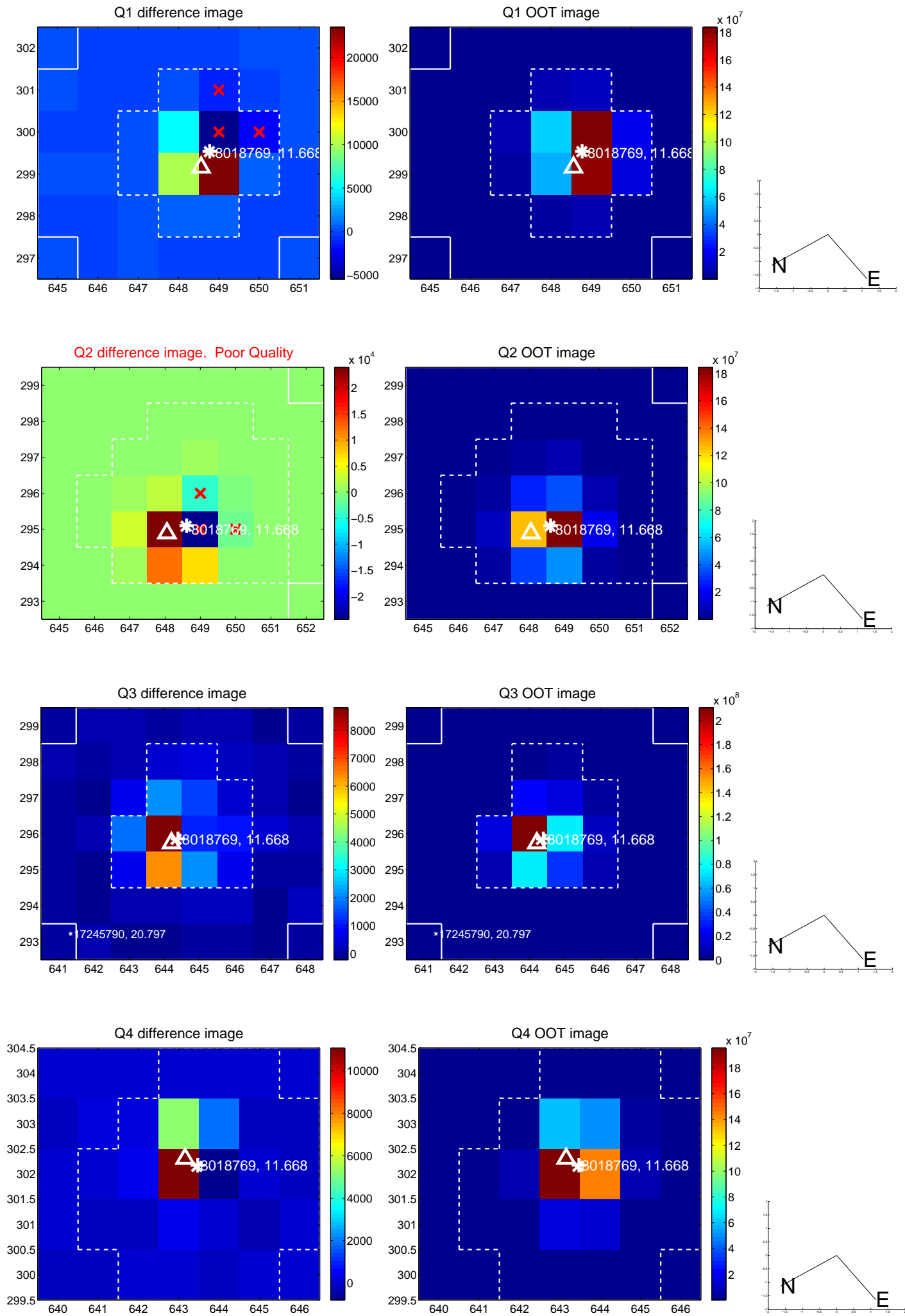
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 0.383 ± 0.204 | 1.88 | -0.212 ± 0.158 | 0.320 ± 0.222 |
| PRF-fit source offset from KIC position | 0.281 ± 0.184 | 1.53 | -0.219 ± 0.158 | 0.176 ± 0.218 |
| photometric centroid source offset | 0.21 ± 0.25 | 0.84 | 0.20 ± 0.25 | 0.06 ± 0.26 |

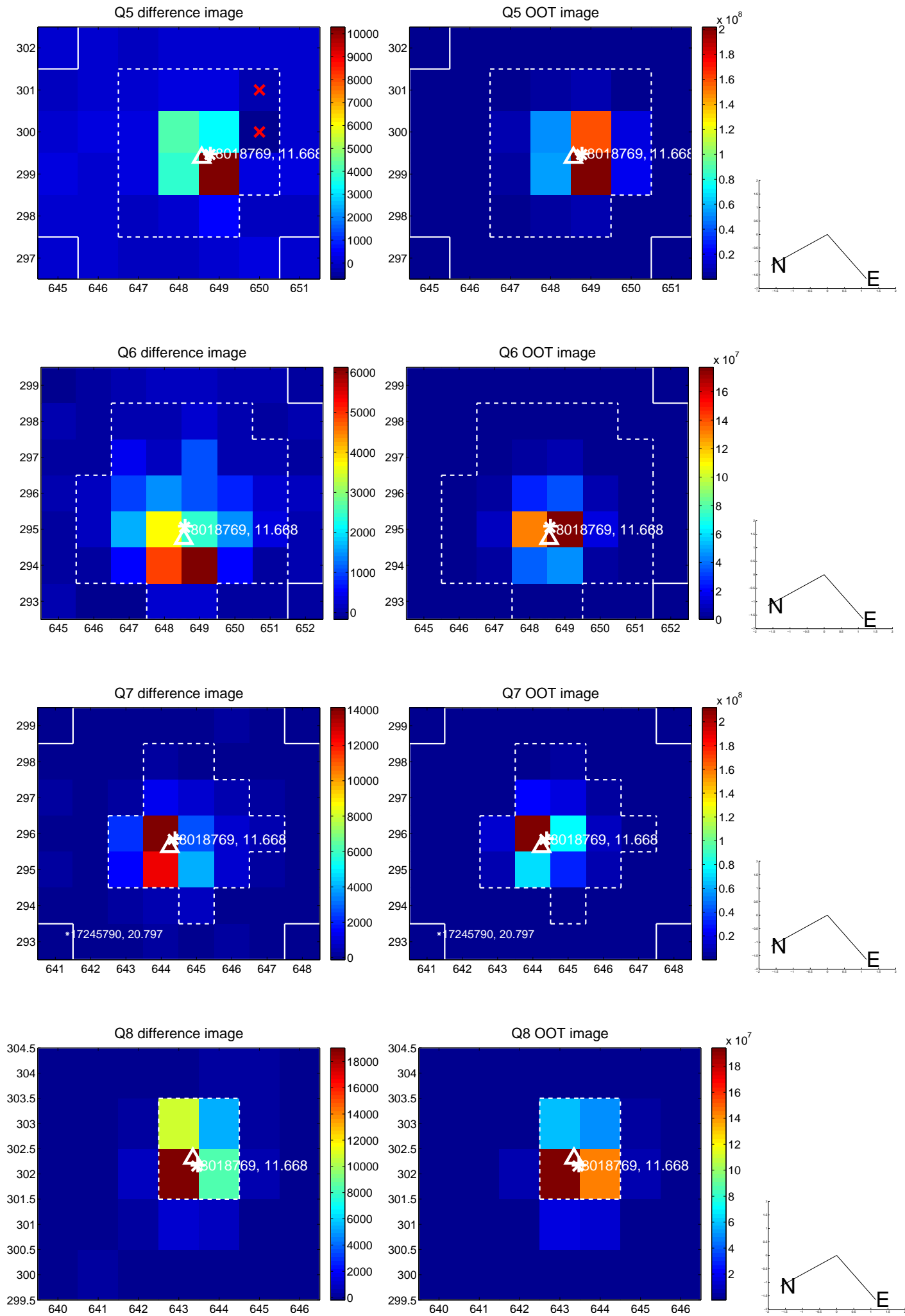


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

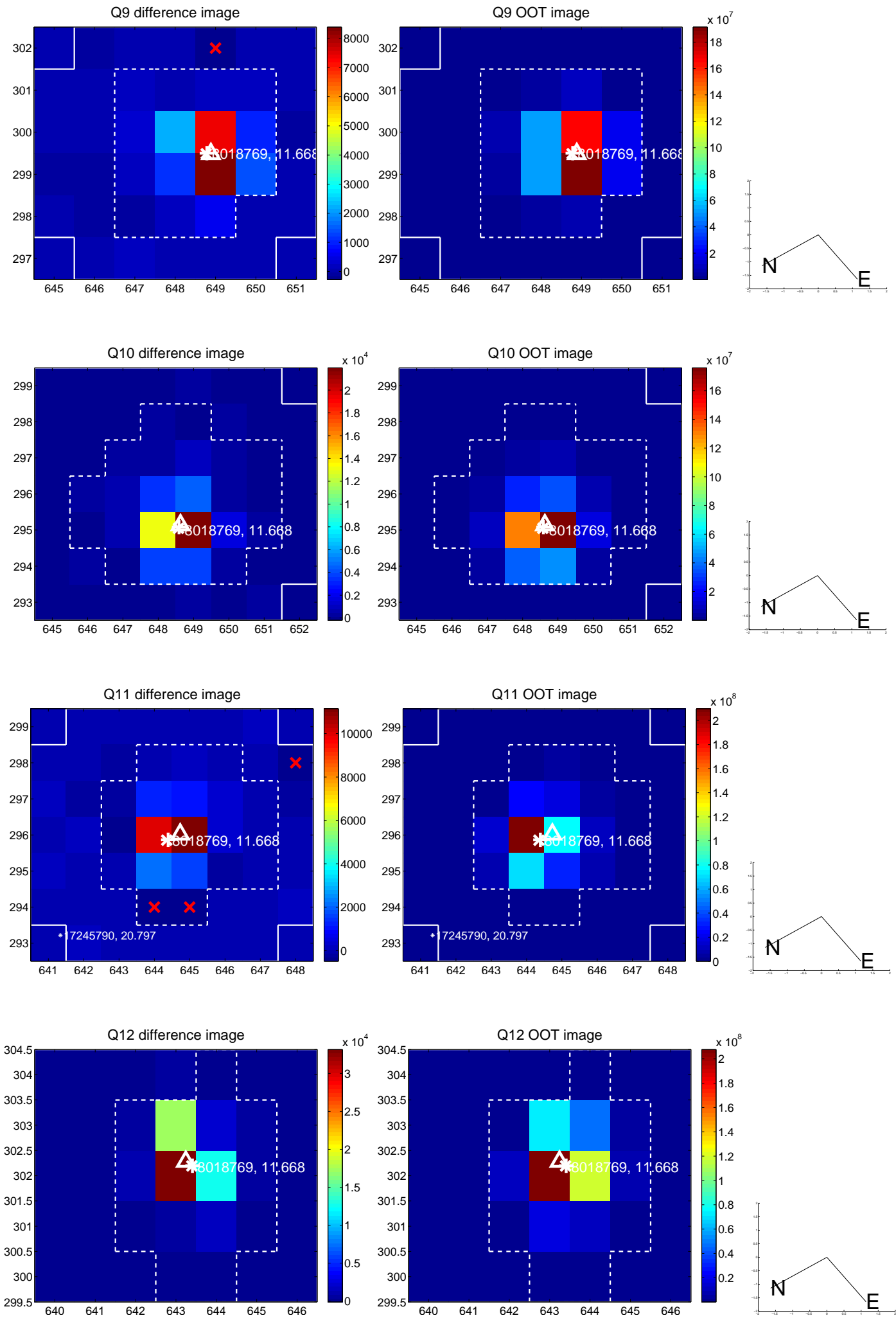
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



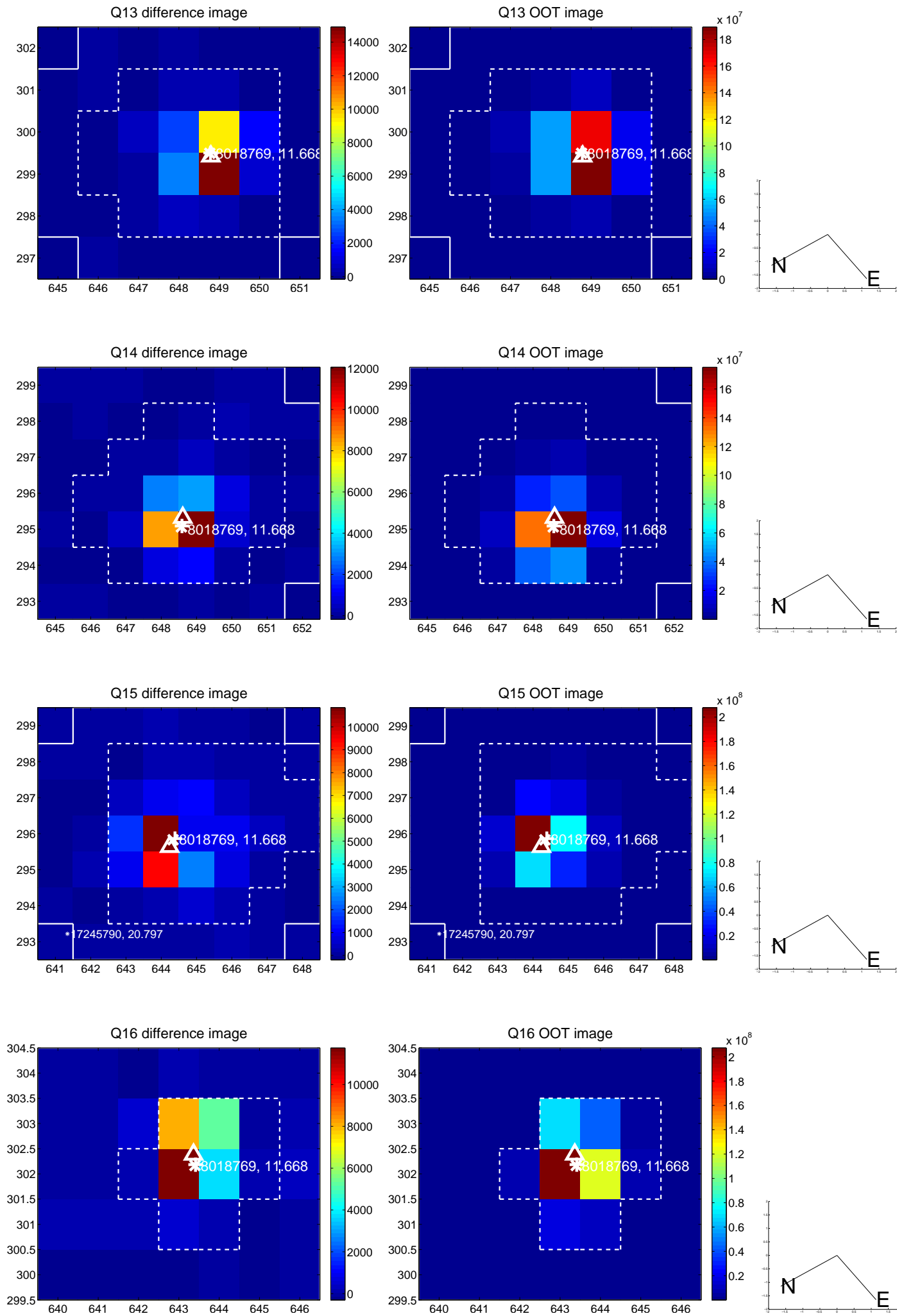
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



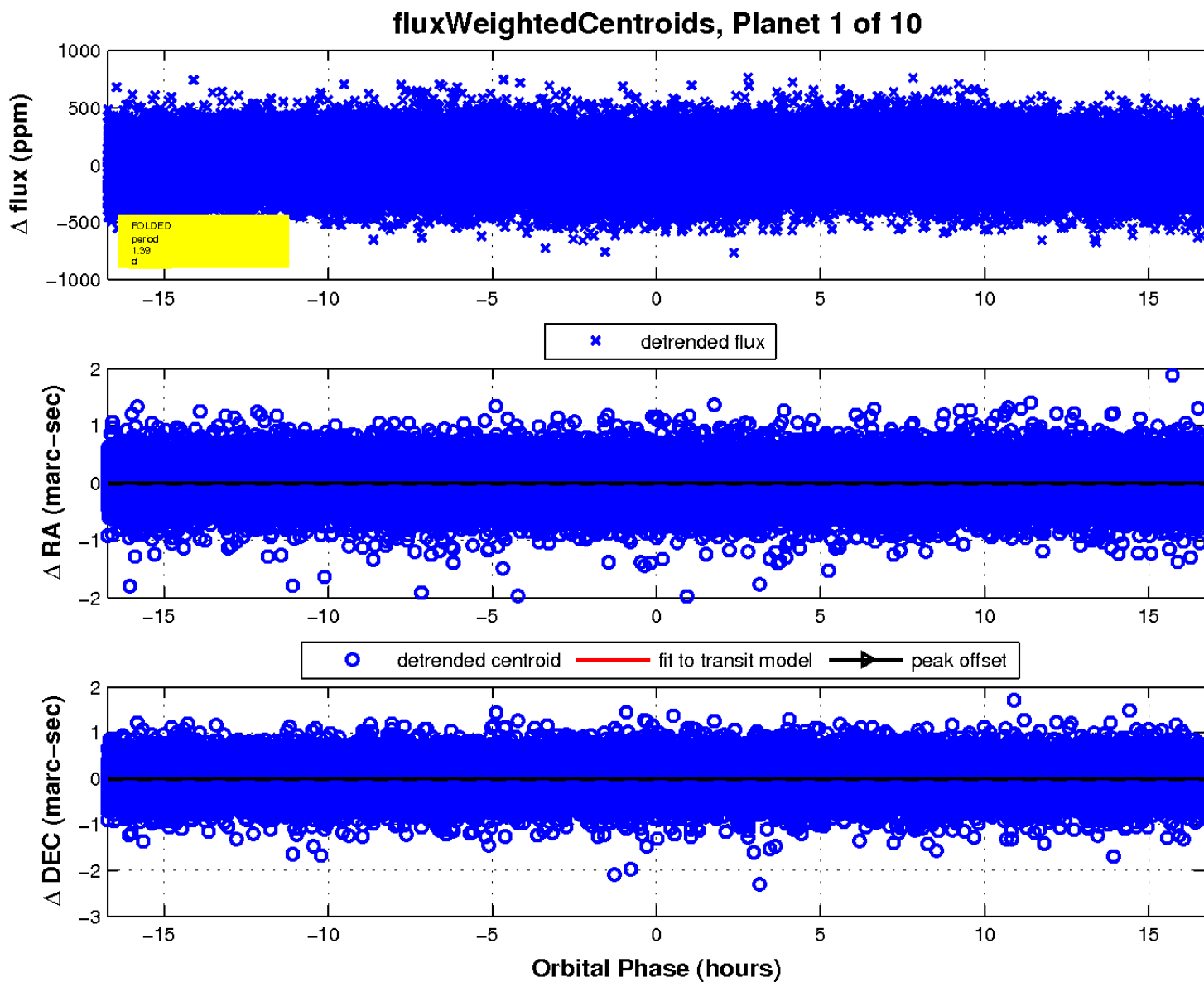
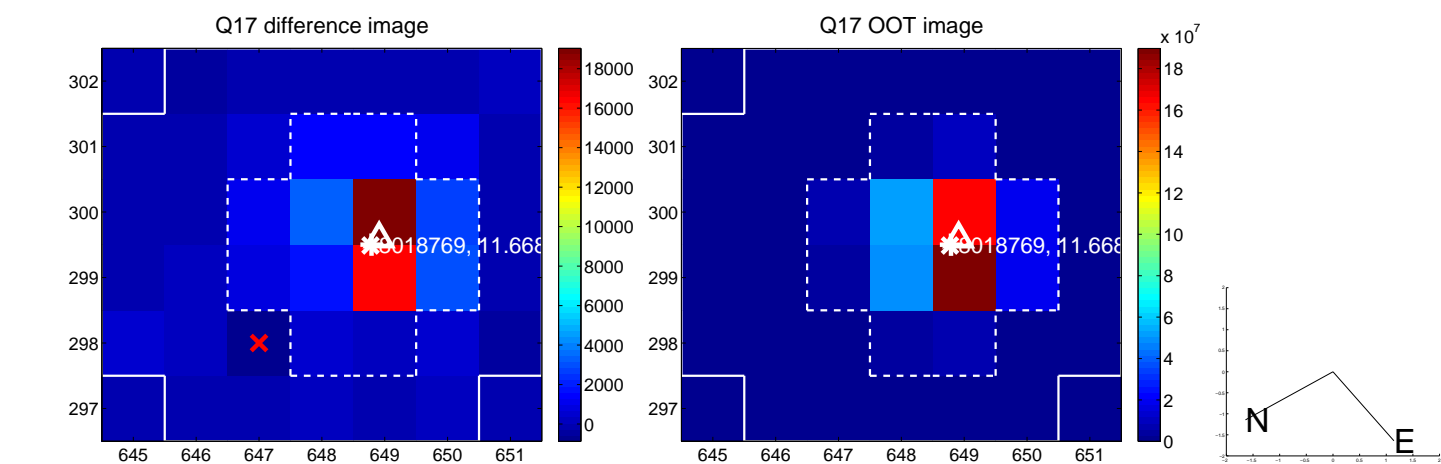
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

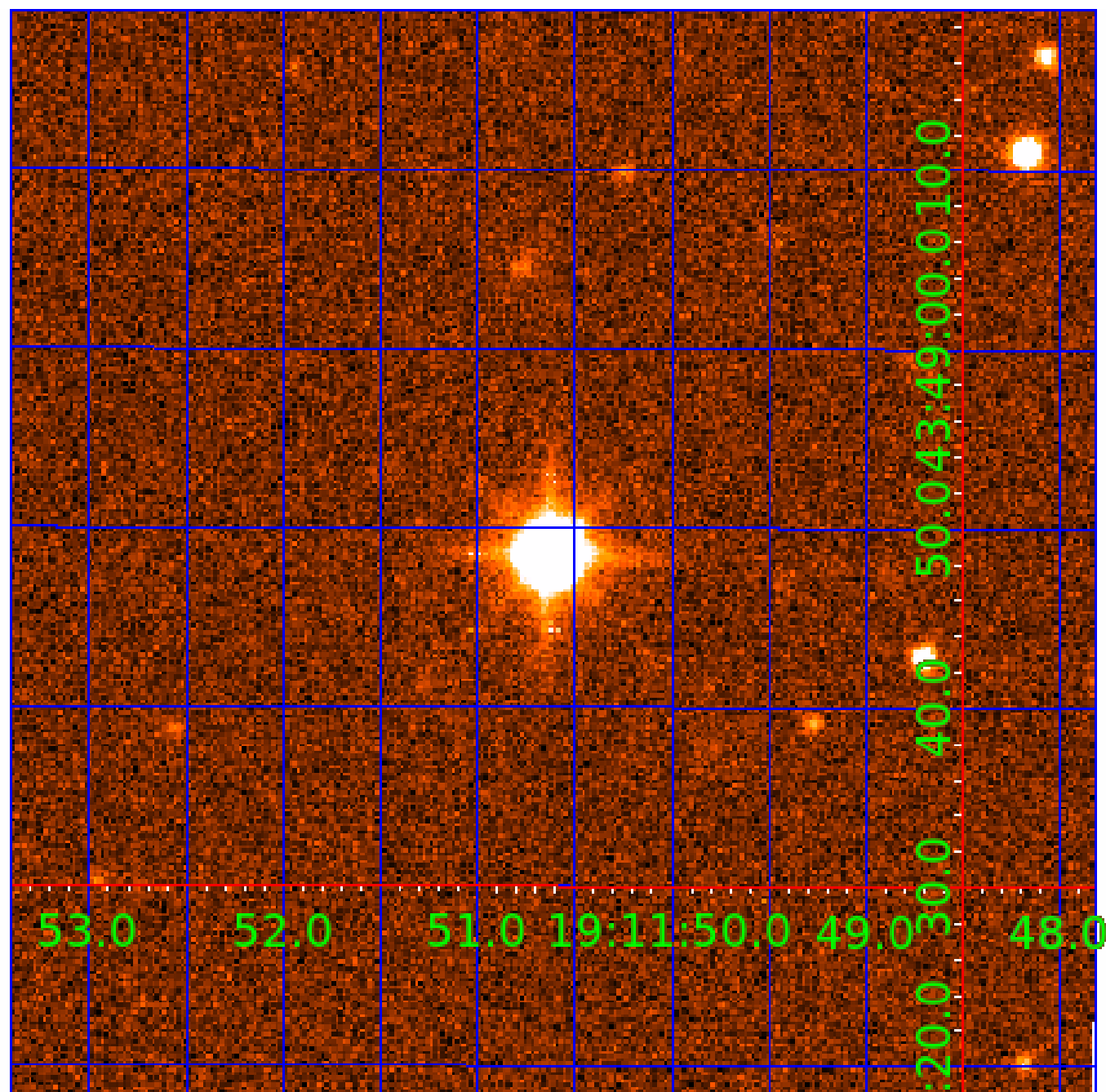


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008018769

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 008018769-01 | OBS | No | 1.393005 | 132.696397 | 26.8 | 7.332 | 9.9 | 9.9 | 4.39 | 6478 | 2.52 | 33196.84 |
| 008018769-02 | OBS | No | 187.688151 | 142.774384 | 246.6 | 18.224 | 10.7 | 8.1 | 4.39 | 6478 | 7.53 | 48.06 |
| 008018769-03 | OBS | No | 21.580518 | 142.903160 | 136.2 | 5.355 | 8.6 | 8.8 | 4.39 | 6478 | 6.01 | 859.58 |
| 008018769-04 | OBS | No | 153.753628 | 227.751237 | 128.8 | 13.438 | 8.6 | 4.6 | 4.39 | 6478 | 5.59 | 62.70 |
| 008018769-05 | OBS | No | 130.796065 | 204.601175 | 331.6 | 2.992 | 8.2 | 8.4 | 4.39 | 6478 | 8.76 | 77.79 |
| 008018769-06 | OBS | No | 126.030555 | 190.511494 | 186.4 | 16.507 | 7.8 | 7.1 | 4.39 | 6478 | 6.72 | 81.73 |
| 008018769-07 | OBS | No | 63.864375 | 176.660218 | 126.1 | 18.797 | 8.0 | 7.6 | 4.39 | 6478 | 5.50 | 202.31 |
| 008018769-09 | OBS | No | 127.543184 | 236.417562 | 163.1 | 13.304 | 7.9 | 6.4 | 4.39 | 6478 | 6.18 | 80.44 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008018769-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 008018769-02 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_UNRESOLVED_OFFSET |
| 008018769-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST |
| 008018769-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008018769-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT |
| 008018769-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS |
| 008018769-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008018769-09 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET |

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

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

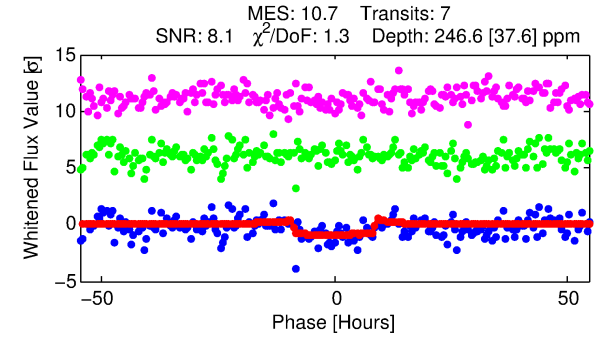
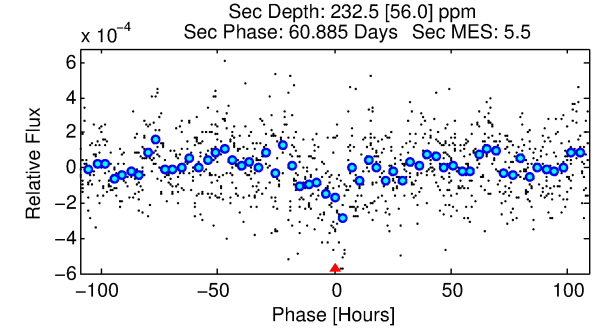
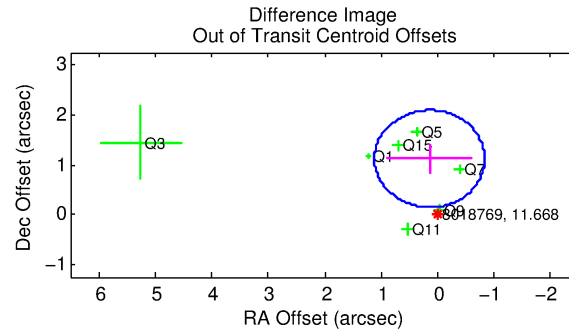
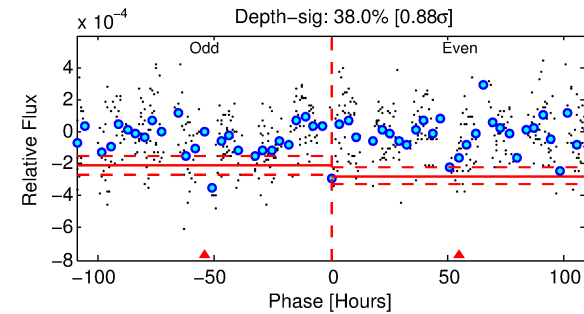
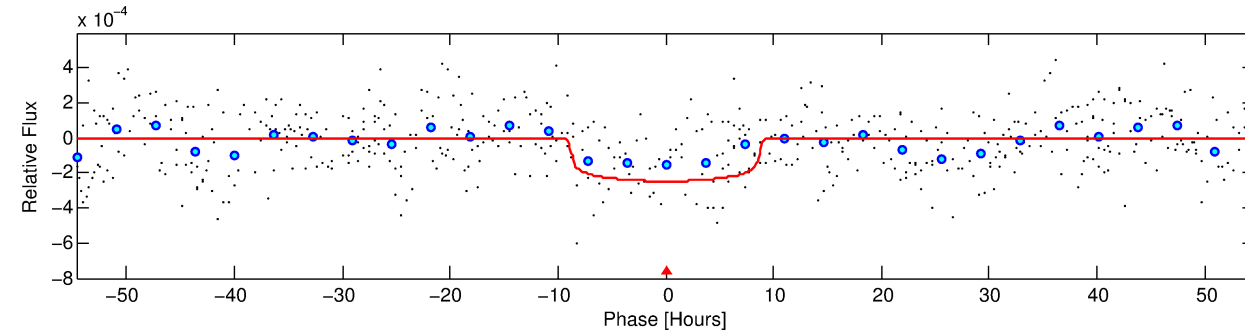
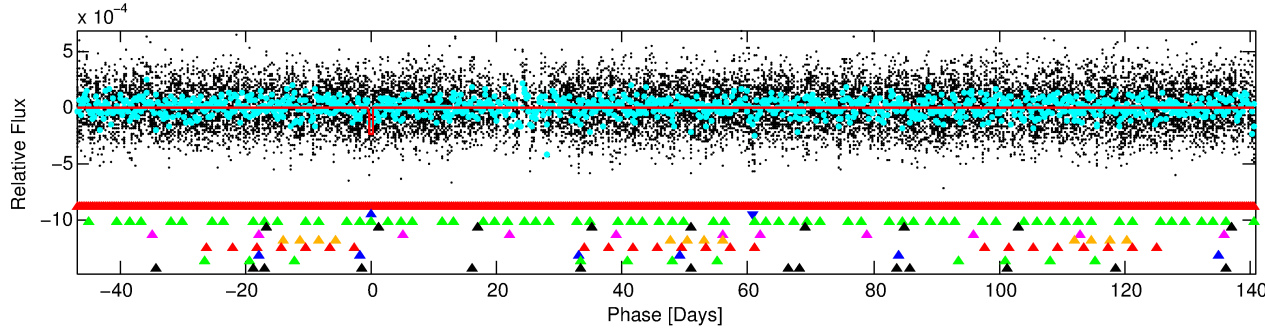
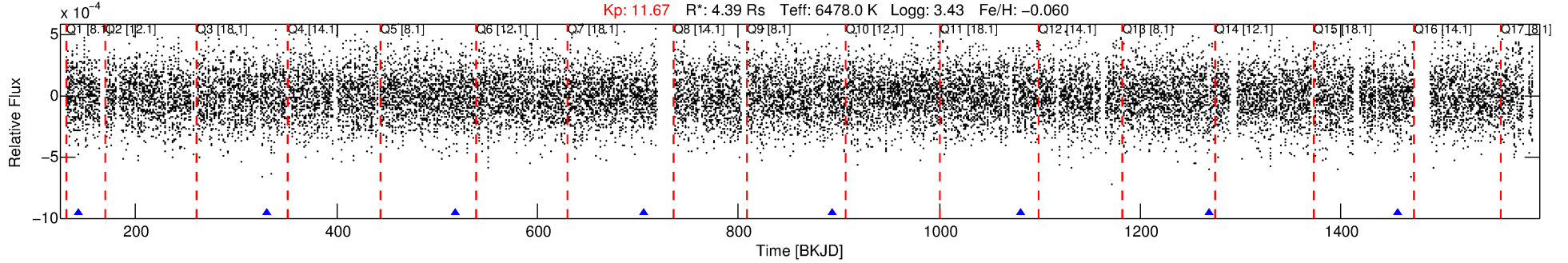
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008018769-02

No Significant Match Found

DV One-Page Summary

KIC: 8018769 Candidate: 2 of 10 Period: 187.688 d



DV Fit Results:

Period = 187.68815 [0.00438] d
Epoch = 142.7744 [0.0209] BKJD
 R_p/R^* = 0.0157 [0.0037]
 a/R^* = 52.07 [63.96]
 b = 0.77 [0.65]
 S_{eff} = 48.06 [29.68]
 T_{eq} = 671 [104] K
 R_p = 7.53 [3.37] R_e
 a = 0.7956 [0.2979] AU
 A_g = 1426.58 [1153.20] [1.24 σ]
 T_{eff} = 6380 [868] K [6.53 σ]

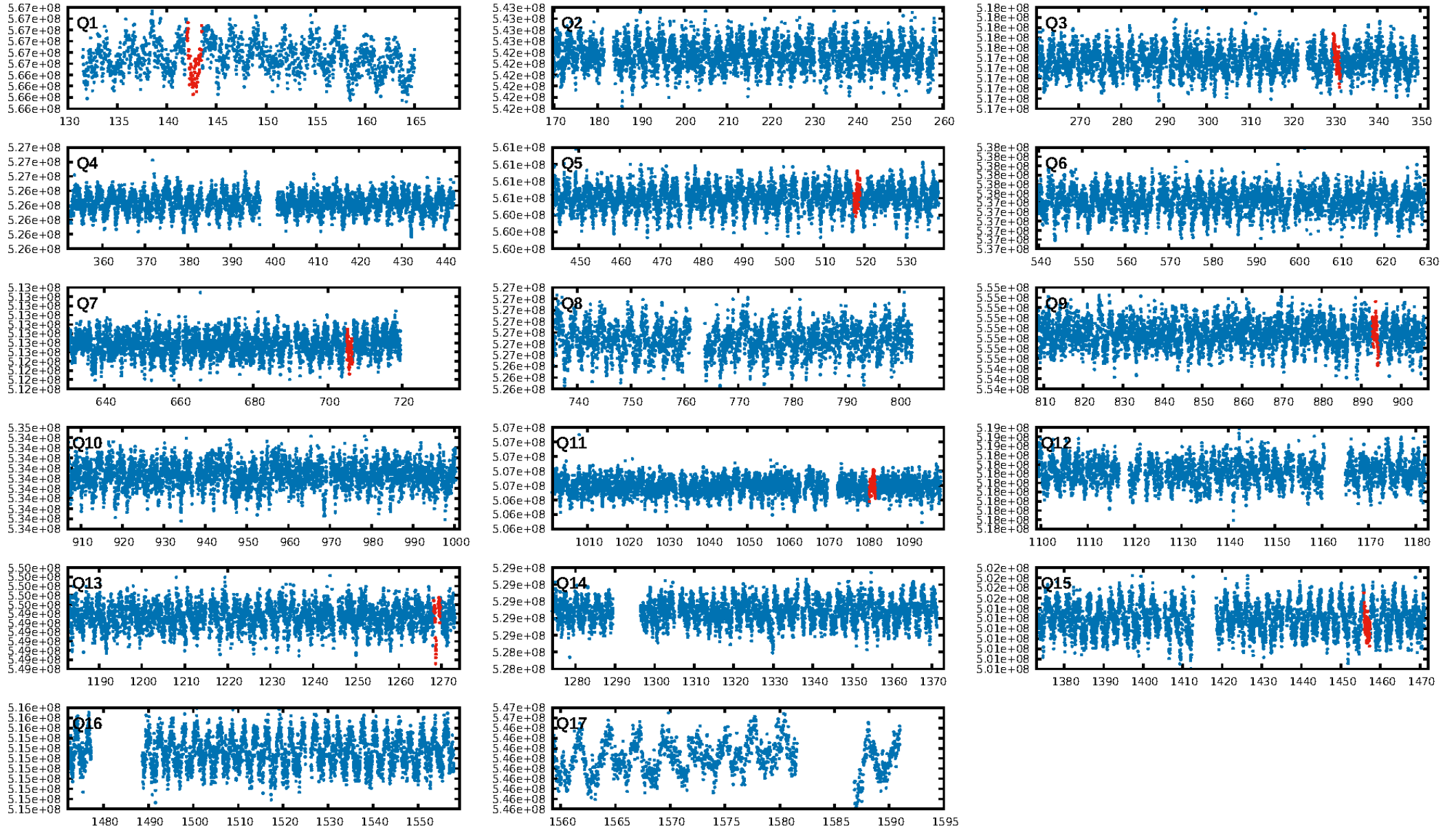
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [35.97 σ]
LongPeriod-sig: 100.0% [59.93 σ]
ModelChiSquare2-sig: 0.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.9001
Centroid-sig: 4.3%
Centroid-so: 0.277 arcsec [1.04 σ]
OotOffset-rm: 1.127 arcsec [3.47 σ]
KicOffset-rm: 1.107 arcsec [2.64 σ]
OotOffset-st: 0/4/0/3 [7]
KicOffset-st: 0/4/0/3 [7]
DiffImageQuality-fgm: 0.43 [3/7]
DiffImageOverlap-fno: 0.00 [0/7]

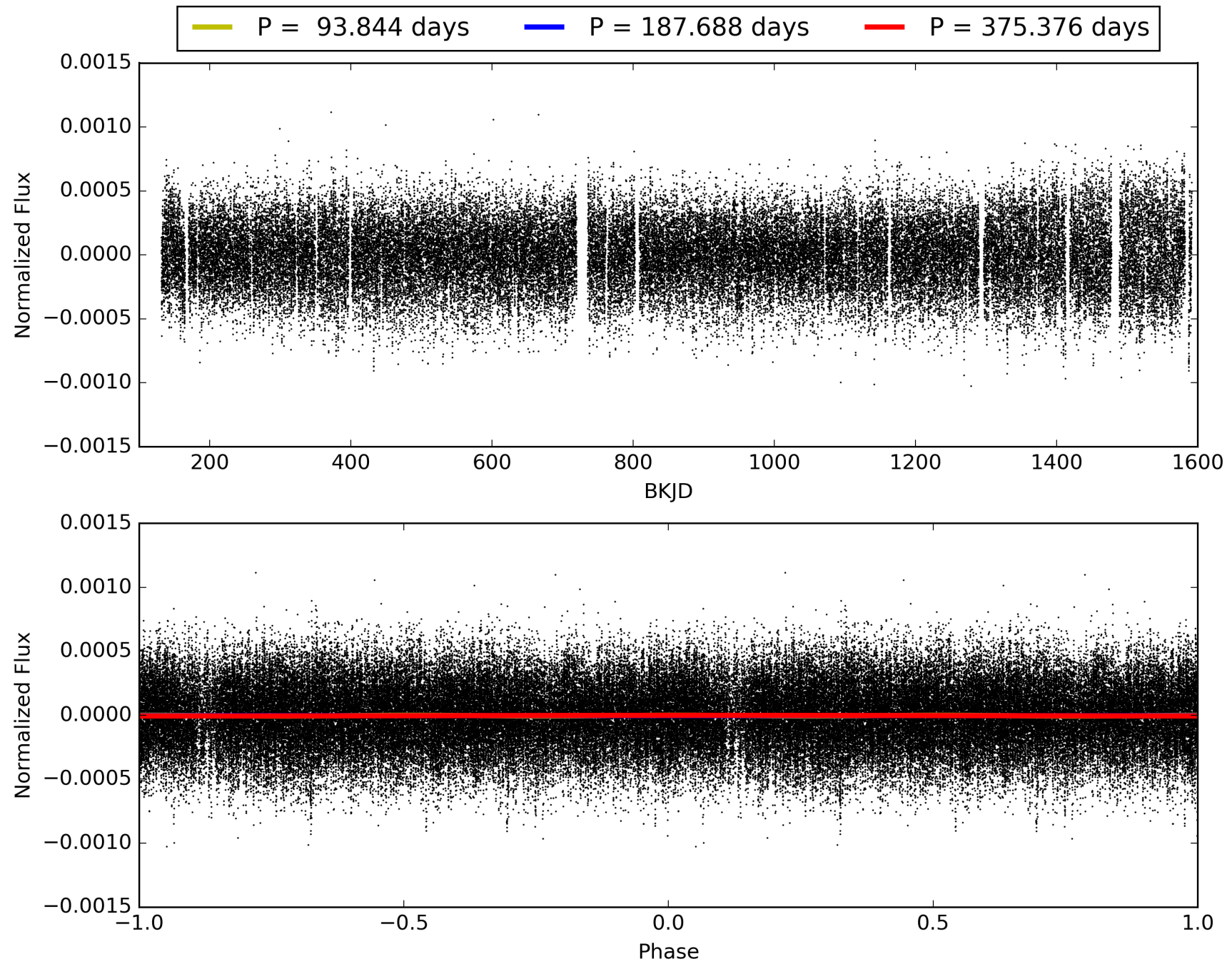
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 04:18:19 Z

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

TCE 008018769-02, PDC Light Curves

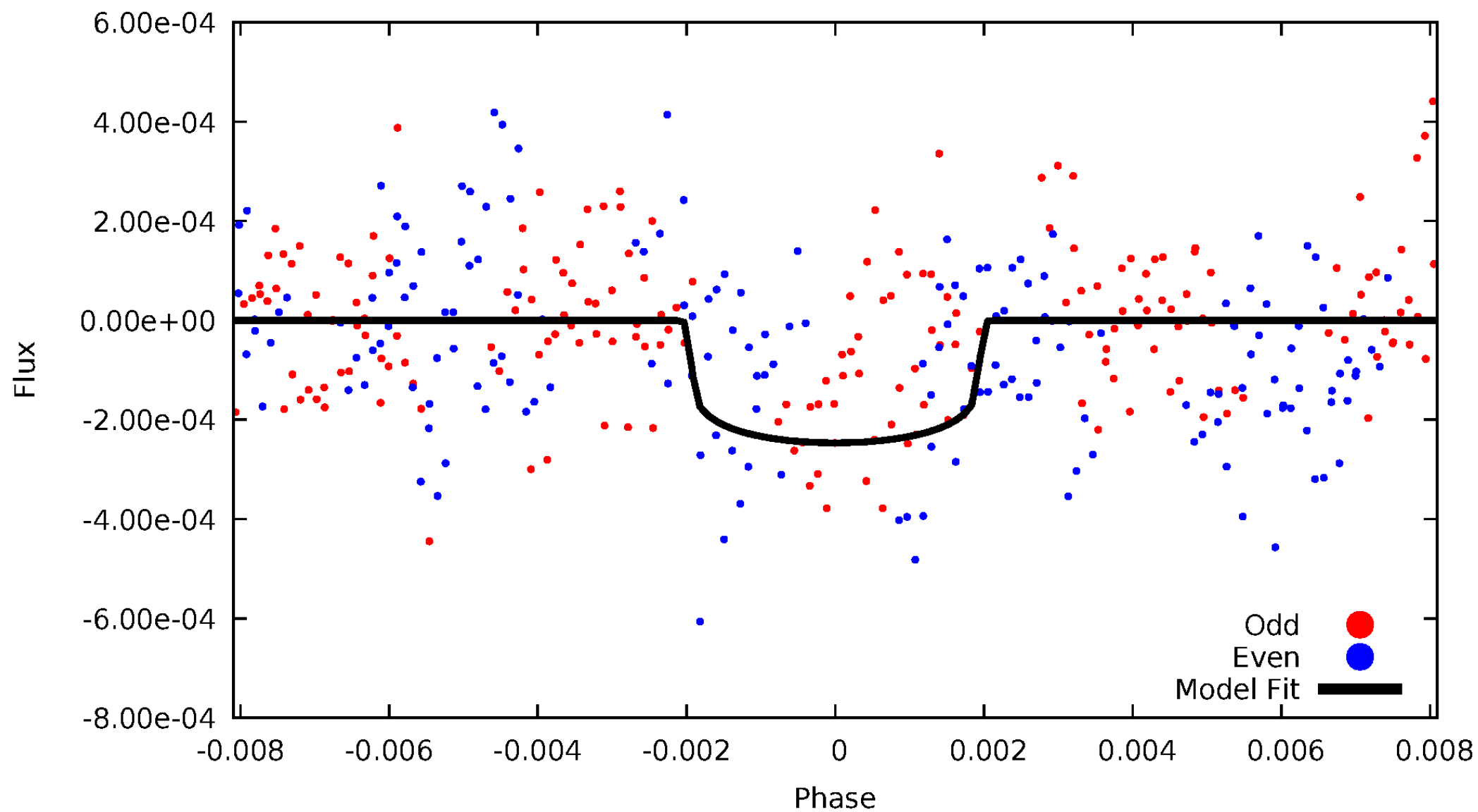


TCE 008018769-02



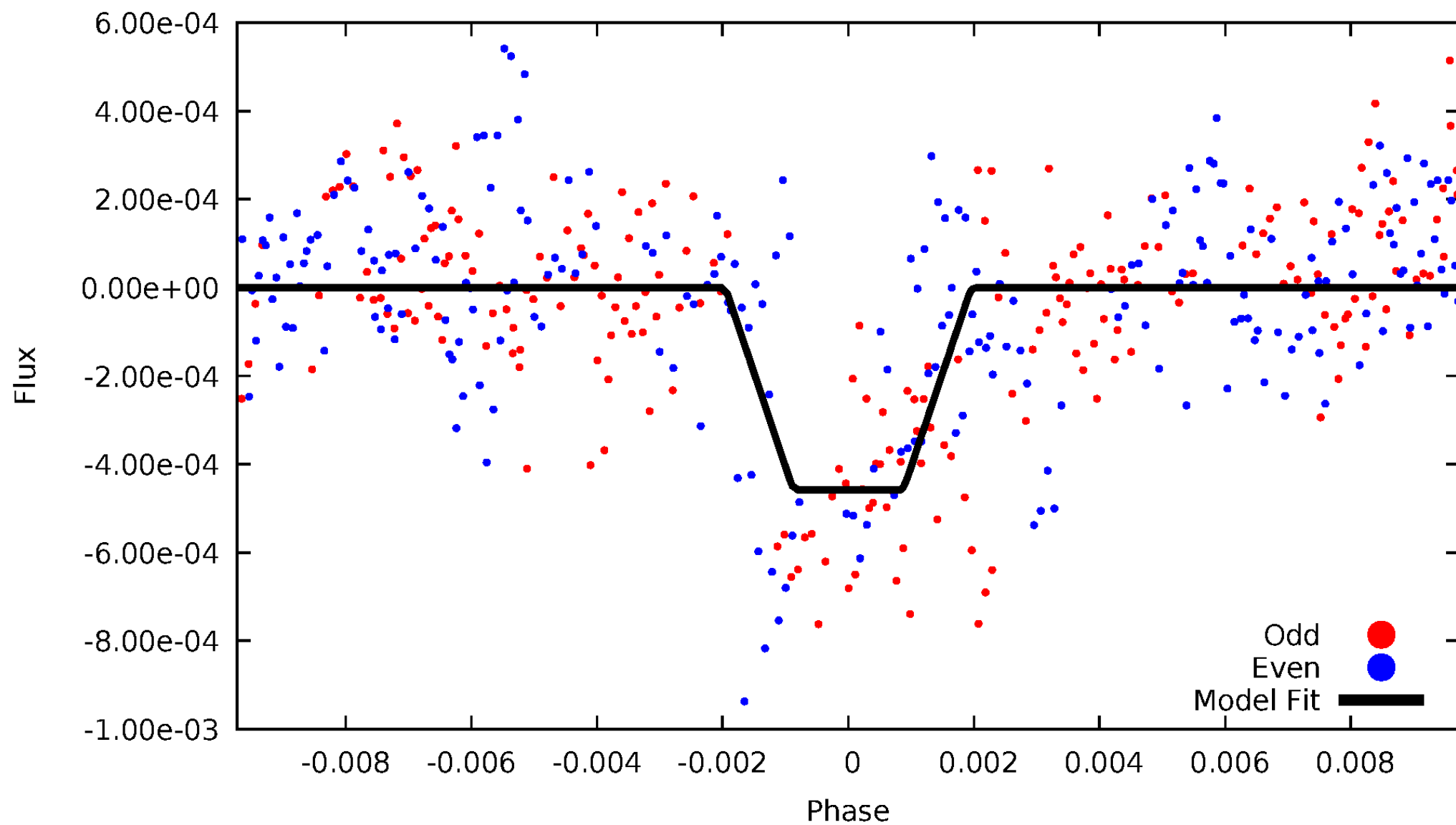
DV Odd/Even

TCE 008018769-02



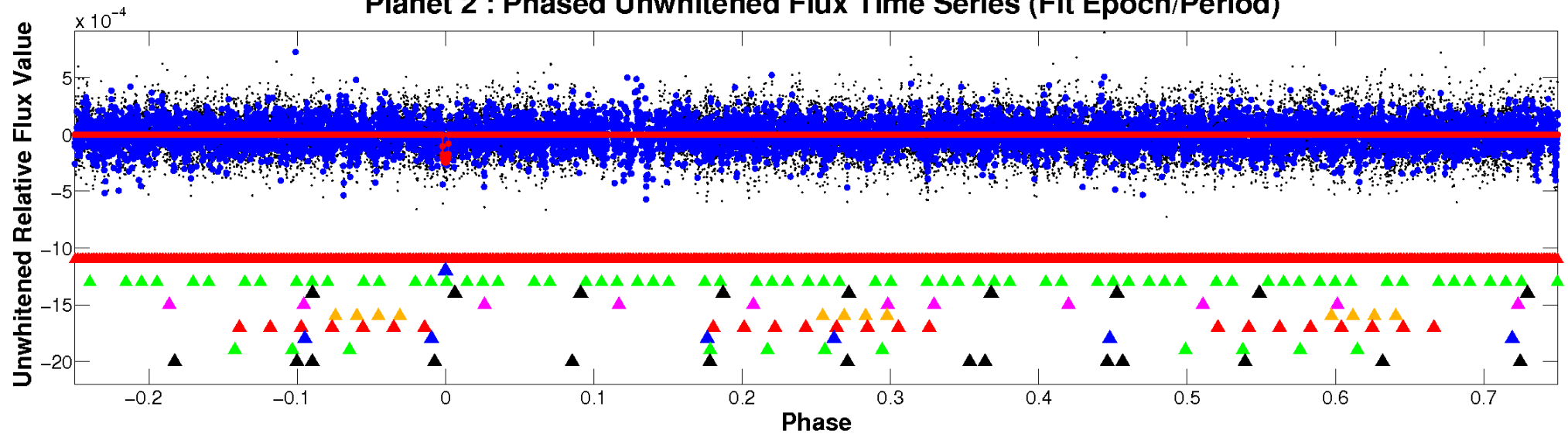
ALT Odd/Even

TCE 008018769-02

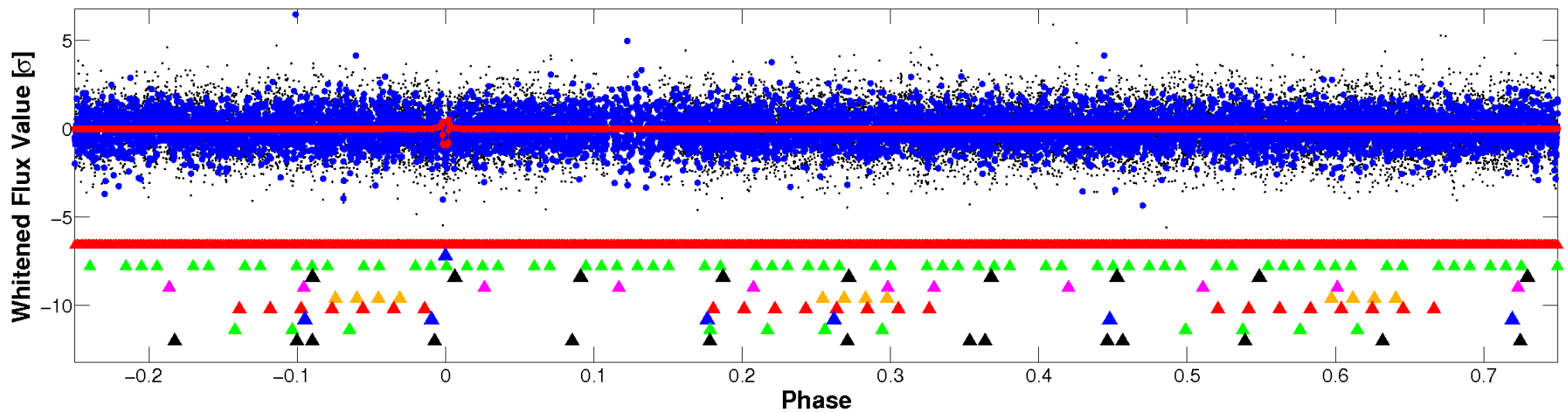


Non-Whitened Vs. Whitened Light Curve

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

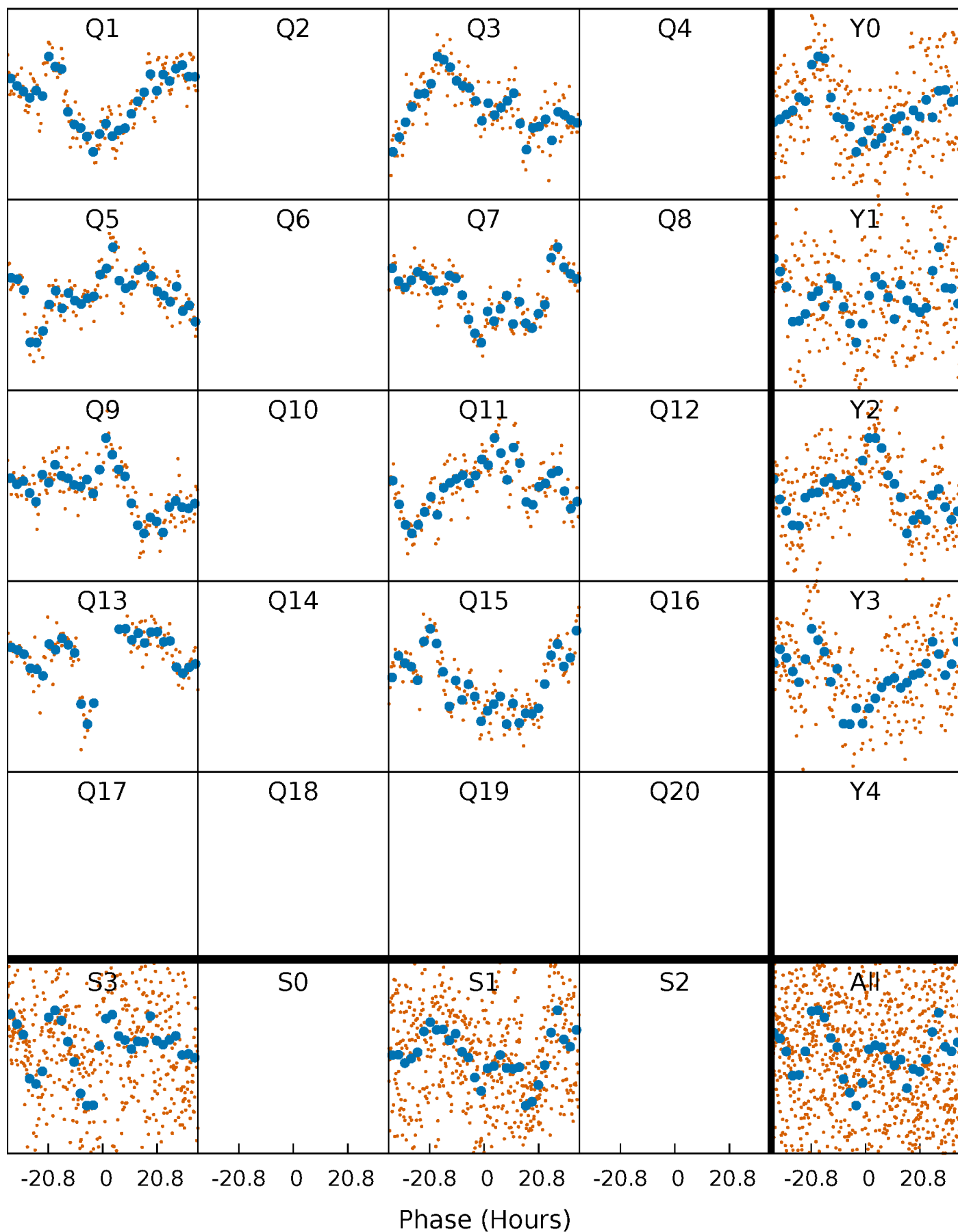


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



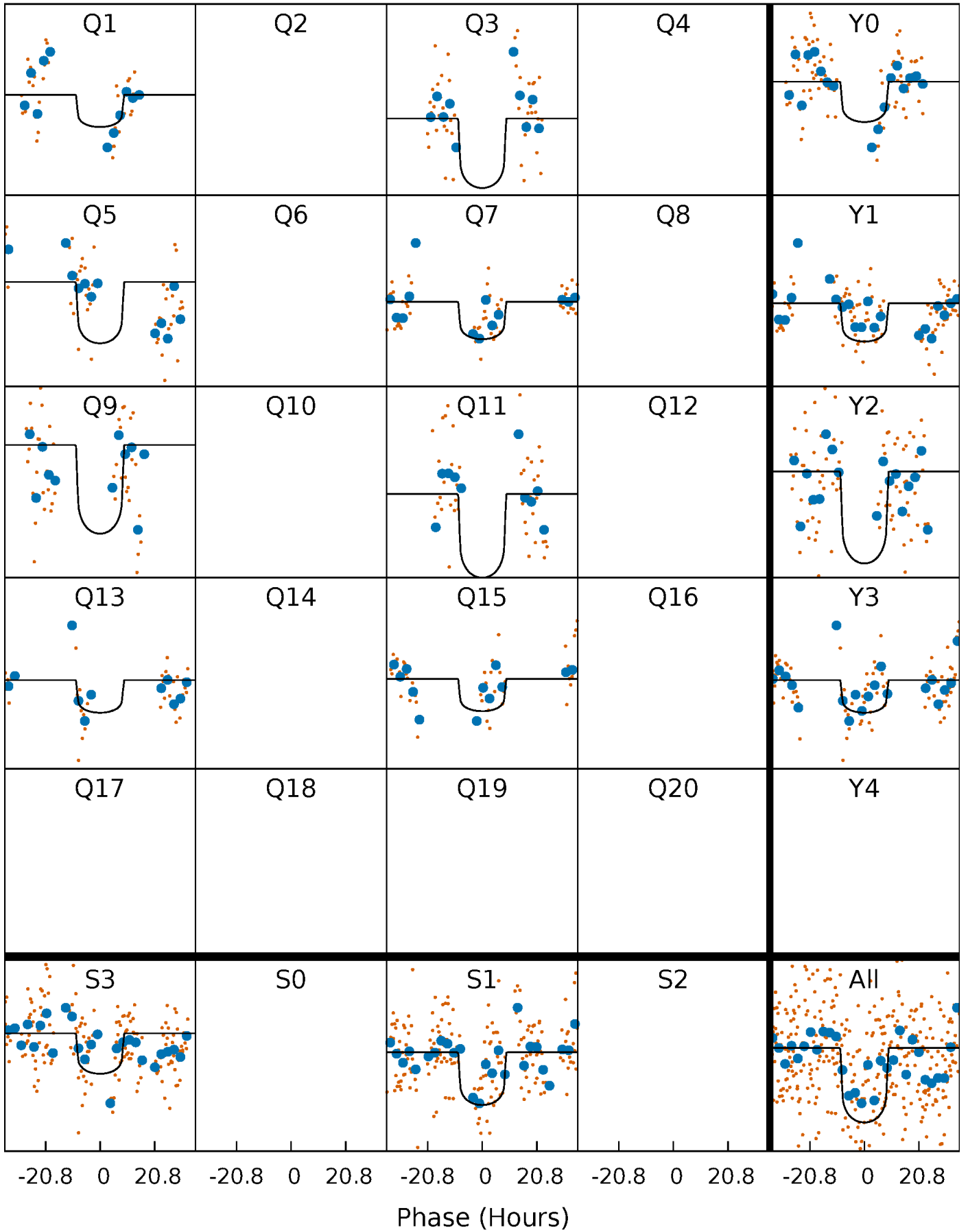
PDC Quarter-Phased Transit Curves

TCE 008018769-02 P=187.688151 Days $T_0=142.774384$ (BKJD)



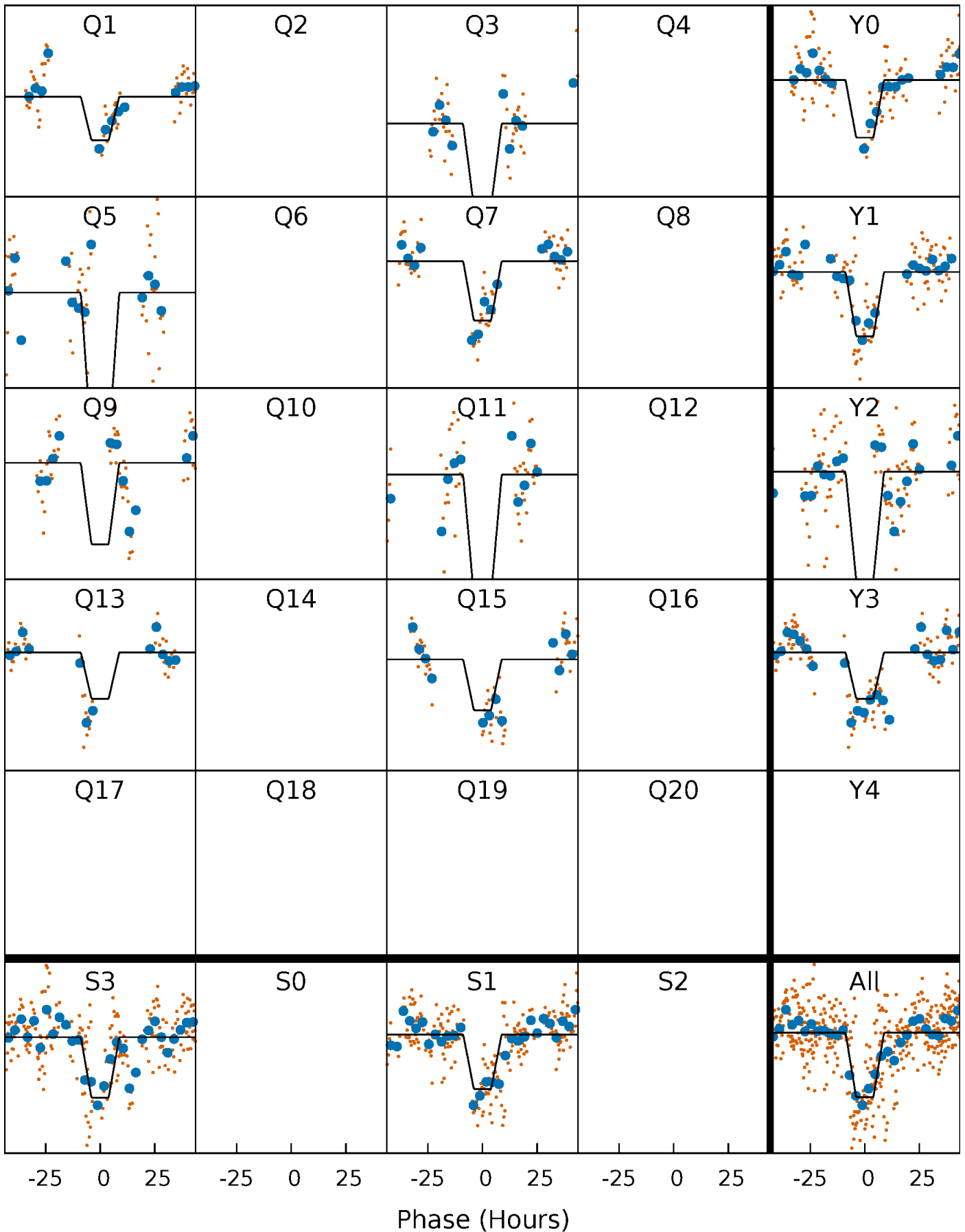
DV Quarter-Phased Transit Curves

TCE 008018769-02 $P=187.688151$ Days $T_0=142.774384$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

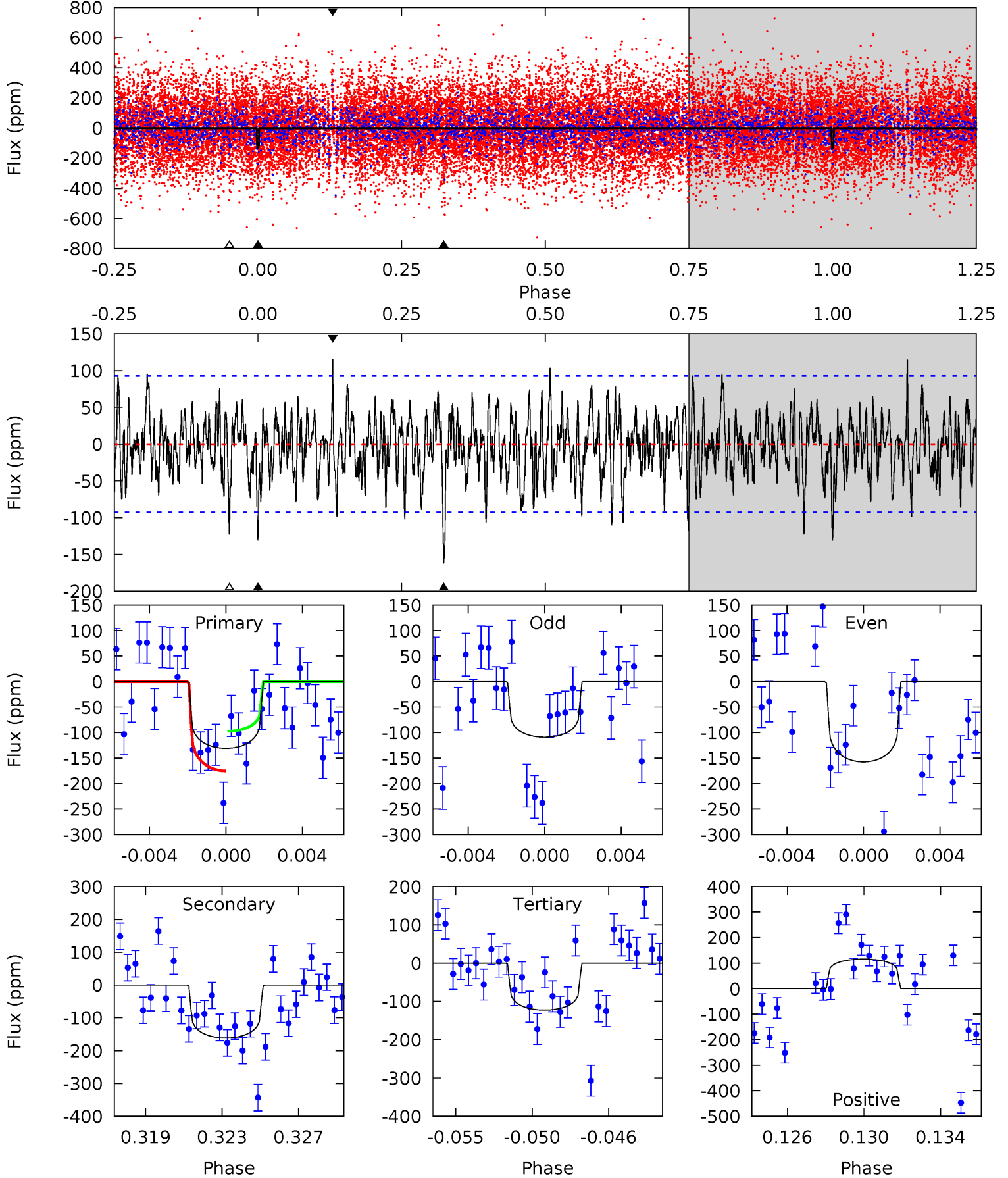
TCE 008018769-02 P=187.655004 Days $T_0=142.941299$ (BKJD)



DV Model-Shift Uniqueness Test

008018769-02, P = 187.688151 Days, E = 142.774384 Days

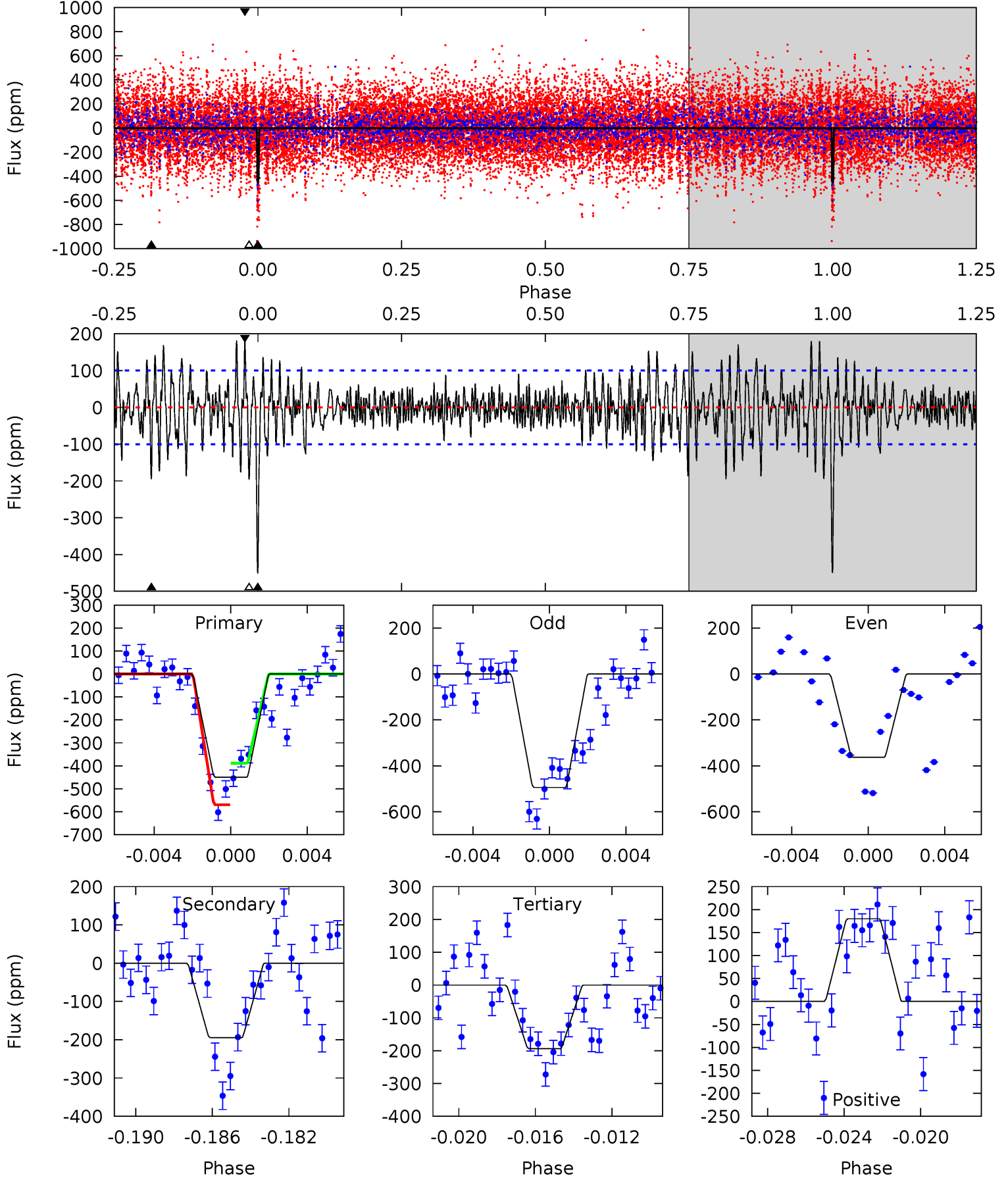
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.32 | 9.04 | 6.86 | 6.49 | 5.19 | 2.86 | 2.07 | 0.46 | 0.83 | 2.17 | 2.54 | 1.37 | 1.27 | 0.42 | 2.15 |



Alt Model-Shift Uniqueness Test

008018769-02, P = 187.655004 Days, E = 142.941299 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 23.3 | 10.1 | 10.1 | 9.33 | 5.20 | 2.88 | 2.70 | 13.3 | 14.0 | 0.04 | 0.76 | 3.42 | 0.78 | 0.29 | 4.41 |



Stellar Parameters For KIC 008018769

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6478^{+146}_{-179} | $3.433^{+0.360}_{-0.090}$ | $-0.060^{+0.300}_{-0.250}$ | $4.391^{+0.594}_{-1.664}$ | $1.908^{+0.094}_{-0.375}$ | $0.032^{+0.087}_{-0.009}$ |
| | +2%/-3% | +10%/-3% | +500%/-417% | +14%/-38% | +5%/-20% | +275%/-28% |
| Source | PHO1 | FLK73 | KIC0 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 008018769-02 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|-------------------|----------------------|-----------------------|
| DV | -161 ± 18 | $7.06^{+2.15}_{-2.14}$ | 920^{+54}_{-88} | 5767^{+879}_{-576} | 1075^{+1159}_{-421} |
| Alt. | -195 ± 19 | $9.36^{+2.50}_{-2.25}$ | 921^{+49}_{-89} | 5267^{+564}_{-364} | 756^{+548}_{-271} |

