

KIC 008817885

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})
008817885-01	OBS	No	625.163148	264.404089	1551.0	7.833	15.9	9.4	2.17	4986	8.30	1.38
008817885-02	OBS	No	343.686068	268.993334	787.6	4.333	13.5	6.6	2.17	4986	6.92	3.07
008817885-03	OBS	No	564.579919	316.517932	1394.2	15.856	13.9	6.9	2.17	4986	16.18	1.59
008817885-04	OBS	No	494.284462	247.611240	936.2	12.590	17.9	5.4	2.17	4986	6.81	1.89
008817885-05	OBS	No	514.219474	172.999465	940.0	4.757	12.9	6.1	2.17	4986	7.10	1.80
008817885-06	OBS	No	485.458145	224.525614	915.1	7.604	11.3	7.0	2.17	4986	6.36	1.94
008817885-07	OBS	No	462.642961	485.426100	495.2	2.210	11.2	3.5	2.17	4986	5.00	2.07
008817885-08	OBS	No	357.907412	274.654893	660.5	3.500	12.1	-1.0	2.17	4986	5.41	2.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008817885-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-02	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
008817885-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008817885-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-06	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—CENT_FEW_DIFFS
008817885-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

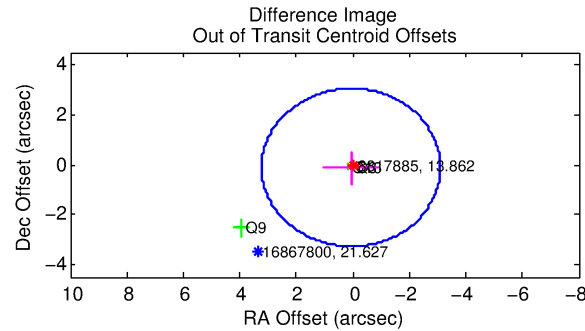
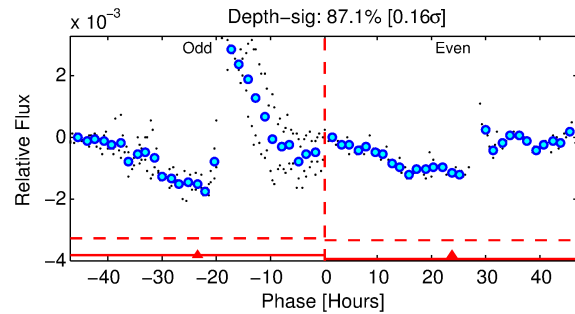
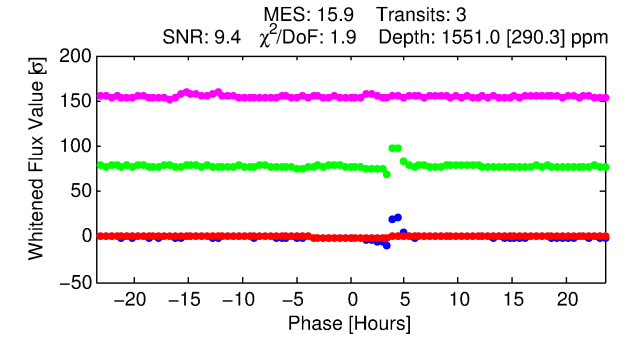
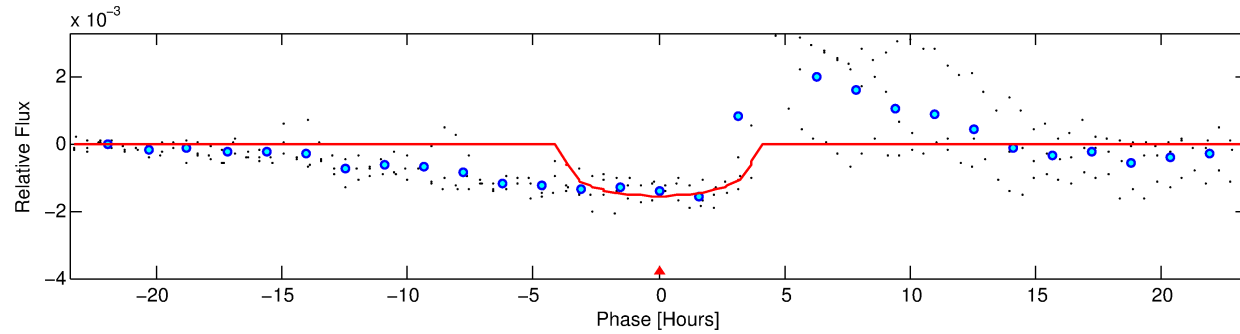
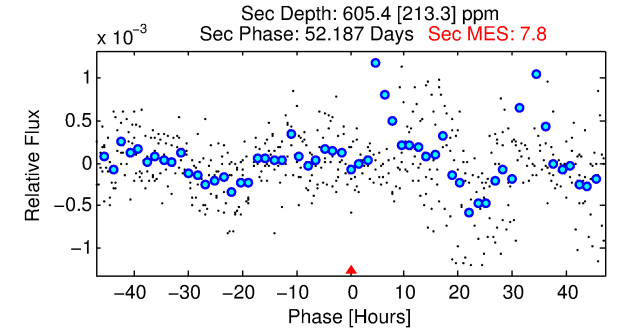
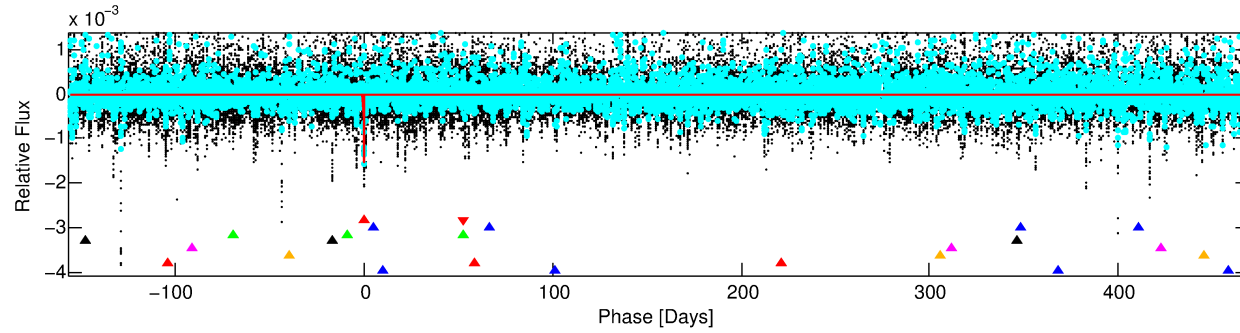
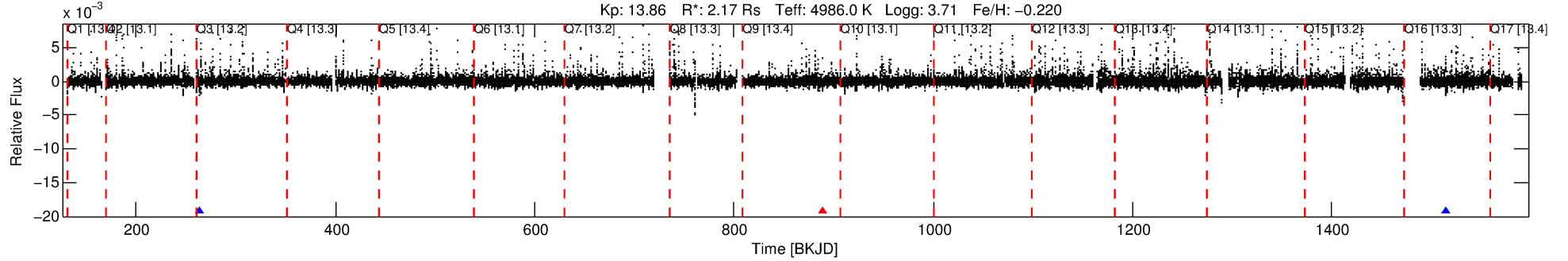
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008817885-01

No Significant Match Found

DV One-Page Summary

KIC: 8817885 Candidate: 1 of 8 Period: 625.163 d



DV Fit Results:

Period = 625.16315 [0.00614] d
Epoch = 264.4041 [0.0076] BKJD
Rp/R* = 0.0351 [0.0719]
a/R* = 626.33 [4516.35]
b = 0.13 [56.58]
Seff = 1.38 [2.07]
Teq = 277 [103] K
Rp = 8.30 [17.93] Re
a = 1.3711 [1.1554] AU
Ag = 9088.41 [39747.46] [0.23 σ]
Teffp = 4176 [4295] K [0.91 σ]

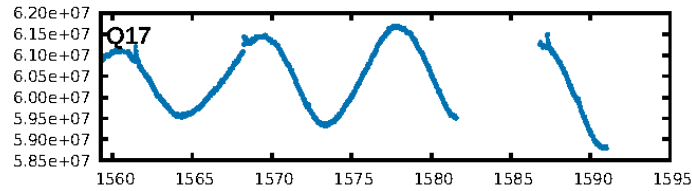
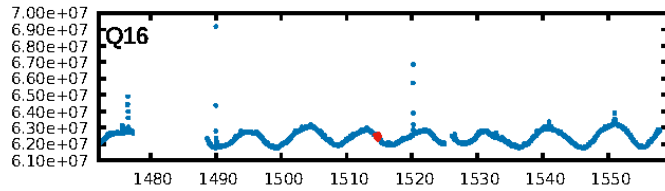
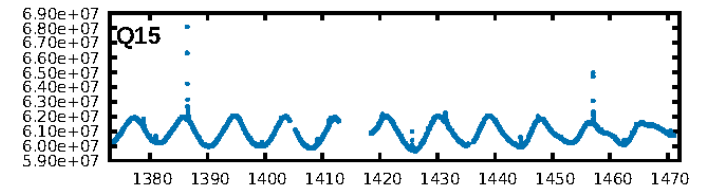
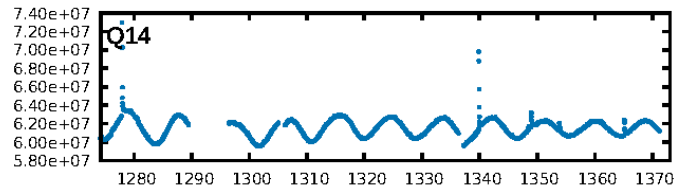
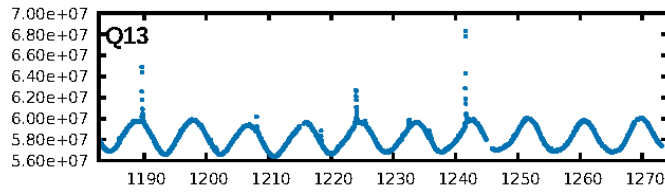
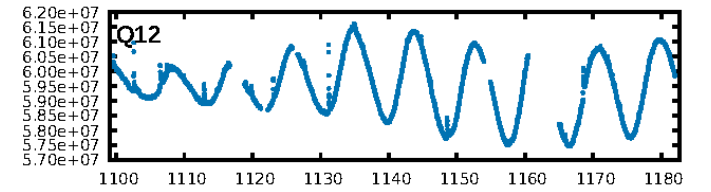
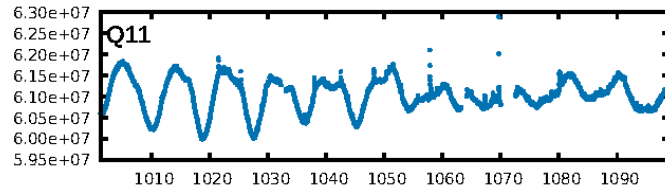
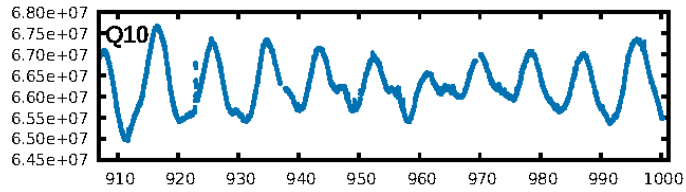
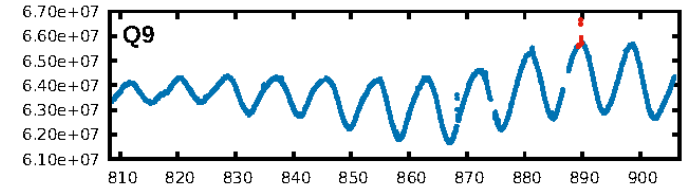
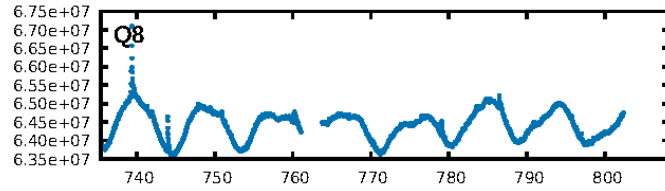
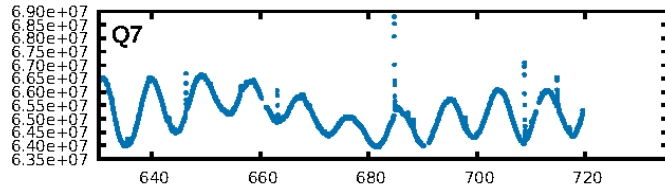
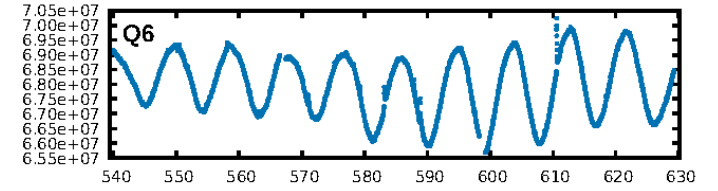
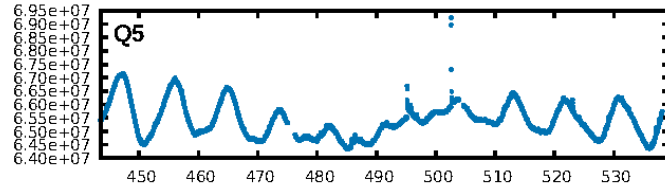
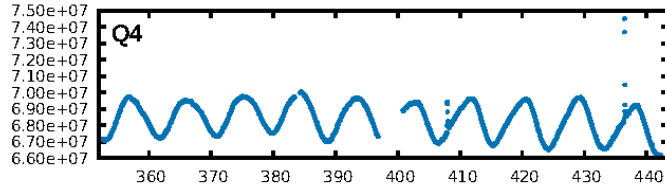
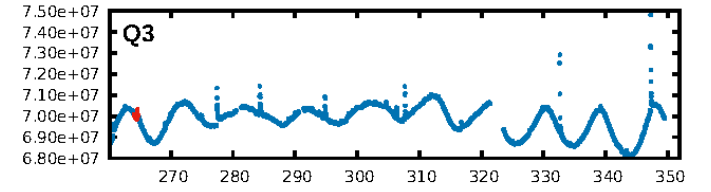
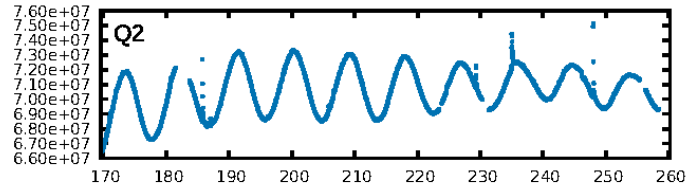
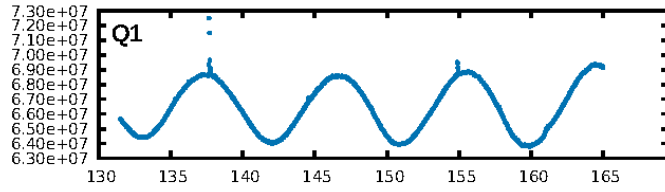
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [82.21 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 19.3%
ModelChiSquareGof-sig: 29.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: 5.358
Centroid-sig: 70.1%
Centroid-so: 0.118 arcsec [0.39 σ]
OotOffset-rm: 0.138 arcsec [0.13 σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-rm: 0.215 arcsec [0.21 σ]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

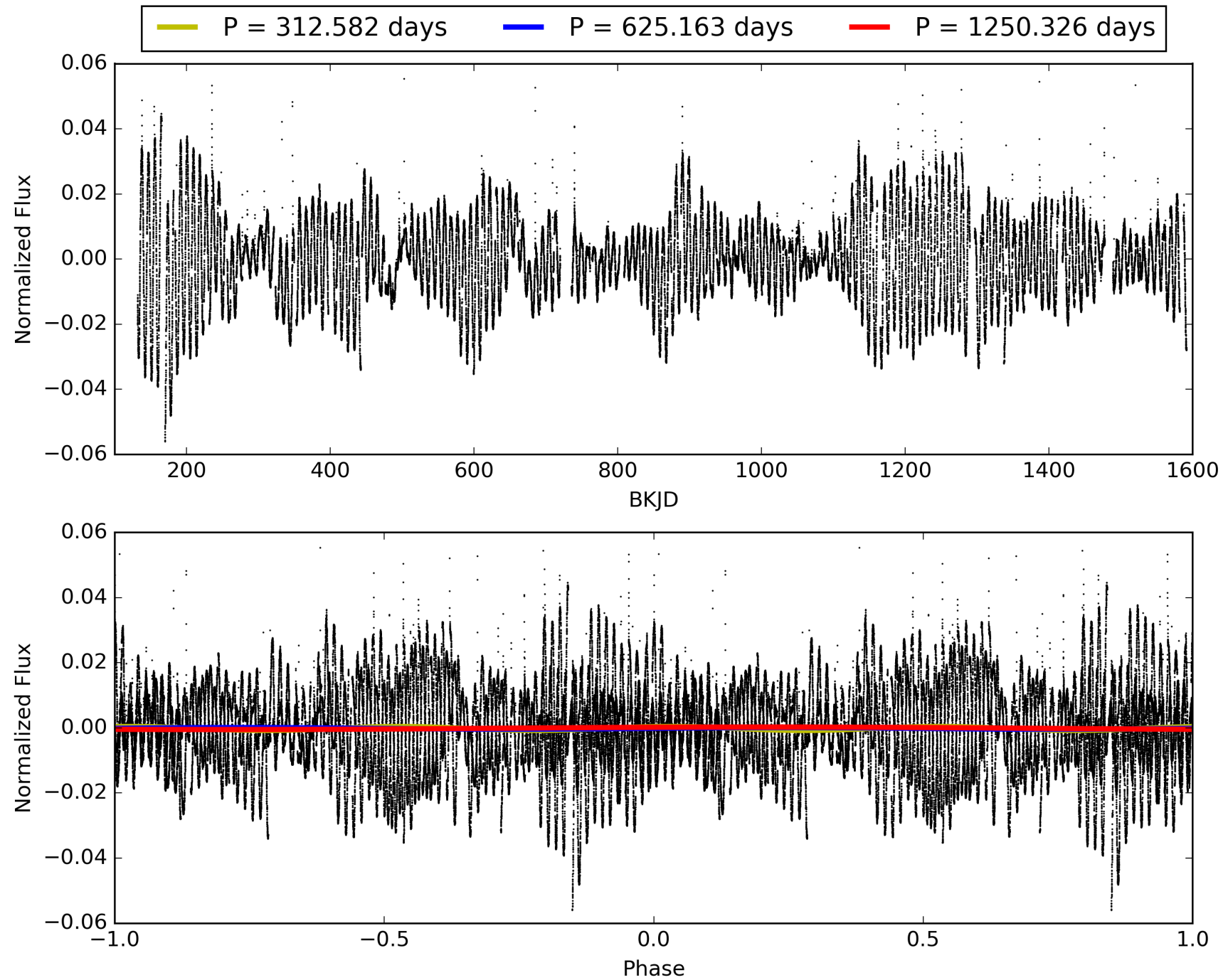
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:09:03 Z

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

TCE 008817885-01, PDC Light Curves

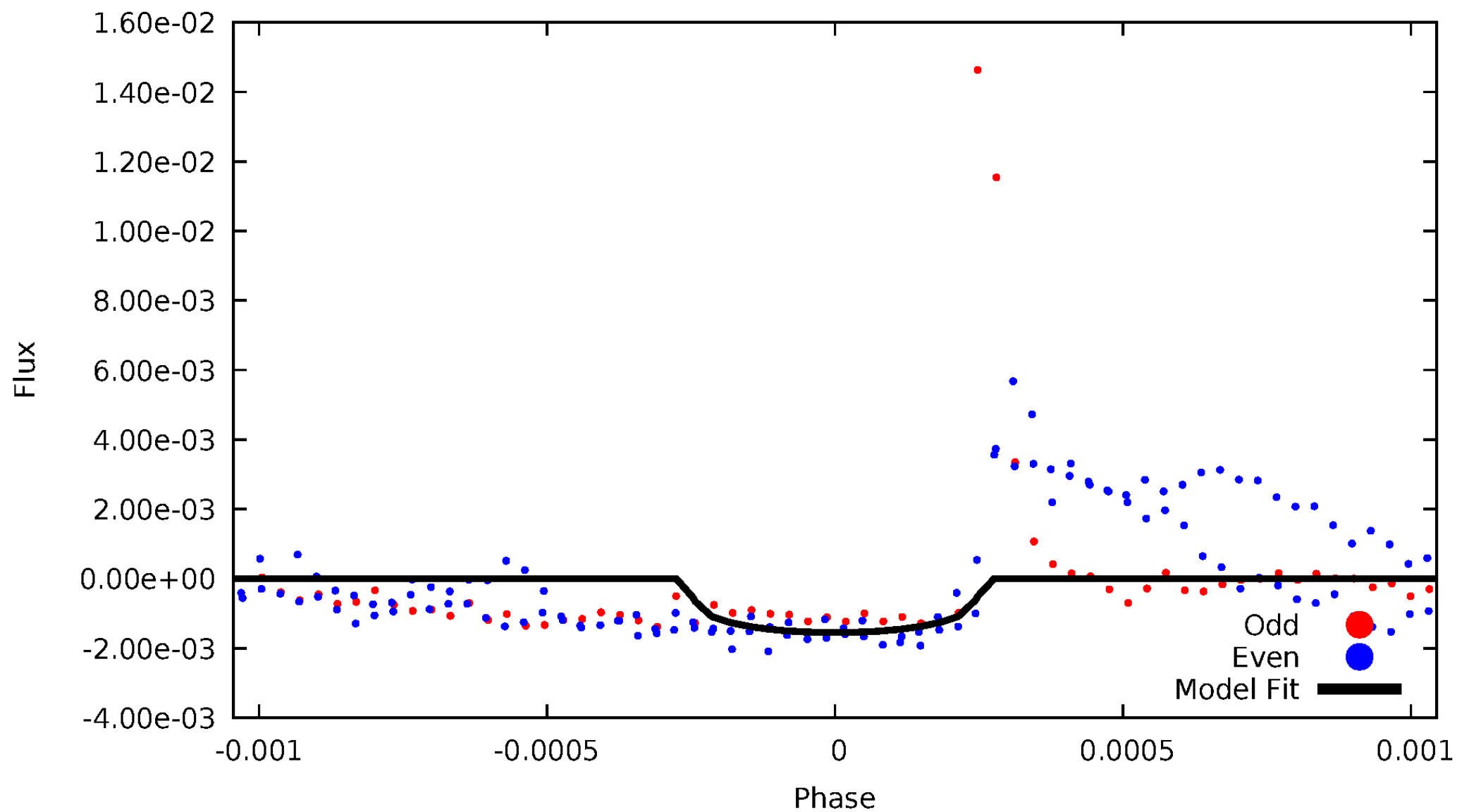


TCE 008817885-01



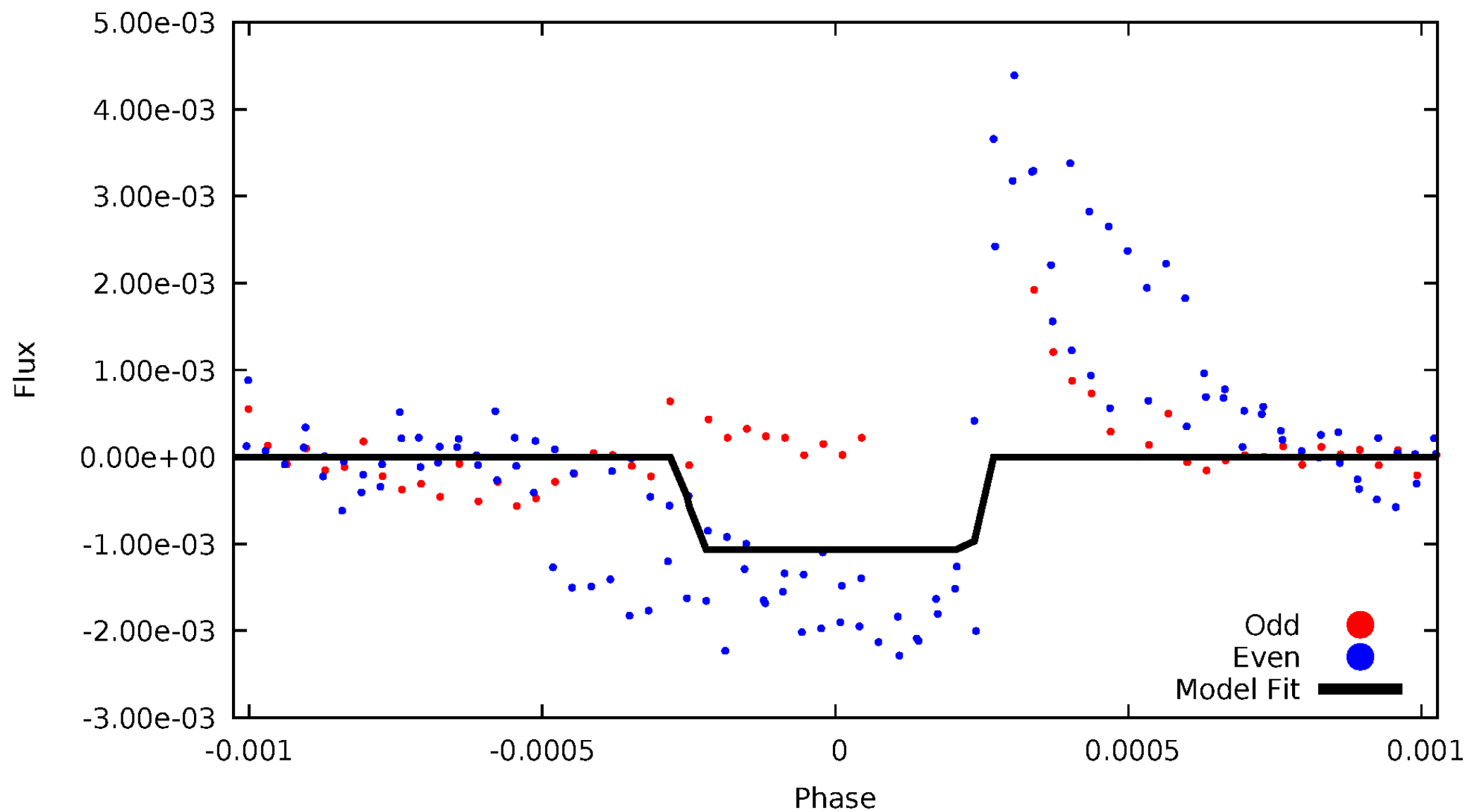
DV Odd/Even

TCE 008817885-01



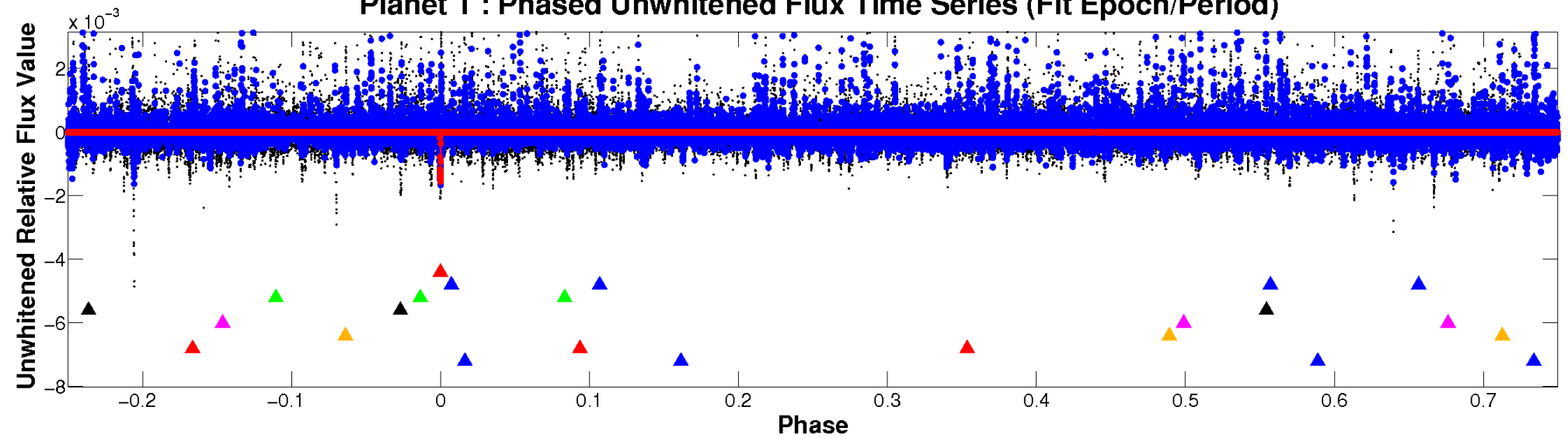
ALT Odd/Even

TCE 008817885-01

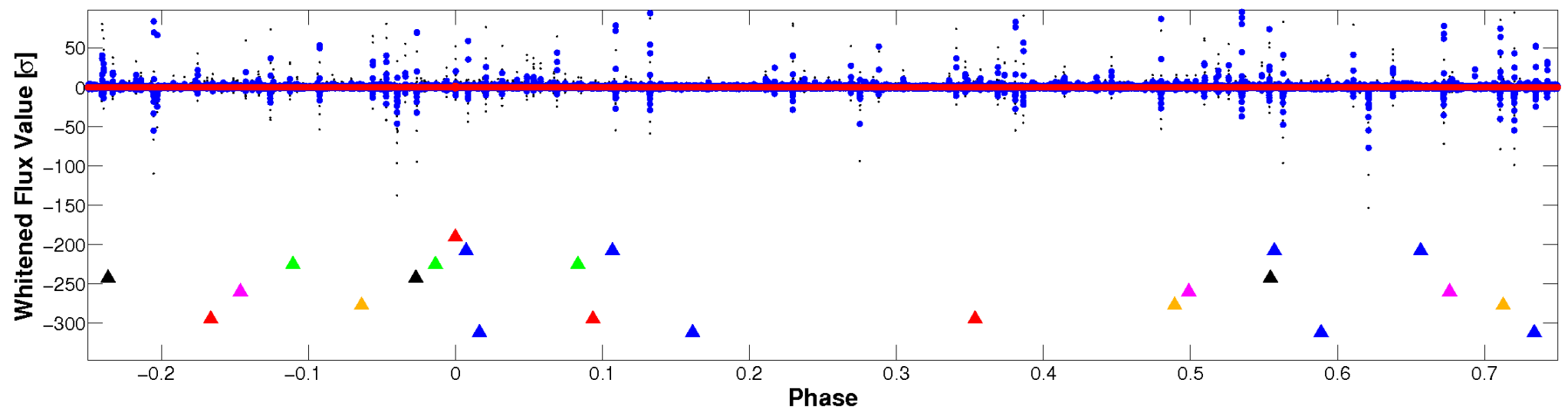


Non-Whitened Vs. Whitened Light Curve

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

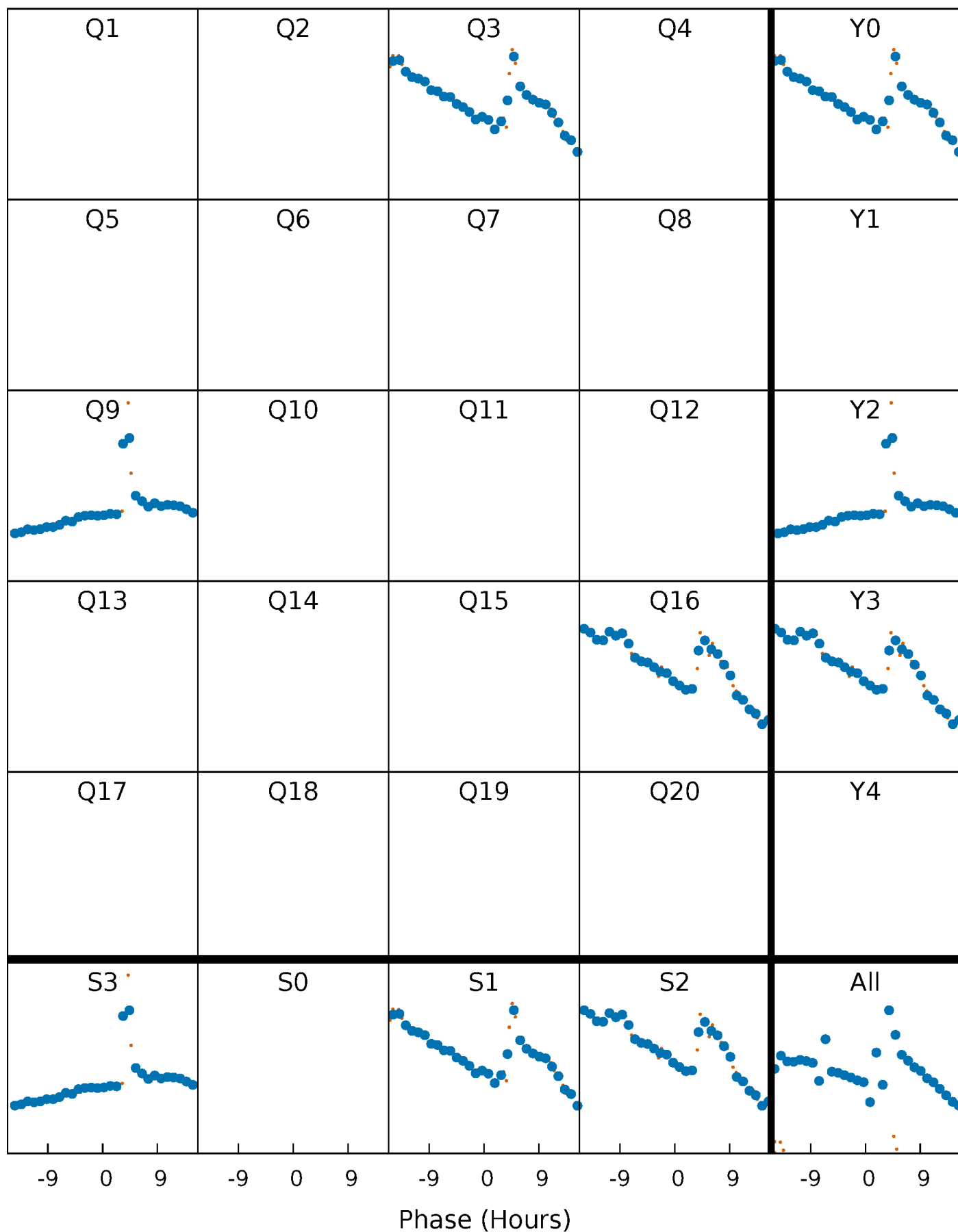


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



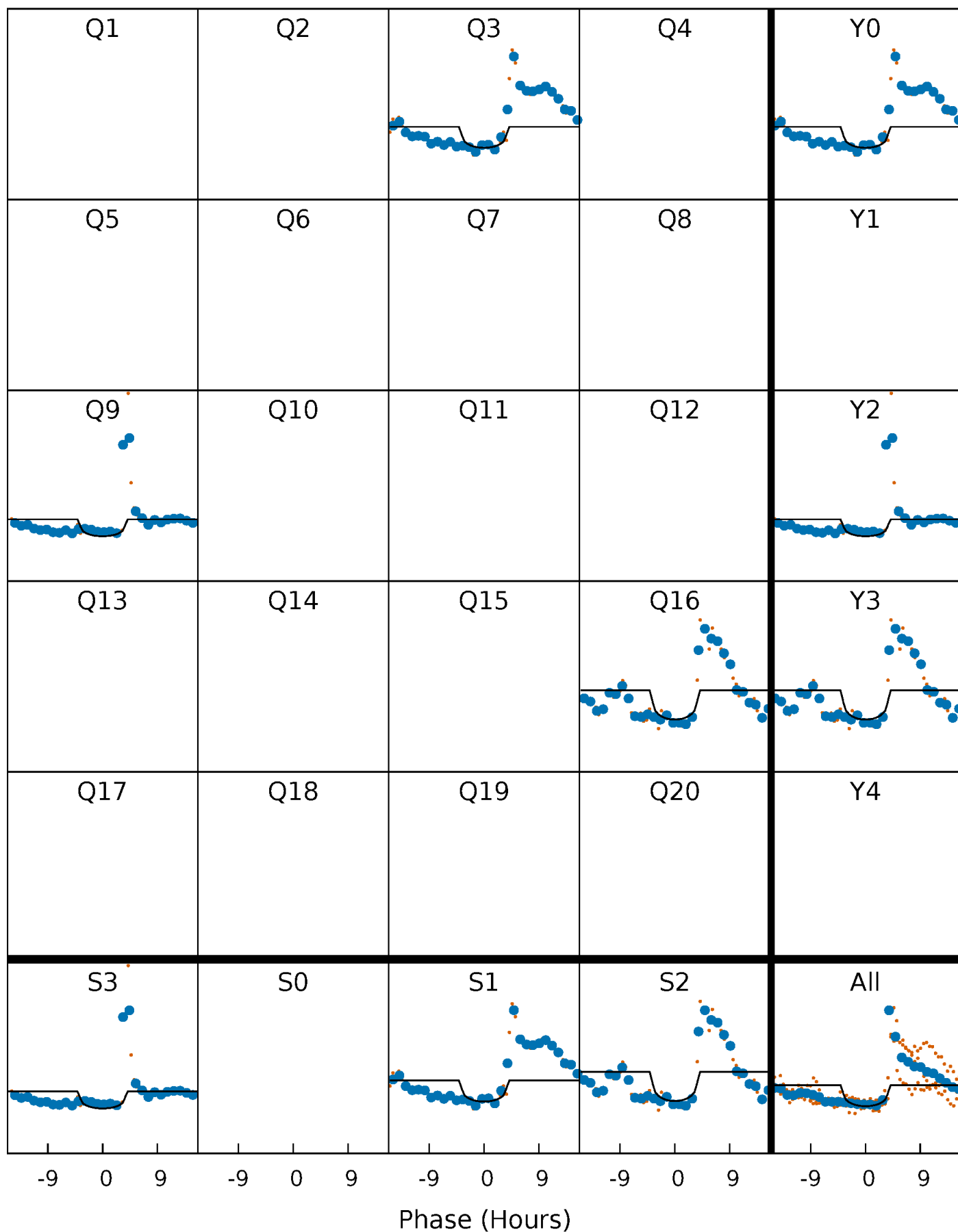
PDC Quarter-Phased Transit Curves

TCE 008817885-01 P=625.163148 Days $T_0=264.404089$ (BKJD)



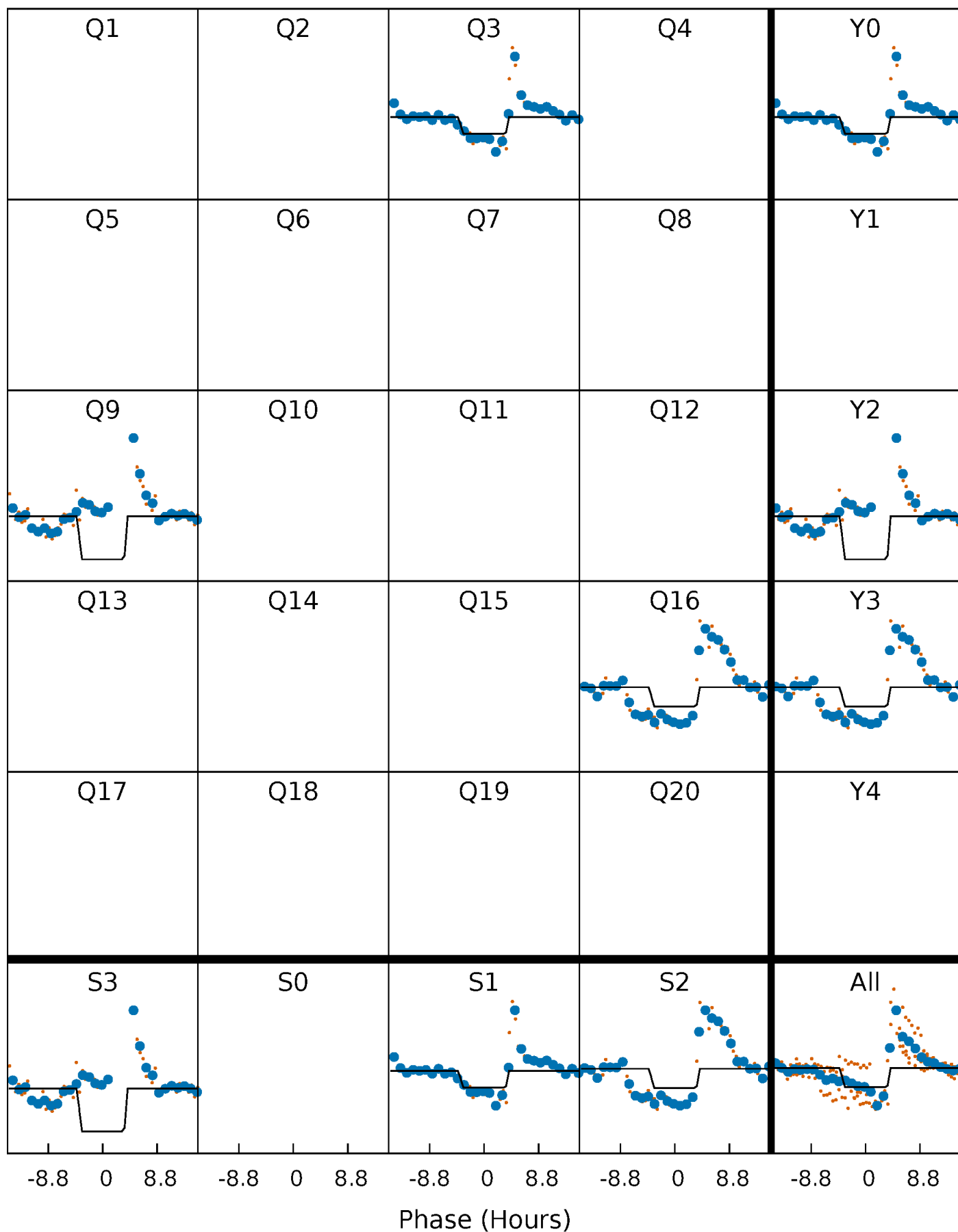
DV Quarter-Phased Transit Curves

TCE 008817885-01 $P=625.163148$ Days $T_0=264.404089$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

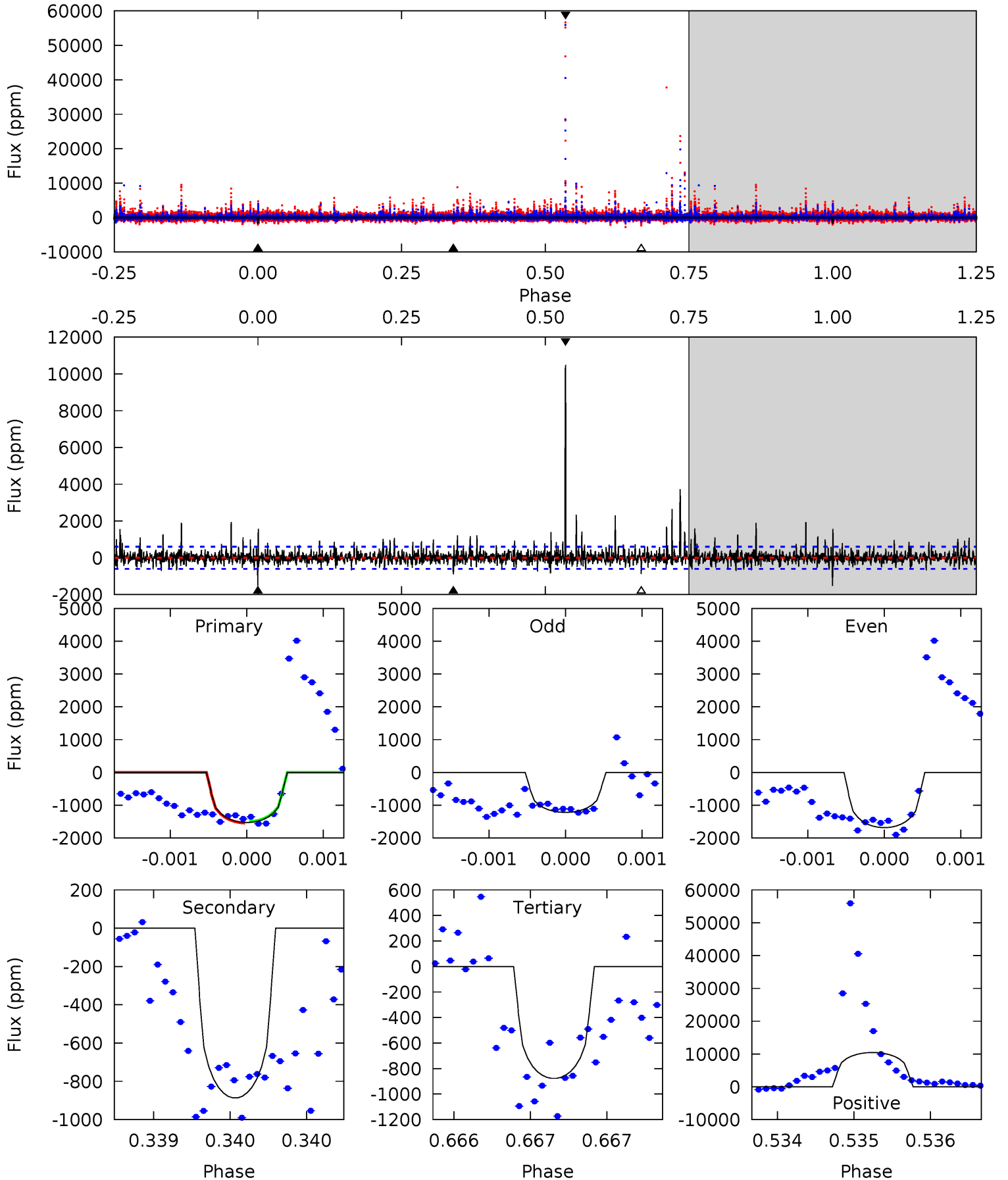
TCE 008817885-01 P=625.164768 Days $T_0=264.406649$ (BKJD)



DV Model-Shift Uniqueness Test

008817885-01, P = 625.163148 Days, E = 264.404089 Days

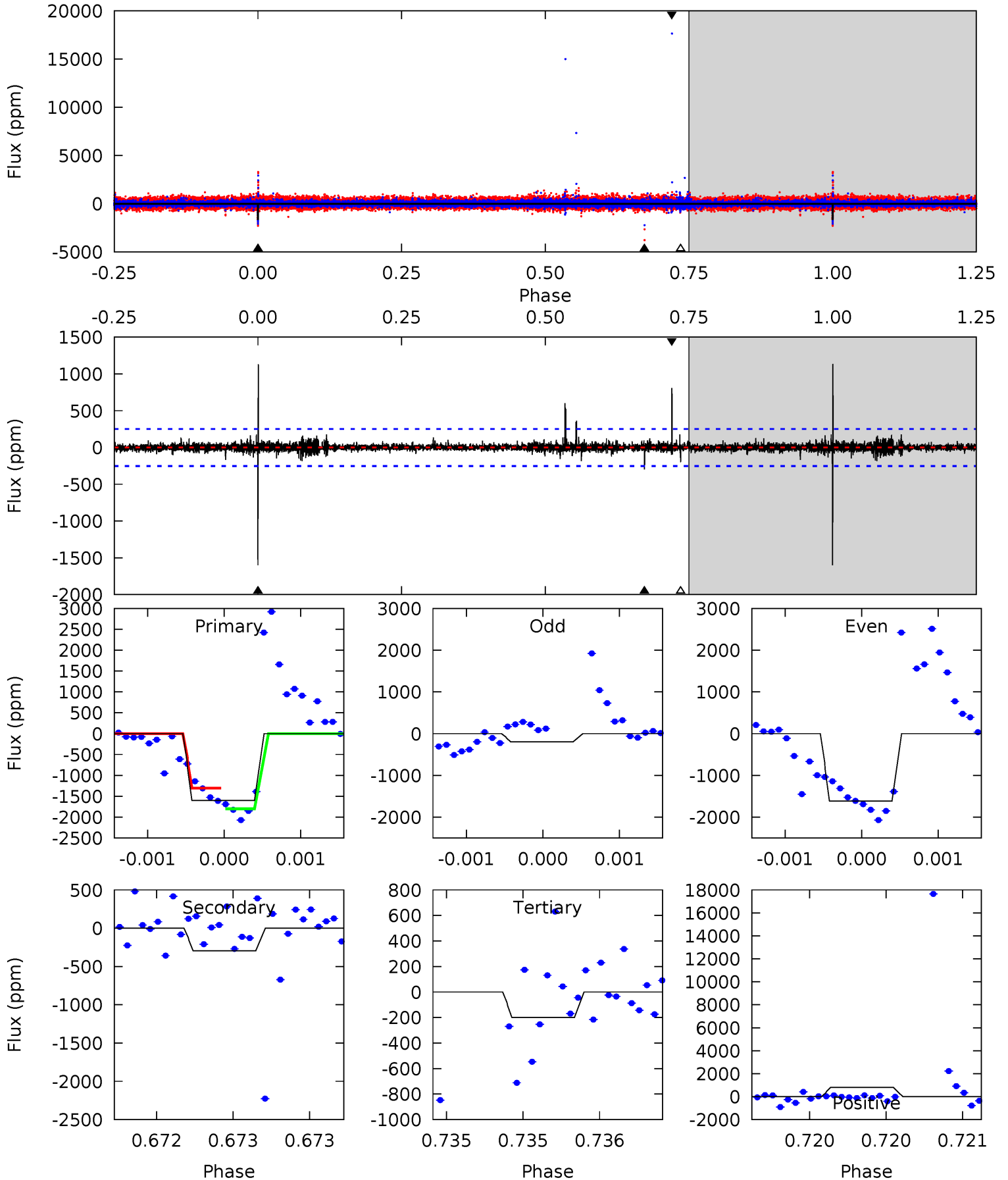
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.1	8.20	8.11	96.6	5.57	3.47	3.32	6.00	-82.5	0.09	-88.4	0.99	0.85	0.87	0.21



Alt Model-Shift Uniqueness Test

008817885-01, P = 625.164768 Days, E = 264.406649 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.4	6.55	4.41	17.8	5.57	3.47	0.79	31.0	17.5	2.14	-11.3	14.7	0.68	0.41	5.64



Stellar Parameters For KIC 008817885

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4986^{+123}_{-147}	$3.710^{+0.922}_{-0.307}$	$-0.220^{+0.300}_{-0.300}$	$2.168^{+1.217}_{-1.488}$	$0.880^{+0.231}_{-0.189}$	$0.122^{+3.042}_{-0.076}$
	+2%/-3%	+25%/-8%	+136%/-136%	+56%/-69%	+26%/-21%	+2502%/-62%
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 008817885-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-886 ± 108	$12.75^{+15.94}_{-8.54}$	373^{+59}_{-72}	3726^{+1863}_{-658}	5750^{+47930}_{-4652}
Alt.	-296 ± 45	$13.78^{+14.74}_{-9.52}$	374^{+58}_{-73}	3085^{+1375}_{-475}	1597^{+16028}_{-1210}

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 $A_{obs} \gg 1.0$

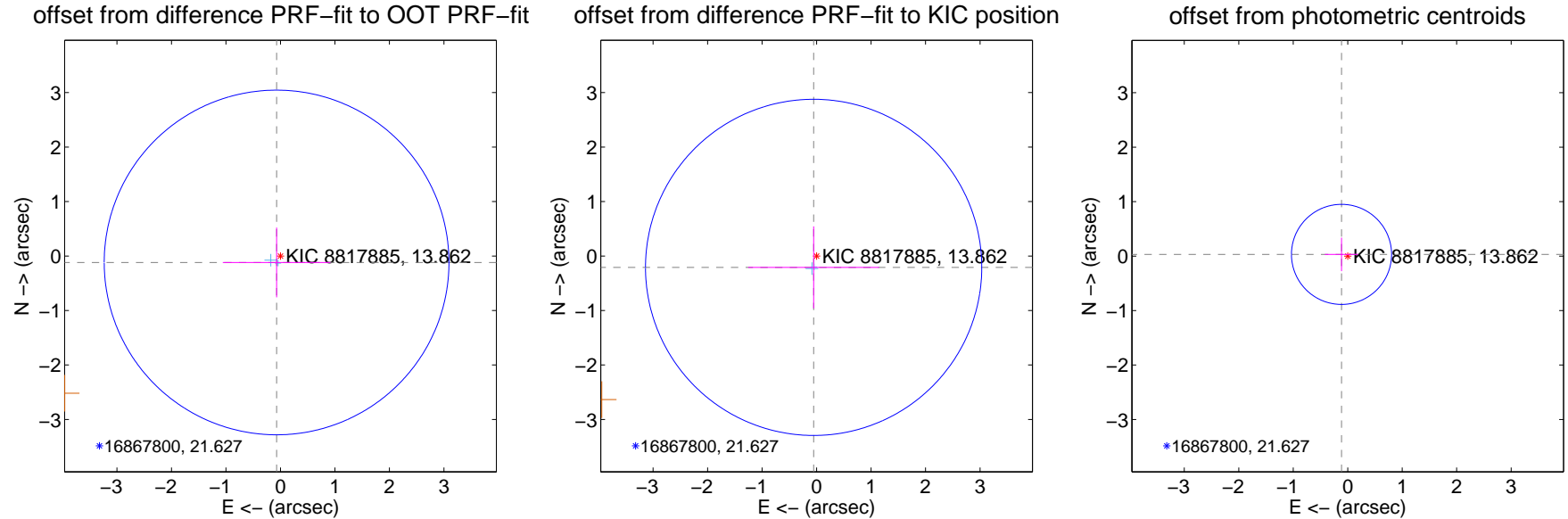
DV Centroid Data

Supplemental centroid analysis for 008817885-01. Kepler magnitude: 13.86. Transit SNR 9.44

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.138 ± 1.054	0.13	0.071 ± 0.987	-0.118 ± 0.640
PRF-fit source offset from KIC position	0.215 ± 1.028	0.21	0.054 ± 1.202	-0.208 ± 0.752
photometric centroid source offset	0.12 ± 0.31	0.39	0.11 ± 0.31	0.03 ± 0.31



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

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

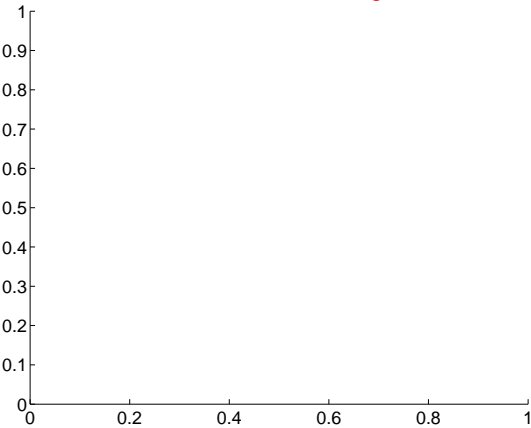
Q1 no difference image



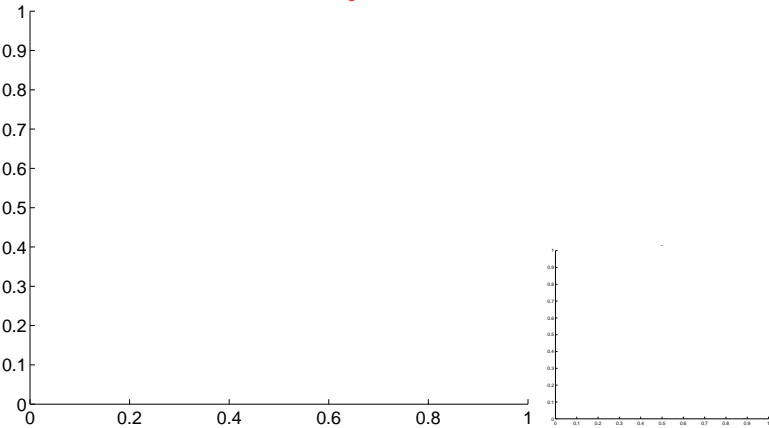
Q1 no OOT image



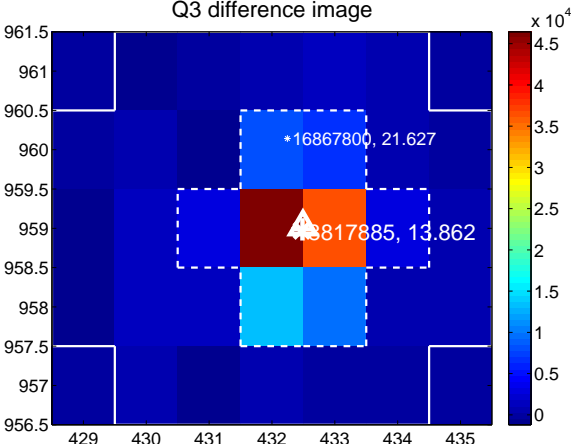
Q2 no difference image



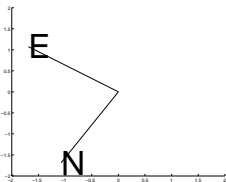
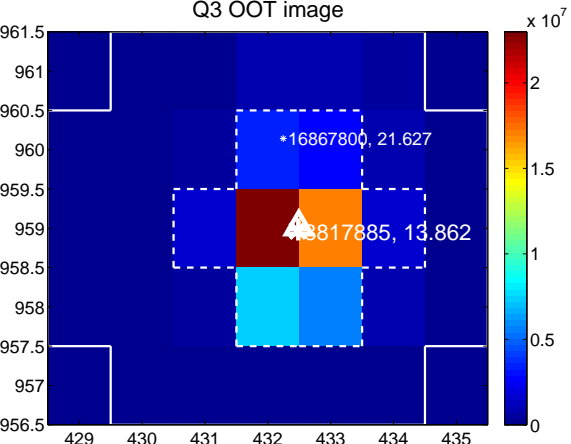
Q2 no OOT image



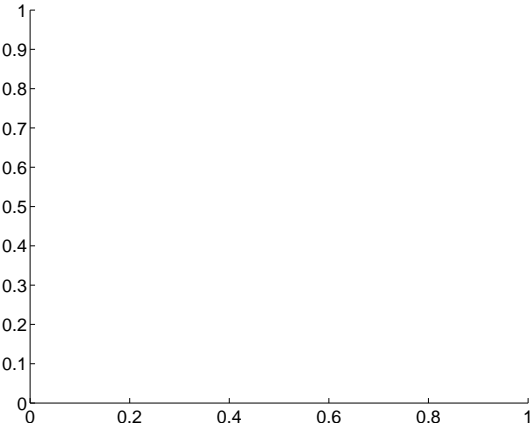
Q3 difference image



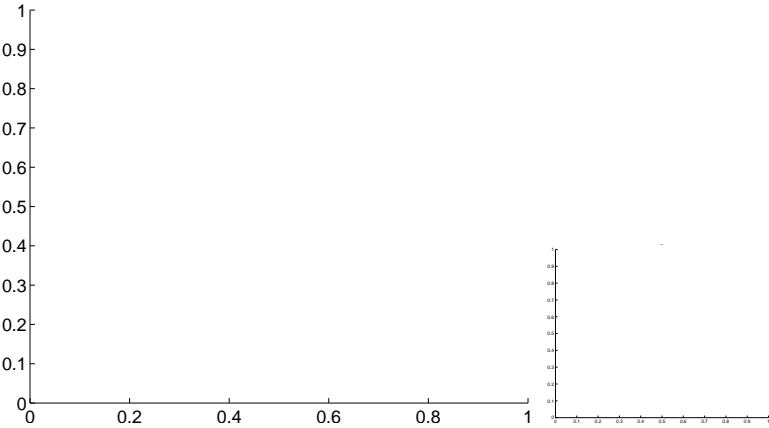
Q3 OOT image



Q4 no difference image



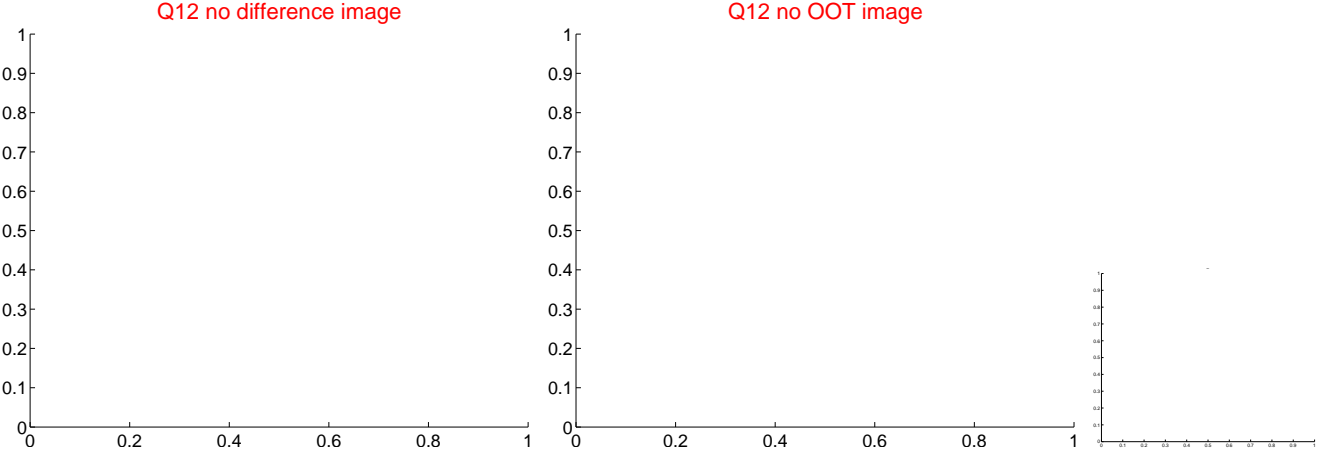
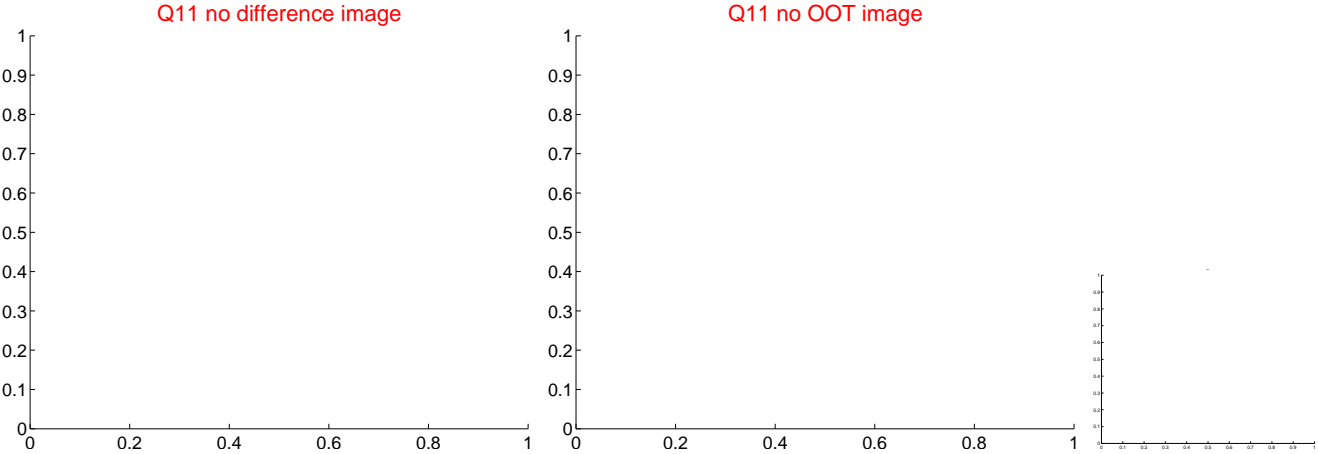
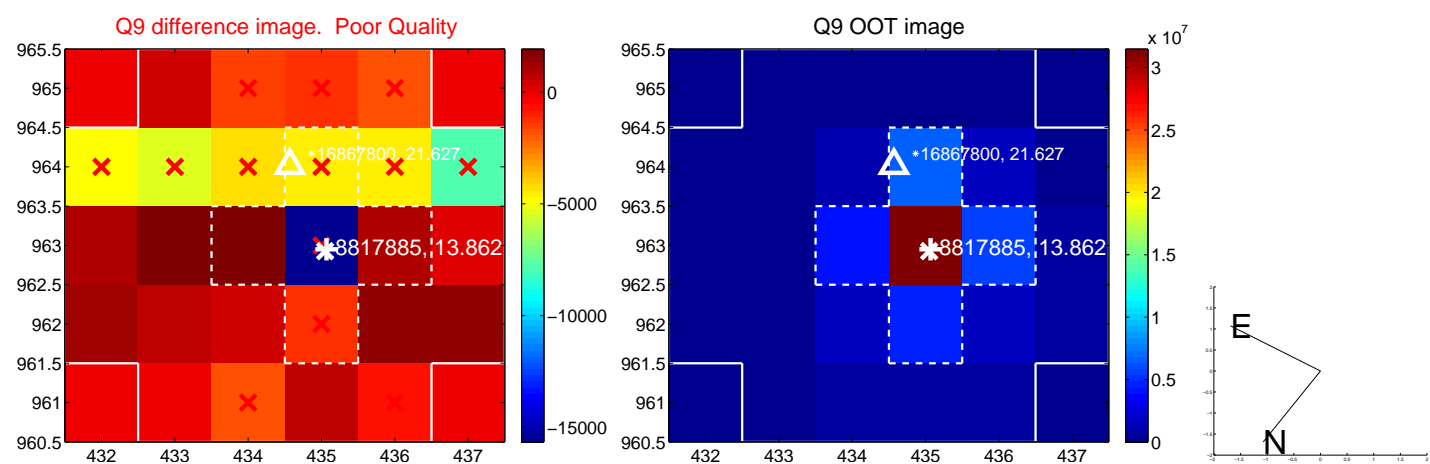
Q4 no OOT image



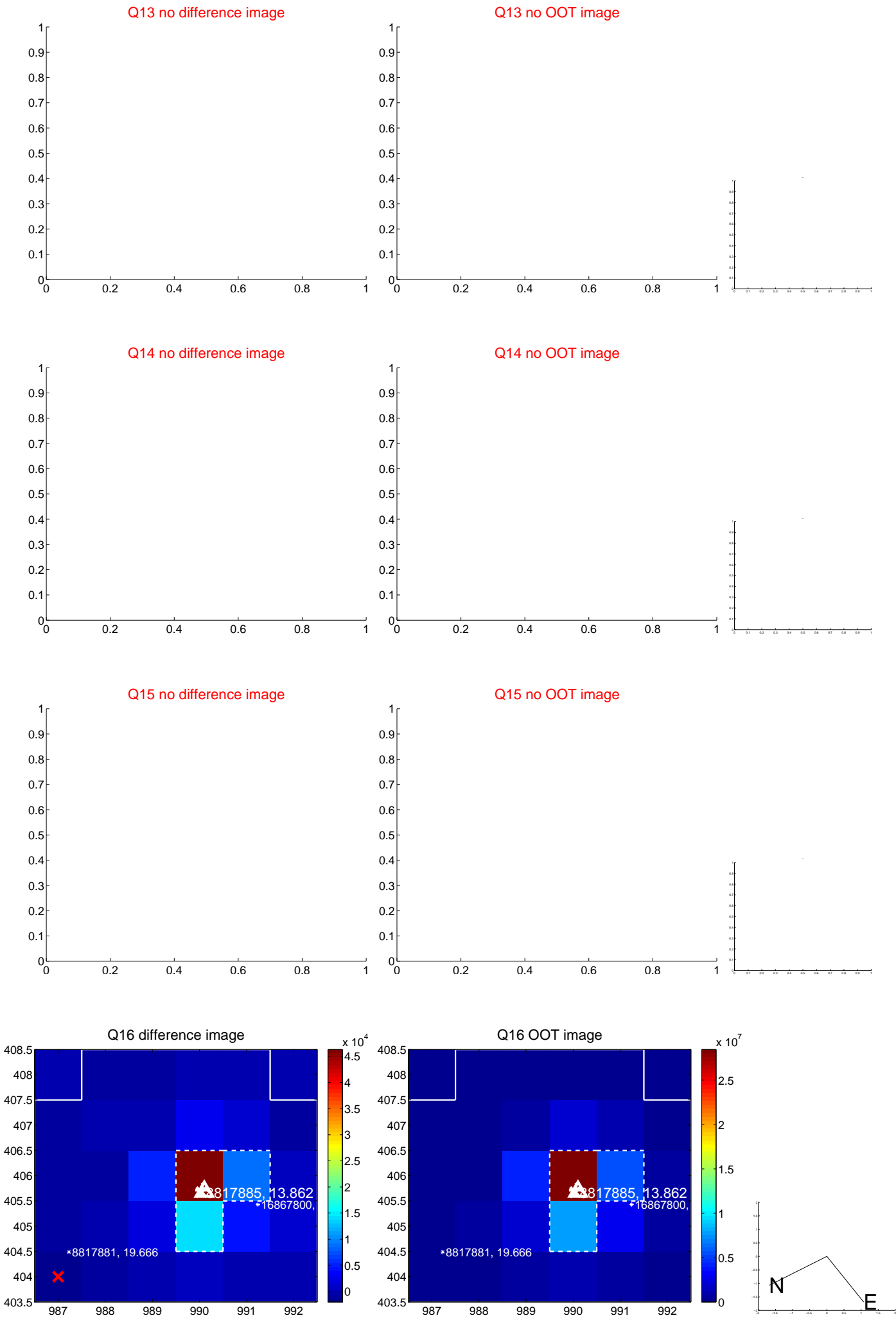
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



