

KIC 010992414

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 010992414-01 | OBS | No | 234.145112 | 162.789088 | 496.4 | 11.475 | 20.0 | 22.2 | 150.65 | 3291 | 307.16 | 3774.52 |
| 010992414-02 | OBS | No | 400.332180 | 375.343374 | 65.3 | 0.605 | 48.9 | 1.9 | 150.65 | 3291 | 279.70 | 1846.21 |
| 010992414-03 | OBS | No | 400.871816 | 374.695550 | 2.1 | 5.924 | 50.7 | 0.1 | 150.65 | 3291 | 24.21 | 1842.90 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 010992414-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED |
| 010992414-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED |
| 010992414-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED |

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

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

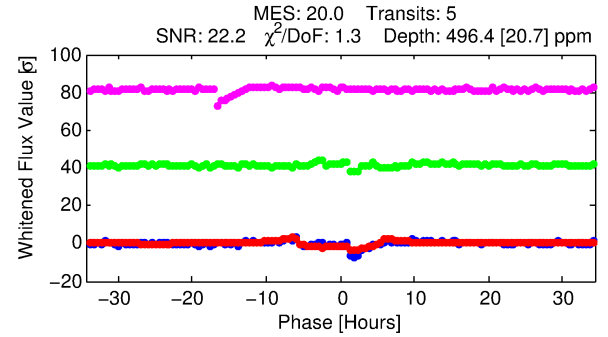
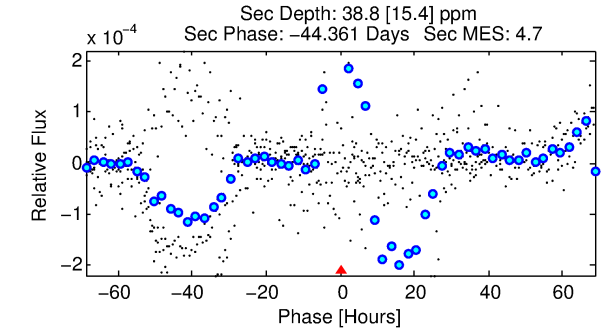
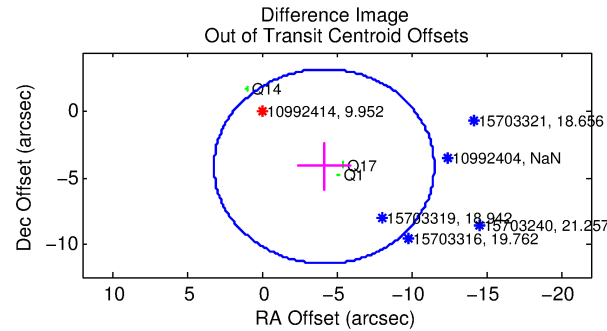
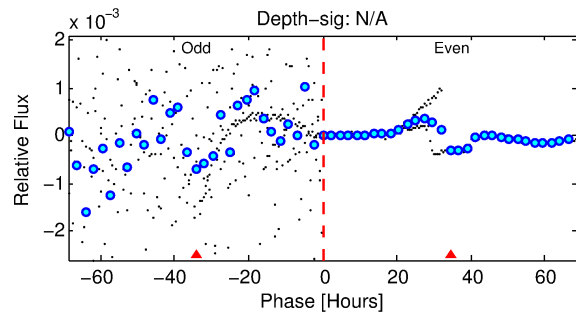
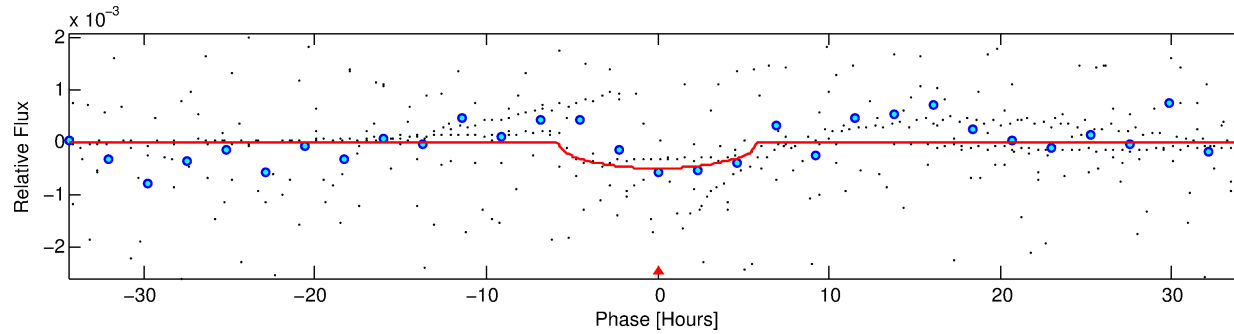
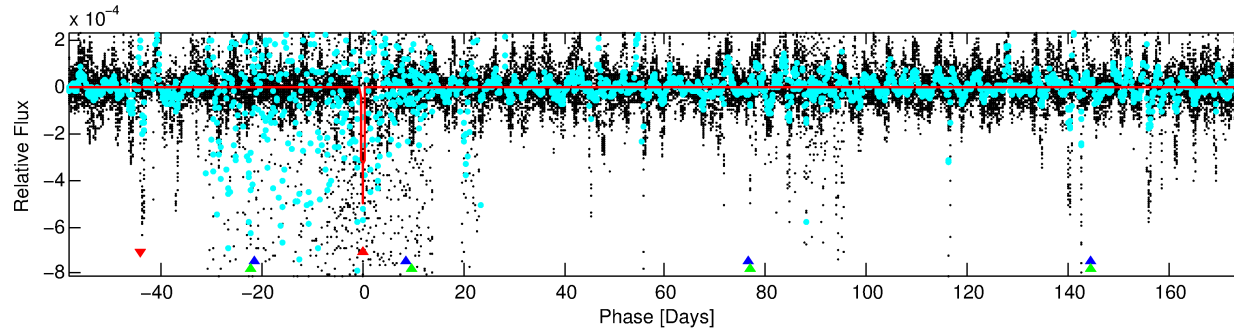
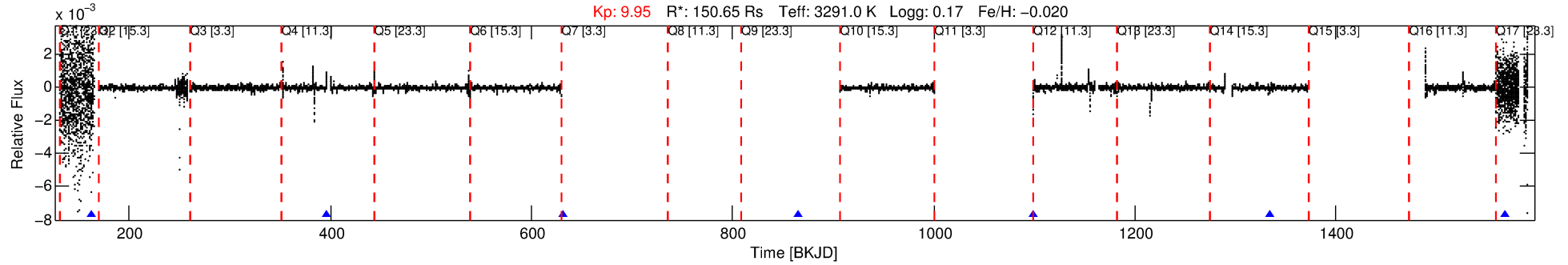
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010992414-01

No Significant Match Found

DV One-Page Summary

KIC: 10992414 Candidate: 1 of 3 Period: 234.145 d



DV Fit Results:

Period = 234.14511 [0.00158] d
Epoch = 162.7891 [0.0066] BKJD
 $R_p/R^* = 0.0187$ [0.0022]
 $a/R^* = 158.79$ [39.21]
 $b = 0.01$ [24.32]
 $\text{Seff} = 3774.52$ [1405.96]
 $T_{\text{eq}} = 1999$ [186] K
 $R_p = 307.16$ [74.75] Re
 $a = 0.7949$ [0.1693] AU
 $\text{Ag} = 0.14$ [0.08] [-10.32σ]
 $T_{\text{eff}} = 1901$ [229] K [-0.33σ]

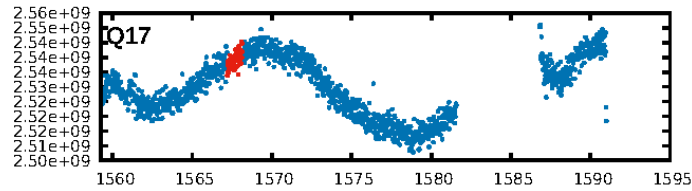
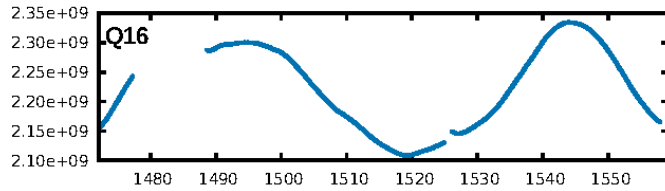
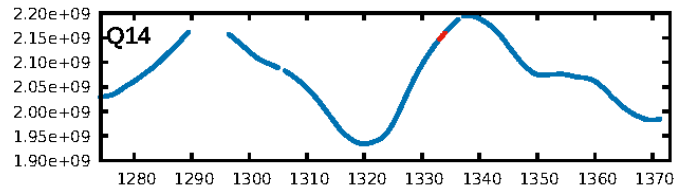
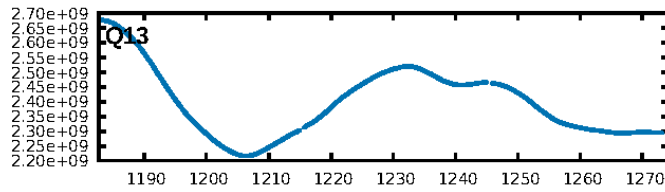
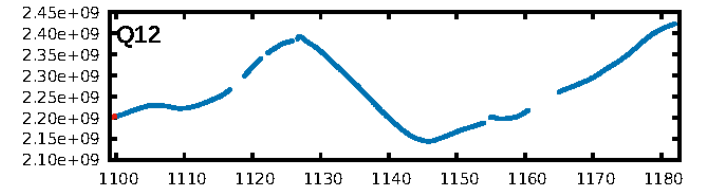
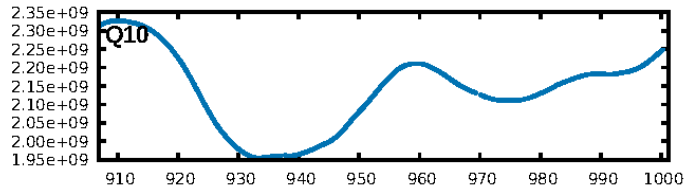
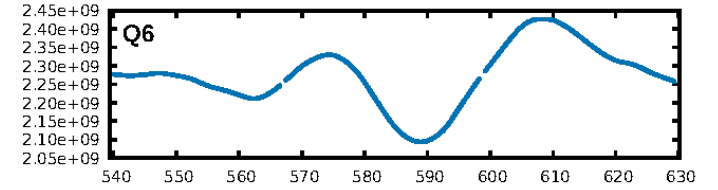
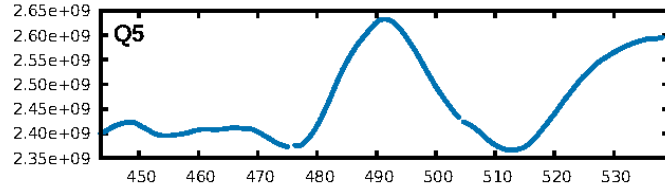
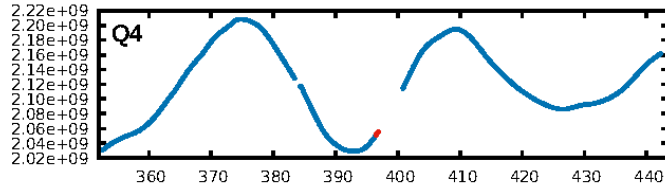
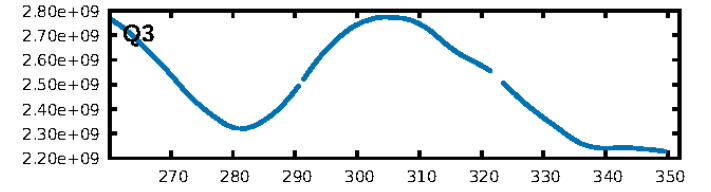
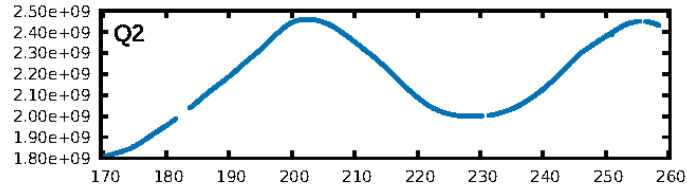
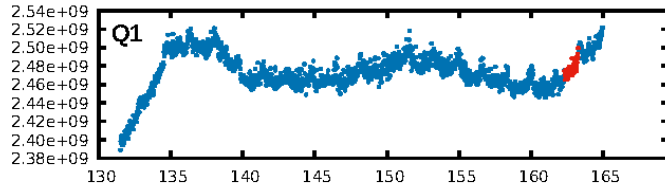
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [347.11σ]
ModelChiSquare2-sig: 7.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.18e-07
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: N/A
Centroid-sig: 15.5%
Centroid-so: 0.621 arcsec [1.02σ]
OotOffset-rm: 5.878 arcsec [2.40σ]
OotOffset-st: 1/0/0/2 [3]
KicOffset-rm: 4.832 arcsec [2.51σ]
KicOffset-st: 1/0/0/2 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [3/3]

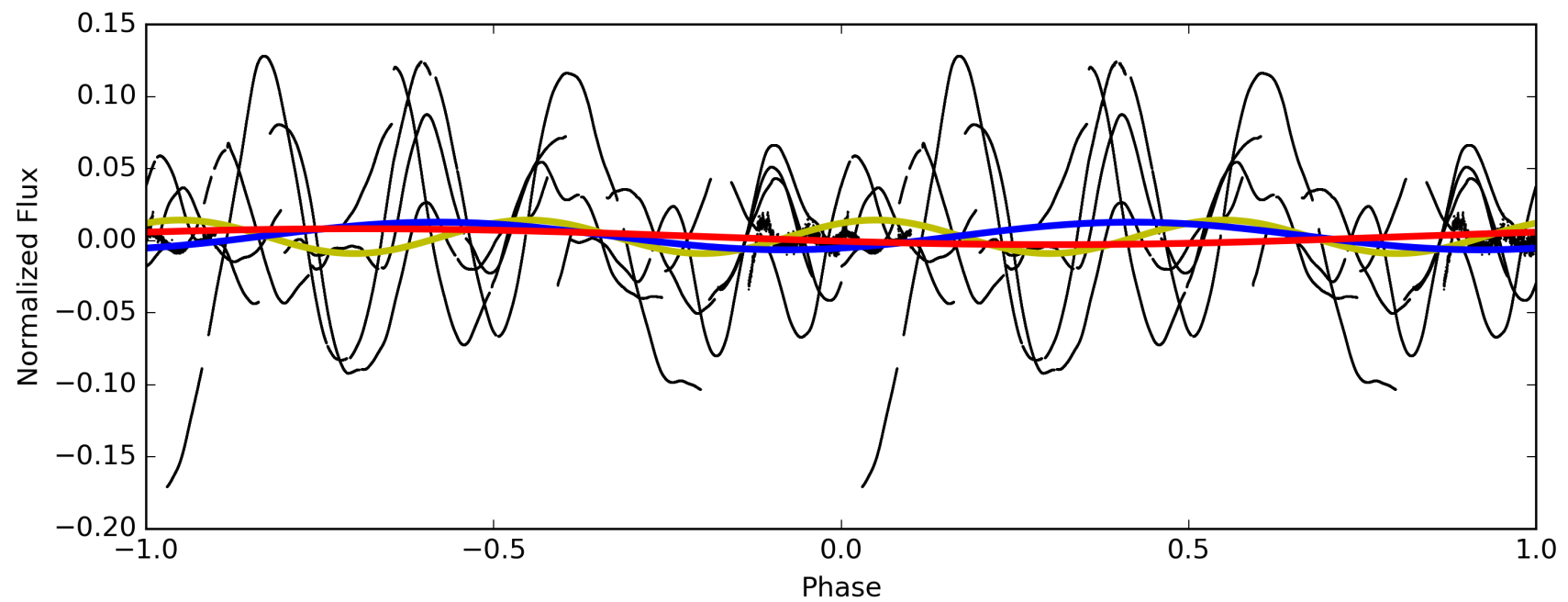
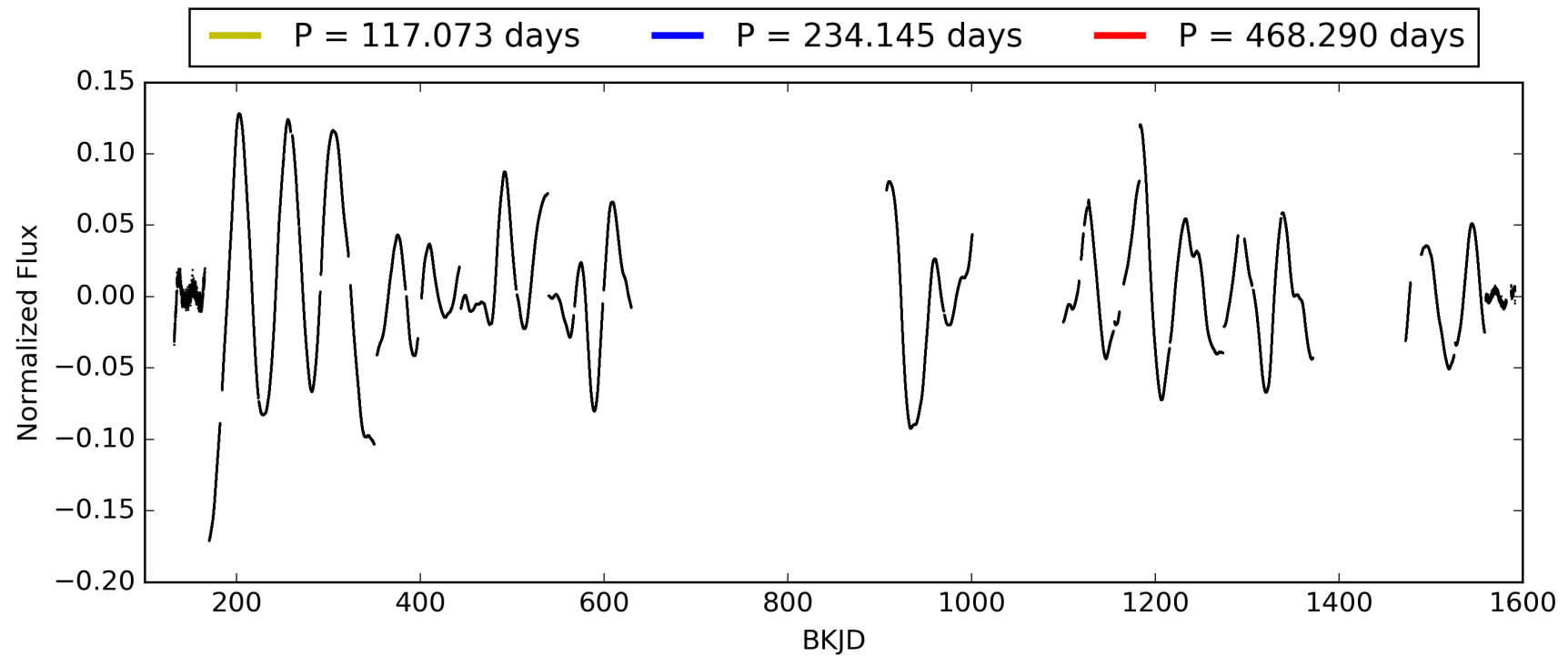
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010992414-01, PDC Light Curves

