

KIC 008494410

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})
008494410-01	OBS	3685.01	208.869082	273.692462	21258.1	4.562	363.8	368.2	0.99	5914	22.13	2.35
008494410-02	OBS	3685.02	7.259329	131.710232	255.9	6.384	33.1	35.3	0.99	5914	1.78	207.06
008494410-03	OBS	No	616.102398	306.176987	400.0	68.633	8.4	6.7	0.99	5914	1.99	0.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008494410-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED
008494410-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008494410-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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.

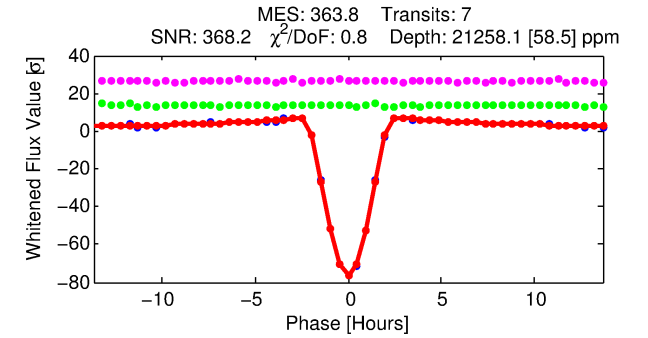
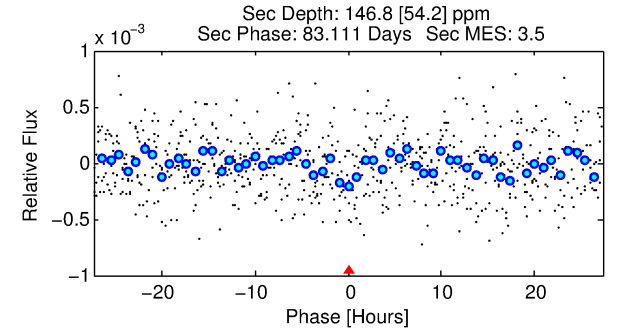
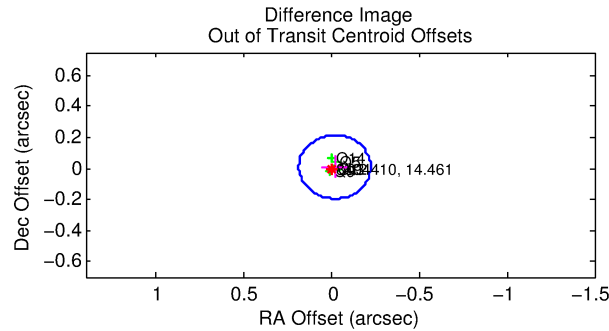
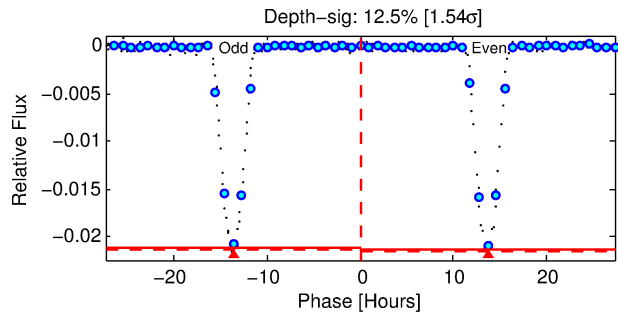
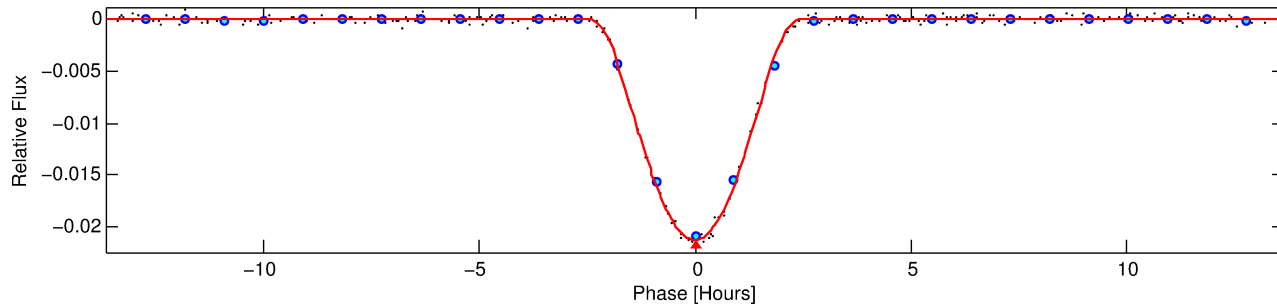
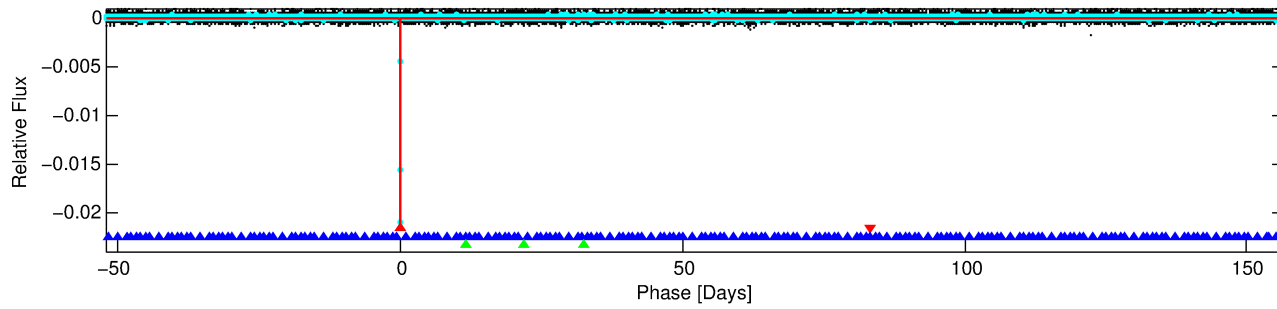
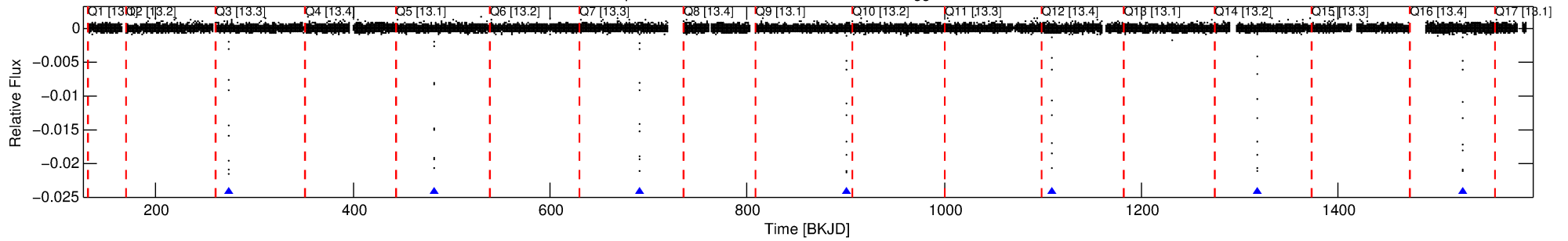
Ephemeris Match Information For 008494410-01

No Significant Match Found

DV One-Page Summary

KIC: 8494410 Candidate: 1 of 3 Period: 208.869 d
KOI: K03685.01 Corr: 1.000

Kp: 14.46 R*: 0.99 Rs Teff: 5914.0 K Logg: 4.42 Fe/H: -0.220



DV Fit Results:

Period = 208.86908 [0.00007] d
Epoch = 273.6925 [0.0002] BKJD
Rp/R* = 0.2054 [0.0188]
a/R* = 256.31 [3.58]
b = 0.96 [0.03]
Seff = 2.35 [0.85]
Teq = 316 [29] K
Rp = 22.13 [6.43] Re
a = 0.6743 [0.1575] AU
Ag = 74.99 [40.17] [1.84σ]
Teff = 1436 [154] K [7.15σ]

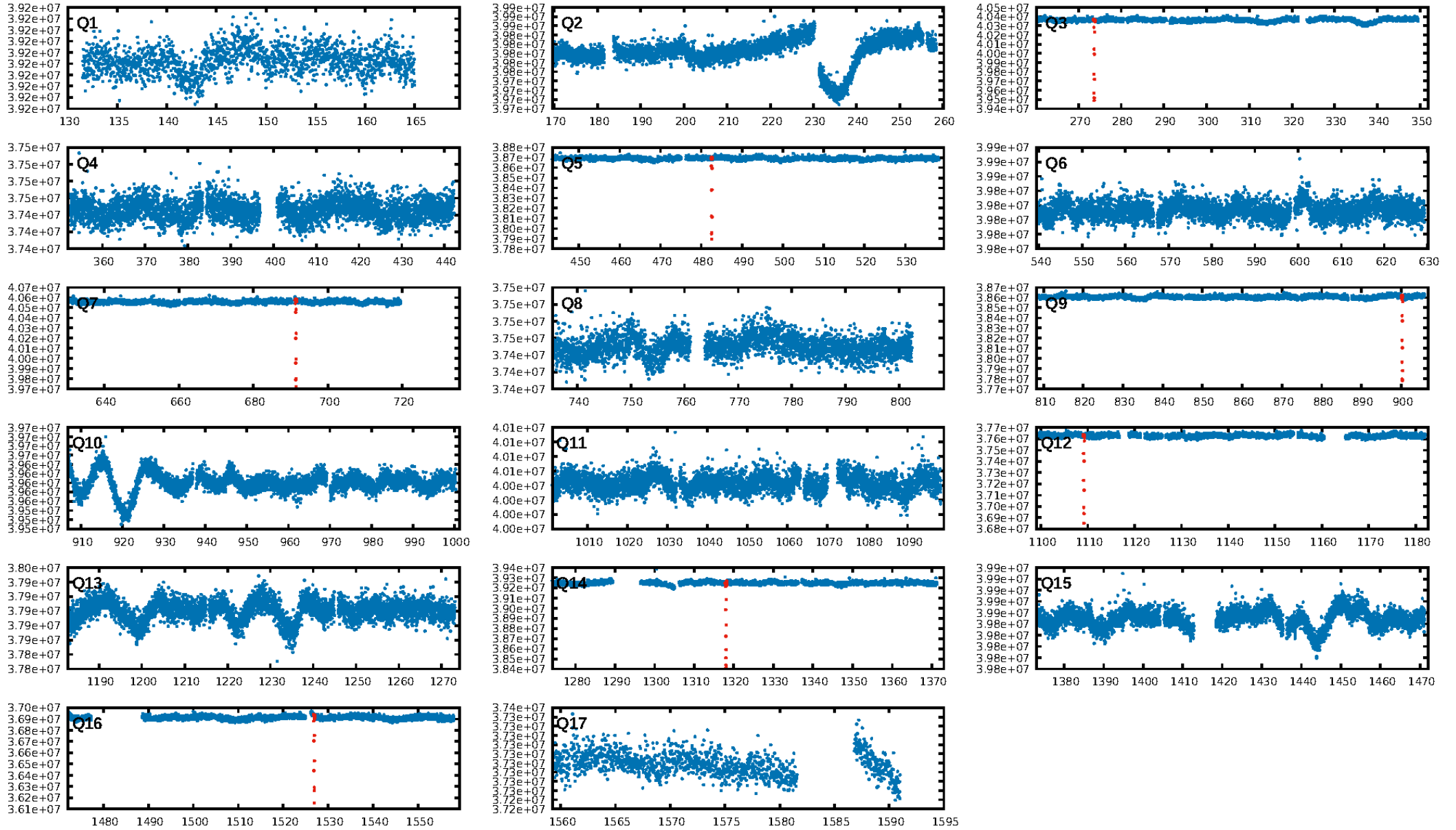
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [616.67σ]
LongPeriod-sig: 100.0% [142.09σ]
ModelChiSquare2-sig: 1.8%
ModelChiSquareGof-sig: 98.9%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 4.397
Centroid-sig: 28.1%
Centroid-so: 0.136 arcsec [4.28σ]
OotOffset-rm: 0.021 arcsec [0.31σ]
KicOffset-rm: 0.183 arcsec [2.59σ]
OotOffset-st: 1/1/1/2 [5]
KicOffset-st: 1/1/1/2 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 1.00 [5/5]

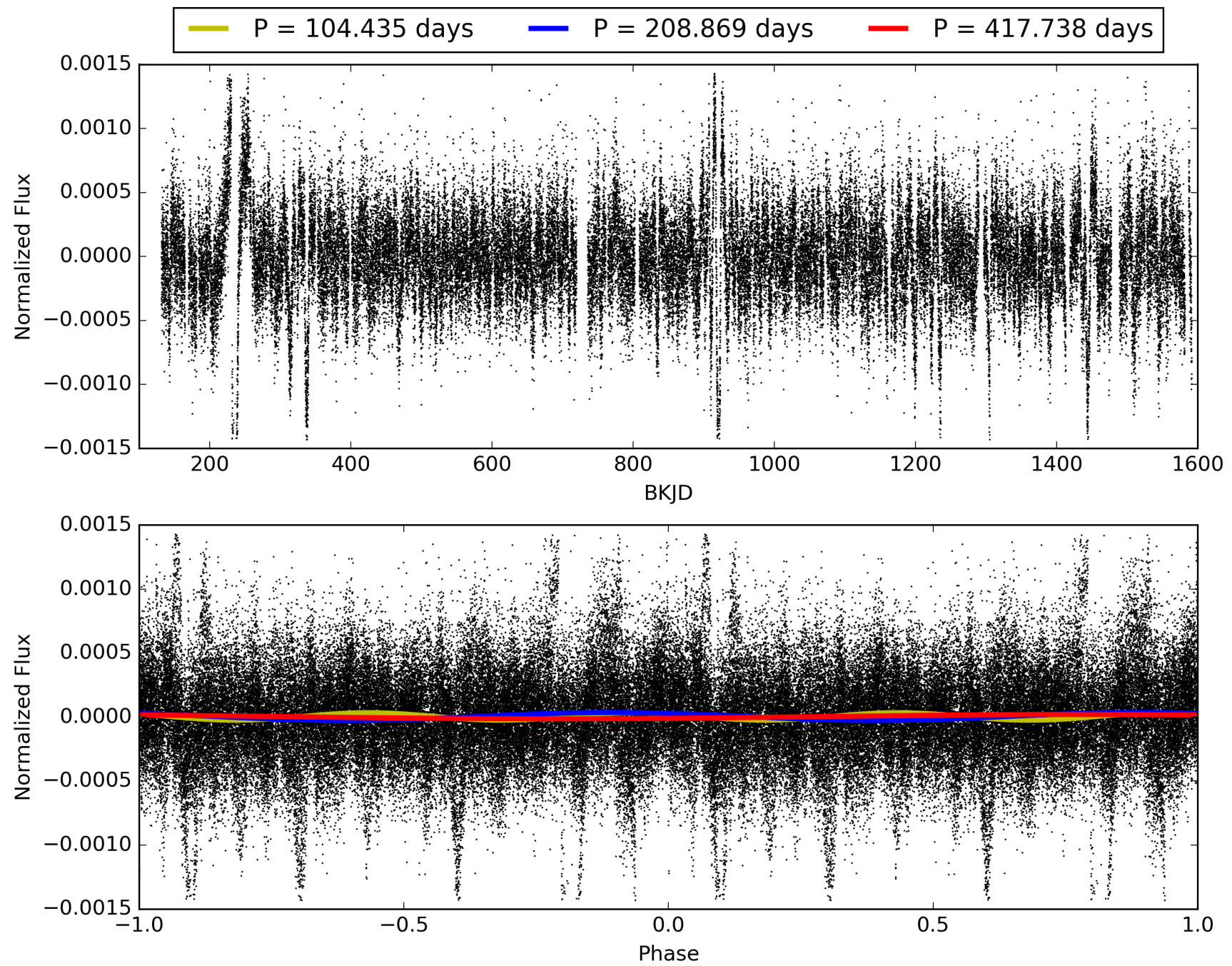
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:04:24 Z