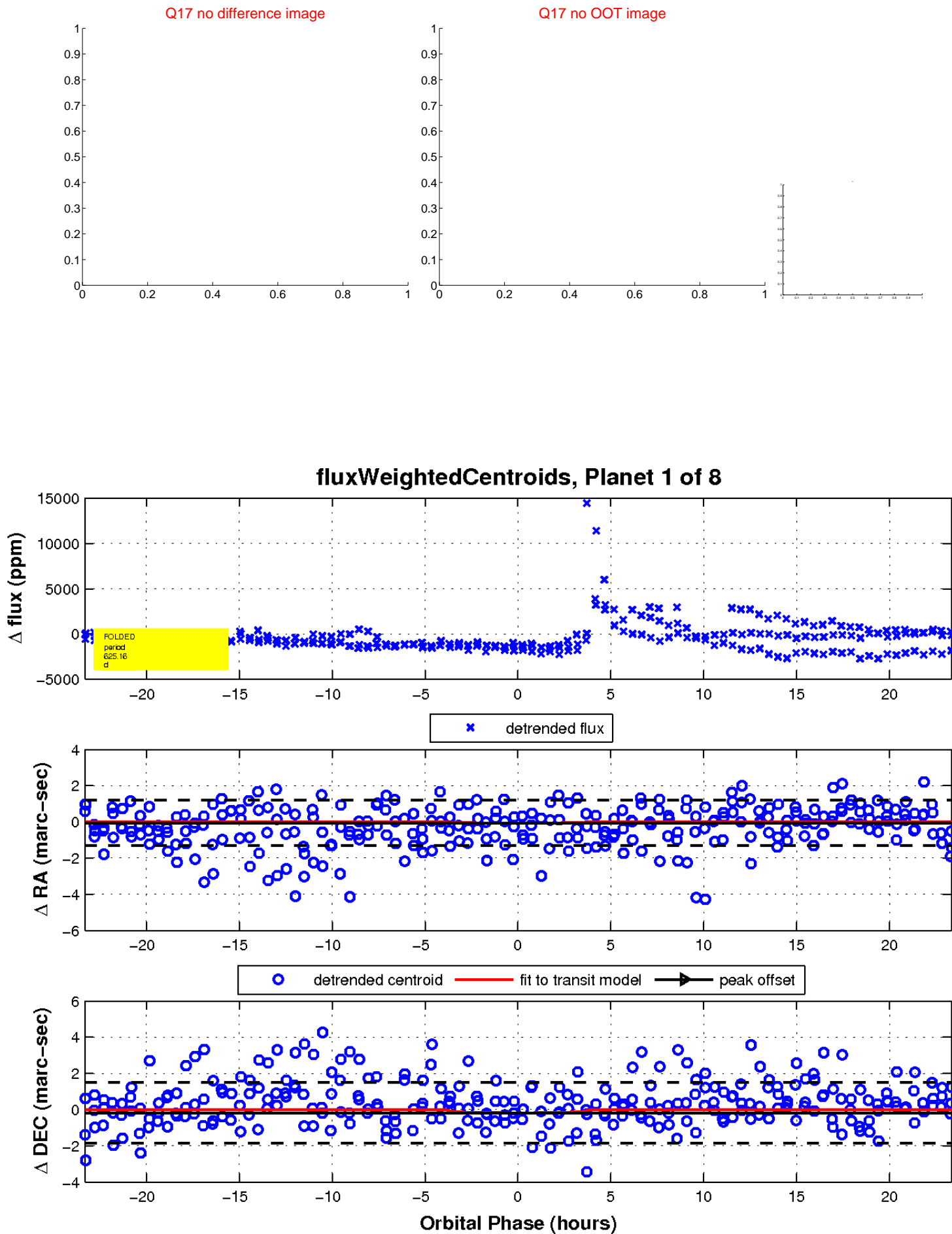
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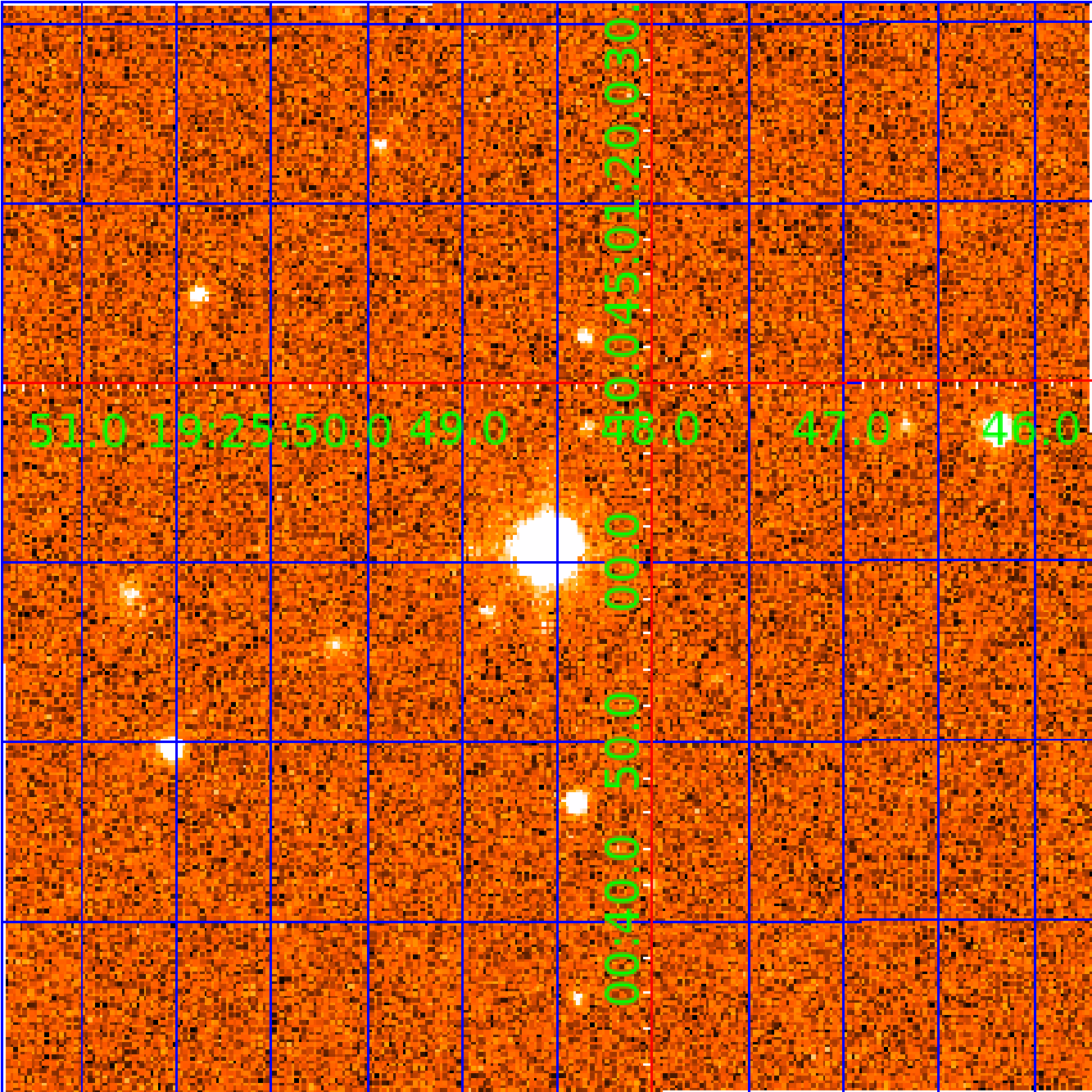


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008817885

Q1-17 DR25 TCE Parameters

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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008817885-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-02	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
008817885-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008817885-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-06	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—CENT_FEW_DIFFS
008817885-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

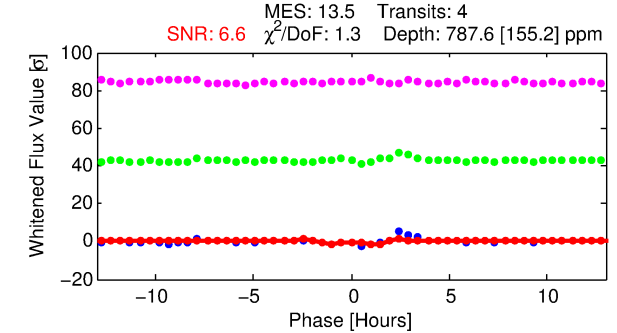
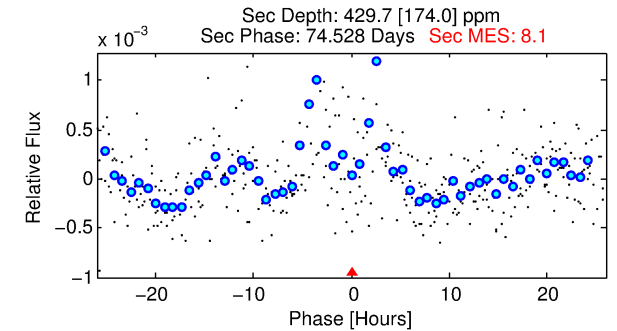
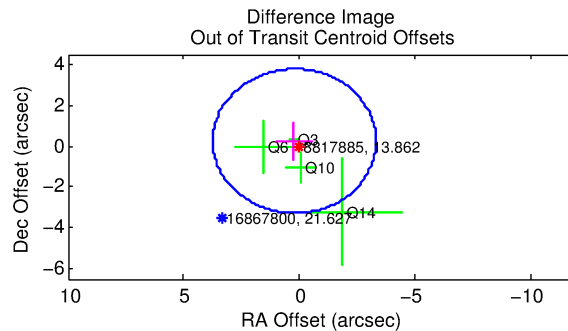
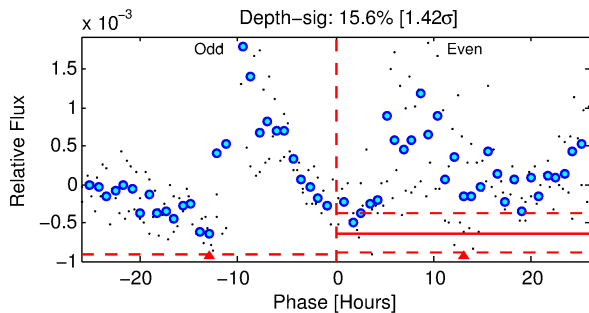
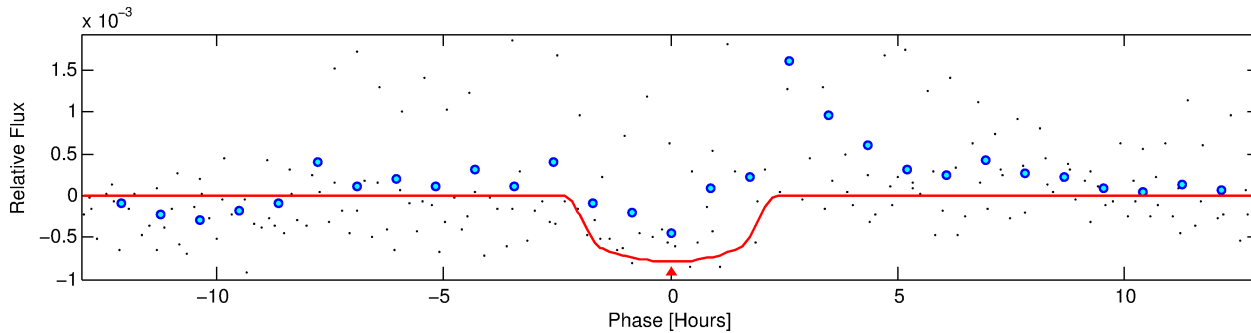
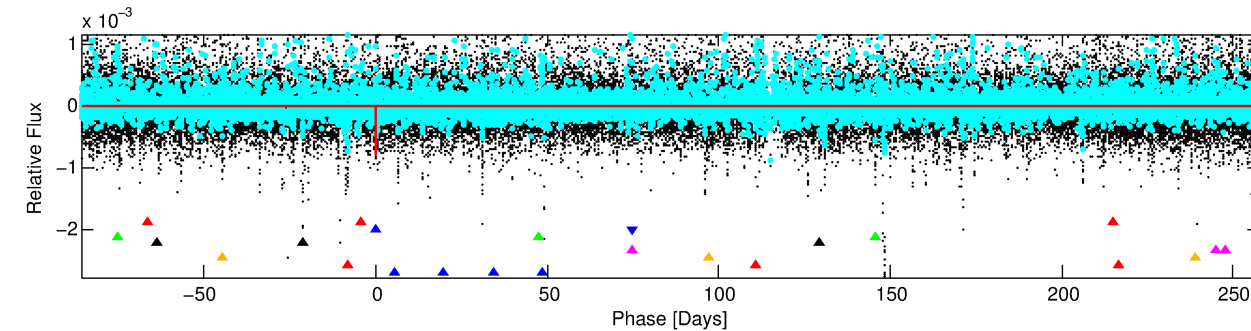
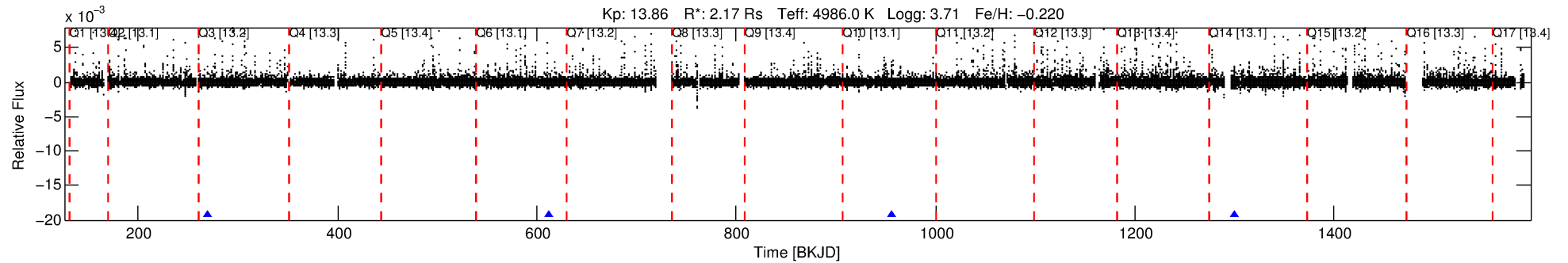
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008817885-02

No Significant Match Found

DV One-Page Summary

KIC: 8817885 Candidate: 2 of 8 Period: 343.686 d



DV Fit Results:

Period = 343.68607 [0.00450] d
Epoch = 268.9933 [0.0073] BKJD
Rp/R* = 0.0293 [0.0135]
a/R* = 371.88 [601.34]
b = 0.83 [0.63]
Seff = 3.07 [4.59]
Teff = 338 [126] K
Rp = 6.92 [5.73] Re
a = 0.9201 [0.7754] AU
Ag = 4174.26 [7500.12] [0.56 σ]
Teffp = 4196 [1065] K [3.60 σ]

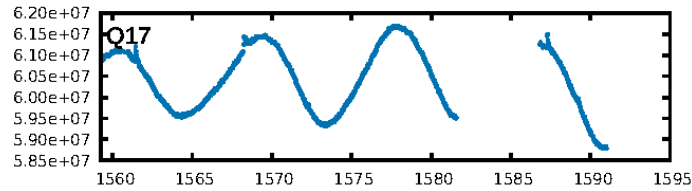
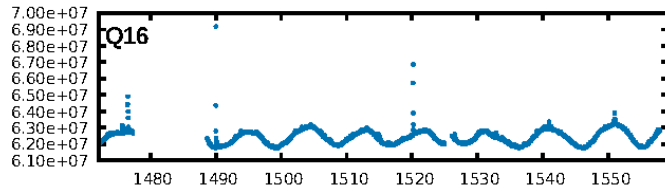
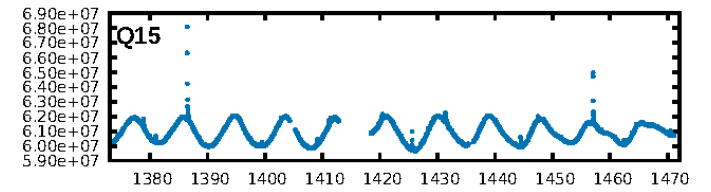
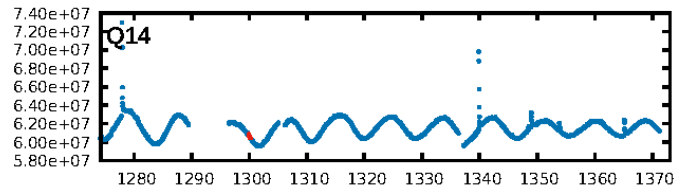
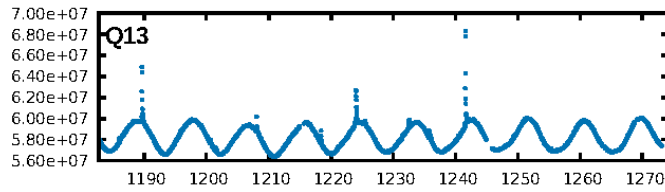
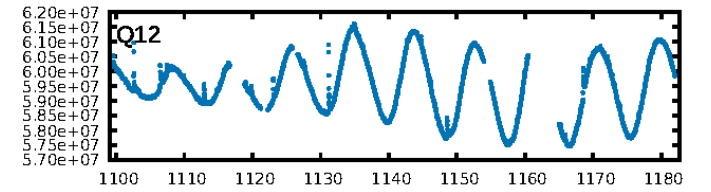
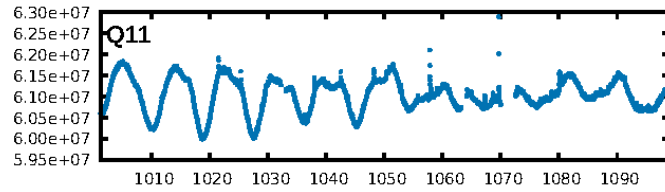
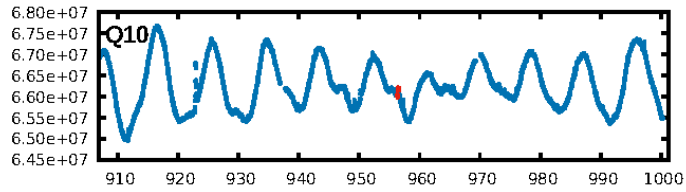
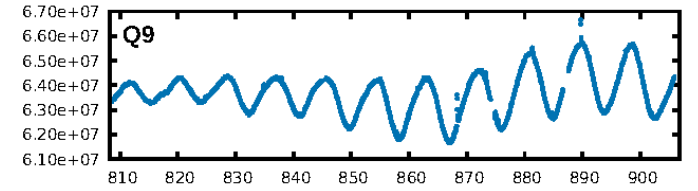
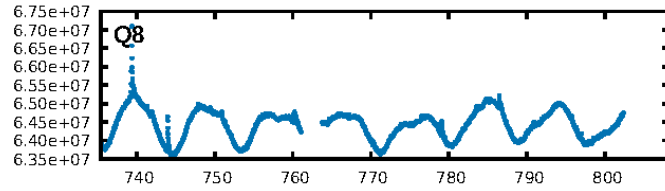
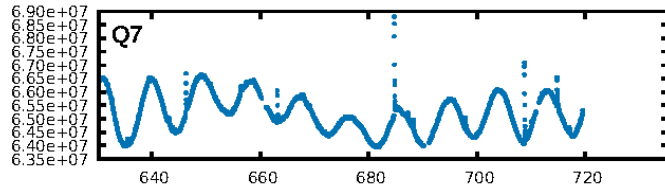
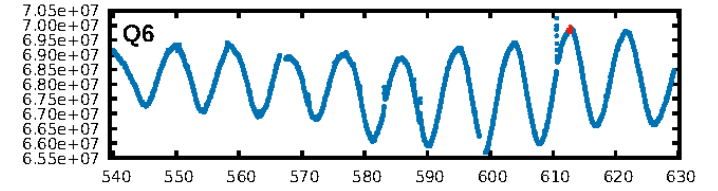
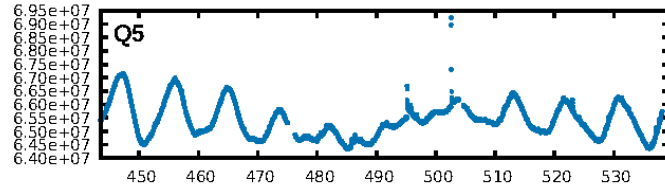
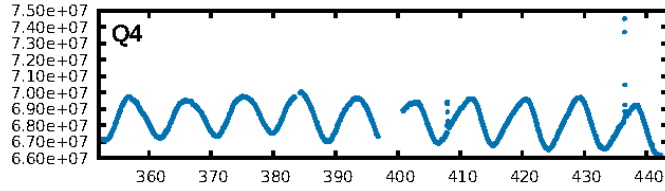
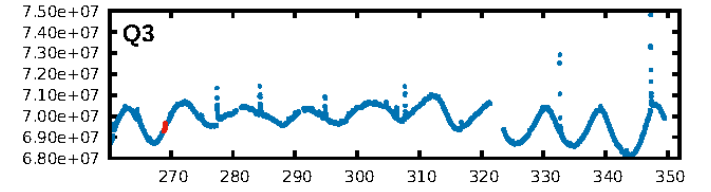
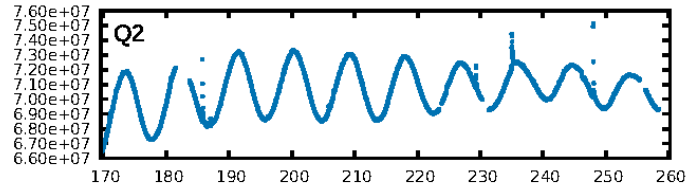
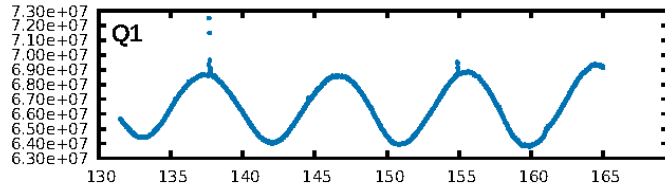
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [61.28 σ]
ModelChiSquare2-sig: 6.8%
ModelChiSquareGof-sig: 91.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.8018
Centroid-sig: 34.9%
Centroid-so: 0.506 arcsec [0.75 σ]
OotOffset-rm: 0.332 arcsec [0.28 σ]
OotOffset-st: 3/1/0/0 [4]
KicOffset-rm: 0.279 arcsec [0.32 σ]
KicOffset-st: 3/1/0/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

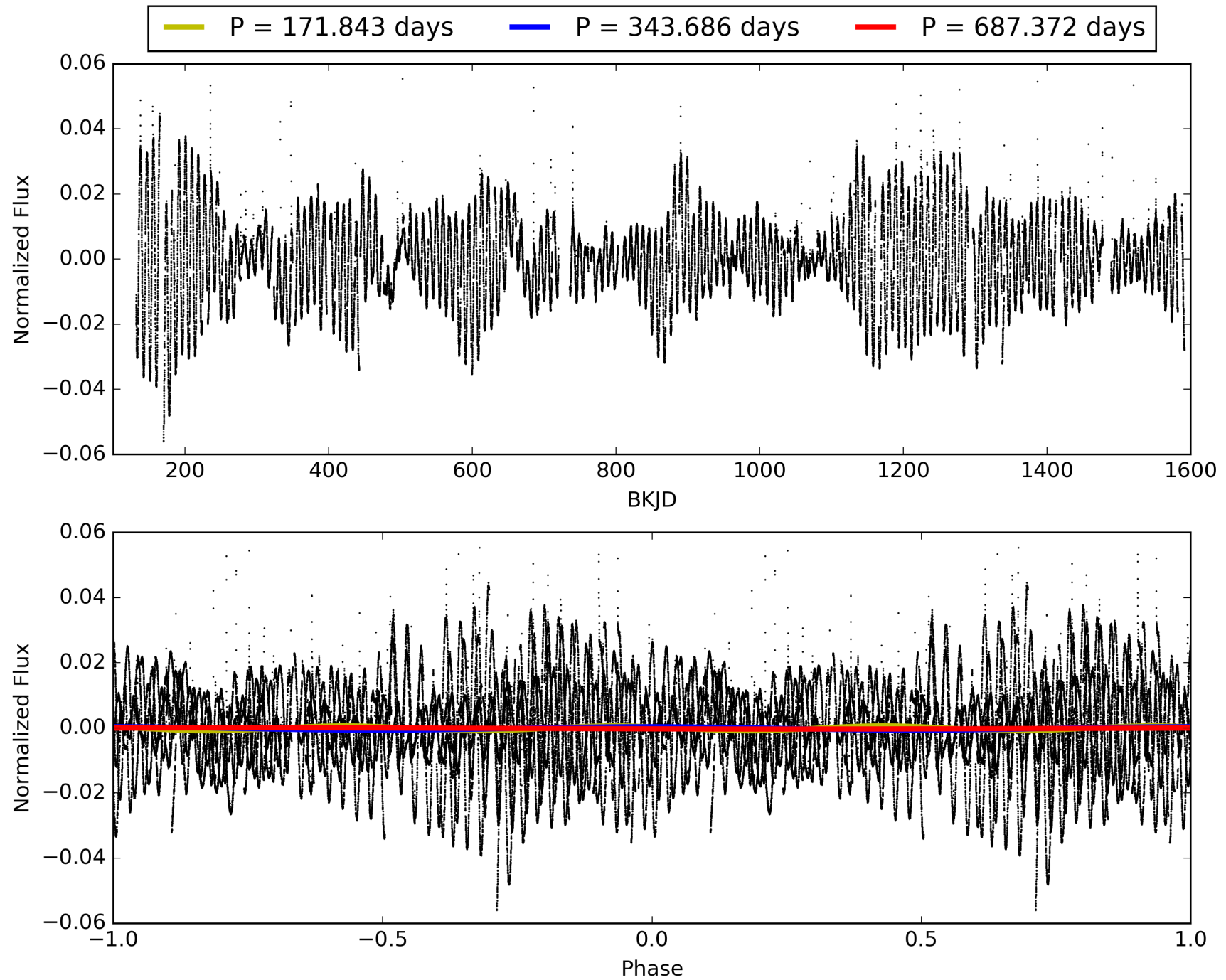
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:09:17 Z

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

TCE 008817885-02, PDC Light Curves

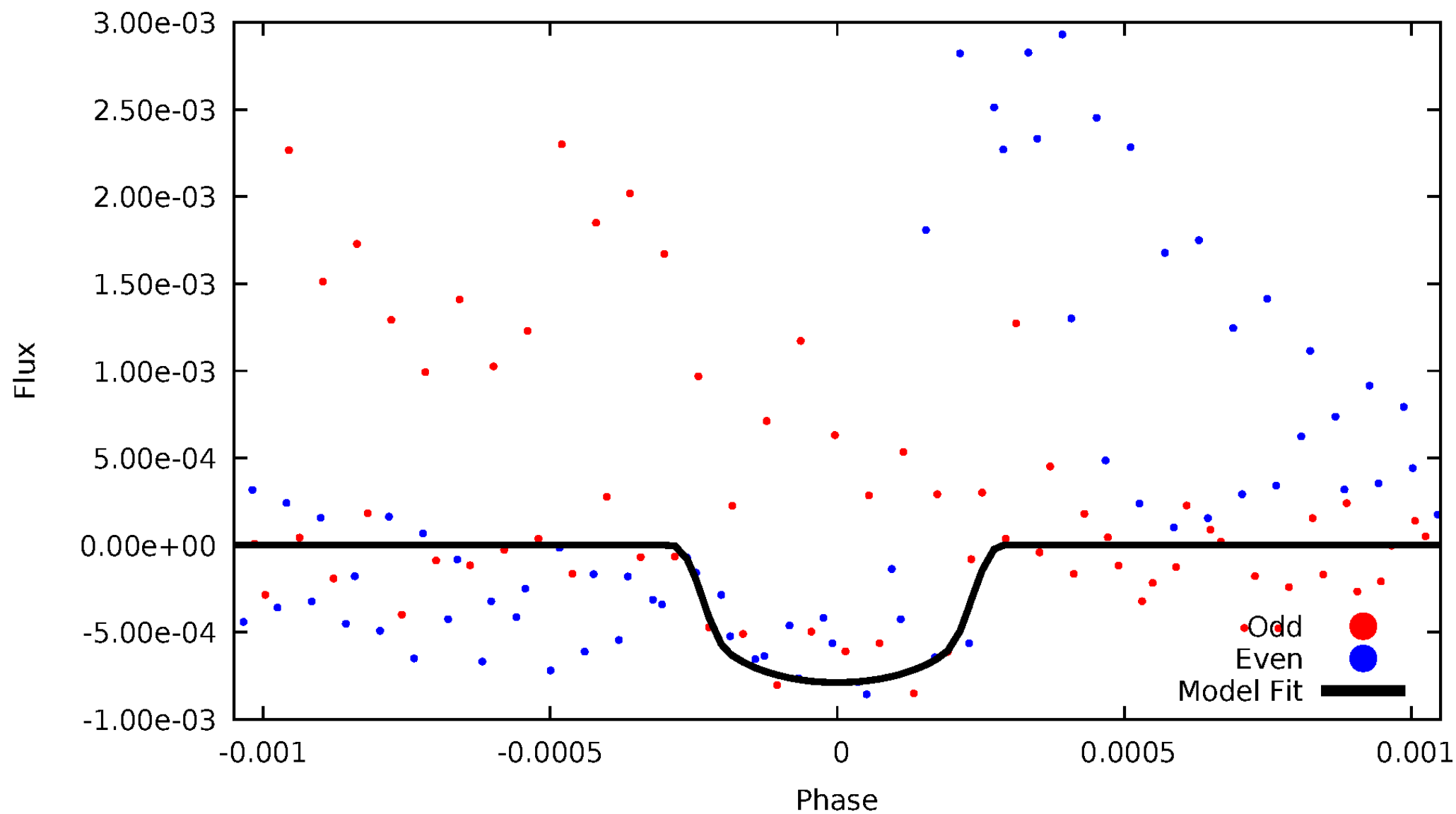


TCE 008817885-02



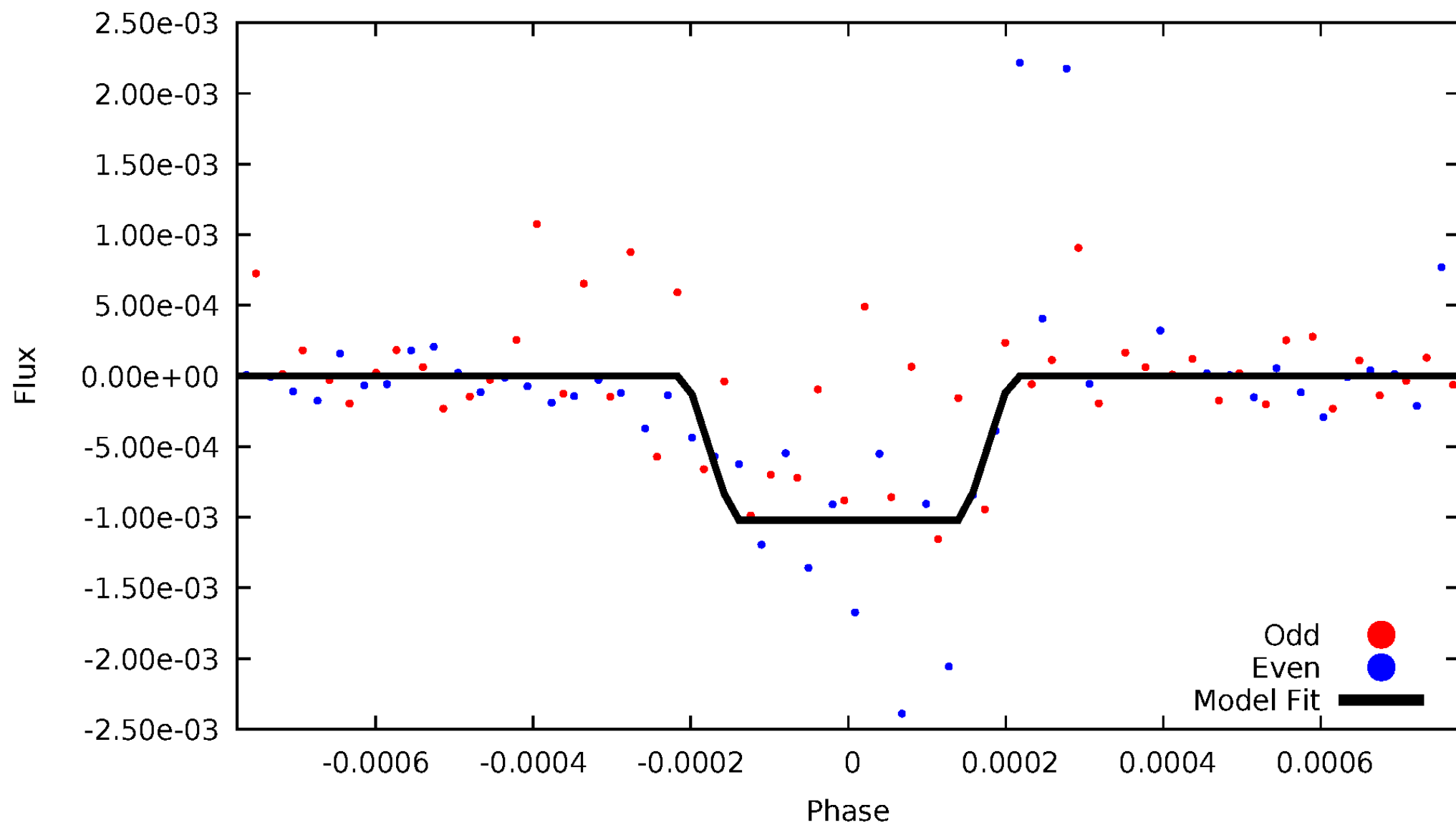
DV Odd/Even

TCE 008817885-02



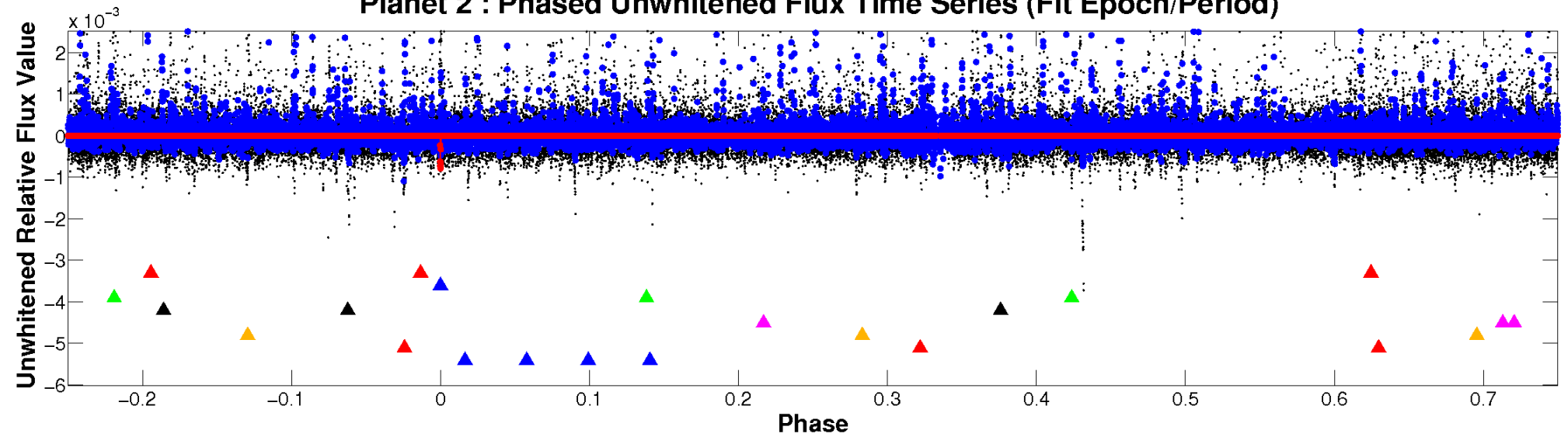
ALT Odd/Even

TCE 008817885-02

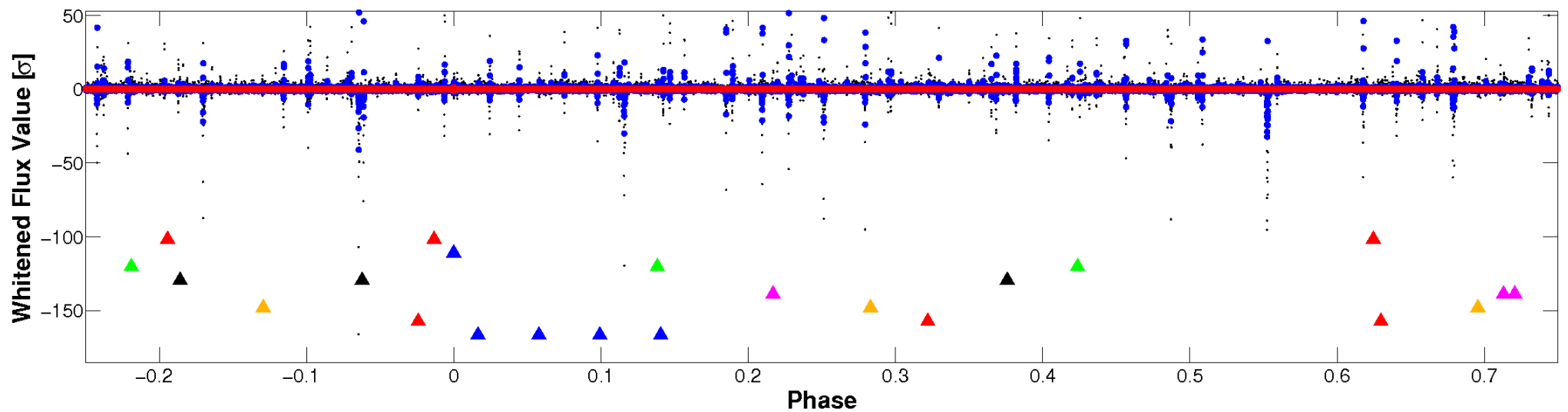


Non-Whitened Vs. Whitened Light Curve

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

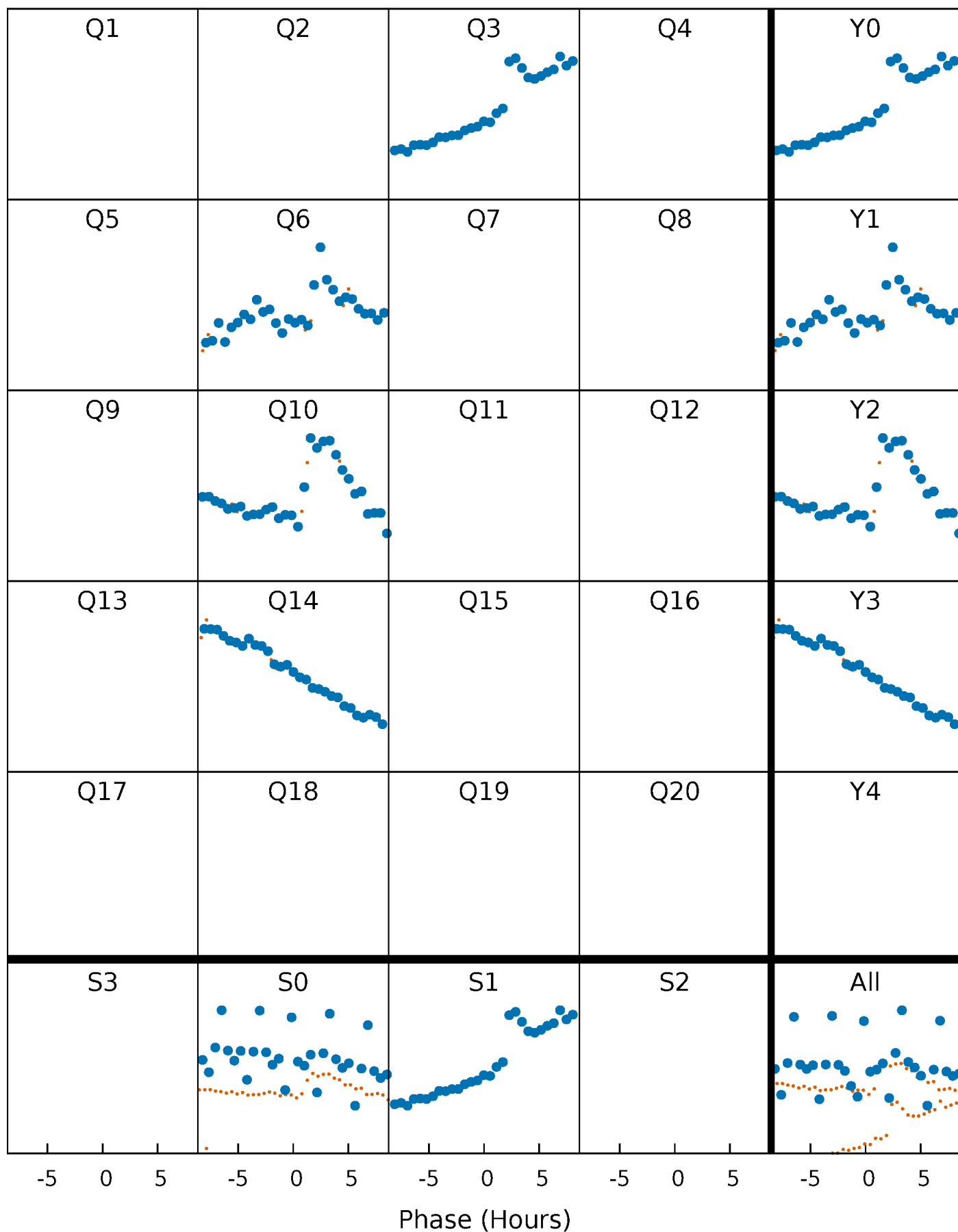


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



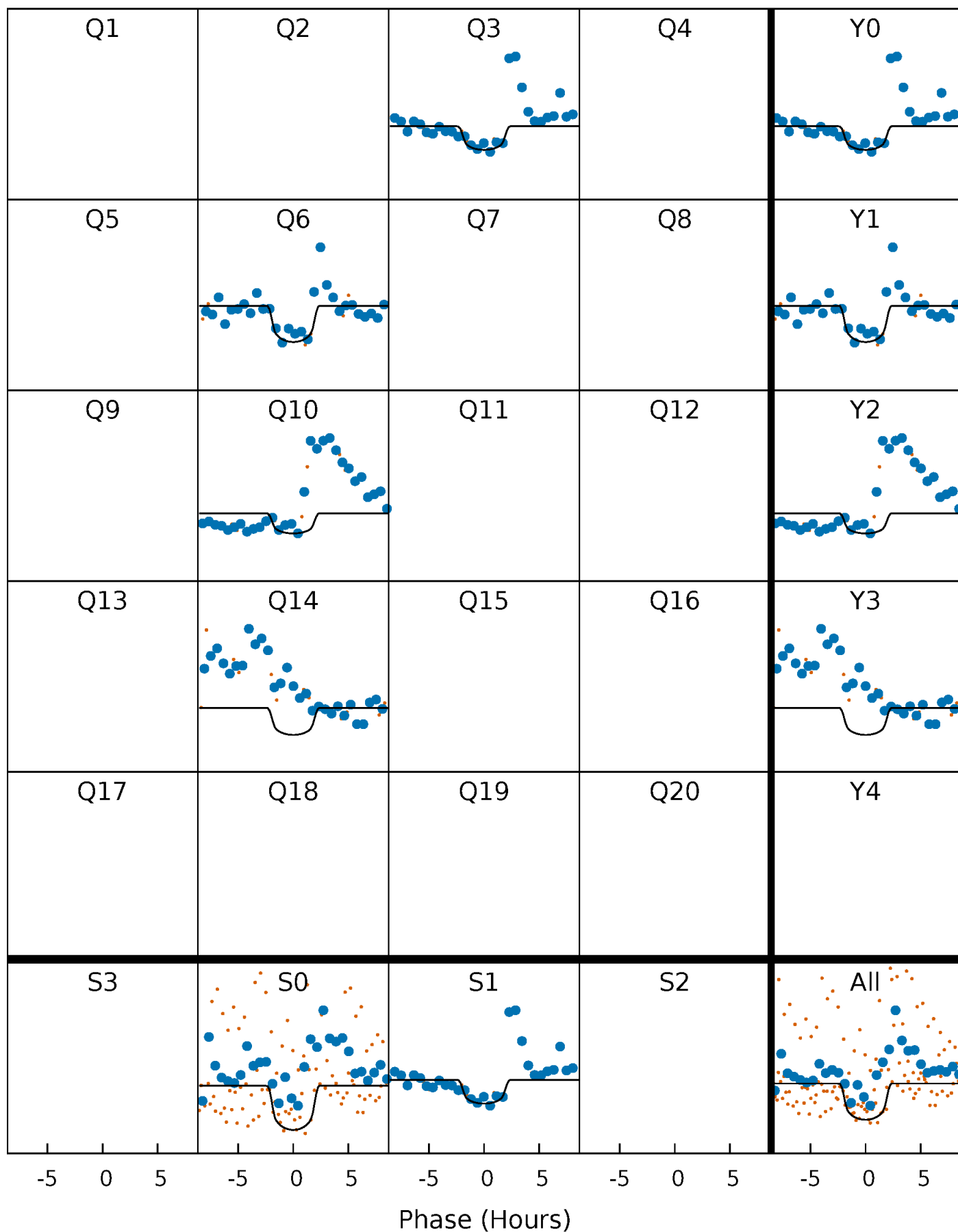
PDC Quarter-Phased Transit Curves

TCE 008817885-02 P=343.686068 Days $T_0=268.993334$ (BKJD)



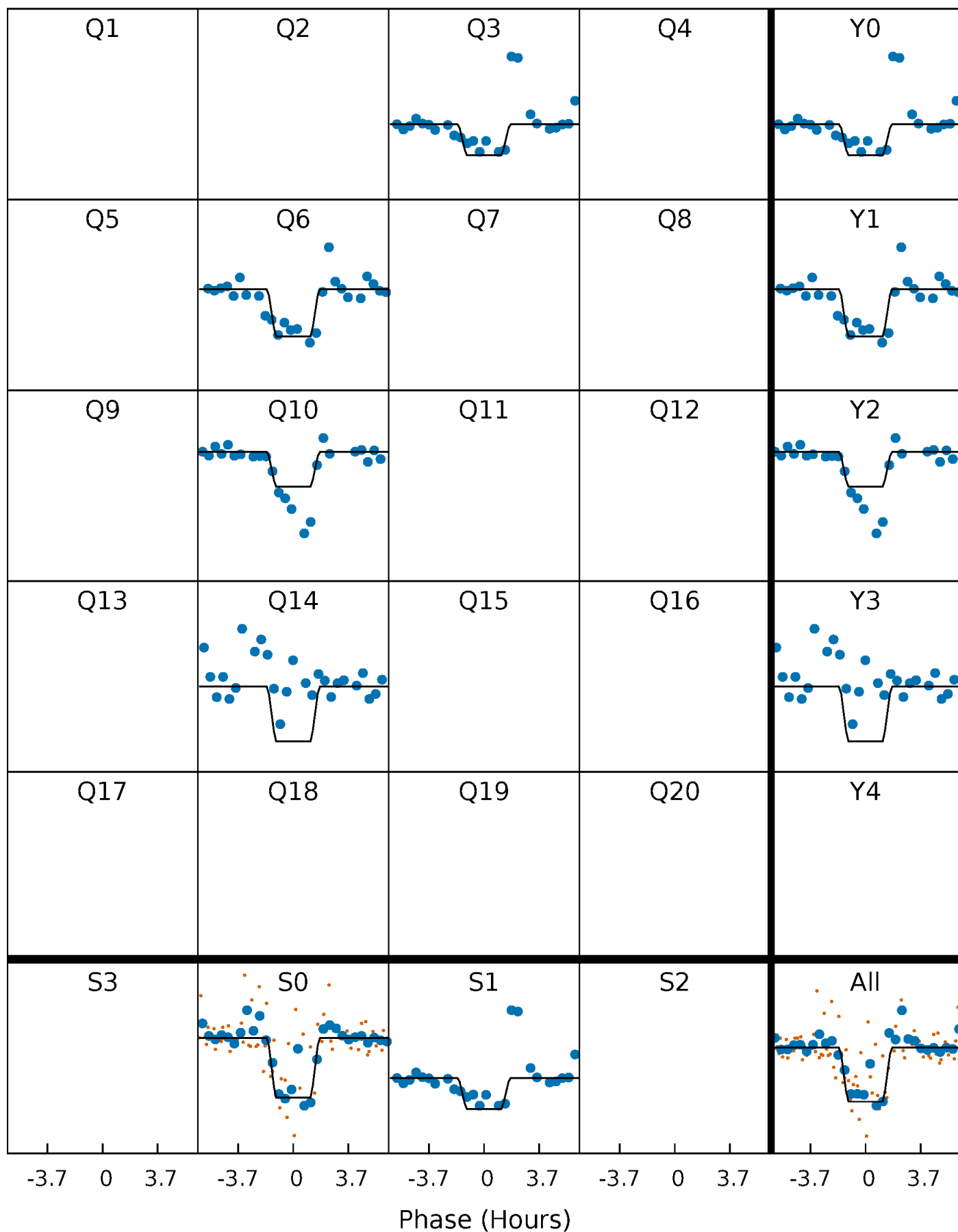
DV Quarter-Phased Transit Curves

TCE 008817885-02 P=343.686068 Days $T_0=268.993334$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

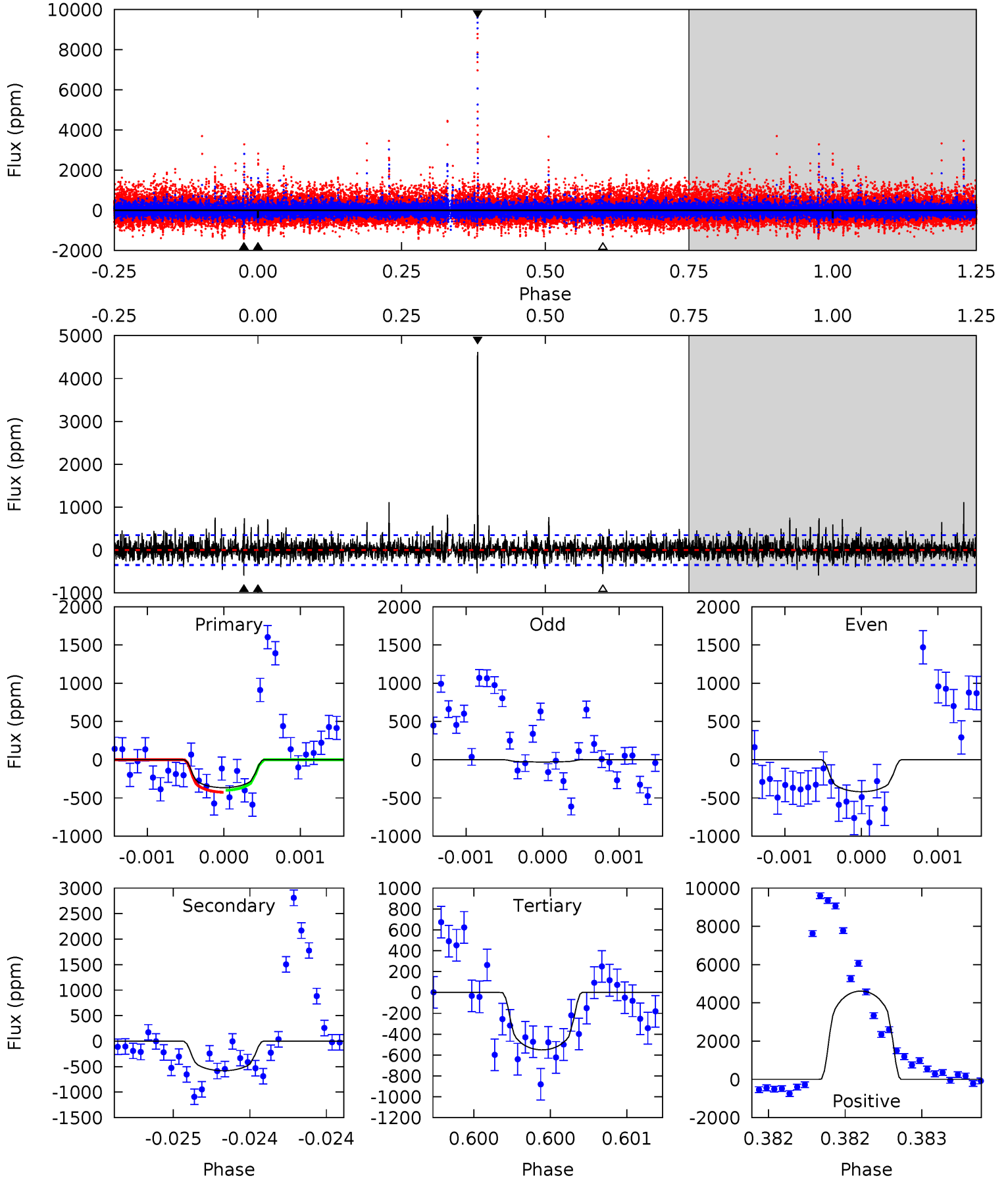
TCE 008817885-02 P=343.668242 Days $T_0=269.017848$ (BKJD)



DV Model-Shift Uniqueness Test

008817885-02, $P = 343.686068$ Days, $E = 268.993334$ Days

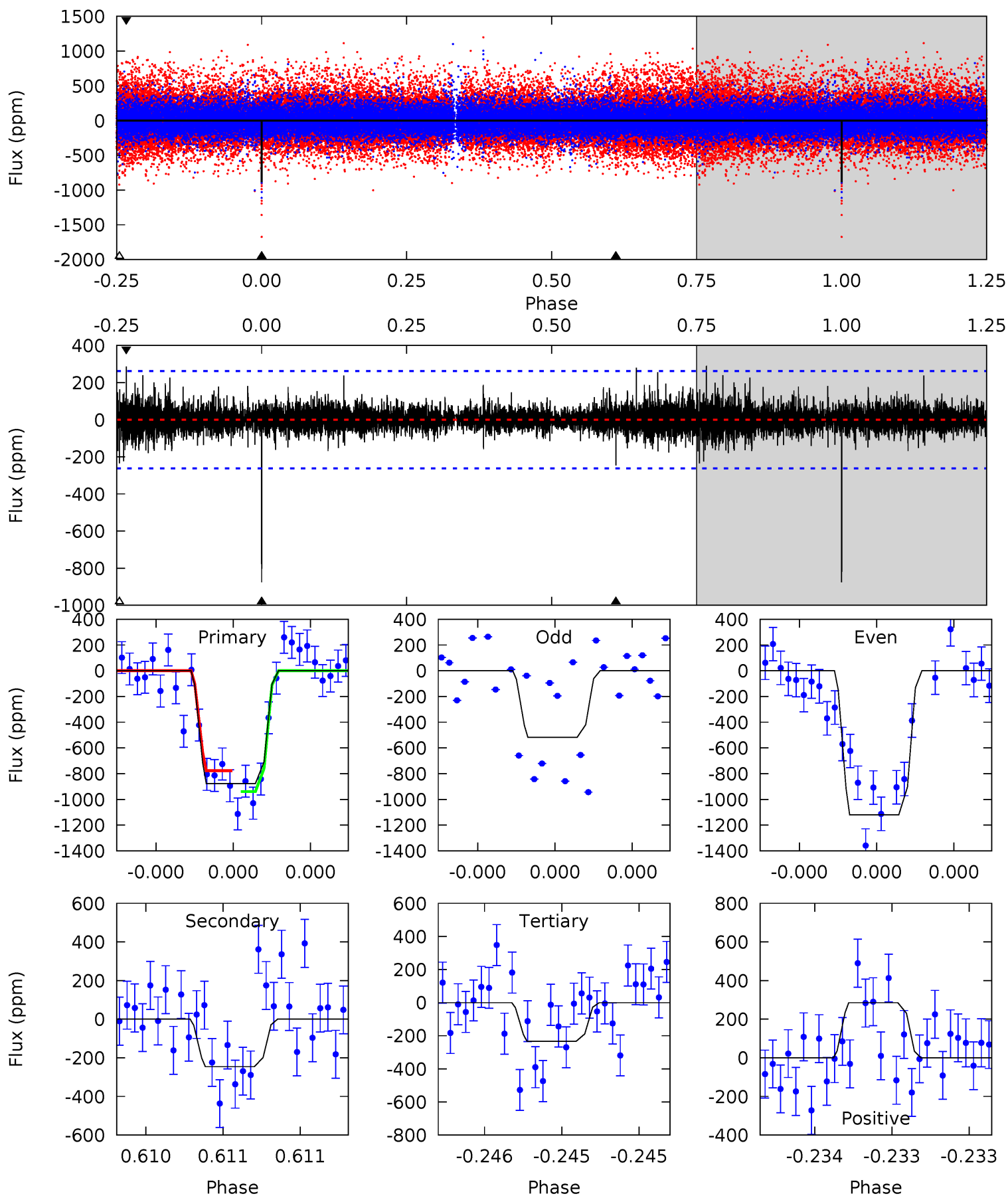
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.82	9.22	8.75	73.4	5.56	3.45	2.53	-2.94	-67.6	0.47	-64.2	1.49	0.57	0.89	0.20



Alt Model-Shift Uniqueness Test

008817885-02, P = 343.668242 Days, E = 269.017848 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.8	5.26	5.02	6.12	5.61	3.54	0.98	13.8	12.6	0.25	-0.86	6.82	1.00	0.25	1.65



Stellar Parameters For KIC 008817885

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4986^{+123}_{-147}	$3.710^{+0.922}_{-0.307}$	$-0.220^{+0.300}_{-0.300}$	$2.168^{+1.217}_{-1.488}$	$0.880^{+0.231}_{-0.189}$	$0.122^{+3.042}_{-0.076}$
	+2%/-3%	+25%/-8%	+136%/-136%	+56%/-69%	+26%/-21%	+2502%/-62%
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 008817885-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-580 ± 63	$6.16^{+4.40}_{-3.24}$	455^{+72}_{-101}	4526^{+1242}_{-537}	6932^{+24772}_{-4457}
Alt.	-246 ± 47	$7.05^{+4.74}_{-3.46}$	463^{+69}_{-92}	3747^{+743}_{-384}	2250^{+6546}_{-1451}

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 $A_{obs} \gg 1.0$

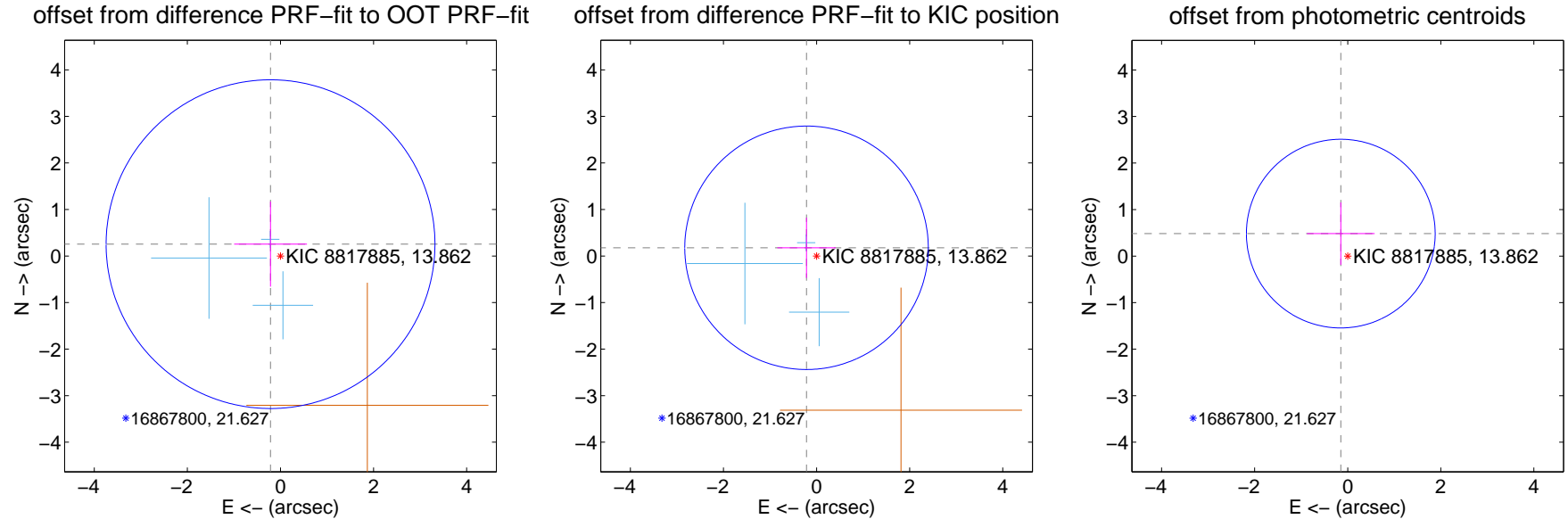
DV Centroid Data

Supplemental centroid analysis for 008817885-02. Kepler magnitude: 13.86. Transit SNR 6.56

There are 3 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.332 ± 1.177	0.28	0.213 ± 0.782	0.255 ± 0.913
PRF-fit source offset from KIC position	0.279 ± 0.872	0.32	0.216 ± 0.628	0.177 ± 0.648
photometric centroid source offset	0.51 ± 0.68	0.75	0.15 ± 0.73	0.48 ± 0.67



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

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

Q1 no difference image



Q1 no OOT image



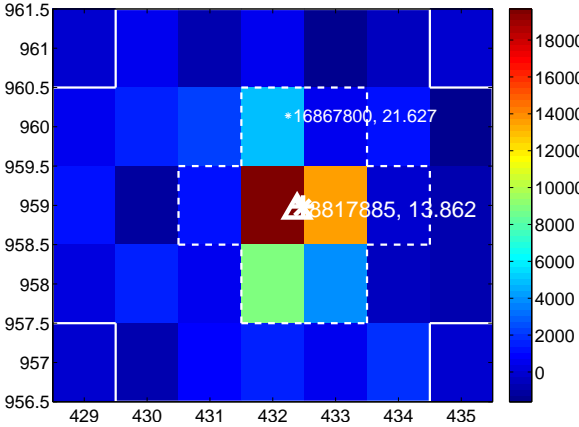
Q2 no difference image



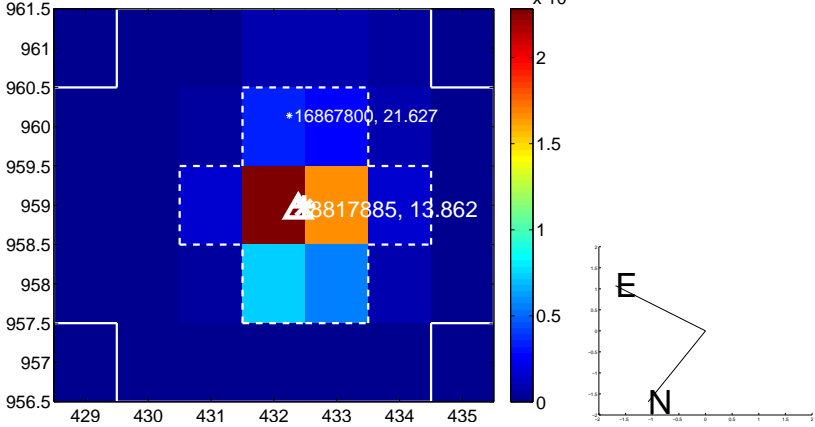
Q2 no OOT image



Q3 difference image



Q3 OOT image



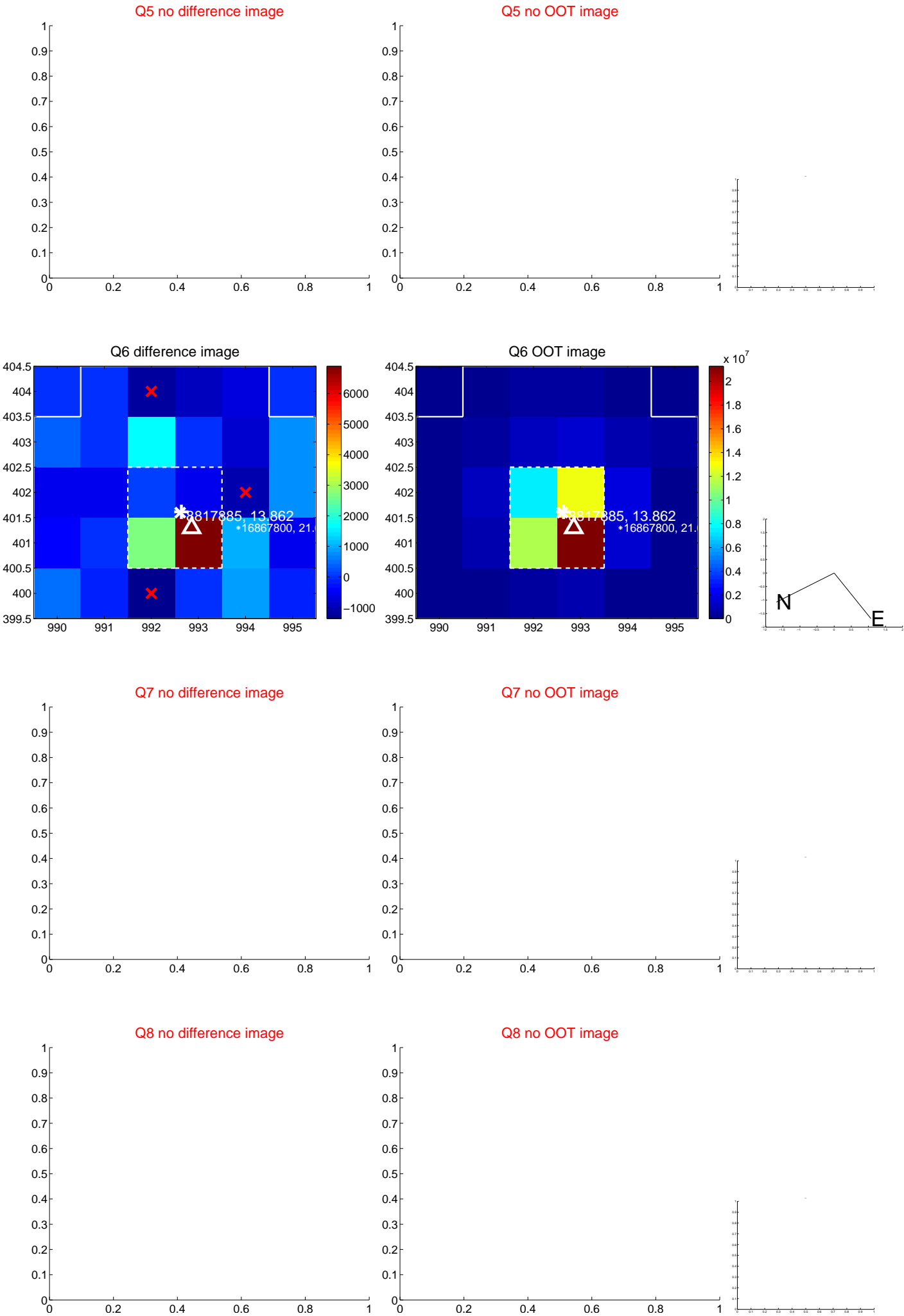
Q4 no difference image



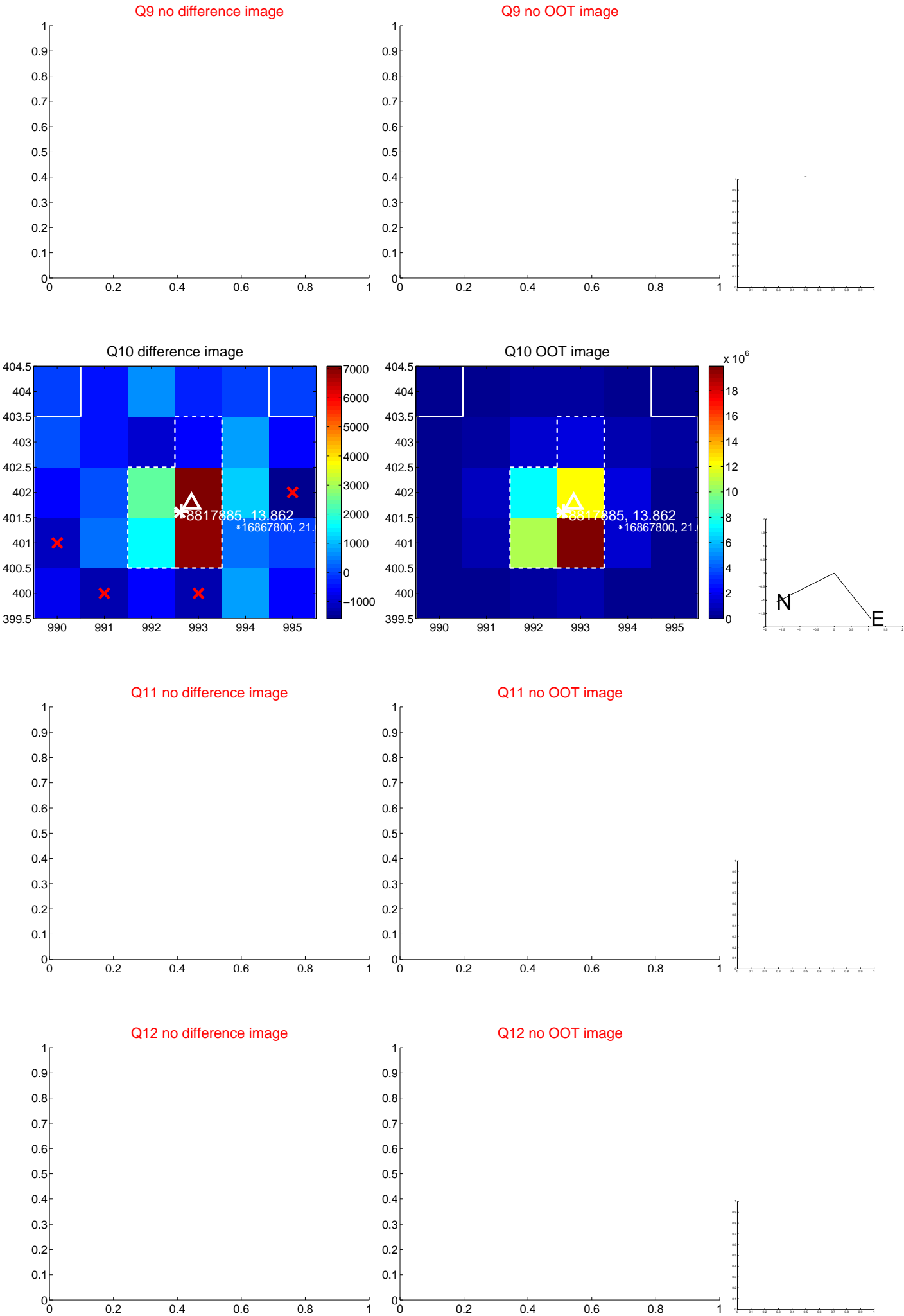
Q4 no OOT image



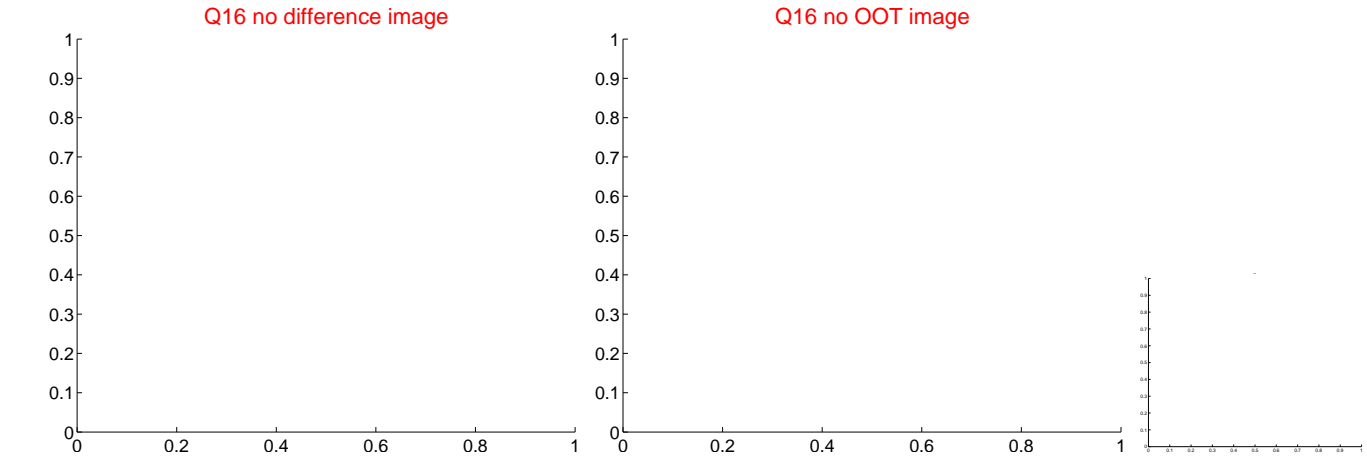
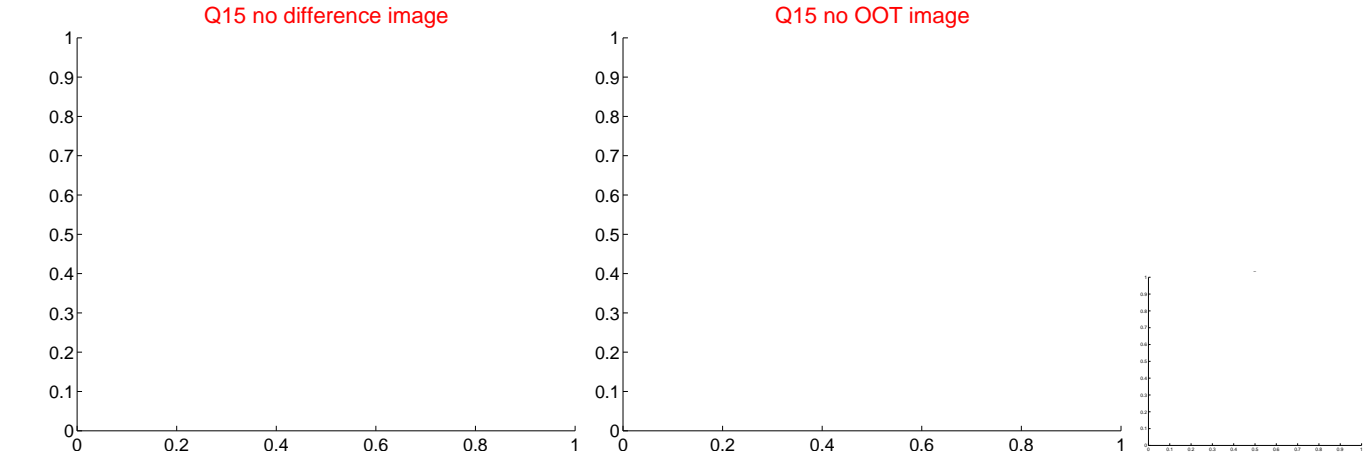
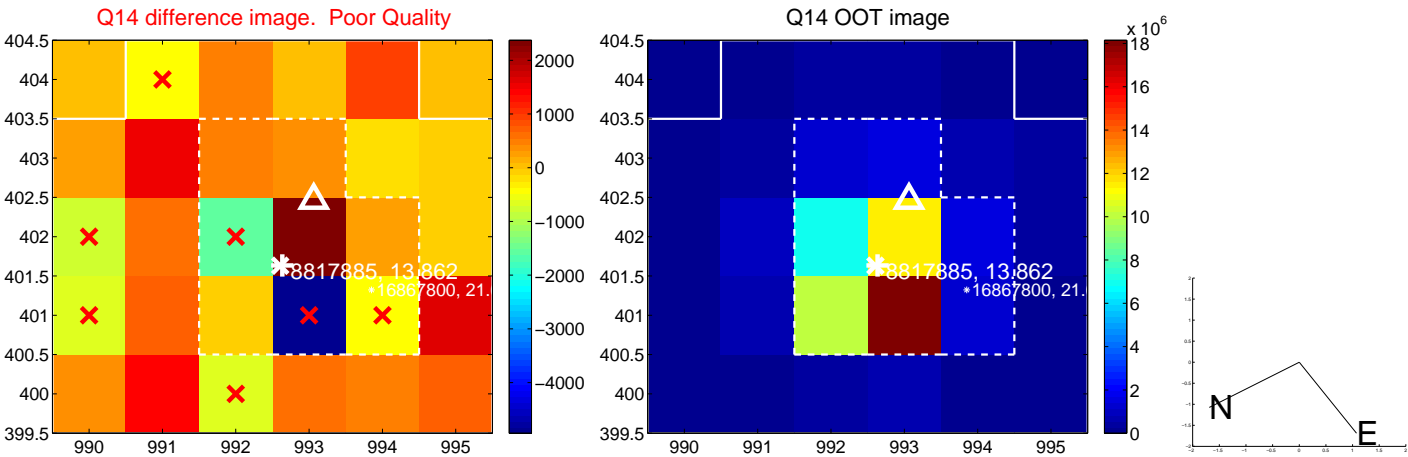
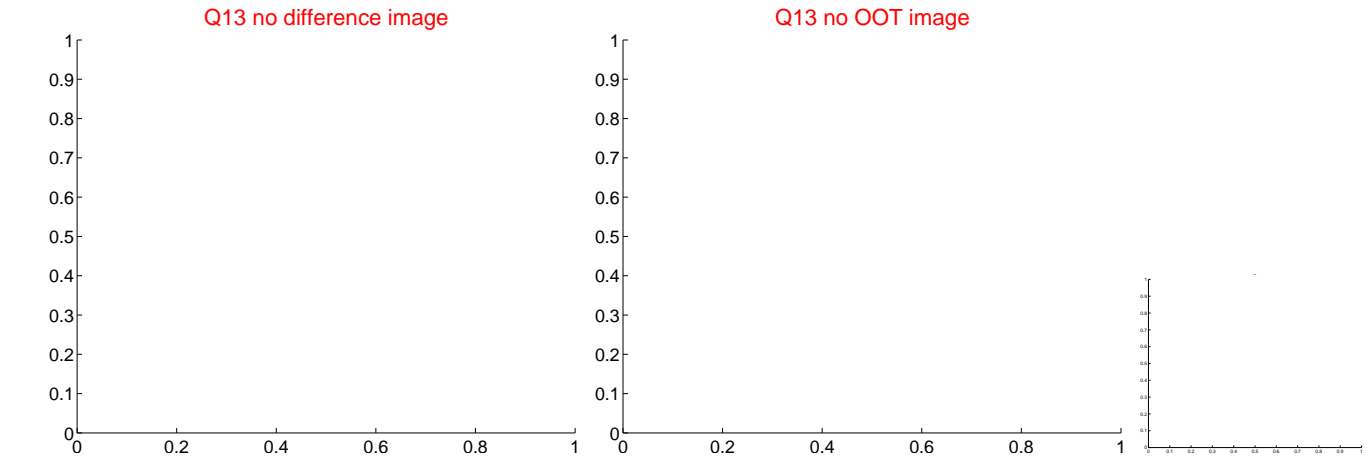
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