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 $A_{obs} \gg 1.0$

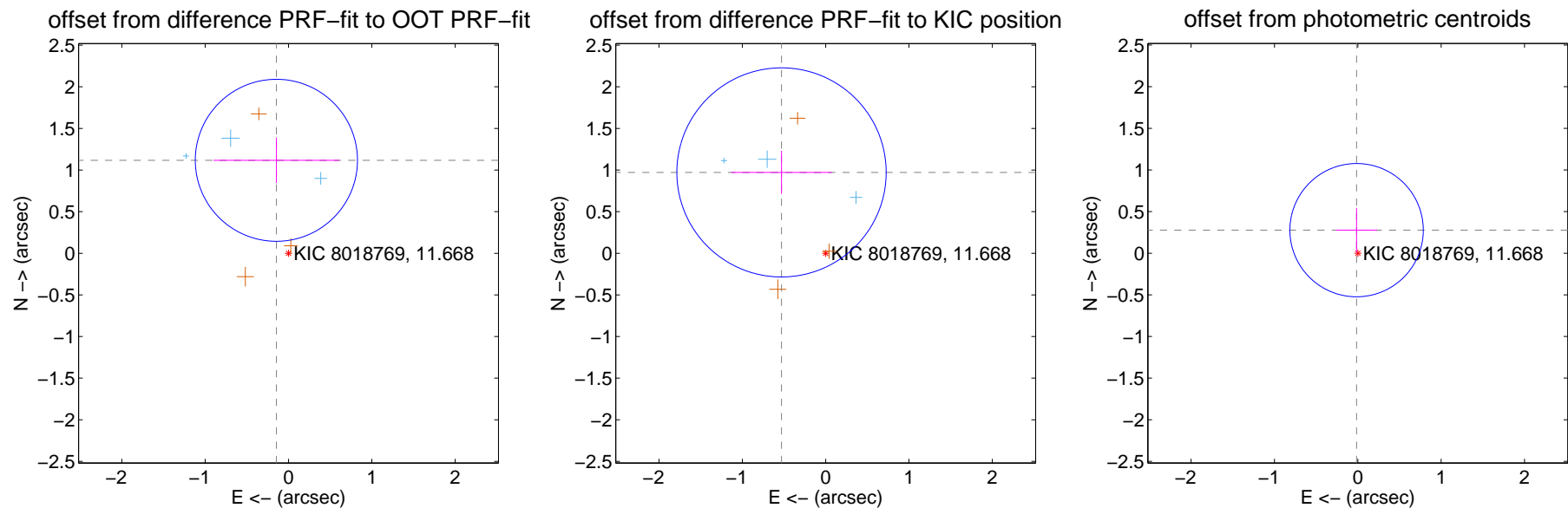
DV Centroid Data

Supplemental centroid analysis for 008018769-02. **Kepler magnitude: 11.67.** Transit SNR 8.10

There are 3 quarters with good PRF difference image offsets

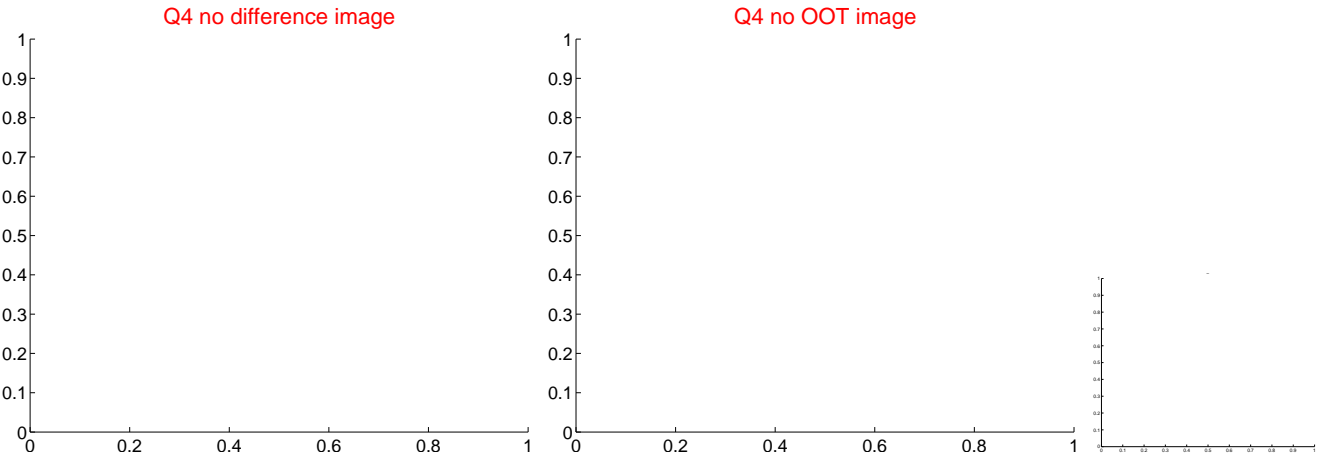
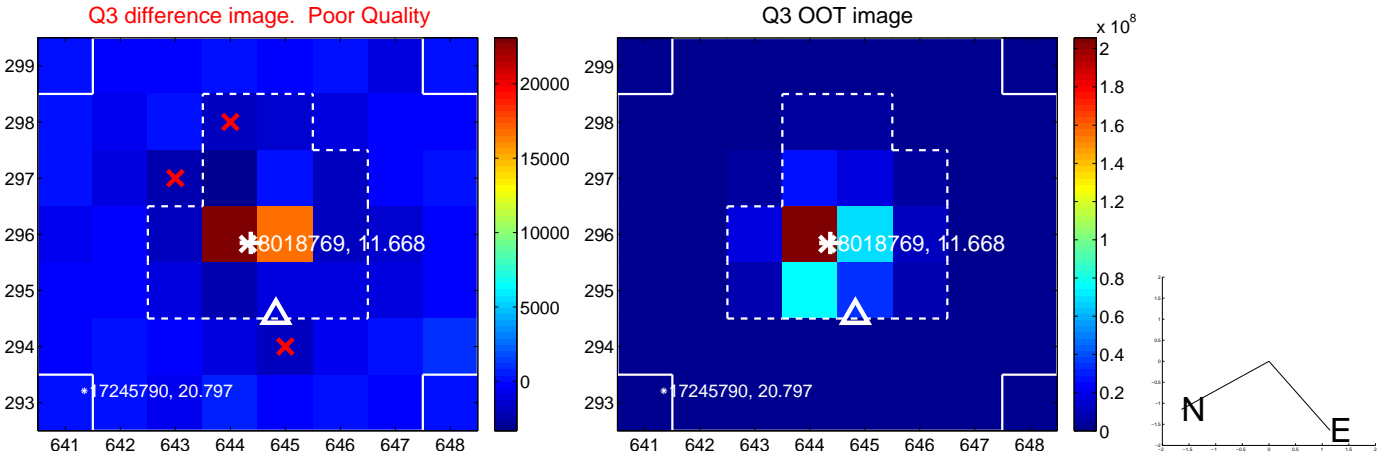
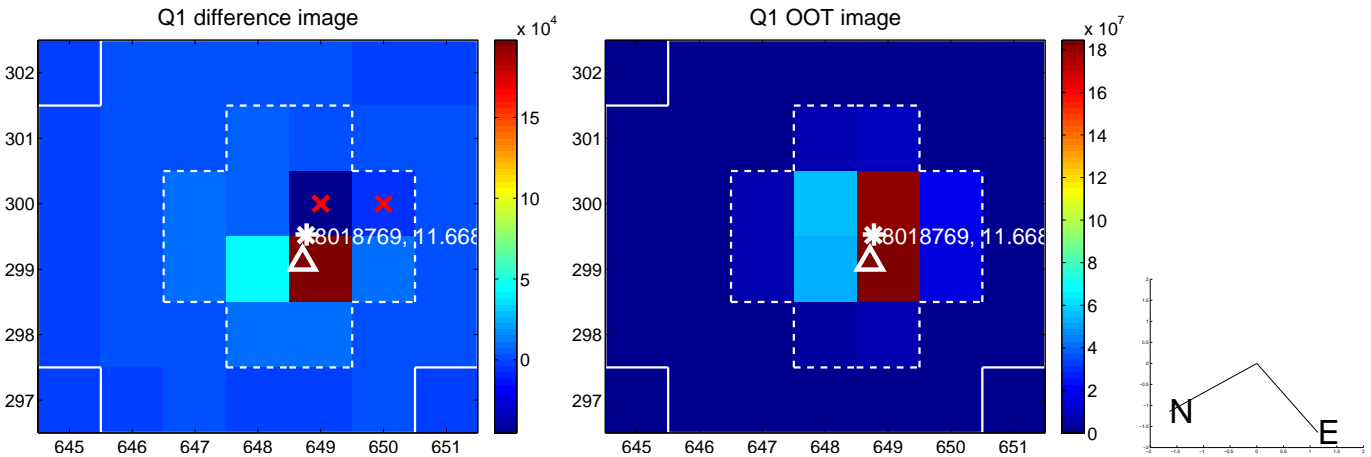
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 1.127 ± 0.324 | 3.47 | 0.145 ± 0.756 | 1.117 ± 0.273 |
| PRF-fit source offset from KIC position | 1.107 ± 0.419 | 2.64 | 0.530 ± 0.603 | 0.972 ± 0.259 |
| photometric centroid source offset | 0.28 ± 0.27 | 1.04 | 0.01 ± 0.25 | 0.28 ± 0.27 |

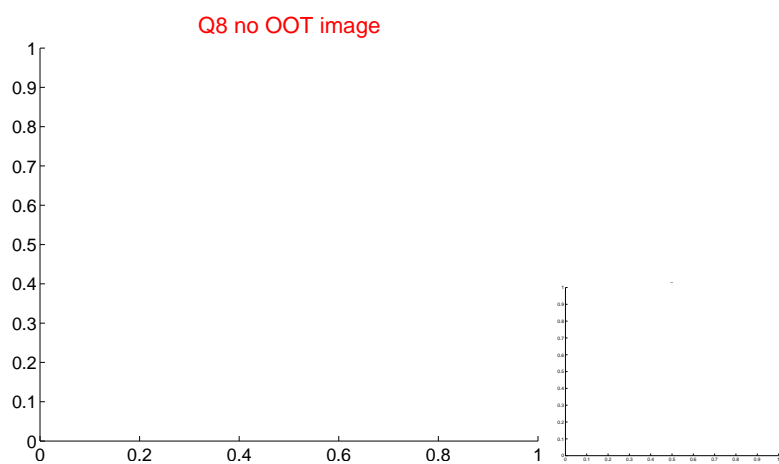
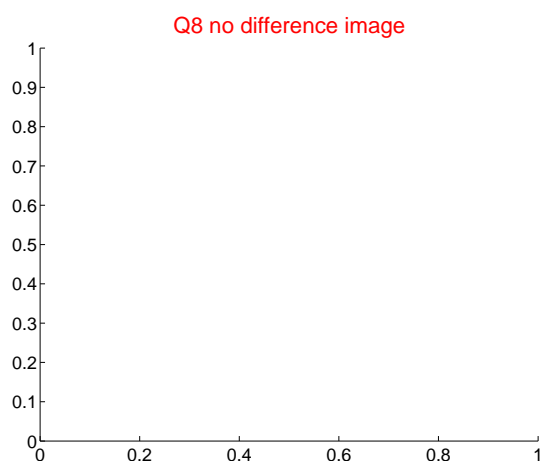
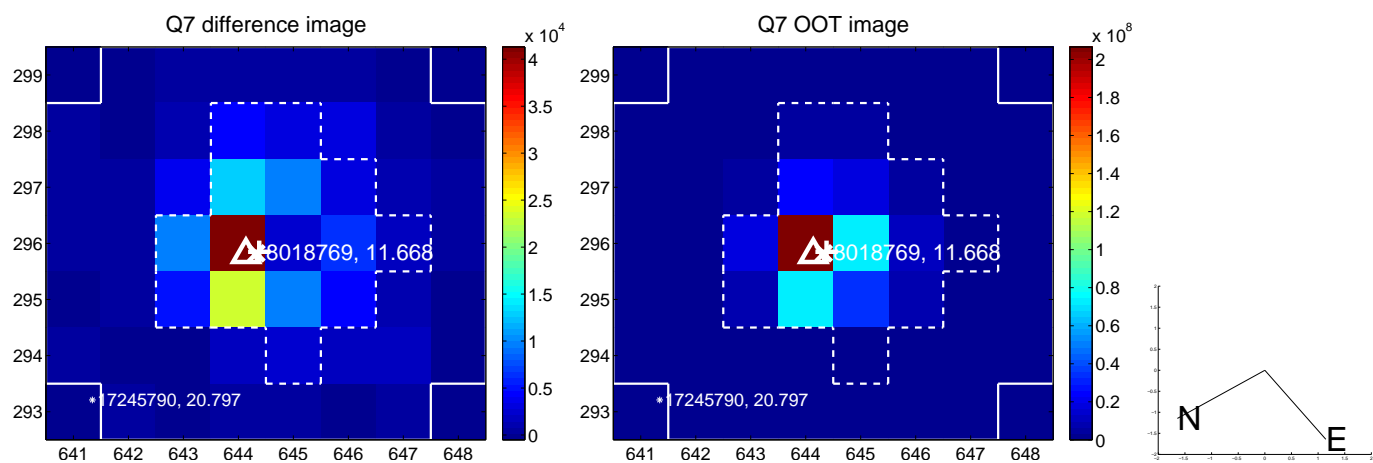
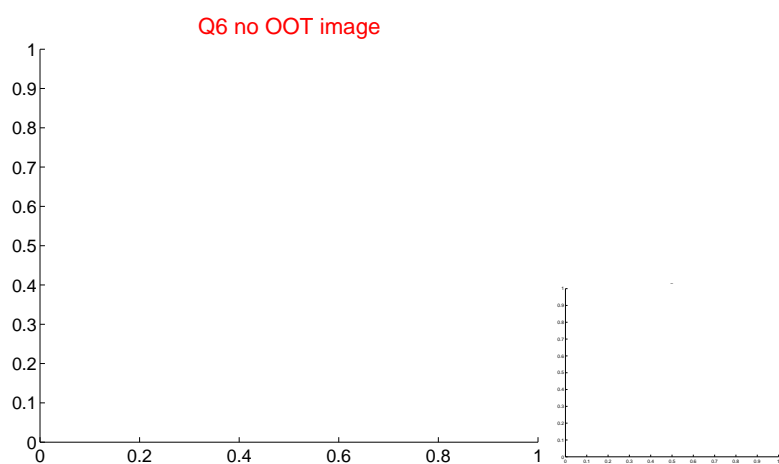
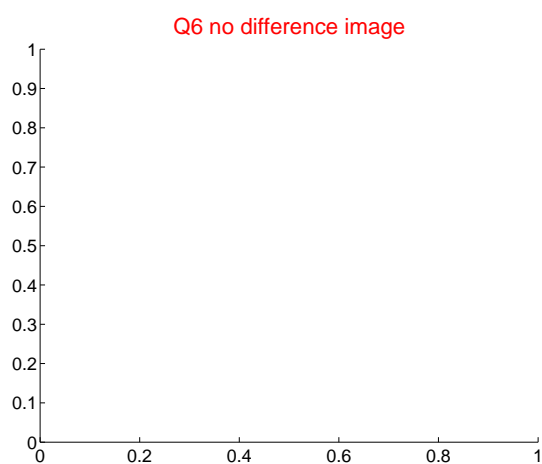
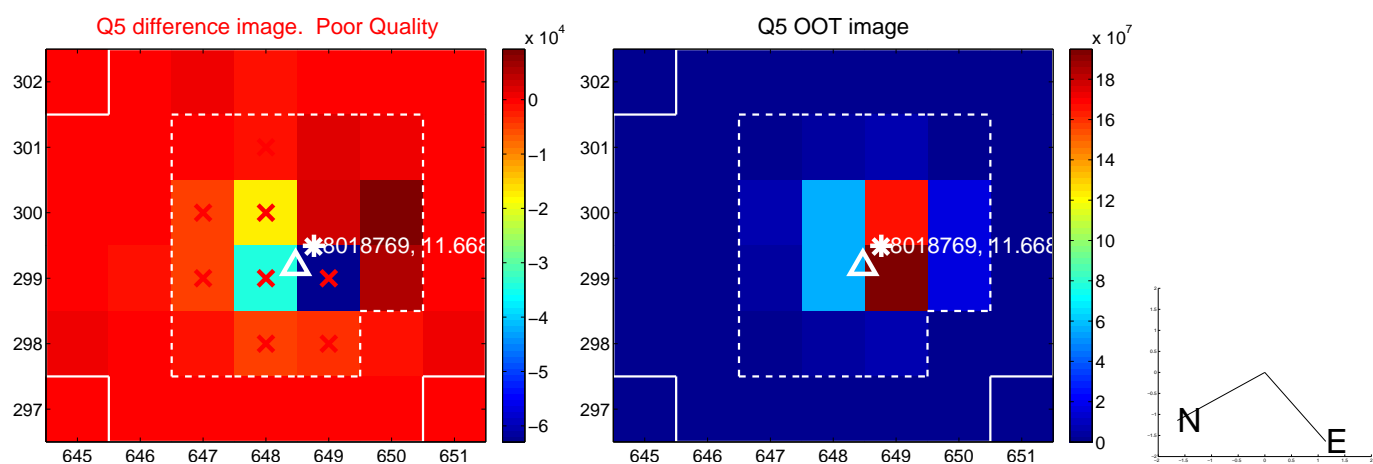


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

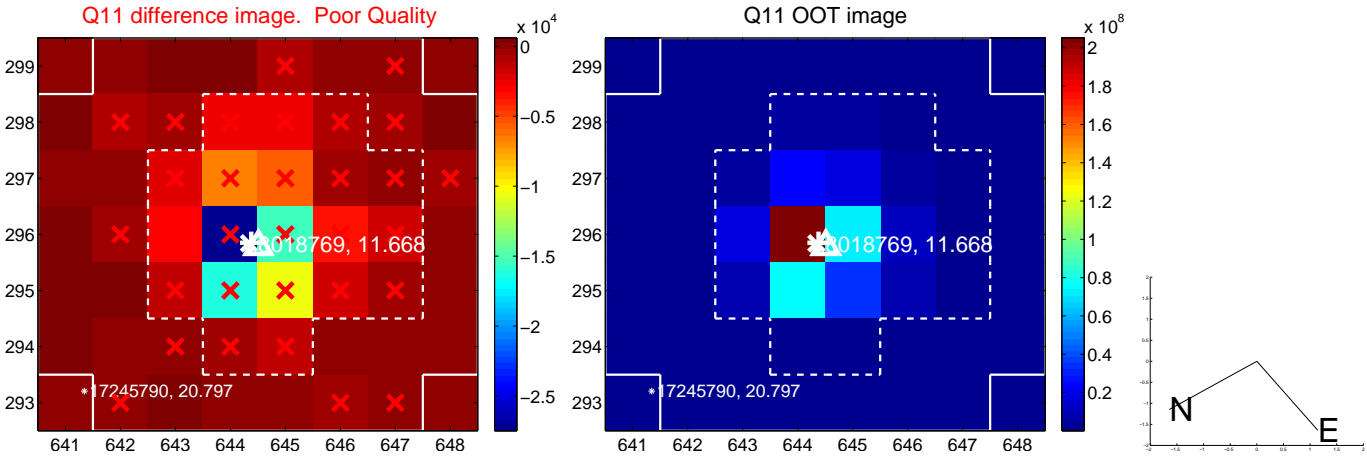
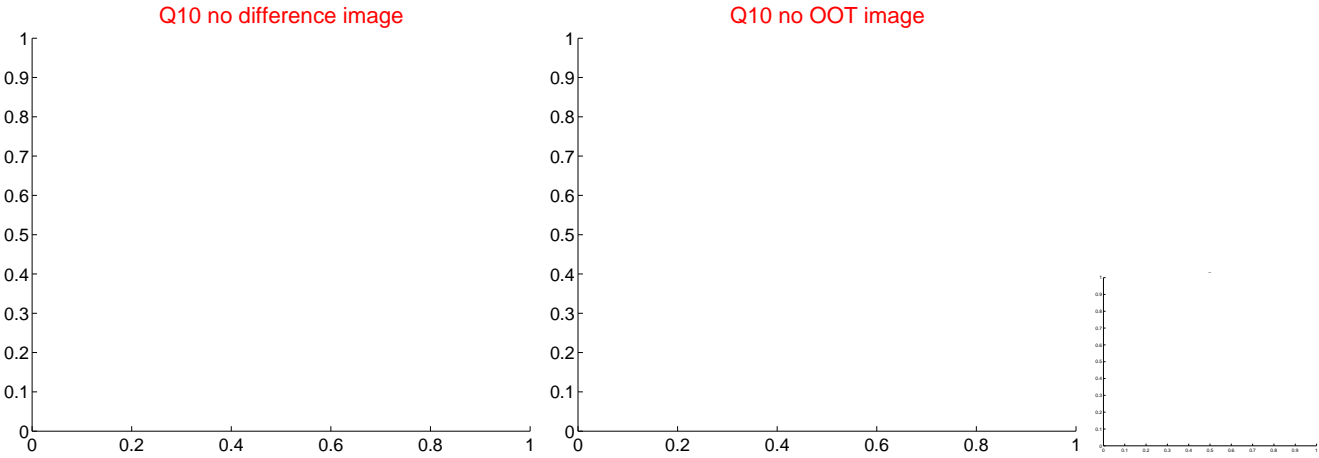
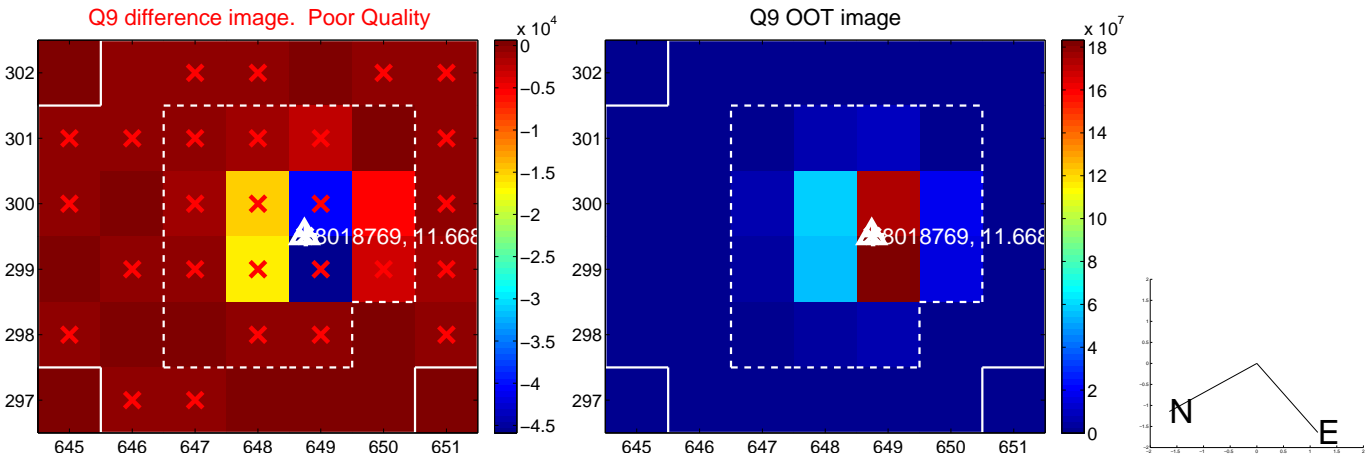
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



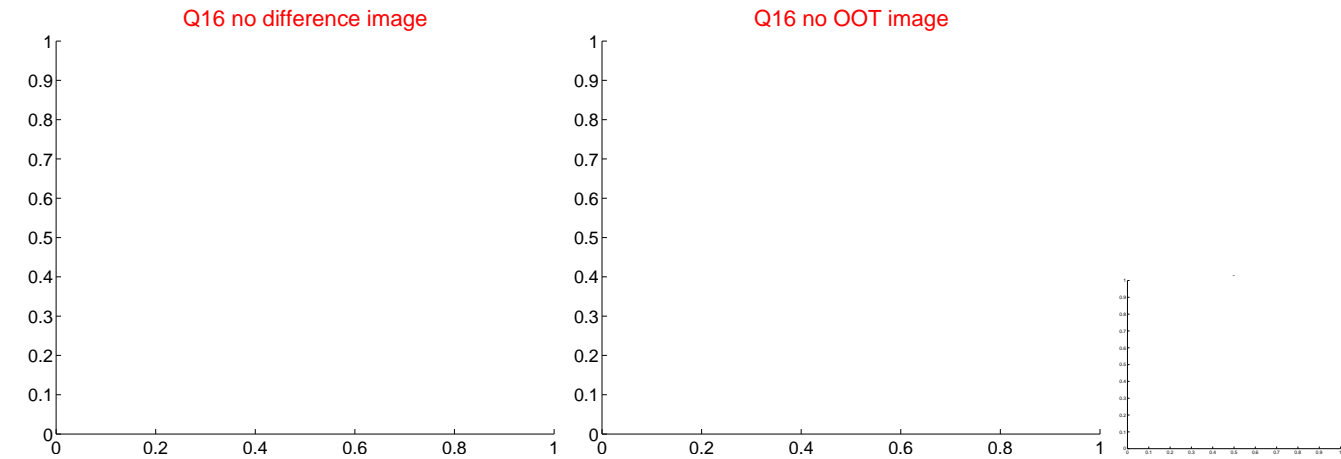
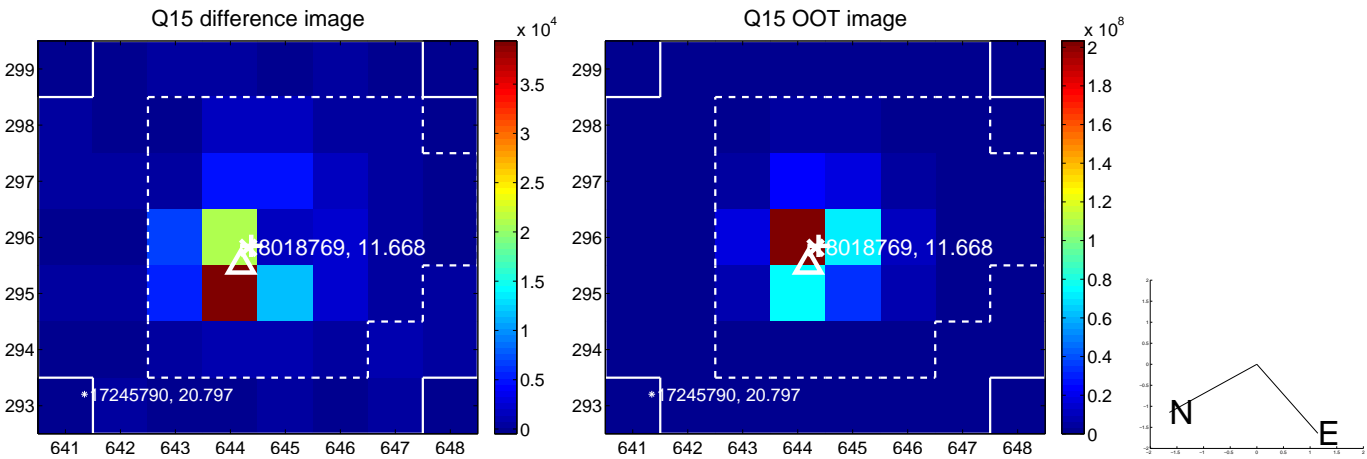
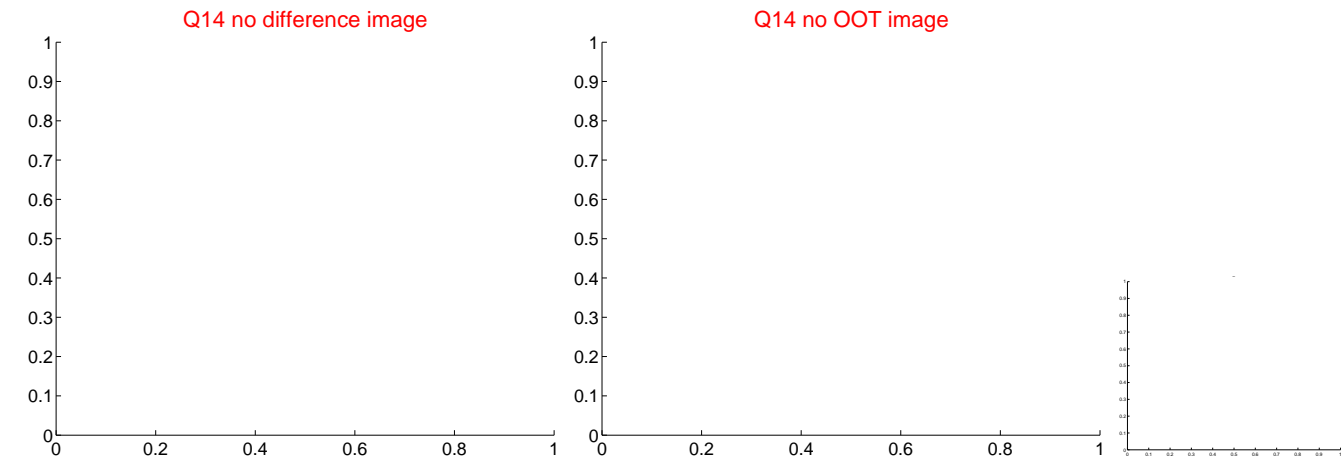
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



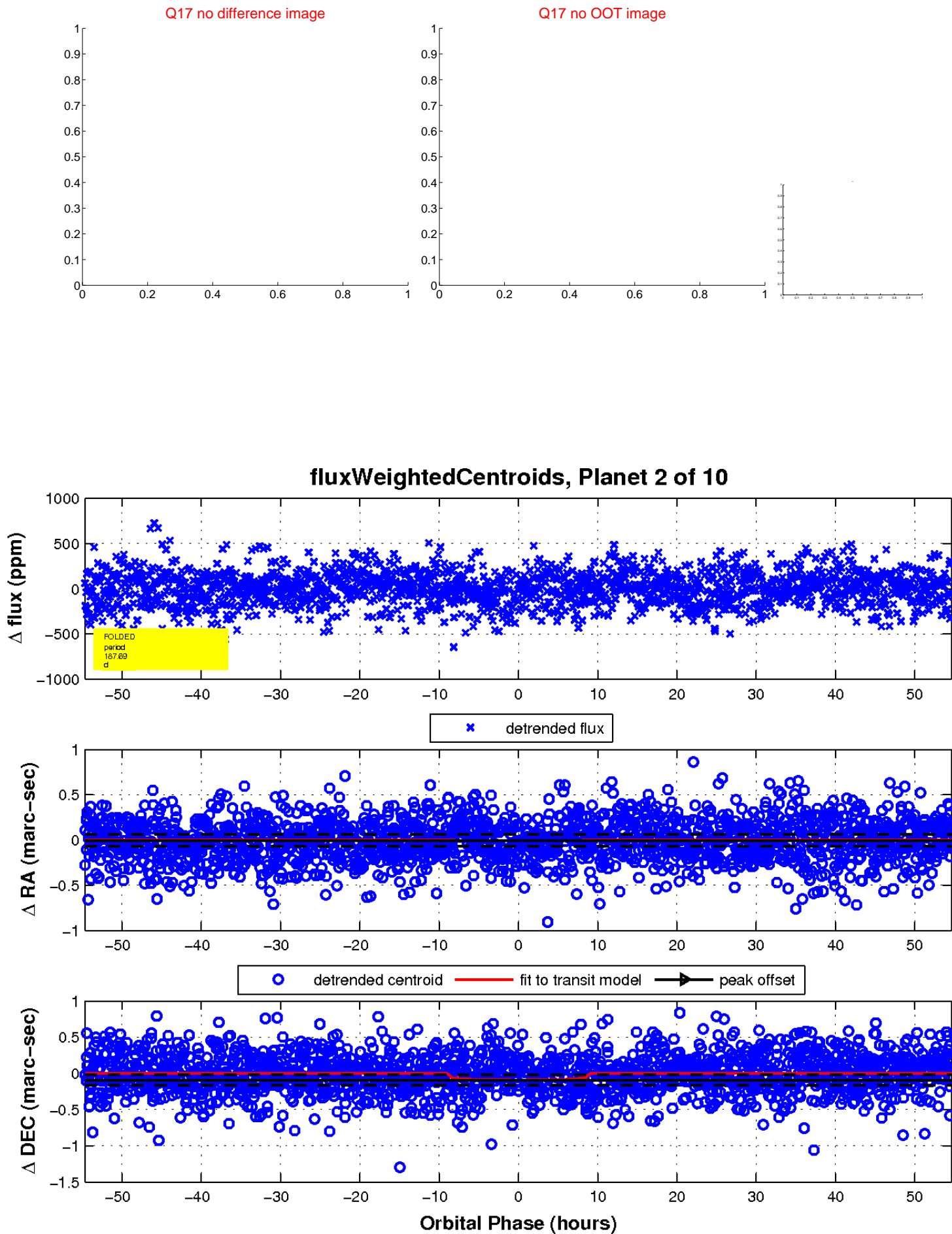
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

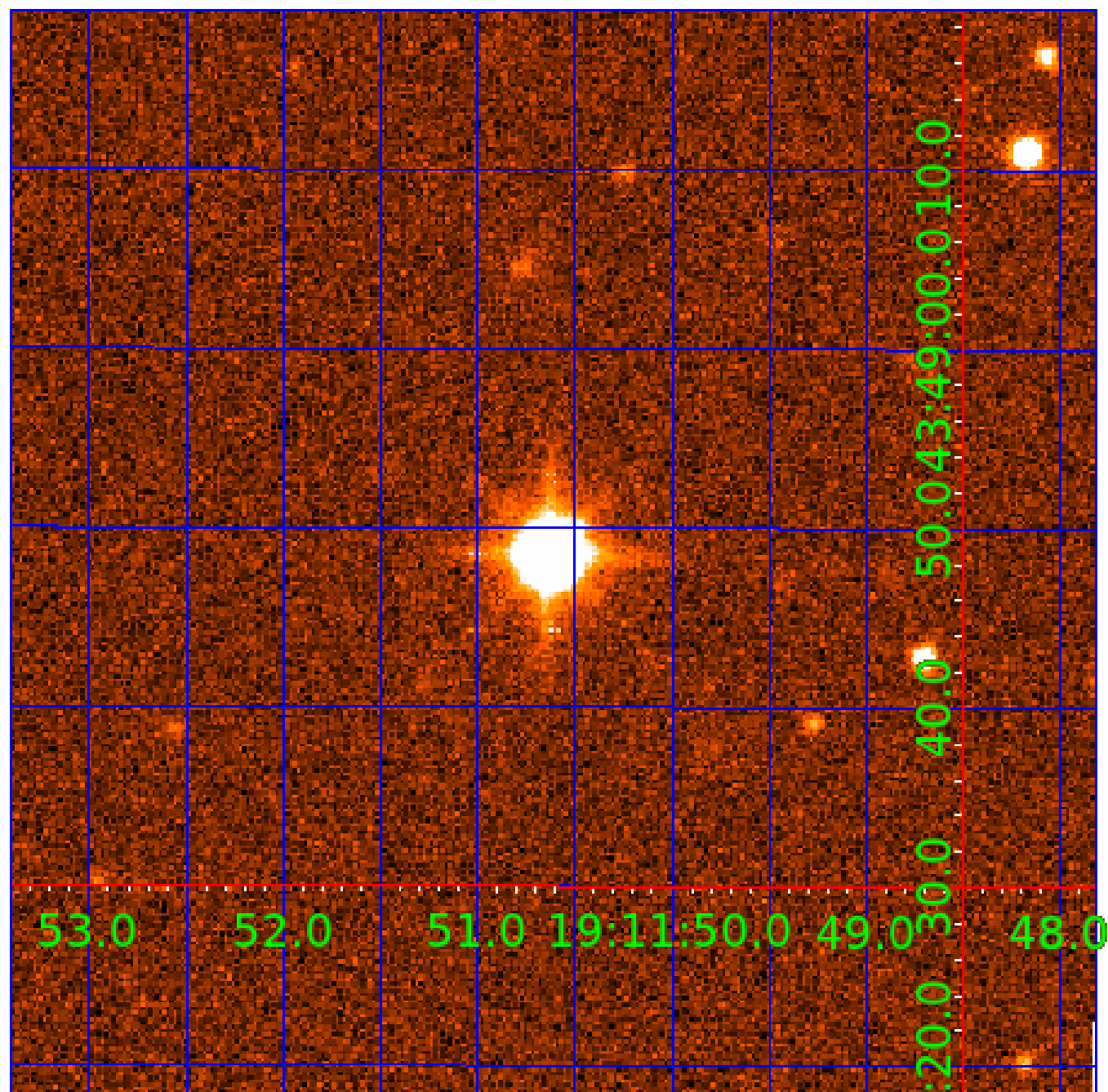


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008018769

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 008018769-01 | OBS | No | 1.393005 | 132.696397 | 26.8 | 7.332 | 9.9 | 9.9 | 4.39 | 6478 | 2.52 | 33196.84 |
| 008018769-02 | OBS | No | 187.688151 | 142.774384 | 246.6 | 18.224 | 10.7 | 8.1 | 4.39 | 6478 | 7.53 | 48.06 |
| 008018769-03 | OBS | No | 21.580518 | 142.903160 | 136.2 | 5.355 | 8.6 | 8.8 | 4.39 | 6478 | 6.01 | 859.58 |
| 008018769-04 | OBS | No | 153.753628 | 227.751237 | 128.8 | 13.438 | 8.6 | 4.6 | 4.39 | 6478 | 5.59 | 62.70 |
| 008018769-05 | OBS | No | 130.796065 | 204.601175 | 331.6 | 2.992 | 8.2 | 8.4 | 4.39 | 6478 | 8.76 | 77.79 |
| 008018769-06 | OBS | No | 126.030555 | 190.511494 | 186.4 | 16.507 | 7.8 | 7.1 | 4.39 | 6478 | 6.72 | 81.73 |
| 008018769-07 | OBS | No | 63.864375 | 176.660218 | 126.1 | 18.797 | 8.0 | 7.6 | 4.39 | 6478 | 5.50 | 202.31 |
| 008018769-09 | OBS | No | 127.543184 | 236.417562 | 163.1 | 13.304 | 7.9 | 6.4 | 4.39 | 6478 | 6.18 | 80.44 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008018769-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 008018769-02 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_UNRESOLVED_OFFSET |
| 008018769-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST |
| 008018769-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008018769-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT |
| 008018769-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS |
| 008018769-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008018769-09 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET |

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

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

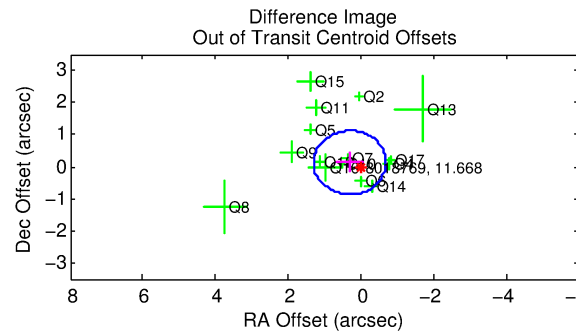
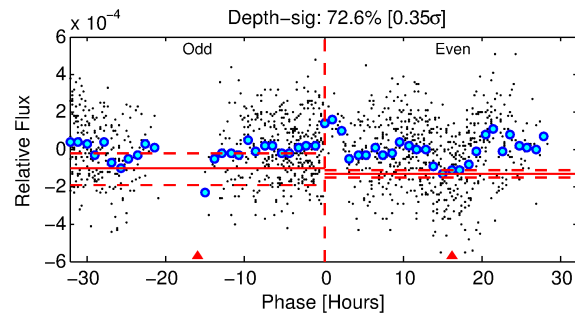
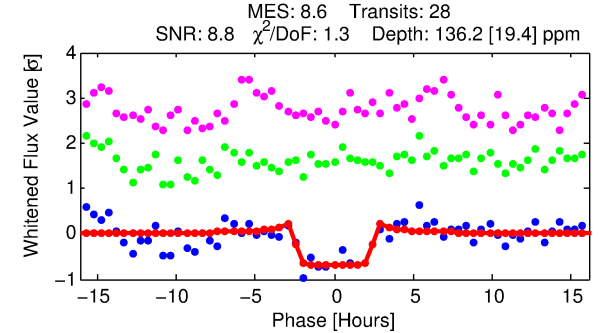
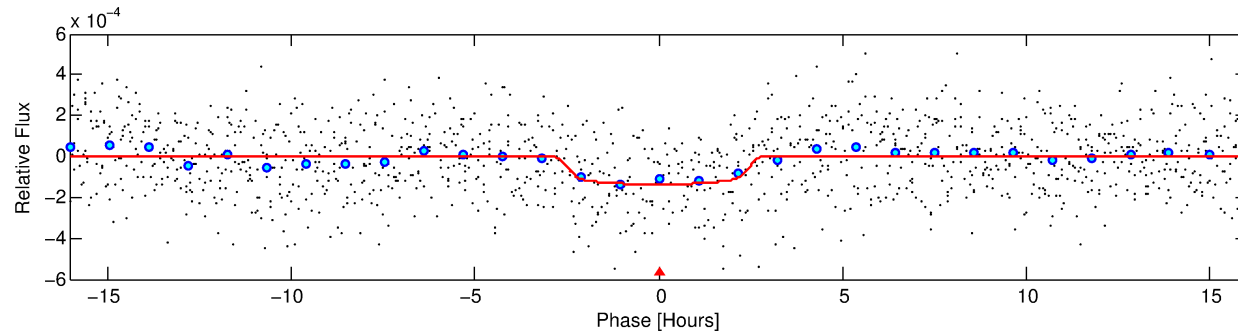
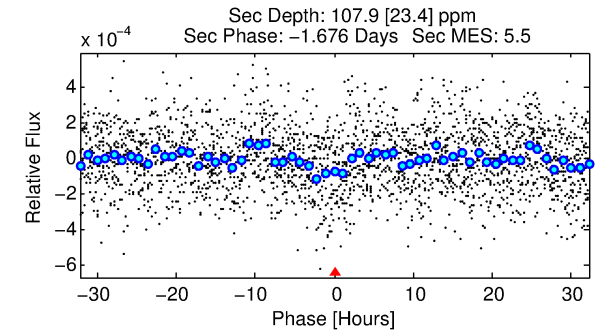
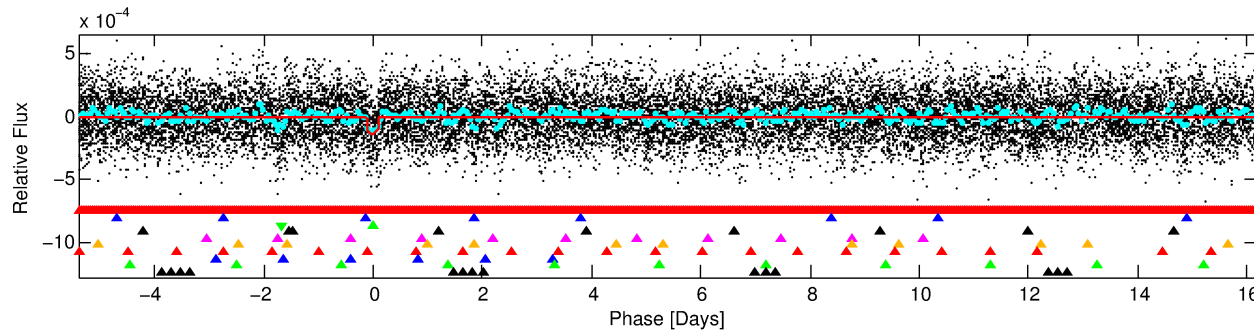
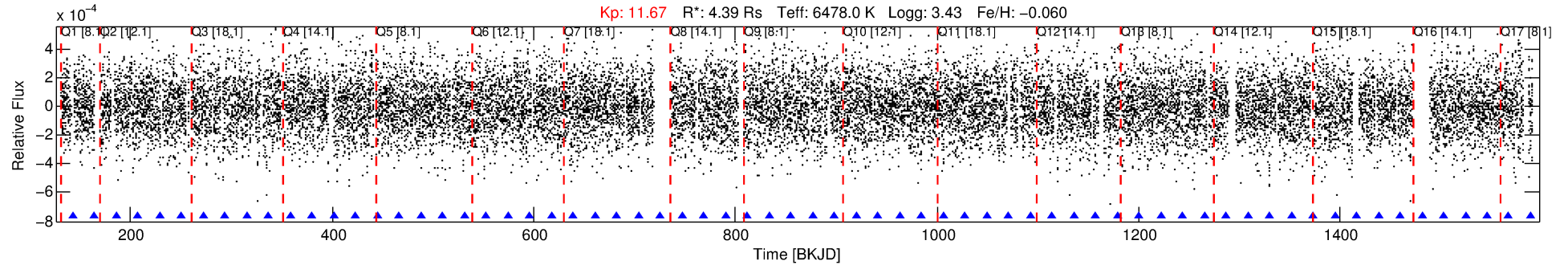
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008018769-03

No Significant Match Found

DV One-Page Summary

KIC: 8018769 Candidate: 3 of 10 Period: 21.581 d



DV Fit Results:

Period = 21.58052 [0.00032] d
Epoch = 142.9032 [0.0125] BKJD
Rp/R* = 0.0126 [0.0031]
a/R* = 13.95 [18.56]
b = 0.91 [0.27]
Seff = 859.58 [530.88]
Teq = 1381 [213] K
Rp = 6.02 [2.73] Re
a = 0.1881 [0.0704] AU
Ag = 58.05 [47.28] [1.21σ]
Teffp = 5892 [816] K [5.35σ]

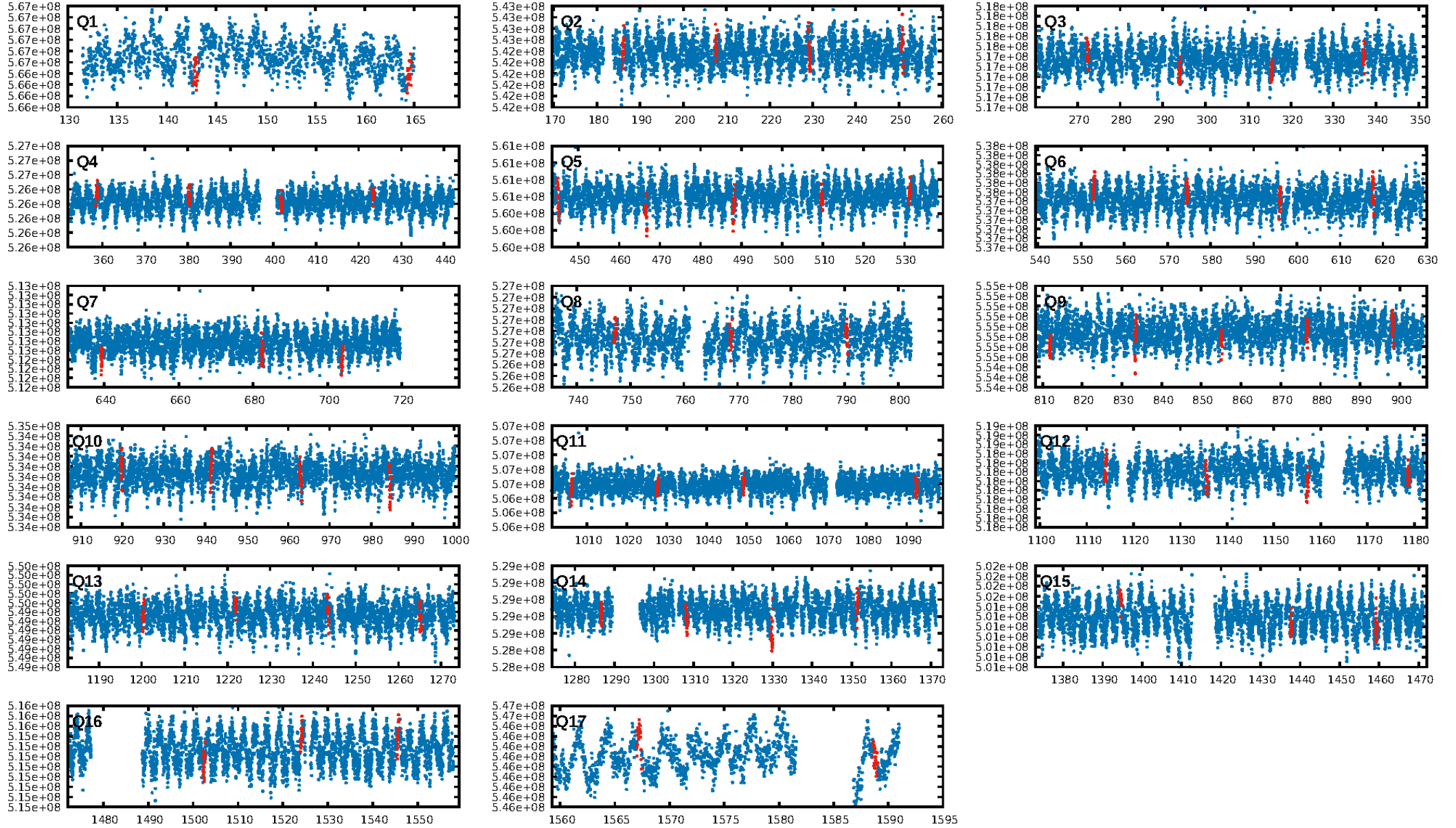
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [53.36σ]
LongPeriod-sig: 100.0% [51.92σ]
ModelChiSquare2-sig: 7.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [27/27]
GhostDiagnostic-chr: -0.1129
Centroid-sig: 3.9%
Centroid-so: 0.430 arcsec [1.81σ]
OotOffset-rm: 0.338 arcsec [1.02σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-rm: 0.284 arcsec [0.81σ]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.47 [7/15]
DiffImageOverlap-fno: 0.24 [4/17]

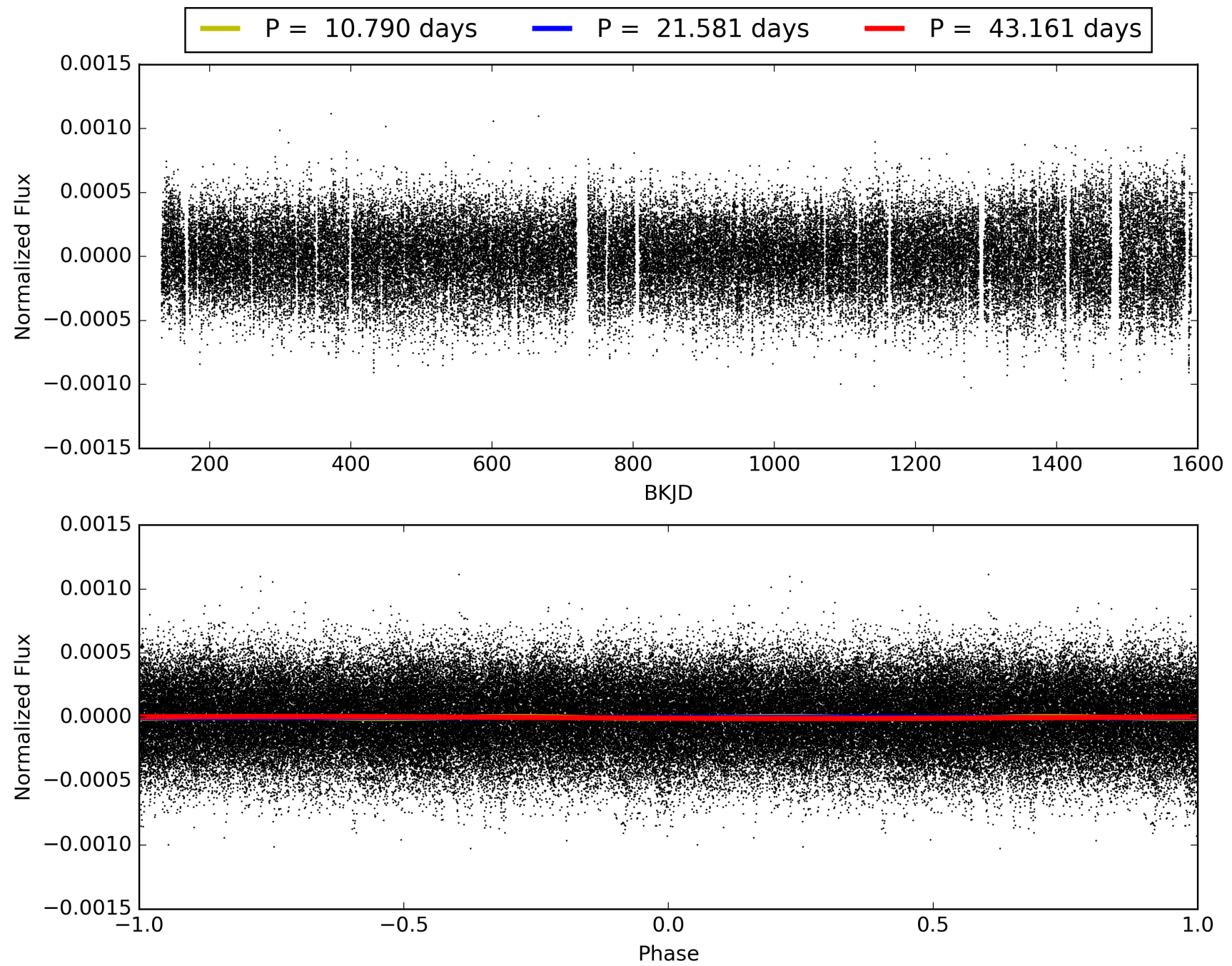
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 04:18:23 Z

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

TCE 008018769-03, PDC Light Curves

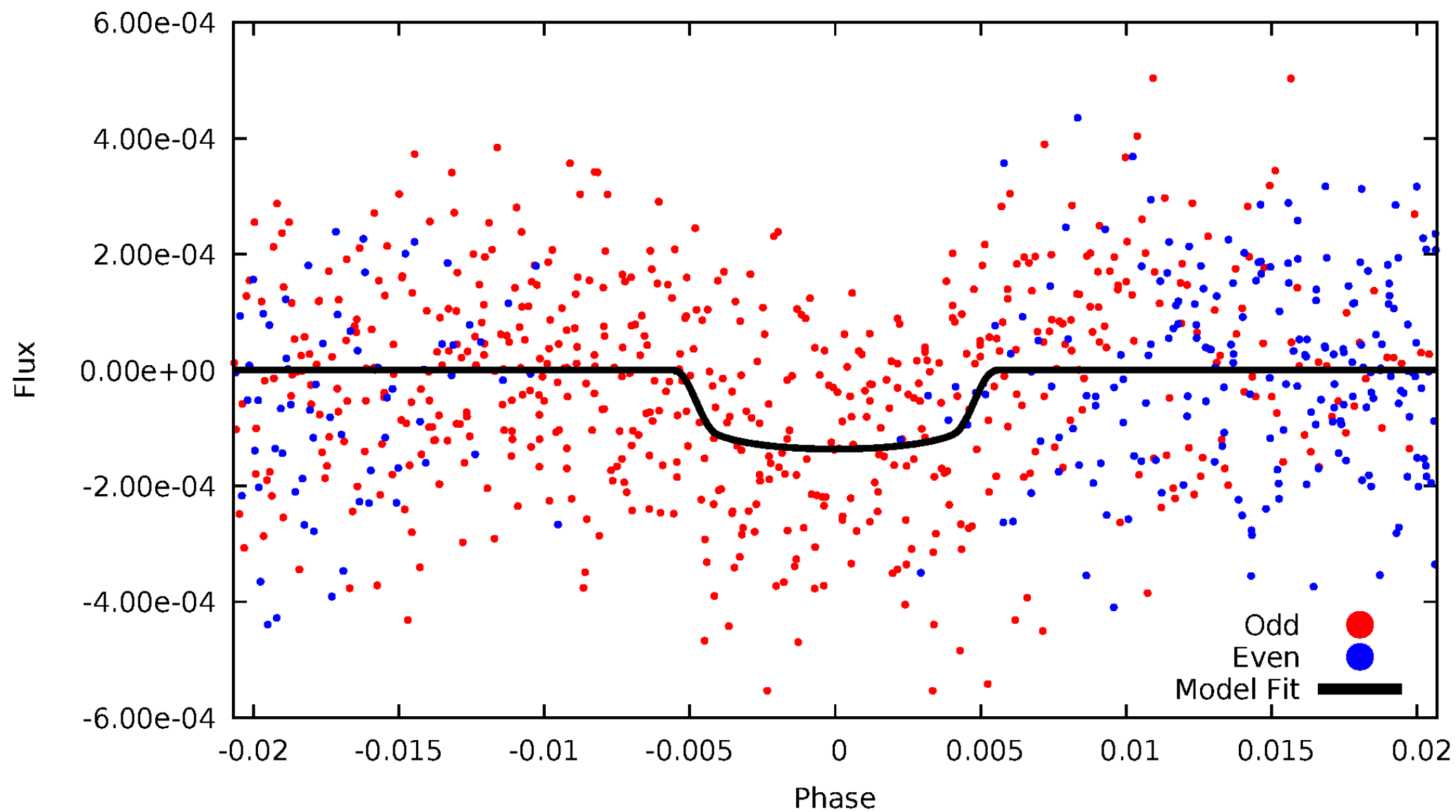


TCE 008018769-03



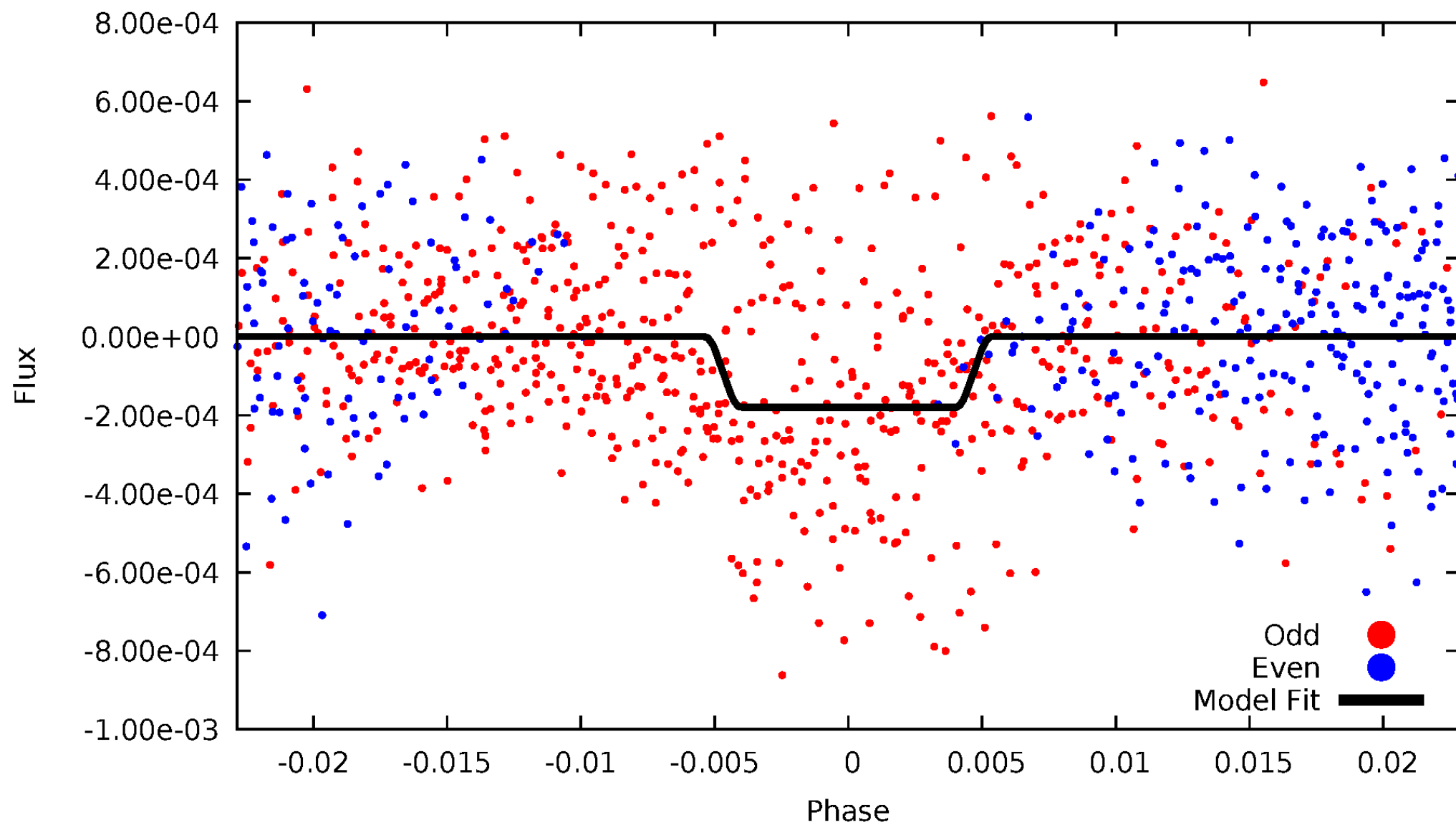
DV Odd/Even

TCE 008018769-03



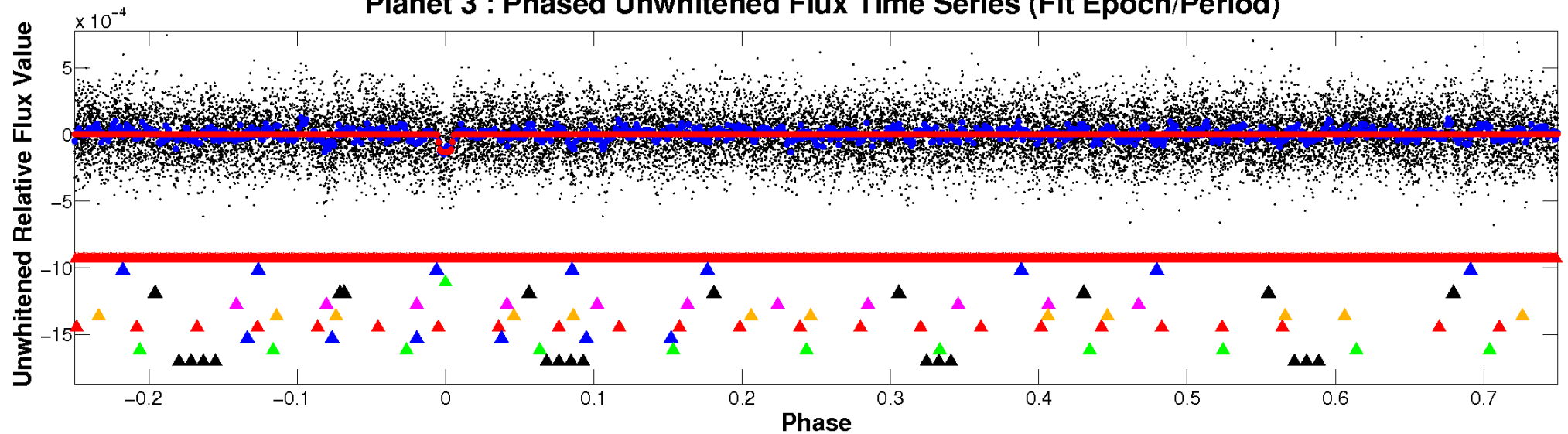
ALT Odd/Even

TCE 008018769-03

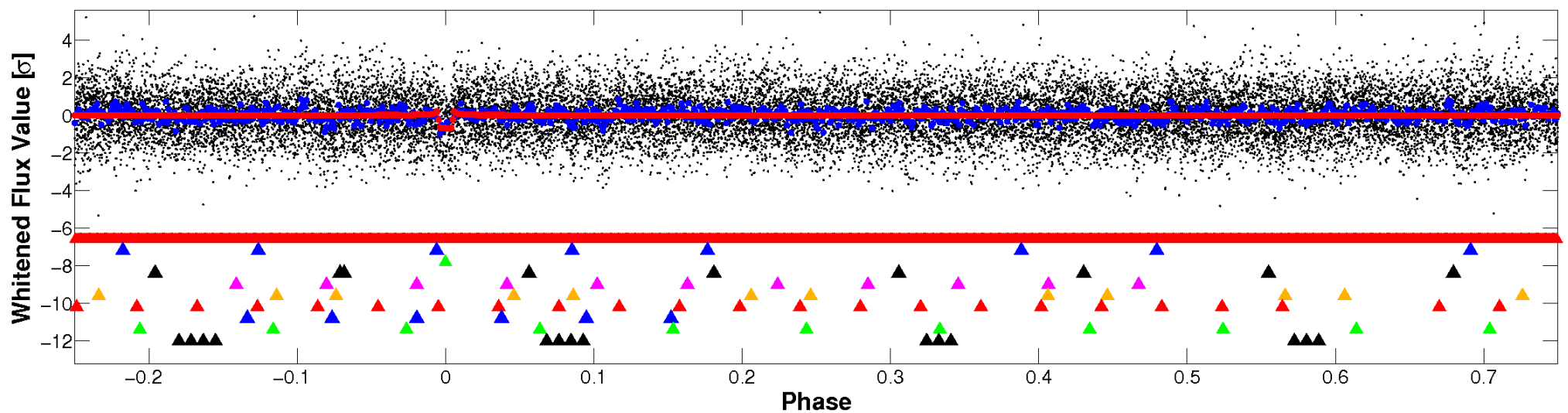


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

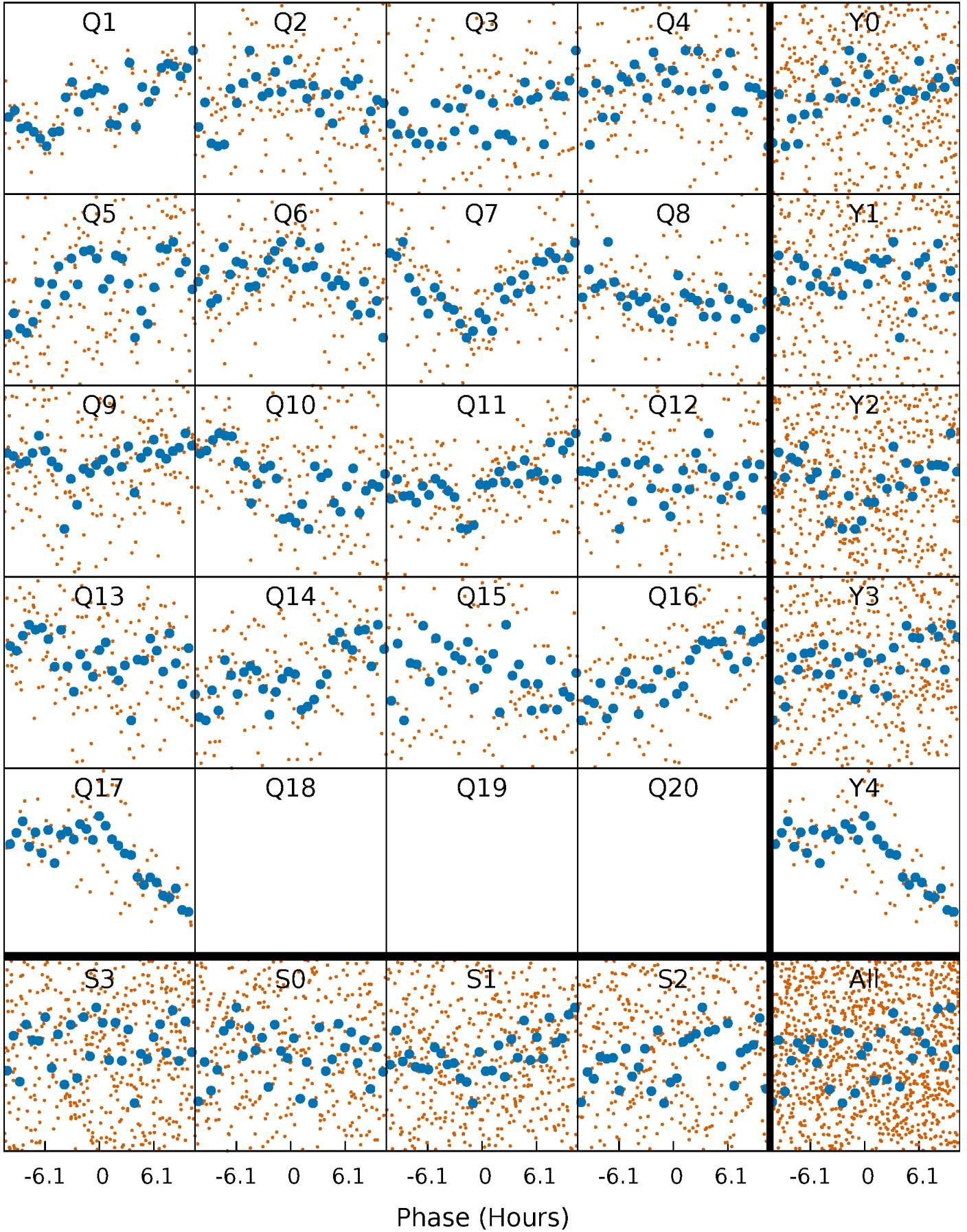


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



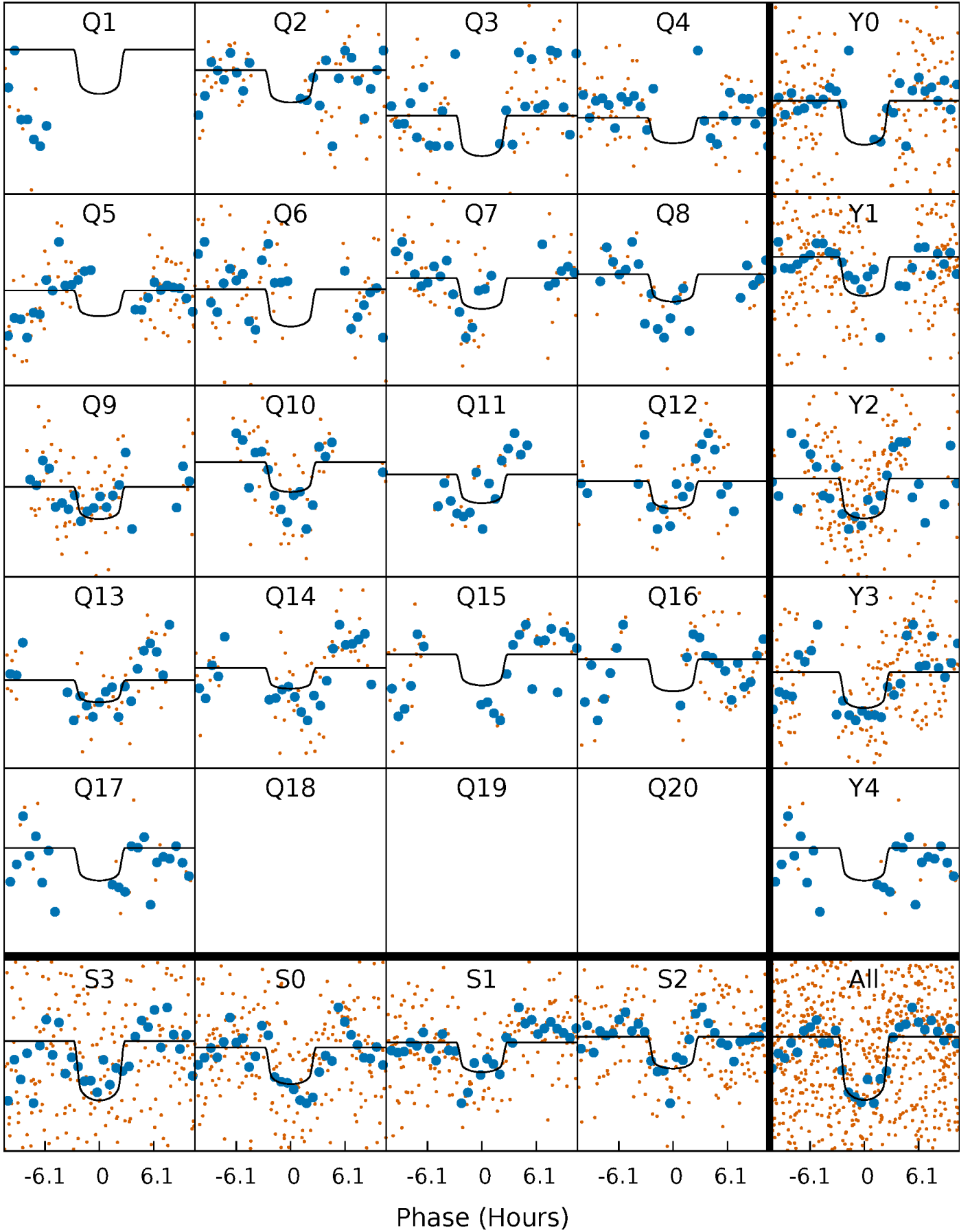
PDC Quarter-Phased Transit Curves

TCE 008018769-03 P= 21.580518 Days $T_0=142.903160$ (BKJD)



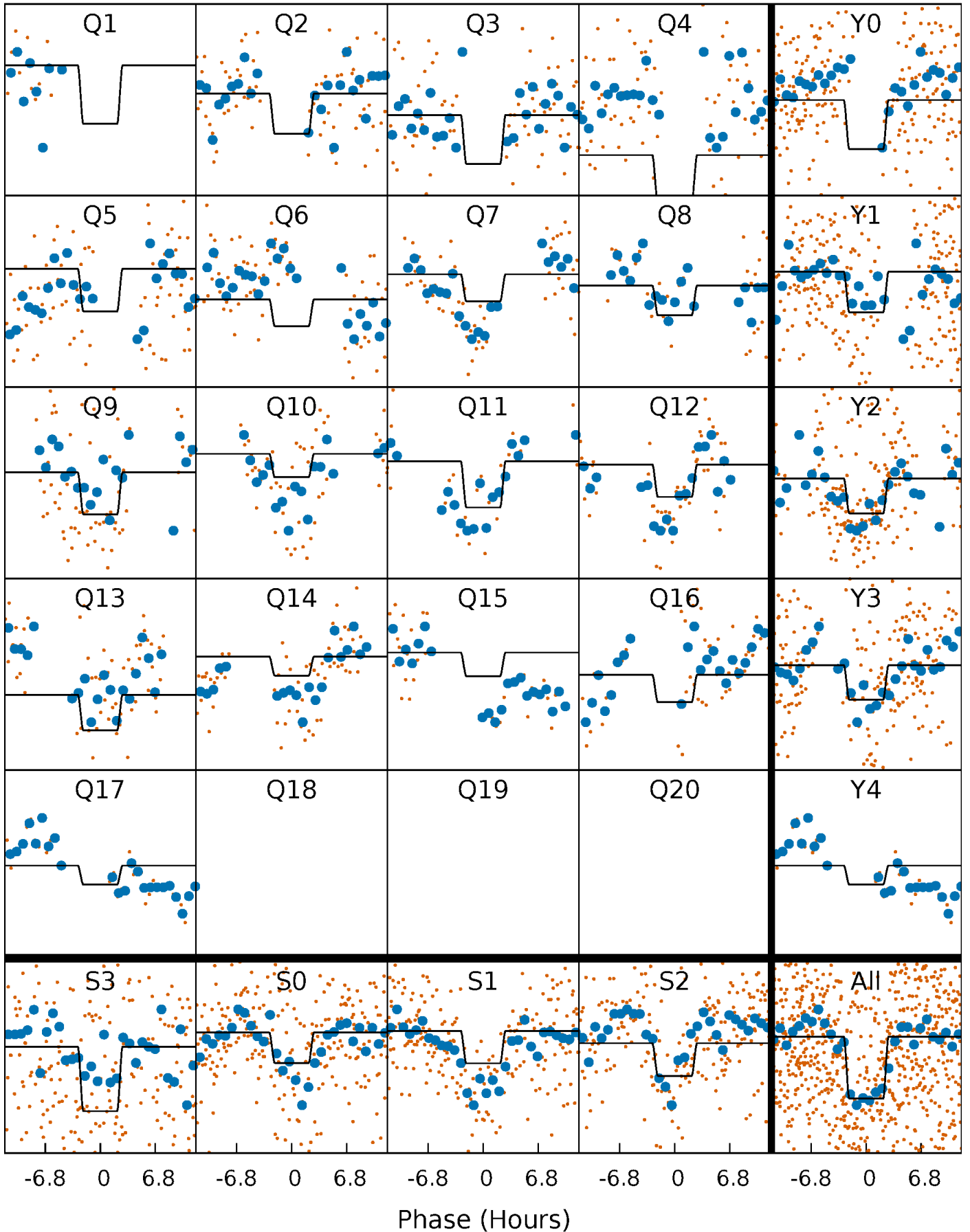
DV Quarter-Phased Transit Curves

TCE 008018769-03 P= 21.580518 Days $T_0=142.903160$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

