

KIC 008950019

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008950019-01 | OBS | No | 1.537285 | 132.501062 | 10.3 | 8.039 | 8.8 | 5.0 | 2.51 | 6654 | 0.87 | 13523.98 |
| 008950019-02 | OBS | No | 216.662839 | 250.644951 | 208.8 | 13.436 | 11.7 | 7.1 | 2.51 | 6654 | 3.94 | 18.44 |
| 008950019-03 | OBS | No | 86.440129 | 133.552210 | 128.7 | 18.788 | 9.3 | 7.7 | 2.51 | 6654 | 3.07 | 62.78 |
| 008950019-04 | OBS | No | 241.801135 | 231.066036 | 207.2 | 9.229 | 9.0 | 7.8 | 2.51 | 6654 | 3.97 | 15.93 |
| 008950019-05 | OBS | No | 298.278515 | 154.764534 | 169.5 | 6.974 | 8.1 | 7.6 | 2.51 | 6654 | 3.57 | 12.04 |
| 008950019-06 | OBS | No | 73.239558 | 179.518514 | 146.3 | 6.324 | 8.1 | 7.8 | 2.51 | 6654 | 3.37 | 78.30 |
| 008950019-07 | OBS | No | 134.974599 | 213.093193 | 212.9 | 3.437 | 7.6 | 8.5 | 2.51 | 6654 | 4.35 | 34.66 |
| 008950019-08 | OBS | No | 80.377986 | 144.503332 | 146.7 | 6.000 | 7.5 | -1.0 | 2.51 | 6654 | 3.06 | 69.17 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008950019-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 008950019-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008950019-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS—HALO_GHOST |
| 008950019-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS |
| 008950019-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008950019-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008950019-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 008950019-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_NOFITS |

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

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

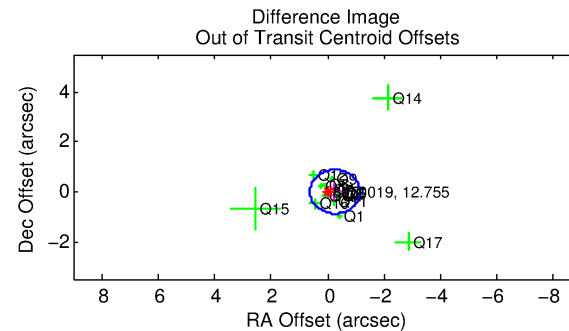
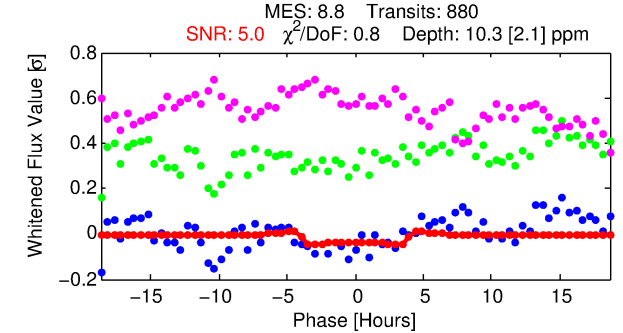
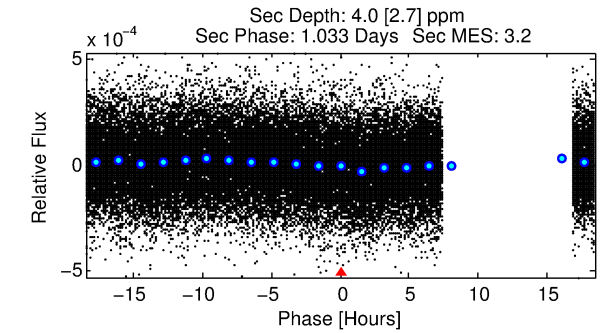
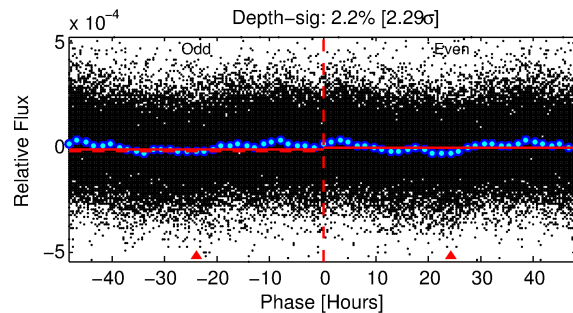
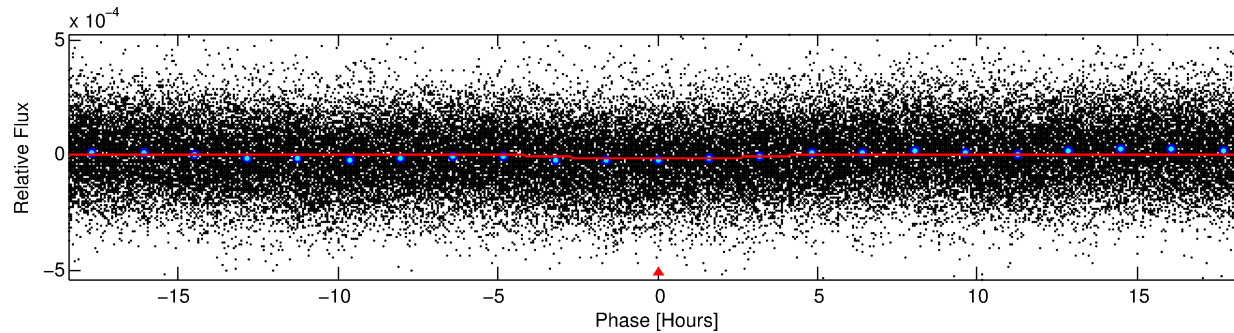
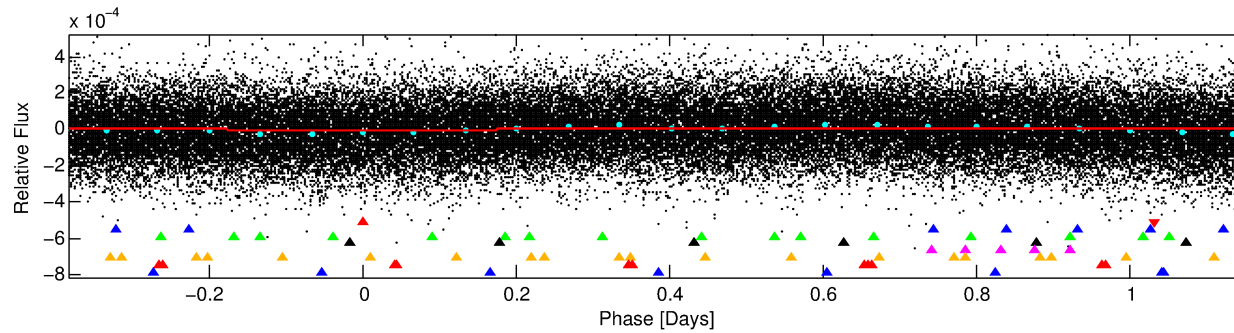
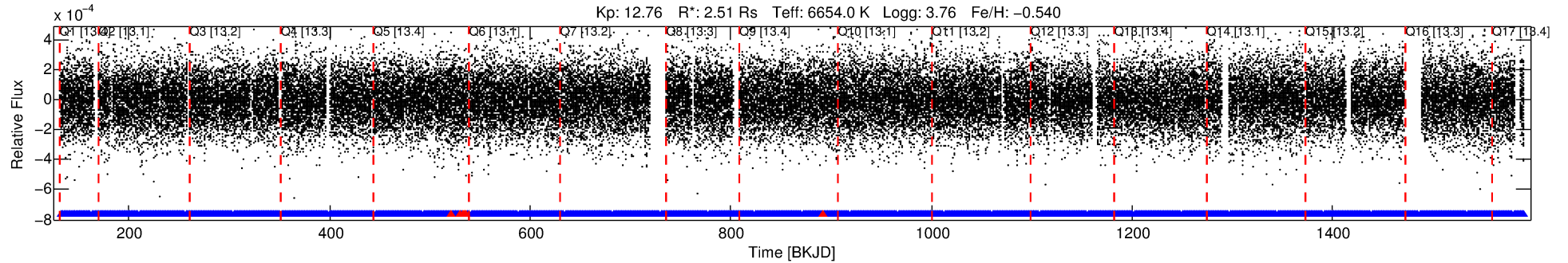
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008950019-01

No Significant Match Found

DV One-Page Summary

KIC: 8950019 Candidate: 1 of 8 Period: 1.537 d



DV Fit Results:

Period = 1.53729 [0.00004] d
Epoch = 132.5011 [0.0092] BKJD
Rp/R* = 0.0032 [0.0013]
a/R* = 1.31 [1.25]
b = 0.73 [1.47]
Seff = 13523.98 [7927.48]
Teq = 2750 [403] K
Rp = 0.87 [0.48] Re
a = 0.0286 [0.0103] AU
Ag = 2.35 [2.84] [0.47 σ]
Teffp = 5263 [1409] K [1.71 σ]

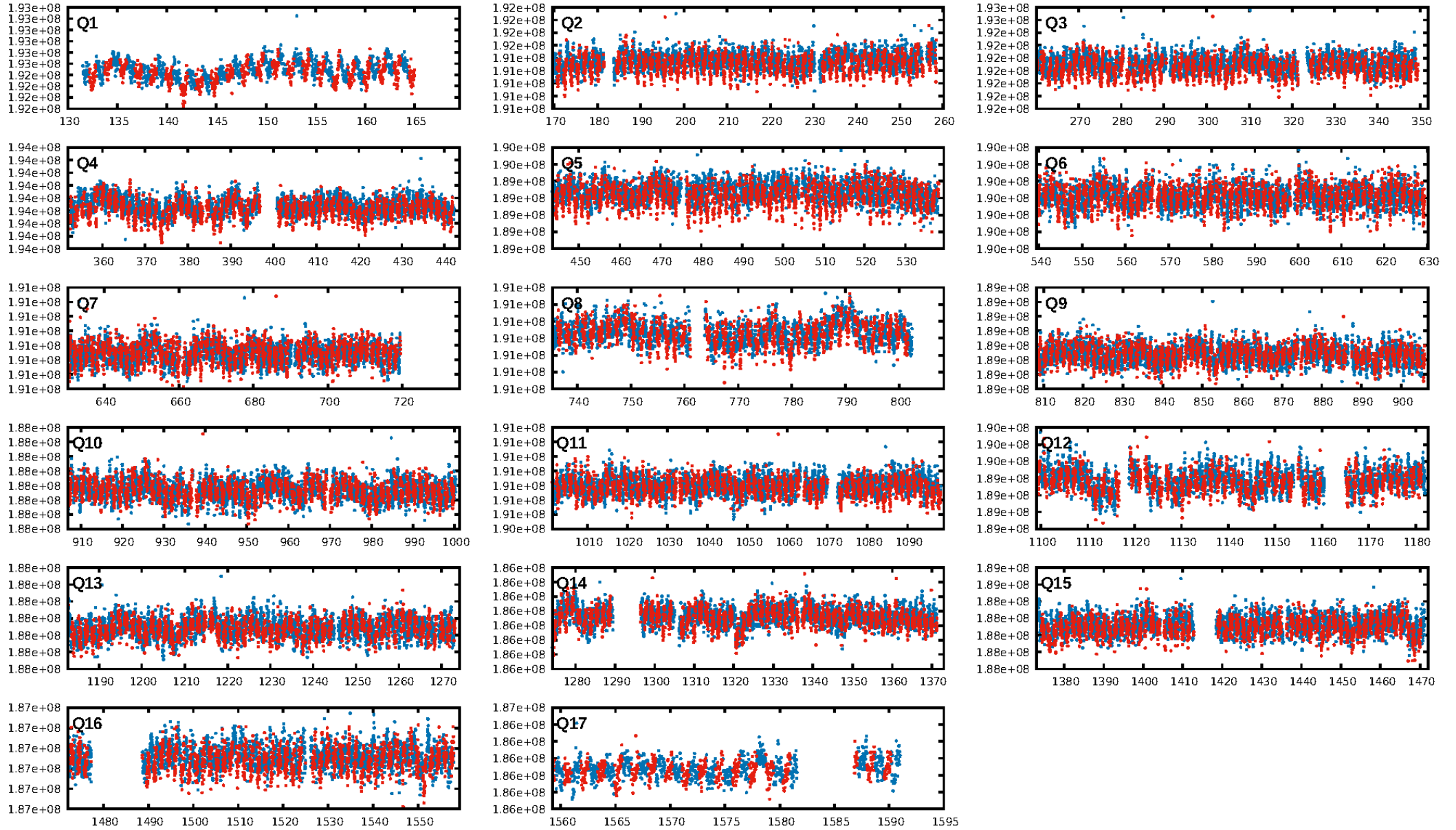
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [168.24 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [834/840]
GhostDiagnostic-chr: 0.7351
Centroid-sig: 17.3%
Centroid-so: 1.759 arcsec [1.16 σ]
OotOffset-rm: 0.254 arcsec [0.87 σ]
KicOffset-rm: 0.185 arcsec [0.63 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.81 [13/16]
DiffImageOverlap-fno: 1.00 [17/17]

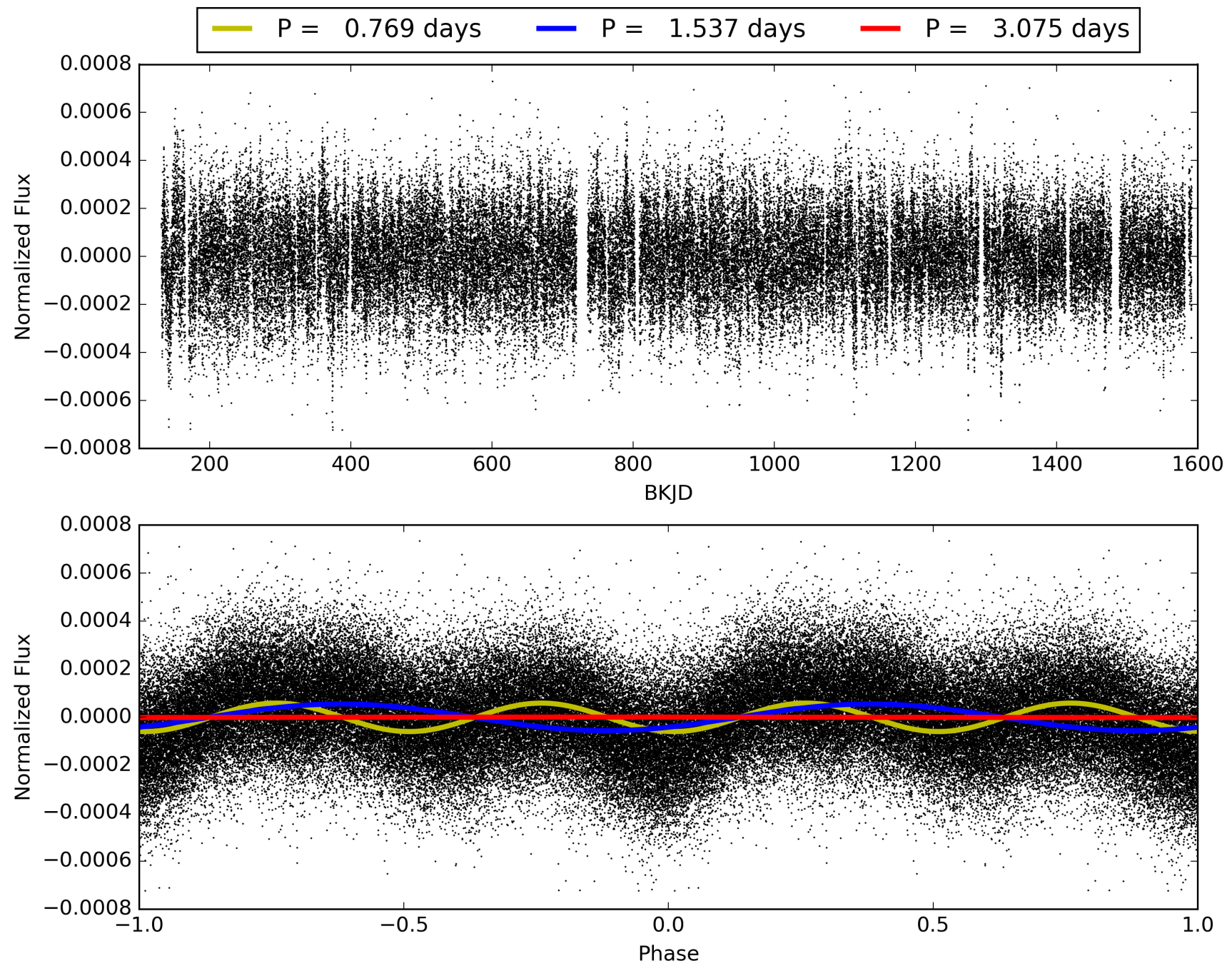
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:41:37 Z

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

TCE 008950019-01, PDC Light Curves

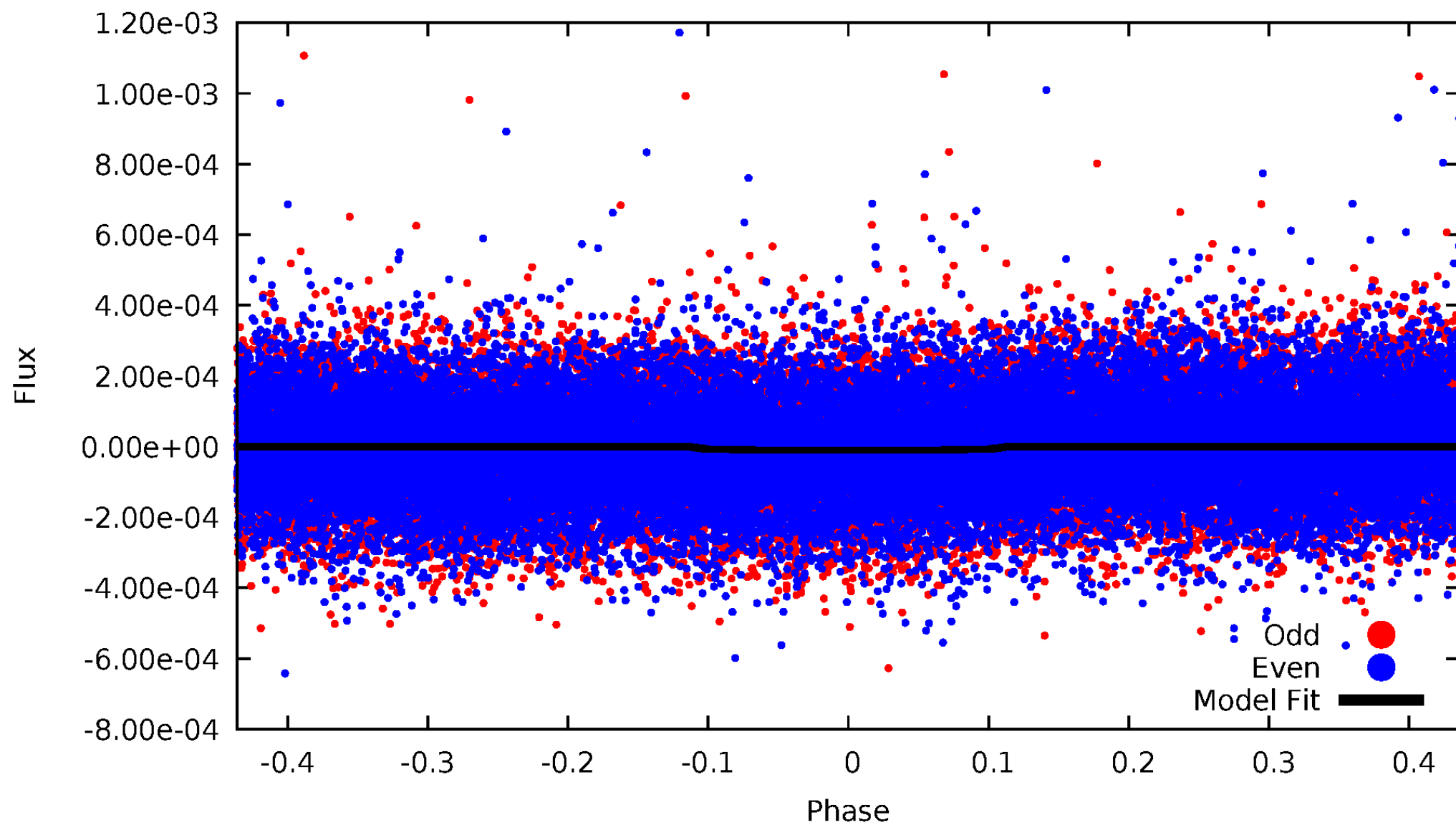


TCE 008950019-01



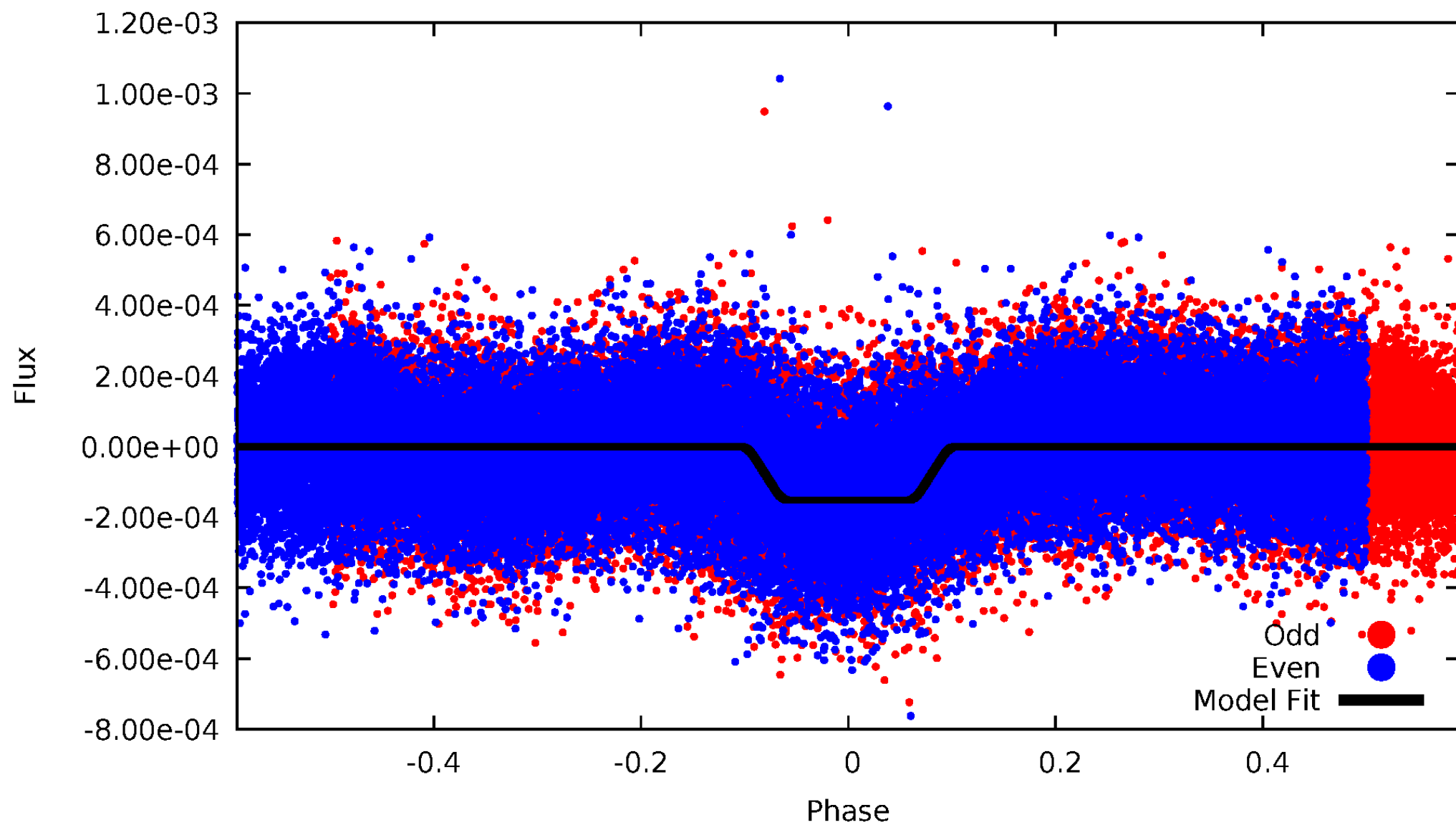
DV Odd/Even

TCE 008950019-01

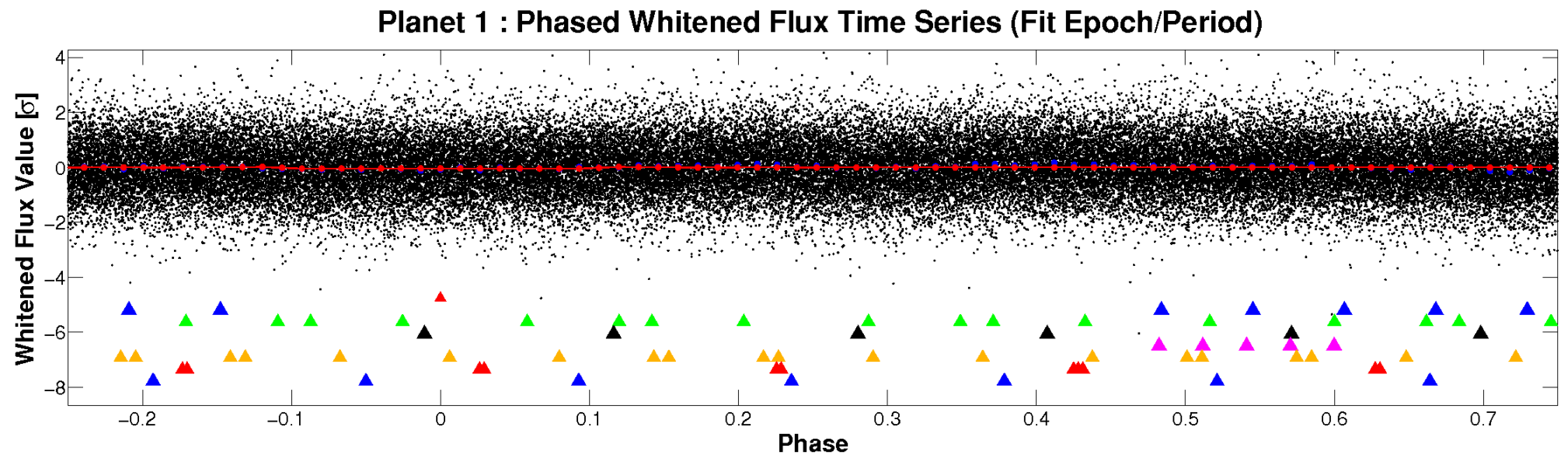
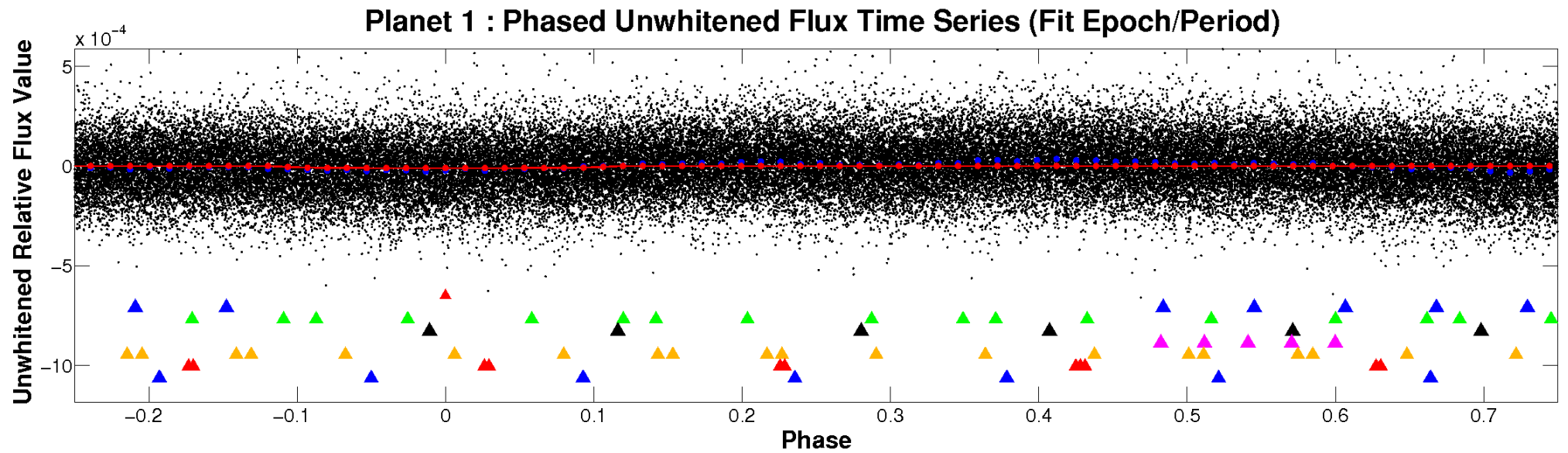


ALT Odd/Even

TCE 008950019-01

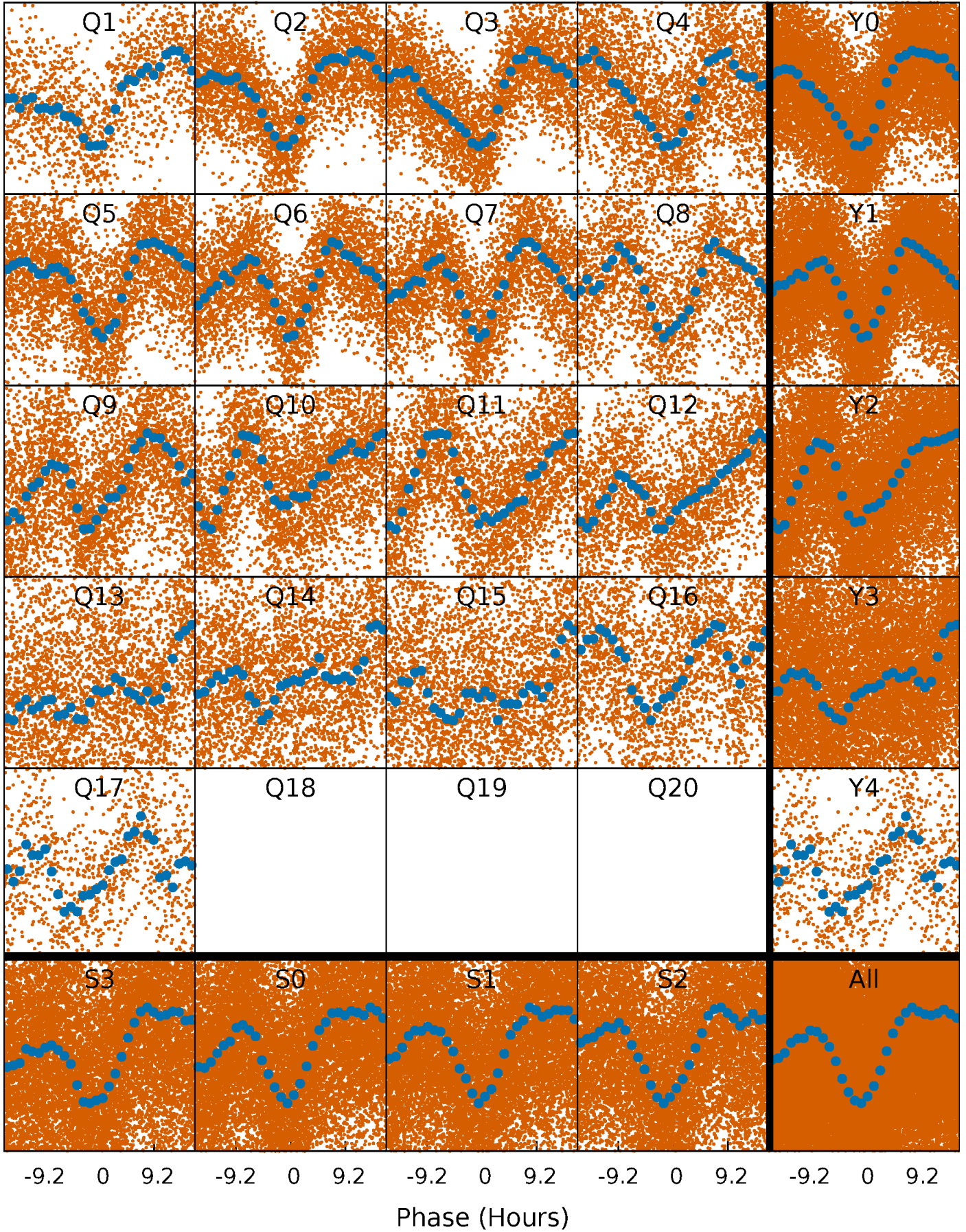


Non-Whitened Vs. Whitened Light Curve



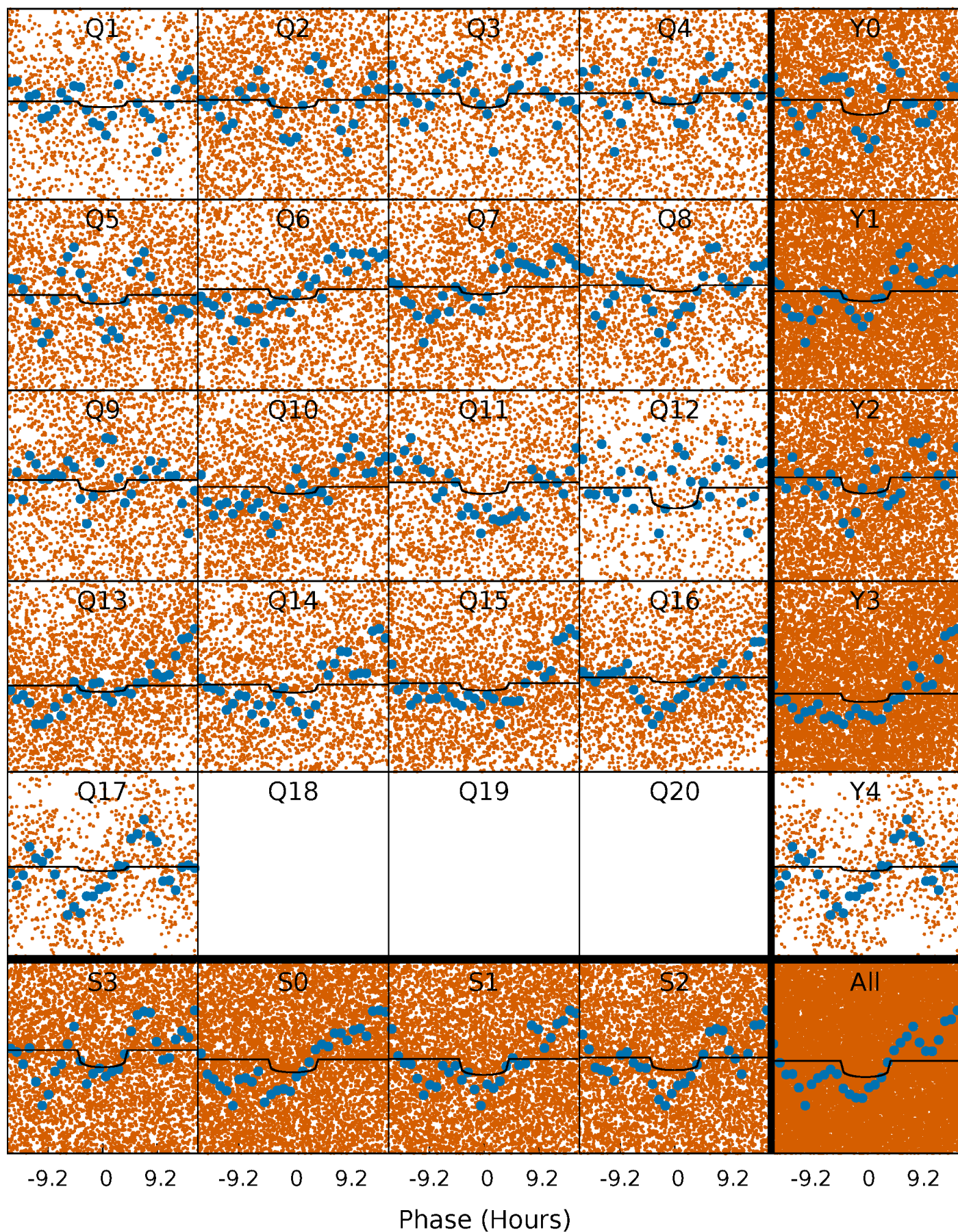
PDC Quarter-Phased Transit Curves

TCE 008950019-01 P= 1.537285 Days $T_0=132.501062$ (BKJD)



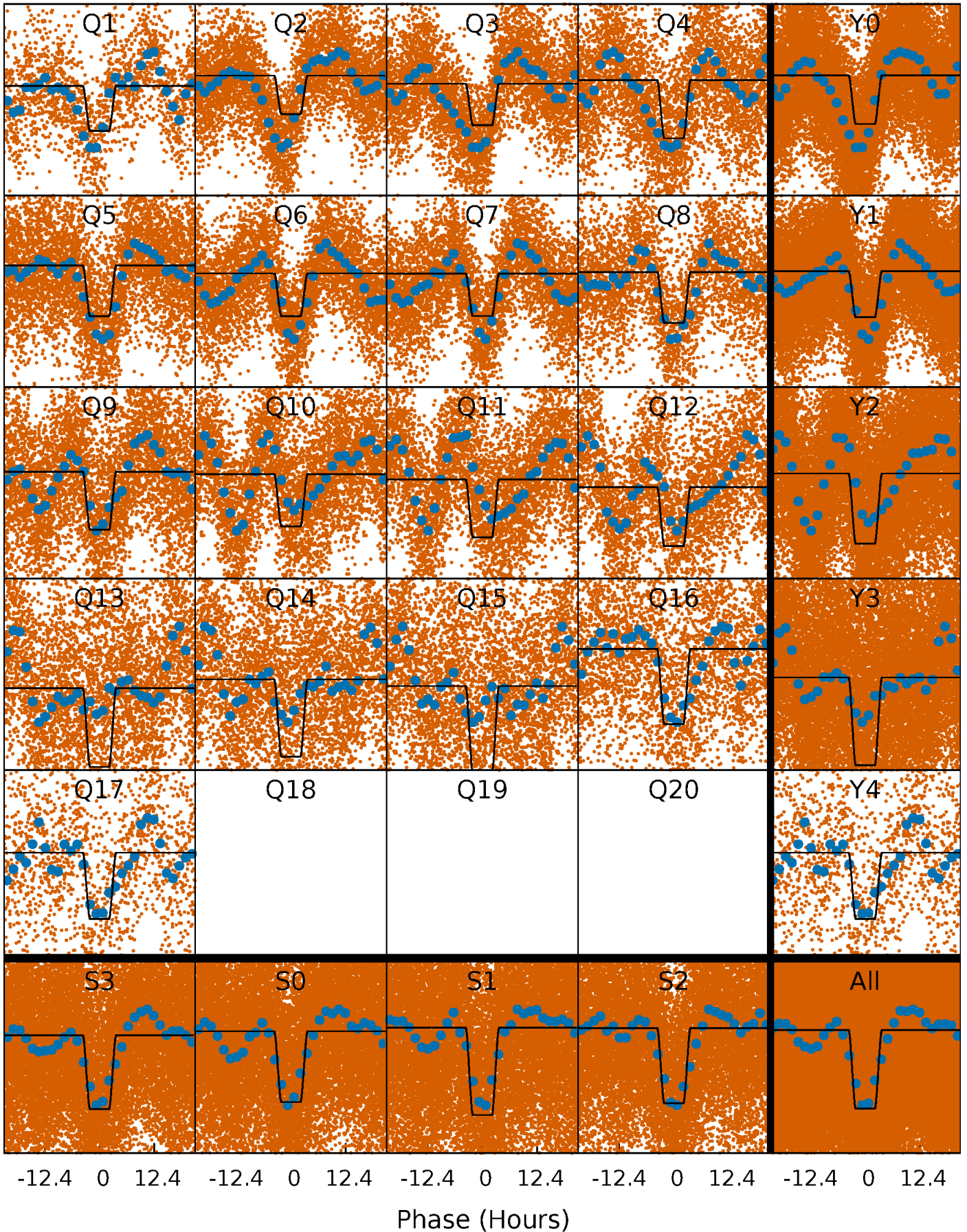
DV Quarter-Phased Transit Curves

TCE 008950019-01 P= 1.537285 Days $T_0=132.501062$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

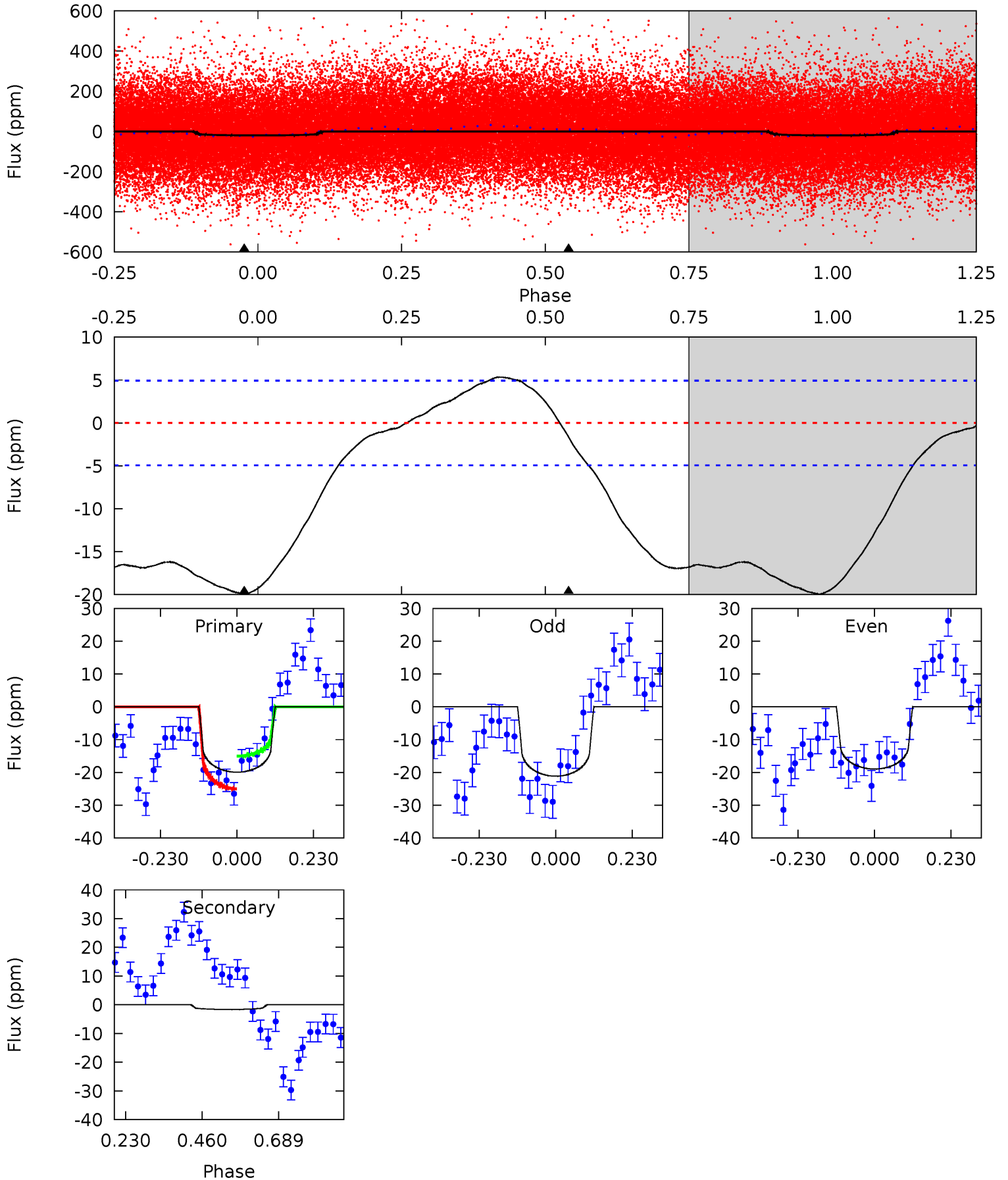
TCE 008950019-01 P= 1.537031 Days $T_0=132.557730$ (BKJD)



DV Model-Shift Uniqueness Test

008950019-01, P = 1.537285 Days, E = 130.963777 Days

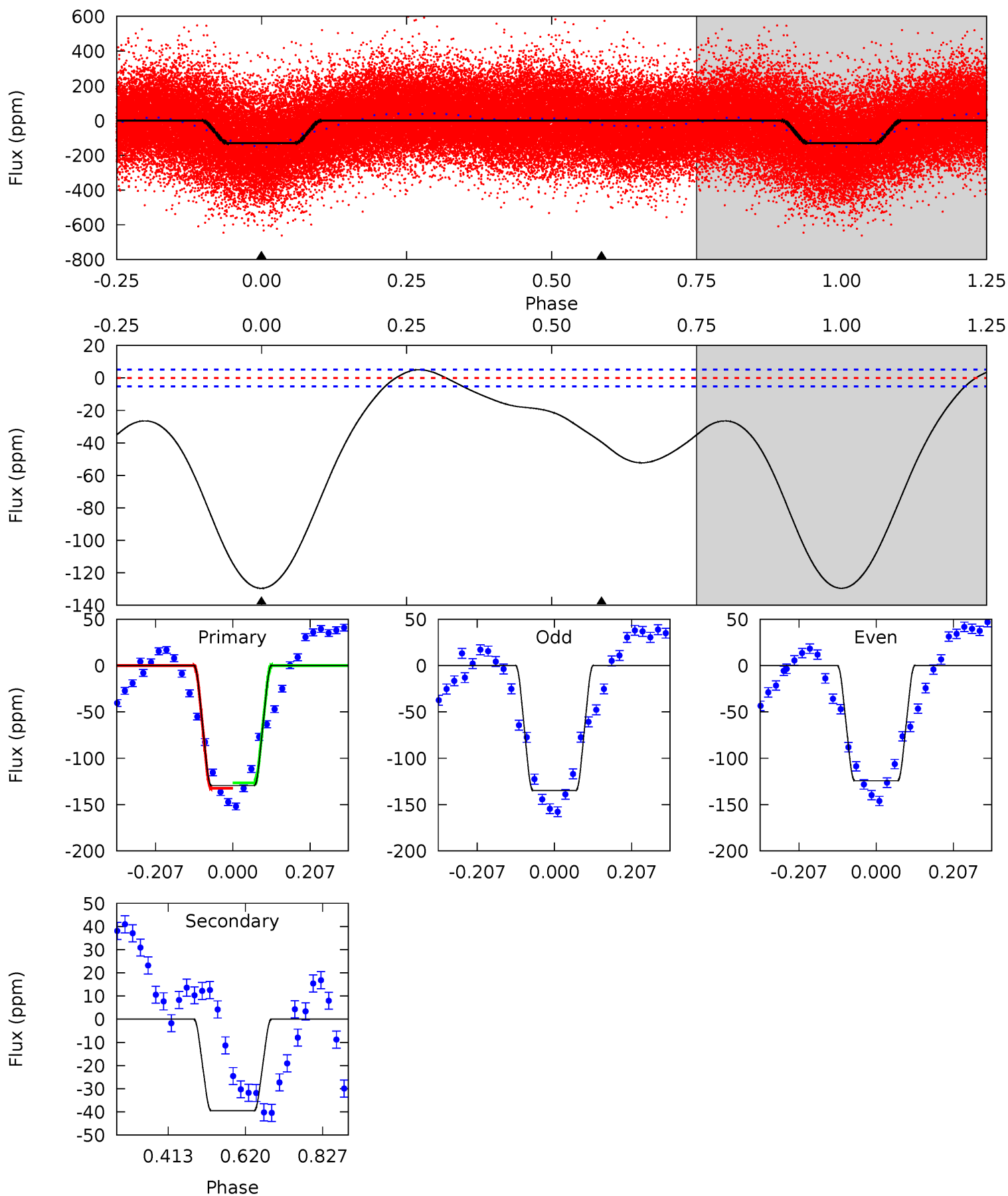
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 17.7 | 1.45 | 0 | 0 | 4.39 | 1.20 | 0.84 | 17.7 | 17.7 | 1.45 | 1.45 | 0.98 | 1.32 | 0.21 | 4.44 |



Alt Model-Shift Uniqueness Test

008950019-01, P = 1.537031 Days, E = 131.020699 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-------|------|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 110.2 | 33.6 | 0 | 0 | 4.41 | 1.26 | 4.07 | 110.2 | 110.2 | 33.6 | 33.6 | 4.52 | 0.96 | 0.04 | 2.52 |



Stellar Parameters For KIC 008950019

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6654^{+182}_{-202} | $3.759^{+0.336}_{-0.084}$ | $-0.540^{+0.350}_{-0.300}$ | $2.508^{+0.404}_{-0.943}$ | $1.317^{+0.222}_{-0.246}$ | $0.118^{+0.286}_{-0.031}$ |
| | +3%/-3% | +9%/-2% | +65%/-56% | +16%/-38% | +17%/-19% | +244%/-26% |
| 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 008950019-01 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|-------------|------------------------|----------------------|------------------------|---------------------------|
| DV | -2 ± 1 | $0.80^{+0.41}_{-0.32}$ | 3748^{+252}_{-355} | 4039^{+1337}_{-6872} | $0.980^{+2.528}_{-0.742}$ |
| Alt. | -40 ± 1 | $3.20^{+0.57}_{-0.66}$ | 3739^{+240}_{-362} | 4664^{+279}_{-240} | $1.759^{+0.923}_{-0.436}$ |

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 $A_{obs} \gg 1.0$

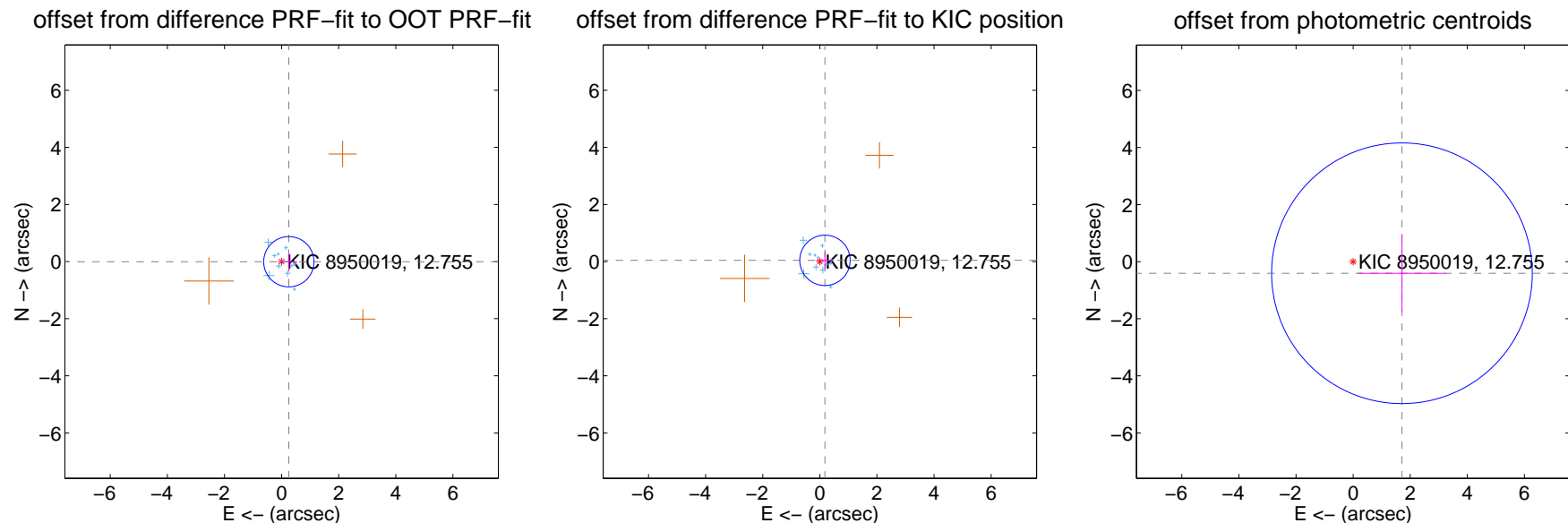
DV Centroid Data

Supplemental centroid analysis for 008950019-01. Kepler magnitude: 12.76. Transit SNR 4.99

There are 13 quarters with good PRF difference image offsets

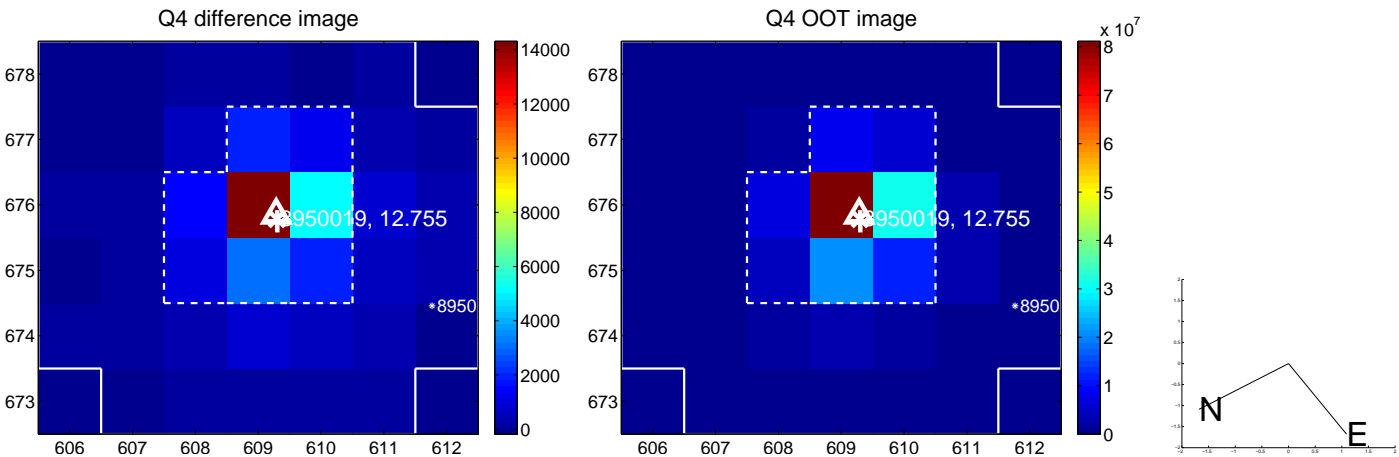
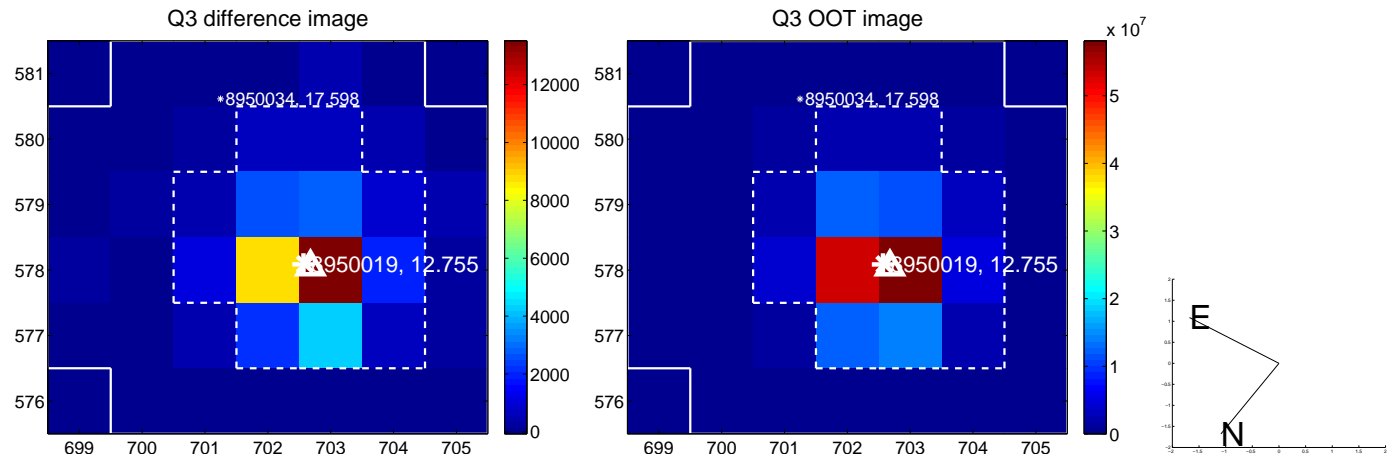
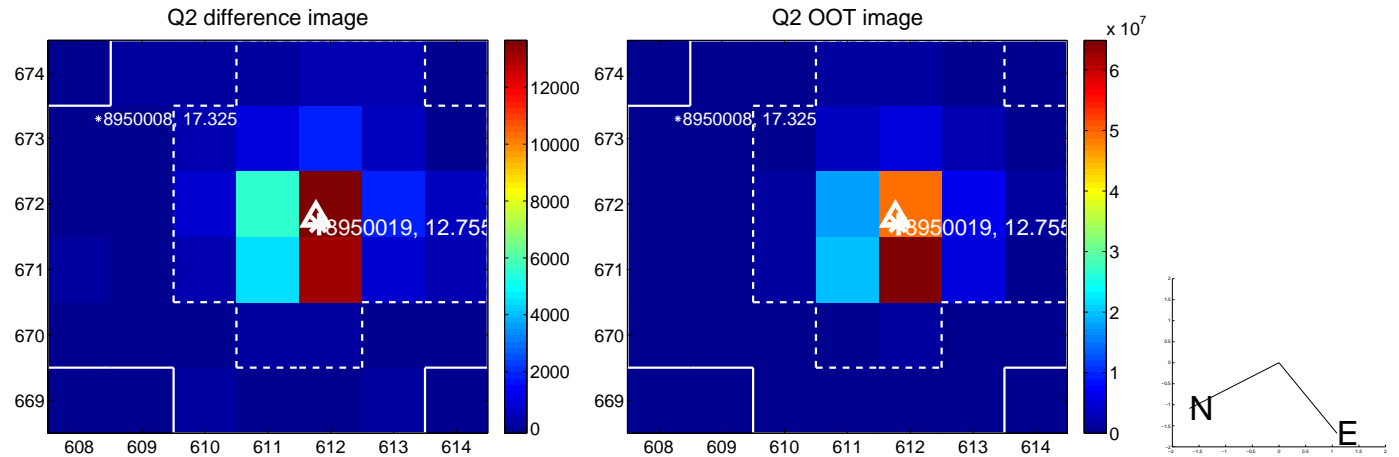
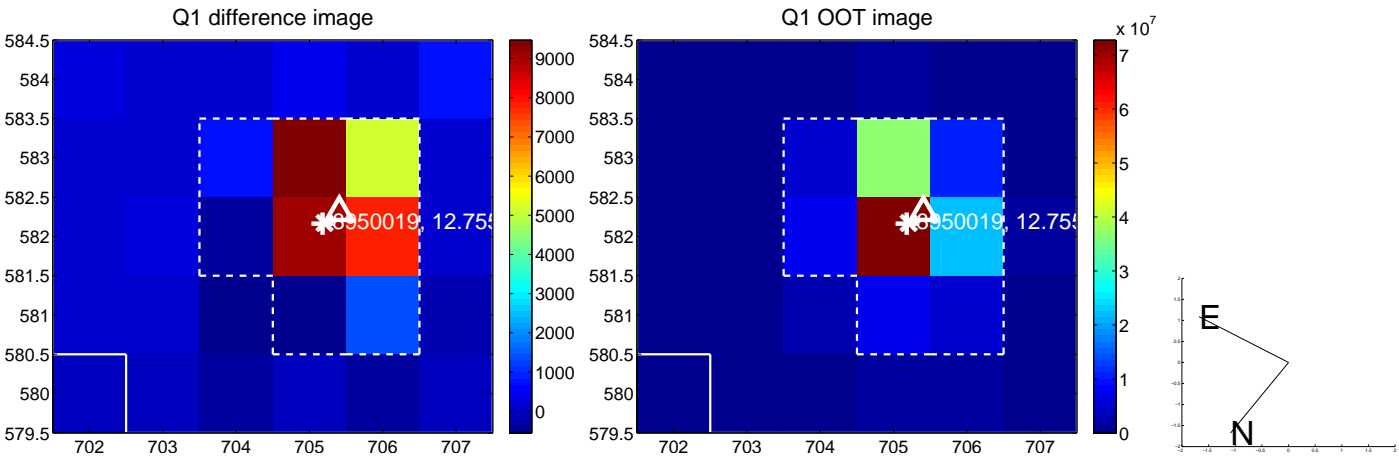
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.254 ± 0.294 | 0.87 | -0.254 ± 0.294 | -0.005 ± 0.300 |
| PRF-fit source offset from KIC position | 0.185 ± 0.294 | 0.63 | -0.179 ± 0.292 | 0.043 ± 0.299 |
| photometric centroid source offset | 1.76 ± 1.52 | 1.16 | -1.71 ± 1.53 | -0.41 ± 1.37 |

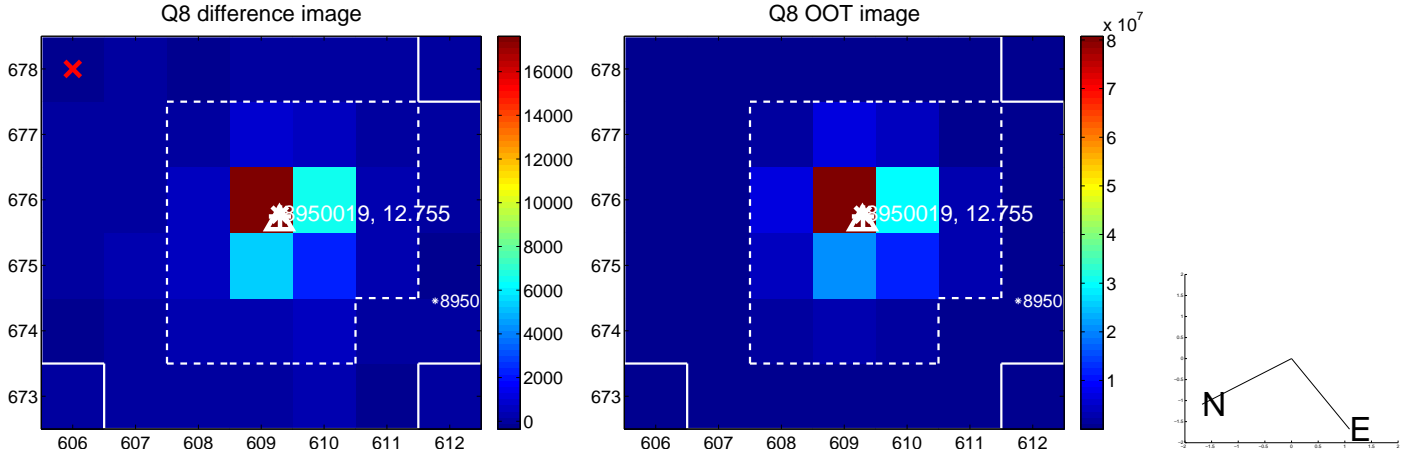
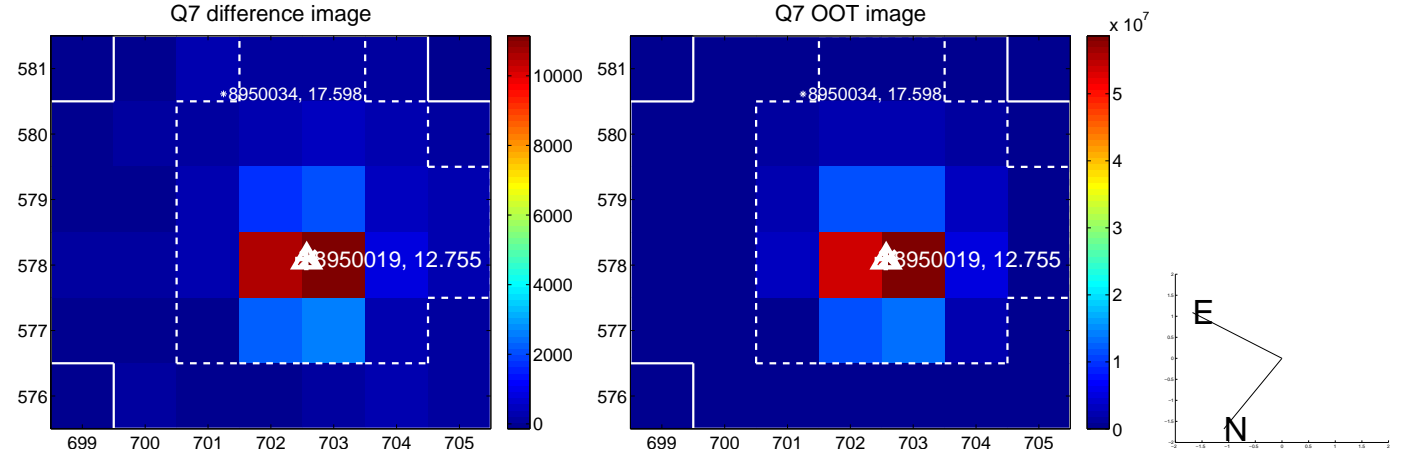
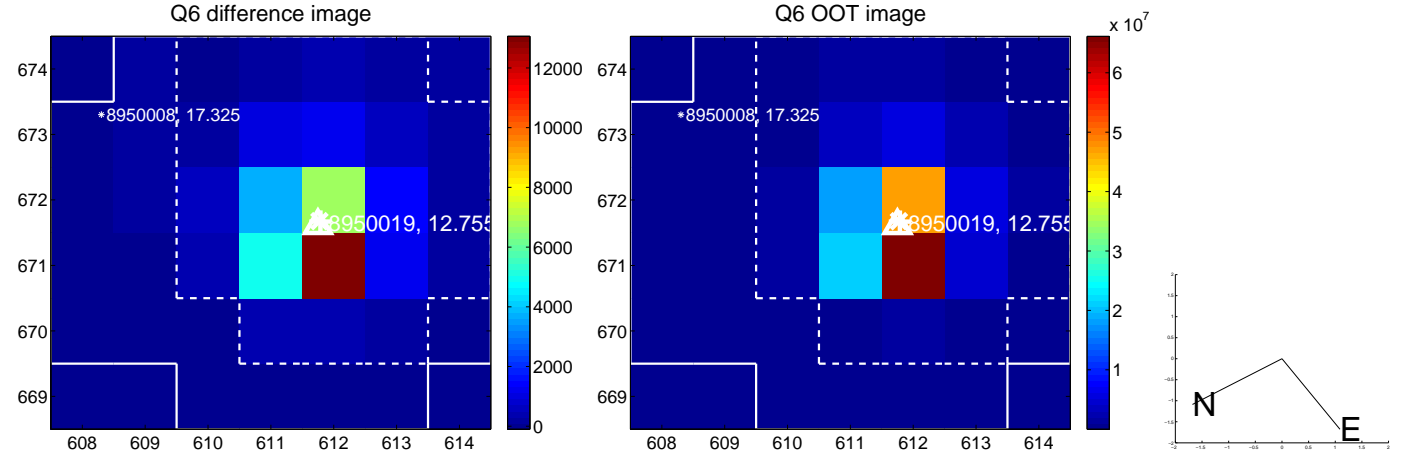
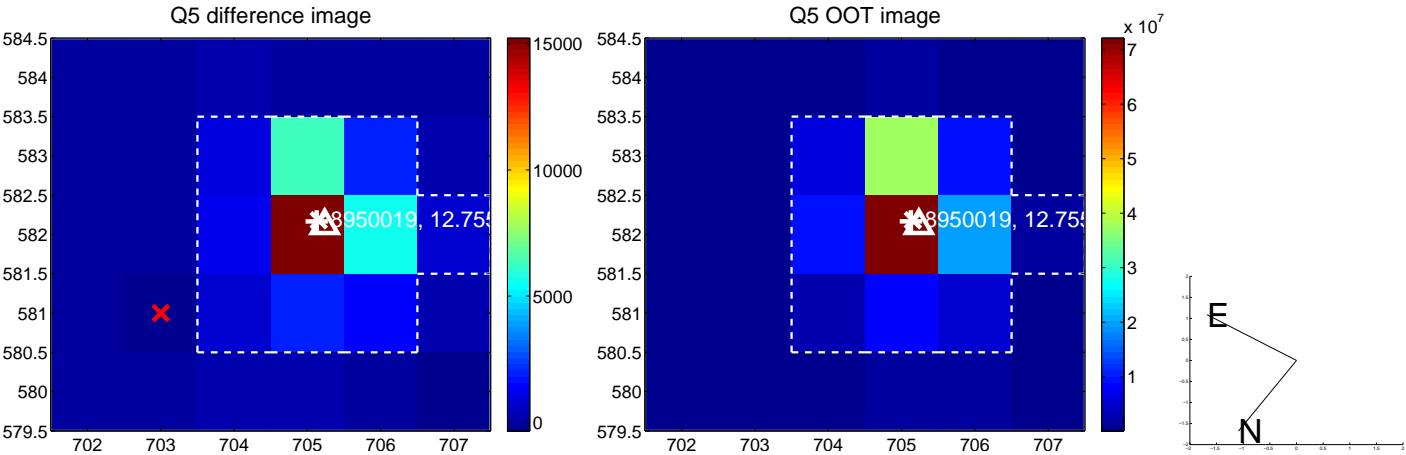


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

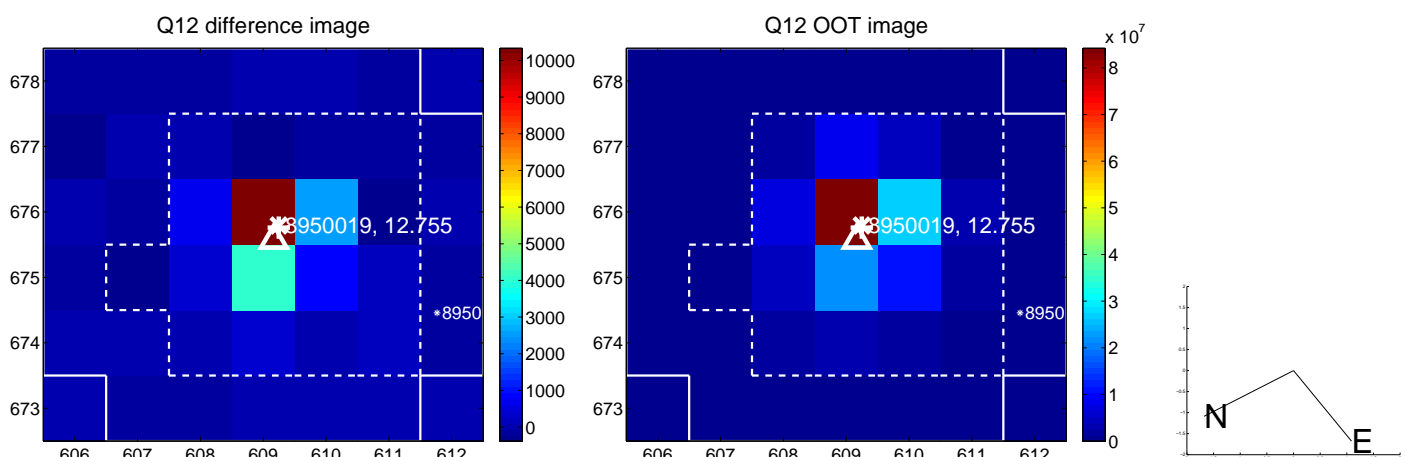
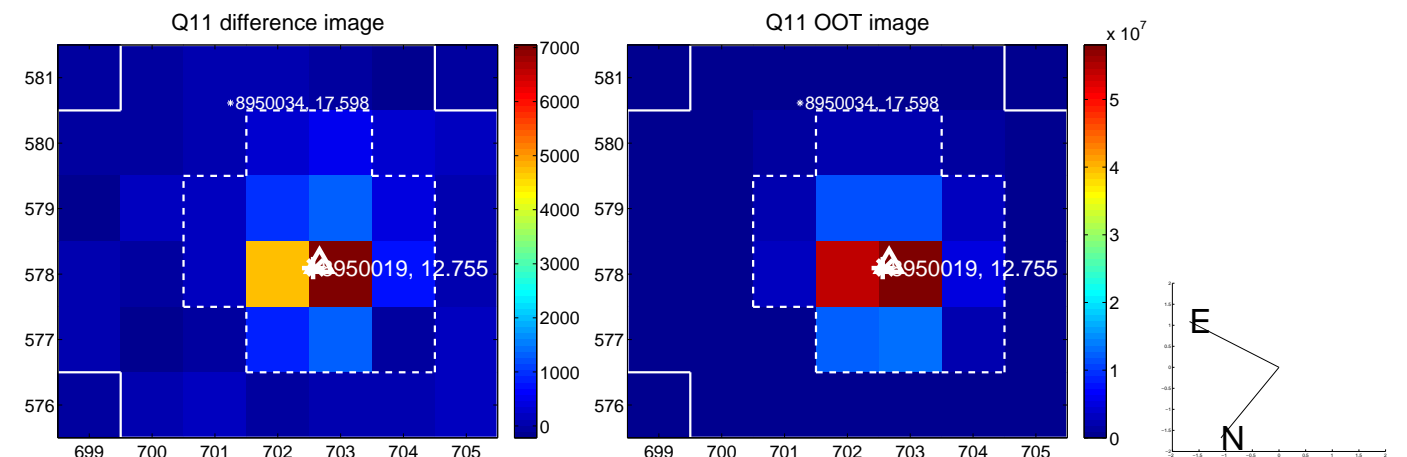
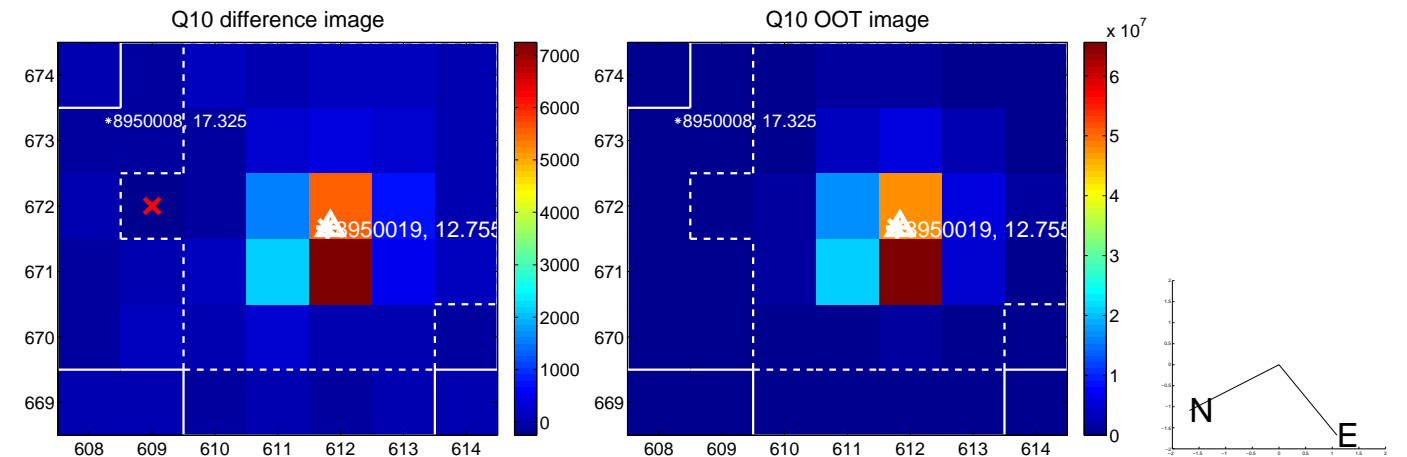
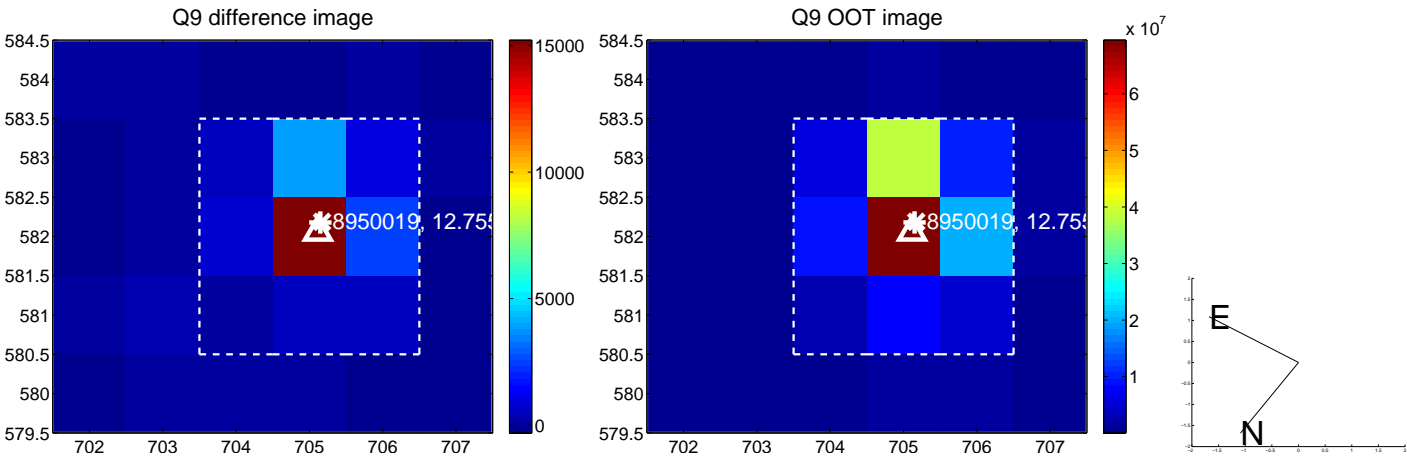
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



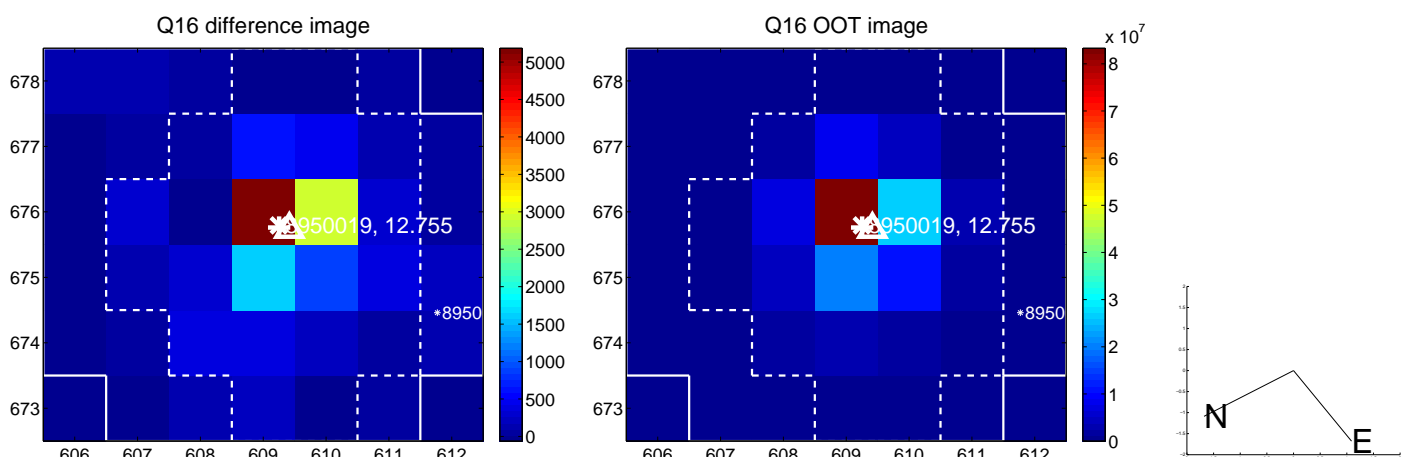
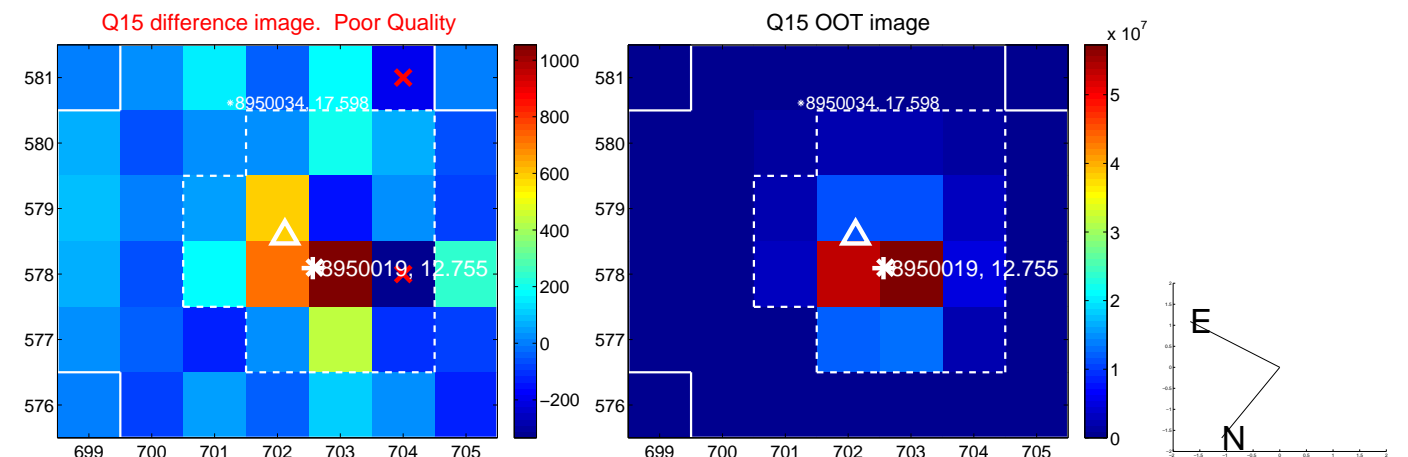
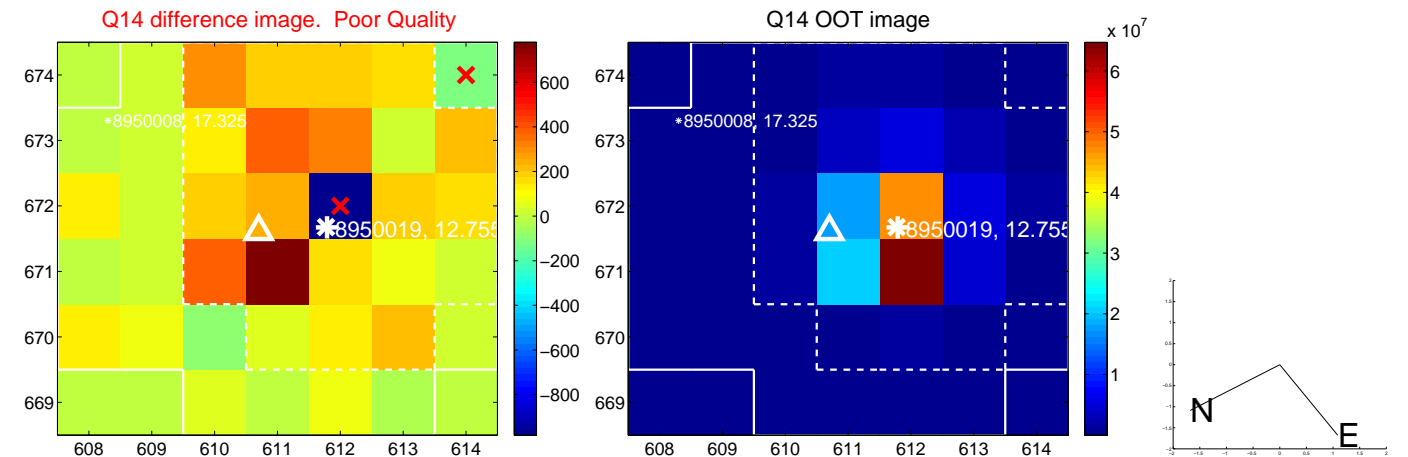
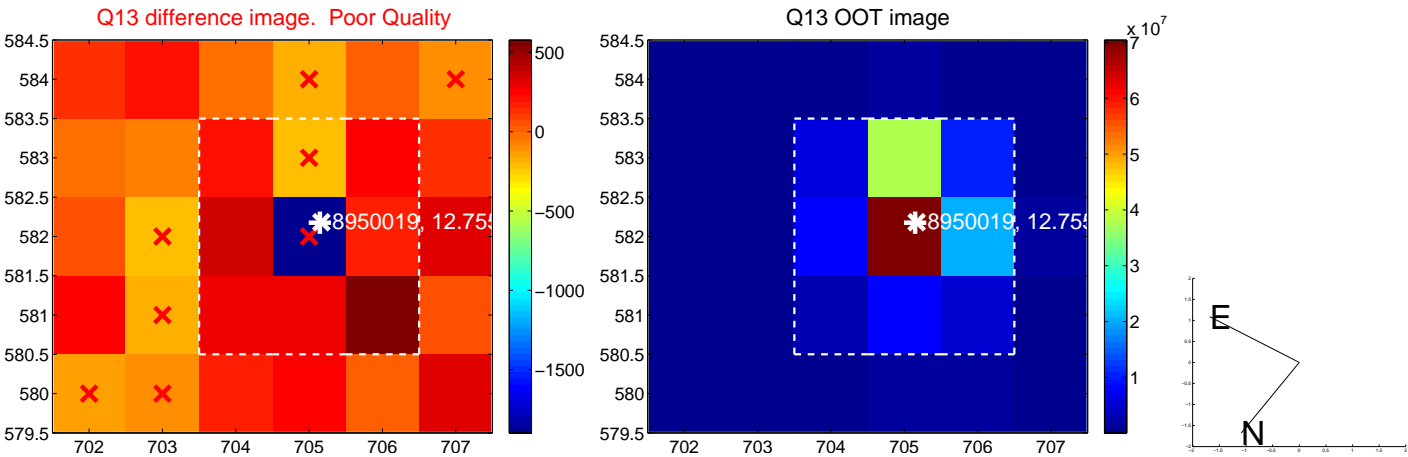
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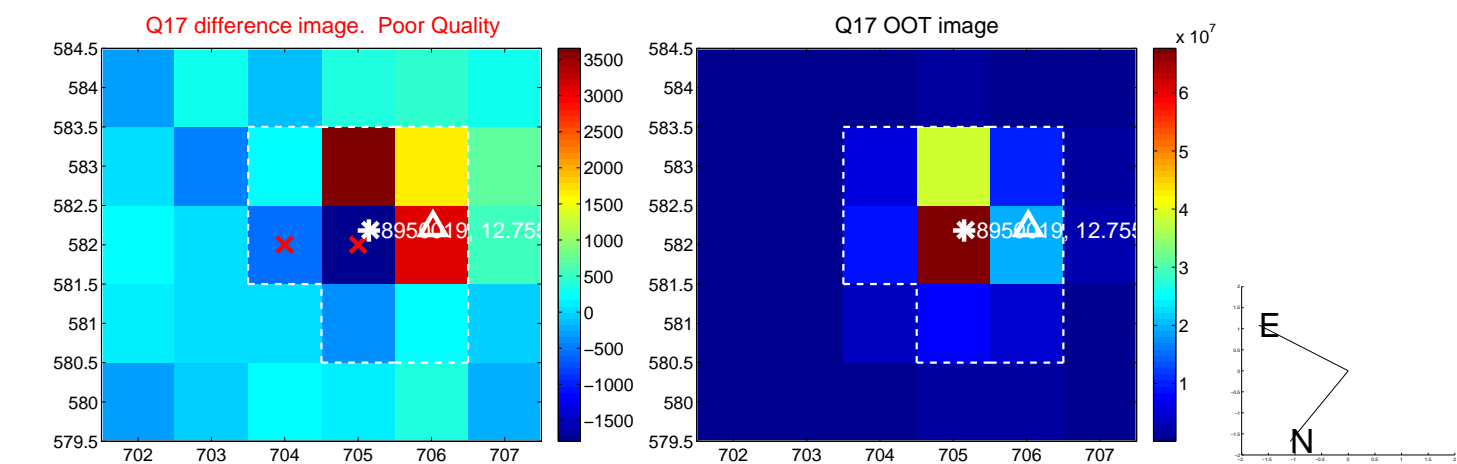
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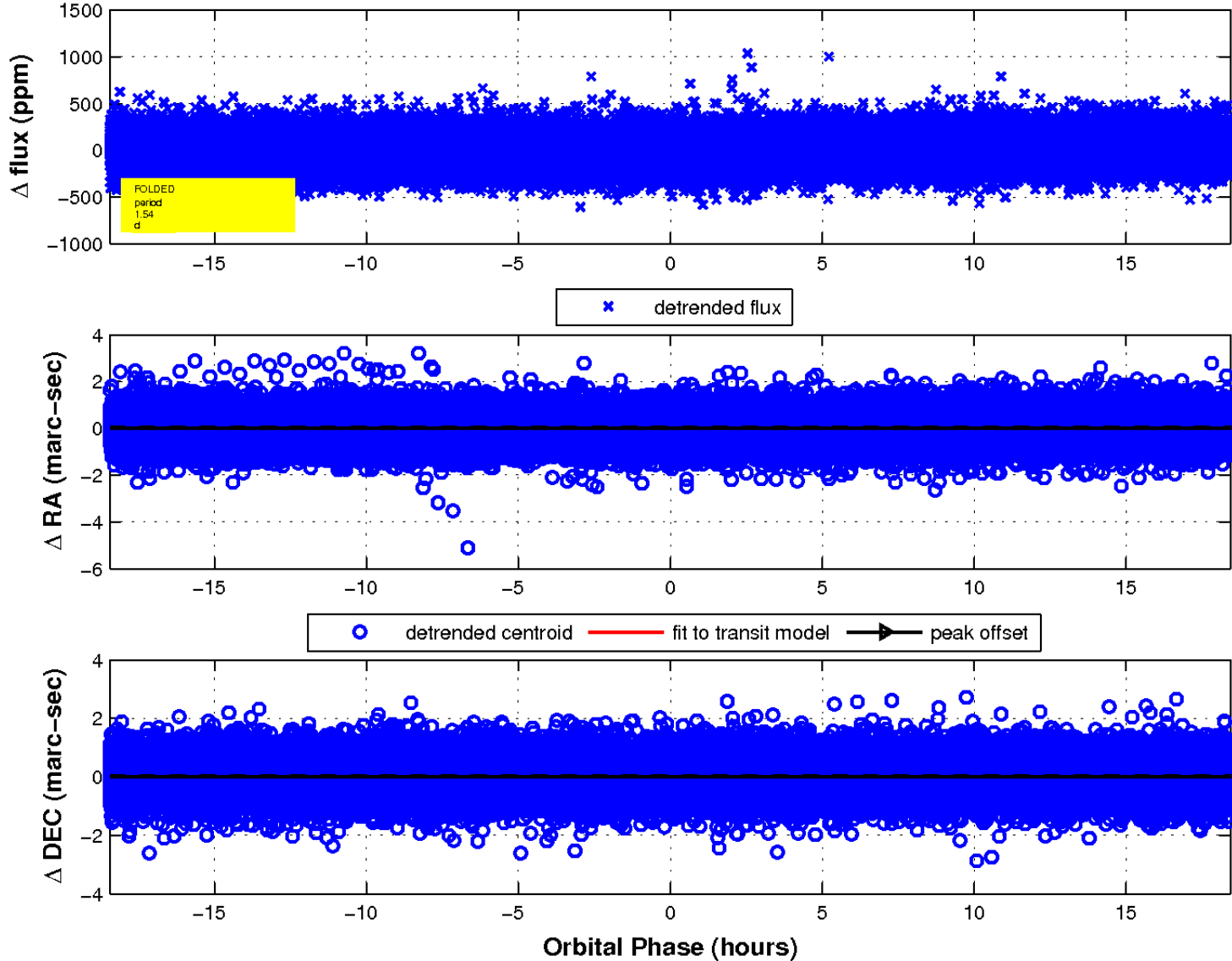
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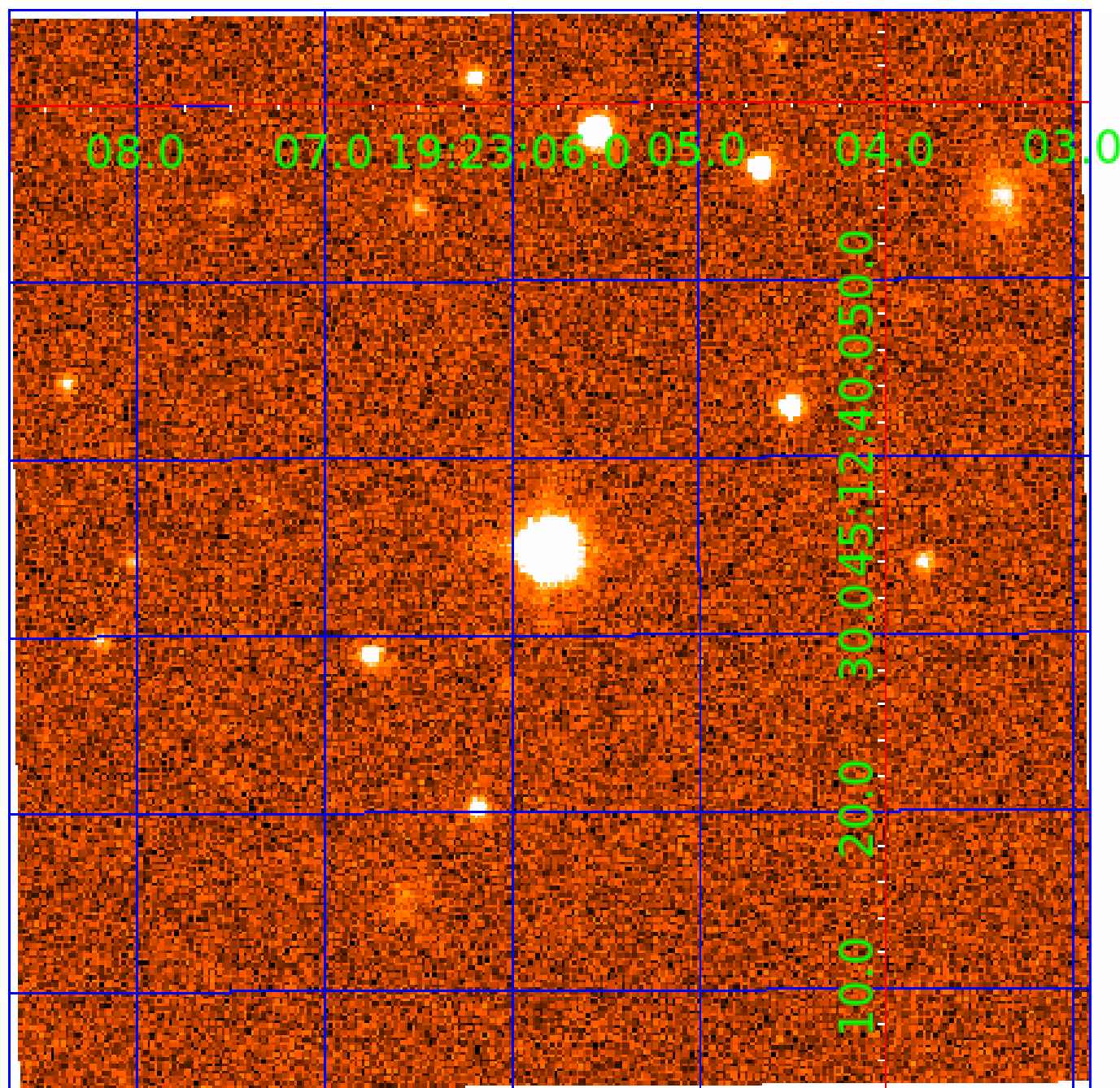


fluxWeightedCentroids, Planet 1 of 8



UKIRT Image

Declination



KIC 008950019

Q1-17 DR25 TCE Parameters

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Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008950019-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 008950019-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS |
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| 008950019-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_NOFITS |

