

KIC 008004647

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})
008004647-01	OBS	No	589.501452	281.510904	2612.4	7.548	18.1	7.5	0.55	4985	3.16	0.13
008004647-02	OBS	No	444.337453	244.446998	1863.1	7.144	16.2	8.3	0.55	4985	2.36	0.19
008004647-03	OBS	No	375.234952	449.422928	1335.1	3.056	15.1	4.2	0.55	4985	2.04	0.24
008004647-04	OBS	No	600.607424	194.706947	2425.1	5.117	14.3	8.3	0.55	4985	2.70	0.13
008004647-05	OBS	No	560.281544	226.195177	2020.9	4.011	15.6	7.2	0.55	4985	2.57	0.14
008004647-07	OBS	No	623.254844	143.604680	2530.2	3.122	11.1	8.6	0.55	4985	2.87	0.12
008004647-08	OBS	No	575.913077	209.052948	982.5	9.000	11.6	-1.0	0.55	4985	1.72	0.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008004647-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
008004647-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008004647-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—CENT_FEW_DIFFS
008004647-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

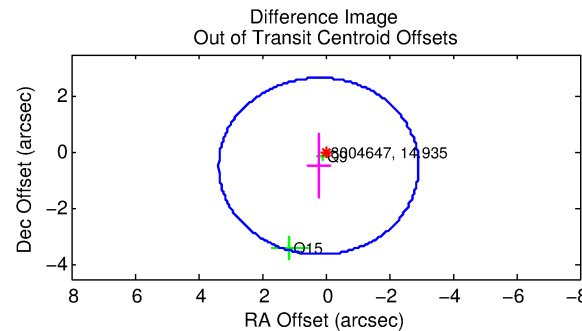
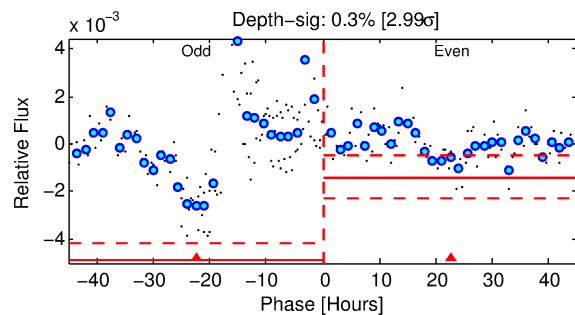
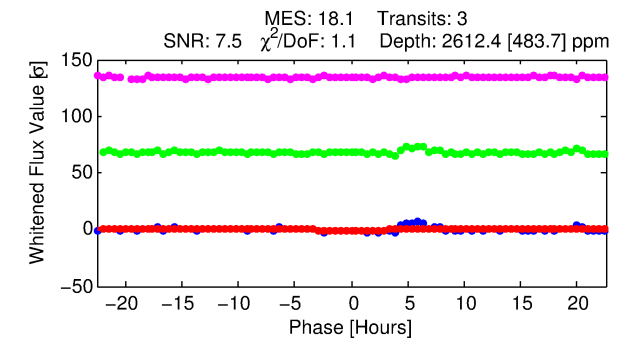
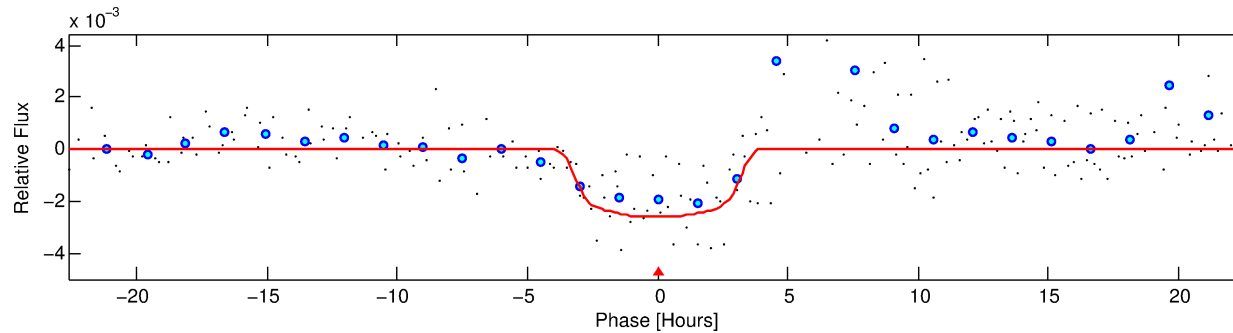
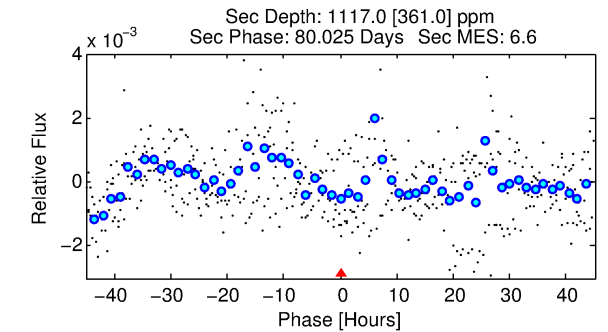
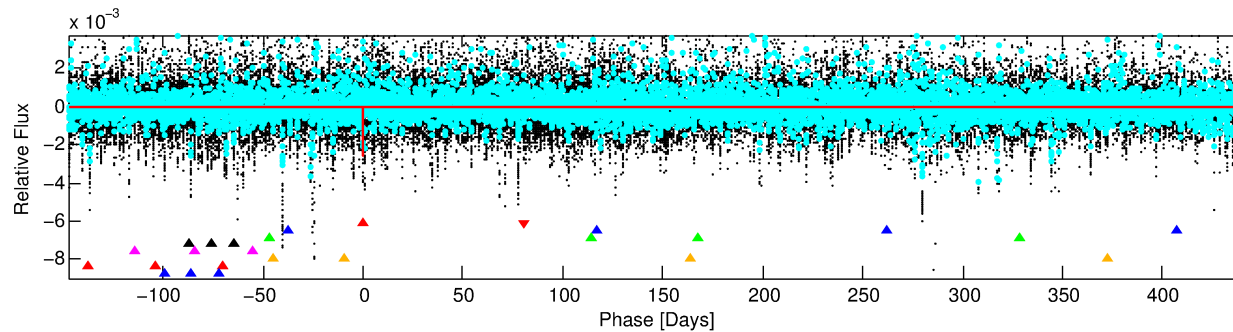
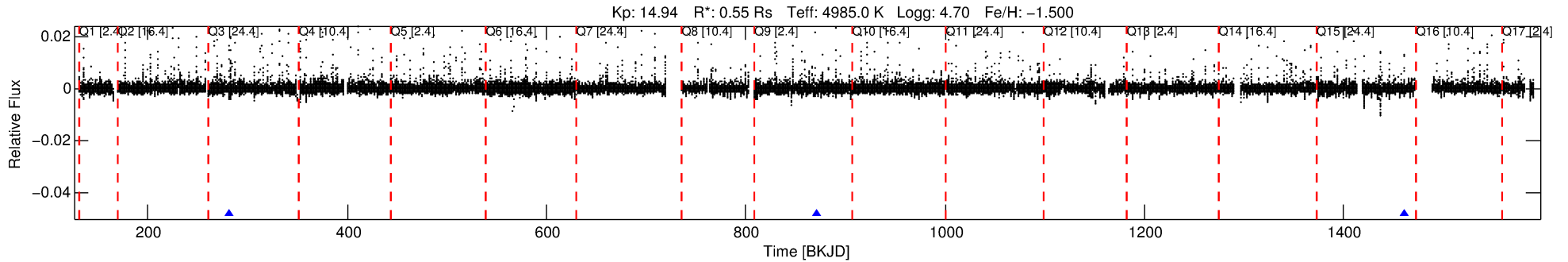
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008004647-01

No Significant Match Found

DV One-Page Summary

KIC: 8004647 Candidate: 1 of 8 Period: 589.501 d



DV Fit Results:

Period = 589.50145 [0.00830] d
Epoch = 281.5109 [0.0126] BKJD
Rp/R* = 0.0524 [0.0070]
a/R* = 394.09 [140.89]
b = 0.82 [0.14]
Seff = 0.13 [0.02]
Teq = 153 [6] K
Rp = 3.16 [0.45] Re
a = 1.1358 [0.0584] AU
Ag = 79549.48 [34036.97] [2.34σ]
Teffp = 3981 [438] K [8.75σ]

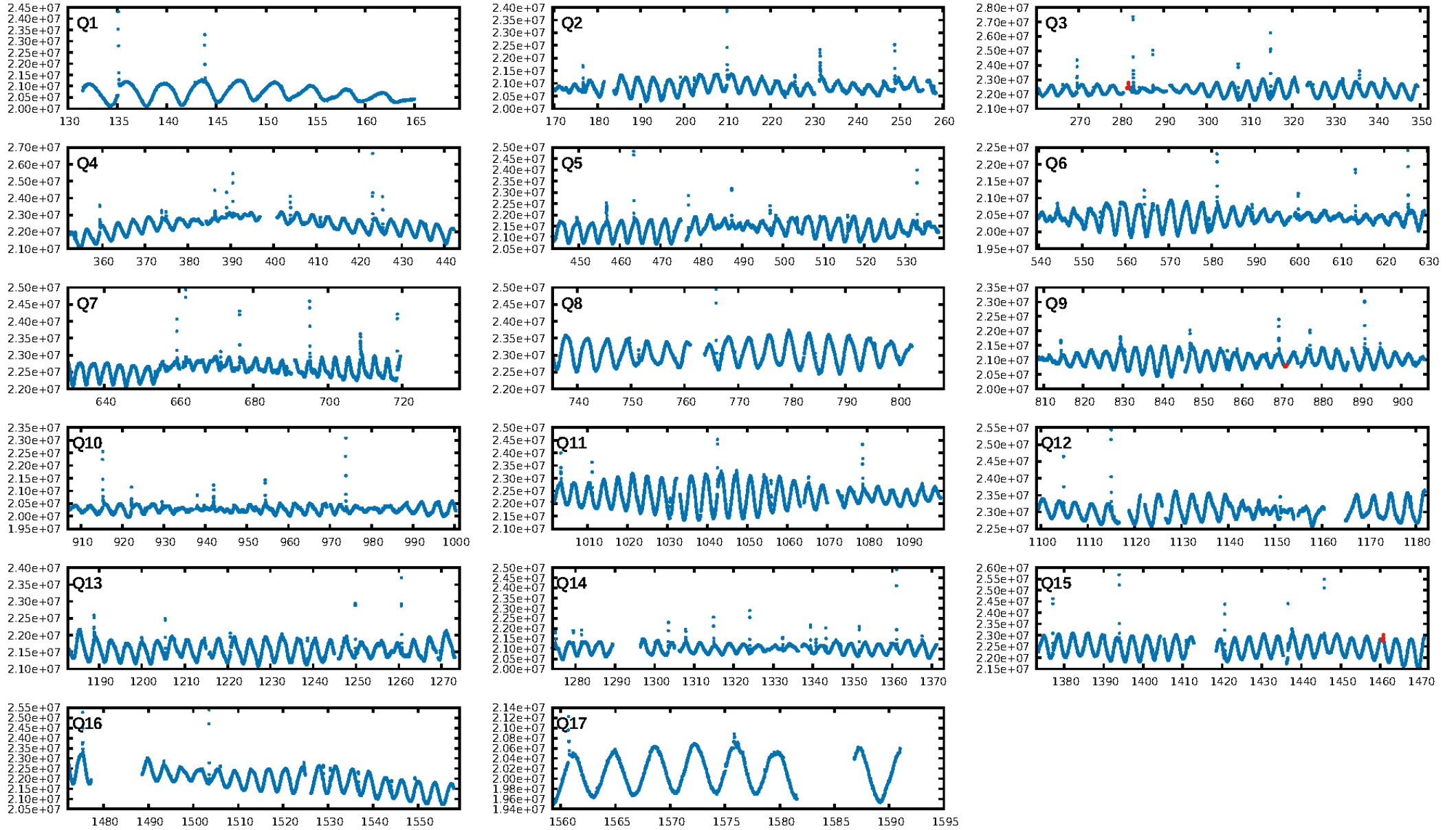
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [27.76σ]
LongPeriod-sig: 100.0% [29.23σ]
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 85.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.3874
Centroid-sig: 25.5%
Centroid-so: 0.905 arcsec [1.61σ]
OotOffset-rm: 0.530 arcsec [0.51σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-rm: 0.714 arcsec [0.46σ]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

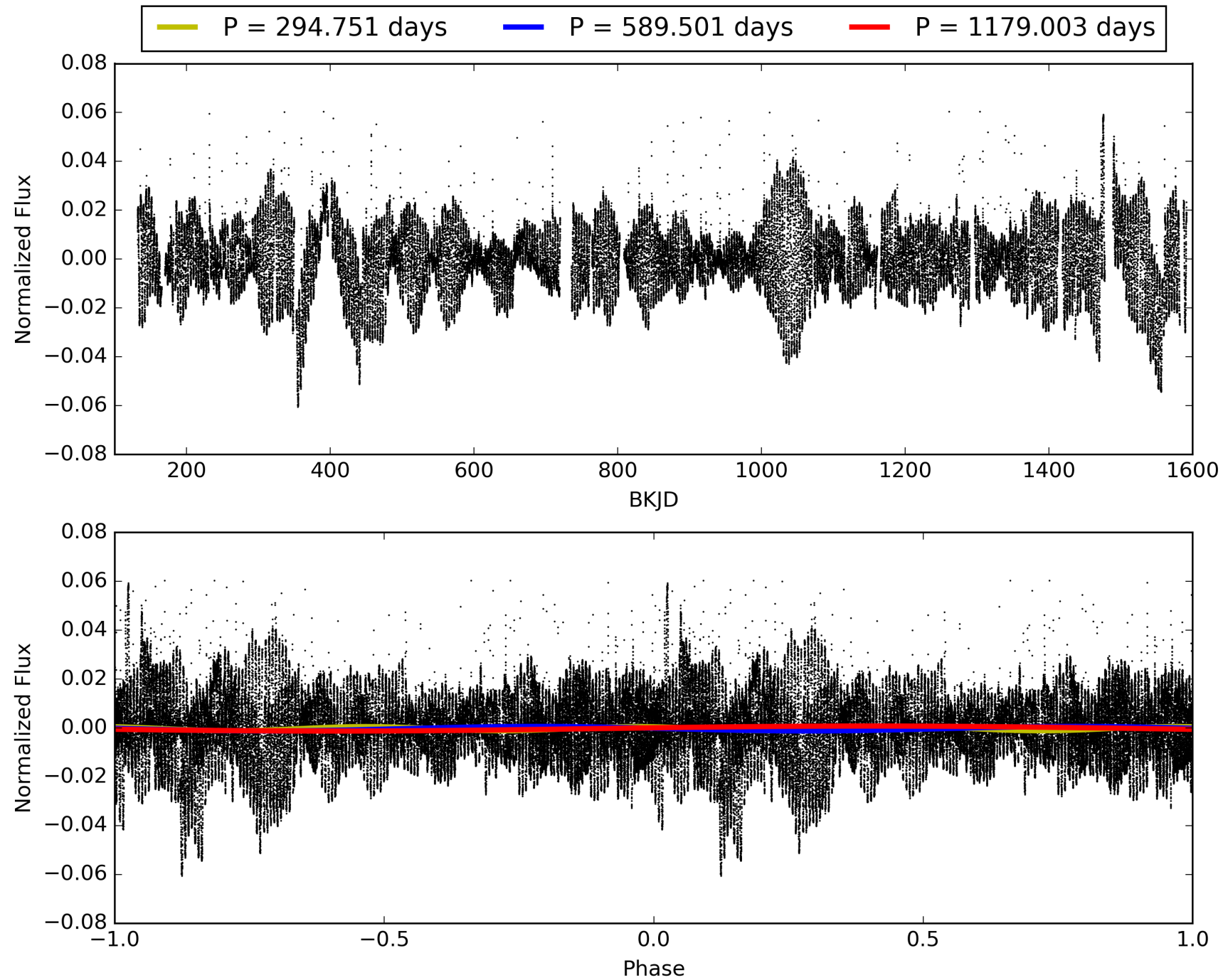
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 15:04:55 Z

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

TCE 008004647-01, PDC Light Curves

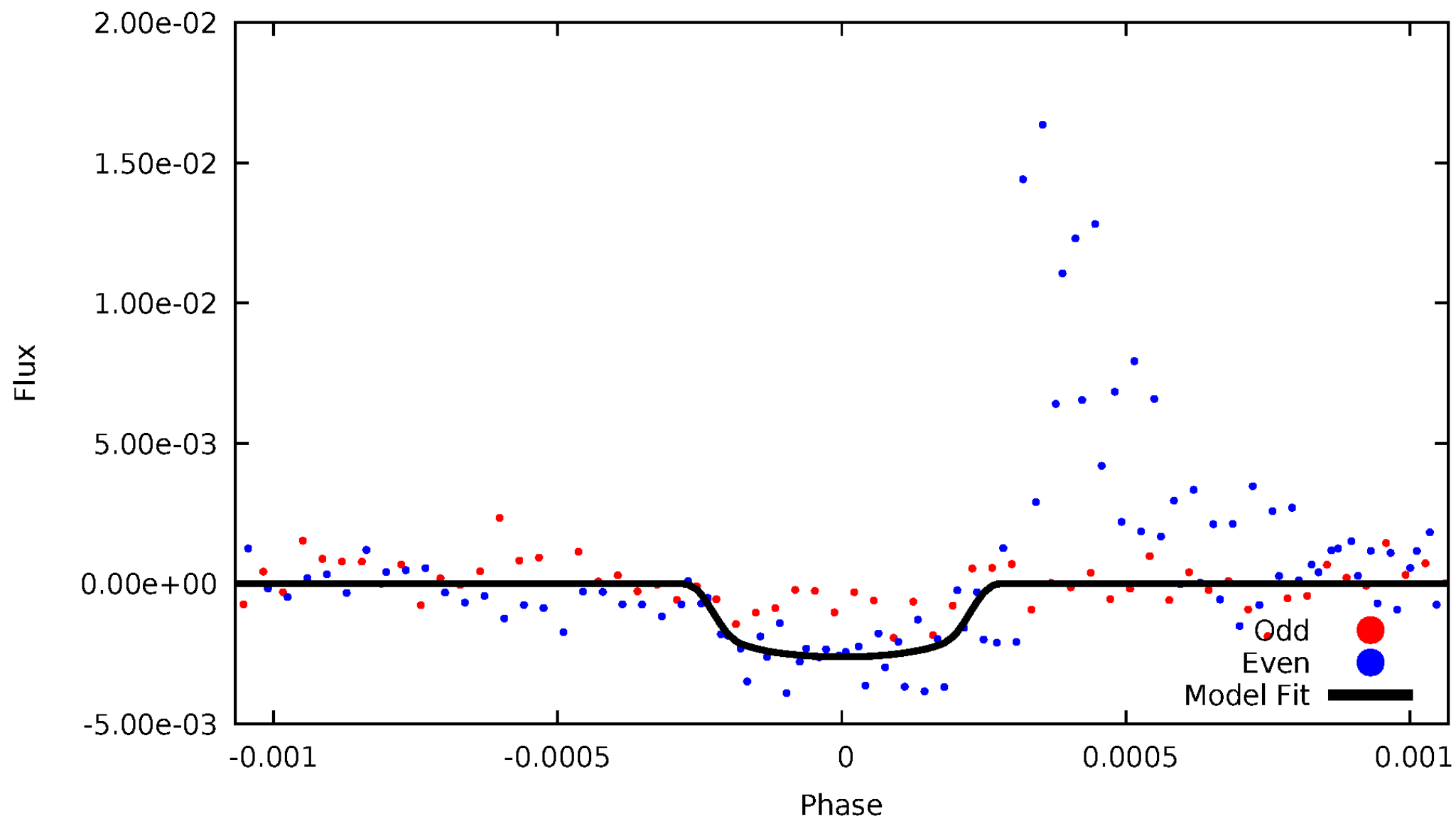


TCE 008004647-01



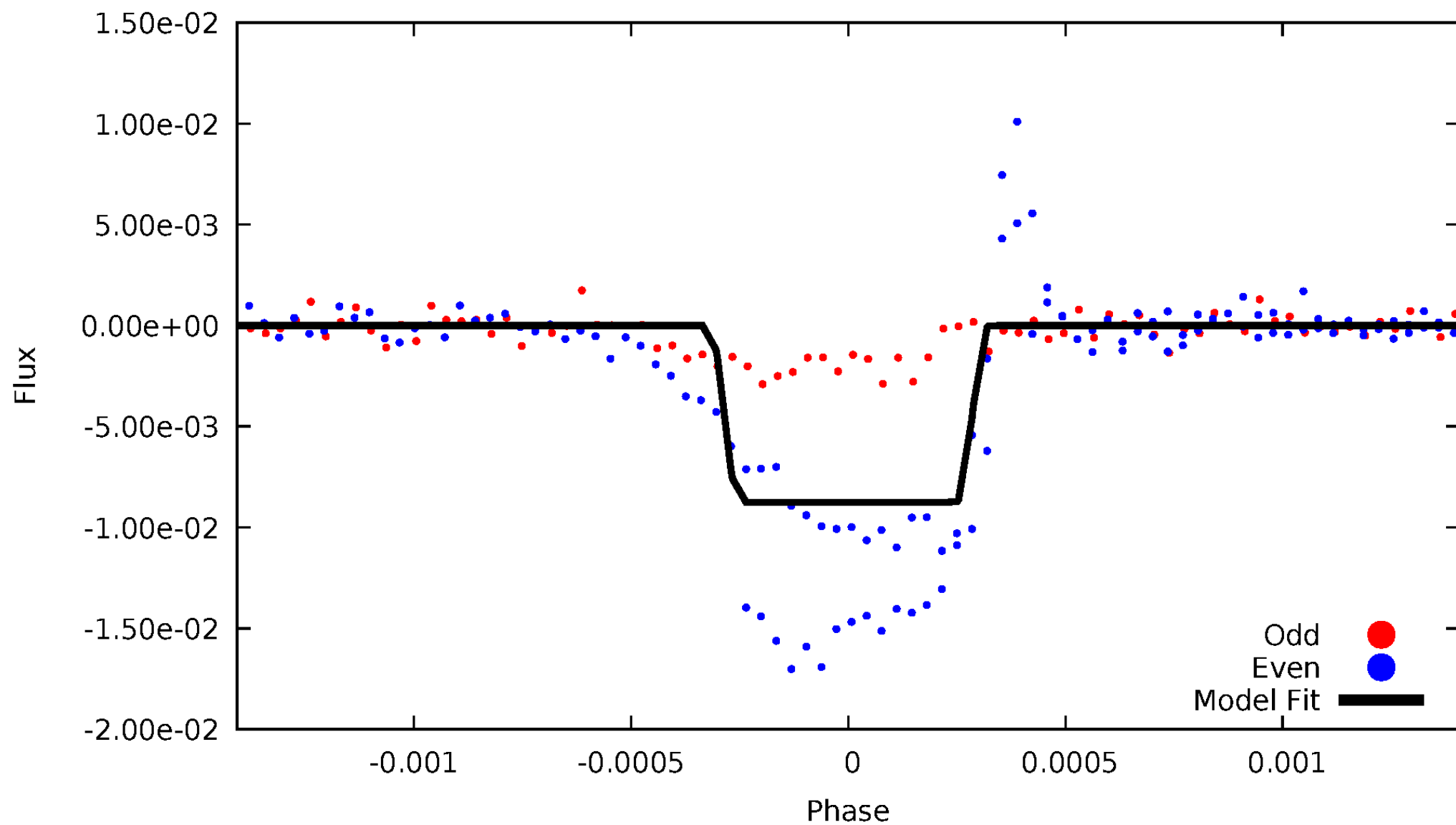
DV Odd/Even

TCE 008004647-01



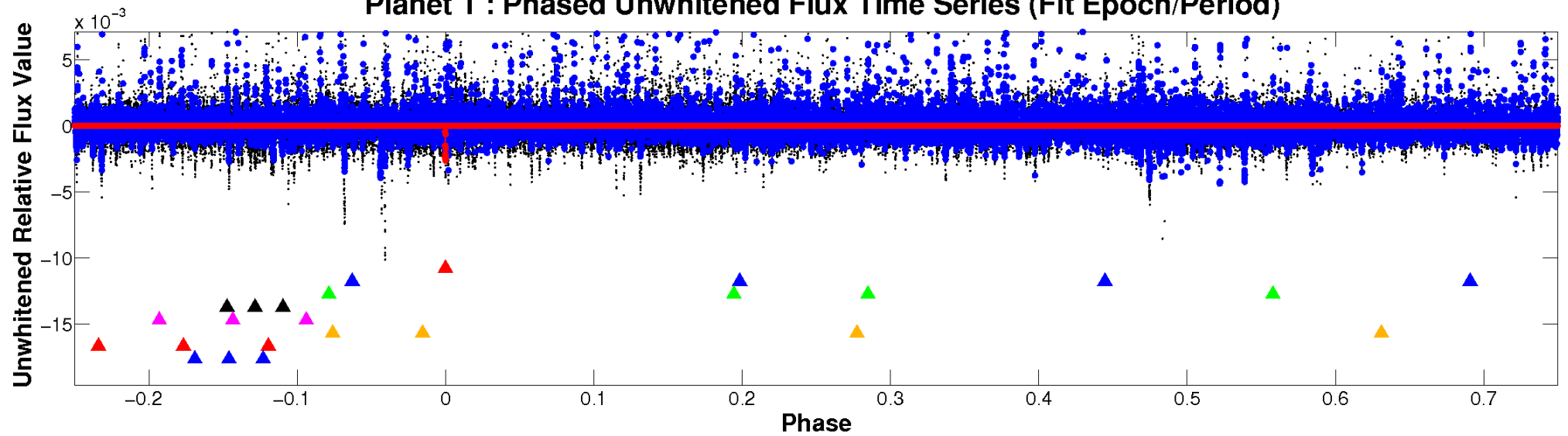
ALT Odd/Even

TCE 008004647-01

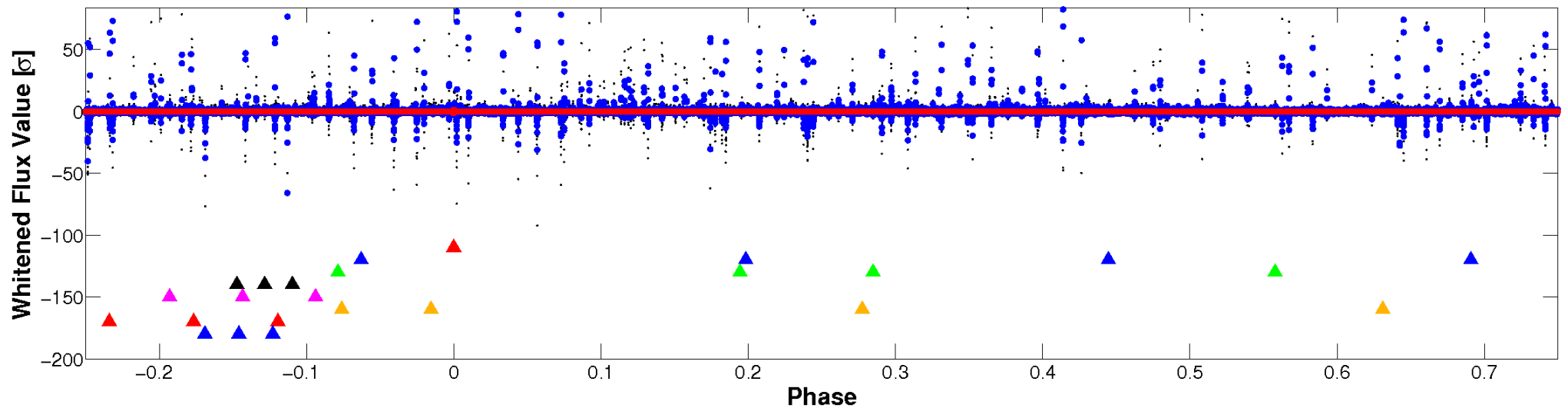


Non-Whitened Vs. Whitened Light Curve

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

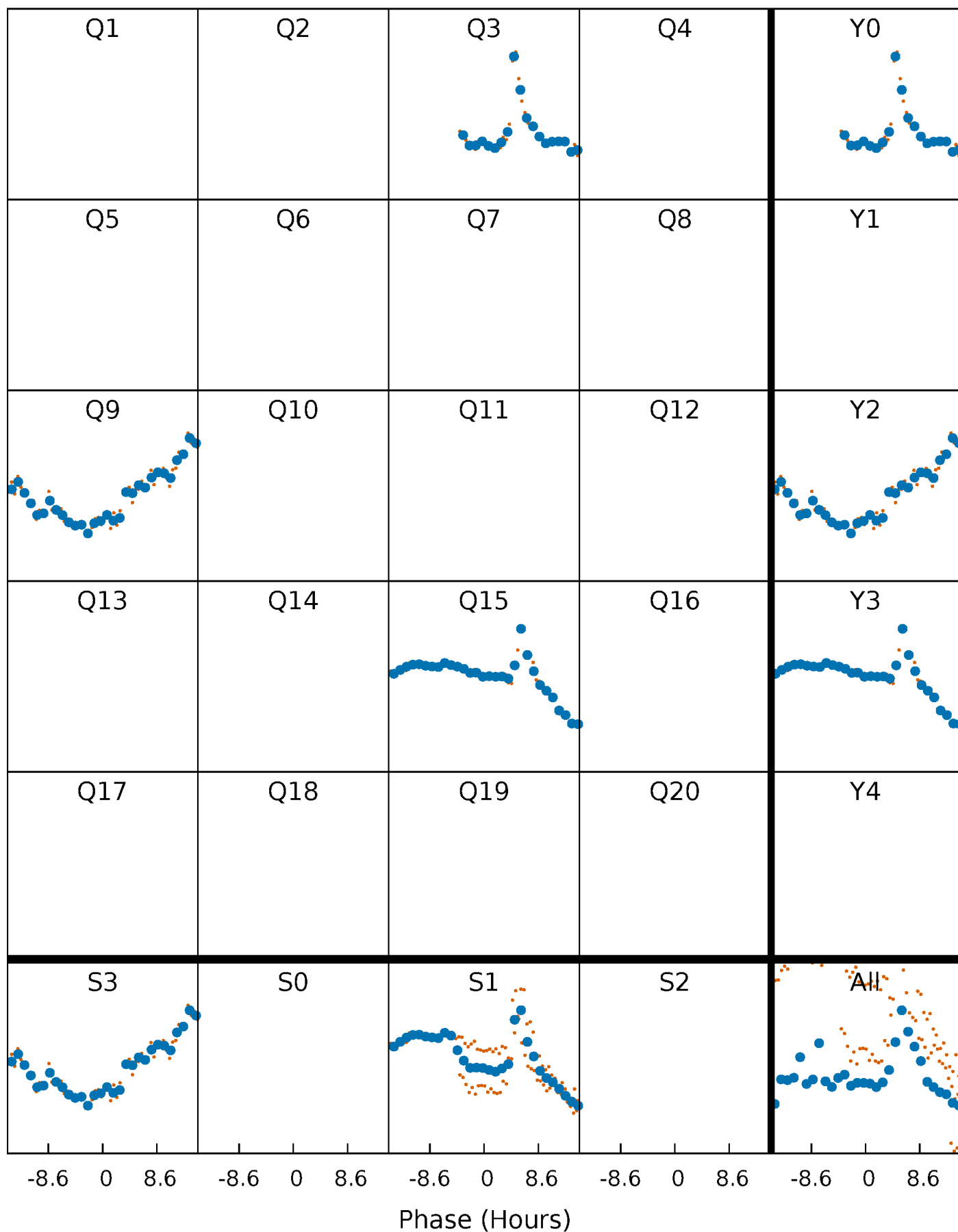


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



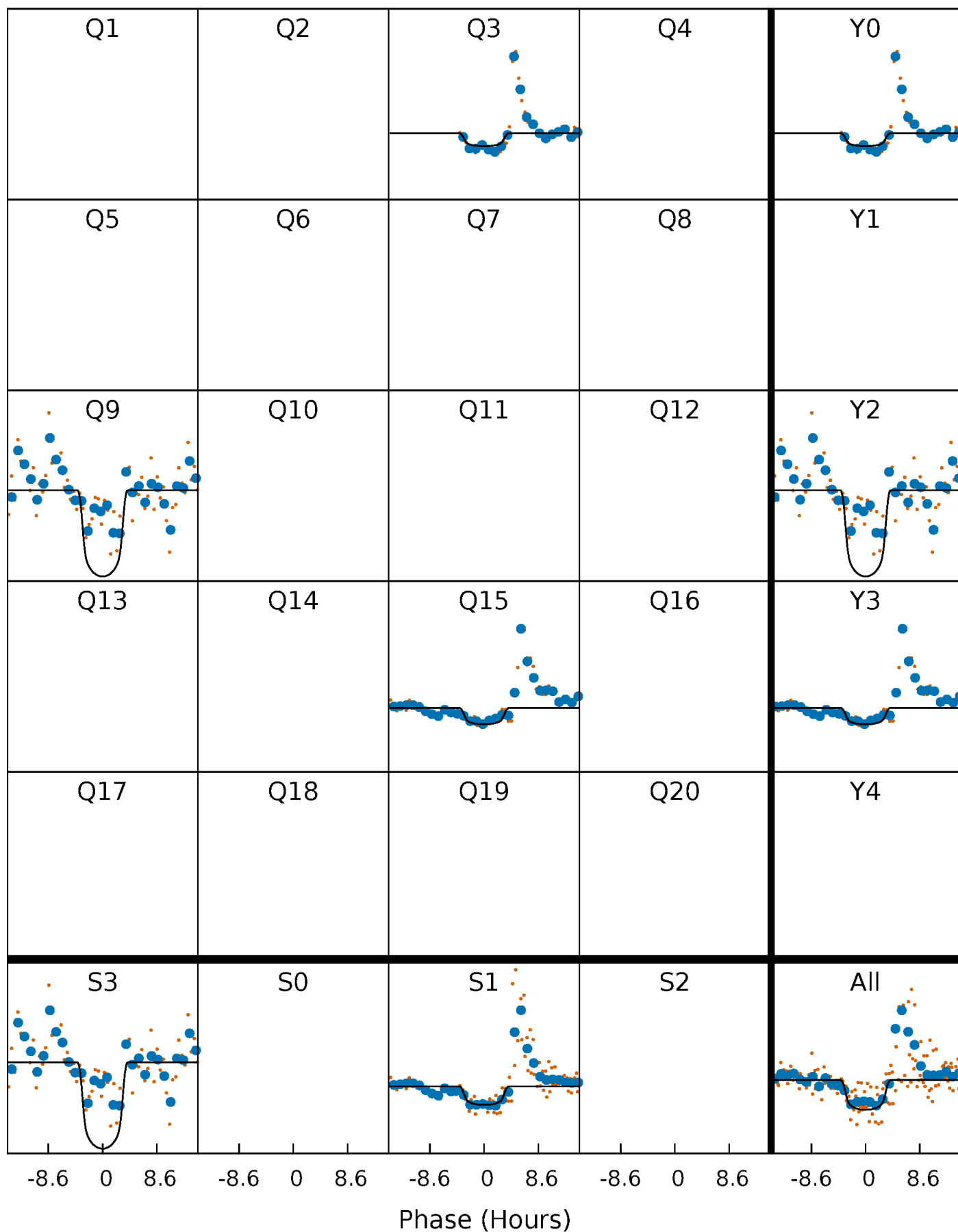
PDC Quarter-Phased Transit Curves

TCE 008004647-01 P=589.501452 Days $T_0=281.510904$ (BKJD)



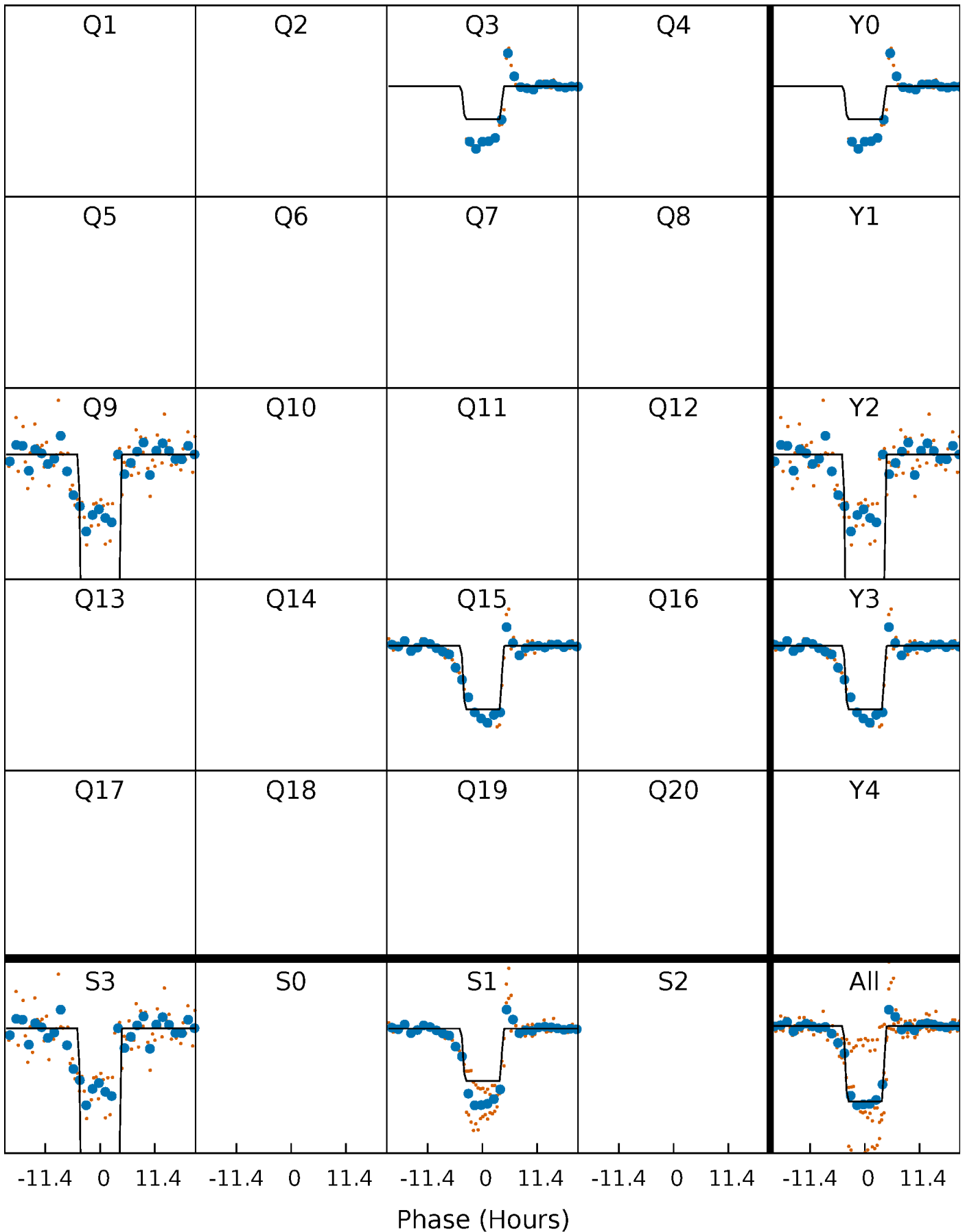
DV Quarter-Phased Transit Curves

TCE 008004647-01 P=589.501452 Days $T_0=281.510904$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

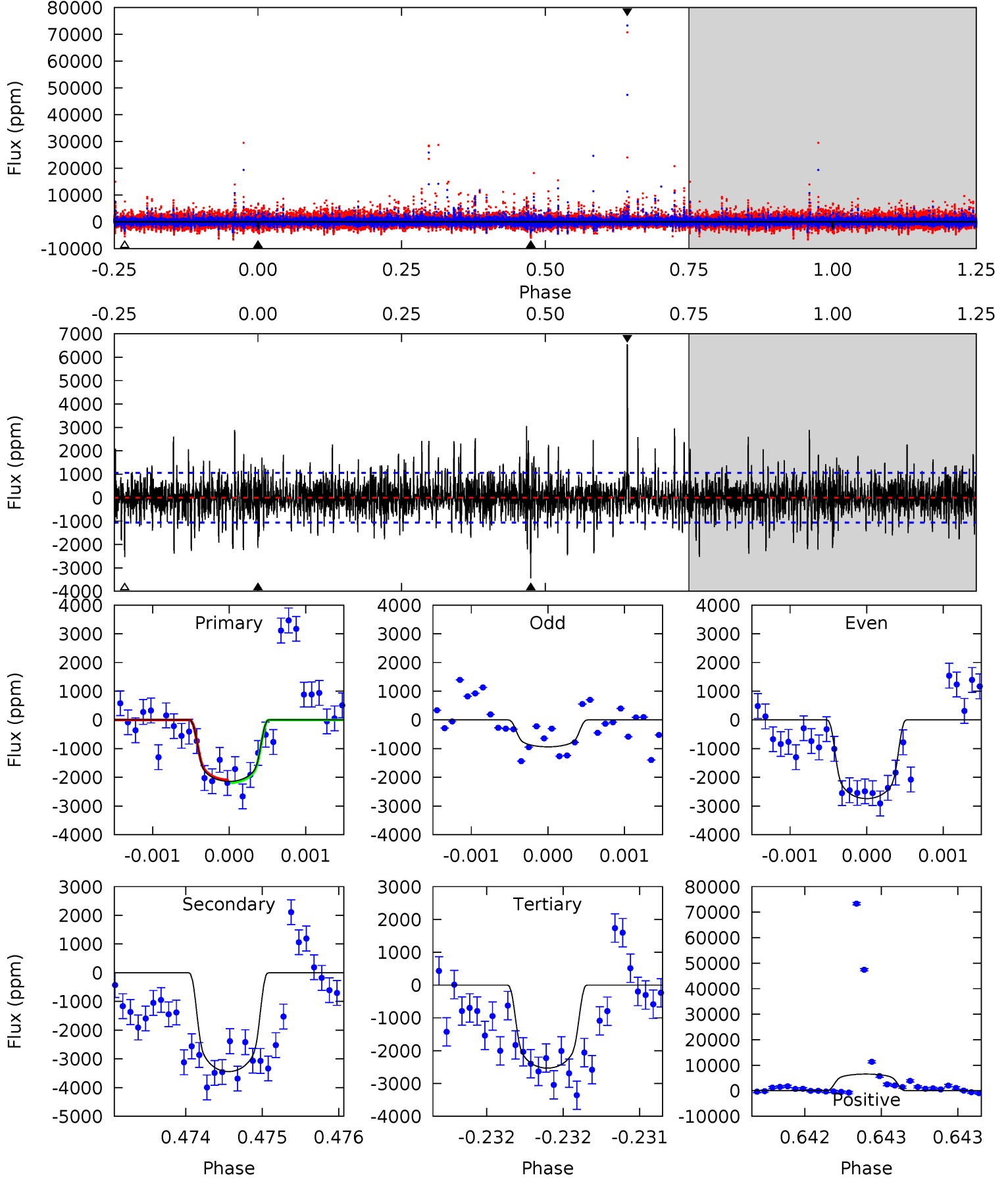
TCE 008004647-01 P=589.528640 Days $T_0=281.490346$ (BKJD)



DV Model-Shift Uniqueness Test

008004647-01, P = 589.501452 Days, E = 281.510904 Days

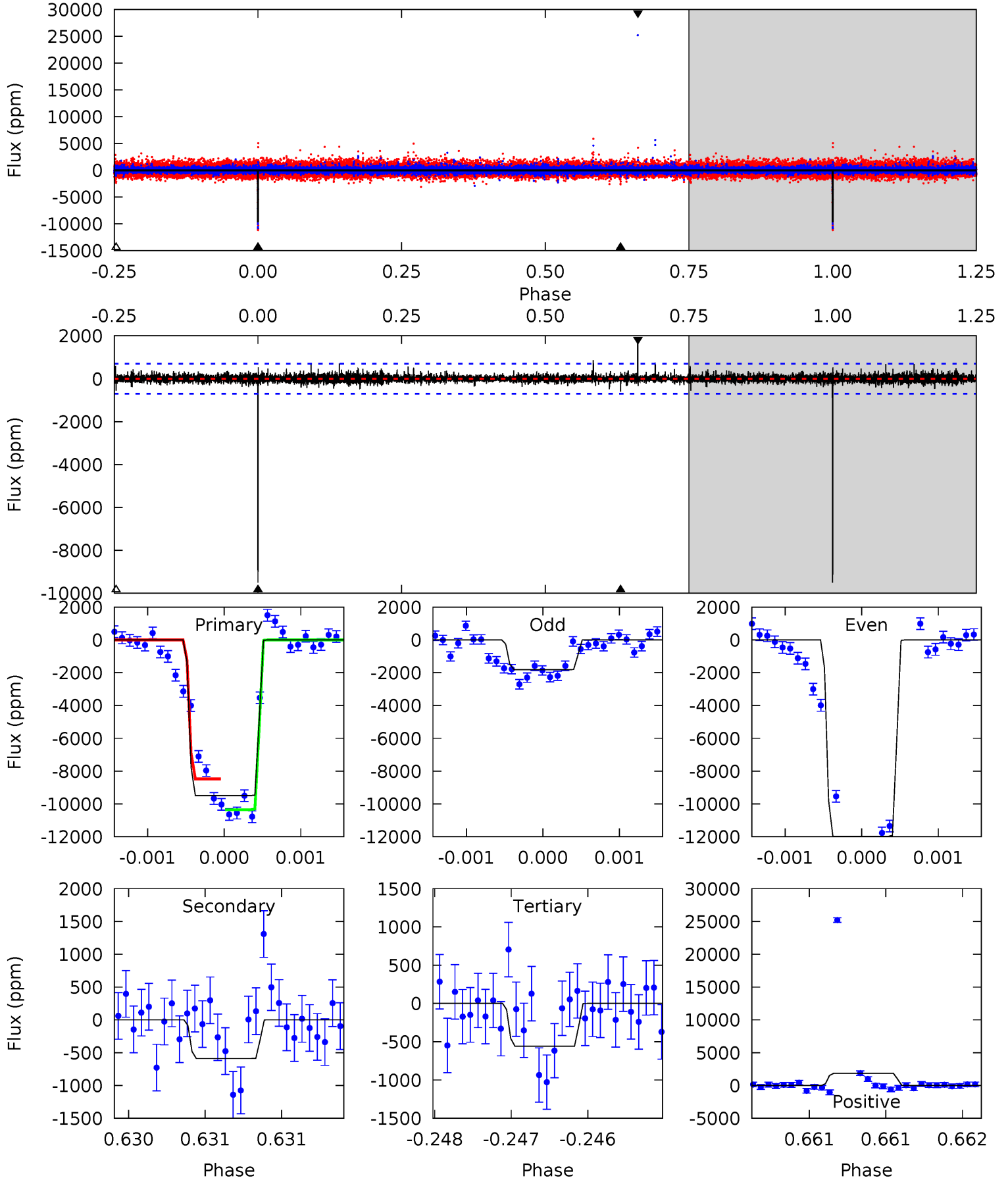
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	18.0	13.3	34.3	5.56	3.46	3.15	-2.04	-23.1	4.77	-16.3	2.15	0.99	0.66	0.25



Alt Model-Shift Uniqueness Test

008004647-01, P = 589.528640 Days, E = 281.490346 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
74.8	4.64	4.40	14.7	5.53	3.42	0.83	70.4	60.1	0.24	-10.1	52.7	0.91	0.16	0



Stellar Parameters For KIC 008004647

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4985^{+163}_{-148}	$4.704^{+0.049}_{-0.024}$	$-1.500^{+0.300}_{-0.300}$	$0.552^{+0.026}_{-0.029}$	$0.562^{+0.040}_{-0.017}$	$4.695^{+0.840}_{-0.452}$
	+3%/-3%	+1%/-1%	+20%/-20%	+5%/-5%	+7%/-3%	+18%/-10%
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 008004647-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3442 ± 191	$3.16^{+0.42}_{-0.46}$	213^{+8}_{-7}	5252^{+409}_{-326}	253602^{+88277}_{-62718}
Alt.	-589 ± 127	$5.61^{+0.49}_{-0.46}$	213^{+8}_{-7}	3114^{+140}_{-141}	13189^{+4004}_{-3432}

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 $A_{obs} \gg 1.0$

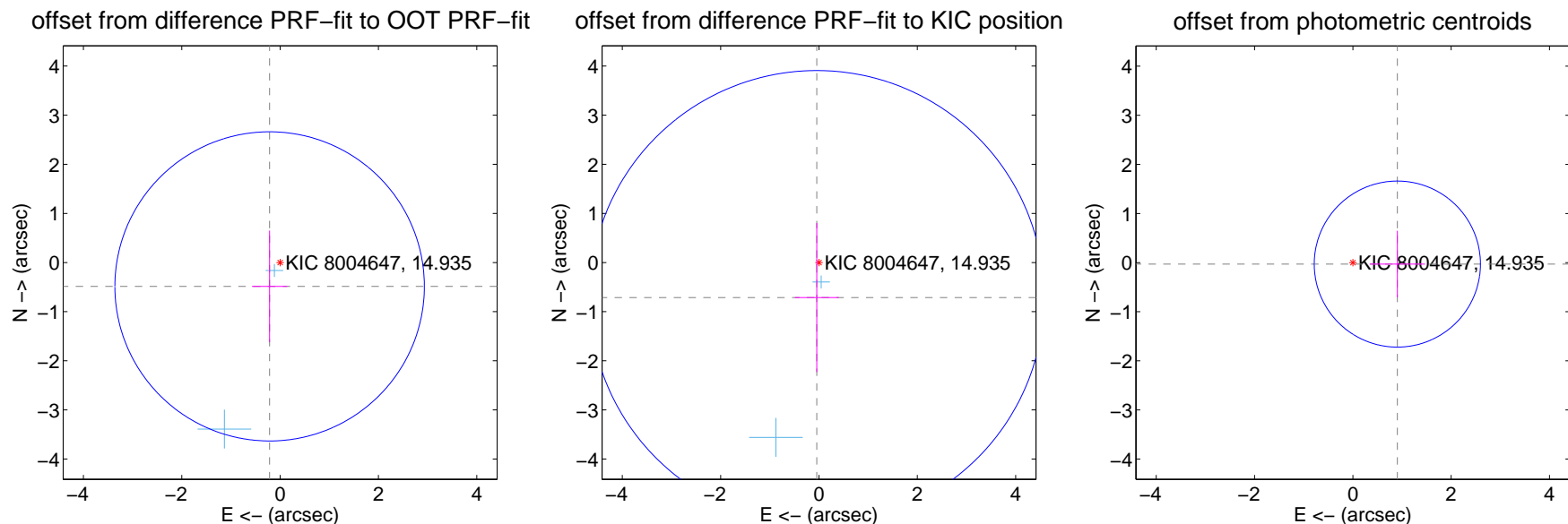
DV Centroid Data

Supplemental centroid analysis for 008004647-01. Kepler magnitude: 14.94. Transit SNR 7.48

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.530 ± 1.049	0.51	0.213 ± 0.357	-0.485 ± 1.135
PRF-fit source offset from KIC position	0.714 ± 1.540	0.46	0.044 ± 0.445	-0.713 ± 1.516
photometric centroid source offset	0.91 ± 0.56	1.61	-0.90 ± 0.56	-0.03 ± 0.68



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

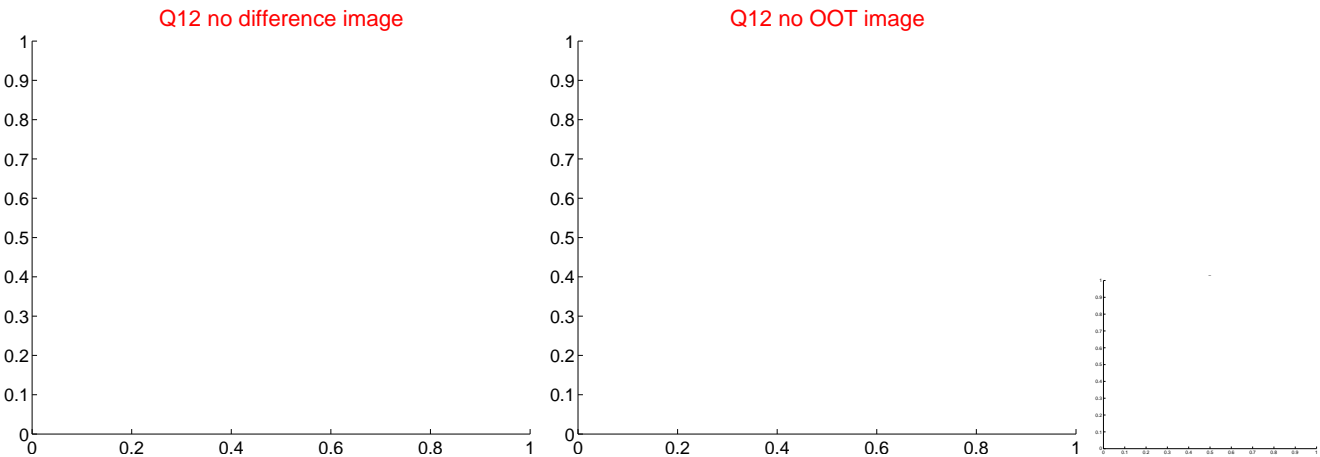
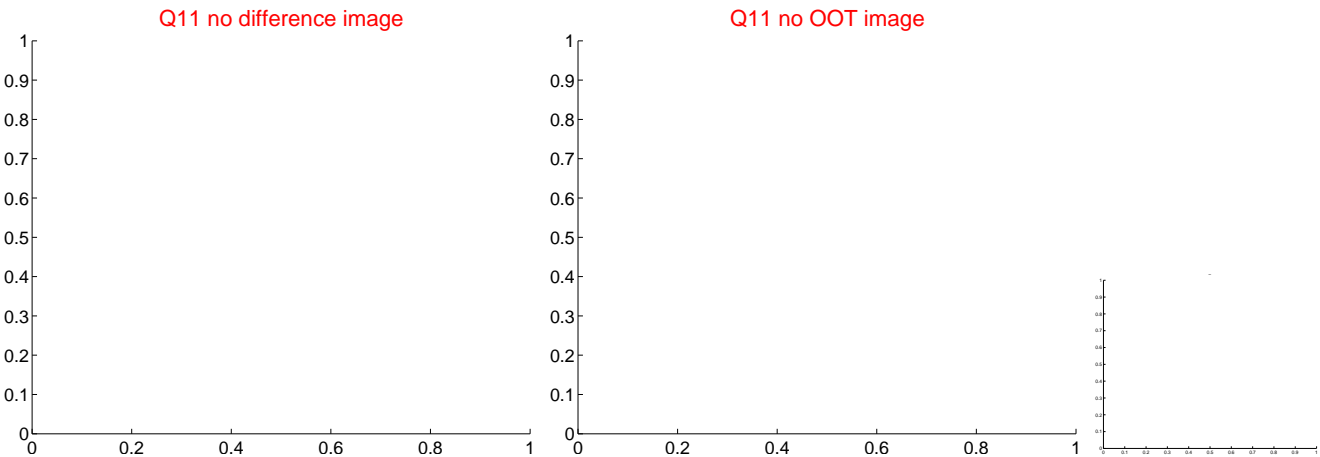
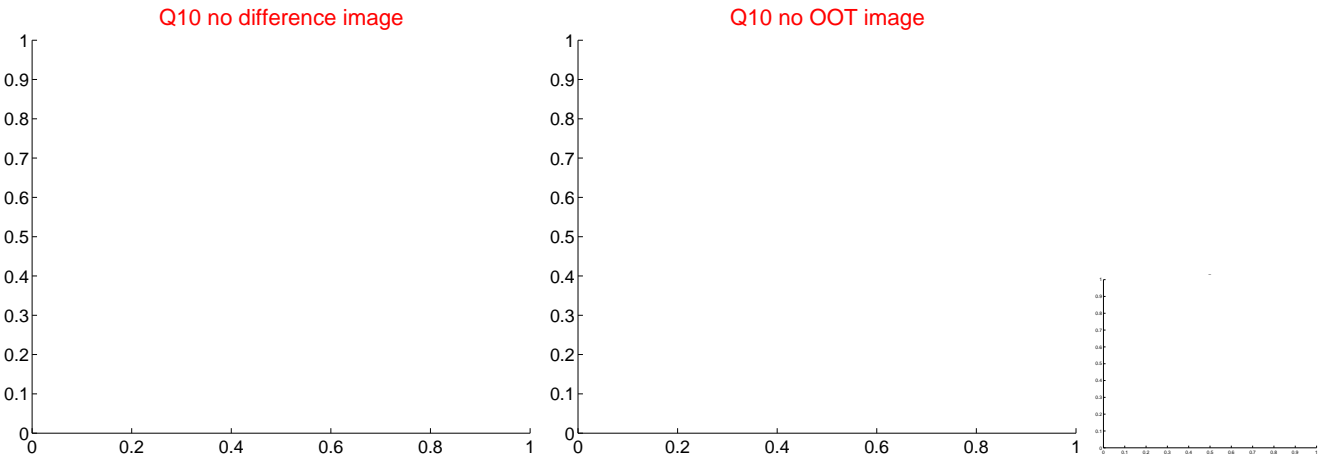
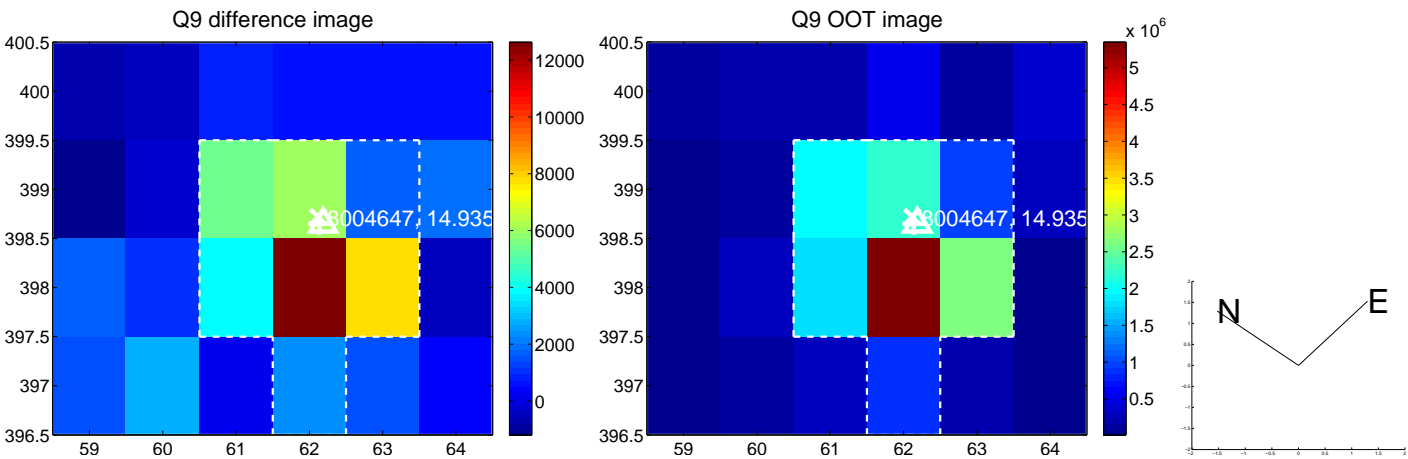
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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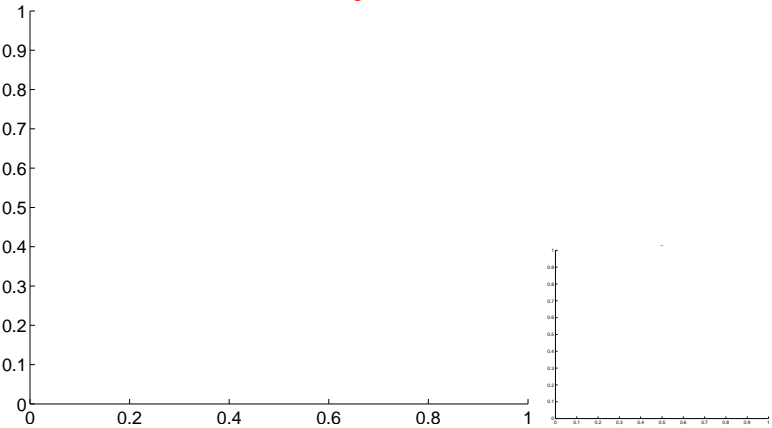


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q13 no difference image



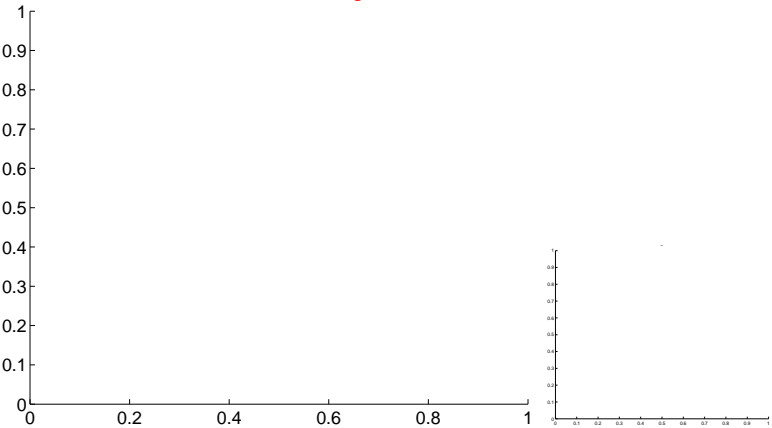
Q13 no OOT image



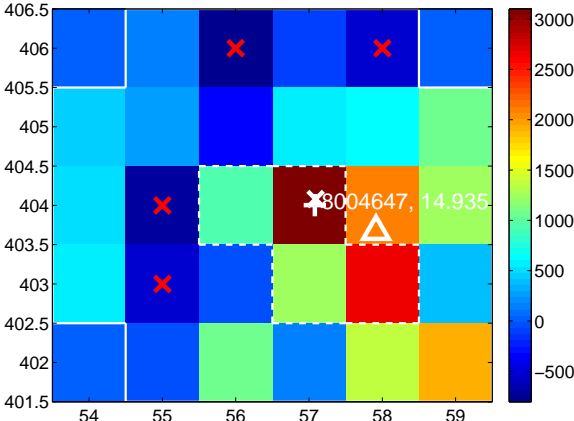
Q14 no difference image



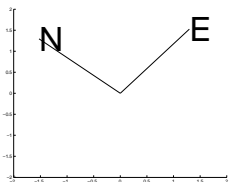
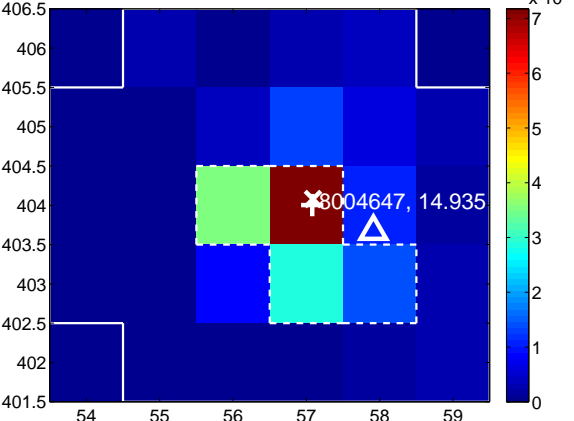
Q14 no OOT image