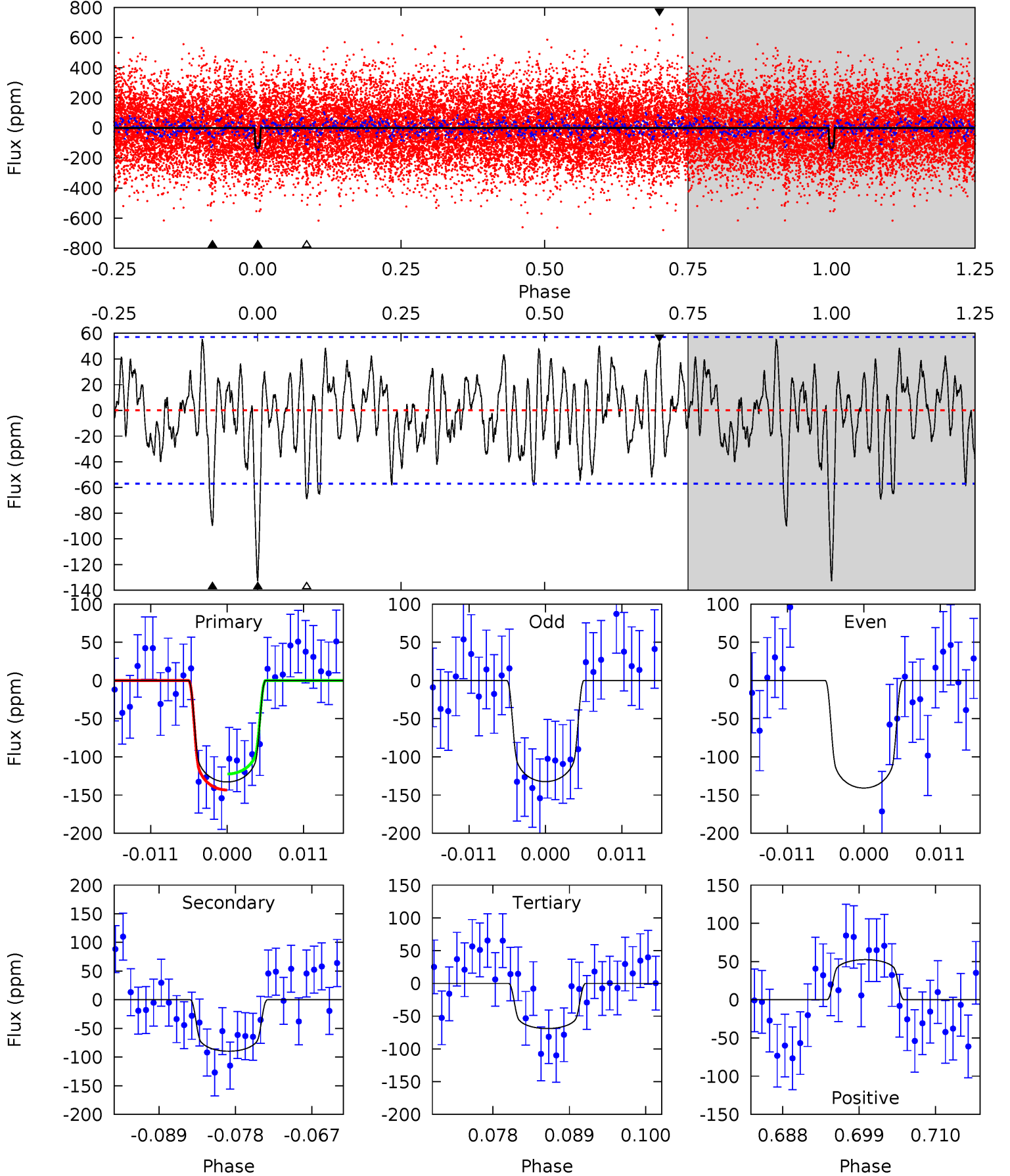
TCE 008018769-03 P= 21.581025 Days $T_0=142.878246$ (BKJD)



DV Model-Shift Uniqueness Test

008018769-03, P = 21.580518 Days, E = 121.322642 Days

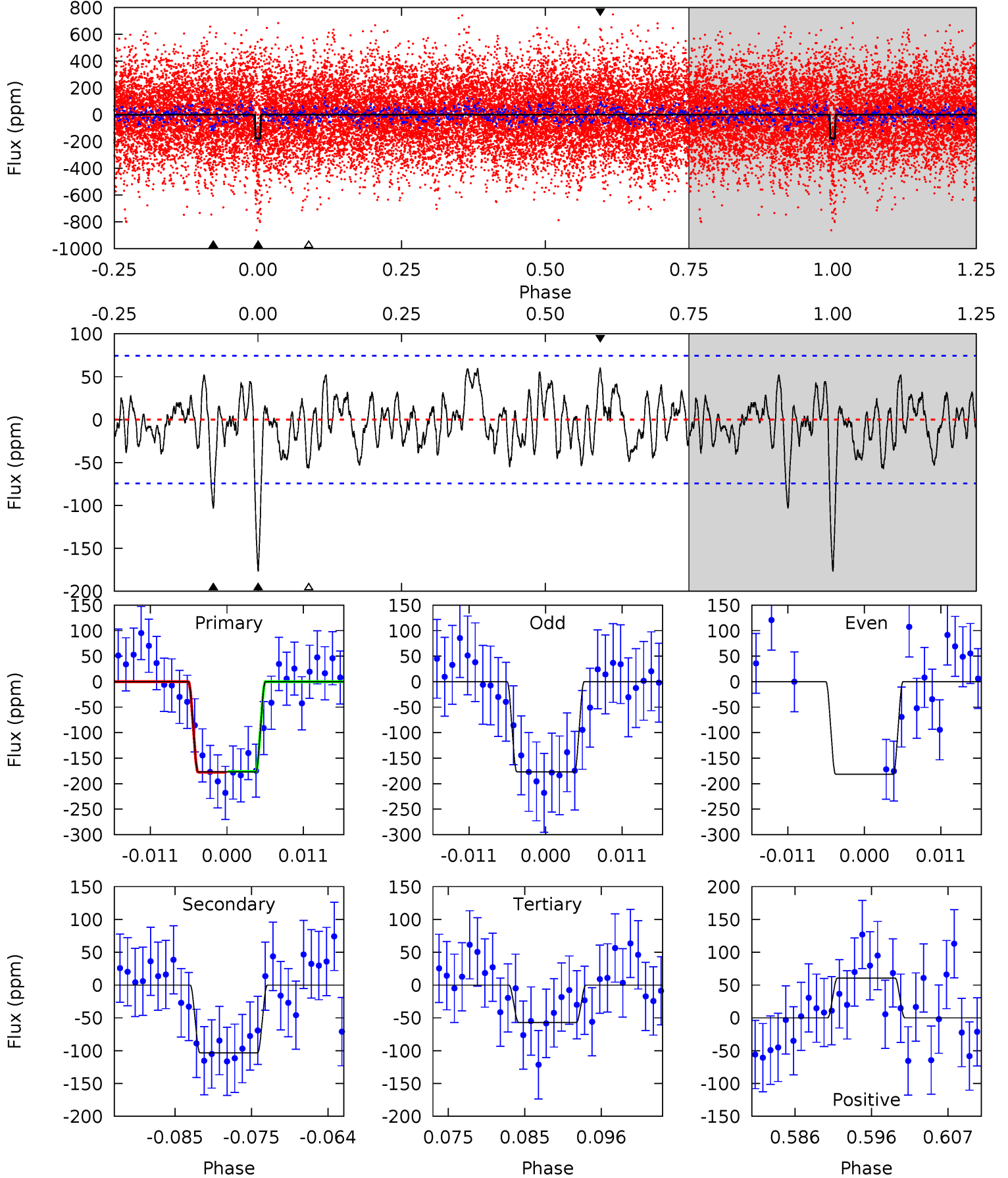
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.7 | 7.87 | 6.05 | 4.60 | 5.01 | 2.54 | 2.06 | 5.60 | 7.05 | 1.83 | 3.27 | 0.16 | 1.09 | 0.29 | 0.92 |



Alt Model-Shift Uniqueness Test

008018769-03, P = 21.581025 Days, E = 121.297221 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 | 6.97 | 3.84 | 4.09 | 5.01 | 2.55 | 1.64 | 8.08 | 7.83 | 3.13 | 2.88 | 0.05 | 0.80 | 0.26 | 0.06 |



Stellar Parameters For KIC 008018769

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6478^{+146}_{-179} | $3.433^{+0.360}_{-0.090}$ | $-0.060^{+0.300}_{-0.250}$ | $4.391^{+0.594}_{-1.664}$ | $1.908^{+0.094}_{-0.375}$ | $0.032^{+0.087}_{-0.009}$ |
| | +2%/-3% | +10%/-3% | +500%/-417% | +14%/-38% | +5%/-20% | +275%/-28% |
| Source | PHO1 | FLK73 | KIC0 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 008018769-03 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|----------------------|----------------------|------------------|
| DV | -90 ± 11 | $5.55^{+1.94}_{-1.74}$ | 1888^{+111}_{-185} | 5593^{+838}_{-586} | 54^{+60}_{-24} |
| Alt. | -103 ± 15 | $5.92^{+1.77}_{-1.64}$ | 1891^{+113}_{-175} | 5643^{+854}_{-570} | 56^{+49}_{-23} |

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

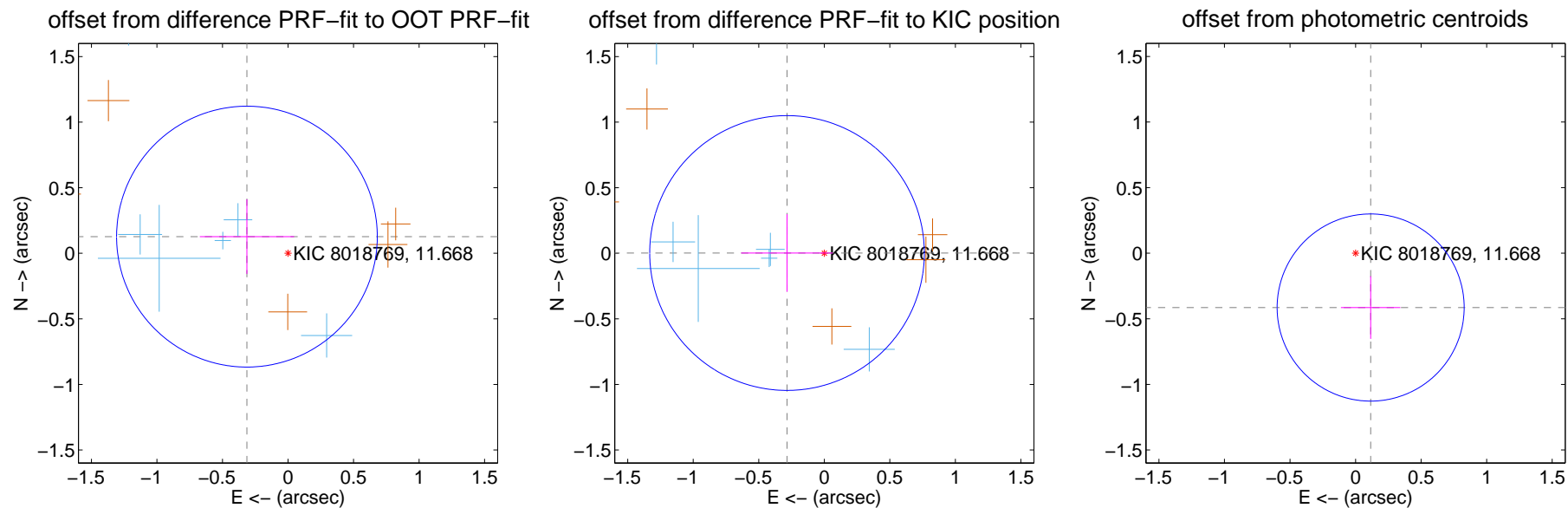
DV Centroid Data

Supplemental centroid analysis for 008018769-03. **Kepler magnitude: 11.67.** Transit SNR 8.82

There are 7 quarters with good PRF difference image offsets

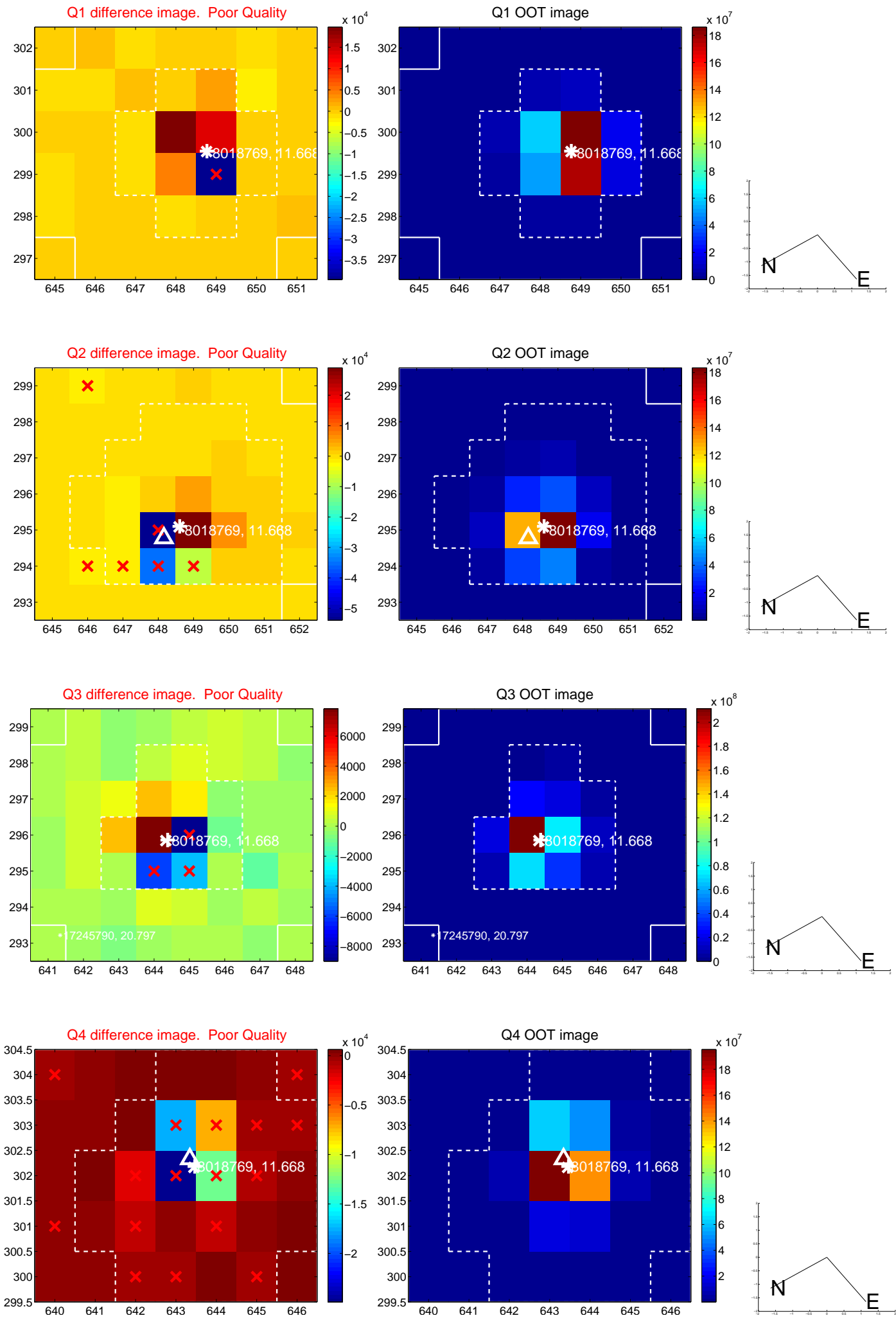
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.338 ± 0.332 | 1.02 | 0.313 ± 0.360 | 0.127 ± 0.284 |
| PRF-fit source offset from KIC position | 0.284 ± 0.349 | 0.81 | 0.284 ± 0.350 | 0.002 ± 0.296 |
| photometric centroid source offset | 0.43 ± 0.24 | 1.81 | -0.12 ± 0.23 | -0.41 ± 0.24 |

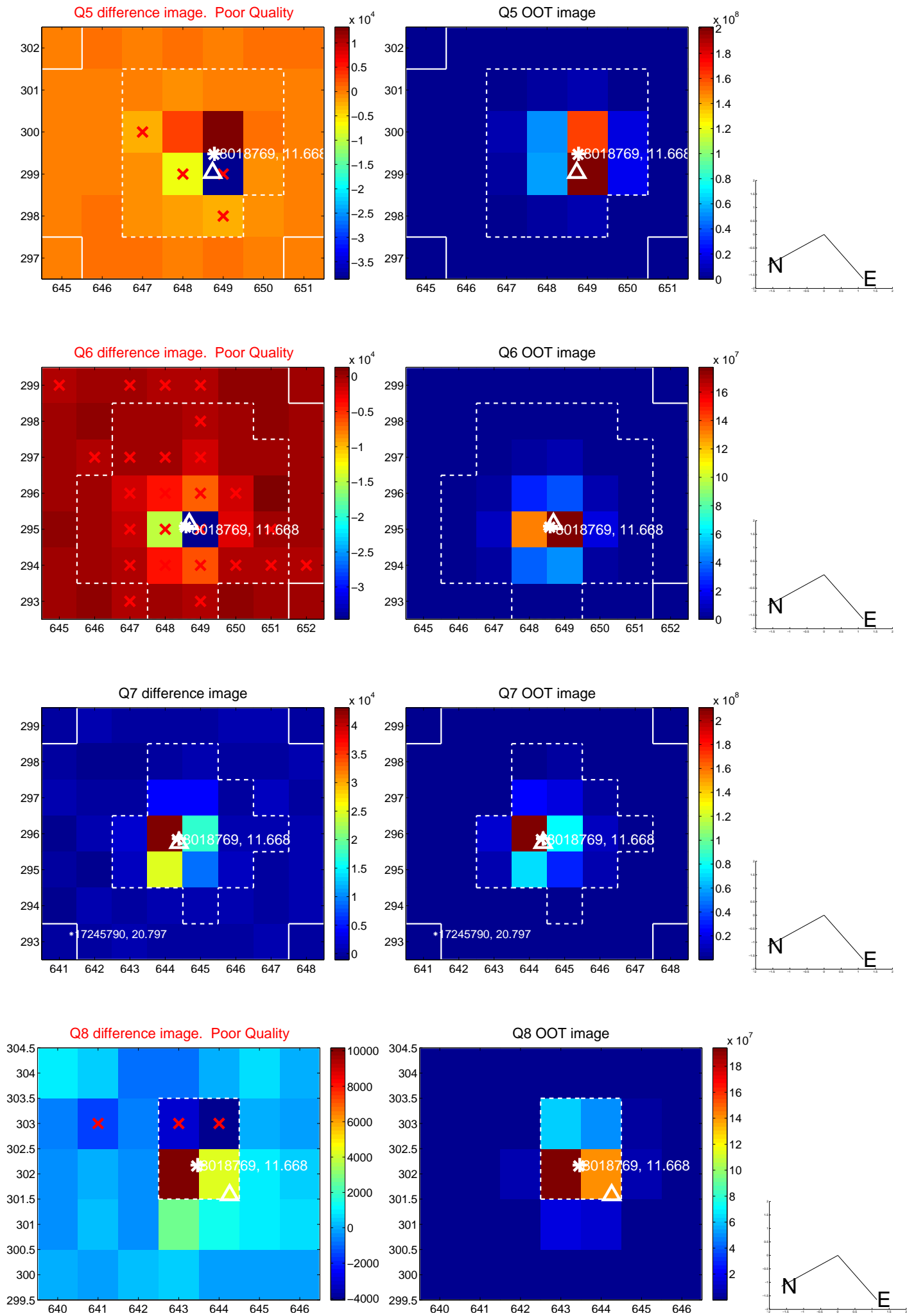


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

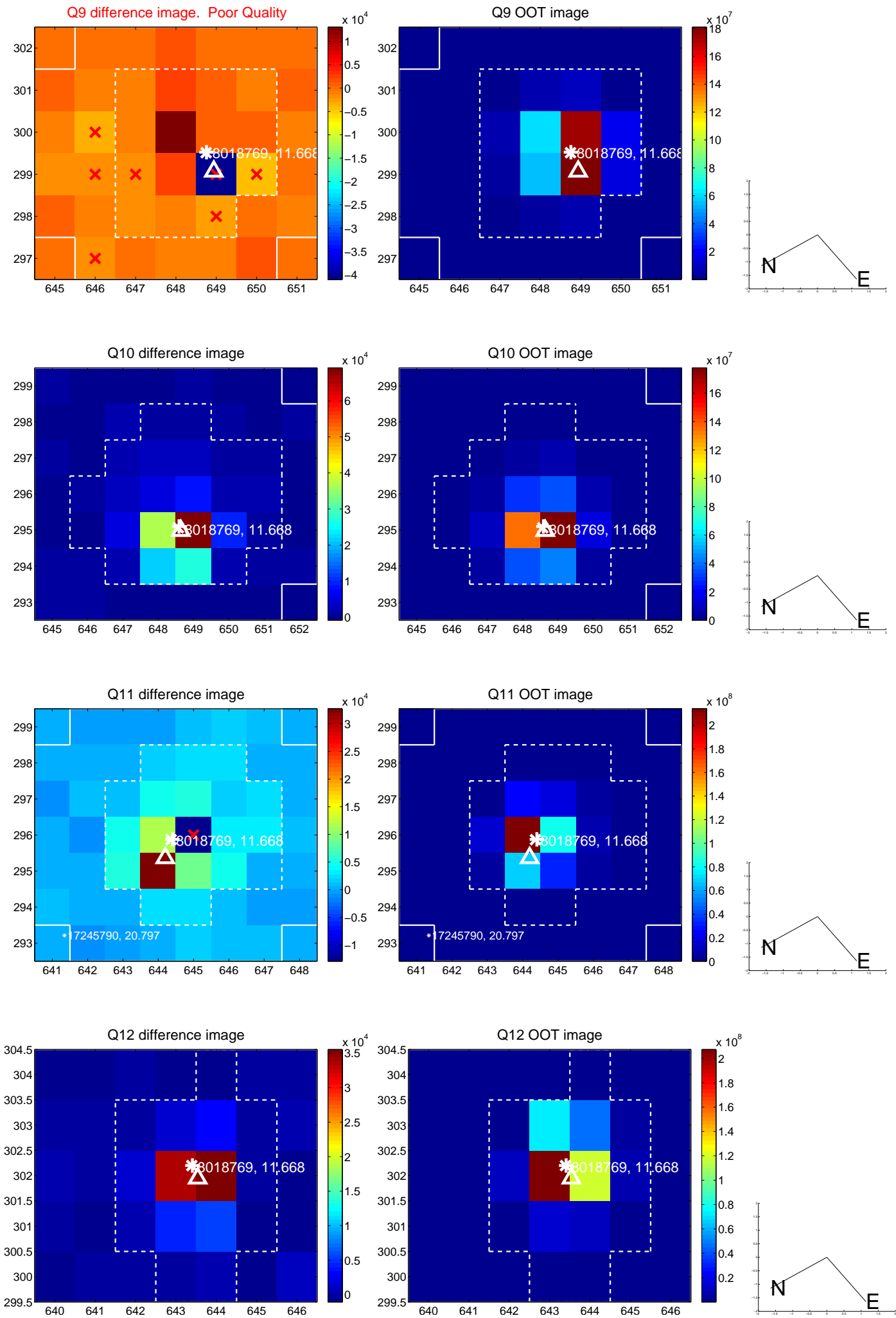
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



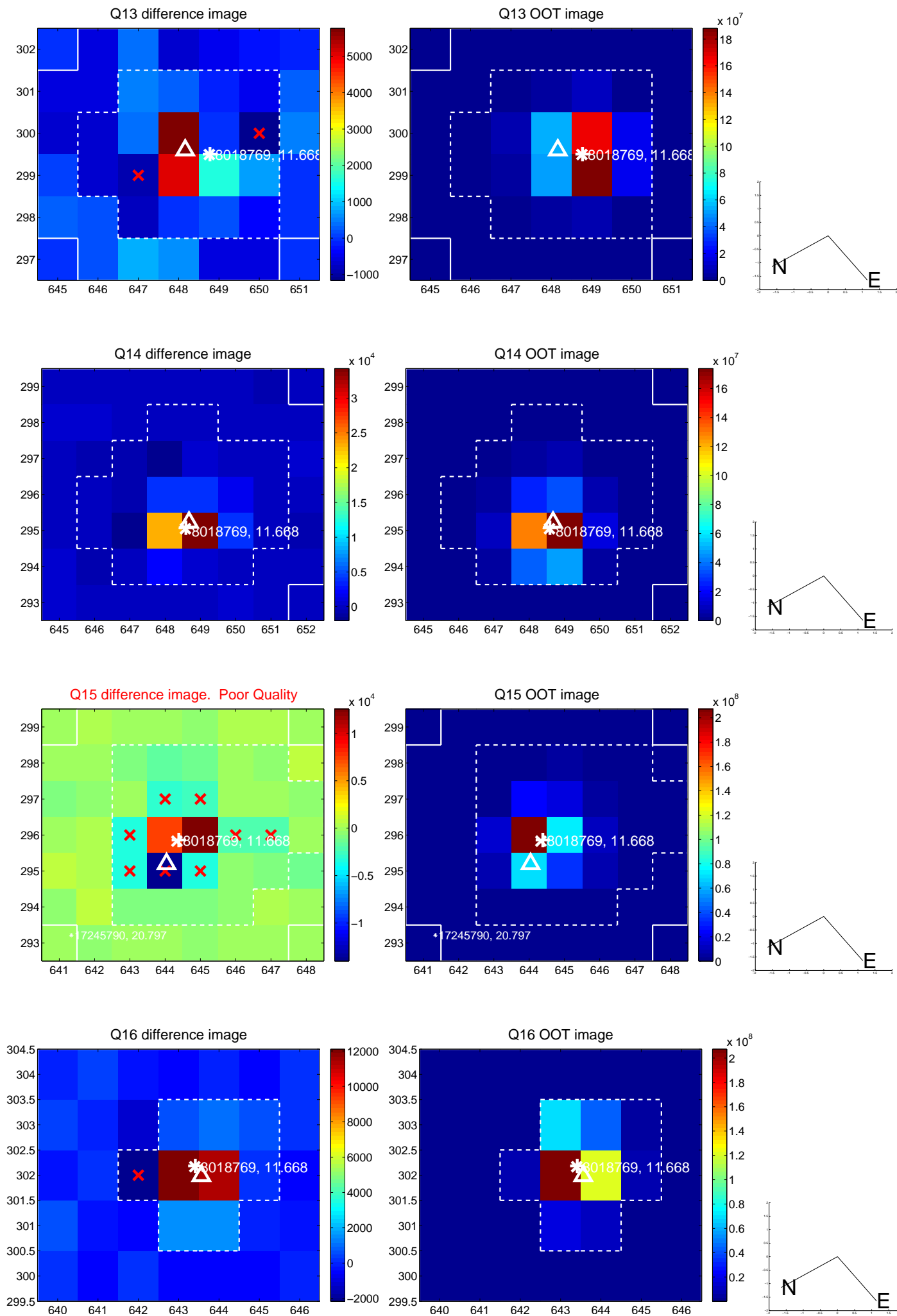
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



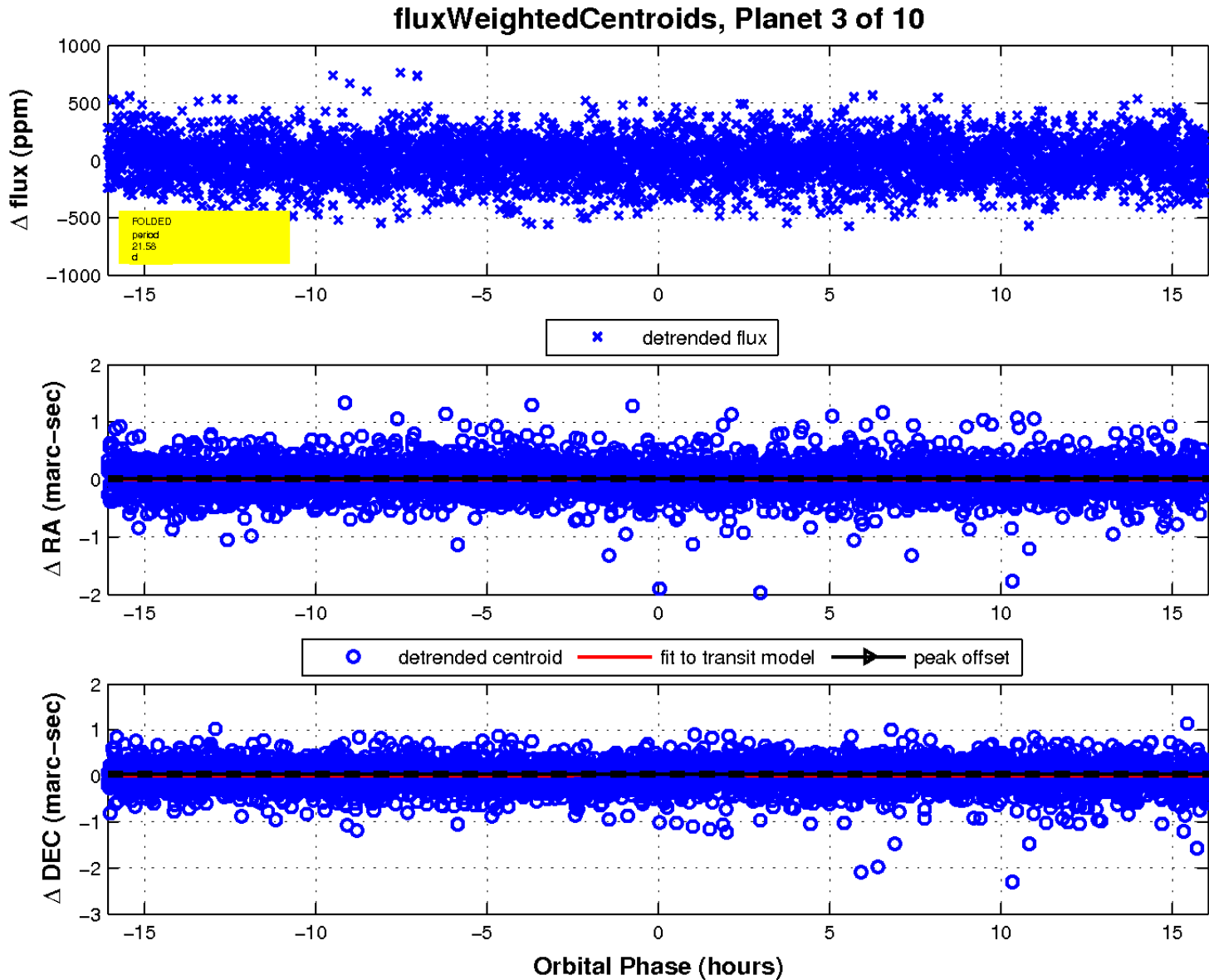
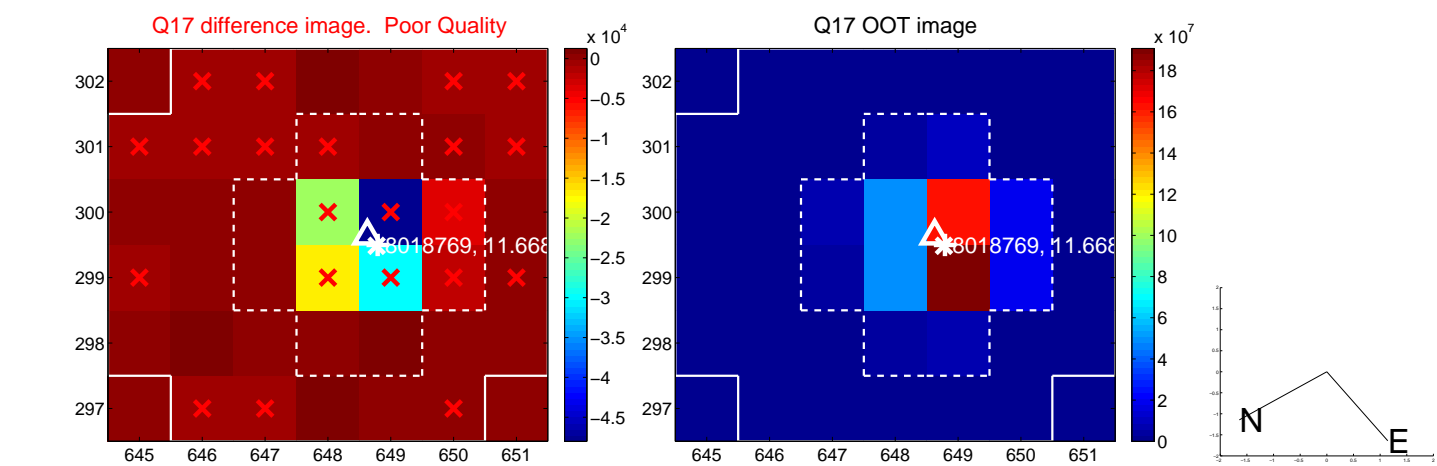
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

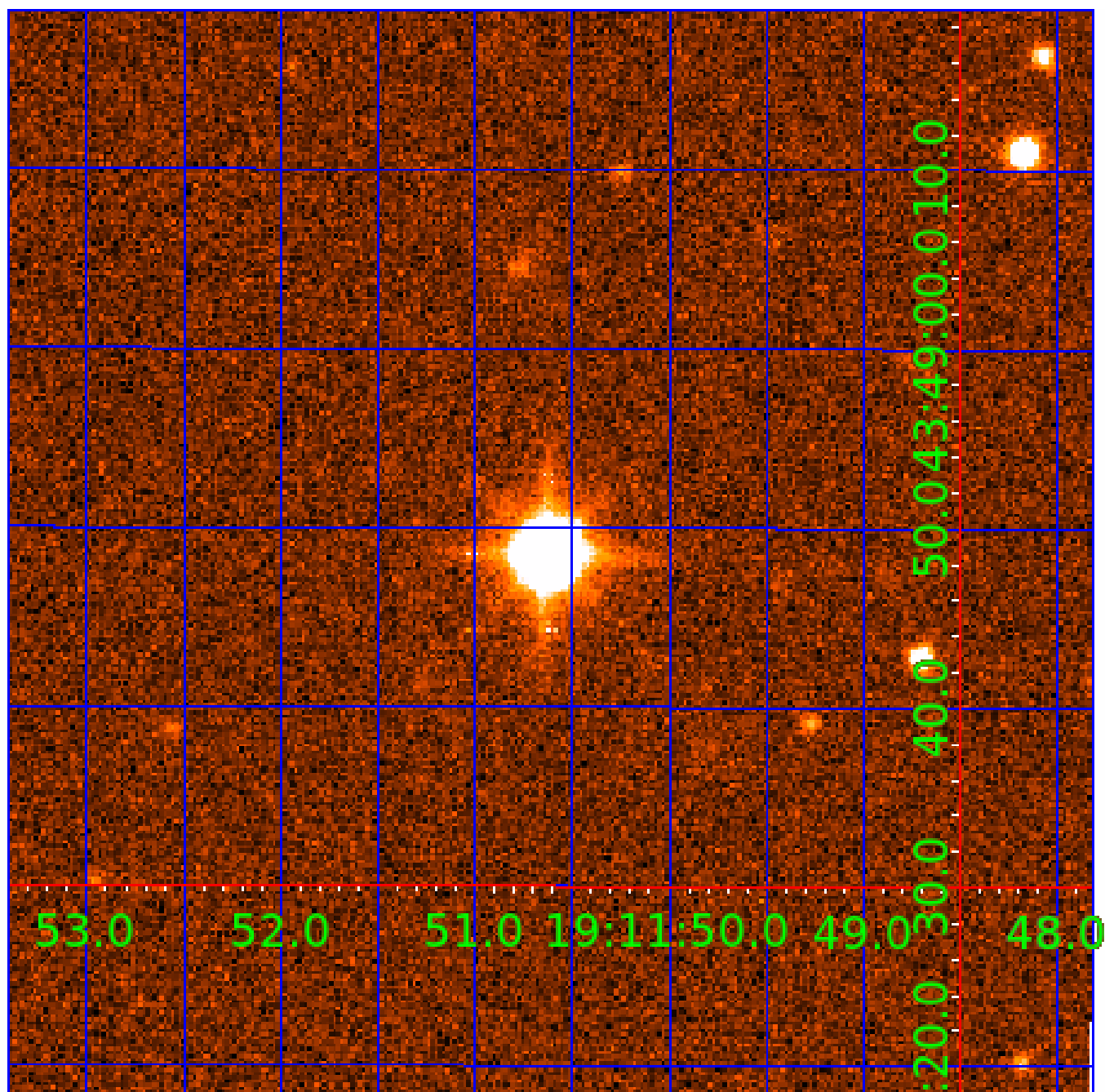


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008018769

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 008018769-01 | OBS | No | 1.393005 | 132.696397 | 26.8 | 7.332 | 9.9 | 9.9 | 4.39 | 6478 | 2.52 | 33196.84 |
| 008018769-02 | OBS | No | 187.688151 | 142.774384 | 246.6 | 18.224 | 10.7 | 8.1 | 4.39 | 6478 | 7.53 | 48.06 |
| 008018769-03 | OBS | No | 21.580518 | 142.903160 | 136.2 | 5.355 | 8.6 | 8.8 | 4.39 | 6478 | 6.01 | 859.58 |
| 008018769-04 | OBS | No | 153.753628 | 227.751237 | 128.8 | 13.438 | 8.6 | 4.6 | 4.39 | 6478 | 5.59 | 62.70 |
| 008018769-05 | OBS | No | 130.796065 | 204.601175 | 331.6 | 2.992 | 8.2 | 8.4 | 4.39 | 6478 | 8.76 | 77.79 |
| 008018769-06 | OBS | No | 126.030555 | 190.511494 | 186.4 | 16.507 | 7.8 | 7.1 | 4.39 | 6478 | 6.72 | 81.73 |
| 008018769-07 | OBS | No | 63.864375 | 176.660218 | 126.1 | 18.797 | 8.0 | 7.6 | 4.39 | 6478 | 5.50 | 202.31 |
| 008018769-09 | OBS | No | 127.543184 | 236.417562 | 163.1 | 13.304 | 7.9 | 6.4 | 4.39 | 6478 | 6.18 | 80.44 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008018769-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 008018769-02 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_UNRESOLVED_OFFSET |
| 008018769-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST |
| 008018769-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008018769-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT |
| 008018769-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS |
| 008018769-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008018769-09 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET |

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

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

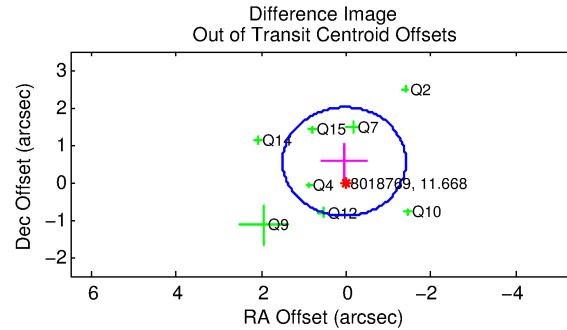
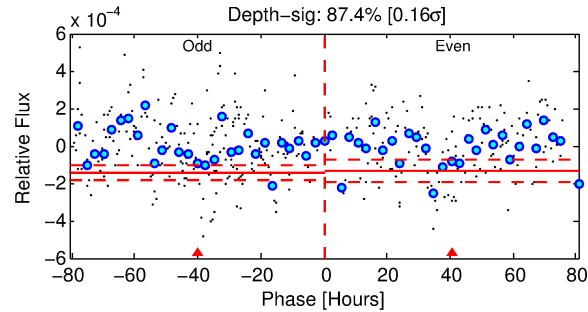
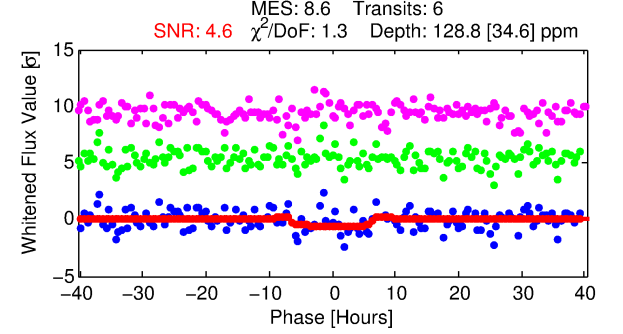
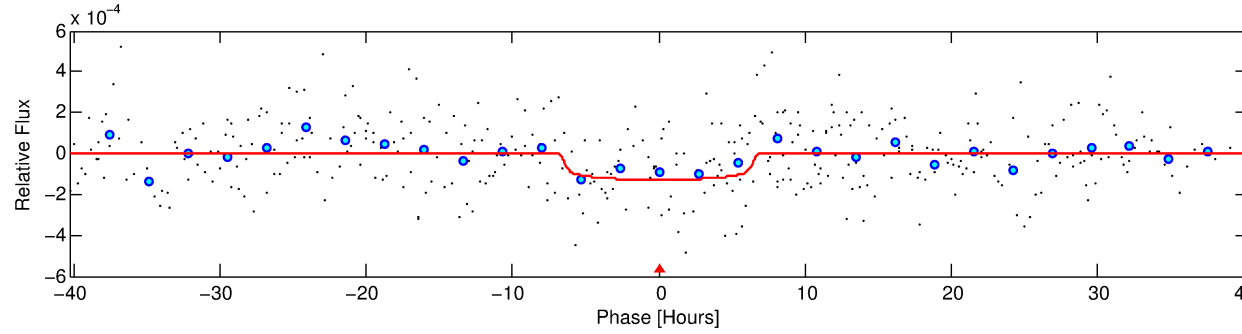
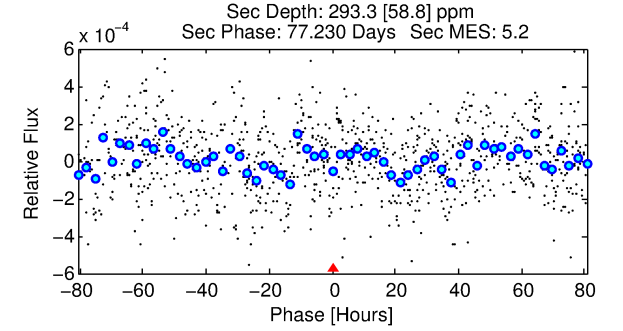
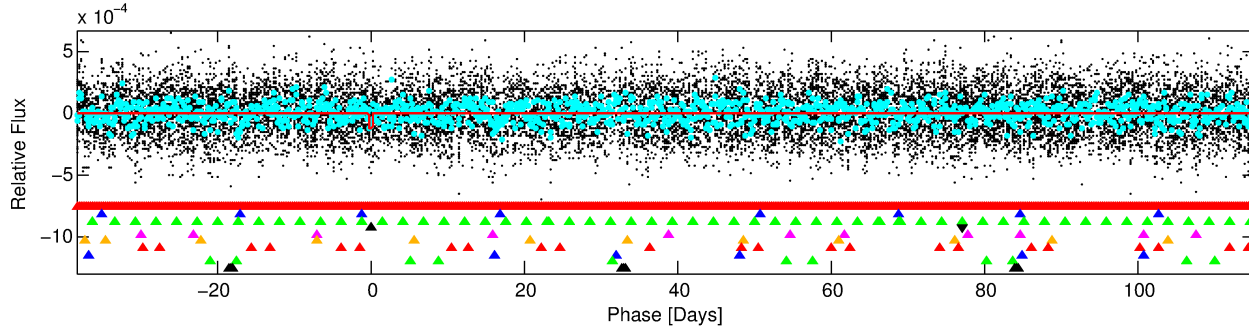
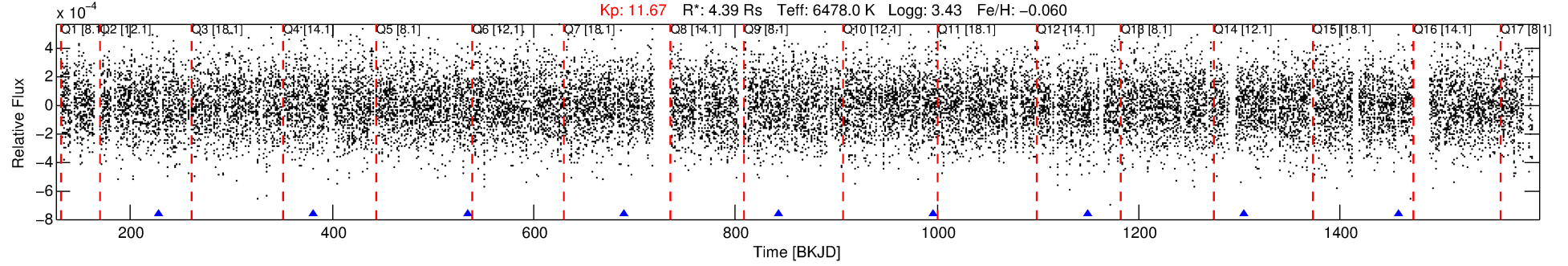
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008018769-04

No Significant Match Found

DV One-Page Summary

KIC: 8018769 Candidate: 4 of 10 Period: 153.754 d



DV Fit Results:

Period = 153.75363 [0.00761] d
Epoch = 227.7512 [0.0293] BKJD
 R_p/R^* = 0.0117 [0.0051]
 a/R^* = 50.03 [114.06]
 b = 0.83 [0.84]
 Seff = 62.70 [38.72]
 T_{eq} = 718 [111] K
 R_p = 5.59 [3.22] R_e
 a = 0.6966 [0.2608] AU
 A_g = 2508.76 [2705.45] [0.93σ]
 T_{eff} = 7851 [1762] K [4.04σ]

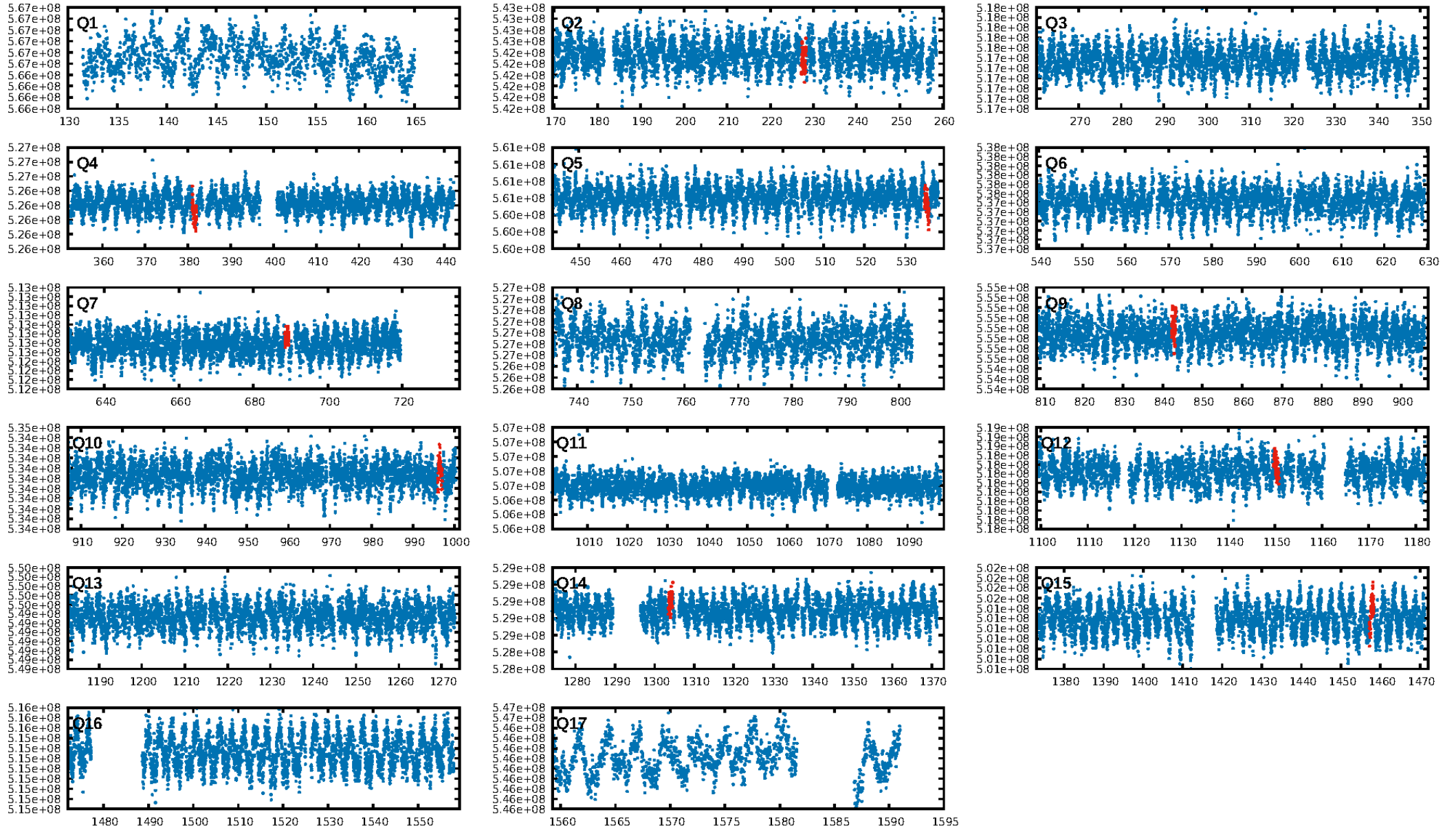
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [40.02σ]
LongPeriod-sig: 100.0% [35.97σ]
ModelChiSquare2-sig: 10.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -0.89
Centroid-sig: 9.5%
Centroid-so: 0.522 arcsec [0.98σ]
OotOffset-rm: 0.555 arcsec [1.15σ]
OotOffset-st: 3/2/2/1 [8]
KicOffset-rm: 0.400 arcsec [0.83σ]
KicOffset-st: 3/2/2/1 [8]
DiffImageQuality-fgm: 0.12 [1/8]
DiffImageOverlap-fno: 0.00 [0/9]

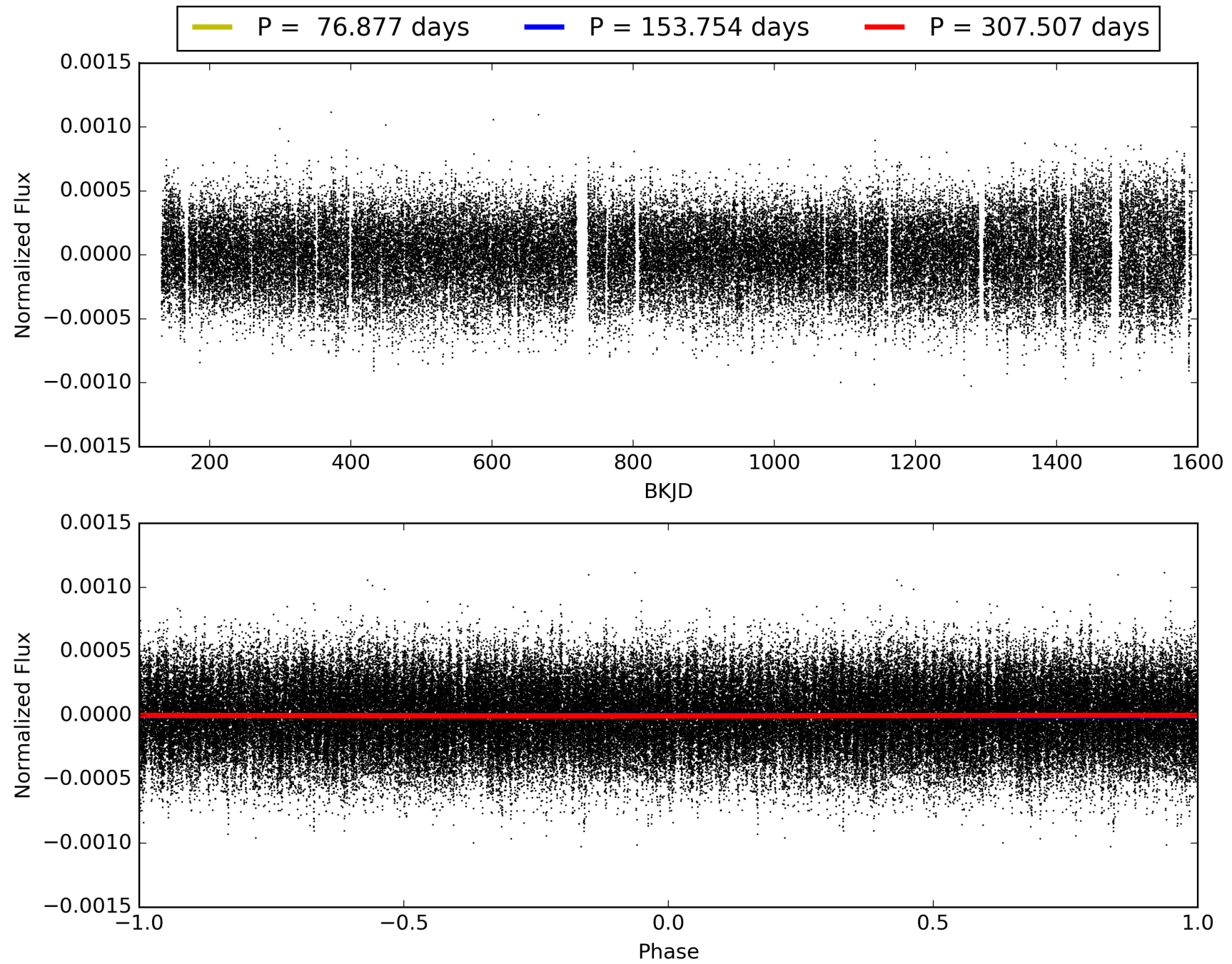
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 04:18:28 Z

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

TCE 008018769-04, PDC Light Curves

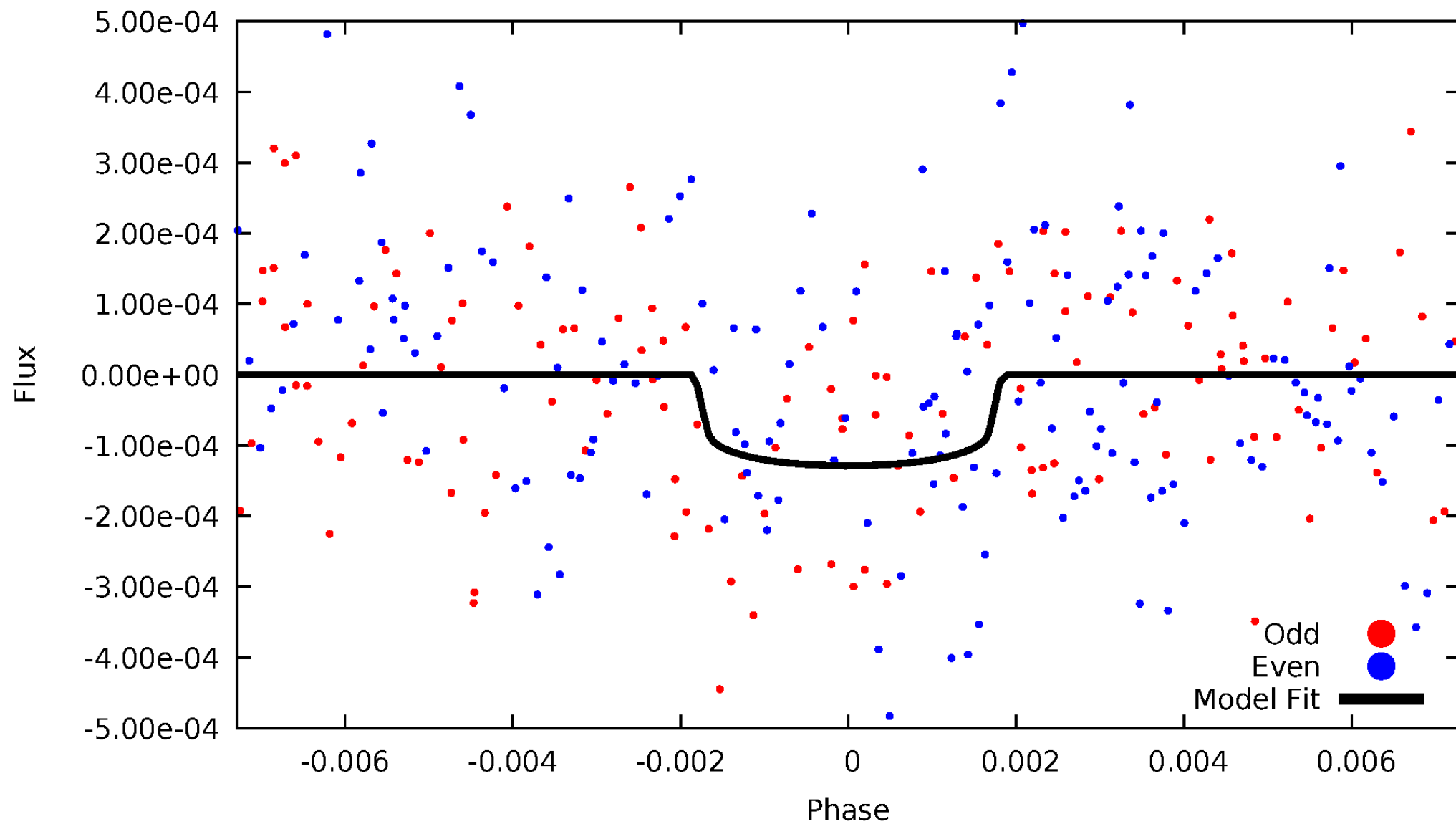


TCE 008018769-04



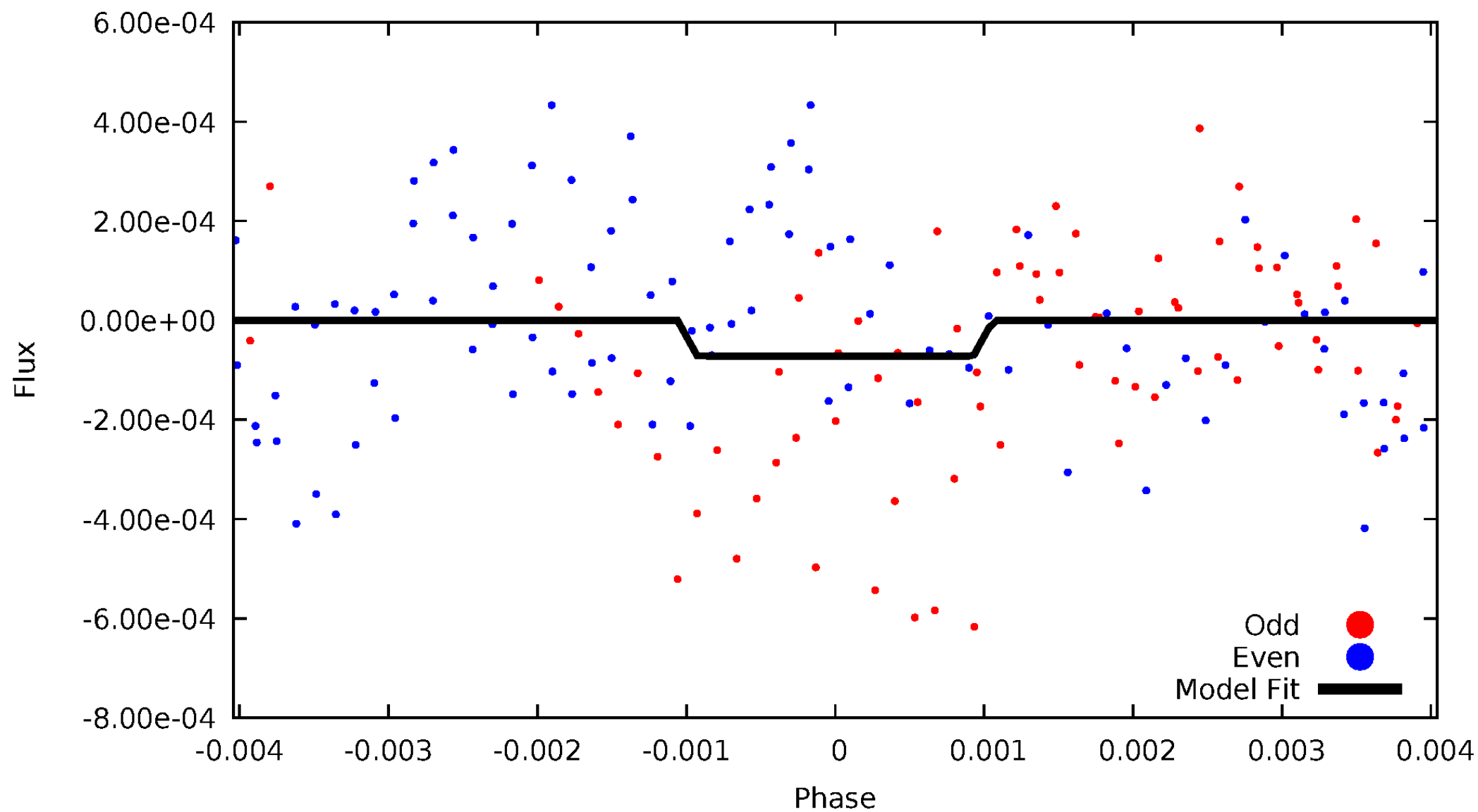
DV Odd/Even

TCE 008018769-04



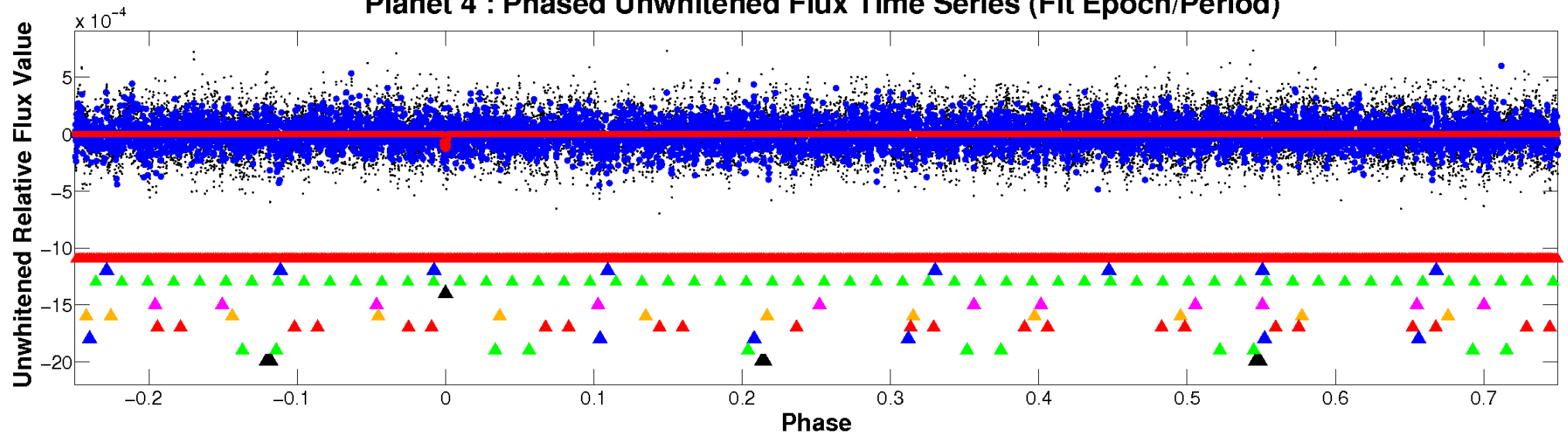
ALT Odd/Even

TCE 008018769-04

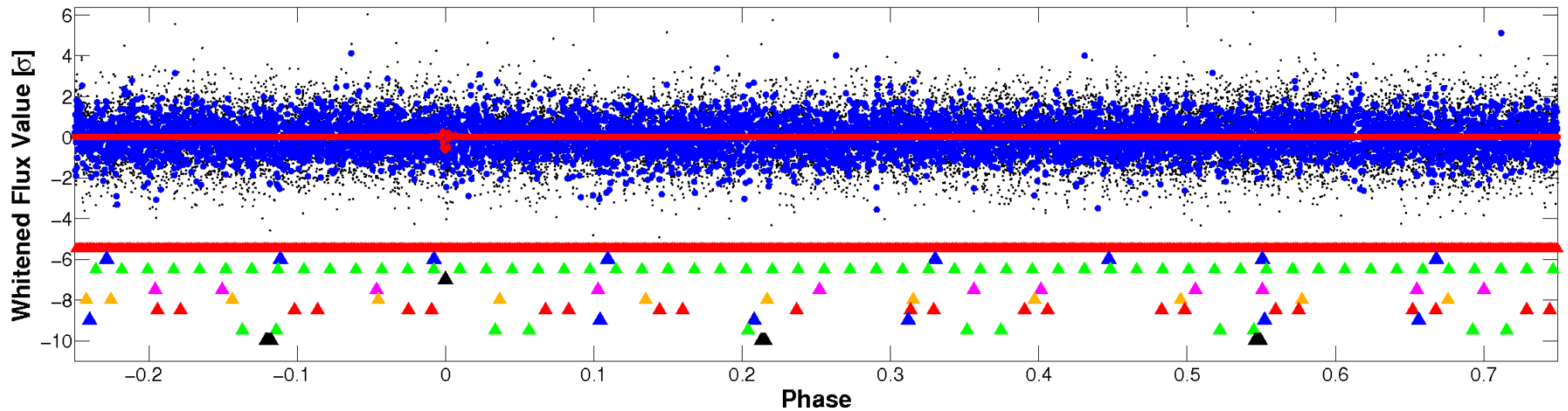


Non-Whitened Vs. Whitened Light Curve

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



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



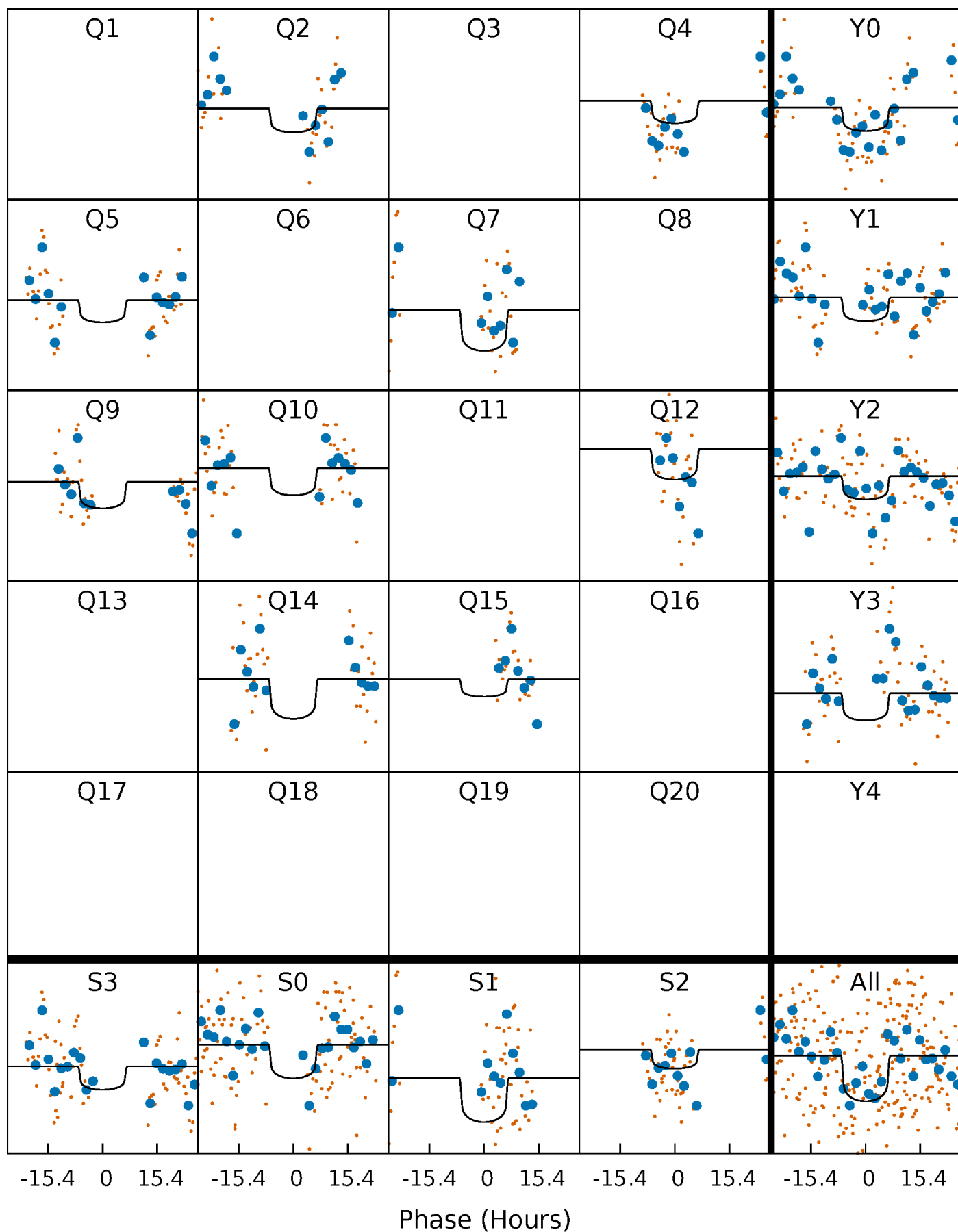
PDC Quarter-Phased Transit Curves

TCE 008018769-04 $P=153.753628$ Days $T_0=227.751237$ (BKJD)



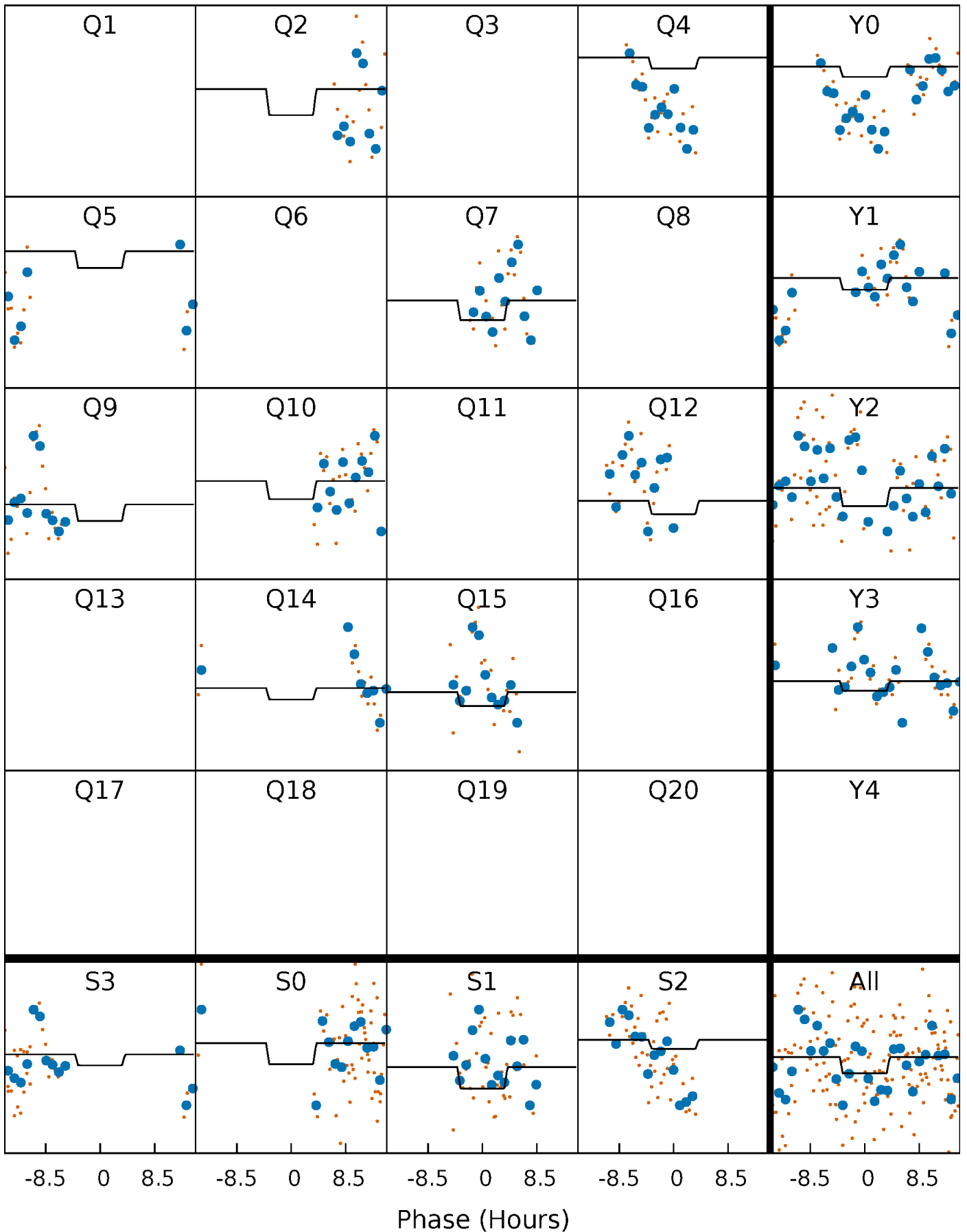
DV Quarter-Phased Transit Curves

TCE 008018769-04 P=153.753628 Days $T_0=227.751237$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