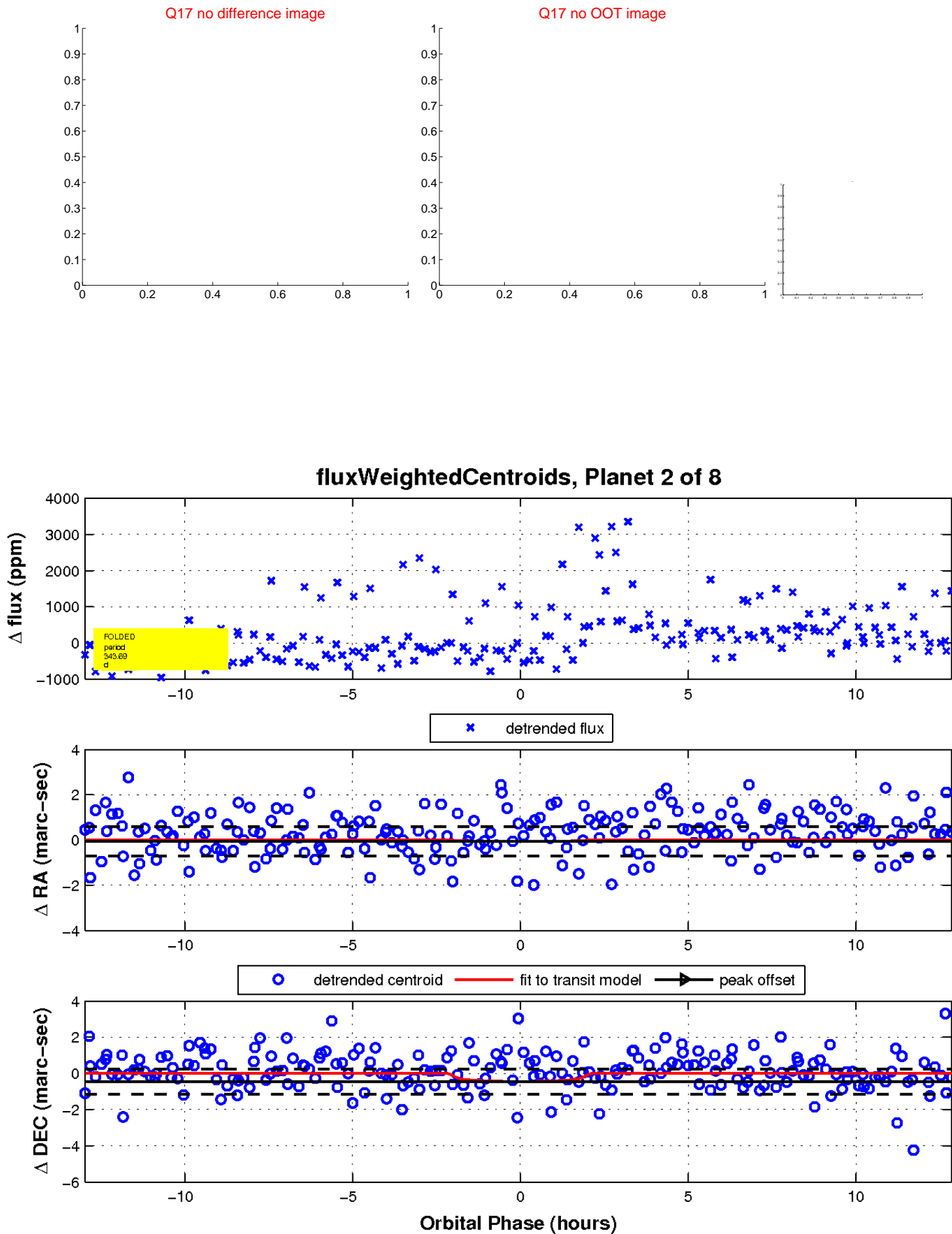
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

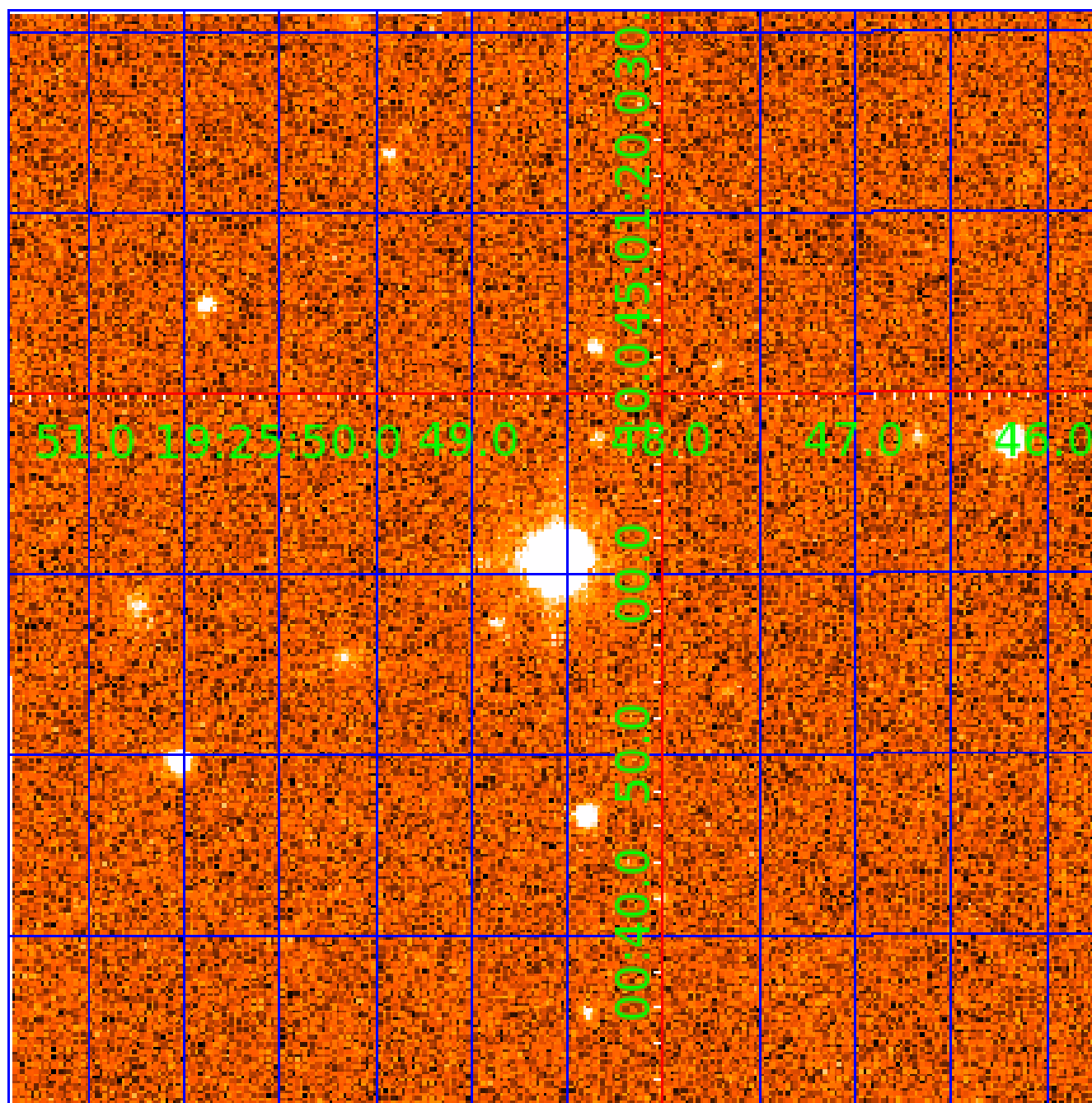


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008817885

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})
008817885-01	OBS	No	625.163148	264.404089	1551.0	7.833	15.9	9.4	2.17	4986	8.30	1.38
008817885-02	OBS	No	343.686068	268.993334	787.6	4.333	13.5	6.6	2.17	4986	6.92	3.07
008817885-03	OBS	No	564.579919	316.517932	1394.2	15.856	13.9	6.9	2.17	4986	16.18	1.59
008817885-04	OBS	No	494.284462	247.611240	936.2	12.590	17.9	5.4	2.17	4986	6.81	1.89
008817885-05	OBS	No	514.219474	172.999465	940.0	4.757	12.9	6.1	2.17	4986	7.10	1.80
008817885-06	OBS	No	485.458145	224.525614	915.1	7.604	11.3	7.0	2.17	4986	6.36	1.94
008817885-07	OBS	No	462.642961	485.426100	495.2	2.210	11.2	3.5	2.17	4986	5.00	2.07
008817885-08	OBS	No	357.907412	274.654893	660.5	3.500	12.1	-1.0	2.17	4986	5.41	2.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008817885-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-02	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
008817885-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008817885-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-06	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—CENT_FEW_DIFFS
008817885-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

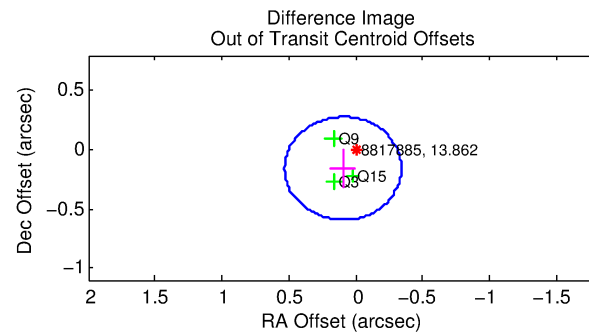
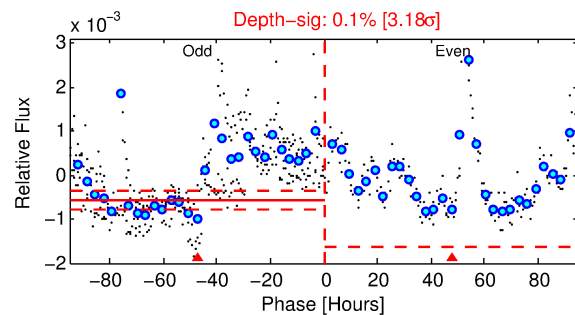
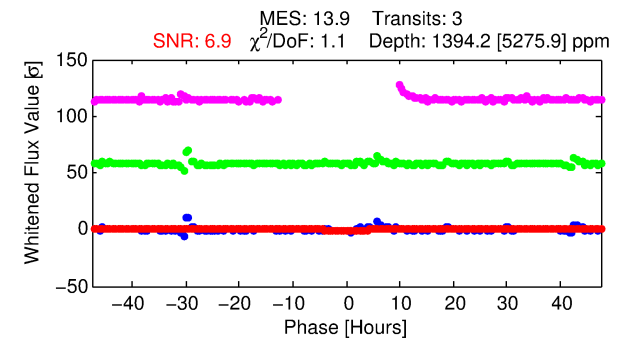
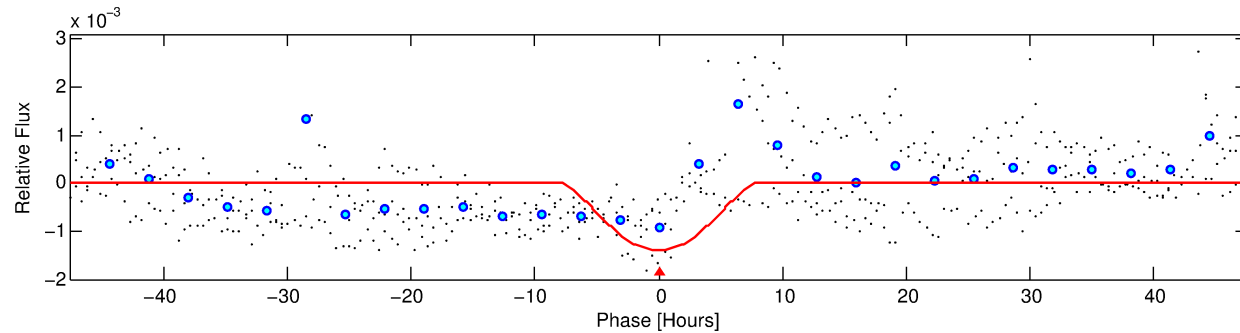
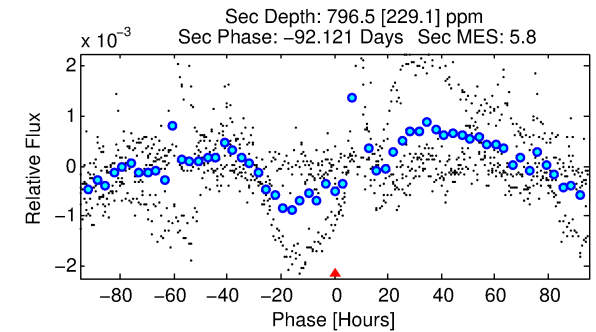
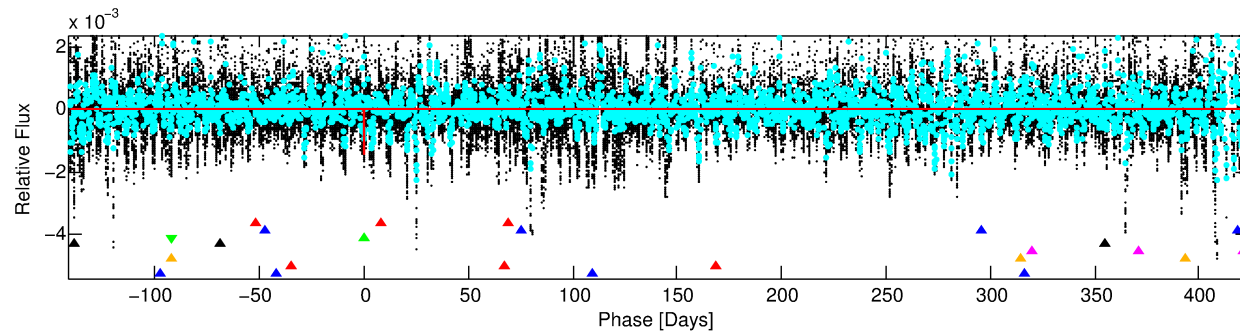
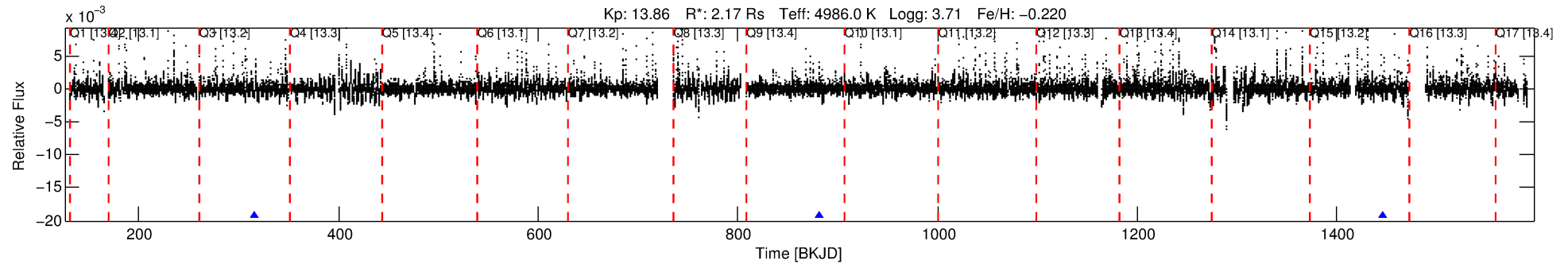
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008817885-03

No Significant Match Found

DV One-Page Summary

KIC: 8817885 Candidate: 3 of 8 Period: 564.580 d



DV Fit Results:

Period = 564.57992 [0.02542] d
Epoch = 316.5179 [0.0296] BKJD
Rp/R* = 0.0684 [0.1775]
a/R* = 102.33 [56.65]
b = 1.00 [0.08]
Seff = 1.59 [2.37]
Teq = 286 [107] K
Rp = 16.18 [43.43] Re
a = 1.2810 [1.0795] AU
Ag = 2745.16 [14838.94] [0.18 σ]
Teffp = 3202 [4162] K [0.70 σ]

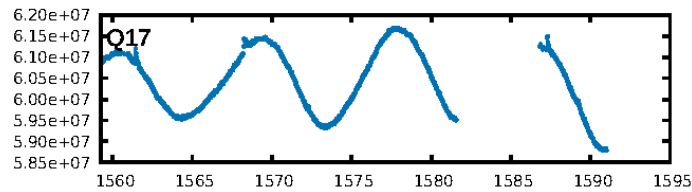
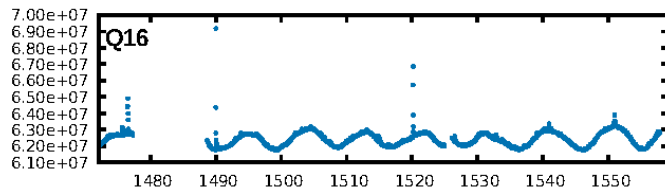
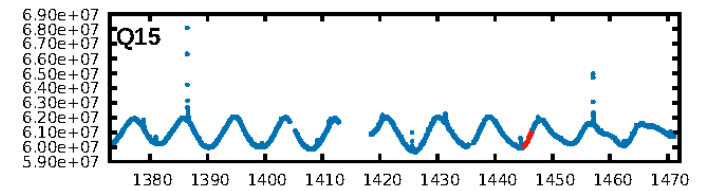
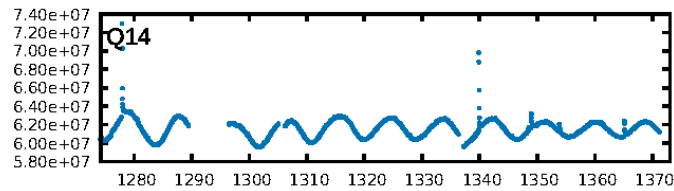
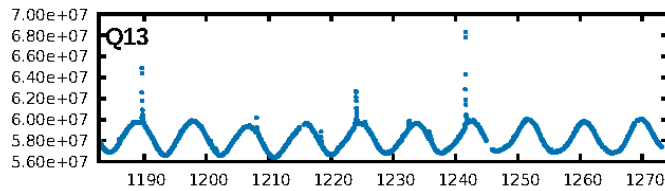
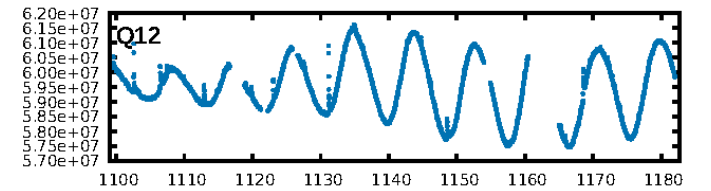
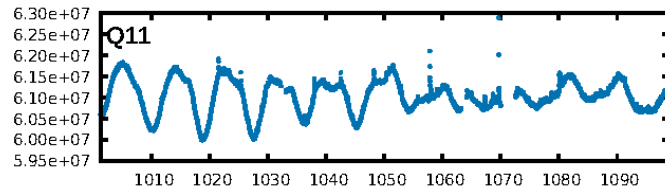
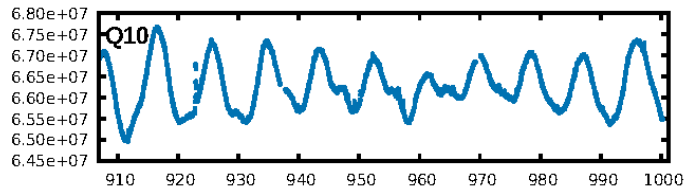
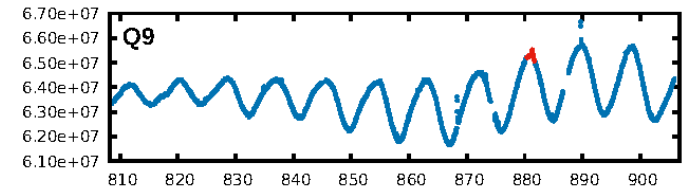
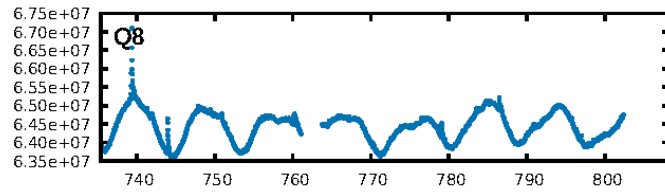
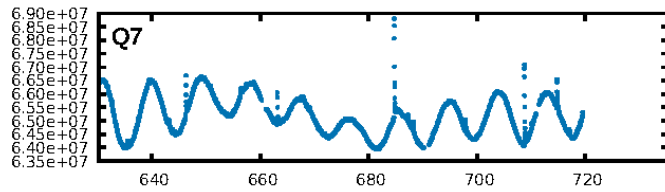
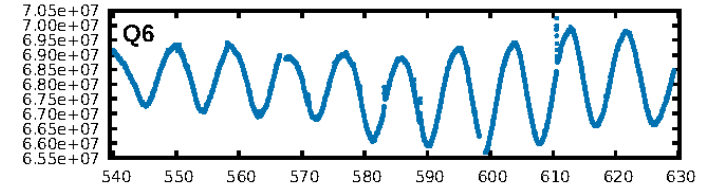
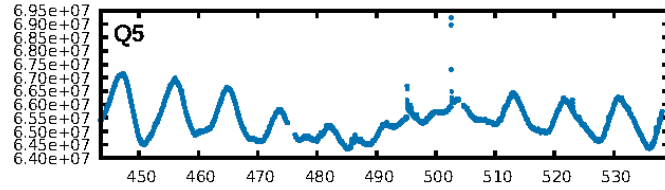
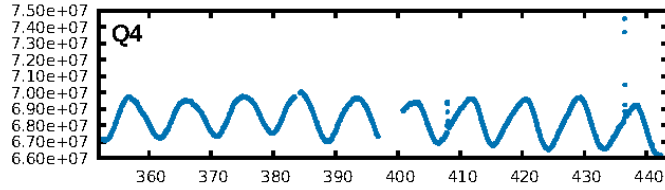
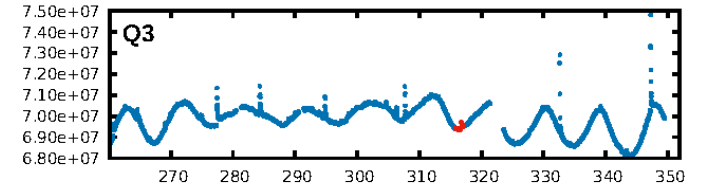
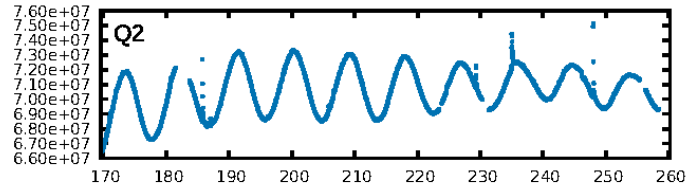
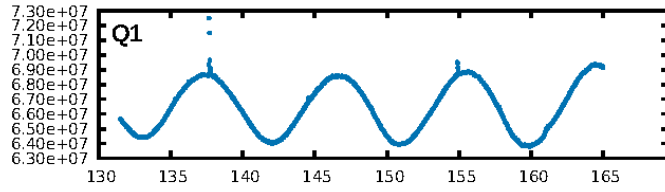
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [73.01 σ]
LongPeriod-sig: 100.0% [82.21 σ]
ModelChiSquare2-sig: 51.2%
ModelChiSquareGof-sig: 97.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.5421
Centroid-sig: 9.8%
Centroid-so: 0.558 arcsec [1.34 σ]
OotOffset-rm: 0.185 arcsec [1.27 σ]
OotOffset-st: 0.2/0/1 [3]
KicOffset-rm: 0.260 arcsec [1.80 σ]
KicOffset-st: 0.2/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

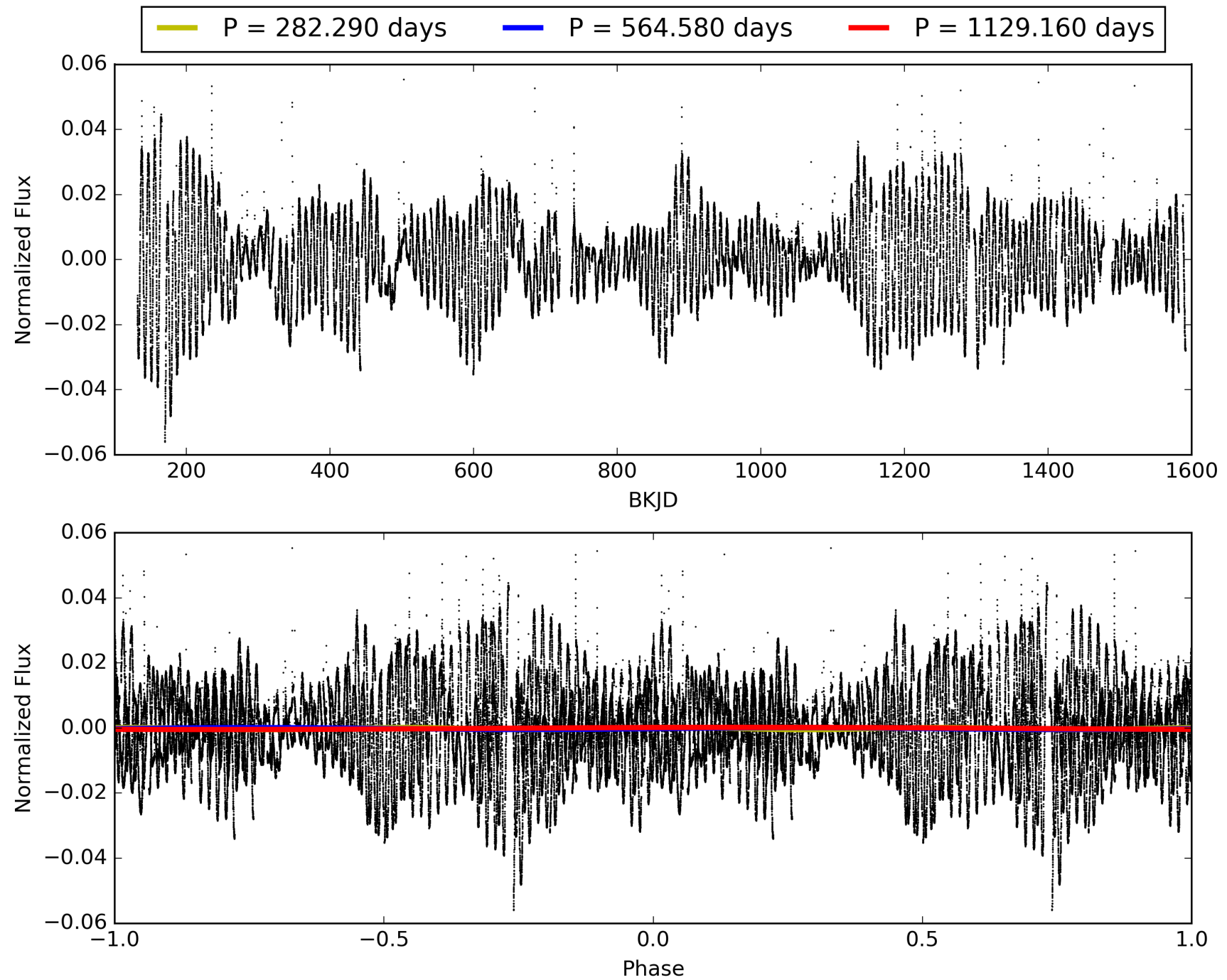
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:09:26 Z

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

TCE 008817885-03, PDC Light Curves

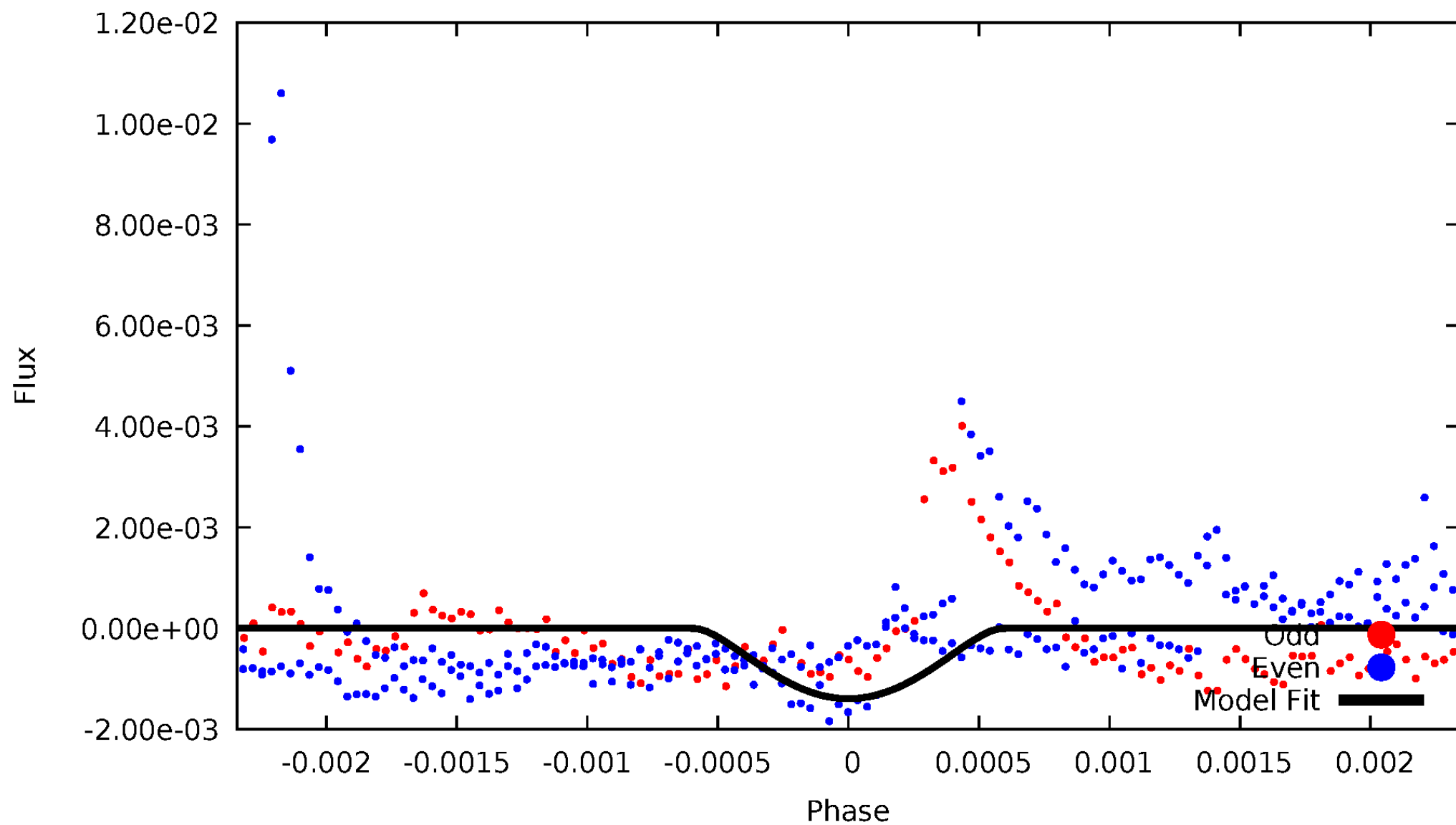


TCE 008817885-03



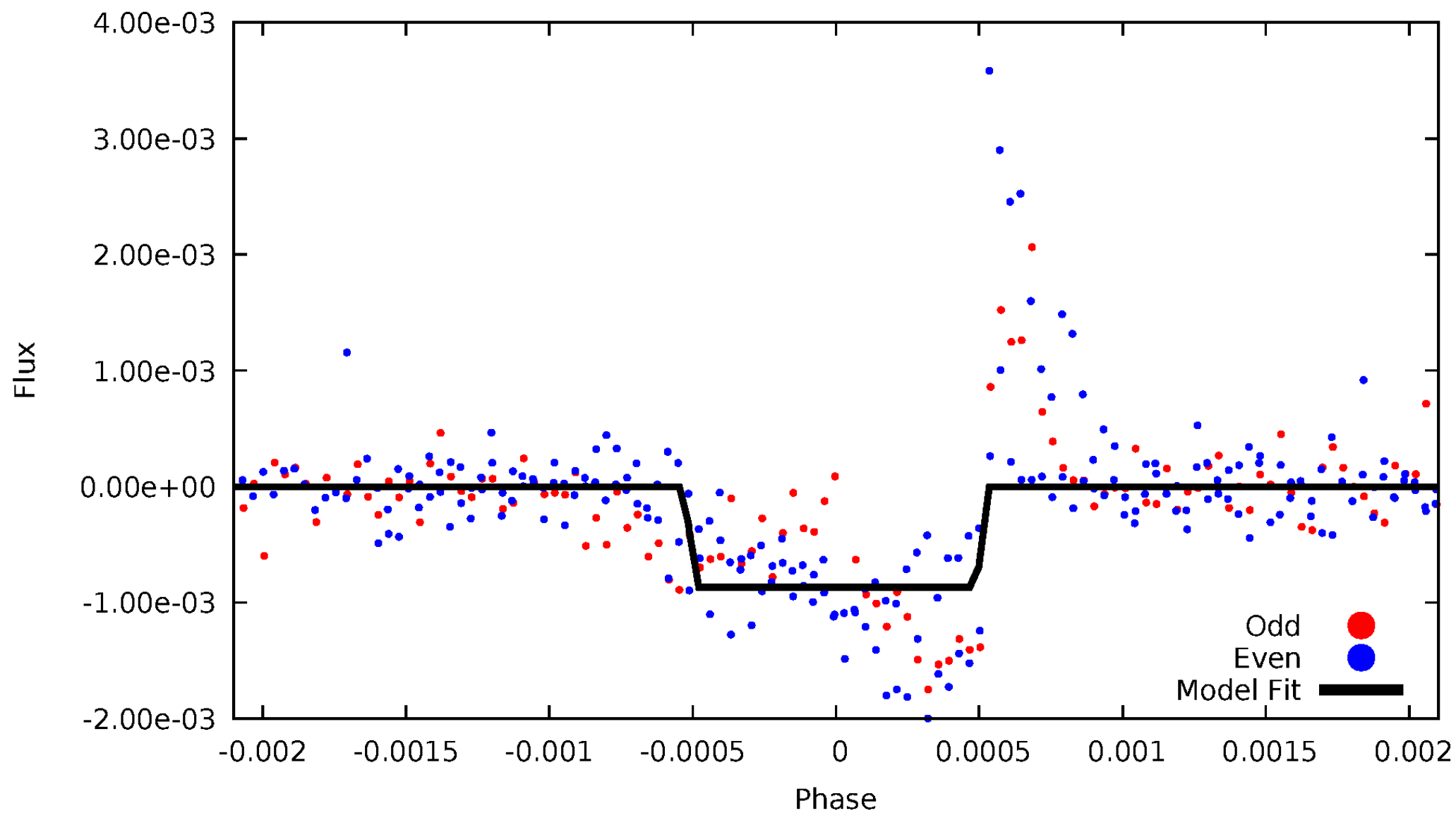
DV Odd/Even

TCE 008817885-03



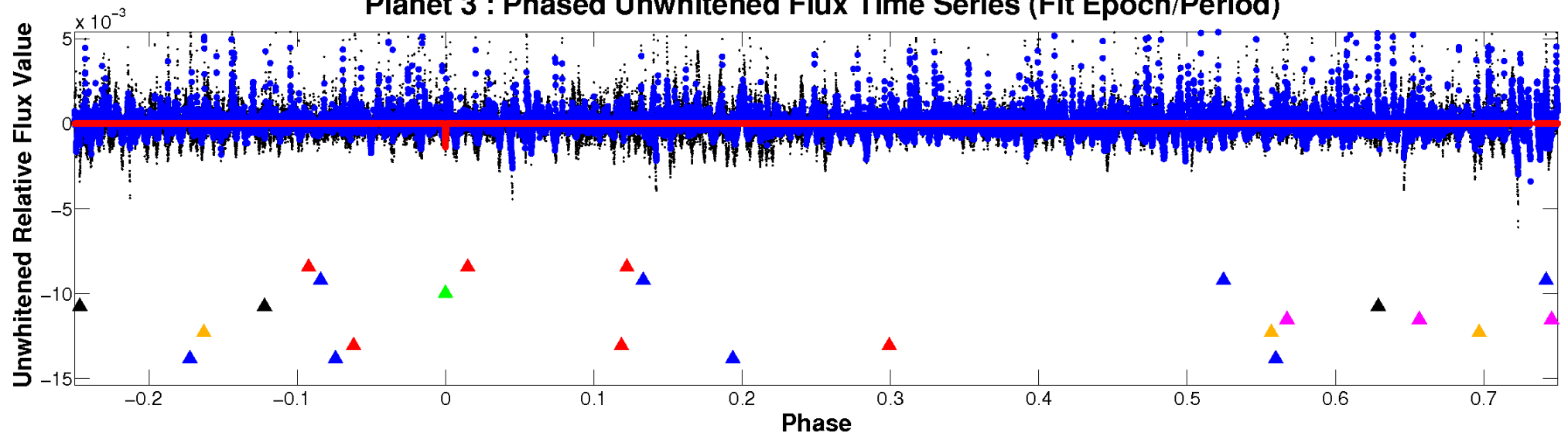
ALT Odd/Even

TCE 008817885-03

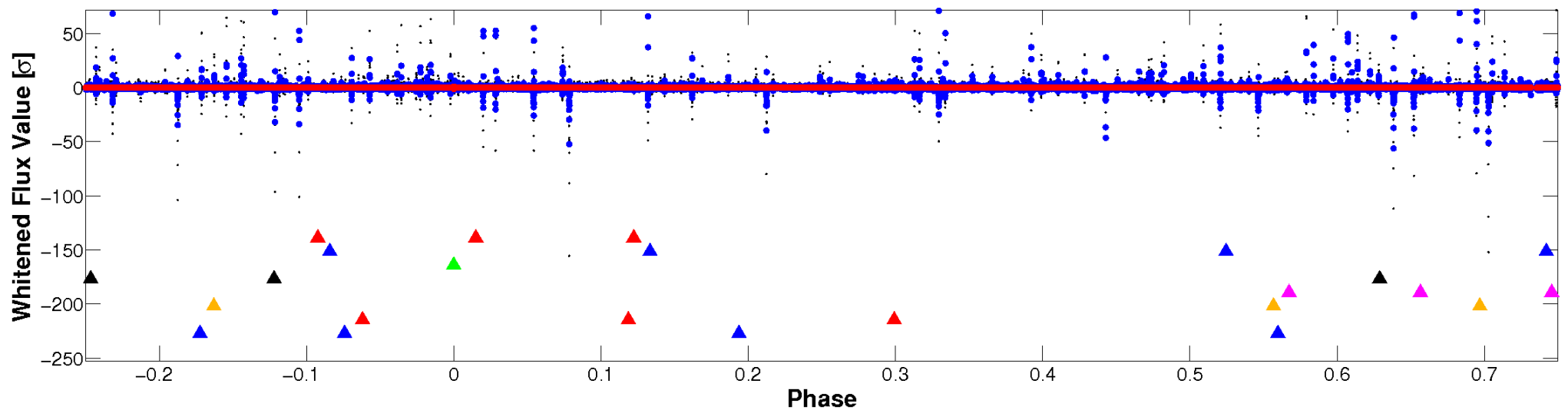


Non-Whitened Vs. Whitened Light Curve

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

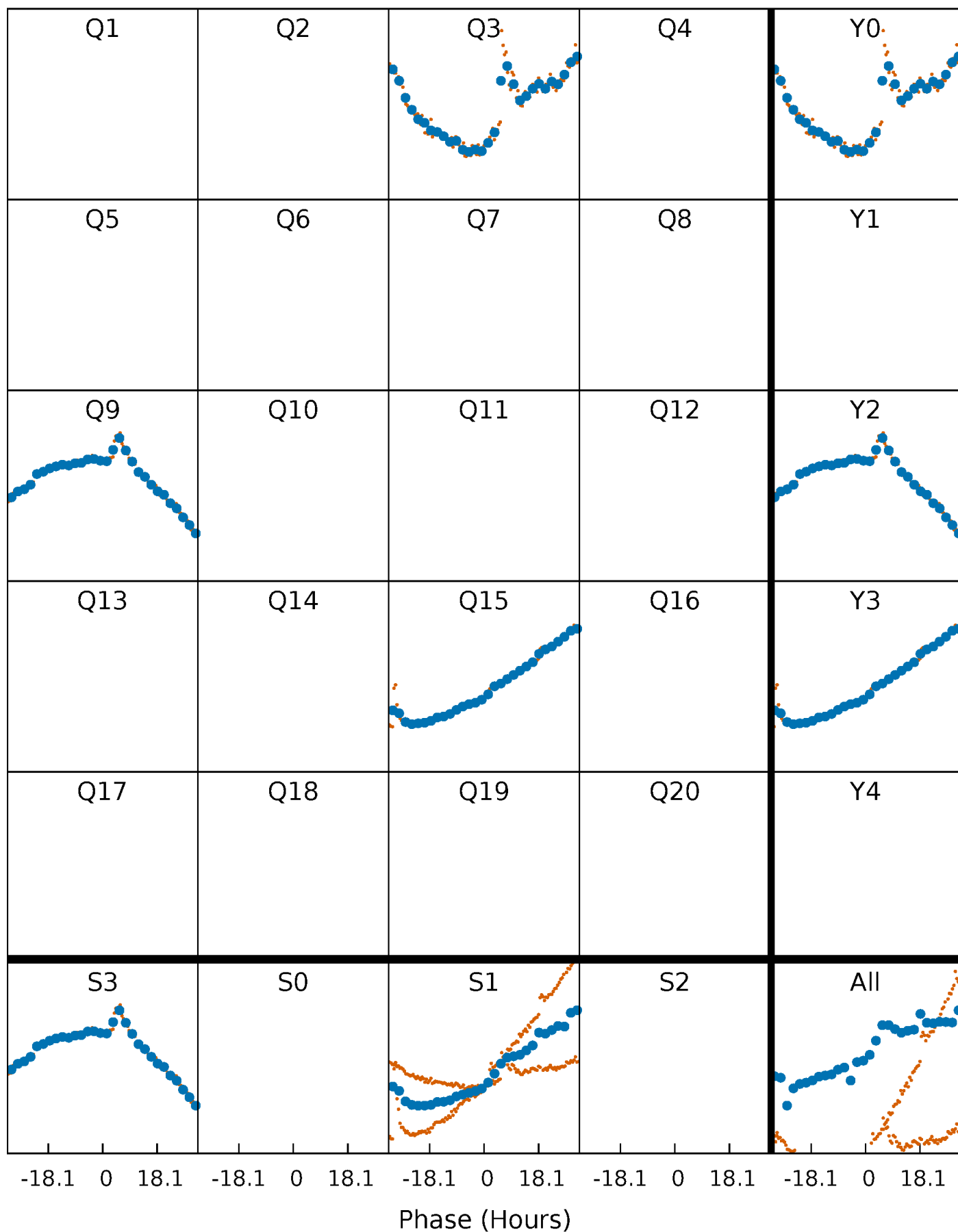


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



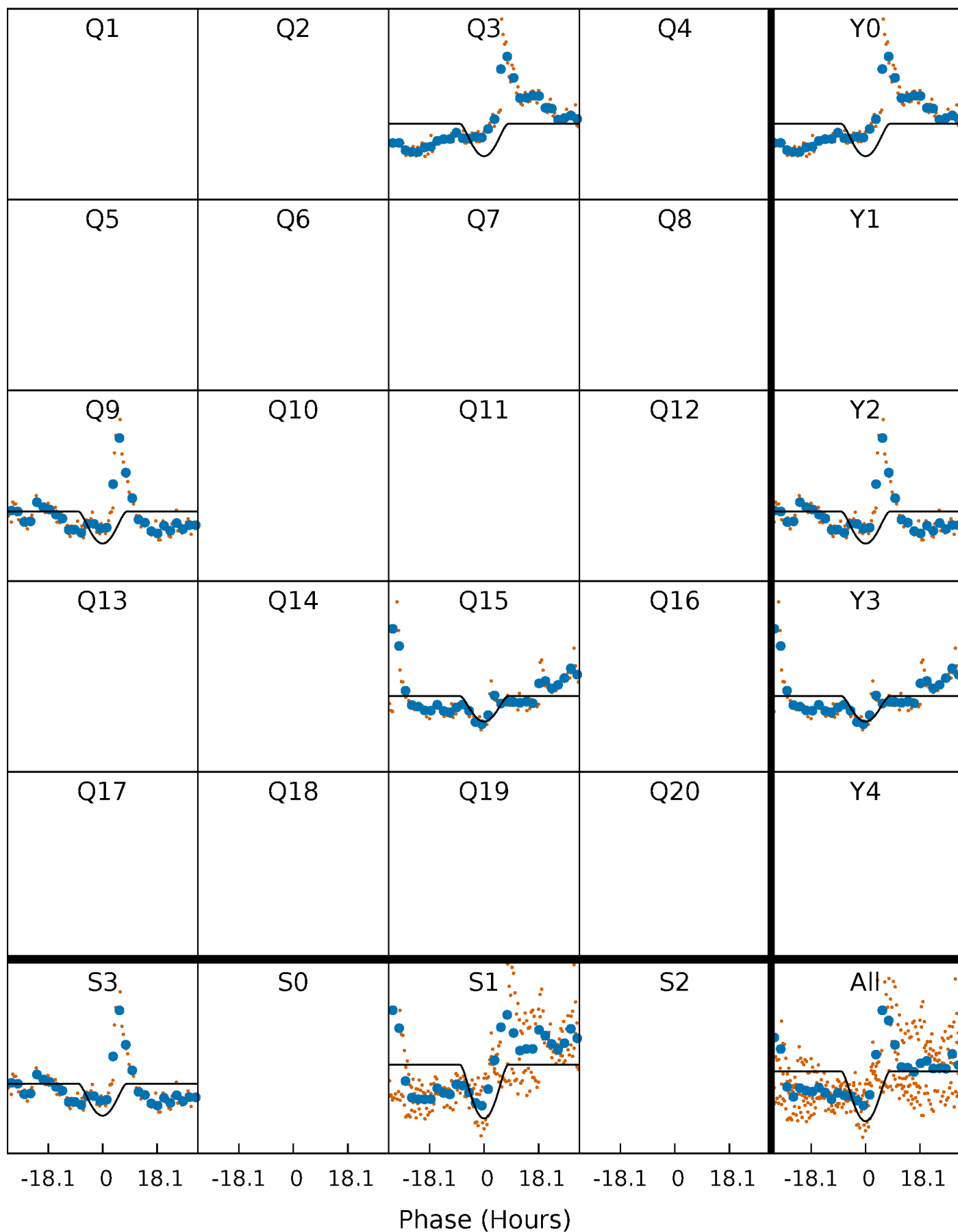
PDC Quarter-Phased Transit Curves

TCE 008817885-03 $P=564.579919$ Days $T_0=316.517932$ (BKJD)



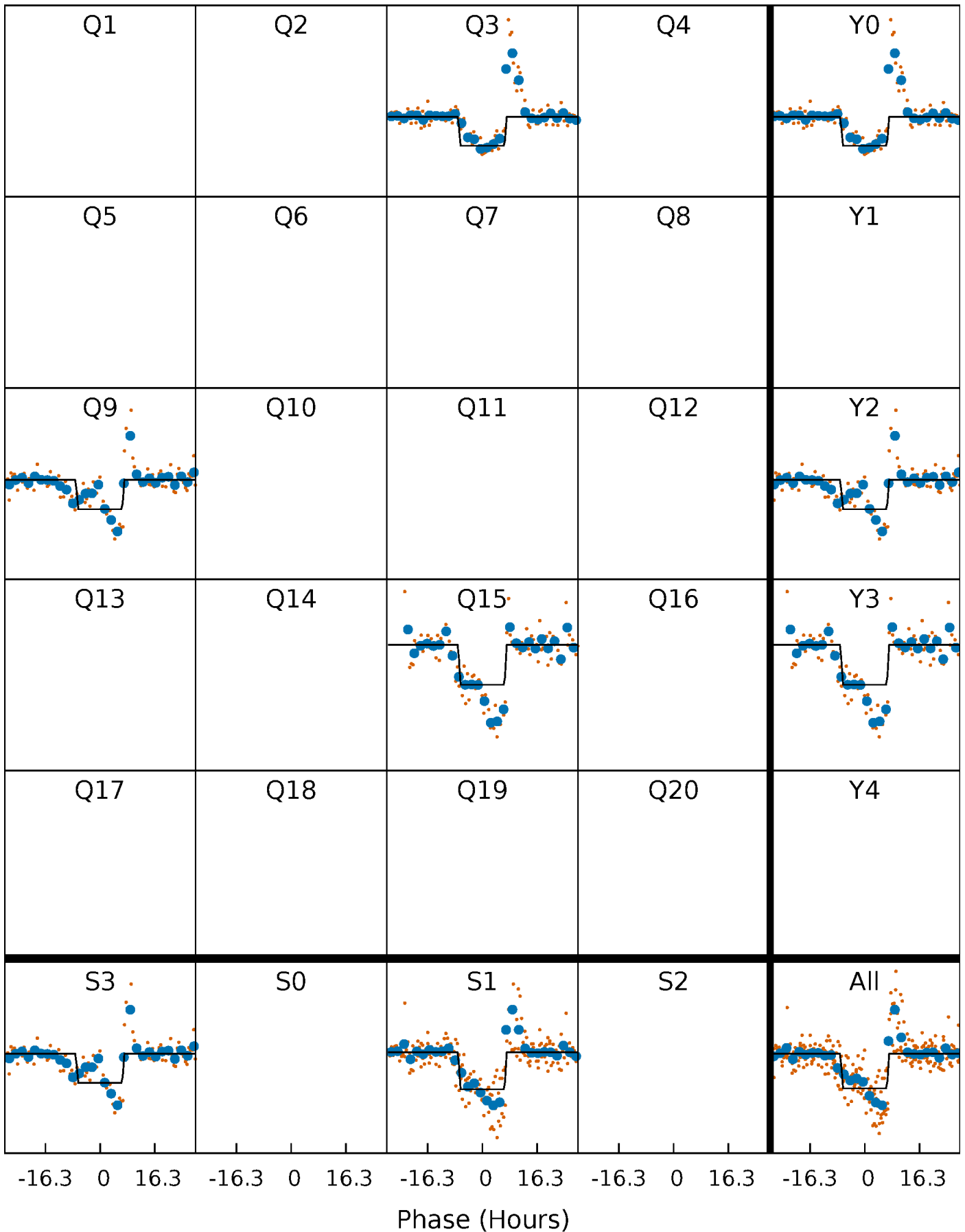
DV Quarter-Phased Transit Curves

TCE 008817885-03 $P=564.579919$ Days $T_0=316.517932$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

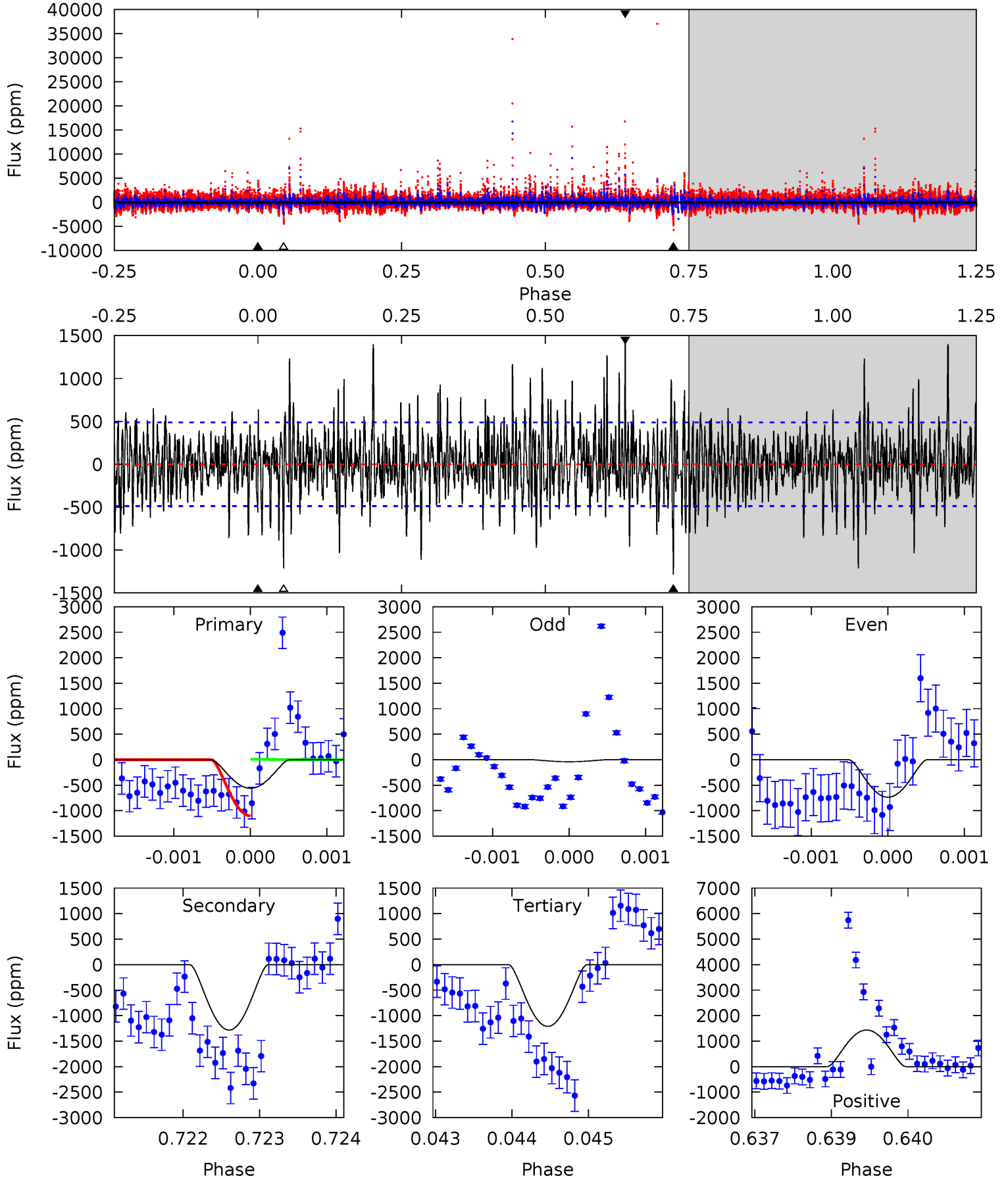
TCE 008817885-03 $P=564.497529$ Days $T_0=316.460306$ (BKJD)



DV Model-Shift Uniqueness Test

008817885-03, P = 564.579919 Days, E = 316.517932 Days

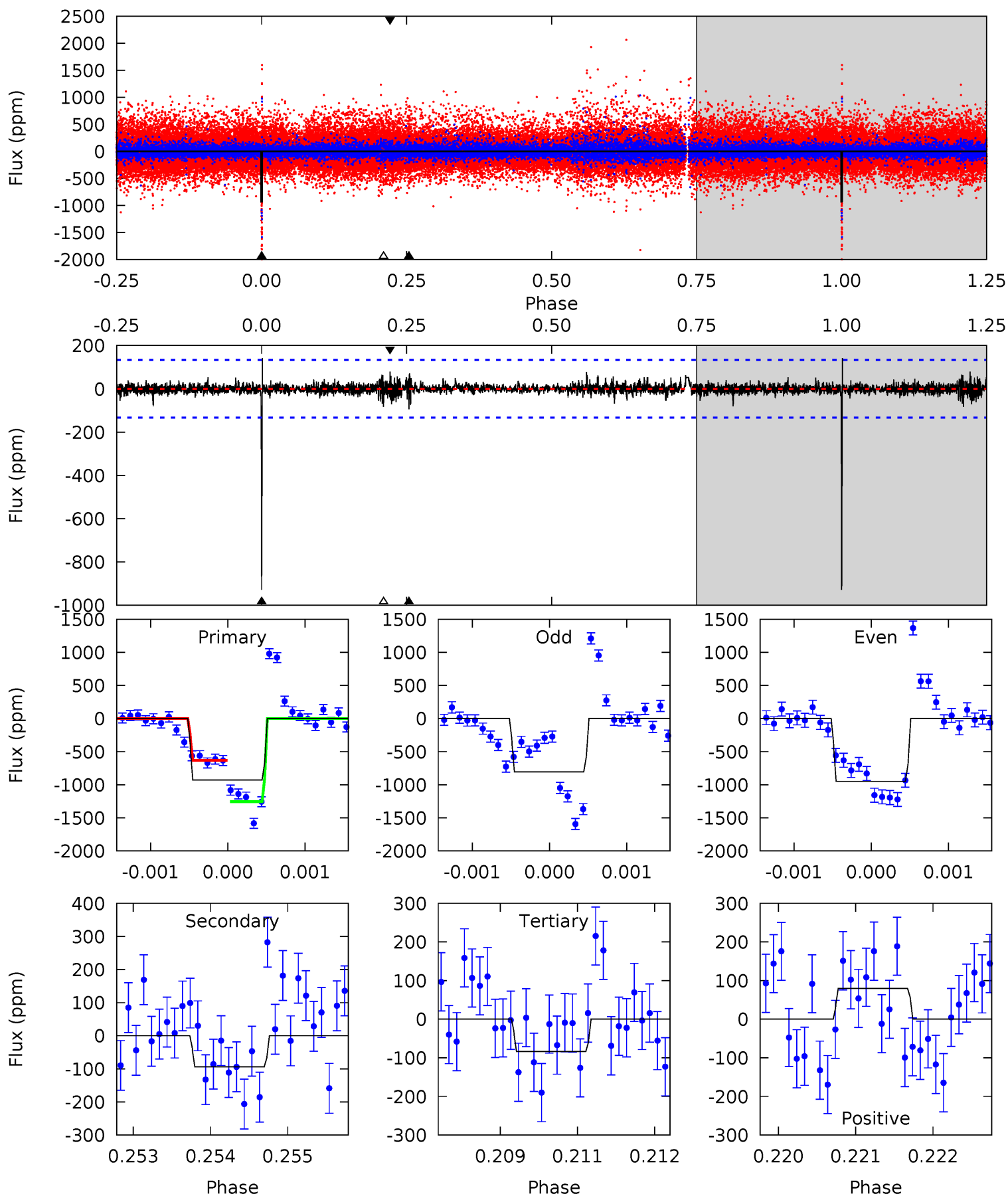
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.21	14.3	13.5	15.9	5.42	3.25	3.41	-7.24	-9.72	0.80	-1.68	2.31	2.41	0.53	6.18



Alt Model-Shift Uniqueness Test

008817885-03, P = 564.497529 Days, E = 316.460306 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.9	3.85	3.42	3.25	5.44	3.28	0.57	34.5	34.7	0.43	0.60	2.41	1.12	0.13	12.9



Stellar Parameters For KIC 008817885

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4986^{+123}_{-147}	$3.710^{+0.922}_{-0.307}$	$-0.220^{+0.300}_{-0.300}$	$2.168^{+1.217}_{-1.488}$	$0.880^{+0.231}_{-0.189}$	$0.122^{+3.042}_{-0.076}$
	+2%/-3%	+25%/-8%	+136%/-136%	+56%/-69%	+26%/-21%	+2502%/-62%
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 008817885-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1285 ± 90	$31.10^{+37.88}_{-21.94}$	386^{+64}_{-74}	3071^{+1374}_{-511}	1247^{+14469}_{-992}
Alt.	-94 ± 24	$28.61^{+35.88}_{-21.04}$	390^{+60}_{-75}	2235^{+776}_{-317}	105^{+1305}_{-86}

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 $A_{obs} \gg 1.0$

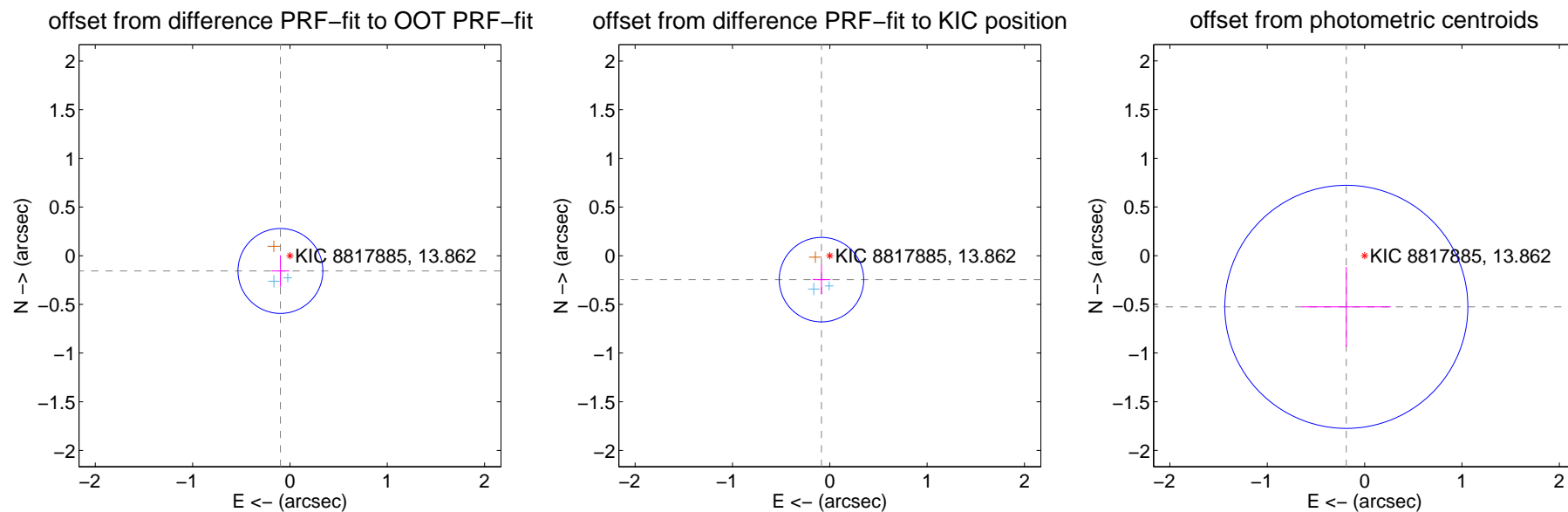
DV Centroid Data

Supplemental centroid analysis for 008817885-03. Kepler magnitude: 13.86. Transit SNR 6.93

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.185 ± 0.145	1.27	0.098 ± 0.091	-0.157 ± 0.162
PRF-fit source offset from KIC position	0.260 ± 0.145	1.80	0.086 ± 0.092	-0.246 ± 0.150
photometric centroid source offset	0.56 ± 0.42	1.34	0.19 ± 0.46	-0.53 ± 0.41



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

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

Q1 no difference image



Q1 no OOT image



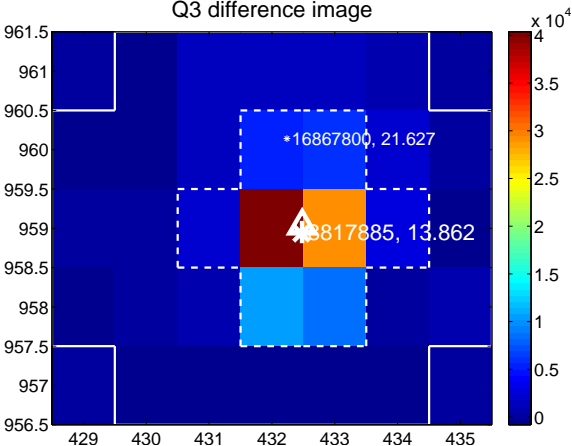
Q2 no difference image



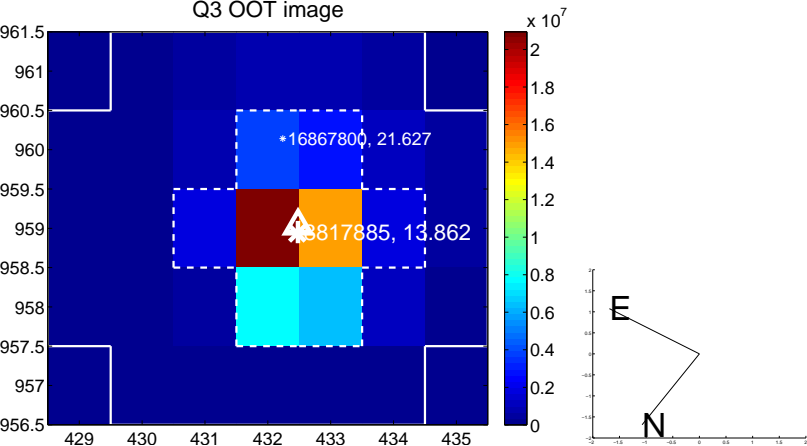
Q2 no OOT image



Q3 difference image



Q3 OOT image



Q4 no difference image



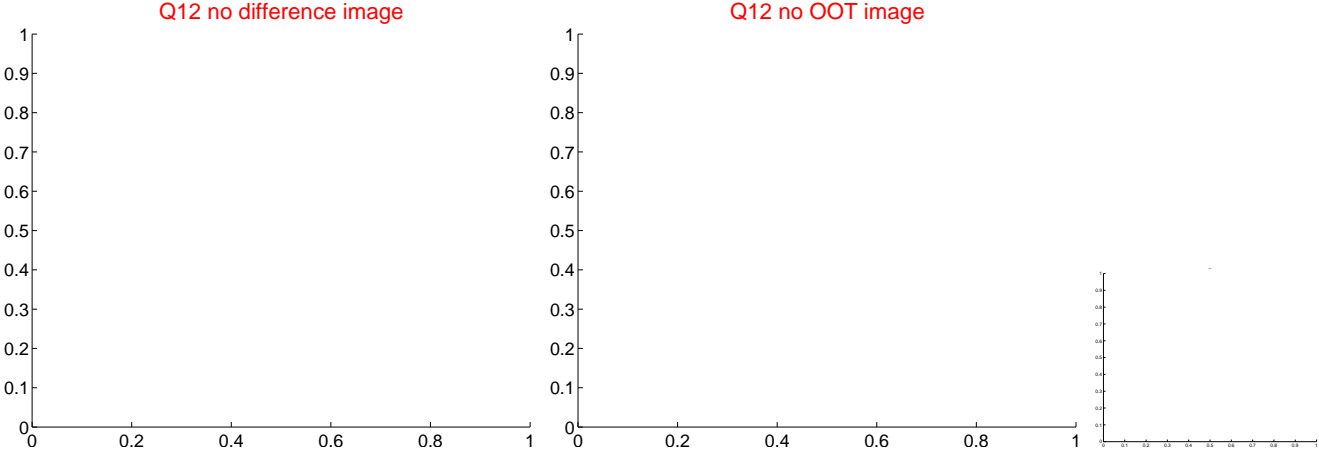
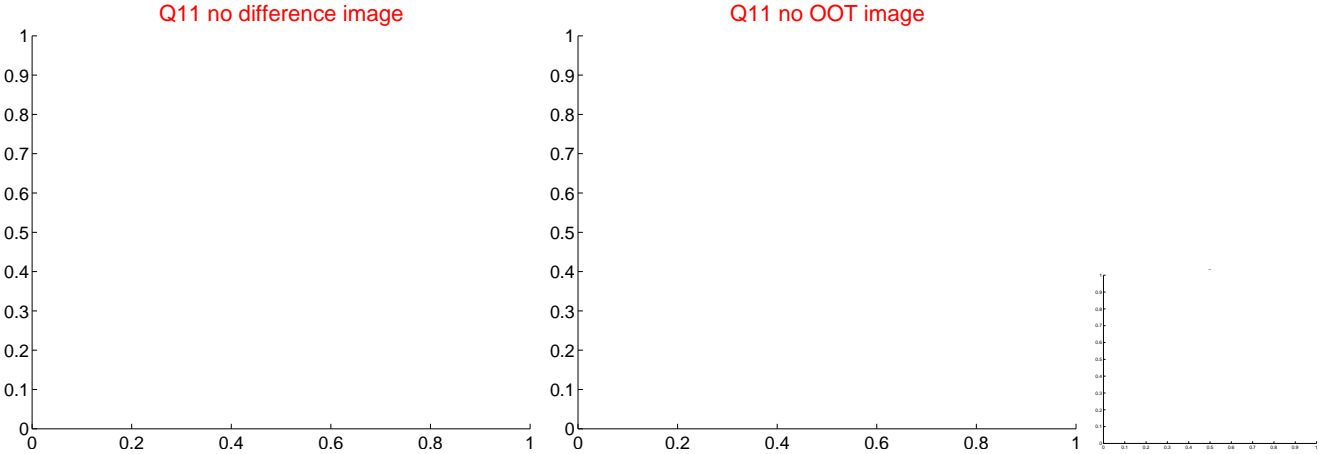
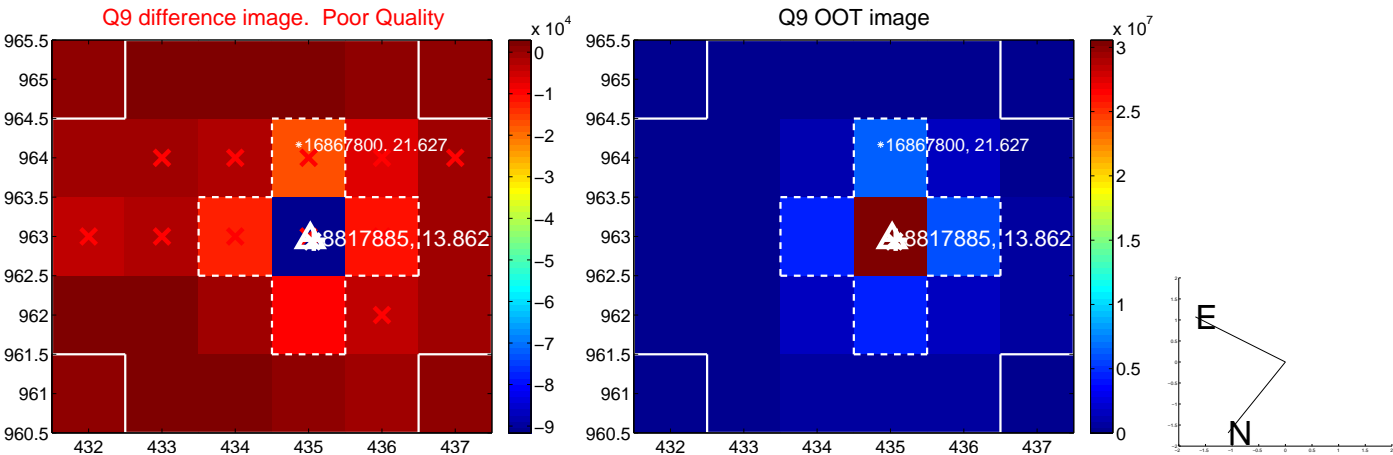
Q4 no OOT image