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

TCE 008494410-01, PDC Light Curves

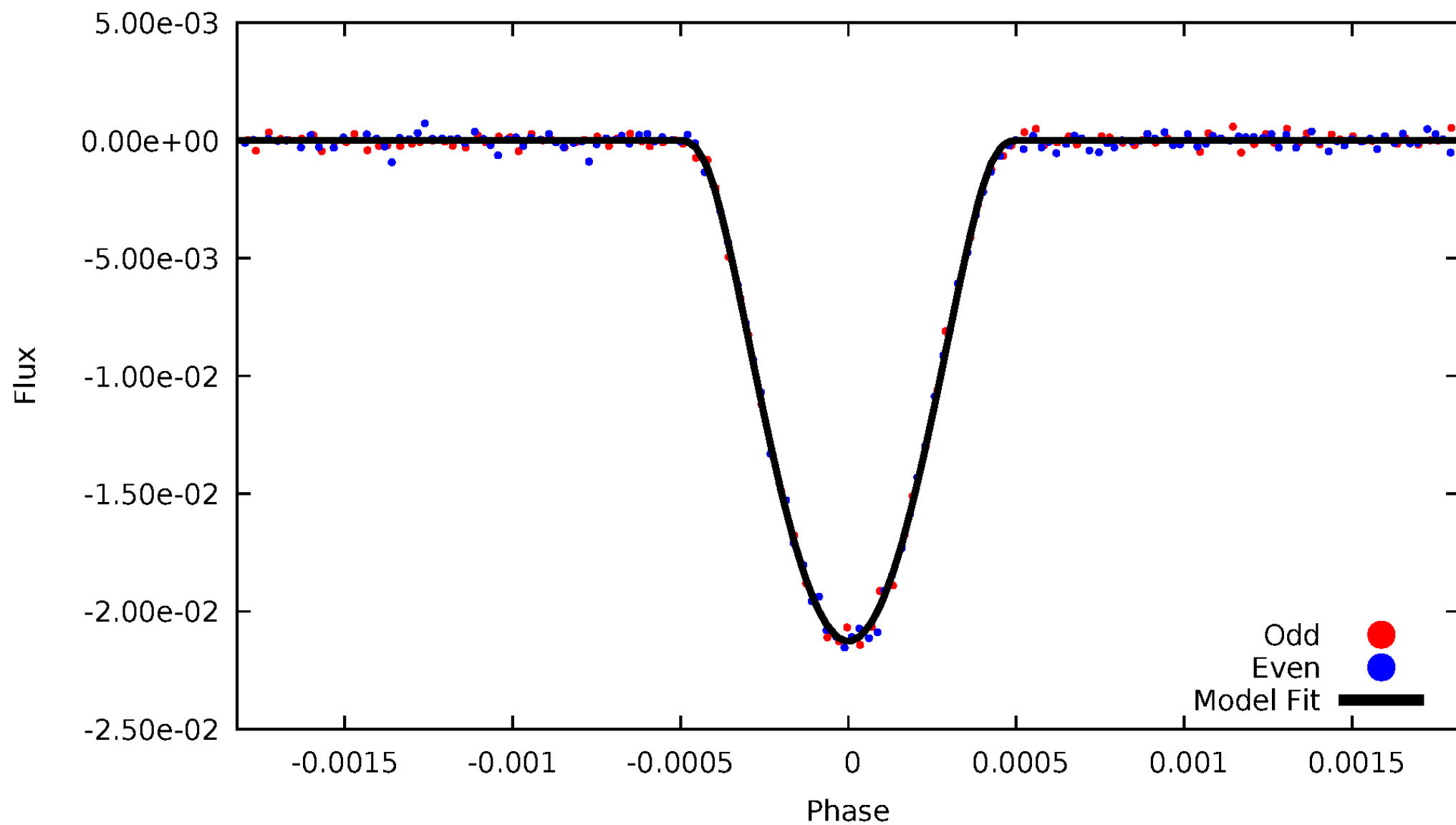


TCE 008494410-01



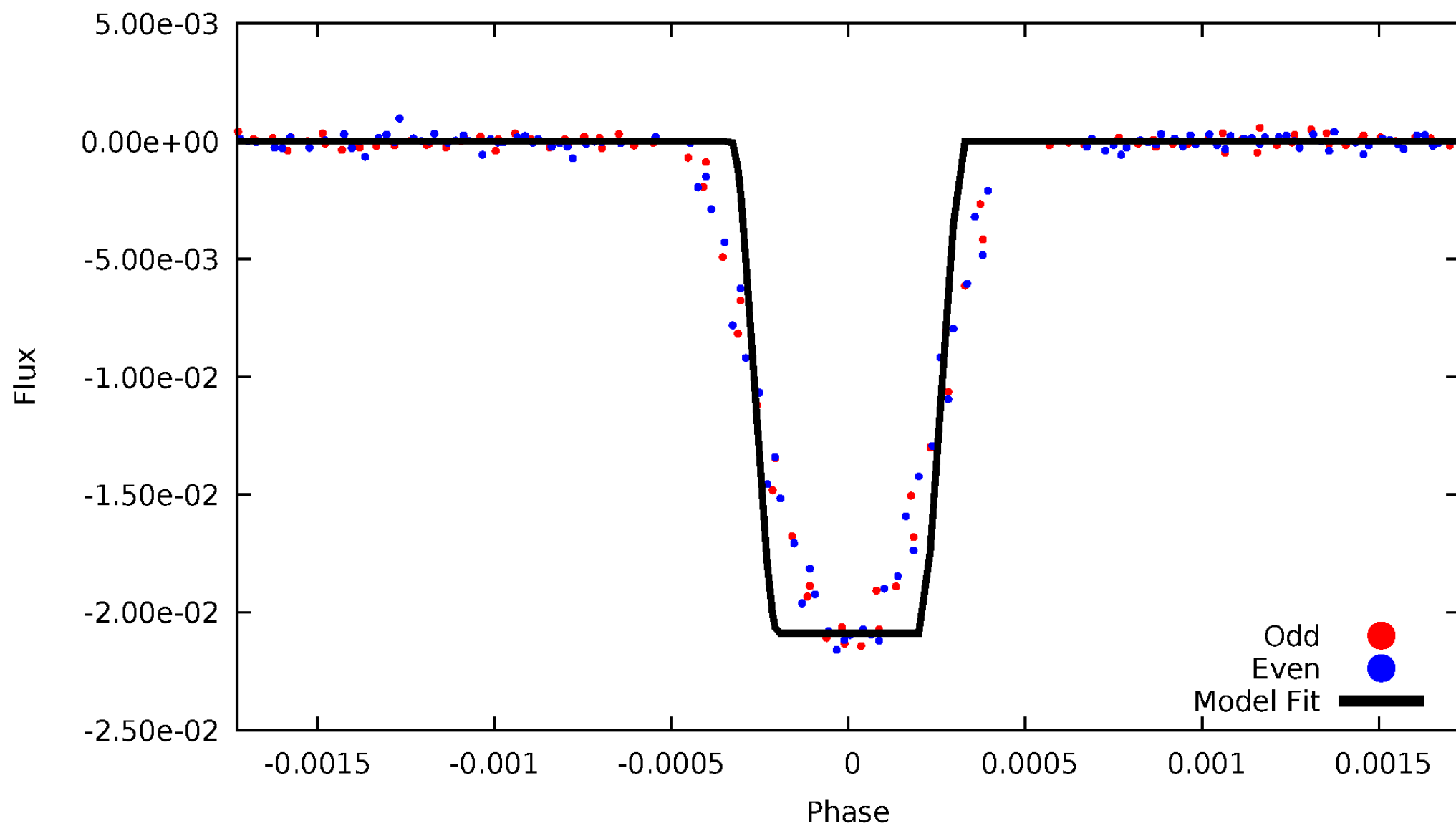
DV Odd/Even

TCE 008494410-01



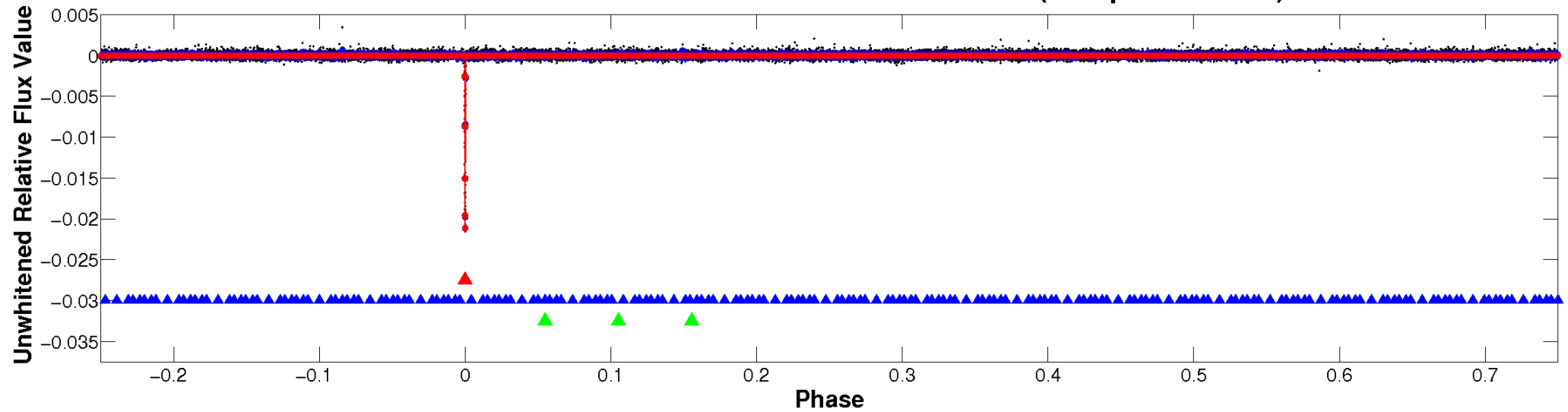
ALT Odd/Even

TCE 008494410-01

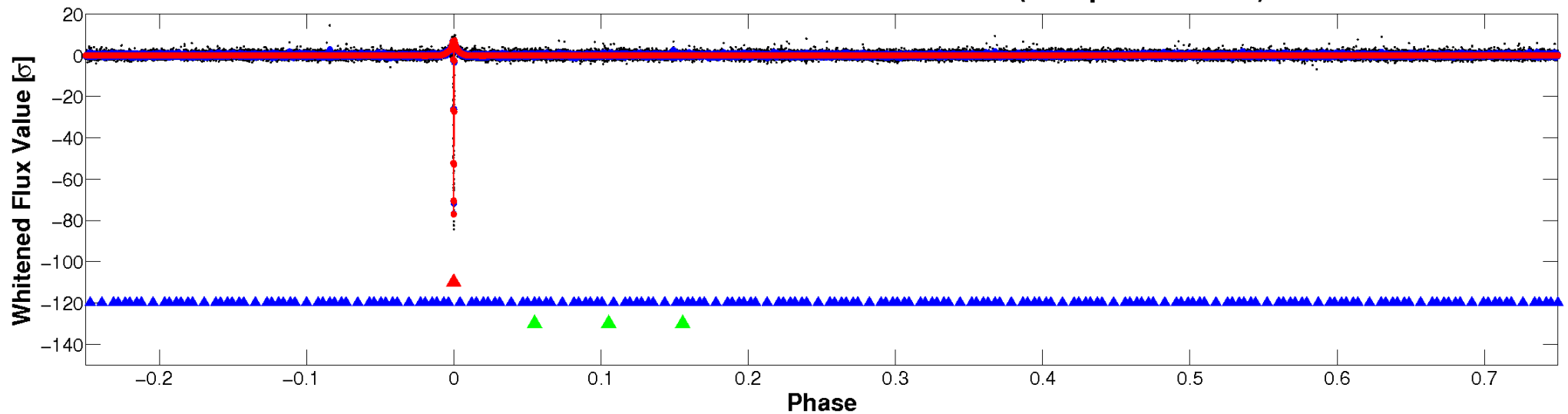


Non-Whitened Vs. Whitened Light Curve

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

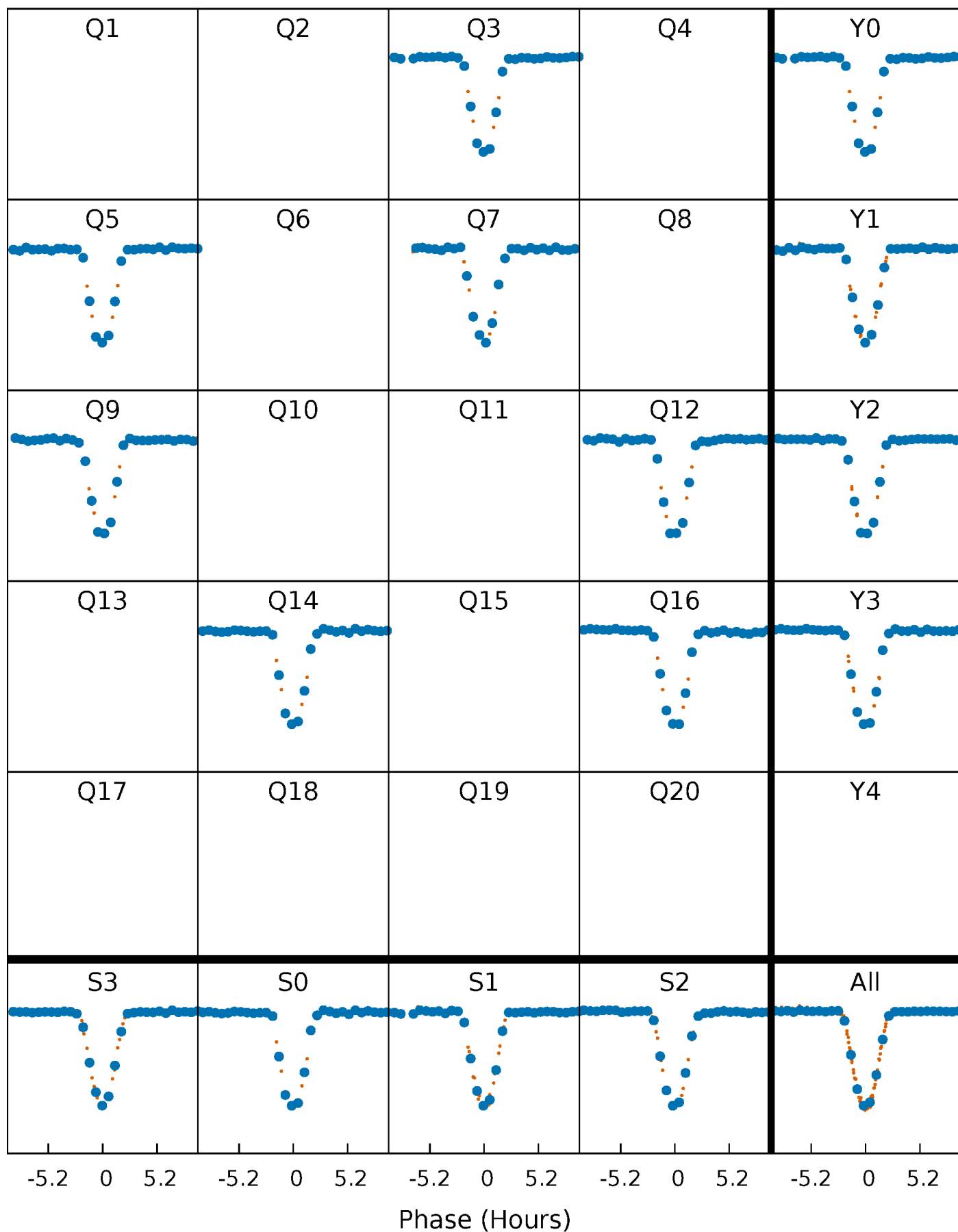


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



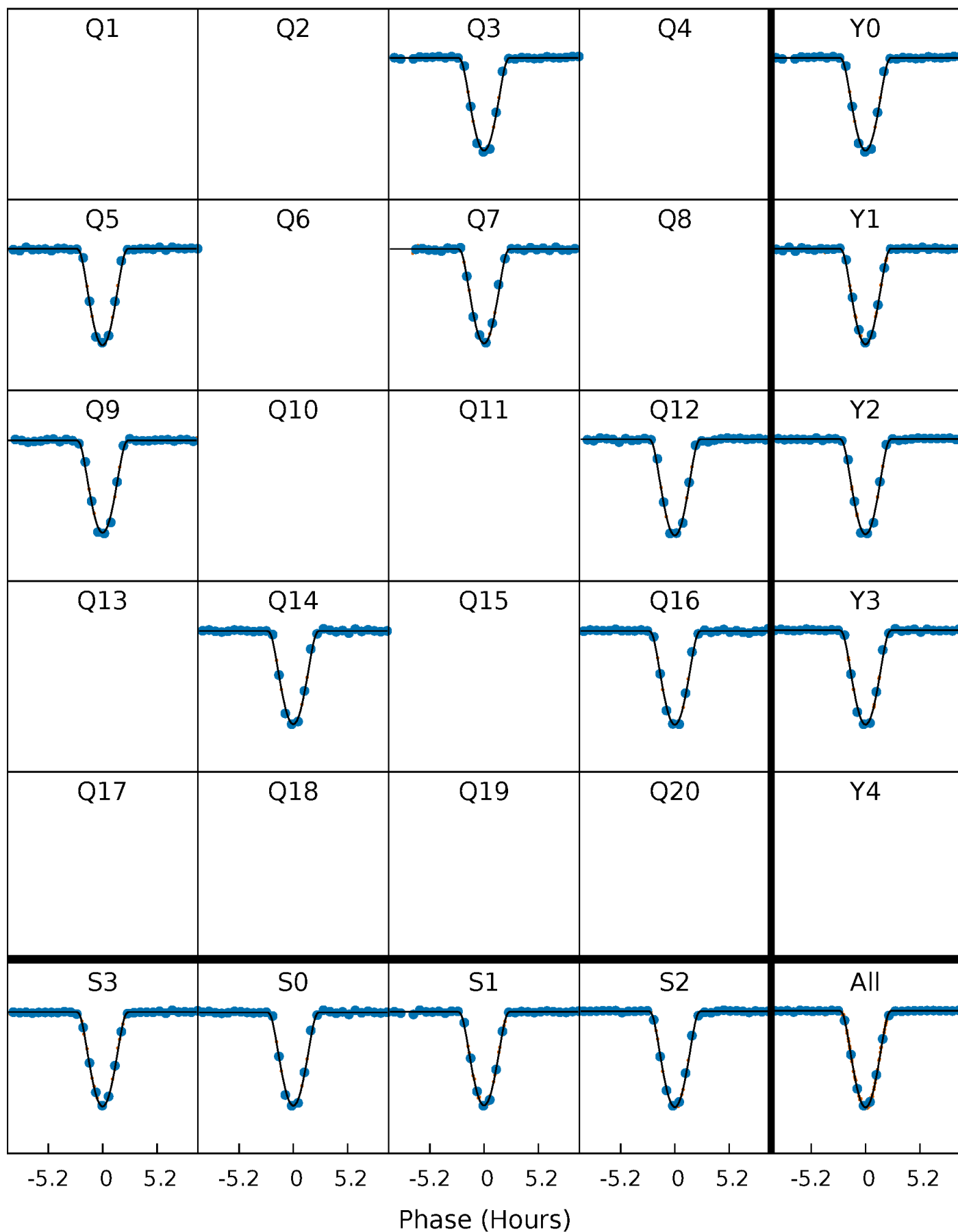
PDC Quarter-Phased Transit Curves

TCE 008494410-01 P=208.869082 Days $T_0=273.692462$ (BKJD)



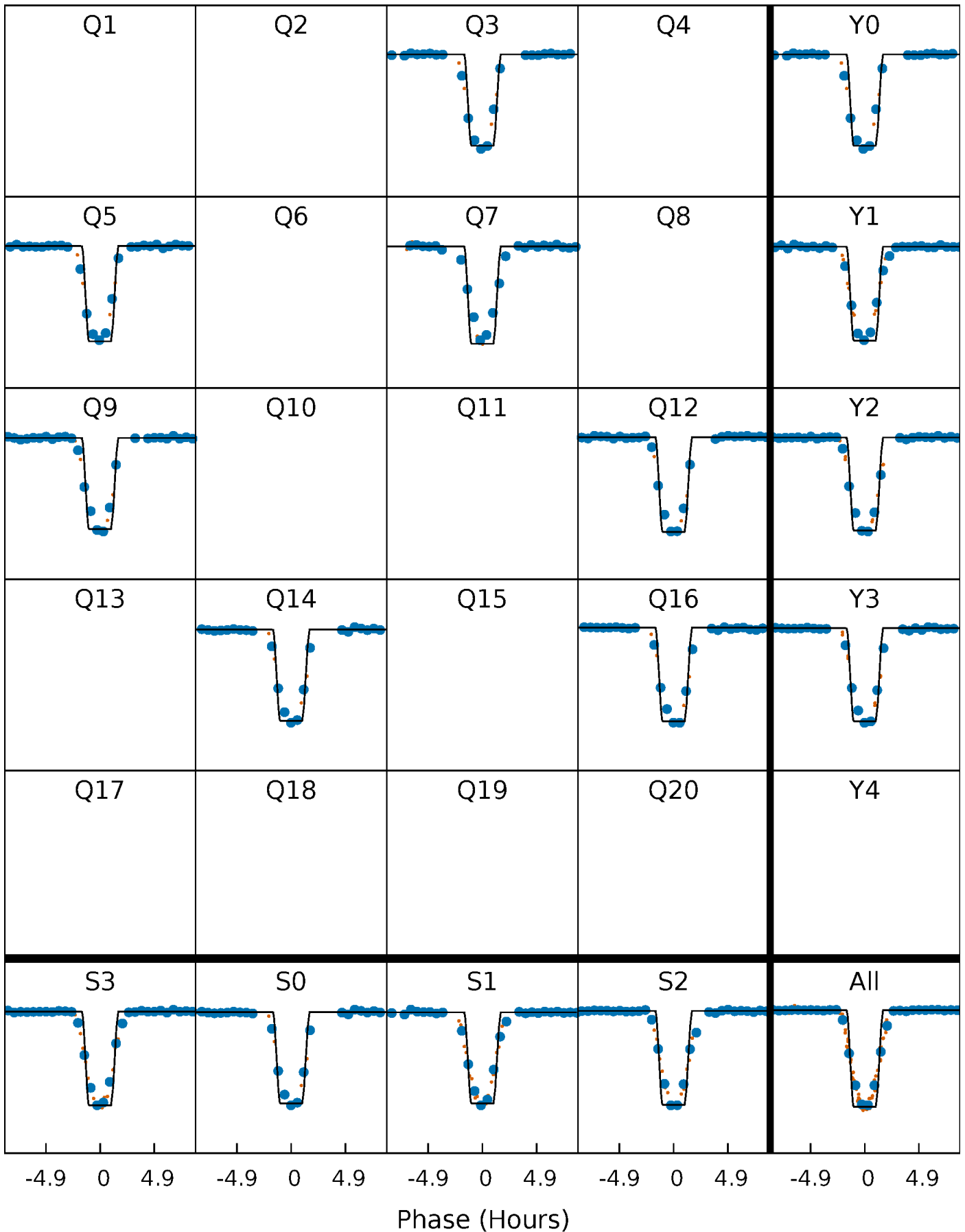
DV Quarter-Phased Transit Curves

TCE 008494410-01 P=208.869082 Days $T_0=273.692462$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

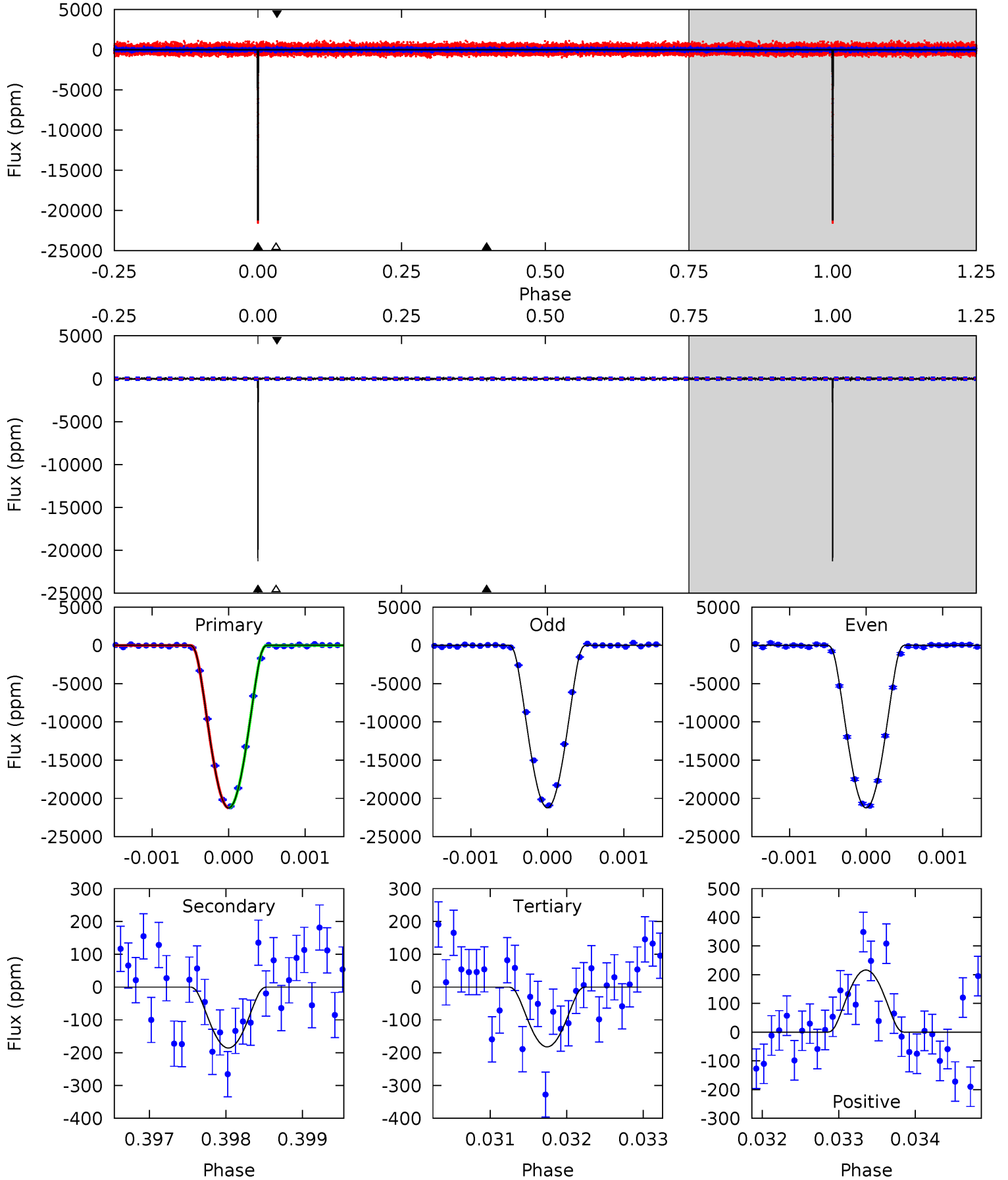
TCE 008494410-01 P=208.867435 Days $T_0=273.697105$ (BKJD)



DV Model-Shift Uniqueness Test

008494410-01, P = 208.869082 Days, E = 64.823380 Days

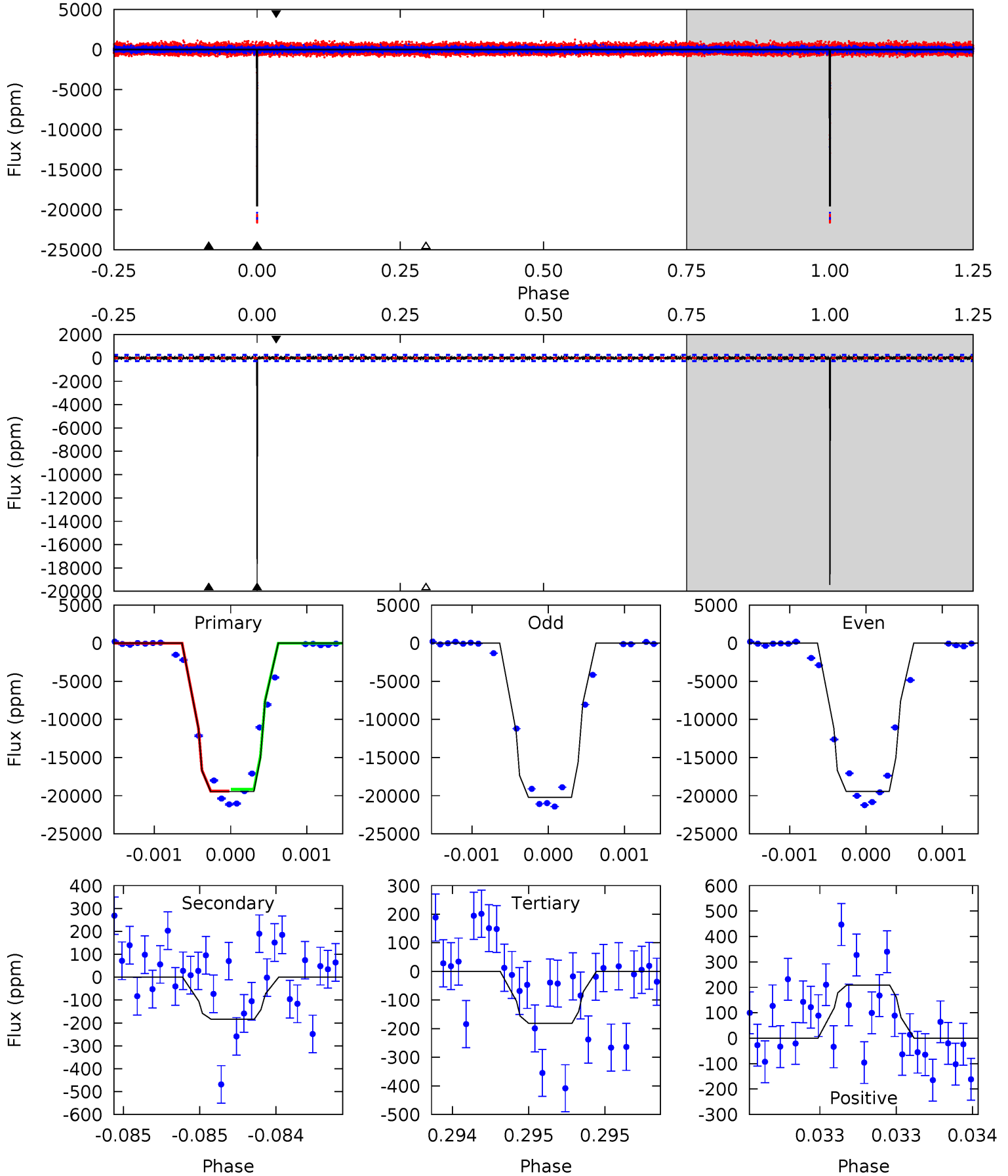
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
701.3	6.14	6.02	7.15	5.45	3.29	1.67	695.3	694.2	0.12	-1.01	0.21	0.99	0.01	0.18



Alt Model-Shift Uniqueness Test

008494410-01, P = 208.867435 Days, E = 64.829670 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
402.0	3.80	3.76	4.31	5.54	3.43	1.60	398.3	397.7	0.05	-0.51	7.36	0.99	0.01	2.34



Stellar Parameters For KIC 008494410

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5914^{+160}_{-178}	$4.421^{+0.101}_{-0.188}$	$-0.220^{+0.300}_{-0.300}$	$0.987^{+0.272}_{-0.146}$	$0.938^{+0.120}_{-0.109}$	$1.374^{+0.625}_{-0.686}$
	+3%/-3%	+2%/-4%	+136%/-136%	+28%/-15%	+13%/-12%	+46%/-50%
Source	PHO1	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 008494410-01 / KOI 3685.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-186 ± 30	$22.64^{+3.95}_{-2.98}$	446^{+29}_{-24}	2403^{+82}_{-71}	88^{+36}_{-23}
Alt.	-184 ± 48	$15.97^{+2.89}_{-2.66}$	445^{+30}_{-24}	2619^{+128}_{-125}	178^{+88}_{-64}

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 $A_{obs} \gg 1.0$

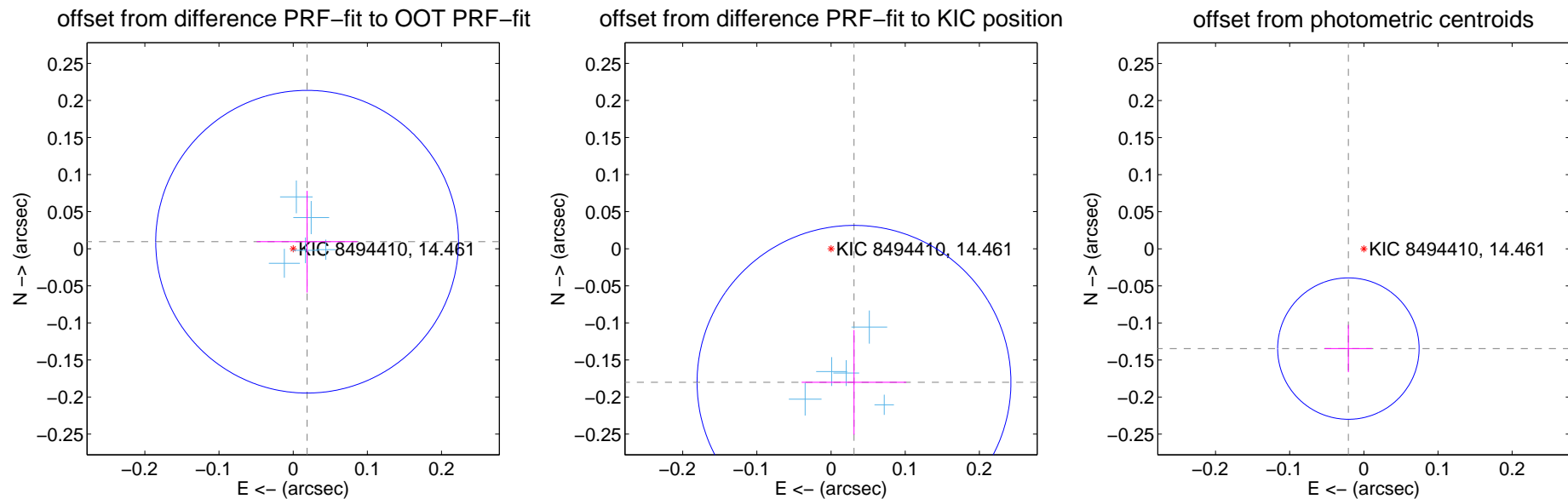
DV Centroid Data

Supplemental centroid analysis for 008494410-01. Kepler magnitude: 14.46. Transit SNR 368.24

There are 5 quarters with good PRF difference image offsets

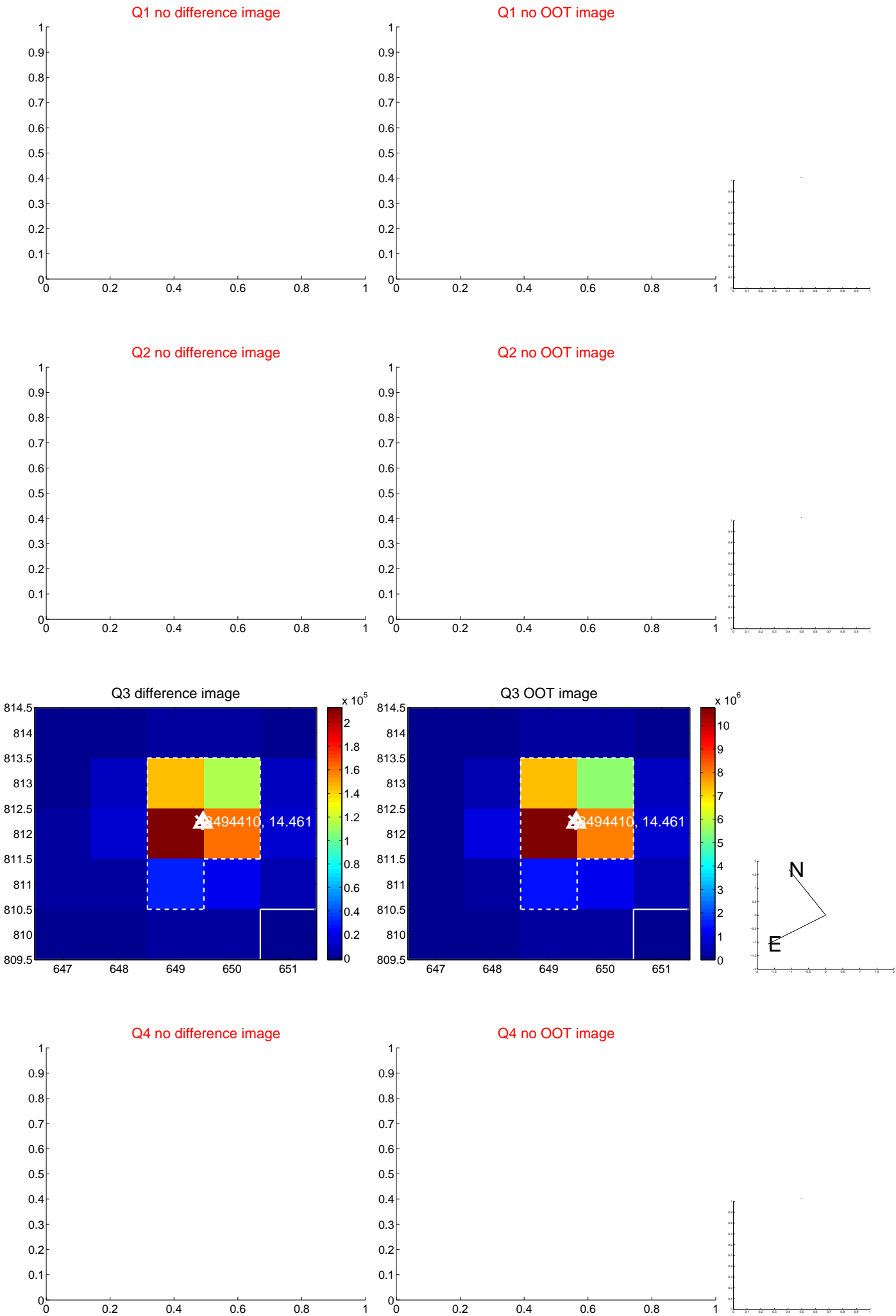
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.021 ± 0.068	0.31	-0.019 ± 0.068	0.009 ± 0.069
PRF-fit source offset from KIC position	0.183 ± 0.071	2.59	-0.031 ± 0.071	-0.180 ± 0.071
photometric centroid source offset	0.14 ± 0.03	4.28	0.02 ± 0.03	-0.13 ± 0.03

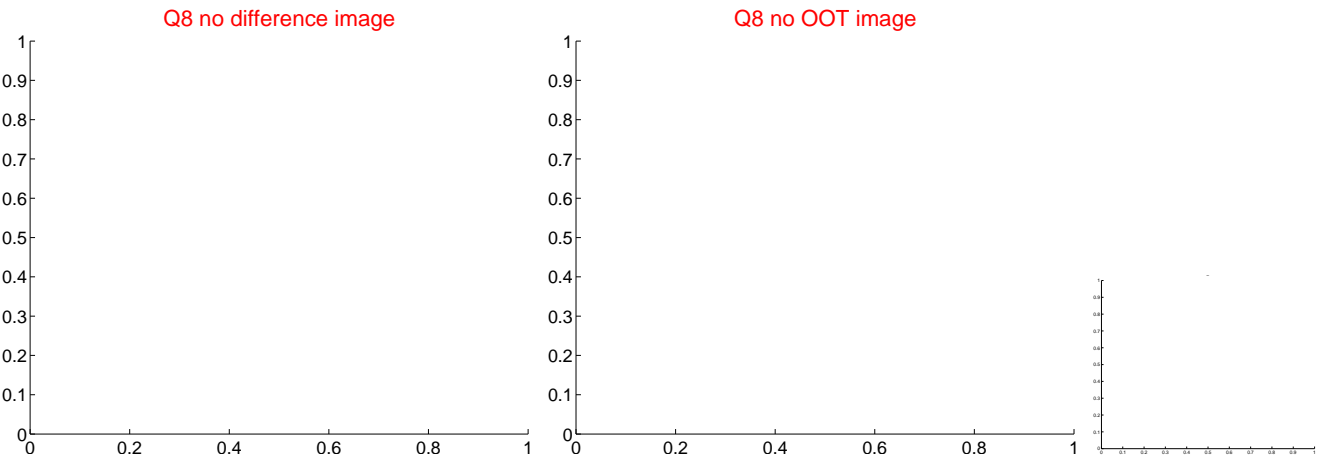
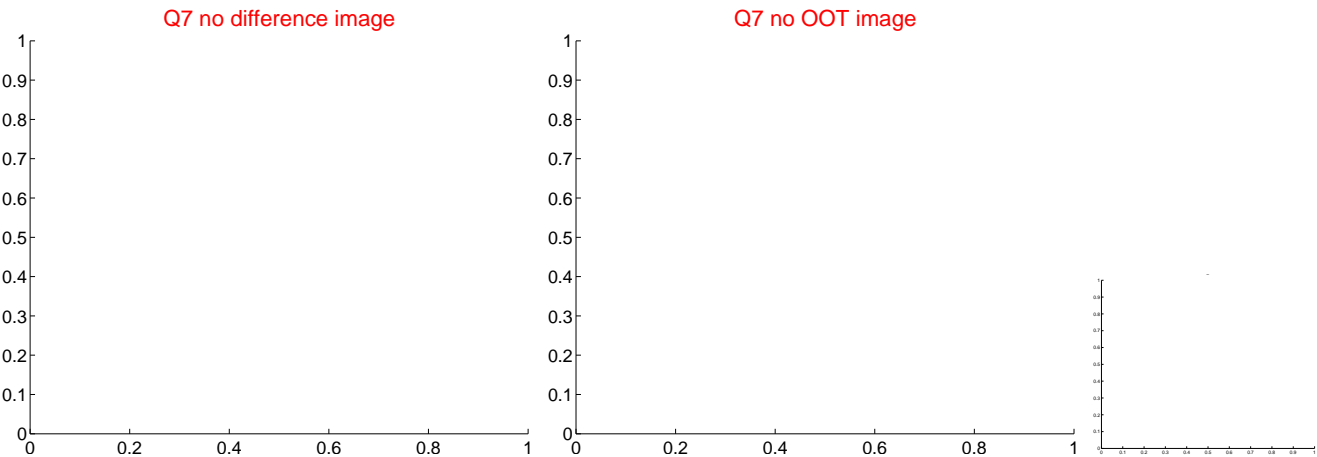
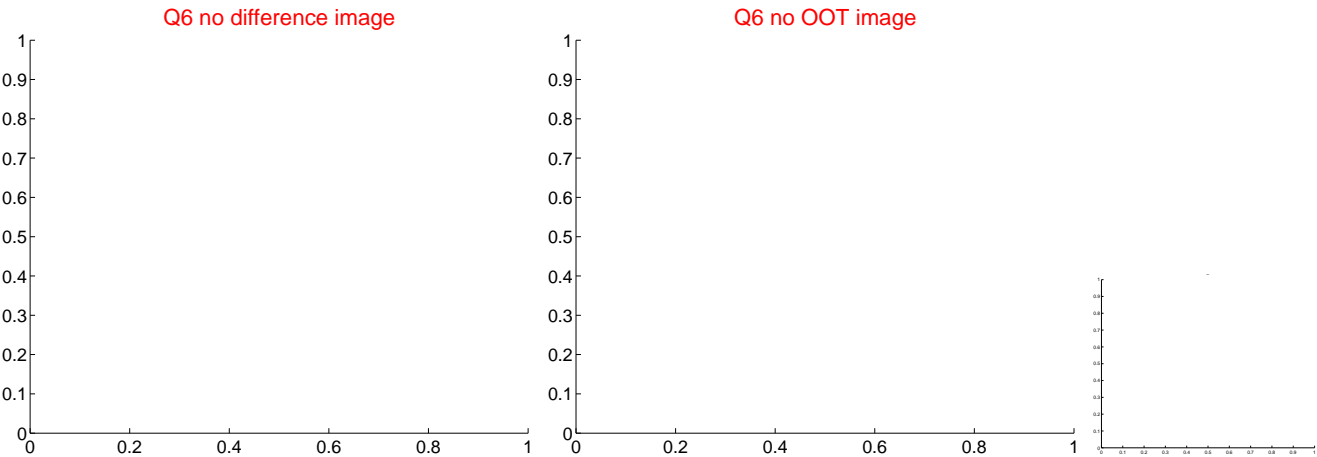
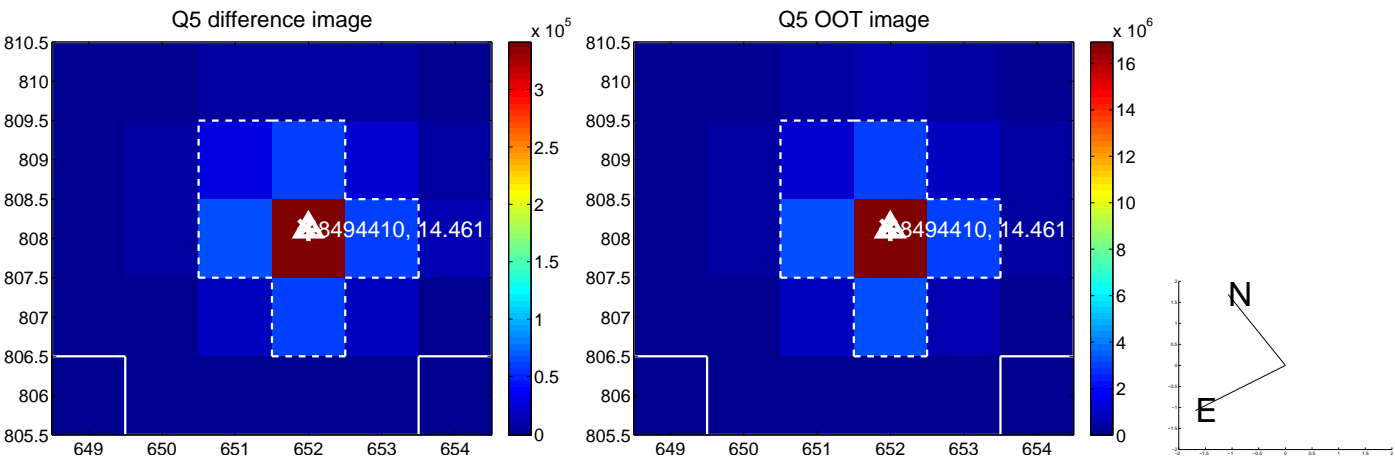