Q15 difference image



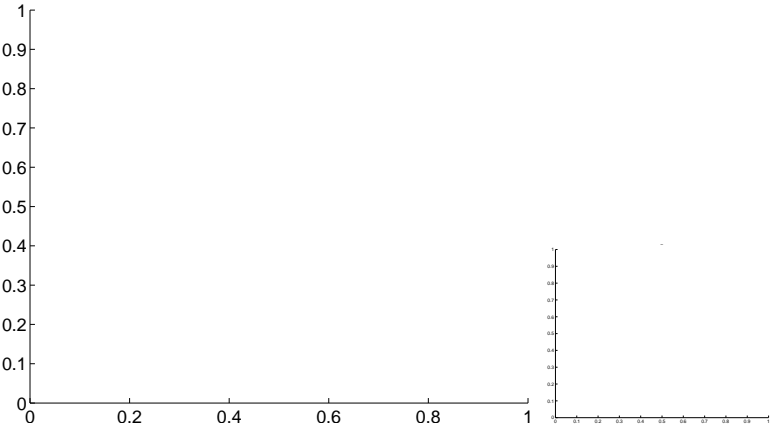
Q15 OOT image



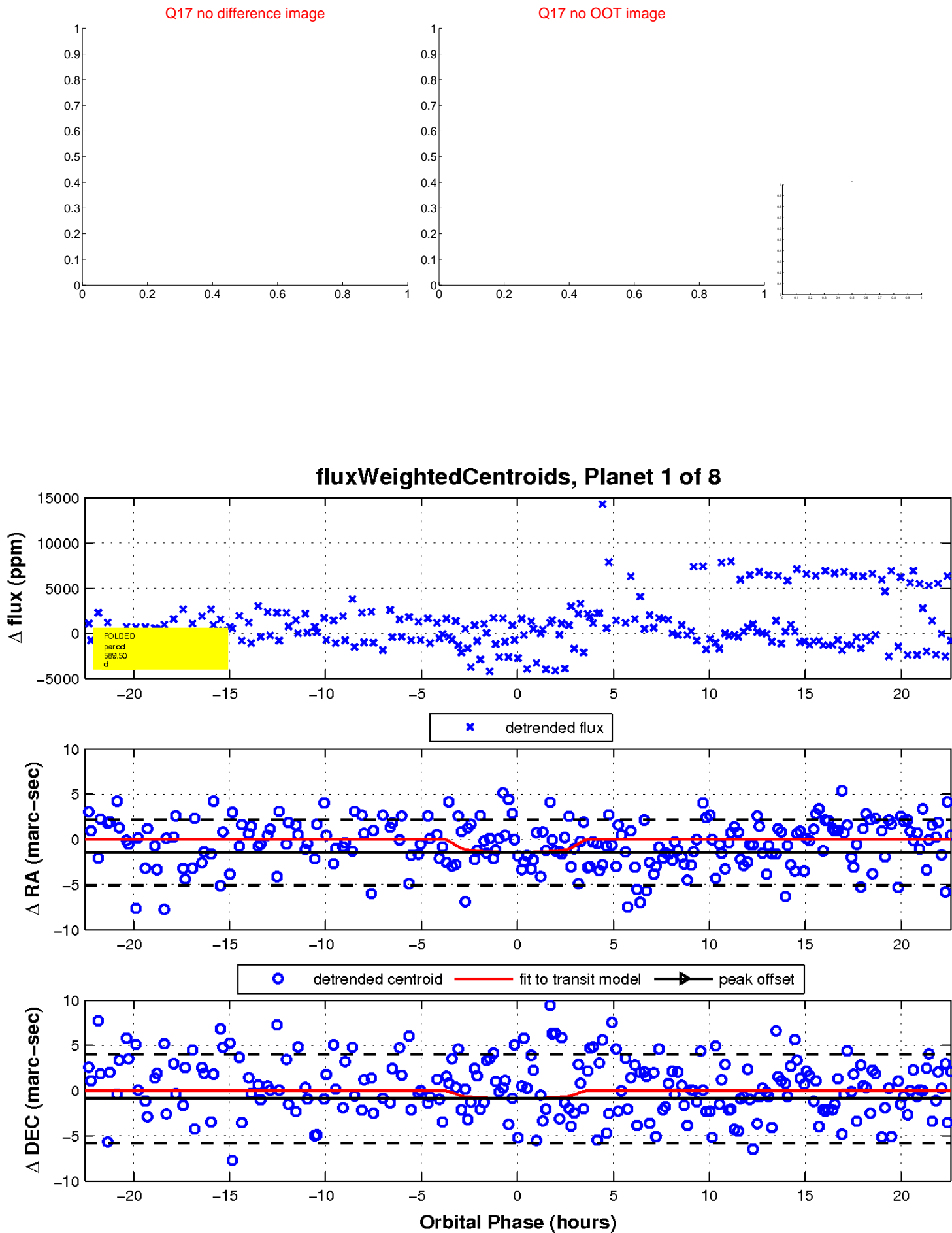
Q16 no difference image



Q16 no OOT image

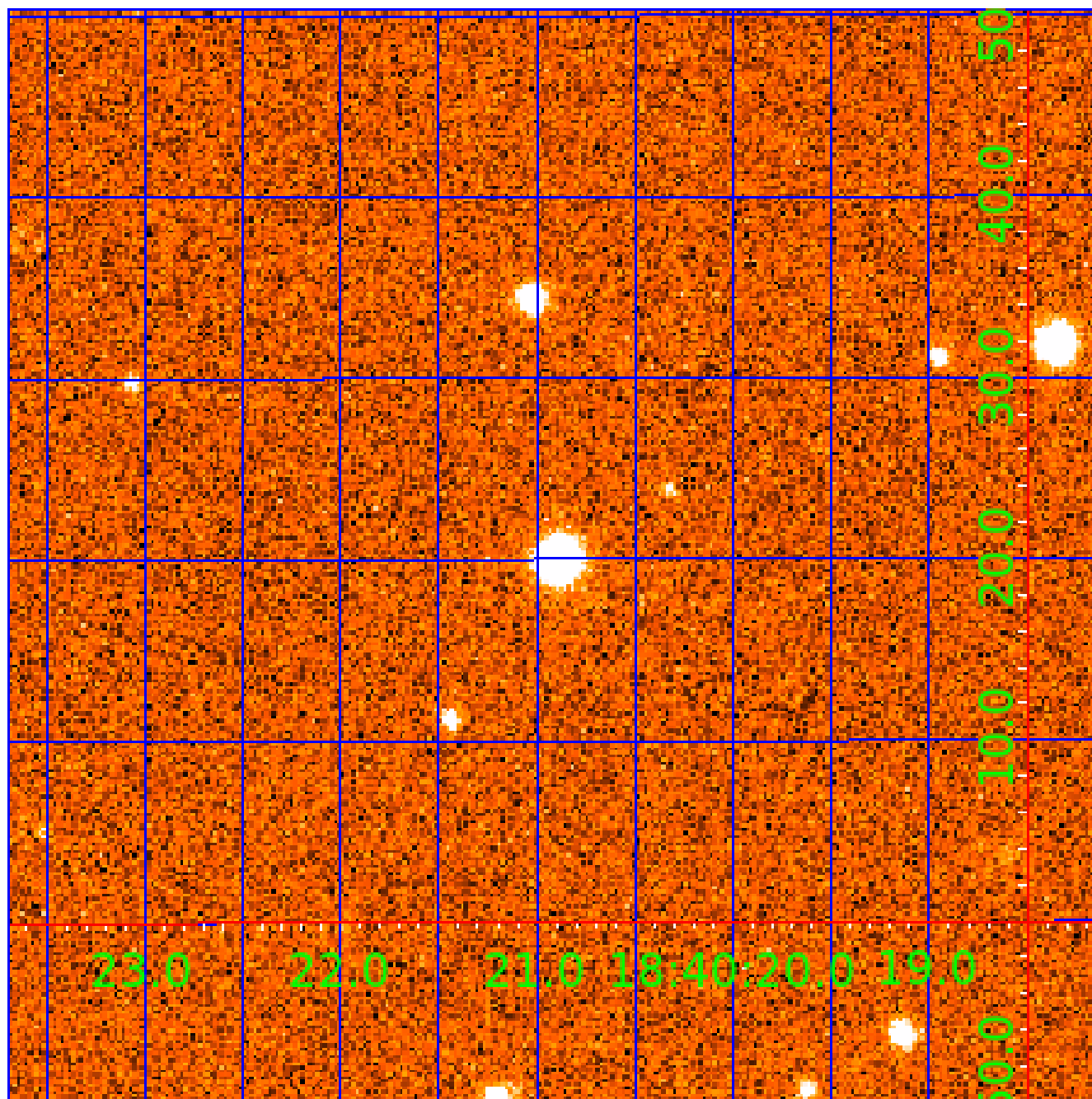


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008004647

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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008004647-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
008004647-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008004647-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—CENT_FEW_DIFFS
008004647-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

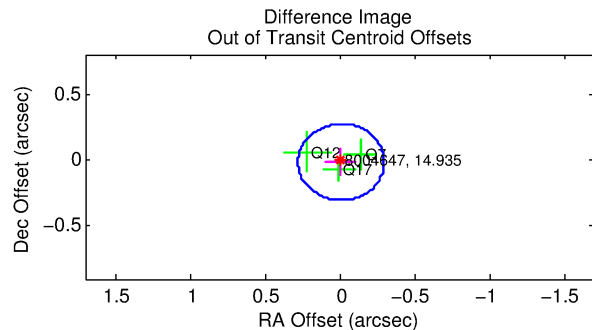
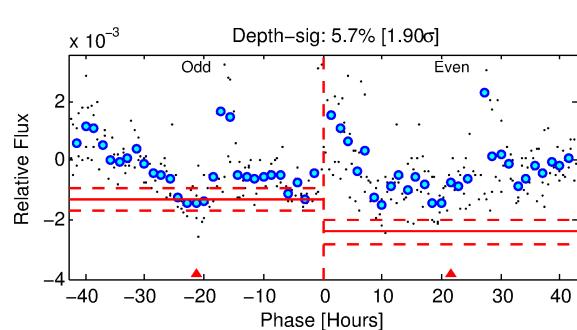
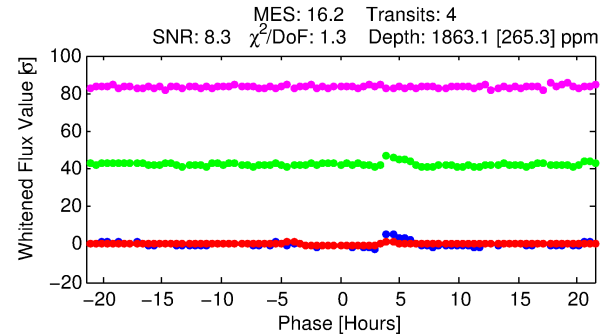
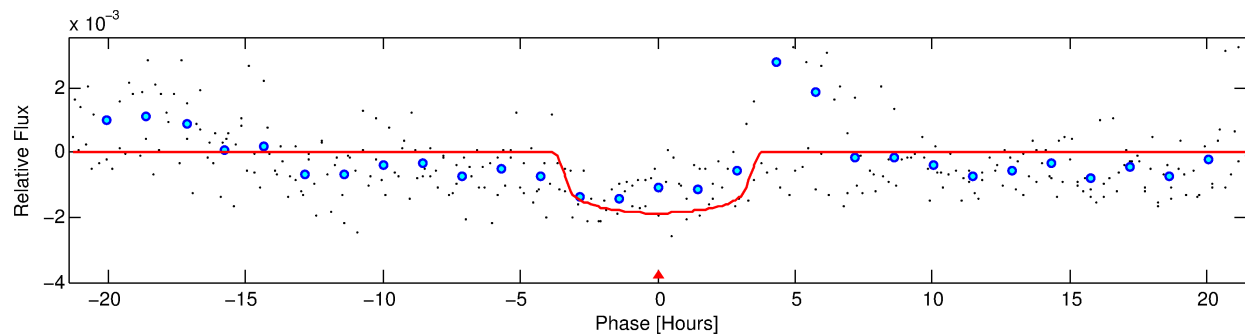
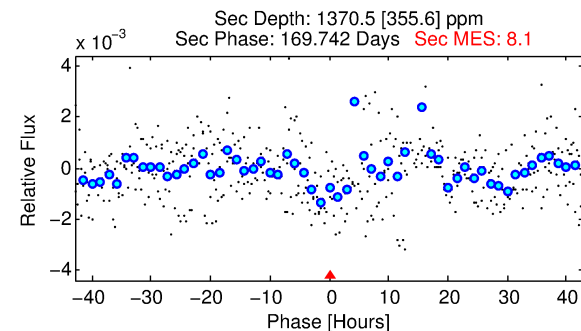
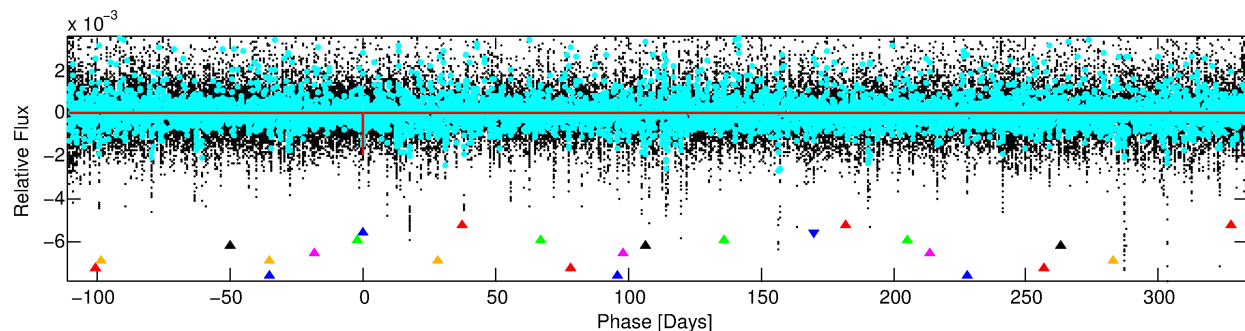
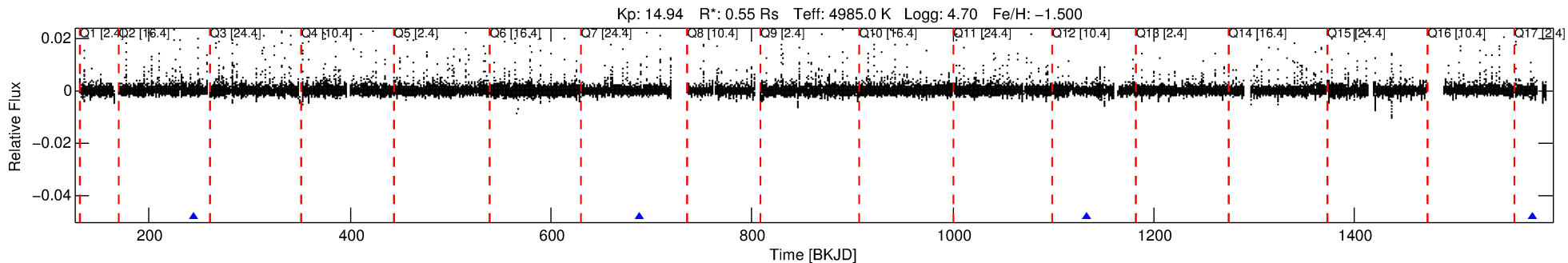
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008004647-02

No Significant Match Found

DV One-Page Summary

KIC: 8004647 Candidate: 2 of 8 Period: 444.337 d



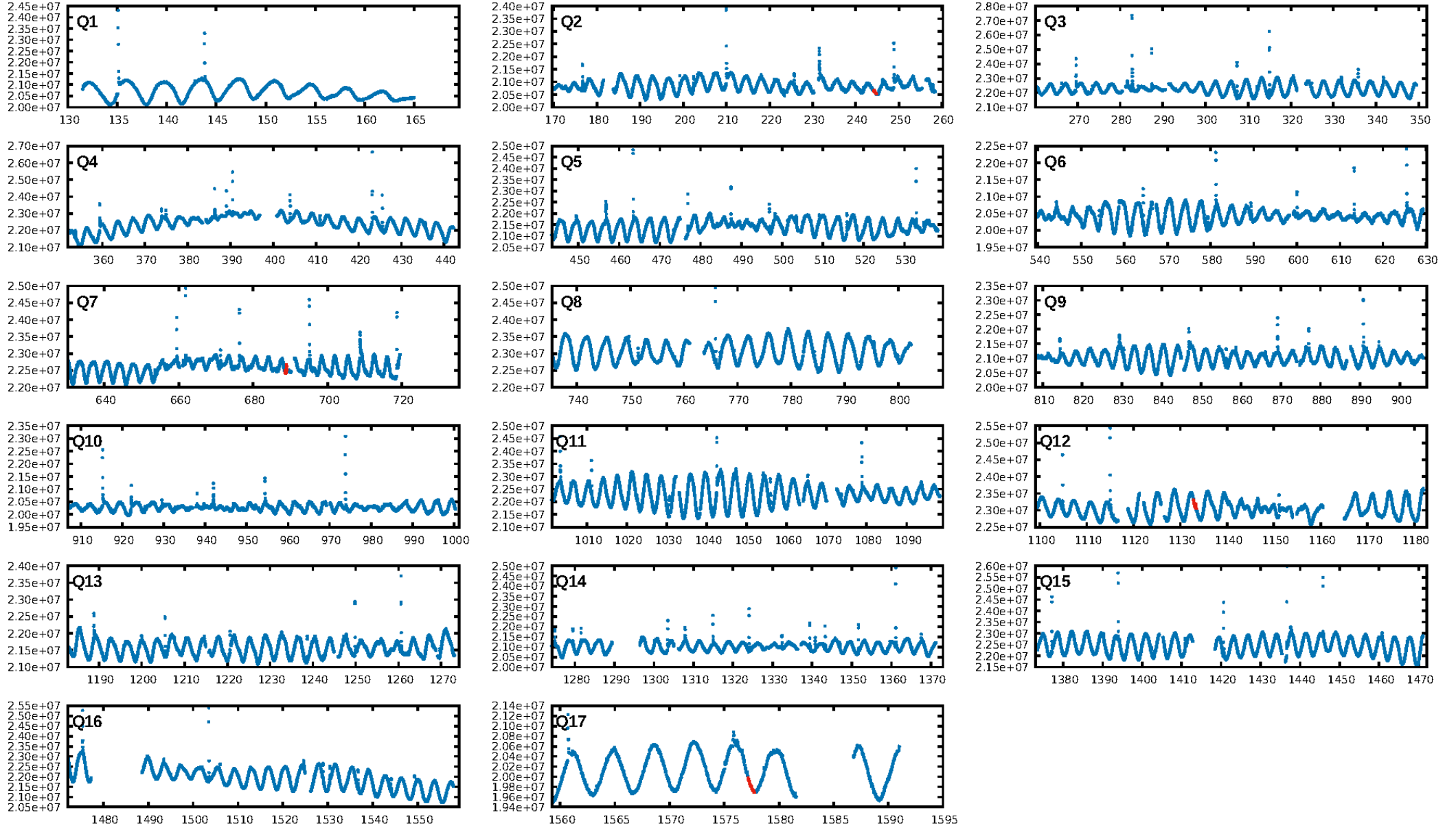
DV Fit Results:

Period = 444.33745 [0.00410] d
Epoch = 244.4470 [0.0078] BKJD
Rp/R* = 0.0393 [0.0329]
a/R* = 493.77 [1873.27]
b = 0.01 [654.87]
Seff = 0.19 [0.03]
Teq = 168 [7] K
Rp = 2.36 [1.98] Re
a = 0.9407 [0.0483] AU
Ag = 119359.64 [202633.04] [0.59σ]
Teffp = 4841 [2058] K [2.27σ]

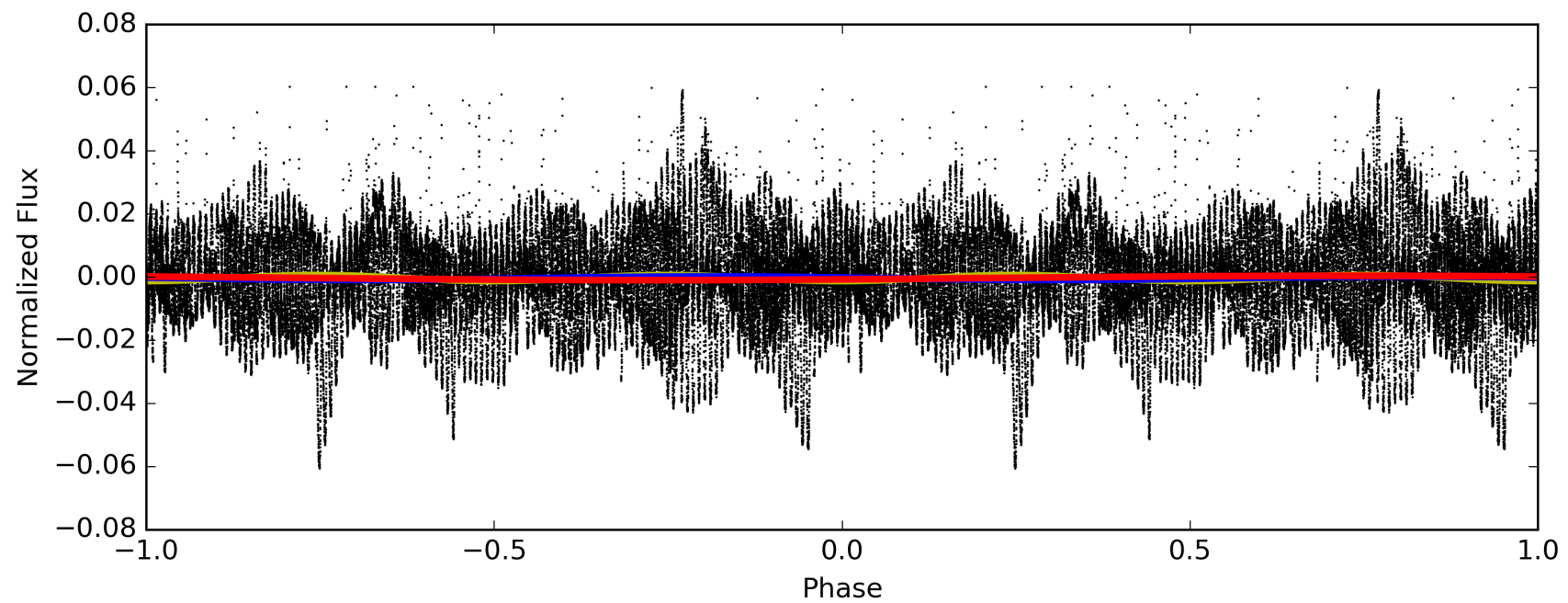
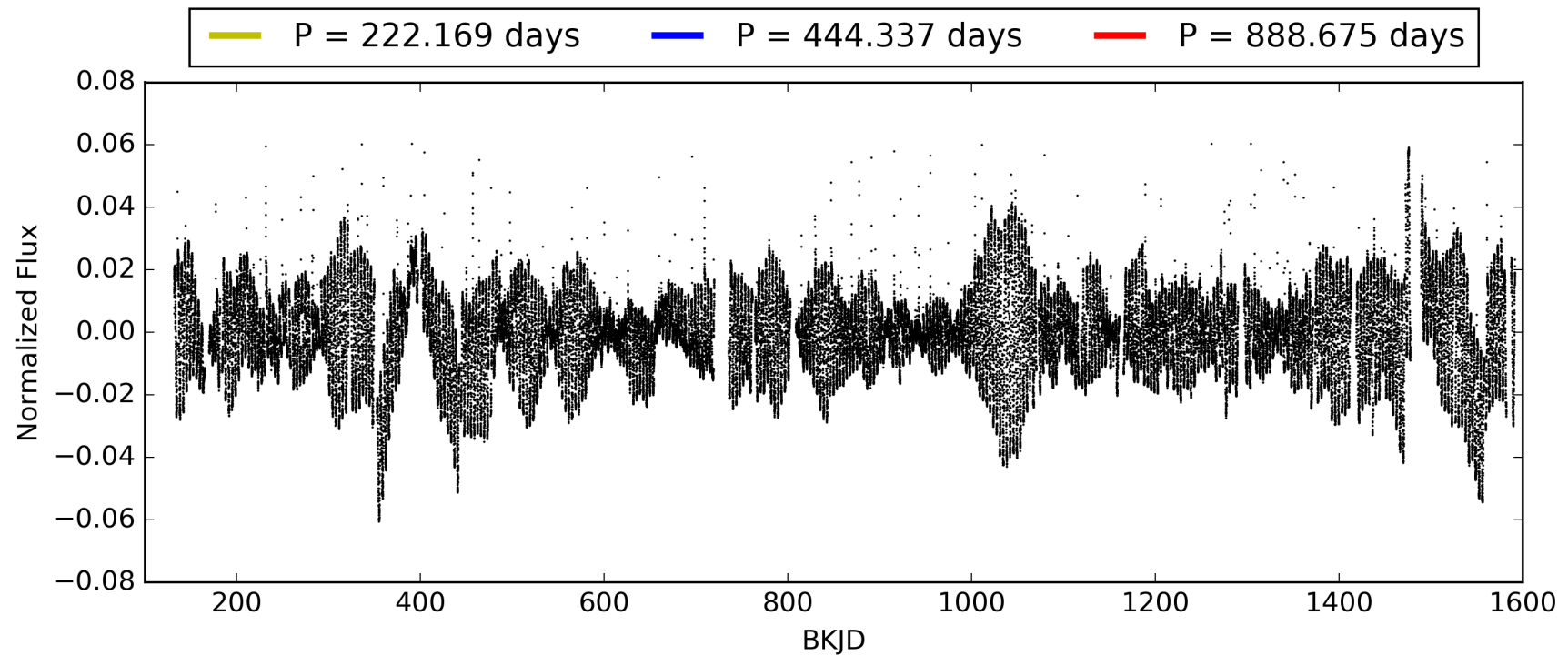
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [187.79σ]
LongPeriod-sig: 100.0% [339.63σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 66.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.301
Centroid-sig: 59.8%
Centroid-so: 1.608 arcsec [2.19σ]
OotOffset-rm: 0.019 arcsec [0.19σ]
KicOffset-rm: 0.314 arcsec [2.45σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 008004647-02, PDC Light Curves

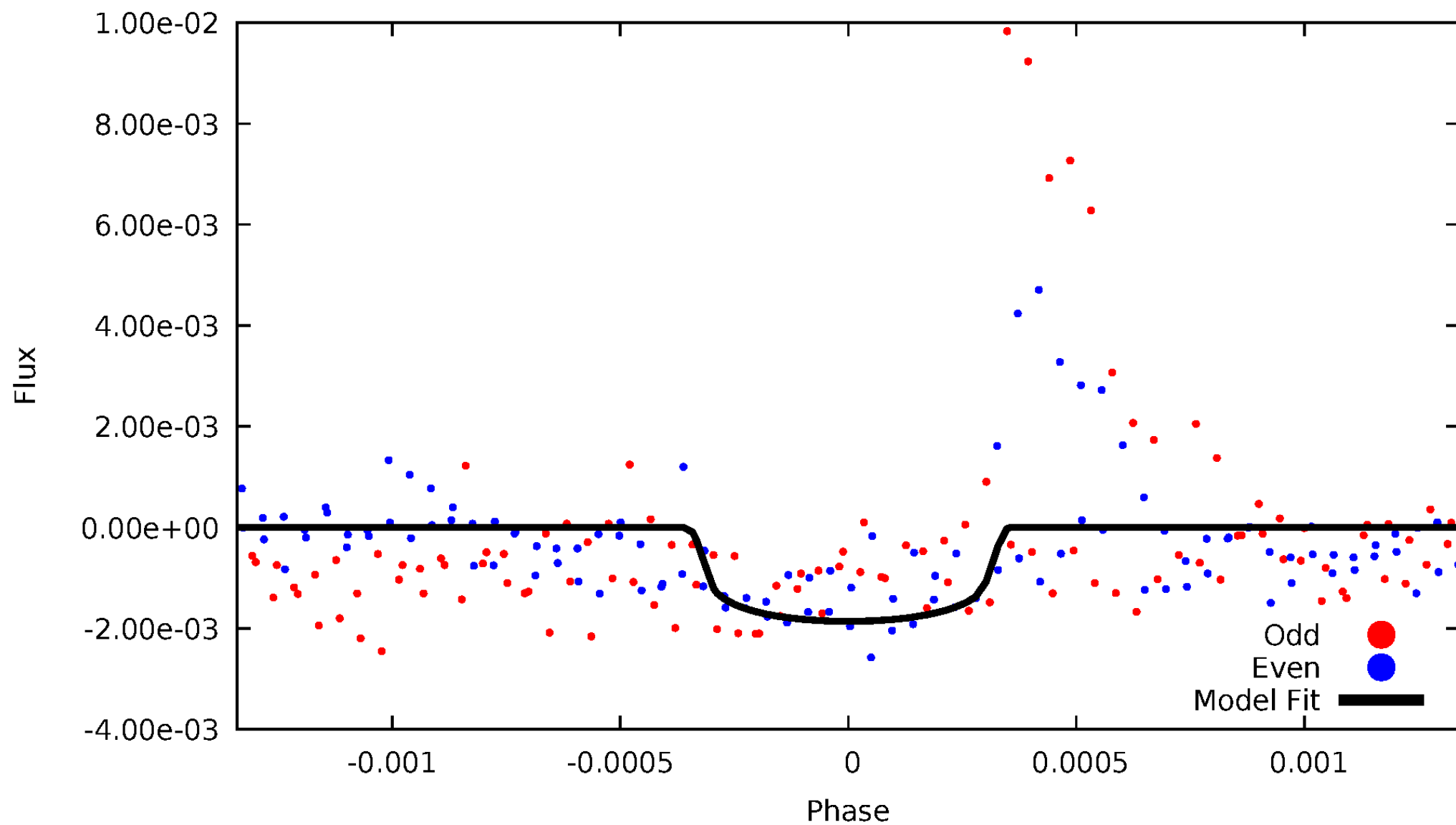


TCE 008004647-02



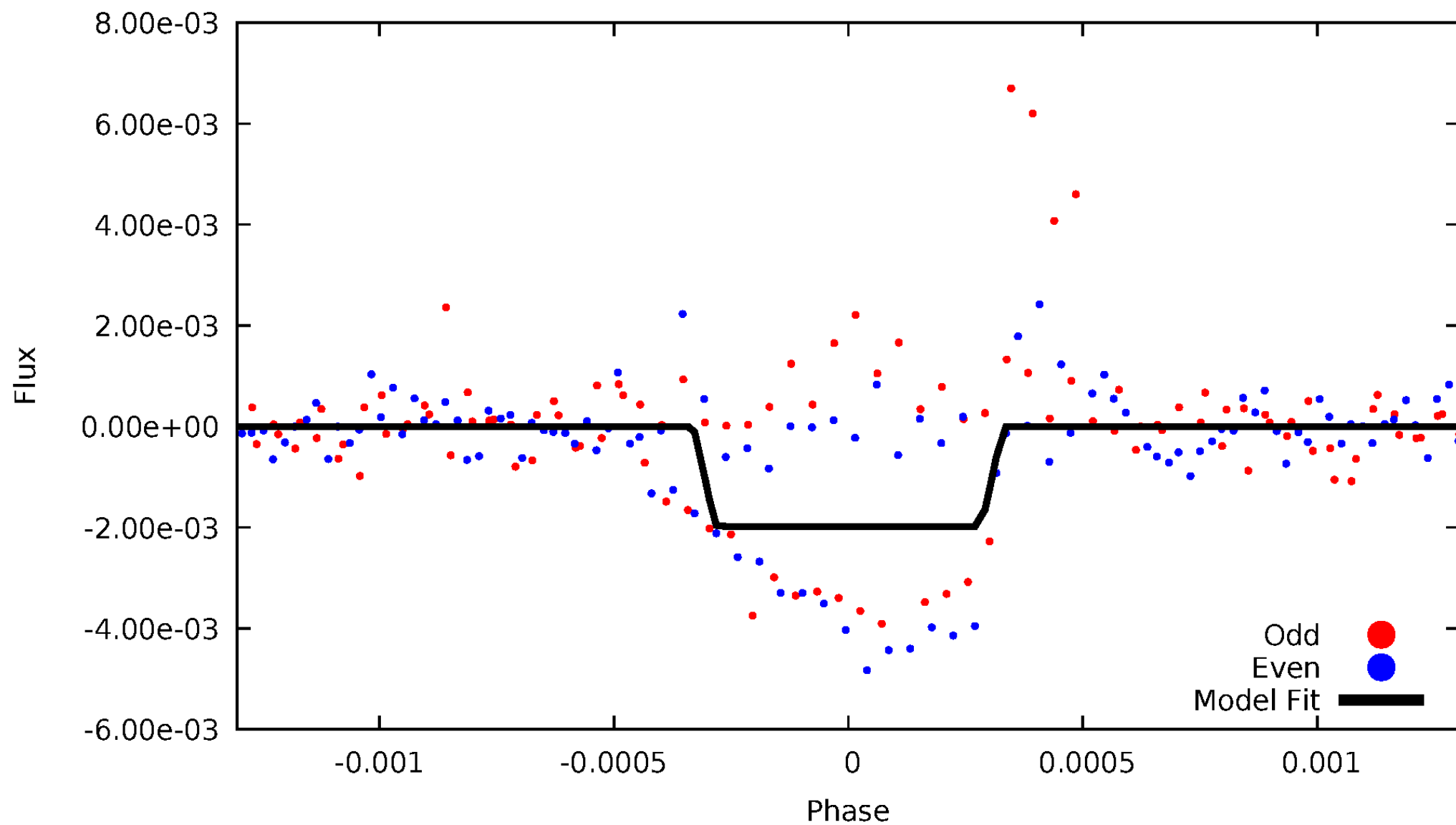
DV Odd/Even

TCE 008004647-02



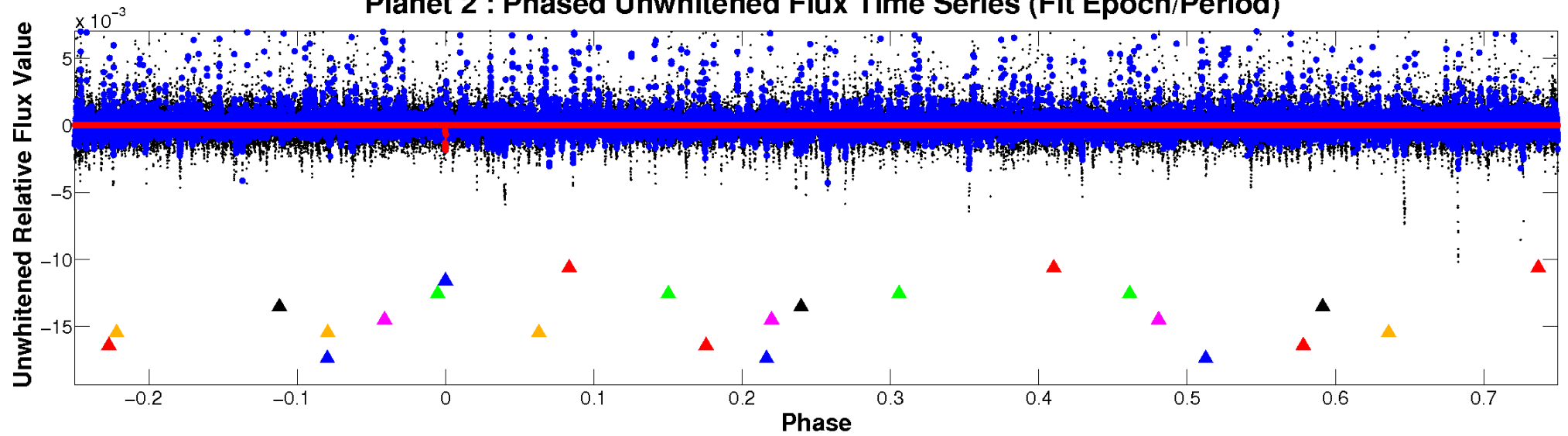
ALT Odd/Even

TCE 008004647-02

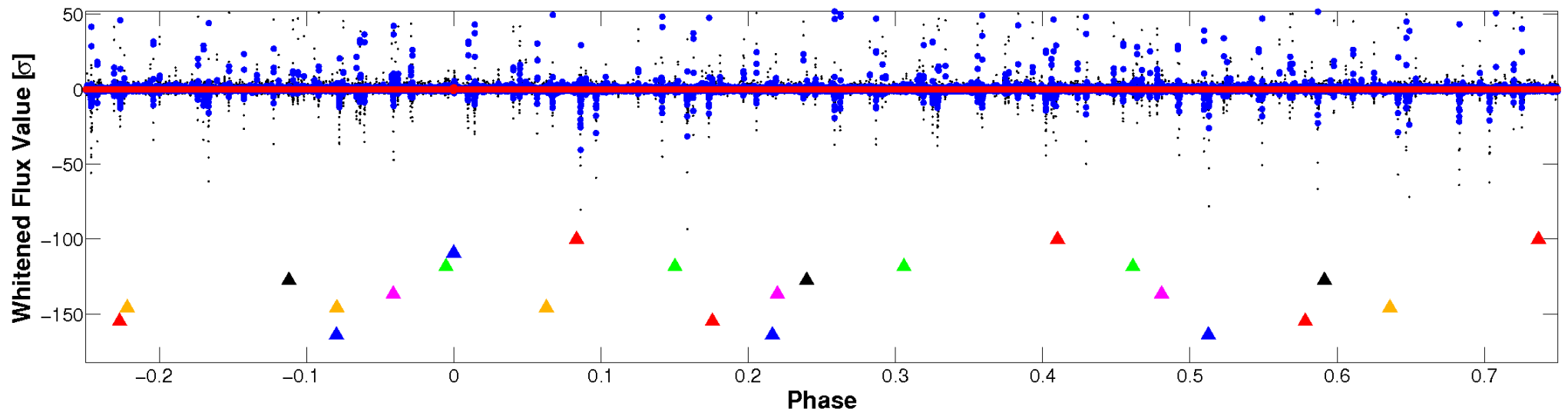


Non-Whitened Vs. Whitened Light Curve

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

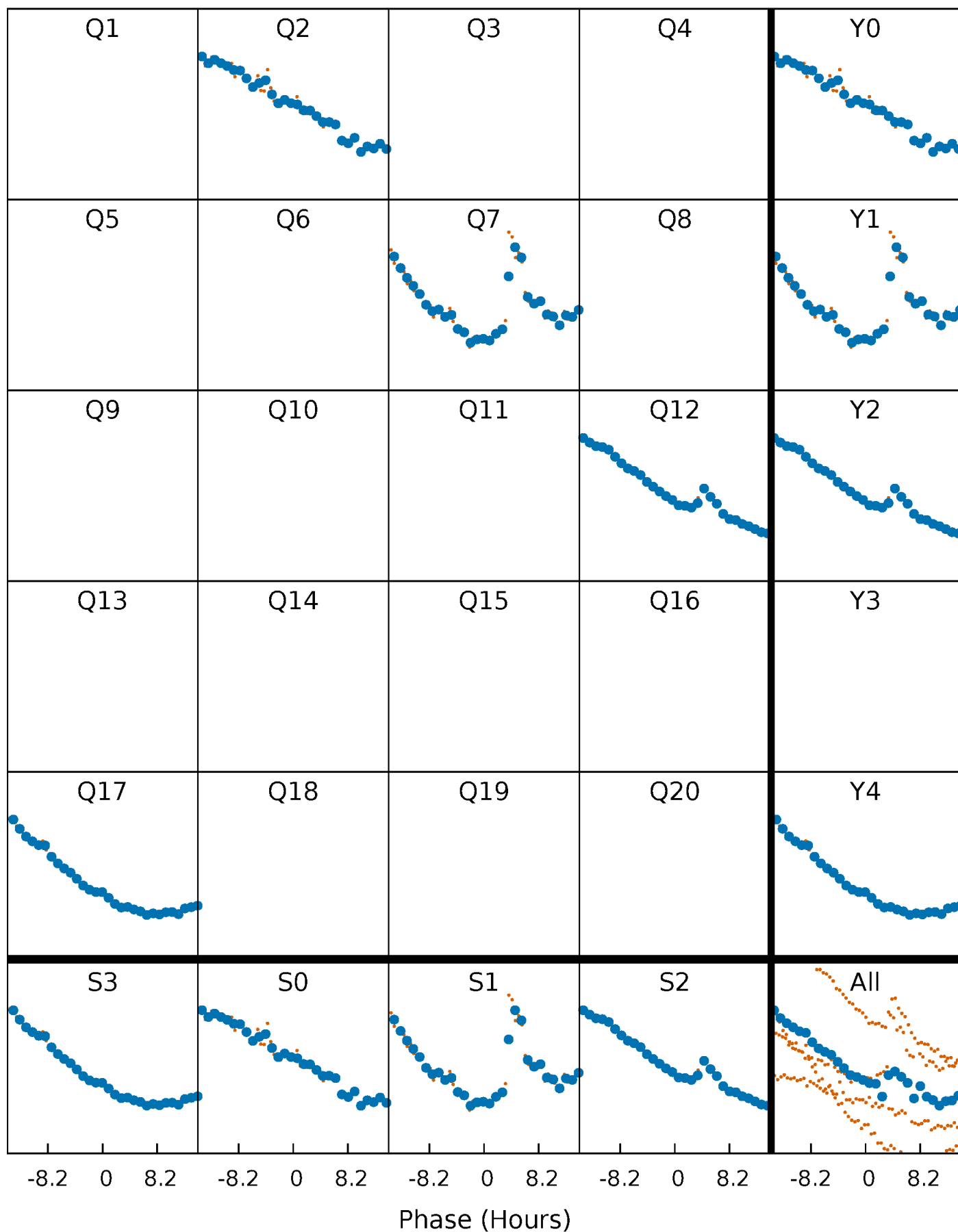


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



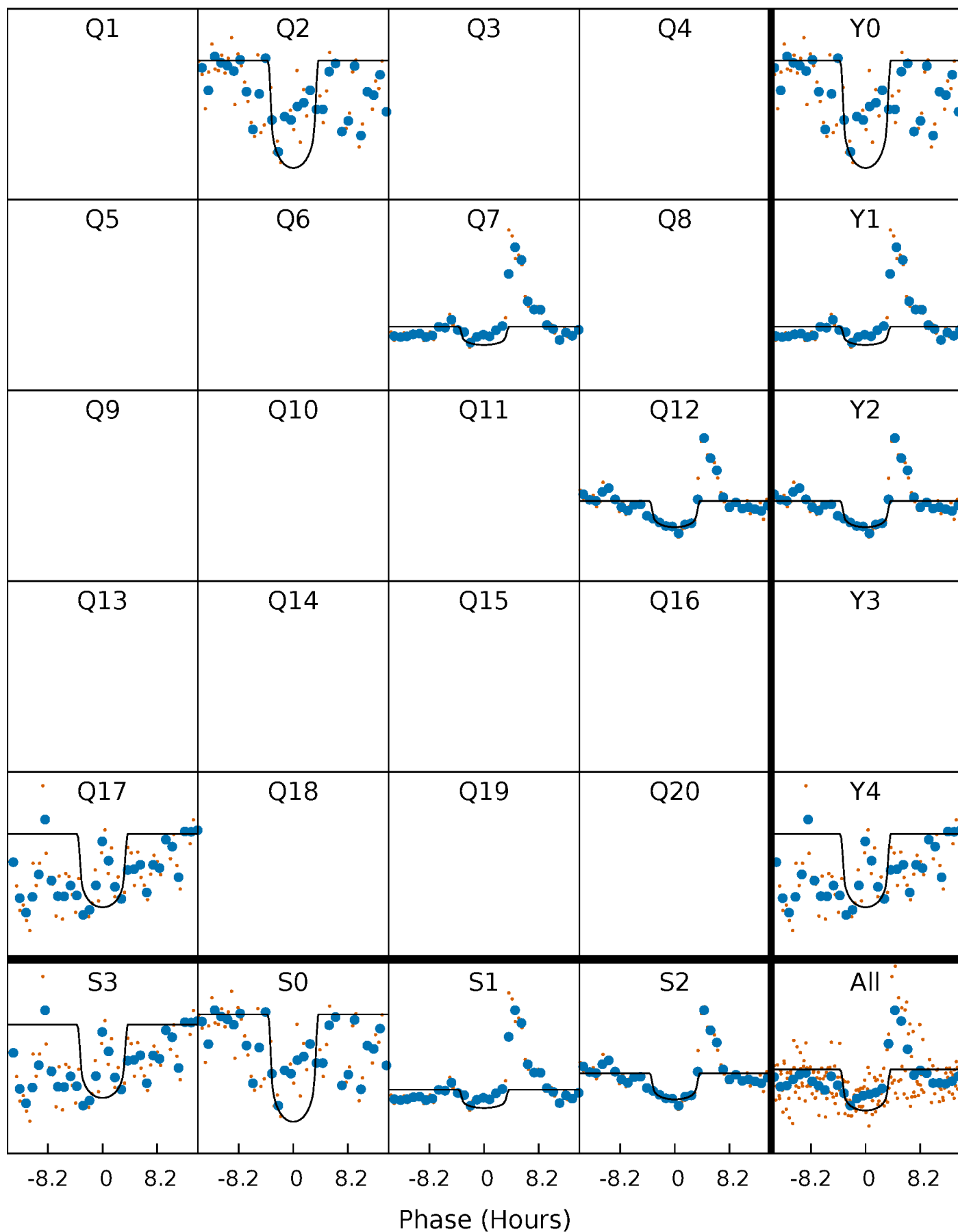
PDC Quarter-Phased Transit Curves

TCE 008004647-02 $P=444.337453$ Days $T_0=244.446998$ (BKJD)



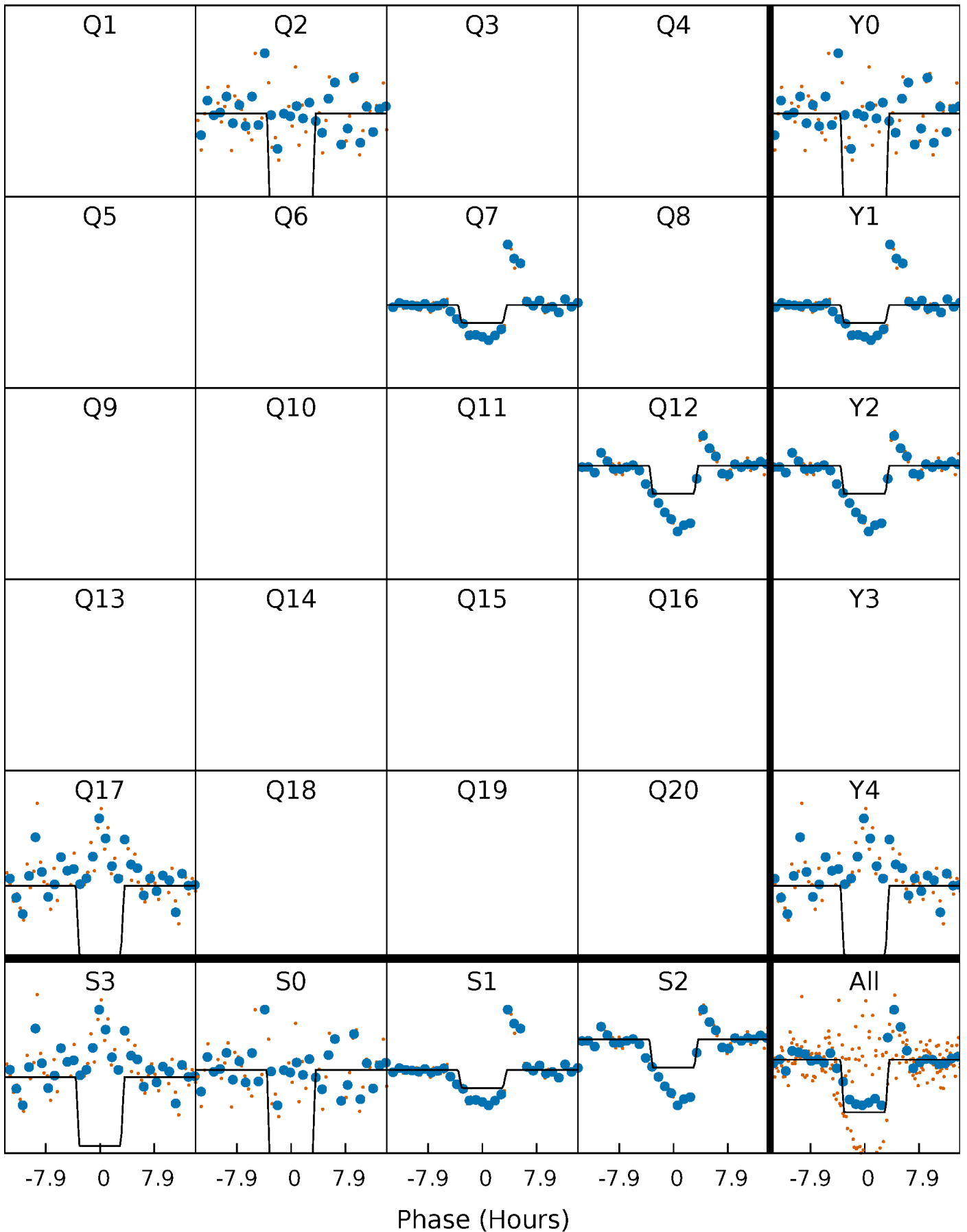
DV Quarter-Phased Transit Curves

TCE 008004647-02 $P=444.337453$ Days $T_0=244.446998$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

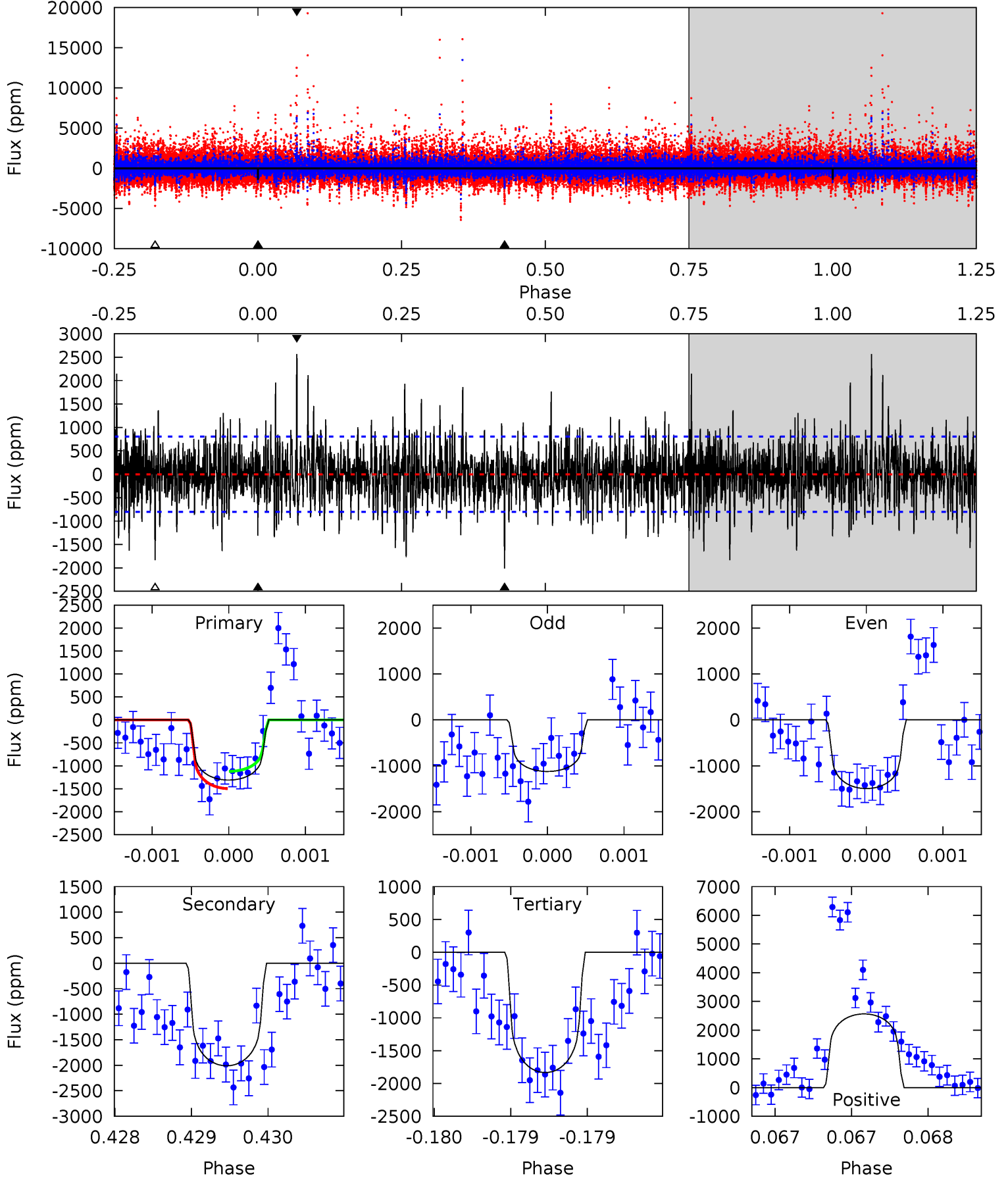
TCE 008004647-02 P=444.341385 Days $T_0=244.443473$ (BKJD)



DV Model-Shift Uniqueness Test

008004647-02, P = 444.337453 Days, E = 244.446998 Days

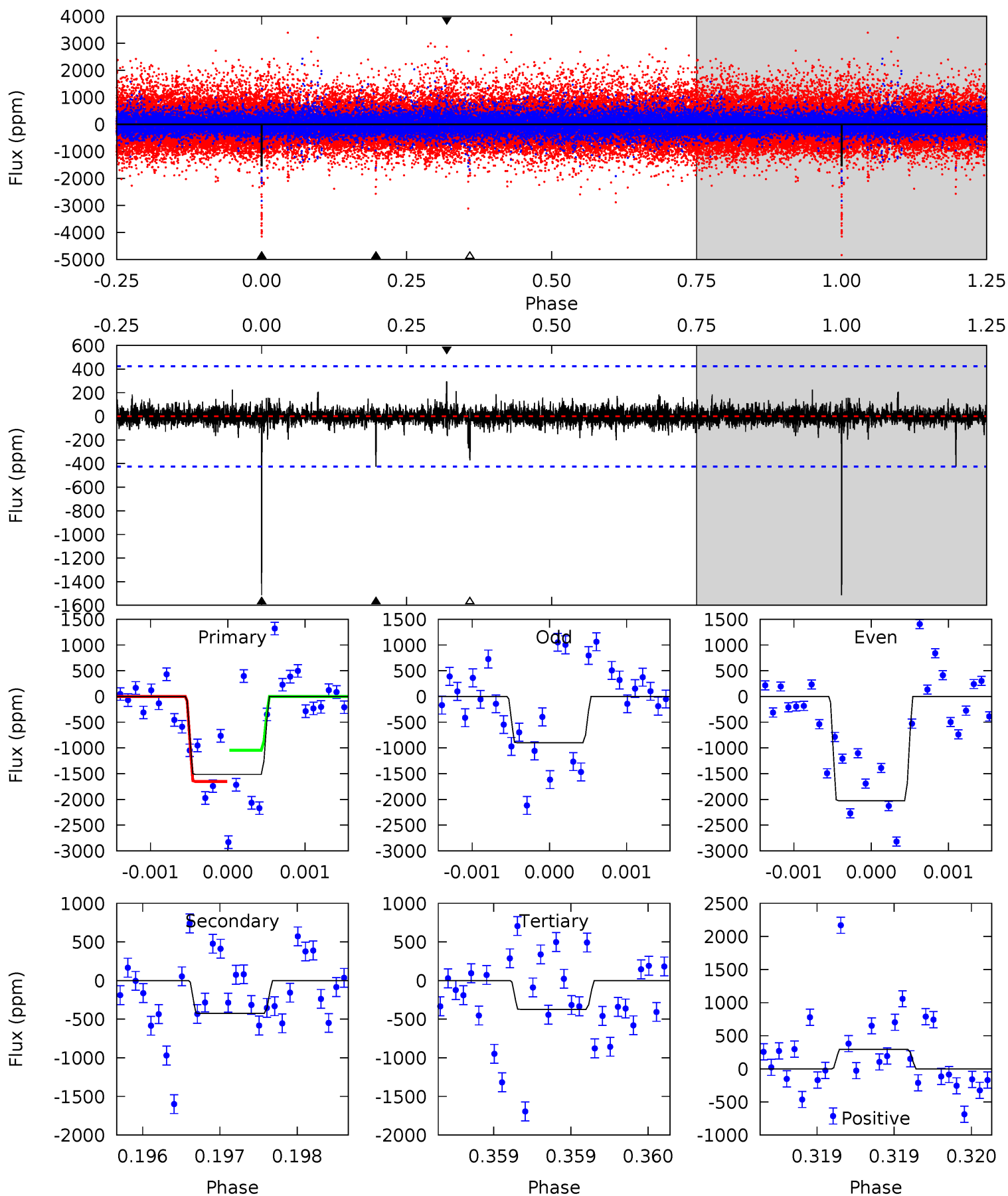
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.00	13.8	12.6	17.6	5.52	3.40	3.21	-3.59	-8.63	1.21	-3.82	0.70	1.04	0.56	1.30



Alt Model-Shift Uniqueness Test

008004647-02, P = 444.341385 Days, E = 244.443473 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	5.53	4.86	3.85	5.53	3.42	0.58	14.9	15.9	0.67	1.68	6.78	0.92	0.16	3.86



Stellar Parameters For KIC 008004647

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4985^{+163}_{-148}	$4.704^{+0.049}_{-0.024}$	$-1.500^{+0.300}_{-0.300}$	$0.552^{+0.026}_{-0.029}$	$0.562^{+0.040}_{-0.017}$	$4.695^{+0.840}_{-0.452}$
	+3%/-3%	+1%/-1%	+20%/-20%	+5%/-5%	+7%/-3%	+18%/-10%
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 008004647-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2010 ± 146	$2.75^{+1.83}_{-1.61}$	234^{+8}_{-7}	4990^{+2662}_{-963}	$133804^{+615759}_{-88634}$
Alt.	-424 ± 77	$2.79^{+1.78}_{-1.59}$	235^{+8}_{-8}	3692^{+1363}_{-552}	$26199^{+115462}_{-16531}$

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

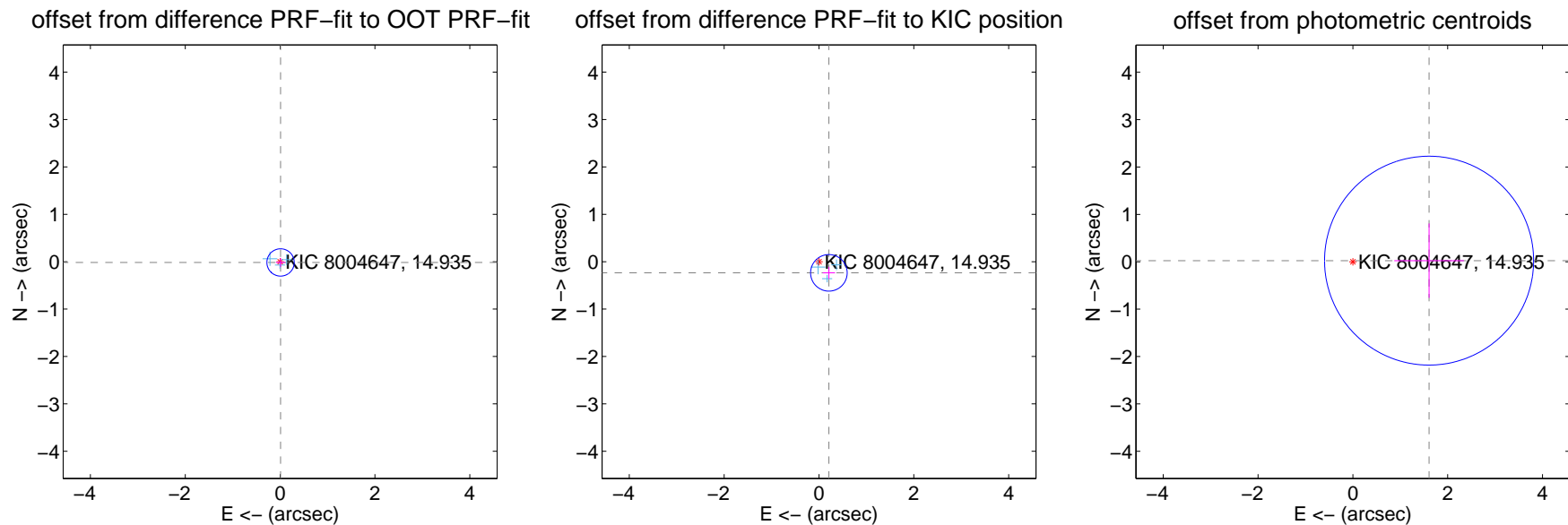
DV Centroid Data

Supplemental centroid analysis for 008004647-02. Kepler magnitude: 14.94. Transit SNR 8.31

There are 3 quarters with good PRF difference image offsets

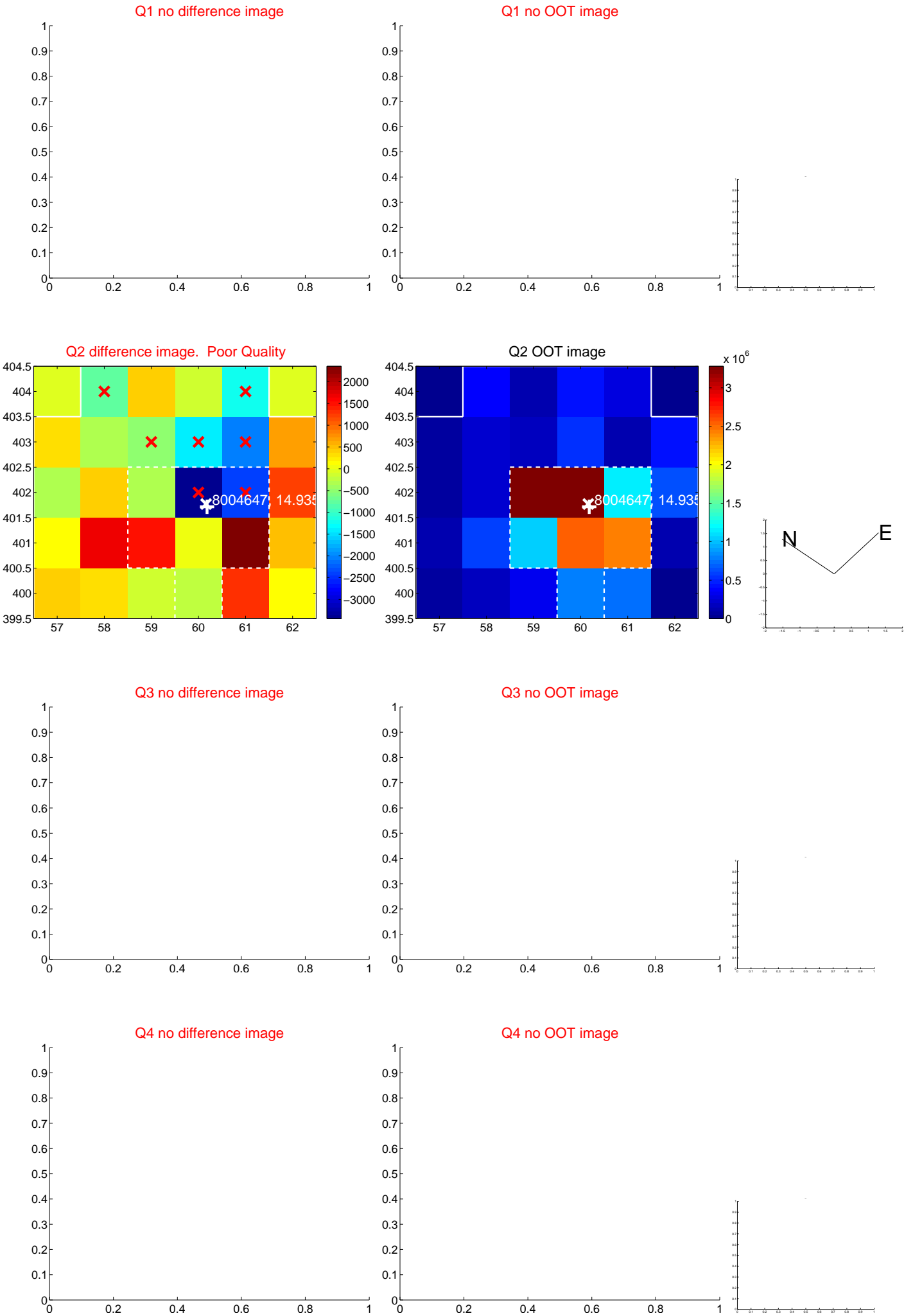
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.019 ± 0.096	0.19	-0.010 ± 0.099	-0.016 ± 0.095
PRF-fit source offset from KIC position	0.314 ± 0.129	2.45	-0.209 ± 0.129	-0.235 ± 0.128
photometric centroid source offset	1.61 ± 0.73	2.19	-1.61 ± 0.73	0.02 ± 0.78



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

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



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

Q5 no difference image



Q5 no OOT image



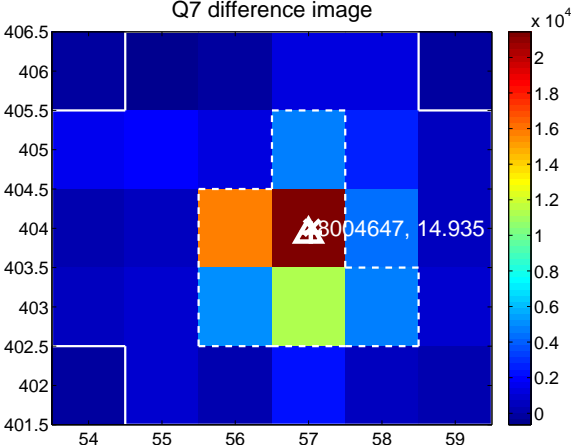
Q6 no difference image



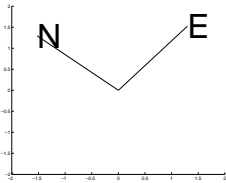
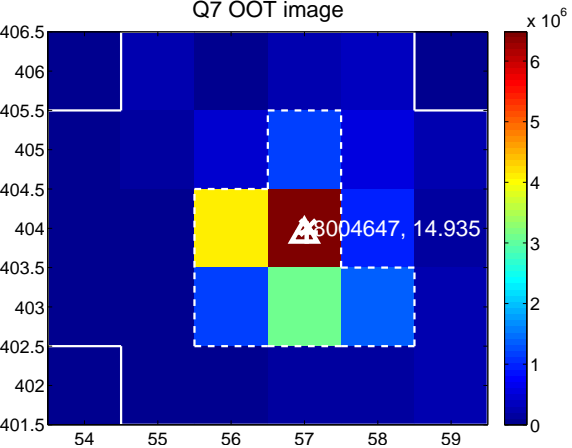
Q6 no OOT image