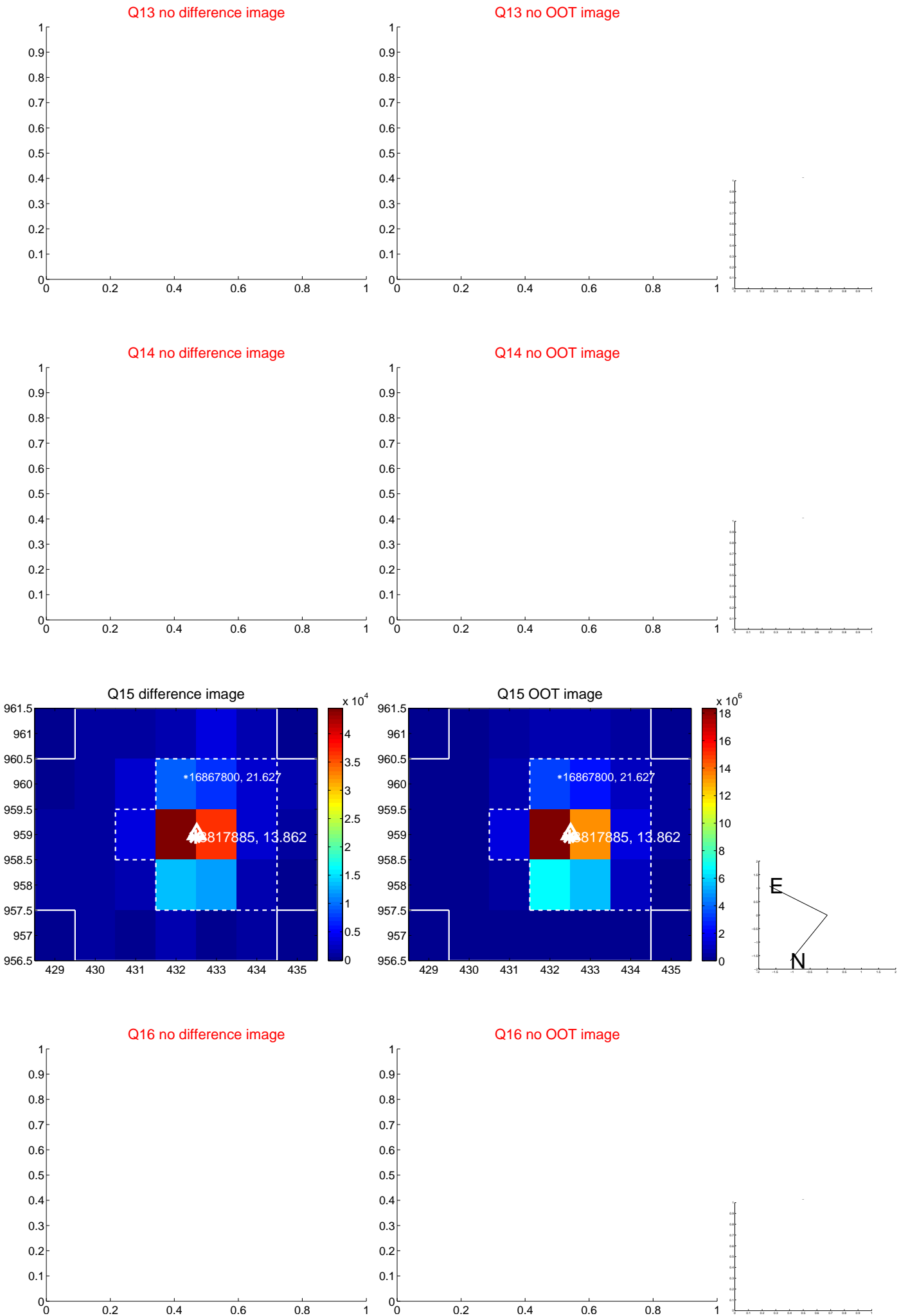
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



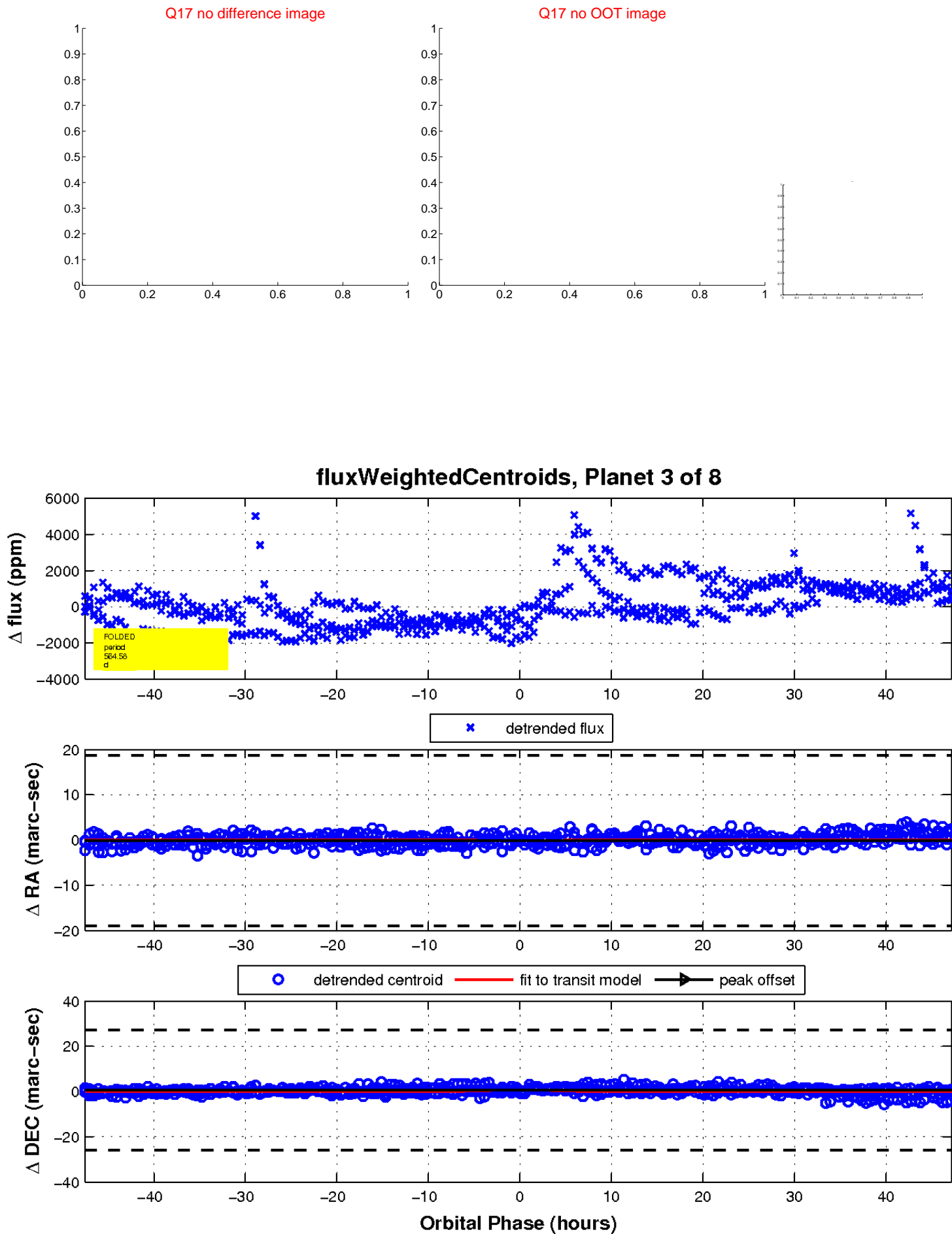
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

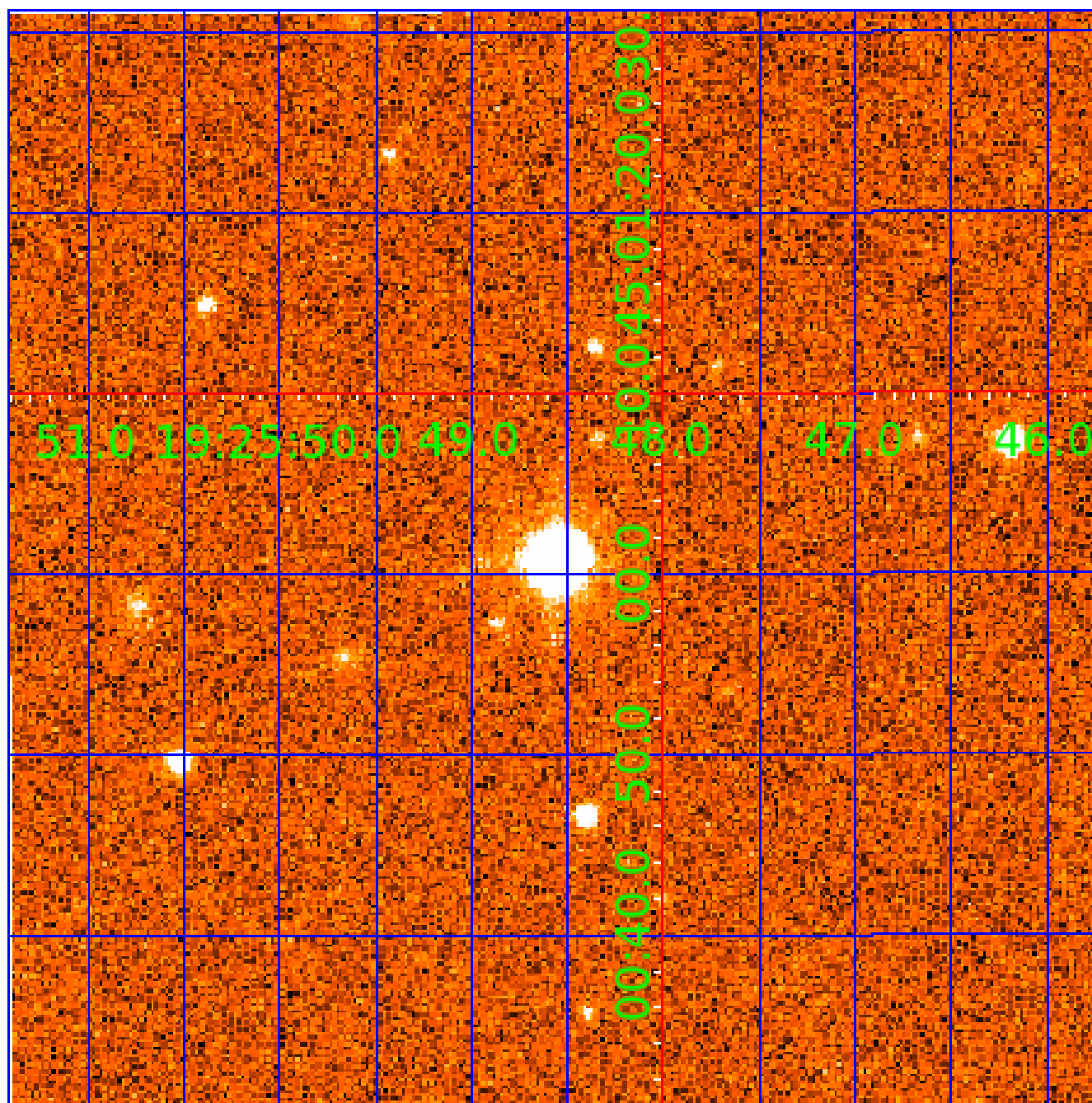


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008817885

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})
008817885-01	OBS	No	625.163148	264.404089	1551.0	7.833	15.9	9.4	2.17	4986	8.30	1.38
008817885-02	OBS	No	343.686068	268.993334	787.6	4.333	13.5	6.6	2.17	4986	6.92	3.07
008817885-03	OBS	No	564.579919	316.517932	1394.2	15.856	13.9	6.9	2.17	4986	16.18	1.59
008817885-04	OBS	No	494.284462	247.611240	936.2	12.590	17.9	5.4	2.17	4986	6.81	1.89
008817885-05	OBS	No	514.219474	172.999465	940.0	4.757	12.9	6.1	2.17	4986	7.10	1.80
008817885-06	OBS	No	485.458145	224.525614	915.1	7.604	11.3	7.0	2.17	4986	6.36	1.94
008817885-07	OBS	No	462.642961	485.426100	495.2	2.210	11.2	3.5	2.17	4986	5.00	2.07
008817885-08	OBS	No	357.907412	274.654893	660.5	3.500	12.1	-1.0	2.17	4986	5.41	2.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008817885-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-02	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
008817885-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008817885-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-06	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—CENT_FEW_DIFFS
008817885-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

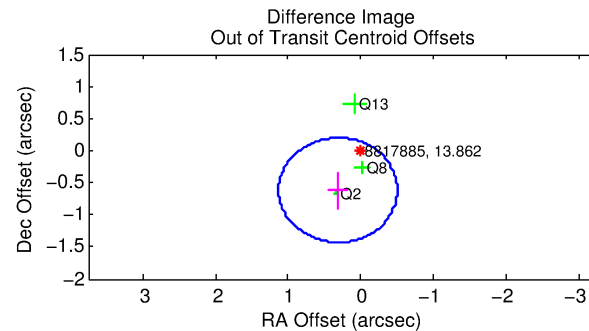
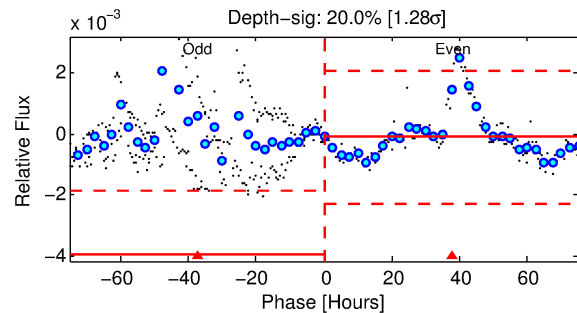
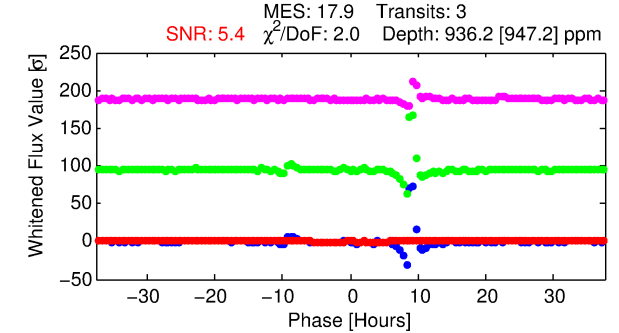
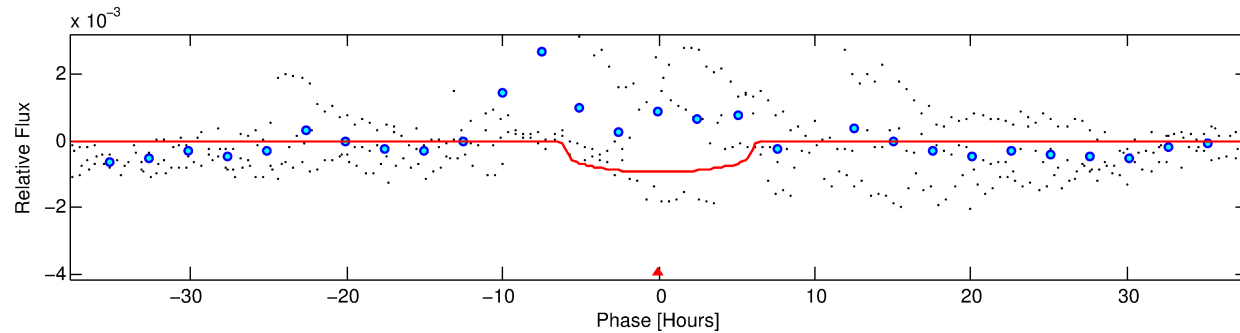
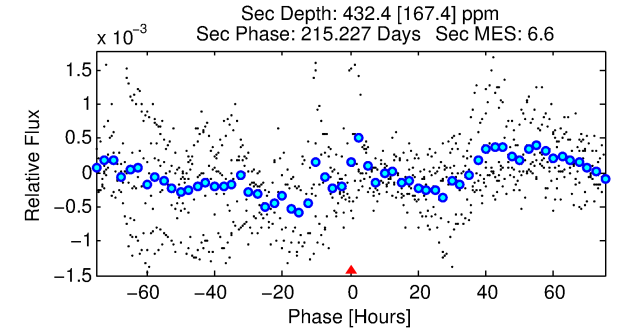
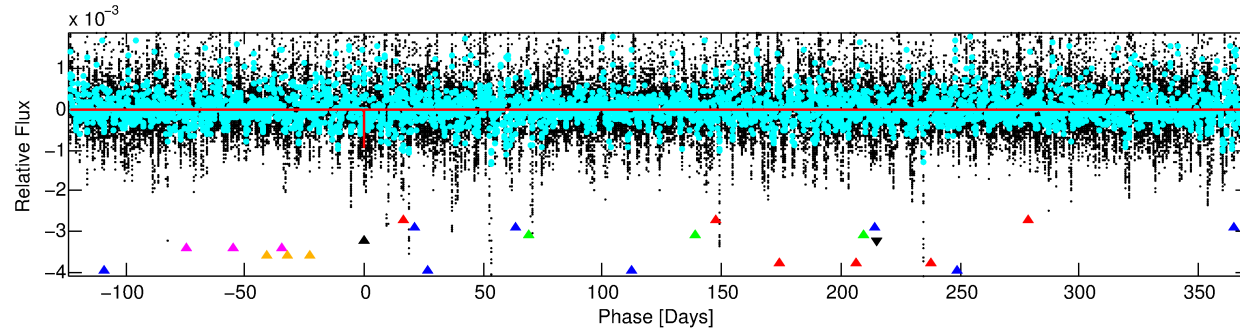
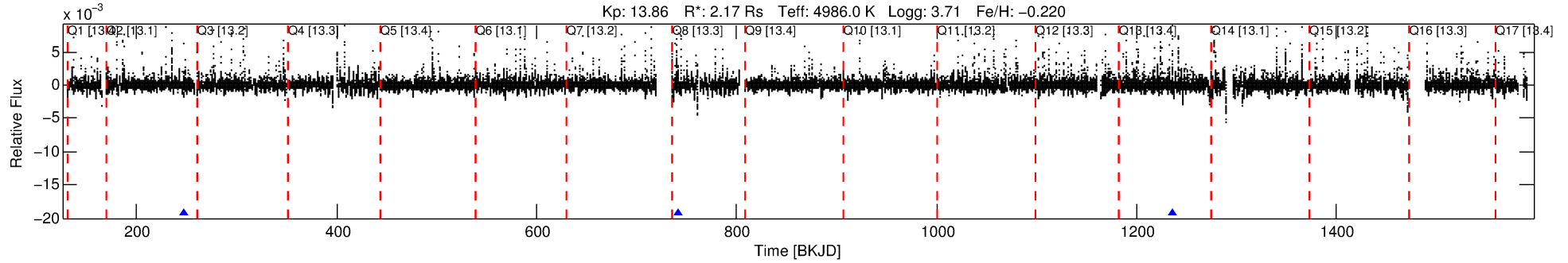
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008817885-04

No Significant Match Found

DV One-Page Summary

KIC: 8817885 Candidate: 4 of 8 Period: 494.284 d



DV Fit Results:

Period = 494.28446 [0.04056] d
Epoch = 247.6112 [0.0486] BKJD
Rp/R* = 0.0288 [0.0462]
a/R* = 255.77 [1326.15]
b = 0.58 [6.11]
Seff = 1.89 [2.83]
Teq = 299 [112] K
Rp = 6.81 [11.88] Re
a = 1.1723 [0.9879] AU
Ag = 7054.38 [25093.21] [0.28 σ]
Teffp = 4238 [3426] K [1.15 σ]

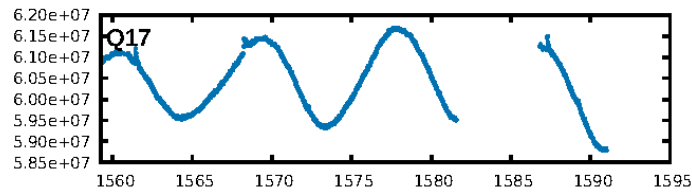
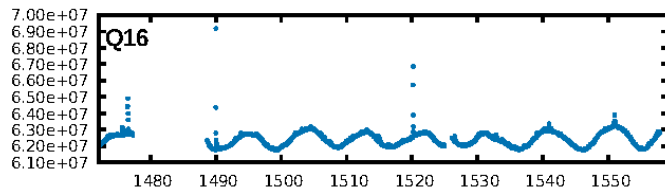
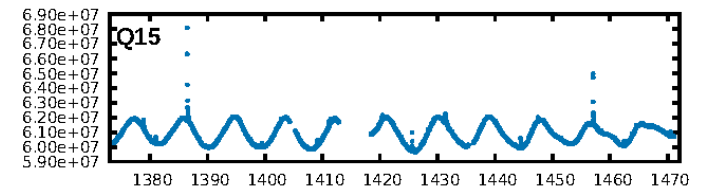
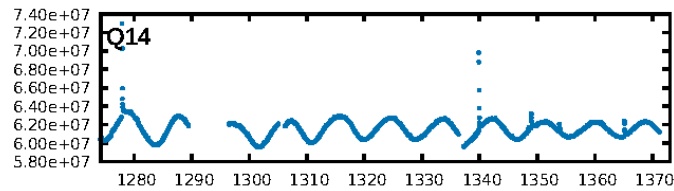
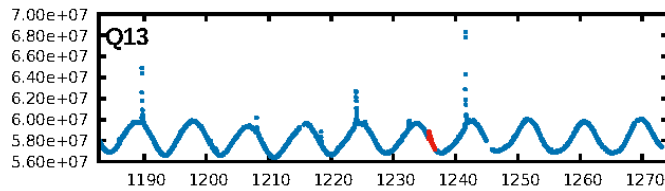
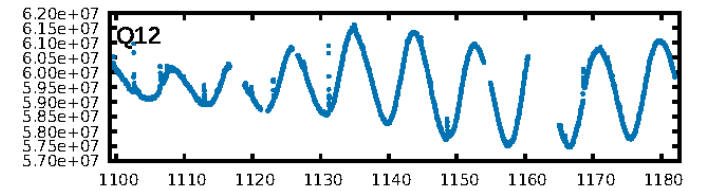
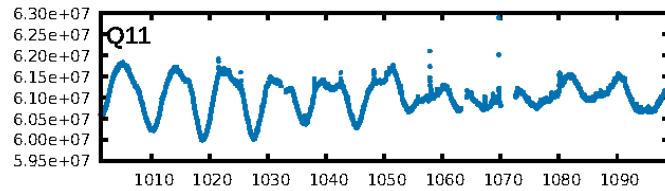
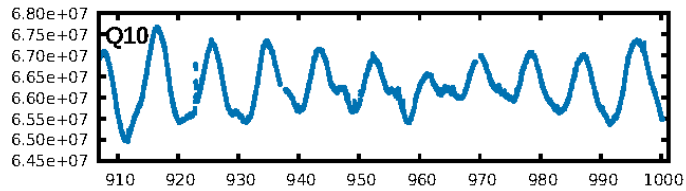
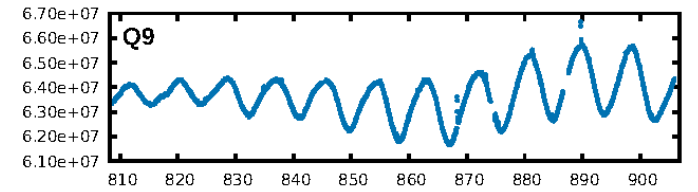
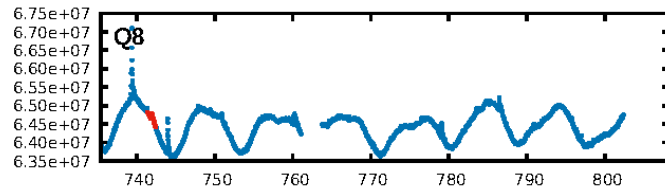
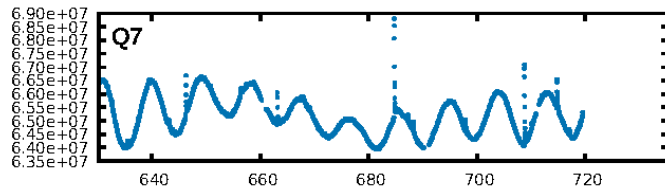
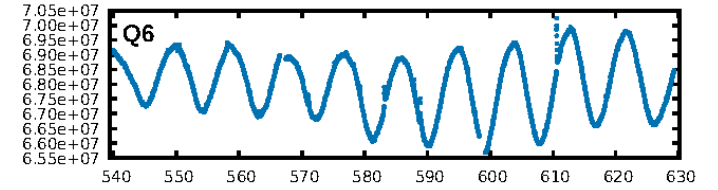
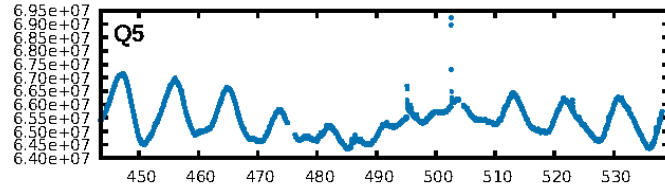
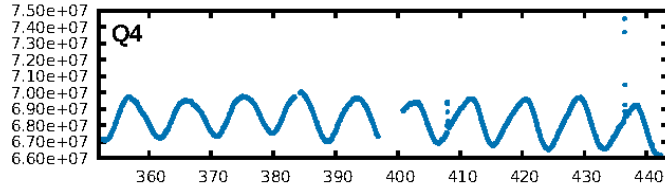
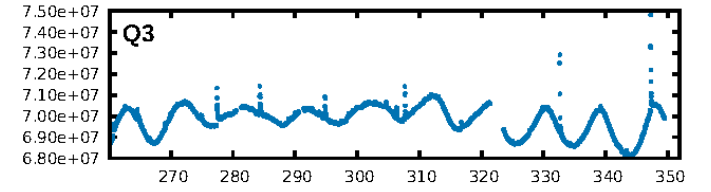
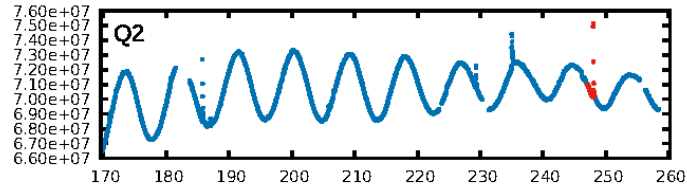
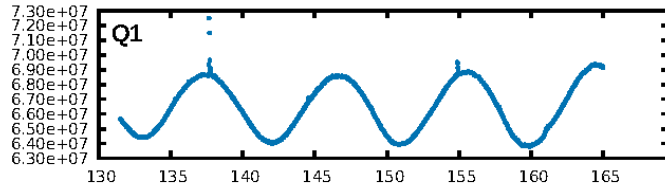
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.40 σ]
LongPeriod-sig: 100.0% [35.55 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 1.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -3.945
Centroid-sig: 3.0%
Centroid-so: 0.937 arcsec [1.73 σ]
OotOffset-rm: 0.692 arcsec [2.55 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-rm: 0.802 arcsec [3.67 σ]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

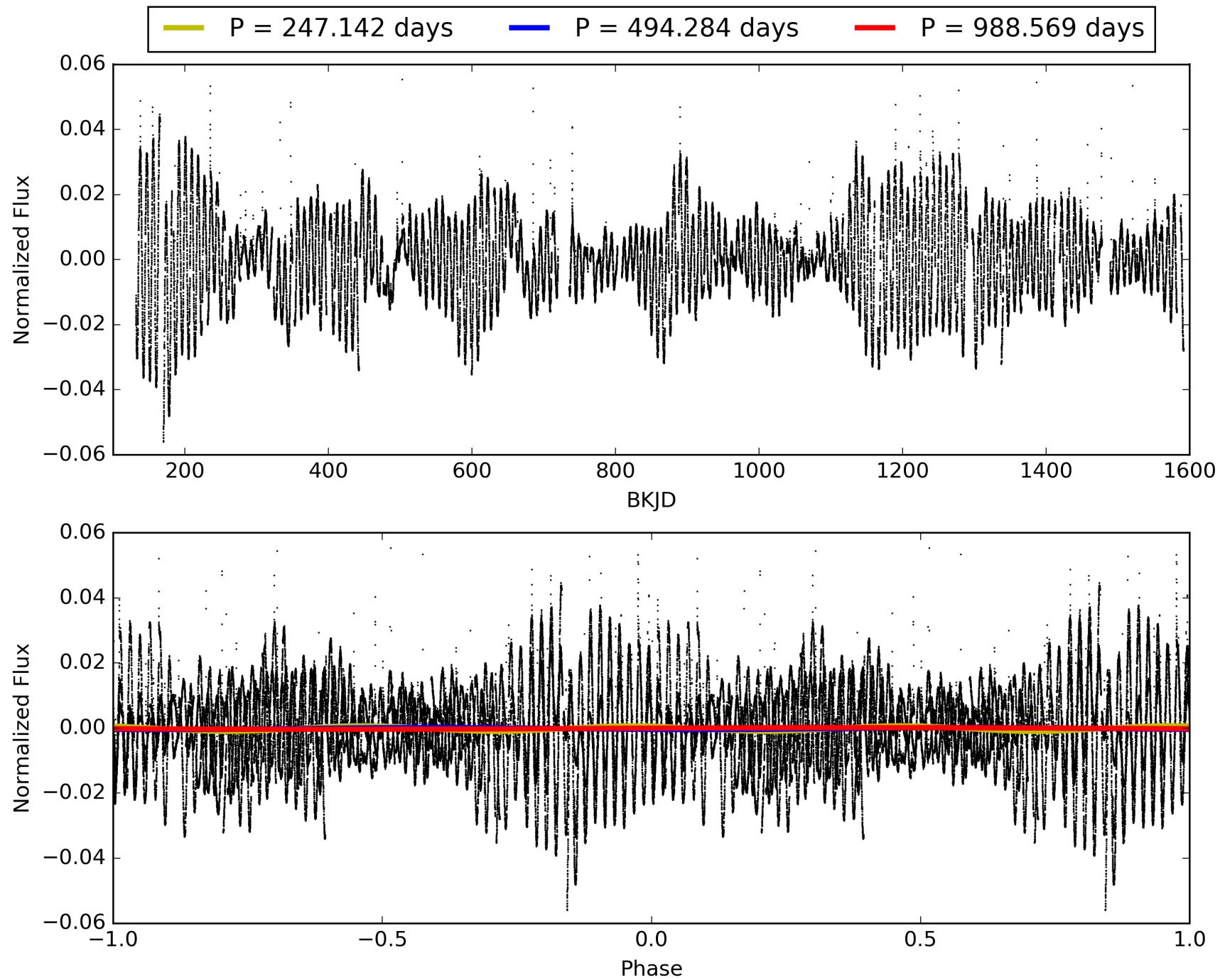
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:09:36 Z

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

TCE 008817885-04, PDC Light Curves

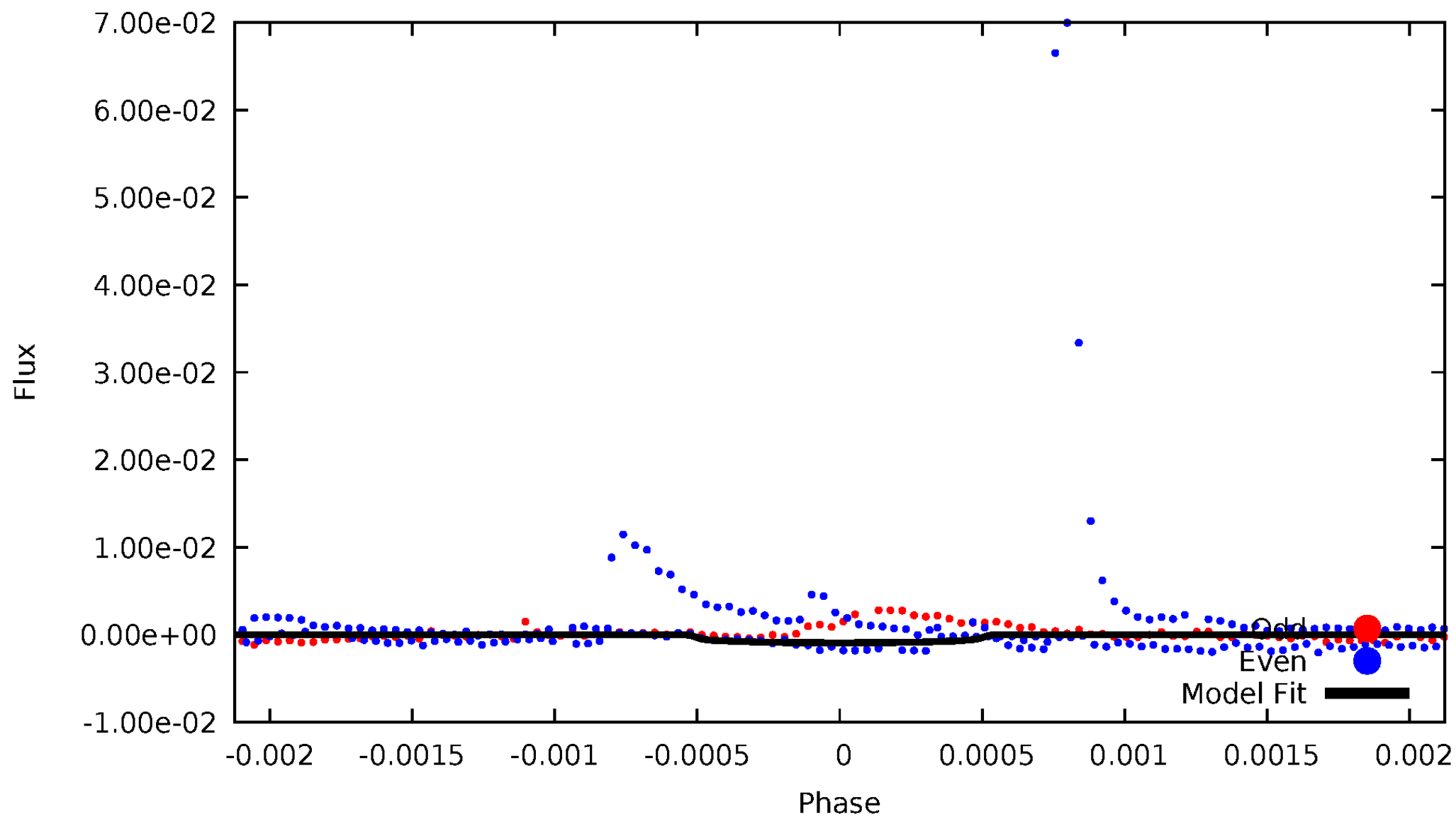


TCE 008817885-04



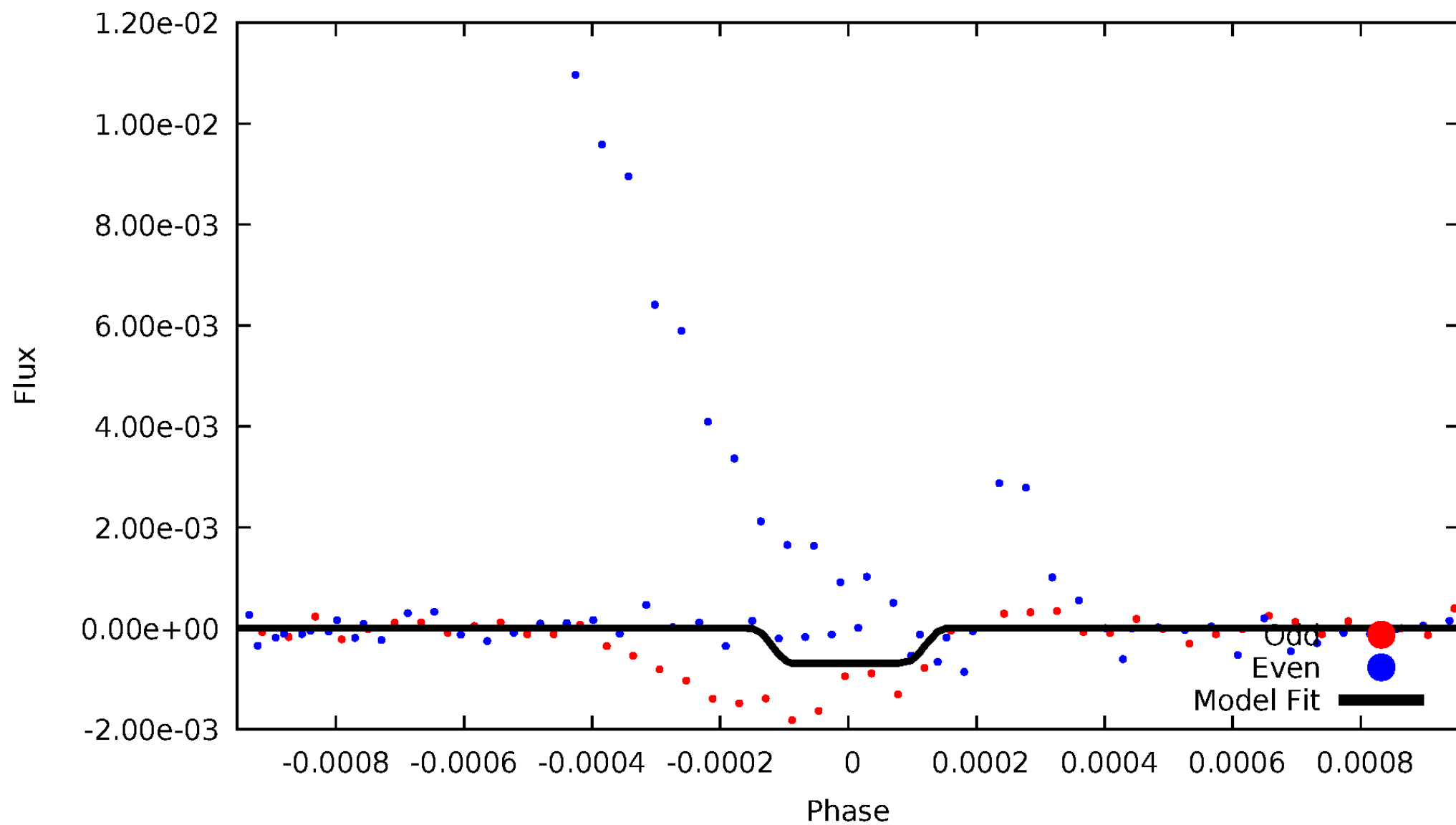
DV Odd/Even

TCE 008817885-04



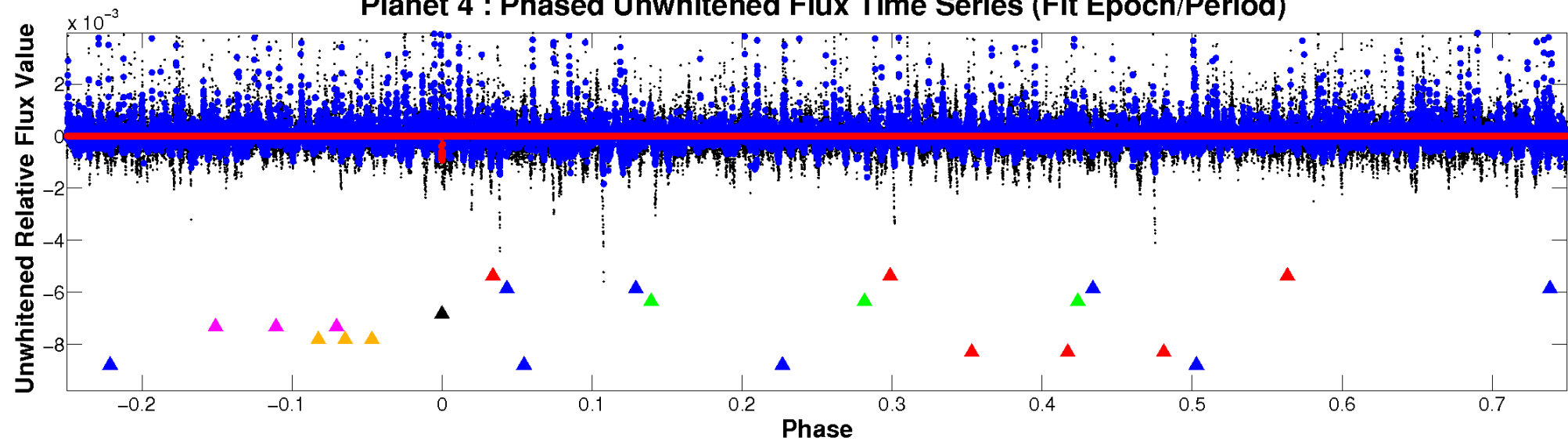
ALT Odd/Even

TCE 008817885-04

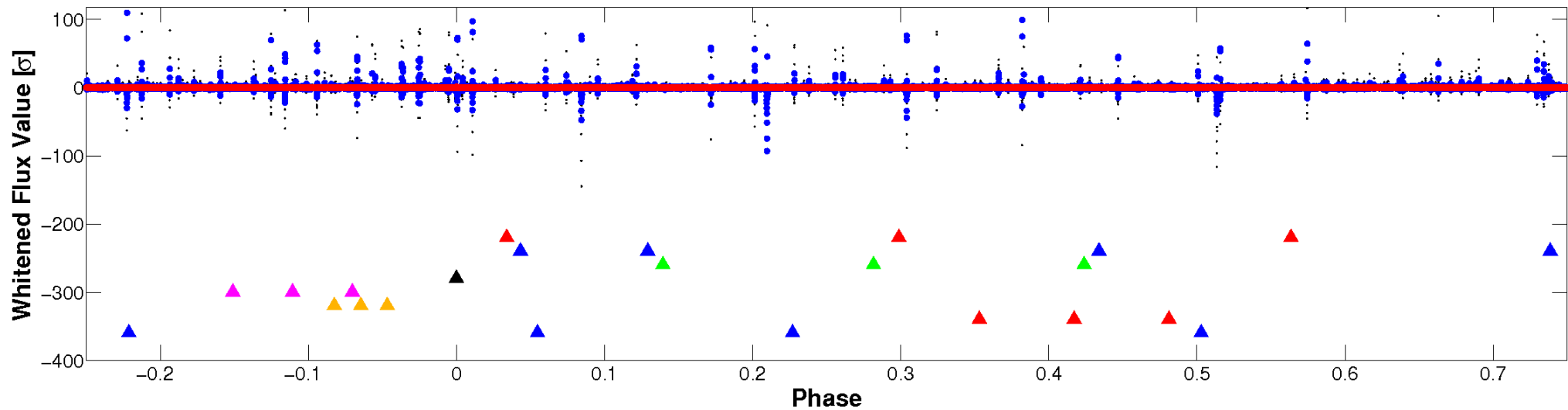


Non-Whitened Vs. Whitened Light Curve

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

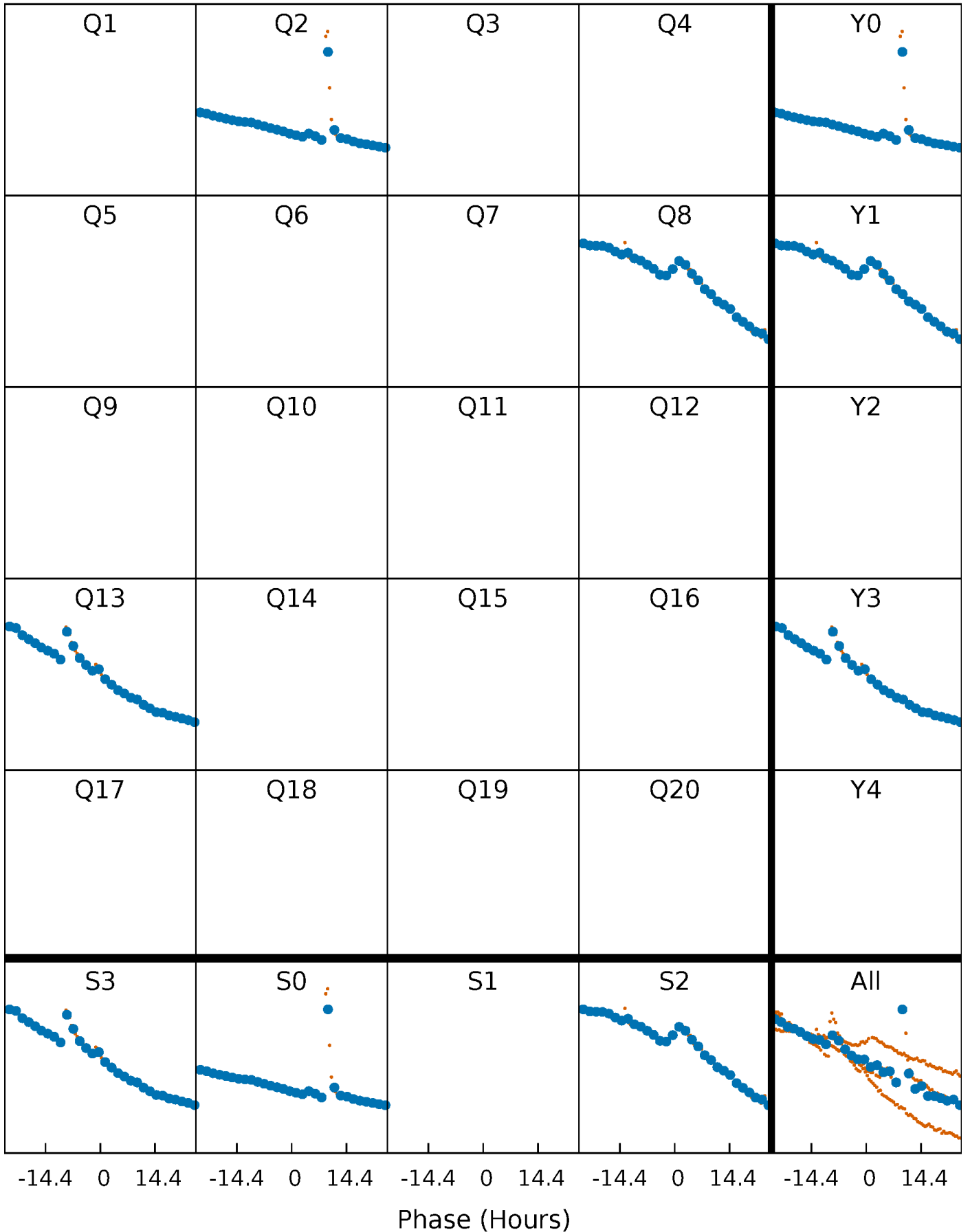


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



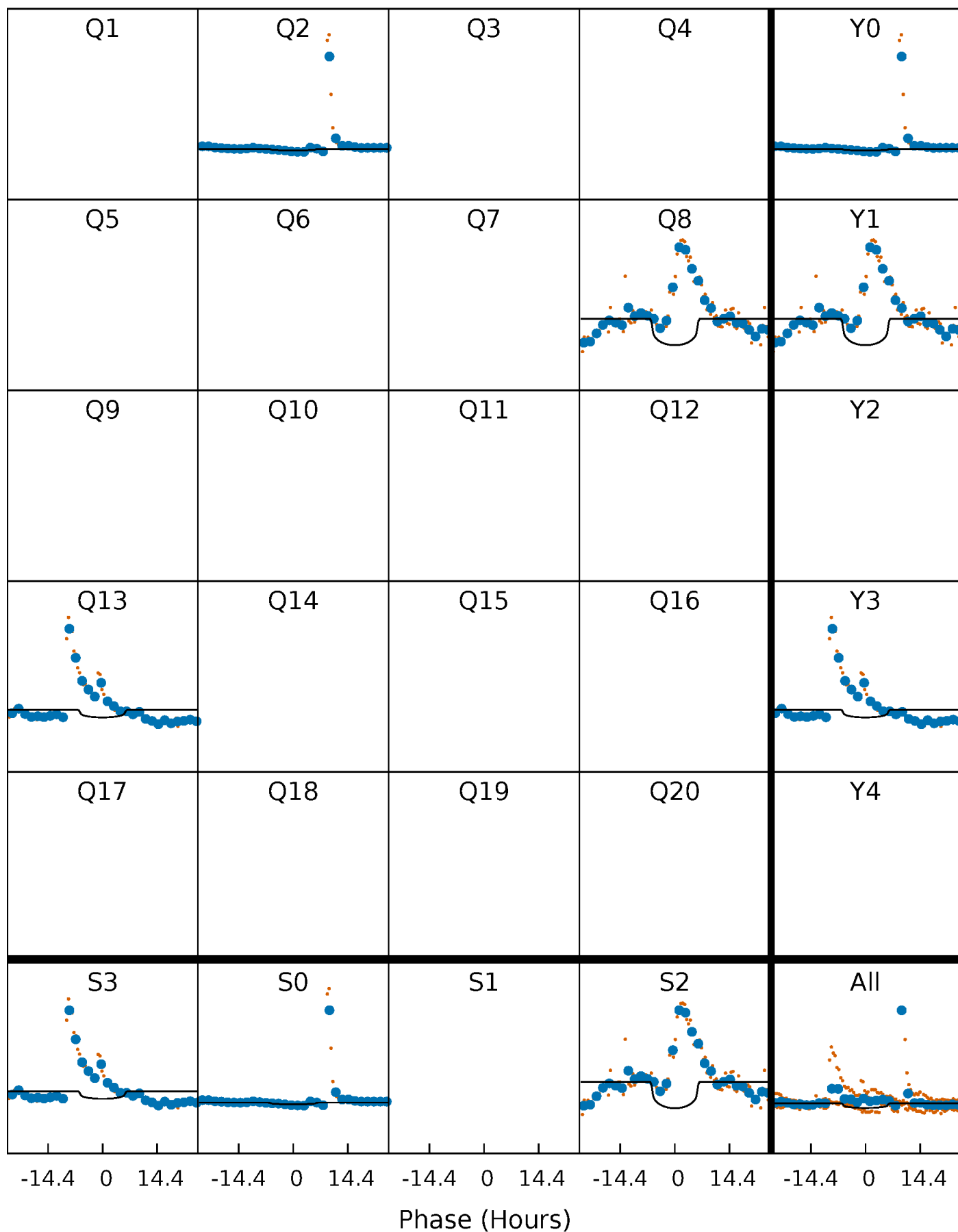
PDC Quarter-Phased Transit Curves

TCE 008817885-04 $P=494.284462$ Days $T_0=247.611240$ (BKJD)



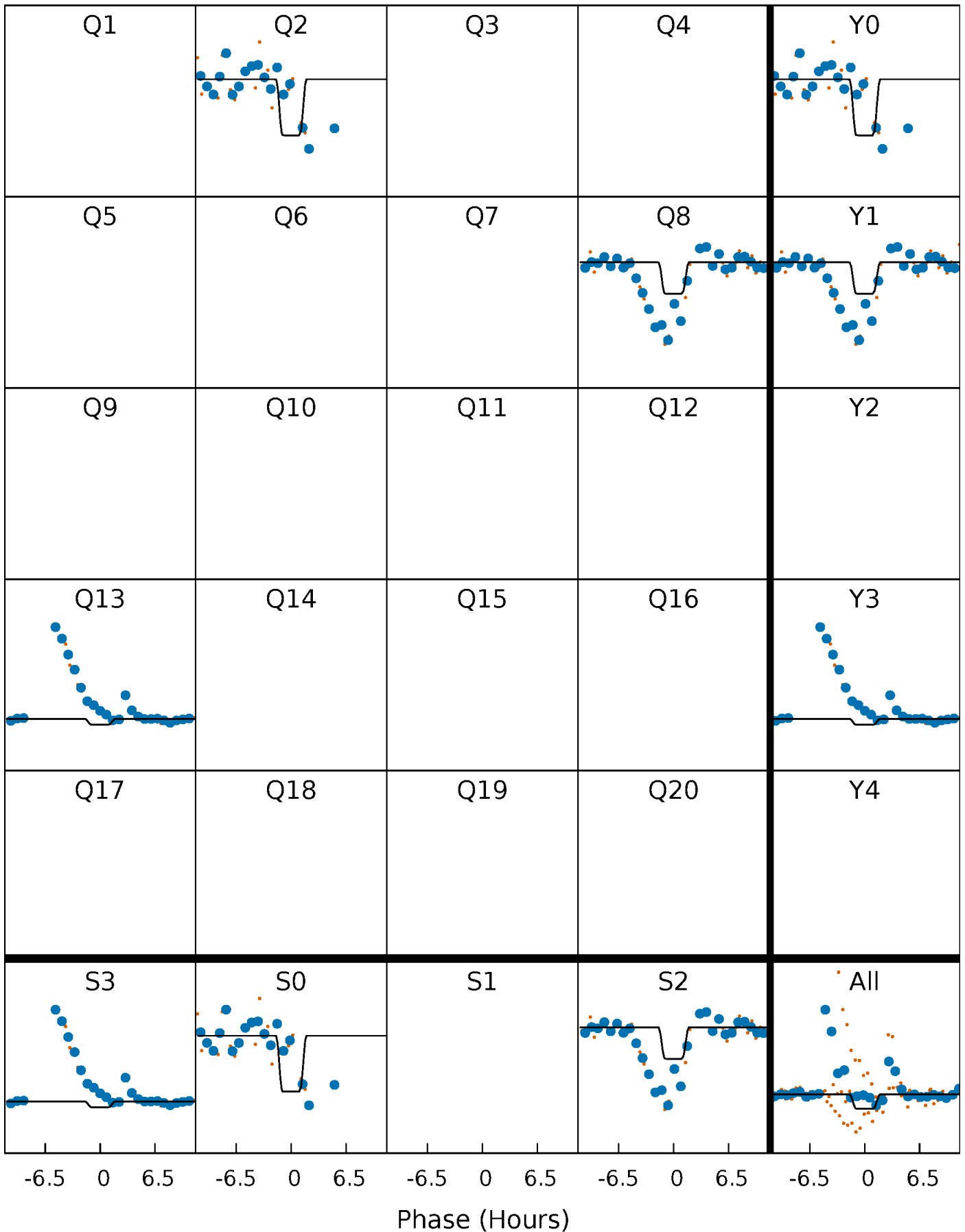
DV Quarter-Phased Transit Curves

TCE 008817885-04 $P=494.284462$ Days $T_0=247.611240$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

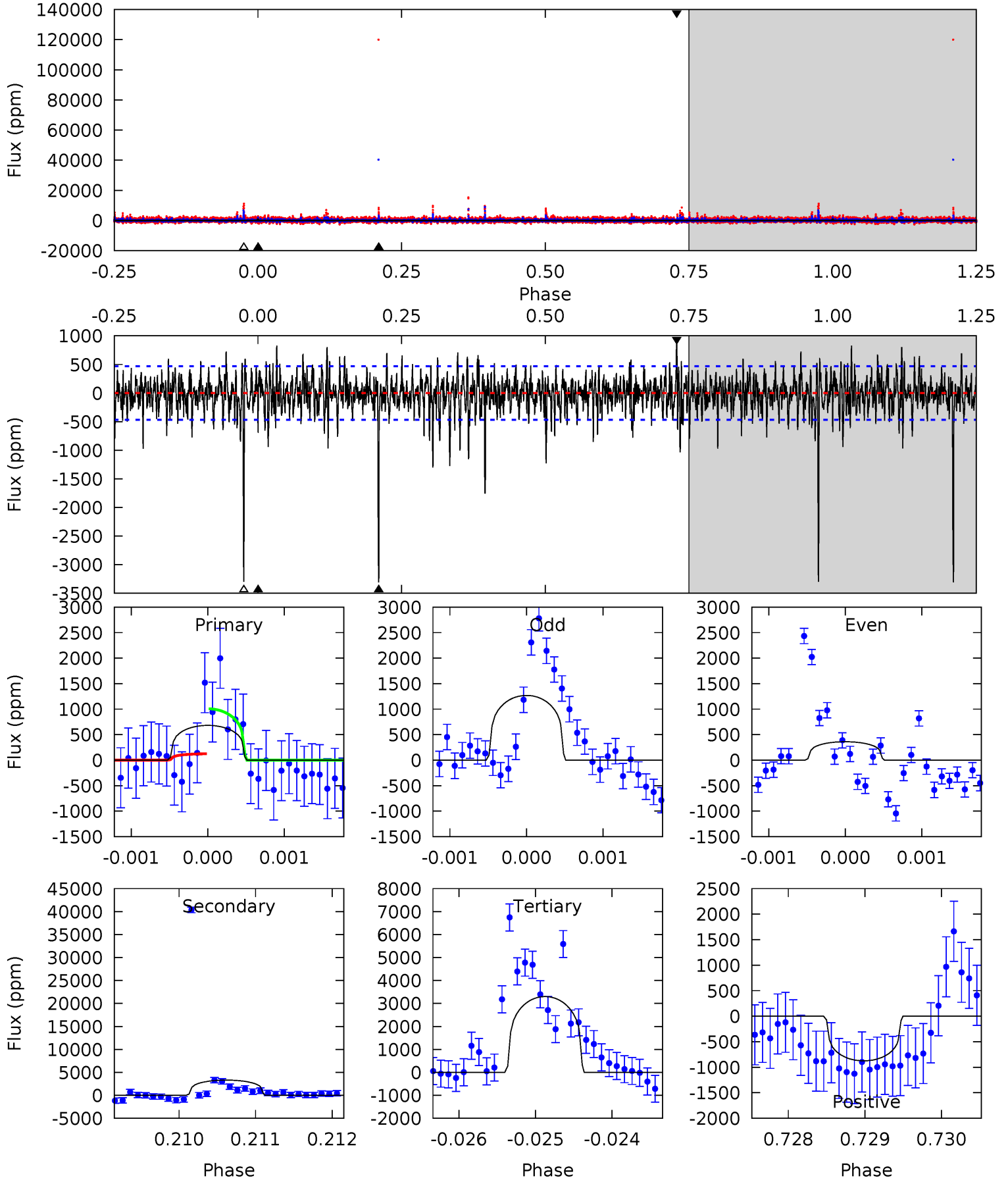
TCE 008817885-04 P=494.172026 Days $T_0=247.671270$ (BKJD)



DV Model-Shift Uniqueness Test

008817885-04, P = 494.284462 Days, E = 247.611240 Days

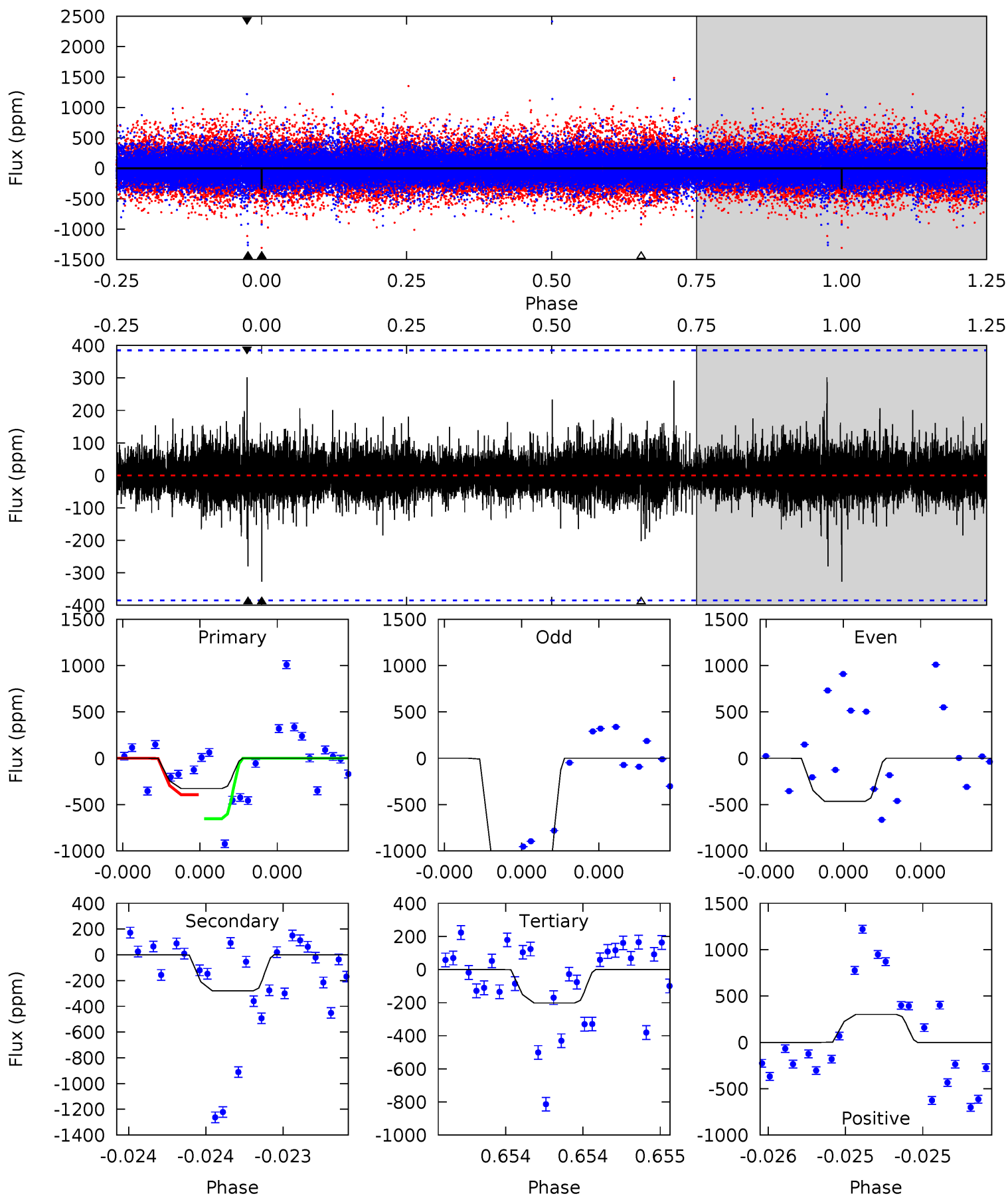
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.91	38.4	38.3	10.1	5.44	3.27	3.13	-30.4	-2.24	0.12	28.3	3.78	0.54	0.21	5.24



Alt Model-Shift Uniqueness Test

008817885-04, P = 494.172026 Days, E = 247.671270 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.82	4.13	2.98	4.44	5.68	3.64	0.58	1.85	0.38	1.15	-0.31	8.22	0.78	0.48	1.80



Stellar Parameters For KIC 008817885

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4986^{+123}_{-147}	$3.710^{+0.922}_{-0.307}$	$-0.220^{+0.300}_{-0.300}$	$2.168^{+1.217}_{-1.488}$	$0.880^{+0.231}_{-0.189}$	$0.122^{+3.042}_{-0.076}$
	+2%/-3%	+25%/-8%	+136%/-136%	+56%/-69%	+26%/-21%	+2502%/-62%
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 008817885-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3310 ± 86	$9.06^{+10.27}_{-6.47}$	405^{+65}_{-83}	5503^{+5171}_{-1196}	$30606^{+313304}_{-23905}$
Alt.	-280 ± 68	$9.12^{+9.59}_{-6.10}$	407^{+56}_{-80}	3480^{+1632}_{-577}	2499^{+21090}_{-1895}

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

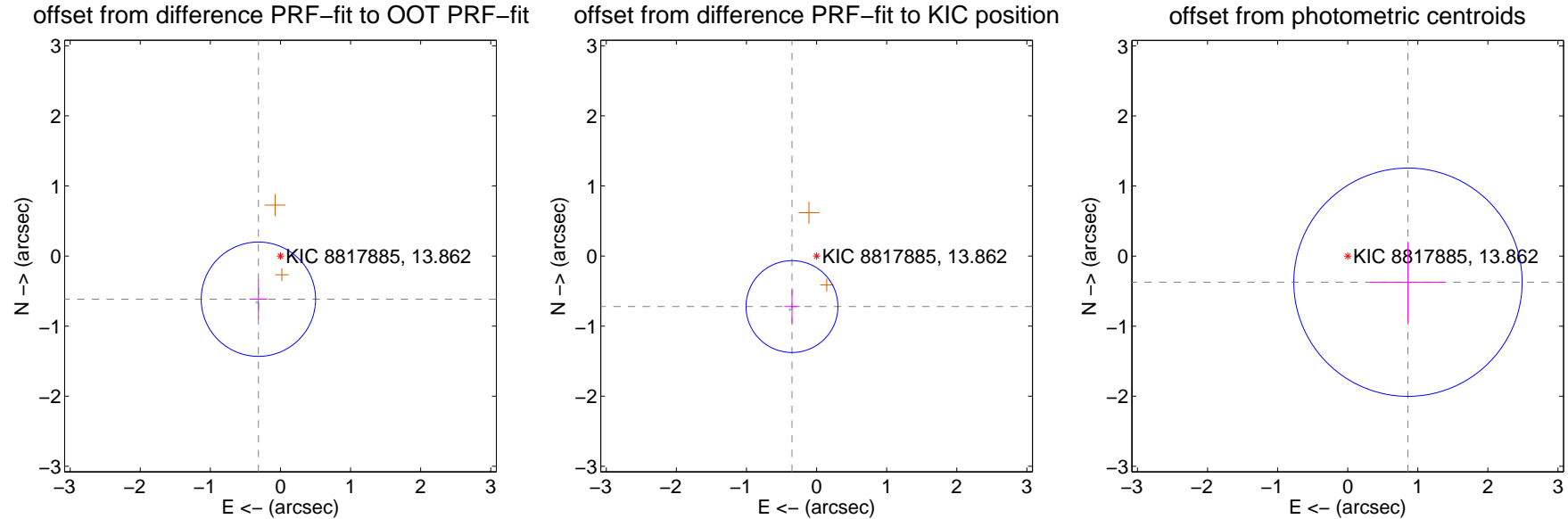
DV Centroid Data

Supplemental centroid analysis for 008817885-04. Kepler magnitude: 13.86. Transit SNR 5.36

There are 1 quarters with good PRF difference image offsets

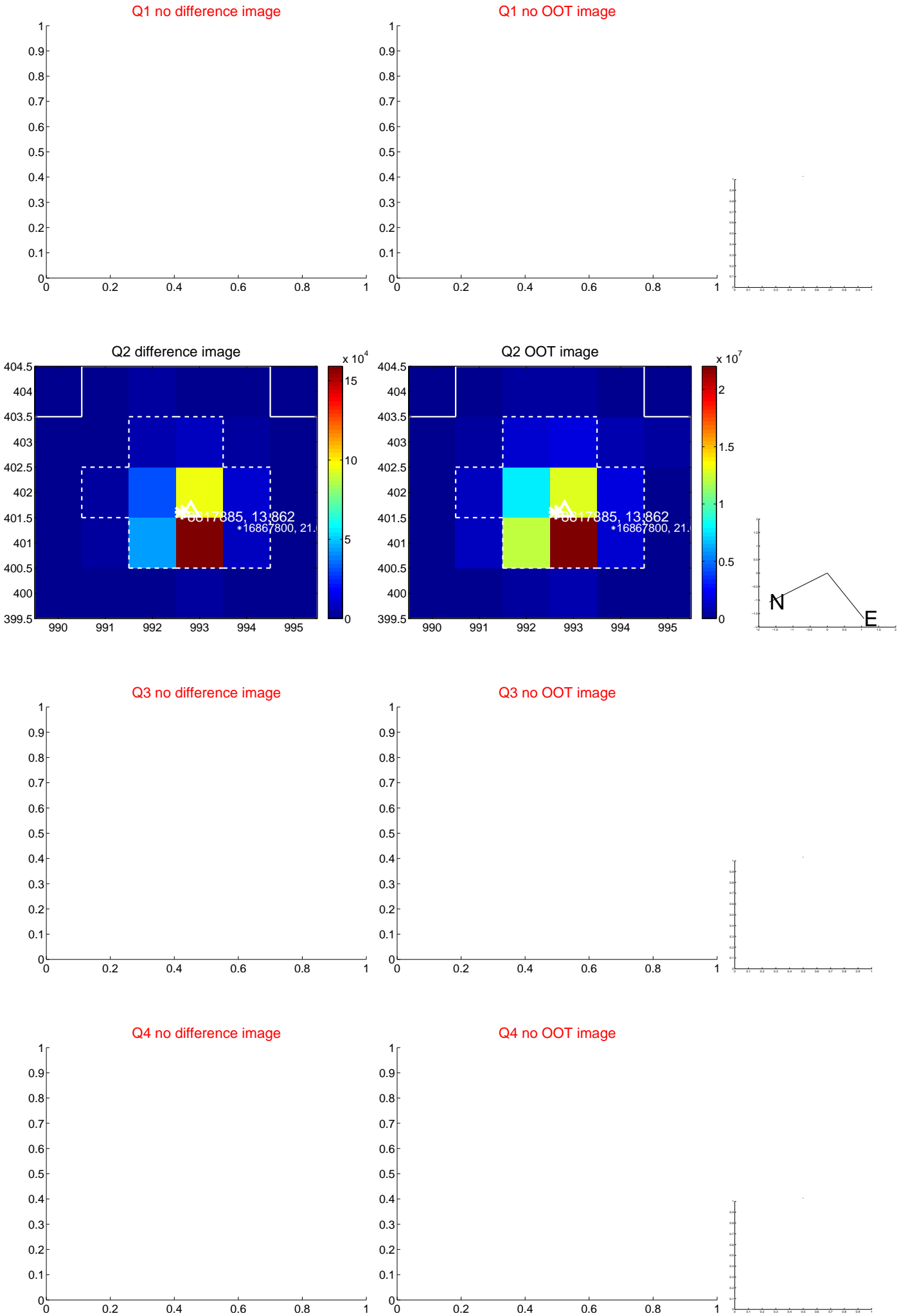
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.692 ± 0.272	2.55	0.315 ± 0.128	-0.616 ± 0.277
PRF-fit source offset from KIC position	0.802 ± 0.218	3.67	0.351 ± 0.111	-0.721 ± 0.239
photometric centroid source offset	0.94 ± 0.54	1.73	-0.86 ± 0.54	-0.37 ± 0.58