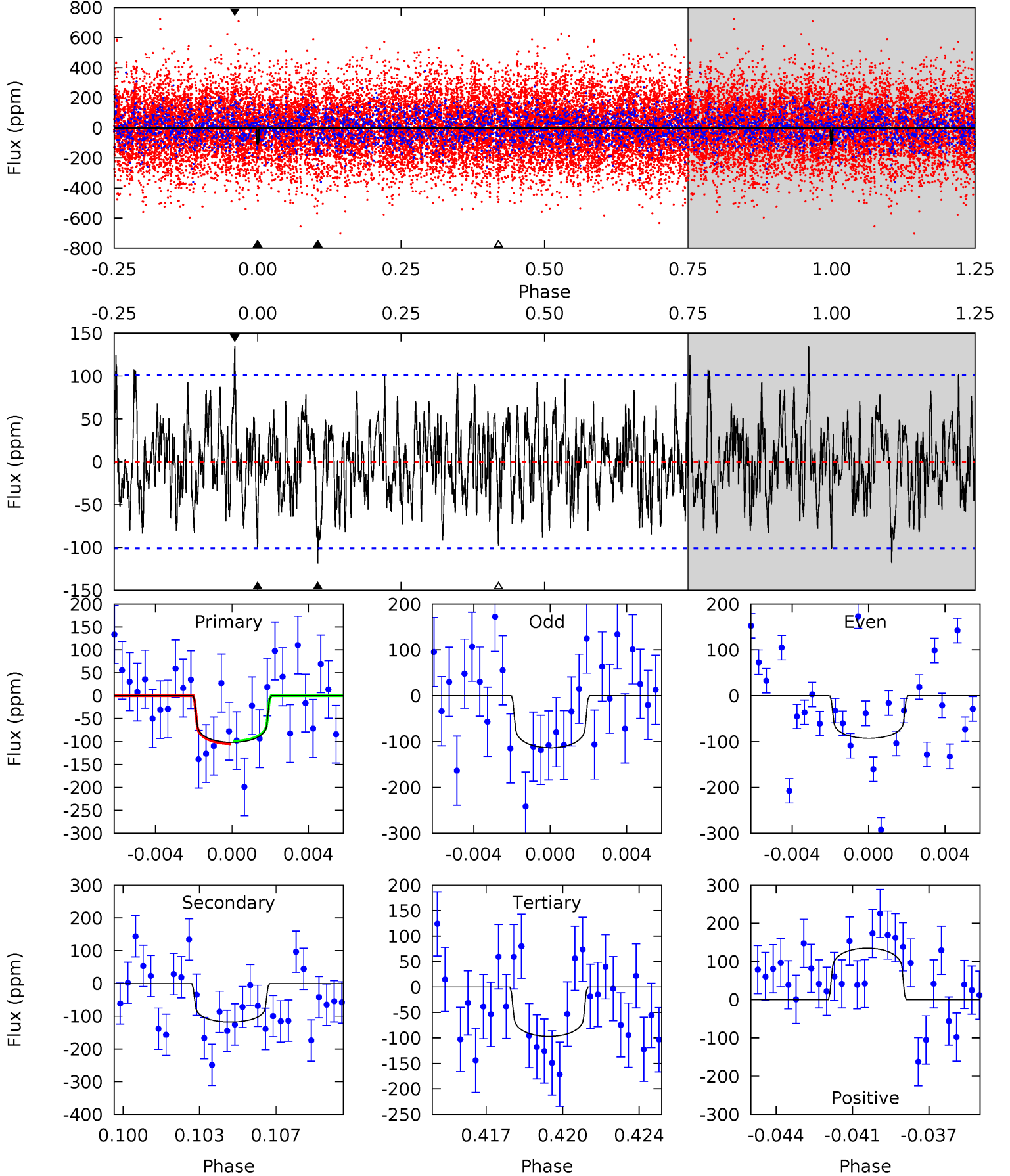
TCE 008018769-04 P=153.813335 Days $T_0=227.618974$ (BKJD)



DV Model-Shift Uniqueness Test

008018769-04, $P = 153.753628$ Days, $E = 73.997609$ Days

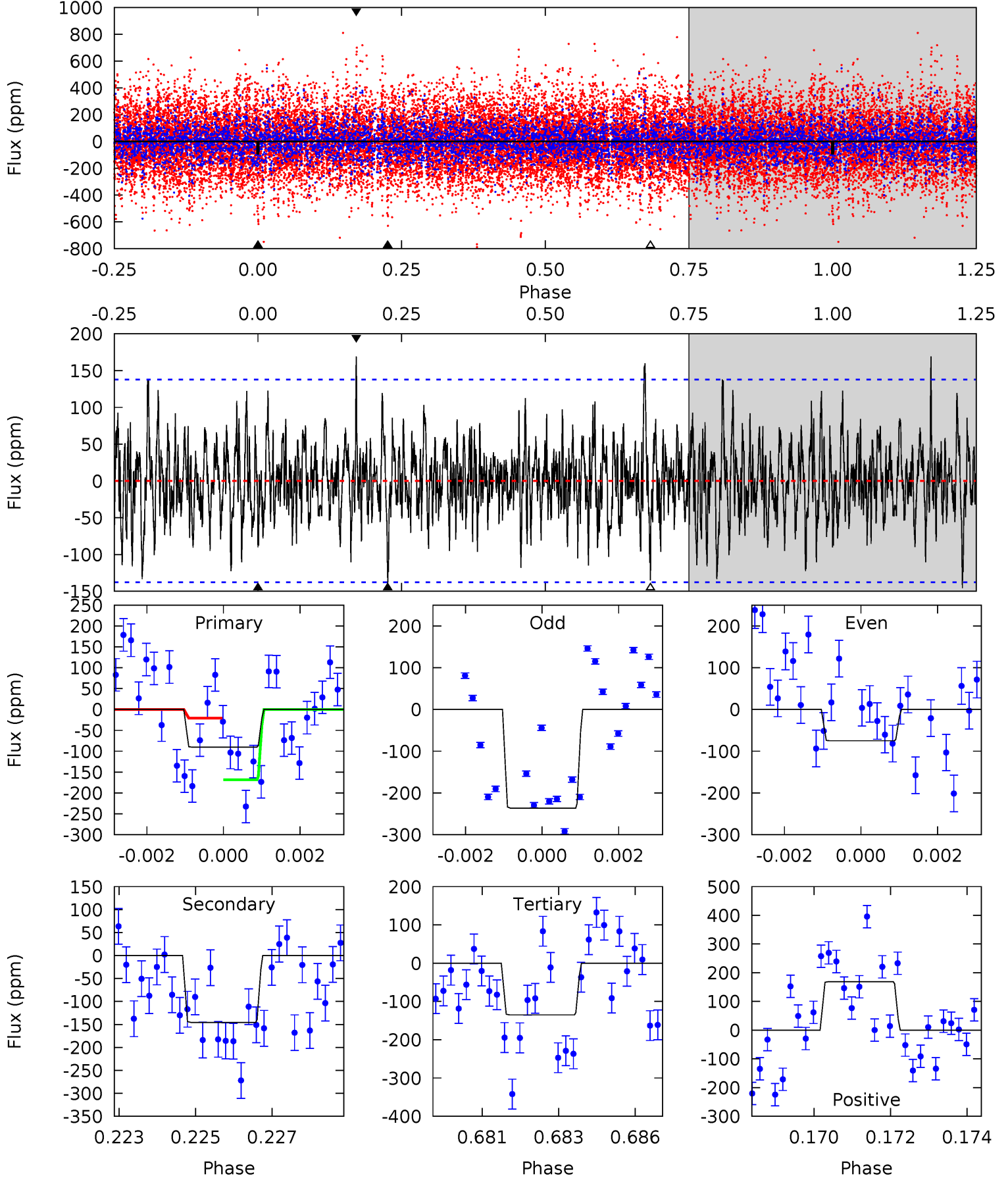
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 5.25 | 6.09 | 5.00 | 6.96 | 5.21 | 2.90 | 1.92 | 0.25 | -1.71 | 1.09 | -0.87 | 0.54 | 0.87 | 0.53 | 0.14 |



Alt Model-Shift Uniqueness Test

008018769-04, $P = 153.813335$ Days, $E = 73.805639$ Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-------|-------|------|
| 3.49 | 5.62 | 5.22 | 6.53 | 5.32 | 3.08 | 1.58 | -1.73 | -3.04 | 0.41 | -0.90 | 3.12 | -3.16 | 0.54 | 2.86 |



Stellar Parameters For KIC 008018769

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6478^{+146}_{-179} | $3.433^{+0.360}_{-0.090}$ | $-0.060^{+0.300}_{-0.250}$ | $4.391^{+0.594}_{-1.664}$ | $1.908^{+0.094}_{-0.375}$ | $0.032^{+0.087}_{-0.009}$ |
| | +2%/-3% | +10%/-3% | +500%/-417% | +14%/-38% | +5%/-20% | +275%/-28% |
| Source | PHO1 | FLK73 | KIC0 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 008018769-04 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|----------------------|------------------------|------------------------|
| DV | -118 ± 19 | $5.15^{+2.51}_{-2.45}$ | 984^{+58}_{-106} | 6134^{+2545}_{-977} | 1170^{+2802}_{-662} |
| Alt. | -146 ± 26 | $3.83^{+2.40}_{-2.00}$ | 987^{+55}_{-97} | 7747^{+5208}_{-1706} | 2581^{+8161}_{-1631} |

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

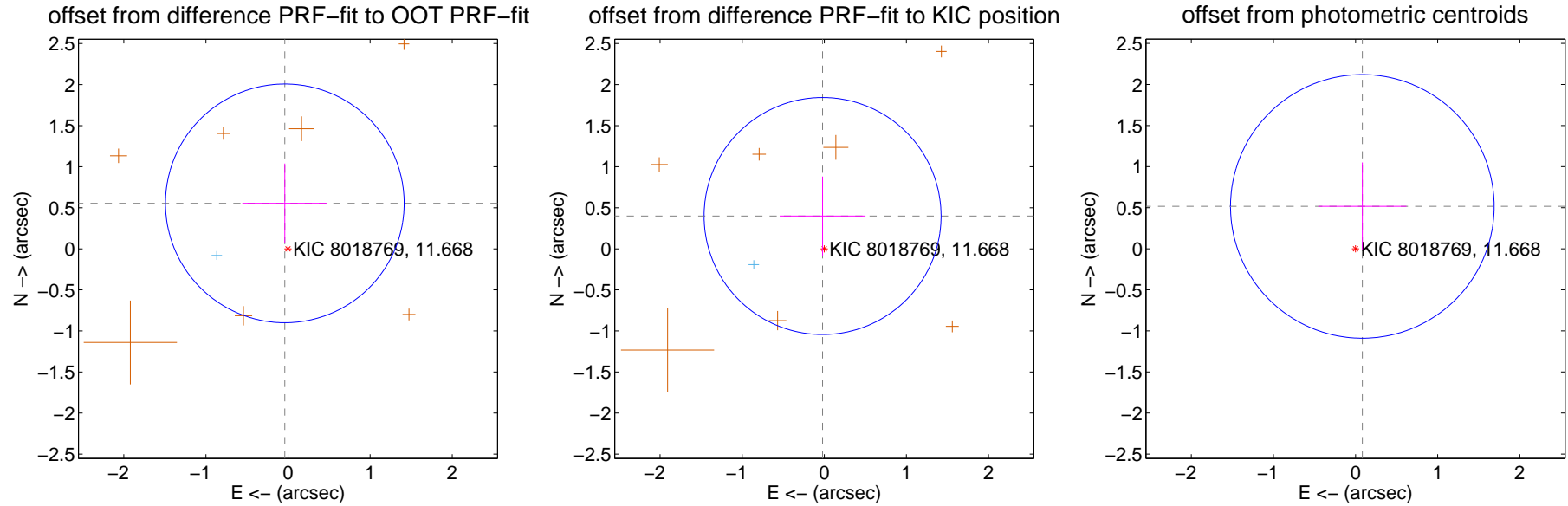
DV Centroid Data

Supplemental centroid analysis for 008018769-04. **Kepler magnitude: 11.67.** Transit SNR 4.61

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.555 ± 0.484 | 1.15 | 0.039 ± 0.518 | 0.553 ± 0.484 |
| PRF-fit source offset from KIC position | 0.400 ± 0.481 | 0.83 | 0.021 ± 0.522 | 0.399 ± 0.481 |
| photometric centroid source offset | 0.52 ± 0.53 | 0.98 | -0.08 ± 0.54 | 0.52 ± 0.53 |



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.

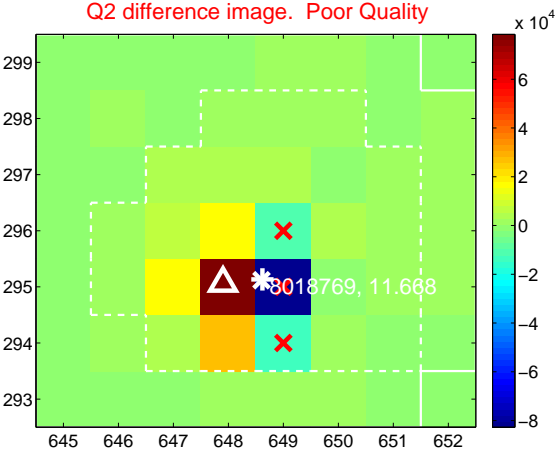
Q1 no difference image



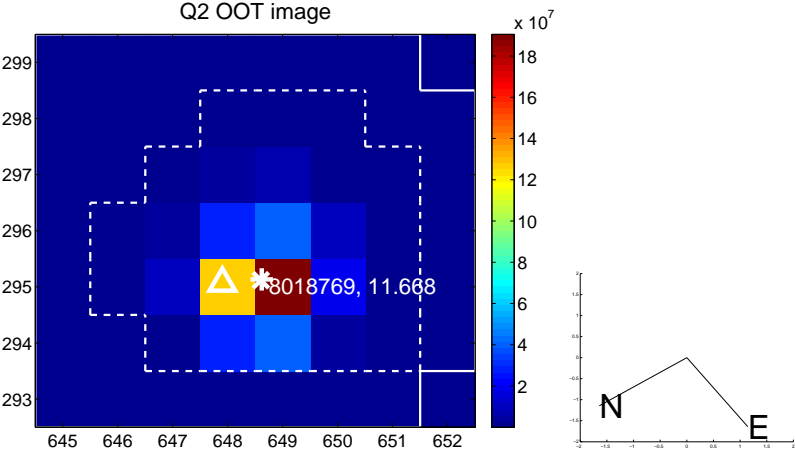
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



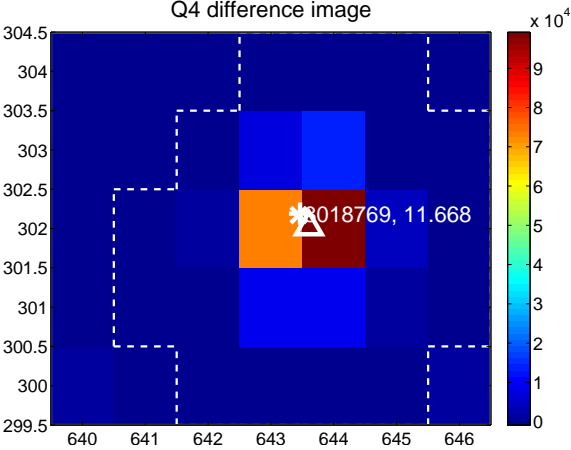
Q3 no difference image



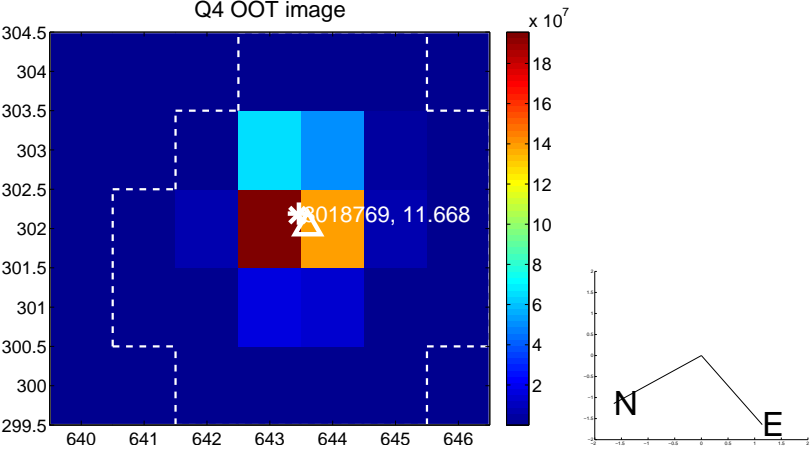
Q3 no OOT image



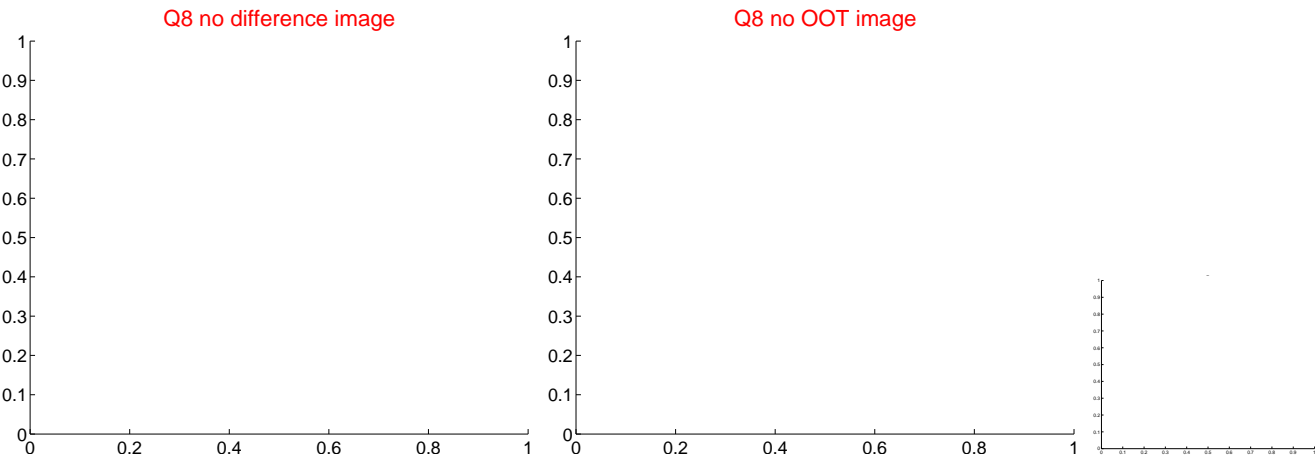
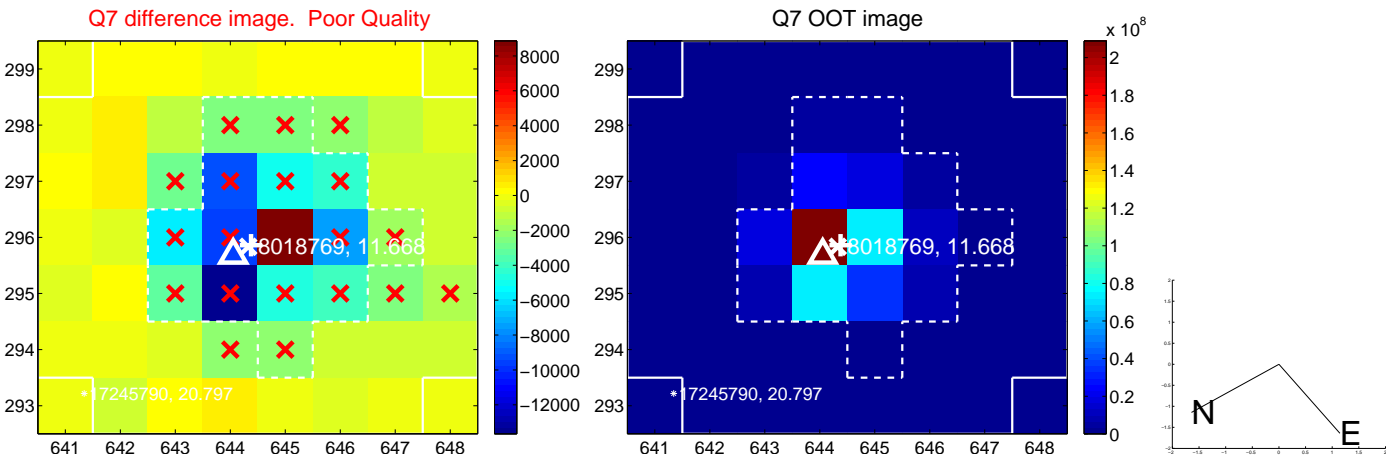
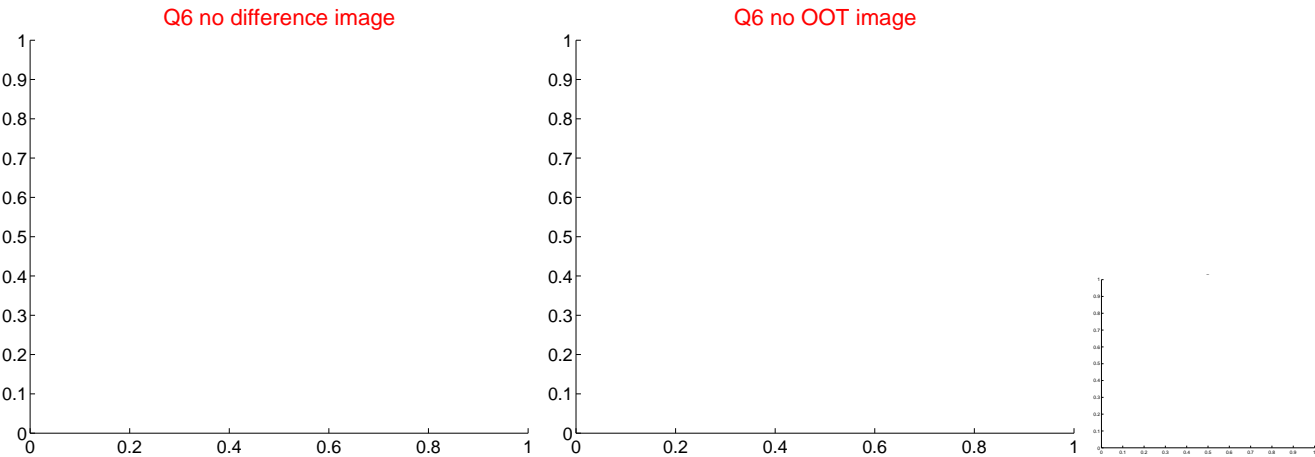
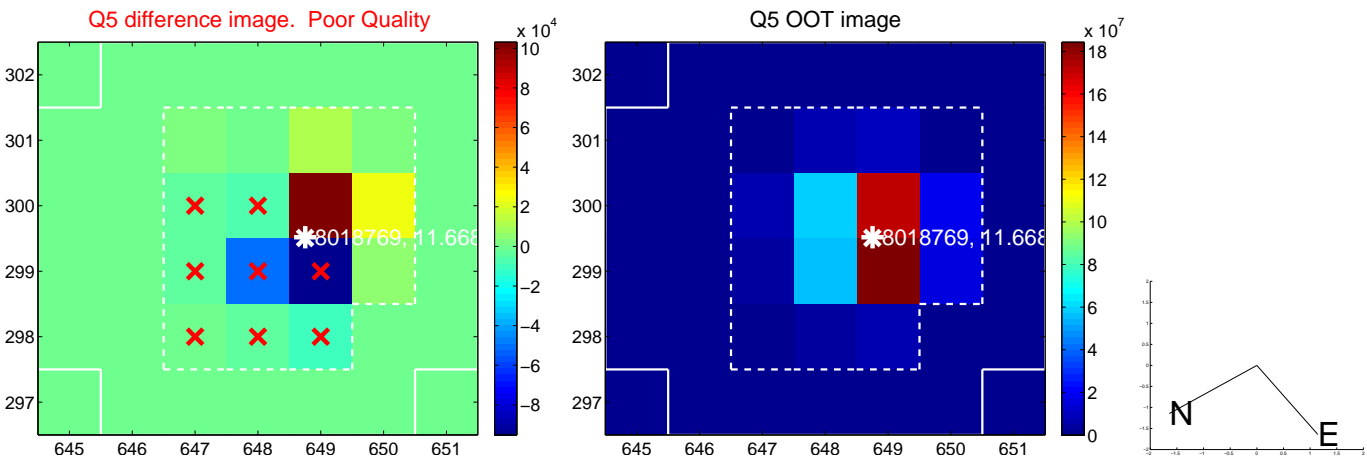
Q4 difference image



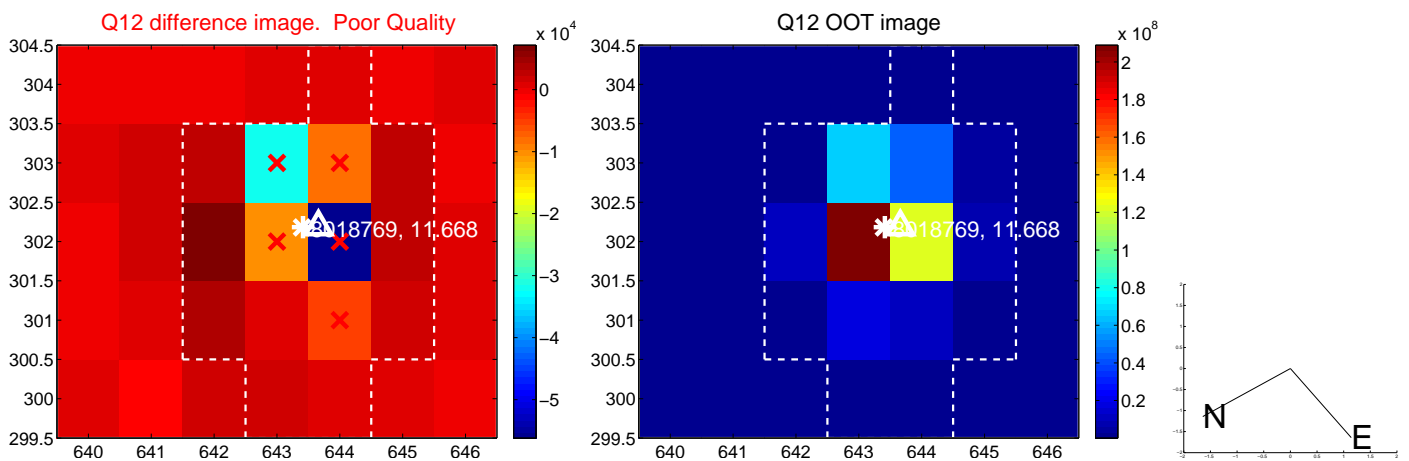
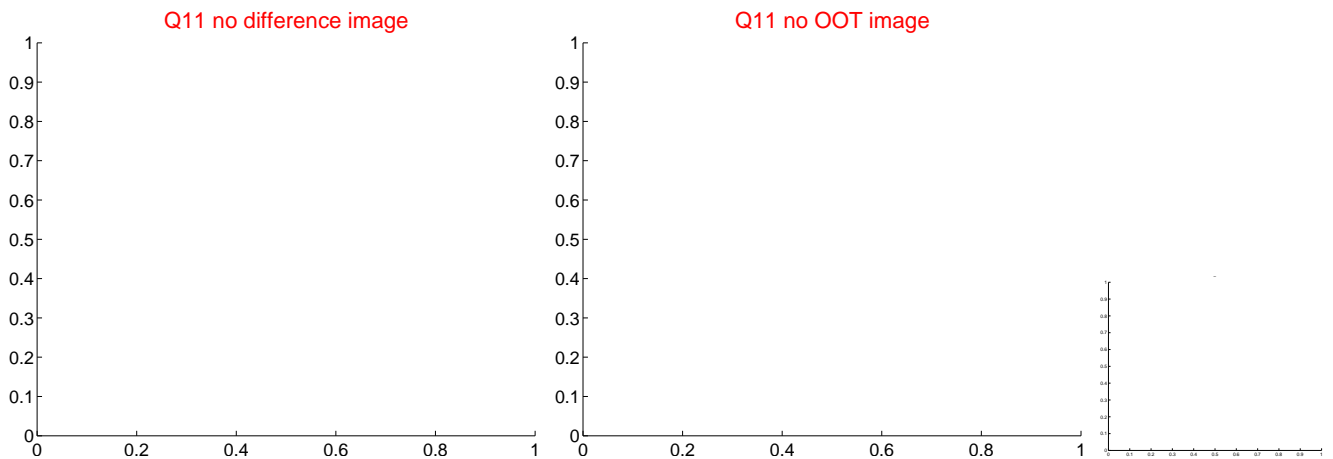
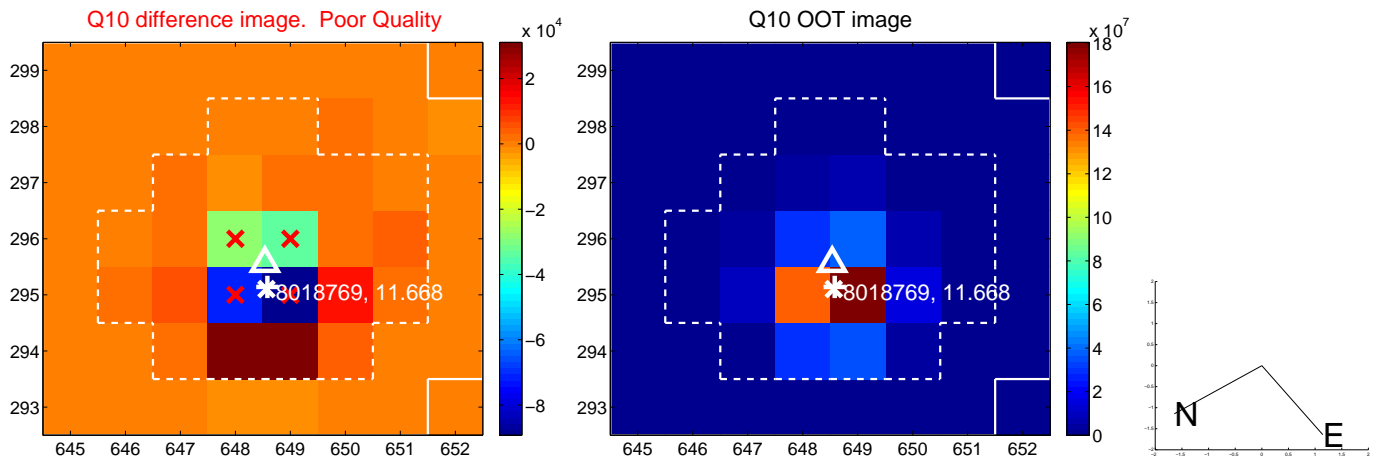
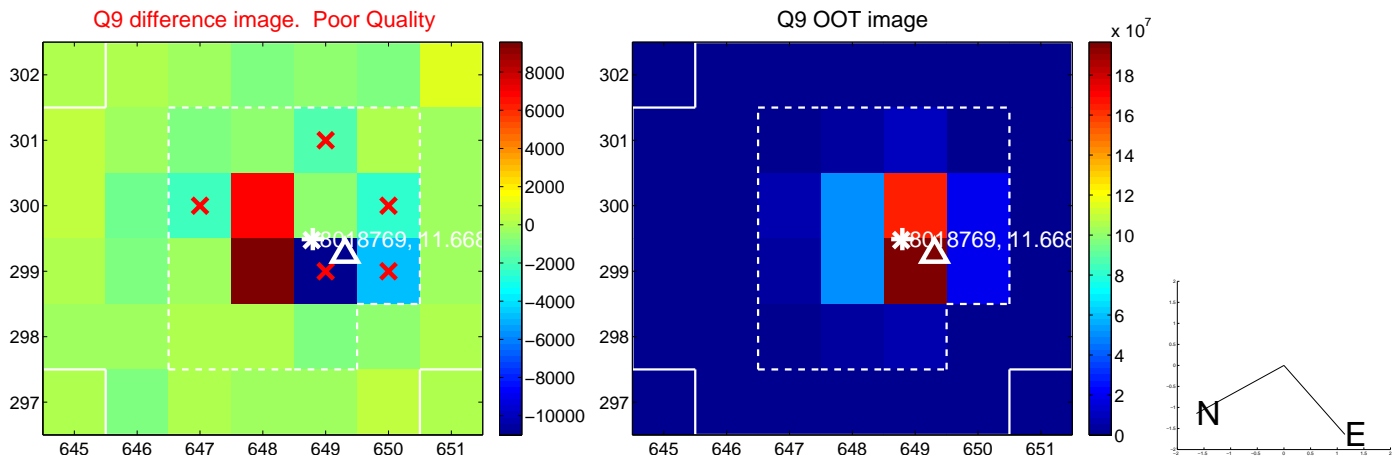
Q4 OOT image



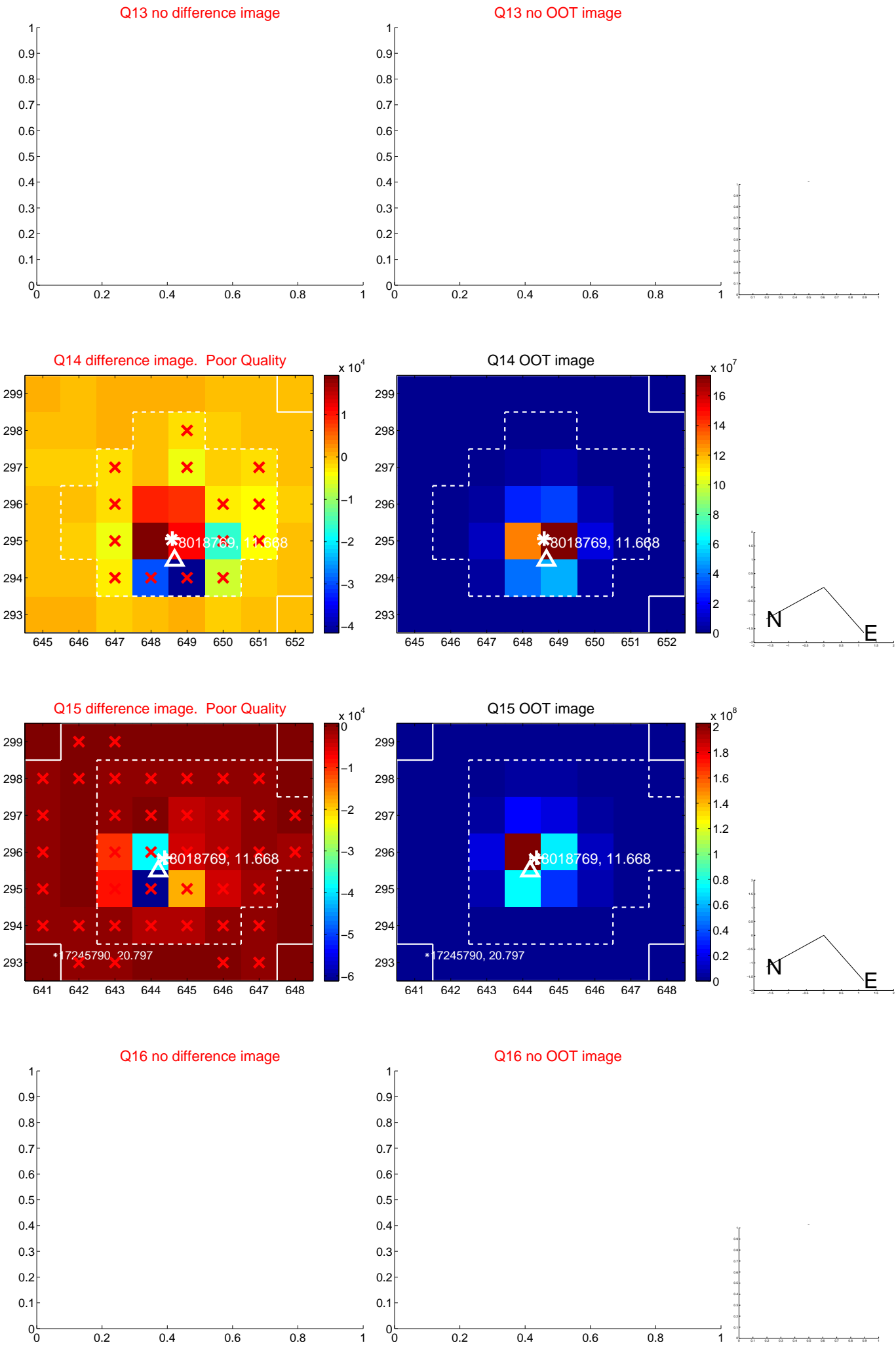
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



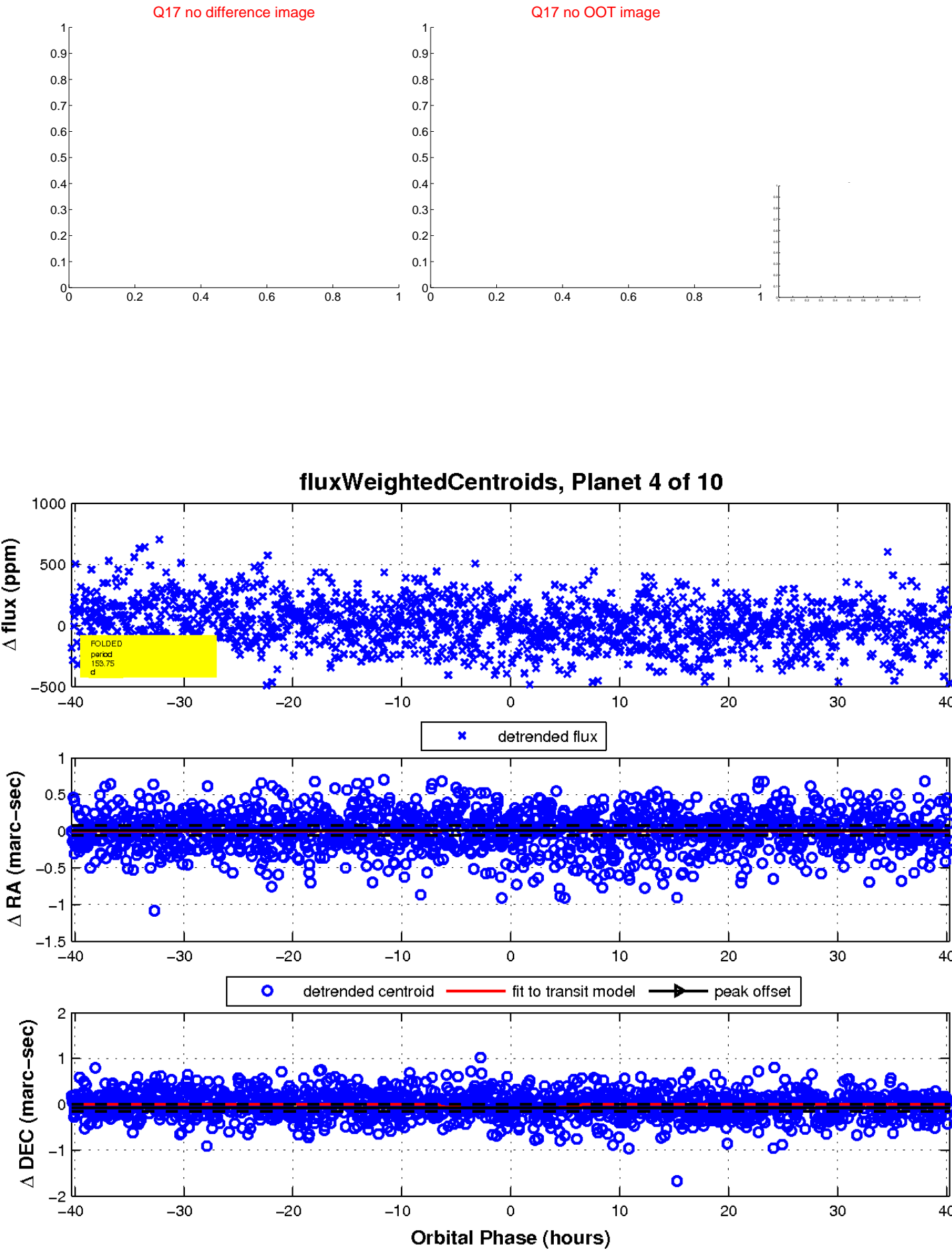
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

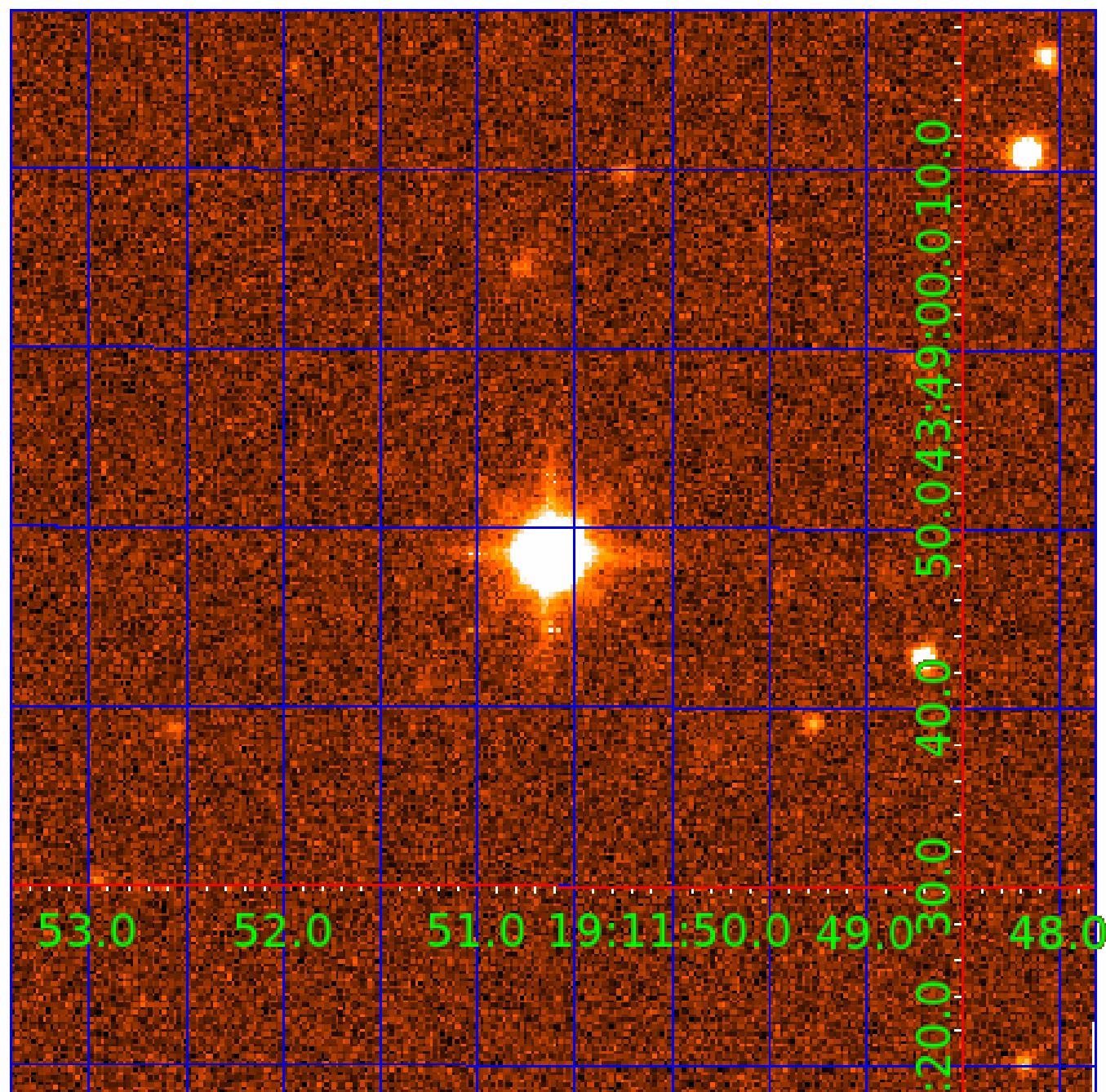


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008018769

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 008018769-01 | OBS | No | 1.393005 | 132.696397 | 26.8 | 7.332 | 9.9 | 9.9 | 4.39 | 6478 | 2.52 | 33196.84 |
| 008018769-02 | OBS | No | 187.688151 | 142.774384 | 246.6 | 18.224 | 10.7 | 8.1 | 4.39 | 6478 | 7.53 | 48.06 |
| 008018769-03 | OBS | No | 21.580518 | 142.903160 | 136.2 | 5.355 | 8.6 | 8.8 | 4.39 | 6478 | 6.01 | 859.58 |
| 008018769-04 | OBS | No | 153.753628 | 227.751237 | 128.8 | 13.438 | 8.6 | 4.6 | 4.39 | 6478 | 5.59 | 62.70 |
| 008018769-05 | OBS | No | 130.796065 | 204.601175 | 331.6 | 2.992 | 8.2 | 8.4 | 4.39 | 6478 | 8.76 | 77.79 |
| 008018769-06 | OBS | No | 126.030555 | 190.511494 | 186.4 | 16.507 | 7.8 | 7.1 | 4.39 | 6478 | 6.72 | 81.73 |
| 008018769-07 | OBS | No | 63.864375 | 176.660218 | 126.1 | 18.797 | 8.0 | 7.6 | 4.39 | 6478 | 5.50 | 202.31 |
| 008018769-09 | OBS | No | 127.543184 | 236.417562 | 163.1 | 13.304 | 7.9 | 6.4 | 4.39 | 6478 | 6.18 | 80.44 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008018769-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 008018769-02 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_UNRESOLVED_OFFSET |
| 008018769-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST |
| 008018769-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008018769-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT |
| 008018769-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS |
| 008018769-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008018769-09 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET |

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

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

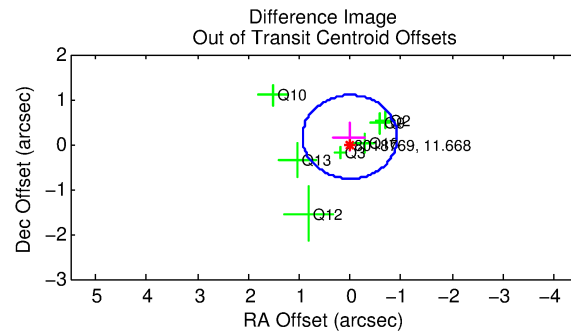
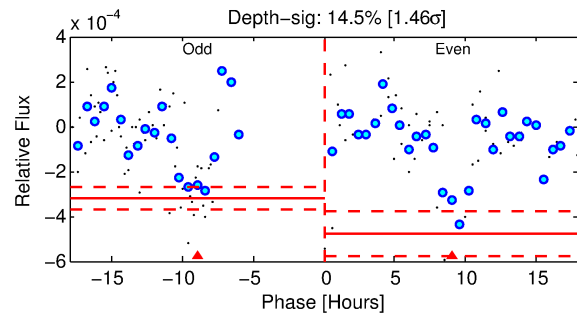
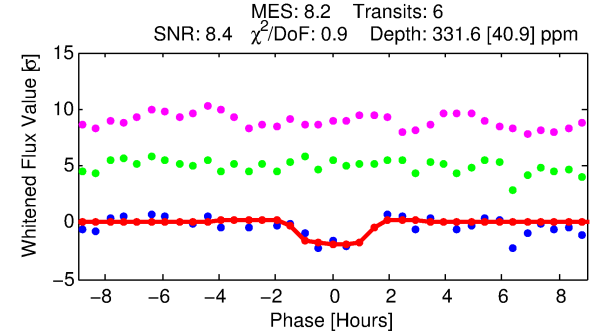
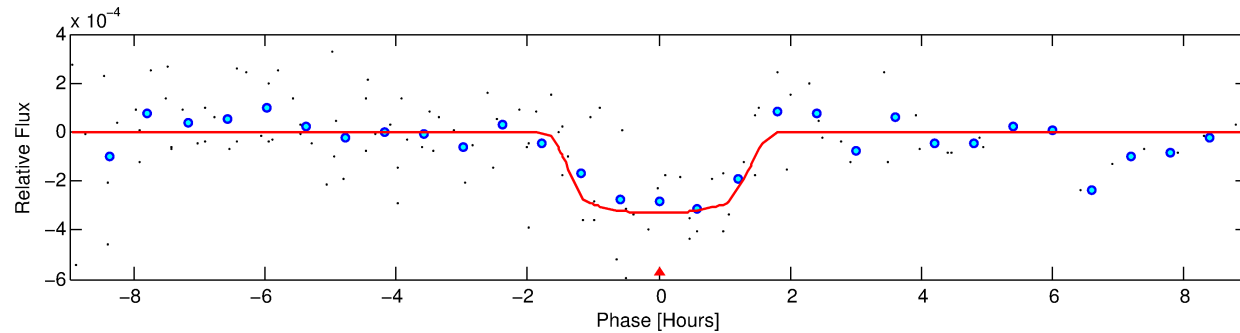
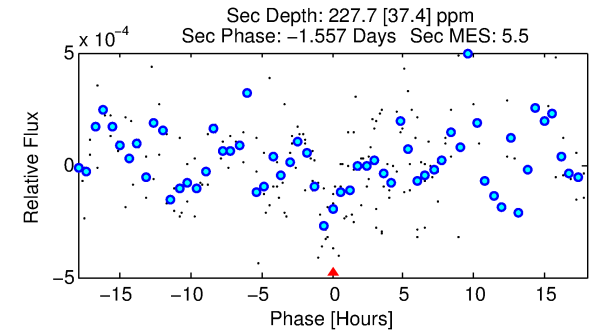
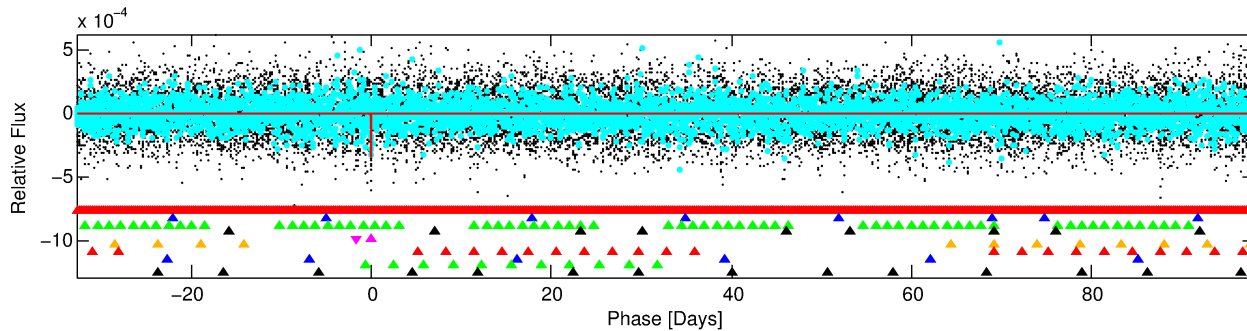
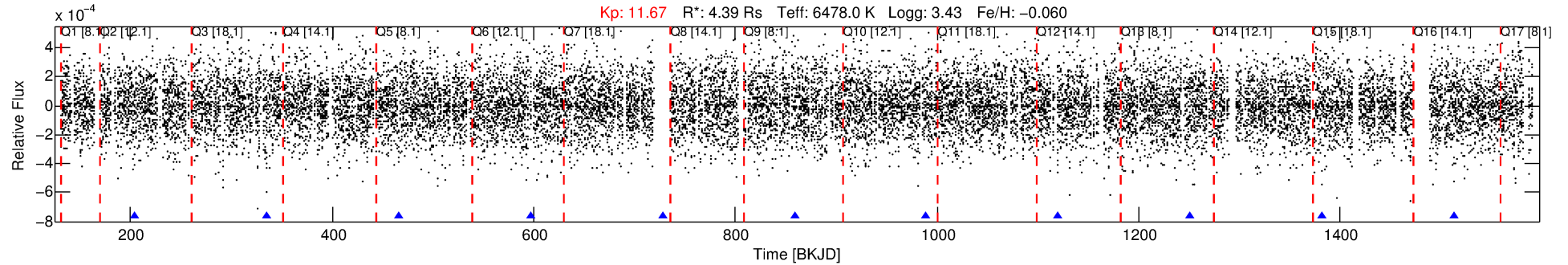
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008018769-05

No Significant Match Found

DV One-Page Summary

KIC: 8018769 Candidate: 5 of 10 Period: 130.796 d



DV Fit Results:

Period = 130.79607 [0.00094] d
Epoch = 204.6012 [0.0056] BKJD
Rp/R* = 0.0183 [0.0229]
a/R* = 220.22 [1533.16]
b = 0.78 [3.61]
Seff = 77.79 [48.04]
Teq = 757 [117] K
Rp = 8.76 [11.49] Re
a = 0.6254 [0.2341] AU
Ag = 638.30 [1651.97] [0.39σ]
Teffp = 5885 [3705] K [1.38σ]

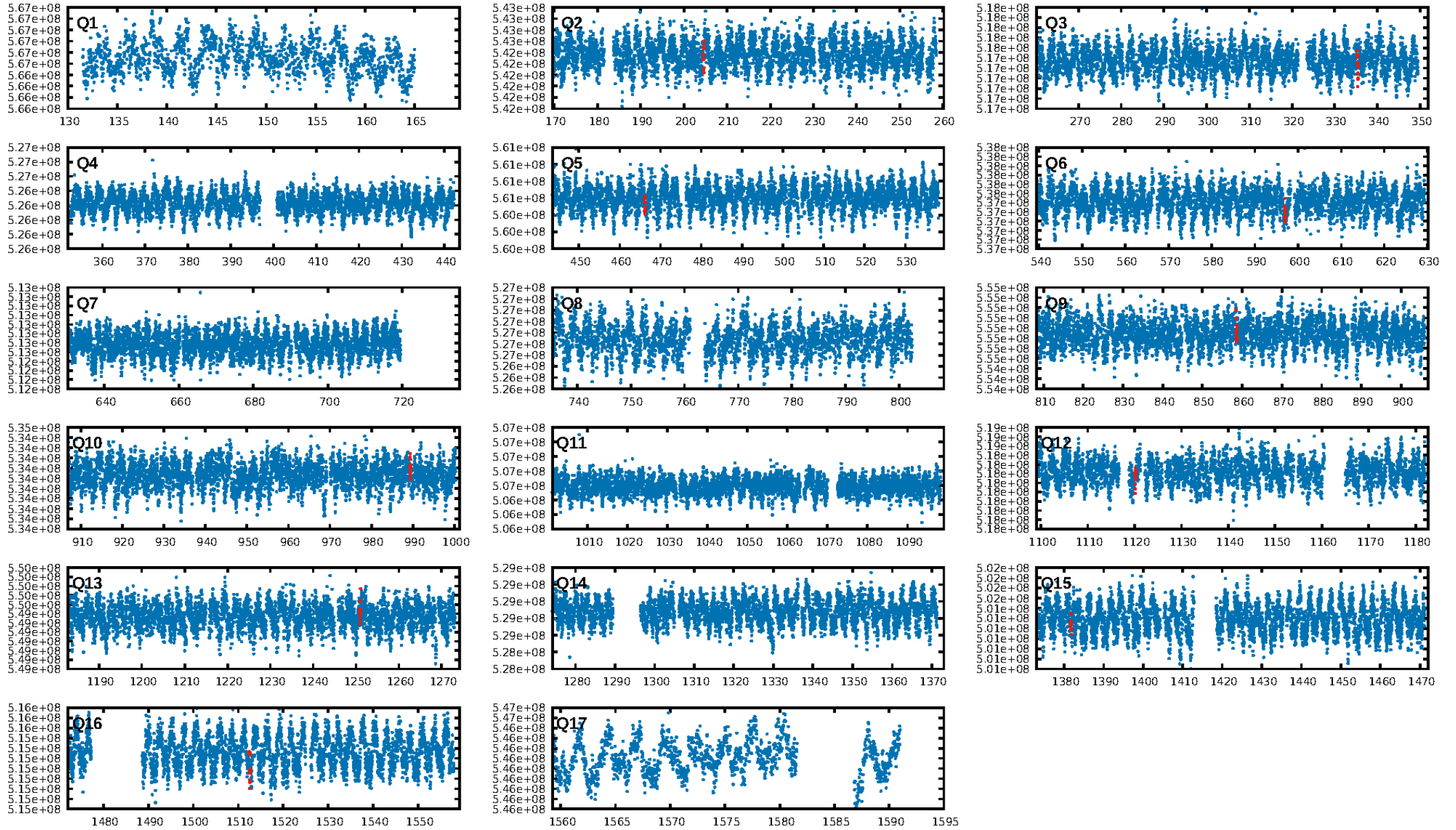
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.73σ]
LongPeriod-sig: 100.0% [40.02σ]
ModelChiSquare2-sig: 12.0%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 2.875
Centroid-sig: 9.8%
Centroid-so: 0.568 arcsec [1.84σ]
OotOffset-rm: 0.162 arcsec [0.52σ]
KicOffset-rm: 0.039 arcsec [0.14σ]
OotOffset-st: 2/1/2/2 [7]
KicOffset-st: 2/1/2/2 [7]
DiffImageQuality-fgm: 0.86 [6/7]
DiffImageOverlap-fno: 0.30 [3/10]

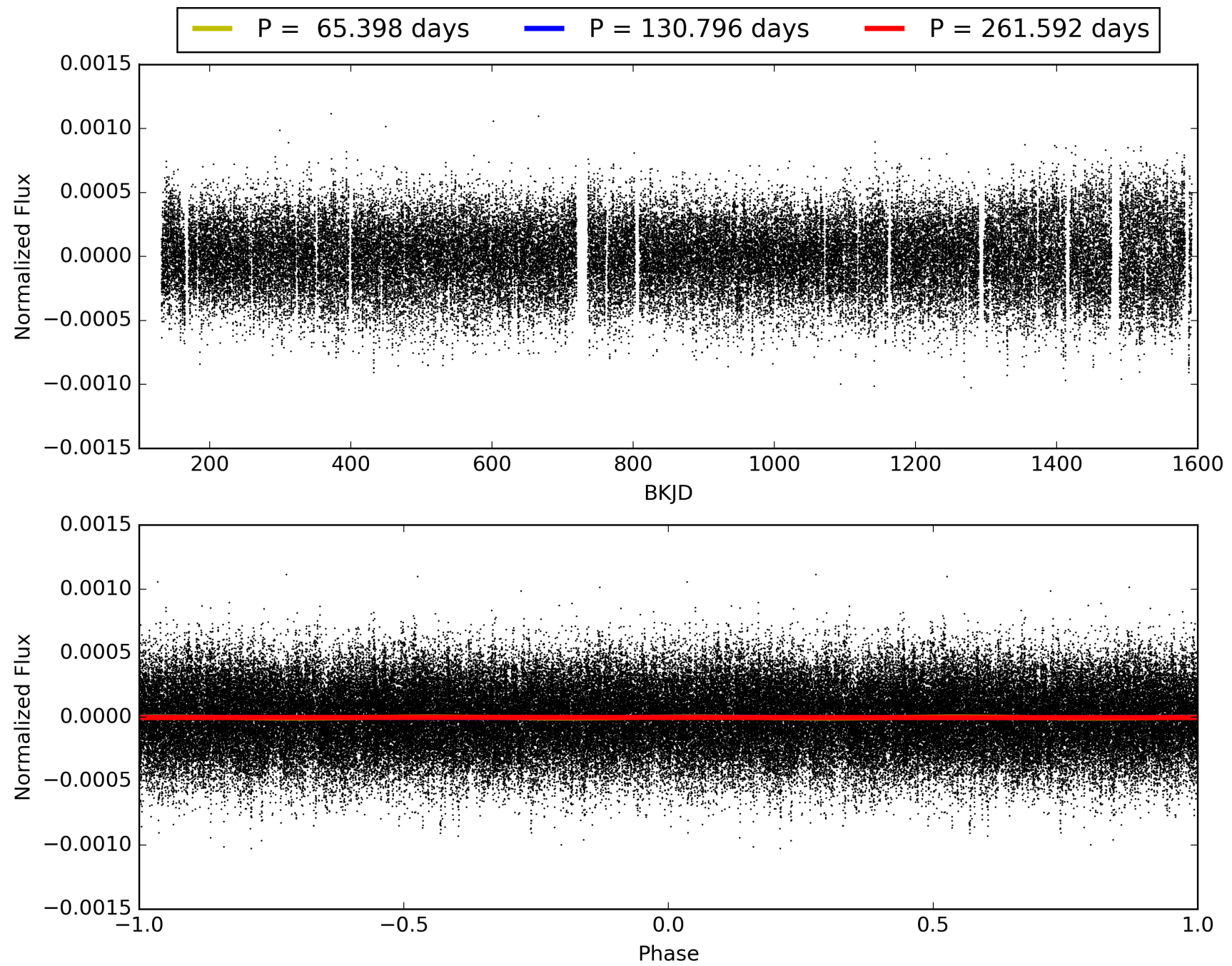
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 04:18:33 Z

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

TCE 008018769-05, PDC Light Curves

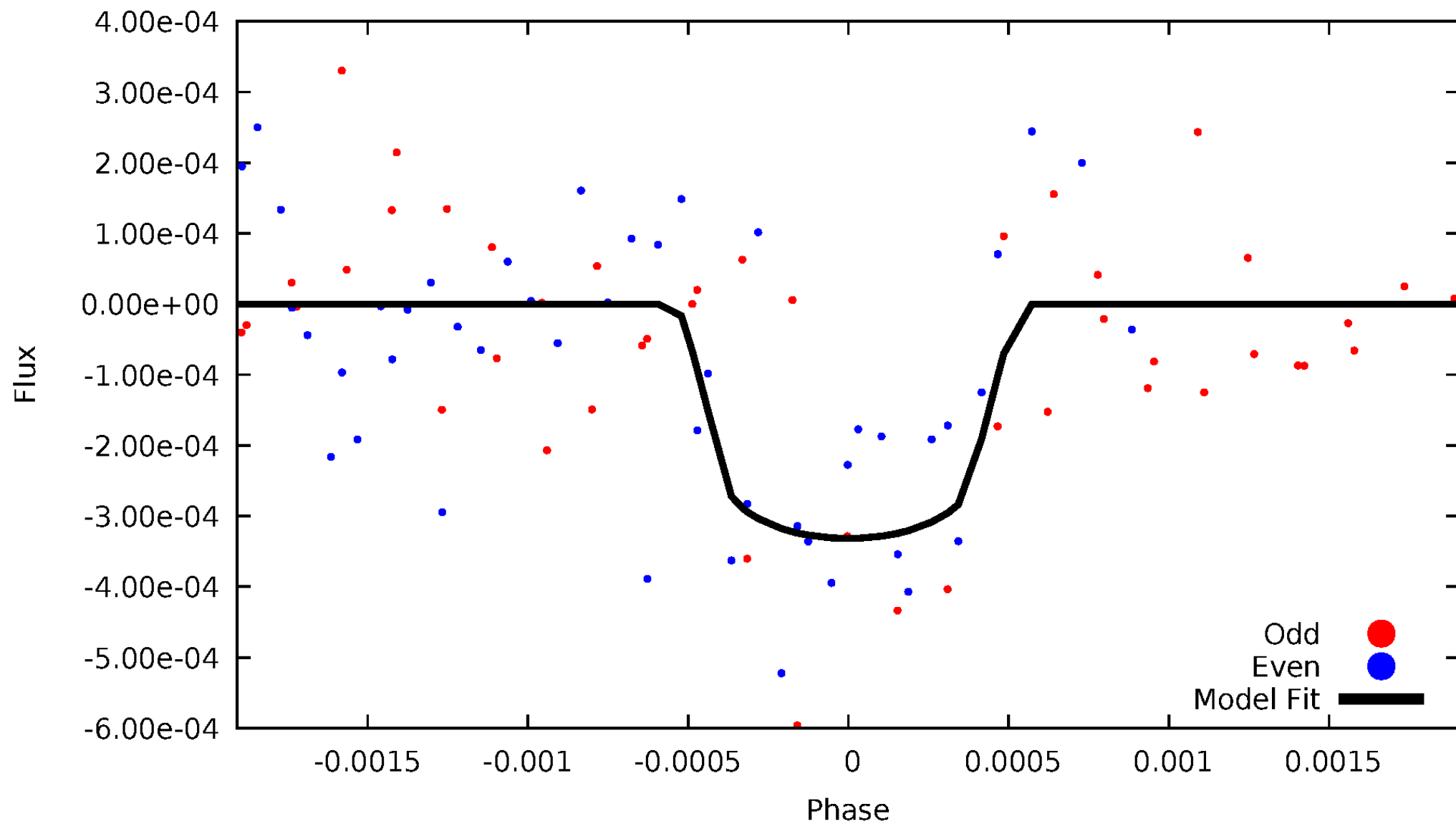


TCE 008018769-05



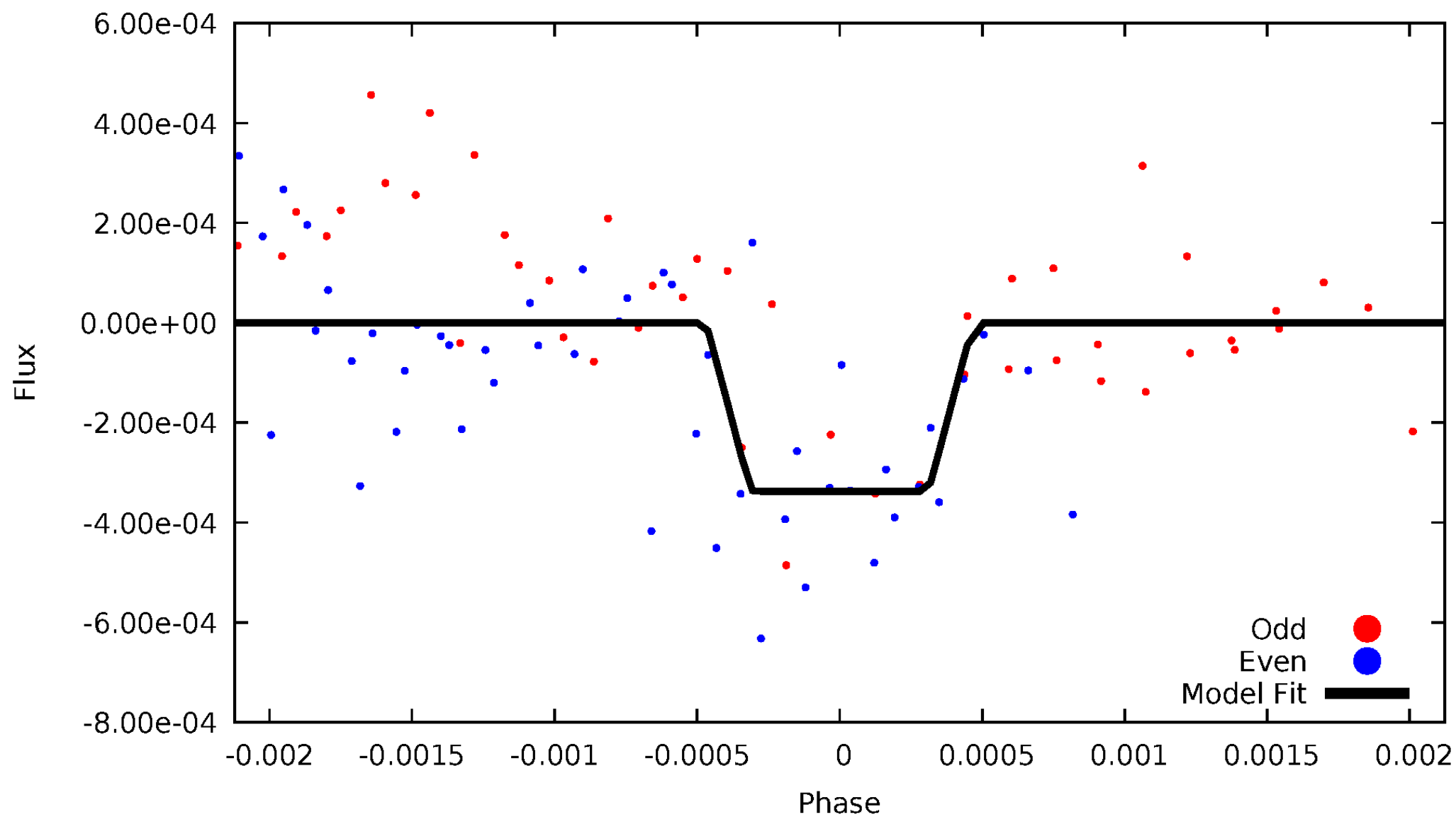
DV Odd/Even

TCE 008018769-05



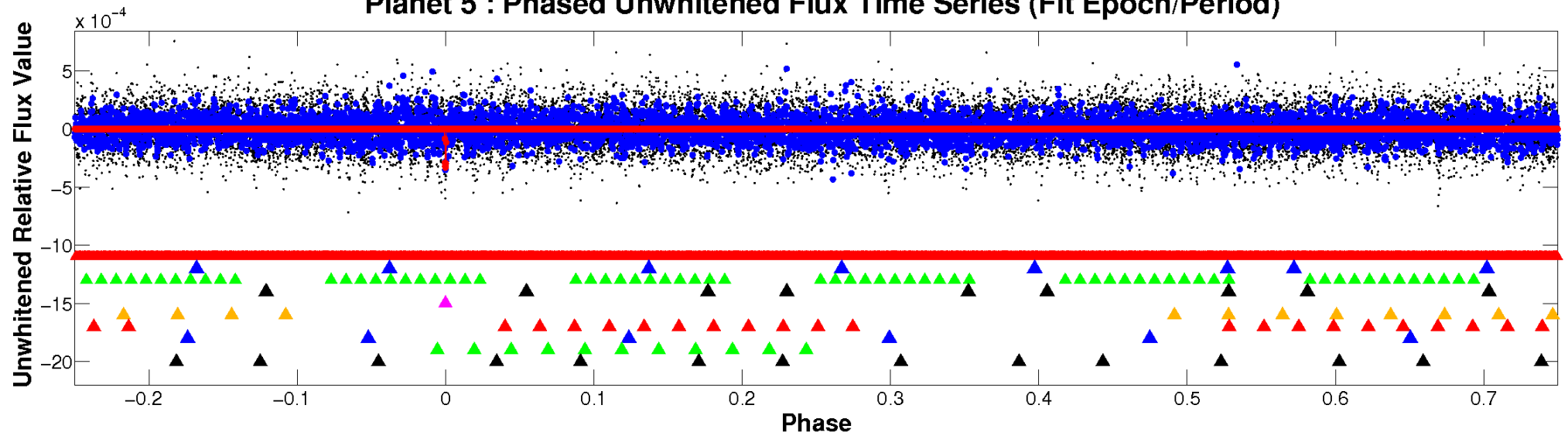
ALT Odd/Even

TCE 008018769-05

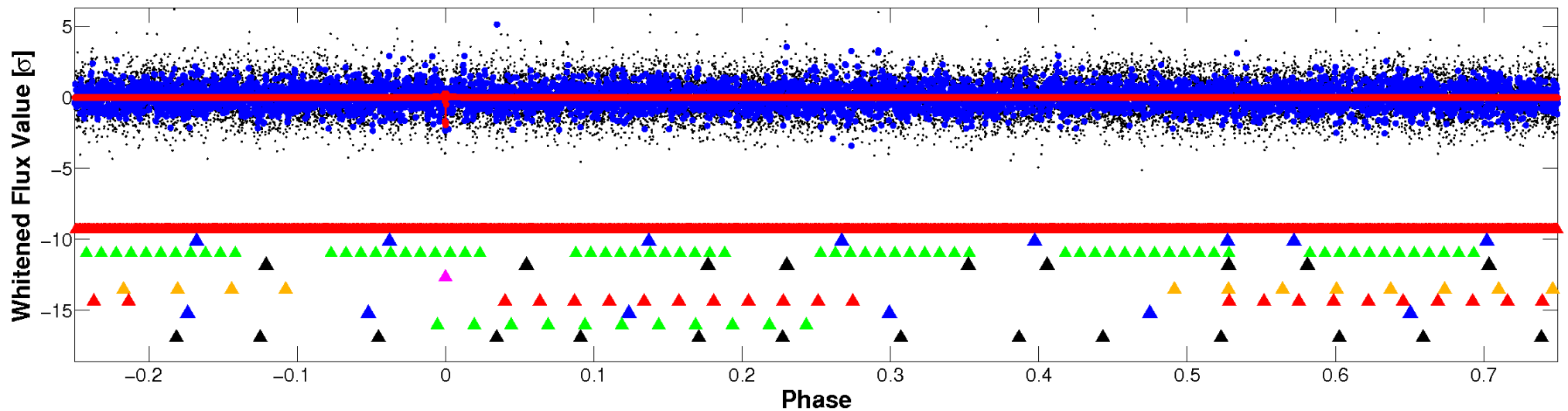


Non-Whitened Vs. Whitened Light Curve

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

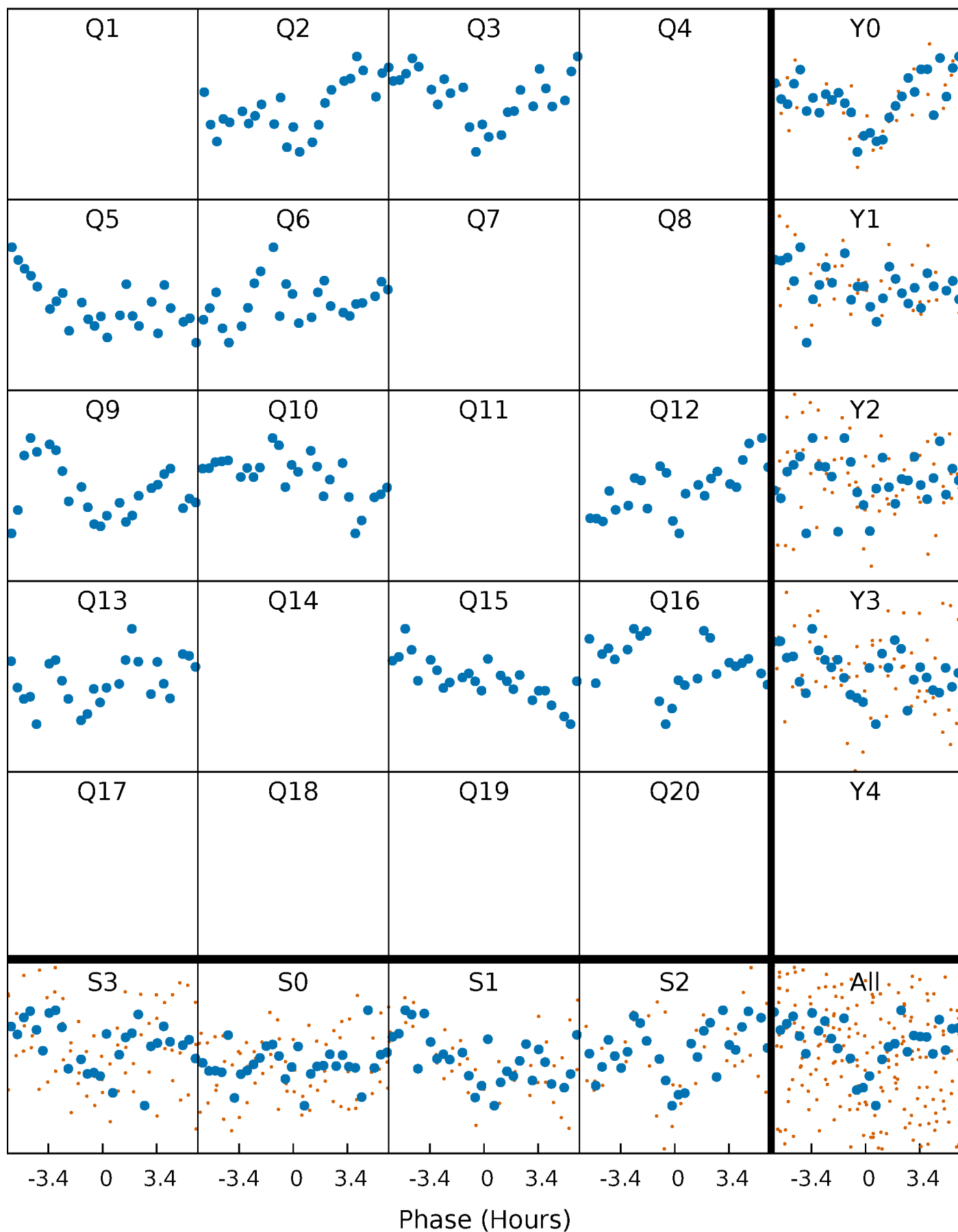


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



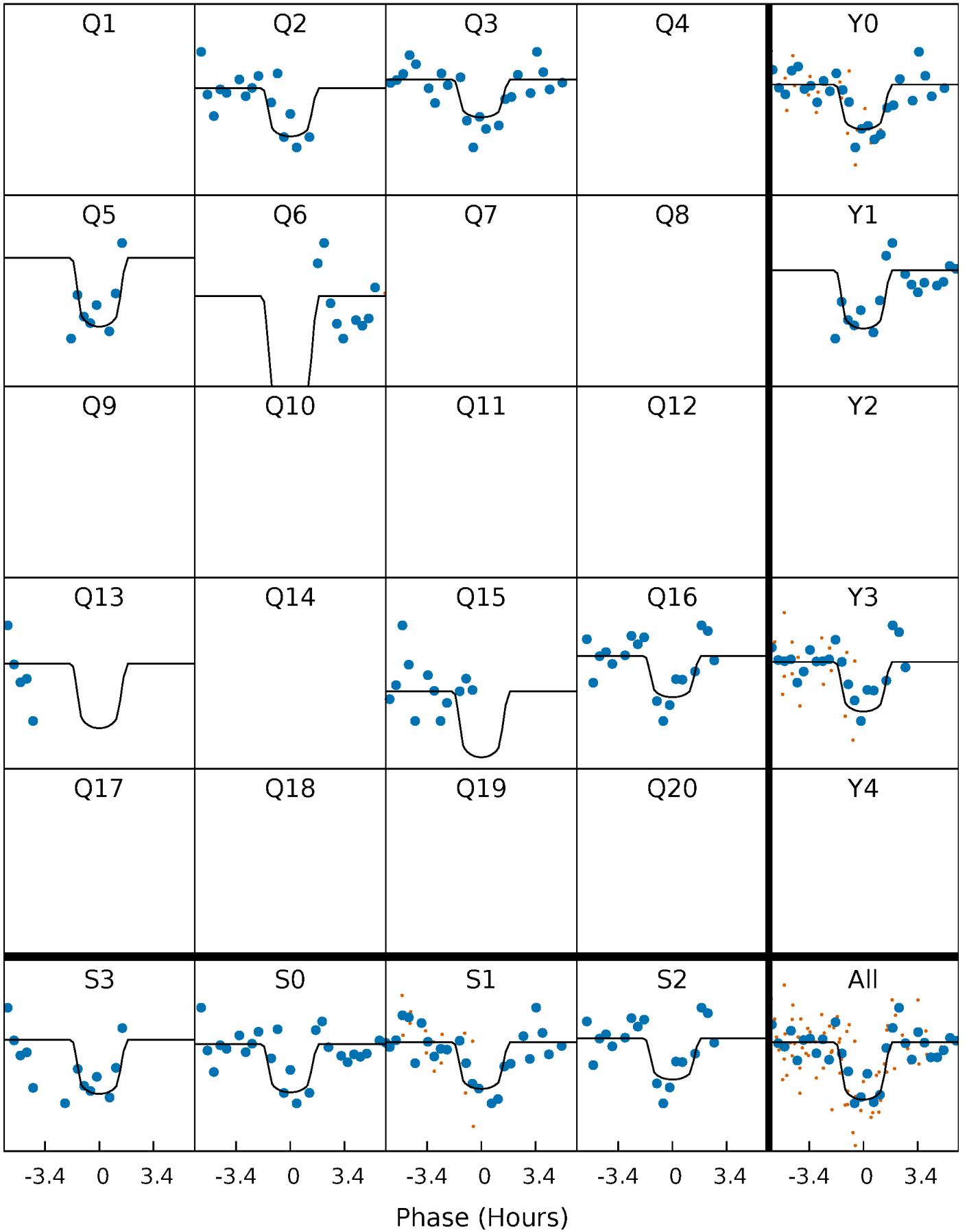
PDC Quarter-Phased Transit Curves

TCE 008018769-05 $P=130.796065$ Days $T_0=204.601175$ (BKJD)