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

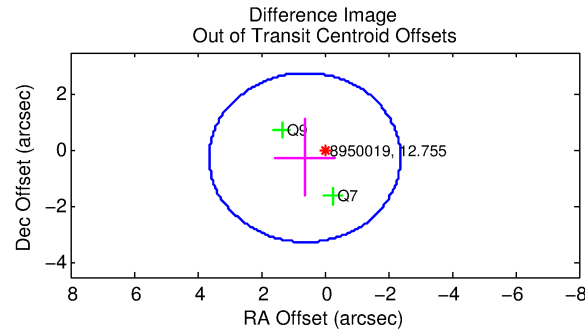
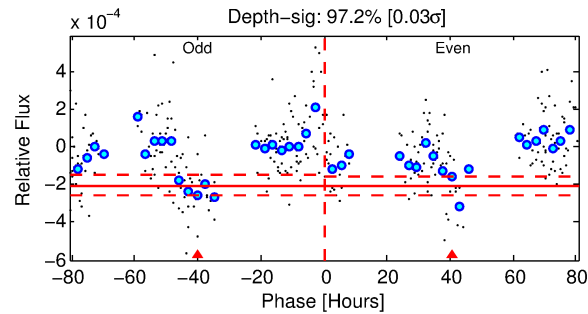
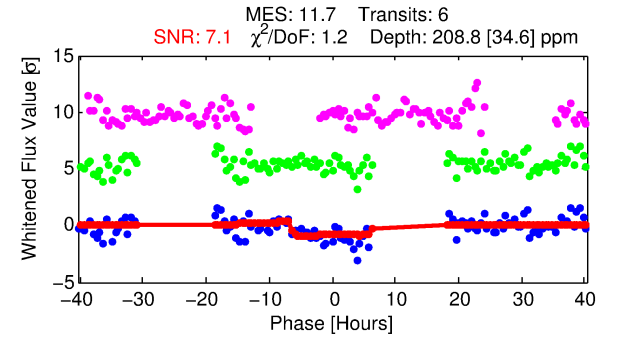
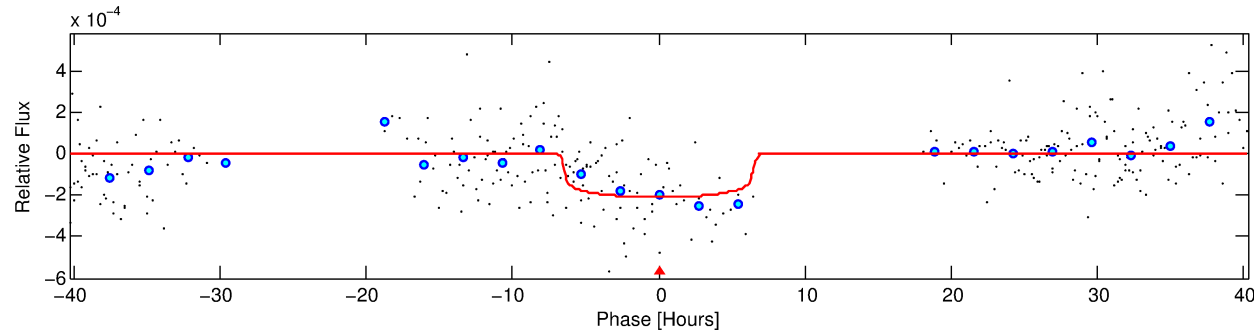
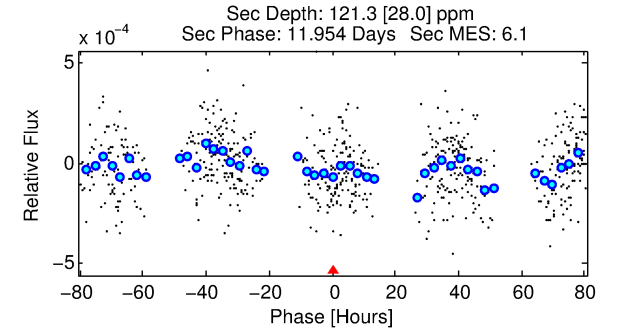
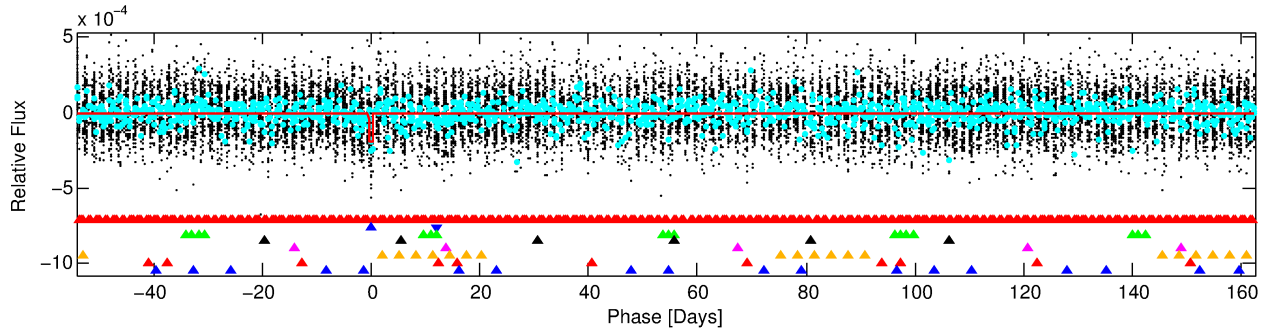
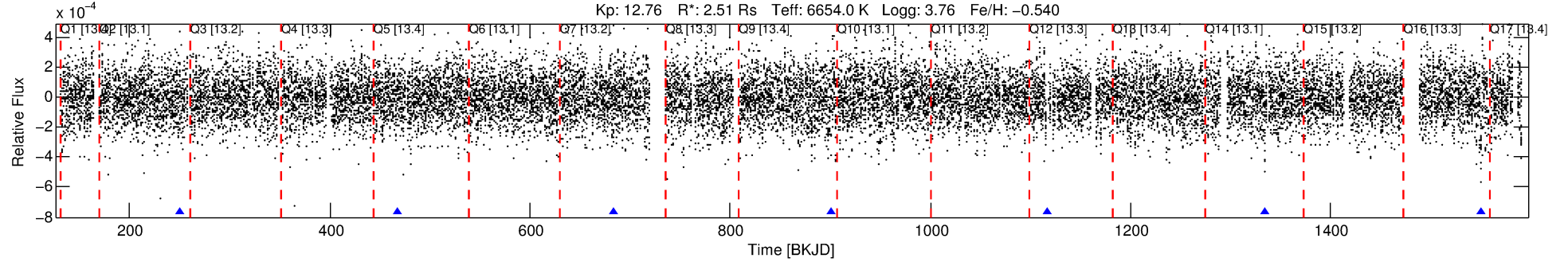
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008950019-02

No Significant Match Found

DV One-Page Summary

KIC: 8950019 Candidate: 2 of 8 Period: 216.663 d



DV Fit Results:

Period = 216.66284 [0.00741] d
Epoch = 250.6450 [0.0357] BKJD
Rp/R* = 0.0144 [0.0048]
a/R* = 83.49 [153.40]
b = 0.75 [1.07]
Seff = 18.44 [10.81]
Teq = 528 [77] K
Rp = 3.94 [1.98] Re
a = 0.7741 [0.2784] AU
Ag = 2577.77 [2348.70] [1.10σ]
Teffp = 5821 [1045] K [5.05σ]

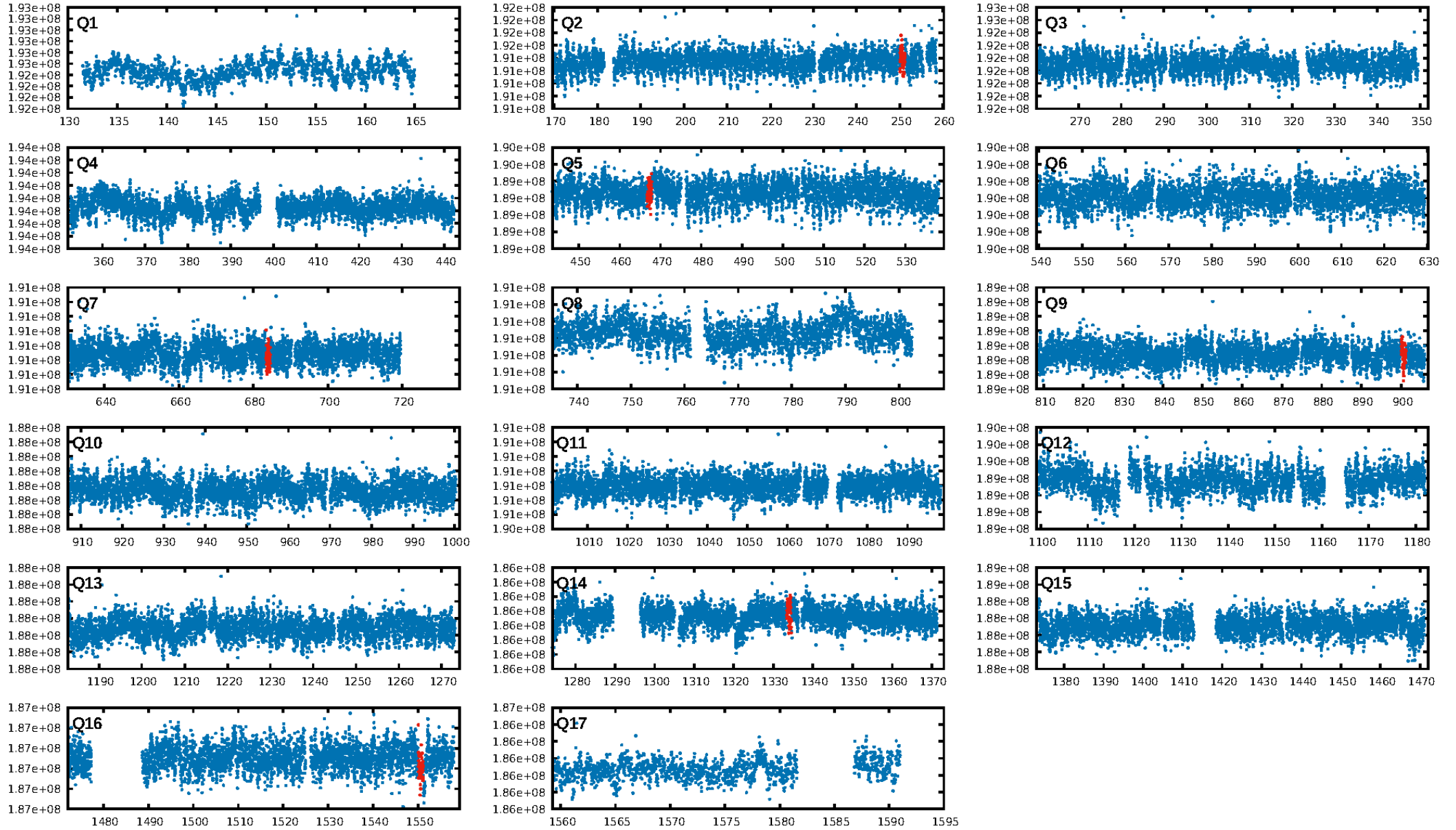
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [141.37σ]
LongPeriod-sig: 100.0% [37.01σ]
ModelChiSquare2-sig: 29.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 6.365
Centroid-sig: 3.9%
Centroid-so: 1.126 arcsec [1.45σ]
OotOffset-rm: 0.667 arcsec [0.66σ]
KicOffset-rm: 0.728 arcsec [0.77σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/6]

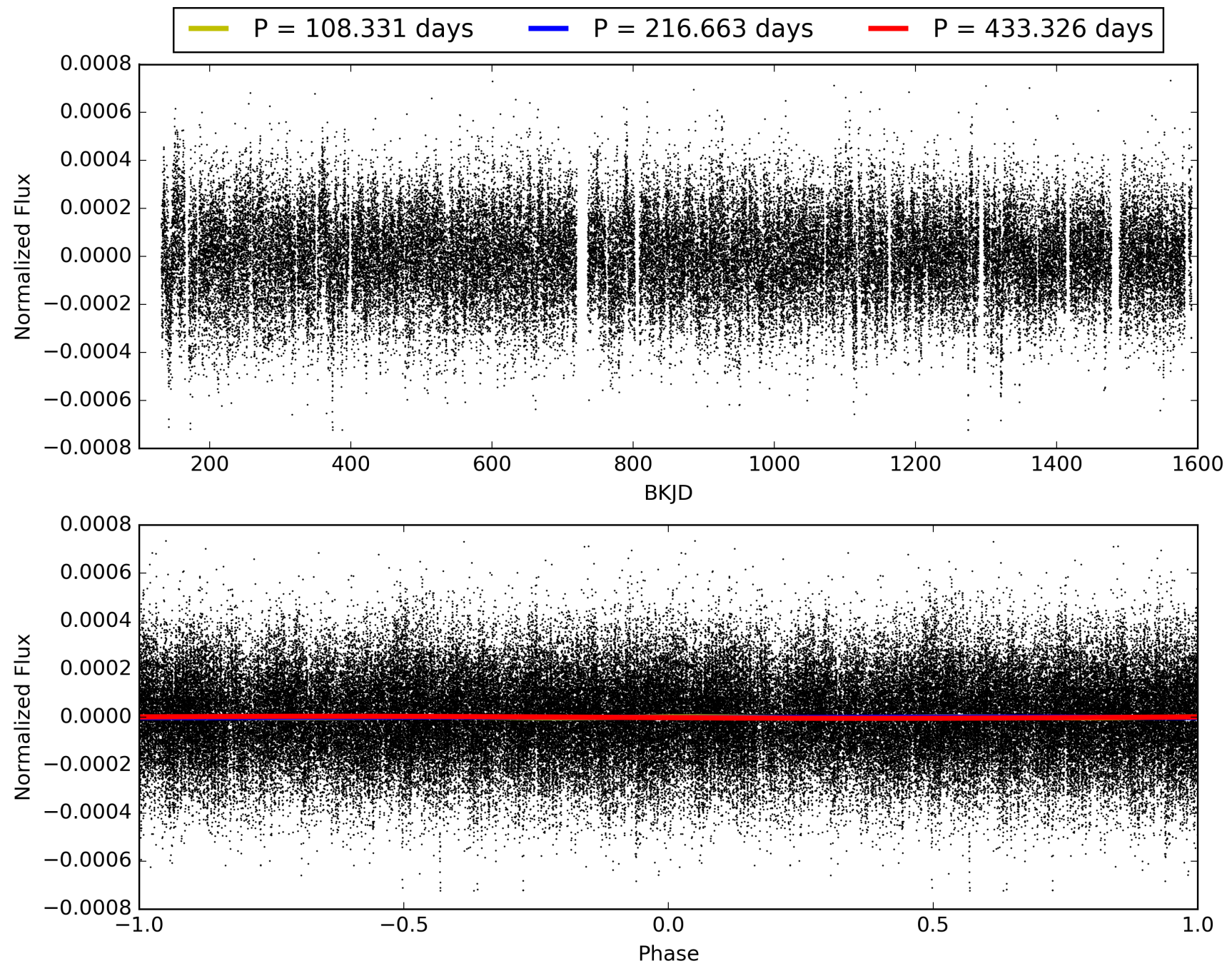
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:41:48 Z

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

TCE 008950019-02, PDC Light Curves

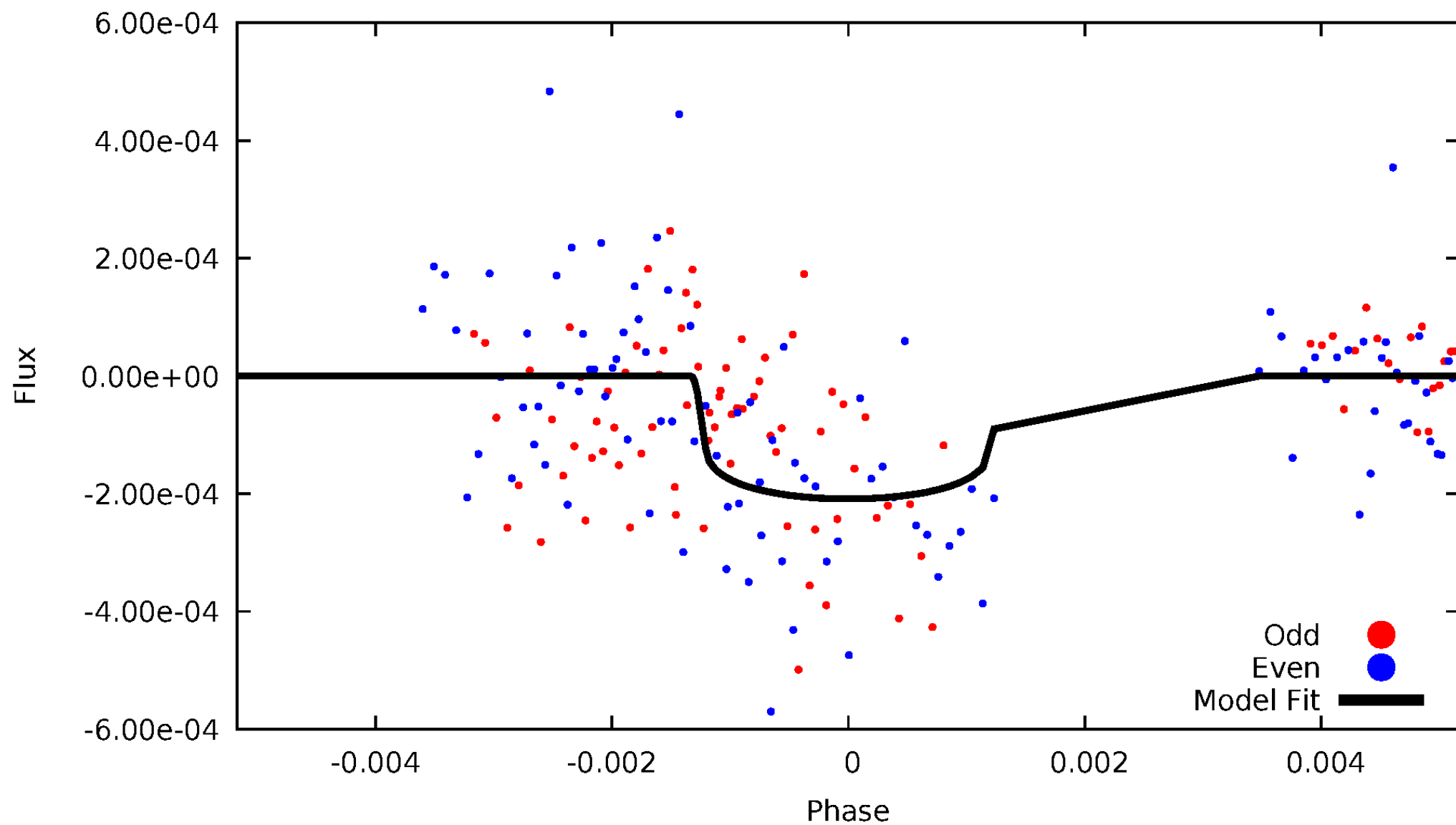


TCE 008950019-02



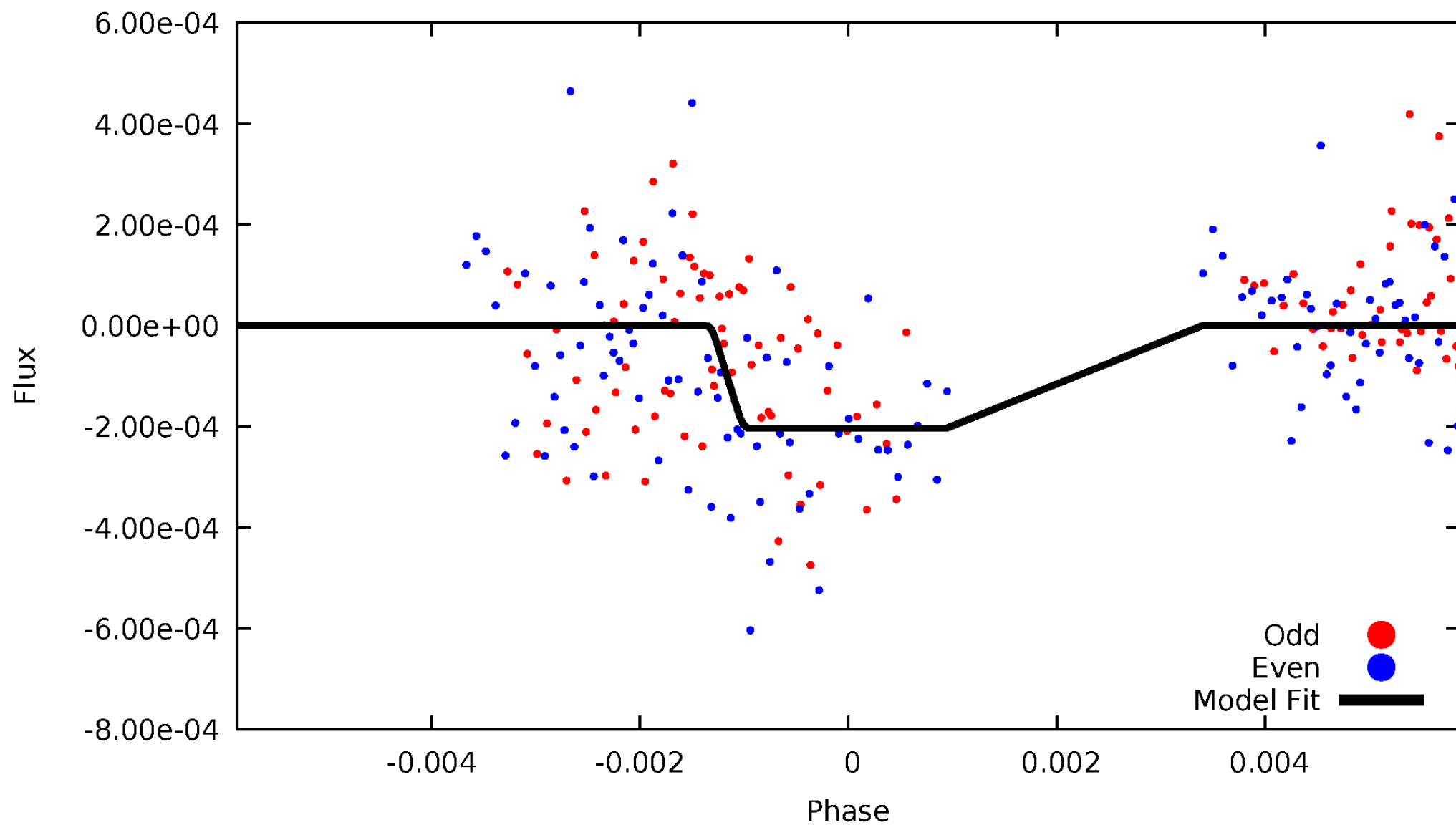
DV Odd/Even

TCE 008950019-02



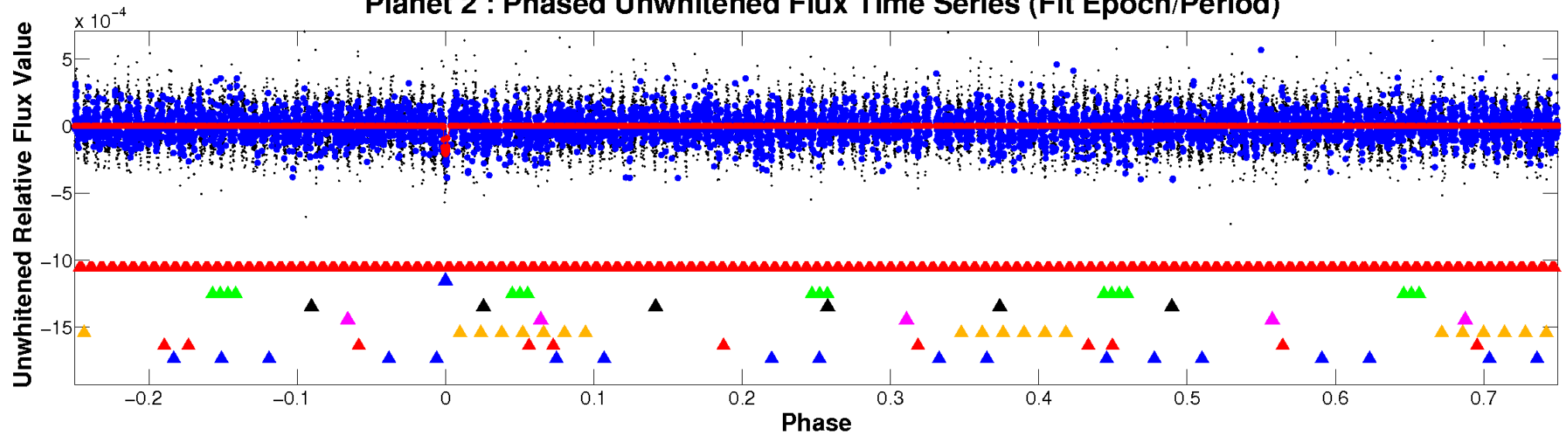
ALT Odd/Even

TCE 008950019-02

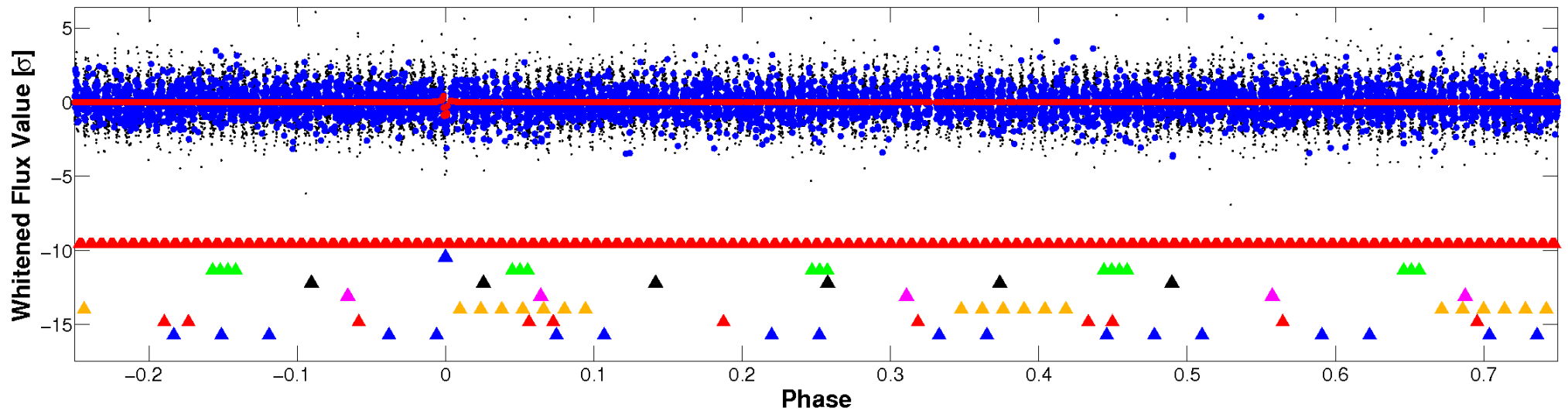


Non-Whitened Vs. Whitened Light Curve

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

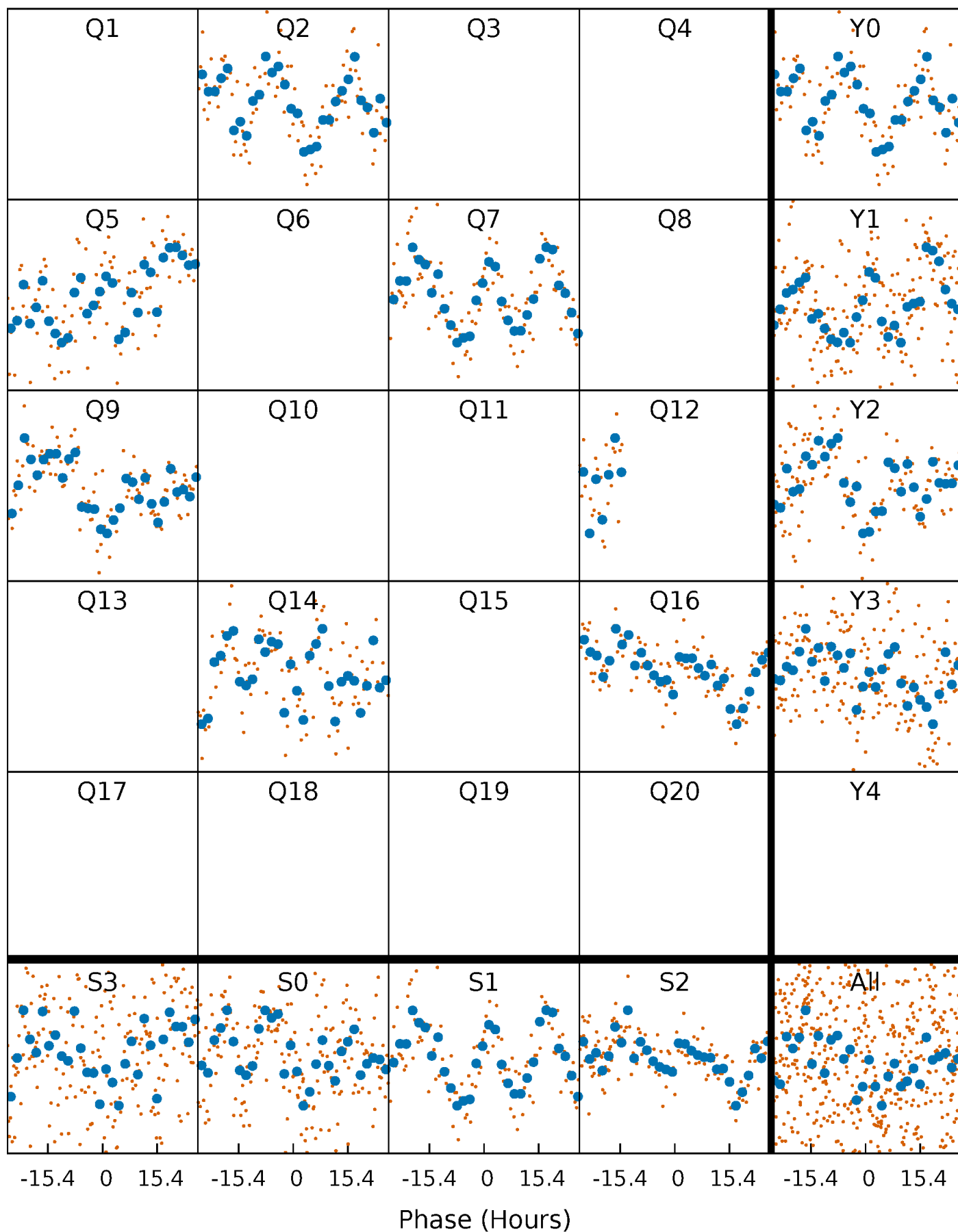


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



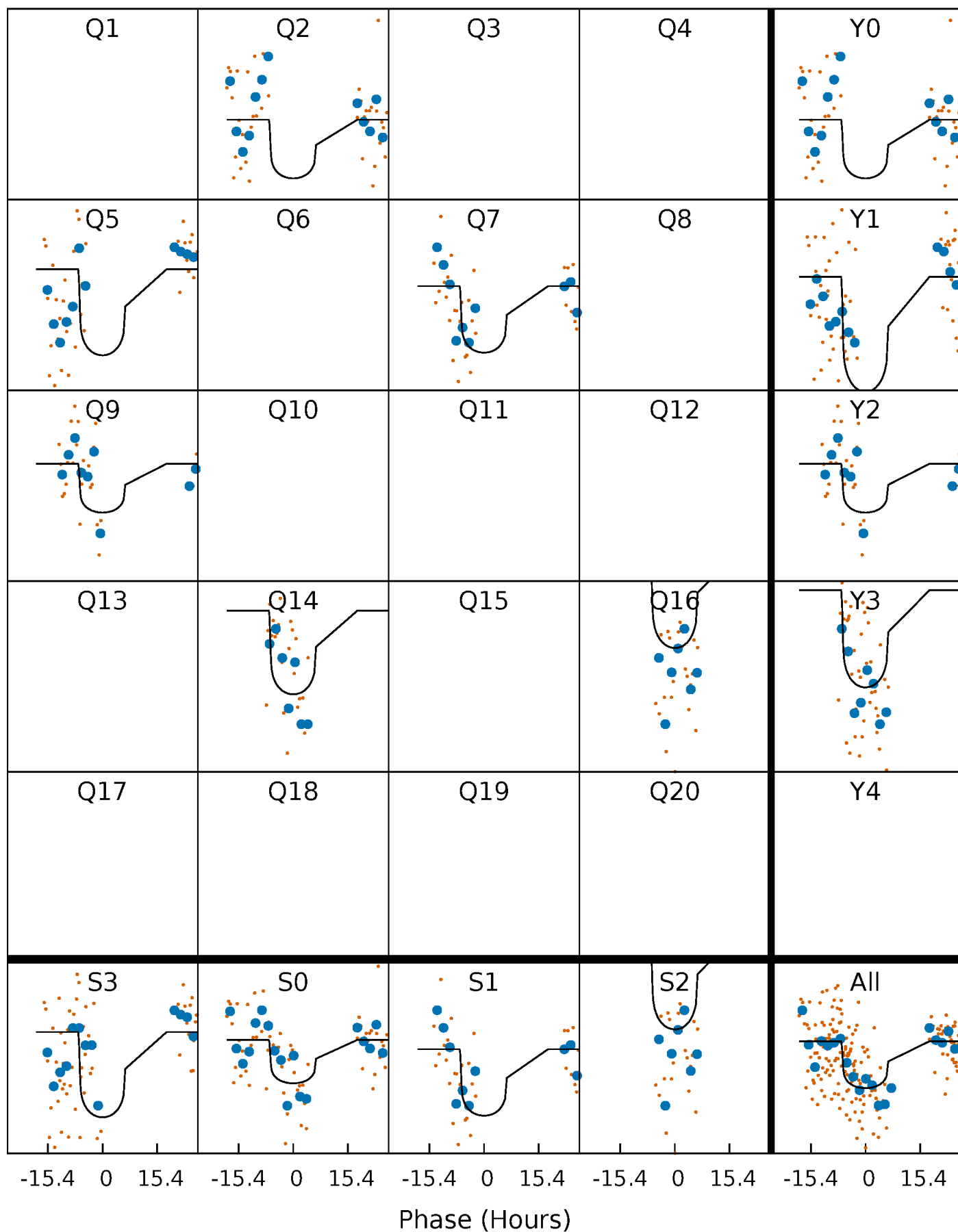
PDC Quarter-Phased Transit Curves

TCE 008950019-02 P=216.662839 Days $T_0=250.644951$ (BKJD)



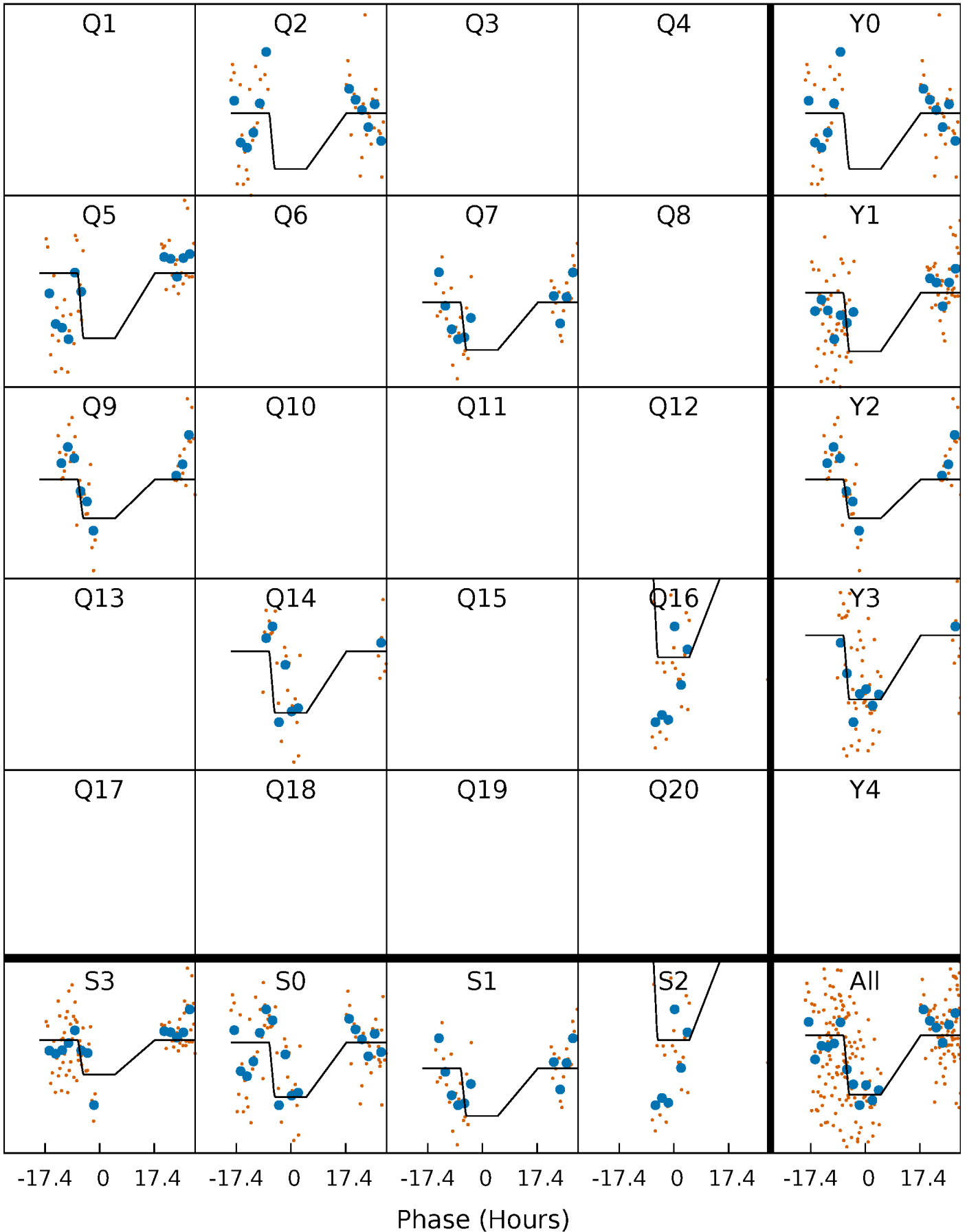
DV Quarter-Phased Transit Curves

TCE 008950019-02 P=216.662839 Days $T_0=250.644951$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

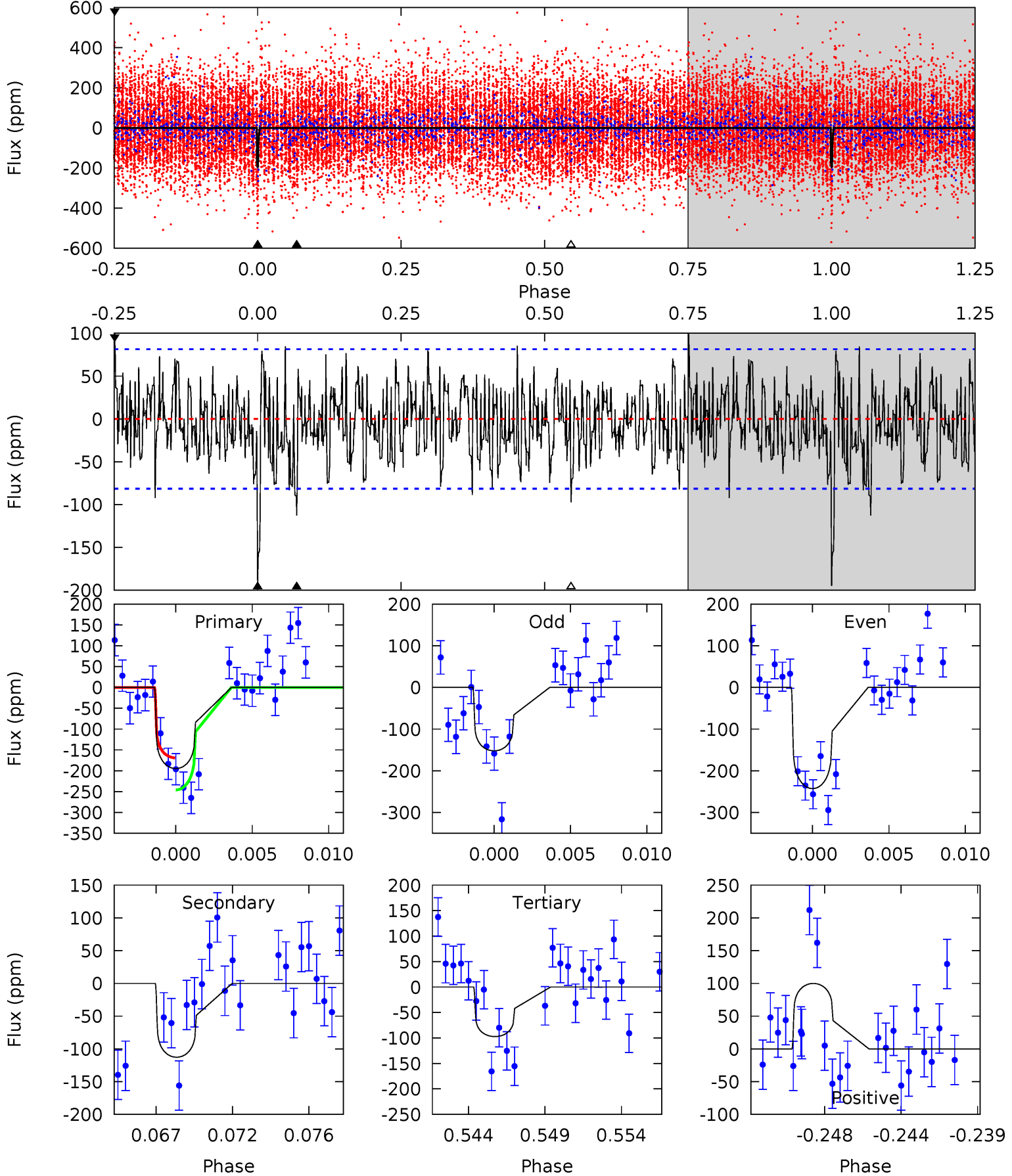
TCE 008950019-02 P=216.670659 Days $T_0=250.659988$ (BKJD)



DV Model-Shift Uniqueness Test

008950019-02, $P = 216.662839$ Days, $E = 33.982112$ Days

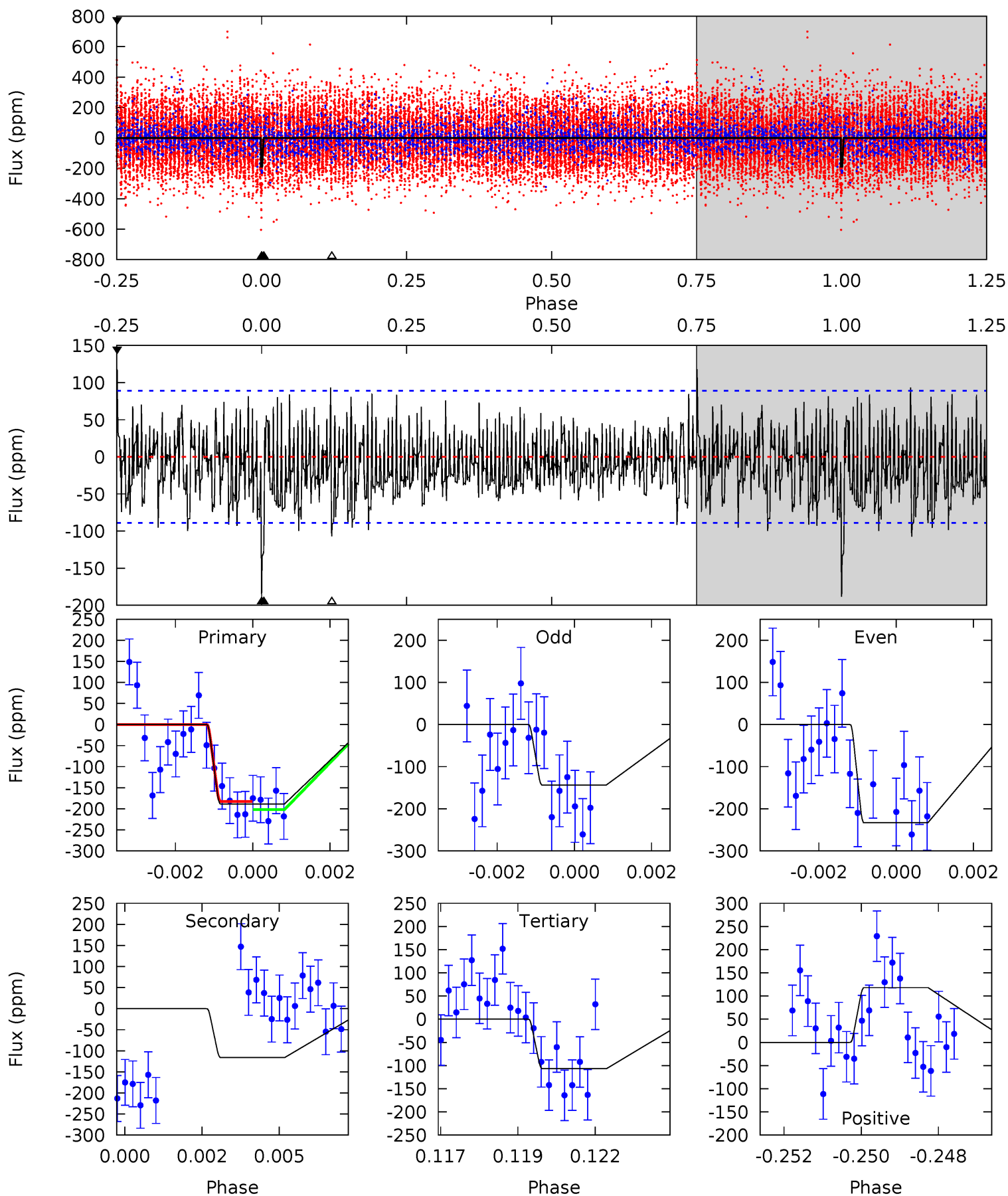
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 12.4 | 7.15 | 6.17 | 6.34 | 5.17 | 2.82 | 1.94 | 6.18 | 6.01 | 0.98 | 0.81 | 2.86 | 1.06 | 0.34 | 2.25 |



Alt Model-Shift Uniqueness Test

008950019-02, P = 216.670659 Days, E = 33.989329 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.2 | 6.91 | 6.37 | 7.02 | 5.30 | 3.05 | 1.90 | 4.85 | 4.19 | 0.54 | -0.12 | 2.66 | 1.10 | 0.39 | 0.48 |



Stellar Parameters For KIC 008950019

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6654^{+182}_{-202} | $3.759^{+0.336}_{-0.084}$ | $-0.540^{+0.350}_{-0.300}$ | $2.508^{+0.404}_{-0.943}$ | $1.317^{+0.222}_{-0.246}$ | $0.118^{+0.286}_{-0.031}$ |
| | +3%/-3% | +9%/-2% | +65%/-56% | +16%/-38% | +17%/-19% | +244%/-26% |
| 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 008950019-02 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|----------------------|-----------------------|------------------------|
| DV | -113 ± 16 | $3.68^{+1.56}_{-1.34}$ | 723^{+45}_{-70} | 5677^{+1355}_{-688} | 2706^{+4070}_{-1292} |
| Alt. | -116 ± 17 | $3.62^{+1.55}_{-1.34}$ | 723^{+44}_{-69} | 5751^{+1529}_{-727} | 2928^{+4493}_{-1425} |

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

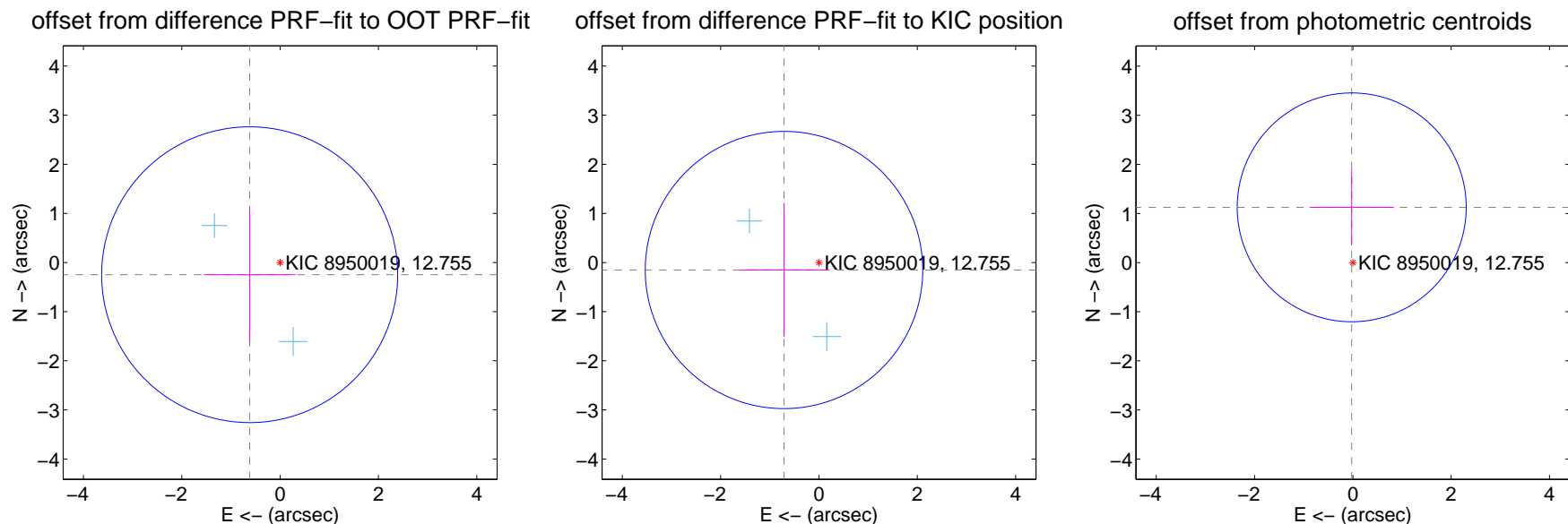
DV Centroid Data

Supplemental centroid analysis for 008950019-02. Kepler magnitude: 12.76. Transit SNR 7.10

There are 2 quarters with good PRF difference image offsets

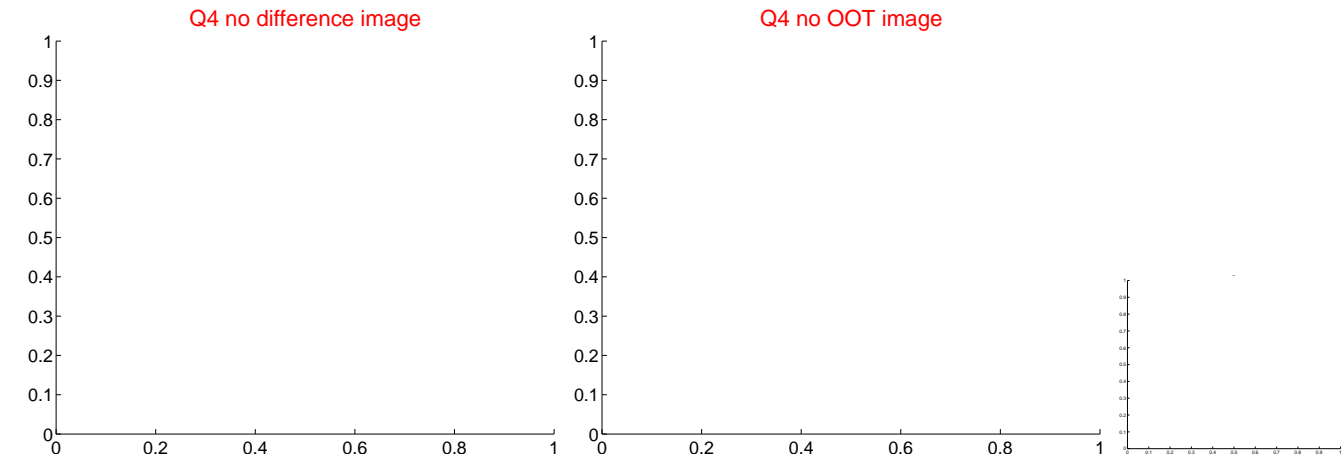
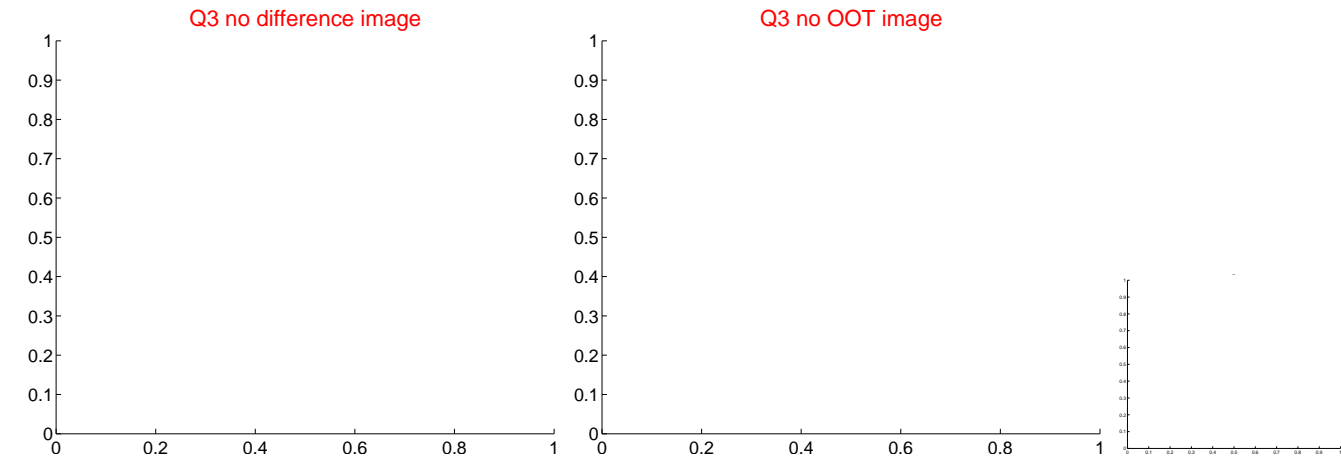
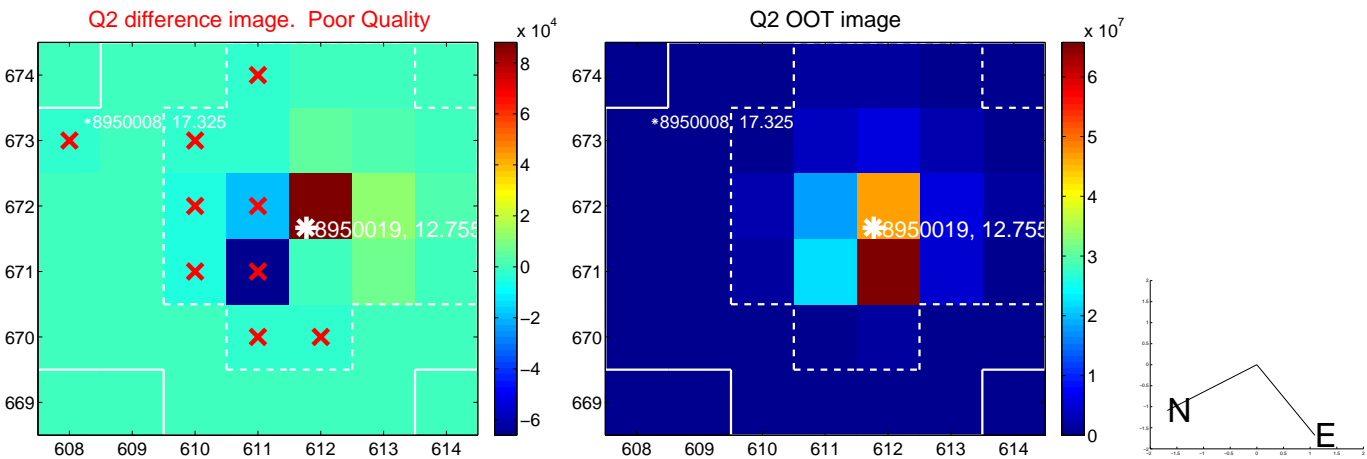
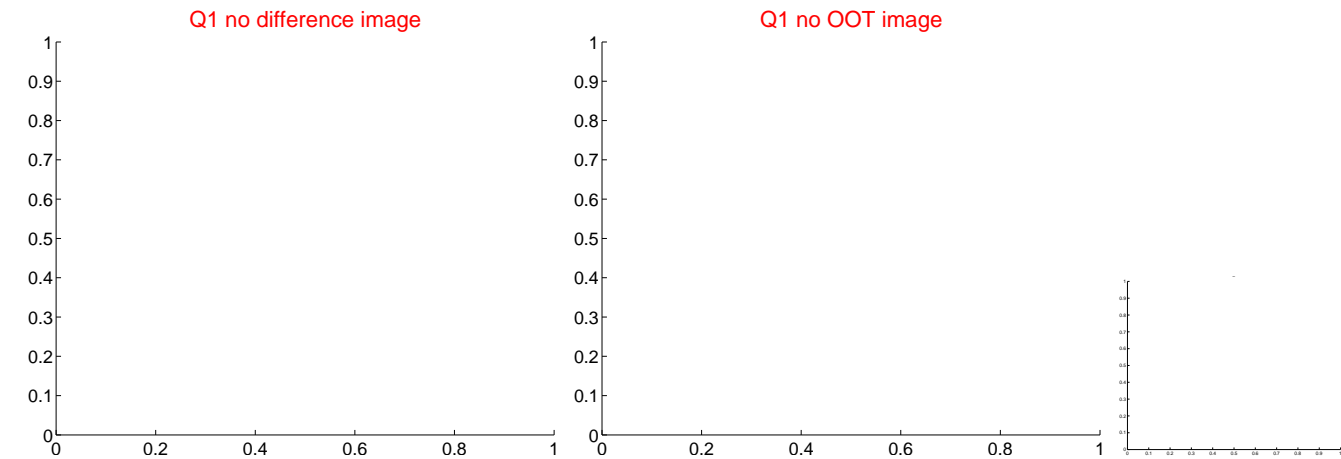
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.667 ± 1.004 | 0.66 | 0.619 ± 0.933 | -0.248 ± 1.364 |
| PRF-fit source offset from KIC position | 0.728 ± 0.941 | 0.77 | 0.712 ± 0.917 | -0.152 ± 1.360 |
| photometric centroid source offset | 1.13 ± 0.78 | 1.45 | 0.02 ± 0.86 | 1.13 ± 0.78 |

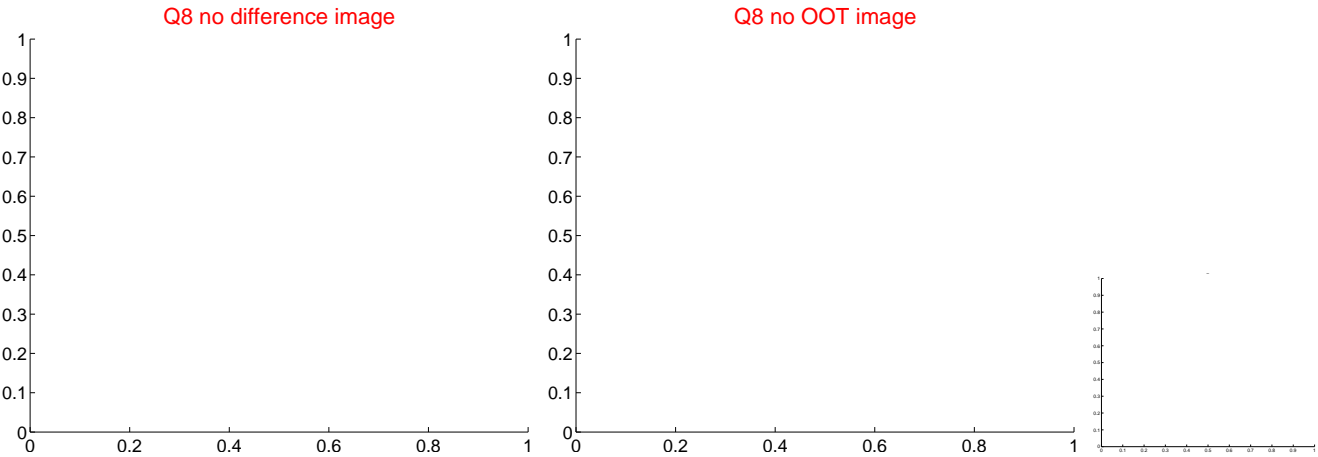
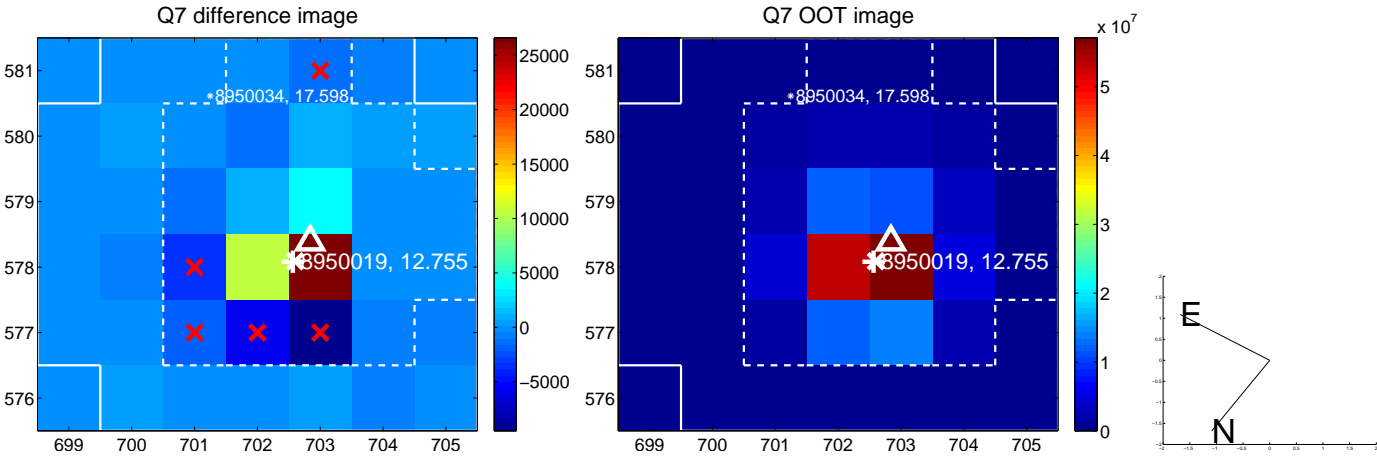
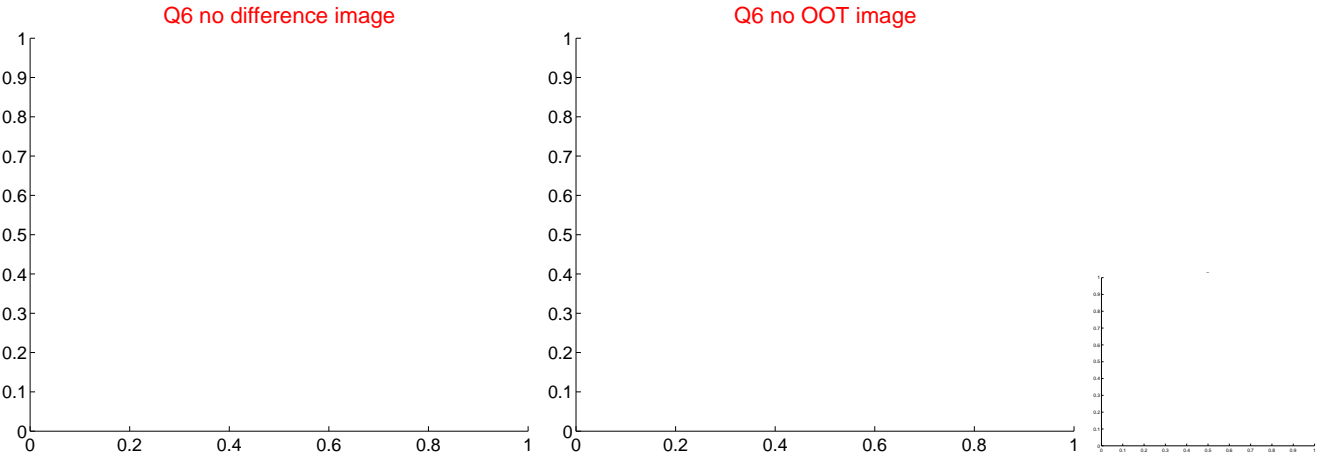
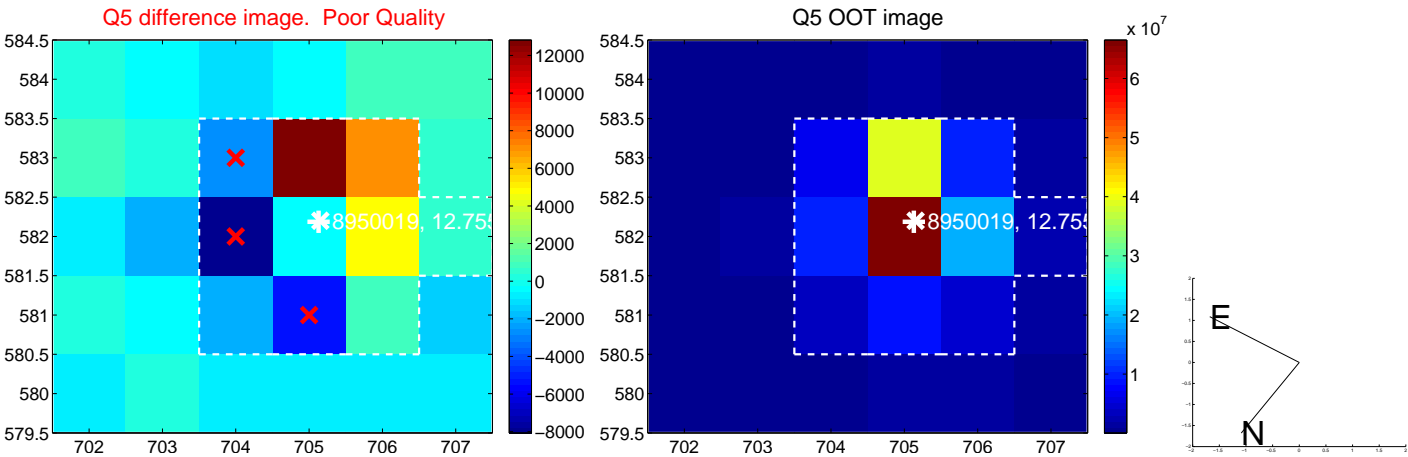


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

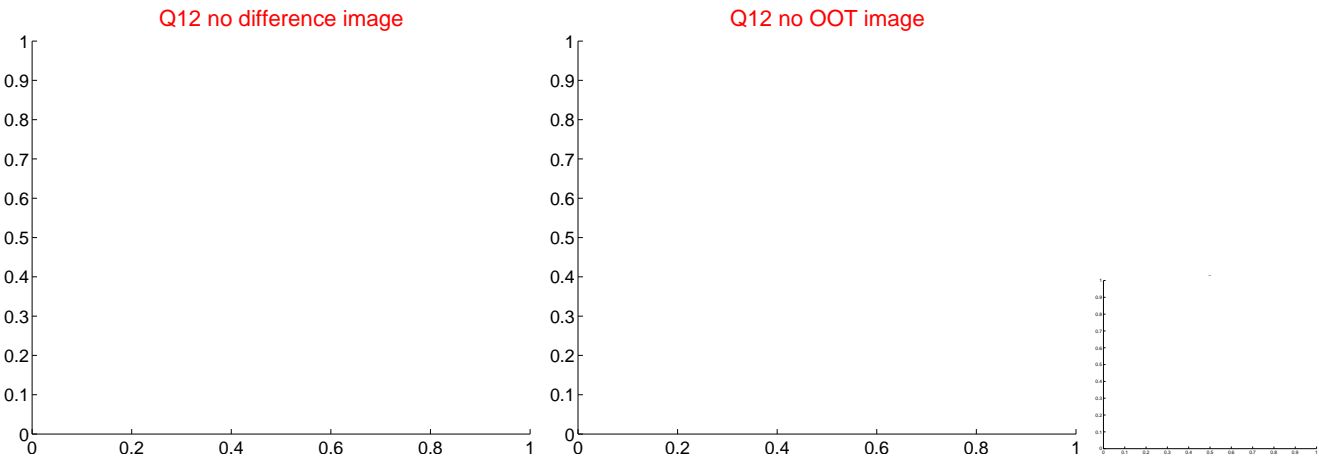
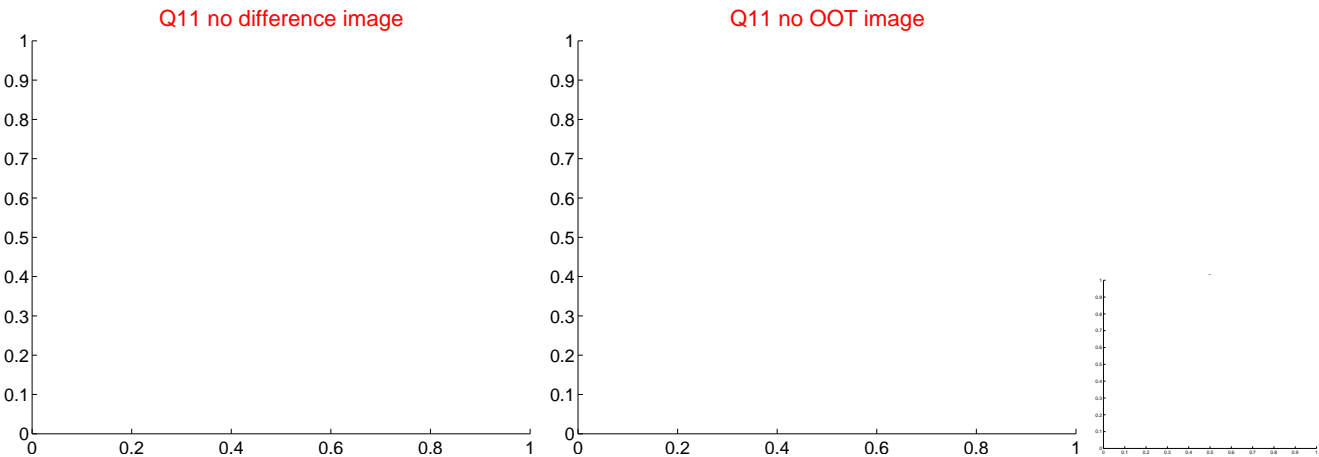
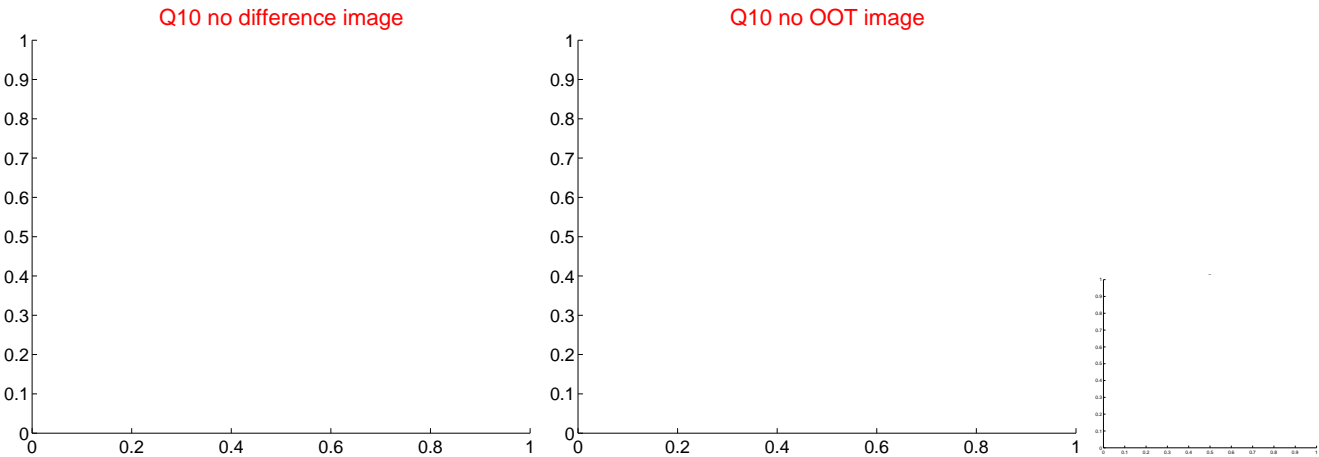
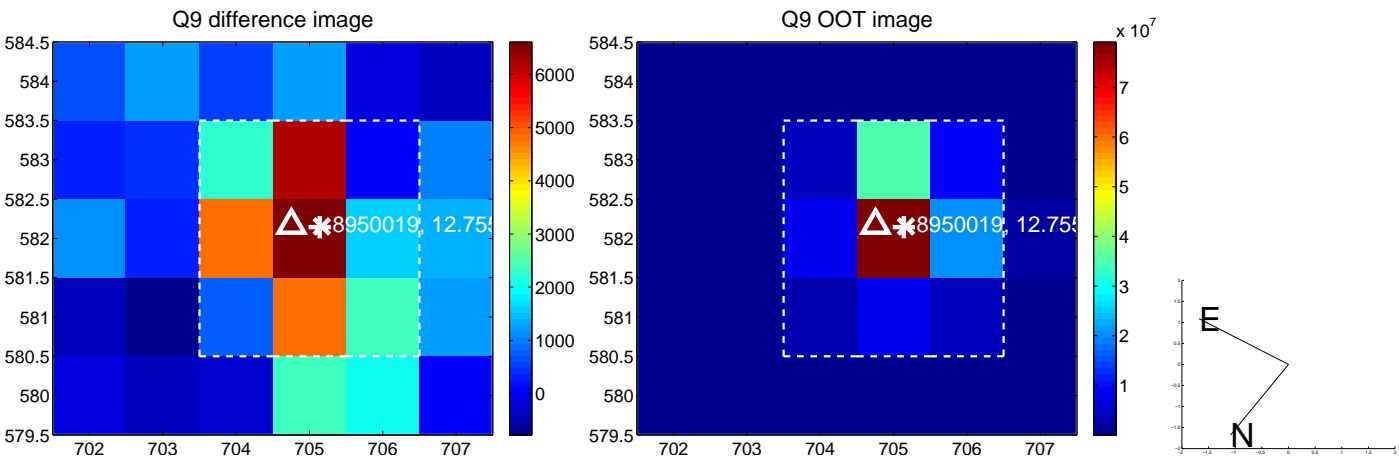
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

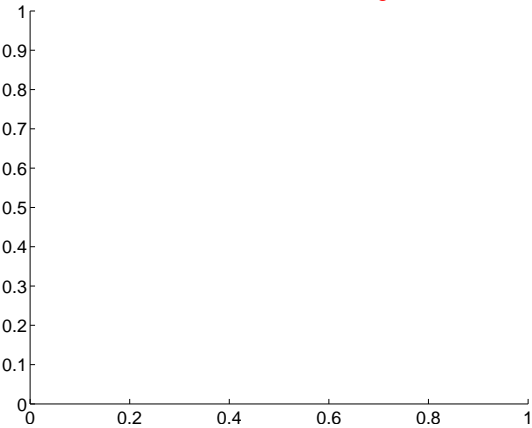


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

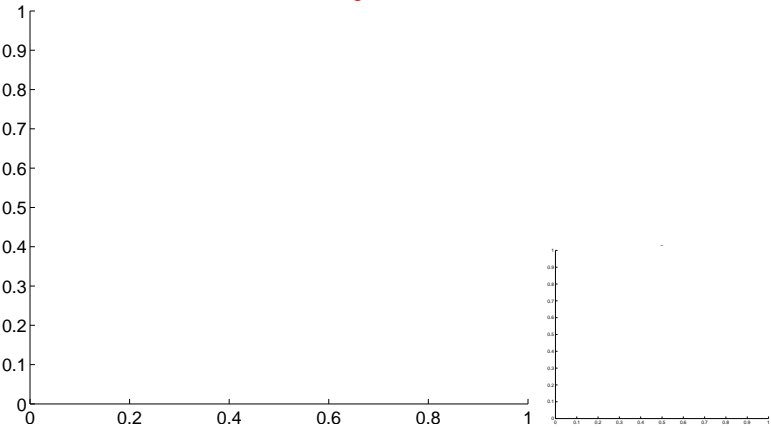


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

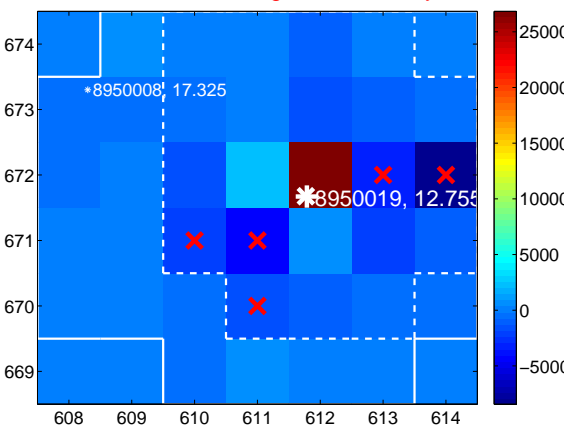
Q13 no difference image



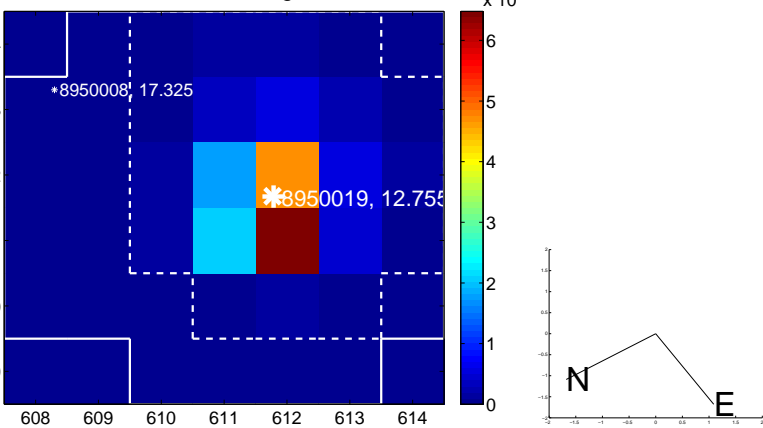
Q13 no OOT image



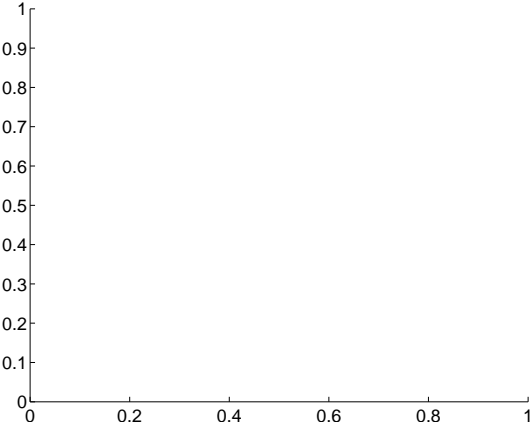
Q14 difference image. Poor Quality



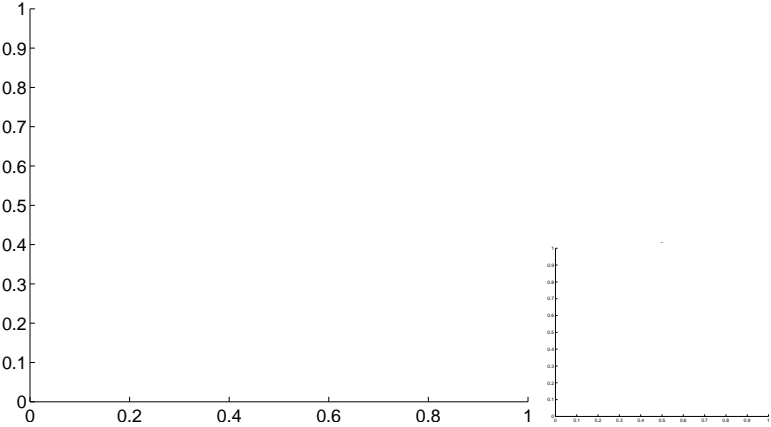
Q14 OOT image



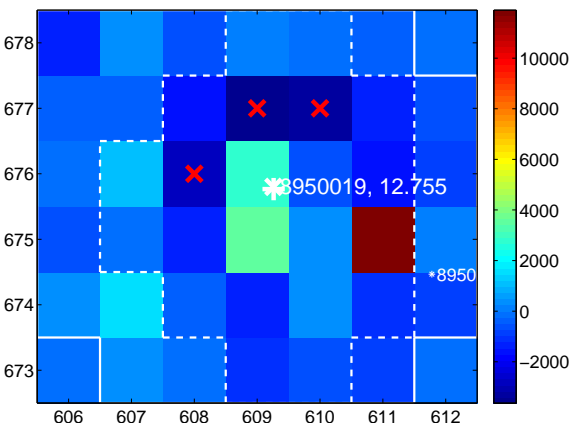
Q15 no difference image



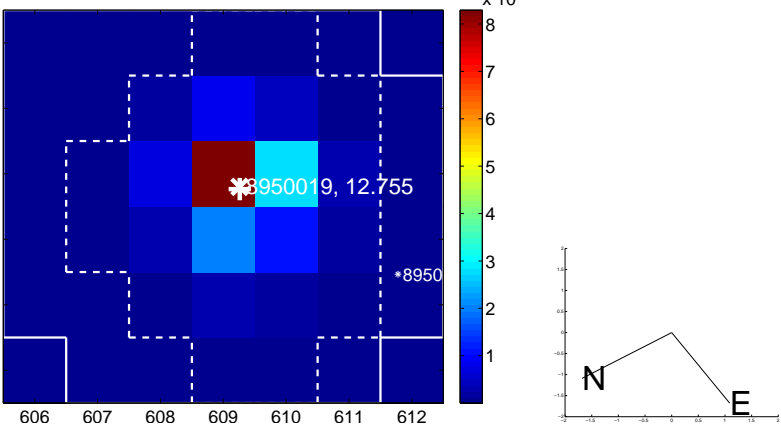
Q15 no OOT image



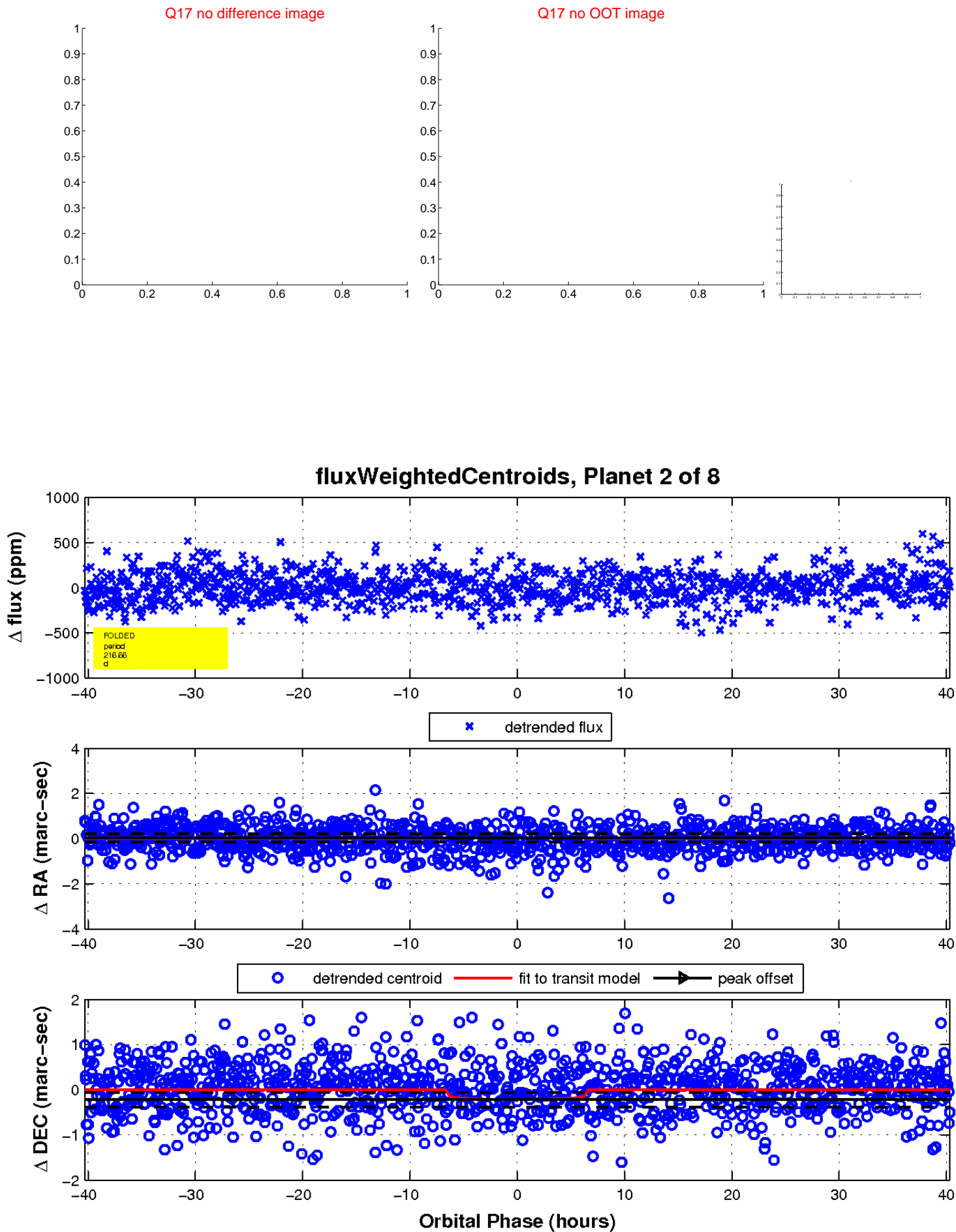
Q16 difference image. Poor Quality



Q16 OOT image

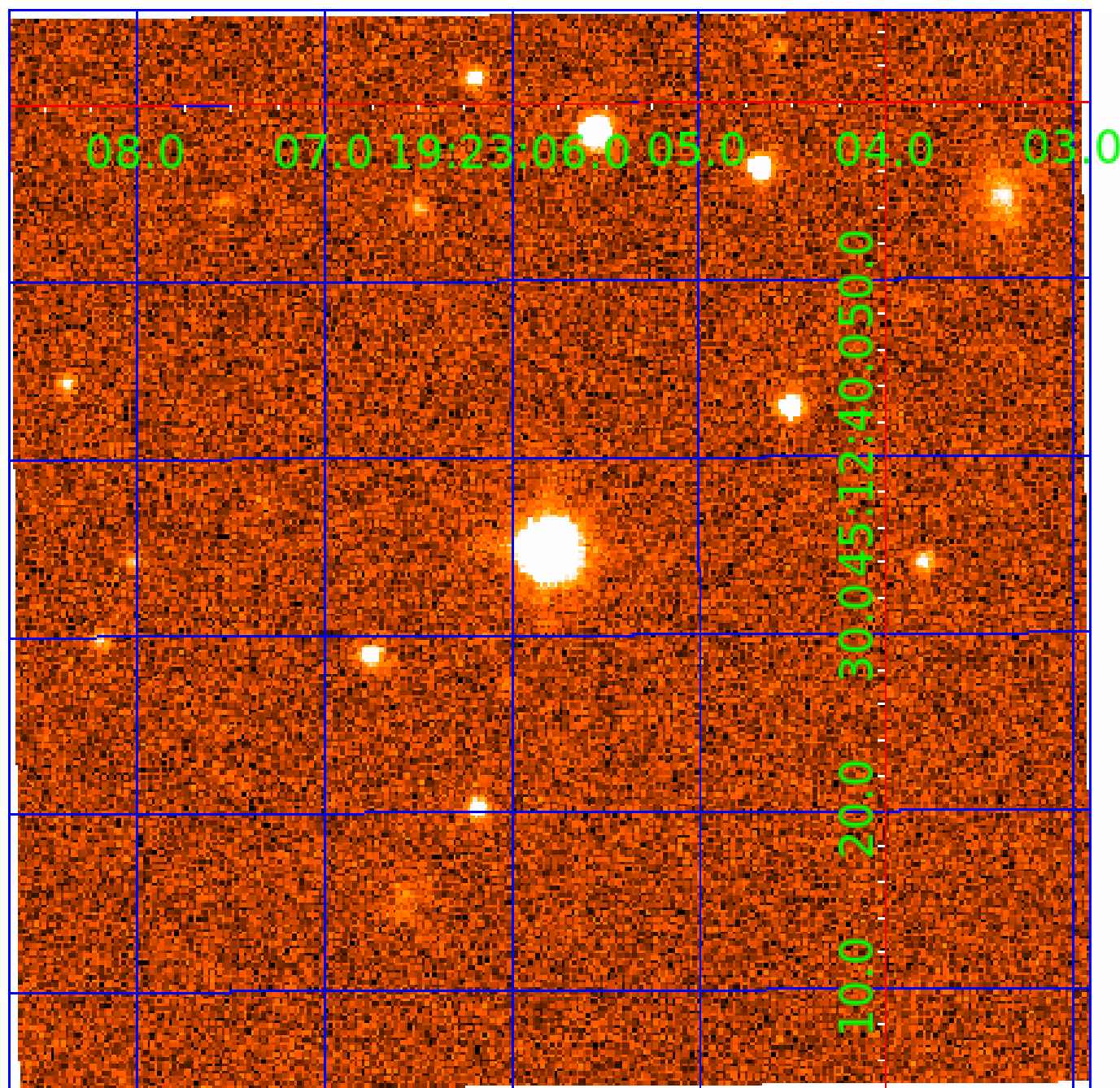


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008950019

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008950019-01 | OBS | No | 1.537285 | 132.501062 | 10.3 | 8.039 | 8.8 | 5.0 | 2.51 | 6654 | 0.87 | 13523.98 |
| 008950019-02 | OBS | No | 216.662839 | 250.644951 | 208.8 | 13.436 | 11.7 | 7.1 | 2.51 | 6654 | 3.94 | 18.44 |
| 008950019-03 | OBS | No | 86.440129 | 133.552210 | 128.7 | 18.788 | 9.3 | 7.7 | 2.51 | 6654 | 3.07 | 62.78 |
| 008950019-04 | OBS | No | 241.801135 | 231.066036 | 207.2 | 9.229 | 9.0 | 7.8 | 2.51 | 6654 | 3.97 | 15.93 |
| 008950019-05 | OBS | No | 298.278515 | 154.764534 | 169.5 | 6.974 | 8.1 | 7.6 | 2.51 | 6654 | 3.57 | 12.04 |
| 008950019-06 | OBS | No | 73.239558 | 179.518514 | 146.3 | 6.324 | 8.1 | 7.8 | 2.51 | 6654 | 3.37 | 78.30 |
| 008950019-07 | OBS | No | 134.974599 | 213.093193 | 212.9 | 3.437 | 7.6 | 8.5 | 2.51 | 6654 | 4.35 | 34.66 |
| 008950019-08 | OBS | No | 80.377986 | 144.503332 | 146.7 | 6.000 | 7.5 | -1.0 | 2.51 | 6654 | 3.06 | 69.17 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008950019-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 008950019-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008950019-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS—HALO_GHOST |
| 008950019-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS |
| 008950019-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008950019-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008950019-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 008950019-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_NOFITS |

