

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 005342558-01 | OBS | No | 308.762826 | 263.627416 | 1701.3 | 10.318 | 18.7 | 8.5 | 0.17 | 3154 | 0.71 | 0.01 |
| 005342558-02 | OBS | No | 383.720665 | 219.310793 | 639.8 | 8.386 | 11.6 | 3.2 | 0.17 | 3154 | 0.45 | 0.01 |
| 005342558-03 | OBS | No | 418.229695 | 220.013594 | 1829.1 | 9.198 | 17.9 | 8.7 | 0.17 | 3154 | 0.73 | 0.01 |
| 005342558-05 | OBS | No | 335.694048 | 448.703570 | 1571.6 | 3.803 | 13.0 | 8.6 | 0.17 | 3154 | 0.68 | 0.01 |
| 005342558-06 | OBS | No | 360.819671 | 220.624153 | 1216.7 | 3.561 | 12.5 | 6.8 | 0.17 | 3154 | 0.67 | 0.01 |
| 005342558-07 | OBS | No | 326.552624 | 275.507809 | 512.0 | 5.172 | 11.2 | 2.8 | 0.17 | 3154 | 0.44 | 0.01 |
| 005342558-08 | OBS | No | 285.507525 | 315.963589 | 1141.7 | 7.857 | 11.0 | 7.5 | 0.17 | 3154 | 0.59 | 0.01 |
| 005342558-09 | OBS | No | 436.602709 | 228.377019 | 1074.0 | 15.912 | 11.2 | 6.4 | 0.17 | 3154 | 0.57 | 0.01 |
| 005342558-10 | OBS | No | 378.103945 | 375.659854 | 1003.0 | 7.162 | 10.8 | 6.7 | 0.17 | 3154 | 0.57 | 0.01 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005342558-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS |
| 005342558-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-09 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS |
| 005342558-10 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_KIC_POS |

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

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

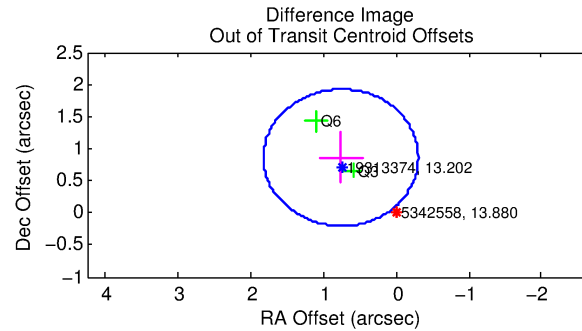
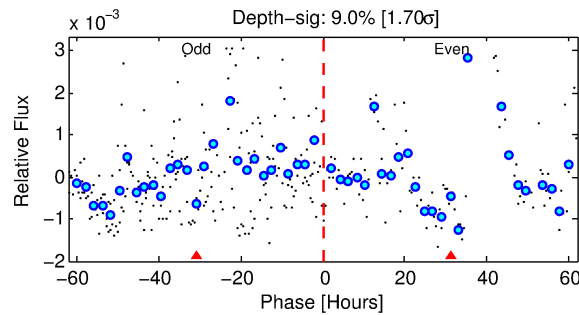
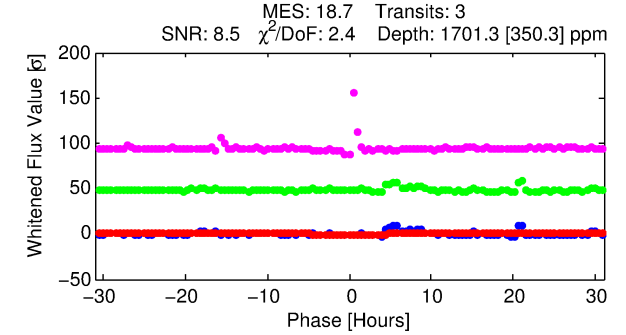
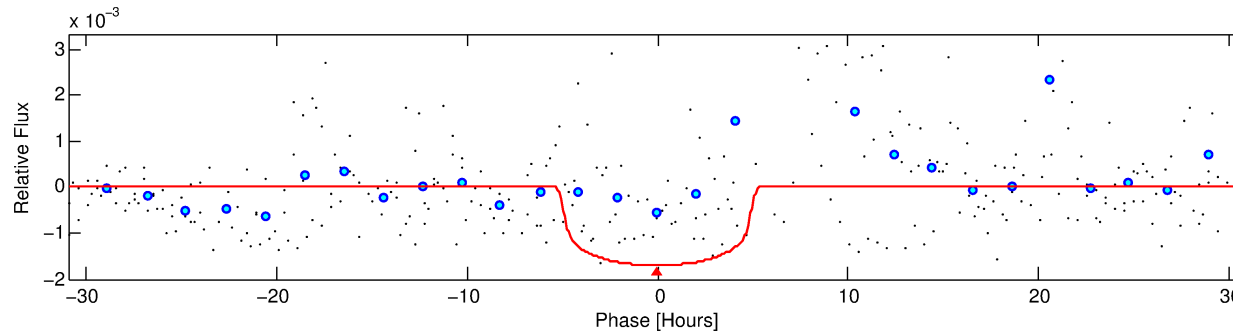
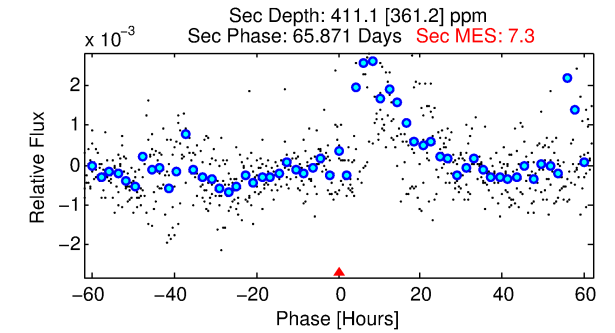
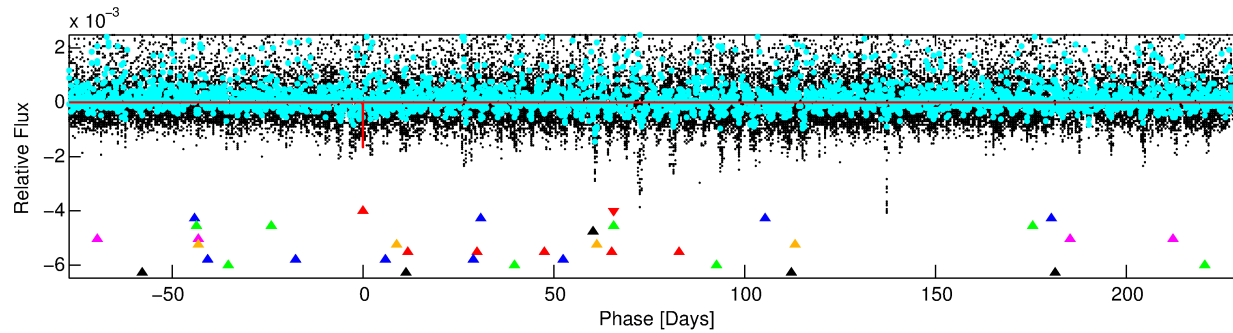
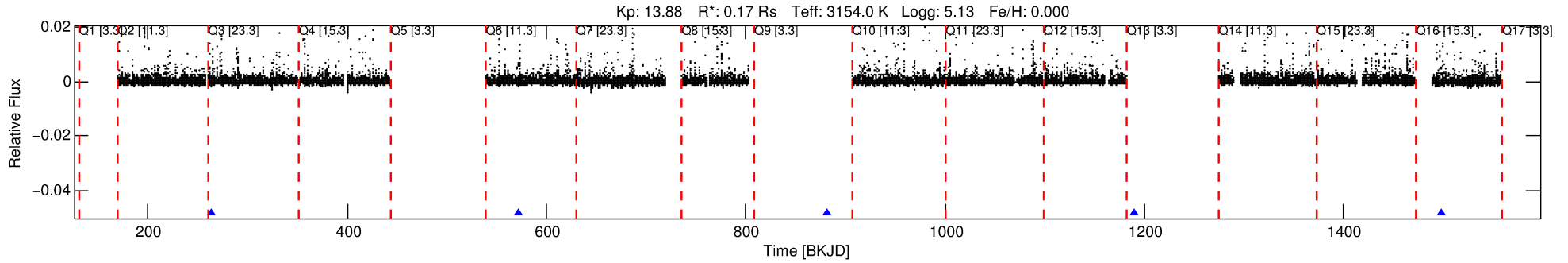
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005342558-01

No Significant Match Found

DV One-Page Summary

KIC: 5342558 Candidate: 1 of 10 Period: 308.763 d



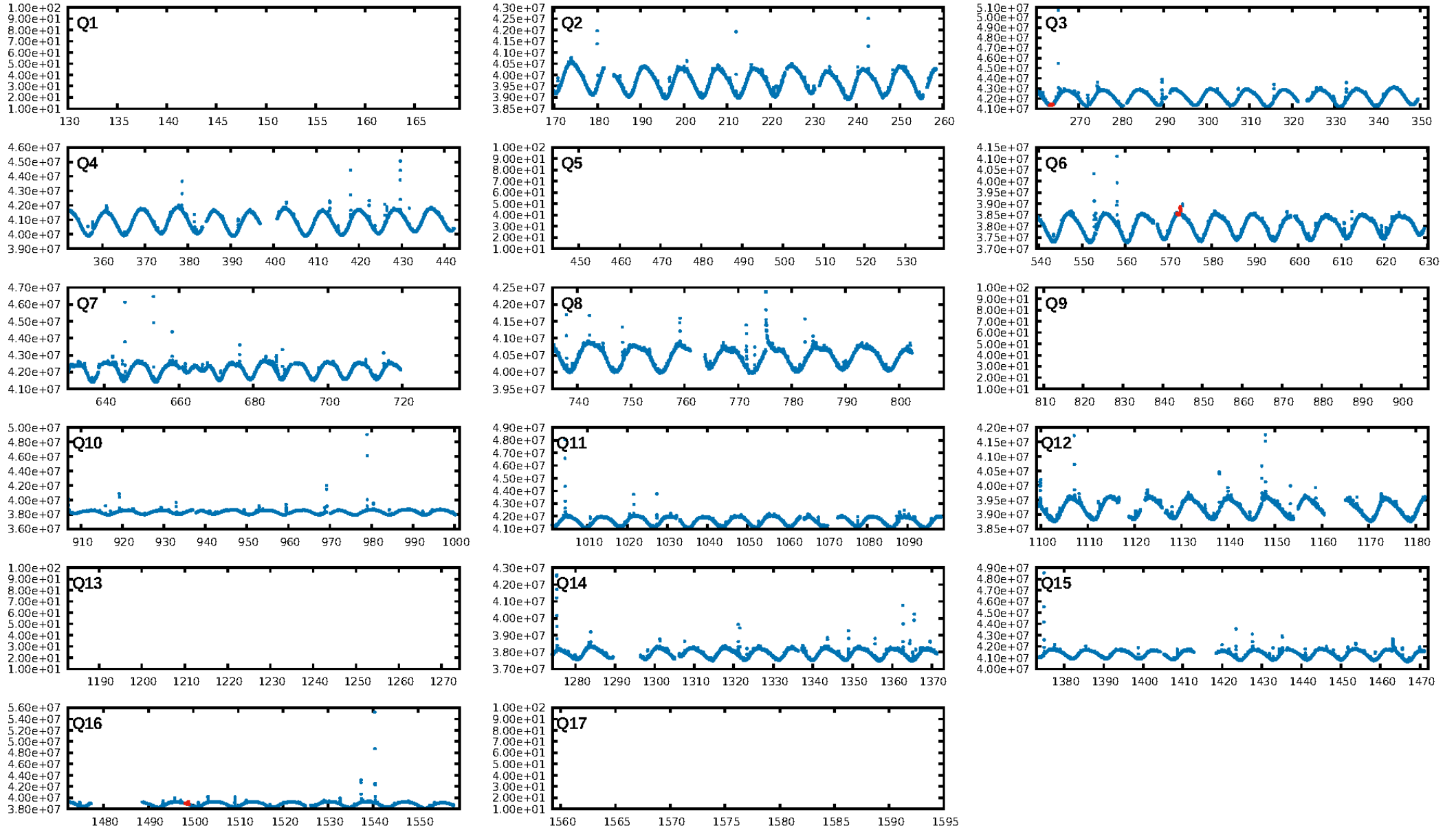
DV Fit Results:

Period = 308.76283 [0.00502] d
Epoch = 263.6274 [0.0130] BKJD
Rp/R* = 0.0375 [0.0266]
a/R* = 231.64 [692.10]
b = 0.22 [12.77]
Seff = 0.01 [0.00]
Teq = 84 [0] K
Rp = 0.71 [0.50] Re
a = 0.4726 [0.0000] AU
Ag = 100843.43 [168263.67] [0.60σ]
Teffp = 2320 [968] K [2.31σ]

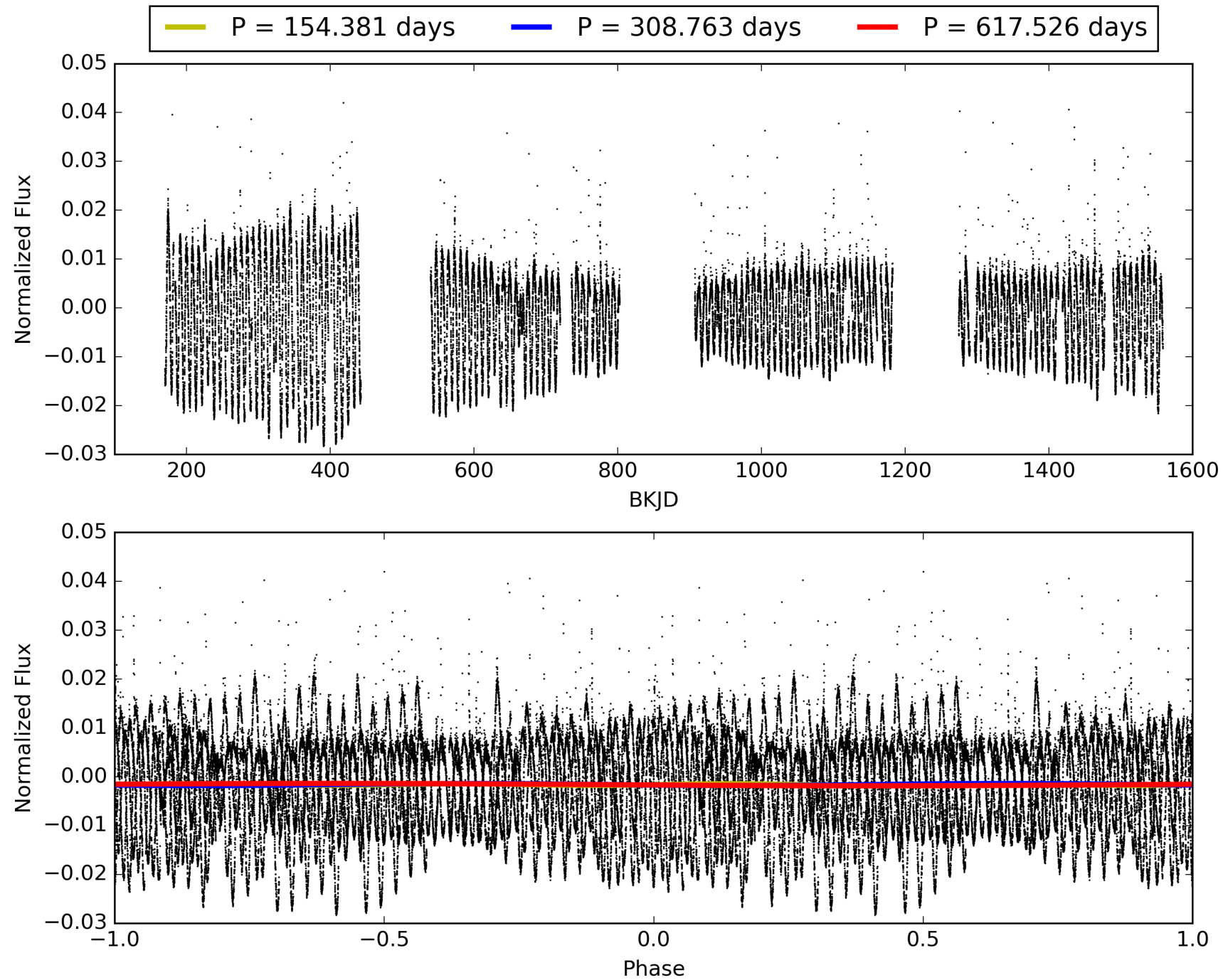
DV Diagnostic Results:

ShortPeriod-sig: 1.8% [0.02σ]
LongPeriod-sig: 100.0% [36.99σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 18.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.177
Centroid-sig: 0.0%
Centroid-so: 2.805 arcsec [2.30σ]
OotOffset-rm: 1.146 arcsec [3.23σ]
KicOffset-rm: 0.557 arcsec [2.00σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 005342558-01, PDC Light Curves

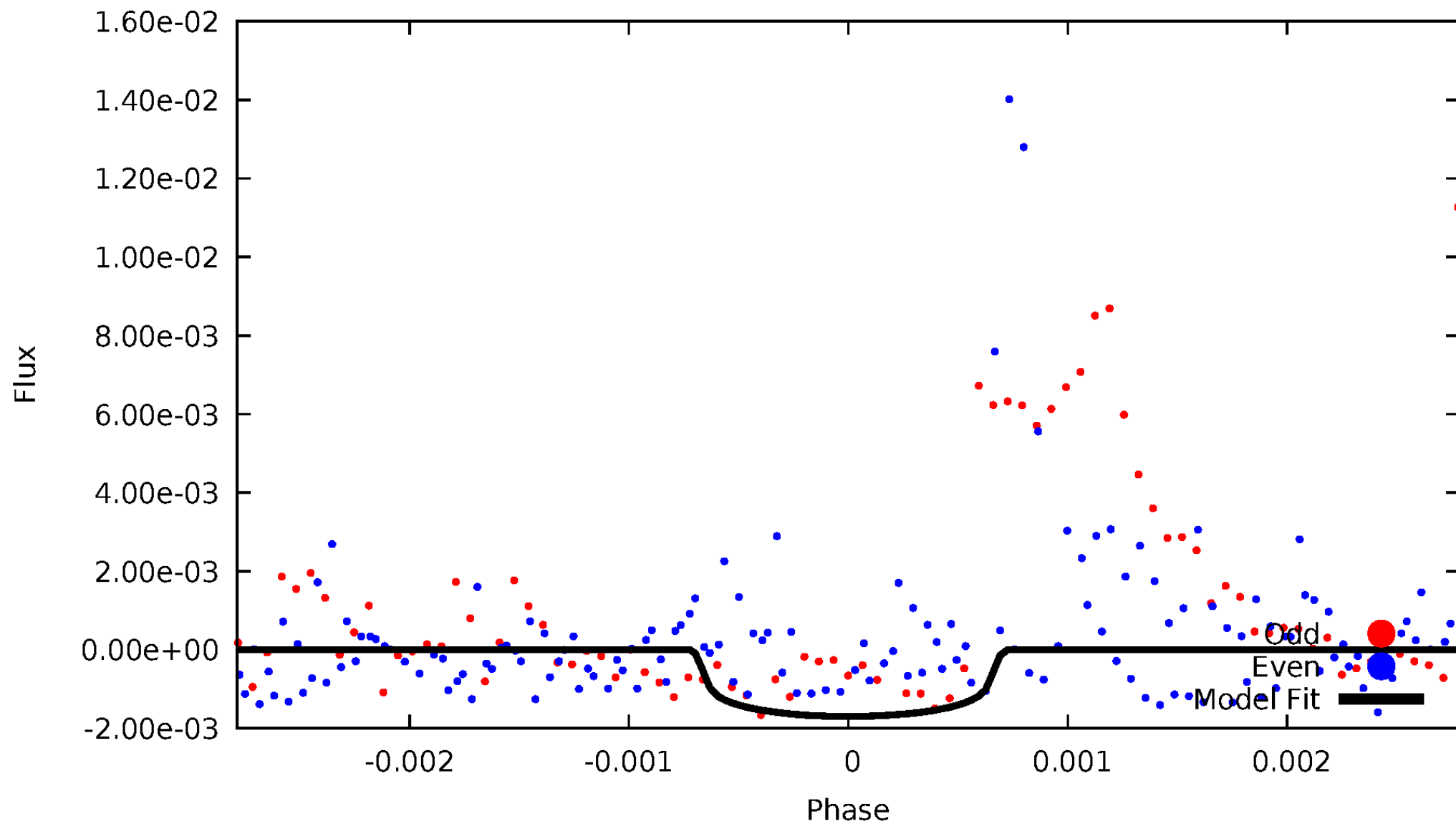


TCE 005342558-01



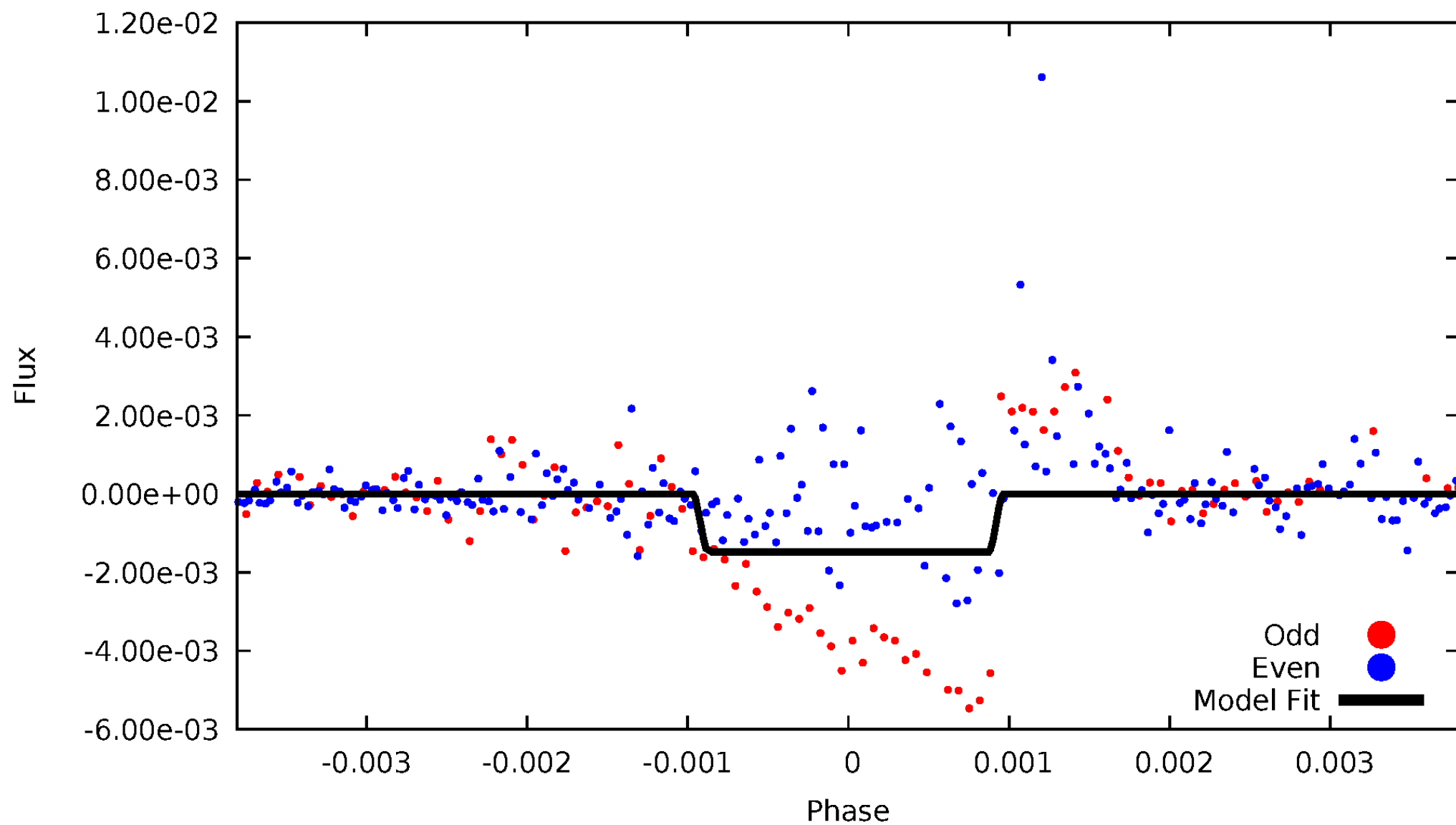
DV Odd/Even

TCE 005342558-01

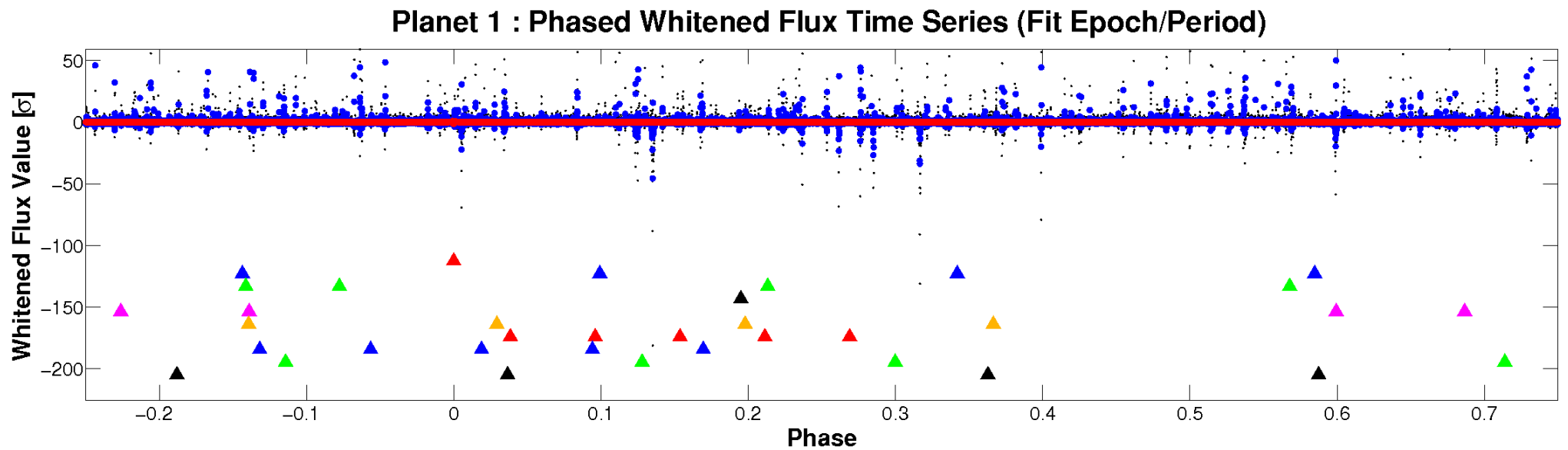
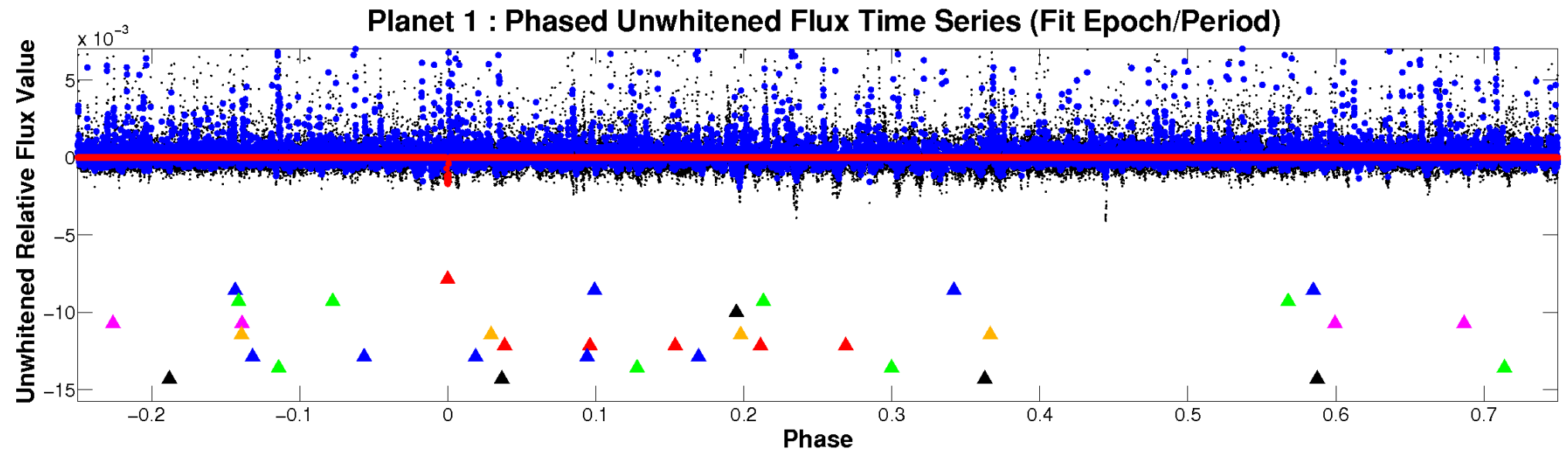


ALT Odd/Even

TCE 005342558-01

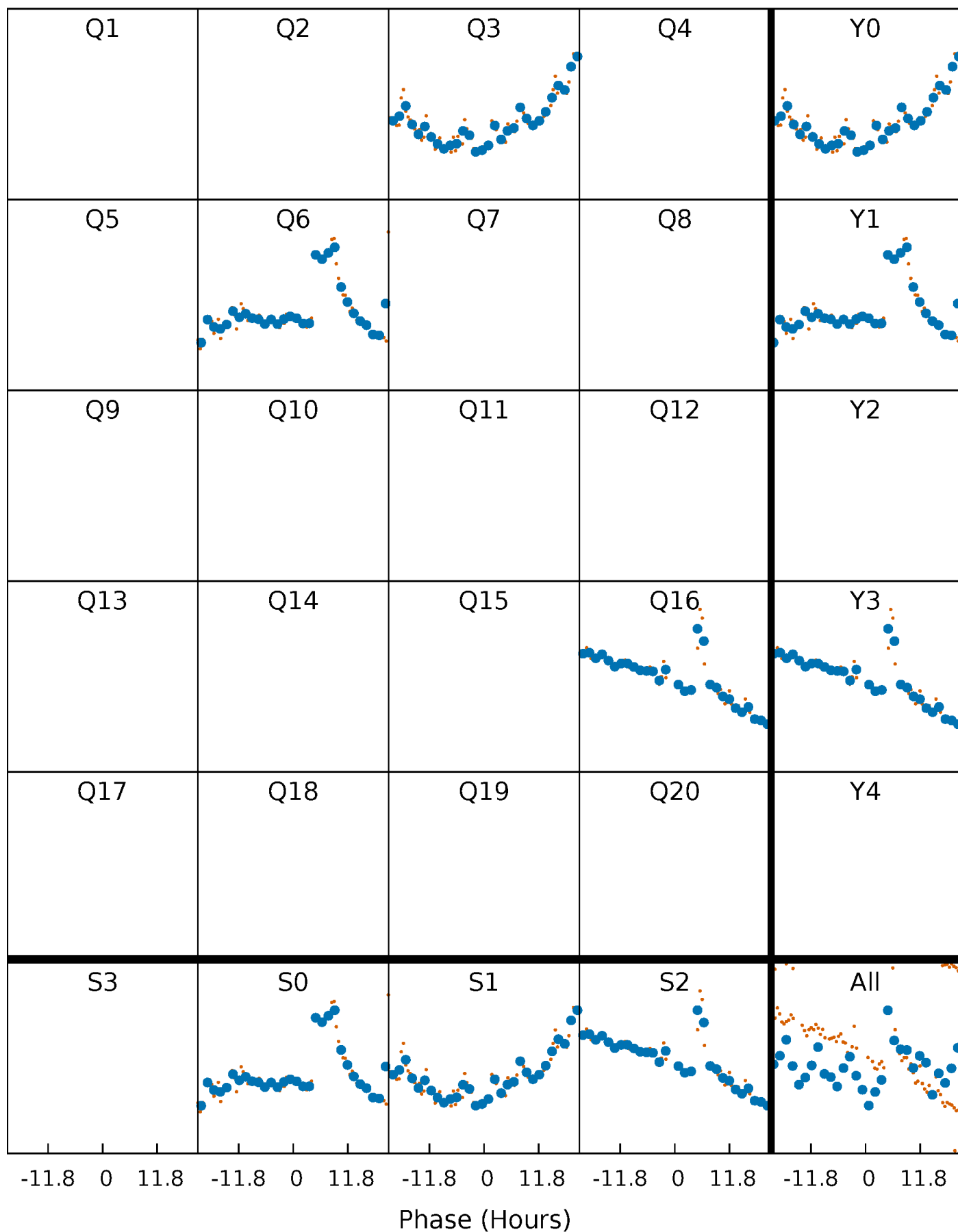


Non-Whitened Vs. Whitened Light Curve



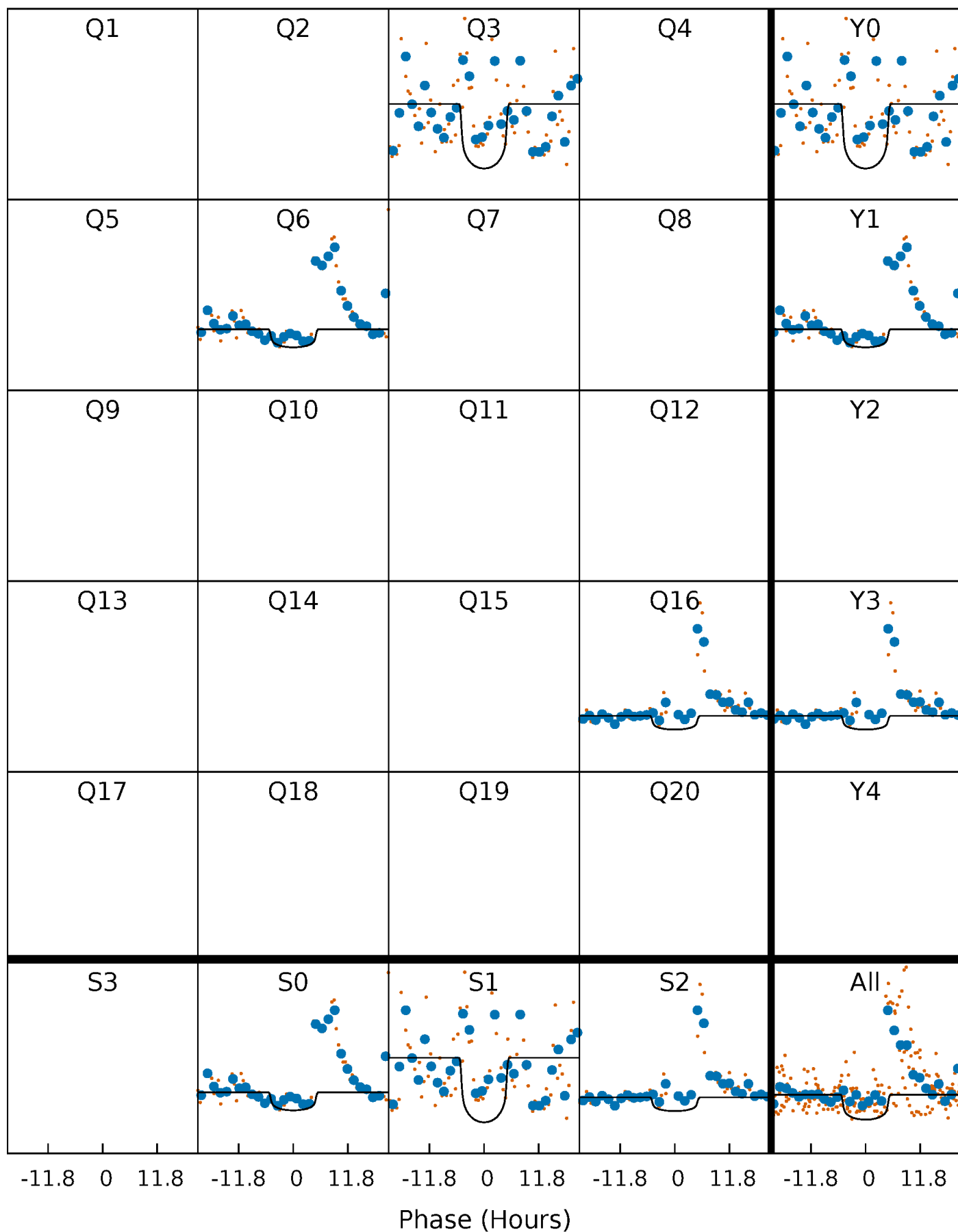
PDC Quarter-Phased Transit Curves

TCE 005342558-01 P=308.762826 Days $T_0=263.627416$ (BKJD)



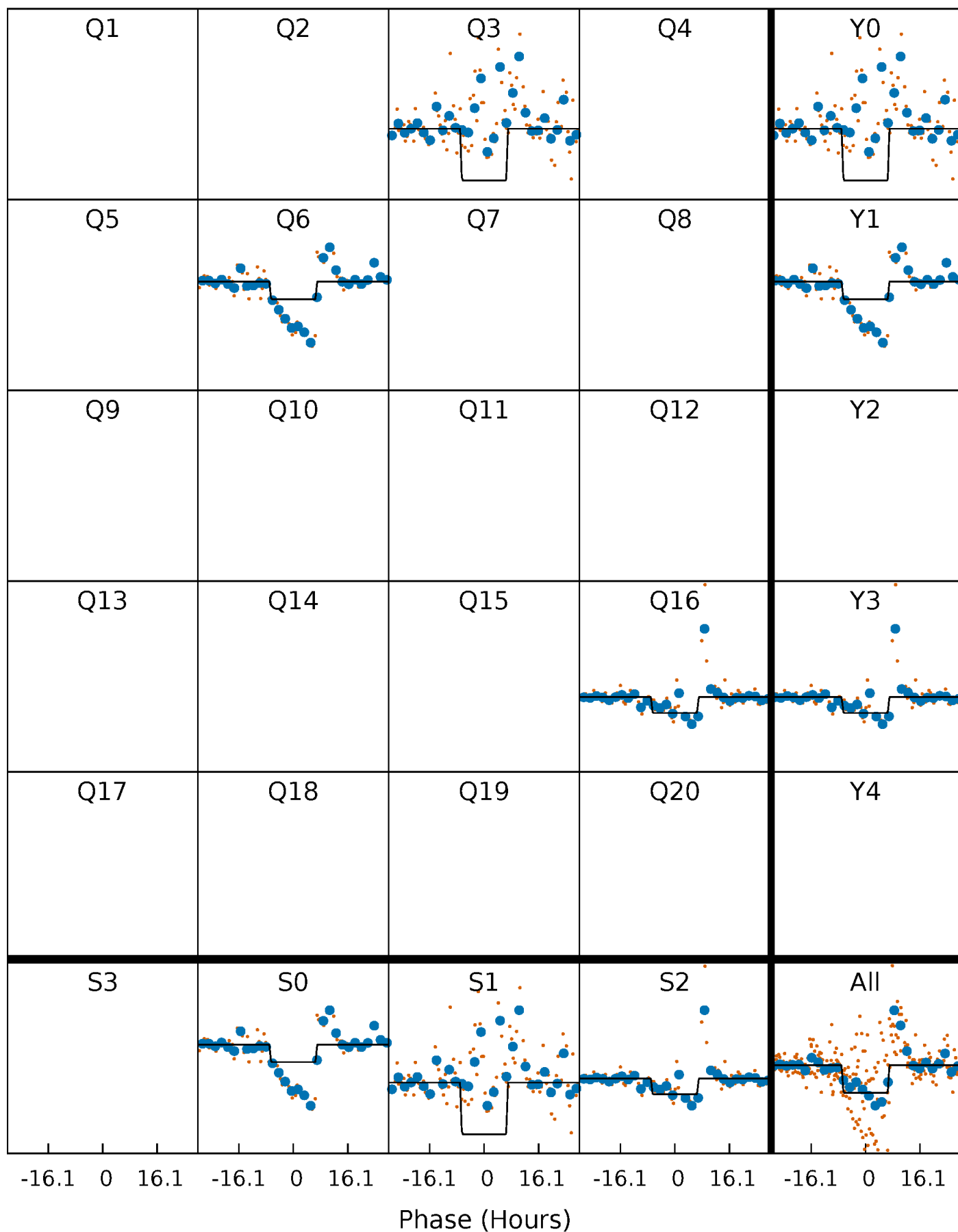
DV Quarter-Phased Transit Curves

TCE 005342558-01 P=308.762826 Days $T_0=263.627416$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

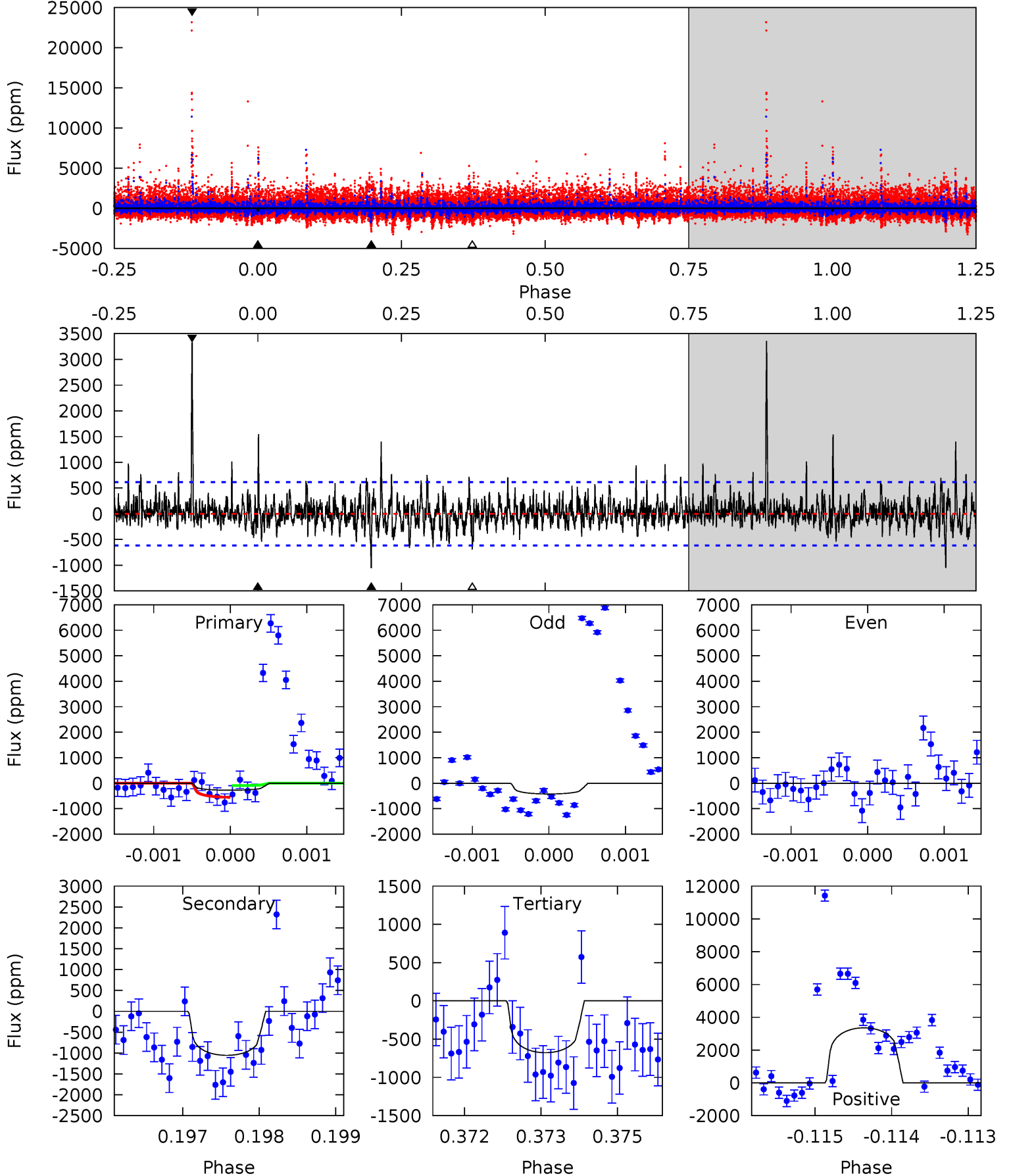
TCE 005342558-01 P=308.757903 Days $T_0=263.522230$ (BKJD)



DV Model-Shift Uniqueness Test

005342558-01, P = 308.762826 Days, E = 263.627416 Days

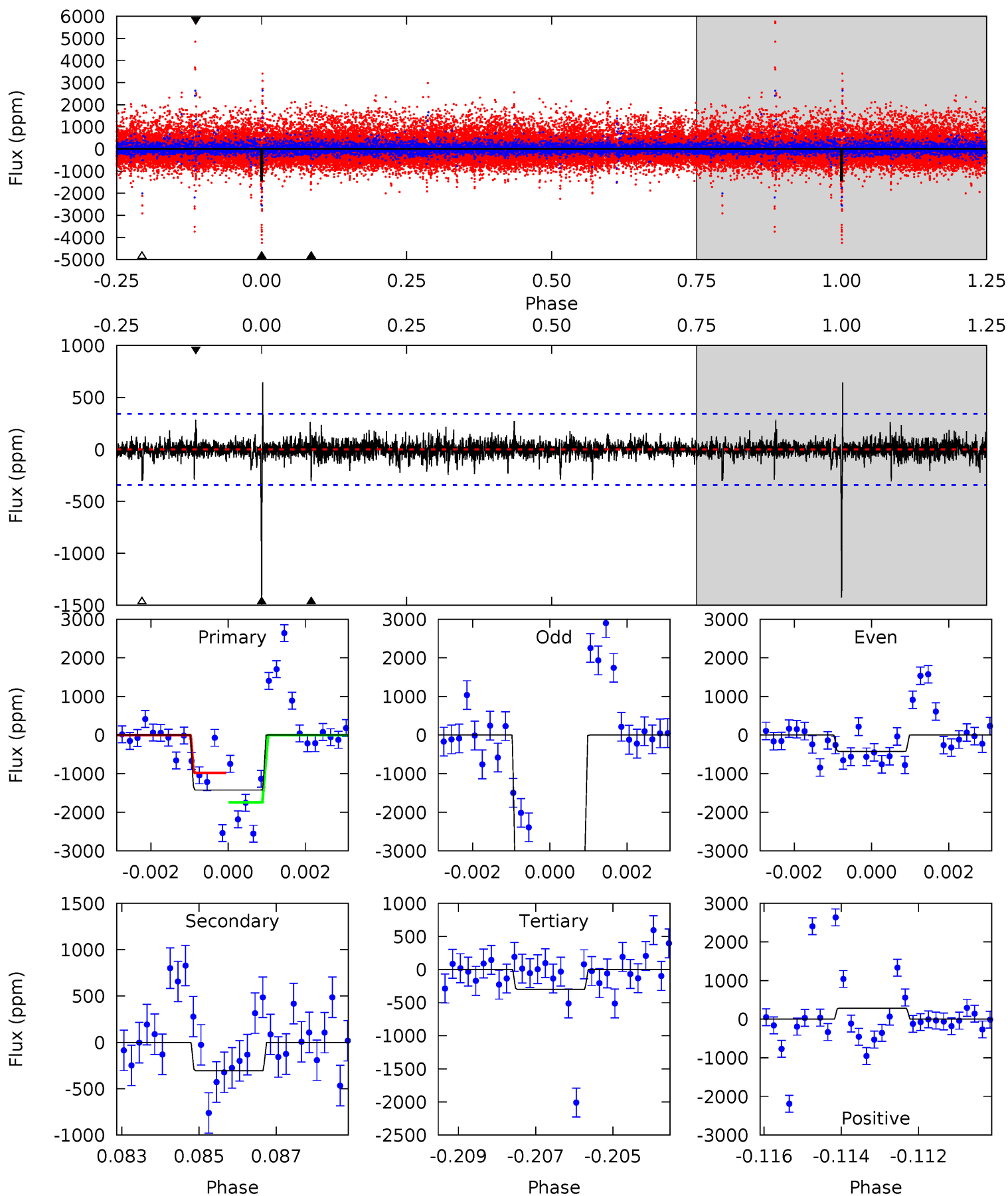
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 2.41 | 9.24 | 5.93 | 29.4 | 5.39 | 3.19 | 2.04 | -3.52 | -27.0 | 3.31 | -20.2 | 1.06 | 0.60 | 0.76 | 2.01 |



Alt Model-Shift Uniqueness Test

005342558-01, P = 308.757903 Days, E = 263.522230 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 22.2 | 4.78 | 4.66 | 4.43 | 5.33 | 3.09 | 0.82 | 17.5 | 17.7 | 0.12 | 0.35 | 26.8 | 1.20 | 0.31 | 0 |



Stellar Parameters For KIC 005342558

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|----------------------------|----------------------------|----------------------------|----------------------------|---|
| | 3154^{+1}_{-1} | $5.131^{+-1.000}_{-1.000}$ | $0.000^{+-1.000}_{-1.000}$ | $0.173^{+-1.000}_{-1.000}$ | $0.147^{+-1.000}_{-1.000}$ | $40.220^{+-1.000}_{-1.000}$ |
| | +0%/-0% | +19%/-19% | +inf%/-inf% | +578%/-578% | +680%/-680% | +2%/-2% |
| Source | PHO54 | PHO54 | PHO54 | BTSL | | |

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

Secondary Eclipse Parameters for KIC 005342558-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-----------------|------------------------|-------------------|----------------------|------------------------------|
| DV | -1055 ± 114 | $0.79^{+0.60}_{-0.48}$ | 119^{+11}_{-11} | 2961^{+909}_{-381} | $216831^{+896665}_{-138818}$ |
| Alt. | -307 ± 64 | $0.82^{+0.59}_{-0.45}$ | 119^{+11}_{-10} | 2499^{+587}_{-282} | $59649^{+210960}_{-37777}$ |

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 $A_{obs} \gg 1.0$

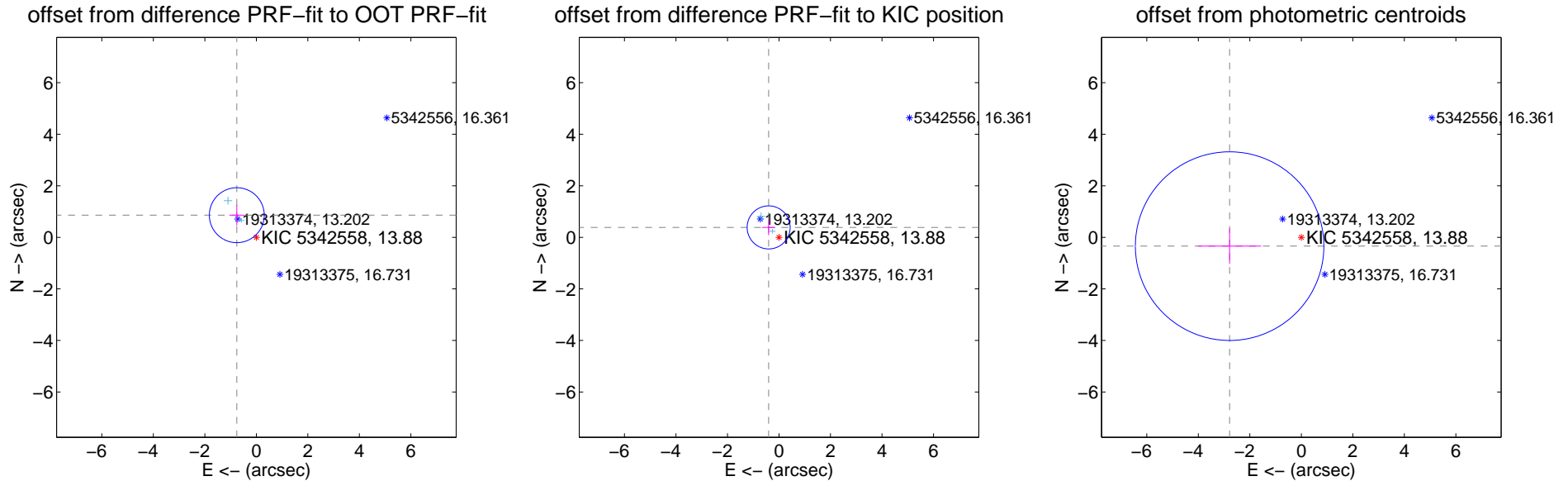
DV Centroid Data

Supplemental centroid analysis for 005342558-01. Kepler magnitude: 13.88. Transit SNR 8.53

There are 2 quarters with good PRF difference image offsets

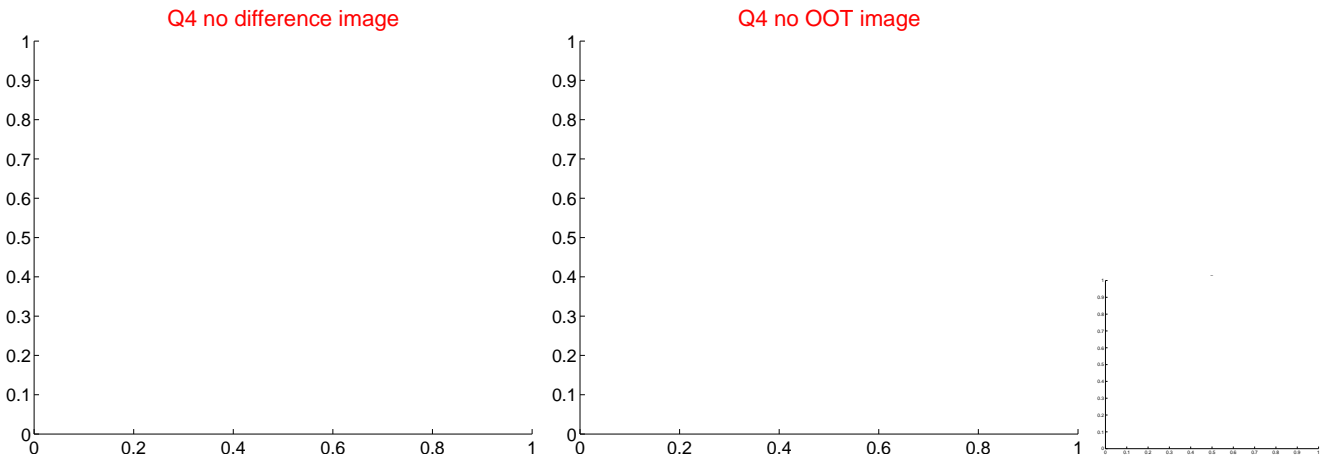
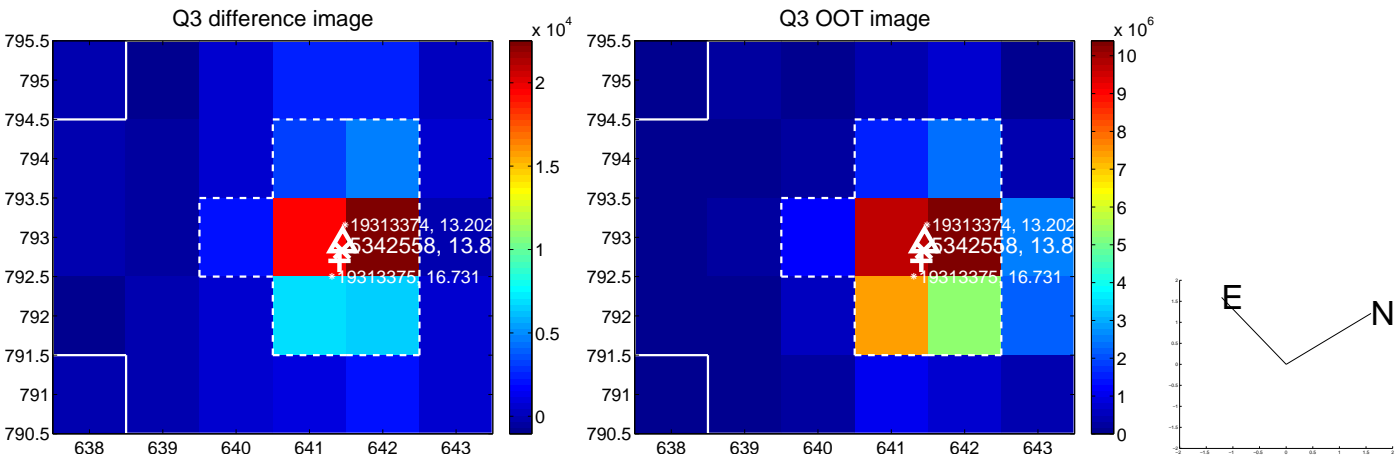
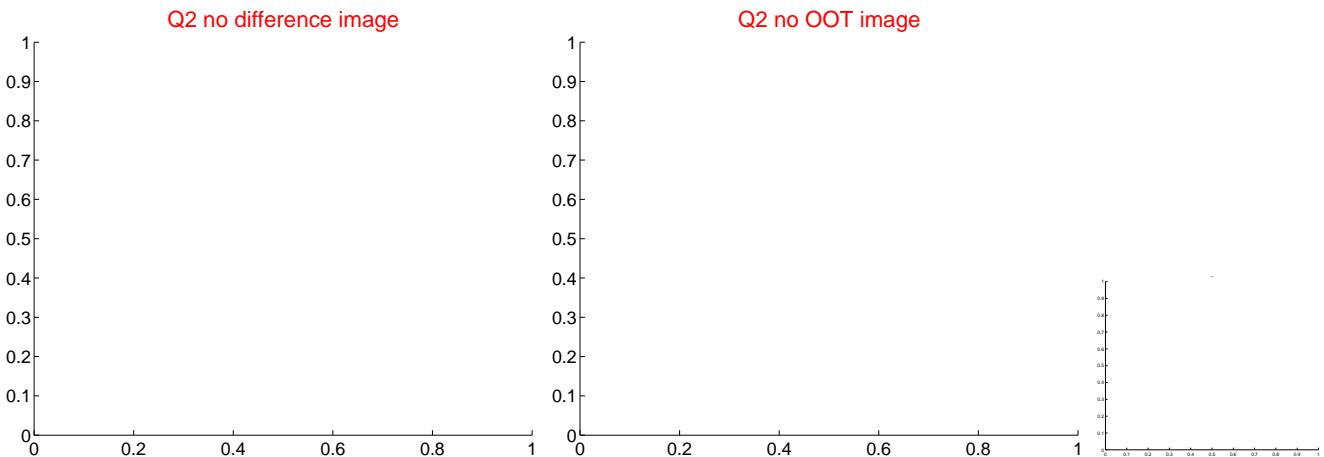
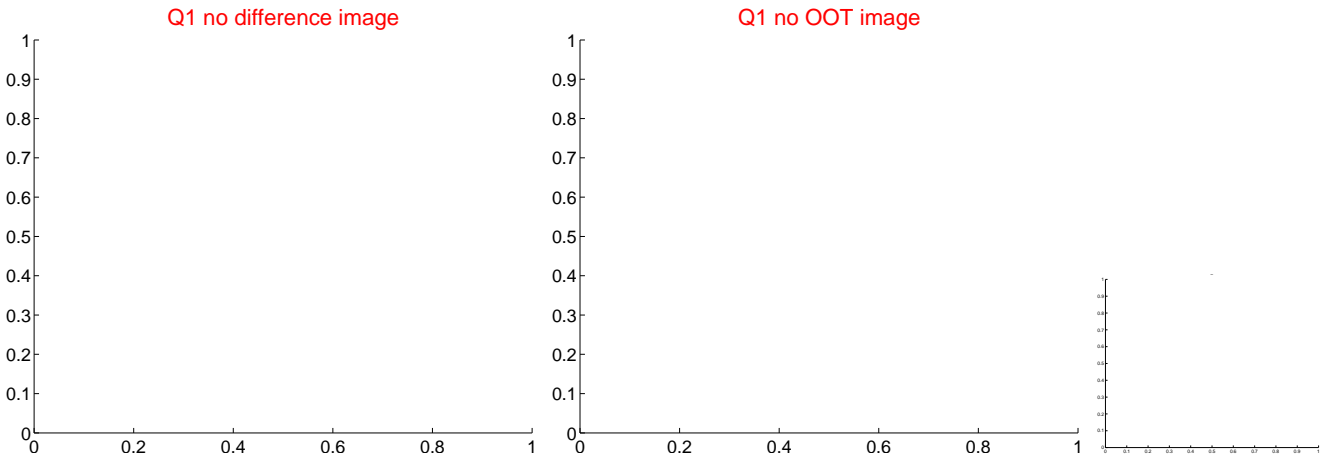
The direct PRF centroid is offset from the target star catalog position by about 0.73 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 1.146 \pm 0.355 | 3.23 | 0.759 \pm 0.294 | 0.859 \pm 0.397 |
| PRF-fit source offset from KIC position | 0.557 \pm 0.278 | 2.00 | 0.402 \pm 0.255 | 0.385 \pm 0.302 |
| photometric centroid source offset | 2.80 \pm 1.22 | 2.30 | 2.78 \pm 1.23 | -0.34 \pm 0.69 |

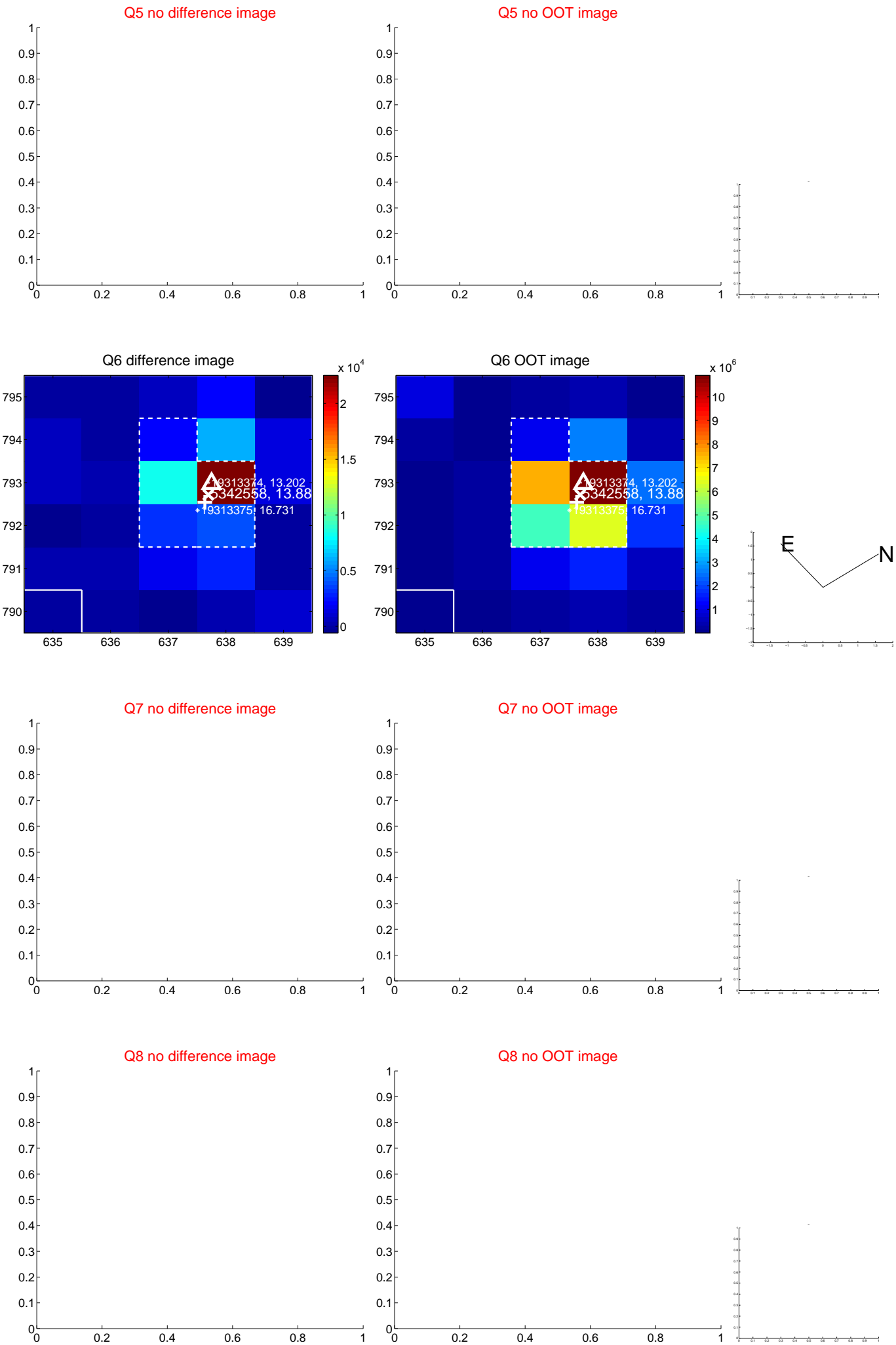


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

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



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



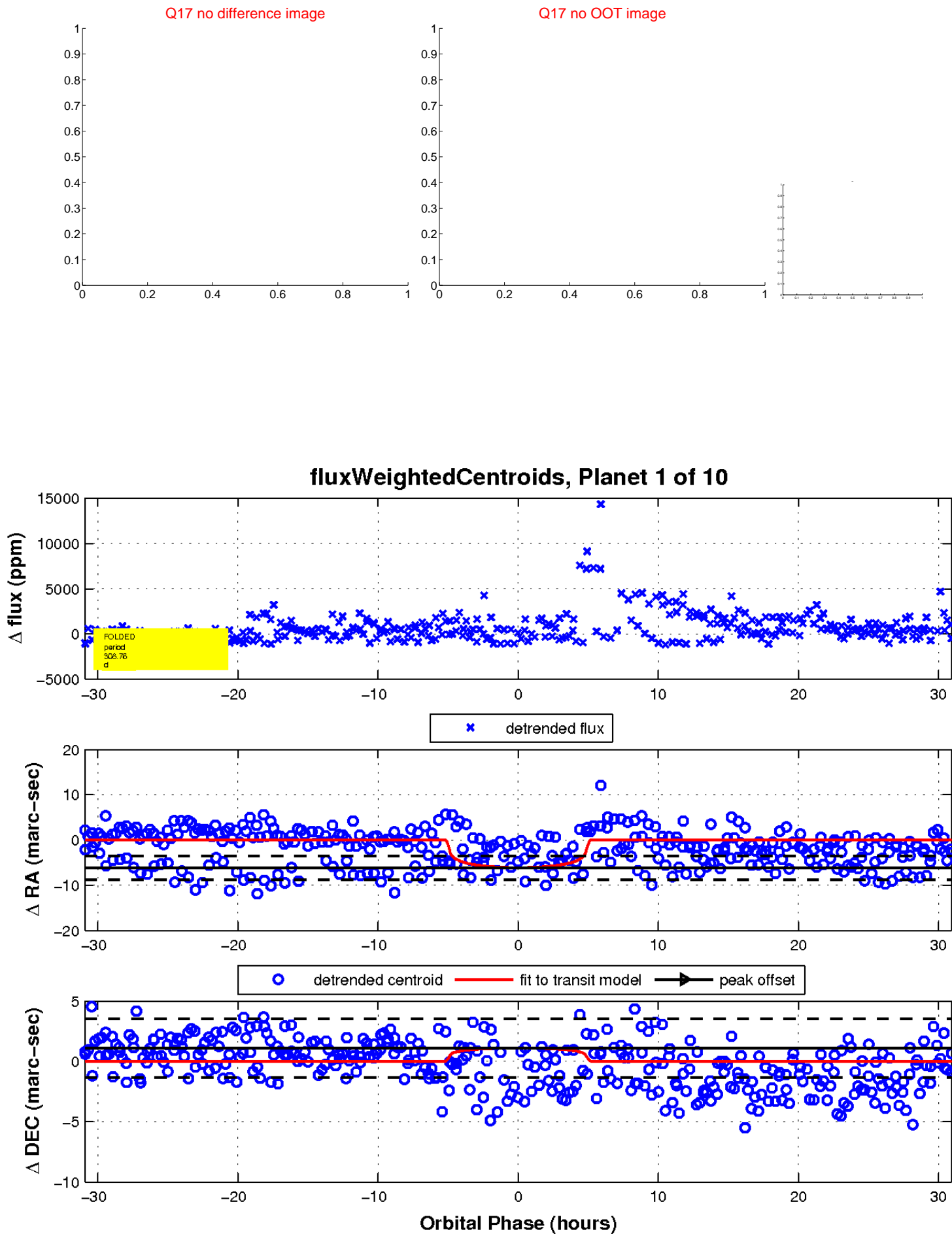
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

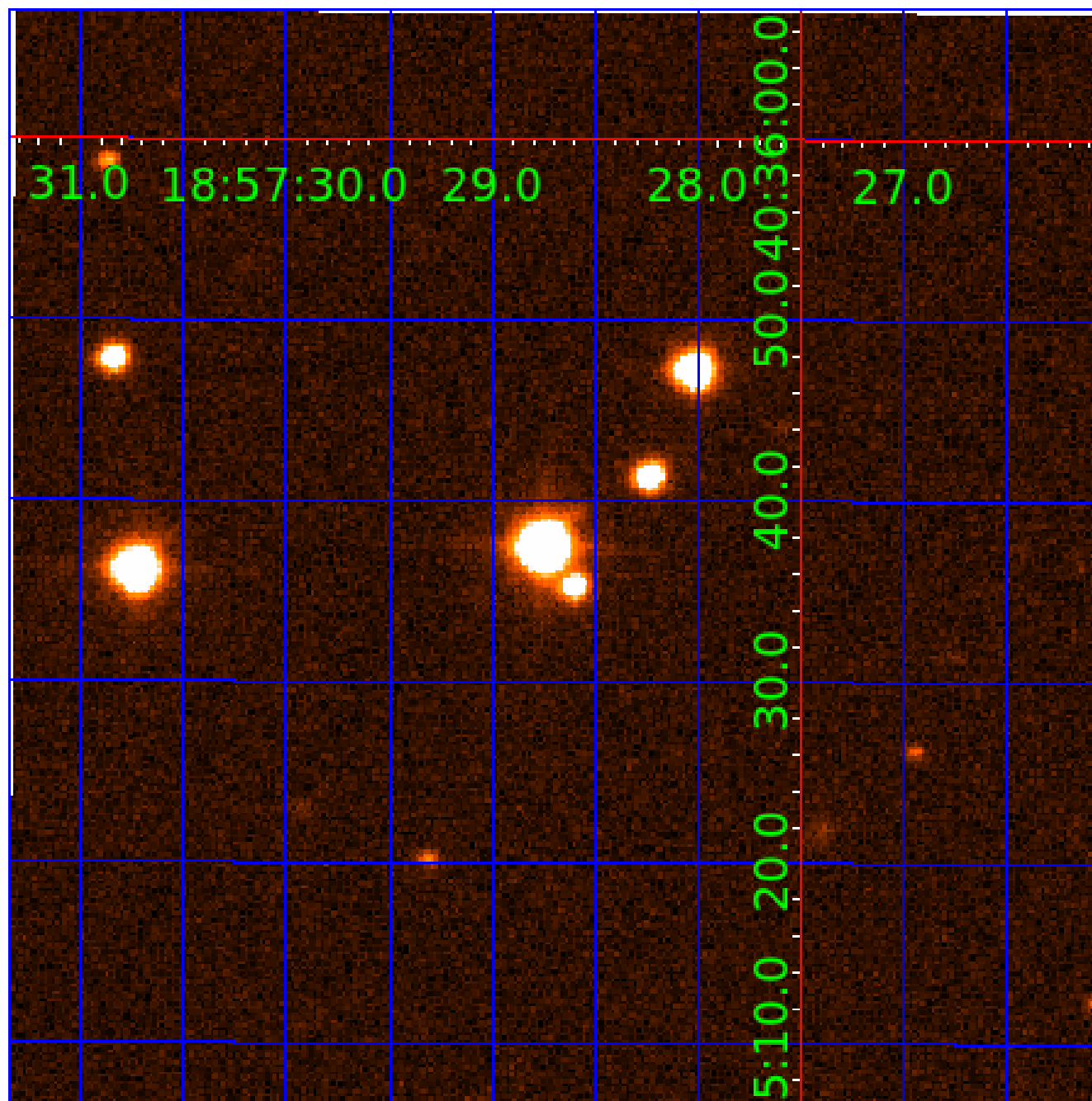


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UKIRT Image

Declination



Q1-17 DR25 TCE Parameters

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| 005342558-05 | OBS | No | 335.694048 | 448.703570 | 1571.6 | 3.803 | 13.0 | 8.6 | 0.17 | 3154 | 0.68 | 0.01 |
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| 005342558-10 | OBS | No | 378.103945 | 375.659854 | 1003.0 | 7.162 | 10.8 | 6.7 | 0.17 | 3154 | 0.57 | 0.01 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005342558-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS |
| 005342558-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-09 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS |
| 005342558-10 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_KIC_POS |

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

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

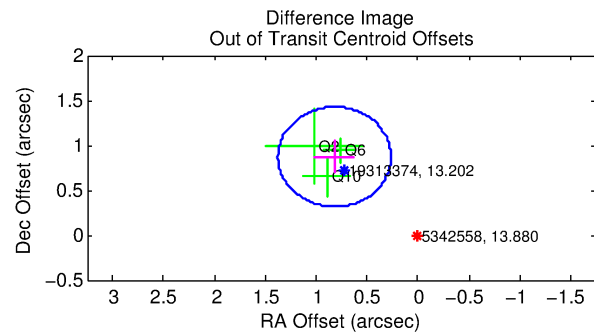
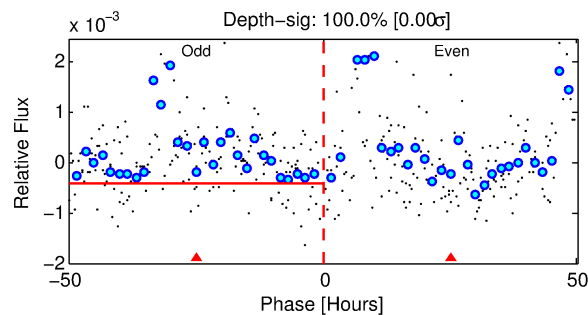
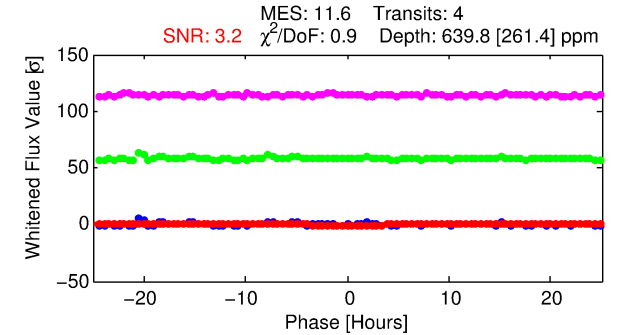
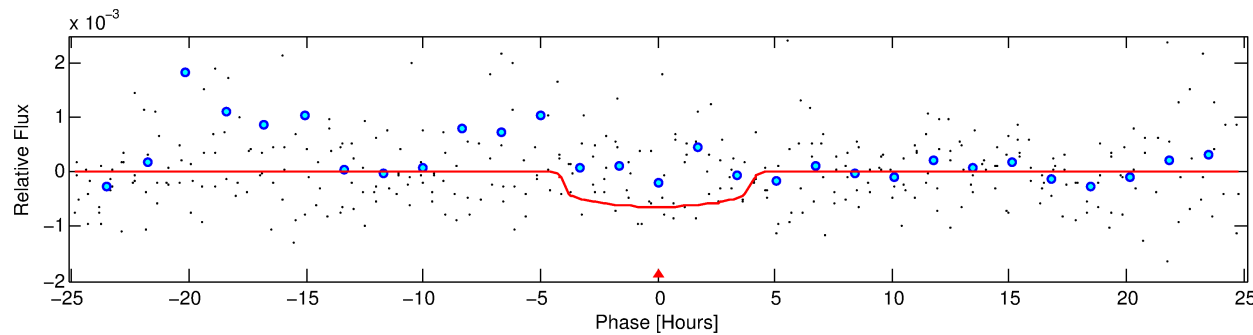
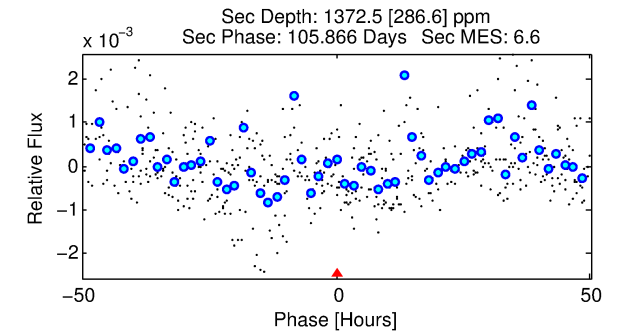
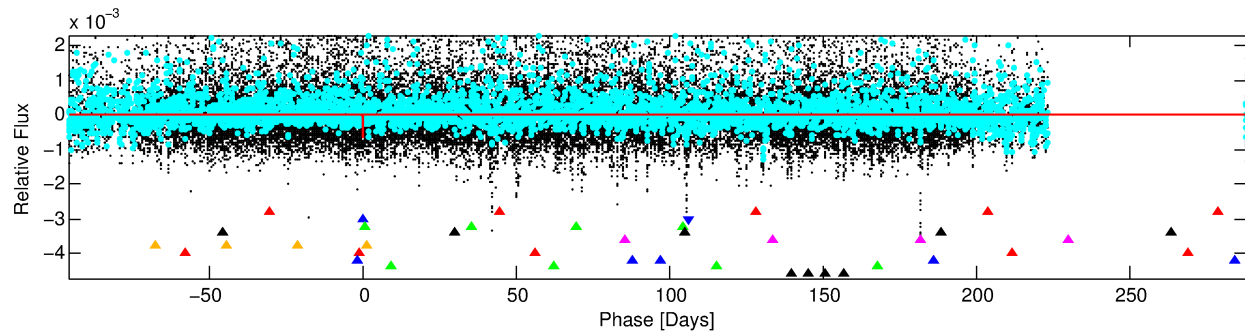
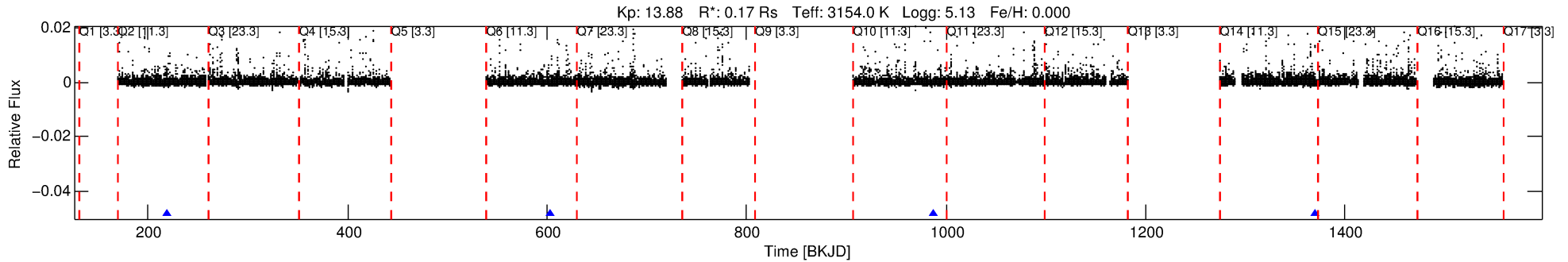
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005342558-02

No Significant Match Found

DV One-Page Summary

KIC: 5342558 Candidate: 2 of 10 Period: 383.721 d



DV Fit Results:

Period = 383.72067 [0.02545] d
Epoch = 219.3108 [0.0299] BKJD
Rp/R* = 0.0236 [0.0640]
a/R* = 311.66 [3612.97]
b = 0.50 [17.29]
Seff = 0.01 [0.00]
Teq = 78 [0] K
Rp = 0.45 [1.21] Re
a = 0.5463 [0.0000] AU
Ag = 1132262.92 [6137726.48] [0.18σ]
Teffp = 3949 [5352] K [0.72σ]