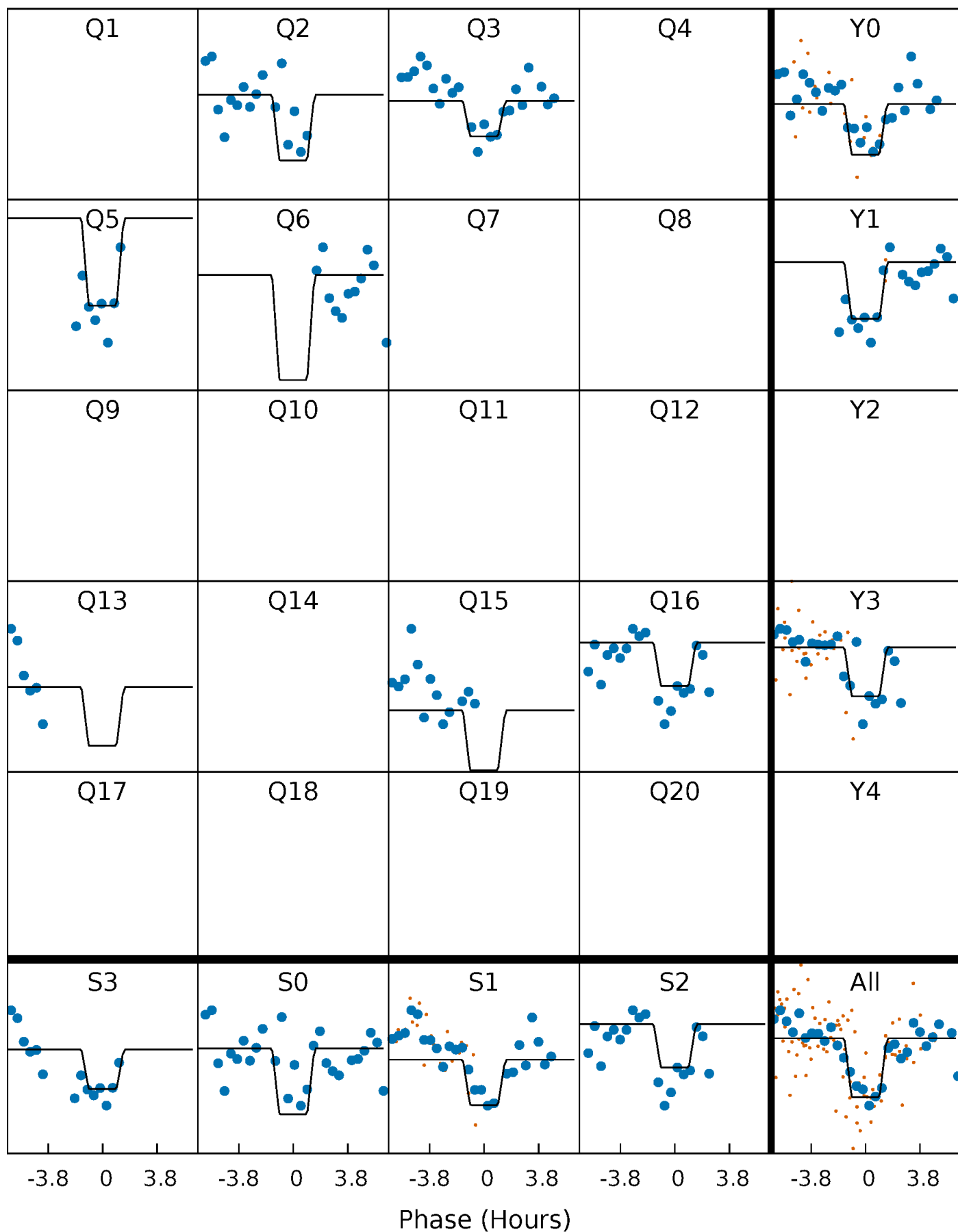
DV Quarter-Phased Transit Curves

TCE 008018769-05 $P=130.796065$ Days $T_0=204.601175$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

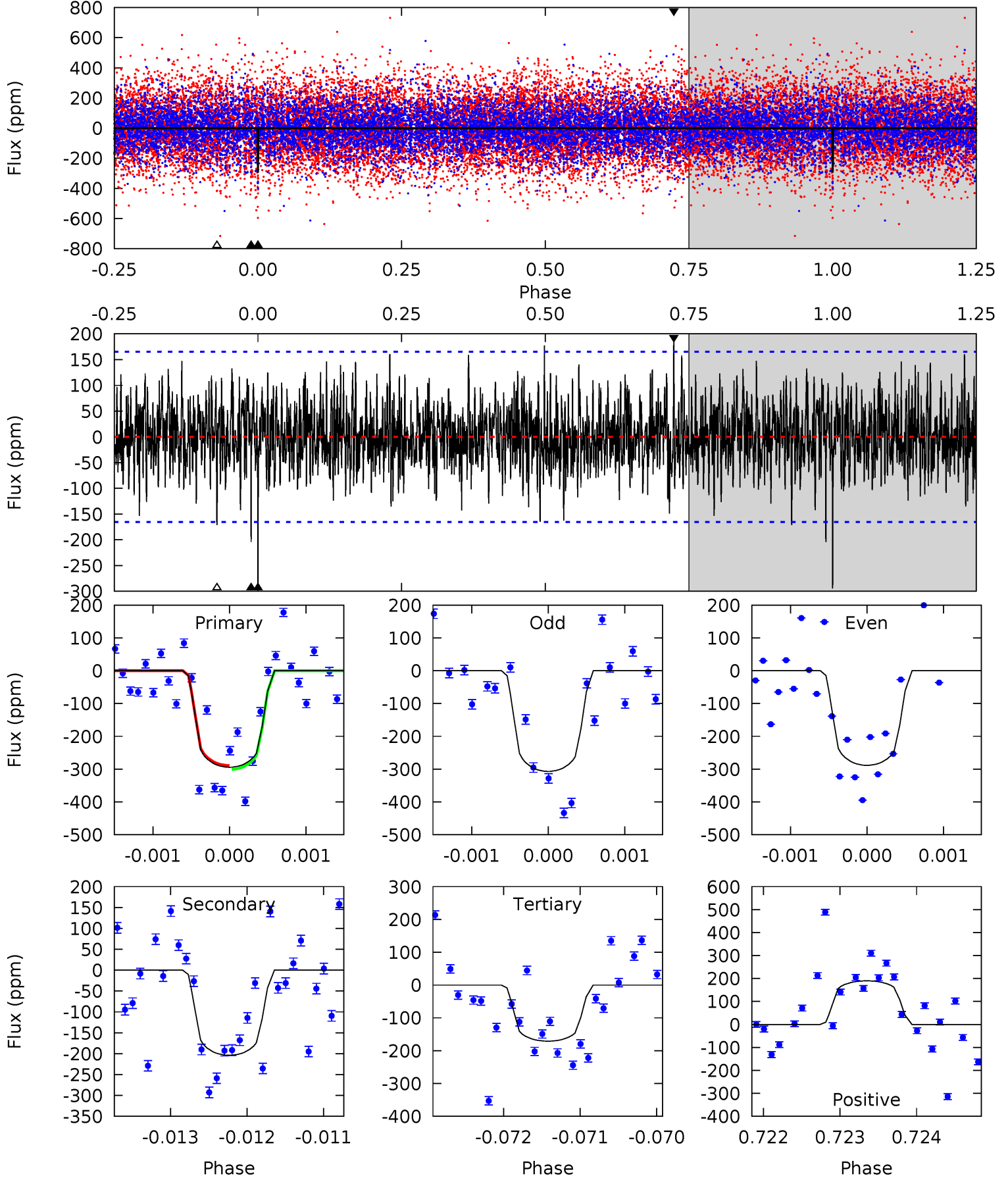
TCE 008018769-05 P=130.796631 Days $T_0=204.604306$ (BKJD)



DV Model-Shift Uniqueness Test

008018769-05, P = 130.796065 Days, E = 73.805110 Days

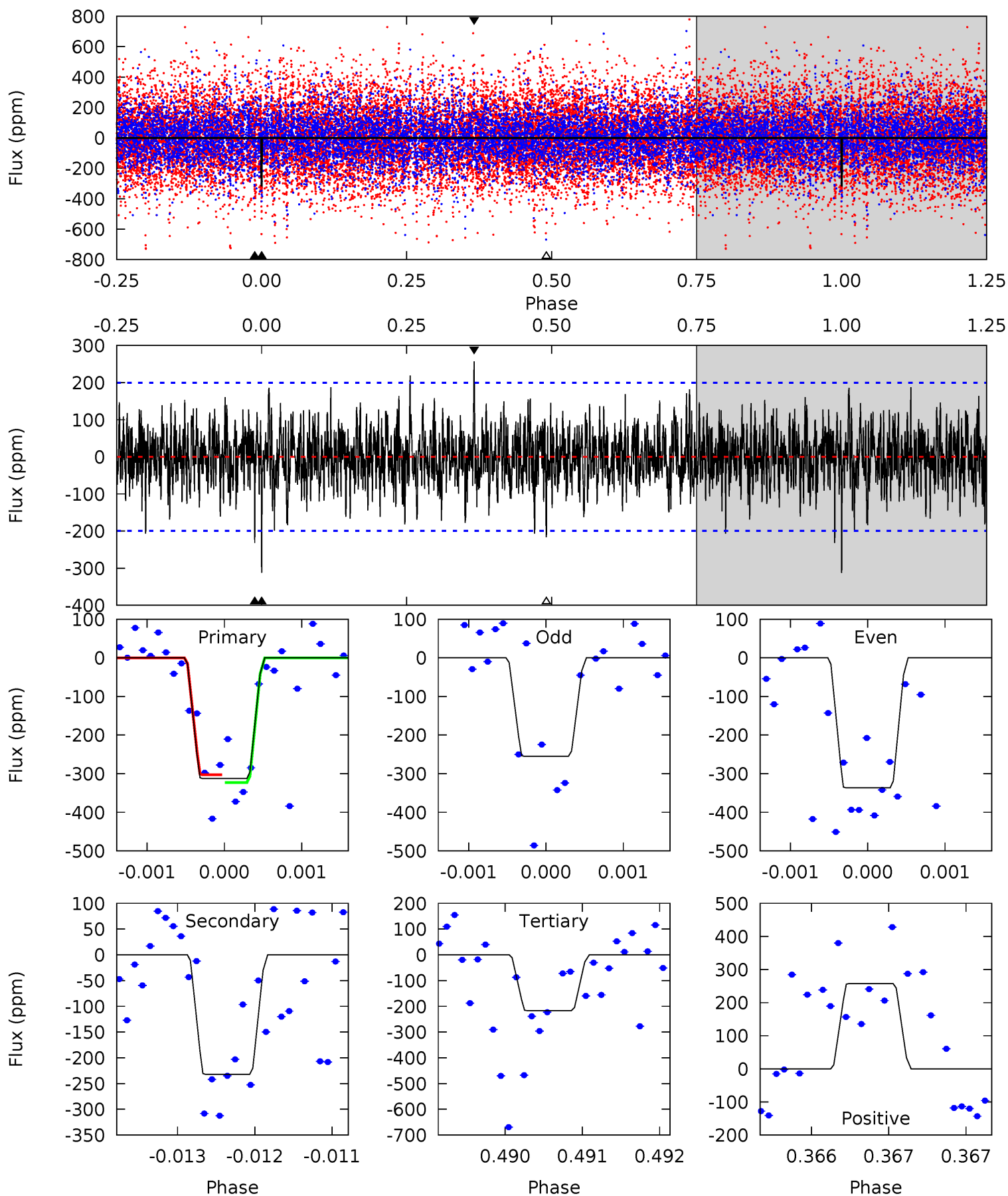
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 9.71 | 6.73 | 5.64 | 6.26 | 5.46 | 3.30 | 1.69 | 4.07 | 3.45 | 1.08 | 0.46 | 0.28 | 0.90 | 0.39 | 0.20 |



Alt Model-Shift Uniqueness Test

008018769-05, P = 130.796631 Days, E = 73.807675 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.55 | 6.34 | 5.92 | 7.04 | 5.46 | 3.30 | 1.68 | 2.62 | 1.51 | 0.42 | -0.69 | 1.07 | 0.76 | 0.45 | 0.28 |



Stellar Parameters For KIC 008018769

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6478^{+146}_{-179} | $3.433^{+0.360}_{-0.090}$ | $-0.060^{+0.300}_{-0.250}$ | $4.391^{+0.594}_{-1.664}$ | $1.908^{+0.094}_{-0.375}$ | $0.032^{+0.087}_{-0.009}$ |
| | +2%/-3% | +10%/-3% | +500%/-417% | +14%/-38% | +5%/-20% | +275%/-28% |
| Source | PHO1 | FLK73 | KIC0 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 008018769-05 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|-------------------------|----------------------|------------------------|----------------------|
| DV | -204 ± 30 | $11.22^{+9.19}_{-7.19}$ | 1040^{+63}_{-102} | 4919^{+3220}_{-936} | 357^{+2302}_{-253} |
| Alt. | -232 ± 37 | $10.49^{+9.90}_{-6.63}$ | 1037^{+57}_{-100} | 5191^{+3547}_{-1165} | 426^{+2868}_{-313} |

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

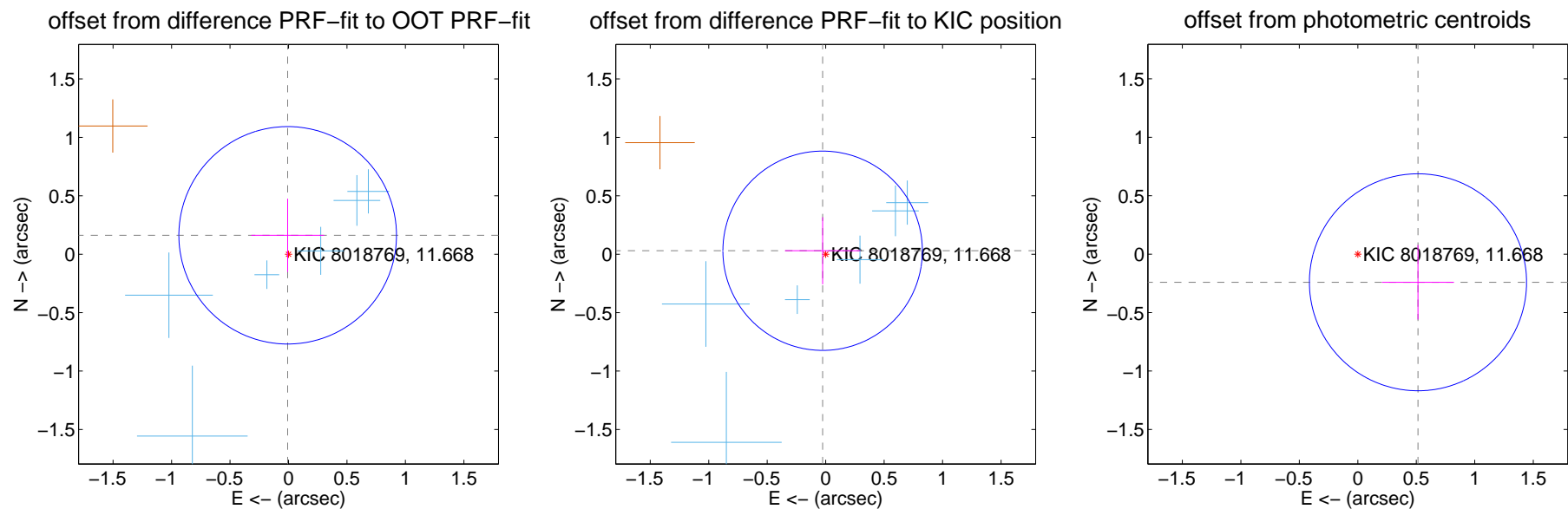
DV Centroid Data

Supplemental centroid analysis for 008018769-05. **Kepler magnitude: 11.67.** Transit SNR 8.40

There are 6 quarters with good PRF difference image offsets

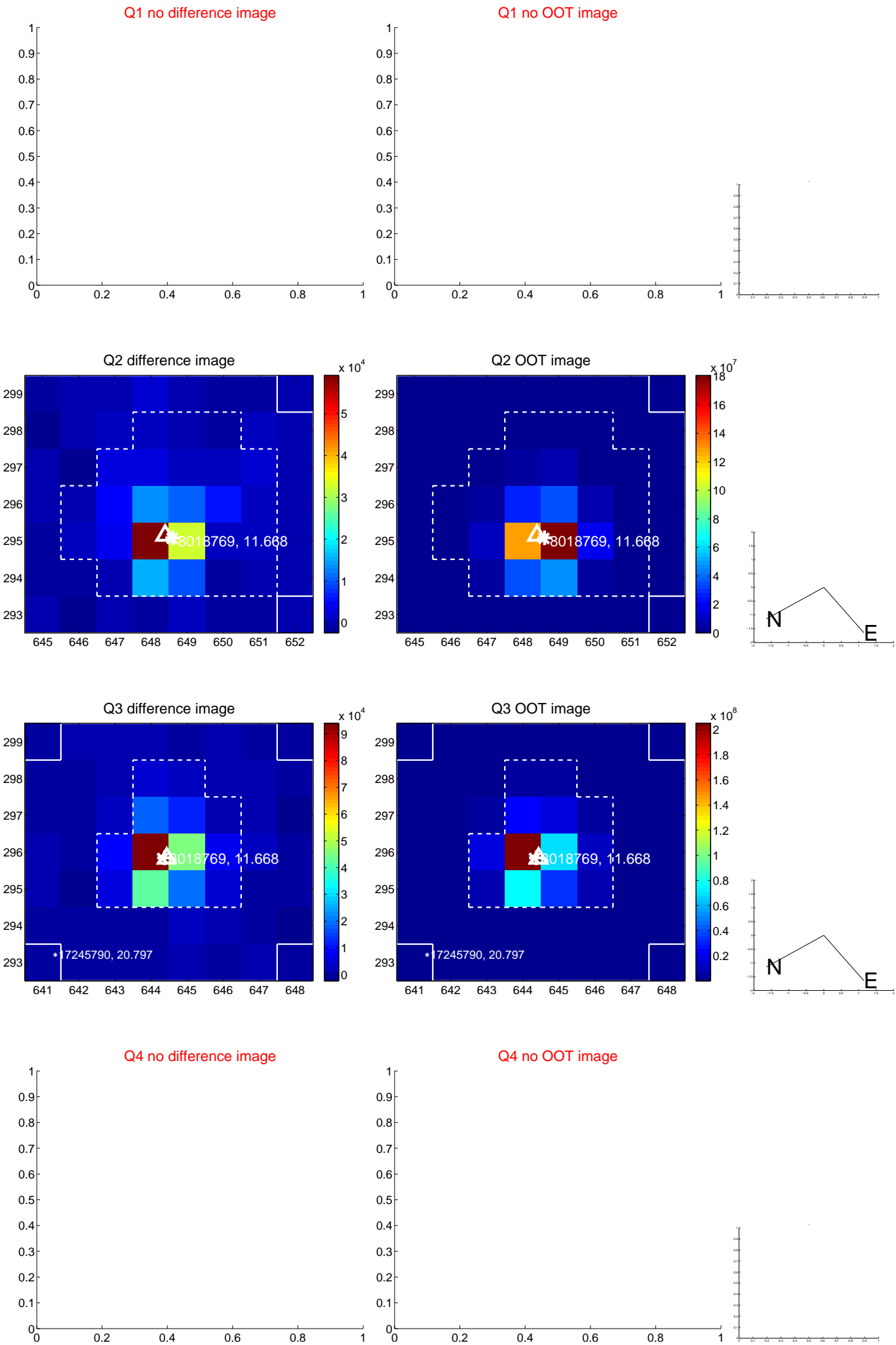
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.162 ± 0.310 | 0.52 | 0.007 ± 0.311 | 0.162 ± 0.314 |
| PRF-fit source offset from KIC position | 0.039 ± 0.284 | 0.14 | 0.026 ± 0.322 | 0.030 ± 0.286 |
| photometric centroid source offset | 0.57 ± 0.31 | 1.84 | -0.51 ± 0.31 | -0.24 ± 0.32 |

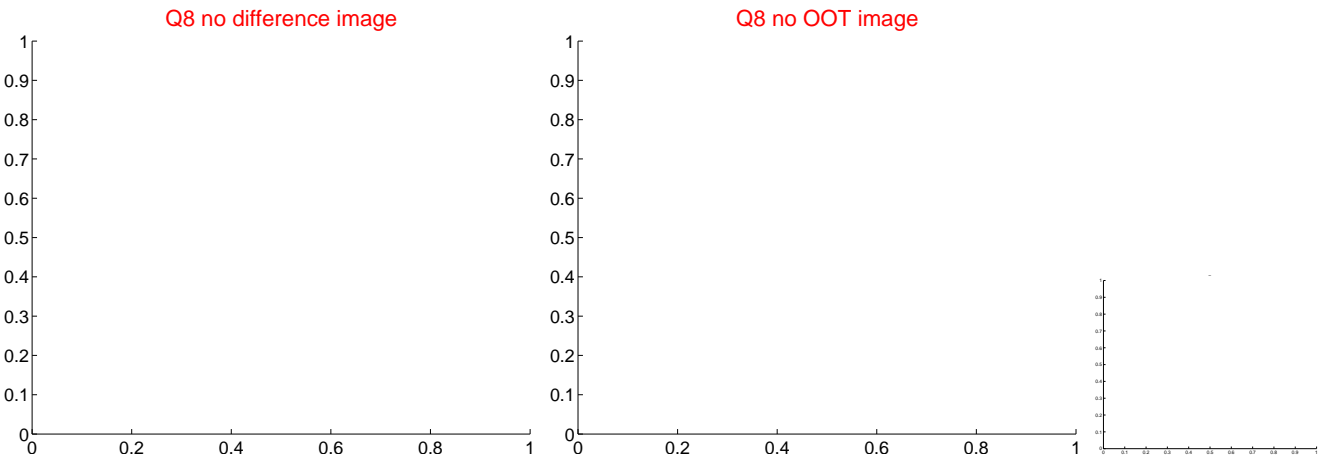
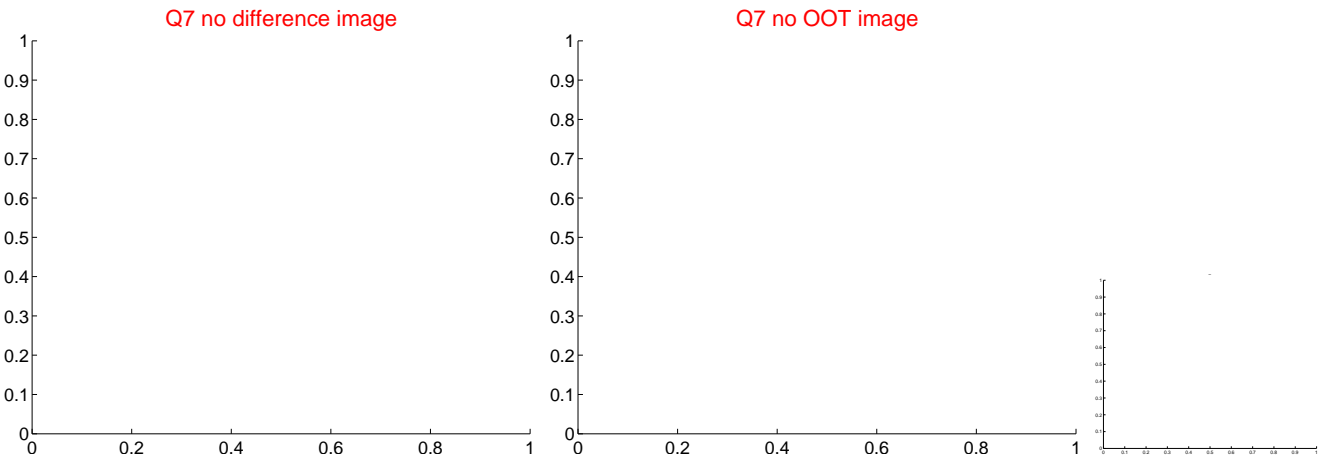
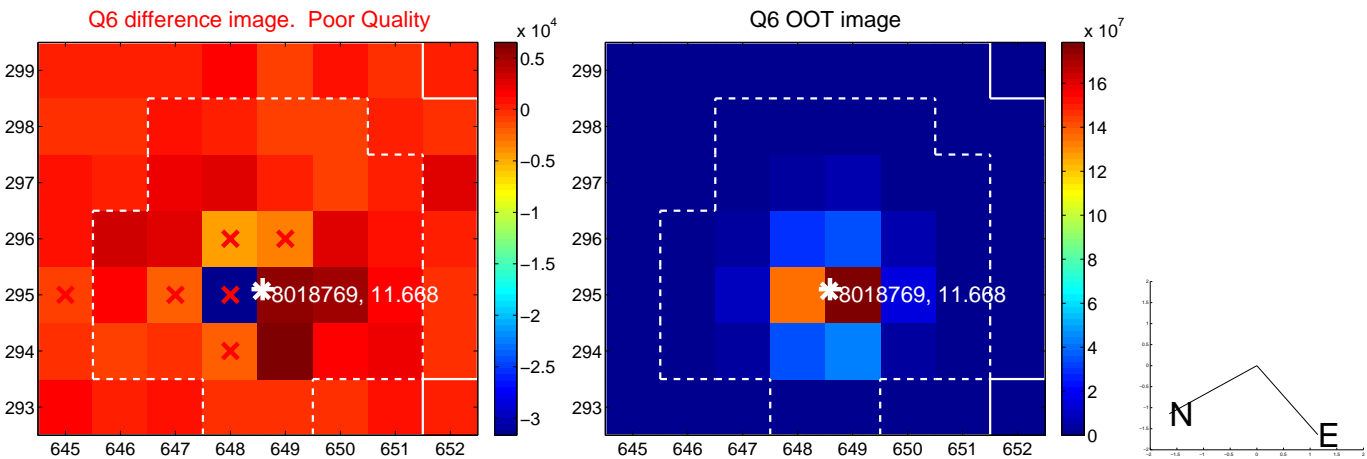
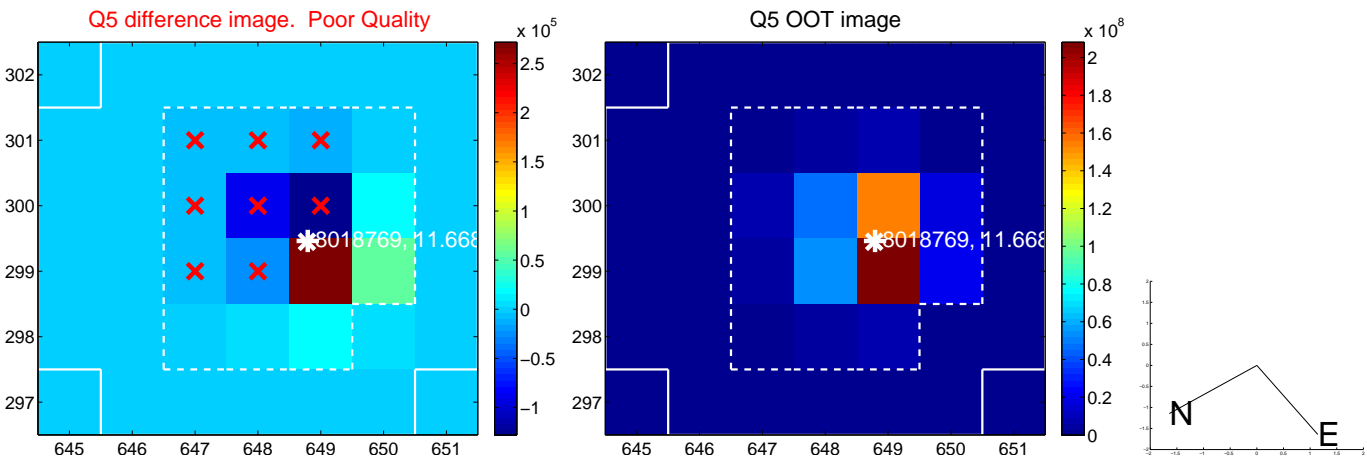


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

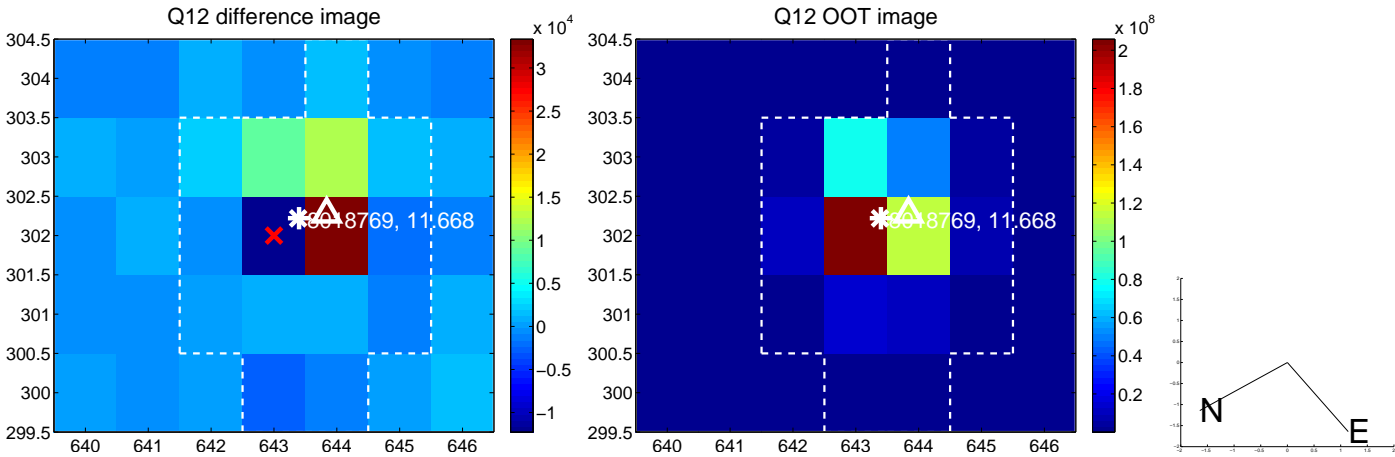
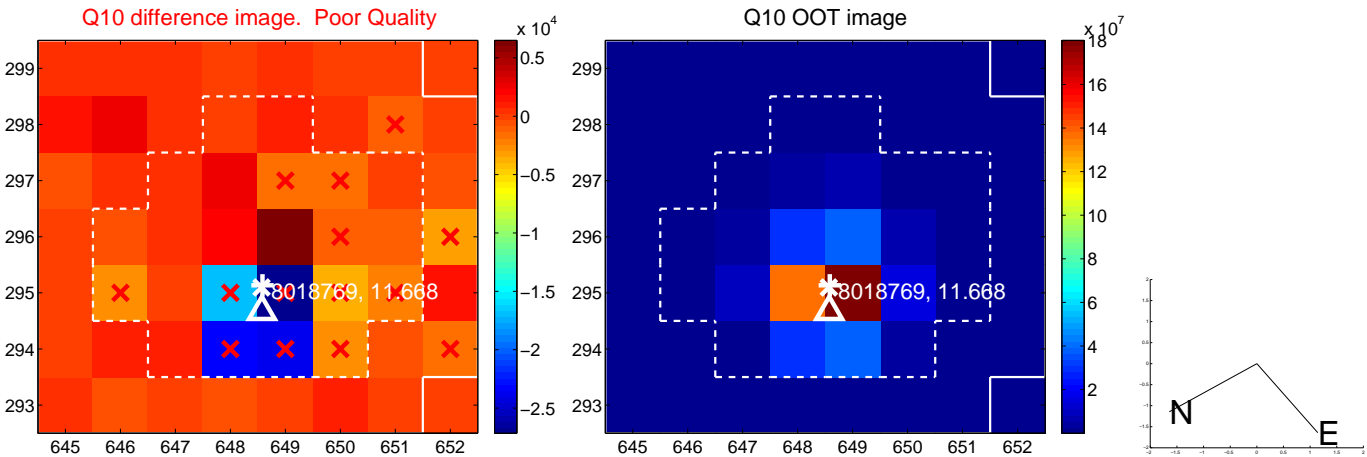
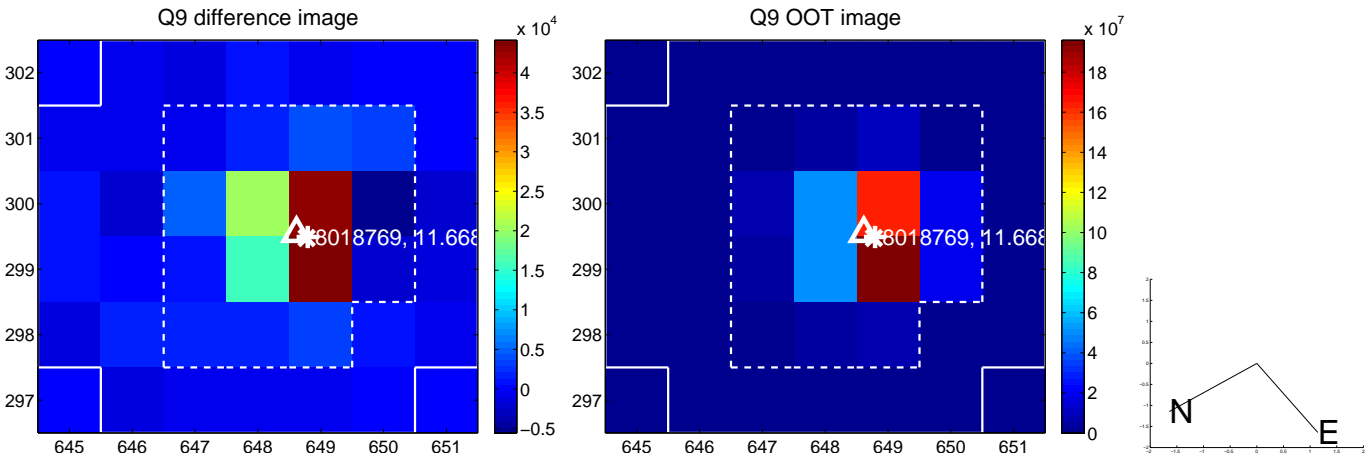
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



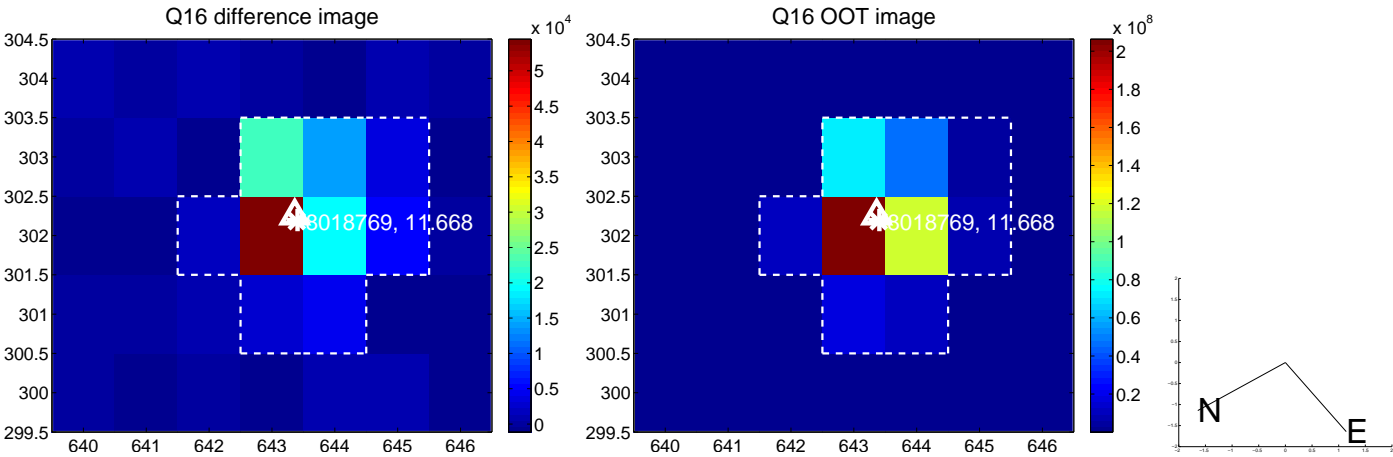
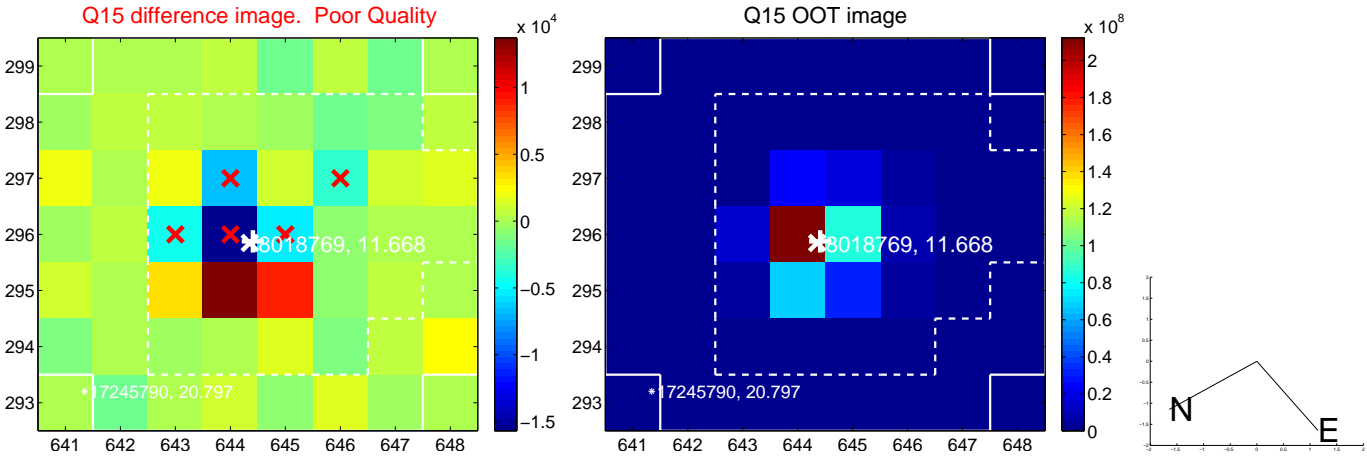
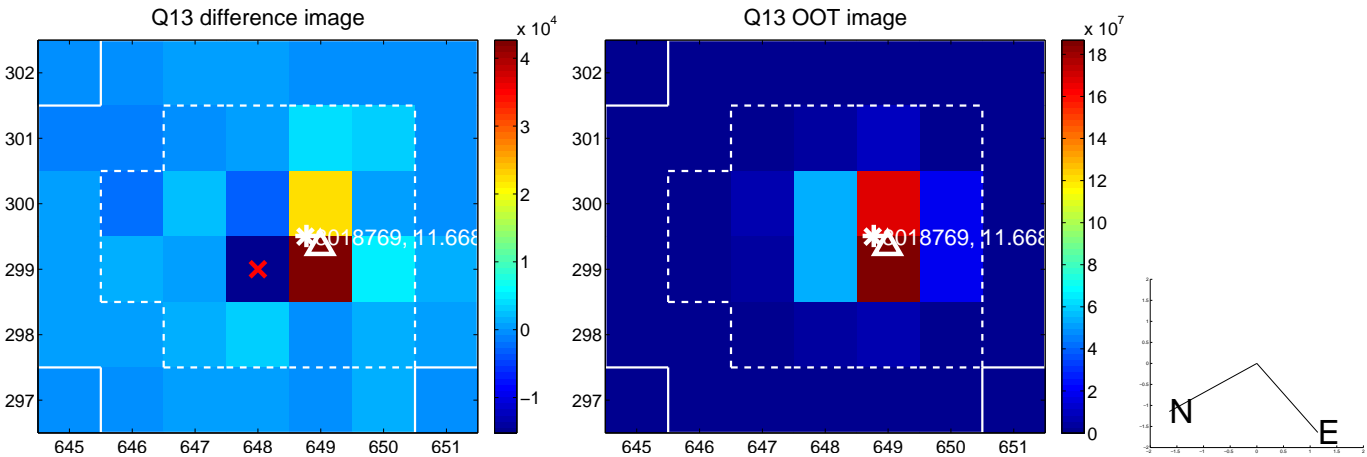
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



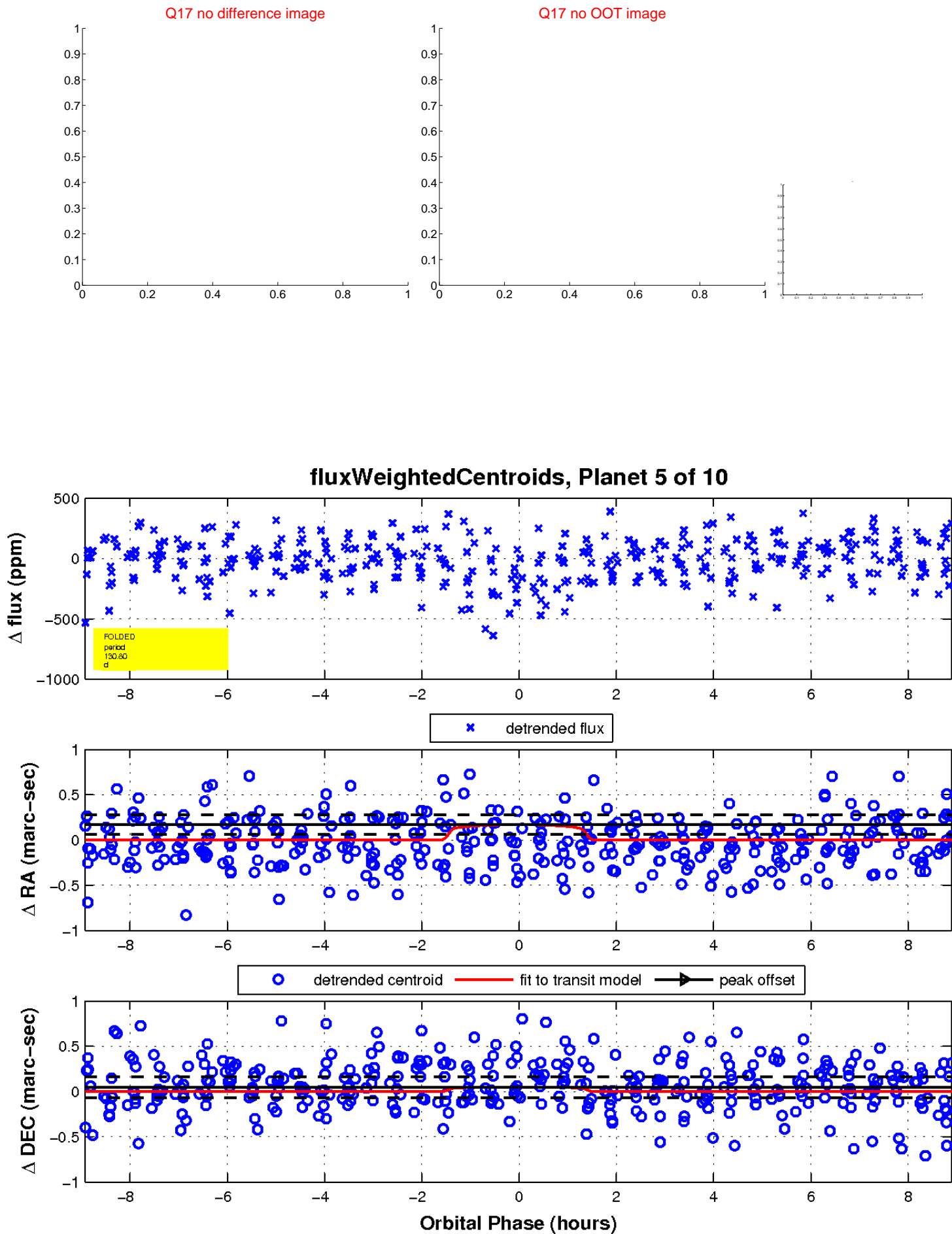
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

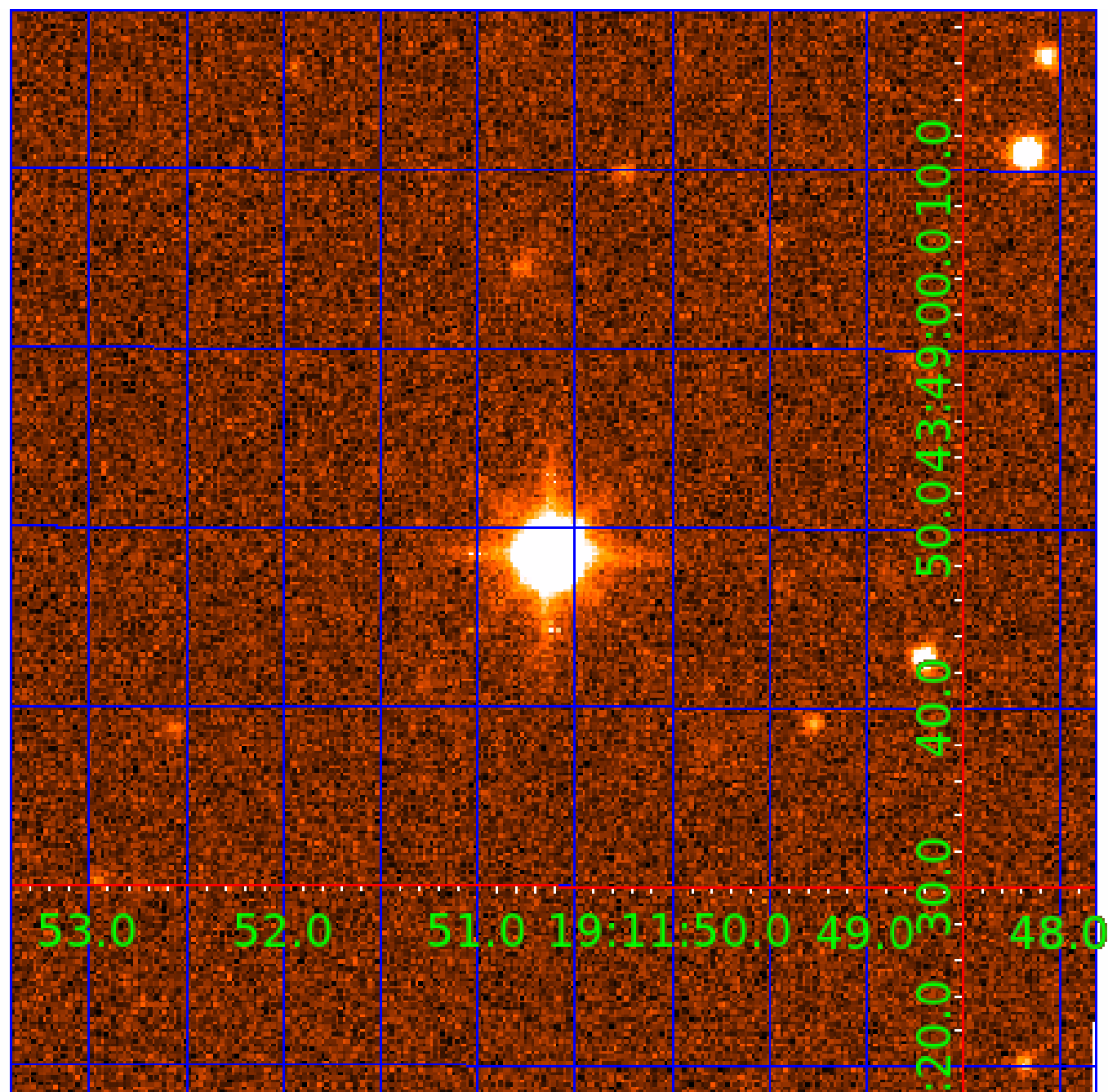


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008018769

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 008018769-01 | OBS | No | 1.393005 | 132.696397 | 26.8 | 7.332 | 9.9 | 9.9 | 4.39 | 6478 | 2.52 | 33196.84 |
| 008018769-02 | OBS | No | 187.688151 | 142.774384 | 246.6 | 18.224 | 10.7 | 8.1 | 4.39 | 6478 | 7.53 | 48.06 |
| 008018769-03 | OBS | No | 21.580518 | 142.903160 | 136.2 | 5.355 | 8.6 | 8.8 | 4.39 | 6478 | 6.01 | 859.58 |
| 008018769-04 | OBS | No | 153.753628 | 227.751237 | 128.8 | 13.438 | 8.6 | 4.6 | 4.39 | 6478 | 5.59 | 62.70 |
| 008018769-05 | OBS | No | 130.796065 | 204.601175 | 331.6 | 2.992 | 8.2 | 8.4 | 4.39 | 6478 | 8.76 | 77.79 |
| 008018769-06 | OBS | No | 126.030555 | 190.511494 | 186.4 | 16.507 | 7.8 | 7.1 | 4.39 | 6478 | 6.72 | 81.73 |
| 008018769-07 | OBS | No | 63.864375 | 176.660218 | 126.1 | 18.797 | 8.0 | 7.6 | 4.39 | 6478 | 5.50 | 202.31 |
| 008018769-09 | OBS | No | 127.543184 | 236.417562 | 163.1 | 13.304 | 7.9 | 6.4 | 4.39 | 6478 | 6.18 | 80.44 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008018769-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 008018769-02 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_UNRESOLVED_OFFSET |
| 008018769-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST |
| 008018769-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008018769-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT |
| 008018769-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS |
| 008018769-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008018769-09 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET |

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

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

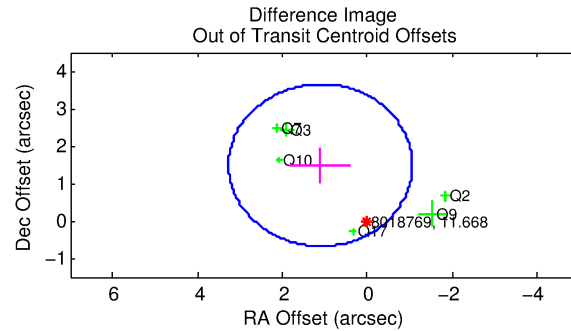
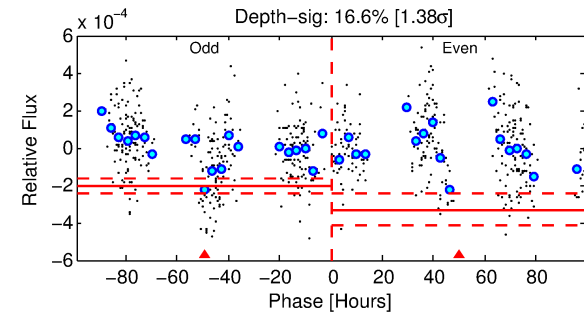
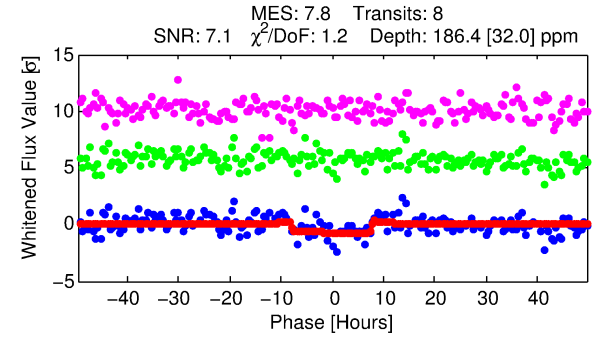
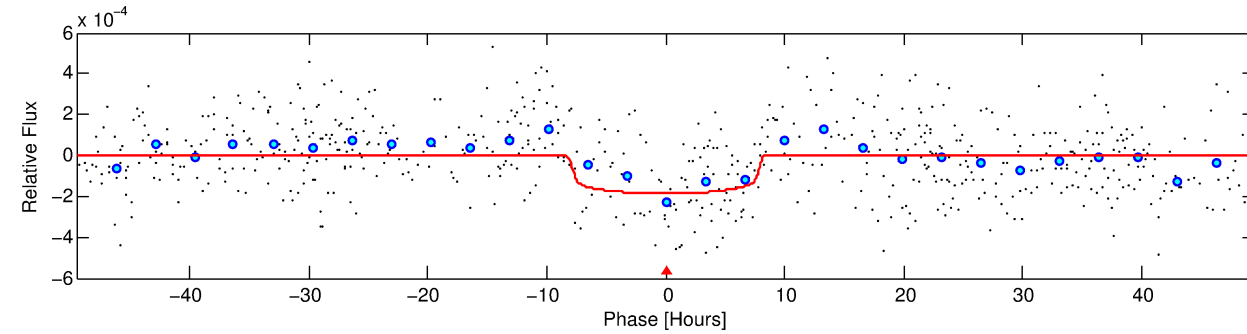
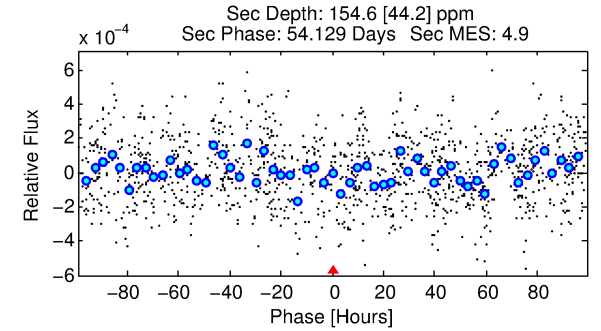
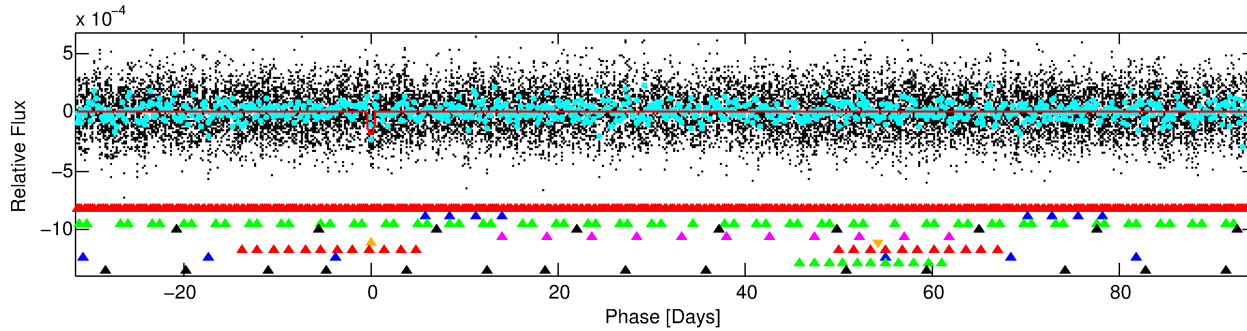
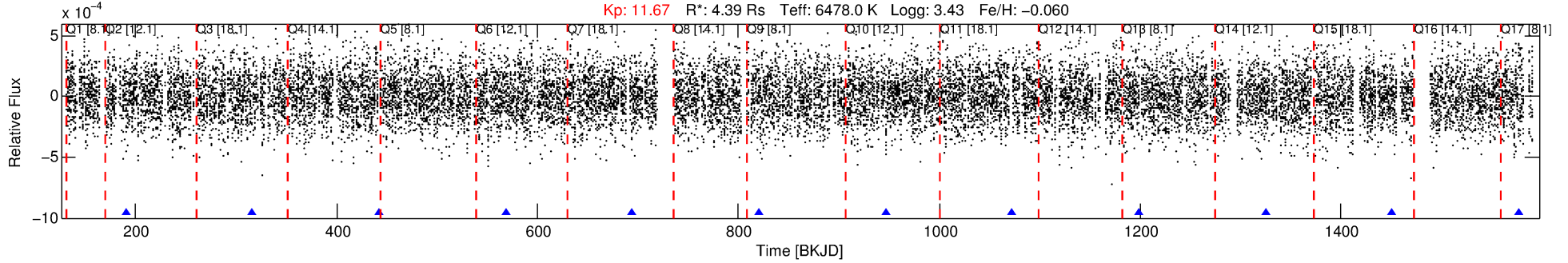
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008018769-06

No Significant Match Found

DV One-Page Summary

KIC: 8018769 Candidate: 6 of 10 Period: 126.031 d



DV Fit Results:

Period = 126.03055 [0.00577] d
Epoch = 190.5115 [0.0469] BKJD
Rp/R* = 0.0140 [0.0025]
a/R* = 33.61 [28.38]
b = 0.83 [0.31]
Seff = 81.73 [50.48]
Teq = 767 [118] K
Rp = 6.72 [2.81] Re
a = 0.6101 [0.2284] AU
Ag = 700.90 [532.68] [1.31σ]
Teffp = 6099 [716] K [7.35σ]

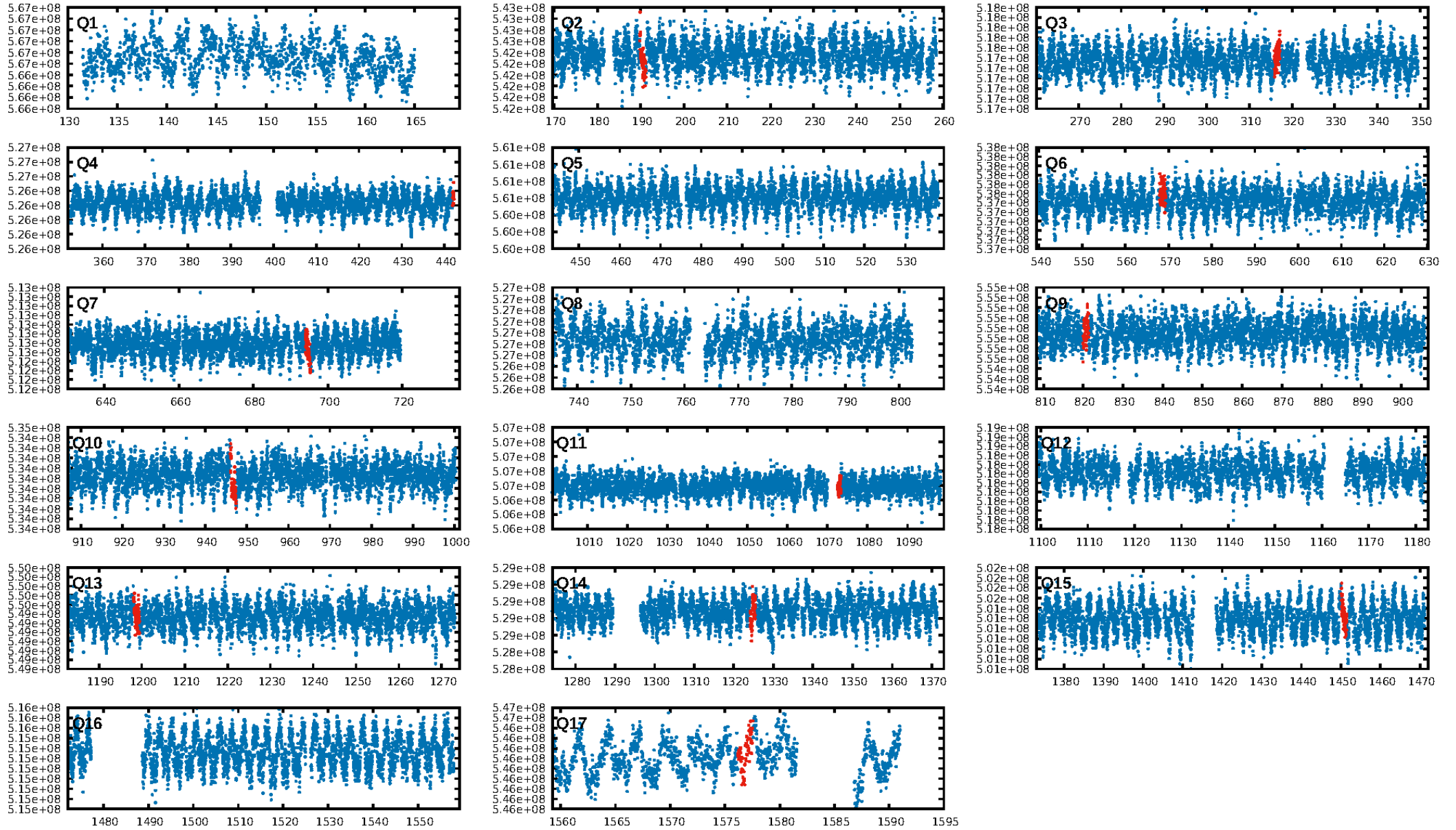
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [33.52σ]
LongPeriod-sig: 91.3% [1.71σ]
ModelChiSquare2-sig: 0.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 1.401
Centroid-sig: 85.9%
Centroid-so: 0.186 arcsec [0.57σ]
OotOffset-rm: 1.846 arcsec [2.56σ]
OotOffset-st: 2/2/0/2 [6]
KicOffset-rm: 1.748 arcsec [2.86σ]
KicOffset-st: 2/2/0/2 [6]
DiffImageQuality-fgm: 0.33 [2/6]
DiffImageOverlap-fno: 0.00 [0/7]

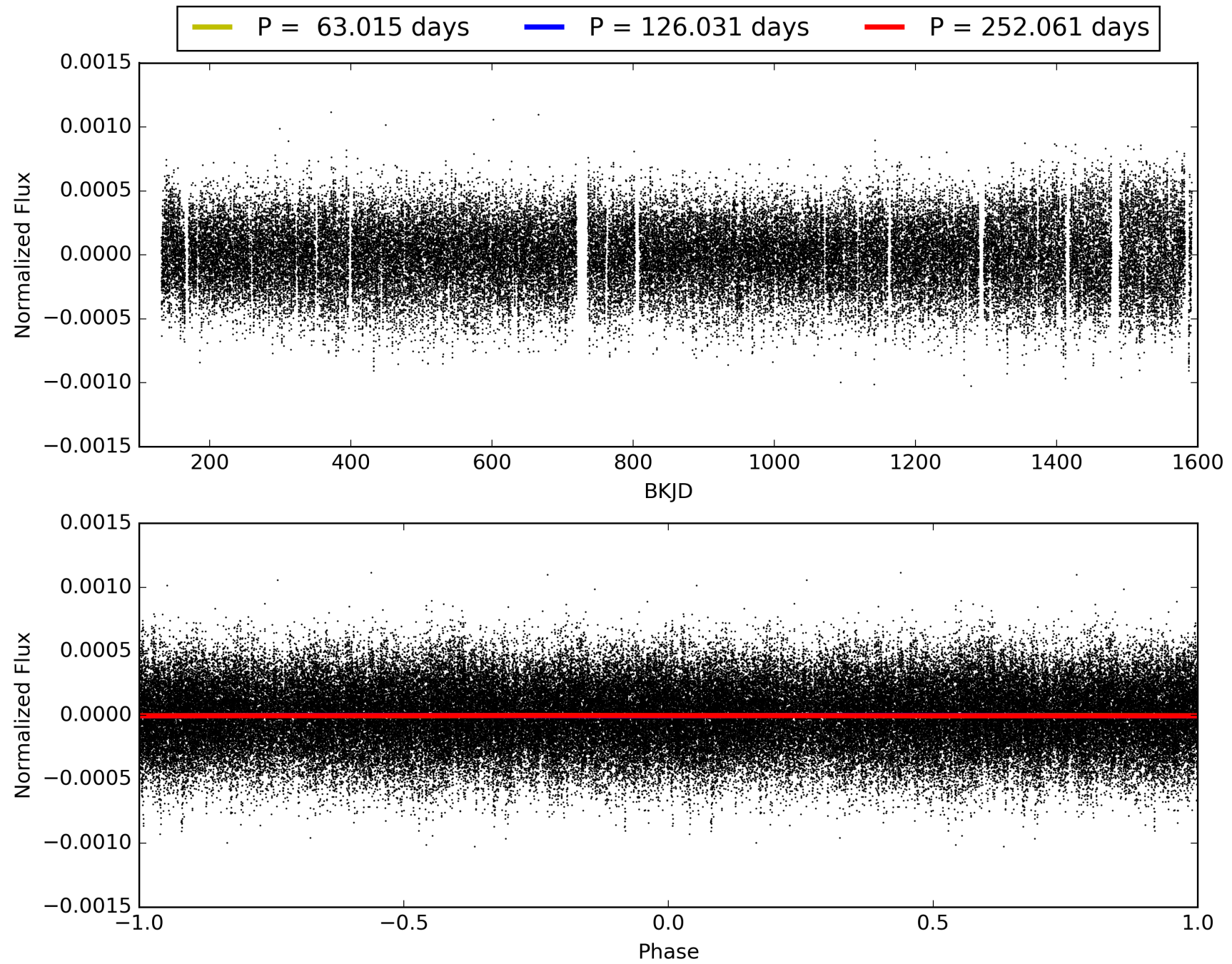
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 04:18:38 Z