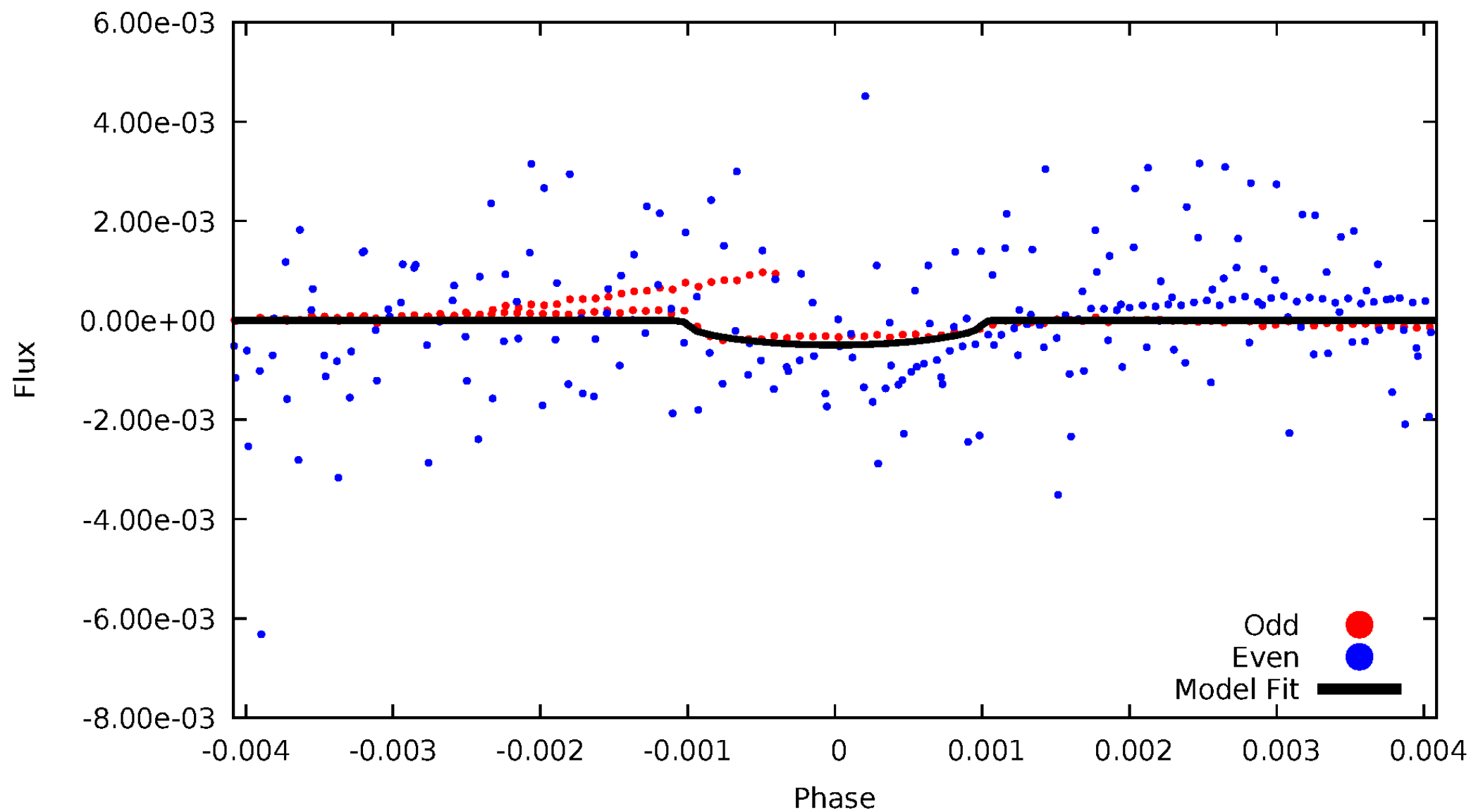


TCE 010992414-01



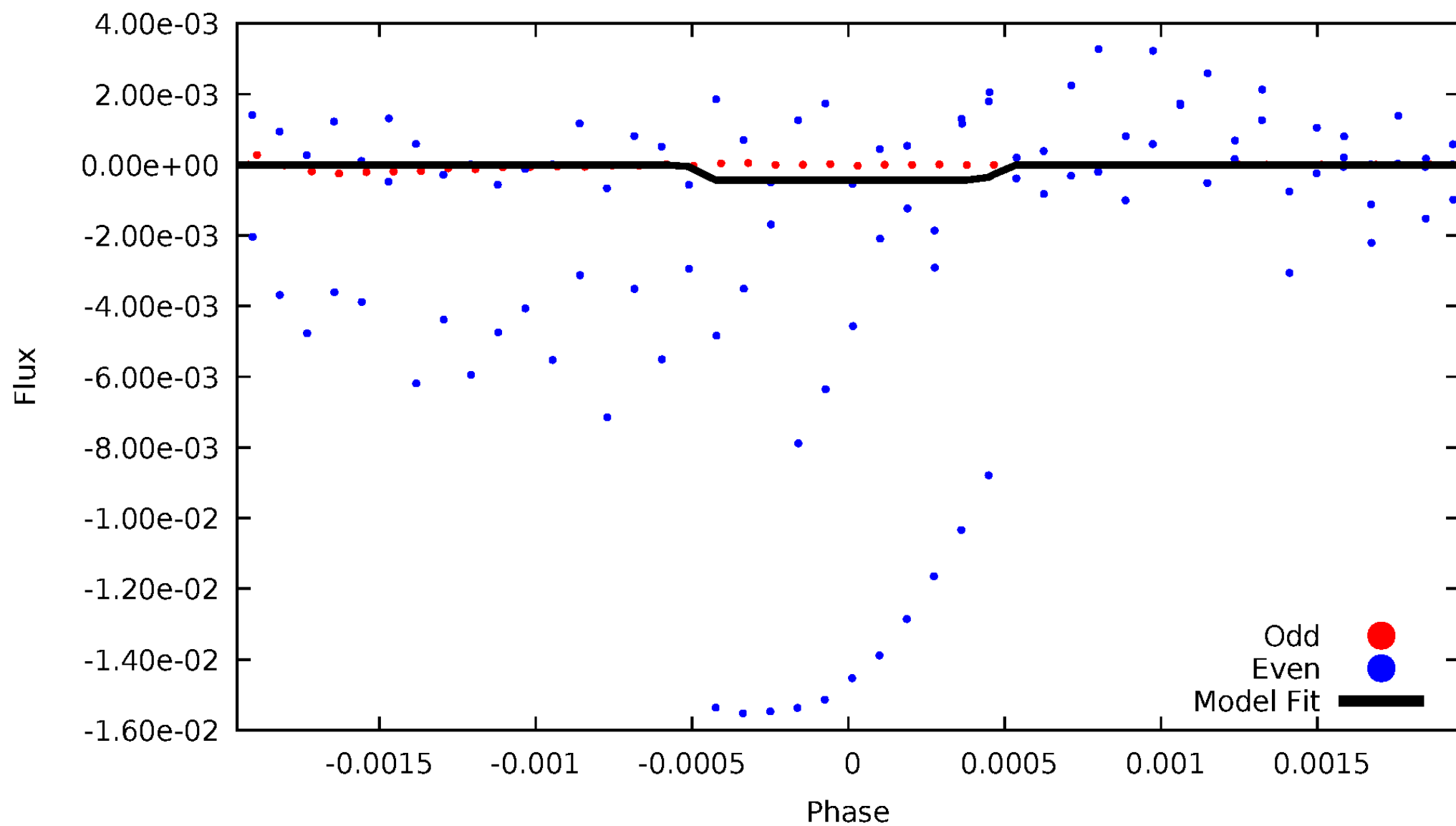
DV Odd/Even

TCE 010992414-01



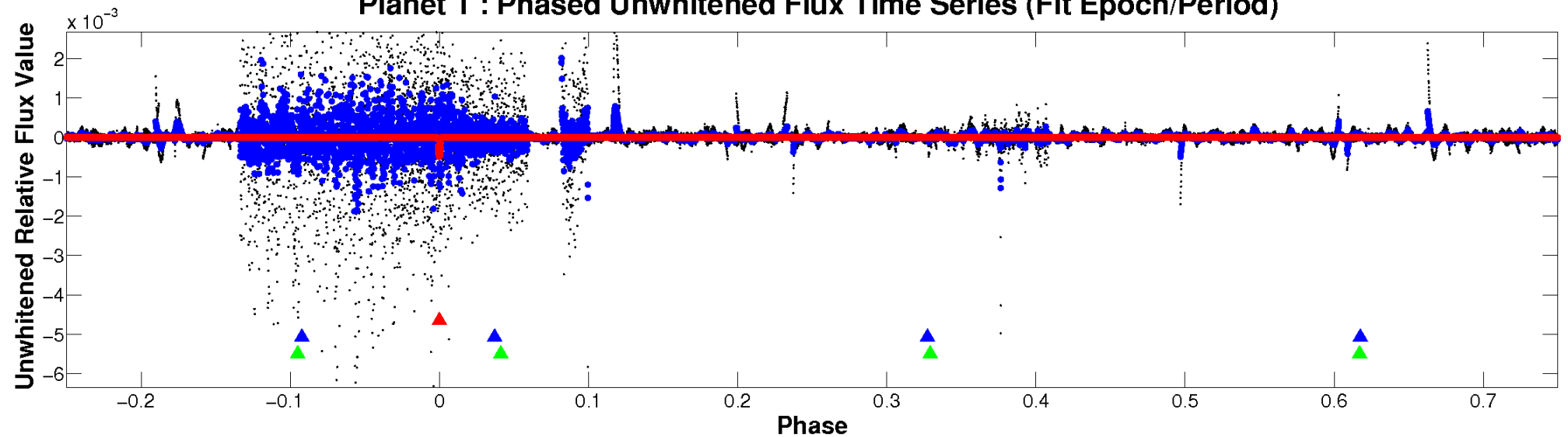
ALT Odd/Even

TCE 010992414-01

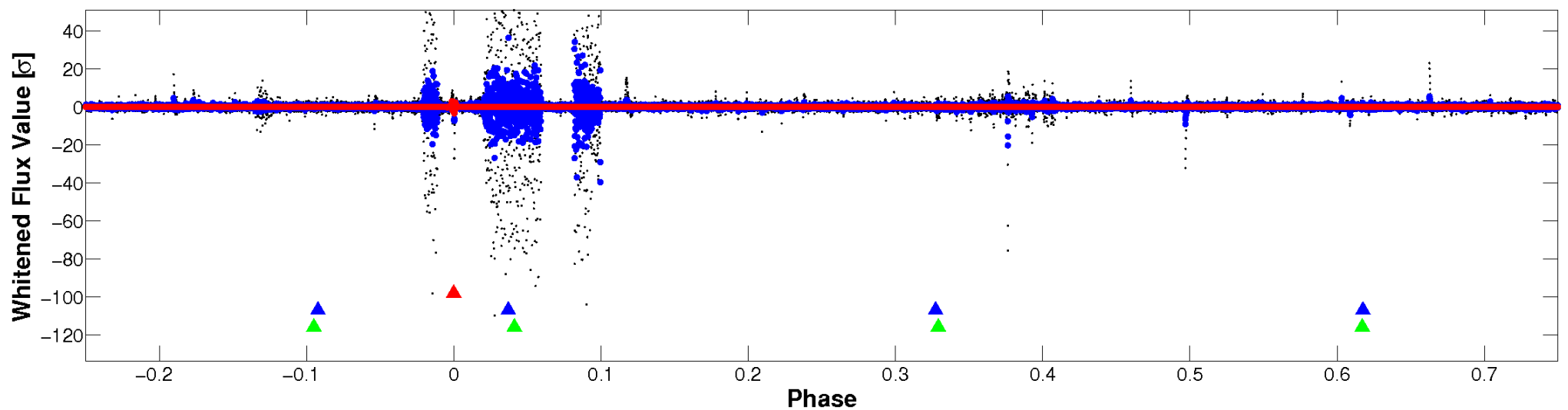


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

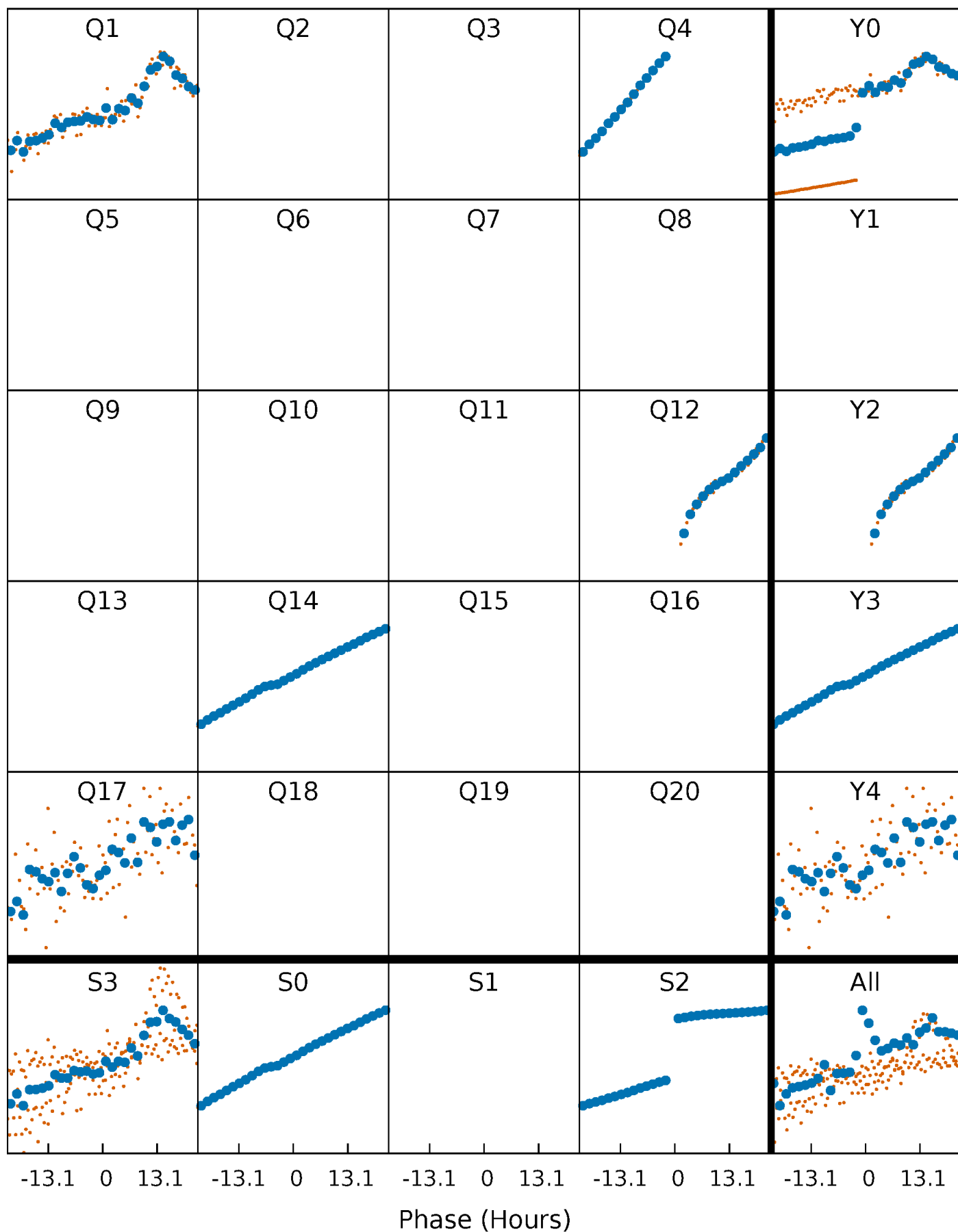


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



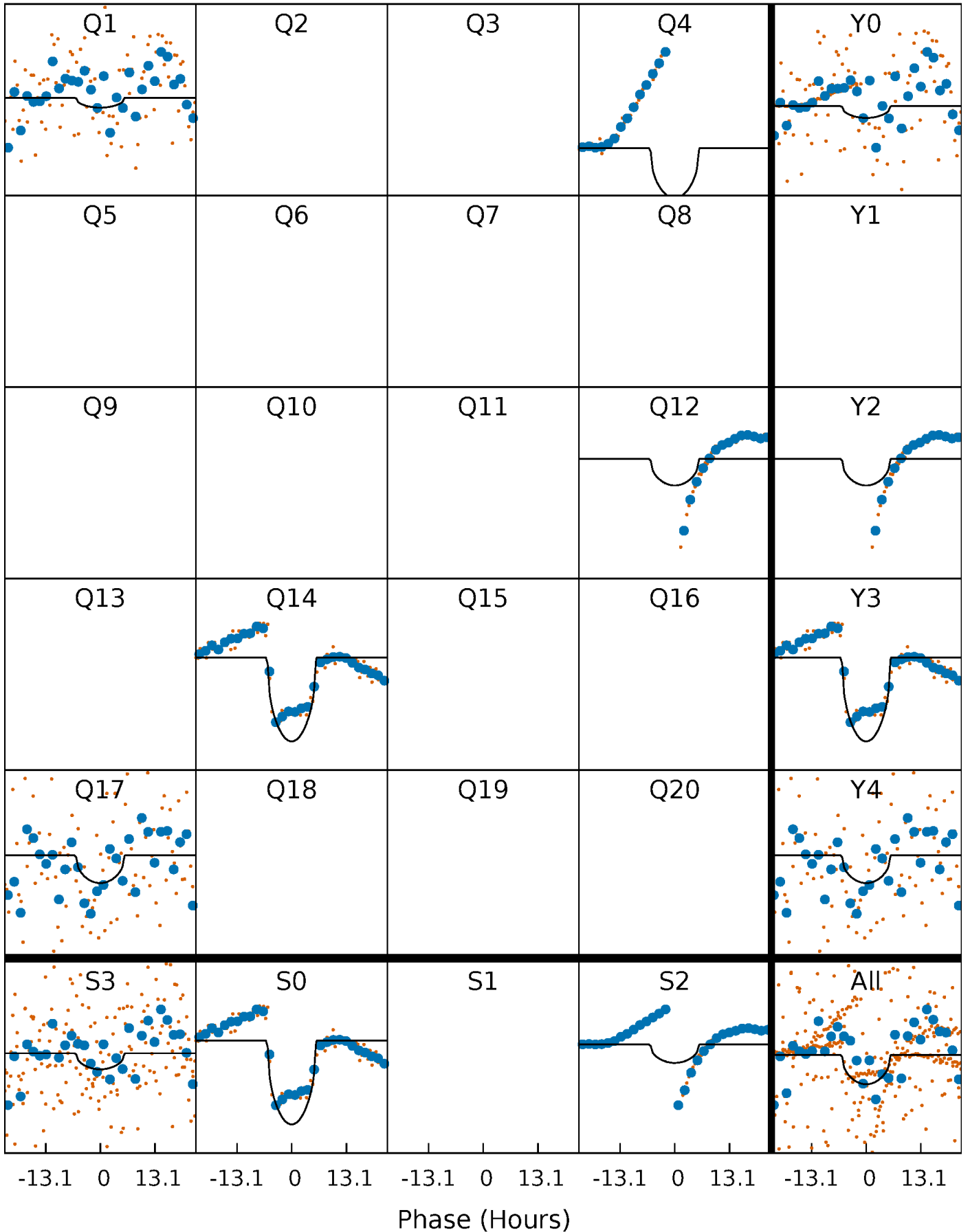
PDC Quarter-Phased Transit Curves

TCE 010992414-01 P=234.145112 Days $T_0=162.789088$ (BKJD)



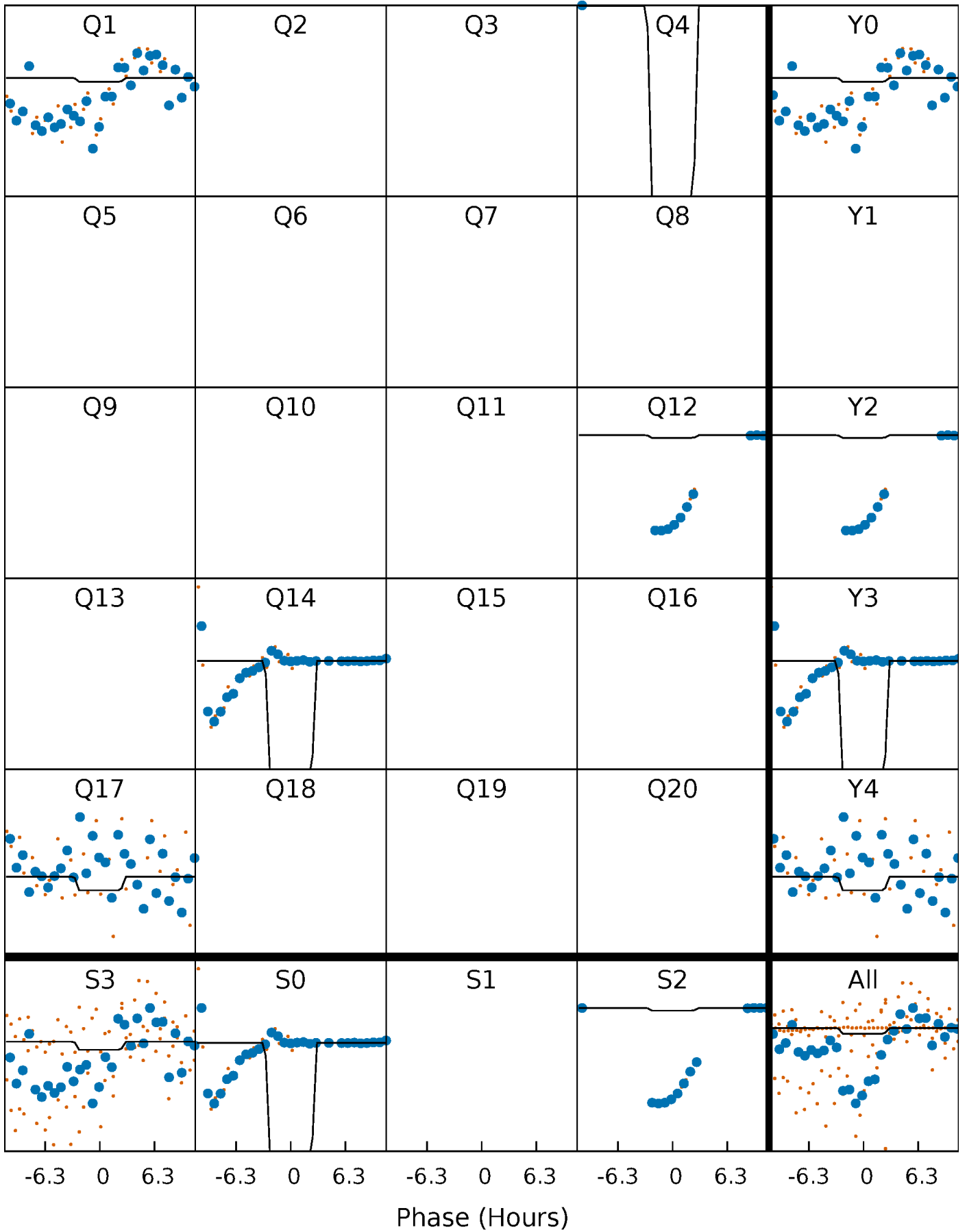
DV Quarter-Phased Transit Curves

TCE 010992414-01 P=234.145112 Days $T_0=162.789088$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

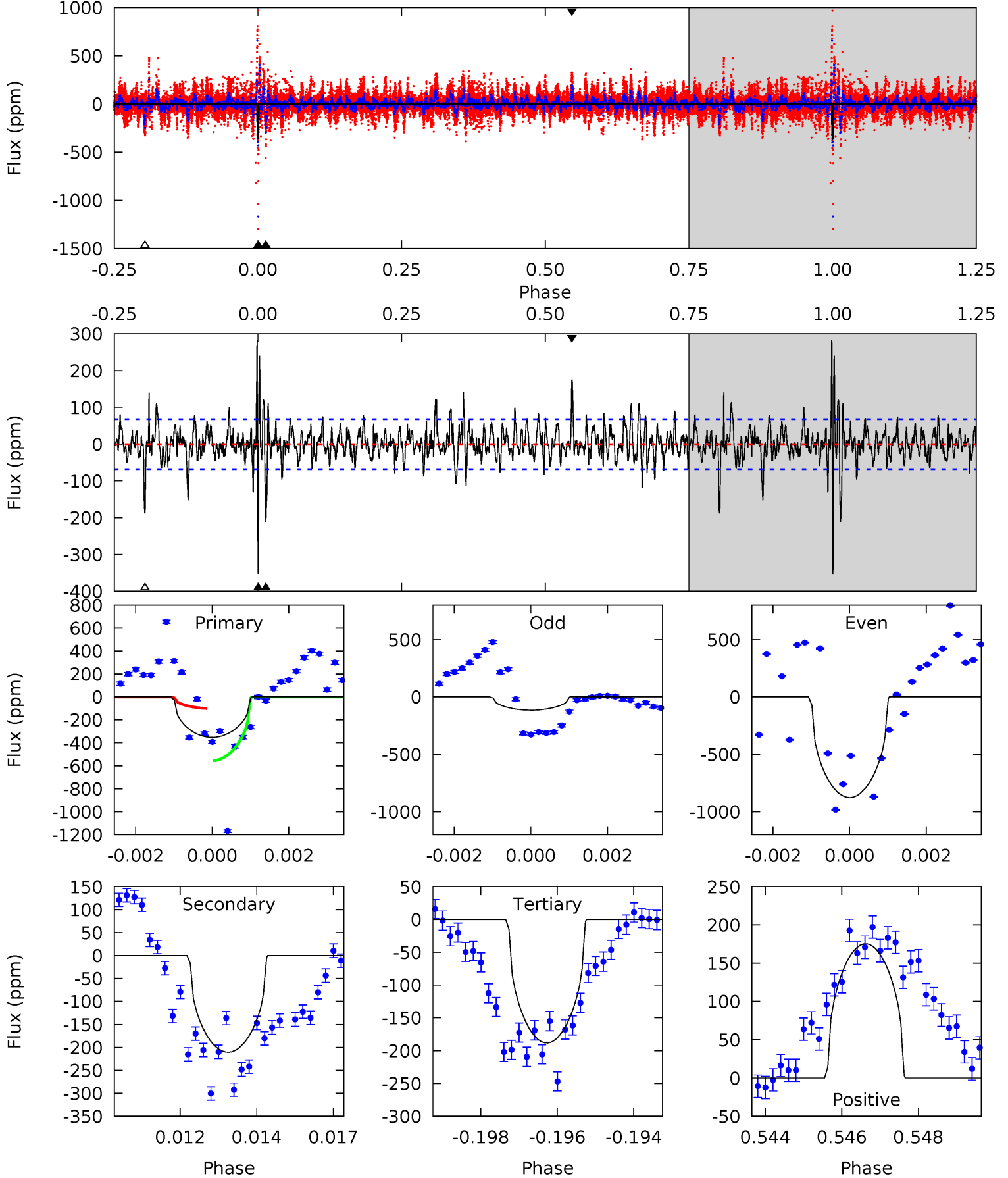
TCE 010992414-01 P=234.107297 Days $T_0=163.181484$ (BKJD)



DV Model-Shift Uniqueness Test

010992414-01, P = 234.145112 Days, E = 162.789088 Days

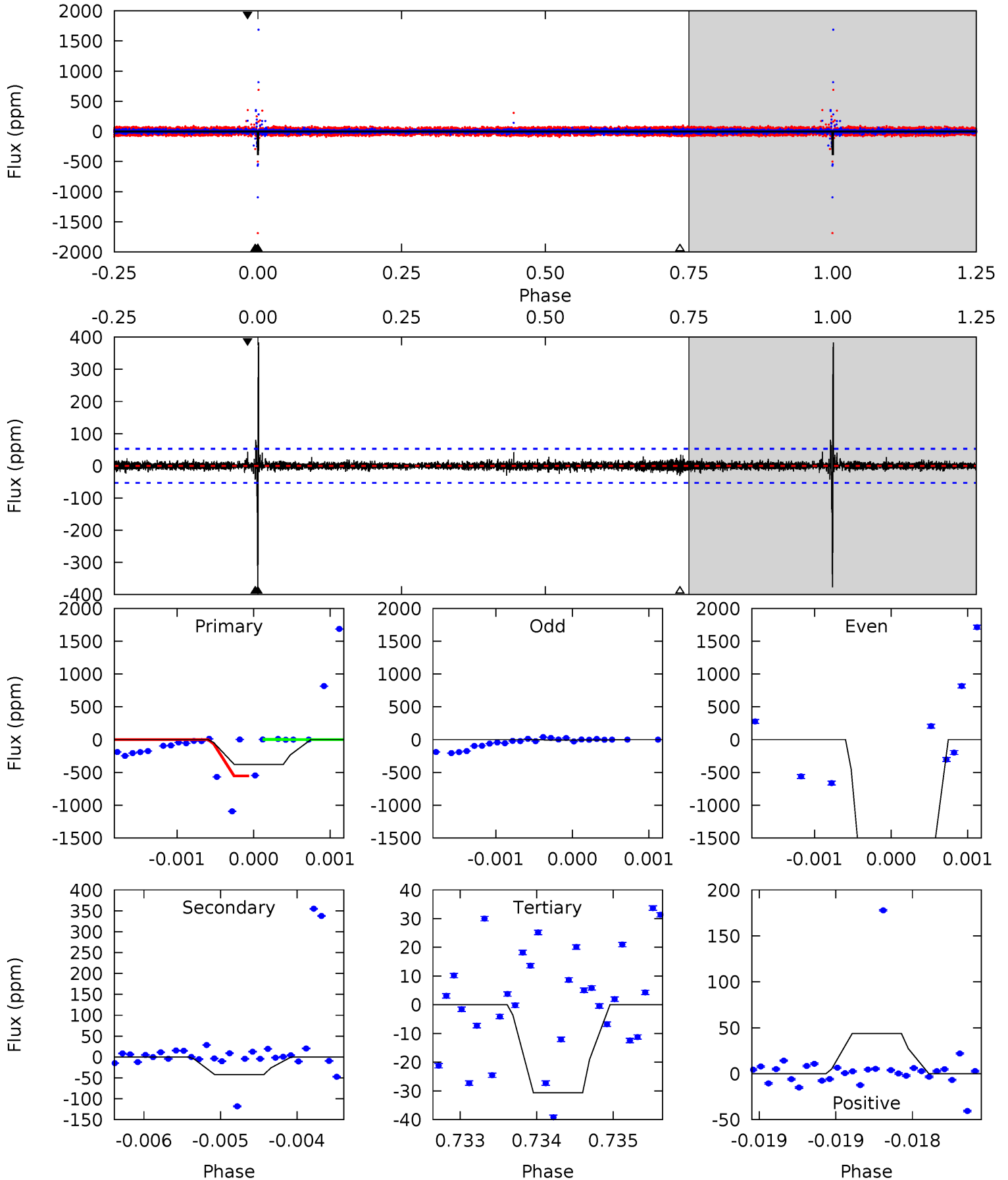
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 27.6 | 16.5 | 14.7 | 13.7 | 5.32 | 3.08 | 2.89 | 12.8 | 13.8 | 1.75 | 2.75 | 18.6 | 0.62 | 0.45 | 0 |