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

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

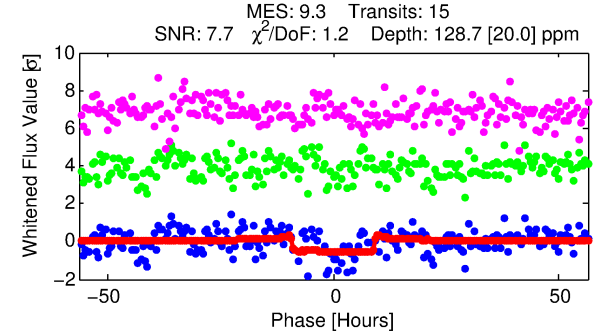
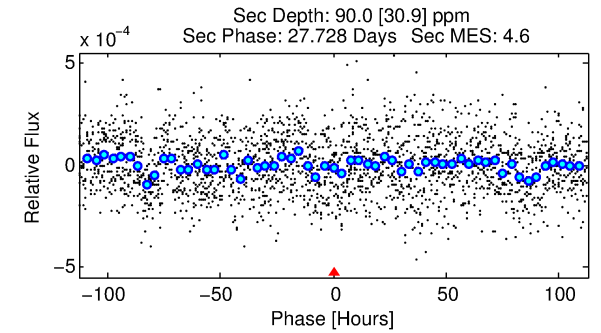
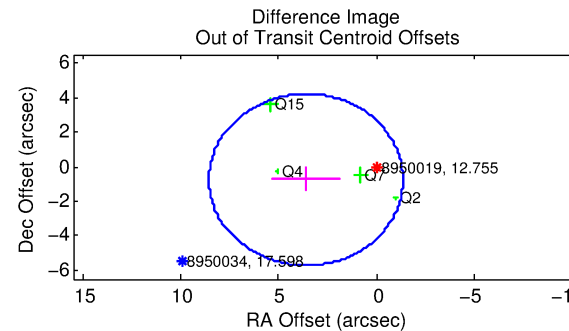
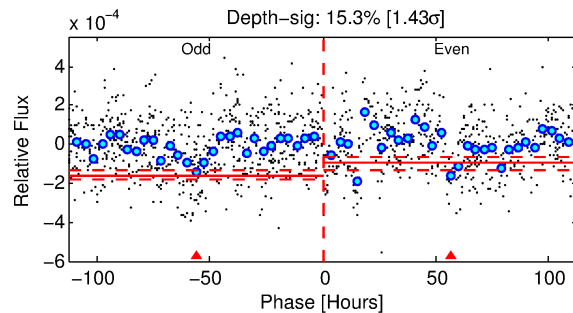
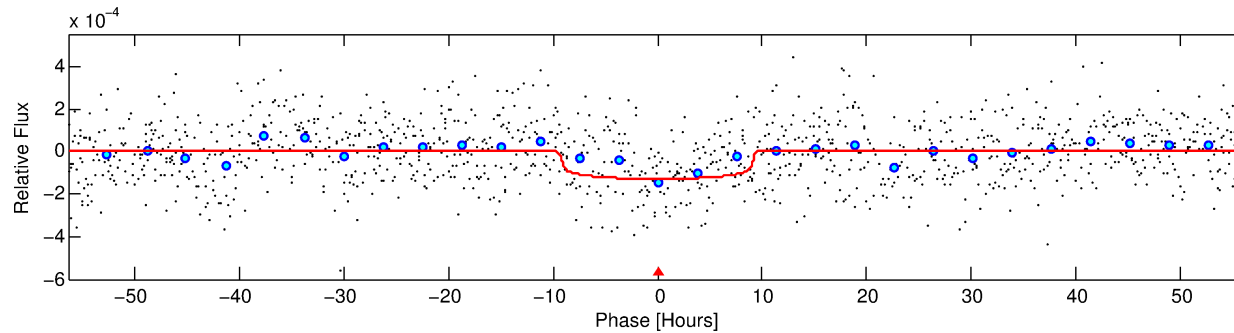
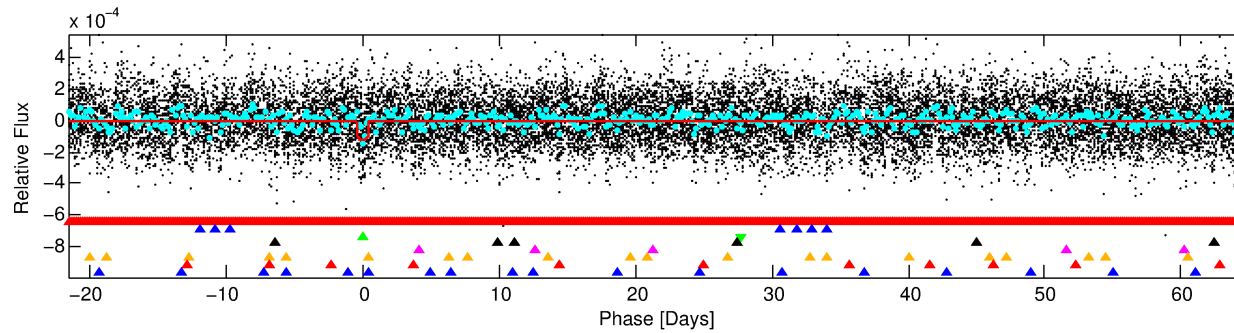
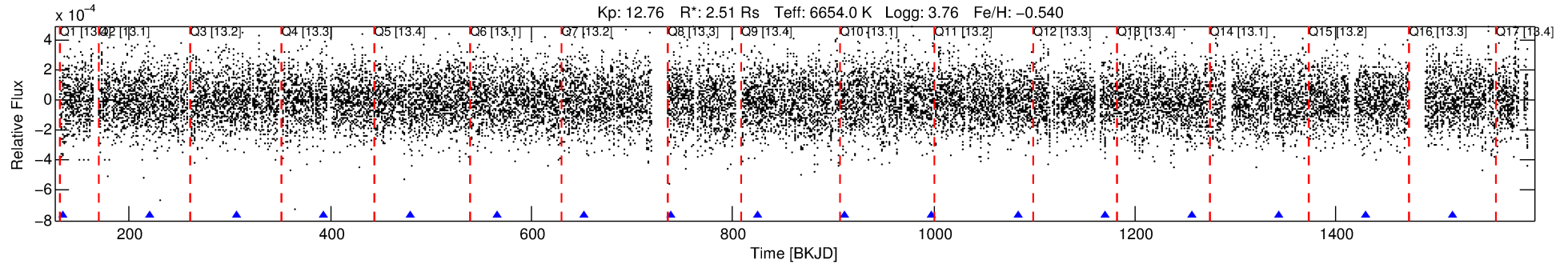
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008950019-03

No Significant Match Found

DV One-Page Summary

KIC: 8950019 Candidate: 3 of 8 Period: 86.440 d



DV Fit Results:

Period = 86.44013 [0.00197] d
Epoch = 133.5522 [0.0196] BKJD
Rp/R* = 0.0112 [0.0026]
a/R* = 24.52 [29.14]
b = 0.73 [0.76]
Seff = 62.78 [36.80]
Teq = 718 [105] K
Rp = 3.07 [1.35] Re
a = 0.4195 [0.1509] AU
Ag = 923.30 [748.04] [1.23 σ]
Teffp = 6117 [895] K [5.99 σ]

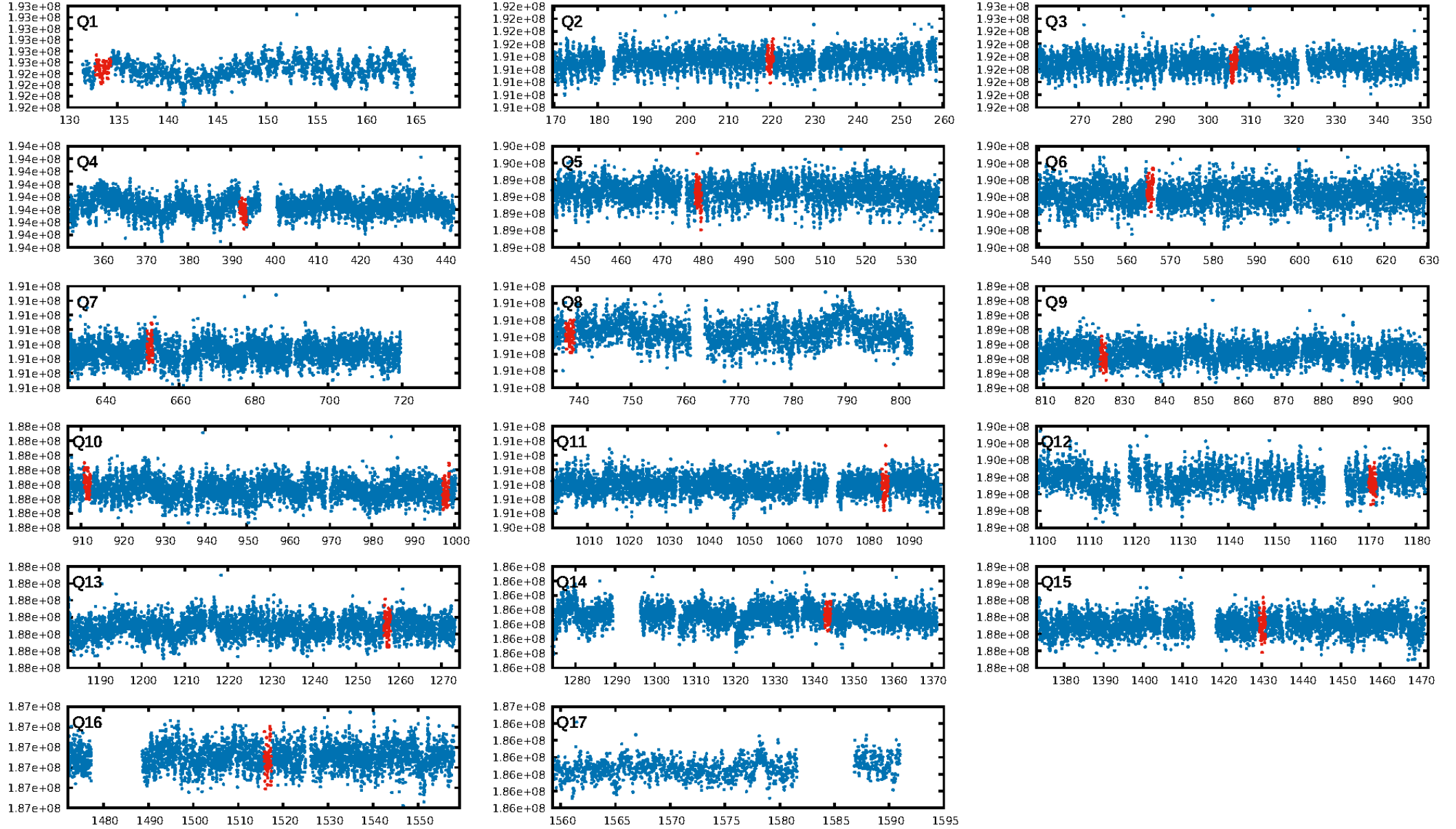
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.38 σ]
LongPeriod-sig: 100.0% [60.99 σ]
ModelChiSquare2-sig: 3.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [14/14]
GhostDiagnostic-chr: -0.2241
Centroid-sig: 6.8%
Centroid-so: 0.973 arcsec [1.54 σ]
OotOffset-rm: 3.680 arcsec [2.23 σ]
KicOffset-rm: 3.780 arcsec [2.25 σ]
OotOffset-st: 1/2/1/0 [4]
KicOffset-st: 1/2/1/0 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 0.00 [0/13]

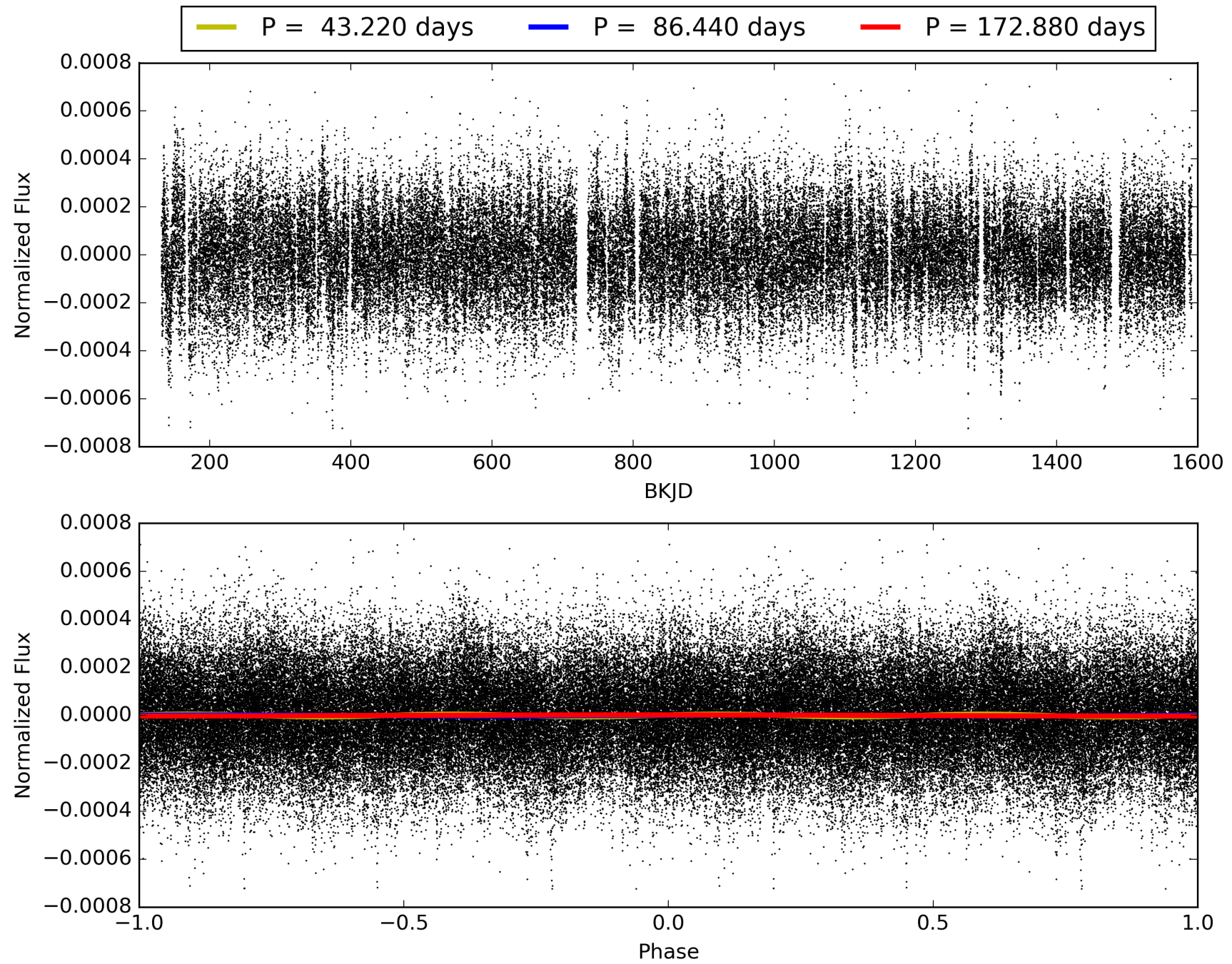
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:41:53 Z

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

TCE 008950019-03, PDC Light Curves

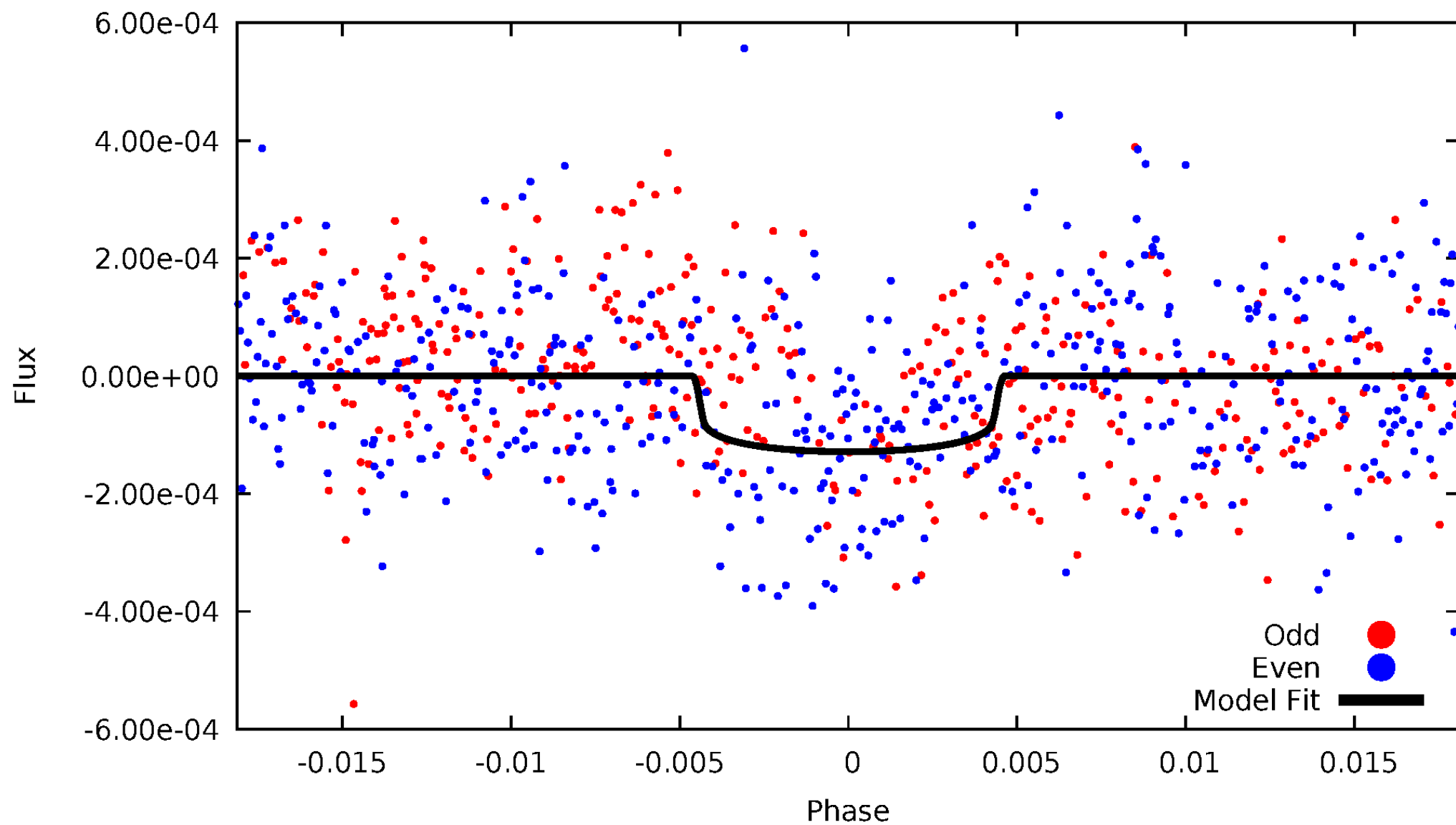


TCE 008950019-03



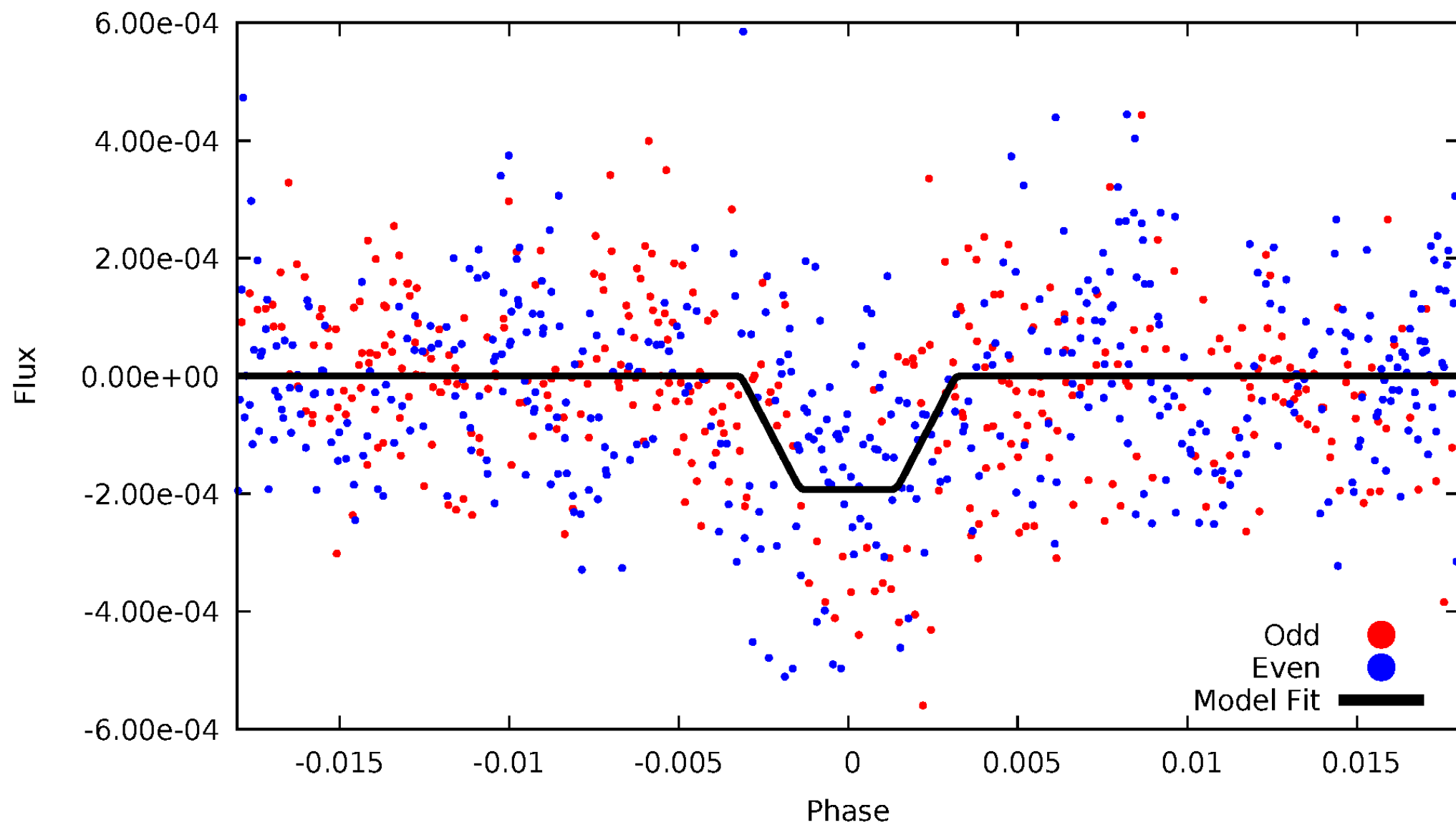
DV Odd/Even

TCE 008950019-03

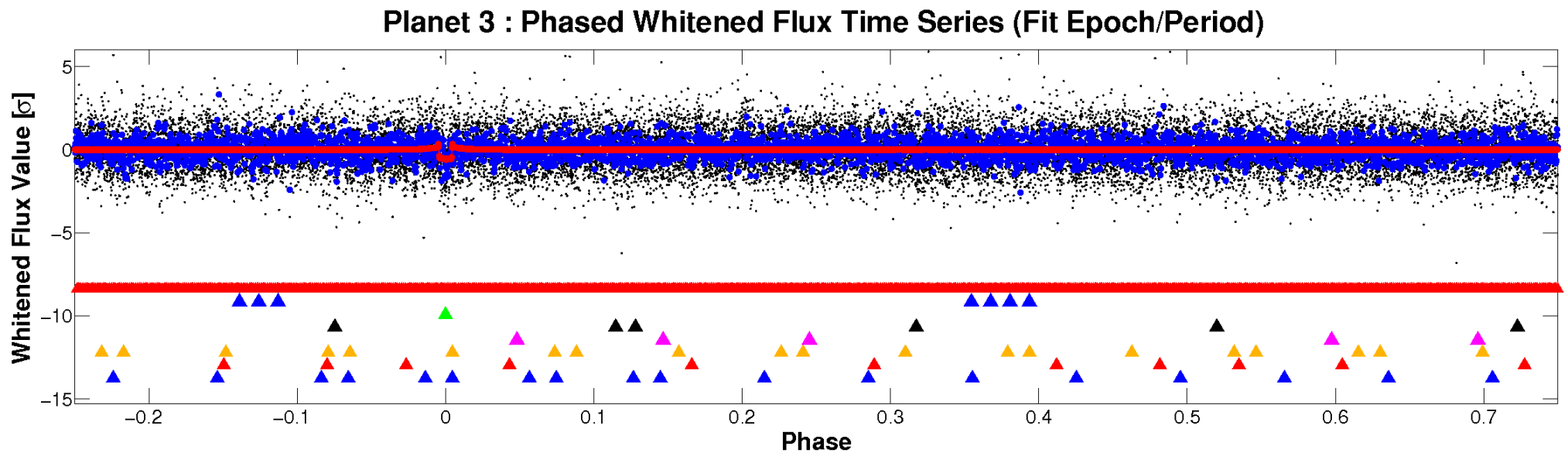
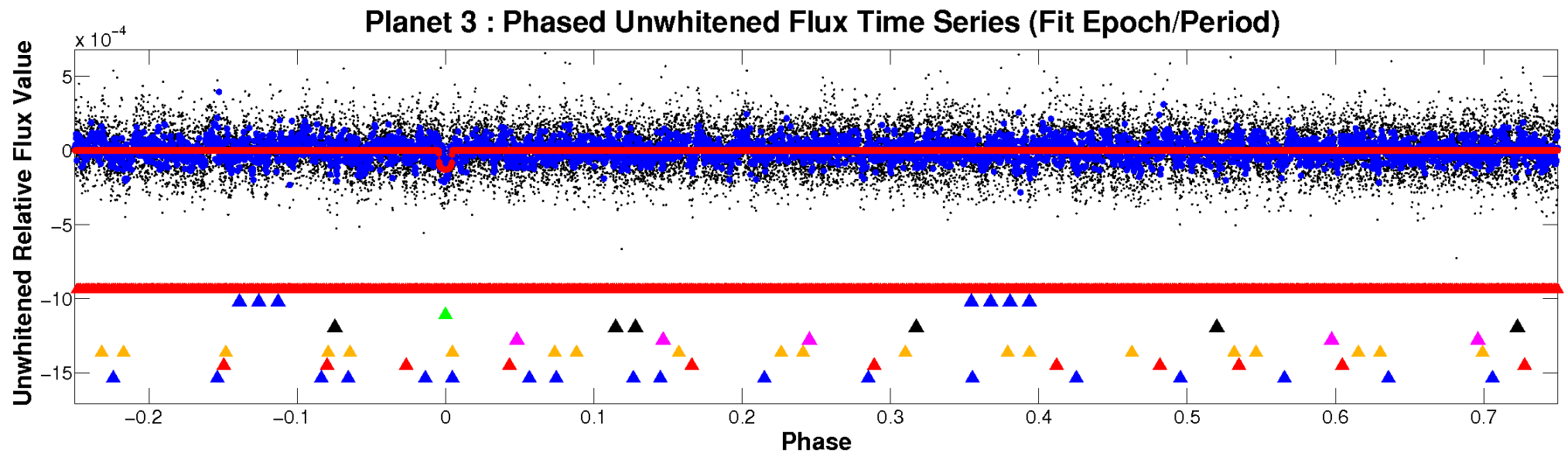


ALT Odd/Even

TCE 008950019-03

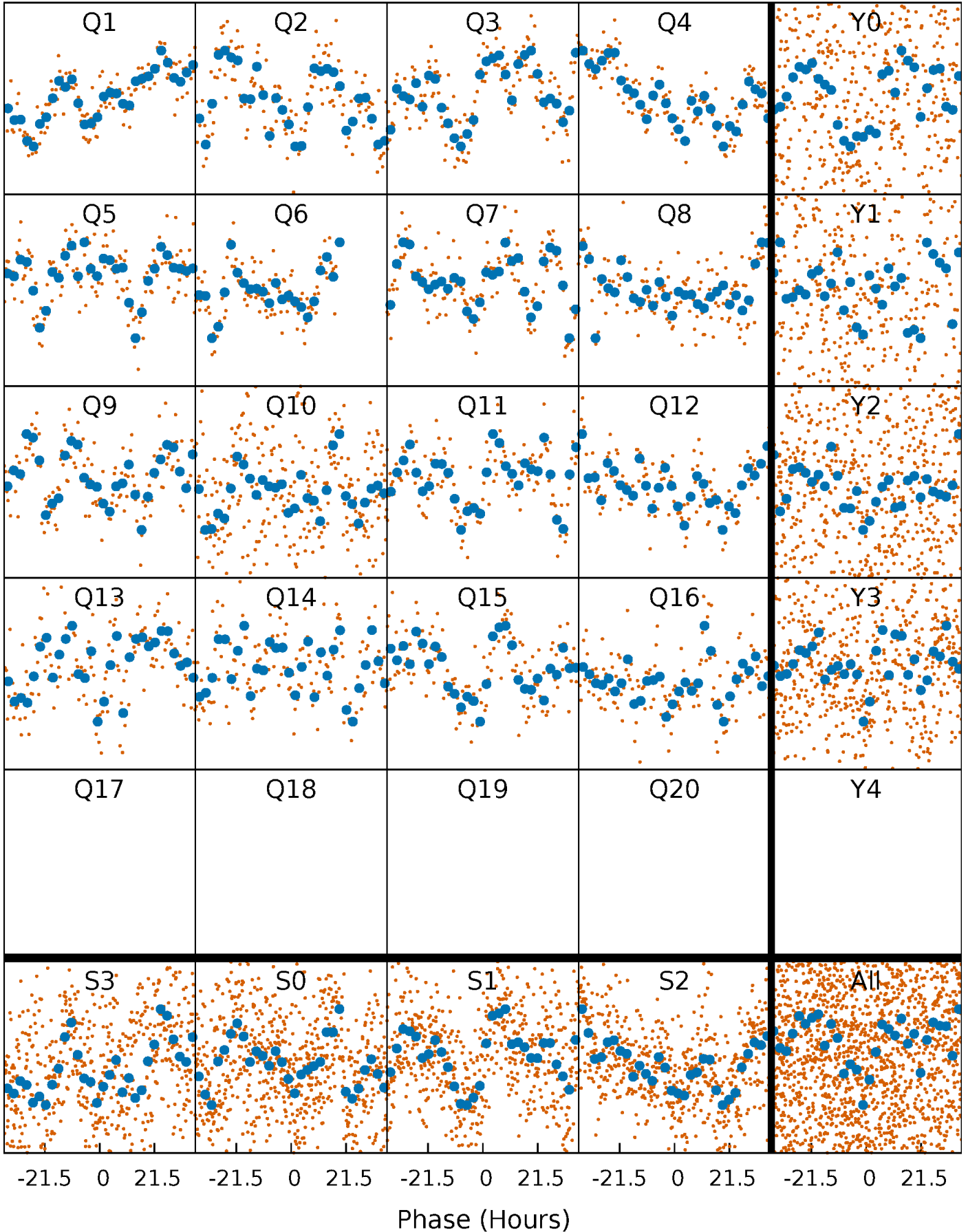


Non-Whitened Vs. Whitened Light Curve



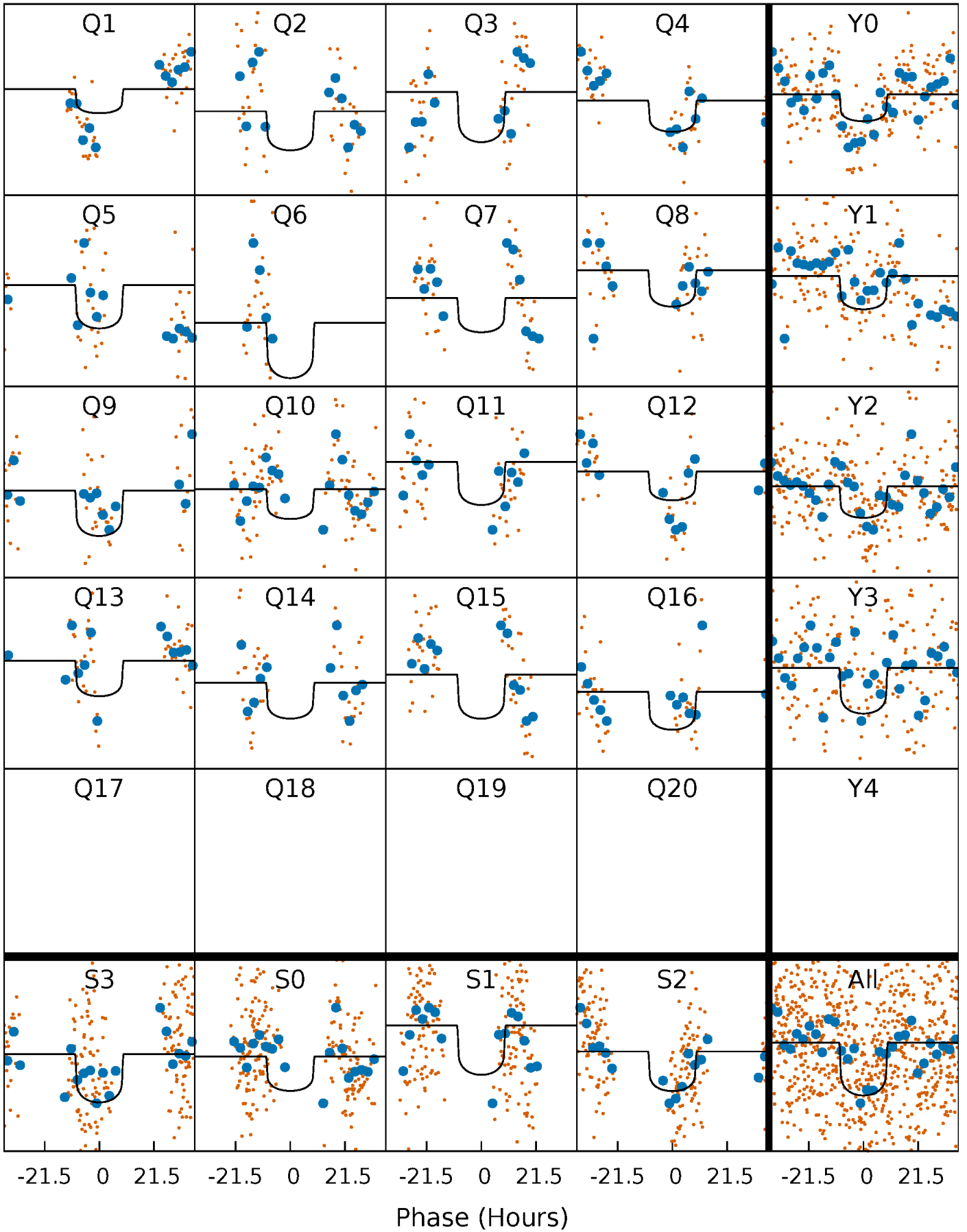
PDC Quarter-Phased Transit Curves

TCE 008950019-03 P= 86.440129 Days $T_0=133.552210$ (BKJD)



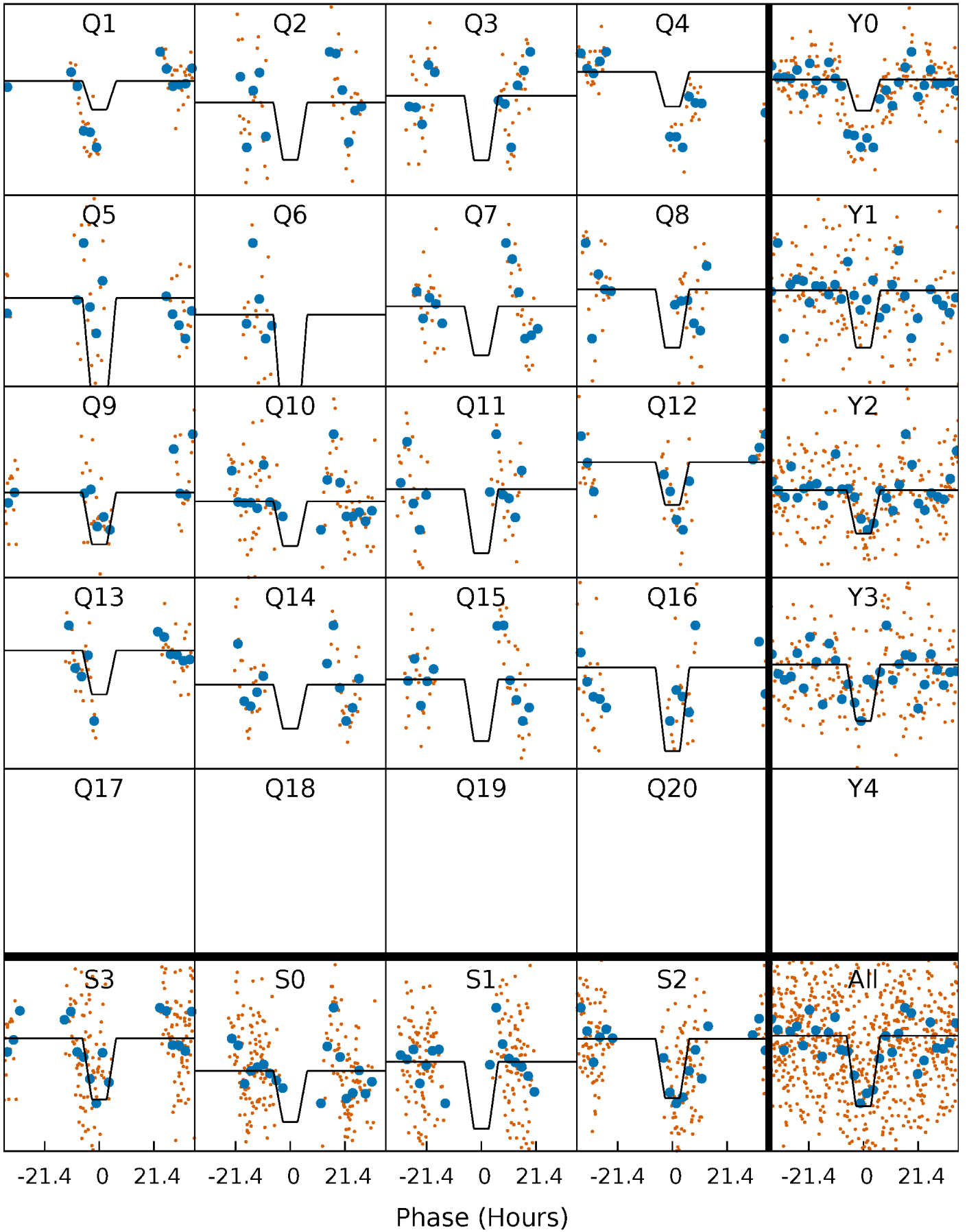
DV Quarter-Phased Transit Curves

TCE 008950019-03 P= 86.440129 Days $T_0=133.552210$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

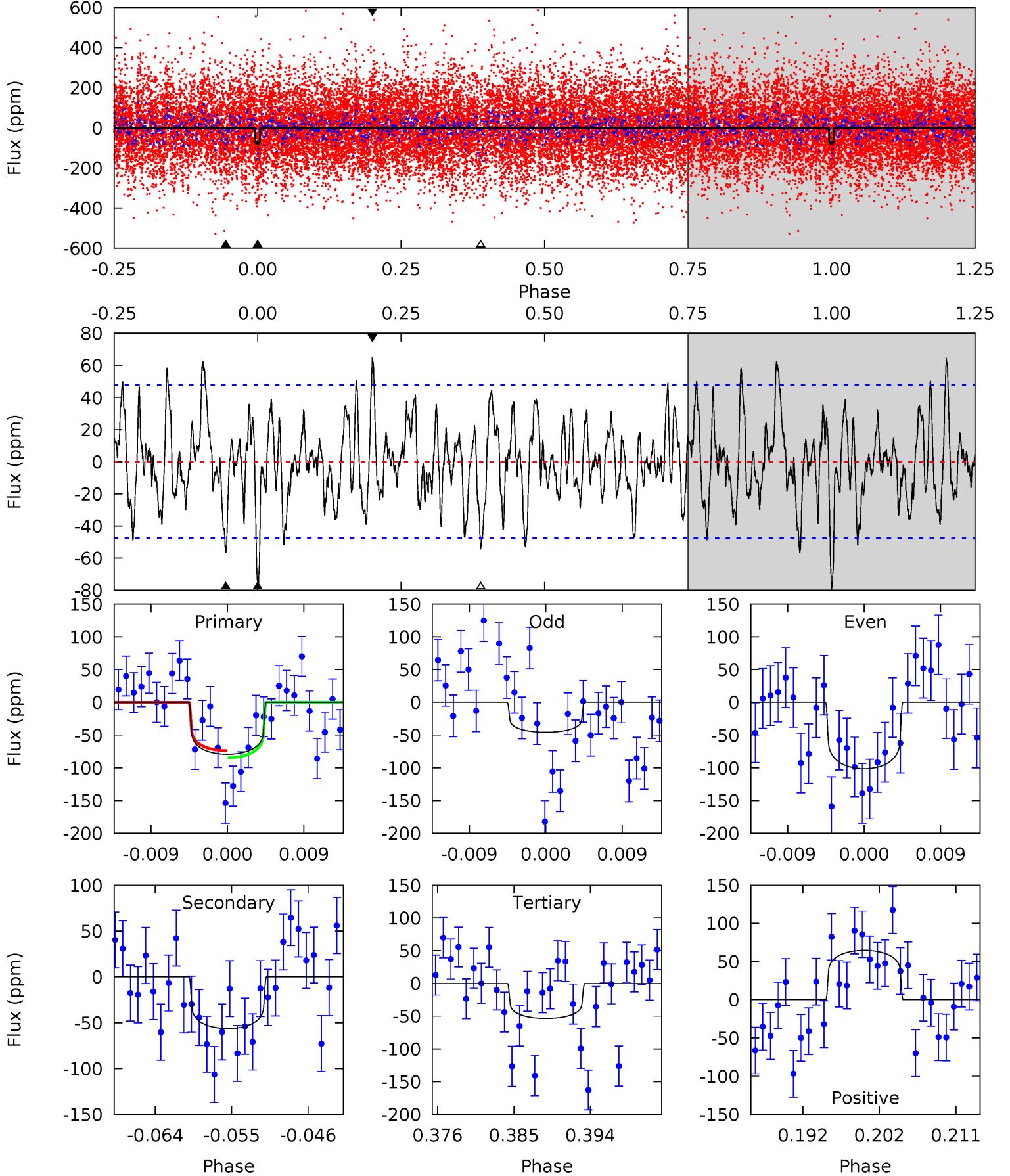
TCE 008950019-03 P= 86.445109 Days $T_0=133.533784$ (BKJD)



DV Model-Shift Uniqueness Test

008950019-03, P = 86.440129 Days, E = 47.112081 Days

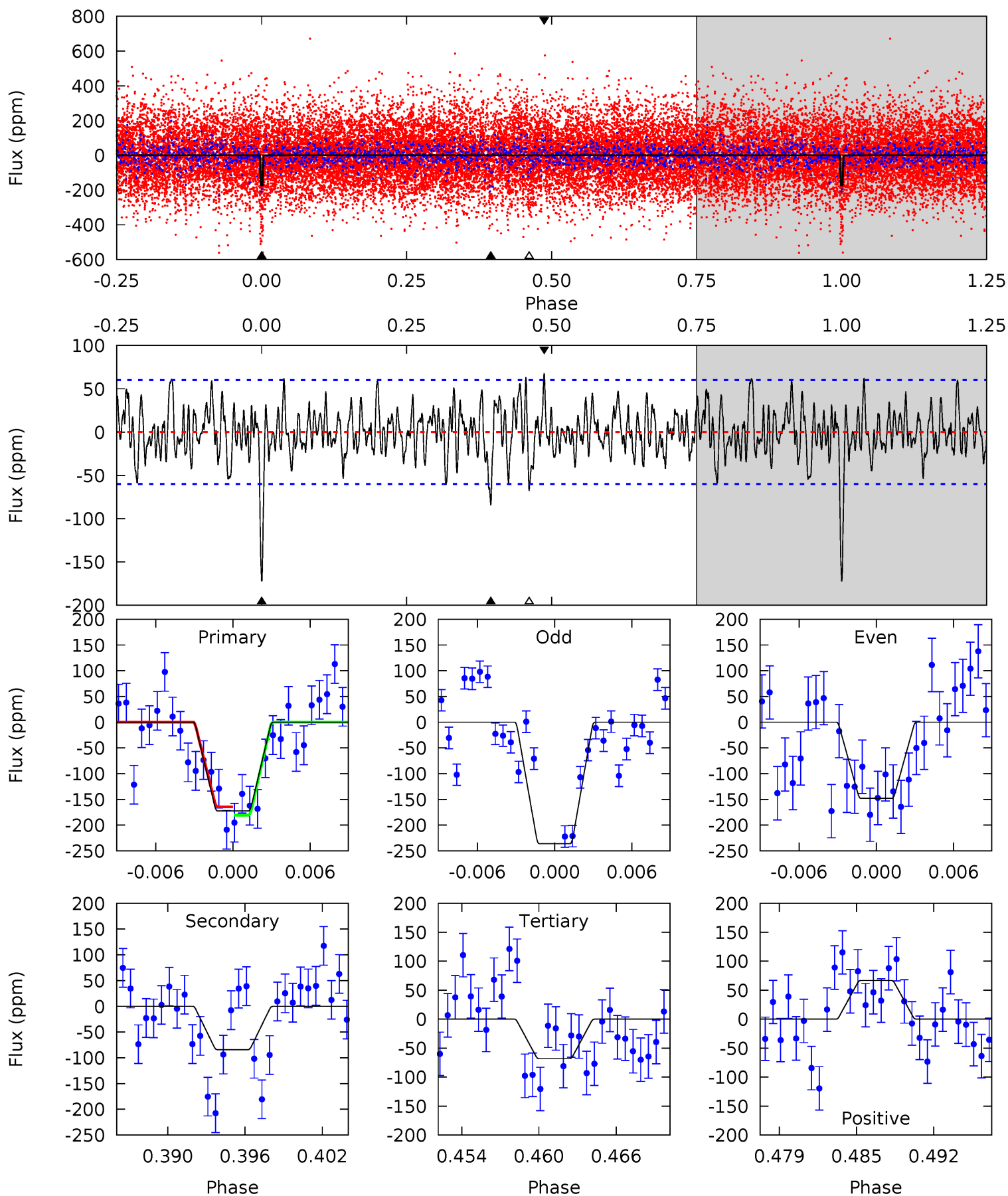
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.38 | 5.96 | 5.67 | 6.83 | 5.04 | 2.61 | 2.26 | 2.72 | 1.55 | 0.29 | -0.88 | 2.90 | 0.98 | 0.45 | 0.58 |



Alt Model-Shift Uniqueness Test

008950019-03, P = 86.445109 Days, E = 47.088675 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.7 | 7.15 | 5.78 | 5.68 | 5.11 | 2.73 | 1.93 | 8.89 | 8.99 | 1.37 | 1.47 | 3.56 | 1.56 | 0.28 | 0.68 |



Stellar Parameters For KIC 008950019

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6654^{+182}_{-202} | $3.759^{+0.336}_{-0.084}$ | $-0.540^{+0.350}_{-0.300}$ | $2.508^{+0.404}_{-0.943}$ | $1.317^{+0.222}_{-0.246}$ | $0.118^{+0.286}_{-0.031}$ |
| | +3%/-3% | +9%/-2% | +65%/-56% | +16%/-38% | +17%/-19% | +244%/-26% |
| 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 008950019-03 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|--------------|------------------------|-------------------|----------------------|---------------------|
| DV | -56 ± 9 | $2.85^{+0.91}_{-0.74}$ | 981^{+57}_{-93} | 5437^{+787}_{-524} | 664^{+569}_{-271} |
| Alt. | -84 ± 12 | $3.59^{+0.94}_{-0.97}$ | 977^{+63}_{-98} | 5400^{+634}_{-461} | 645^{+519}_{-242} |

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

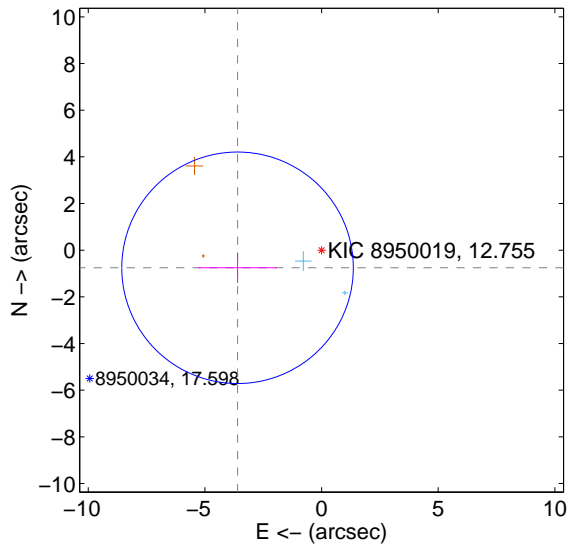
Supplemental centroid analysis for 008950019-03. Kepler magnitude: 12.76. Transit SNR 7.69

There are 2 quarters with good PRF difference image offsets

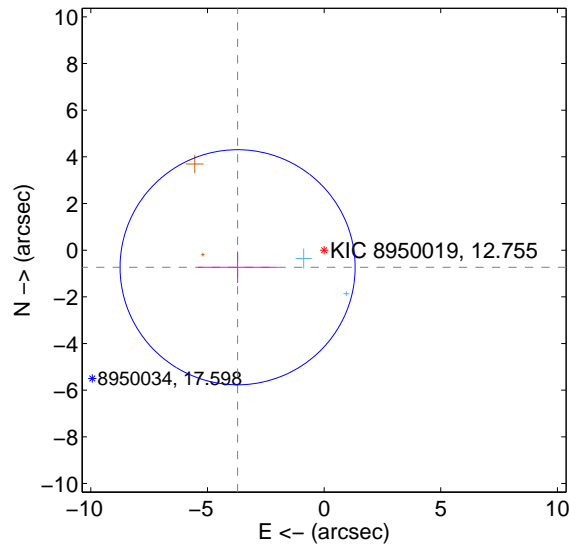
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 3.680 ± 1.654 | 2.23 | 3.602 ± 1.684 | -0.755 ± 0.653 |
| PRF-fit source offset from KIC position | 3.780 ± 1.679 | 2.25 | 3.708 ± 1.706 | -0.732 ± 0.679 |
| photometric centroid source offset | 0.97 ± 0.63 | 1.54 | 0.65 ± 0.69 | 0.73 ± 0.58 |

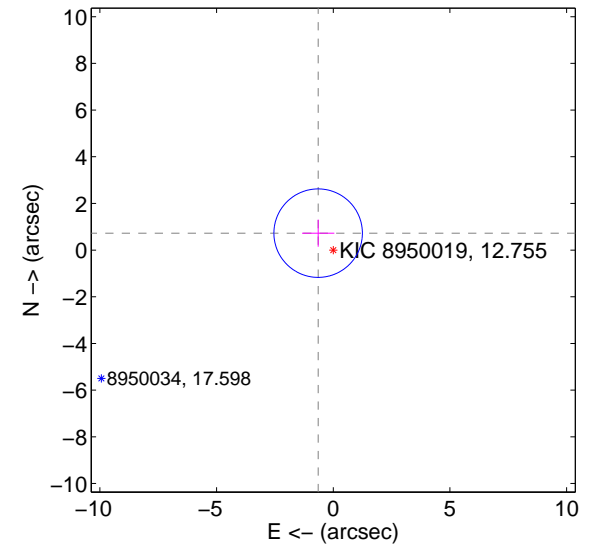
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

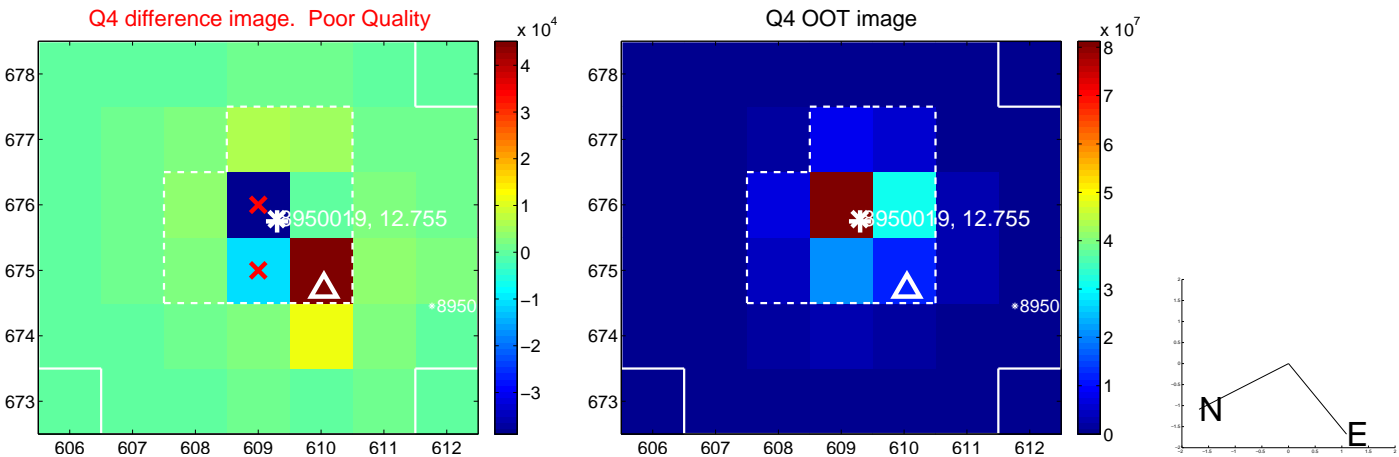
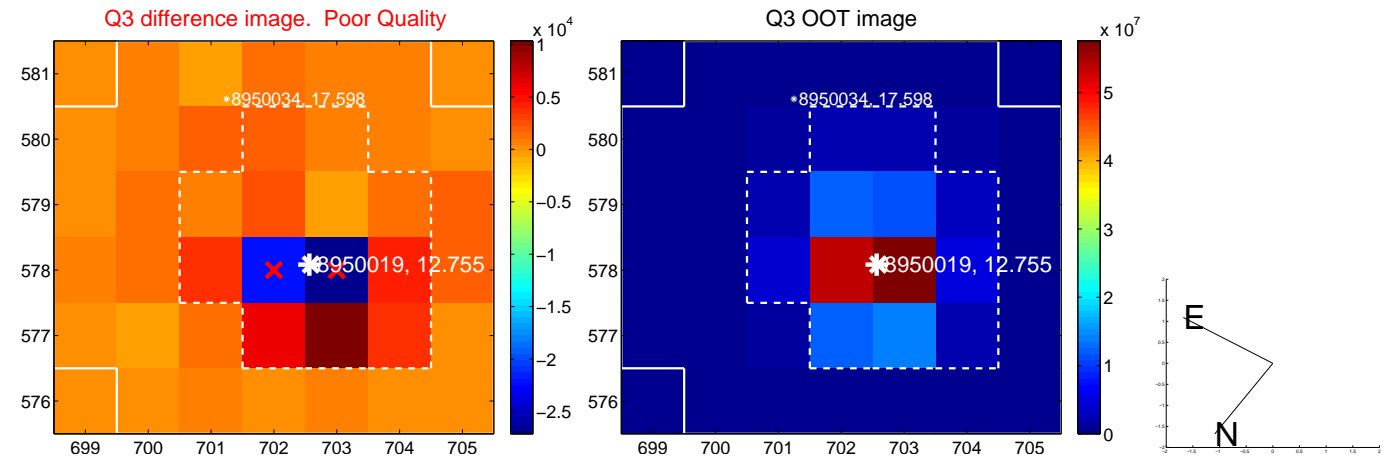
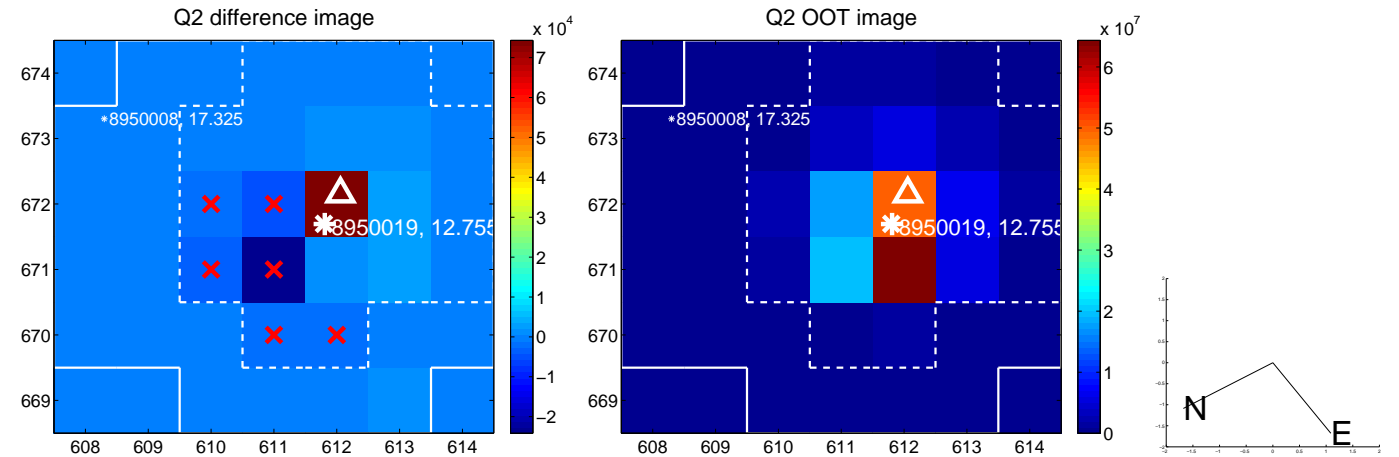
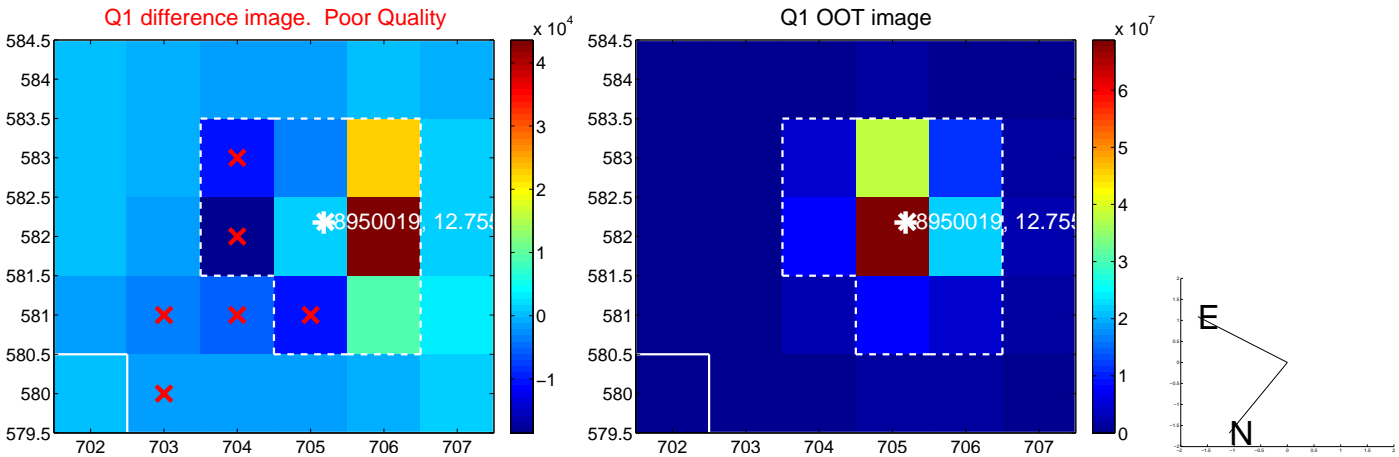


offset from photometric centroids

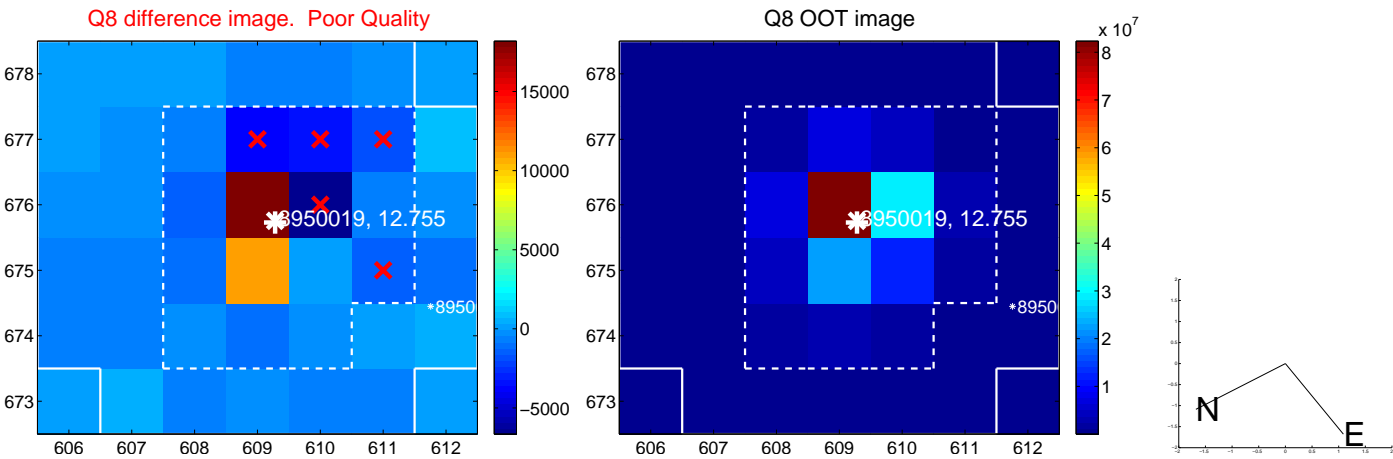
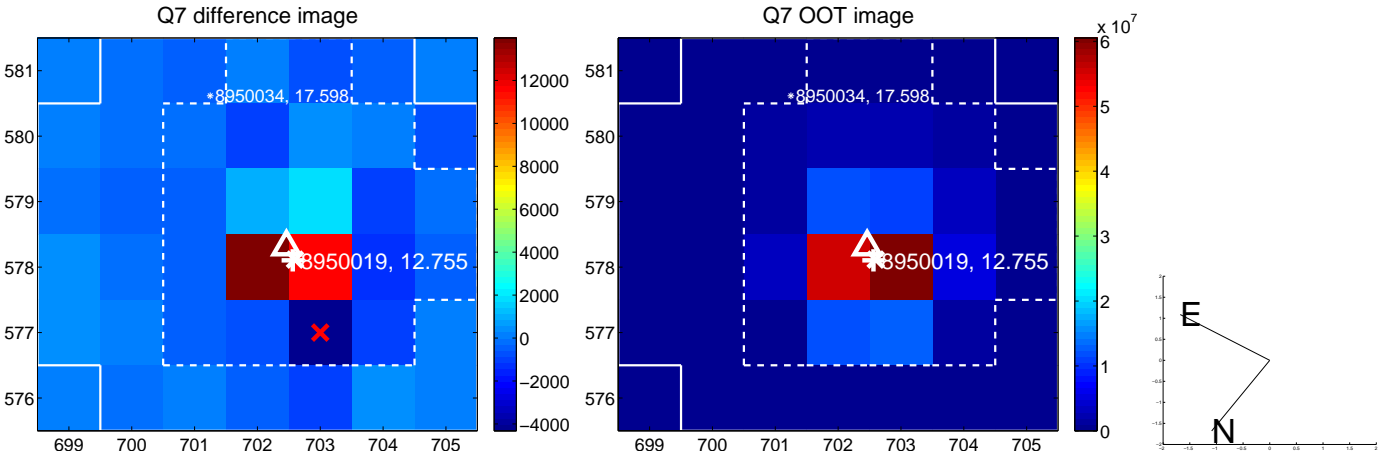
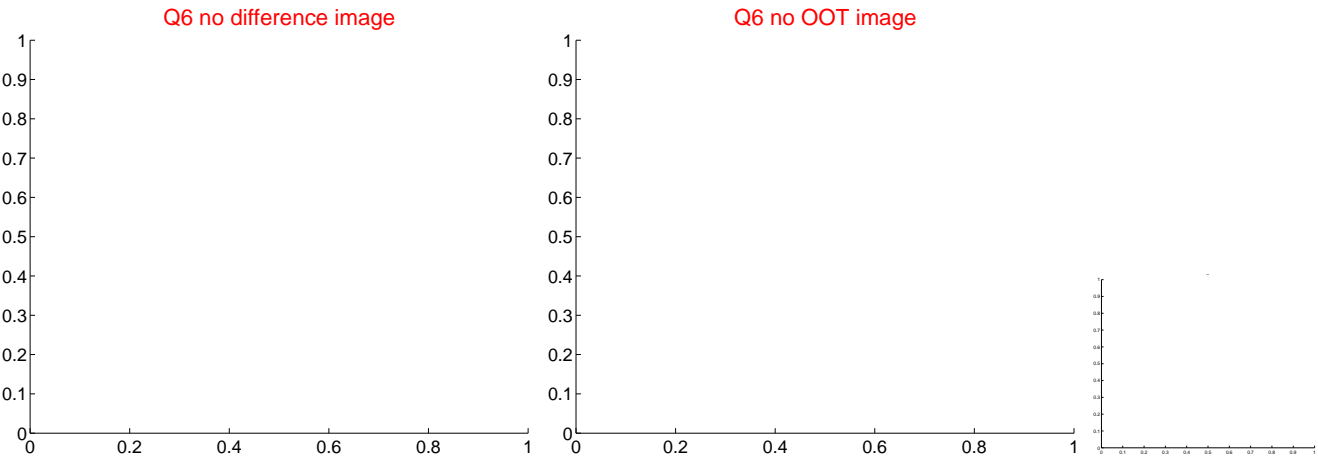
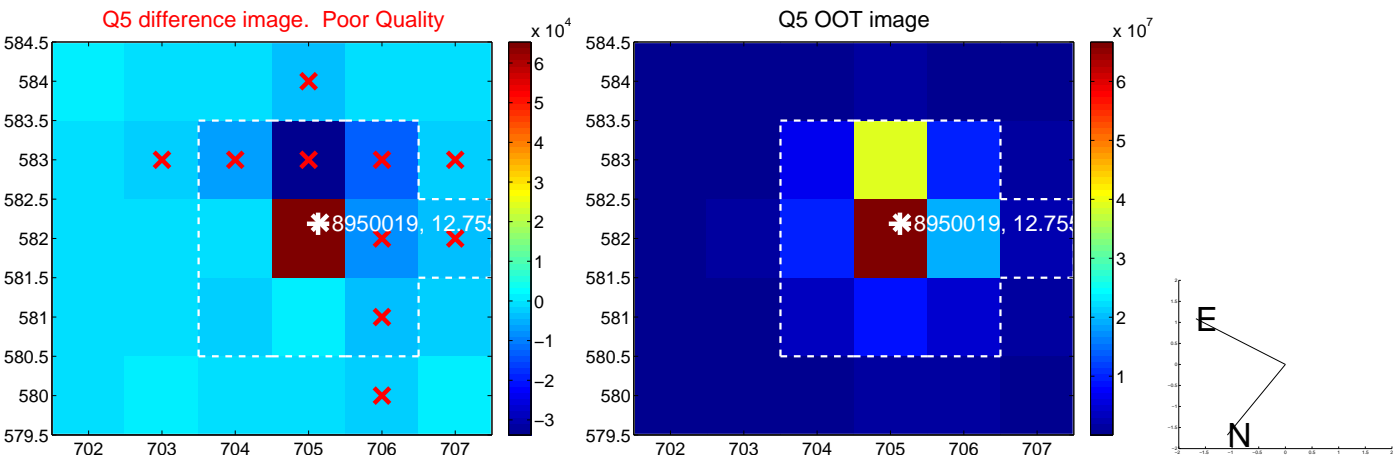


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

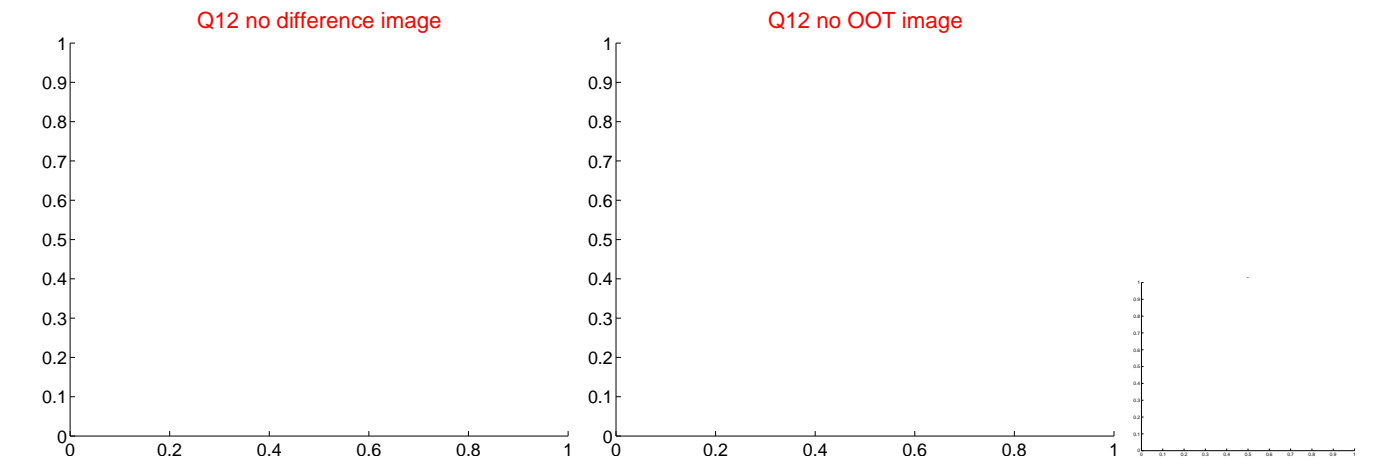
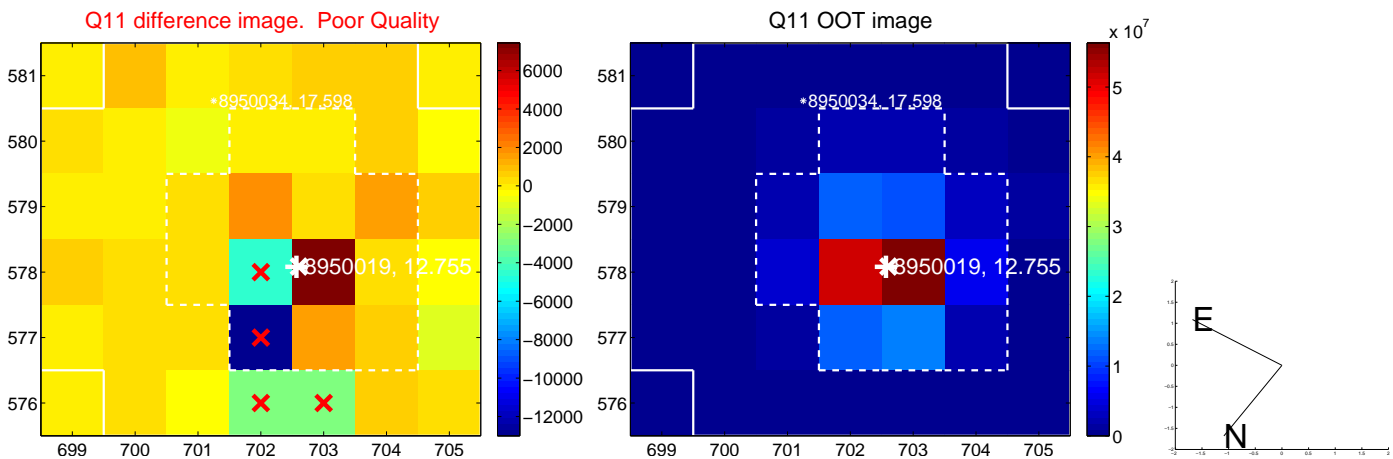
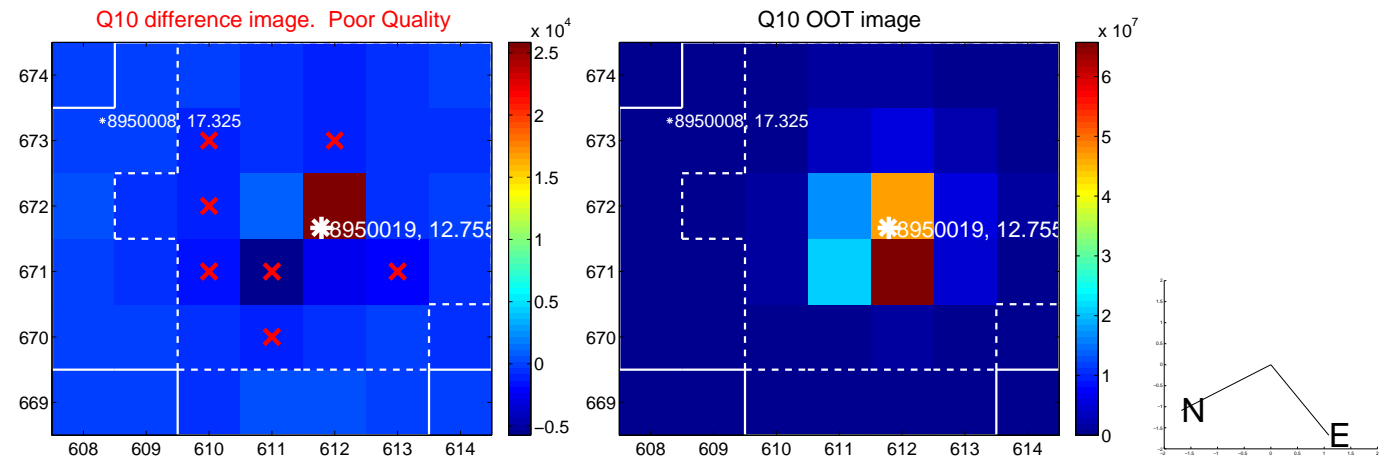
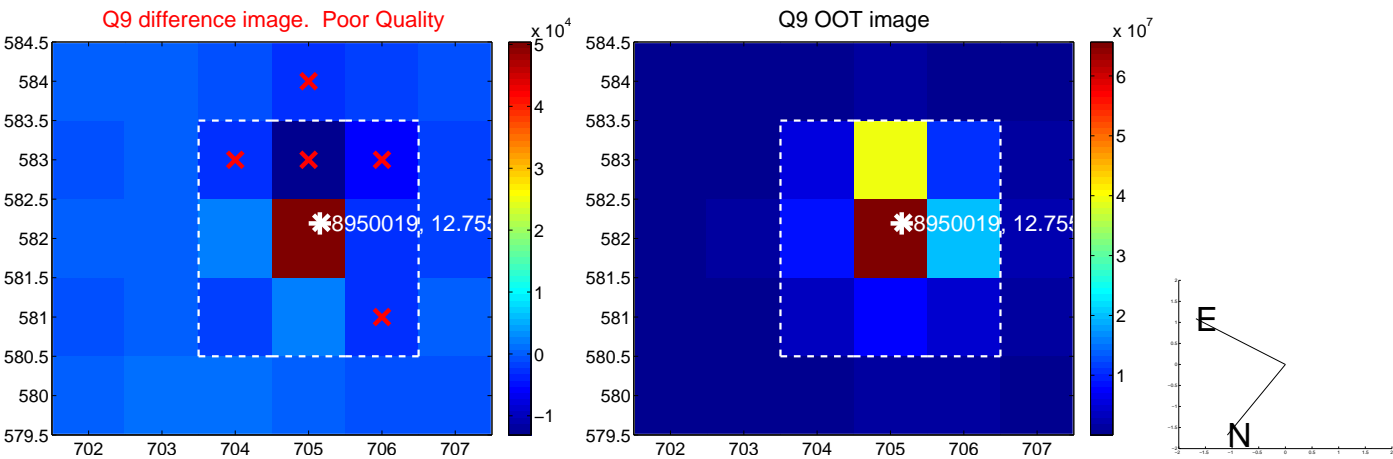
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



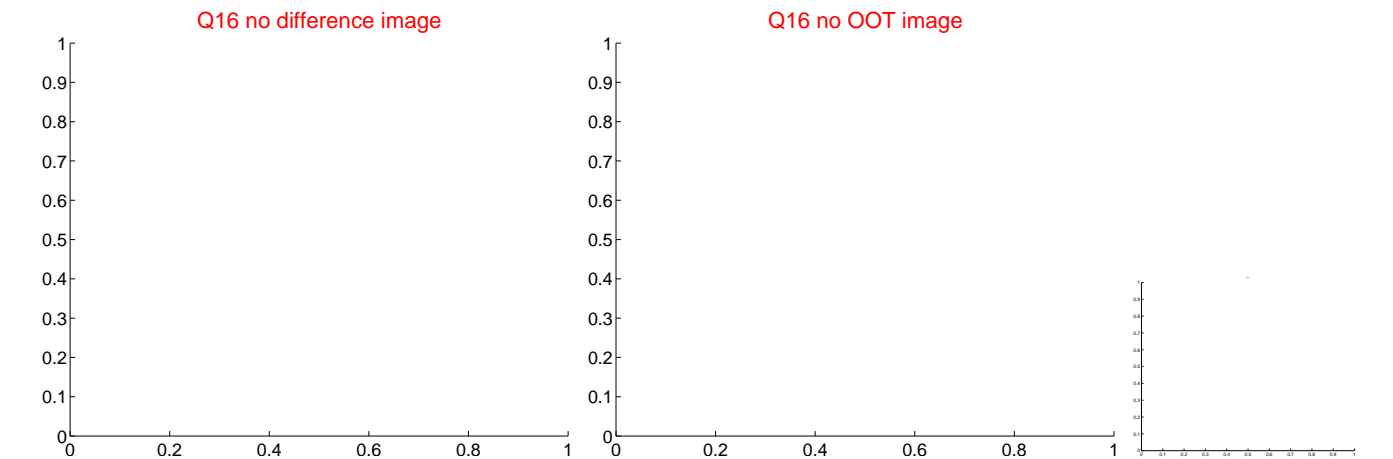
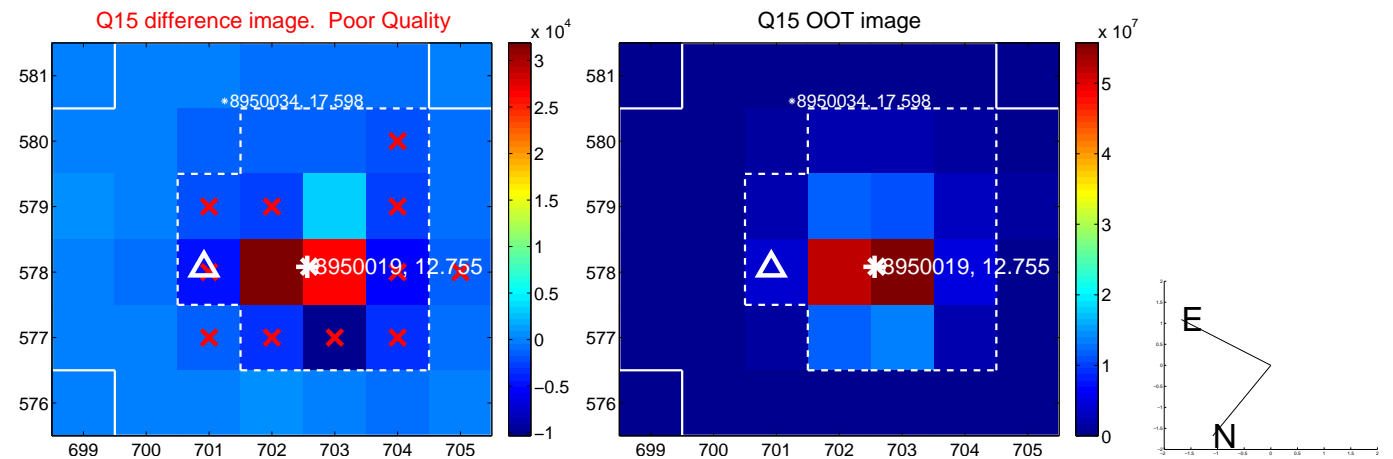
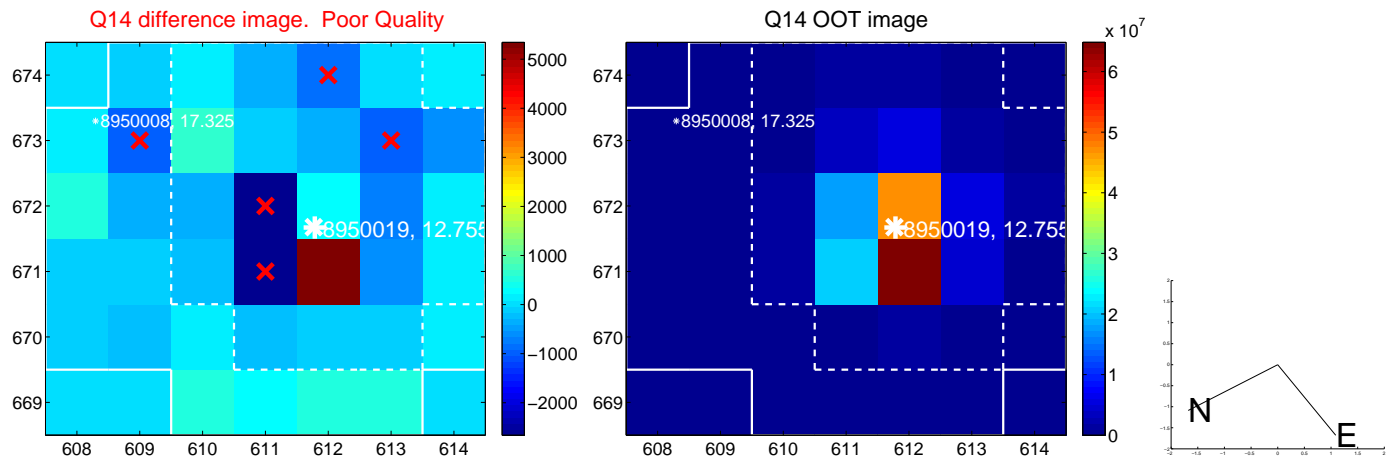
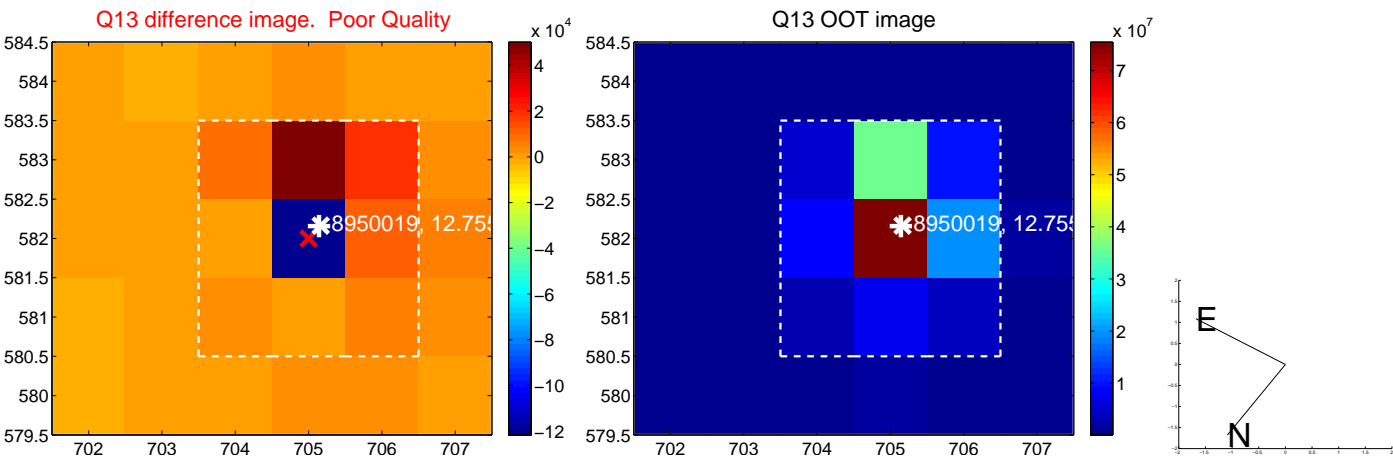
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