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

TCE 008018769-06, PDC Light Curves

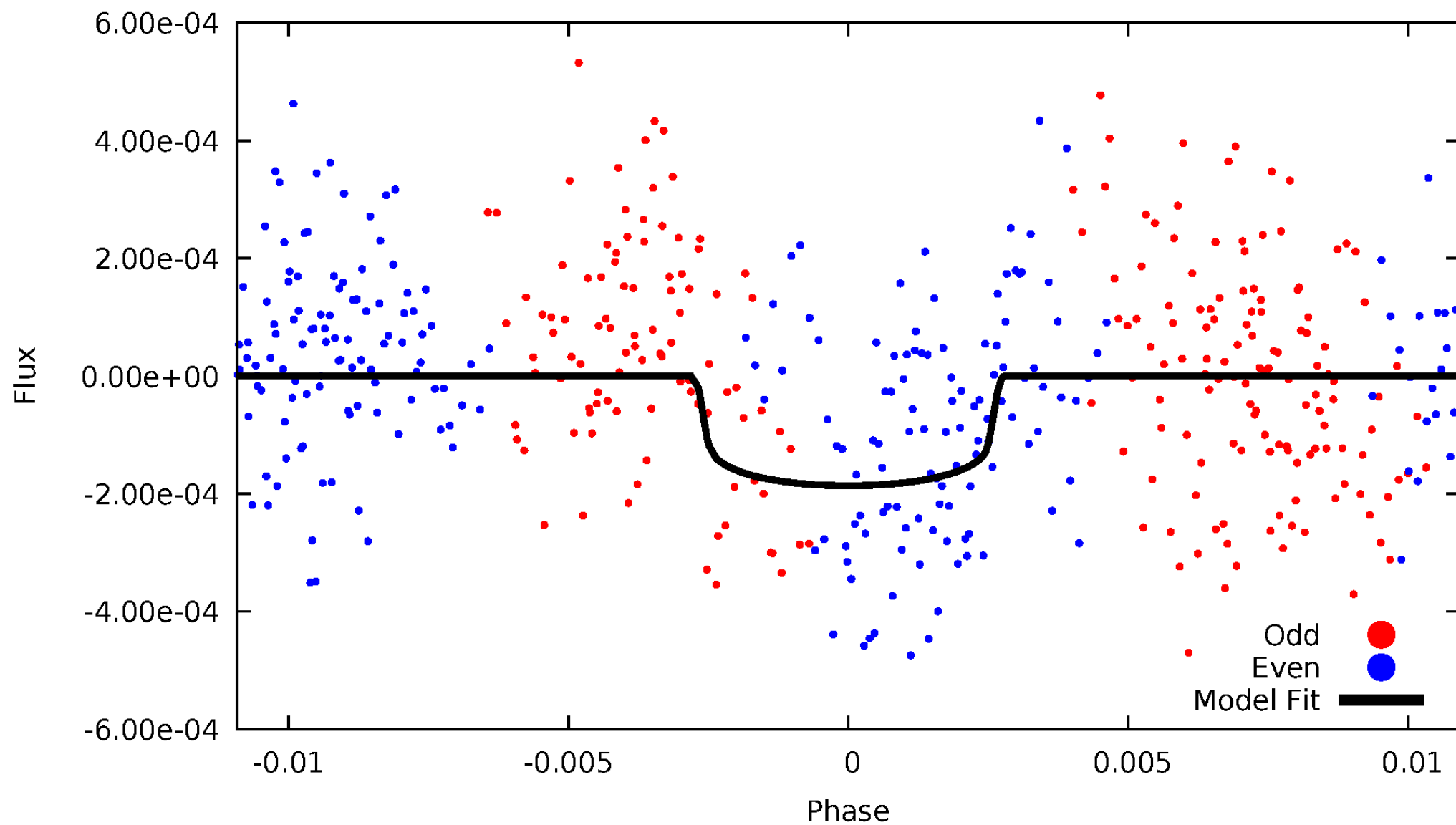


TCE 008018769-06



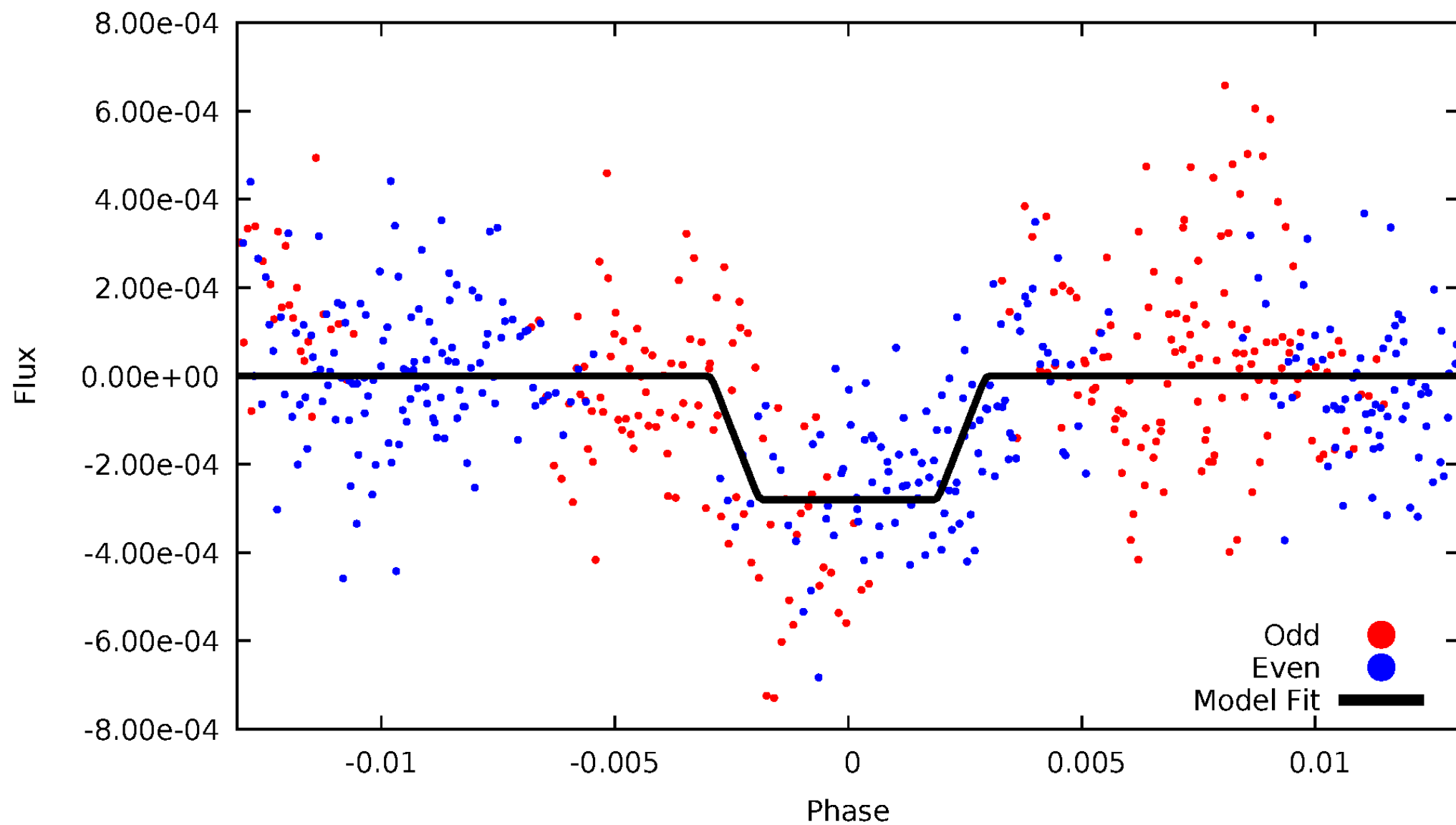
DV Odd/Even

TCE 008018769-06



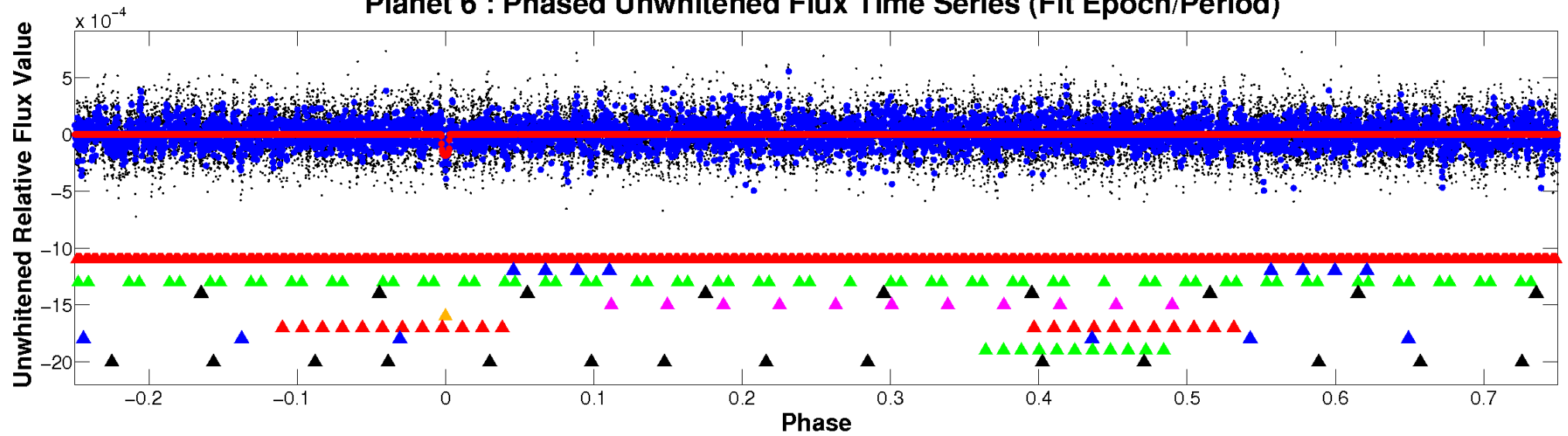
ALT Odd/Even

TCE 008018769-06

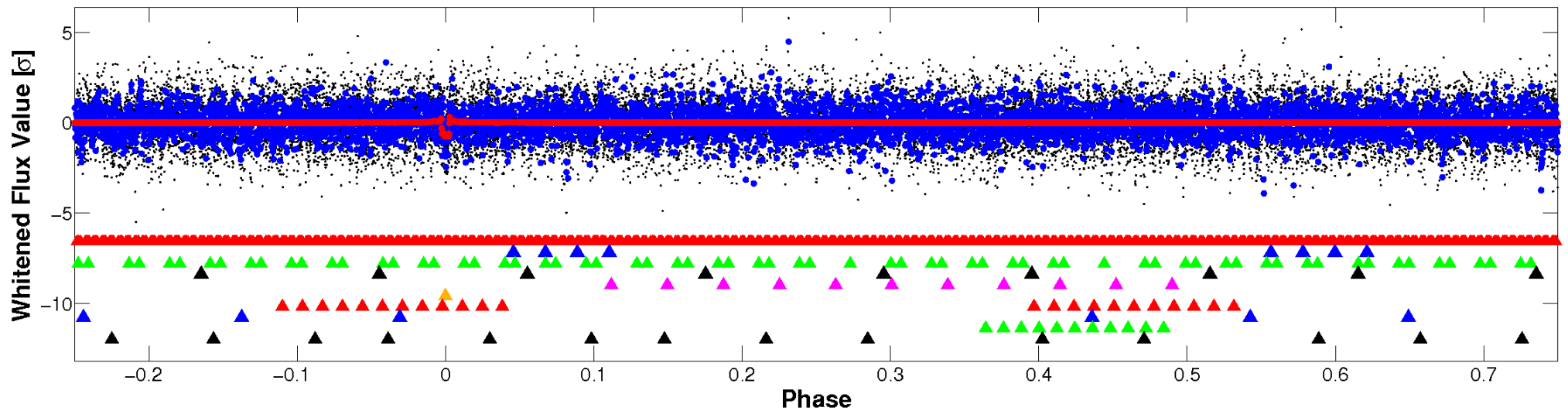


Non-Whitened Vs. Whitened Light Curve

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

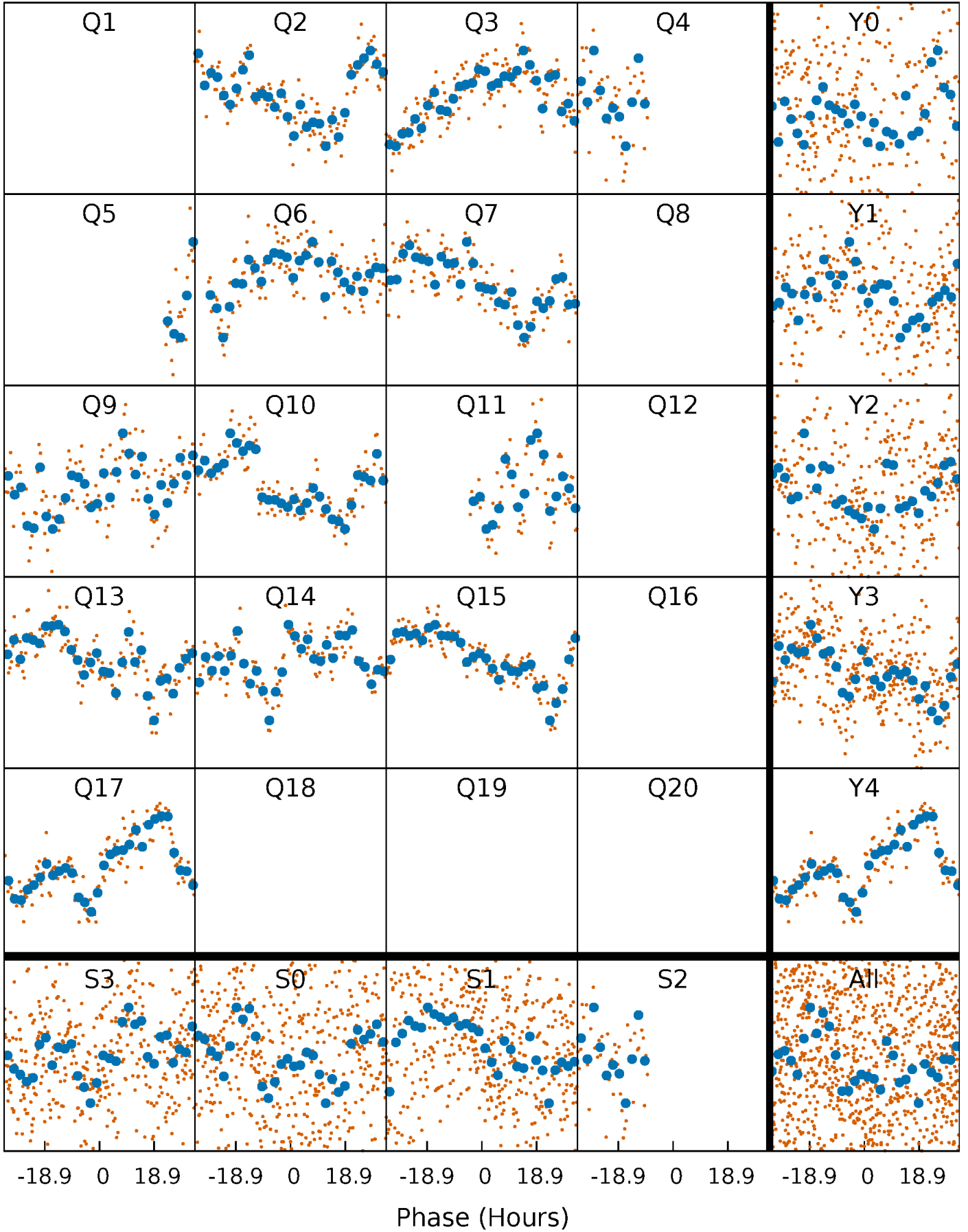


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



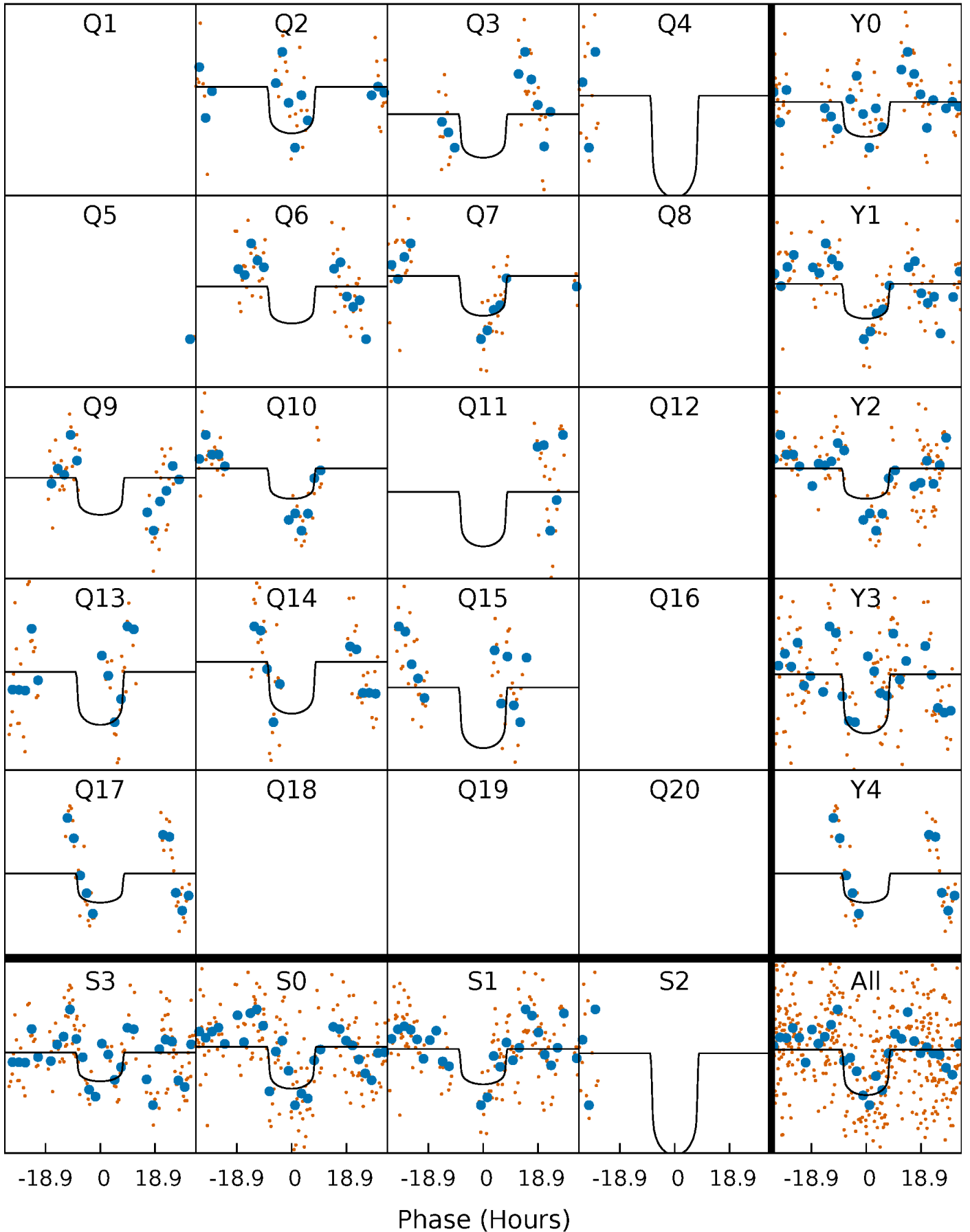
PDC Quarter-Phased Transit Curves

TCE 008018769-06 P=126.030555 Days $T_0=190.511494$ (BKJD)



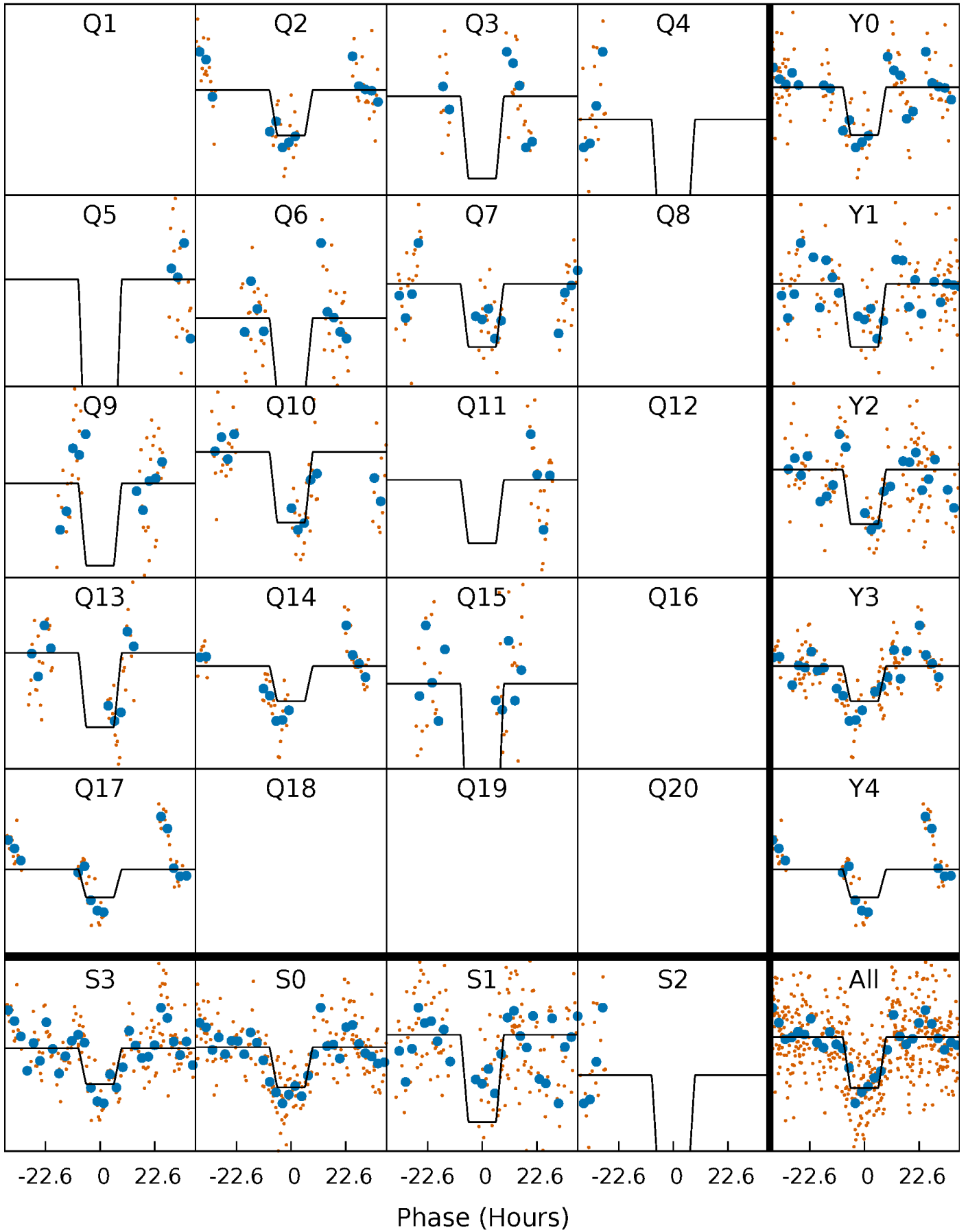
DV Quarter-Phased Transit Curves

TCE 008018769-06 P=126.030555 Days $T_0=190.511494$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

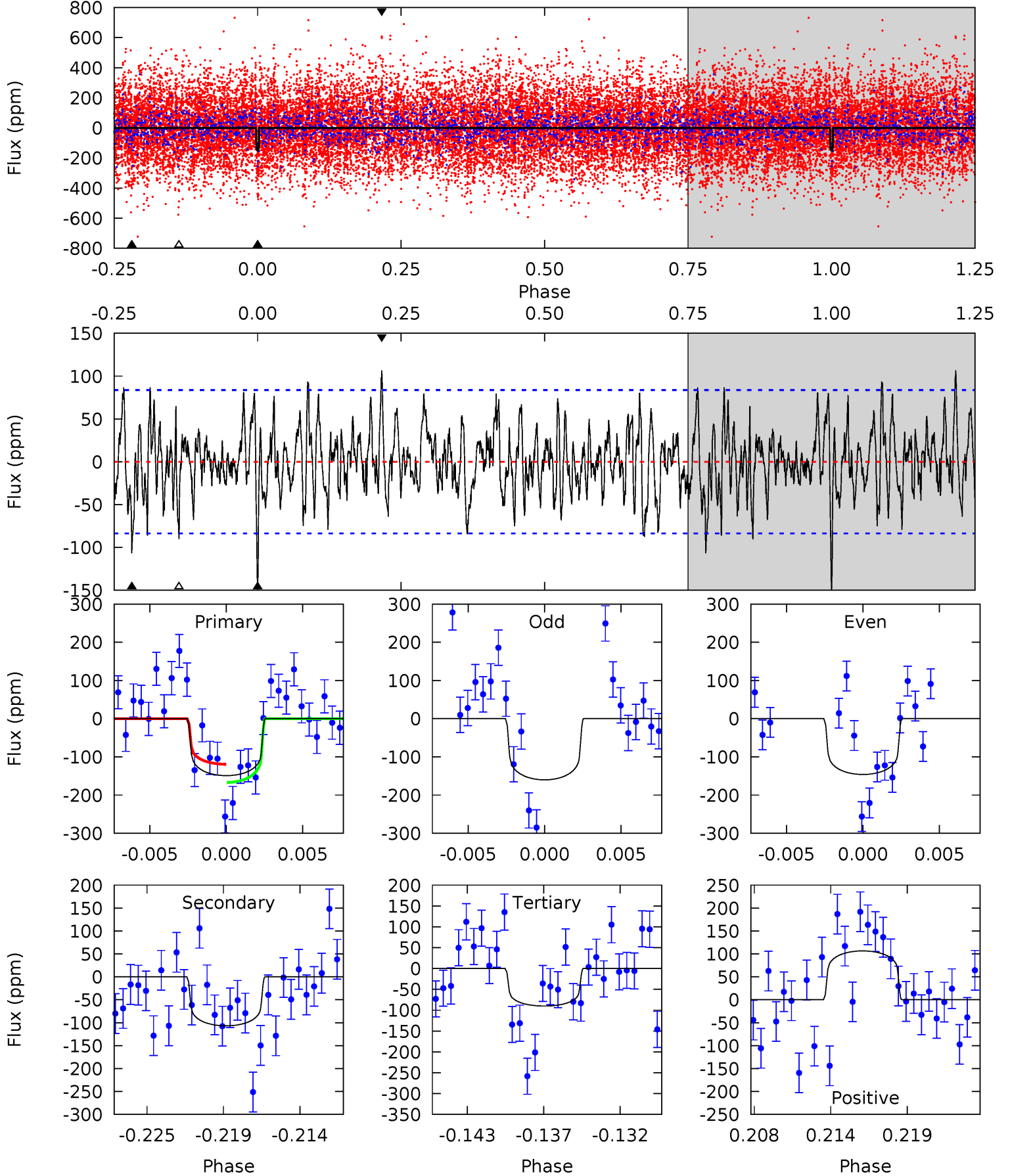
TCE 008018769-06 P=126.006953 Days $T_0=190.626714$ (BKJD)



DV Model-Shift Uniqueness Test

008018769-06, $P = 126.030555$ Days, $E = 64.480939$ Days

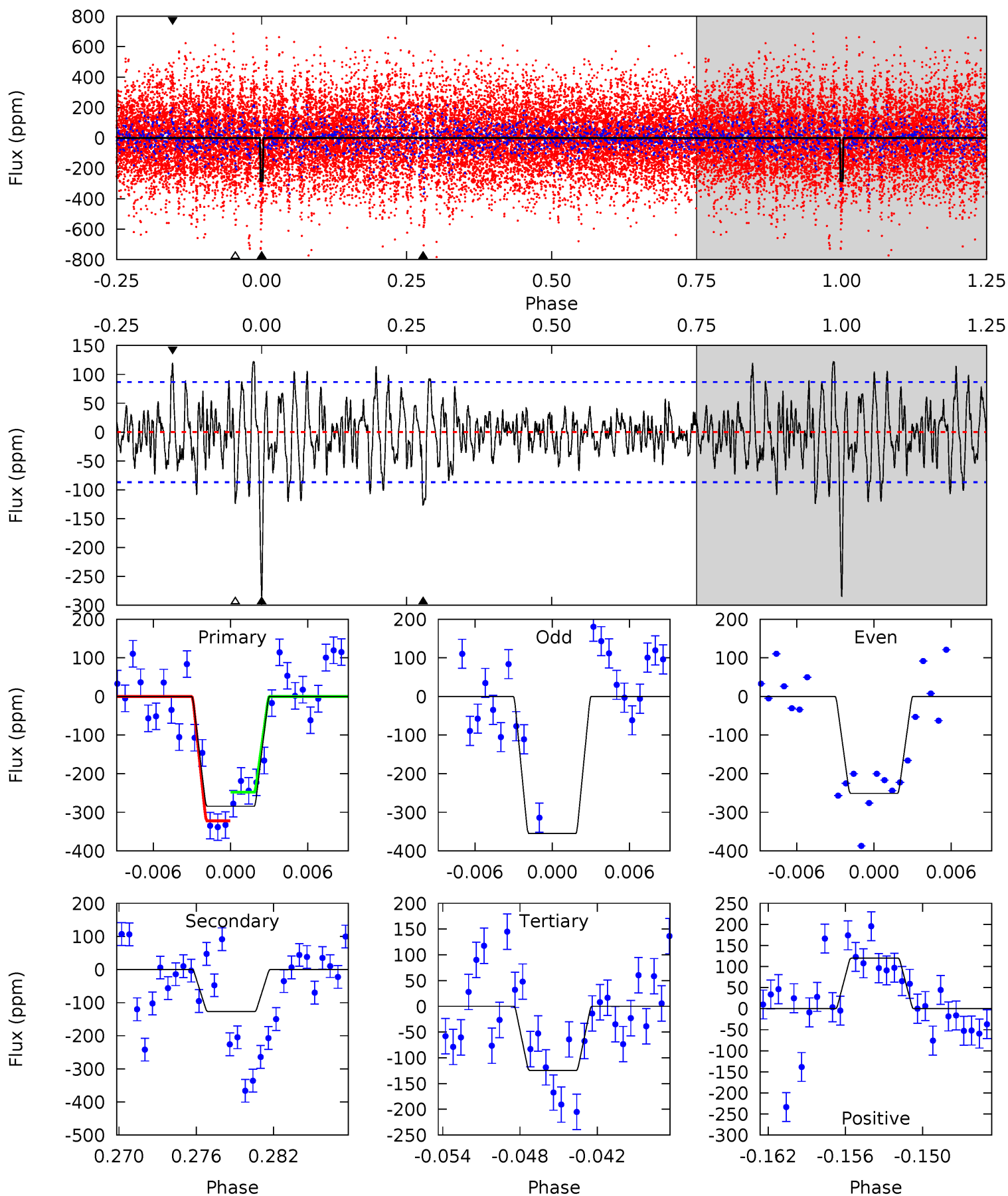
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 9.15 | 6.56 | 5.53 | 6.54 | 5.14 | 2.78 | 2.00 | 3.62 | 2.62 | 1.03 | 0.02 | 0.35 | 0.84 | 0.42 | 1.41 |



Alt Model-Shift Uniqueness Test

008018769-06, P = 126.006953 Days, E = 64.619761 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 16.8 | 7.49 | 7.34 | 7.08 | 5.12 | 2.75 | 2.27 | 9.46 | 9.72 | 0.16 | 0.42 | 2.90 | 0.67 | 0.30 | 2.20 |



Stellar Parameters For KIC 008018769

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6478^{+146}_{-179} | $3.433^{+0.360}_{-0.090}$ | $-0.060^{+0.300}_{-0.250}$ | $4.391^{+0.594}_{-1.664}$ | $1.908^{+0.094}_{-0.375}$ | $0.032^{+0.087}_{-0.009}$ |
| | +2%/-3% | +10%/-3% | +500%/-417% | +14%/-38% | +5%/-20% | +275%/-28% |
| Source | PHO1 | FLK73 | KIC0 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 008018769-06 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|------------------------|----------------------|----------------------|---------------------|
| DV | -107 ± 16 | $6.16^{+1.59}_{-1.45}$ | 1053^{+57}_{-109} | 5568^{+589}_{-459} | 547^{+420}_{-201} |
| Alt. | -127 ± 17 | $7.43^{+1.74}_{-1.62}$ | 1054^{+57}_{-105} | 5339^{+455}_{-402} | 450^{+294}_{-158} |

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

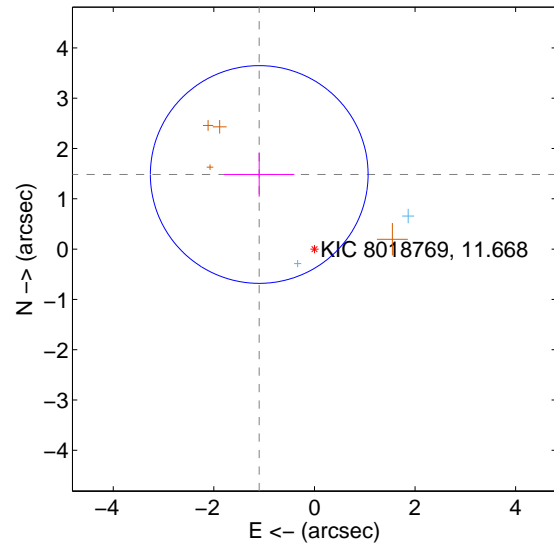
Supplemental centroid analysis for 008018769-06. **Kepler magnitude: 11.67.** Transit SNR 7.14

There are 2 quarters with good PRF difference image offsets

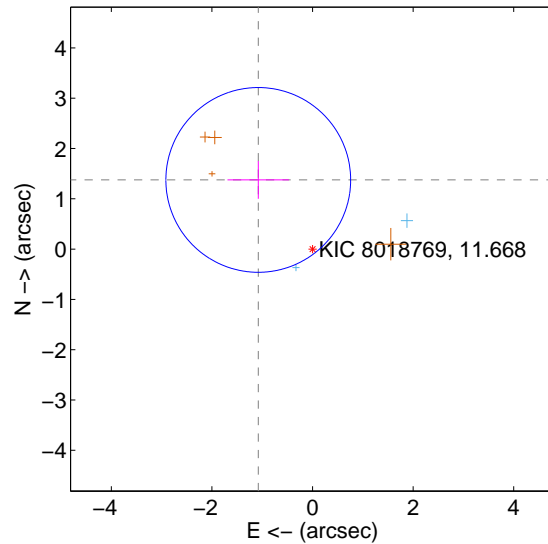
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 1.846 ± 0.722 | 2.56 | 1.098 ± 0.698 | 1.483 ± 0.441 |
| PRF-fit source offset from KIC position | 1.748 ± 0.612 | 2.86 | 1.079 ± 0.611 | 1.376 ± 0.374 |
| photometric centroid source offset | 0.19 ± 0.33 | 0.57 | 0.05 ± 0.31 | -0.18 ± 0.33 |

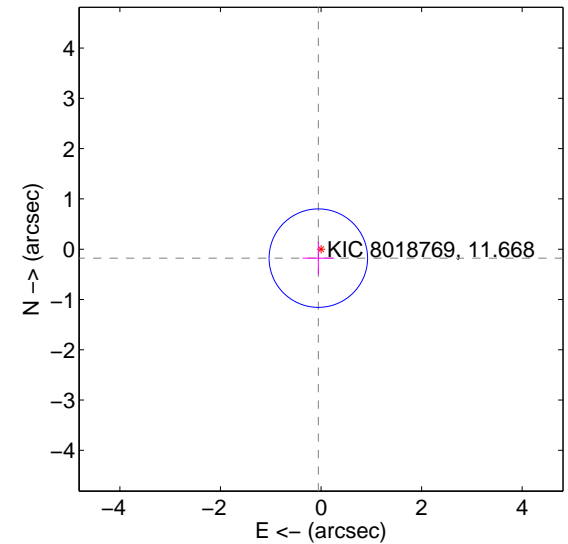
offset from difference PRF-fit to OOT PRF-fit



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.

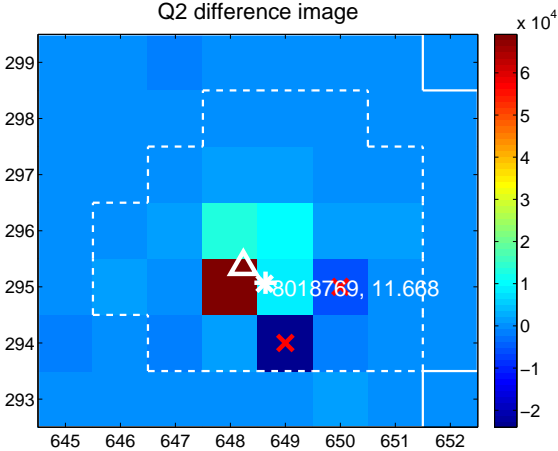
Q1 no difference image



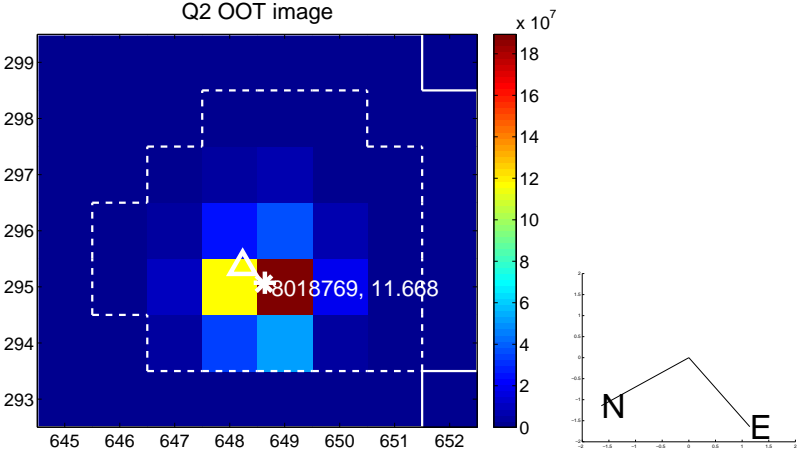
Q1 no OOT image



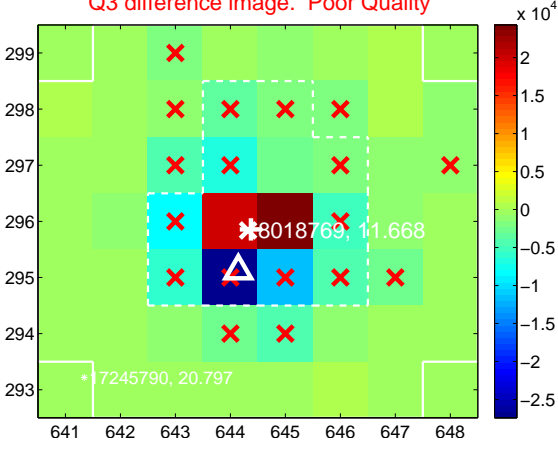
Q2 difference image



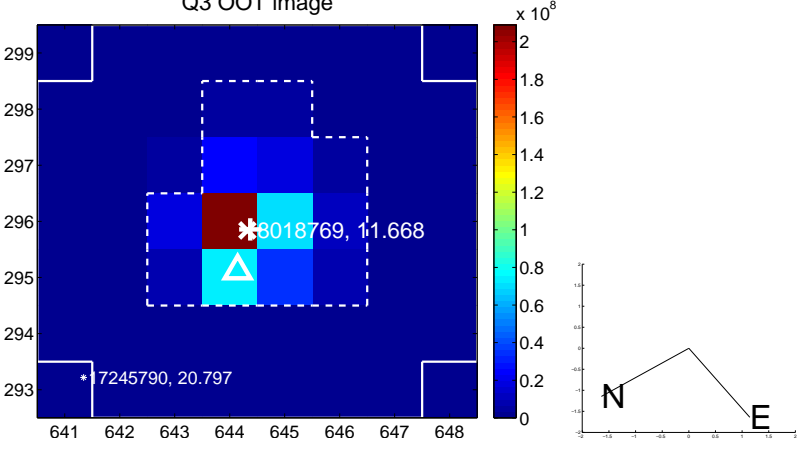
Q2 OOT image



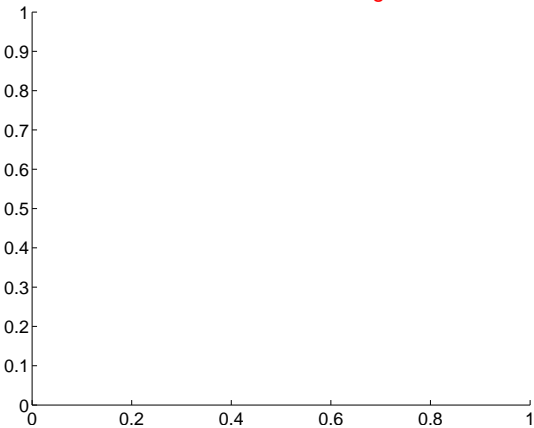
Q3 difference image. Poor Quality



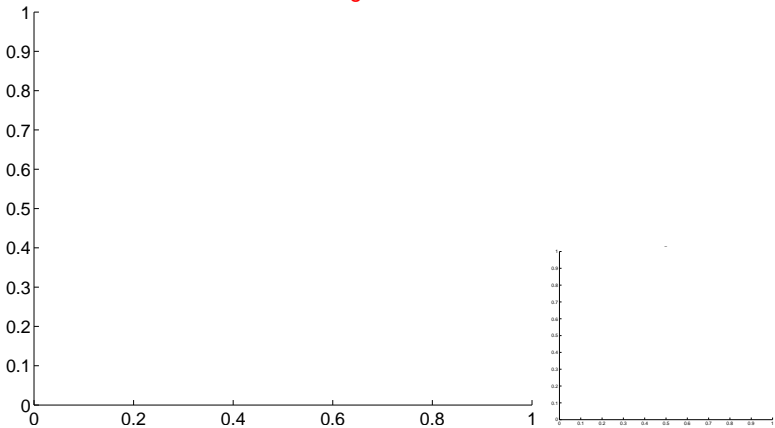
Q3 OOT image



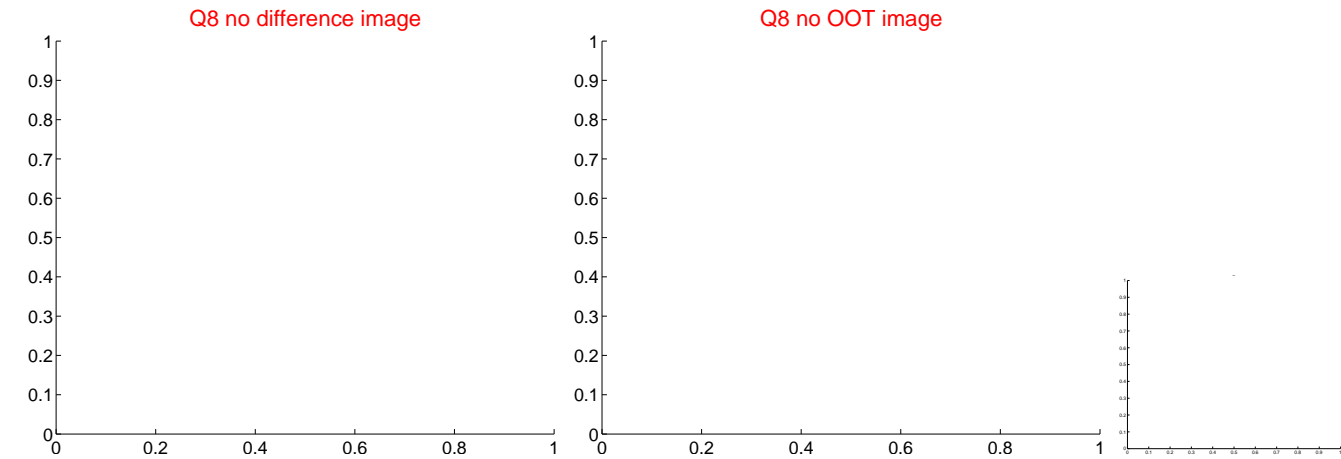
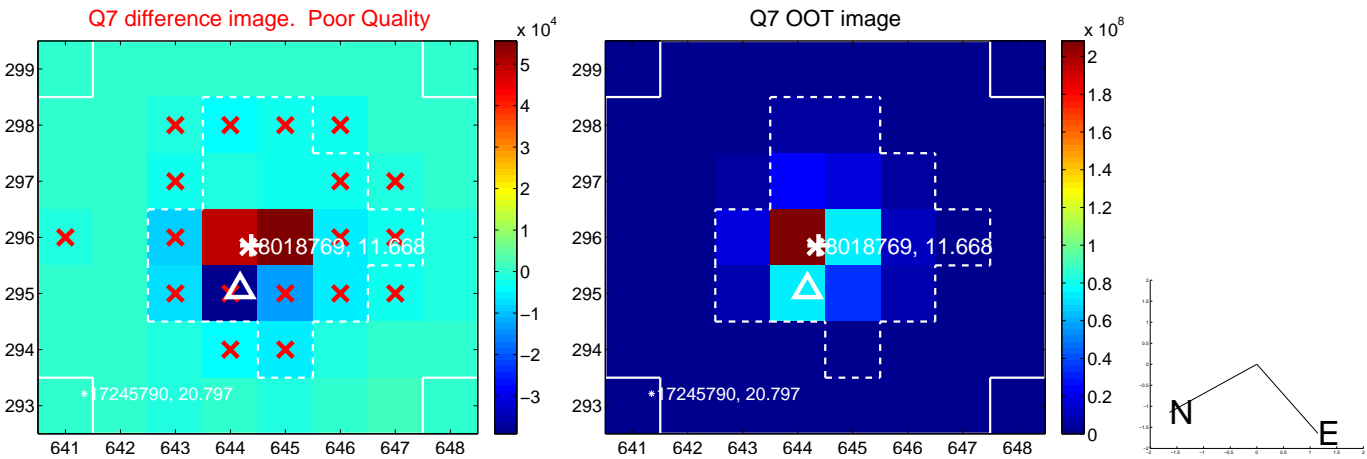
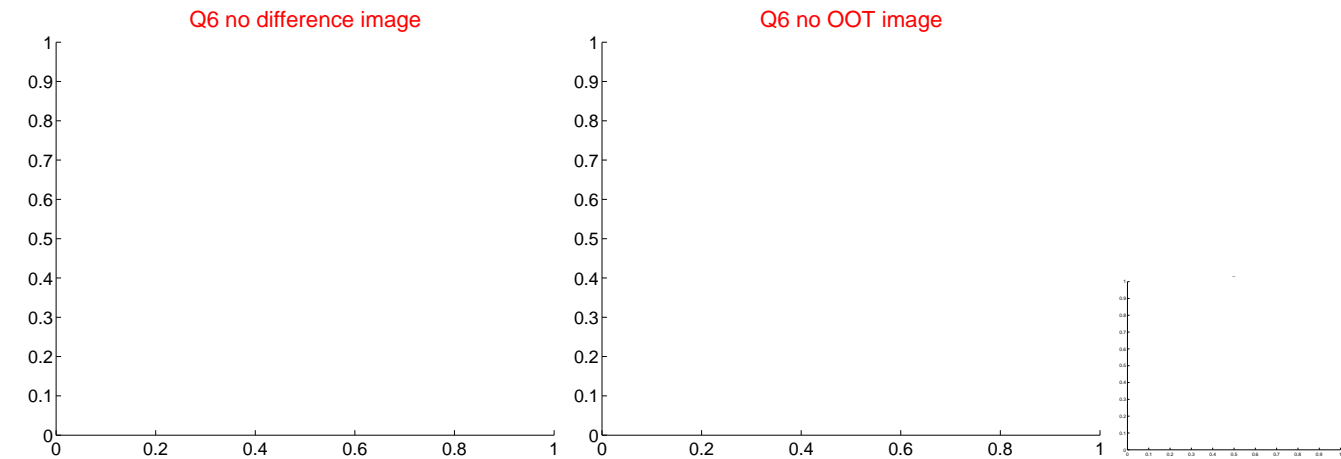
Q4 no difference image



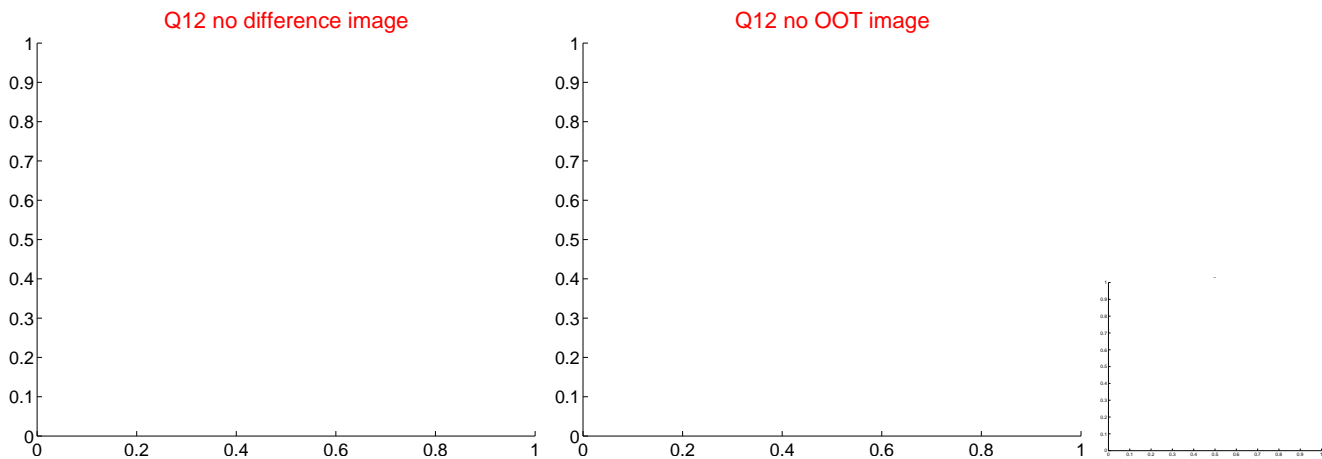
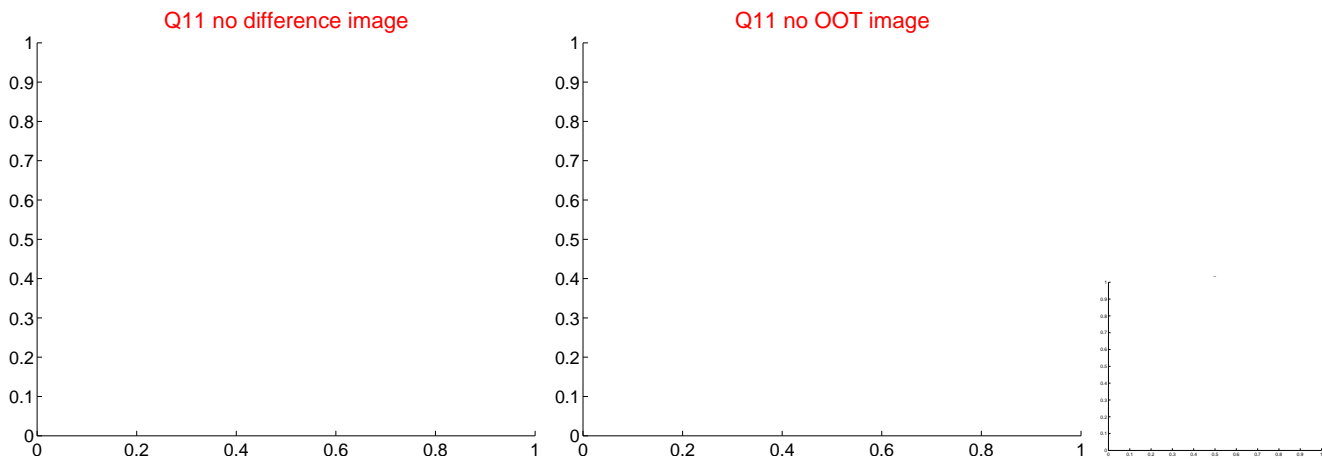
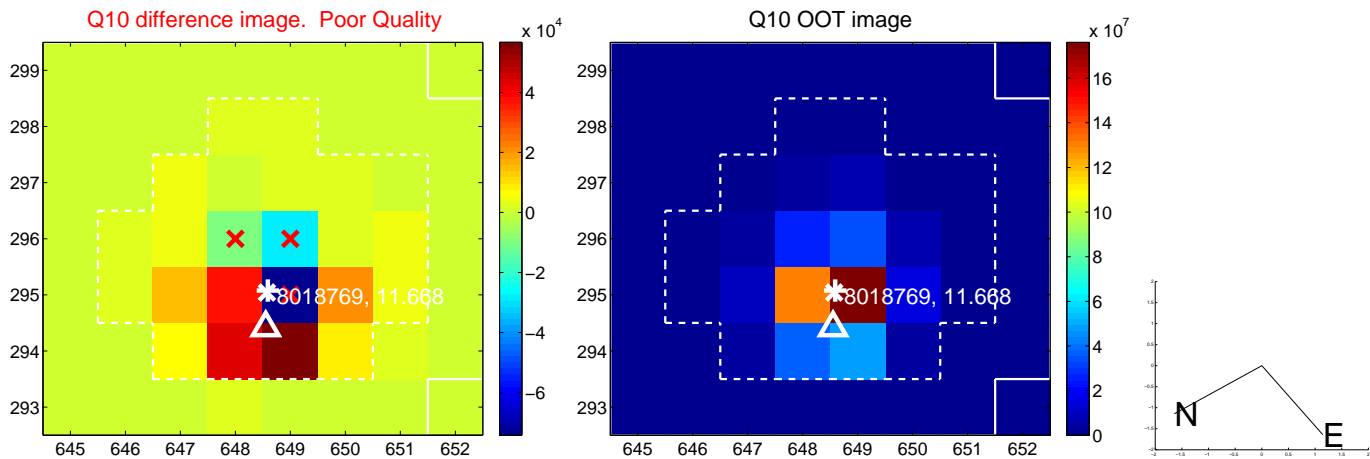
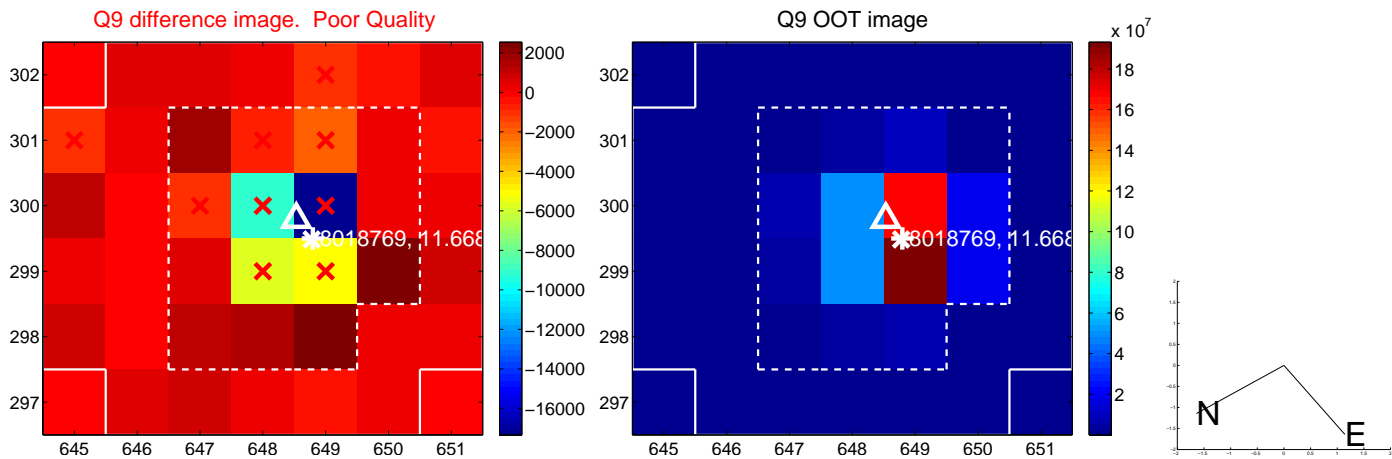
Q4 no OOT image



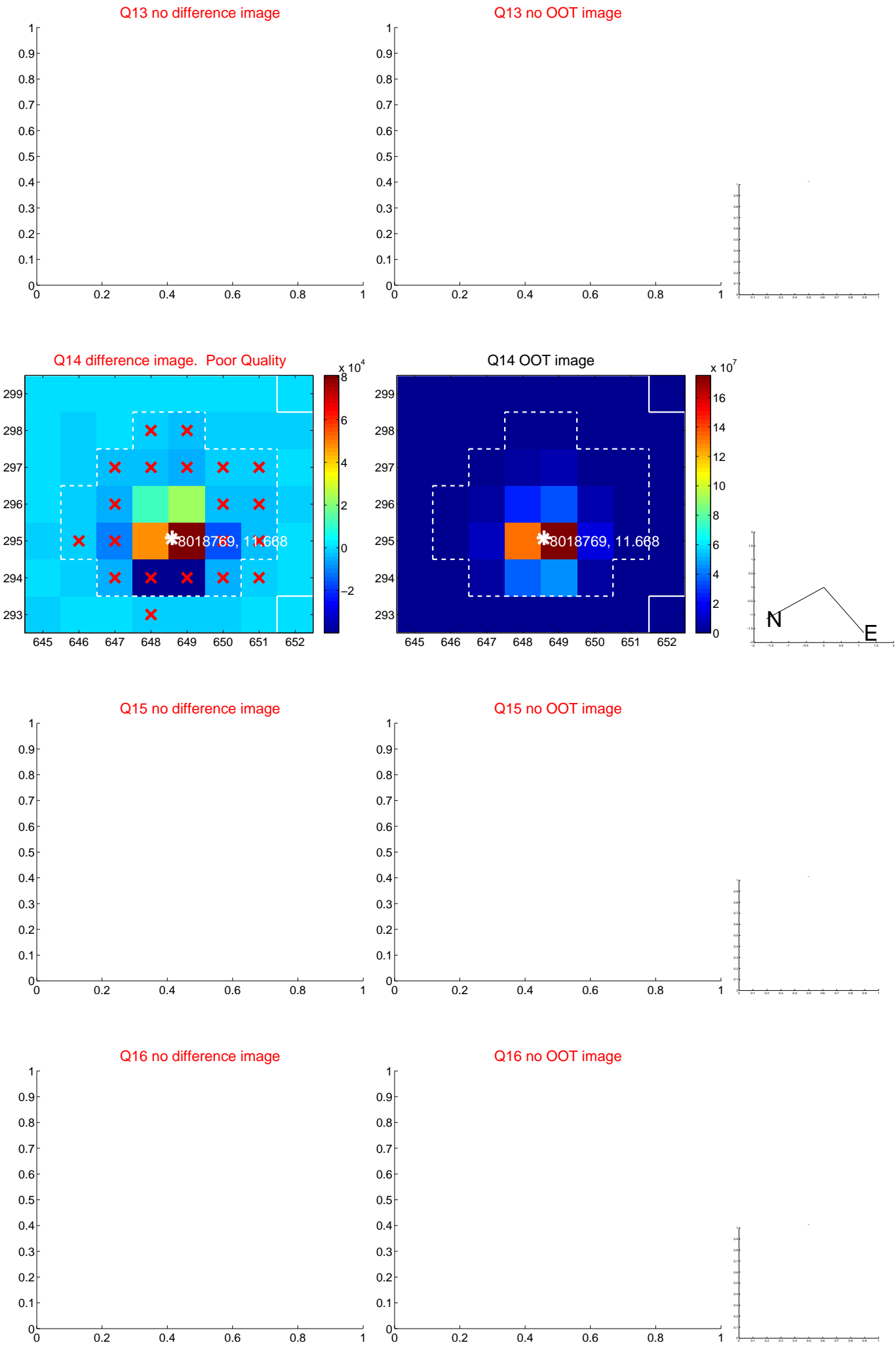
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



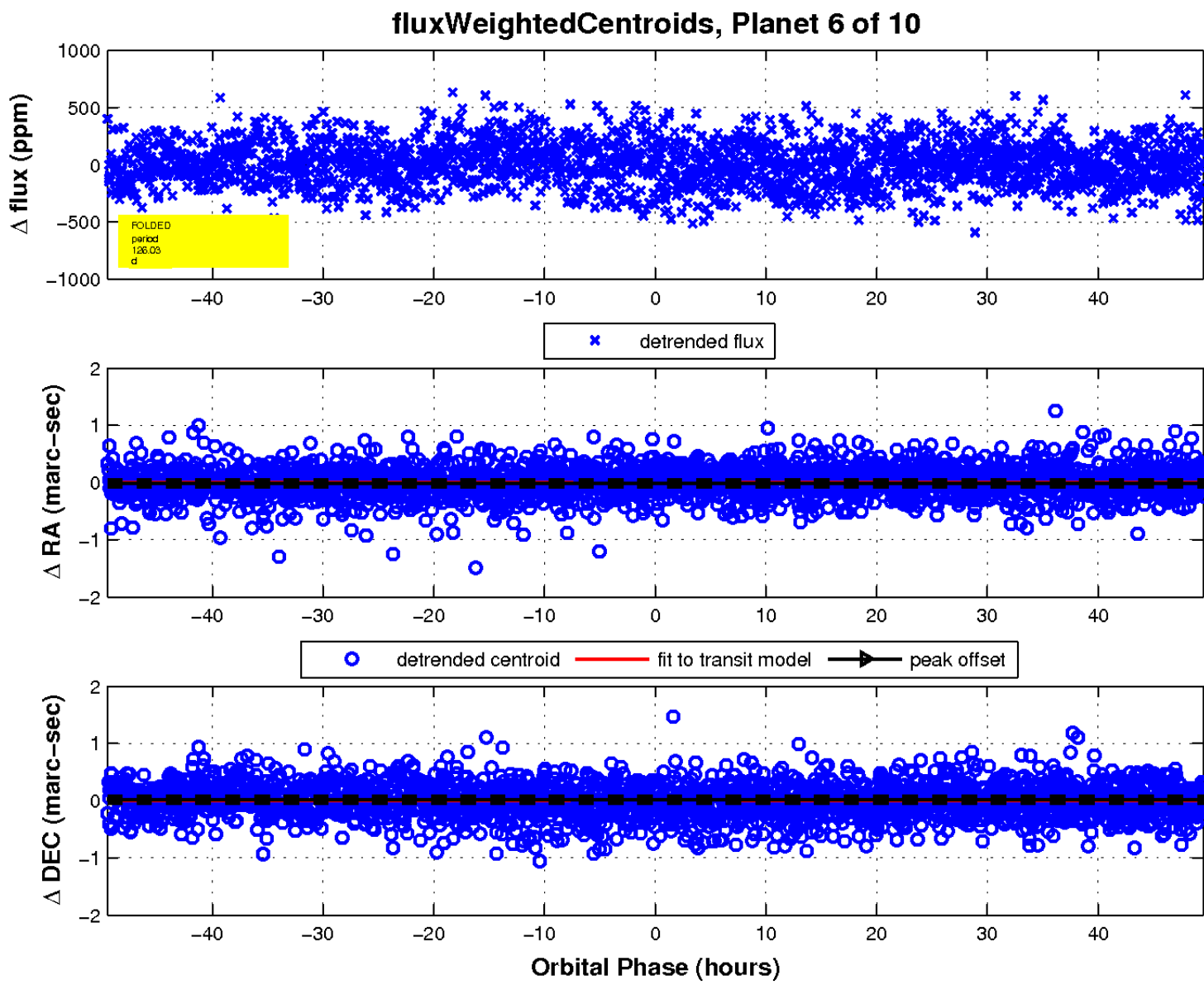
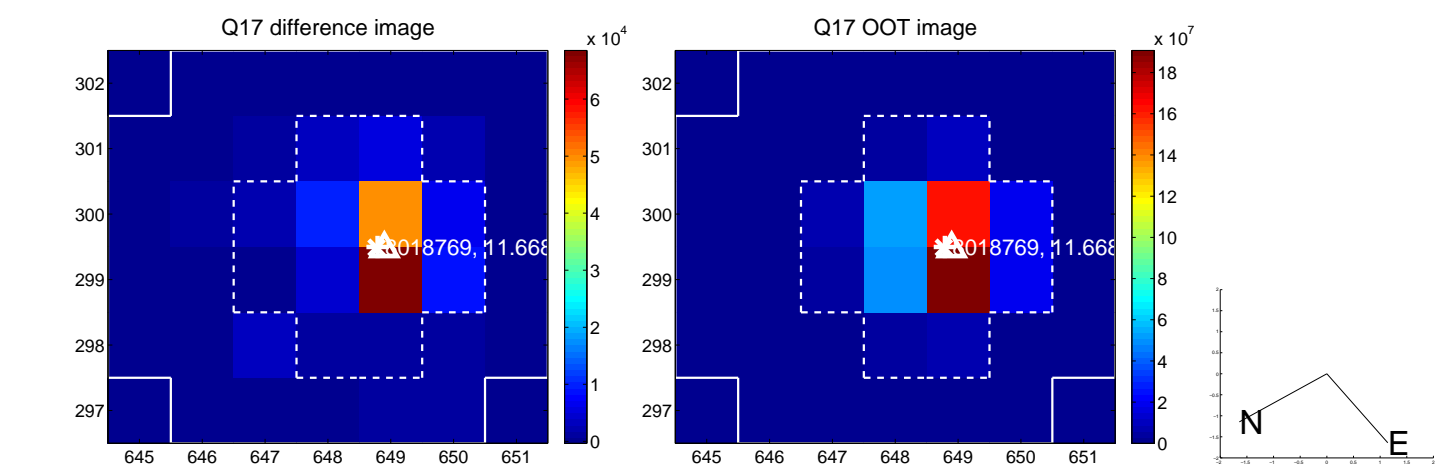
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

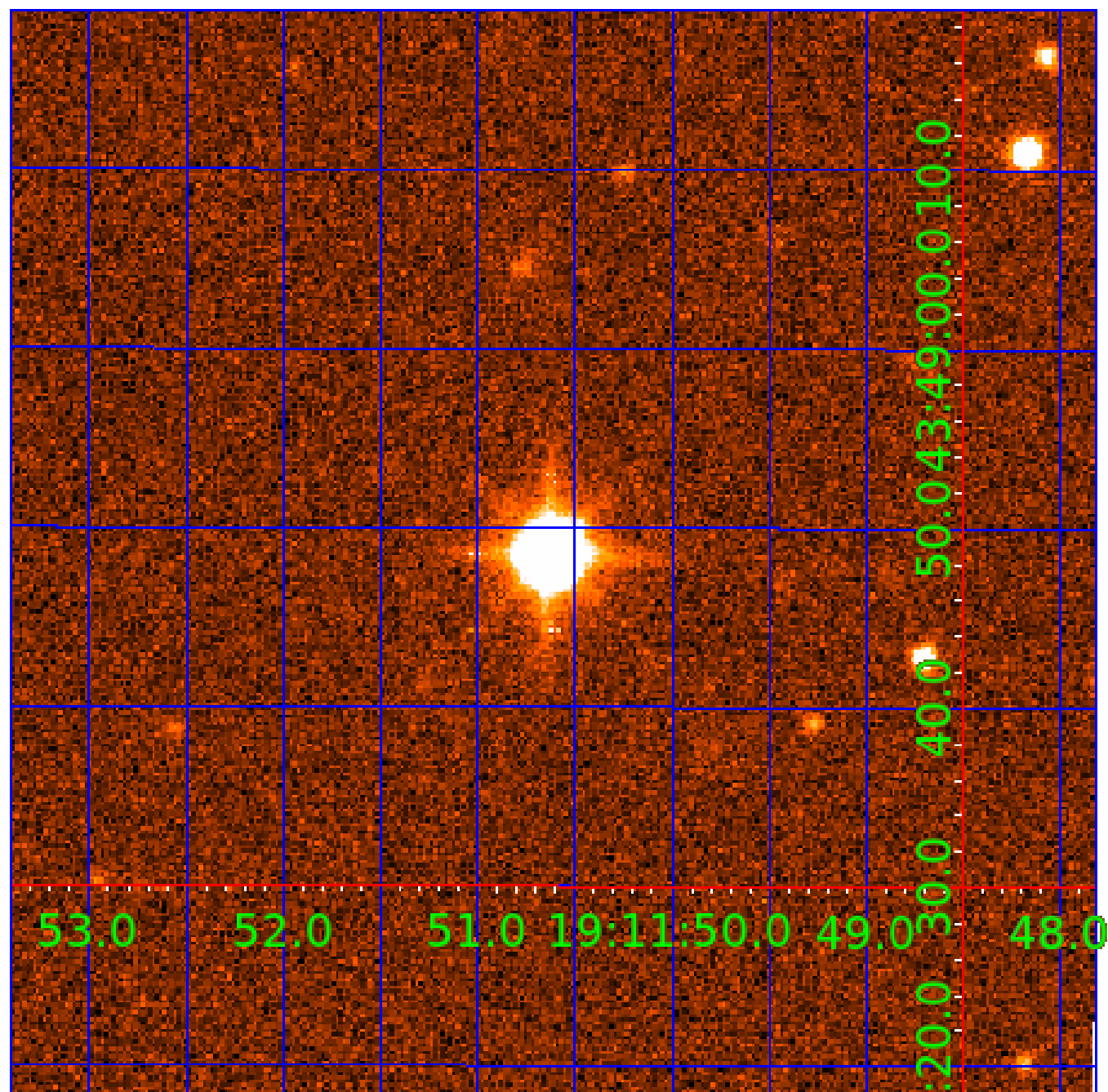


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008018769

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 008018769-01 | OBS | No | 1.393005 | 132.696397 | 26.8 | 7.332 | 9.9 | 9.9 | 4.39 | 6478 | 2.52 | 33196.84 |
| 008018769-02 | OBS | No | 187.688151 | 142.774384 | 246.6 | 18.224 | 10.7 | 8.1 | 4.39 | 6478 | 7.53 | 48.06 |
| 008018769-03 | OBS | No | 21.580518 | 142.903160 | 136.2 | 5.355 | 8.6 | 8.8 | 4.39 | 6478 | 6.01 | 859.58 |
| 008018769-04 | OBS | No | 153.753628 | 227.751237 | 128.8 | 13.438 | 8.6 | 4.6 | 4.39 | 6478 | 5.59 | 62.70 |
| 008018769-05 | OBS | No | 130.796065 | 204.601175 | 331.6 | 2.992 | 8.2 | 8.4 | 4.39 | 6478 | 8.76 | 77.79 |
| 008018769-06 | OBS | No | 126.030555 | 190.511494 | 186.4 | 16.507 | 7.8 | 7.1 | 4.39 | 6478 | 6.72 | 81.73 |
| 008018769-07 | OBS | No | 63.864375 | 176.660218 | 126.1 | 18.797 | 8.0 | 7.6 | 4.39 | 6478 | 5.50 | 202.31 |
| 008018769-09 | OBS | No | 127.543184 | 236.417562 | 163.1 | 13.304 | 7.9 | 6.4 | 4.39 | 6478 | 6.18 | 80.44 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008018769-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 008018769-02 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_UNRESOLVED_OFFSET |
| 008018769-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST |
| 008018769-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008018769-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT |
| 008018769-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS |
| 008018769-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008018769-09 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET |

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

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

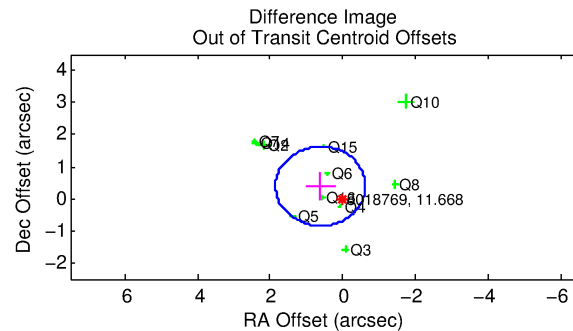
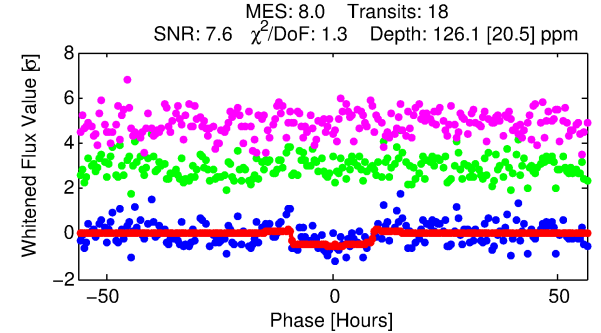
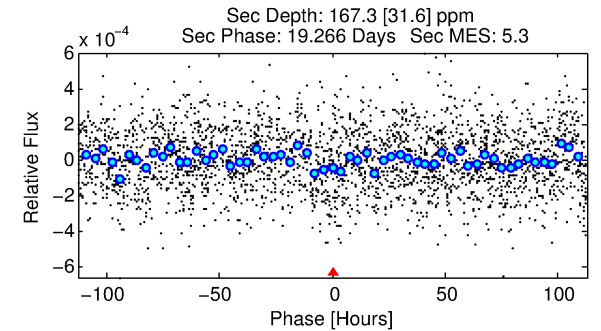
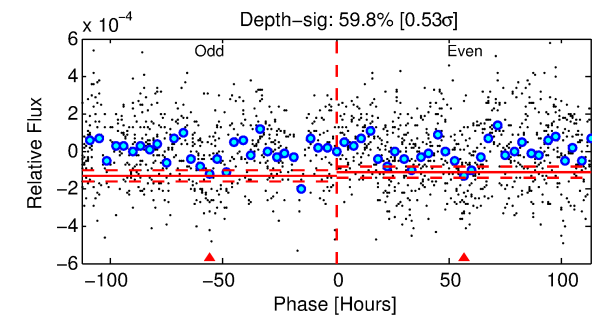
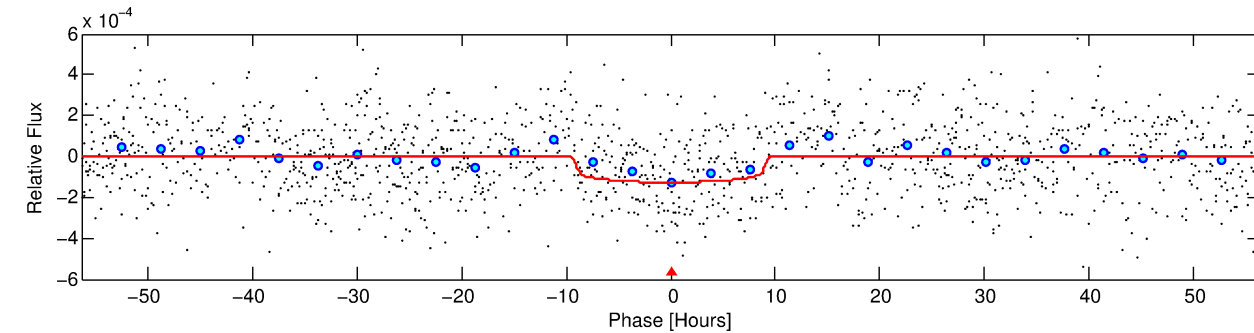
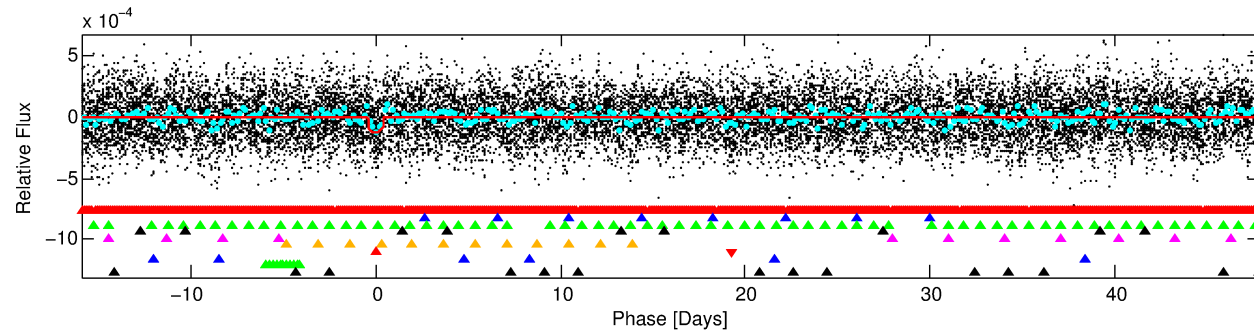
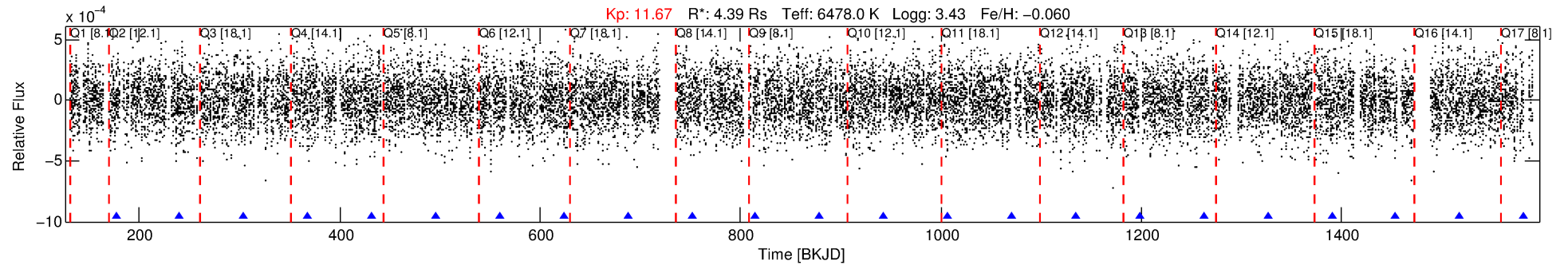
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008018769-07

No Significant Match Found

DV One-Page Summary

KIC: 8018769 Candidate: 7 of 10 Period: 63.864 d



DV Fit Results:

Period = 63.86438 [0.00241] d
Epoch = 176.6602 [0.0308] BKJD
 R_p/R^* = 0.0115 [0.0022]
 a/R^* = 15.29 [14.49]
 b = 0.82 [0.38]
 S_{eff} = 202.31 [124.95]
 T_{eq} = 962 [148] K
 R_p = 5.50 [2.34] R_e
 a = 0.3878 [0.1452] AU
 A_g = 457.63 [340.47] [1.34 σ]
 T_{effp} = 6877 [762] K [7.62 σ]