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

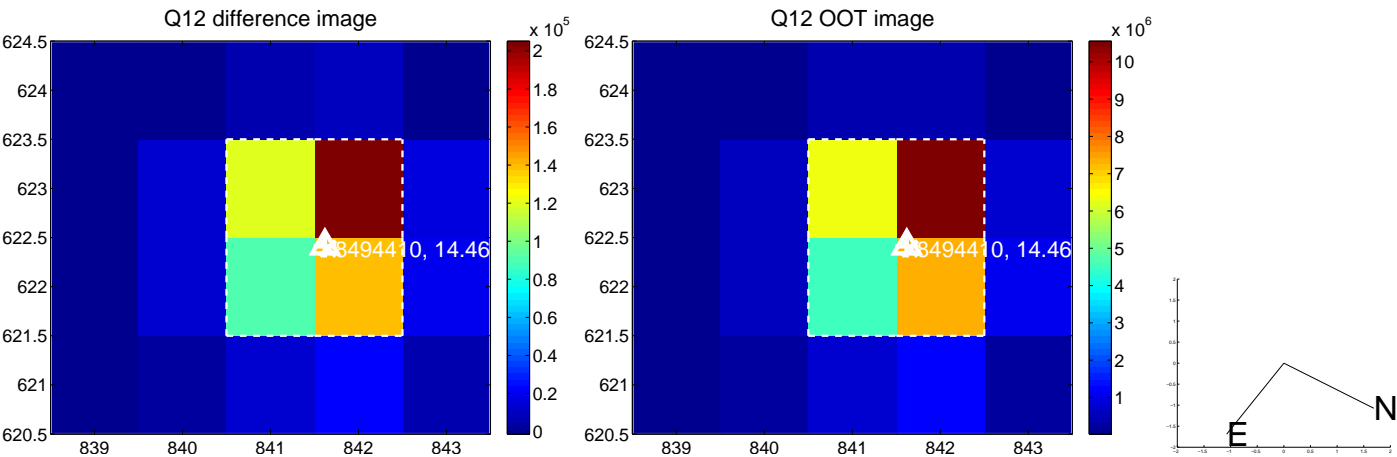
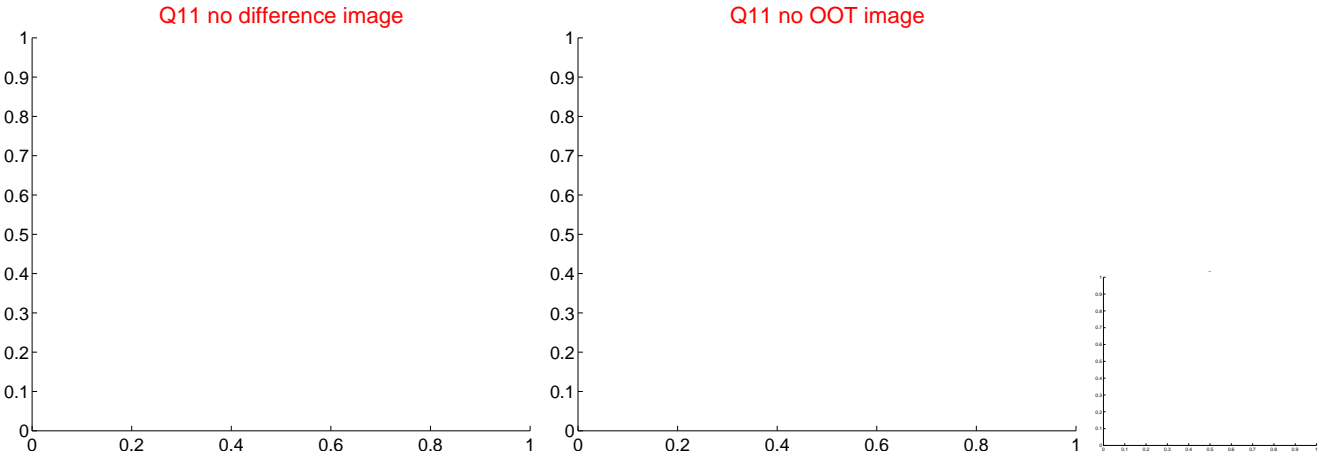
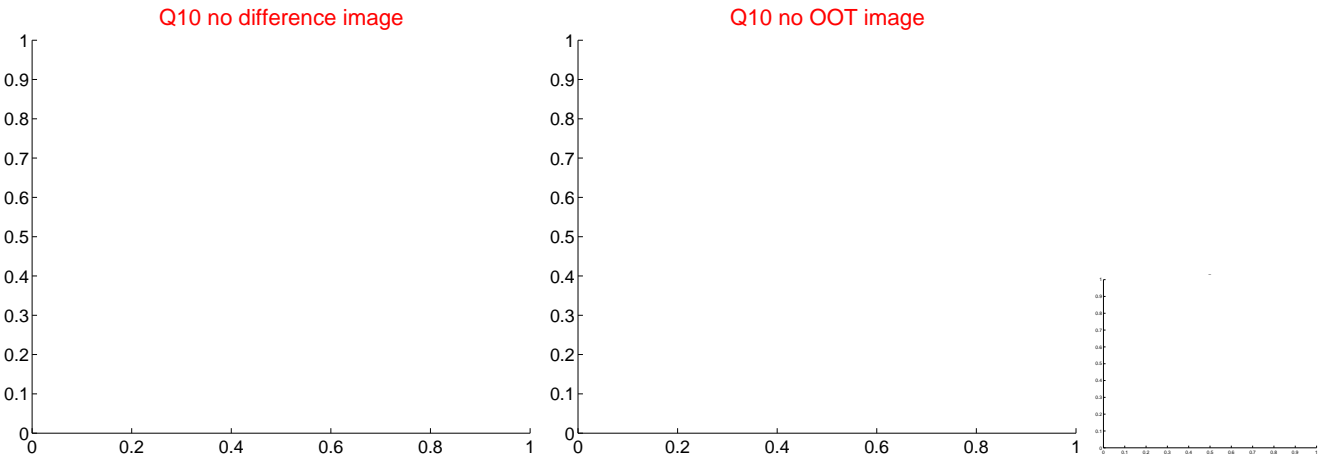
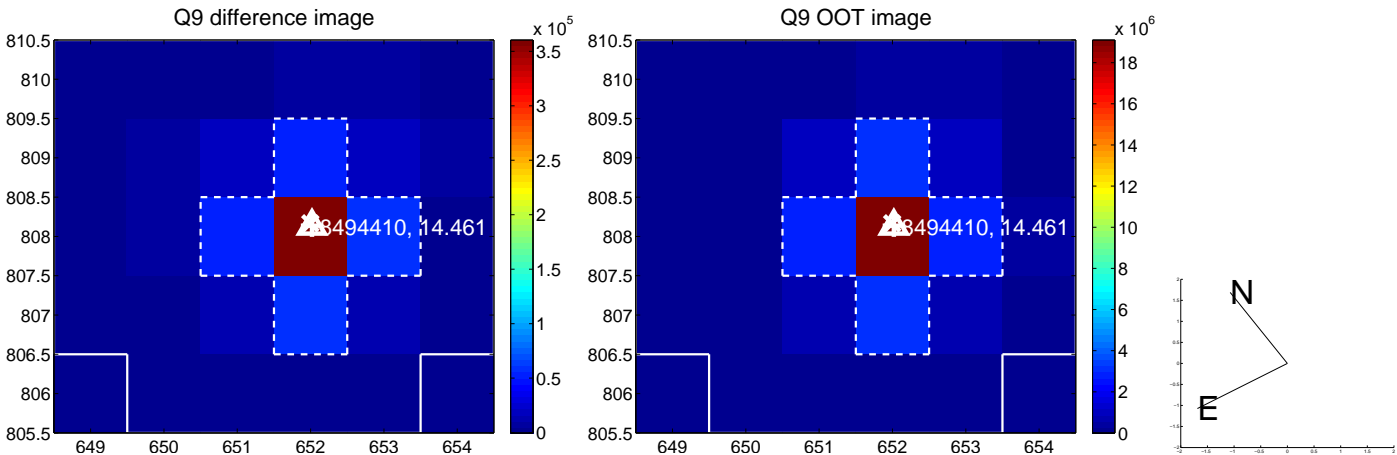
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



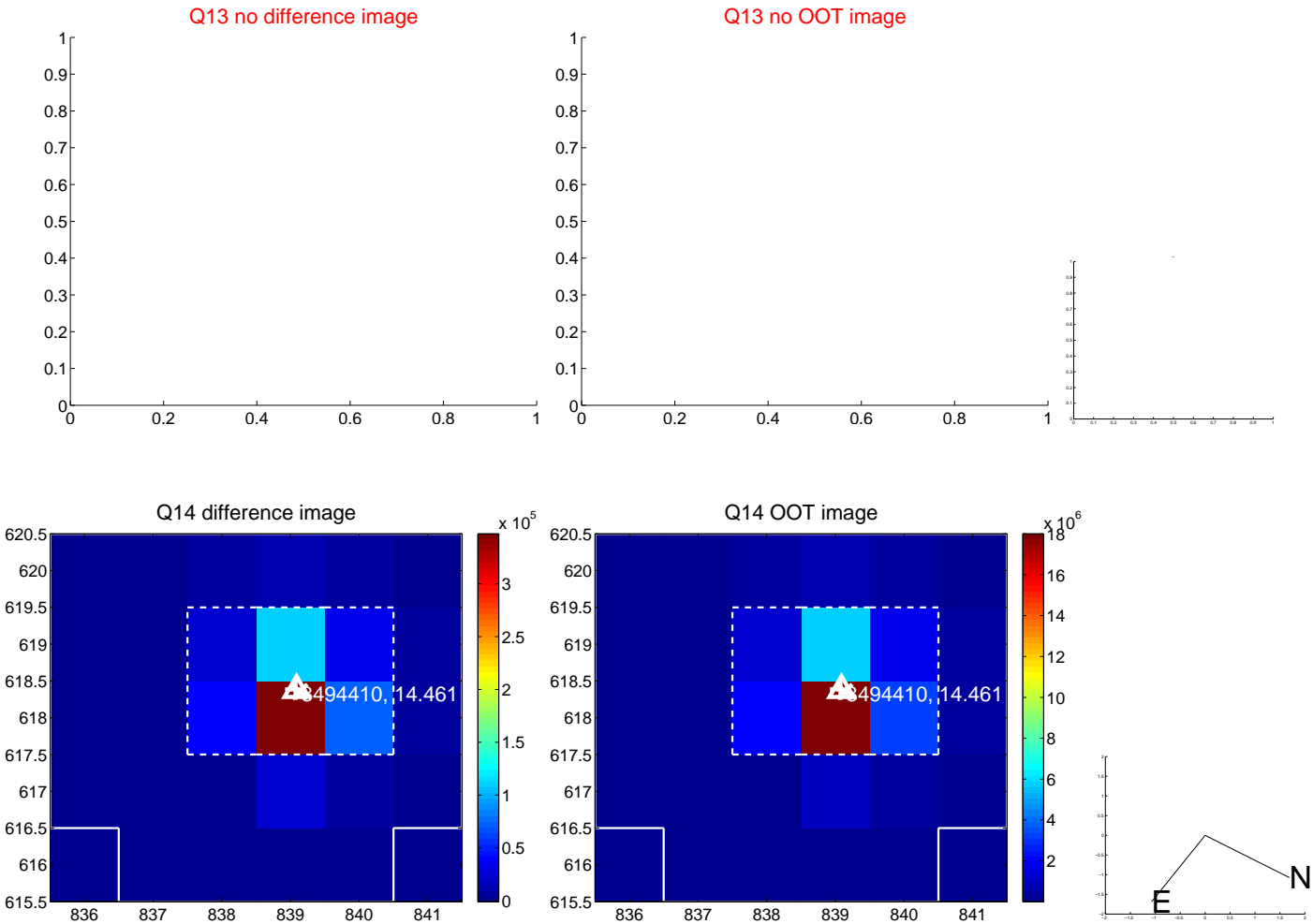
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



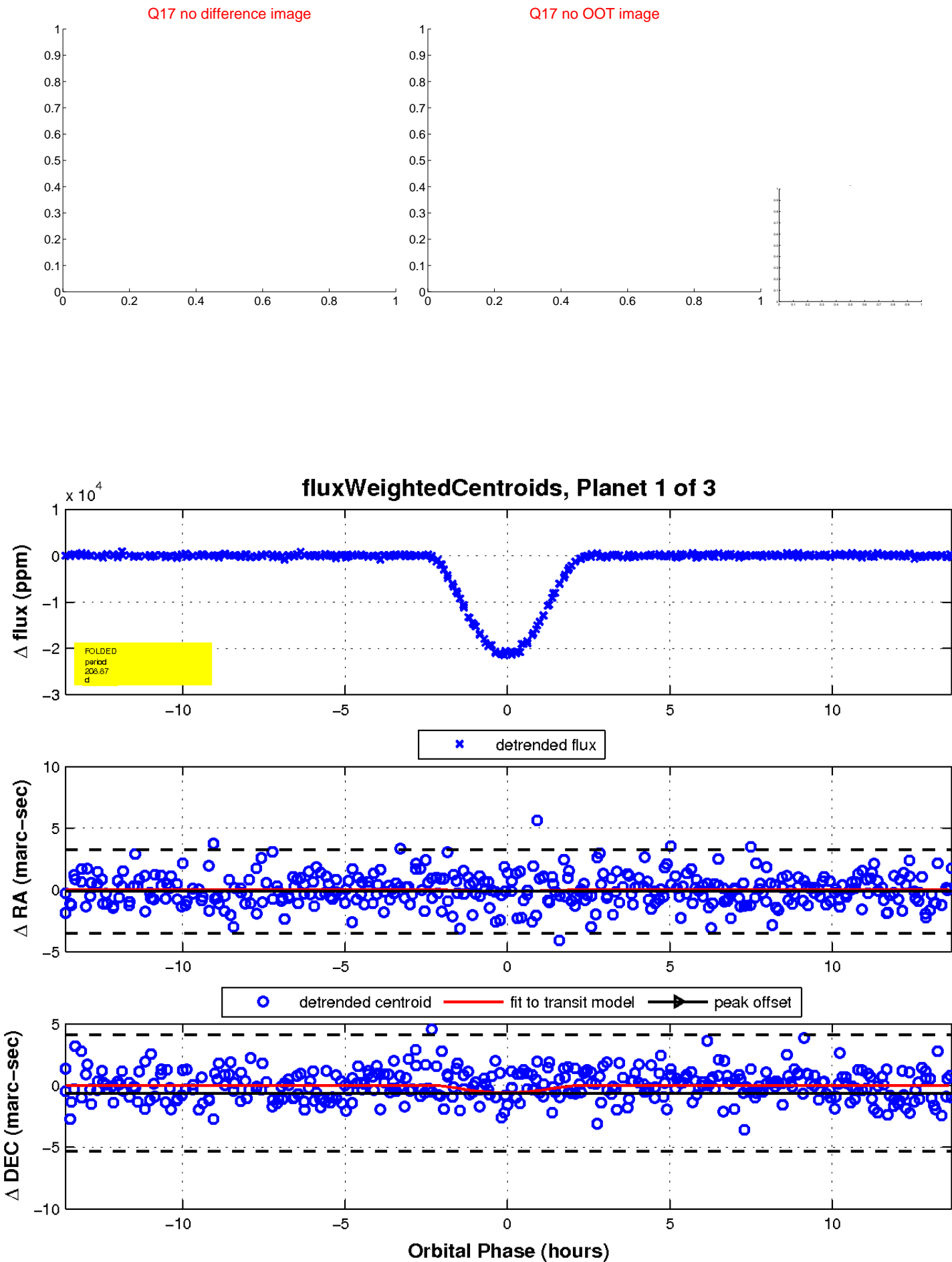
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

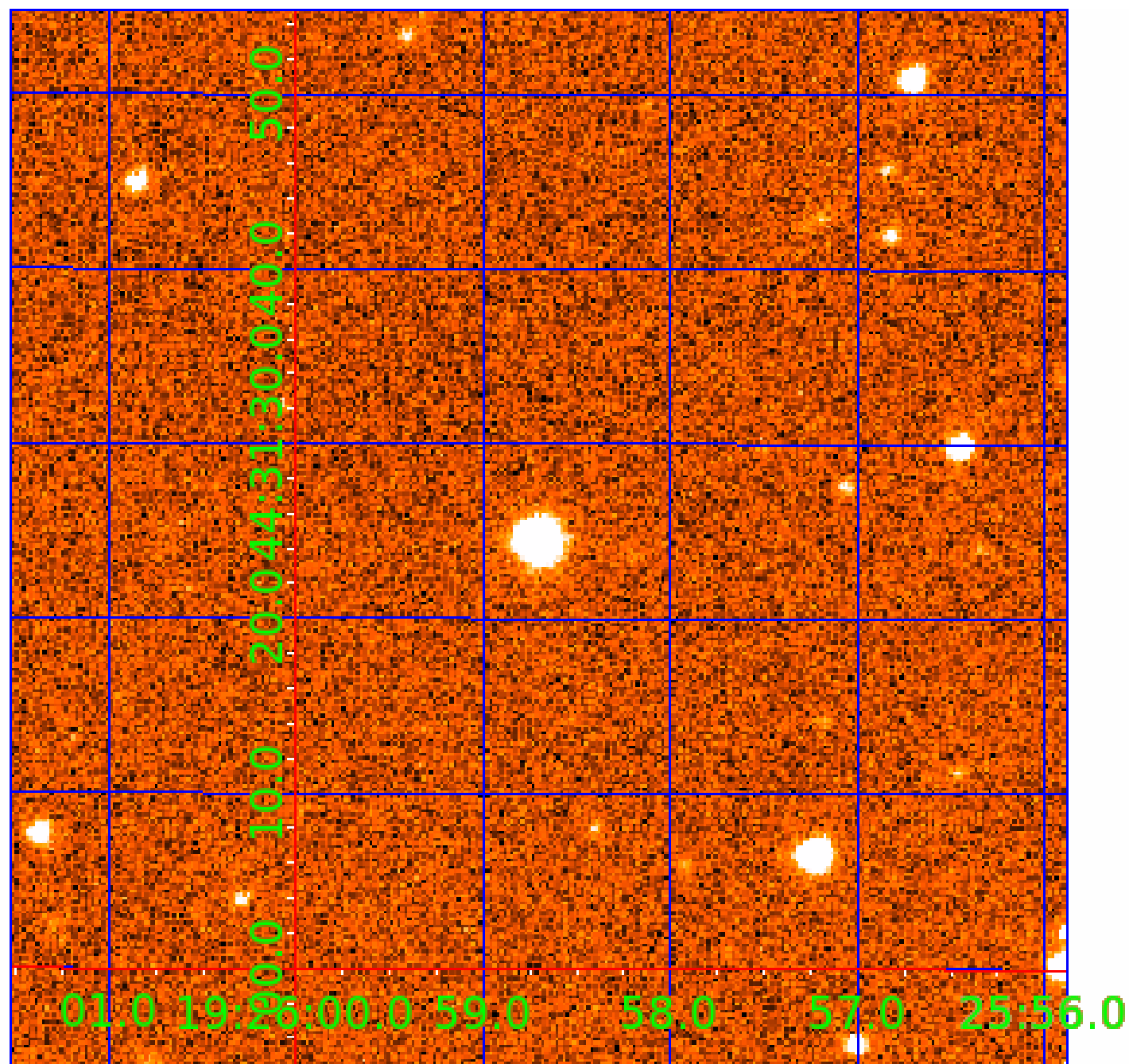


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008494410

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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008494410-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008494410-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

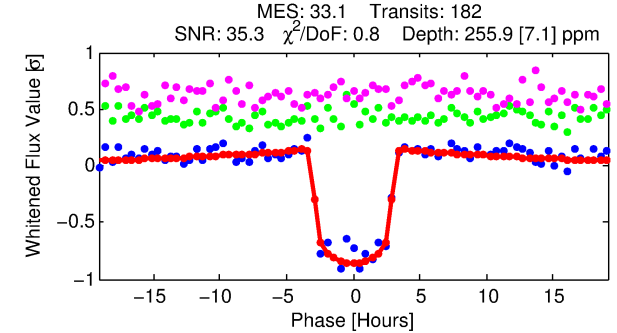
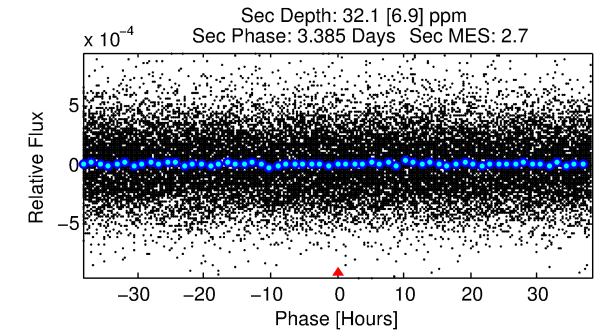
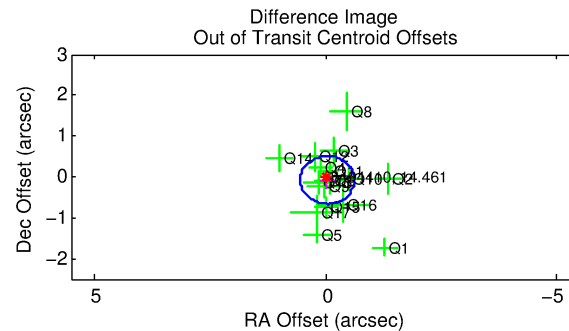
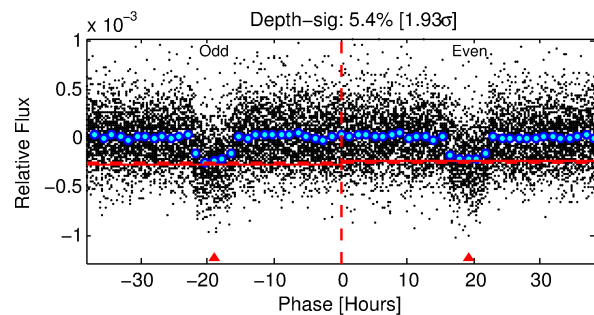
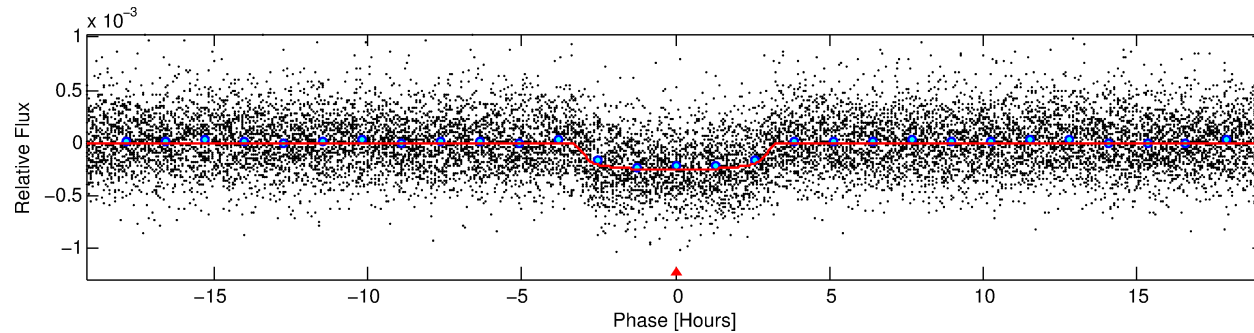
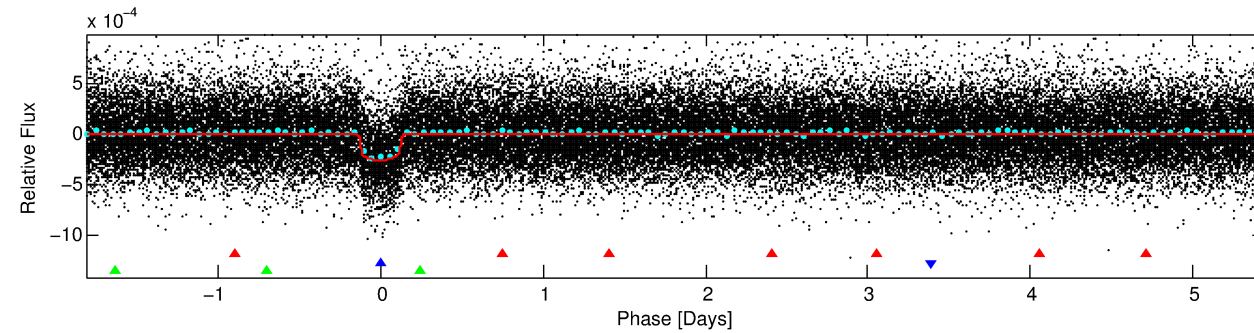
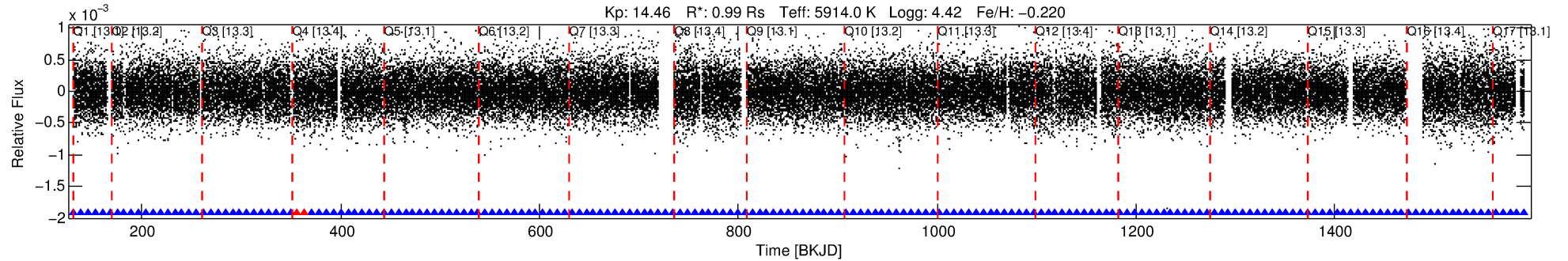
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008494410-02