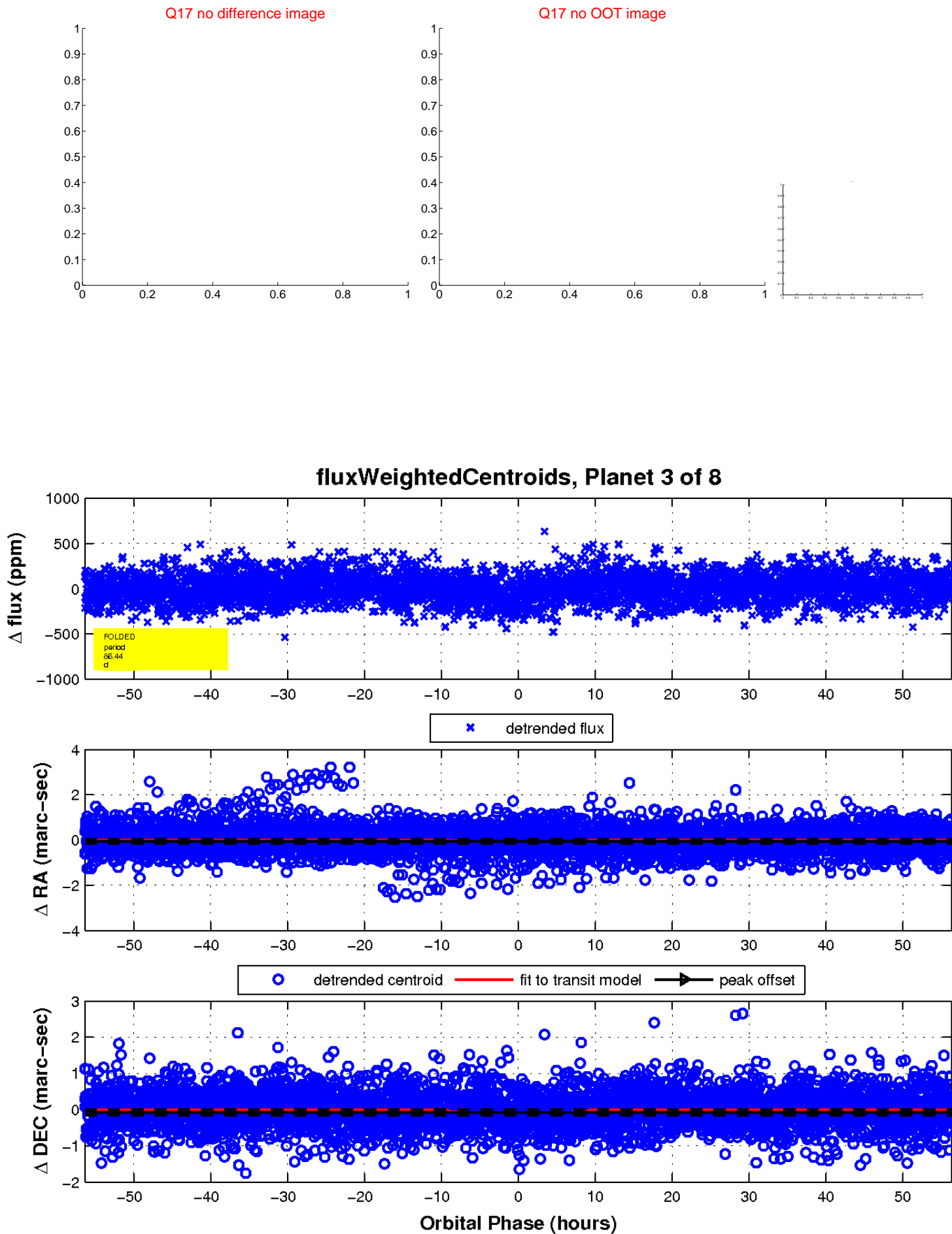
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

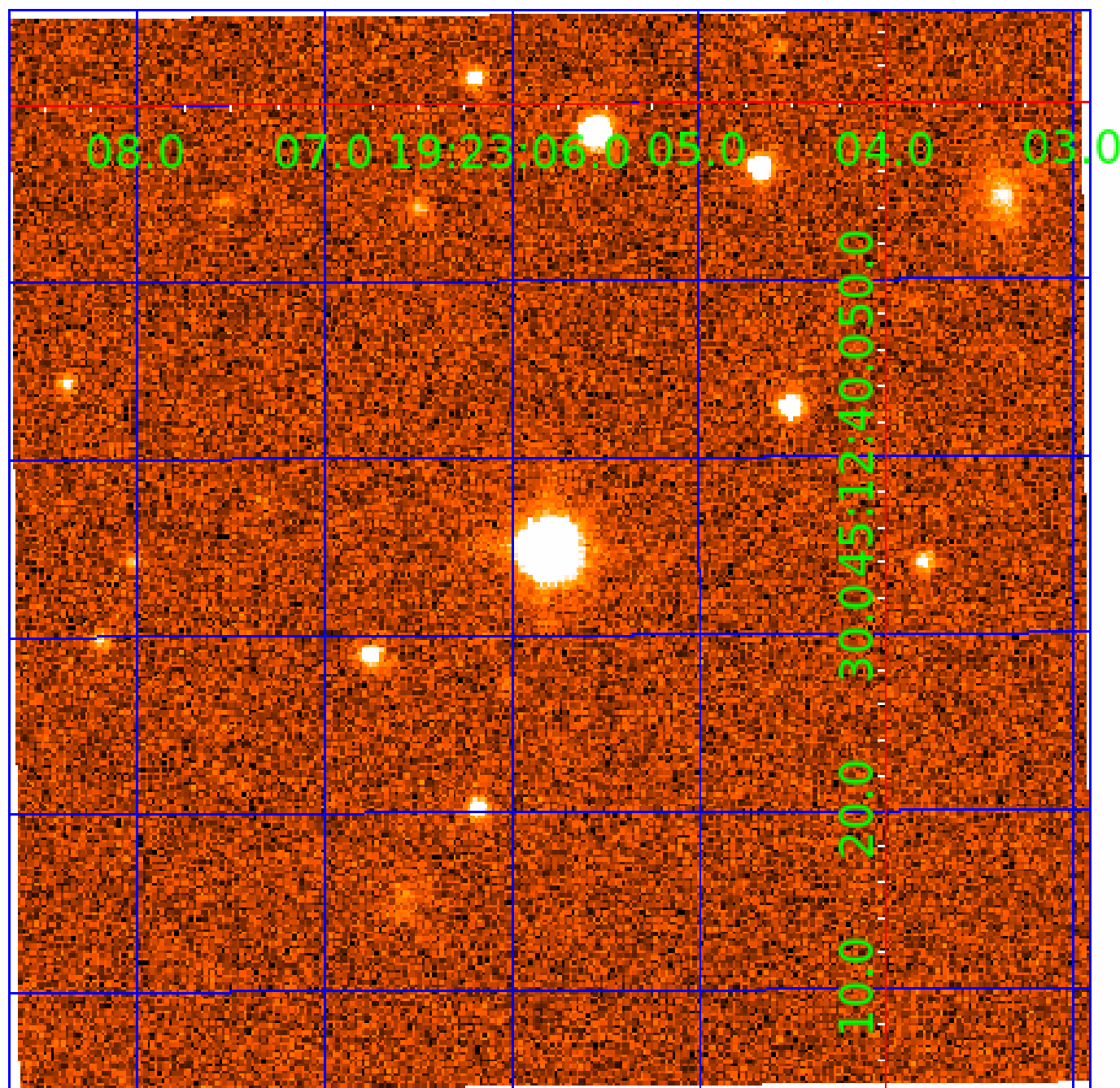


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008950019

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008950019-01 | OBS | No | 1.537285 | 132.501062 | 10.3 | 8.039 | 8.8 | 5.0 | 2.51 | 6654 | 0.87 | 13523.98 |
| 008950019-02 | OBS | No | 216.662839 | 250.644951 | 208.8 | 13.436 | 11.7 | 7.1 | 2.51 | 6654 | 3.94 | 18.44 |
| 008950019-03 | OBS | No | 86.440129 | 133.552210 | 128.7 | 18.788 | 9.3 | 7.7 | 2.51 | 6654 | 3.07 | 62.78 |
| 008950019-04 | OBS | No | 241.801135 | 231.066036 | 207.2 | 9.229 | 9.0 | 7.8 | 2.51 | 6654 | 3.97 | 15.93 |
| 008950019-05 | OBS | No | 298.278515 | 154.764534 | 169.5 | 6.974 | 8.1 | 7.6 | 2.51 | 6654 | 3.57 | 12.04 |
| 008950019-06 | OBS | No | 73.239558 | 179.518514 | 146.3 | 6.324 | 8.1 | 7.8 | 2.51 | 6654 | 3.37 | 78.30 |
| 008950019-07 | OBS | No | 134.974599 | 213.093193 | 212.9 | 3.437 | 7.6 | 8.5 | 2.51 | 6654 | 4.35 | 34.66 |
| 008950019-08 | OBS | No | 80.377986 | 144.503332 | 146.7 | 6.000 | 7.5 | -1.0 | 2.51 | 6654 | 3.06 | 69.17 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008950019-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 008950019-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008950019-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS—HALO_GHOST |
| 008950019-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS |
| 008950019-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008950019-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008950019-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 008950019-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_NOFITS |

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

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

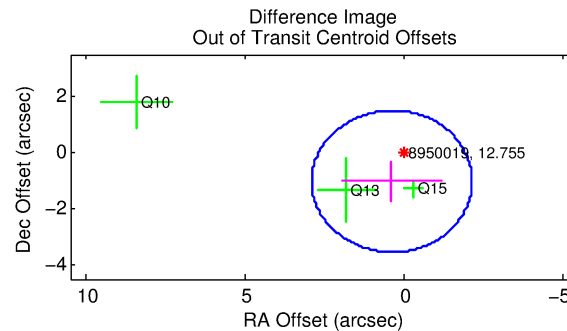
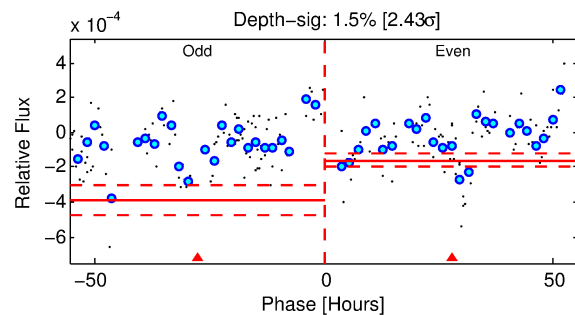
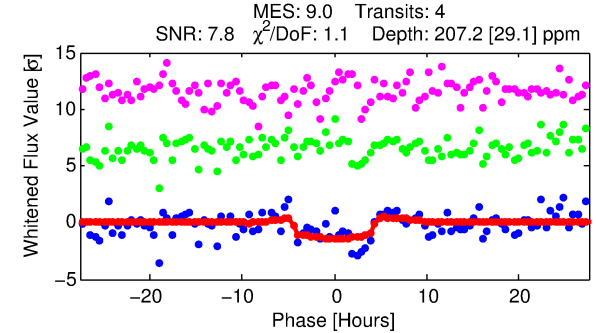
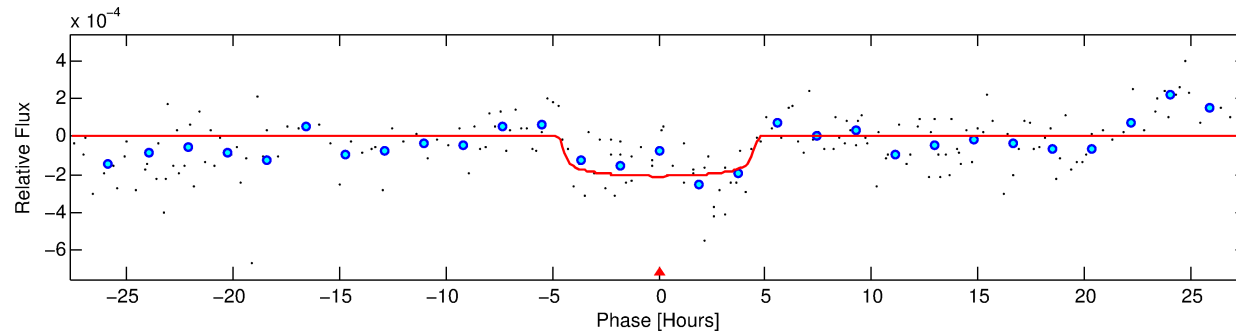
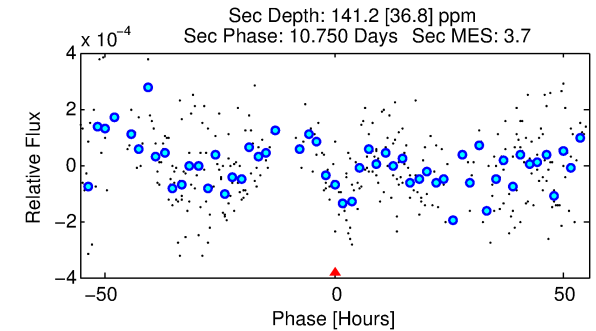
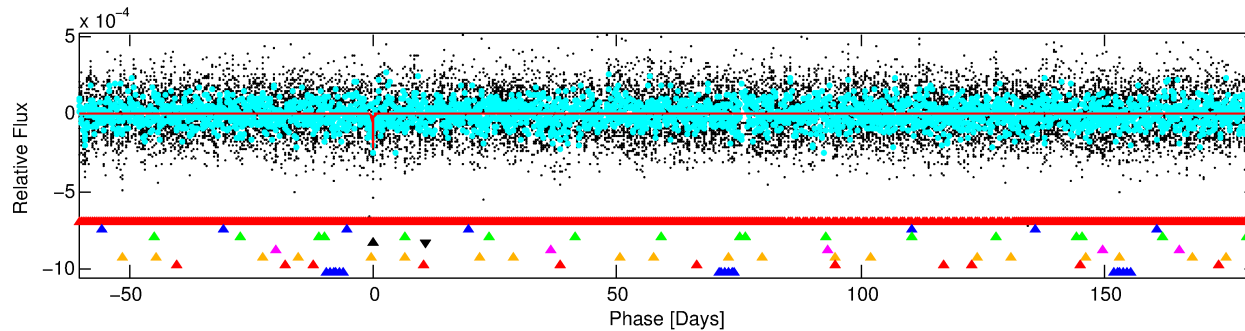
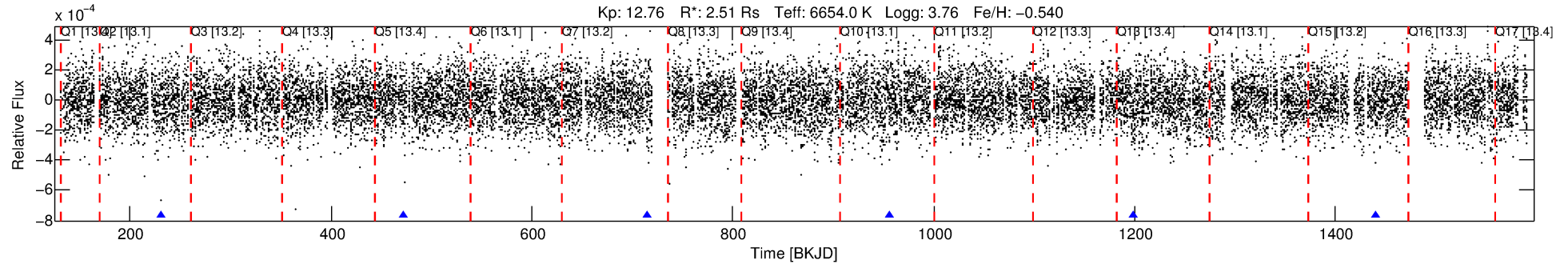
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008950019-04

No Significant Match Found

DV One-Page Summary

KIC: 8950019 Candidate: 4 of 8 Period: 241.801 d



DV Fit Results:

Period = 241.80113 [0.00647] d
Epoch = 231.0660 [0.0239] BKJD
Rp/R* = 0.0145 [0.0074]
a/R* = 128.03 [373.04]
b = 0.79 [1.41]
Seff = 15.93 [9.34]
Teq = 509 [75] K
Rp = 3.97 [2.51] Re
a = 0.8328 [0.2995] AU
Ag = 3424.65 [4105.22] [0.83σ]
Teffp = 6025 [1596] K [3.45σ]

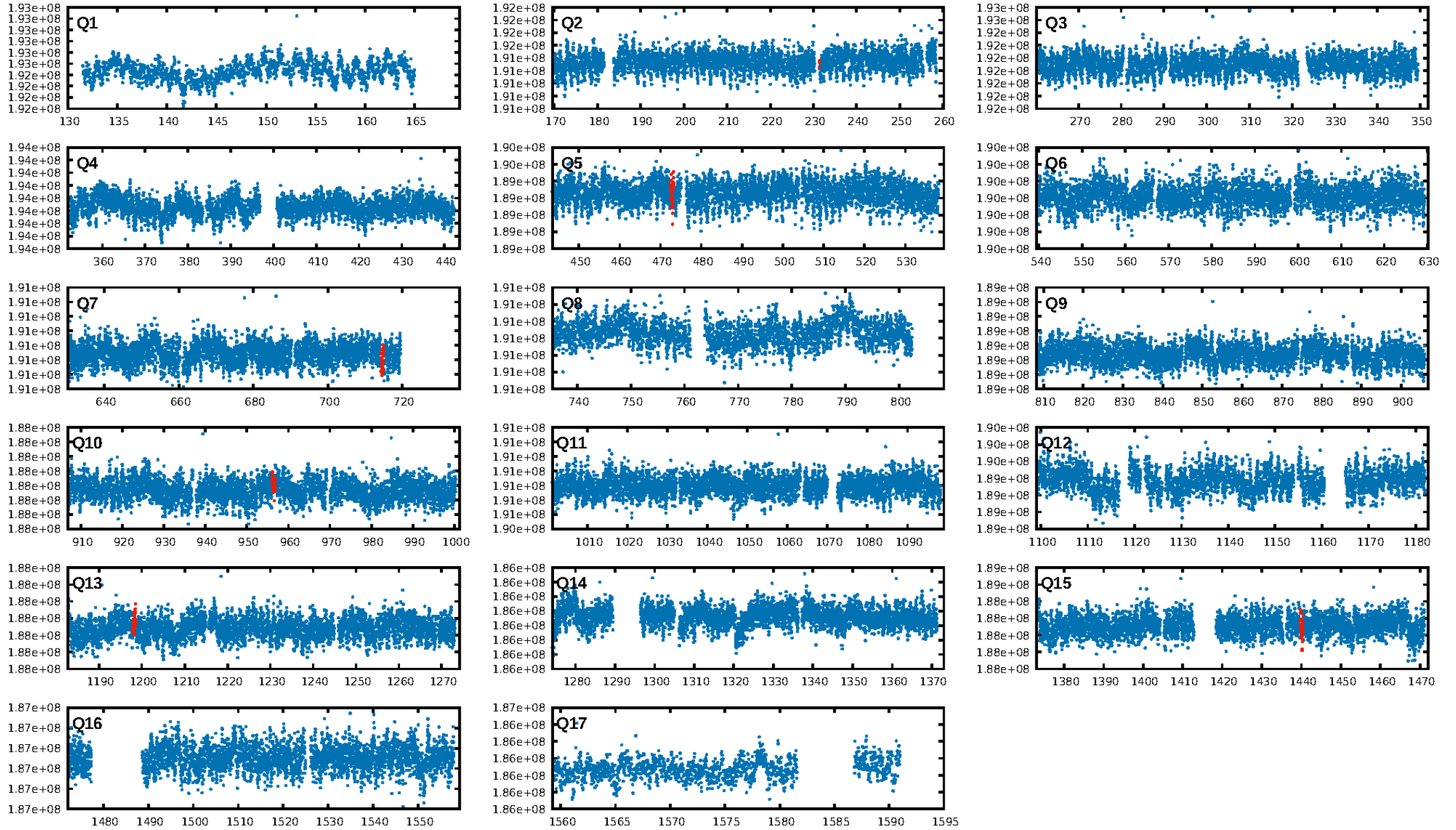
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [37.01σ]
LongPeriod-sig: 100.0% [117.18σ]
ModelChiSquare2-sig: 1.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.542
Centroid-sig: 1.1%
Centroid-so: 1.407 arcsec [1.53σ]
OotOffset-rm: 1.095 arcsec [1.30σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 1.067 arcsec [1.18σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.00 [0/4]

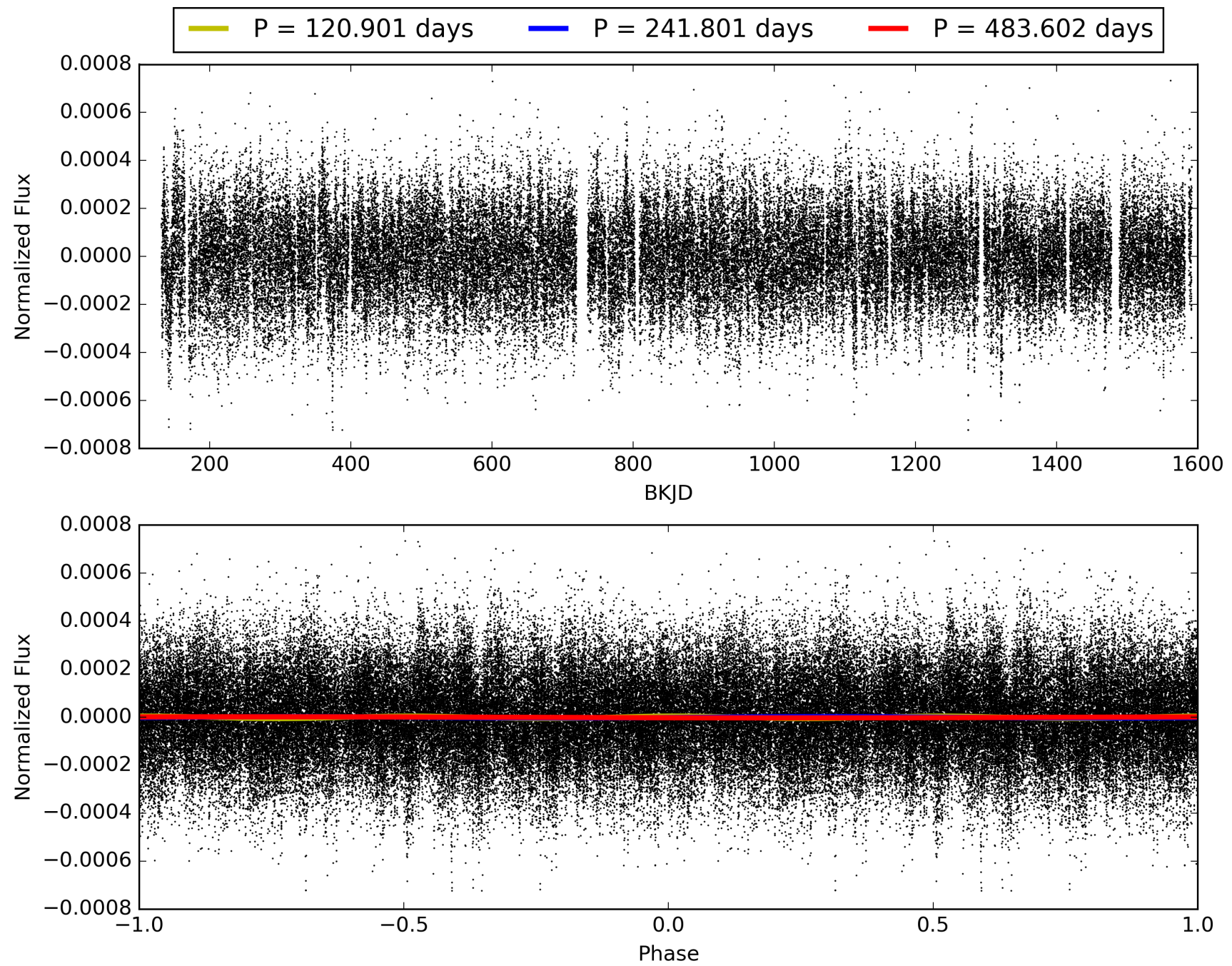
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:41:58 Z

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

TCE 008950019-04, PDC Light Curves

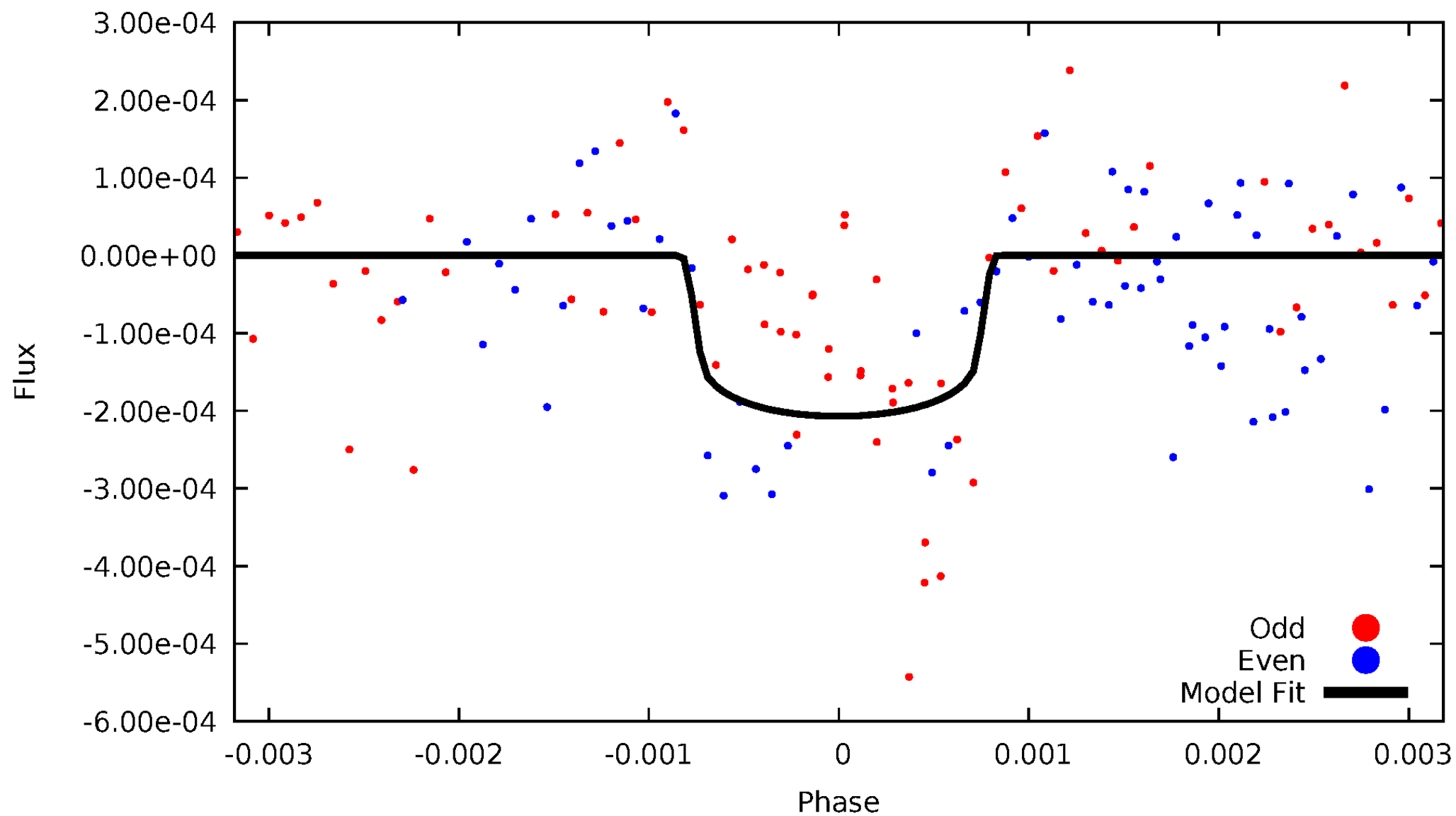


TCE 008950019-04



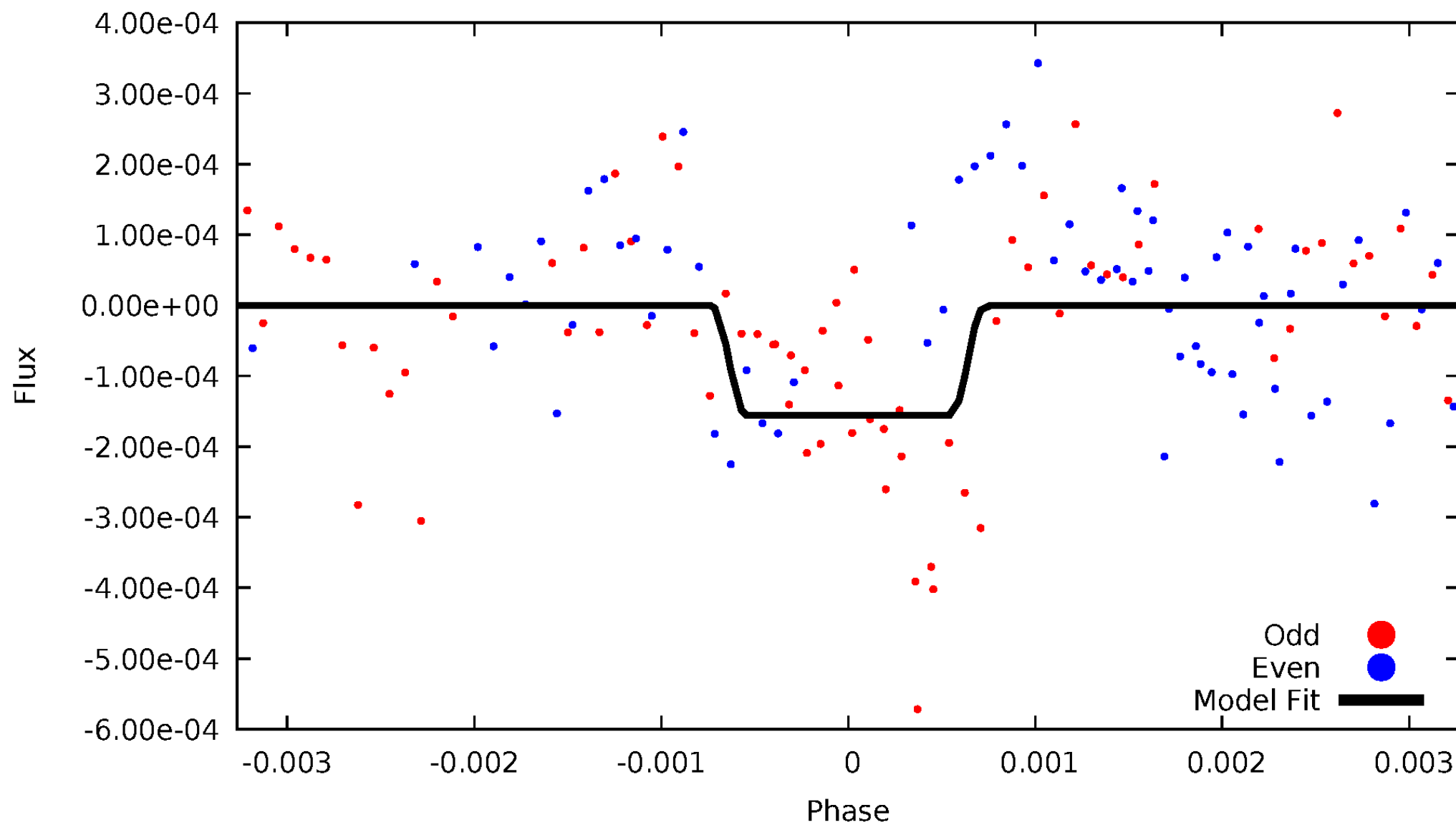
DV Odd/Even

TCE 008950019-04



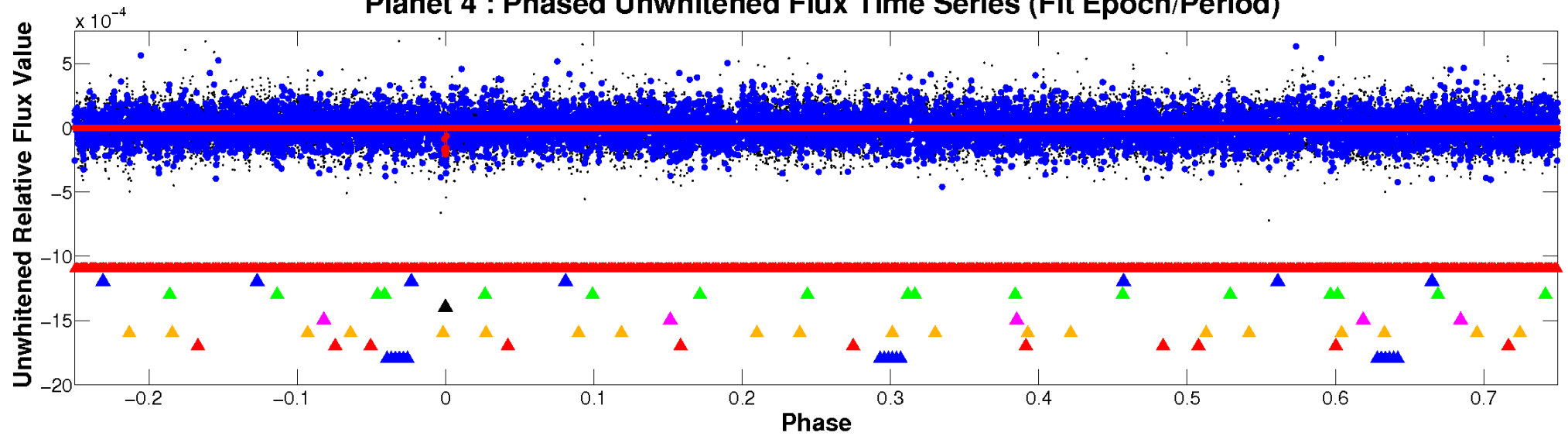
ALT Odd/Even

TCE 008950019-04

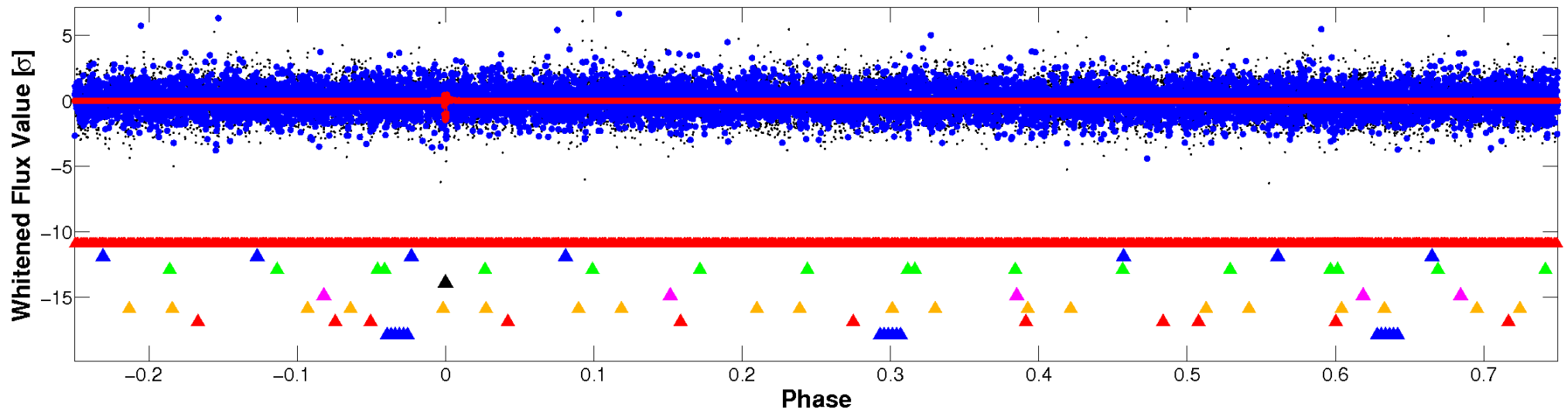


Non-Whitened Vs. Whitened Light Curve

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



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



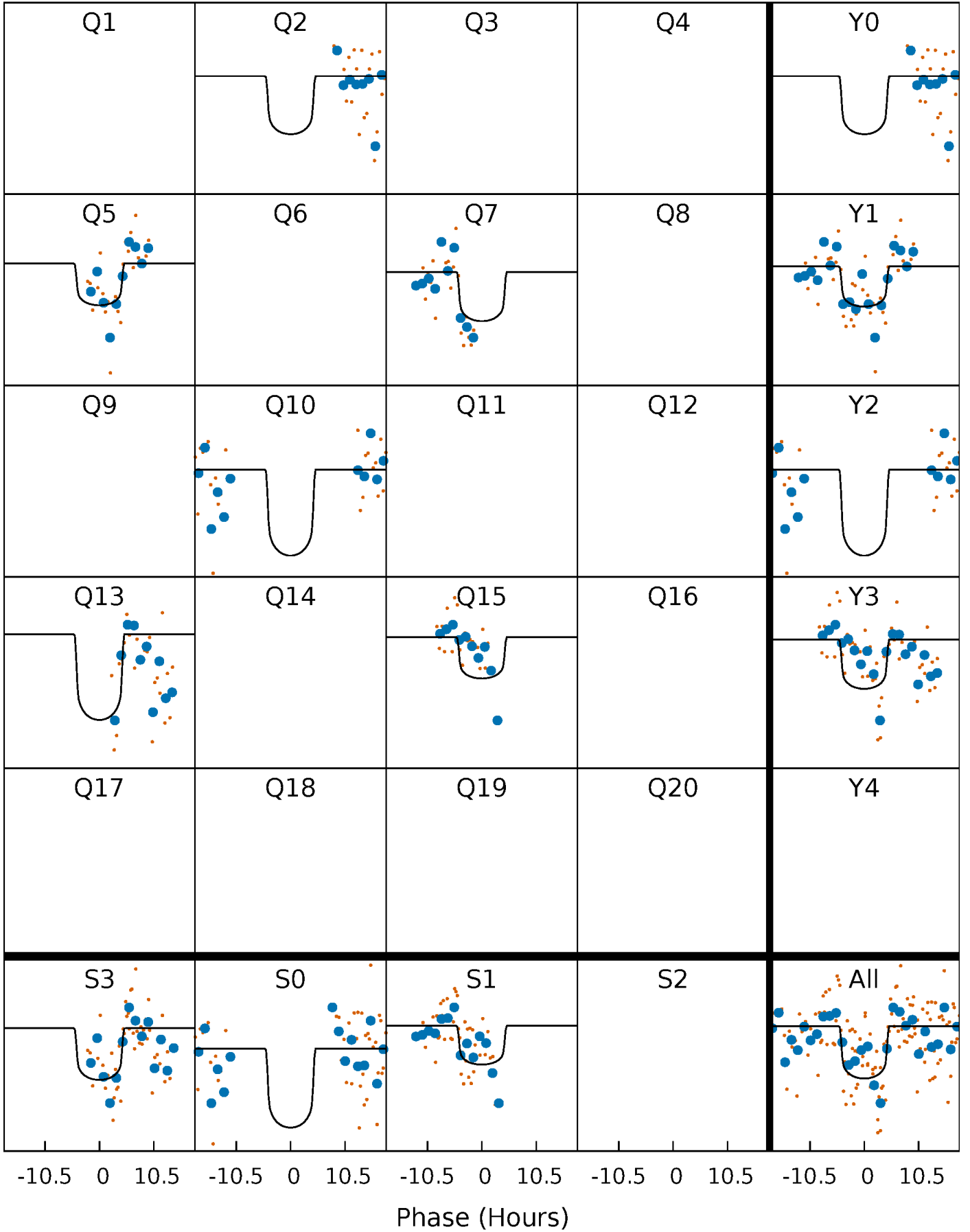
PDC Quarter-Phased Transit Curves

TCE 008950019-04 P=241.801135 Days $T_0=231.066036$ (BKJD)



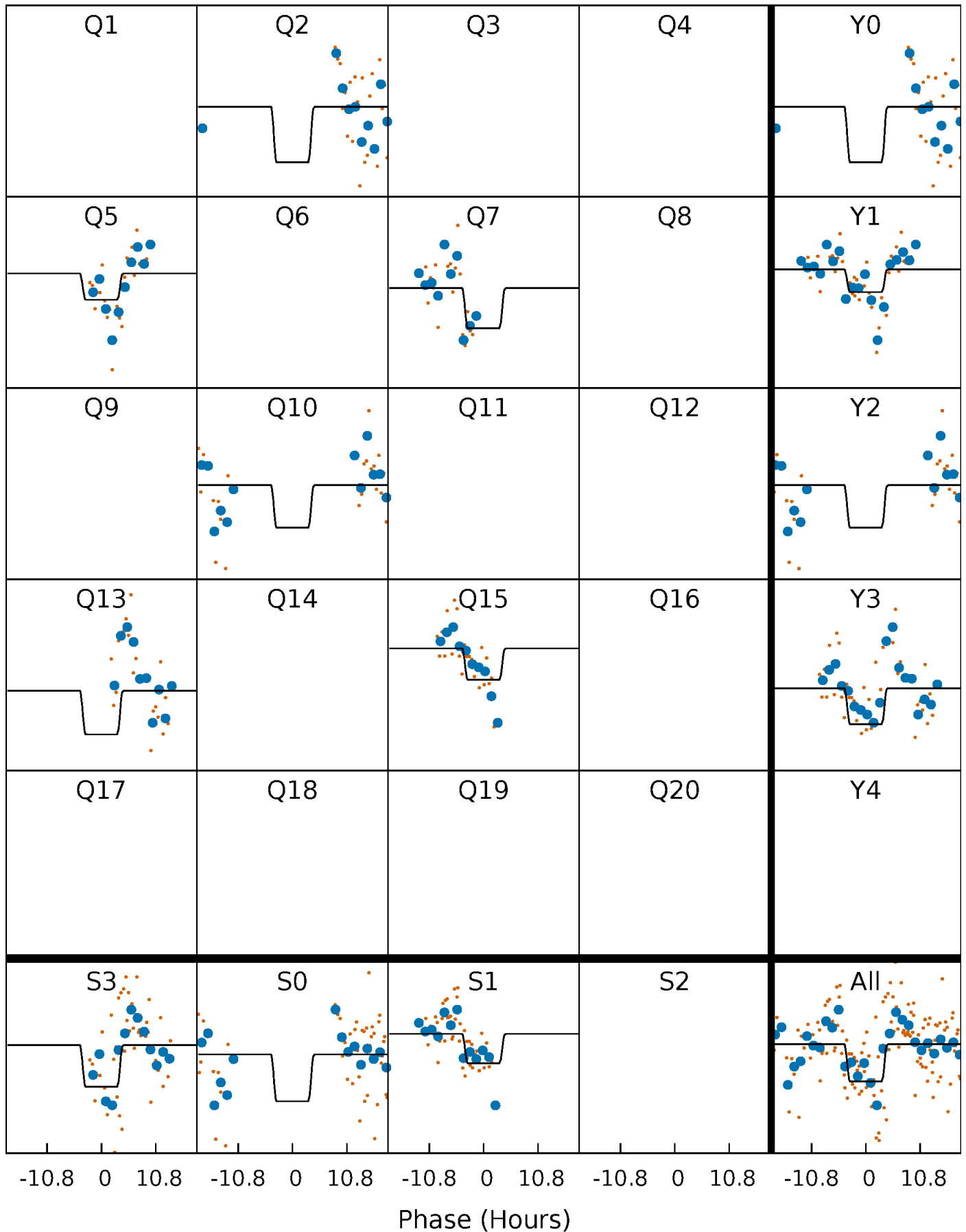
DV Quarter-Phased Transit Curves

TCE 008950019-04 P=241.801135 Days $T_0=231.066036$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

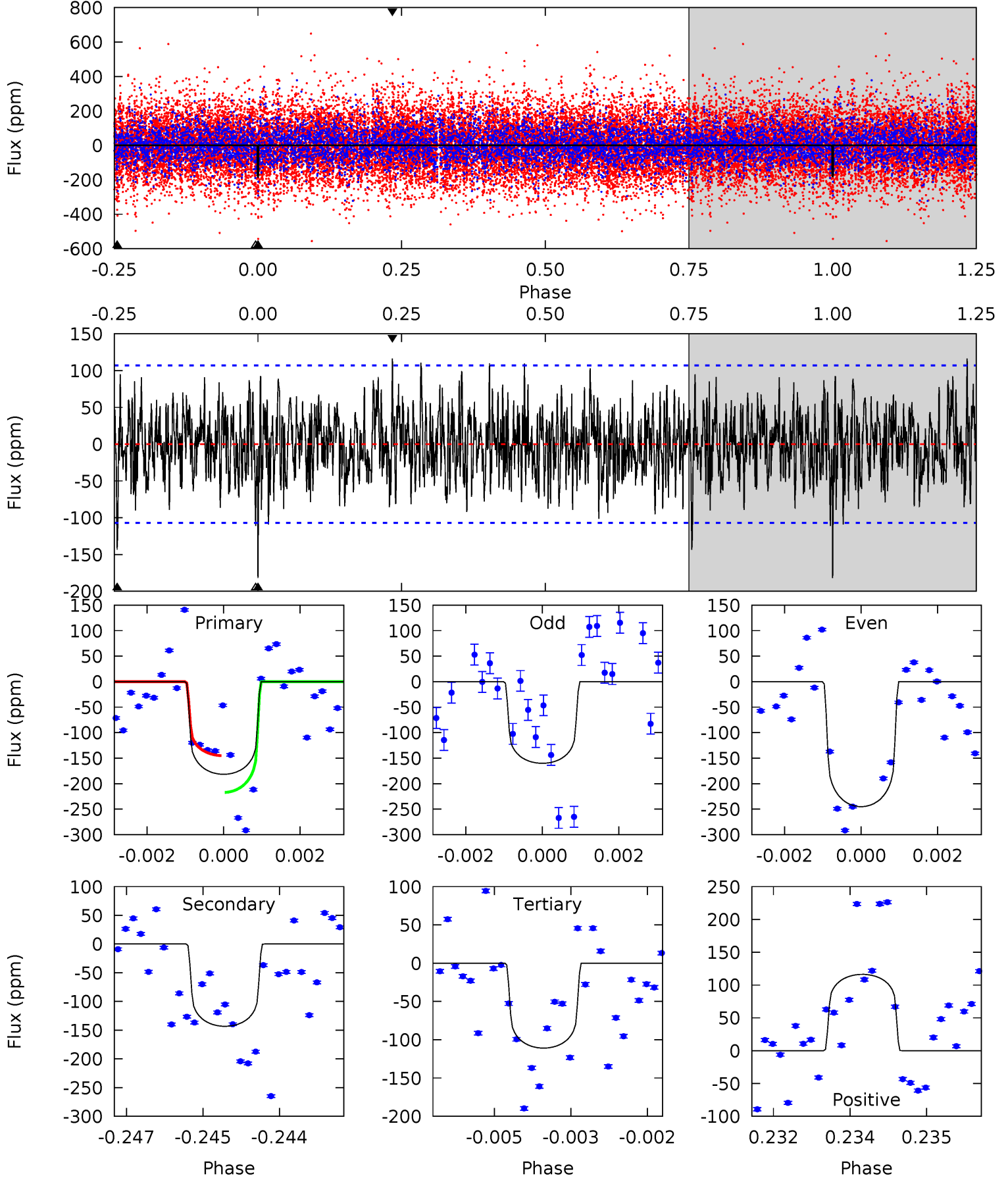
TCE 008950019-04 P=241.806729 Days $T_0=231.060486$ (BKJD)



DV Model-Shift Uniqueness Test

008950019-04, P = 241.801135 Days, E = 231.066036 Days

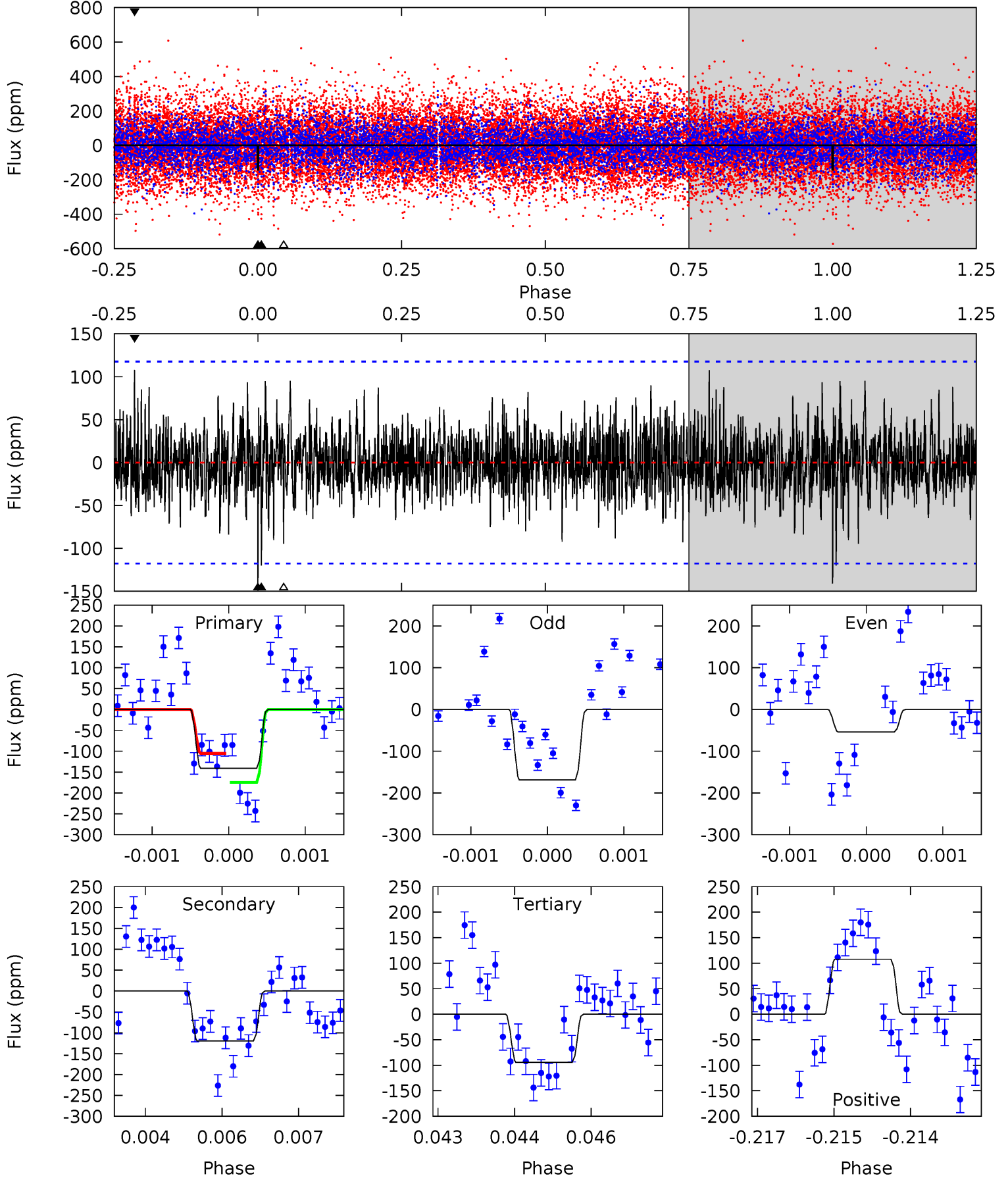
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 9.09 | 7.17 | 5.55 | 5.82 | 5.36 | 3.14 | 1.84 | 3.54 | 3.27 | 1.62 | 1.35 | 1.94 | 1.02 | 0.39 | 1.80 |



Alt Model-Shift Uniqueness Test

008950019-04, P = 241.806729 Days, E = 231.060486 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.44 | 5.48 | 4.32 | 4.93 | 5.38 | 3.18 | 1.28 | 2.12 | 1.51 | 1.16 | 0.54 | 2.37 | 0.72 | 0.43 | 1.59 |



Stellar Parameters For KIC 008950019

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6654^{+182}_{-202} | $3.759^{+0.336}_{-0.084}$ | $-0.540^{+0.350}_{-0.300}$ | $2.508^{+0.404}_{-0.943}$ | $1.317^{+0.222}_{-0.246}$ | $0.118^{+0.286}_{-0.031}$ |
| | +3%/-3% | +9%/-2% | +65%/-56% | +16%/-38% | +17%/-19% | +244%/-26% |
| 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 008950019-04 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|-------------------|------------------------|-------------------------|
| DV | -143 ± 20 | $3.67^{+2.06}_{-1.82}$ | 696^{+42}_{-65} | 5986^{+2613}_{-979} | 4095^{+11341}_{-2425} |
| Alt. | -120 ± 22 | $3.23^{+2.12}_{-1.77}$ | 694^{+43}_{-62} | 6097^{+3890}_{-1243} | 4505^{+17100}_{-2935} |

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 $A_{obs} \gg 1.0$

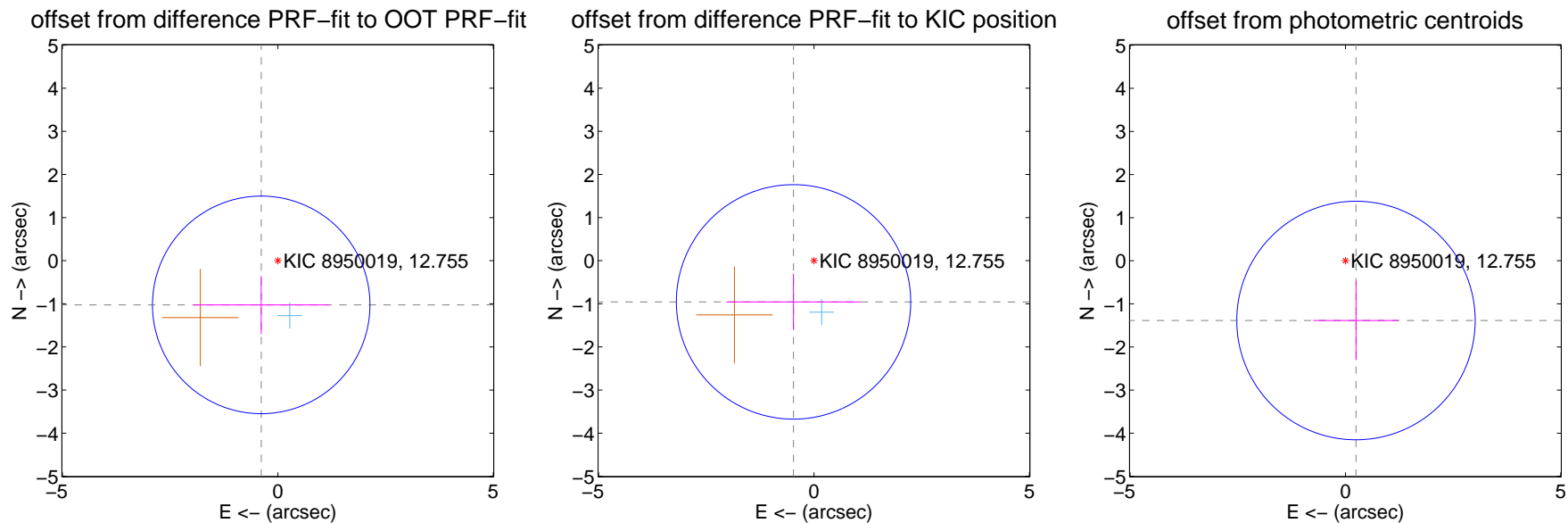
DV Centroid Data

Supplemental centroid analysis for 008950019-04. Kepler magnitude: 12.76. Transit SNR 7.85

There are 1 quarters with good PRF difference image offsets

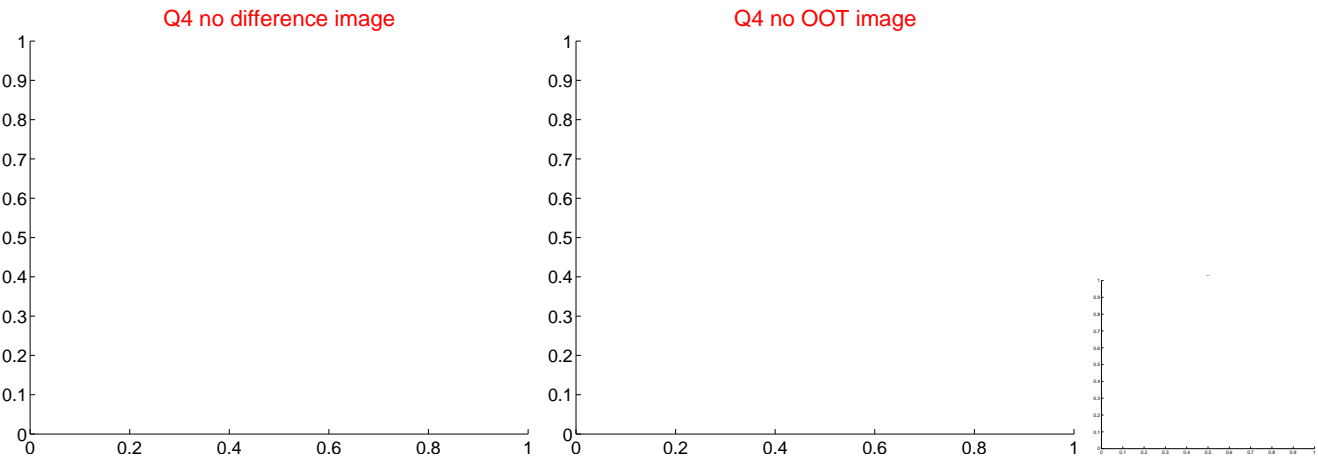
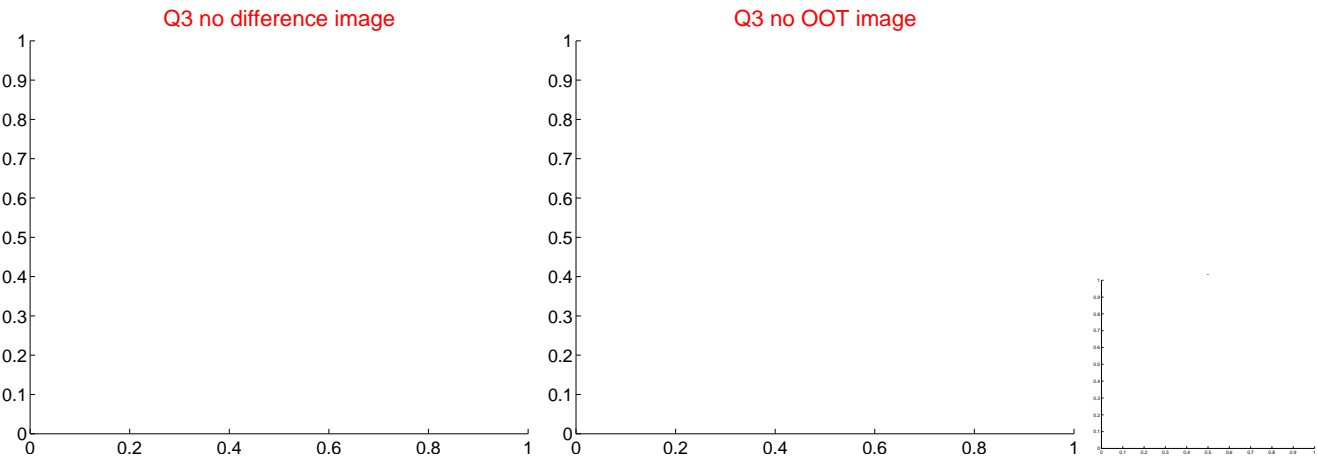
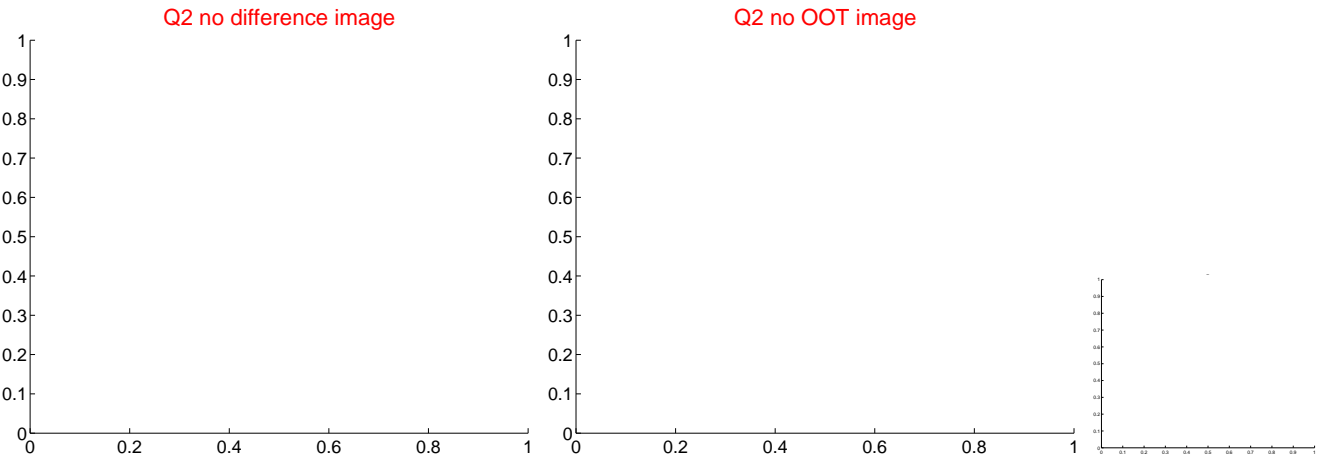
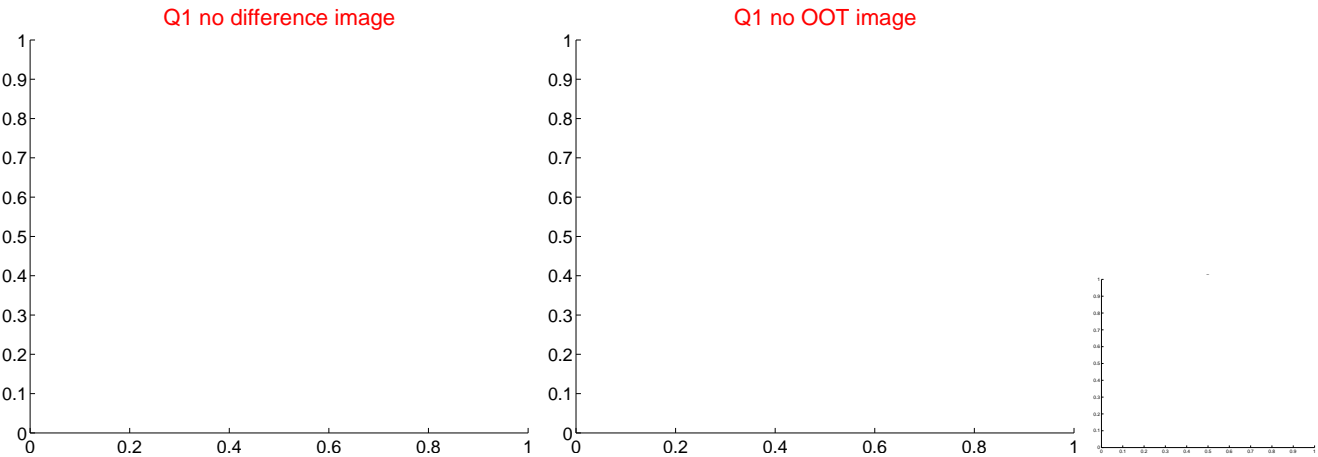
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 1.095 ± 0.841 | 1.30 | 0.386 ± 1.574 | -1.025 ± 0.676 |
| PRF-fit source offset from KIC position | 1.067 ± 0.906 | 1.18 | 0.474 ± 1.561 | -0.956 ± 0.651 |
| photometric centroid source offset | 1.41 ± 0.92 | 1.53 | -0.24 ± 0.99 | -1.39 ± 0.92 |

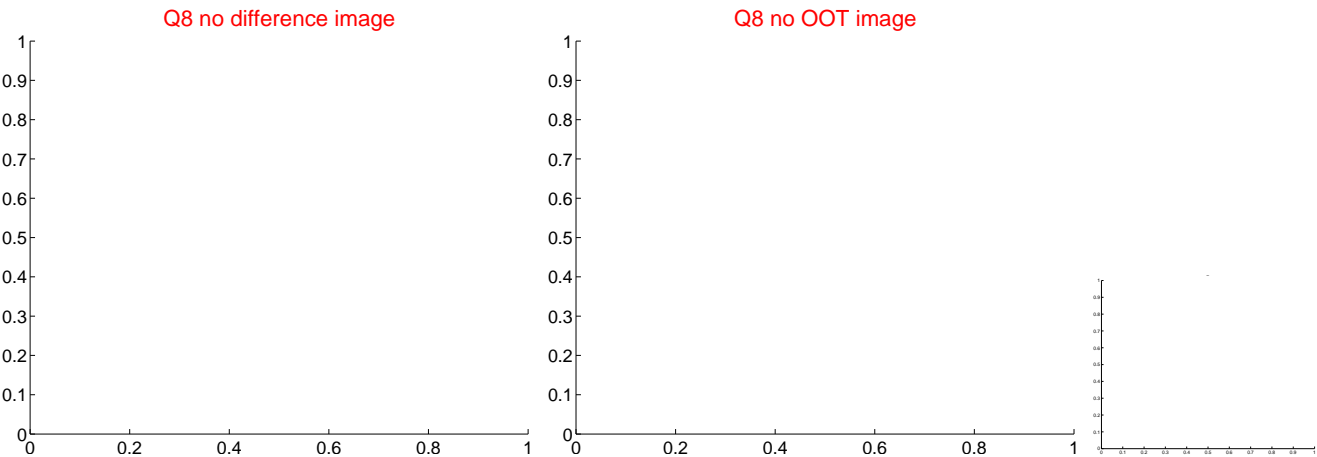
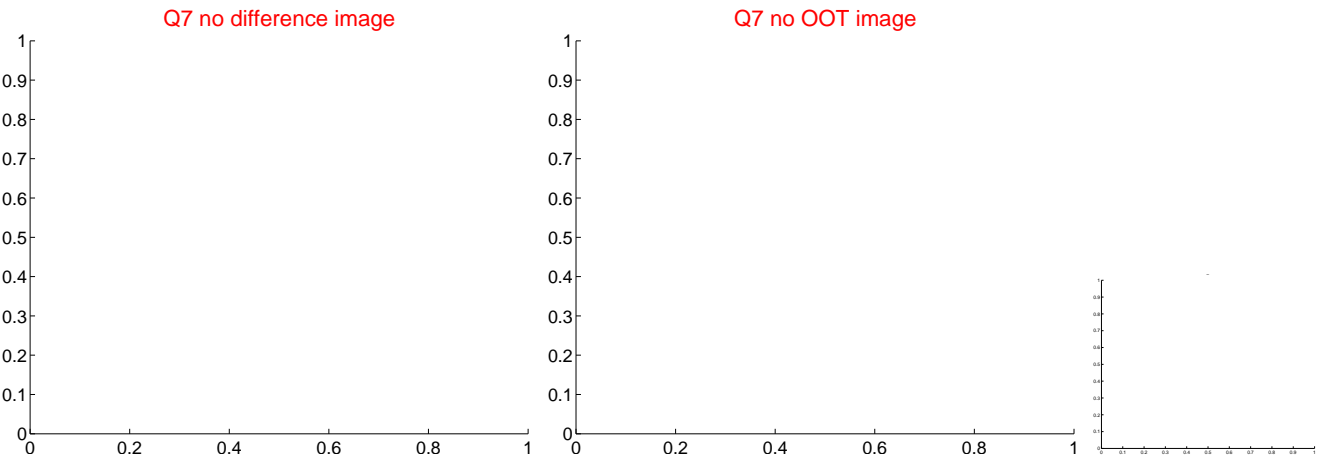
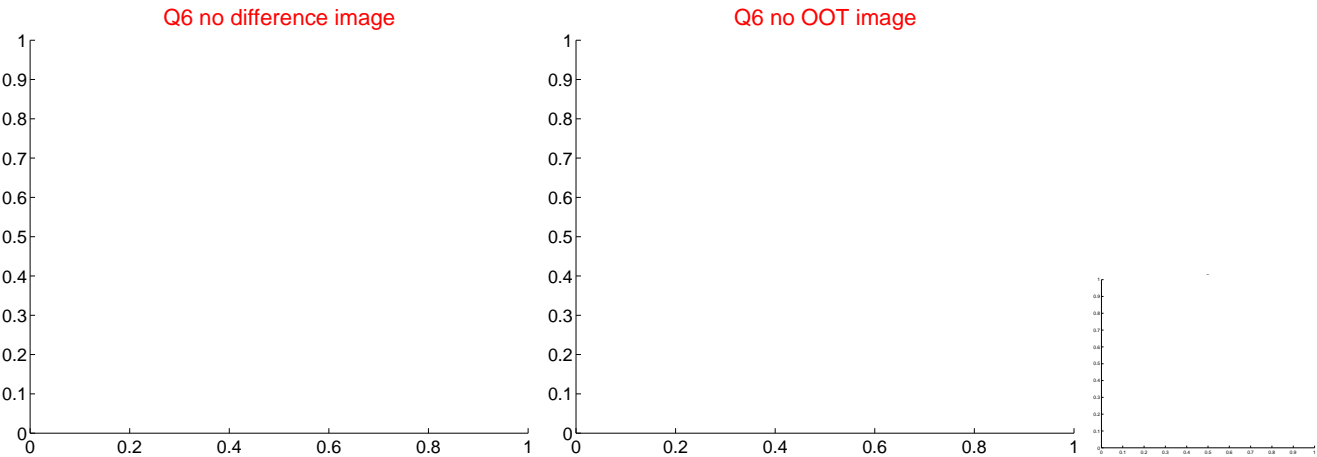
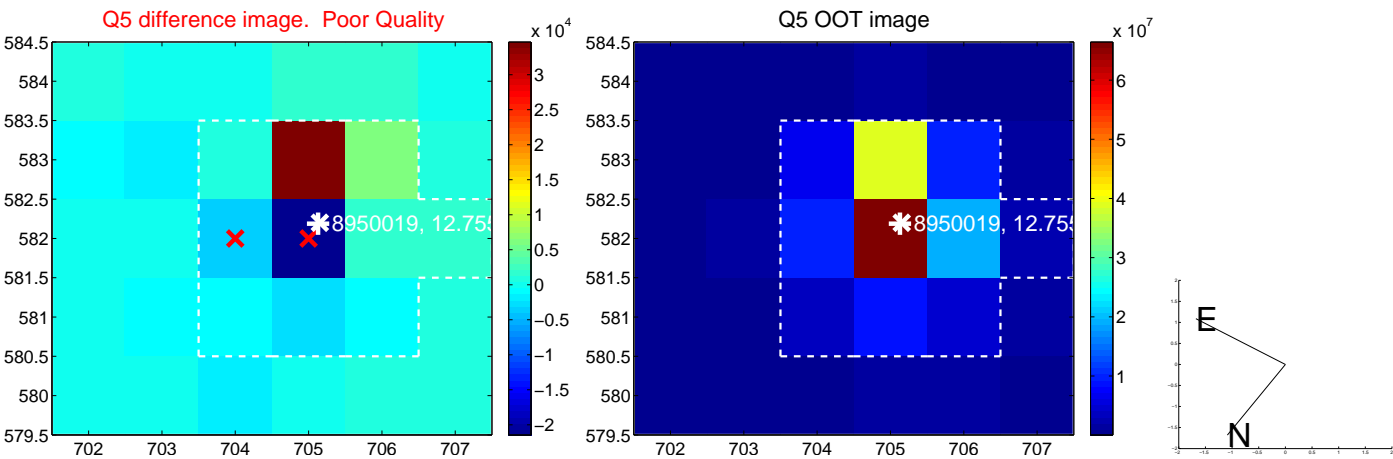


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

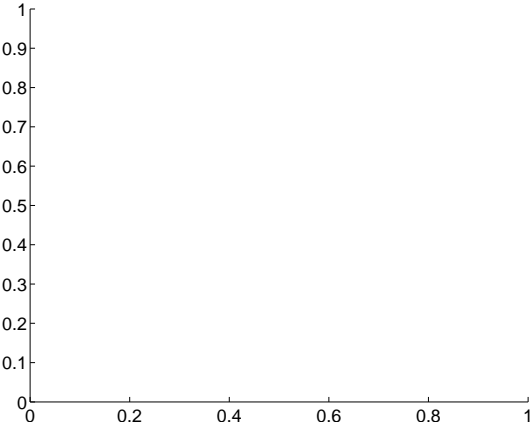


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

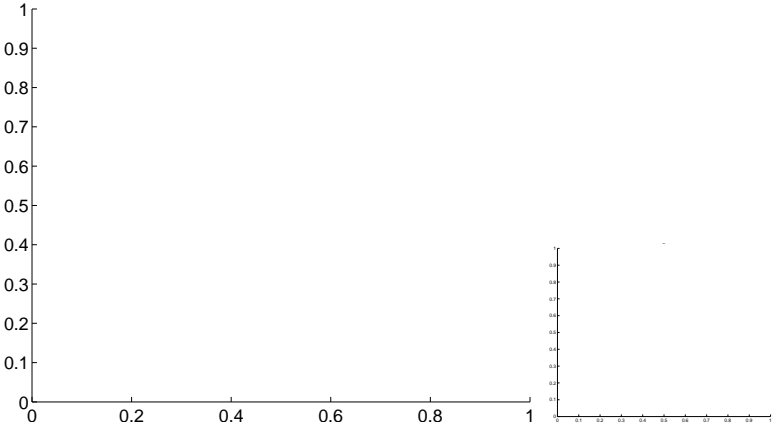


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

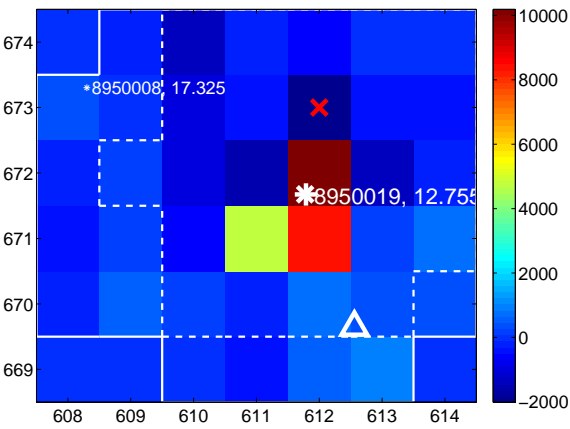
Q9 no difference image



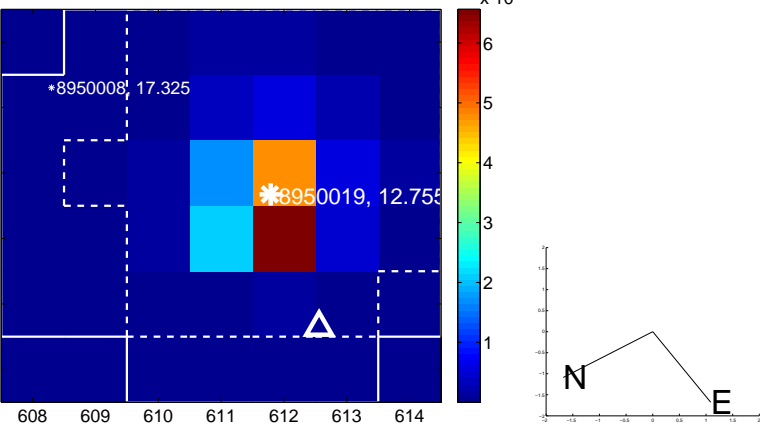
Q9 no OOT image



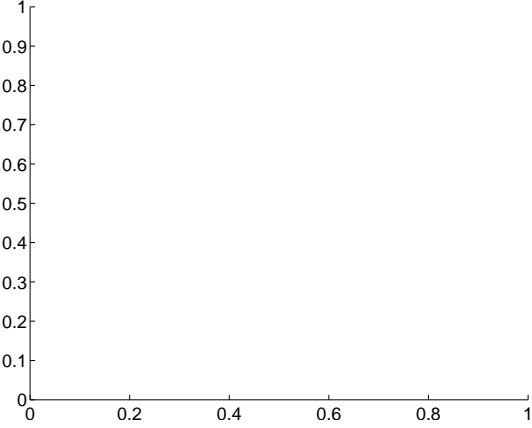
Q10 difference image. Poor Quality



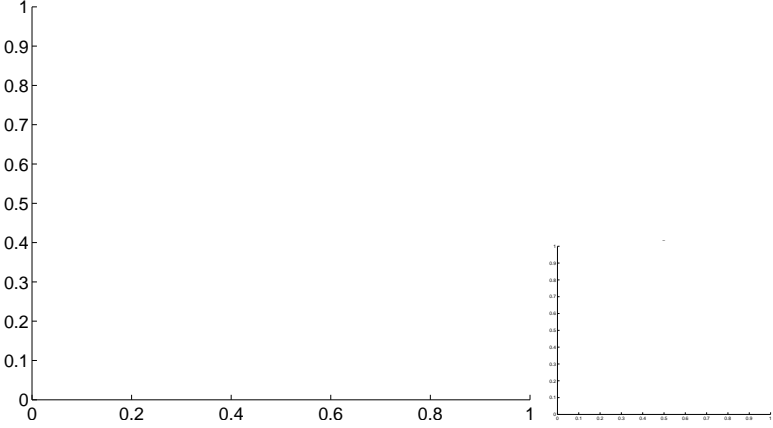
Q10 OOT image



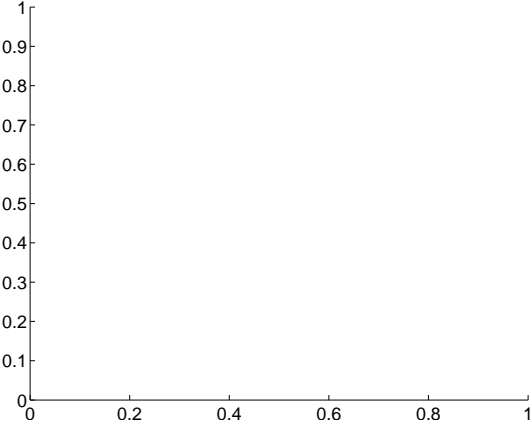
Q11 no difference image



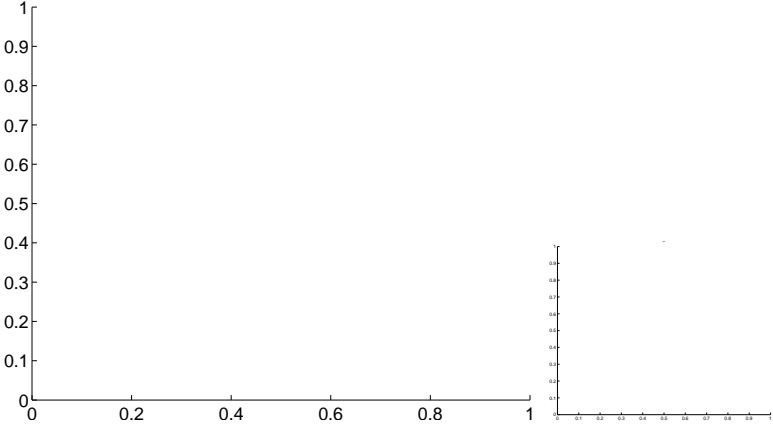
Q11 no OOT image



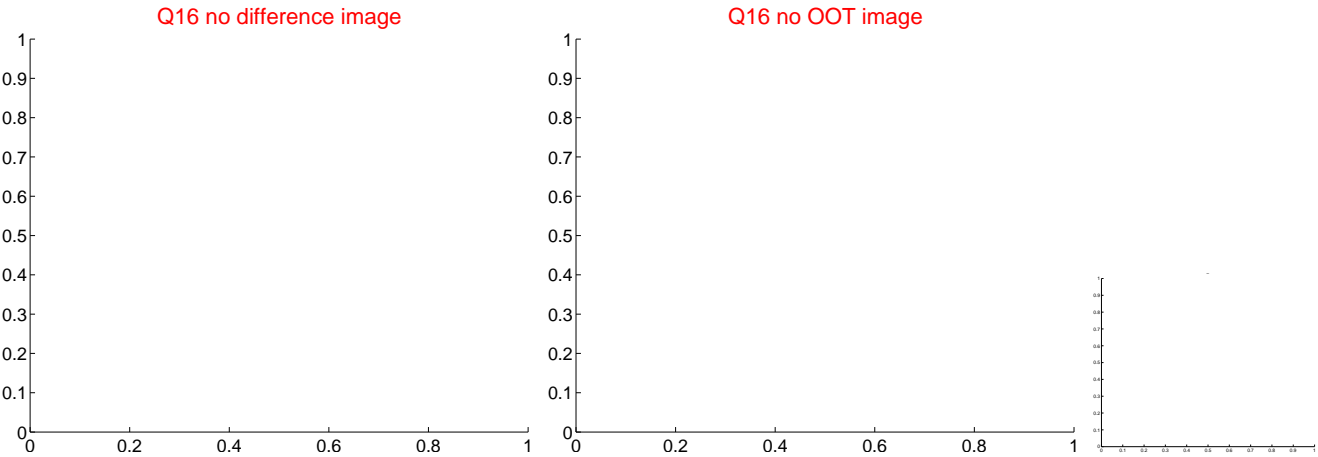
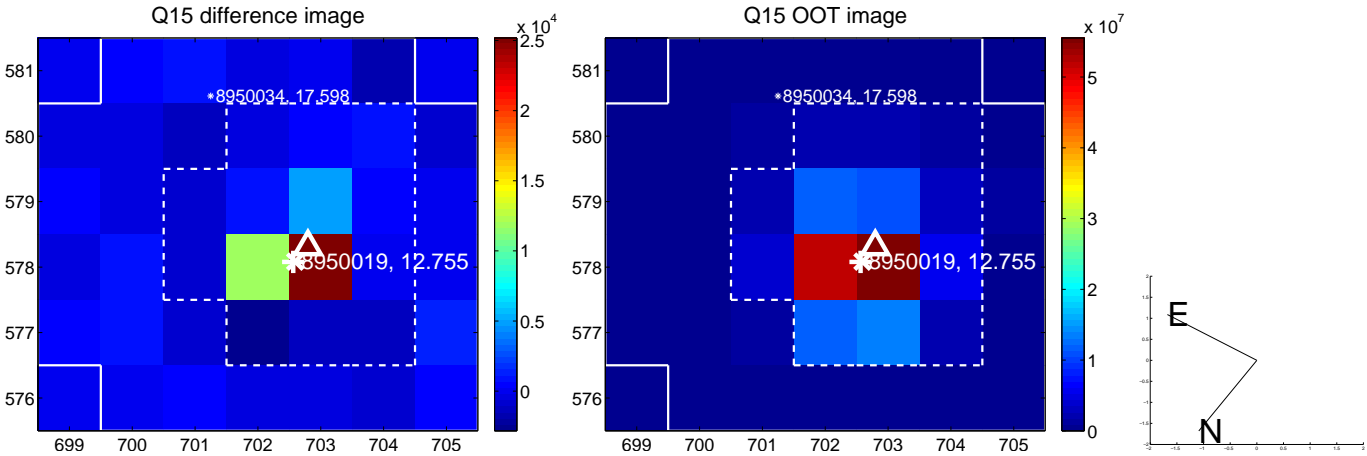
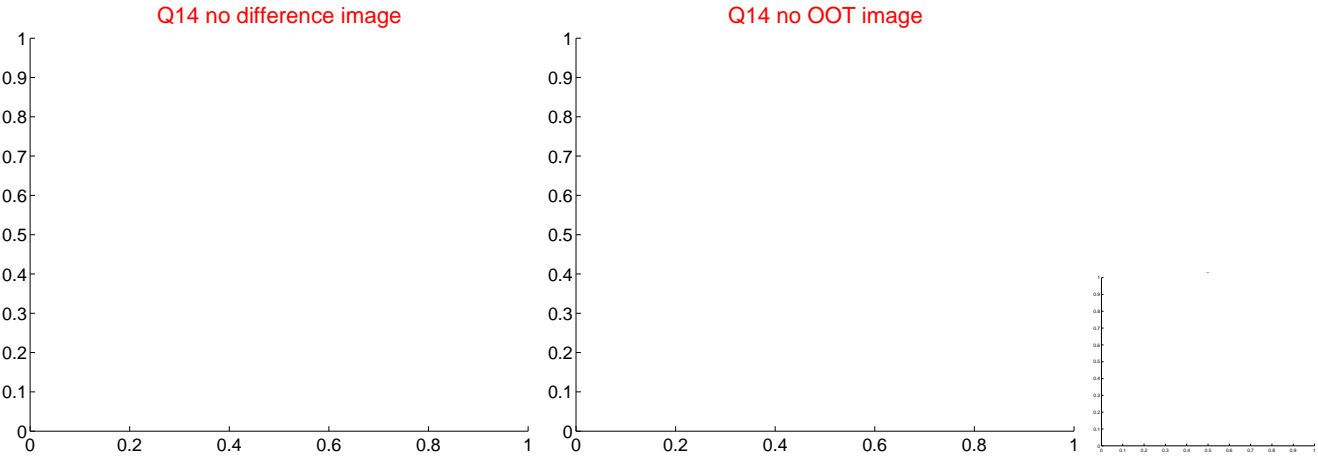
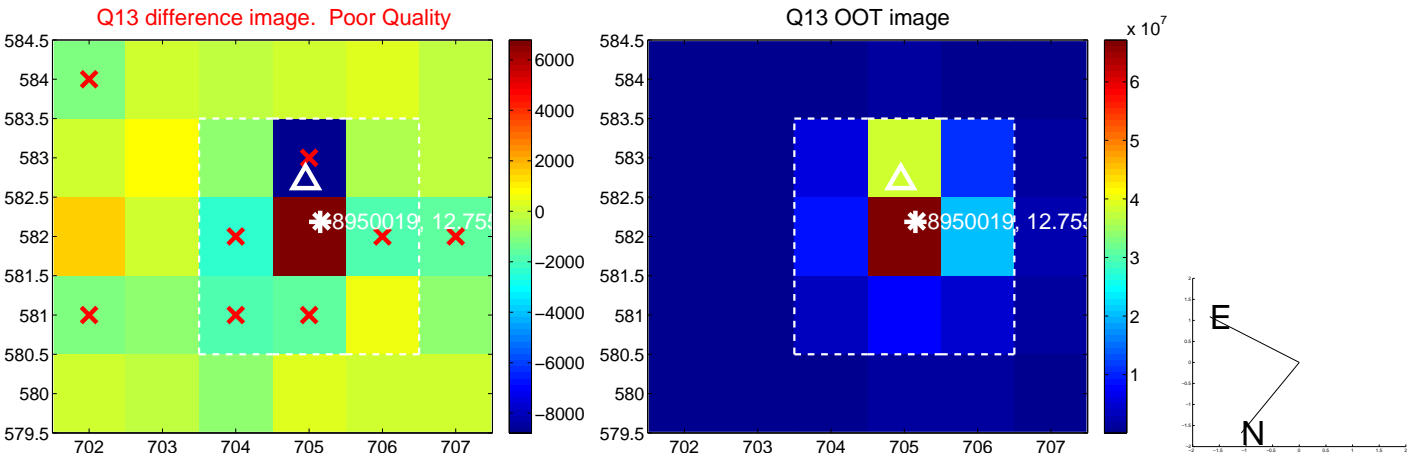
Q12 no difference image



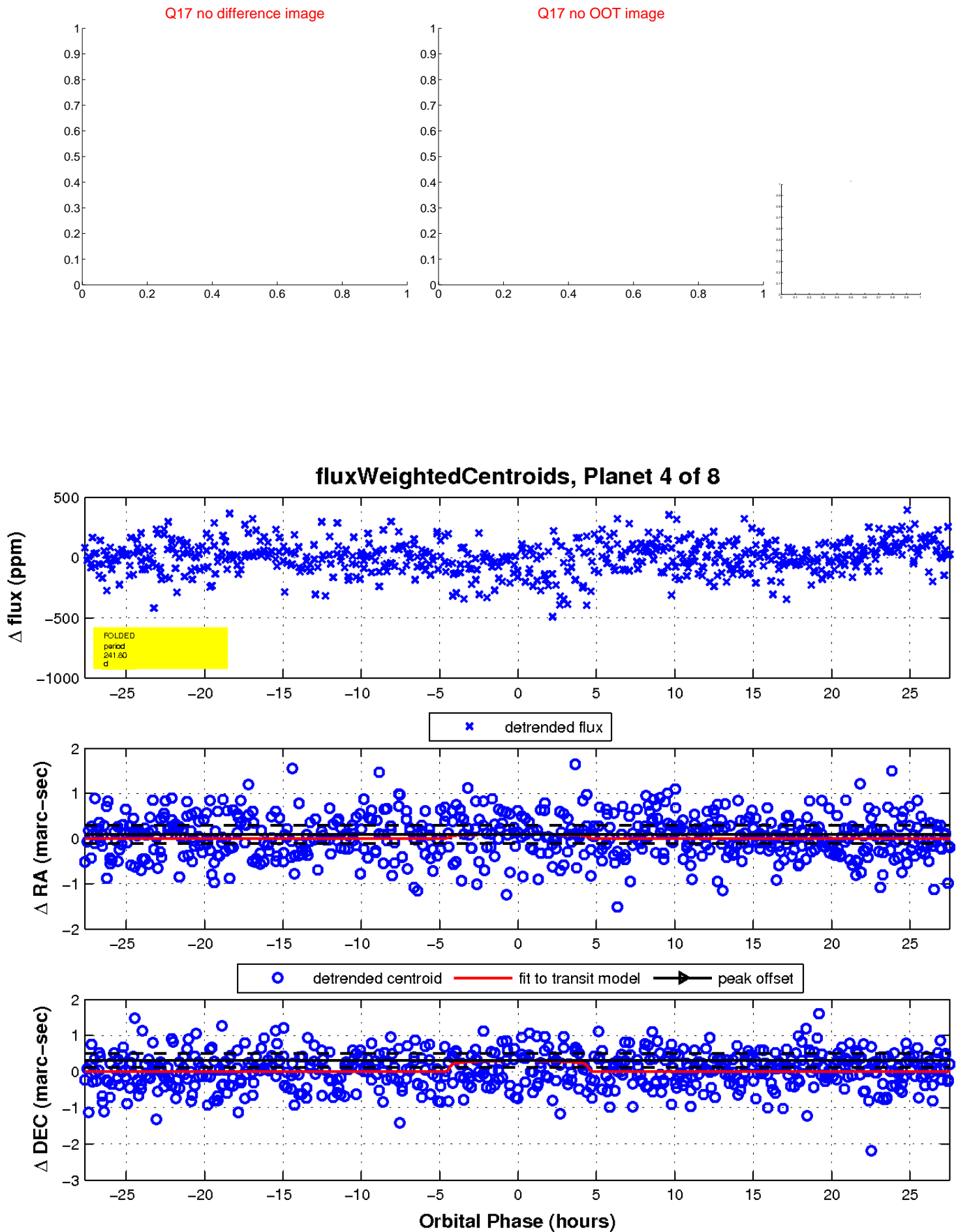
Q12 no OOT image



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

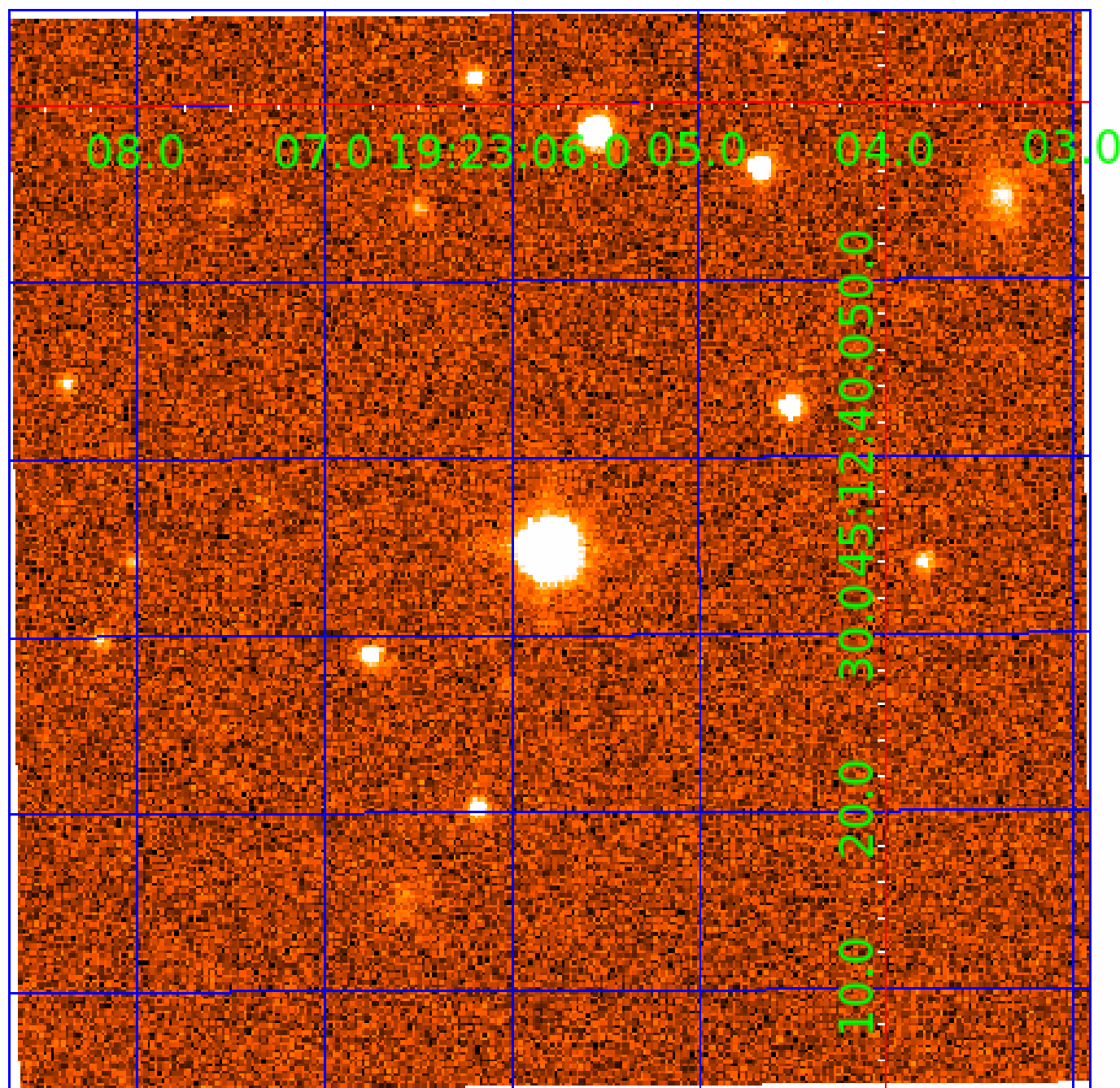


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008950019

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008950019-01 | OBS | No | 1.537285 | 132.501062 | 10.3 | 8.039 | 8.8 | 5.0 | 2.51 | 6654 | 0.87 | 13523.98 |
| 008950019-02 | OBS | No | 216.662839 | 250.644951 | 208.8 | 13.436 | 11.7 | 7.1 | 2.51 | 6654 | 3.94 | 18.44 |
| 008950019-03 | OBS | No | 86.440129 | 133.552210 | 128.7 | 18.788 | 9.3 | 7.7 | 2.51 | 6654 | 3.07 | 62.78 |
| 008950019-04 | OBS | No | 241.801135 | 231.066036 | 207.2 | 9.229 | 9.0 | 7.8 | 2.51 | 6654 | 3.97 | 15.93 |
| 008950019-05 | OBS | No | 298.278515 | 154.764534 | 169.5 | 6.974 | 8.1 | 7.6 | 2.51 | 6654 | 3.57 | 12.04 |
| 008950019-06 | OBS | No | 73.239558 | 179.518514 | 146.3 | 6.324 | 8.1 | 7.8 | 2.51 | 6654 | 3.37 | 78.30 |
| 008950019-07 | OBS | No | 134.974599 | 213.093193 | 212.9 | 3.437 | 7.6 | 8.5 | 2.51 | 6654 | 4.35 | 34.66 |
| 008950019-08 | OBS | No | 80.377986 | 144.503332 | 146.7 | 6.000 | 7.5 | -1.0 | 2.51 | 6654 | 3.06 | 69.17 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008950019-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 008950019-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008950019-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS—HALO_GHOST |
| 008950019-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS |
| 008950019-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008950019-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008950019-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 008950019-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_NOFITS |