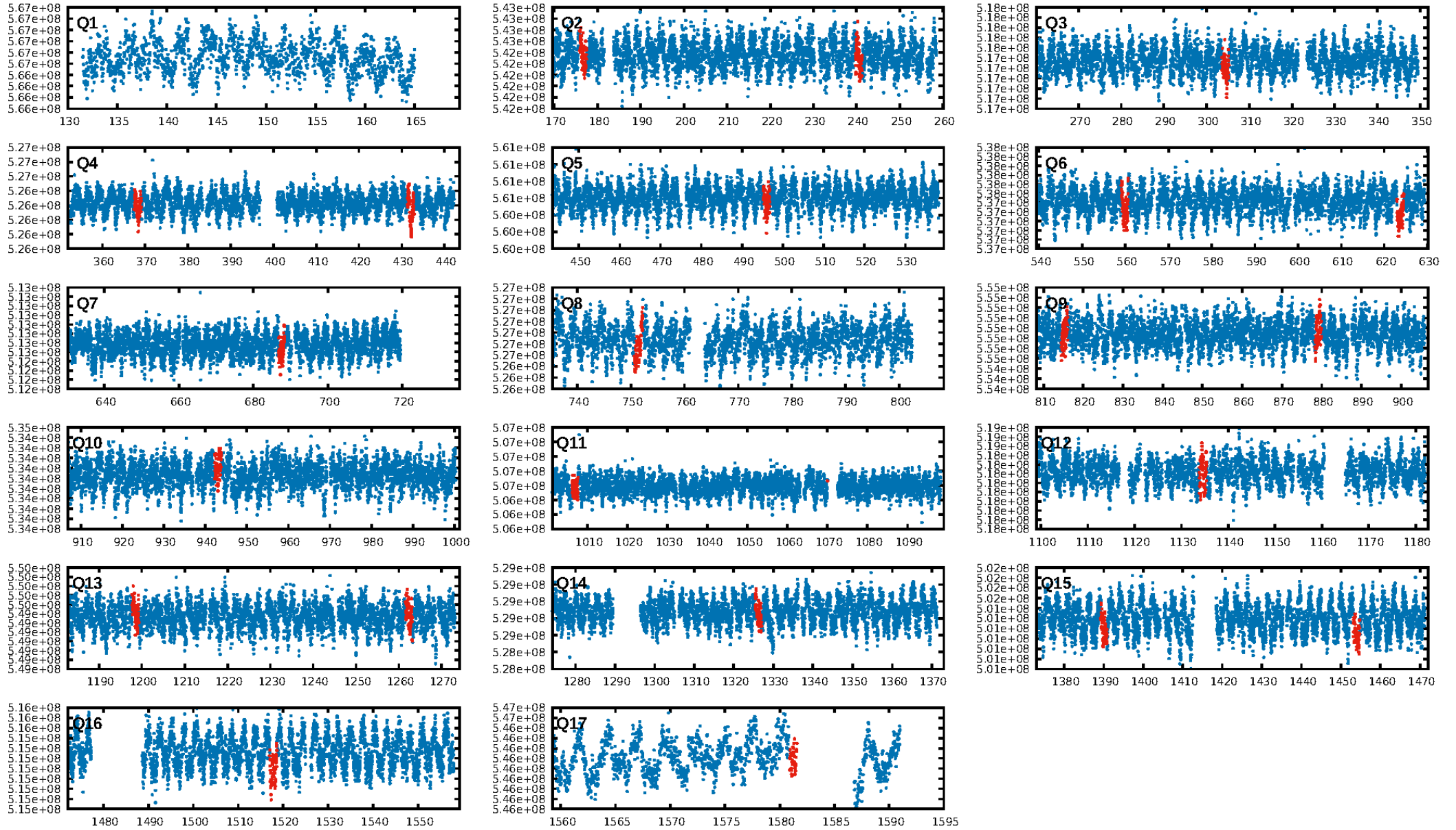
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [51.92 σ]
LongPeriod-sig: 100.0% [48.71 σ]
ModelChiSquare2-sig: 11.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [18/18]
GhostDiagnostic-chr: -18.67
Centroid-sig: 45.0%
Centroid-so: 0.116 arcsec [0.41 σ]
OotOffset-rm: 0.733 arcsec [1.78 σ]
KicOffset-rm: 0.659 arcsec [1.40 σ]
OotOffset-st: 4/3/3/1 [11]
KicOffset-st: 4/3/3/1 [11]
DiffImageQuality-fgm: 0.55 [6/11]
DiffImageOverlap-fno: 0.00 [0/14]

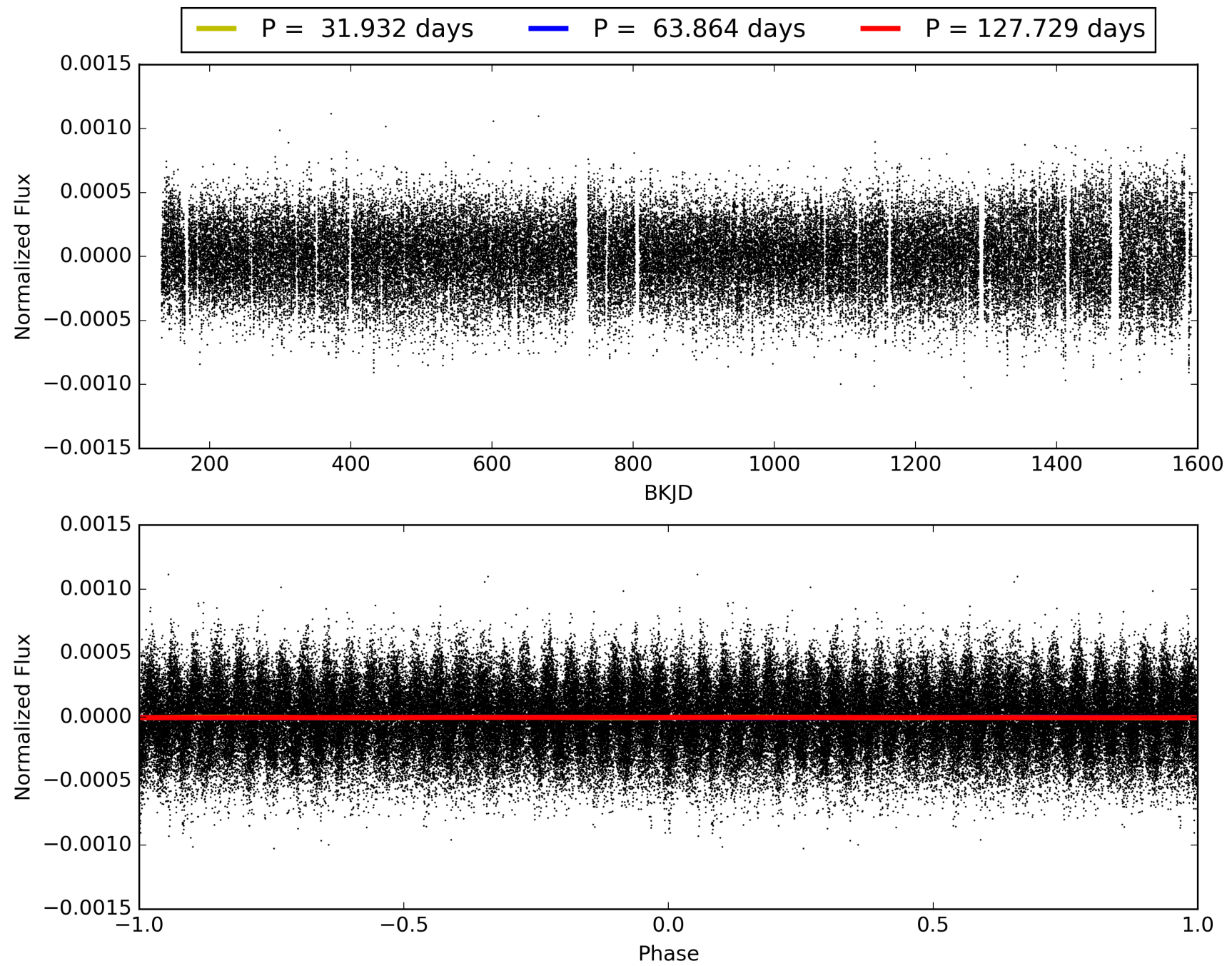
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 04:18:43 Z

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

TCE 008018769-07, PDC Light Curves

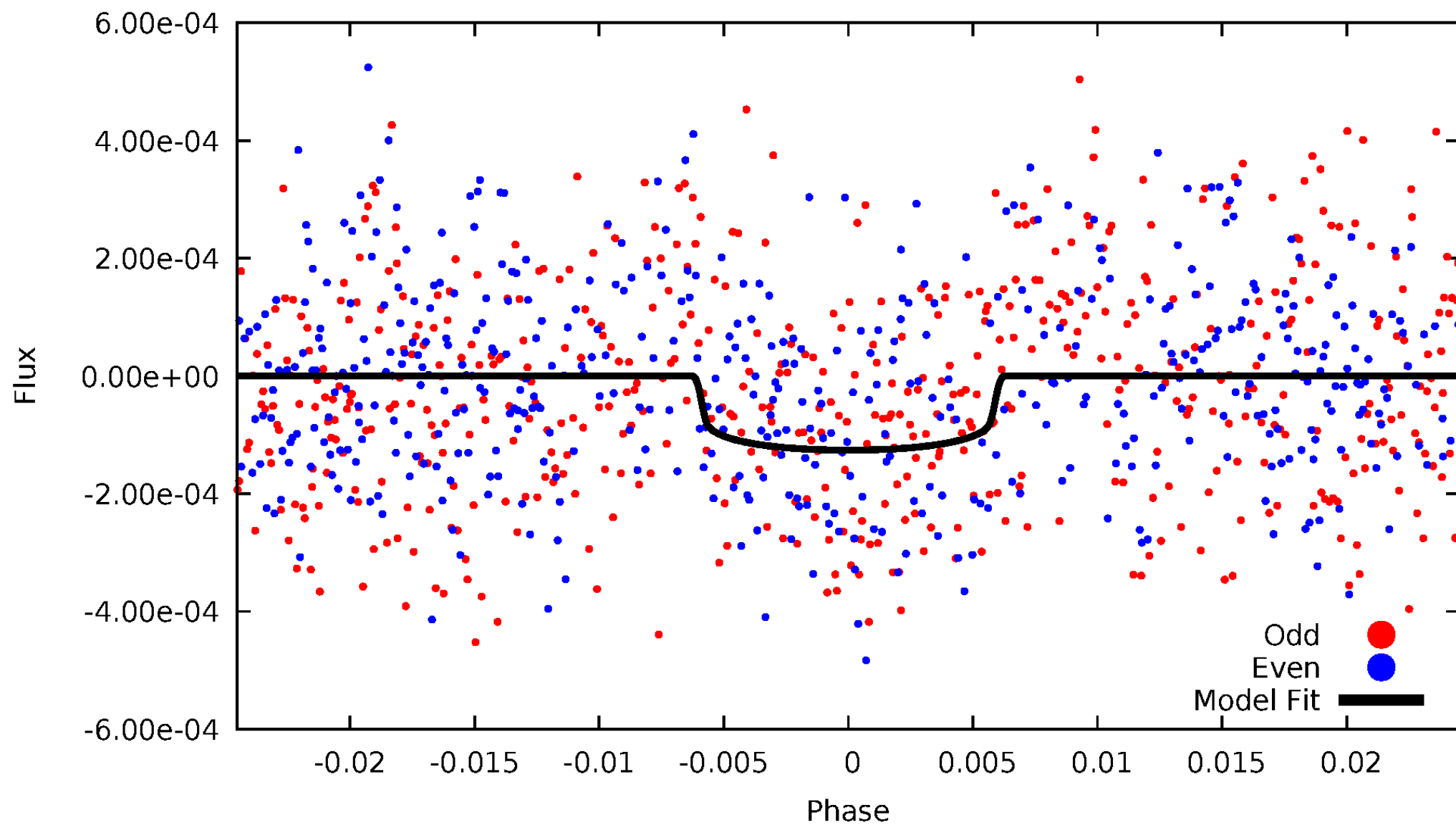


TCE 008018769-07



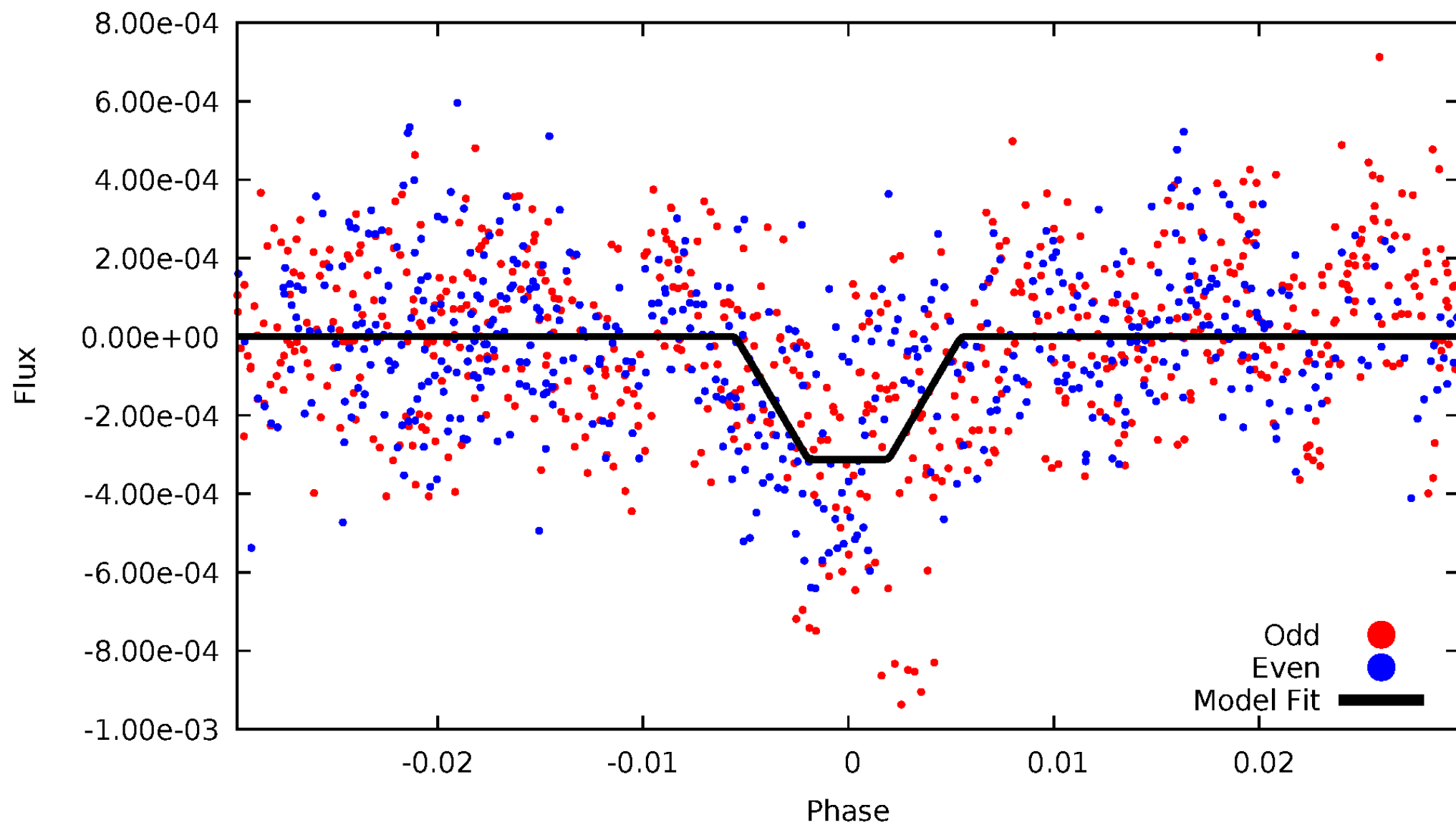
DV Odd/Even

TCE 008018769-07



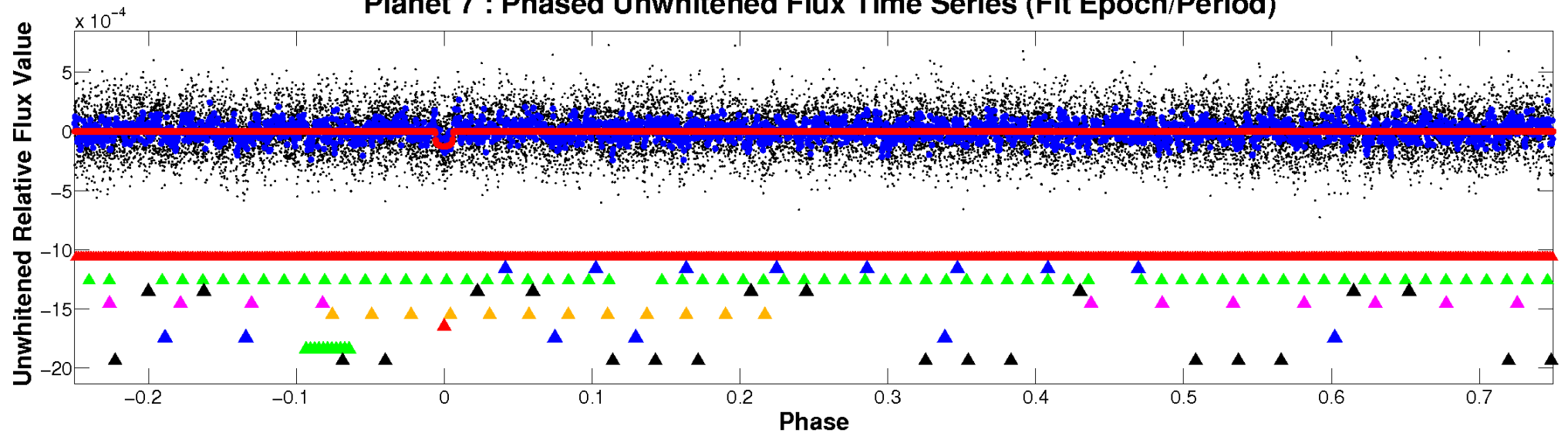
ALT Odd/Even

TCE 008018769-07

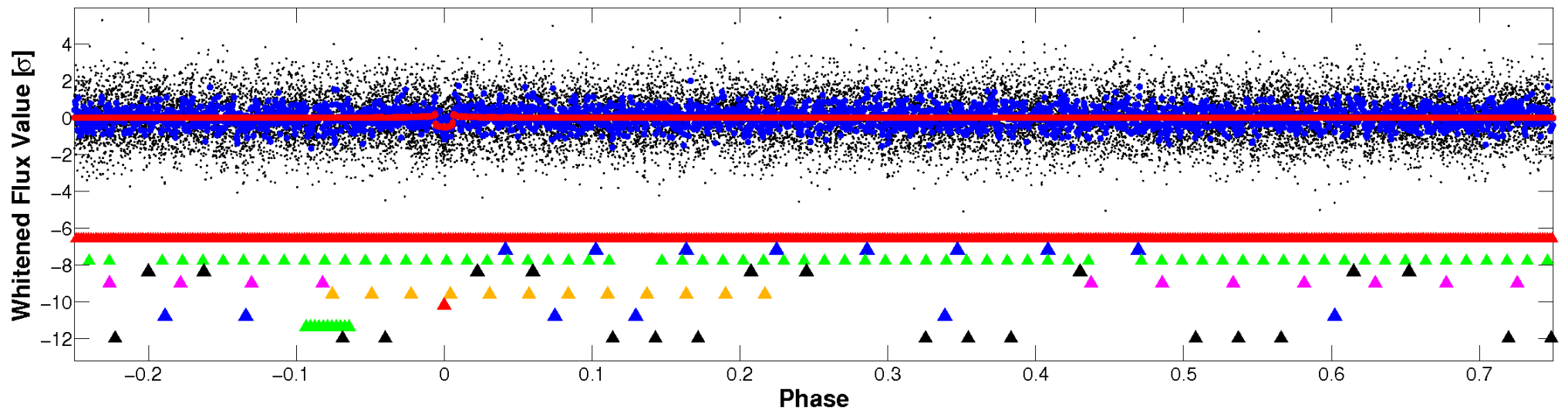


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

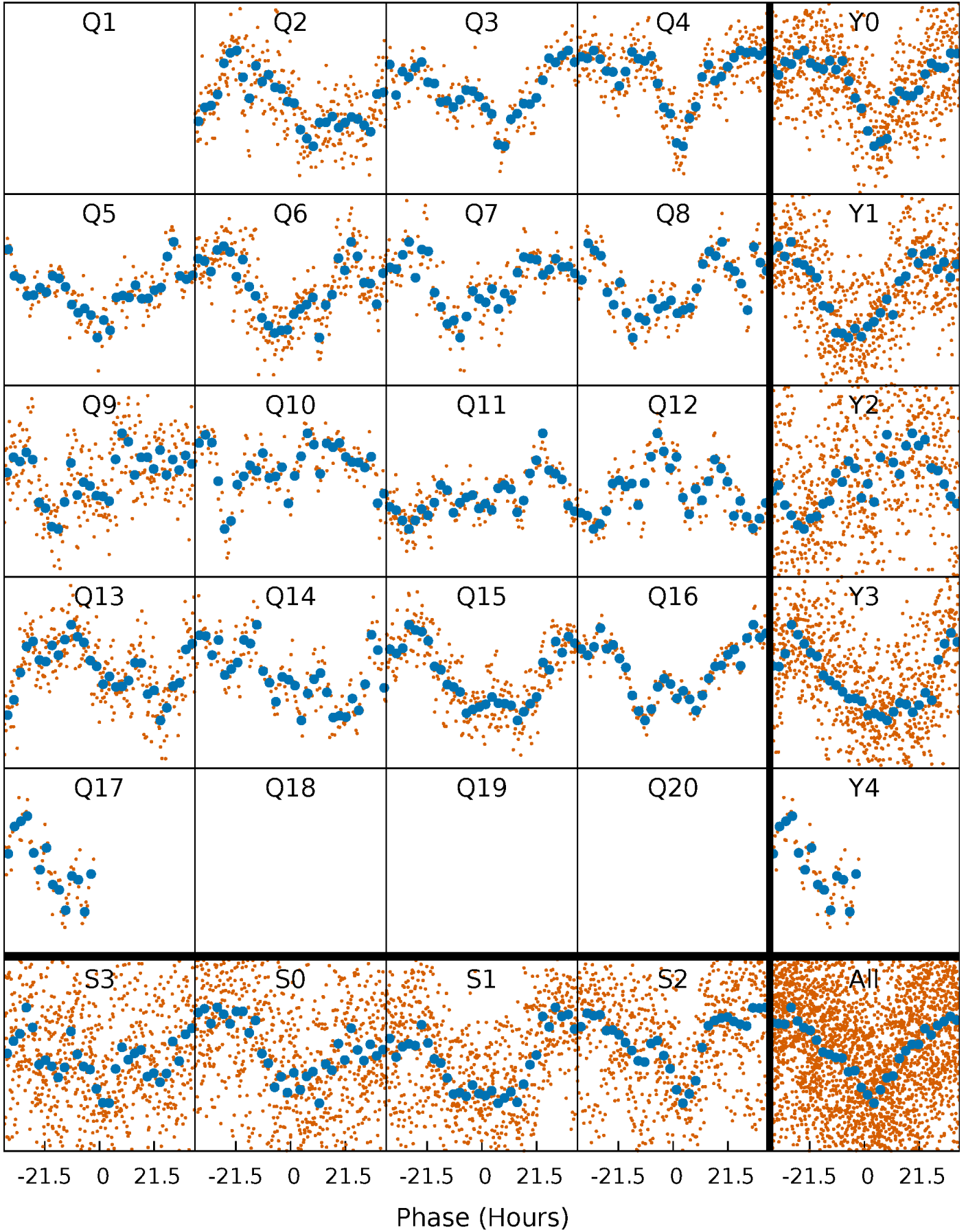


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



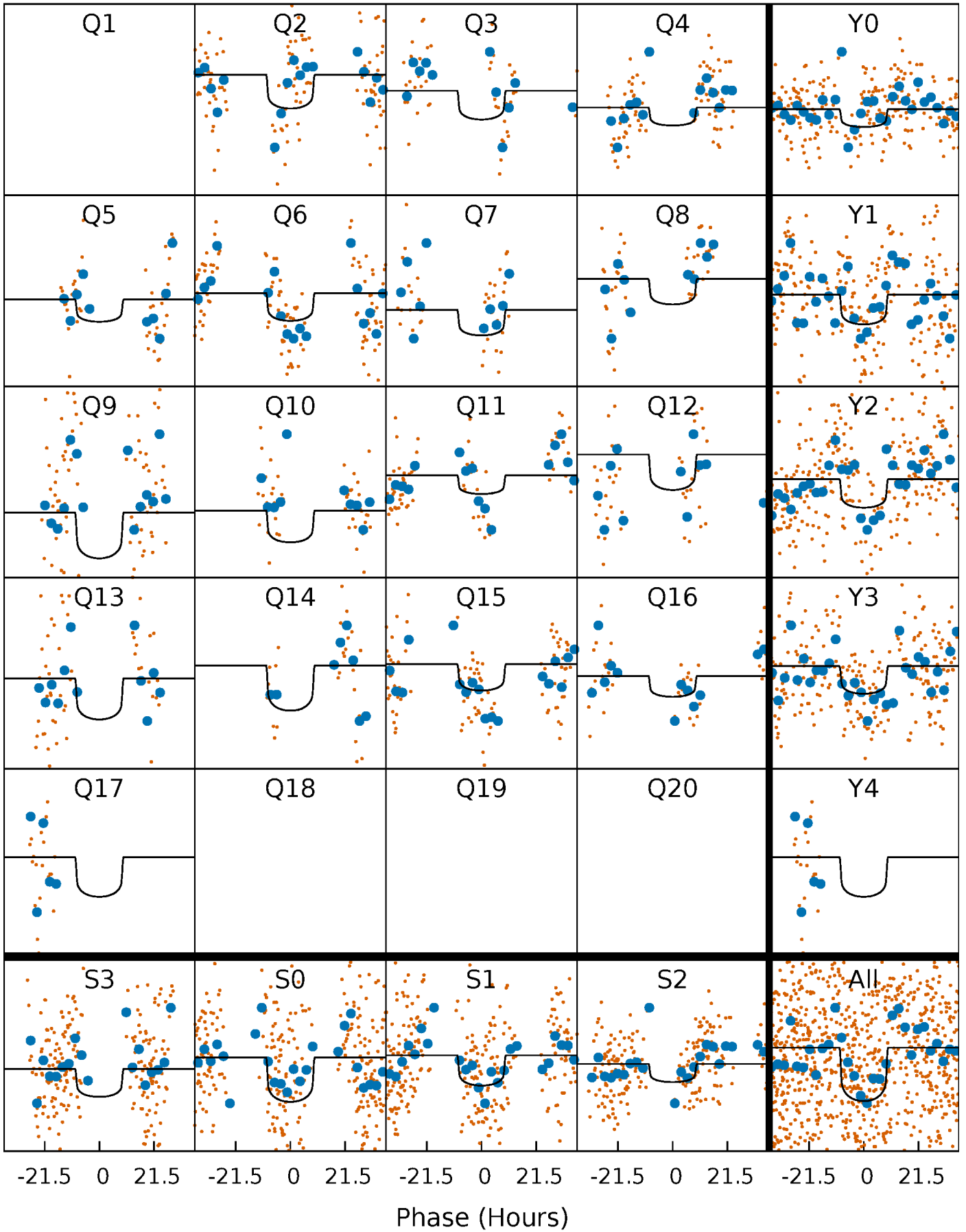
PDC Quarter-Phased Transit Curves

TCE 008018769-07 $P = 63.864375$ Days $T_0 = 176.660218$ (BKJD)



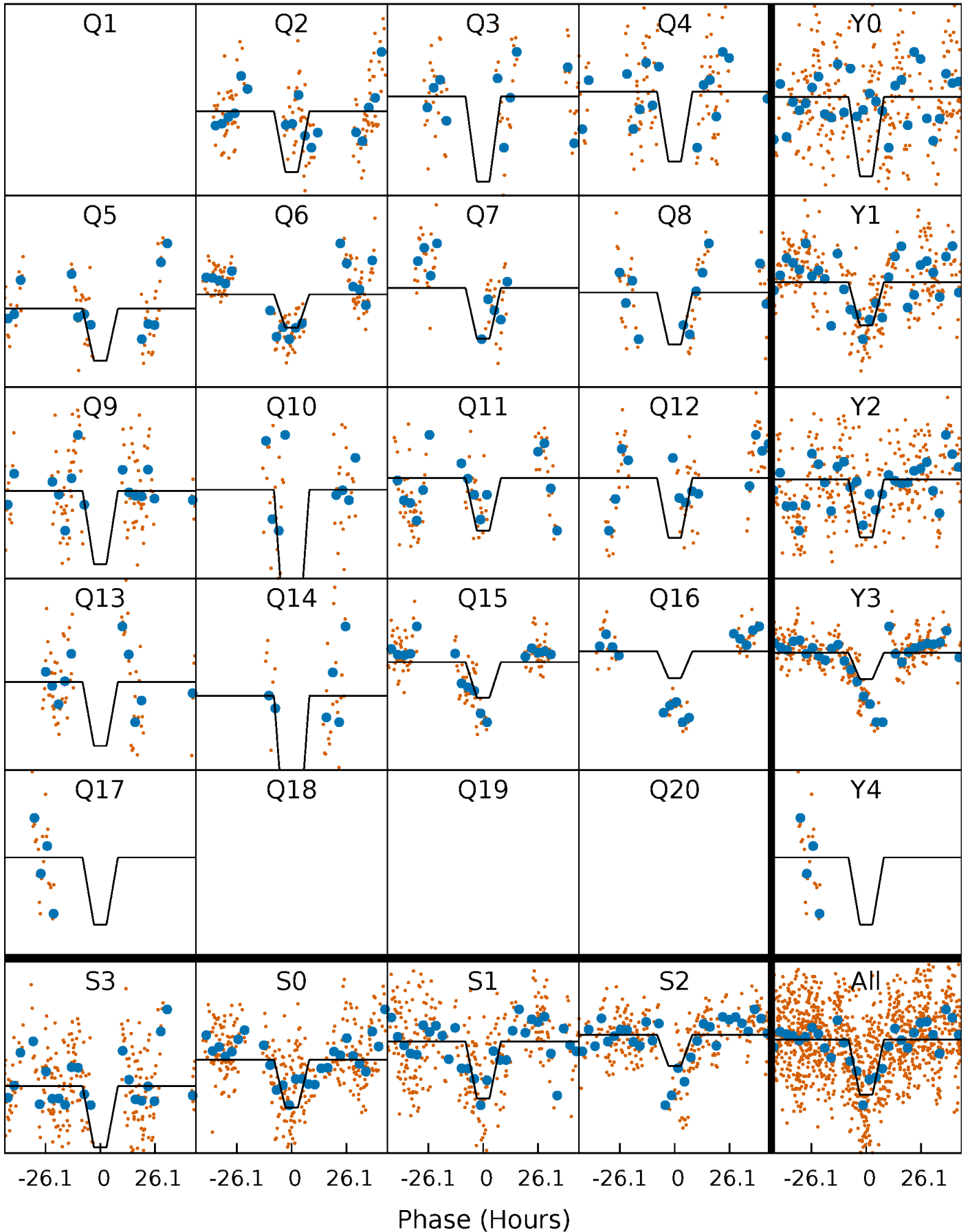
DV Quarter-Phased Transit Curves

TCE 008018769-07 $P = 63.864375$ Days $T_0 = 176.660218$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

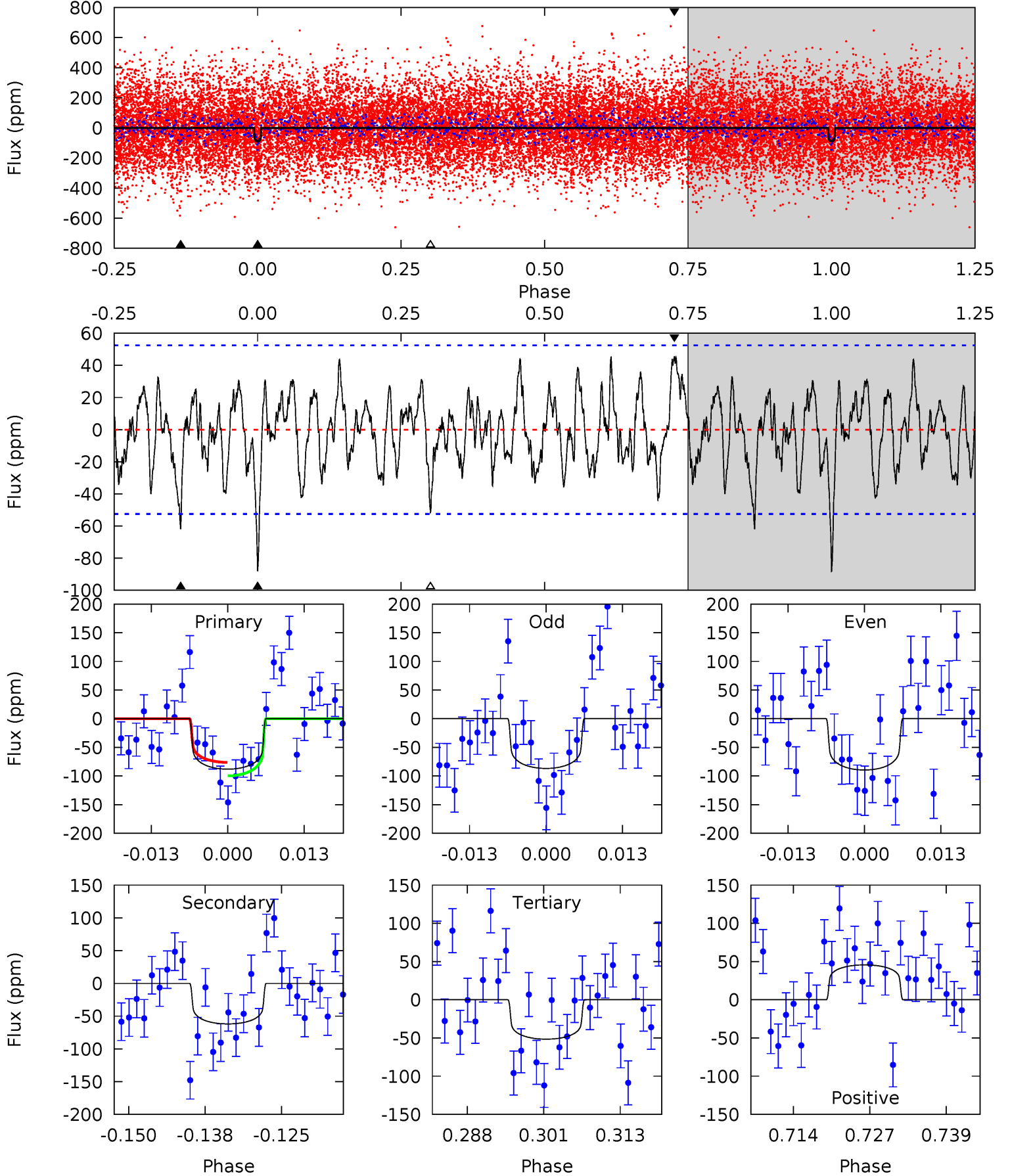
TCE 008018769-07 $P = 63.879130$ Days $T_0 = 176.527151$ (BKJD)



DV Model-Shift Uniqueness Test

008018769-07, P = 63.864375 Days, E = 112.795843 Days

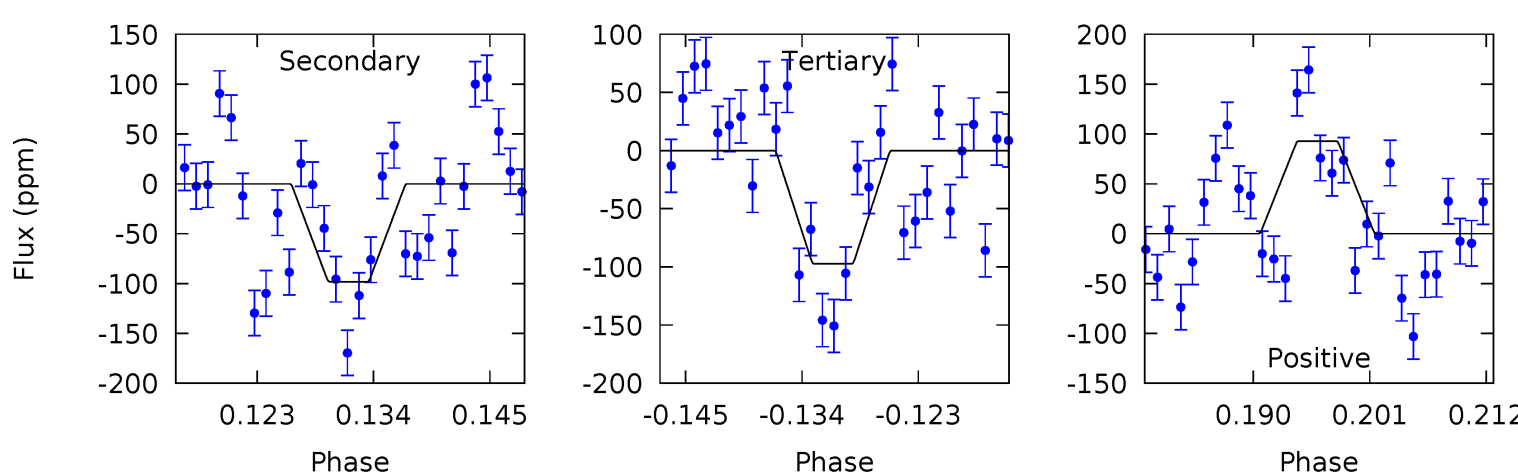
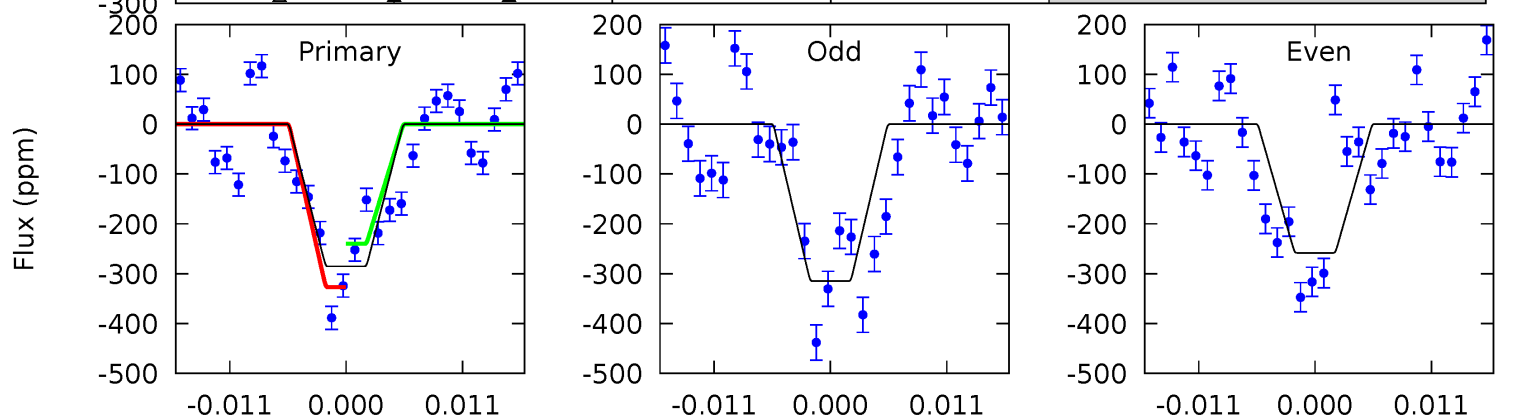
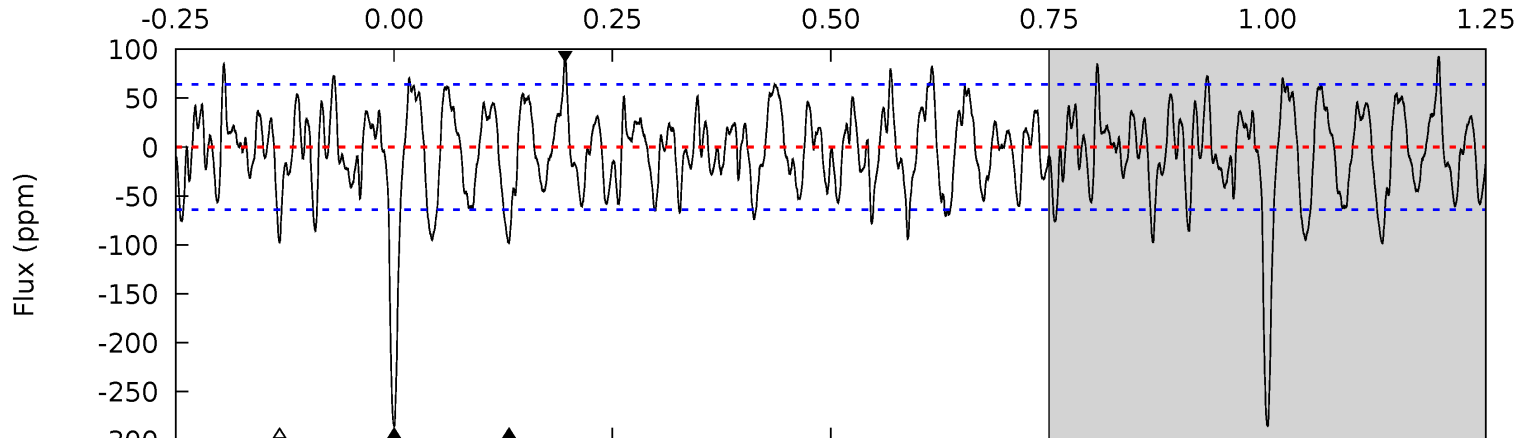
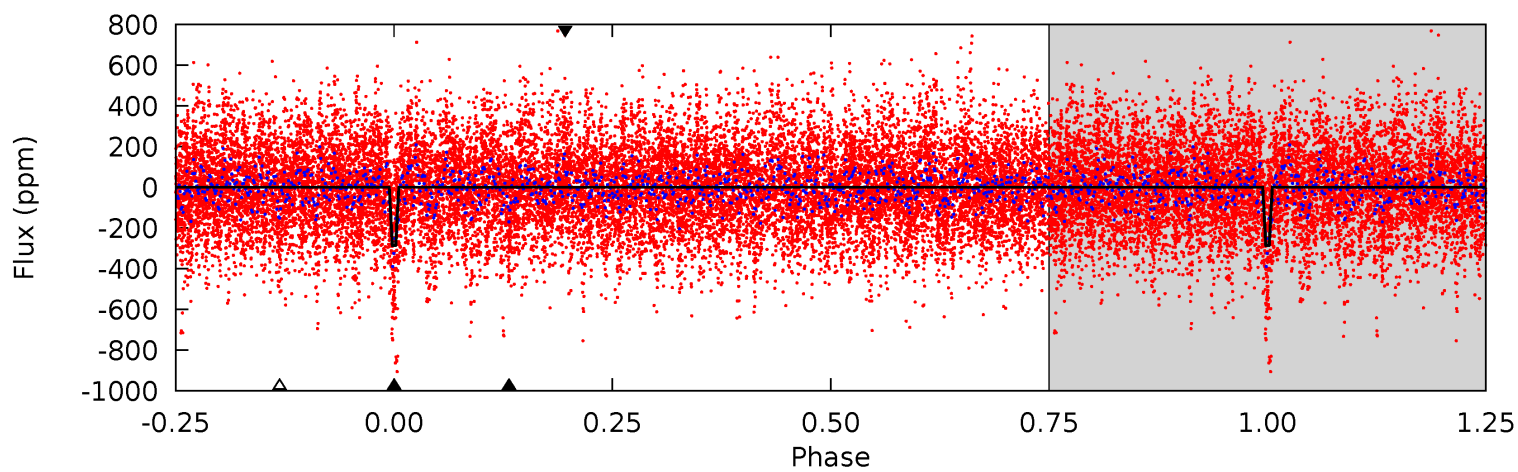
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.36 | 5.88 | 4.89 | 4.33 | 4.98 | 2.50 | 1.76 | 3.47 | 4.03 | 0.98 | 1.55 | 0.13 | 0.72 | 0.34 | 1.12 |



Alt Model-Shift Uniqueness Test

008018769-07, P = 63.879130 Days, E = 112.648021 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-------|-------|------|
| 22.3 | 7.68 | 7.62 | 7.26 | 5.01 | 2.54 | 2.86 | 14.7 | 15.1 | 0.06 | 0.42 | 2.21 | -0.73 | 0.25 | 3.38 |



Stellar Parameters For KIC 008018769

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6478^{+146}_{-179} | $3.433^{+0.360}_{-0.090}$ | $-0.060^{+0.300}_{-0.250}$ | $4.391^{+0.594}_{-1.664}$ | $1.908^{+0.094}_{-0.375}$ | $0.032^{+0.087}_{-0.009}$ |
| | +2%/-3% | +10%/-3% | +500%/-417% | +14%/-38% | +5%/-20% | +275%/-28% |
| Source | PHO1 | FLK73 | KIC0 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 008018769-07 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|--------------|------------------------|----------------------|----------------------|--------------------|
| DV | -62 ± 11 | $5.04^{+1.37}_{-1.30}$ | 1315^{+75}_{-141} | 5387^{+634}_{-481} | 198^{+160}_{-77} |
| Alt. | -98 ± 13 | $7.91^{+1.73}_{-1.77}$ | 1317^{+79}_{-132} | 4941^{+353}_{-303} | 127^{+74}_{-41} |

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

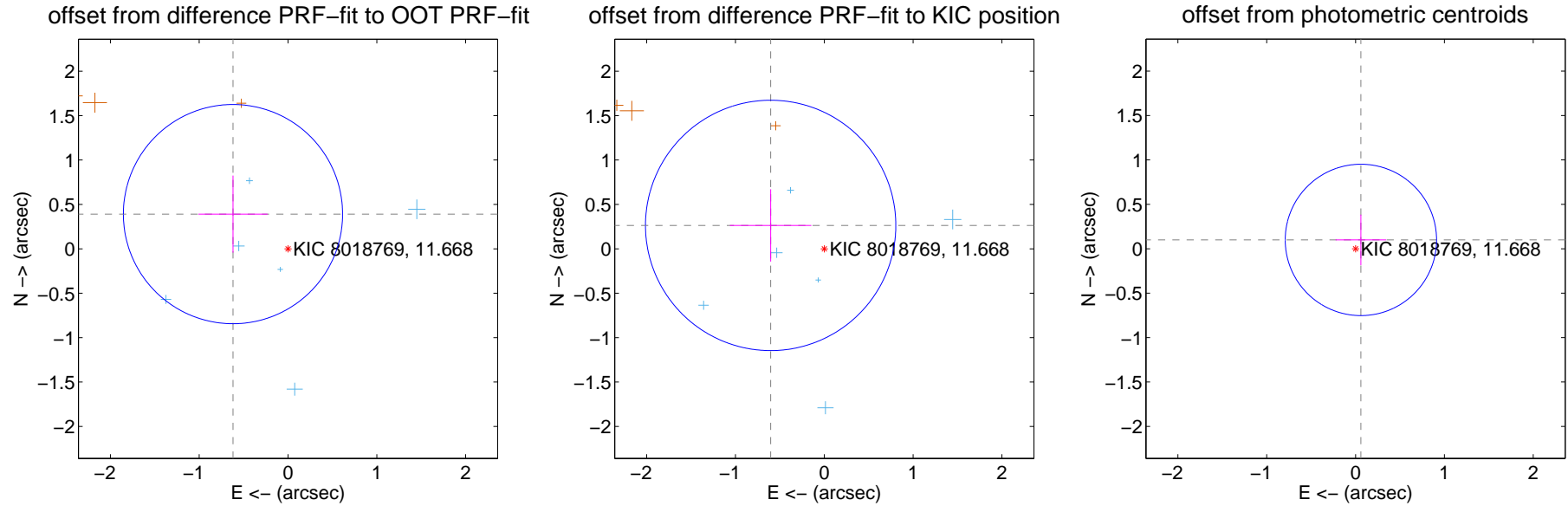
DV Centroid Data

Supplemental centroid analysis for 008018769-07. **Kepler magnitude: 11.67.** Transit SNR 7.56

There are 6 quarters with good PRF difference image offsets

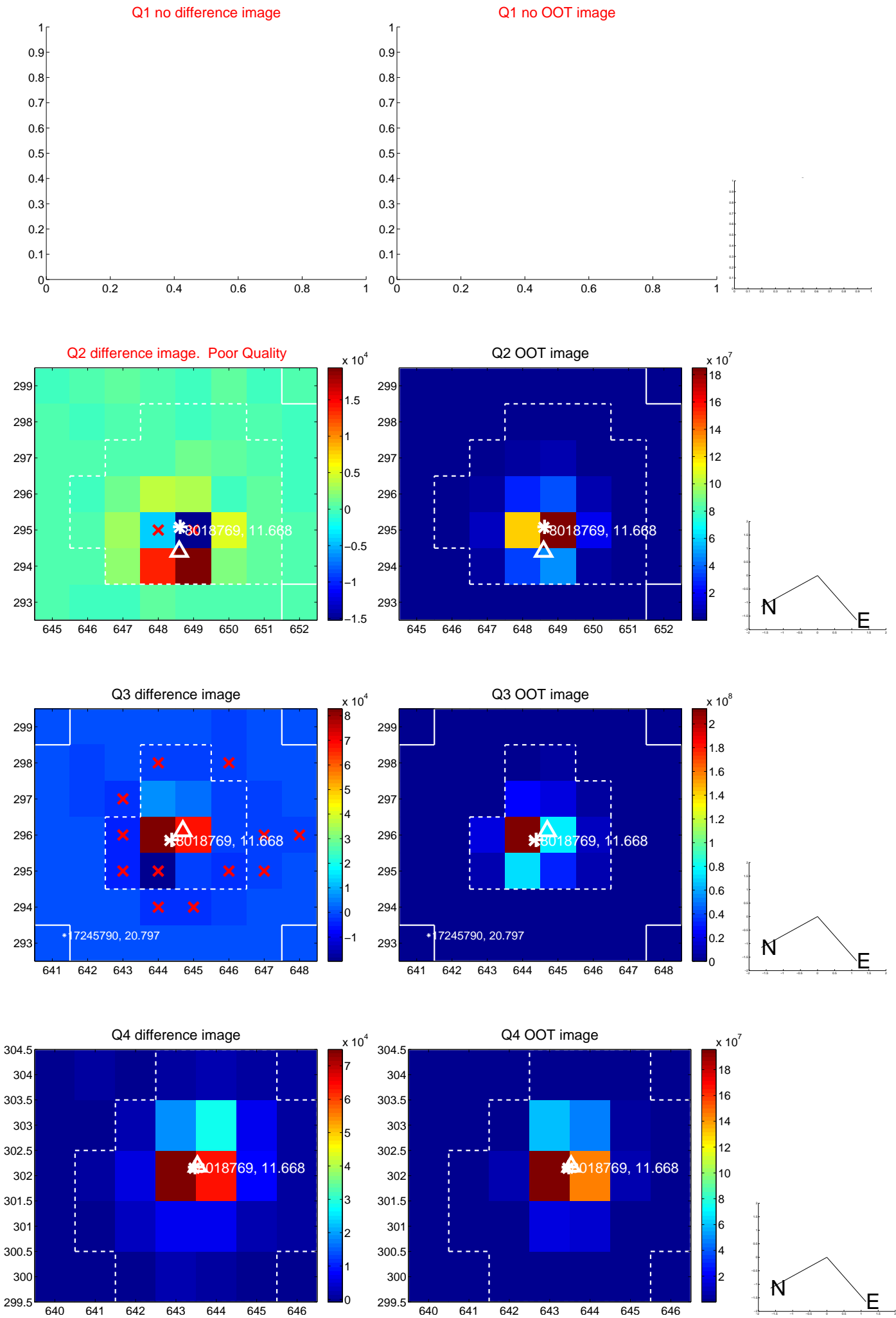
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 0.733 ± 0.411 | 1.78 | 0.620 ± 0.389 | 0.391 ± 0.434 |
| PRF-fit source offset from KIC position | 0.659 ± 0.470 | 1.40 | 0.604 ± 0.459 | 0.264 ± 0.407 |
| photometric centroid source offset | 0.12 ± 0.28 | 0.41 | -0.06 ± 0.28 | 0.10 ± 0.28 |

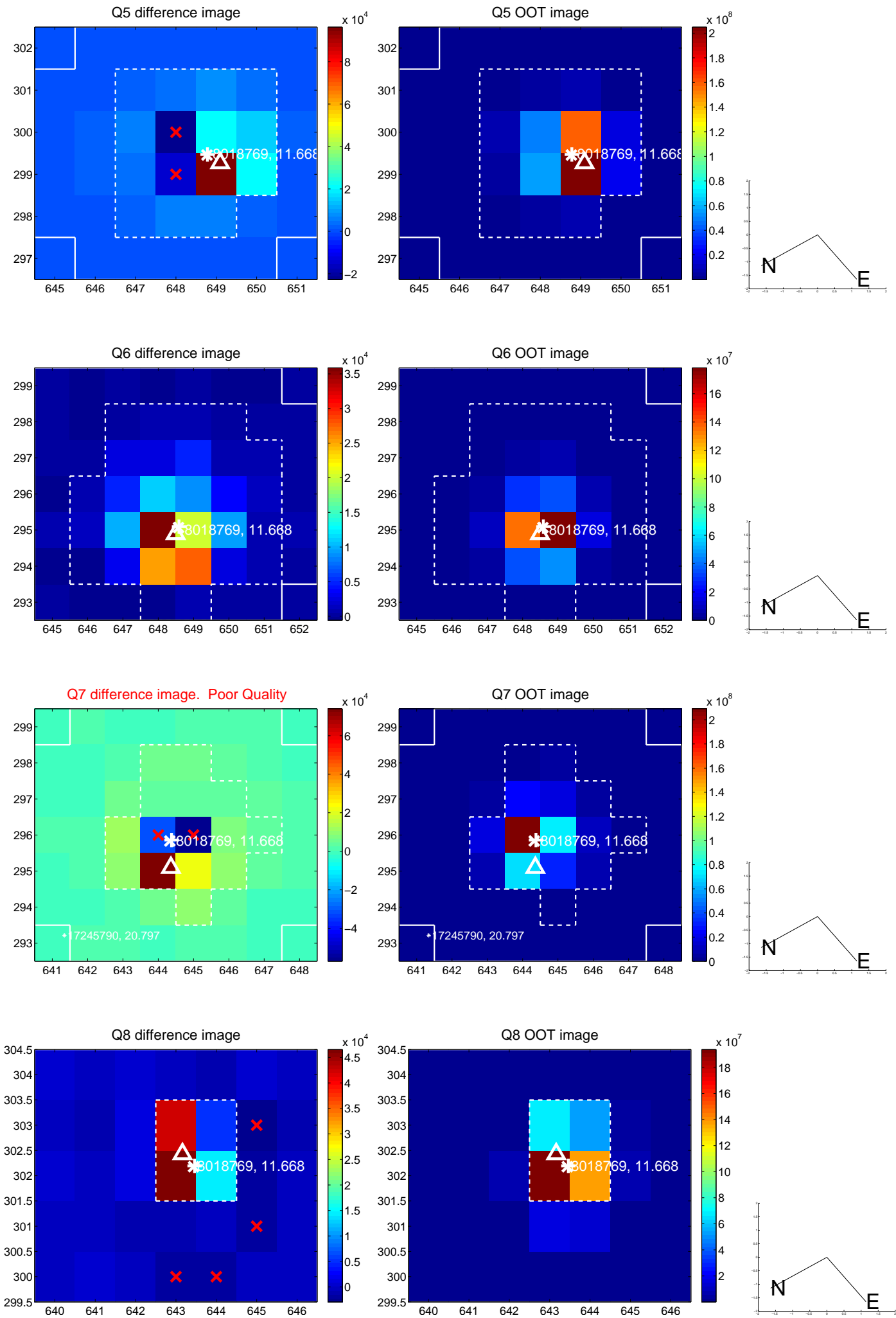


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

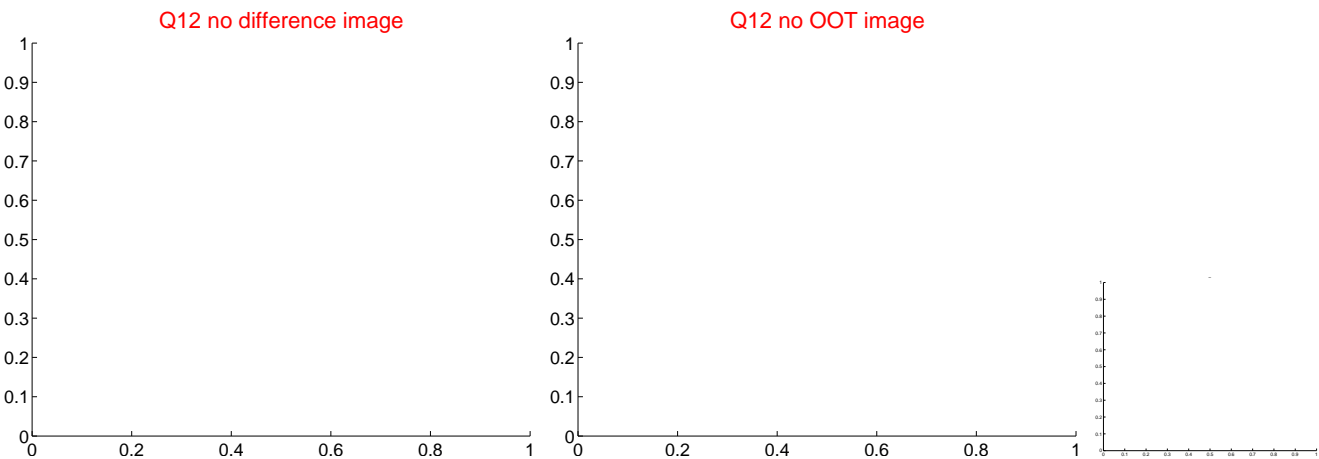
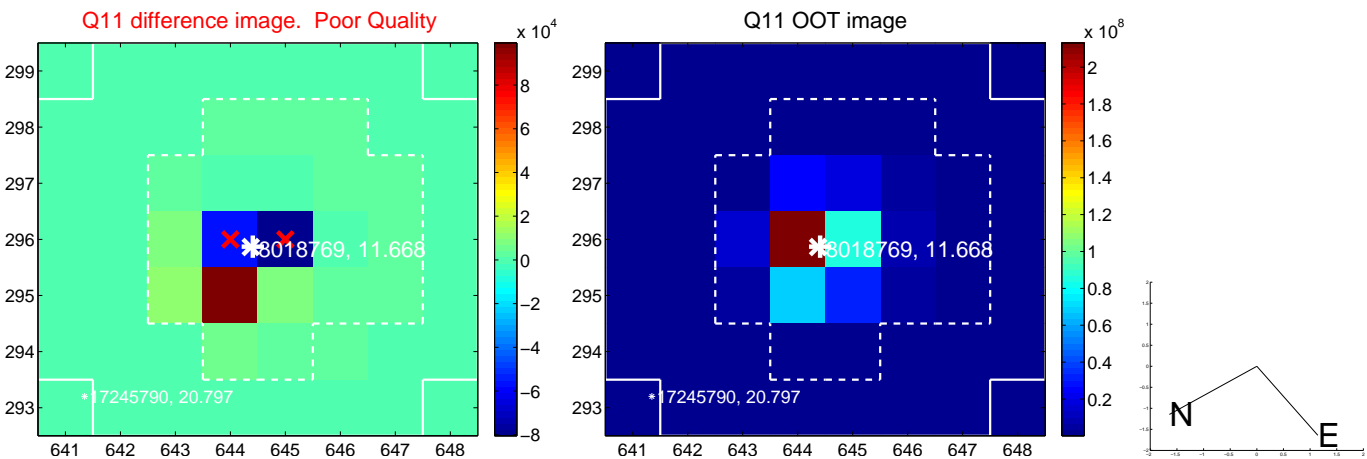
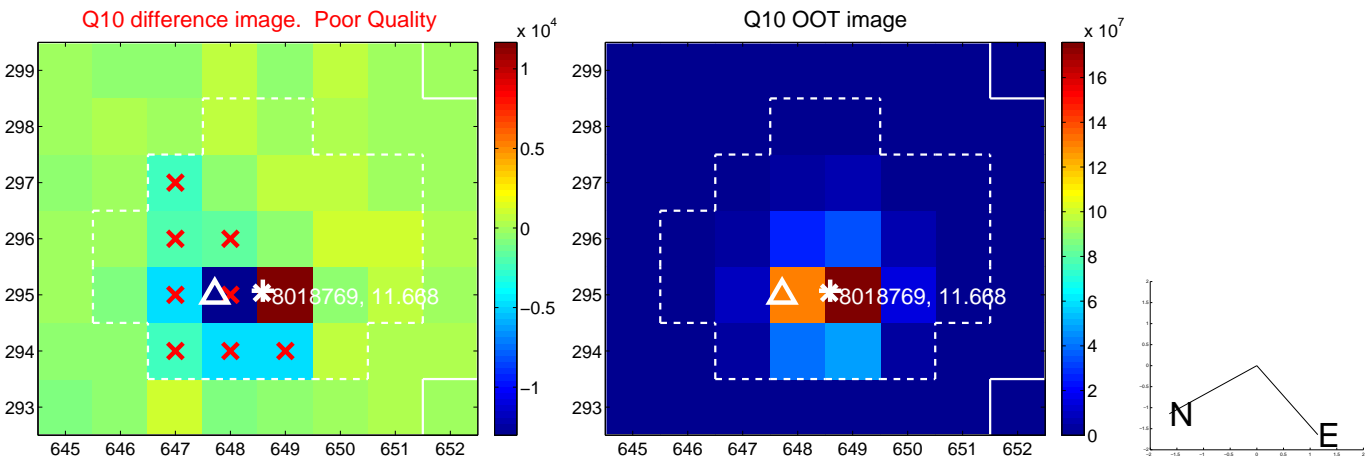
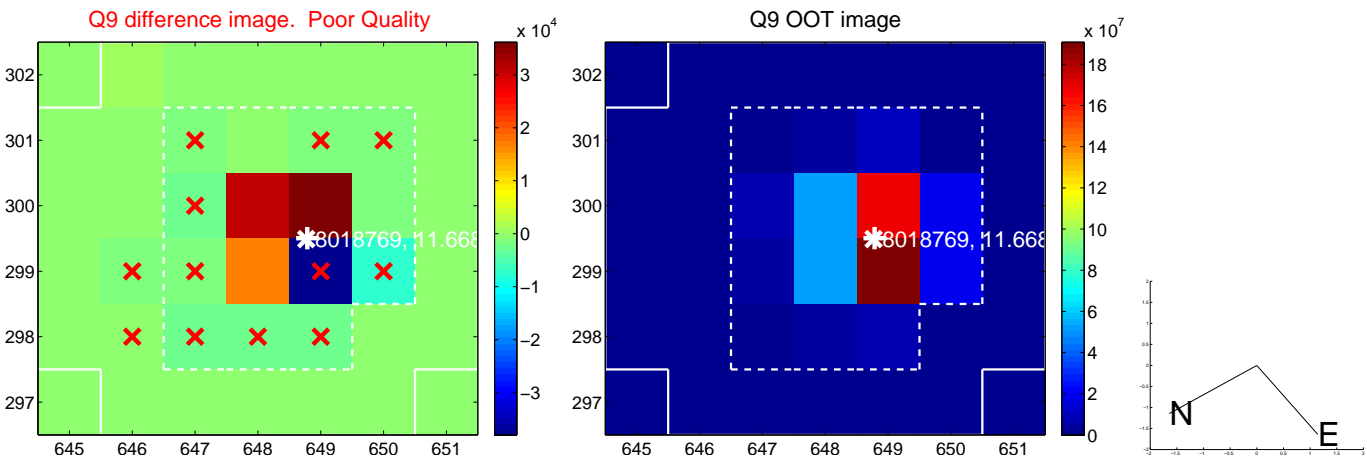
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



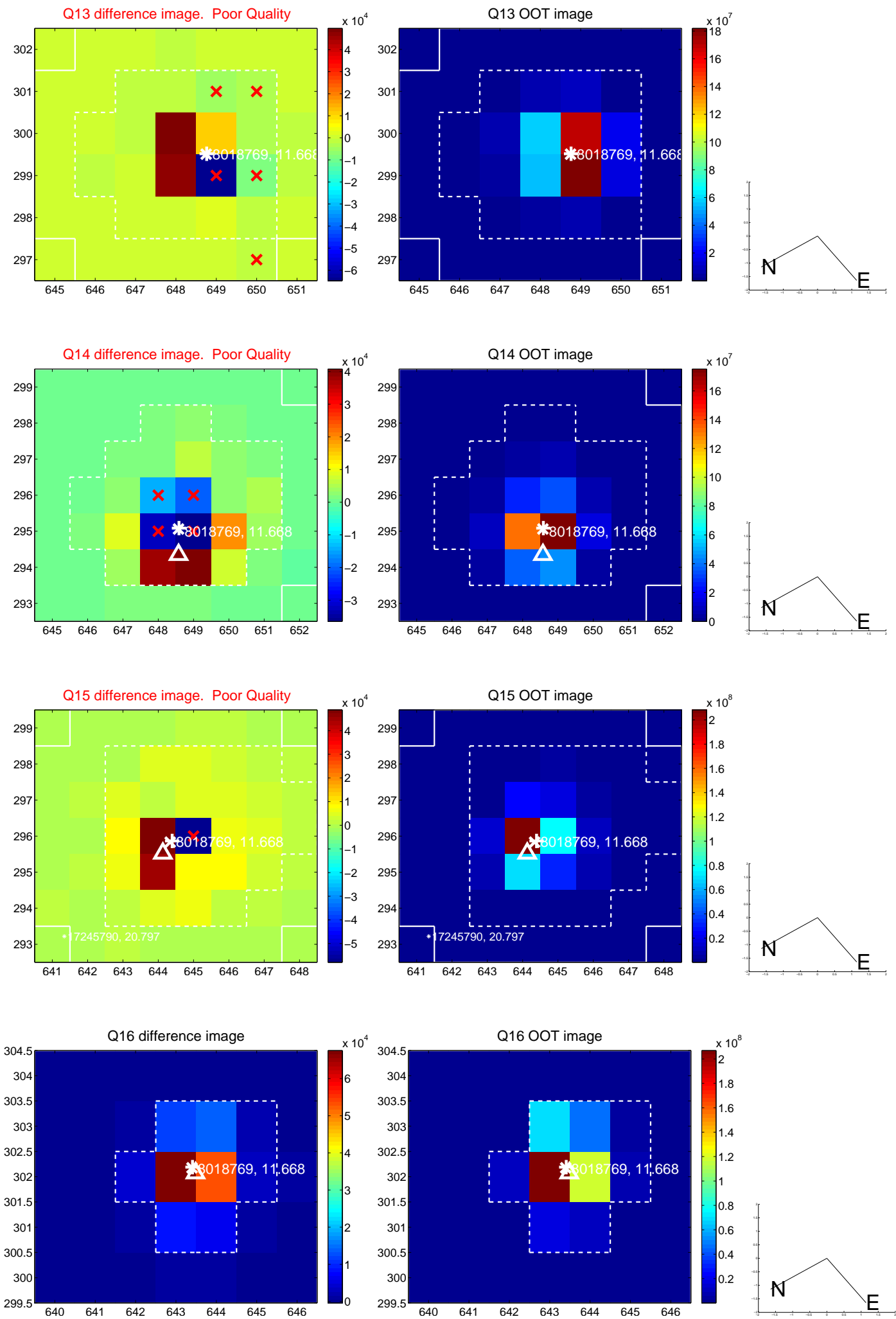
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



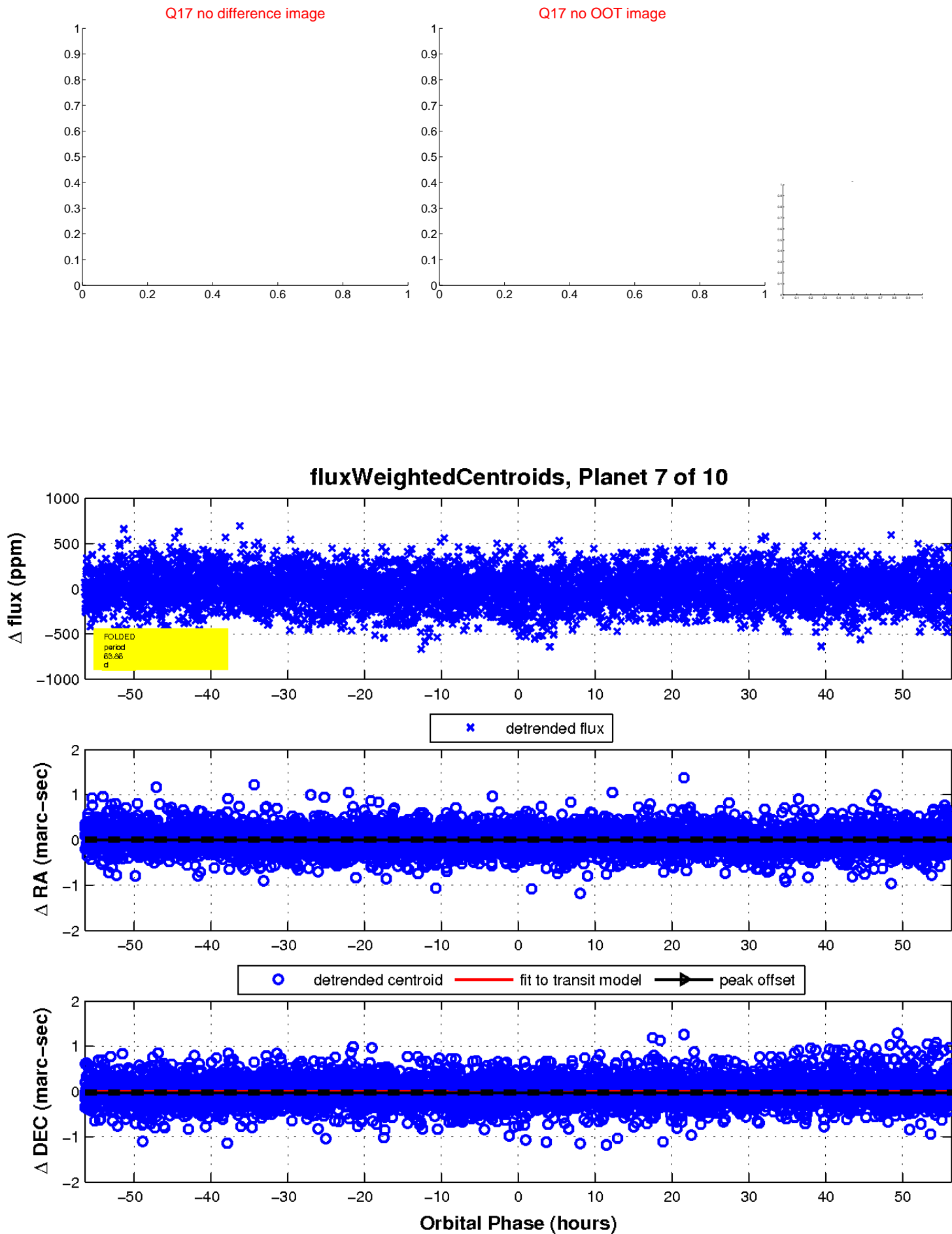
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

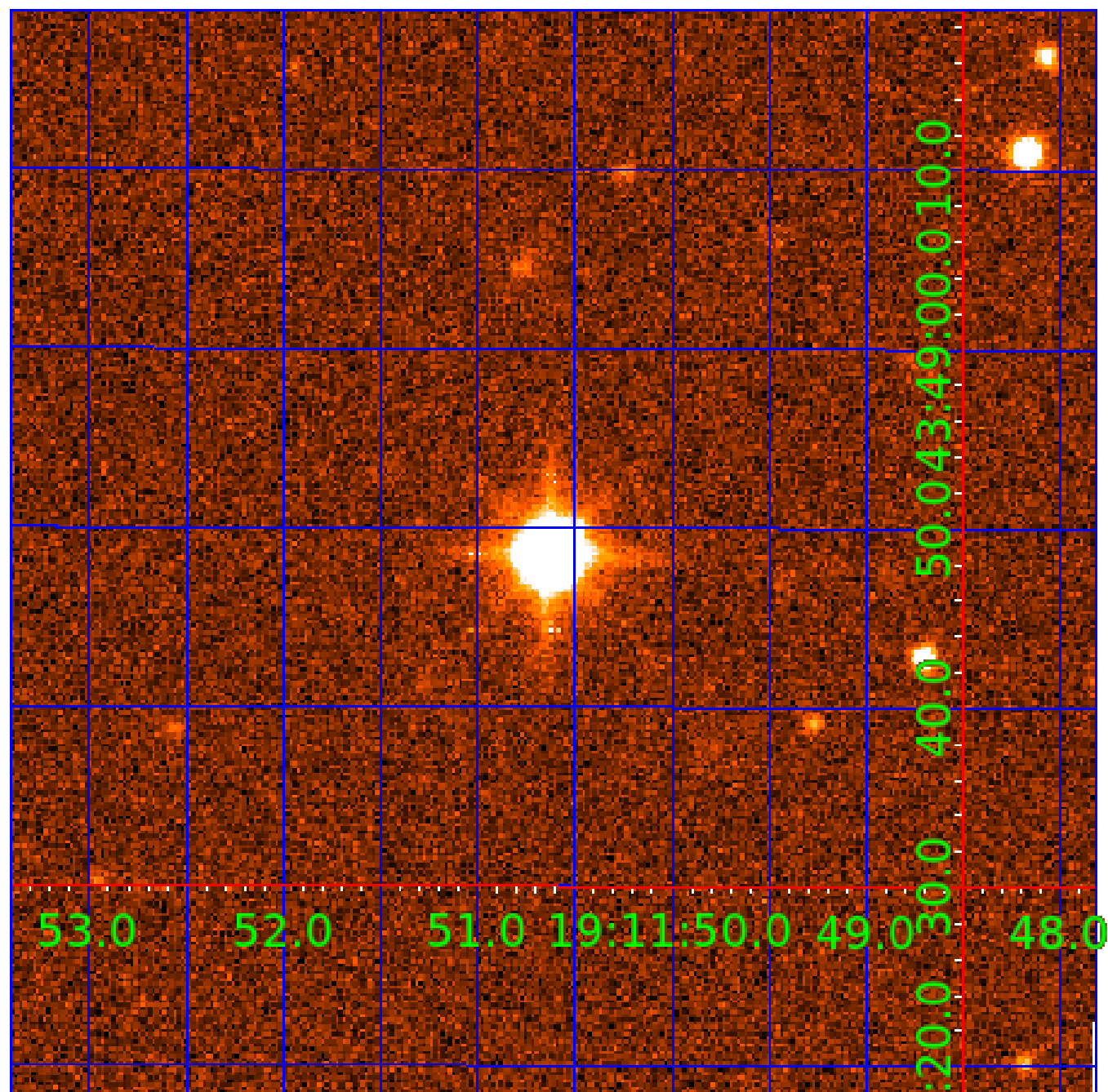


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008018769

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 008018769-01 | OBS | No | 1.393005 | 132.696397 | 26.8 | 7.332 | 9.9 | 9.9 | 4.39 | 6478 | 2.52 | 33196.84 |
| 008018769-02 | OBS | No | 187.688151 | 142.774384 | 246.6 | 18.224 | 10.7 | 8.1 | 4.39 | 6478 | 7.53 | 48.06 |
| 008018769-03 | OBS | No | 21.580518 | 142.903160 | 136.2 | 5.355 | 8.6 | 8.8 | 4.39 | 6478 | 6.01 | 859.58 |
| 008018769-04 | OBS | No | 153.753628 | 227.751237 | 128.8 | 13.438 | 8.6 | 4.6 | 4.39 | 6478 | 5.59 | 62.70 |
| 008018769-05 | OBS | No | 130.796065 | 204.601175 | 331.6 | 2.992 | 8.2 | 8.4 | 4.39 | 6478 | 8.76 | 77.79 |
| 008018769-06 | OBS | No | 126.030555 | 190.511494 | 186.4 | 16.507 | 7.8 | 7.1 | 4.39 | 6478 | 6.72 | 81.73 |
| 008018769-07 | OBS | No | 63.864375 | 176.660218 | 126.1 | 18.797 | 8.0 | 7.6 | 4.39 | 6478 | 5.50 | 202.31 |
| 008018769-09 | OBS | No | 127.543184 | 236.417562 | 163.1 | 13.304 | 7.9 | 6.4 | 4.39 | 6478 | 6.18 | 80.44 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|--|
| 008018769-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 008018769-02 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_UNRESOLVED_OFFSET |
| 008018769-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST |
| 008018769-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008018769-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT |
| 008018769-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS |
| 008018769-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008018769-09 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_UNRESOLVED_OFFSET |