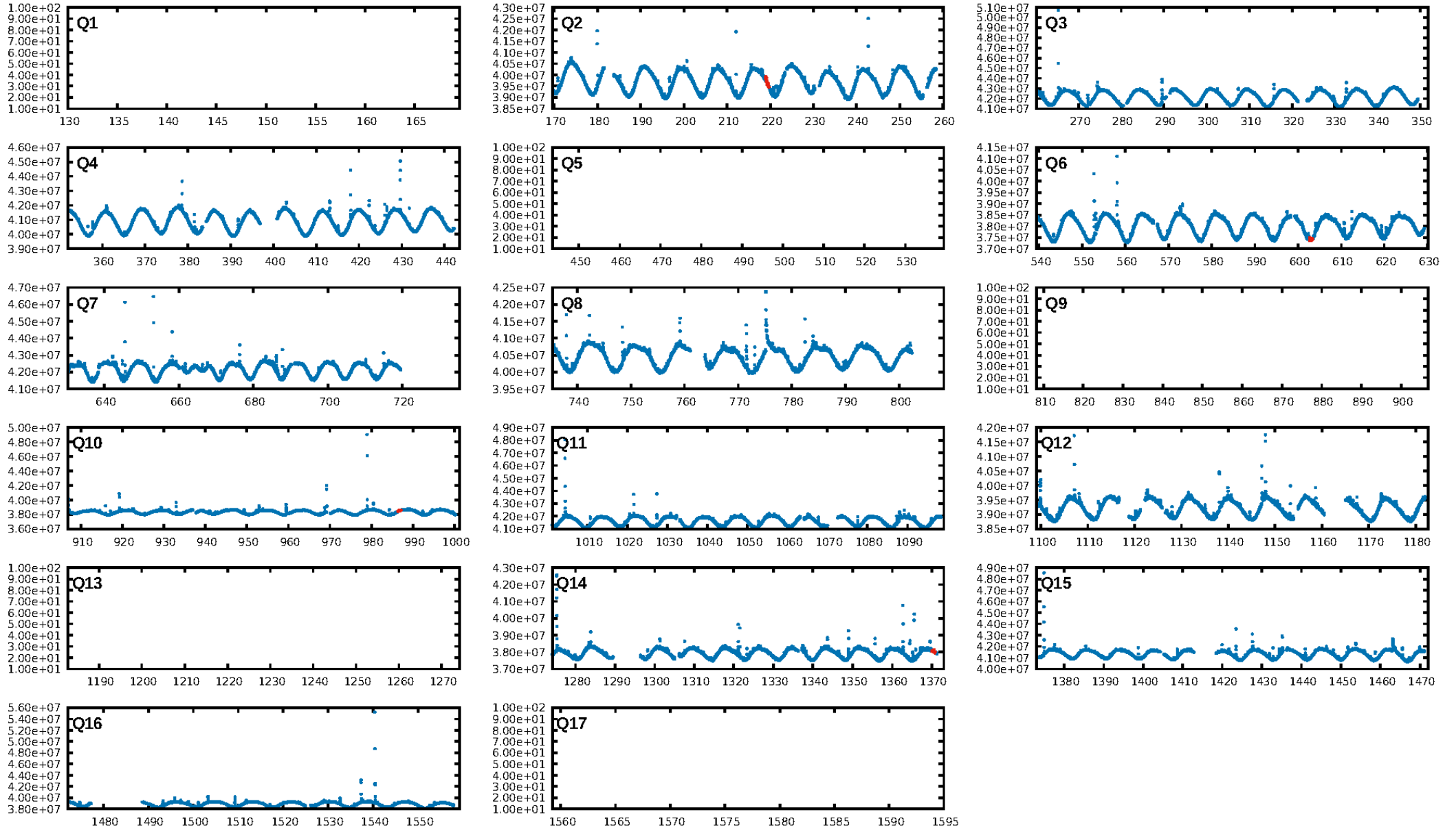
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.22σ]
LongPeriod-sig: 100.0% [66.54σ]
ModelChiSquare2-sig: 6.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.4988
Centroid-sig: 33.9%
Centroid-so: 1.659 arcsec [0.81σ]
OotOffset-rm: 1.195 arcsec [6.46σ]
OotOffset-st: 3/0/0/0 [3]
KicOffset-rm: 0.658 arcsec [3.49σ]
KicOffset-st: 3/0/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.67 [2/3]

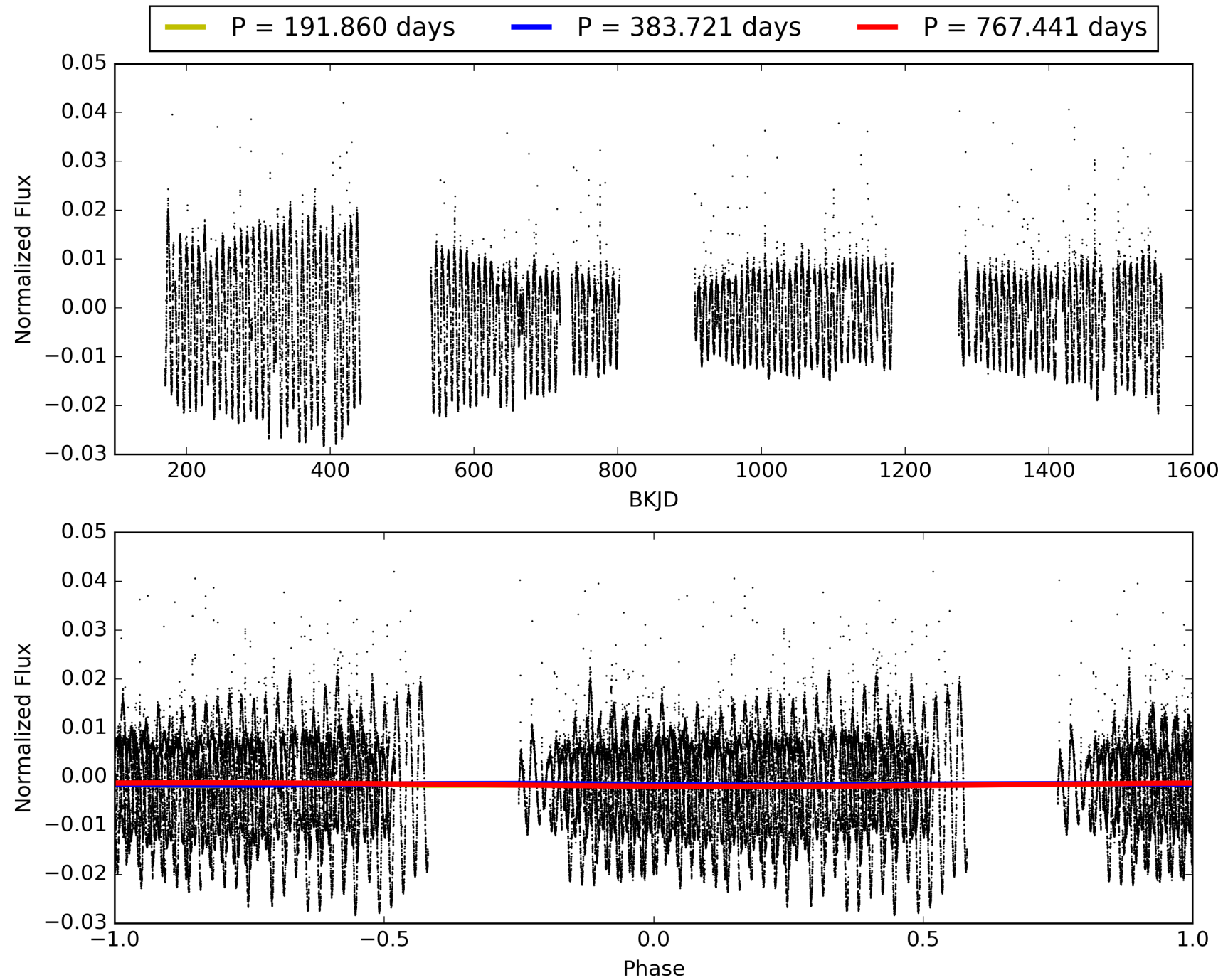
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:42:16 Z

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

TCE 005342558-02, PDC Light Curves

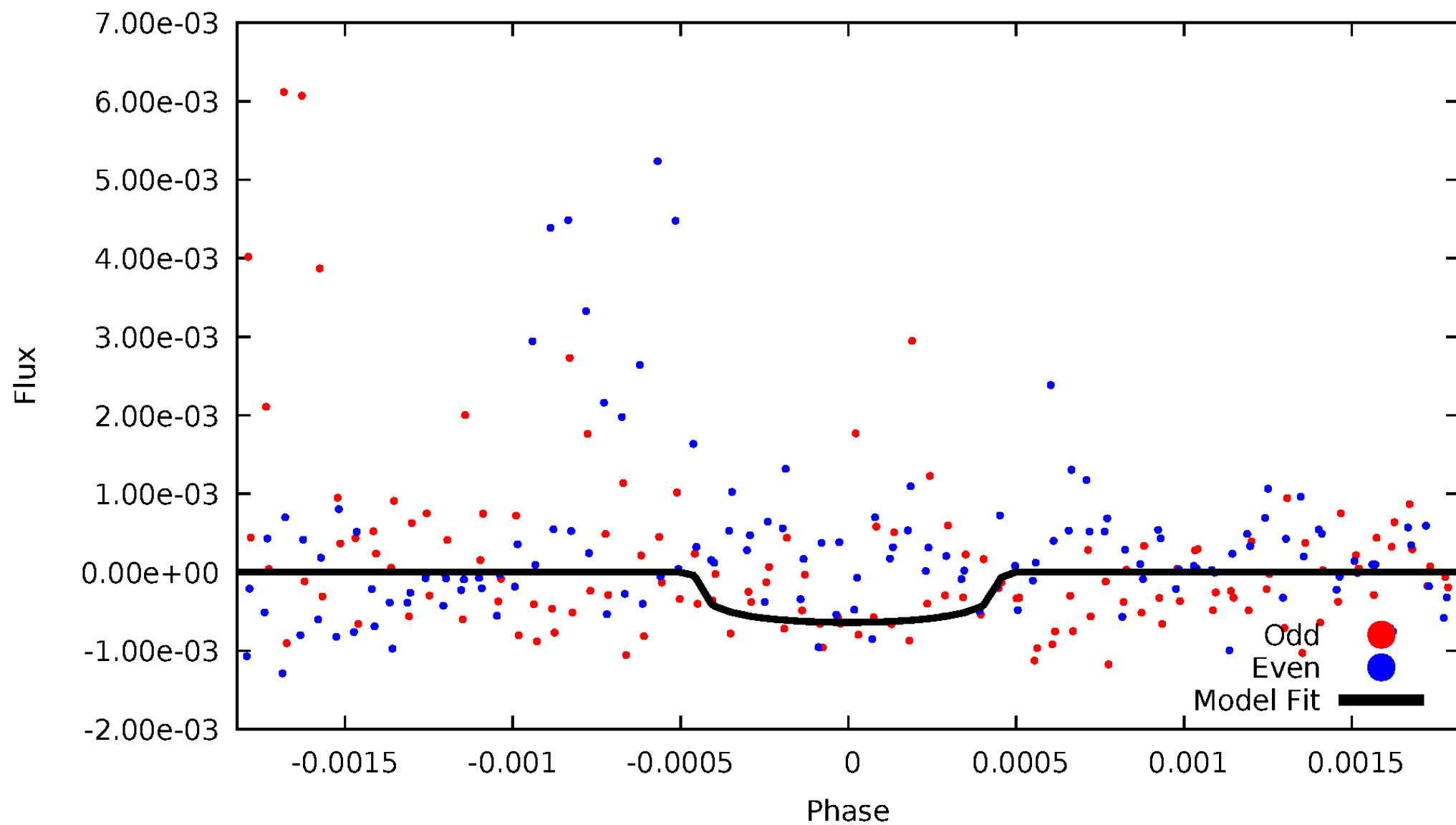


TCE 005342558-02



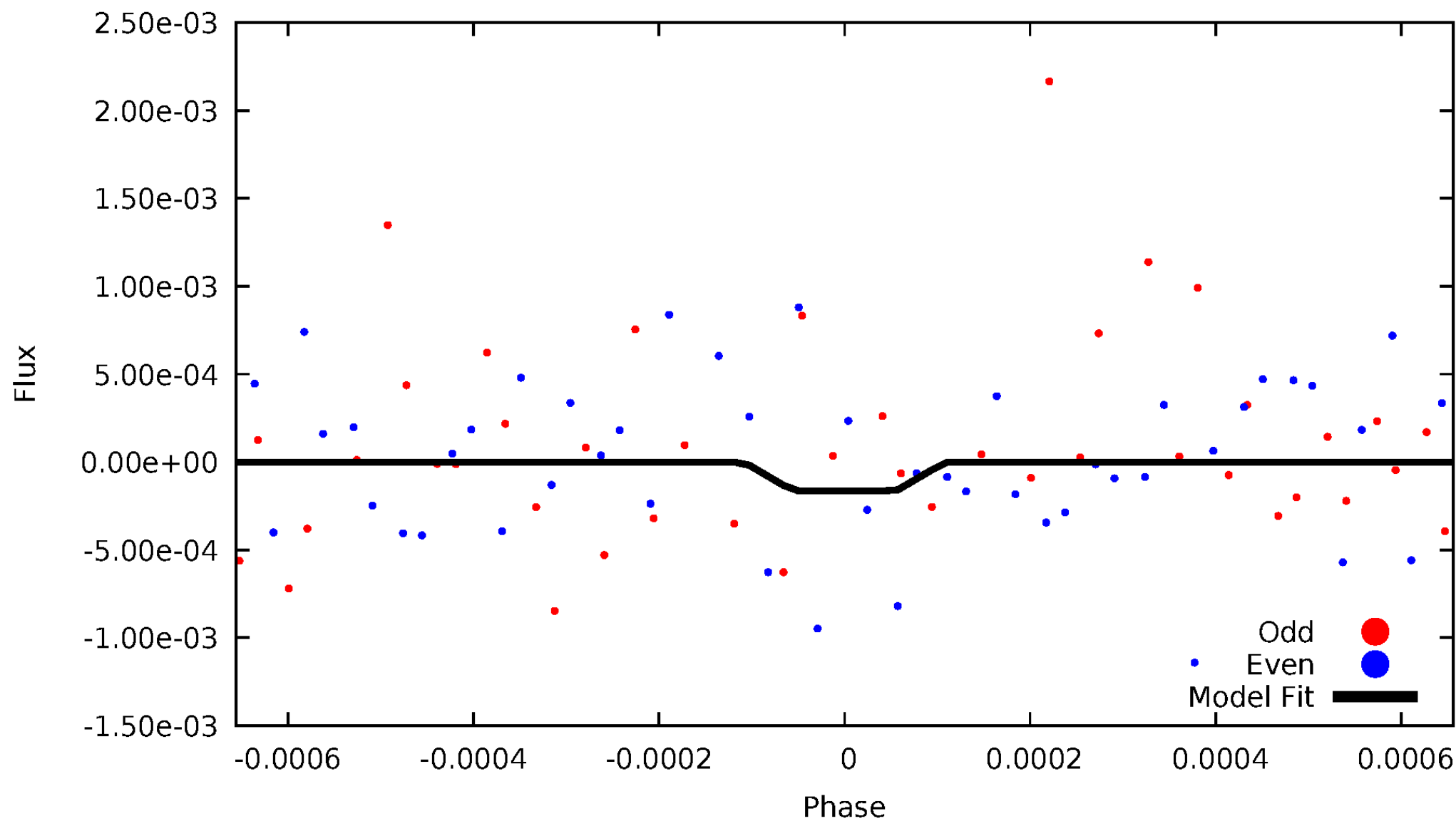
DV Odd/Even

TCE 005342558-02



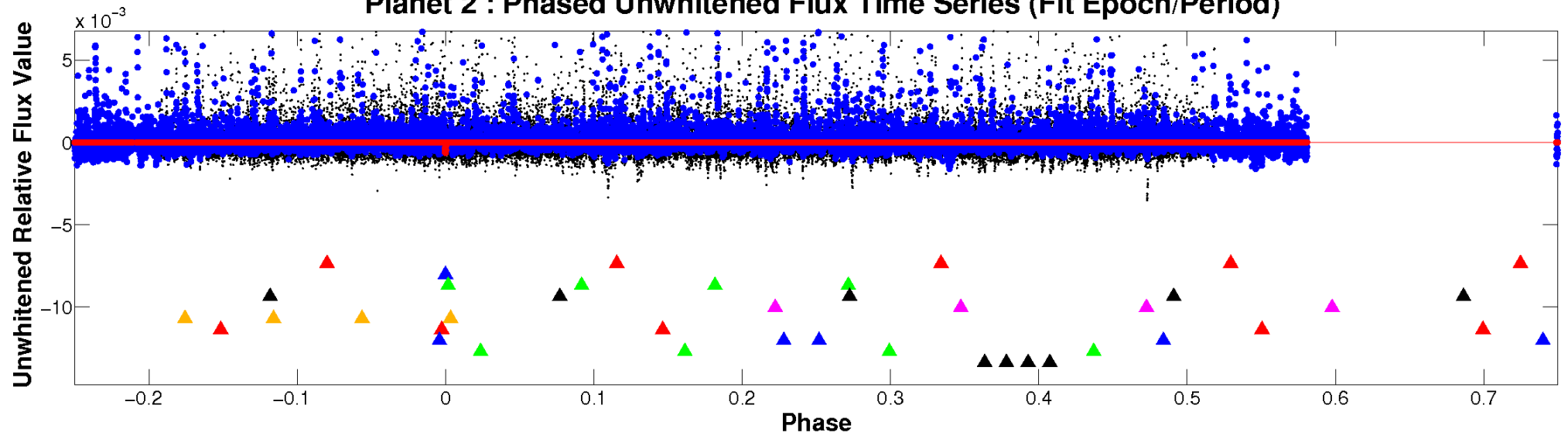
ALT Odd/Even

TCE 005342558-02

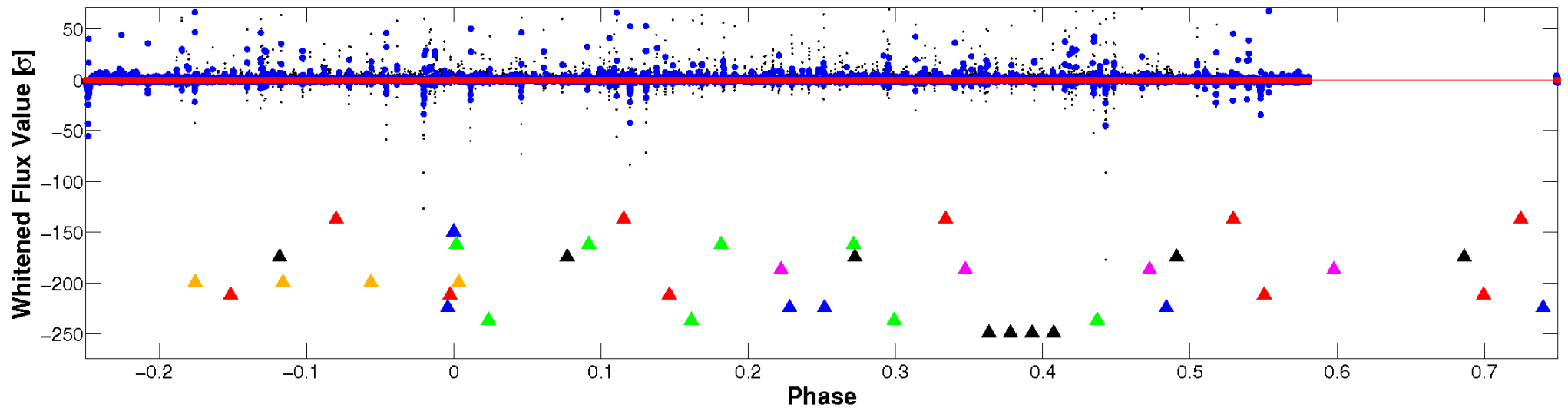


Non-Whitened Vs. Whitened Light Curve

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

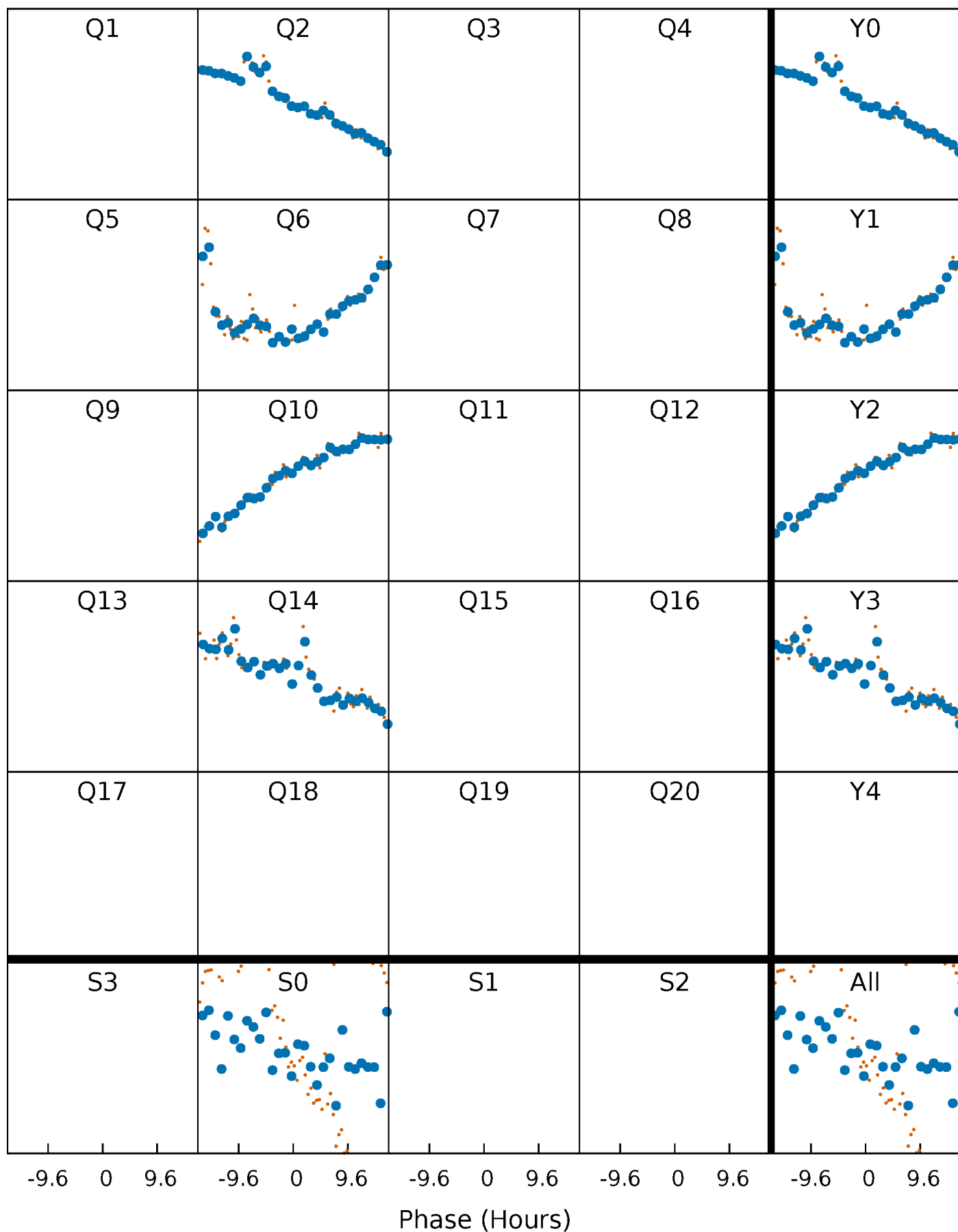


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



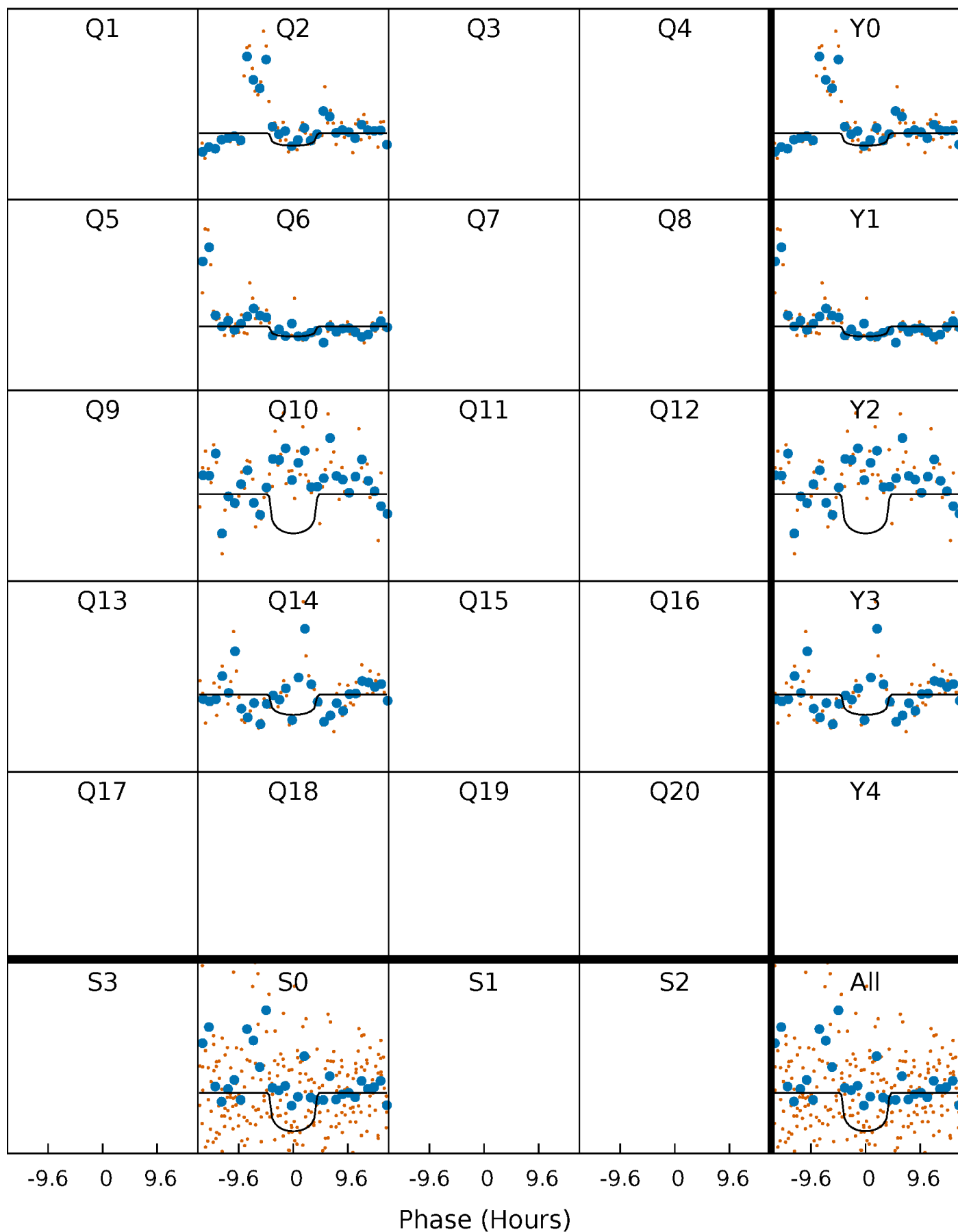
PDC Quarter-Phased Transit Curves

TCE 005342558-02 P=383.720665 Days $T_0=219.310793$ (BKJD)



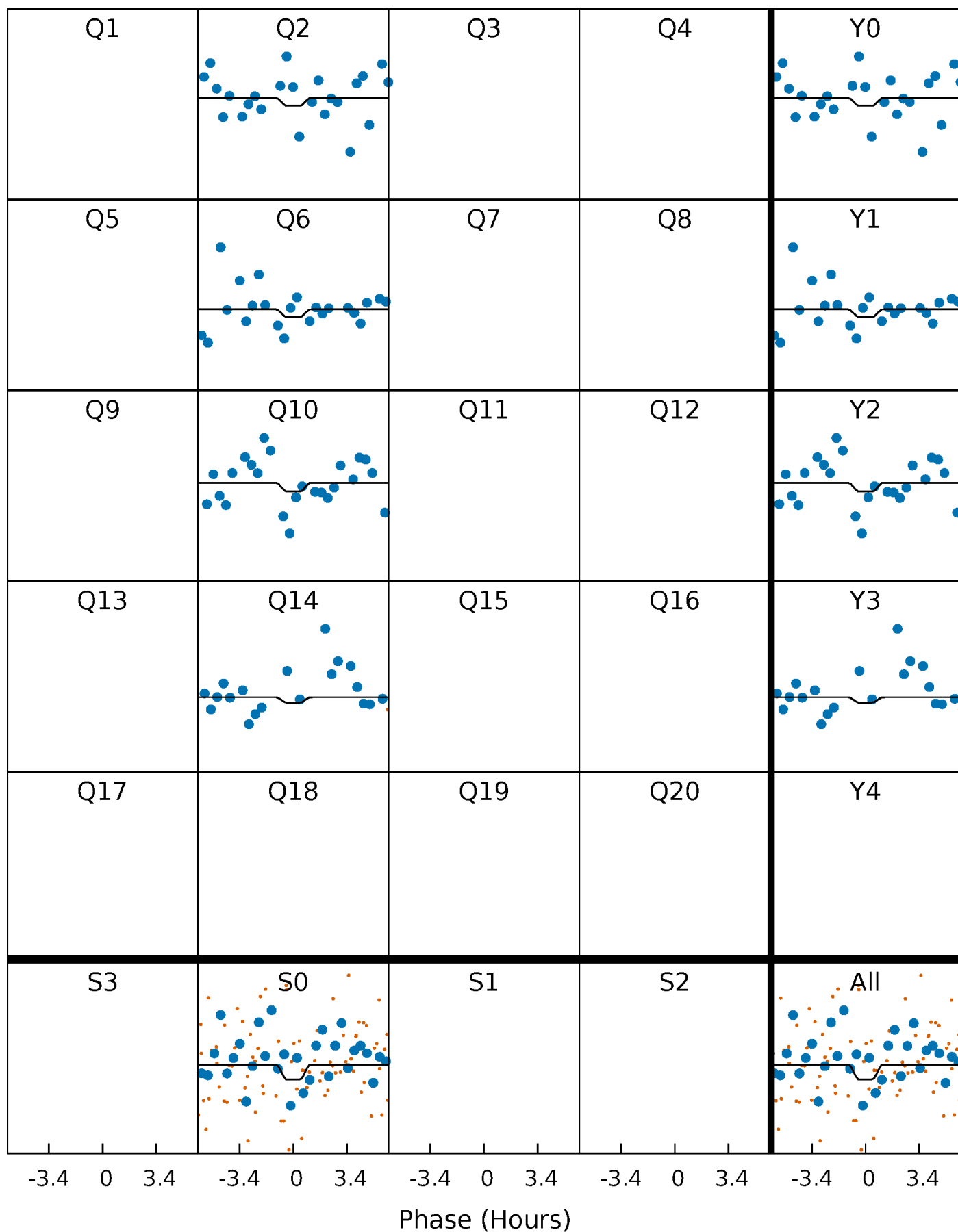
DV Quarter-Phased Transit Curves

TCE 005342558-02 P=383.720665 Days $T_0=219.310793$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

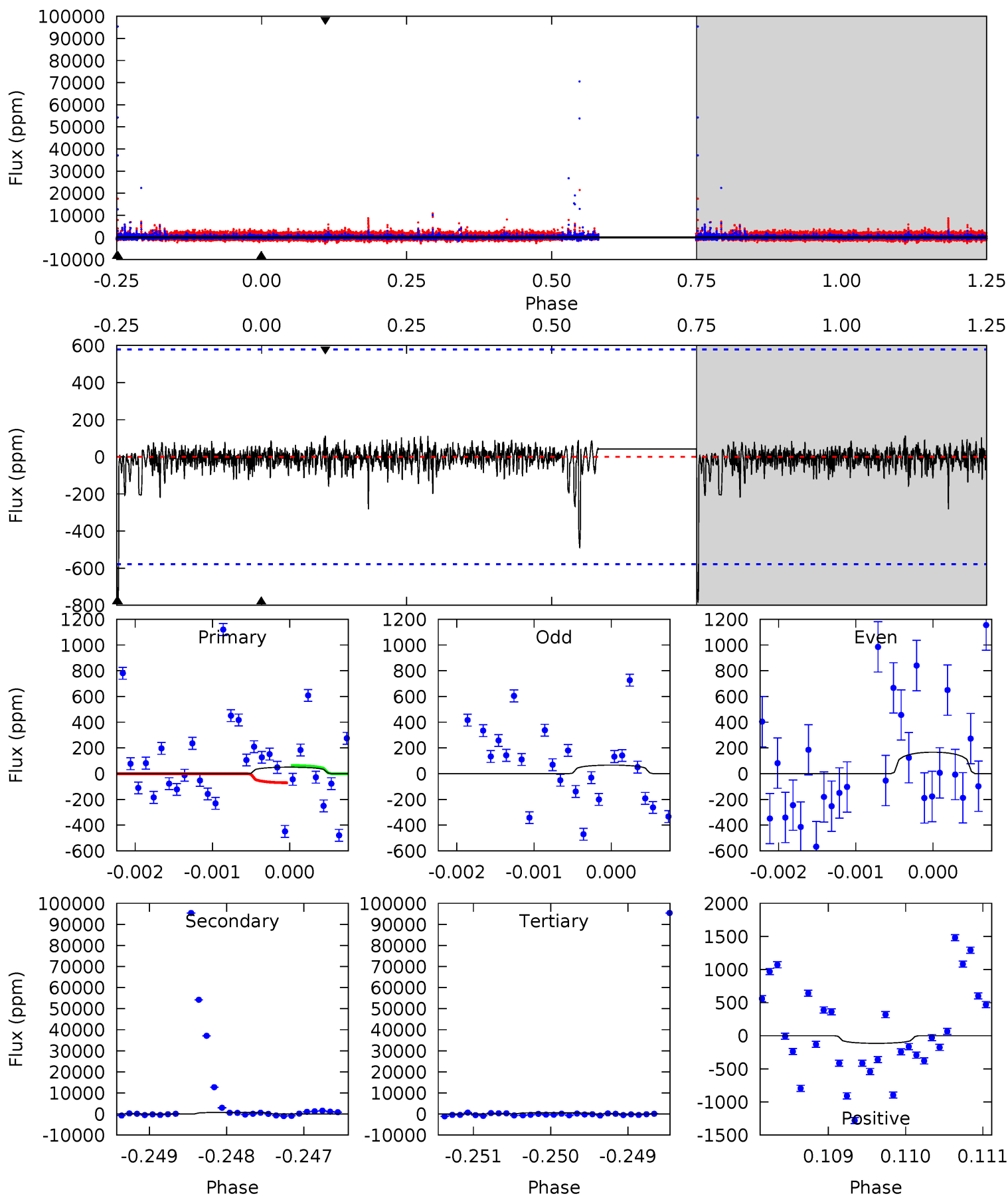
TCE 005342558-02 P=383.319963 Days $T_0=219.602068$ (BKJD)



DV Model-Shift Uniqueness Test

005342558-02, P = 383.720665 Days, E = 219.310793 Days

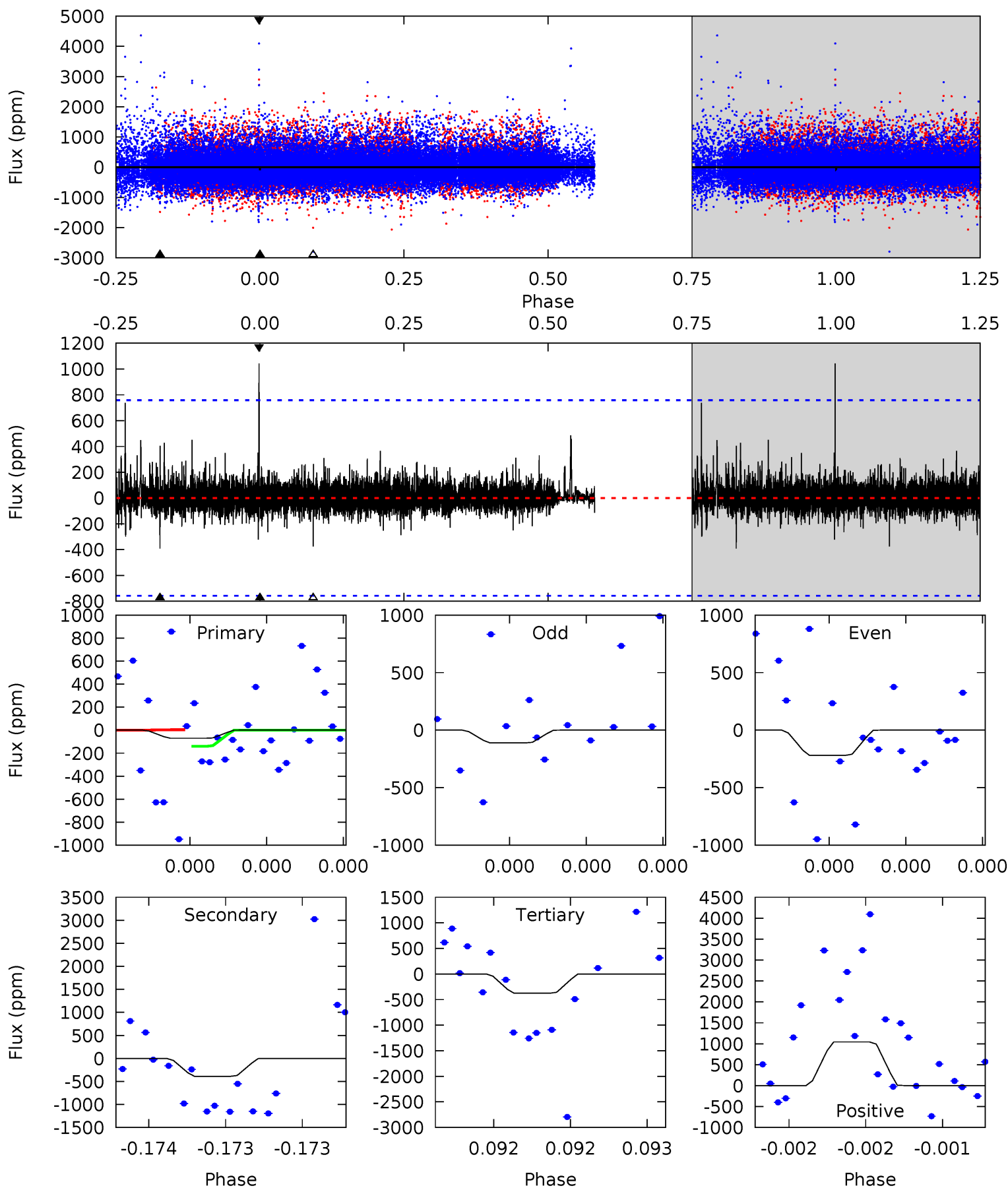
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 0.48 | 7.42 | 5.76 | 1.08 | 5.47 | 3.31 | 0.46 | -5.28 | -0.60 | 1.65 | 6.33 | 0.30 | 1.23 | 0.13 | 0.02 |



Alt Model-Shift Uniqueness Test

005342558-02, P = 383.319963 Days, E = 219.602068 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-------|-------|------|
| 0.53 | 2.96 | 2.85 | 7.90 | 5.74 | 3.73 | 0.56 | -2.31 | -7.36 | 0.11 | -4.94 | 0.39 | -3.57 | 0.73 | 0.51 |



Stellar Parameters For KIC 005342558

| | $T_{\text{eff}}(K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|----------------------------|----------------------------|----------------------------|----------------------------|---|
| | 3154^{+1}_{-1} | $5.131^{+-1.000}_{-1.000}$ | $0.000^{+-1.000}_{-1.000}$ | $0.173^{+-1.000}_{-1.000}$ | $0.147^{+-1.000}_{-1.000}$ | $40.220^{+-1.000}_{-1.000}$ |
| | +0%/-0% | +19%/-19% | +inf%/-inf% | +578%/-578% | +680%/-680% | +2%/-2% |
| Source | PHO54 | PHO54 | PHO54 | BTSL | | |

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

Secondary Eclipse Parameters for KIC 005342558-02 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|----------------|------------------------|----------------------|----------------------|-----------------------------|
| DV | -785 ± 106 | $1.08^{+1.17}_{-0.73}$ | 111^{+10}_{-10} | 2636^{+984}_{-416} | $120600^{+940883}_{-91630}$ |
| Alt. | -390 ± 132 | $0.95^{+1.10}_{-0.66}$ | 111^{+10}_{-10} | 2488^{+909}_{-410} | $73131^{+607673}_{-57270}$ |

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

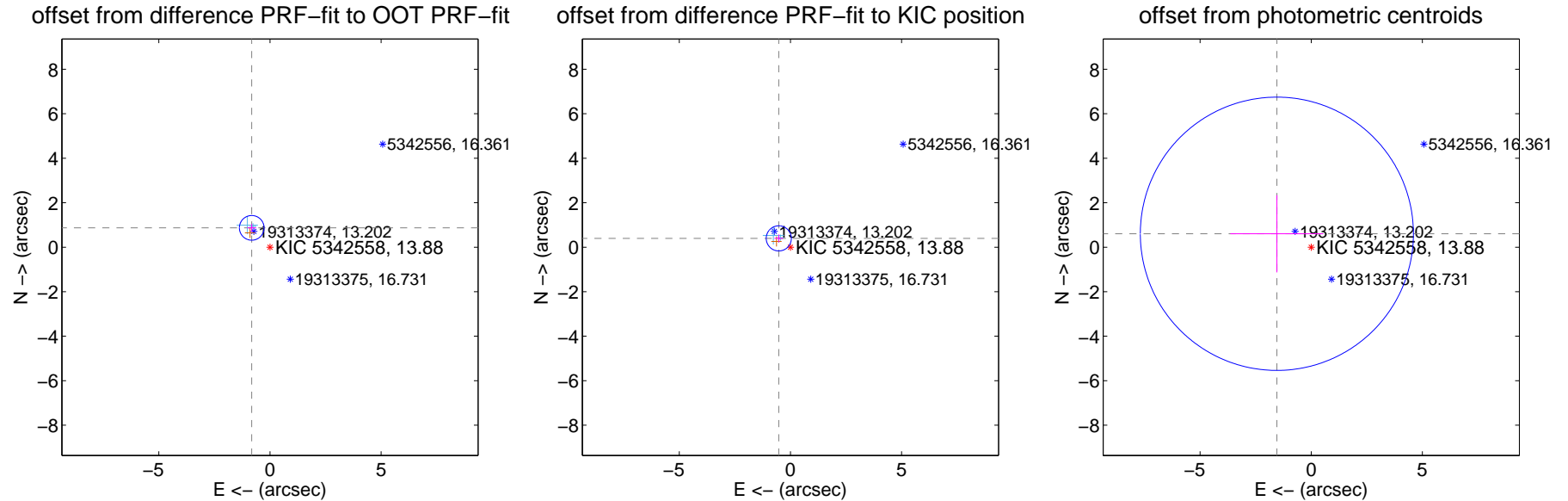
DV Centroid Data

Supplemental centroid analysis for 005342558-02. Kepler magnitude: 13.88. Transit SNR 3.23

There are 2 quarters with good PRF difference image offsets

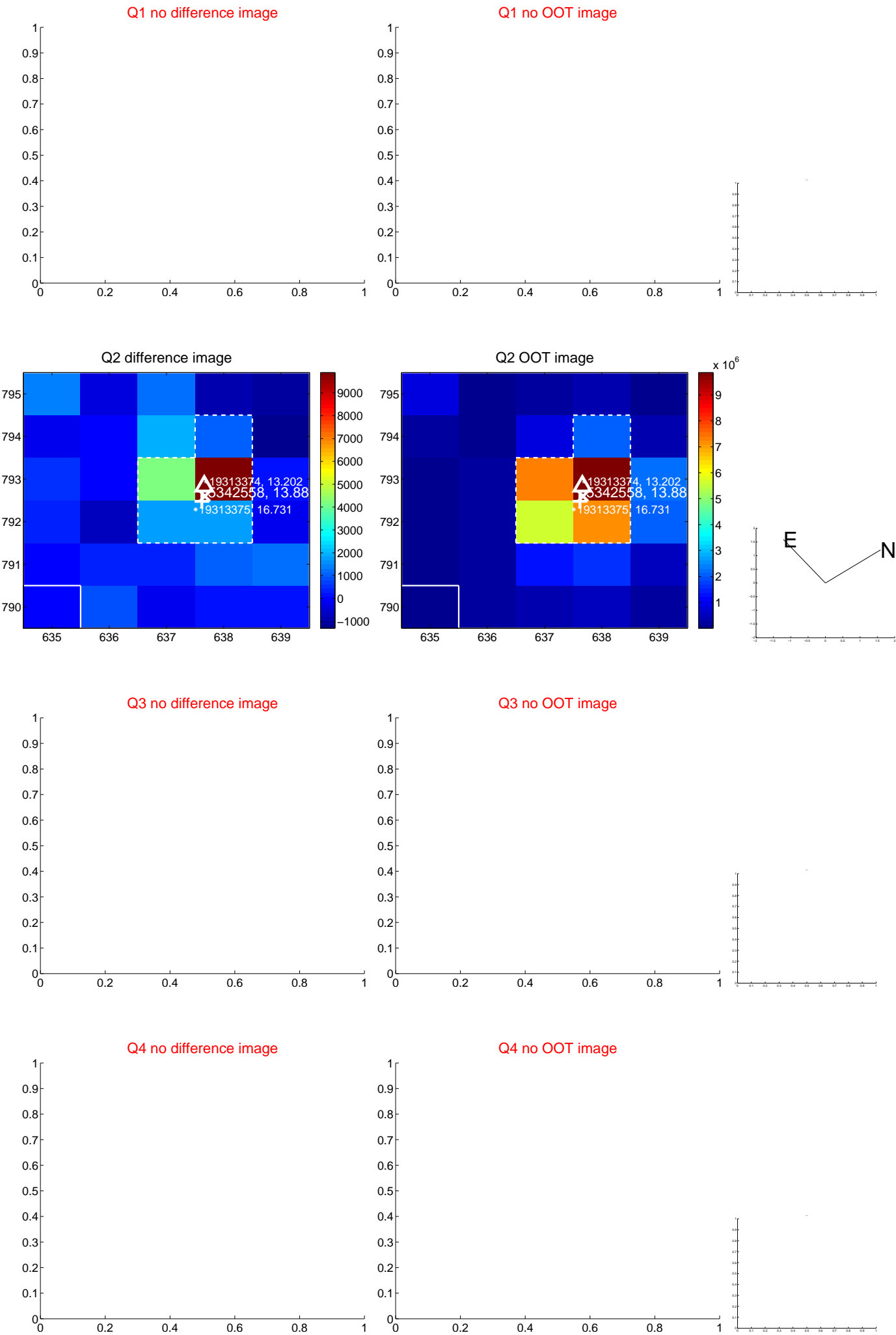
The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 1.195 ± 0.185 | 6.46 | 0.820 ± 0.195 | 0.870 ± 0.176 |
| PRF-fit source offset from KIC position | 0.658 ± 0.188 | 3.49 | 0.524 ± 0.195 | 0.397 ± 0.176 |
| photometric centroid source offset | 1.66 ± 2.05 | 0.81 | 1.55 ± 2.09 | 0.60 ± 1.74 |

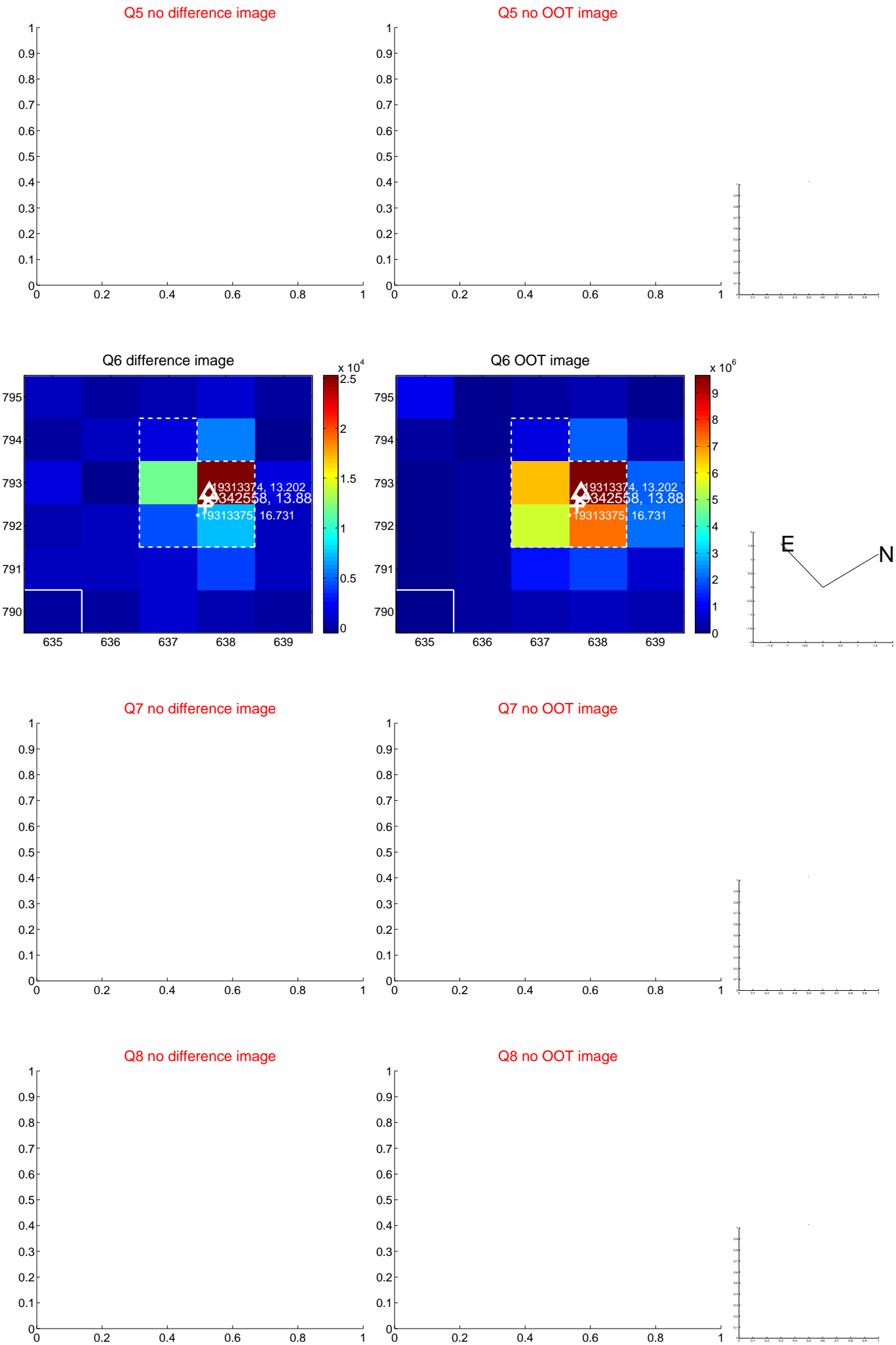


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

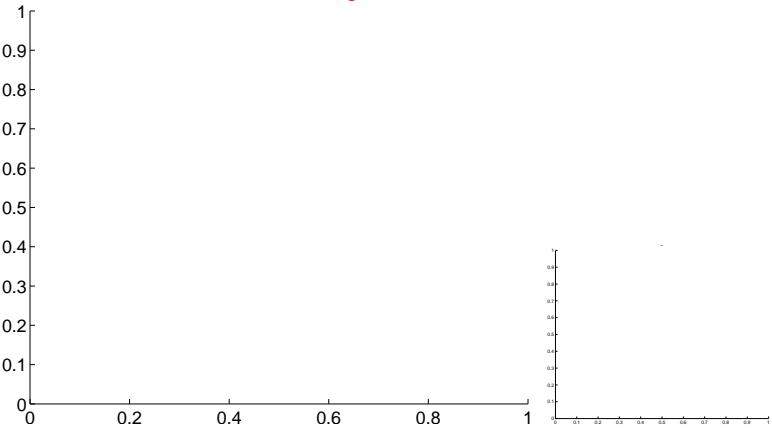


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

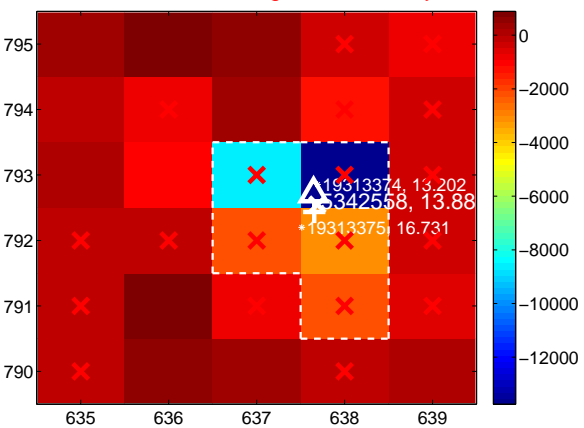
Q9 no difference image



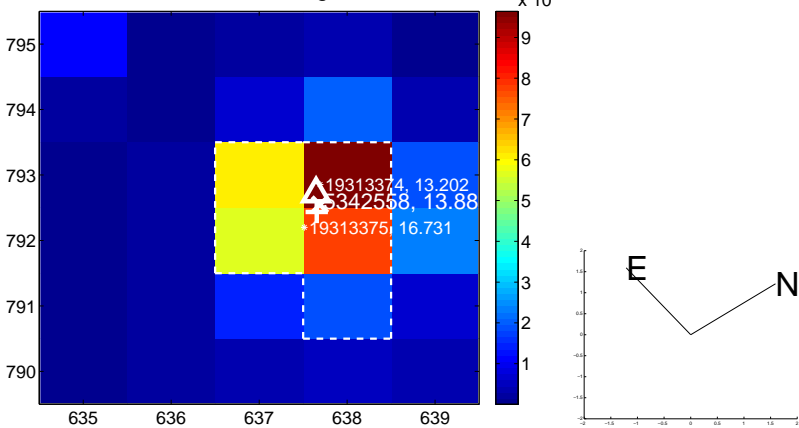
Q9 no OOT image



Q10 difference image. Poor Quality



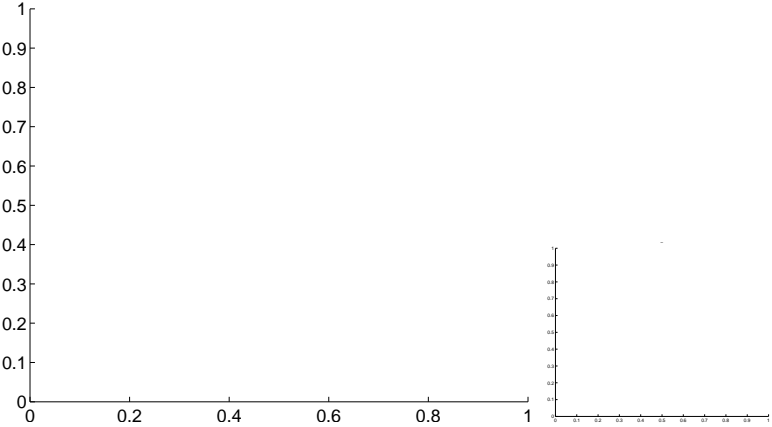
Q10 OOT image



Q11 no difference image



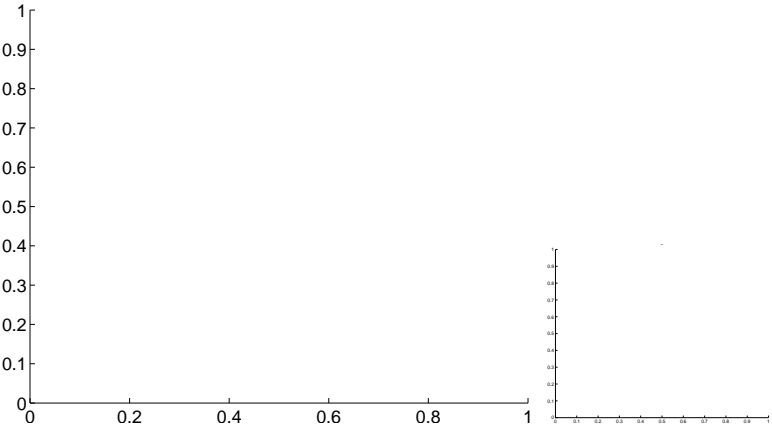
Q11 no OOT image



Q12 no difference image



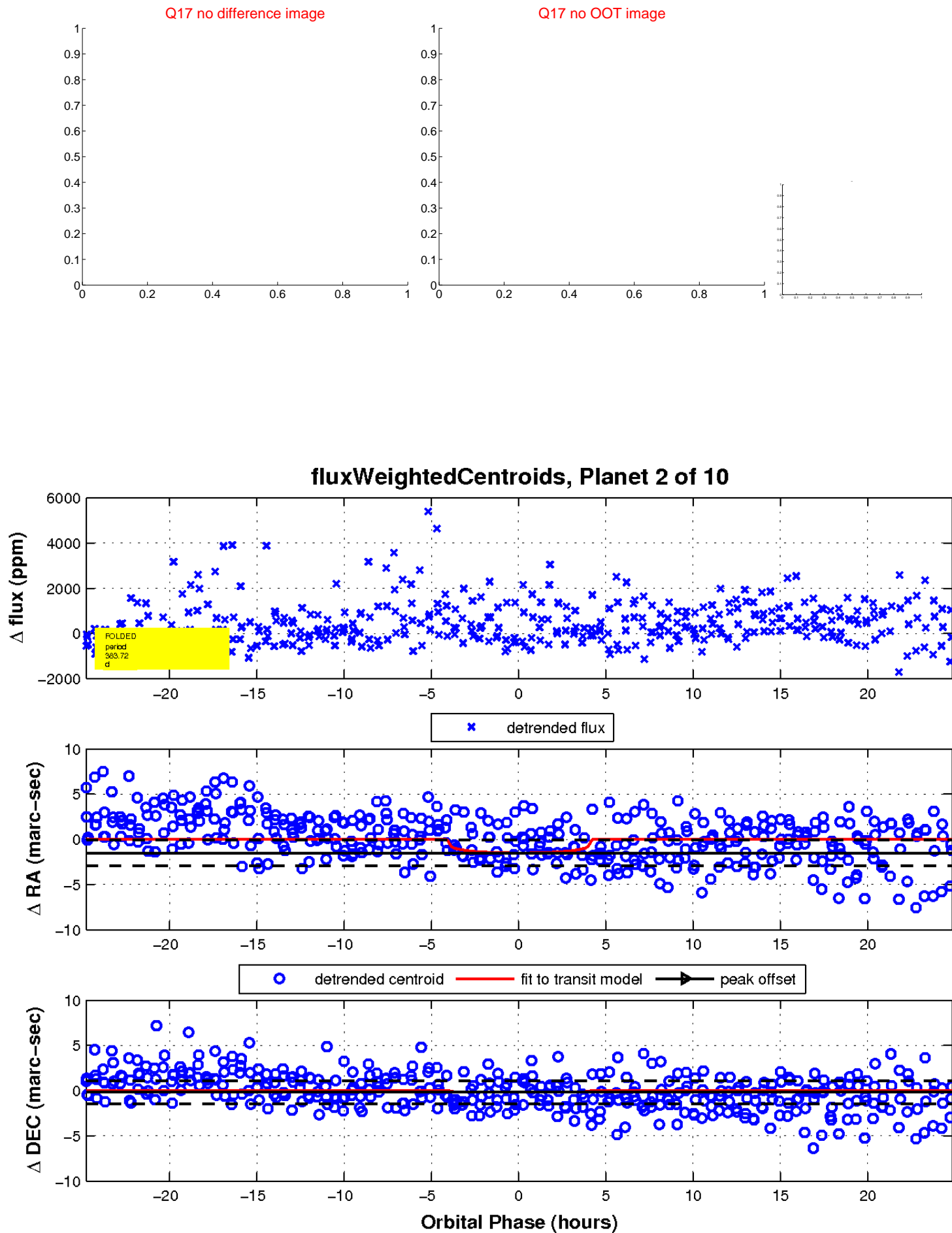
Q12 no OOT image



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

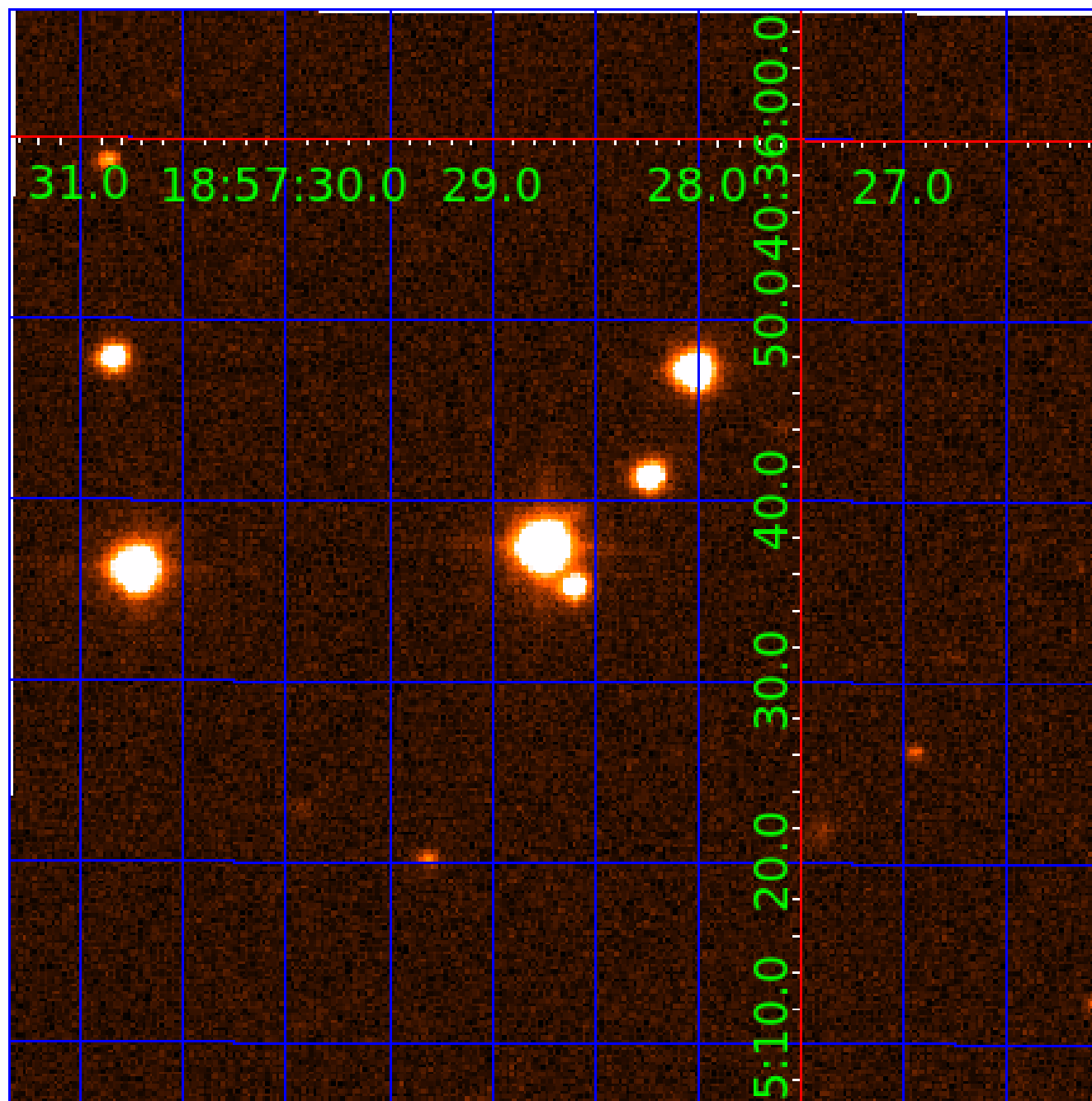


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 005342558-01 | OBS | No | 308.762826 | 263.627416 | 1701.3 | 10.318 | 18.7 | 8.5 | 0.17 | 3154 | 0.71 | 0.01 |
| 005342558-02 | OBS | No | 383.720665 | 219.310793 | 639.8 | 8.386 | 11.6 | 3.2 | 0.17 | 3154 | 0.45 | 0.01 |
| 005342558-03 | OBS | No | 418.229695 | 220.013594 | 1829.1 | 9.198 | 17.9 | 8.7 | 0.17 | 3154 | 0.73 | 0.01 |
| 005342558-05 | OBS | No | 335.694048 | 448.703570 | 1571.6 | 3.803 | 13.0 | 8.6 | 0.17 | 3154 | 0.68 | 0.01 |
| 005342558-06 | OBS | No | 360.819671 | 220.624153 | 1216.7 | 3.561 | 12.5 | 6.8 | 0.17 | 3154 | 0.67 | 0.01 |
| 005342558-07 | OBS | No | 326.552624 | 275.507809 | 512.0 | 5.172 | 11.2 | 2.8 | 0.17 | 3154 | 0.44 | 0.01 |
| 005342558-08 | OBS | No | 285.507525 | 315.963589 | 1141.7 | 7.857 | 11.0 | 7.5 | 0.17 | 3154 | 0.59 | 0.01 |
| 005342558-09 | OBS | No | 436.602709 | 228.377019 | 1074.0 | 15.912 | 11.2 | 6.4 | 0.17 | 3154 | 0.57 | 0.01 |
| 005342558-10 | OBS | No | 378.103945 | 375.659854 | 1003.0 | 7.162 | 10.8 | 6.7 | 0.17 | 3154 | 0.57 | 0.01 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005342558-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS |
| 005342558-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-09 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS |
| 005342558-10 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_KIC_POS |

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

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

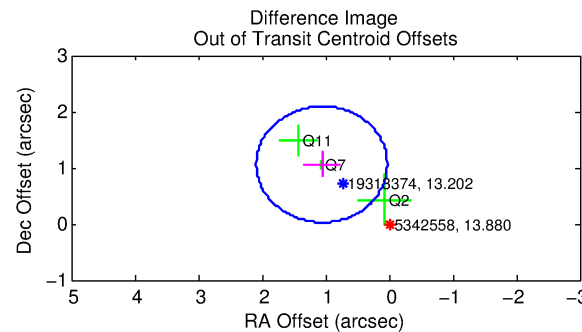
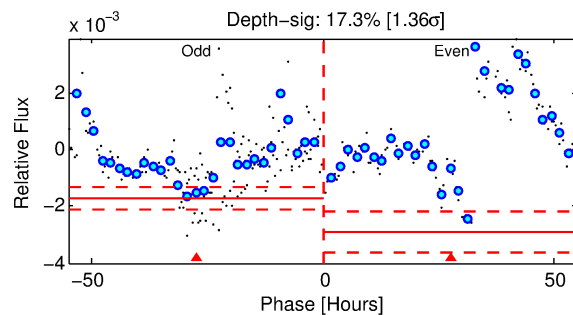
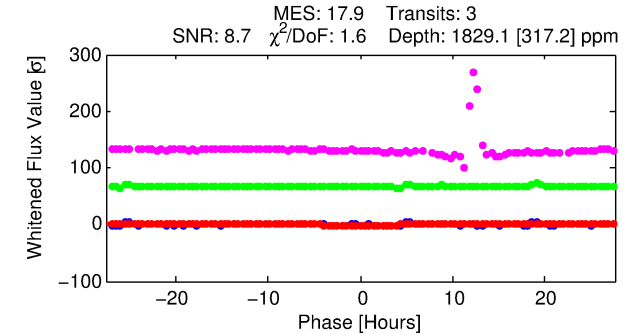
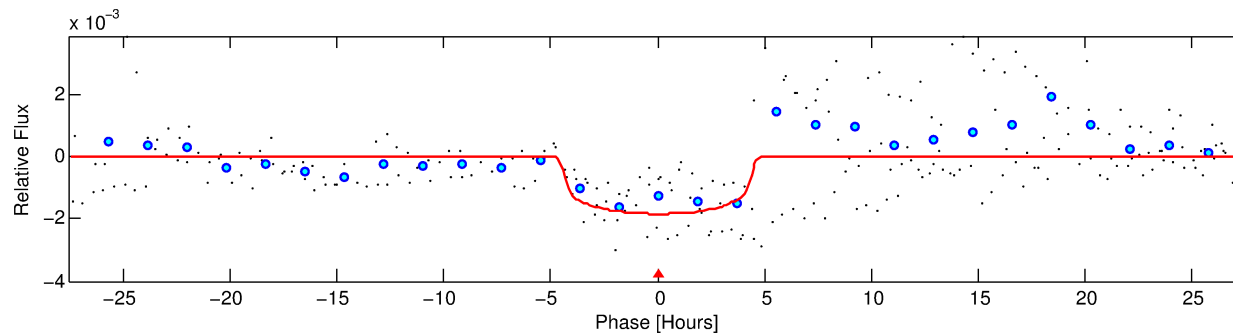
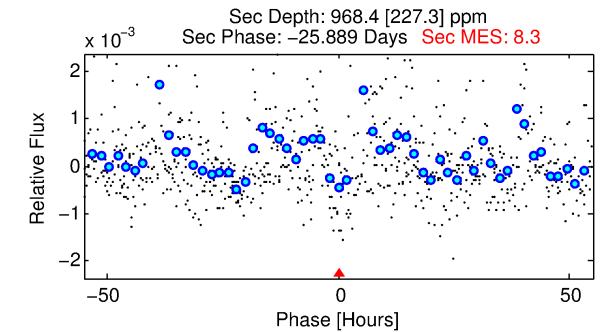
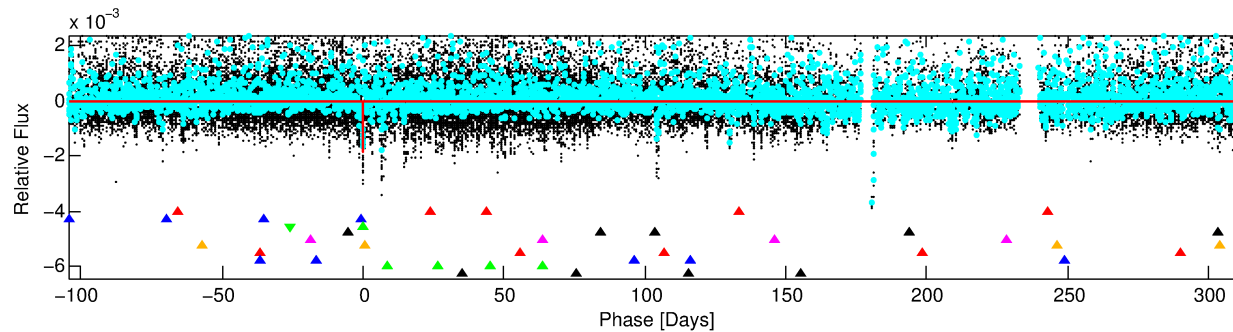
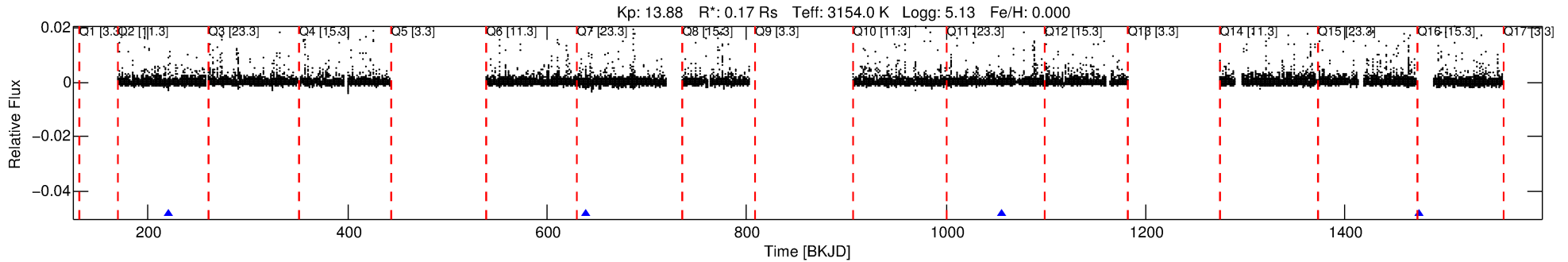
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005342558-03

No Significant Match Found

DV One-Page Summary

KIC: 5342558 Candidate: 3 of 10 Period: 418.230 d



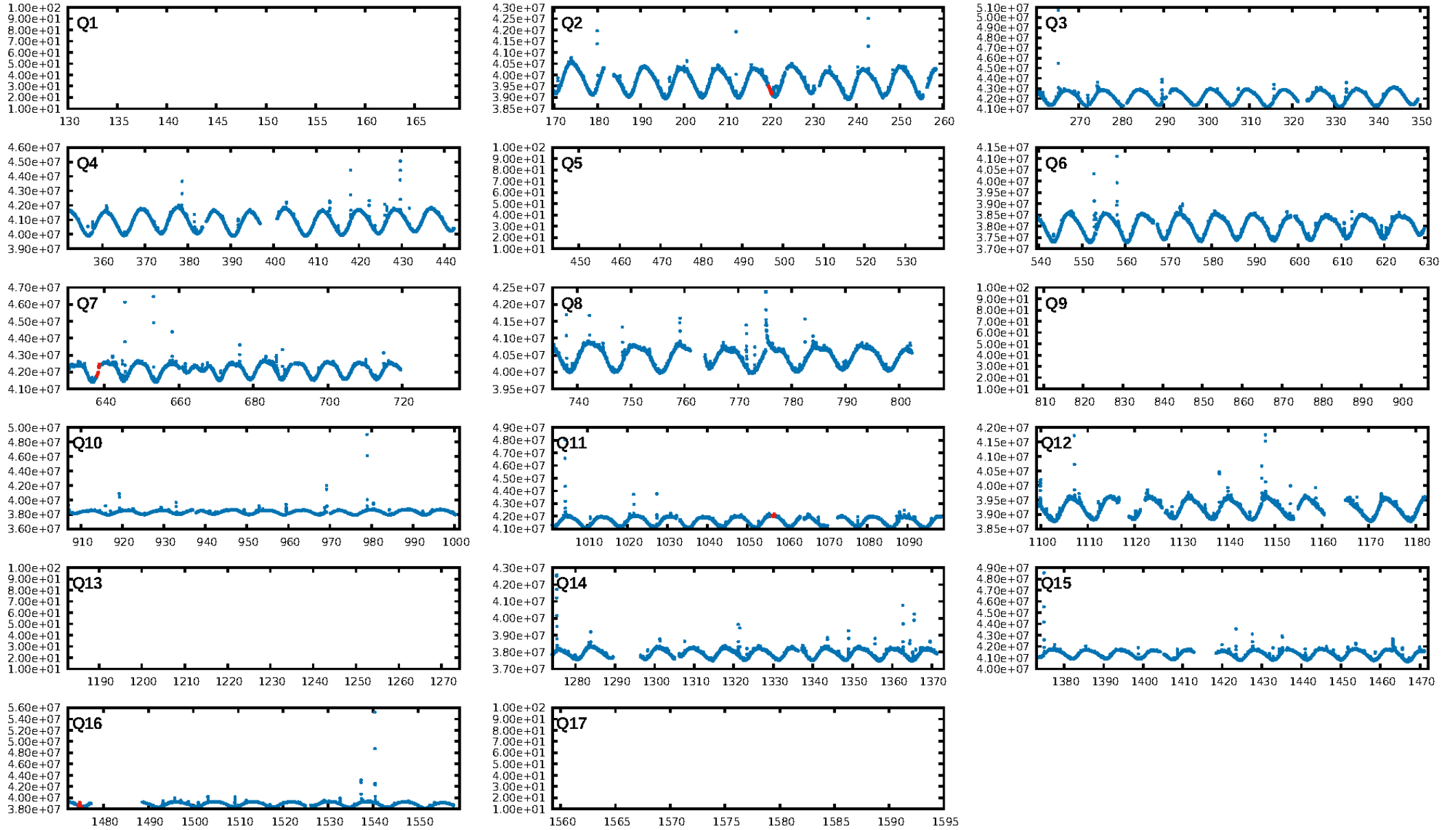
DV Fit Results:

Period = 418.22970 [0.01005] d
Epoch = 220.0136 [0.0134] BKJD
Rp/R* = 0.0388 [0.0360]
a/R* = 355.43 [1404.11]
b = 0.18 [21.41]
Seff = 0.01 [0.00]
Teq = 76 [0] K
Rp = 0.73 [0.68] Re
a = 0.5785 [0.0000] AU
Ag = 332464.83 [622746.25] [0.53 σ]
Teffp = 2825 [1323] K [2.08 σ]

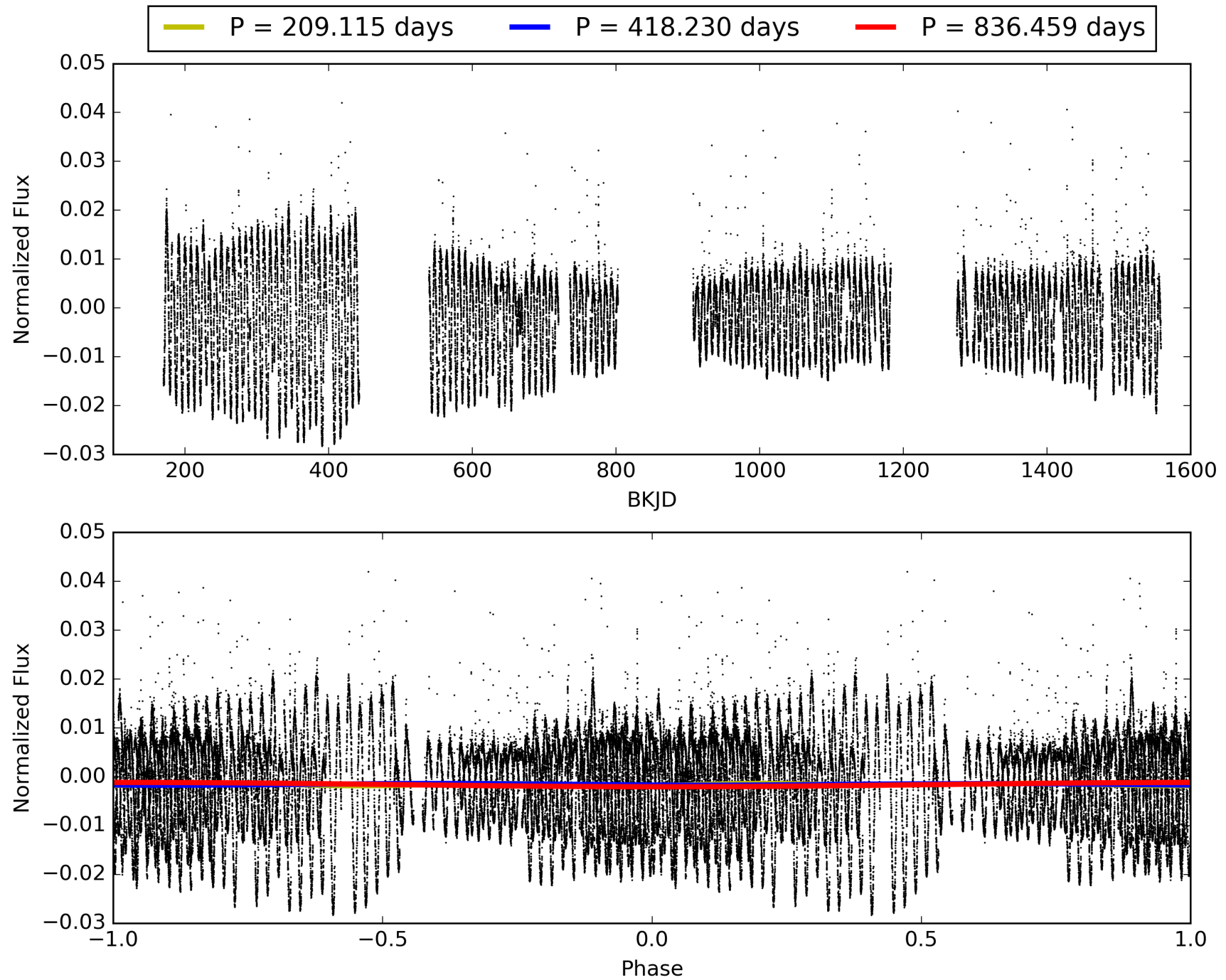
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [66.54 σ]
LongPeriod-sig: 100.0% [23.99 σ]
ModelChiSquare2-sig: 0.7%
ModelChiSquareGof-sig: 53.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.468
Centroid-sig: 37.9%
Centroid-so: 0.340 arcsec [0.50 σ]
OotOffset-rm: 1.496 arcsec [4.35 σ]
KicOffset-rm: 1.035 arcsec [2.67 σ]
OotOffset-st: 1/2/0/0 [3]
KicOffset-st: 1/2/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.67 [2/3]