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

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

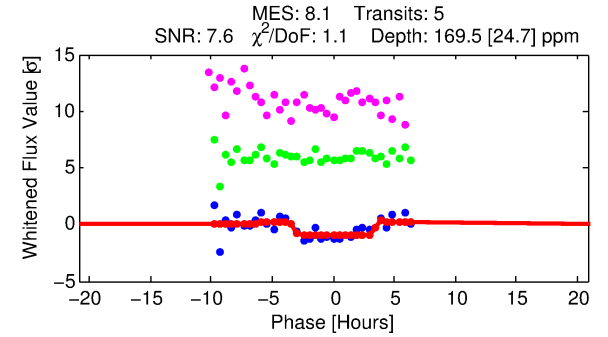
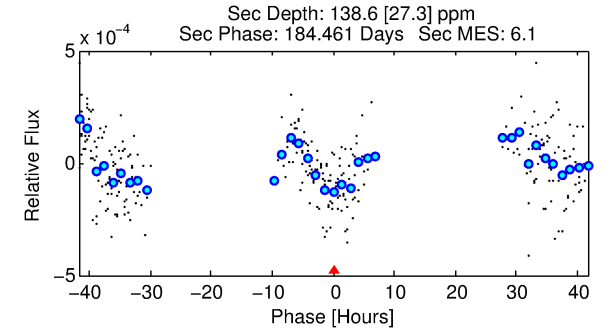
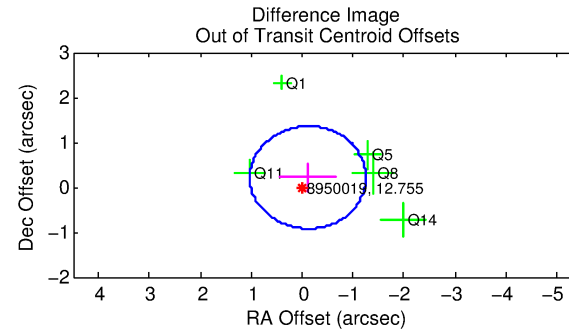
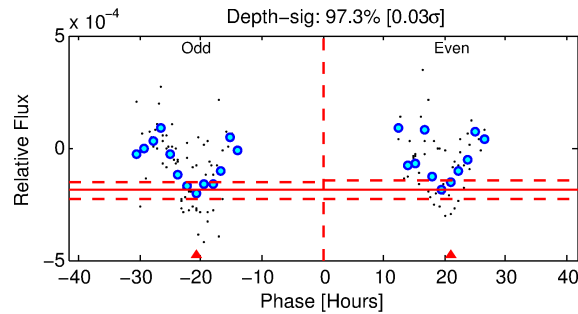
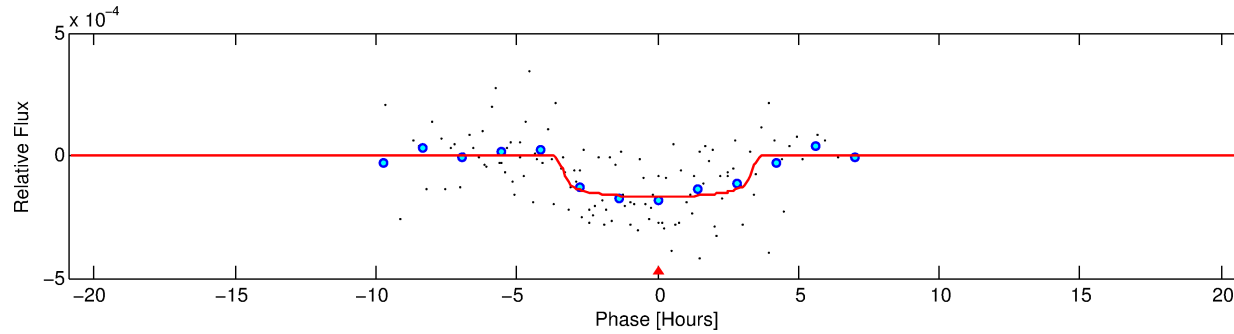
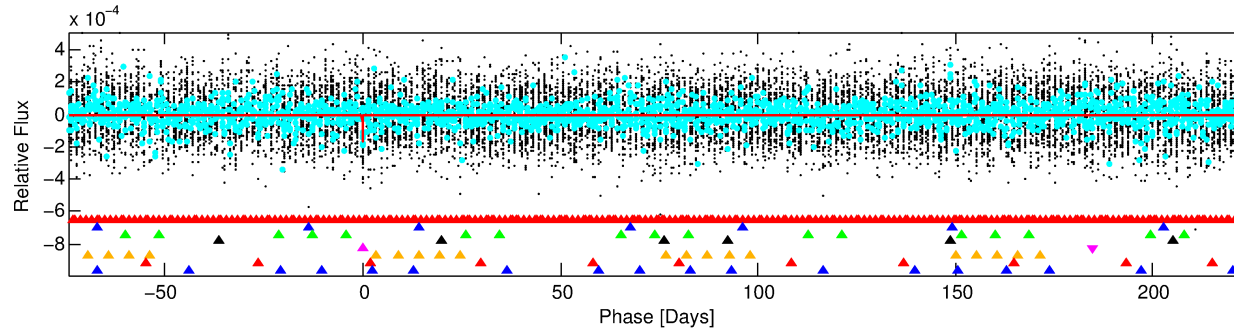
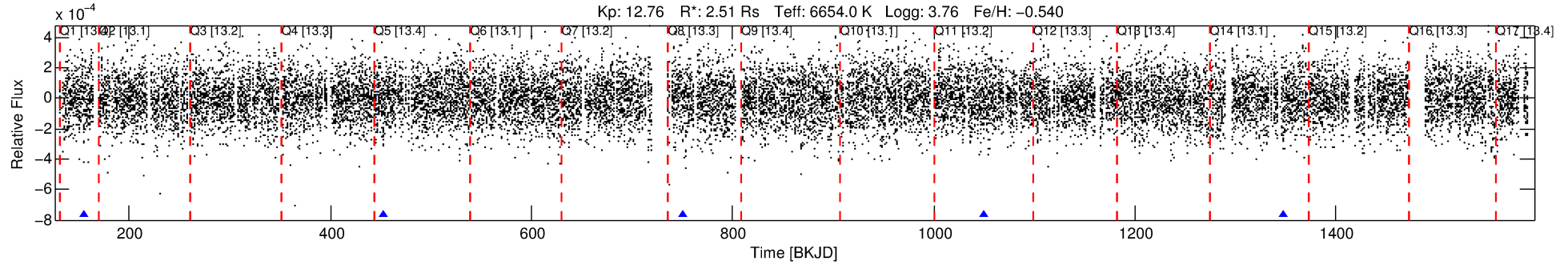
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008950019-05

No Significant Match Found

DV One-Page Summary

KIC: 8950019 Candidate: 5 of 8 Period: 298.279 d



DV Fit Results:

Period = 298.27851 [0.00530] d
Epoch = 154.7645 [0.0117] BKJD
Rp/R* = 0.0130 [0.0080]
a/R* = 213.36 [745.35]
b = 0.77 [1.82]
Seff = 12.04 [7.06]
Teq = 475 [70] K
Rp = 3.57 [2.56] Re
a = 0.9579 [0.3445] AU
Ag = 5486.36 [7492.63] [0.73σ]
Teffp = 6320 [1968] K [2.97σ]

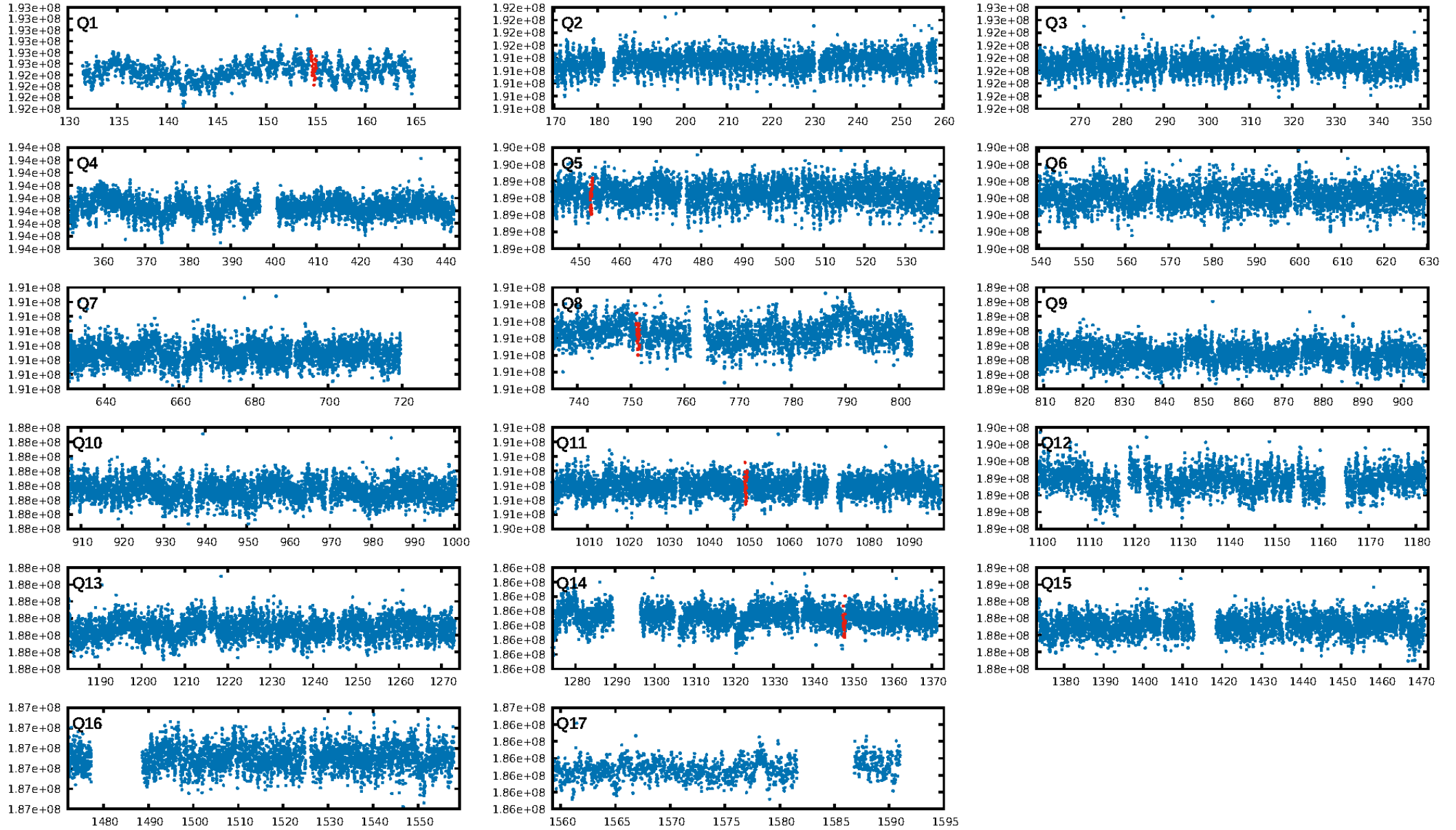
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [117.18σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 20.1%
ModelChiSquareGof-sig: 89.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 3.917
Centroid-sig: 0.5%
Centroid-so: 3.312 arcsec [2.49σ]
OotOffset-rm: 0.243 arcsec [0.64σ]
KicOffset-rm: 0.290 arcsec [0.71σ]
OotOffset-st: 1/1/1/2 [5]
KicOffset-st: 1/1/1/2 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 0.40 [2/5]

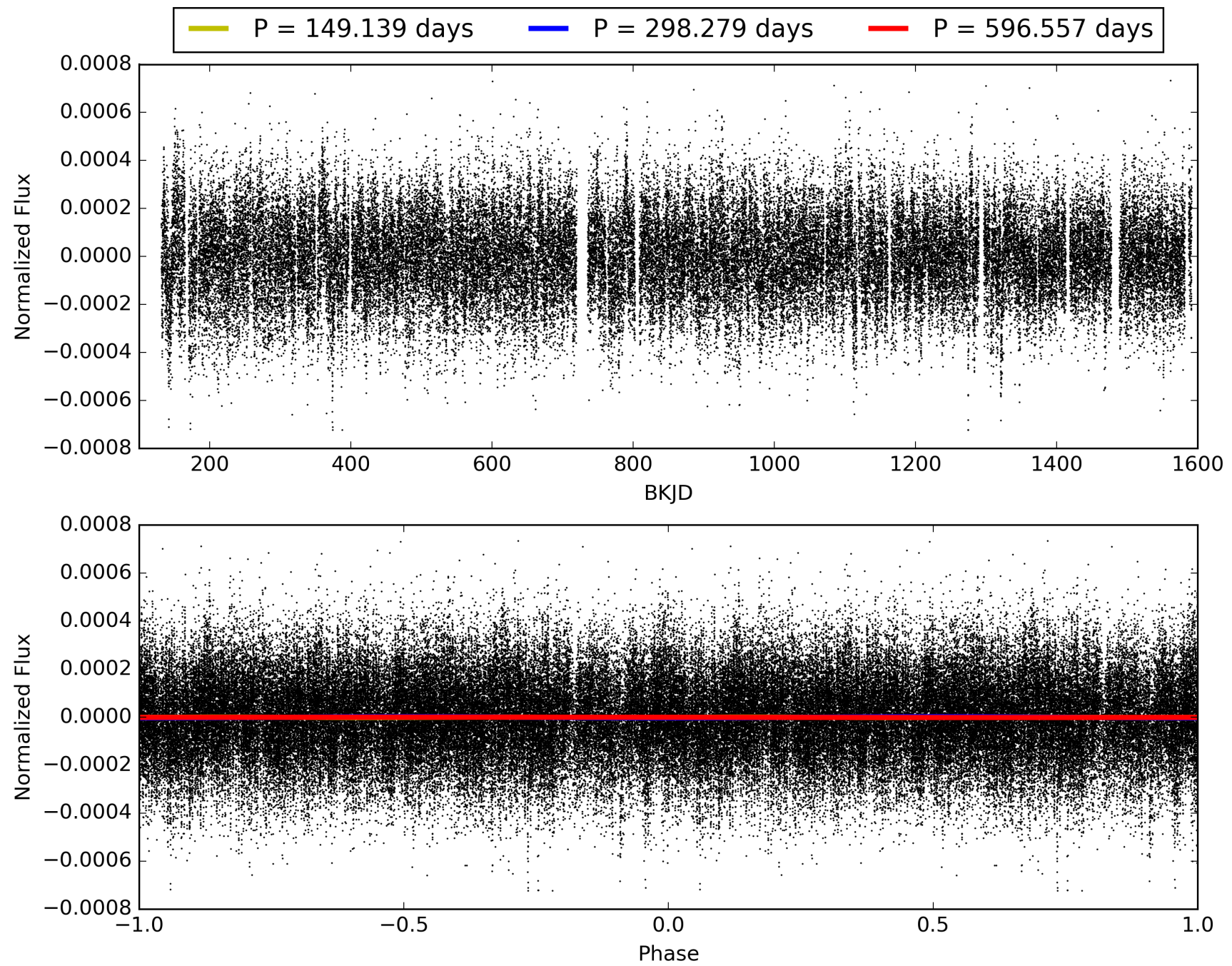
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:42:03 Z

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

TCE 008950019-05, PDC Light Curves

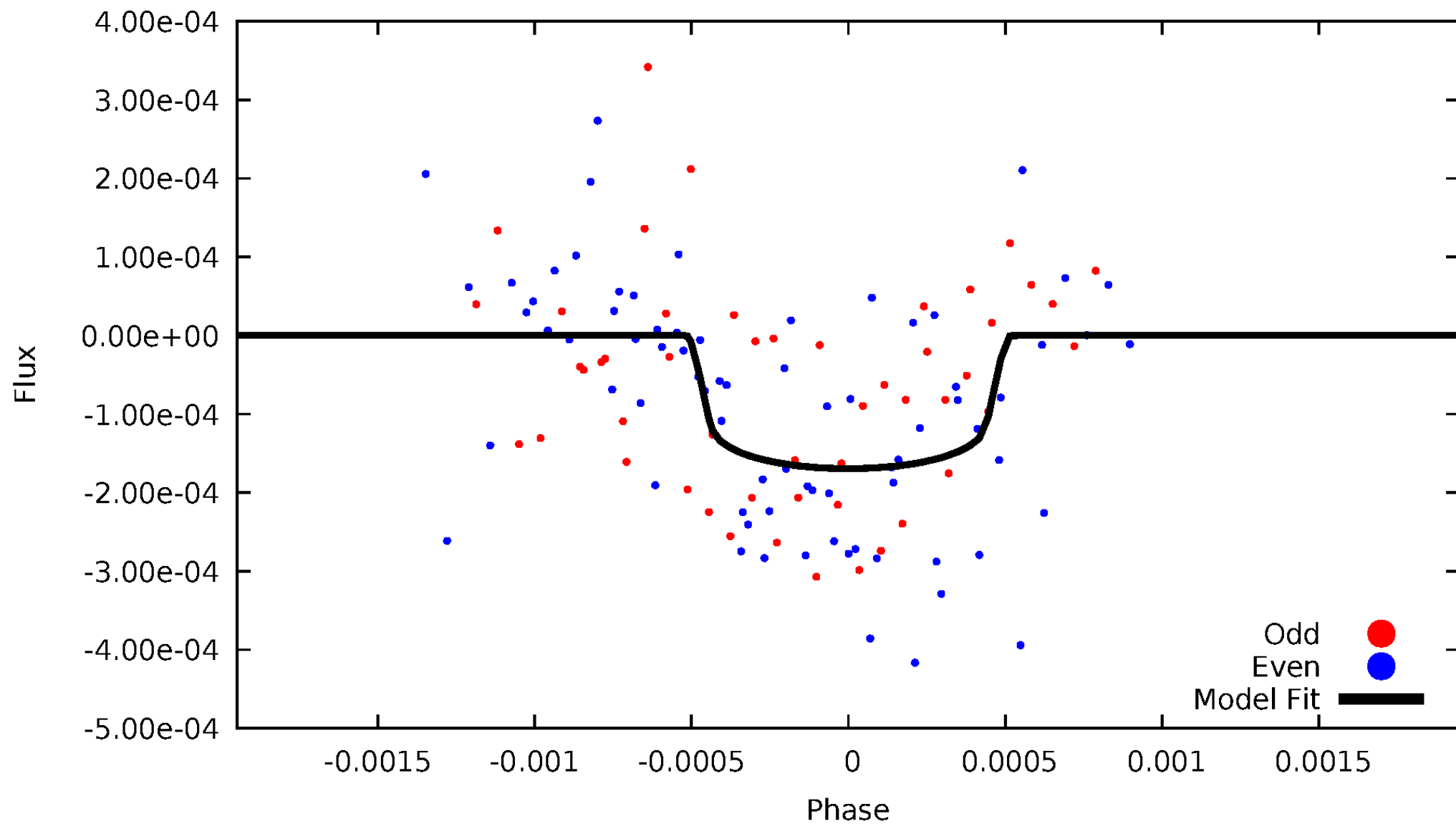


TCE 008950019-05



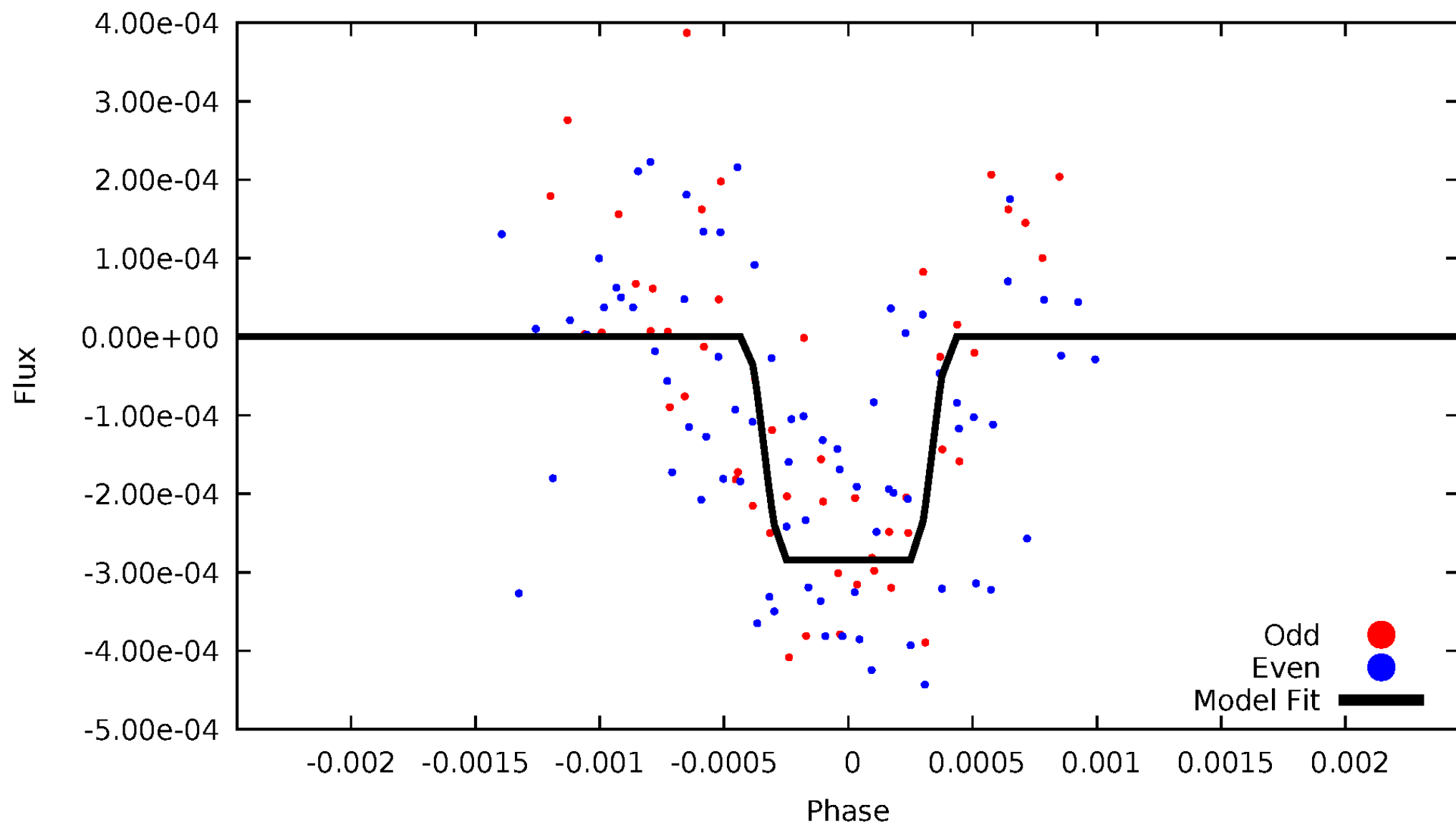
DV Odd/Even

TCE 008950019-05

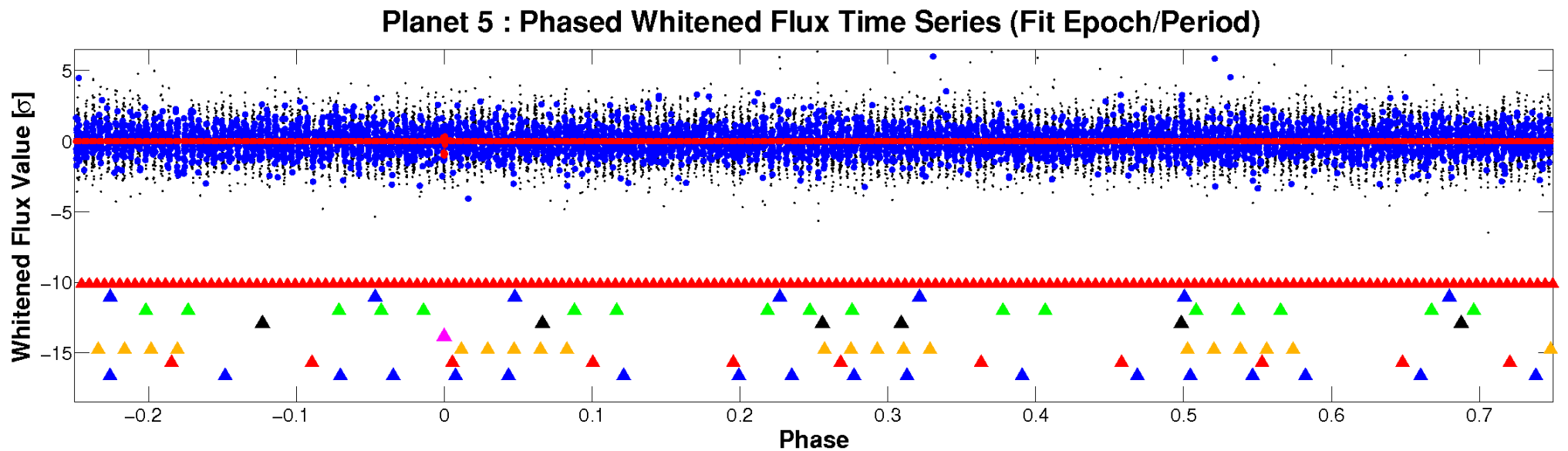
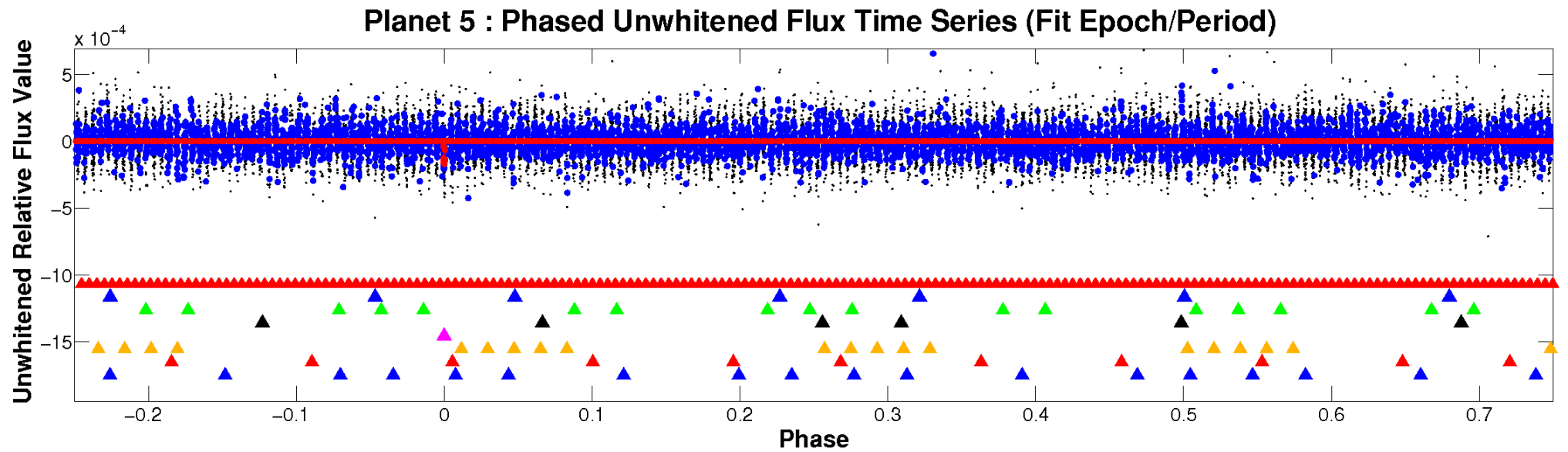


ALT Odd/Even

TCE 008950019-05

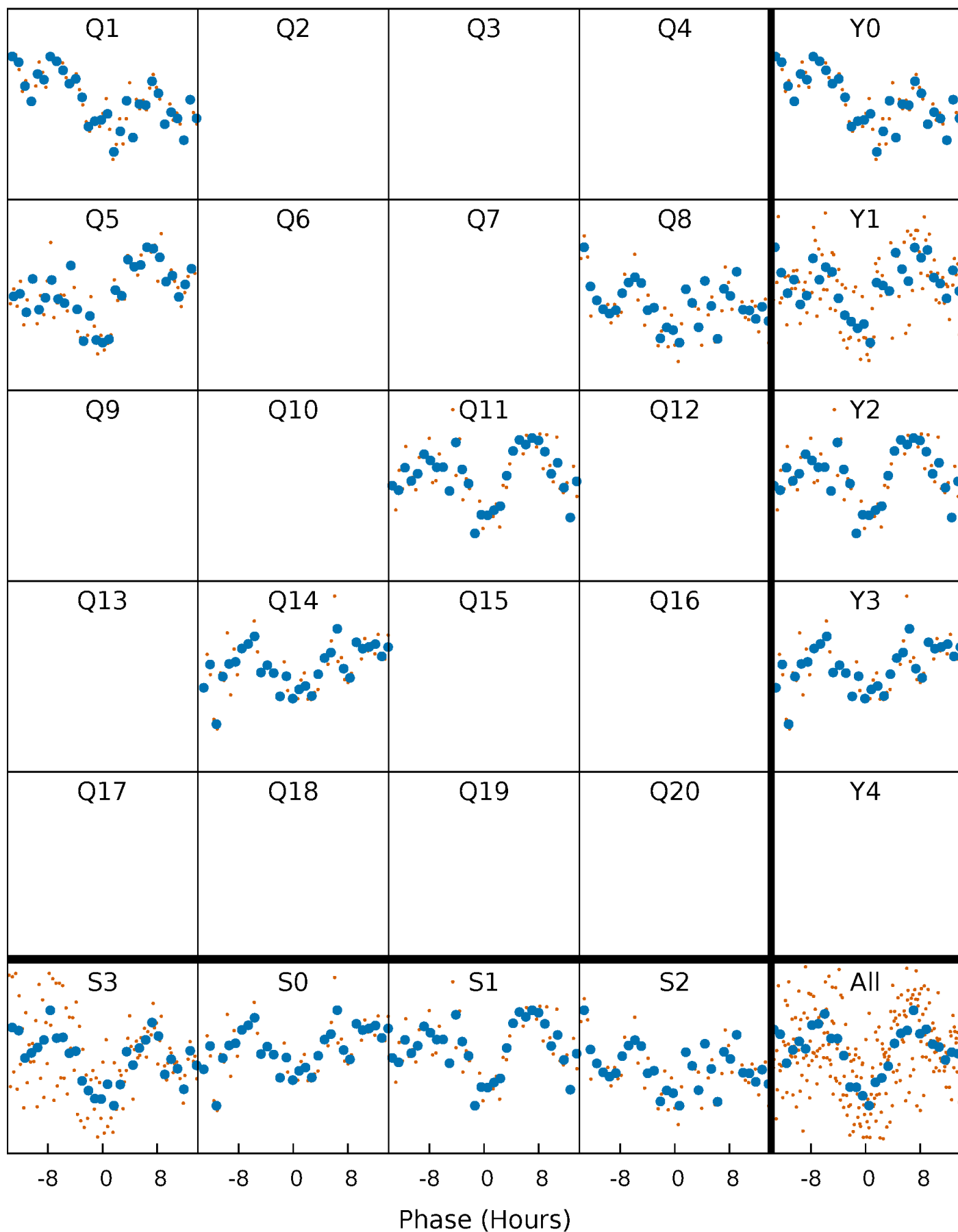


Non-Whitened Vs. Whitened Light Curve



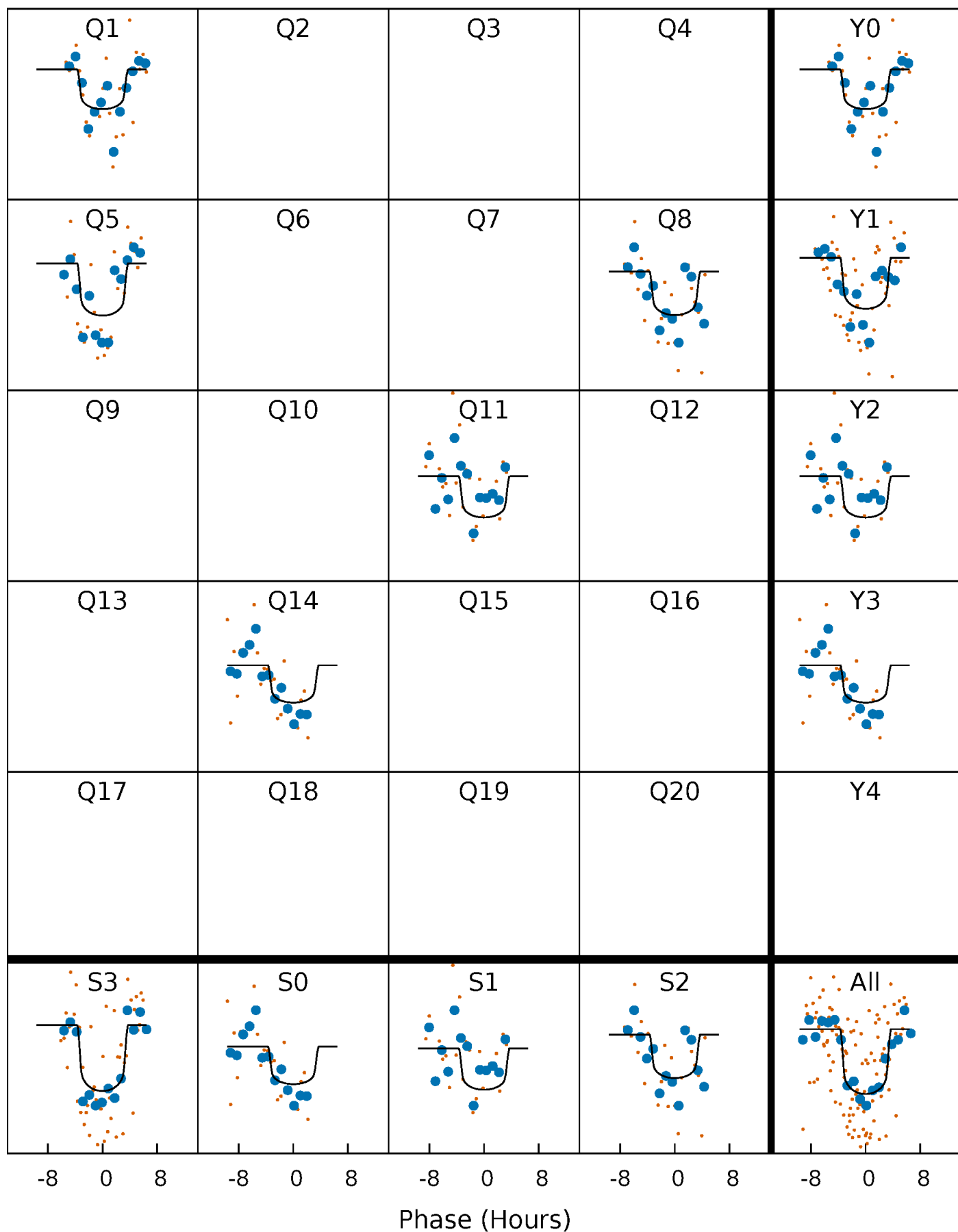
PDC Quarter-Phased Transit Curves

TCE 008950019-05 $P=298.278515$ Days $T_0=154.764534$ (BKJD)



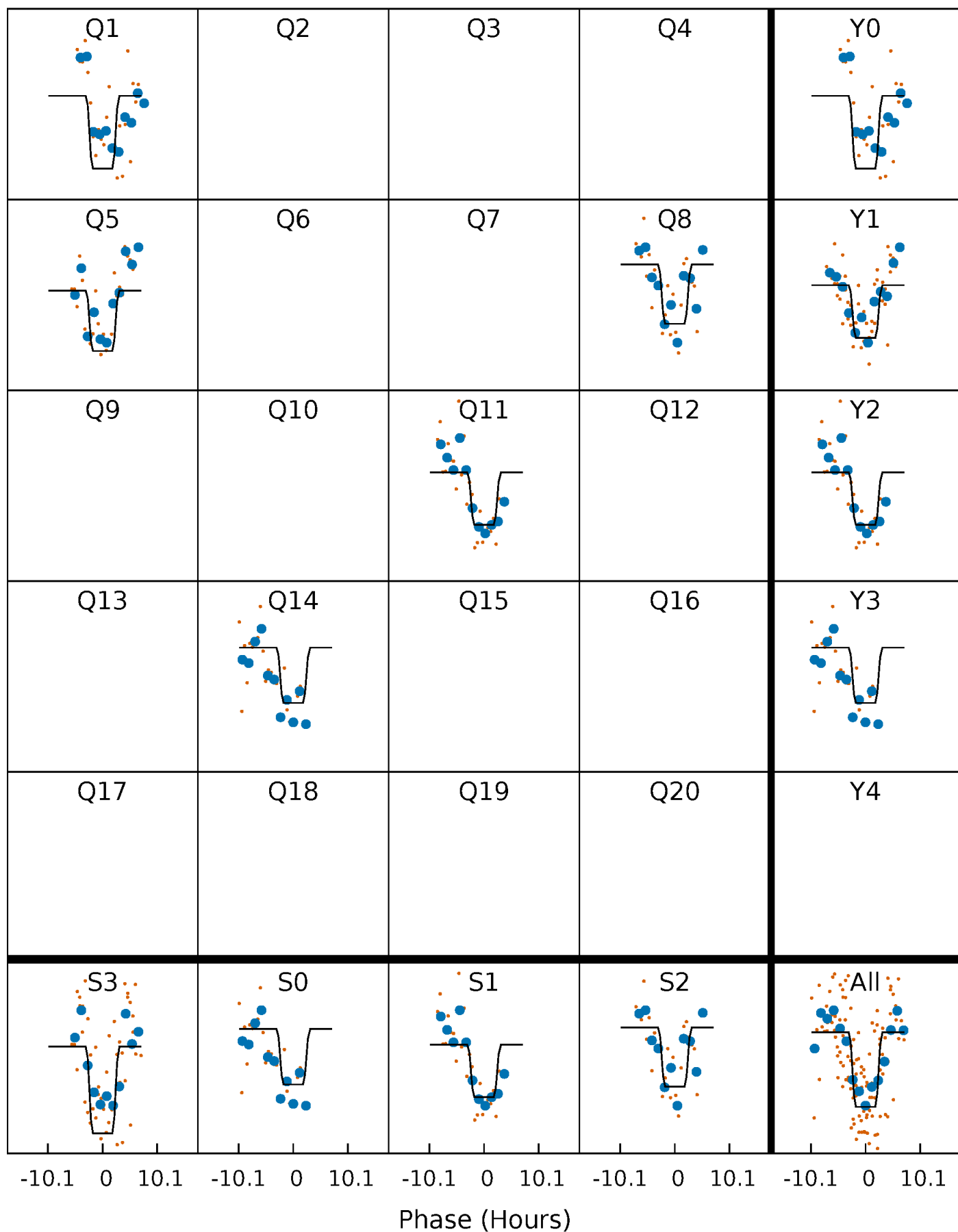
DV Quarter-Phased Transit Curves

TCE 008950019-05 $P=298.278515$ Days $T_0=154.764534$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

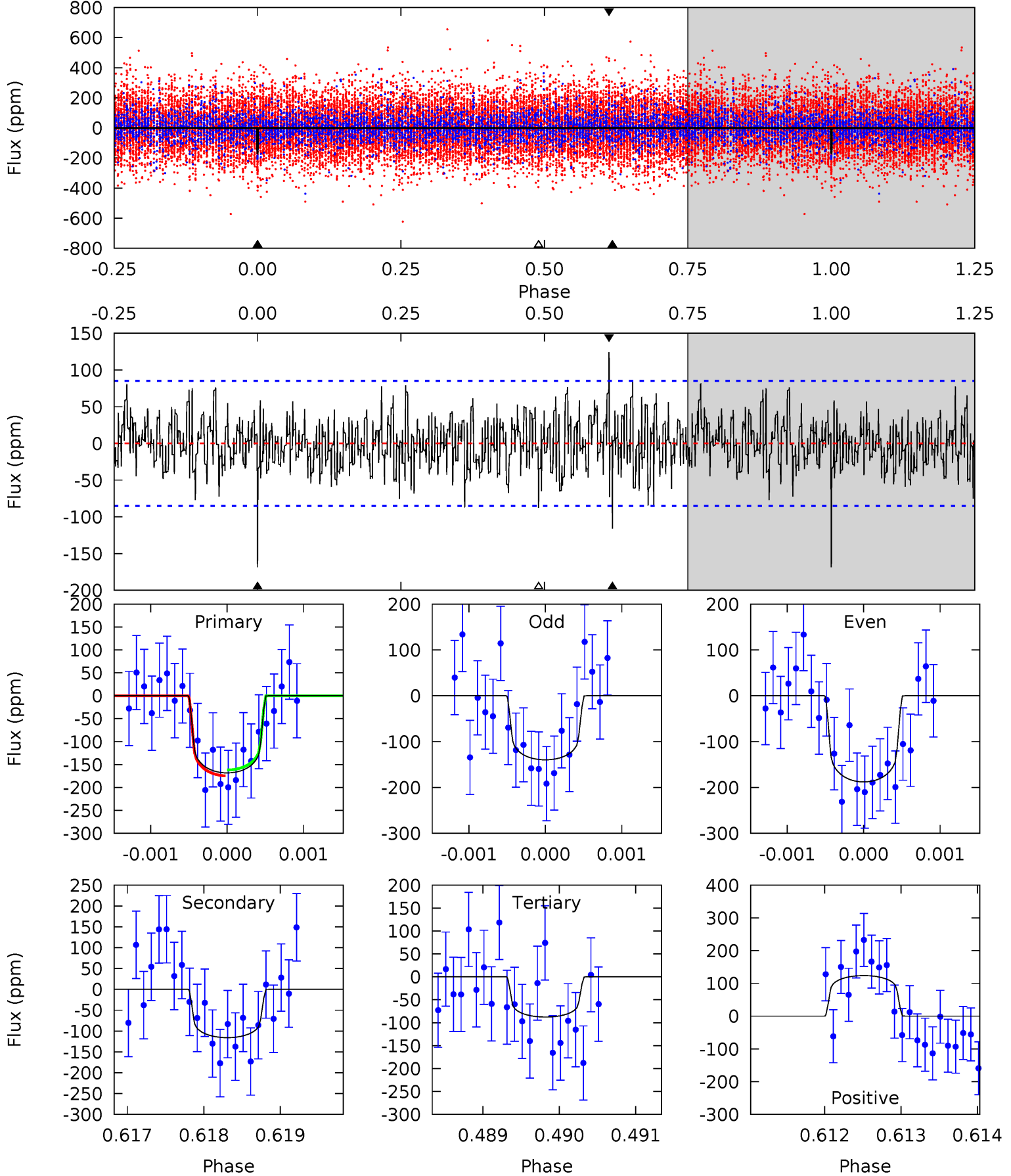
TCE 008950019-05 P=298.289109 Days $T_0=154.735987$ (BKJD)



DV Model-Shift Uniqueness Test

008950019-05, P = 298.278515 Days, E = 154.764534 Days

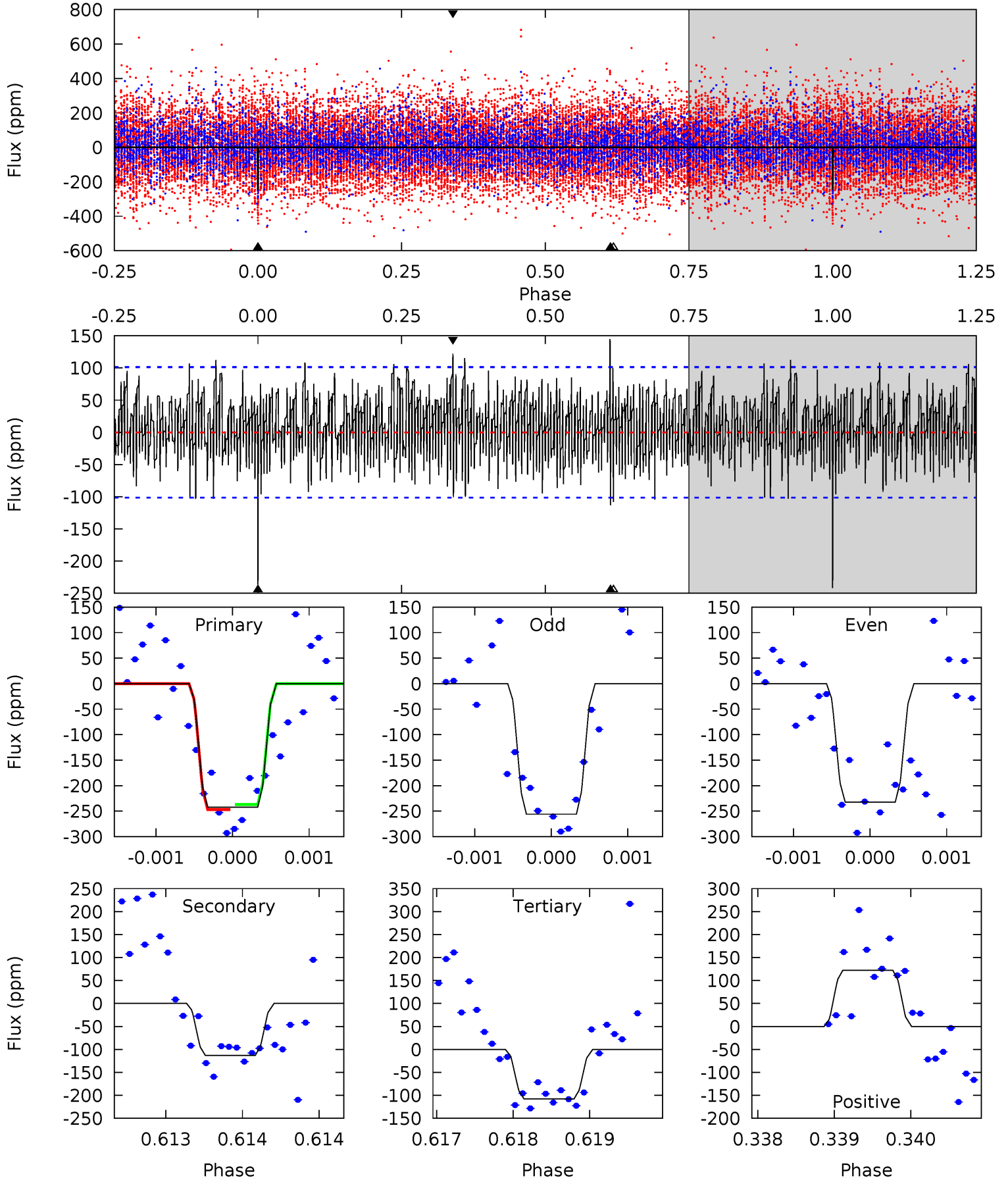
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.7 | 7.40 | 5.60 | 7.91 | 5.45 | 3.29 | 1.81 | 5.15 | 2.84 | 1.80 | -0.51 | 1.52 | 0.90 | 0.42 | 0.41 |



Alt Model-Shift Uniqueness Test

008950019-05, P = 298.289109 Days, E = 154.735987 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 13.1 | 6.13 | 5.84 | 6.62 | 5.50 | 3.37 | 2.21 | 7.28 | 6.50 | 0.28 | -0.50 | 0.62 | 1.13 | 0.37 | 0.27 |



Stellar Parameters For KIC 008950019

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6654^{+182}_{-202} | $3.759^{+0.336}_{-0.084}$ | $-0.540^{+0.350}_{-0.300}$ | $2.508^{+0.404}_{-0.943}$ | $1.317^{+0.222}_{-0.246}$ | $0.118^{+0.286}_{-0.031}$ |
| | +3%/-3% | +9%/-2% | +65%/-56% | +16%/-38% | +17%/-19% | +244%/-26% |
| 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 008950019-05 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|-------------------|------------------------|-------------------------|
| DV | -116 ± 16 | $3.37^{+2.19}_{-1.77}$ | 649^{+38}_{-57} | 5949^{+3177}_{-1136} | 5381^{+16912}_{-3510} |
| Alt. | -113 ± 18 | $4.37^{+2.27}_{-2.11}$ | 650^{+39}_{-66} | 5271^{+1837}_{-791} | 2916^{+7870}_{-1579} |

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

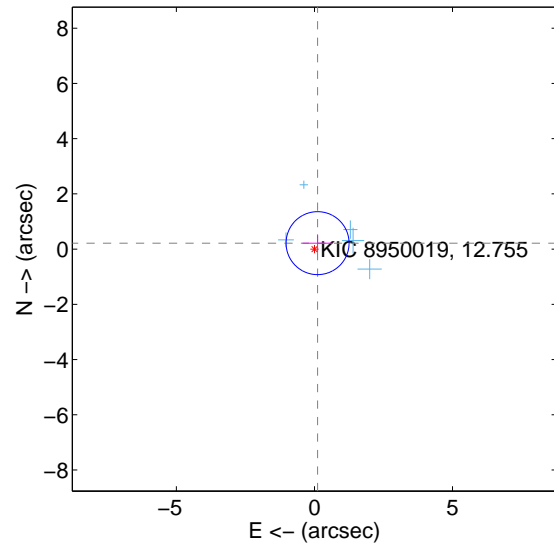
Supplemental centroid analysis for 008950019-05. Kepler magnitude: 12.76. Transit SNR 7.61

There are 5 quarters with good PRF difference image offsets

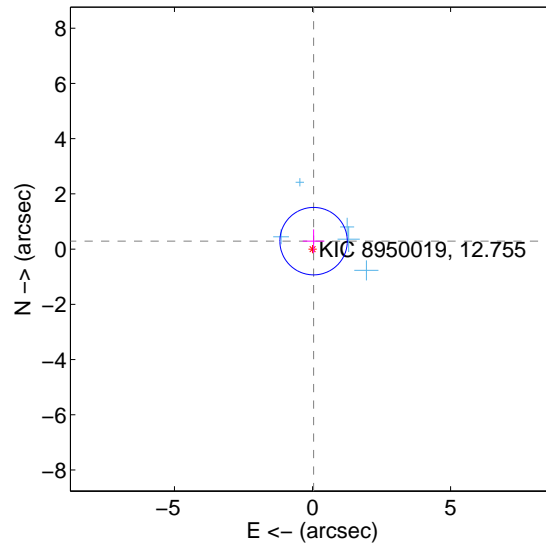
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|-------------------|
| PRF-fit source offset from OOT | 0.243 ± 0.380 | 0.64 | -0.114 ± 0.546 | 0.215 ± 0.319 |
| PRF-fit source offset from KIC position | 0.290 ± 0.407 | 0.71 | -0.039 ± 0.392 | 0.288 ± 0.429 |
| photometric centroid source offset | 3.31 ± 1.33 | 2.49 | 3.23 ± 1.33 | -0.75 ± 1.28 |

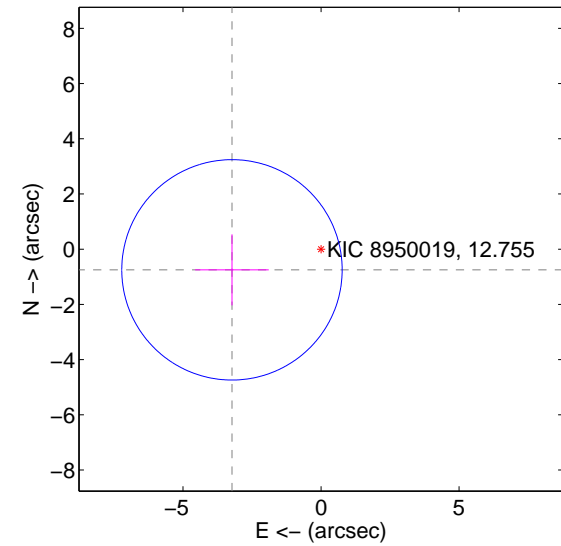
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

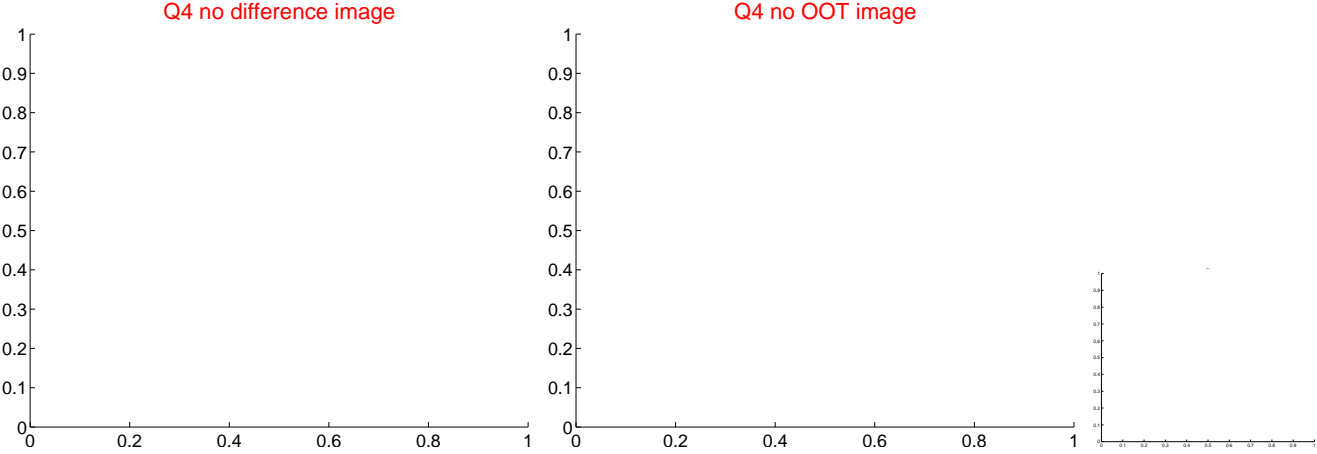
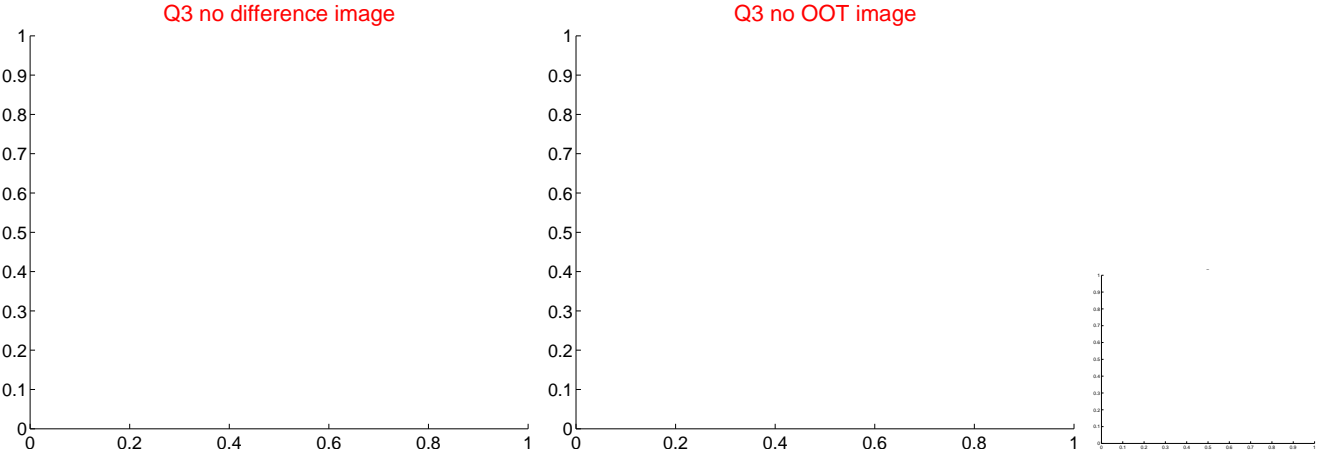
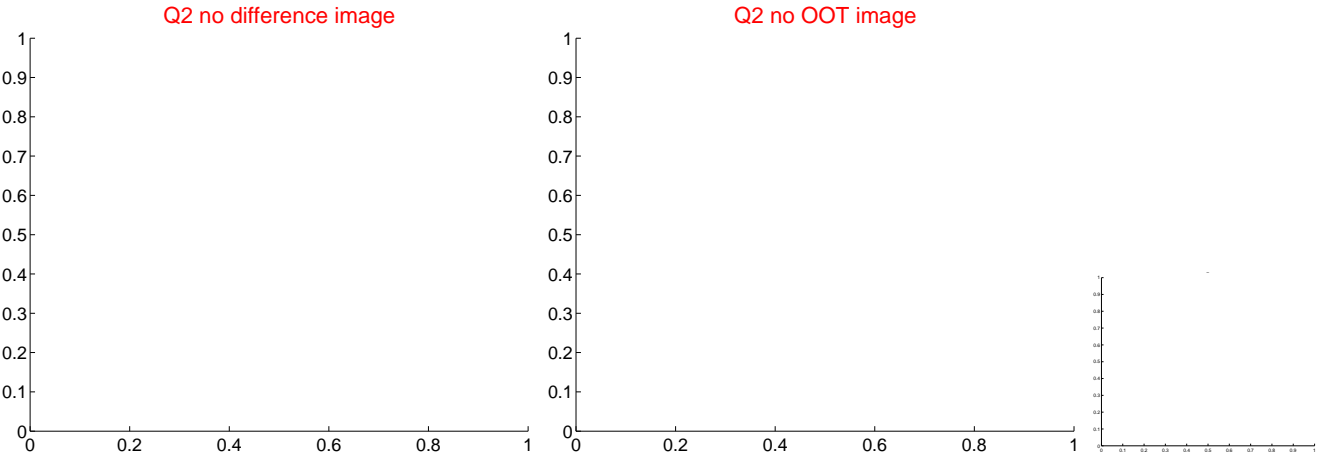
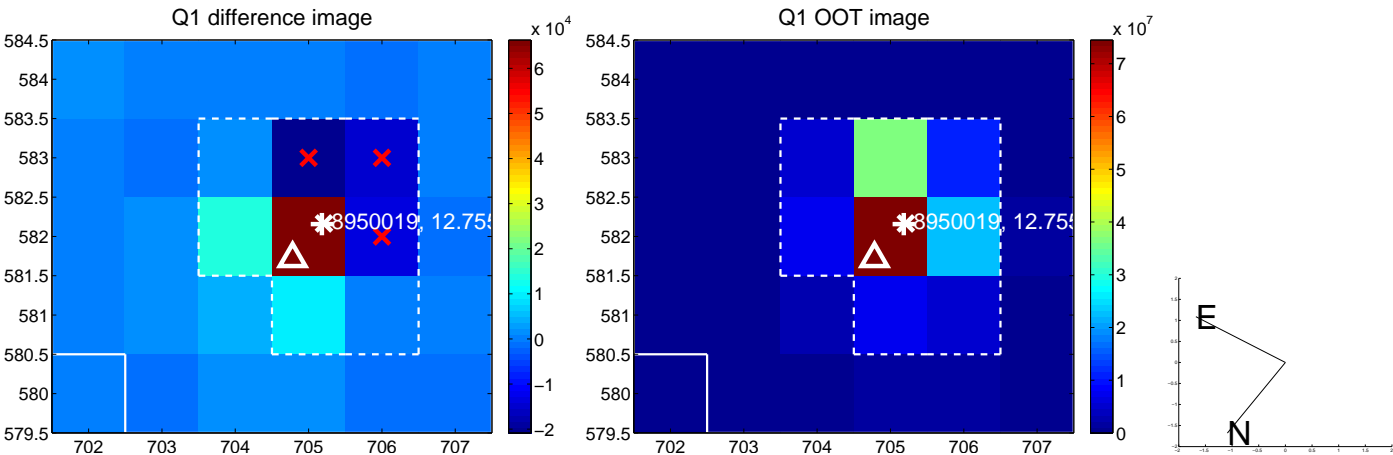


offset from photometric centroids

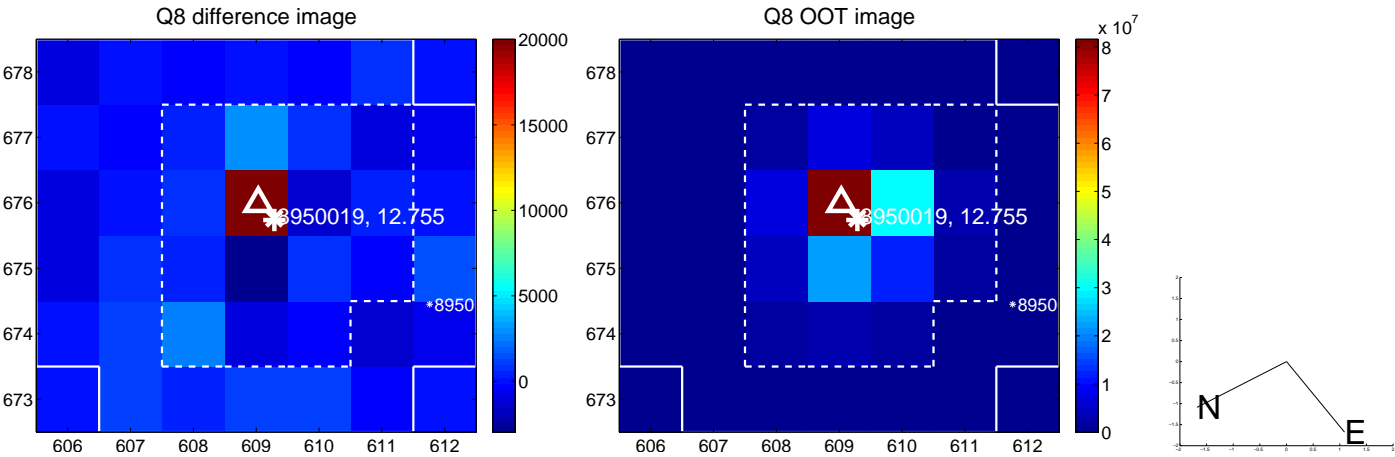
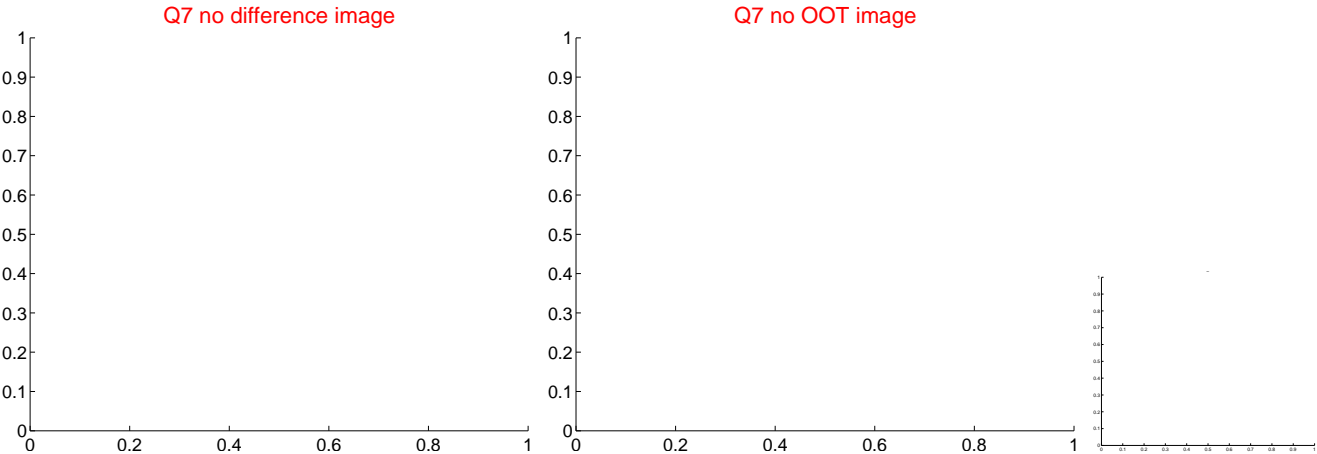
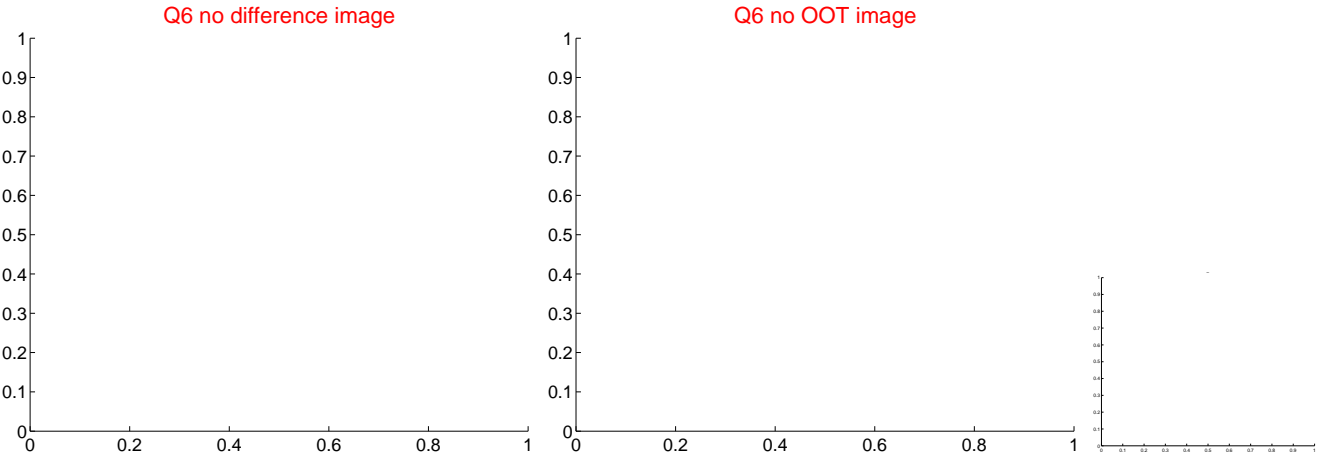
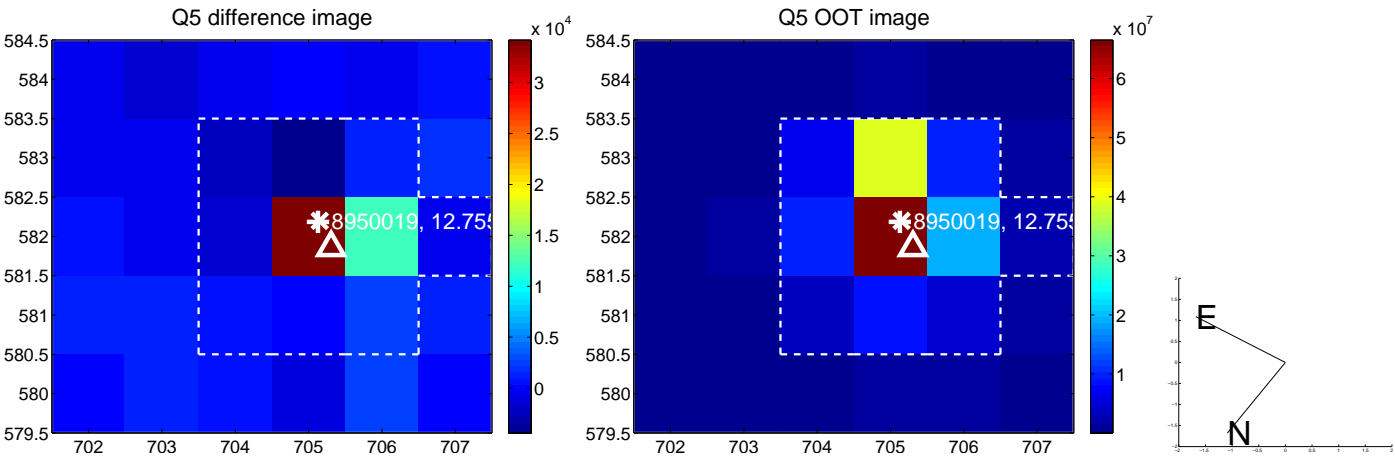


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

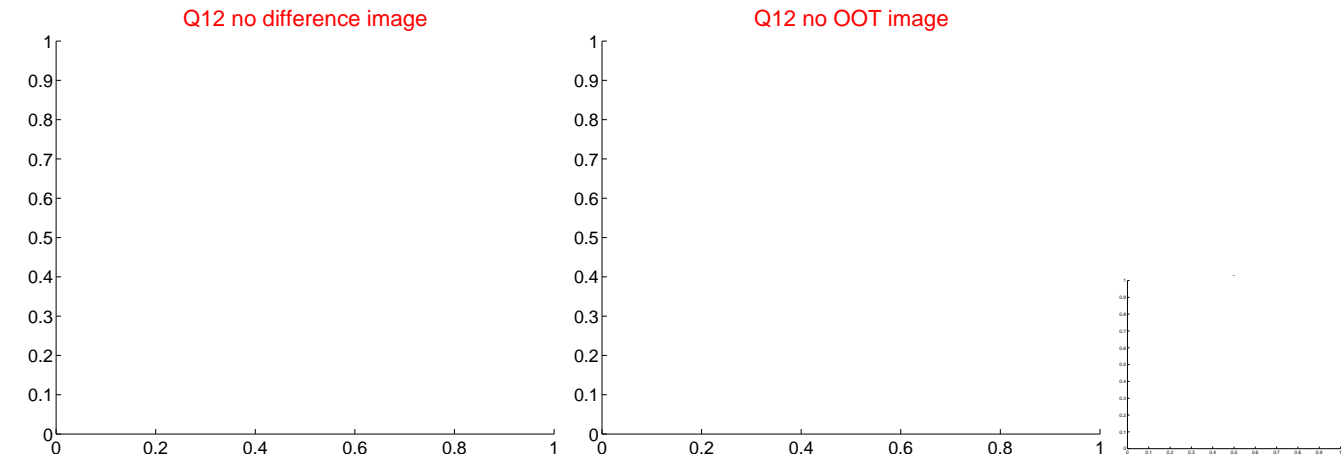
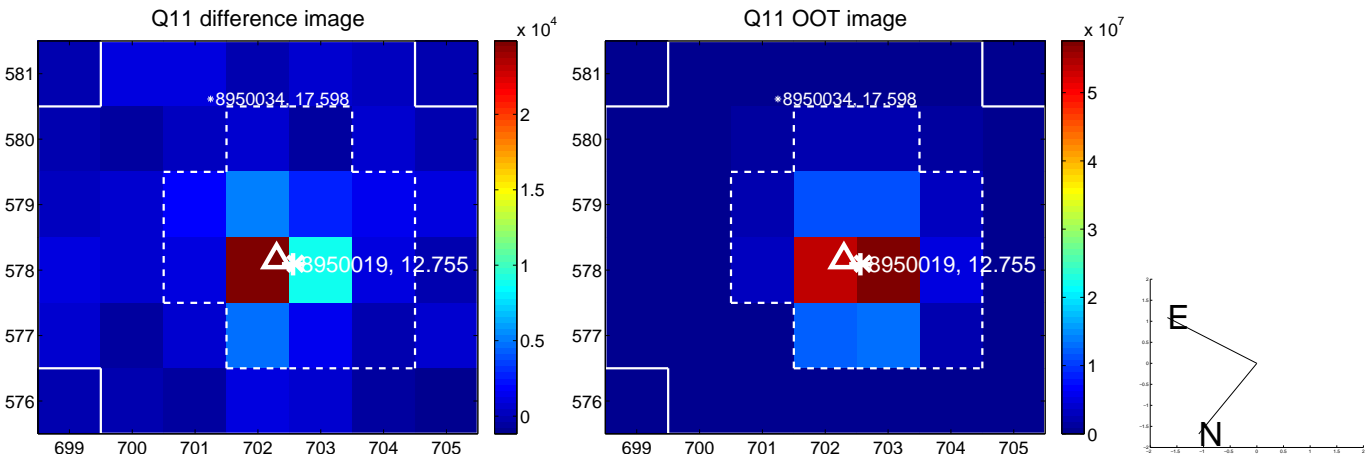
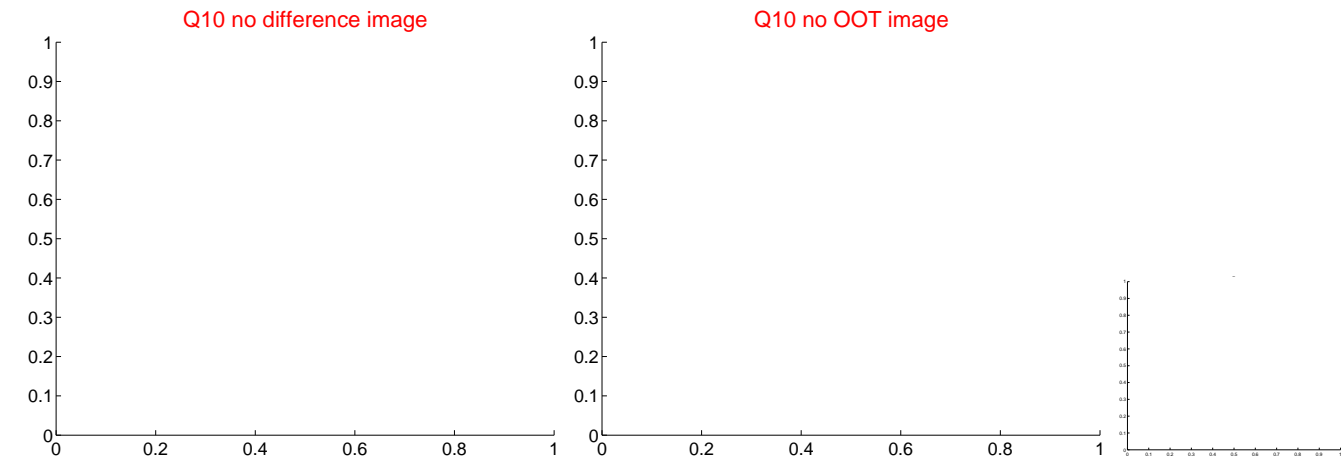
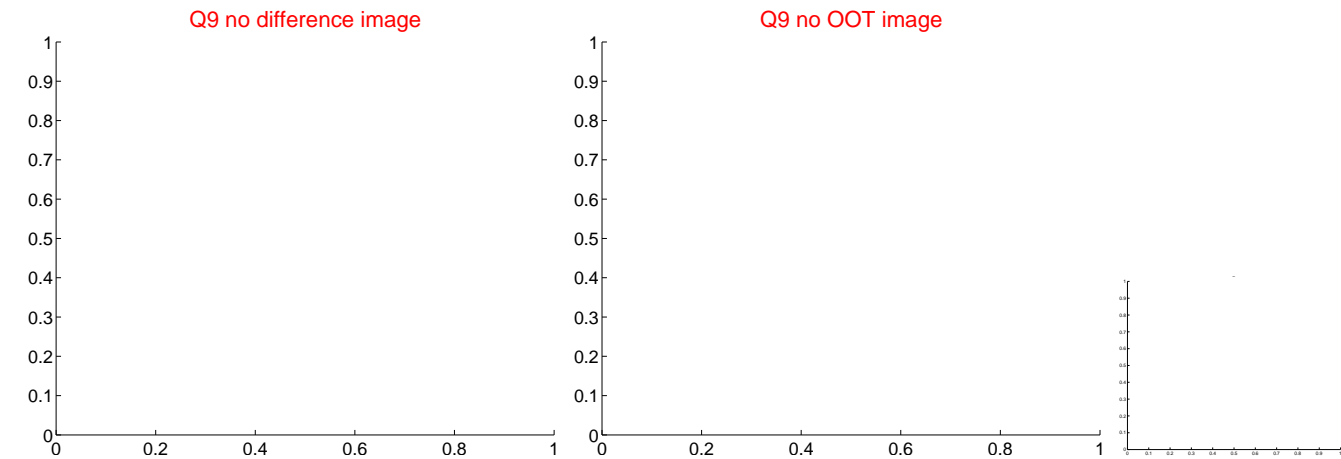
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



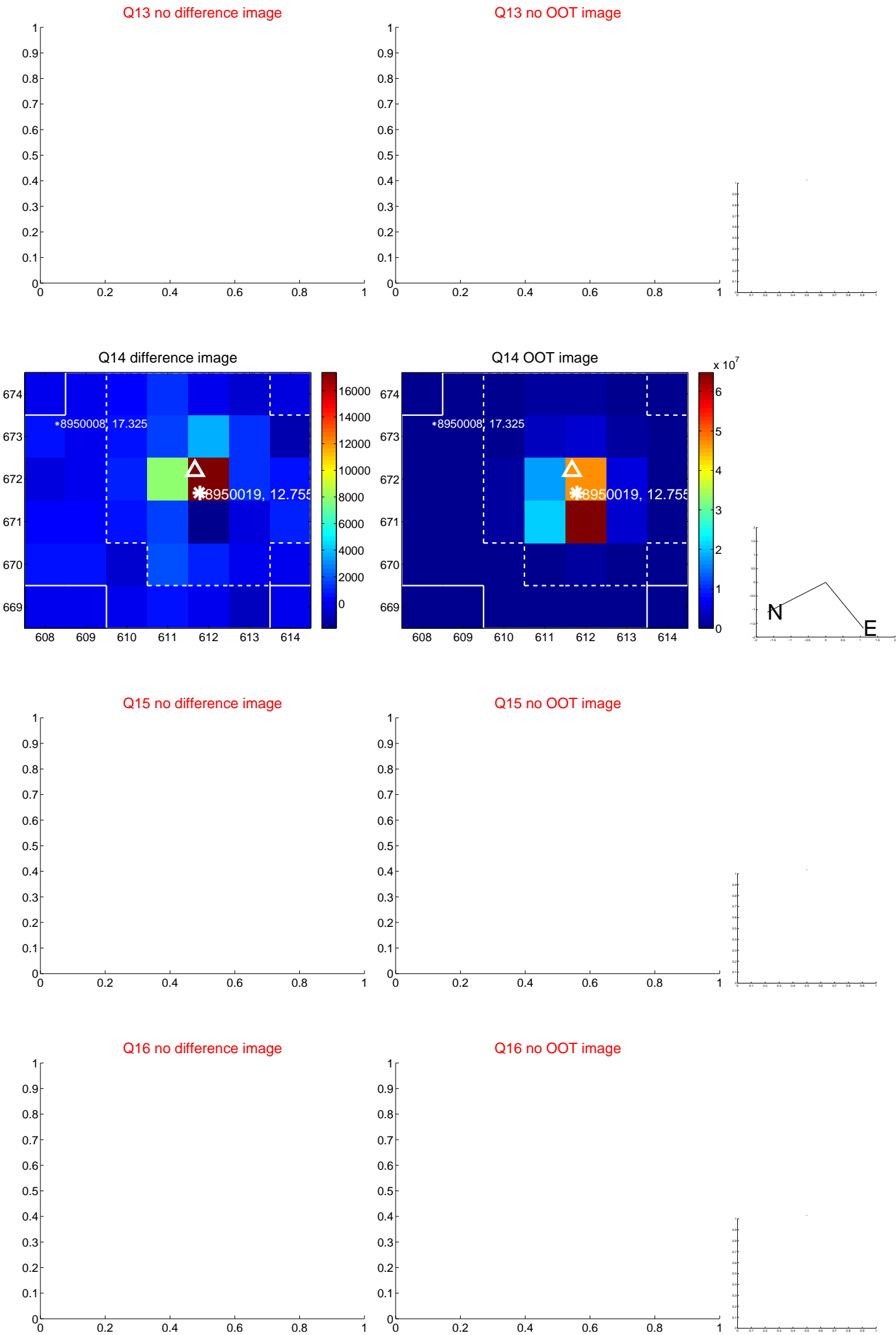
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



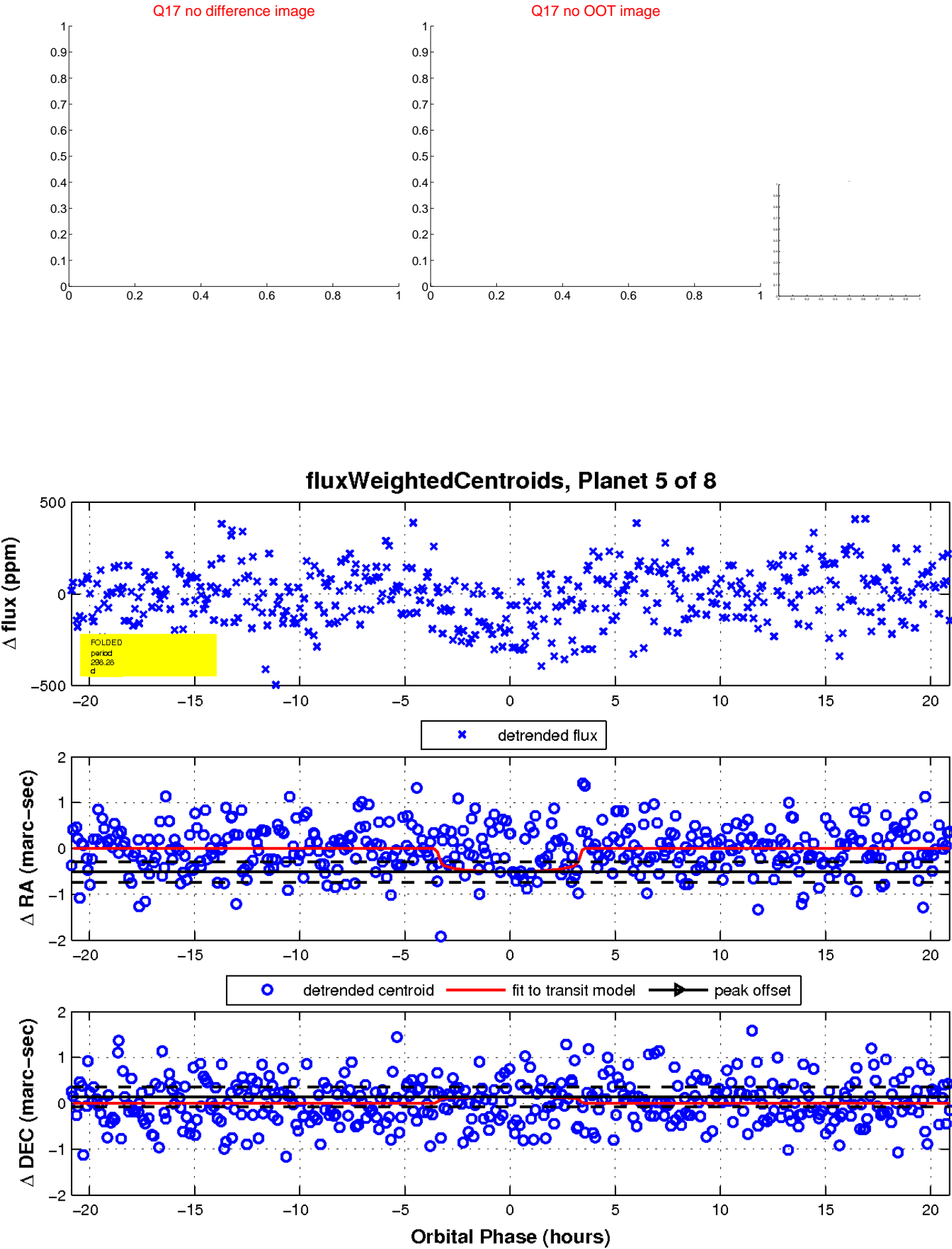
white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



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

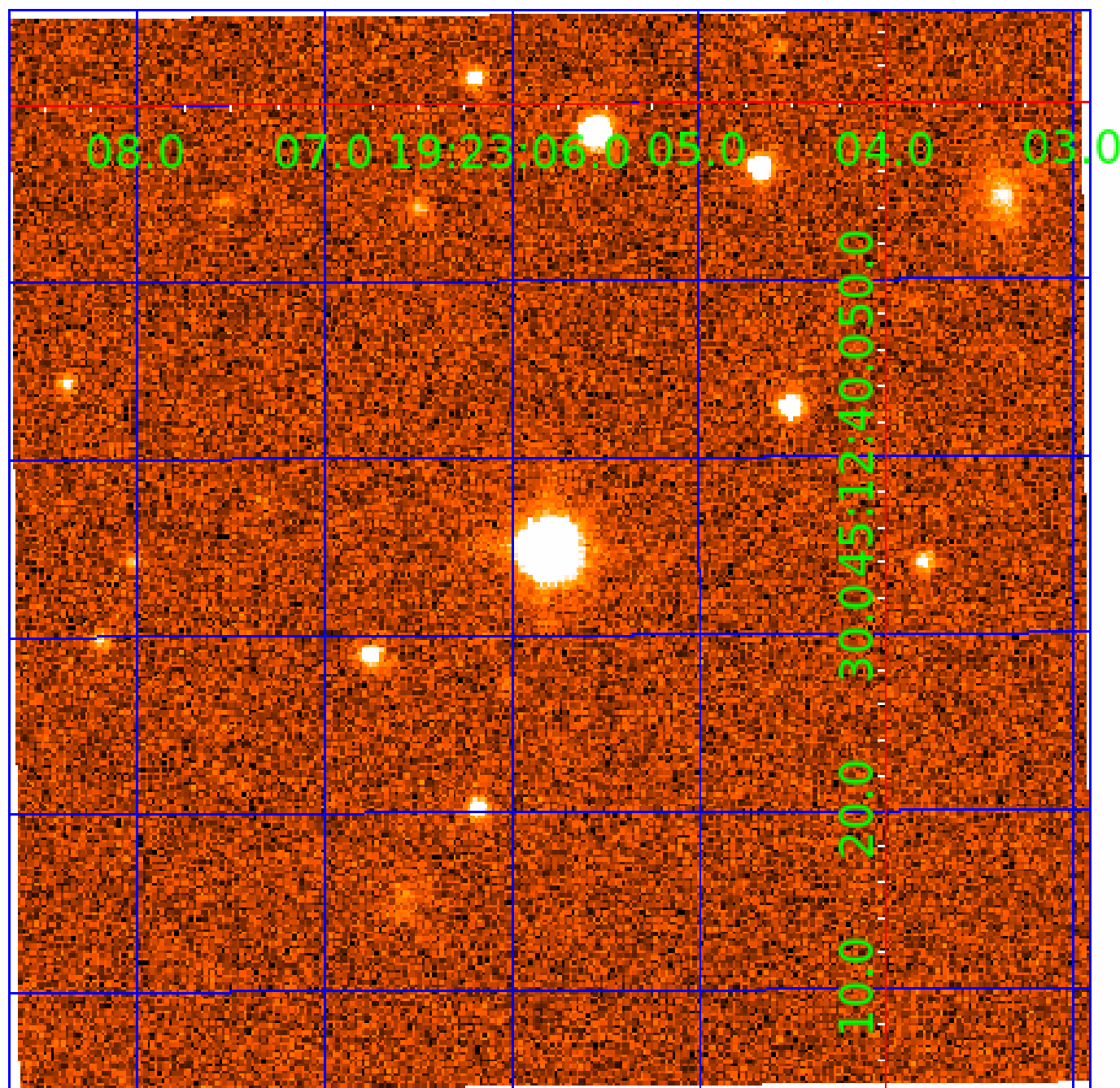


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008950019

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008950019-01 | OBS | No | 1.537285 | 132.501062 | 10.3 | 8.039 | 8.8 | 5.0 | 2.51 | 6654 | 0.87 | 13523.98 |
| 008950019-02 | OBS | No | 216.662839 | 250.644951 | 208.8 | 13.436 | 11.7 | 7.1 | 2.51 | 6654 | 3.94 | 18.44 |
| 008950019-03 | OBS | No | 86.440129 | 133.552210 | 128.7 | 18.788 | 9.3 | 7.7 | 2.51 | 6654 | 3.07 | 62.78 |
| 008950019-04 | OBS | No | 241.801135 | 231.066036 | 207.2 | 9.229 | 9.0 | 7.8 | 2.51 | 6654 | 3.97 | 15.93 |
| 008950019-05 | OBS | No | 298.278515 | 154.764534 | 169.5 | 6.974 | 8.1 | 7.6 | 2.51 | 6654 | 3.57 | 12.04 |
| 008950019-06 | OBS | No | 73.239558 | 179.518514 | 146.3 | 6.324 | 8.1 | 7.8 | 2.51 | 6654 | 3.37 | 78.30 |
| 008950019-07 | OBS | No | 134.974599 | 213.093193 | 212.9 | 3.437 | 7.6 | 8.5 | 2.51 | 6654 | 4.35 | 34.66 |
| 008950019-08 | OBS | No | 80.377986 | 144.503332 | 146.7 | 6.000 | 7.5 | -1.0 | 2.51 | 6654 | 3.06 | 69.17 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008950019-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 008950019-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008950019-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS—HALO_GHOST |
| 008950019-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS |
| 008950019-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008950019-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008950019-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 008950019-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_NOFITS |