No Significant Match Found

DV One-Page Summary

KIC: 8494410 Candidate: 2 of 3 Period: 7.259 d
KOI: K03685.02 Corr: 0.985



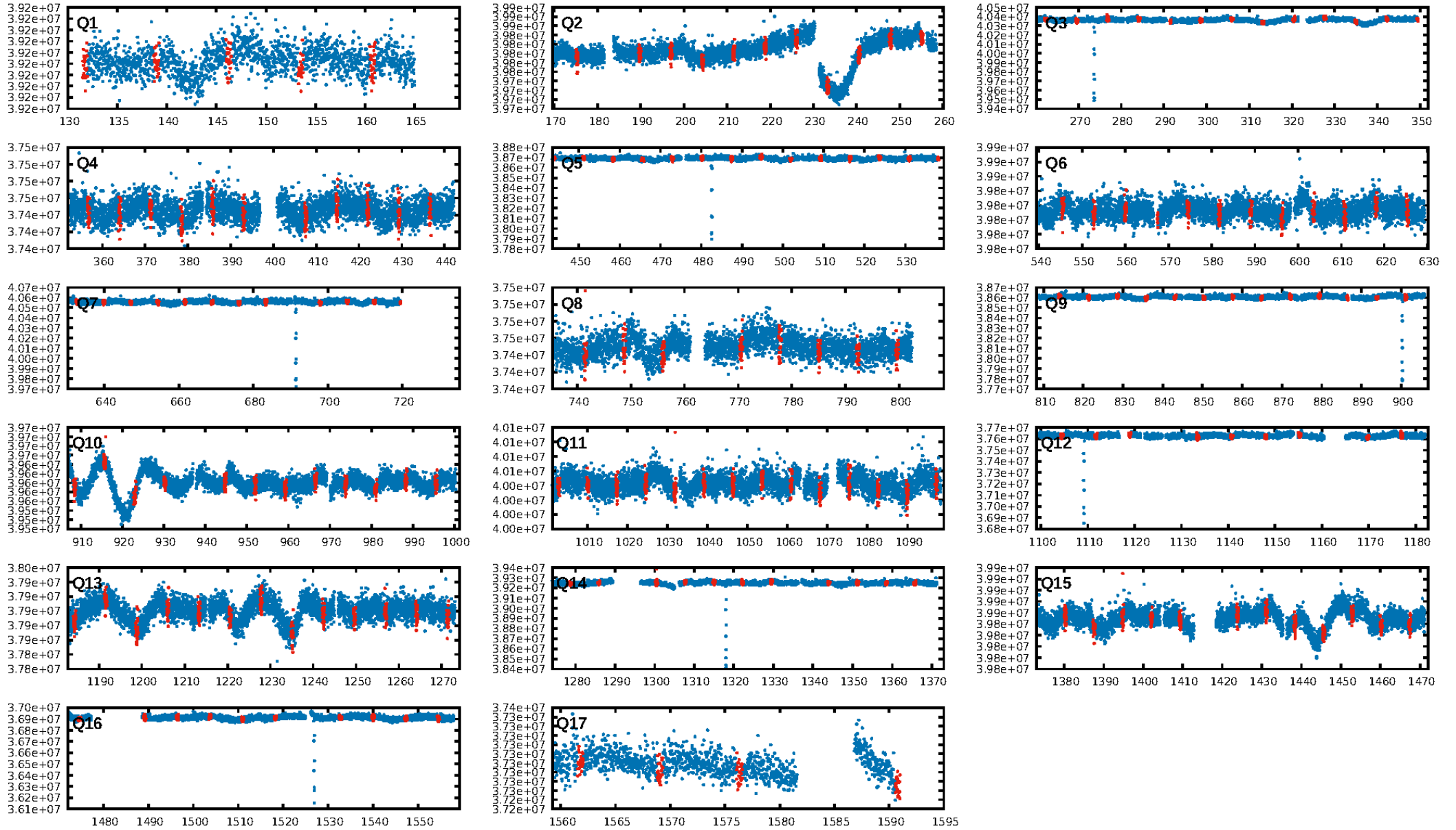
DV Fit Results:

Period = 7.25933 [0.00003] d
Epoch = 131.7102 [0.0027] BKJD
Rp/R* = 0.0165 [0.0020]
a/R* = 5.08 [2.82]
b = 0.84 [0.21]
Seff = 207.06 [75.10]
Teq = 967 [88] K
Rp = 1.78 [0.53] Re
a = 0.0718 [0.0168] AU
Ag = 28.65 [13.41] [2.06σ]
Teffp = 3460 [295] K [8.10σ]

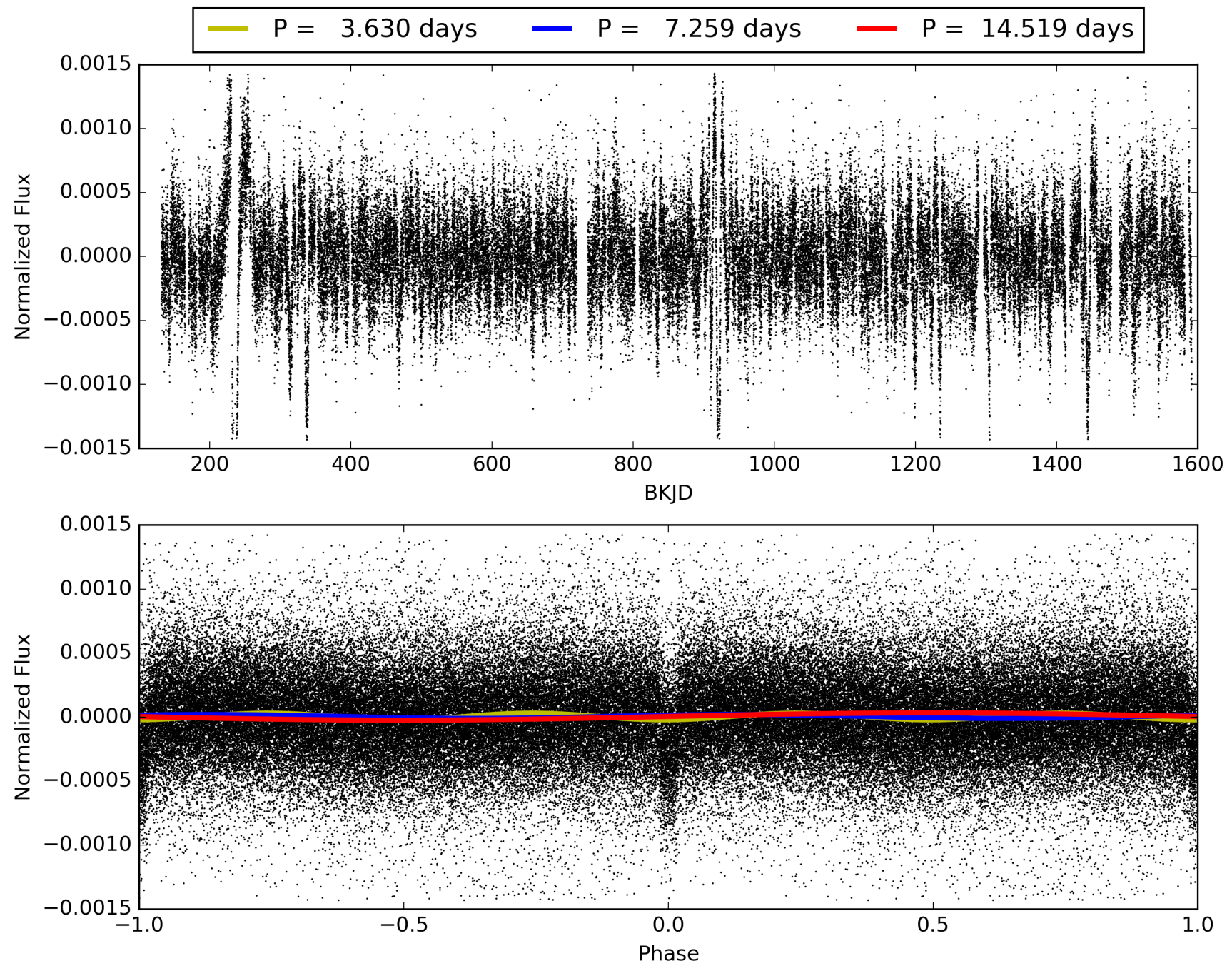
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [616.67σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 4.13e-233
RollingBand-fgt: 0.99 [171/173]
GhostDiagnostic-chr: 6.453
Centroid-sig: 1.6%
Centroid-so: 0.743 arcsec [2.15σ]
OotOffset-rm: 0.088 arcsec [0.45σ]
KicOffset-rm: 0.340 arcsec [1.79σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008494410-02, PDC Light Curves

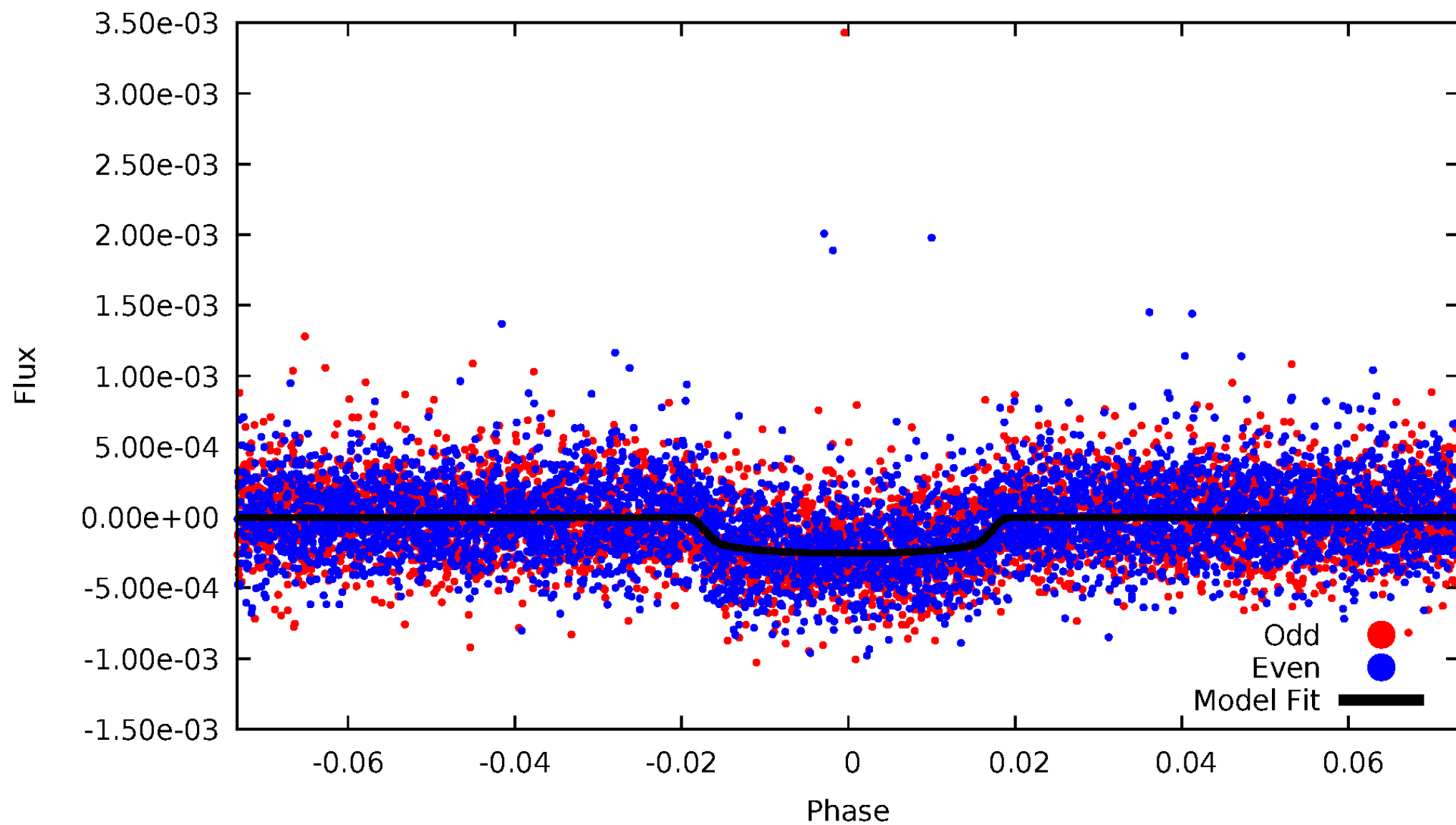


TCE 008494410-02



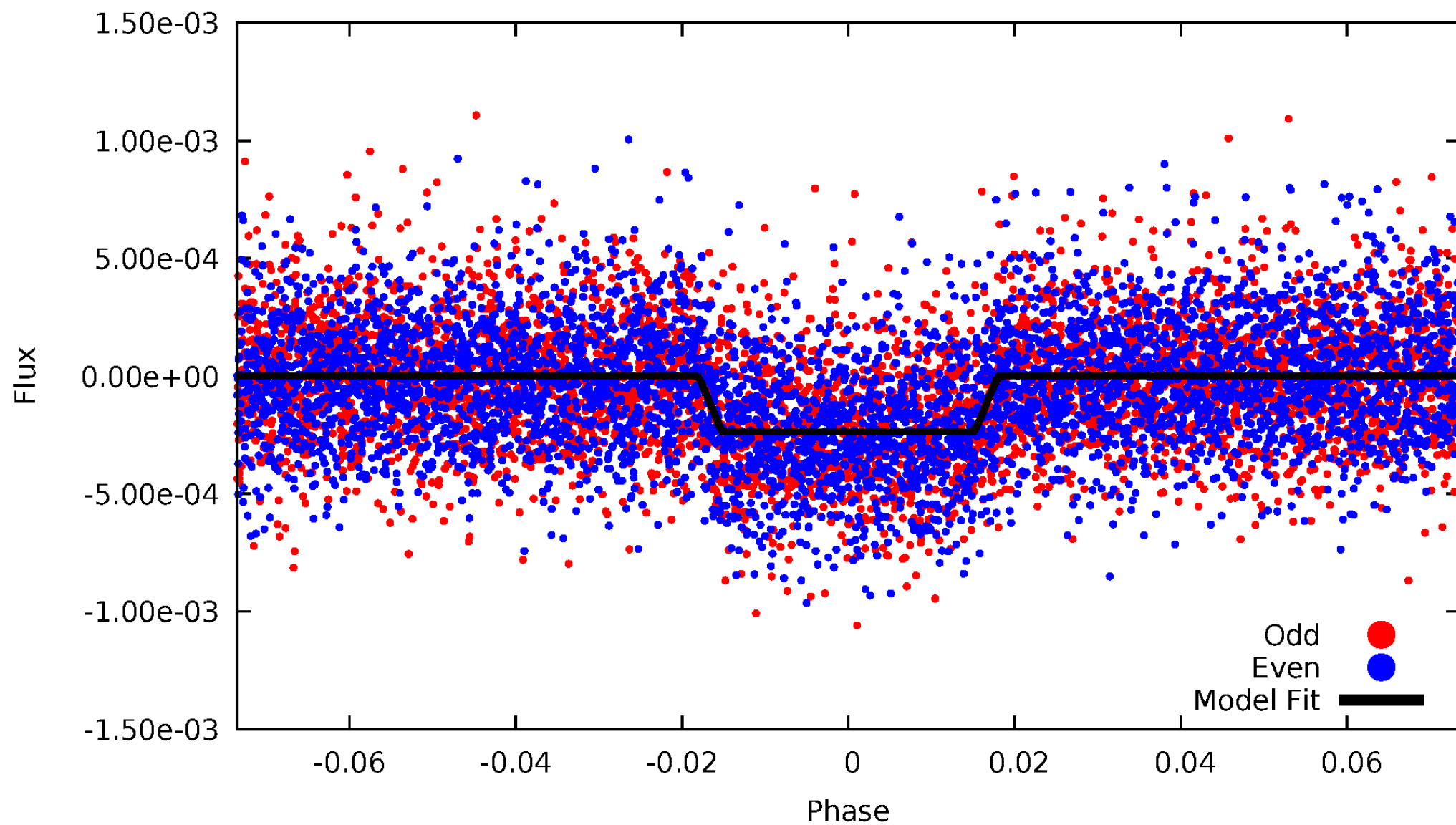
DV Odd/Even

TCE 008494410-02



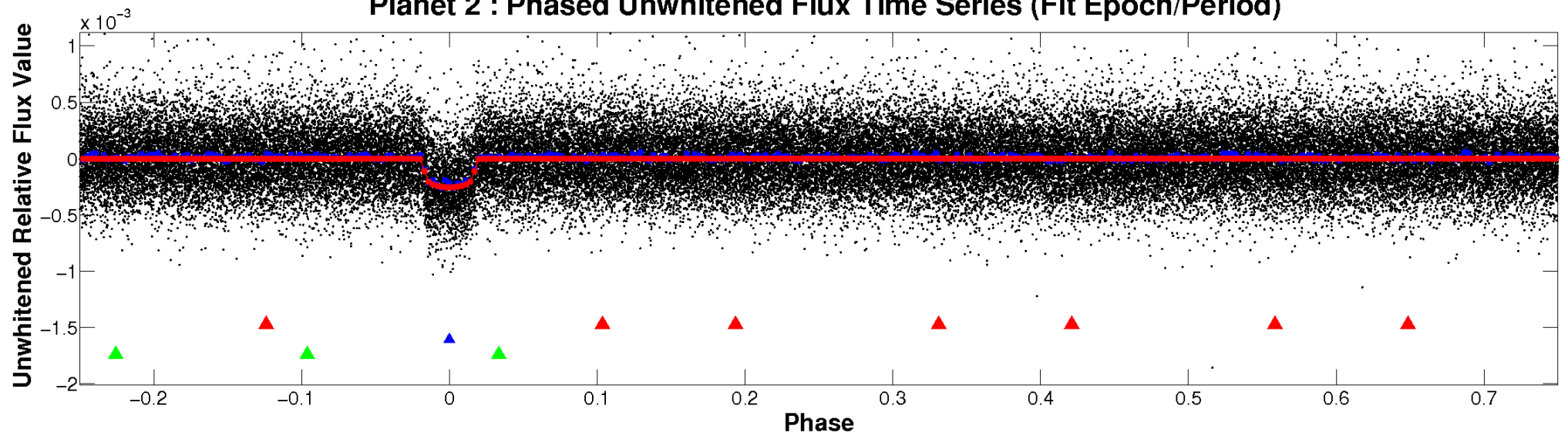
ALT Odd/Even

TCE 008494410-02

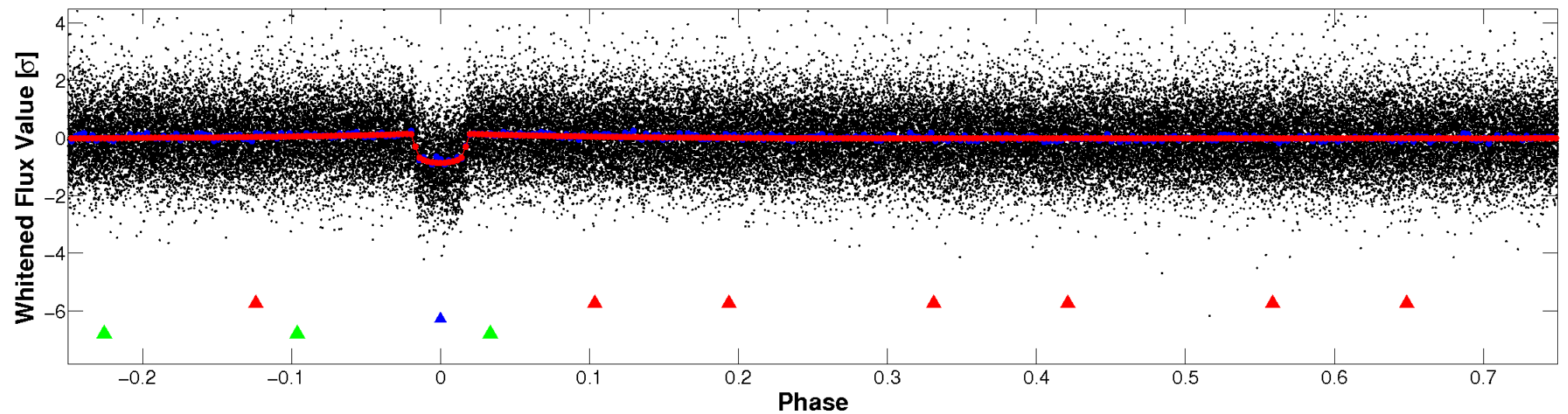


Non-Whitened Vs. Whitened Light Curve

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

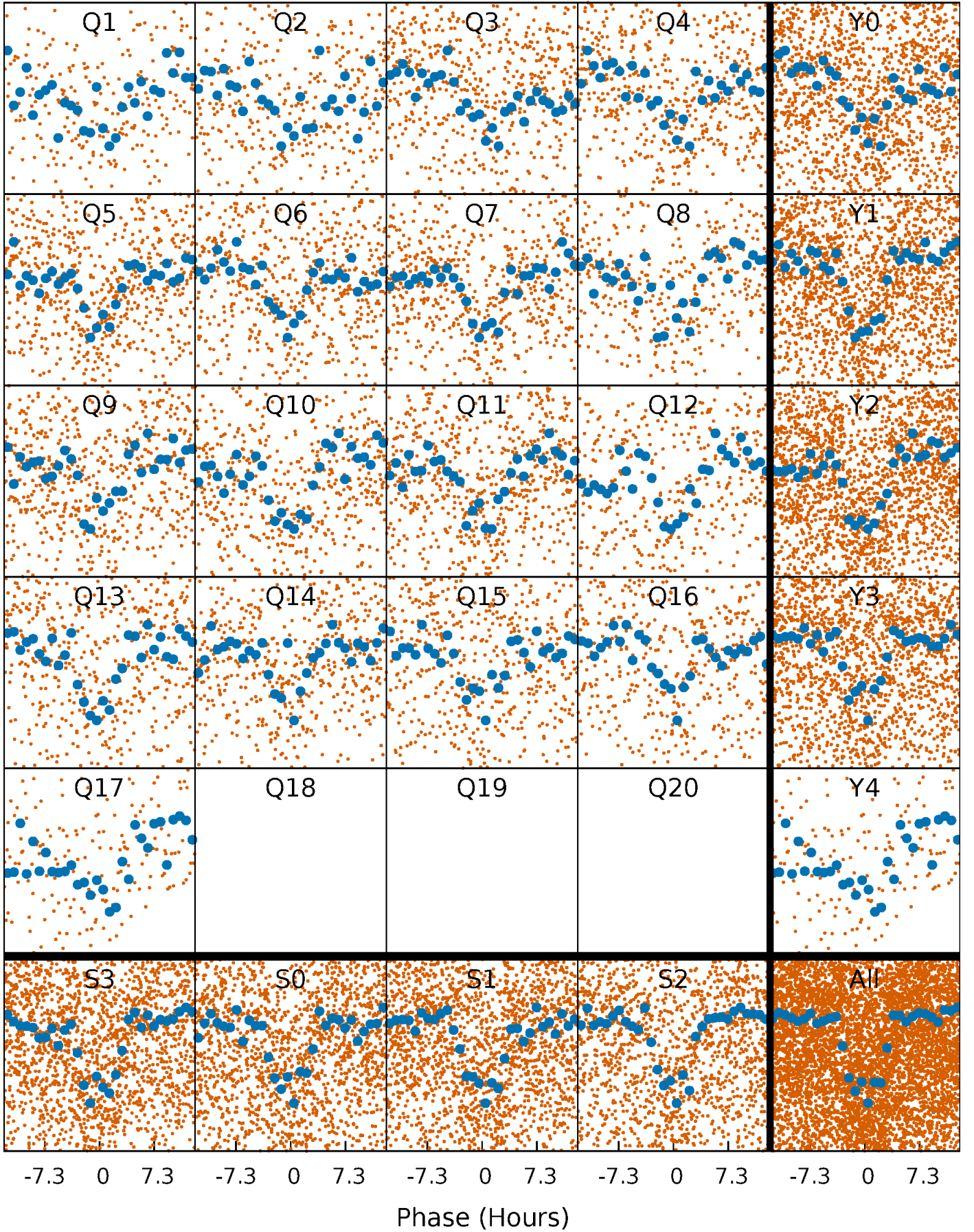


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



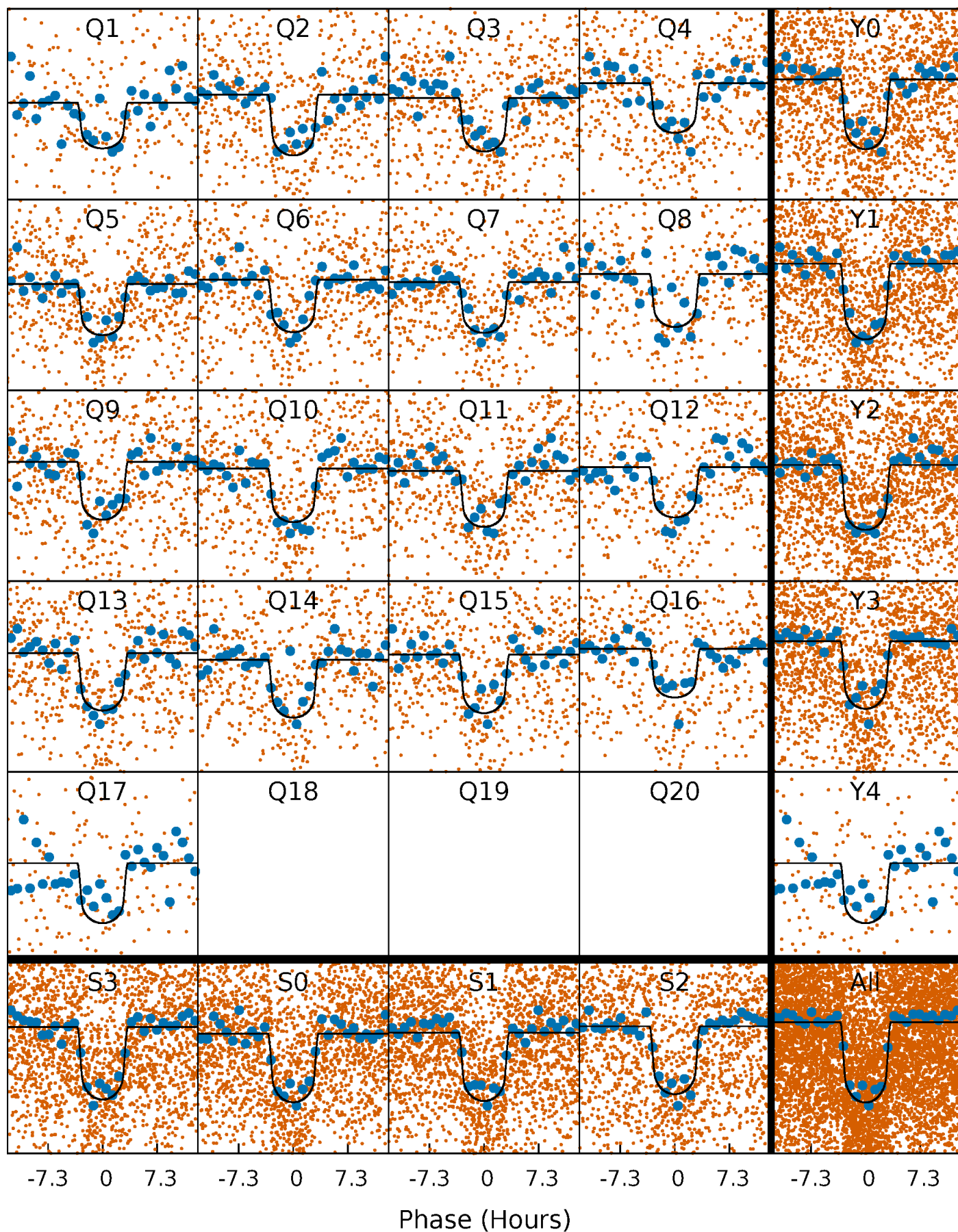
PDC Quarter-Phased Transit Curves

TCE 008494410-02 P= 7.259329 Days $T_0=131.710232$ (BKJD)



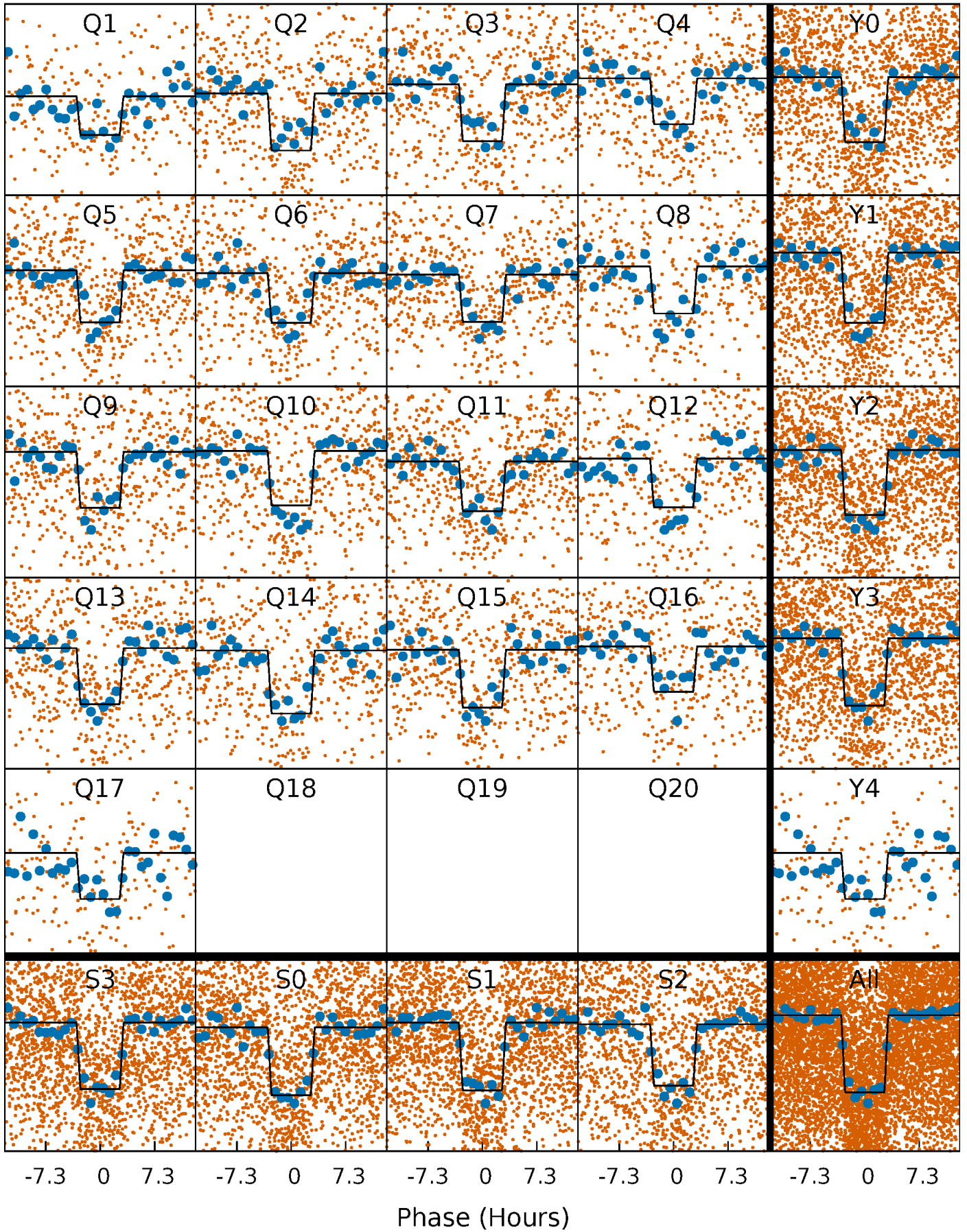
DV Quarter-Phased Transit Curves

TCE 008494410-02 P= 7.259329 Days $T_0=131.710232$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