TCE 005342558-03, PDC Light Curves

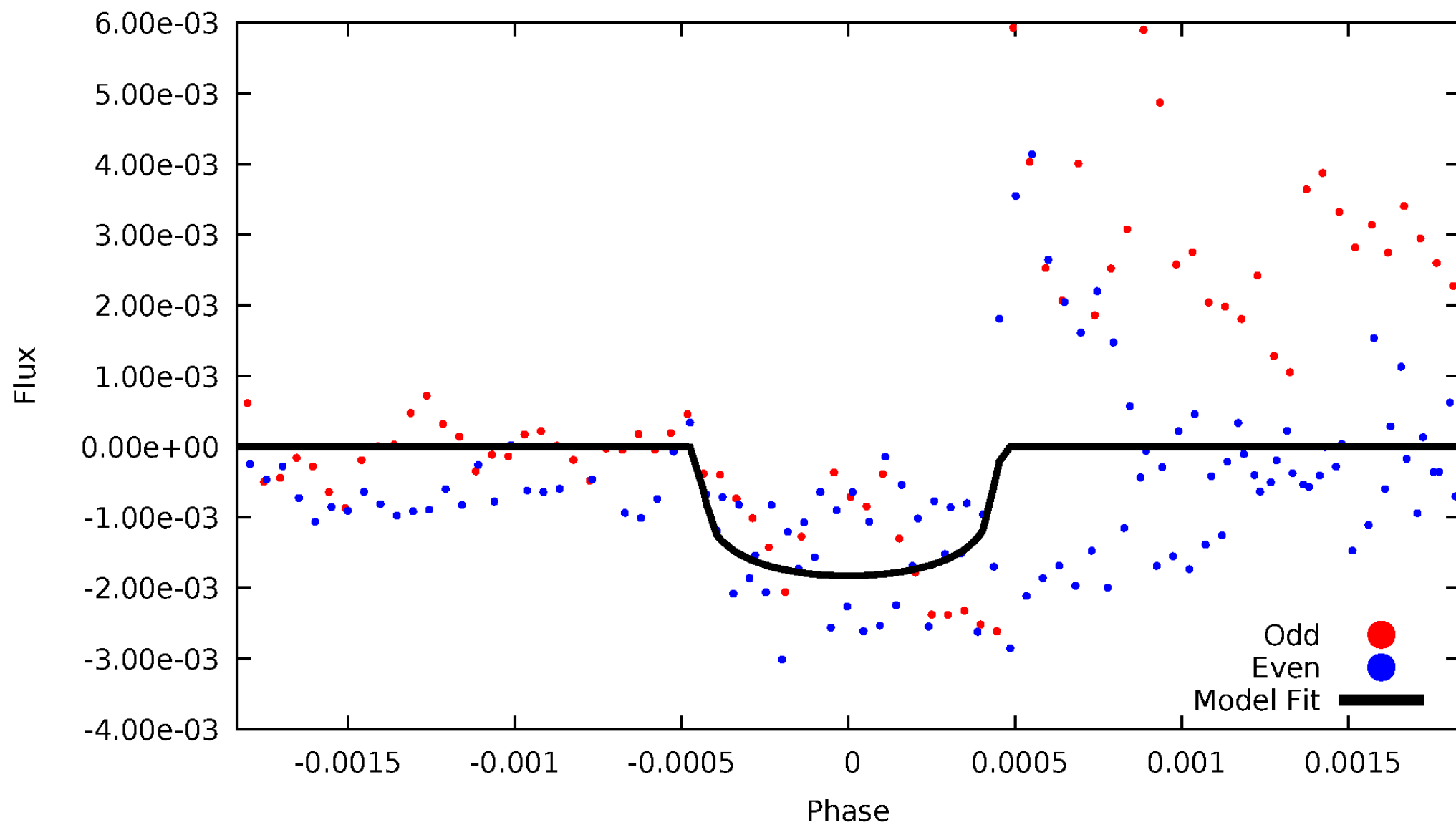


TCE 005342558-03



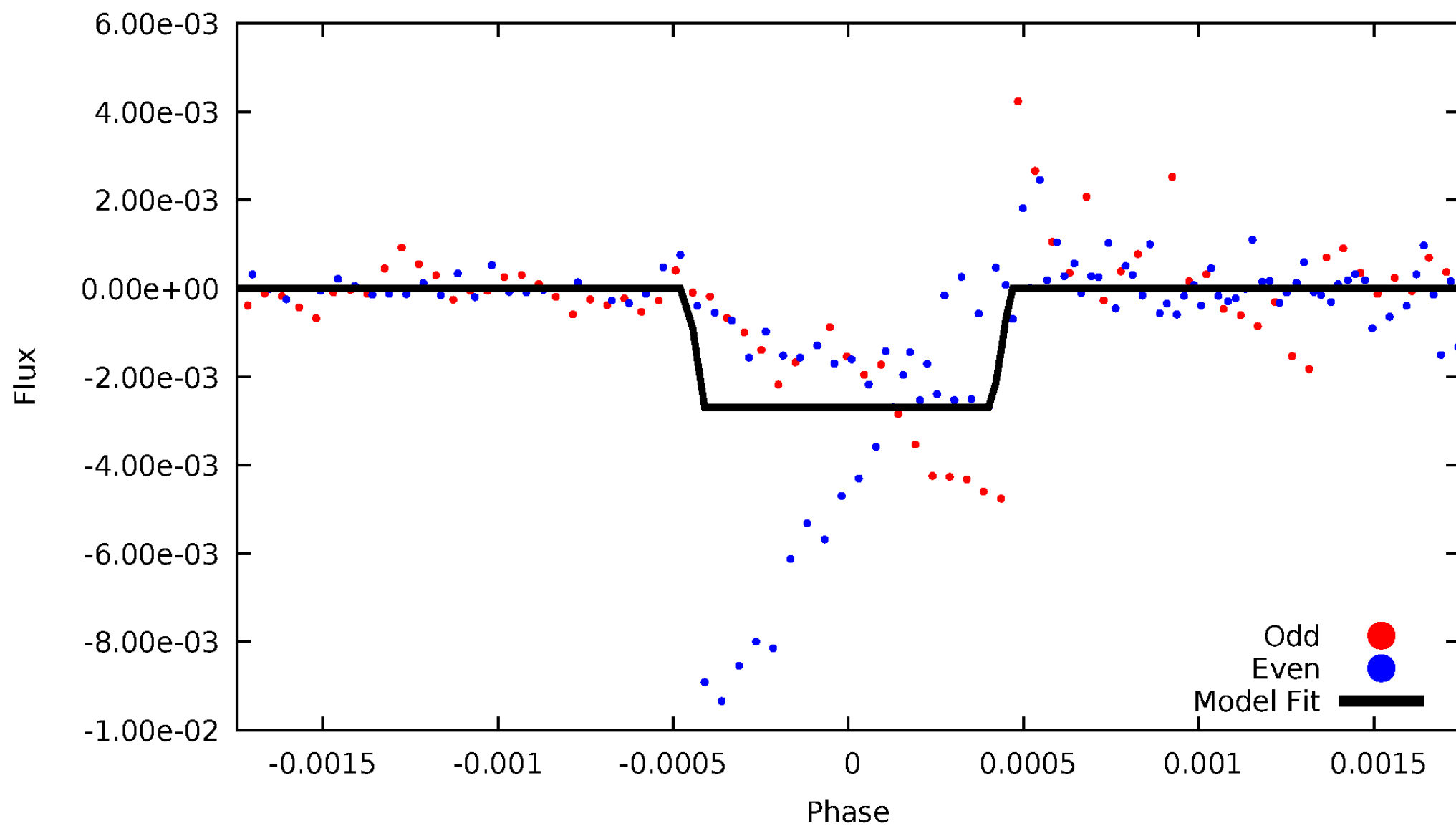
DV Odd/Even

TCE 005342558-03



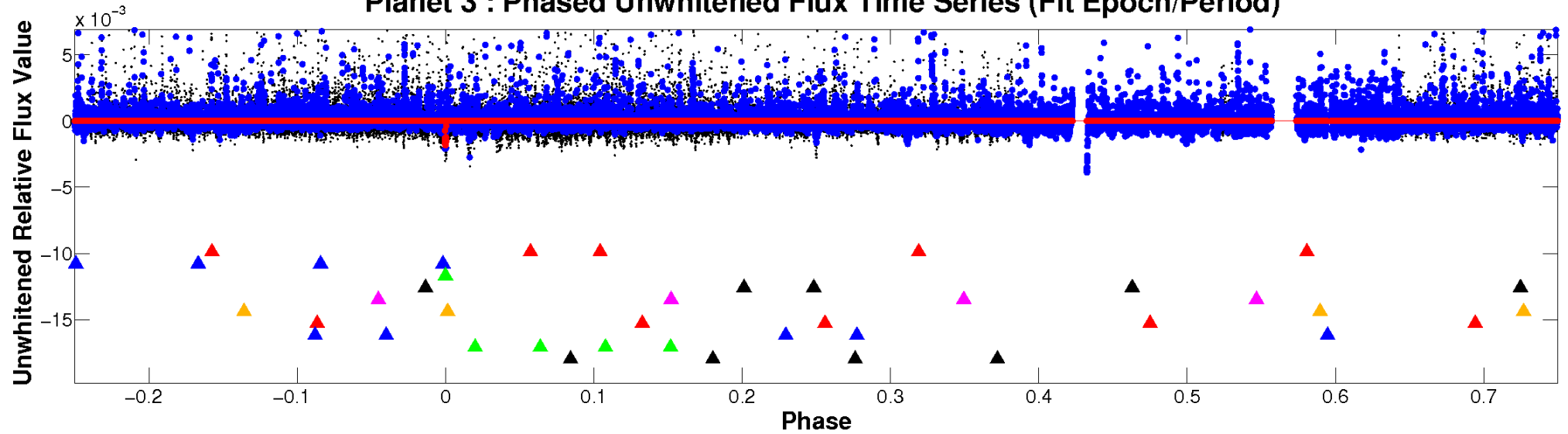
ALT Odd/Even

TCE 005342558-03

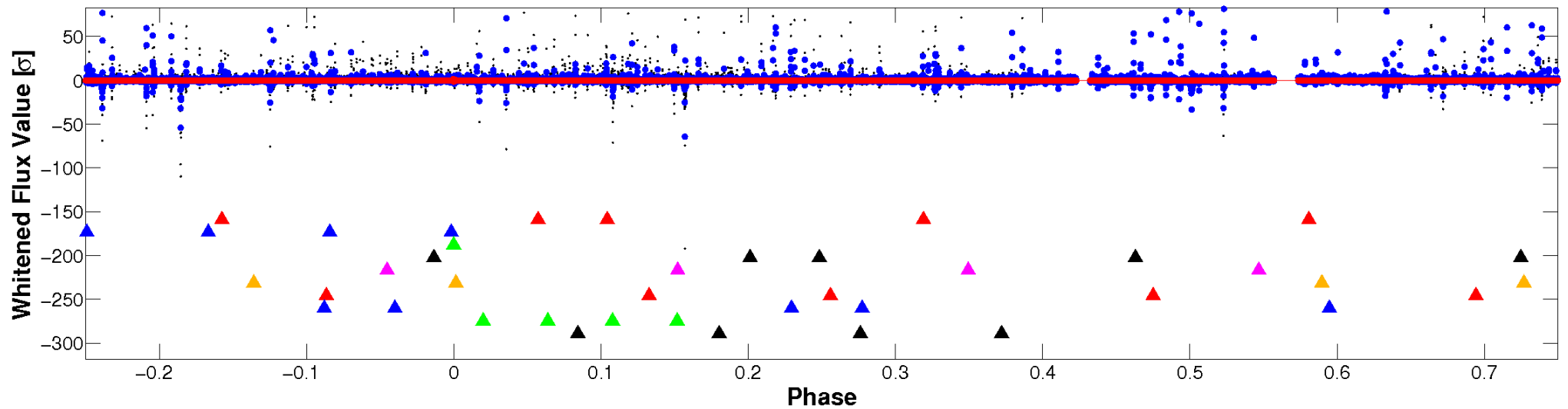


Non-Whitened Vs. Whitened Light Curve

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

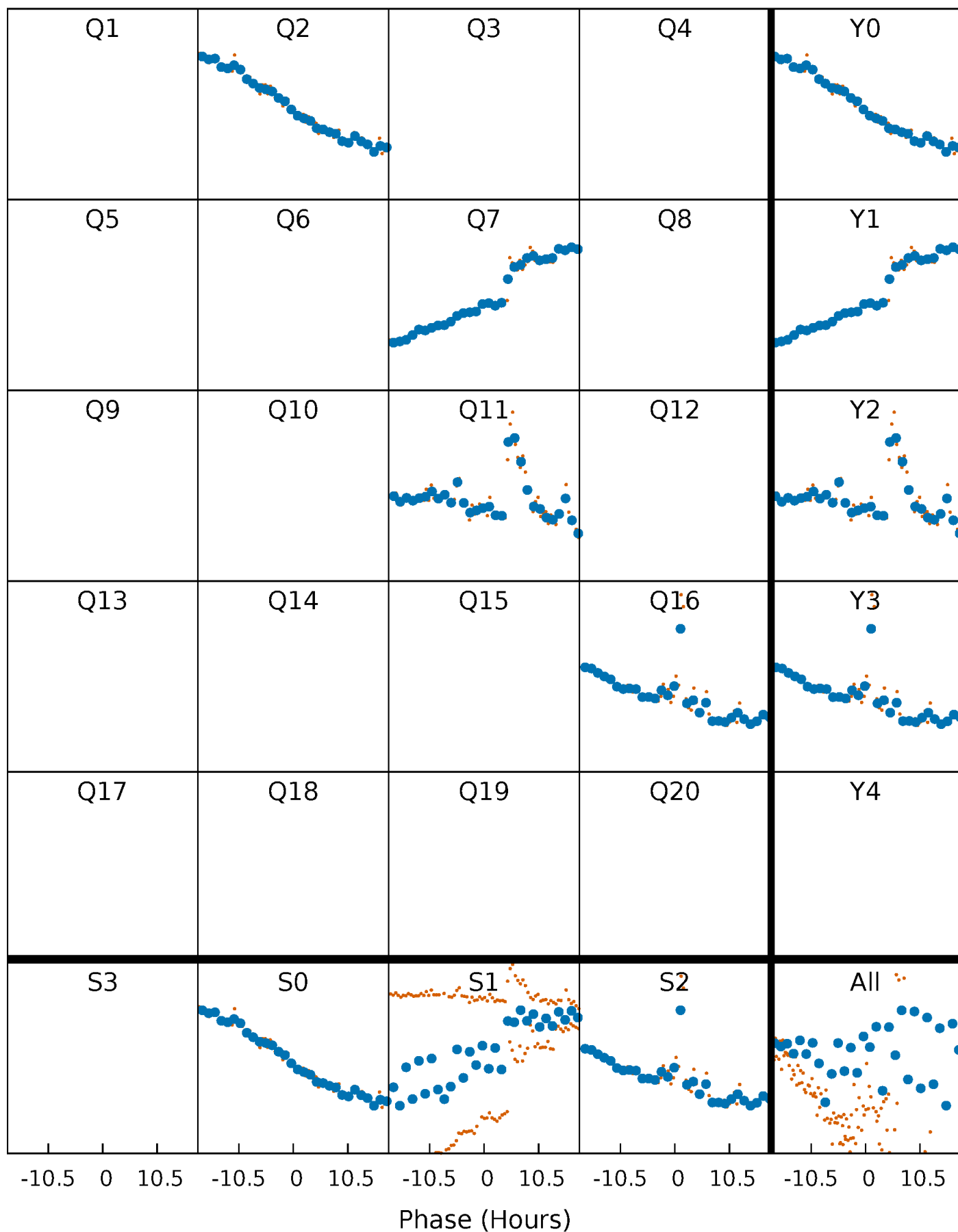


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



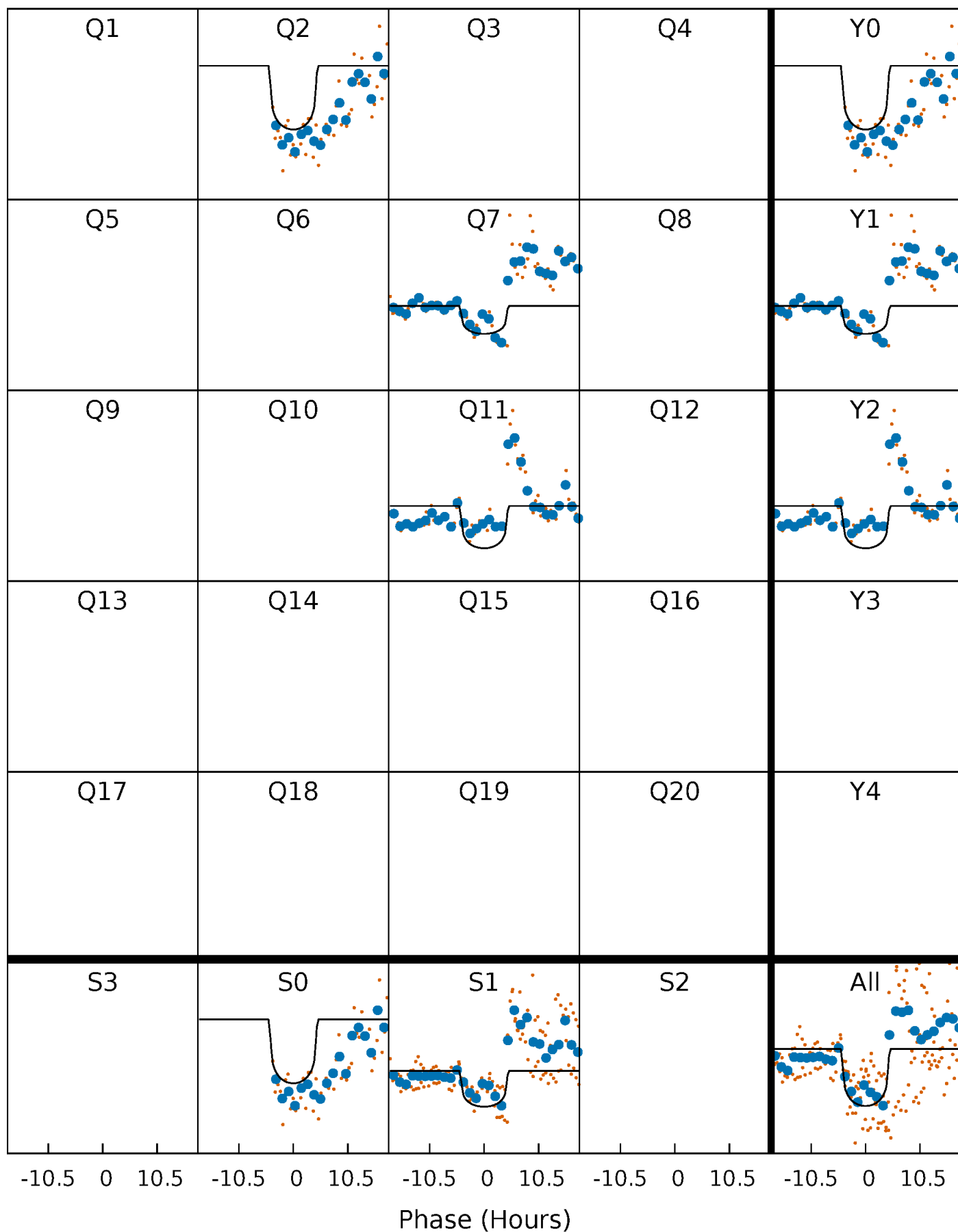
PDC Quarter-Phased Transit Curves

TCE 005342558-03 $P=418.229695$ Days $T_0=220.013594$ (BKJD)



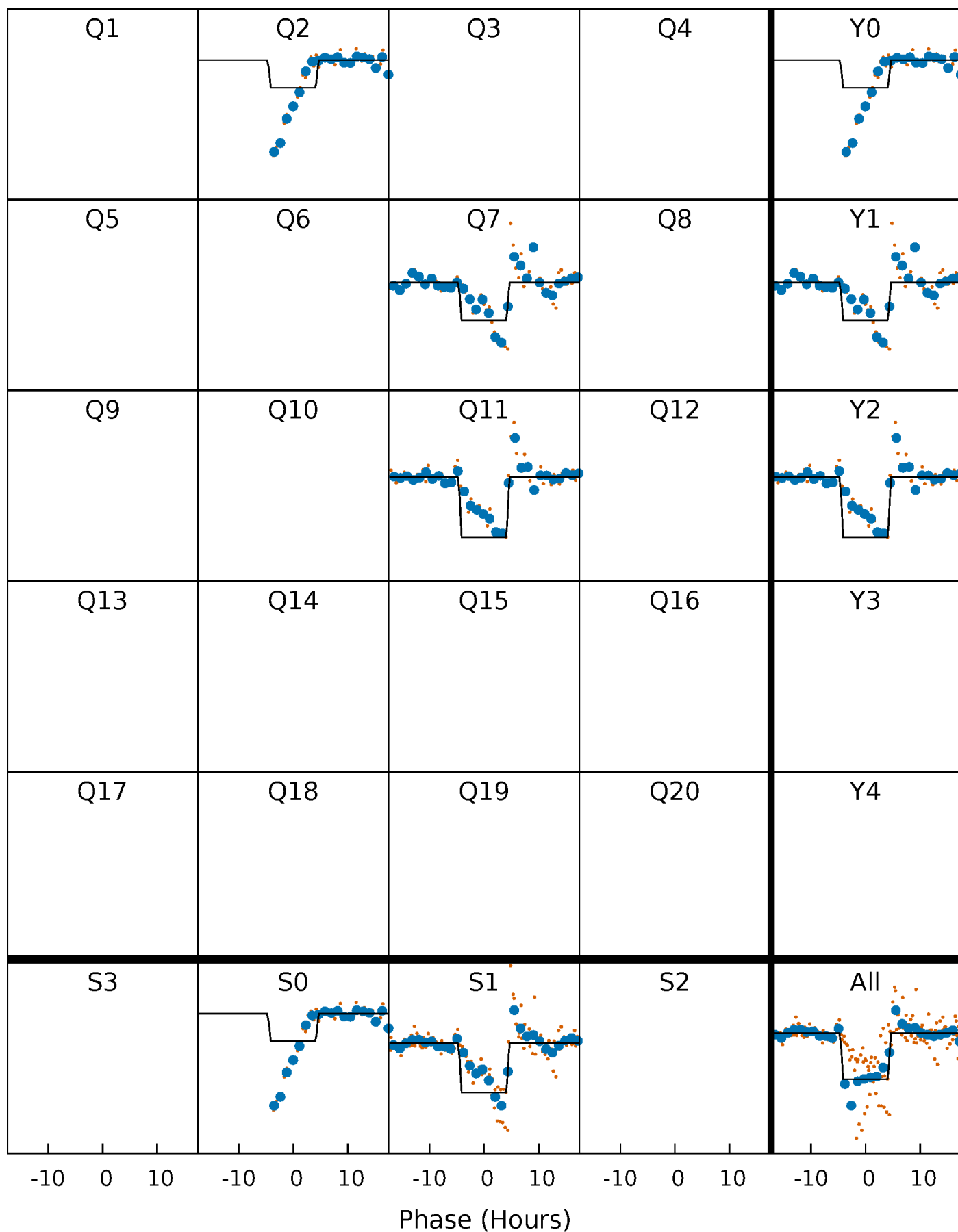
DV Quarter-Phased Transit Curves

TCE 005342558-03 $P=418.229695$ Days $T_0=220.013594$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

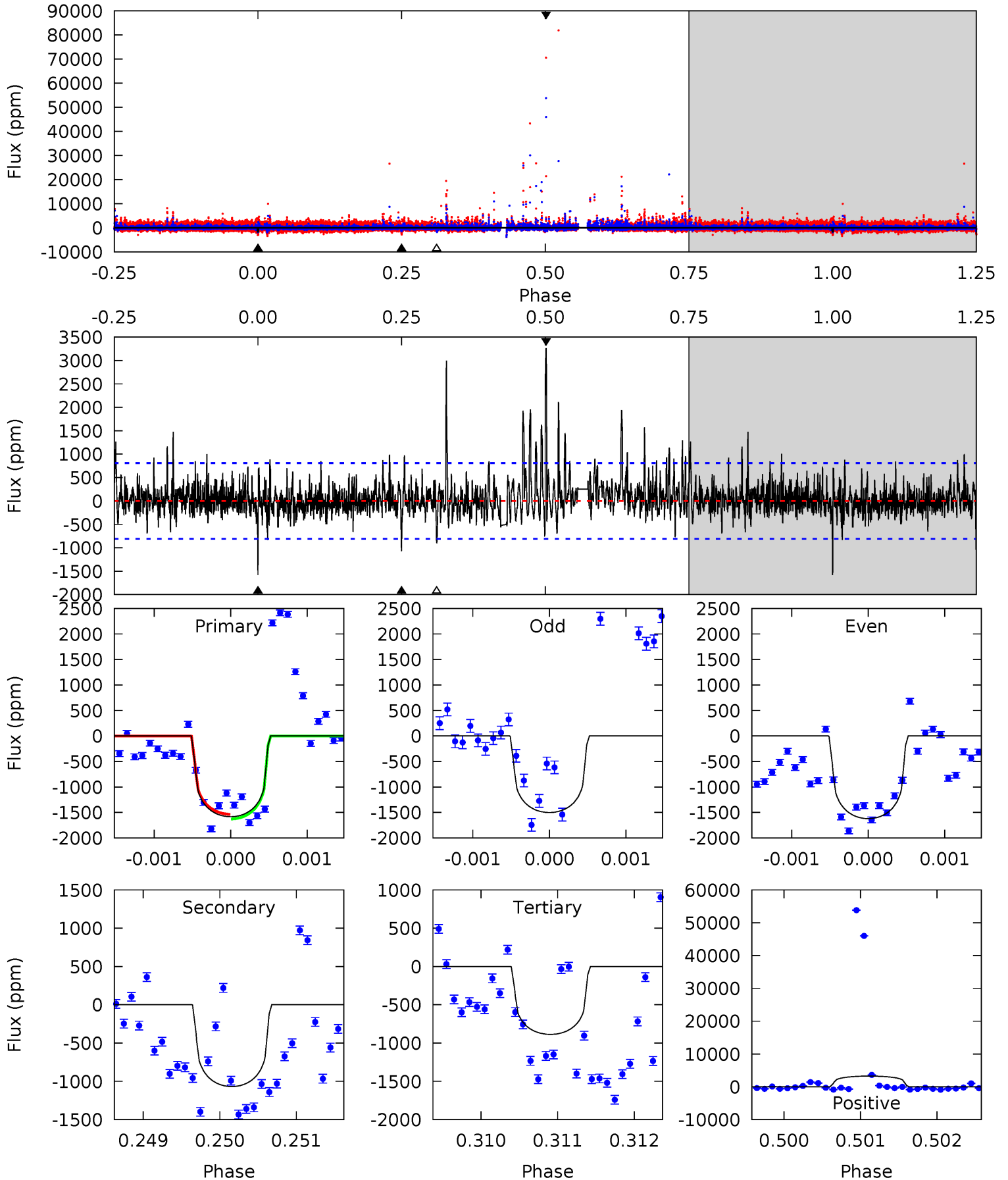
TCE 005342558-03 P=418.227295 Days $T_0=220.020224$ (BKJD)



DV Model-Shift Uniqueness Test

005342558-03, P = 418.229695 Days, E = 220.013594 Days

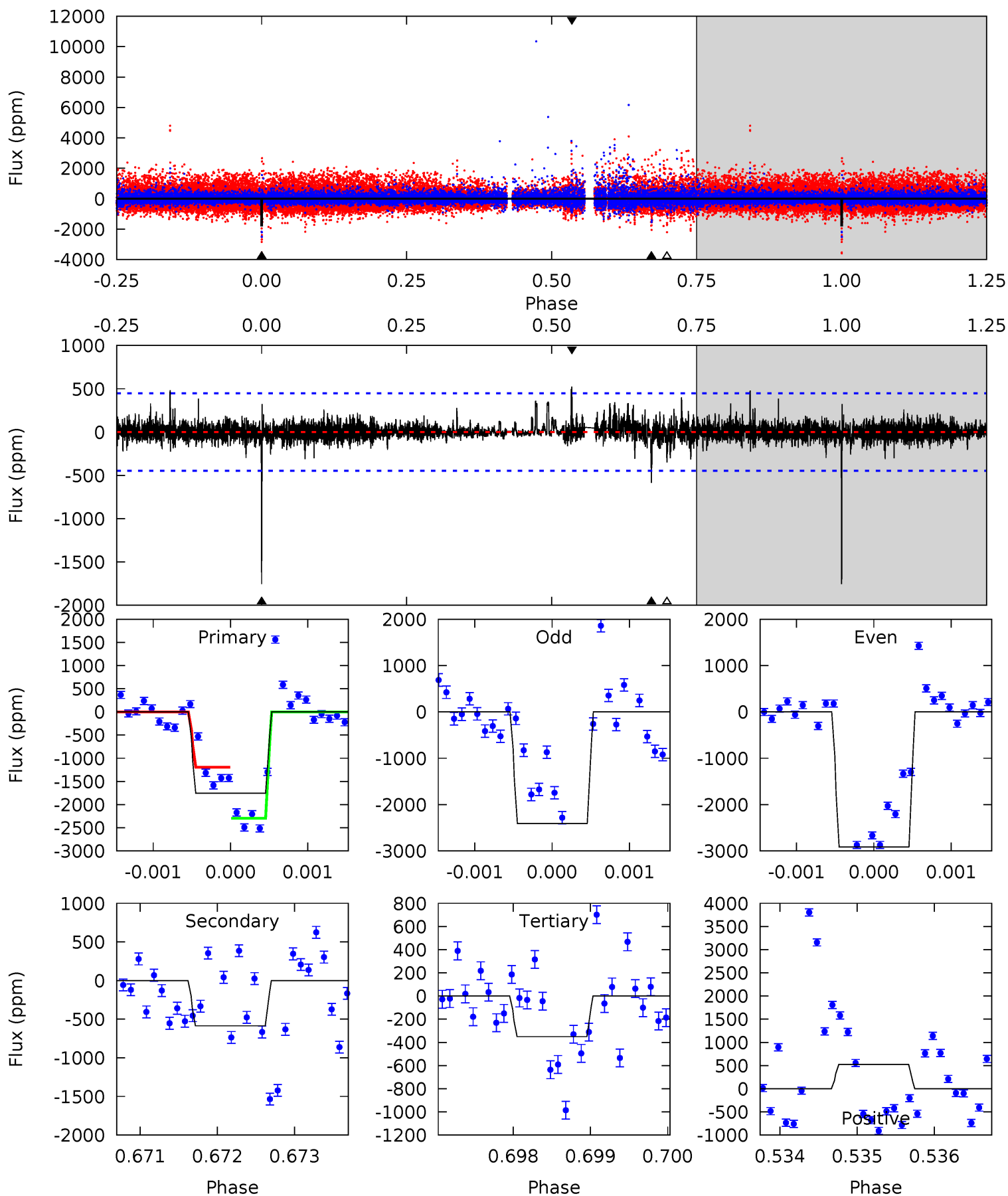
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 10.7 | 7.21 | 5.99 | 22.0 | 5.46 | 3.31 | 2.14 | 4.69 | -11.3 | 1.22 | -14.8 | 0.21 | 1.05 | 0.67 | 0.31 |



Alt Model-Shift Uniqueness Test

005342558-03, P = 418.227295 Days, E = 220.020224 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 21.5 | 7.17 | 4.29 | 6.42 | 5.47 | 3.33 | 0.85 | 17.2 | 15.1 | 2.88 | 0.75 | 3.20 | 1.19 | 0.23 | 6.77 |



Stellar Parameters For KIC 005342558

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|----------------------------|----------------------------|----------------------------|----------------------------|---|
| | 3154^{+1}_{-1} | $5.131^{+-1.000}_{-1.000}$ | $0.000^{+-1.000}_{-1.000}$ | $0.173^{+-1.000}_{-1.000}$ | $0.147^{+-1.000}_{-1.000}$ | $40.220^{+-1.000}_{-1.000}$ |
| | +0%/-0% | +19%/-19% | +inf%/-inf% | +578%/-578% | +680%/-680% | +2%/-2% |
| Source | PHO54 | PHO54 | PHO54 | BTSL | | |

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

Secondary Eclipse Parameters for KIC 005342558-03 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-----------------|------------------------|------------------|-----------------------|-------------------------------|
| DV | -1068 ± 148 | $0.86^{+0.83}_{-0.55}$ | 107^{+10}_{-9} | 2879^{+1152}_{-407} | $275162^{+1849877}_{-190642}$ |
| Alt. | -586 ± 82 | $1.07^{+0.86}_{-0.59}$ | 108^{+9}_{-9} | 2545^{+689}_{-327} | $97845^{+430360}_{-63558}$ |

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

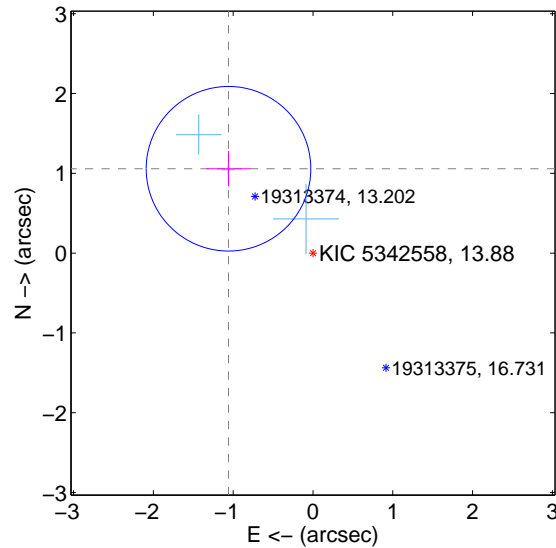
Supplemental centroid analysis for 005342558-03. Kepler magnitude: 13.88. Transit SNR 8.72

There are 3 quarters with good PRF difference image offsets

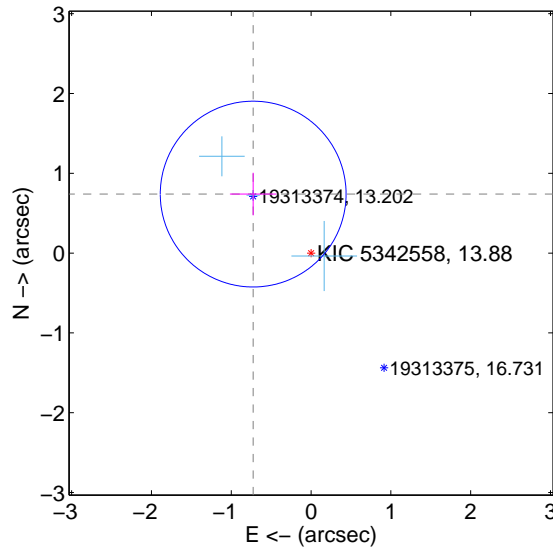
The direct PRF centroid is offset from the target star catalog position by about 0.42 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 1.496 \pm 0.344 | 4.35 | 1.058 \pm 0.276 | 1.057 \pm 0.221 |
| PRF-fit source offset from KIC position | 1.035 \pm 0.388 | 2.67 | 0.725 \pm 0.291 | 0.739 \pm 0.267 |
| photometric centroid source offset | 0.34 \pm 0.67 | 0.50 | 0.16 \pm 0.89 | 0.30 \pm 0.60 |

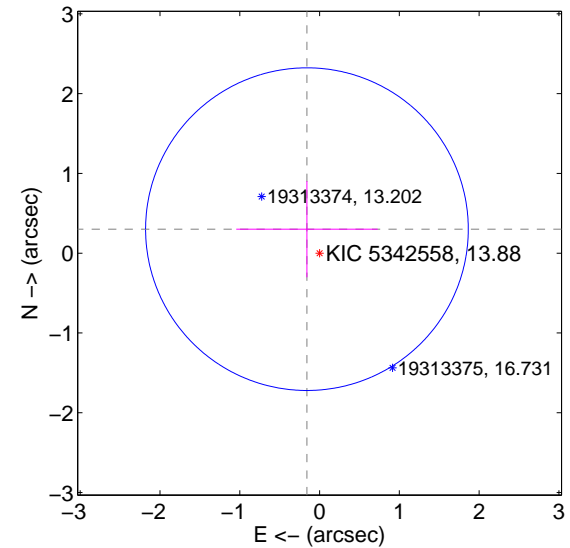
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

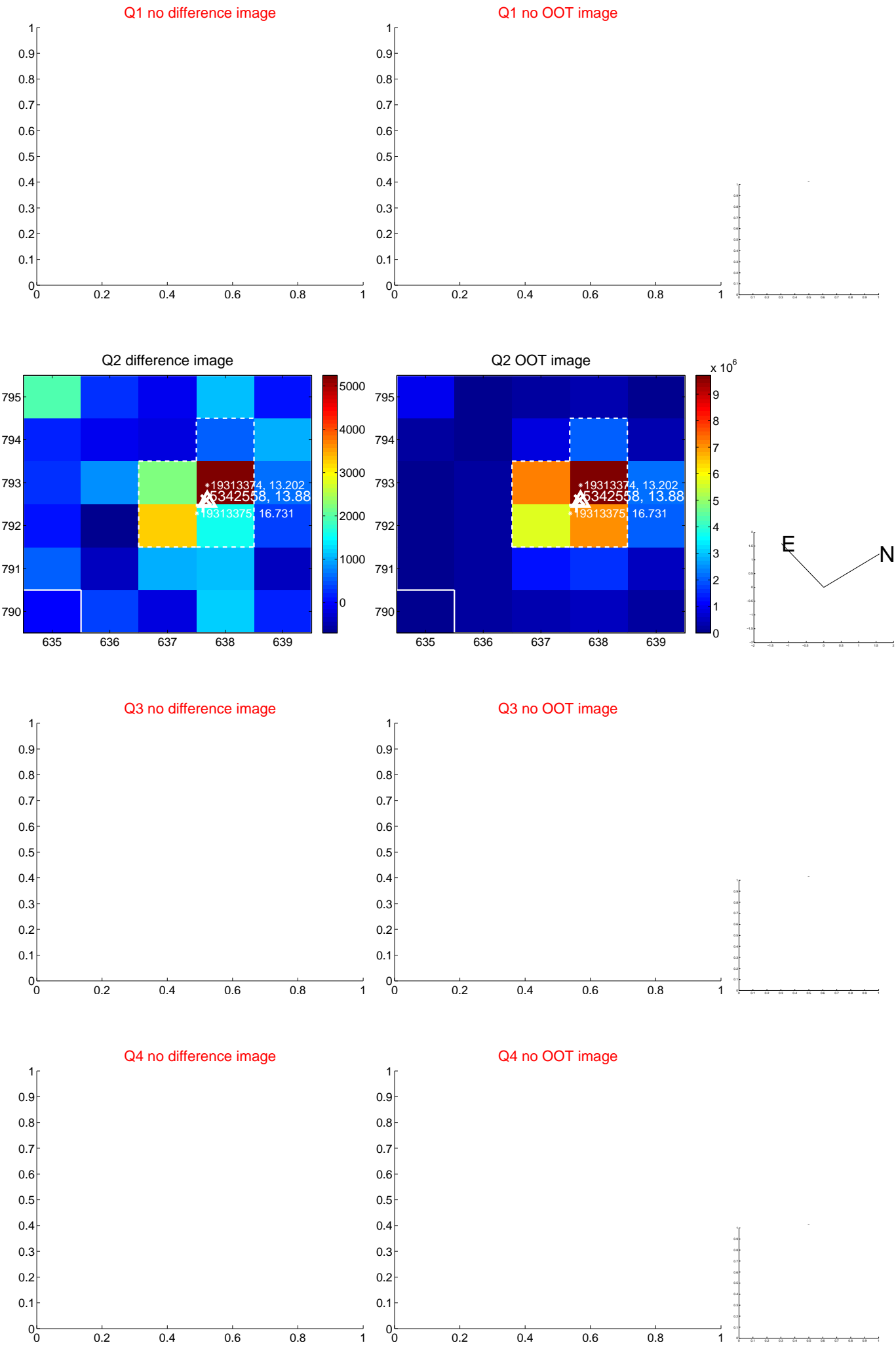


offset from photometric centroids

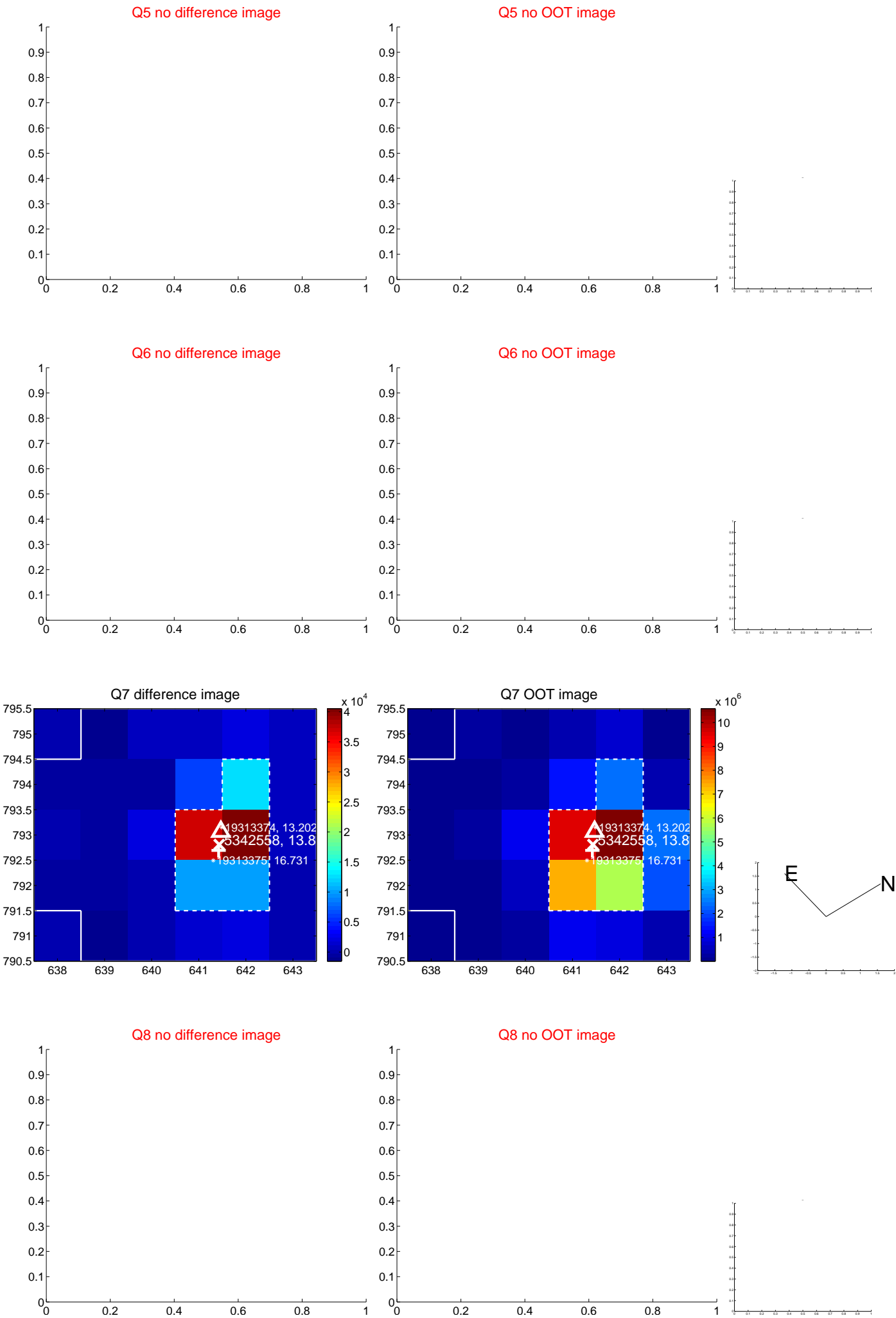


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

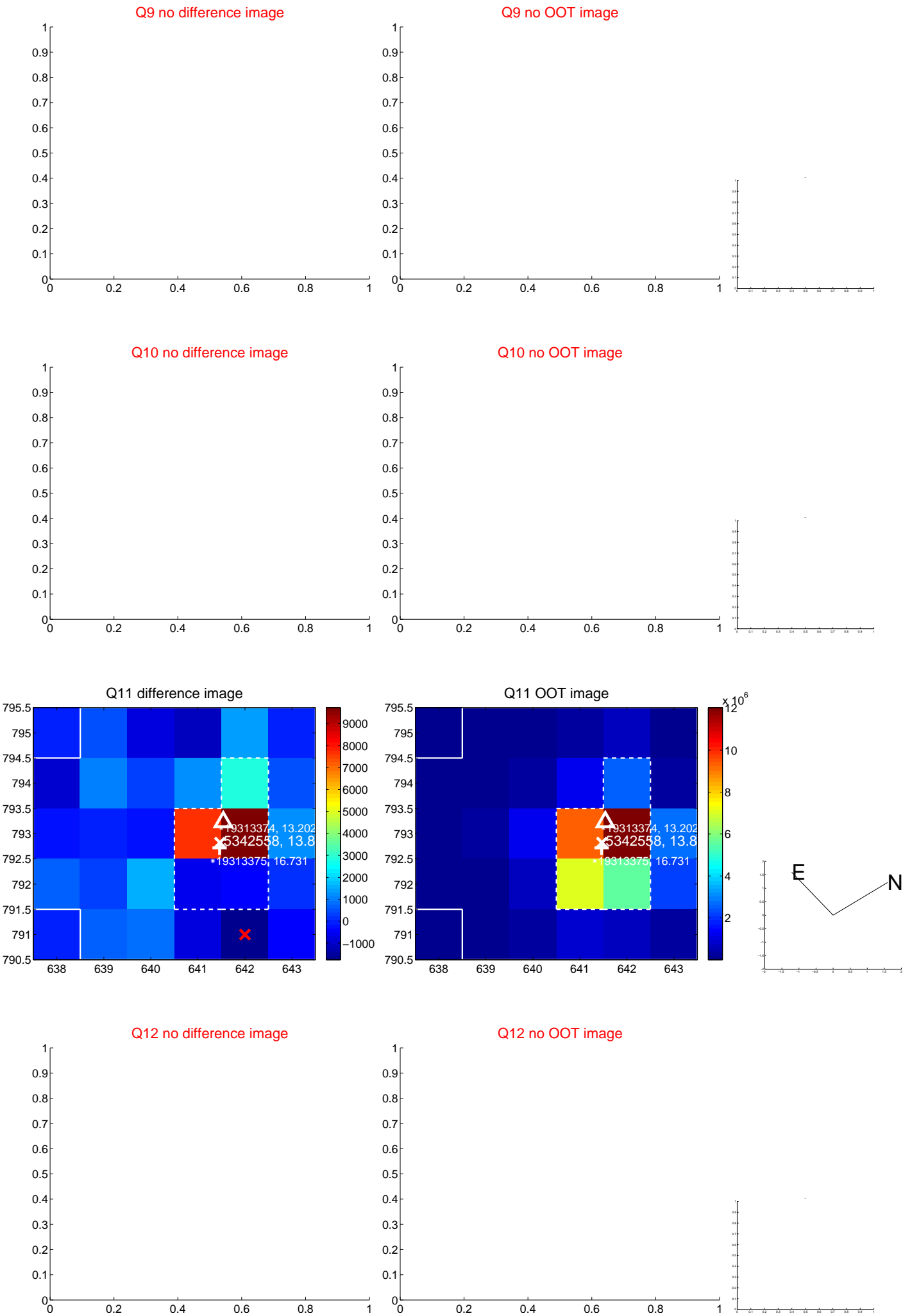
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



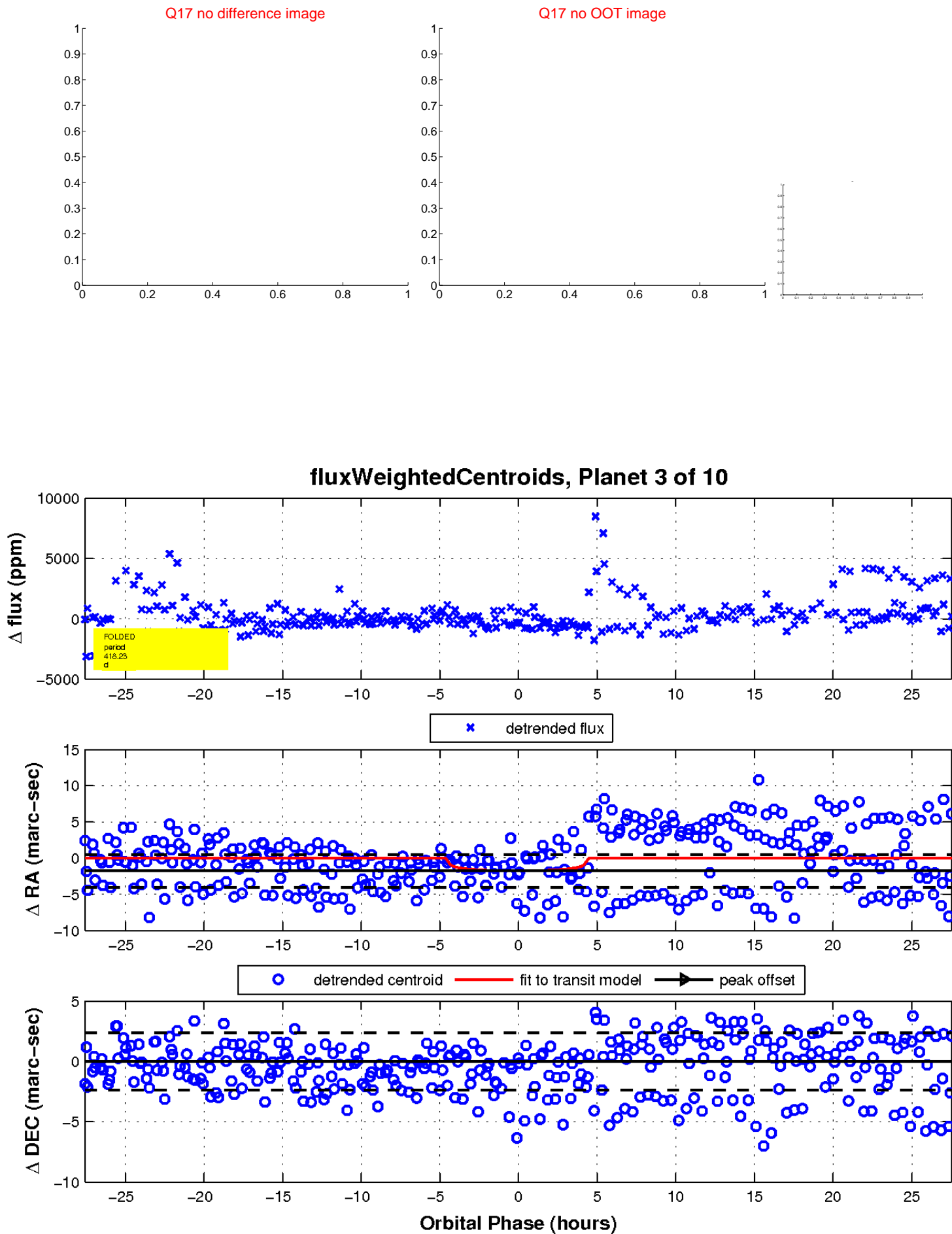
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

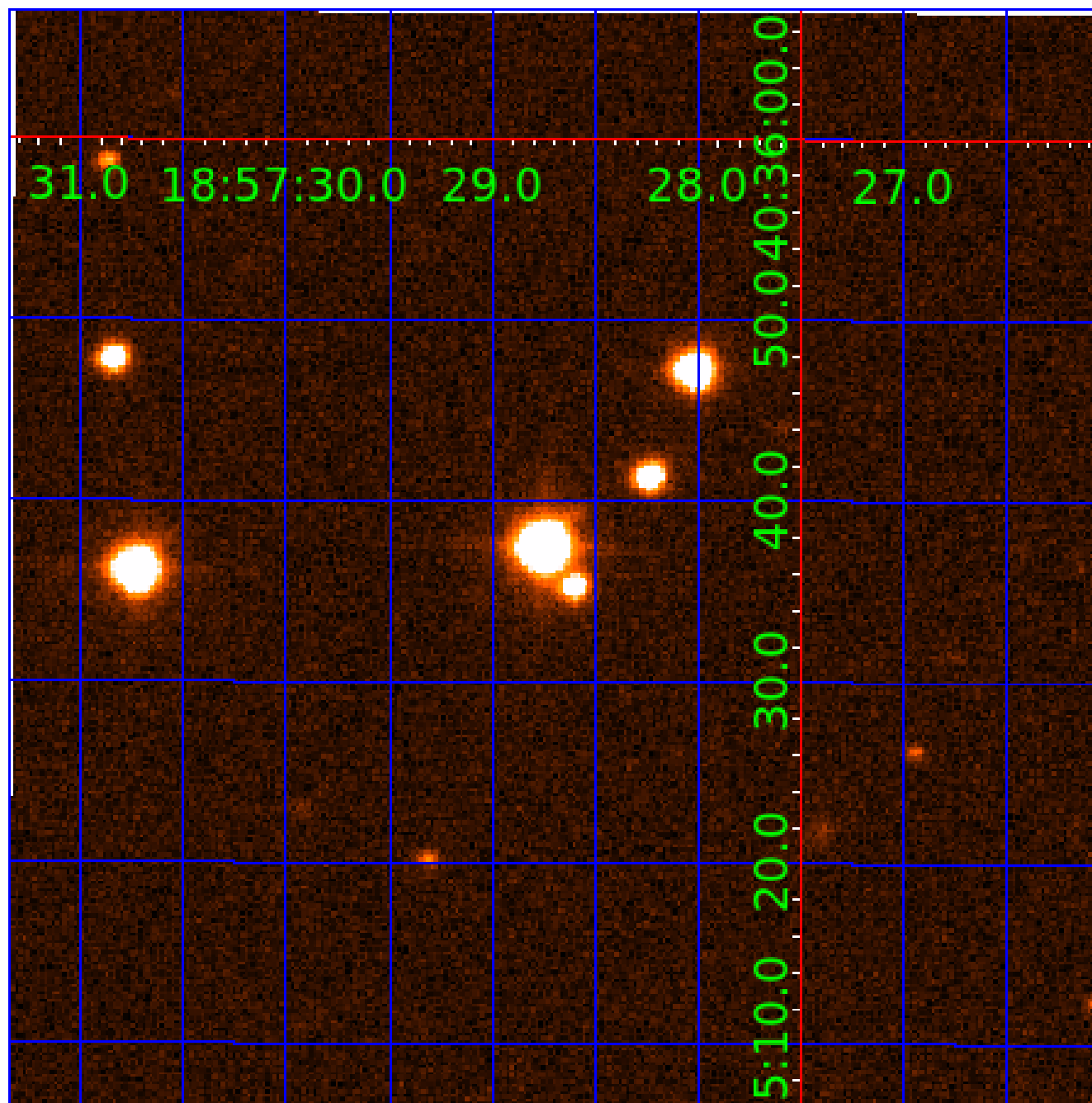


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 005342558-01 | OBS | No | 308.762826 | 263.627416 | 1701.3 | 10.318 | 18.7 | 8.5 | 0.17 | 3154 | 0.71 | 0.01 |
| 005342558-02 | OBS | No | 383.720665 | 219.310793 | 639.8 | 8.386 | 11.6 | 3.2 | 0.17 | 3154 | 0.45 | 0.01 |
| 005342558-03 | OBS | No | 418.229695 | 220.013594 | 1829.1 | 9.198 | 17.9 | 8.7 | 0.17 | 3154 | 0.73 | 0.01 |
| 005342558-05 | OBS | No | 335.694048 | 448.703570 | 1571.6 | 3.803 | 13.0 | 8.6 | 0.17 | 3154 | 0.68 | 0.01 |
| 005342558-06 | OBS | No | 360.819671 | 220.624153 | 1216.7 | 3.561 | 12.5 | 6.8 | 0.17 | 3154 | 0.67 | 0.01 |
| 005342558-07 | OBS | No | 326.552624 | 275.507809 | 512.0 | 5.172 | 11.2 | 2.8 | 0.17 | 3154 | 0.44 | 0.01 |
| 005342558-08 | OBS | No | 285.507525 | 315.963589 | 1141.7 | 7.857 | 11.0 | 7.5 | 0.17 | 3154 | 0.59 | 0.01 |
| 005342558-09 | OBS | No | 436.602709 | 228.377019 | 1074.0 | 15.912 | 11.2 | 6.4 | 0.17 | 3154 | 0.57 | 0.01 |
| 005342558-10 | OBS | No | 378.103945 | 375.659854 | 1003.0 | 7.162 | 10.8 | 6.7 | 0.17 | 3154 | 0.57 | 0.01 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005342558-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS |
| 005342558-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-09 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS |
| 005342558-10 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_KIC_POS |

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

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

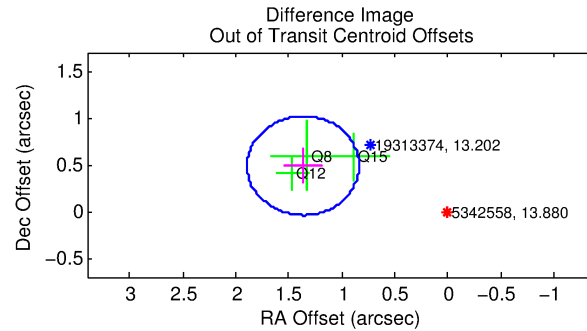
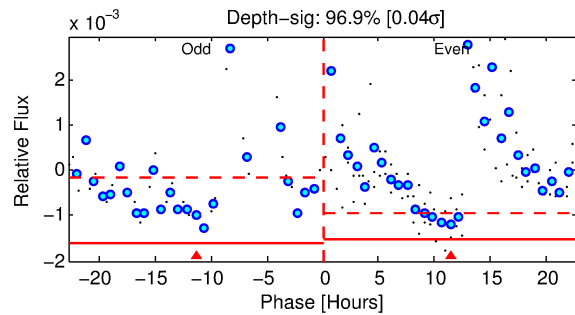
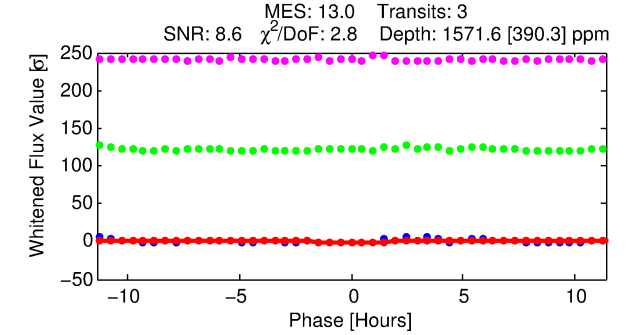
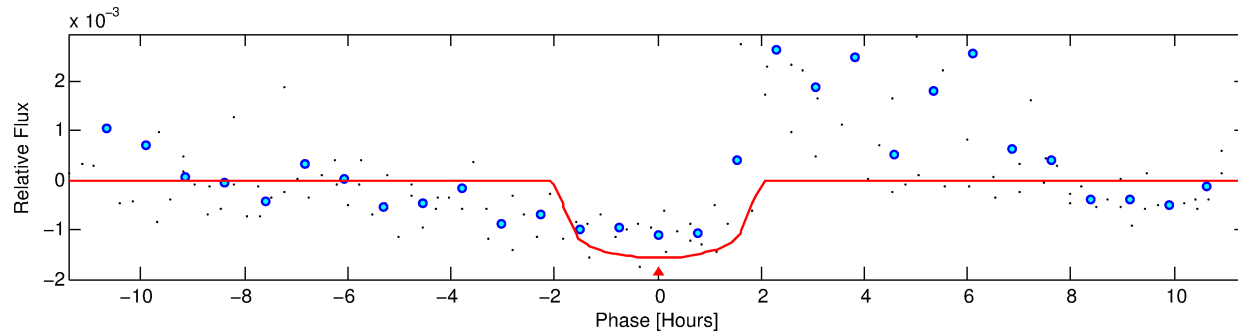
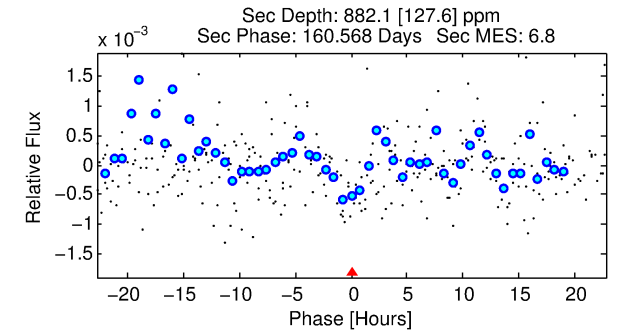
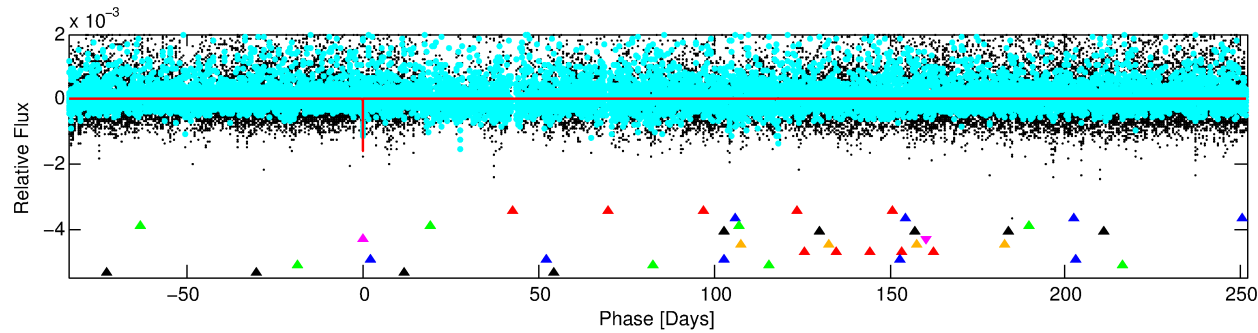
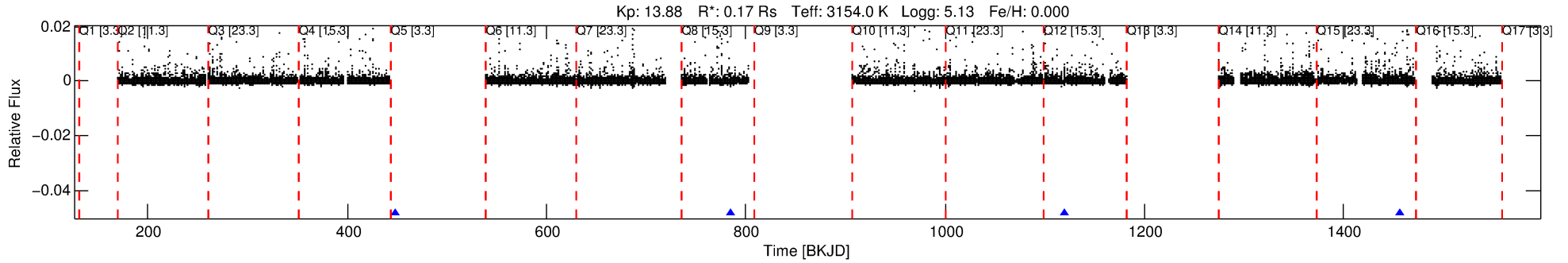
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005342558-05

No Significant Match Found

DV One-Page Summary

KIC: 5342558 Candidate: 5 of 10 Period: 335.694 d



DV Fit Results:

Period = 335.69405 [0.01166] d
Epoch = 448.7036 [0.0229] BKJD
Rp/R* = 0.0358 [0.0941]
a/R* = 698.54 [7994.45]
b = 0.00 [110685.81]
Seff = 0.01 [0.00]
Teq = 82 [0] K
Rp = 0.68 [1.78] Re
a = 0.4997 [0.0000] AU
Ag = 264520.38 [1388551.97] [0.19σ]
Teffp = 2871 [3767] K [0.74σ]

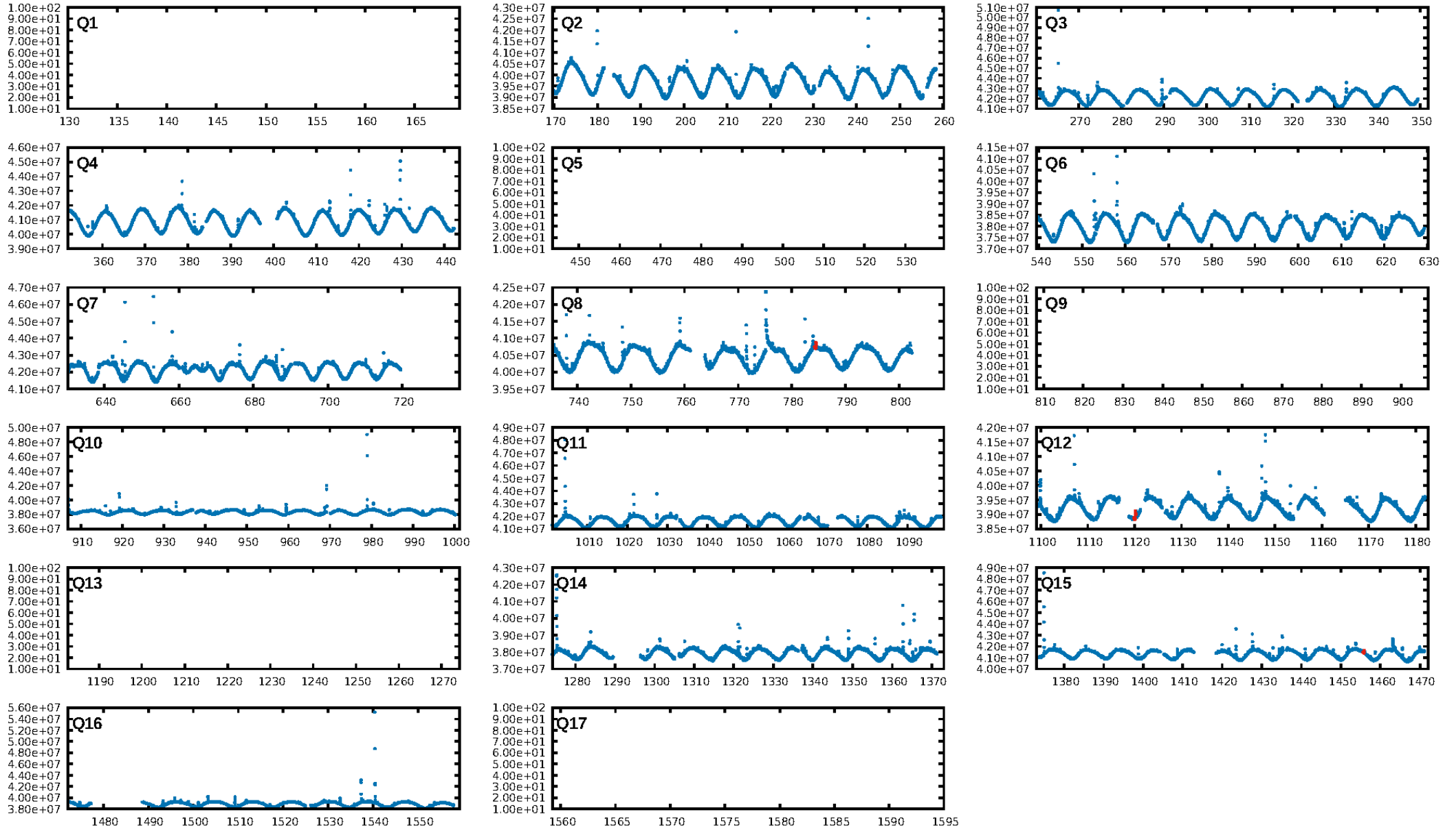
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [34.18σ]
LongPeriod-sig: 100.0% [115.75σ]
ModelChiSquare2-sig: 67.1%
ModelChiSquareGof-sig: 89.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.285
Centroid-sig: 92.0%
Centroid-so: 0.969 arcsec [0.87σ]
OotOffset-rm: 1.447 arcsec [8.22σ]
KicOffset-rm: 0.815 arcsec [4.64σ]
OotOffset-st: 0/1/2/0 [3]
KicOffset-st: 0/1/2/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

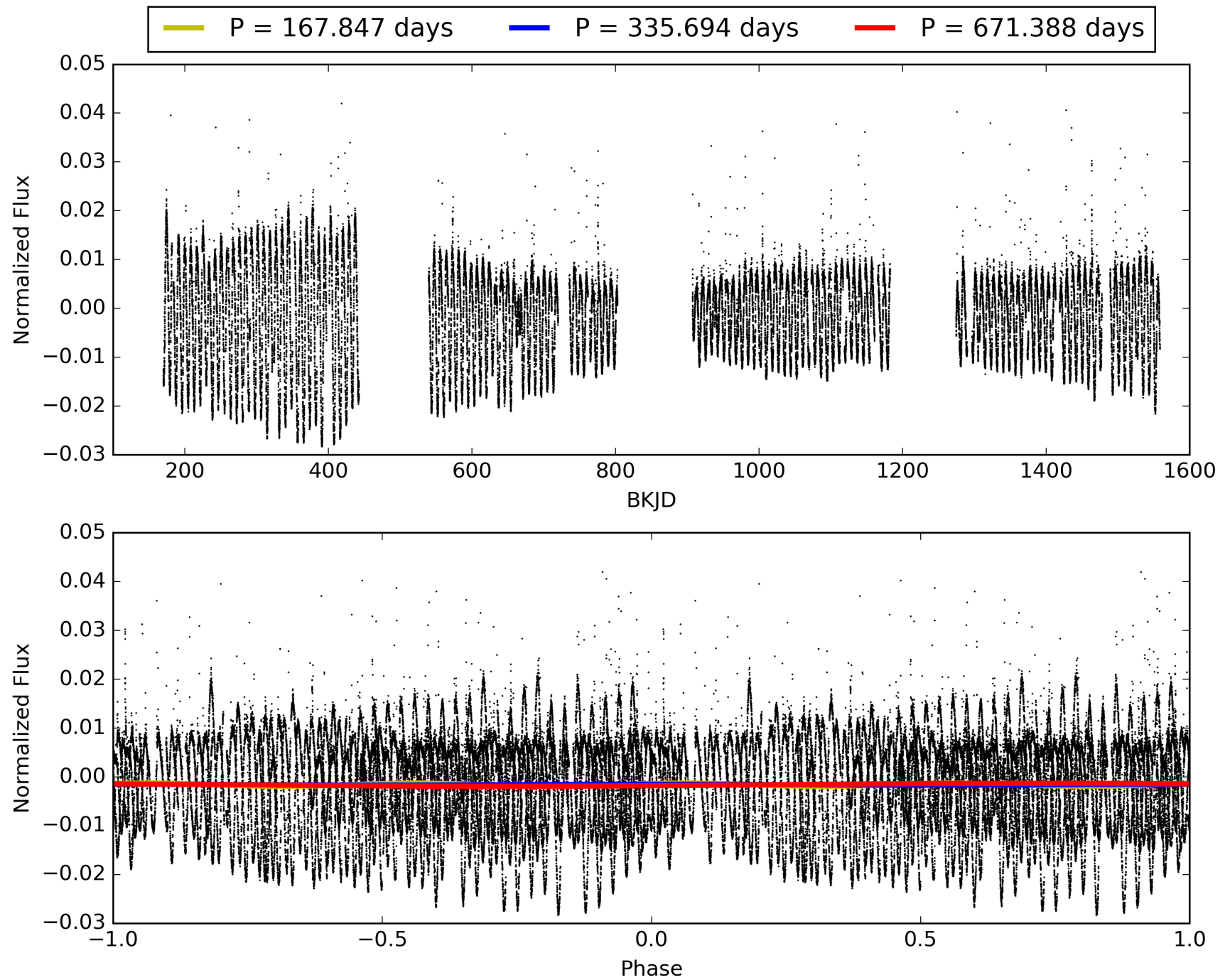
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:42:51 Z

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

TCE 005342558-05, PDC Light Curves

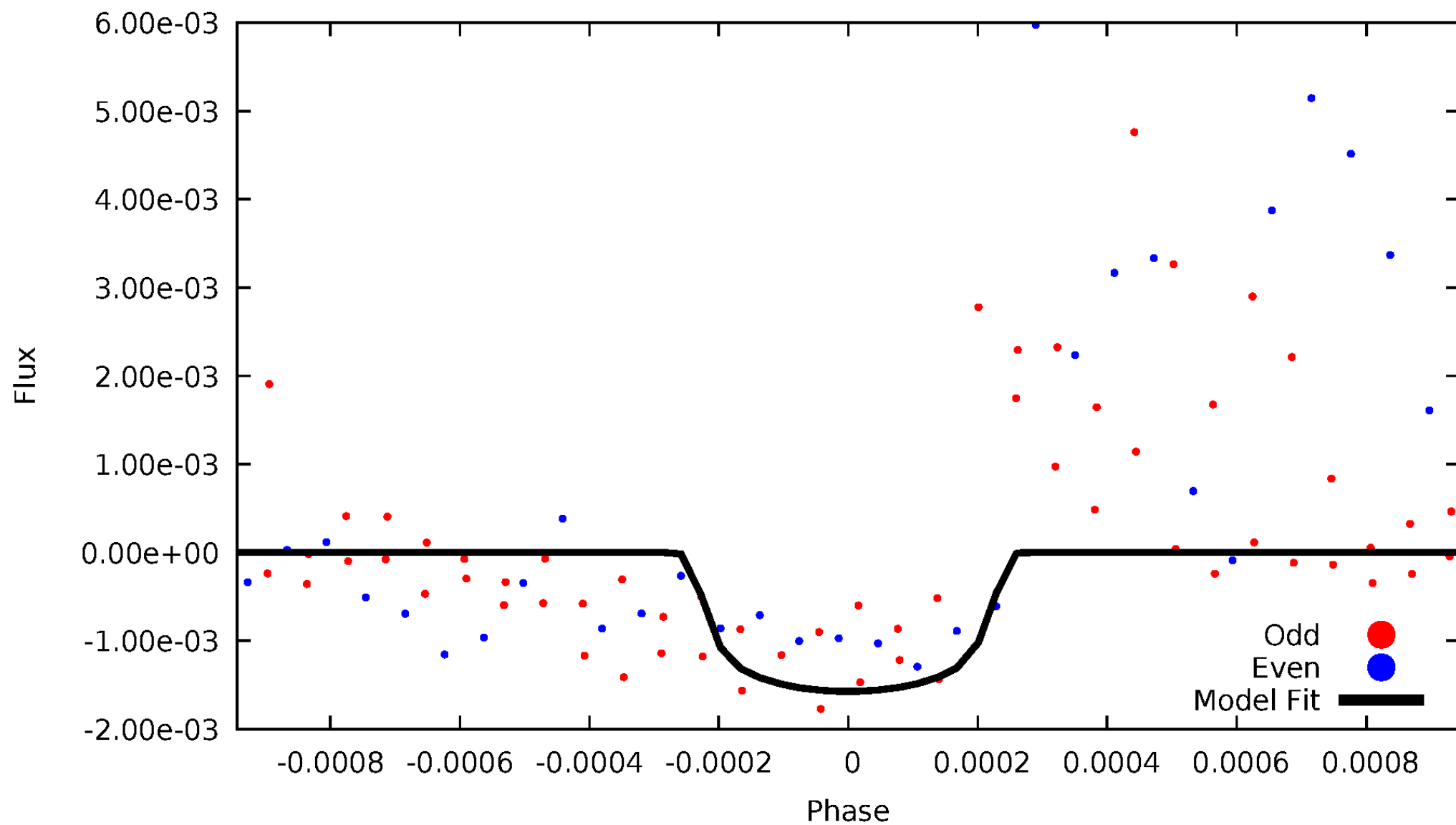


TCE 005342558-05



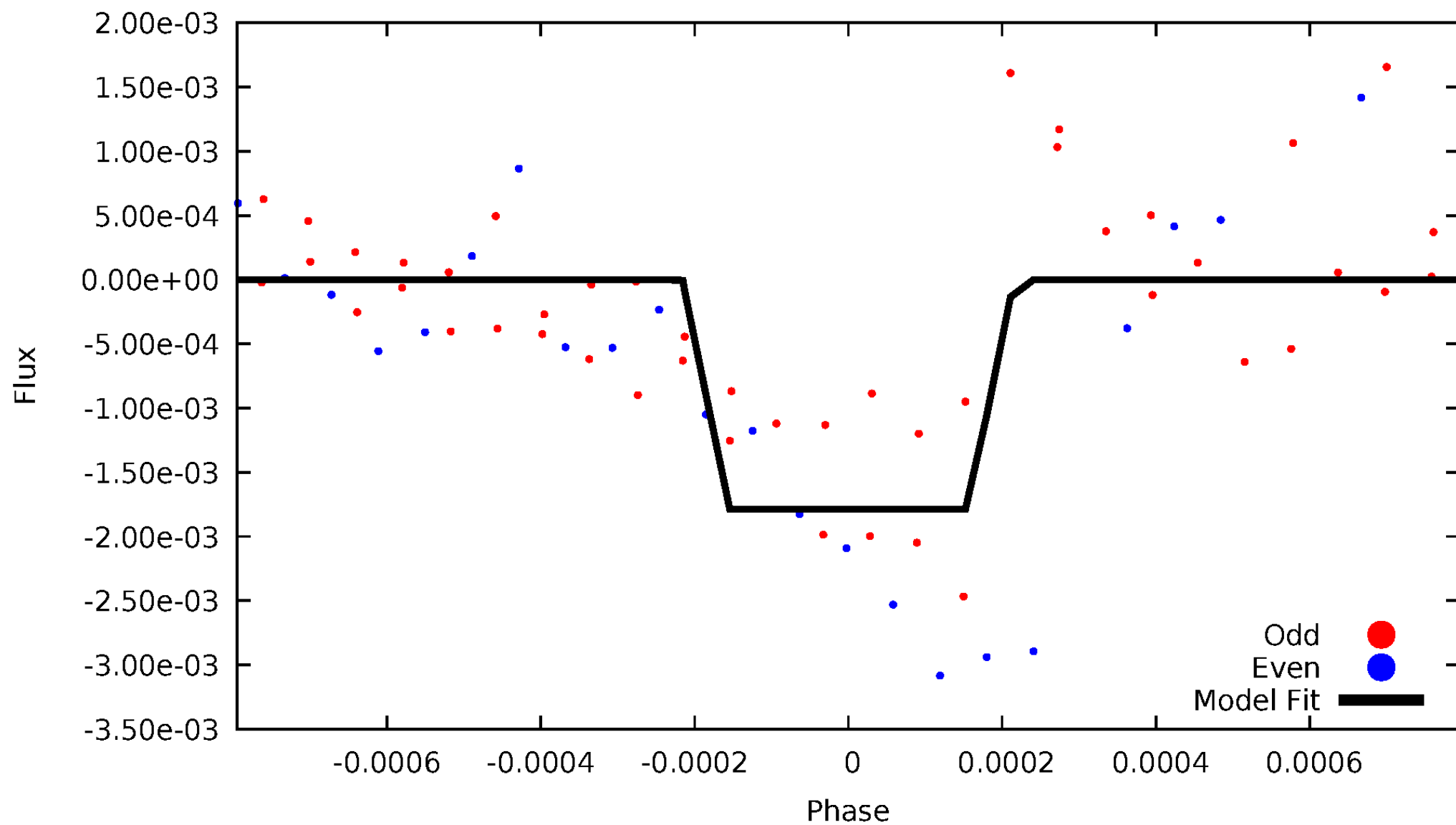
DV Odd/Even

TCE 005342558-05



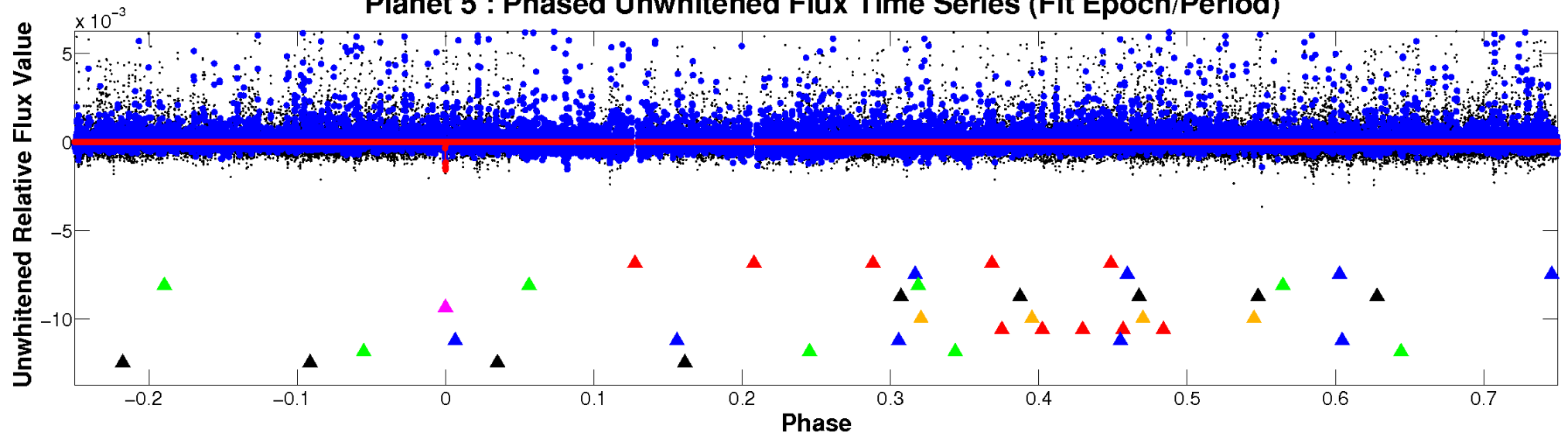
ALT Odd/Even

TCE 005342558-05

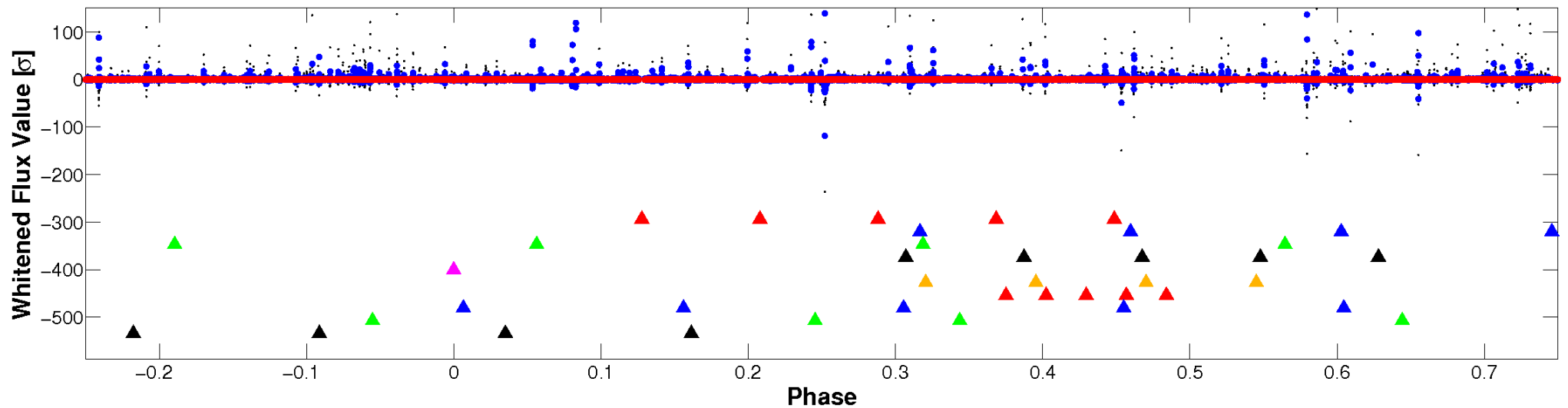


Non-Whitened Vs. Whitened Light Curve

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

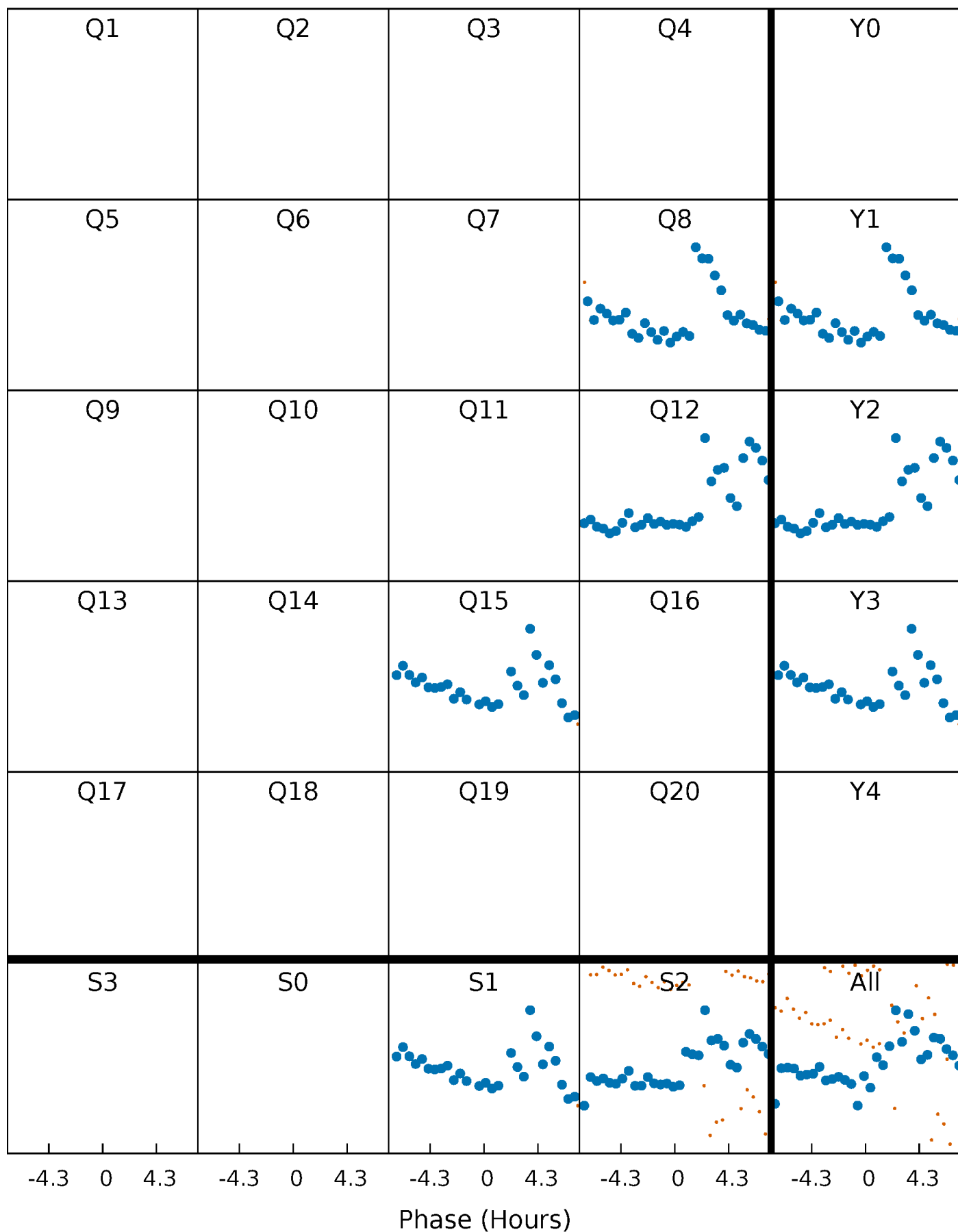


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



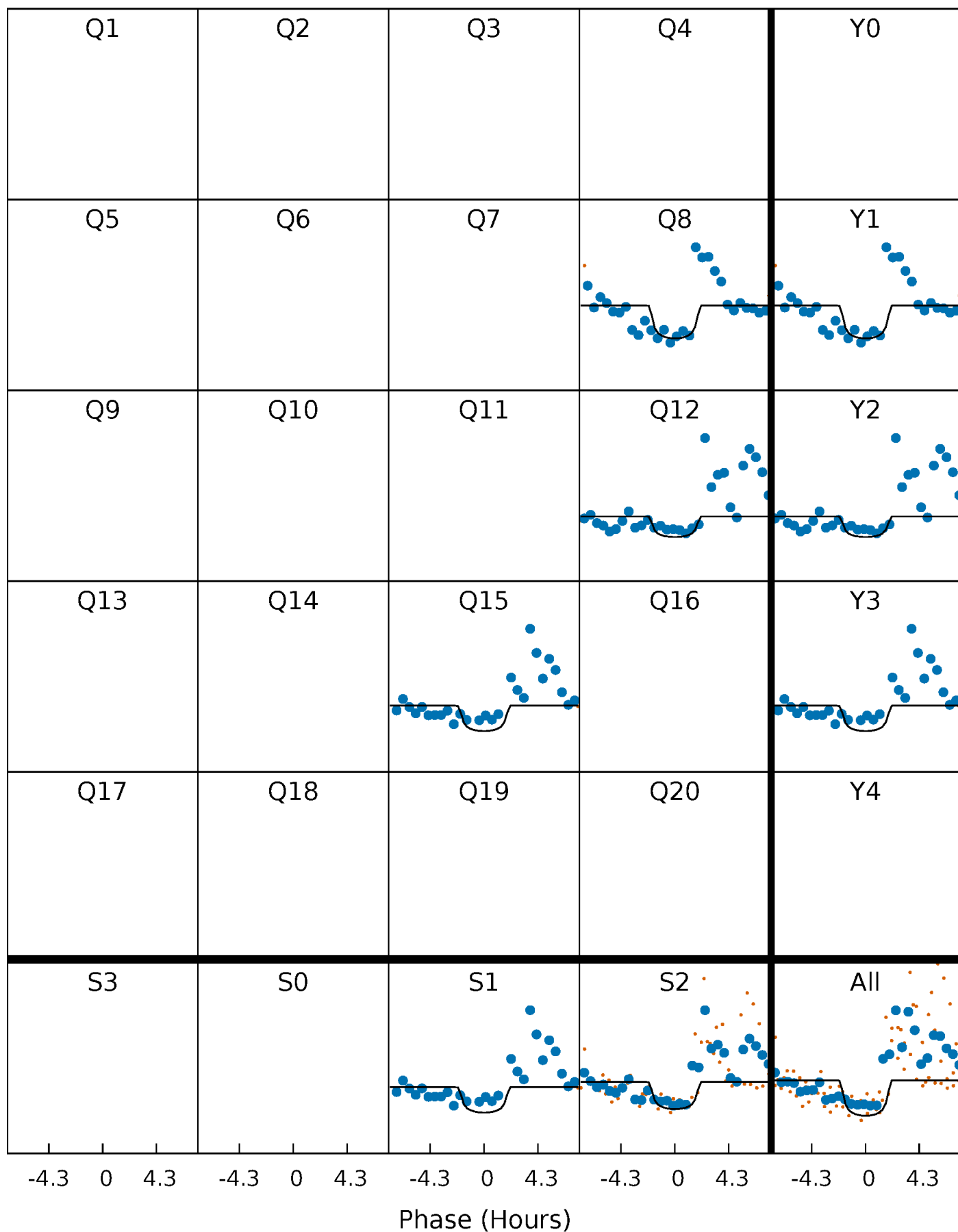
PDC Quarter-Phased Transit Curves

TCE 005342558-05 $P=335.694048$ Days $T_0=448.703570$ (BKJD)