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

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

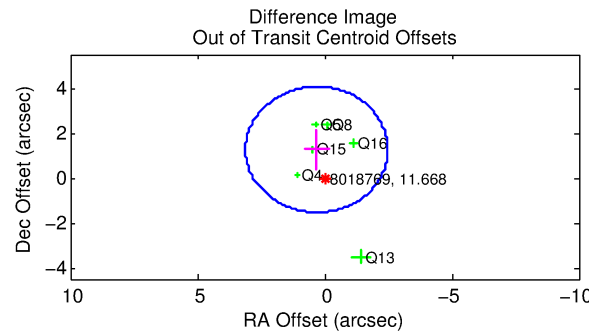
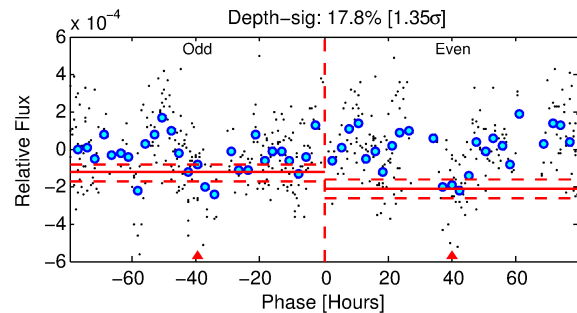
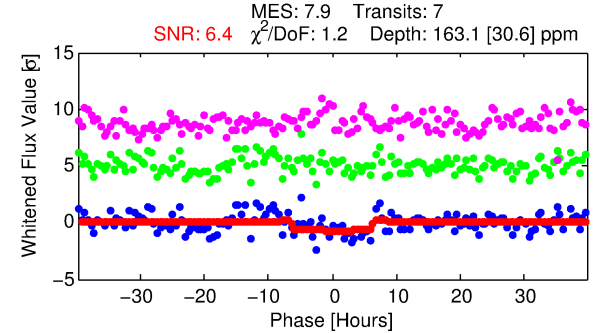
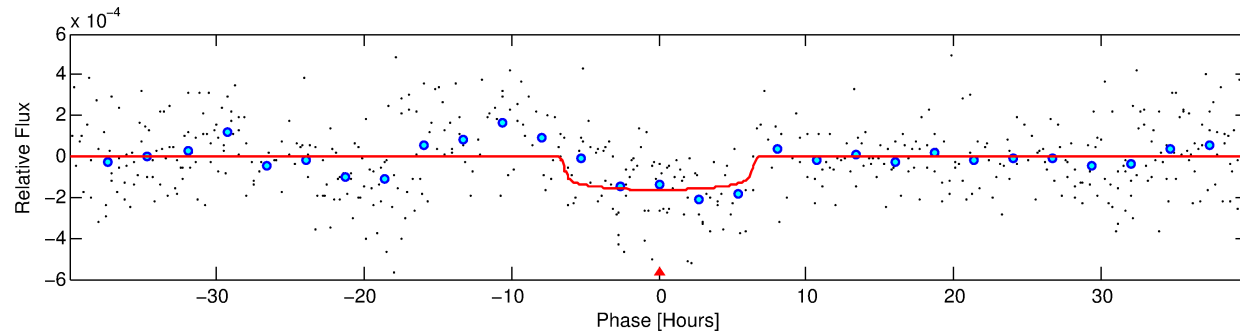
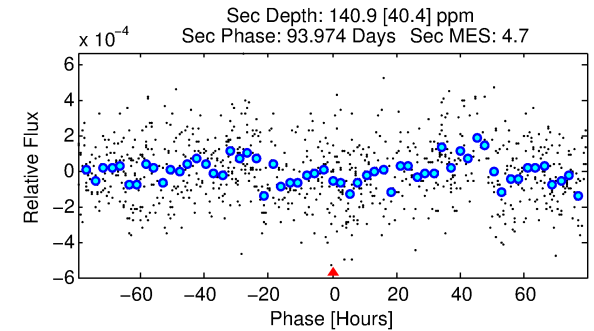
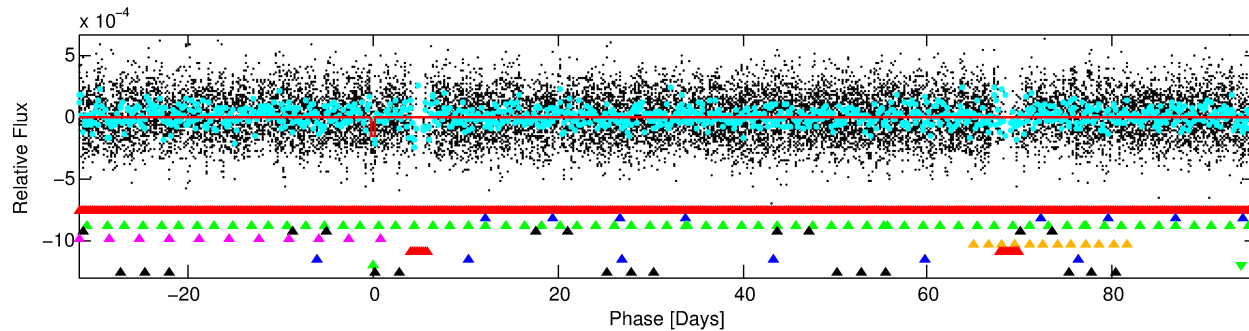
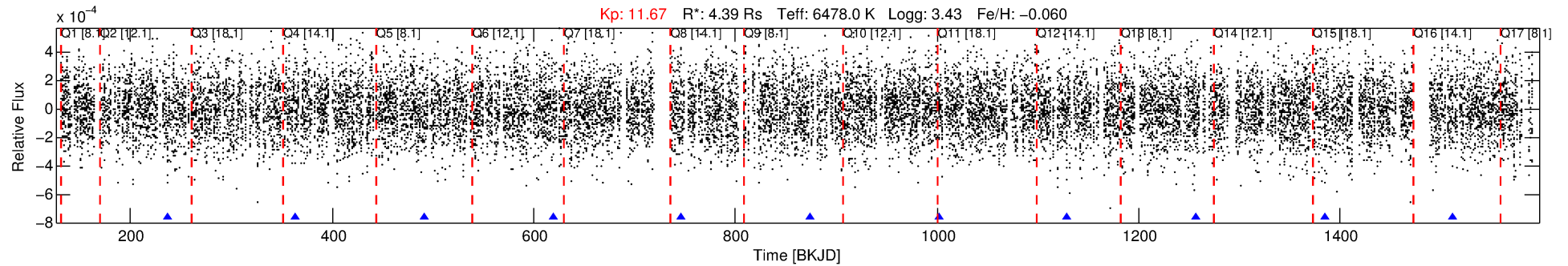
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008018769-09

No Significant Match Found

DV One-Page Summary

KIC: 8018769 Candidate: 9 of 10 Period: 127.543 d



DV Fit Results:

Period = 127.54318 [0.00519] d
Epoch = 236.4176 [0.0257] BKJD
 R_p/R^* = 0.0129 [0.0048]
 a/R^* = 46.19 [93.16]
 b = 0.79 [0.95]
 S_{eff} = 80.44 [49.68]
 T_{eq} = 764 [118] K
 R_p = 6.18 [3.29] R_e
 a = 0.6150 [0.2302] AU
 A_g = 768.77 [774.06] [0.99σ]
 T_{effp} = 6217 [1260] K [4.31σ]

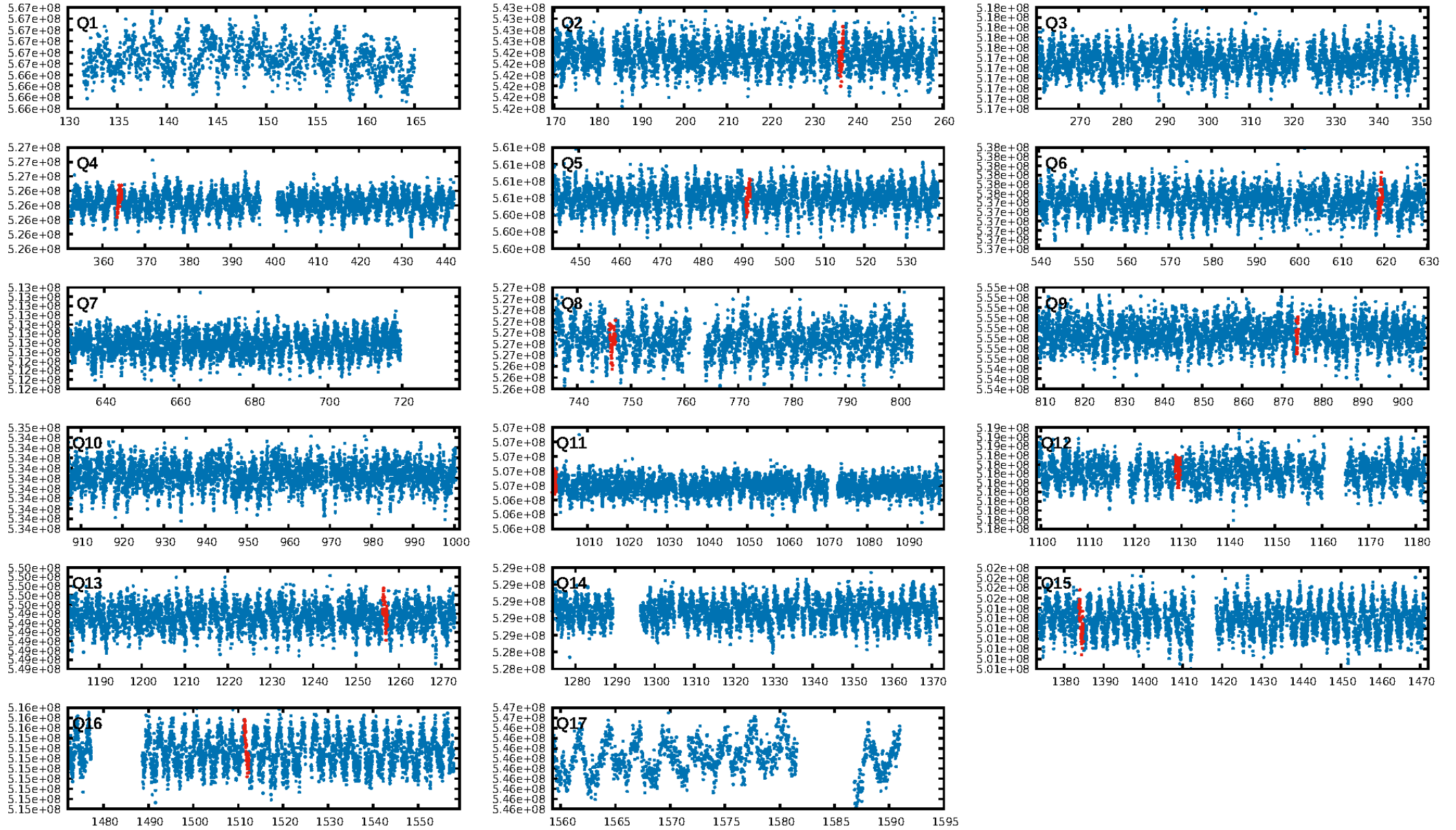
DV Diagnostic Results:

ShortPeriod-sig: 91.3% [1.71σ]
LongPeriod-sig: 100.0% [5.73σ]
ModelChiSquare2-sig: 23.7%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 0.6698
Centroid-sig: 71.9%
Centroid-so: 0.100 arcsec [0.31σ]
OotOffset-rm: 1.299 arcsec [1.39σ]
KicOffset-rm: 1.189 arcsec [1.63σ]
OotOffset-st: 0/1/3/2 [6]
KicOffset-st: 0/1/3/2 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 0.00 [0/8]

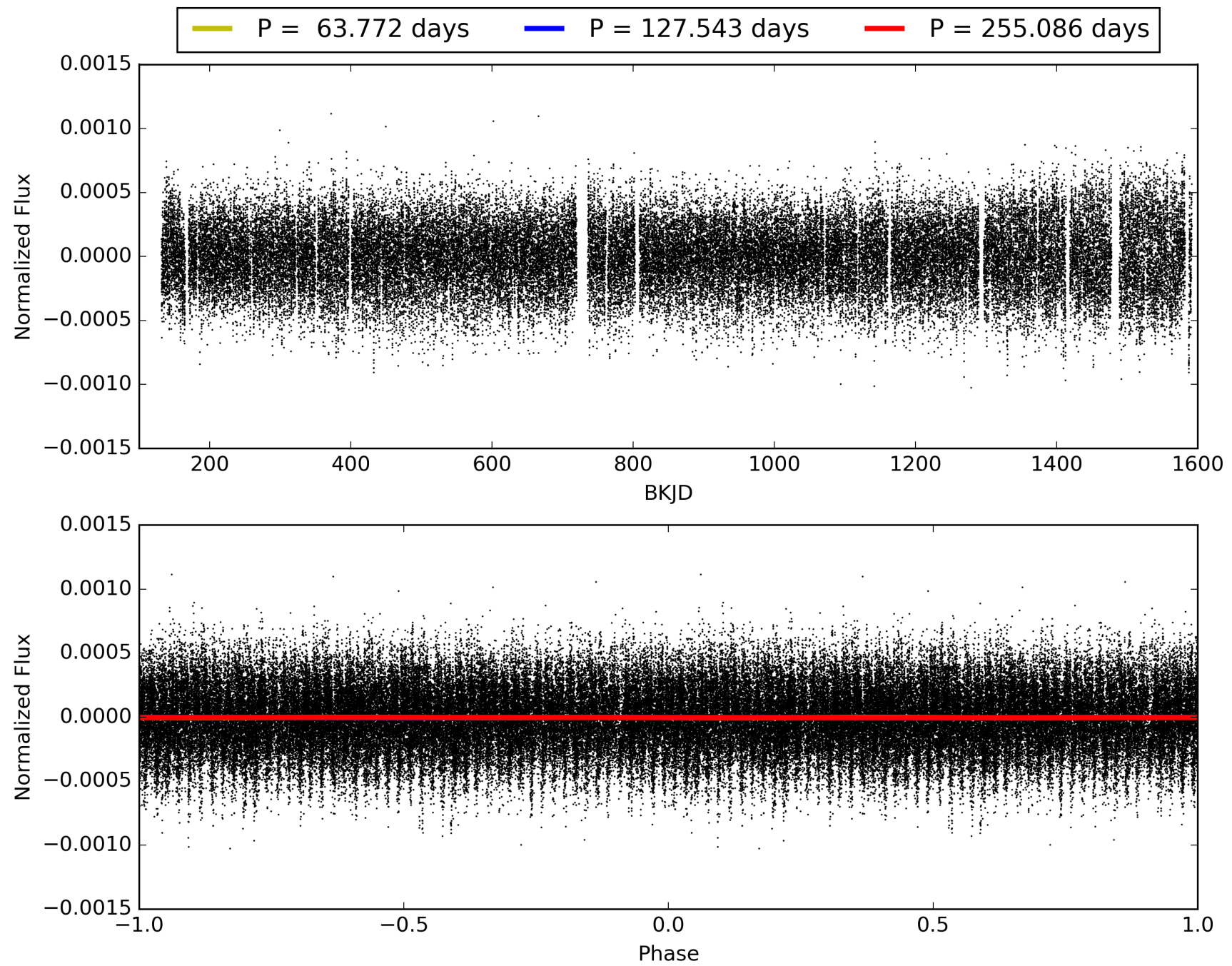
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 04:18:52 Z

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

TCE 008018769-09, PDC Light Curves

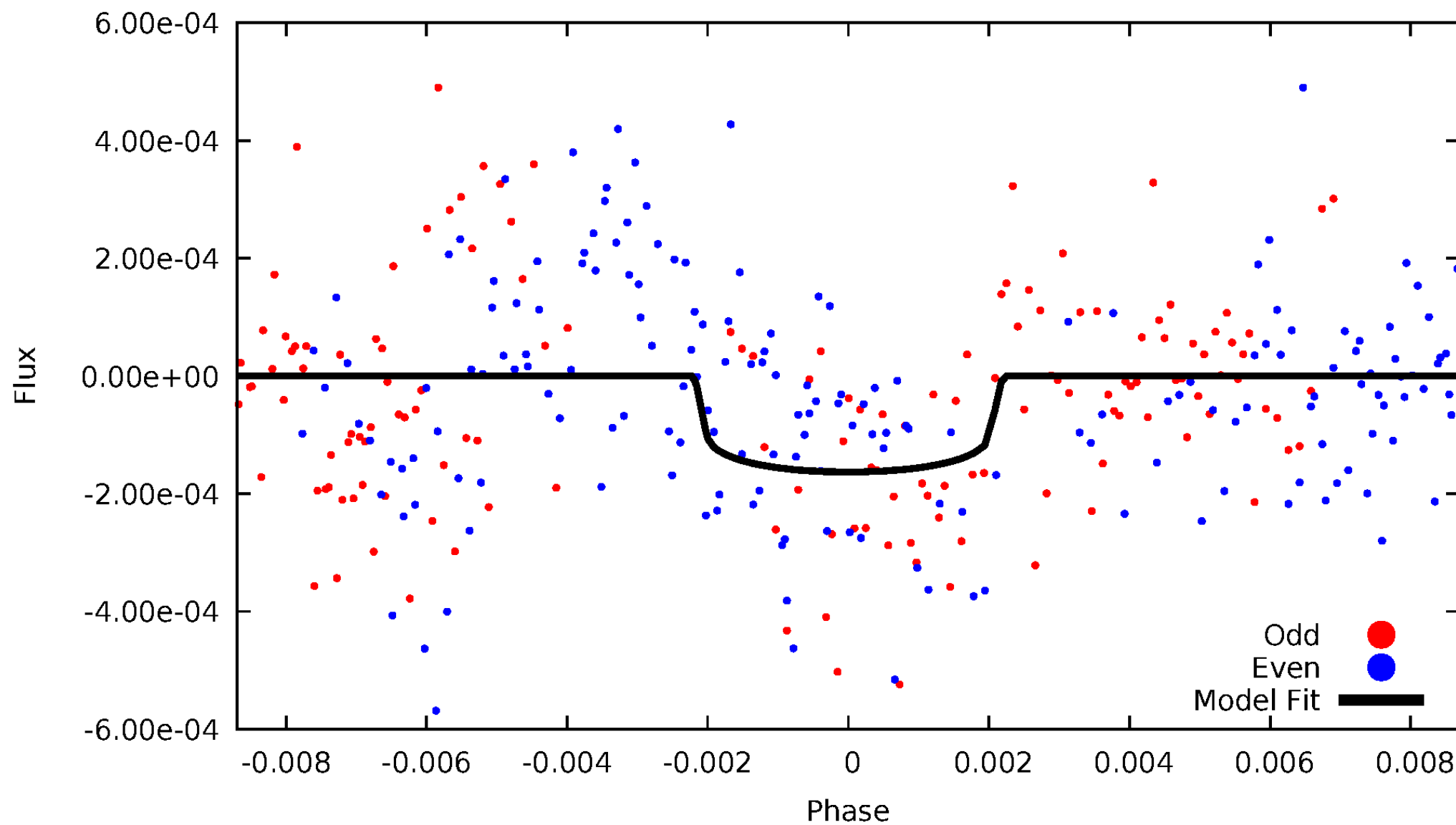


TCE 008018769-09



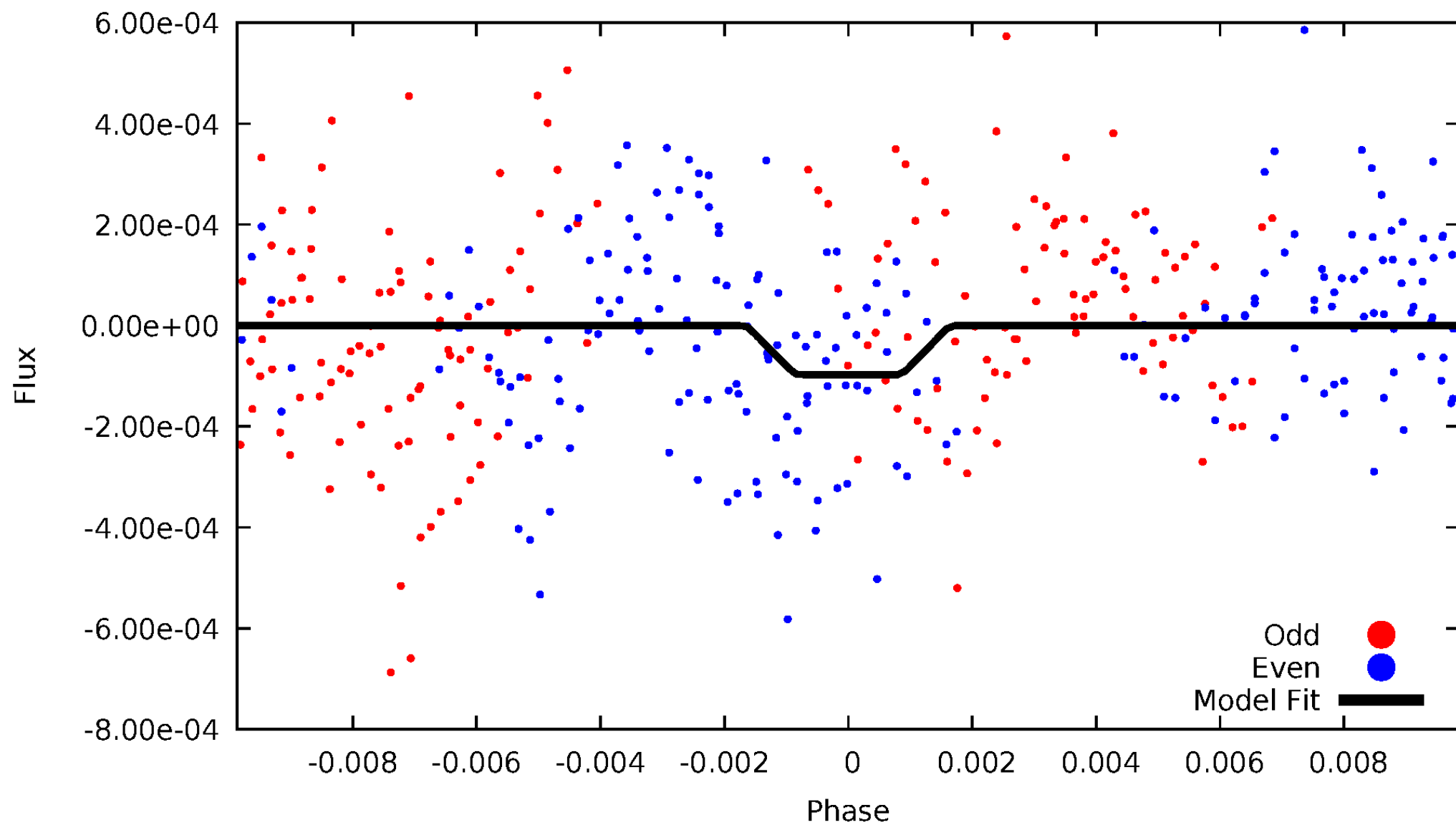
DV Odd/Even

TCE 008018769-09



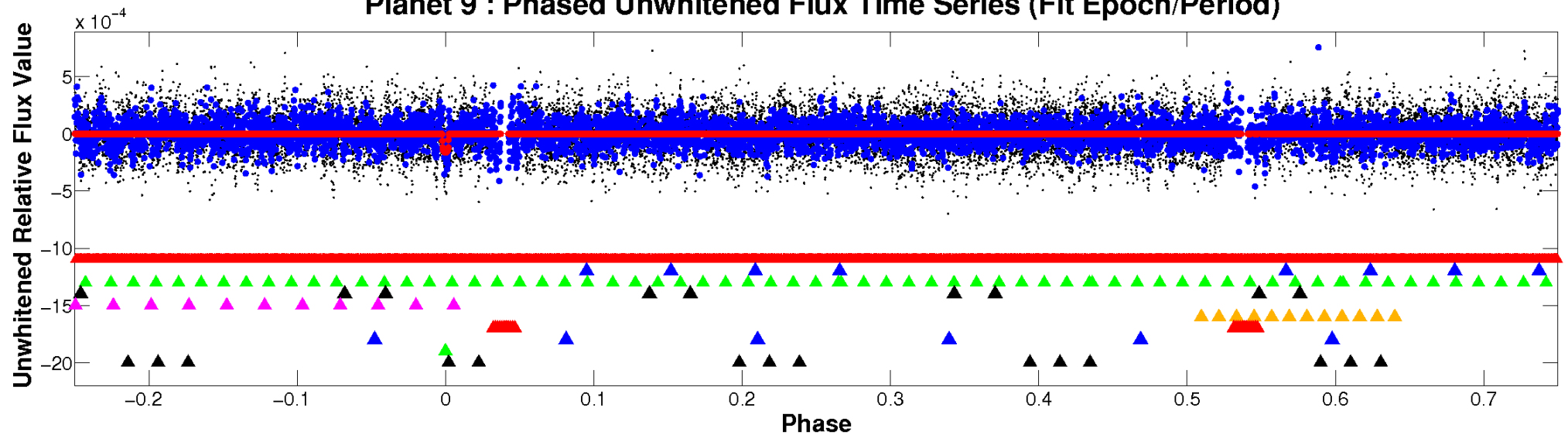
ALT Odd/Even

TCE 008018769-09

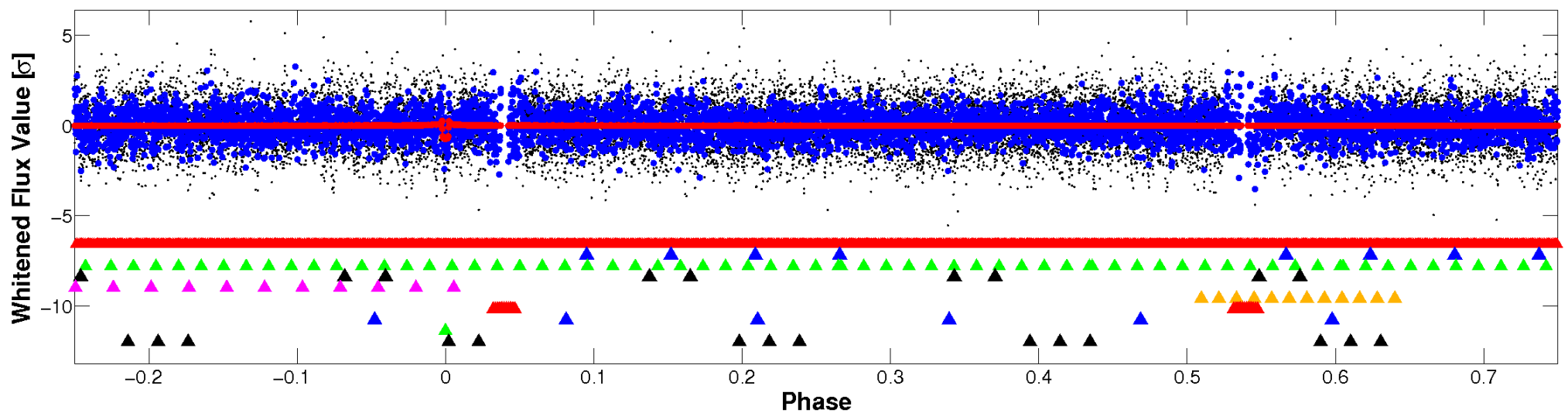


Non-Whitened Vs. Whitened Light Curve

Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



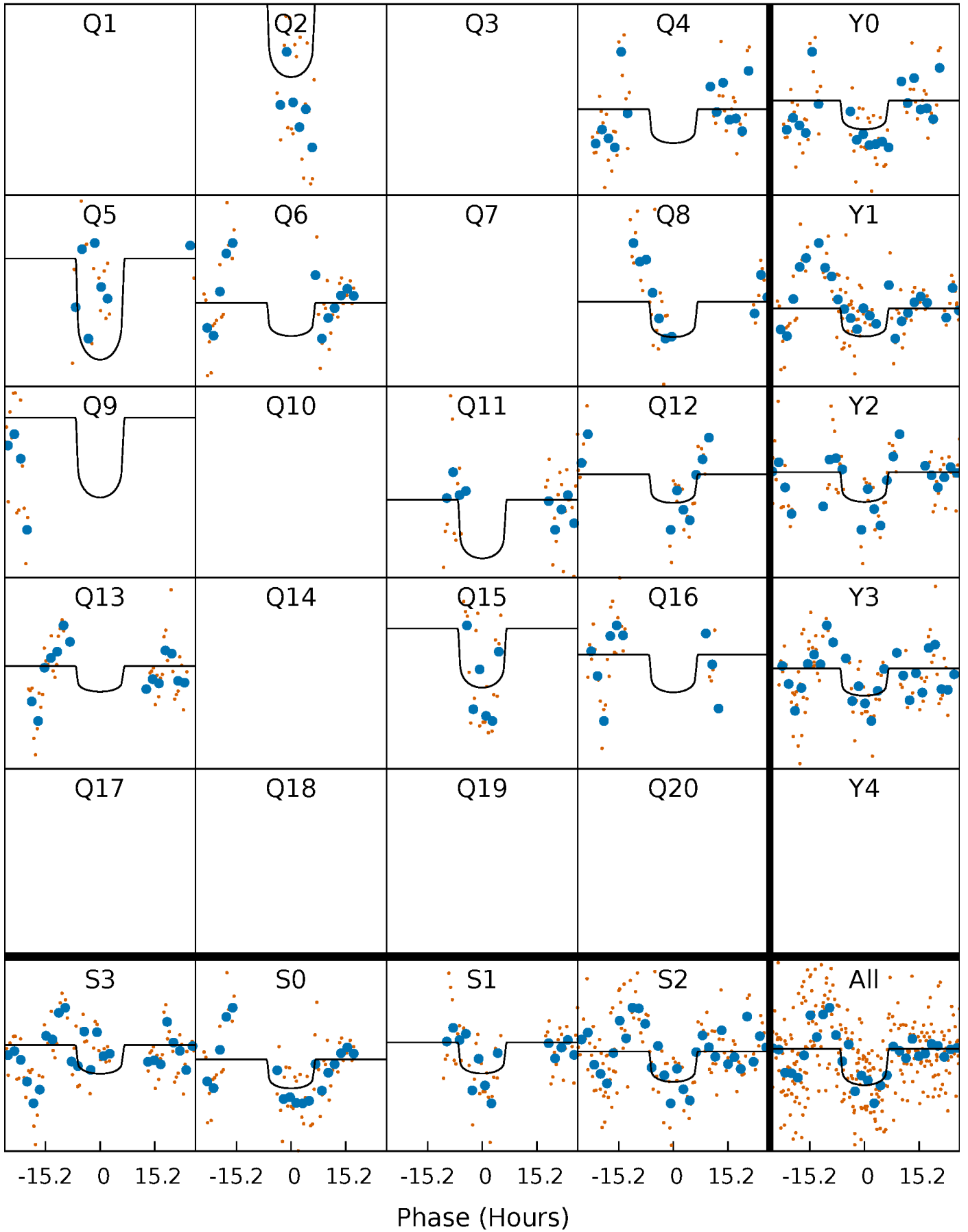
PDC Quarter-Phased Transit Curves

TCE 008018769-09 $P=127.543184$ Days $T_0=236.417562$ (BKJD)



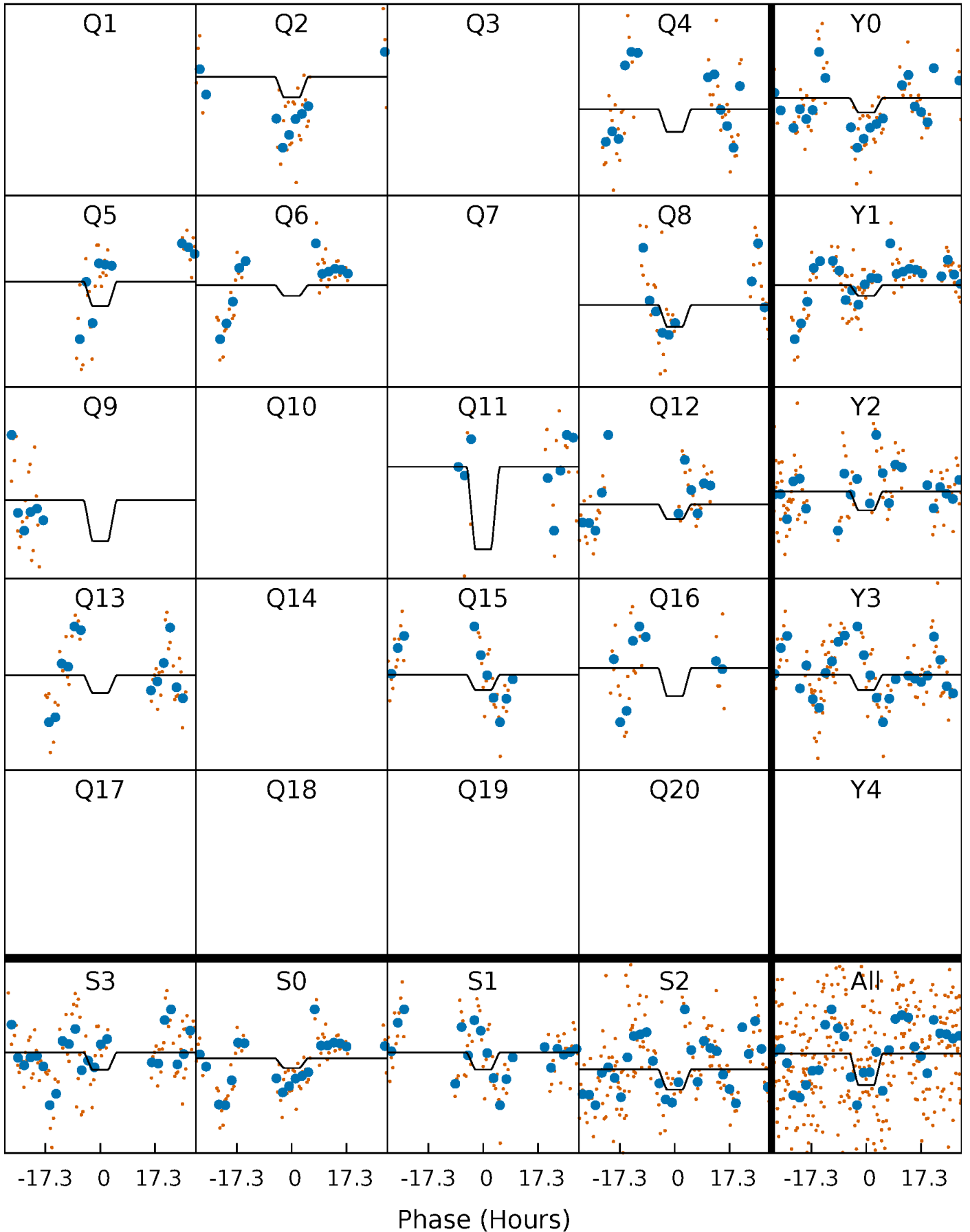
DV Quarter-Phased Transit Curves

TCE 008018769-09 $P=127.543184$ Days $T_0=236.417562$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

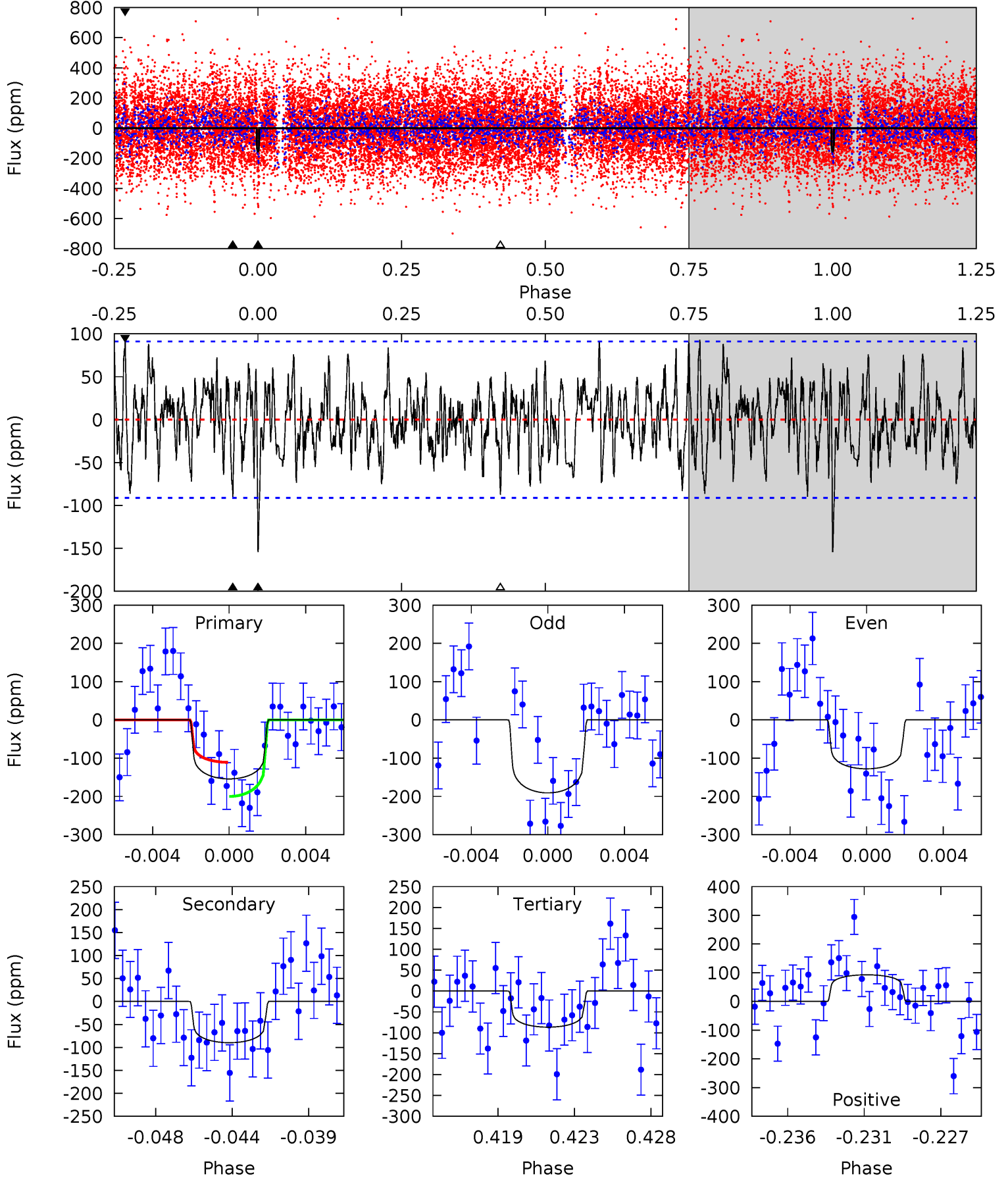
TCE 008018769-09 $P=127.525848$ Days $T_0=236.442535$ (BKJD)



DV Model-Shift Uniqueness Test

008018769-09, P = 127.543184 Days, E = 108.874378 Days

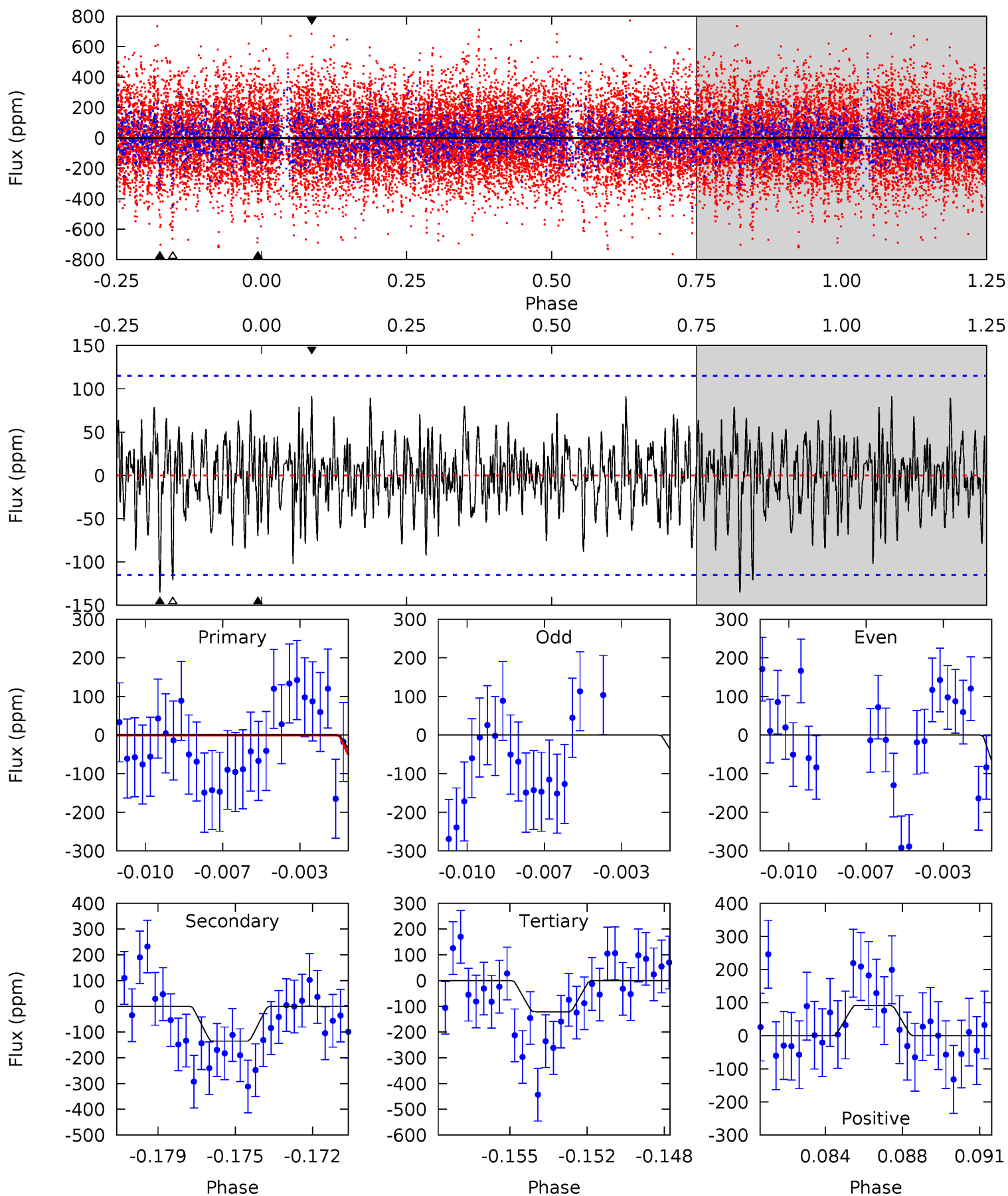
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.77 | 5.11 | 4.92 | 5.28 | 5.18 | 2.85 | 1.81 | 3.85 | 3.49 | 0.18 | -0.17 | 1.76 | 1.01 | 0.38 | 2.53 |



Alt Model-Shift Uniqueness Test

008018769-09, P = 127.525848 Days, E = 108.916687 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-------|-------|------|
| 3.19 | 6.15 | 5.52 | 4.16 | 5.23 | 2.93 | 1.44 | -2.33 | -0.96 | 0.63 | 2.00 | 1.31 | -1.80 | 0.40 | 1.60 |



Stellar Parameters For KIC 008018769

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6478^{+146}_{-179} | $3.433^{+0.360}_{-0.090}$ | $-0.060^{+0.300}_{-0.250}$ | $4.391^{+0.594}_{-1.664}$ | $1.908^{+0.094}_{-0.375}$ | $0.032^{+0.087}_{-0.009}$ |
| | +2%/-3% | +10%/-3% | +500%/-417% | +14%/-38% | +5%/-20% | +275%/-28% |
| Source | PHO1 | FLK73 | KIC0 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 008018769-09 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|----------------------|------------------------|-----------------------|
| DV | -90 ± 18 | $5.61^{+2.17}_{-2.18}$ | 1047^{+61}_{-102} | 5581^{+1388}_{-758} | 575^{+987}_{-303} |
| Alt. | -135 ± 22 | $4.36^{+2.19}_{-1.95}$ | 1048^{+58}_{-116} | 6981^{+3192}_{-1274} | 1469^{+3592}_{-862} |

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

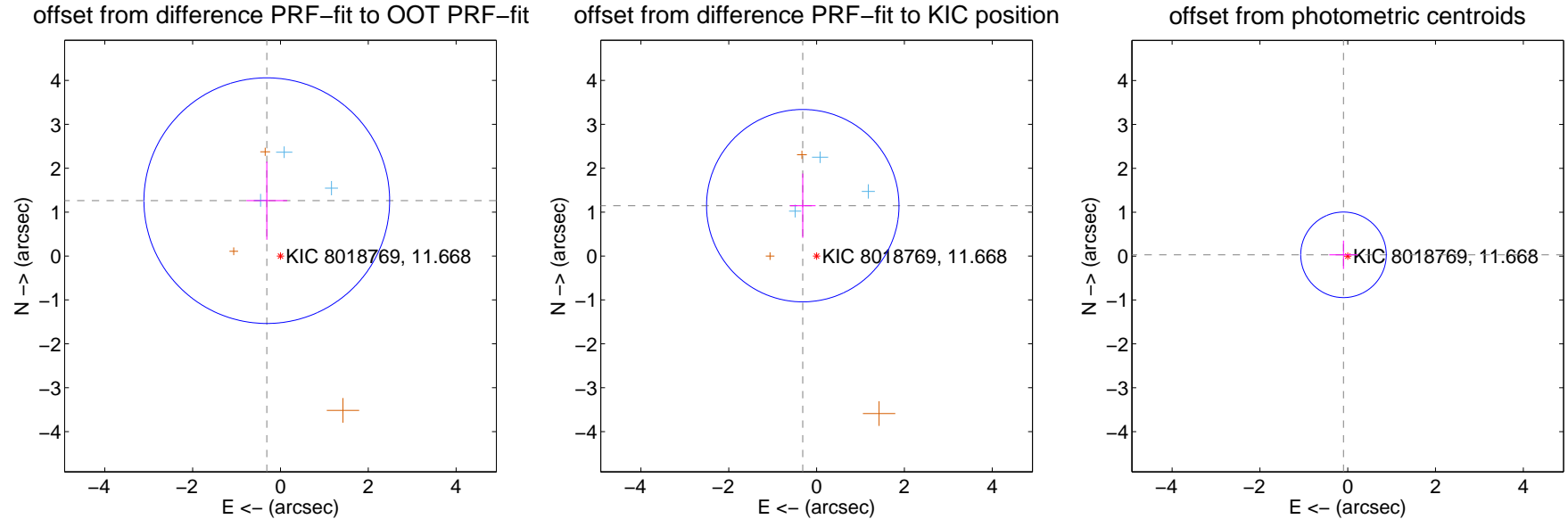
DV Centroid Data

Supplemental centroid analysis for 008018769-09. **Kepler magnitude: 11.67.** Transit SNR 6.43

There are 3 quarters with good PRF difference image offsets

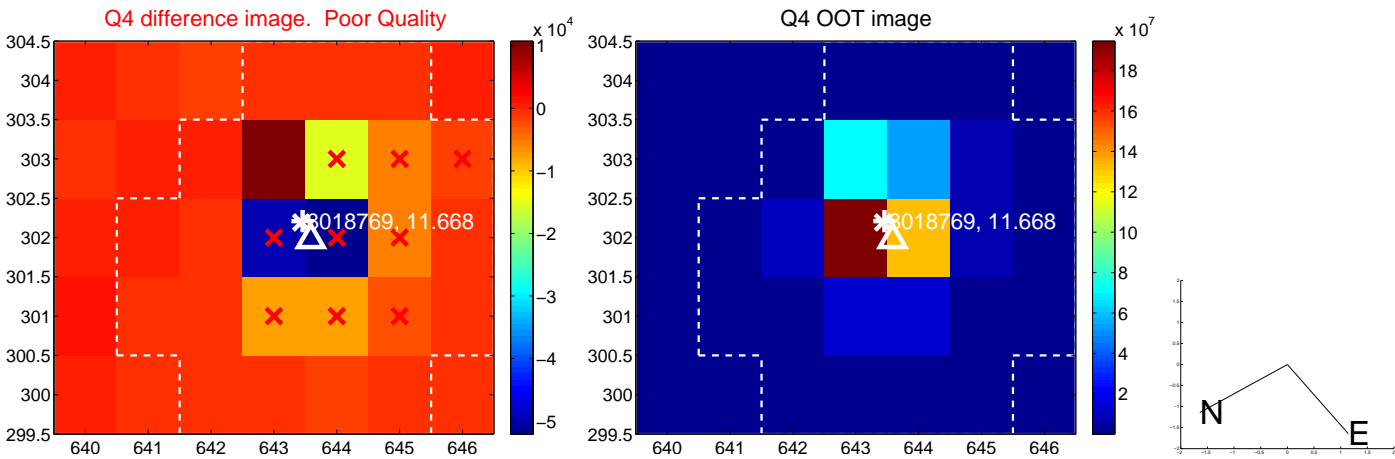
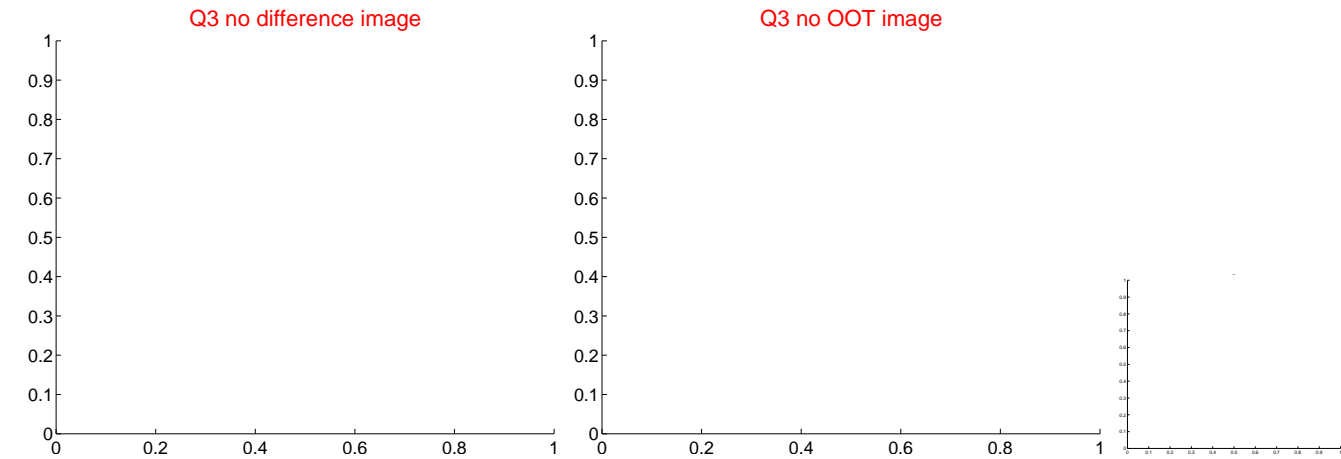
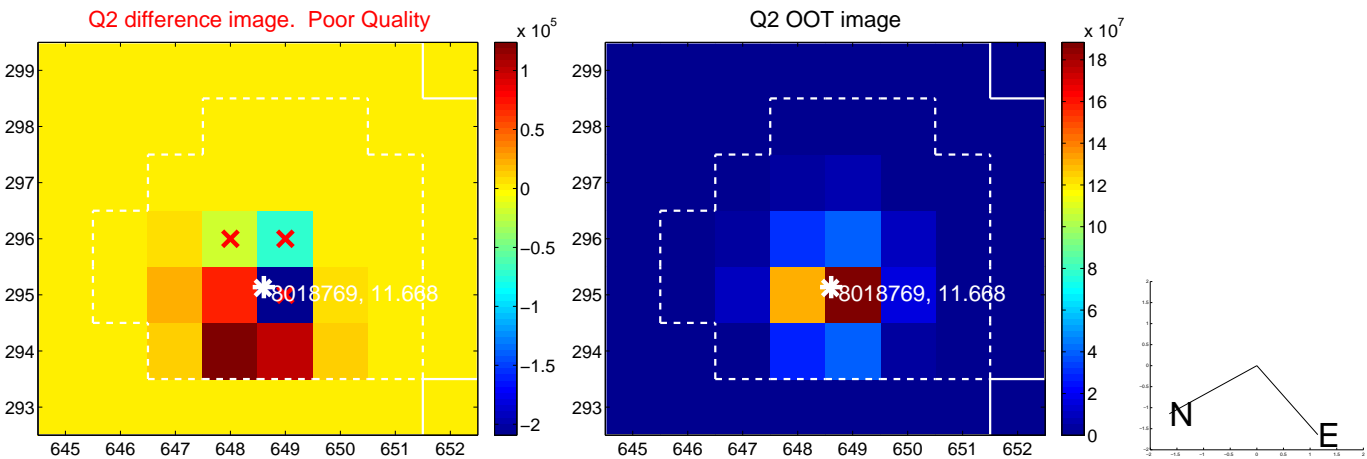
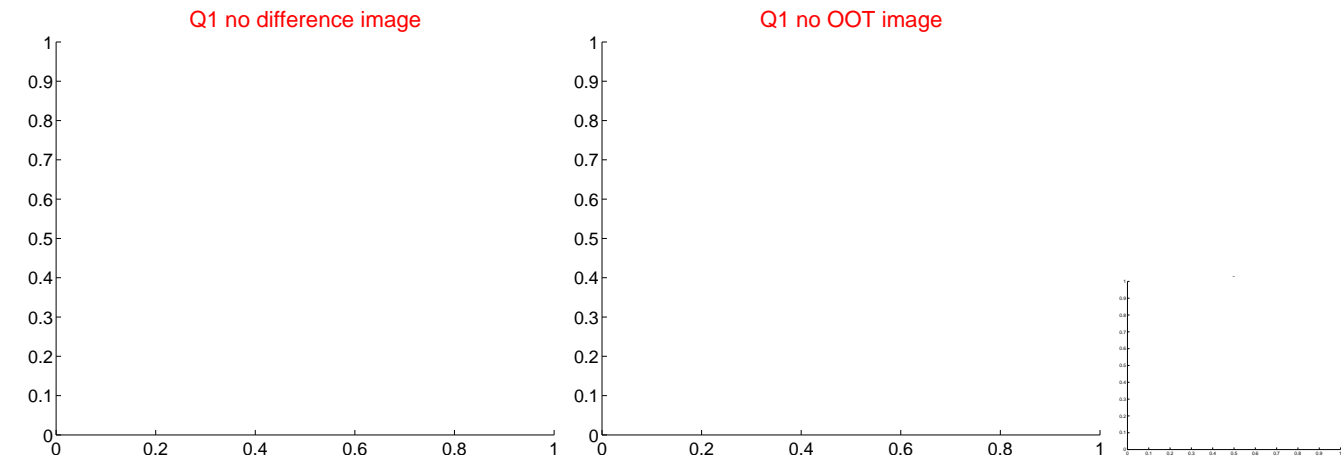
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 1.299 ± 0.933 | 1.39 | 0.311 ± 0.464 | 1.261 ± 0.889 |
| PRF-fit source offset from KIC position | 1.189 ± 0.731 | 1.63 | 0.315 ± 0.293 | 1.147 ± 0.731 |
| photometric centroid source offset | 0.10 ± 0.32 | 0.31 | 0.10 ± 0.33 | 0.03 ± 0.32 |

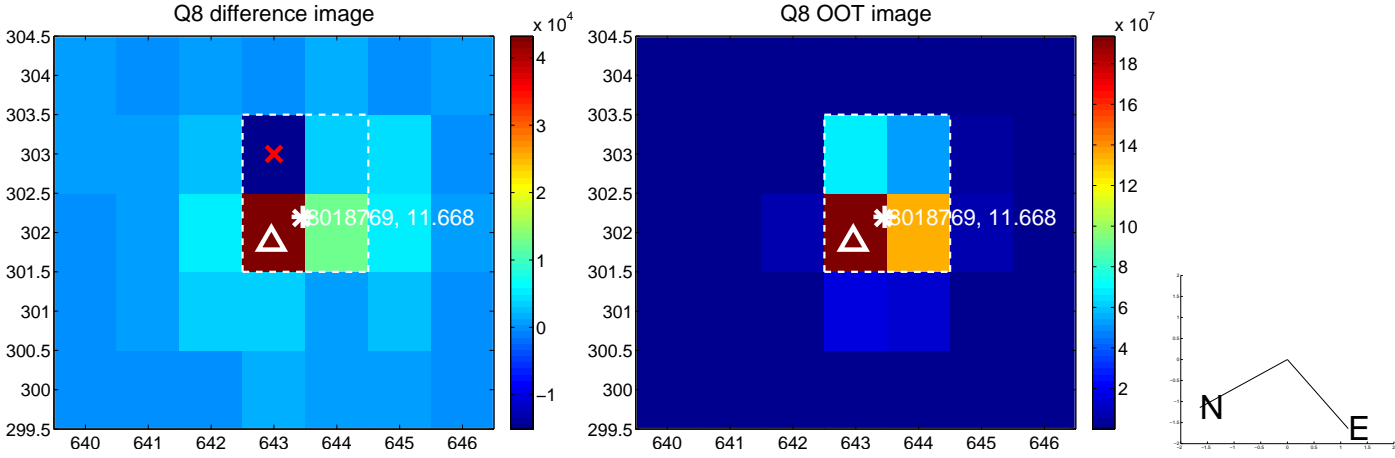
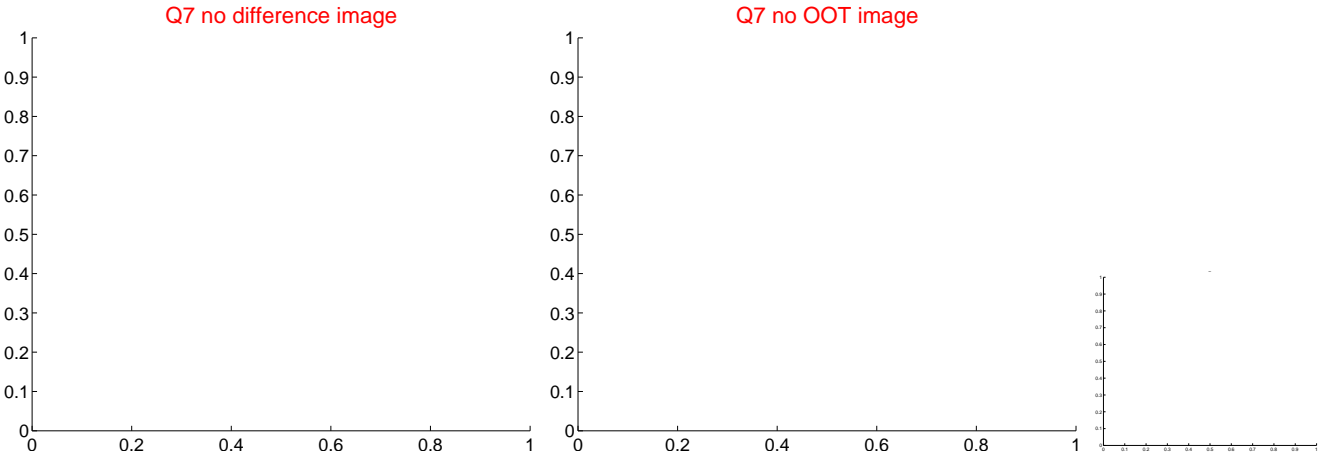
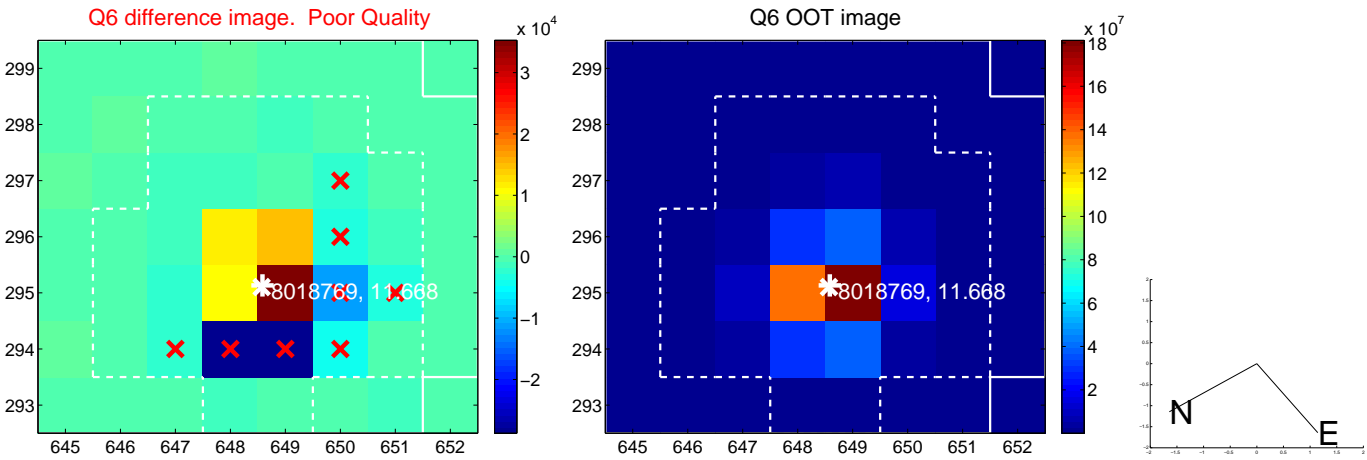
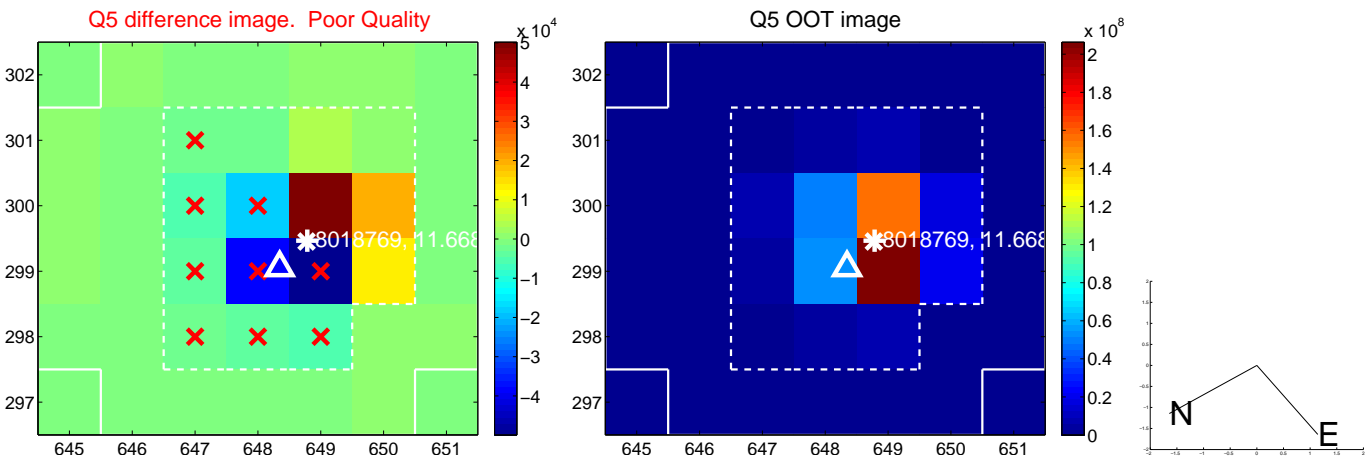


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



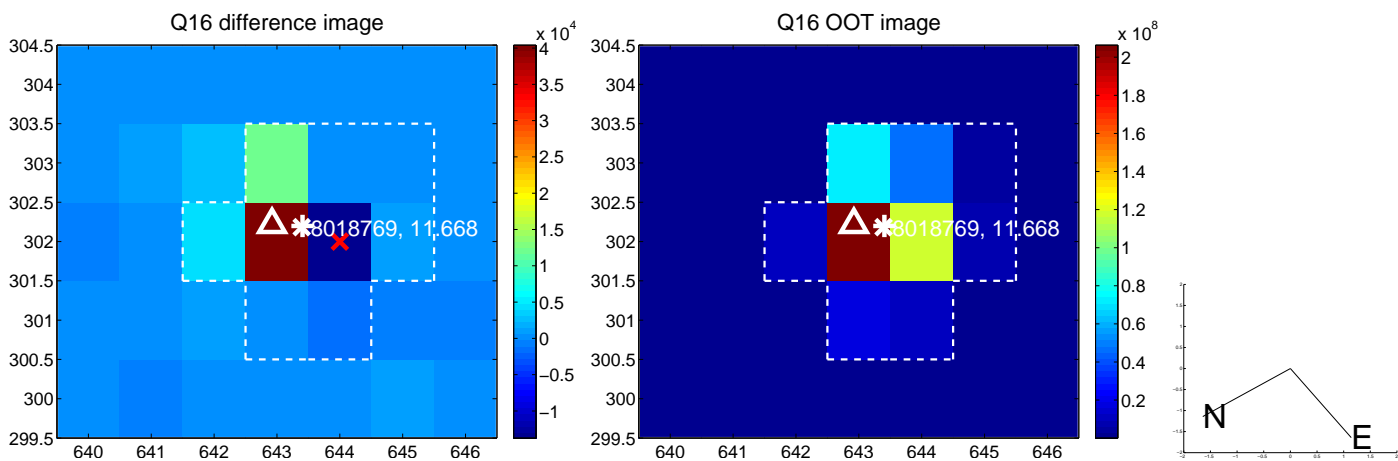
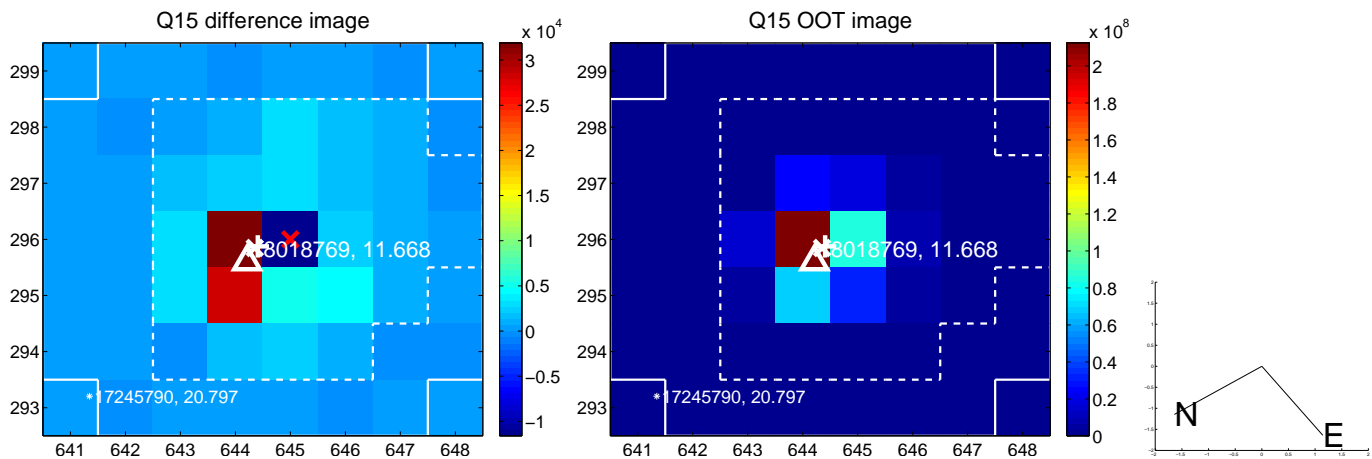
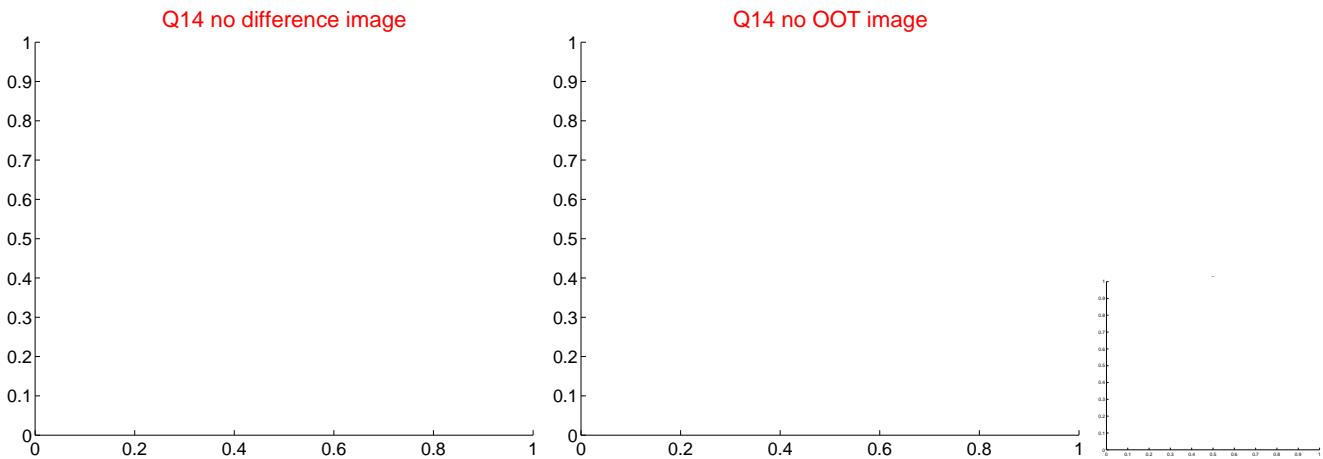
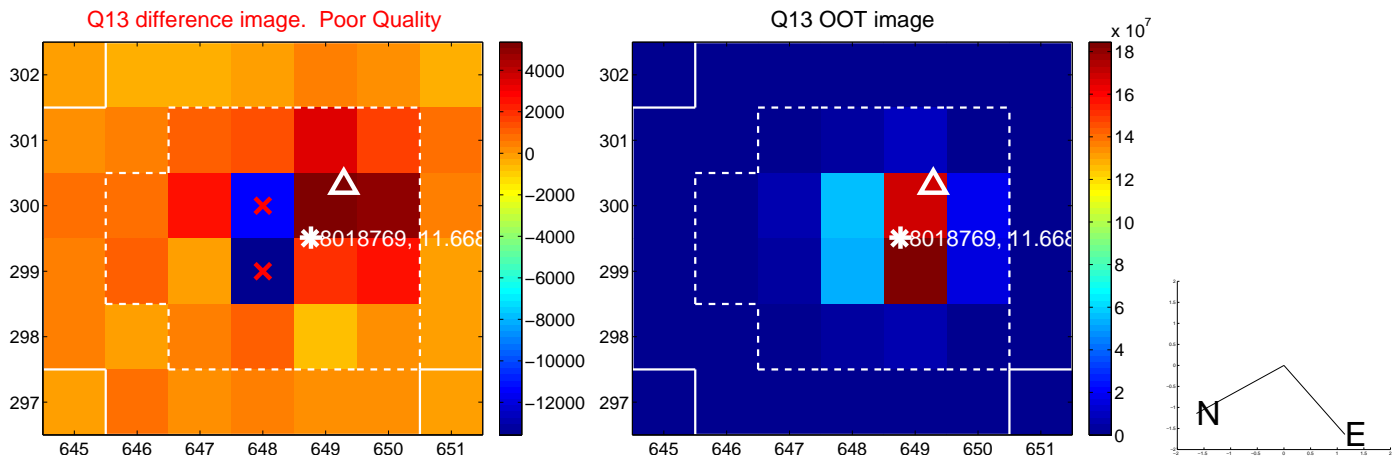
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



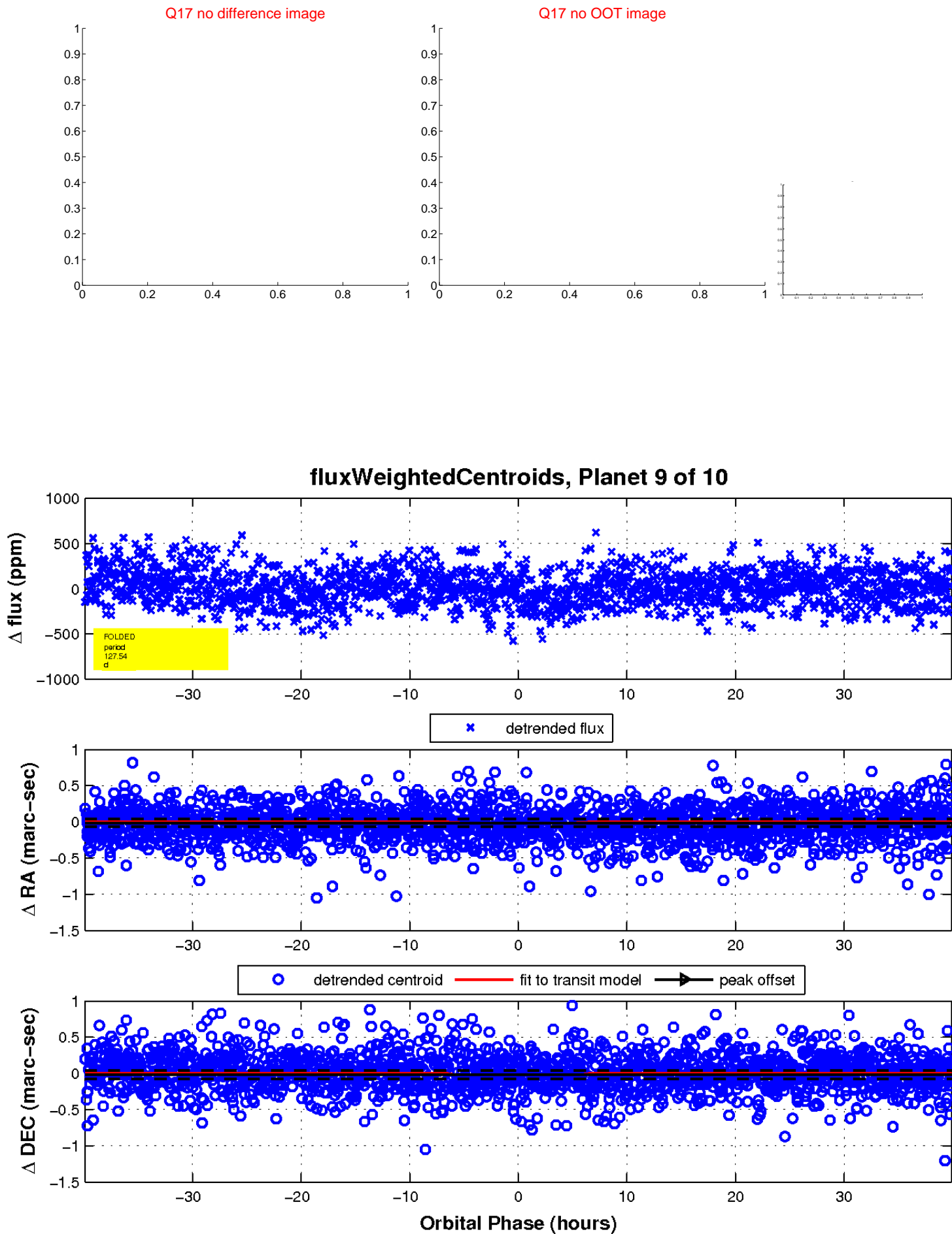
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