Q7 difference image



Q7 OOT image



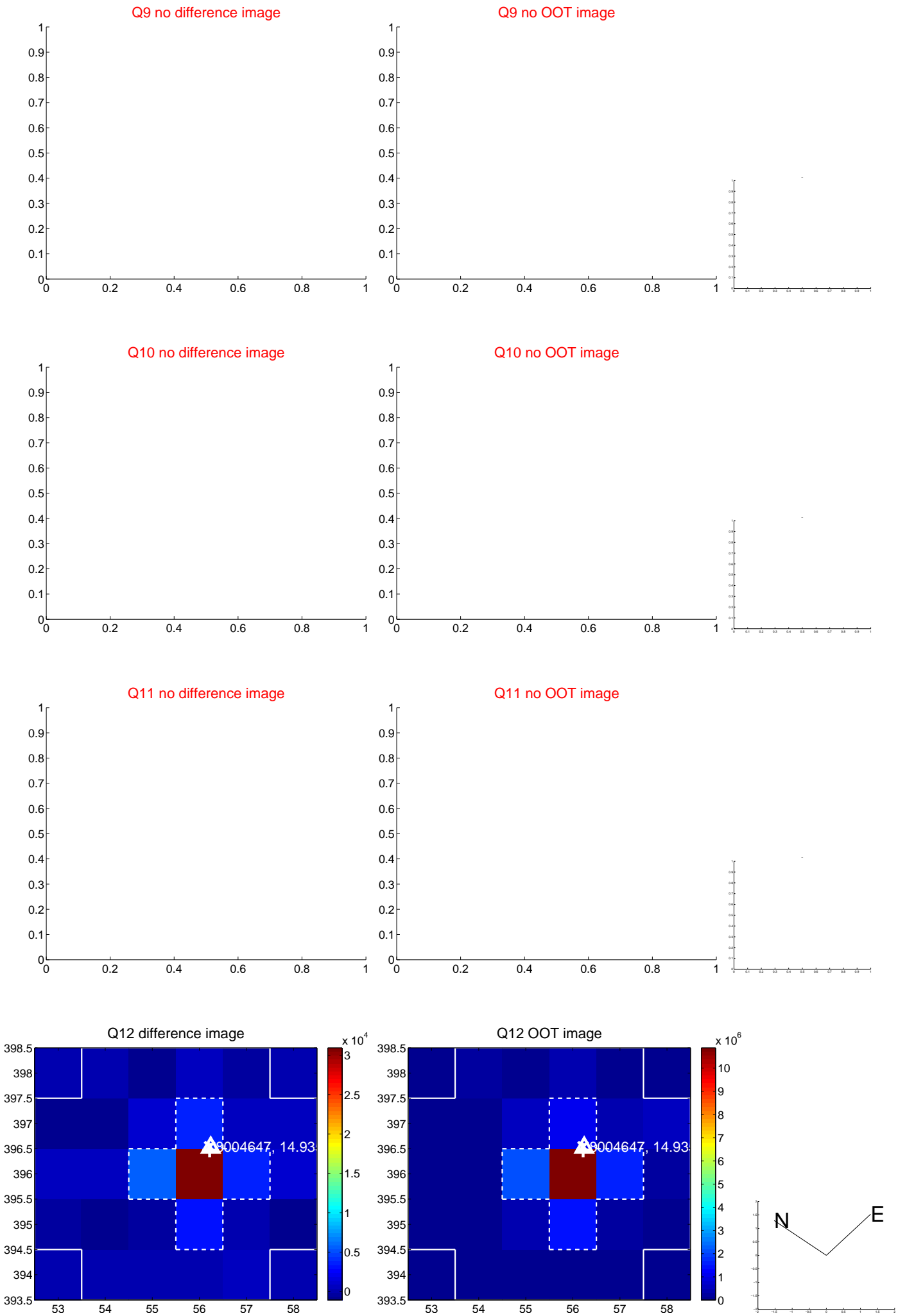
Q8 no difference image



Q8 no OOT image



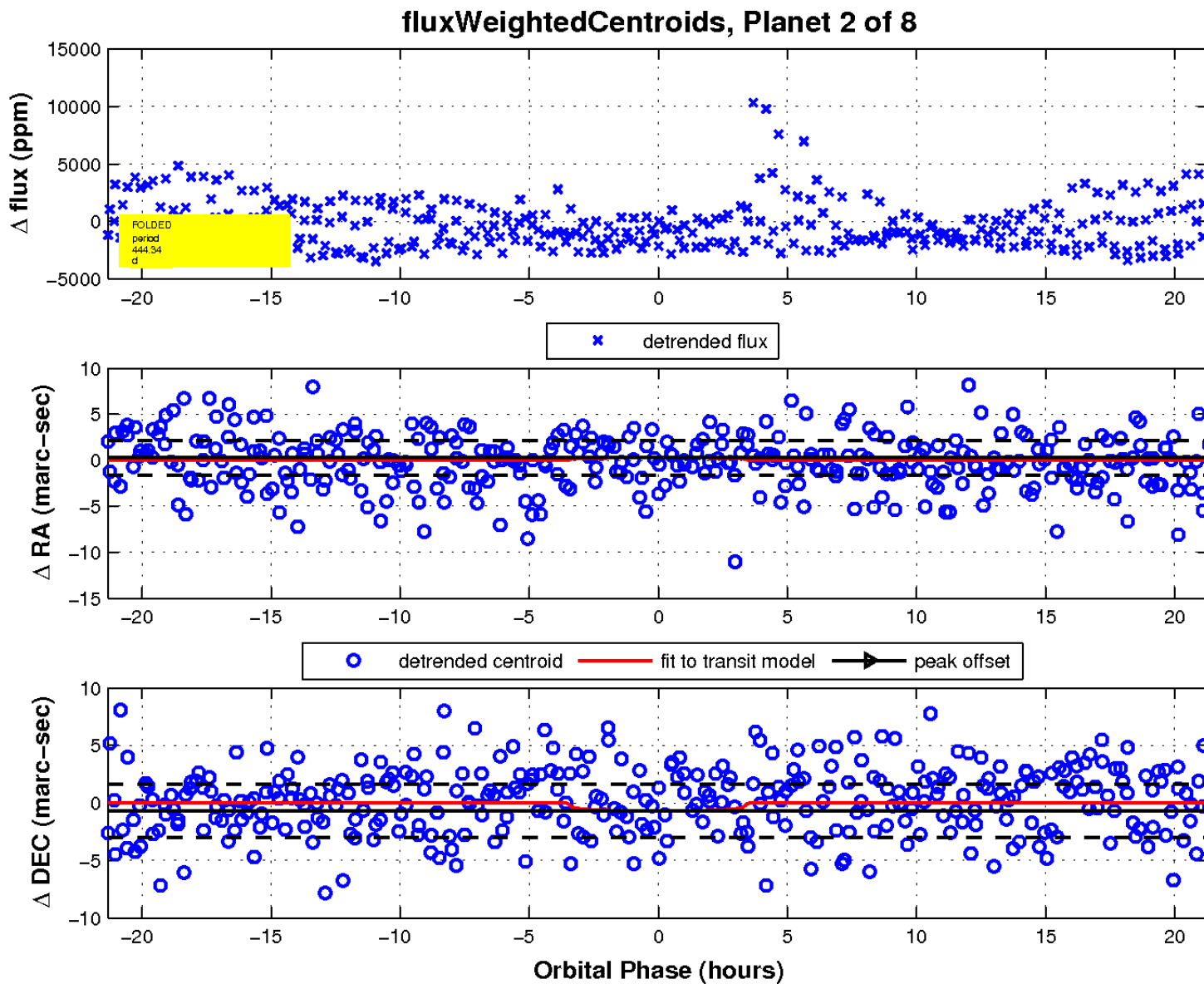
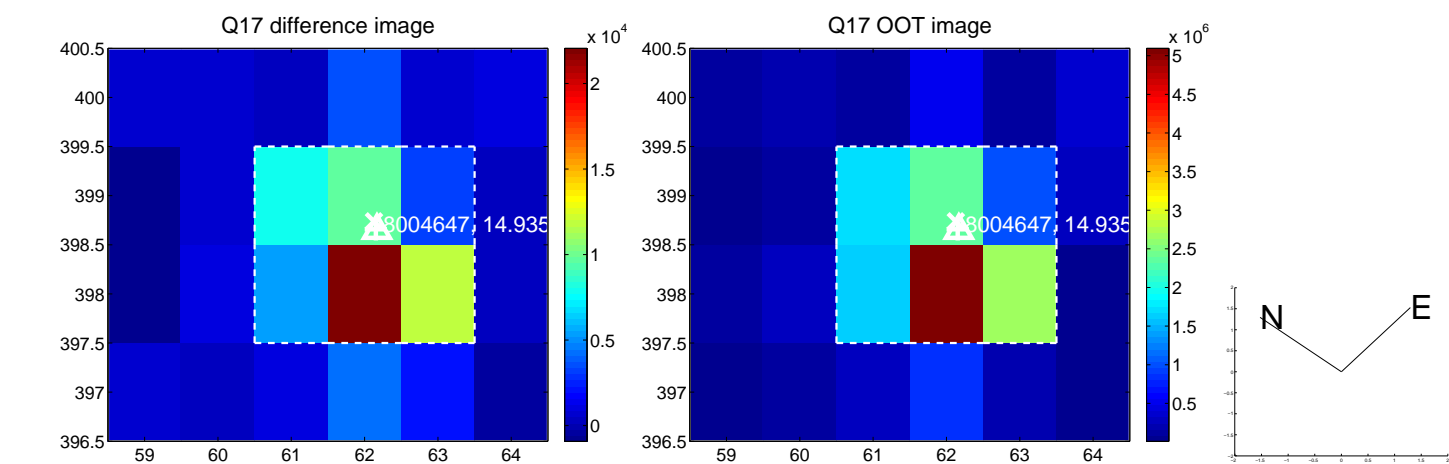
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

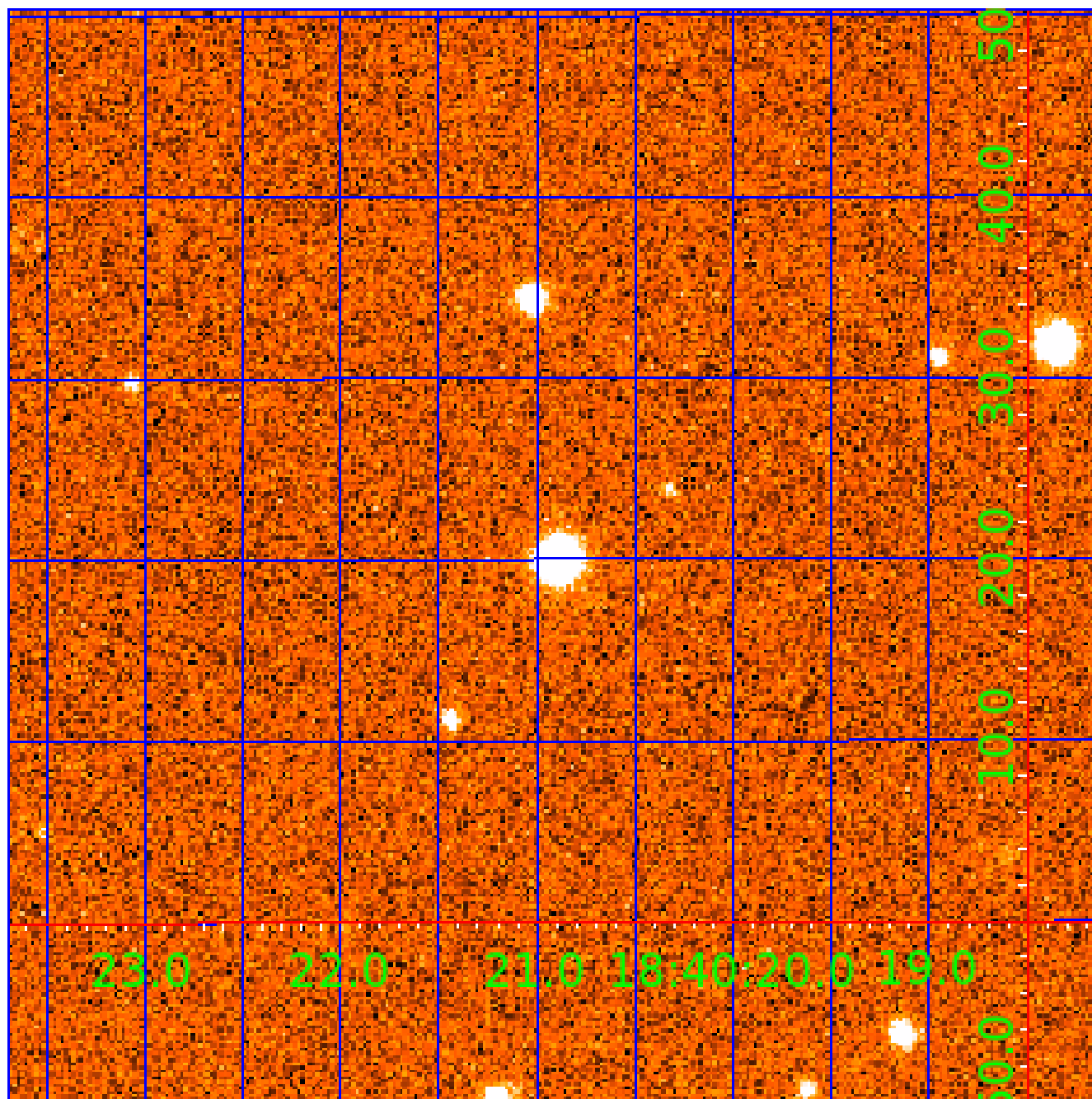


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008004647

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})
008004647-01	OBS	No	589.501452	281.510904	2612.4	7.548	18.1	7.5	0.55	4985	3.16	0.13
008004647-02	OBS	No	444.337453	244.446998	1863.1	7.144	16.2	8.3	0.55	4985	2.36	0.19
008004647-03	OBS	No	375.234952	449.422928	1335.1	3.056	15.1	4.2	0.55	4985	2.04	0.24
008004647-04	OBS	No	600.607424	194.706947	2425.1	5.117	14.3	8.3	0.55	4985	2.70	0.13
008004647-05	OBS	No	560.281544	226.195177	2020.9	4.011	15.6	7.2	0.55	4985	2.57	0.14
008004647-07	OBS	No	623.254844	143.604680	2530.2	3.122	11.1	8.6	0.55	4985	2.87	0.12
008004647-08	OBS	No	575.913077	209.052948	982.5	9.000	11.6	-1.0	0.55	4985	1.72	0.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008004647-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
008004647-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008004647-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—CENT_FEW_DIFFS
008004647-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

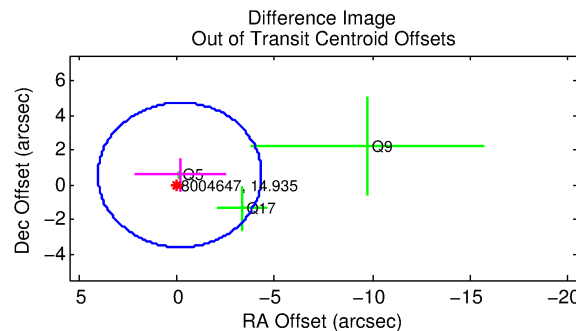
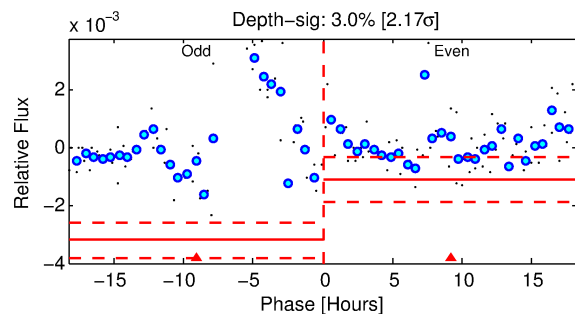
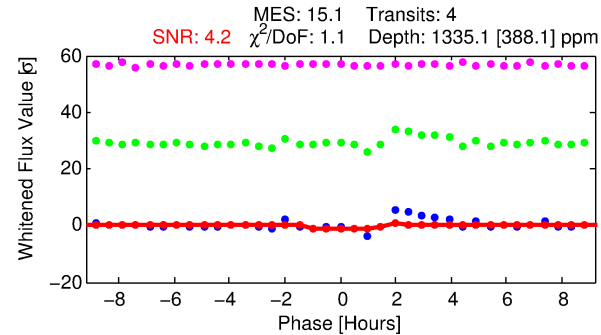
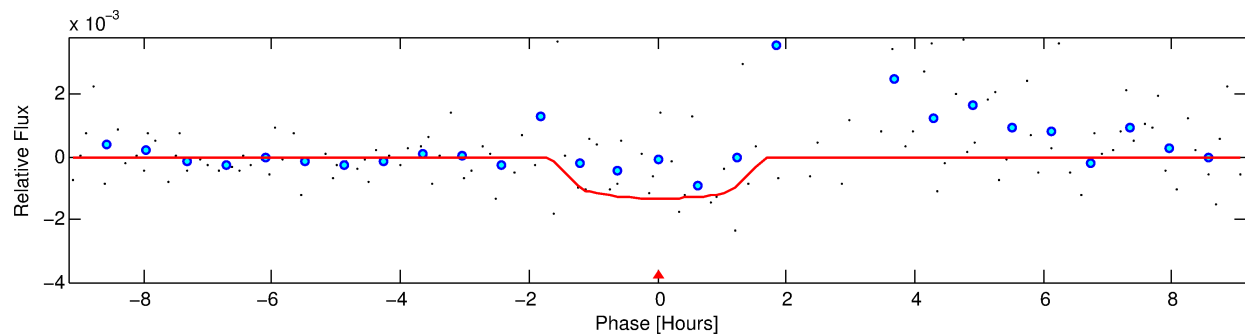
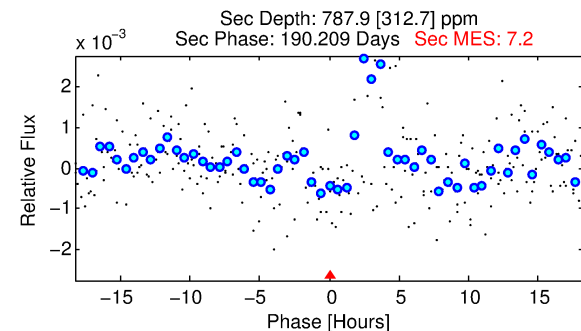
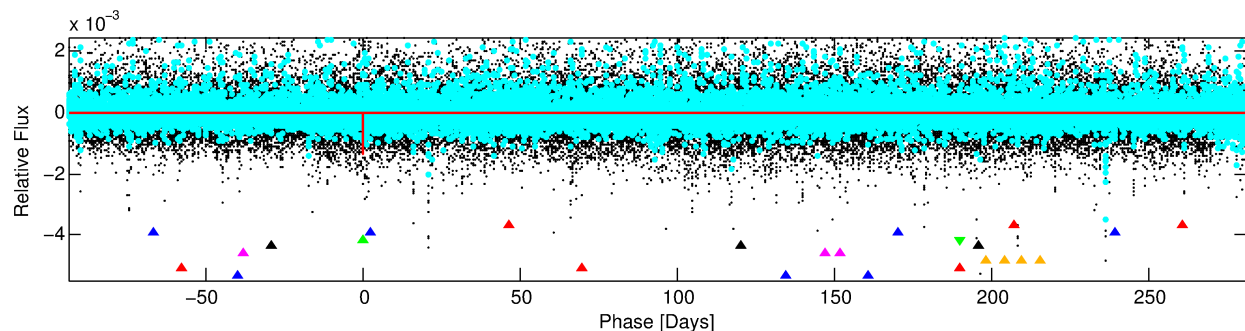
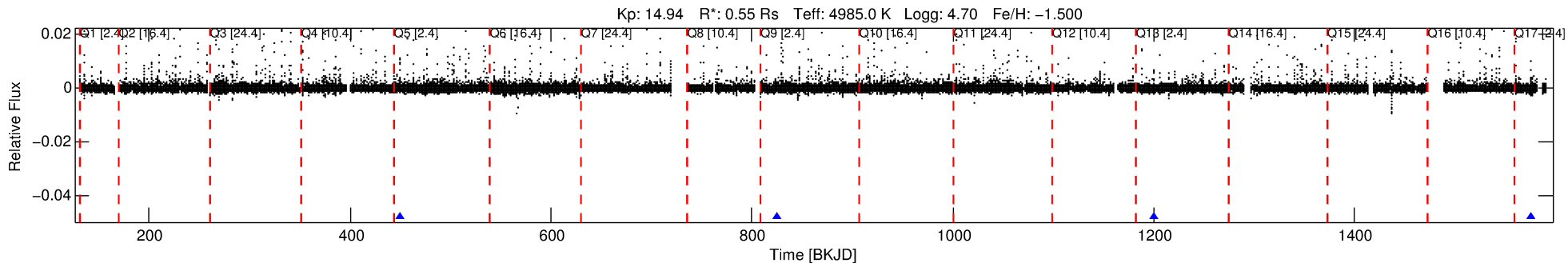
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008004647-03

No Significant Match Found

DV One-Page Summary

KIC: 8004647 Candidate: 3 of 8 Period: 375.235 d



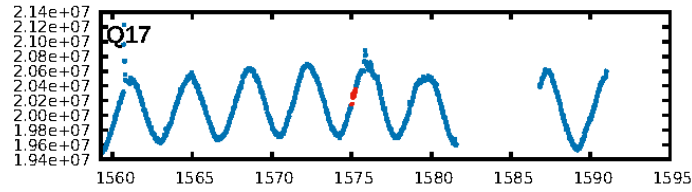
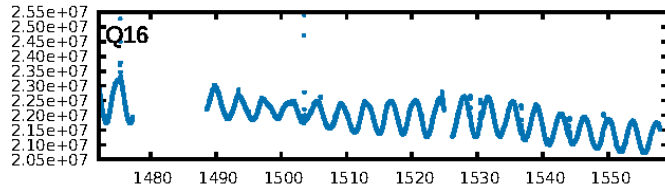
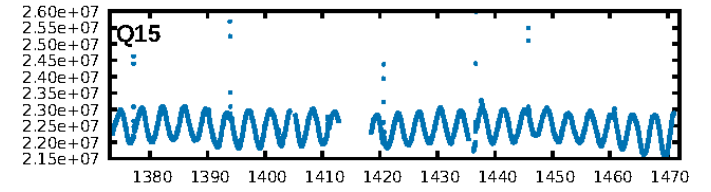
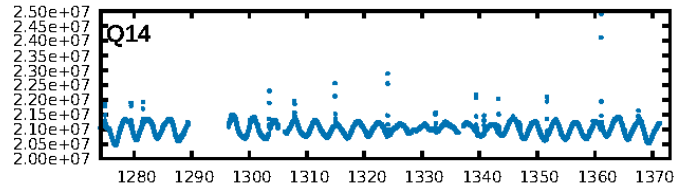
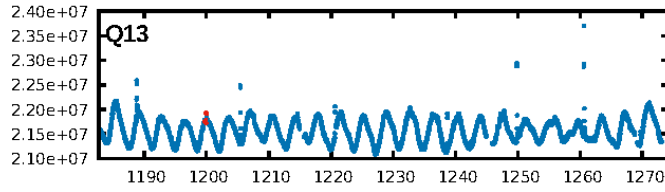
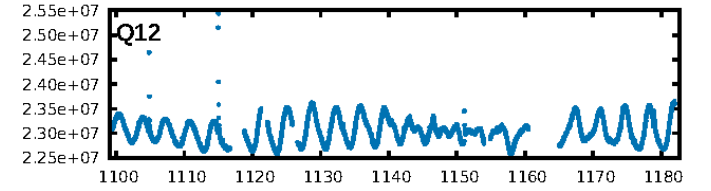
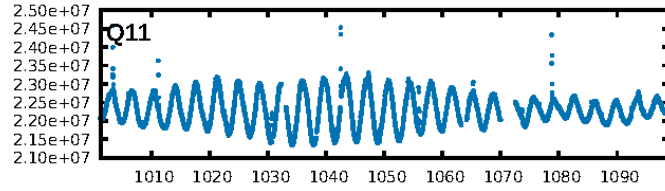
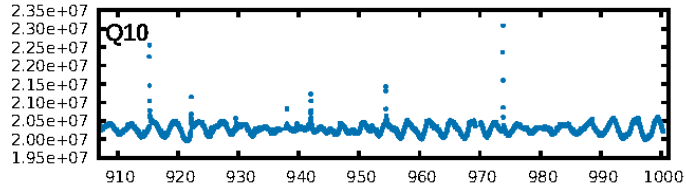
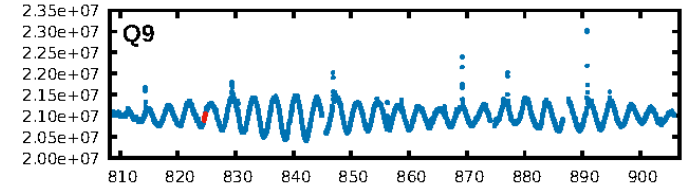
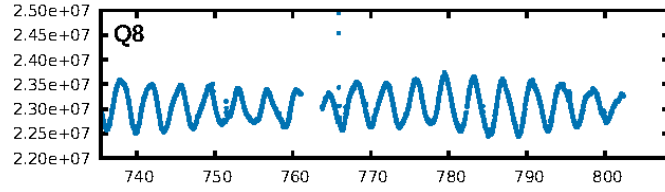
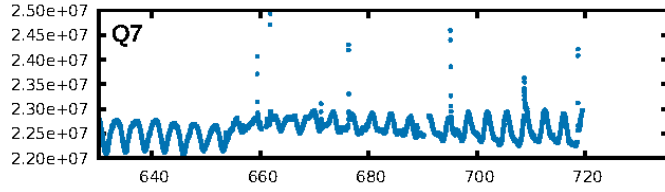
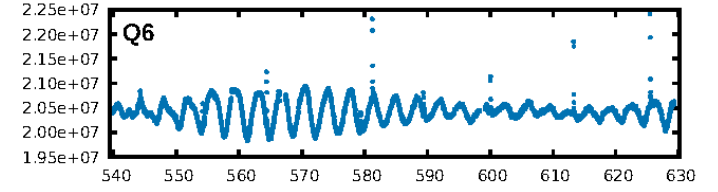
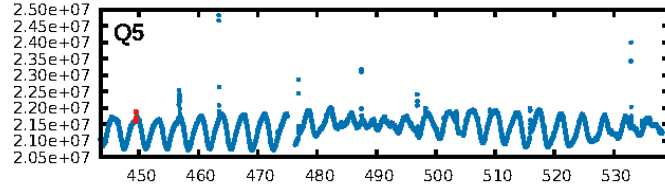
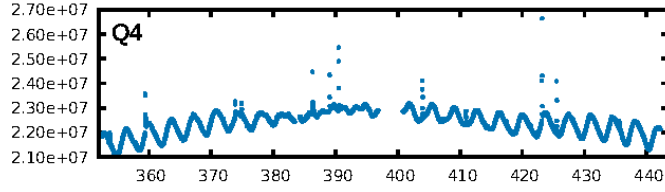
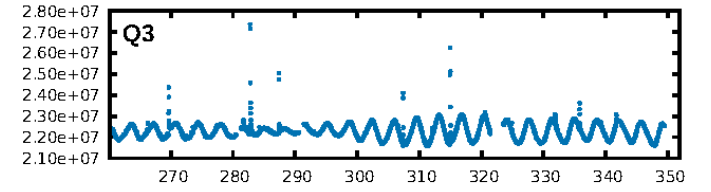
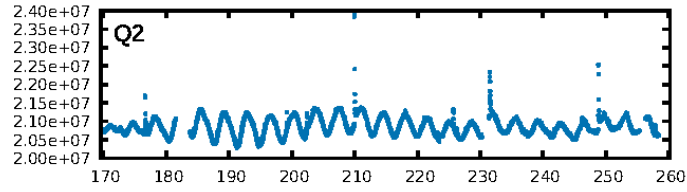
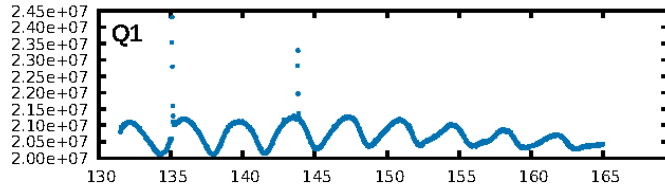
DV Fit Results:

Period = 375.23495 [0.00566] d
Epoch = 449.4229 [0.0111] BKJD
Rp/R* = 0.0339 [0.0966]
a/R* = 887.41 [11556.59]
b = 0.42 [25.85]
Seff = 0.24 [0.04]
Teq = 178 [7] K
Rp = 2.04 [5.82] Re
a = 0.8405 [0.0432] AU
Ag = 73221.01 [417682.29] [0.18σ]
Teffp = 4533 [6465] K [0.67σ]

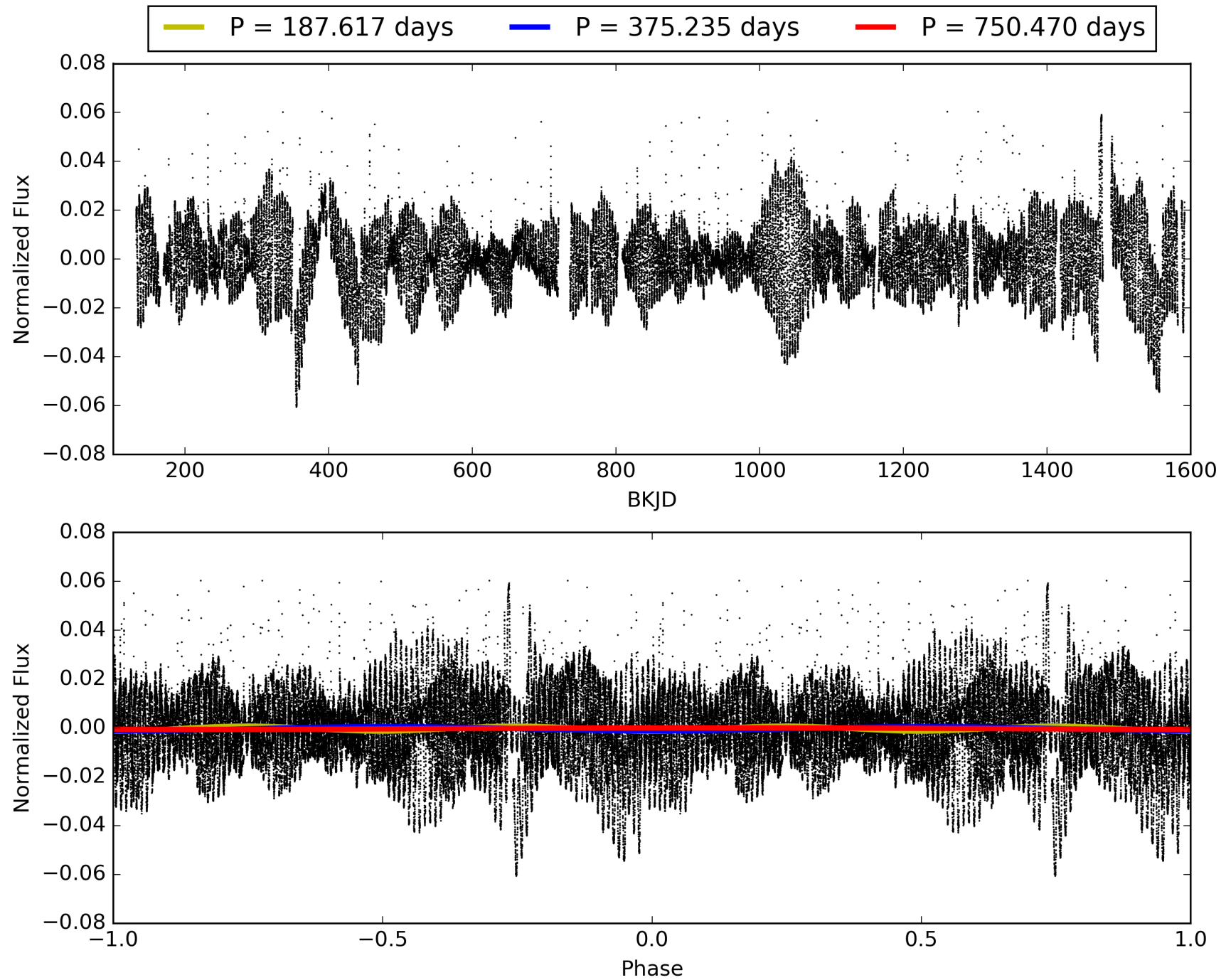
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [28.87σ]
ModelChiSquare2-sig: 1.4%
ModelChiSquareGof-sig: 97.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 105.9
Centroid-sig: 21.8%
Centroid-so: 1.061 arcsec [0.59σ]
OotOffset-rm: 0.598 arcsec [0.43σ]
KicOffset-rm: 0.589 arcsec [0.29σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 008004647-03, PDC Light Curves

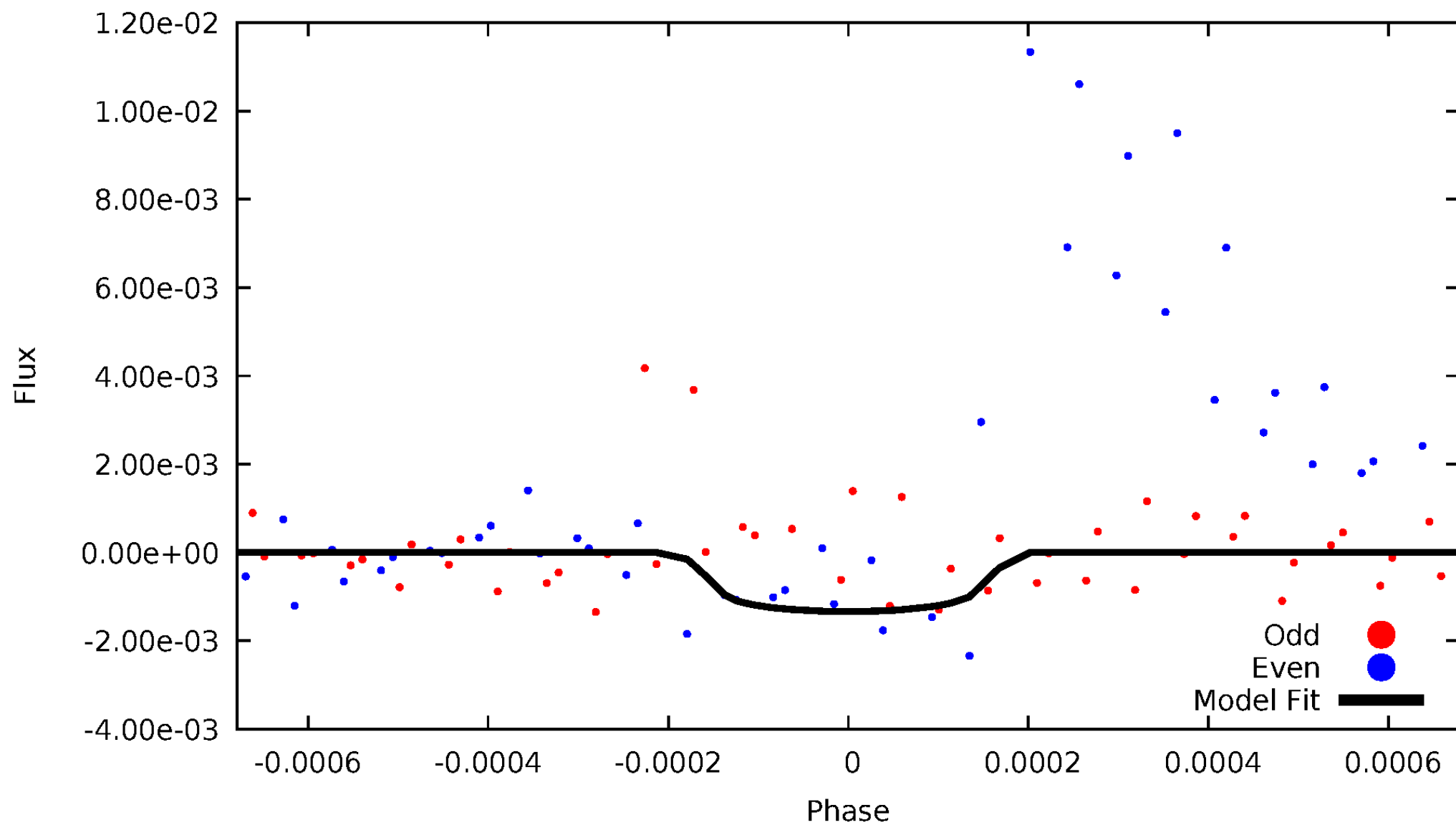


TCE 008004647-03



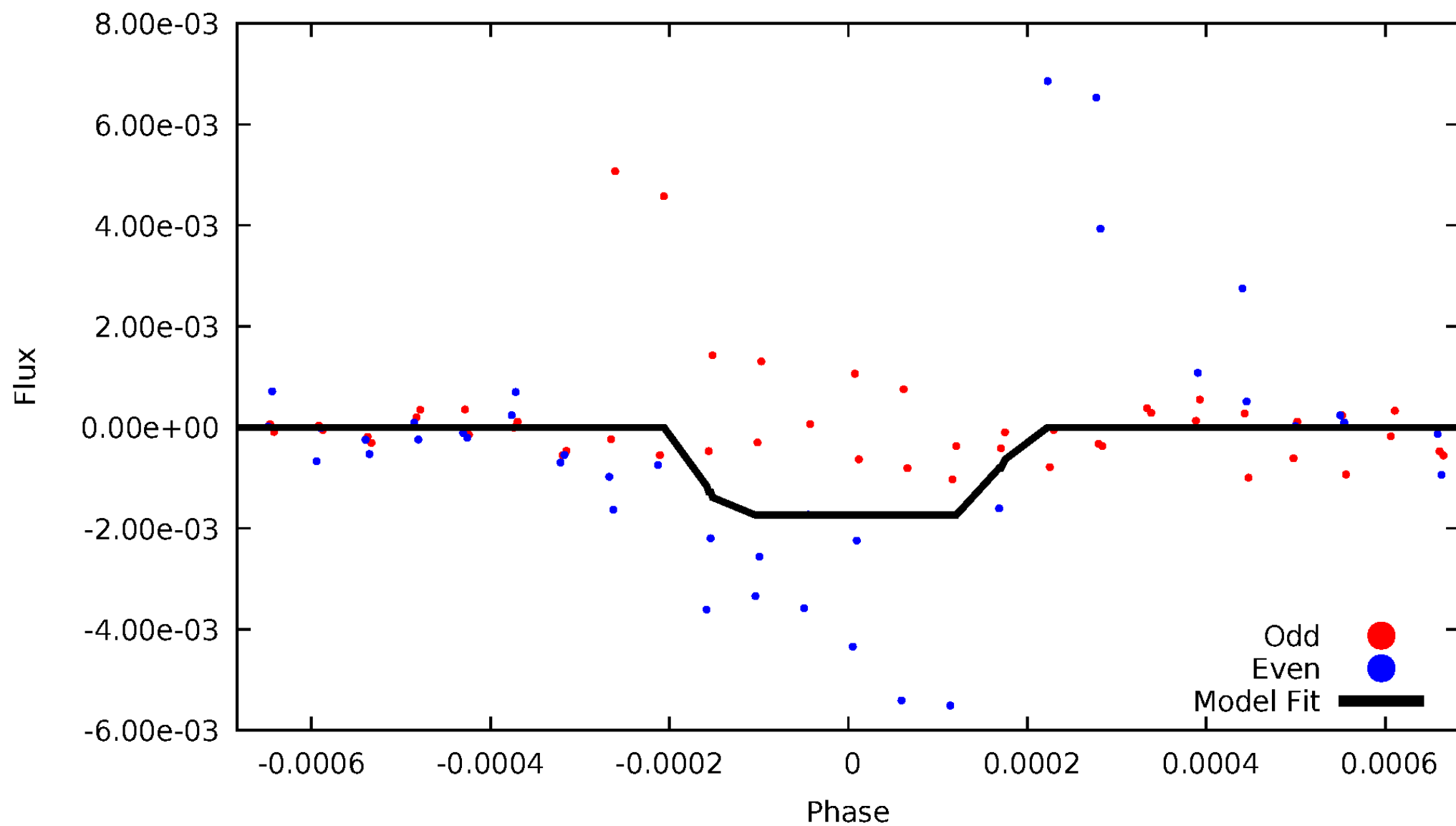
DV Odd/Even

TCE 008004647-03



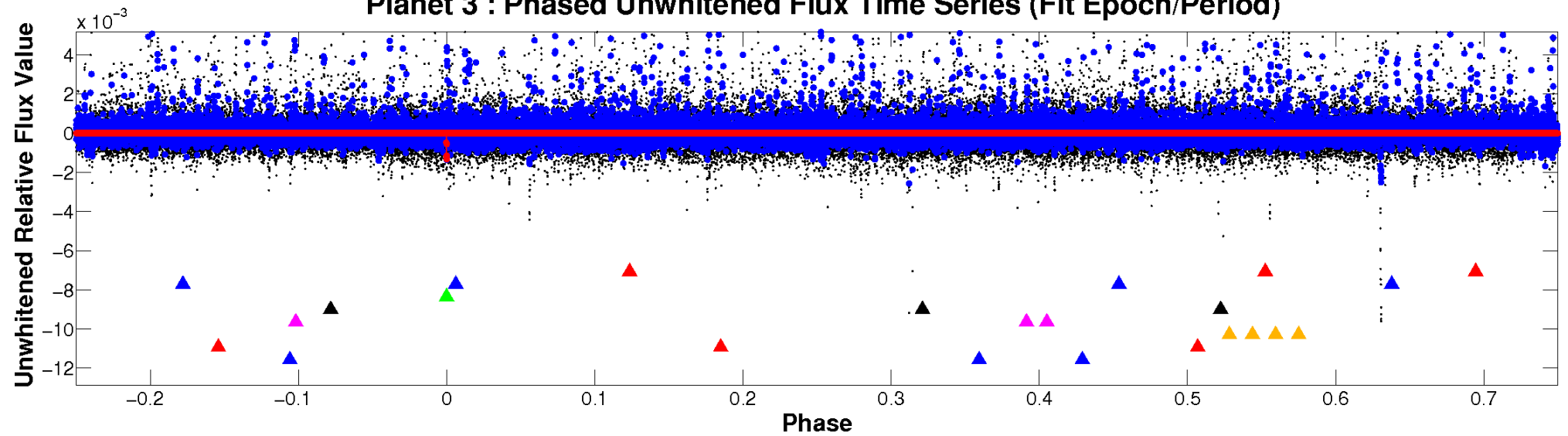
ALT Odd/Even

TCE 008004647-03

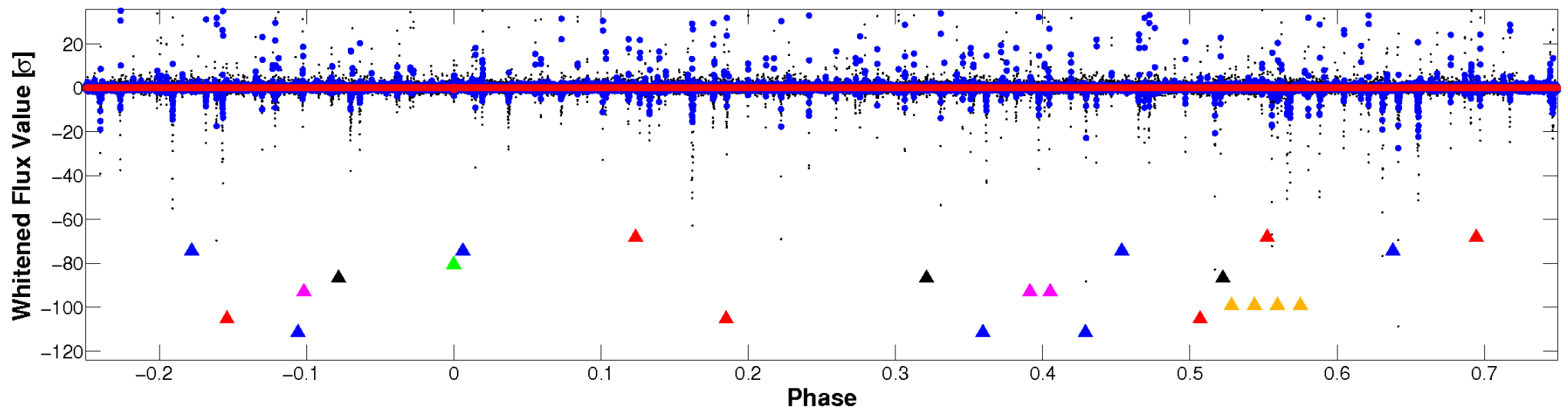


Non-Whitened Vs. Whitened Light Curve

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

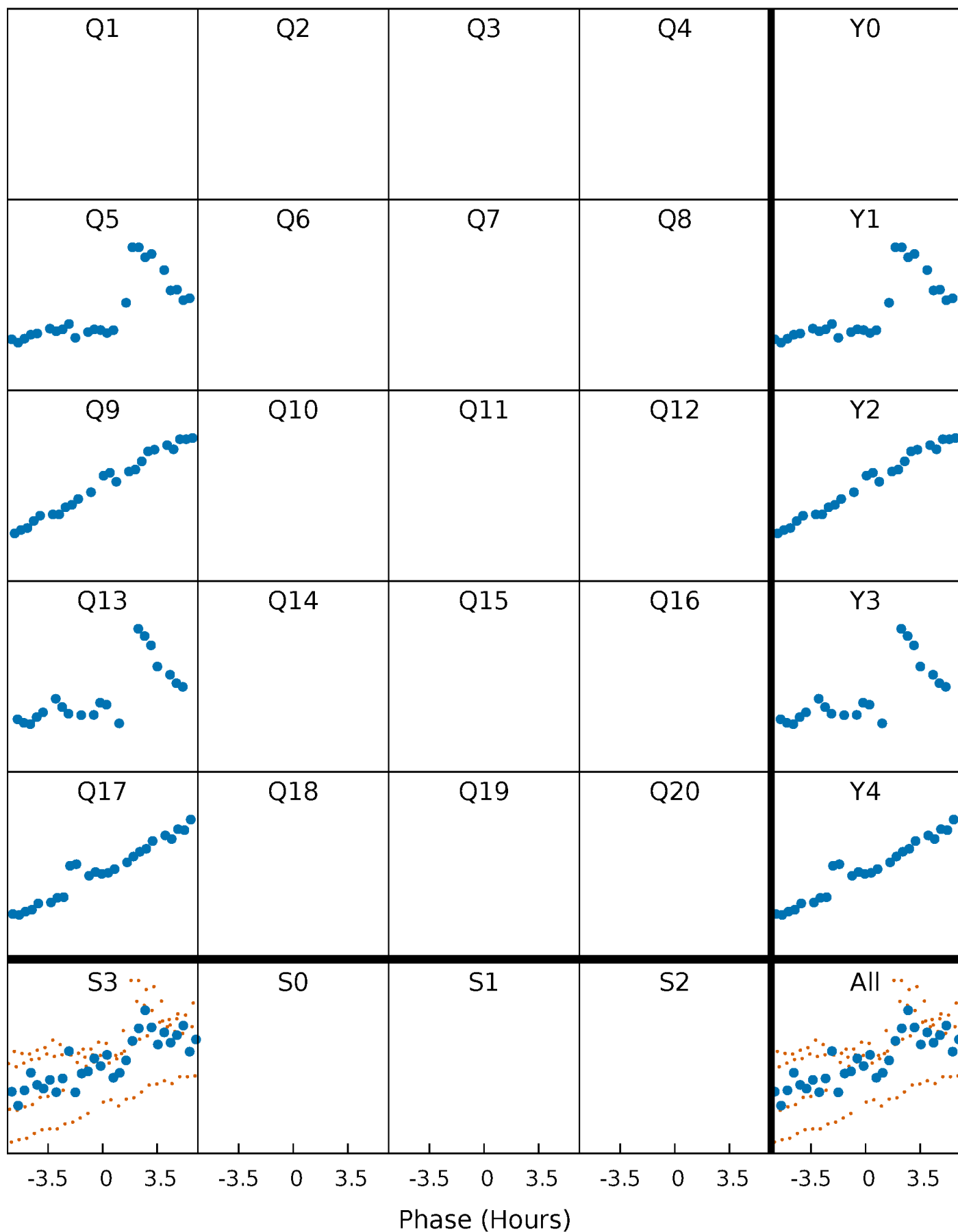


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



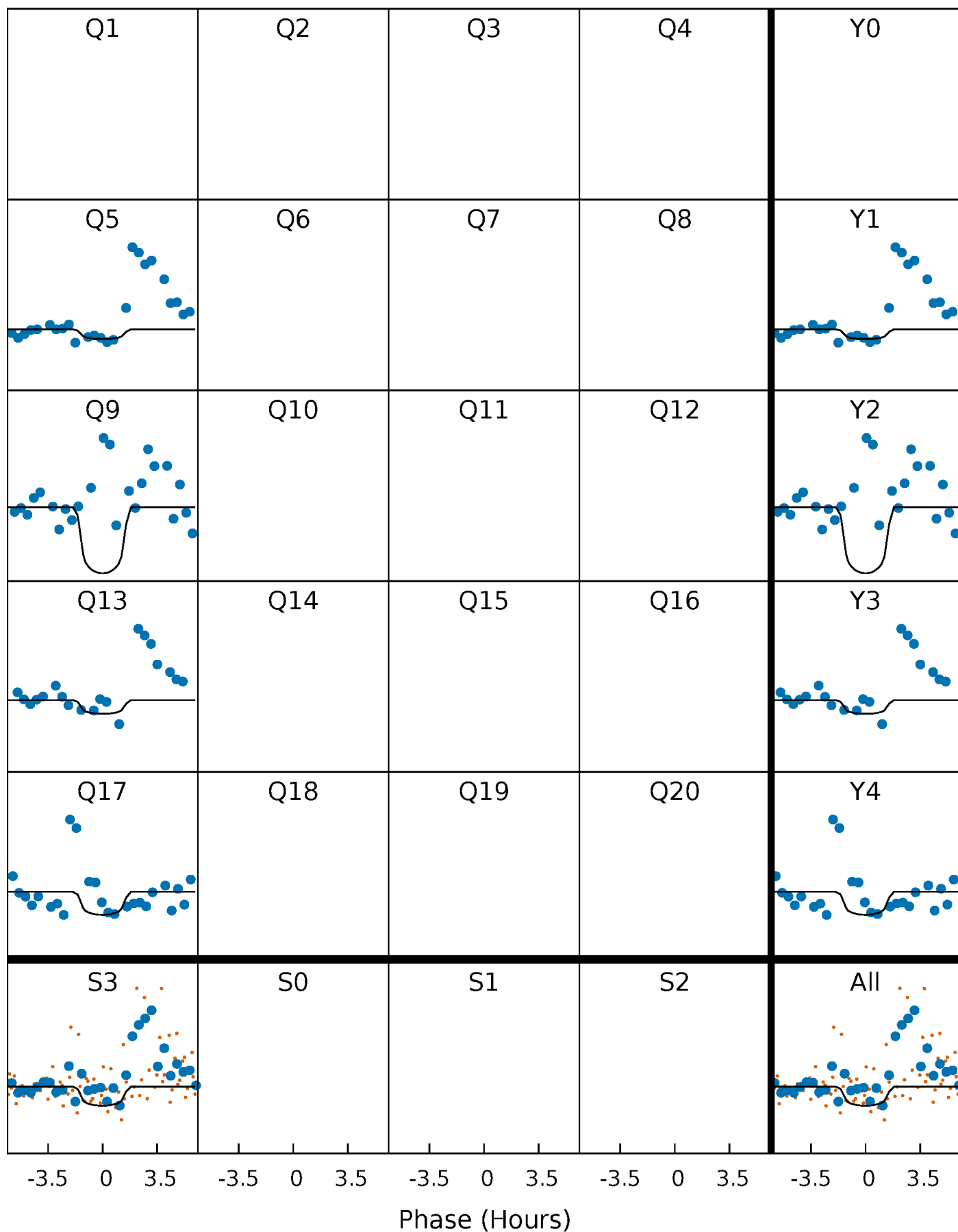
PDC Quarter-Phased Transit Curves

TCE 008004647-03 $P=375.234952$ Days $T_0=449.422928$ (BKJD)



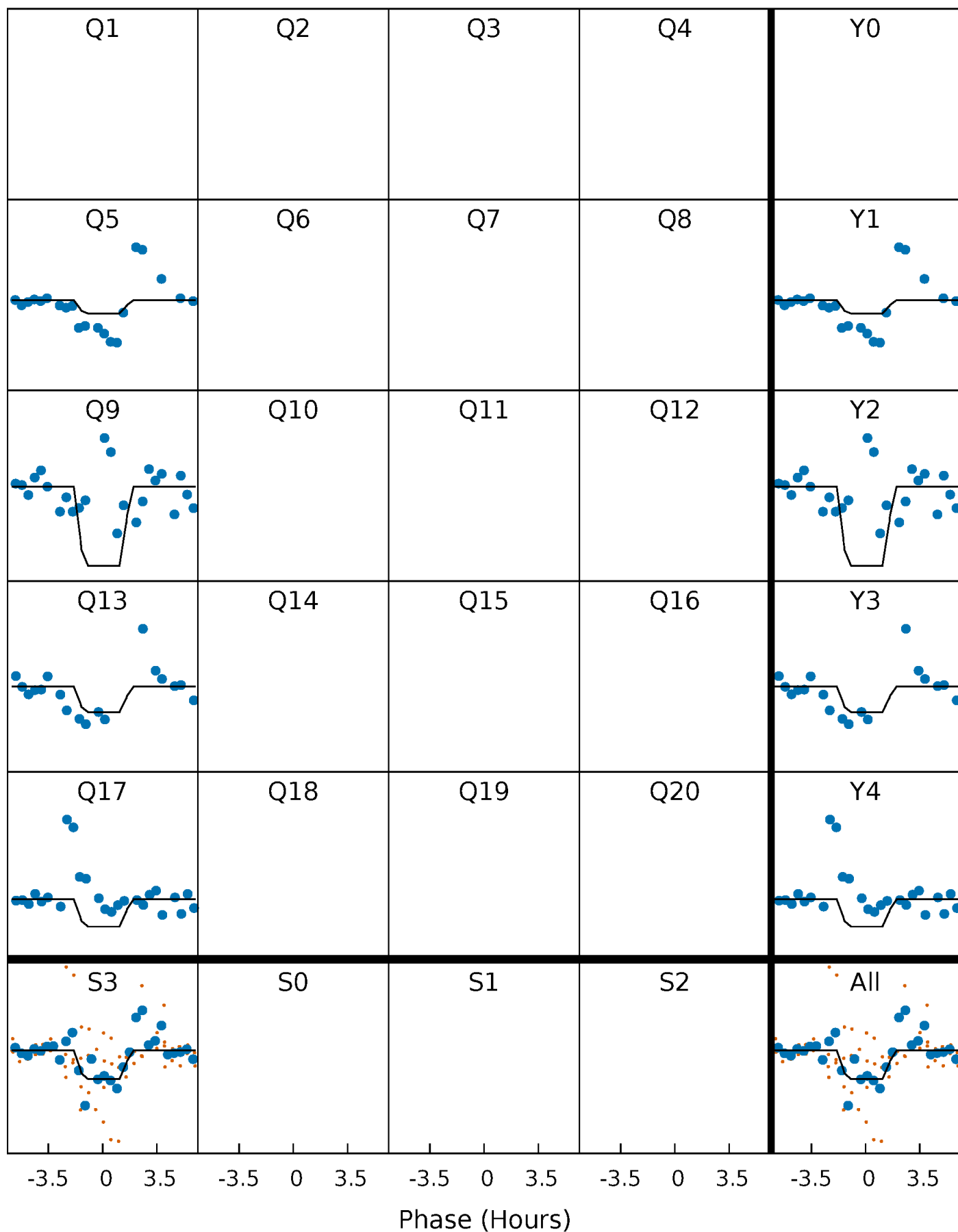
DV Quarter-Phased Transit Curves

TCE 008004647-03 $P=375.234952$ Days $T_0=449.422928$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

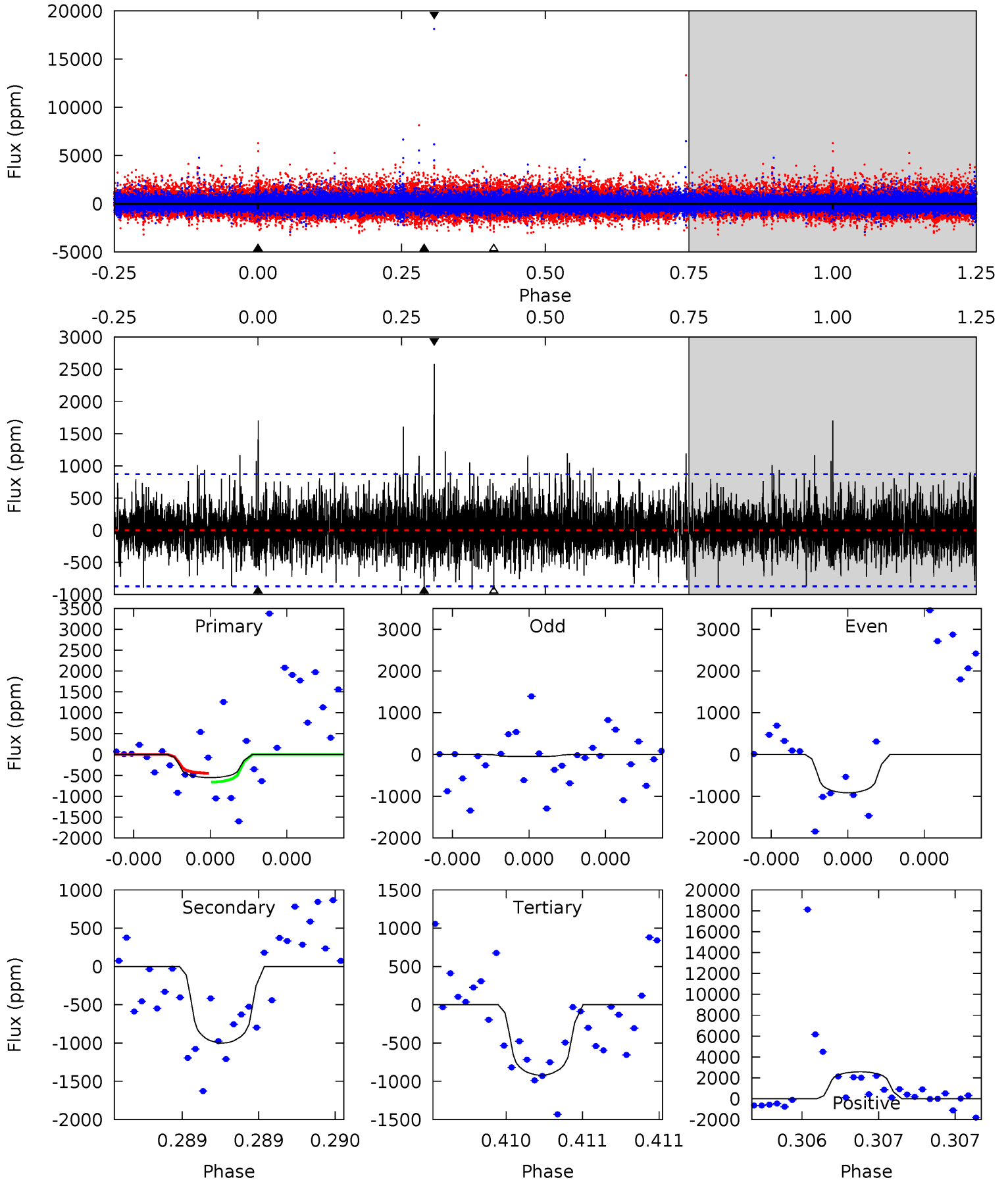
TCE 008004647-03 $P=375.241896$ Days $T_0=449.415077$ (BKJD)



DV Model-Shift Uniqueness Test

008004647-03, P = 375.234952 Days, E = 74.187976 Days

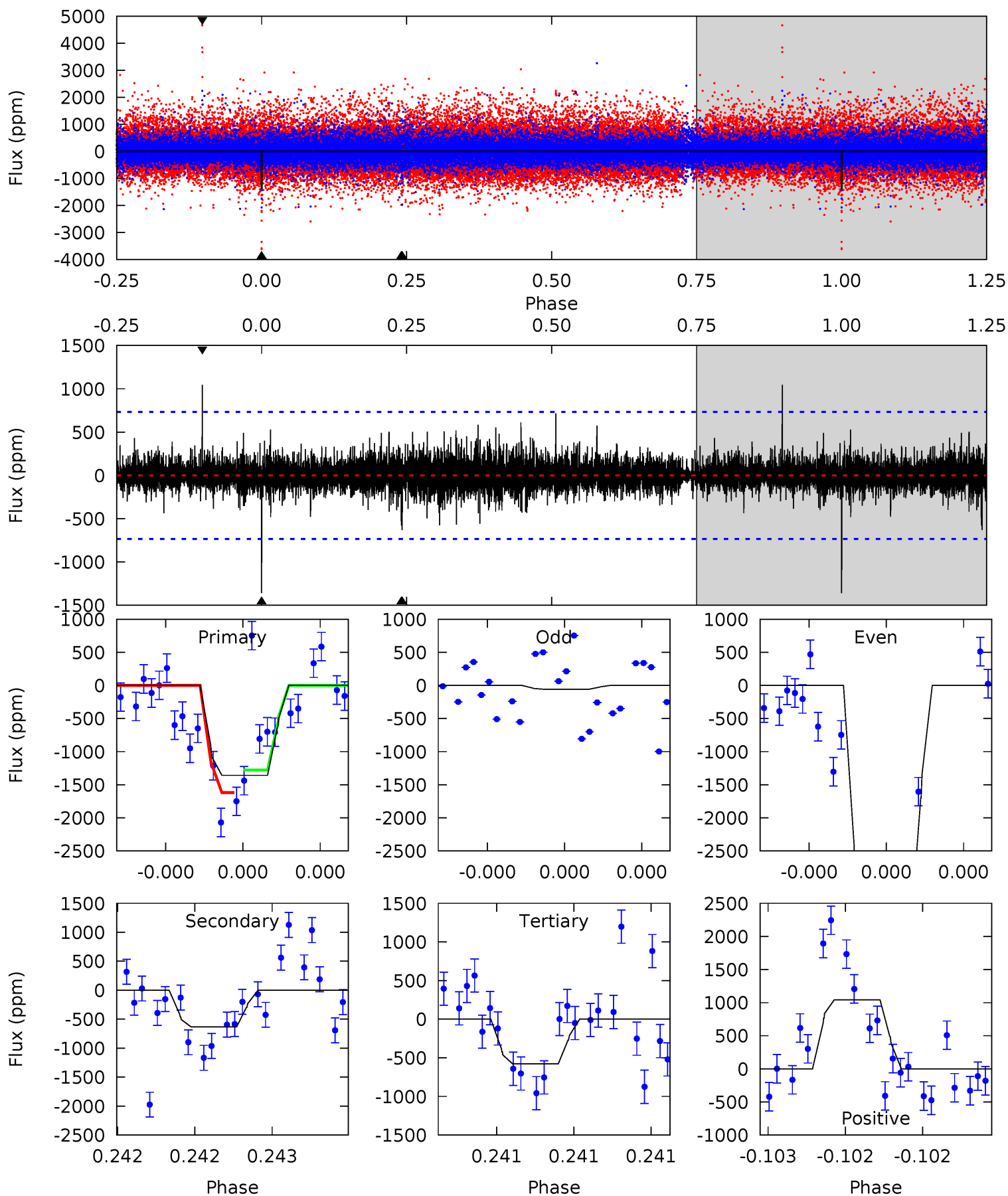
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.58	6.46	5.94	16.7	5.62	3.55	1.67	-2.37	-13.1	0.52	-10.2	2.14	0.59	0.72	0.69