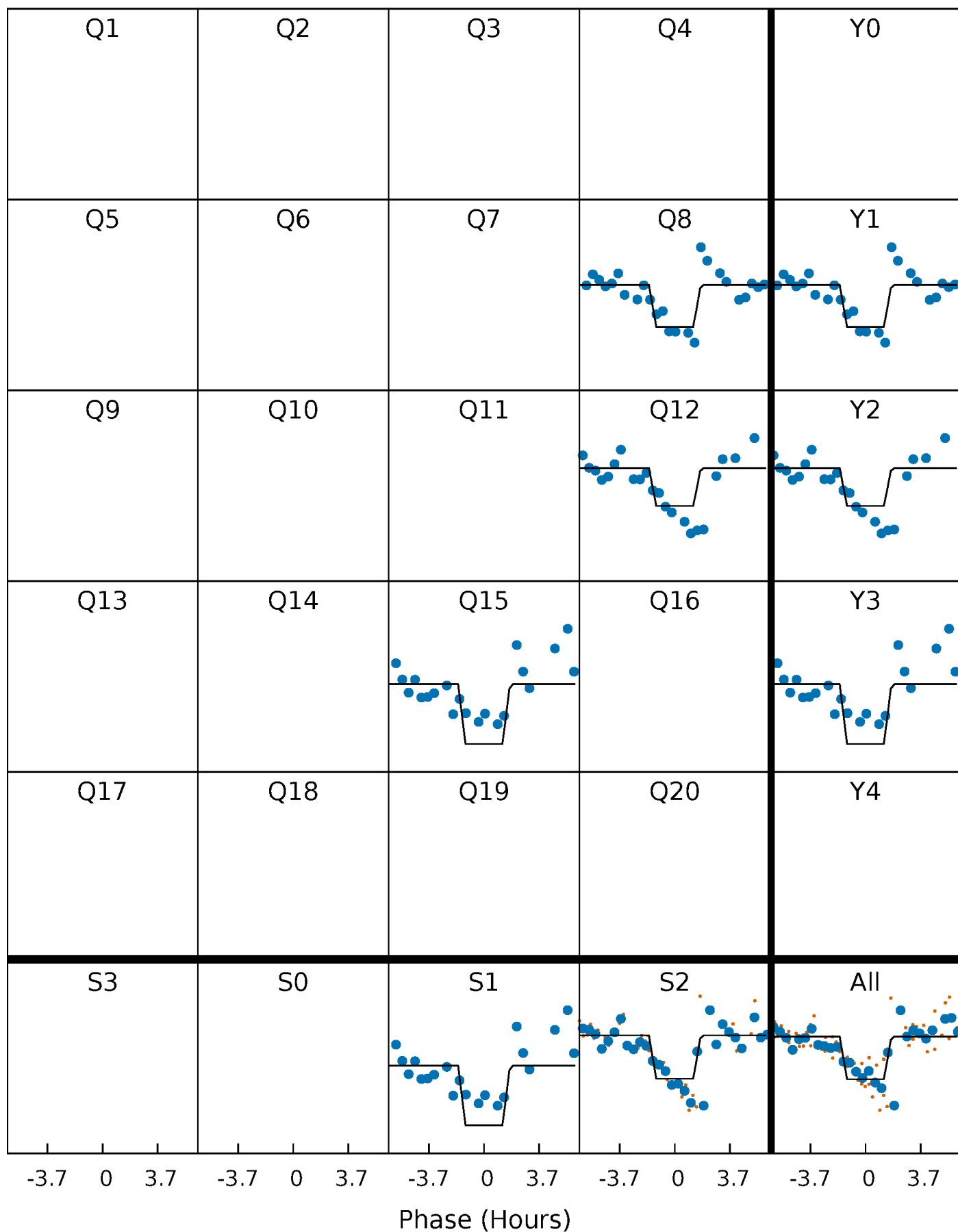
DV Quarter-Phased Transit Curves

TCE 005342558-05 $P=335.694048$ Days $T_0=448.703570$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

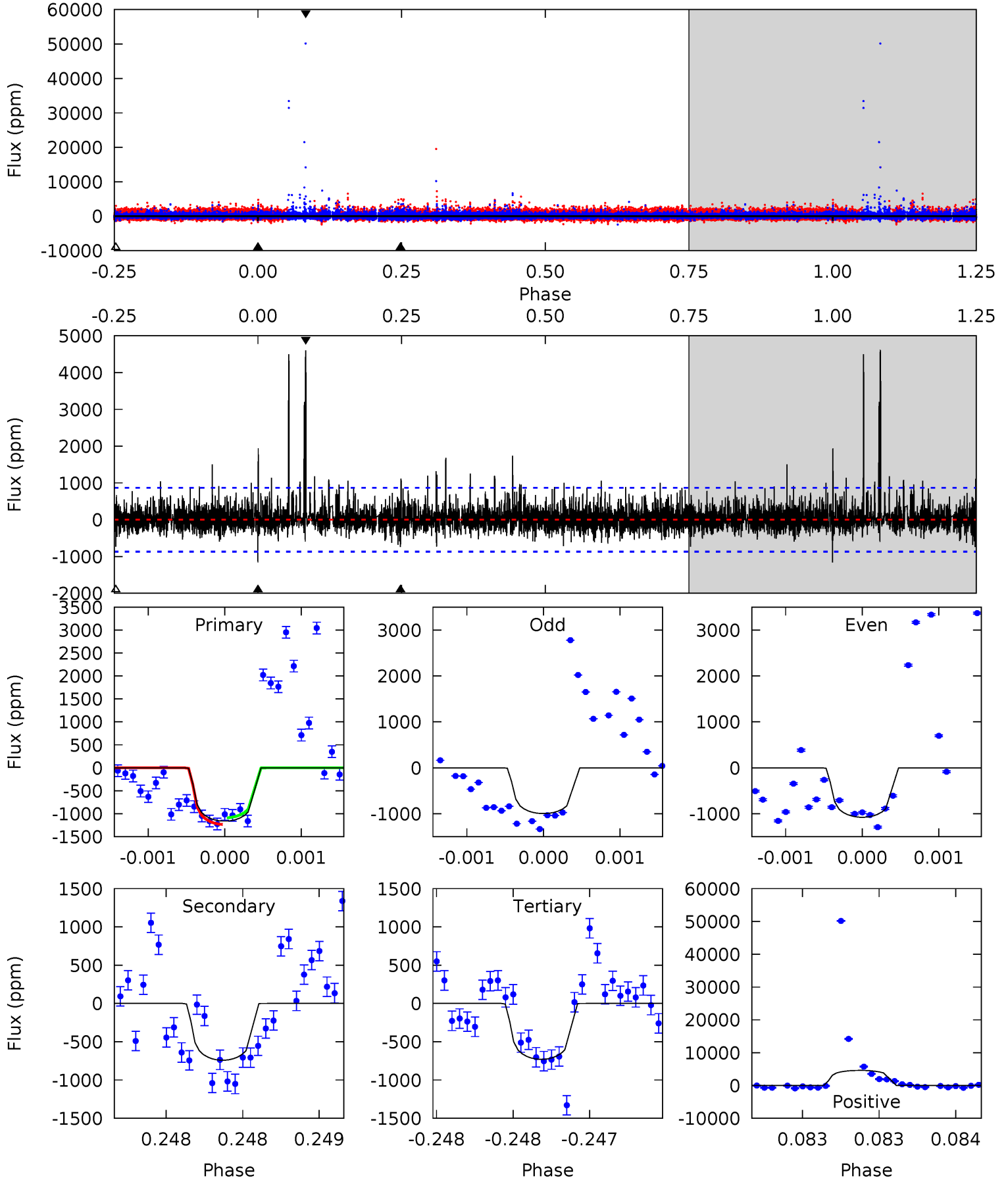
TCE 005342558-05 $P=335.693180$ Days $T_0=448.701129$ (BKJD)



DV Model-Shift Uniqueness Test

005342558-05, P = 335.694048 Days, E = 113.009522 Days

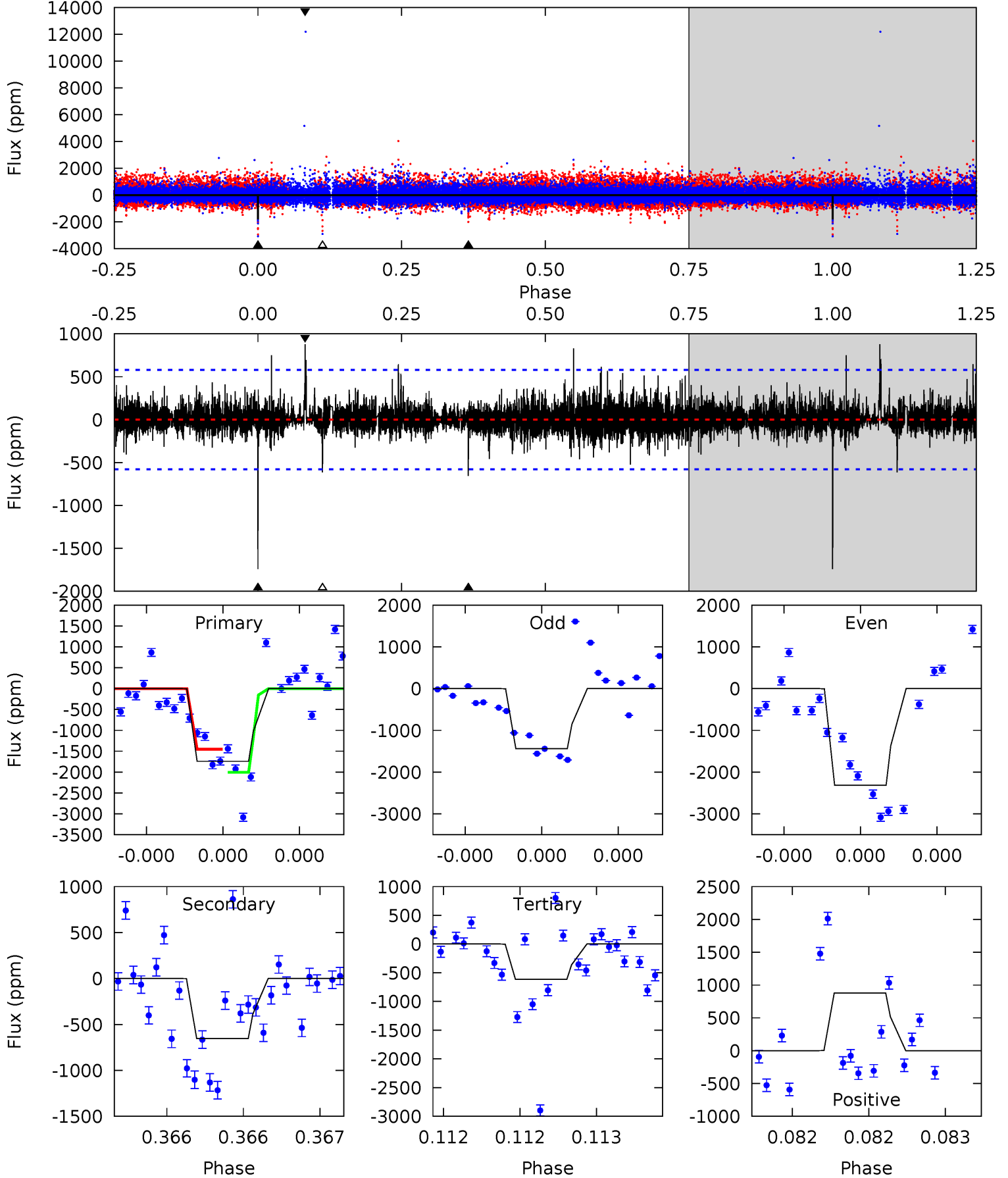
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.42 | 4.74 | 4.67 | 29.4 | 5.56 | 3.46 | 1.75 | 2.76 | -22.0 | 0.08 | -24.7 | 0.16 | 0.94 | 0.80 | 0.45 |



Alt Model-Shift Uniqueness Test

005342558-05, P = 335.693180 Days, E = 113.007949 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 16.8 | 6.32 | 5.91 | 8.46 | 5.59 | 3.51 | 1.12 | 10.9 | 8.33 | 0.41 | -2.14 | 4.06 | 0.95 | 0.34 | 2.73 |



Stellar Parameters For KIC 005342558

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|----------------------------|----------------------------|----------------------------|----------------------------|---|
| | 3154^{+1}_{-1} | $5.131^{+-1.000}_{-1.000}$ | $0.000^{+-1.000}_{-1.000}$ | $0.173^{+-1.000}_{-1.000}$ | $0.147^{+-1.000}_{-1.000}$ | $40.220^{+-1.000}_{-1.000}$ |
| | +0%/-0% | +19%/-19% | +inf%/-inf% | +578%/-578% | +680%/-680% | +2%/-2% |
| Source | PHO54 | PHO54 | PHO54 | BTSL | | |

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

Secondary Eclipse Parameters for KIC 005342558-05 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|-------------------|----------------------|----------------------------|
| DV | -741±156 | $1.51^{+1.84}_{-1.02}$ | 116^{+10}_{-10} | 2370^{+841}_{-338} | $42416^{+374533}_{-32026}$ |
| Alt. | -655±104 | $1.54^{+1.63}_{-1.04}$ | 116^{+10}_{-10} | 2349^{+818}_{-337} | $37768^{+320827}_{-27884}$ |

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 $A_{obs} \gg 1.0$

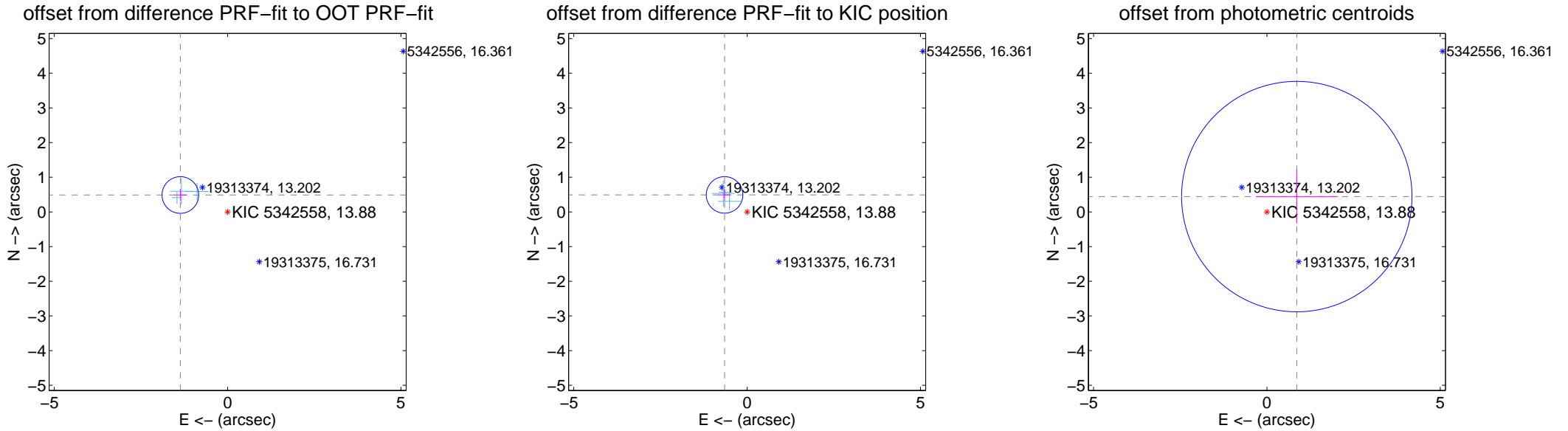
DV Centroid Data

Supplemental centroid analysis for 005342558-05. Kepler magnitude: 13.88. Transit SNR 8.64

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 1.447 ± 0.176 | 8.22 | 1.363 ± 0.176 | 0.488 ± 0.175 |
| PRF-fit source offset from KIC position | 0.815 ± 0.176 | 4.64 | 0.651 ± 0.176 | 0.491 ± 0.175 |
| photometric centroid source offset | 0.97 ± 1.11 | 0.87 | -0.86 ± 1.18 | 0.44 ± 0.77 |

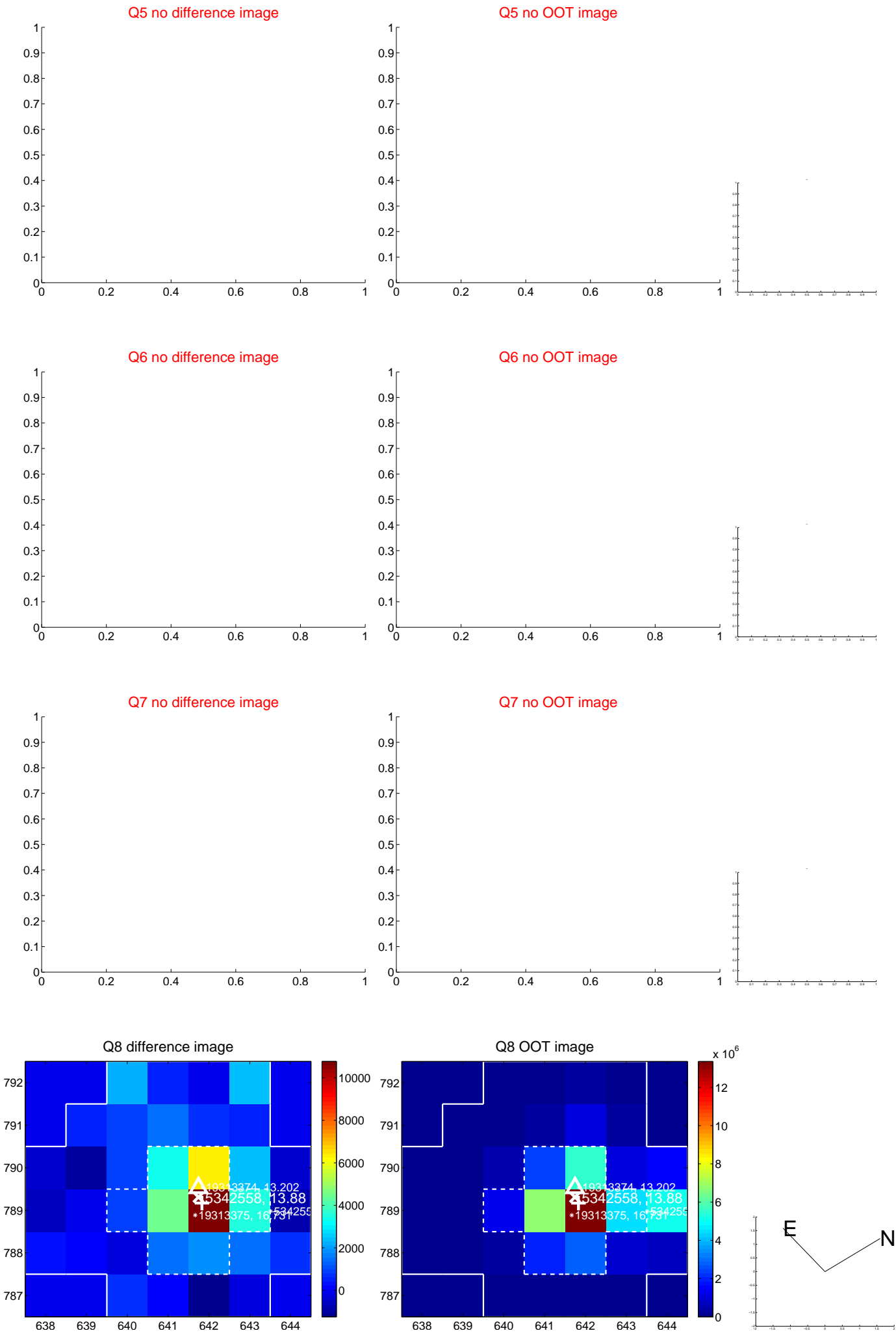


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

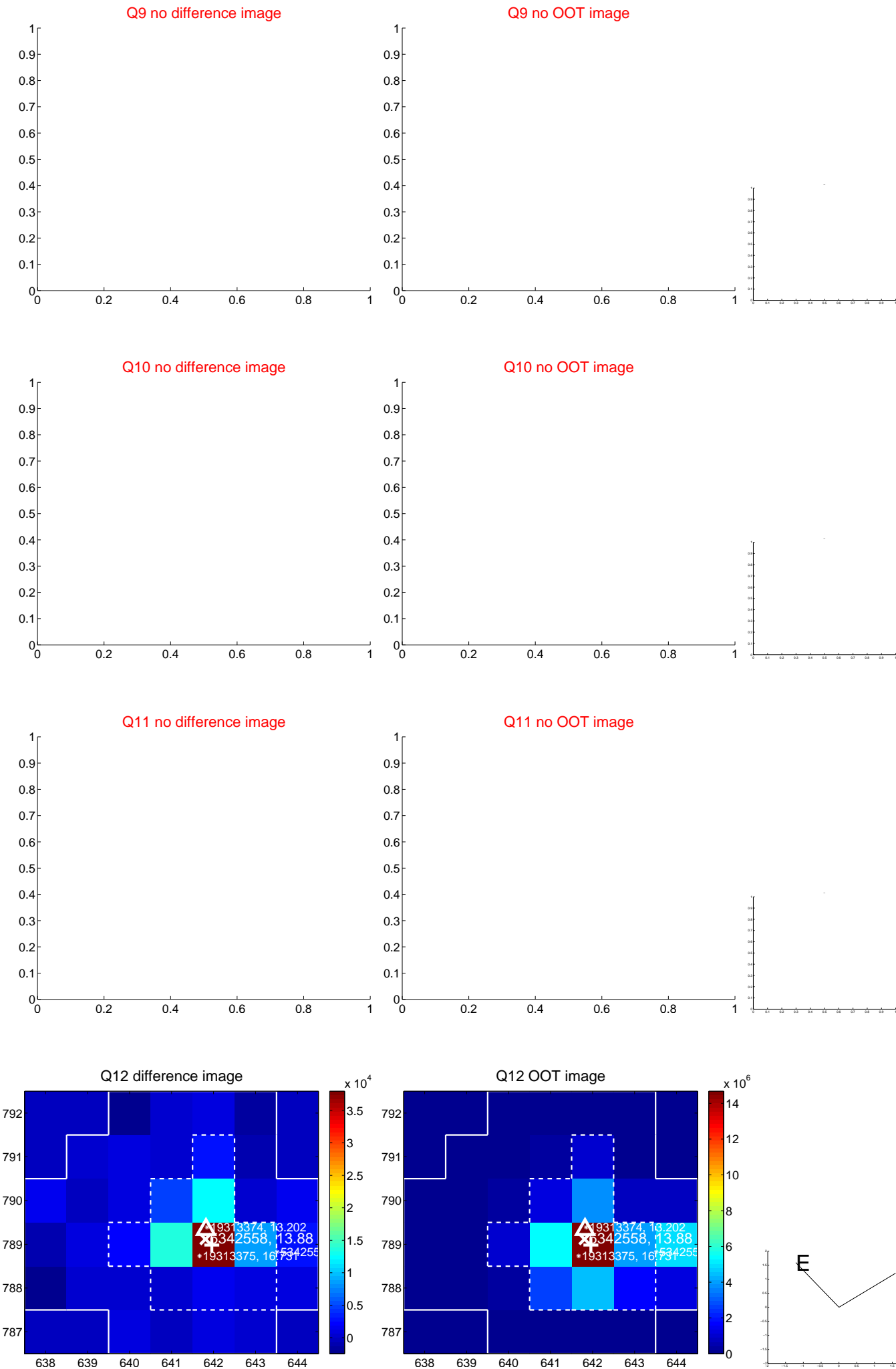
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



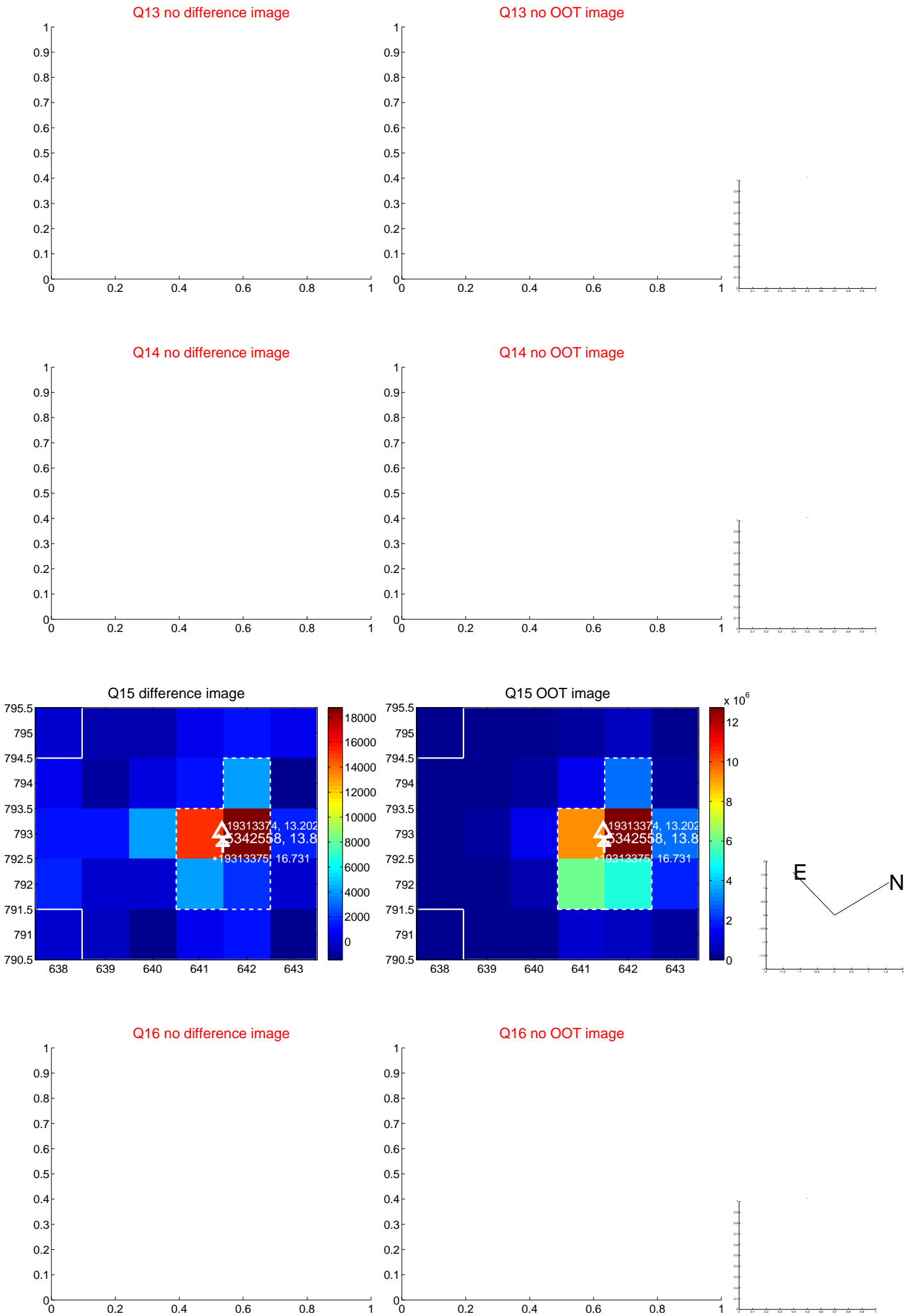
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



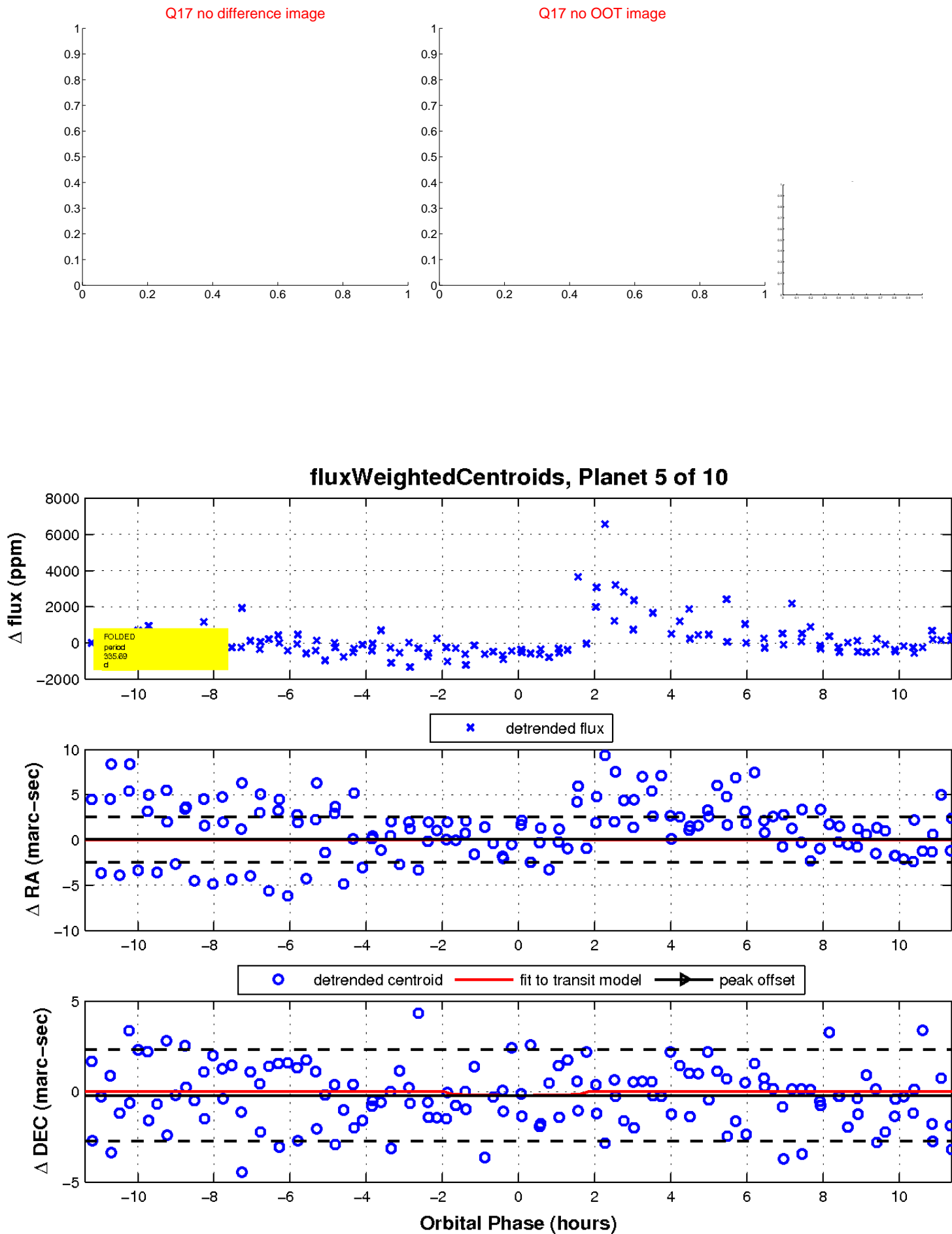
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

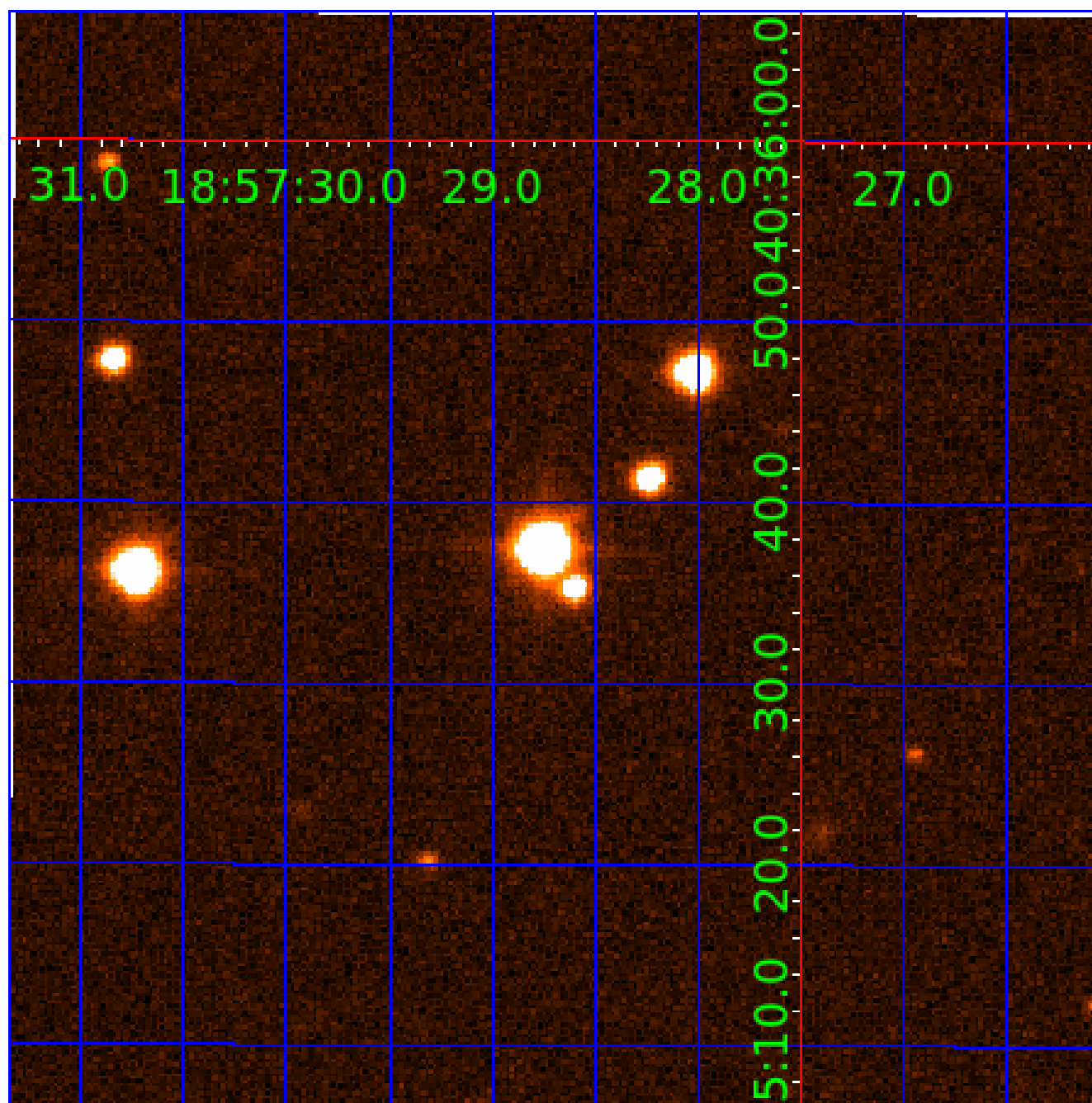


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 005342558-01 | OBS | No | 308.762826 | 263.627416 | 1701.3 | 10.318 | 18.7 | 8.5 | 0.17 | 3154 | 0.71 | 0.01 |
| 005342558-02 | OBS | No | 383.720665 | 219.310793 | 639.8 | 8.386 | 11.6 | 3.2 | 0.17 | 3154 | 0.45 | 0.01 |
| 005342558-03 | OBS | No | 418.229695 | 220.013594 | 1829.1 | 9.198 | 17.9 | 8.7 | 0.17 | 3154 | 0.73 | 0.01 |
| 005342558-05 | OBS | No | 335.694048 | 448.703570 | 1571.6 | 3.803 | 13.0 | 8.6 | 0.17 | 3154 | 0.68 | 0.01 |
| 005342558-06 | OBS | No | 360.819671 | 220.624153 | 1216.7 | 3.561 | 12.5 | 6.8 | 0.17 | 3154 | 0.67 | 0.01 |
| 005342558-07 | OBS | No | 326.552624 | 275.507809 | 512.0 | 5.172 | 11.2 | 2.8 | 0.17 | 3154 | 0.44 | 0.01 |
| 005342558-08 | OBS | No | 285.507525 | 315.963589 | 1141.7 | 7.857 | 11.0 | 7.5 | 0.17 | 3154 | 0.59 | 0.01 |
| 005342558-09 | OBS | No | 436.602709 | 228.377019 | 1074.0 | 15.912 | 11.2 | 6.4 | 0.17 | 3154 | 0.57 | 0.01 |
| 005342558-10 | OBS | No | 378.103945 | 375.659854 | 1003.0 | 7.162 | 10.8 | 6.7 | 0.17 | 3154 | 0.57 | 0.01 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005342558-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS |
| 005342558-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-09 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS |
| 005342558-10 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_KIC_POS |

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

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

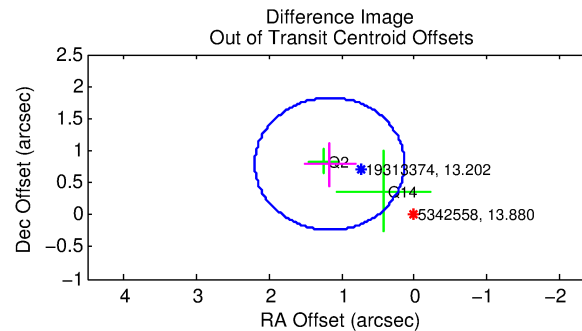
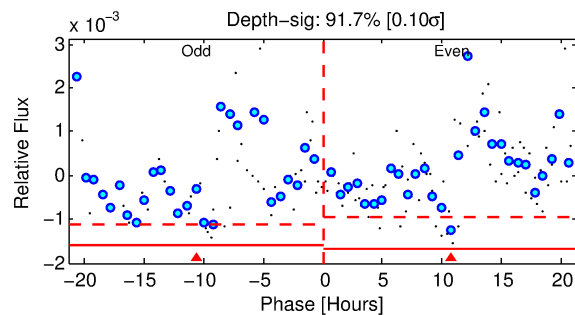
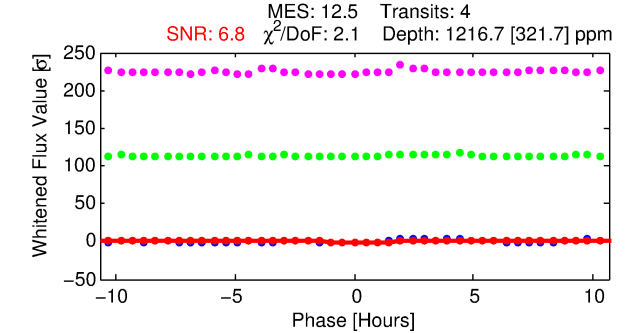
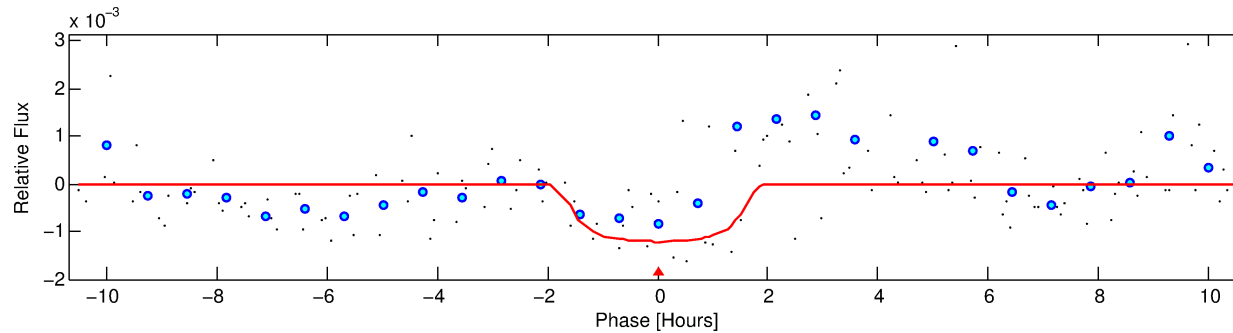
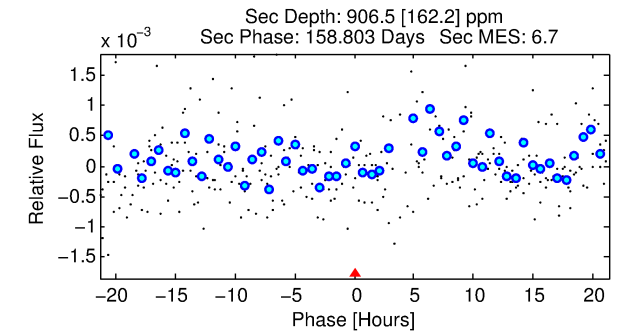
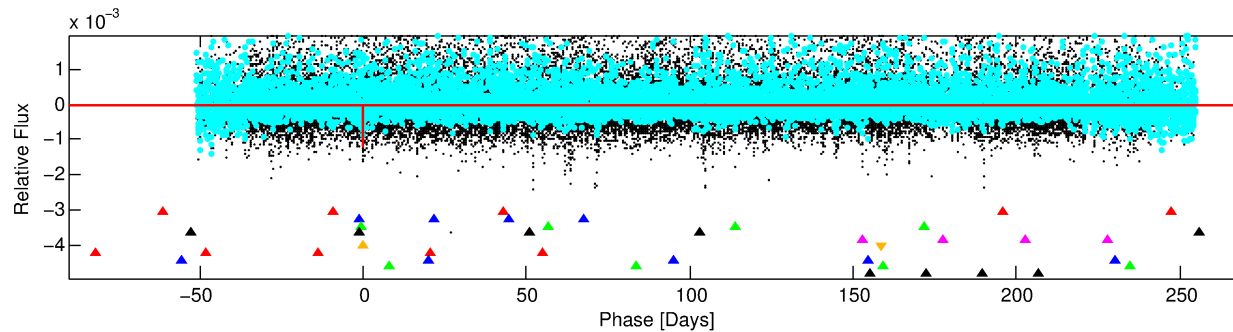
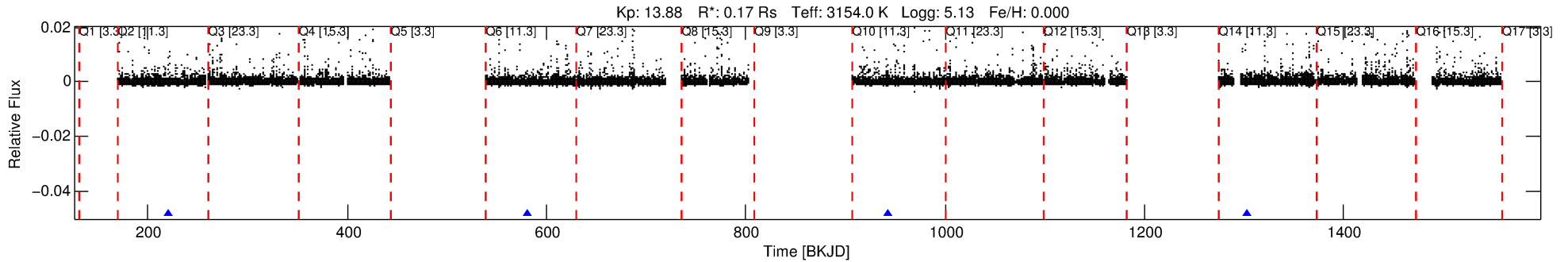
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005342558-06

No Significant Match Found

DV One-Page Summary

KIC: 5342558 Candidate: 6 of 10 Period: 360.820 d



DV Fit Results:

Period = 360.81967 [0.00812] d
Epoch = 220.6242 [0.0170] BKJD
Rp/R* = 0.0352 [0.0328]
a/R* = 521.41 [1992.22]
b = 0.79 [1.87]
Seff = 0.01 [0.00]
Teq = 80 [0] K
Rp = 0.66 [0.62] Re
a = 0.5243 [0.0000] AU
Ag = 310227.14 [580139.51] [0.53σ]
Teffp = 2916 [1363] K [2.08σ]

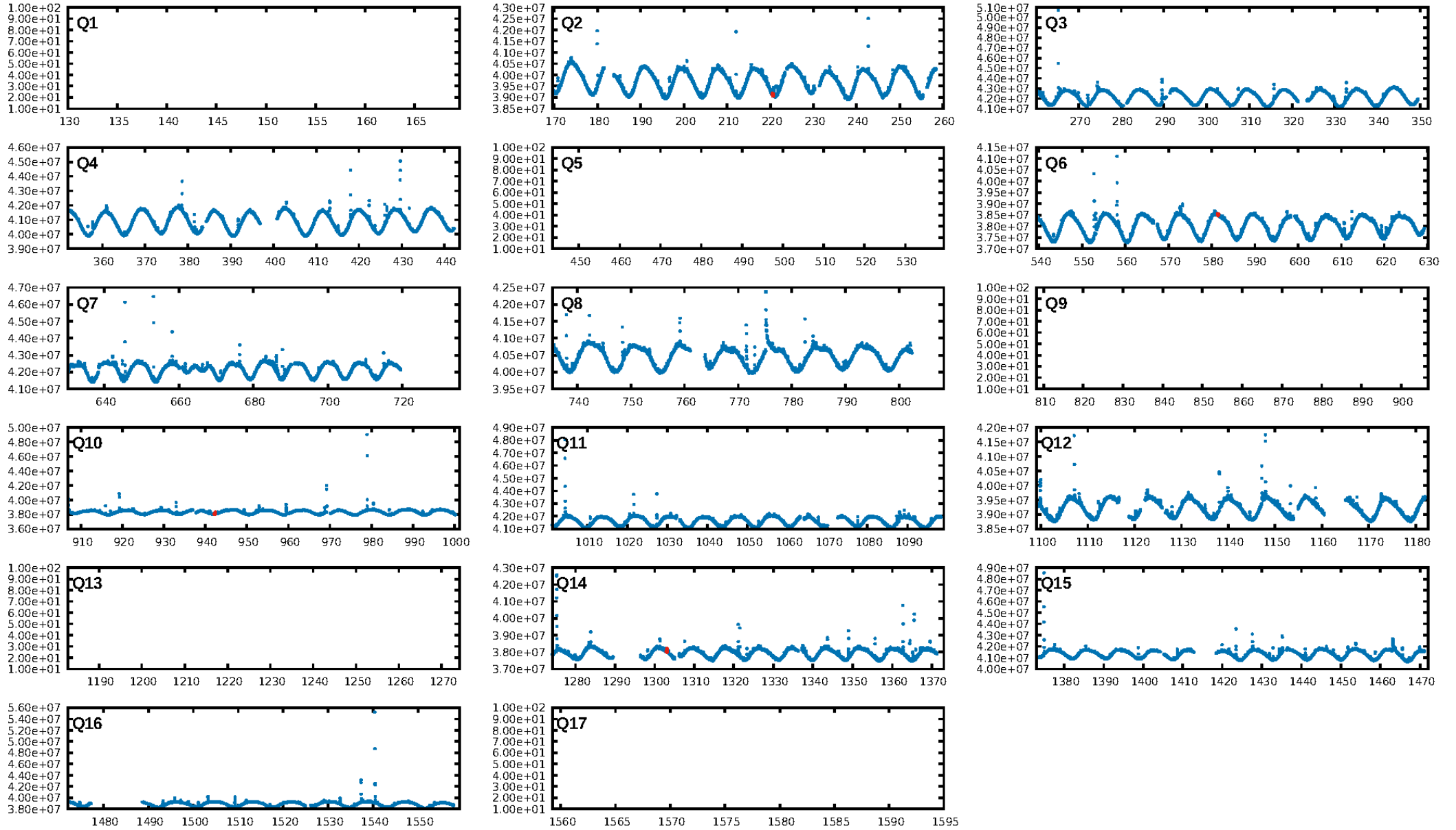
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [115.75σ]
LongPeriod-sig: 100.0% [51.86σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 14.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -4.028
Centroid-sig: 76.9%
Centroid-so: 0.514 arcsec [0.46σ]
OotOffset-rm: 1.409 arcsec [4.10σ]
KicOffset-rm: 0.949 arcsec [2.70σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [4/4]

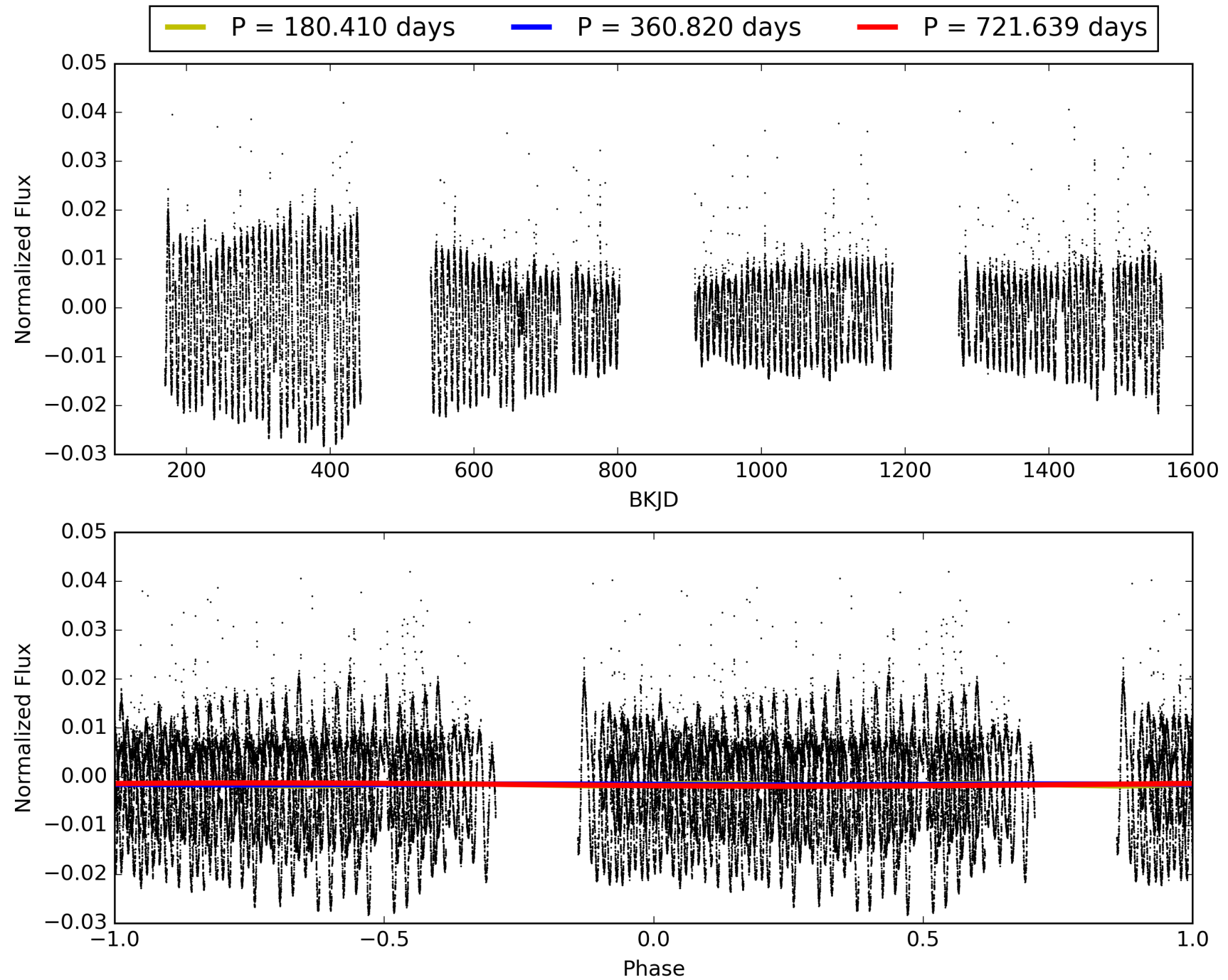
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:43:03 Z

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

TCE 005342558-06, PDC Light Curves

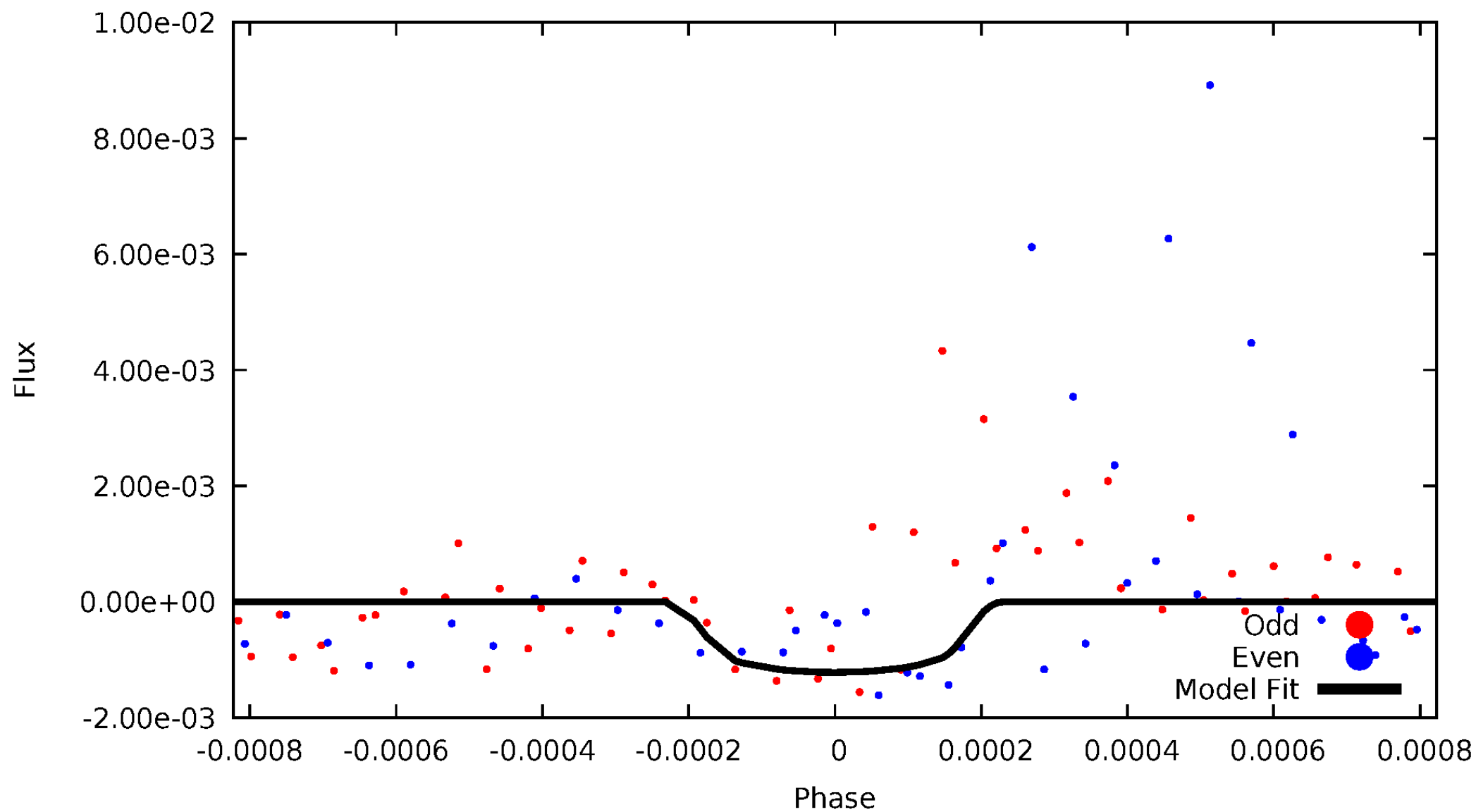


TCE 005342558-06



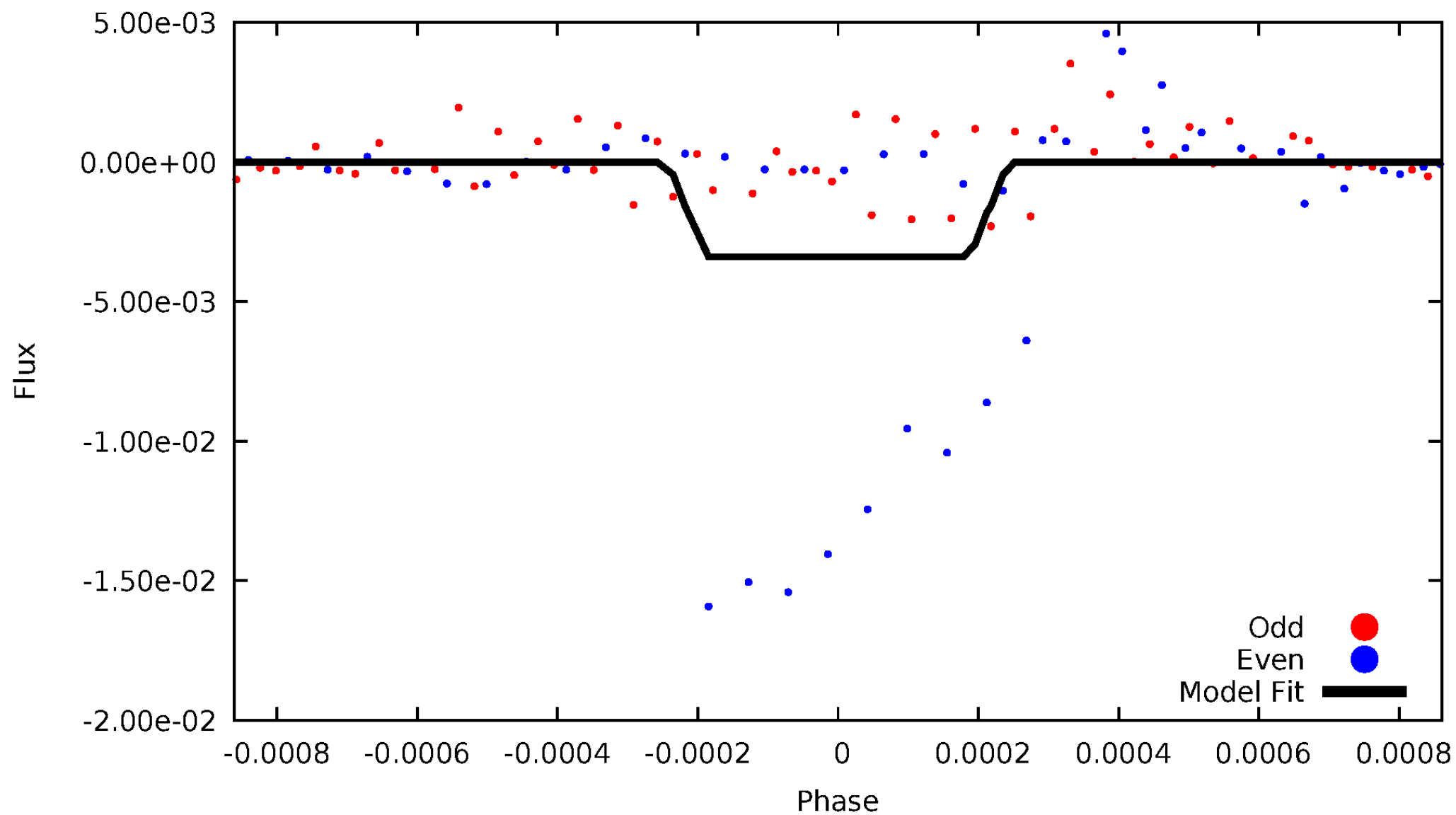
DV Odd/Even

TCE 005342558-06



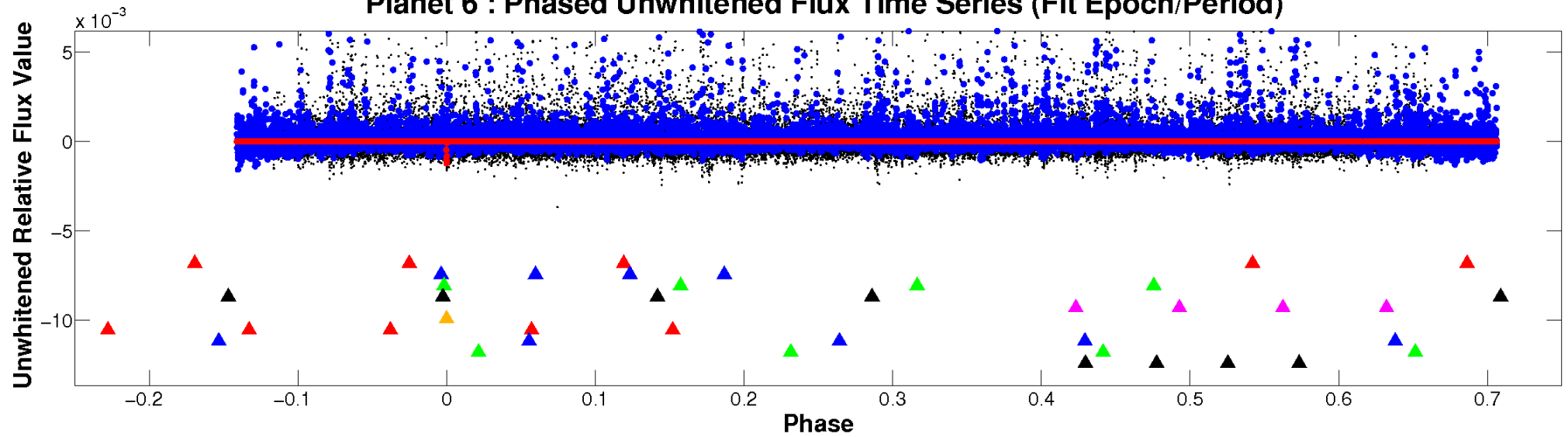
ALT Odd/Even

TCE 005342558-06

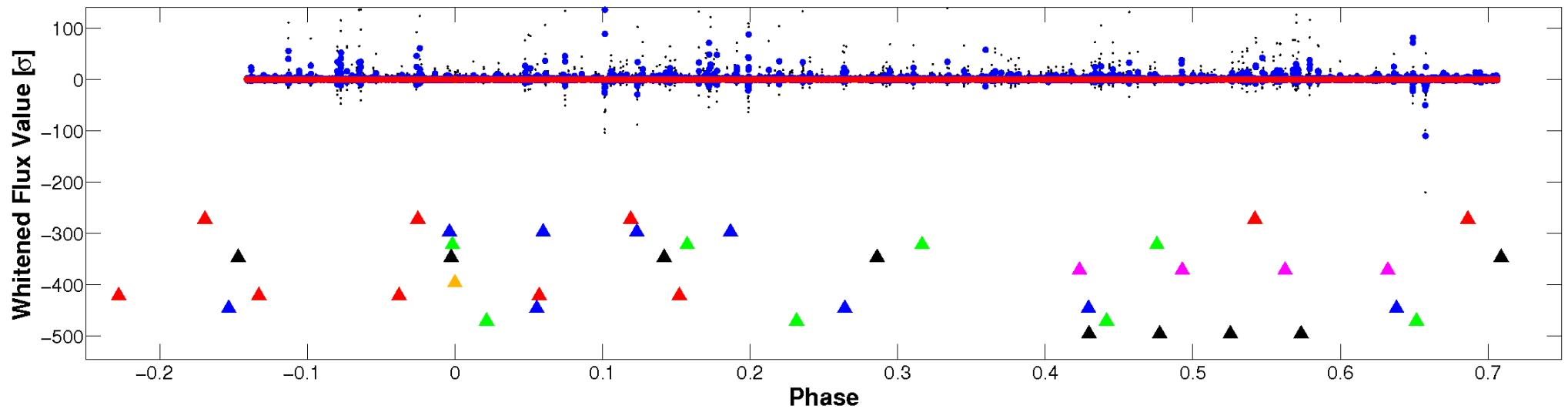


Non-Whitened Vs. Whitened Light Curve

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

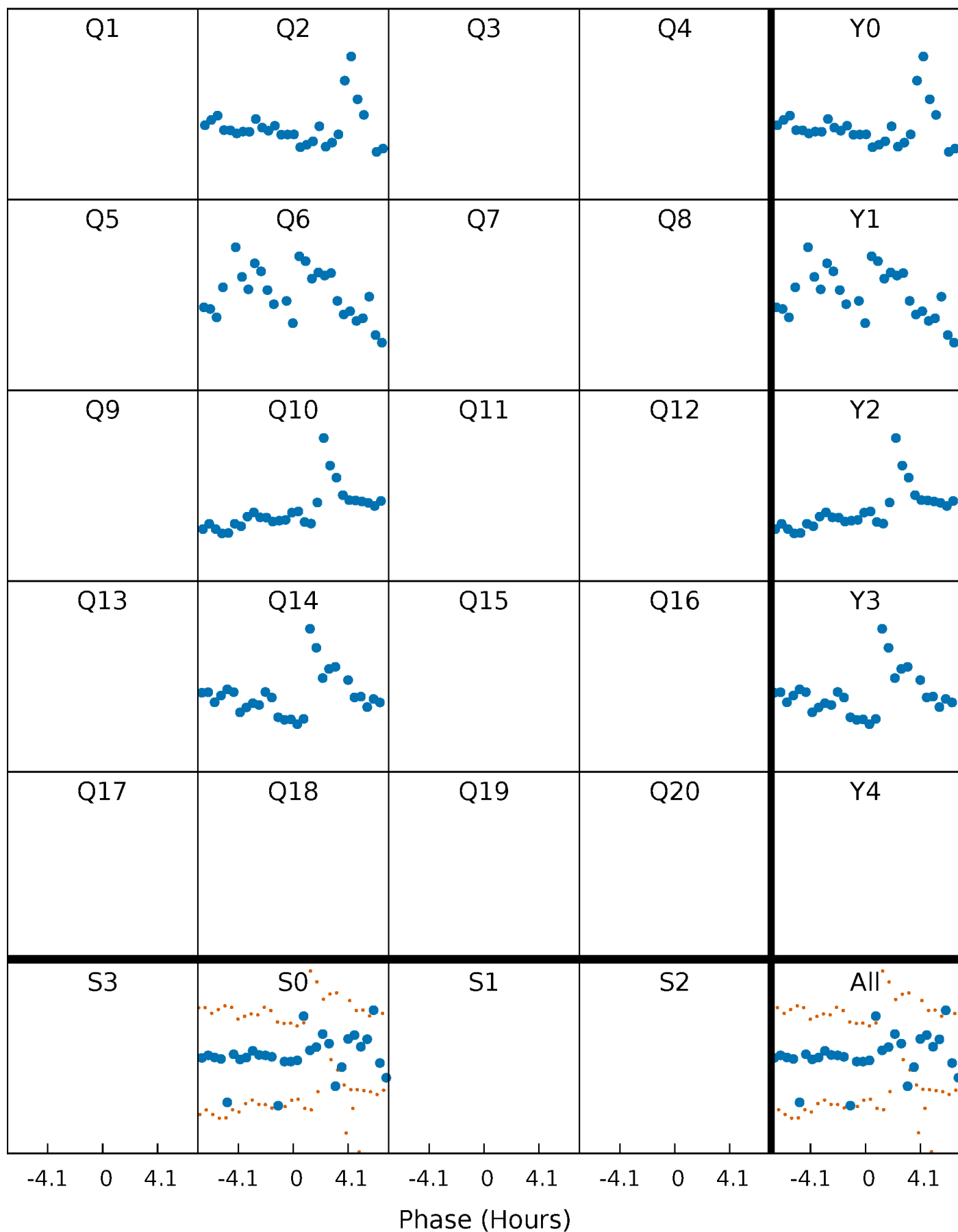


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



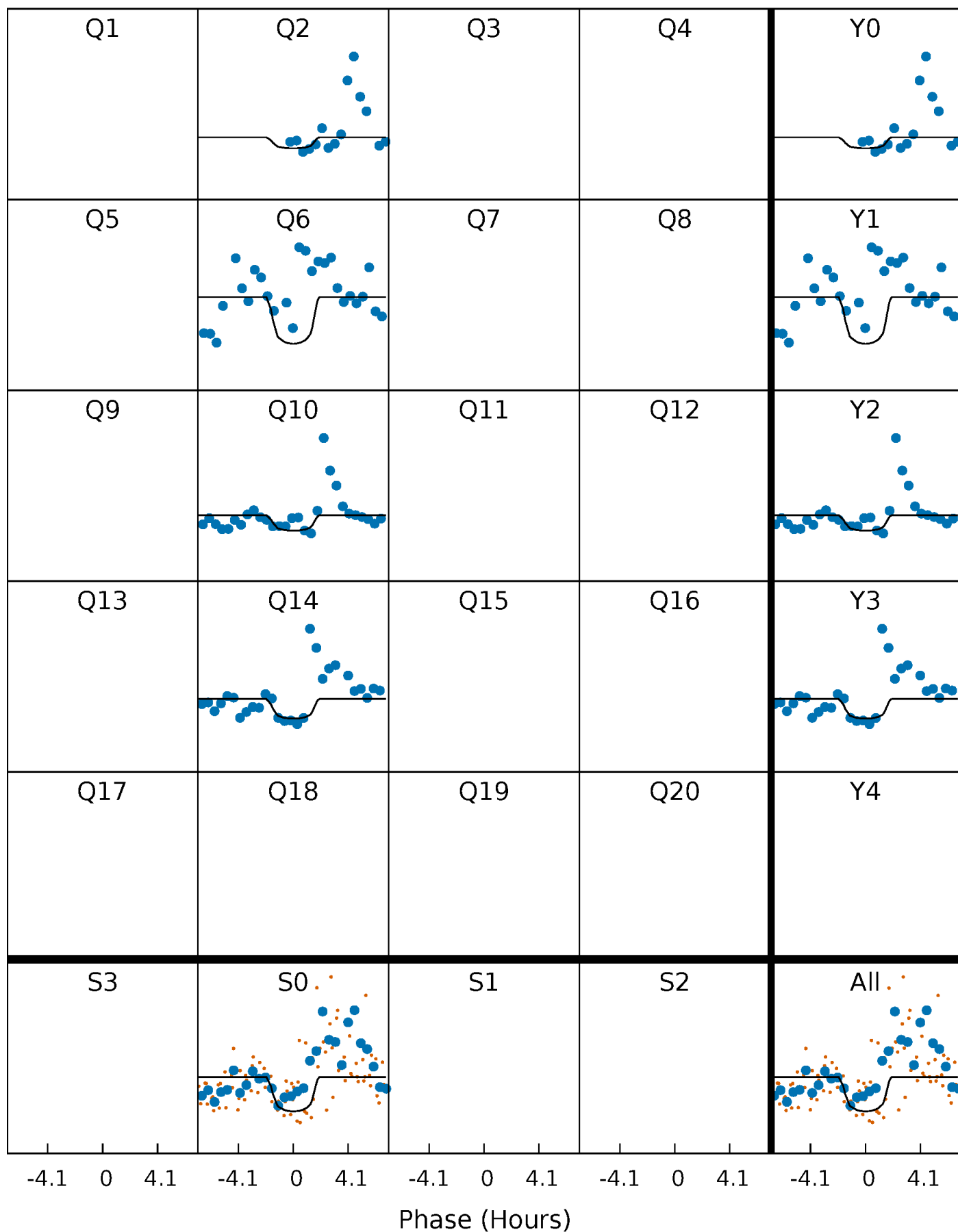
PDC Quarter-Phased Transit Curves

TCE 005342558-06 P=360.819671 Days $T_0=220.624153$ (BKJD)



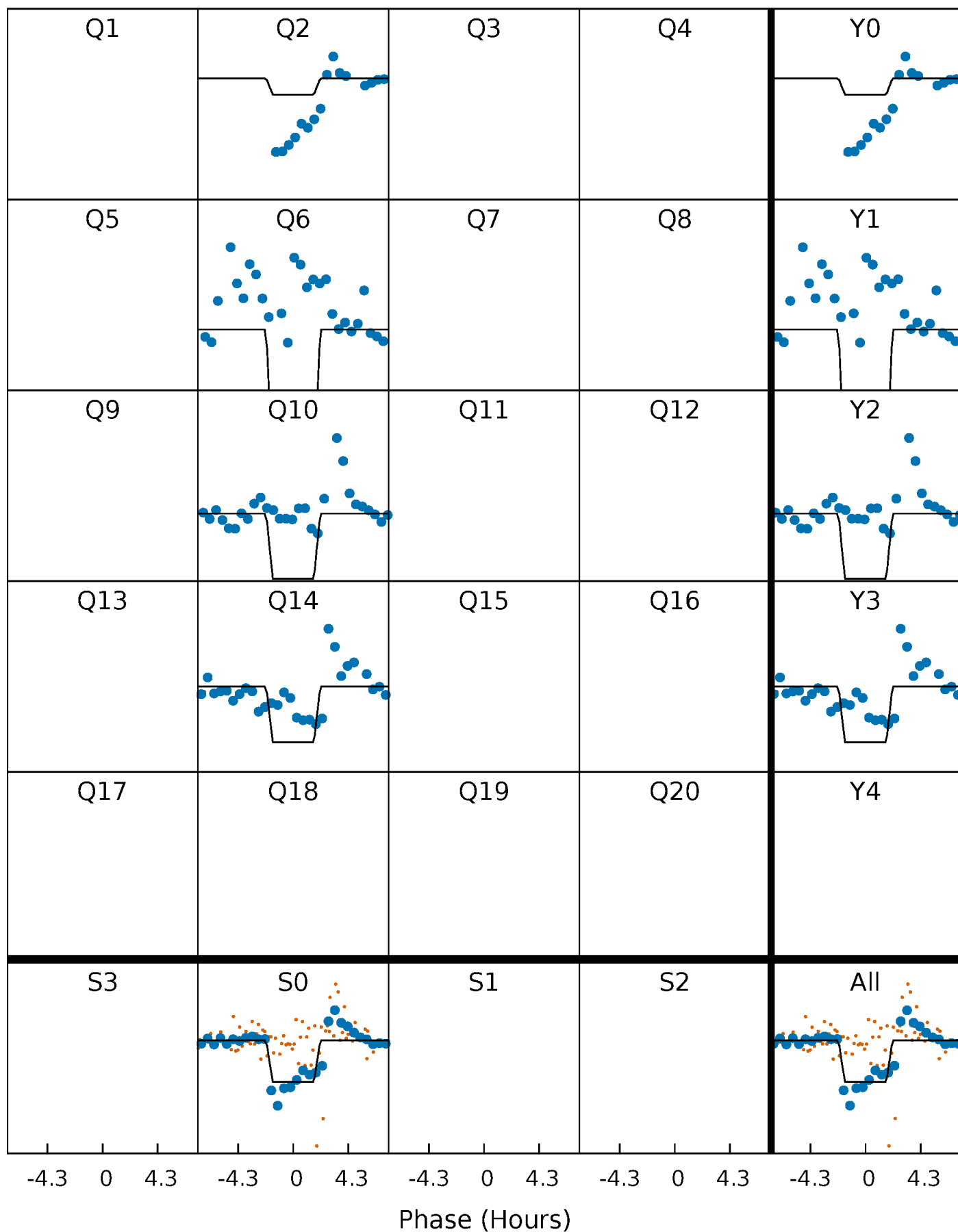
DV Quarter-Phased Transit Curves

TCE 005342558-06 P=360.819671 Days $T_0=220.624153$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