Alt Model-Shift Uniqueness Test

010992414-01, P = 234.107297 Days, E = 163.181484 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 38.8 | 4.36 | 3.16 | 4.51 | 5.46 | 3.30 | 0.77 | 35.7 | 34.3 | 1.20 | -0.15 | 128.3 | 2.66 | 0.50 | 32.0 |



Stellar Parameters For KIC 010992414

| | $T_{\text{eff}}(K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|---------------------------|----------------------------|------------------------------|---------------------------|---|
| | 3291^{+107}_{-88} | $0.169^{+0.208}_{-0.052}$ | $-0.020^{+0.250}_{-0.150}$ | $150.645^{+9.958}_{-31.865}$ | $1.221^{+0.202}_{-0.166}$ | $0.000^{+0.000}_{-0.000}$ |
| | +3%/-3% | +123%/-31% | +1250%/-750% | +7%/-21% | +17%/-14% | +103%/-16% |
| Source | KIC0 | KIC0 | KIC0 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 010992414-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{\text{max}} (K)$ | $T_{\text{obs}} (K)$ | A_{obs} |
|---------|---------------|----------------------------|----------------------|-----------------------|---------------------------|
| DV | -211 ± 13 | $300.20^{+45.82}_{-49.05}$ | 2750^{+110}_{-152} | 2866^{+184}_{-167} | $0.840^{+0.317}_{-0.210}$ |
| Alt. | -42 ± 10 | $332.38^{+50.89}_{-47.69}$ | 2755^{+115}_{-169} | -2470^{+161}_{-111} | $0.134^{+0.061}_{-0.040}$ |

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

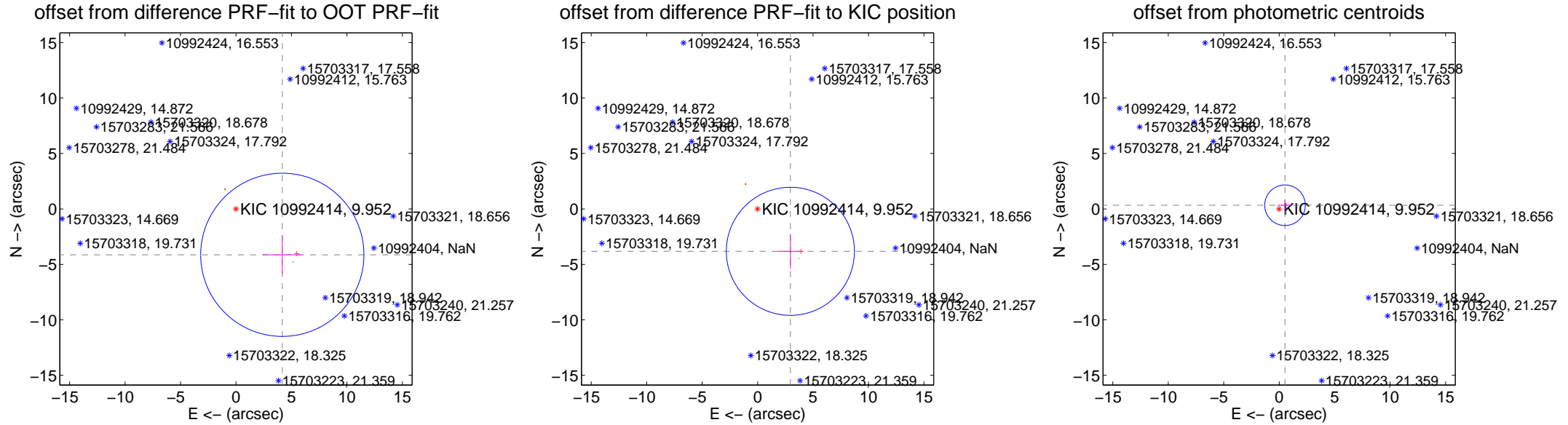
DV Centroid Data

Supplemental centroid analysis for 010992414-01. **Kepler magnitude: 9.95.** Transit SNR 22.18

There are 0 quarters with good PRF difference image offsets

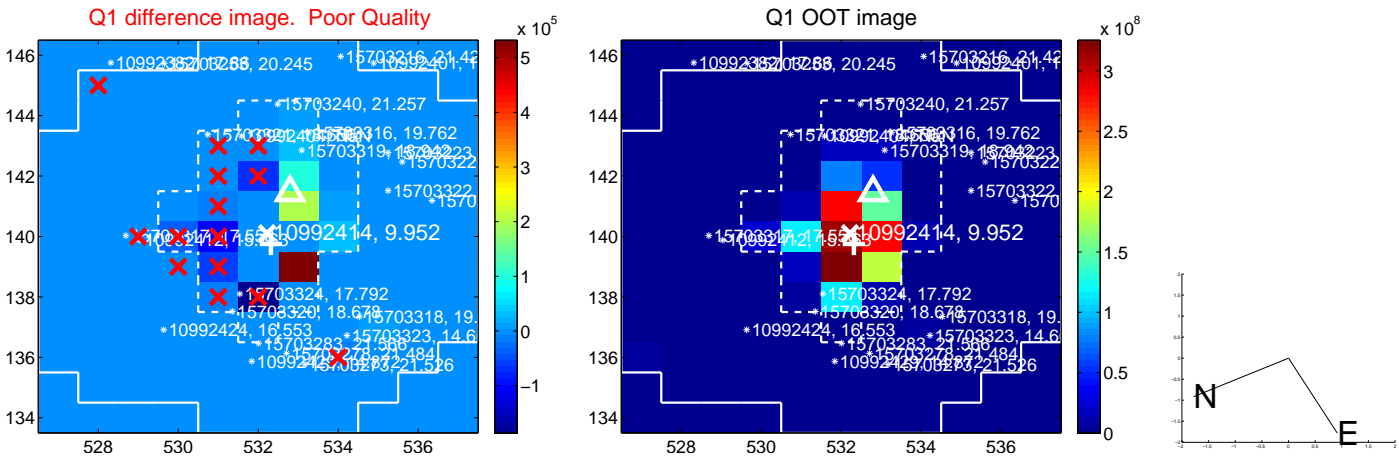
The direct PRF centroid is offset from the target star catalog position by about 1.58 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 5.878 ± 2.453 | 2.40 | -4.176 ± 1.753 | -4.137 ± 1.731 |
| PRF-fit source offset from KIC position | 4.832 ± 1.925 | 2.51 | -2.955 ± 1.147 | -3.823 ± 1.554 |
| photometric centroid source offset | 0.62 ± 0.61 | 1.02 | -0.52 ± 0.67 | 0.33 ± 0.44 |



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.



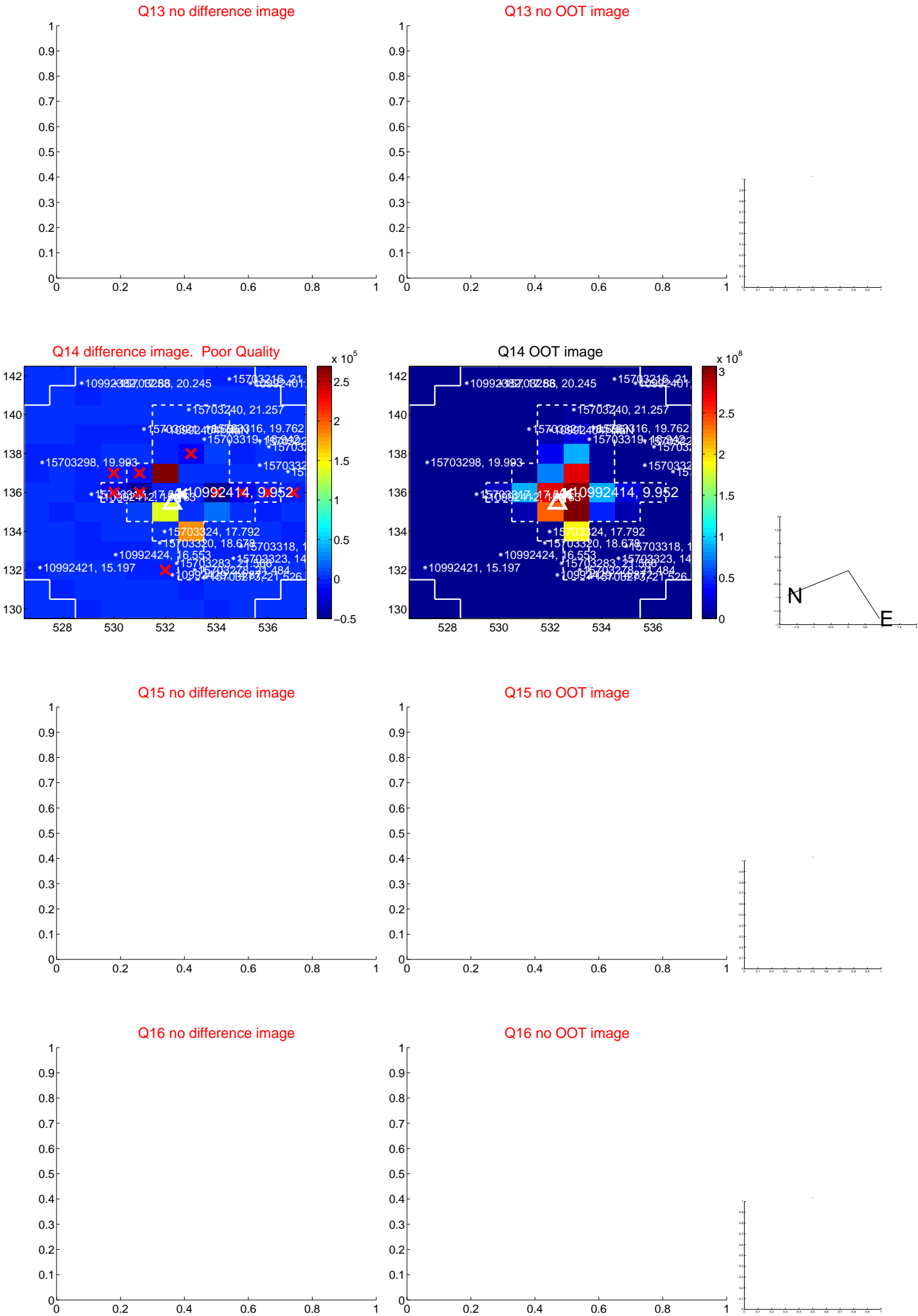
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



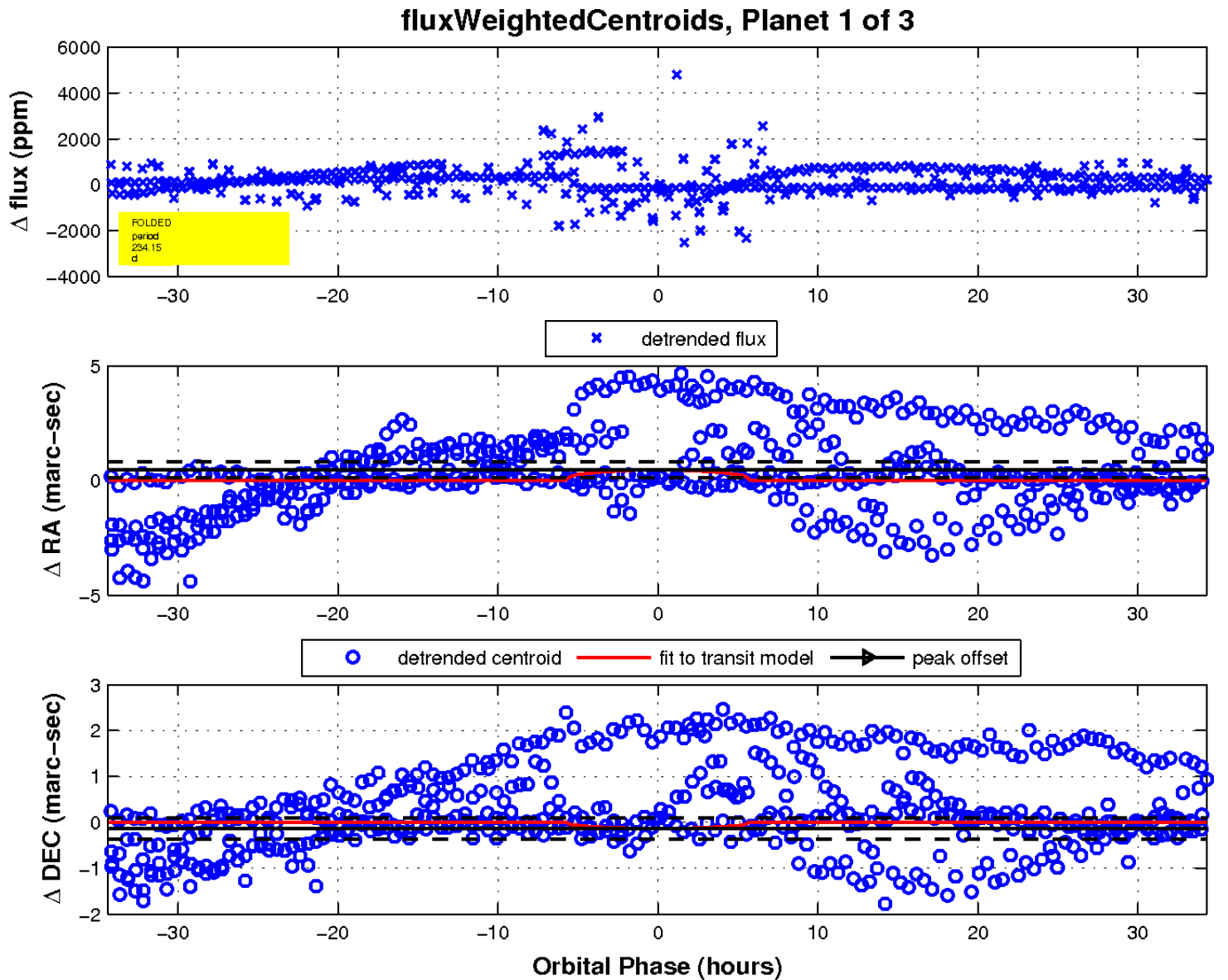
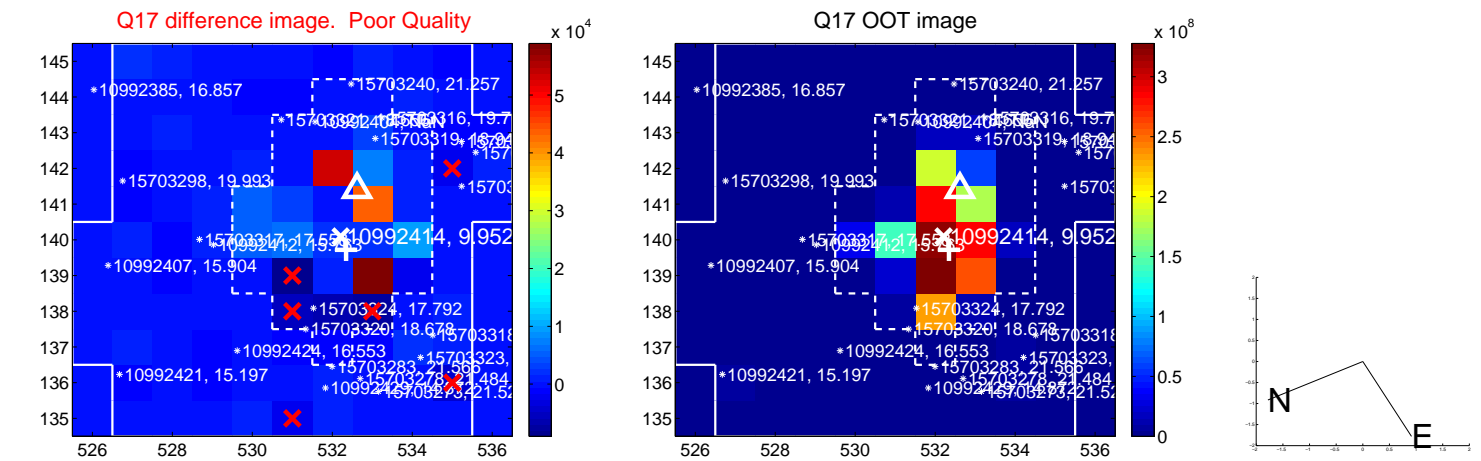
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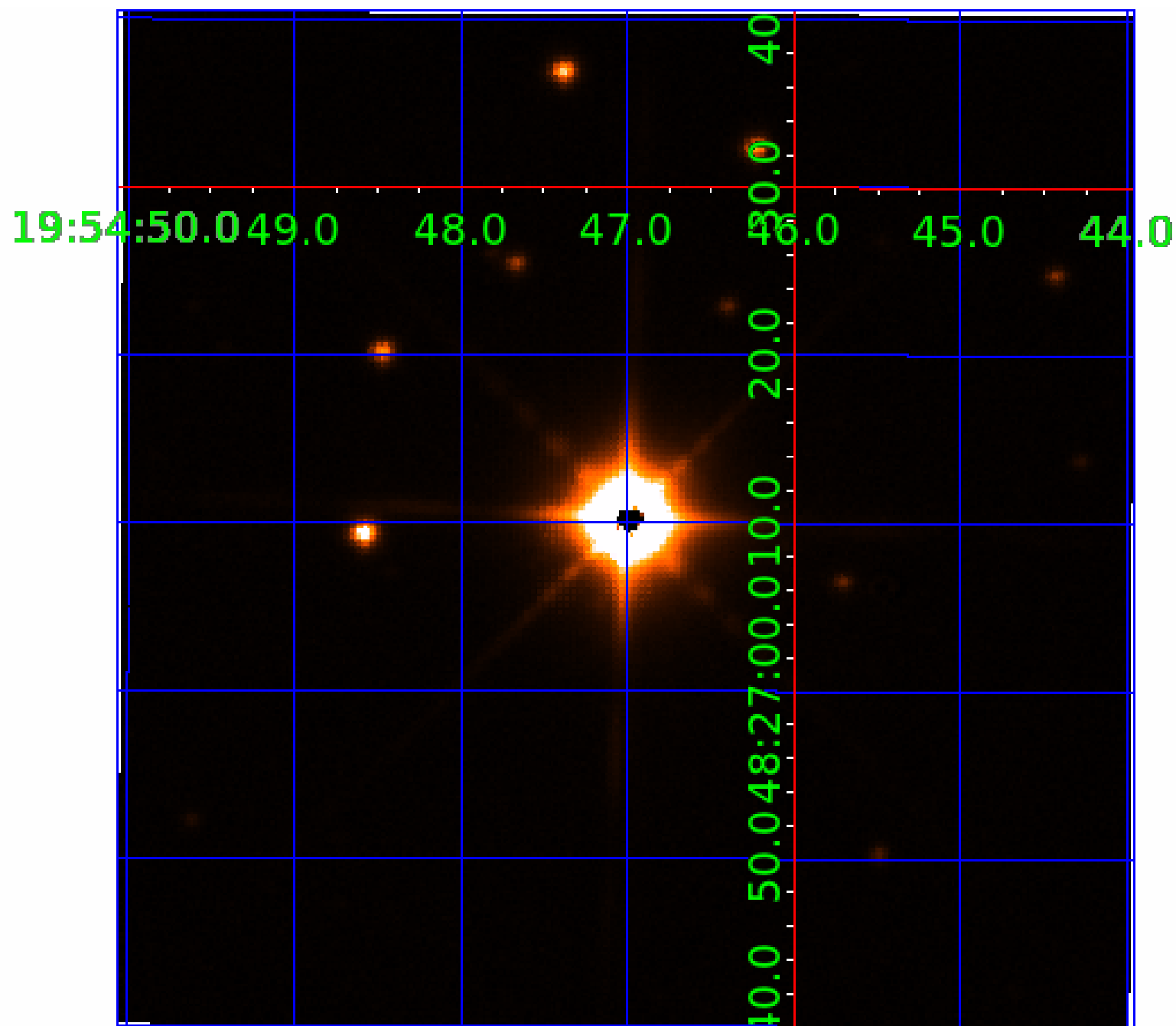


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010992414

Q1-17 DR25 TCE Parameters

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| 010992414-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED |

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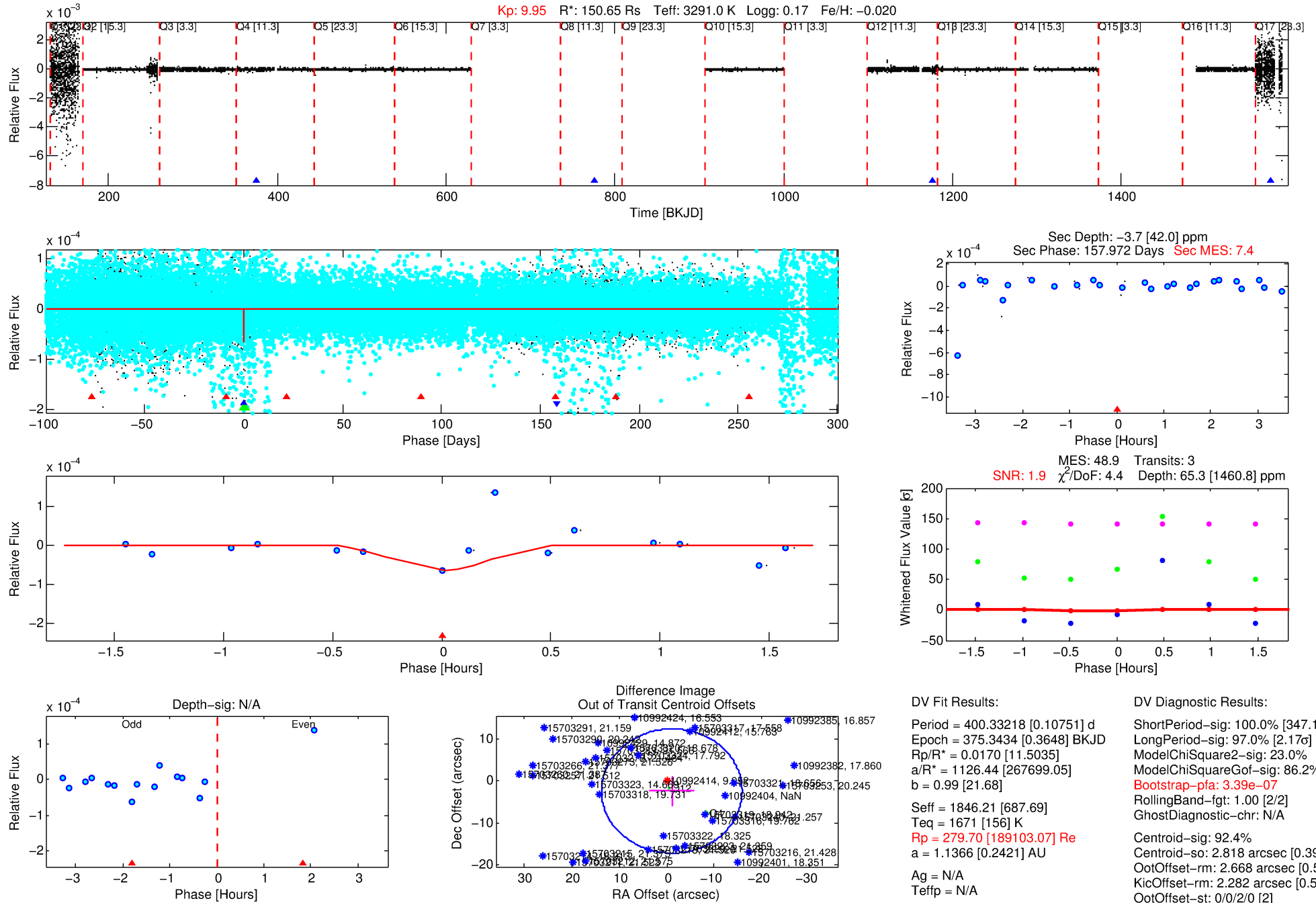
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010992414-02