Alt Model-Shift Uniqueness Test

008004647-03, P = 375.241896 Days, E = 74.173181 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	4.84	4.43	8.00	5.62	3.55	0.89	5.98	2.41	0.41	-3.16	15.5	1.44	0.43	1.26



Stellar Parameters For KIC 008004647

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4985^{+163}_{-148}	$4.704^{+0.049}_{-0.024}$	$-1.500^{+0.300}_{-0.300}$	$0.552^{+0.026}_{-0.029}$	$0.562^{+0.040}_{-0.017}$	$4.695^{+0.840}_{-0.452}$
	+3%/-3%	+1%/-1%	+20%/-20%	+5%/-5%	+7%/-3%	+18%/-10%
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 008004647-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1000 ± 155	$4.64^{+4.57}_{-3.17}$	248^{+9}_{-8}	3580^{+2016}_{-679}	$18306^{+159058}_{-13915}$
Alt.	-631 ± 130	$5.03^{+4.15}_{-3.32}$	248^{+8}_{-8}	3225^{+1479}_{-491}	9573^{+76163}_{-6695}

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

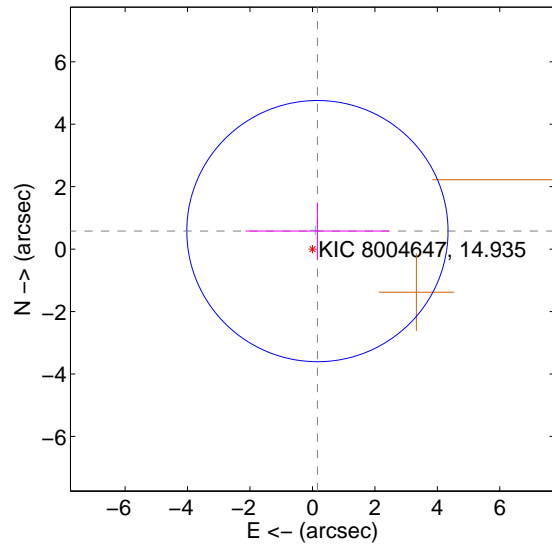
Supplemental centroid analysis for 008004647-03. Kepler magnitude: 14.94. Transit SNR 4.24

There are 1 quarters with good PRF difference image offsets

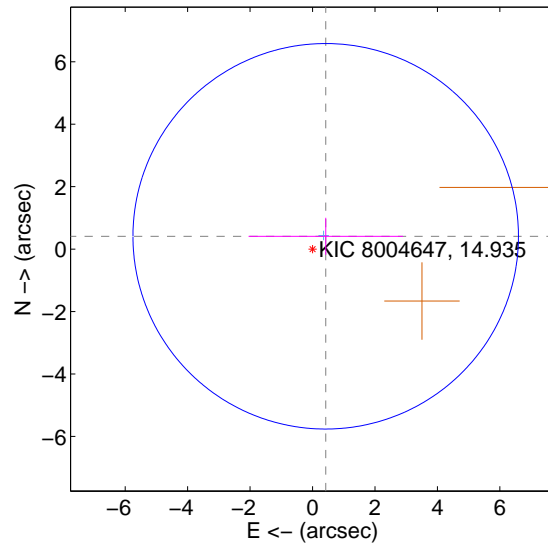
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.598 ± 1.394	0.43	-0.160 ± 2.299	0.576 ± 0.904
PRF-fit source offset from KIC position	0.589 ± 2.058	0.29	-0.422 ± 2.472	0.410 ± 0.593
photometric centroid source offset	1.06 ± 1.80	0.59	-0.50 ± 1.59	0.94 ± 1.85

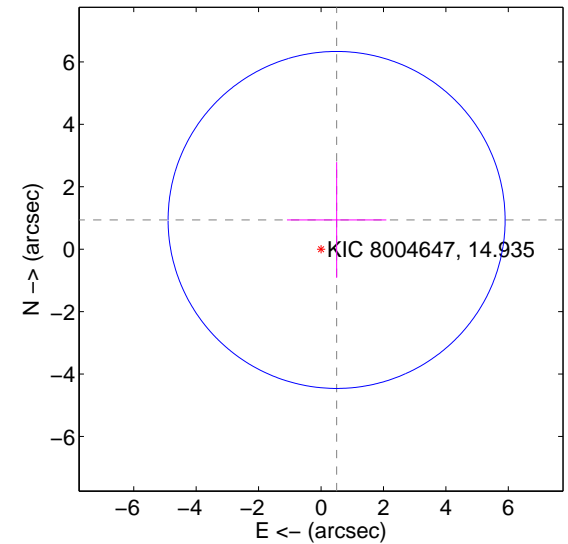
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

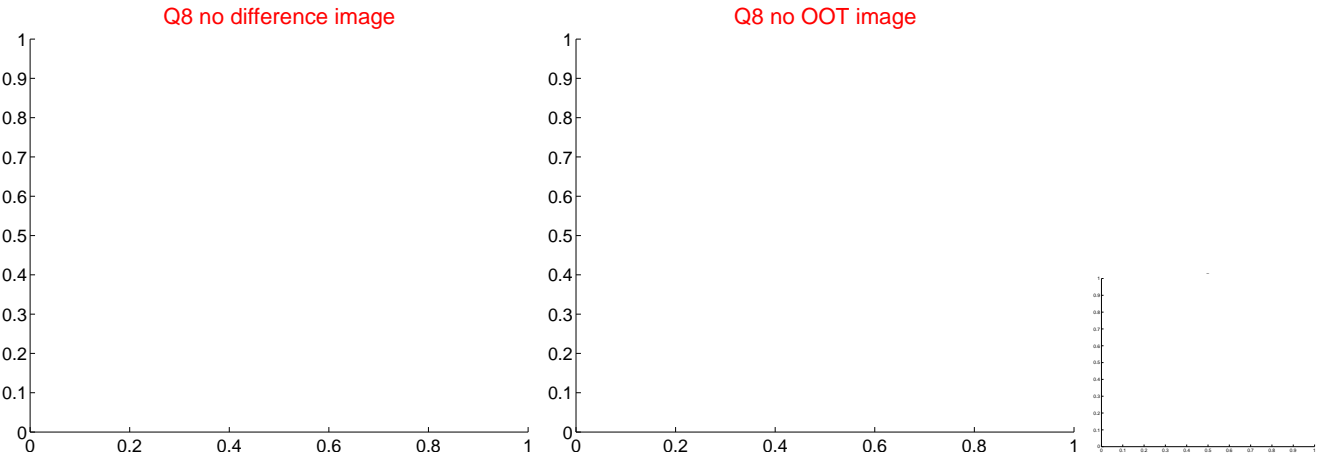
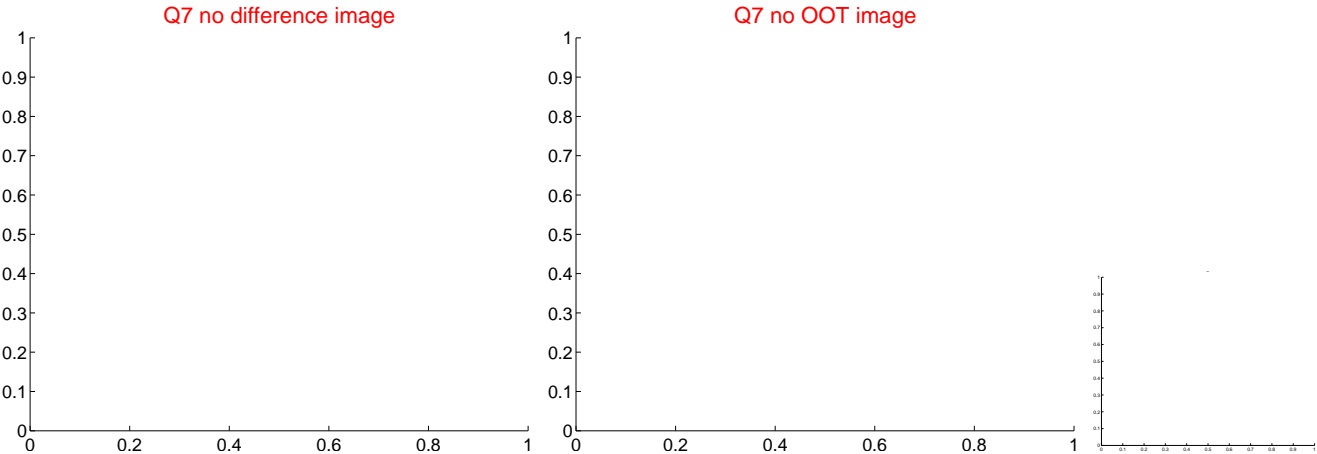
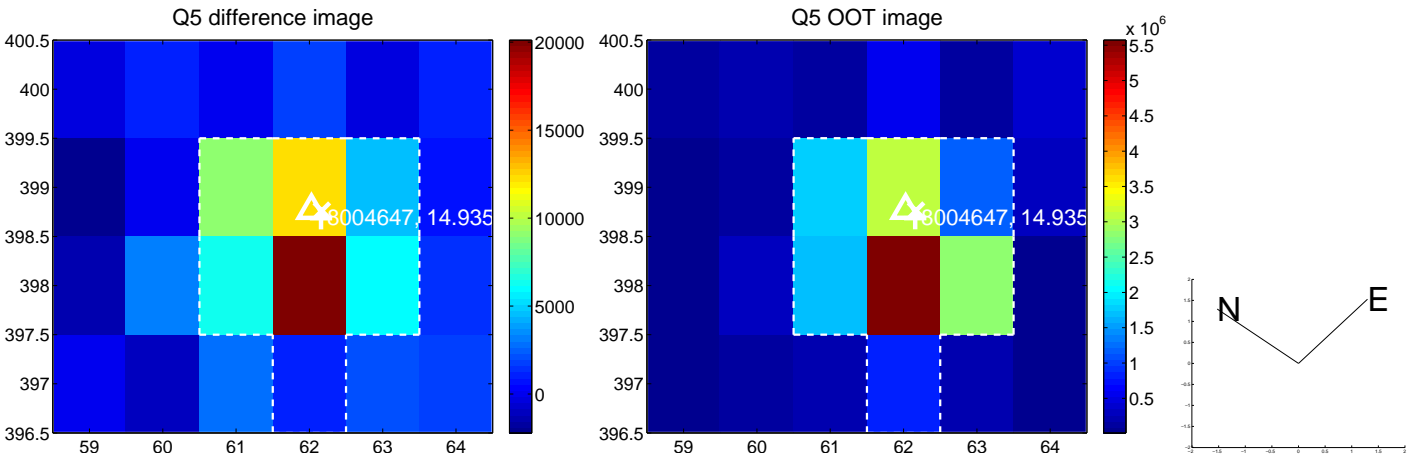


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

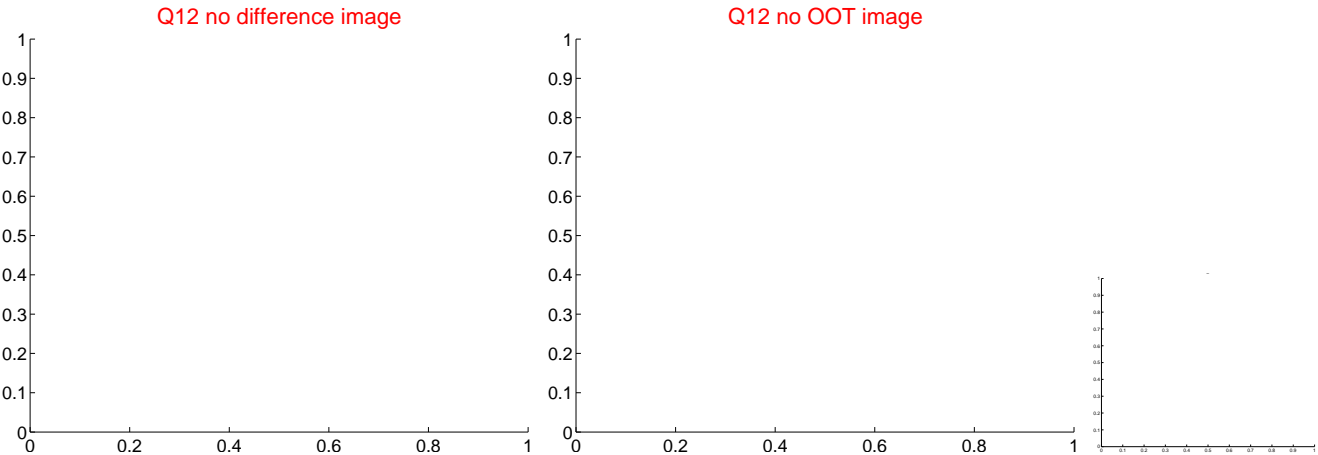
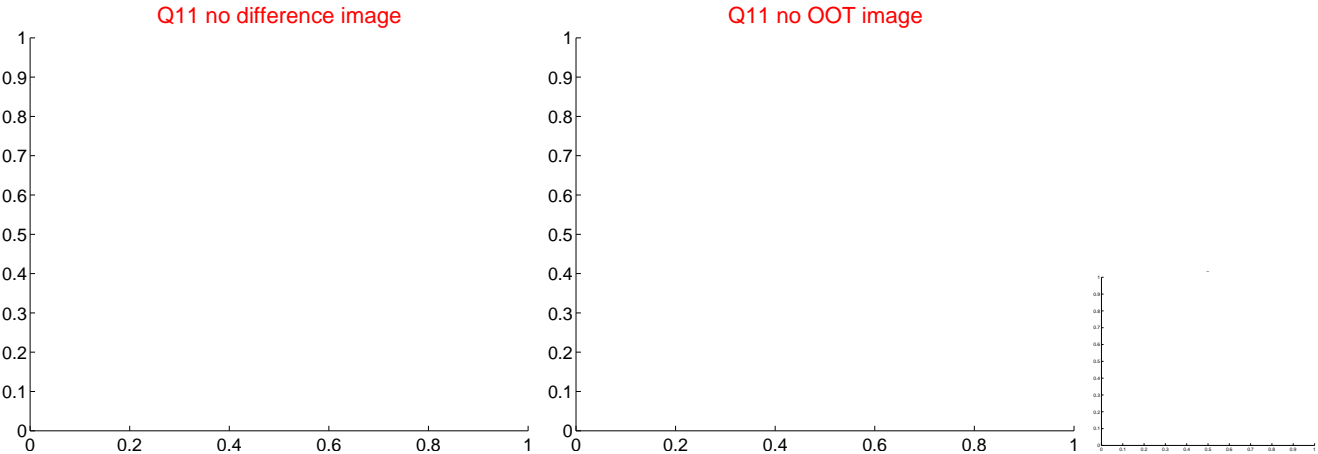
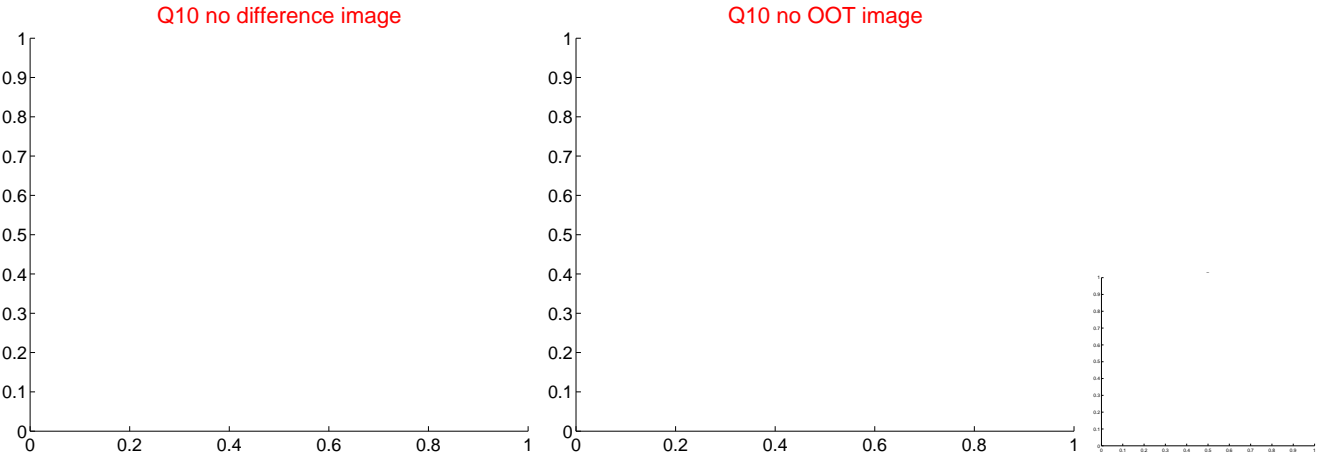
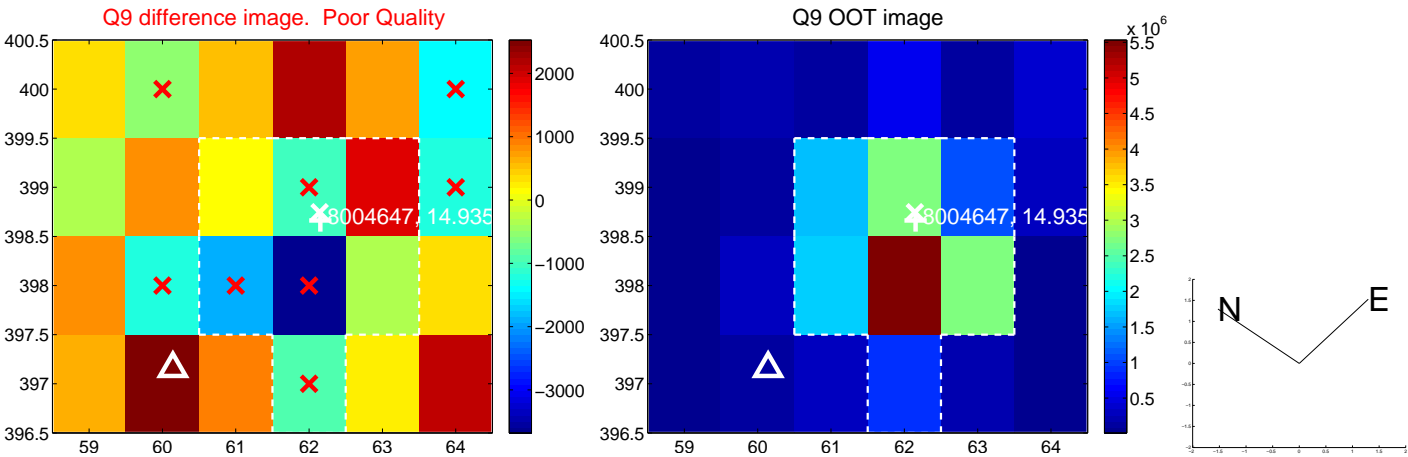
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



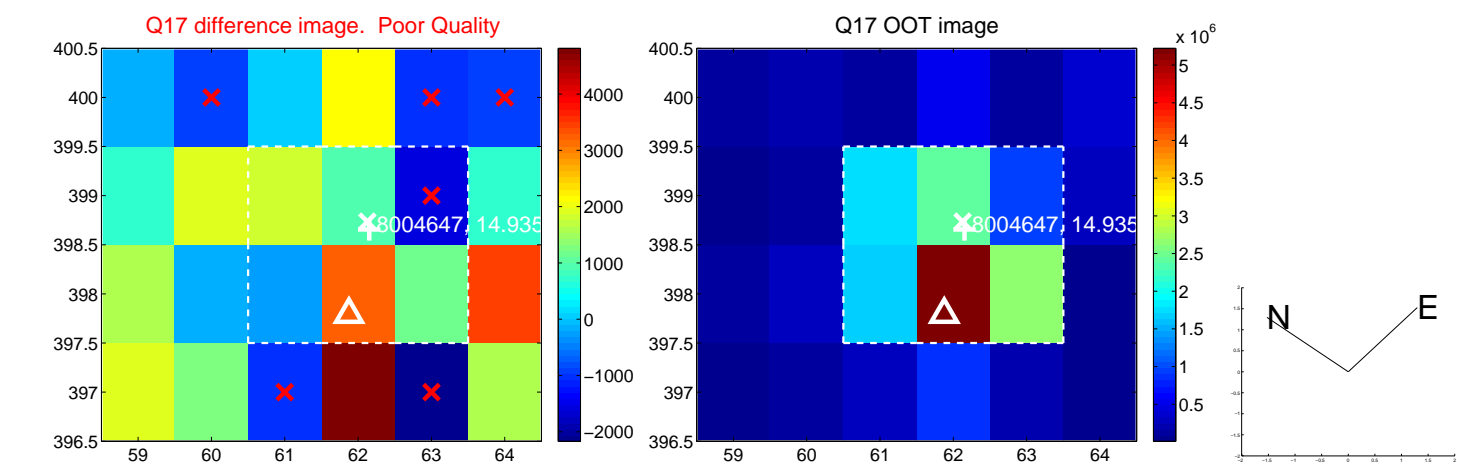
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



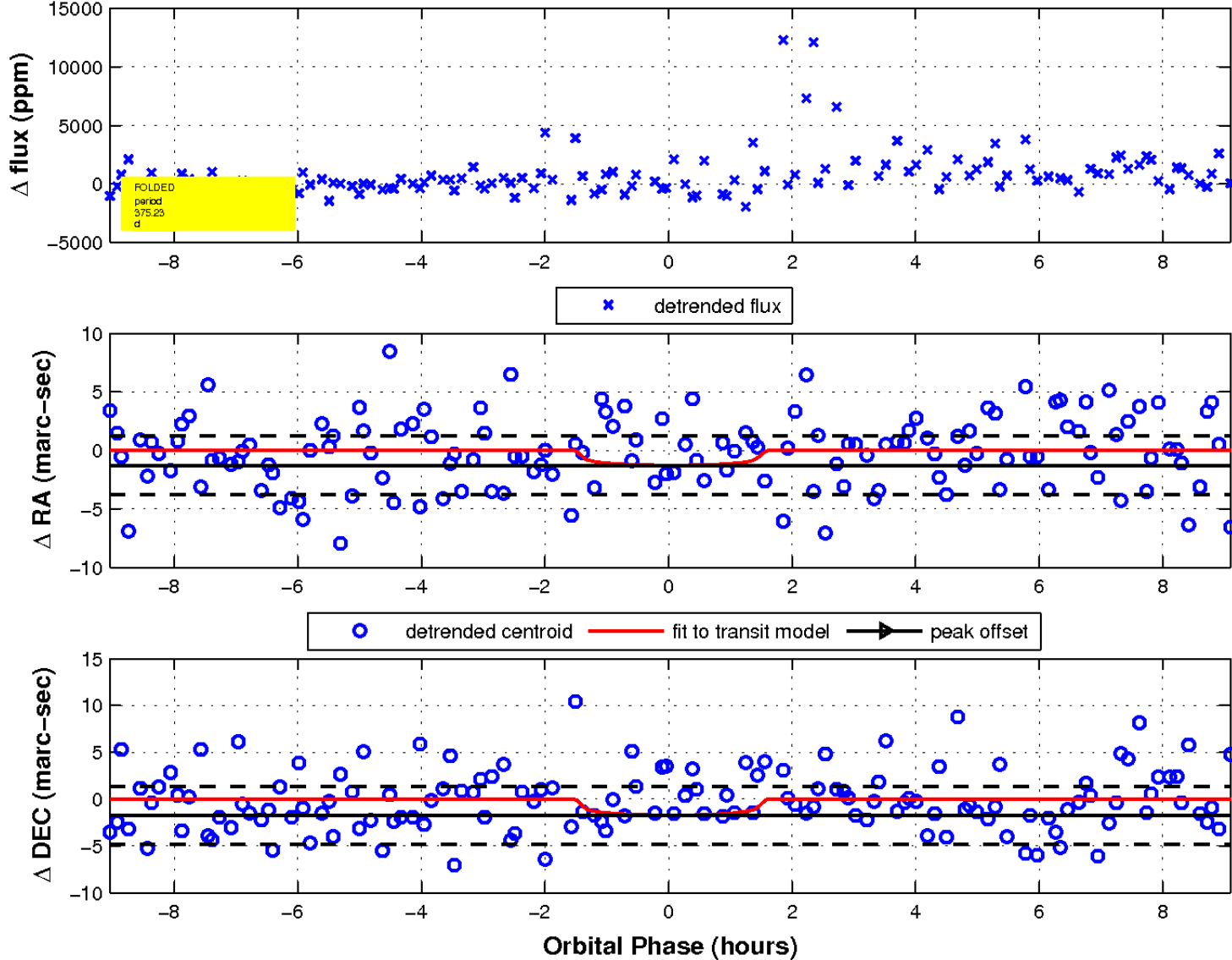
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

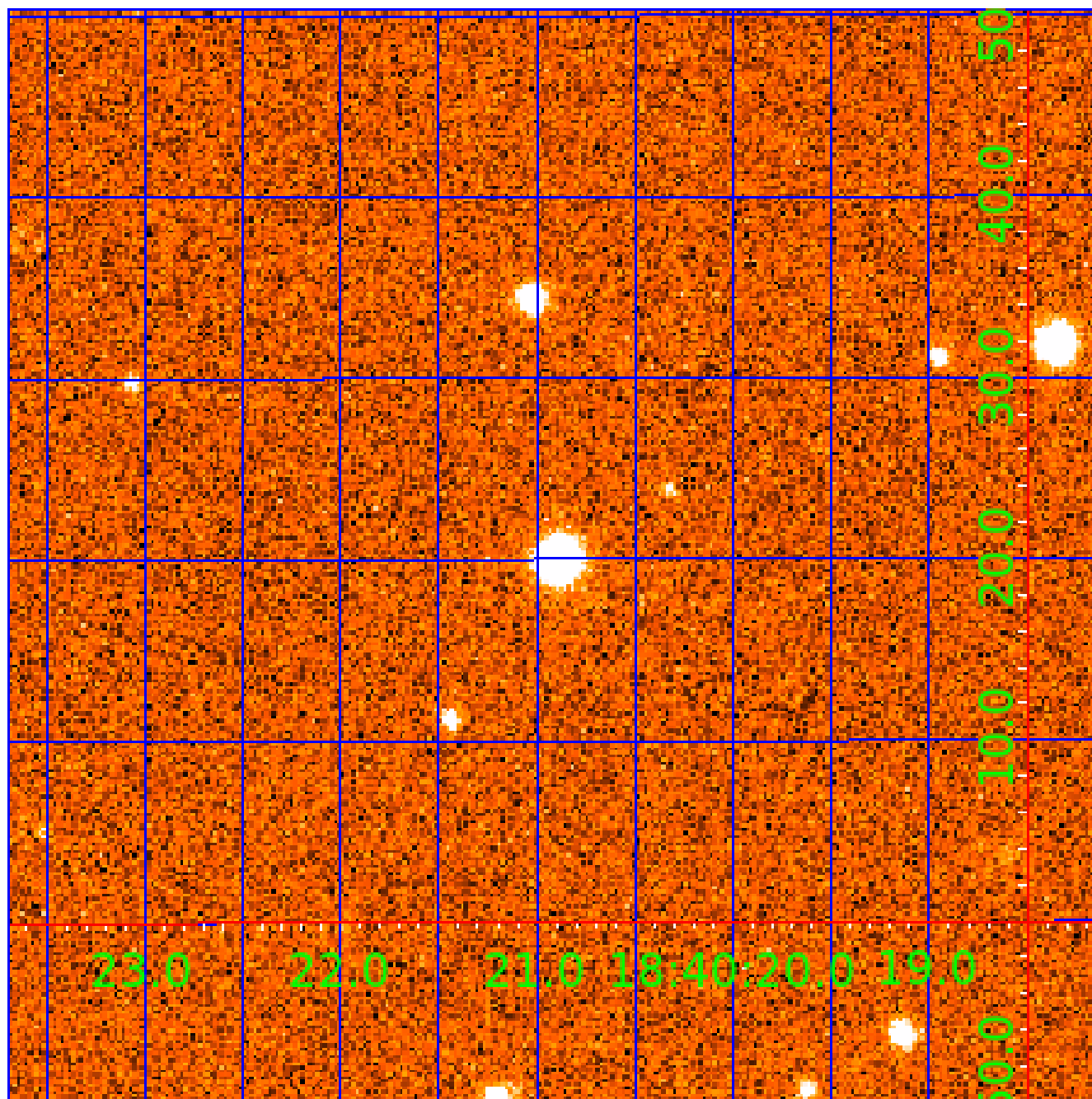


fluxWeightedCentroids, Planet 3 of 8



UKIRT Image

Declination



KIC 008004647

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})
008004647-01	OBS	No	589.501452	281.510904	2612.4	7.548	18.1	7.5	0.55	4985	3.16	0.13
008004647-02	OBS	No	444.337453	244.446998	1863.1	7.144	16.2	8.3	0.55	4985	2.36	0.19
008004647-03	OBS	No	375.234952	449.422928	1335.1	3.056	15.1	4.2	0.55	4985	2.04	0.24
008004647-04	OBS	No	600.607424	194.706947	2425.1	5.117	14.3	8.3	0.55	4985	2.70	0.13
008004647-05	OBS	No	560.281544	226.195177	2020.9	4.011	15.6	7.2	0.55	4985	2.57	0.14
008004647-07	OBS	No	623.254844	143.604680	2530.2	3.122	11.1	8.6	0.55	4985	2.87	0.12
008004647-08	OBS	No	575.913077	209.052948	982.5	9.000	11.6	-1.0	0.55	4985	1.72	0.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008004647-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
008004647-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008004647-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—CENT_FEW_DIFFS
008004647-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

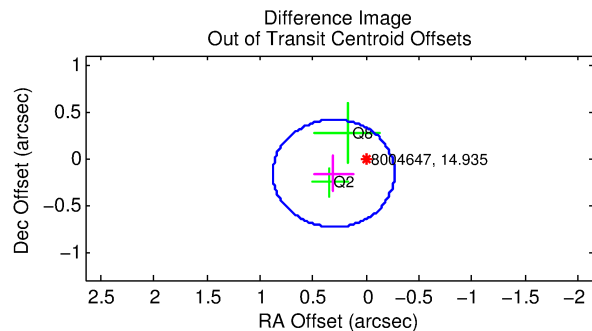
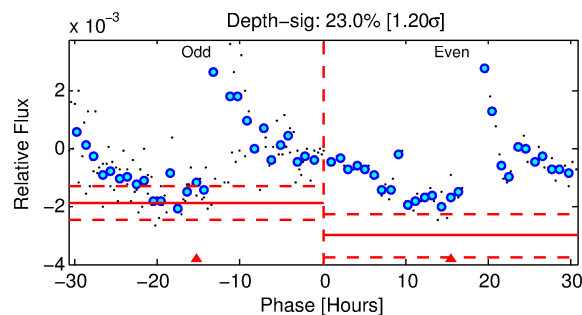
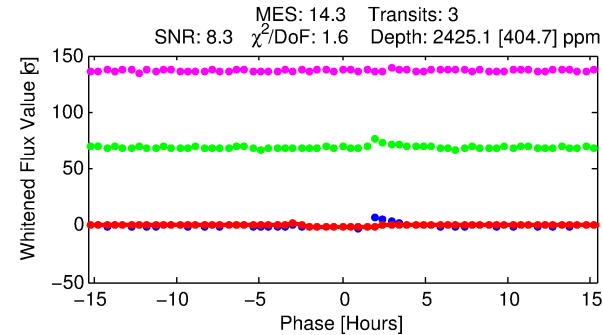
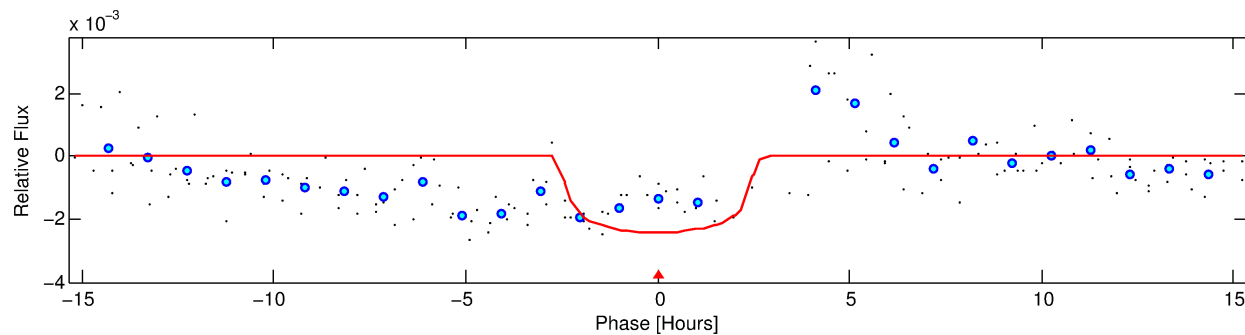
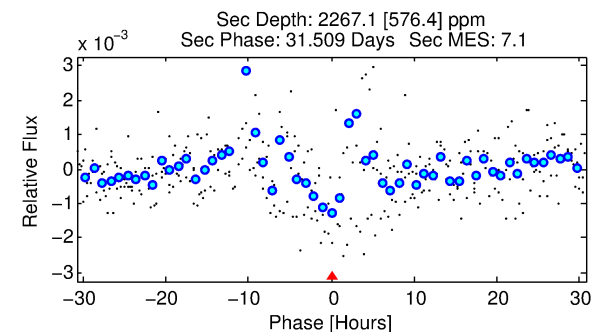
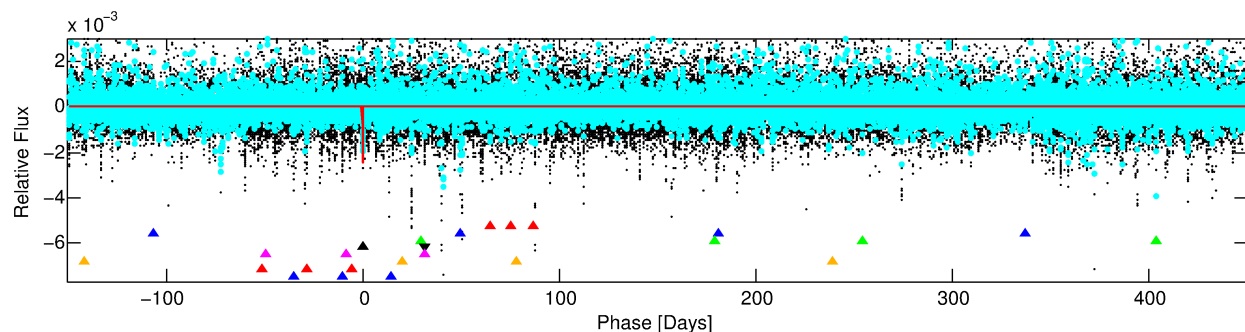
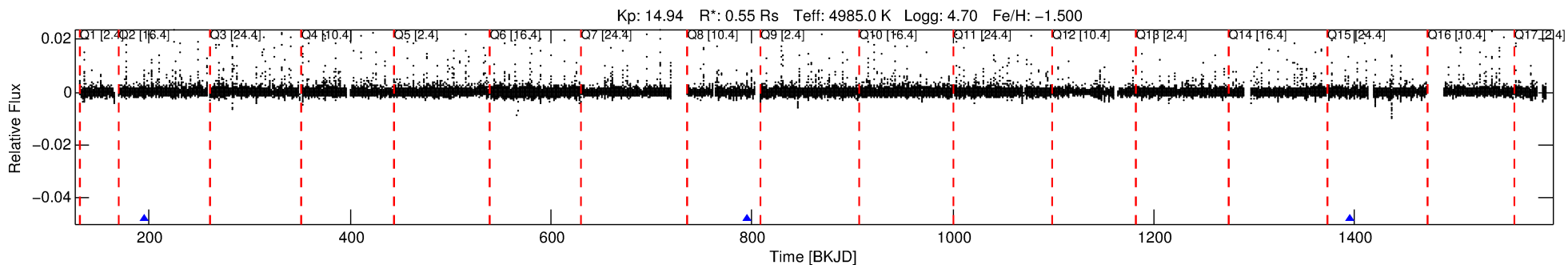
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008004647-04

No Significant Match Found

DV One-Page Summary

KIC: 8004647 Candidate: 4 of 8 Period: 600.607 d



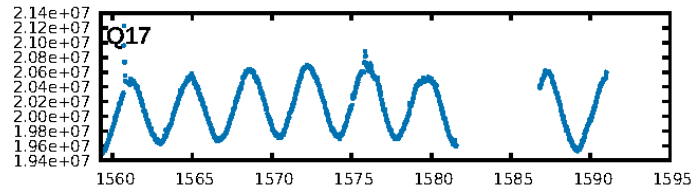
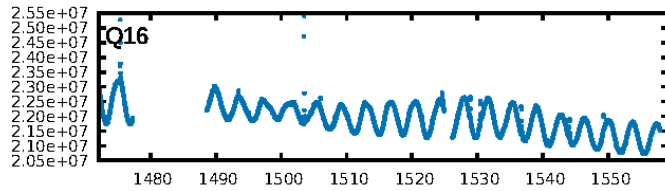
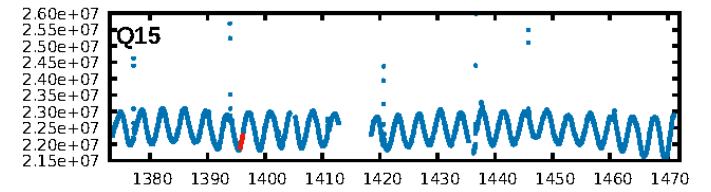
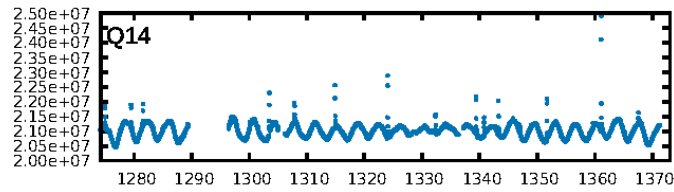
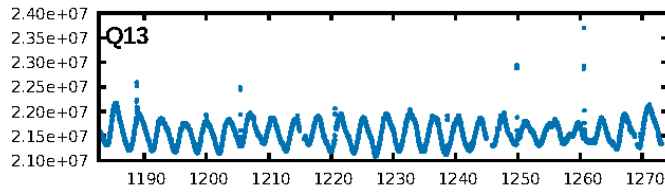
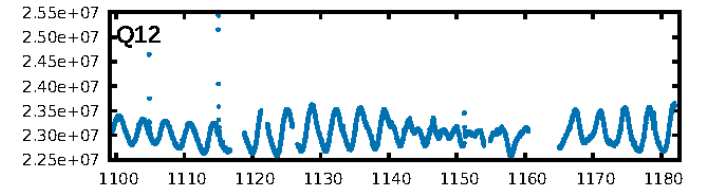
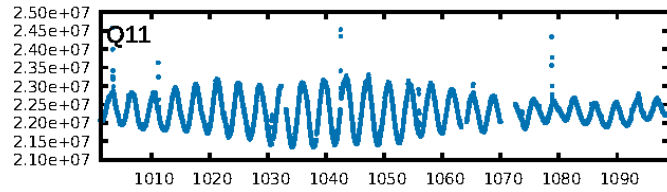
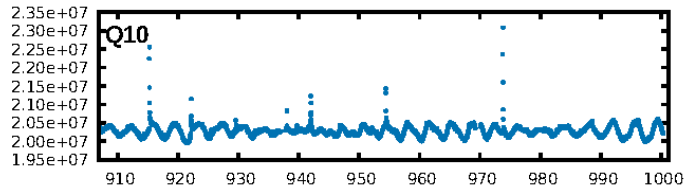
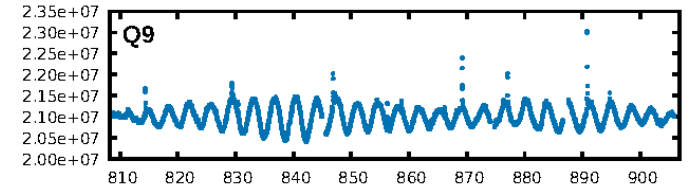
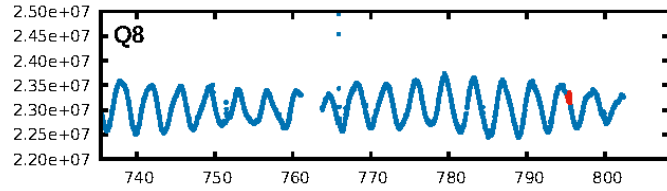
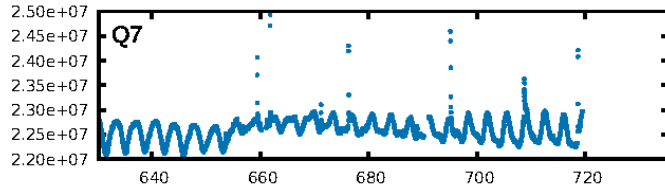
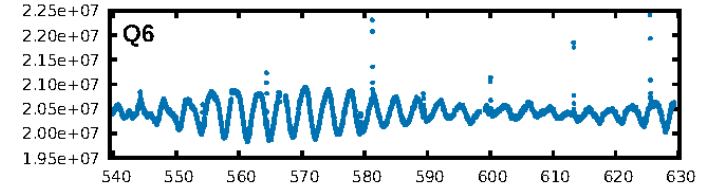
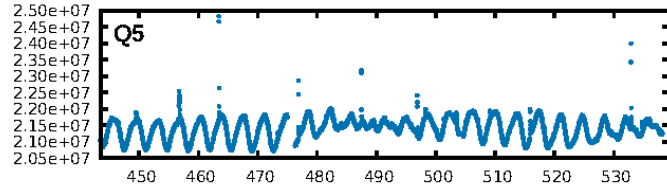
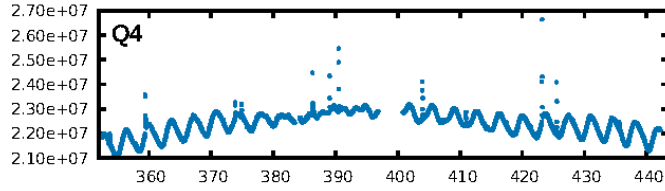
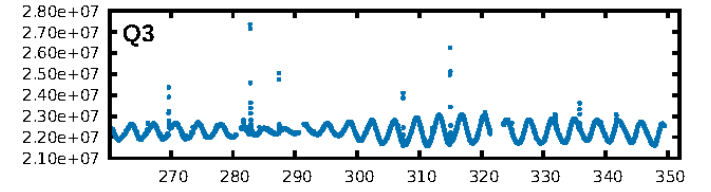
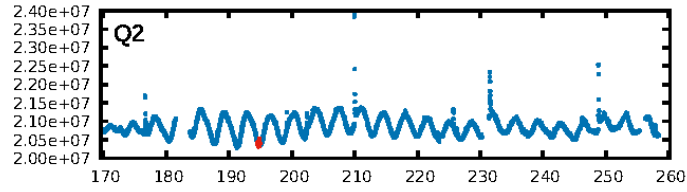
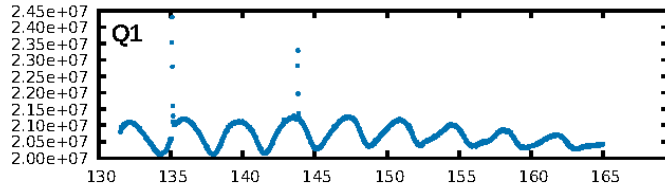
DV Fit Results:

Period = 600.60742 [0.00628] d
Epoch = 194.7069 [0.0087] BKJD
Rp/R* = 0.0448 [0.0538]
a/R* = 936.84 [5113.67]
b = 0.00 [3590.40]
Seff = 0.13 [0.02]
Teq = 152 [6] K
Rp = 2.70 [3.25] Re
a = 1.1501 [0.0591] AU
Ag = 226605.23 [548181.83] [0.41σ]
Teffp = 5140 [3111] K [1.60σ]

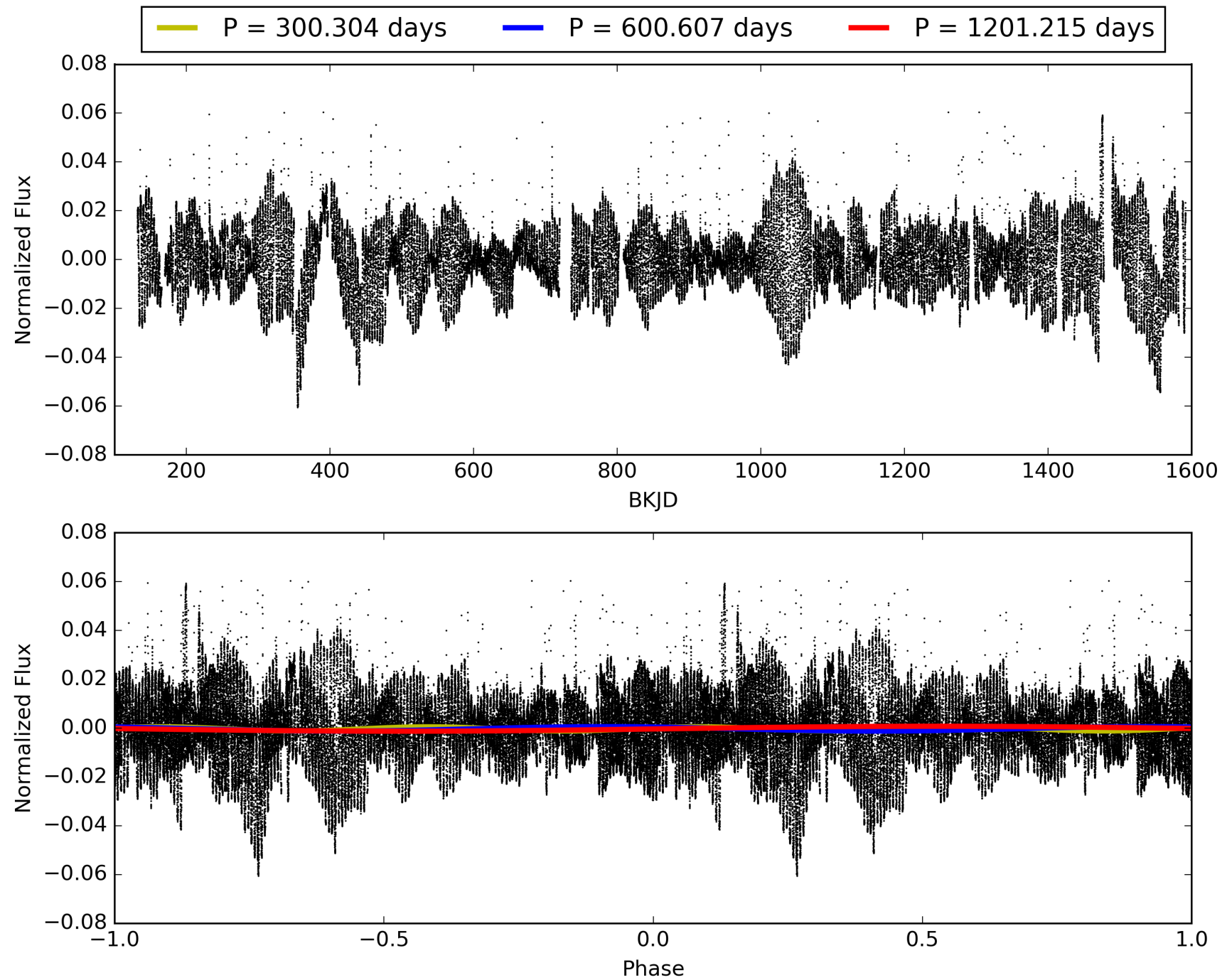
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [29.23σ]
LongPeriod-sig: 100.0% [90.68σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 64.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.2285
Centroid-sig: 12.8%
Centroid-so: 2.040 arcsec [2.93σ]
OotOffset-rm: 0.345 arcsec [1.80σ]
KicOffset-rm: 0.416 arcsec [1.44σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 008004647-04, PDC Light Curves

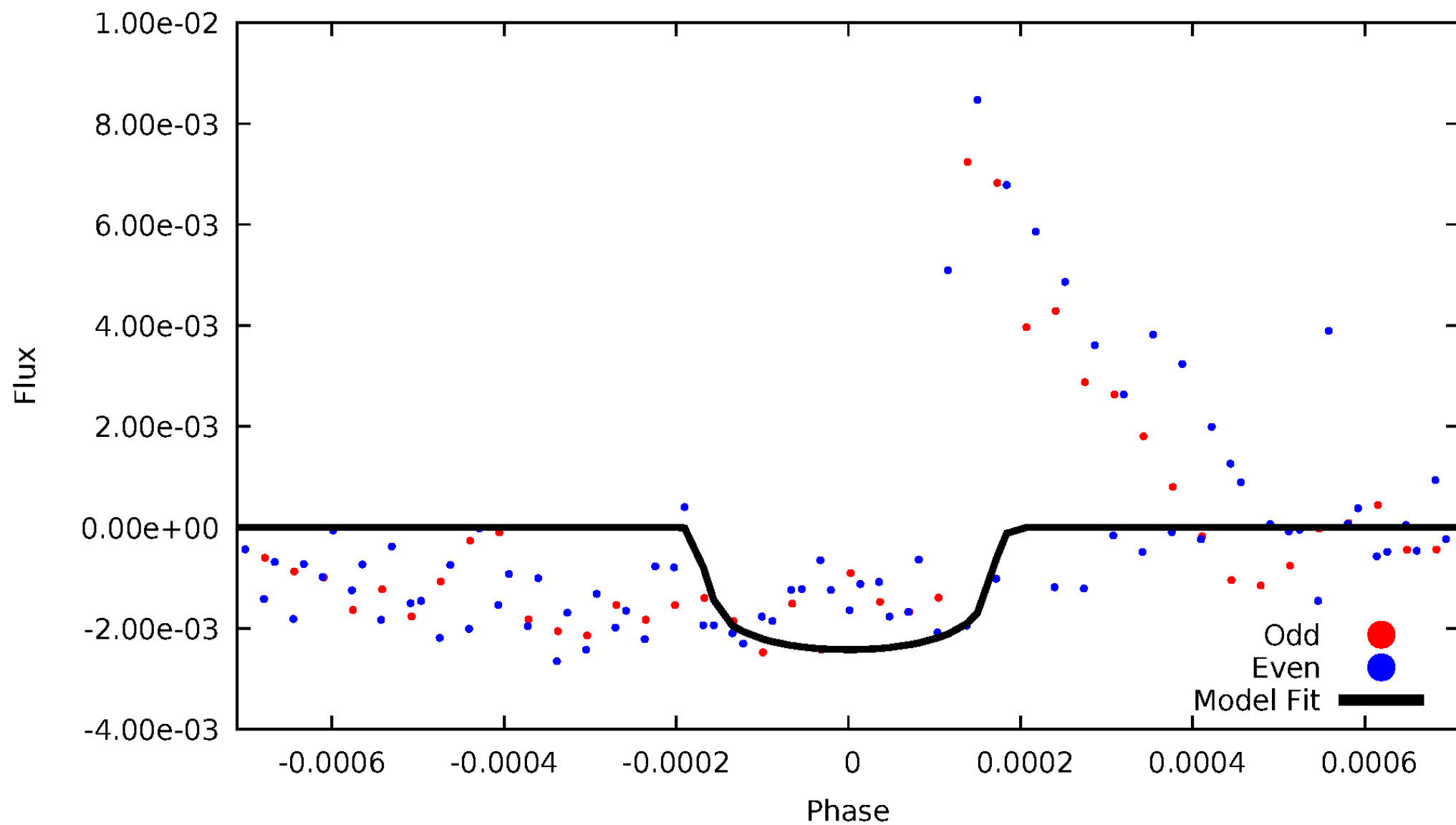


TCE 008004647-04



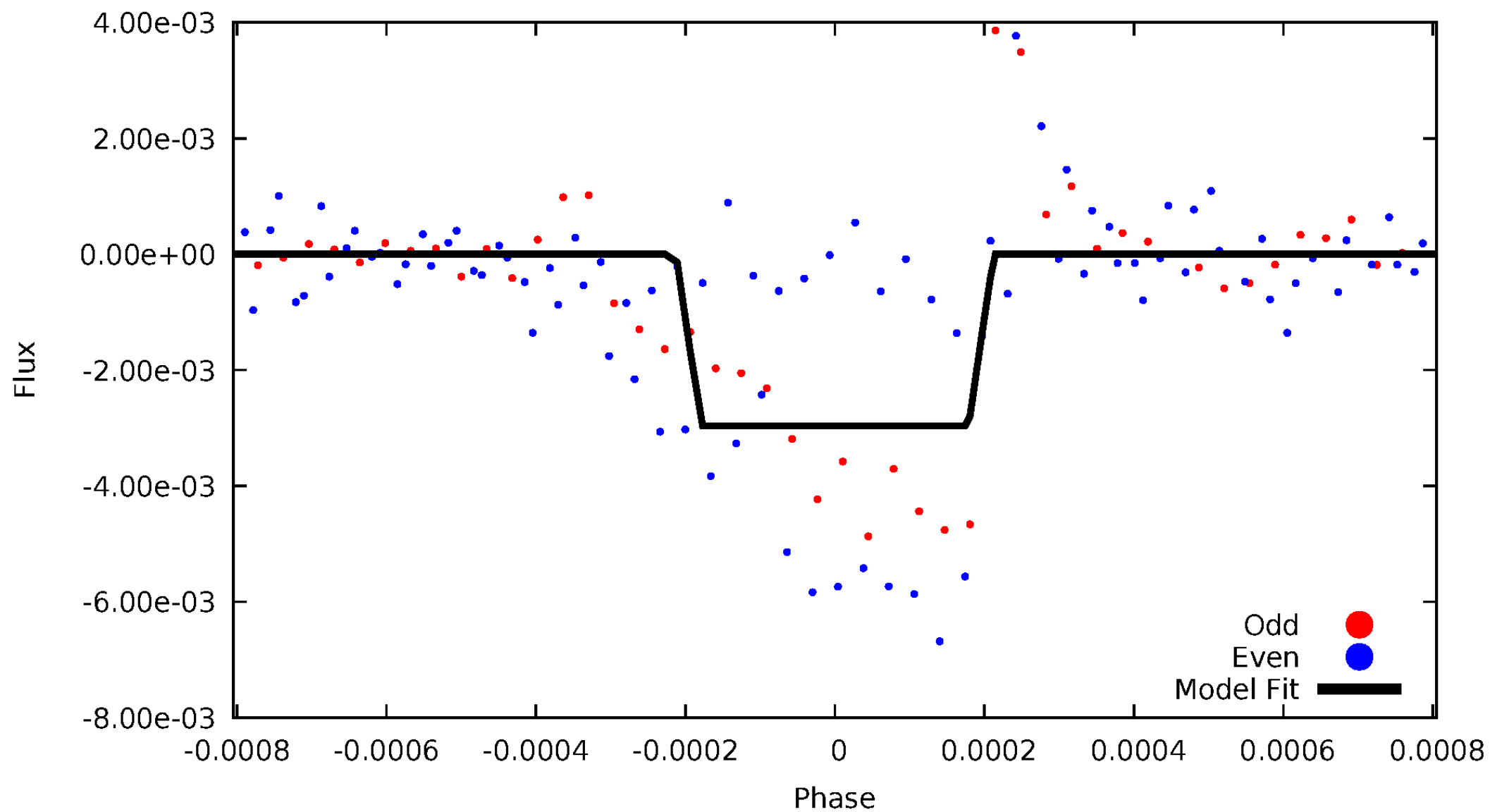
DV Odd/Even

TCE 008004647-04



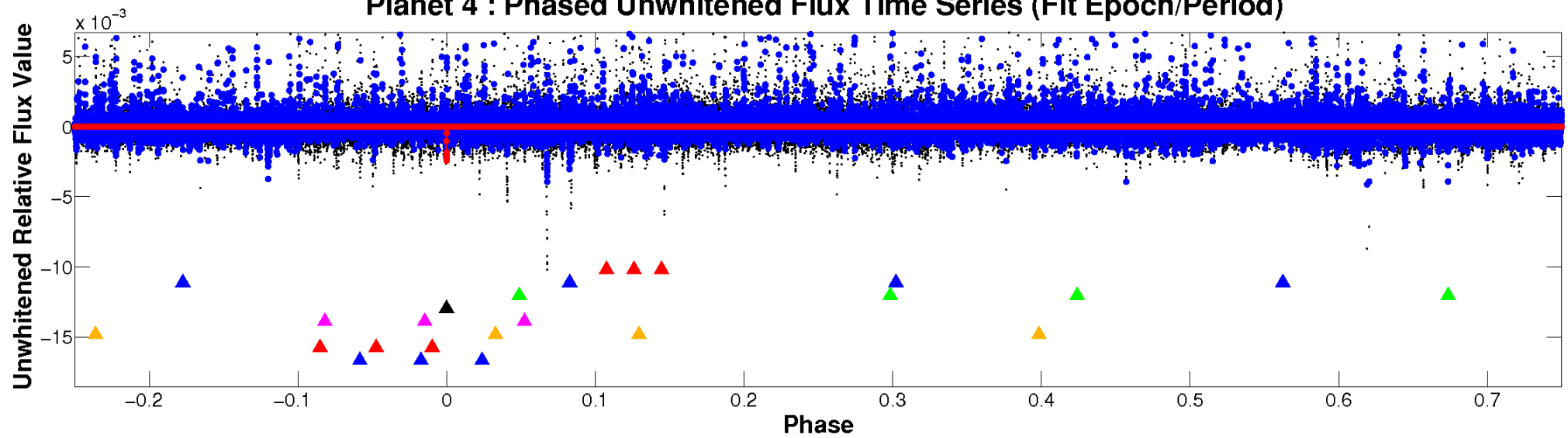
ALT Odd/Even

TCE 008004647-04

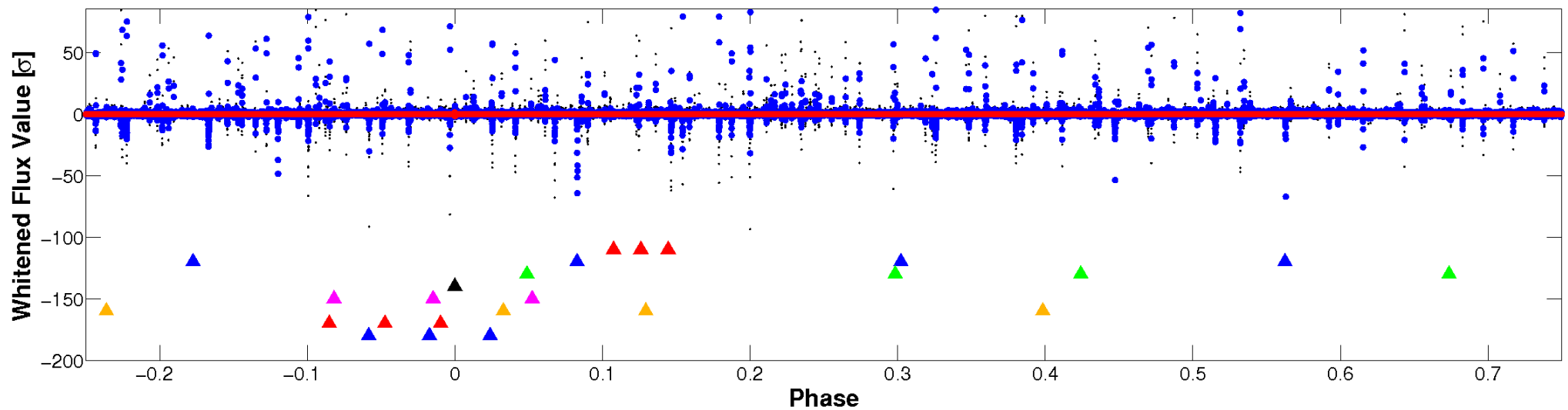


Non-Whitened Vs. Whitened Light Curve

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

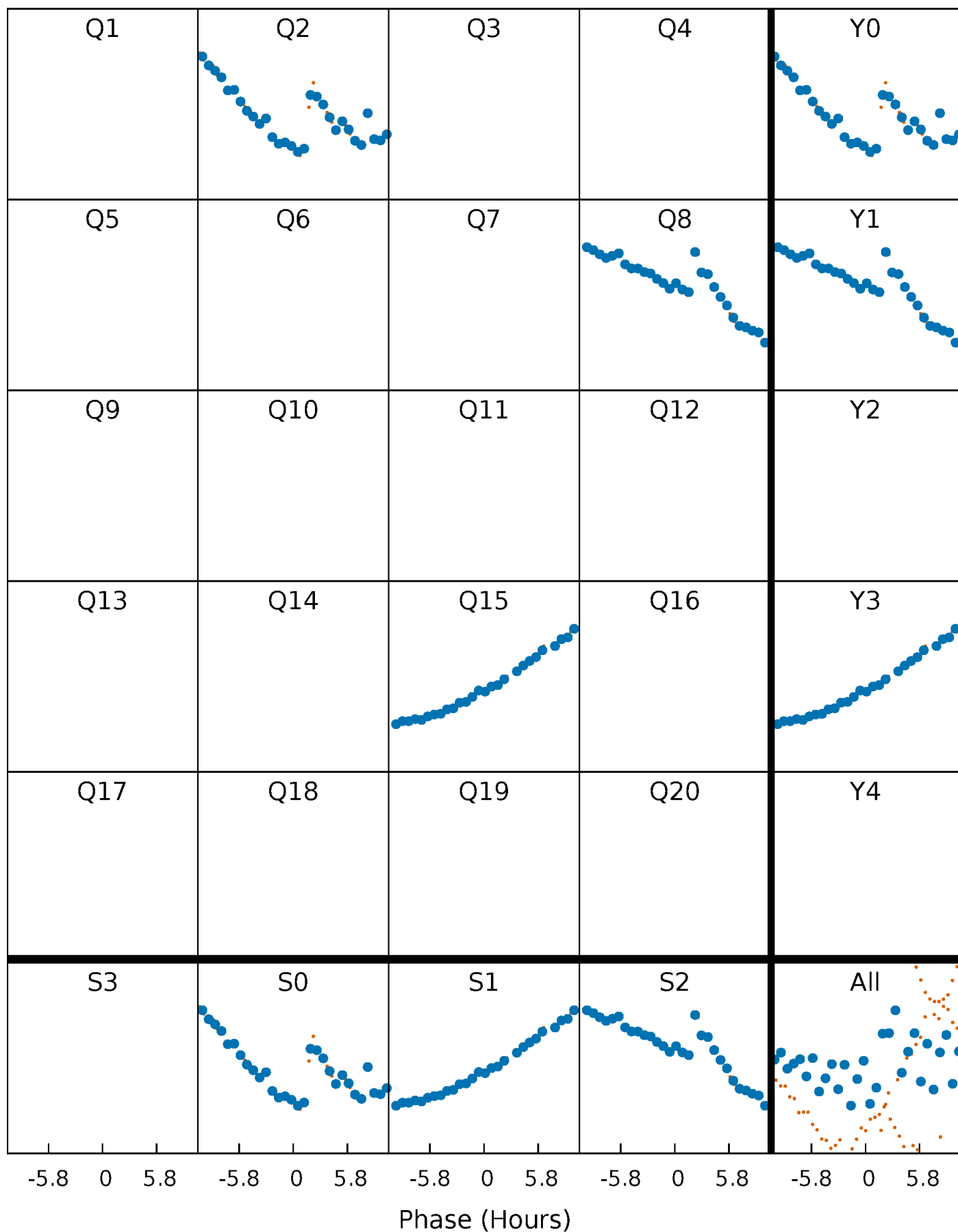


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



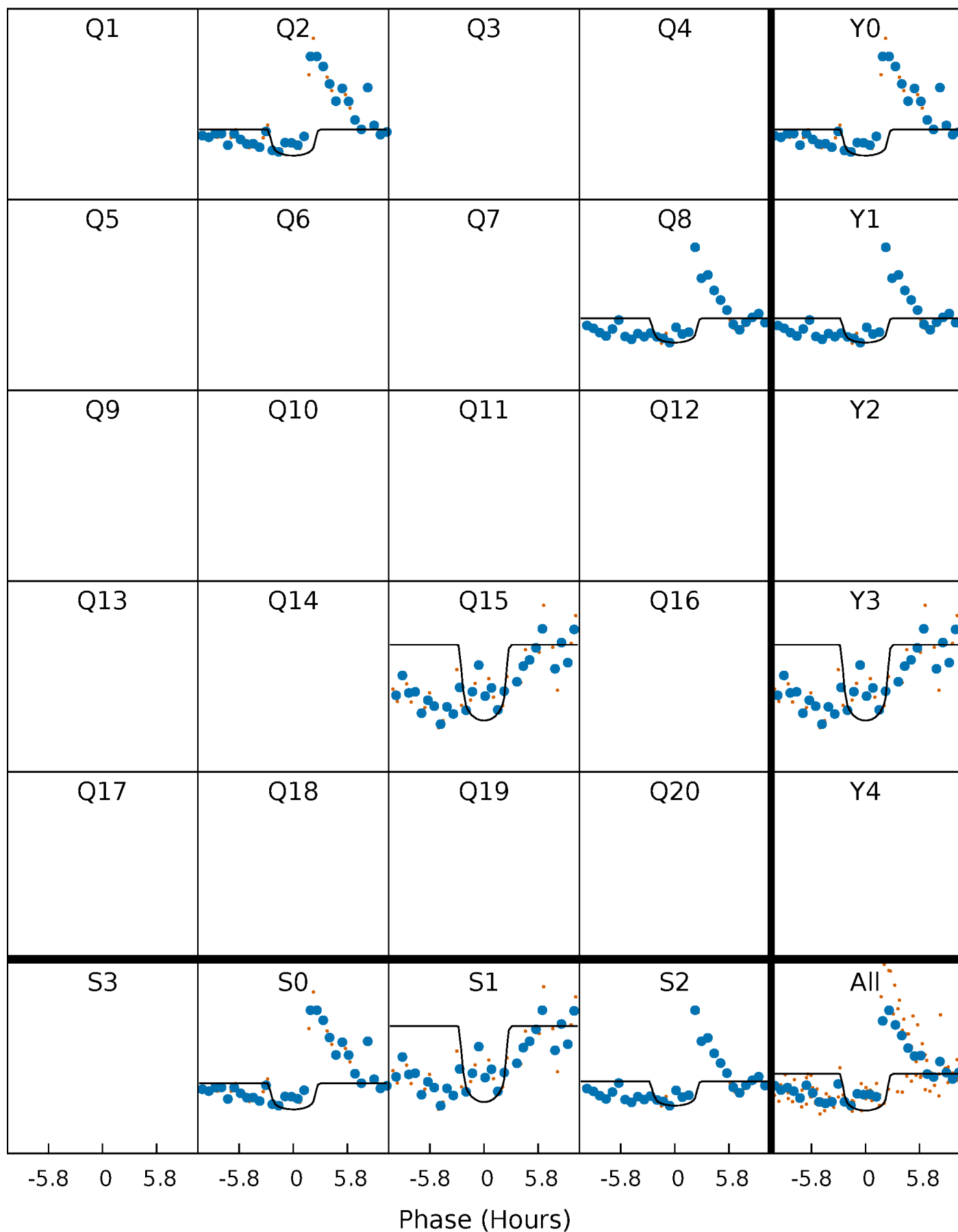
PDC Quarter-Phased Transit Curves

TCE 008004647-04 P=600.607423 Days $T_0=194.706947$ (BKJD)