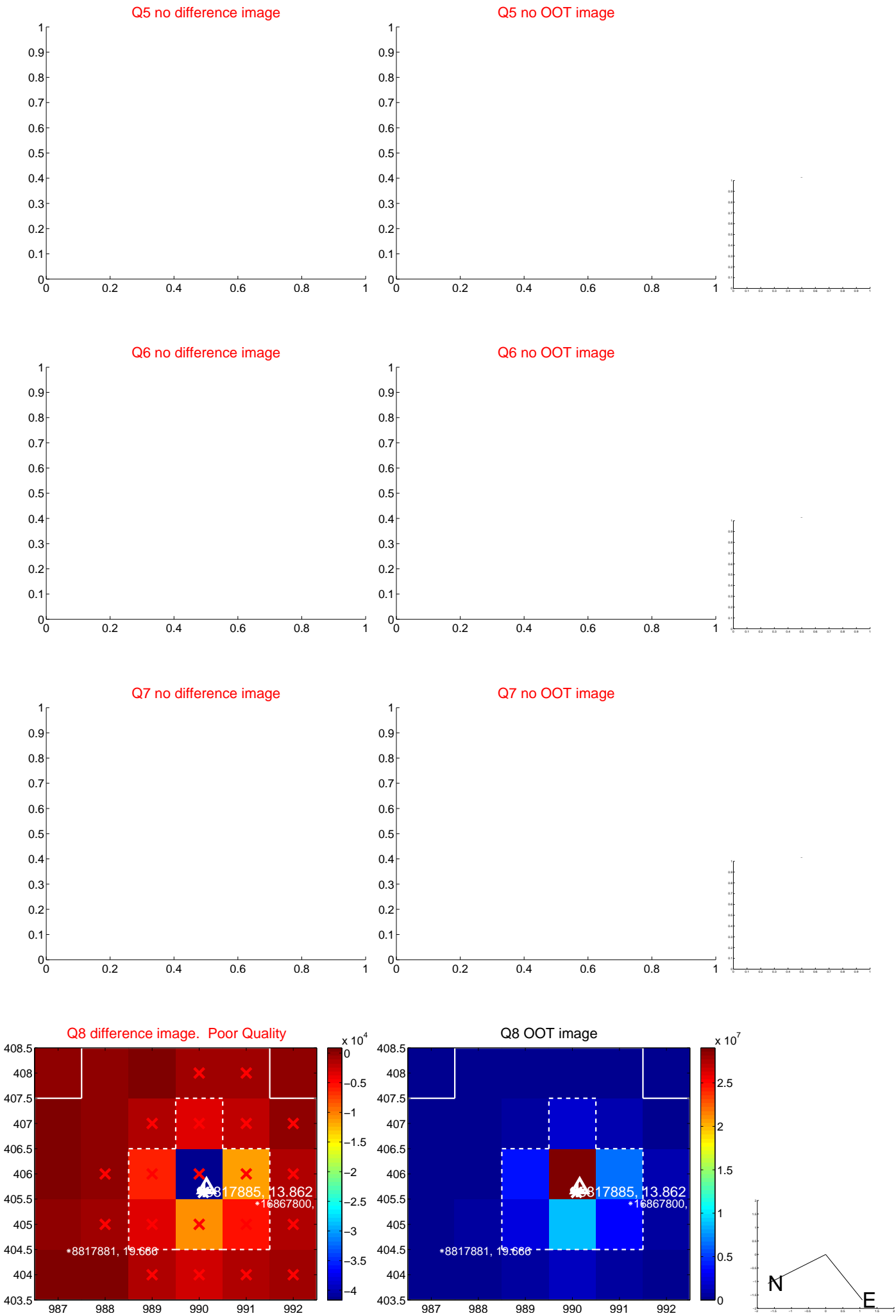


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



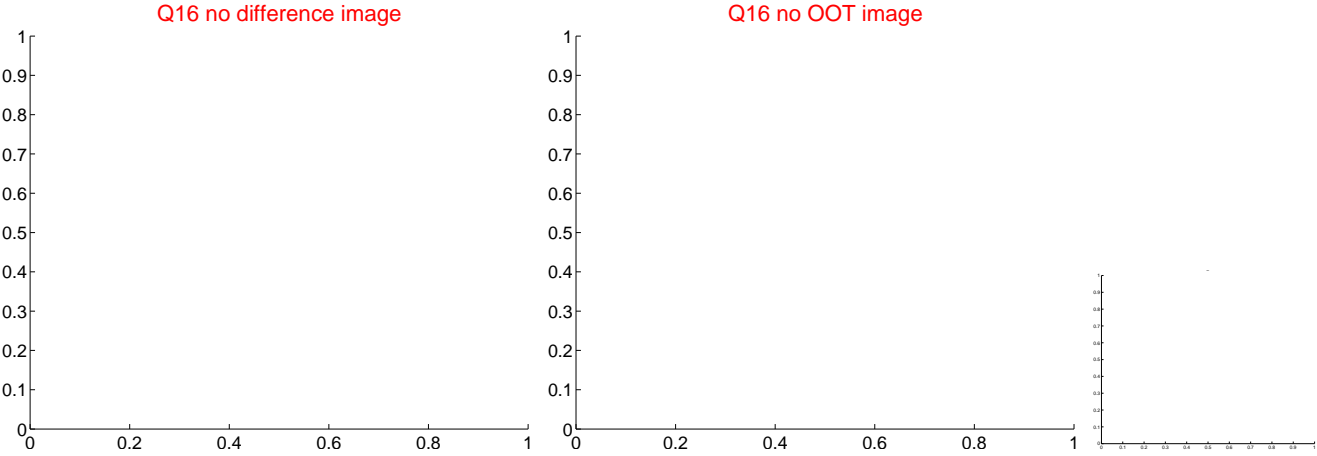
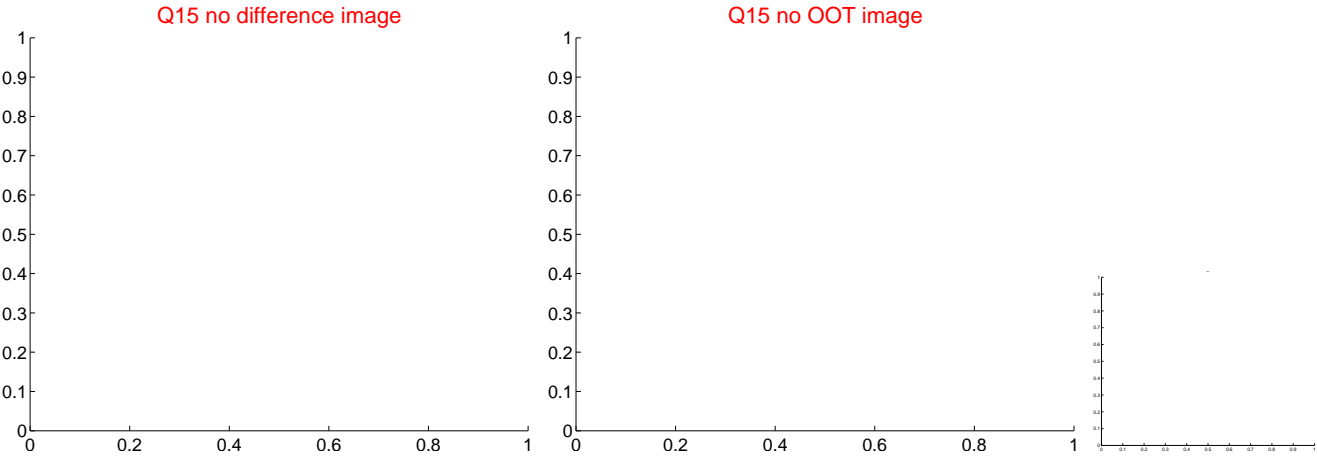
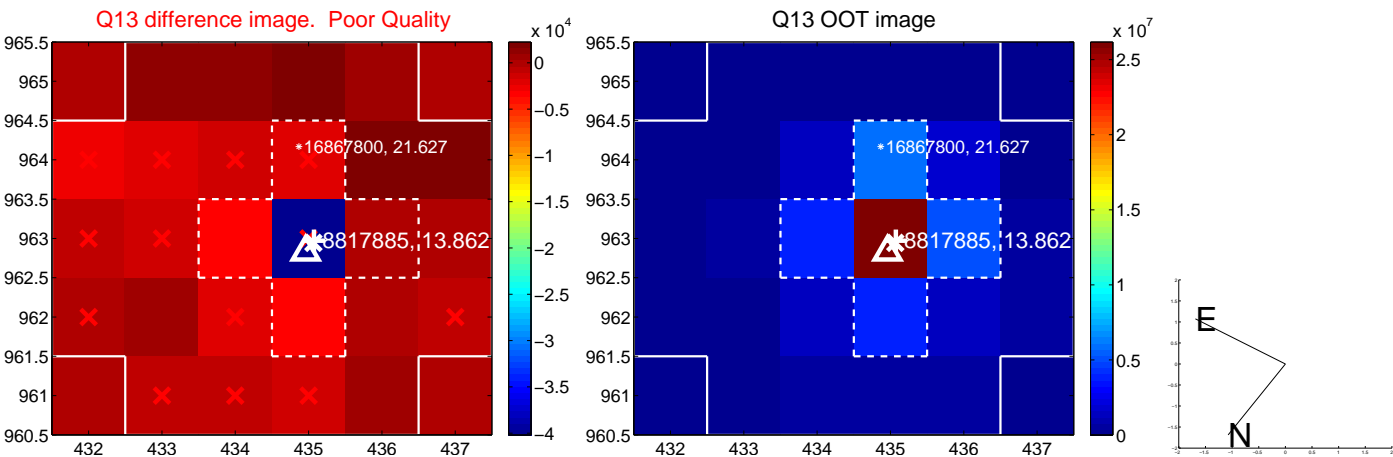
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



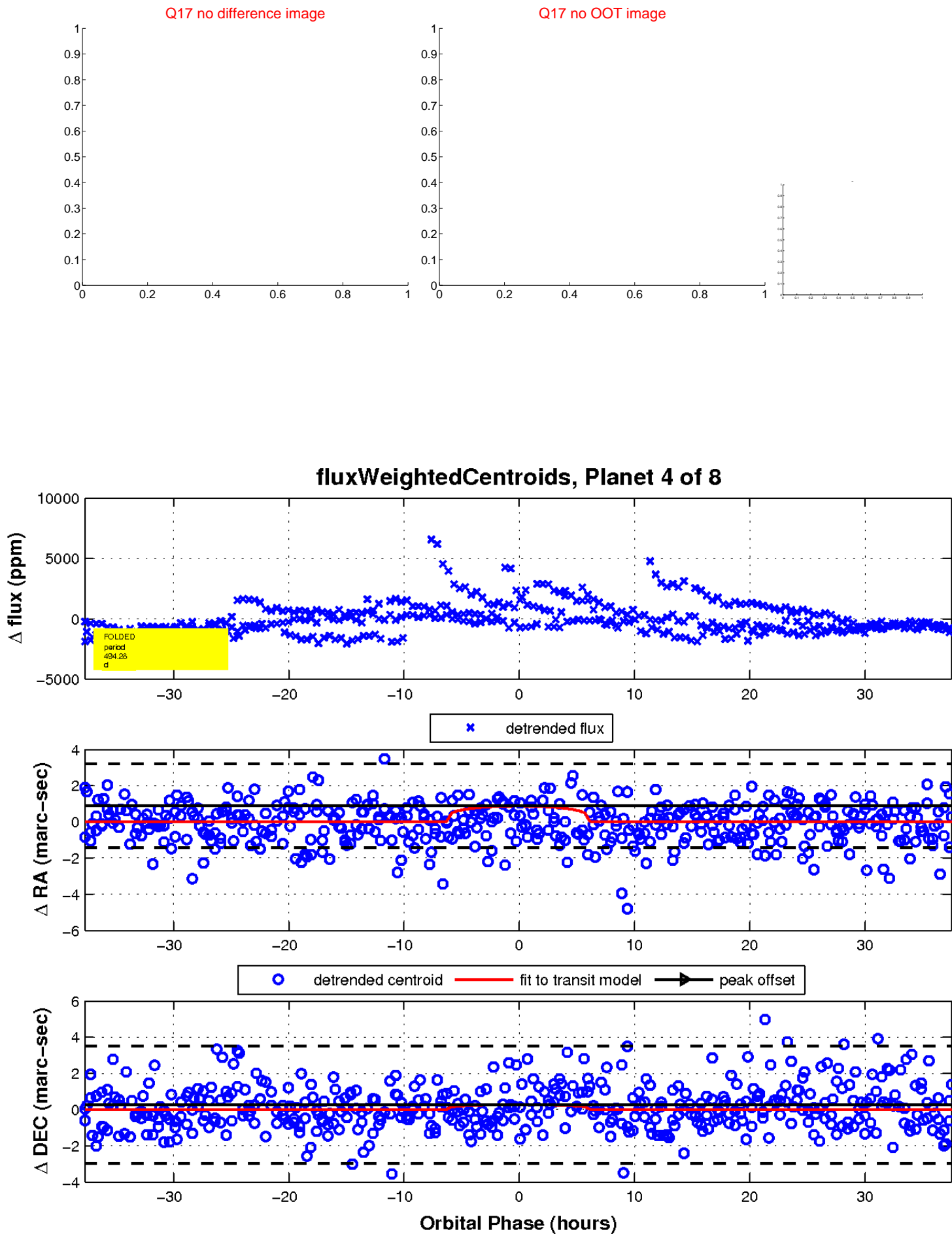
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

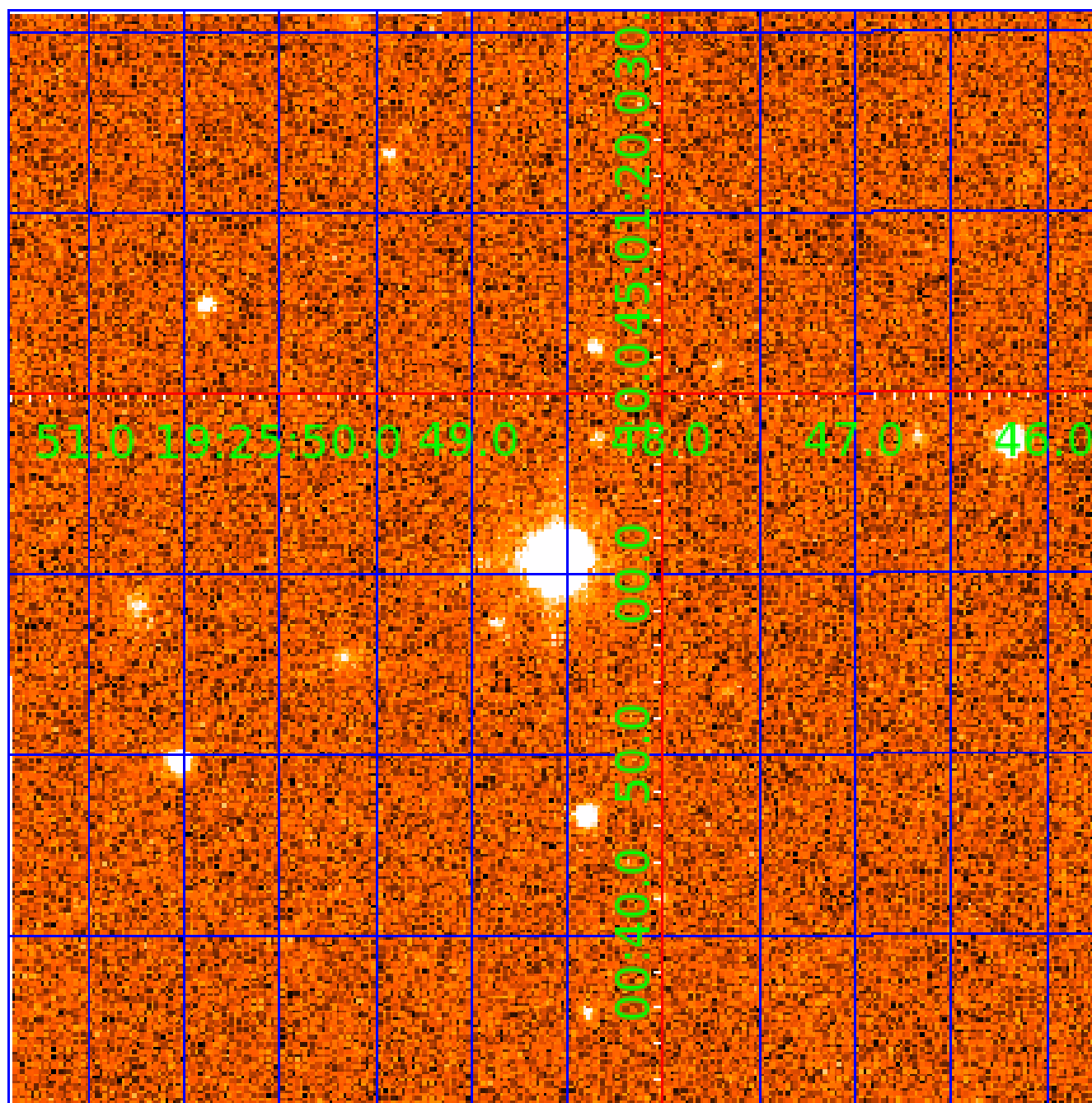


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008817885

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})
008817885-01	OBS	No	625.163148	264.404089	1551.0	7.833	15.9	9.4	2.17	4986	8.30	1.38
008817885-02	OBS	No	343.686068	268.993334	787.6	4.333	13.5	6.6	2.17	4986	6.92	3.07
008817885-03	OBS	No	564.579919	316.517932	1394.2	15.856	13.9	6.9	2.17	4986	16.18	1.59
008817885-04	OBS	No	494.284462	247.611240	936.2	12.590	17.9	5.4	2.17	4986	6.81	1.89
008817885-05	OBS	No	514.219474	172.999465	940.0	4.757	12.9	6.1	2.17	4986	7.10	1.80
008817885-06	OBS	No	485.458145	224.525614	915.1	7.604	11.3	7.0	2.17	4986	6.36	1.94
008817885-07	OBS	No	462.642961	485.426100	495.2	2.210	11.2	3.5	2.17	4986	5.00	2.07
008817885-08	OBS	No	357.907412	274.654893	660.5	3.500	12.1	-1.0	2.17	4986	5.41	2.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008817885-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-02	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
008817885-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008817885-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-06	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—CENT_FEW_DIFFS
008817885-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

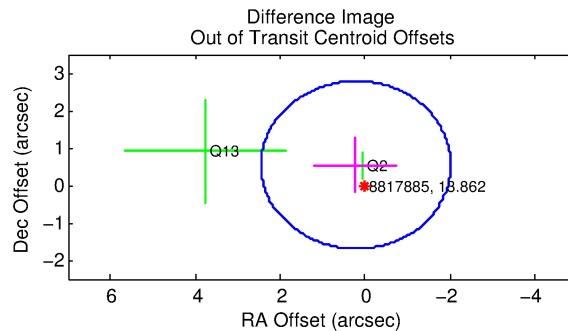
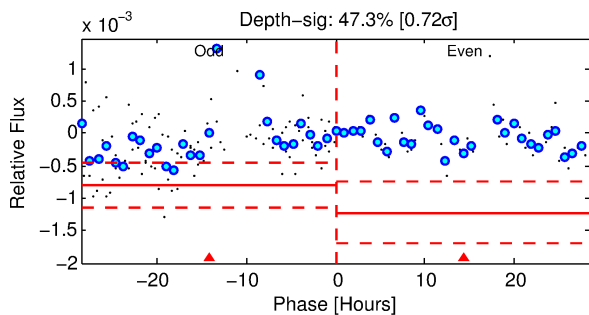
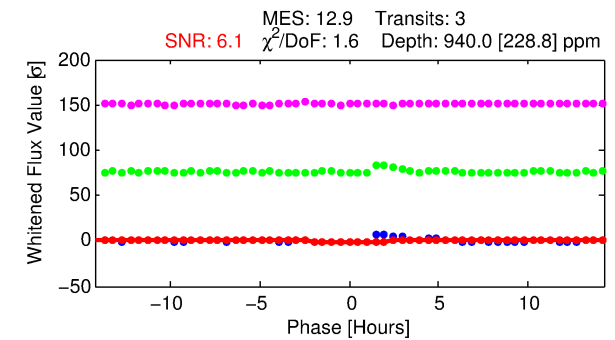
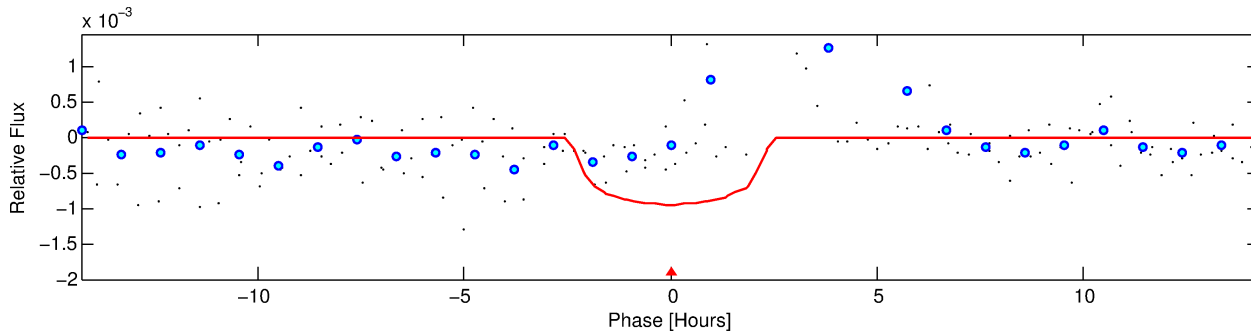
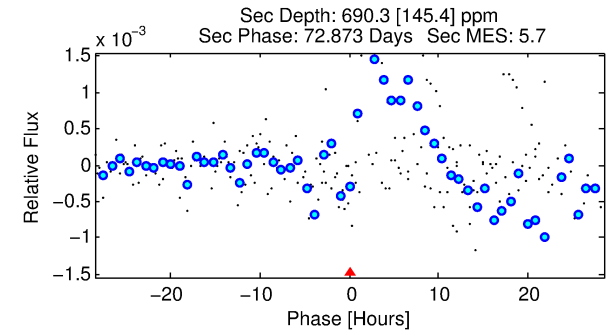
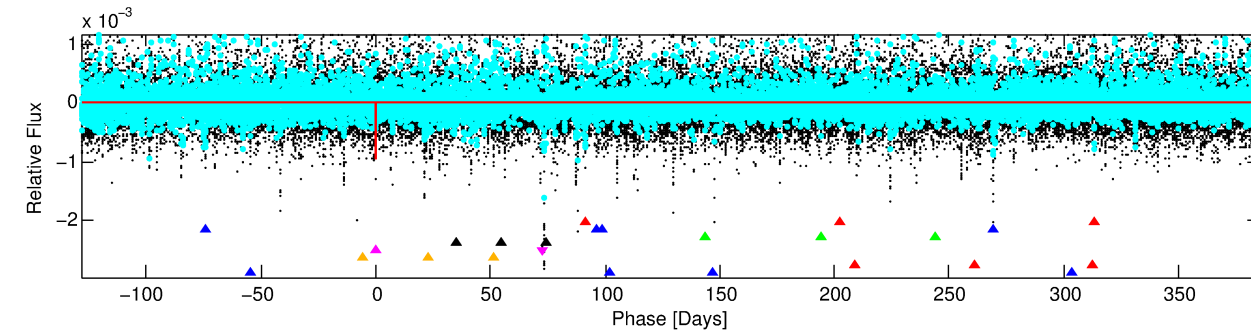
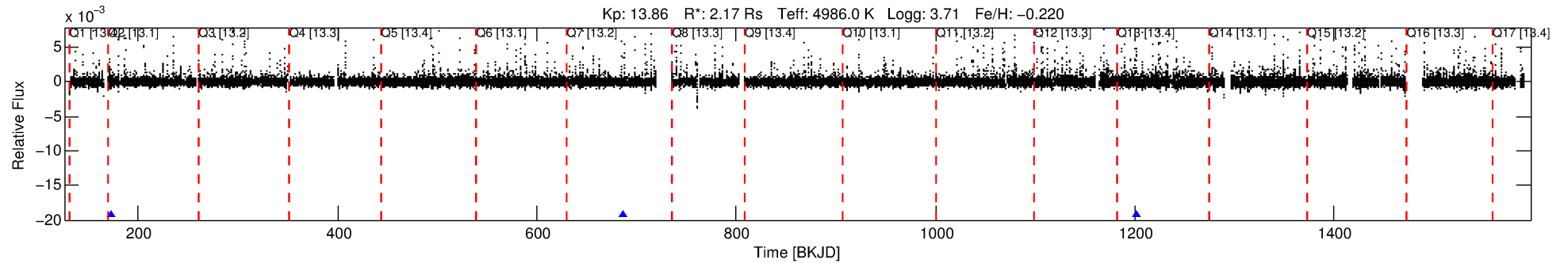
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008817885-05

No Significant Match Found

DV One-Page Summary

KIC: 8817885 Candidate: 5 of 8 Period: 514.219 d



DV Fit Results:

Period = 514.21947 [0.00945] d
Epoch = 172.9995 [0.0124] BKJD
Rp/R* = 0.0300 [0.0405]
a/R* = 620.88 [2996.73]
b = 0.70 [3.51]
Seff = 1.80 [2.68]
Teq = 295 [110] K
Rp = 7.10 [10.75] Re
a = 1.2037 [1.0143] AU
Ag = 10907.33 [33668.96] [0.32σ]
Teffp = 4664 [3157] K [1.38σ]

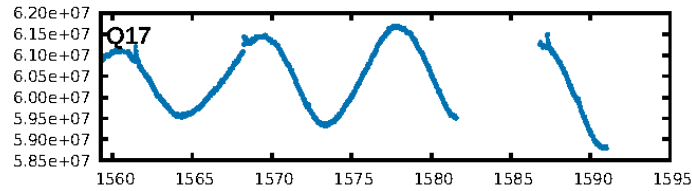
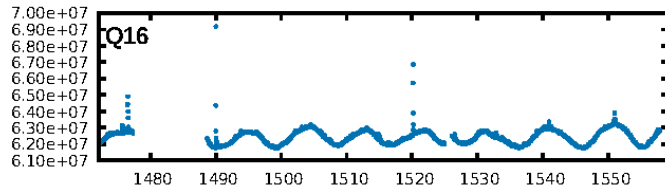
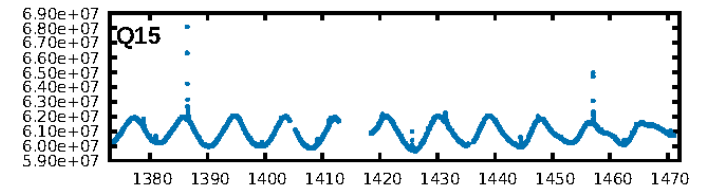
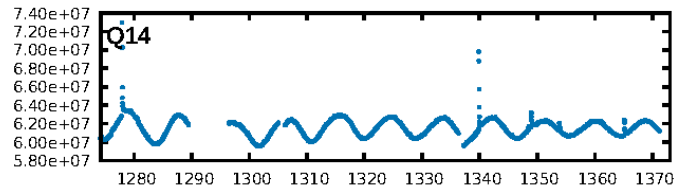
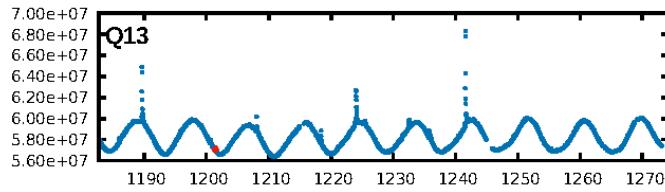
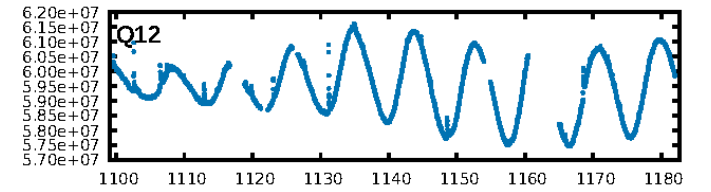
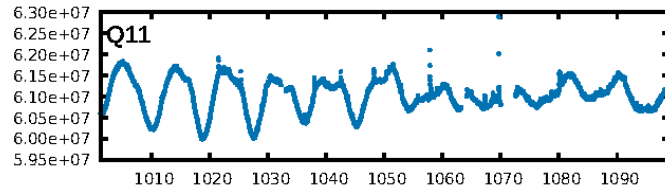
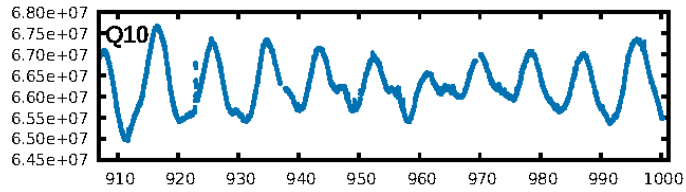
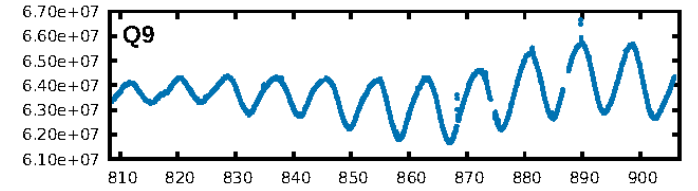
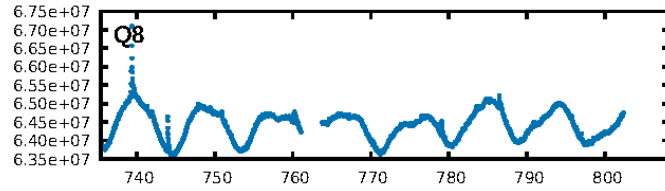
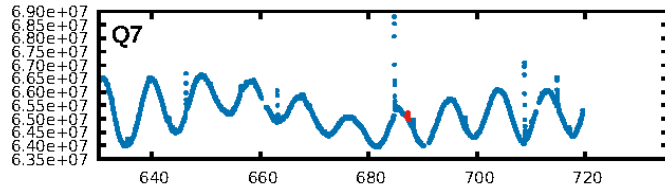
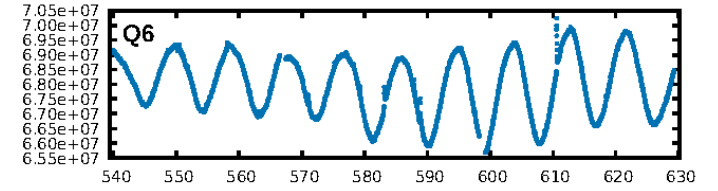
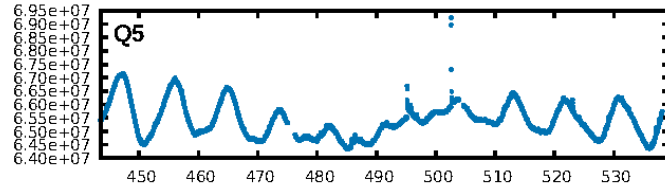
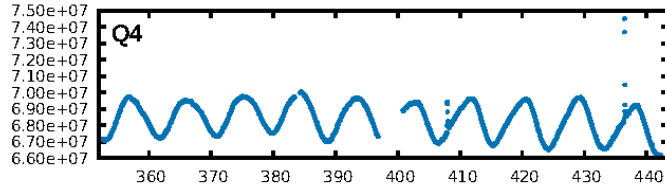
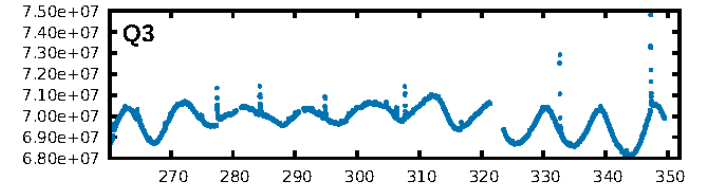
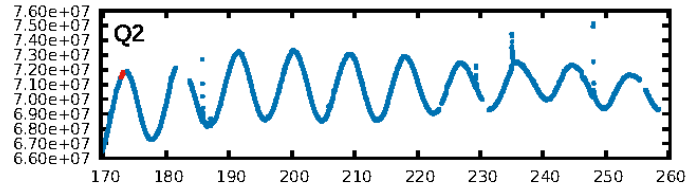
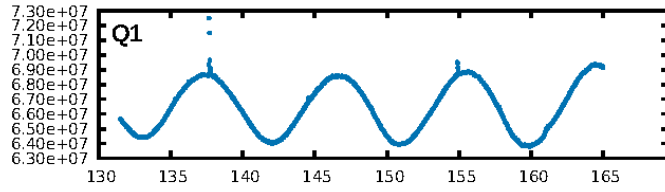
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [35.55σ]
LongPeriod-sig: 100.0% [73.01σ]
ModelChiSquare2-sig: 2.4%
ModelChiSquareGof-sig: 27.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 4.703
Centroid-sig: 17.9%
Centroid-so: 1.017 arcsec [1.21σ]
OotOffset-rm: 0.585 arcsec [0.78σ]
KicOffset-rm: 0.538 arcsec [0.60σ]
OotOffset-st: 1/0/0/1 [2]
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DiffImageOverlap-fno: 1.00 [3/3]

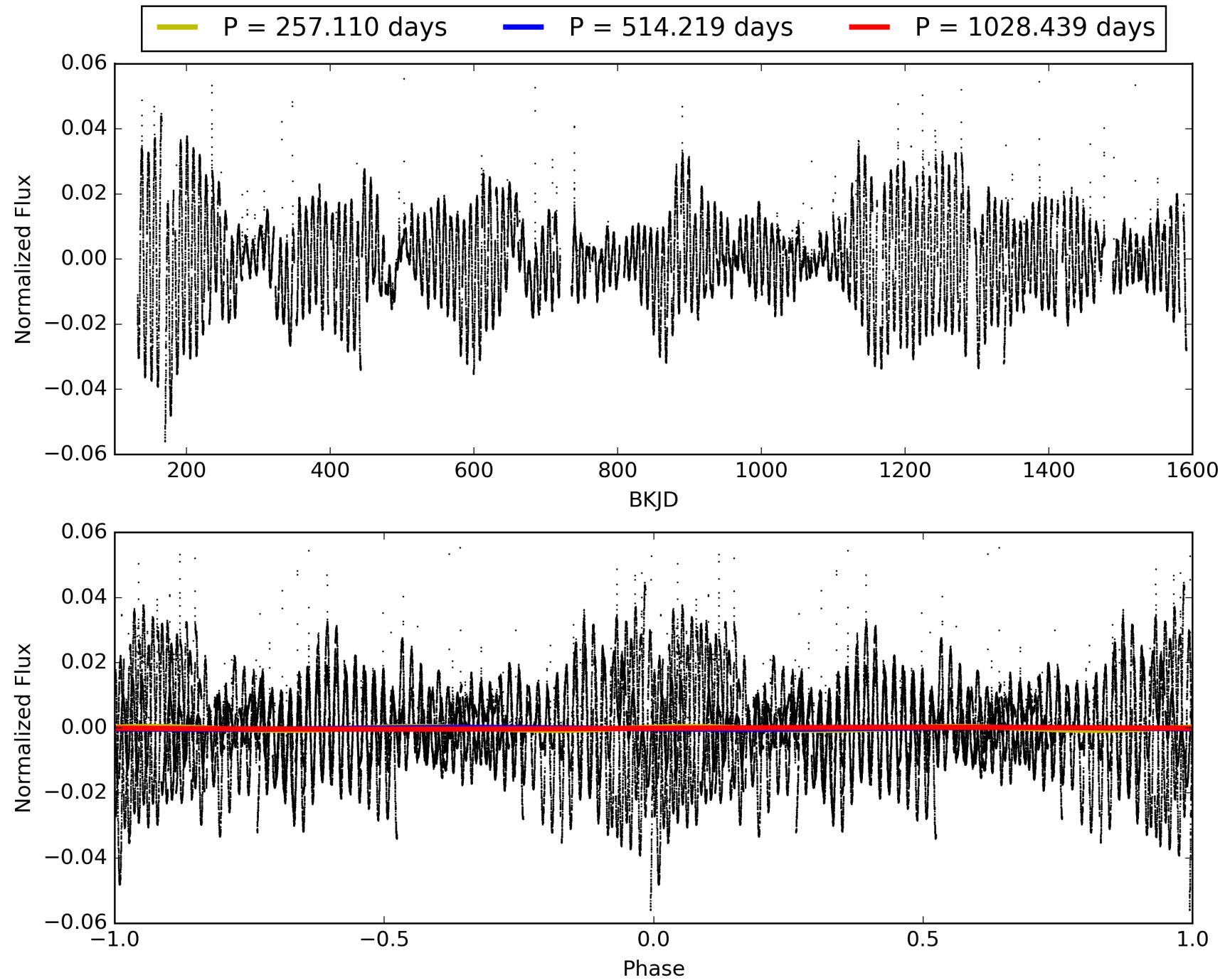
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:09:52 Z

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

TCE 008817885-05, PDC Light Curves

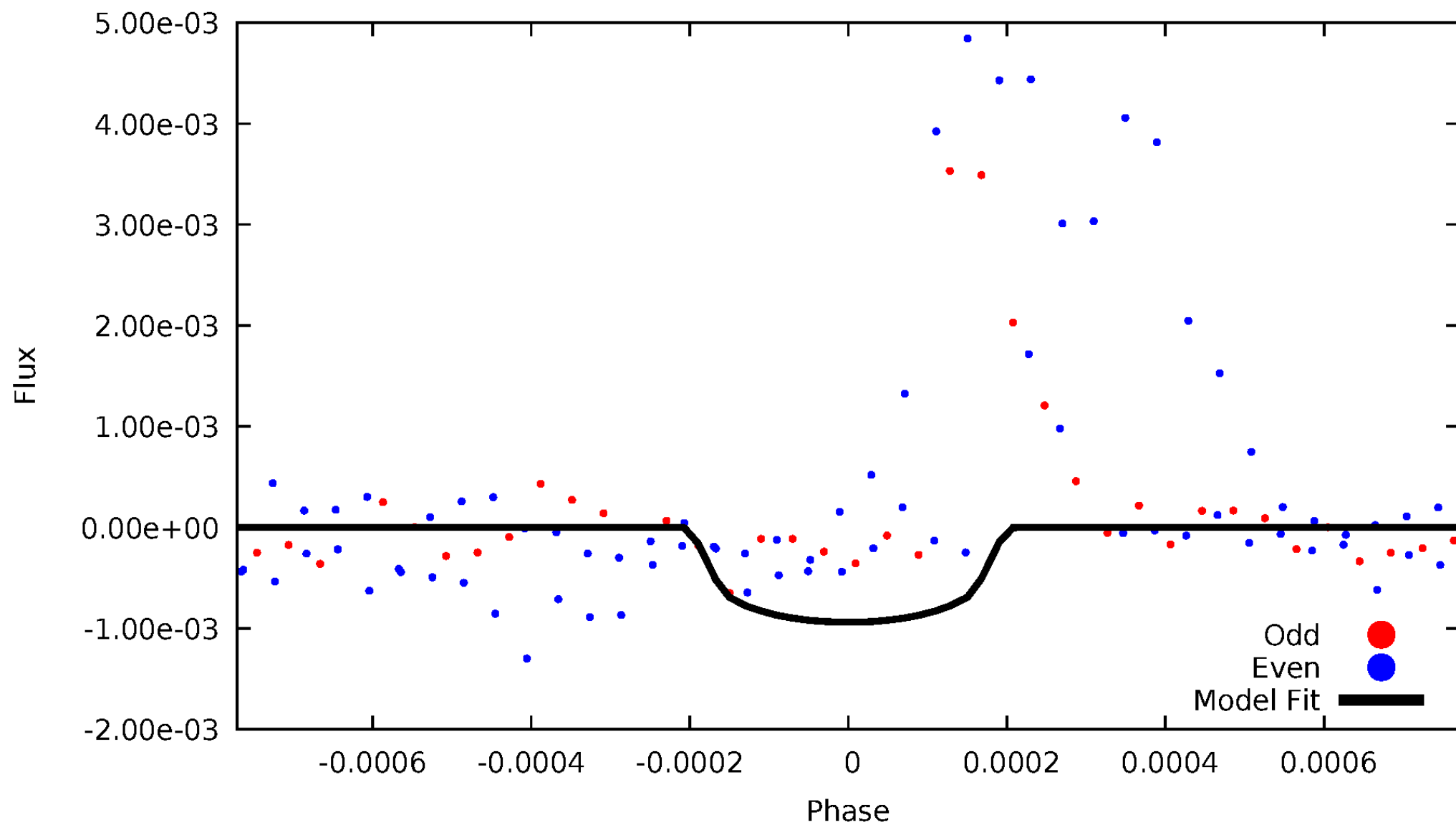


TCE 008817885-05



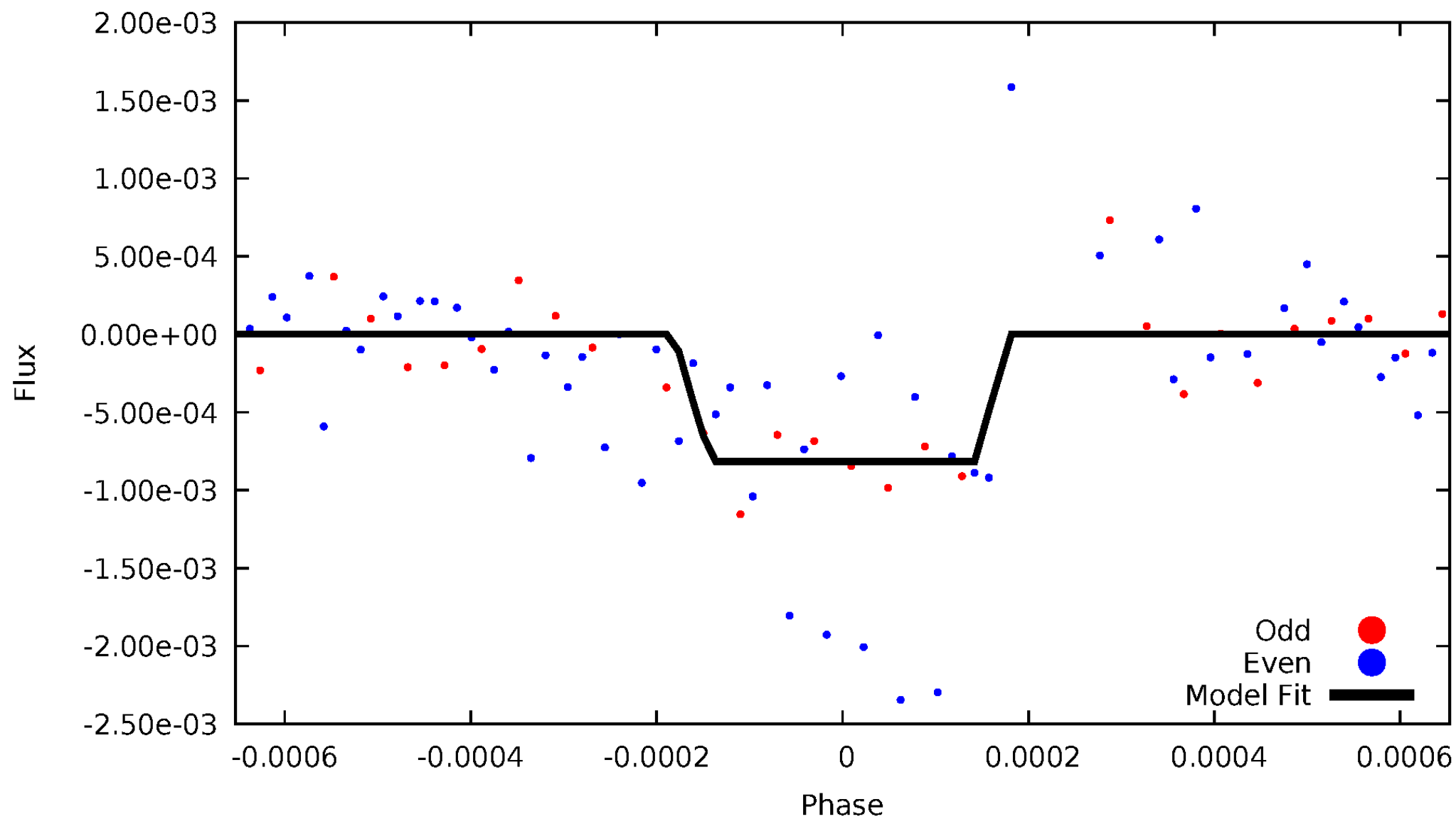
DV Odd/Even

TCE 008817885-05



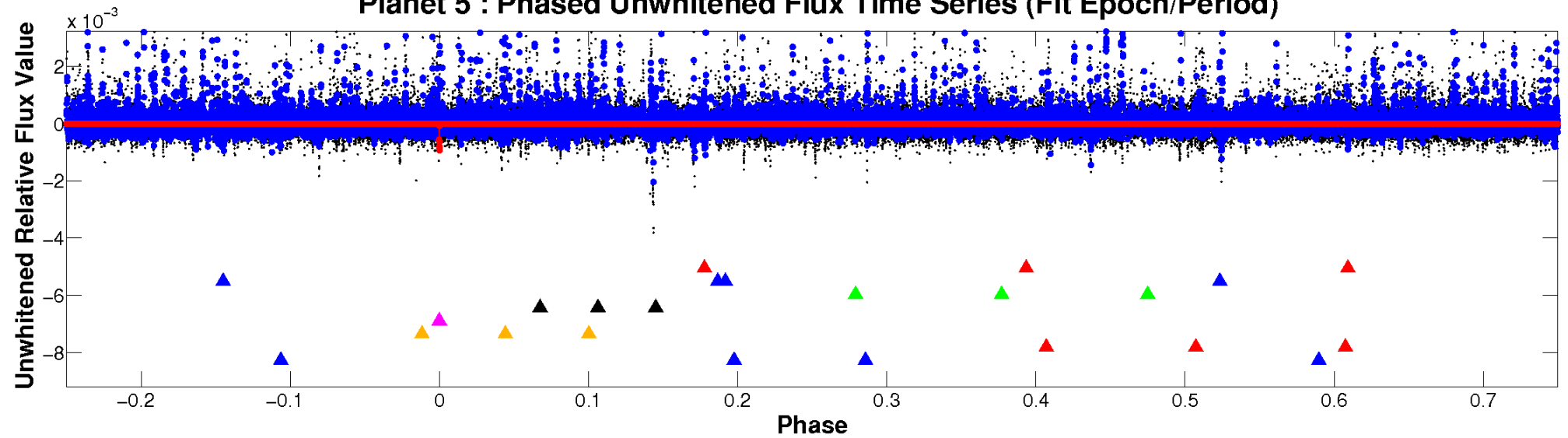
ALT Odd/Even

TCE 008817885-05

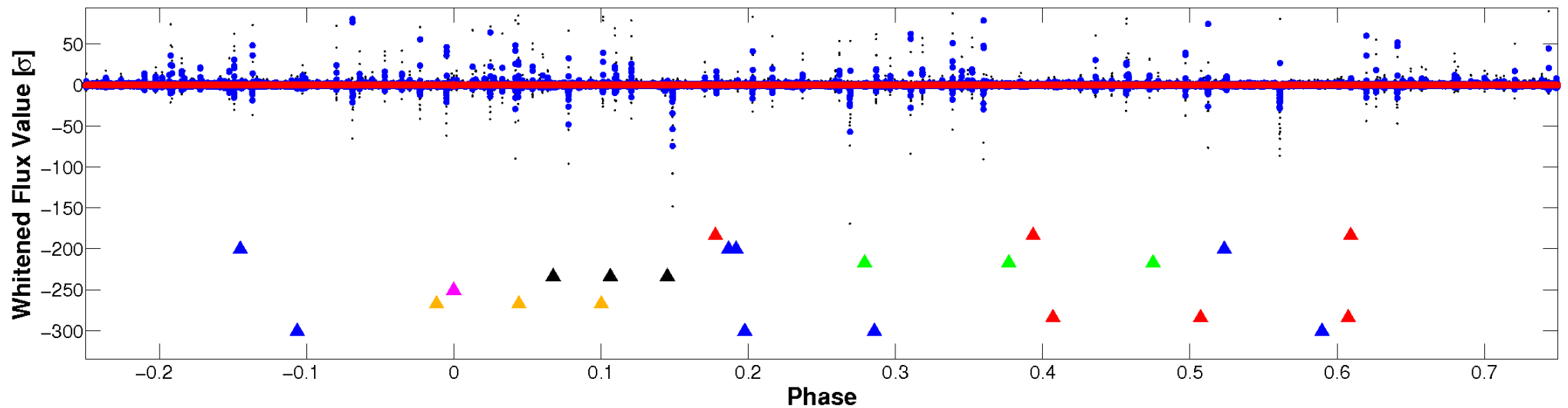


Non-Whitened Vs. Whitened Light Curve

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

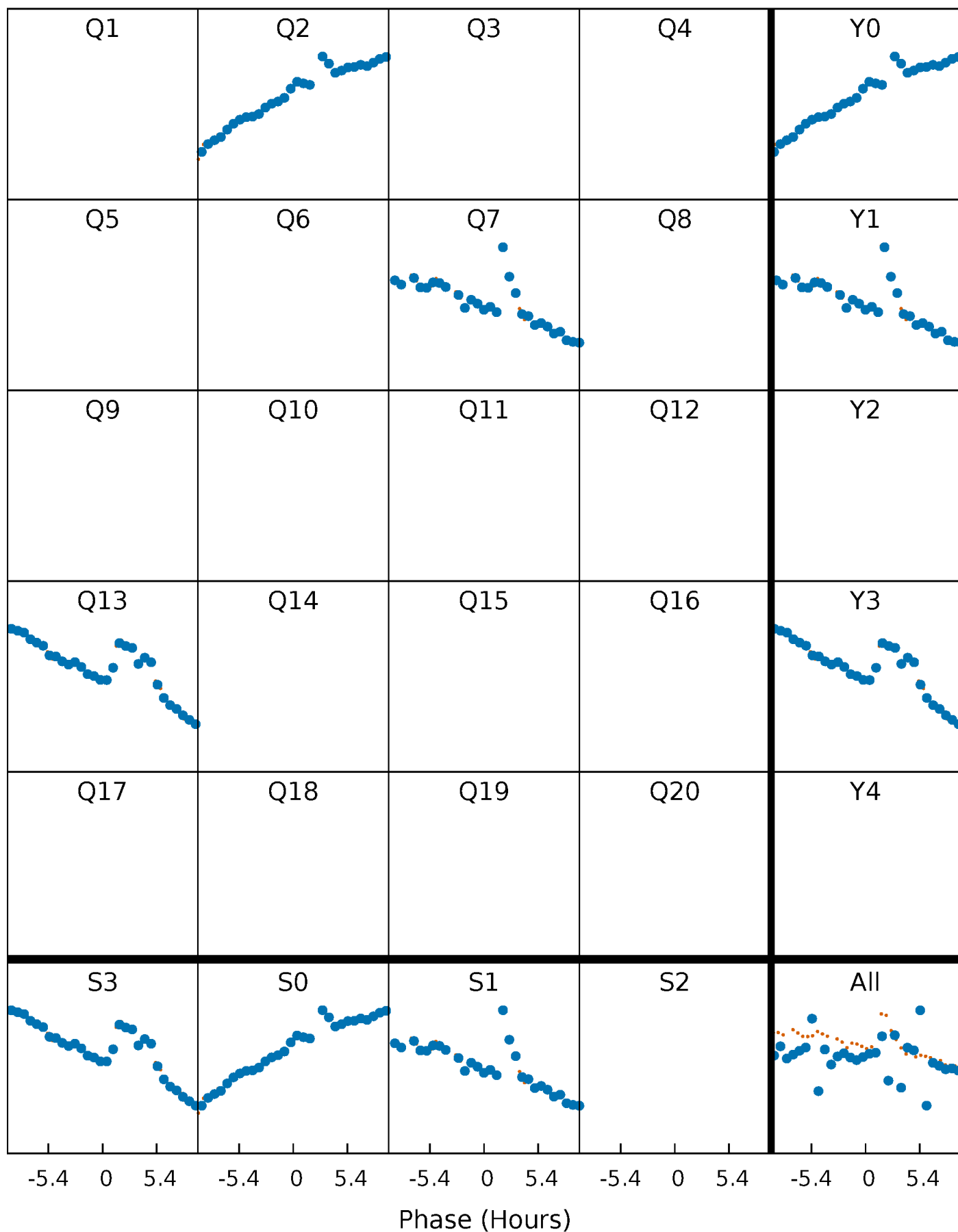


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



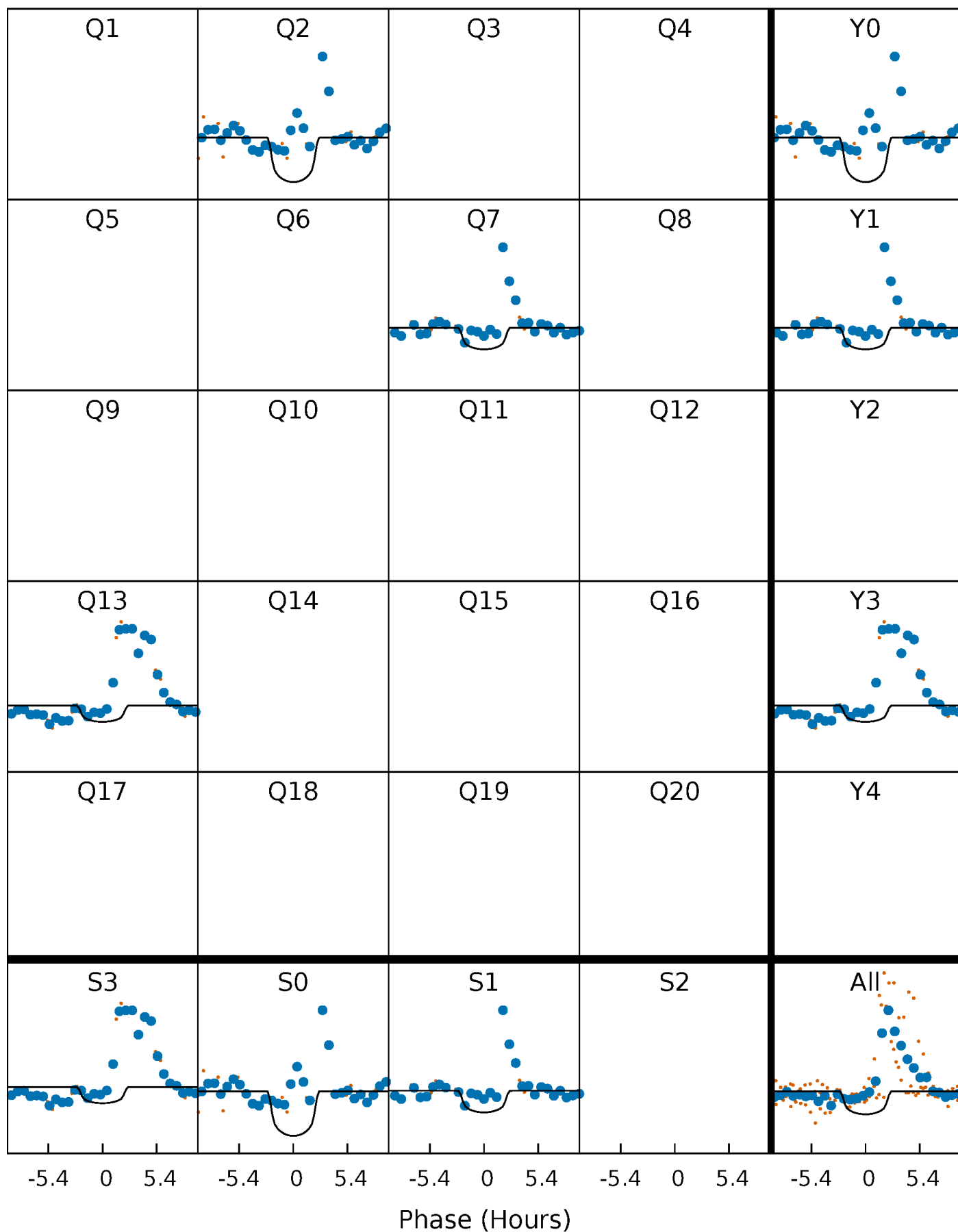
PDC Quarter-Phased Transit Curves

TCE 008817885-05 $P=514.219474$ Days $T_0=172.999465$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008817885-05 $P=514.219474$ Days $T_0=172.999465$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

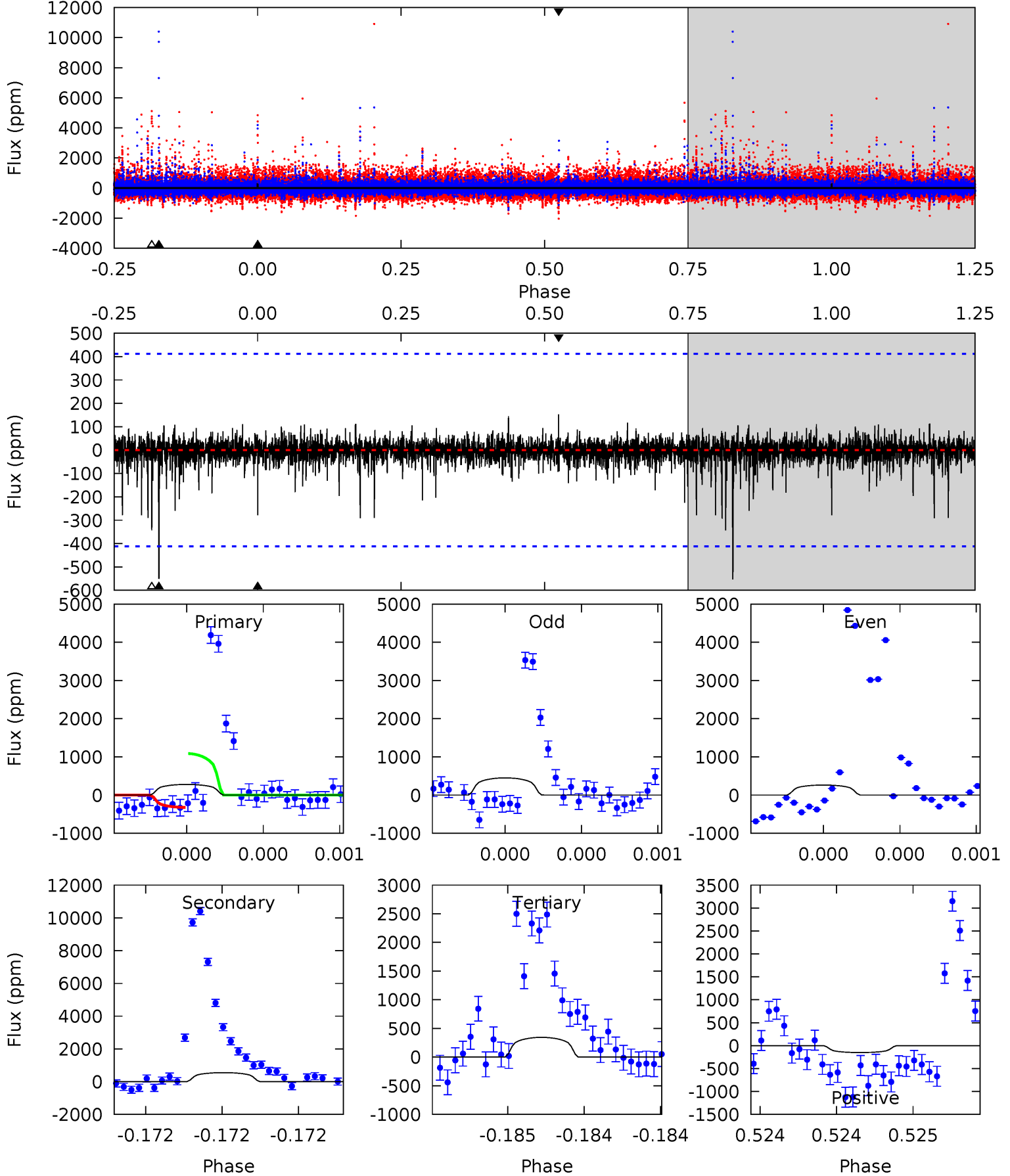
TCE 008817885-05 $P=514.203726$ Days $T_0=172.994657$ (BKJD)



DV Model-Shift Uniqueness Test

008817885-05, P = 514.219474 Days, E = 172.999465 Days

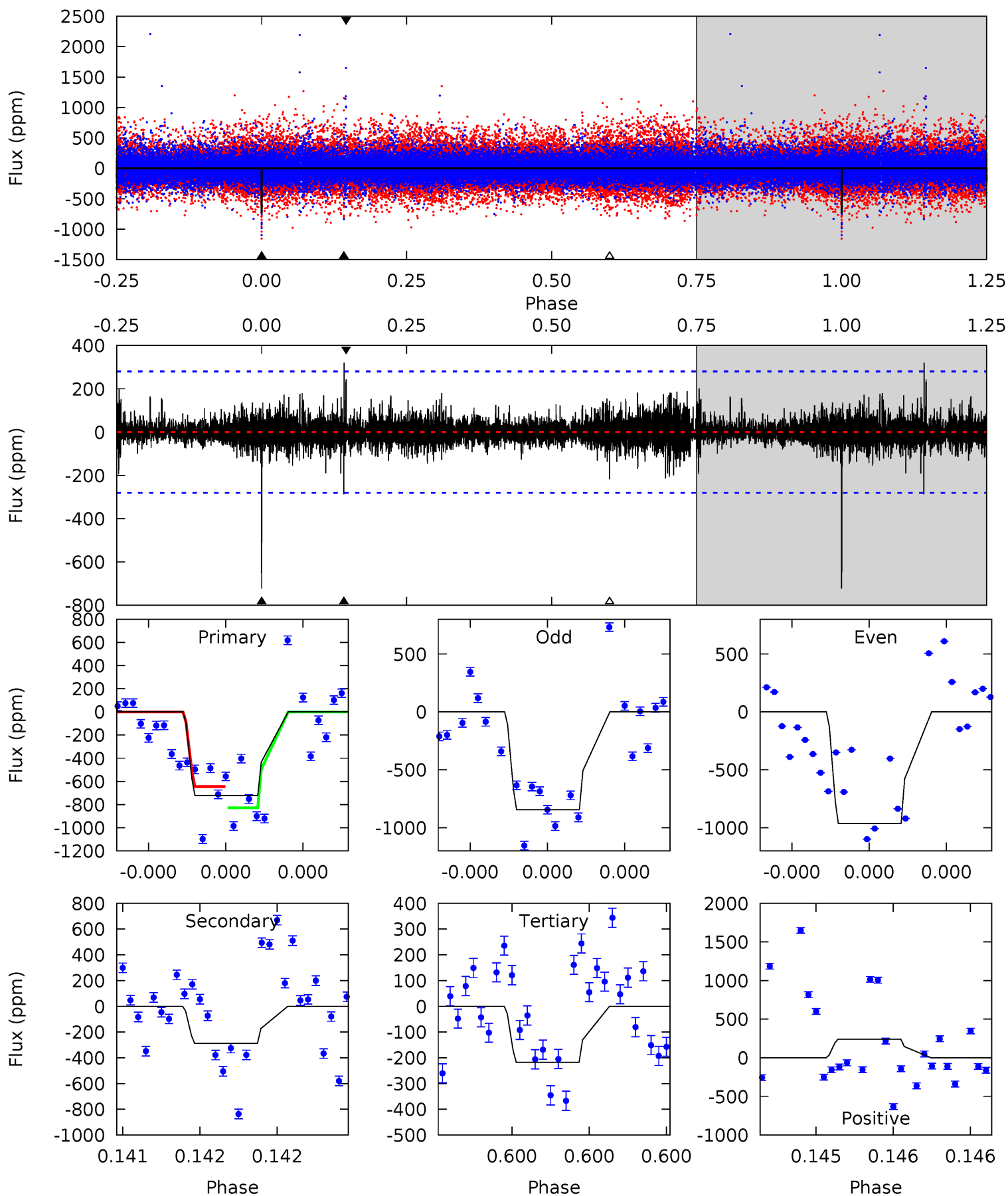
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.78	7.48	4.67	2.07	5.60	3.52	0.50	-0.89	1.71	2.81	5.41	0.72	1.03	0.22	5.17



Alt Model-Shift Uniqueness Test

008817885-05, P = 514.203726 Days, E = 172.994657 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	5.77	4.36	4.87	5.64	3.58	0.81	10.2	9.65	1.41	0.91	1.19	1.15	0.31	1.82



Stellar Parameters For KIC 008817885

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4986^{+123}_{-147}	$3.710^{+0.922}_{-0.307}$	$-0.220^{+0.300}_{-0.300}$	$2.168^{+1.217}_{-1.488}$	$0.880^{+0.231}_{-0.189}$	$0.122^{+3.042}_{-0.076}$
	+2%/-3%	+25%/-8%	+136%/-136%	+56%/-69%	+26%/-21%	+2502%/-62%
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 008817885-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-551 ± 74	$8.19^{+9.45}_{-5.71}$	405^{+57}_{-84}	4069^{+2479}_{-739}	6610^{+71225}_{-5179}
Alt.	-287 ± 50	$8.23^{+9.29}_{-5.54}$	398^{+60}_{-78}	3622^{+1602}_{-655}	3507^{+27869}_{-2751}

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 $A_{obs} \gg 1.0$

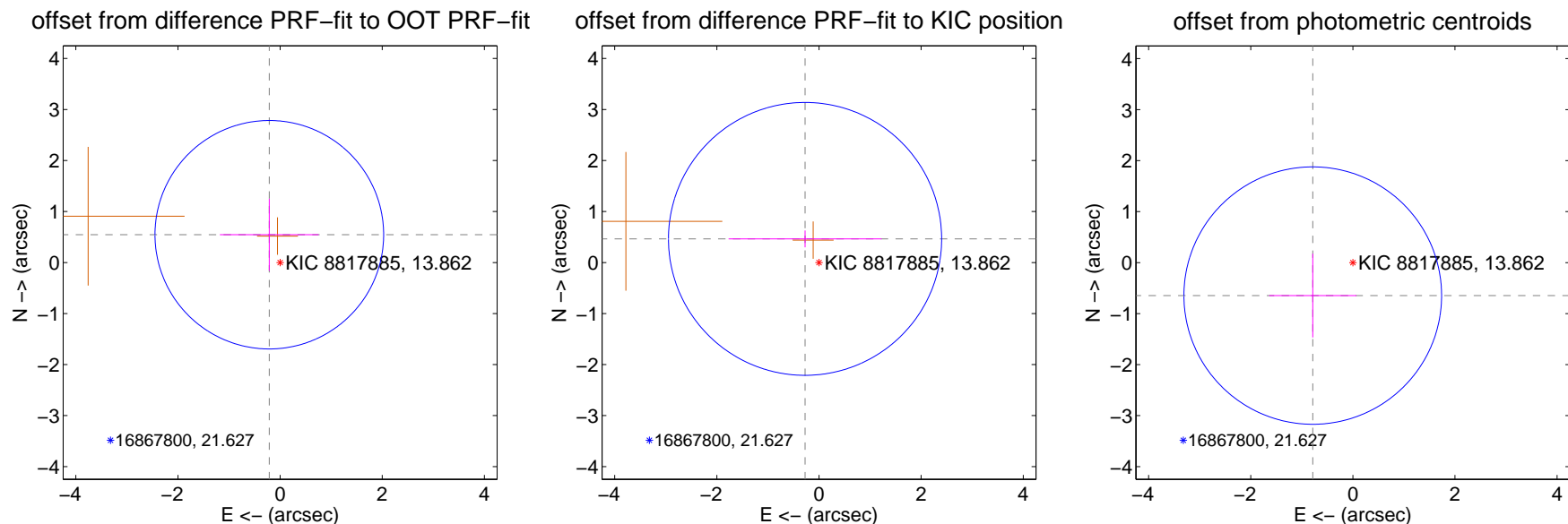
DV Centroid Data

Supplemental centroid analysis for 008817885-05. Kepler magnitude: 13.86. Transit SNR 6.09

There are 0 quarters with good PRF difference image offsets

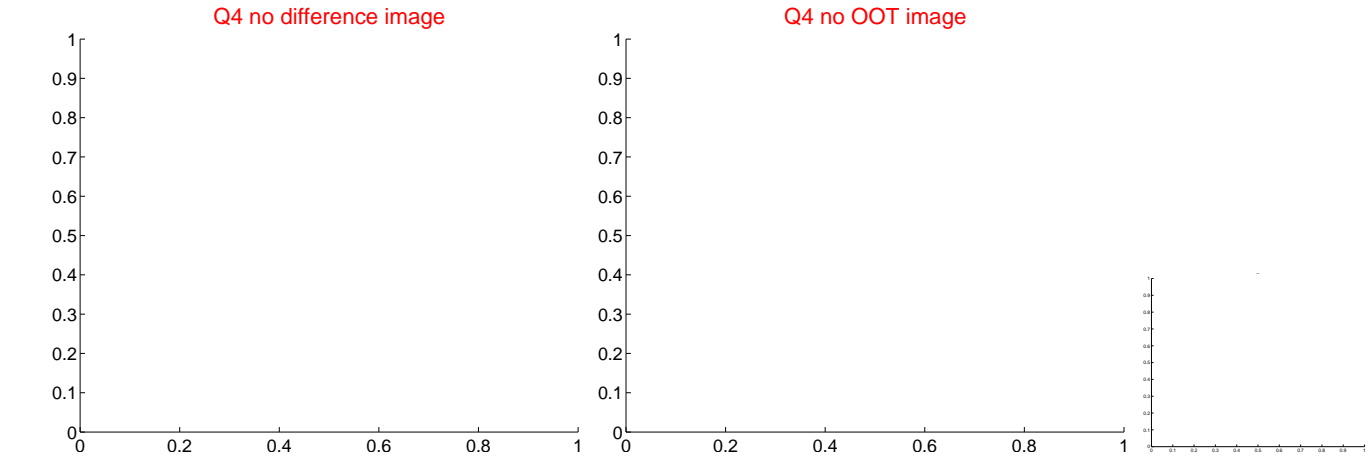
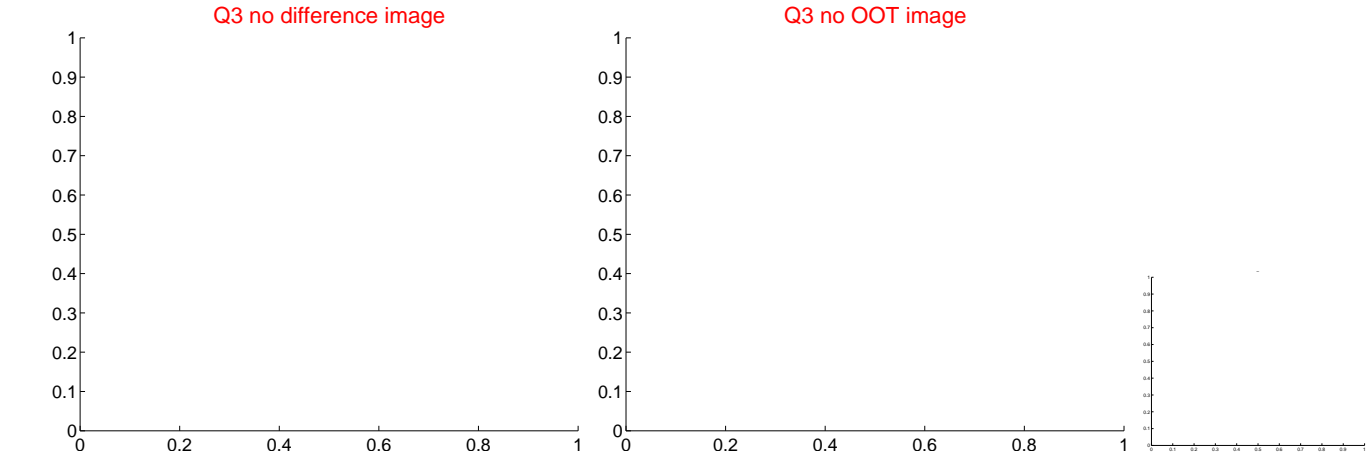
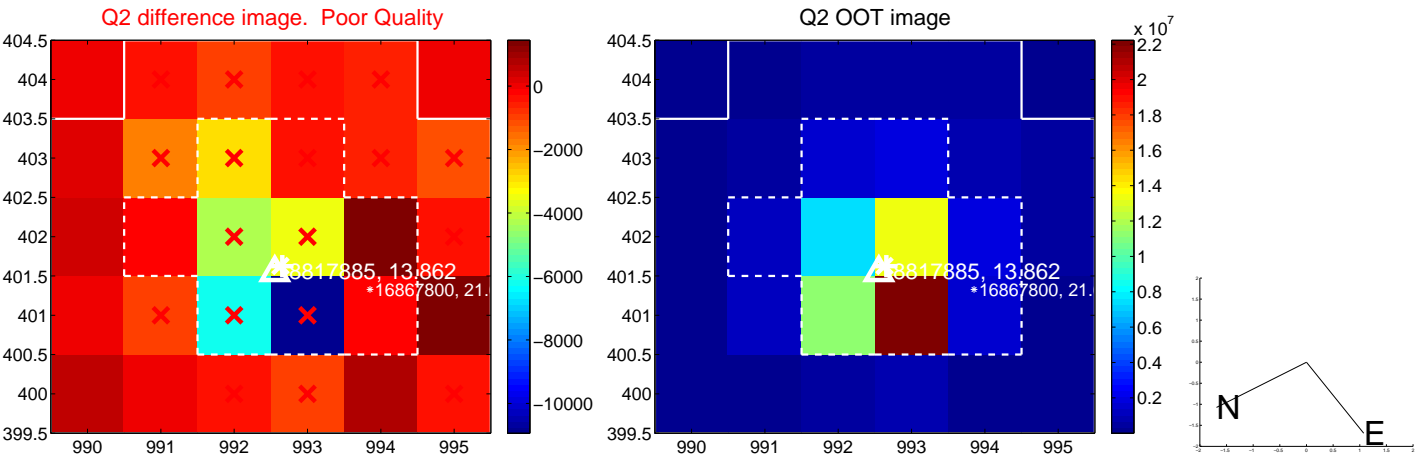
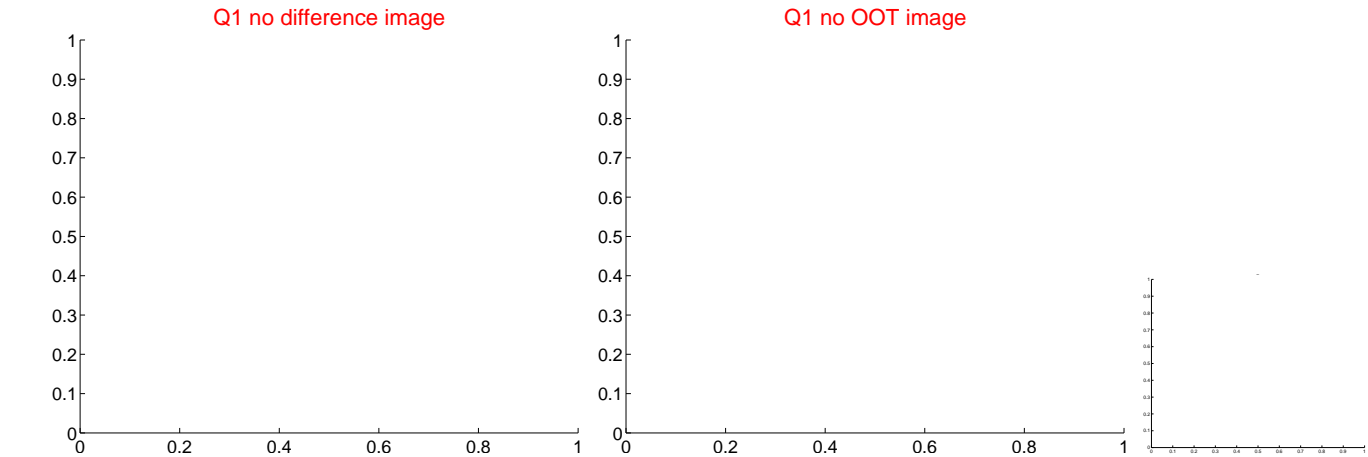
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.585 ± 0.746	0.78	0.211 ± 0.967	0.545 ± 0.707
PRF-fit source offset from KIC position	0.538 ± 0.892	0.60	0.273 ± 1.499	0.464 ± 0.165
photometric centroid source offset	1.02 ± 0.84	1.21	0.79 ± 0.85	-0.65 ± 0.82