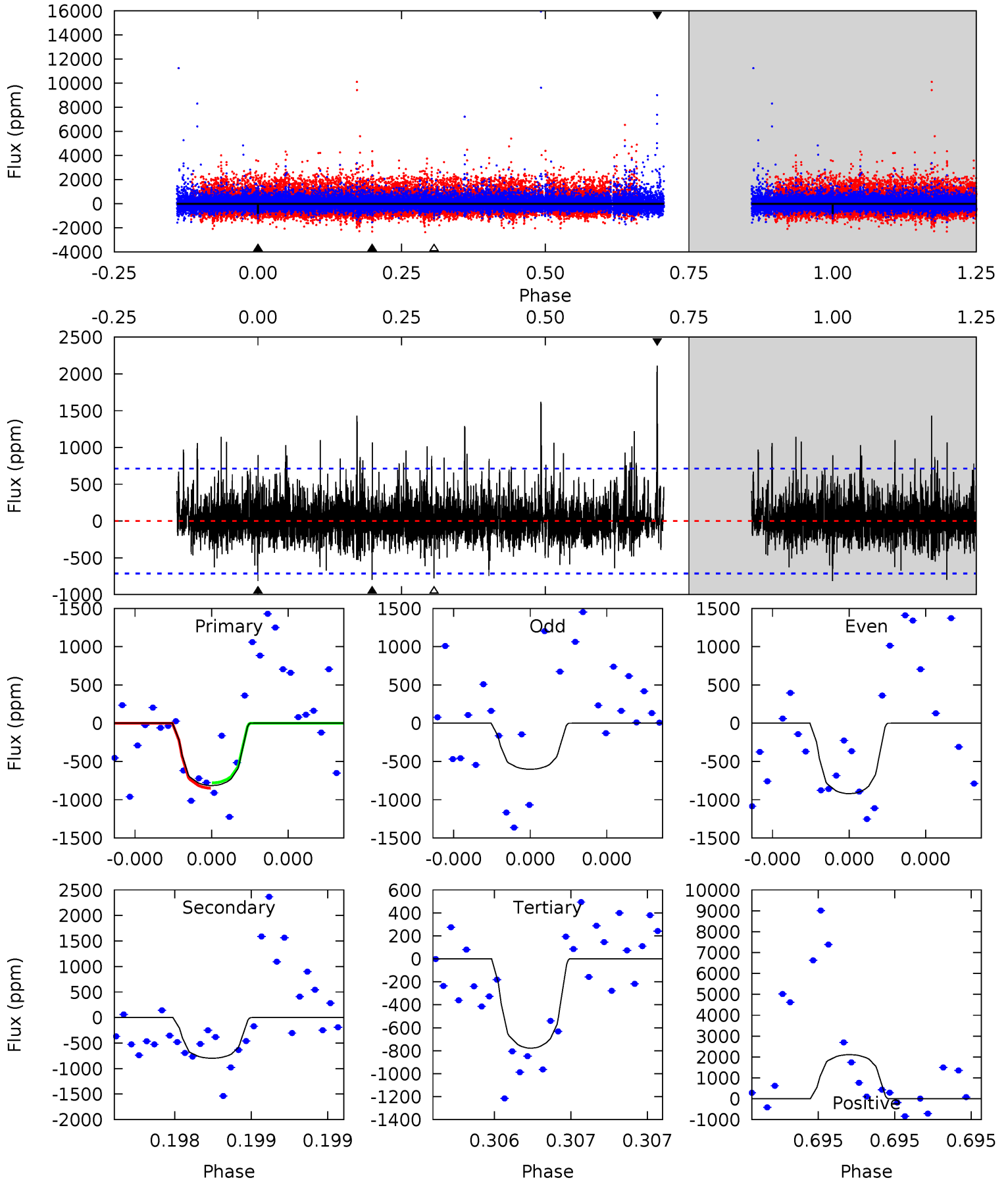
TCE 005342558-06 P=360.781746 Days $T_0=220.671366$ (BKJD)



DV Model-Shift Uniqueness Test

005342558-06, P = 360.819671 Days, E = 220.624153 Days

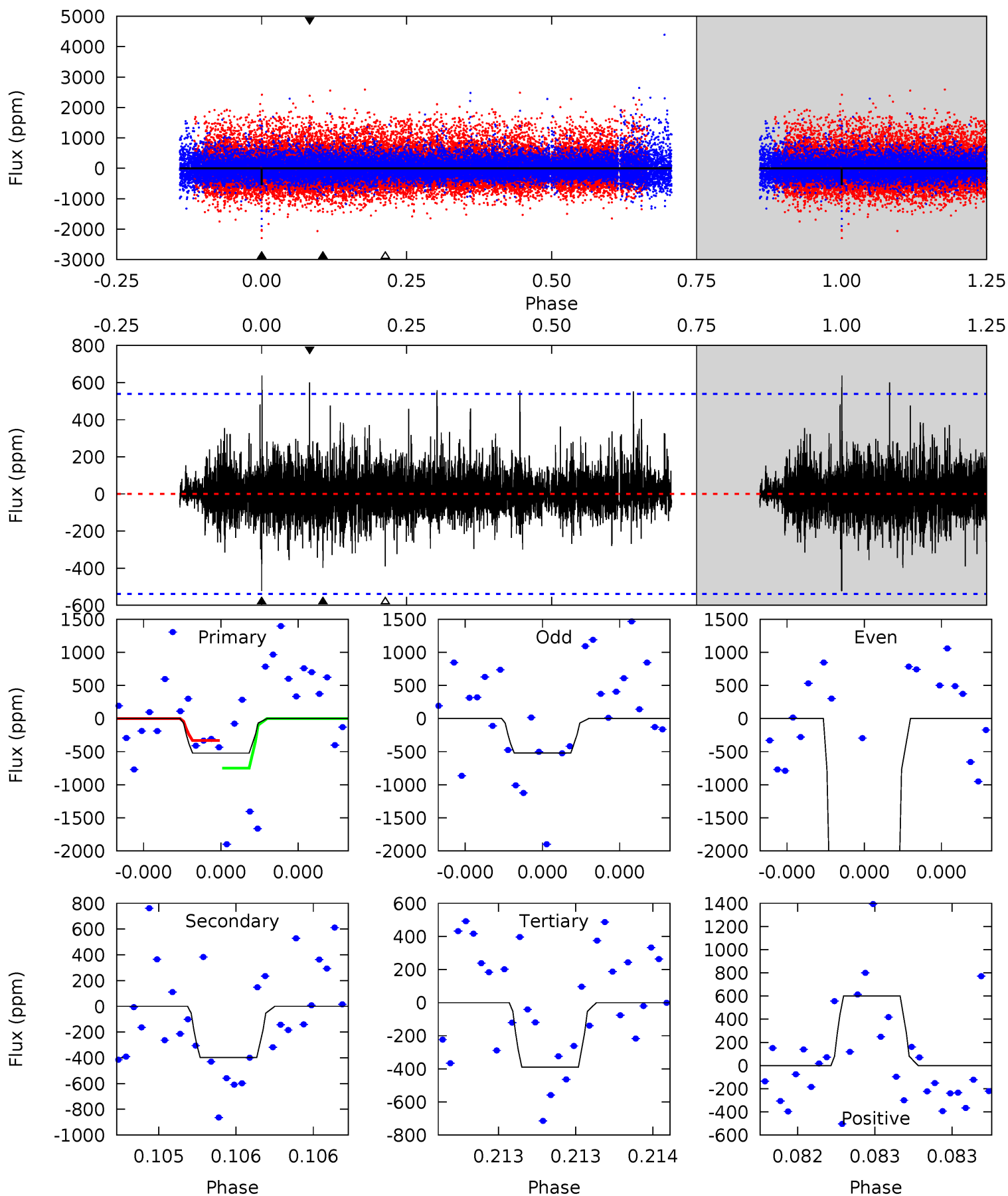
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.40 | 6.26 | 6.11 | 16.6 | 5.59 | 3.51 | 1.76 | 0.29 | -10.2 | 0.16 | -10.3 | 0.49 | 0.73 | 0.72 | 0.27 |



Alt Model-Shift Uniqueness Test

005342558-06, P = 360.781746 Days, E = 220.671366 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 5.41 | 4.12 | 4.03 | 6.21 | 5.58 | 3.49 | 0.96 | 1.38 | -0.80 | 0.08 | -2.10 | 28.6 | 4.52 | 0.55 | 2.17 |



Stellar Parameters For KIC 005342558

| | $T_{\text{eff}}(K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|----------------------------|----------------------------|----------------------------|----------------------------|---|
| | 3154^{+1}_{-1} | $5.131^{+-1.000}_{-1.000}$ | $0.000^{+-1.000}_{-1.000}$ | $0.173^{+-1.000}_{-1.000}$ | $0.147^{+-1.000}_{-1.000}$ | $40.220^{+-1.000}_{-1.000}$ |
| | +0%/-0% | +19%/-19% | +inf%/-inf% | +578%/-578% | +680%/-680% | +2%/-2% |
| Source | PHO54 | PHO54 | PHO54 | BTSL | | |

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

Secondary Eclipse Parameters for KIC 005342558-06 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|----------------|------------------------|----------------------|----------------------|-------------------------------|
| DV | -798 ± 127 | $0.82^{+0.71}_{-0.53}$ | 113^{+10}_{-10} | 2827^{+933}_{-413} | $186247^{+1061601}_{-128053}$ |
| Alt. | -398 ± 97 | $1.17^{+0.74}_{-0.63}$ | 113^{+9}_{-10} | 2370^{+499}_{-249} | $44365^{+154124}_{-26177}$ |

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

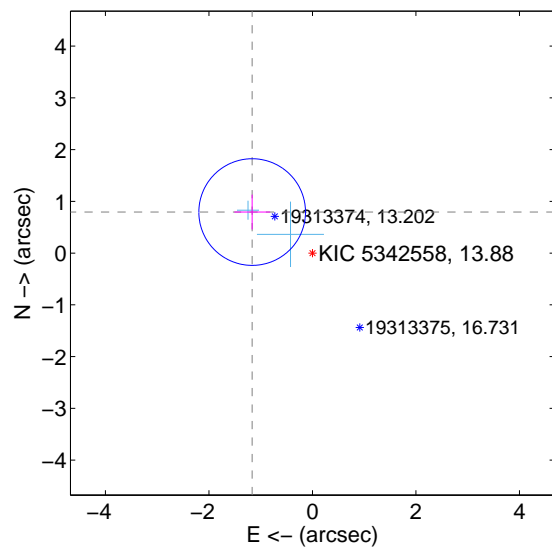
Supplemental centroid analysis for 005342558-06. Kepler magnitude: 13.88. Transit SNR 6.78

There are 2 quarters with good PRF difference image offsets

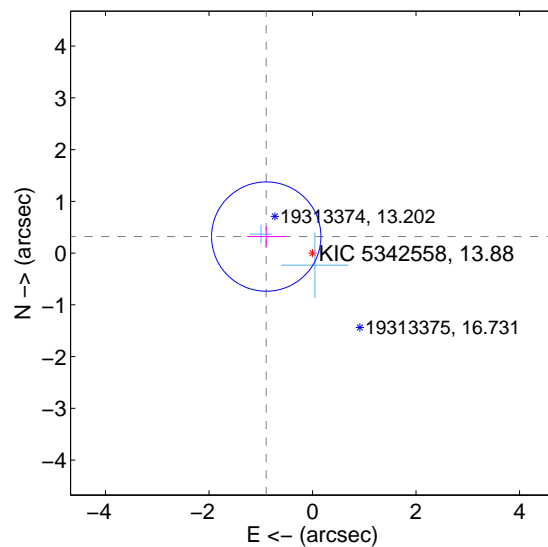
The direct PRF centroid is offset from the target star catalog position by about 0.76 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 1.409 ± 0.343 | 4.10 | 1.164 ± 0.347 | 0.793 ± 0.336 |
| PRF-fit source offset from KIC position | 0.949 ± 0.352 | 2.70 | 0.894 ± 0.367 | 0.319 ± 0.200 |
| photometric centroid source offset | 0.51 ± 1.13 | 0.46 | -0.51 ± 1.13 | -0.02 ± 0.99 |

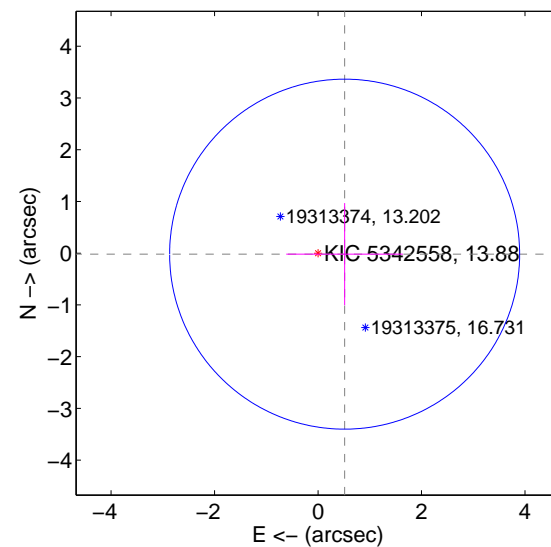
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

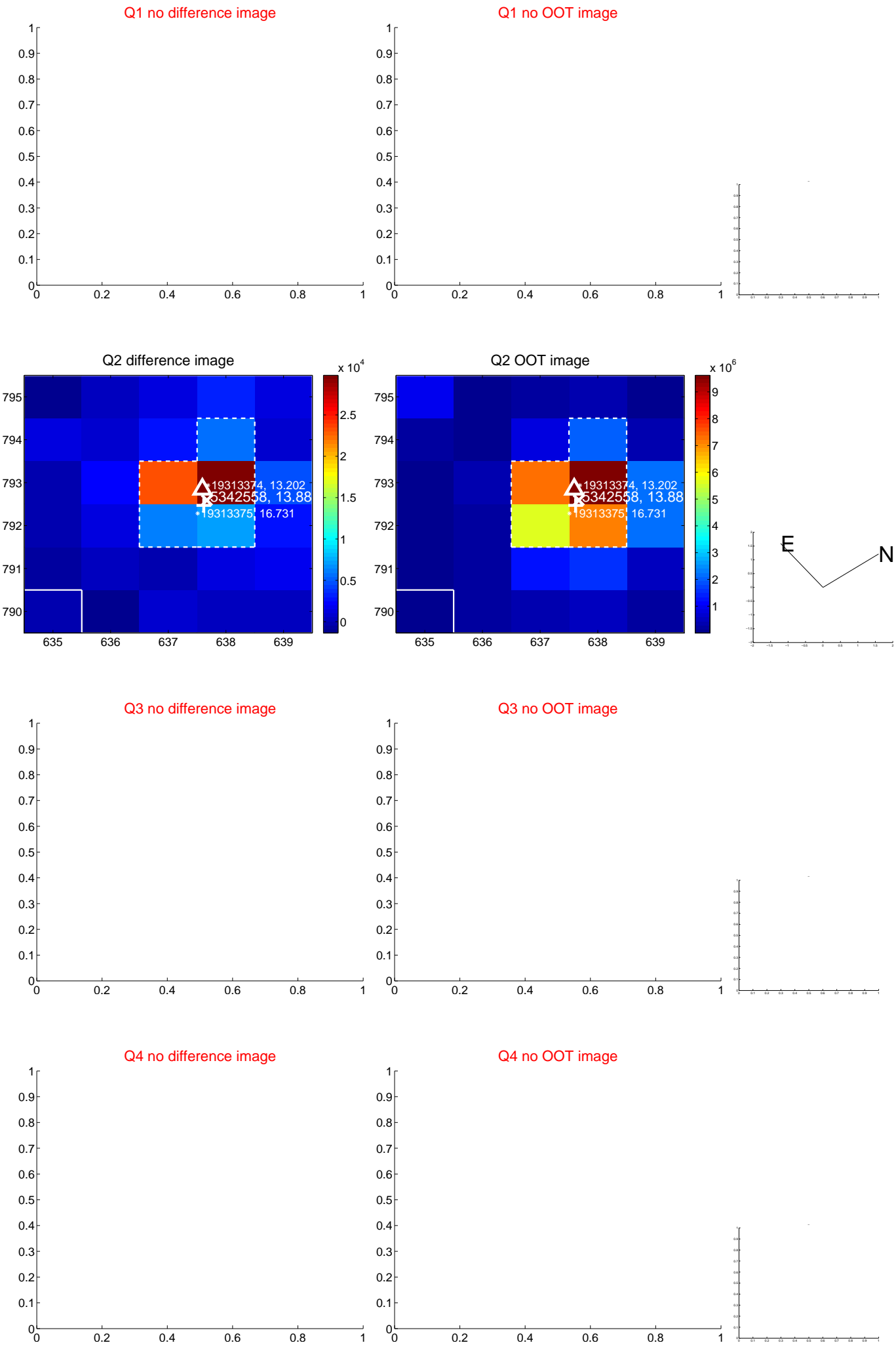


offset from photometric centroids

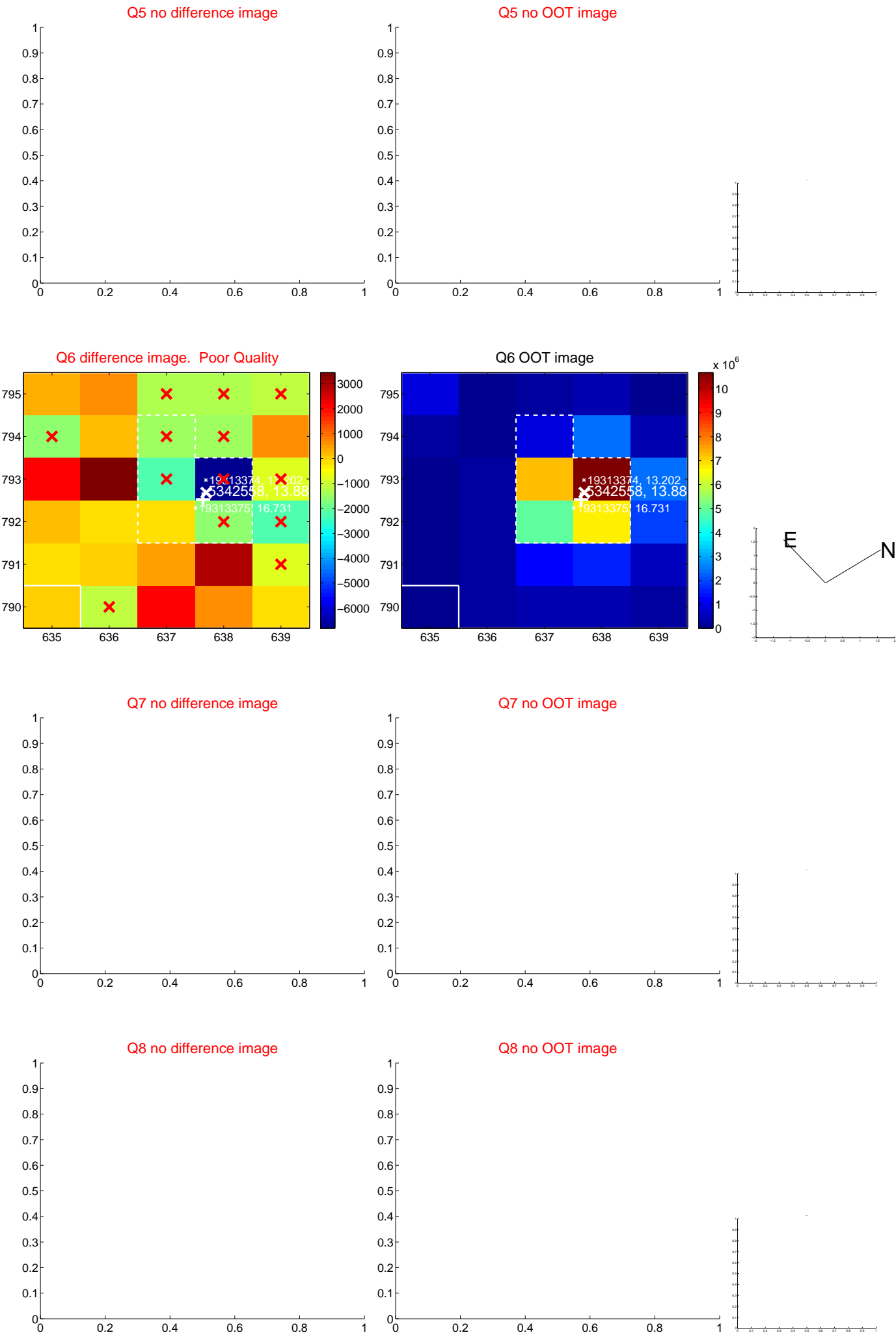


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

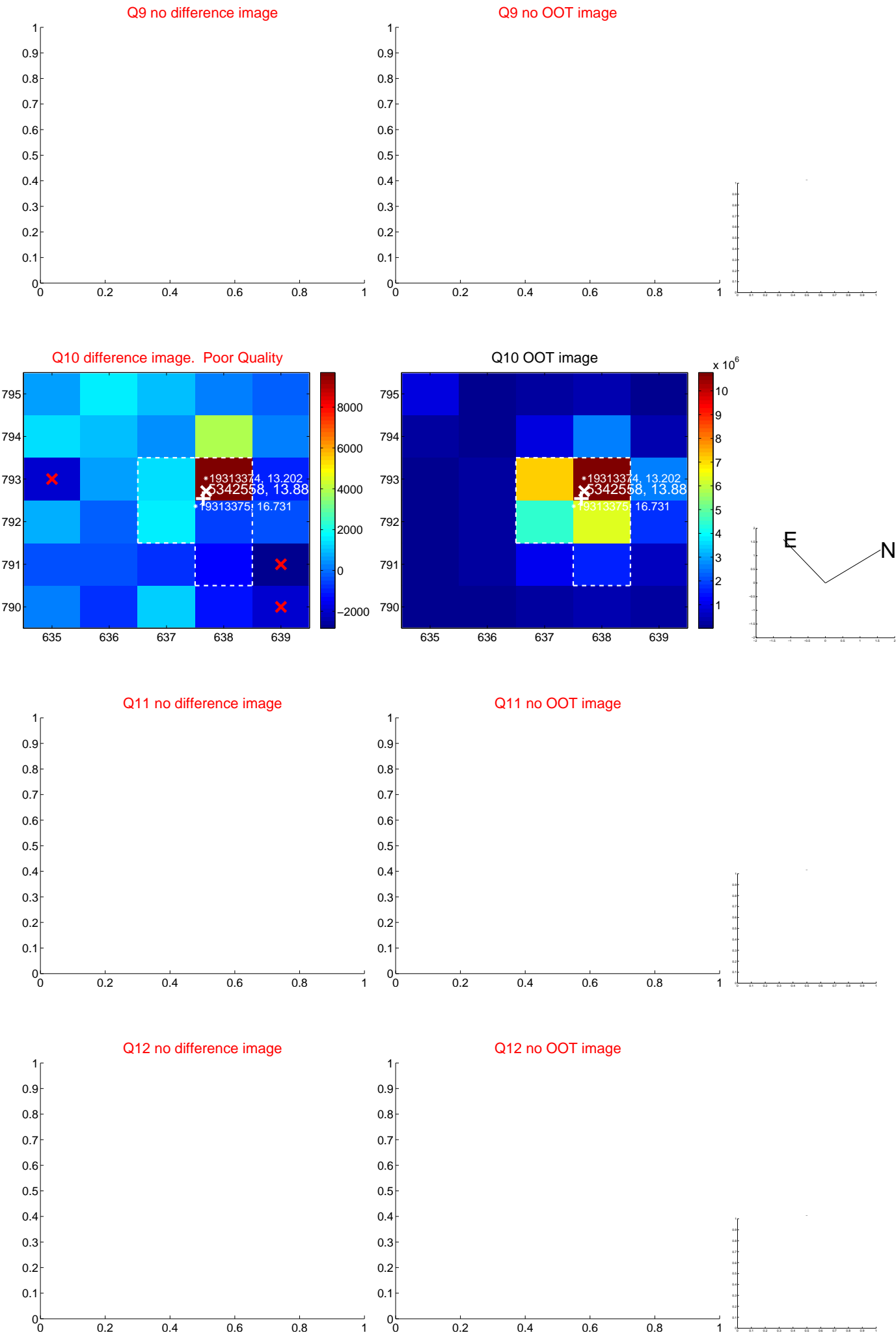
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



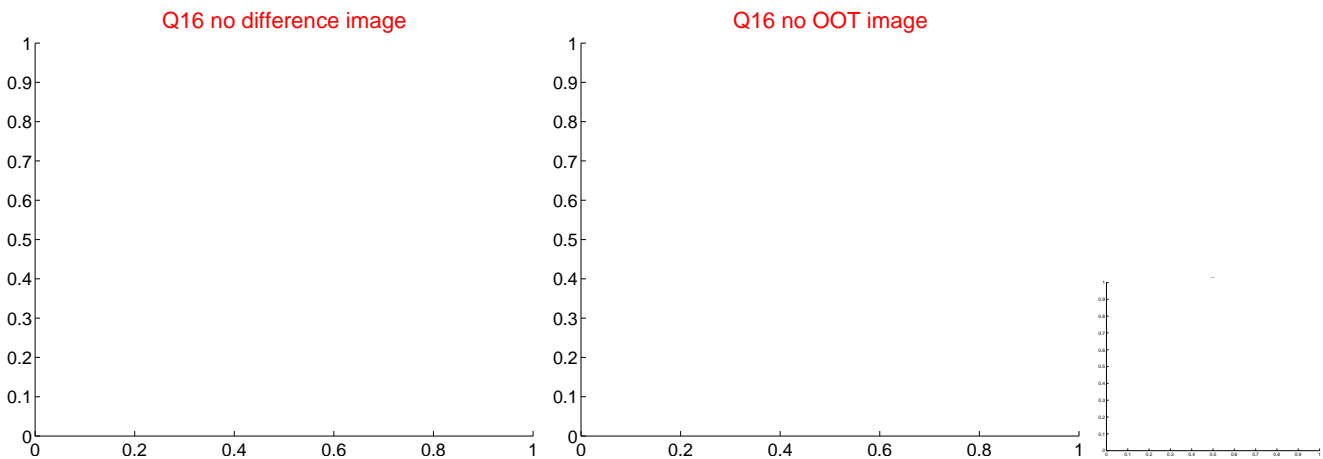
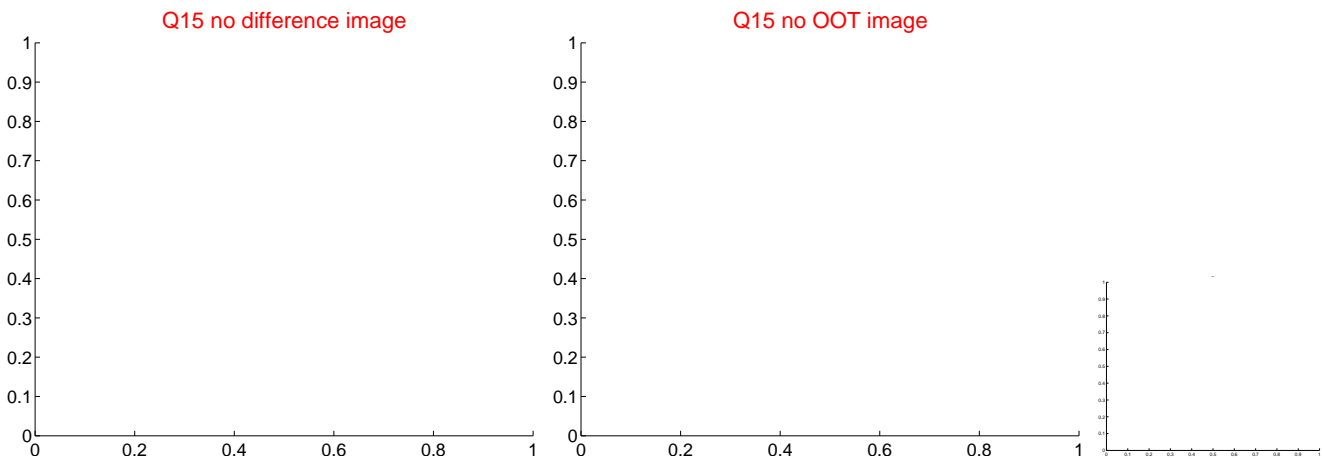
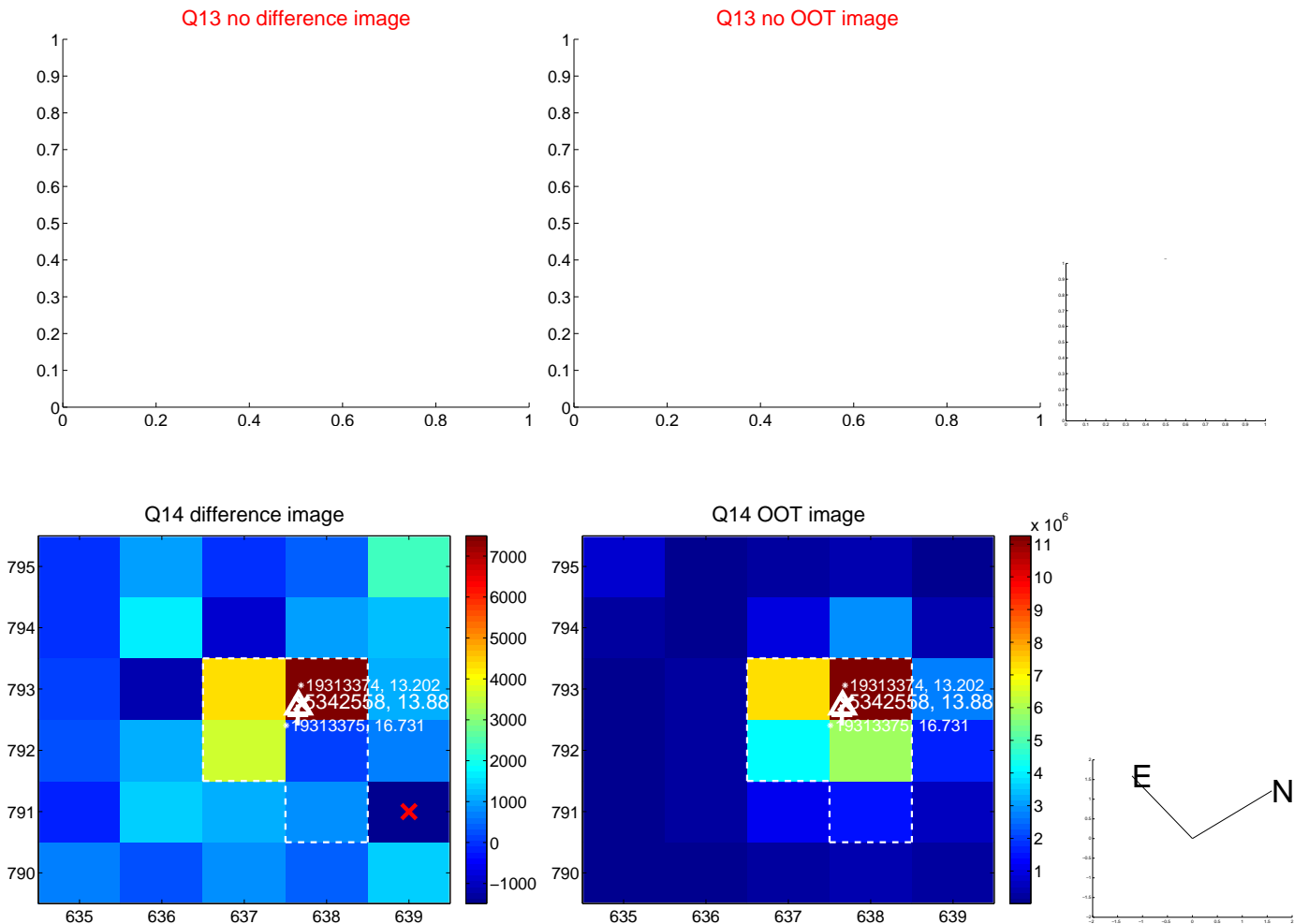
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



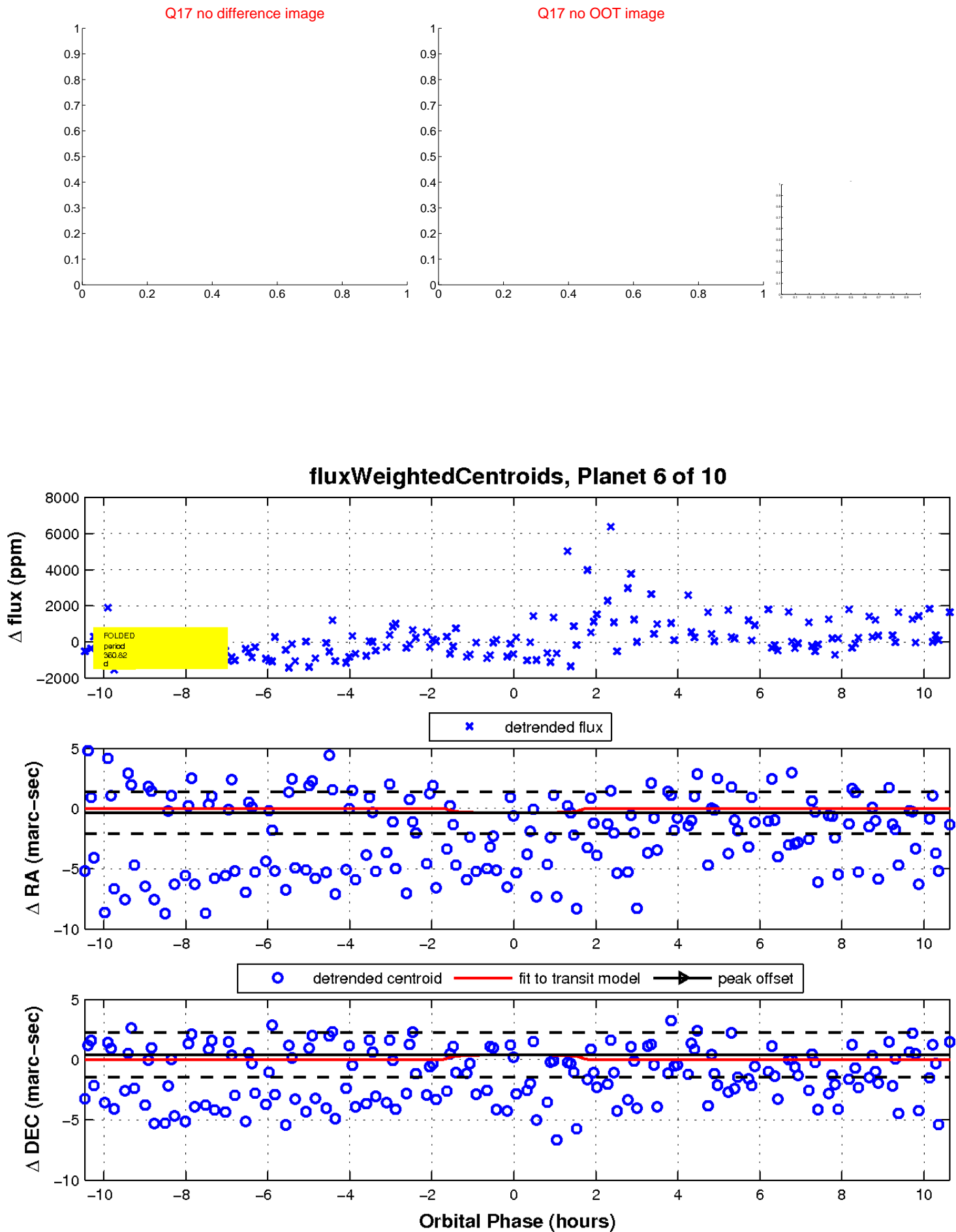
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

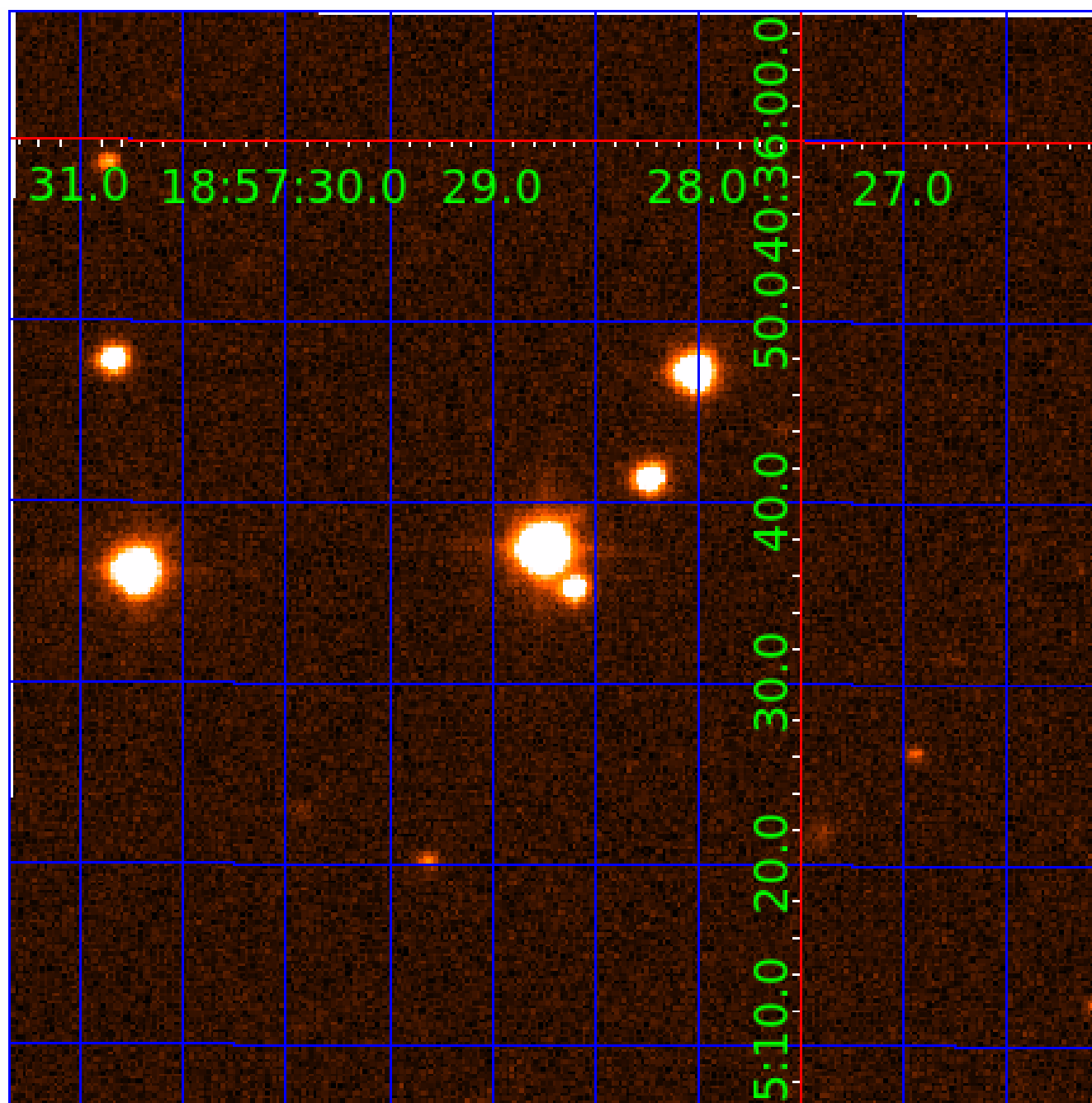


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 005342558-01 | OBS | No | 308.762826 | 263.627416 | 1701.3 | 10.318 | 18.7 | 8.5 | 0.17 | 3154 | 0.71 | 0.01 |
| 005342558-02 | OBS | No | 383.720665 | 219.310793 | 639.8 | 8.386 | 11.6 | 3.2 | 0.17 | 3154 | 0.45 | 0.01 |
| 005342558-03 | OBS | No | 418.229695 | 220.013594 | 1829.1 | 9.198 | 17.9 | 8.7 | 0.17 | 3154 | 0.73 | 0.01 |
| 005342558-05 | OBS | No | 335.694048 | 448.703570 | 1571.6 | 3.803 | 13.0 | 8.6 | 0.17 | 3154 | 0.68 | 0.01 |
| 005342558-06 | OBS | No | 360.819671 | 220.624153 | 1216.7 | 3.561 | 12.5 | 6.8 | 0.17 | 3154 | 0.67 | 0.01 |
| 005342558-07 | OBS | No | 326.552624 | 275.507809 | 512.0 | 5.172 | 11.2 | 2.8 | 0.17 | 3154 | 0.44 | 0.01 |
| 005342558-08 | OBS | No | 285.507525 | 315.963589 | 1141.7 | 7.857 | 11.0 | 7.5 | 0.17 | 3154 | 0.59 | 0.01 |
| 005342558-09 | OBS | No | 436.602709 | 228.377019 | 1074.0 | 15.912 | 11.2 | 6.4 | 0.17 | 3154 | 0.57 | 0.01 |
| 005342558-10 | OBS | No | 378.103945 | 375.659854 | 1003.0 | 7.162 | 10.8 | 6.7 | 0.17 | 3154 | 0.57 | 0.01 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005342558-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS |
| 005342558-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-09 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS |
| 005342558-10 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_KIC_POS |

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

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

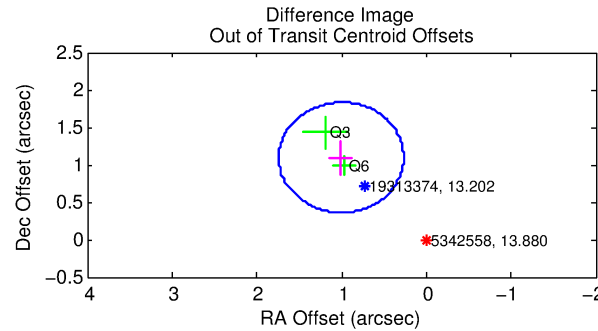
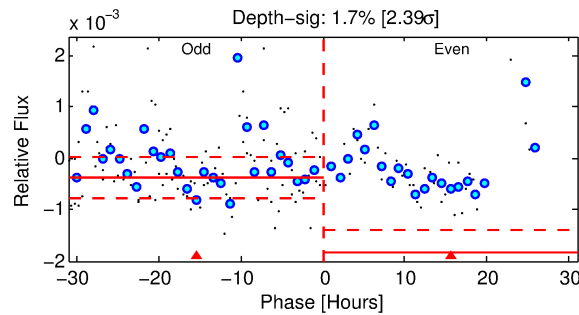
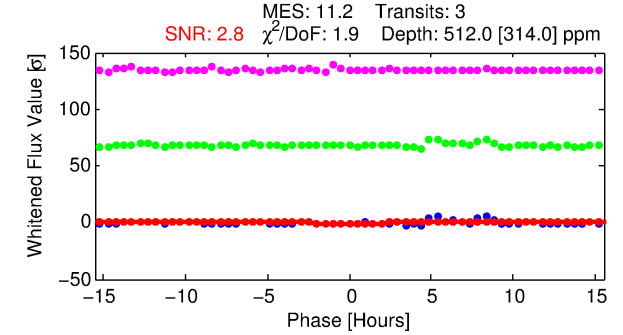
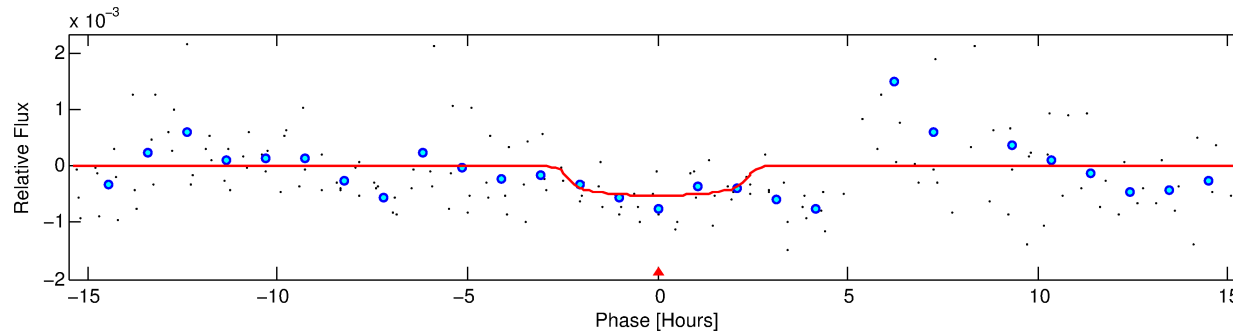
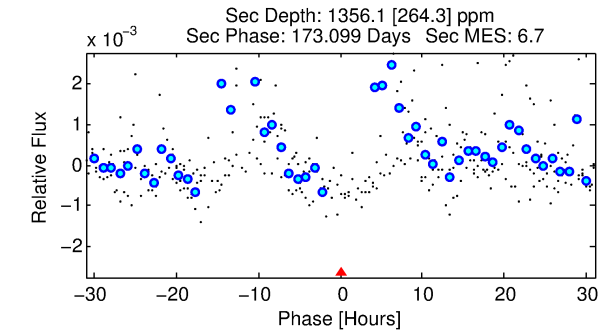
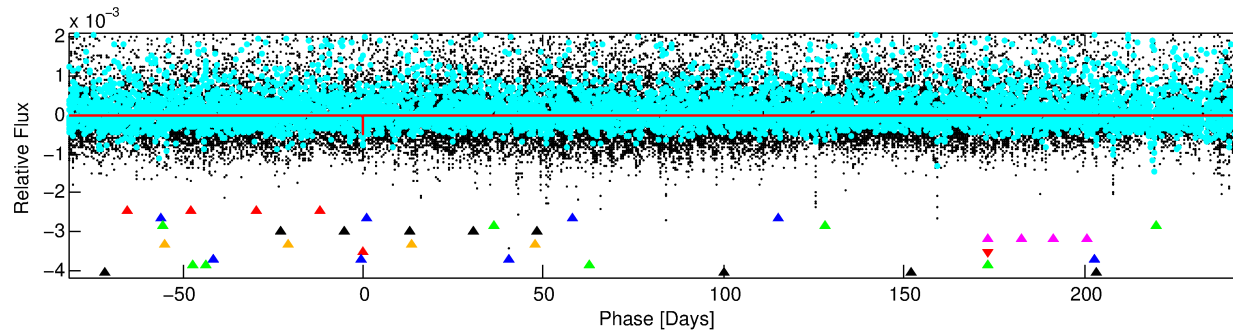
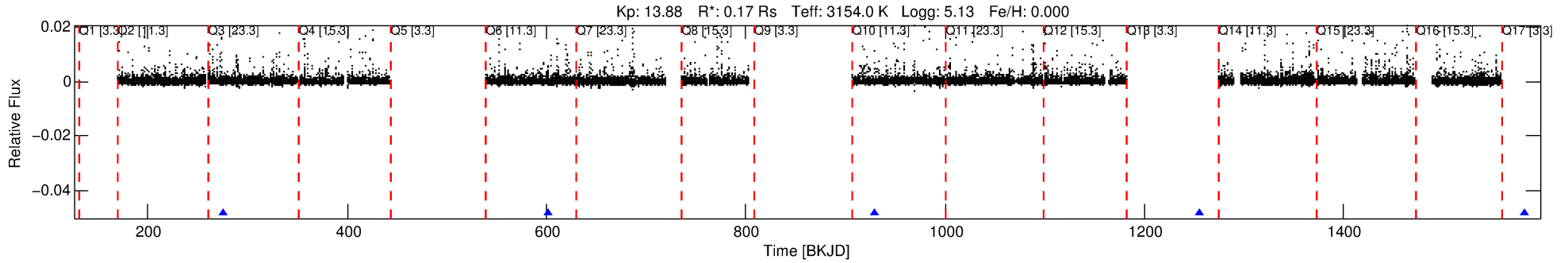
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005342558-07

No Significant Match Found

DV One-Page Summary

KIC: 5342558 Candidate: 7 of 10 Period: 326.553 d



DV Fit Results:

Period = 326.55262 [0.02080] d
Epoch = 275.5078 [0.0284] BKJD
Rp/R* = 0.0231 [0.0905]
a/R* = 302.73 [5036.82]
b = 0.81 [7.24]
Seff = 0.01 [0.00]
Teq = 83 [0] K
Rp = 0.44 [1.71] Re
a = 0.4906 [0.0000] AU
Ag = 946010.91 [7419897.08] [0.13σ]
Teffp = 3984 [7813] K [0.50σ]

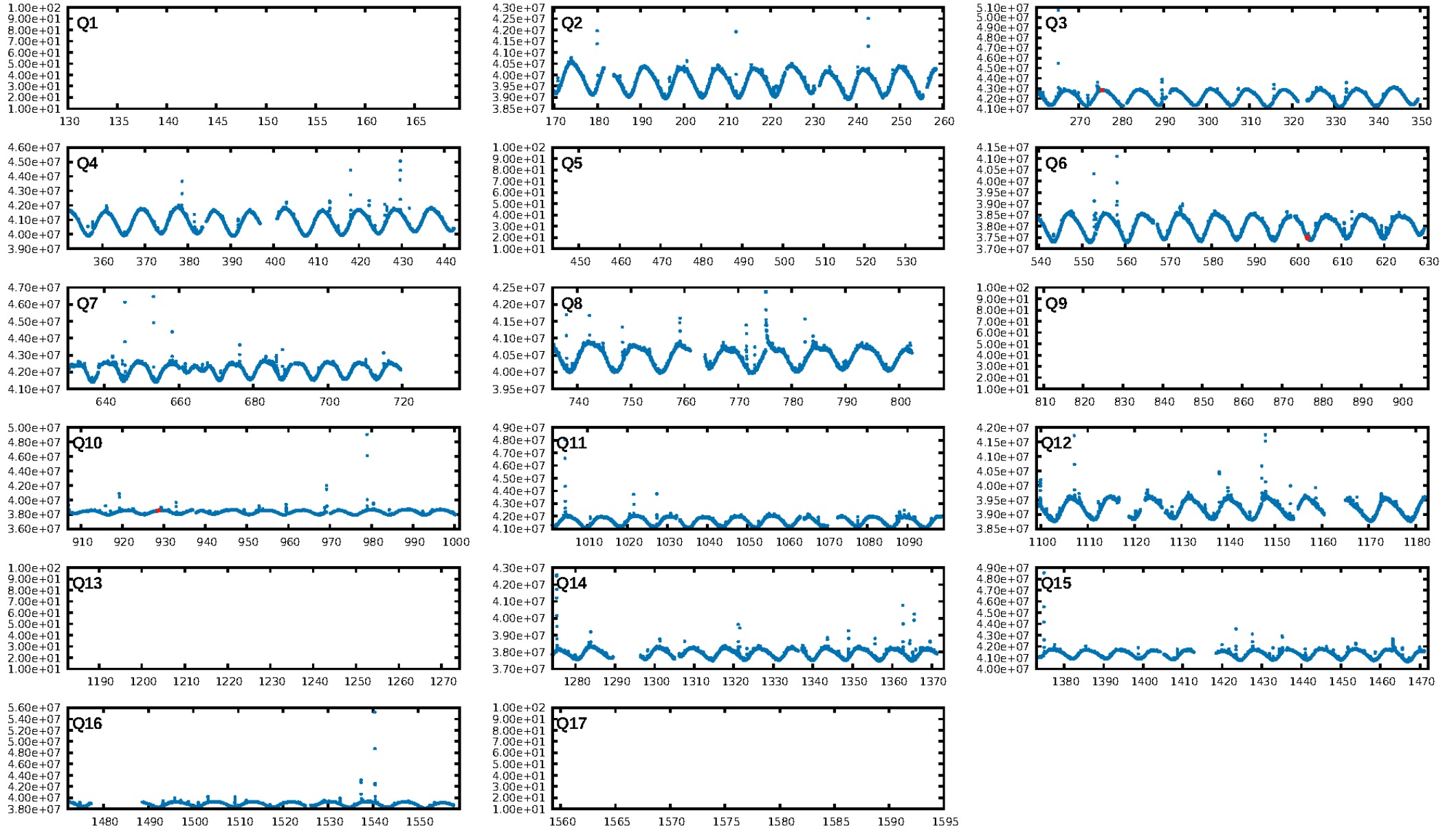
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [36.99σ]
LongPeriod-sig: 100.0% [34.18σ]
ModelChiSquare2-sig: 45.2%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -11.77
Centroid-sig: 42.6%
Centroid-so: 2.099 arcsec [0.70σ]
OotOffset-rm: 1.485 arcsec [6.05σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 0.926 arcsec [4.35σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.67 [2/3]

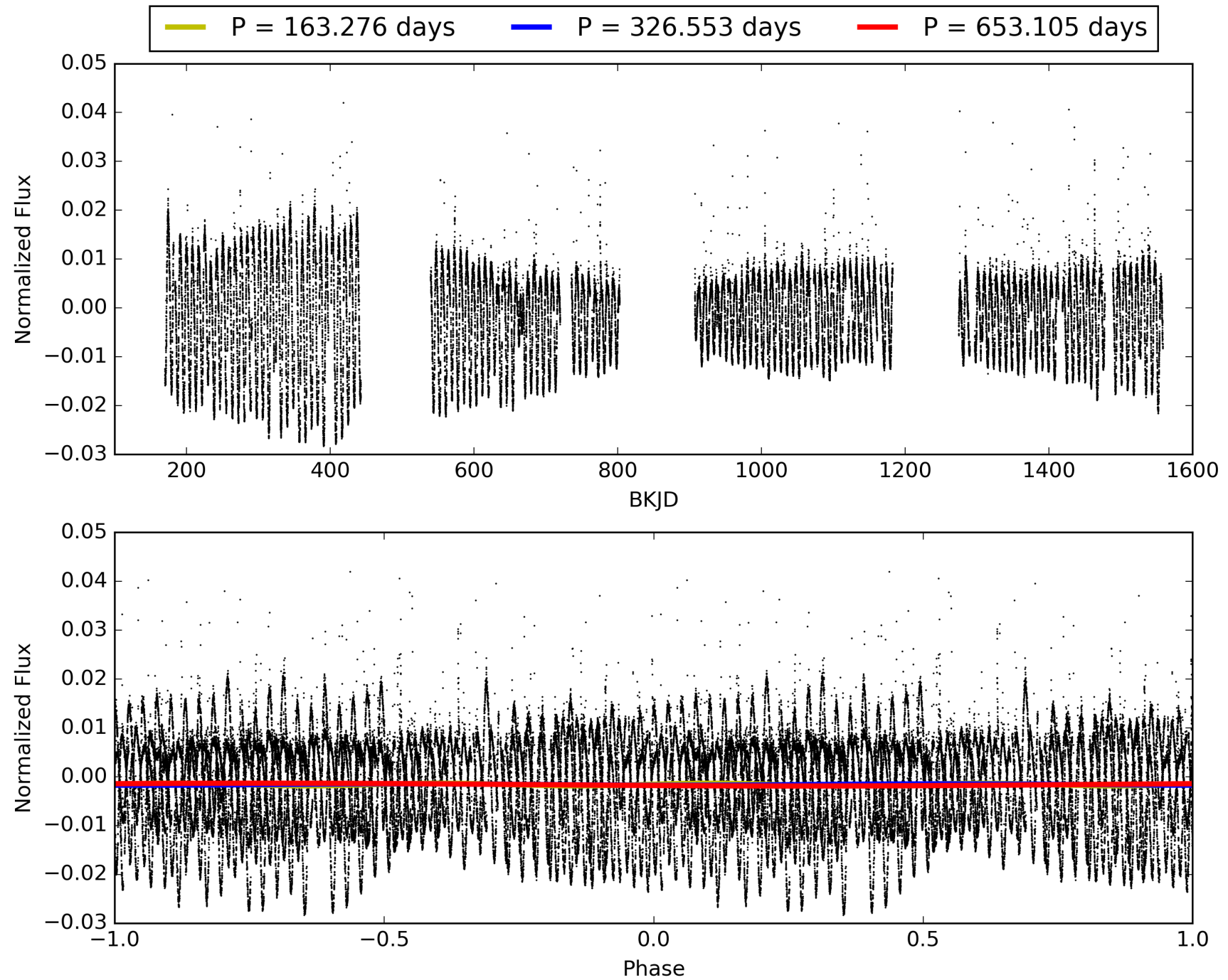
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:43:13 Z

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

TCE 005342558-07, PDC Light Curves

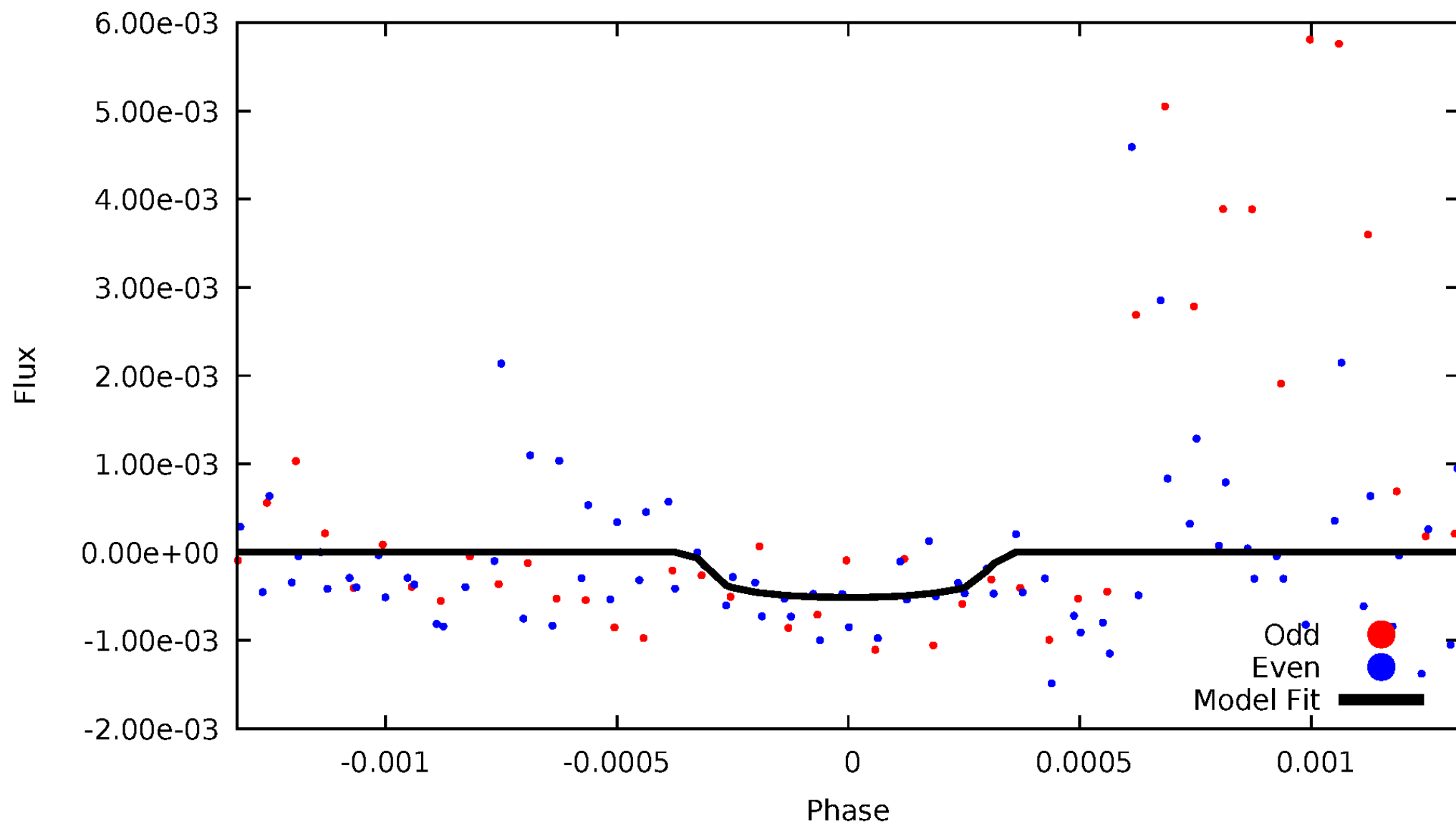


TCE 005342558-07



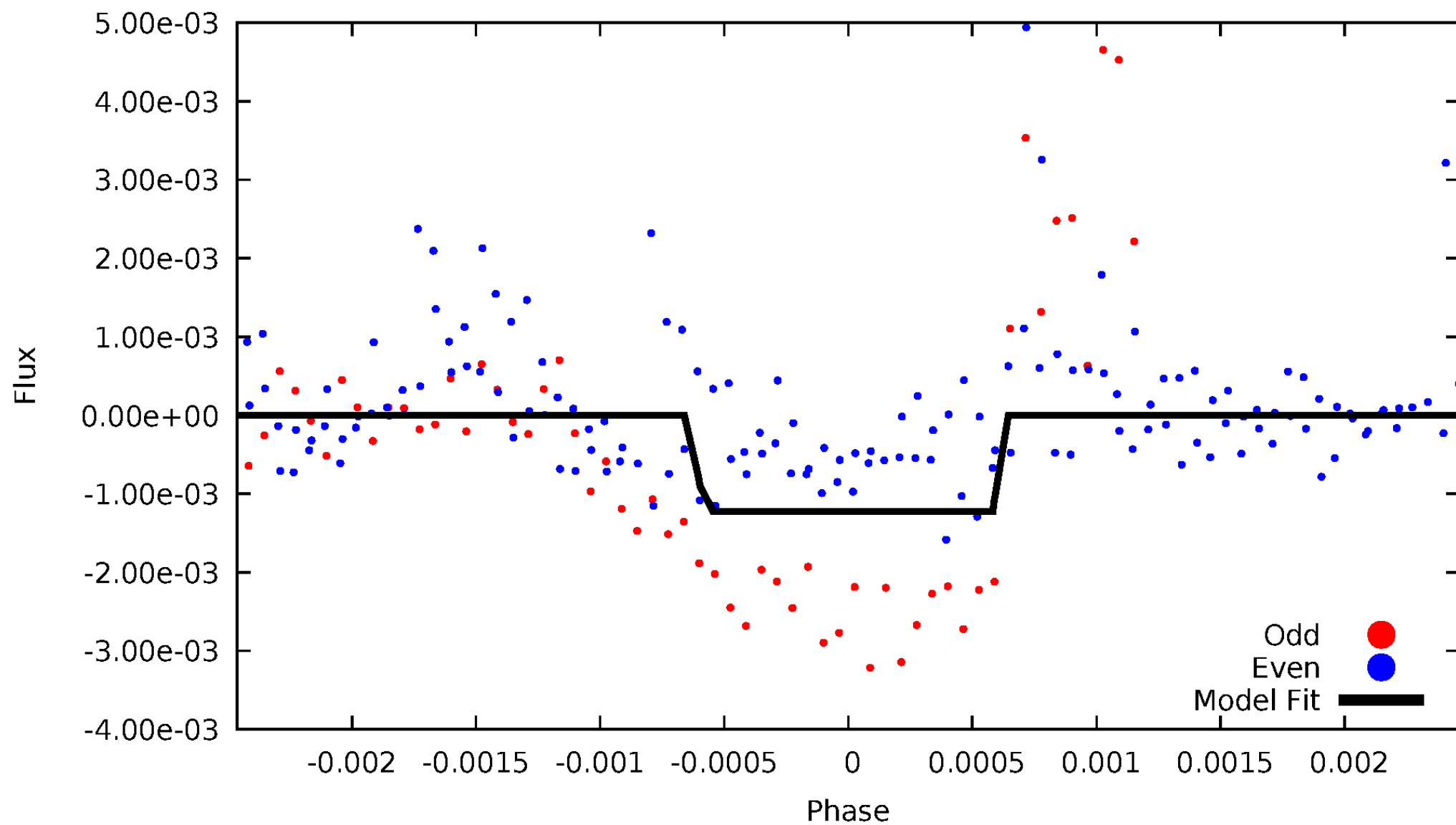
DV Odd/Even

TCE 005342558-07



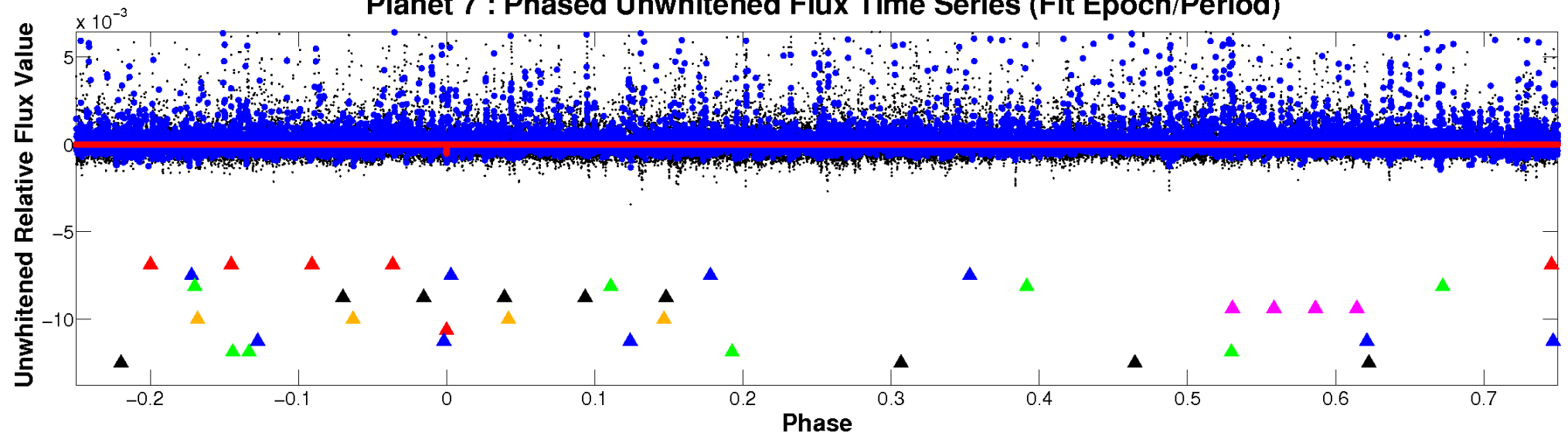
ALT Odd/Even

TCE 005342558-07

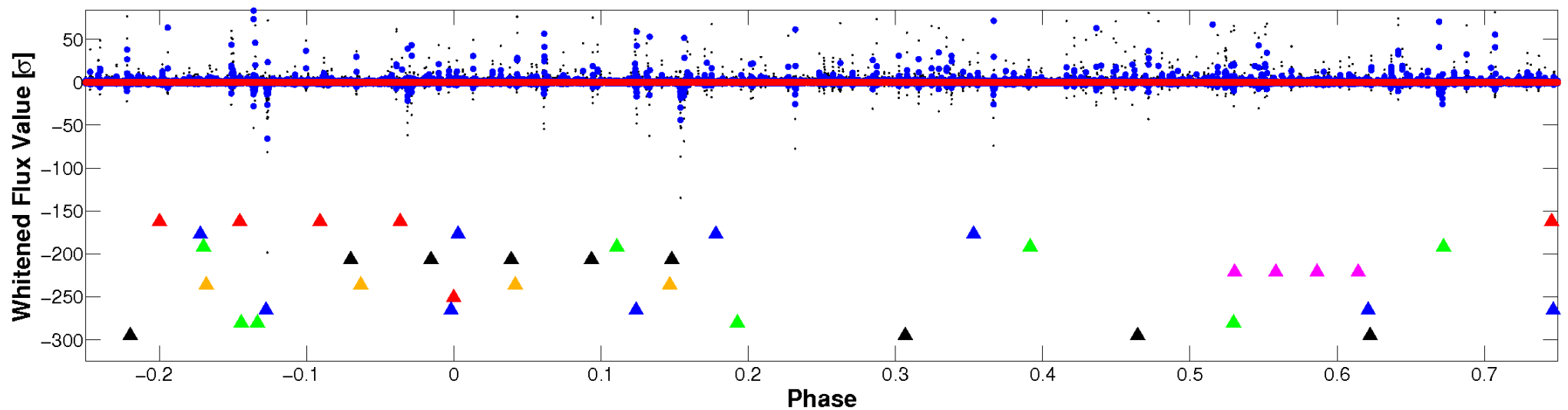


Non-Whitened Vs. Whitened Light Curve

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

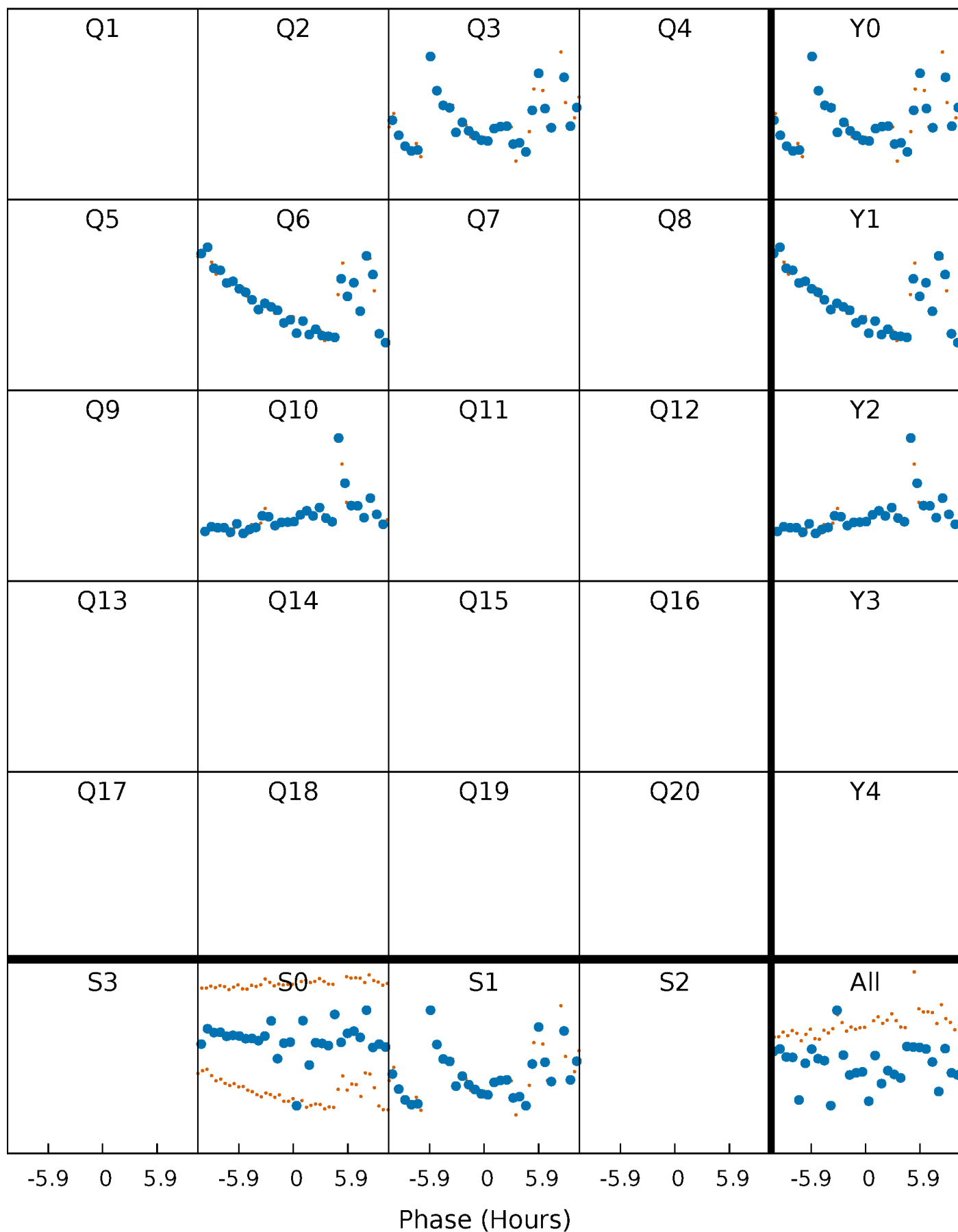


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



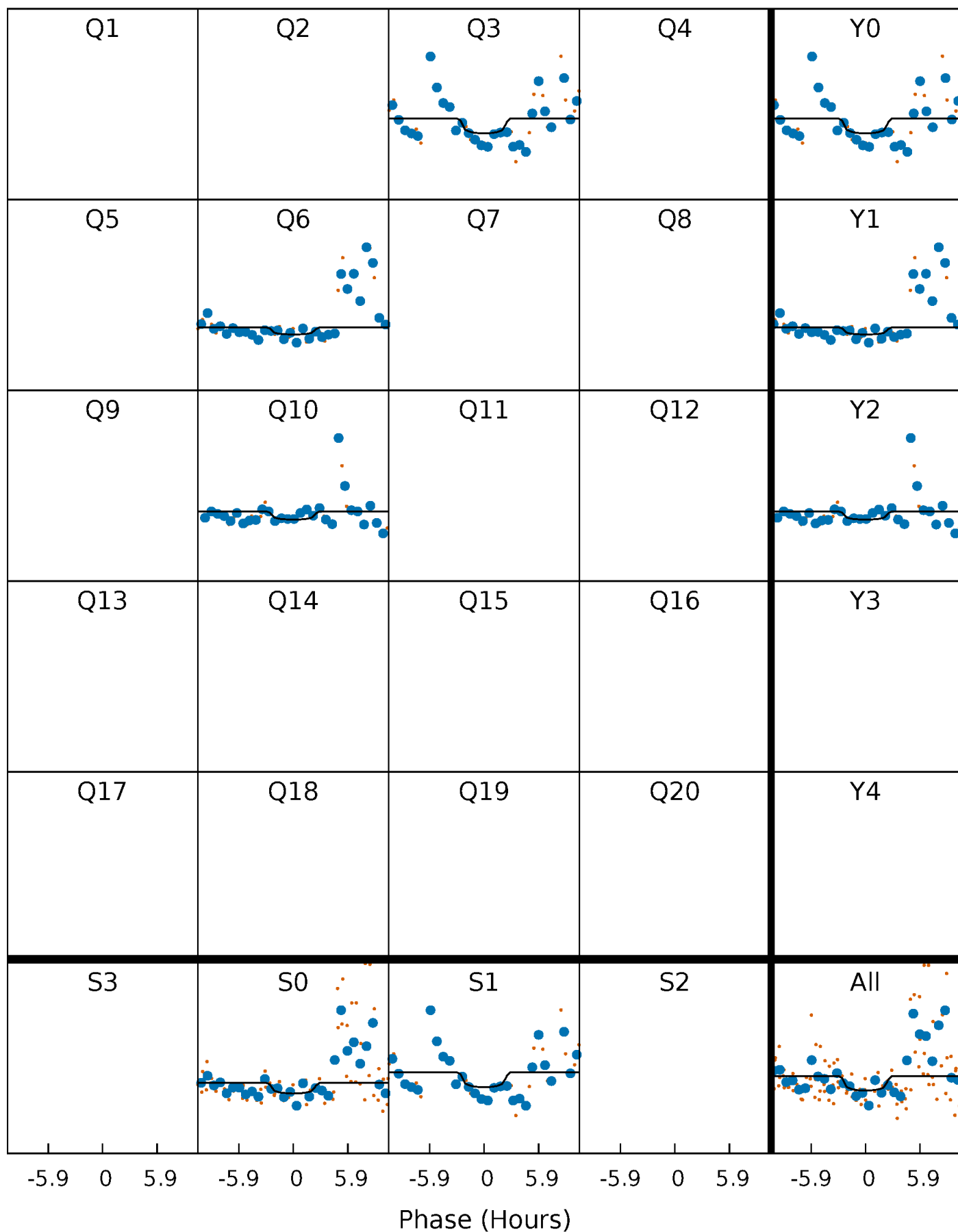
PDC Quarter-Phased Transit Curves

TCE 005342558-07 P=326.552624 Days $T_0=275.507809$ (BKJD)



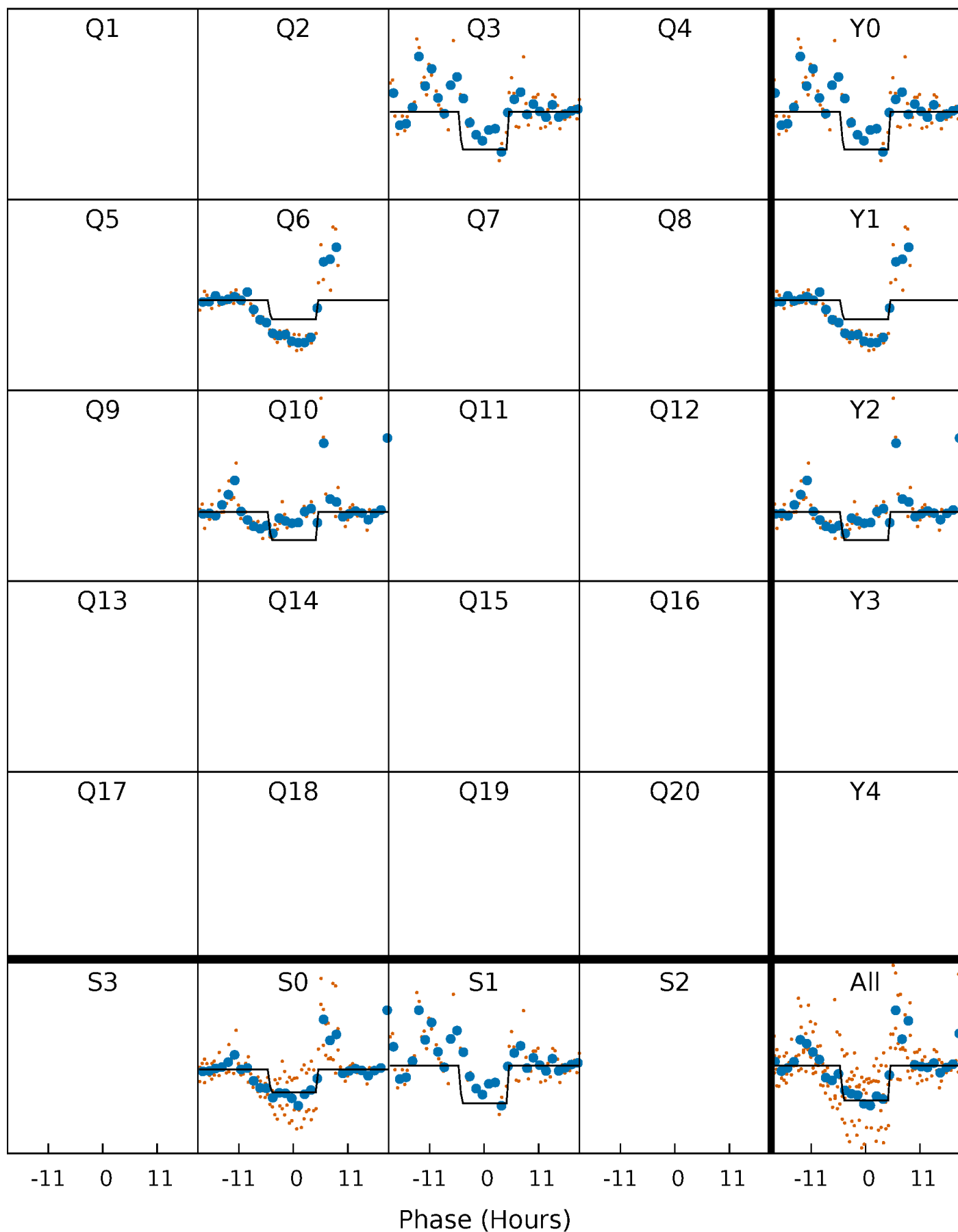
DV Quarter-Phased Transit Curves

TCE 005342558-07 $P=326.552624$ Days $T_0=275.507809$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

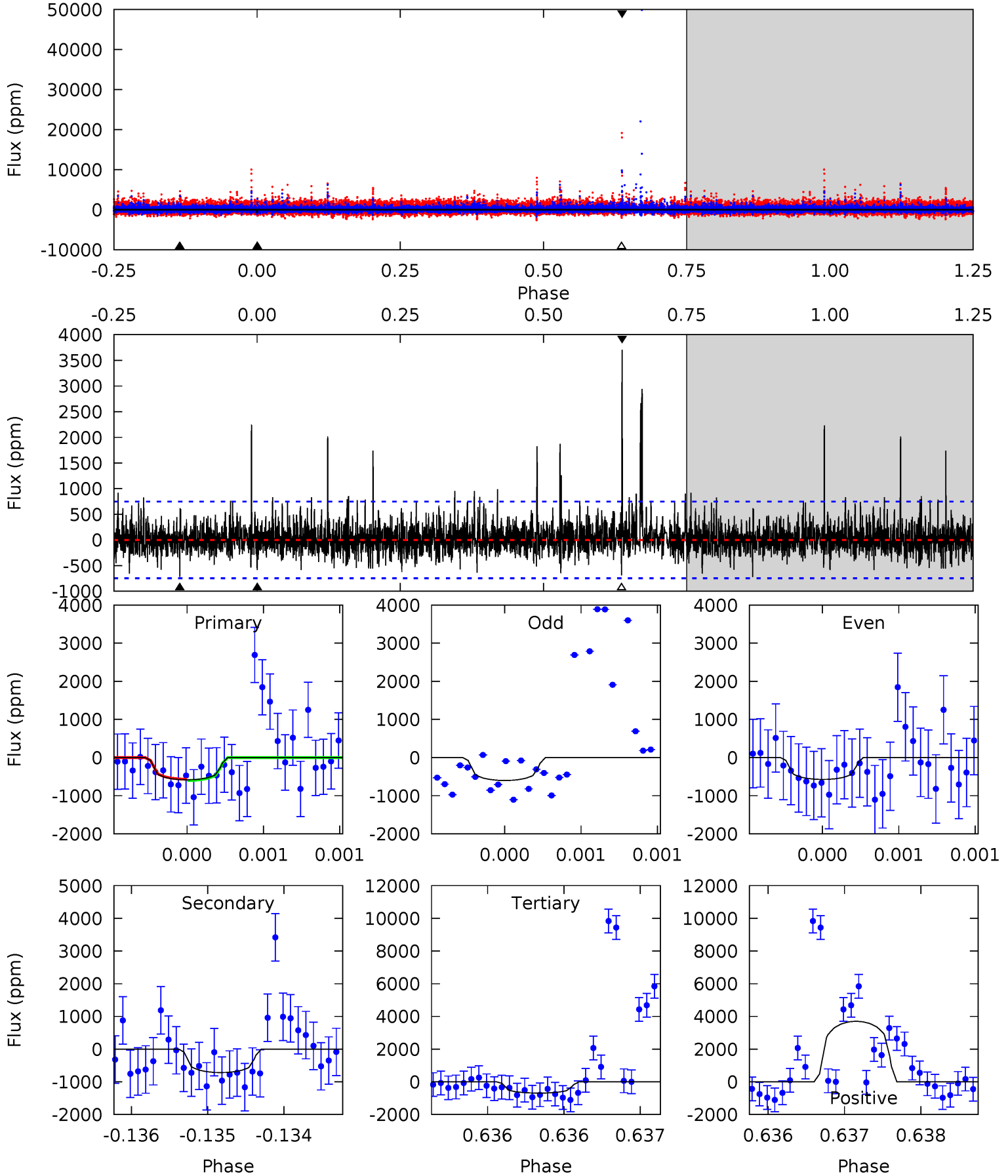
TCE 005342558-07 P=326.528289 Days $T_0=275.522493$ (BKJD)