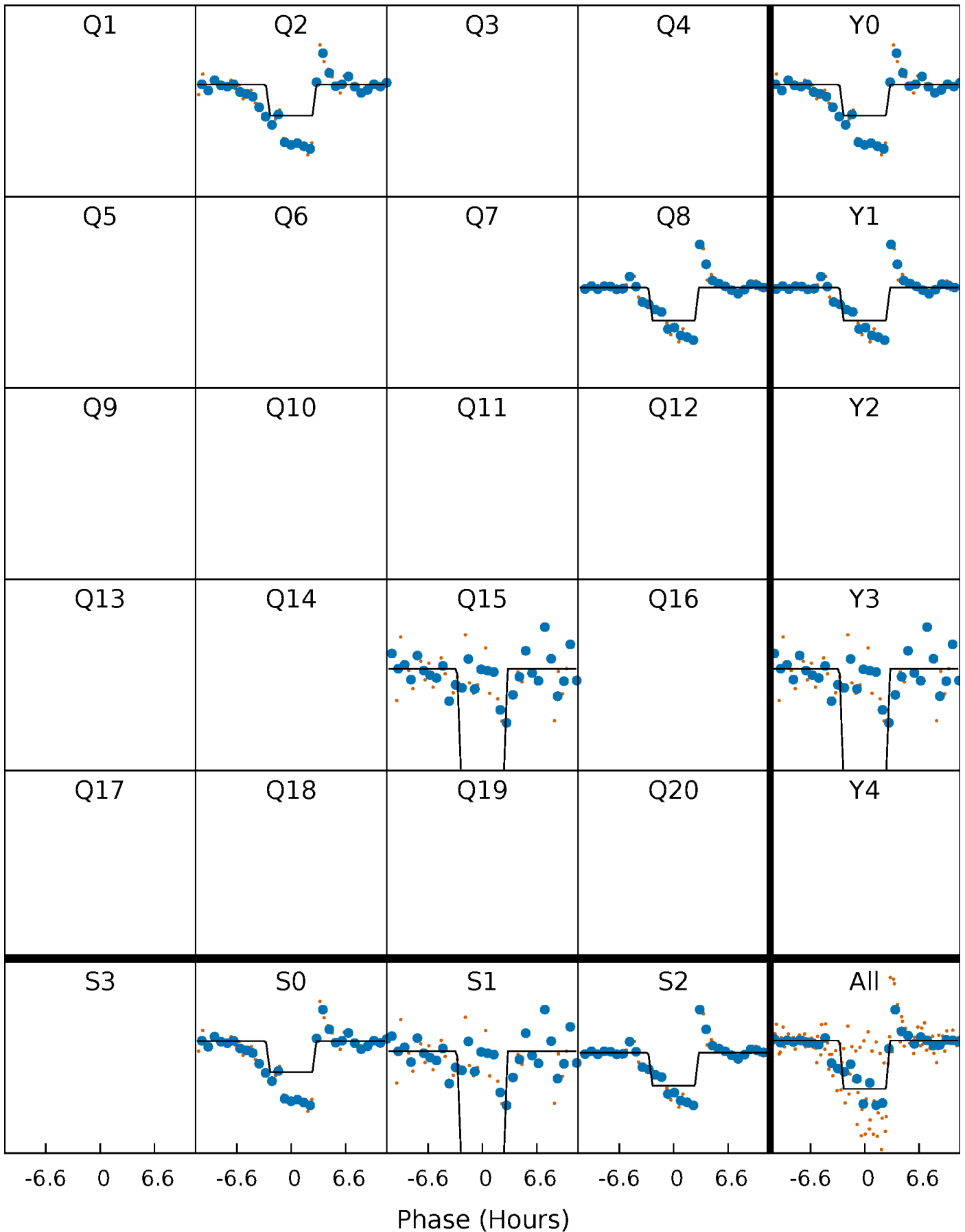
DV Quarter-Phased Transit Curves

TCE 008004647-04 $P=600.607423$ Days $T_0=194.706947$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

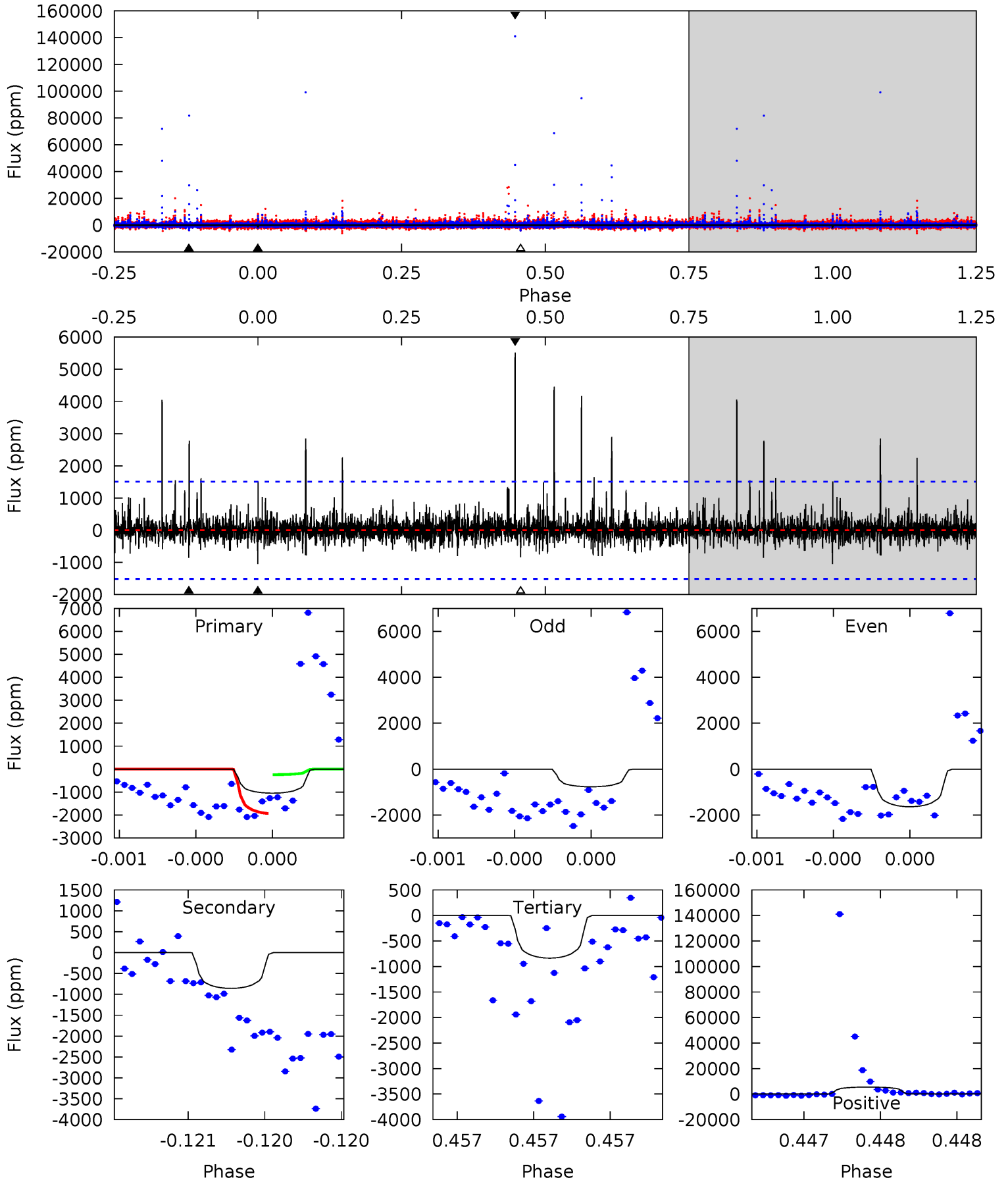
TCE 008004647-04 $P=600.617251$ Days $T_0=194.651532$ (BKJD)



DV Model-Shift Uniqueness Test

008004647-04, P = 600.607423 Days, E = 194.706947 Days

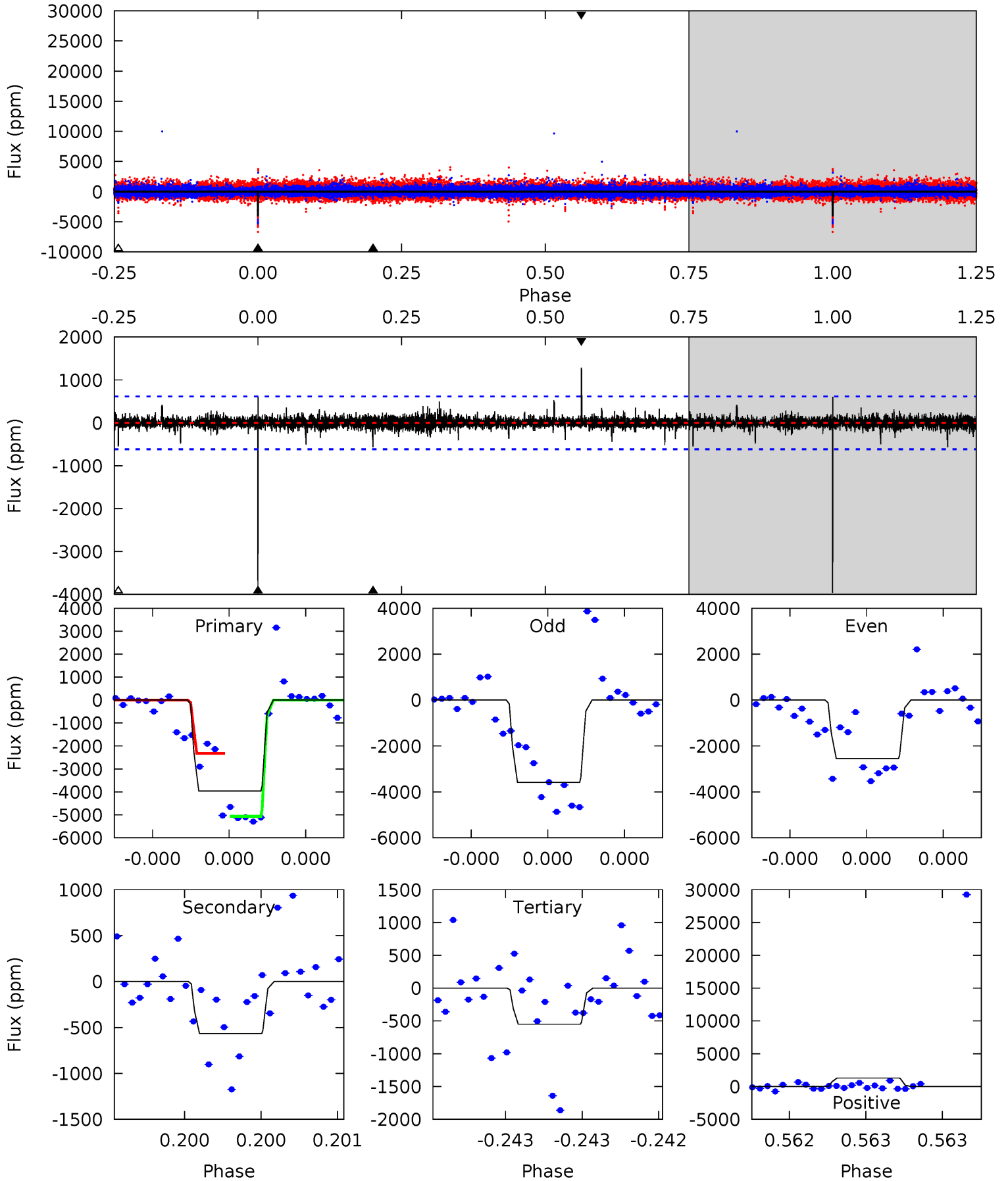
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.90	3.19	3.12	20.6	5.62	3.56	1.16	0.79	-16.7	0.08	-17.4	0.83	1.09	0.84	3.25



Alt Model-Shift Uniqueness Test

008004647-04, P = 600.617251 Days, E = 194.651532 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.1	5.17	5.01	11.7	5.60	3.53	0.72	31.1	24.4	0.16	-6.55	4.31	0.84	0.24	0



Stellar Parameters For KIC 008004647

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4985^{+163}_{-148}	$4.704^{+0.049}_{-0.024}$	$-1.500^{+0.300}_{-0.300}$	$0.552^{+0.026}_{-0.029}$	$0.562^{+0.040}_{-0.017}$	$4.695^{+0.840}_{-0.452}$
	+3%/-3%	+1%/-1%	+20%/-20%	+5%/-5%	+7%/-3%	+18%/-10%
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 008004647-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-858 ± 269	$3.40^{+3.11}_{-2.18}$	212^{+8}_{-6}	3830^{+2021}_{-670}	$51432^{+339460}_{-36895}$
Alt.	-567 ± 110	$3.69^{+2.91}_{-2.31}$	212^{+8}_{-7}	3544^{+1511}_{-583}	$30893^{+191580}_{-21262}$

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 $A_{obs} \gg 1.0$

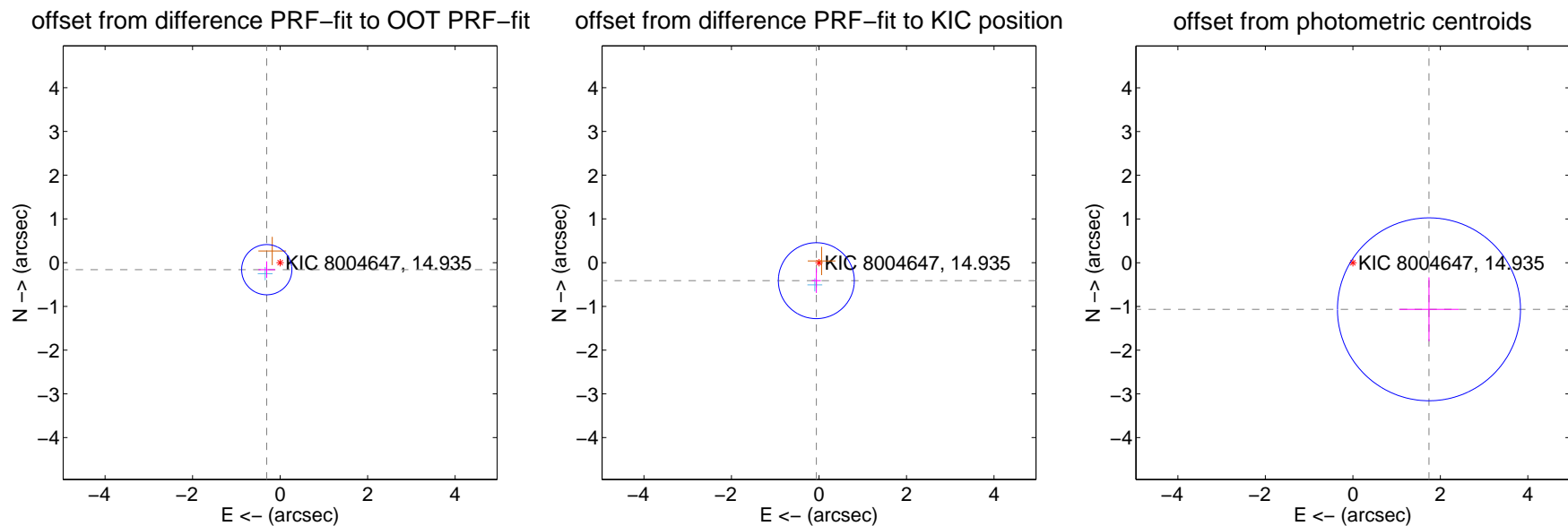
DV Centroid Data

Supplemental centroid analysis for 008004647-04. Kepler magnitude: 14.94. Transit SNR 8.35

There are 1 quarters with good PRF difference image offsets

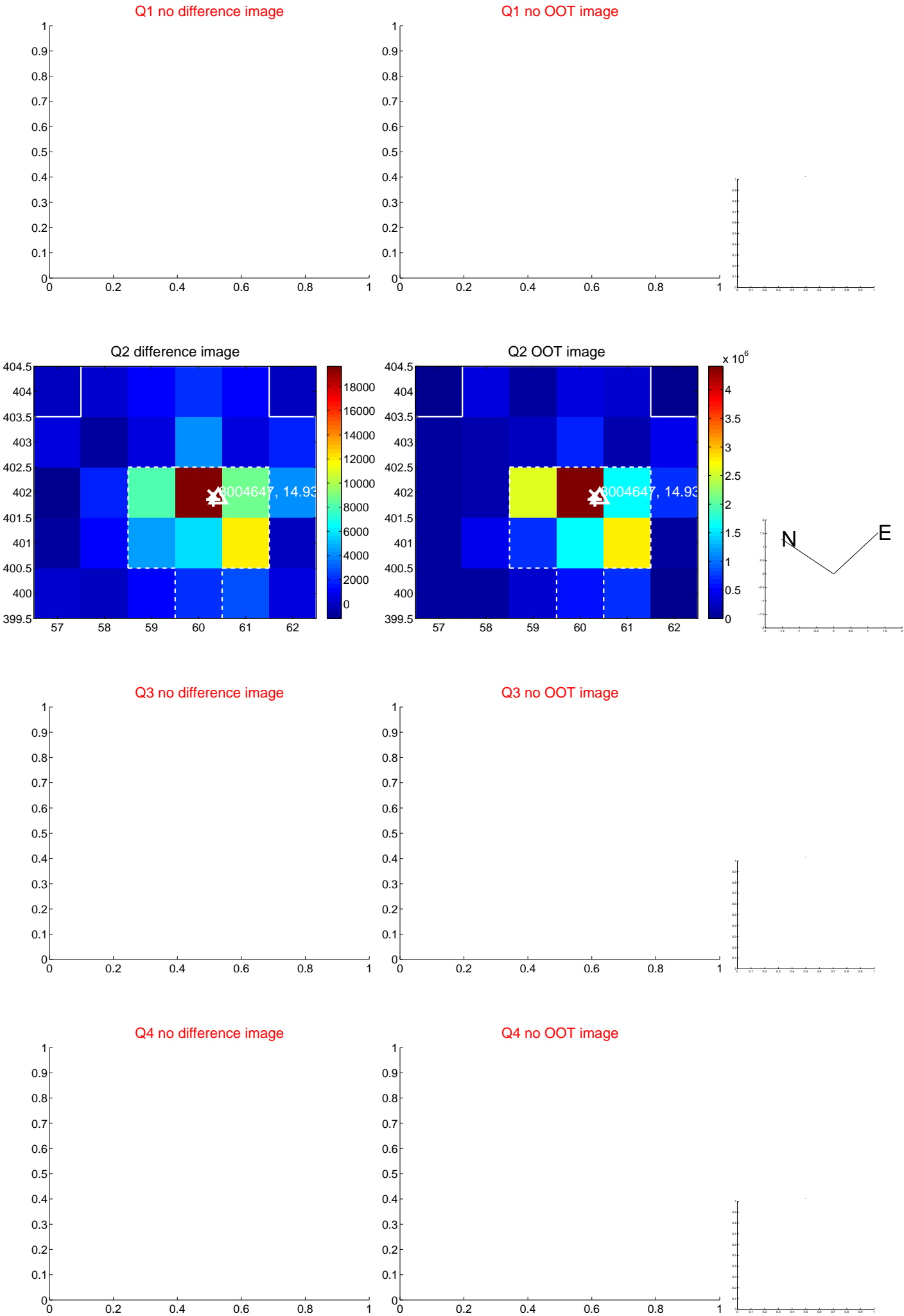
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.345 ± 0.191	1.80	0.305 ± 0.192	-0.161 ± 0.191
PRF-fit source offset from KIC position	0.416 ± 0.289	1.44	0.061 ± 0.102	-0.412 ± 0.281
photometric centroid source offset	2.04 ± 0.70	2.93	-1.74 ± 0.68	-1.07 ± 0.73

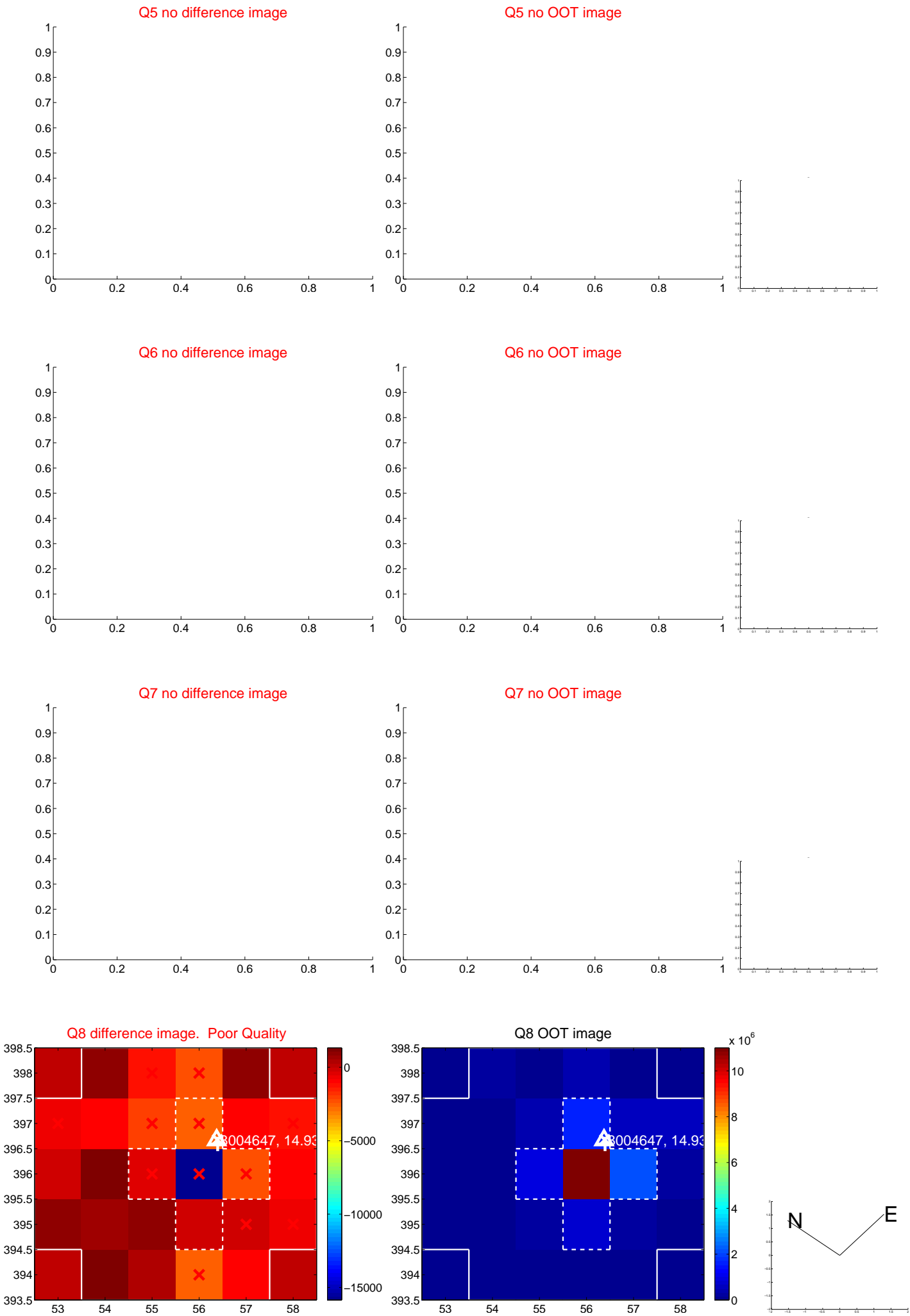


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



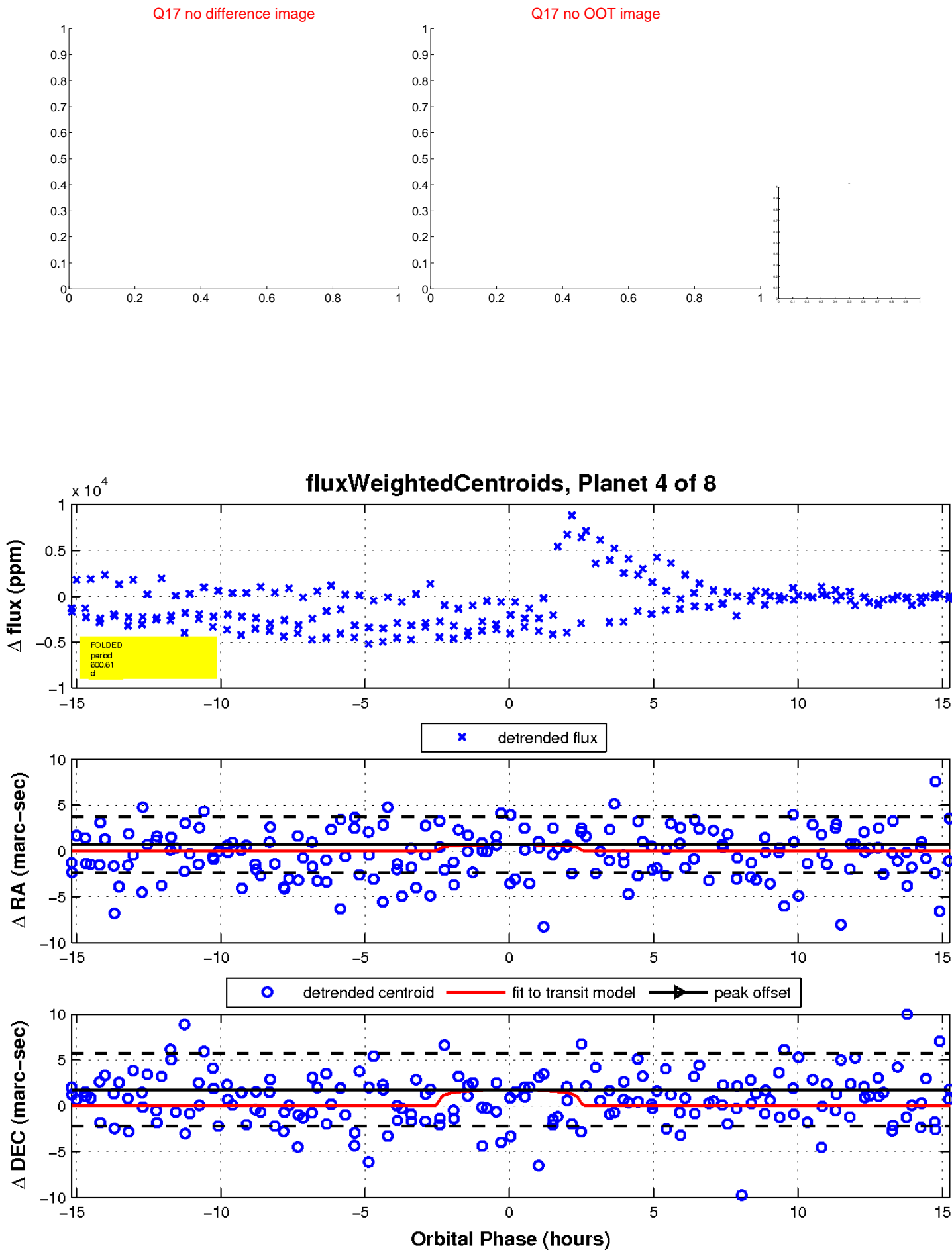
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

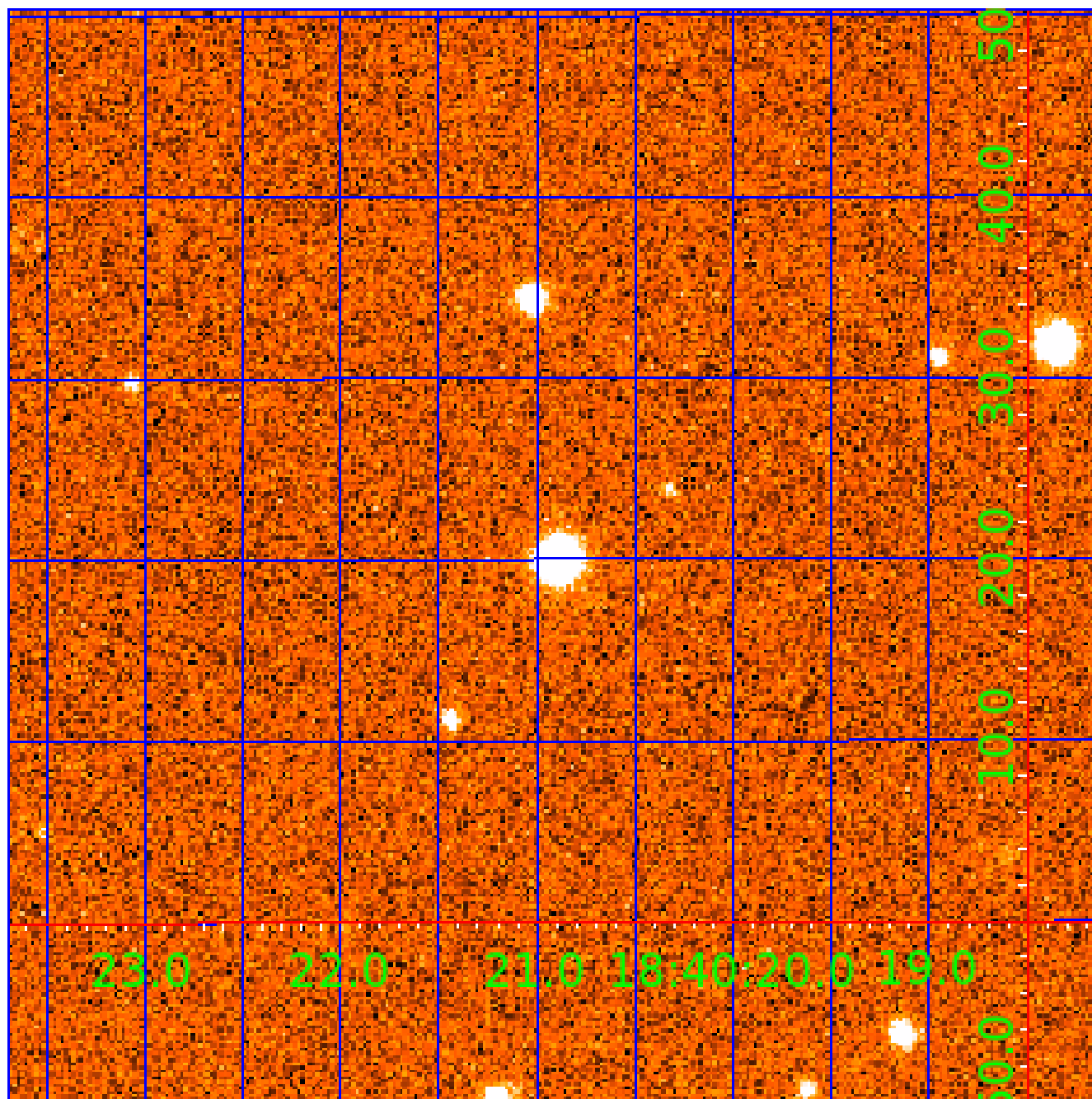


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008004647

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})
008004647-01	OBS	No	589.501452	281.510904	2612.4	7.548	18.1	7.5	0.55	4985	3.16	0.13
008004647-02	OBS	No	444.337453	244.446998	1863.1	7.144	16.2	8.3	0.55	4985	2.36	0.19
008004647-03	OBS	No	375.234952	449.422928	1335.1	3.056	15.1	4.2	0.55	4985	2.04	0.24
008004647-04	OBS	No	600.607424	194.706947	2425.1	5.117	14.3	8.3	0.55	4985	2.70	0.13
008004647-05	OBS	No	560.281544	226.195177	2020.9	4.011	15.6	7.2	0.55	4985	2.57	0.14
008004647-07	OBS	No	623.254844	143.604680	2530.2	3.122	11.1	8.6	0.55	4985	2.87	0.12
008004647-08	OBS	No	575.913077	209.052948	982.5	9.000	11.6	-1.0	0.55	4985	1.72	0.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008004647-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
008004647-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008004647-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—CENT_FEW_DIFFS
008004647-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

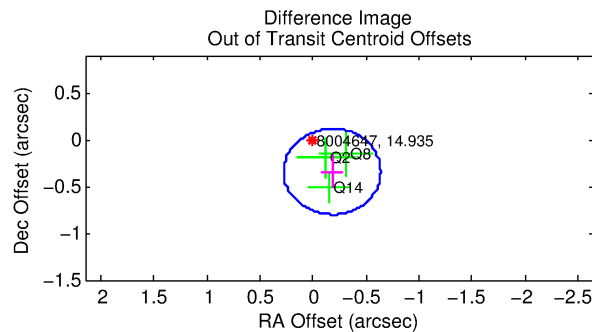
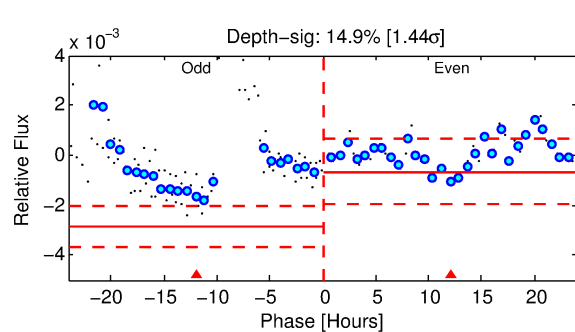
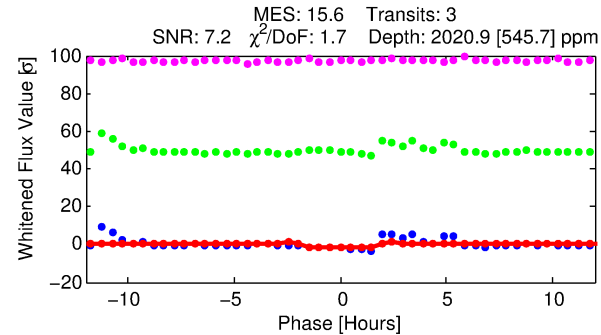
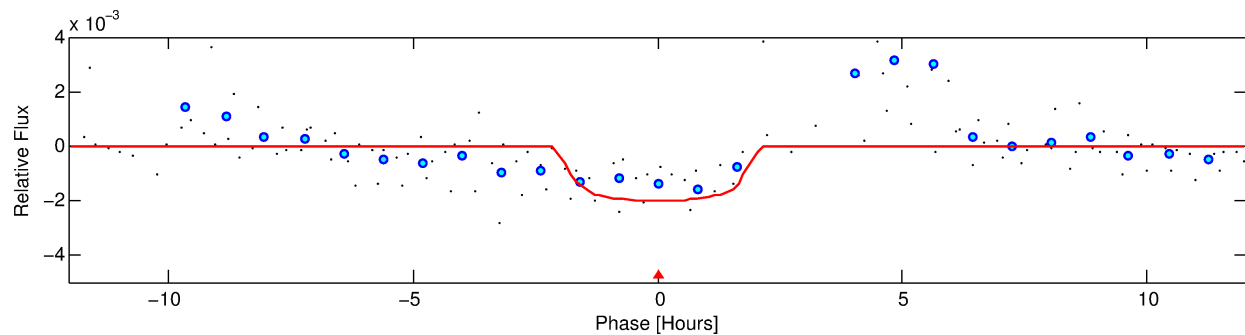
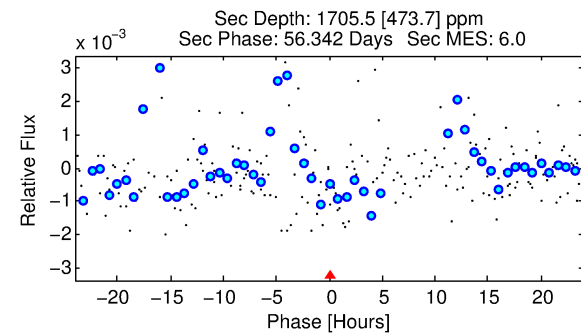
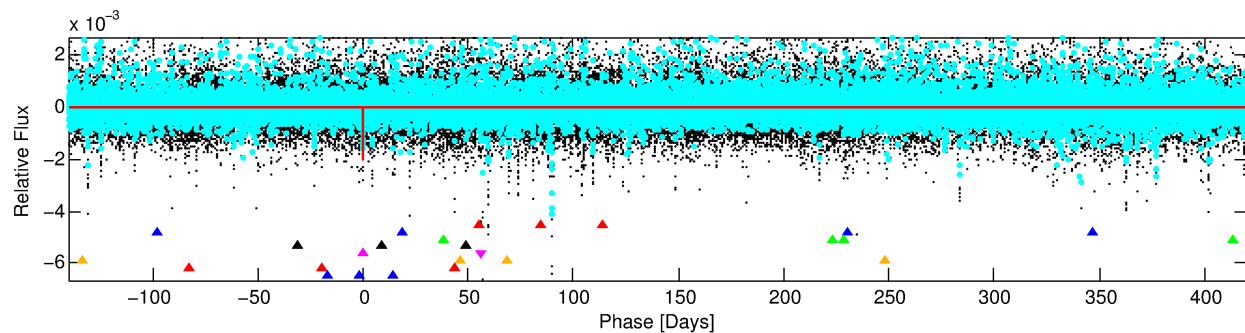
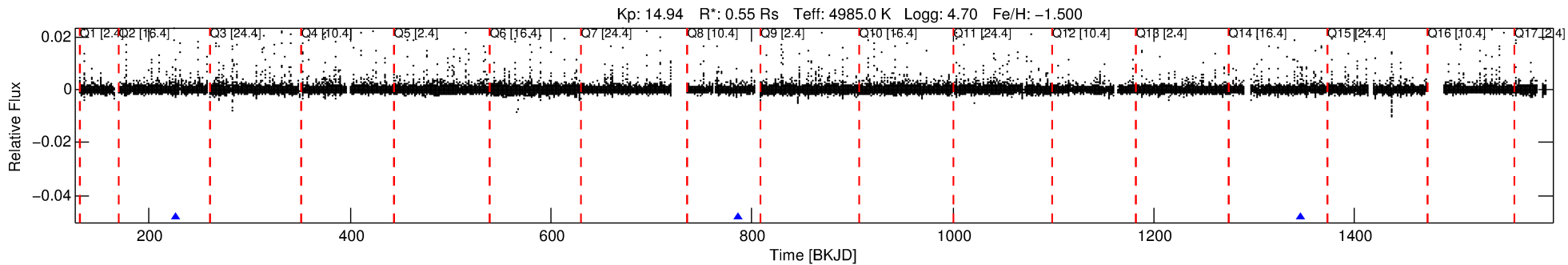
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008004647-05

No Significant Match Found

DV One-Page Summary

KIC: 8004647 Candidate: 5 of 8 Period: 560.282 d



DV Fit Results:

Period = 560.28154 [0.00873] d
Epoch = 226.1952 [0.0117] BKJD
Rp/R* = 0.0426 [0.0379]
a/R* = 934.64 [3658.60]
b = 0.57 [4.72]
Seff = 0.14 [0.02]
Teq = 156 [6] K
Rp = 2.57 [2.29] Re
a = 1.0980 [0.0564] AU
Ag = 171478.97 [309222.15] [0.55σ]
Teffp = 4906 [2215] K [2.14σ]

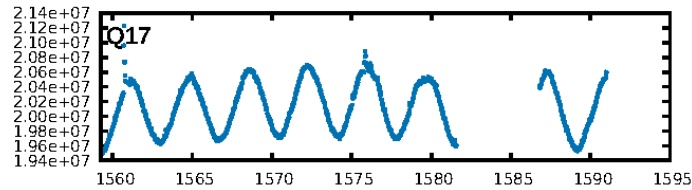
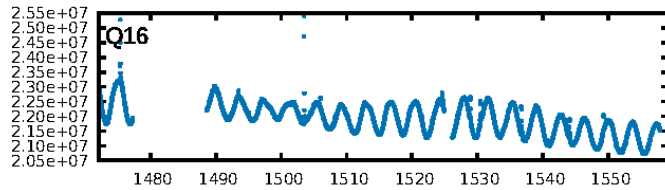
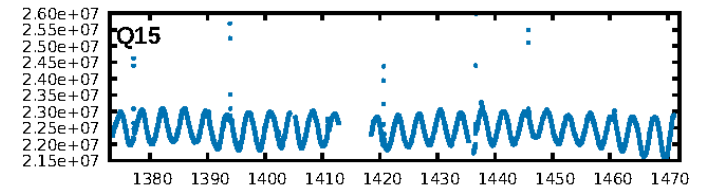
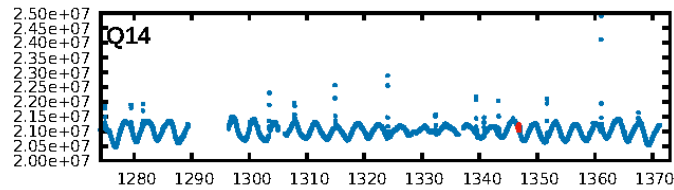
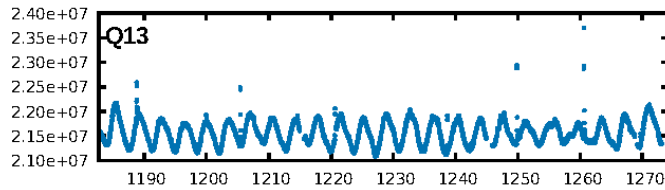
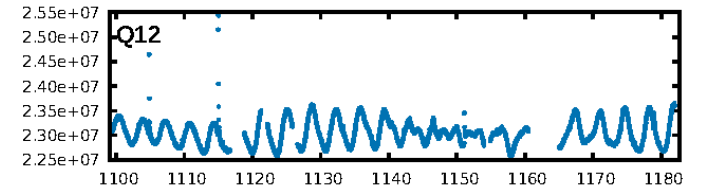
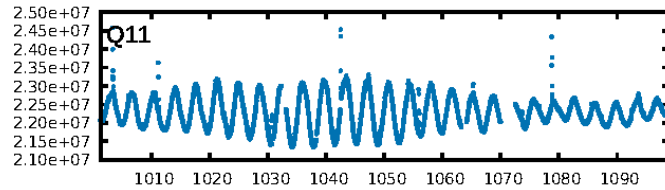
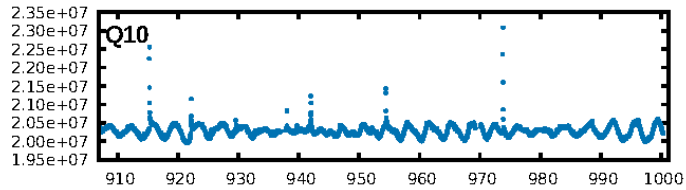
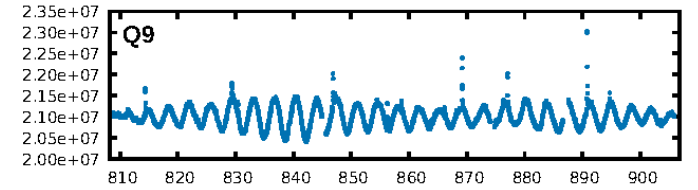
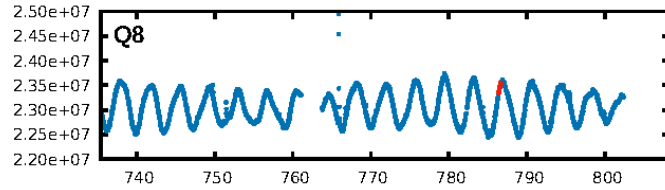
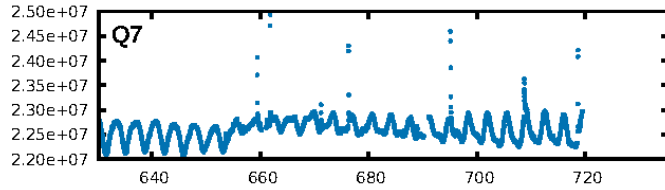
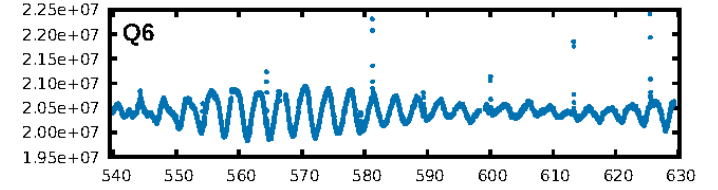
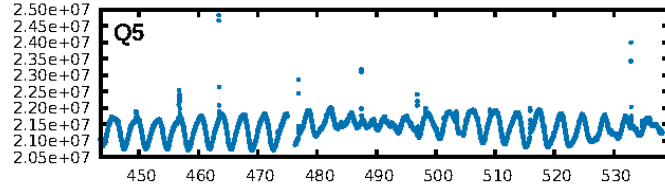
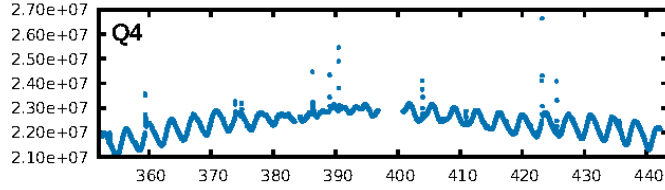
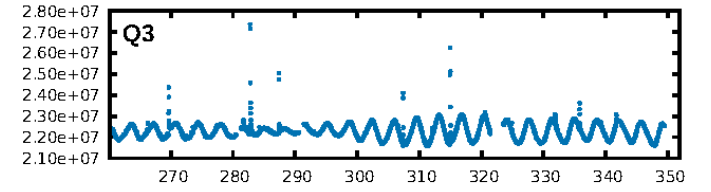
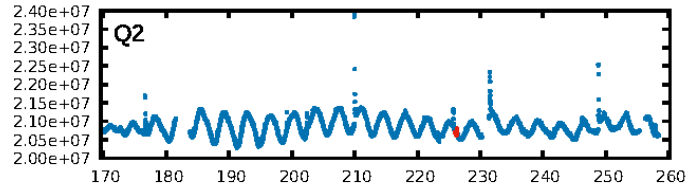
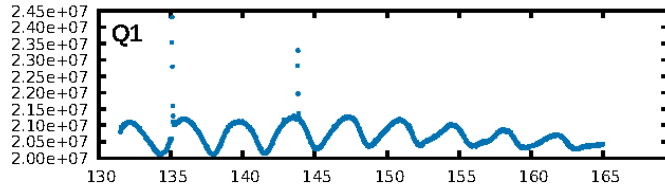
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [339.63σ]
LongPeriod-sig: 100.0% [38.07σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 55.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.911
Centroid-sig: 18.8%
Centroid-so: 1.763 arcsec [1.87σ]
OotOffset-rm: 0.388 arcsec [2.54σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-rm: 0.684 arcsec [4.73σ]
KicOffset-st: 2/0/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

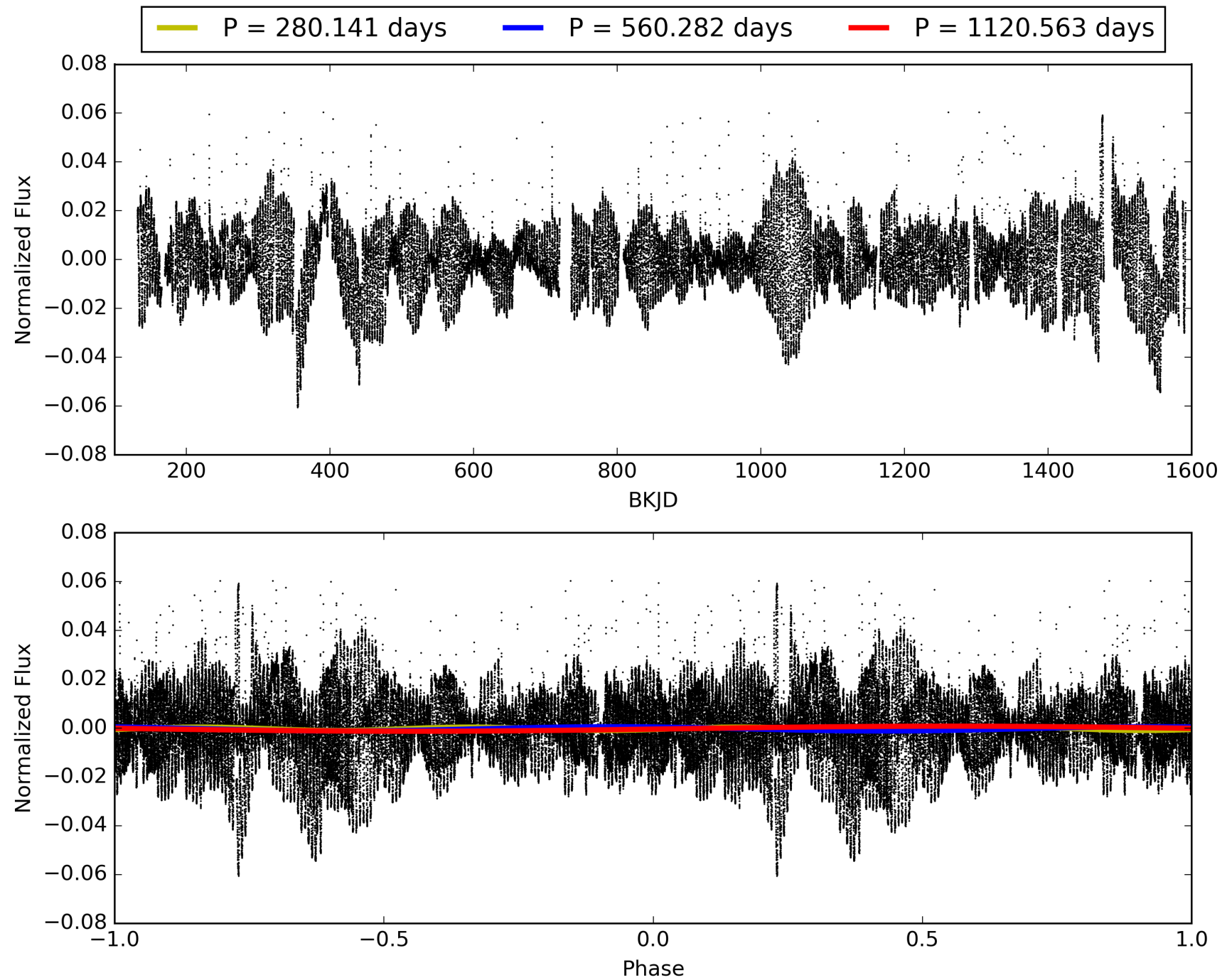
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 15:06:01 Z

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

TCE 008004647-05, PDC Light Curves

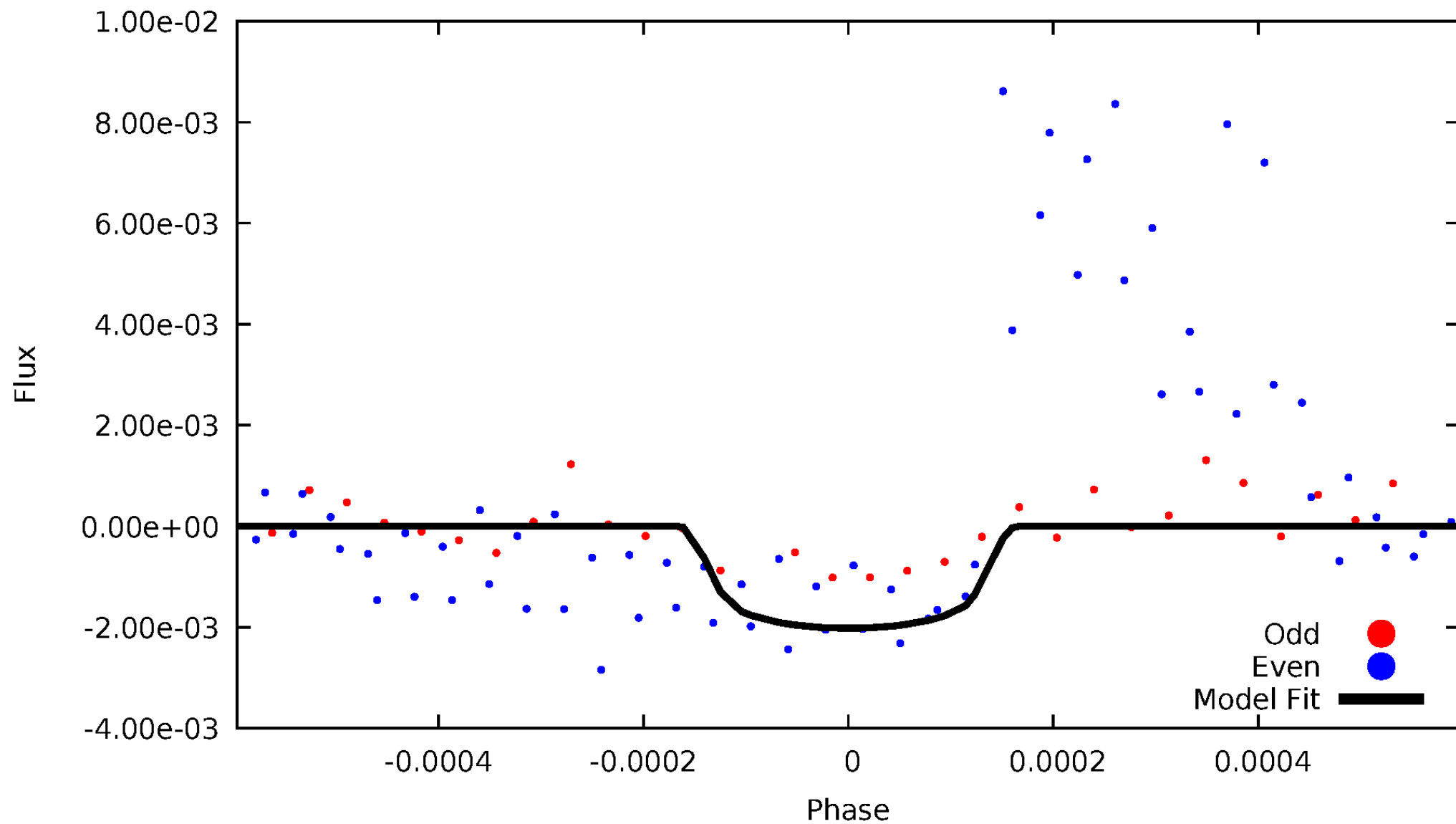


TCE 008004647-05



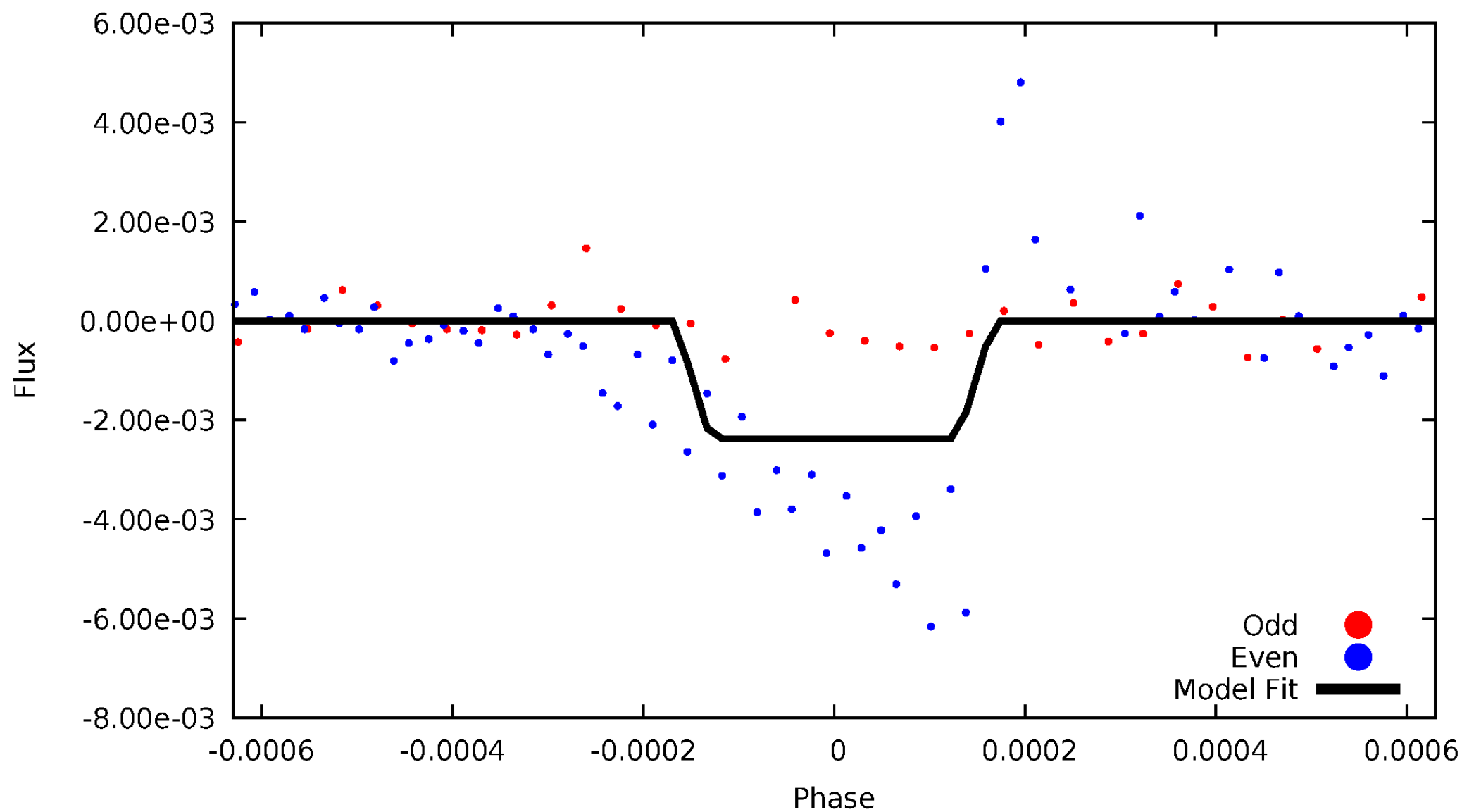
DV Odd/Even

TCE 008004647-05



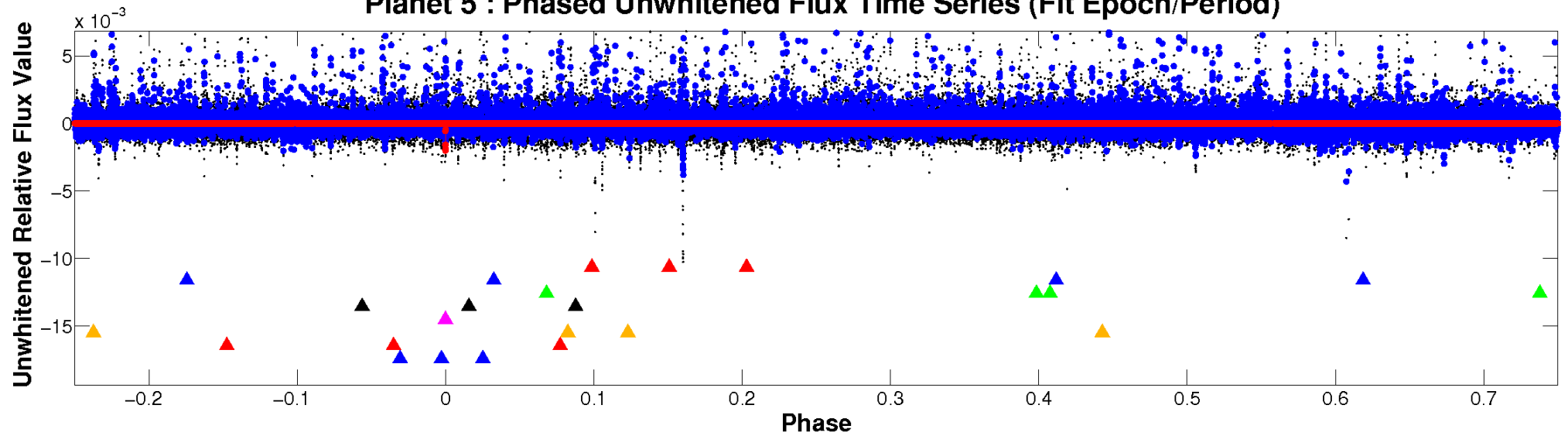
ALT Odd/Even

TCE 008004647-05

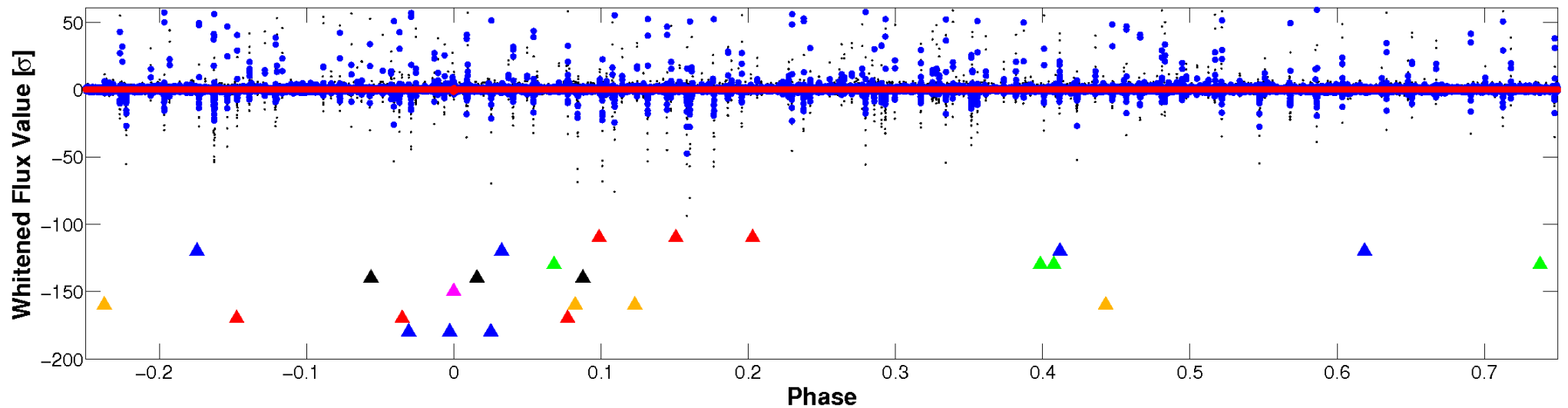


Non-Whitened Vs. Whitened Light Curve

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

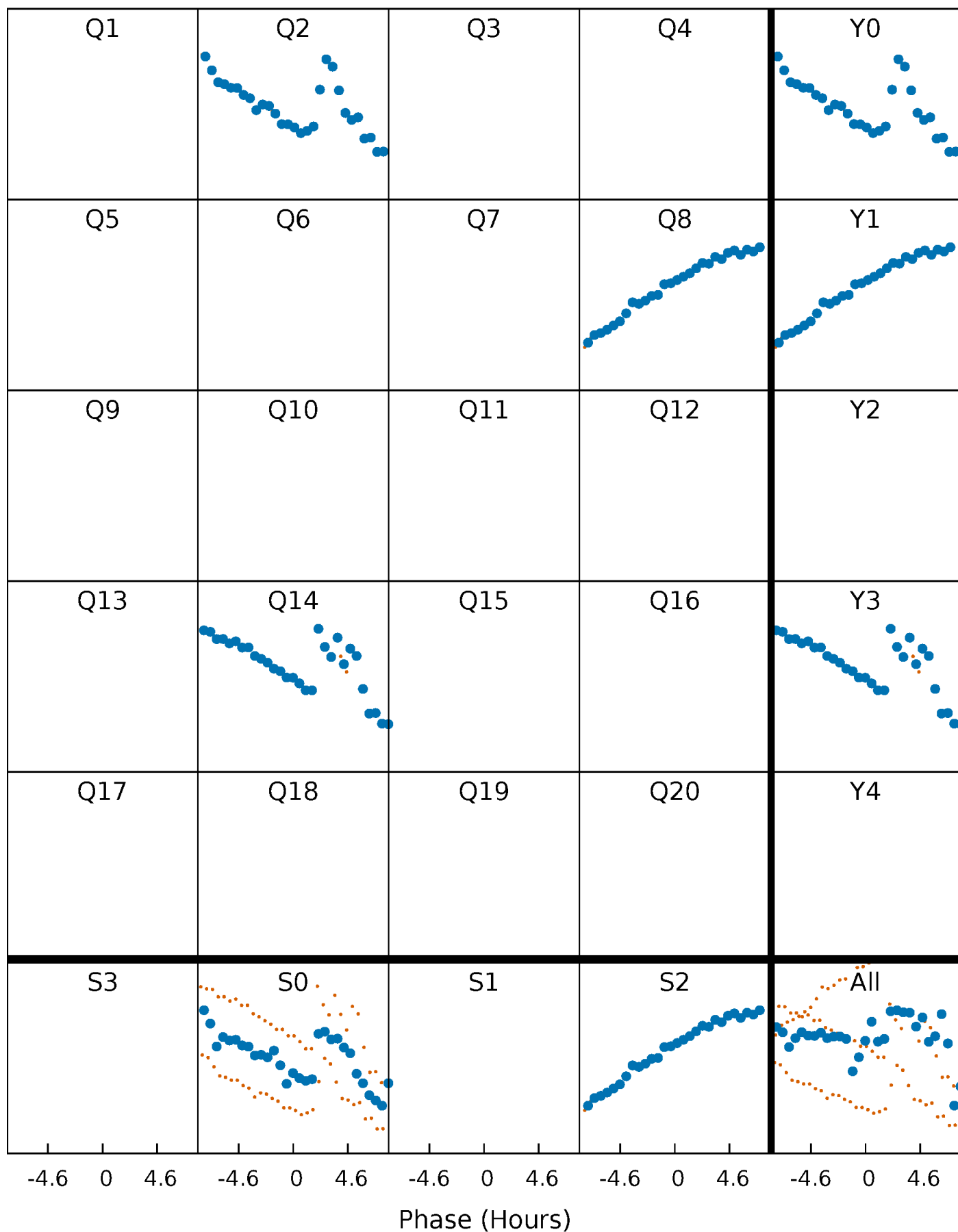


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



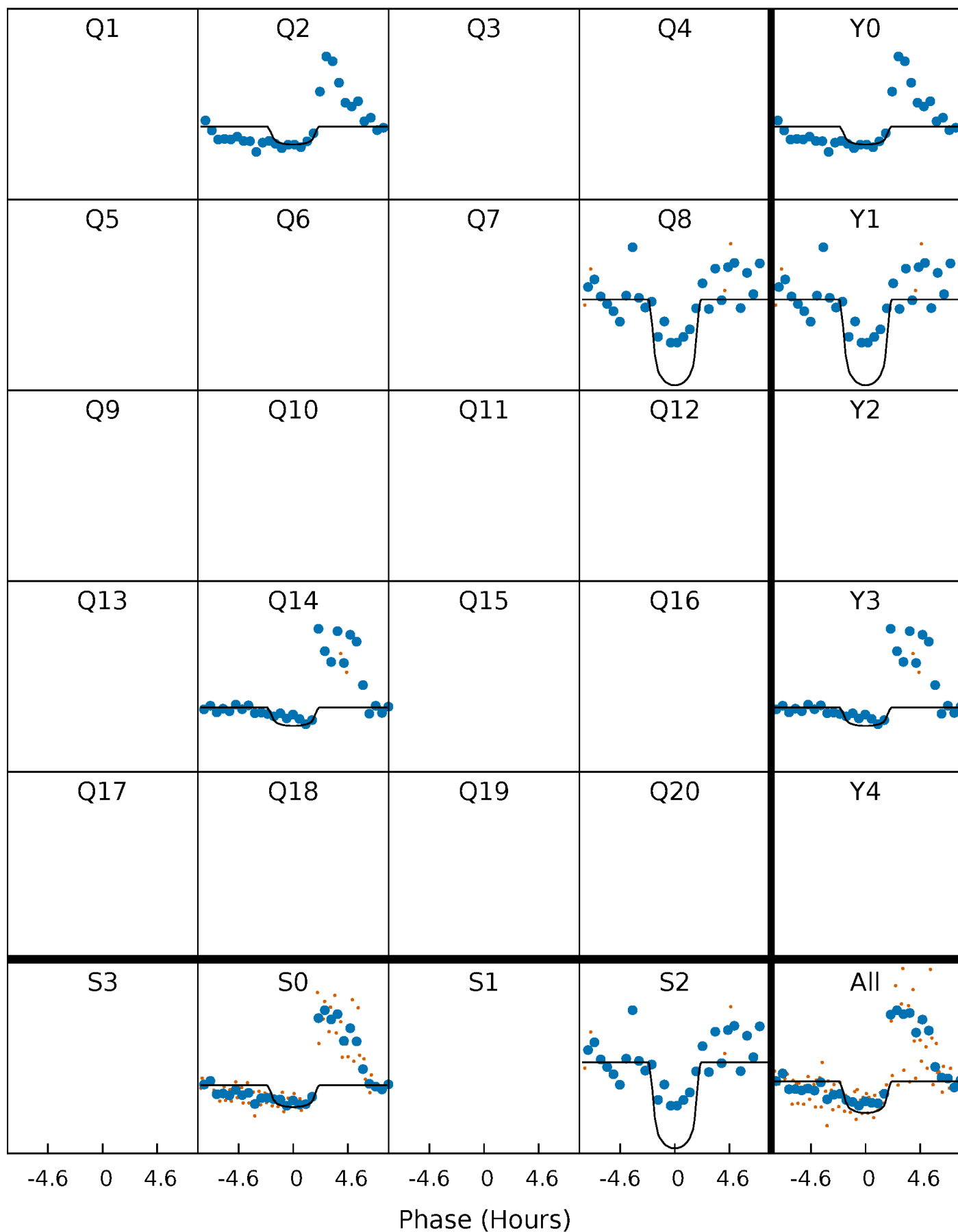
PDC Quarter-Phased Transit Curves

TCE 008004647-05 P=560.281544 Days $T_0=226.195177$ (BKJD)