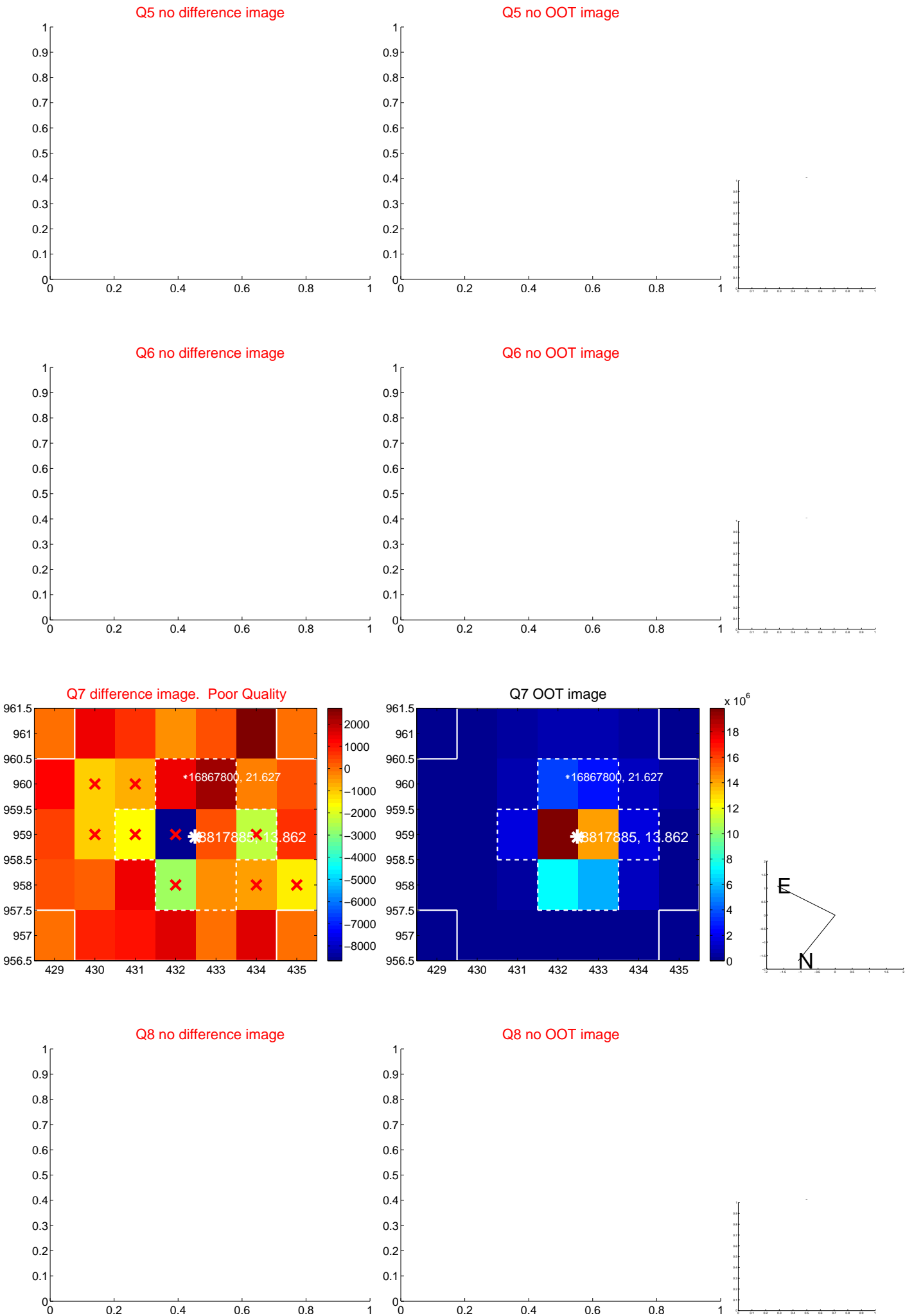


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



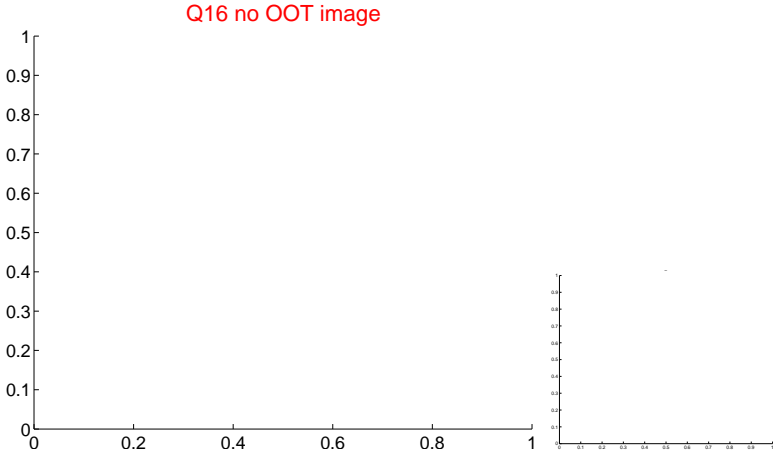
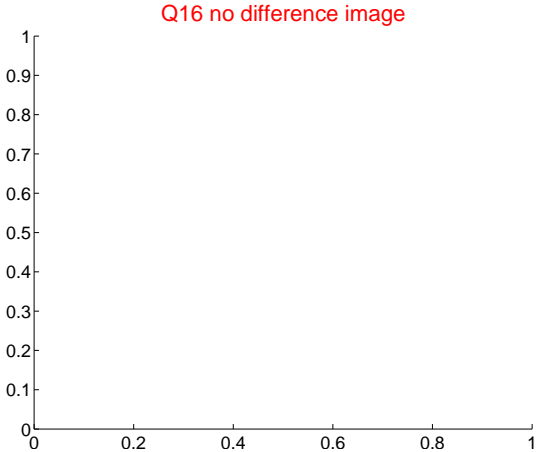
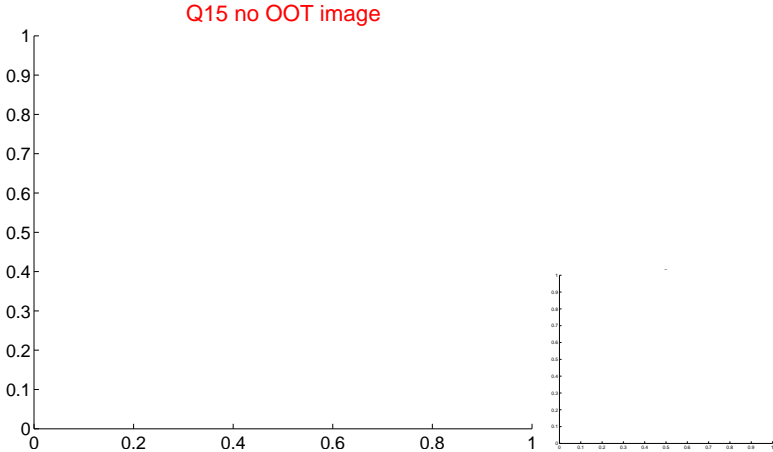
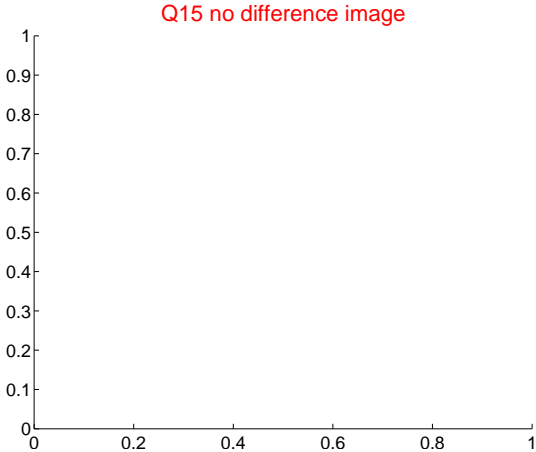
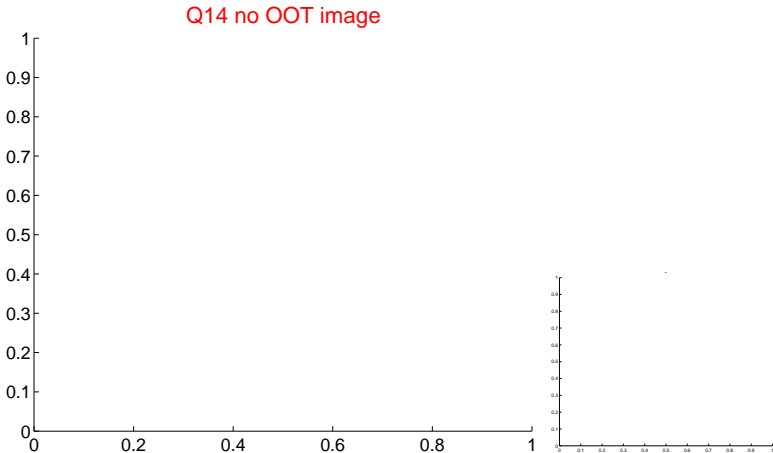
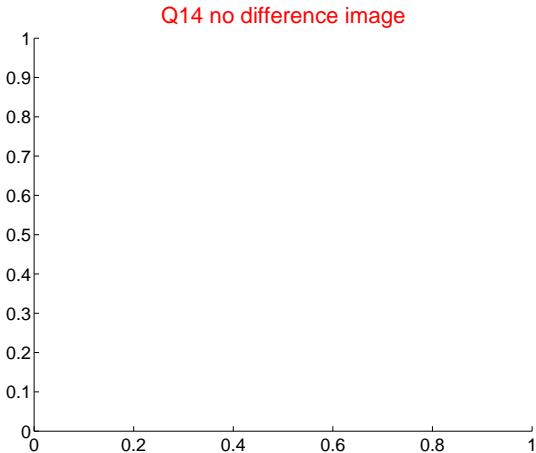
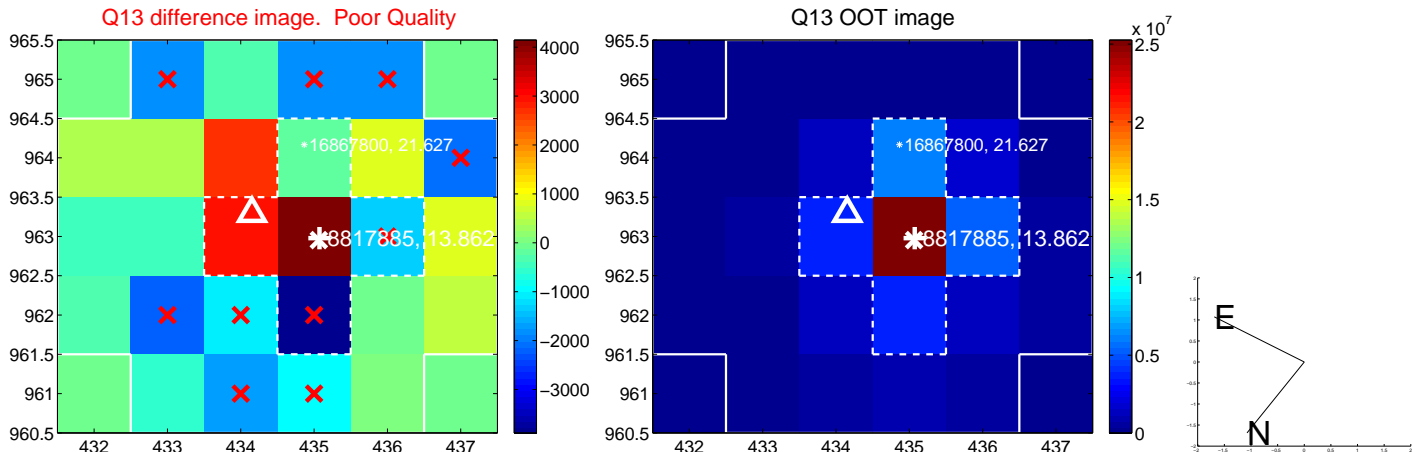
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



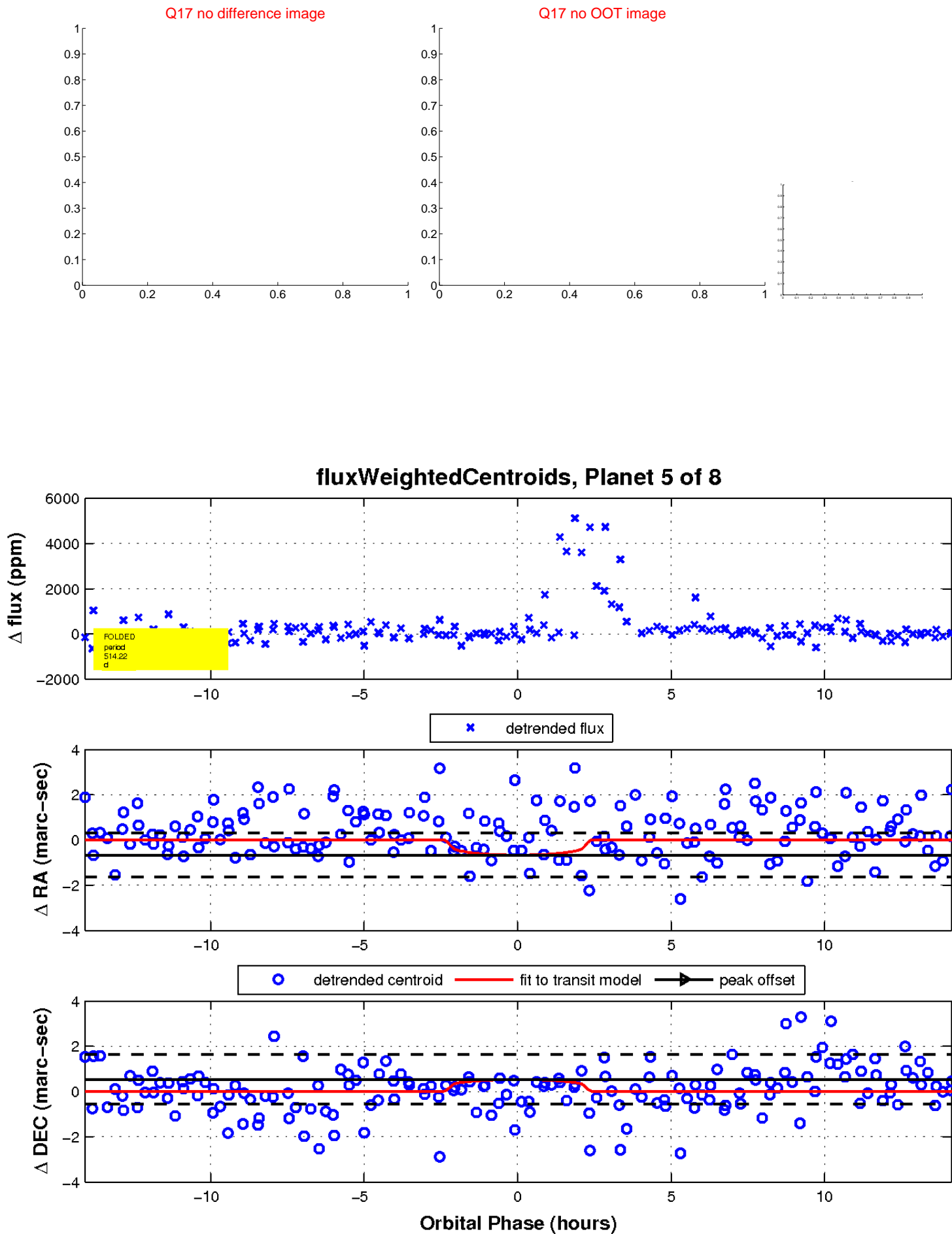
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

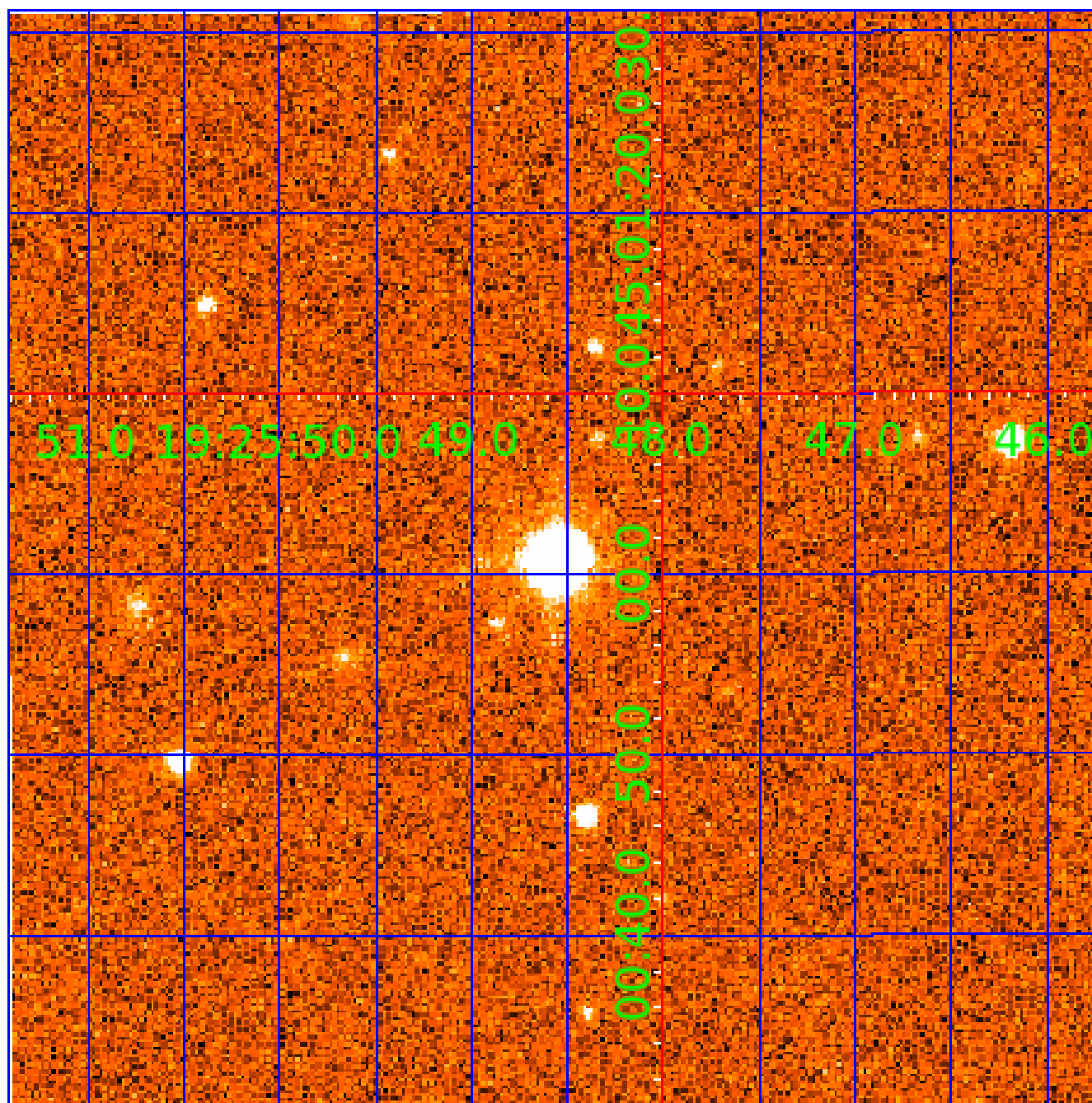


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008817885

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})
008817885-01	OBS	No	625.163148	264.404089	1551.0	7.833	15.9	9.4	2.17	4986	8.30	1.38
008817885-02	OBS	No	343.686068	268.993334	787.6	4.333	13.5	6.6	2.17	4986	6.92	3.07
008817885-03	OBS	No	564.579919	316.517932	1394.2	15.856	13.9	6.9	2.17	4986	16.18	1.59
008817885-04	OBS	No	494.284462	247.611240	936.2	12.590	17.9	5.4	2.17	4986	6.81	1.89
008817885-05	OBS	No	514.219474	172.999465	940.0	4.757	12.9	6.1	2.17	4986	7.10	1.80
008817885-06	OBS	No	485.458145	224.525614	915.1	7.604	11.3	7.0	2.17	4986	6.36	1.94
008817885-07	OBS	No	462.642961	485.426100	495.2	2.210	11.2	3.5	2.17	4986	5.00	2.07
008817885-08	OBS	No	357.907412	274.654893	660.5	3.500	12.1	-1.0	2.17	4986	5.41	2.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008817885-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-02	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
008817885-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008817885-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-06	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—CENT_FEW_DIFFS
008817885-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

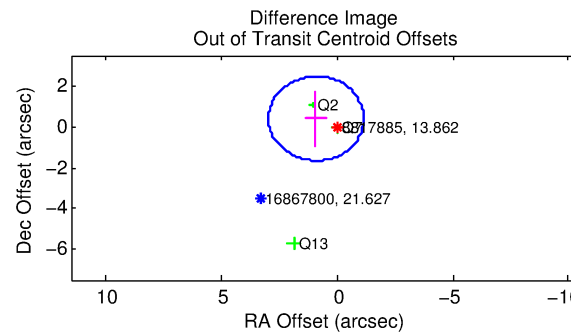
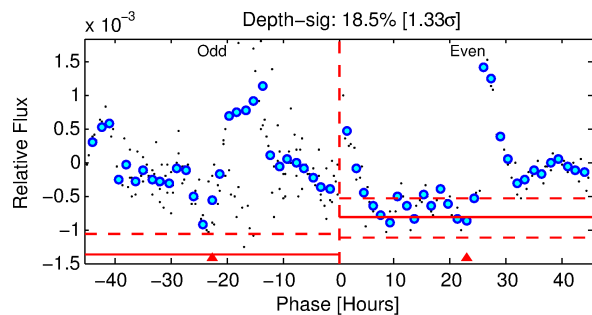
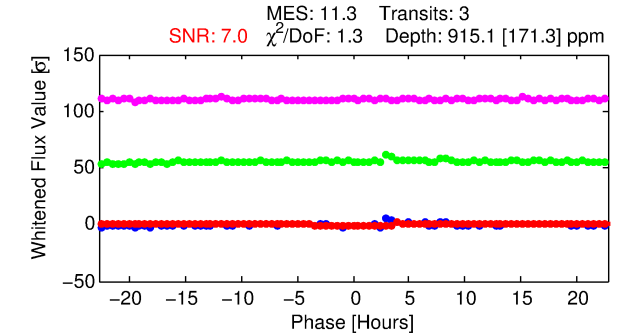
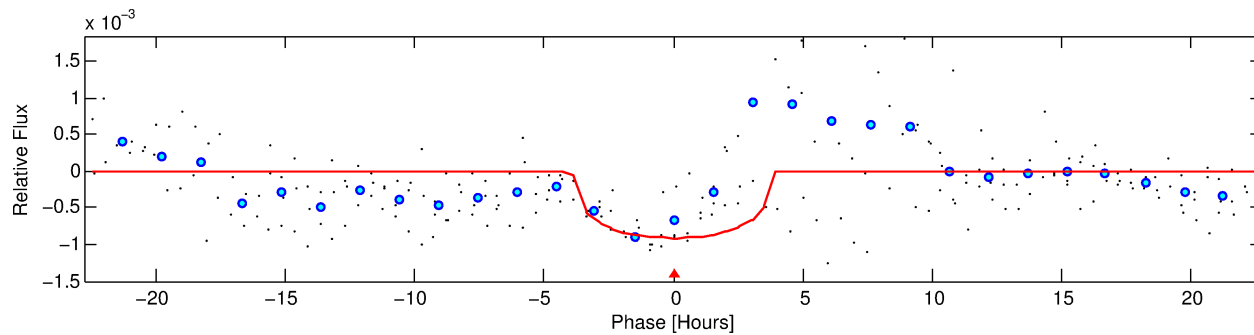
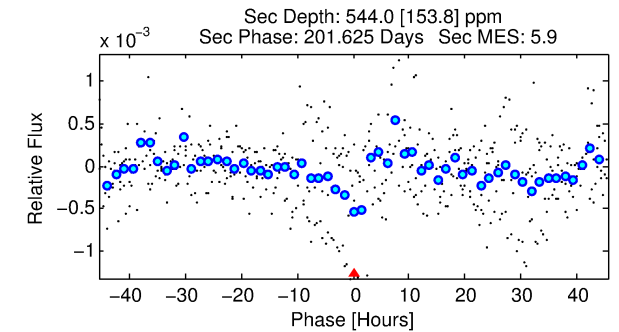
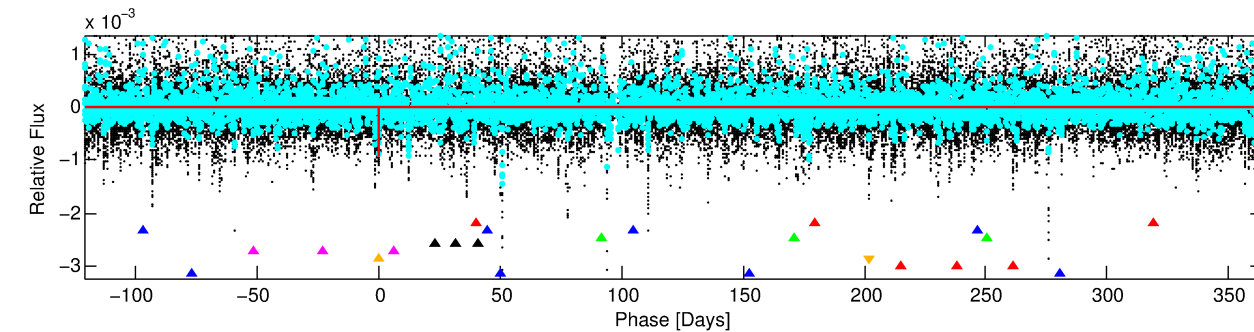
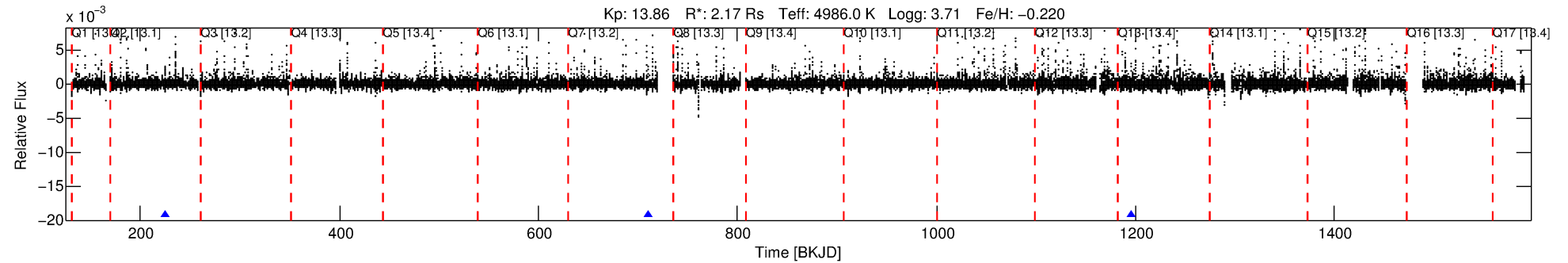
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008817885-06

No Significant Match Found

DV One-Page Summary

KIC: 8817885 Candidate: 6 of 8 Period: 485.458 d



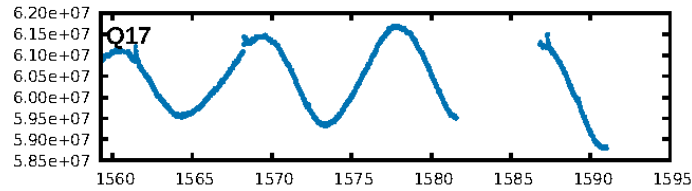
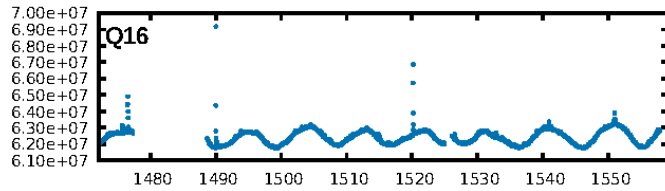
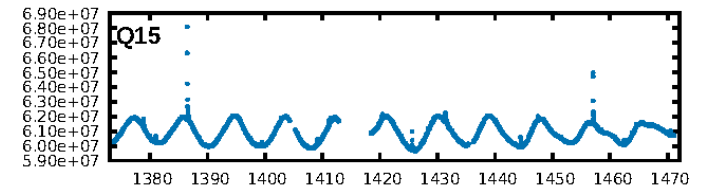
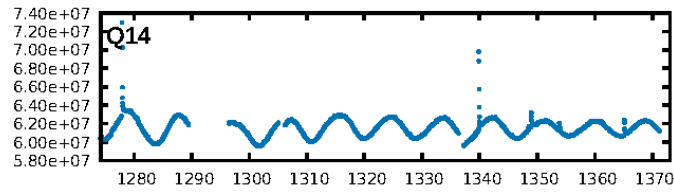
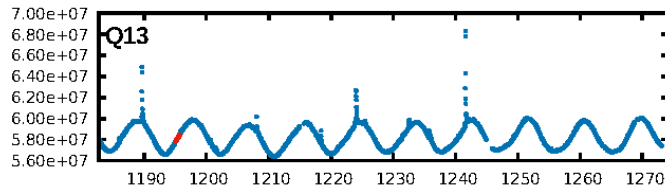
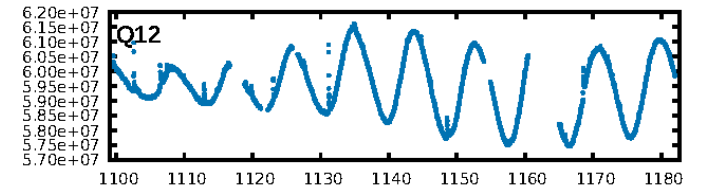
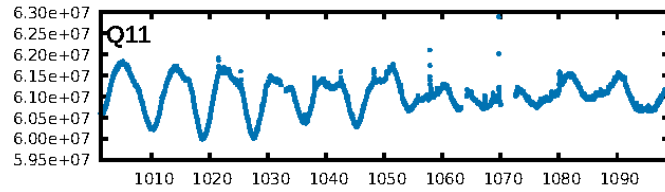
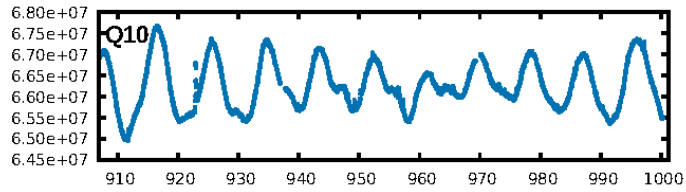
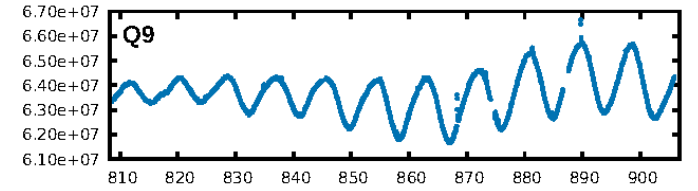
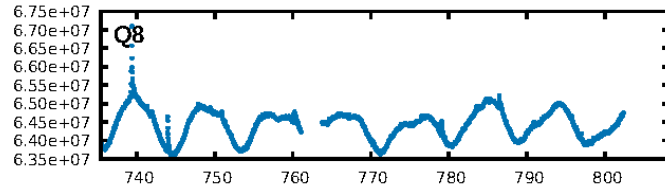
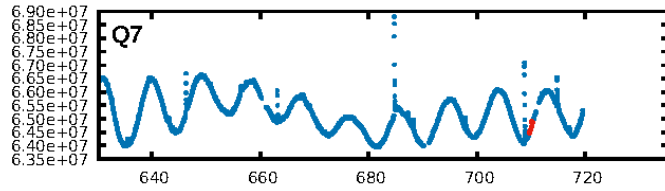
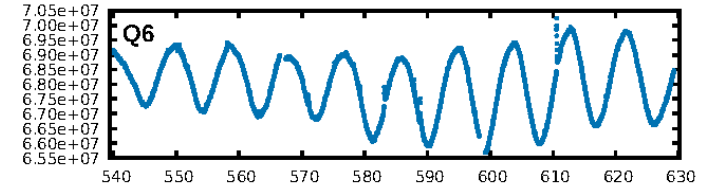
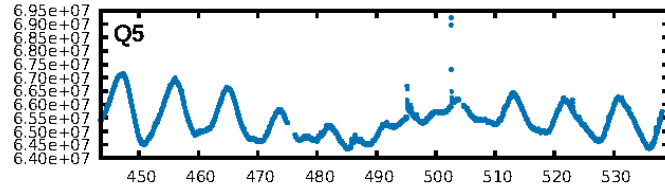
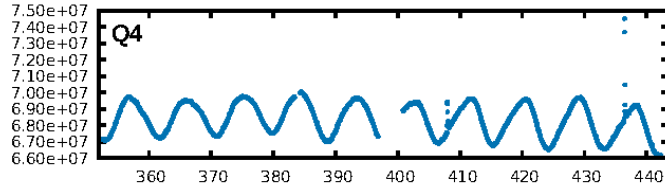
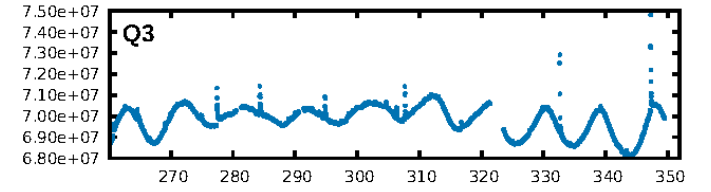
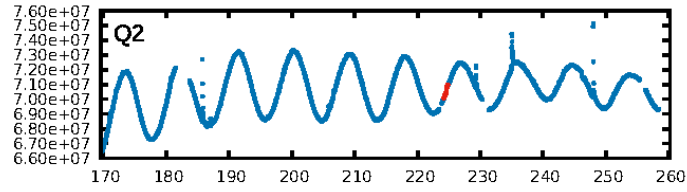
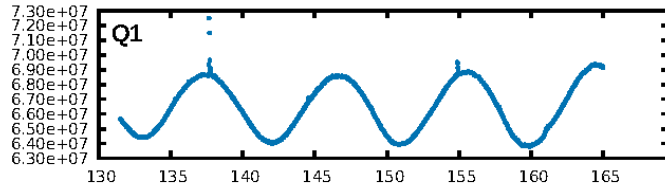
DV Fit Results:

Period = 485.45815 [0.00729] d
Epoch = 224.5256 [0.0107] BKJD
Rp/R* = 0.0269 [0.0348]
a/R* = 500.85 [2251.59]
b = 0.01 [590.74]
Seff = 1.94 [2.89]
Teq = 301 [112] K
Rp = 6.36 [9.31] Re
a = 1.1583 [0.9761] AU
Ag = 9931.96 [29764.75] [0.33σ]
Teffp = 4645 [3024] K [1.44σ]

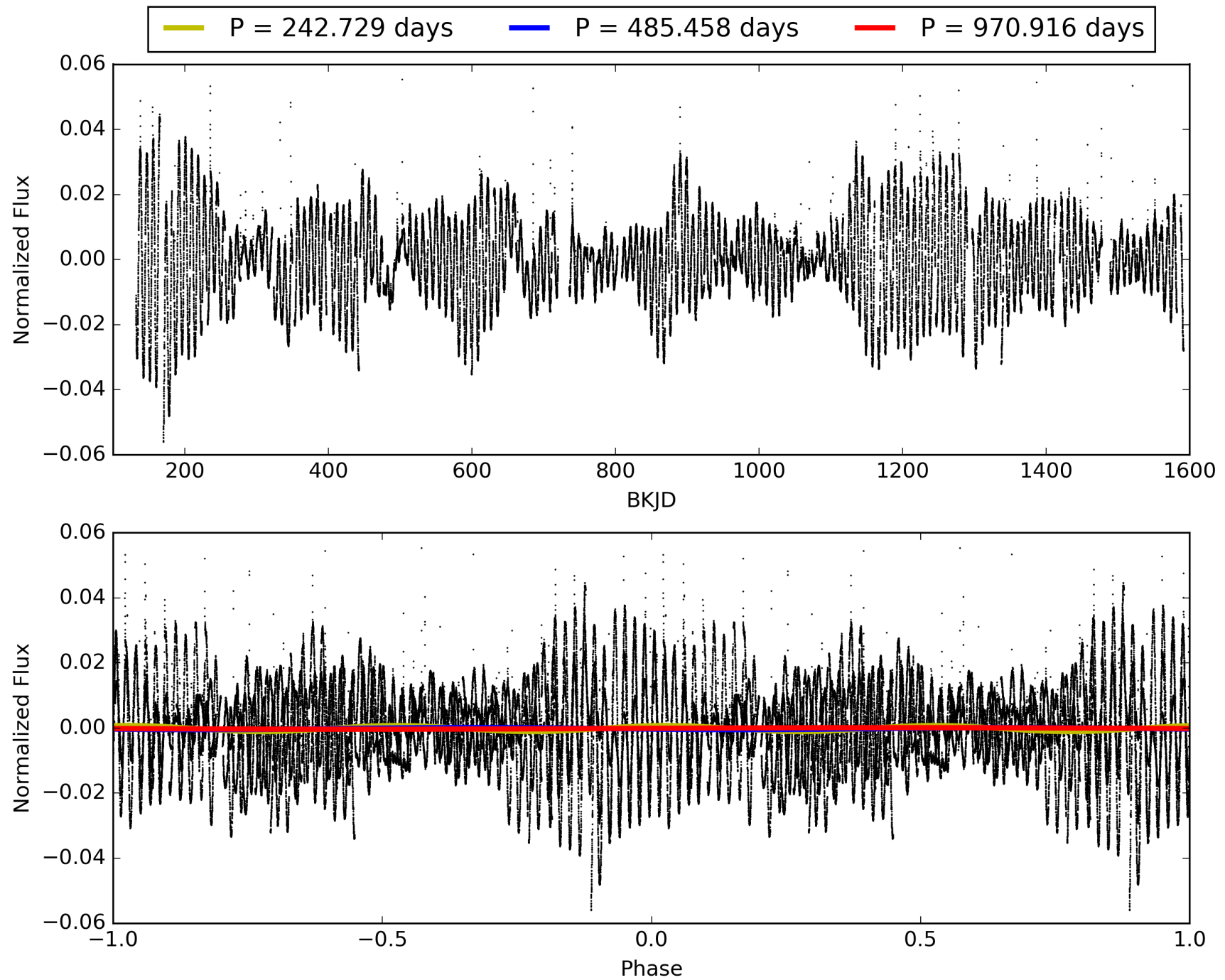
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [69.15σ]
LongPeriod-sig: 100.0% [14.40σ]
ModelChiSquare2-sig: 10.0%
ModelChiSquareGof-sig: 92.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.097
Centroid-sig: 98.1%
Centroid-so: 0.130 arcsec [0.19σ]
OotOffset-rm: 0.992 arcsec [1.44σ]
KicOffset-rm: 0.999 arcsec [1.63σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 008817885-06, PDC Light Curves

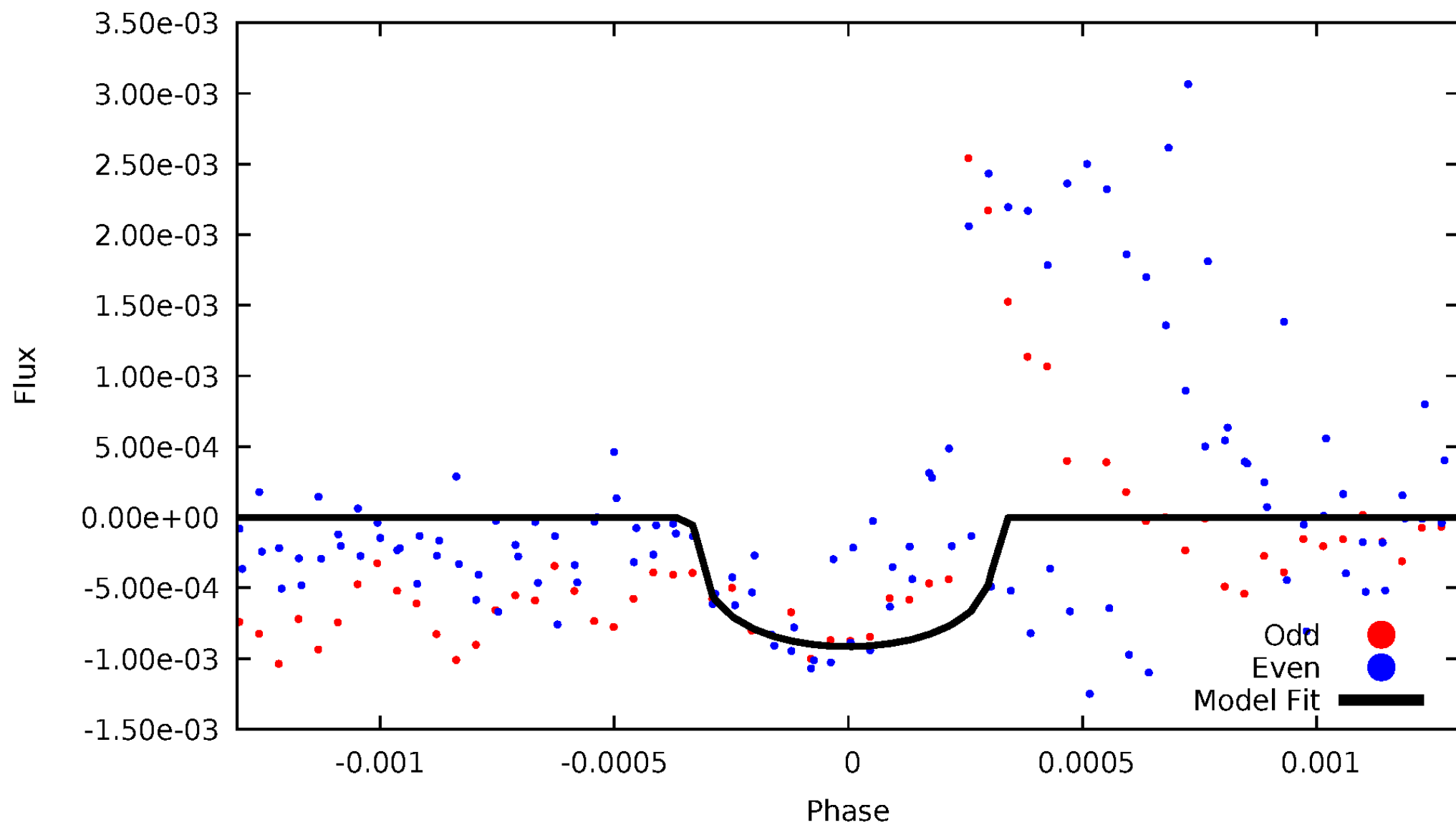


TCE 008817885-06



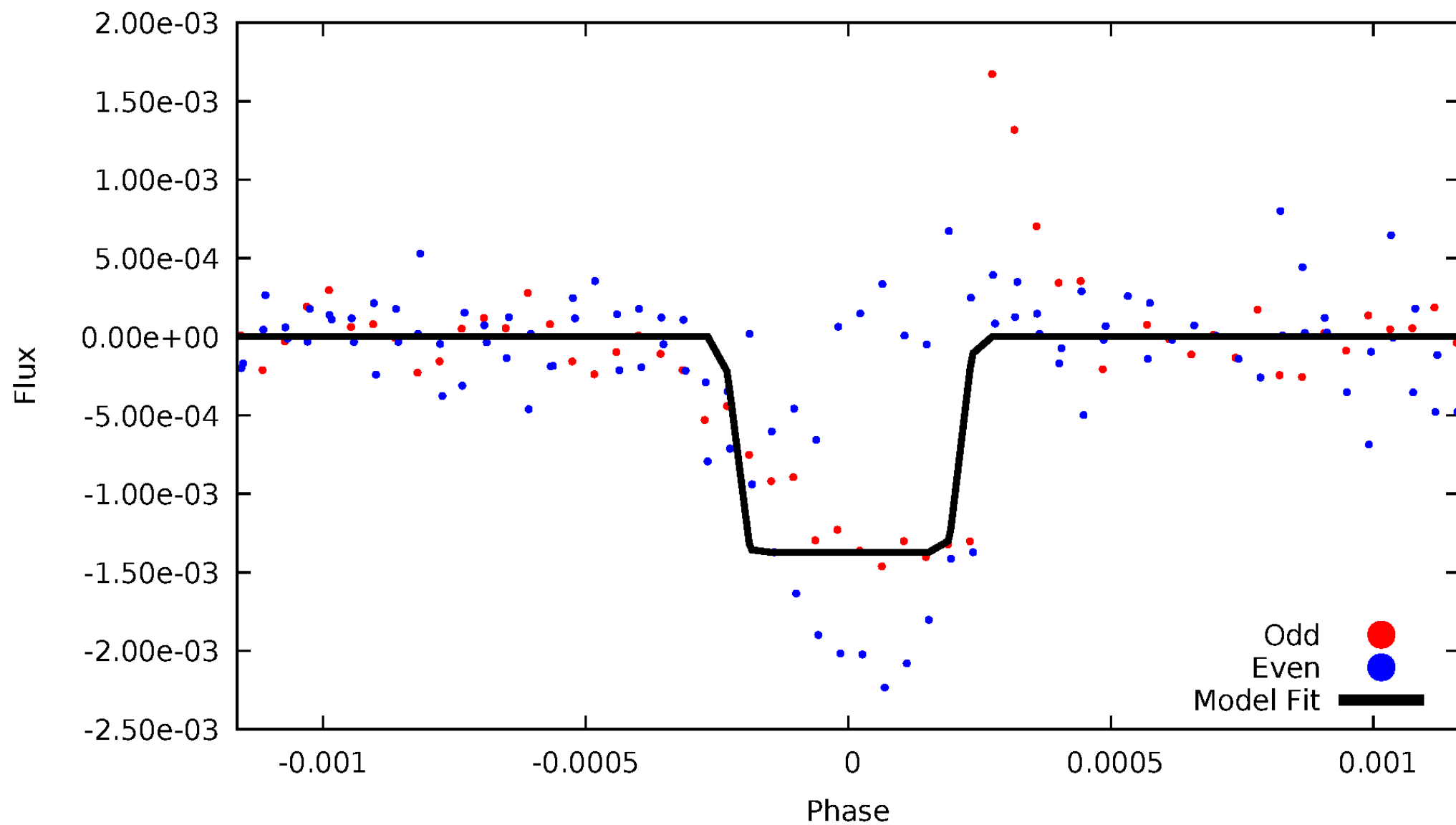
DV Odd/Even

TCE 008817885-06



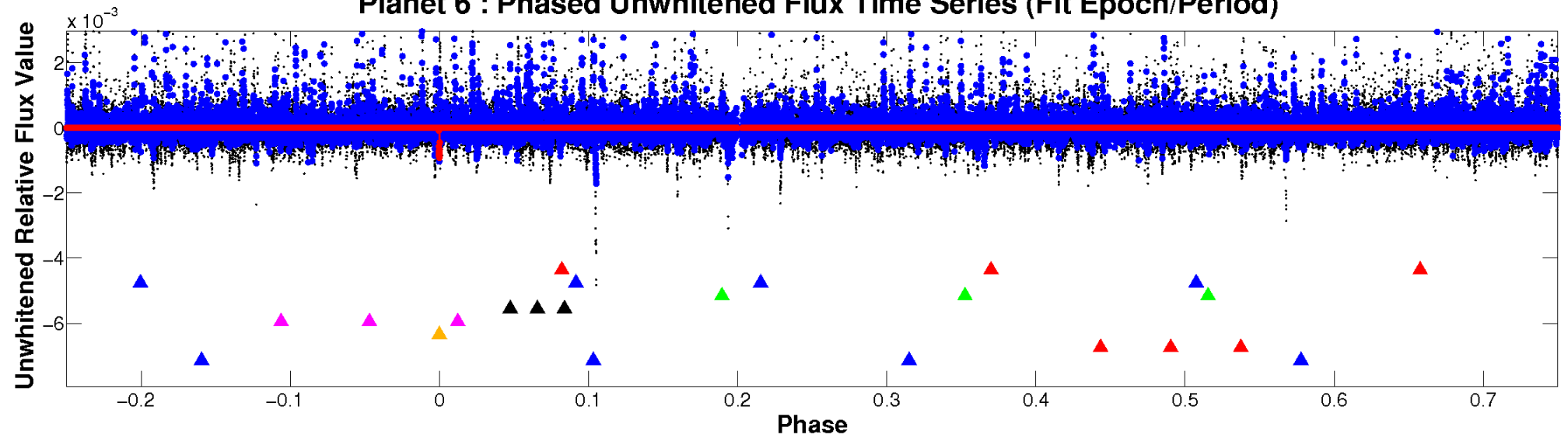
ALT Odd/Even

TCE 008817885-06

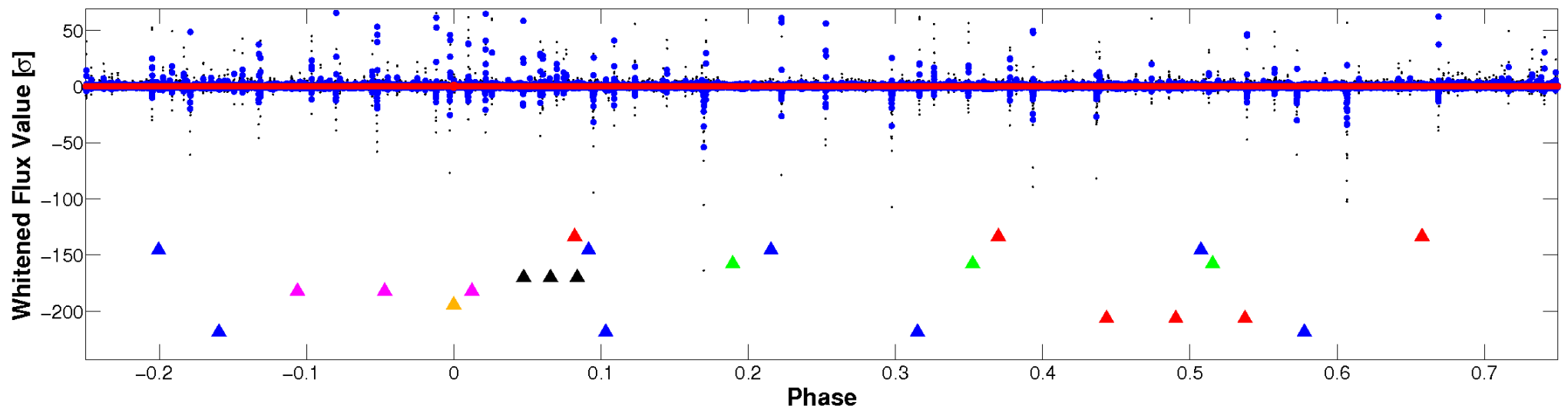


Non-Whitened Vs. Whitened Light Curve

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

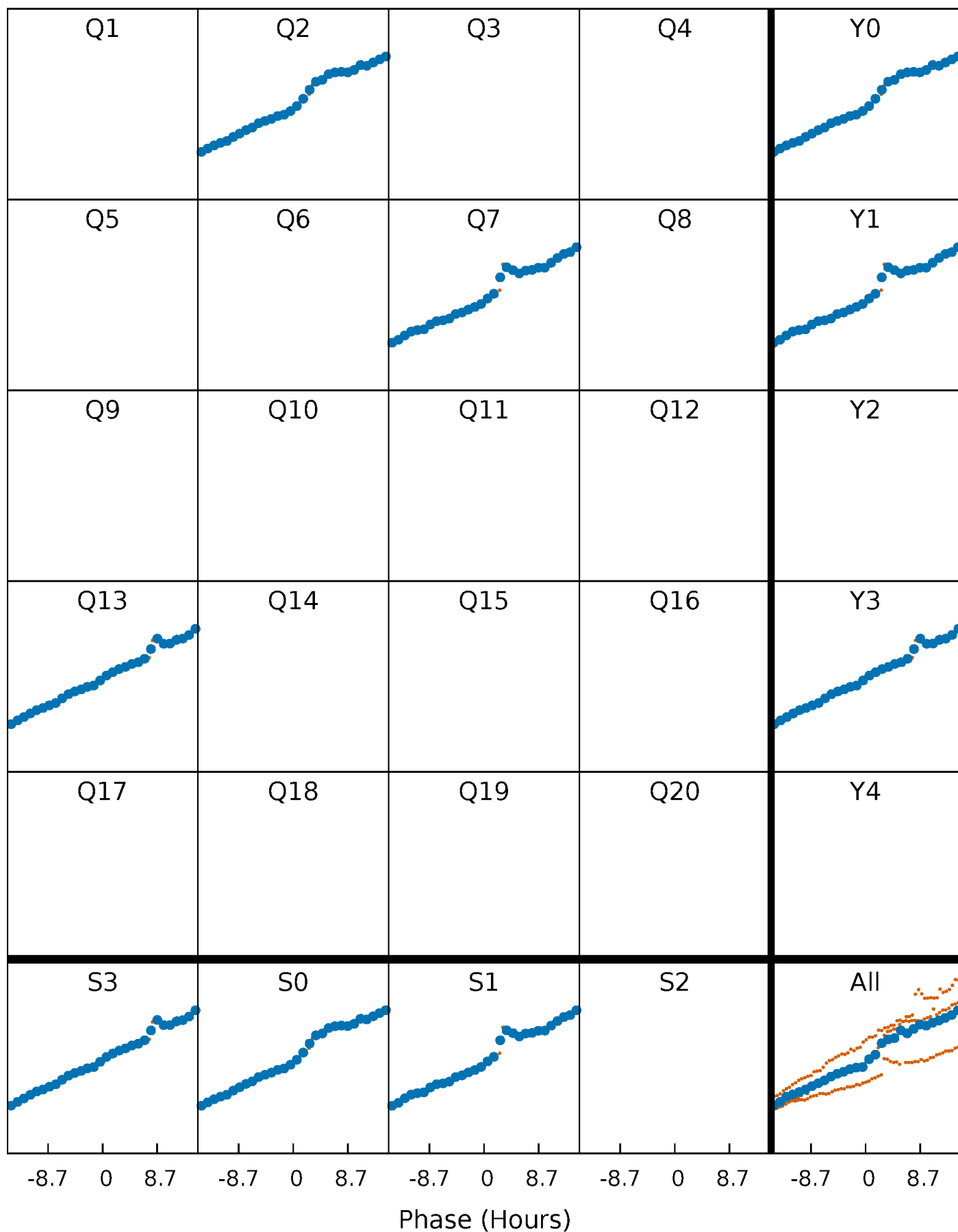


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



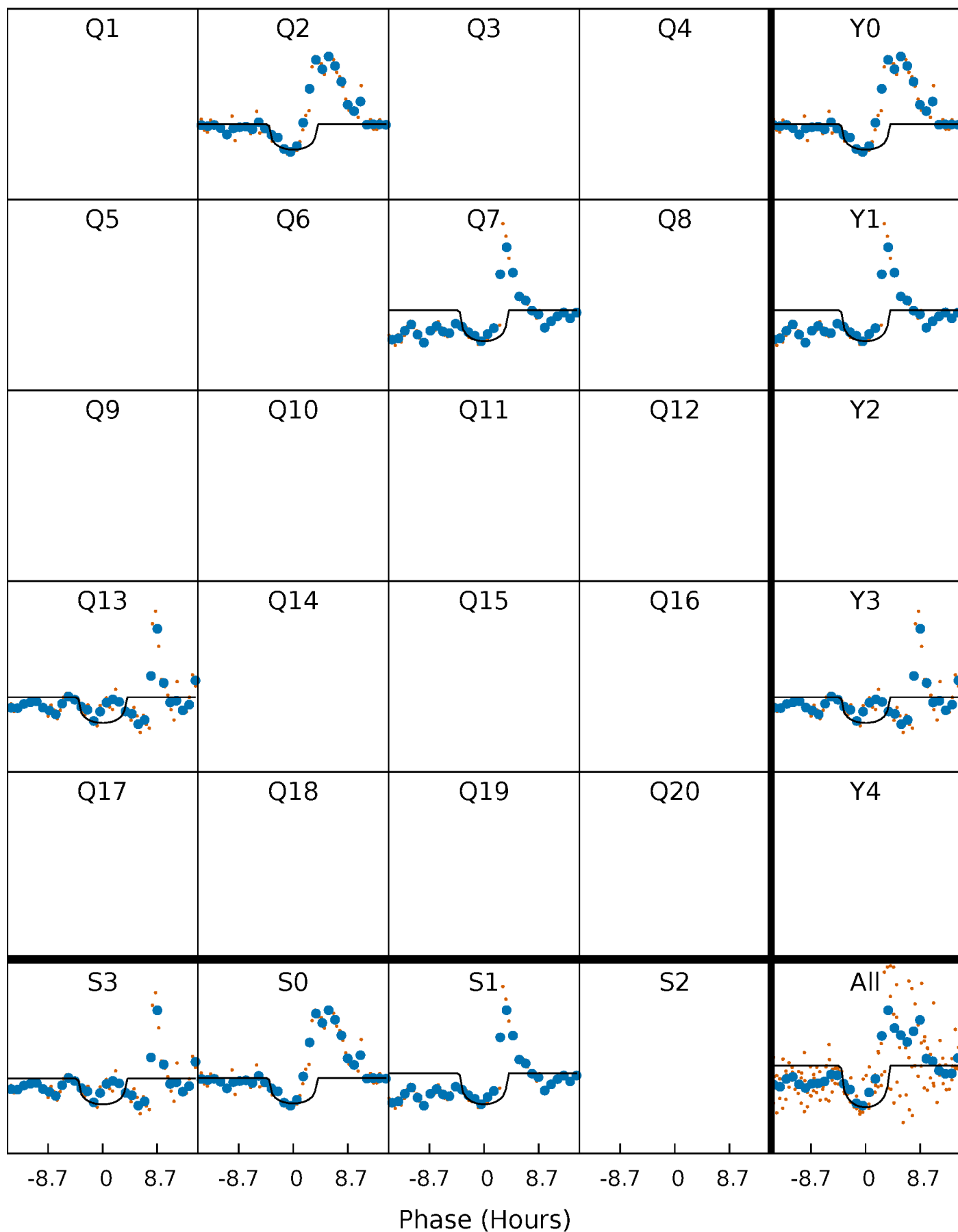
PDC Quarter-Phased Transit Curves

TCE 008817885-06 P=485.458146 Days $T_0=224.525614$ (BKJD)



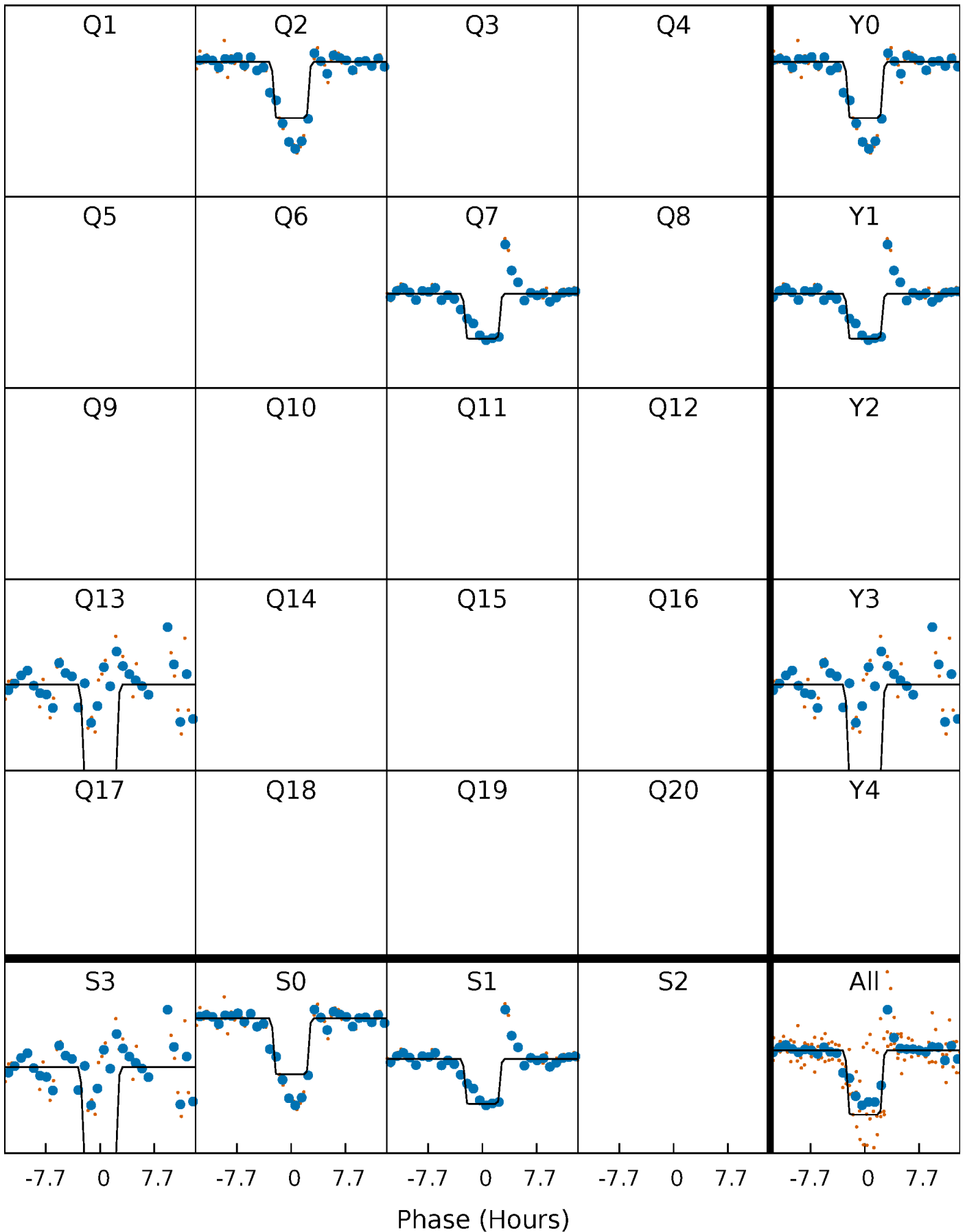
DV Quarter-Phased Transit Curves

TCE 008817885-06 $P=485.458146$ Days $T_0=224.525614$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

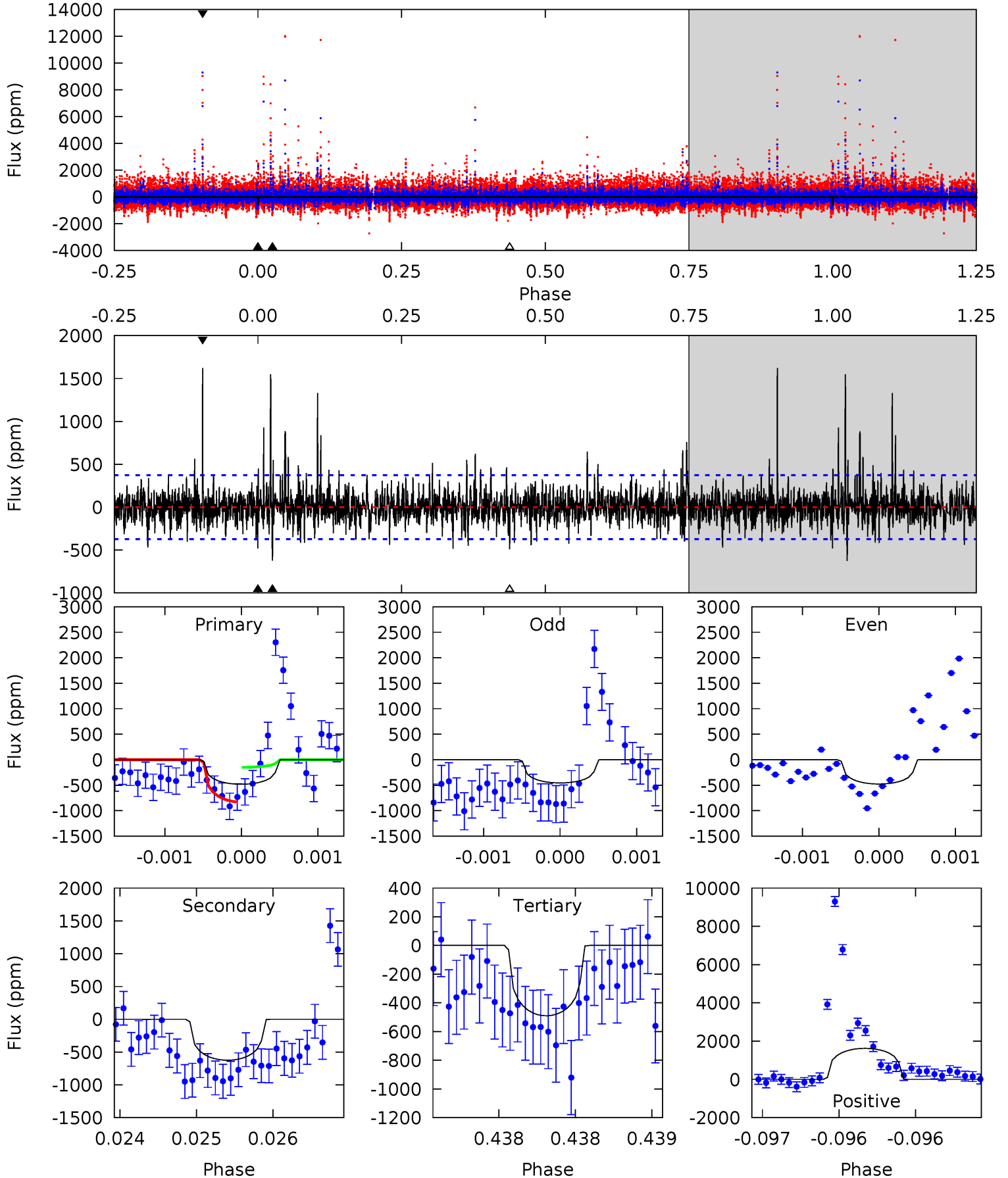
TCE 008817885-06 P=485.460518 Days $T_0=224.514805$ (BKJD)



DV Model-Shift Uniqueness Test

008817885-06, P = 485.458146 Days, E = 224.525614 Days

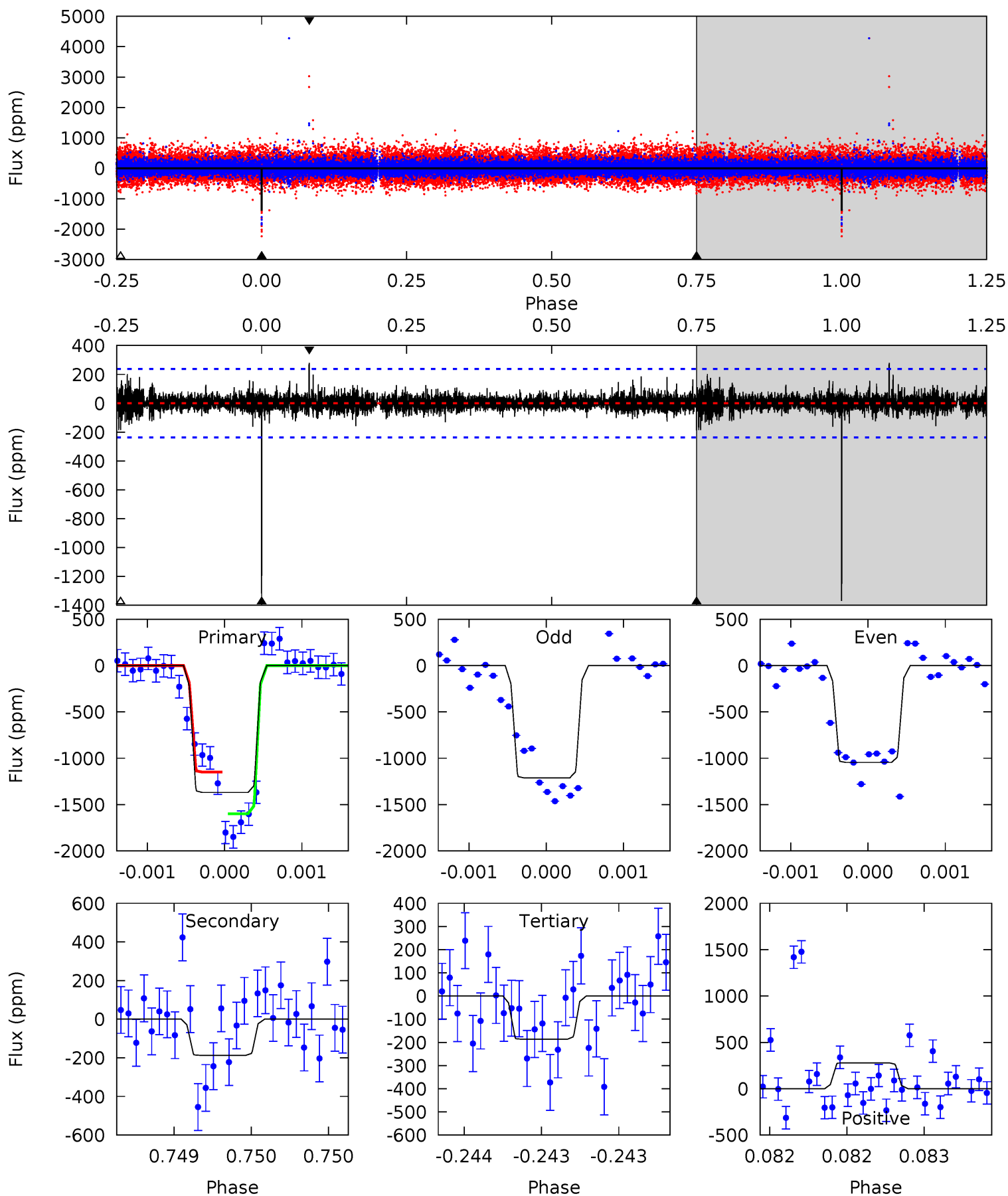
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.13	9.25	7.26	24.0	5.52	3.40	2.22	-0.13	-16.9	1.99	-14.8	0.08	0.93	0.72	5.08



Alt Model-Shift Uniqueness Test

008817885-06, P = 485.460518 Days, E = 224.514805 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.2	4.40	4.38	6.56	5.57	3.48	0.79	27.8	25.6	0.02	-2.17	1.90	0.83	0.17	5.12



Stellar Parameters For KIC 008817885

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4986^{+123}_{-147}	$3.710^{+0.922}_{-0.307}$	$-0.220^{+0.300}_{-0.300}$	$2.168^{+1.217}_{-1.488}$	$0.880^{+0.231}_{-0.189}$	$0.122^{+3.042}_{-0.076}$
	+2%/-3%	+25%/-8%	+136%/-136%	+56%/-69%	+26%/-21%	+2502%/-62%
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 008817885-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-625 ± 68	$7.55^{+8.64}_{-5.05}$	407^{+60}_{-81}	4231^{+2517}_{-768}	8015^{+69160}_{-6223}
Alt.	-187 ± 43	$8.75^{+8.83}_{-5.81}$	414^{+57}_{-83}	3312^{+1385}_{-504}	1715^{+13950}_{-1284}