No Significant Match Found

DV One-Page Summary

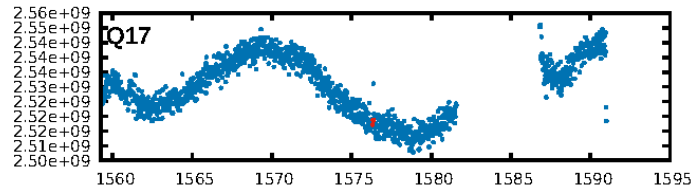
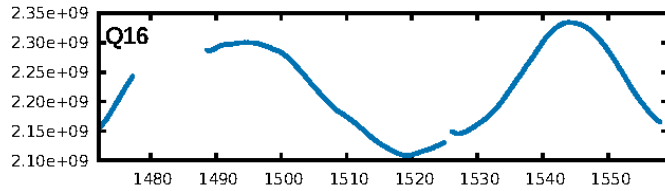
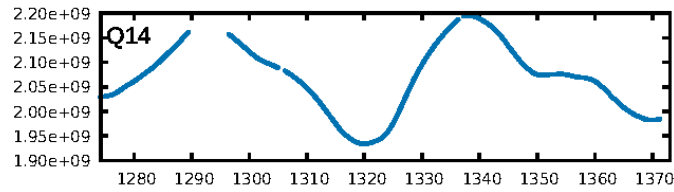
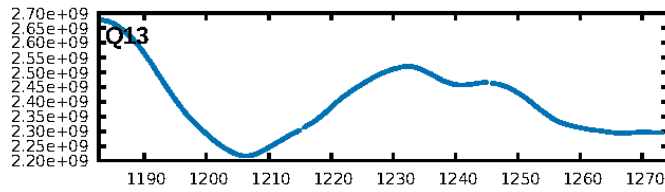
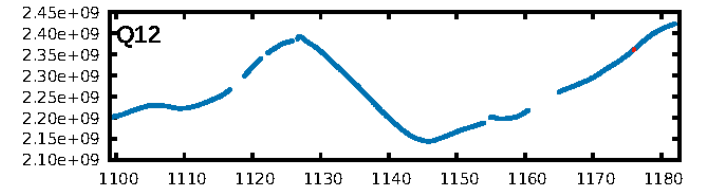
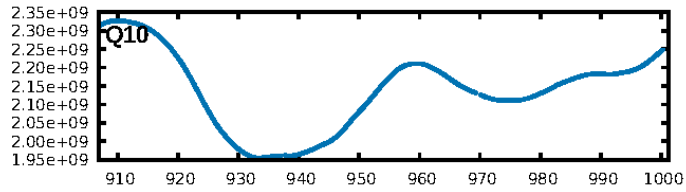
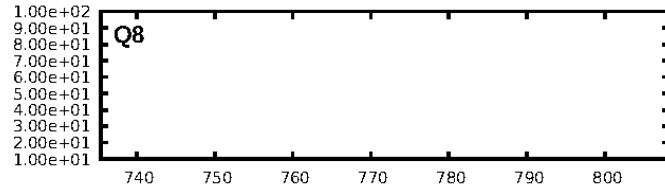
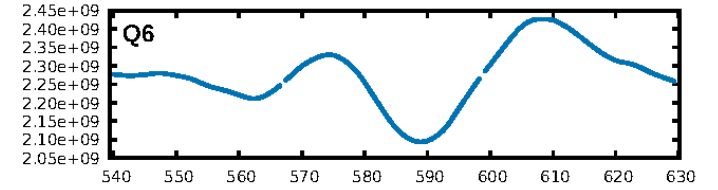
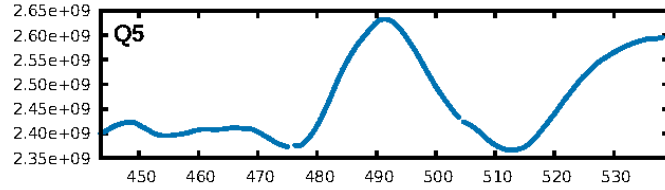
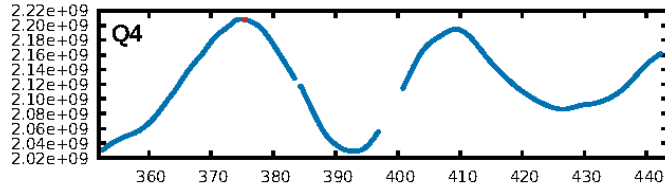
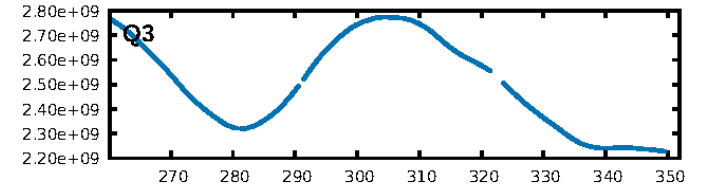
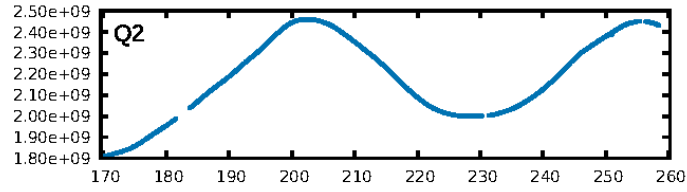
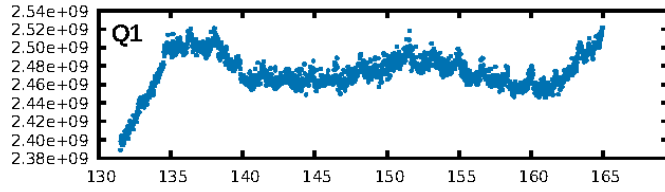
KIC: 10992414 Candidate: 2 of 3 Period: 400.332 d



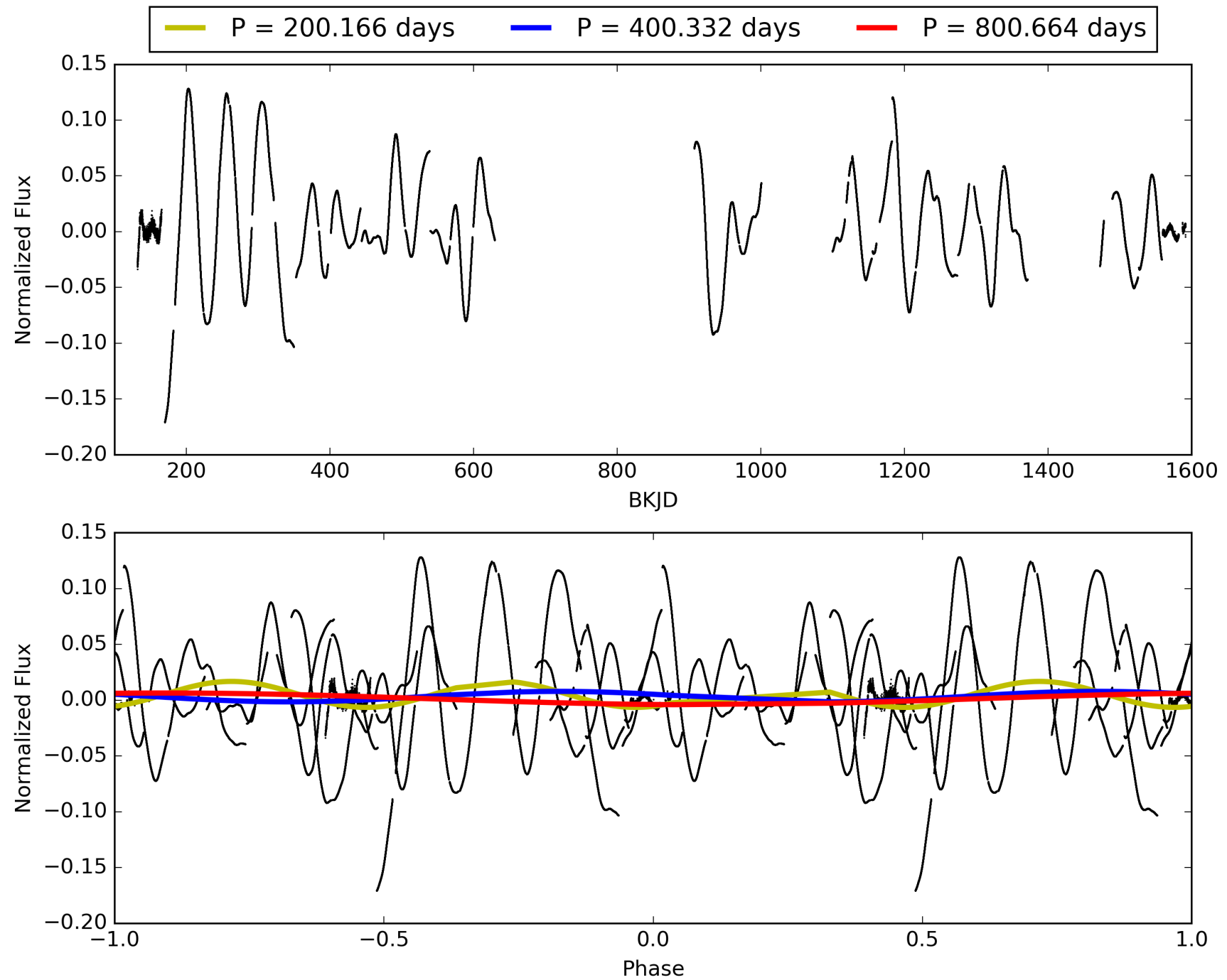
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010992414-02, PDC Light Curves