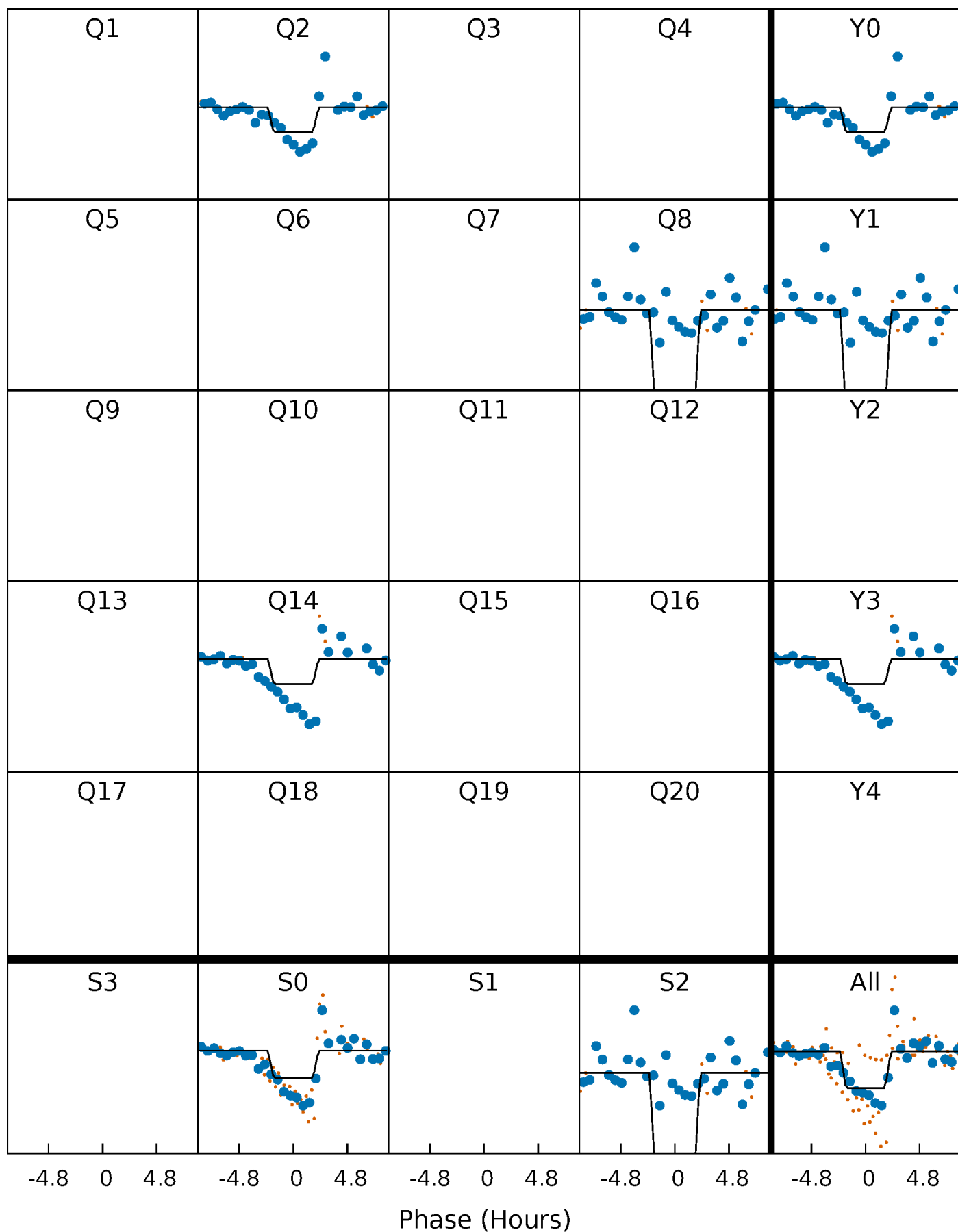
DV Quarter-Phased Transit Curves

TCE 008004647-05 $P=560.281544$ Days $T_0=226.195177$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

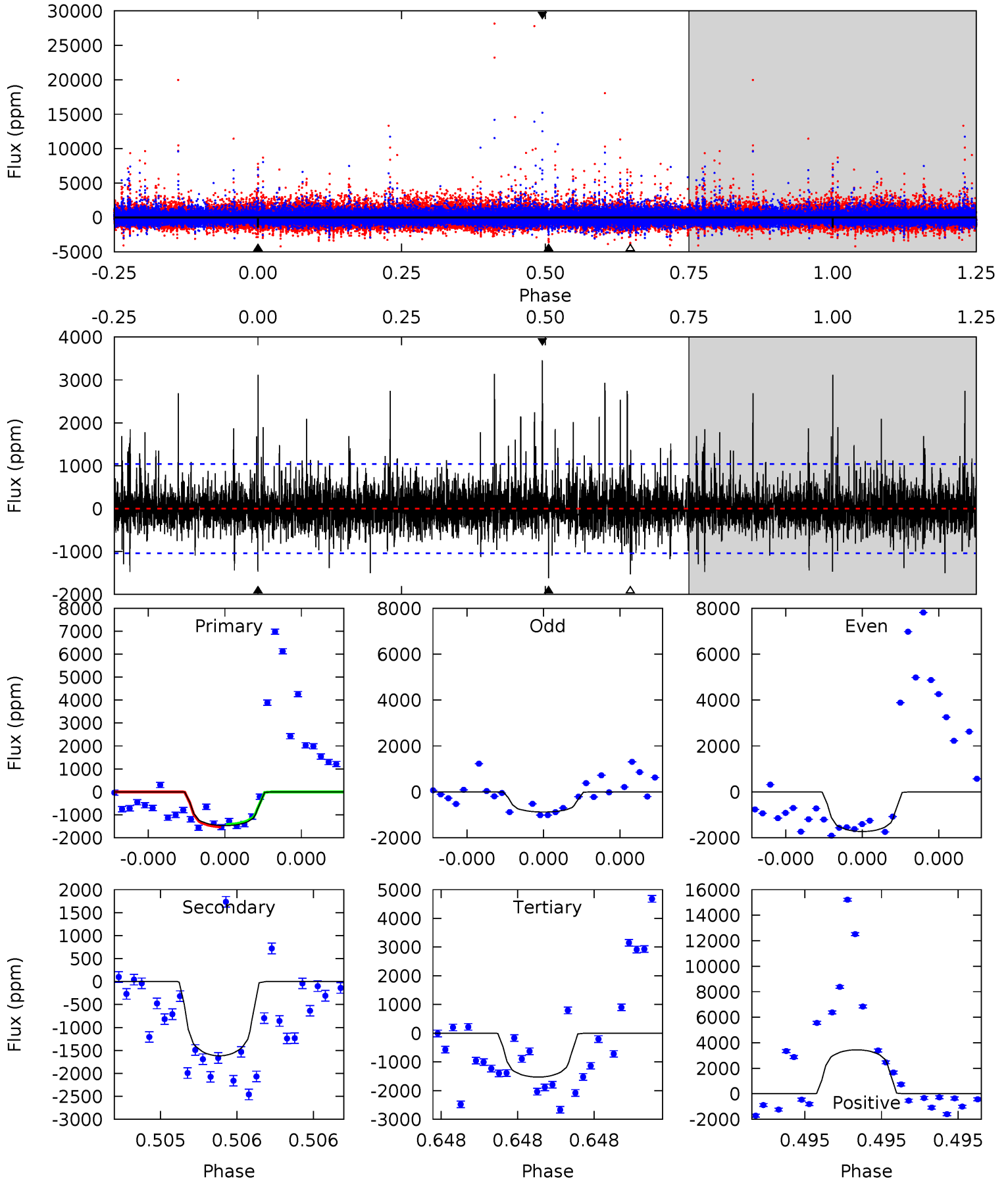
TCE 008004647-05 $P=560.274593$ Days $T_0=226.195972$ (BKJD)



DV Model-Shift Uniqueness Test

008004647-05, P = 560.281544 Days, E = 226.195177 Days

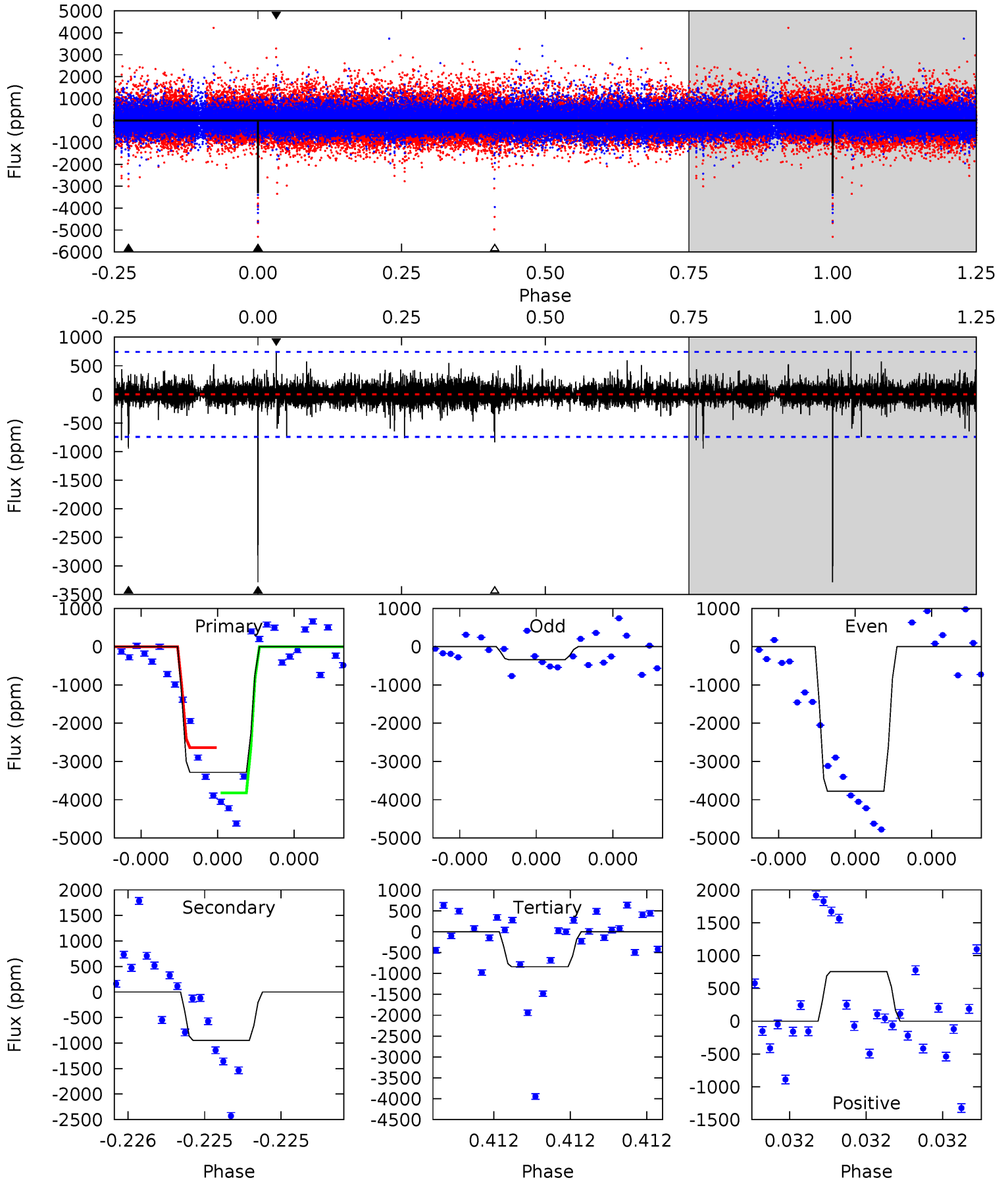
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.99	8.79	8.31	18.7	5.66	3.61	1.98	-0.32	-10.7	0.48	-9.94	0.73	1.25	0.68	0.29



Alt Model-Shift Uniqueness Test

008004647-05, P = 560.274593 Days, E = 226.195972 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.0	7.19	6.39	5.76	5.65	3.59	0.83	18.6	19.2	0.80	1.44	12.3	0.89	0.19	4.60



Stellar Parameters For KIC 008004647

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4985^{+163}_{-148}	$4.704^{+0.049}_{-0.024}$	$-1.500^{+0.300}_{-0.300}$	$0.552^{+0.026}_{-0.029}$	$0.562^{+0.040}_{-0.017}$	$4.695^{+0.840}_{-0.452}$
	+3%/-3%	+1%/-1%	+20%/-20%	+5%/-5%	+7%/-3%	+18%/-10%
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 008004647-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1618 ± 184	$2.95^{+1.93}_{-1.75}$	217^{+7}_{-8}	4614^{+2433}_{-812}	$123871^{+648031}_{-77920}$
Alt.	-946 ± 131	$3.27^{+2.24}_{-1.88}$	217^{+7}_{-7}	4026^{+1670}_{-669}	$60404^{+276965}_{-39885}$

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

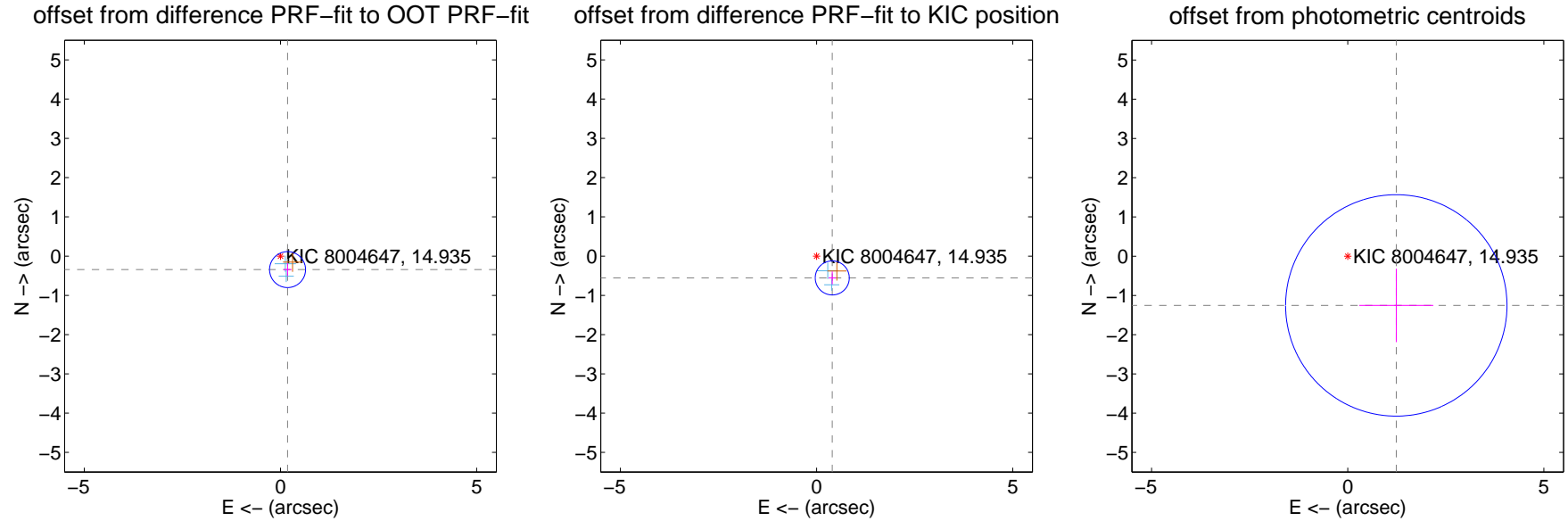
DV Centroid Data

Supplemental centroid analysis for 008004647-05. Kepler magnitude: 14.94. Transit SNR 7.22

There are 2 quarters with good PRF difference image offsets

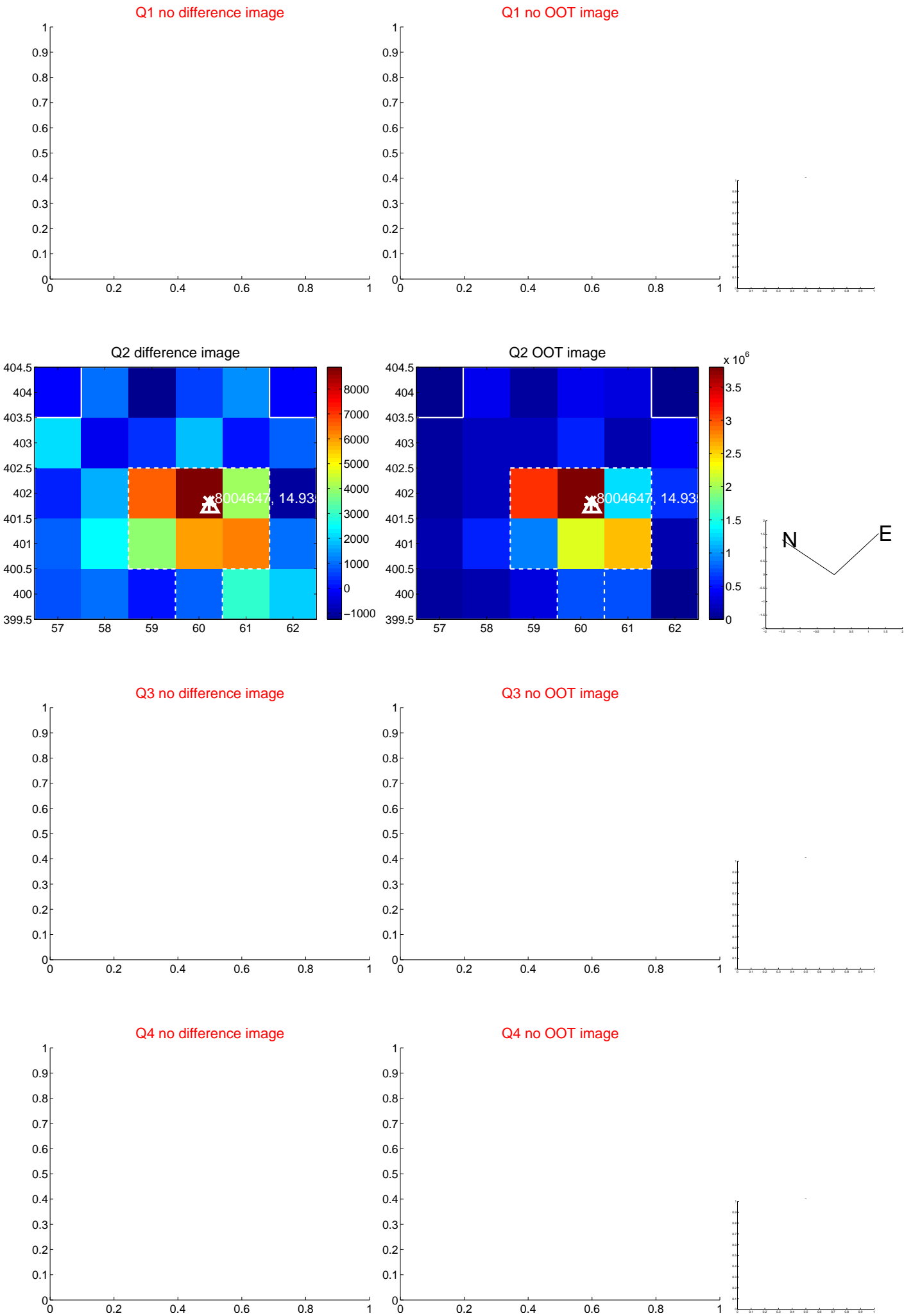
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.388 ± 0.153	2.54	-0.181 ± 0.101	-0.343 ± 0.164
PRF-fit source offset from KIC position	0.684 ± 0.145	4.73	-0.400 ± 0.094	-0.555 ± 0.165
photometric centroid source offset	1.76 ± 0.94	1.87	-1.24 ± 0.95	-1.25 ± 0.94

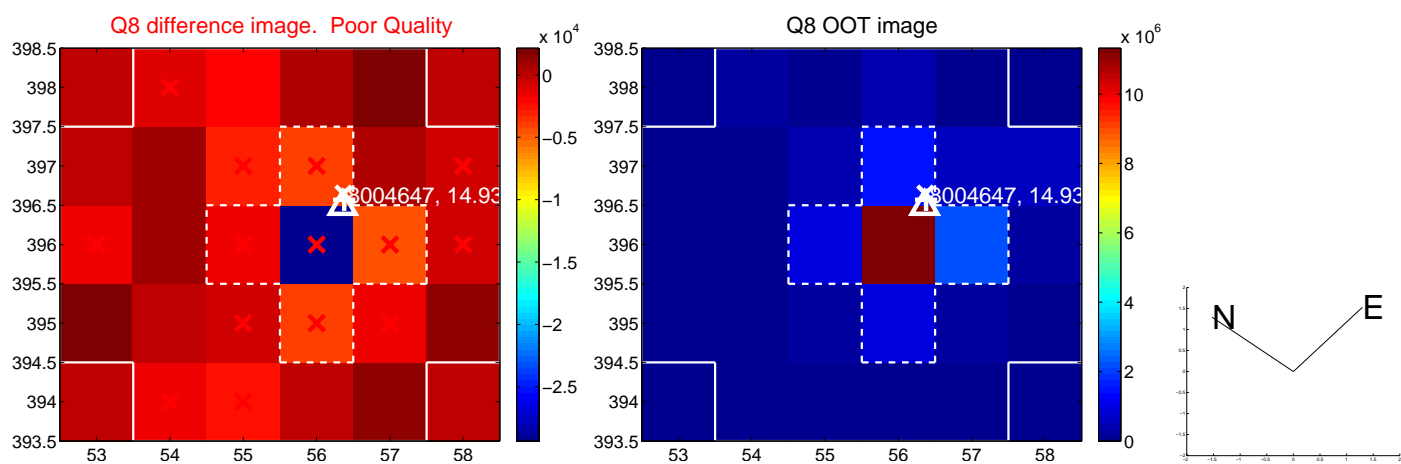
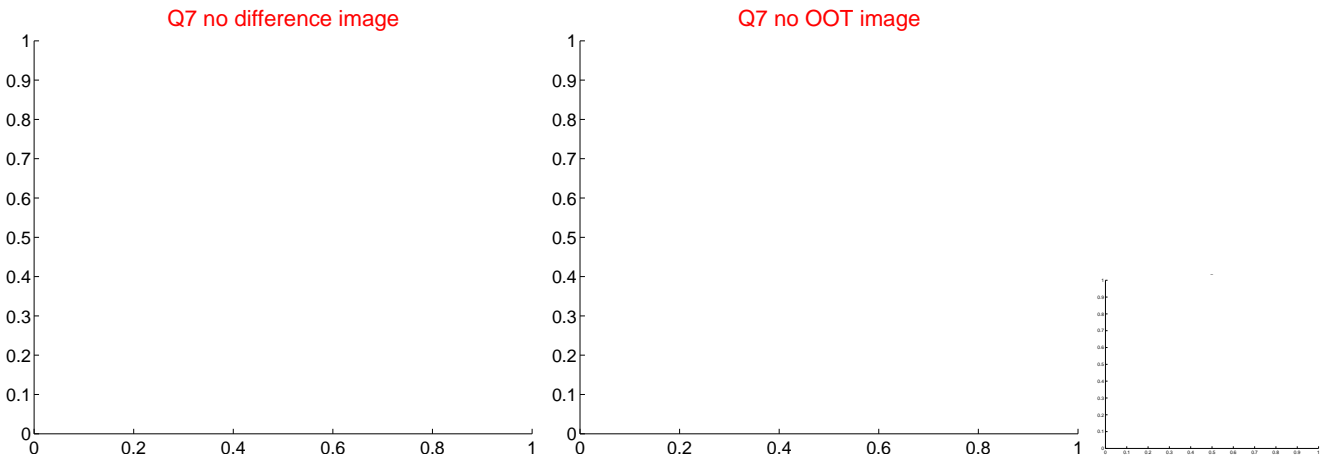
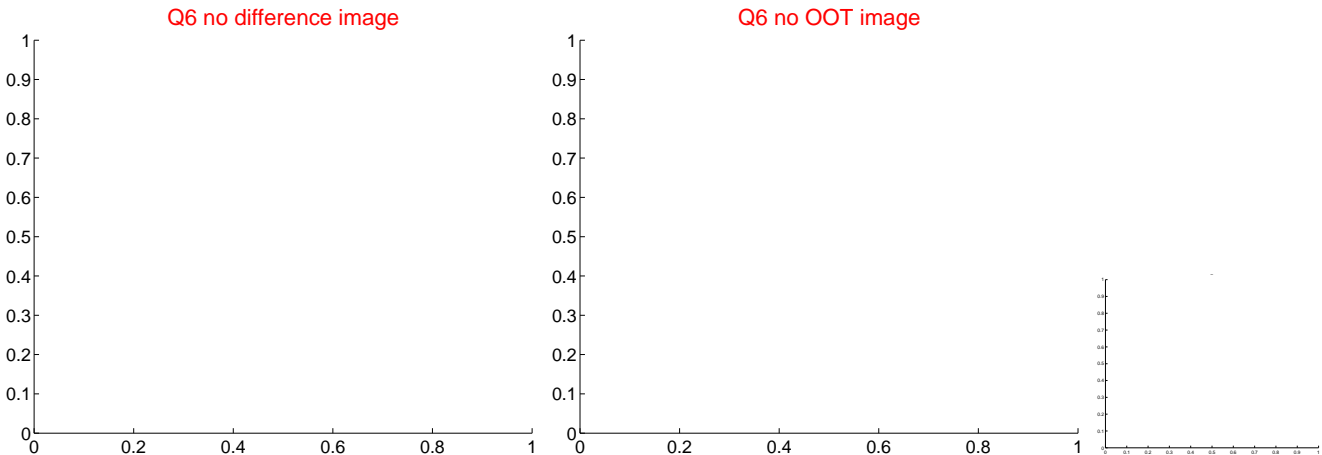
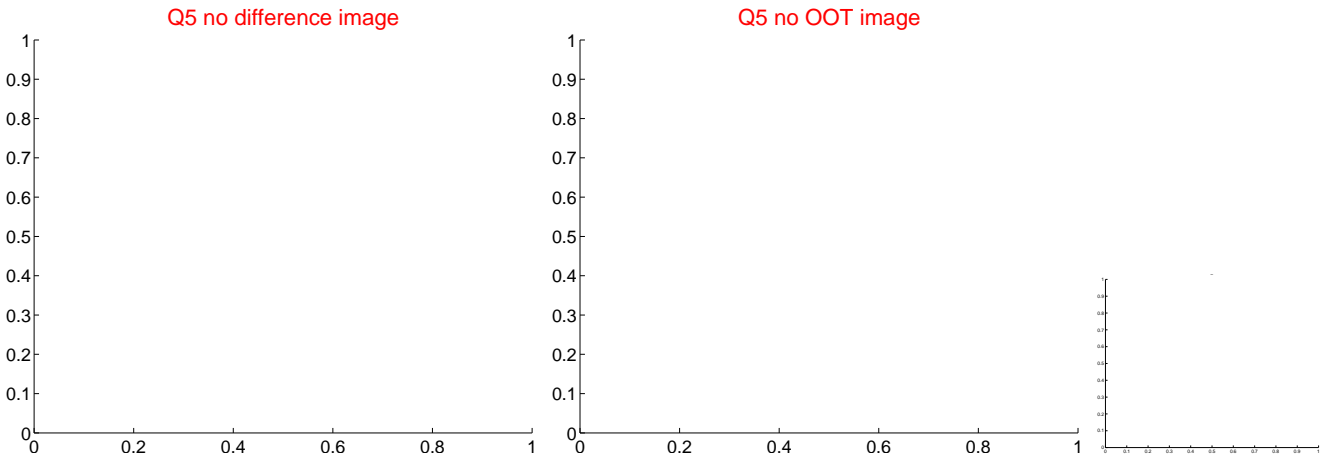


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



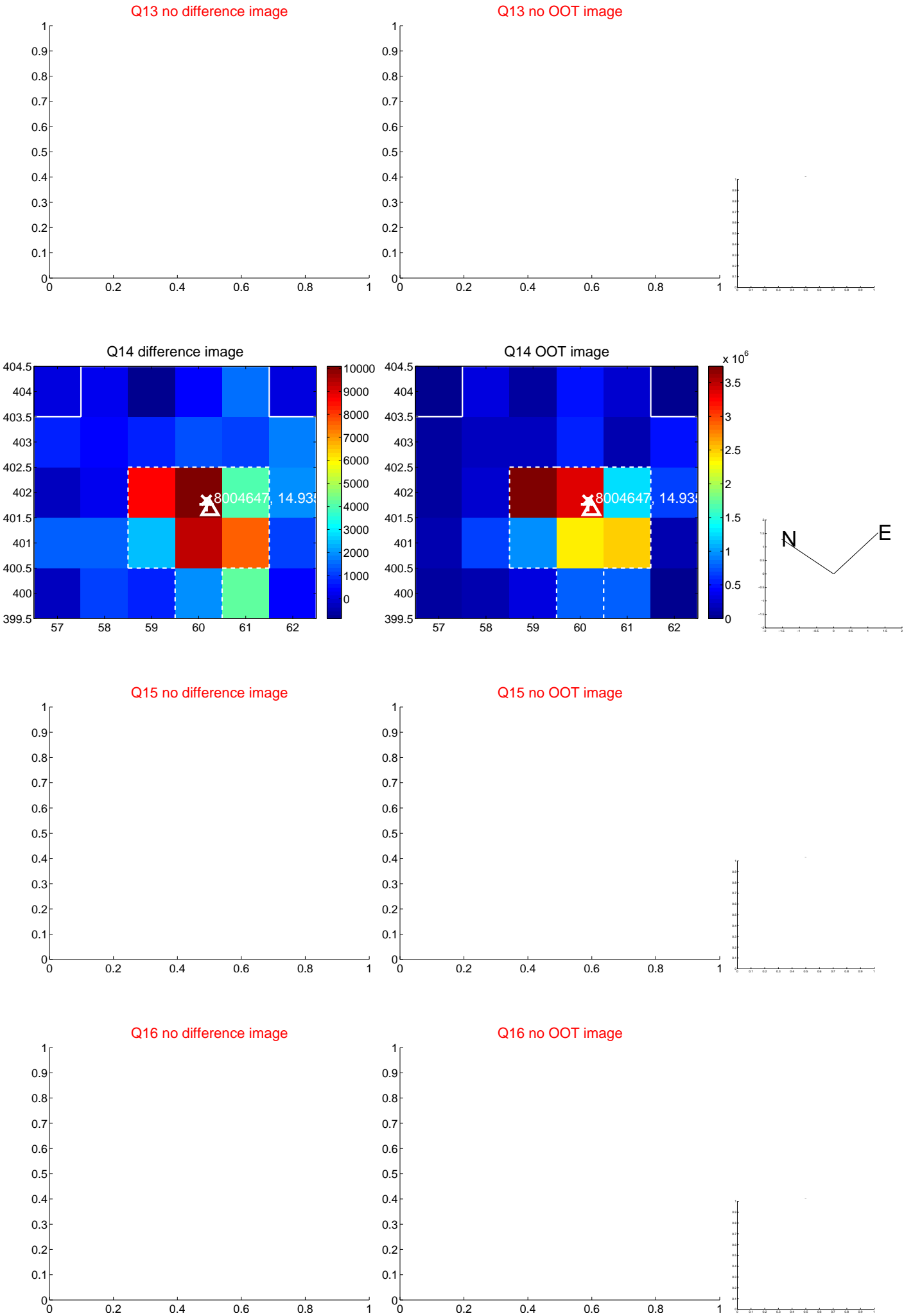
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



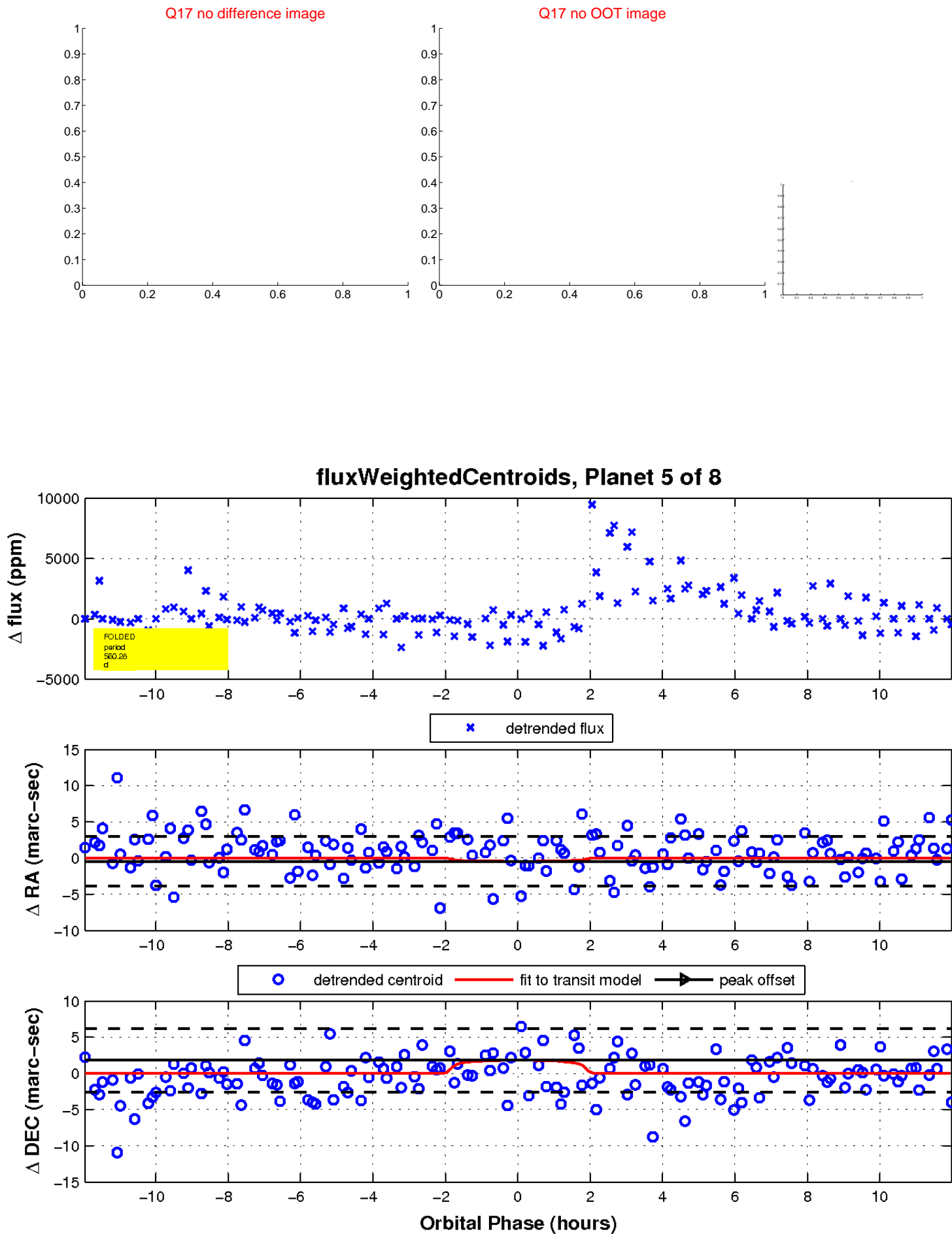
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

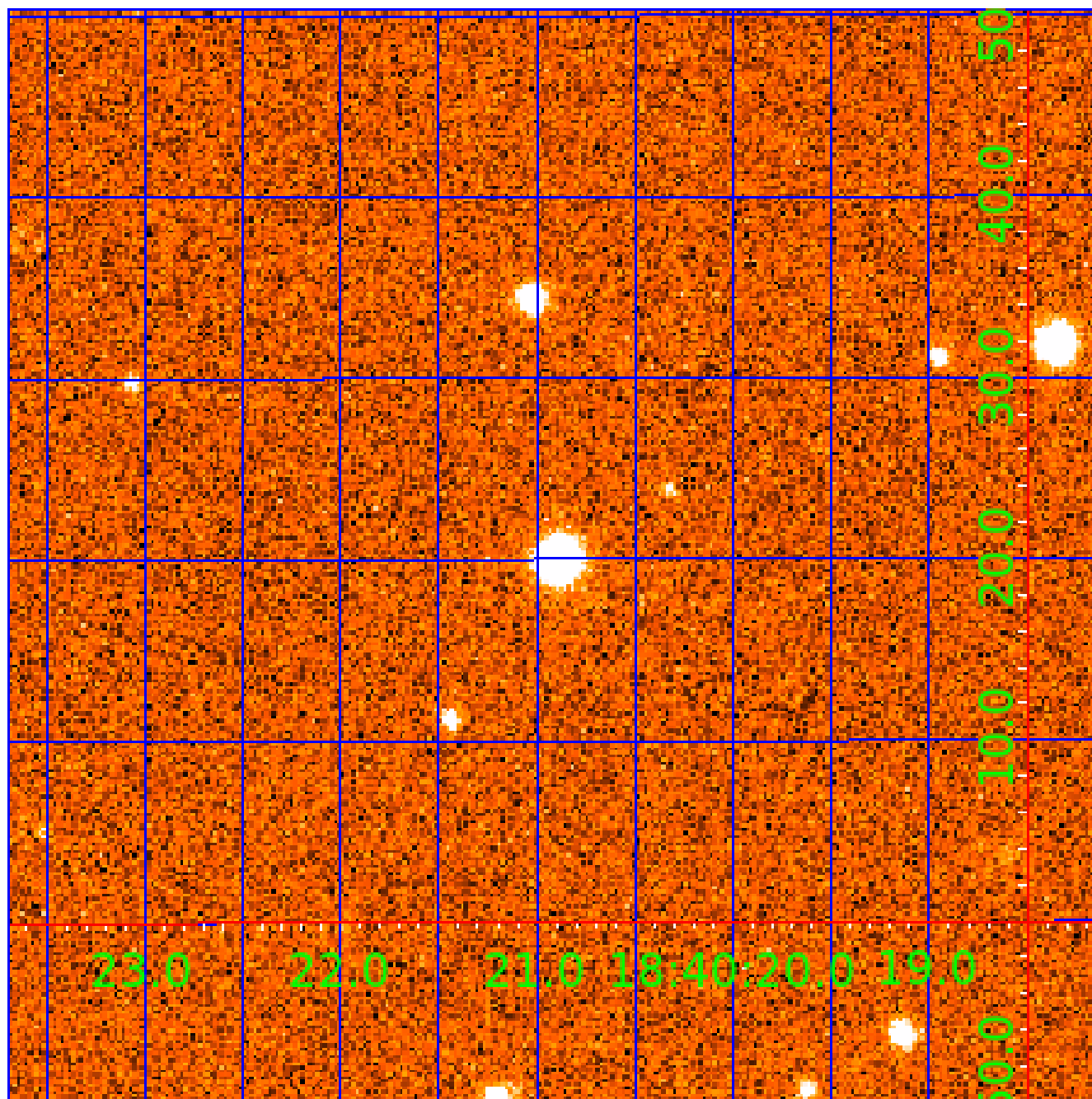


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008004647

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})
008004647-01	OBS	No	589.501452	281.510904	2612.4	7.548	18.1	7.5	0.55	4985	3.16	0.13
008004647-02	OBS	No	444.337453	244.446998	1863.1	7.144	16.2	8.3	0.55	4985	2.36	0.19
008004647-03	OBS	No	375.234952	449.422928	1335.1	3.056	15.1	4.2	0.55	4985	2.04	0.24
008004647-04	OBS	No	600.607424	194.706947	2425.1	5.117	14.3	8.3	0.55	4985	2.70	0.13
008004647-05	OBS	No	560.281544	226.195177	2020.9	4.011	15.6	7.2	0.55	4985	2.57	0.14
008004647-07	OBS	No	623.254844	143.604680	2530.2	3.122	11.1	8.6	0.55	4985	2.87	0.12
008004647-08	OBS	No	575.913077	209.052948	982.5	9.000	11.6	-1.0	0.55	4985	1.72	0.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008004647-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
008004647-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008004647-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—CENT_FEW_DIFFS
008004647-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

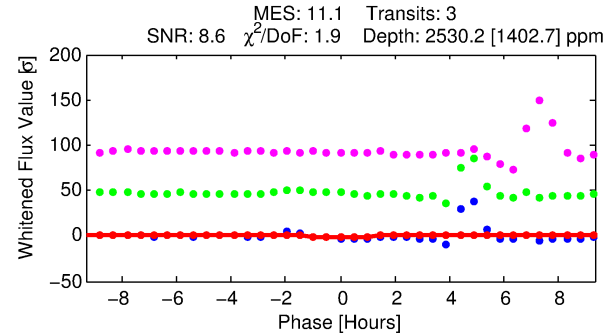
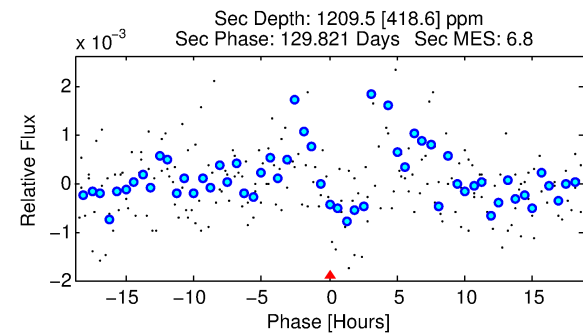
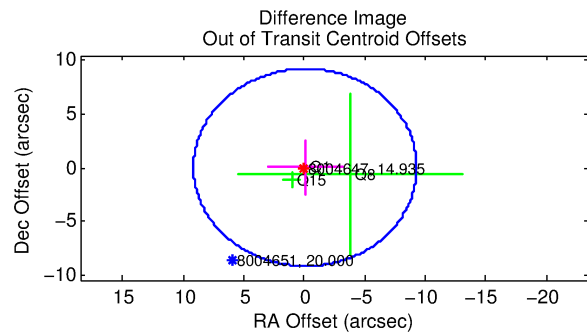
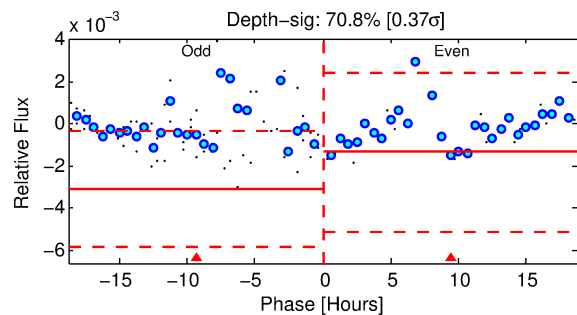
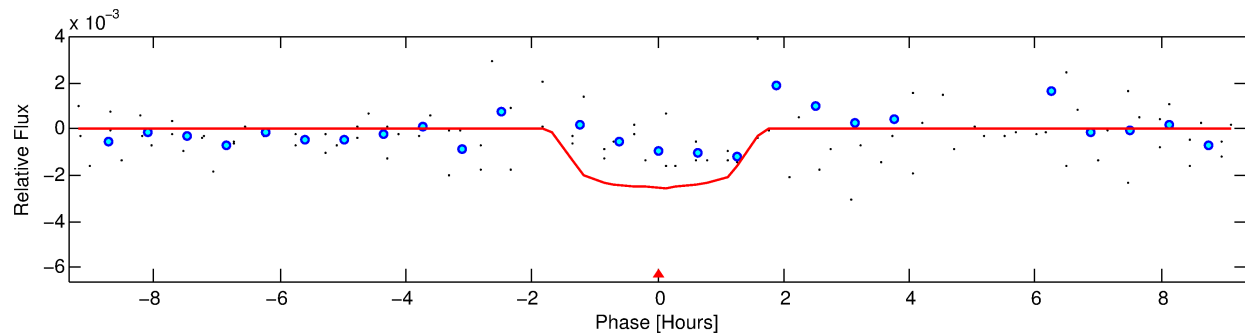
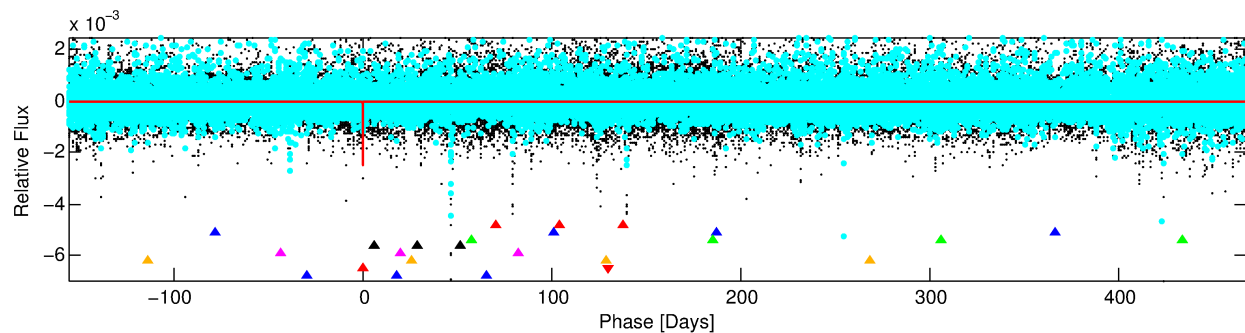
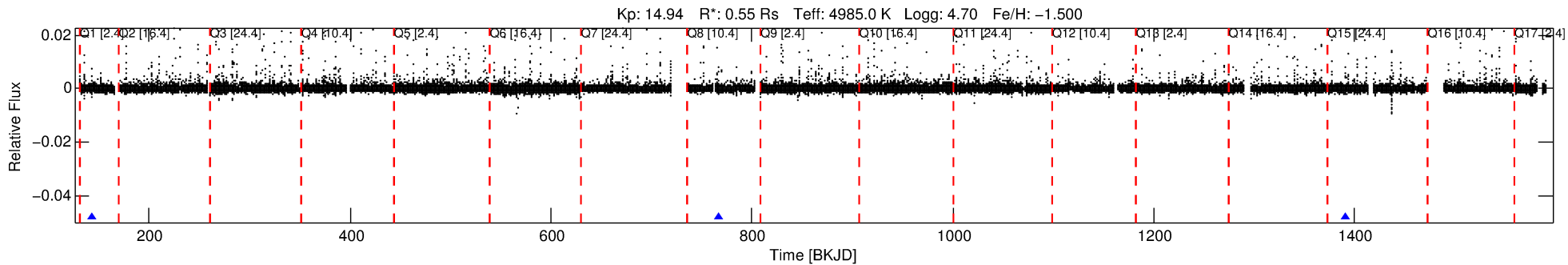
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008004647-07

No Significant Match Found

DV One-Page Summary

KIC: 8004647 Candidate: 7 of 8 Period: 623.255 d



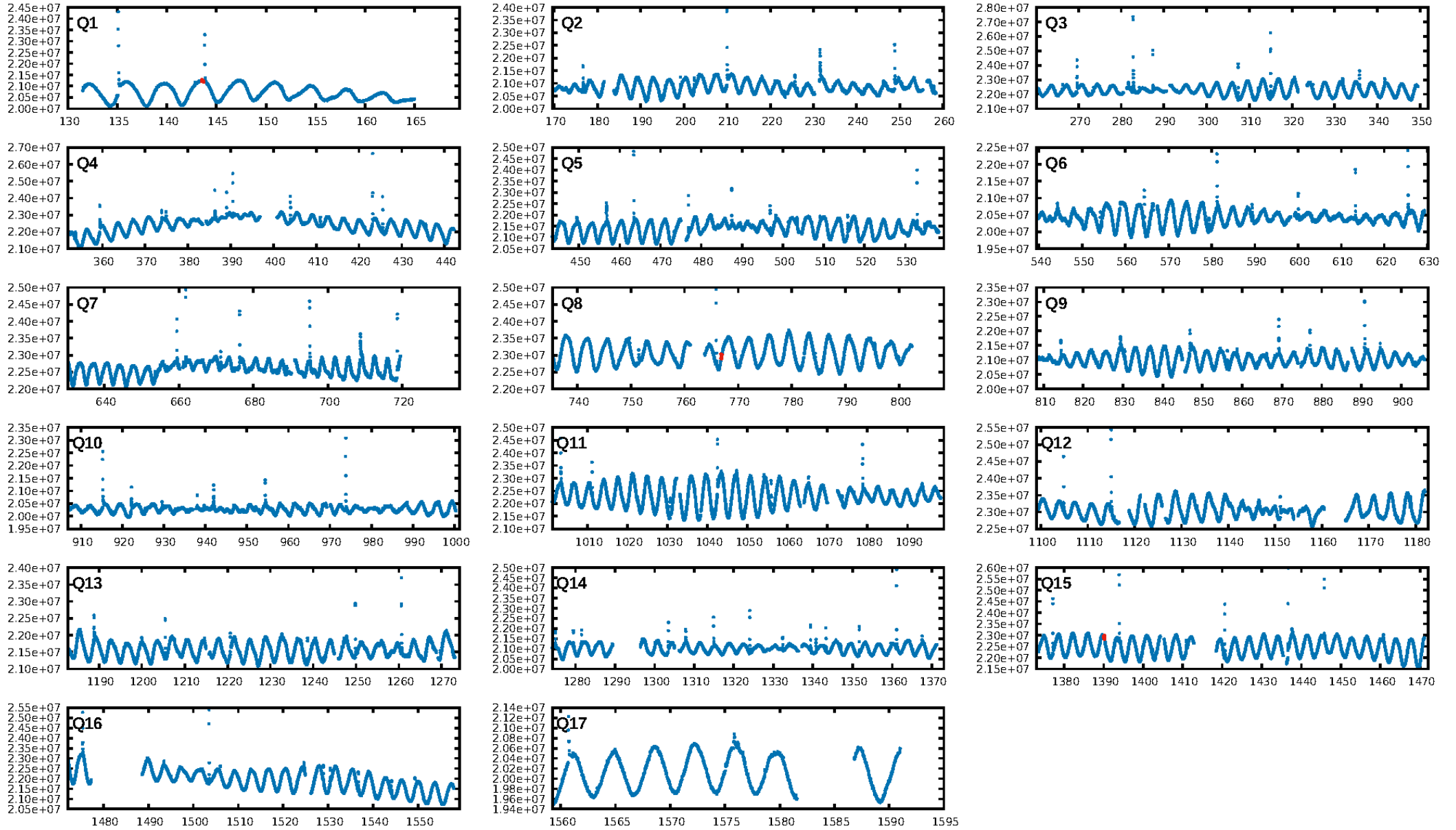
DV Fit Results:

Period = 623.25484 [0.01699] d
Epoch = 143.6047 [0.0236] BKJD
Rp/R* = 0.0476 [0.1767]
a/R* = 1358.67 [22720.14]
b = 0.55 [21.22]
Seff = 0.12 [0.02]
Teq = 150 [6] K
Rp = 2.87 [10.65] Re
a = 1.1788 [0.0606] AU
Ag = 112262.18 [833877.27] [0.13 σ]
Teffp = 4259 [7910] K [0.52 σ]

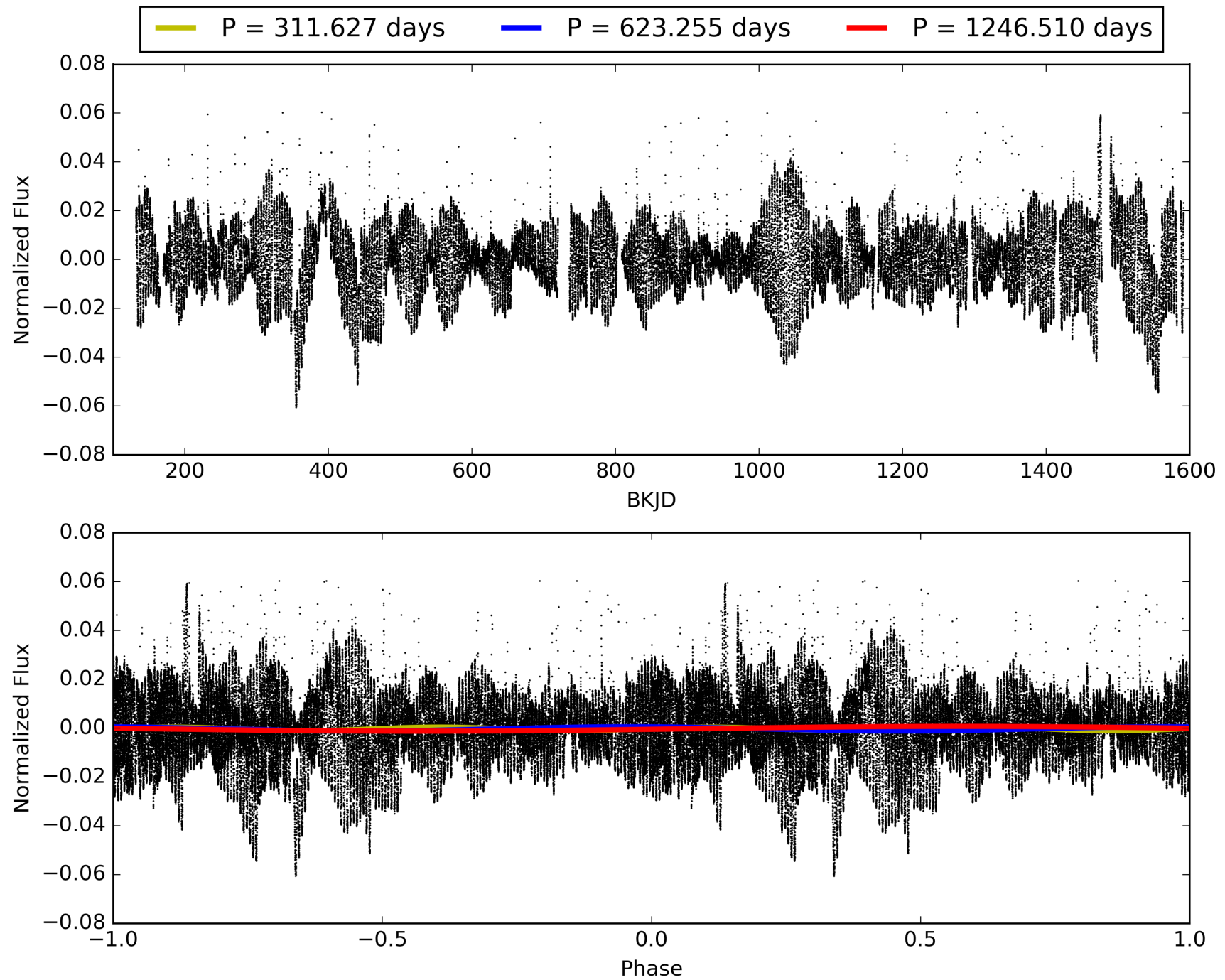
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [90.68 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 5.0%
ModelChiSquareGof-sig: 40.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 1.353
Centroid-sig: 31.1%
Centroid-so: 1.889 arcsec [2.16 σ]
OotOffset-rm: 0.074 arcsec [0.02 σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-rm: 0.310 arcsec [0.10 σ]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 008004647-07, PDC Light Curves