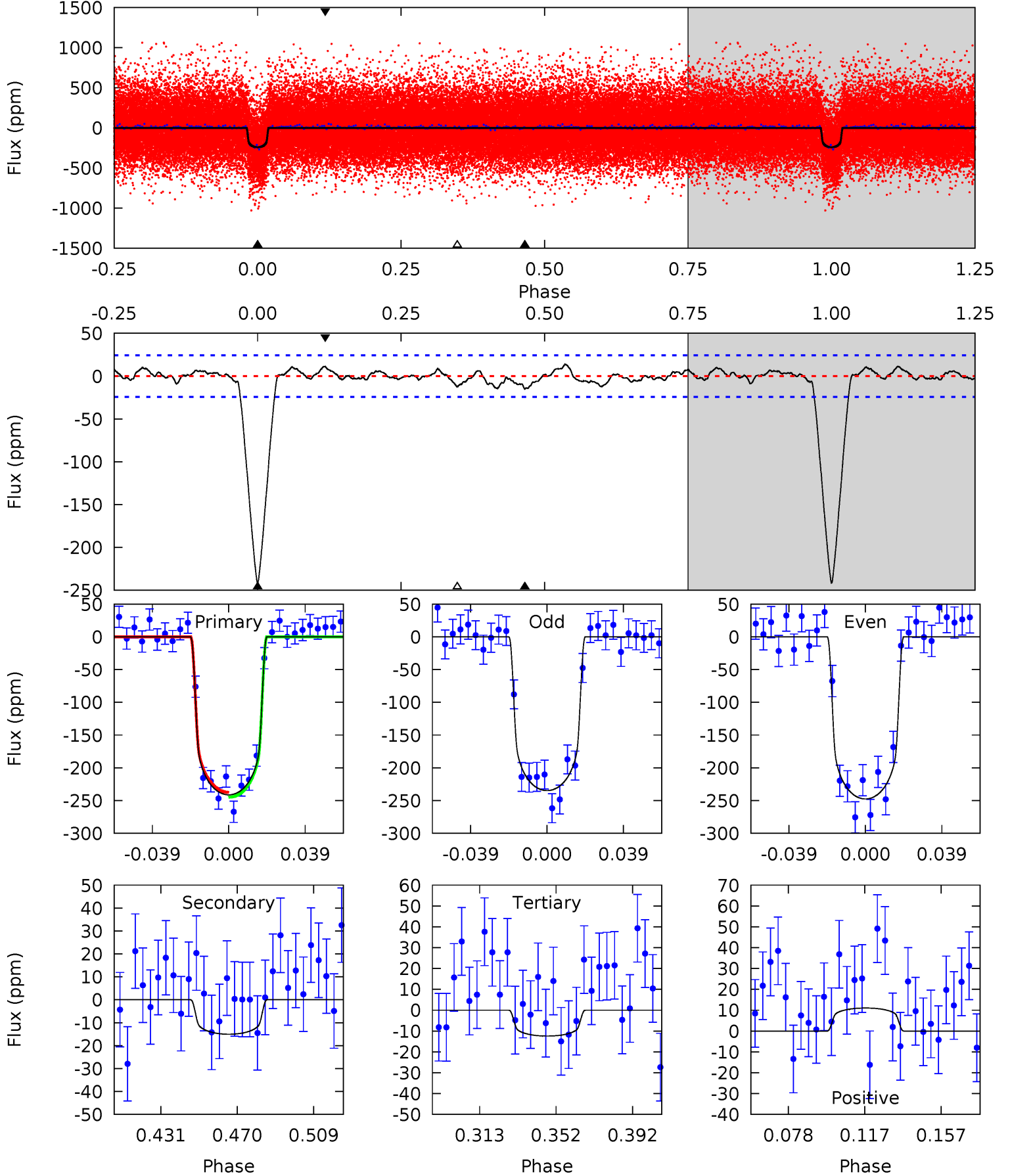
TCE 008494410-02 P= 7.259362 Days $T_0=131.707292$ (BKJD)



DV Model-Shift Uniqueness Test

008494410-02, P = 7.259329 Days, E = 124.450903 Days

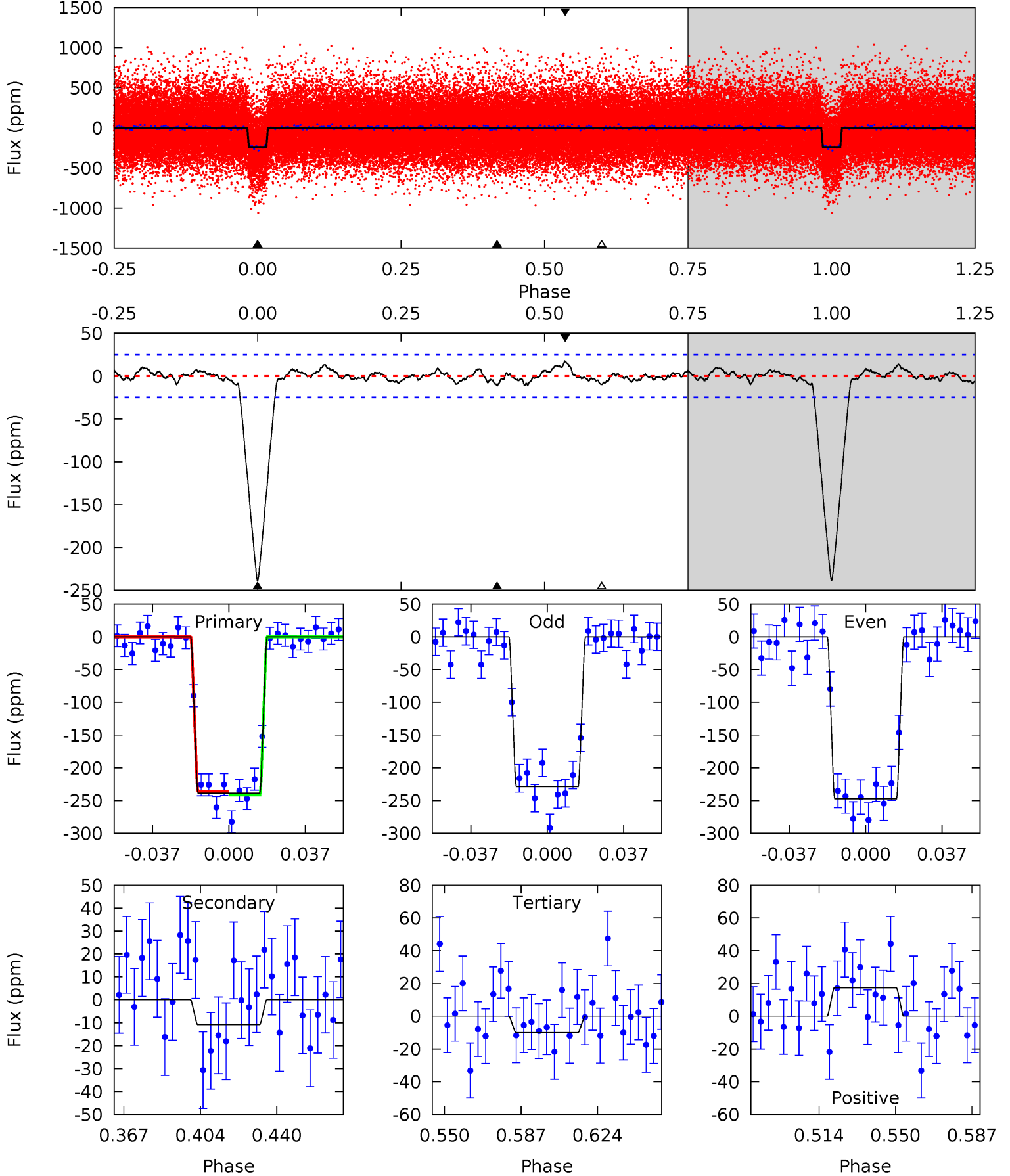
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.3	2.95	2.43	2.16	4.76	2.06	1.04	44.9	45.1	0.52	0.78	1.25	1.01	0.05	0.73



Alt Model-Shift Uniqueness Test

008494410-02, P = 7.259362 Days, E = 124.447930 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.9	2.09	1.94	3.34	4.77	2.09	0.97	44.0	42.6	0.16	-1.25	1.77	1.00	0.07	0.54



Stellar Parameters For KIC 008494410

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5914^{+160}_{-178}	$4.421^{+0.101}_{-0.188}$	$-0.220^{+0.300}_{-0.300}$	$0.987^{+0.272}_{-0.146}$	$0.938^{+0.120}_{-0.109}$	$1.374^{+0.625}_{-0.686}$
	+3%/-3%	+2%/-4%	+136%/-136%	+28%/-15%	+13%/-12%	+46%/-50%
Source	PHO1	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 008494410-02 / KOI 3685.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-15 ± 5	$1.82^{+0.31}_{-0.27}$	1365^{+90}_{-72}	3379^{+230}_{-240}	13^{+7}_{-5}
Alt.	-11 ± 5	$1.71^{+0.33}_{-0.29}$	1362^{+101}_{-71}	3267^{+273}_{-348}	10^{+8}_{-6}

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

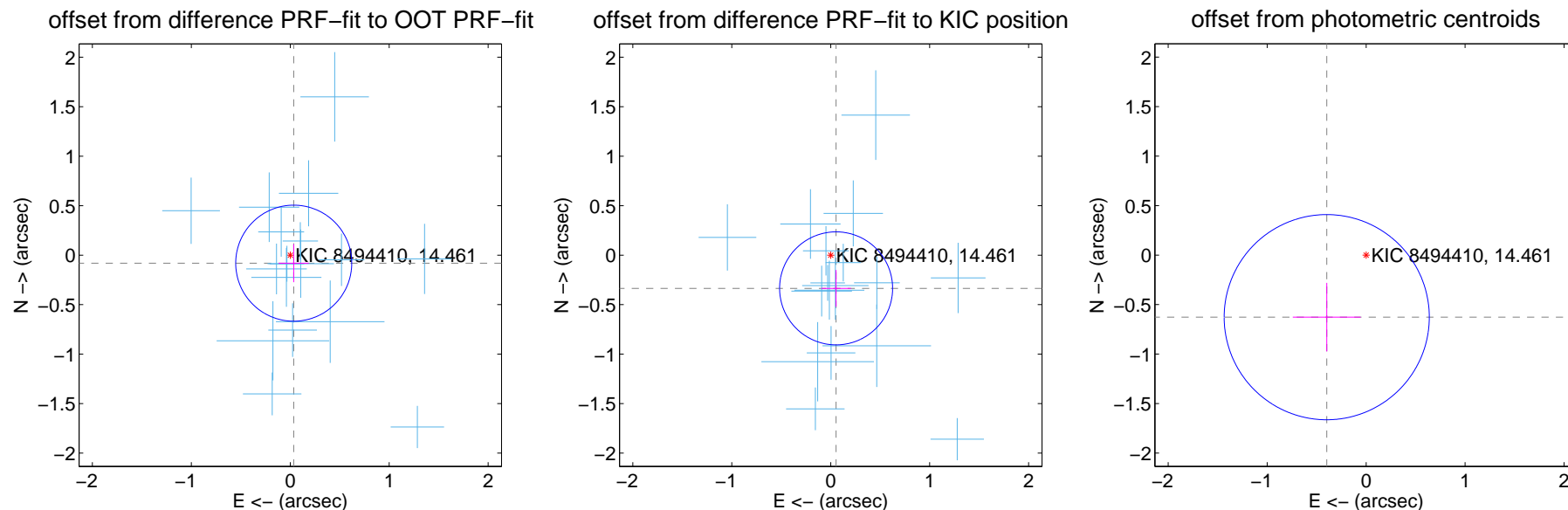
DV Centroid Data

Supplemental centroid analysis for 008494410-02. Kepler magnitude: 14.46. Transit SNR 35.33

There are 17 quarters with good PRF difference image offsets

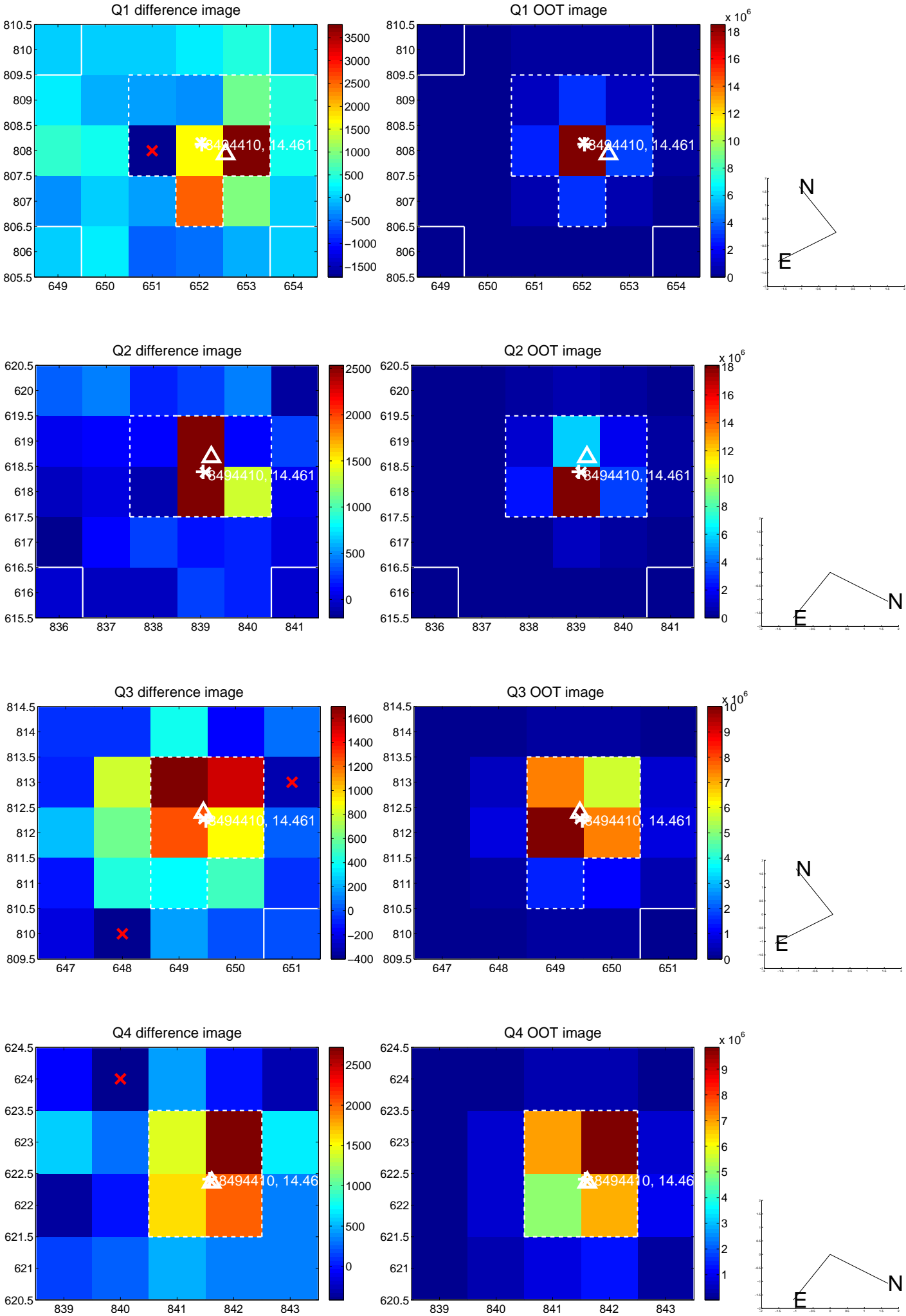
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.088 ± 0.195	0.45	-0.035 ± 0.153	-0.081 ± 0.192
PRF-fit source offset from KIC position	0.340 ± 0.190	1.79	-0.054 ± 0.150	-0.336 ± 0.186
photometric centroid source offset	0.74 ± 0.35	2.15	0.40 ± 0.34	-0.63 ± 0.35

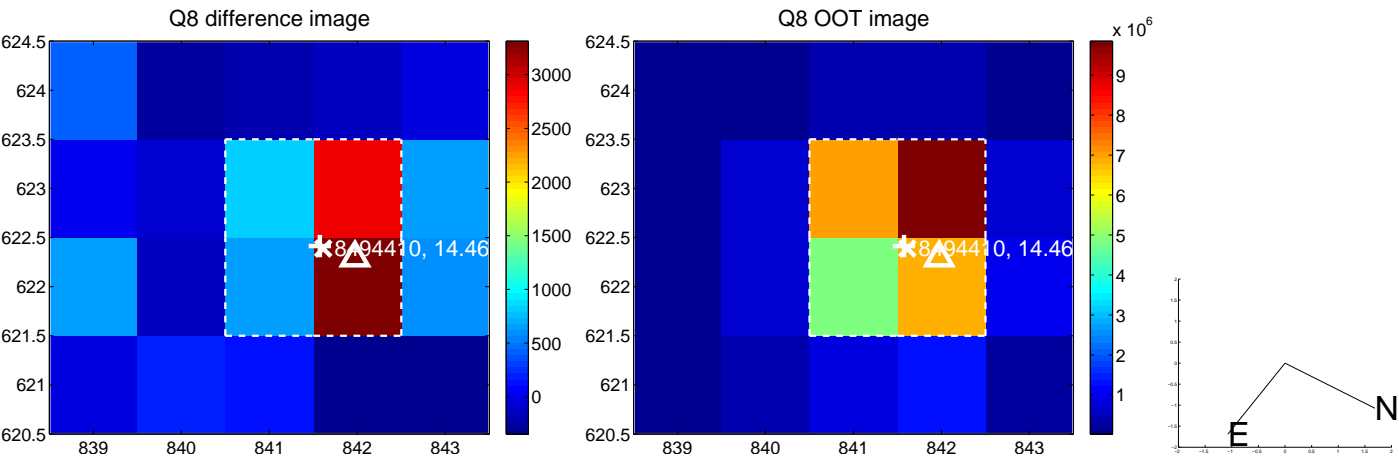
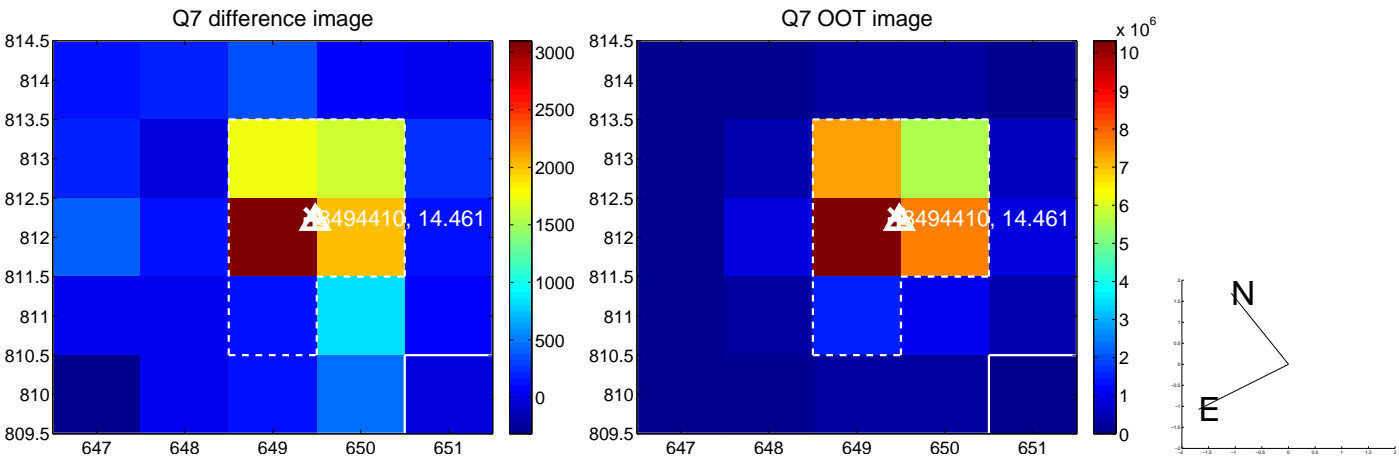
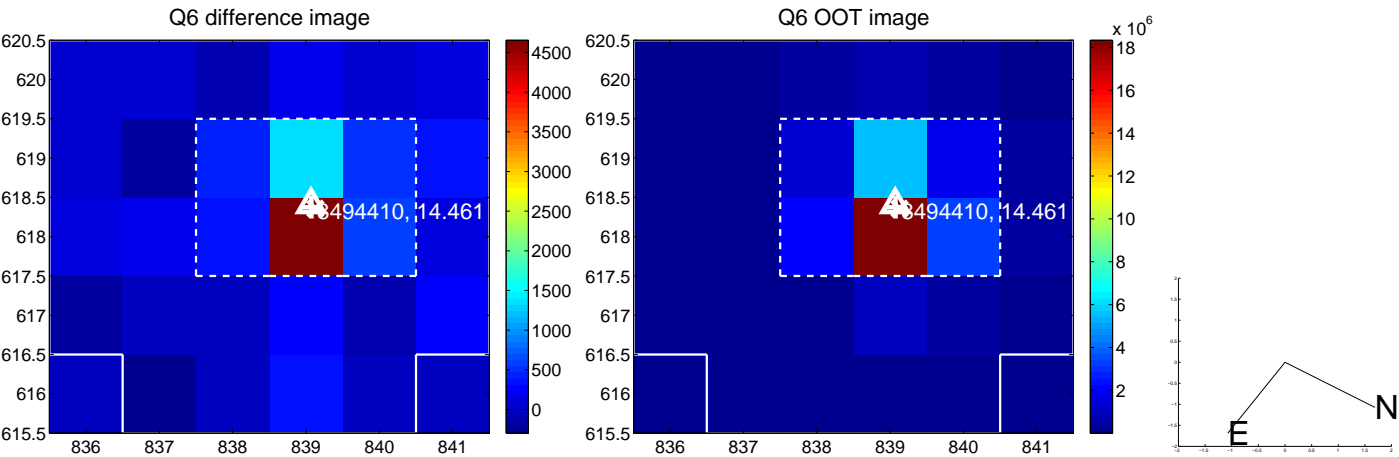
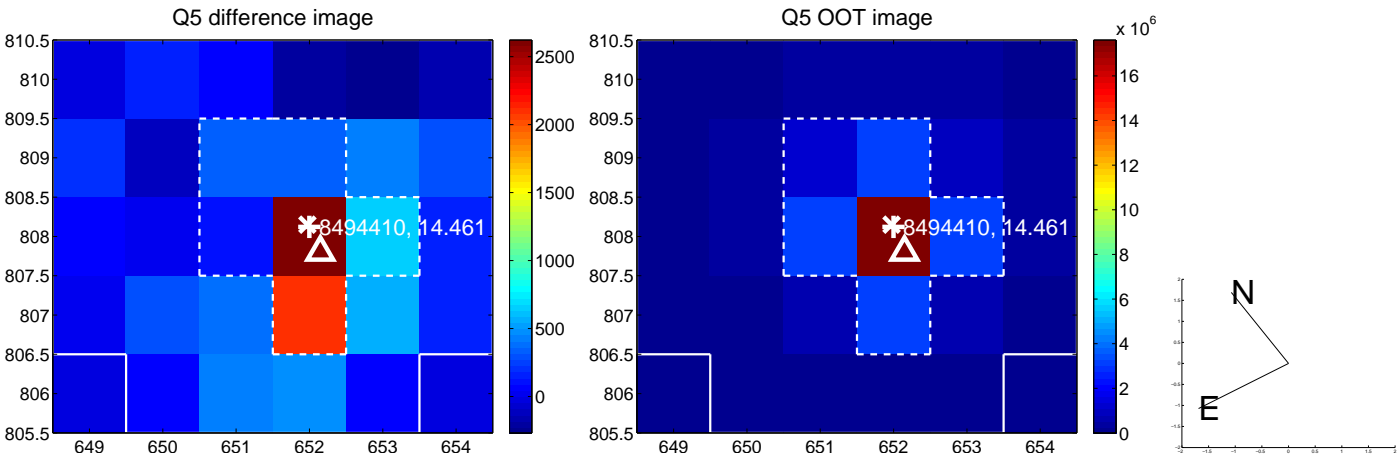


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

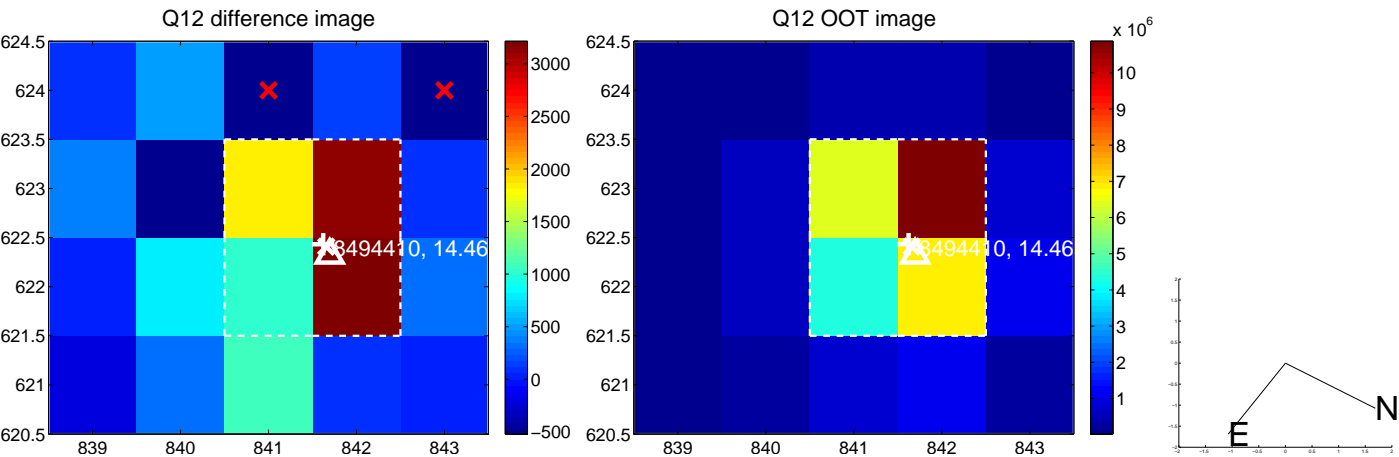
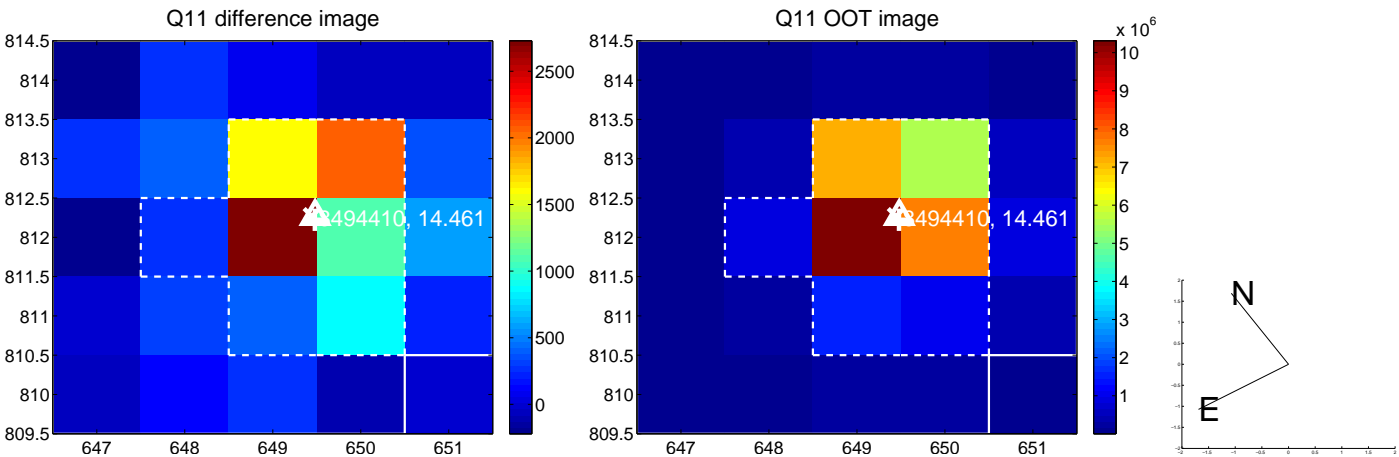
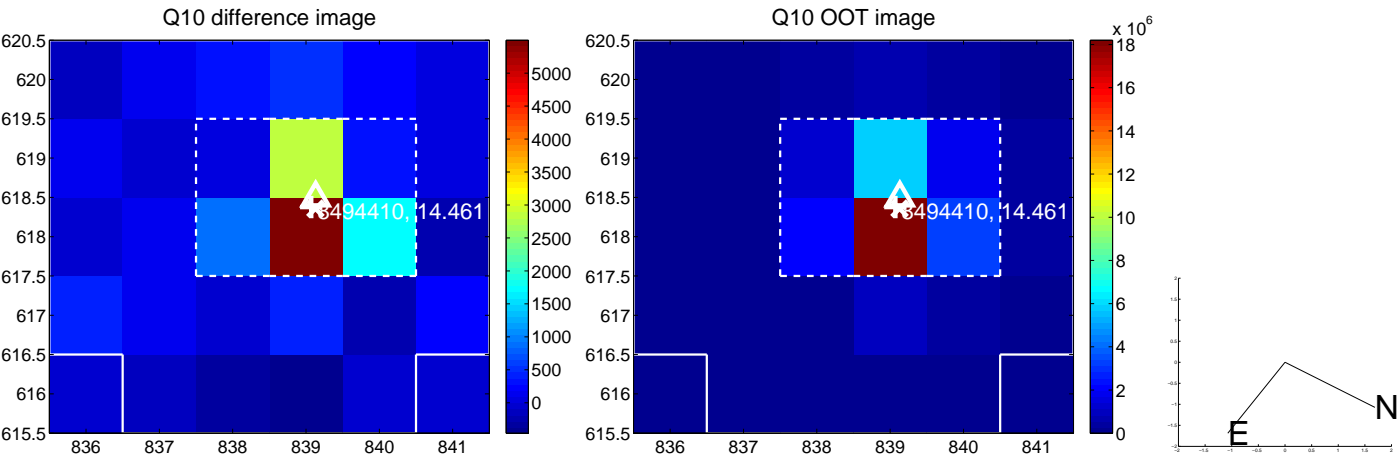
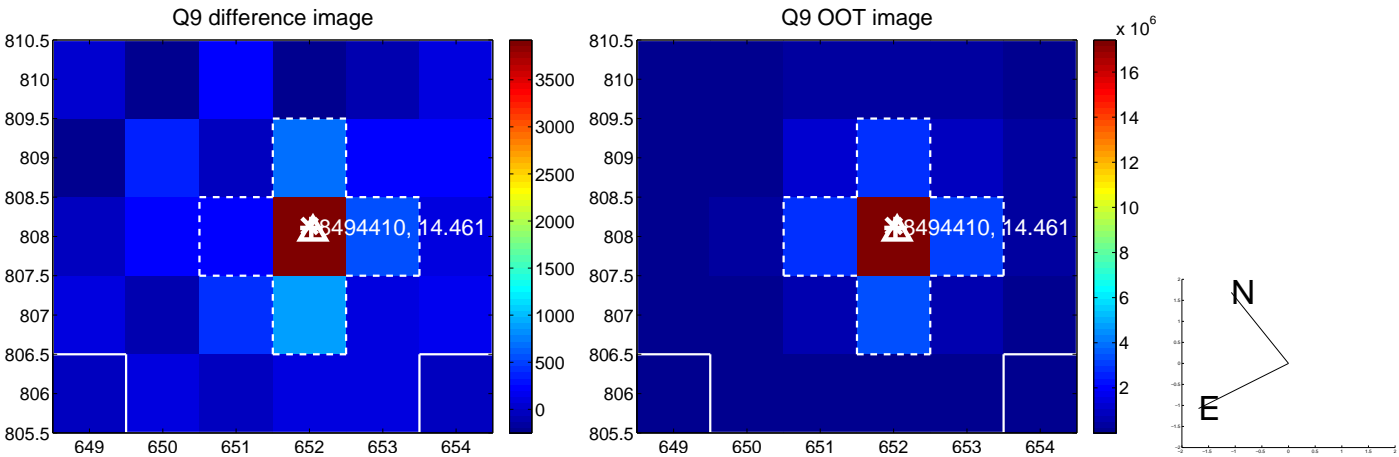
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