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

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

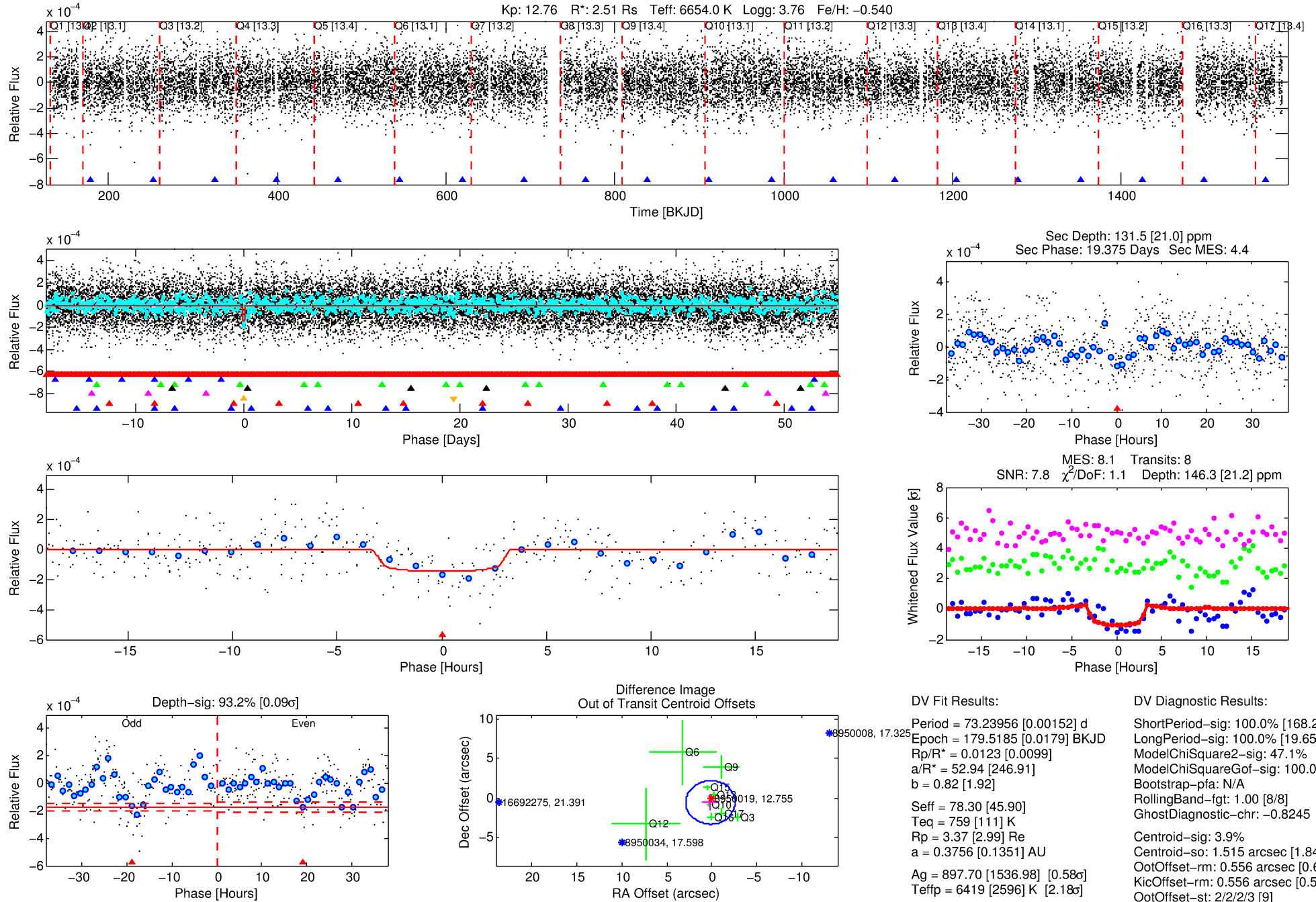
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008950019-06

No Significant Match Found

DV One-Page Summary

KIC: 8950019 Candidate: 6 of 8 Period: 73.240 d



DV Fit Results:

Period = 73.23956 [0.00152] d
Epoch = 179.5185 [0.0179] BKJD
Rp/R* = 0.0123 [0.0099]
a/R* = 52.94 [246.91]
b = 0.82 [1.92]
Seff = 78.30 [45.90]
Teff = 759 [111] K
Rp = 3.37 [2.99] Re
a = 0.3756 [0.1351] AU
Ag = 897.70 [1536.98] [0.58σ]
Teffp = 6419 [2596] K [2.18σ]

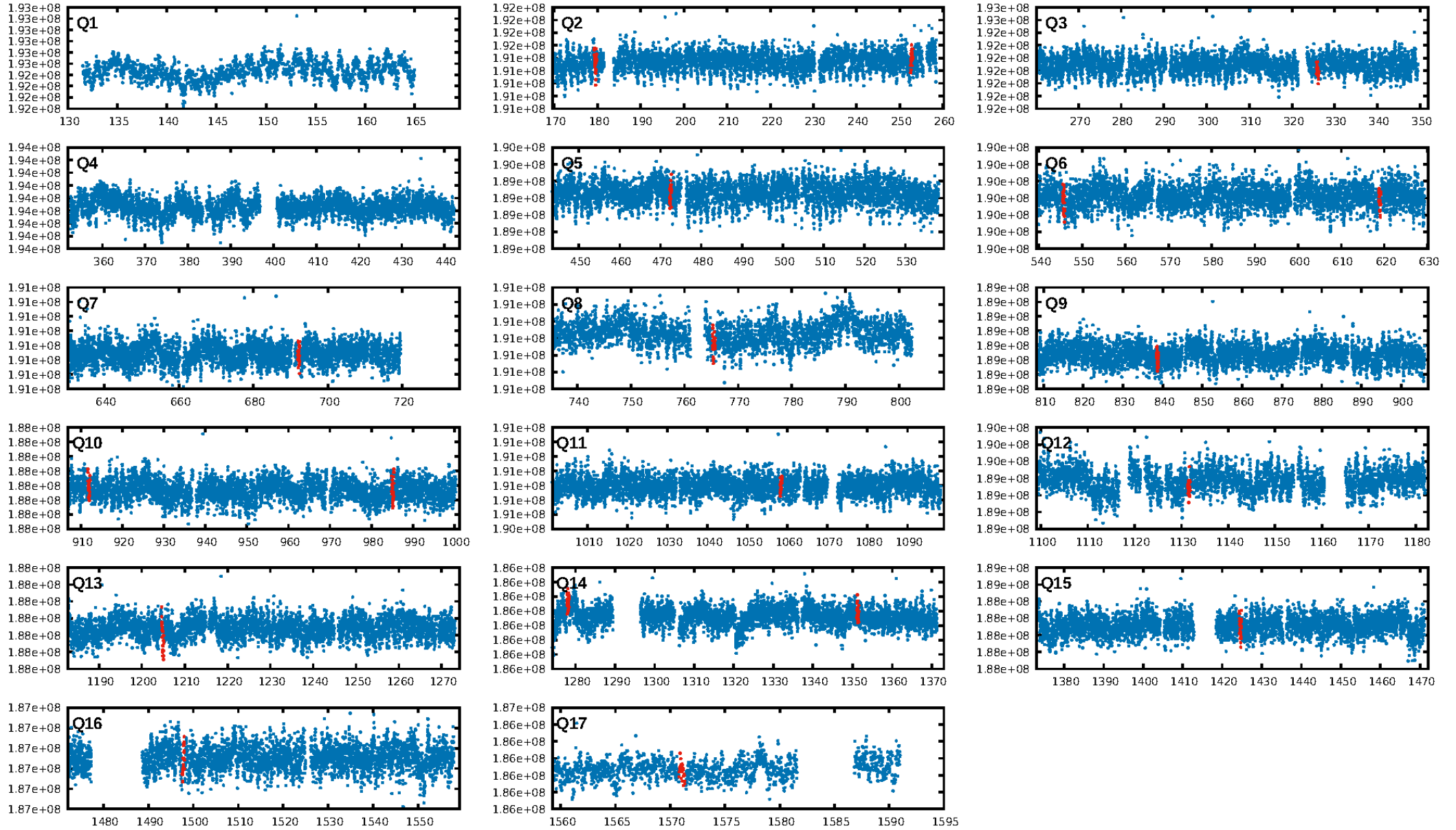
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [168.24σ]
LongPeriod-sig: 100.0% [19.65σ]
ModelChiSquare2-sig: 47.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -0.8245
Centroid-sig: 3.9%
Centroid-so: 1.515 arcsec [1.84σ]
OotOffset-rm: 0.556 arcsec [0.61σ]
KicOffset-rm: 0.556 arcsec [0.51σ]
OotOffset-st: 2/2/2/3 [9]
KicOffset-st: 2/2/2/3 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 0.07 [1/14]

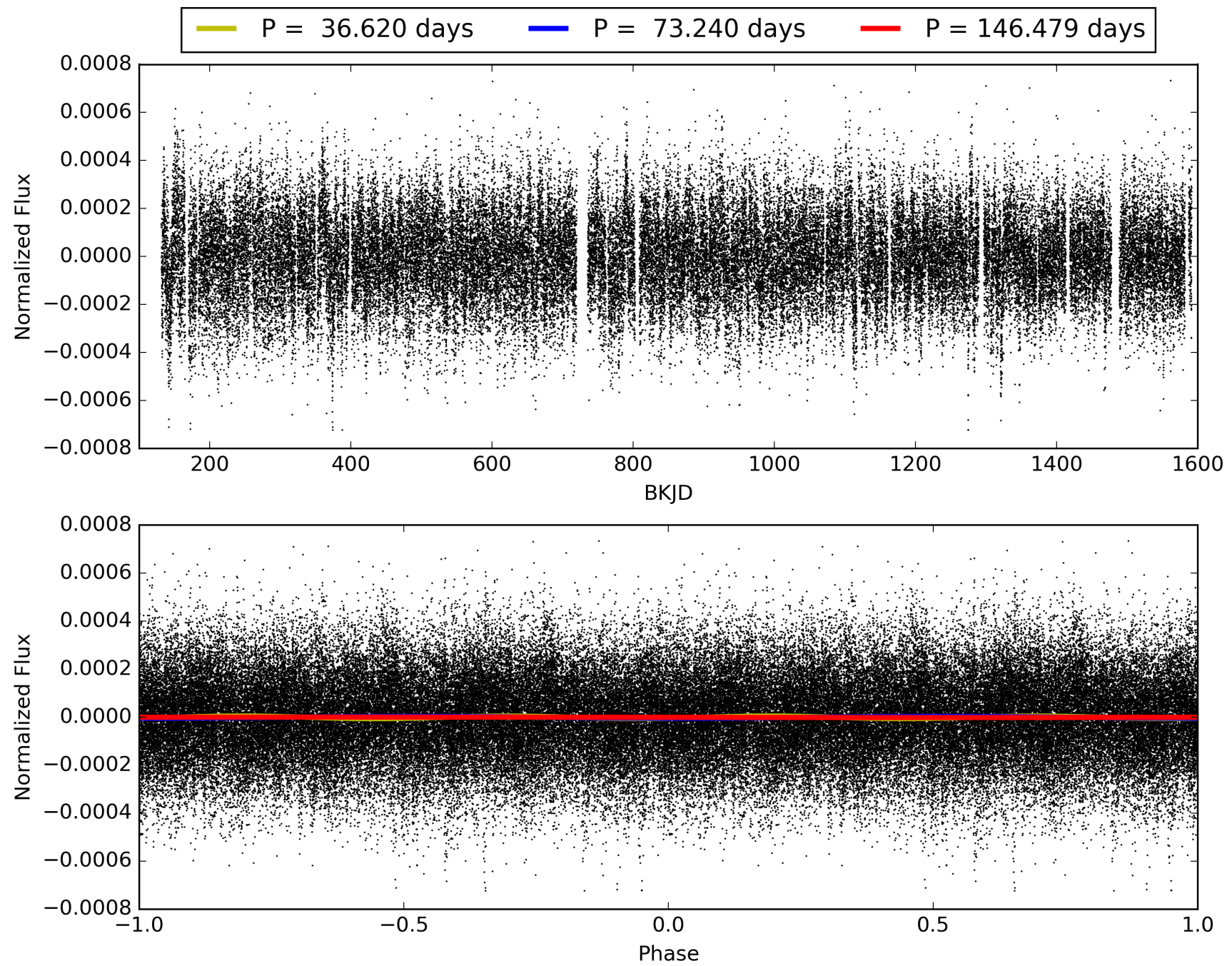
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:42:08 Z

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

TCE 008950019-06, PDC Light Curves

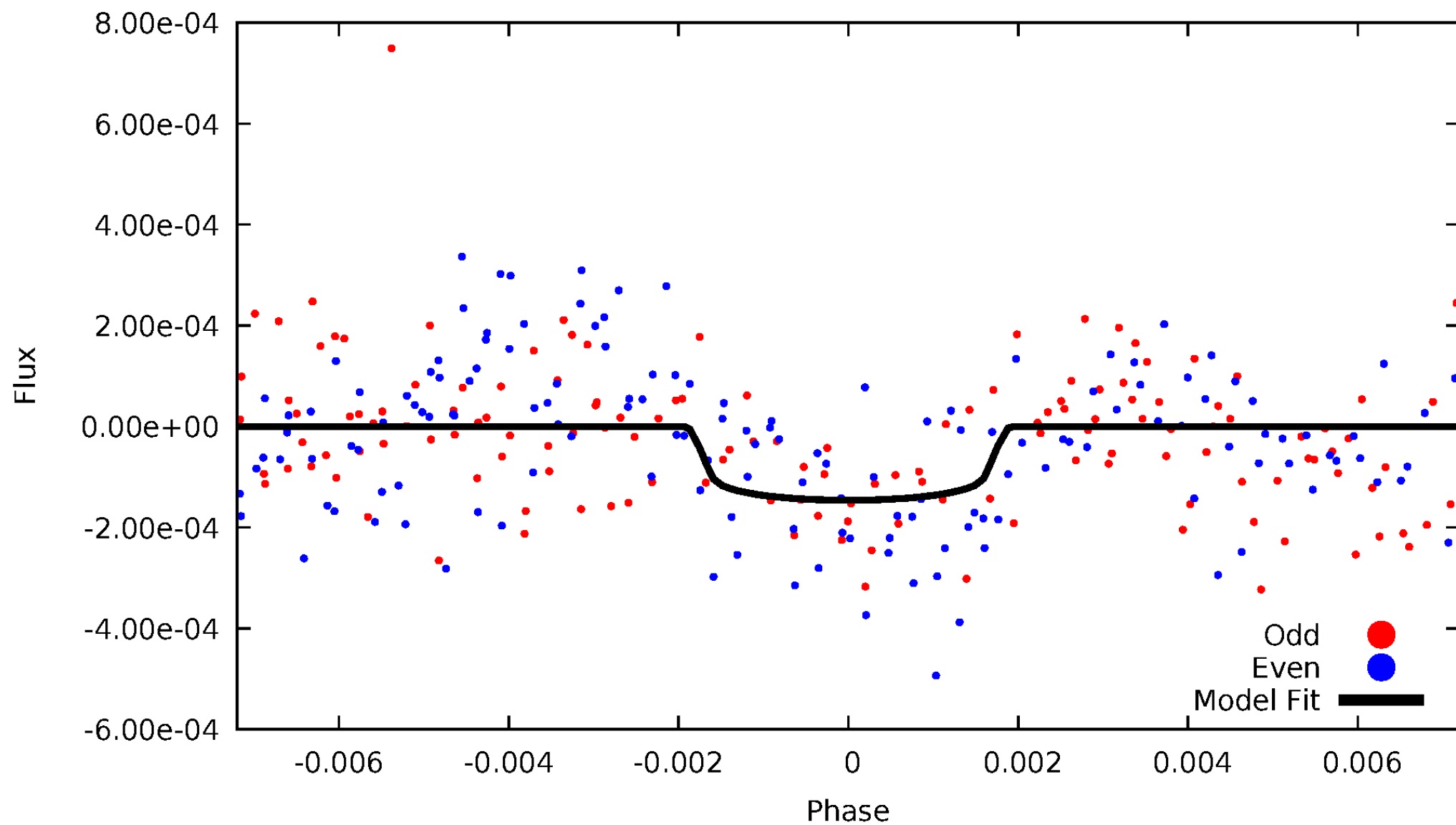


TCE 008950019-06



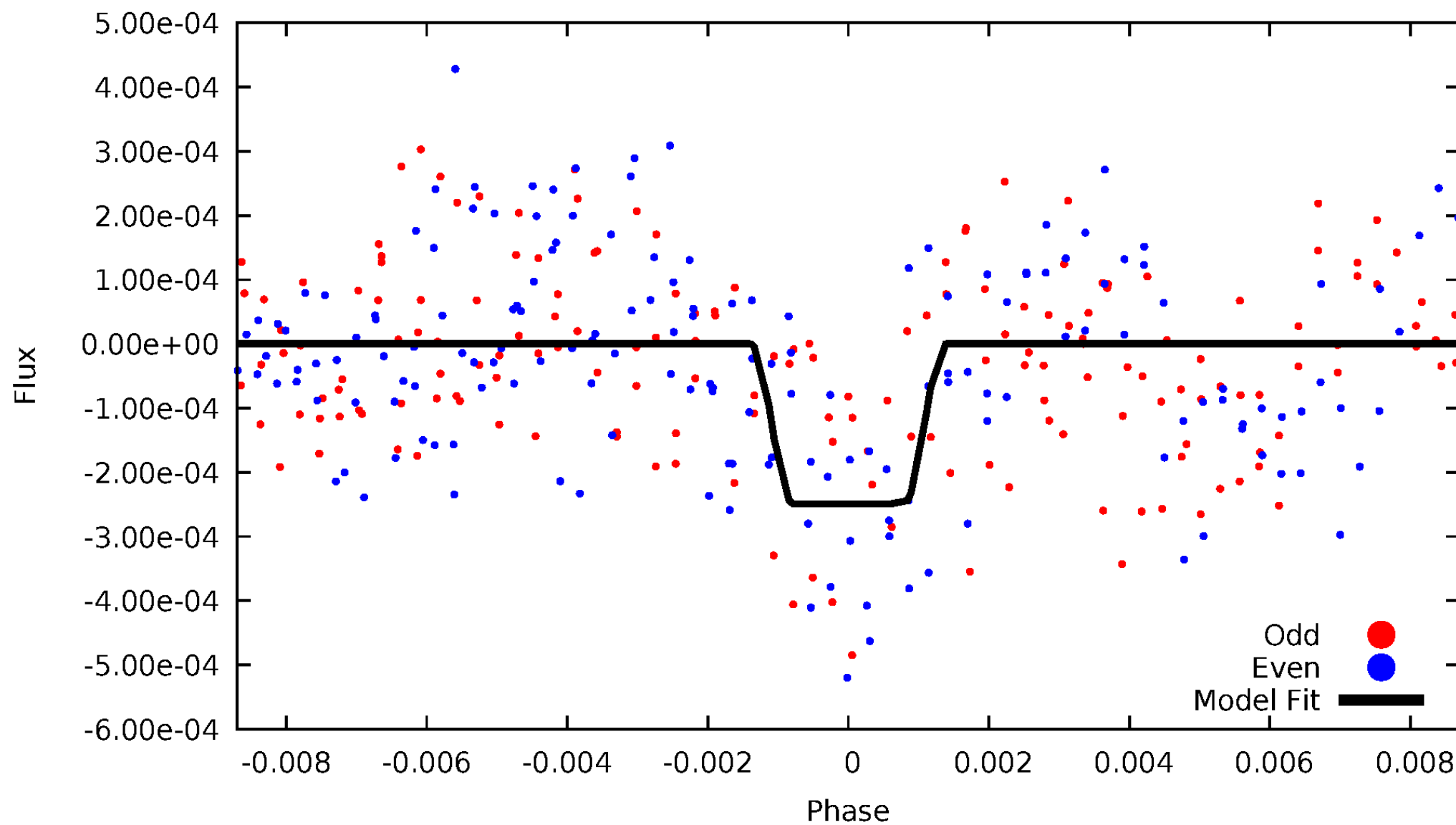
DV Odd/Even

TCE 008950019-06



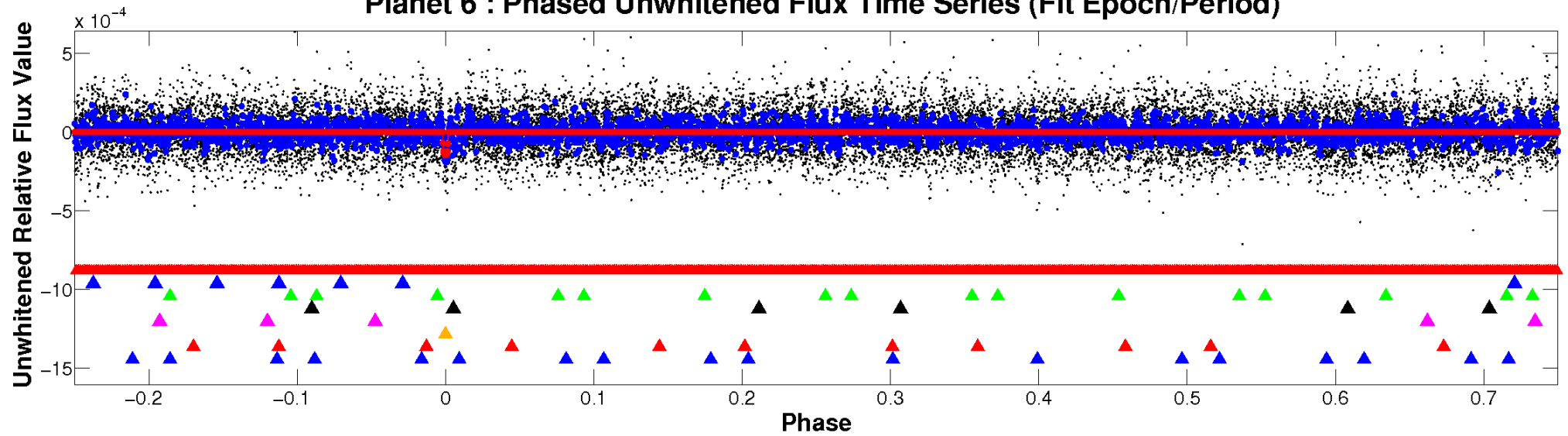
ALT Odd/Even

TCE 008950019-06

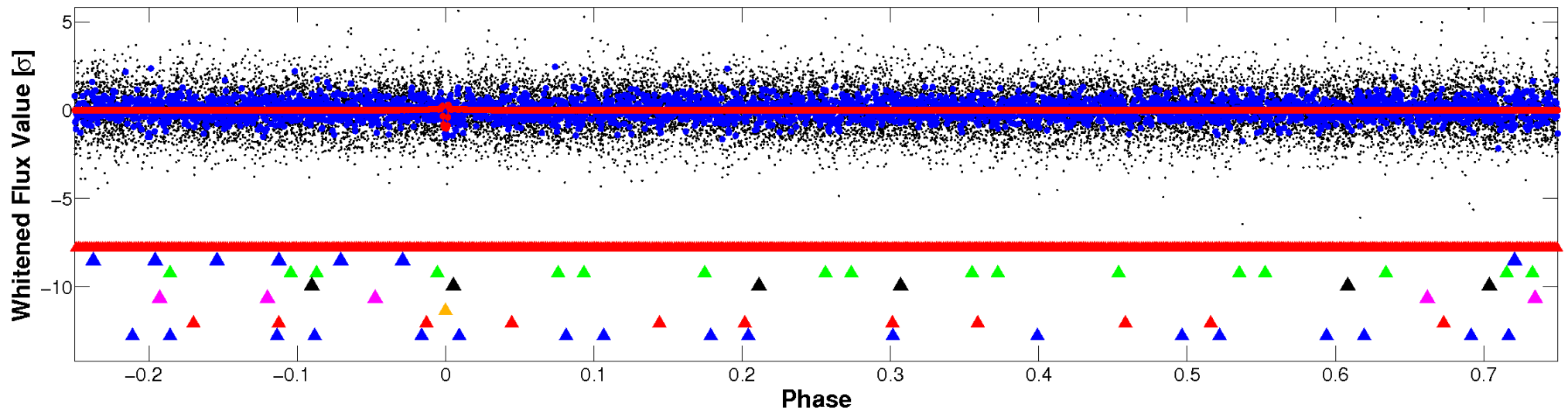


Non-Whitened Vs. Whitened Light Curve

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

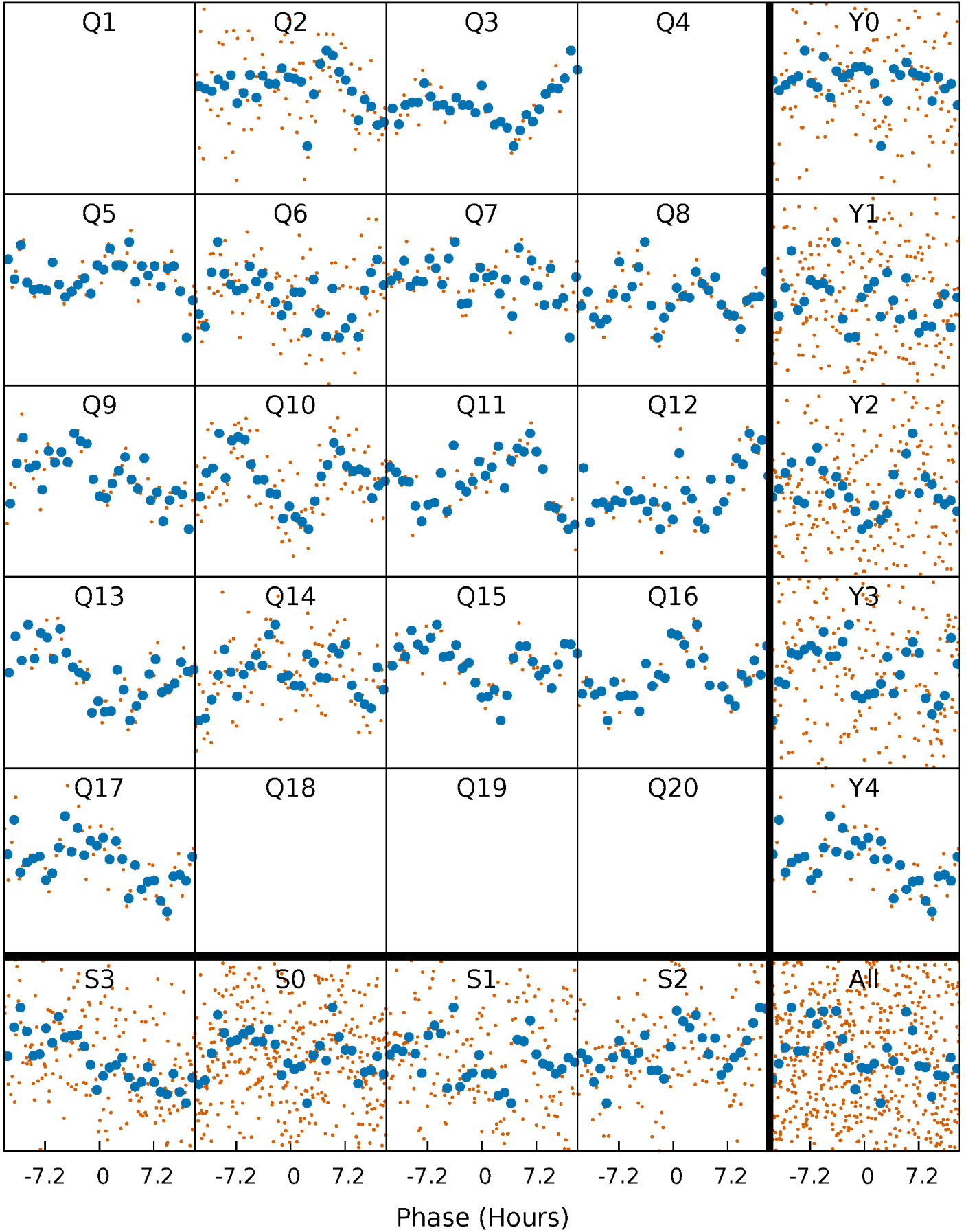


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



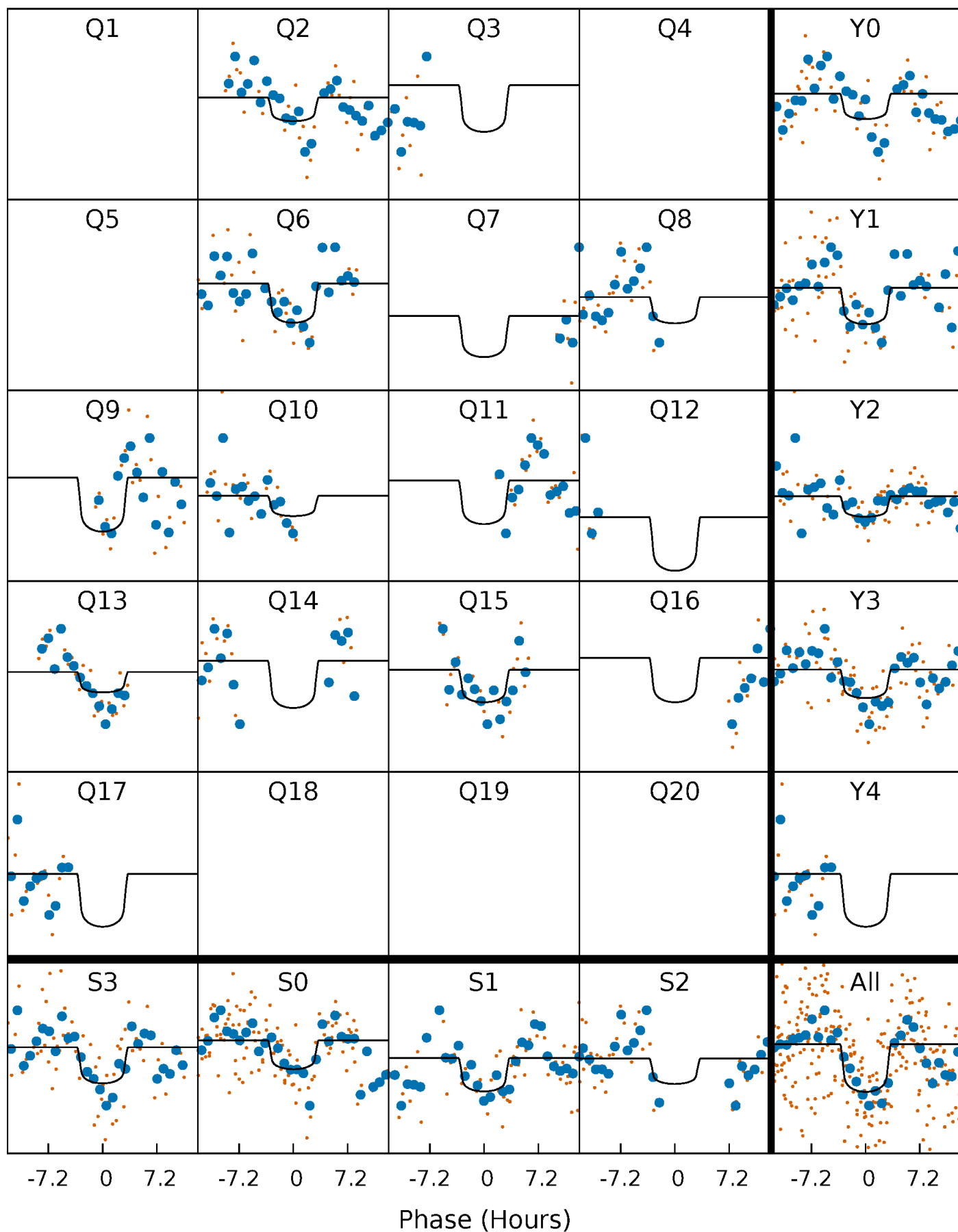
PDC Quarter-Phased Transit Curves

TCE 008950019-06 P= 73.239558 Days $T_0=179.518514$ (BKJD)



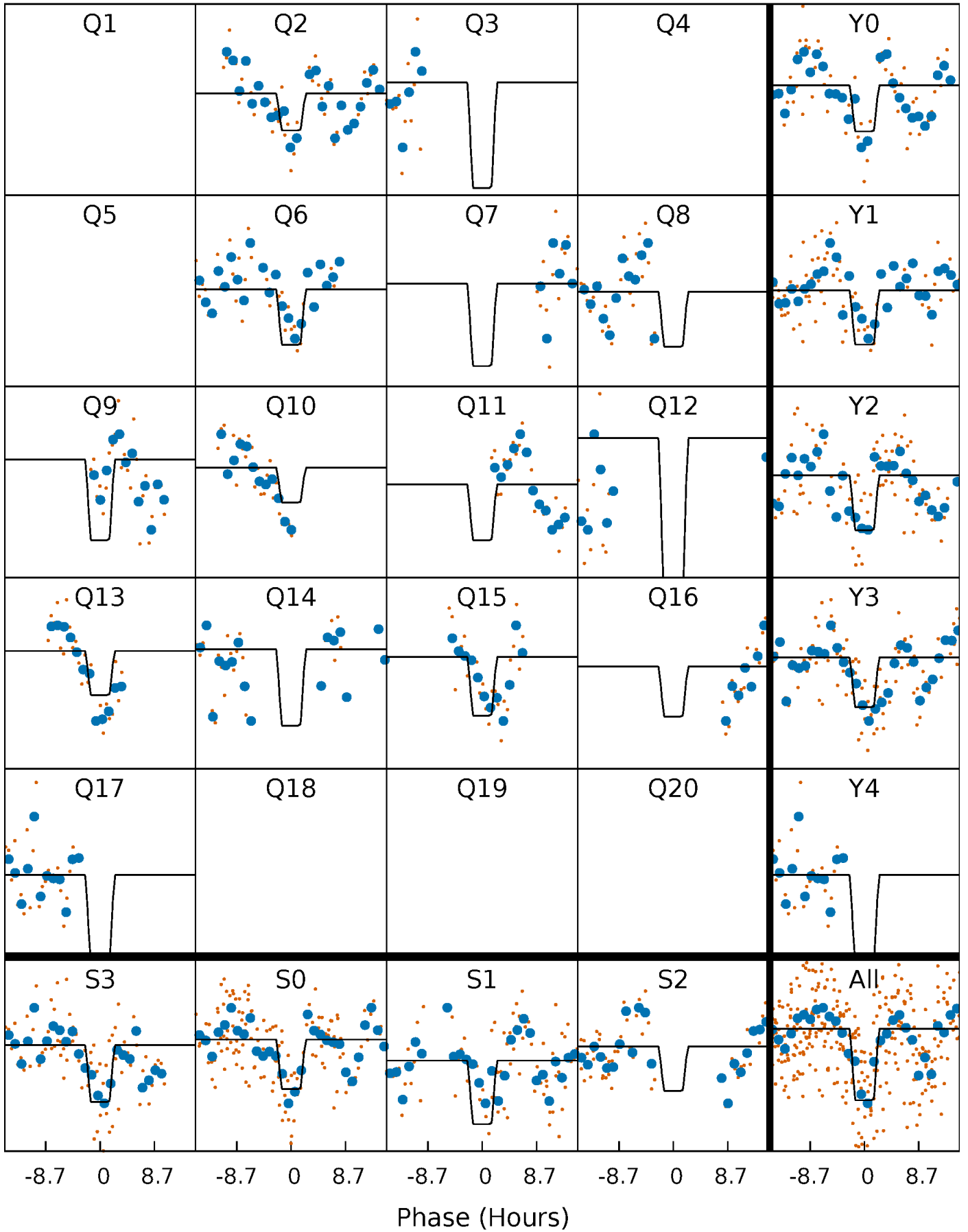
DV Quarter-Phased Transit Curves

TCE 008950019-06 P= 73.239558 Days $T_0=179.518514$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

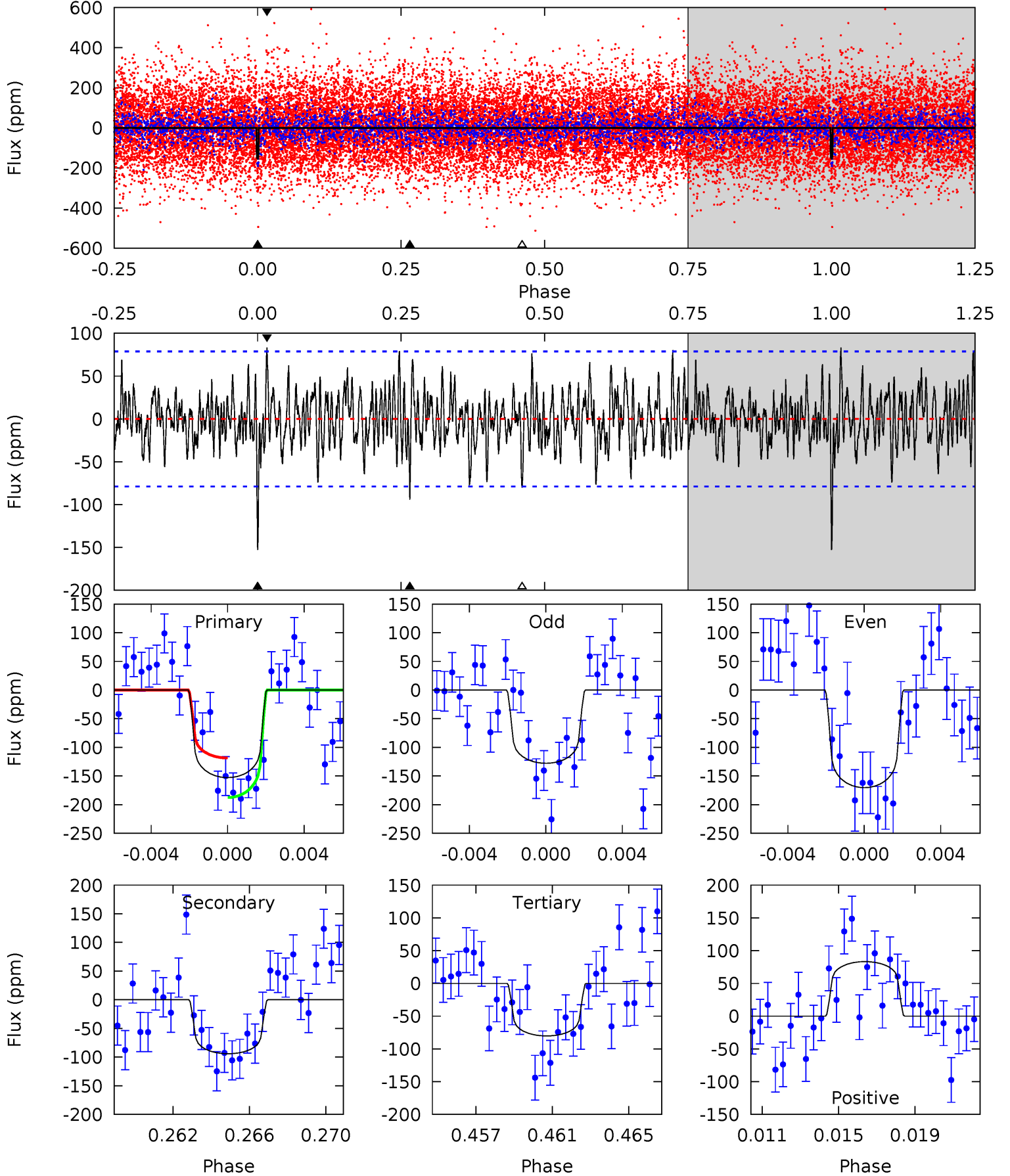
TCE 008950019-06 P= 73.233583 Days $T_0=179.595096$ (BKJD)



DV Model-Shift Uniqueness Test

008950019-06, $P = 73.239558$ Days, $E = 106.278956$ Days

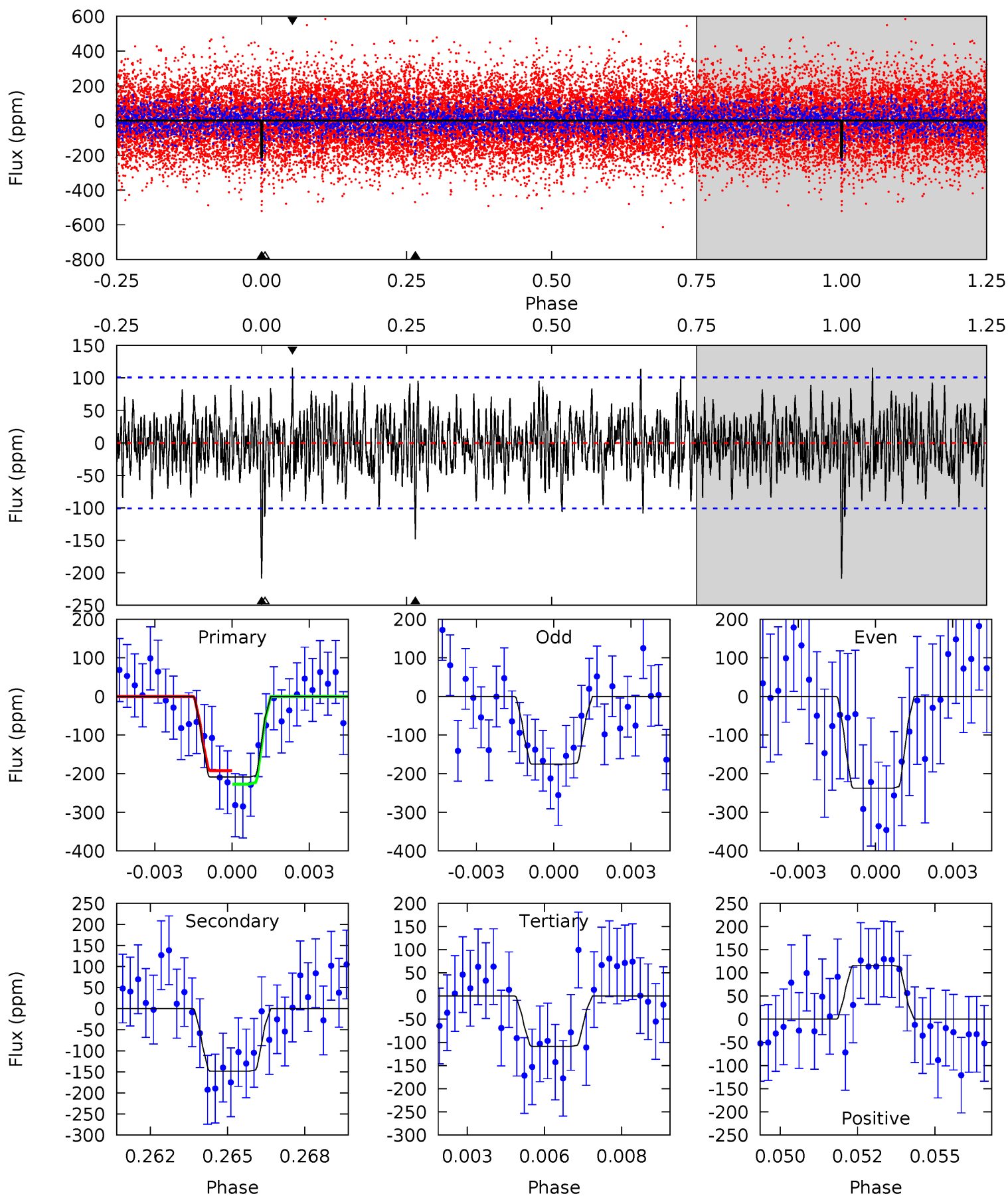
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.1 | 6.23 | 5.30 | 5.50 | 5.21 | 2.90 | 1.74 | 4.80 | 4.60 | 0.92 | 0.72 | 1.38 | 1.08 | 0.35 | 2.29 |



Alt Model-Shift Uniqueness Test

008950019-06, P = 73.233583 Days, E = 106.361513 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.9 | 7.74 | 5.66 | 6.04 | 5.27 | 2.99 | 1.84 | 5.23 | 4.85 | 2.07 | 1.69 | 1.64 | 1.10 | 0.36 | 0.91 |



Stellar Parameters For KIC 008950019

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6654^{+182}_{-202} | $3.759^{+0.336}_{-0.084}$ | $-0.540^{+0.350}_{-0.300}$ | $2.508^{+0.404}_{-0.943}$ | $1.317^{+0.222}_{-0.246}$ | $0.118^{+0.286}_{-0.031}$ |
| | +3%/-3% | +9%/-2% | +65%/-56% | +16%/-38% | +17%/-19% | +244%/-26% |
| 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 008950019-06 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|---------------------|------------------------|----------------------|
| DV | -94 ± 15 | $3.38^{+2.69}_{-1.99}$ | 1029^{+65}_{-107} | 5697^{+3601}_{-1274} | 650^{+2992}_{-455} |
| Alt. | -148 ± 19 | $4.16^{+2.67}_{-2.27}$ | 1031^{+64}_{-100} | 5670^{+2878}_{-1036} | 670^{+2529}_{-417} |

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 $A_{obs} \gg 1.0$

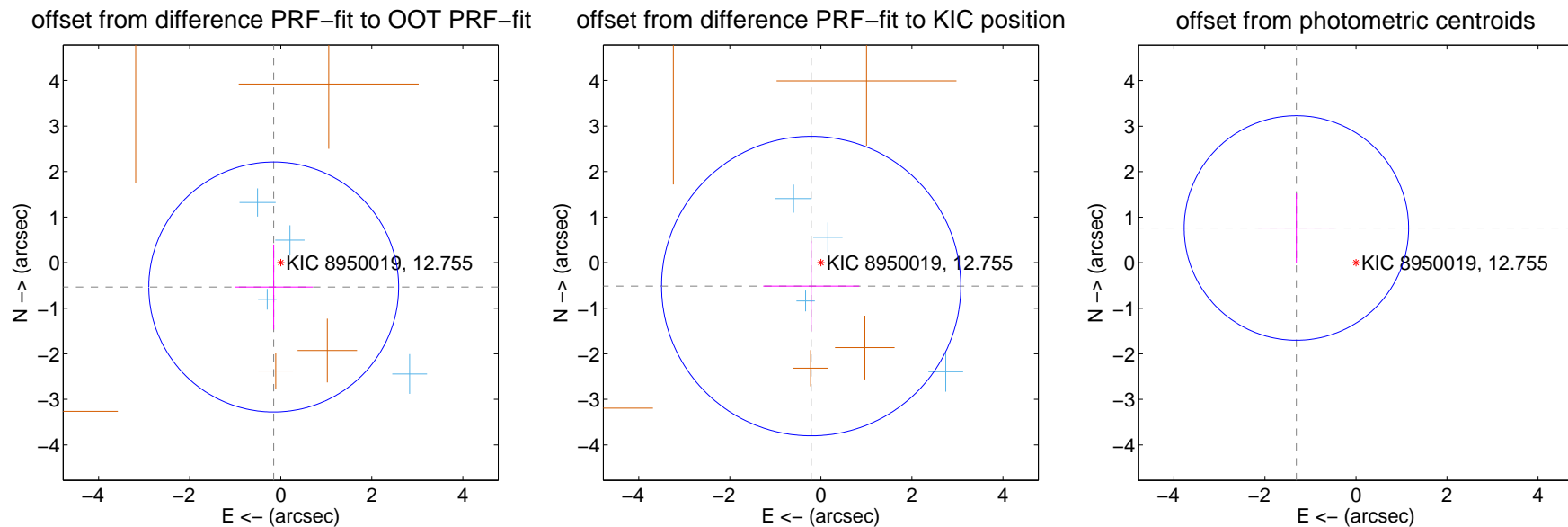
DV Centroid Data

Supplemental centroid analysis for 008950019-06. Kepler magnitude: 12.76. Transit SNR 7.84

There are 4 quarters with good PRF difference image offsets

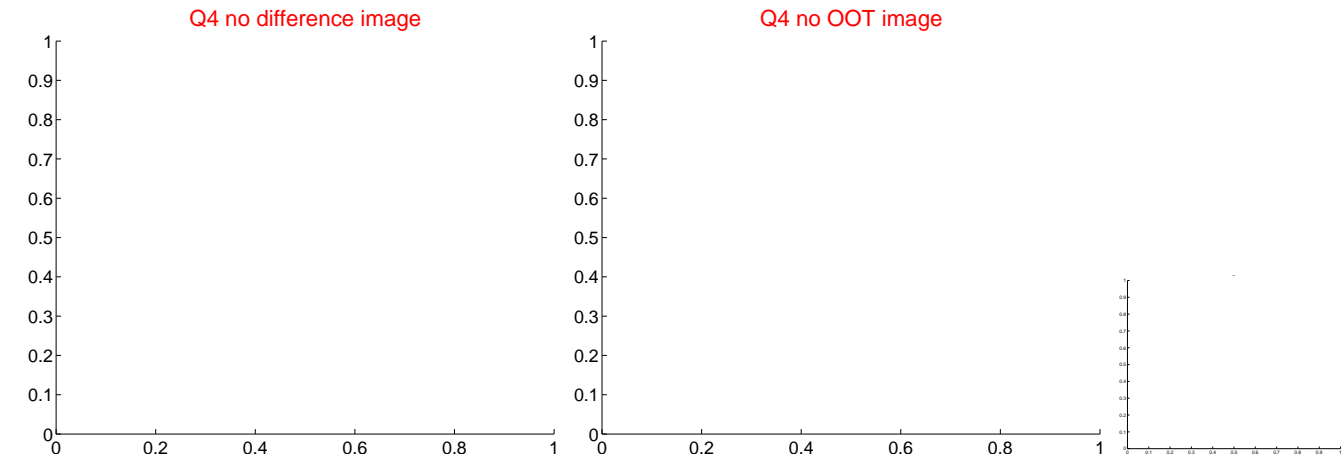
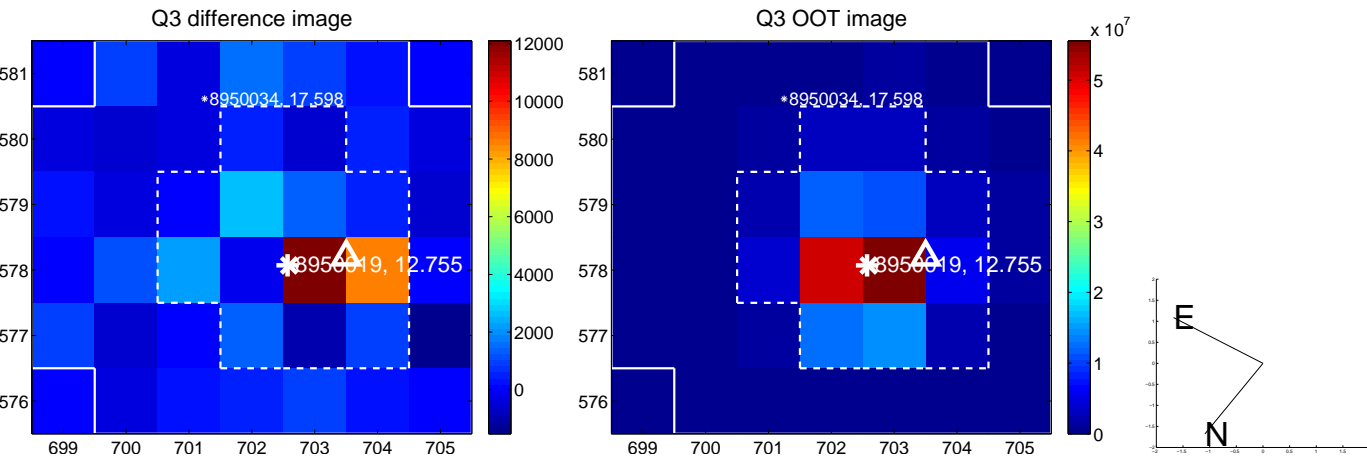
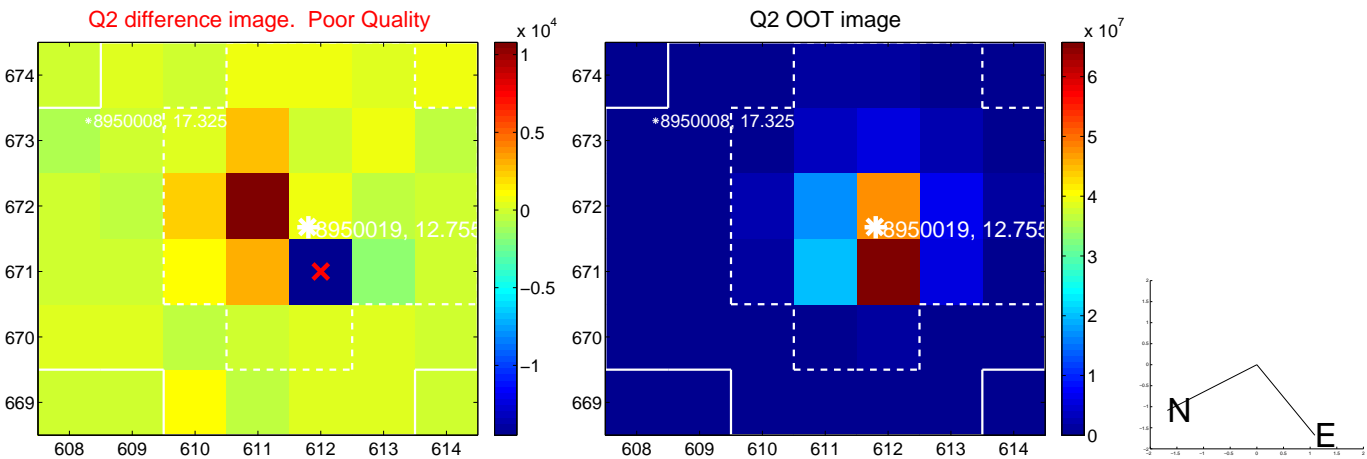
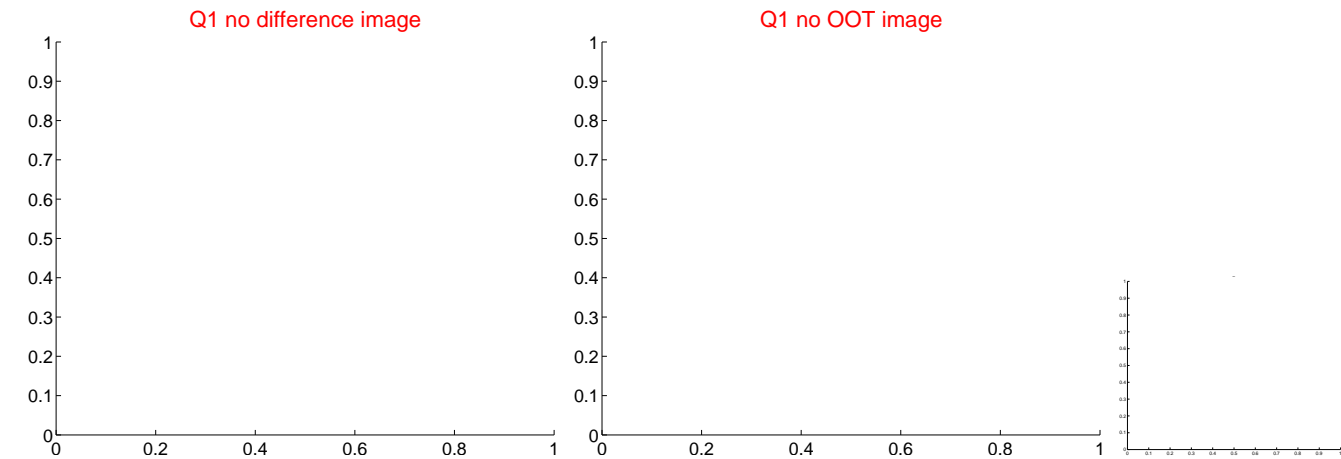
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 0.556 ± 0.915 | 0.61 | 0.154 ± 0.859 | -0.534 ± 0.934 |
| PRF-fit source offset from KIC position | 0.556 ± 1.096 | 0.51 | 0.213 ± 1.054 | -0.513 ± 0.993 |
| photometric centroid source offset | 1.52 ± 0.82 | 1.84 | 1.31 ± 0.84 | 0.76 ± 0.76 |

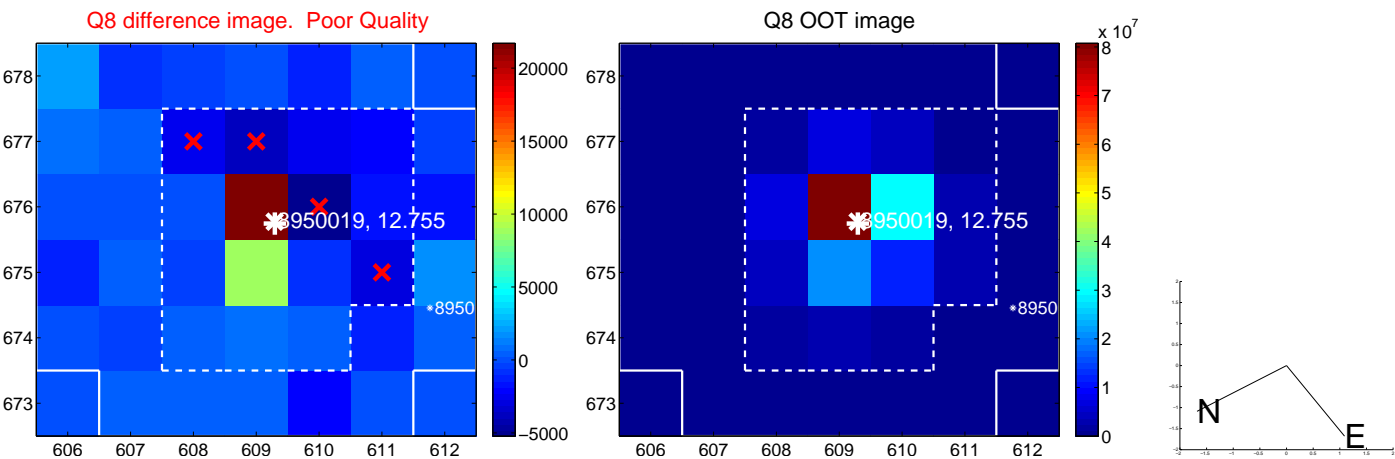
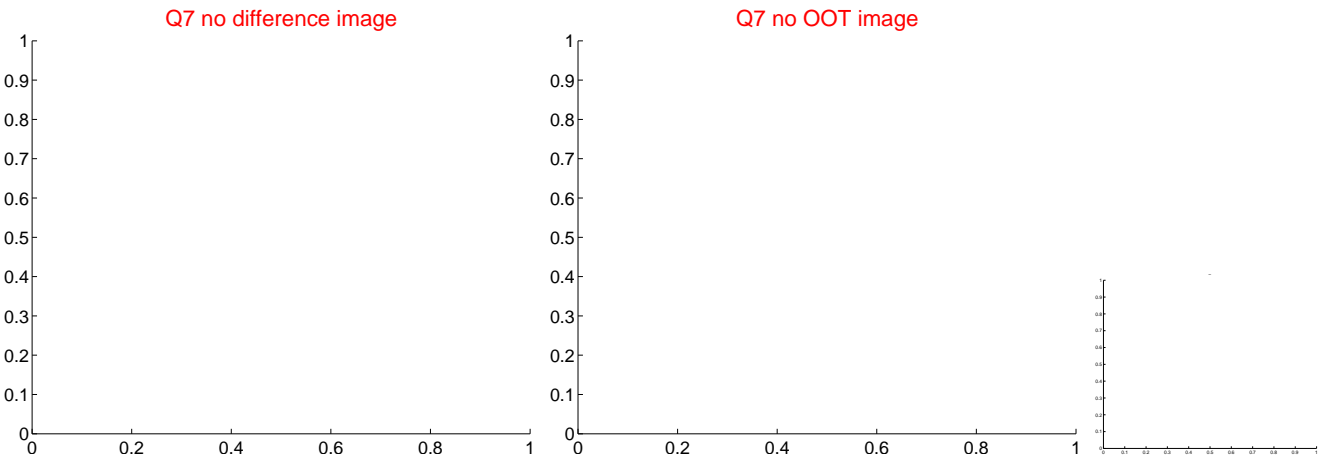
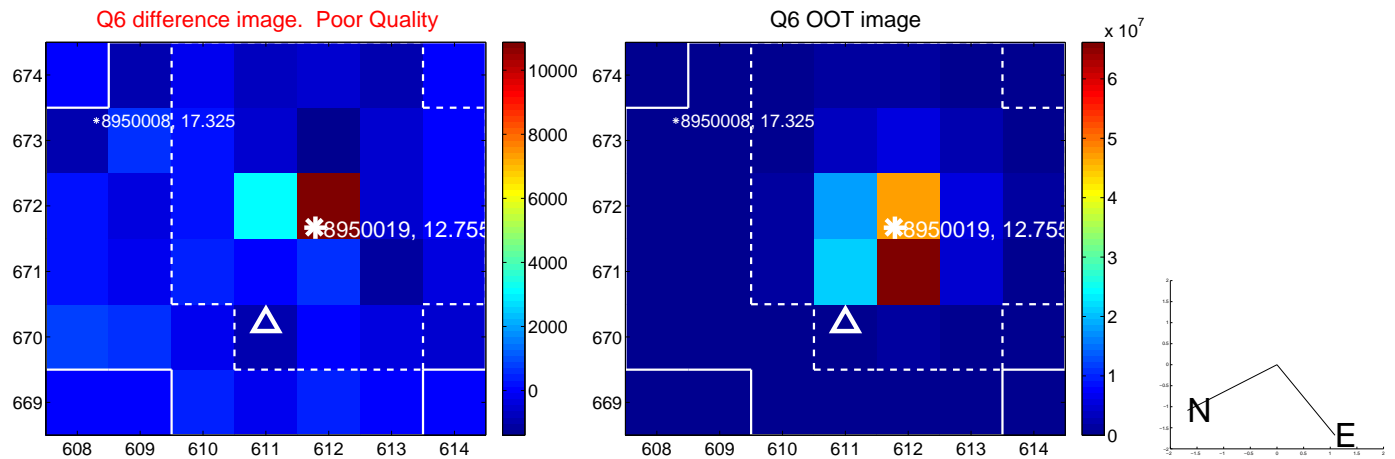
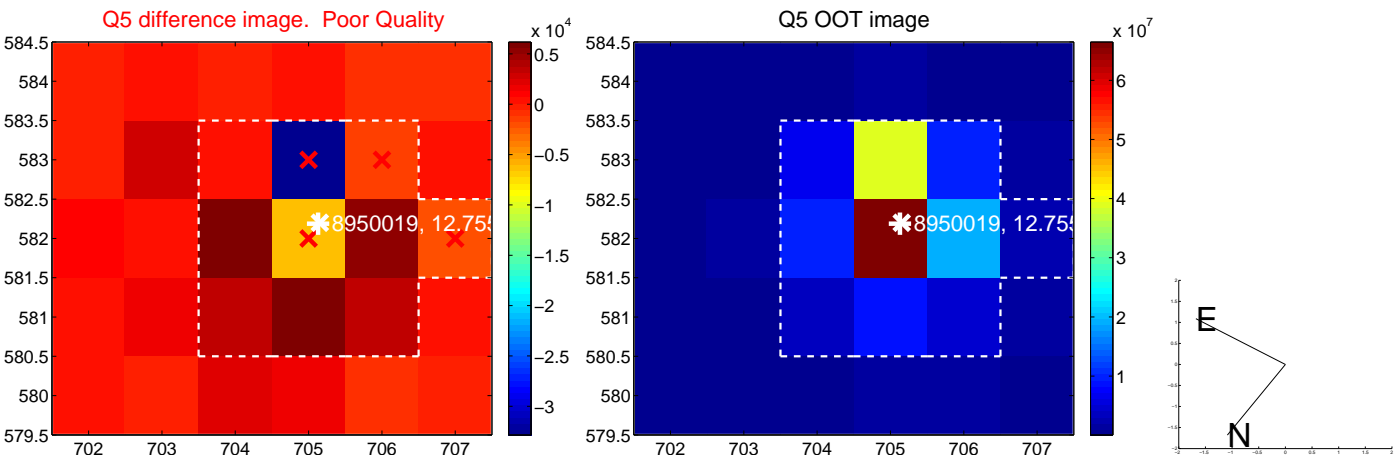


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

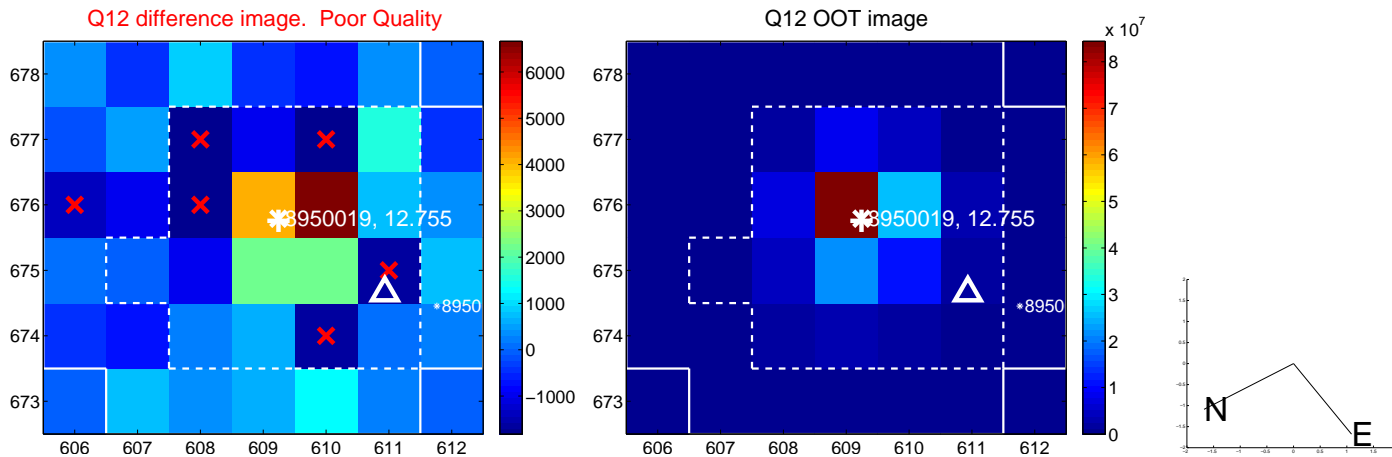
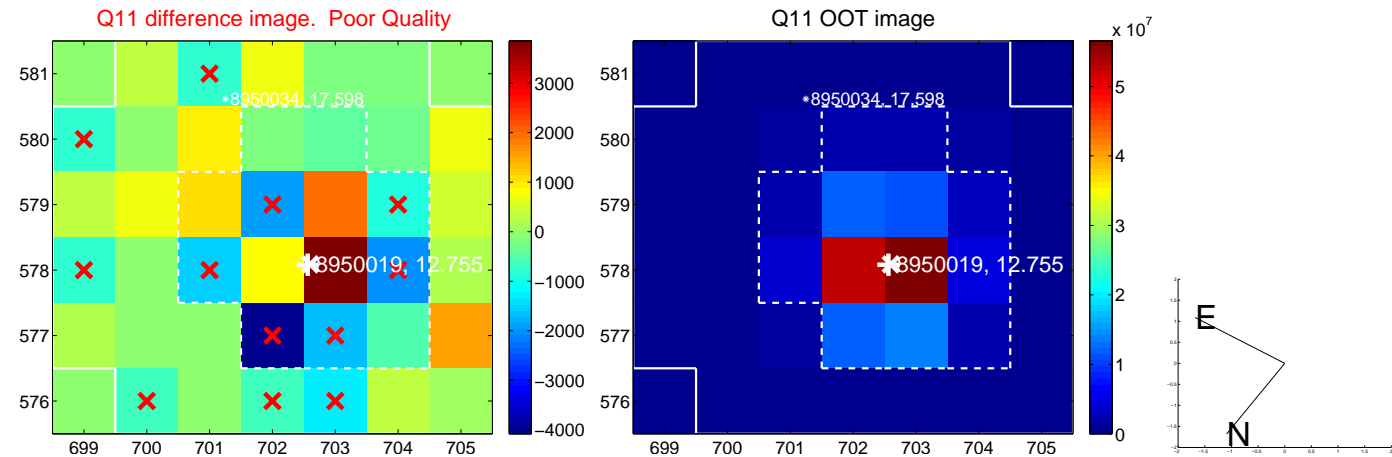
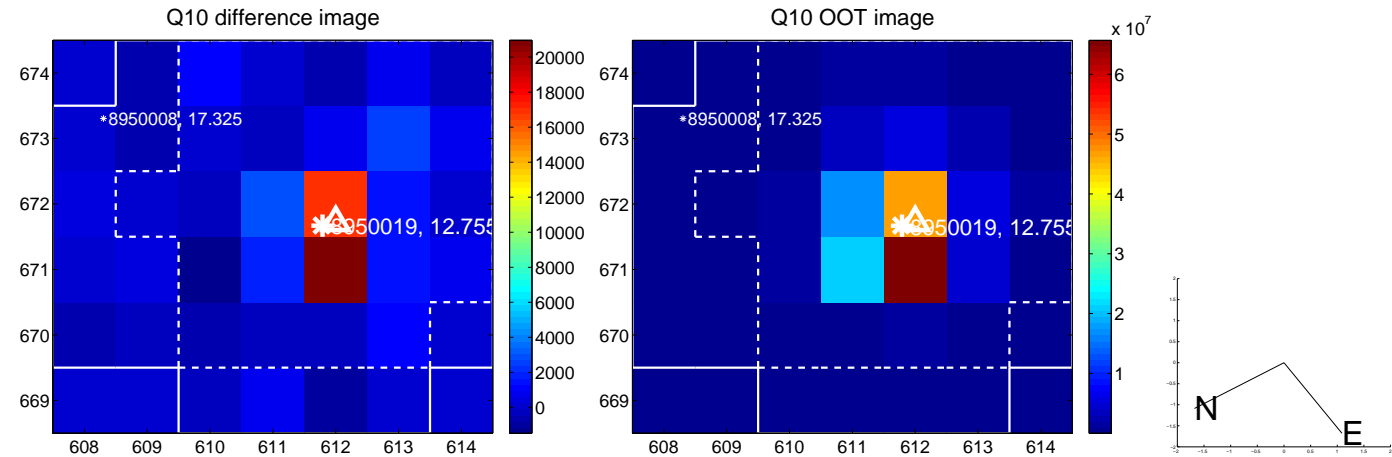
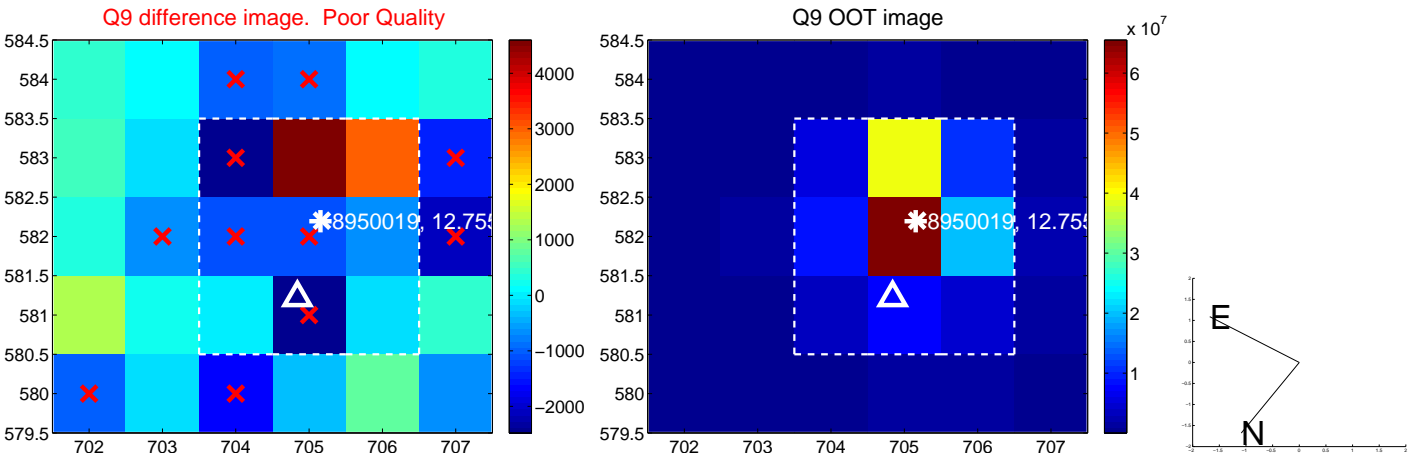
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



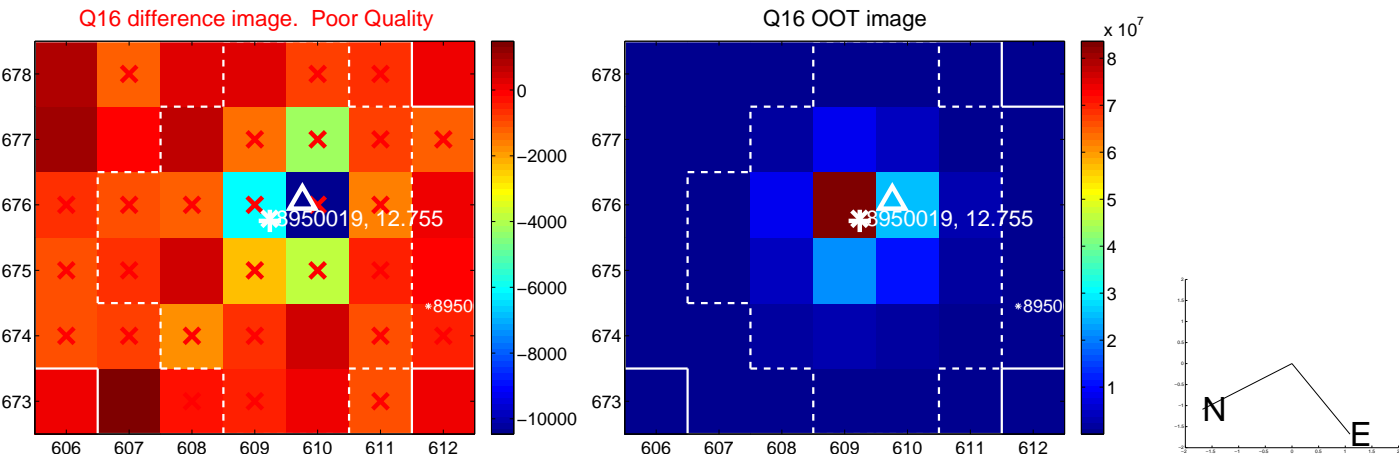
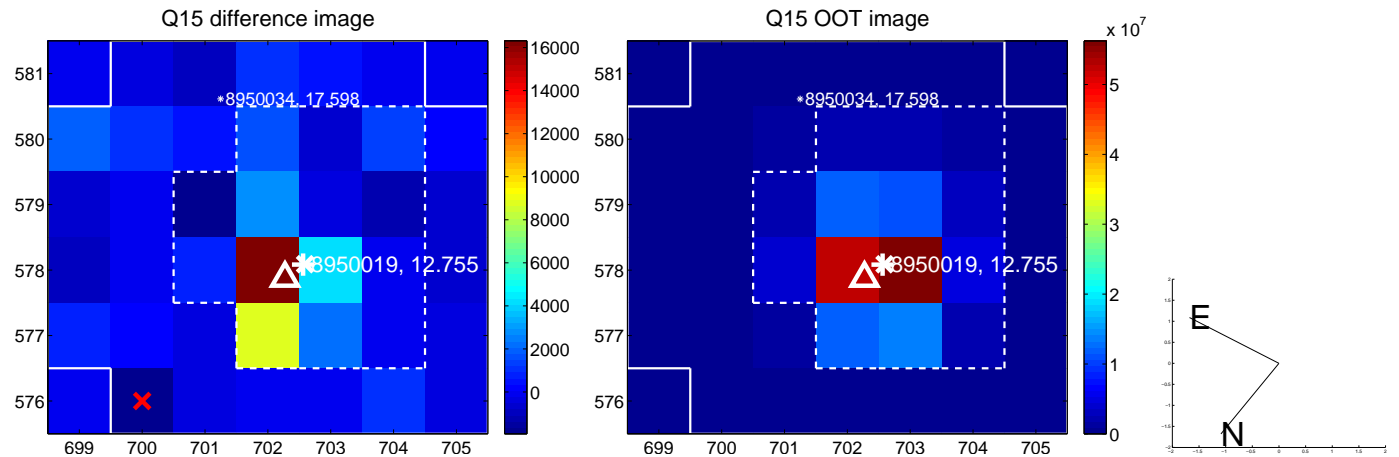
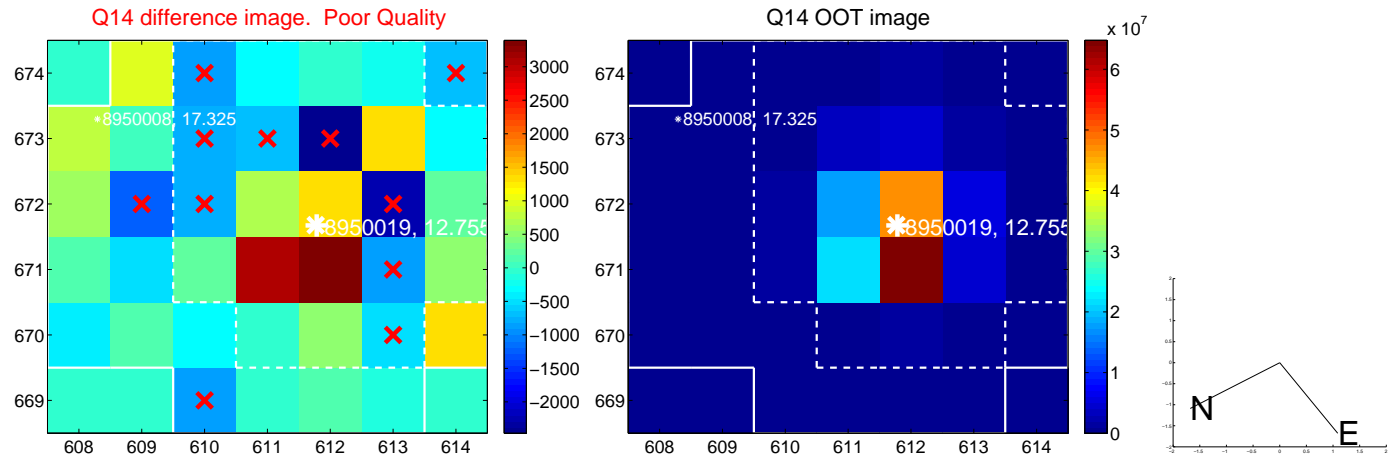
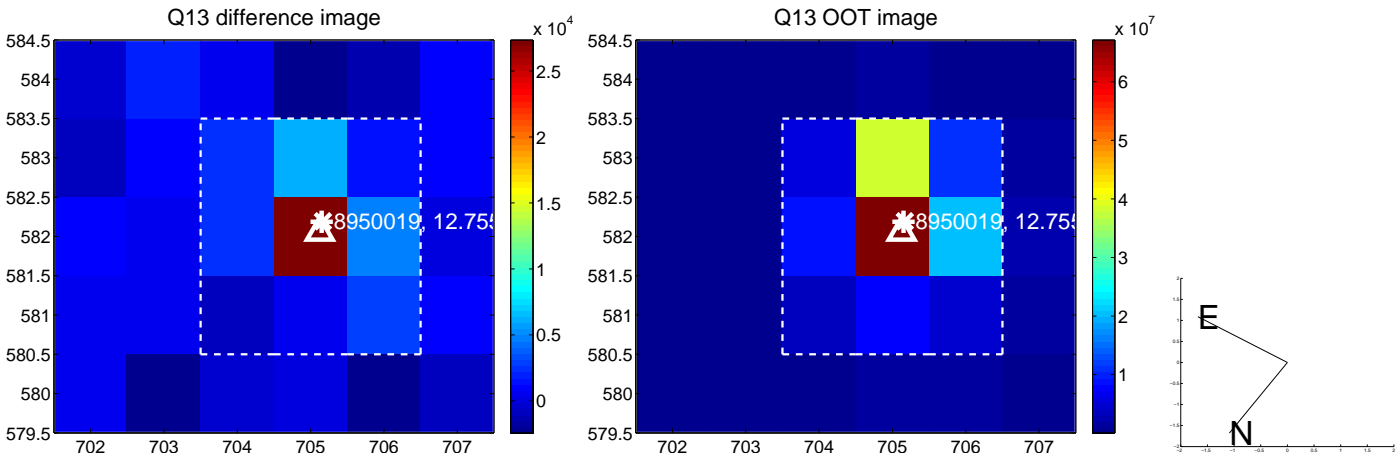
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



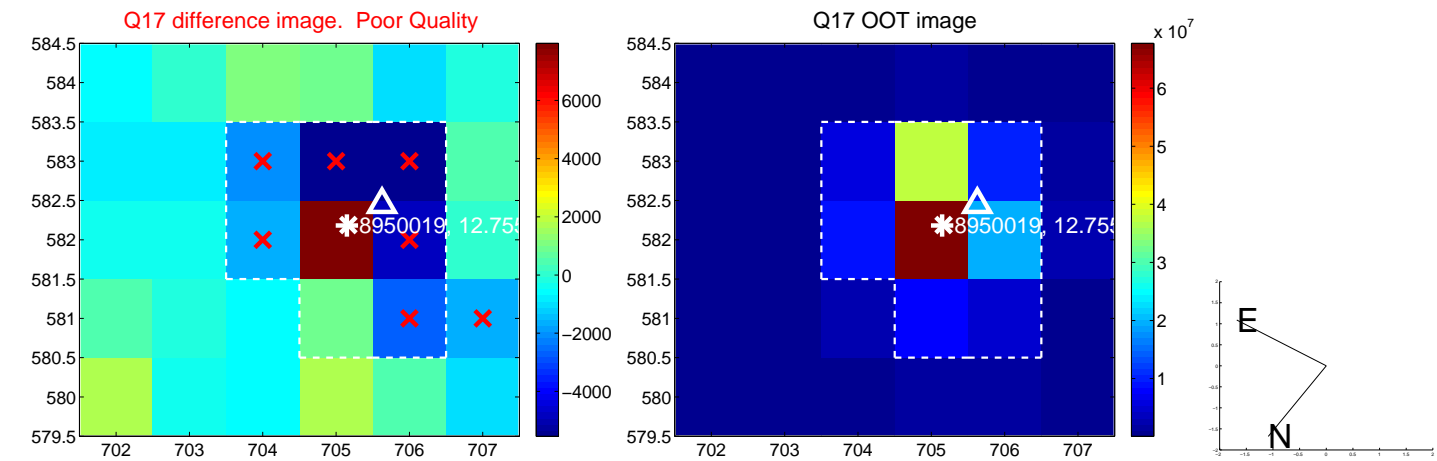
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



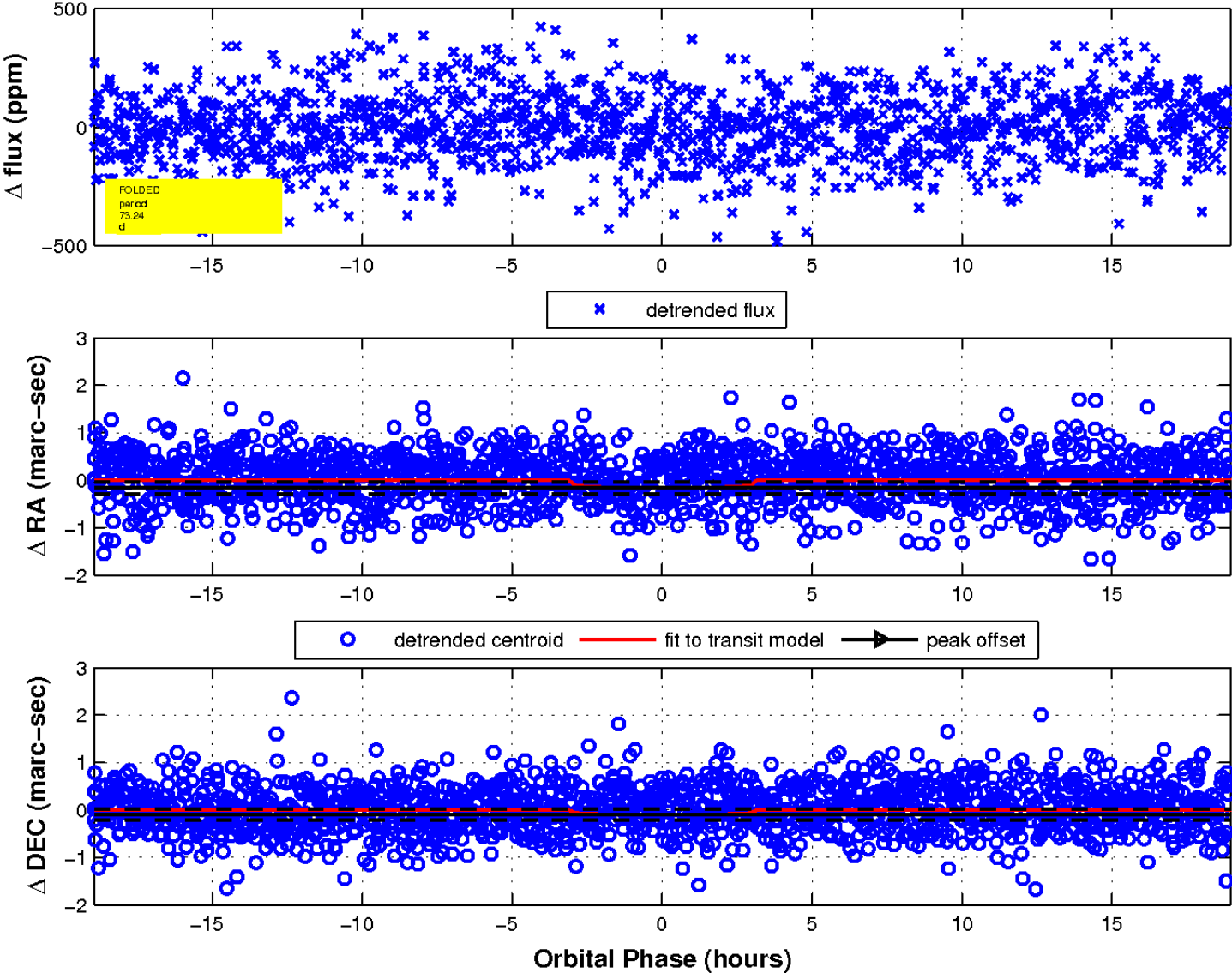
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

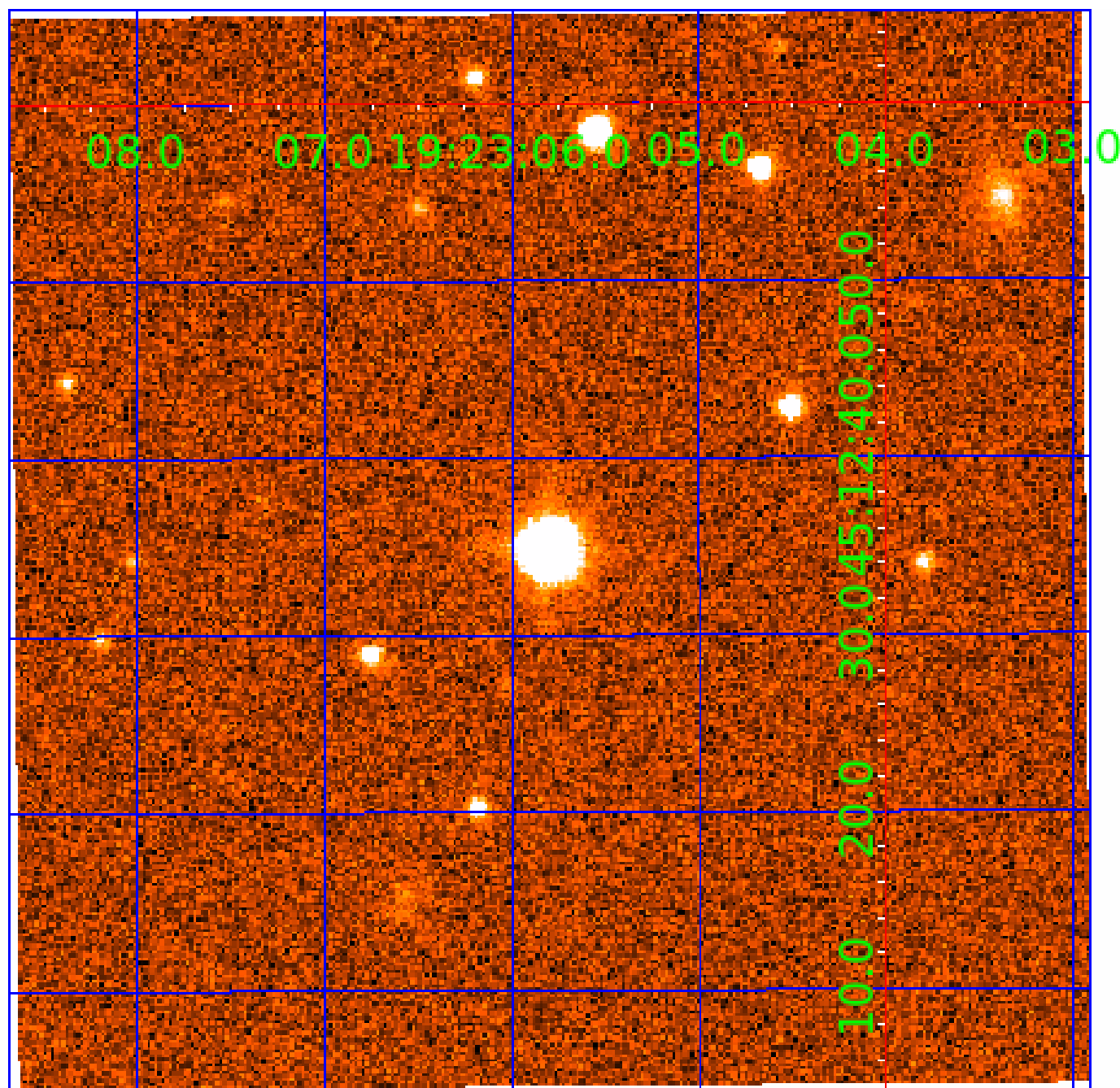


fluxWeightedCentroids, Planet 6 of 8



UKIRT Image

Declination



KIC 008950019

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008950019-01 | OBS | No | 1.537285 | 132.501062 | 10.3 | 8.039 | 8.8 | 5.0 | 2.51 | 6654 | 0.87 | 13523.98 |
| 008950019-02 | OBS | No | 216.662839 | 250.644951 | 208.8 | 13.436 | 11.7 | 7.1 | 2.51 | 6654 | 3.94 | 18.44 |
| 008950019-03 | OBS | No | 86.440129 | 133.552210 | 128.7 | 18.788 | 9.3 | 7.7 | 2.51 | 6654 | 3.07 | 62.78 |
| 008950019-04 | OBS | No | 241.801135 | 231.066036 | 207.2 | 9.229 | 9.0 | 7.8 | 2.51 | 6654 | 3.97 | 15.93 |
| 008950019-05 | OBS | No | 298.278515 | 154.764534 | 169.5 | 6.974 | 8.1 | 7.6 | 2.51 | 6654 | 3.57 | 12.04 |
| 008950019-06 | OBS | No | 73.239558 | 179.518514 | 146.3 | 6.324 | 8.1 | 7.8 | 2.51 | 6654 | 3.37 | 78.30 |
| 008950019-07 | OBS | No | 134.974599 | 213.093193 | 212.9 | 3.437 | 7.6 | 8.5 | 2.51 | 6654 | 4.35 | 34.66 |
| 008950019-08 | OBS | No | 80.377986 | 144.503332 | 146.7 | 6.000 | 7.5 | -1.0 | 2.51 | 6654 | 3.06 | 69.17 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008950019-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 008950019-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008950019-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS—HALO_GHOST |
| 008950019-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS |
| 008950019-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008950019-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008950019-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 008950019-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_NOFITS |