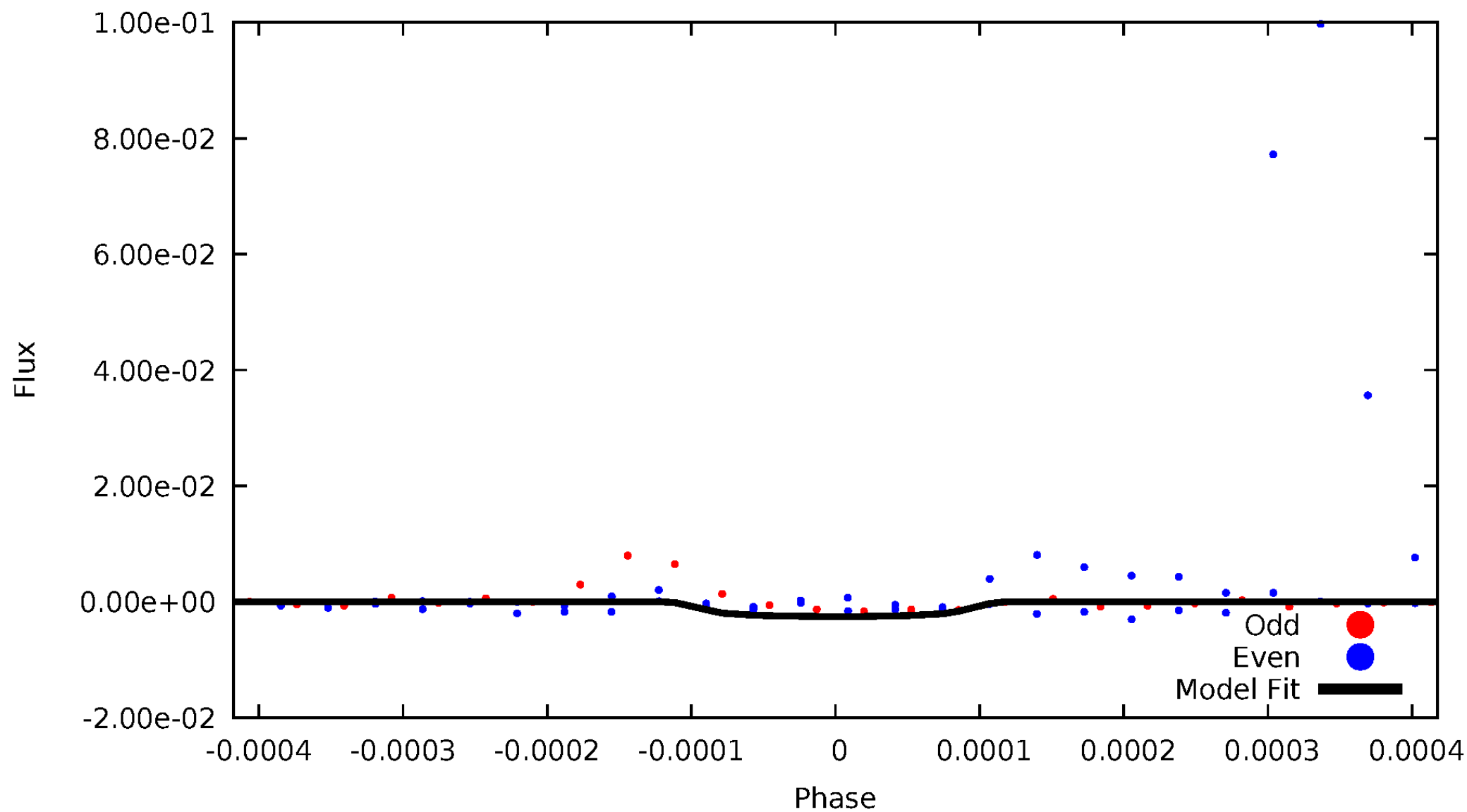


TCE 008004647-07



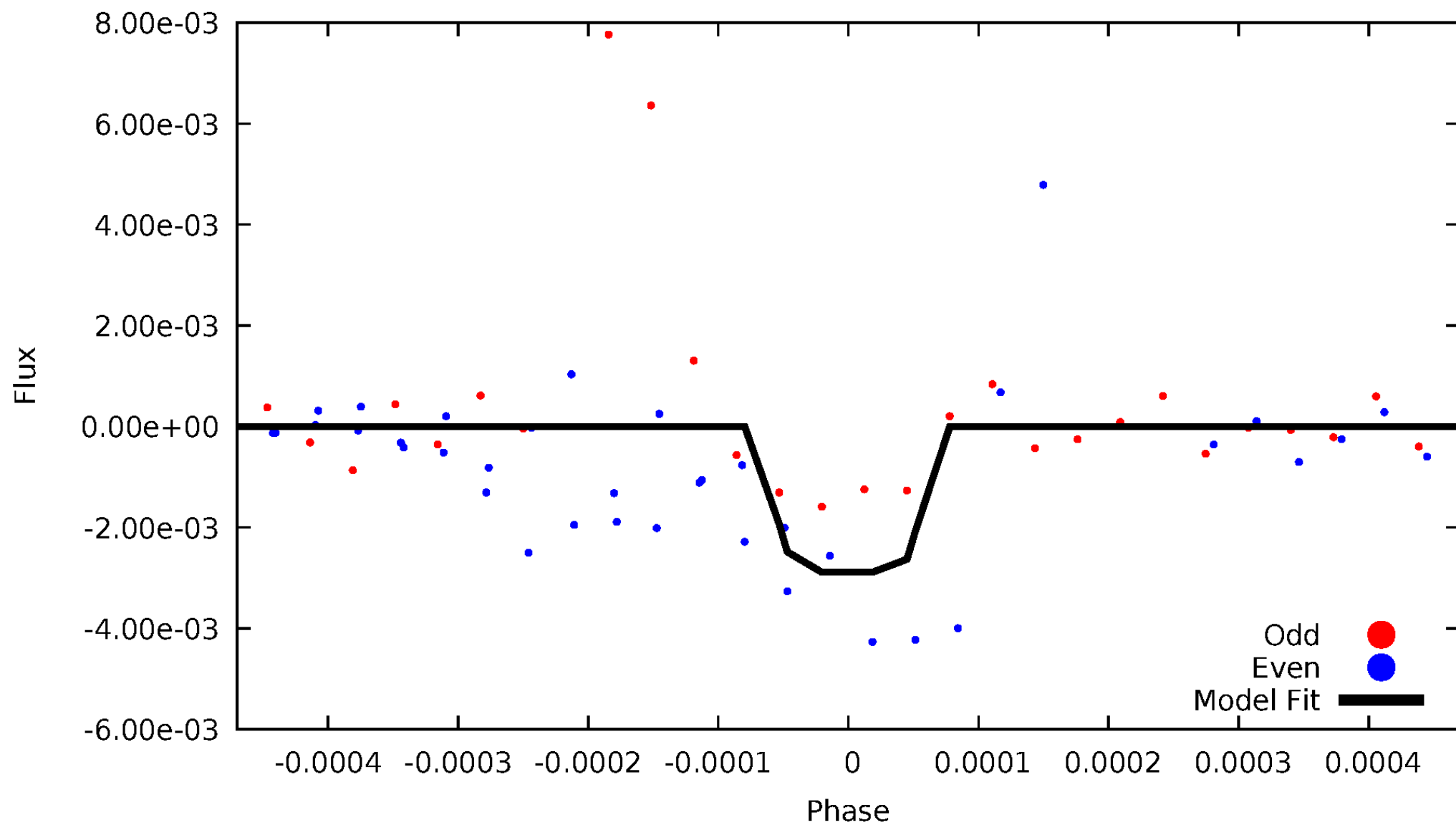
DV Odd/Even

TCE 008004647-07



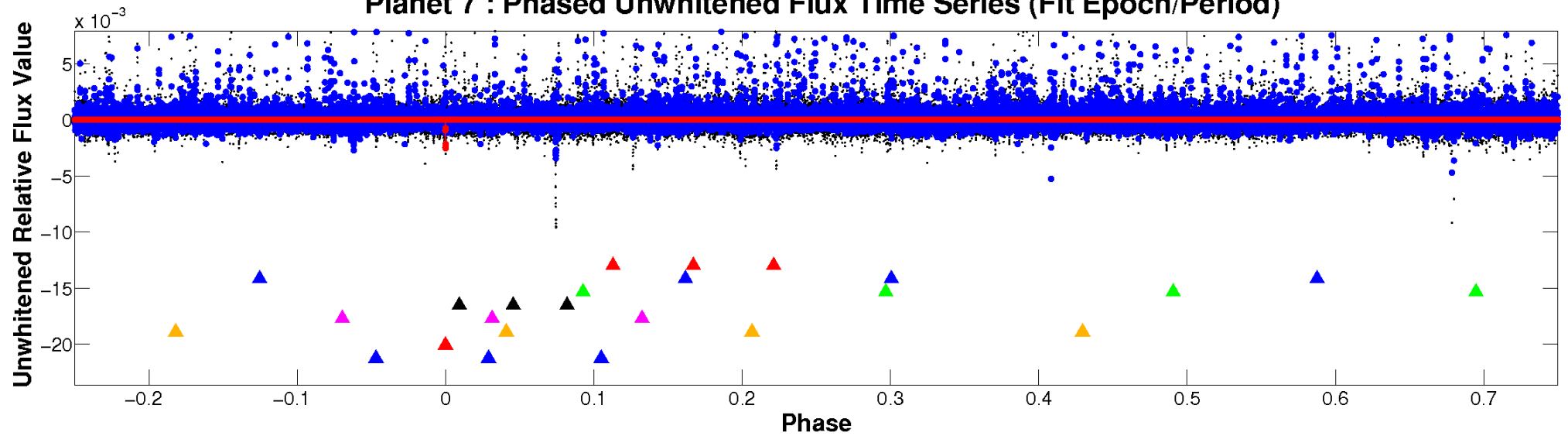
ALT Odd/Even

TCE 008004647-07

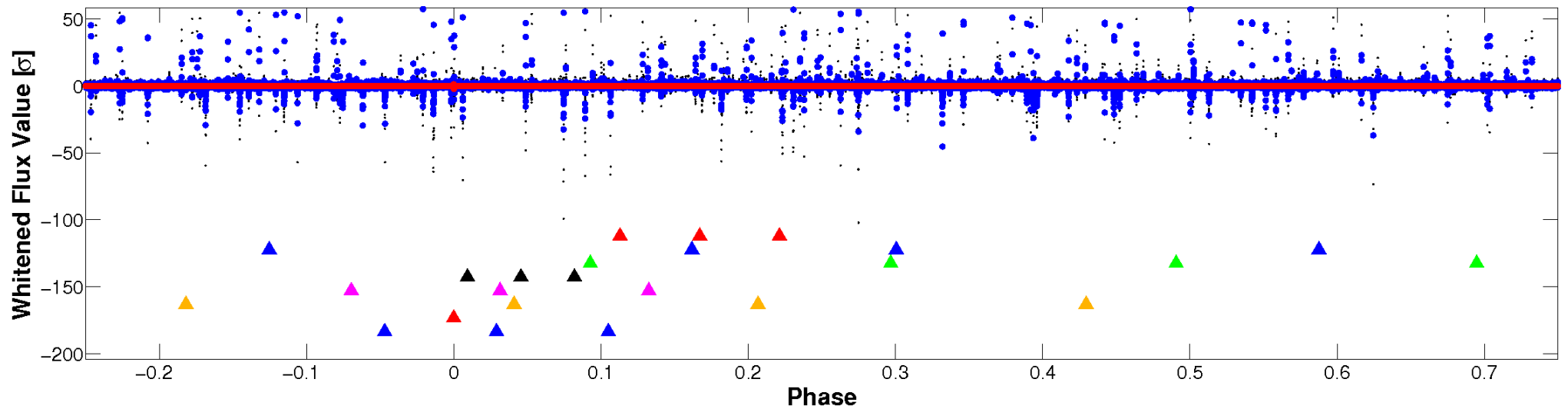


Non-Whitened Vs. Whitened Light Curve

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

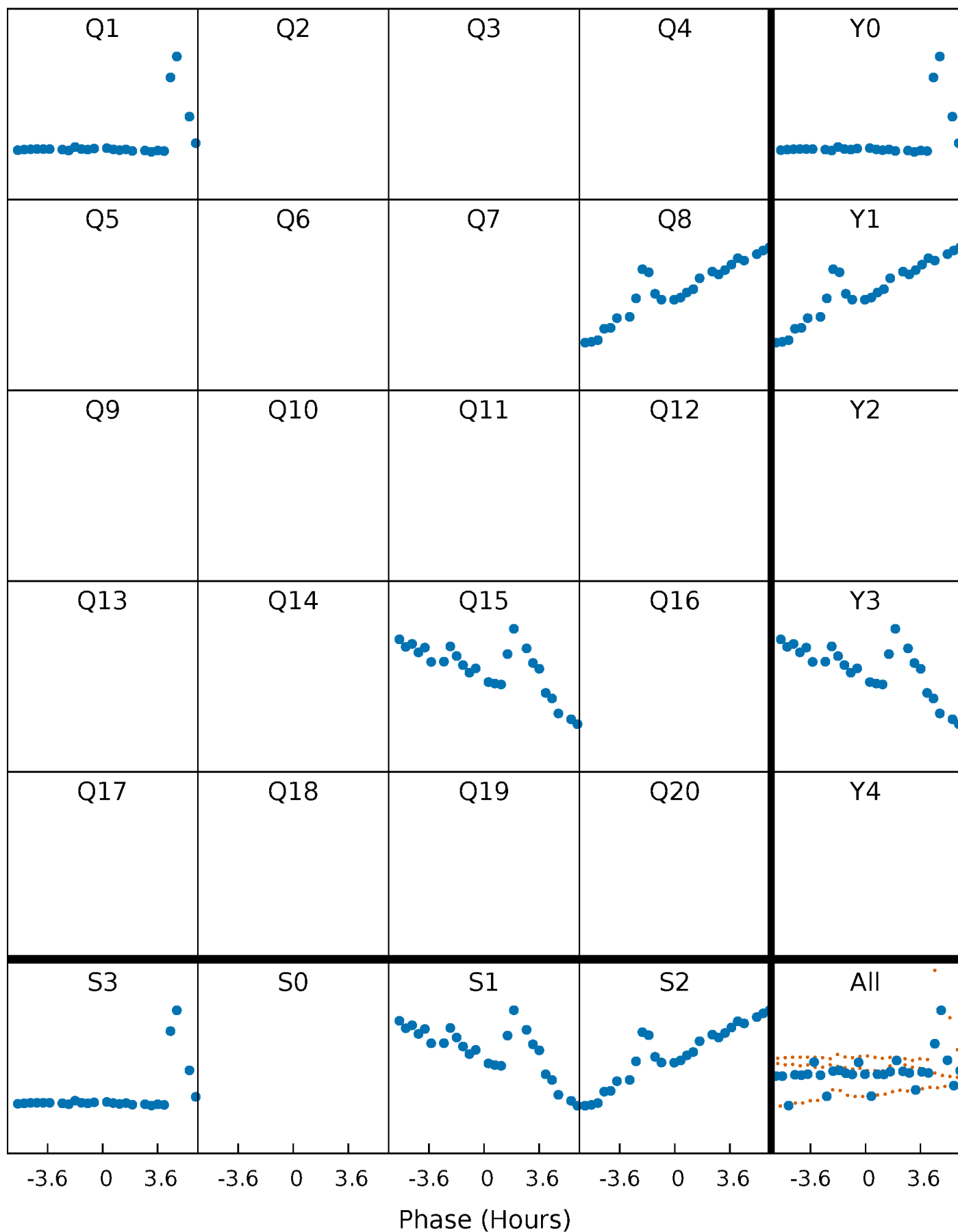


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



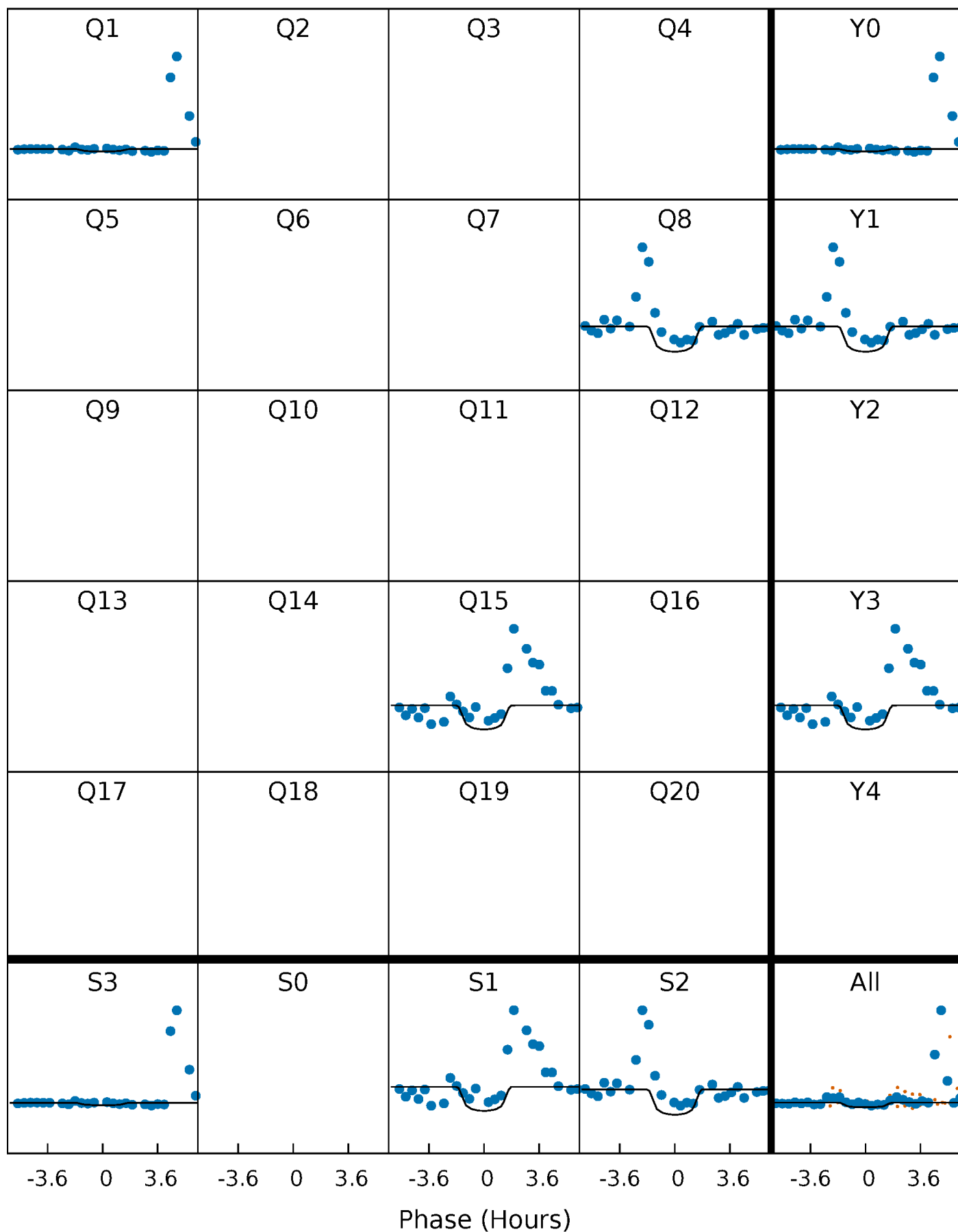
PDC Quarter-Phased Transit Curves

TCE 008004647-07 $P=623.254844$ Days $T_0=143.604680$ (BKJD)



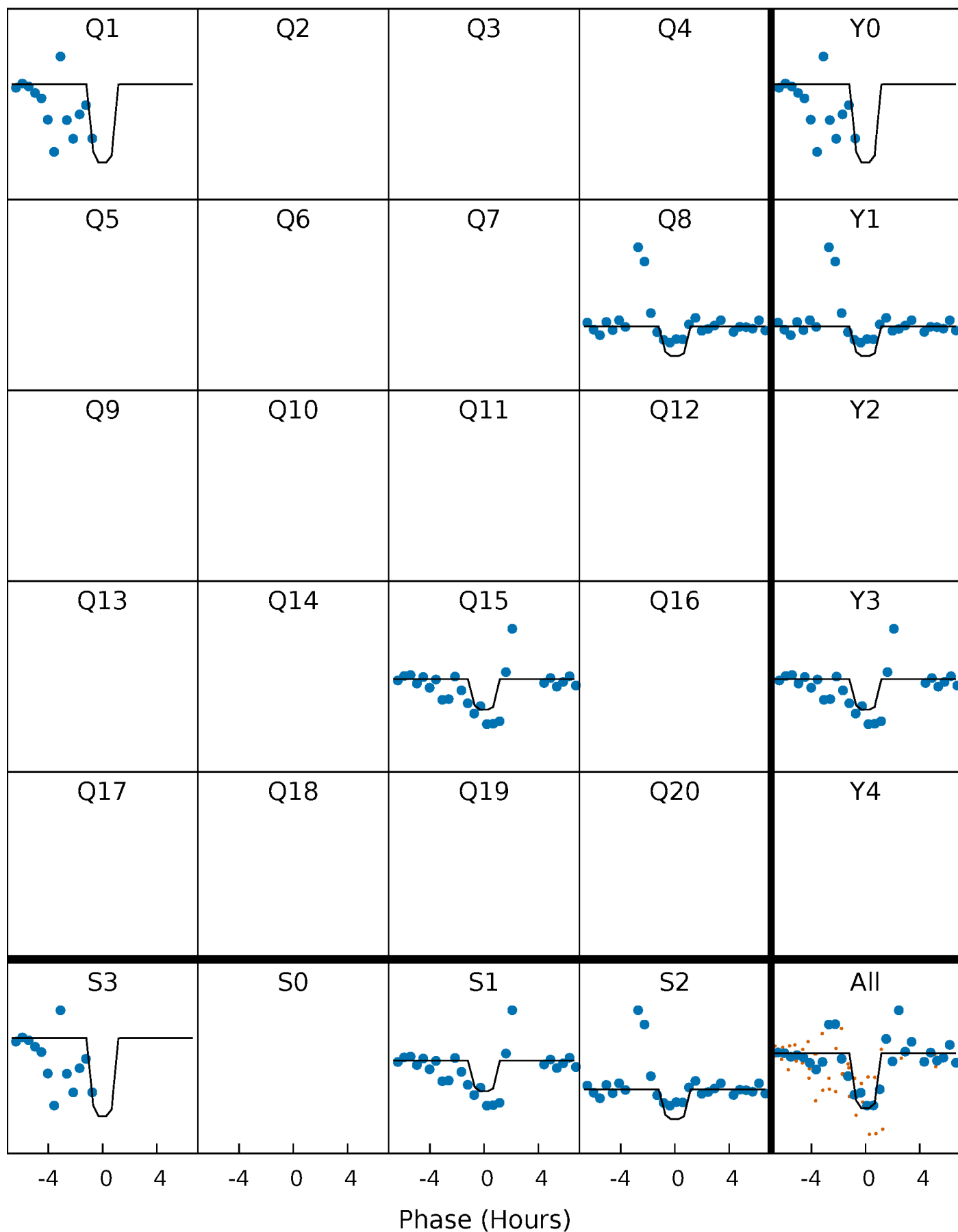
DV Quarter-Phased Transit Curves

TCE 008004647-07 $P=623.254844$ Days $T_0=143.604680$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

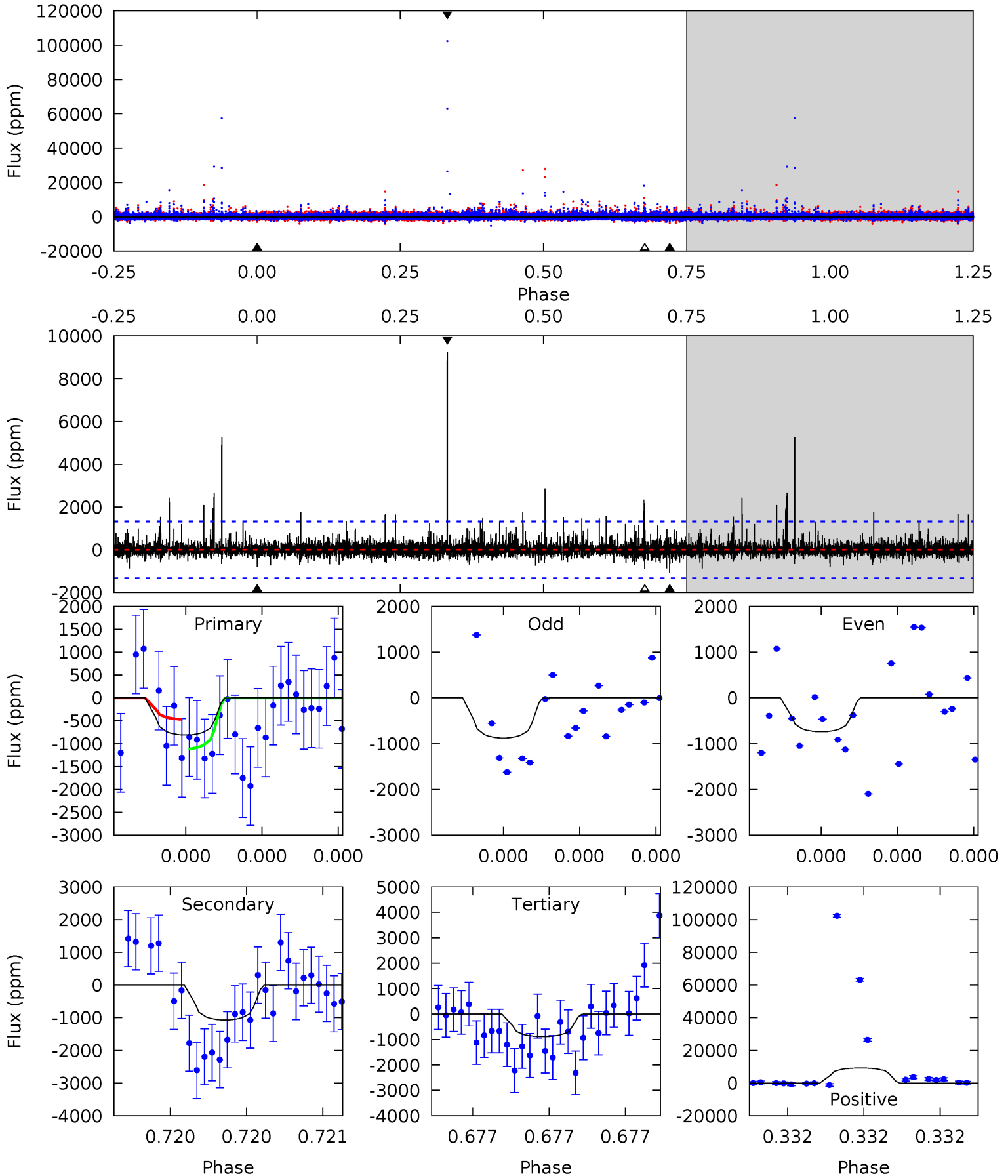
TCE 008004647-07 P=623.223580 Days $T_0=143.661016$ (BKJD)



DV Model-Shift Uniqueness Test

008004647-07, P = 623.254844 Days, E = 143.604680 Days

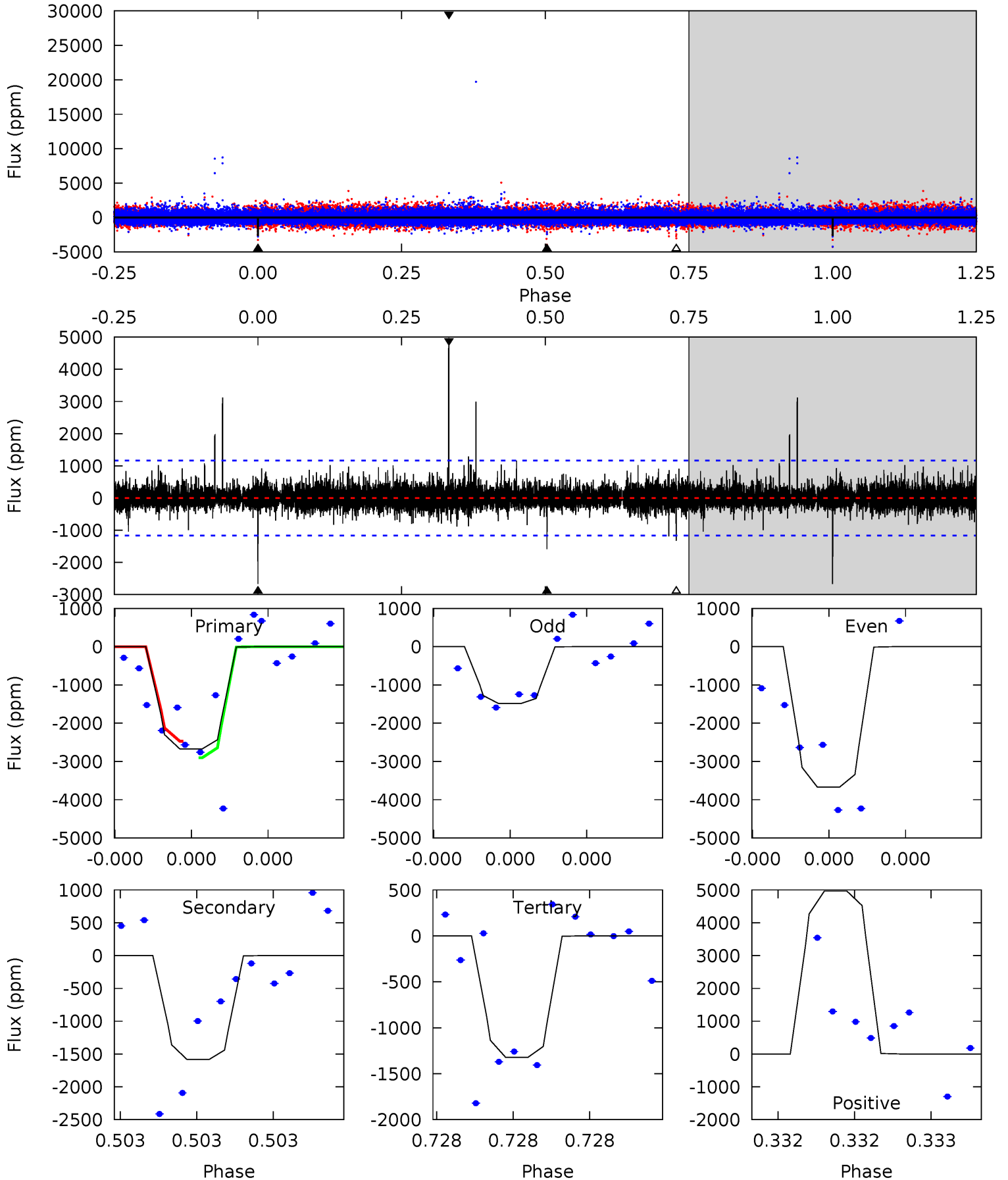
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.48	4.59	3.80	39.7	5.71	3.68	1.20	-0.32	-36.2	0.79	-35.1	0.10	0.85	0.90	1.41



Alt Model-Shift Uniqueness Test

008004647-07, P = 623.223580 Days, E = 143.661016 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	7.86	6.57	24.7	5.80	3.82	1.05	6.71	-11.4	1.29	-16.8	4.78	1.00	0.65	1.06



Stellar Parameters For KIC 008004647

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4985^{+163}_{-148}	$4.704^{+0.049}_{-0.024}$	$-1.500^{+0.300}_{-0.300}$	$0.552^{+0.026}_{-0.029}$	$0.562^{+0.040}_{-0.017}$	$4.695^{+0.840}_{-0.452}$
	+3%/-3%	+1%/-1%	+20%/-20%	+5%/-5%	+7%/-3%	+18%/-10%
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 008004647-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1070 ± 233	$8.63^{+8.03}_{-6.01}$	209^{+7}_{-7}	2994^{+1415}_{-471}	$10877^{+105022}_{-7954}$
Alt.	-1581 ± 201	$8.80^{+7.74}_{-6.02}$	209^{+7}_{-7}	3149^{+1525}_{-503}	$15642^{+144904}_{-11255}$

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

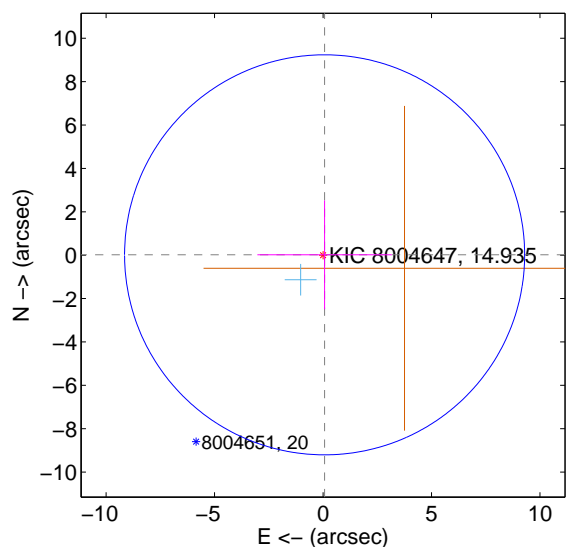
Supplemental centroid analysis for 008004647-07. Kepler magnitude: 14.94. Transit SNR 8.59

There are 2 quarters with good PRF difference image offsets

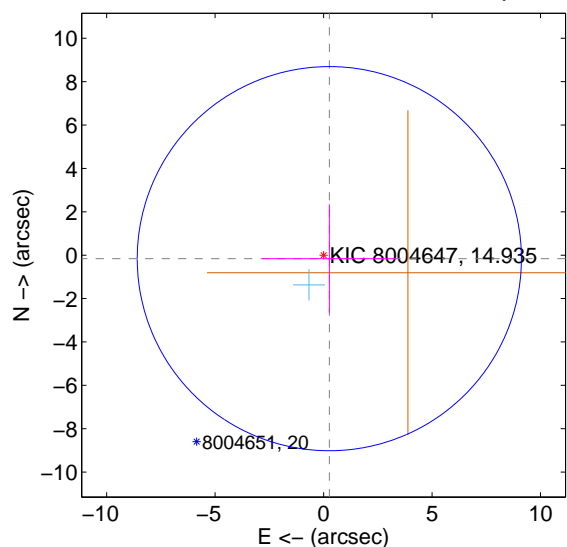
The direct PRF centroid is offset from the target star catalog position by about 0.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.074 ± 3.073	0.02	-0.072 ± 3.099	0.016 ± 2.508
PRF-fit source offset from KIC position	0.310 ± 2.951	0.10	-0.265 ± 3.099	-0.161 ± 2.508
photometric centroid source offset	1.89 ± 0.88	2.16	-1.51 ± 0.81	-1.13 ± 0.98

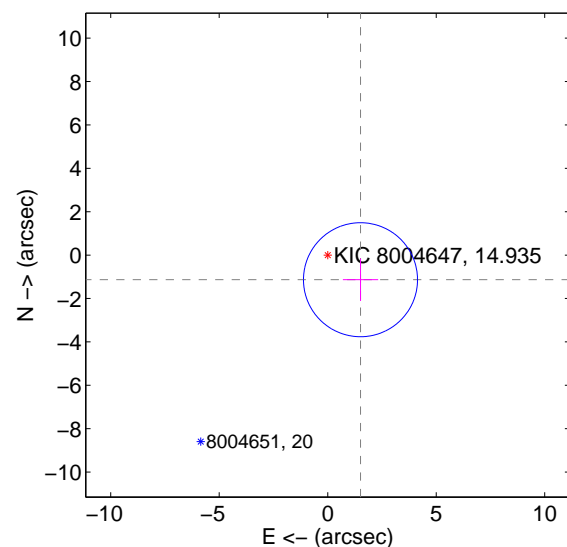
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

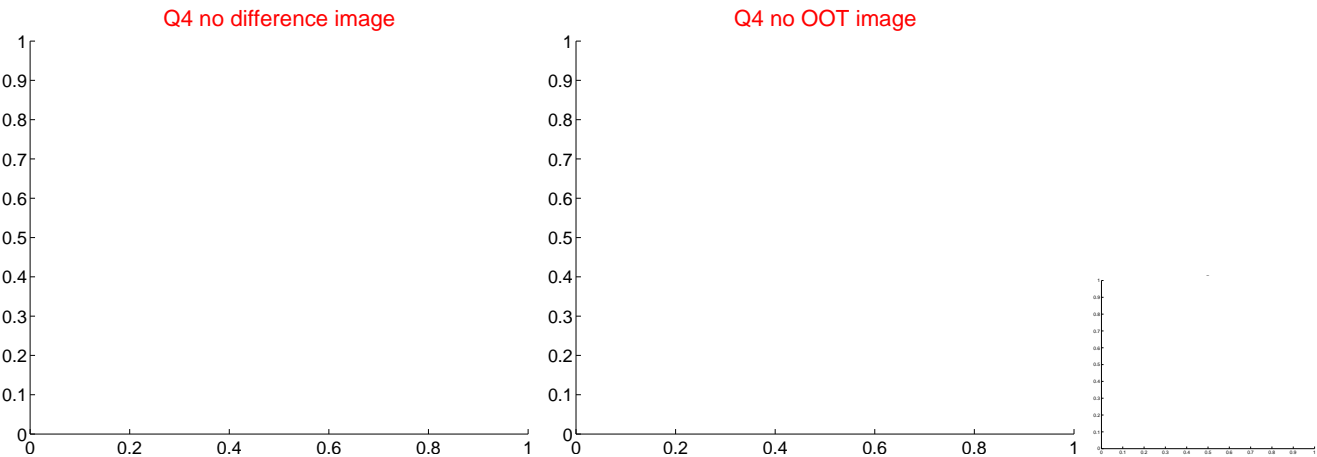
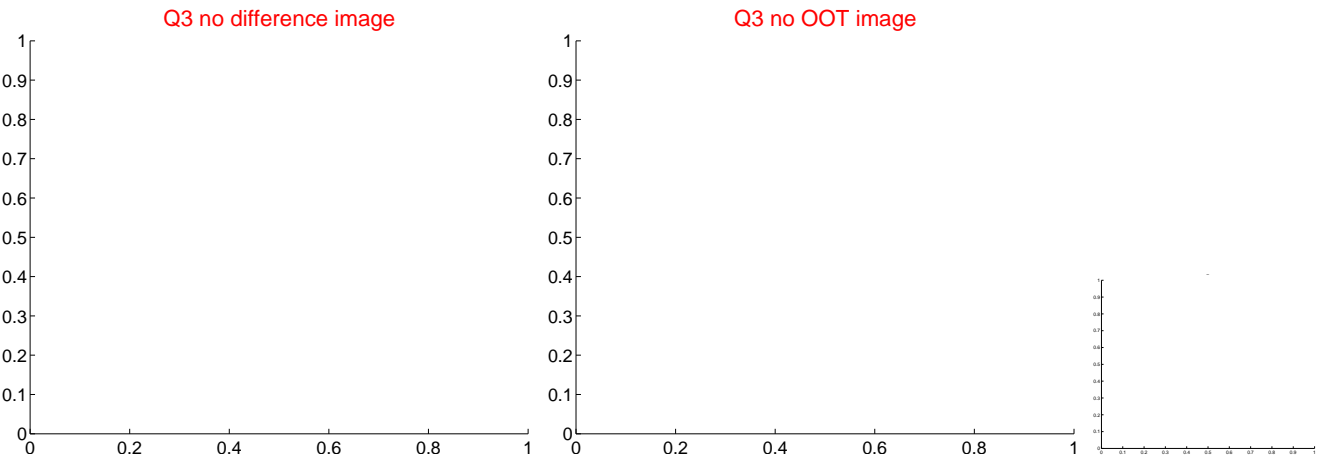
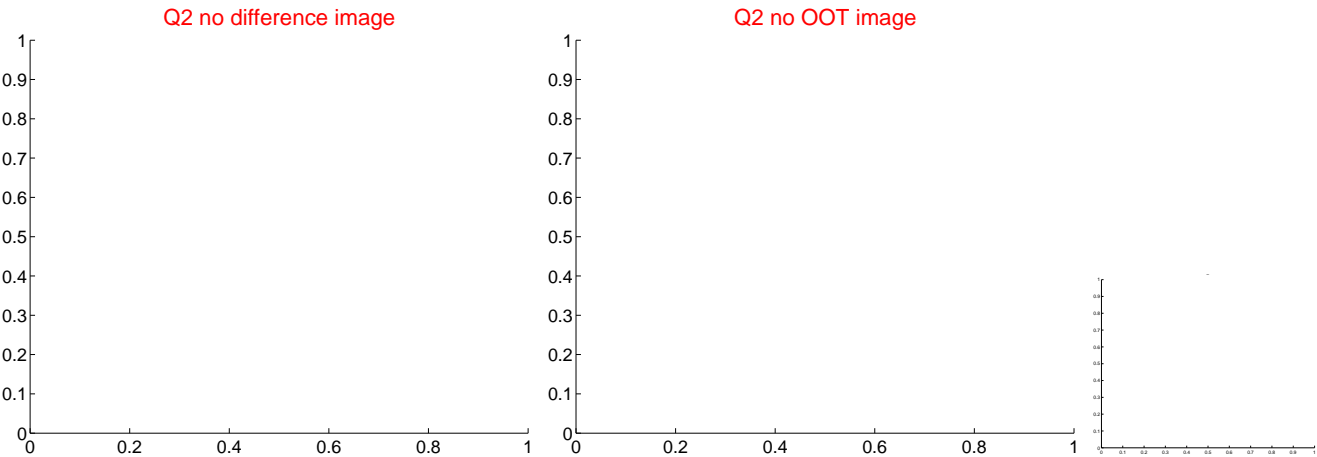
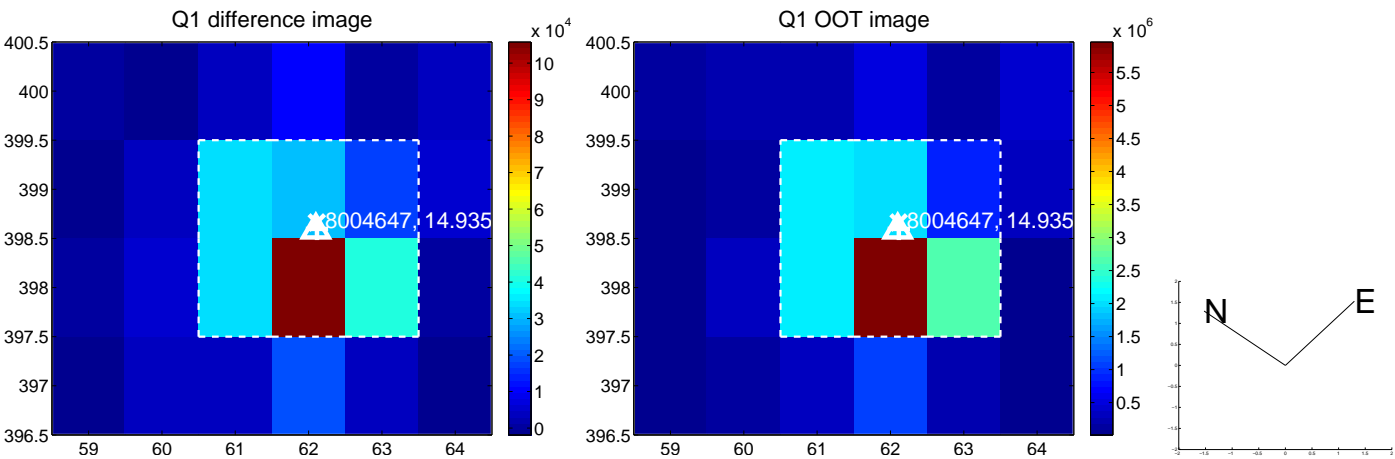


offset from photometric centroids

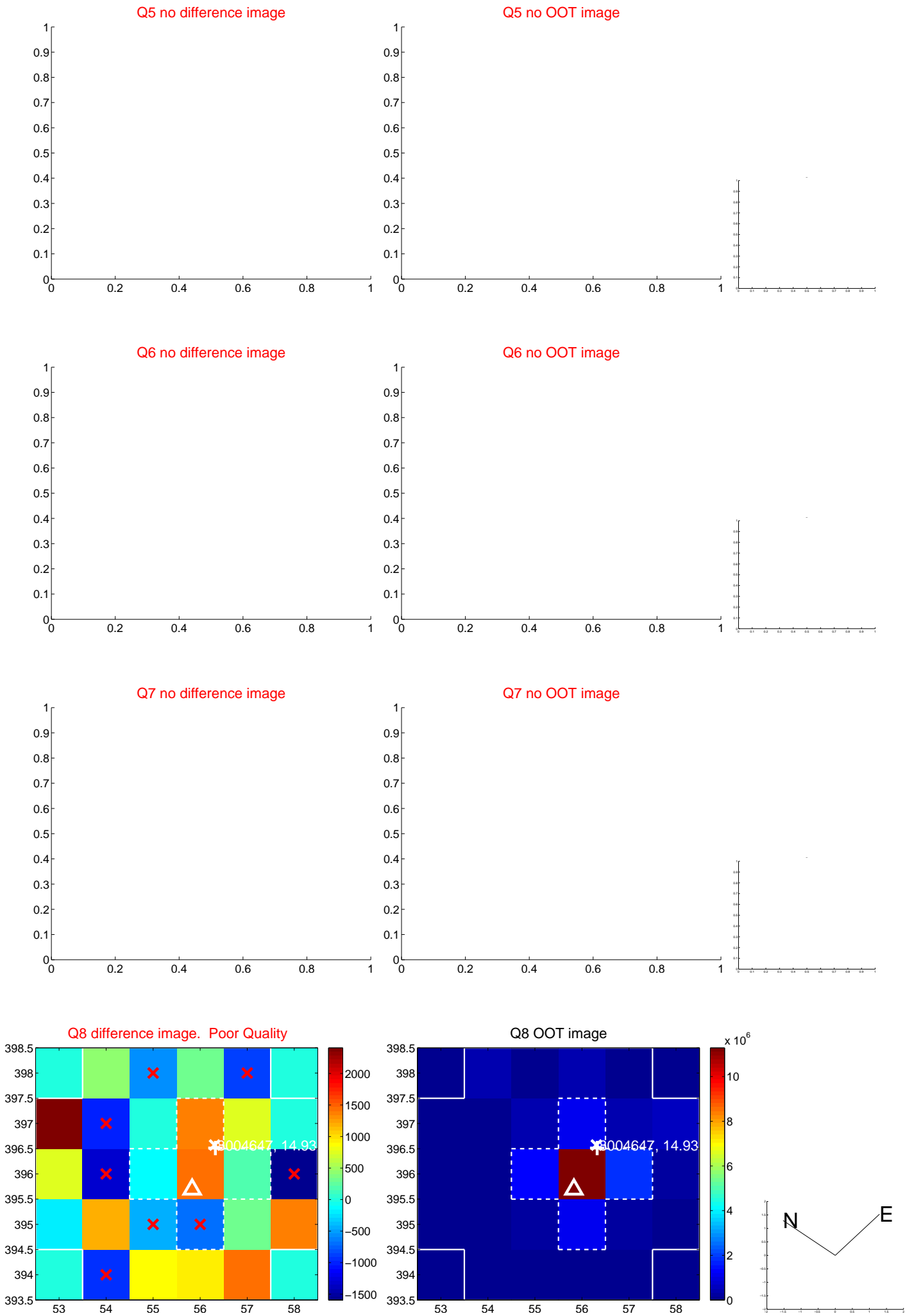


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



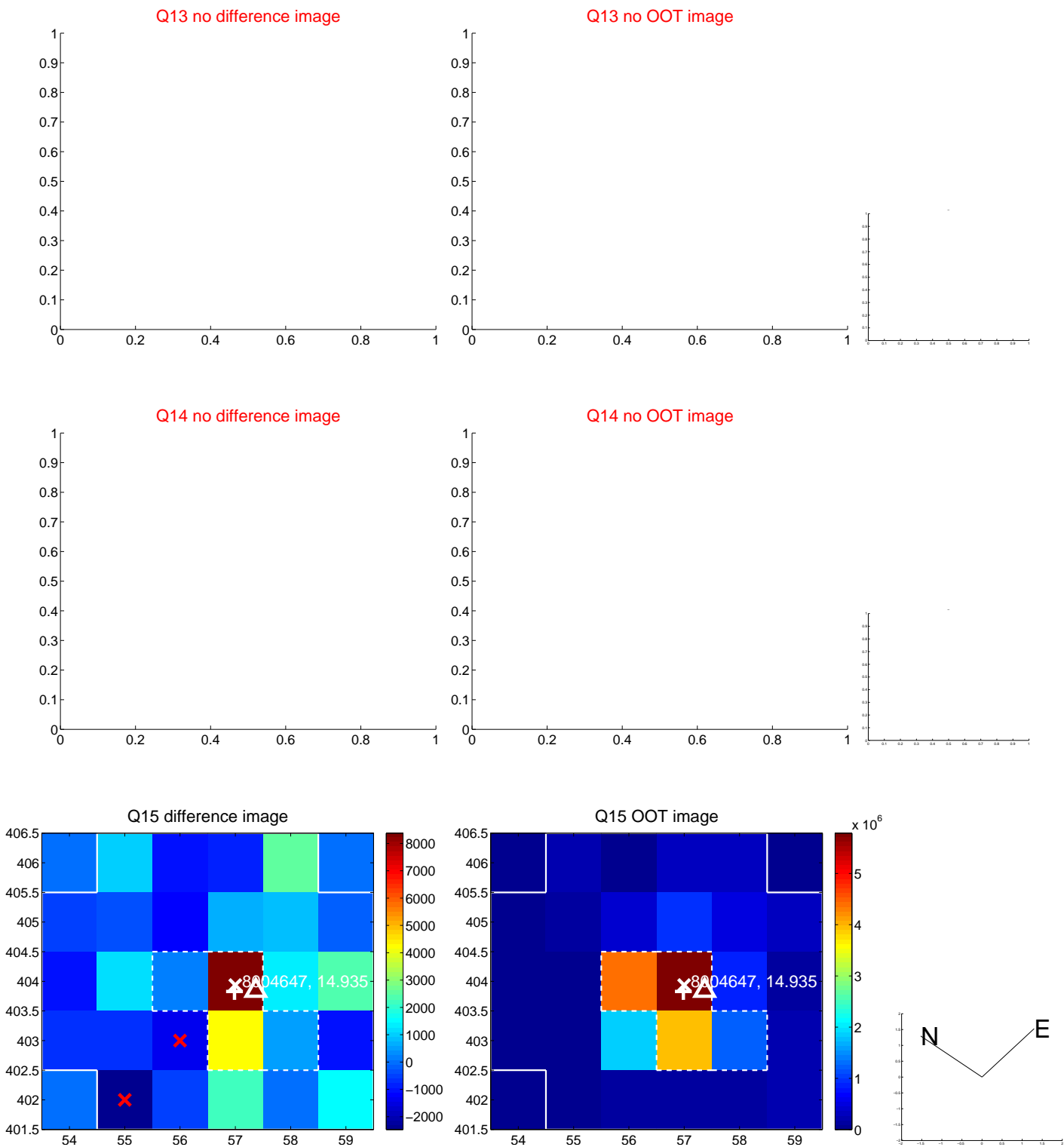
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



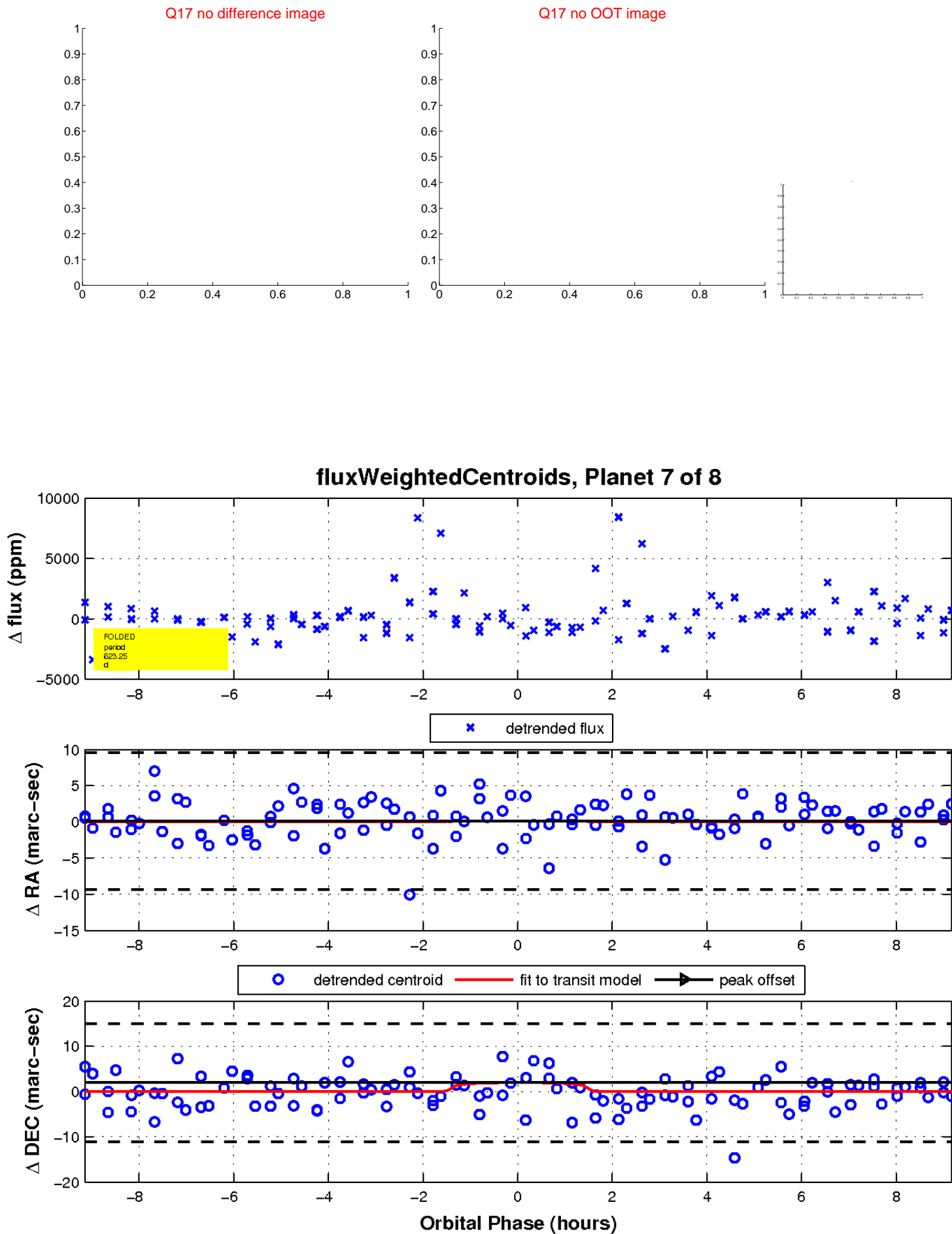
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

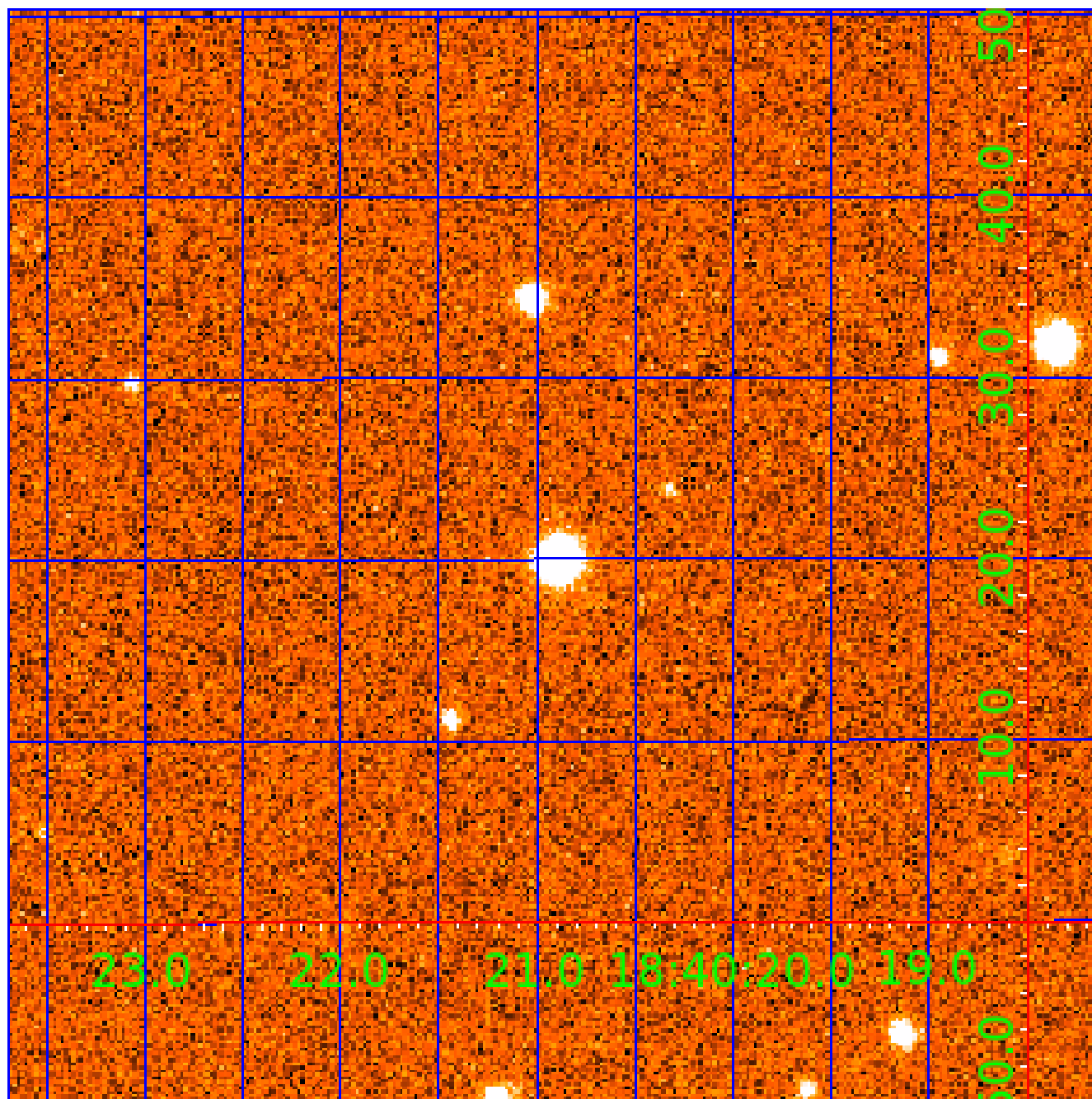


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008004647

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})
008004647-01	OBS	No	589.501452	281.510904	2612.4	7.548	18.1	7.5	0.55	4985	3.16	0.13
008004647-02	OBS	No	444.337453	244.446998	1863.1	7.144	16.2	8.3	0.55	4985	2.36	0.19
008004647-03	OBS	No	375.234952	449.422928	1335.1	3.056	15.1	4.2	0.55	4985	2.04	0.24
008004647-04	OBS	No	600.607424	194.706947	2425.1	5.117	14.3	8.3	0.55	4985	2.70	0.13
008004647-05	OBS	No	560.281544	226.195177	2020.9	4.011	15.6	7.2	0.55	4985	2.57	0.14
008004647-07	OBS	No	623.254844	143.604680	2530.2	3.122	11.1	8.6	0.55	4985	2.87	0.12
008004647-08	OBS	No	575.913077	209.052948	982.5	9.000	11.6	-1.0	0.55	4985	1.72	0.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008004647-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
008004647-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008004647-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008004647-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—CENT_FEW_DIFFS
008004647-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS

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

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

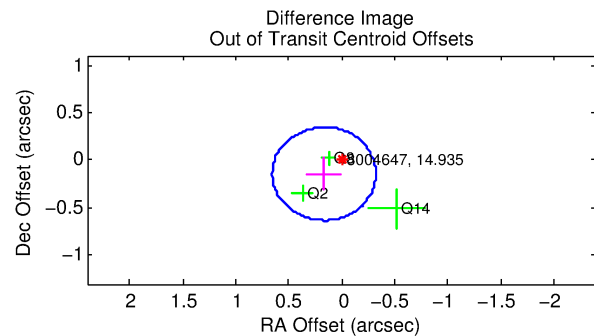
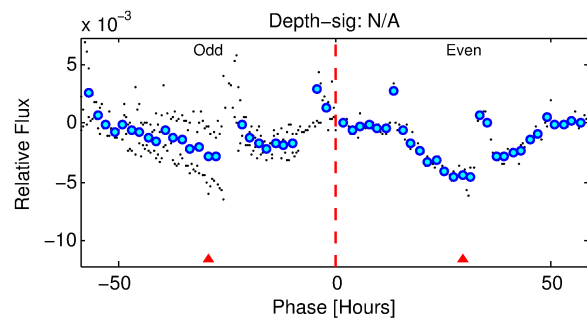
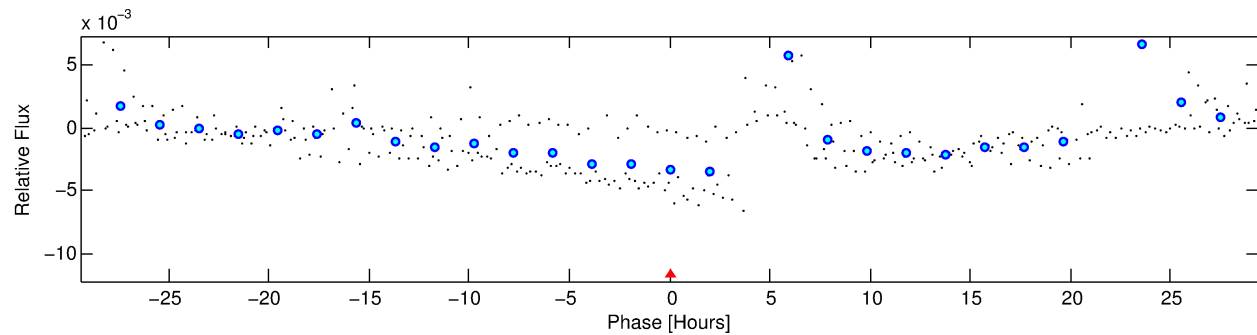
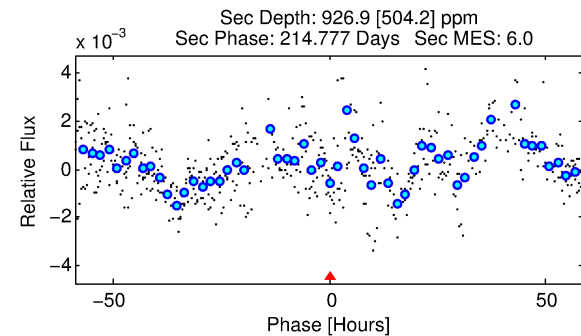
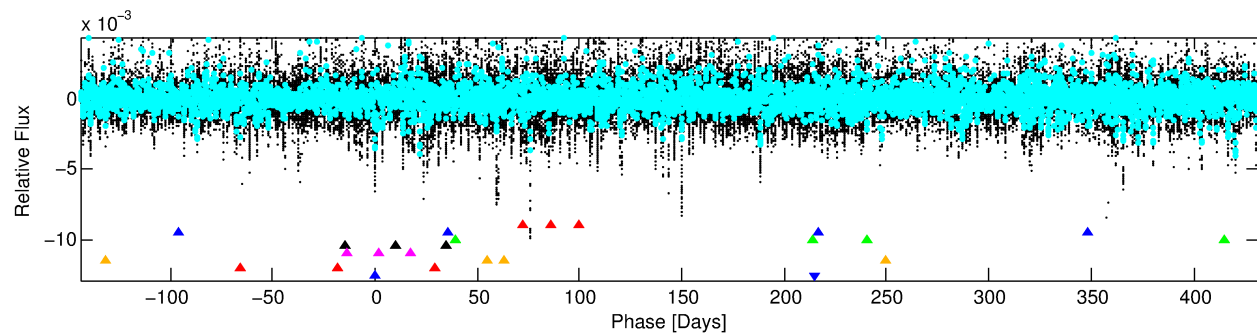
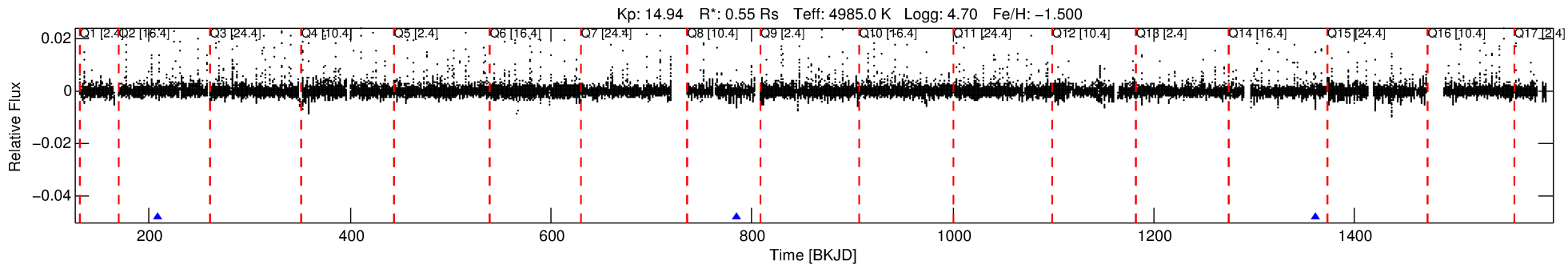
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008004647-08

No Significant Match Found

DV One-Page Summary

KIC: 8004647 Candidate: 8 of 8 Period: 575.913 d



TPS TCE Results:

Period = 575.91308 d
Epoch = 209.0529 BKJD

DV fit results are unavailable

DV Diagnostic Results:

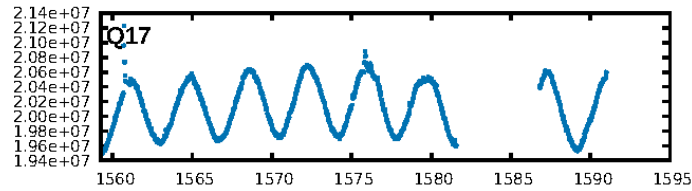
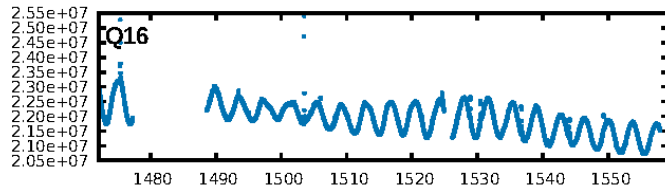
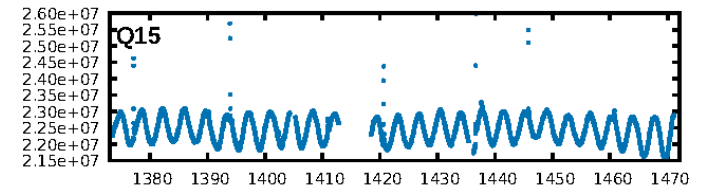
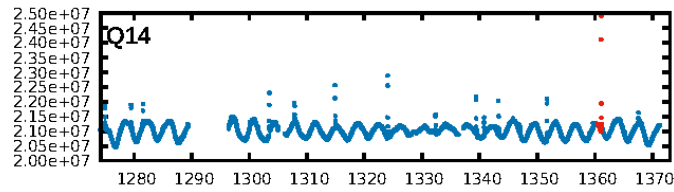
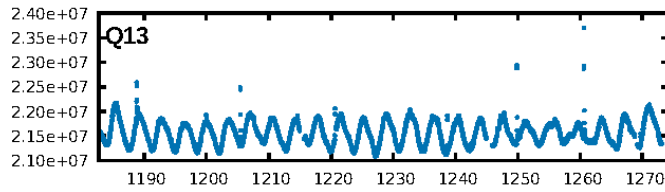
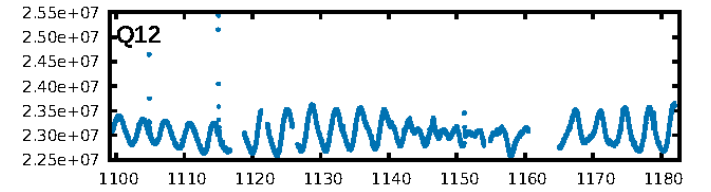
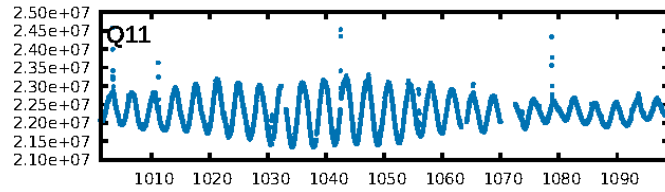
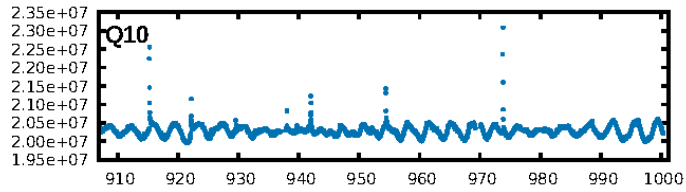
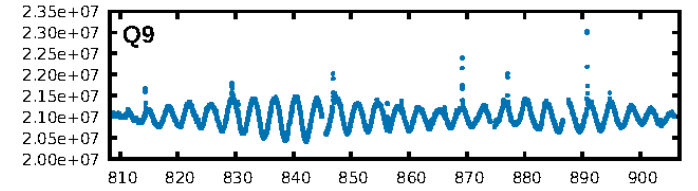
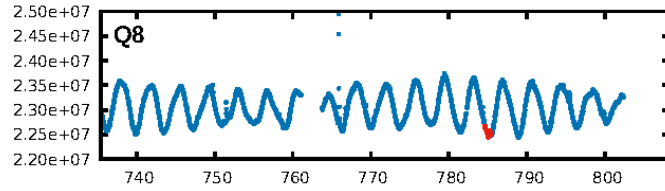
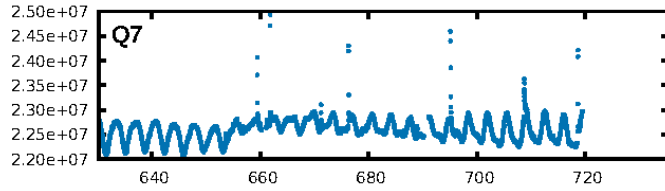
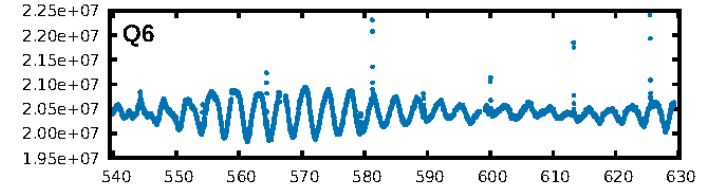
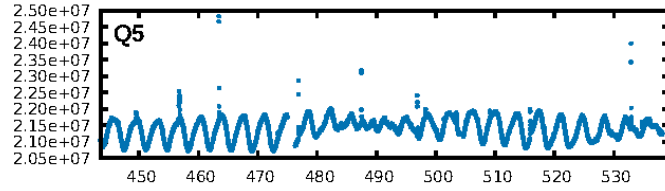
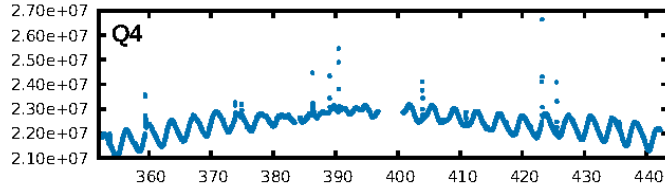
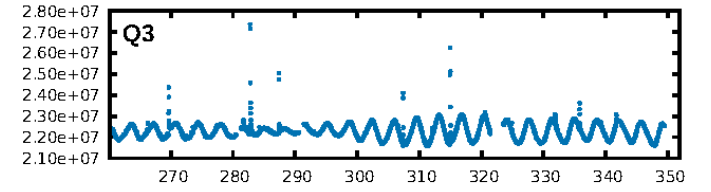
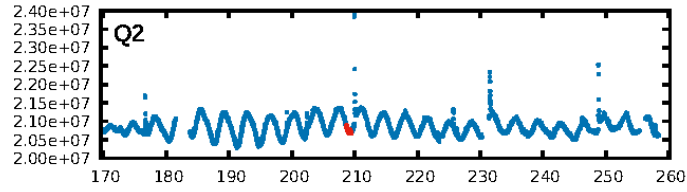
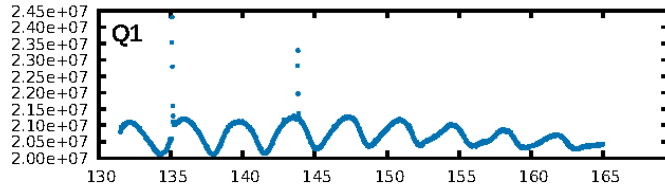
ShortPeriod-sig: 100.0% [38.07σ]
LongPeriod-sig: 100.0% [27.76σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -4.339

Centroid-sig: 60.7%
Centroid-so: 1.597 arcsec [5.03σ]
OotOffset-rm: 0.218 arcsec [1.34σ]
KicOffset-rm: 0.369 arcsec [2.13σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-st: 2/0/1/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

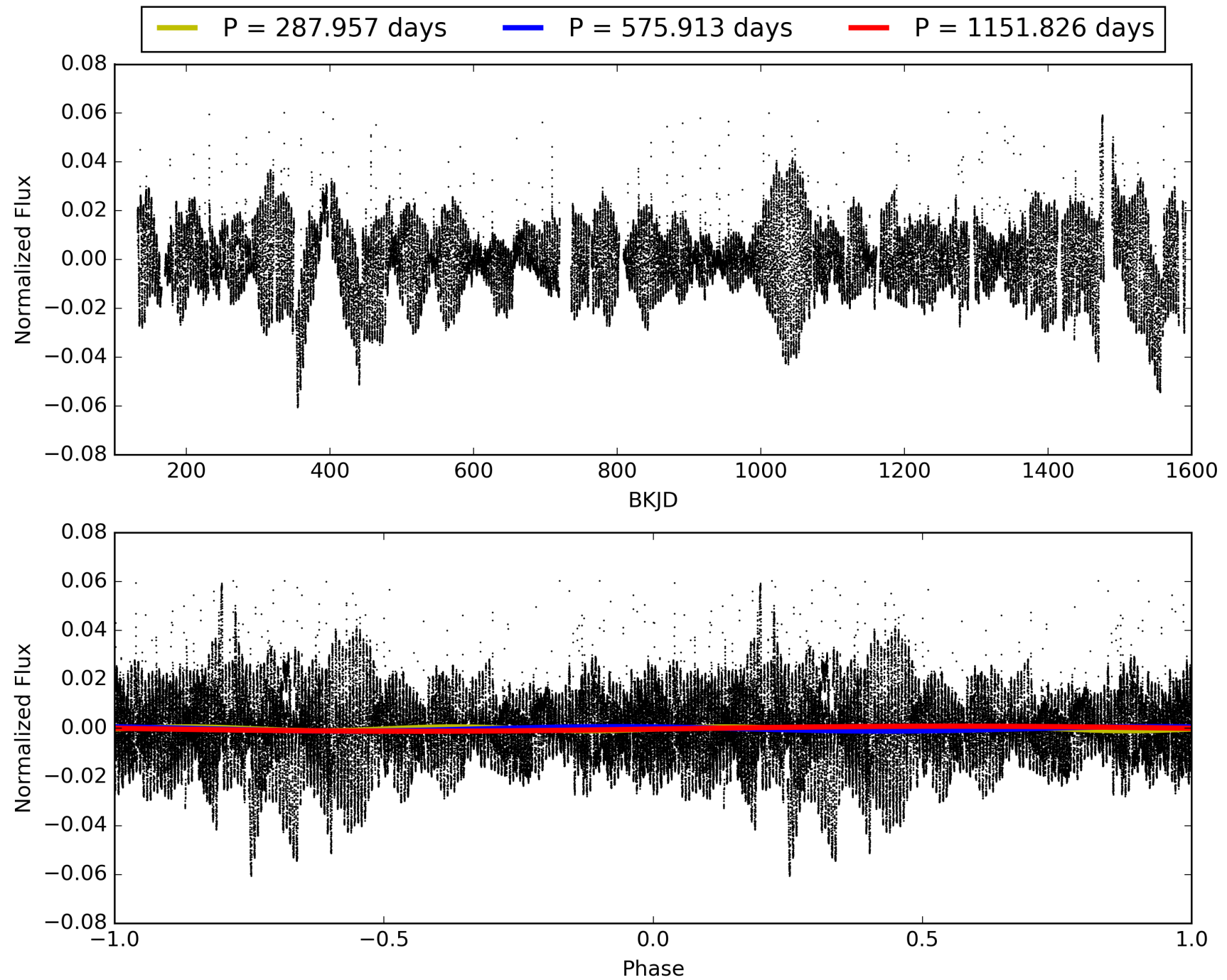
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 15:06:53 Z

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

TCE 008004647-08, PDC Light Curves

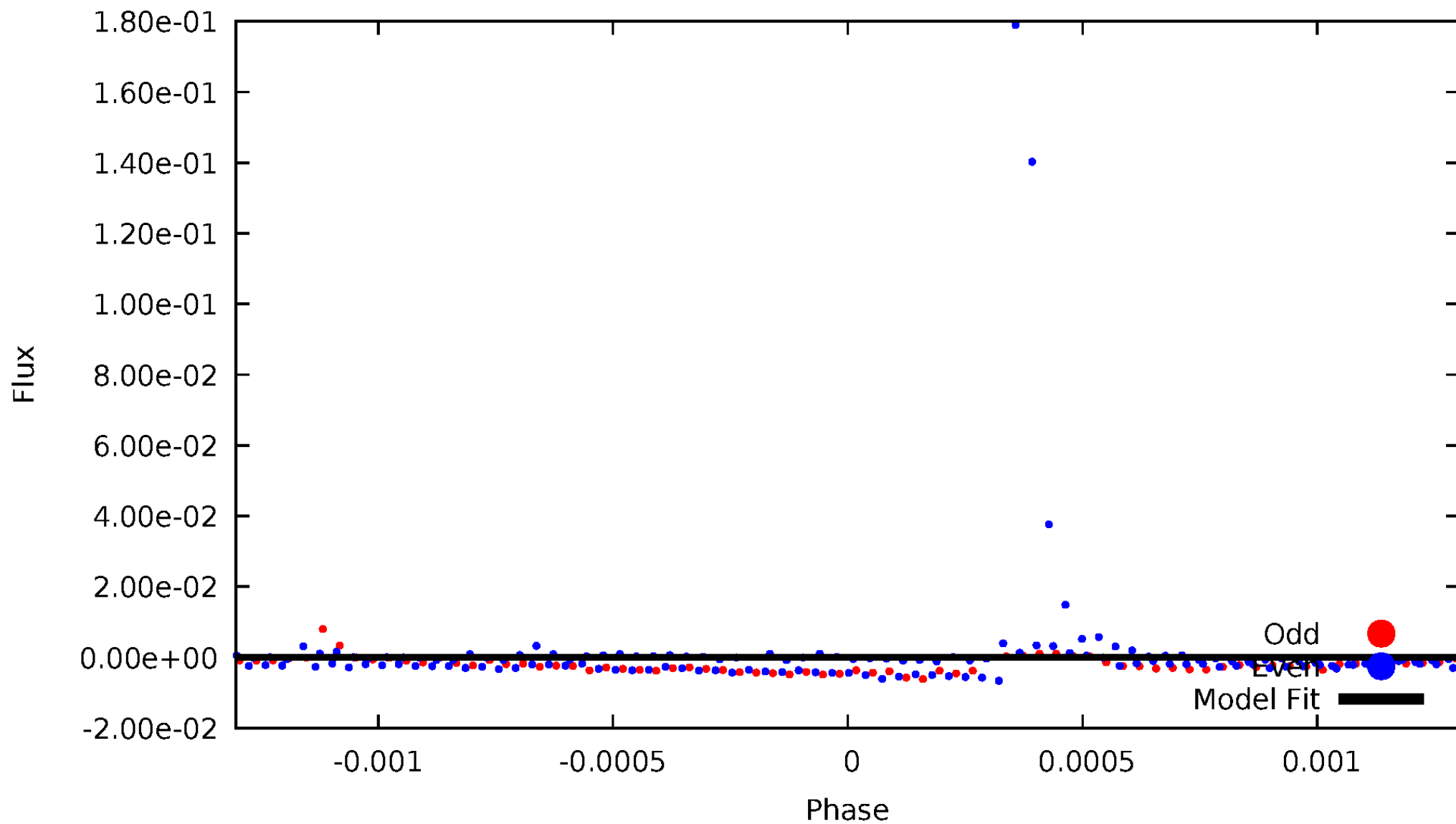


TCE 008004647-08



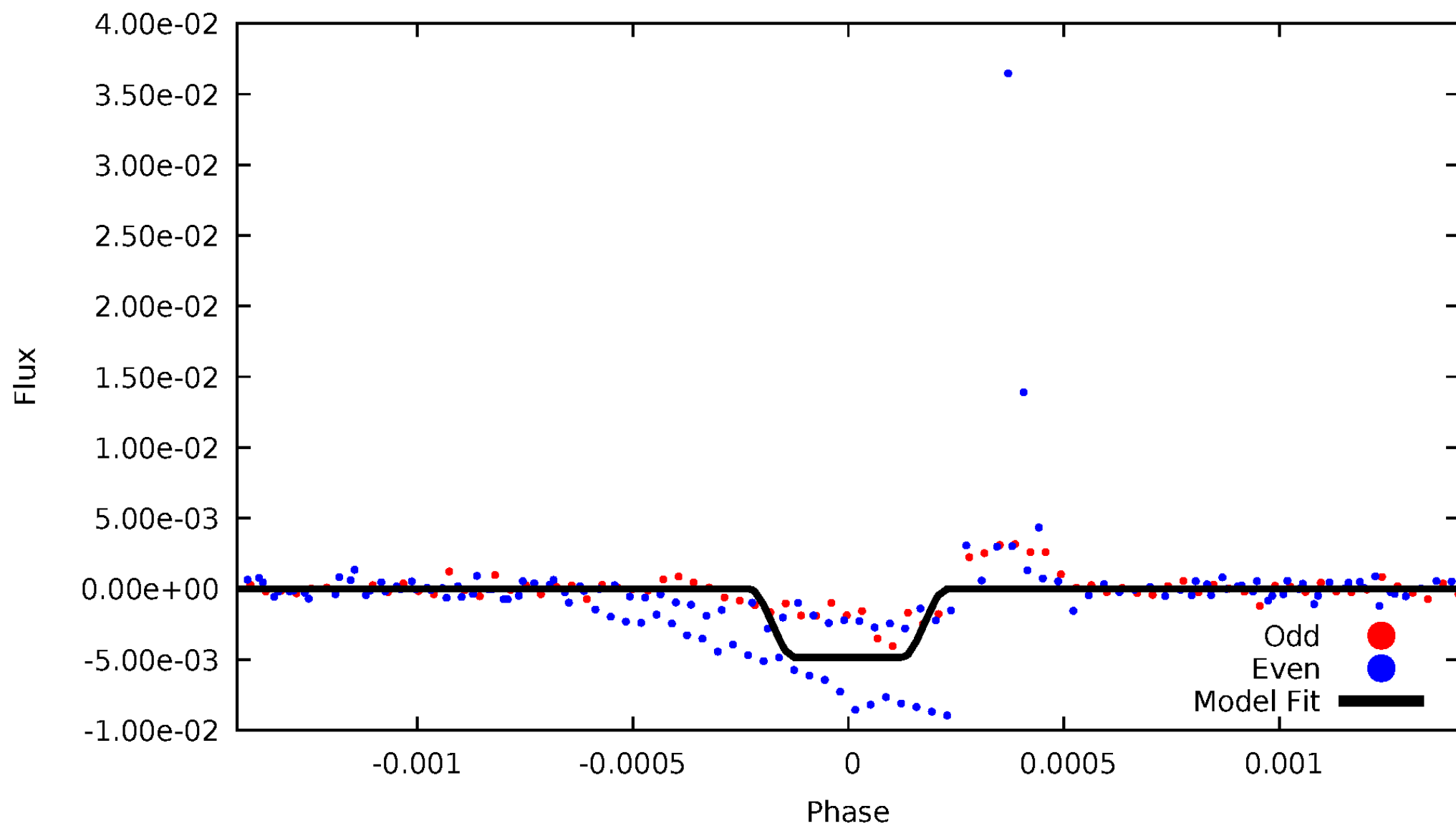
DV Odd/Even

TCE 008004647-08



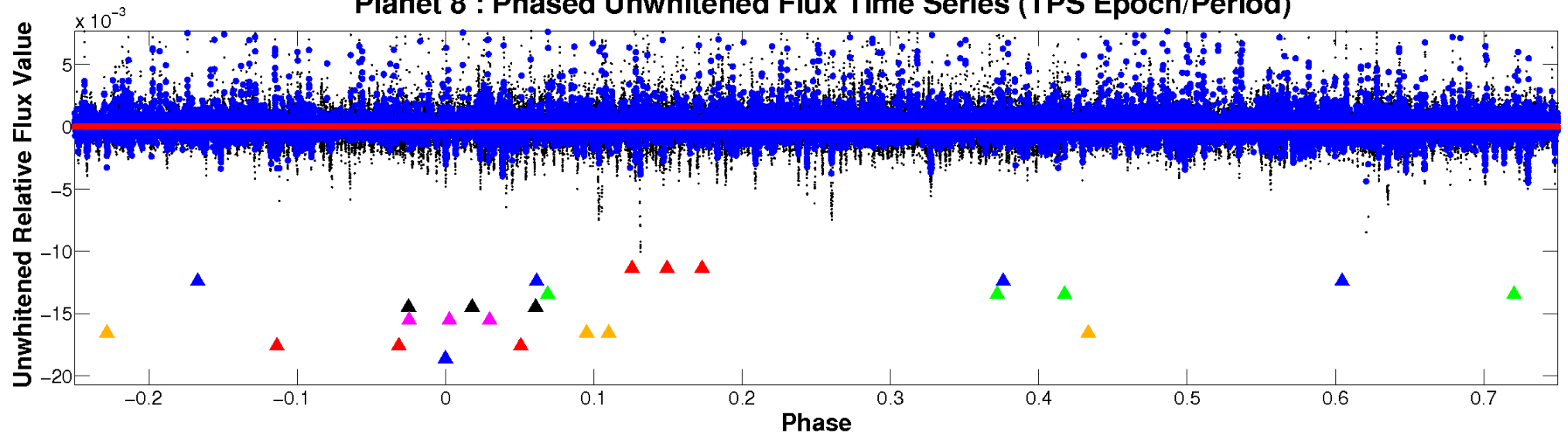
ALT Odd/Even

TCE 008004647-08

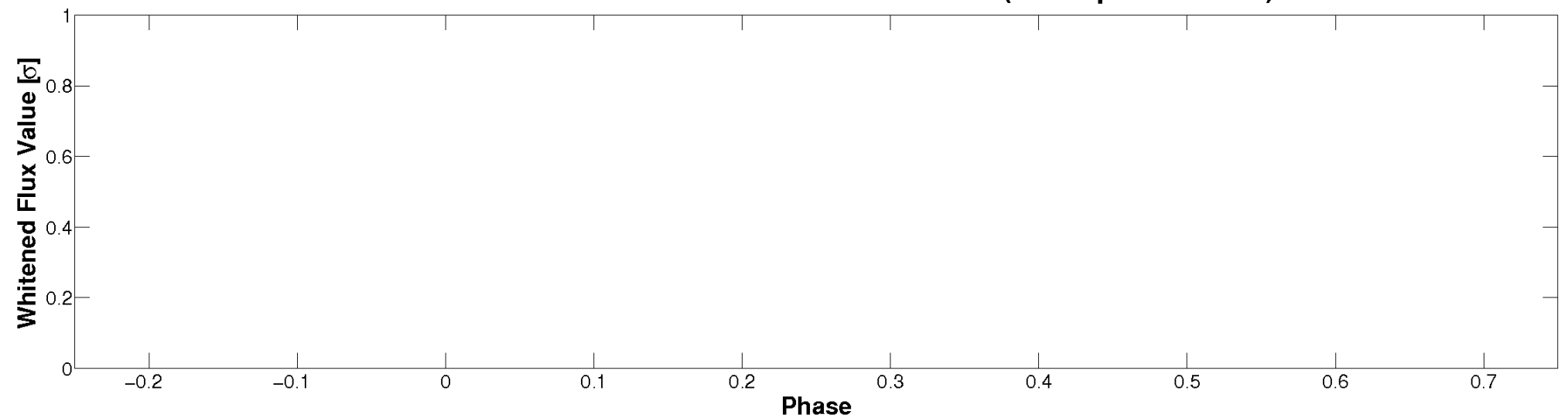


Non-Whitened Vs. Whitened Light Curve

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

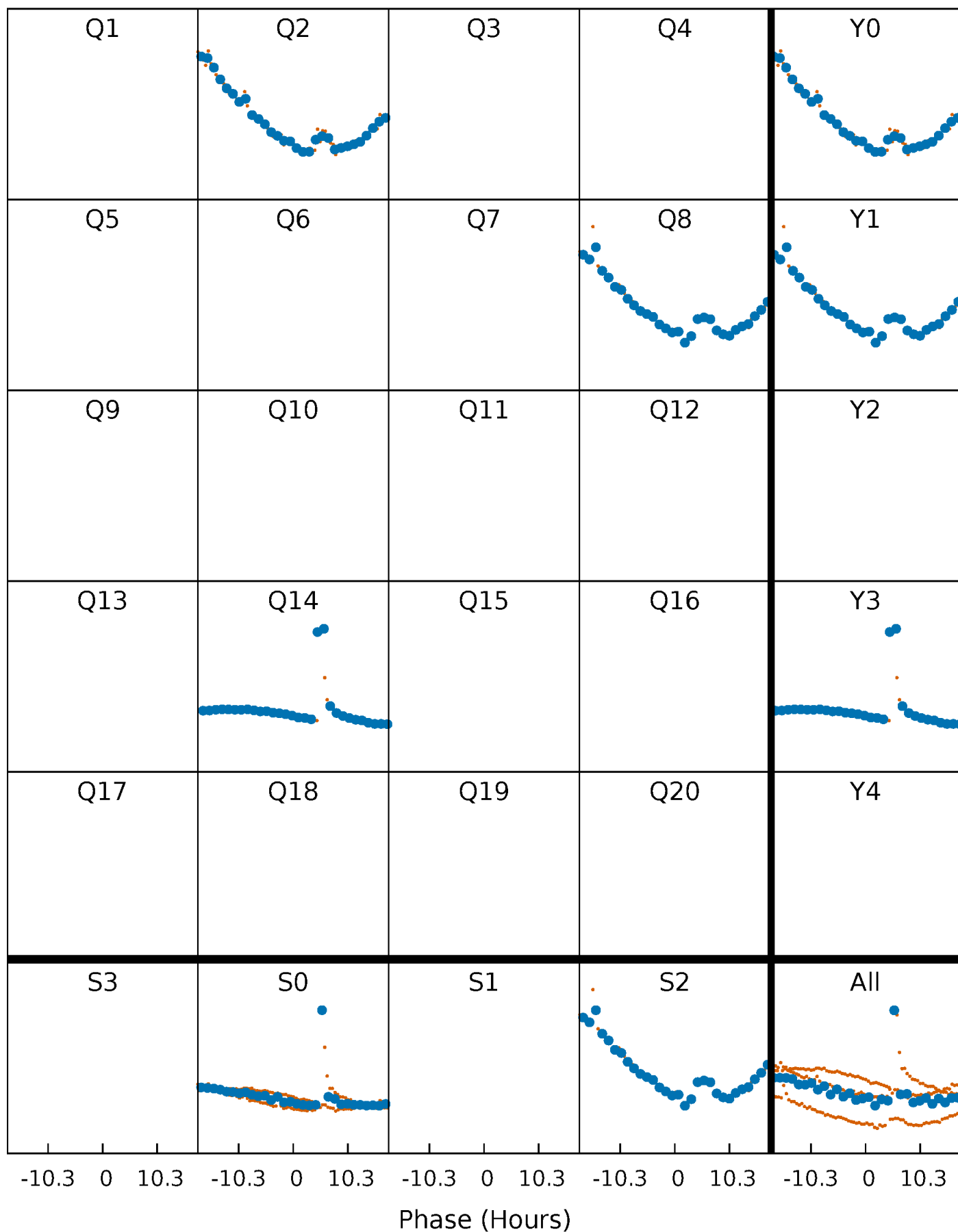


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



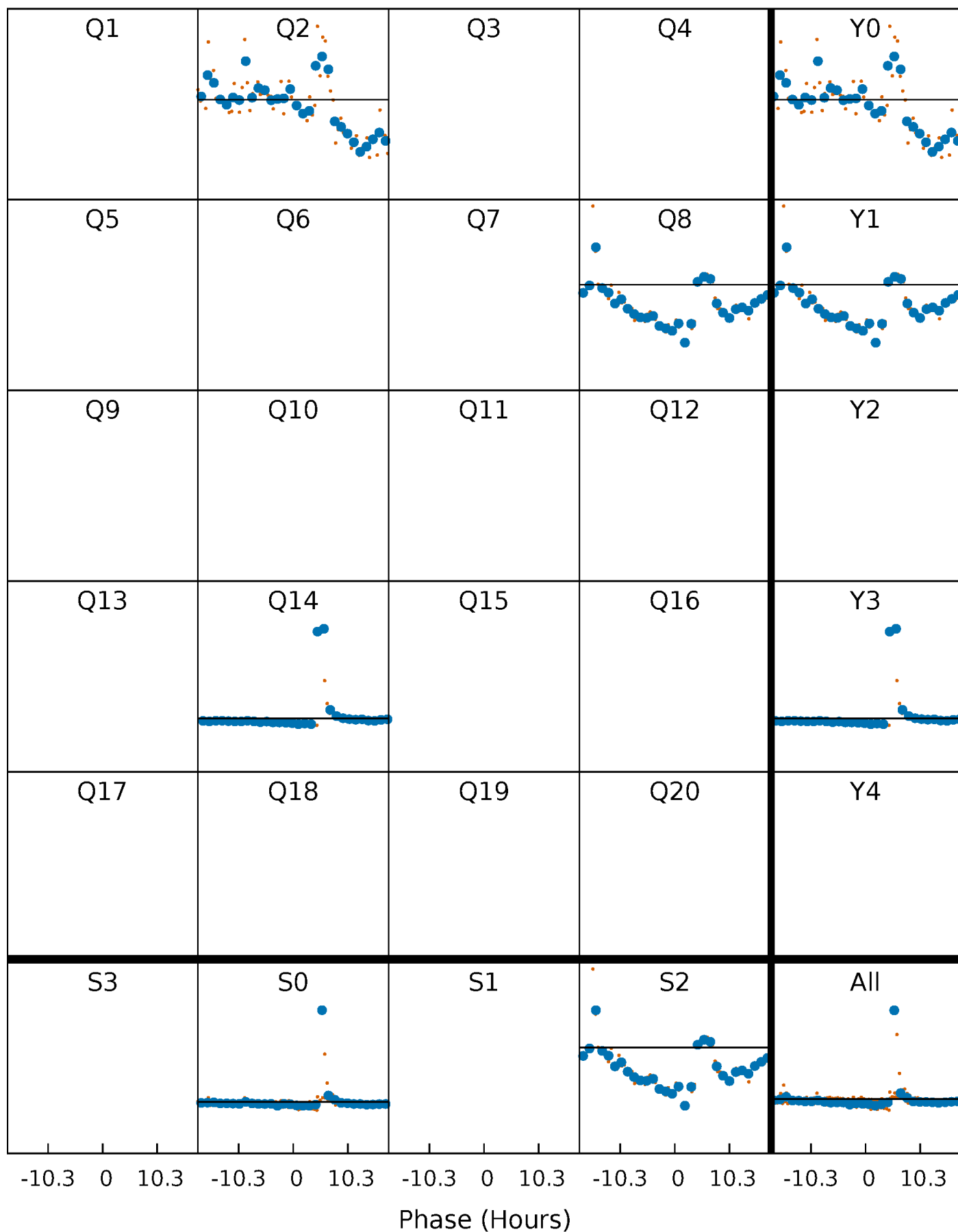
PDC Quarter-Phased Transit Curves

TCE 008004647-08 P=575.913077 Days $T_0=209.052948$ (BKJD)



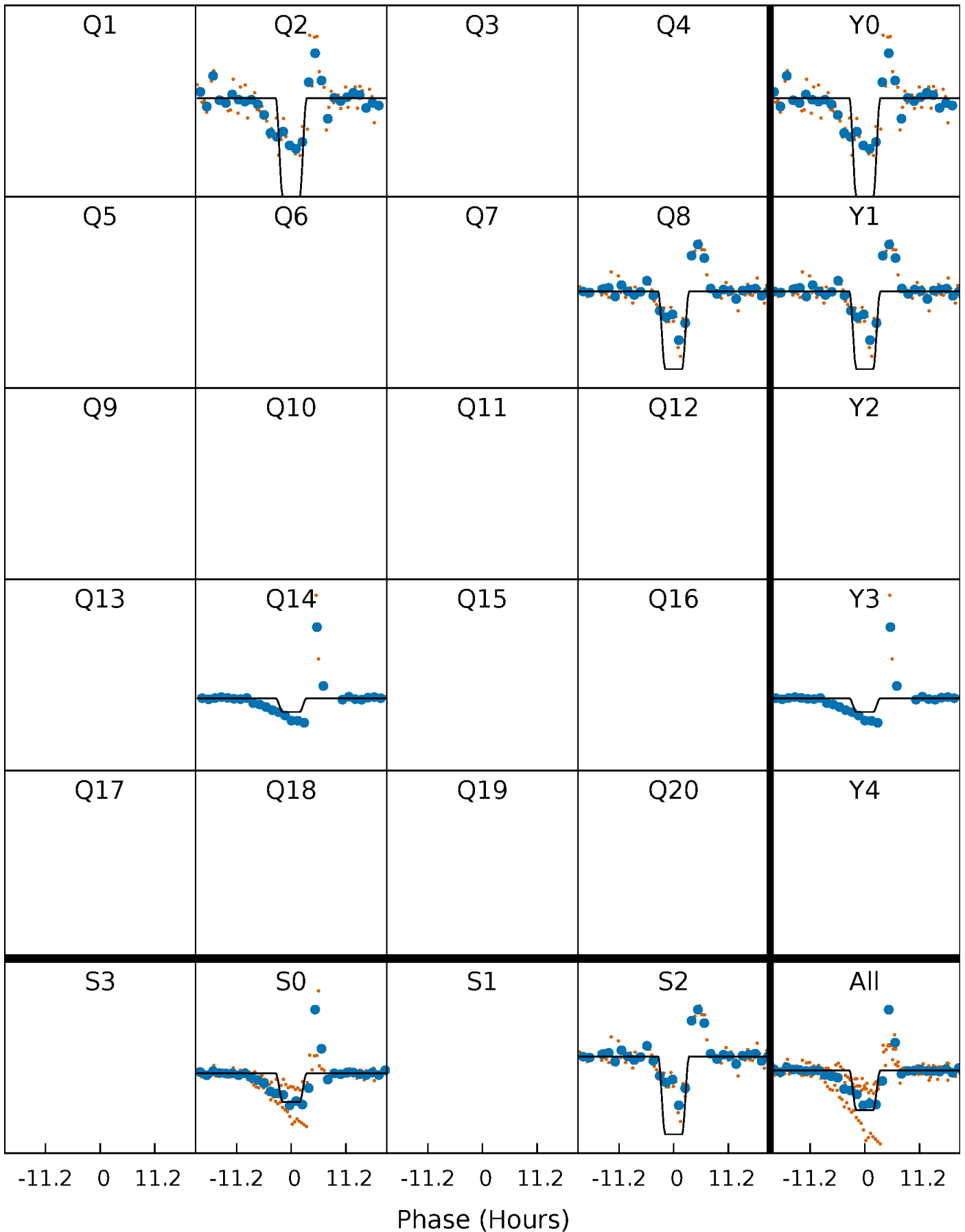
DV Quarter-Phased Transit Curves

TCE 008004647-08 $P=575.913077$ Days $T_0=209.052948$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

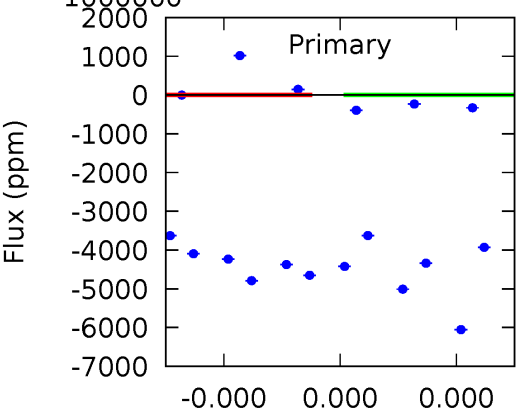
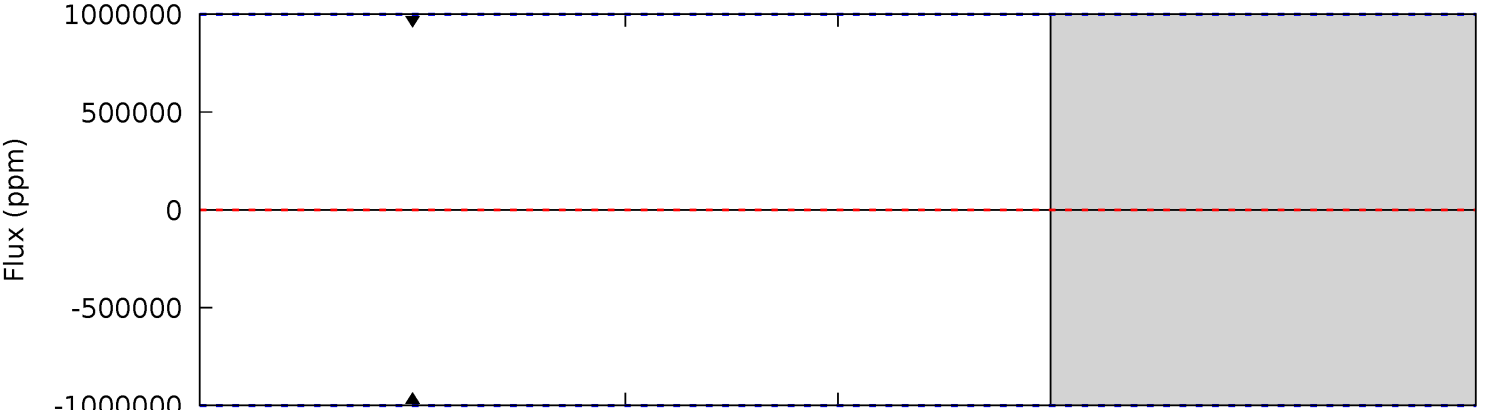
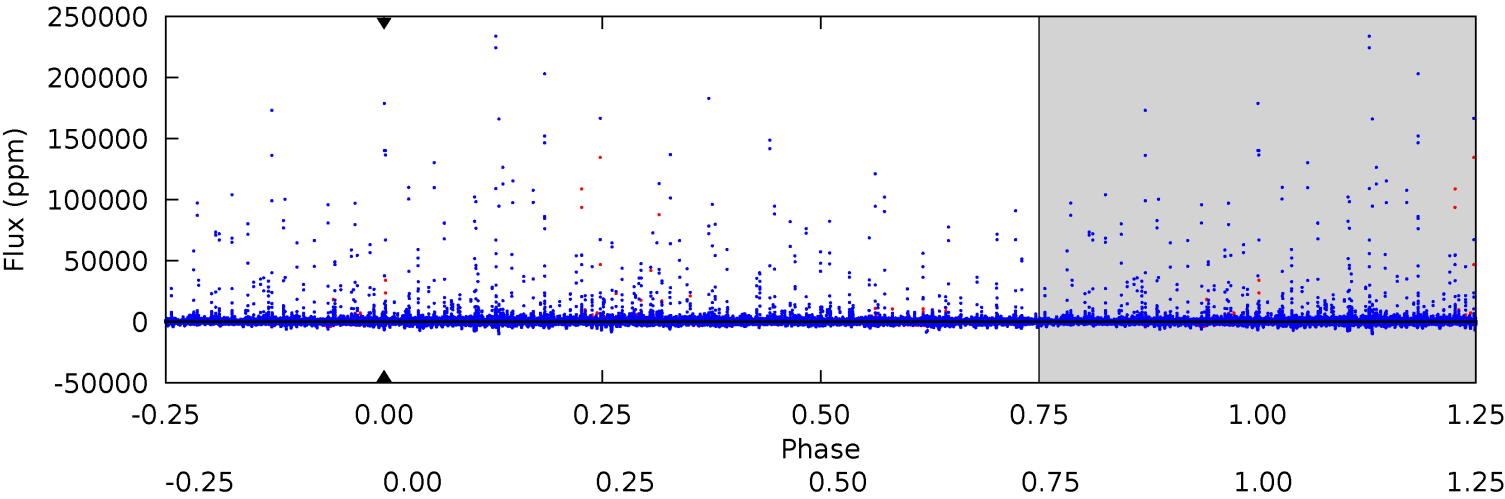
TCE 008004647-08 P=575.913077 Days $T_0=209.085765$ (BKJD)



DV Model-Shift Uniqueness Test

008004647-08, P = 575.913077 Days, E = 209.052948 Days

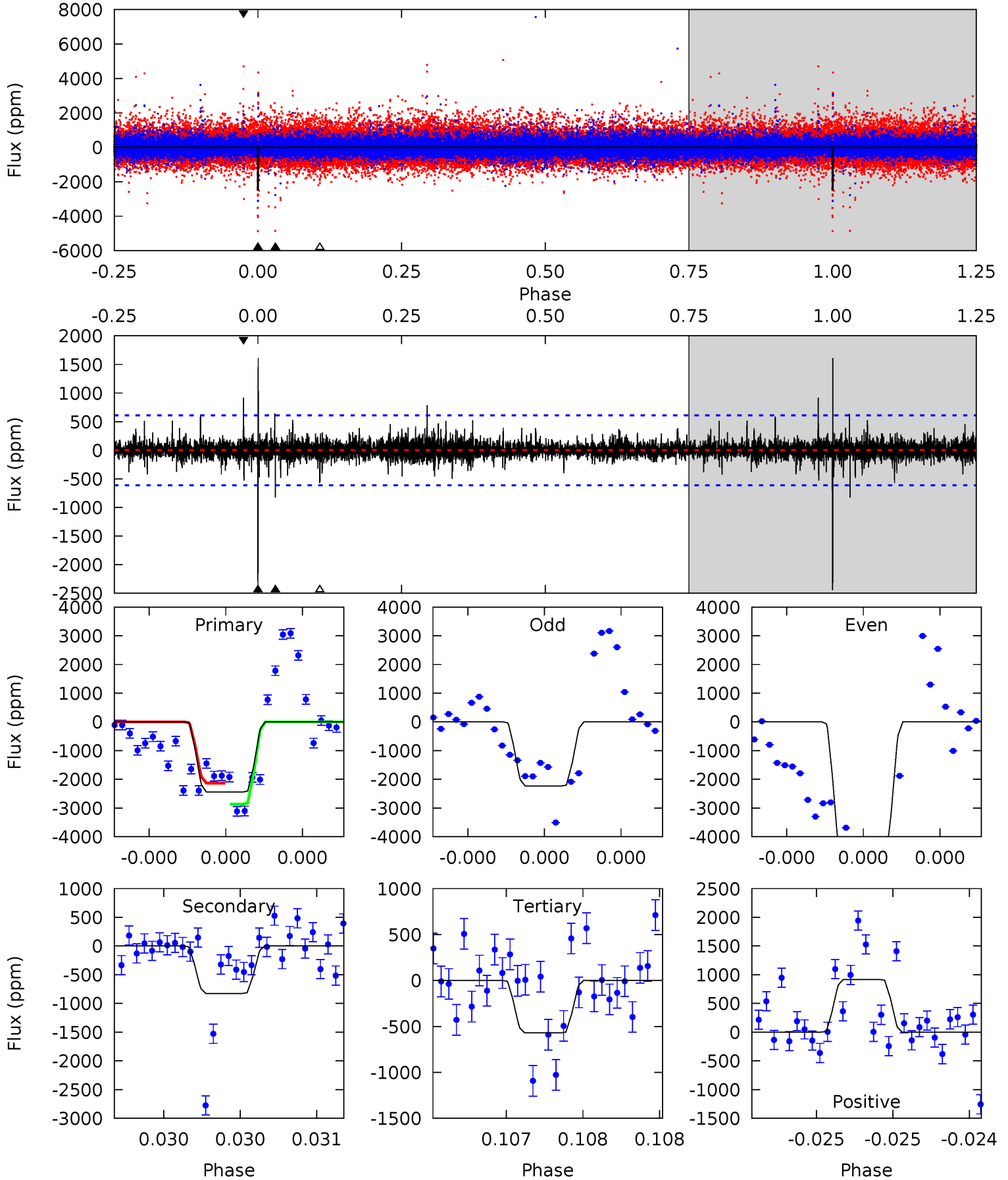
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008004647-08, P = 575.913077 Days, E = 209.085765 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.4	7.54	5.22	8.39	5.59	3.50	0.88	17.1	14.0	2.33	-0.85	12.7	1.75	0.40	3.35



Stellar Parameters For KIC 008004647

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4985^{+163}_{-148}	$4.704^{+0.049}_{-0.024}$	$-1.500^{+0.300}_{-0.300}$	$0.552^{+0.026}_{-0.029}$	$0.562^{+0.040}_{-0.017}$	$4.695^{+0.840}_{-0.452}$
	+3%/-3%	+1%/-1%	+20%/-20%	+5%/-5%	+7%/-3%	+18%/-10%
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 008004647-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$4.86^{+4.61}_{-3.40}$	215^{+8}_{-7}	4277^{+11002}_{-17227}	$87222^{+7037936}_{-4558005}$
Alt.	-825 ± 109	$6.27^{+5.32}_{-3.94}$	215^{+7}_{-7}	3178^{+1246}_{-503}	14207^{+95335}_{-9854}

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 $A_{obs} \gg 1.0$

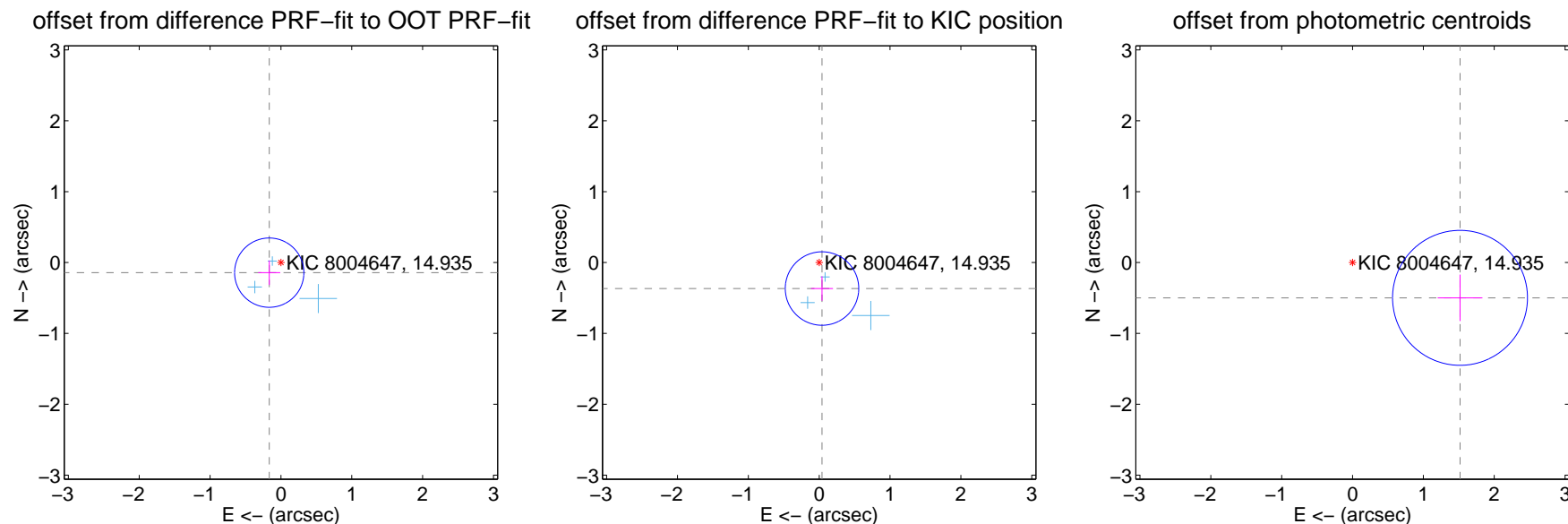
DV Centroid Data

Supplemental centroid analysis for 008004647-08. Kepler magnitude: 14.94. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

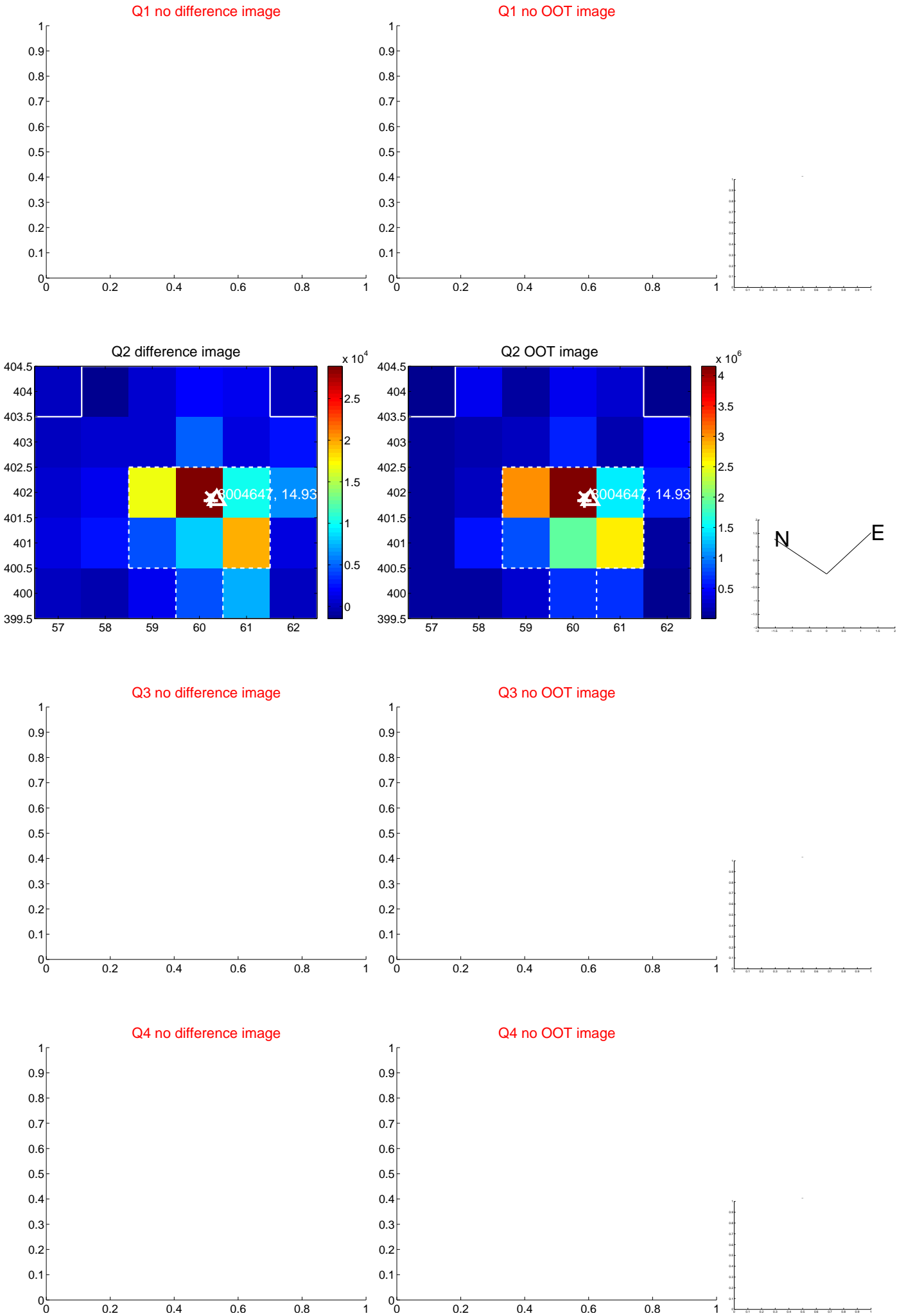
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.218 ± 0.163	1.34	0.165 ± 0.156	-0.143 ± 0.172
PRF-fit source offset from KIC position	0.369 ± 0.173	2.13	-0.040 ± 0.155	-0.367 ± 0.173
photometric centroid source offset	1.60 ± 0.32	5.03	-1.52 ± 0.32	-0.50 ± 0.33

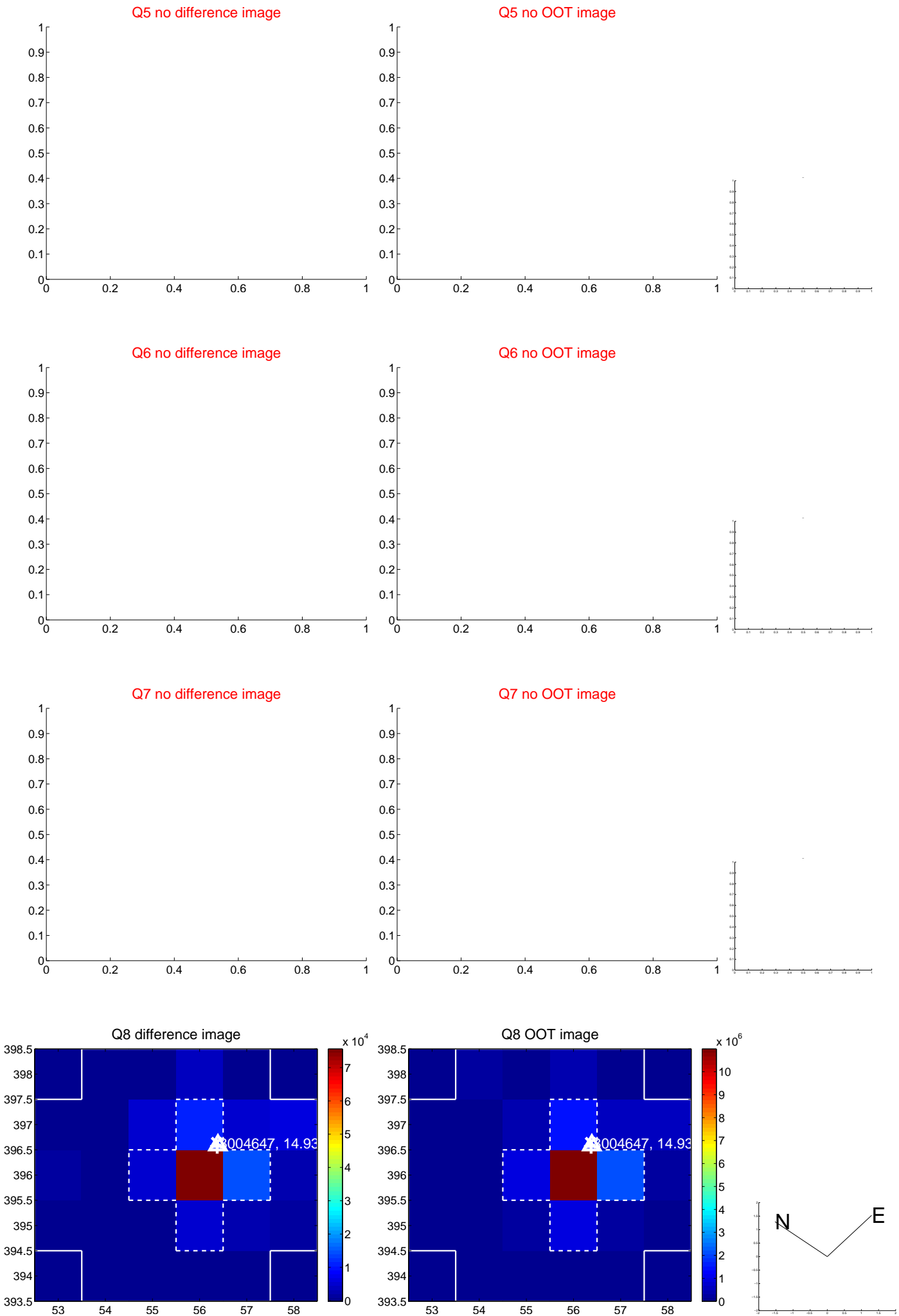


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



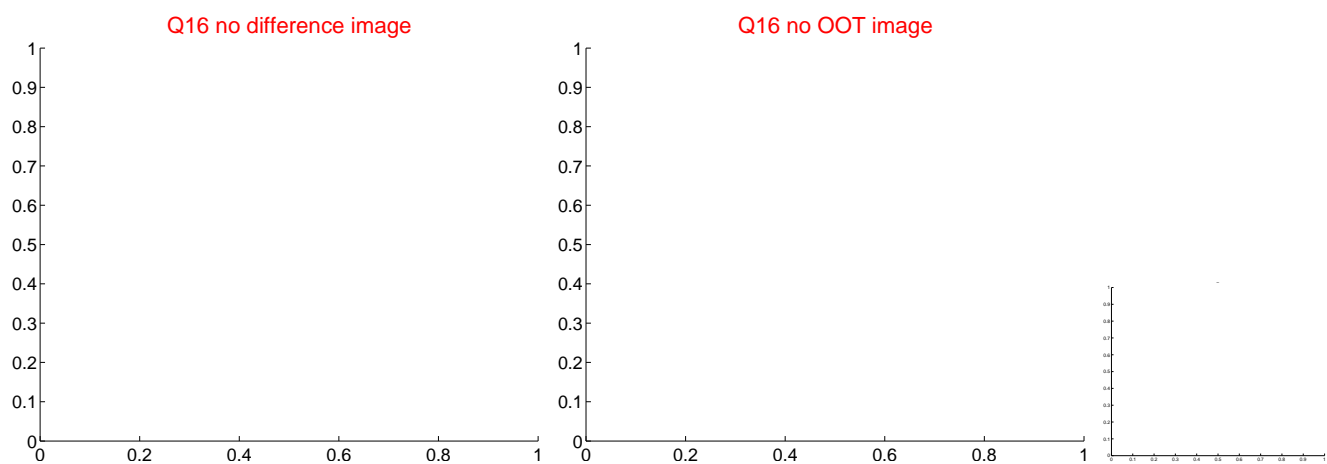
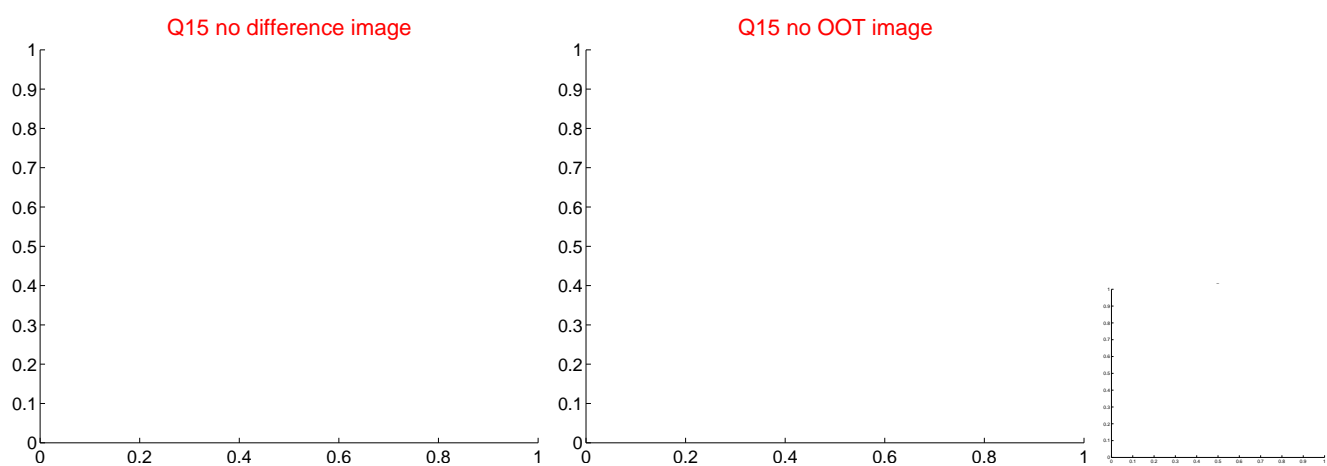
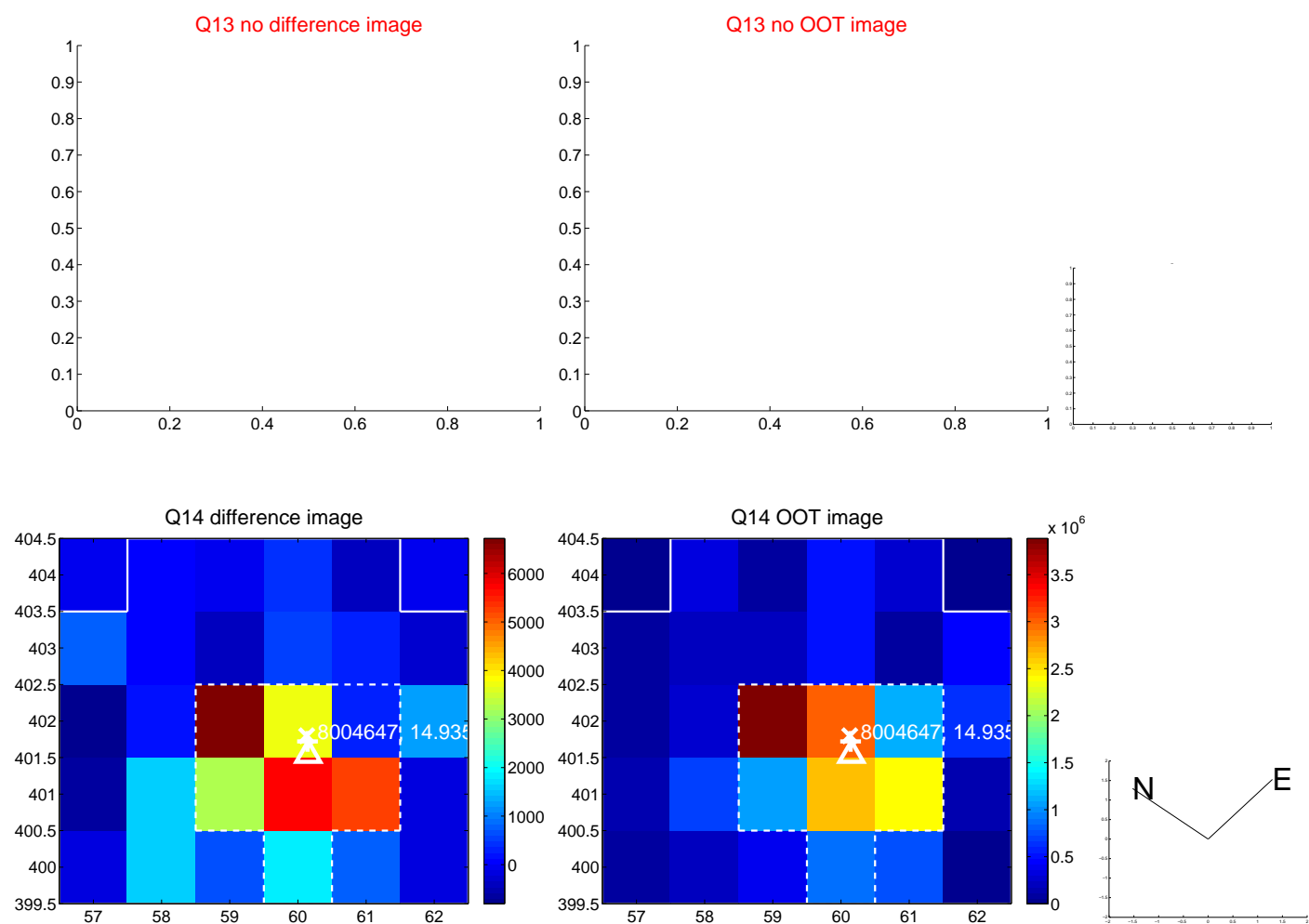
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



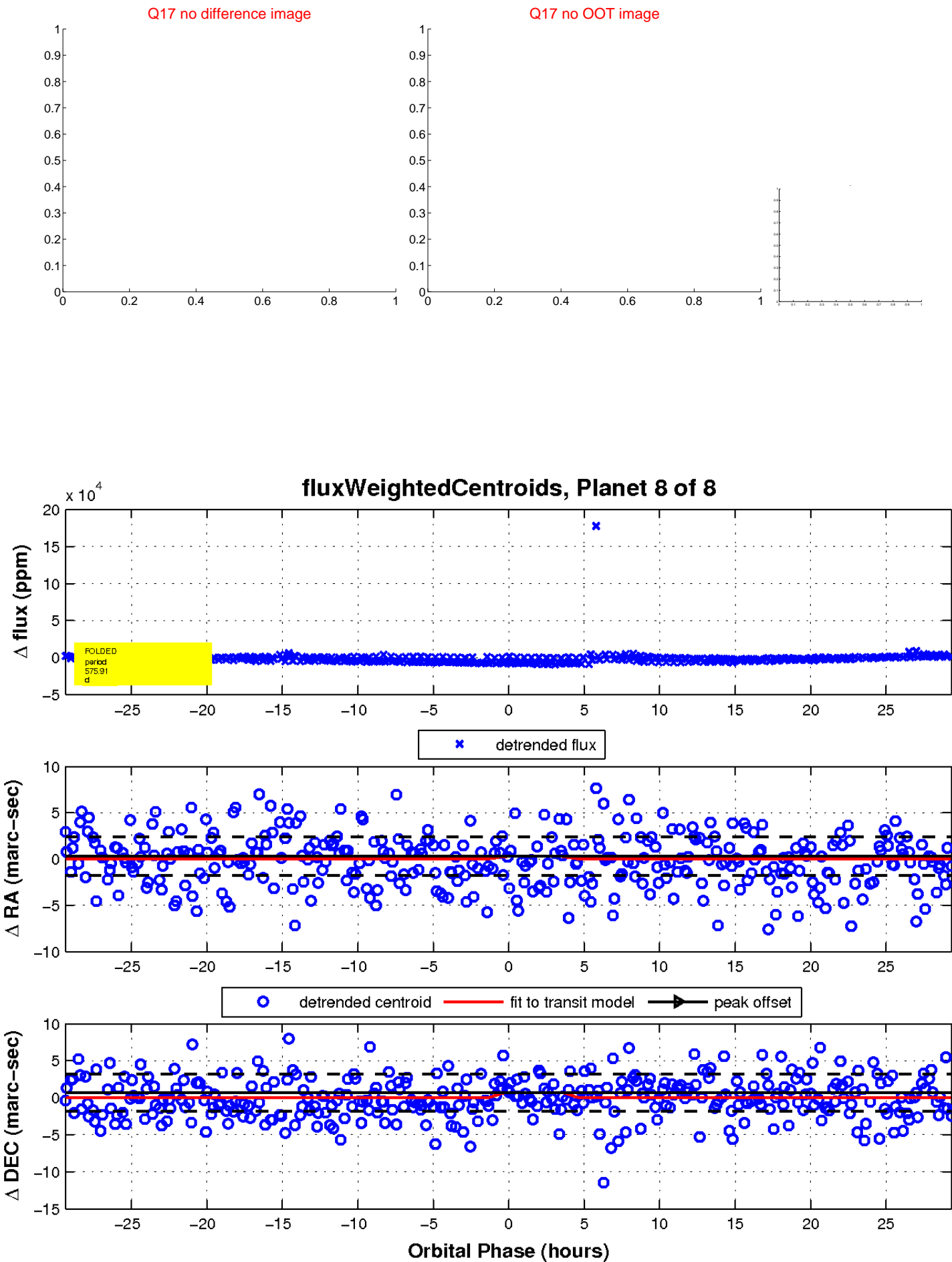
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