DV Model-Shift Uniqueness Test

005342558-07, P = 326.552624 Days, E = 275.507809 Days

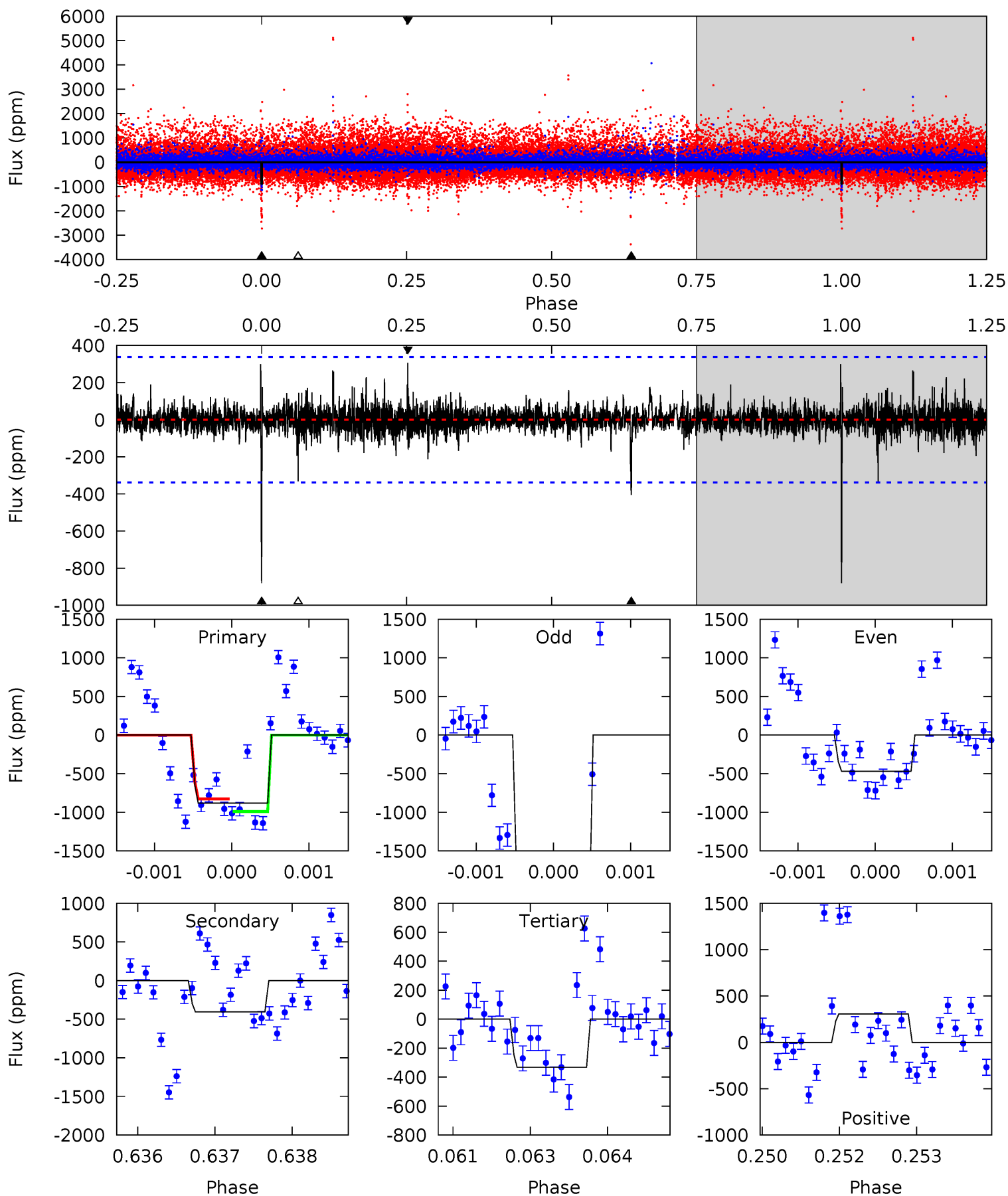
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 4.31 | 5.31 | 5.10 | 27.4 | 5.52 | 3.40 | 1.91 | -0.79 | -23.1 | 0.21 | -22.1 | 0.04 | 0.96 | 0.84 | 0.13 |



Alt Model-Shift Uniqueness Test

005342558-07, P = 326.528289 Days, E = 275.522493 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 14.1 | 6.47 | 5.30 | 4.89 | 5.41 | 3.23 | 0.75 | 8.77 | 9.18 | 1.17 | 1.58 | 14.8 | 1.87 | 0.26 | 1.29 |



Stellar Parameters For KIC 005342558

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|----------------------------|----------------------------|----------------------------|----------------------------|---|
| | 3154^{+1}_{-1} | $5.131^{+-1.000}_{-1.000}$ | $0.000^{+-1.000}_{-1.000}$ | $0.173^{+-1.000}_{-1.000}$ | $0.147^{+-1.000}_{-1.000}$ | $40.220^{+-1.000}_{-1.000}$ |
| | +0%/-0% | +19%/-19% | +inf%/-inf% | +578%/-578% | +680%/-680% | +2%/-2% |
| Source | PHO54 | PHO54 | PHO54 | BTSL | | |

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

Secondary Eclipse Parameters for KIC 005342558-07 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-------------|------------------------|-------------------|----------------------|----------------------------|
| DV | -718±135 | $1.34^{+1.39}_{-0.93}$ | 117^{+10}_{-10} | 2459^{+956}_{-399} | $55383^{+468028}_{-43052}$ |
| Alt. | -405±63 | $1.47^{+1.52}_{-1.04}$ | 116^{+10}_{-9} | 2237^{+757}_{-299} | $25420^{+224960}_{-18719}$ |

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 $A_{obs} \gg 1.0$

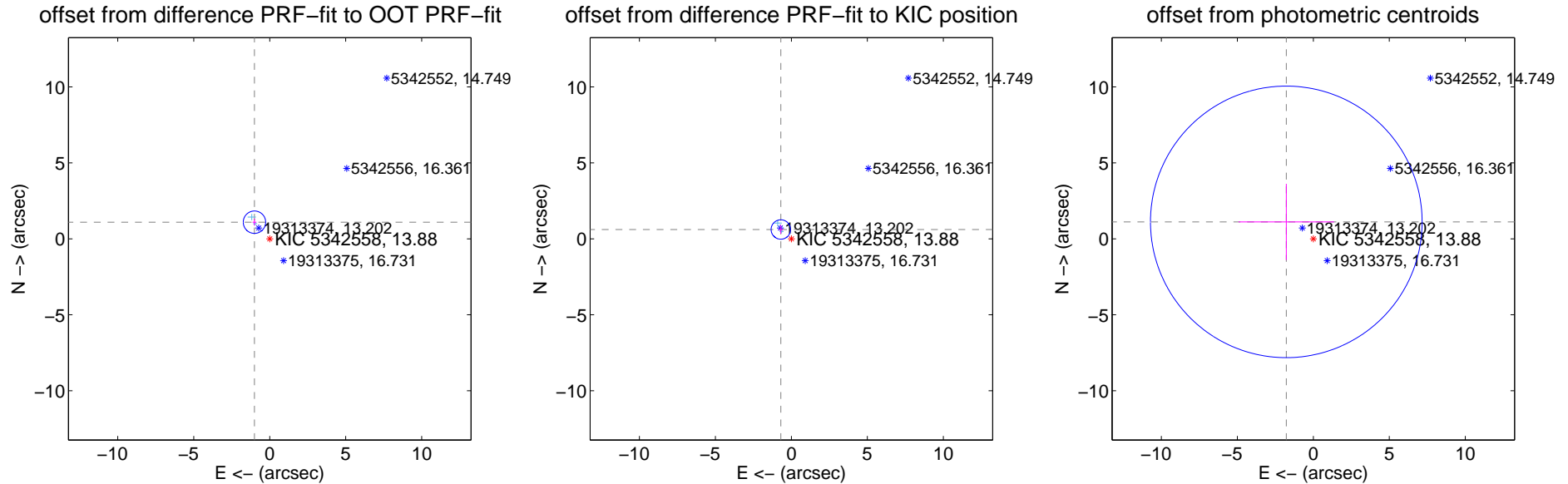
DV Centroid Data

Supplemental centroid analysis for 005342558-07. Kepler magnitude: 13.88. Transit SNR 2.78

There are 2 quarters with good PRF difference image offsets

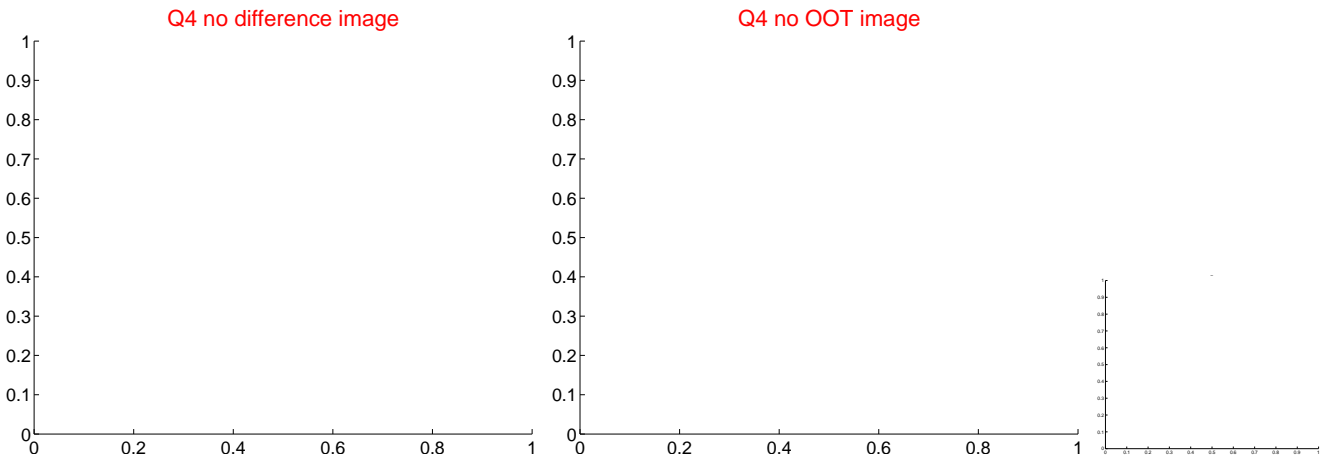
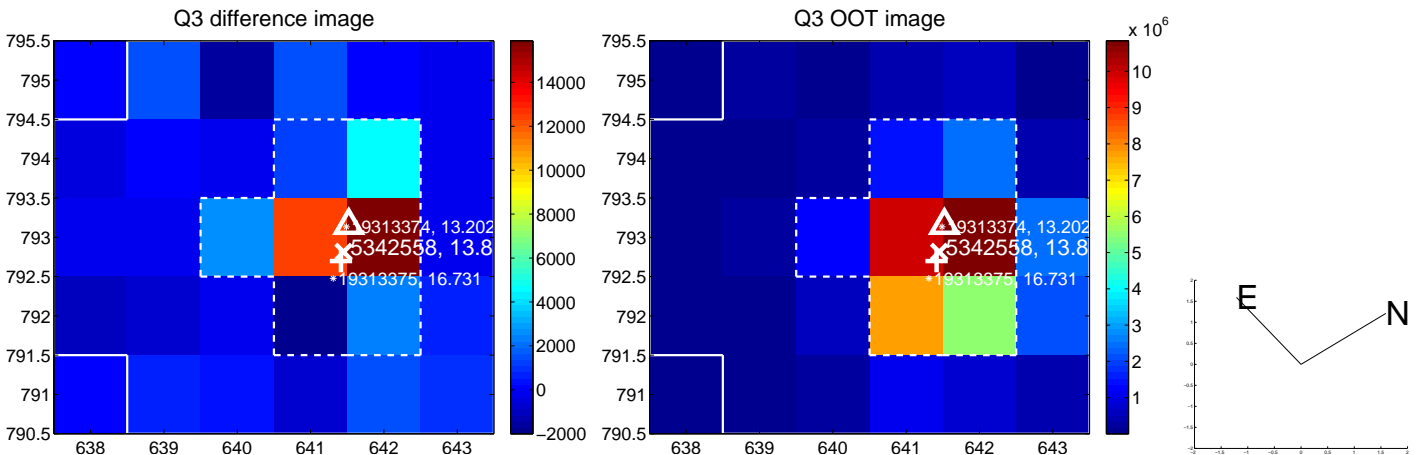
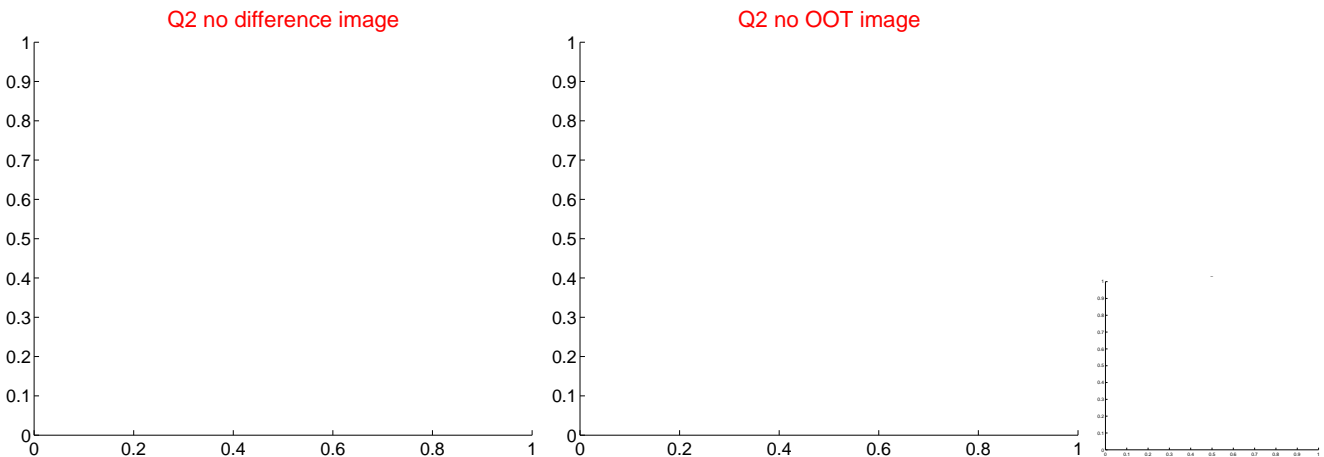
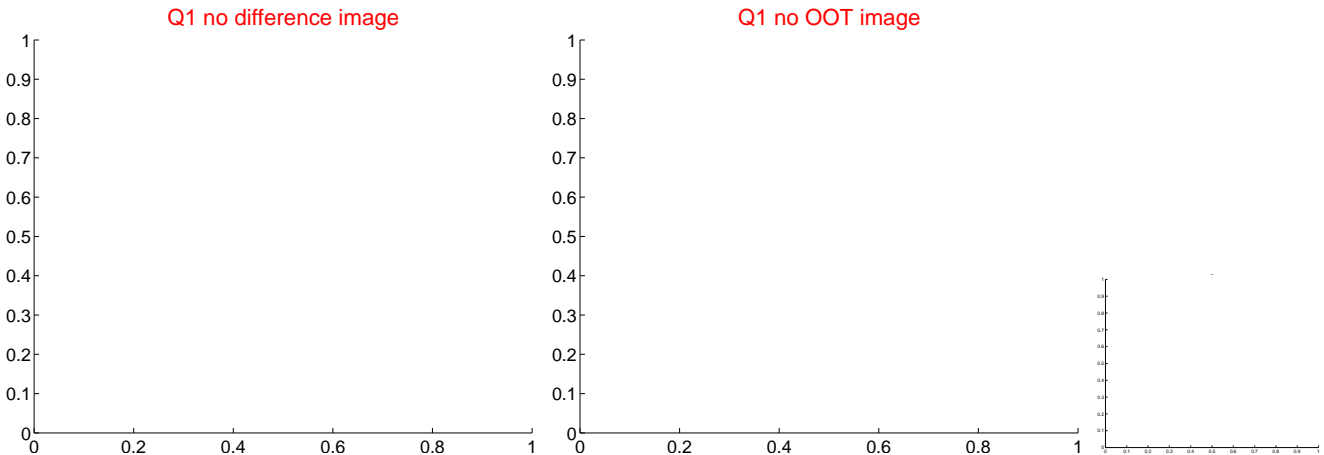
The direct PRF centroid is offset from the target star catalog position by about 0.60 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 1.485 \pm 0.246 | 6.05 | 1.004 \pm 0.128 | 1.095 \pm 0.230 |
| PRF-fit source offset from KIC position | 0.926 \pm 0.213 | 4.35 | 0.694 \pm 0.135 | 0.613 \pm 0.283 |
| photometric centroid source offset | 2.10 \pm 2.98 | 0.70 | 1.78 \pm 3.15 | 1.11 \pm 2.50 |

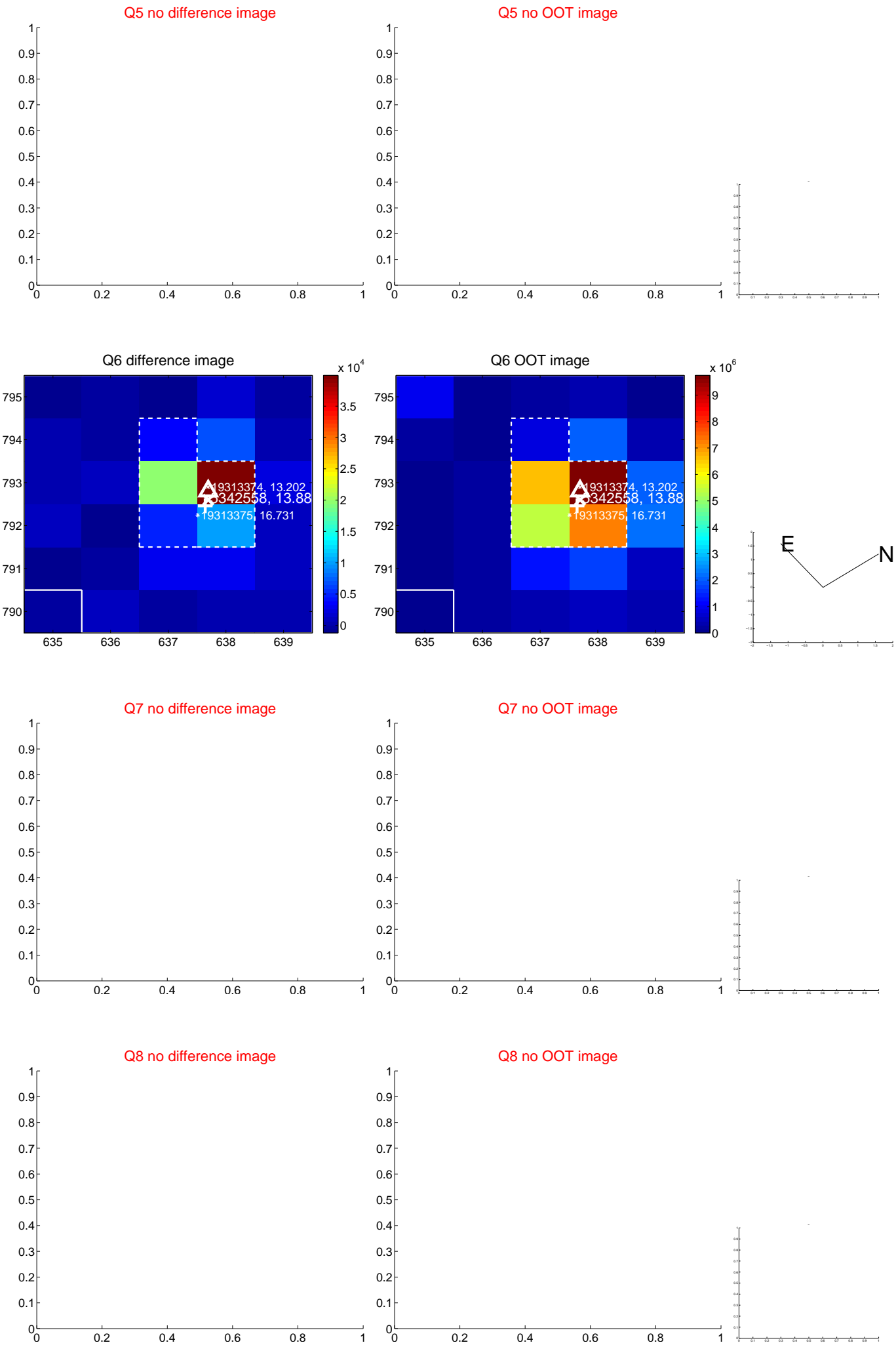


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

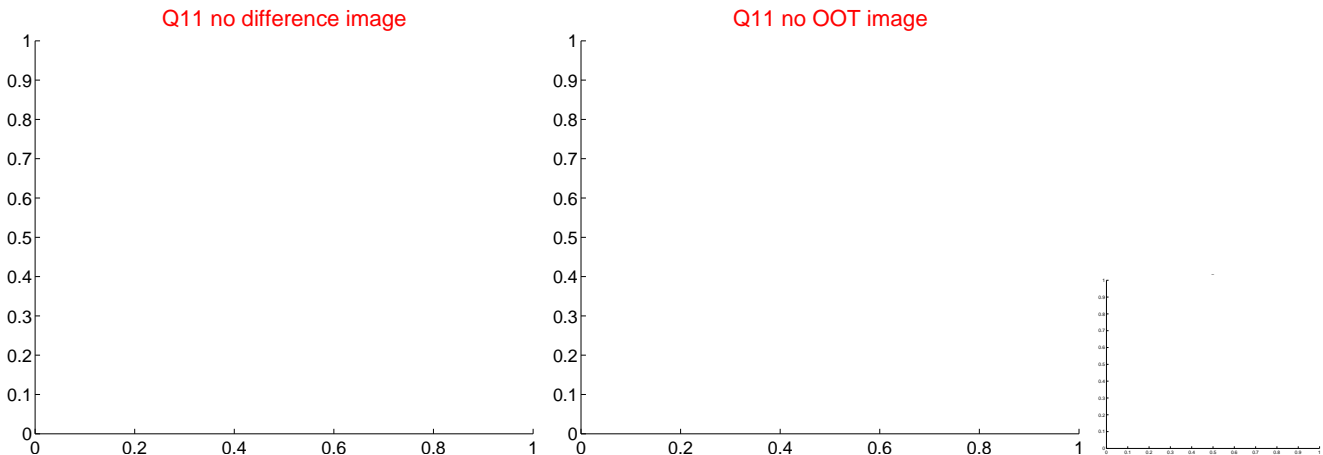
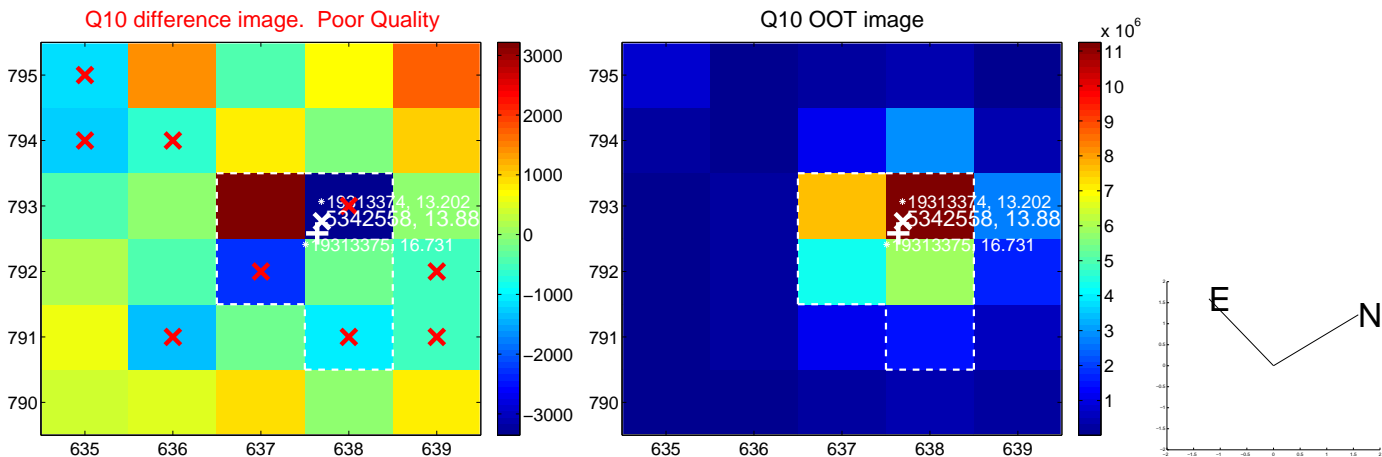
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



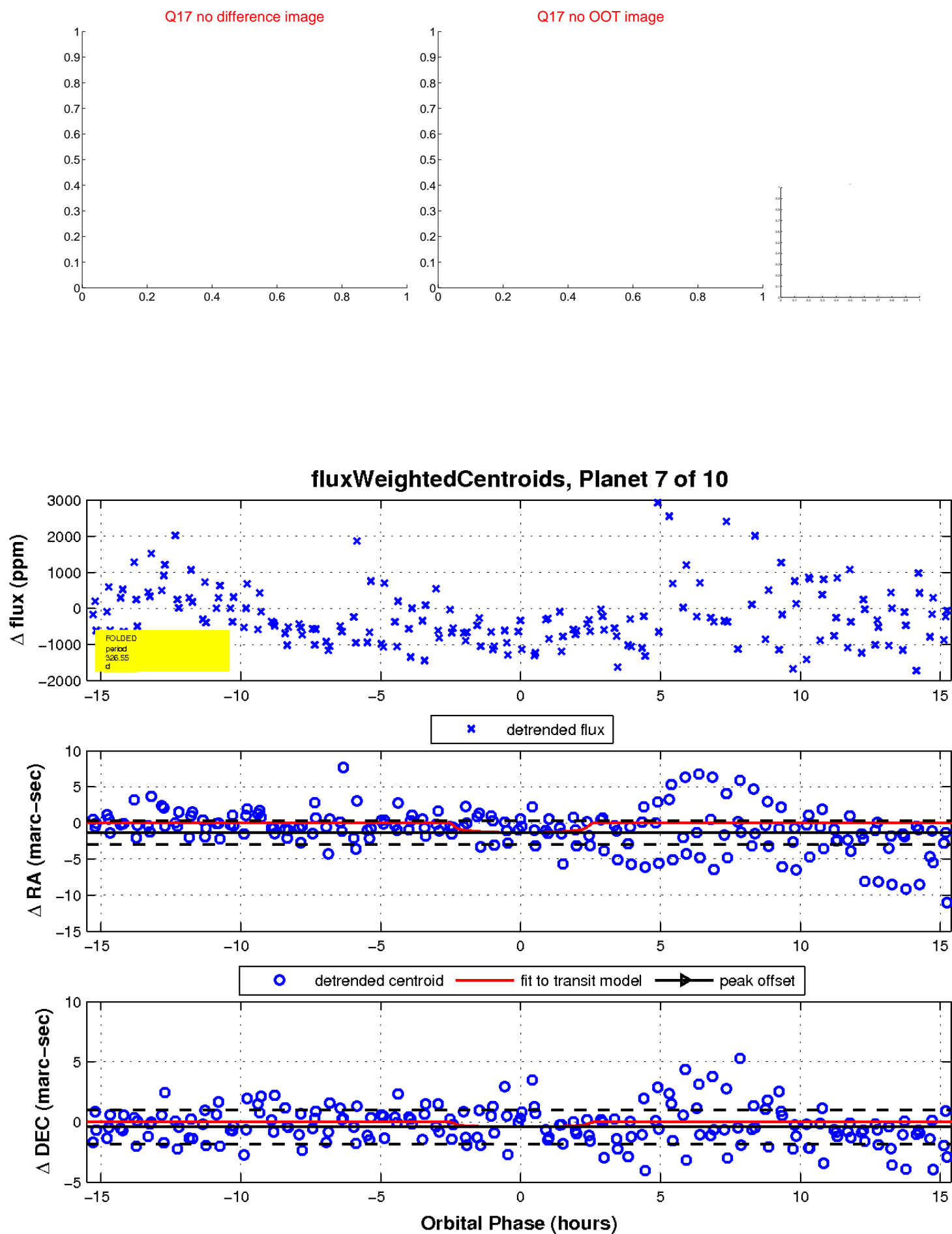
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

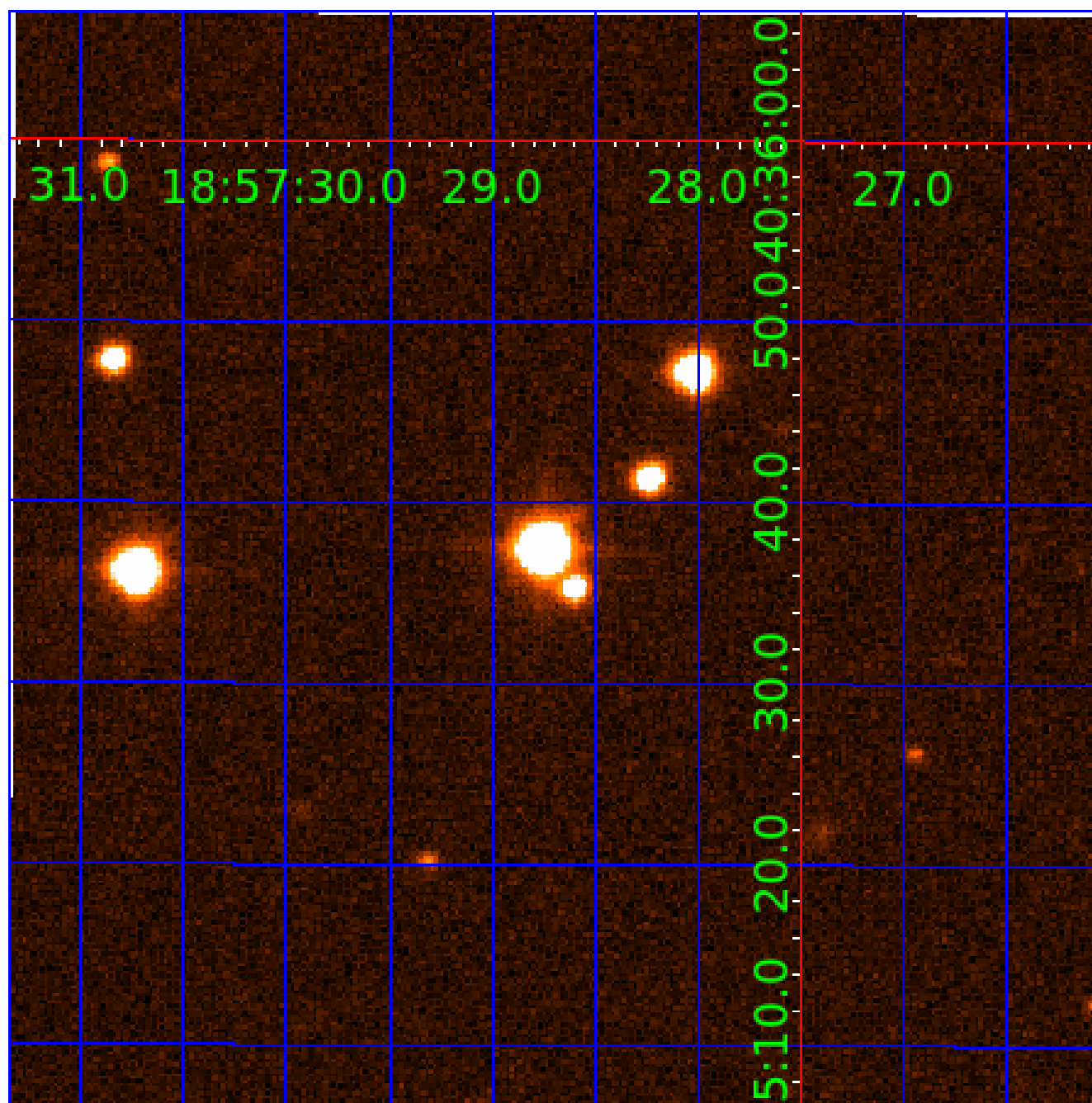


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 005342558-01 | OBS | No | 308.762826 | 263.627416 | 1701.3 | 10.318 | 18.7 | 8.5 | 0.17 | 3154 | 0.71 | 0.01 |
| 005342558-02 | OBS | No | 383.720665 | 219.310793 | 639.8 | 8.386 | 11.6 | 3.2 | 0.17 | 3154 | 0.45 | 0.01 |
| 005342558-03 | OBS | No | 418.229695 | 220.013594 | 1829.1 | 9.198 | 17.9 | 8.7 | 0.17 | 3154 | 0.73 | 0.01 |
| 005342558-05 | OBS | No | 335.694048 | 448.703570 | 1571.6 | 3.803 | 13.0 | 8.6 | 0.17 | 3154 | 0.68 | 0.01 |
| 005342558-06 | OBS | No | 360.819671 | 220.624153 | 1216.7 | 3.561 | 12.5 | 6.8 | 0.17 | 3154 | 0.67 | 0.01 |
| 005342558-07 | OBS | No | 326.552624 | 275.507809 | 512.0 | 5.172 | 11.2 | 2.8 | 0.17 | 3154 | 0.44 | 0.01 |
| 005342558-08 | OBS | No | 285.507525 | 315.963589 | 1141.7 | 7.857 | 11.0 | 7.5 | 0.17 | 3154 | 0.59 | 0.01 |
| 005342558-09 | OBS | No | 436.602709 | 228.377019 | 1074.0 | 15.912 | 11.2 | 6.4 | 0.17 | 3154 | 0.57 | 0.01 |
| 005342558-10 | OBS | No | 378.103945 | 375.659854 | 1003.0 | 7.162 | 10.8 | 6.7 | 0.17 | 3154 | 0.57 | 0.01 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005342558-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS |
| 005342558-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-09 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS |
| 005342558-10 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_KIC_POS |

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

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

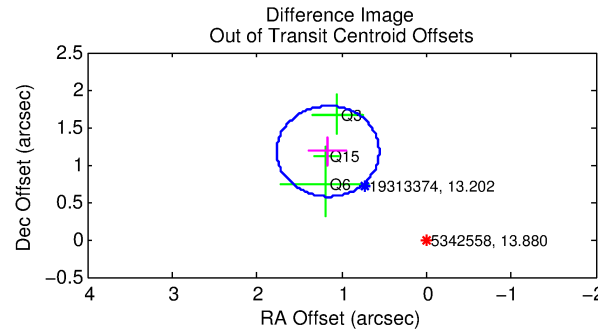
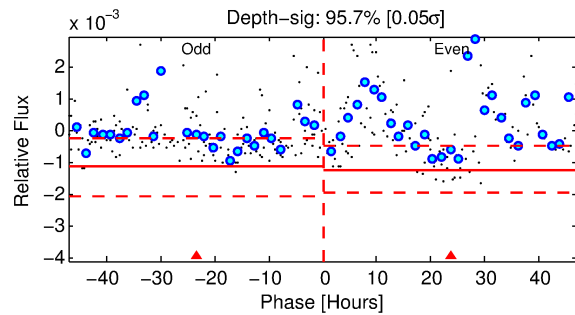
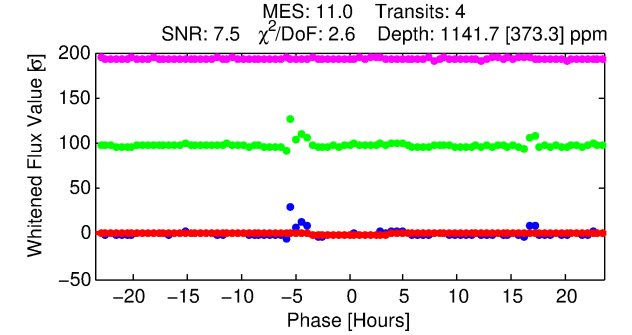
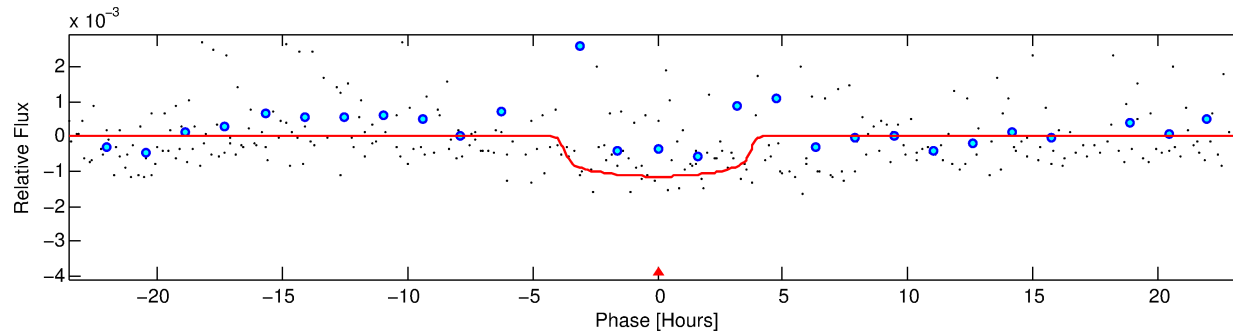
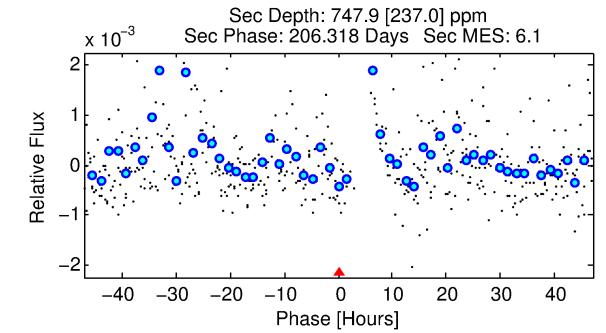
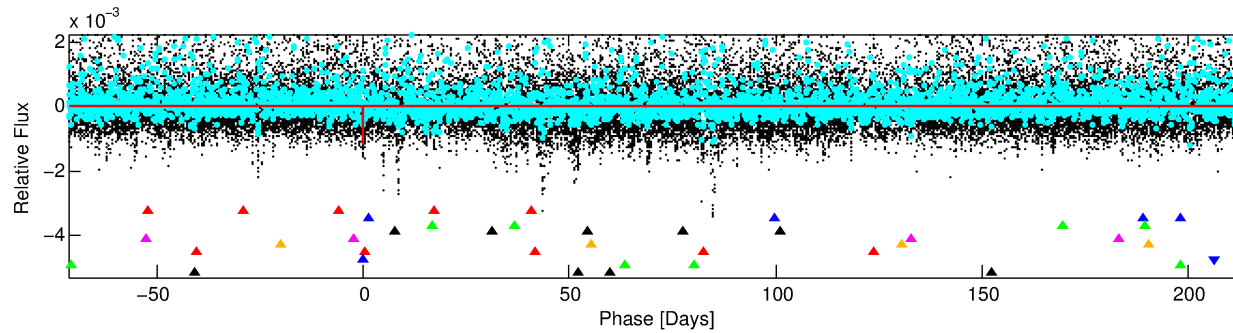
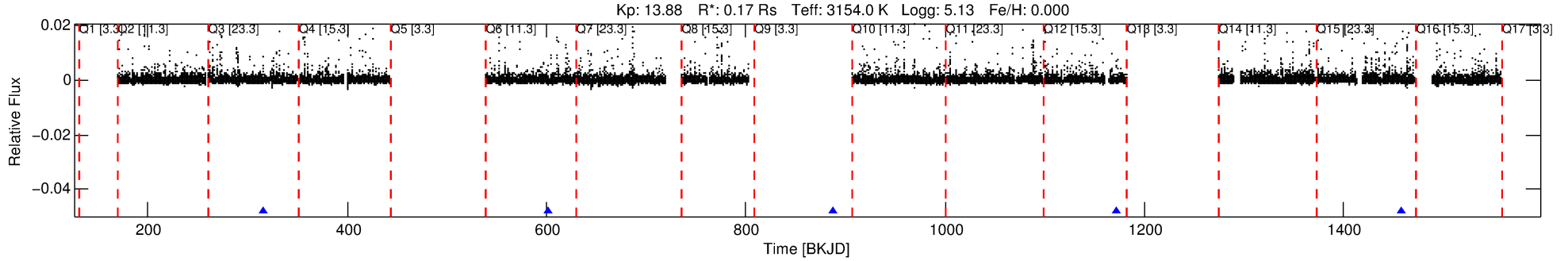
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005342558-08

No Significant Match Found

DV One-Page Summary

KIC: 5342558 Candidate: 8 of 10 Period: 285.508 d



DV Fit Results:

Period = 285.50753 [0.00929] d
Epoch = 315.9636 [0.0259] BKJD
Rp/R* = 0.0313 [0.0412]
a/R* = 258.06 [1441.39]
b = 0.45 [10.01]
Seff = 0.01 [0.00]
Teq = 86 [0] K
Rp = 0.59 [0.78] Re
a = 0.4485 [0.0000] AU
Ag = 236844.87 [628283.71] [0.38σ]
Teffp = 2947 [1955] K [1.46σ]

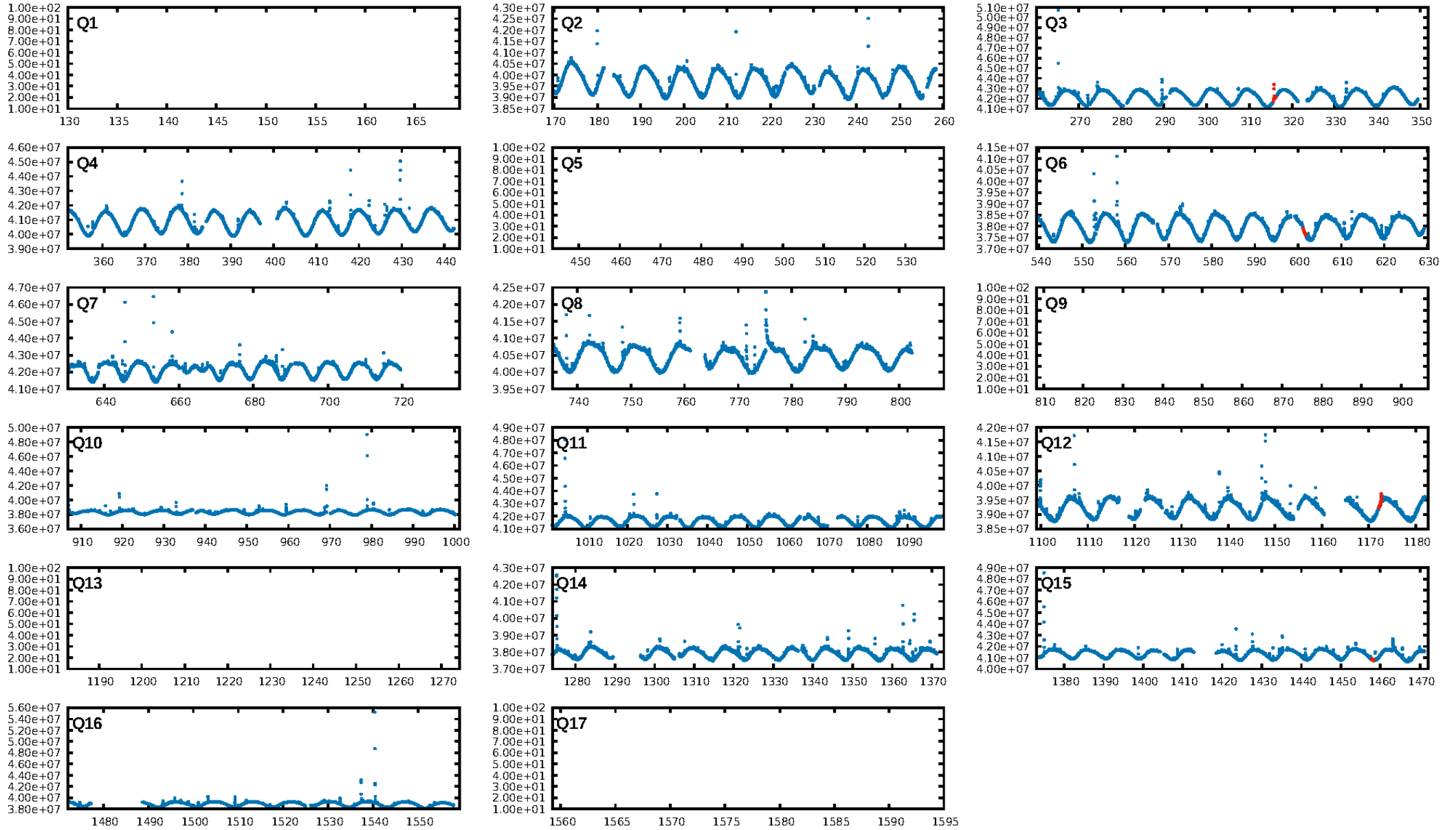
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [67.53σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 40.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.6381
Centroid-sig: 14.3%
Centroid-so: 1.537 arcsec [1.17σ]
OotOffset-rm: 1.654 arcsec [8.20σ]
KicOffset-rm: 1.168 arcsec [5.82σ]
OotOffset-st: 1/2/0/0 [3]
KicOffset-st: 1/2/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.67 [2/3]

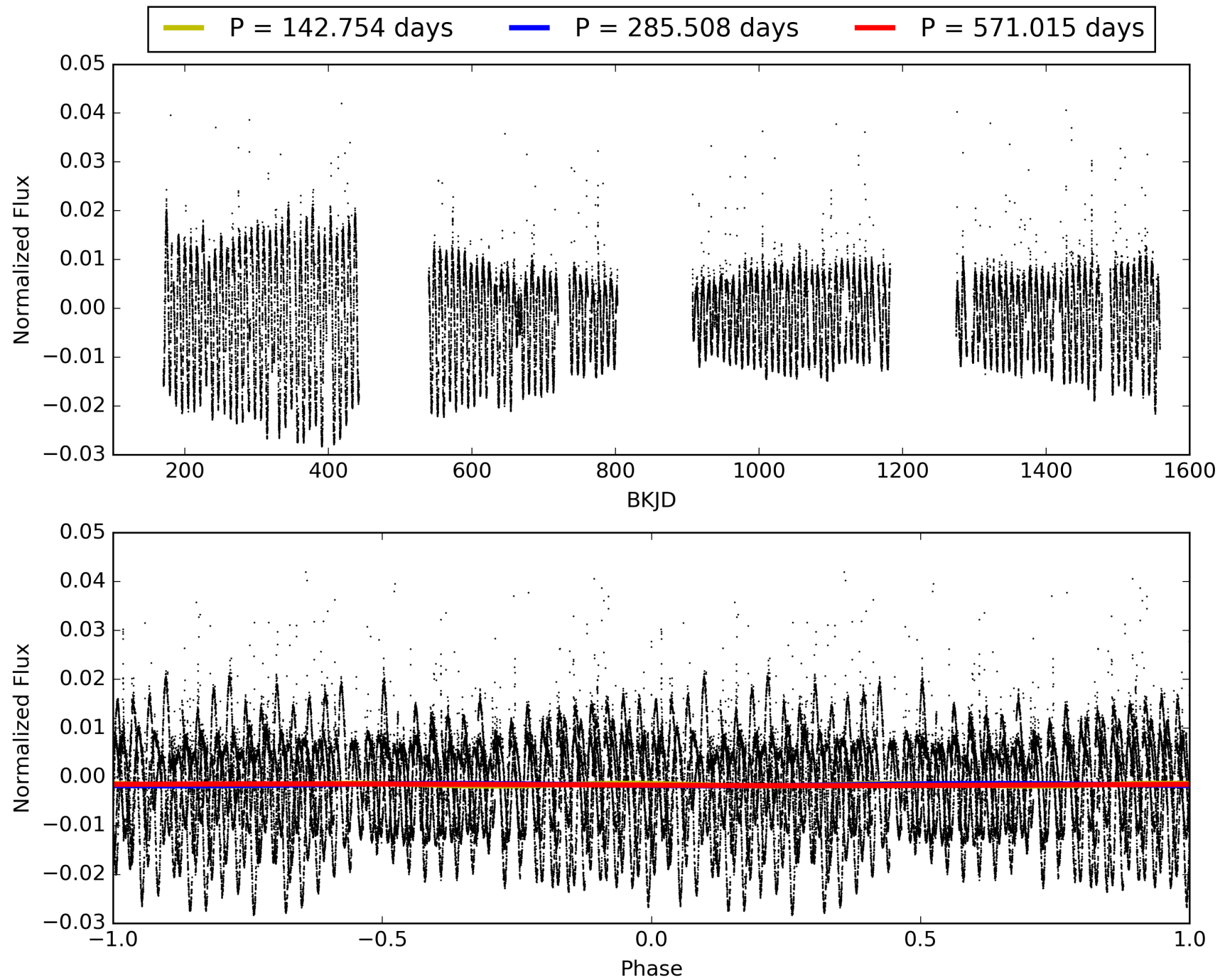
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:43:21 Z

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

TCE 005342558-08, PDC Light Curves

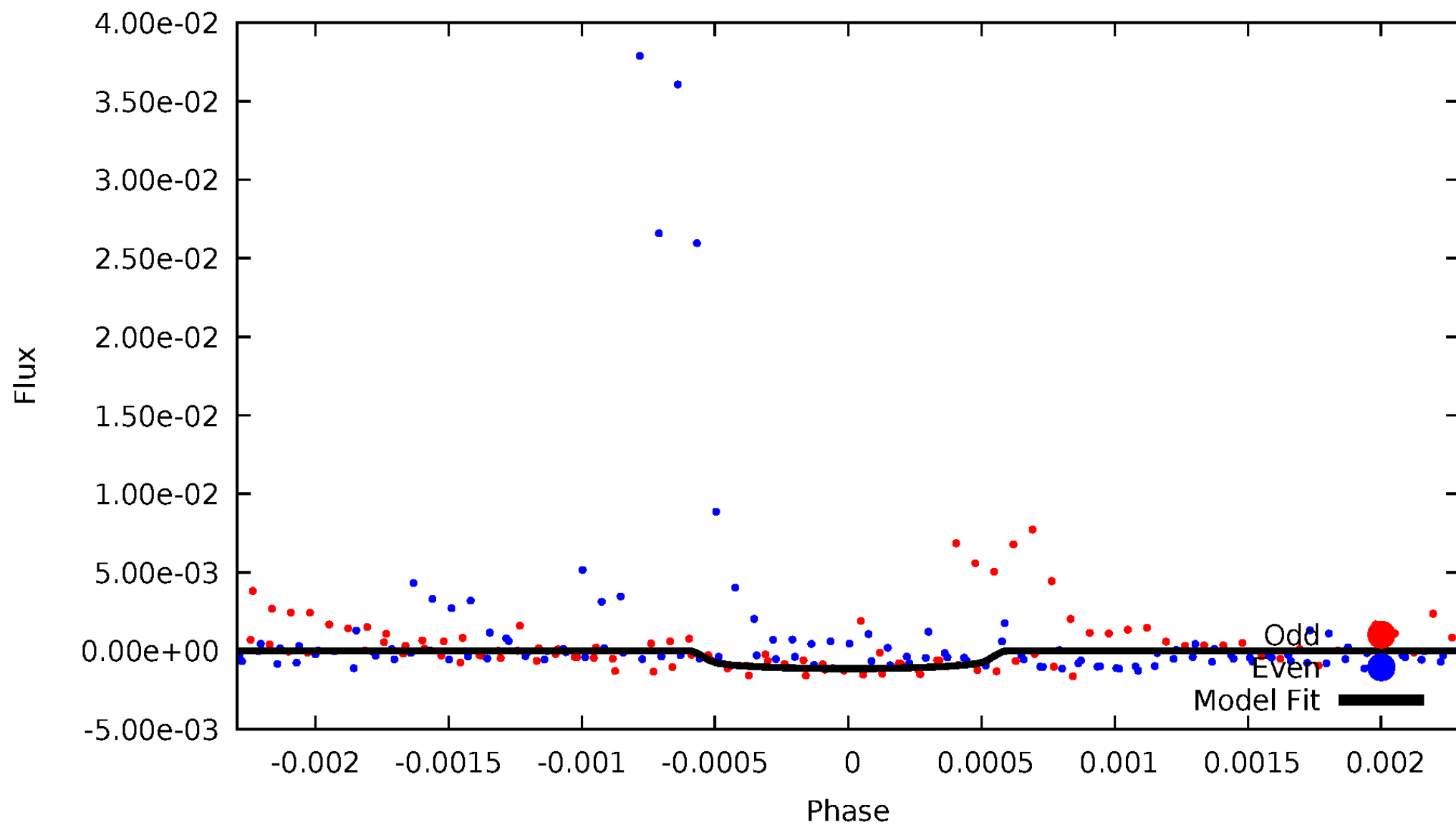


TCE 005342558-08



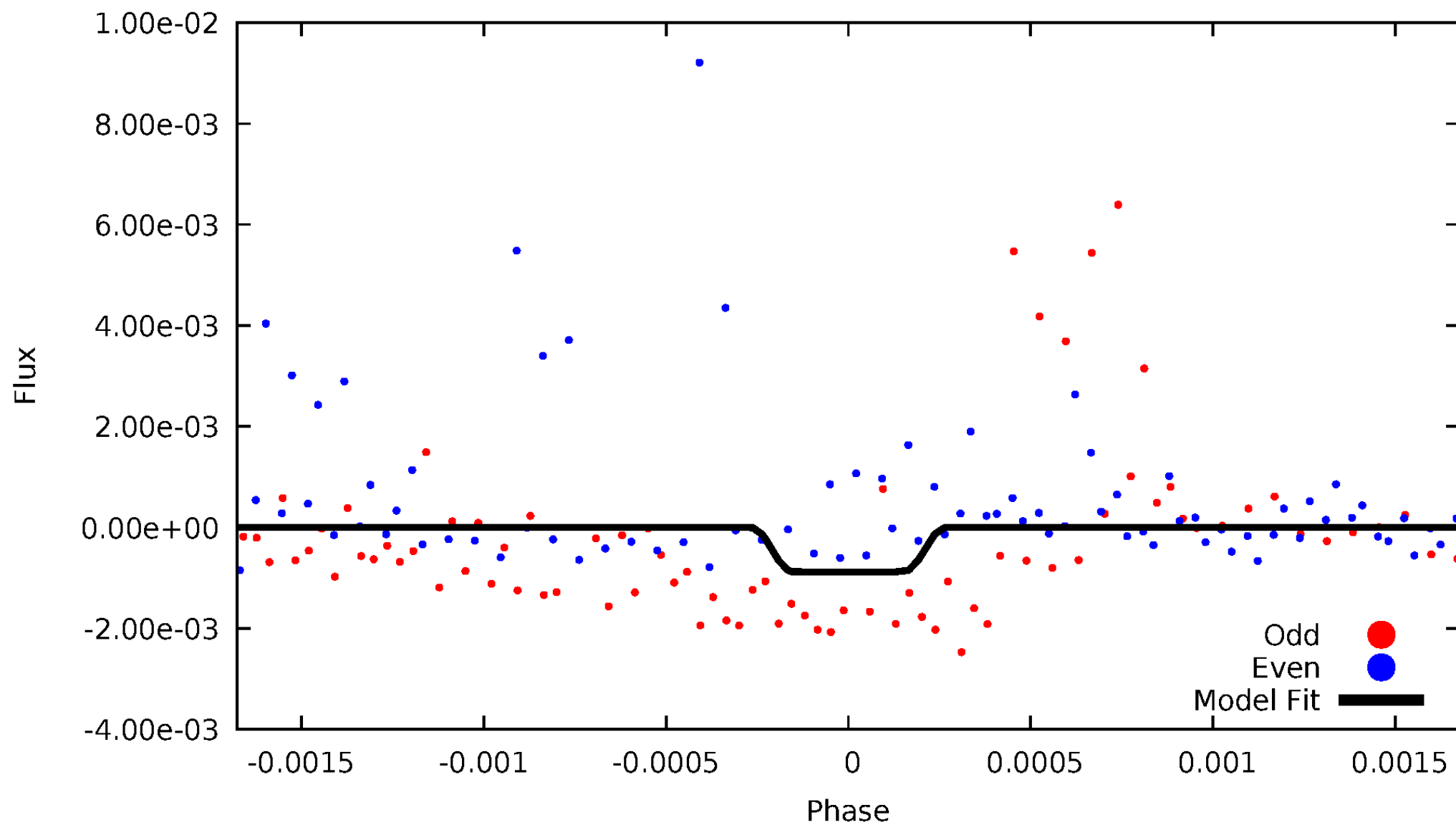
DV Odd/Even

TCE 005342558-08



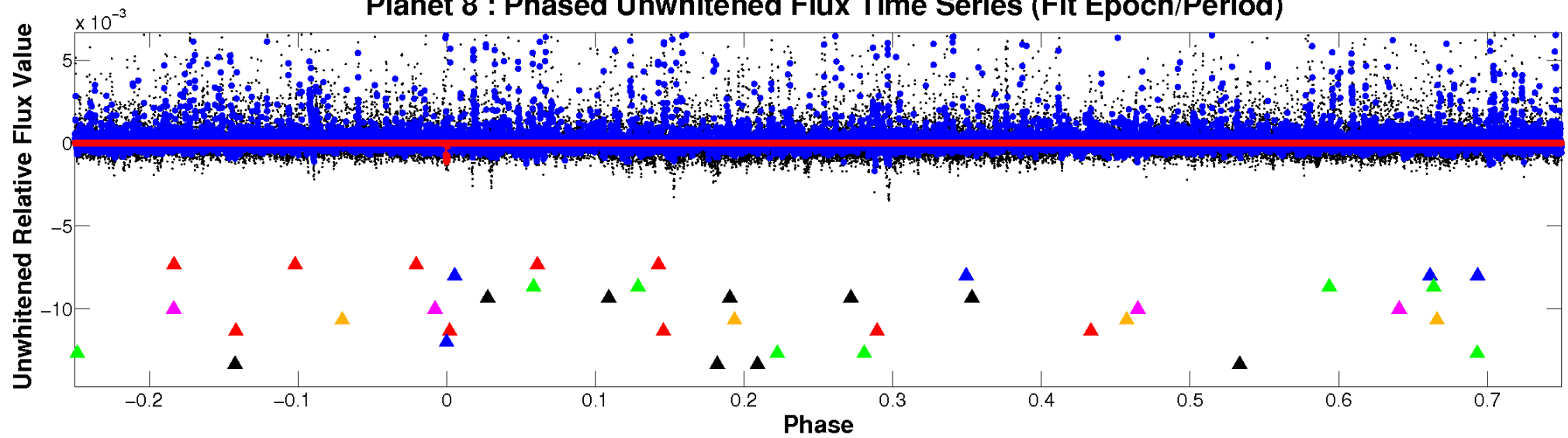
ALT Odd/Even

TCE 005342558-08

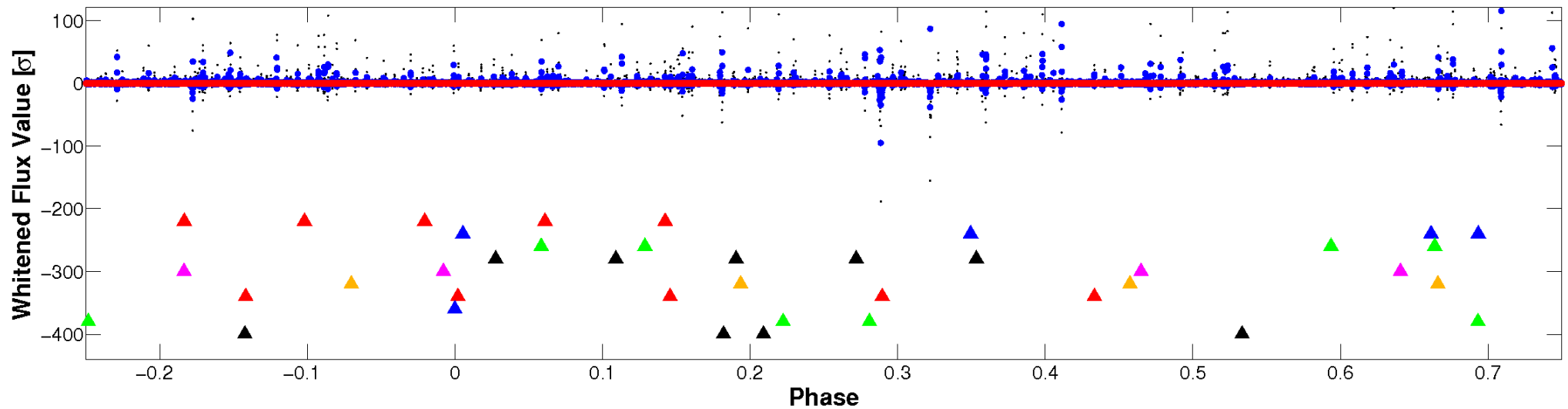


Non-Whitened Vs. Whitened Light Curve

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

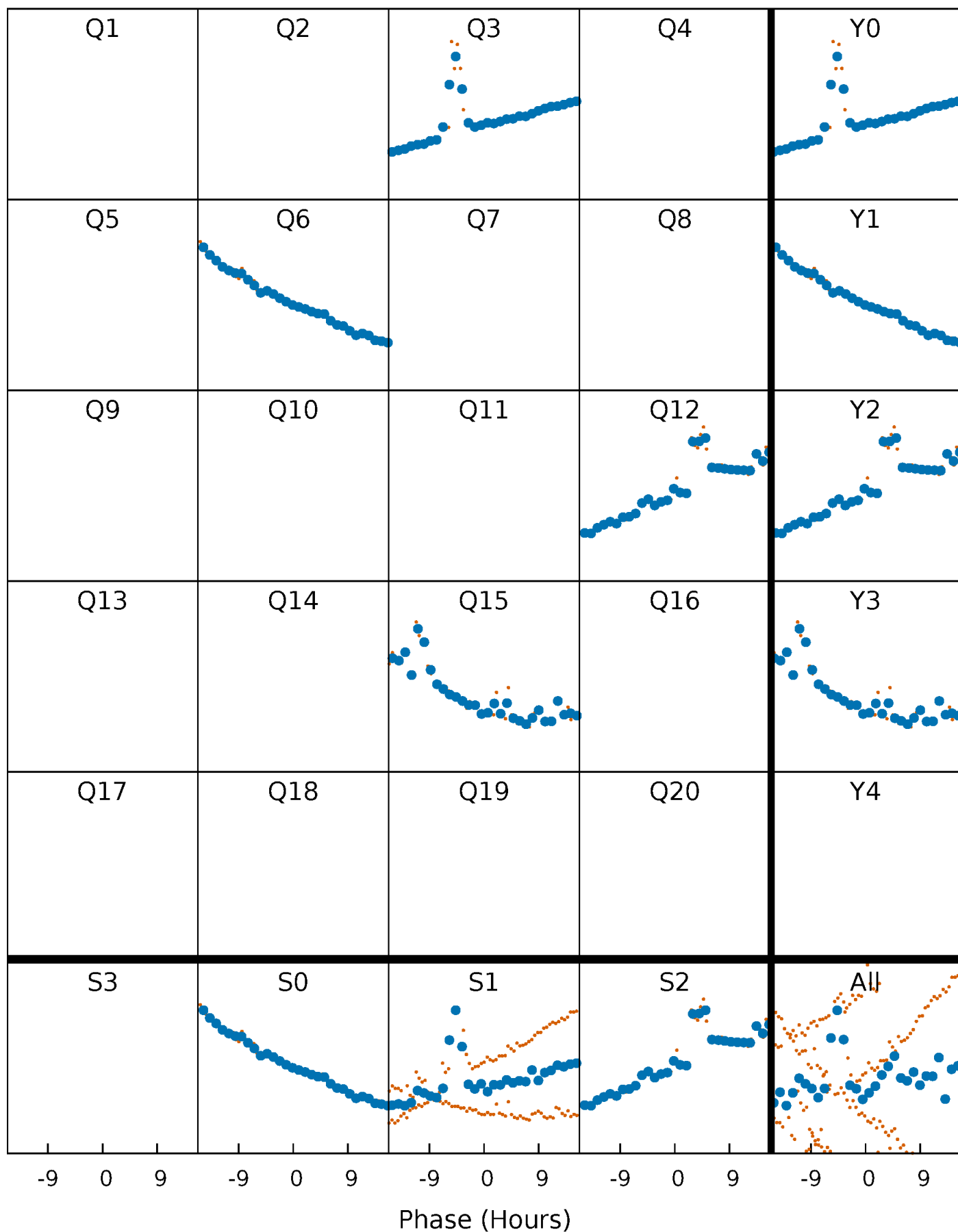


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



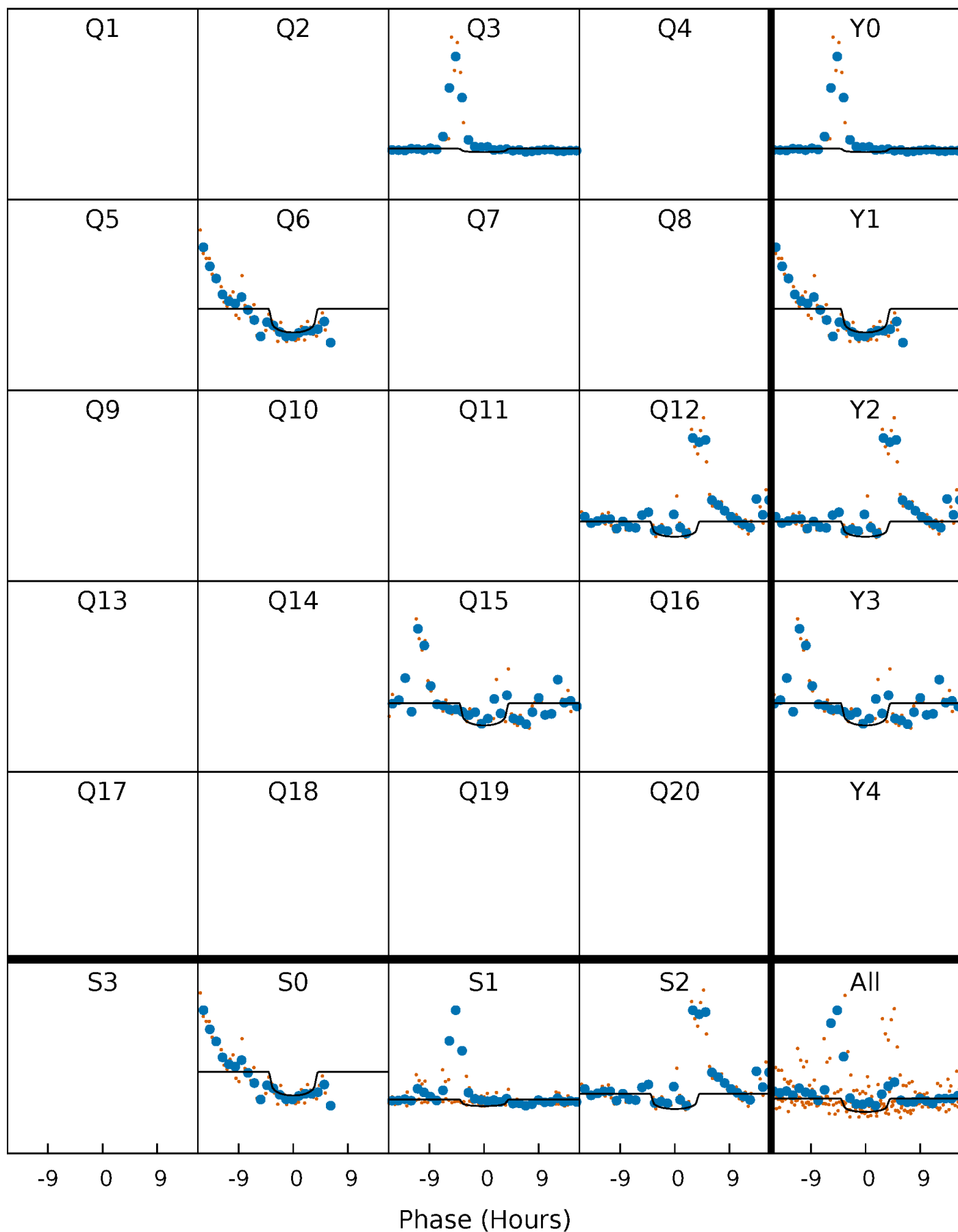
PDC Quarter-Phased Transit Curves

TCE 005342558-08 P=285.507525 Days $T_0=315.963589$ (BKJD)



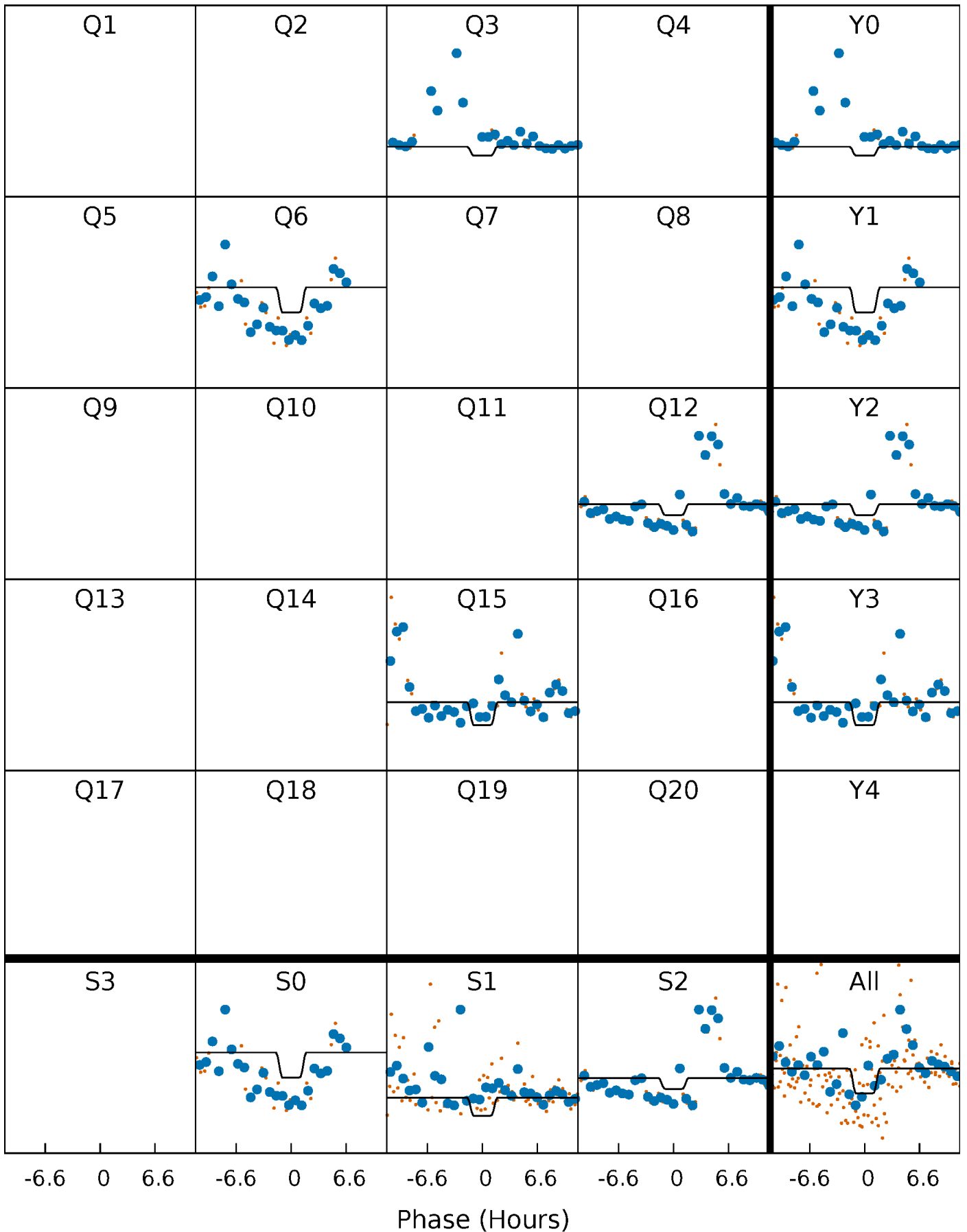
DV Quarter-Phased Transit Curves

TCE 005342558-08 $P=285.507525$ Days $T_0=315.963589$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

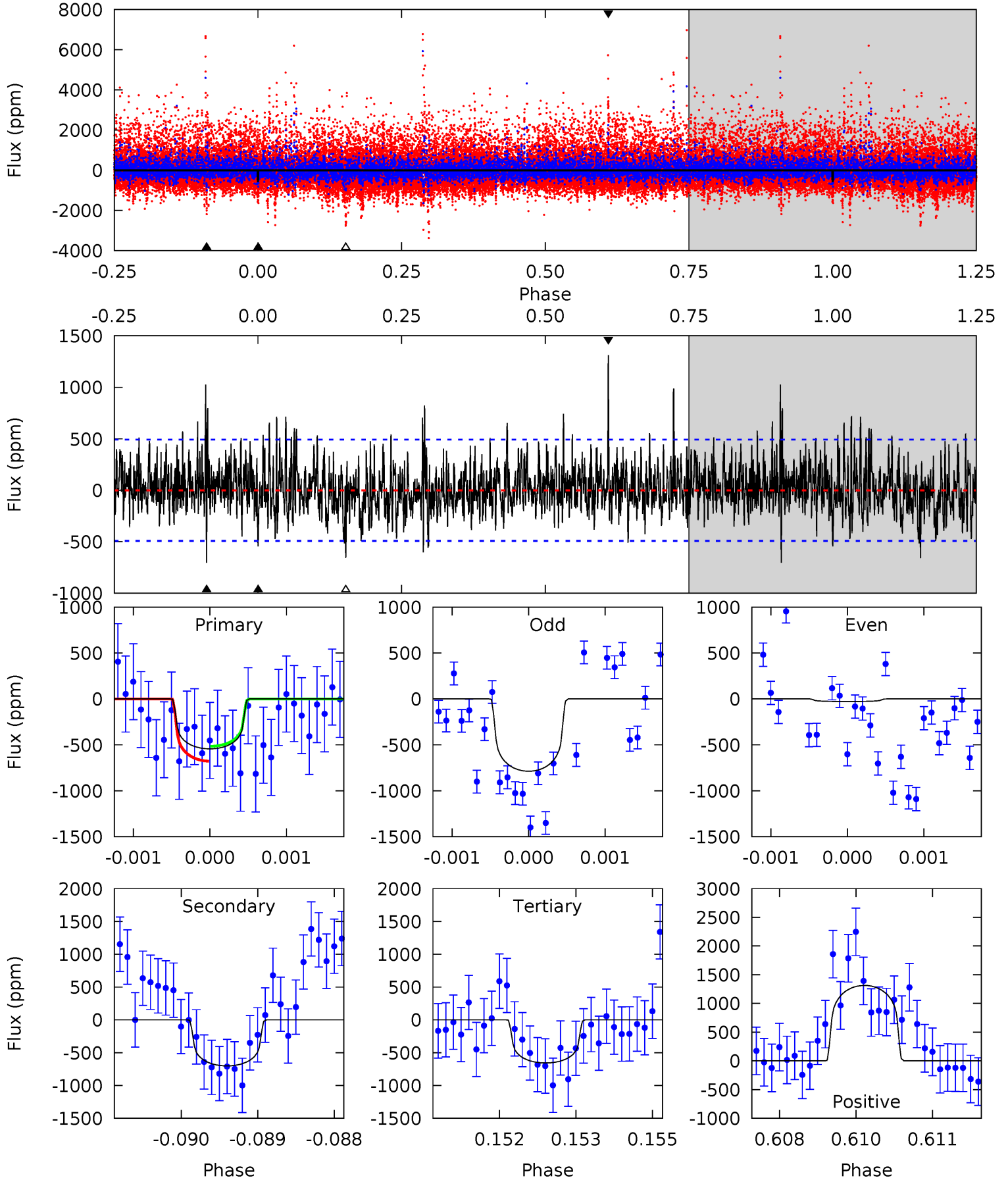
TCE 005342558-08 P=285.511323 Days $T_0=315.938413$ (BKJD)



DV Model-Shift Uniqueness Test

005342558-08, P = 285.507525 Days, E = 30.456064 Days

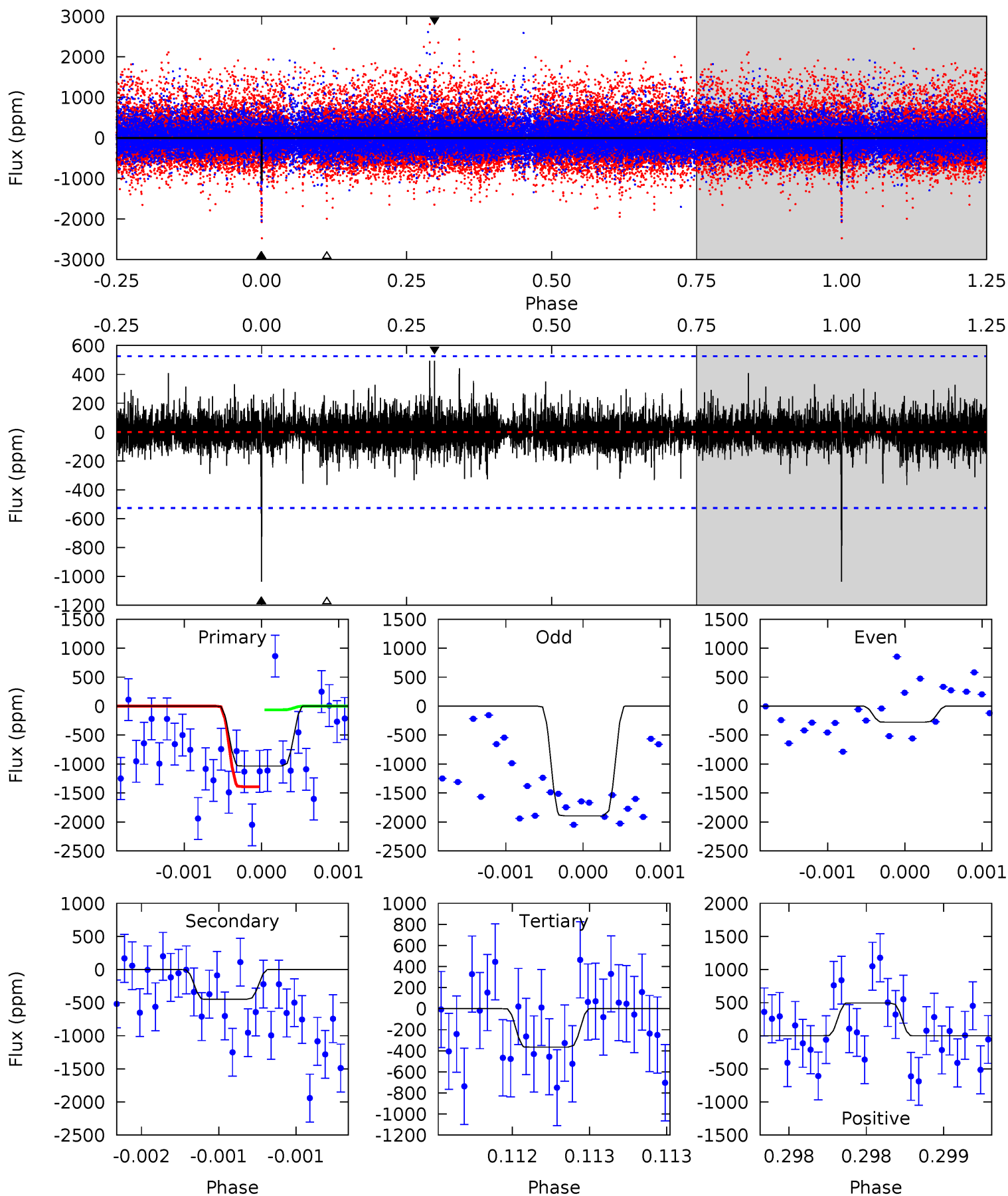
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 5.99 | 7.73 | 7.24 | 14.5 | 5.42 | 3.23 | 2.16 | -1.25 | -8.48 | 0.49 | -6.74 | 1.80 | 0.10 | 0.65 | 0.90 |