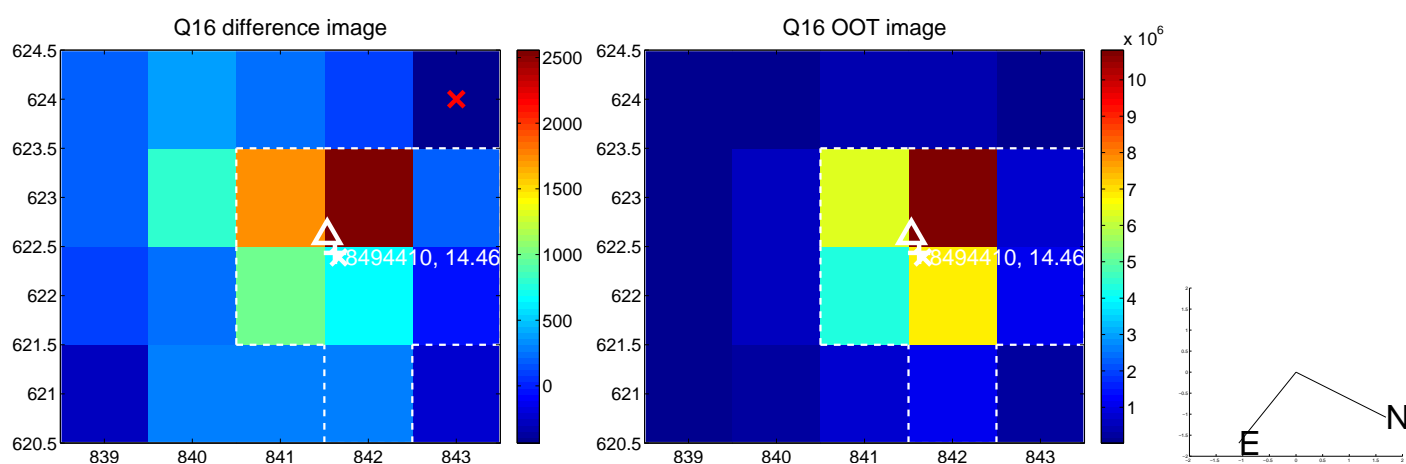
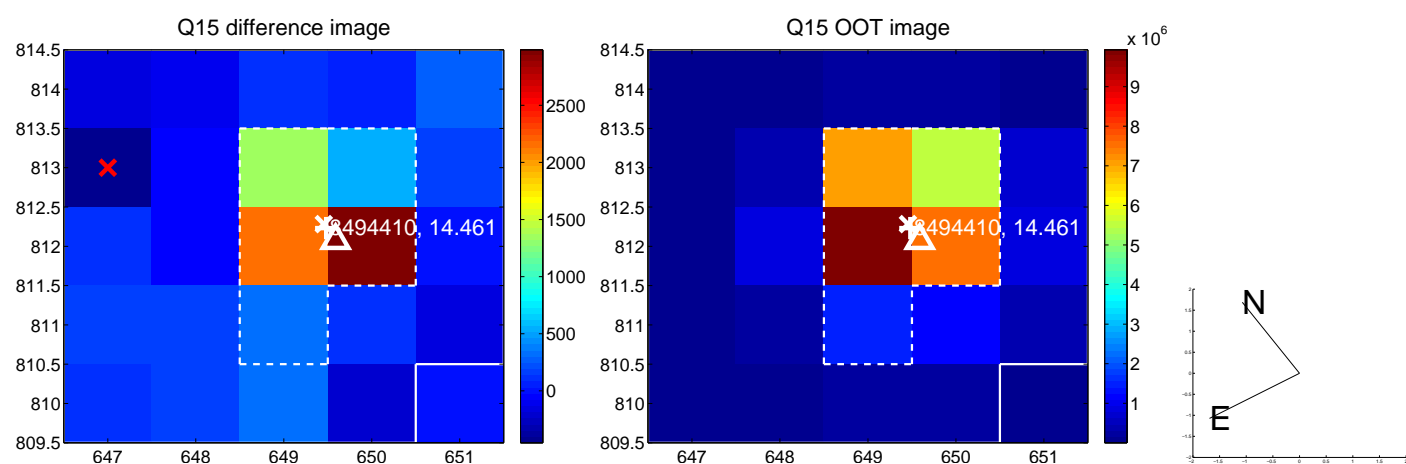
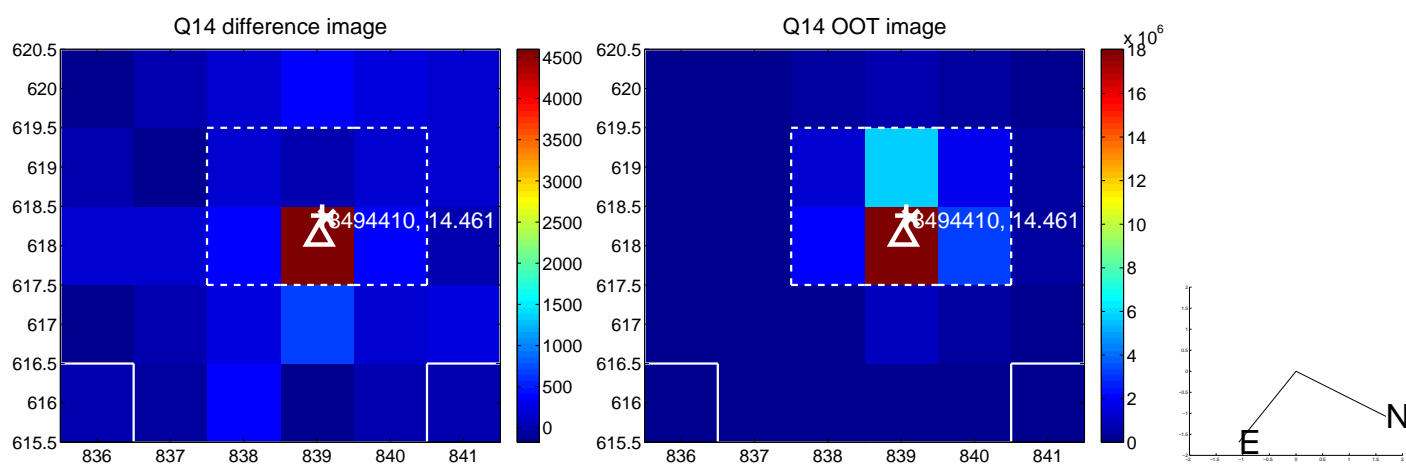
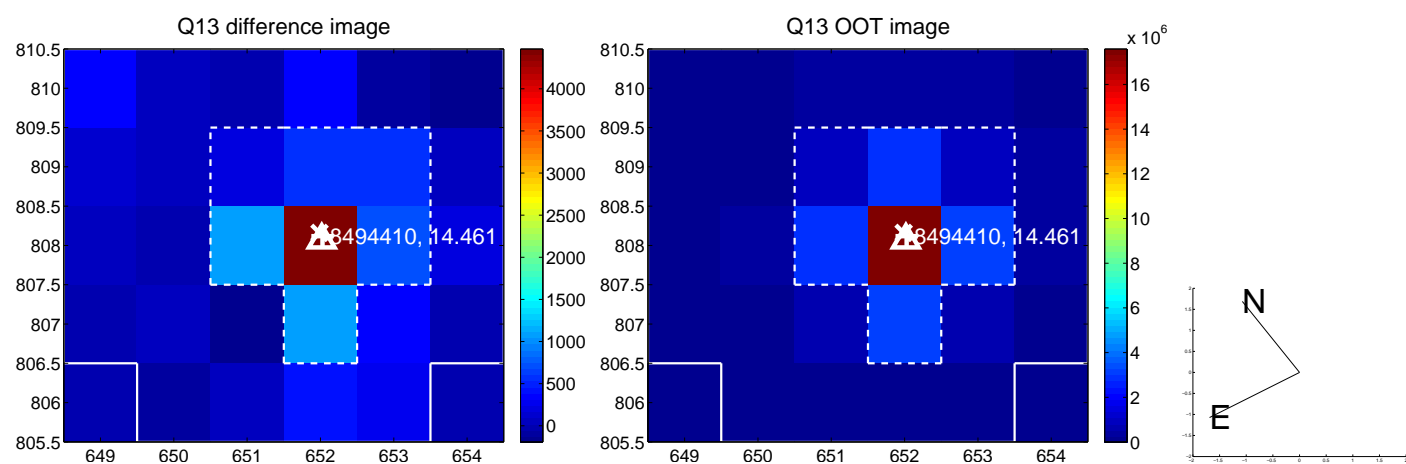
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



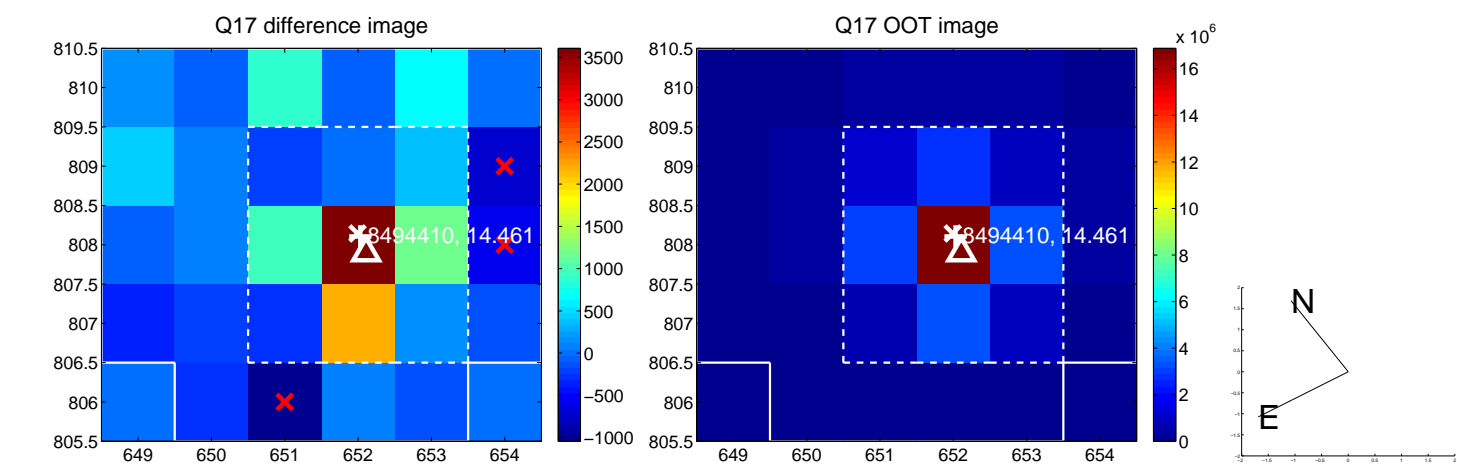
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



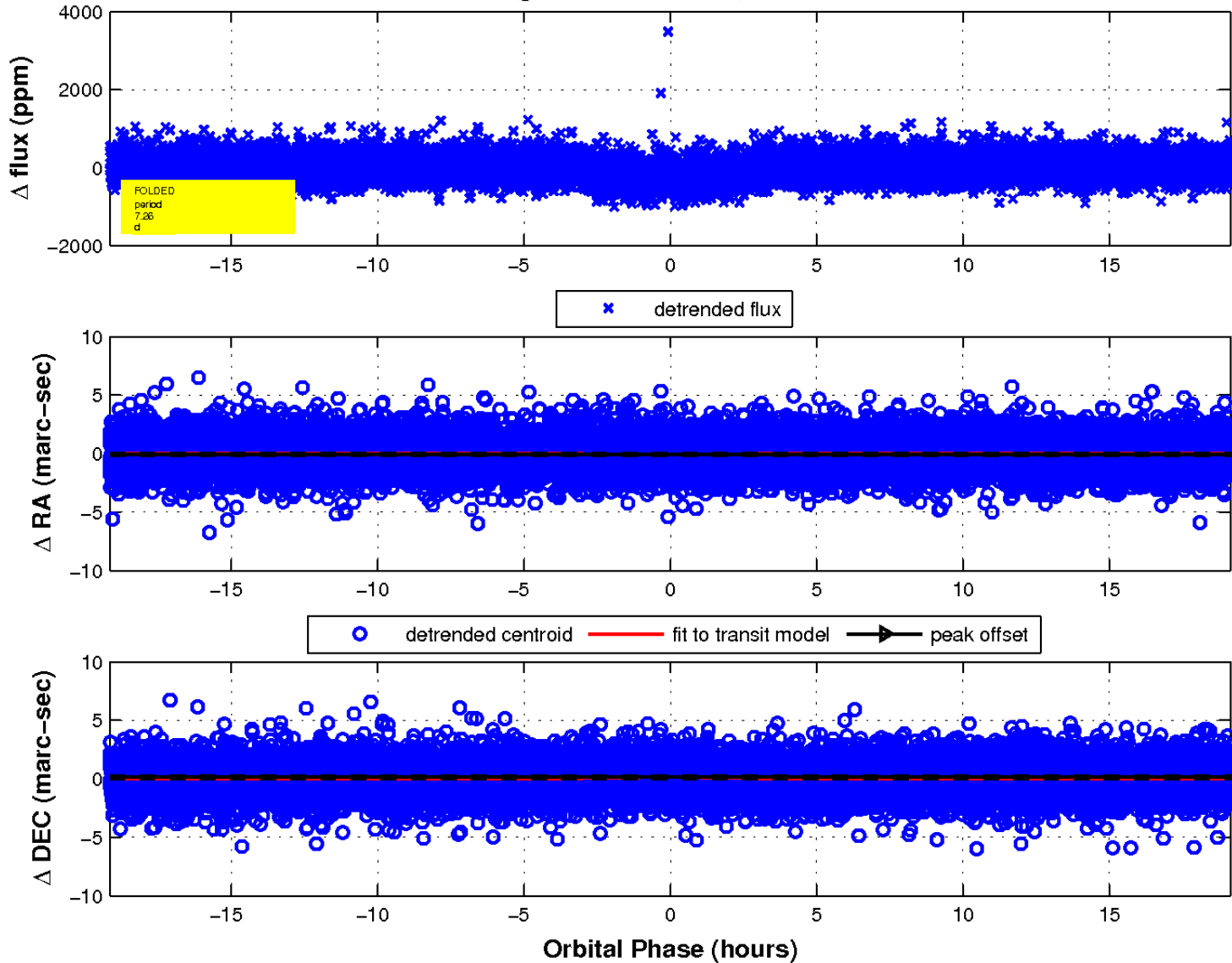
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

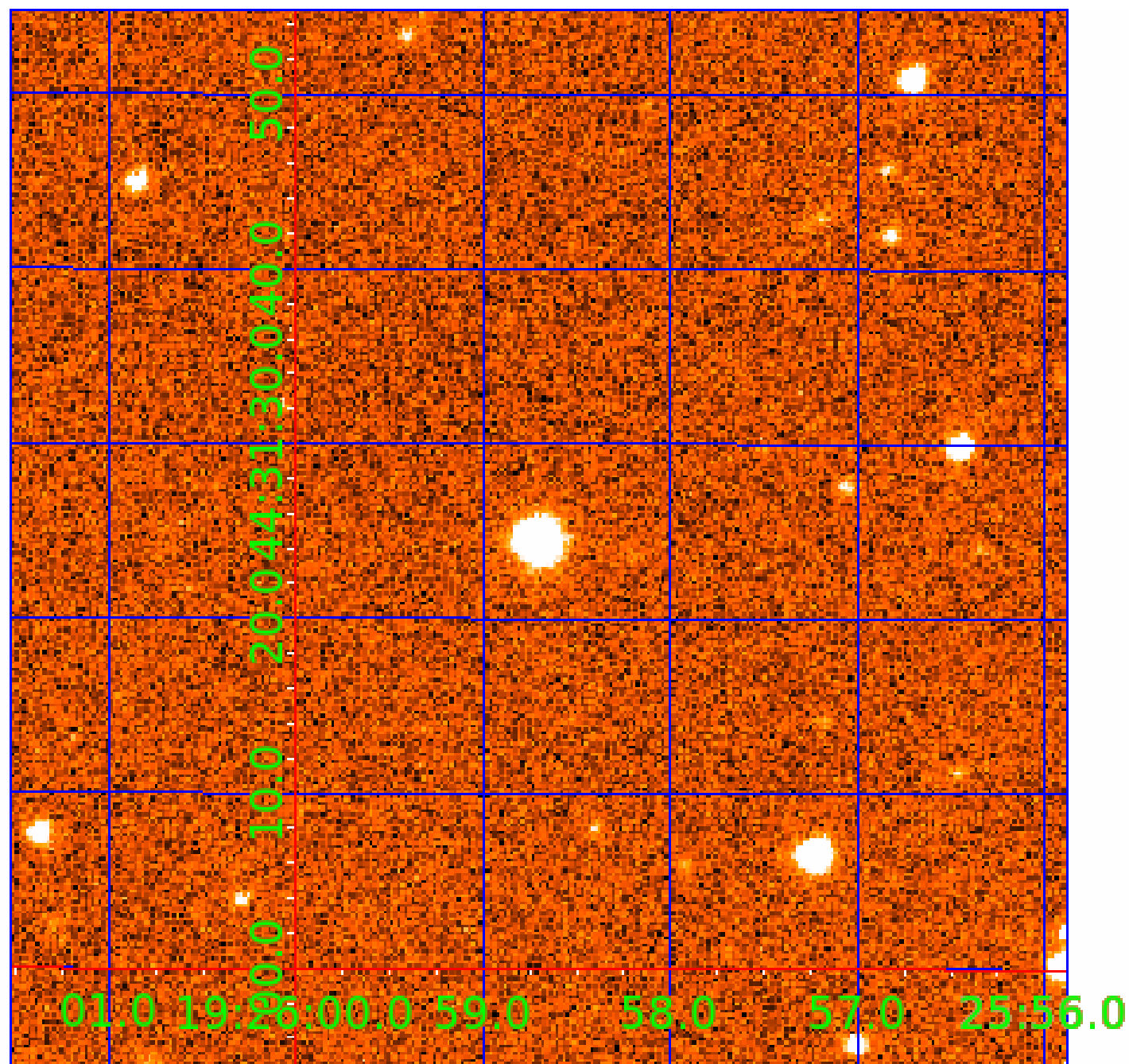


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 008494410

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})
008494410-01	OBS	3685.01	208.869082	273.692462	21258.1	4.562	363.8	368.2	0.99	5914	22.13	2.35
008494410-02	OBS	3685.02	7.259329	131.710232	255.9	6.384	33.1	35.3	0.99	5914	1.78	207.06
008494410-03	OBS	No	616.102398	306.176987	400.0	68.633	8.4	6.7	0.99	5914	1.99	0.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008494410-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED
008494410-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008494410-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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 008494410-03

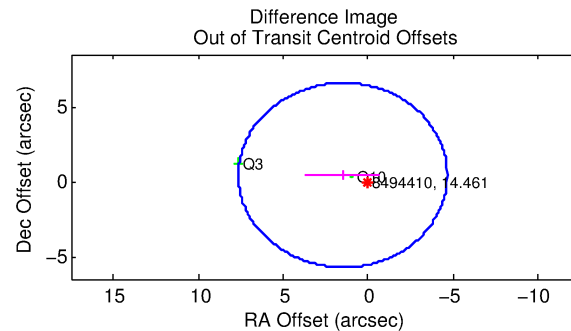
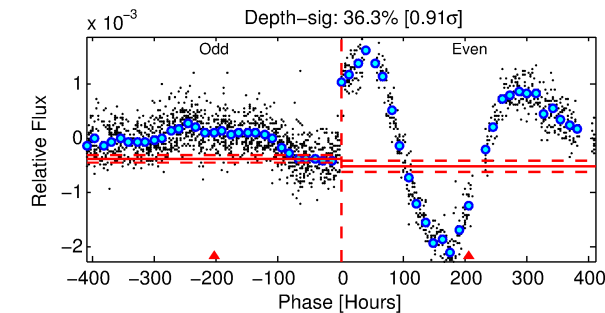
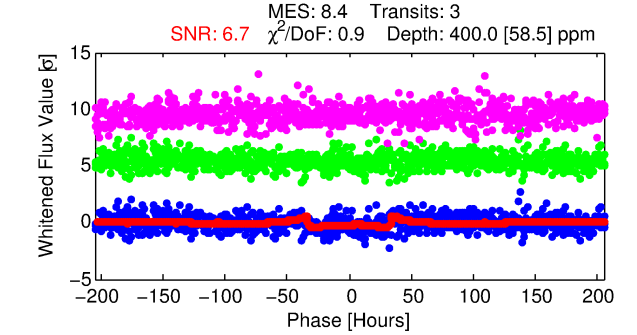
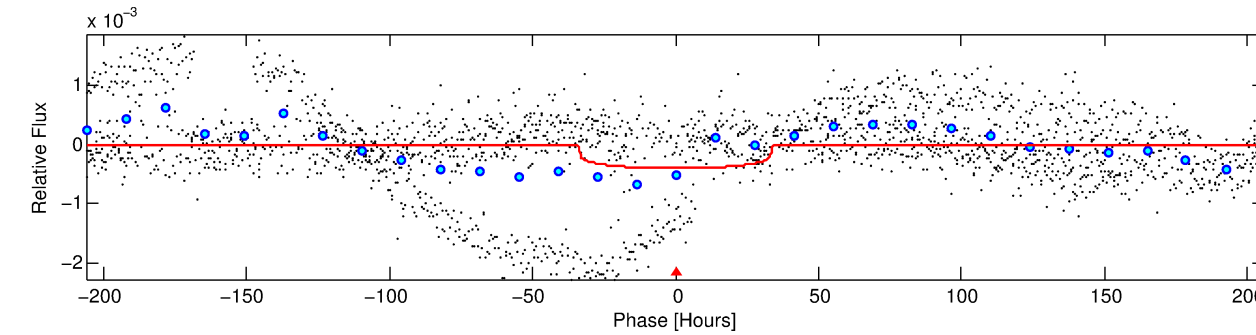
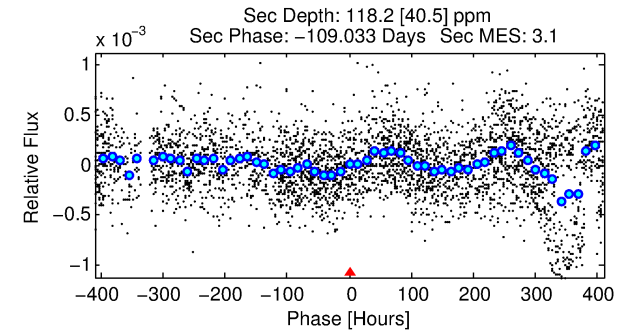
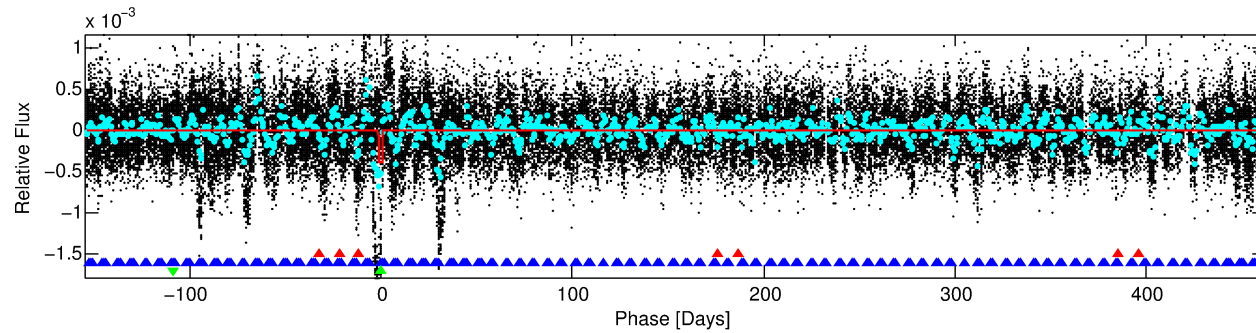
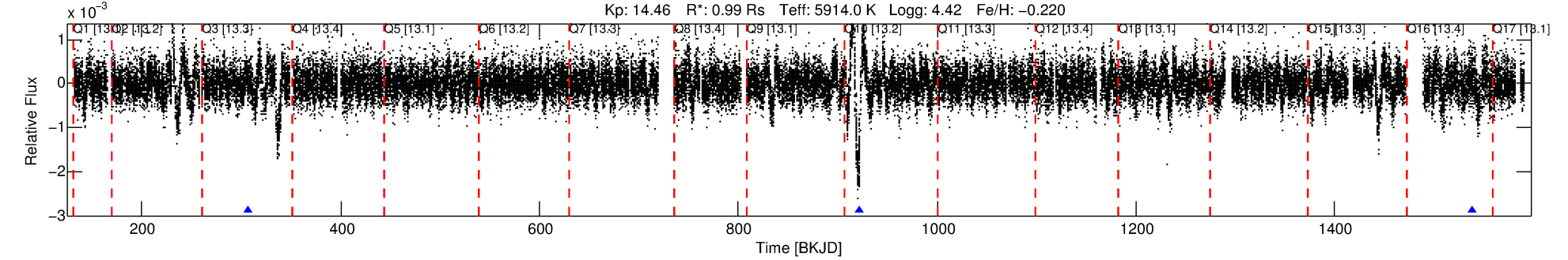
No Significant Match Found

DV One-Page Summary

KIC: 8494410 Candidate: 3 of 3 Period: 616.102 d

KOI: K03685 Corr: No Ephemeris Match

Kp: 14.46 R*: 0.99 Rs Teff: 5914.0 K Logg: 4.42 Fe/H: -0.220



DV Fit Results:

Period = 616.10240 [0.02939] d
Epoch = 306.1770 [0.0288] BKJD
Rp/R* = 0.0185 [0.0035]
a/R* = 65.99 [54.11]
b = 0.33 [2.19]
Seff = 0.56 [0.20]
Teq = 220 [20] K
Rp = 1.99 [0.67] Re
a = 1.3868 [0.3240] AU
Ag = 31624.46 [19511.90] [1.62σ]
Teff = 4538 [598] K [7.21σ]