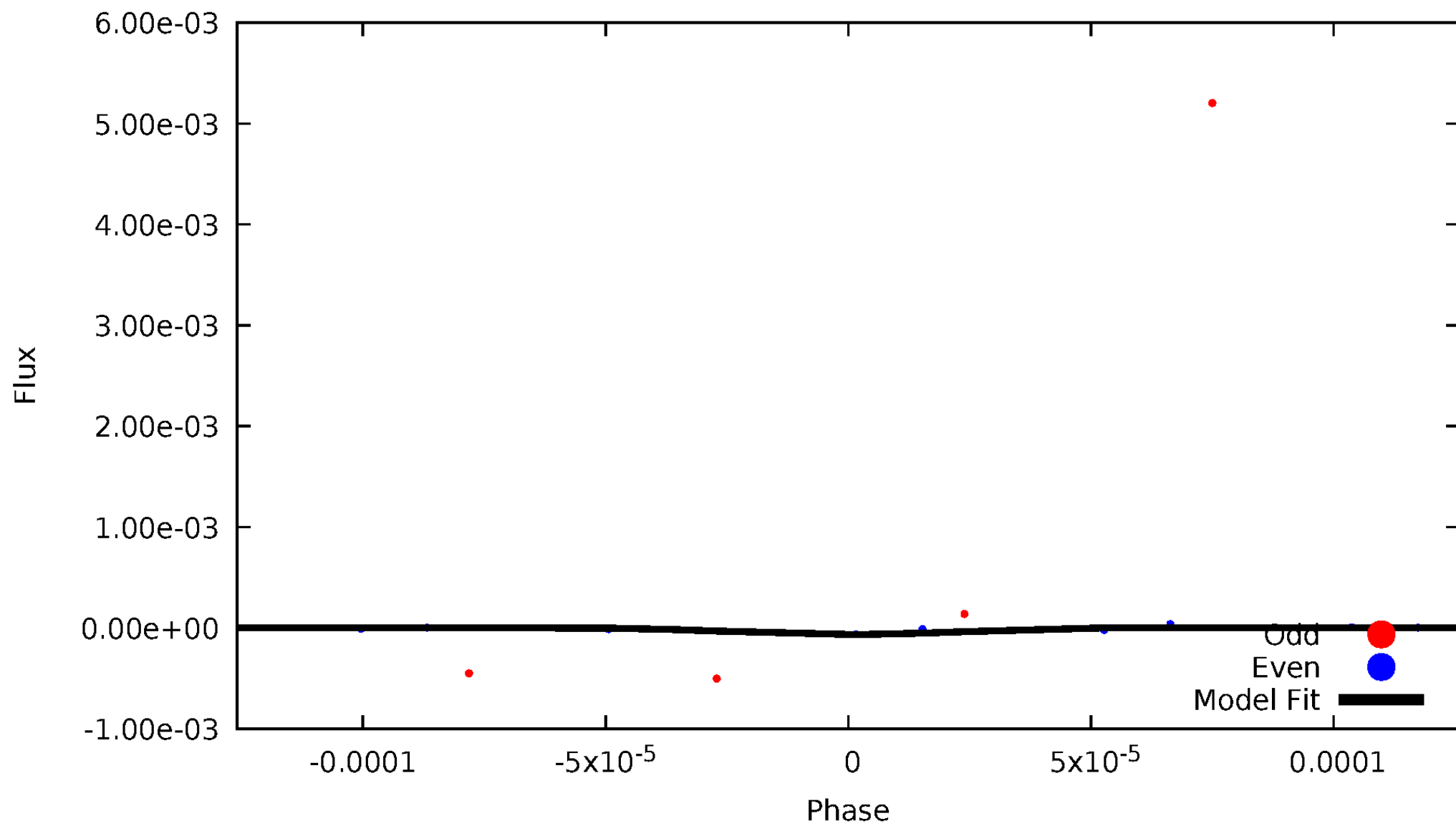


TCE 010992414-02



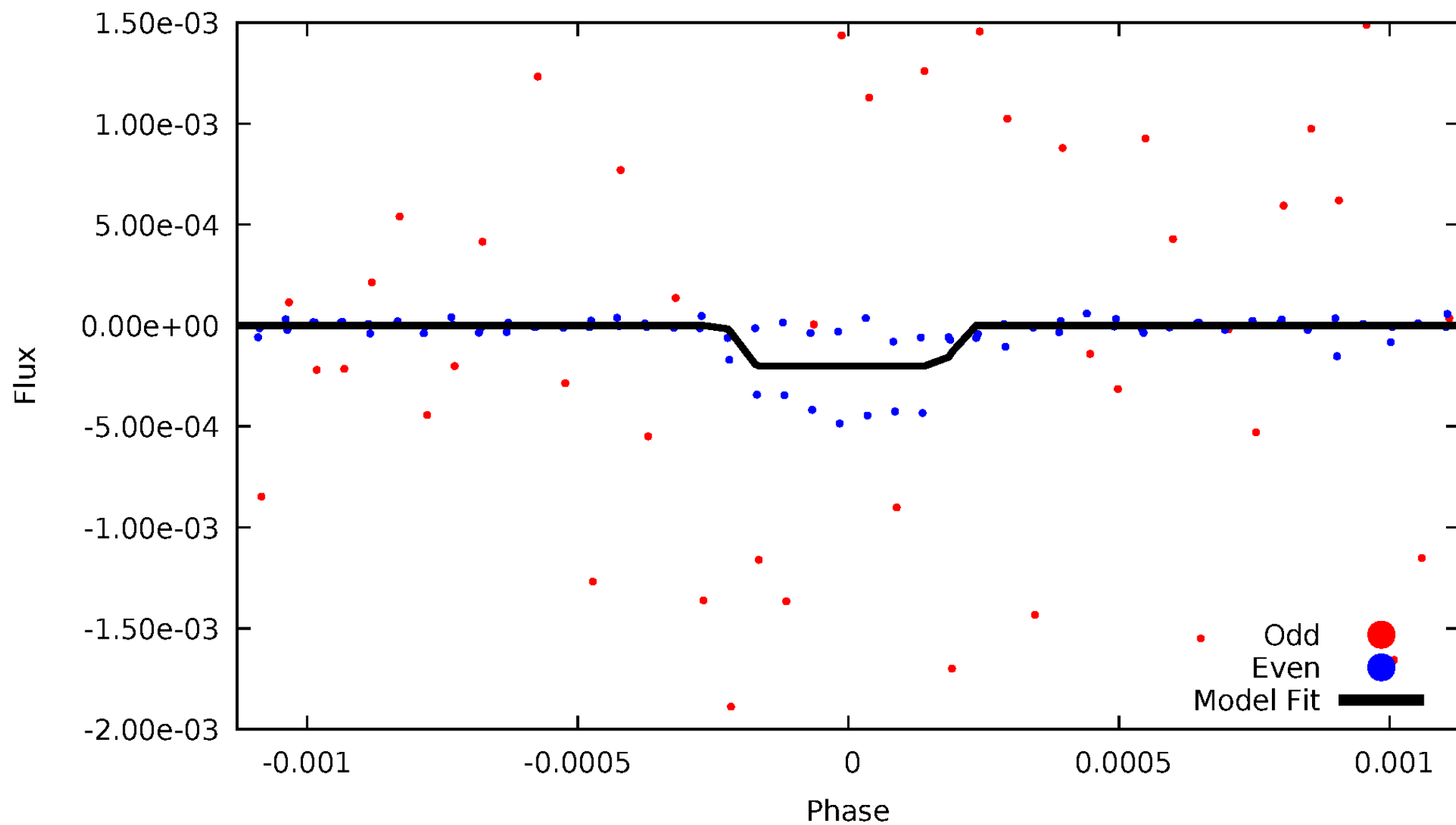
DV Odd/Even

TCE 010992414-02



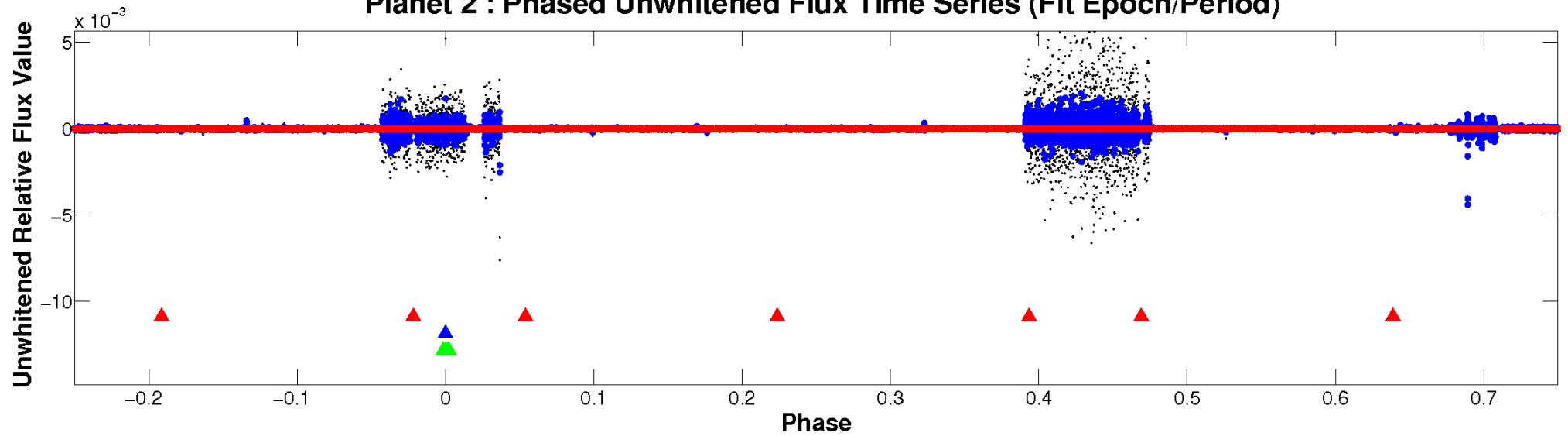
ALT Odd/Even

TCE 010992414-02

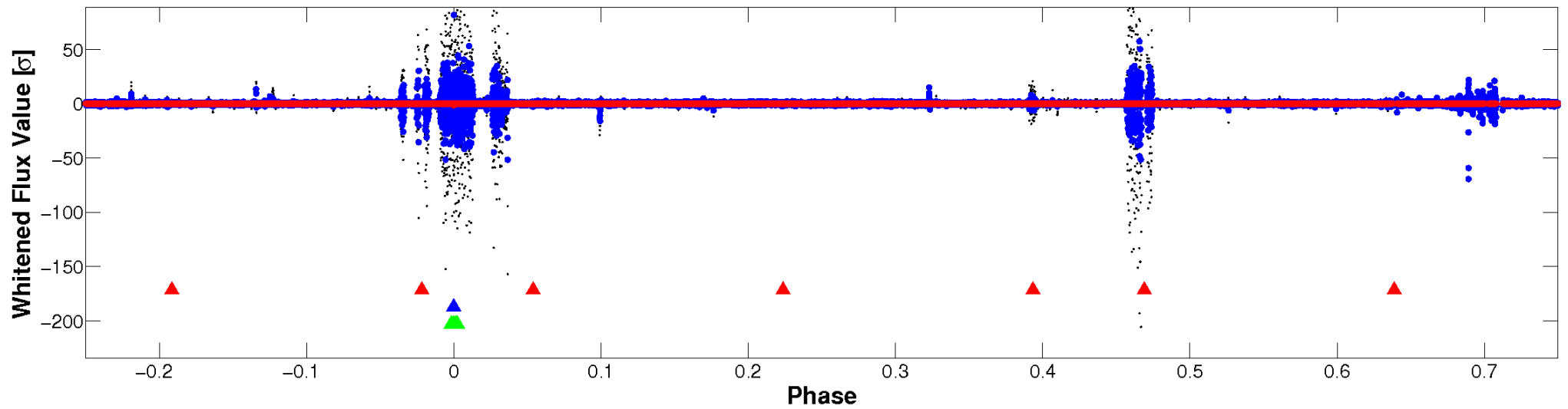


Non-Whitened Vs. Whitened Light Curve

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

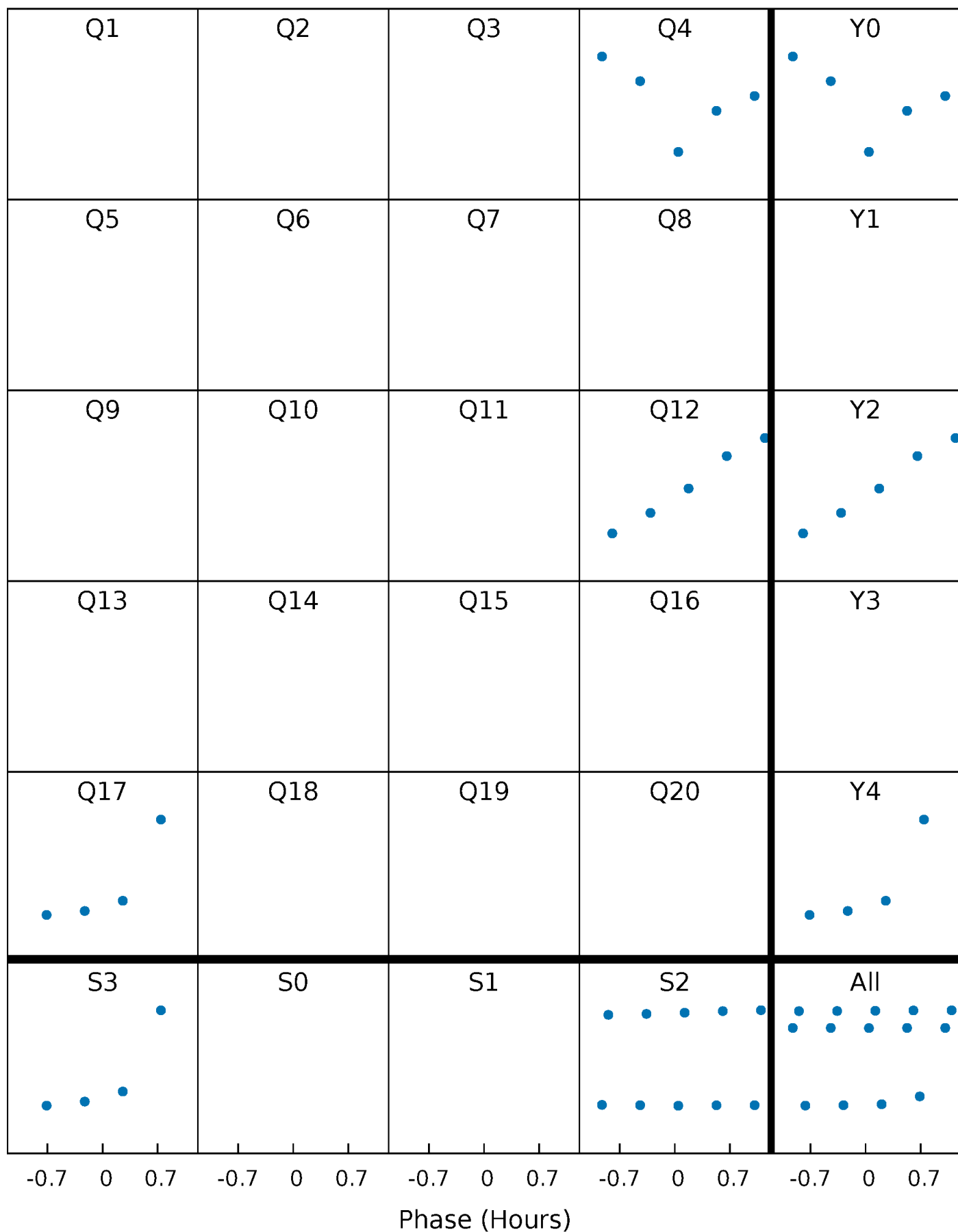


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



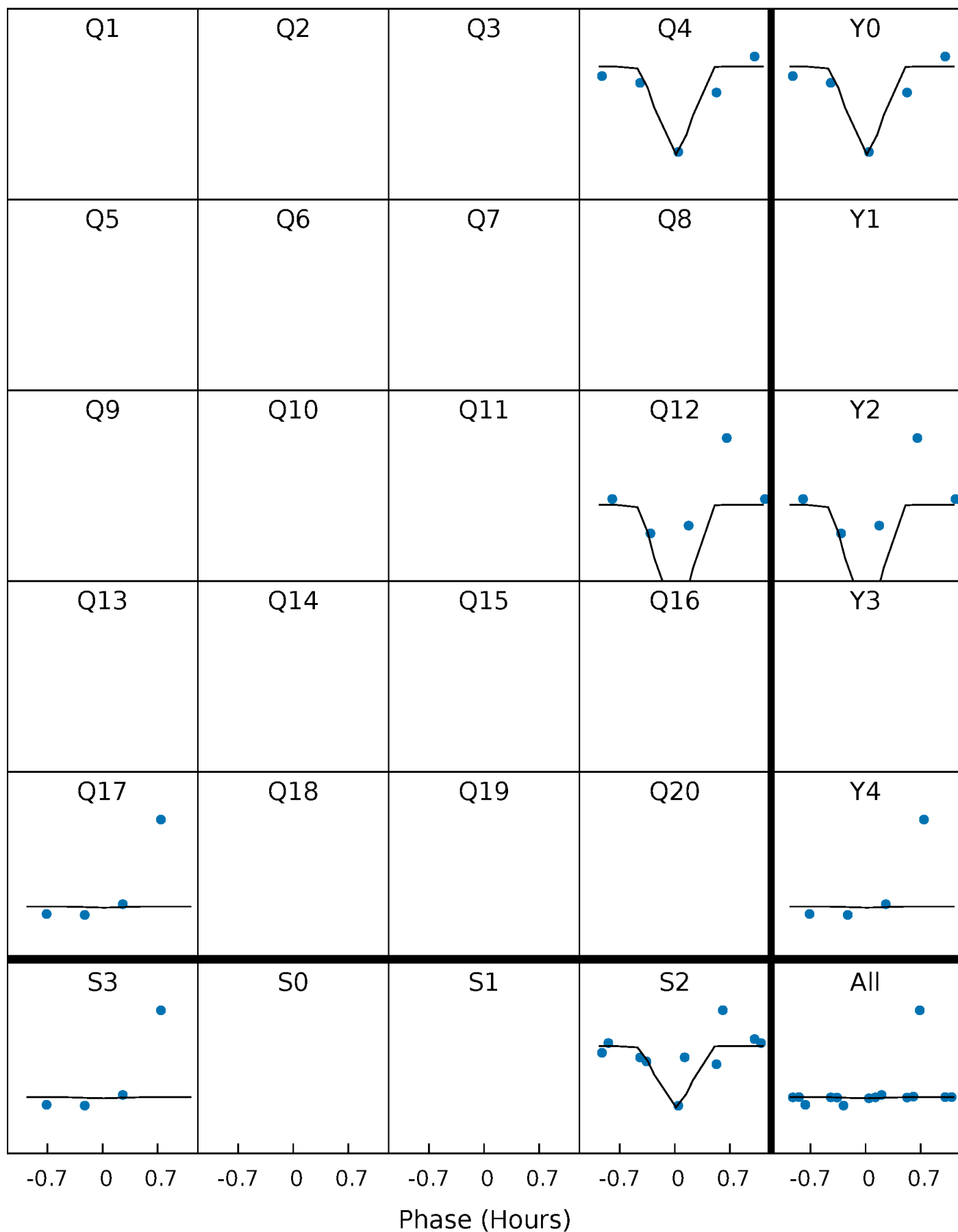
PDC Quarter-Phased Transit Curves

TCE 010992414-02 P=400.332180 Days $T_0=375.343374$ (BKJD)



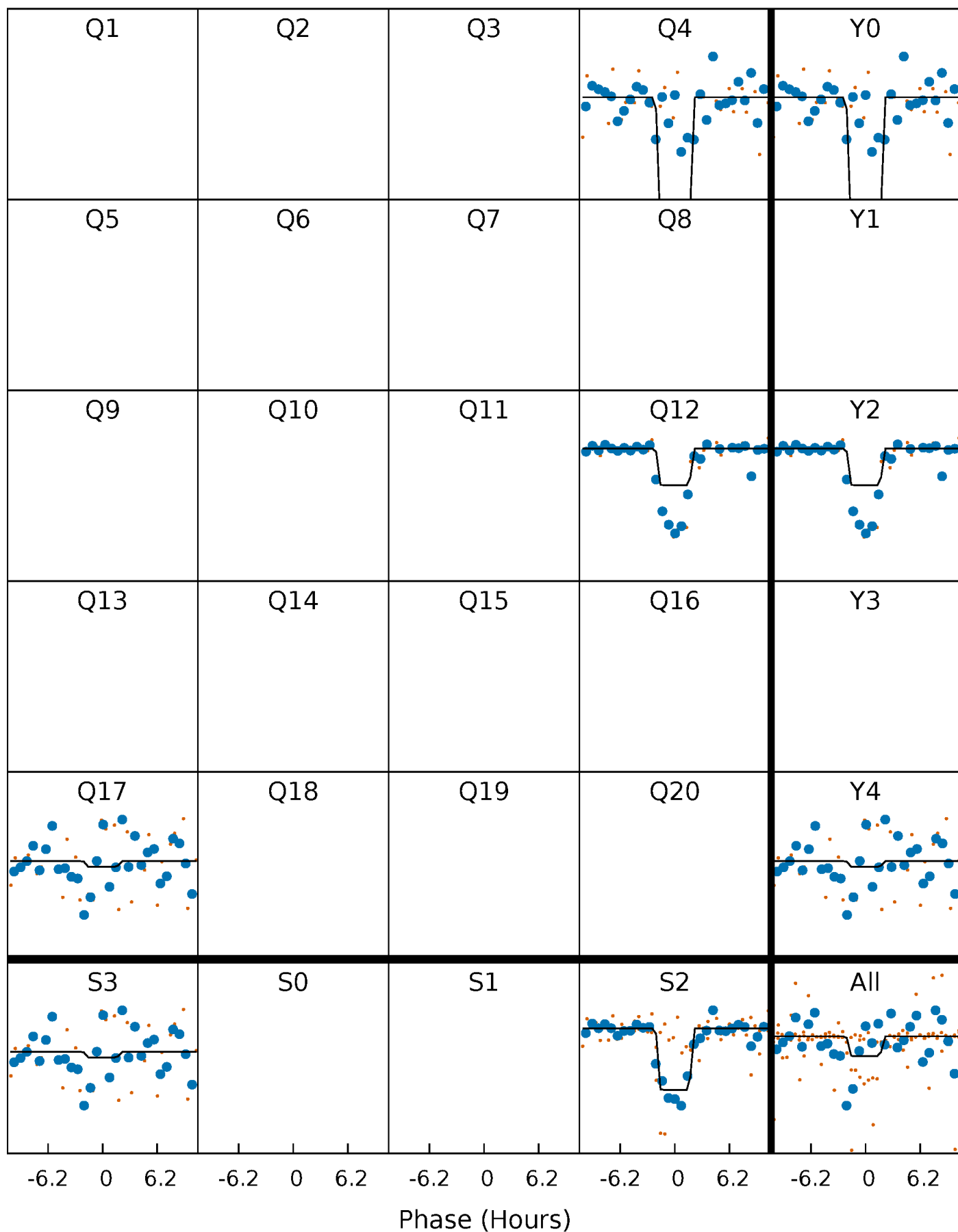
DV Quarter-Phased Transit Curves

TCE 010992414-02 P=400.332180 Days $T_0=375.343374$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

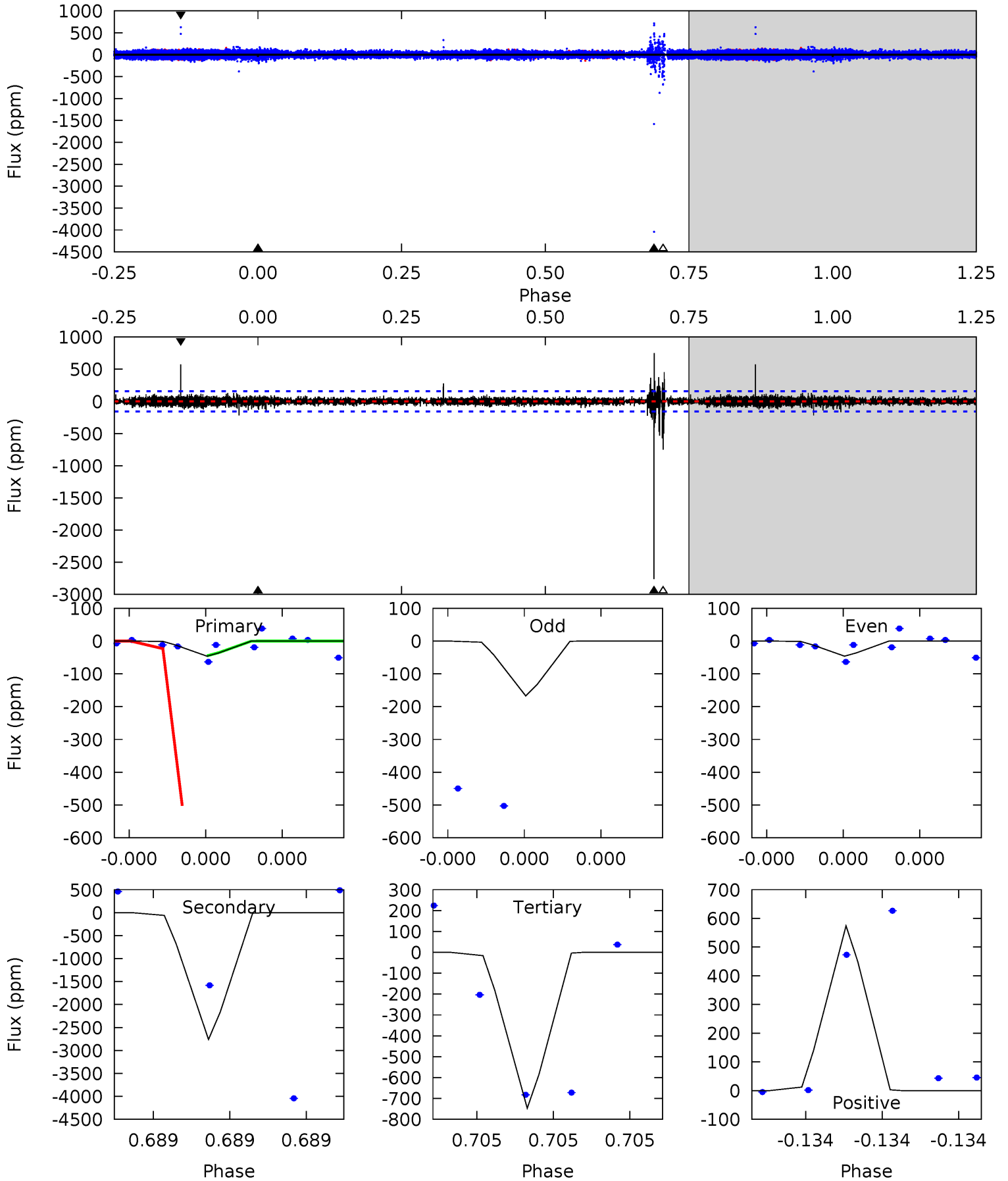
TCE 010992414-02 P=400.395608 Days $T_0=375.433337$ (BKJD)



DV Model-Shift Uniqueness Test

010992414-02, P = 400.332180 Days, E = 375.343374 Days

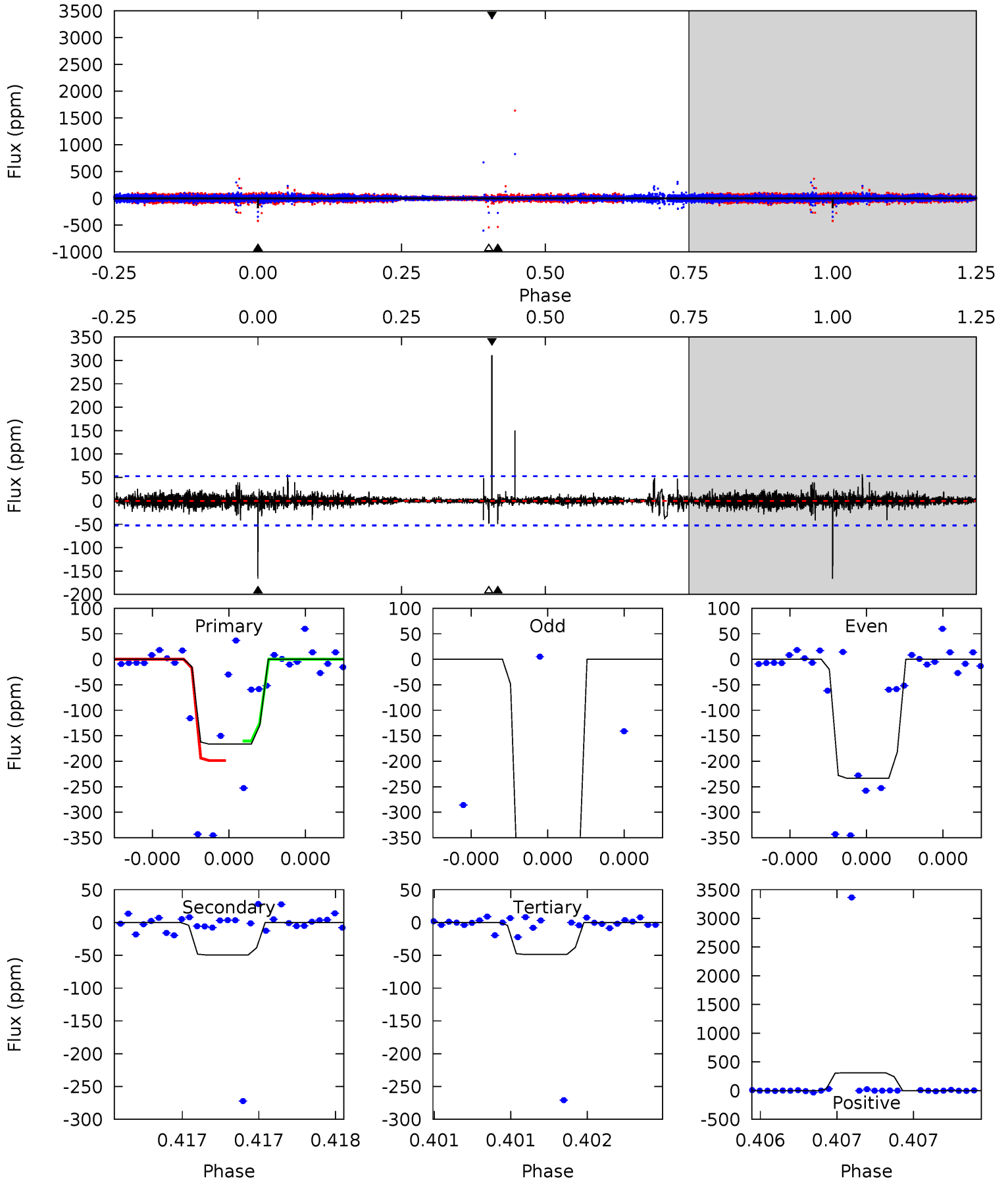
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|-------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 1.72 | 102.8 | 27.8 | 21.4 | 5.87 | 3.92 | 1.10 | -26.1 | -19.6 | 75.0 | 81.4 | 1.16 | 2.00 | 0.21 | 8.74 |



Alt Model-Shift Uniqueness Test

010992414-02, P = 400.395608 Days, E = 375.433337 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 17.7 | 5.25 | 5.17 | 33.0 | 5.59 | 3.50 | 0.84 | 12.5 | -15.4 | 0.08 | -27.8 | 2.07 | 1.36 | 0.65 | 0 |



Stellar Parameters For KIC 010992414

| | $T_{\text{eff}}(K)$ | $\log(g)$ | $[\text{Fe}/\text{H}]$ | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|---------------------|---------------------------|----------------------------|------------------------------|---------------------------|---|
| | 3291^{+107}_{-88} | $0.169^{+0.208}_{-0.052}$ | $-0.020^{+0.250}_{-0.150}$ | $150.645^{+9.958}_{-31.865}$ | $1.221^{+0.202}_{-0.166}$ | $0.000^{+0.000}_{-0.000}$ |
| | +3%/-3% | +123%/-31% | +1250%/-750% | +7%/-21% | +17%/-14% | +103%/-16% |
| Source | KIC0 | KIC0 | KIC0 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 010992414-02 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|----------------|--------------------------------------|----------------------|---------------------|---------------------------|
| DV | -2762 ± 27 | $126253.49^{+134428.19}_{-87832.70}$ | 2297^{+104}_{-140} | -2432^{+86}_{-72} | $0.000^{+0.001}_{-0.000}$ |
| Alt. | -50 ± 9 | $114310.81^{+157843.64}_{-79448.92}$ | 2297^{+100}_{-134} | -2434^{+76}_{-71} | $0.000^{+0.000}_{-0.000}$ |

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

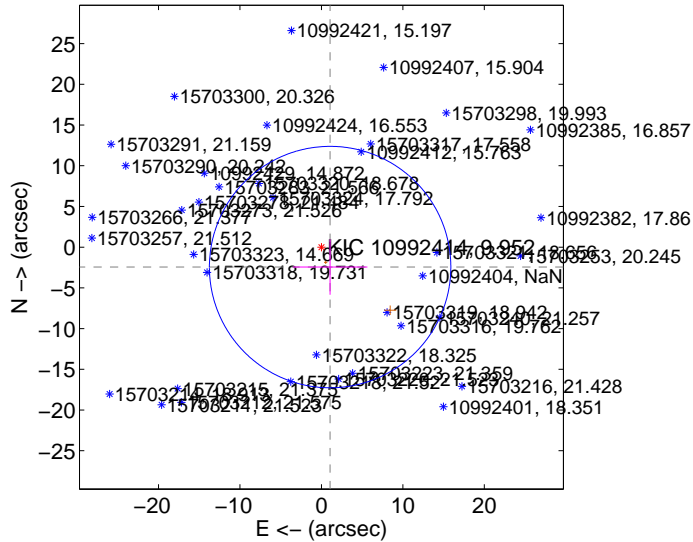
Supplemental centroid analysis for 010992414-02. **Kepler magnitude: 9.95.** Transit SNR 1.95

There are 0 quarters with good PRF difference image offsets

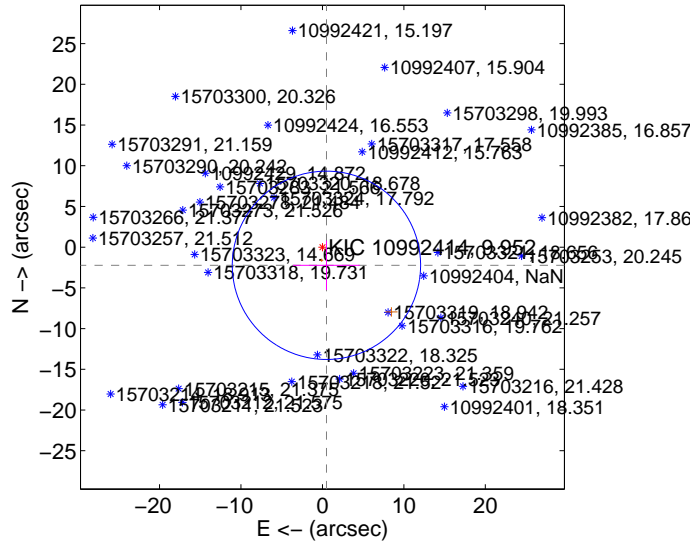
The direct PRF centroid is offset from the target star catalog position by about 0.67 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|--------------------|--------------------|
| PRF-fit source offset from OOT | 2.668 ± 4.941 | 0.54 | -1.068 ± 4.572 | -2.445 ± 3.396 |
| PRF-fit source offset from KIC position | 2.282 ± 3.854 | 0.59 | -0.492 ± 4.105 | -2.228 ± 3.041 |
| photometric centroid source offset | 2.82 ± 7.31 | 0.39 | -2.71 ± 7.42 | -0.77 ± 5.80 |

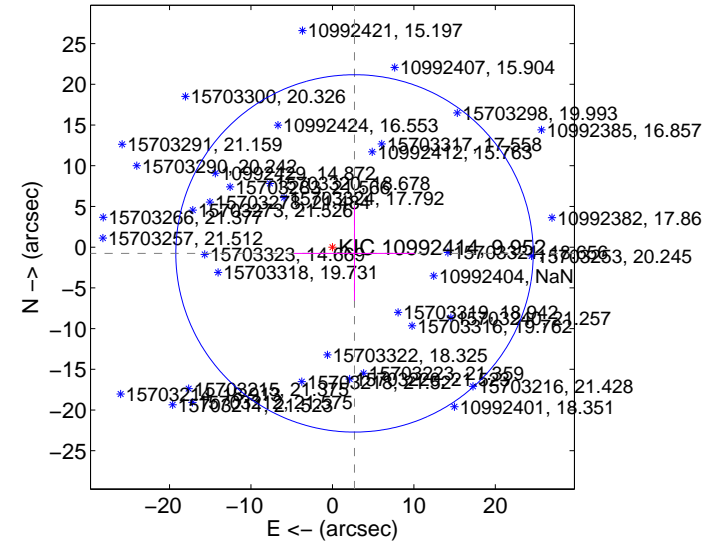
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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

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

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



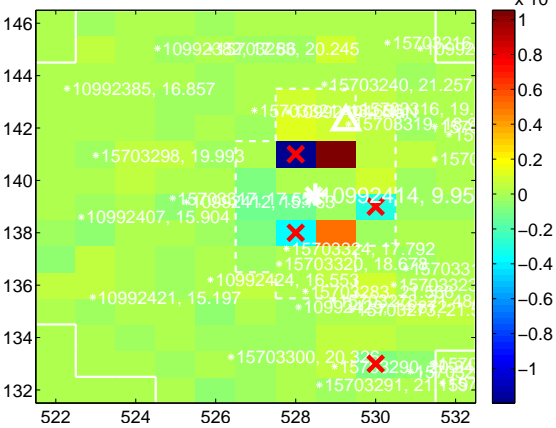
Q3 no difference image



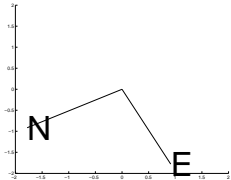
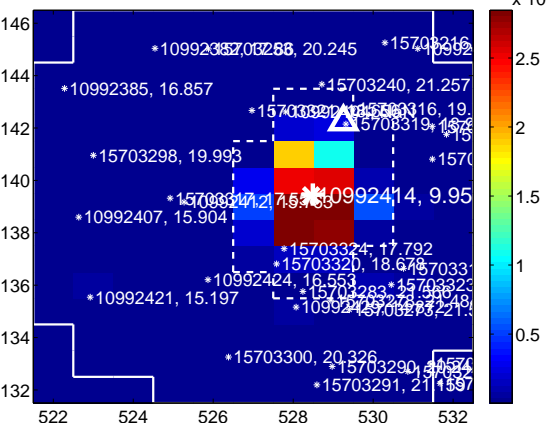
Q3 no OOT image