Alt Model-Shift Uniqueness Test

005342558-08, P = 285.511323 Days, E = 30.427090 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 11.0 | 4.77 | 3.87 | 5.23 | 5.57 | 3.48 | 0.88 | 7.09 | 5.73 | 0.90 | -0.47 | 8.13 | 0.71 | 0.32 | 6.92 |



Stellar Parameters For KIC 005342558

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|----------------------------|----------------------------|----------------------------|----------------------------|---|
| | 3154^{+1}_{-1} | $5.131^{+-1.000}_{-1.000}$ | $0.000^{+-1.000}_{-1.000}$ | $0.173^{+-1.000}_{-1.000}$ | $0.147^{+-1.000}_{-1.000}$ | $40.220^{+-1.000}_{-1.000}$ |
| | +0%/-0% | +19%/-19% | +inf%/-inf% | +578%/-578% | +680%/-680% | +2%/-2% |
| Source | PHO54 | PHO54 | PHO54 | BTSL | | |

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

Secondary Eclipse Parameters for KIC 005342558-08 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|------------------------|-------------------|----------------------|-----------------------------|
| DV | -702 ± 91 | $0.88^{+0.85}_{-0.58}$ | 122^{+10}_{-10} | 2730^{+946}_{-405} | $105243^{+632717}_{-75262}$ |
| Alt. | -450 ± 94 | $0.82^{+0.78}_{-0.54}$ | 122^{+10}_{-10} | 2613^{+860}_{-375} | $77420^{+510670}_{-56010}$ |

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

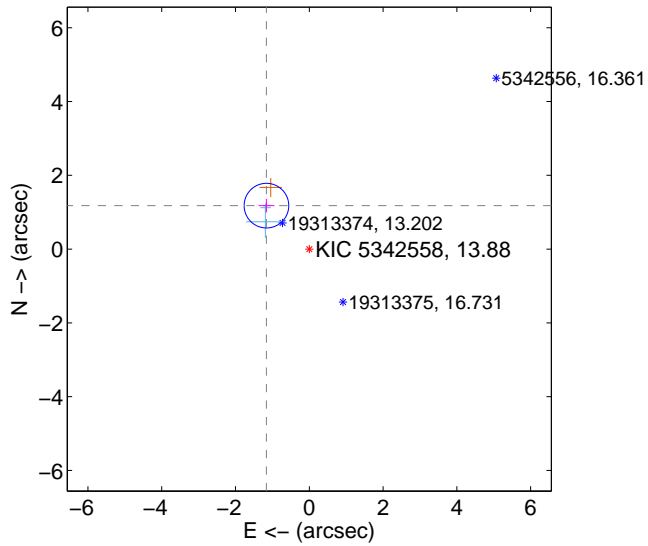
Supplemental centroid analysis for 005342558-08. Kepler magnitude: 13.88. Transit SNR 7.54

There are 2 quarters with good PRF difference image offsets

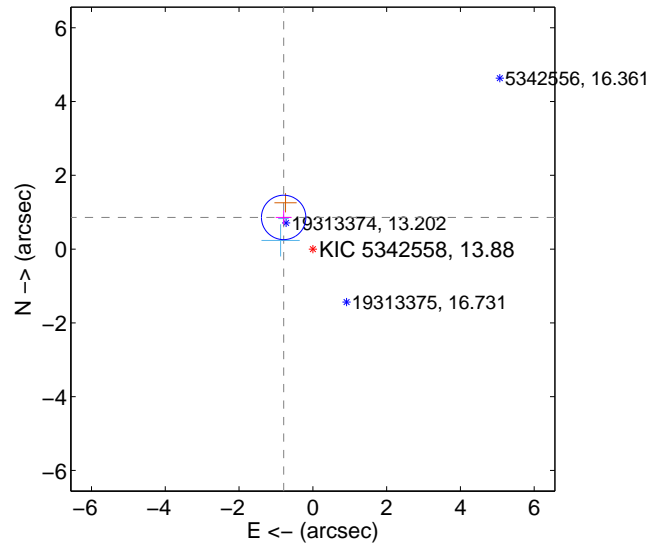
The direct PRF centroid is offset from the target star catalog position by about 0.49 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 1.654 ± 0.202 | 8.20 | 1.161 ± 0.216 | 1.178 ± 0.186 |
| PRF-fit source offset from KIC position | 1.168 ± 0.201 | 5.82 | 0.791 ± 0.216 | 0.859 ± 0.186 |
| photometric centroid source offset | 1.54 ± 1.31 | 1.17 | -1.42 ± 1.37 | -0.58 ± 0.88 |

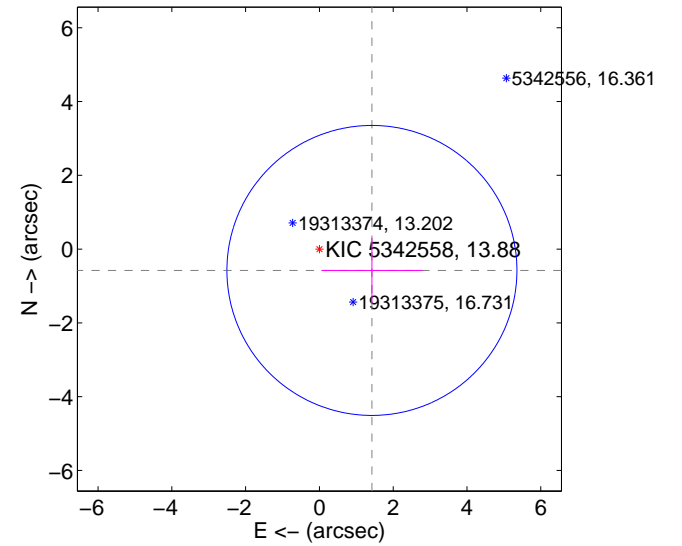
offset from difference PRF-fit to OOT PRF-fit



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

Q1 no difference image



Q1 no OOT image



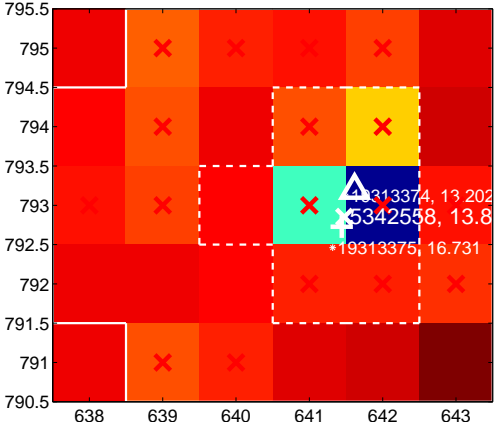
Q2 no difference image



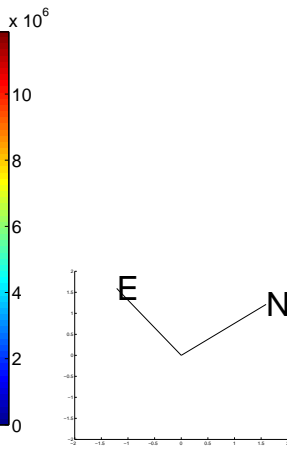
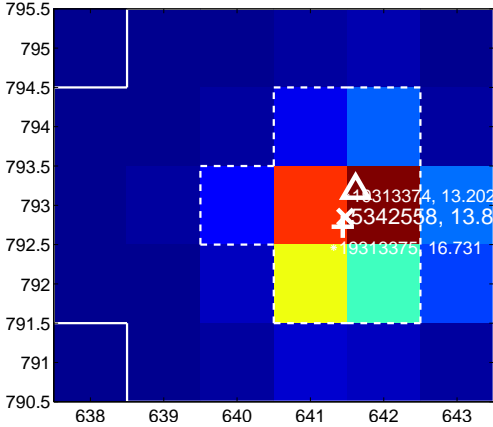
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



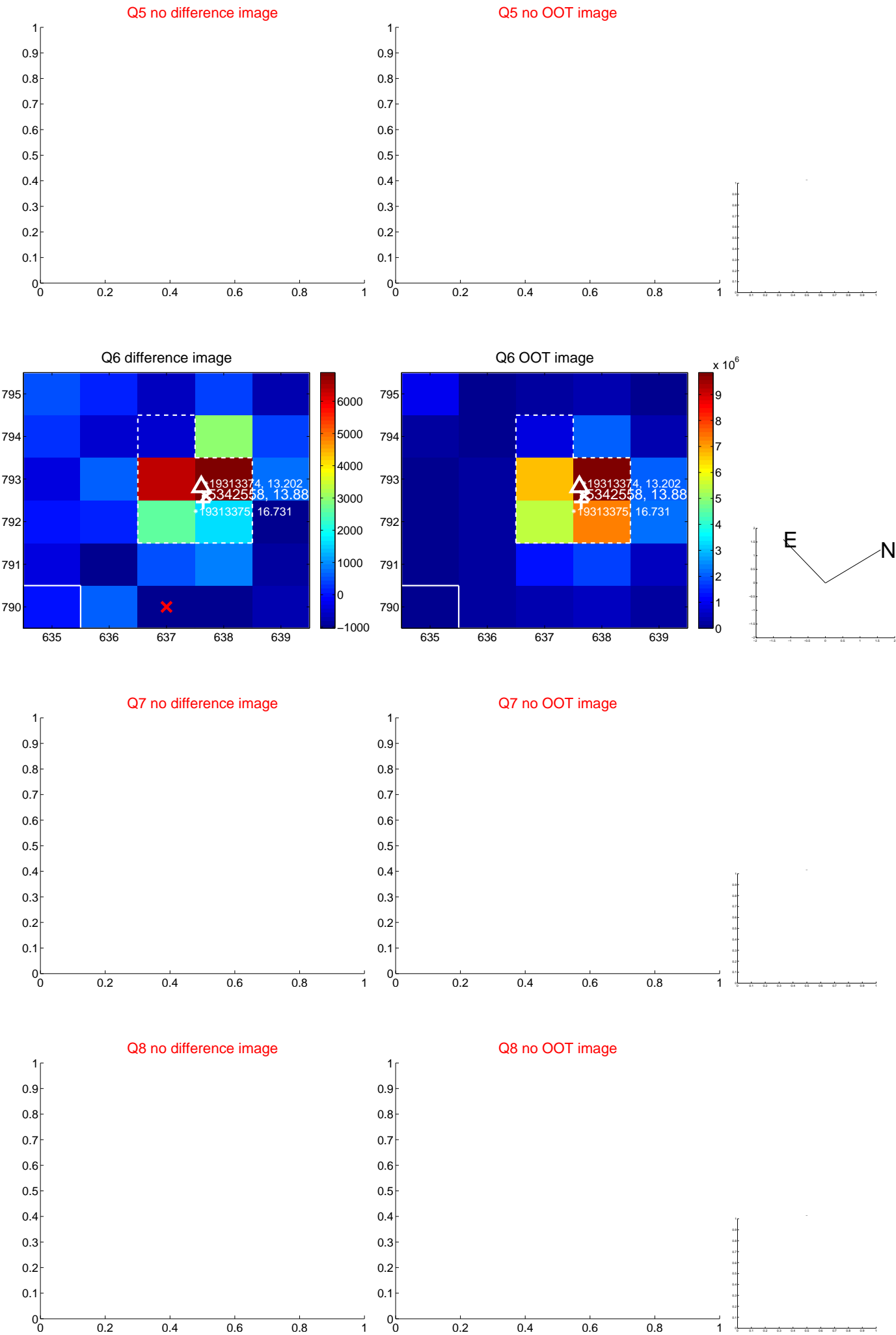
Q4 no difference image



Q4 no OOT image



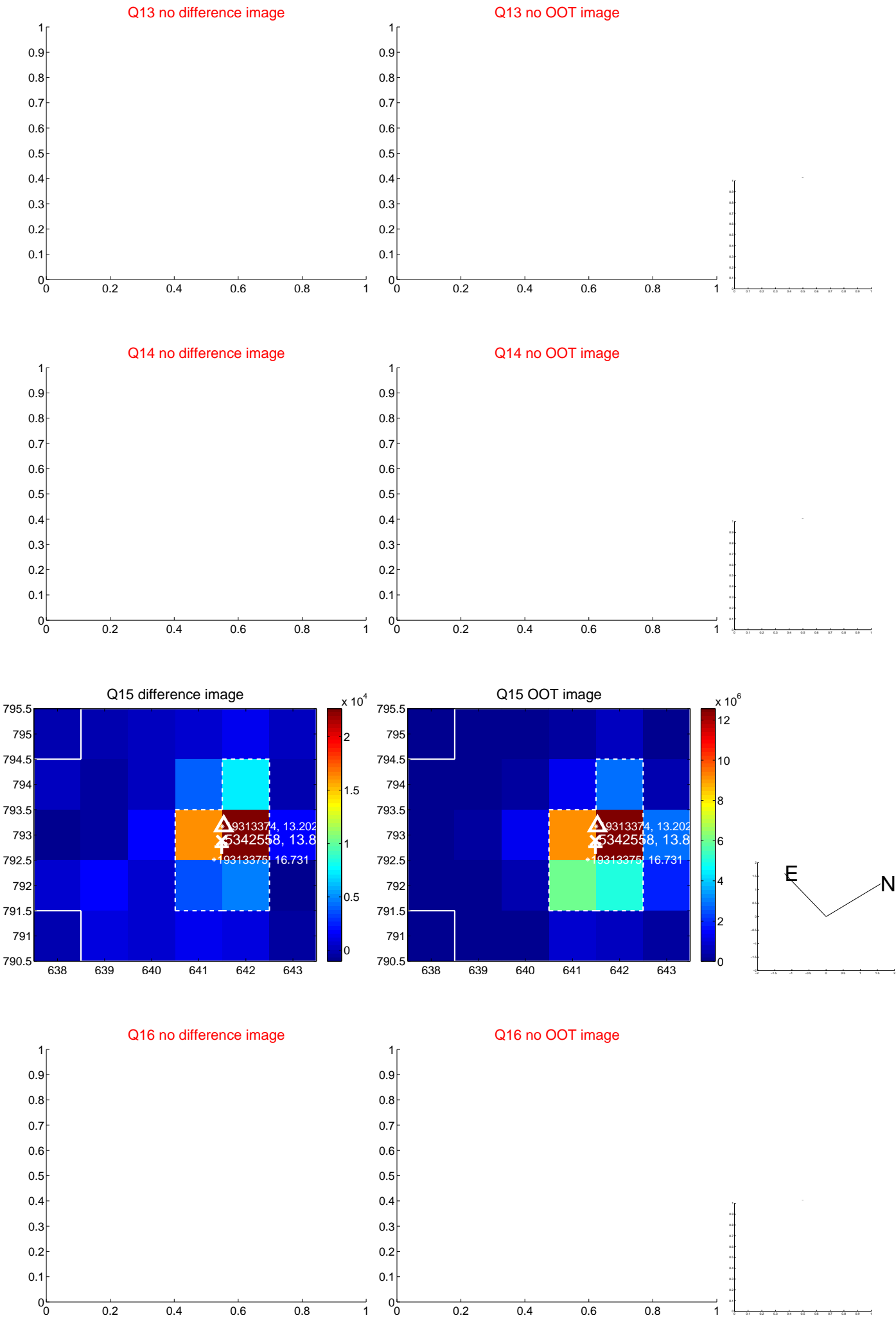
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



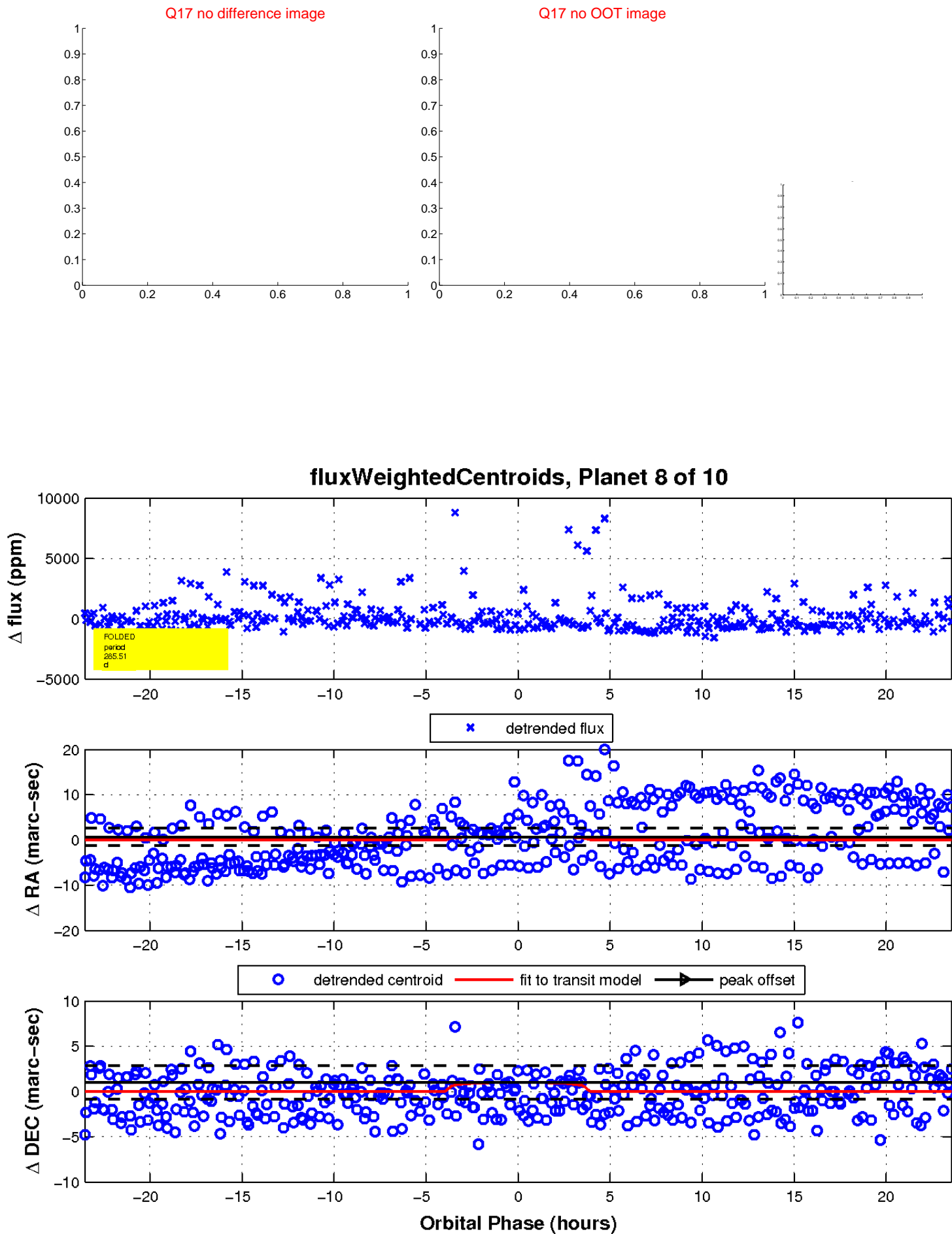
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

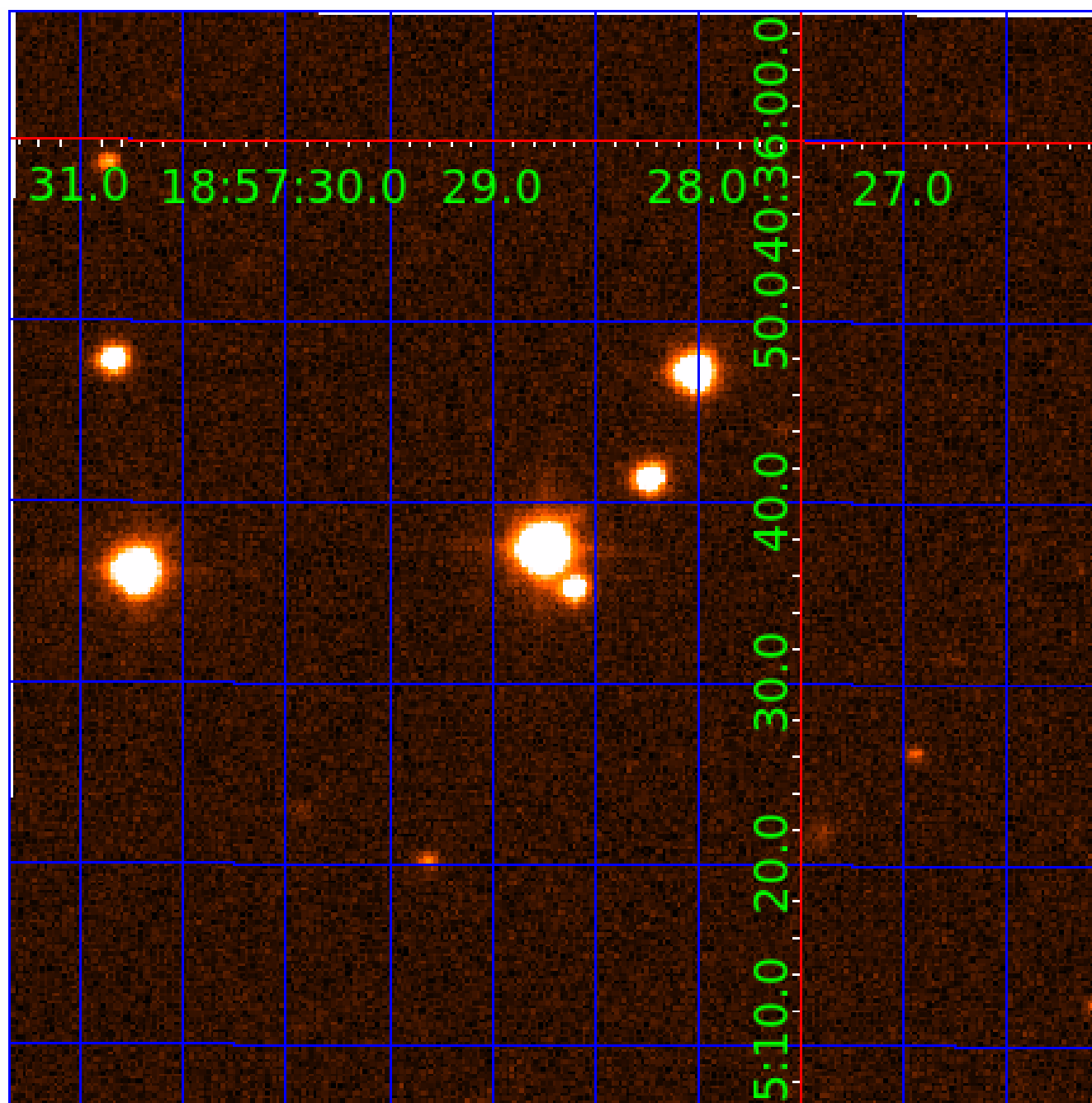


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 005342558-01 | OBS | No | 308.762826 | 263.627416 | 1701.3 | 10.318 | 18.7 | 8.5 | 0.17 | 3154 | 0.71 | 0.01 |
| 005342558-02 | OBS | No | 383.720665 | 219.310793 | 639.8 | 8.386 | 11.6 | 3.2 | 0.17 | 3154 | 0.45 | 0.01 |
| 005342558-03 | OBS | No | 418.229695 | 220.013594 | 1829.1 | 9.198 | 17.9 | 8.7 | 0.17 | 3154 | 0.73 | 0.01 |
| 005342558-05 | OBS | No | 335.694048 | 448.703570 | 1571.6 | 3.803 | 13.0 | 8.6 | 0.17 | 3154 | 0.68 | 0.01 |
| 005342558-06 | OBS | No | 360.819671 | 220.624153 | 1216.7 | 3.561 | 12.5 | 6.8 | 0.17 | 3154 | 0.67 | 0.01 |
| 005342558-07 | OBS | No | 326.552624 | 275.507809 | 512.0 | 5.172 | 11.2 | 2.8 | 0.17 | 3154 | 0.44 | 0.01 |
| 005342558-08 | OBS | No | 285.507525 | 315.963589 | 1141.7 | 7.857 | 11.0 | 7.5 | 0.17 | 3154 | 0.59 | 0.01 |
| 005342558-09 | OBS | No | 436.602709 | 228.377019 | 1074.0 | 15.912 | 11.2 | 6.4 | 0.17 | 3154 | 0.57 | 0.01 |
| 005342558-10 | OBS | No | 378.103945 | 375.659854 | 1003.0 | 7.162 | 10.8 | 6.7 | 0.17 | 3154 | 0.57 | 0.01 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005342558-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS |
| 005342558-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-09 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS |
| 005342558-10 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_KIC_POS |

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

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

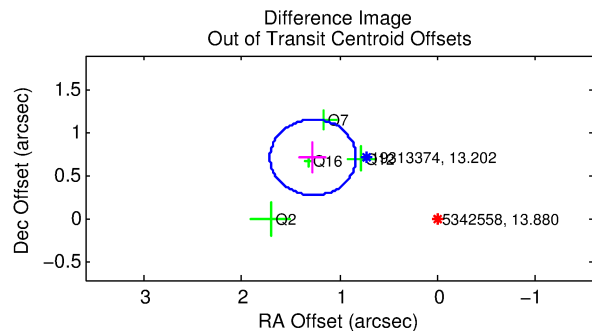
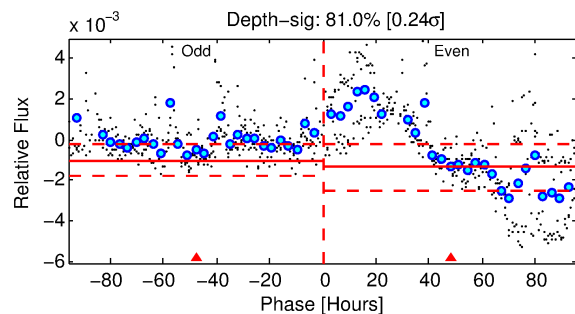
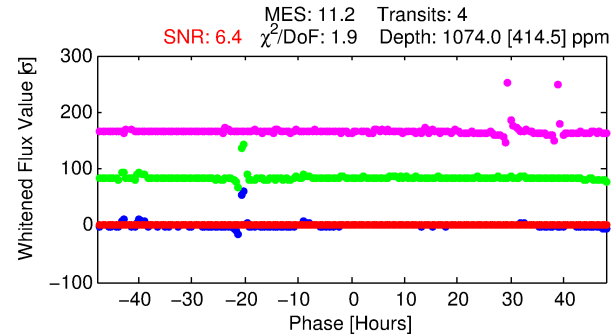
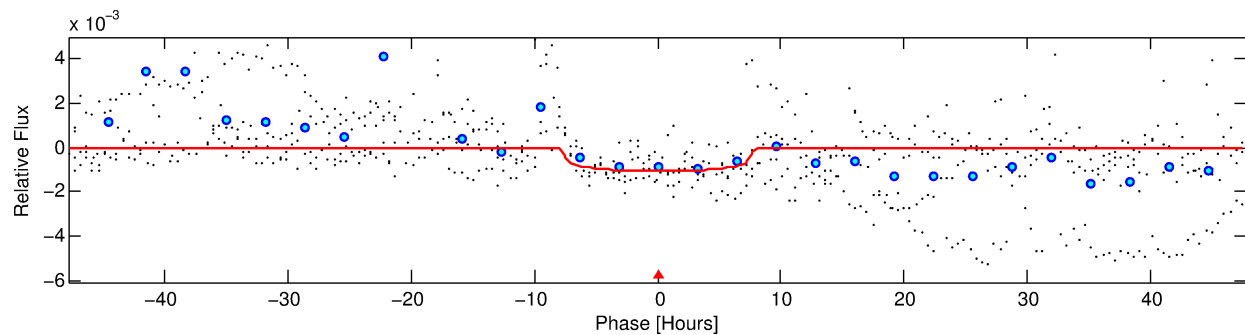
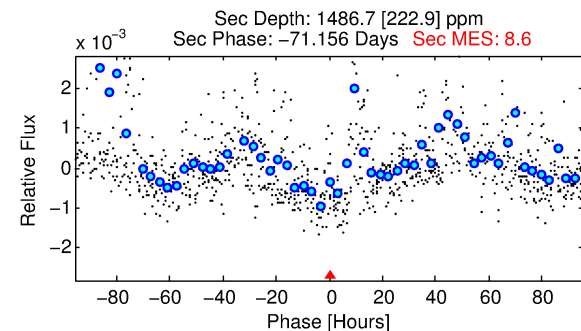
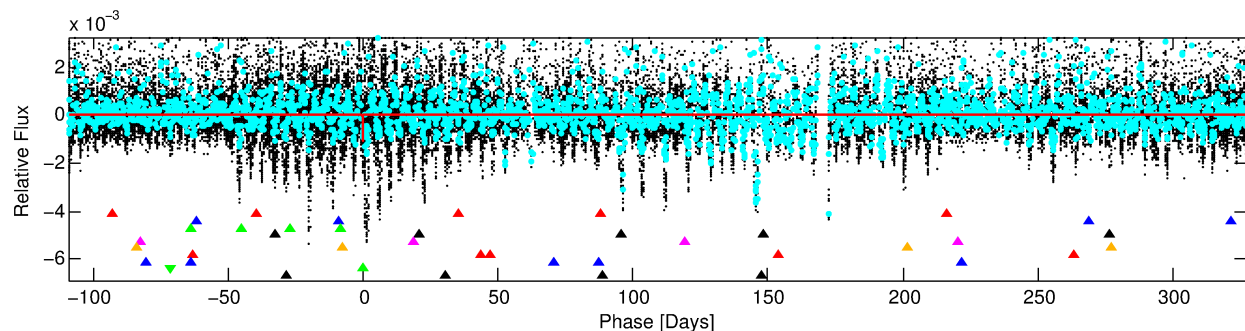
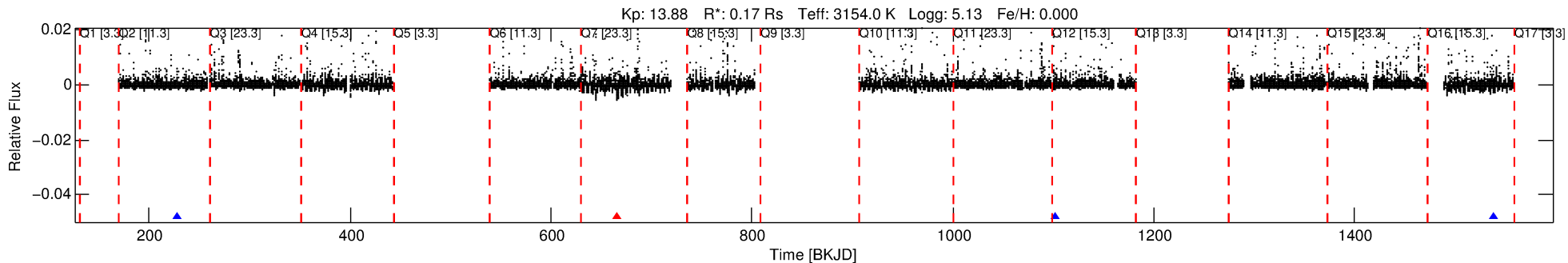
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005342558-09

No Significant Match Found

DV One-Page Summary

KIC: 5342558 Candidate: 9 of 10 Period: 436.603 d



DV Fit Results:

Period = 436.60271 [0.01609] d
Epoch = 228.3770 [0.0324] BKJD
Rp/R* = 0.0302 [0.0341]
a/R* = 200.04 [943.08]
b = 0.39 [10.31]
Seff = 0.01 [0.00]
Teq = 75 [0] K
Rp = 0.57 [0.64] Re
a = 0.5954 [0.0000] AU
Ag = 893950.51 [2027039.27] [0.44 σ]
Teffp = 3566 [2021] K [1.73 σ]

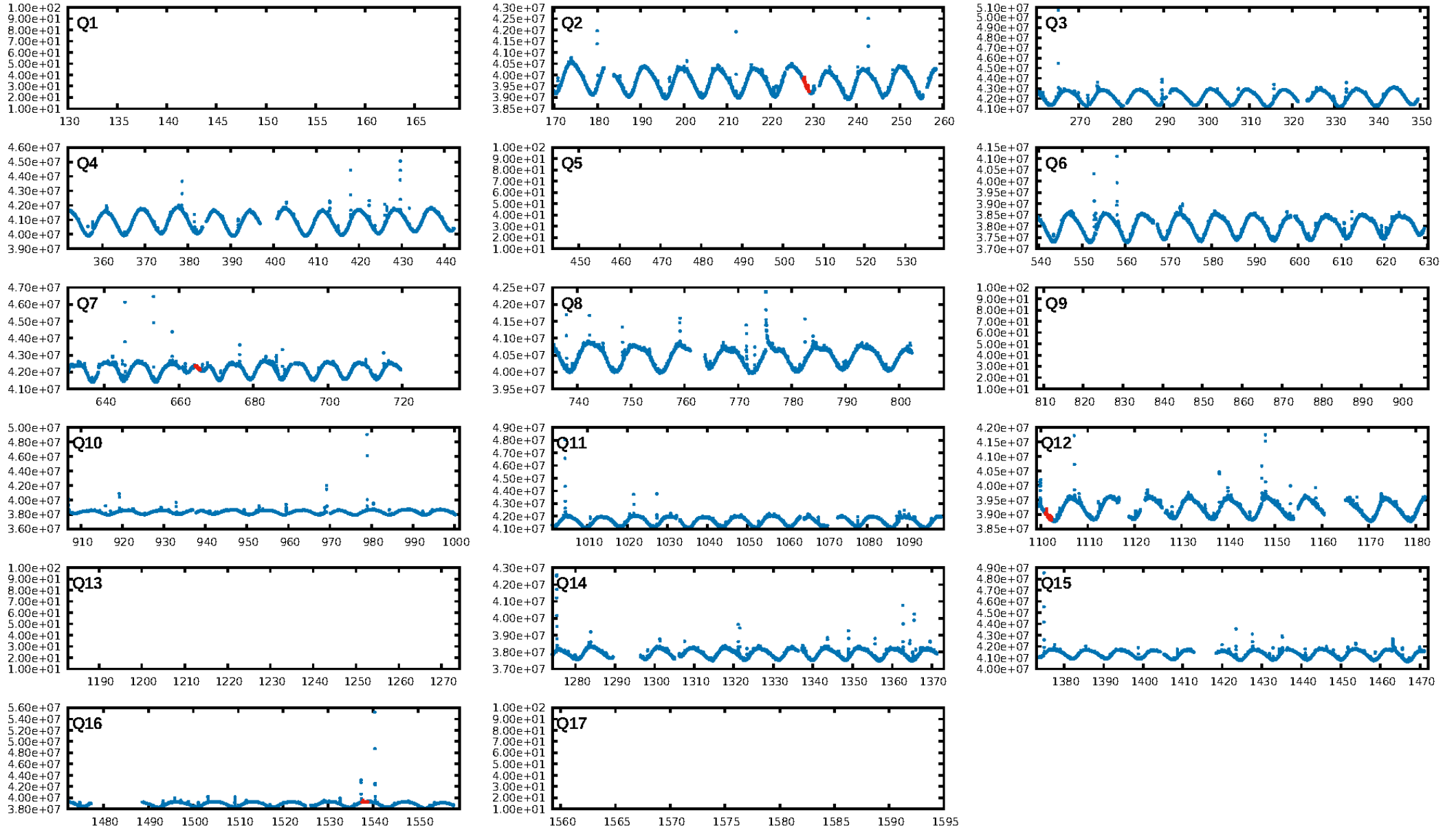
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [23.99 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 21.1%
ModelChiSquareGof-sig: 85.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.75 [3/4]
GhostDiagnostic-chr: -2.69
Centroid-sig: 0.1%
Centroid-so: 3.590 arcsec [2.16 σ]
OotOffset-rm: 1.461 arcsec [9.99 σ]
KicOffset-rm: 1.039 arcsec [7.79 σ]
OotOffset-st: 1/1/2/0 [4]
KicOffset-st: 1/1/2/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

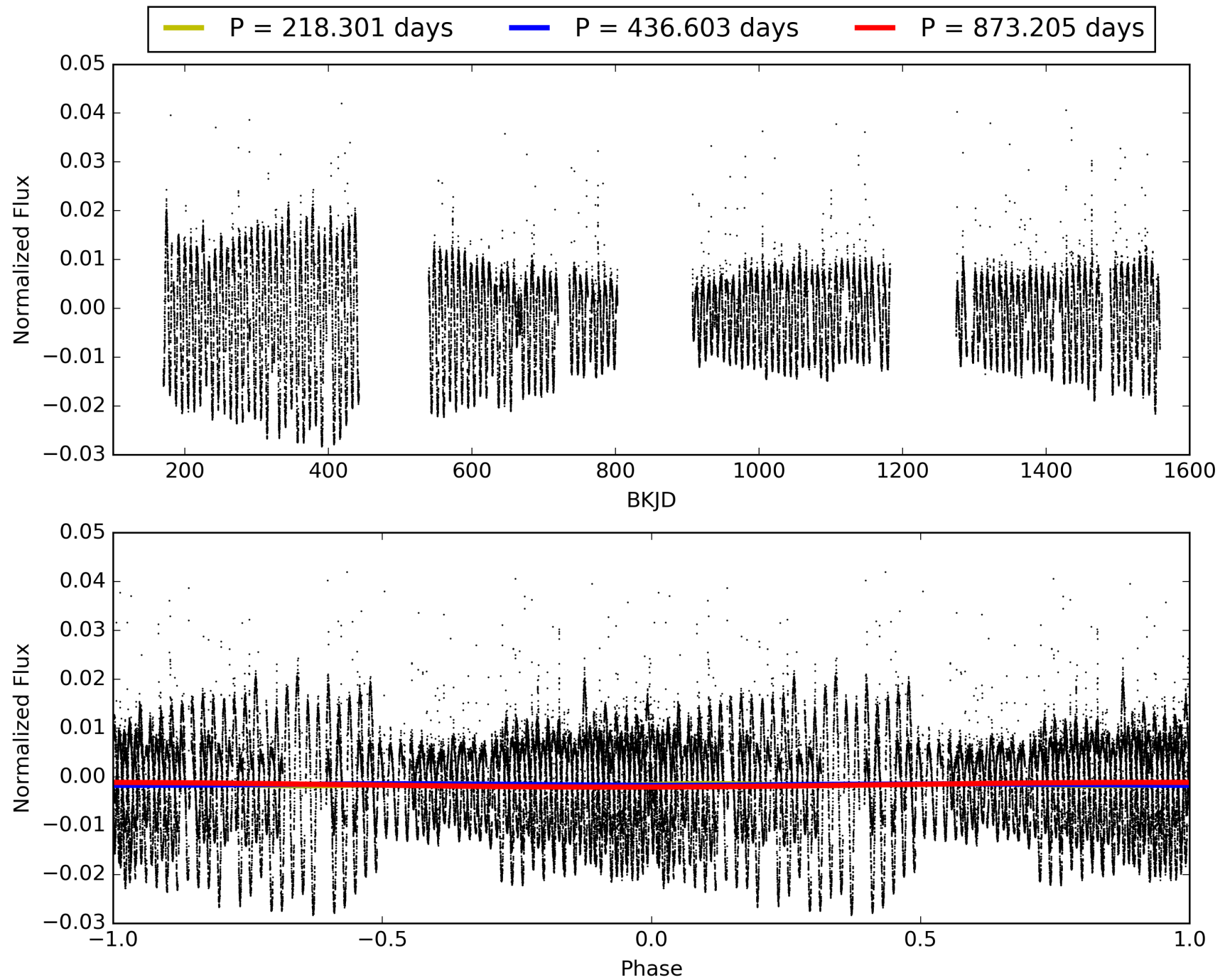
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:43:28 Z

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

TCE 005342558-09, PDC Light Curves

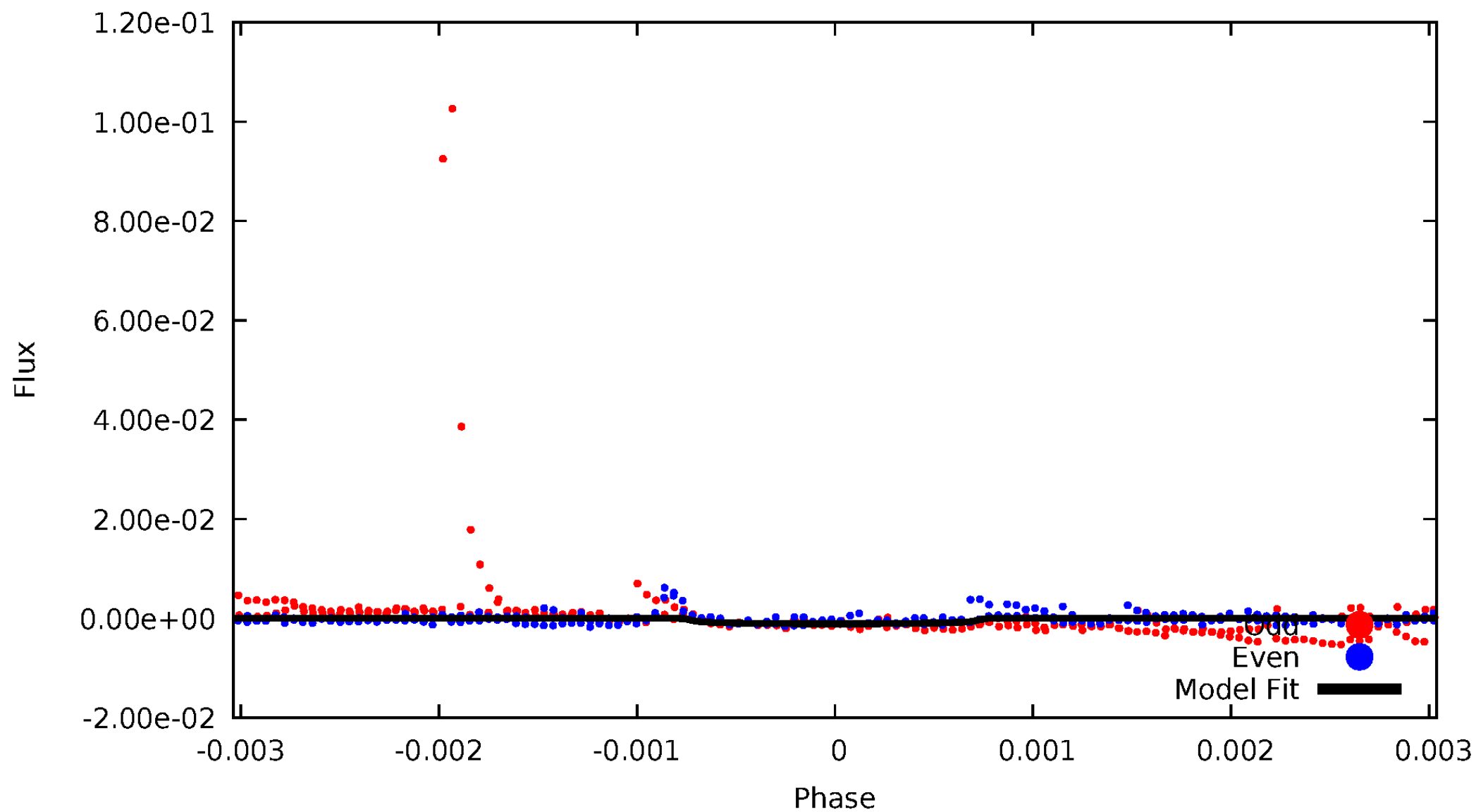


TCE 005342558-09



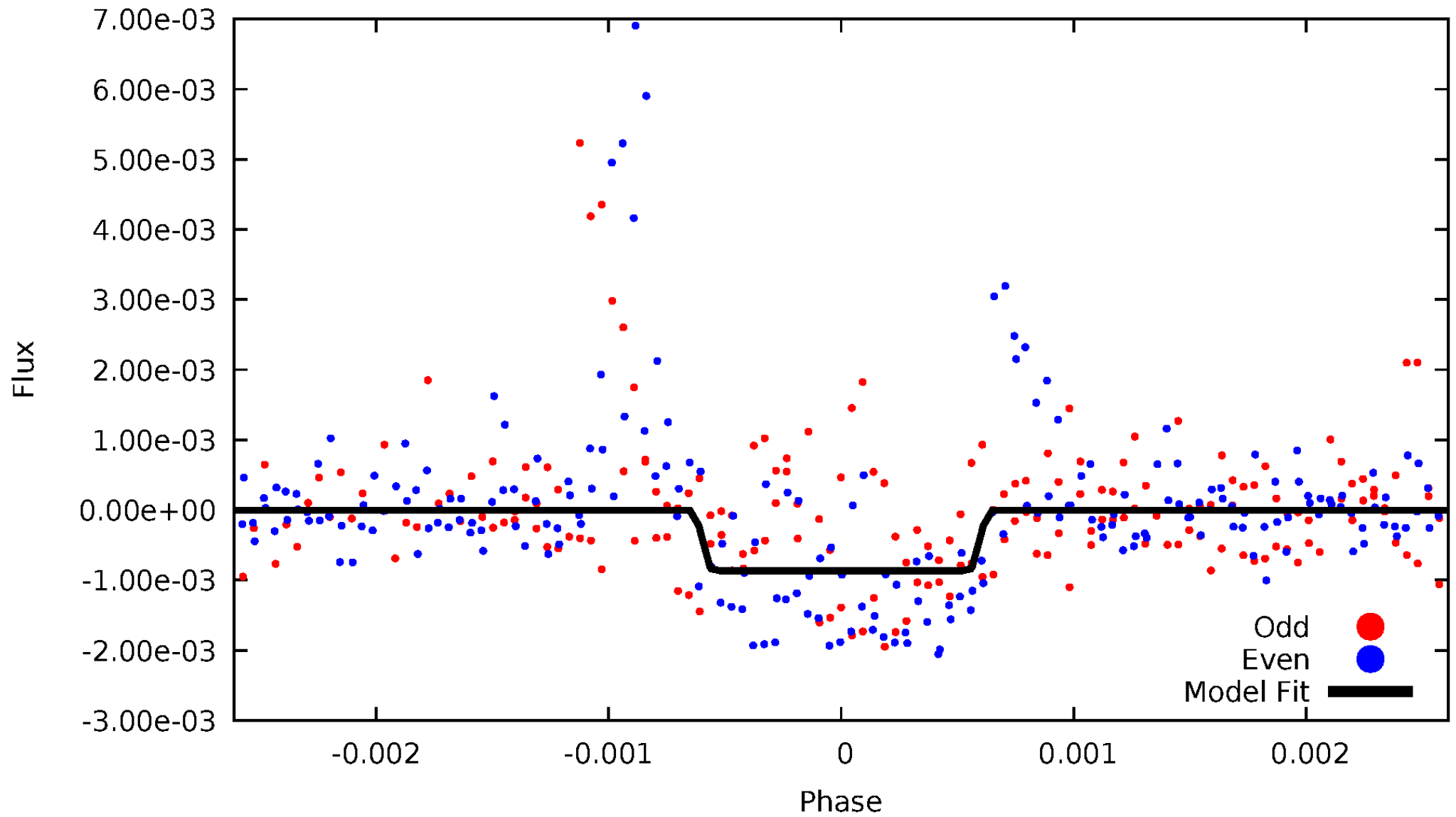
DV Odd/Even

TCE 005342558-09



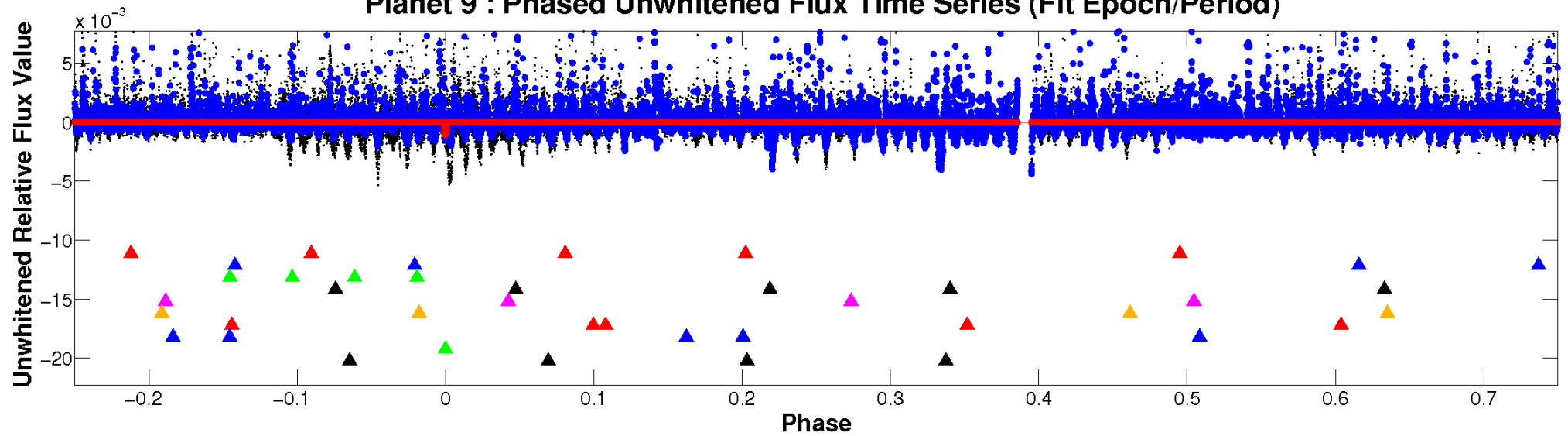
ALT Odd/Even

TCE 005342558-09

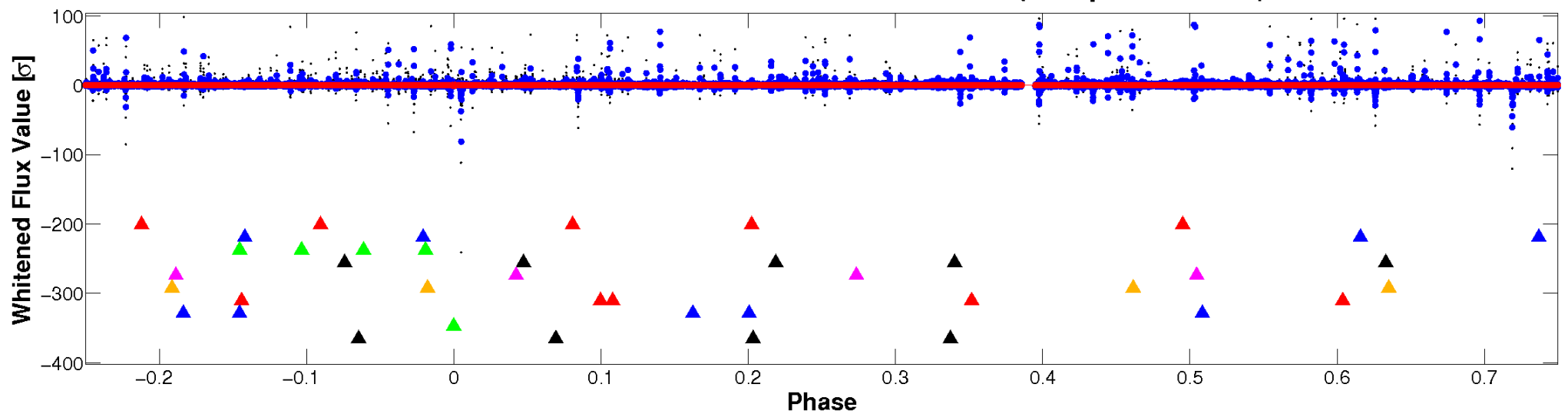


Non-Whitened Vs. Whitened Light Curve

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

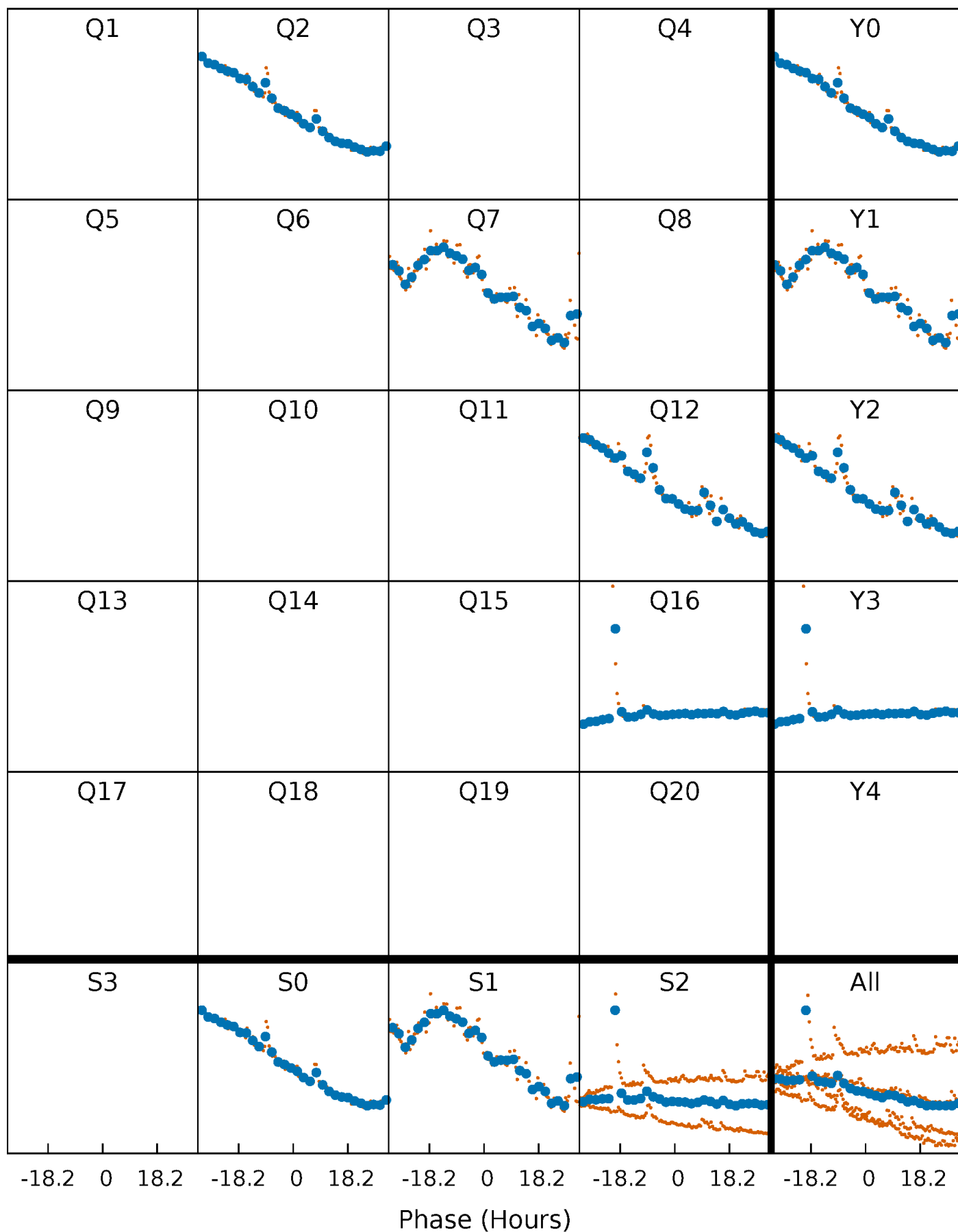


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



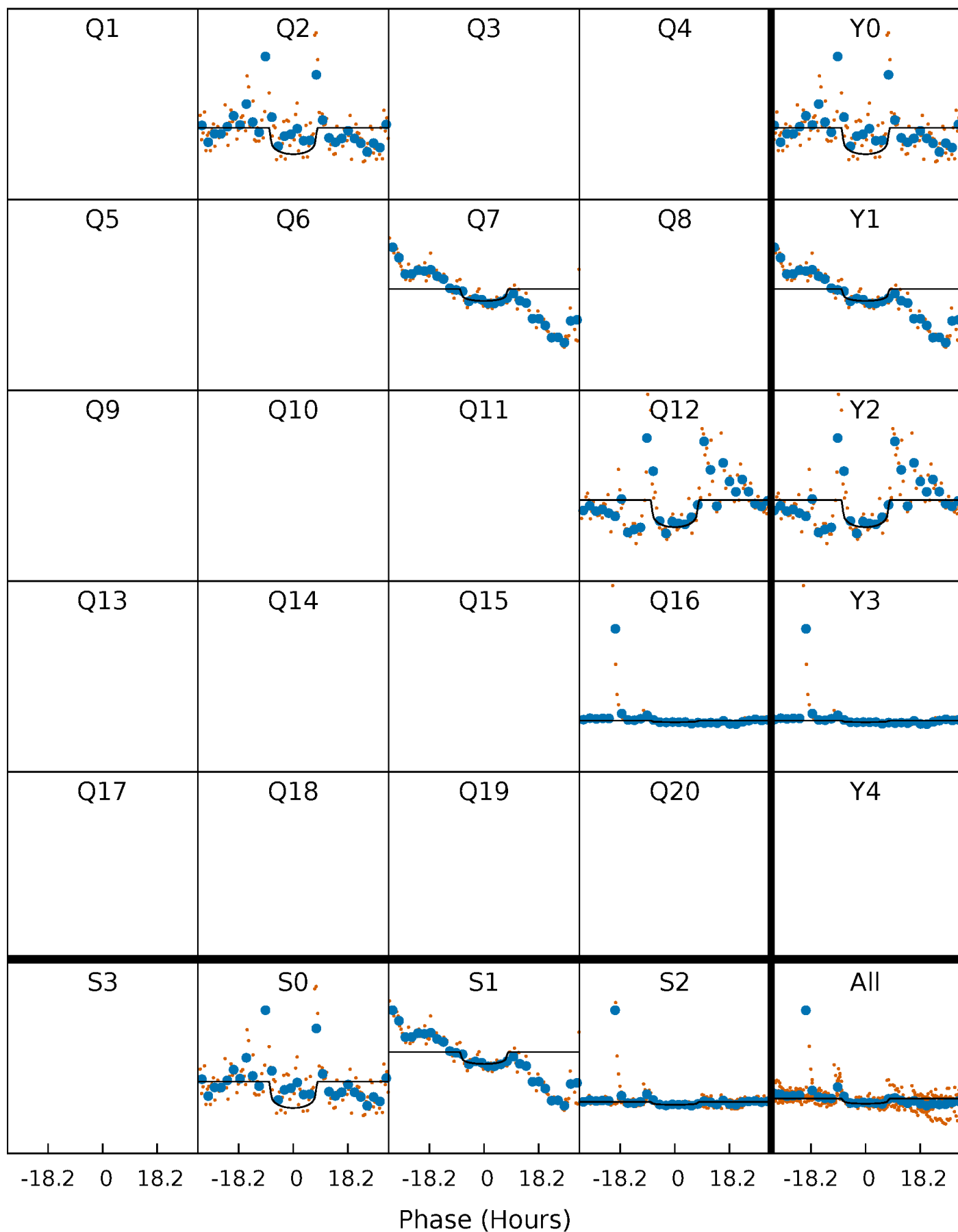
PDC Quarter-Phased Transit Curves

TCE 005342558-09 $P=436.602709$ Days $T_0=228.377019$ (BKJD)



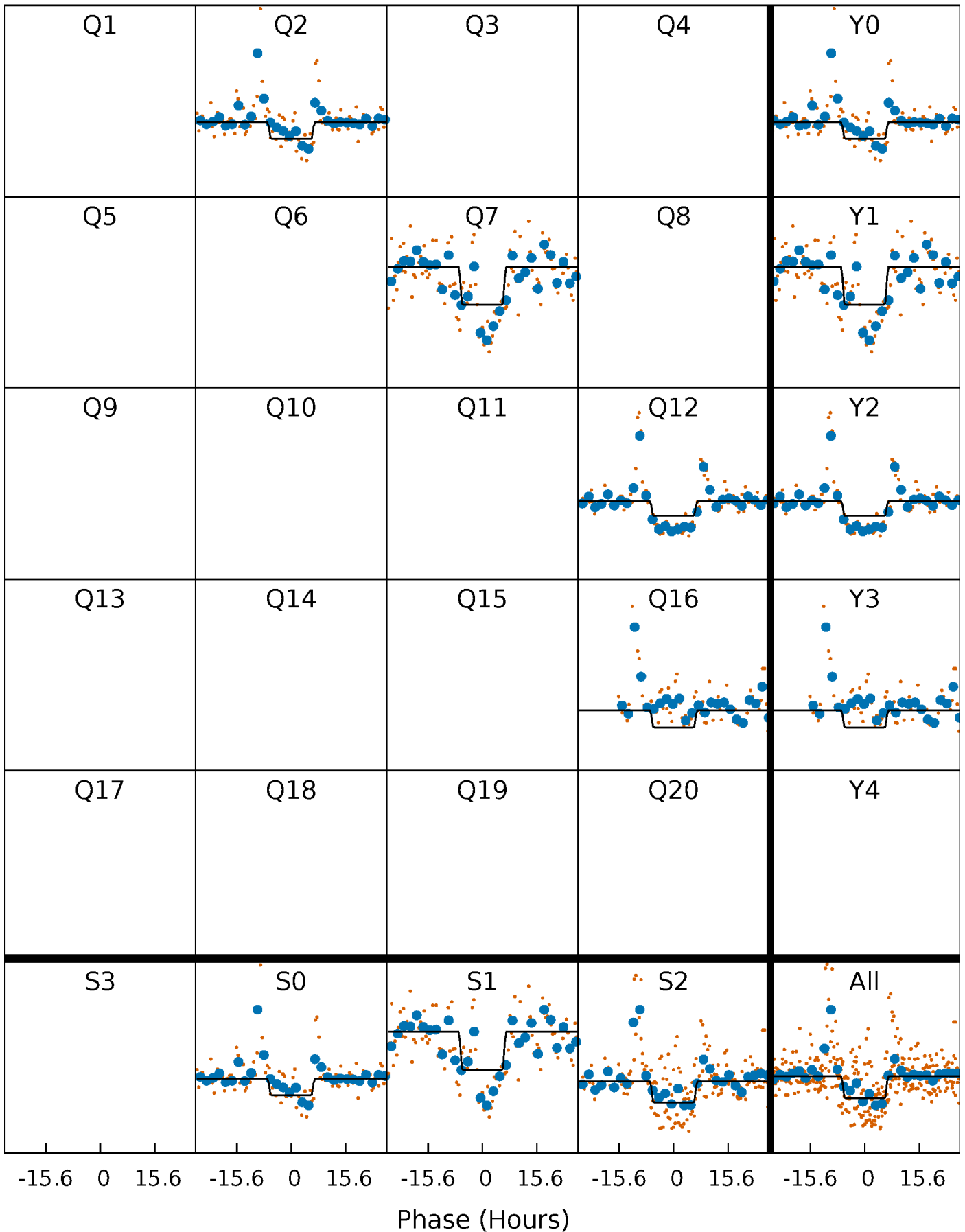
DV Quarter-Phased Transit Curves

TCE 005342558-09 $P=436.602709$ Days $T_0=228.377019$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

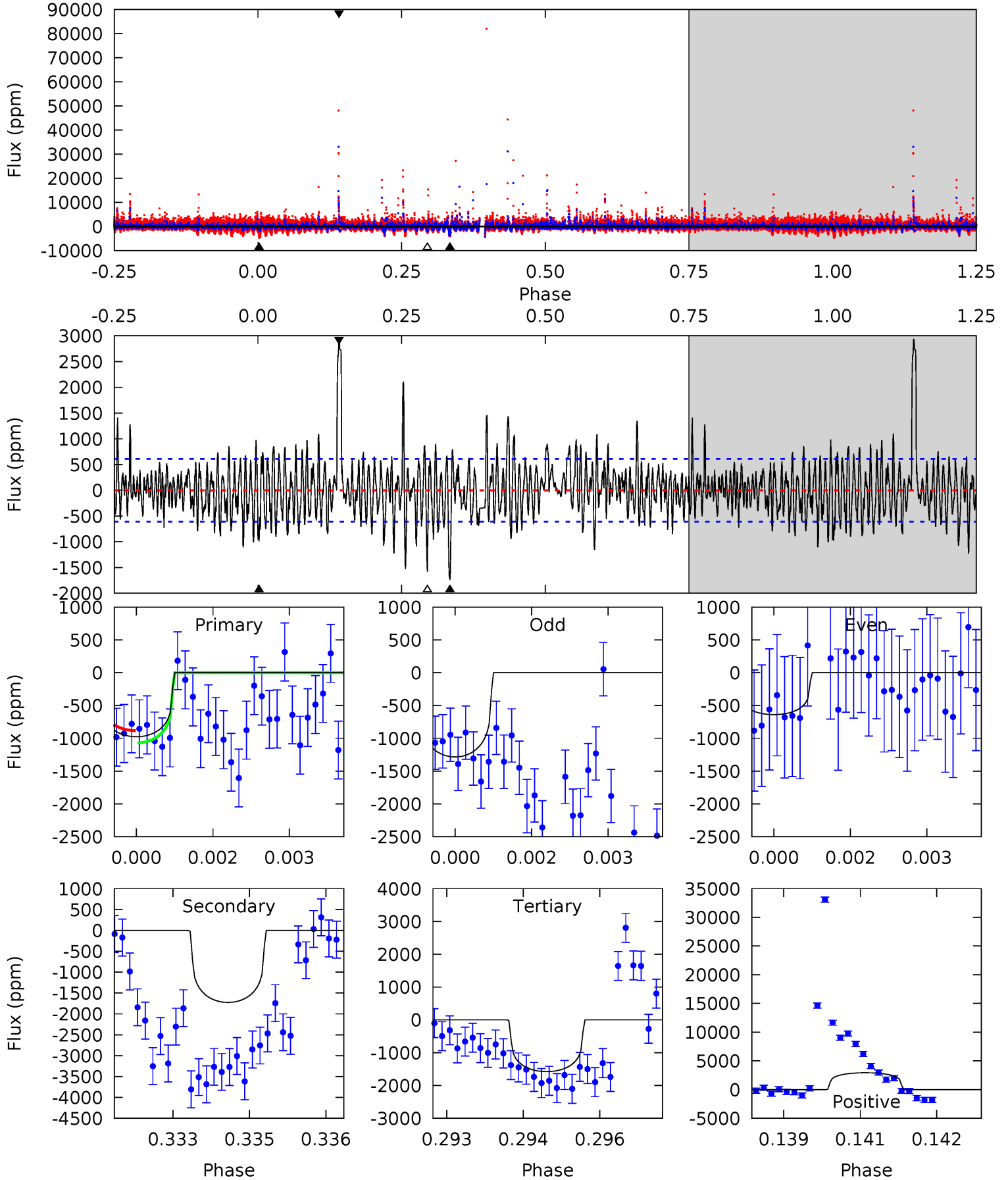
TCE 005342558-09 $P=436.624310$ Days $T_0=228.388211$ (BKJD)



DV Model-Shift Uniqueness Test

005342558-09, P = 436.602709 Days, E = 228.377019 Days

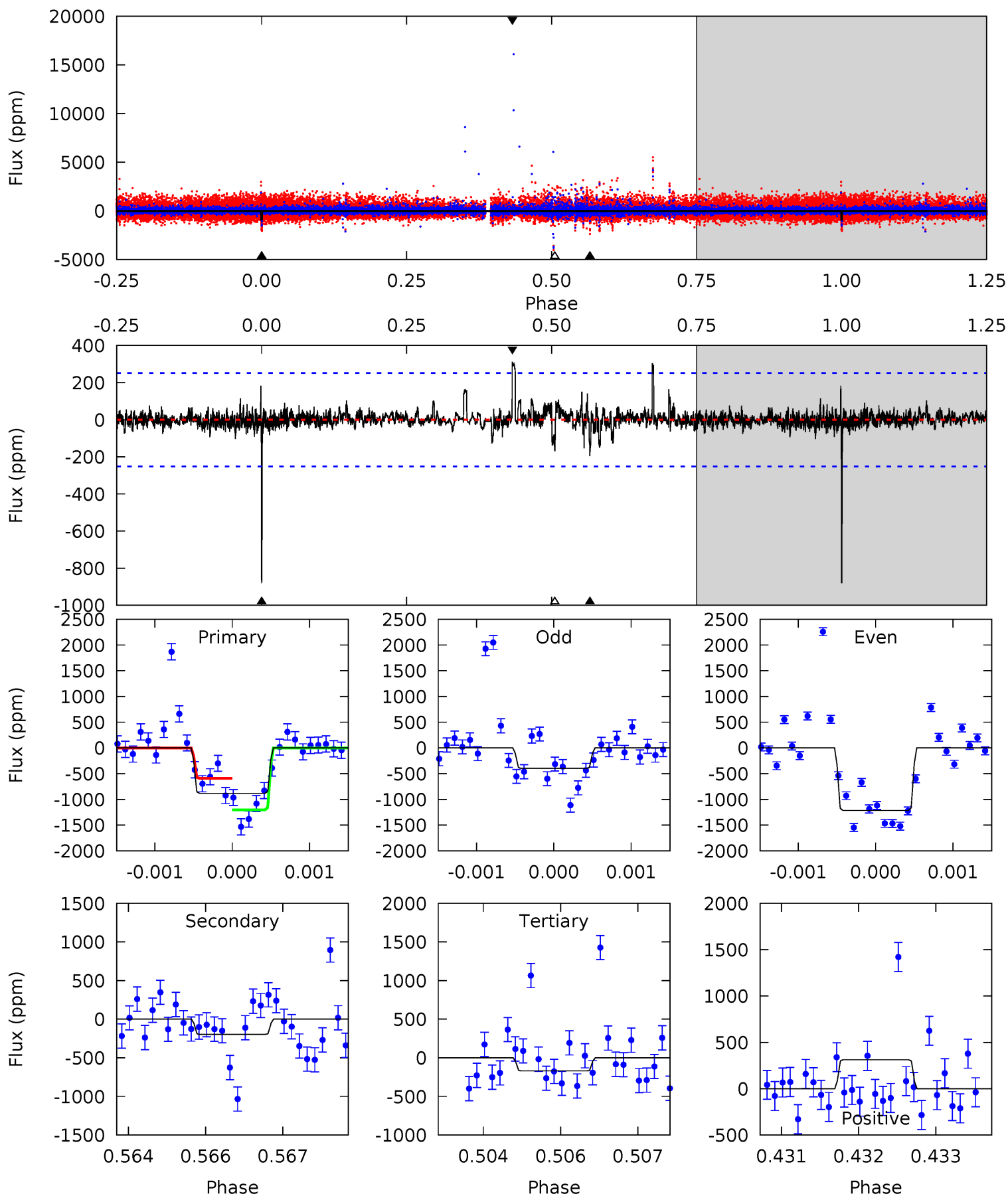
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.60 | 15.2 | 13.9 | 25.8 | 5.37 | 3.17 | 4.01 | -5.30 | -17.2 | 1.30 | -10.6 | 1.77 | 0.88 | 0.63 | 0.81 |



Alt Model-Shift Uniqueness Test

005342558-09, P = 436.624310 Days, E = 228.388211 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 19.0 | 4.22 | 3.65 | 6.72 | 5.42 | 3.23 | 0.76 | 15.3 | 12.3 | 0.57 | -2.50 | 8.20 | 0.90 | 0.26 | 6.64 |



Stellar Parameters For KIC 005342558

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|----------------------------|----------------------------|----------------------------|----------------------------|---|
| | 3154^{+1}_{-1} | $5.131^{+-1.000}_{-1.000}$ | $0.000^{+-1.000}_{-1.000}$ | $0.173^{+-1.000}_{-1.000}$ | $0.147^{+-1.000}_{-1.000}$ | $40.220^{+-1.000}_{-1.000}$ |
| | +0%/-0% | +19%/-19% | +inf%/-inf% | +578%/-578% | +680%/-680% | +2%/-2% |
| Source | PHO54 | PHO54 | PHO54 | BTSL | | |

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

Secondary Eclipse Parameters for KIC 005342558-09 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|-----------------|------------------------|-----------------|-----------------------|-------------------------------|
| DV | -1725 ± 114 | $0.75^{+0.64}_{-0.45}$ | 106^{+9}_{-9} | 3244^{+1146}_{-516} | $630940^{+3412593}_{-440509}$ |
| Alt. | -196 ± 46 | $0.76^{+0.67}_{-0.50}$ | 106^{+9}_{-9} | 2403^{+713}_{-323} | $64738^{+384057}_{-44143}$ |

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 $A_{obs} \gg 1.0$

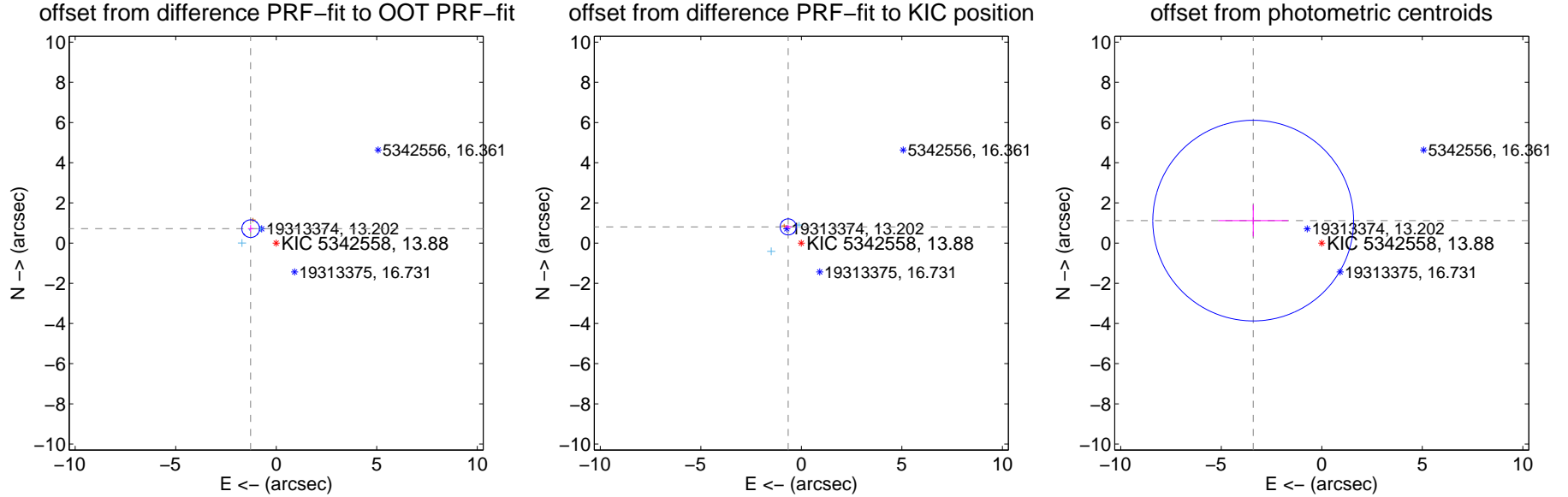
DV Centroid Data

Supplemental centroid analysis for 005342558-09. Kepler magnitude: 13.88. Transit SNR 6.36

There are 3 quarters with good PRF difference image offsets

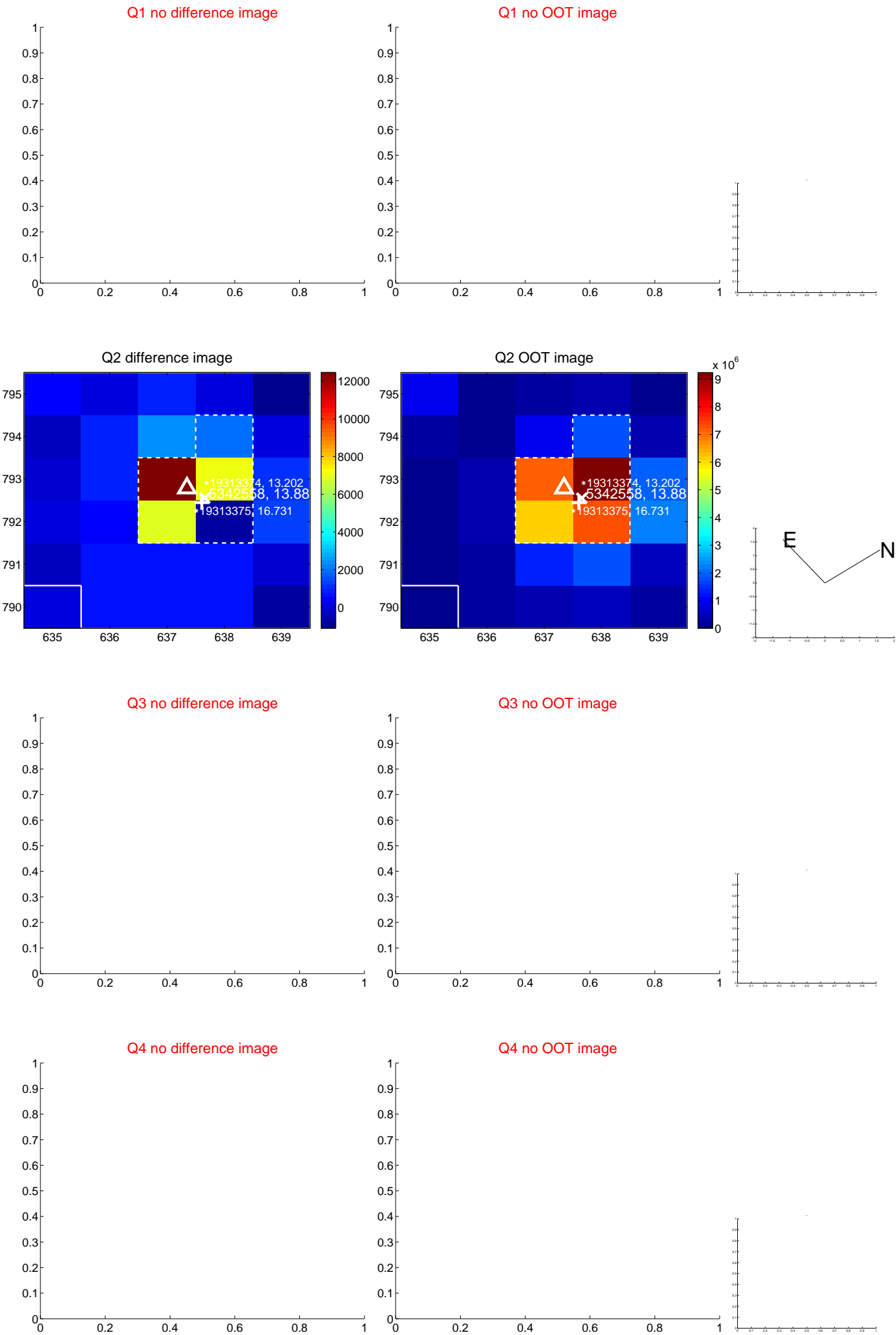
The direct PRF centroid is offset from the target star catalog position by about 0.67 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 1.461 ± 0.146 | 9.99 | 1.272 ± 0.135 | 0.719 ± 0.176 |
| PRF-fit source offset from KIC position | 1.039 ± 0.133 | 7.79 | 0.656 ± 0.168 | 0.806 ± 0.104 |
| photometric centroid source offset | 3.59 ± 1.66 | 2.16 | 3.41 ± 1.73 | 1.12 ± 0.79 |



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

Q5 no difference image



Q5 no OOT image



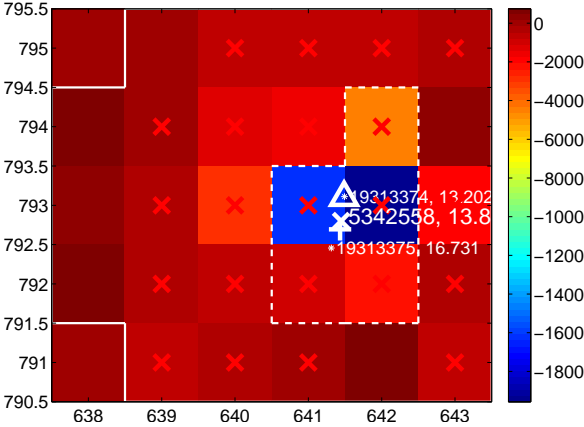
Q6 no difference image



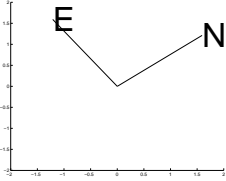
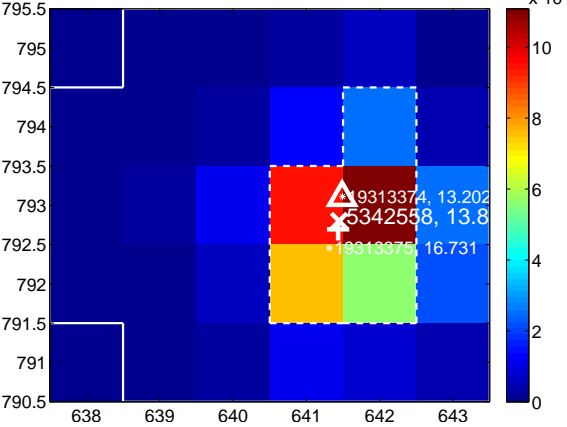
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