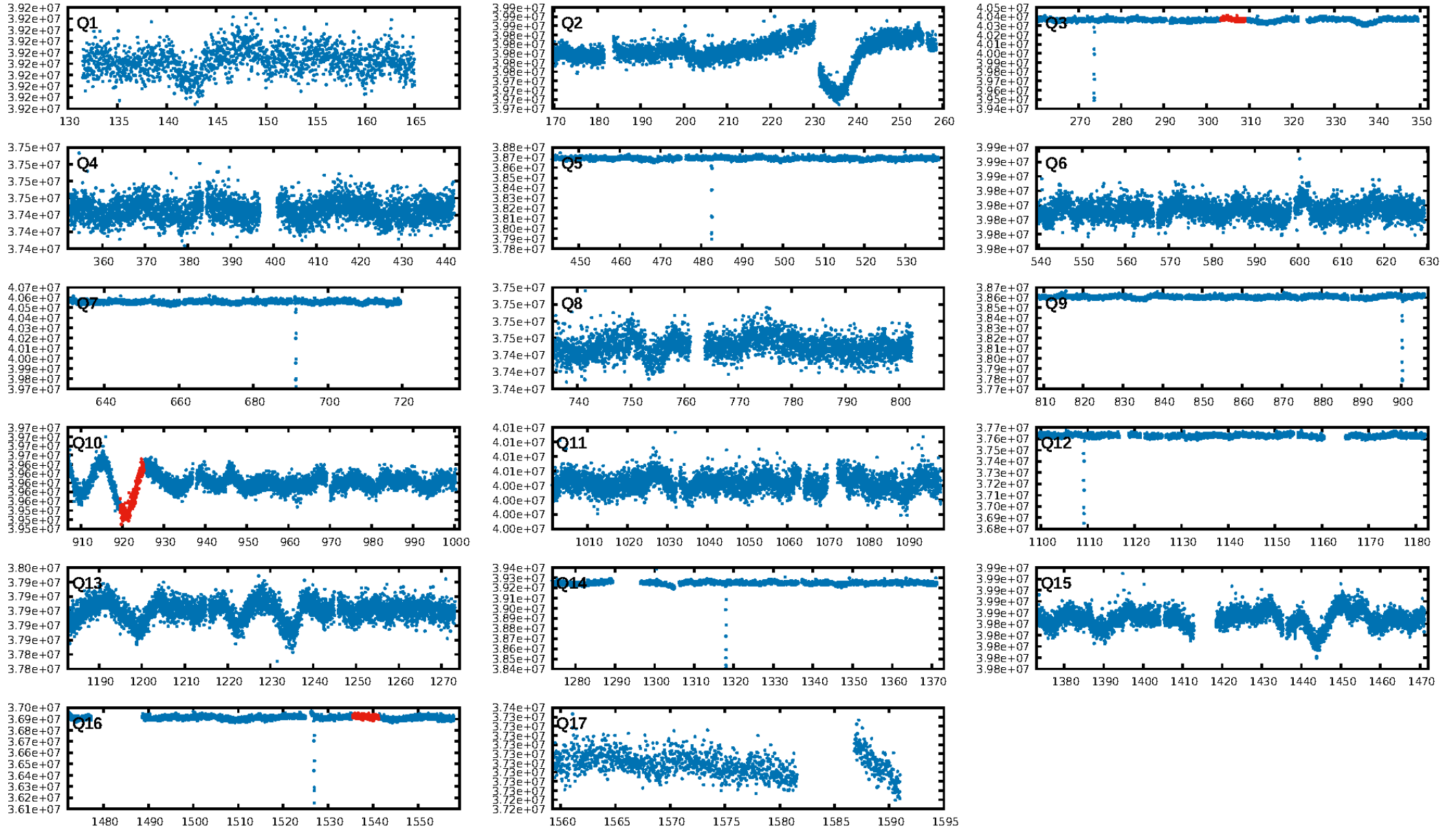
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [142.09σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.20e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.3148
Centroid-sig: 36.3%
Centroid-so: 0.597 arcsec [1.15σ]
OotOffset-rm: 1.536 arcsec [0.75σ]
KicOffset-rm: 1.538 arcsec [0.48σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/3]

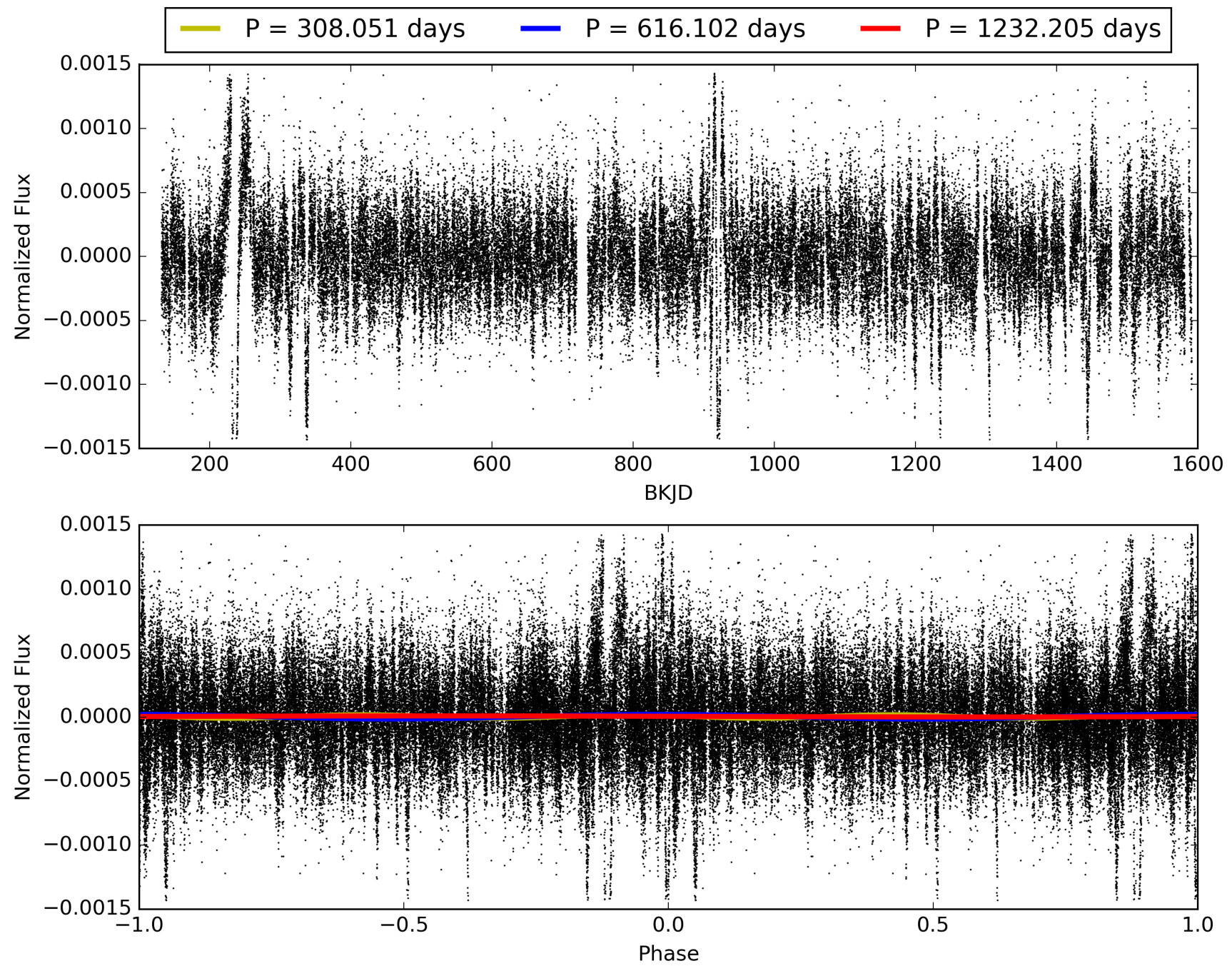
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:04:40 Z

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

TCE 008494410-03, PDC Light Curves

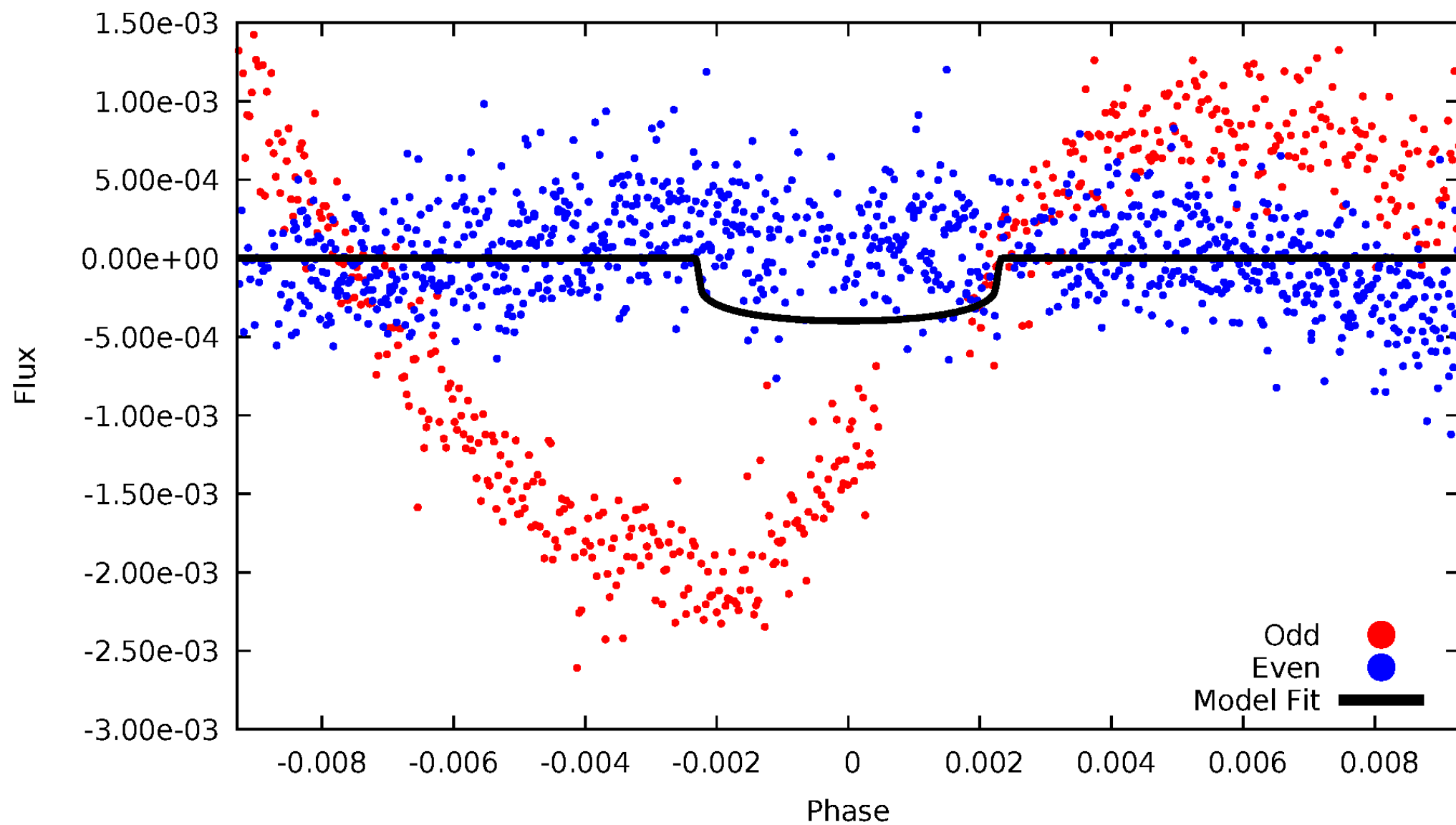


TCE 008494410-03



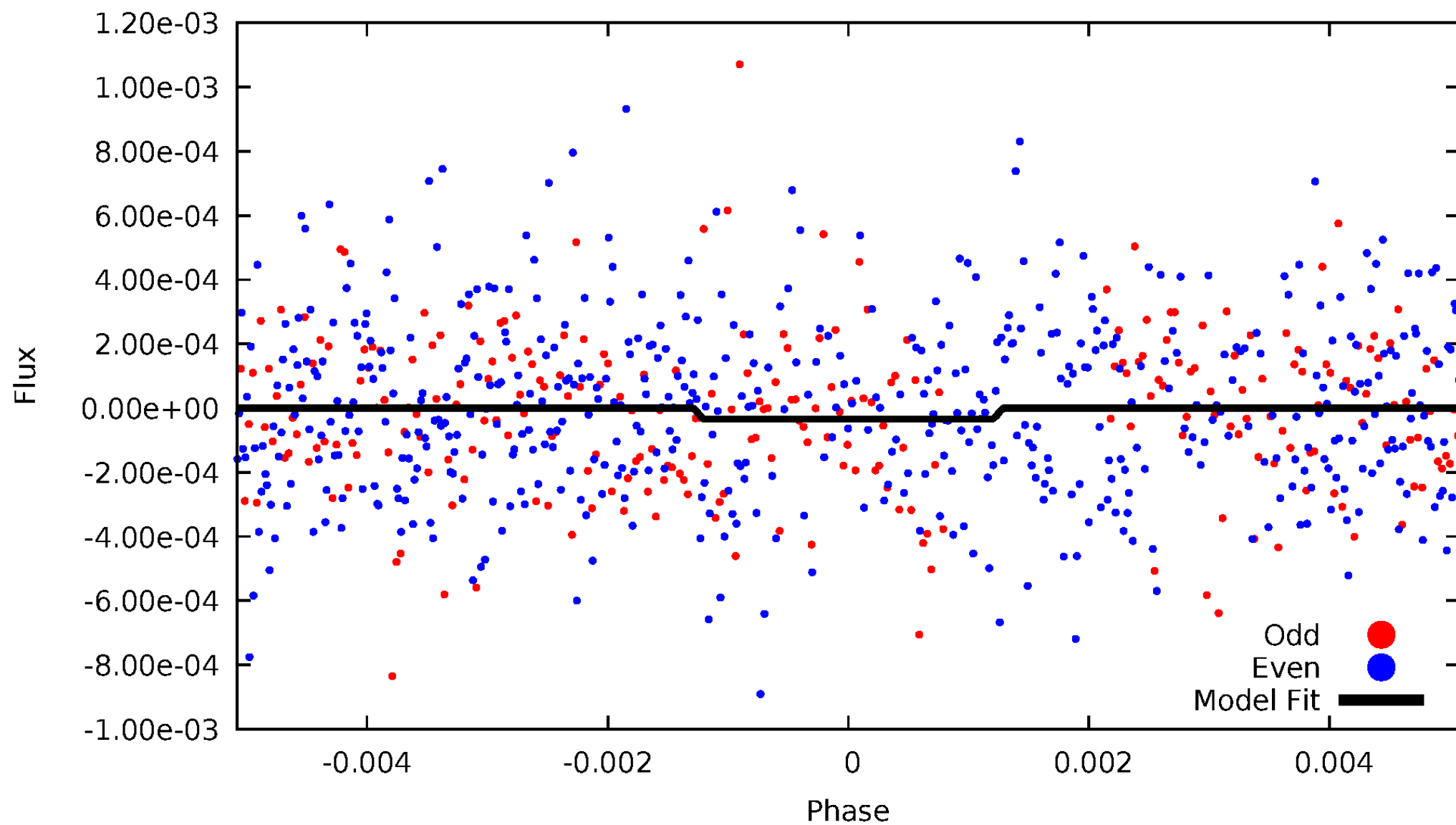
DV Odd/Even

TCE 008494410-03



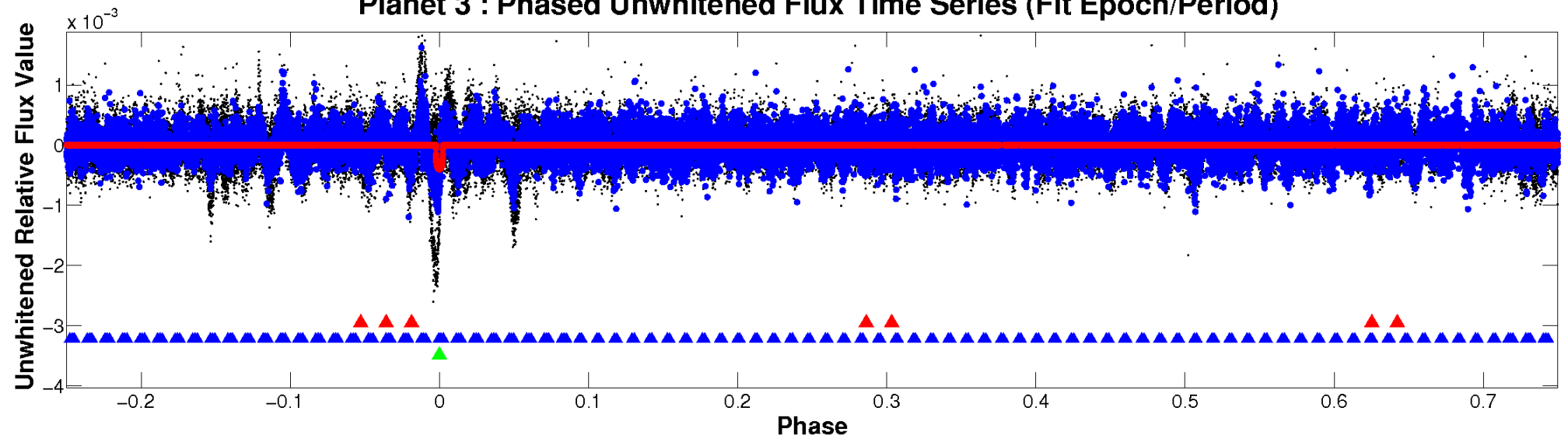
ALT Odd/Even

TCE 008494410-03

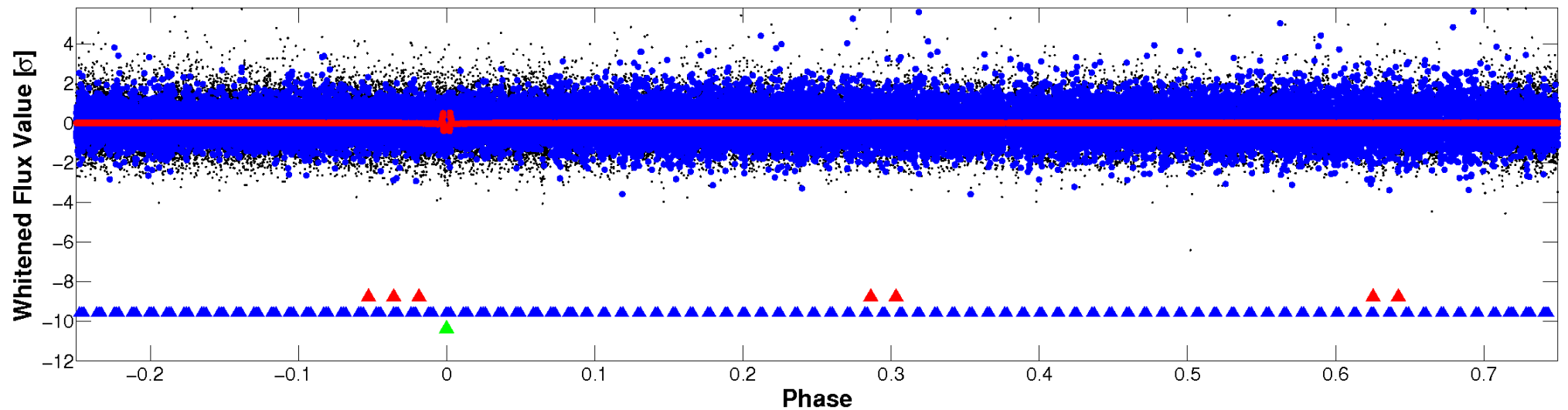


Non-Whitened Vs. Whitened Light Curve

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

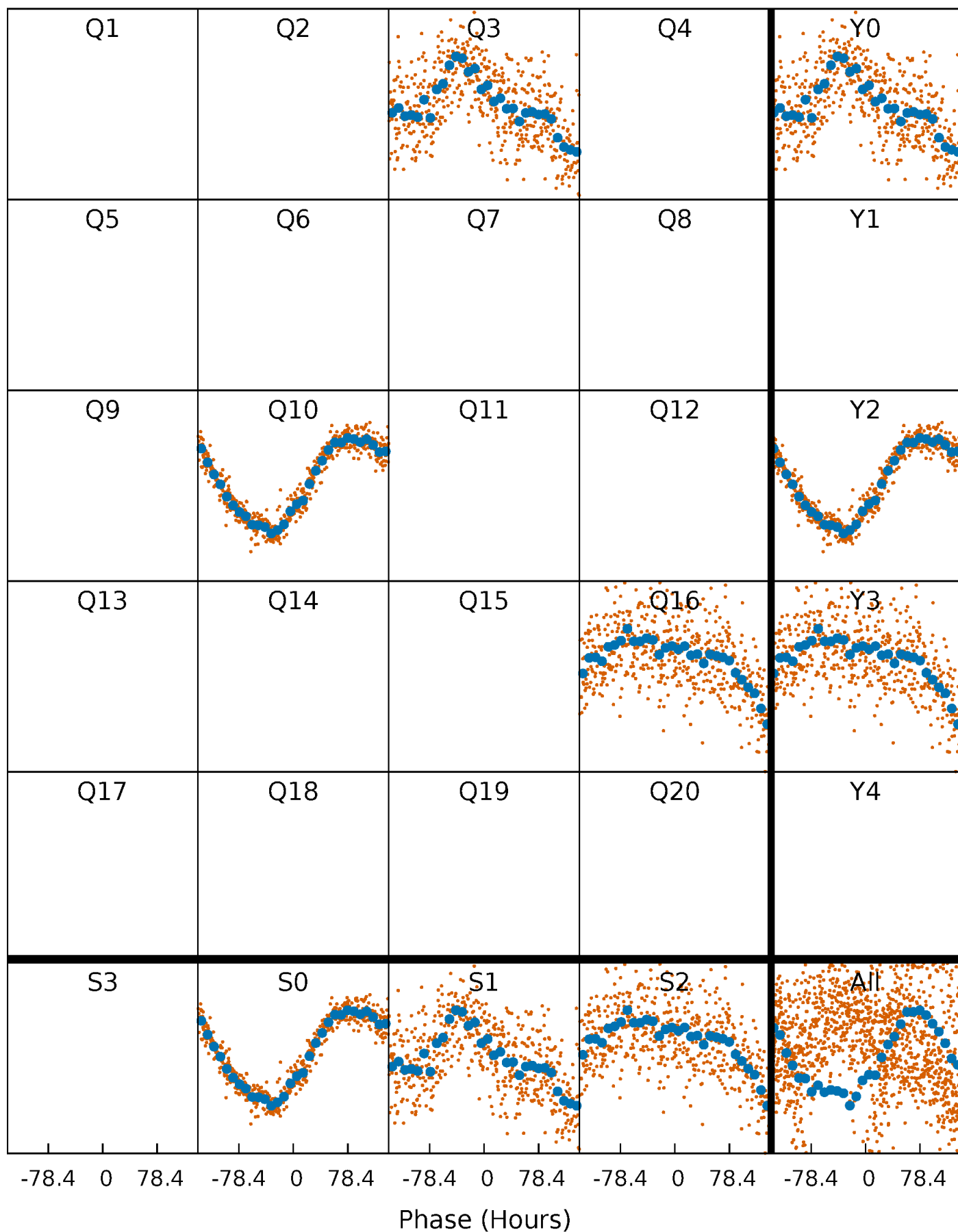


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



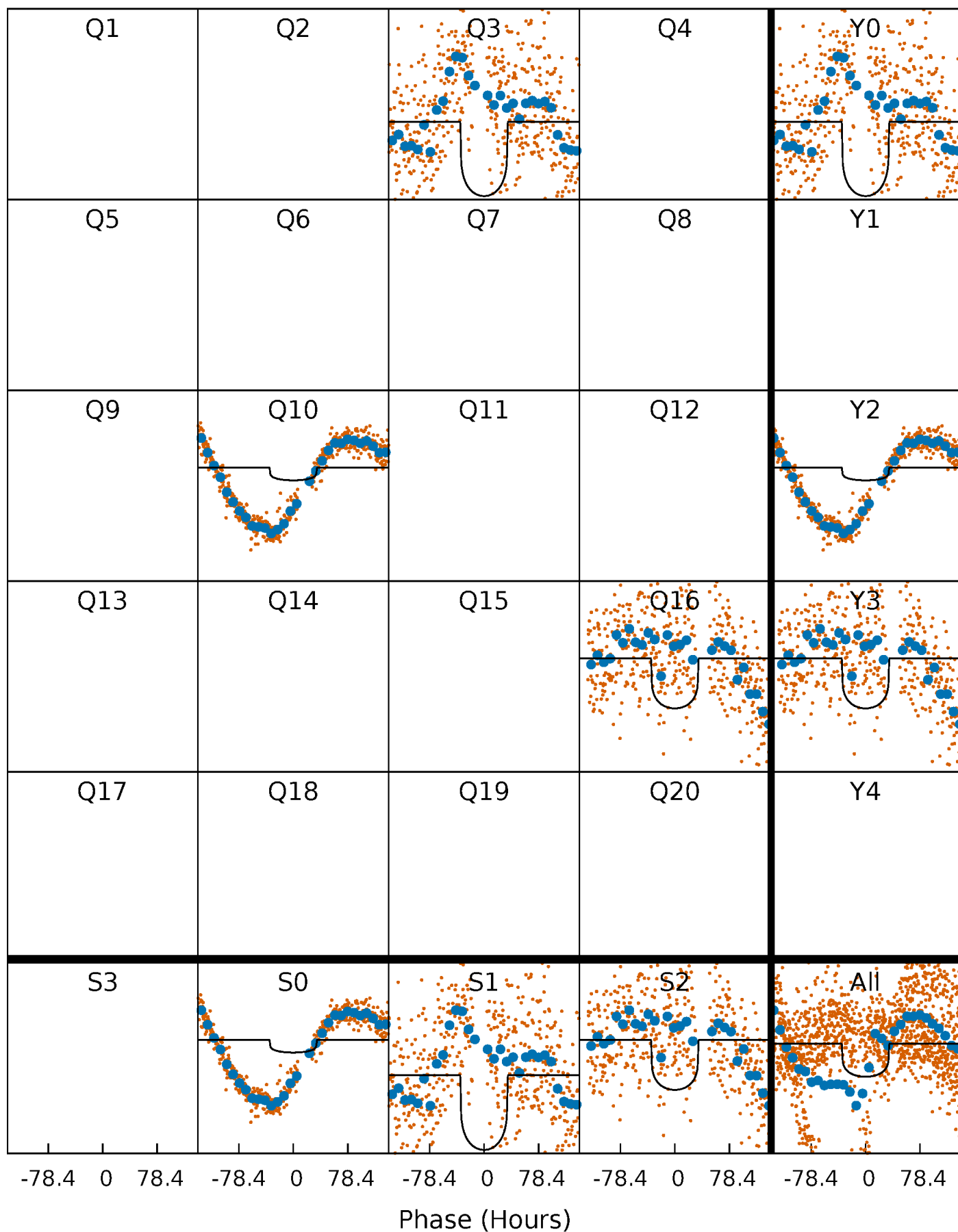
PDC Quarter-Phased Transit Curves

TCE 008494410-03 $P=616.102398$ Days $T_0=306.176987$ (BKJD)



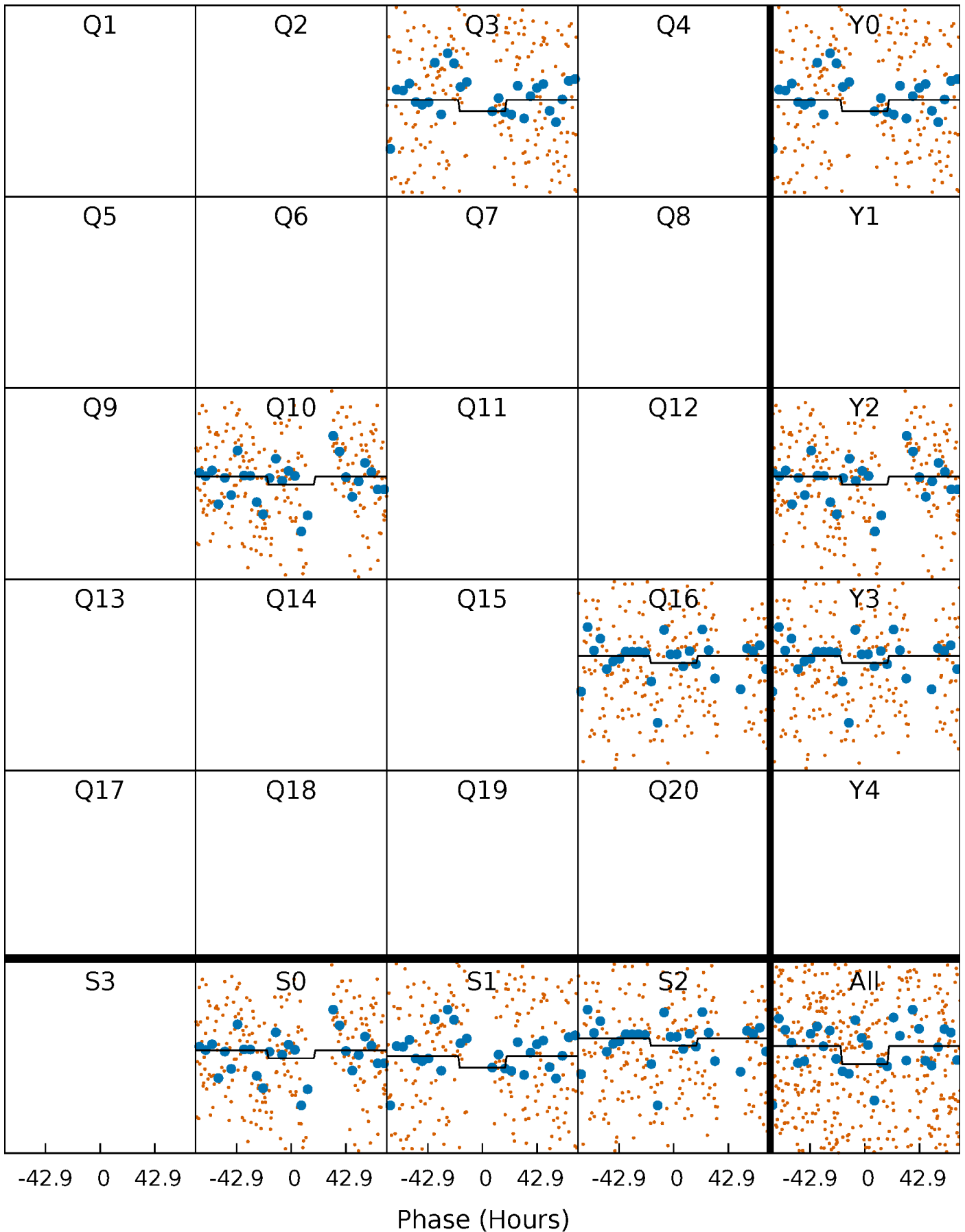
DV Quarter-Phased Transit Curves

TCE 008494410-03 P=616.102398 Days $T_0=306.176987$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