Q4 difference image. Poor Quality



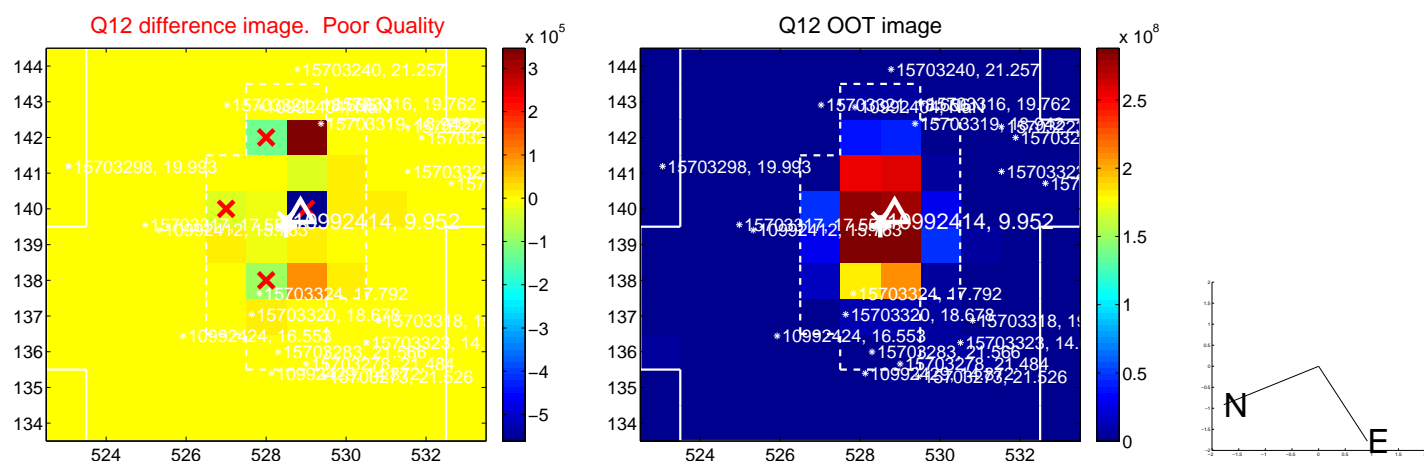
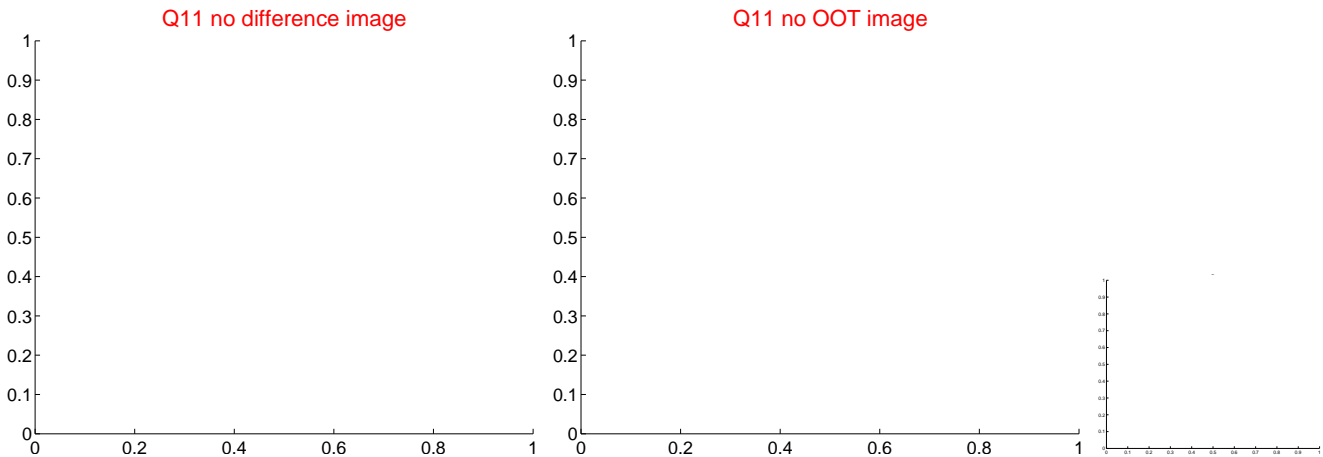
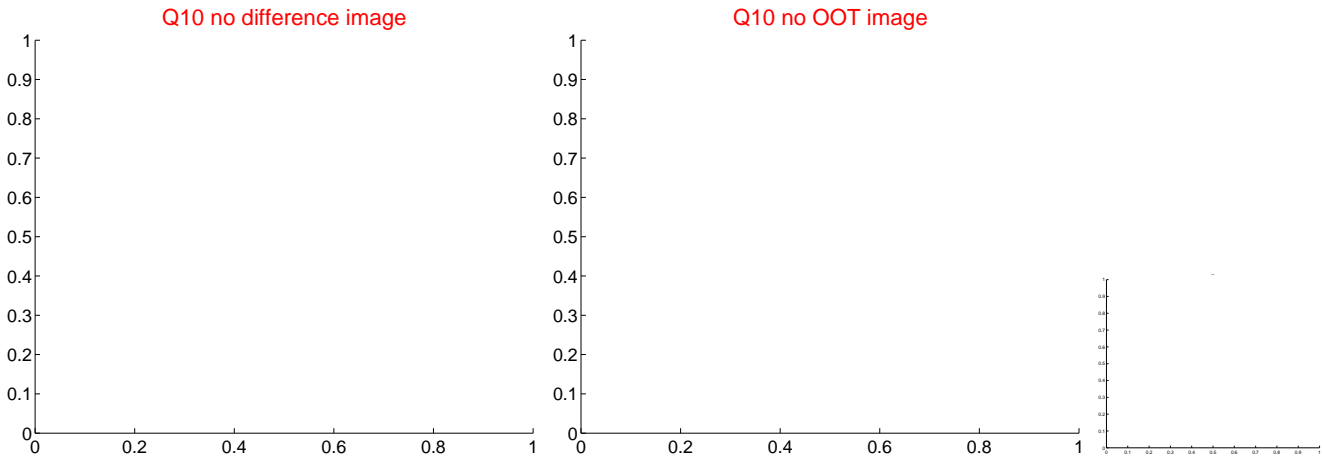
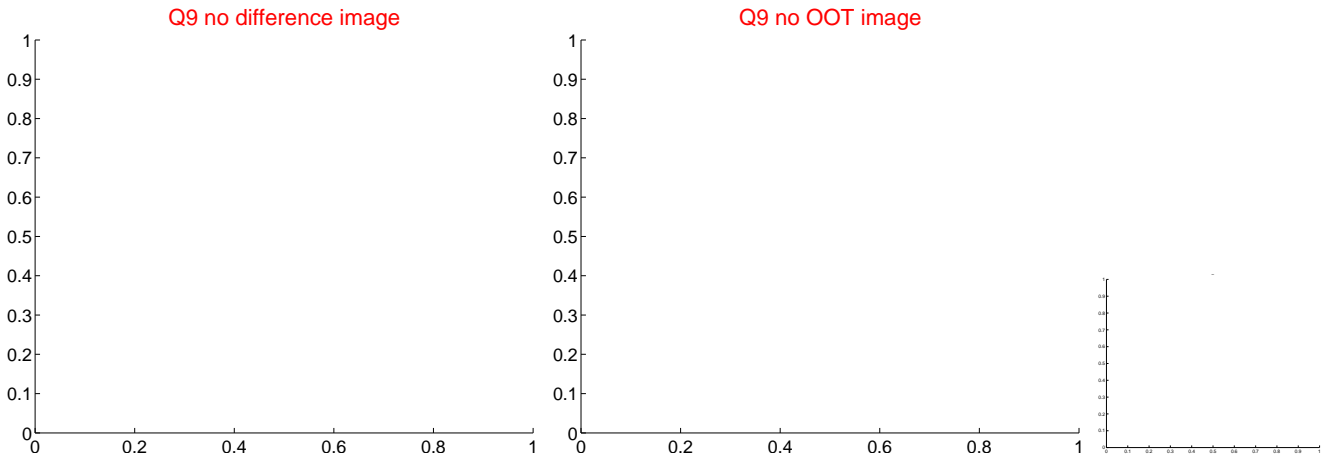
Q4 OOT image



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



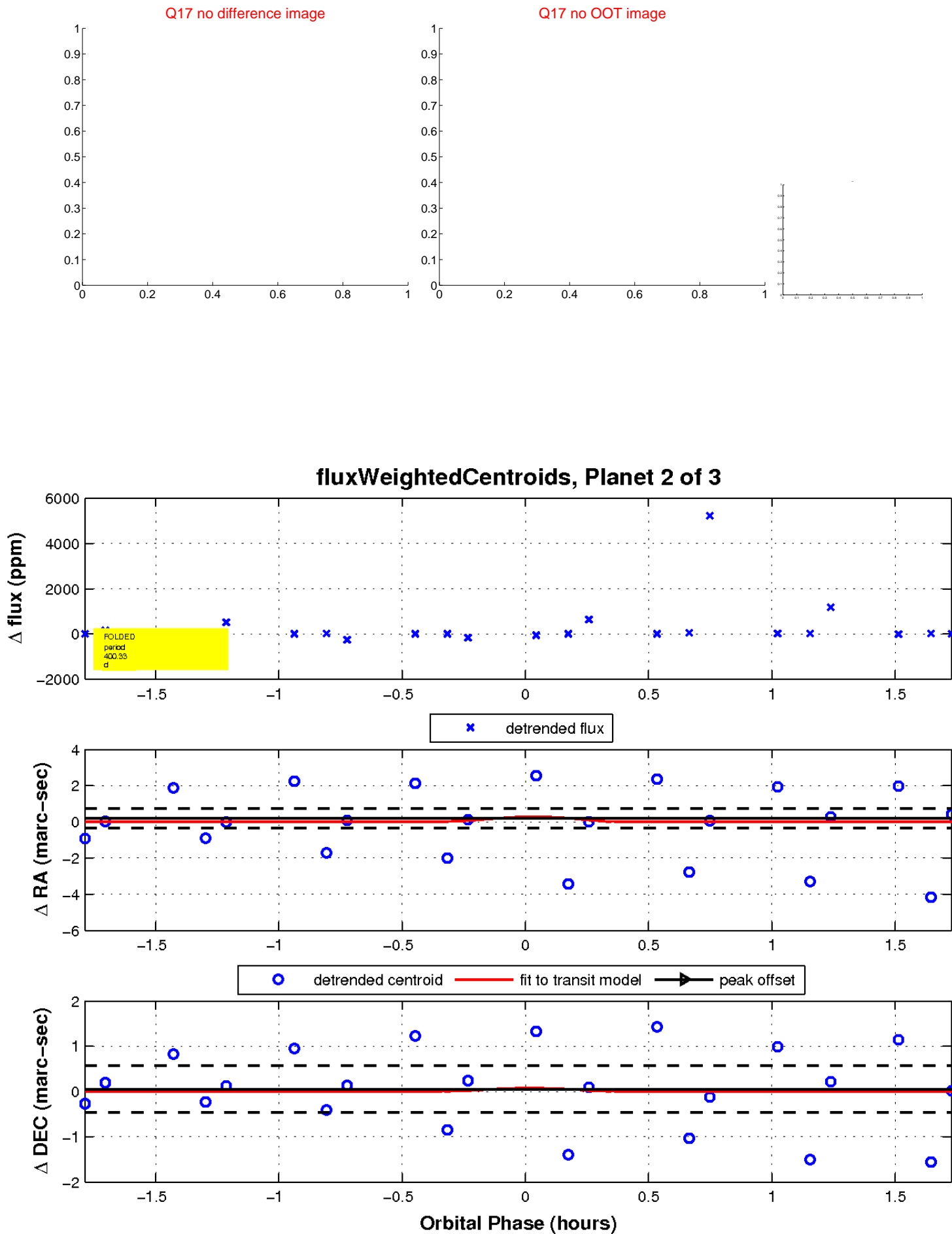
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

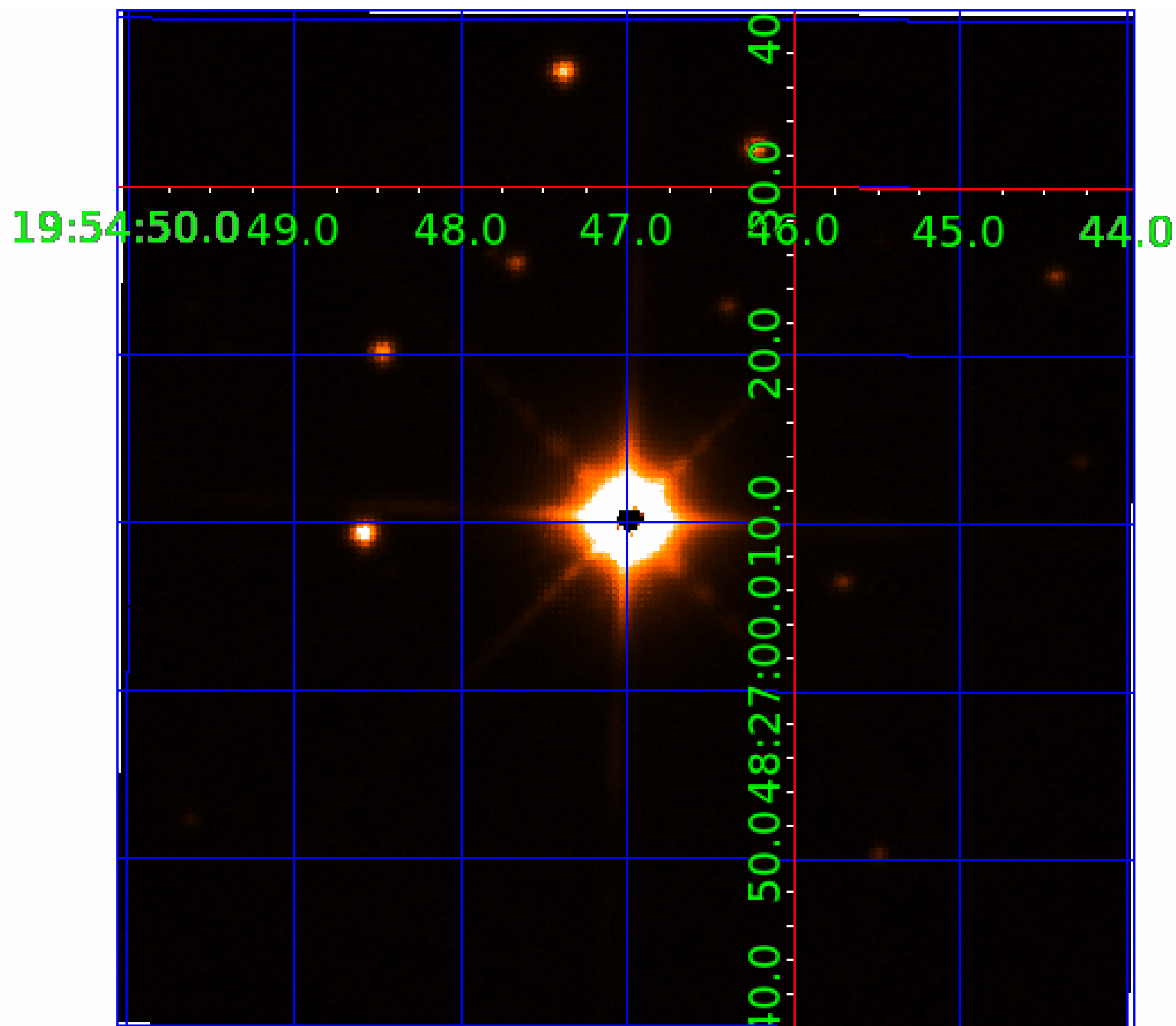


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010992414

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}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|------|------|-----------------------------|-----------------|------------------------|------------------------|
| 010992414-01 | OBS | No | 234.145112 | 162.789088 | 496.4 | 11.475 | 20.0 | 22.2 | 150.65 | 3291 | 307.16 | 3774.52 |
| 010992414-02 | OBS | No | 400.332180 | 375.343374 | 65.3 | 0.605 | 48.9 | 1.9 | 150.65 | 3291 | 279.70 | 1846.21 |
| 010992414-03 | OBS | No | 400.871816 | 374.695550 | 2.1 | 5.924 | 50.7 | 0.1 | 150.65 | 3291 | 24.21 | 1842.90 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---|
| 010992414-01 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED |
| 010992414-02 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED |
| 010992414-03 | OBS | FP | 0.00 | 1 | 0 | 0 | 0 | INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED |

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

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

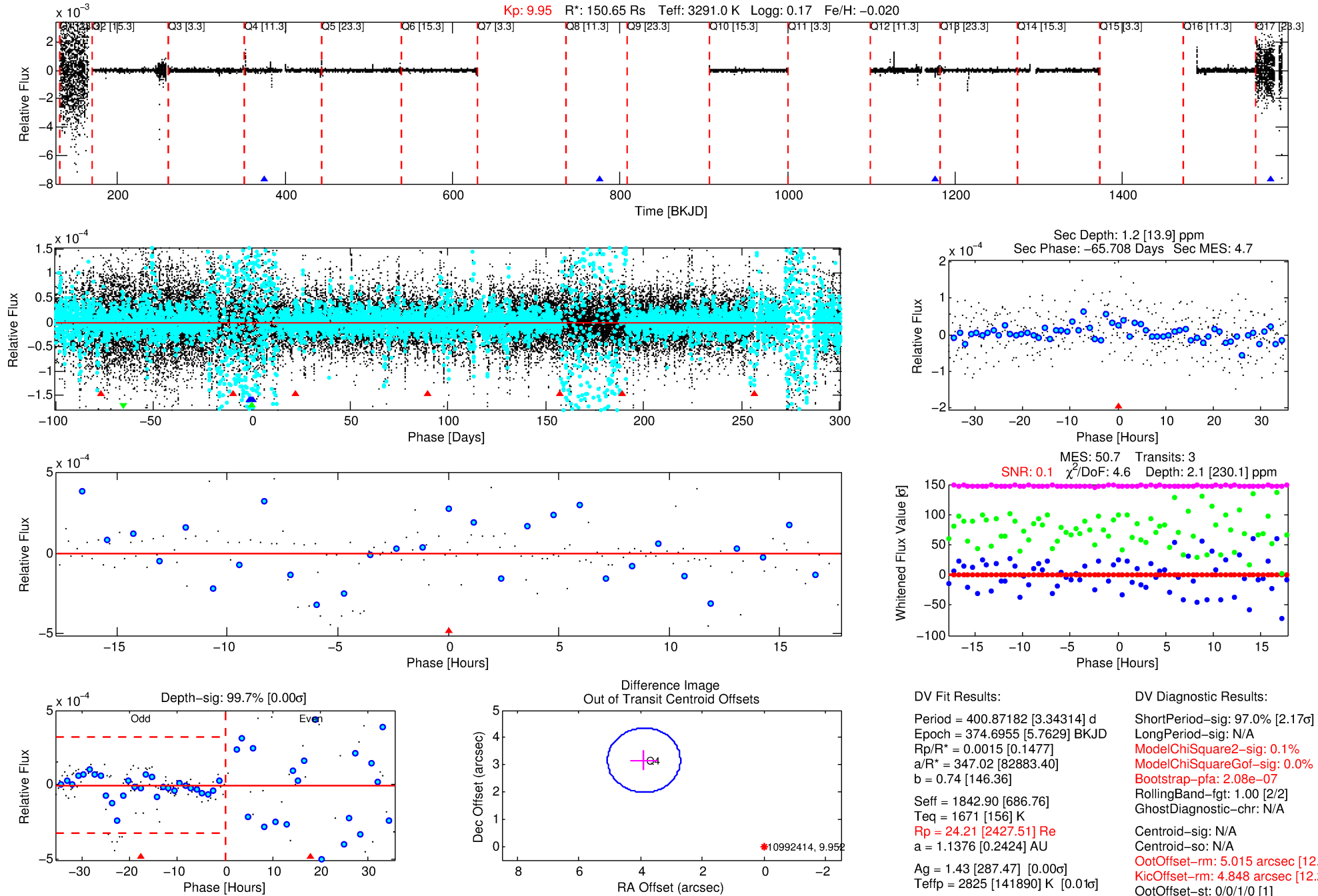
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010992414-03

No Significant Match Found

DV One-Page Summary

KIC: 10992414 Candidate: 3 of 3 Period: 400.872 d



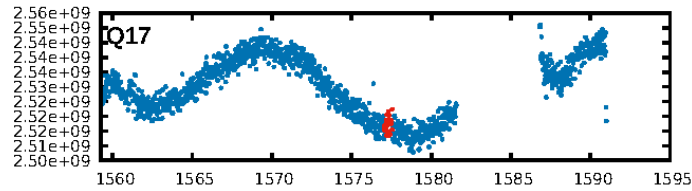
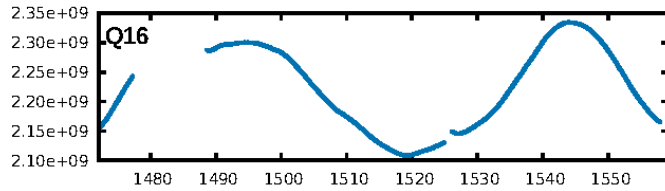
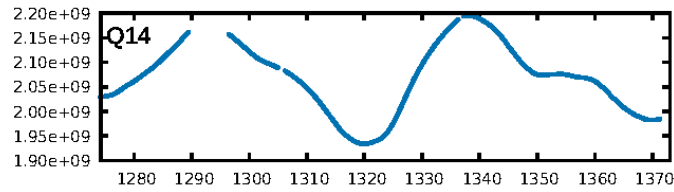
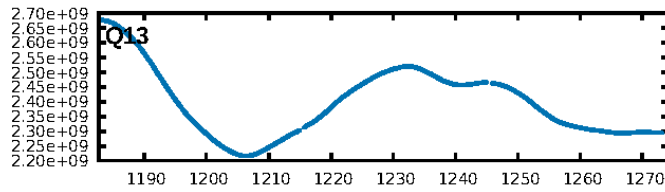
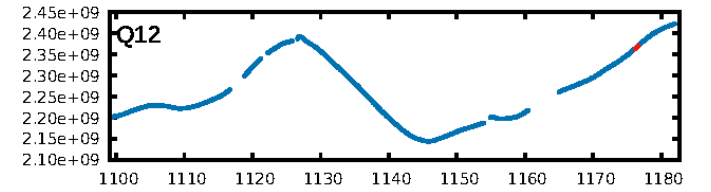
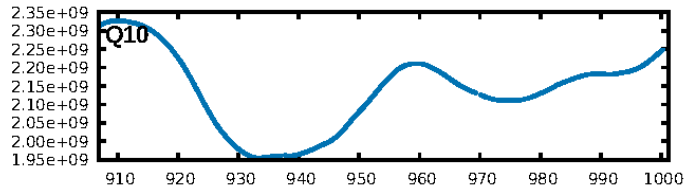
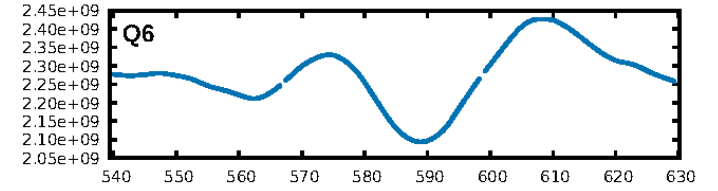
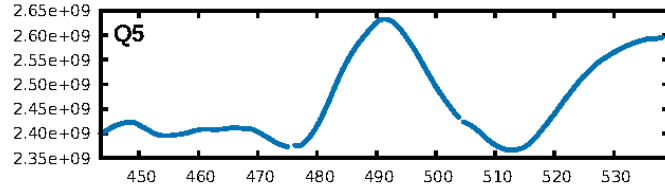
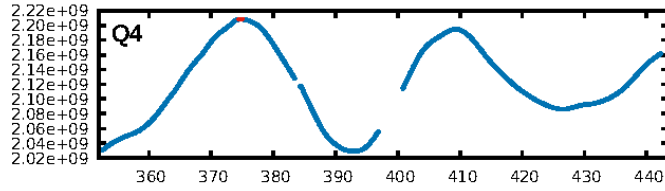
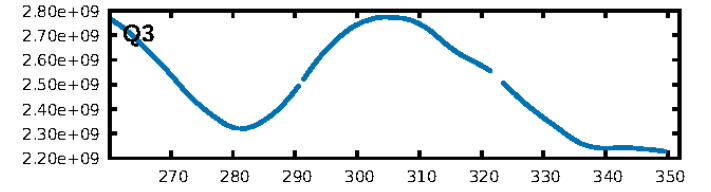
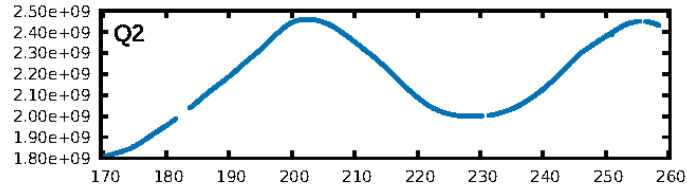
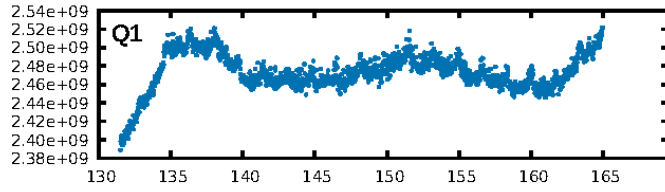
DV Fit Results:

Period = 400.87182 [3.34314] d
 Epoch = 374.6955 [5.7629] BKJD
 $R_p/R^* = 0.0015$ [0.1477]
 $a/R^* = 347.02$ [82883.40]
 $b = 0.74$ [146.36]
 $\text{Seff} = 1842.90$ [686.76]
 $T_{\text{eq}} = 1671$ [156] K
 $R_p = 24.21$ [2427.51] Re
 $a = 1.1376$ [0.2424] AU
 $A_g = 1.43$ [287.47] [0.00σ]
 $T_{\text{eff}} = 2825$ [141890] K [0.01σ]