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

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

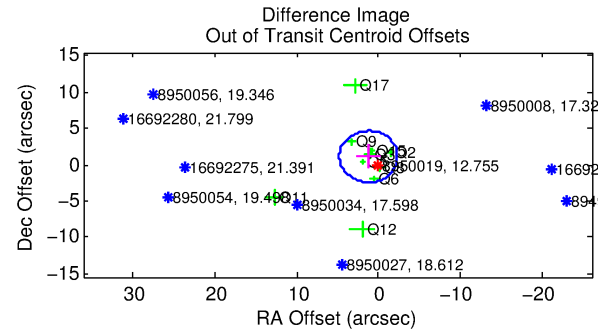
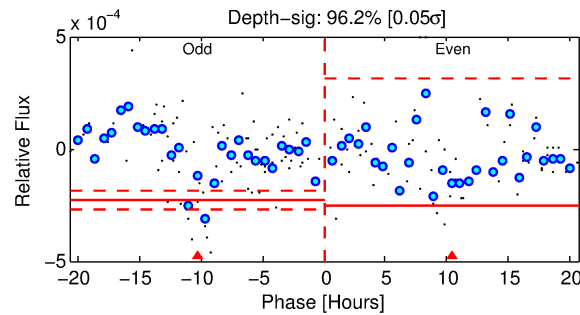
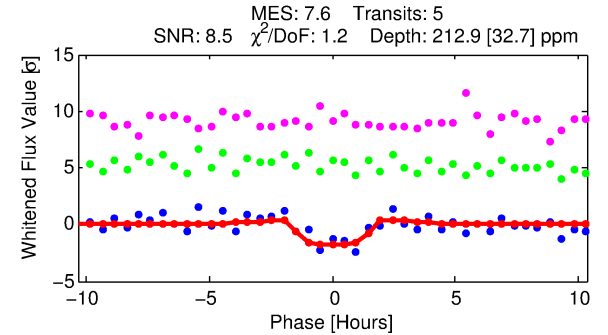
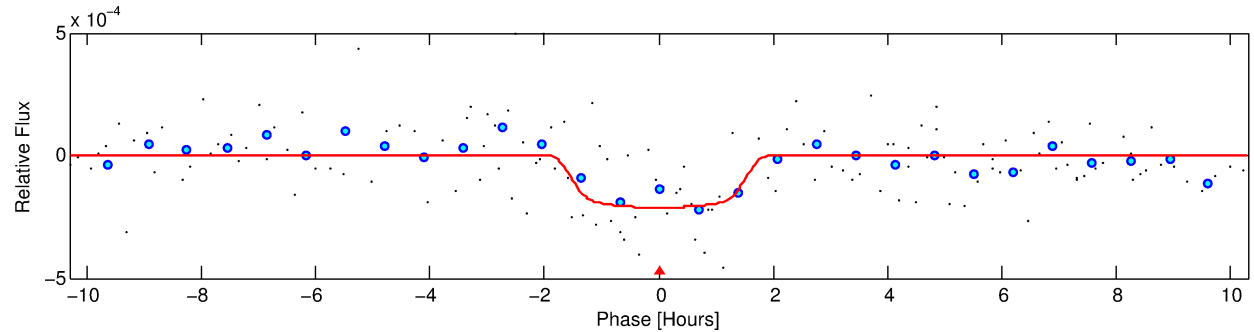
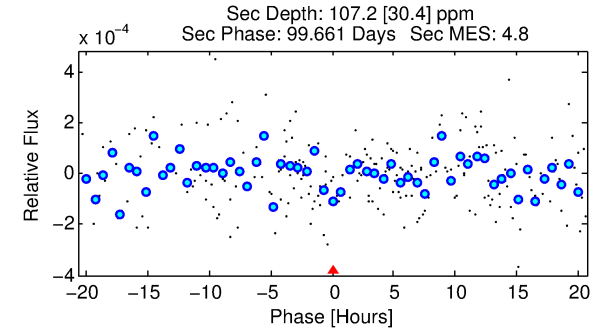
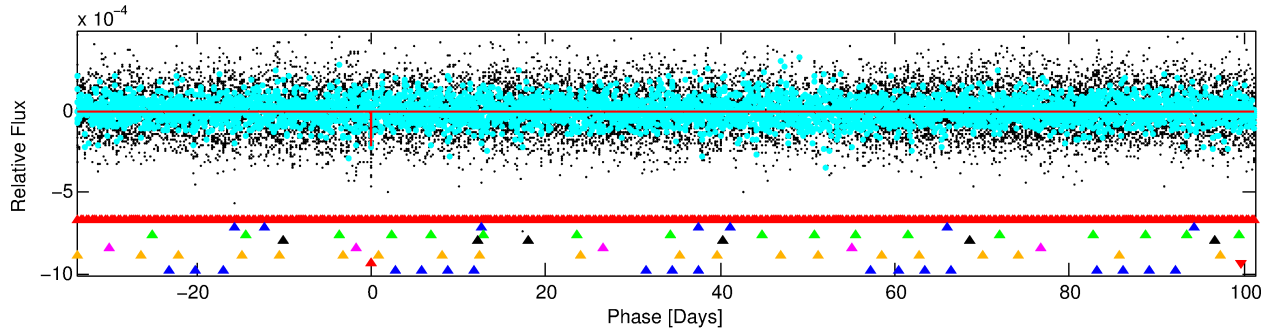
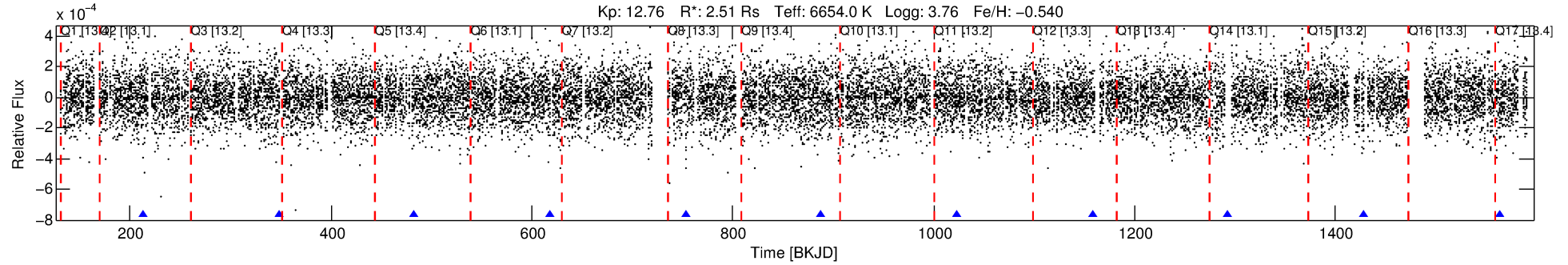
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008950019-07

No Significant Match Found

DV One-Page Summary

KIC: 8950019 Candidate: 7 of 8 Period: 134.975 d



DV Fit Results:

Period = 134.97460 [0.00150] d
Epoch = 213.0932 [0.0112] BKJD
Rp/R* = 0.0159 [0.0073]
a/R* = 128.14 [341.17]
b = 0.92 [0.44]
Seff = 34.66 [20.31]
Teff = 619 [91] K
Rp = 4.35 [2.57] Re
a = 0.5646 [0.2031] AU
Ag = 994.91 [1109.56] [0.90σ]
Teffp = 5372 [1295] K [3.66σ]

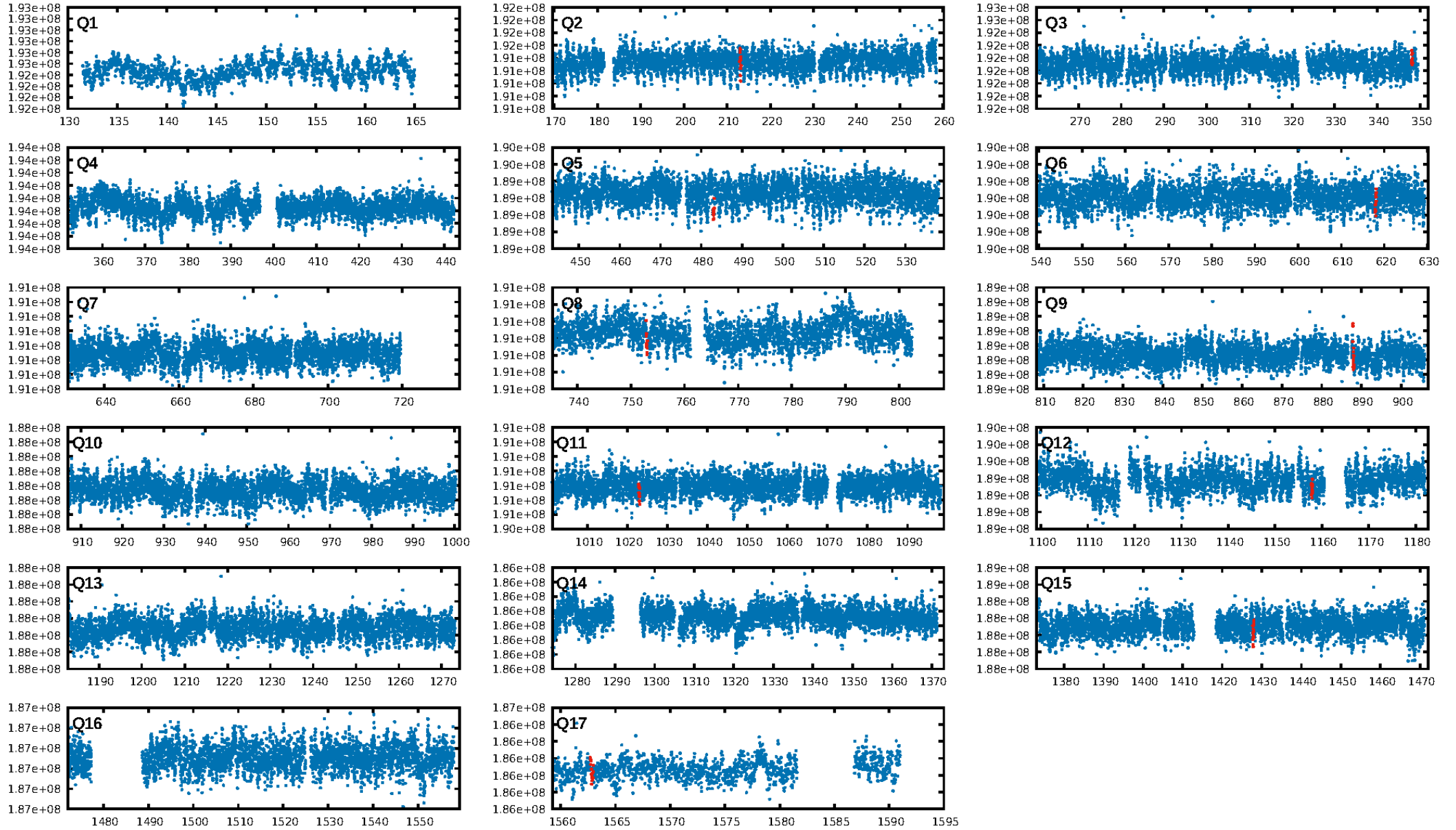
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [60.99σ]
LongPeriod-sig: 100.0% [141.37σ]
ModelChiSquare2-sig: 27.0%
ModelChiSquareGof-sig: 89.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.4618
Centroid-sig: 19.3%
Centroid-so: 1.037 arcsec [1.08σ]
OotOffset-rm: 1.681 arcsec [1.42σ]
OotOffset-st: 2/3/2/3 [10]
KicOffset-rm: 1.778 arcsec [1.40σ]
KicOffset-st: 2/3/2/3 [10]
DiffImageQuality-fgm: 0.50 [5/10]
DiffImageOverlap-fno: 0.50 [5/10]

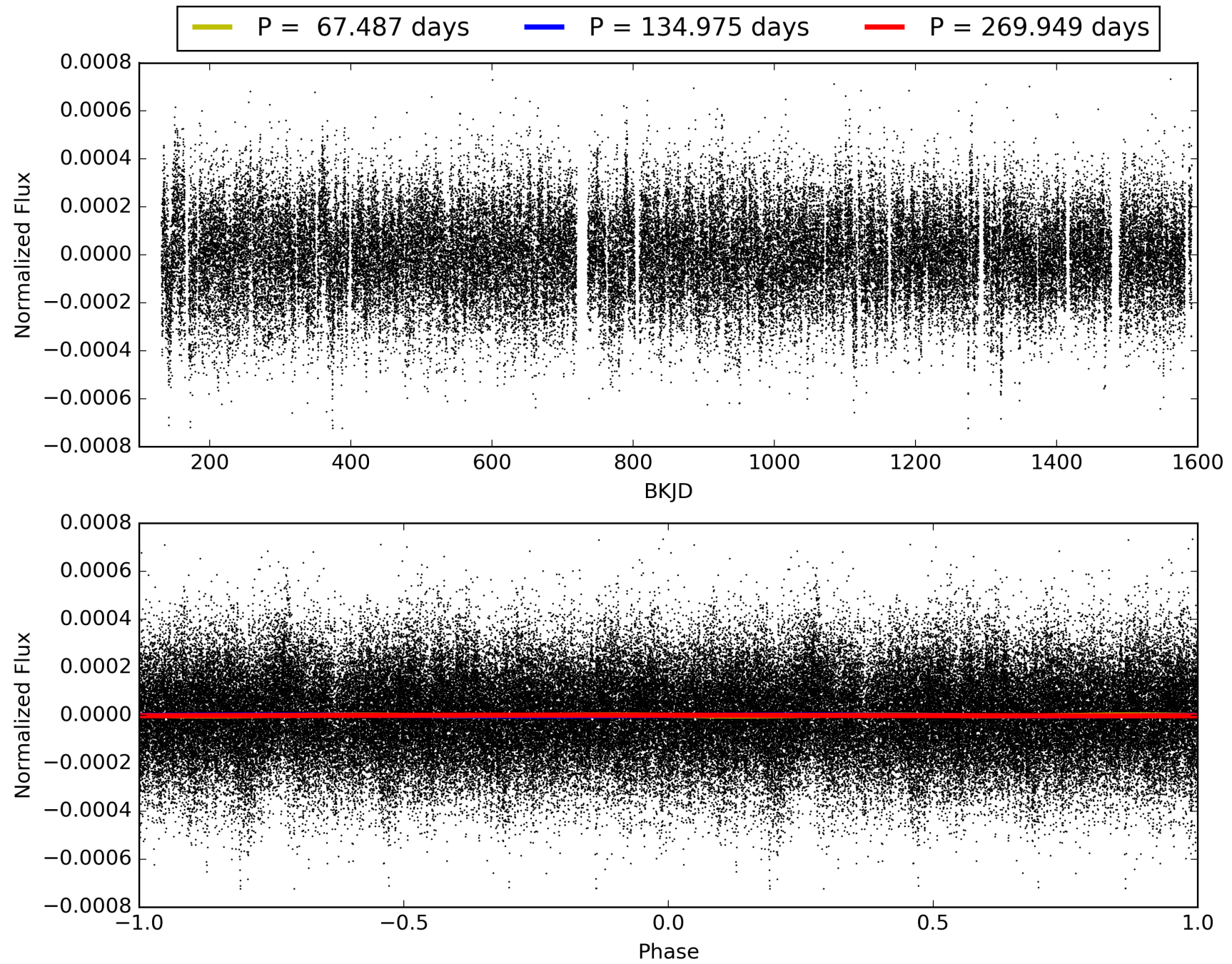
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:42:13 Z

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

TCE 008950019-07, PDC Light Curves

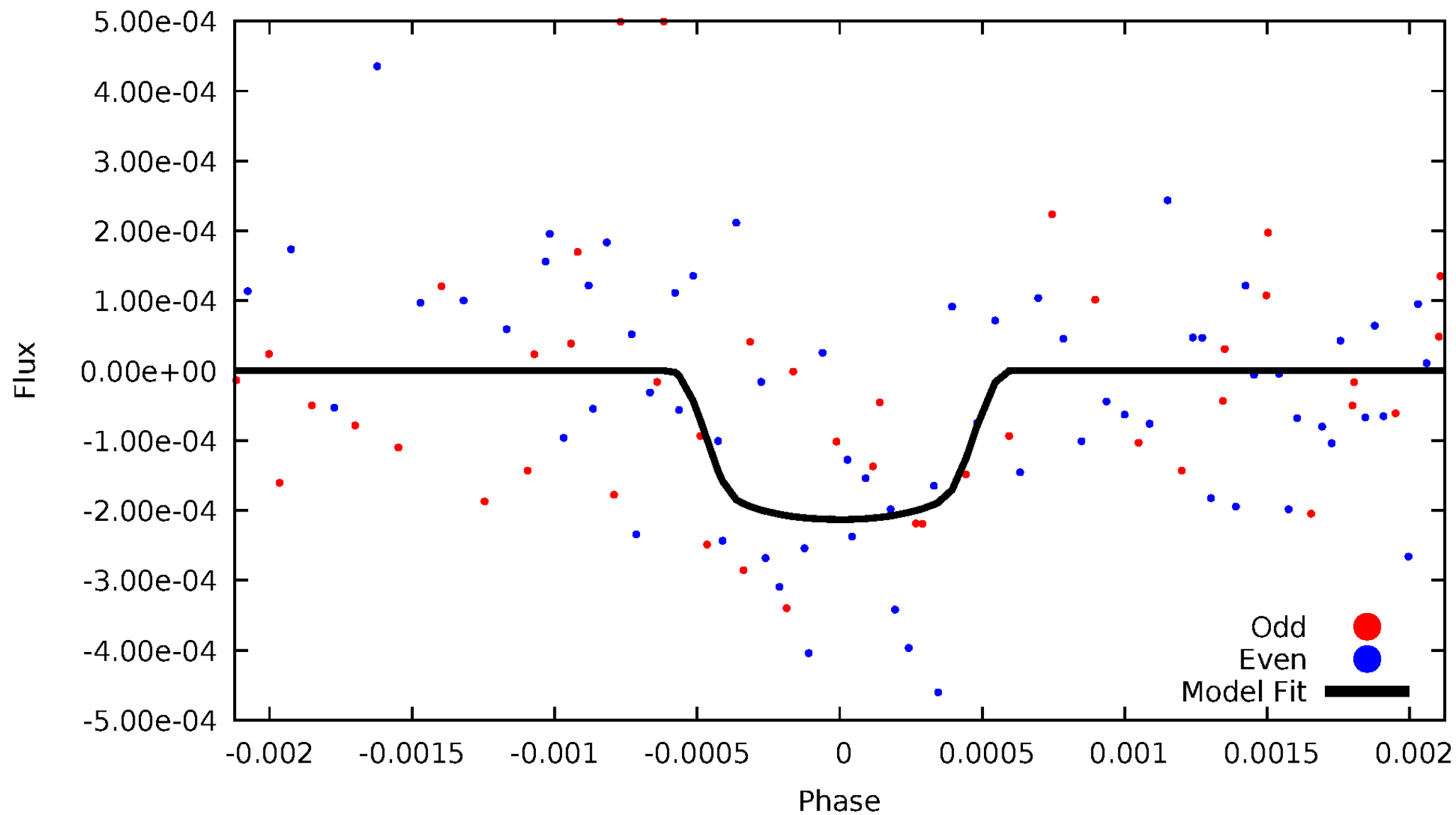


TCE 008950019-07



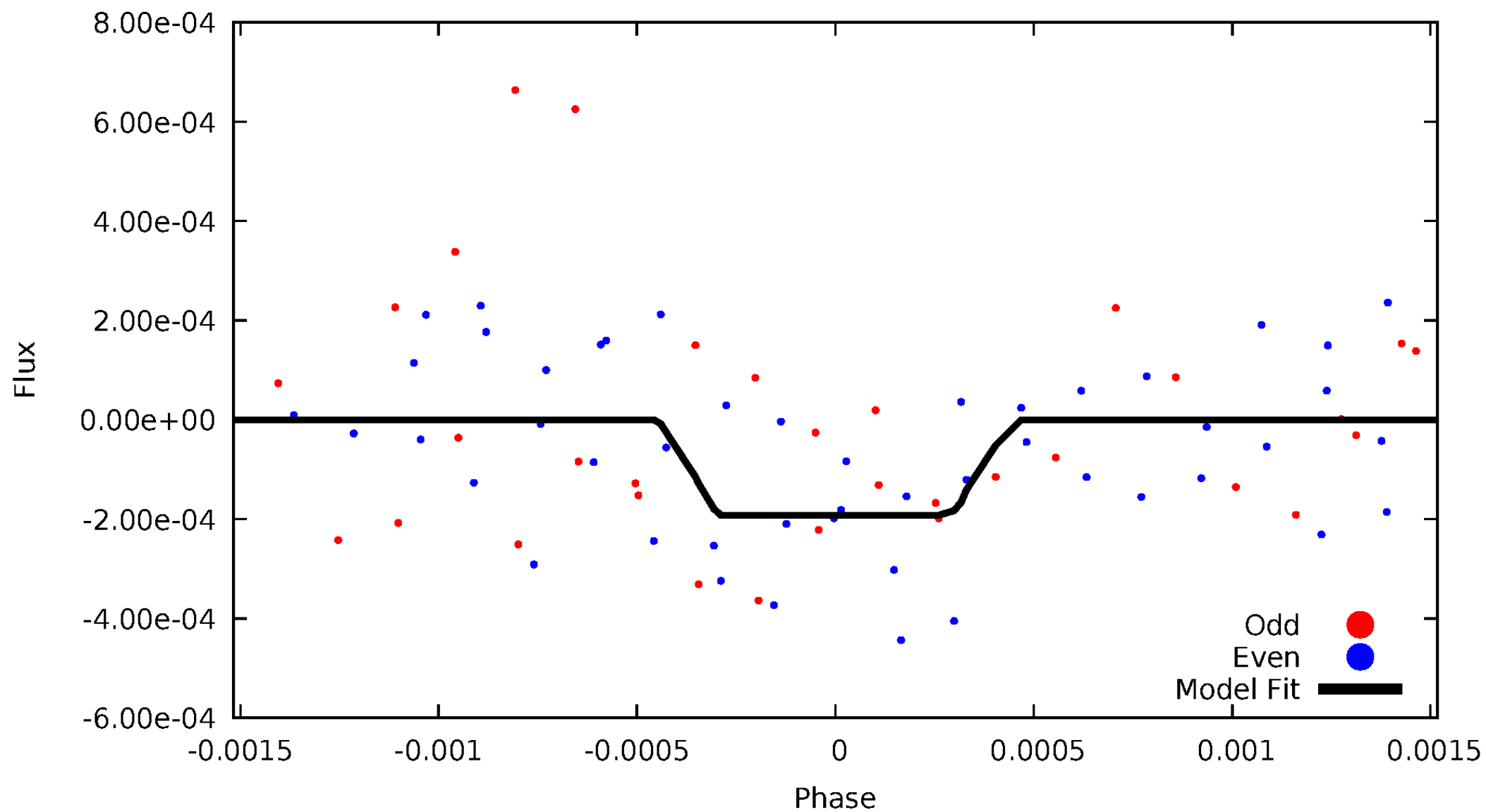
DV Odd/Even

TCE 008950019-07



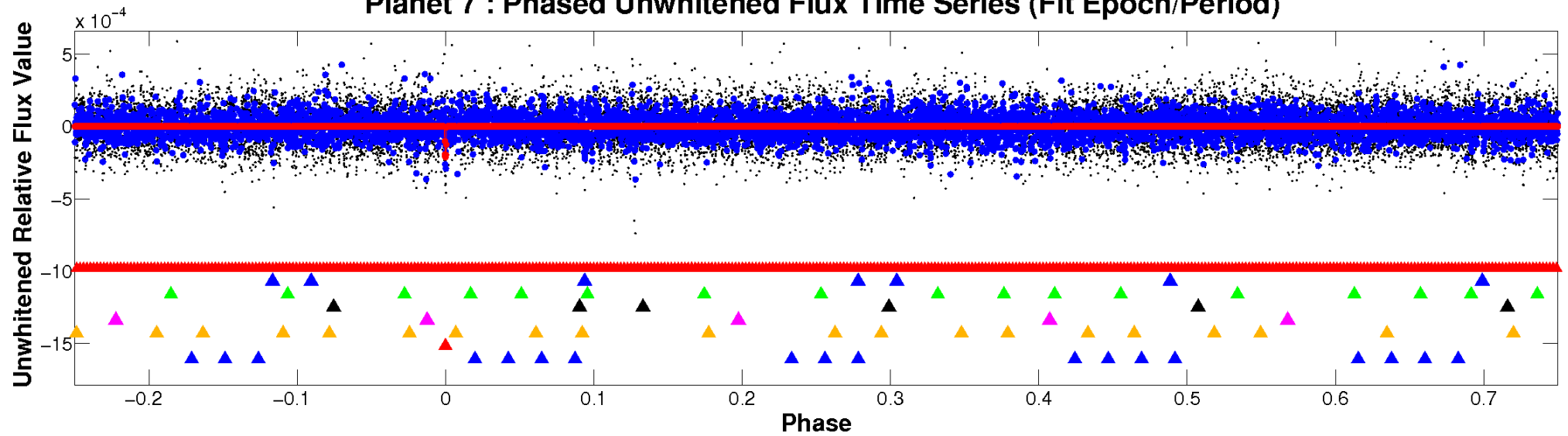
ALT Odd/Even

TCE 008950019-07

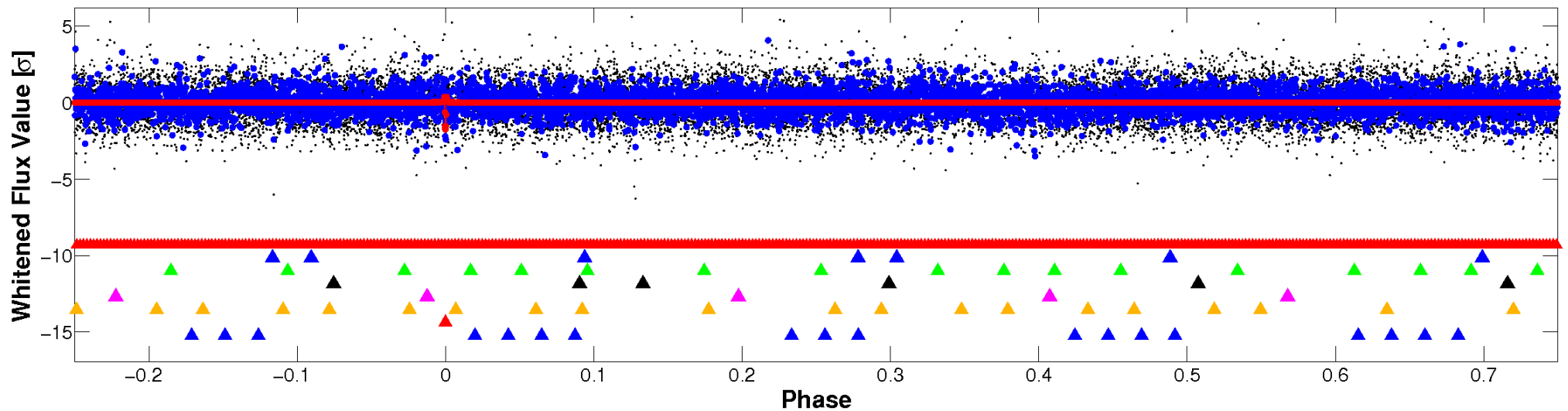


Non-Whitened Vs. Whitened Light Curve

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

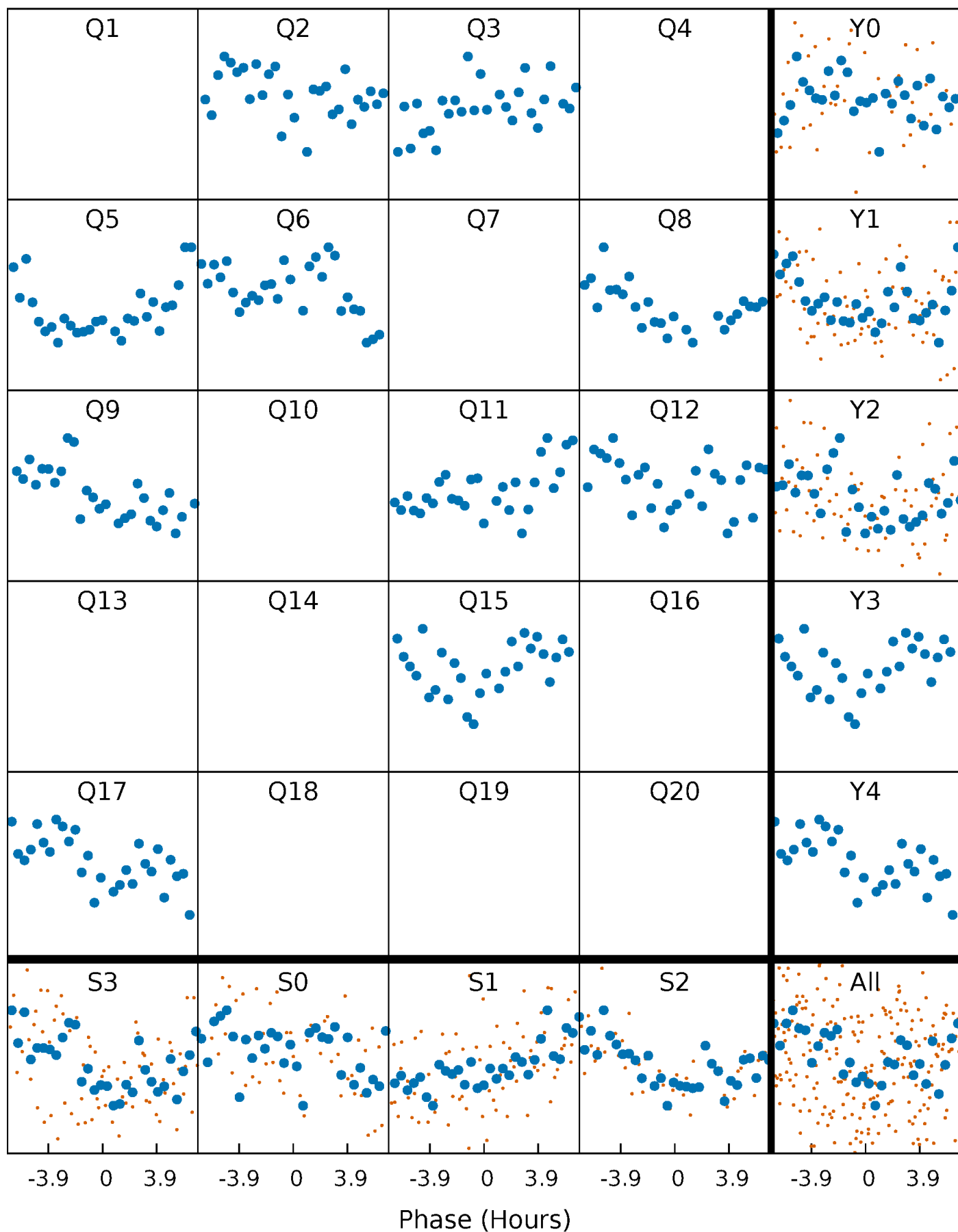


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



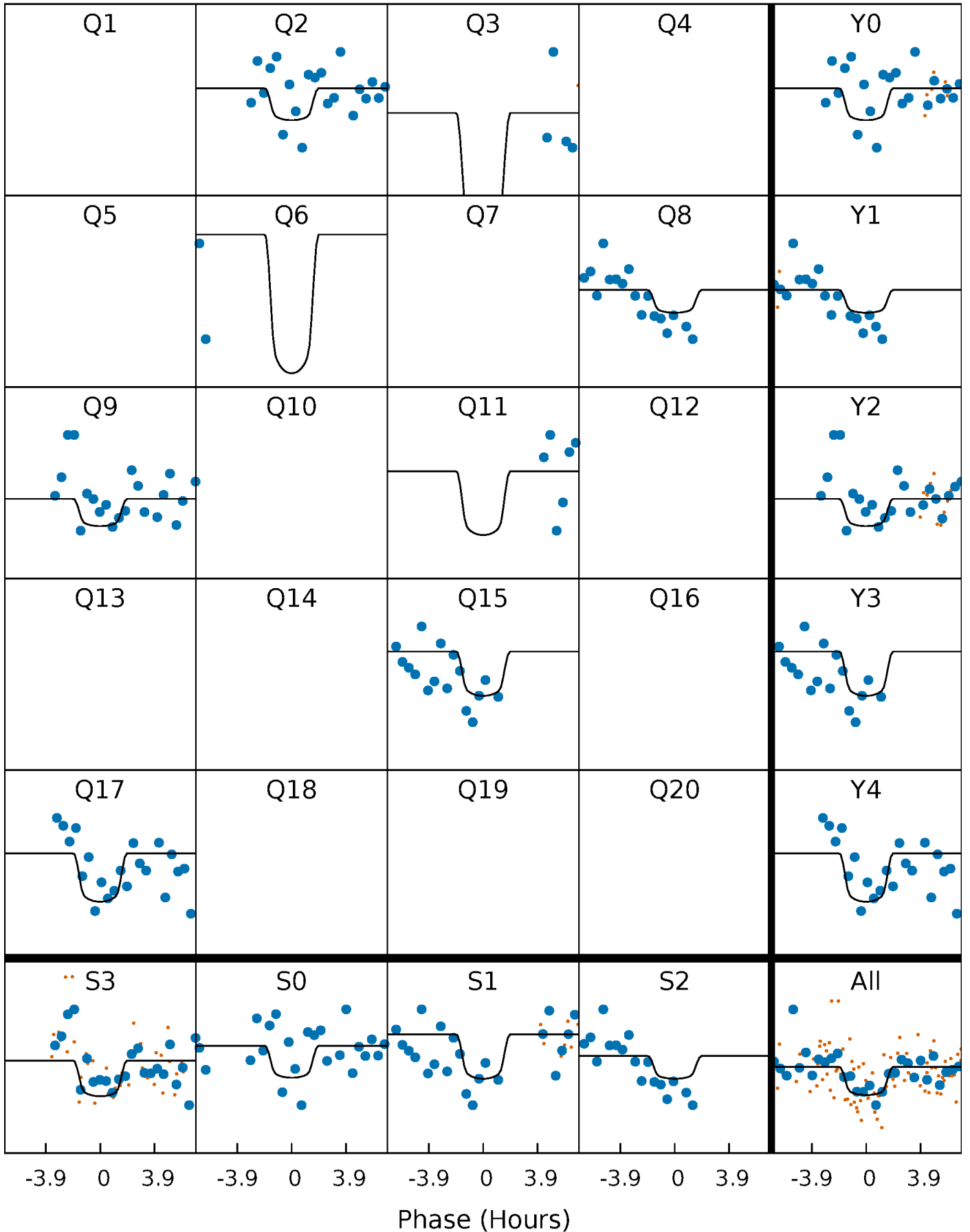
PDC Quarter-Phased Transit Curves

TCE 008950019-07 P=134.974599 Days $T_0=213.093192$ (BKJD)



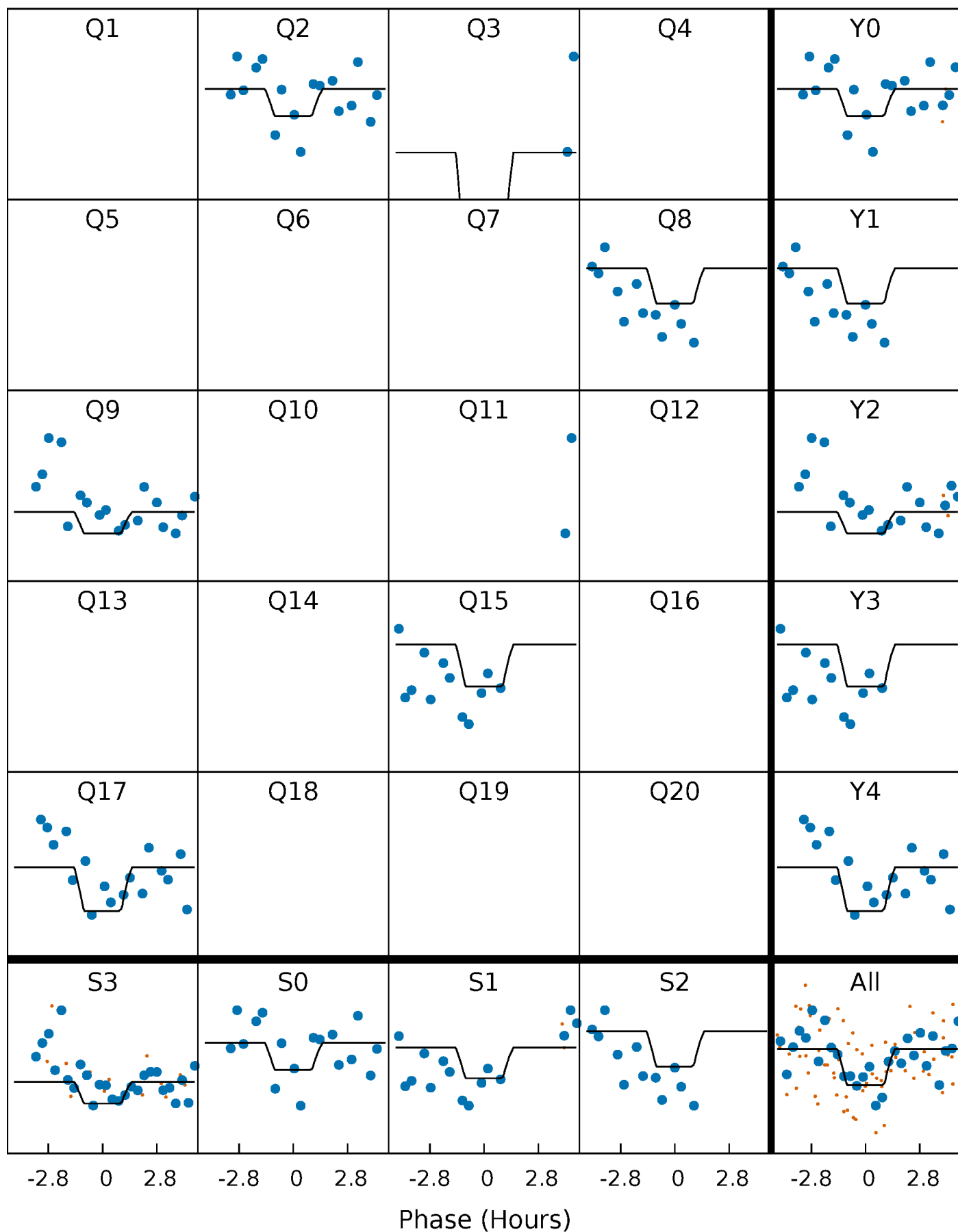
DV Quarter-Phased Transit Curves

TCE 008950019-07 P=134.974599 Days $T_0=213.093192$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

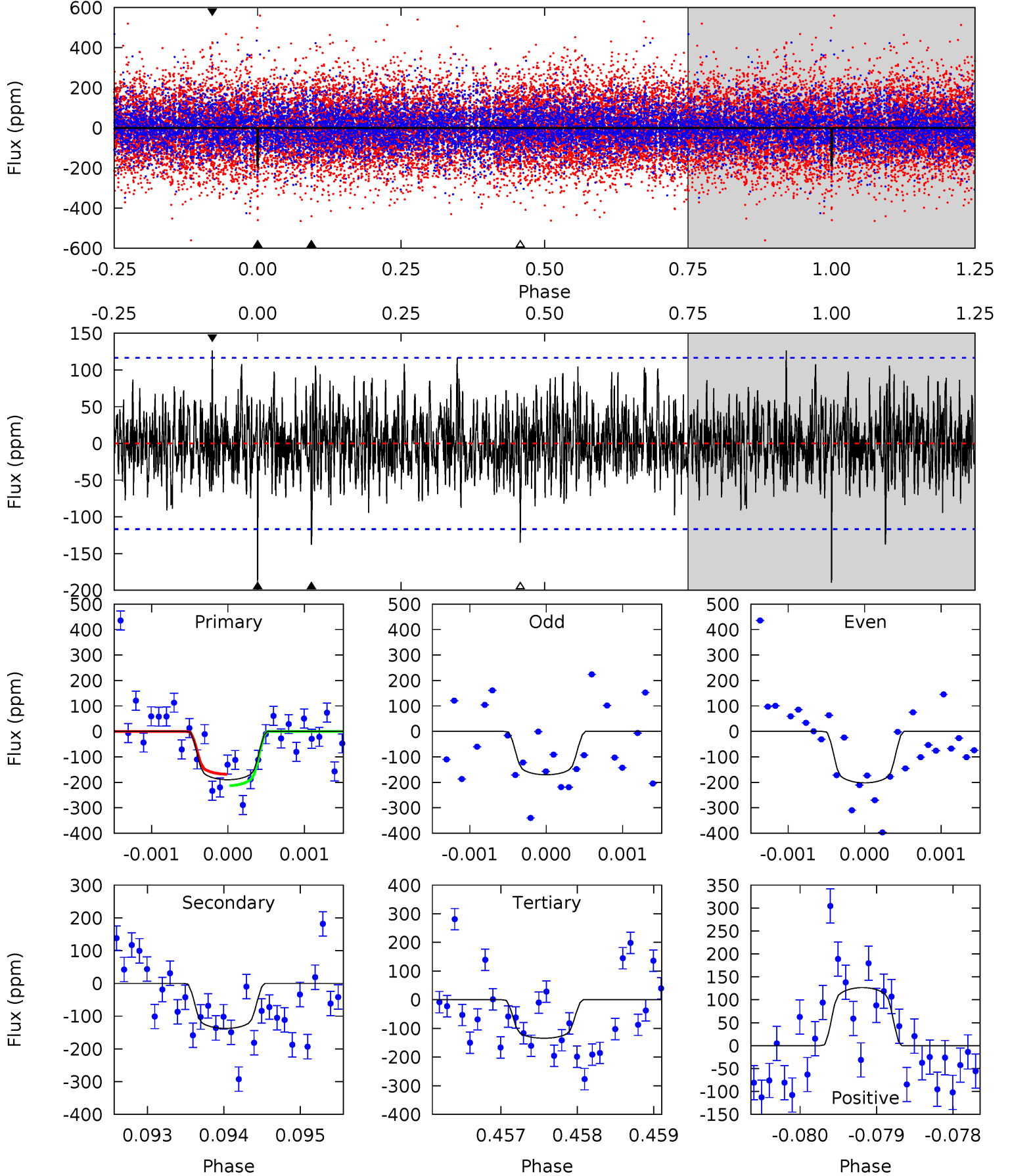
TCE 008950019-07 P=134.973557 Days $T_0=213.103609$ (BKJD)



DV Model-Shift Uniqueness Test

008950019-07, P = 134.974599 Days, E = 78.118593 Days

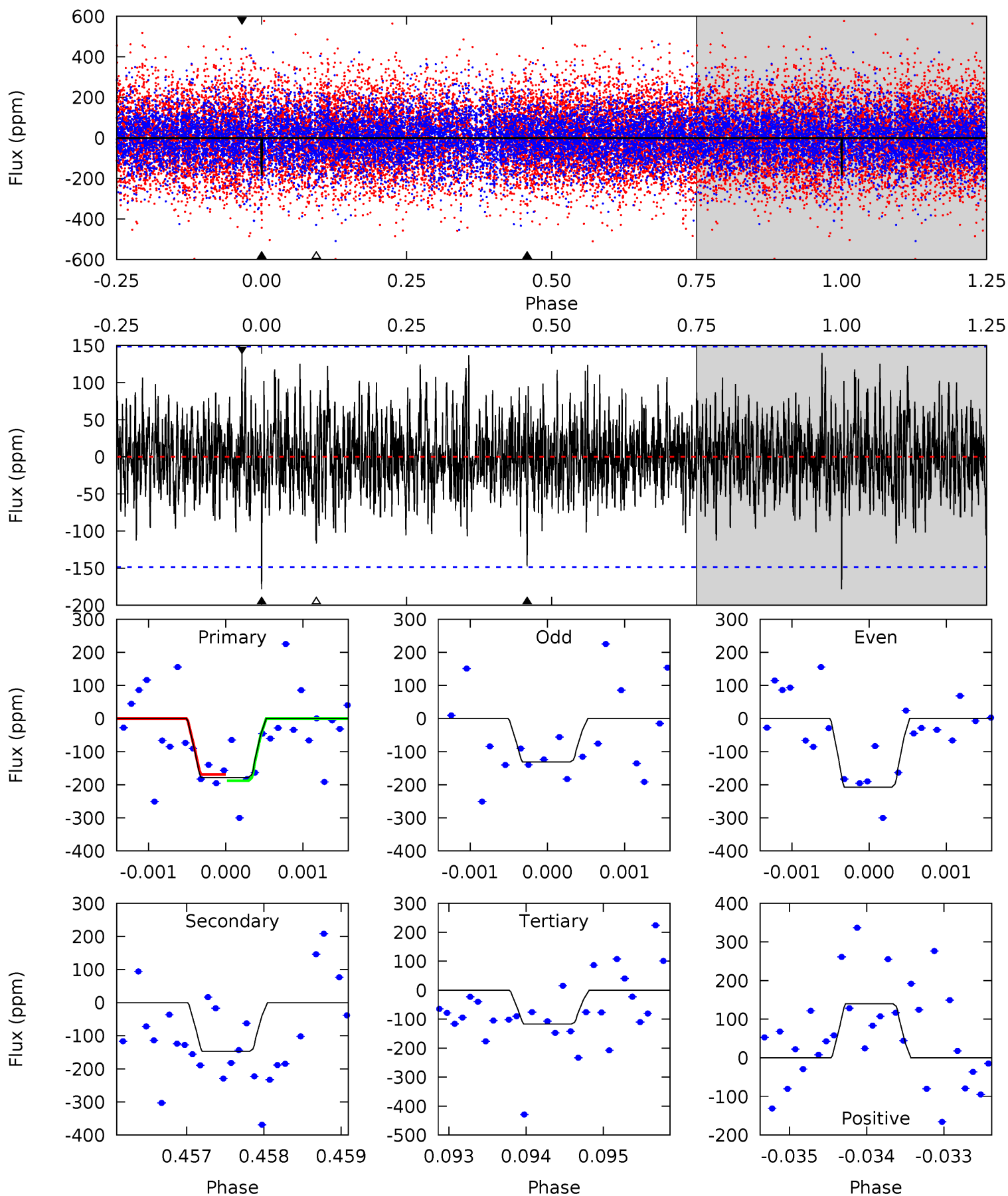
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.83 | 6.41 | 6.25 | 5.89 | 5.43 | 3.25 | 1.61 | 2.58 | 2.94 | 0.16 | 0.52 | 0.73 | 1.20 | 0.40 | 1.04 |



Alt Model-Shift Uniqueness Test

008950019-07, P = 134.973557 Days, E = 78.130052 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.57 | 5.43 | 4.30 | 5.16 | 5.47 | 3.32 | 1.45 | 2.27 | 1.41 | 1.13 | 0.27 | 1.38 | 0.92 | 0.44 | 0.35 |



Stellar Parameters For KIC 008950019

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | $M(M_{\odot})$ | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6654^{+182}_{-202} | $3.759^{+0.336}_{-0.084}$ | $-0.540^{+0.350}_{-0.300}$ | $2.508^{+0.404}_{-0.943}$ | $1.317^{+0.222}_{-0.246}$ | $0.118^{+0.286}_{-0.031}$ |
| | +3%/-3% | +9%/-2% | +65%/-56% | +16%/-38% | +17%/-19% | +244%/-26% |
| 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 008950019-07 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|------------------------|----------------------|------------------------|------------------------|
| DV | -138 ± 21 | $4.08^{+2.00}_{-1.76}$ | 847^{+48}_{-78} | 5635^{+1929}_{-822} | 1441^{+3035}_{-821} |
| Alt. | -147 ± 27 | $3.64^{+2.08}_{-1.87}$ | 842^{+50}_{-73} | 6118^{+2910}_{-1119} | 1912^{+6415}_{-1099} |

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

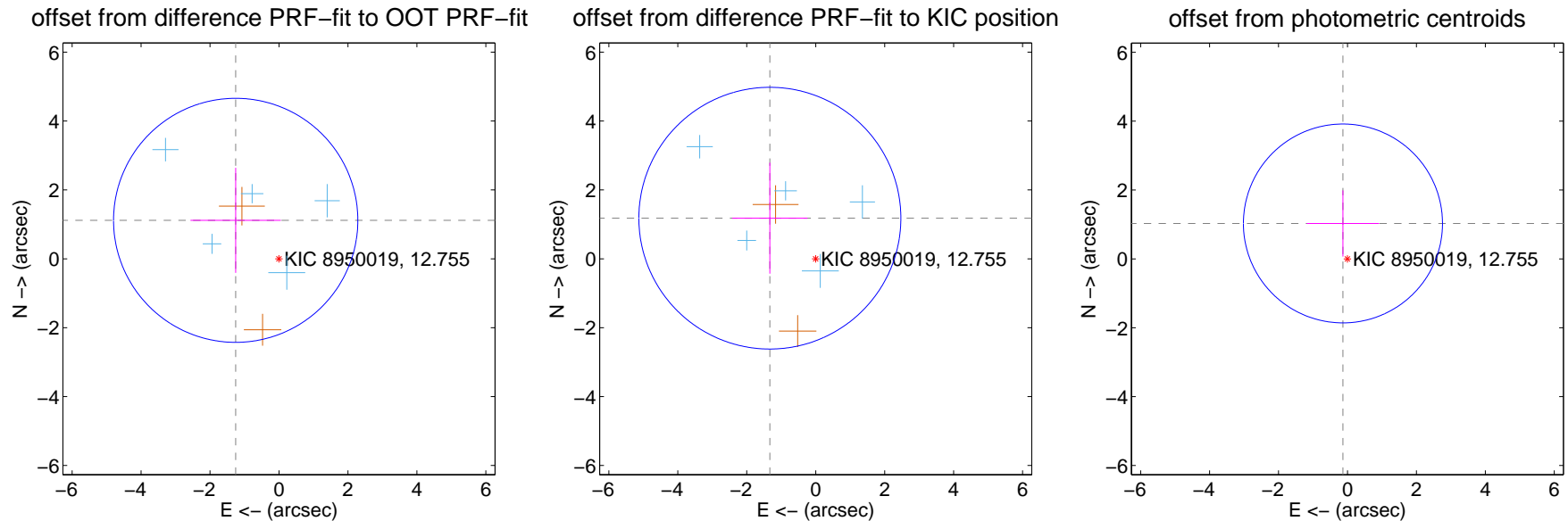
DV Centroid Data

Supplemental centroid analysis for 008950019-07. Kepler magnitude: 12.76. Transit SNR 8.48

There are 5 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 1.681 ± 1.181 | 1.42 | 1.256 ± 1.311 | 1.117 ± 1.524 |
| PRF-fit source offset from KIC position | 1.778 ± 1.267 | 1.40 | 1.330 ± 1.093 | 1.180 ± 1.611 |
| photometric centroid source offset | 1.04 ± 0.96 | 1.08 | 0.13 ± 1.05 | 1.03 ± 0.96 |



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.

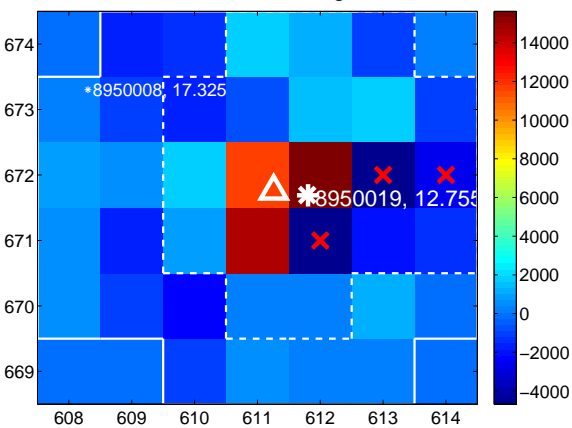
Q1 no difference image



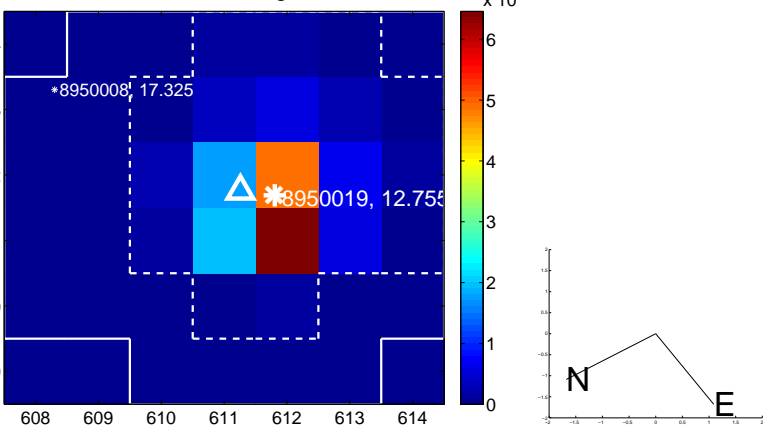
Q1 no OOT image



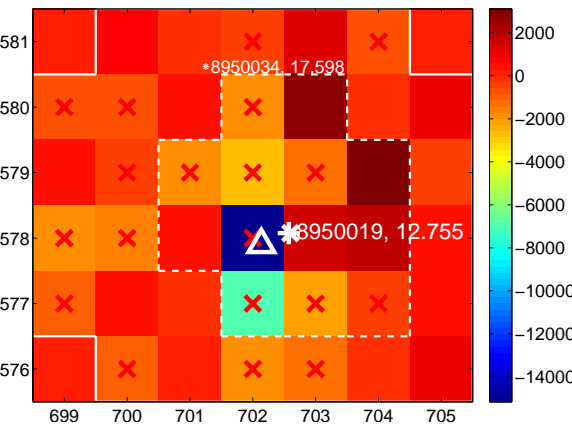
Q2 difference image



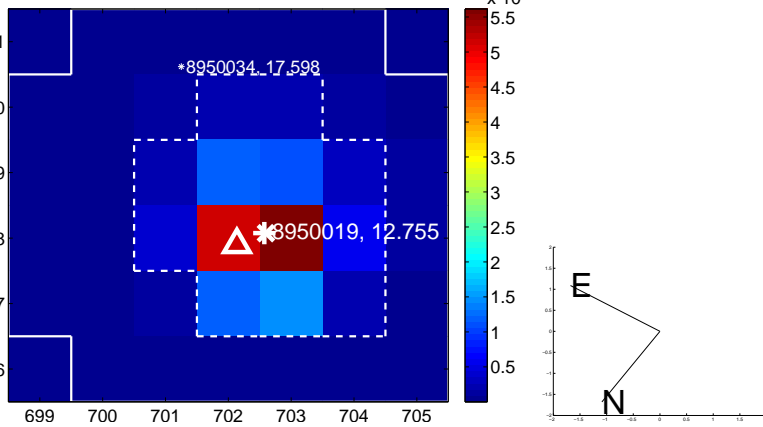
Q2 OOT image



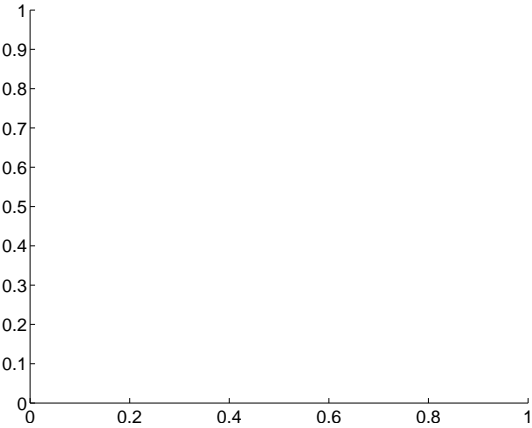
Q3 difference image. Poor Quality



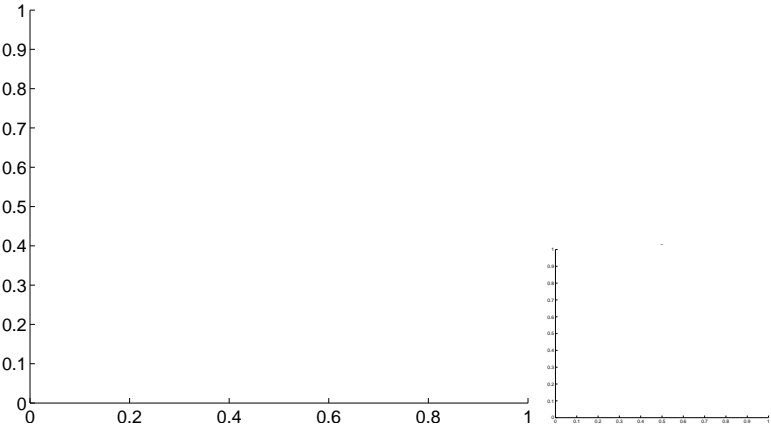
Q3 OOT image



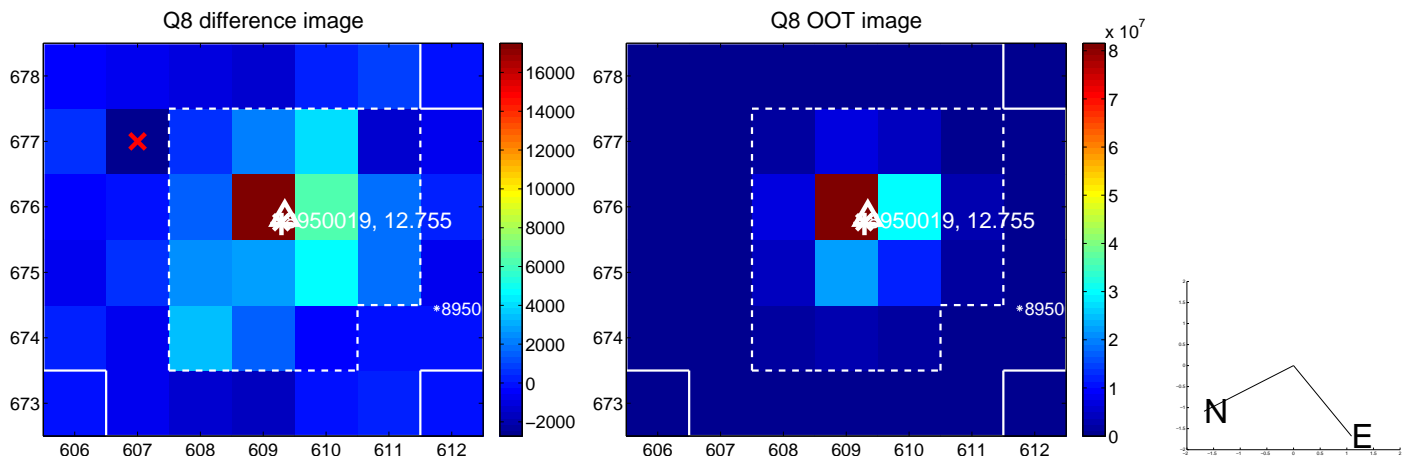
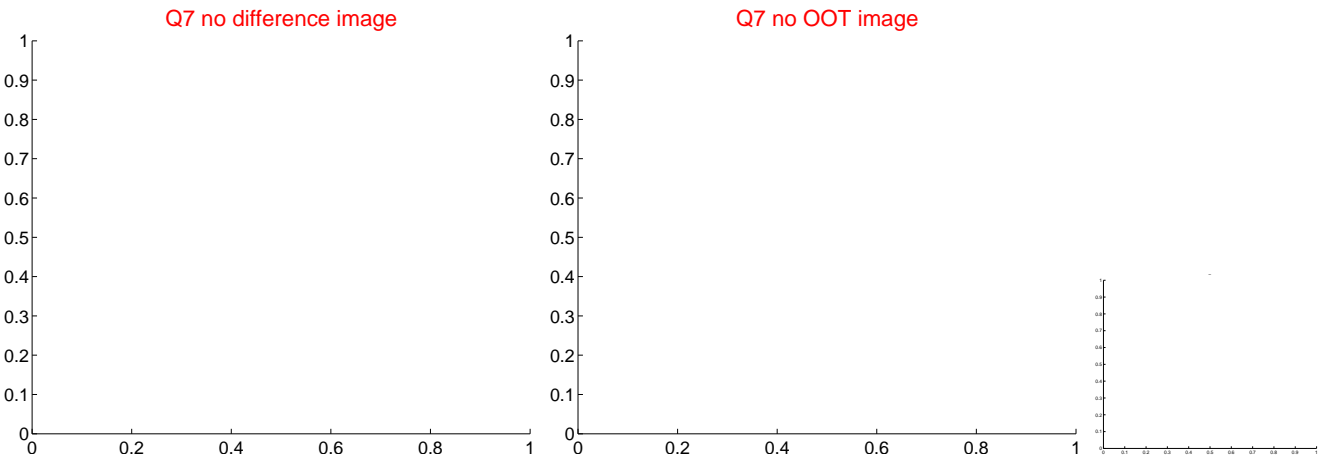
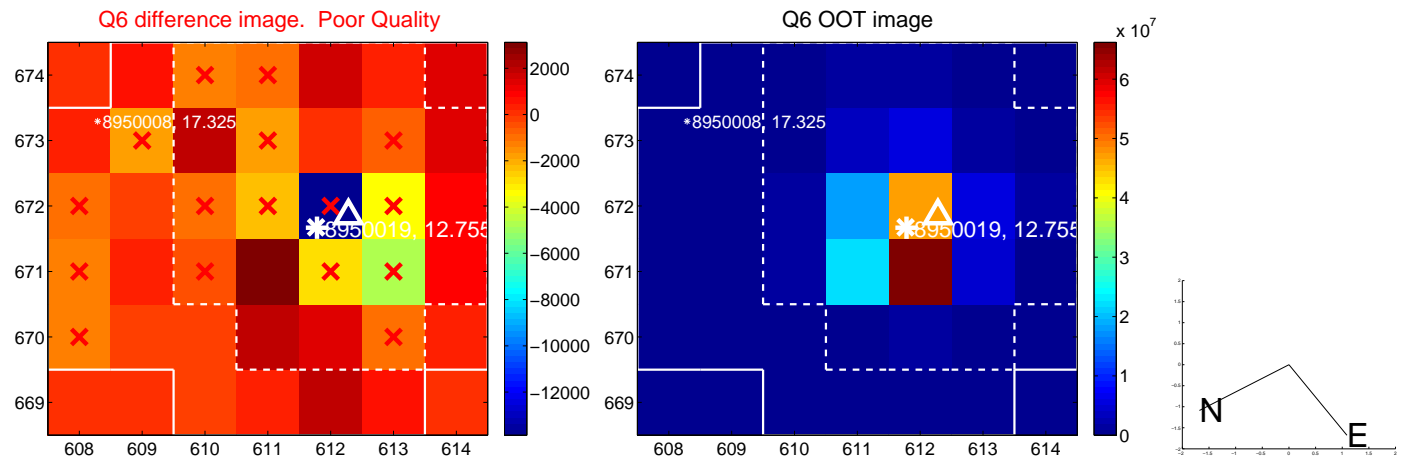
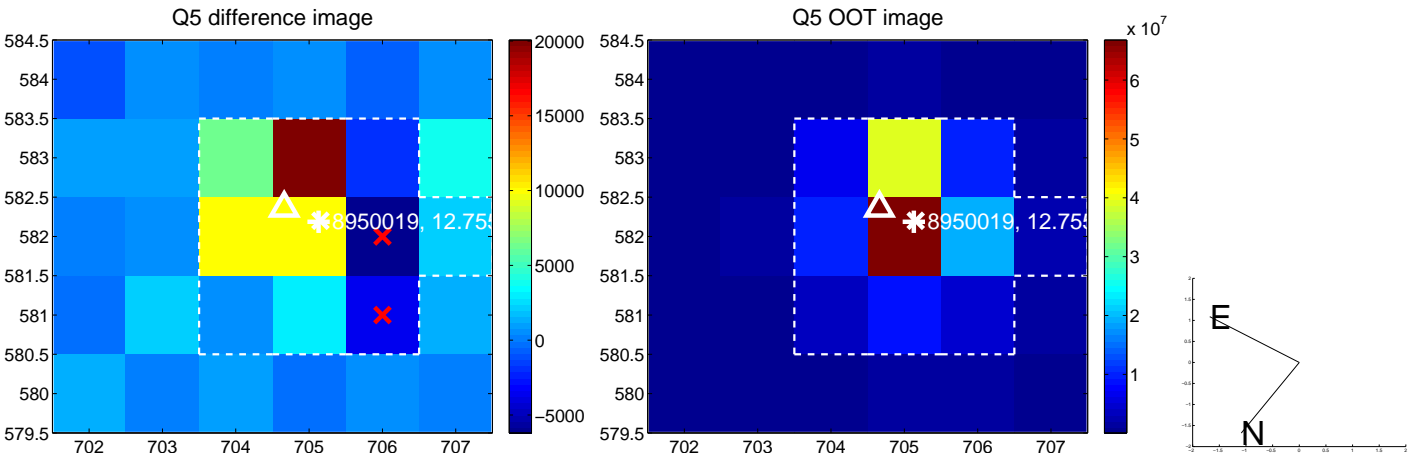
Q4 no difference image



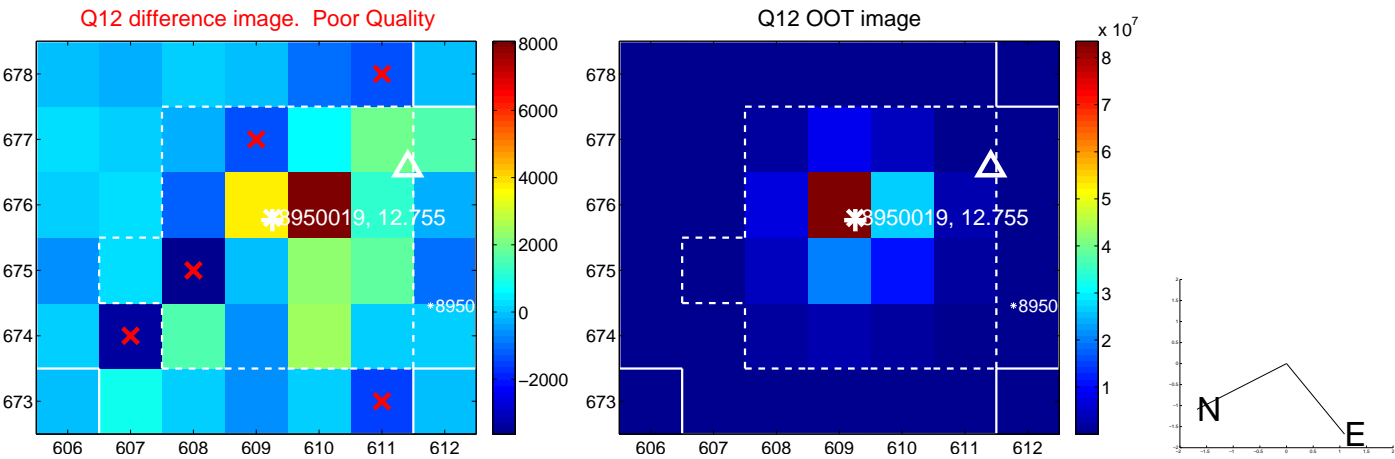
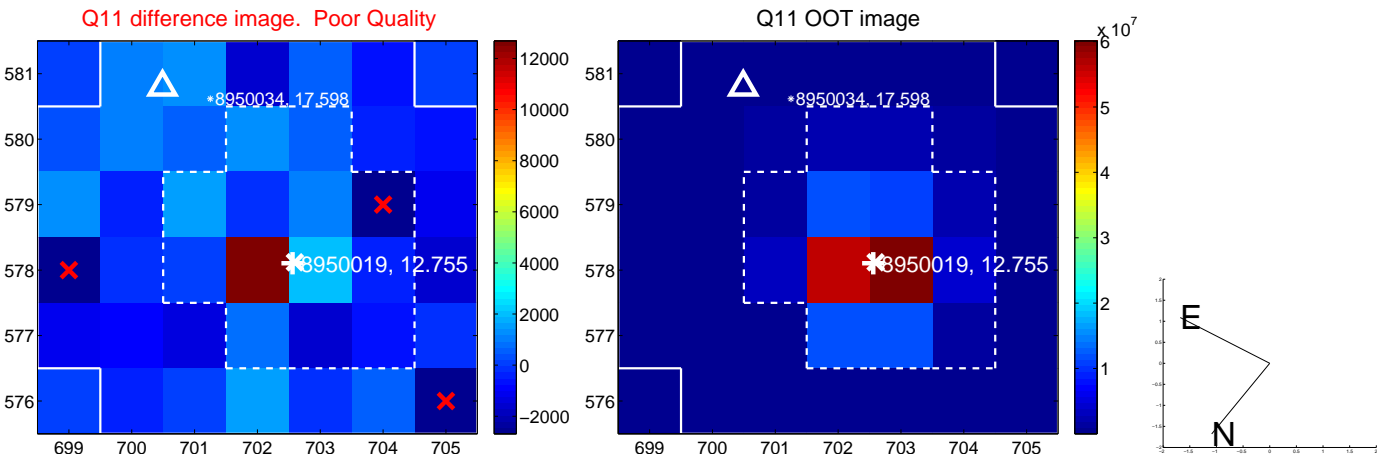
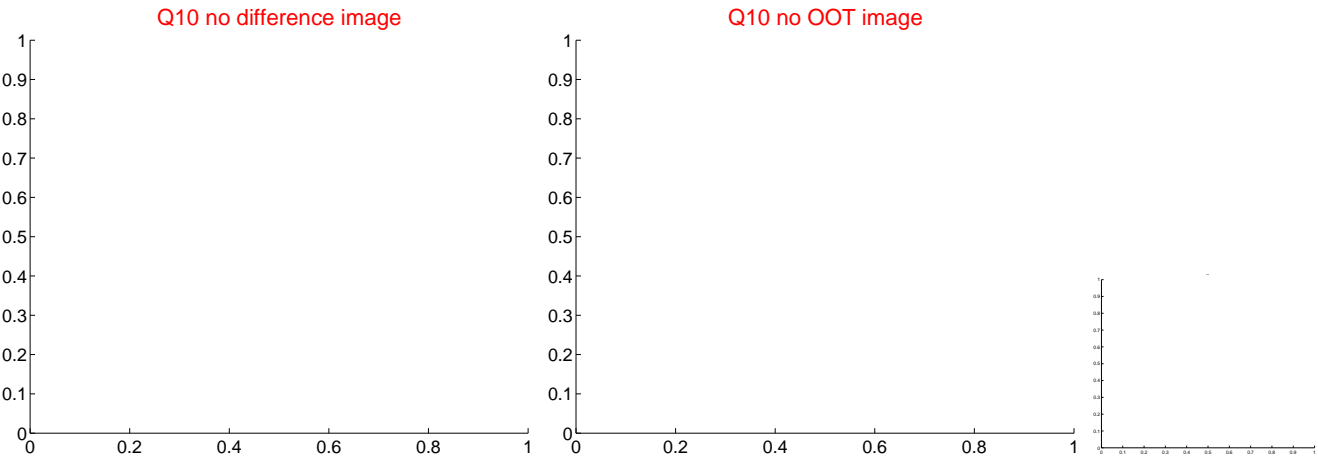
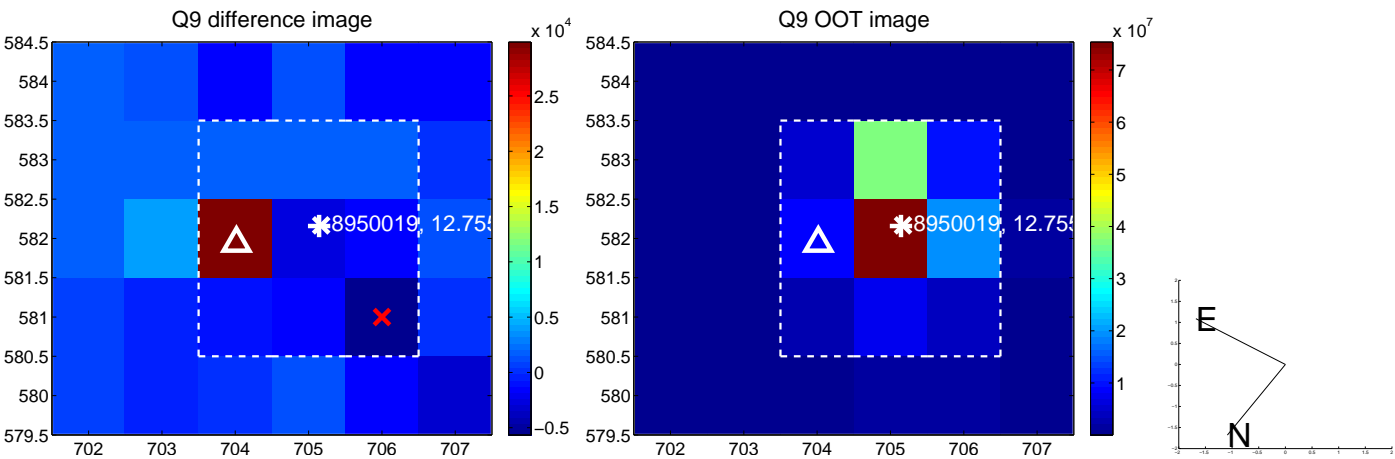
Q4 no OOT image



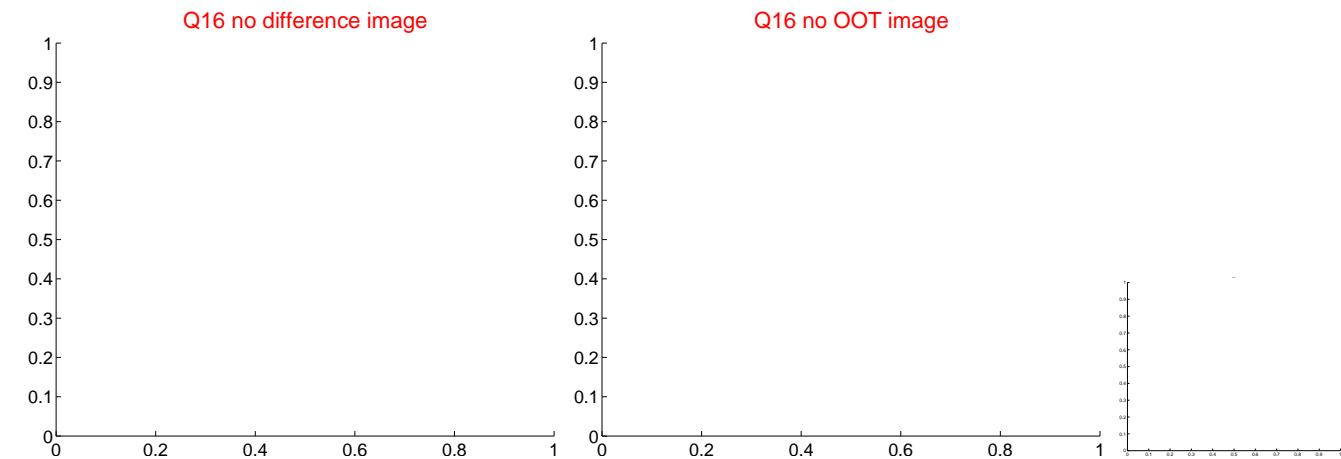
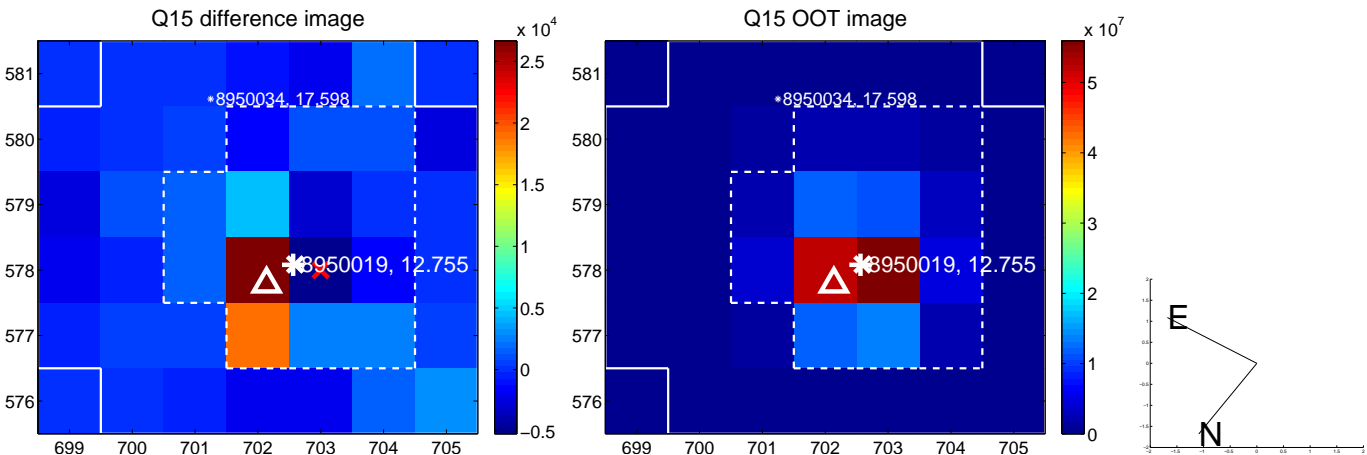
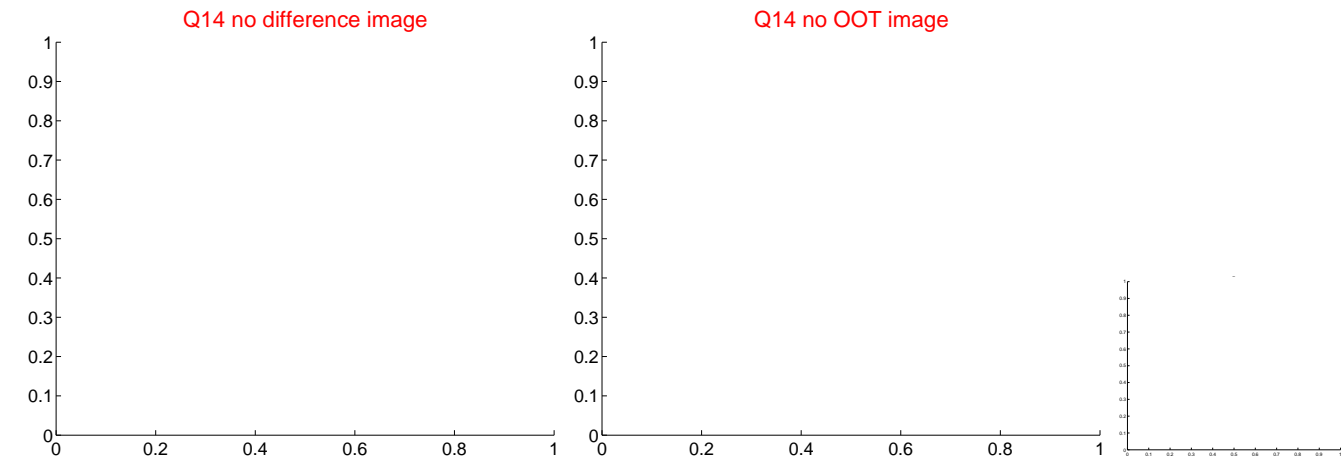
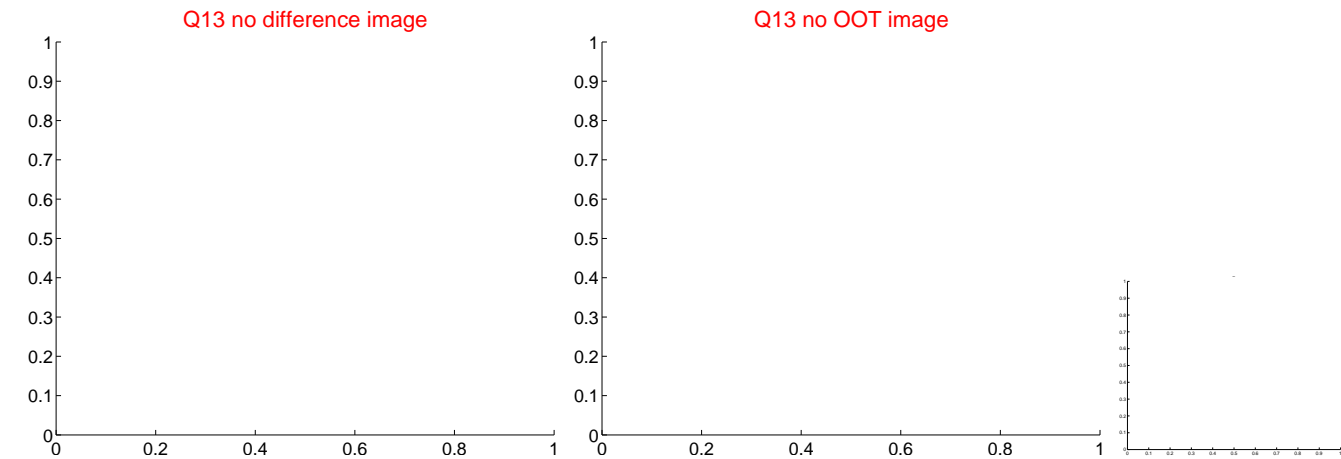
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



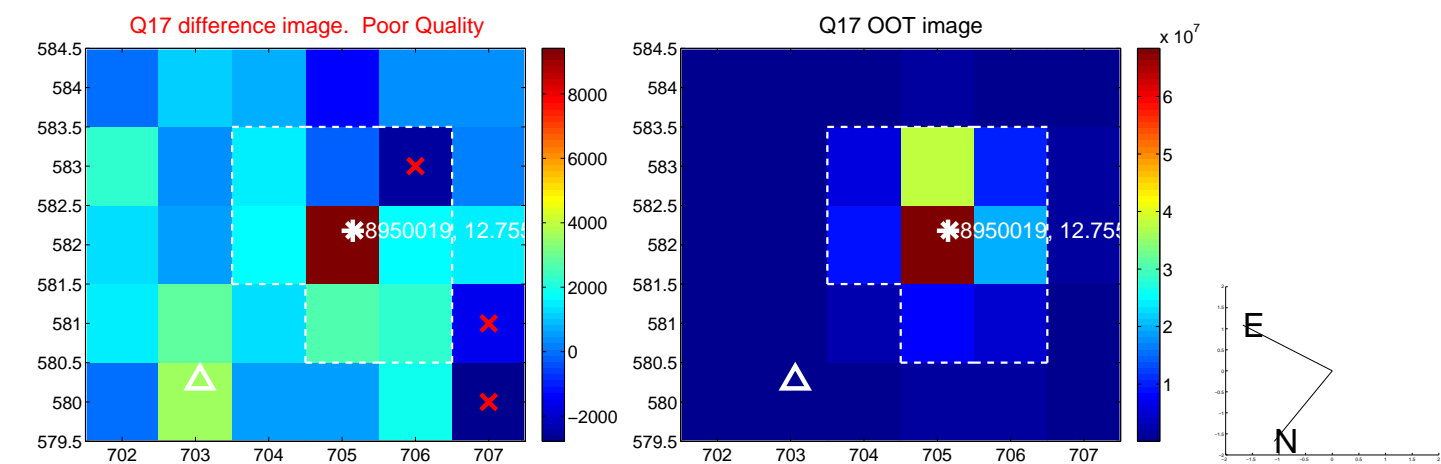
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



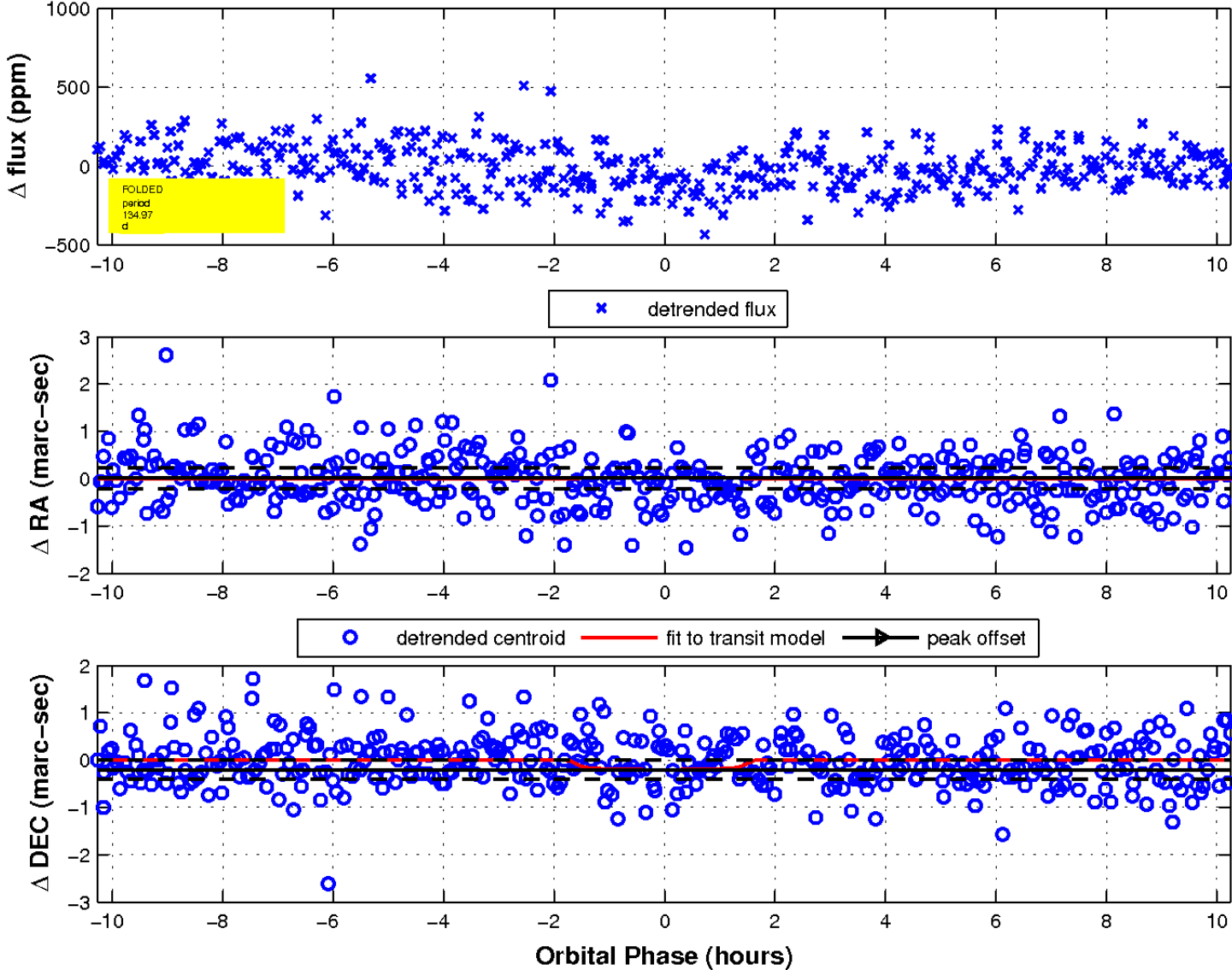
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