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 $A_{obs} \gg 1.0$

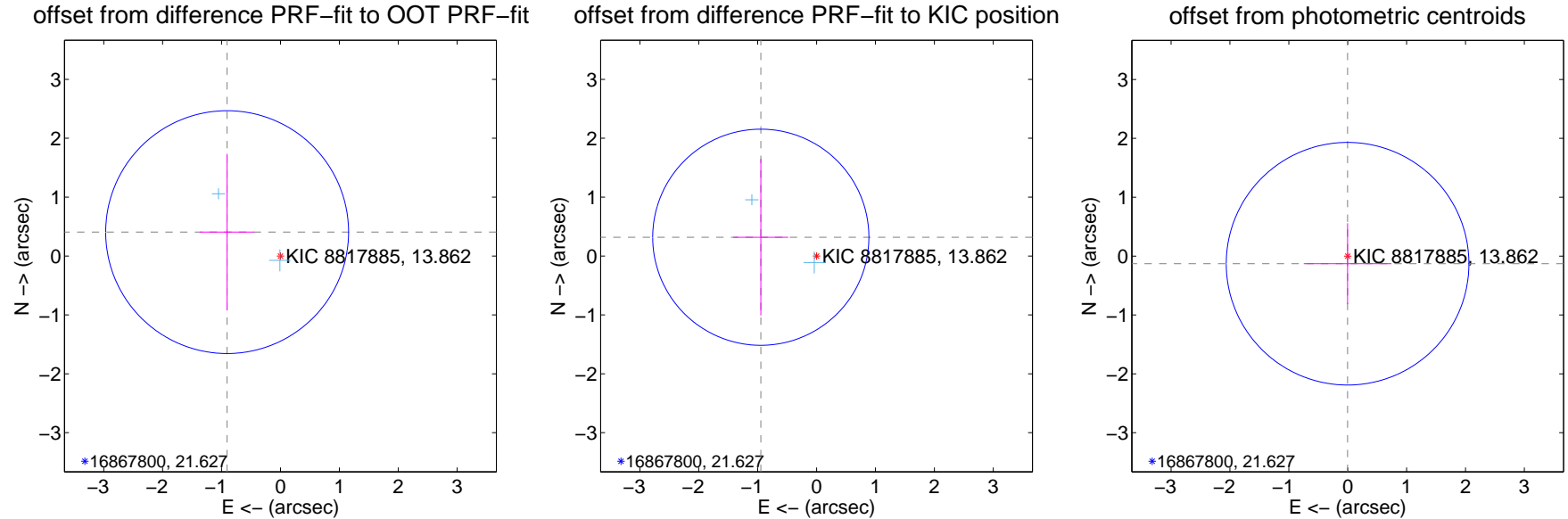
DV Centroid Data

Supplemental centroid analysis for 008817885-06. Kepler magnitude: 13.86. Transit SNR 6.99

There are 2 quarters with good PRF difference image offsets

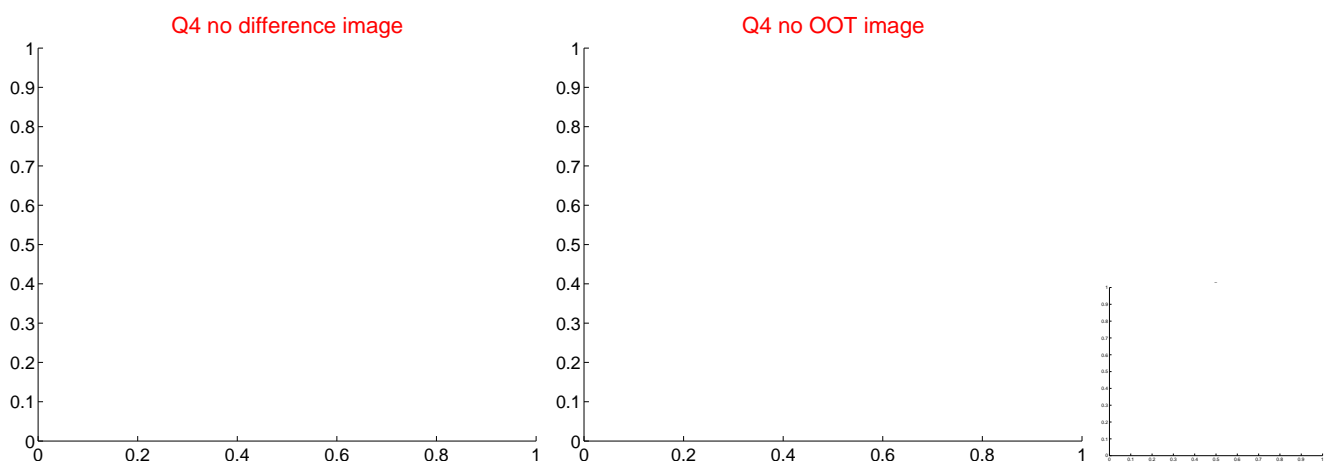
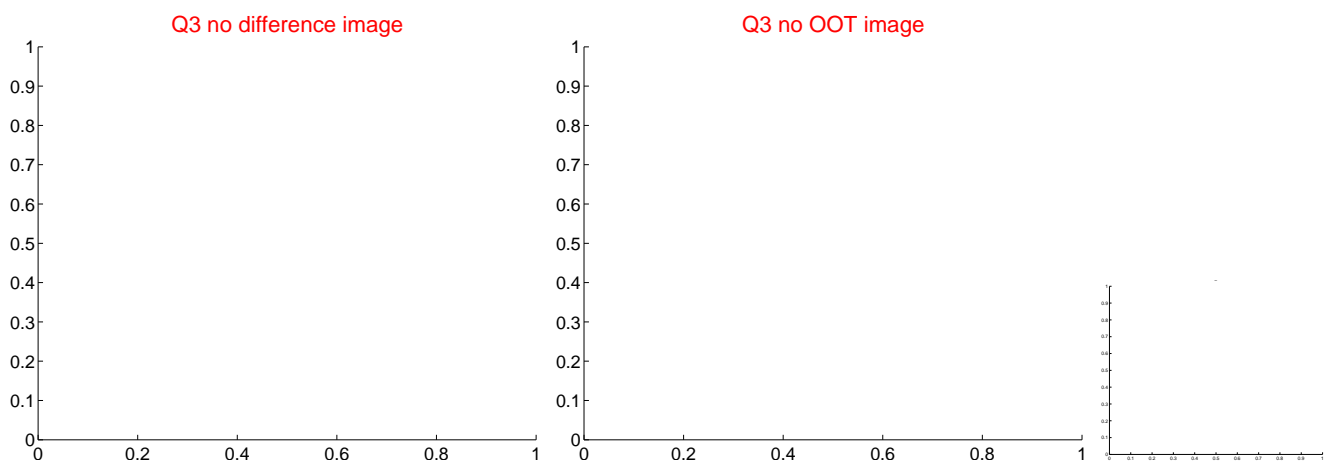
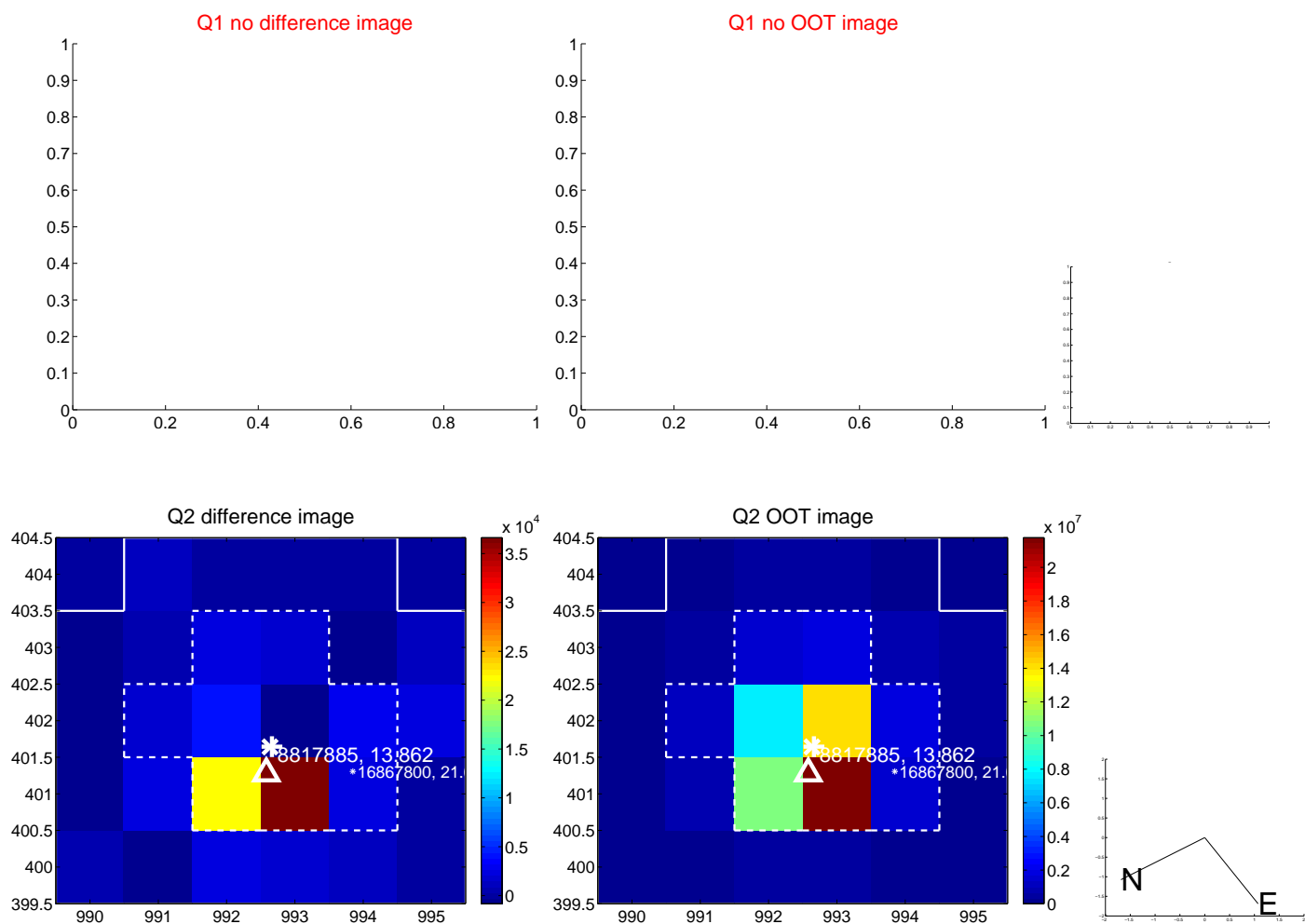
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.992 ± 0.687	1.44	0.905 ± 0.460	0.406 ± 1.330
PRF-fit source offset from KIC position	0.999 ± 0.612	1.63	0.947 ± 0.465	0.319 ± 1.329
photometric centroid source offset	0.13 ± 0.69	0.19	0.00 ± 0.74	-0.13 ± 0.69

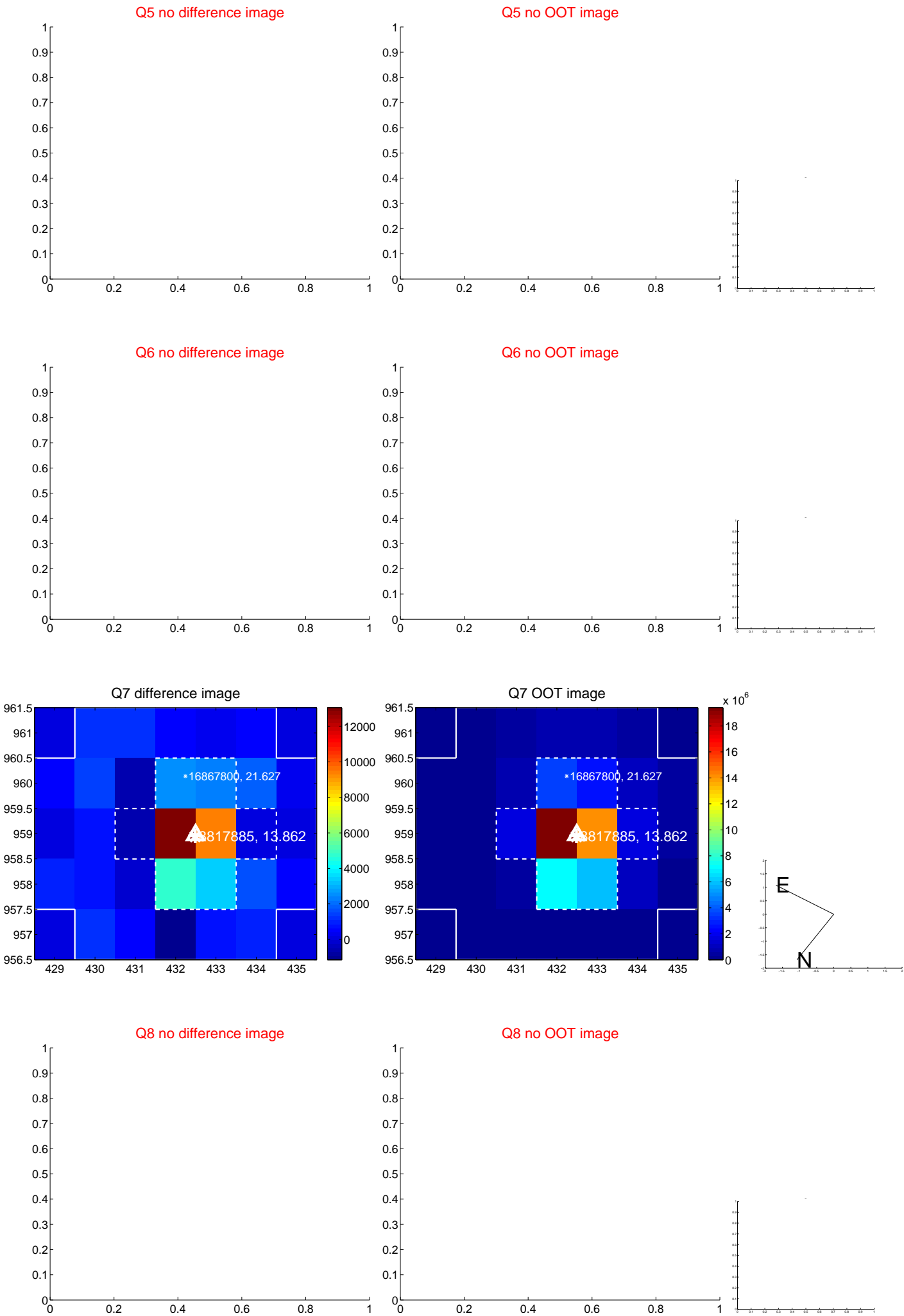


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



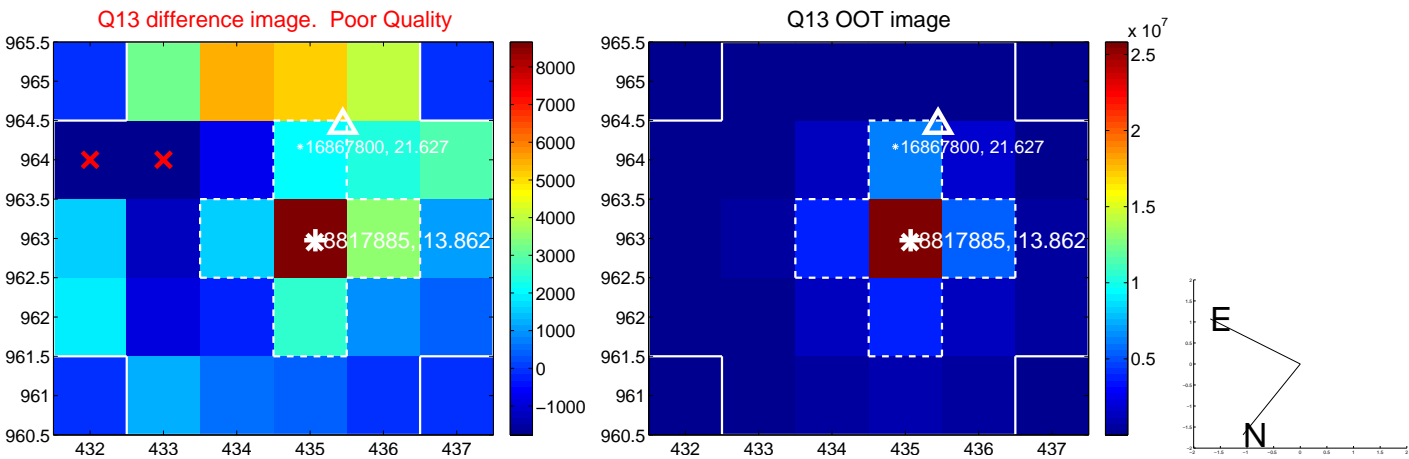
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



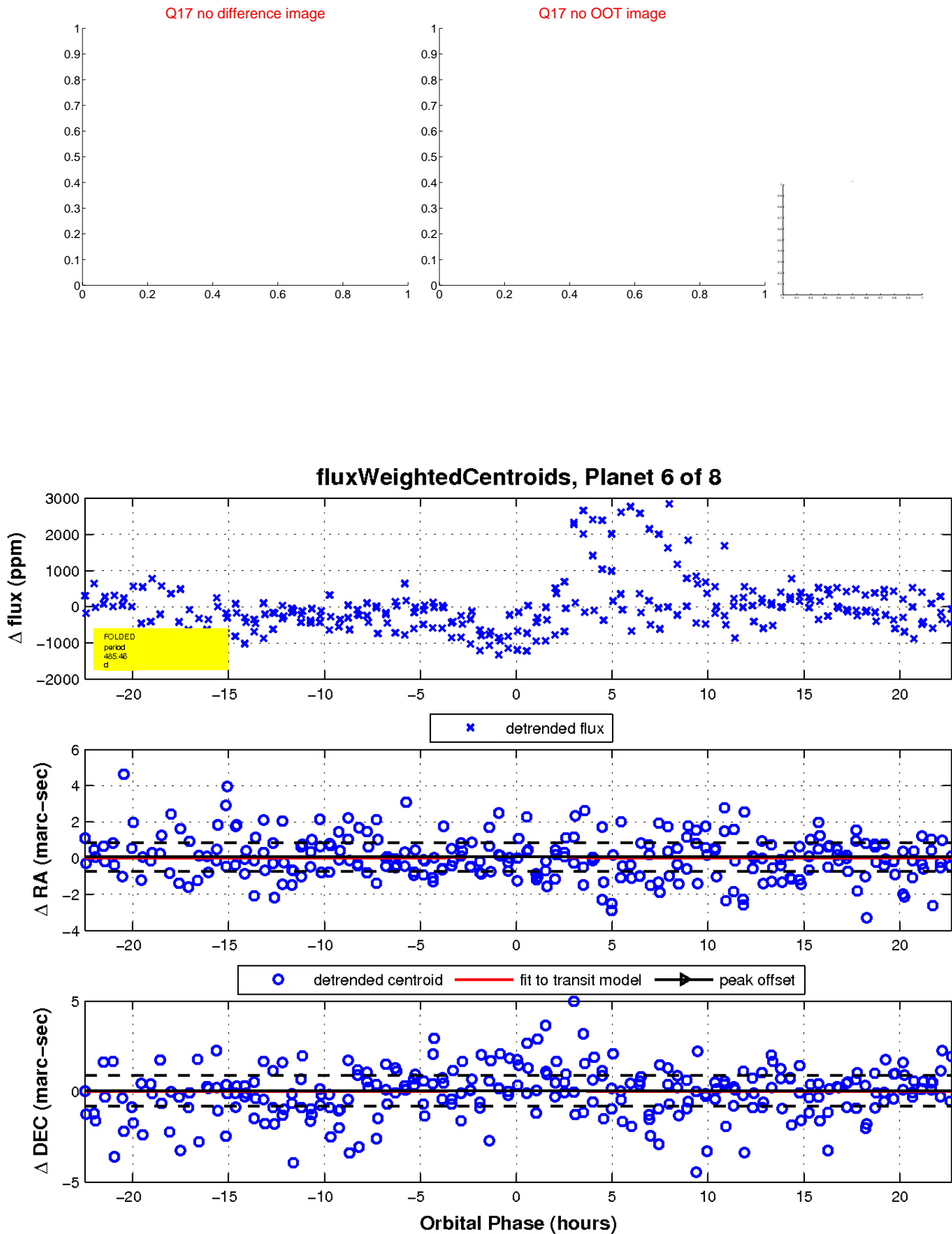
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

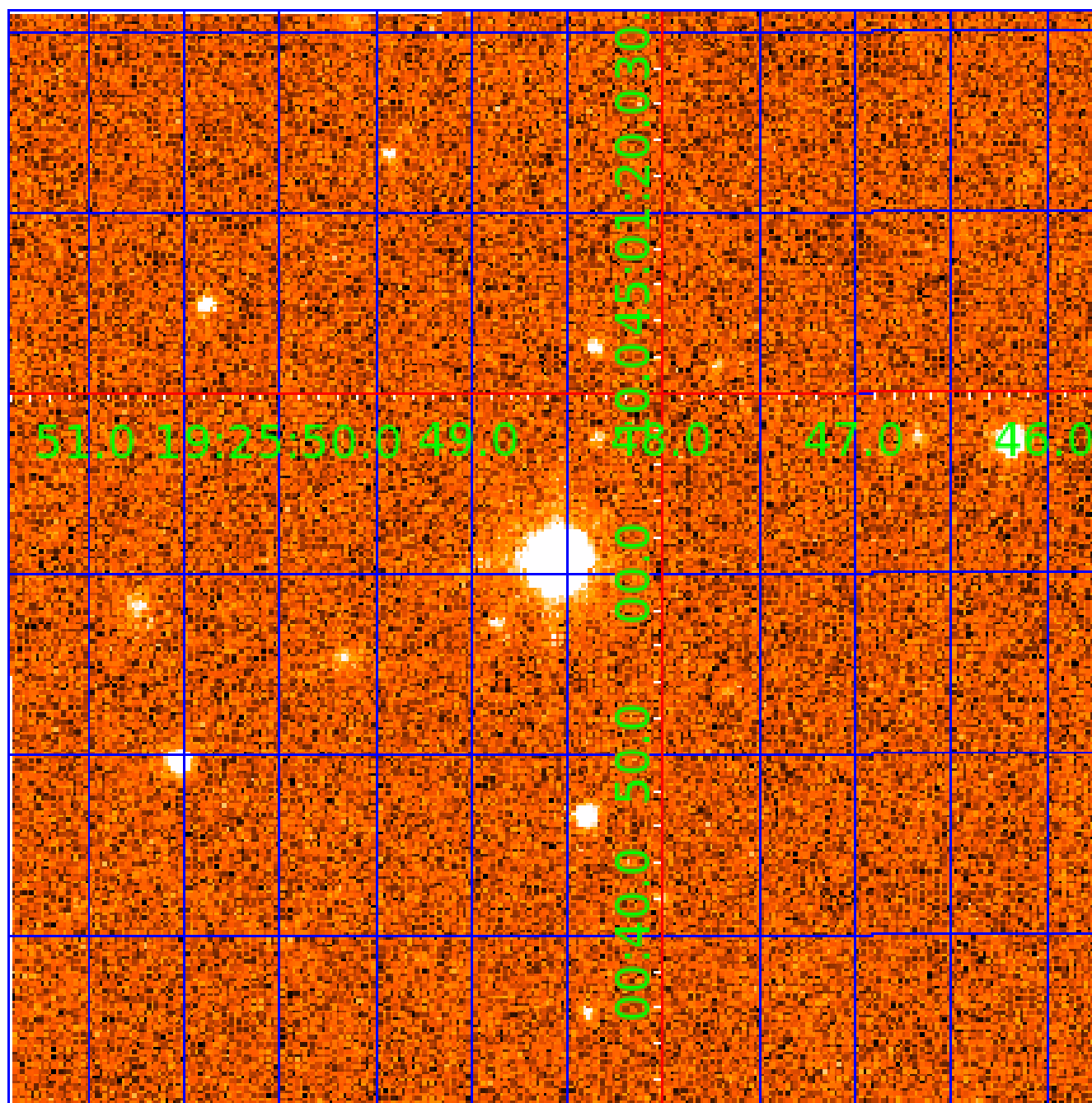


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008817885

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})
008817885-01	OBS	No	625.163148	264.404089	1551.0	7.833	15.9	9.4	2.17	4986	8.30	1.38
008817885-02	OBS	No	343.686068	268.993334	787.6	4.333	13.5	6.6	2.17	4986	6.92	3.07
008817885-03	OBS	No	564.579919	316.517932	1394.2	15.856	13.9	6.9	2.17	4986	16.18	1.59
008817885-04	OBS	No	494.284462	247.611240	936.2	12.590	17.9	5.4	2.17	4986	6.81	1.89
008817885-05	OBS	No	514.219474	172.999465	940.0	4.757	12.9	6.1	2.17	4986	7.10	1.80
008817885-06	OBS	No	485.458145	224.525614	915.1	7.604	11.3	7.0	2.17	4986	6.36	1.94
008817885-07	OBS	No	462.642961	485.426100	495.2	2.210	11.2	3.5	2.17	4986	5.00	2.07
008817885-08	OBS	No	357.907412	274.654893	660.5	3.500	12.1	-1.0	2.17	4986	5.41	2.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008817885-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-02	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
008817885-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008817885-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-06	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—CENT_FEW_DIFFS
008817885-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

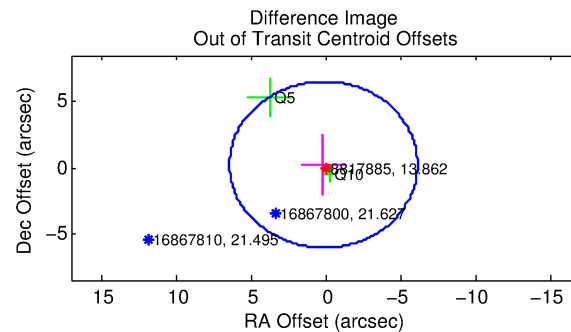
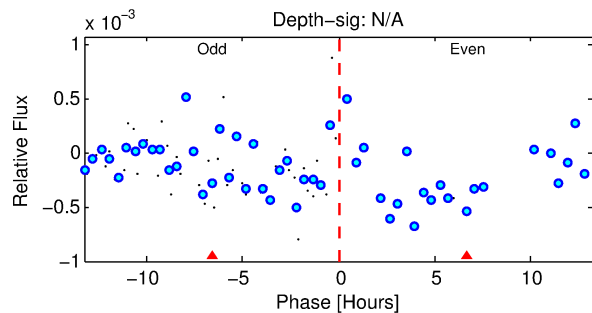
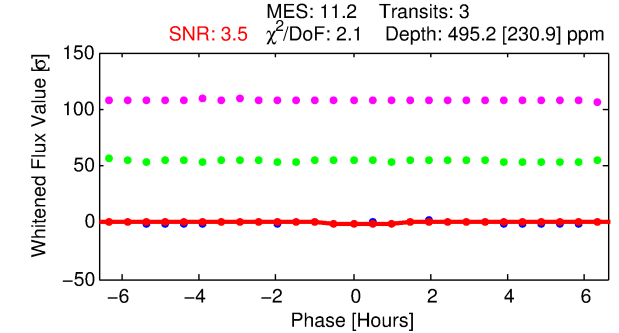
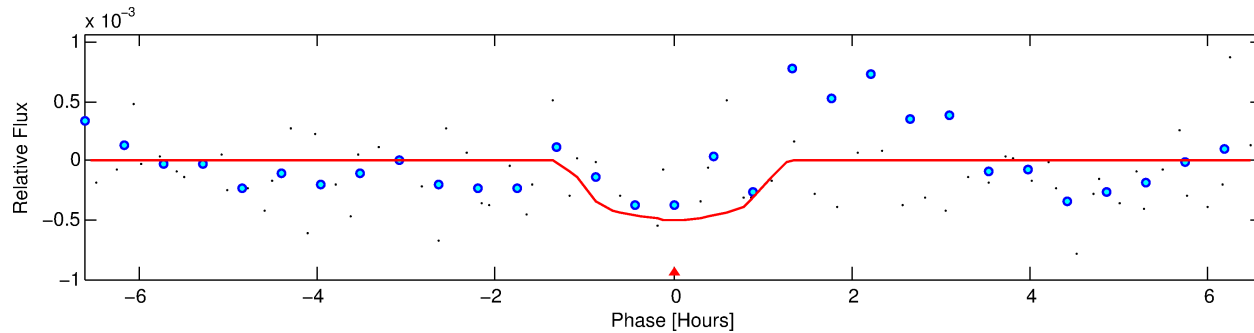
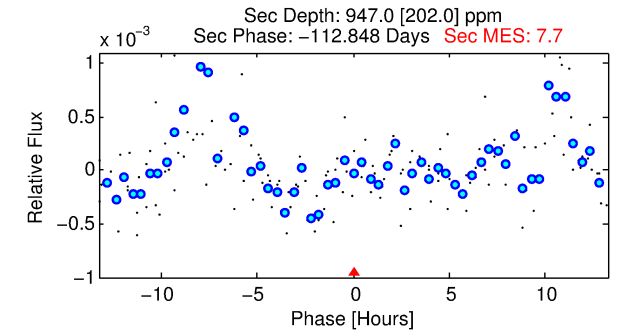
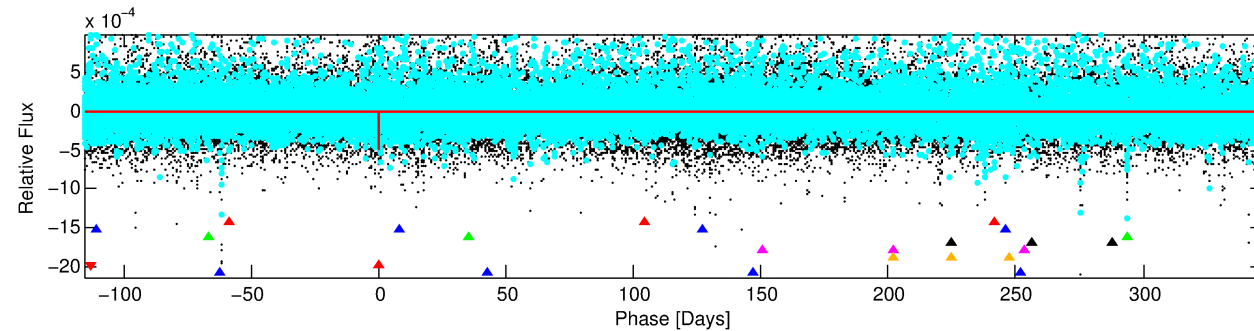
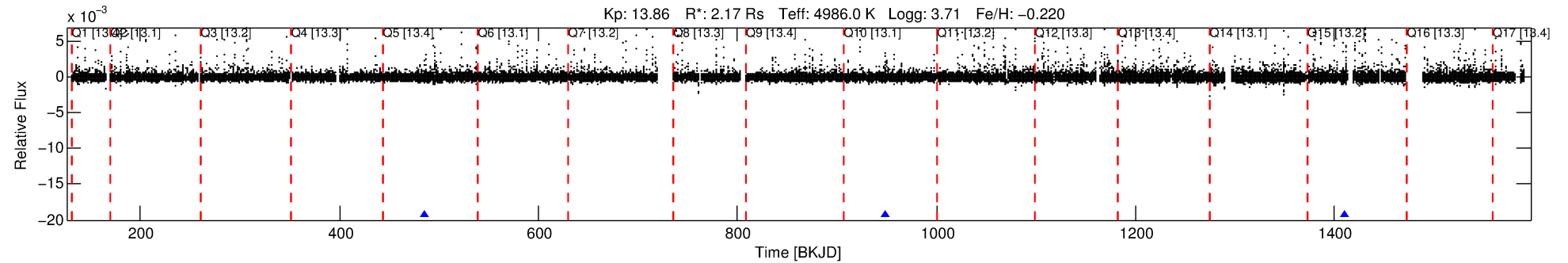
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008817885-07

No Significant Match Found

DV One-Page Summary

KIC: 8817885 Candidate: 7 of 8 Period: 462.643 d



DV Fit Results:

Period = 462.64296 [0.01164] d
Epoch = 485.4261 [0.0169] BKJD
Rp/R* = 0.0211 [0.1405]
a/R* = 1322.67 [30870.07]
b = 0.60 [25.56]
Seff = 2.07 [3.09]
Teq = 306 [114] K
Rp = 5.00 [33.41] Re
a = 1.1218 [0.9453] AU
Ag = 26226.71 [350889.50] [0.07σ]
Teffp = 6017 [20000] K [0.29σ]

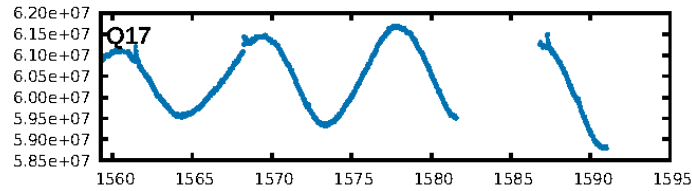
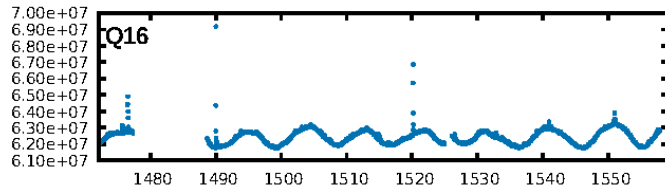
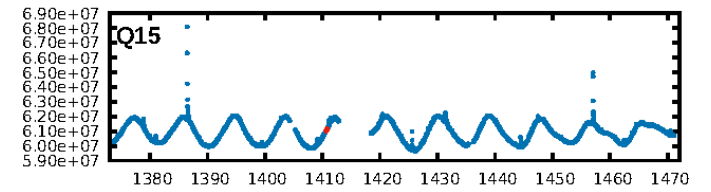
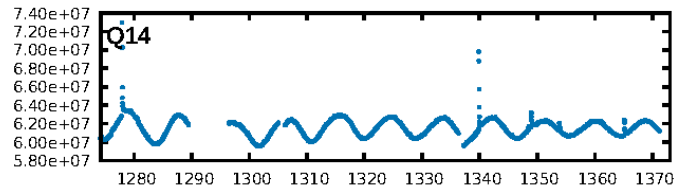
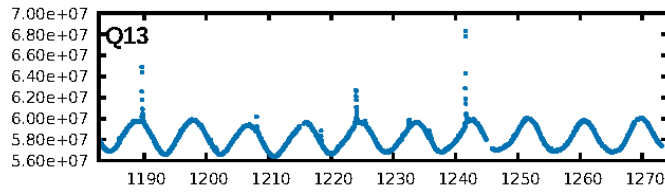
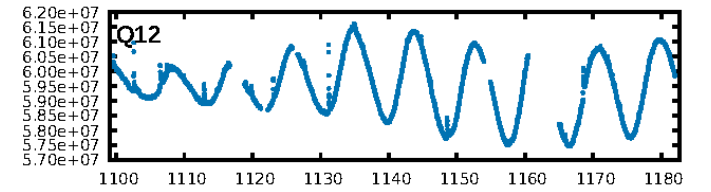
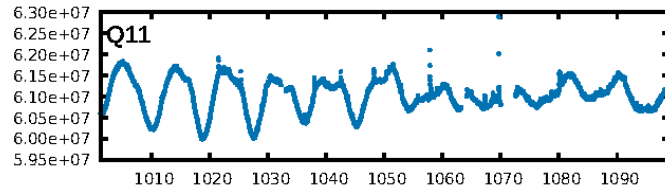
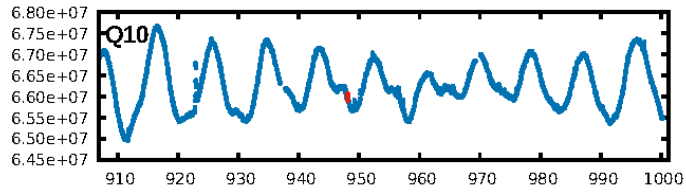
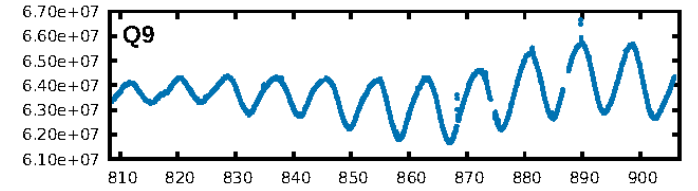
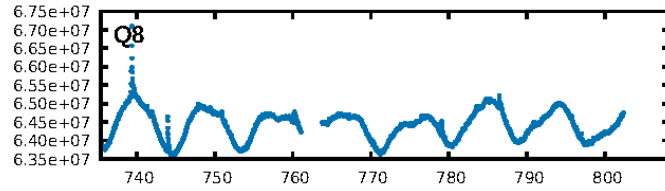
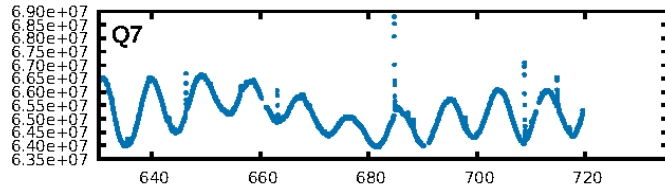
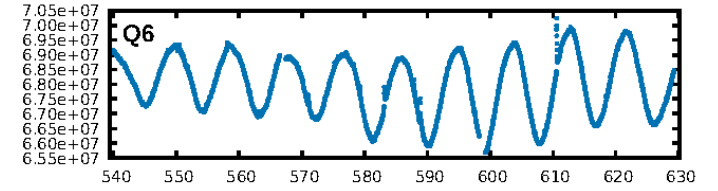
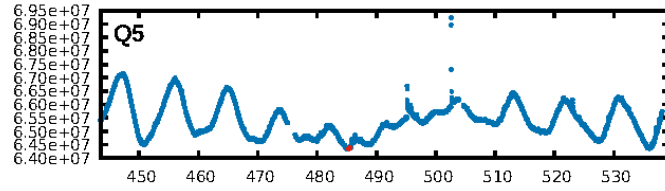
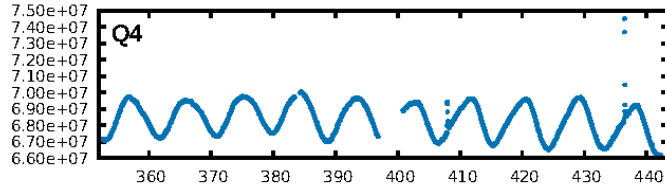
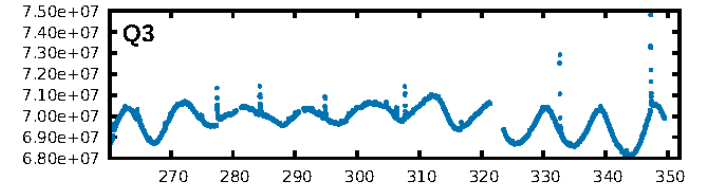
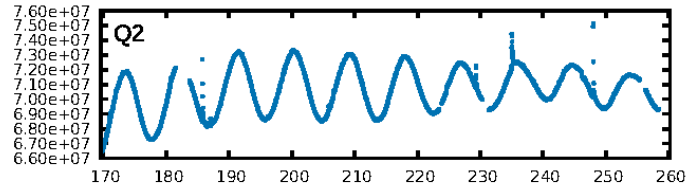
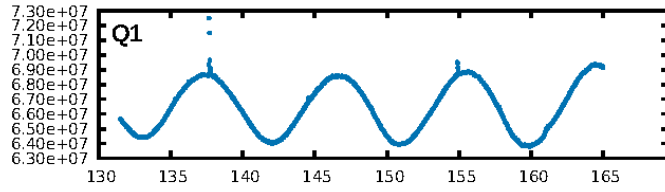
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [607.26σ]
LongPeriod-sig: 100.0% [69.15σ]
ModelChiSquare2-sig: 28.1%
ModelChiSquareGof-sig: 64.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.4408
Centroid-sig: 97.0%
Centroid-so: 0.349 arcsec [0.18σ]
OotOffset-rm: 0.260 arcsec [0.12σ]
KicOffset-rm: 0.148 arcsec [0.04σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

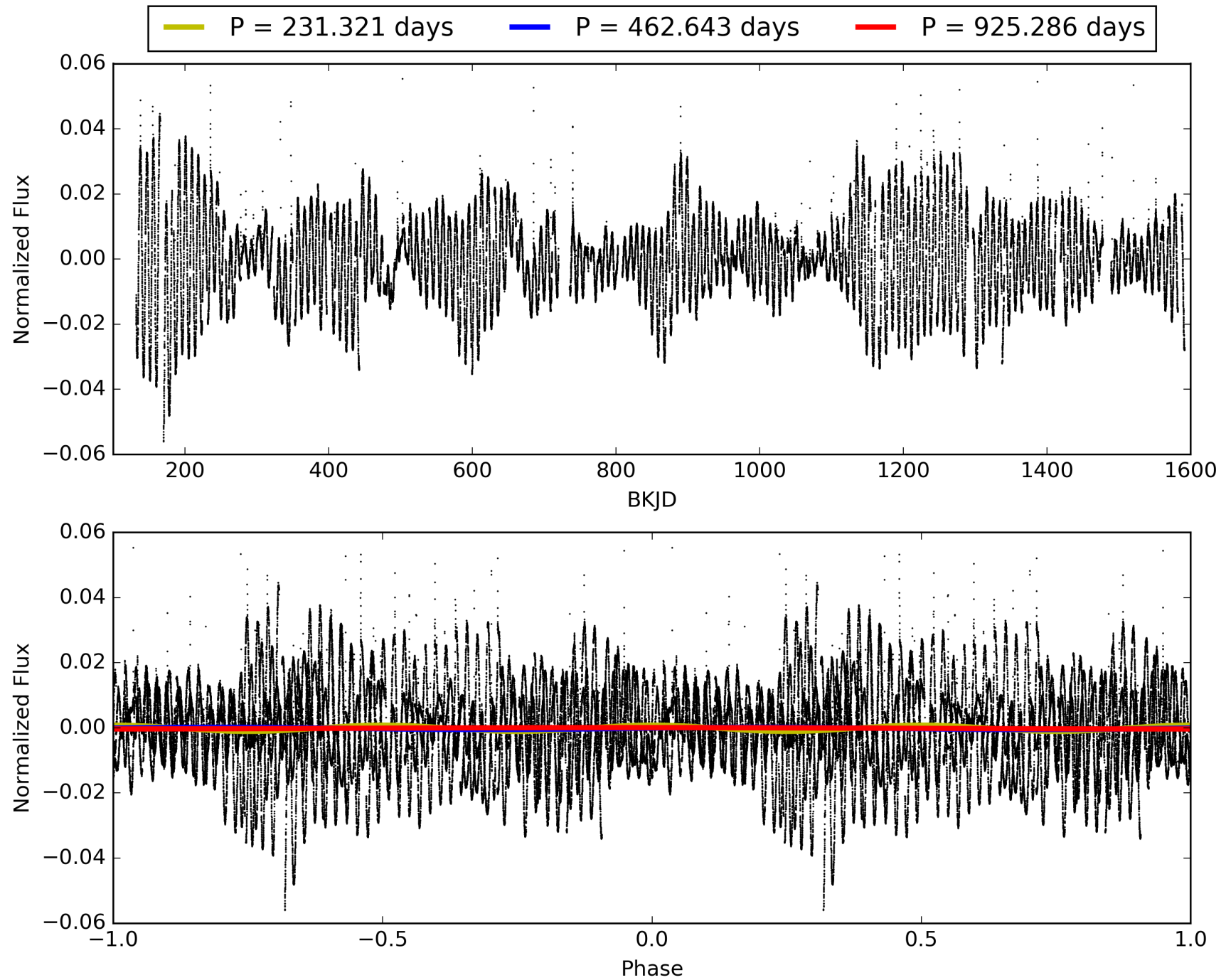
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:10:30 Z

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

TCE 008817885-07, PDC Light Curves

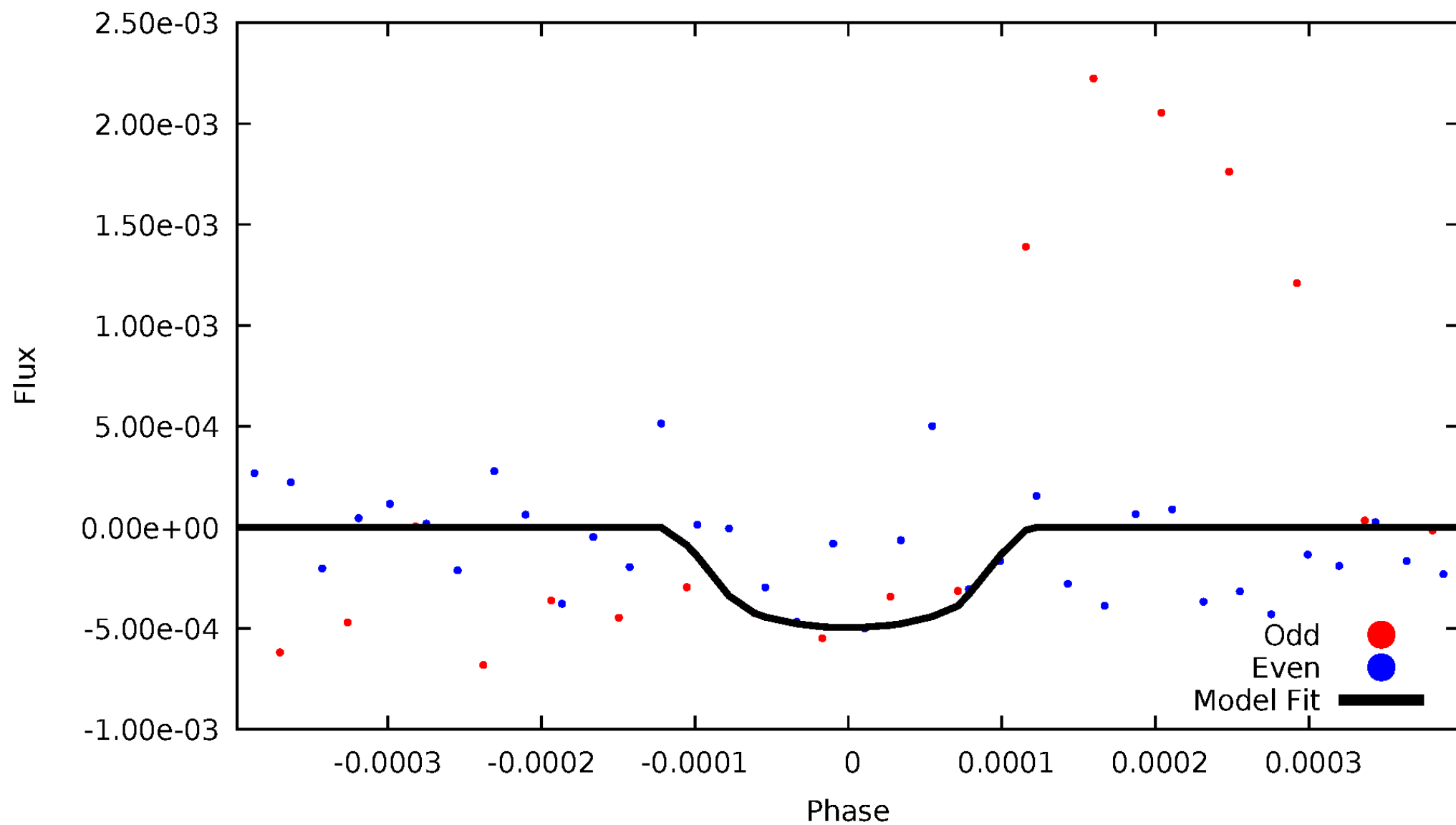


TCE 008817885-07



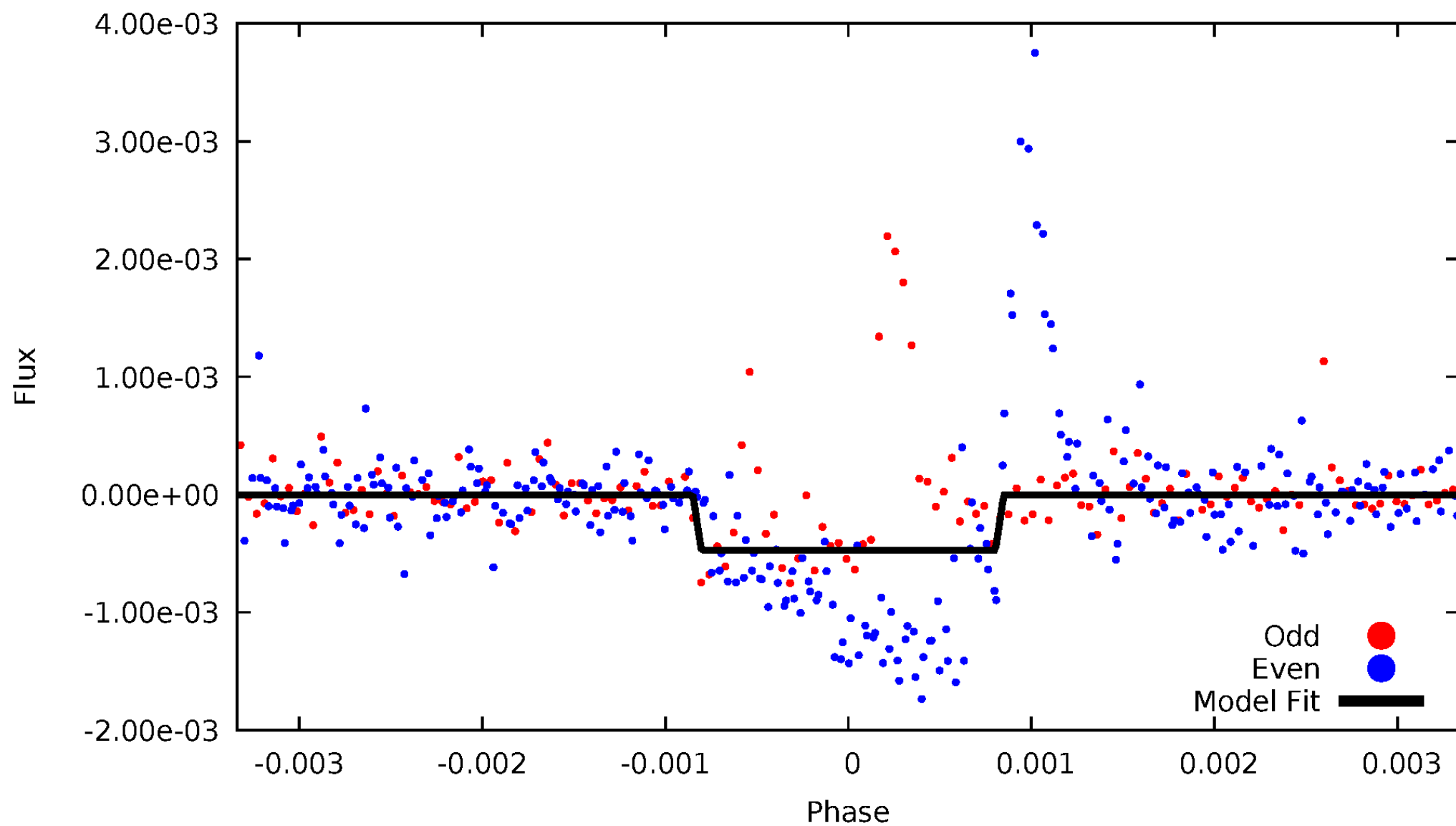
DV Odd/Even

TCE 008817885-07



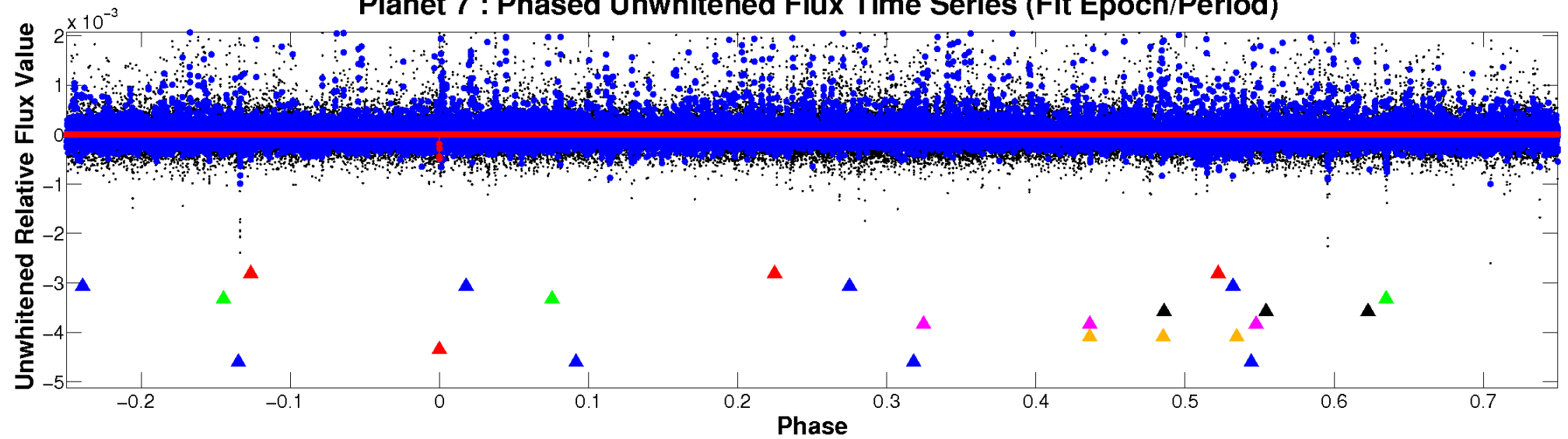
ALT Odd/Even

TCE 008817885-07

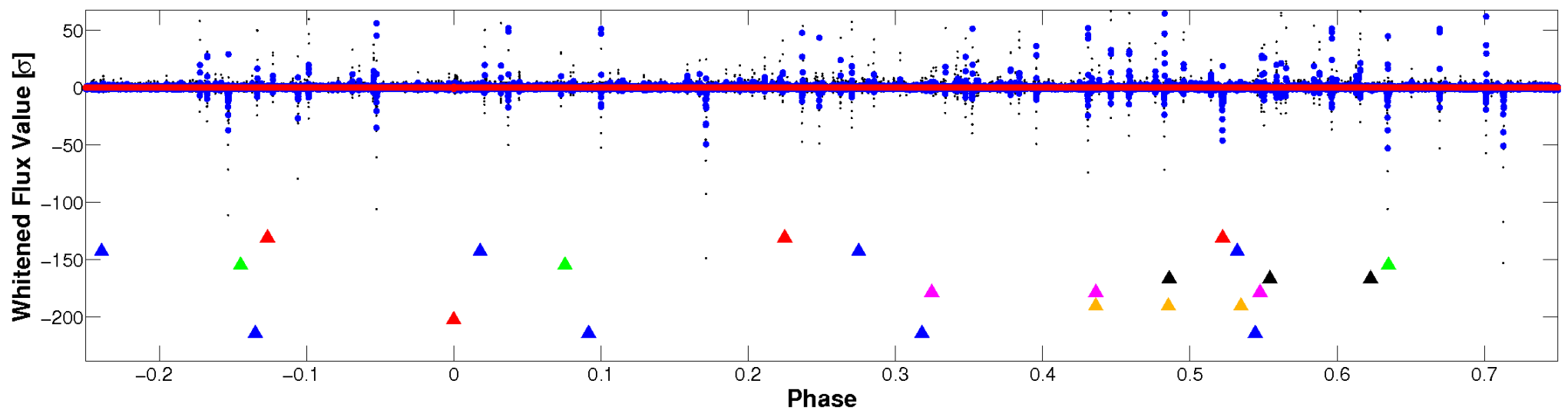


Non-Whitened Vs. Whitened Light Curve

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

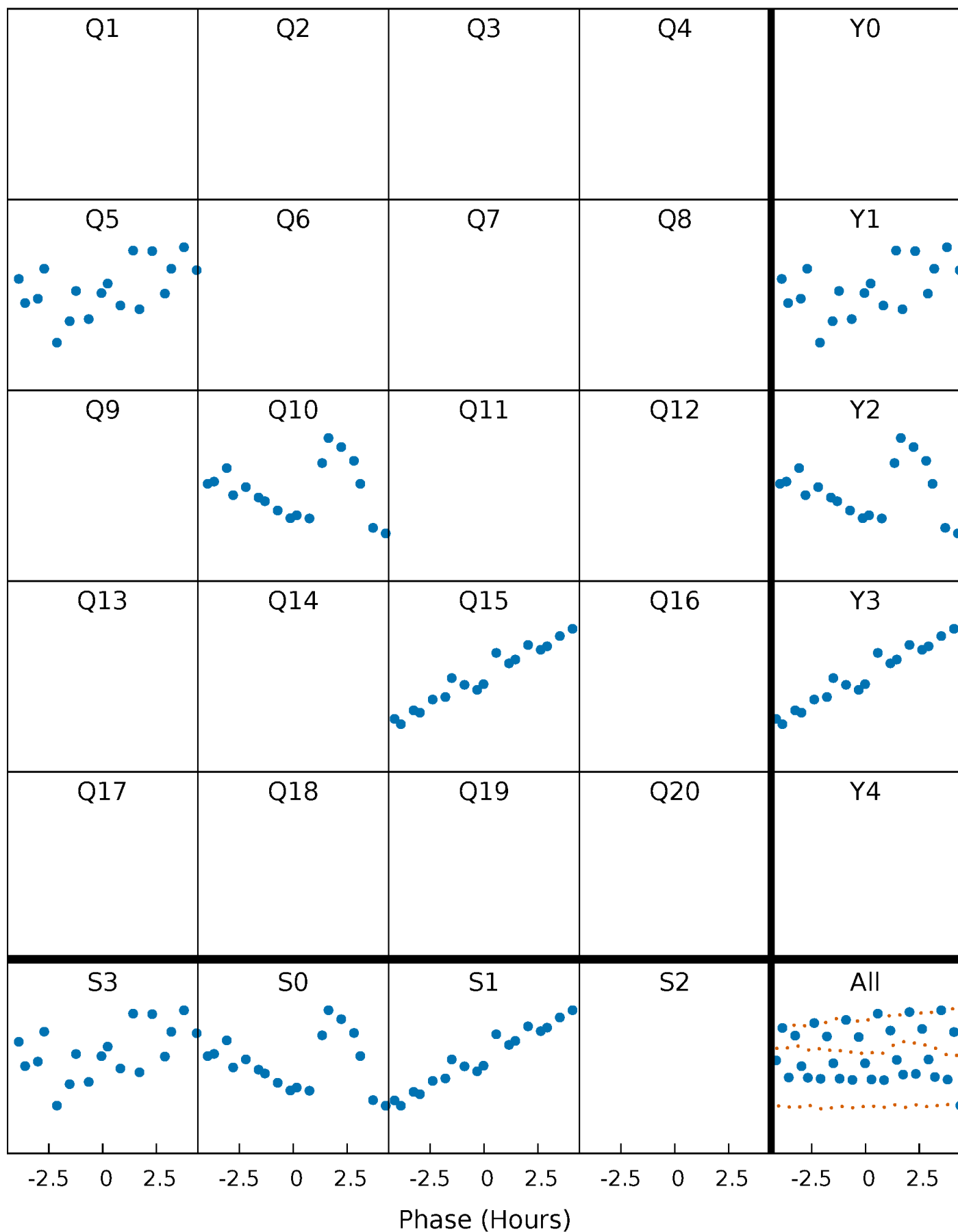


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



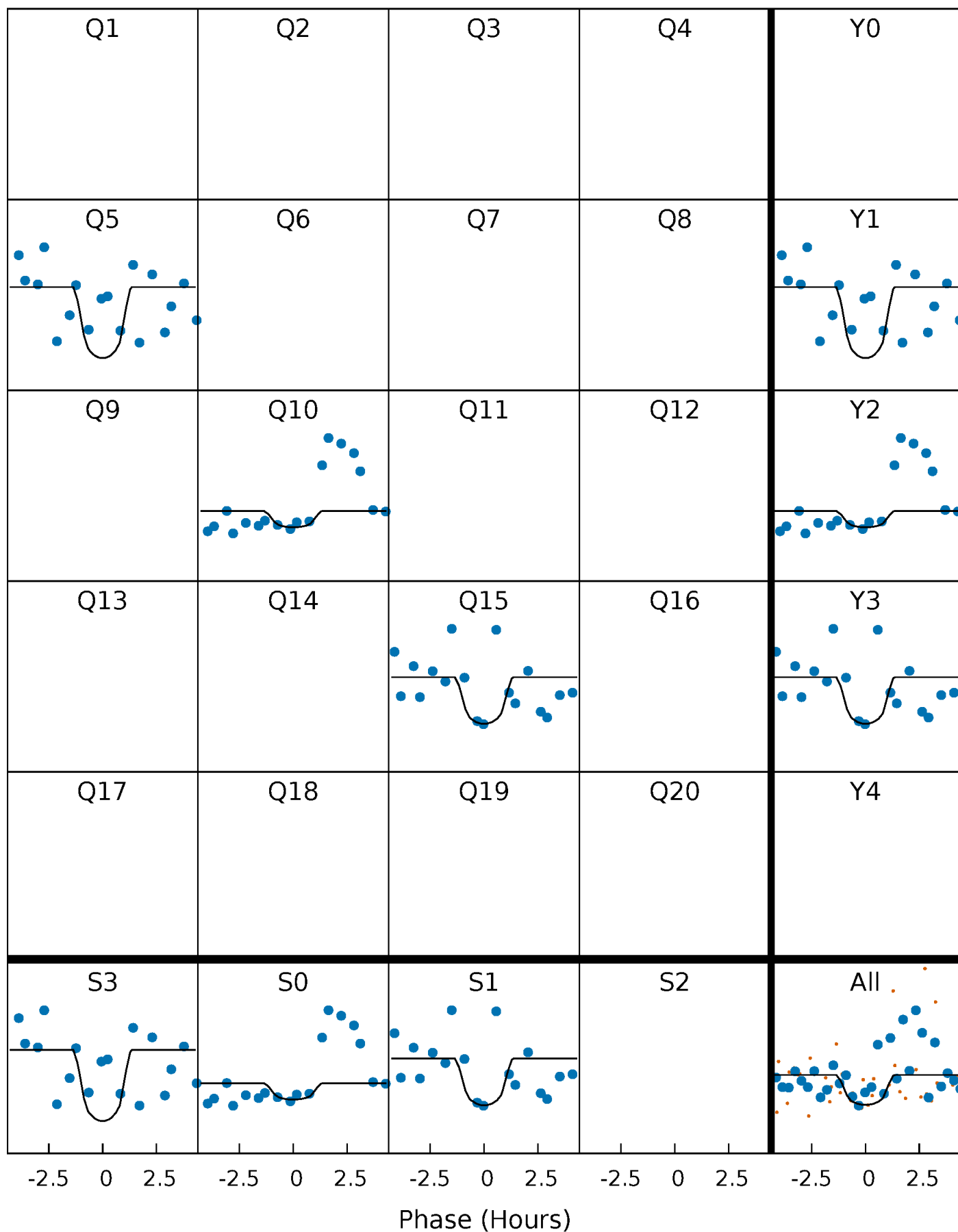
PDC Quarter-Phased Transit Curves

TCE 008817885-07 P=462.642961 Days $T_0=485.426100$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008817885-07 P=462.642961 Days $T_0=485.426100$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

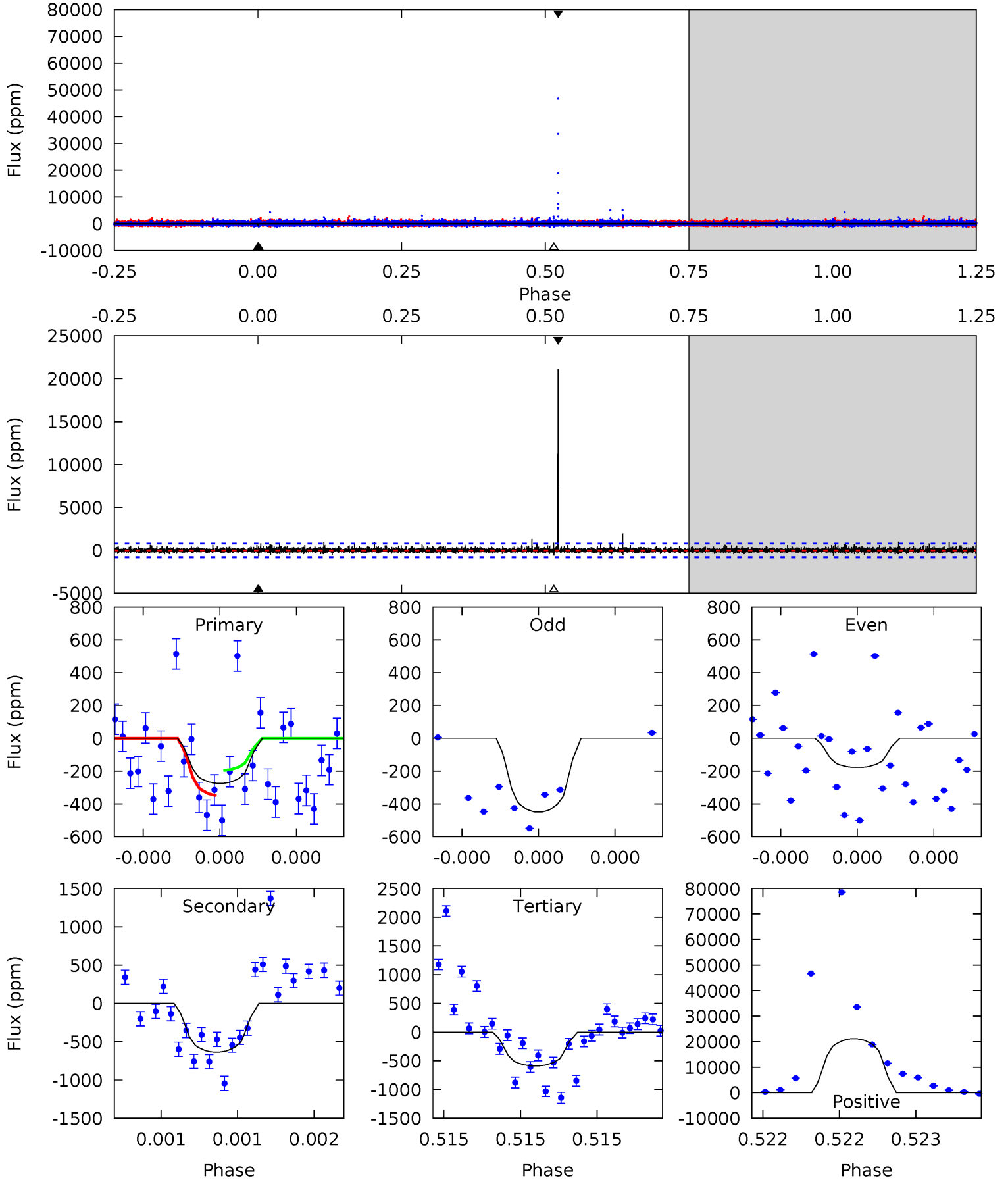
TCE 008817885-07 P=462.670288 Days $T_0=485.374590$ (BKJD)



DV Model-Shift Uniqueness Test

008817885-07, P = 462.642961 Days, E = 22.783139 Days

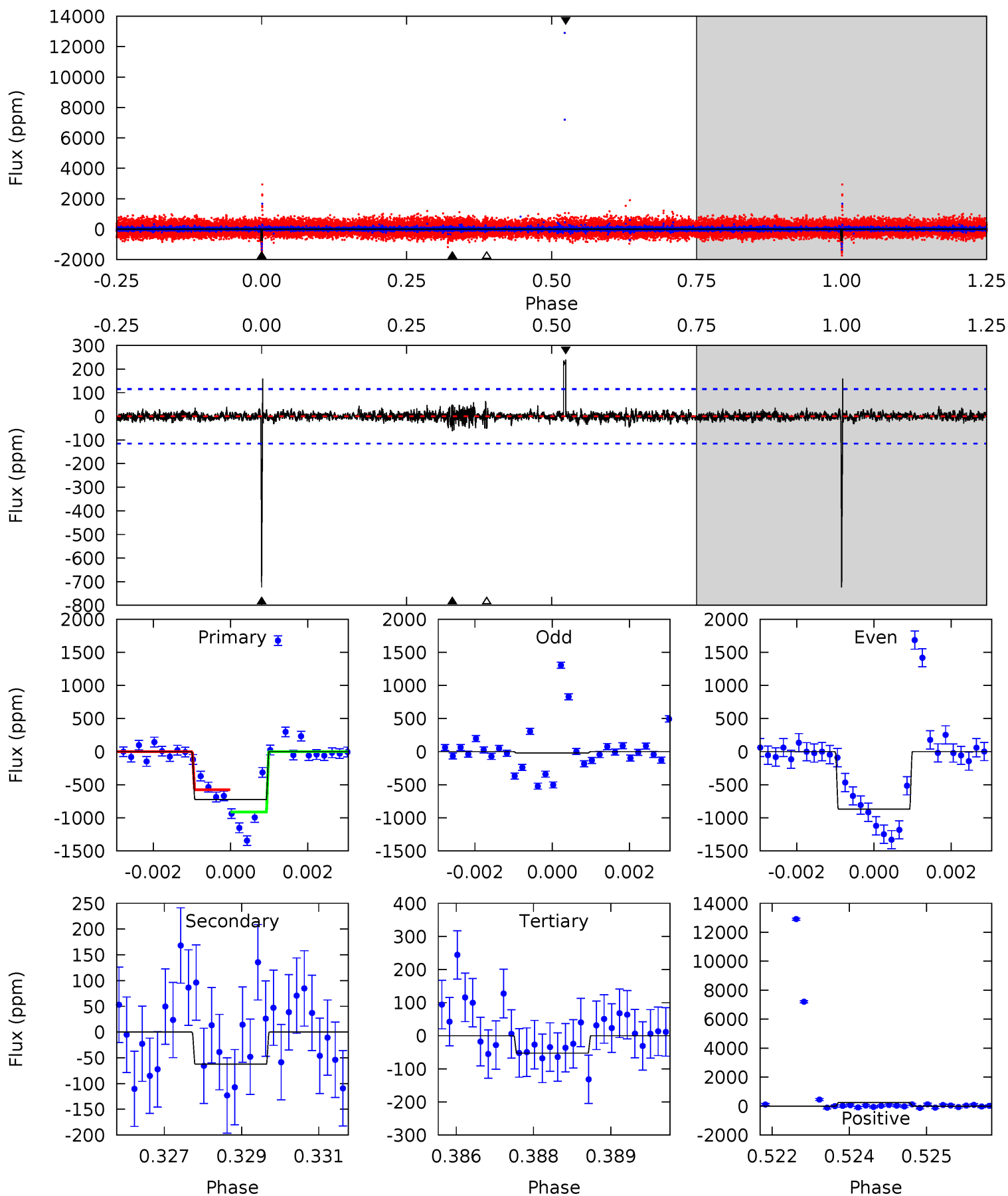
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.97	4.55	4.21	151.3	5.71	3.69	2.09	-2.24	-149.3	0.34	-146.8	0.60	1.44	0.97	0.52



Alt Model-Shift Uniqueness Test

008817885-07, P = 462.670288 Days, E = 22.704302 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.5	2.90	2.43	11.1	5.35	3.13	0.68	31.1	22.4	0.46	-8.23	19.7	0.68	0.25	7.83



Stellar Parameters For KIC 008817885

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4986^{+123}_{-147}	$3.710^{+0.922}_{-0.307}$	$-0.220^{+0.300}_{-0.300}$	$2.168^{+1.217}_{-1.488}$	$0.880^{+0.231}_{-0.189}$	$0.122^{+3.042}_{-0.076}$
	+2%/-3%	+25%/-8%	+136%/-136%	+56%/-69%	+26%/-21%	+2502%/-62%
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 008817885-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-635 ± 140	$20.82^{+24.64}_{-15.41}$	410^{+69}_{-85}	3058^{+1670}_{-531}	1018^{+13865}_{-812}
Alt.	-62 ± 22	$21.95^{+25.78}_{-15.67}$	416^{+69}_{-79}	2254^{+794}_{-329}	88^{+1002}_{-70}