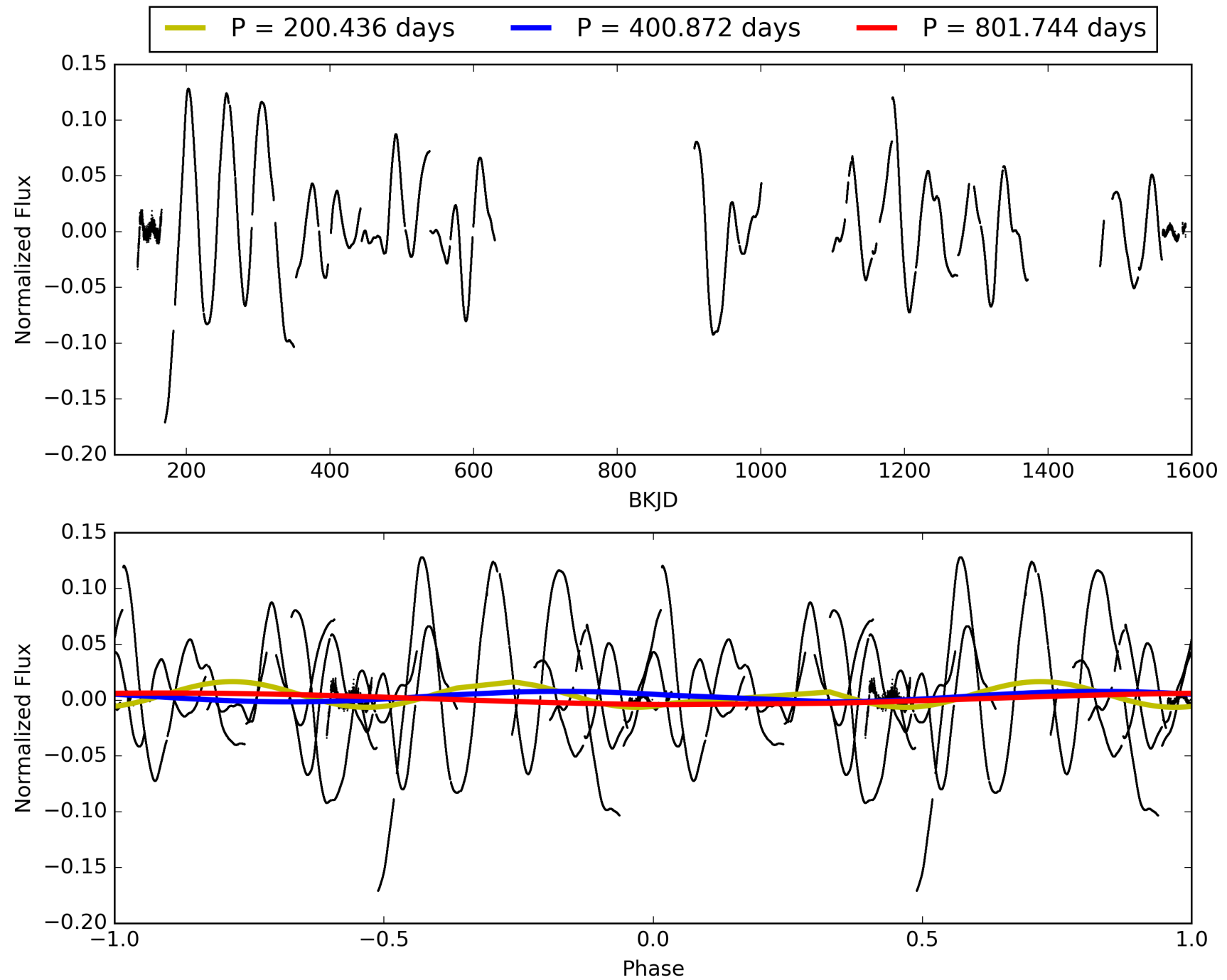
DV Diagnostic Results:

ShortPeriod-sig: 97.0% [2.17σ]
 LongPeriod-sig: N/A
 ModelChiSquare2-sig: 0.1%
 ModelChiSquareGof-sig: 0.0%
 Bootstrap-pfa: 2.08e-07
 RollingBand-fgt: 1.00 [2/2]
 GhostDiagnostic-chr: N/A
 Centroid-sig: N/A
 Centroid-so: N/A
 OotOffset-rm: 5.015 arcsec [12.73σ]
 KicOffset-rm: 4.848 arcsec [12.23σ]
 OotOffset-st: 0/0/1/0 [1]
 KicOffset-st: 0/0/1/0 [1]
 DiffImageQuality-fgm: 0.00 [0/1]
 DiffImageOverlap-fno: 0.67 [2/3]

TCE 010992414-03, PDC Light Curves

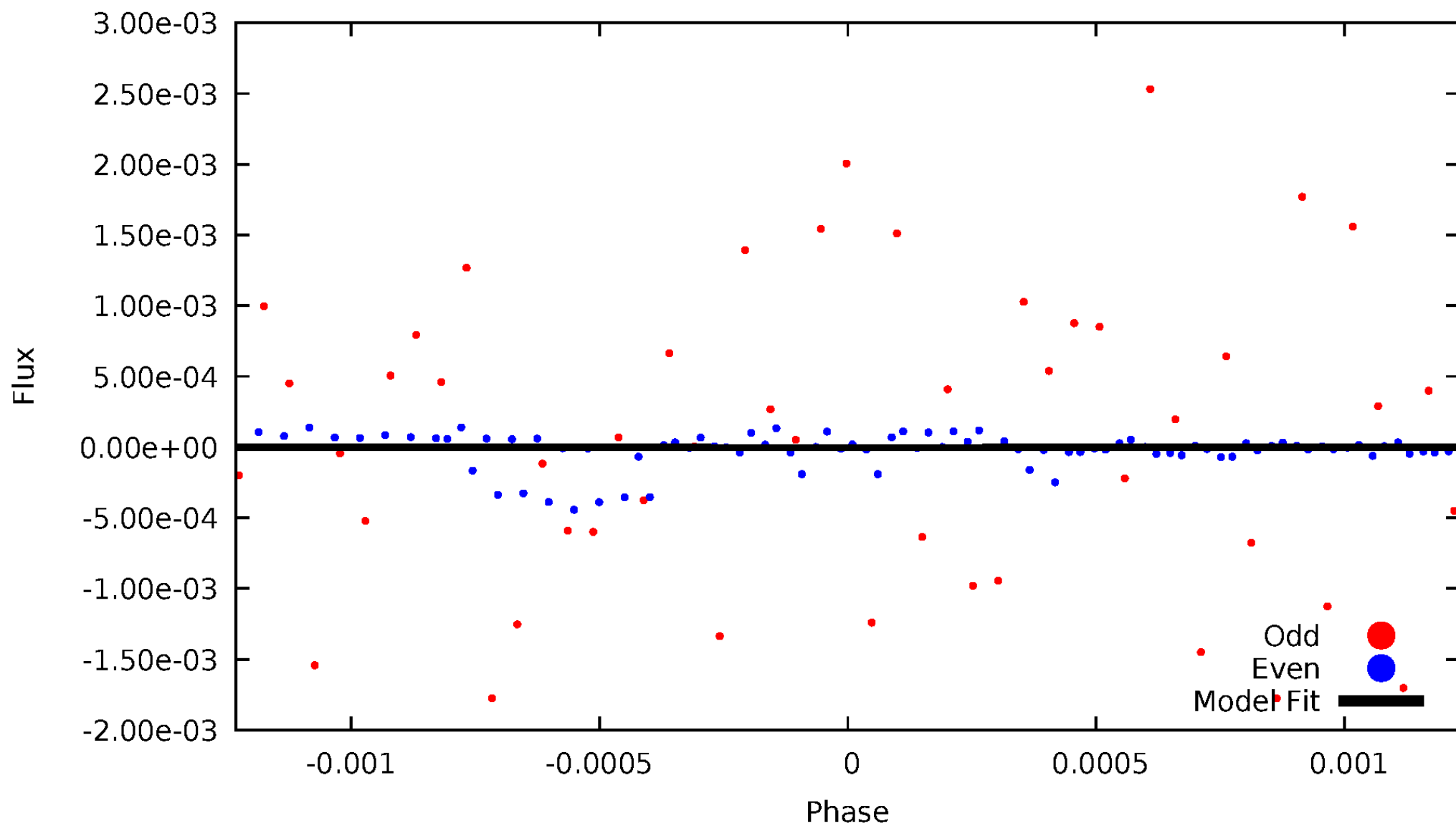


TCE 010992414-03



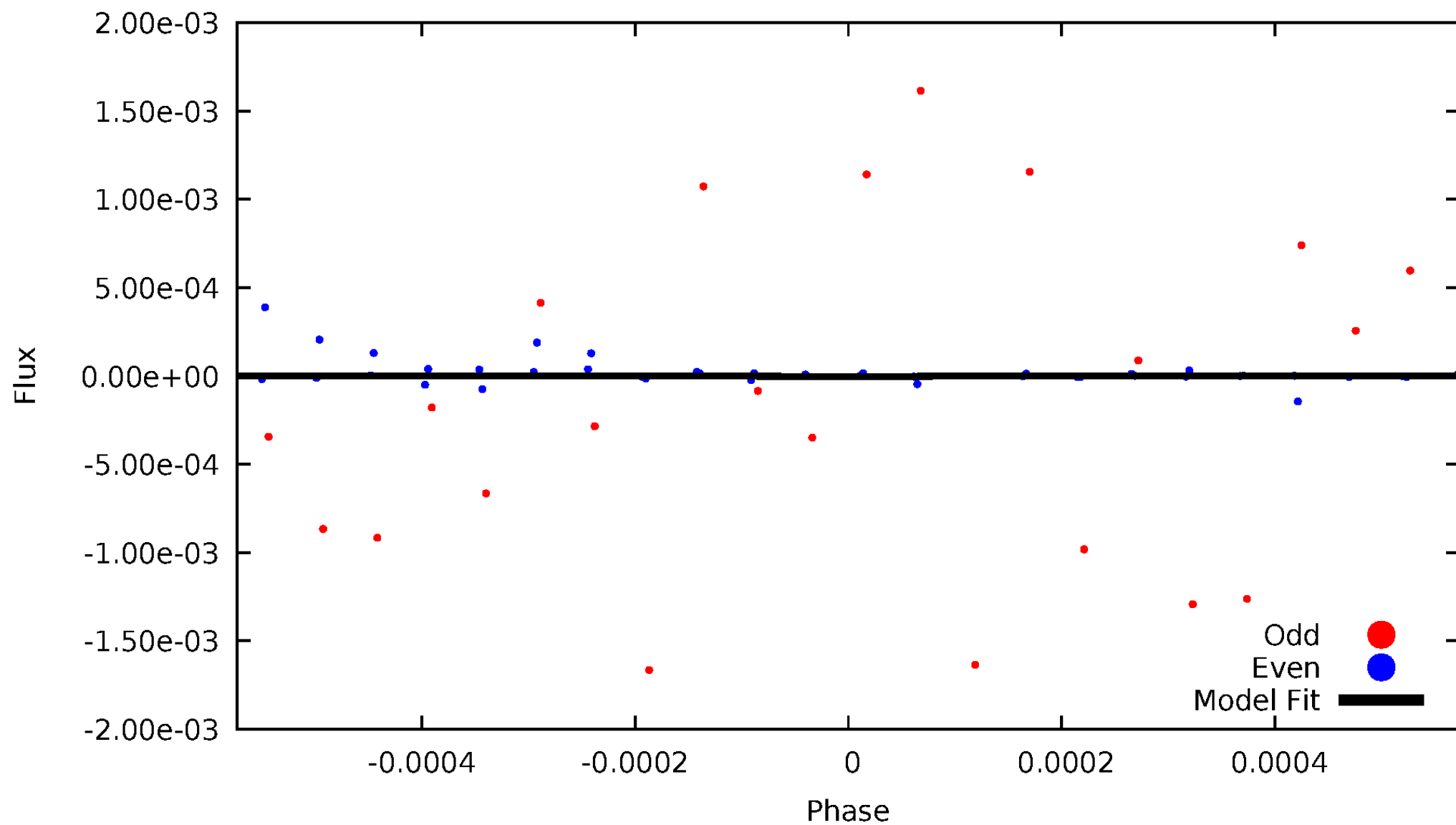
DV Odd/Even

TCE 010992414-03



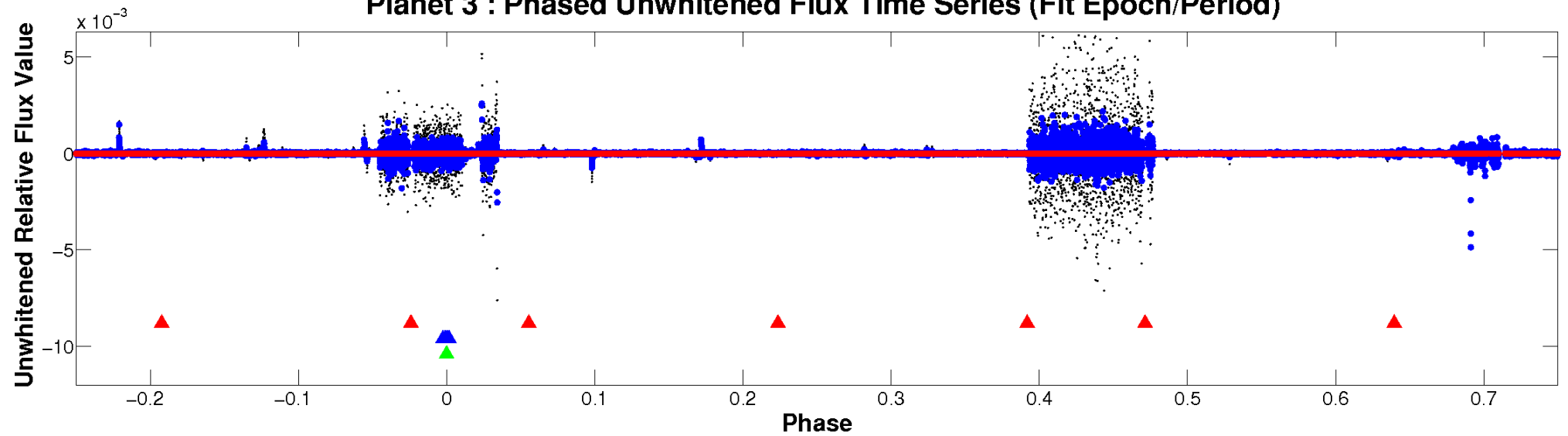
ALT Odd/Even

TCE 010992414-03

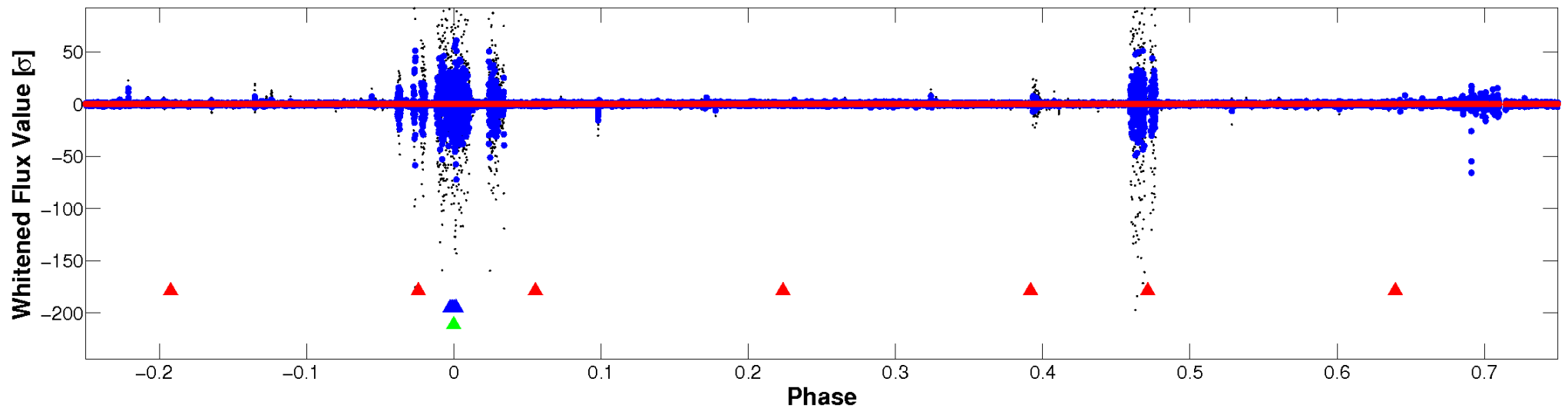


Non-Whitened Vs. Whitened Light Curve

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

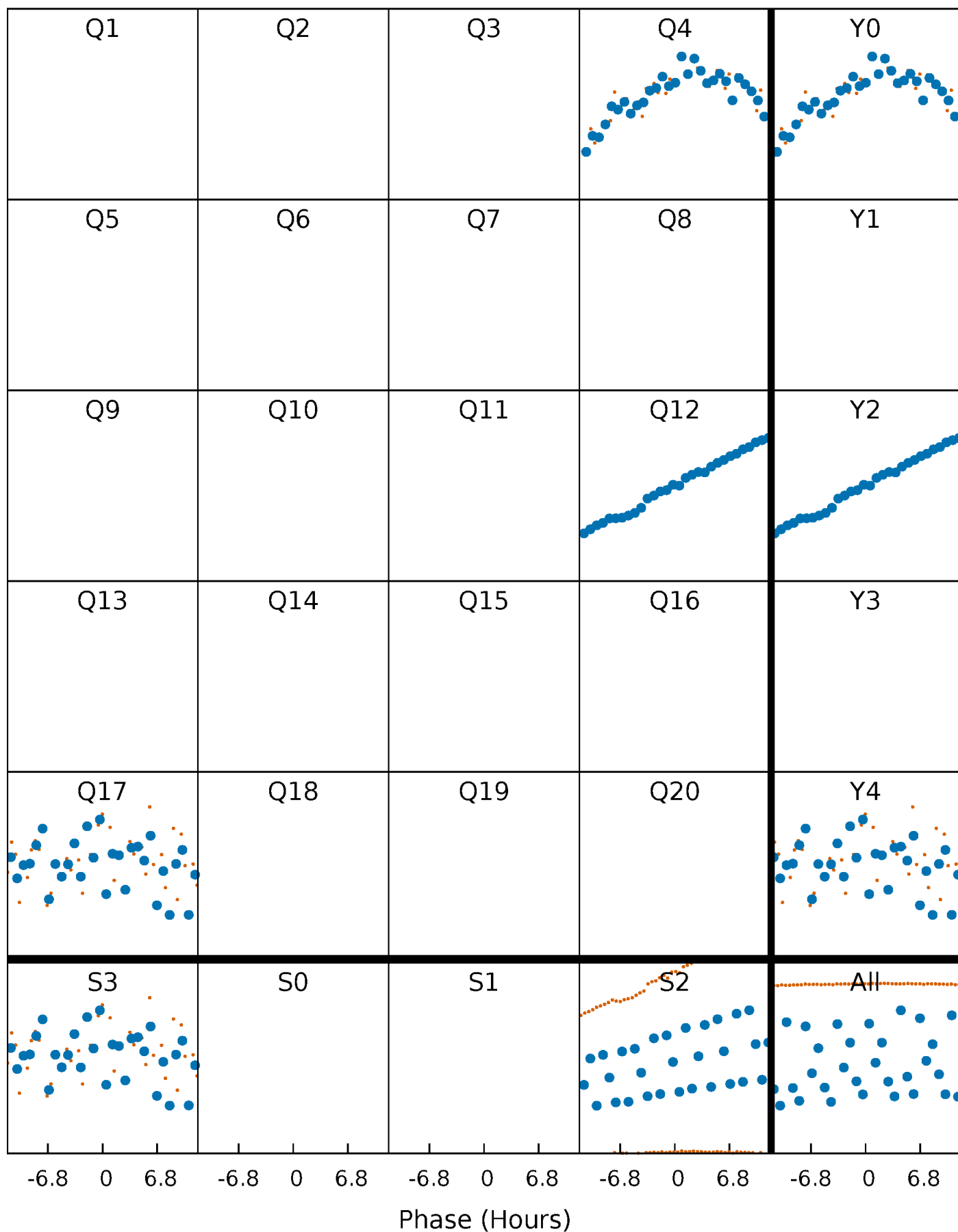


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



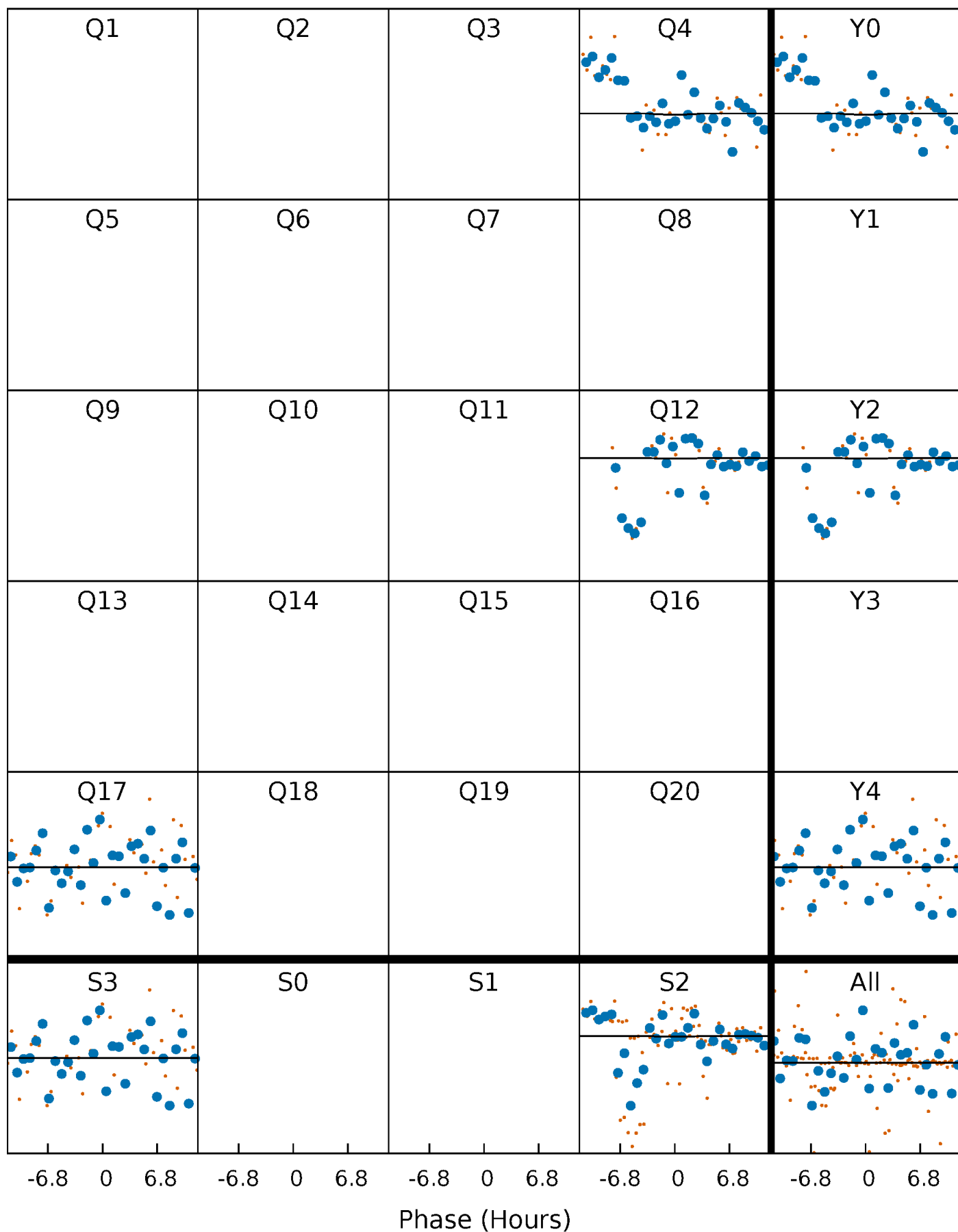
PDC Quarter-Phased Transit Curves

TCE 010992414-03 P=400.871816 Days $T_0=374.695550$ (BKJD)