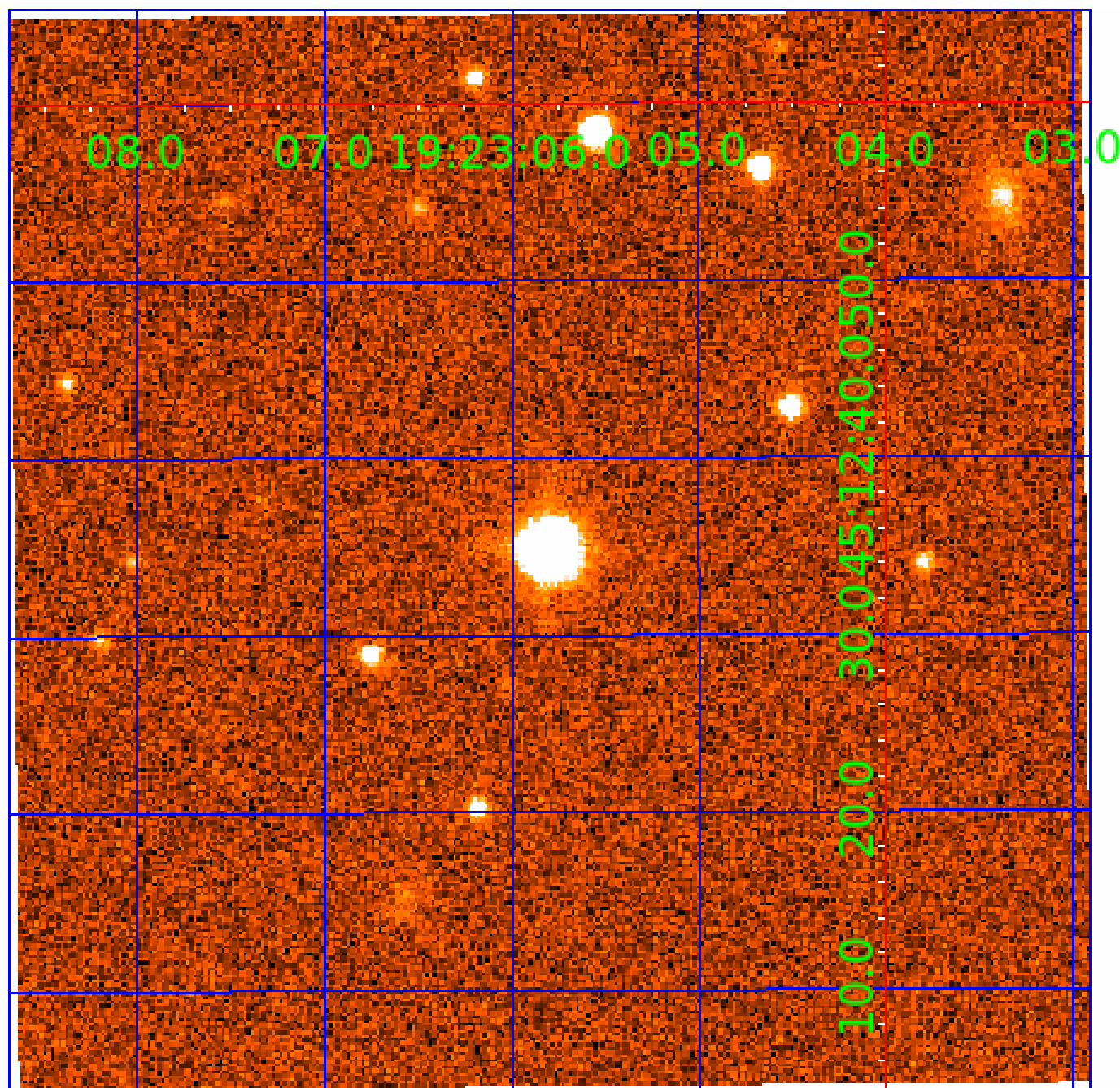


fluxWeightedCentroids, Planet 7 of 8



UKIRT Image

Declination



KIC 008950019

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 008950019-01 | OBS | No | 1.537285 | 132.501062 | 10.3 | 8.039 | 8.8 | 5.0 | 2.51 | 6654 | 0.87 | 13523.98 |
| 008950019-02 | OBS | No | 216.662839 | 250.644951 | 208.8 | 13.436 | 11.7 | 7.1 | 2.51 | 6654 | 3.94 | 18.44 |
| 008950019-03 | OBS | No | 86.440129 | 133.552210 | 128.7 | 18.788 | 9.3 | 7.7 | 2.51 | 6654 | 3.07 | 62.78 |
| 008950019-04 | OBS | No | 241.801135 | 231.066036 | 207.2 | 9.229 | 9.0 | 7.8 | 2.51 | 6654 | 3.97 | 15.93 |
| 008950019-05 | OBS | No | 298.278515 | 154.764534 | 169.5 | 6.974 | 8.1 | 7.6 | 2.51 | 6654 | 3.57 | 12.04 |
| 008950019-06 | OBS | No | 73.239558 | 179.518514 | 146.3 | 6.324 | 8.1 | 7.8 | 2.51 | 6654 | 3.37 | 78.30 |
| 008950019-07 | OBS | No | 134.974599 | 213.093193 | 212.9 | 3.437 | 7.6 | 8.5 | 2.51 | 6654 | 4.35 | 34.66 |
| 008950019-08 | OBS | No | 80.377986 | 144.503332 | 146.7 | 6.000 | 7.5 | -1.0 | 2.51 | 6654 | 3.06 | 69.17 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 008950019-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV |
| 008950019-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 008950019-03 | OBS | FP | 0.00 | 1 | 0 | 1 | 0 | INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS—HALO_GHOST |
| 008950019-04 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS |
| 008950019-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008950019-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT |
| 008950019-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT |
| 008950019-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_NOFITS |

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

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

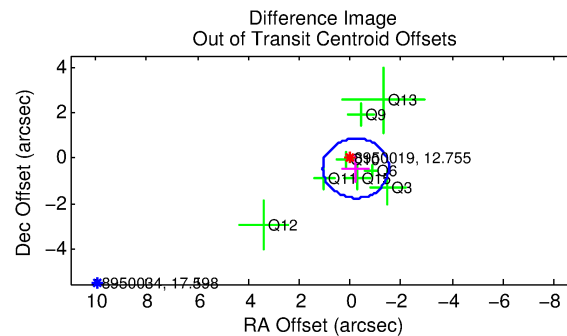
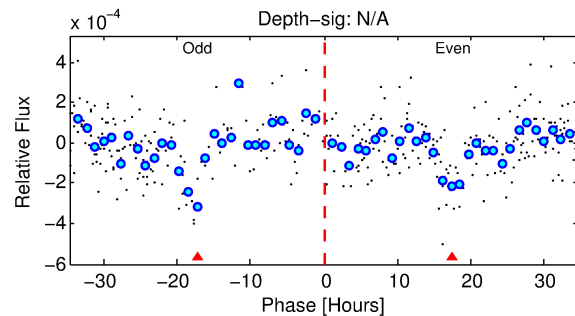
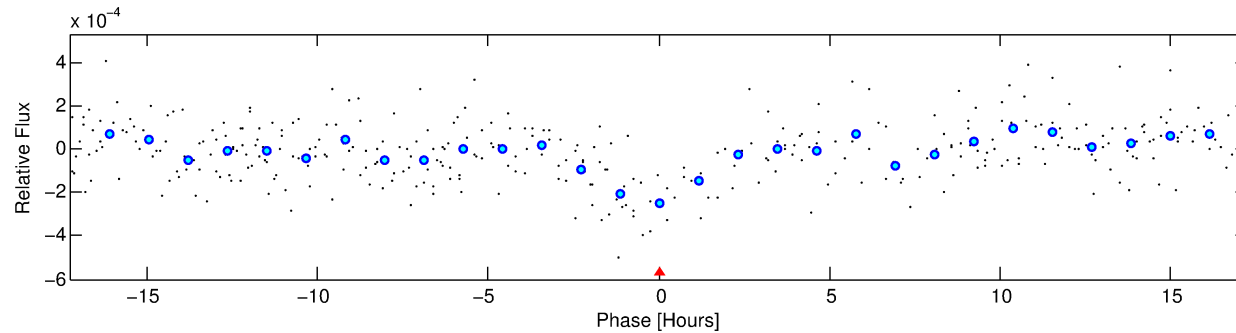
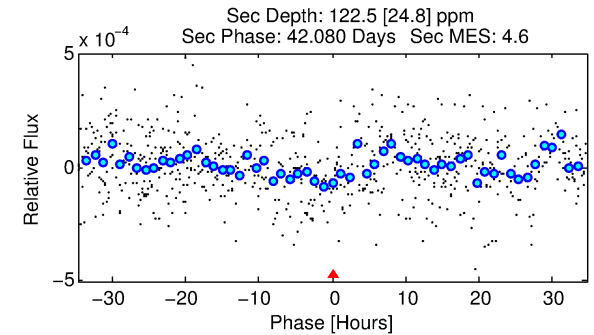
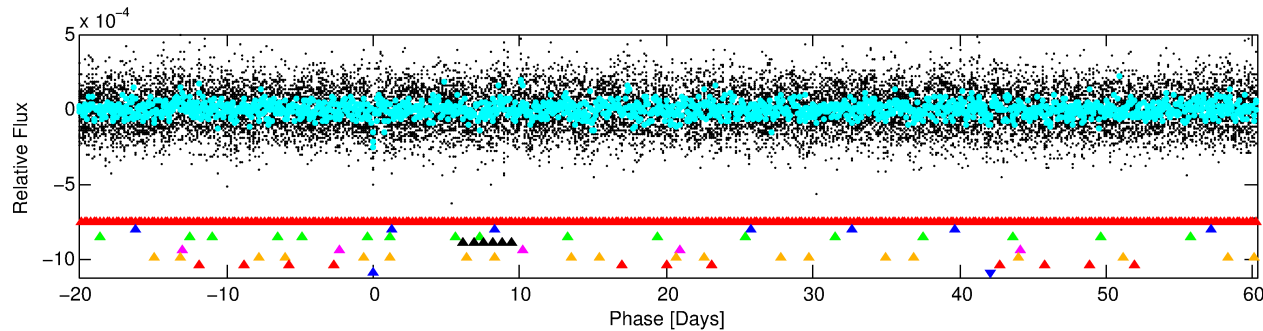
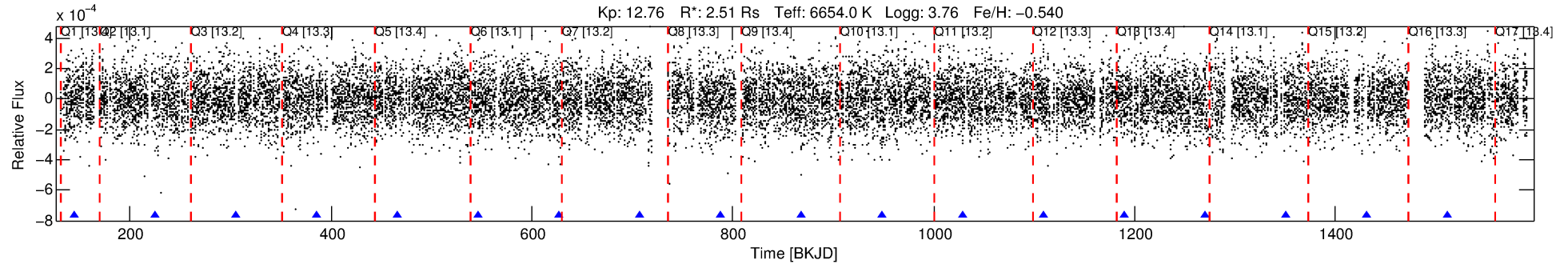
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008950019-08

No Significant Match Found

DV One-Page Summary

KIC: 8950019 Candidate: 8 of 8 Period: 80.378 d



TPS TCE Results:

Period = 80.37799 d
Epoch = 144.5033 BKJD

DV fit results are unavailable

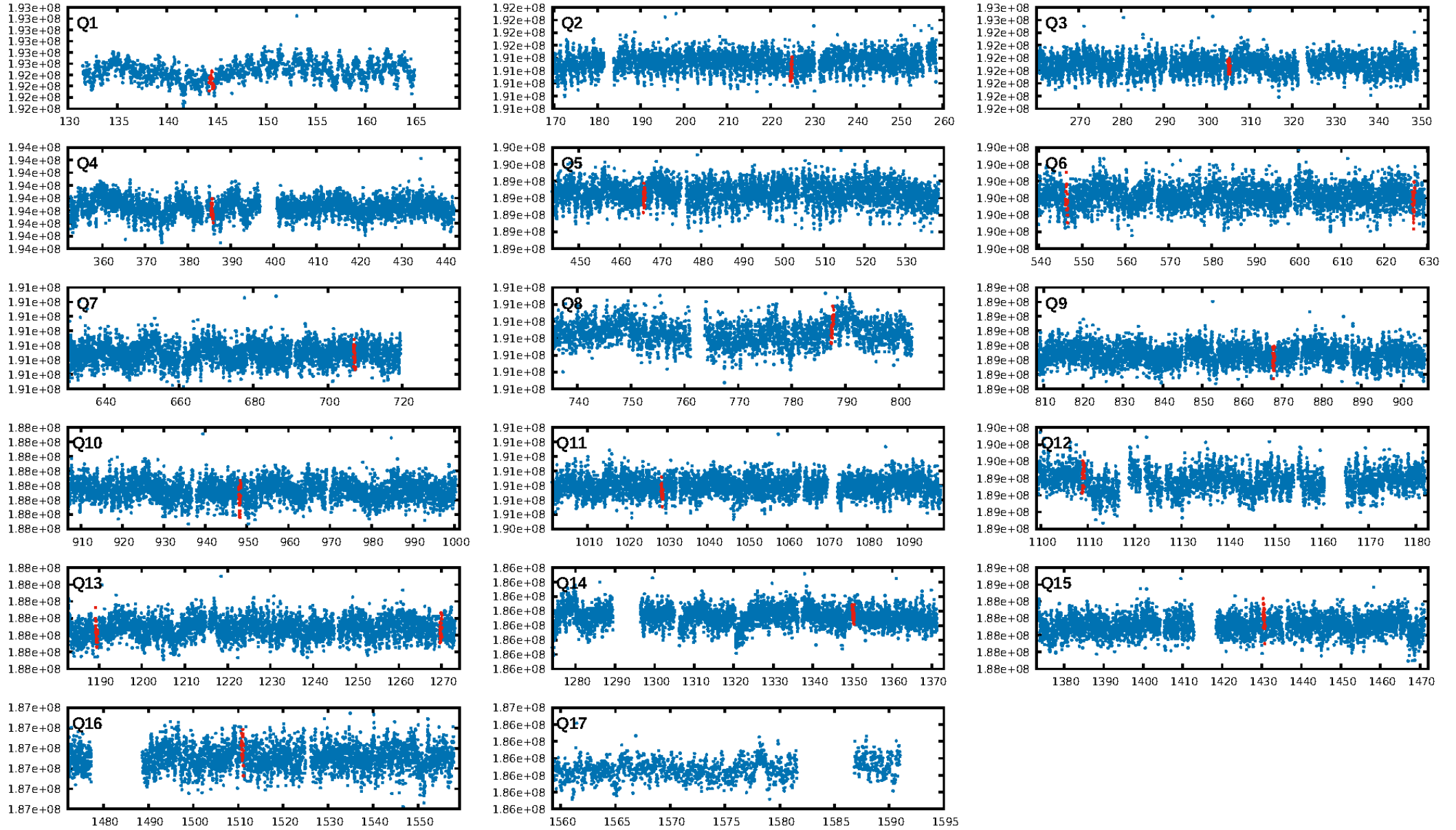
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [19.65σ]
LongPeriod-sig: 100.0% [7.38σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 0.5196
Centroid-sig: 17.6%
Centroid-so: 0.480 arcsec [0.90σ]
OotOffset-rm: 0.492 arcsec [1.14σ]
KicOffset-rm: 0.493 arcsec [1.03σ]
OotOffset-st: 2/3/1/2 [8]
KicOffset-st: 2/3/1/2 [8]
DiffImageQuality-fgm: 0.75 [6/8]
DiffImageOverlap-fno: 0.13 [2/15]

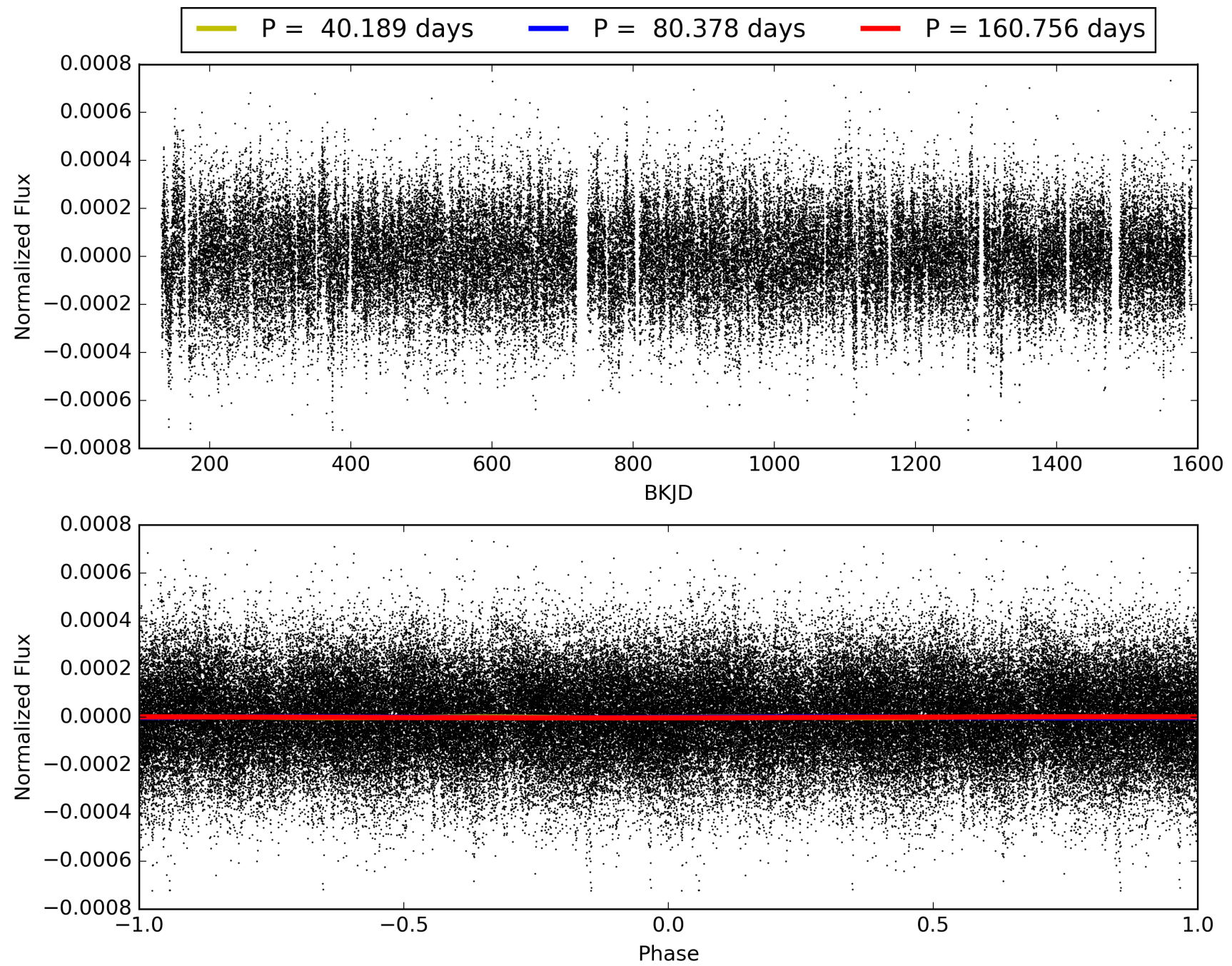
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:42:17 Z

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

TCE 008950019-08, PDC Light Curves

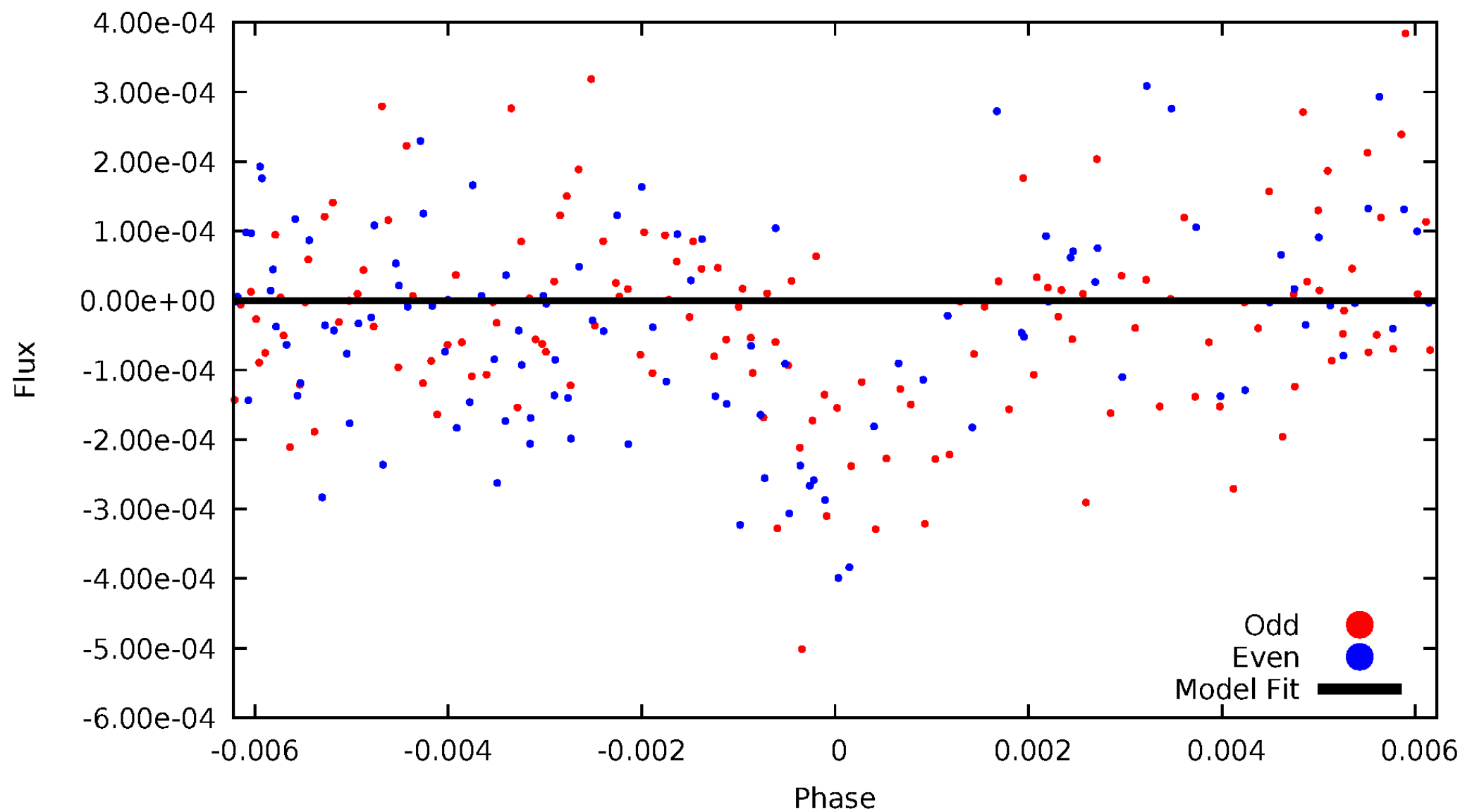


TCE 008950019-08



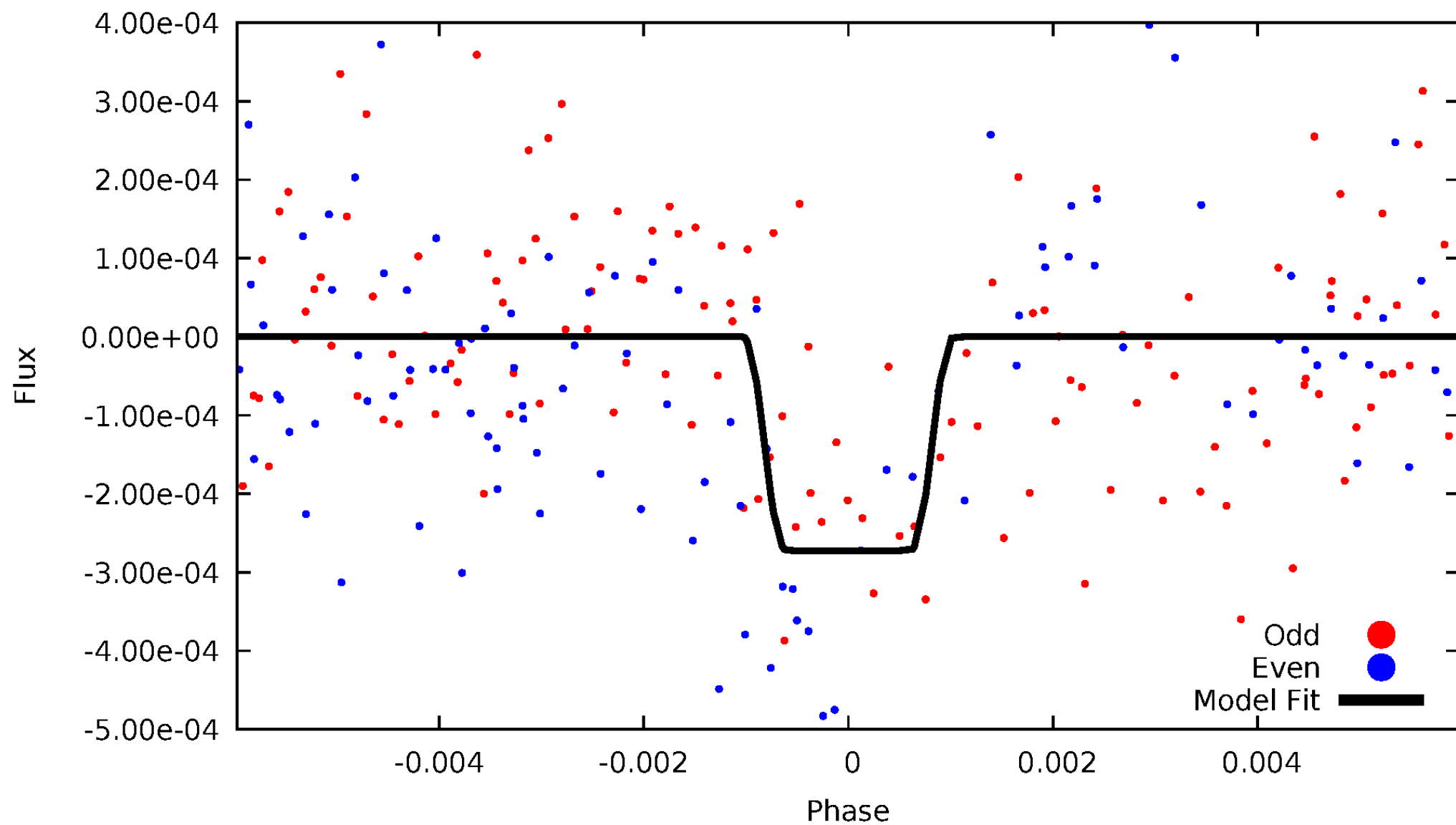
DV Odd/Even

TCE 008950019-08



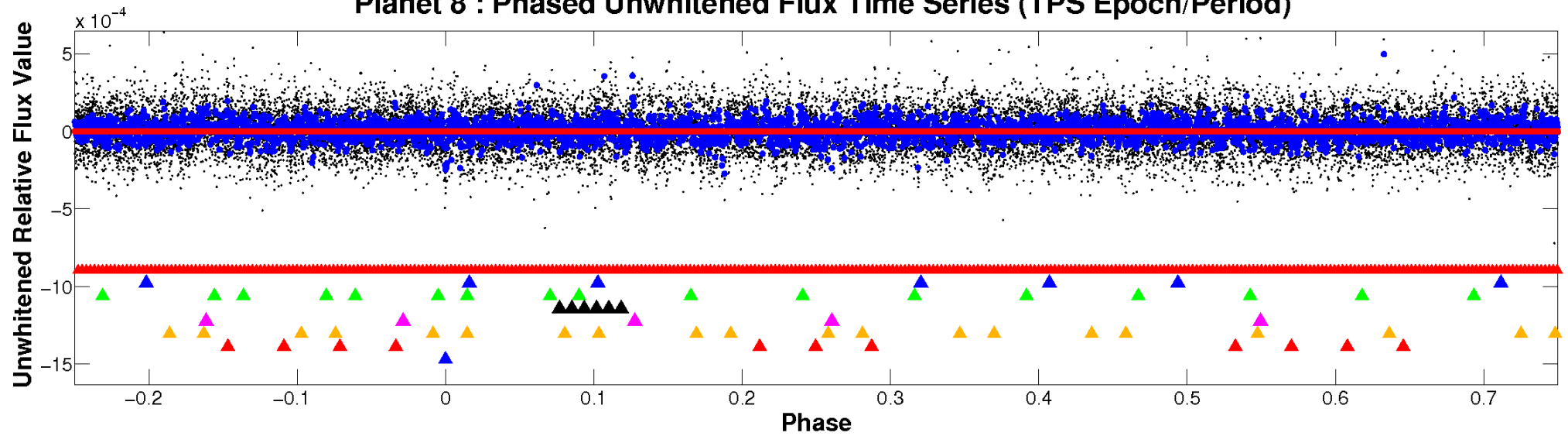
ALT Odd/Even

TCE 008950019-08

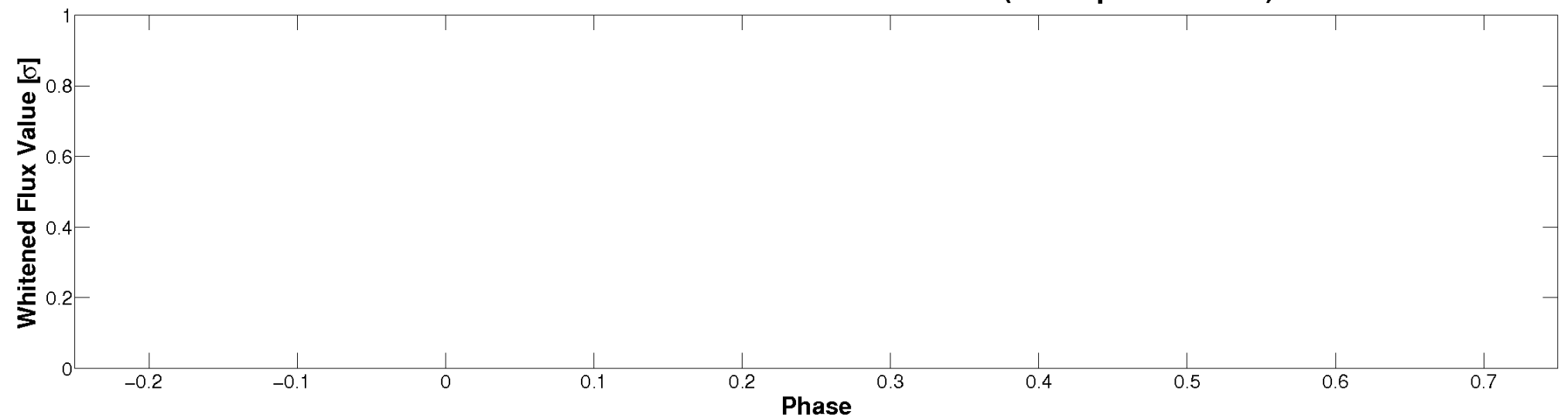


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

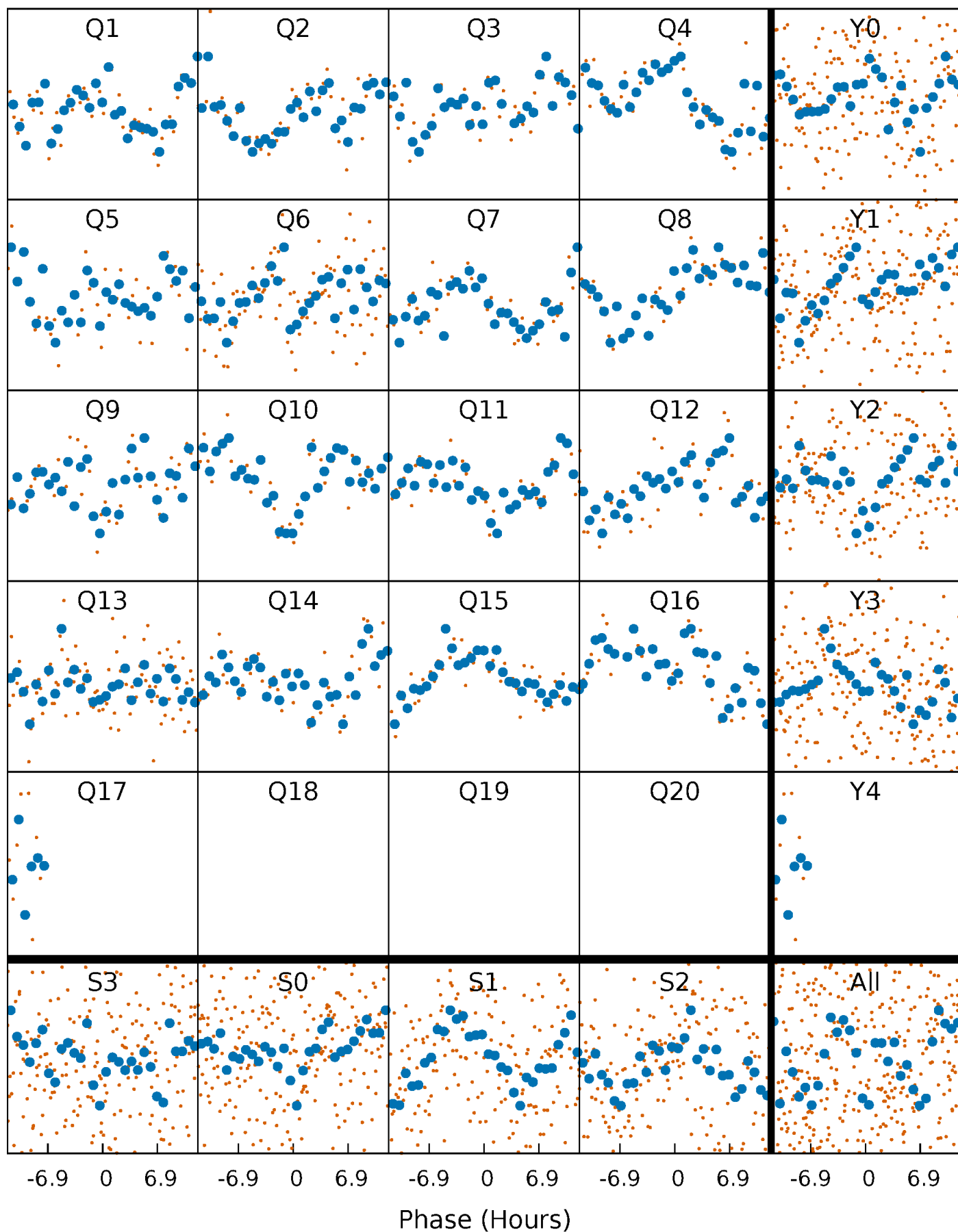


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



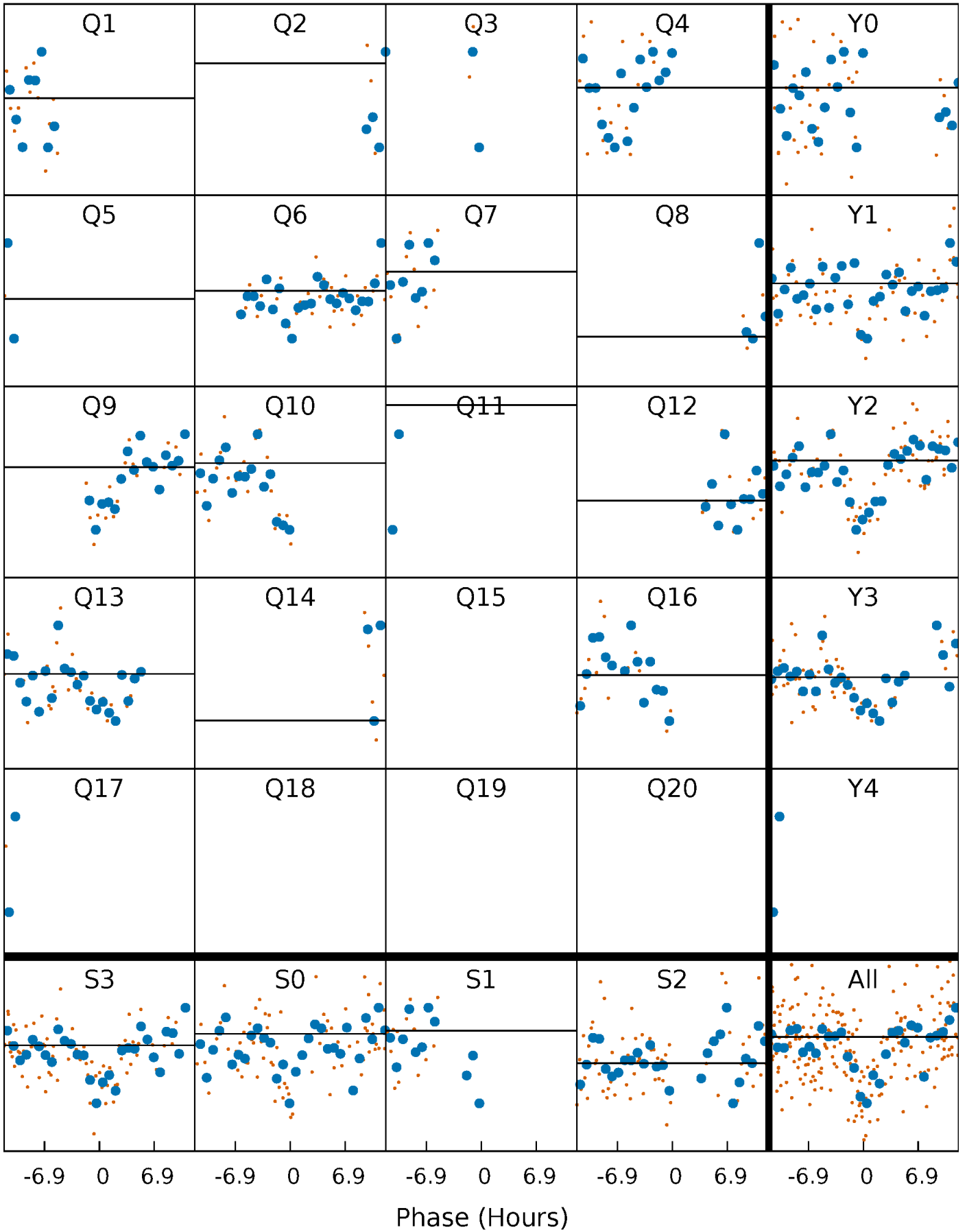
PDC Quarter-Phased Transit Curves

TCE 008950019-08 P= 80.377986 Days $T_0=144.503332$ (BKJD)



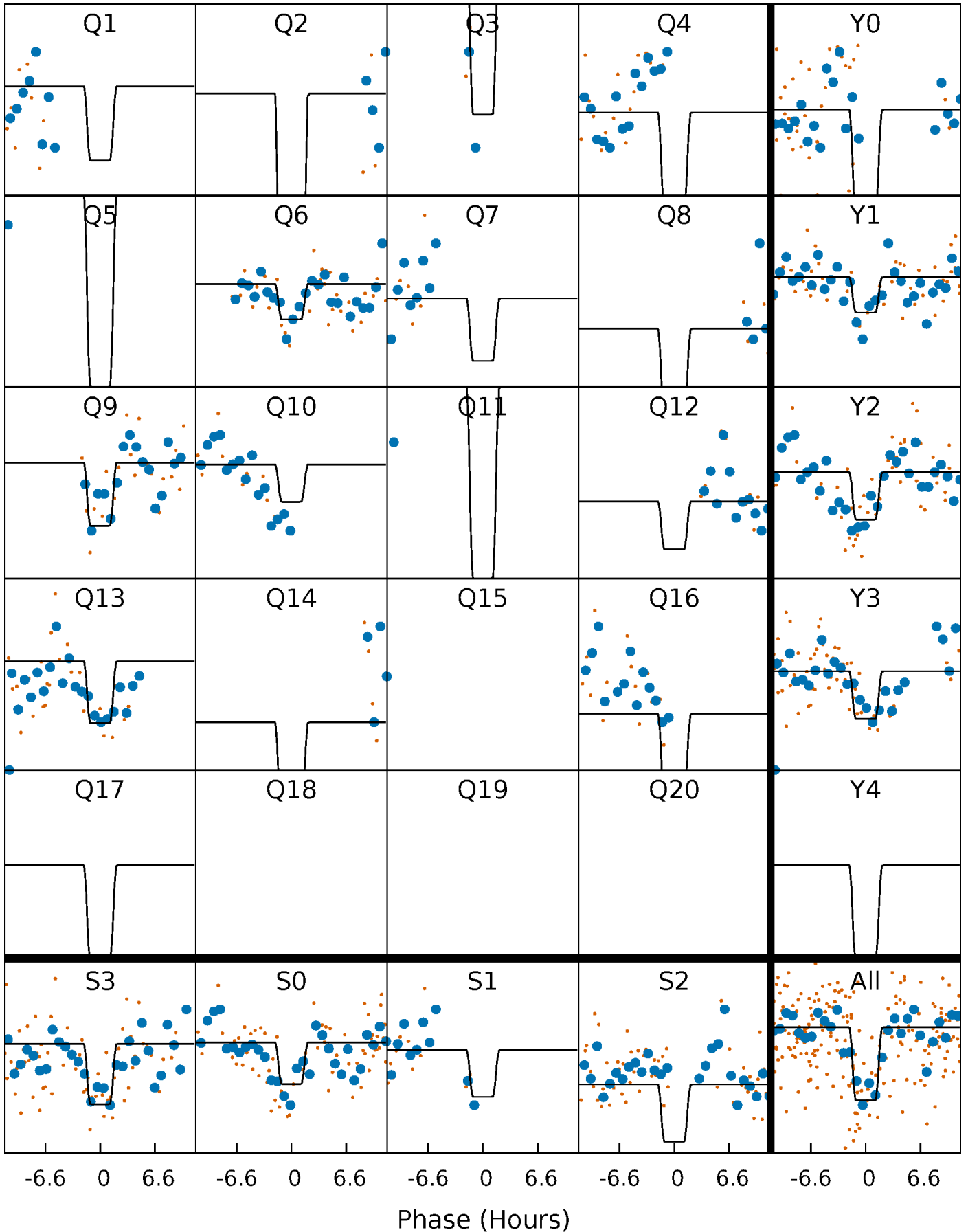
DV Quarter-Phased Transit Curves

TCE 008950019-08 $P = 80.377986$ Days $T_0 = 144.503332$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

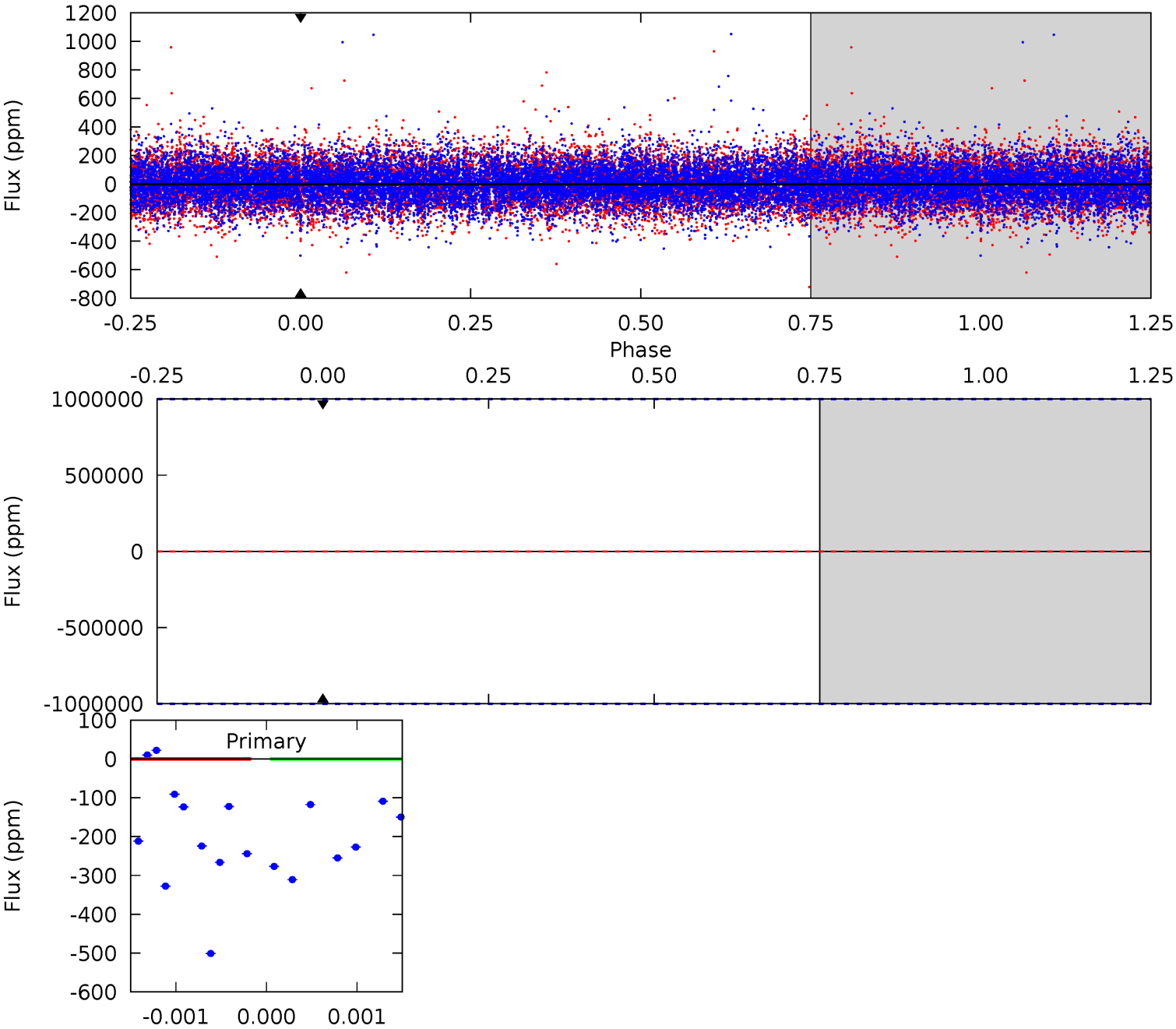
TCE 008950019-08 $P = 80.377986$ Days $T_0 = 144.526025$ (BKJD)



DV Model-Shift Uniqueness Test

008950019-08, P = 80.377986 Days, E = 64.125346 Days

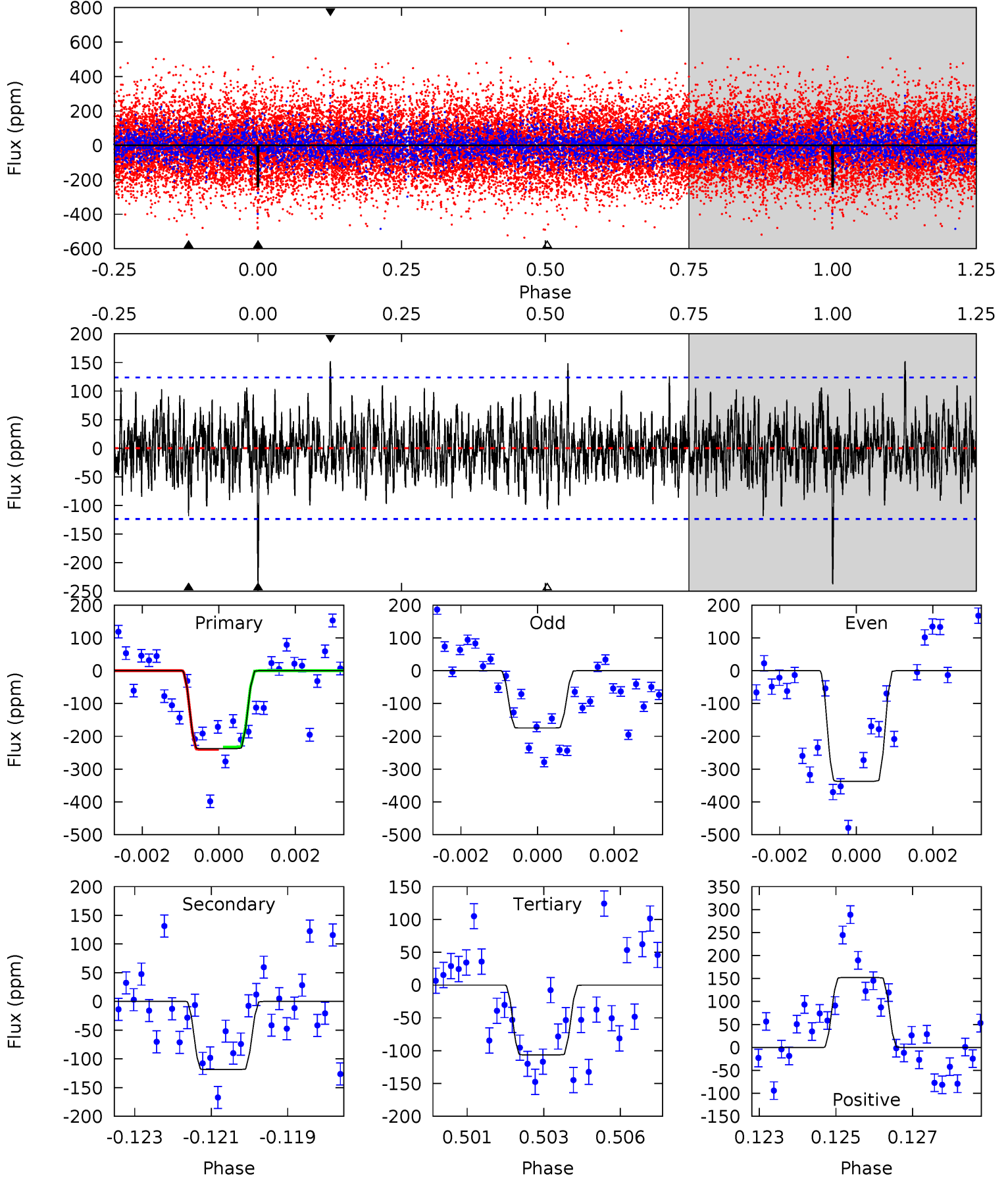
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|-----|-----|-----|-----|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-----|-------|-----|
| 0 | 0 | 0 | 0 | 1.00 | 1.00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



Alt Model-Shift Uniqueness Test

008950019-08, P = 80.377986 Days, E = 64.148039 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.2 | 5.09 | 4.57 | 6.53 | 5.31 | 3.07 | 1.59 | 5.63 | 3.67 | 0.52 | -1.43 | 3.41 | 0.75 | 0.39 | 0.14 |



Stellar Parameters For KIC 008950019

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6654^{+182}_{-202} | $3.759^{+0.336}_{-0.084}$ | $-0.540^{+0.350}_{-0.300}$ | $2.508^{+0.404}_{-0.943}$ | $1.317^{+0.222}_{-0.246}$ | $0.118^{+0.286}_{-0.031}$ |
| | +3%/-3% | +9%/-2% | +65%/-56% | +16%/-38% | +17%/-19% | +244%/-26% |
| 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 008950019-08 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-----------------|---------------------------|--------------------|--------------------------|--------------------------|
| DV | 0 ± 1000000 | $17.94^{+21.32}_{-12.42}$ | 1003^{+63}_{-93} | 6573^{+33636}_{-29513} | 1334^{+67984}_{-34382} |
| Alt. | -119 ± 23 | $19.18^{+21.24}_{-13.96}$ | 1002^{+59}_{-90} | 3137^{+1707}_{-582} | 29^{+344}_{-22} |

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

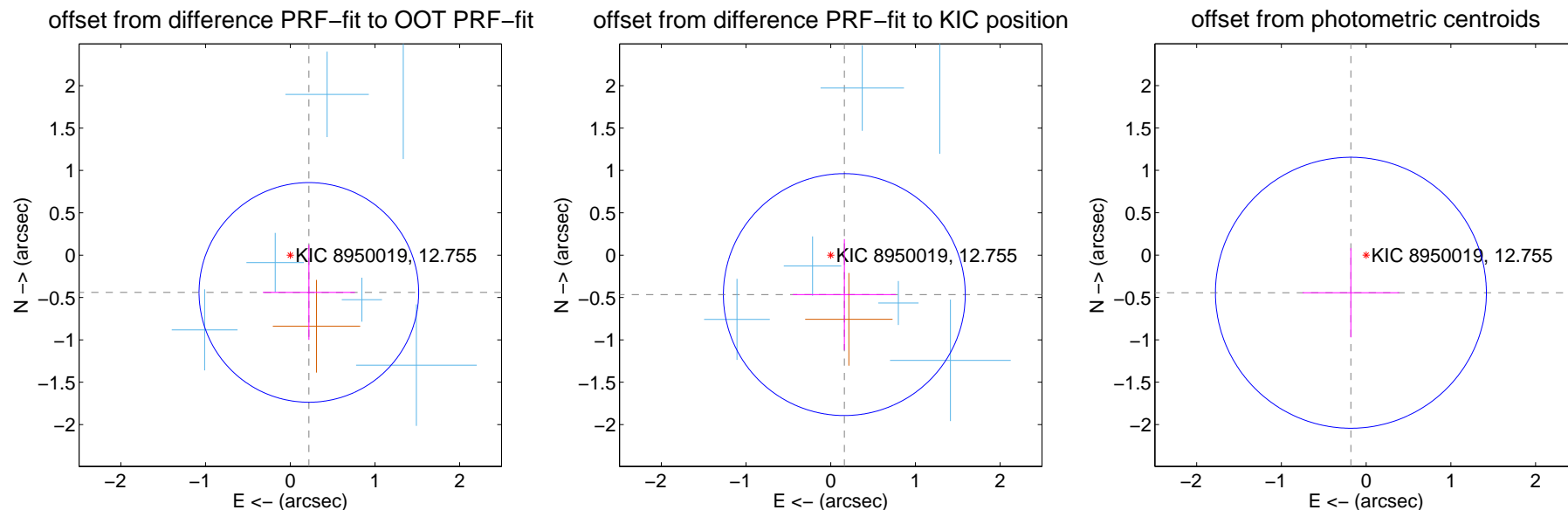
DV Centroid Data

Supplemental centroid analysis for 008950019-08. Kepler magnitude: 12.76. Transit SNR -1.00

There are 6 quarters with good PRF difference image offsets

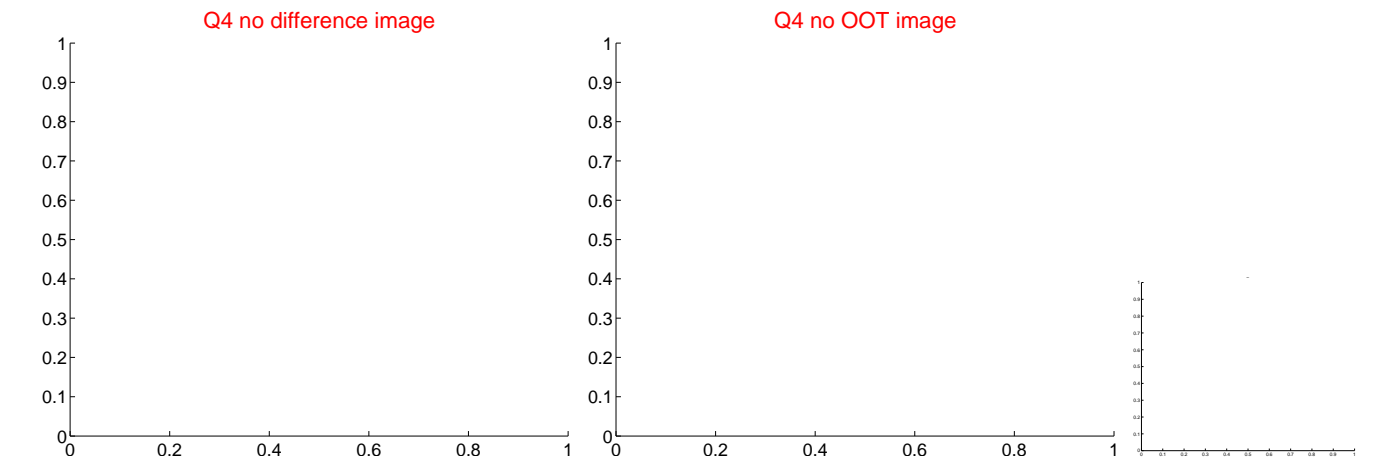
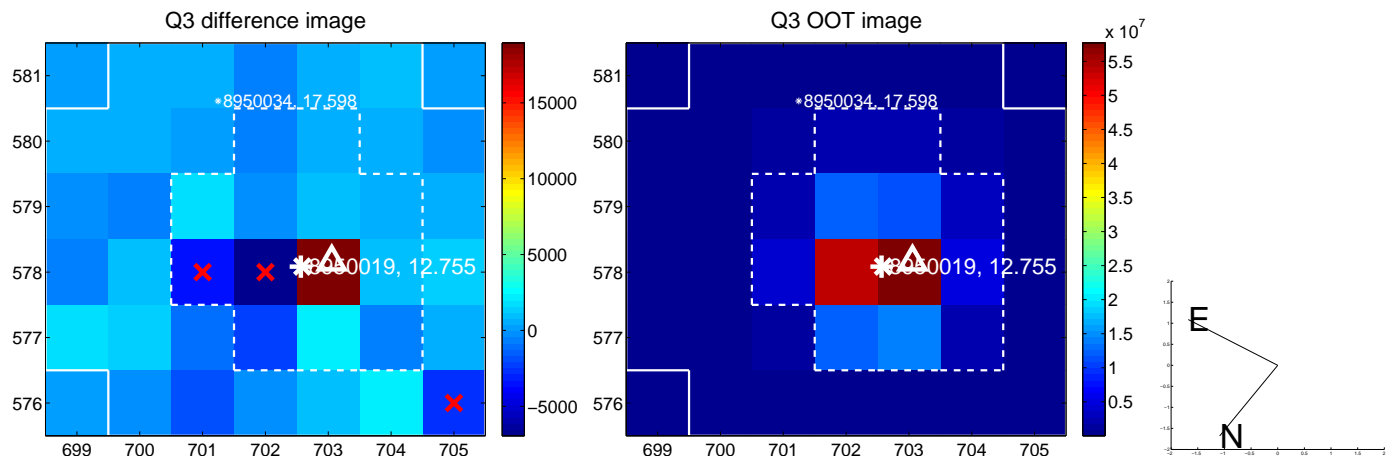
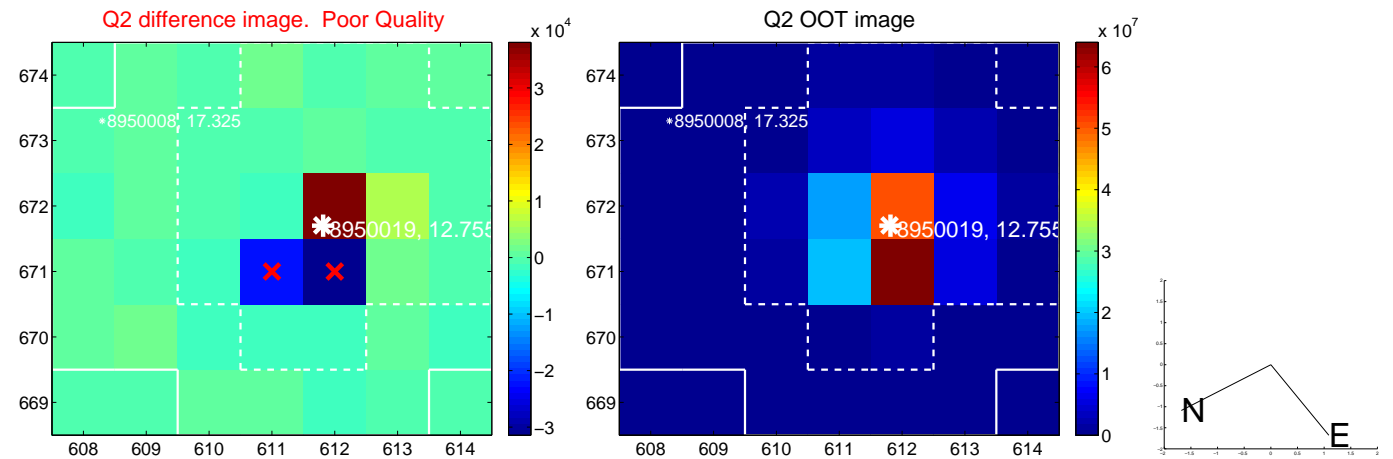
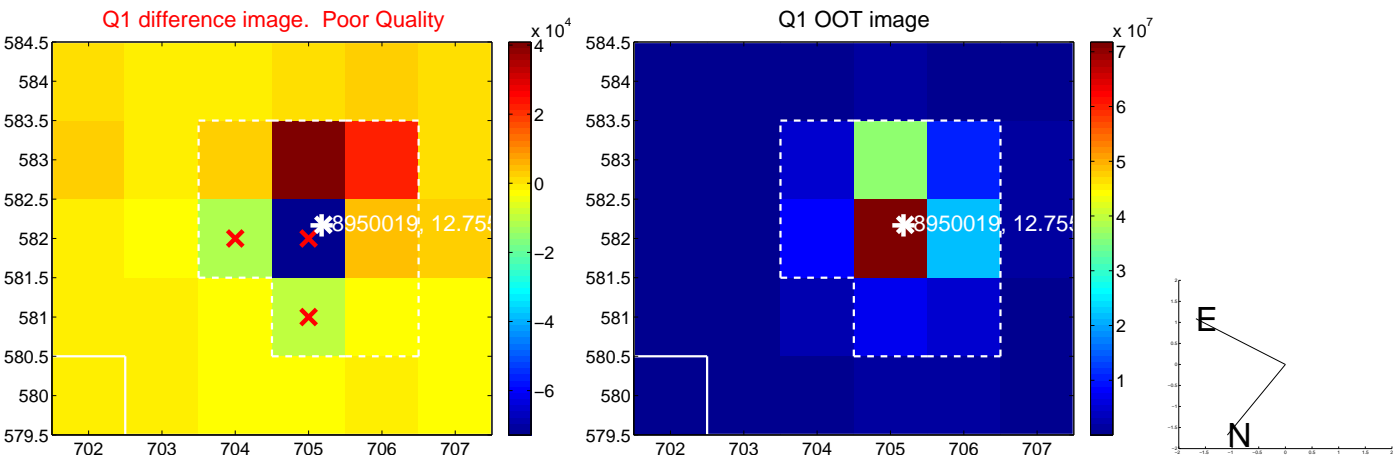
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 0.492 ± 0.432 | 1.14 | -0.220 ± 0.544 | -0.440 ± 0.561 |
| PRF-fit source offset from KIC position | 0.493 ± 0.476 | 1.03 | -0.161 ± 0.609 | -0.466 ± 0.655 |
| photometric centroid source offset | 0.48 ± 0.53 | 0.90 | 0.18 ± 0.57 | -0.44 ± 0.53 |

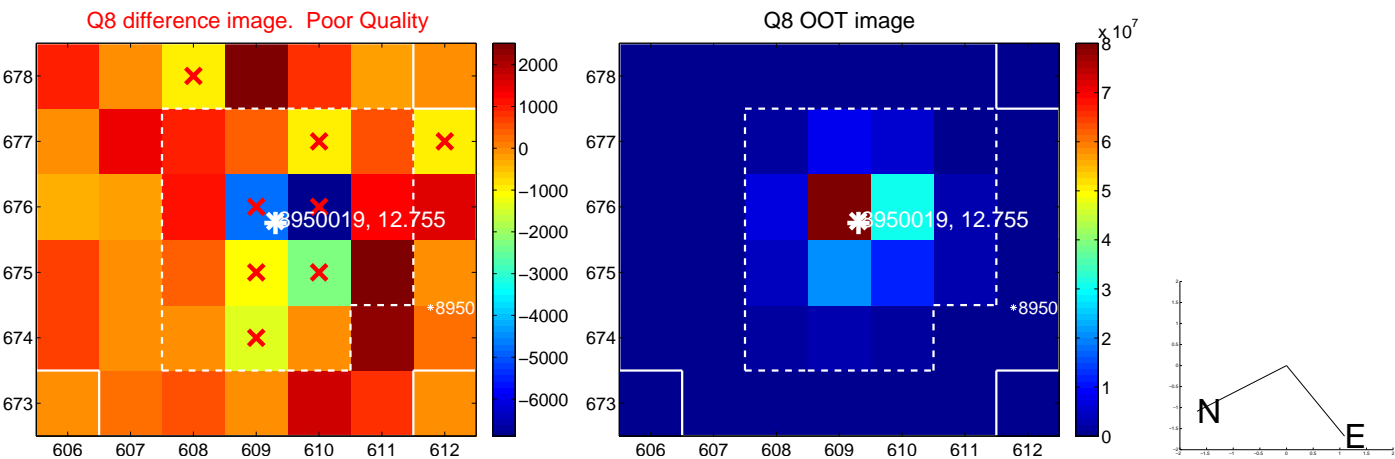
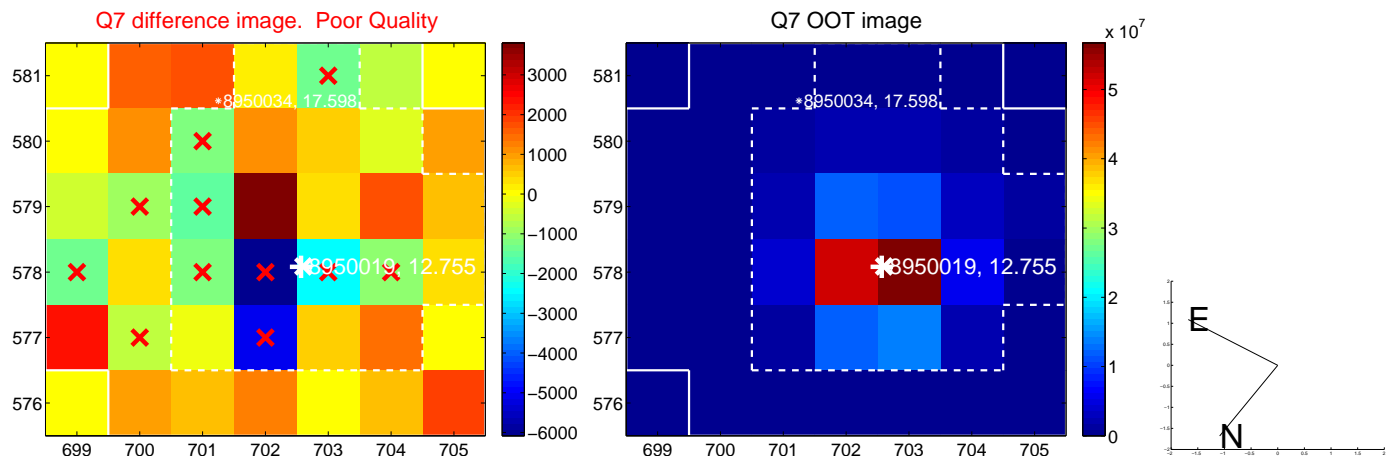
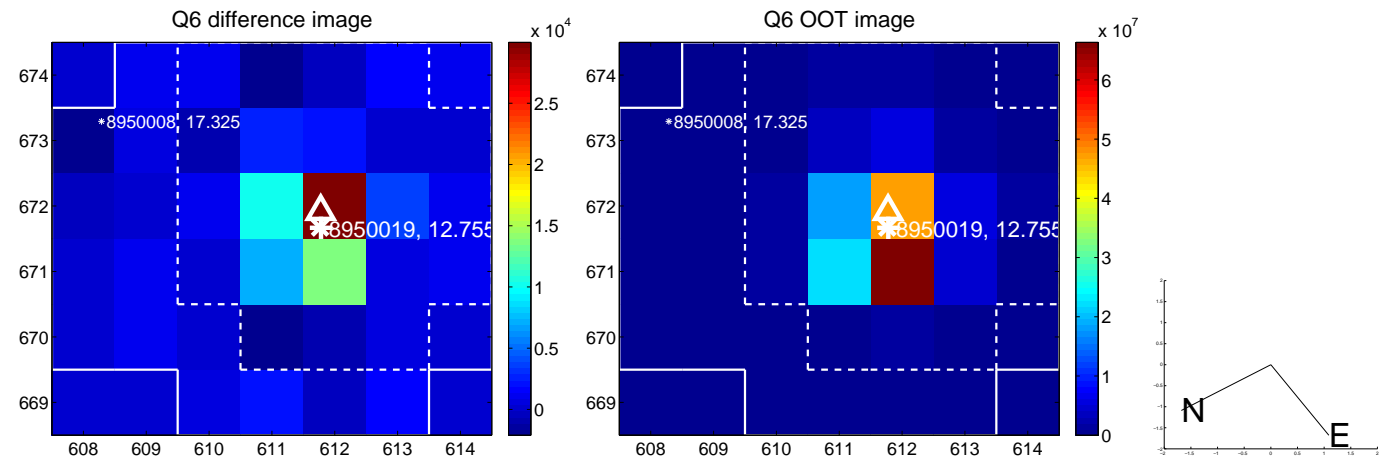
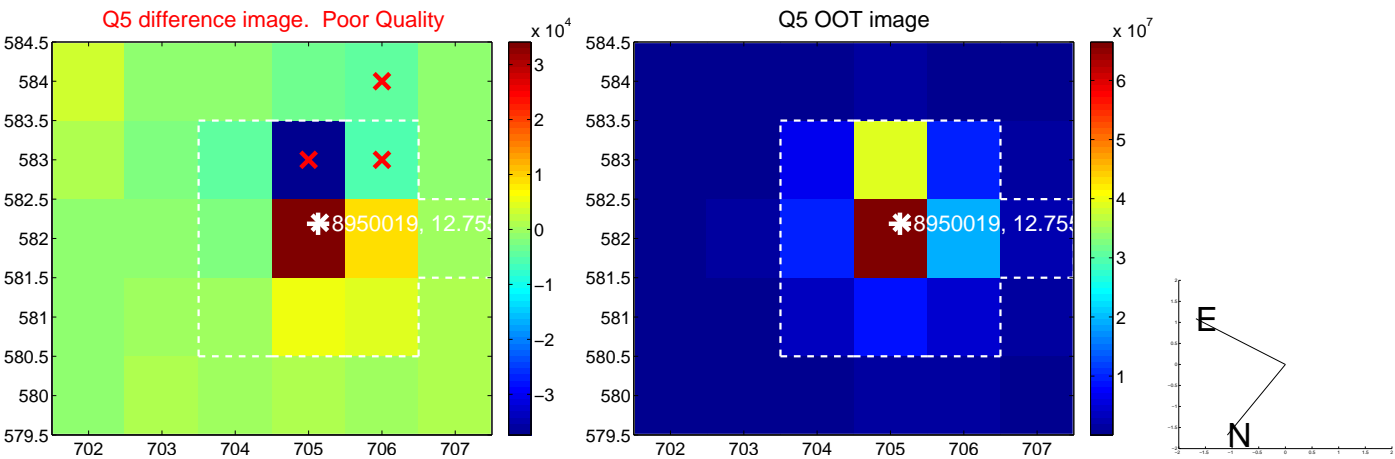


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

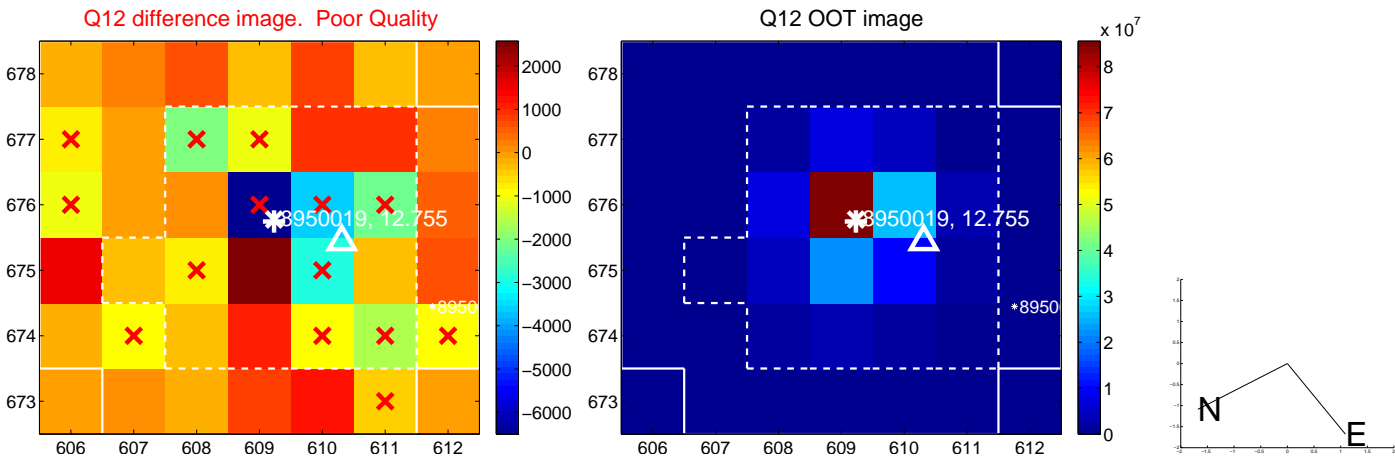
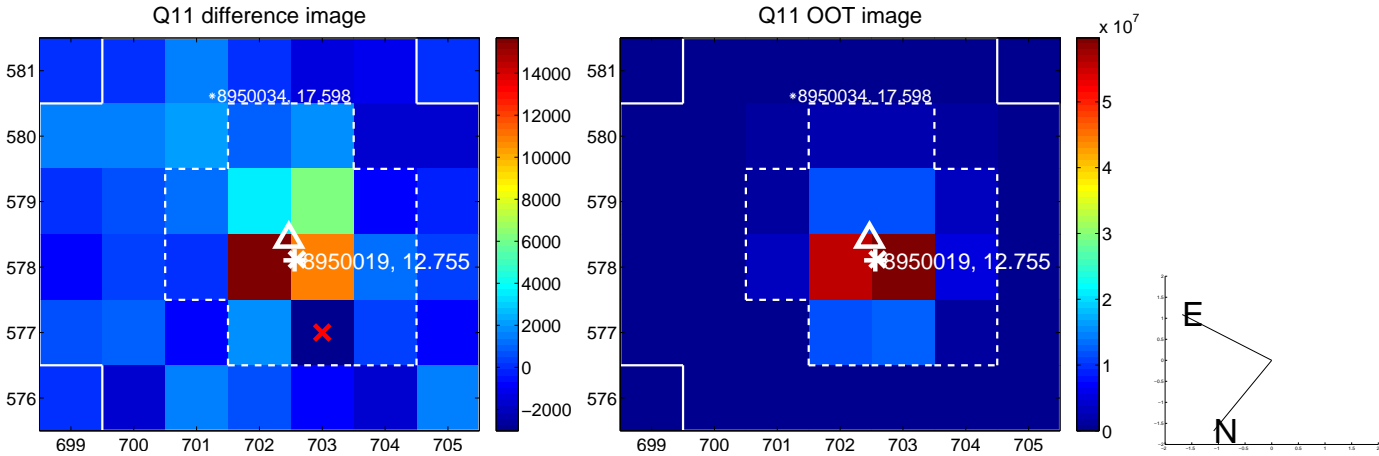
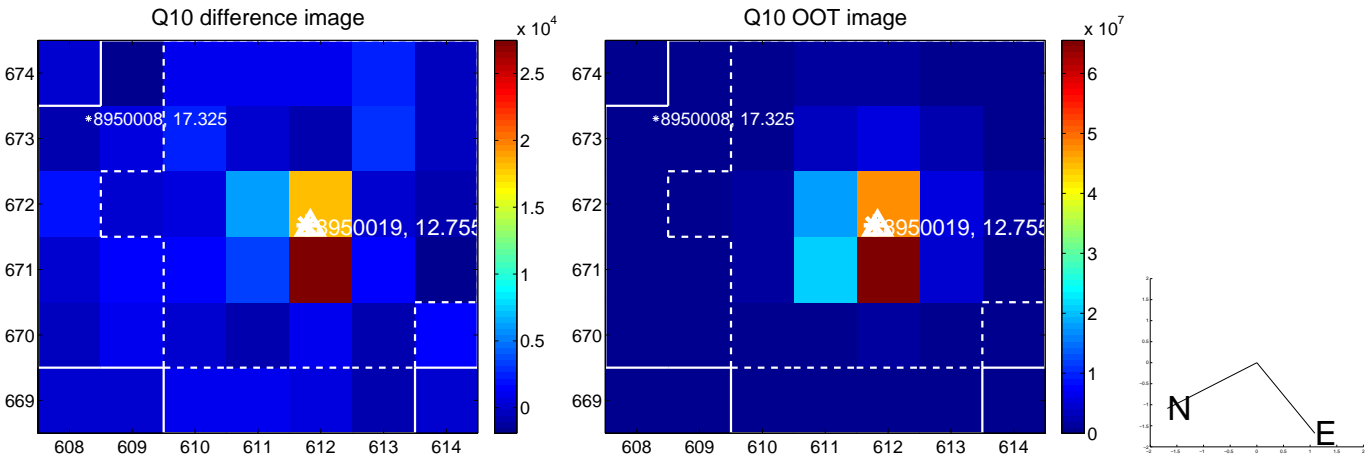
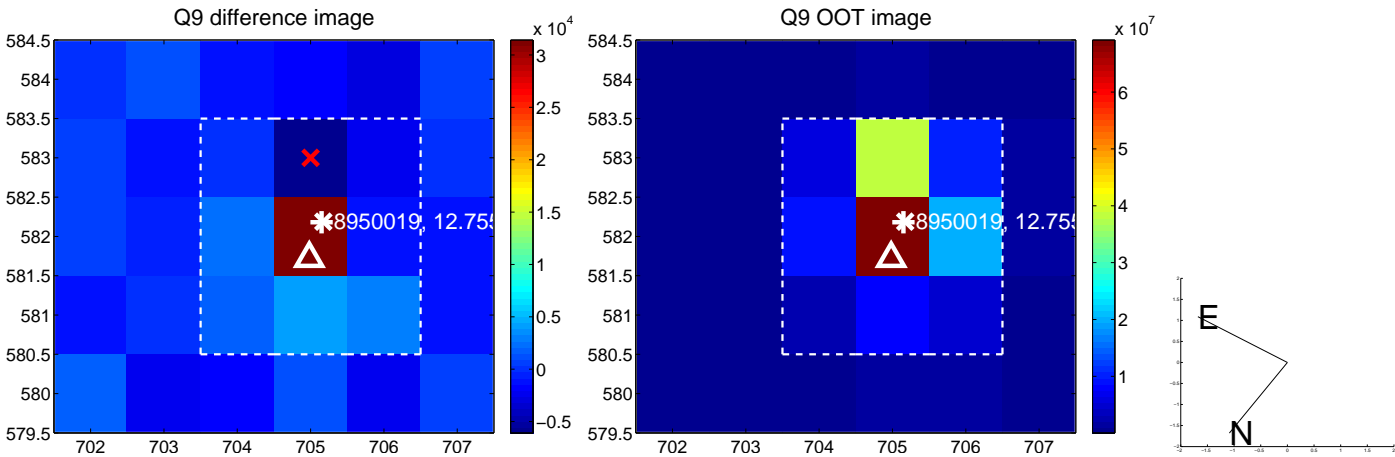
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



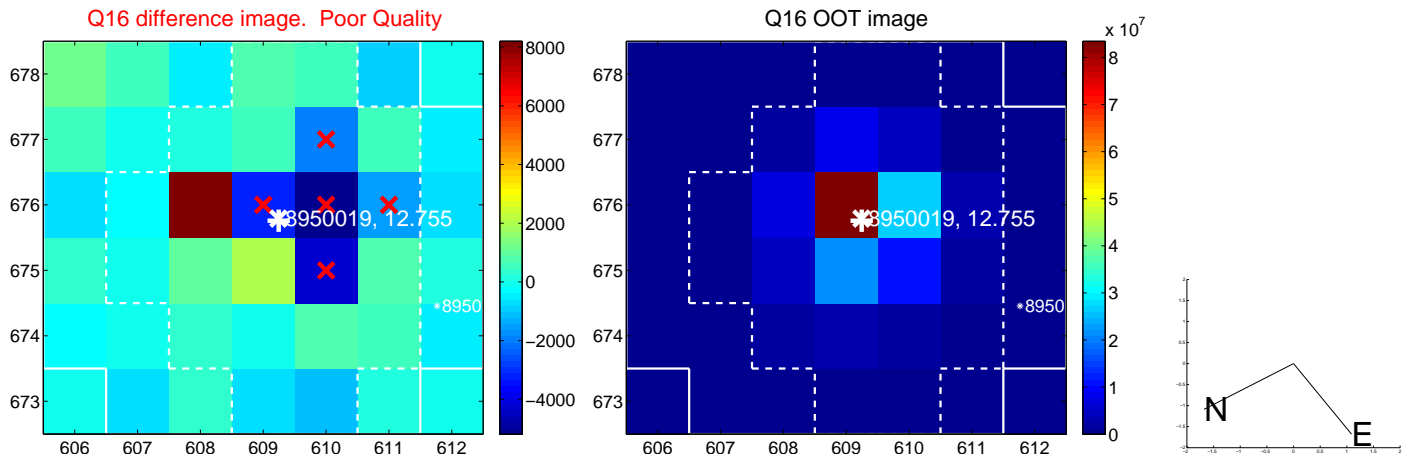
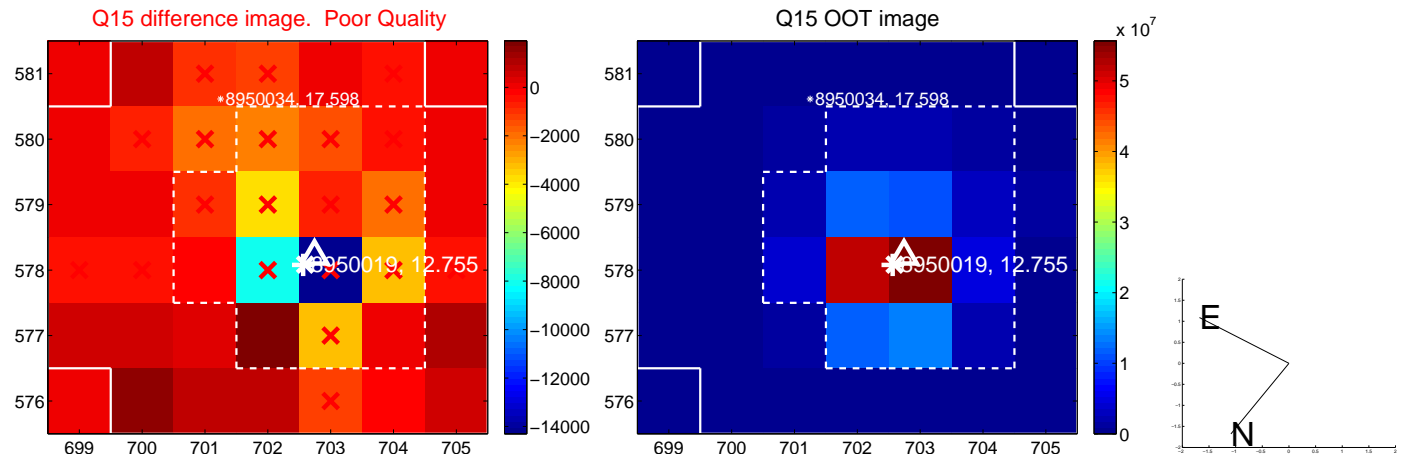
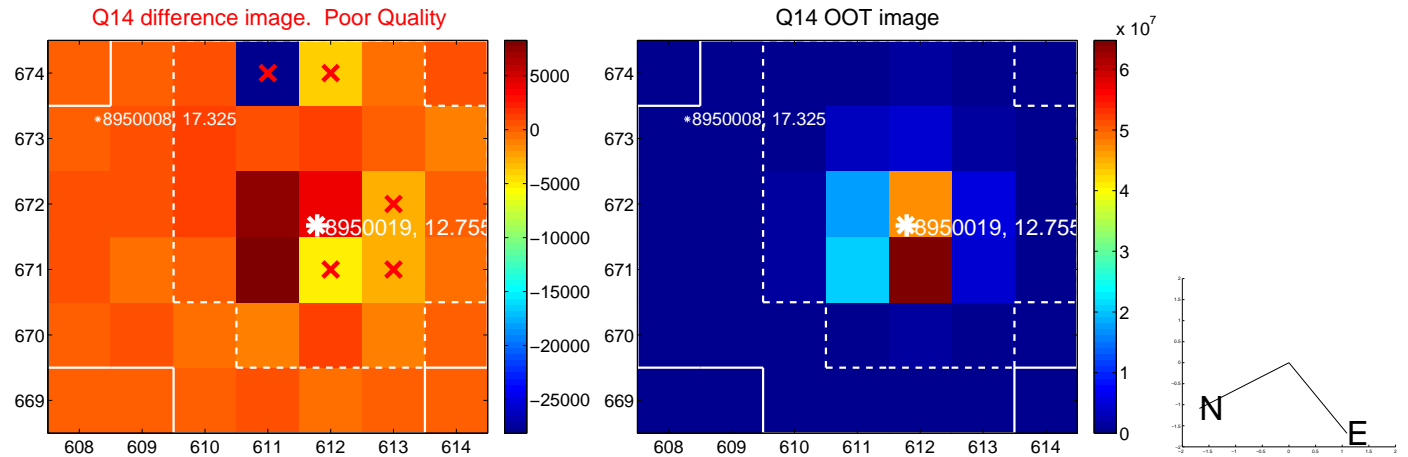
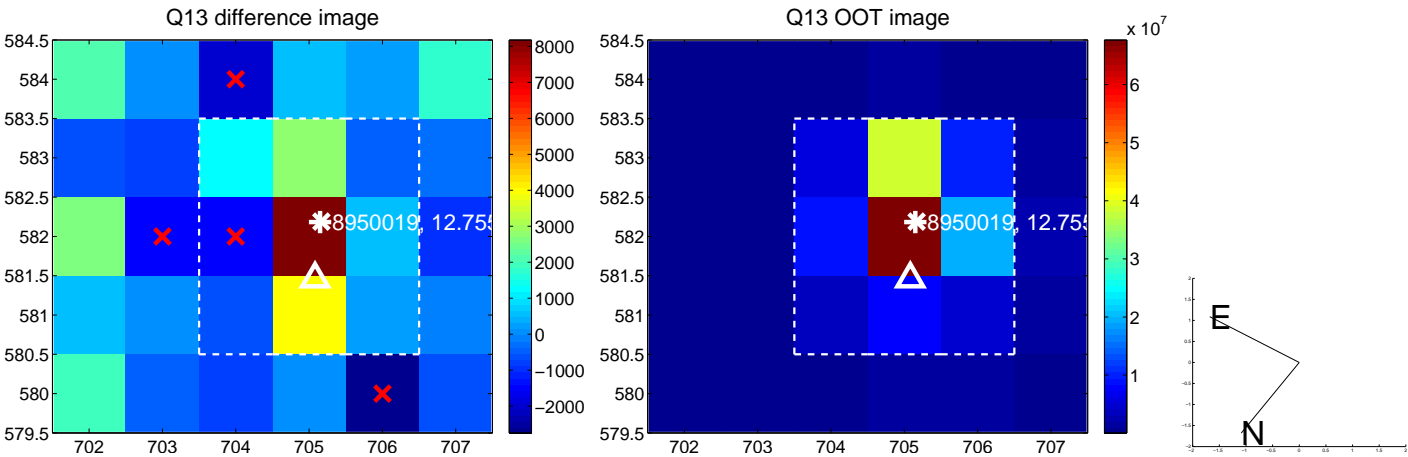
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



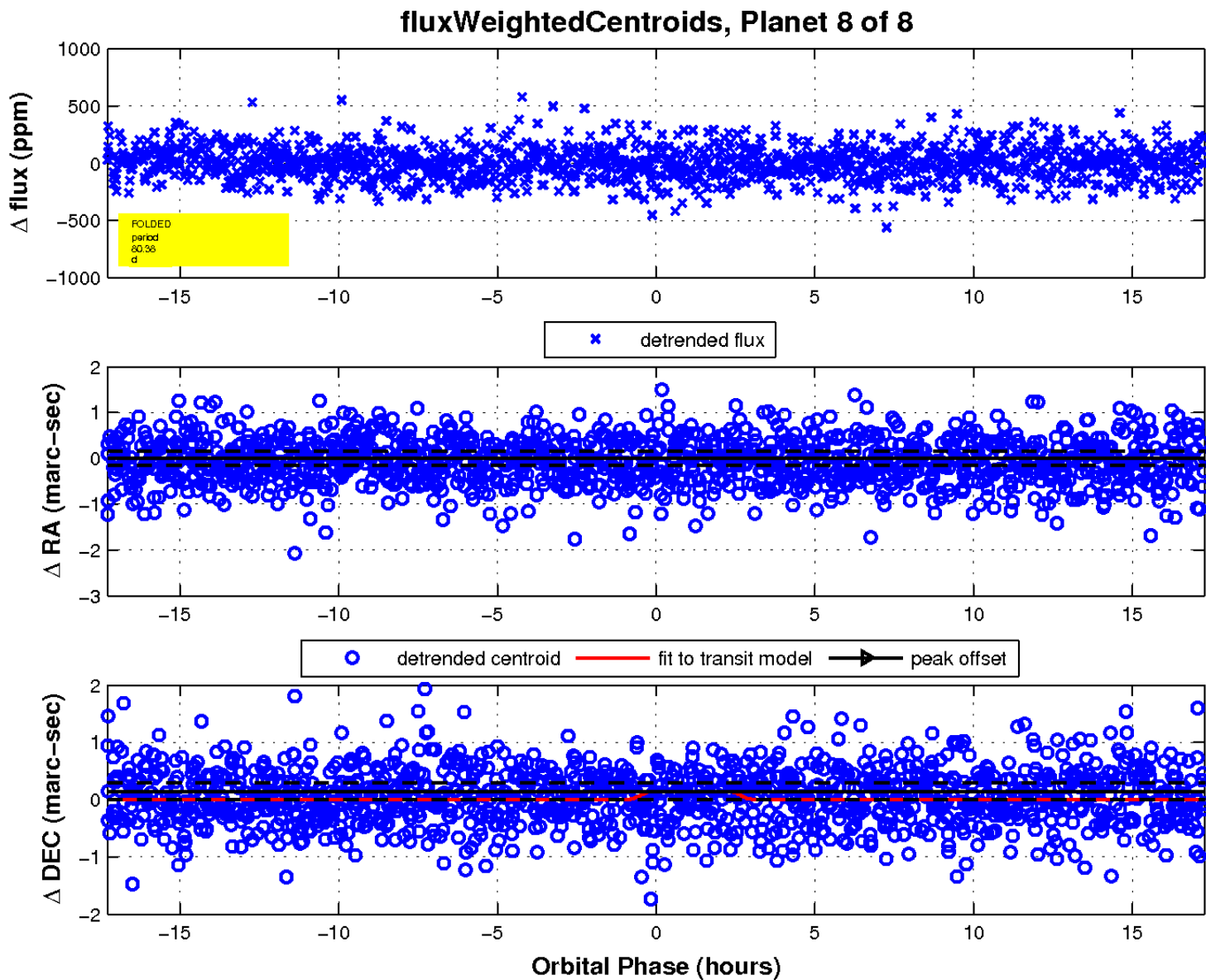
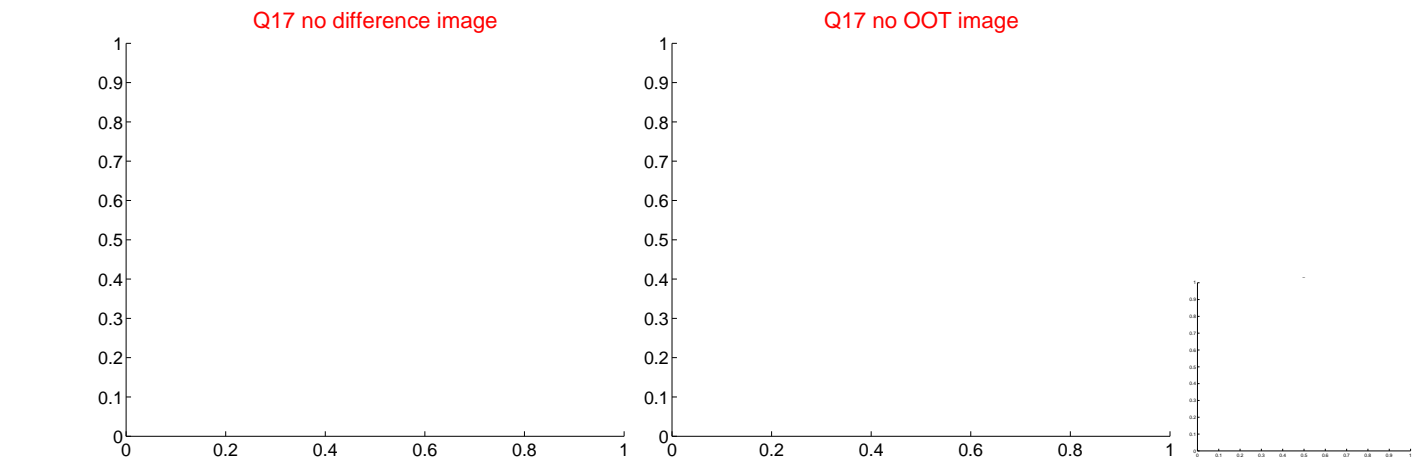
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