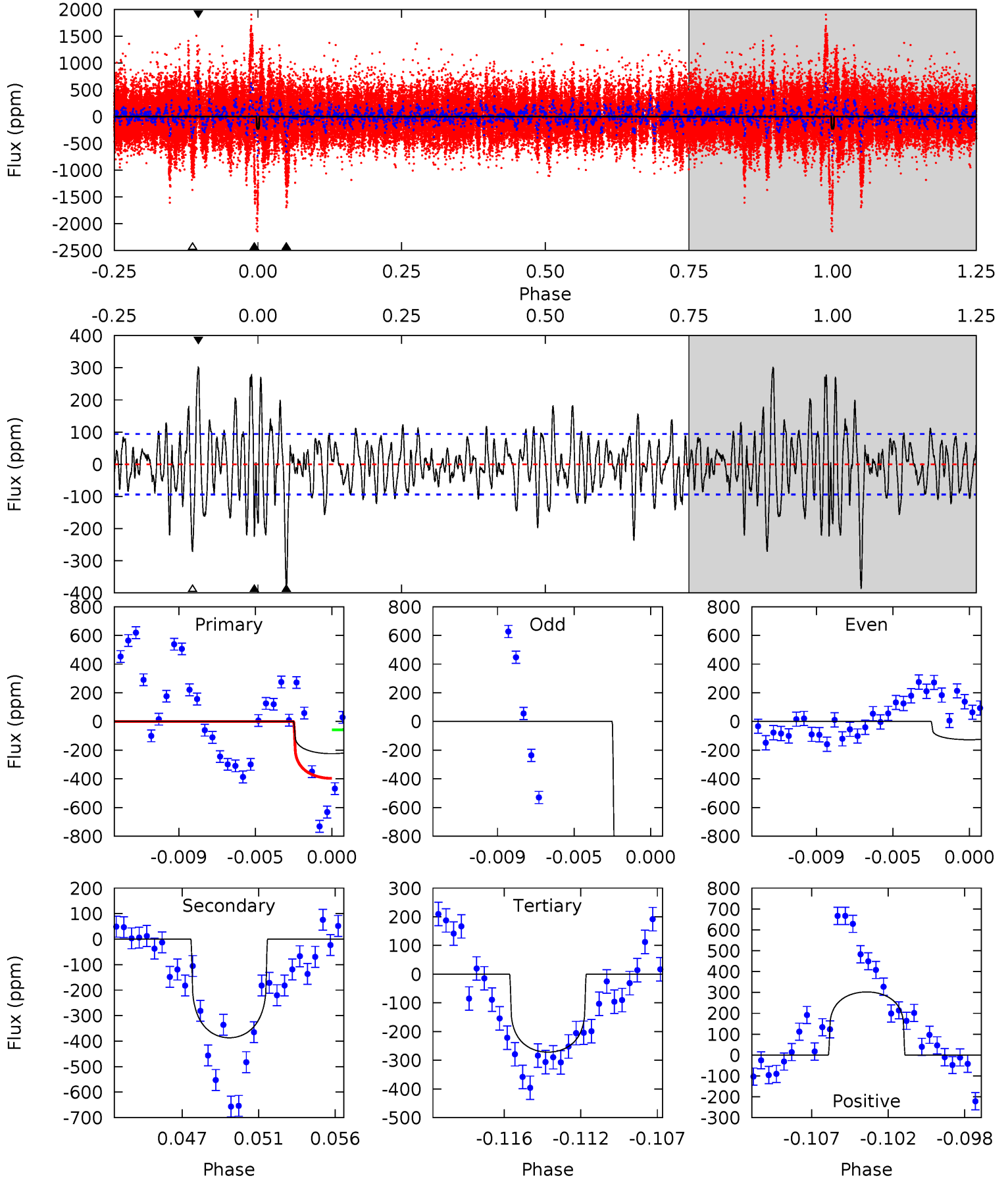
TCE 008494410-03 $P=616.085456$ Days $T_0=305.988559$ (BKJD)



DV Model-Shift Uniqueness Test

008494410-03, P = 616.102398 Days, E = 306.176987 Days

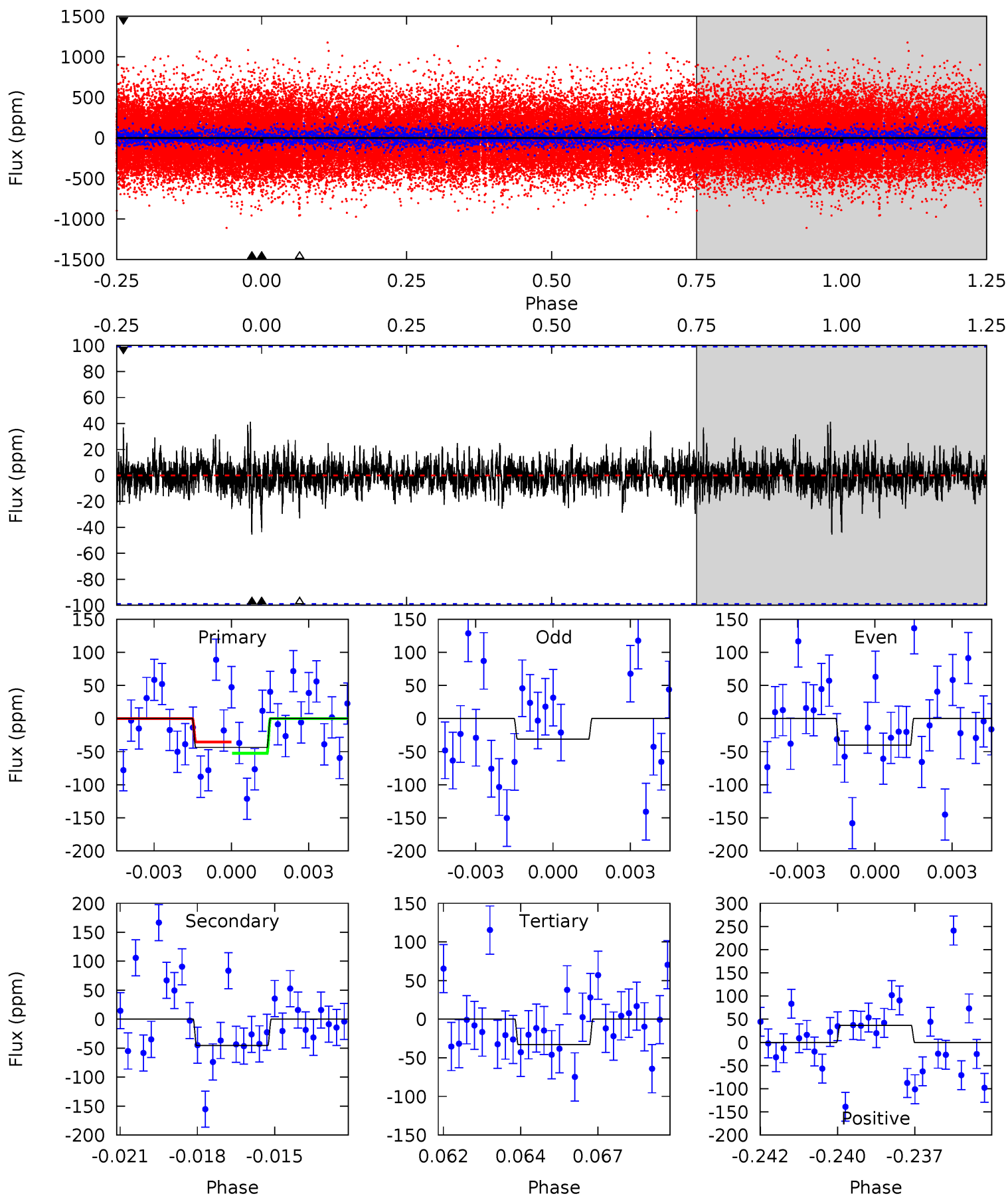
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	21.3	14.9	16.6	5.17	2.83	4.42	-2.59	-4.27	6.33	4.65	40.0	-5.13	0.44	9.39



Alt Model-Shift Uniqueness Test

008494410-03, P = 616.085456 Days, E = 305.988559 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.32	2.42	1.75	1.96	5.28	3.01	0.44	0.57	0.36	0.67	0.47	0.24	1.07	0.48	0.46



Stellar Parameters For KIC 008494410

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5914^{+160}_{-178}	$4.421^{+0.101}_{-0.188}$	$-0.220^{+0.300}_{-0.300}$	$0.987^{+0.272}_{-0.146}$	$0.938^{+0.120}_{-0.109}$	$1.374^{+0.625}_{-0.686}$
	+3%/-3%	+2%/-4%	+136%/-136%	+28%/-15%	+13%/-12%	+46%/-50%
Source	PHO1	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 008494410-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-387 ± 18	$2.01^{+0.53}_{-0.42}$	311^{+23}_{-16}	6127^{+738}_{-527}	101018^{+61810}_{-37116}
Alt.	-46 ± 19	$0.69^{+0.39}_{-0.35}$	311^{+22}_{-18}	6067^{+3504}_{-1219}	$97753^{+334187}_{-63944}$

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

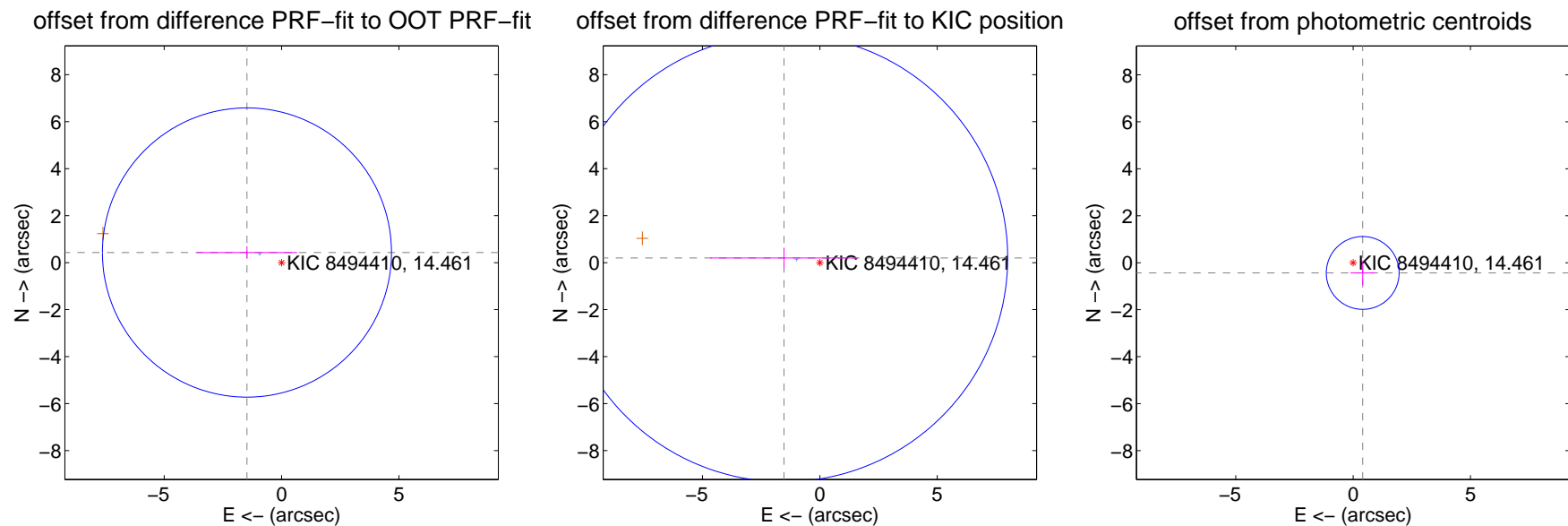
DV Centroid Data

Supplemental centroid analysis for 008494410-03. Kepler magnitude: 14.46. Transit SNR 6.73

There are 1 quarters with good PRF difference image offsets

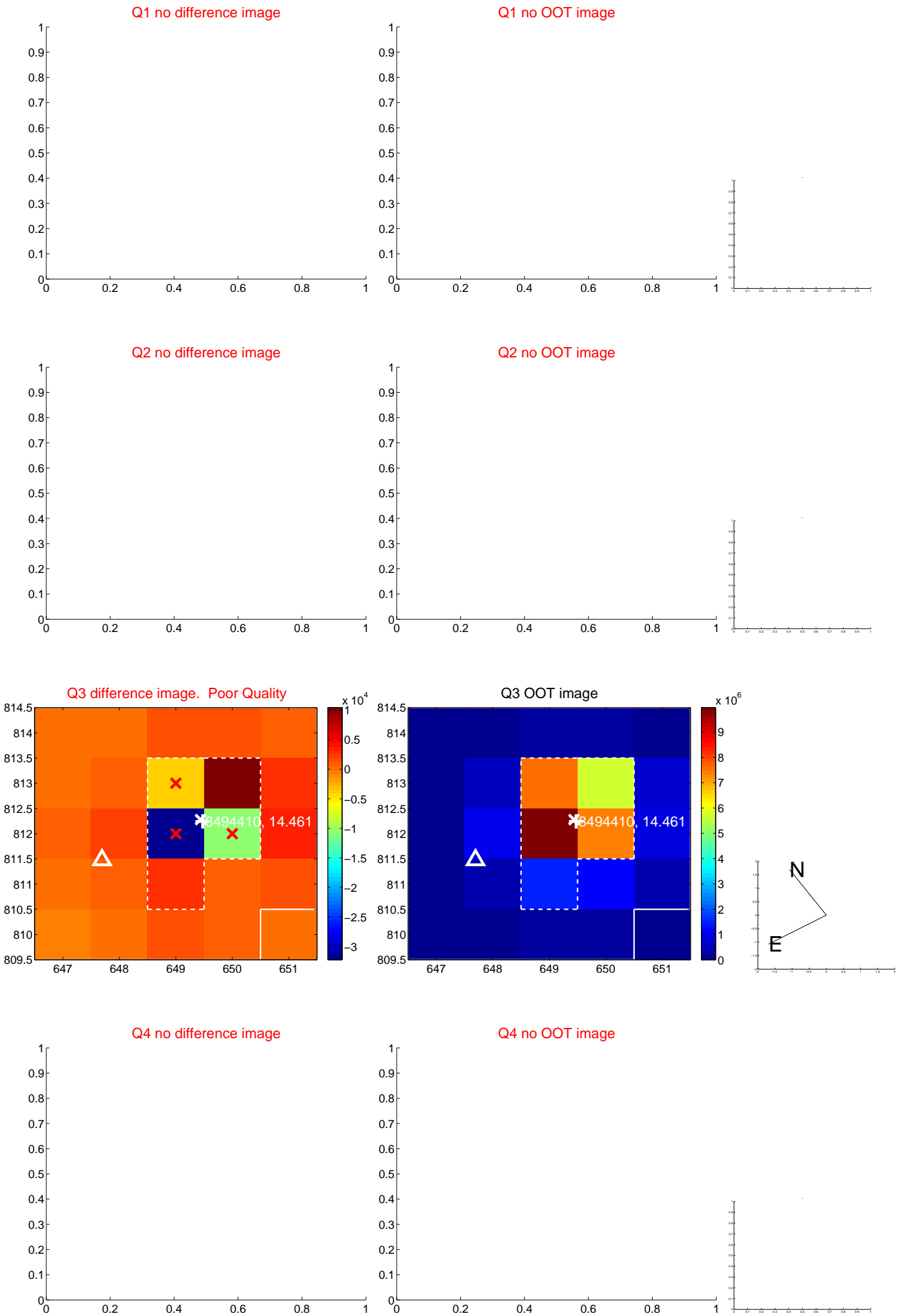
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.536 ± 2.052	0.75	1.475 ± 2.136	0.431 ± 0.269
PRF-fit source offset from KIC position	1.538 ± 3.175	0.48	1.526 ± 3.146	0.197 ± 0.437
photometric centroid source offset	0.60 ± 0.52	1.15	-0.41 ± 0.52	-0.44 ± 0.52



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.

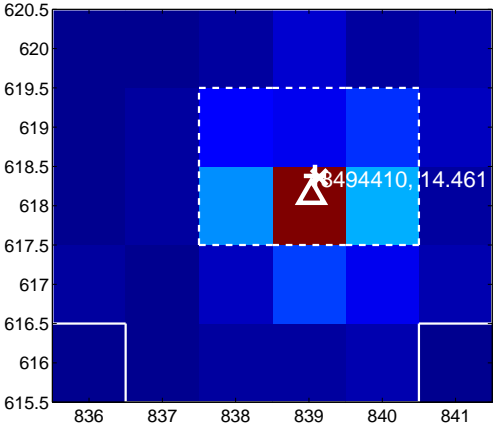
Q9 no difference image



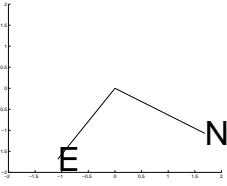
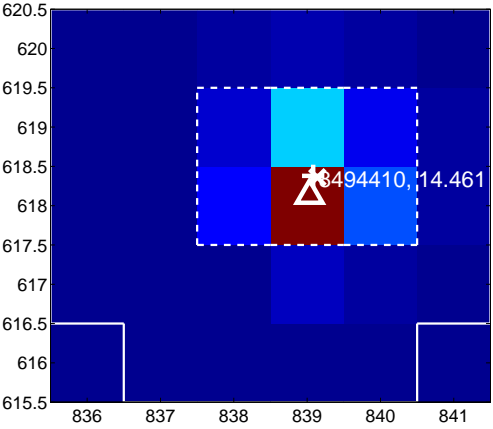
Q9 no OOT image



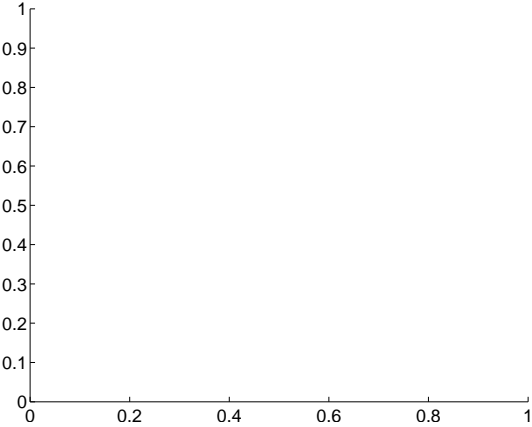
Q10 difference image



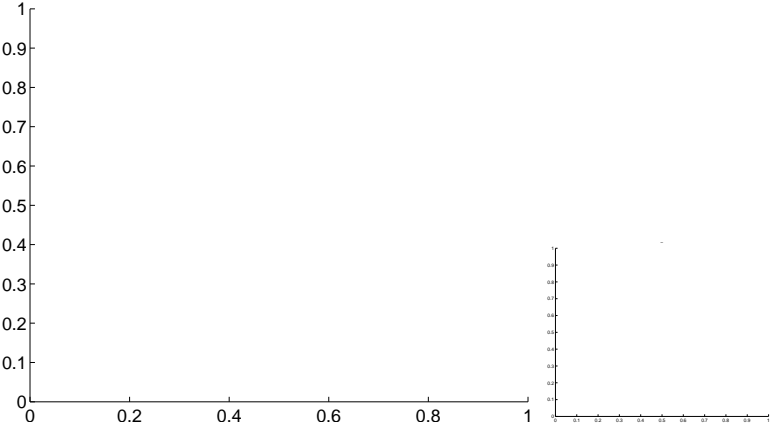
Q10 OOT image



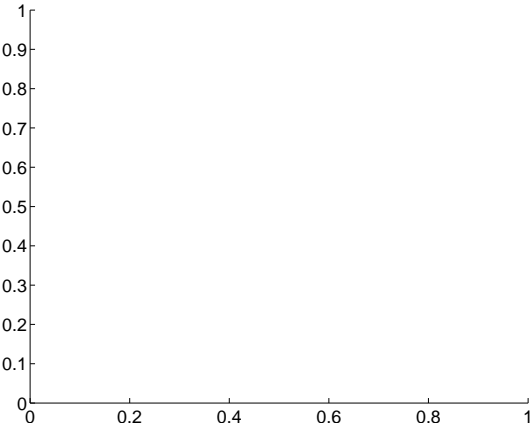
Q11 no difference image



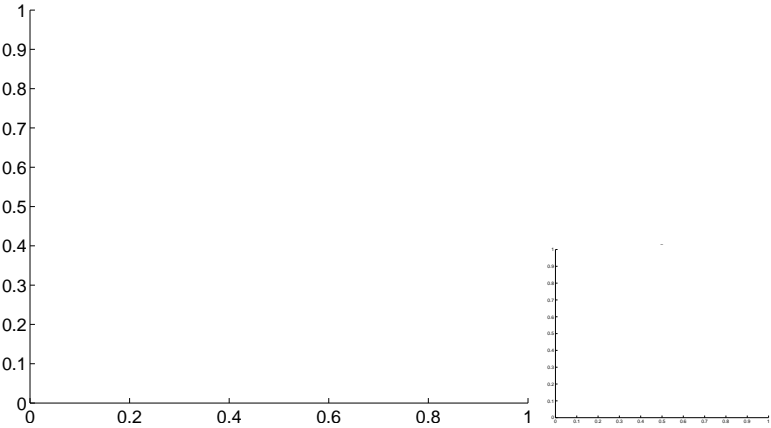
Q11 no OOT image



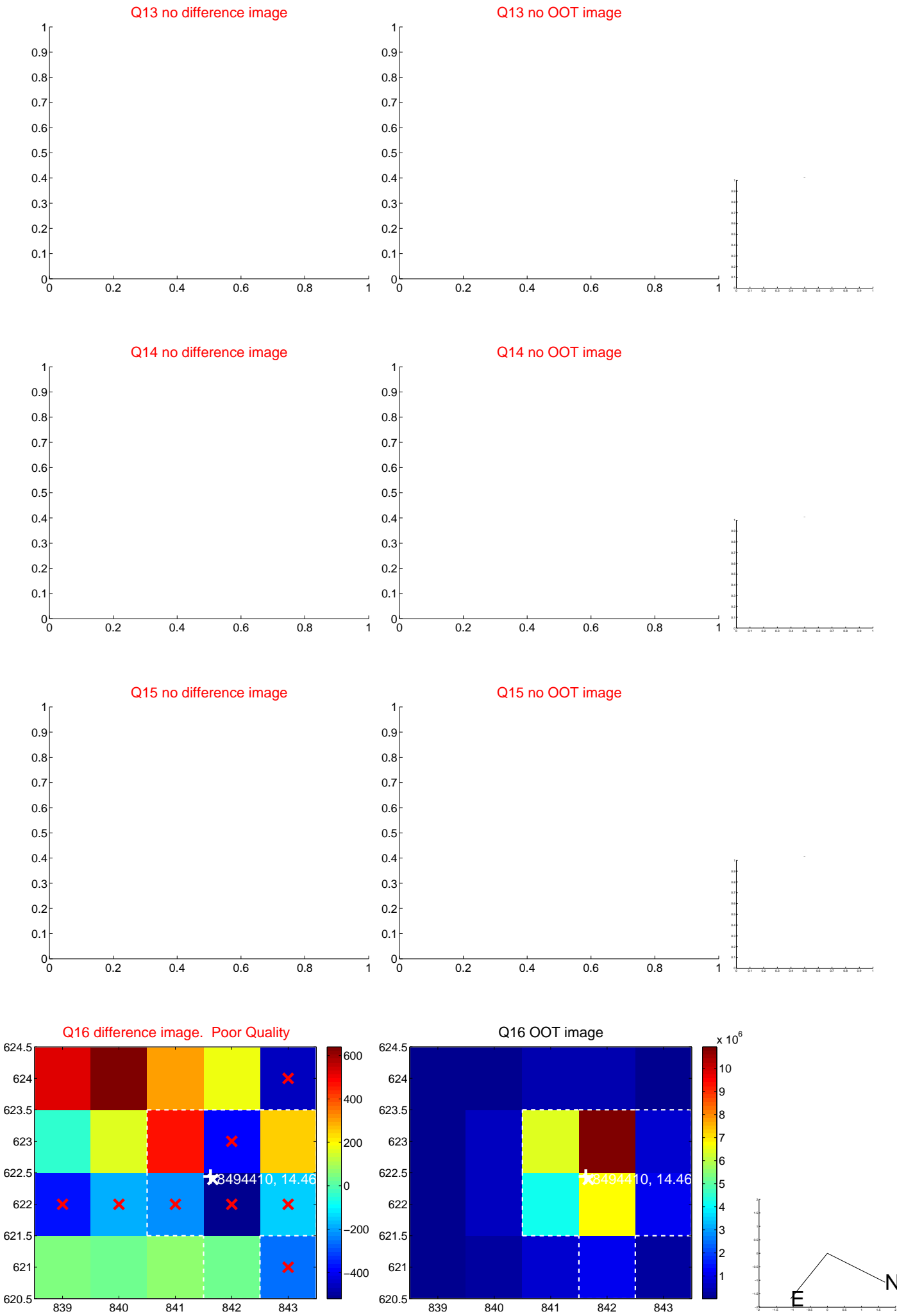
Q12 no difference image



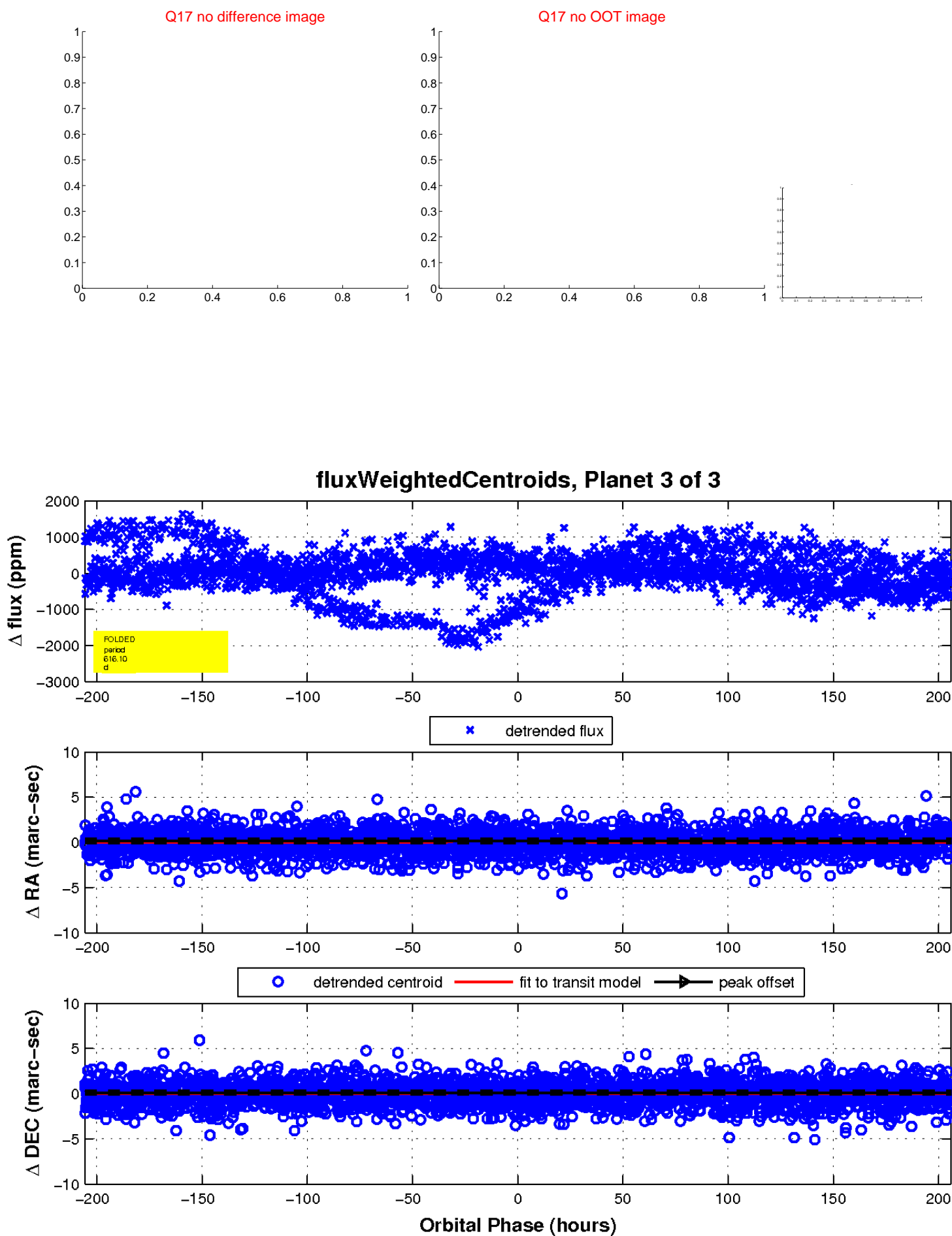
Q12 no OOT image



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.



UKIRT Image