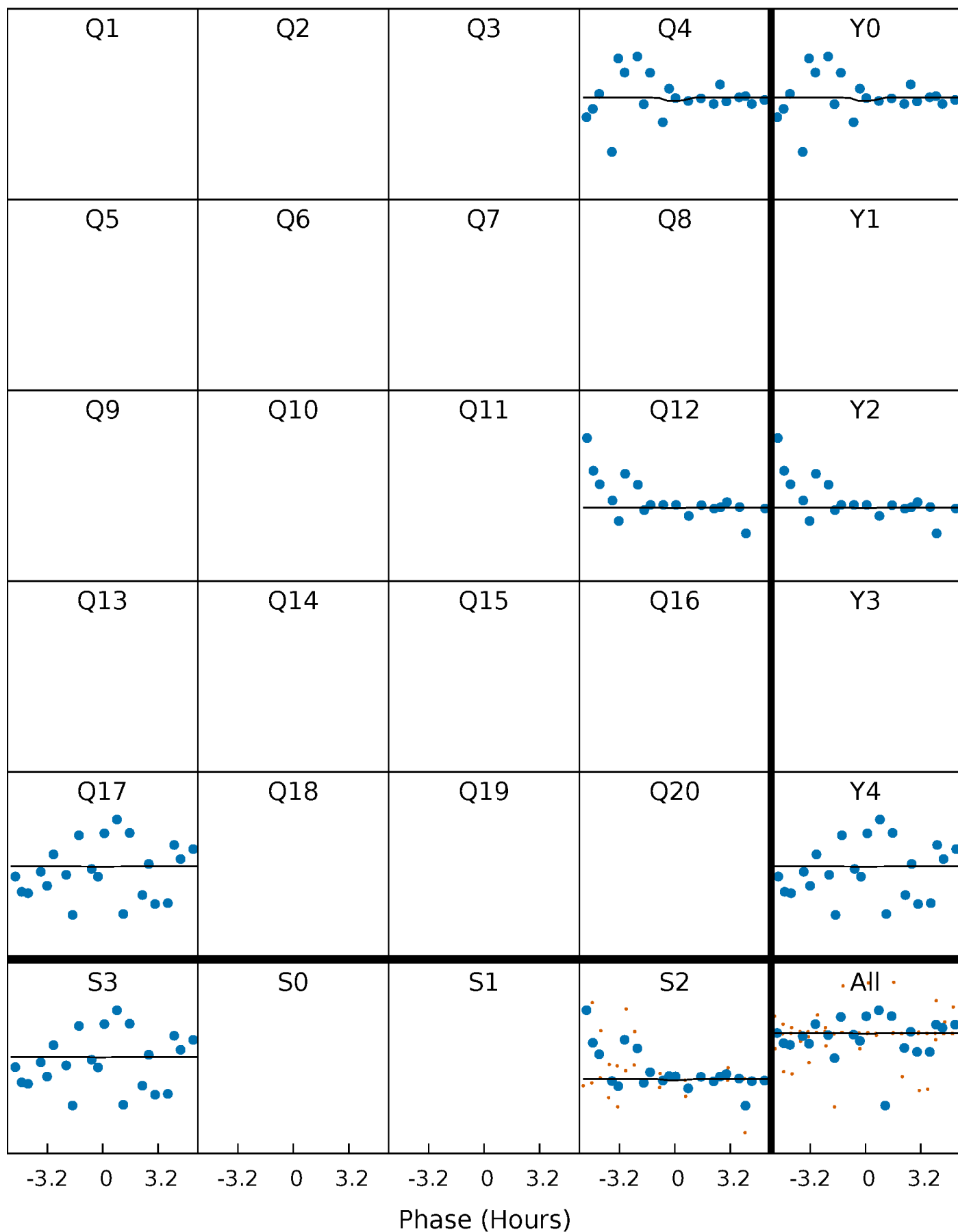
DV Quarter-Phased Transit Curves

TCE 010992414-03 $P=400.871816$ Days $T_0=374.695550$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

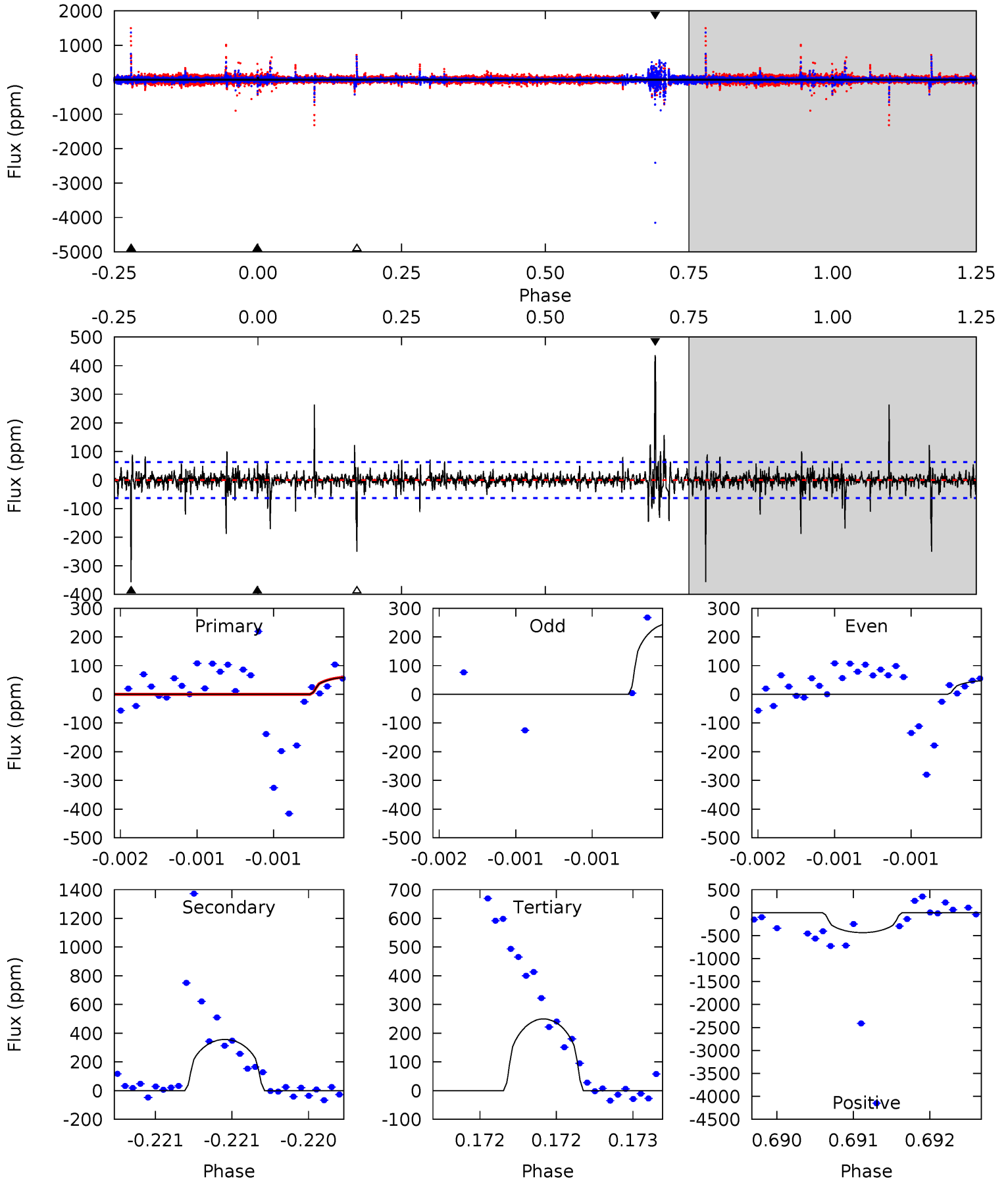
TCE 010992414-03 P=400.865580 Days $T_0=374.685862$ (BKJD)



DV Model-Shift Uniqueness Test

010992414-03, P = 400.871816 Days, E = 374.695550 Days

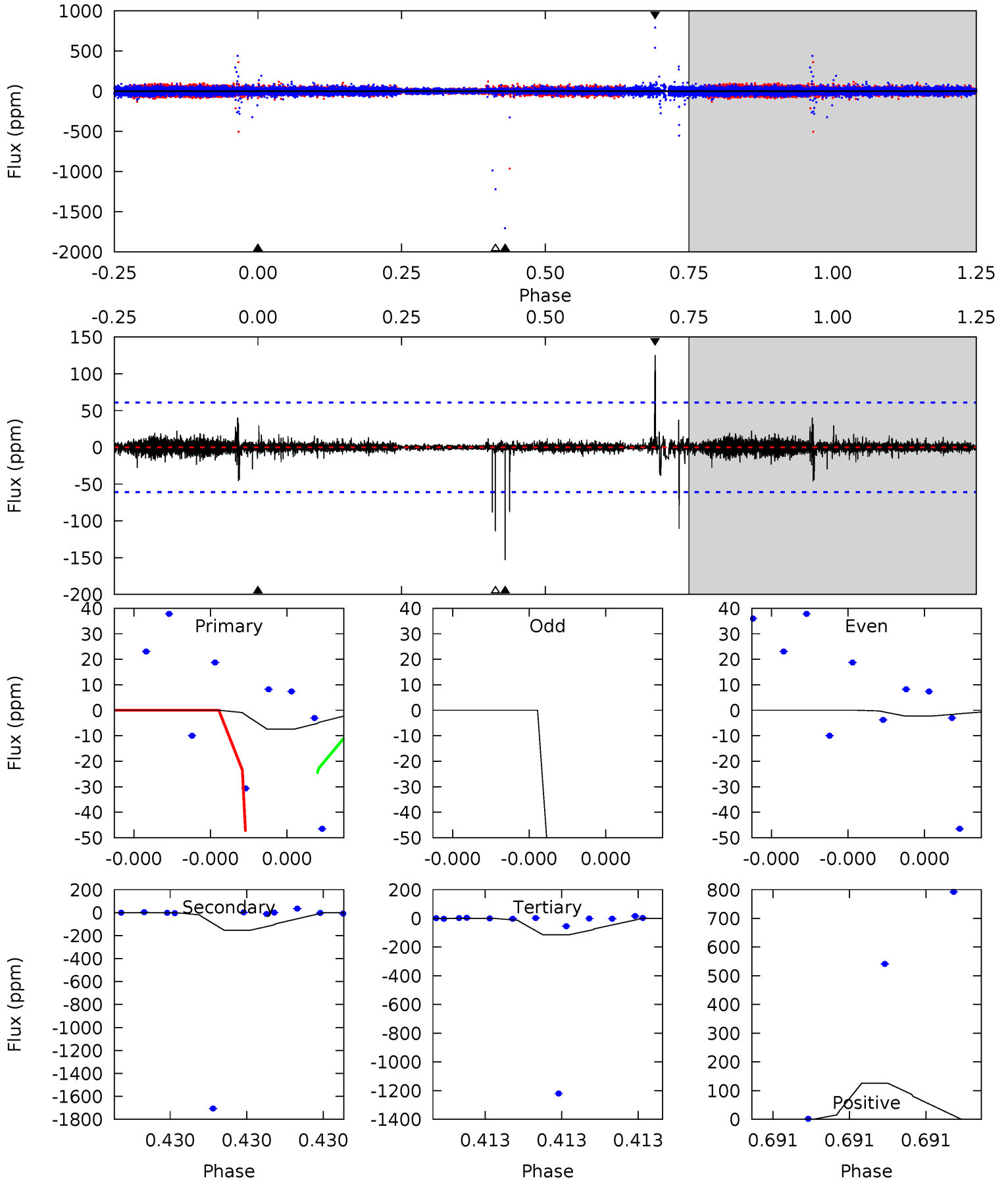
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|-----|
| 5.20 | 31.2 | 21.9 | 38.2 | 5.52 | 3.40 | 1.88 | -16.7 | -33.0 | 9.36 | -6.95 | 1.90 | 3.35 | 0.55 | 0 |



Alt Model-Shift Uniqueness Test

010992414-03, P = 400.865580 Days, E = 374.685862 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|-------|-------|-----|
| 0.71 | 14.5 | 10.8 | 11.9 | 5.77 | 3.78 | 0.41 | -10.1 | -11.2 | 3.67 | 2.61 | 6.91 | 200.0 | 0.45 | 0 |



Stellar Parameters For KIC 010992414

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | R (R_{\odot}) | M (M_{\odot}) | p_{\star} ($\text{g}\cdot\text{cm}^{-3}$) |
|--------|---------------------|---------------------------|----------------------------|------------------------------|---------------------------|---|
| | 3291^{+107}_{-88} | $0.169^{+0.208}_{-0.052}$ | $-0.020^{+0.250}_{-0.150}$ | $150.645^{+9.958}_{-31.865}$ | $1.221^{+0.202}_{-0.166}$ | $0.000^{+0.000}_{-0.000}$ |
| | +3%/-3% | +123%/-31% | +1250%/-750% | +7%/-21% | +17%/-14% | +103%/-16% |
| Source | KIC0 | KIC0 | KIC0 | DSEP | | |

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

Secondary Eclipse Parameters for KIC 010992414-03 / KOI

| Detrend | Depth (ppm) | R_p (R_{\oplus}) | T_{max} (K) | T_{obs} (K) | A_{obs} |
|---------|---------------|---------------------------------|----------------------|------------------------|---------------------------|
| DV | -357 ± 11 | $1521.11^{+1656.14}_{-1064.17}$ | 2297^{+103}_{-130} | -2271^{+5103}_{-158} | $0.112^{+1.170}_{-0.086}$ |
| Alt. | -153 ± 11 | $1553.93^{+1859.60}_{-1153.71}$ | 2297^{+108}_{-144} | -2348^{+4863}_{-112} | $0.048^{+0.644}_{-0.038}$ |

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

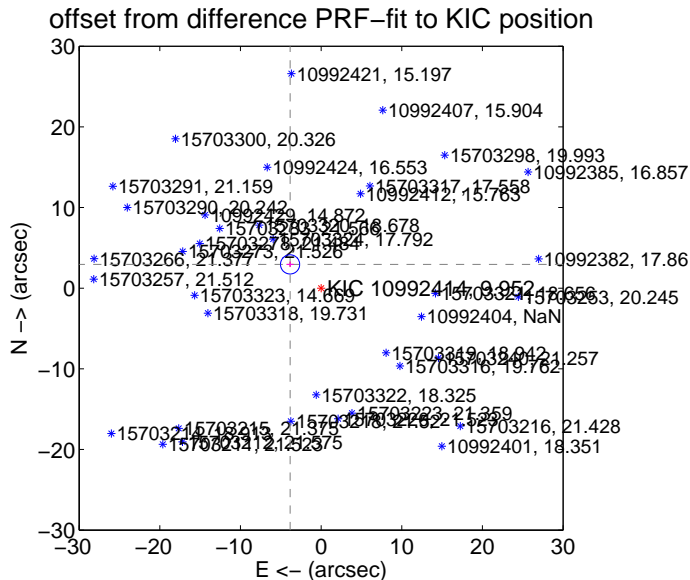
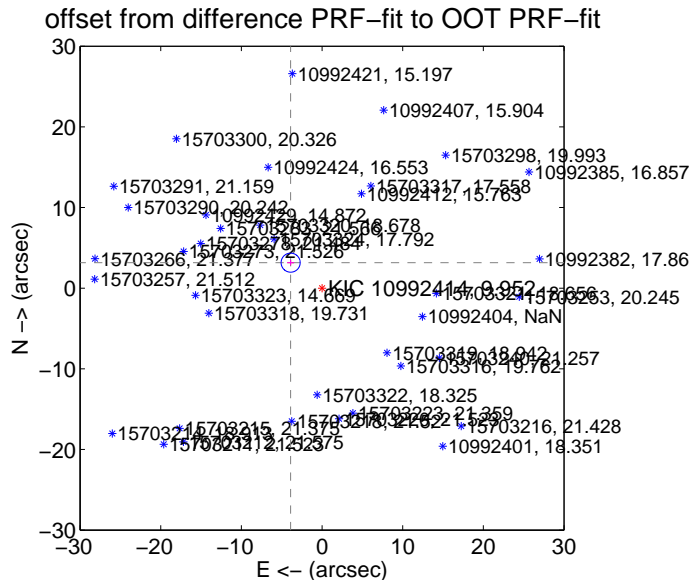
DV Centroid Data

Supplemental centroid analysis for 010992414-03. **Kepler magnitude: 9.95.** Transit SNR 0.12

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|-------------------------------------|---------------------|-------------------|-------------------|
| PRF-fit source offset from OOT | 5.015 \pm 0.394 | 12.73 | 3.893 \pm 0.429 | 3.162 \pm 0.334 |
| PRF-fit source offset from KIC position | 4.848 \pm 0.396 | 12.23 | 3.848 \pm 0.429 | 2.949 \pm 0.334 |
| photometric centroid source offset | — | — | — | — |



There are no photometric centroids

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

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

Q1 no difference image



Q1 no OOT image



Q2 no difference image



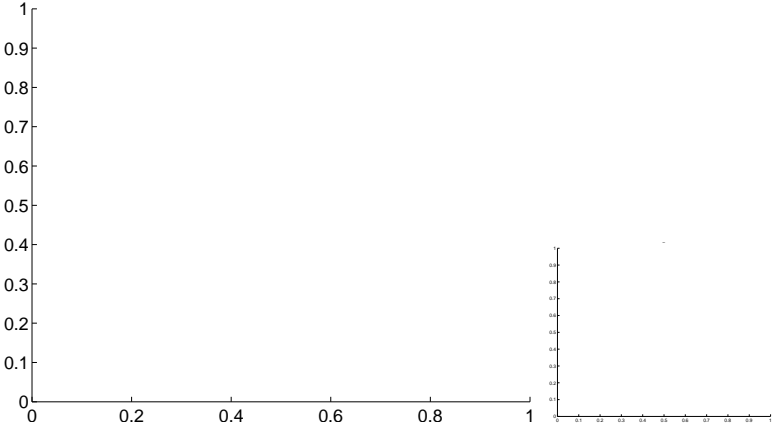
Q2 no OOT image



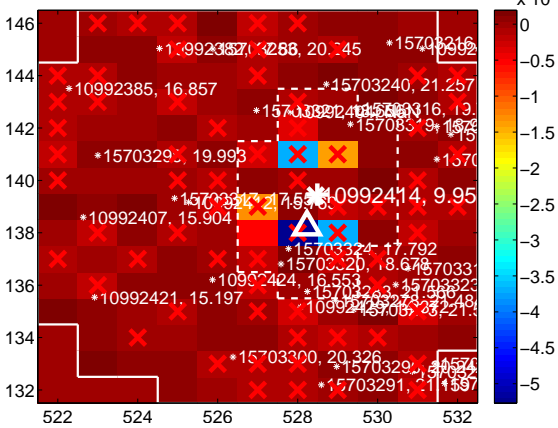
Q3 no difference image



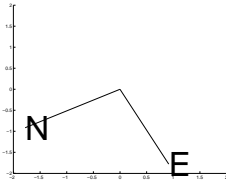
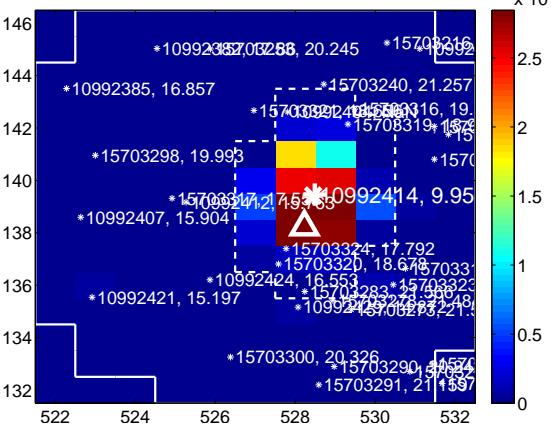
Q3 no OOT image



Q4 difference image. Poor Quality



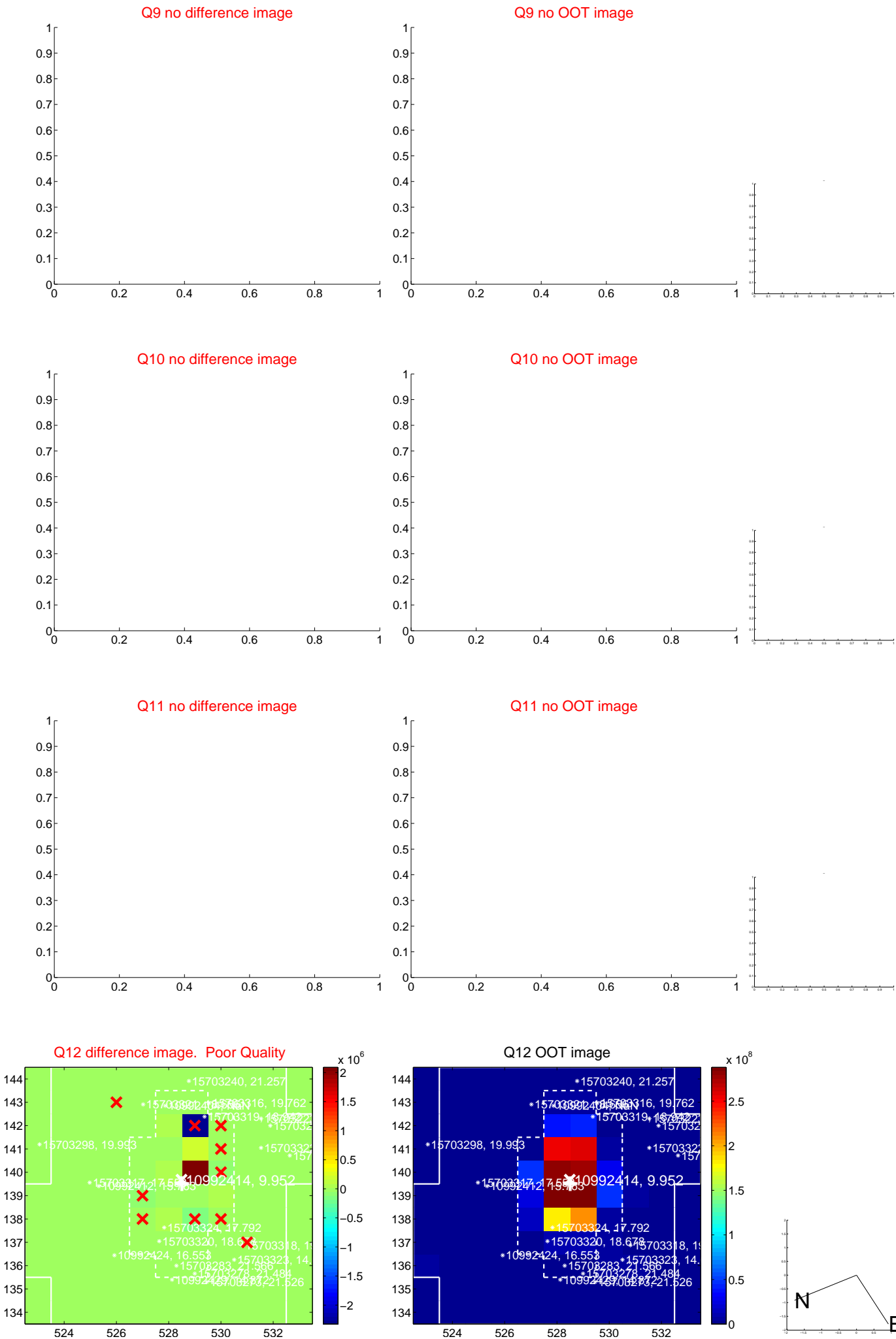
Q4 OOT image



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



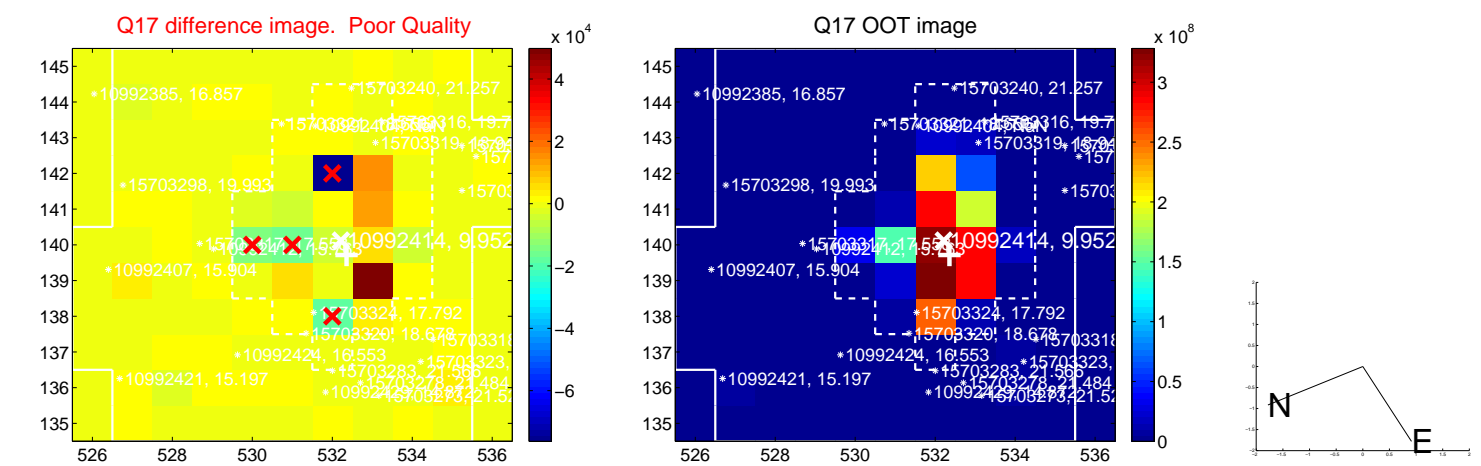
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



folded centroid time series figure for this object.

UKIRT Image

Declination