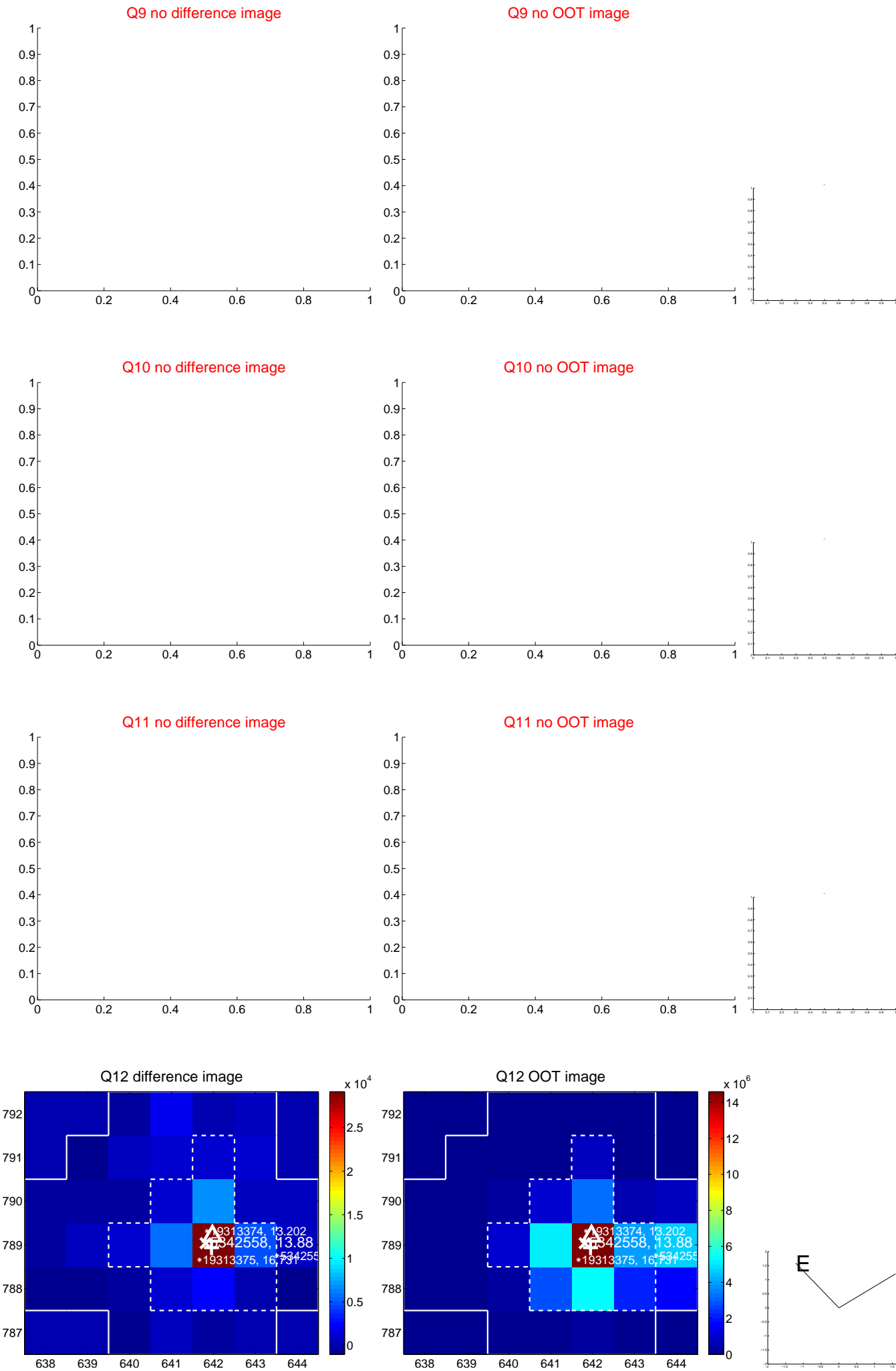
Q8 no difference image



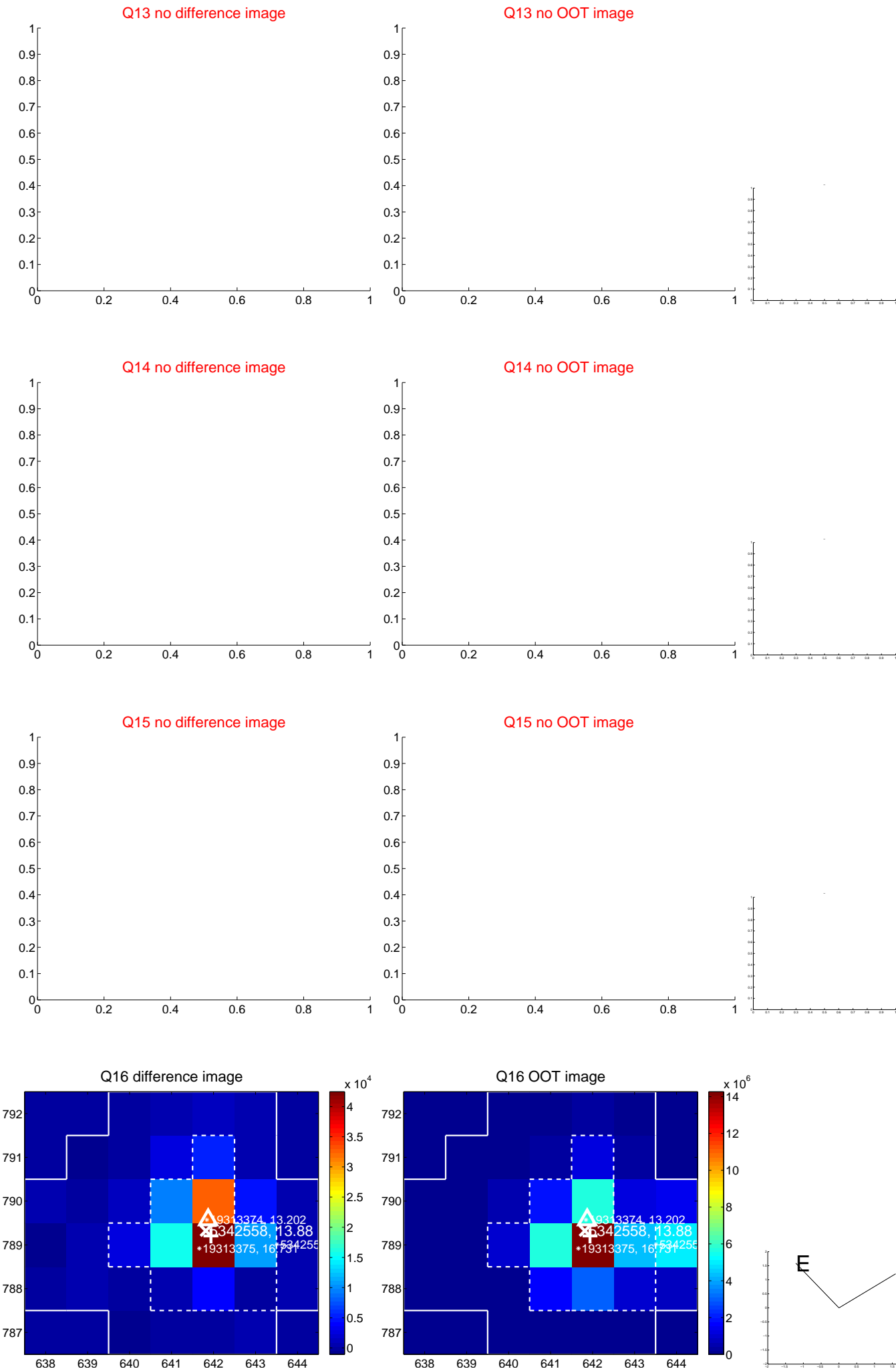
Q8 no OOT image



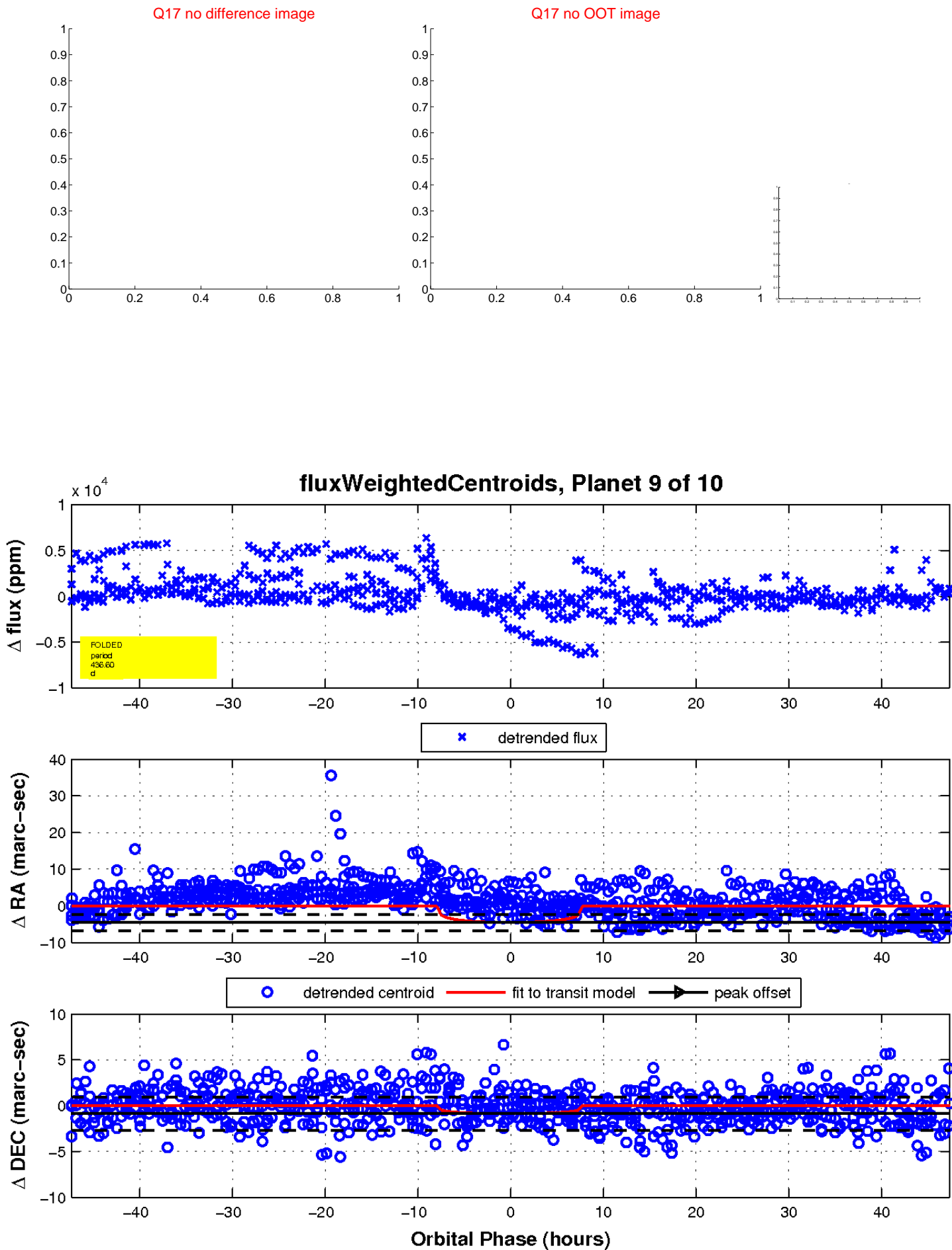
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

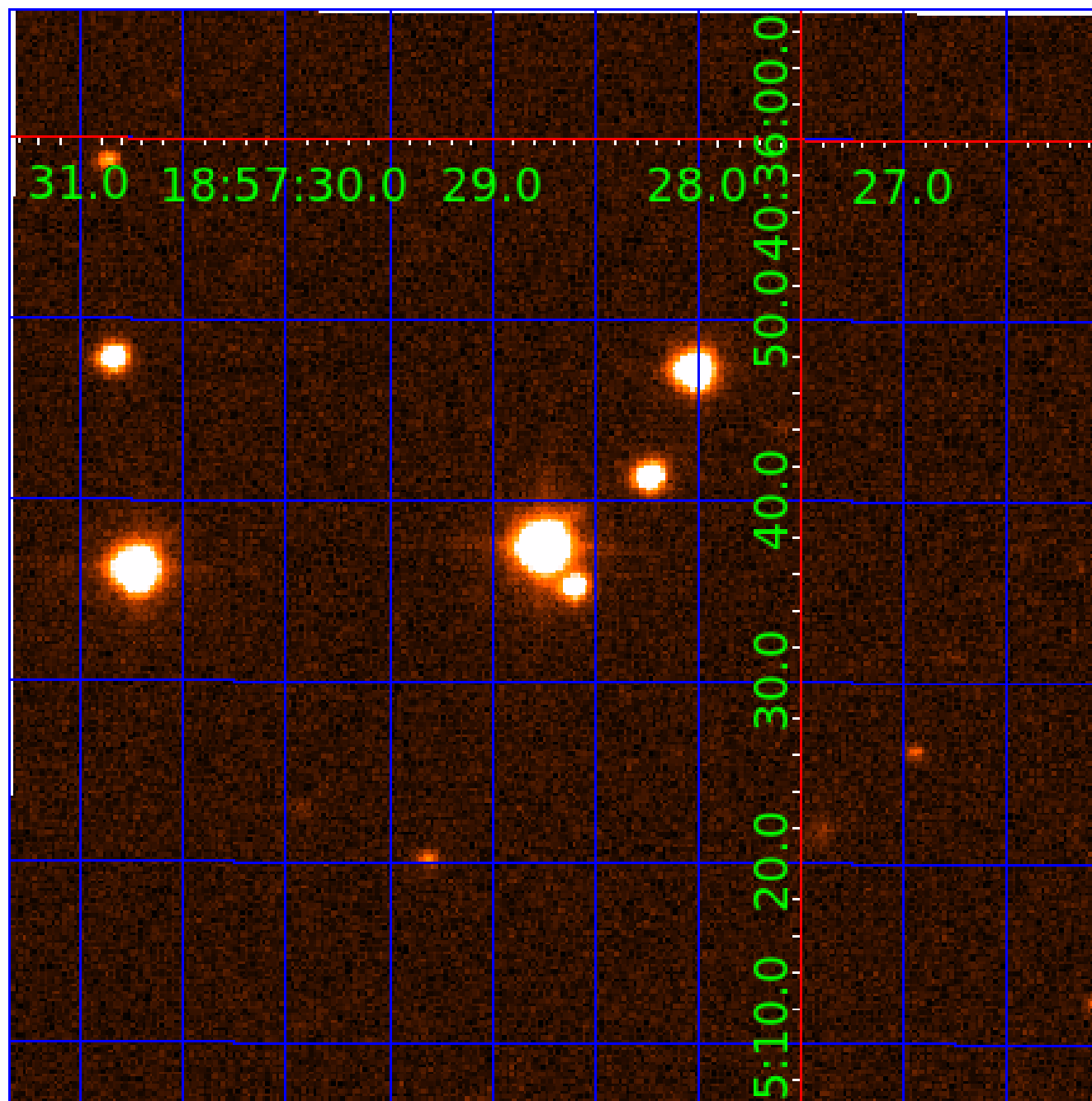


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|-----|-----------------------------|-----------------|------------------------|------------------------|
| 005342558-01 | OBS | No | 308.762826 | 263.627416 | 1701.3 | 10.318 | 18.7 | 8.5 | 0.17 | 3154 | 0.71 | 0.01 |
| 005342558-02 | OBS | No | 383.720665 | 219.310793 | 639.8 | 8.386 | 11.6 | 3.2 | 0.17 | 3154 | 0.45 | 0.01 |
| 005342558-03 | OBS | No | 418.229695 | 220.013594 | 1829.1 | 9.198 | 17.9 | 8.7 | 0.17 | 3154 | 0.73 | 0.01 |
| 005342558-05 | OBS | No | 335.694048 | 448.703570 | 1571.6 | 3.803 | 13.0 | 8.6 | 0.17 | 3154 | 0.68 | 0.01 |
| 005342558-06 | OBS | No | 360.819671 | 220.624153 | 1216.7 | 3.561 | 12.5 | 6.8 | 0.17 | 3154 | 0.67 | 0.01 |
| 005342558-07 | OBS | No | 326.552624 | 275.507809 | 512.0 | 5.172 | 11.2 | 2.8 | 0.17 | 3154 | 0.44 | 0.01 |
| 005342558-08 | OBS | No | 285.507525 | 315.963589 | 1141.7 | 7.857 | 11.0 | 7.5 | 0.17 | 3154 | 0.59 | 0.01 |
| 005342558-09 | OBS | No | 436.602709 | 228.377019 | 1074.0 | 15.912 | 11.2 | 6.4 | 0.17 | 3154 | 0.57 | 0.01 |
| 005342558-10 | OBS | No | 378.103945 | 375.659854 | 1003.0 | 7.162 | 10.8 | 6.7 | 0.17 | 3154 | 0.57 | 0.01 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 005342558-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-05 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_KIC_POS |
| 005342558-06 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_RUBBLE_CHASES_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS |
| 005342558-07 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-08 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS |
| 005342558-09 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS |
| 005342558-10 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_KIC_POS |

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

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

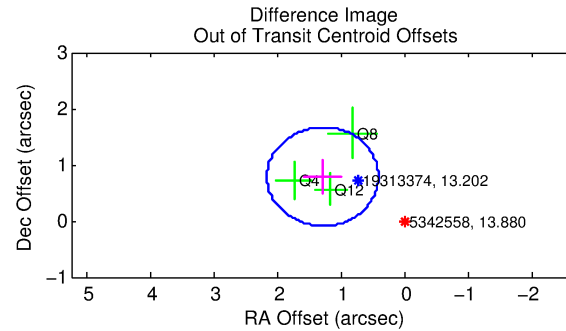
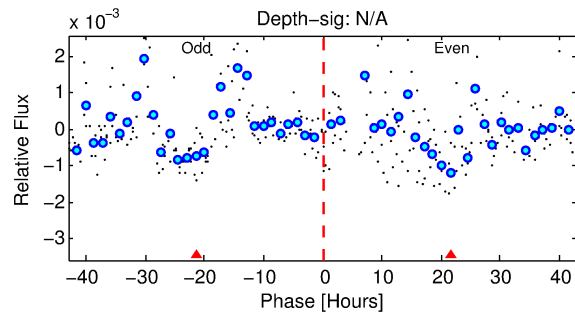
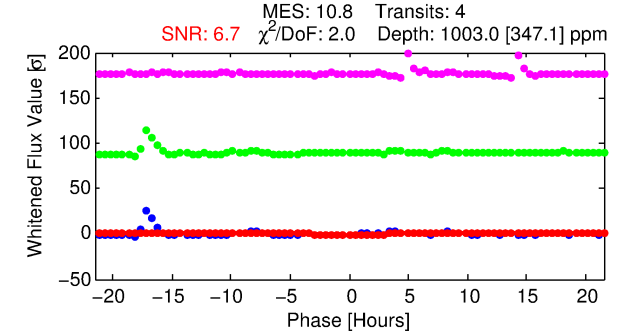
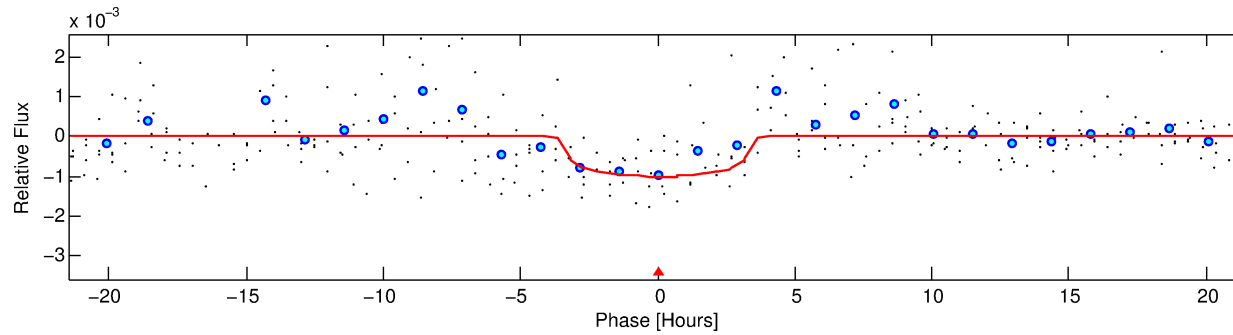
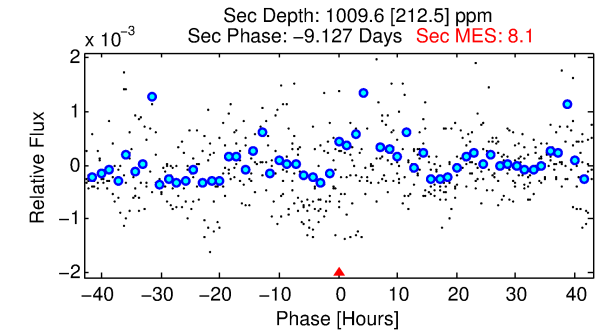
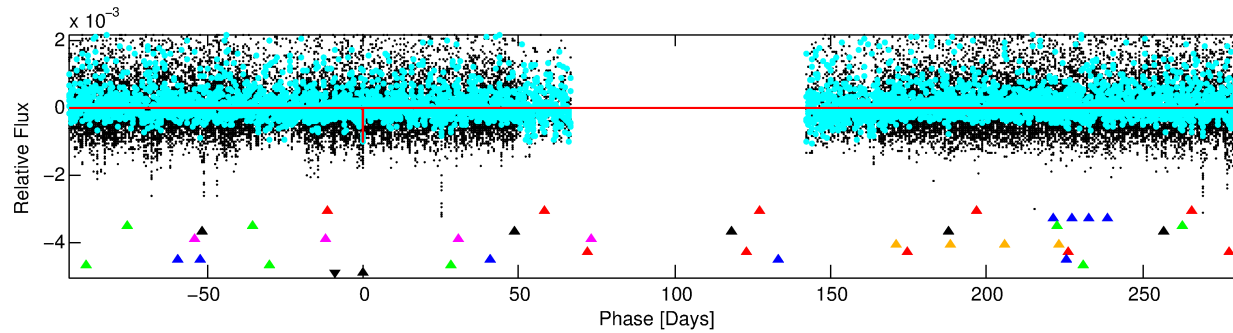
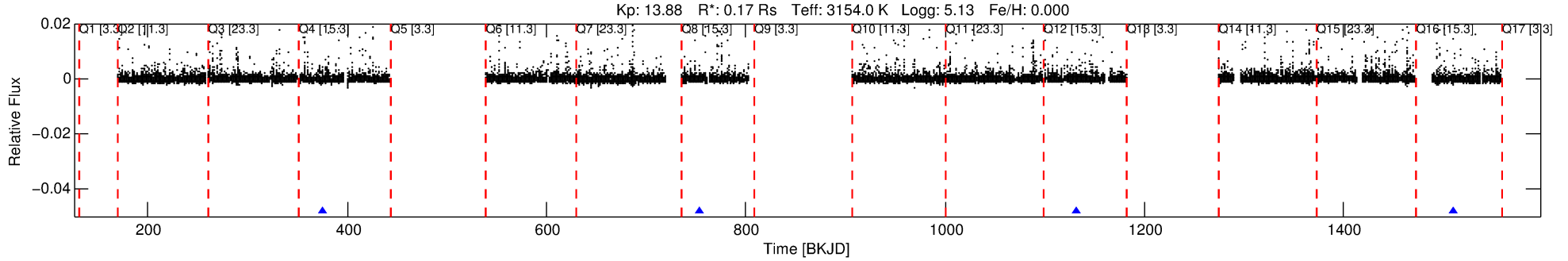
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005342558-10

No Significant Match Found

DV One-Page Summary

KIC: 5342558 Candidate: 10 of 10 Period: 378.104 d



DV Fit Results:

Period = 378.10394 [0.01357] d
Epoch = 375.6599 [0.0241] BKJD
Rp/R* = 0.0302 [0.0260]
a/R* = 332.75 [1171.74]
b = 0.62 [3.51]
Seff = 0.01 [0.00]
Teq = 79 [0] K
Rp = 0.57 [0.49] Re
a = 0.5409 [0.0000] AU
Ag = 498774.14 [864866.58] [0.58σ]
Teffp = 3233 [1402] K [2.25σ]

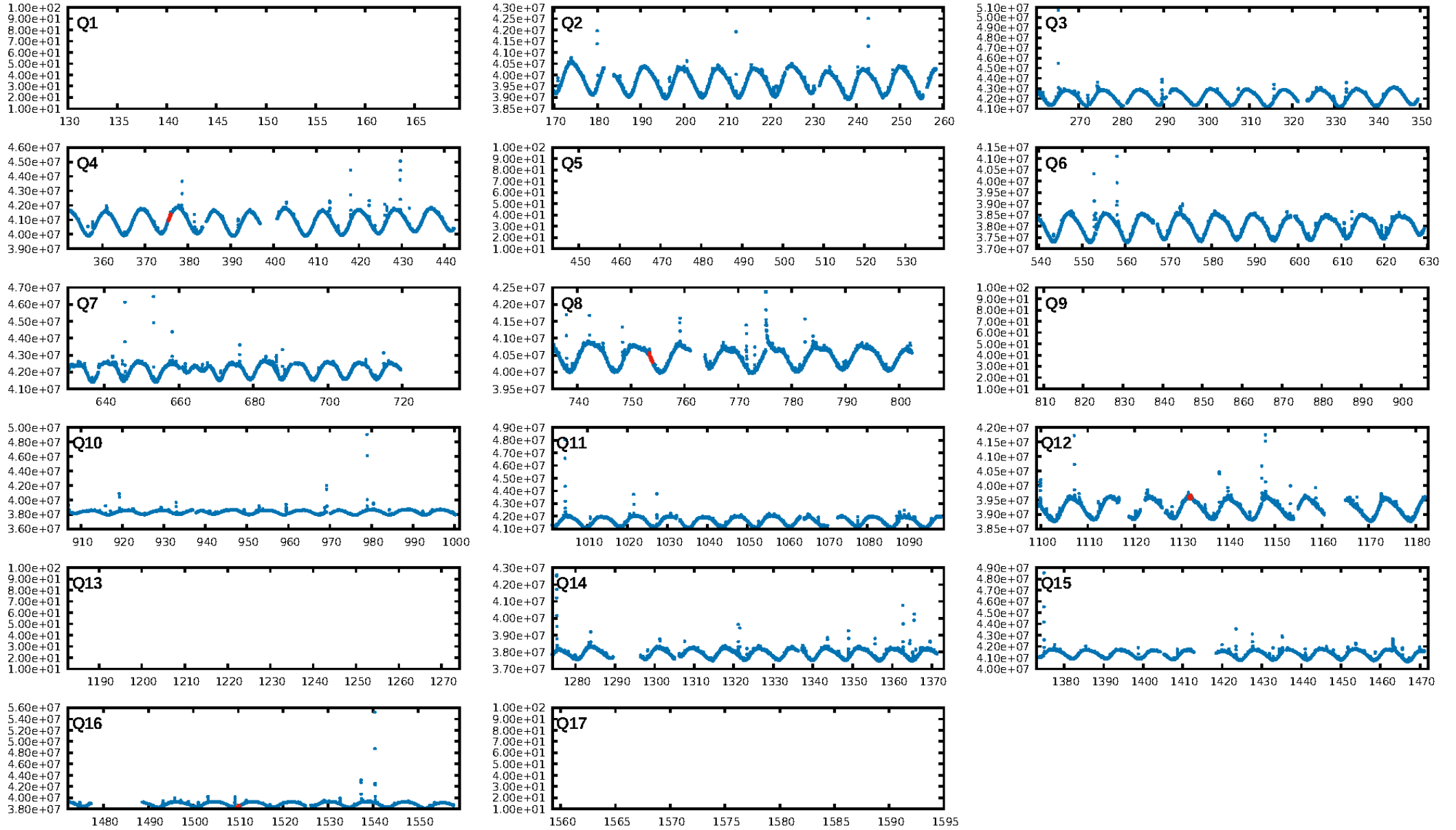
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [51.86σ]
LongPeriod-sig: 100.0% [12.22σ]
ModelChiSquare2-sig: 26.3%
ModelChiSquareGof-sig: 98.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -2.339
Centroid-sig: 9.8%
Centroid-so: 1.986 arcsec [1.15σ]
OotOffset-rm: 1.516 arcsec [5.18σ]
KicOffset-rm: 0.915 arcsec [3.20σ]
OotOffset-st: 0/0/3/0 [3]
KicOffset-st: 0/0/3/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

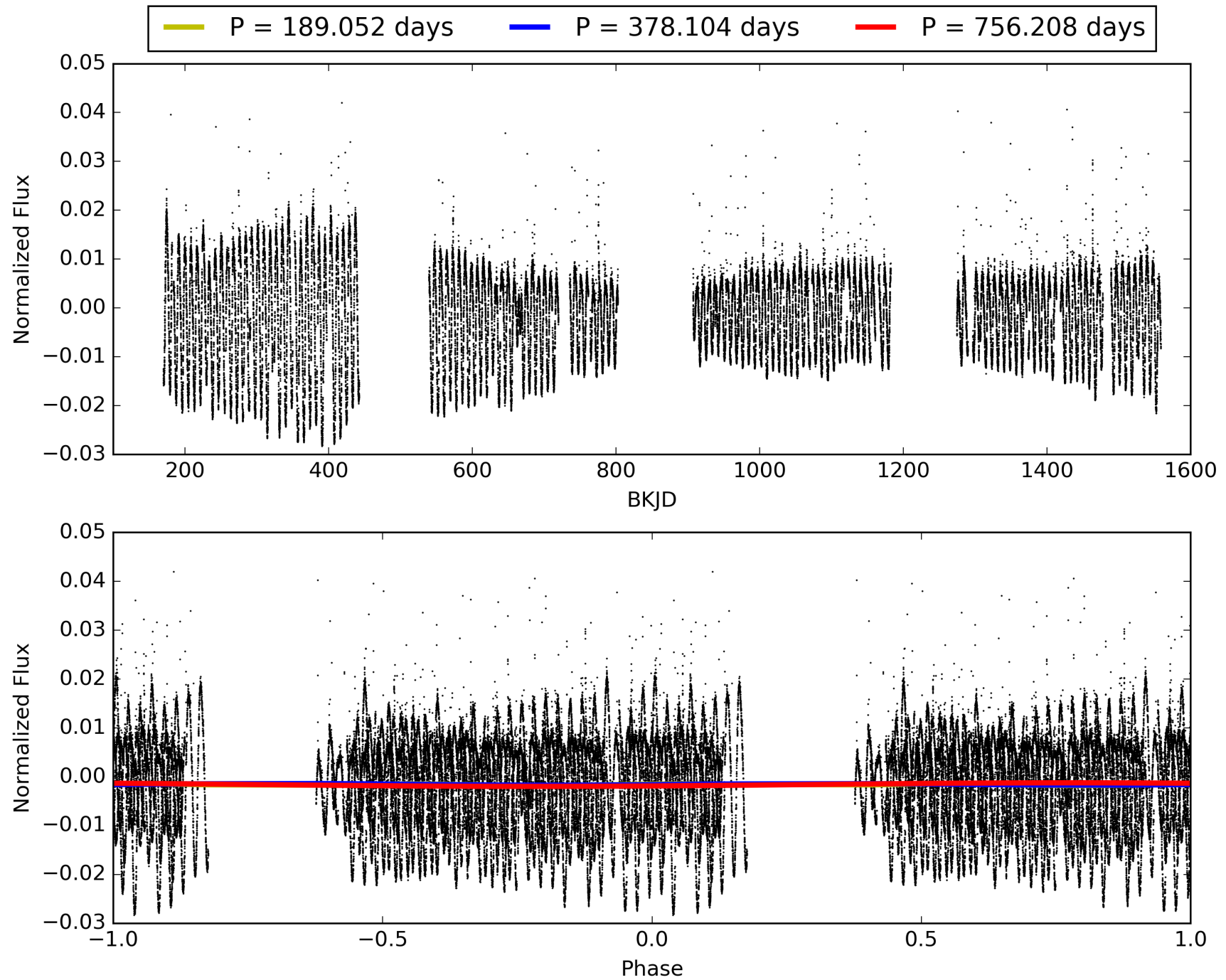
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:43:36 Z

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

TCE 005342558-10, PDC Light Curves

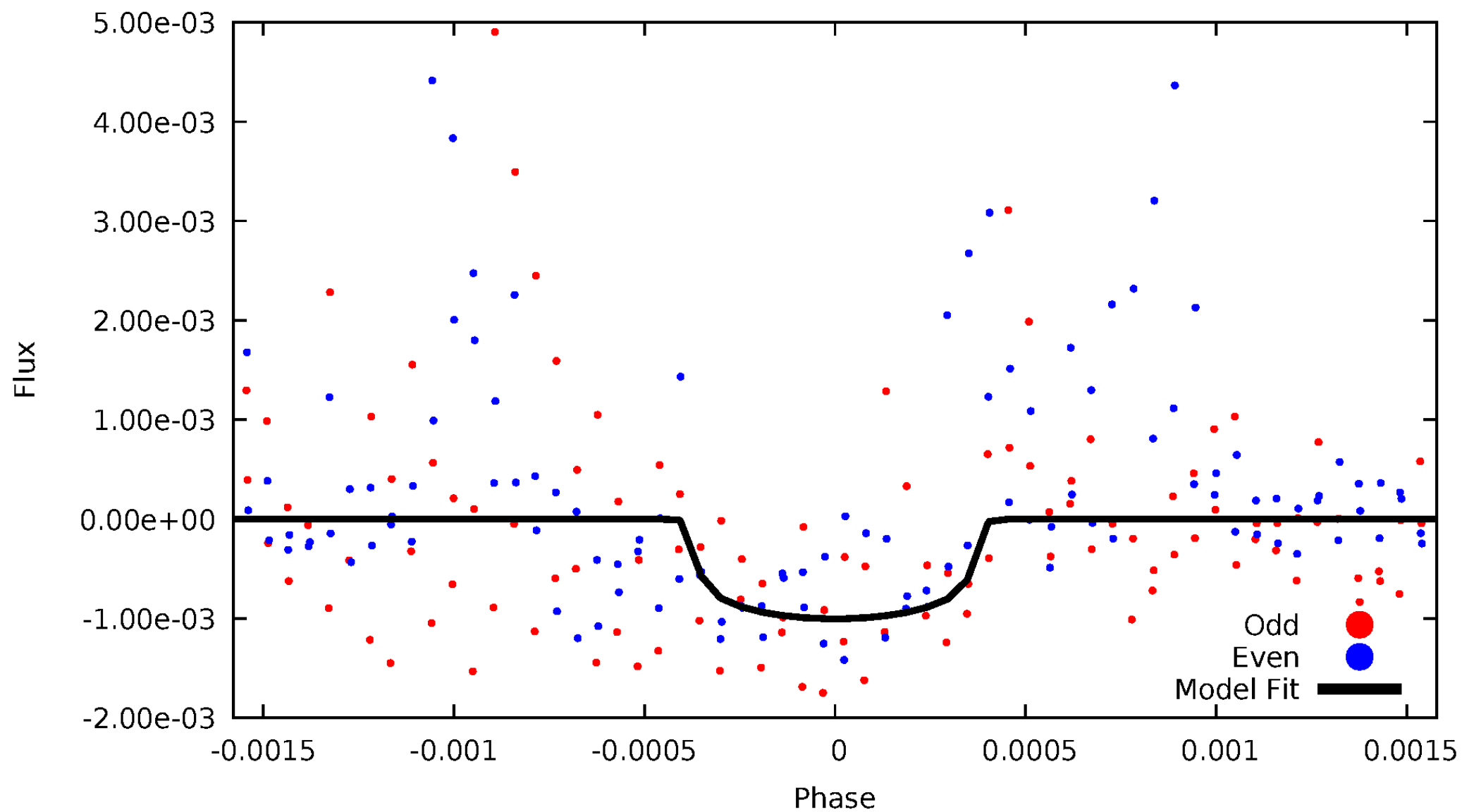


TCE 005342558-10



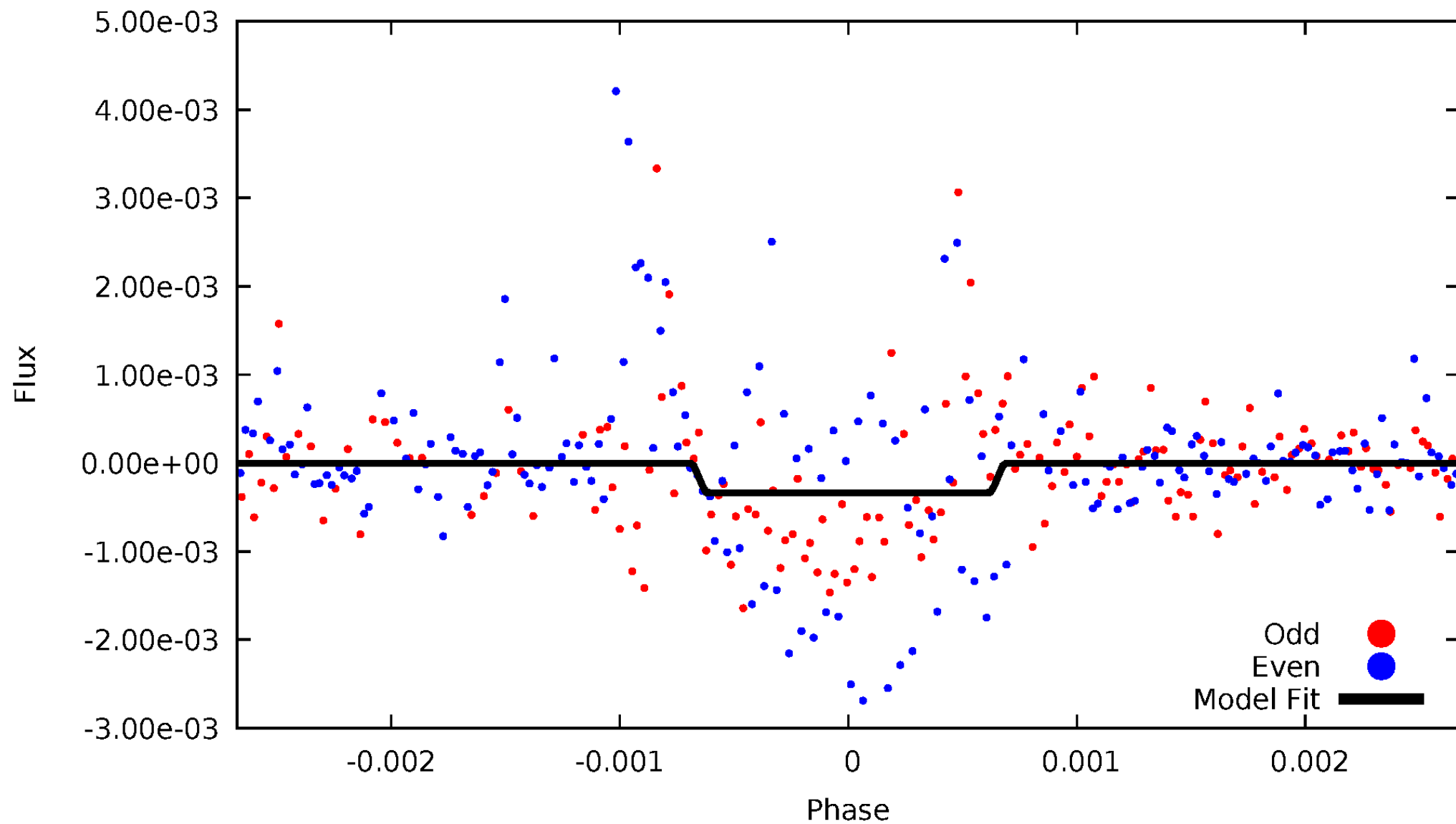
DV Odd/Even

TCE 005342558-10



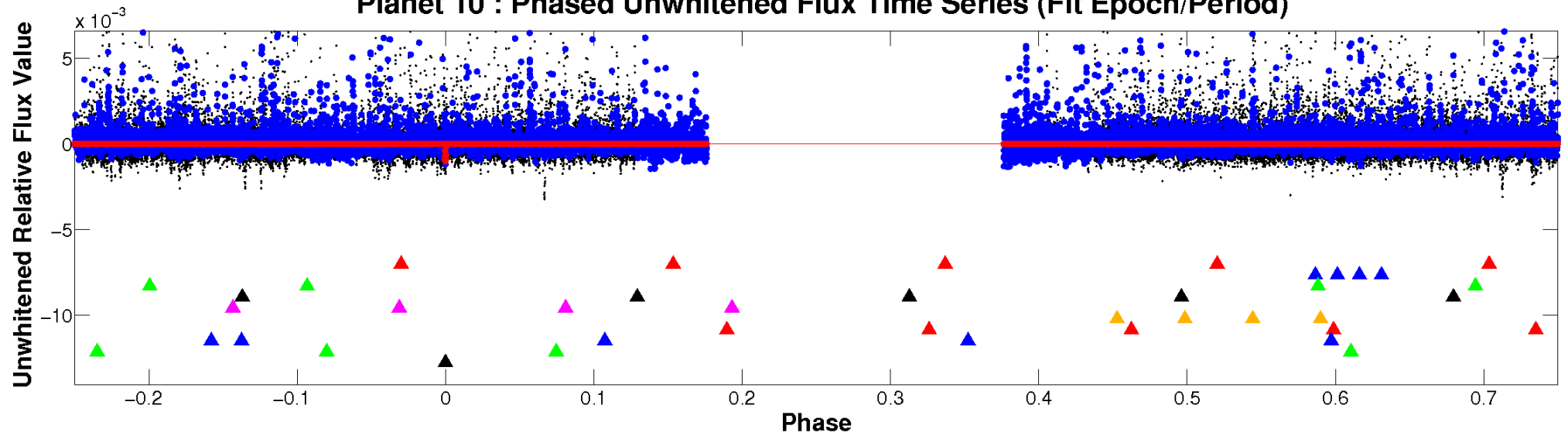
ALT Odd/Even

TCE 005342558-10

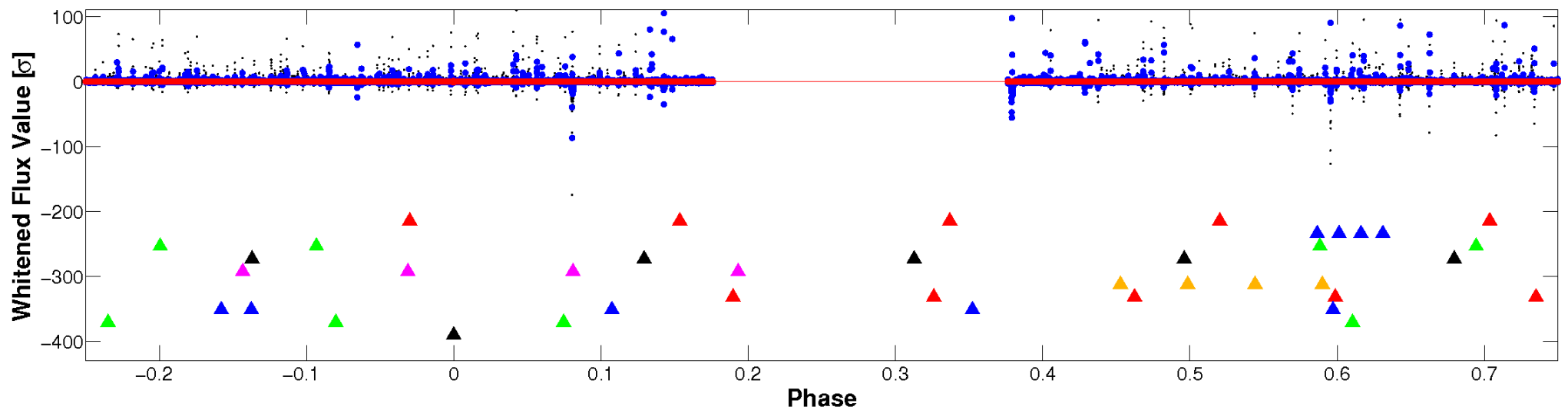


Non-Whitened Vs. Whitened Light Curve

Planet 10 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

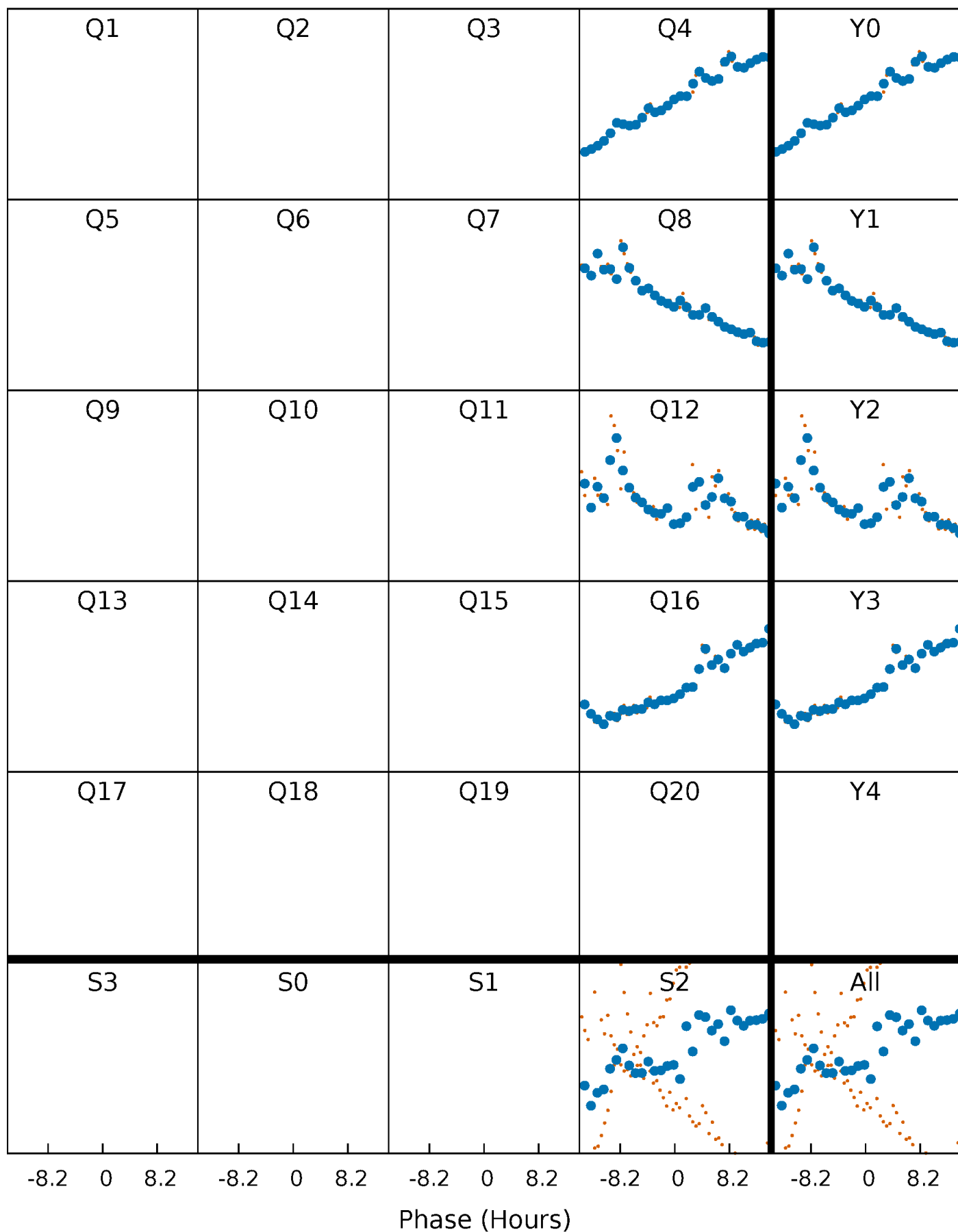


Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)



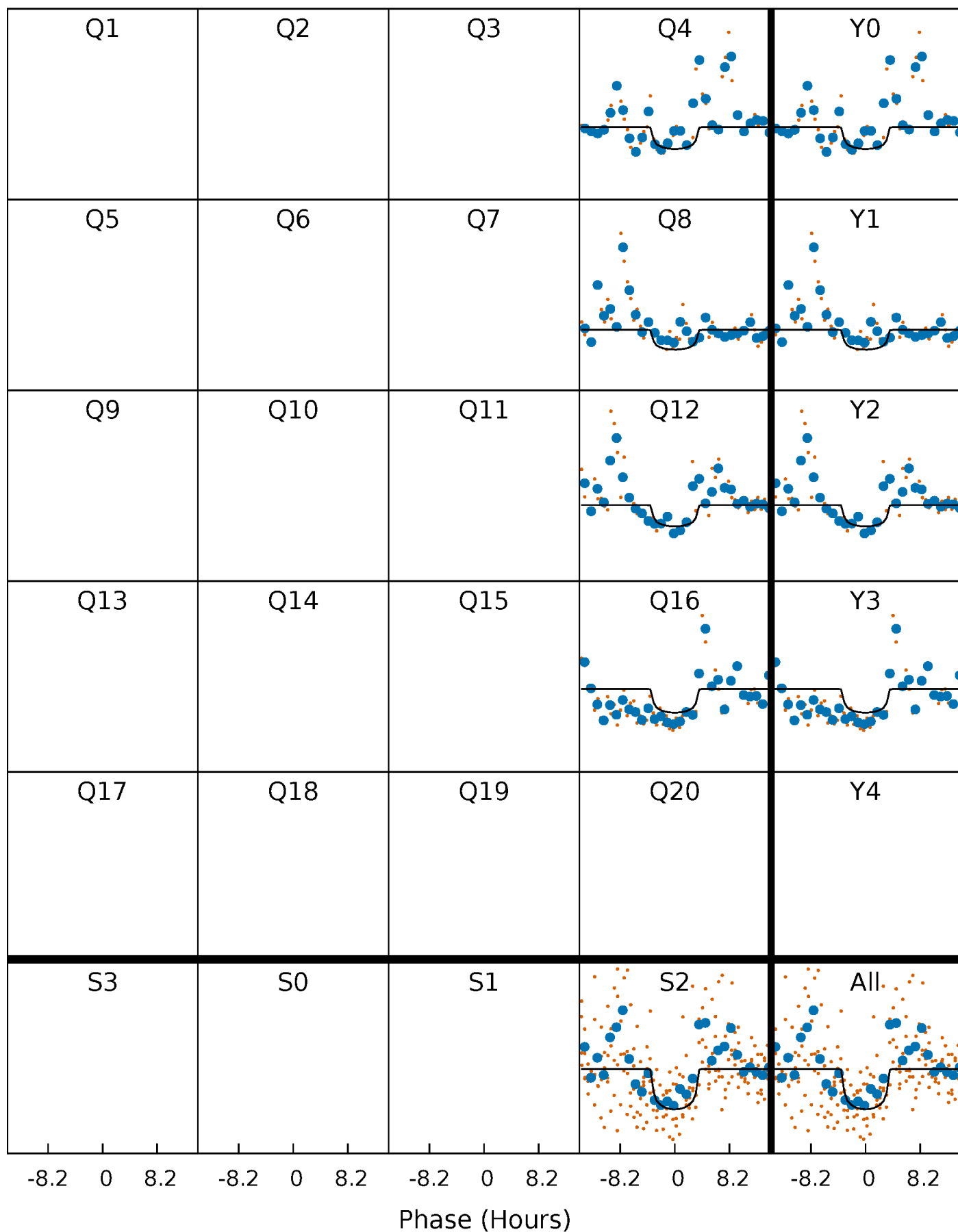
PDC Quarter-Phased Transit Curves

TCE 005342558-10 P=378.103945 Days $T_0=375.659854$ (BKJD)



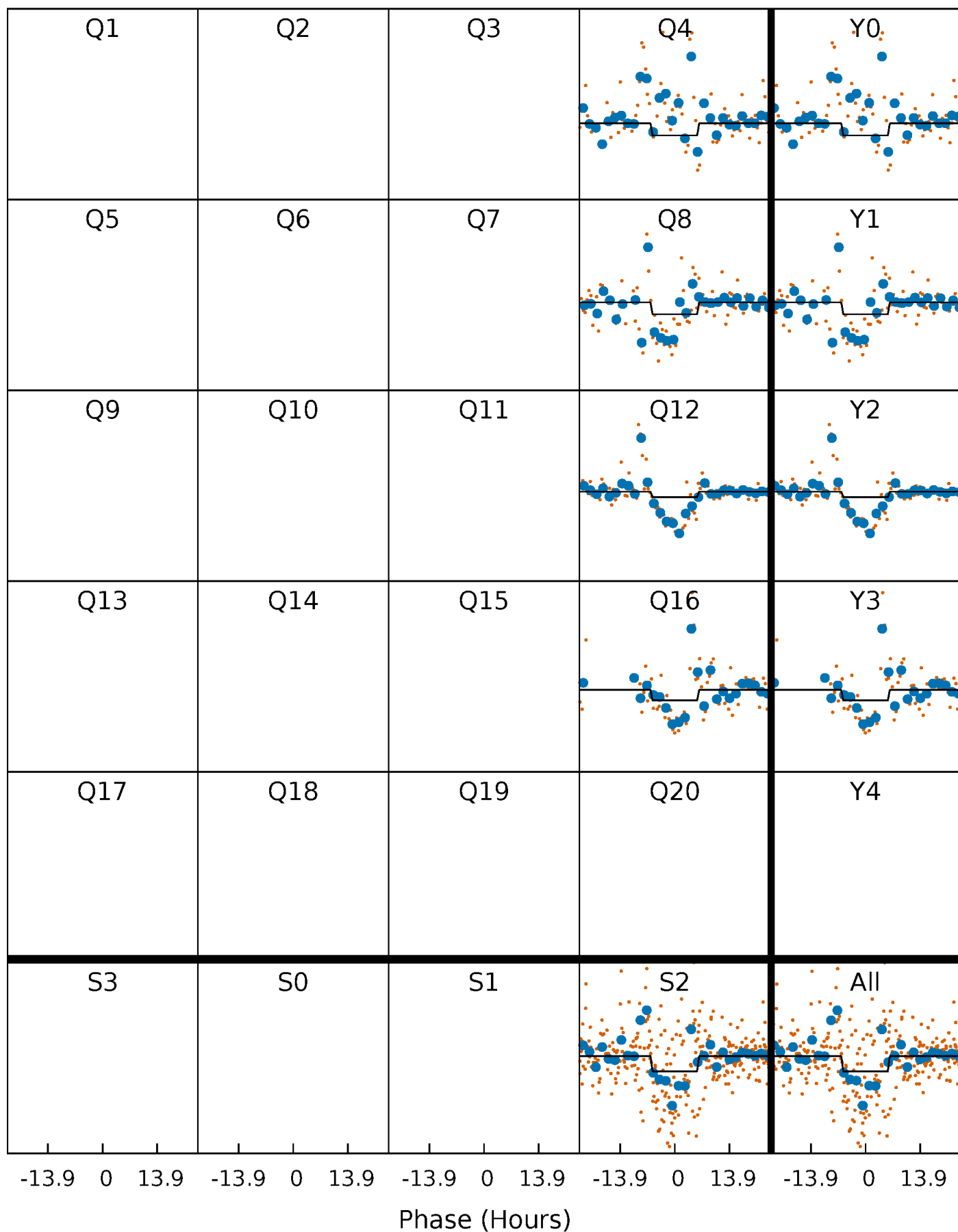
DV Quarter-Phased Transit Curves

TCE 005342558-10 $P=378.103945$ Days $T_0=375.659854$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

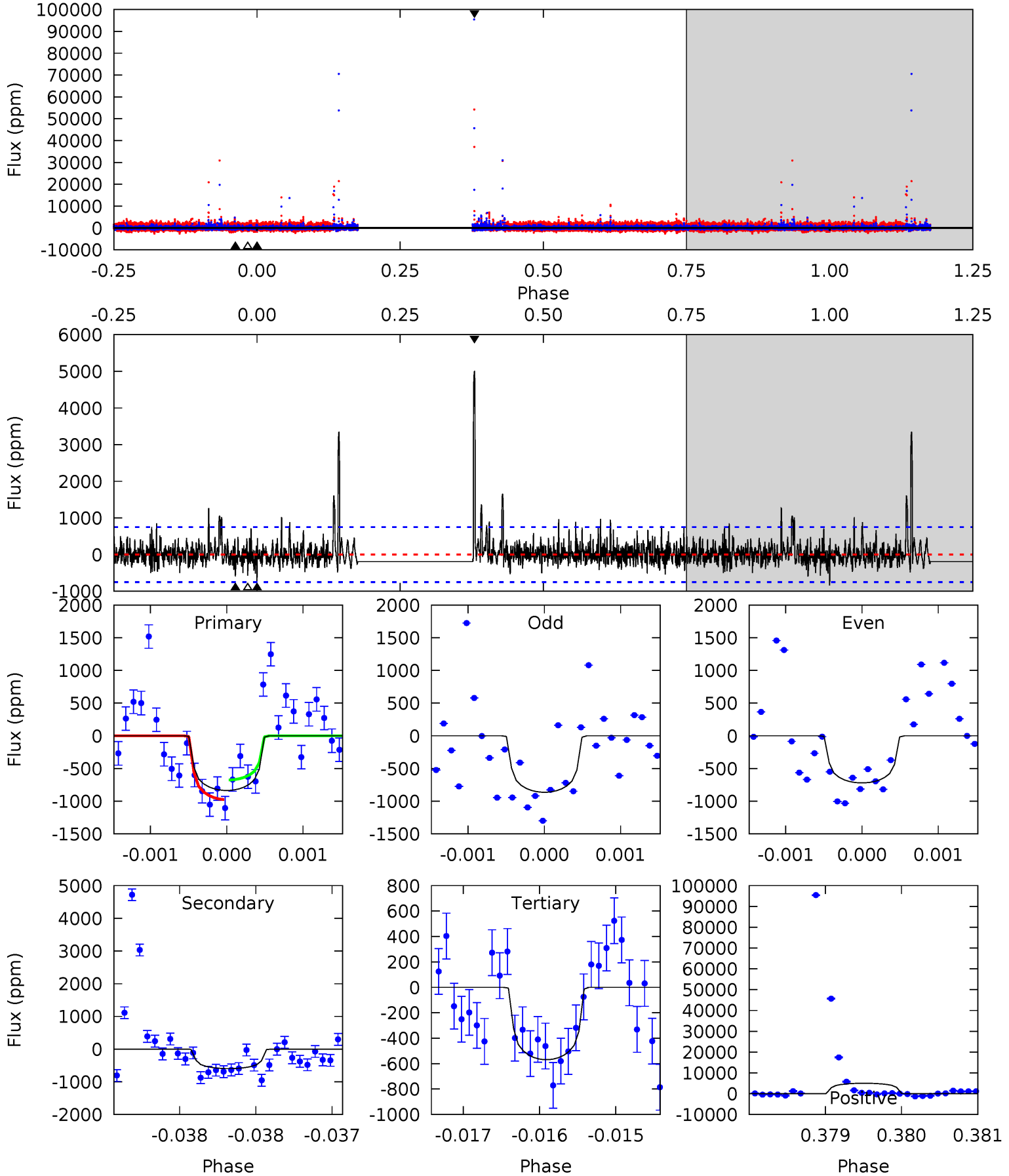
TCE 005342558-10 P=378.109405 Days $T_0=375.633486$ (BKJD)



DV Model-Shift Uniqueness Test

005342558-10, P = 378.103945 Days, E = 375.659854 Days

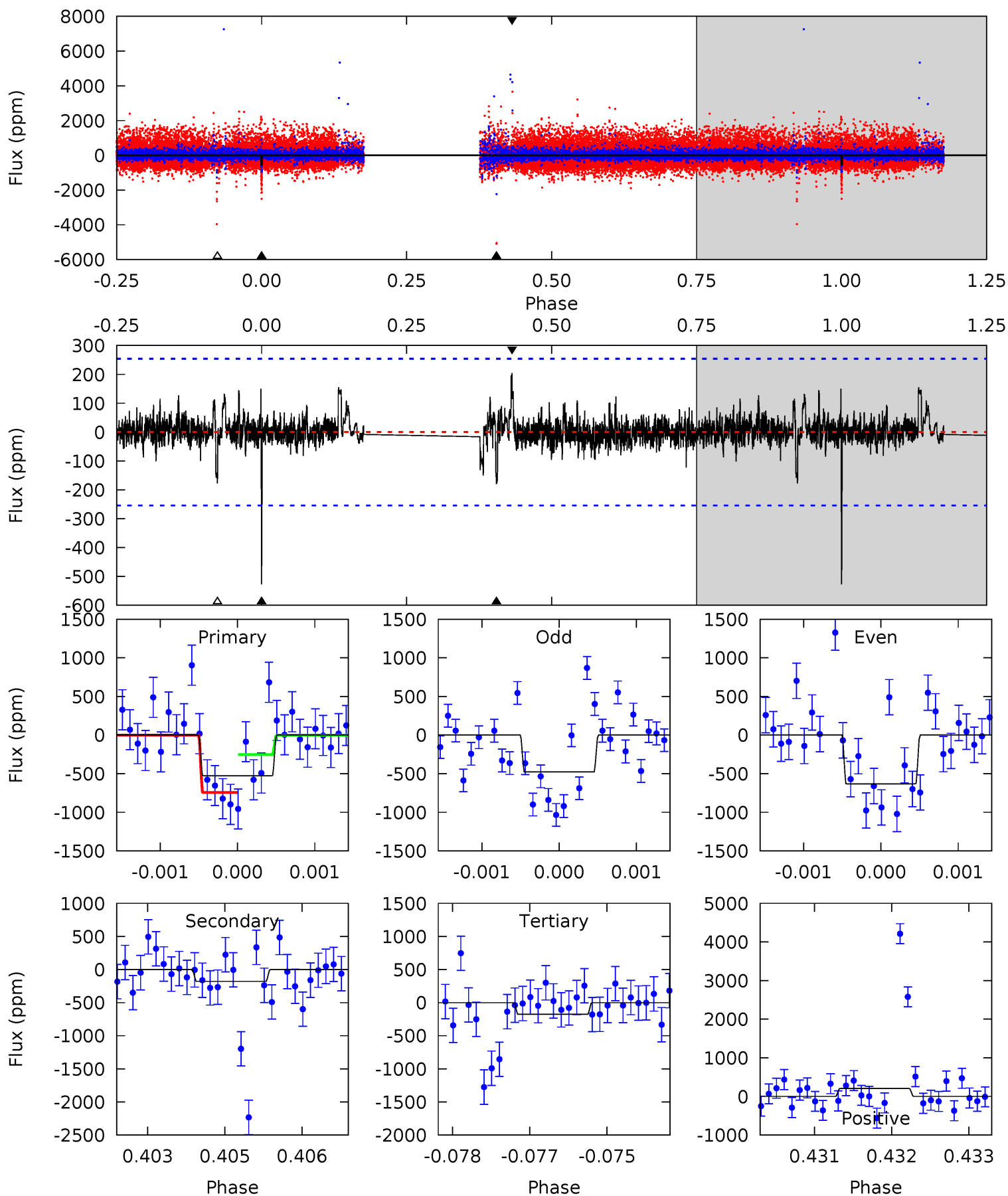
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 6.12 | 4.36 | 4.16 | 36.7 | 5.49 | 3.35 | 2.11 | 1.96 | -30.5 | 0.20 | -32.3 | 0.30 | 1.21 | 0.86 | 0.94 |



Alt Model-Shift Uniqueness Test

005342558-10, P = 378.109405 Days, E = 375.633486 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 | 3.81 | 3.77 | 4.34 | 5.40 | 3.20 | 0.67 | 7.42 | 6.86 | 0.04 | -0.53 | 1.56 | 1.20 | 0.28 | 5.24 |



Stellar Parameters For KIC 005342558

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|----------------------------|----------------------------|----------------------------|----------------------------|---|
| | 3154^{+1}_{-1} | $5.131^{+-1.000}_{-1.000}$ | $0.000^{+-1.000}_{-1.000}$ | $0.173^{+-1.000}_{-1.000}$ | $0.147^{+-1.000}_{-1.000}$ | $40.220^{+-1.000}_{-1.000}$ |
| | +0%/-0% | +19%/-19% | +inf%/-inf% | +578%/-578% | +680%/-680% | +2%/-2% |
| Source | PHO54 | PHO54 | PHO54 | BTSL | | |

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

Secondary Eclipse Parameters for KIC 005342558-10 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|----------------|------------------------|----------------------|----------------------|------------------------------|
| DV | -596 ± 137 | $0.71^{+0.53}_{-0.43}$ | 111^{+9}_{-9} | 2823^{+941}_{-406} | $200225^{+990374}_{-132324}$ |
| Alt. | -179 ± 47 | $0.51^{+0.52}_{-0.34}$ | 111^{+9}_{-10} | 2609^{+965}_{-394} | $113432^{+782838}_{-84910}$ |

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

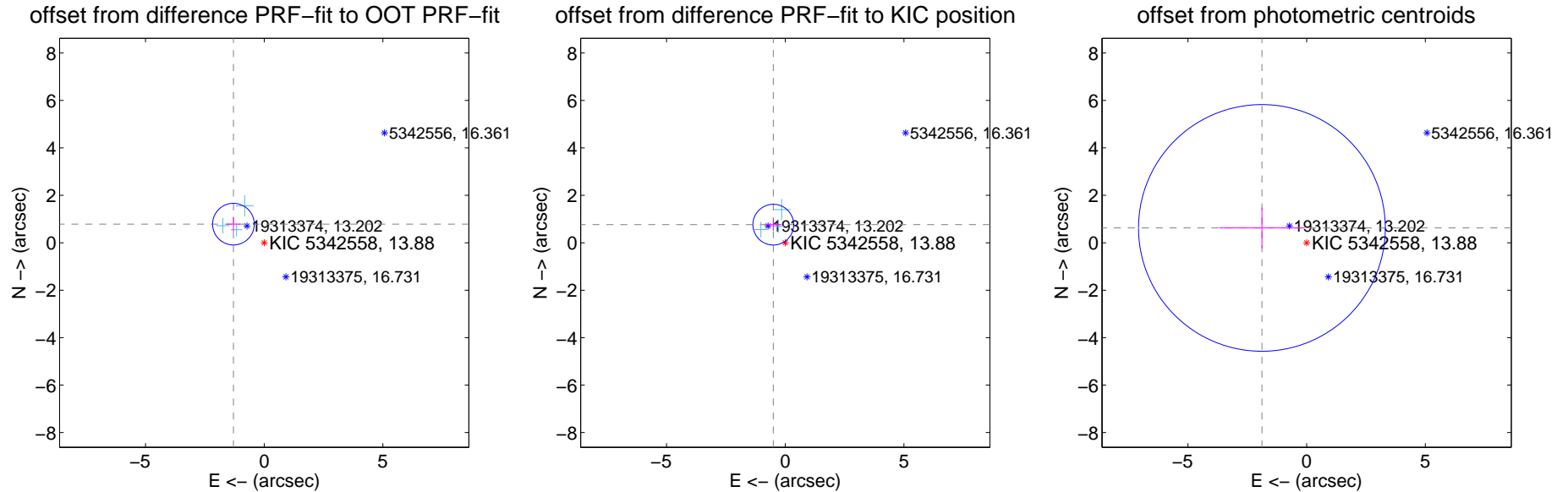
DV Centroid Data

Supplemental centroid analysis for 005342558-10. Kepler magnitude: 13.88. Transit SNR 6.73

There are 3 quarters with good PRF difference image offsets

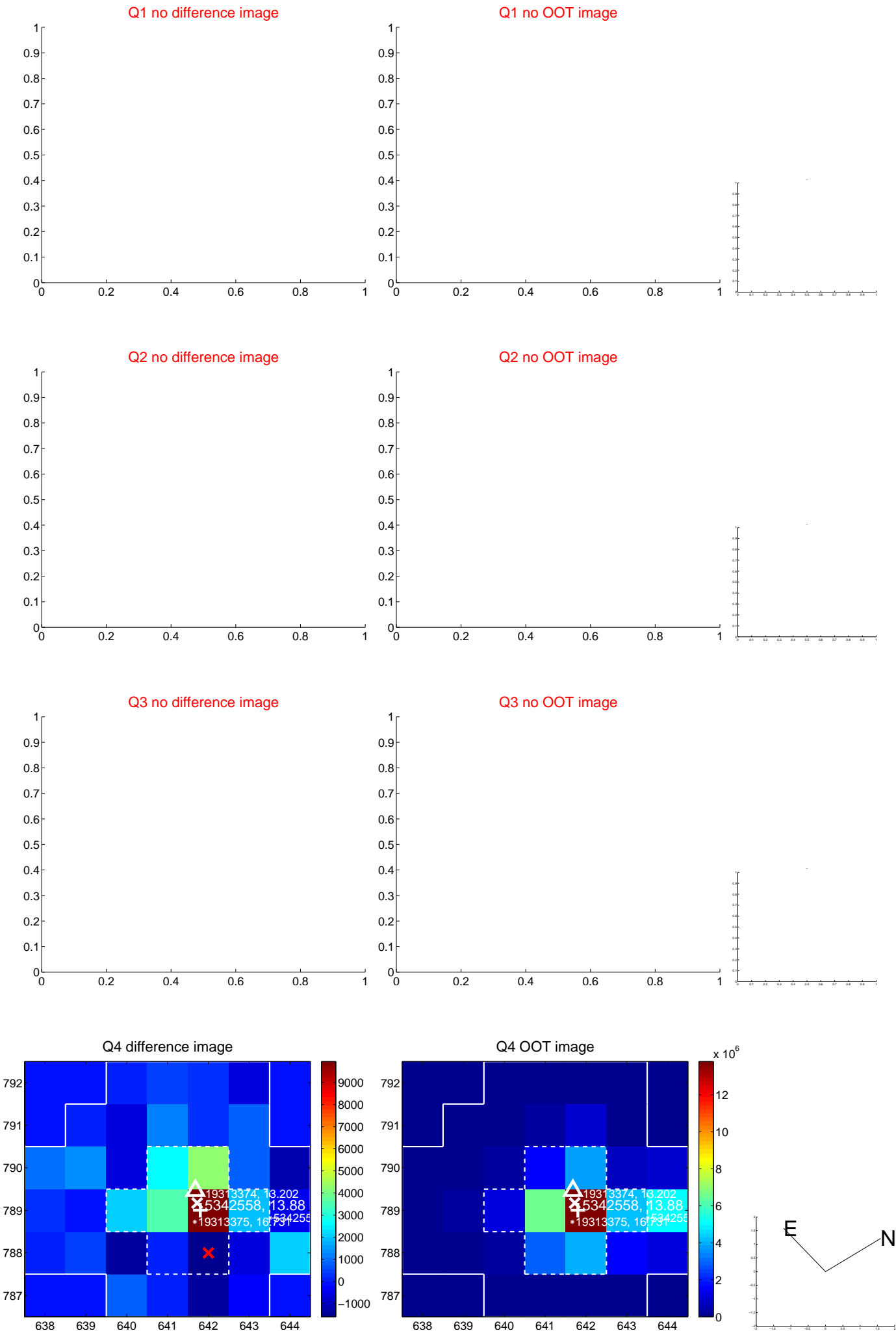
The direct PRF centroid is offset from the target star catalog position by about 0.88 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 1.516 ± 0.292 | 5.18 | 1.296 ± 0.288 | 0.786 ± 0.304 |
| PRF-fit source offset from KIC position | 0.915 ± 0.286 | 3.20 | 0.504 ± 0.339 | 0.763 ± 0.260 |
| photometric centroid source offset | 1.99 ± 1.73 | 1.15 | 1.88 ± 1.80 | 0.63 ± 0.86 |

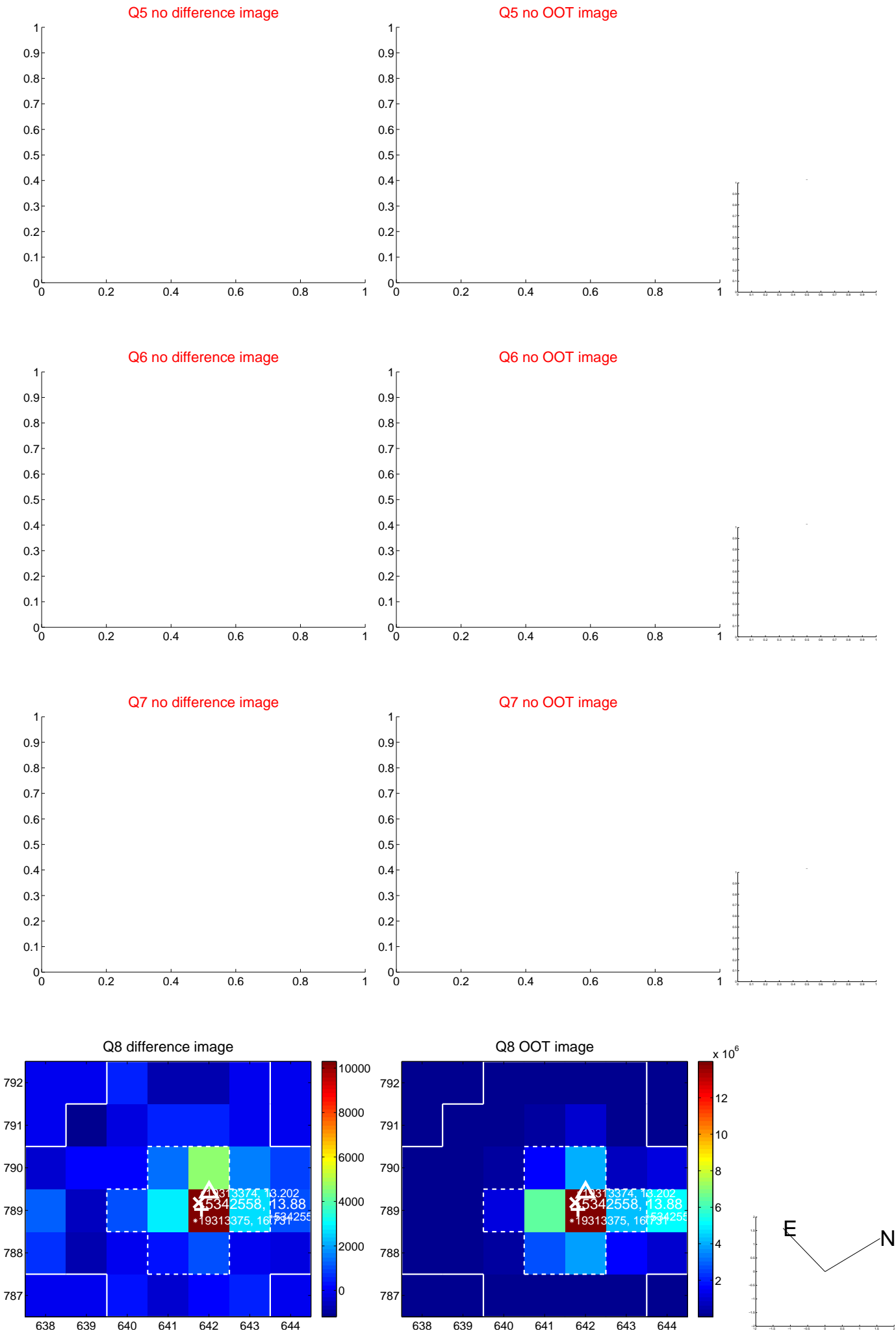


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

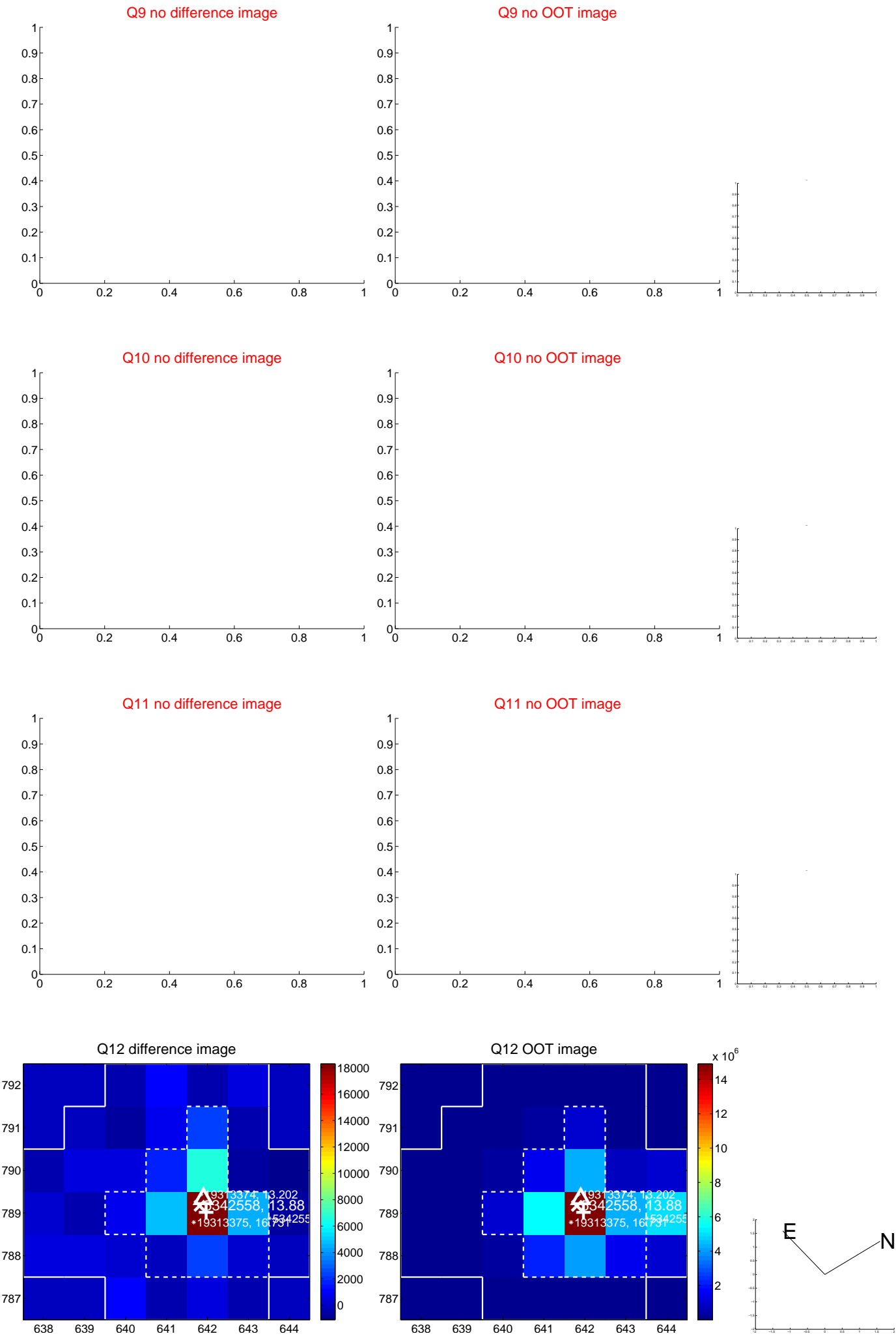
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



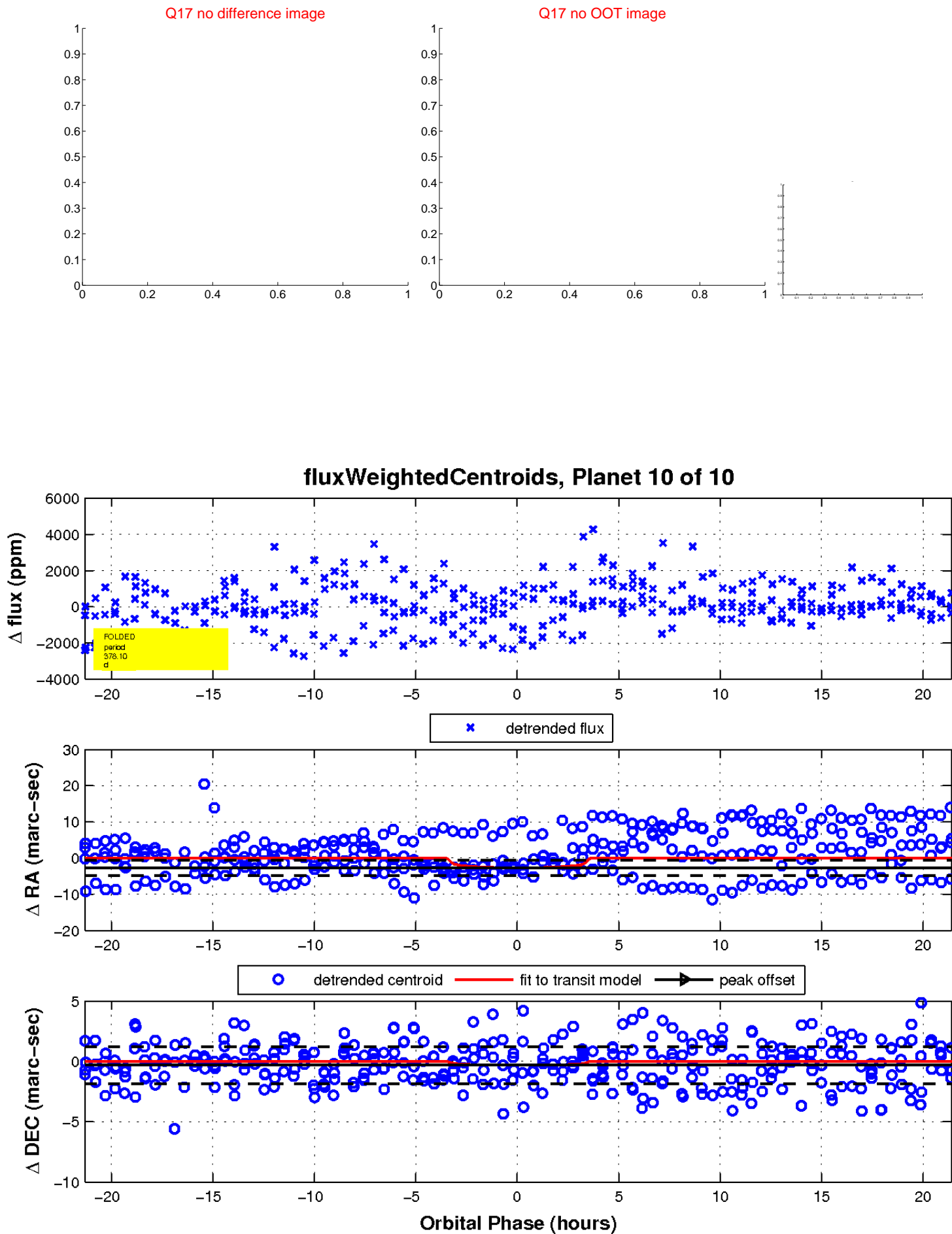
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