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 $A_{obs} \gg 1.0$

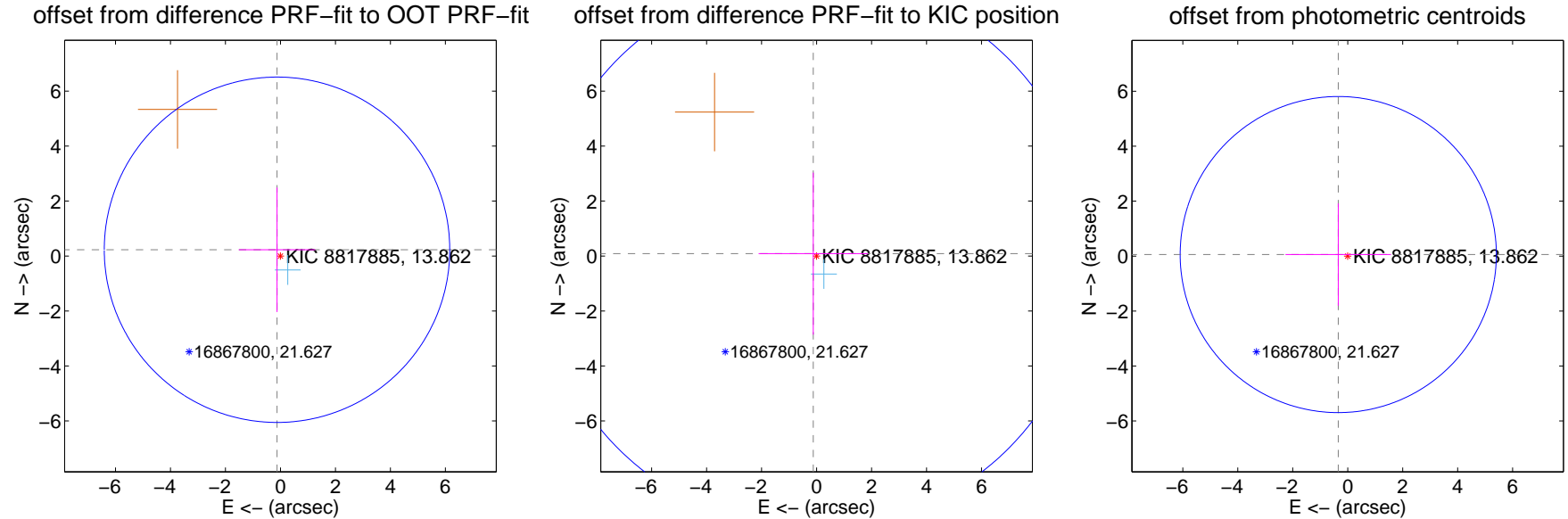
DV Centroid Data

Supplemental centroid analysis for 008817885-07. Kepler magnitude: 13.86. Transit SNR 3.54

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.260 ± 2.095	0.12	0.125 ± 1.389	0.228 ± 2.265
PRF-fit source offset from KIC position	0.148 ± 3.345	0.04	0.119 ± 1.990	0.087 ± 2.948
photometric centroid source offset	0.35 ± 1.92	0.18	0.34 ± 1.92	0.06 ± 1.86

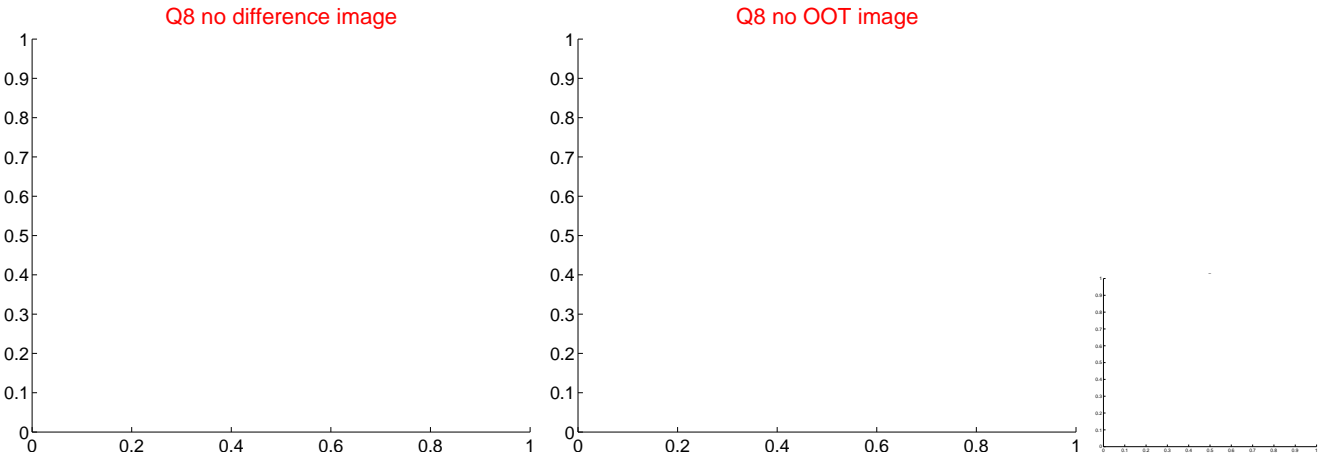
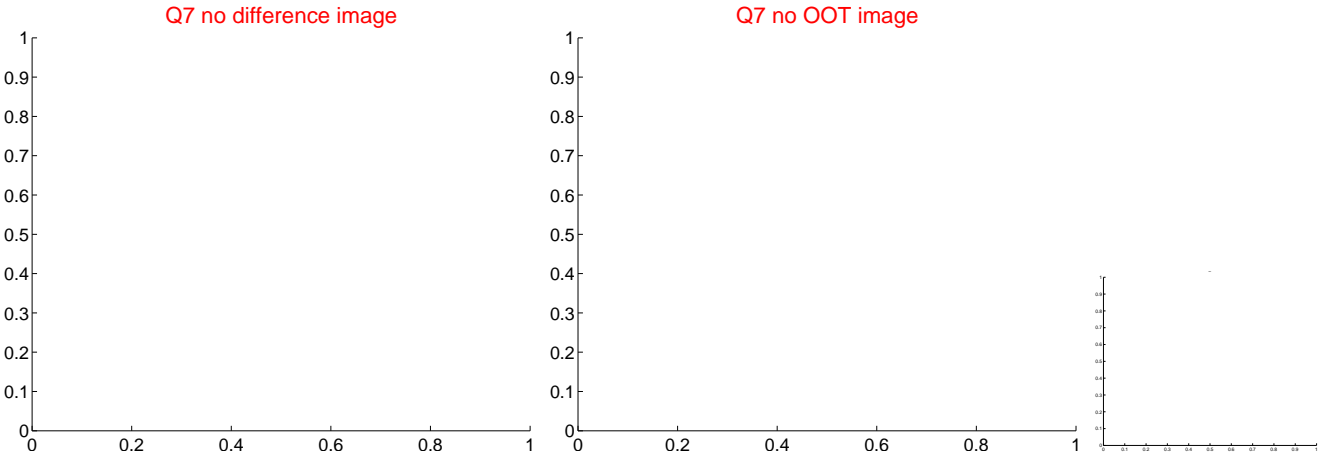
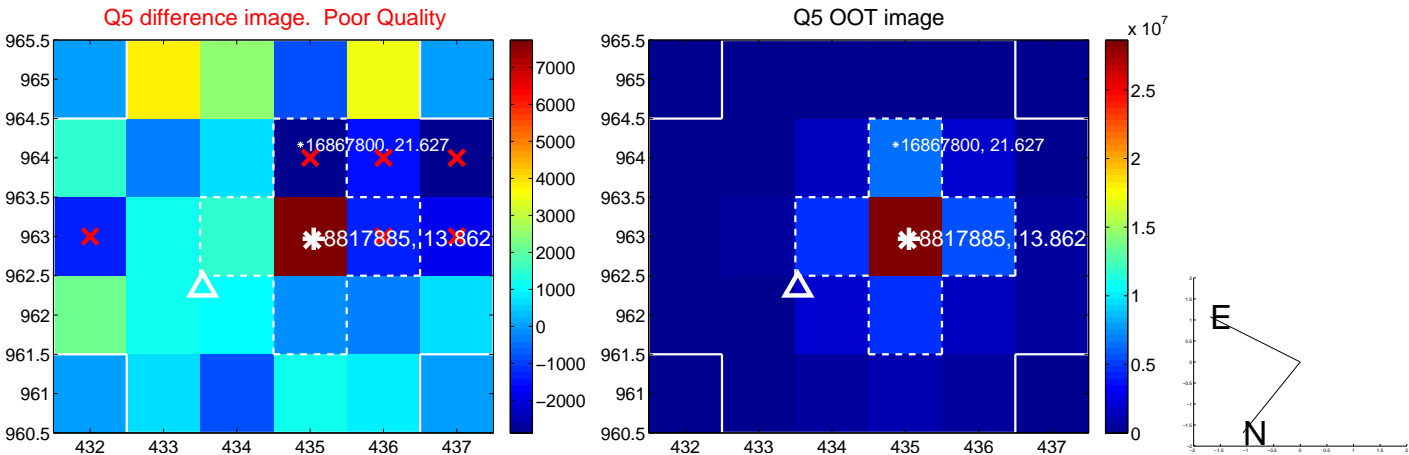


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

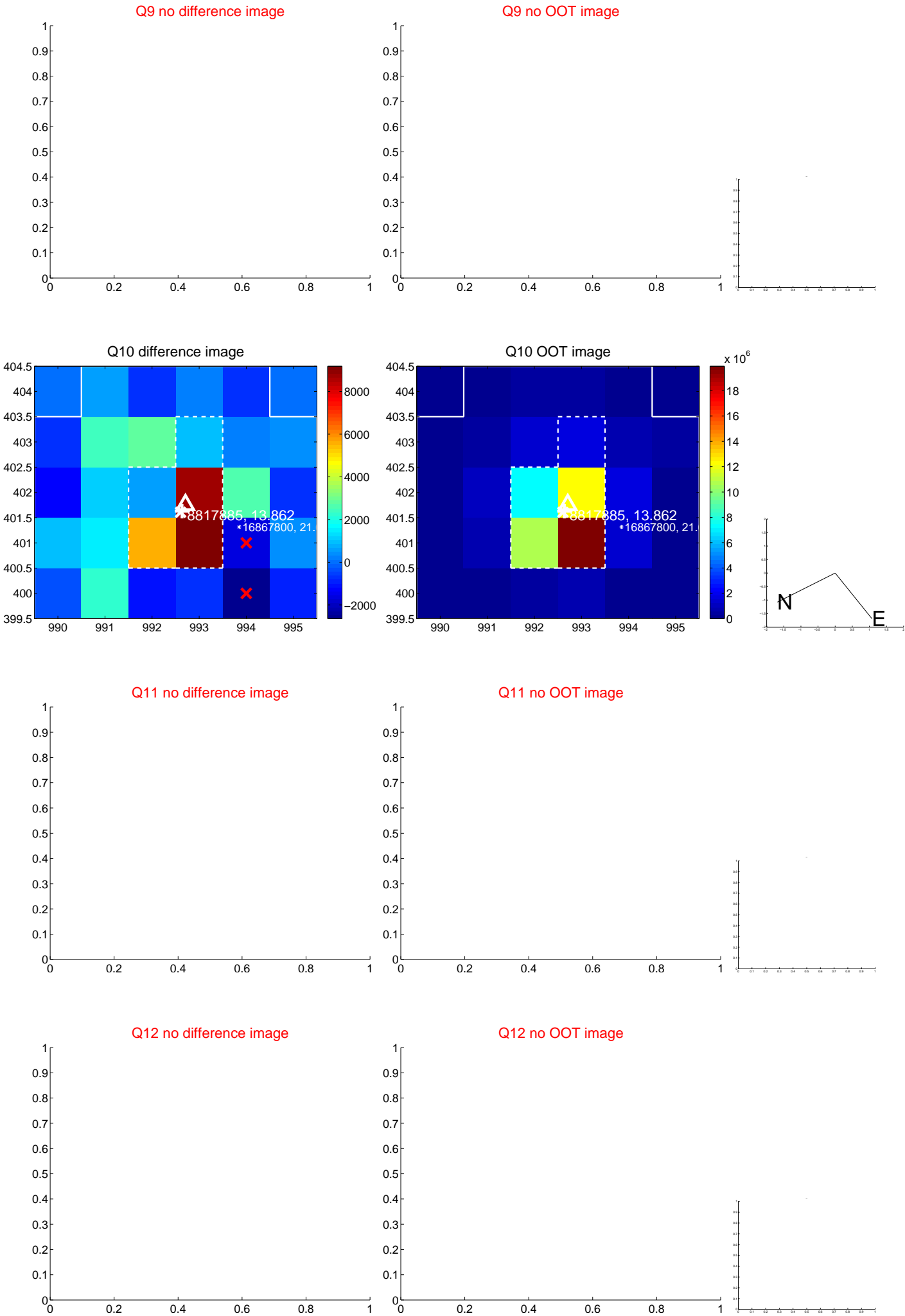
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



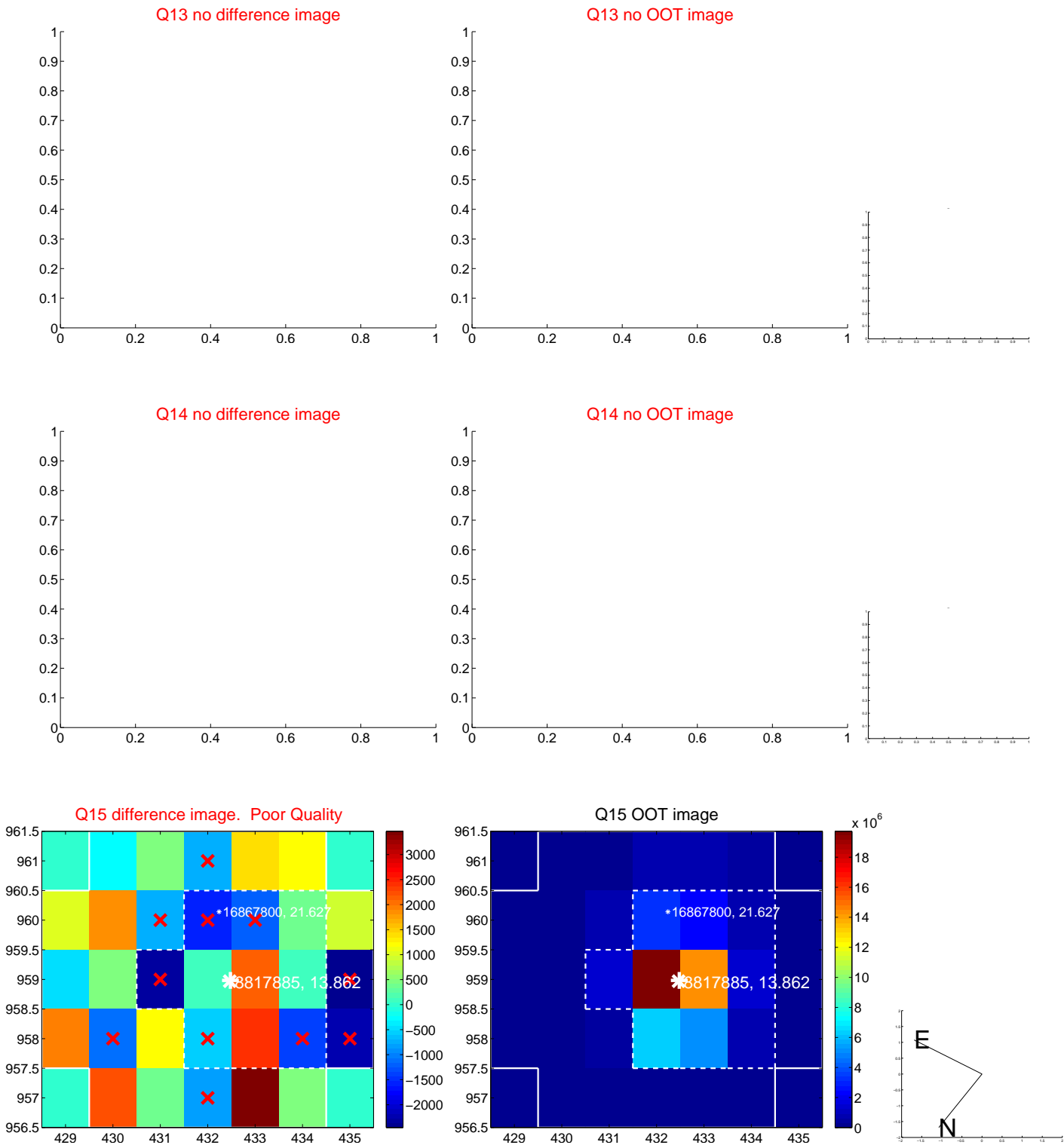
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



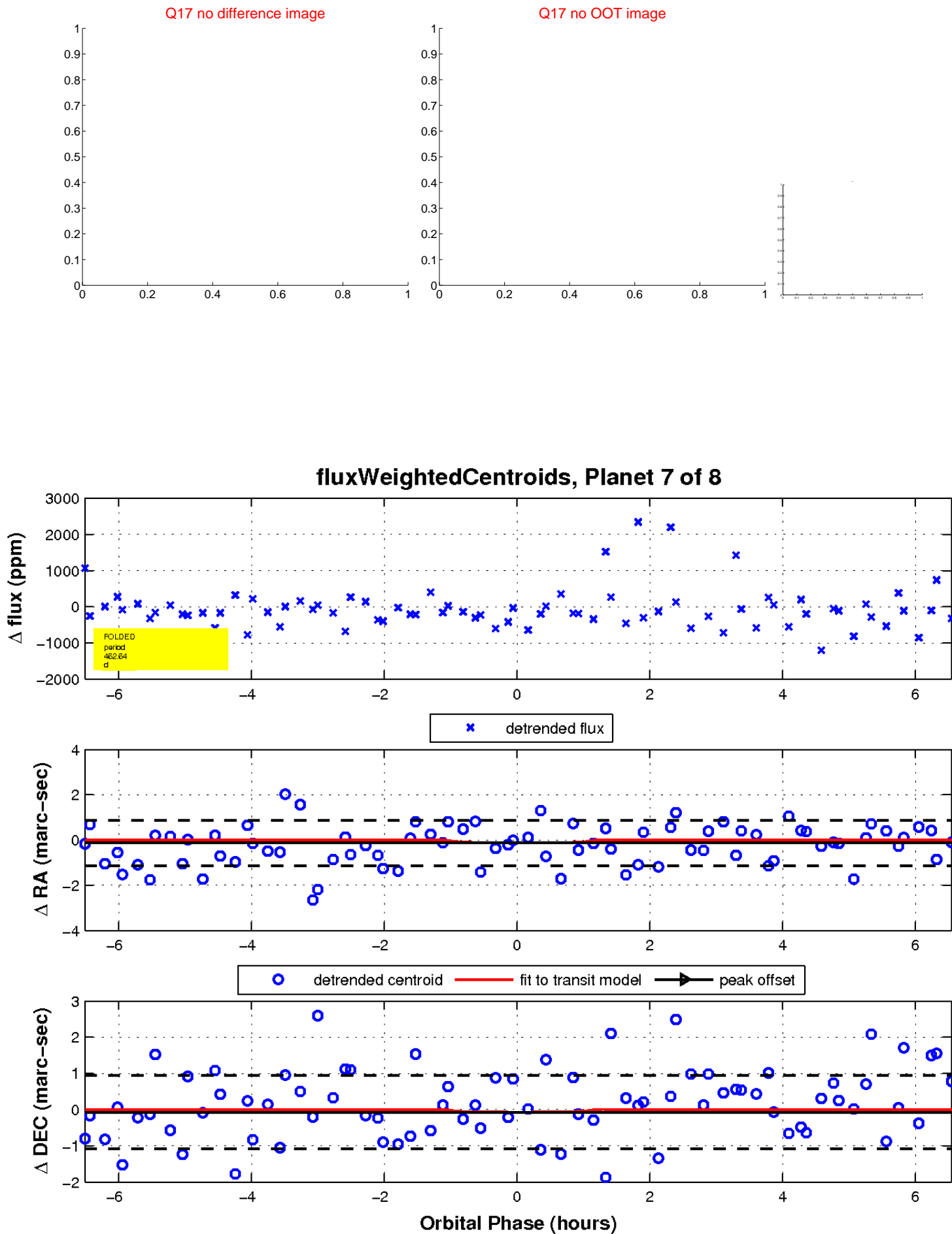
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

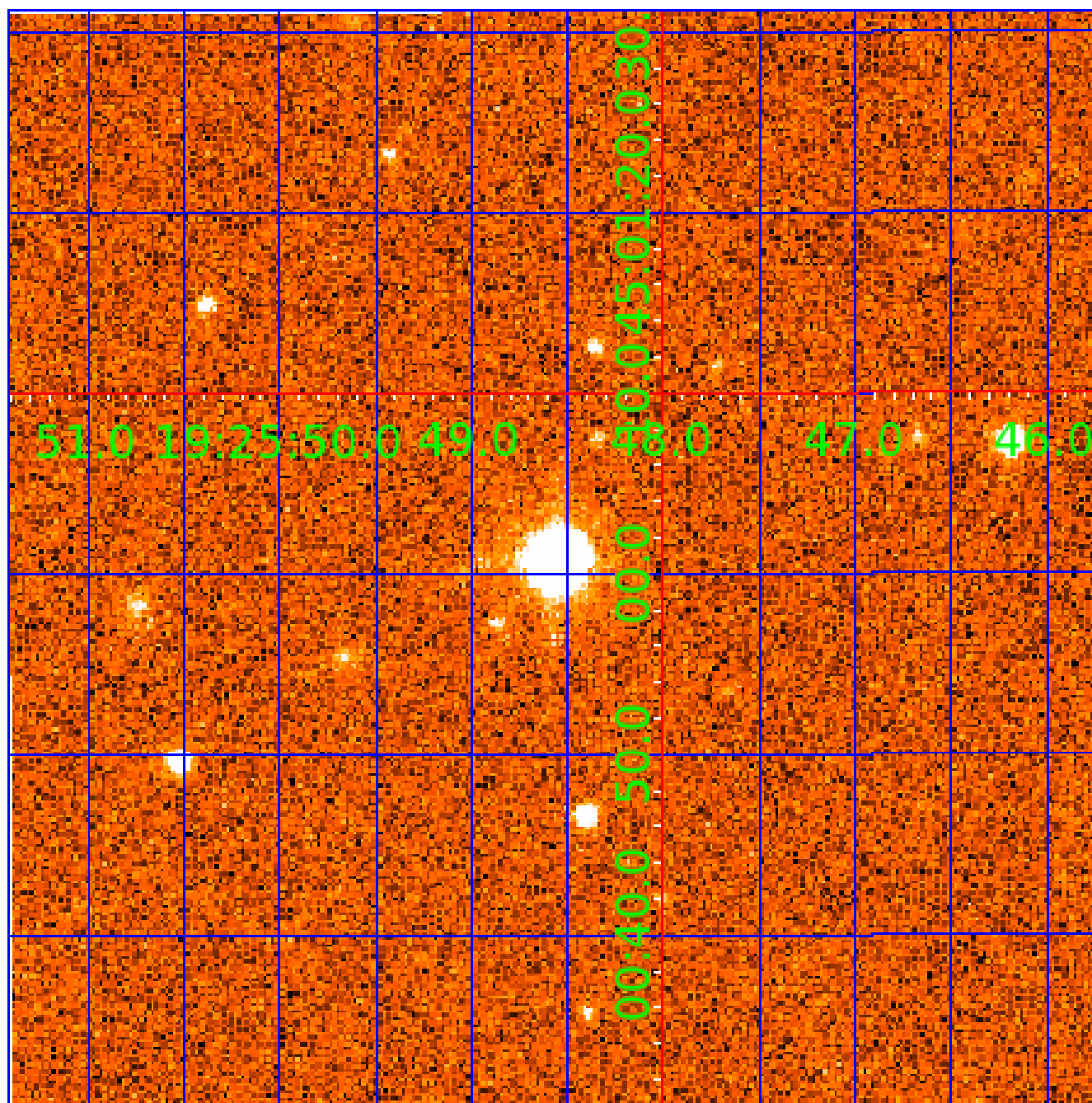


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008817885

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})
008817885-01	OBS	No	625.163148	264.404089	1551.0	7.833	15.9	9.4	2.17	4986	8.30	1.38
008817885-02	OBS	No	343.686068	268.993334	787.6	4.333	13.5	6.6	2.17	4986	6.92	3.07
008817885-03	OBS	No	564.579919	316.517932	1394.2	15.856	13.9	6.9	2.17	4986	16.18	1.59
008817885-04	OBS	No	494.284462	247.611240	936.2	12.590	17.9	5.4	2.17	4986	6.81	1.89
008817885-05	OBS	No	514.219474	172.999465	940.0	4.757	12.9	6.1	2.17	4986	7.10	1.80
008817885-06	OBS	No	485.458145	224.525614	915.1	7.604	11.3	7.0	2.17	4986	6.36	1.94
008817885-07	OBS	No	462.642961	485.426100	495.2	2.210	11.2	3.5	2.17	4986	5.00	2.07
008817885-08	OBS	No	357.907412	274.654893	660.5	3.500	12.1	-1.0	2.17	4986	5.41	2.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008817885-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-02	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
008817885-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
008817885-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-06	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—CENT_FEW_DIFFS
008817885-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008817885-08	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

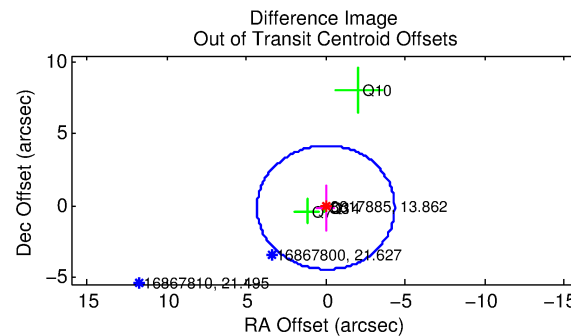
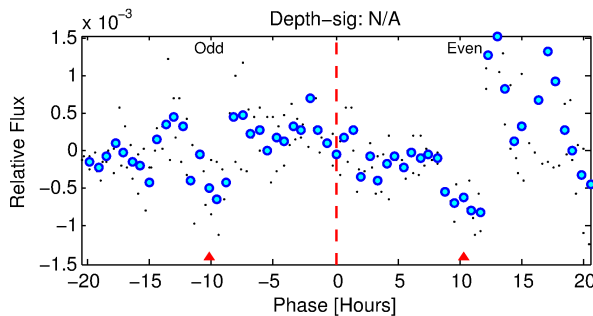
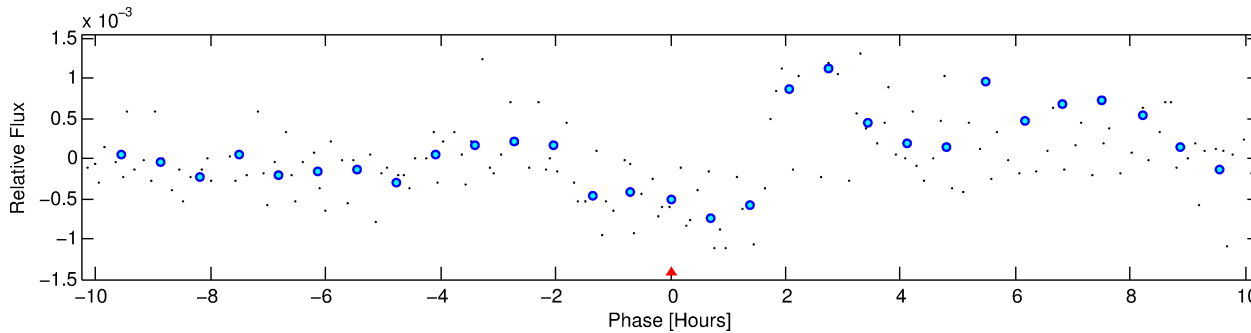
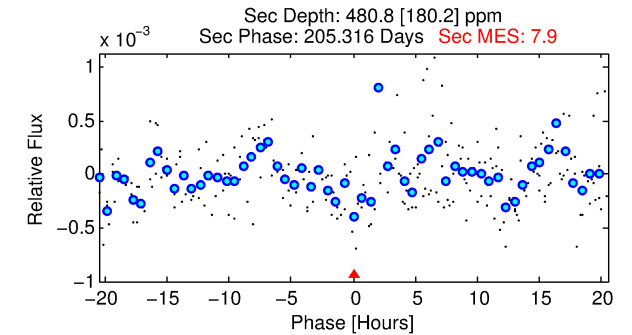
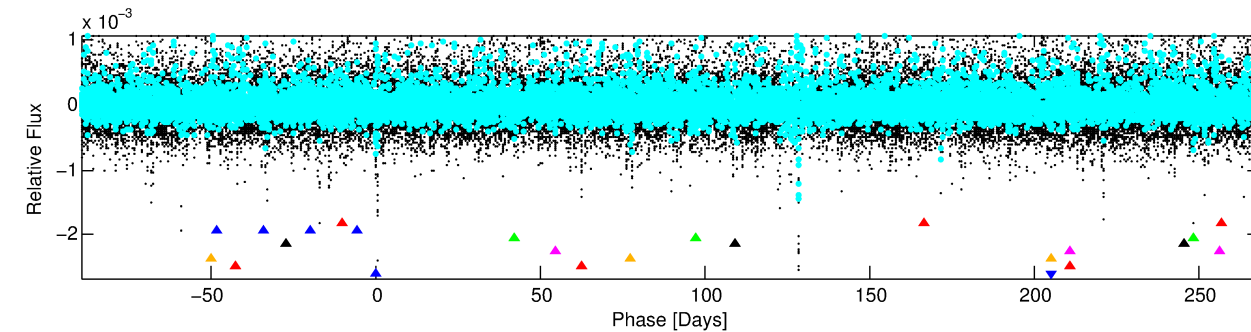
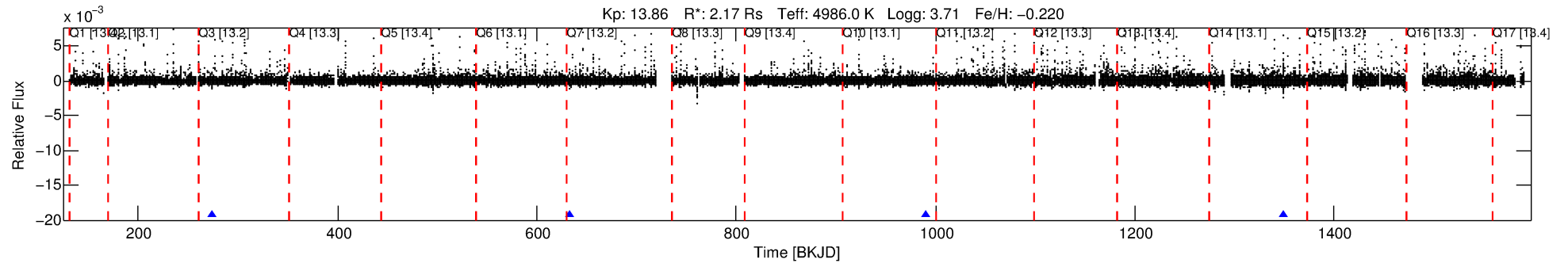
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008817885-08

No Significant Match Found

DV One-Page Summary

KIC: 8817885 Candidate: 8 of 8 Period: 357.907 d



TPS TCE Results:

Period = 357.90741 d
Epoch = 274.6549 BKJD

DV fit results are unavailable

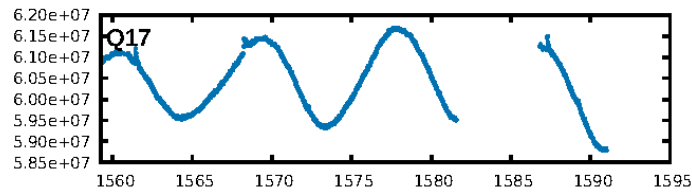
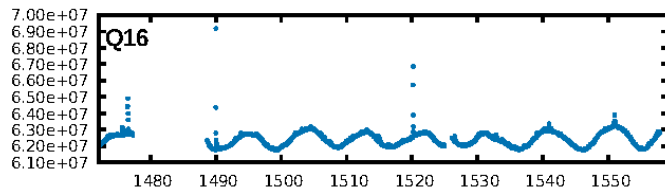
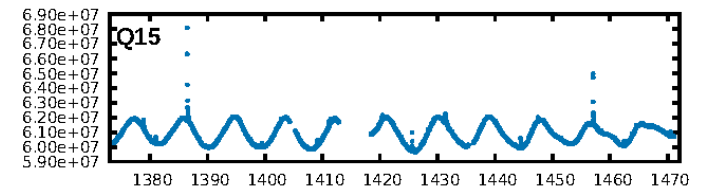
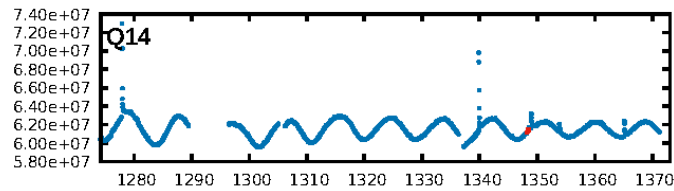
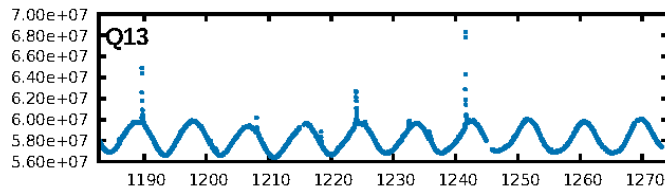
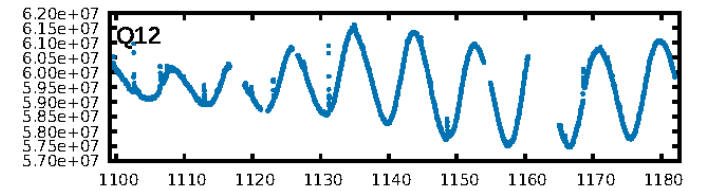
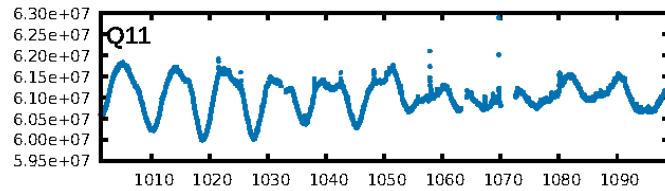
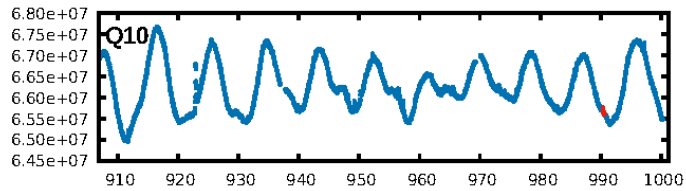
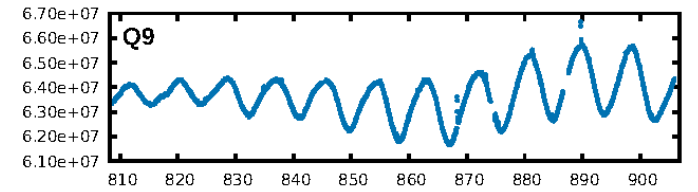
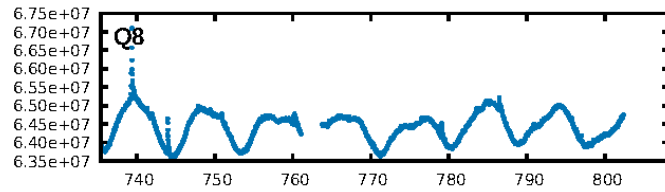
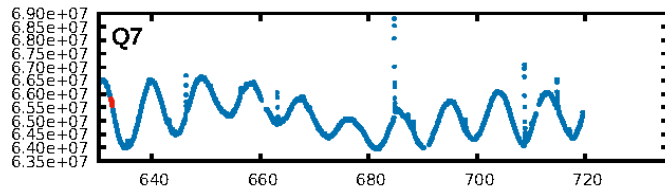
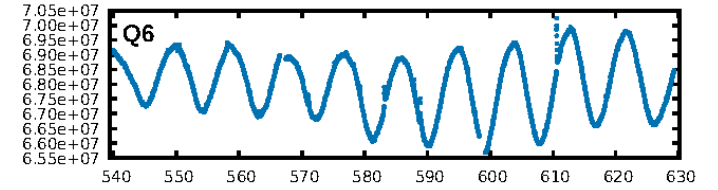
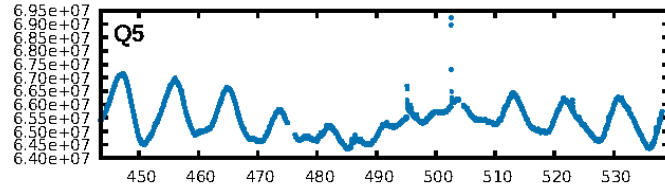
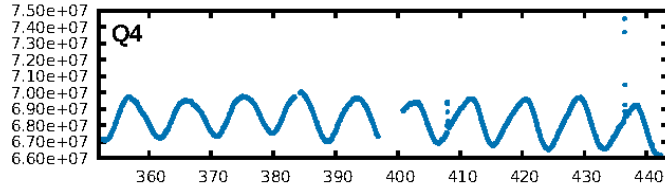
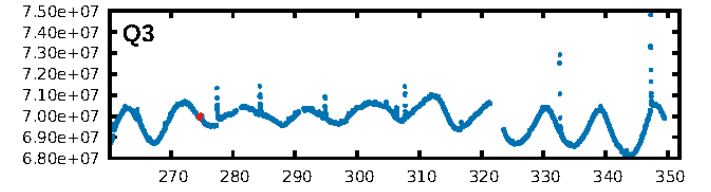
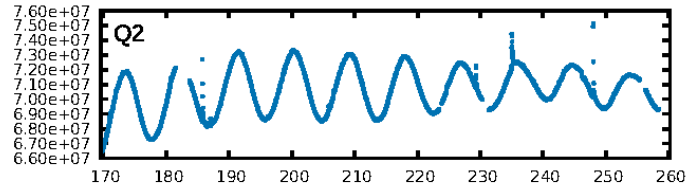
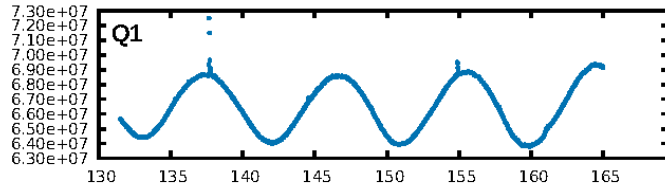
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [61.28σ]
LongPeriod-sig: 100.0% [607.26σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.1652
Centroid-sig: 56.5%
Centroid-so: 0.481 arcsec [0.66σ]
OotOffset-rm: 0.148 arcsec [0.10σ]
KicOffset-rm: 0.249 arcsec [0.14σ]
OotOffset-st: 2/2/0/0 [4]
KicOffset-st: 2/2/0/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

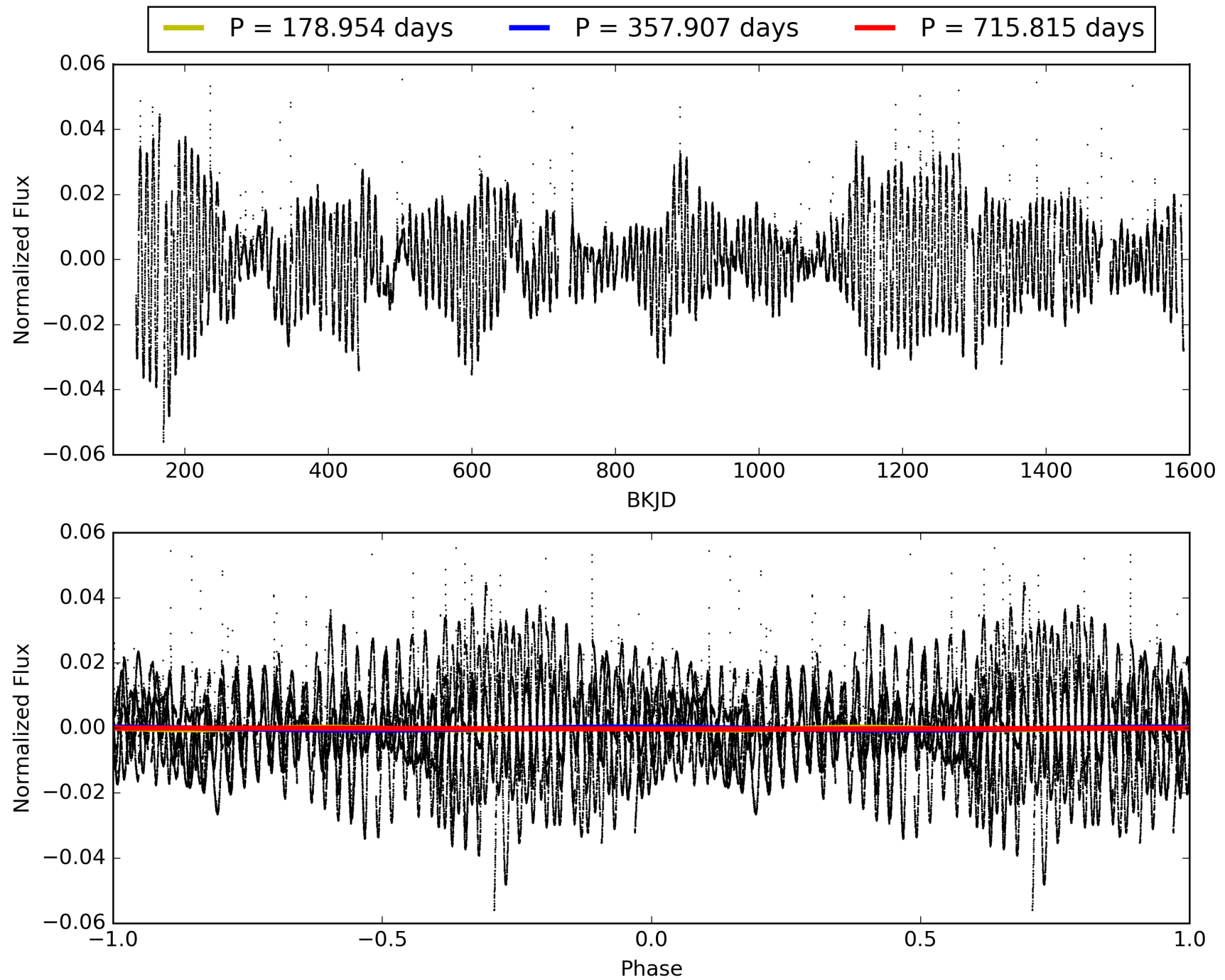
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:10:46 Z

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

TCE 008817885-08, PDC Light Curves

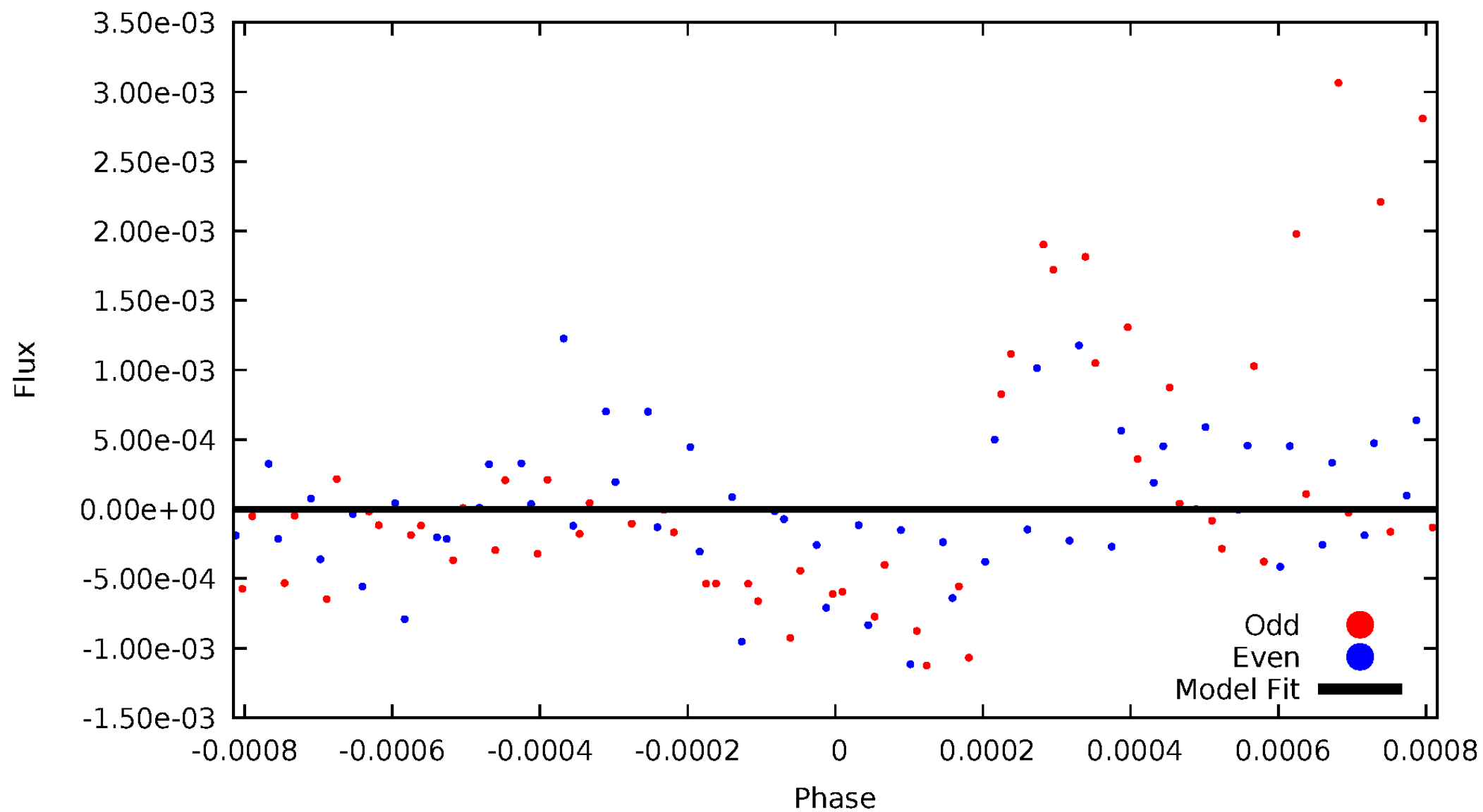


TCE 008817885-08



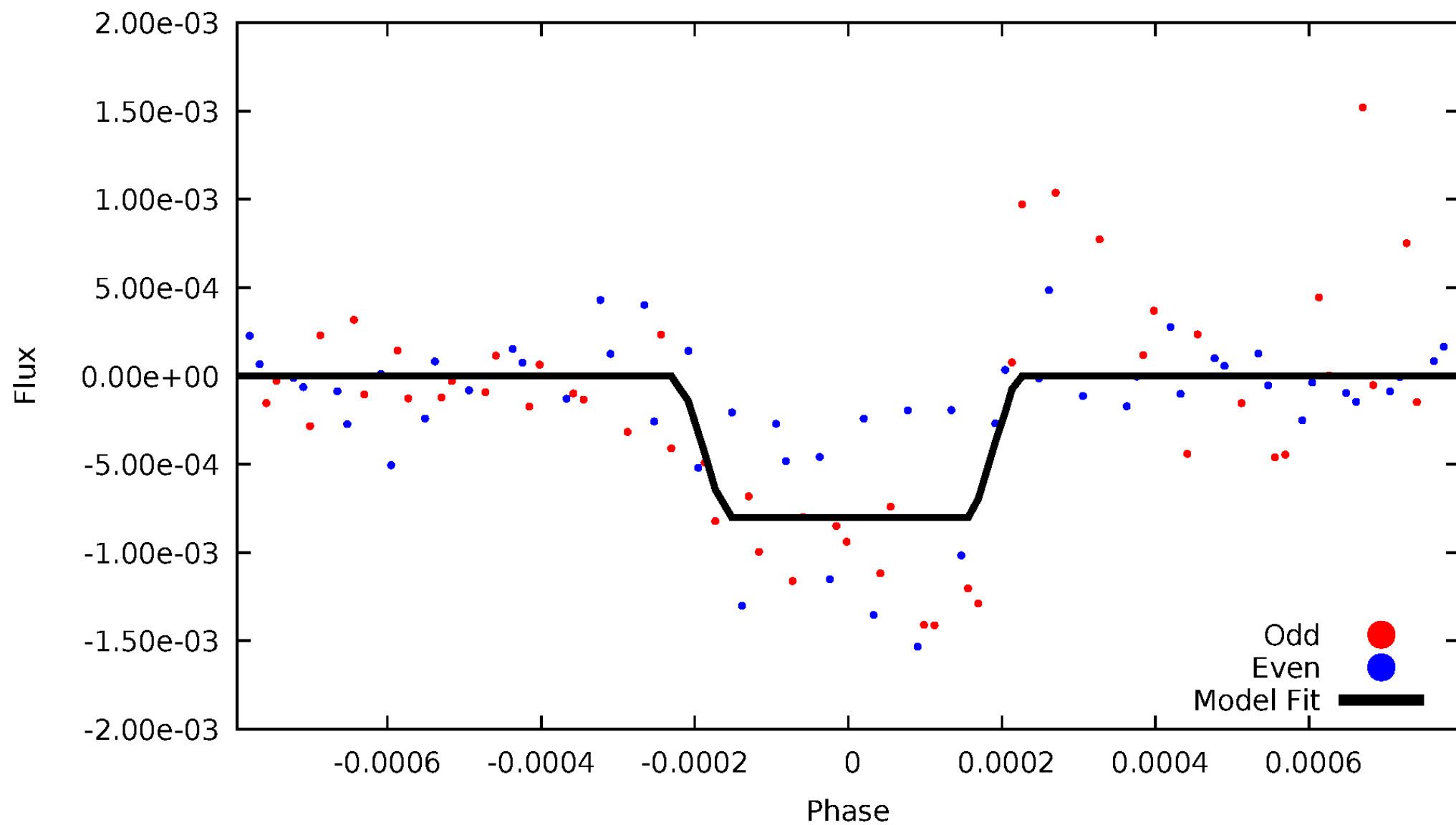
DV Odd/Even

TCE 008817885-08



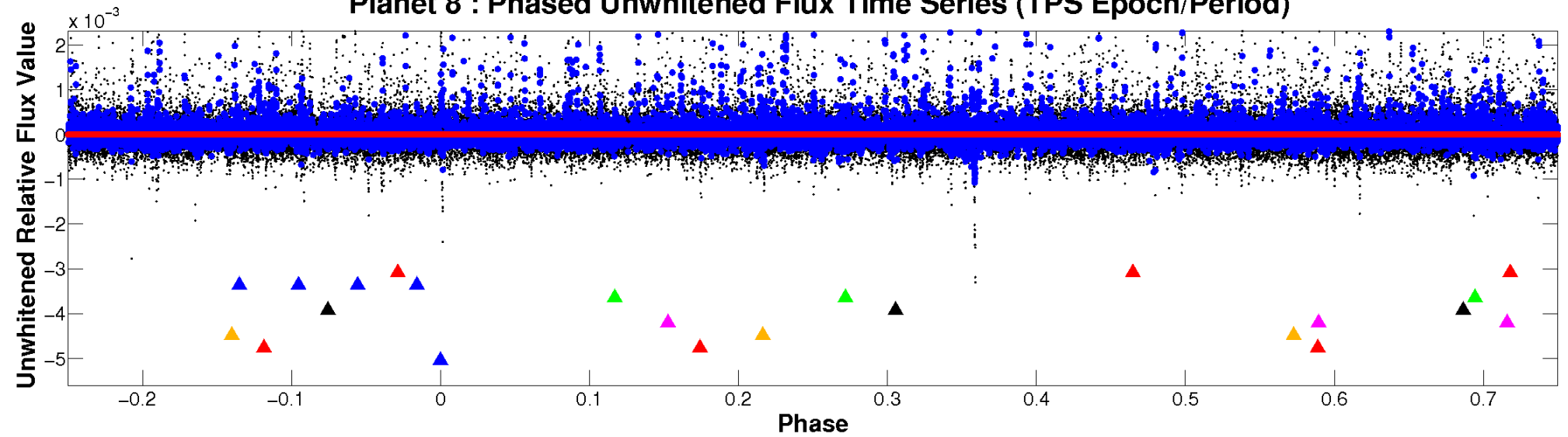
ALT Odd/Even

TCE 008817885-08



Non-Whitened Vs. Whitened Light Curve

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

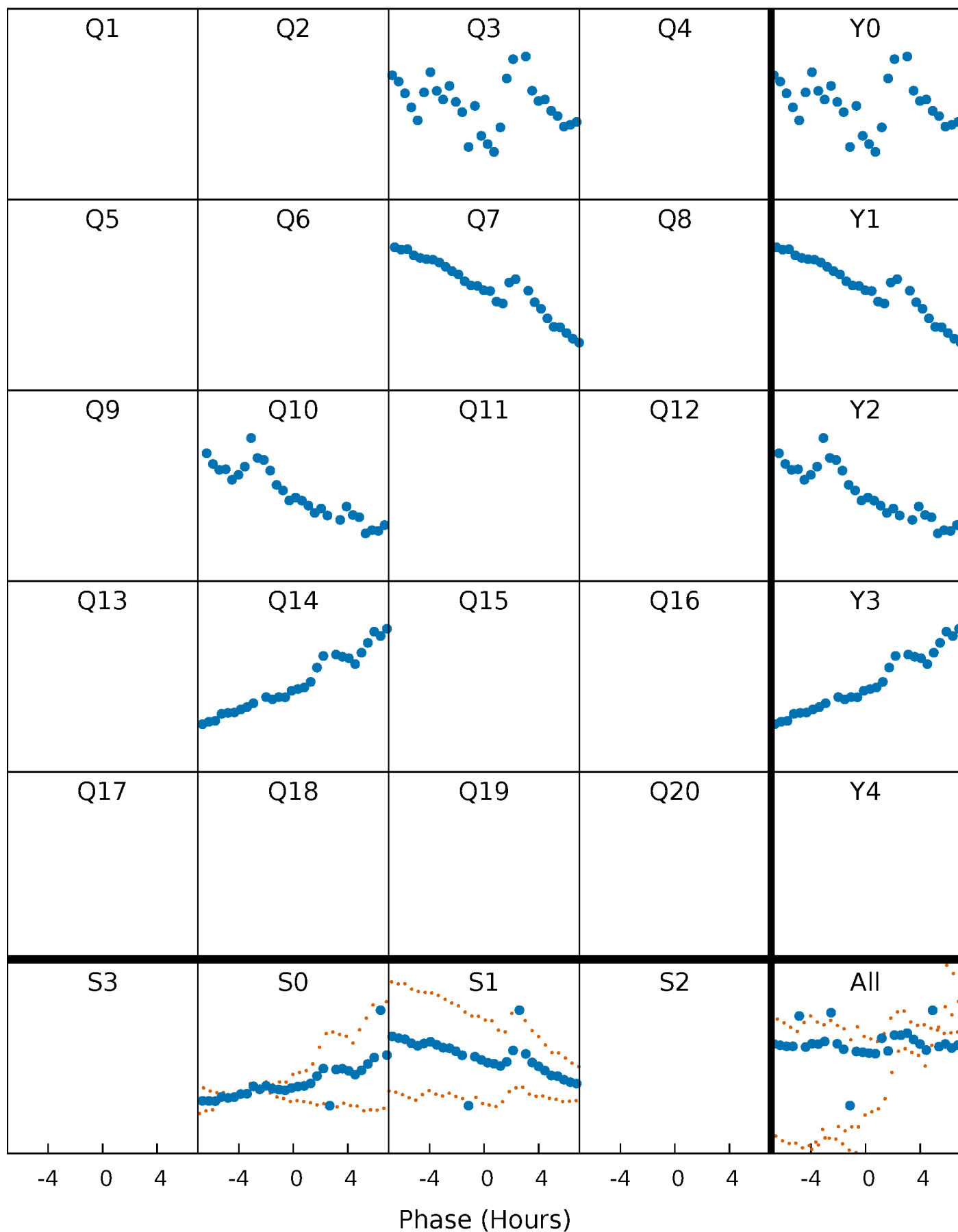


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



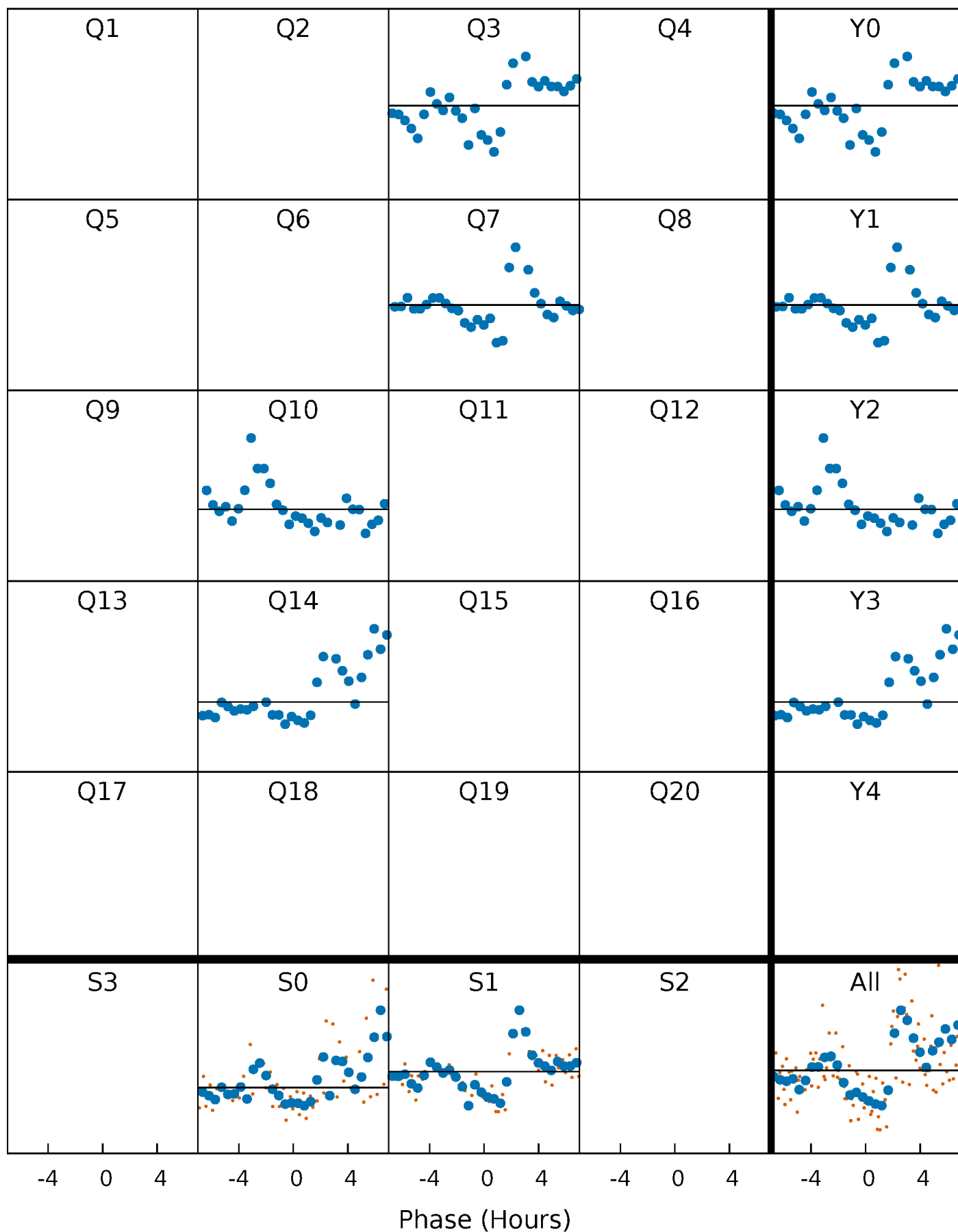
PDC Quarter-Phased Transit Curves

TCE 008817885-08 $P=357.907412$ Days $T_0=274.654893$ (BKJD)



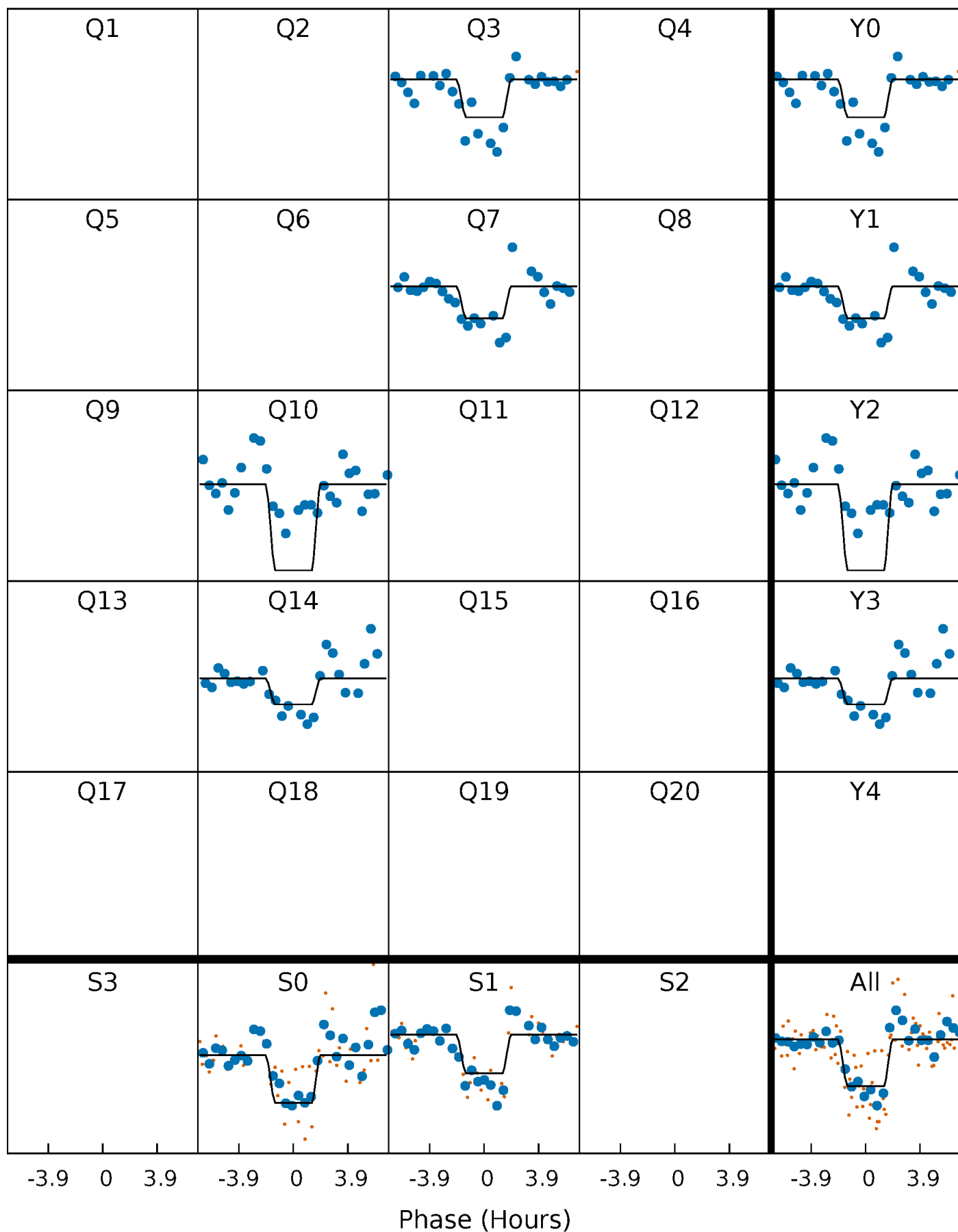
DV Quarter-Phased Transit Curves

TCE 008817885-08 $P=357.907412$ Days $T_0=274.654893$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

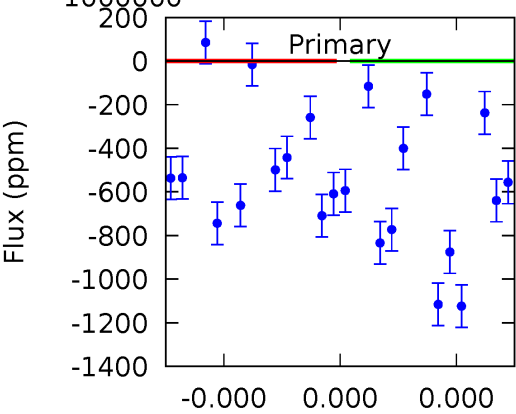
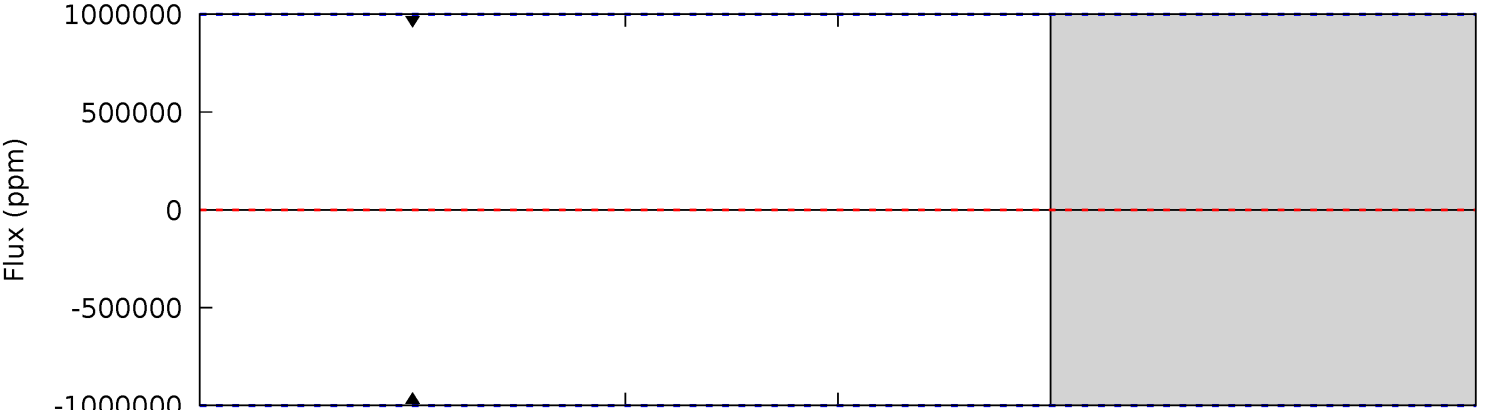
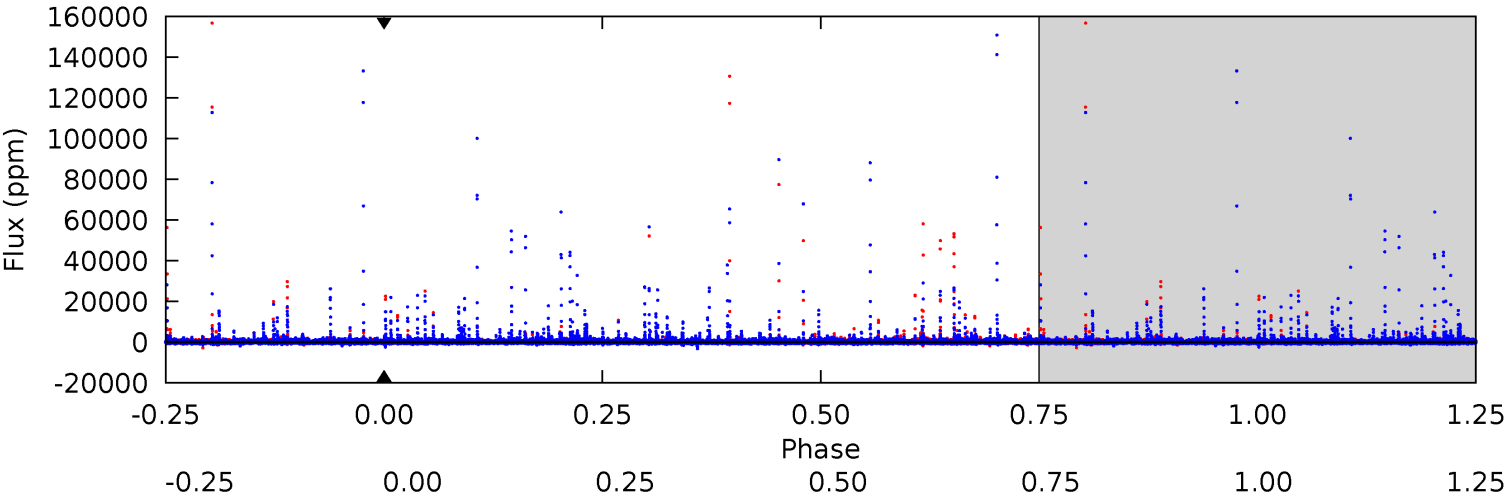
TCE 008817885-08 P=357.907412 Days $T_0=274.659108$ (BKJD)



DV Model-Shift Uniqueness Test

008817885-08, P = 357.907412 Days, E = 274.654893 Days

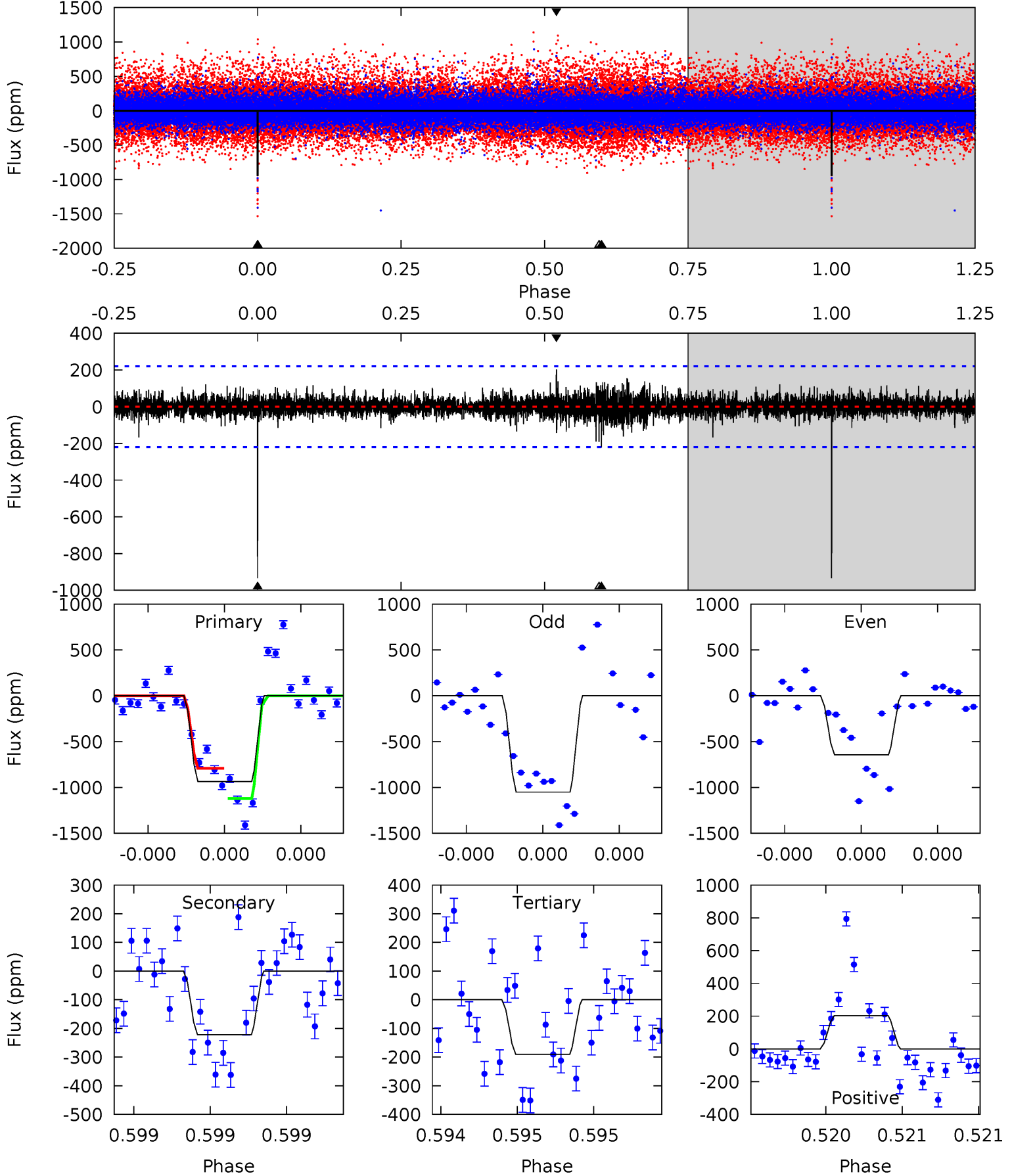
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008817885-08, P = 357.907412 Days, E = 274.659108 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.7	5.63	4.84	5.13	5.60	3.52	0.85	18.9	18.6	0.79	0.49	5.09	0.83	0.18	4.20



Stellar Parameters For KIC 008817885

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4986^{+123}_{-147}	$3.710^{+0.922}_{-0.307}$	$-0.220^{+0.300}_{-0.300}$	$2.168^{+1.217}_{-1.488}$	$0.880^{+0.231}_{-0.189}$	$0.122^{+3.042}_{-0.076}$
	+2%/-3%	+25%/-8%	+136%/-136%	+56%/-69%	+26%/-21%	+2502%/-62%
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 008817885-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$14.80^{+21.12}_{-10.85}$	448^{+72}_{-90}	-4017^{+18895}_{-9429}	$-2388.146^{+367197.672}_{-344778.285}$
Alt.	-222 ± 39	$16.89^{+20.00}_{-11.32}$	452^{+66}_{-91}	2809^{+1045}_{-436}	376^{+2799}_{-298}

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 $A_{obs} \gg 1.0$

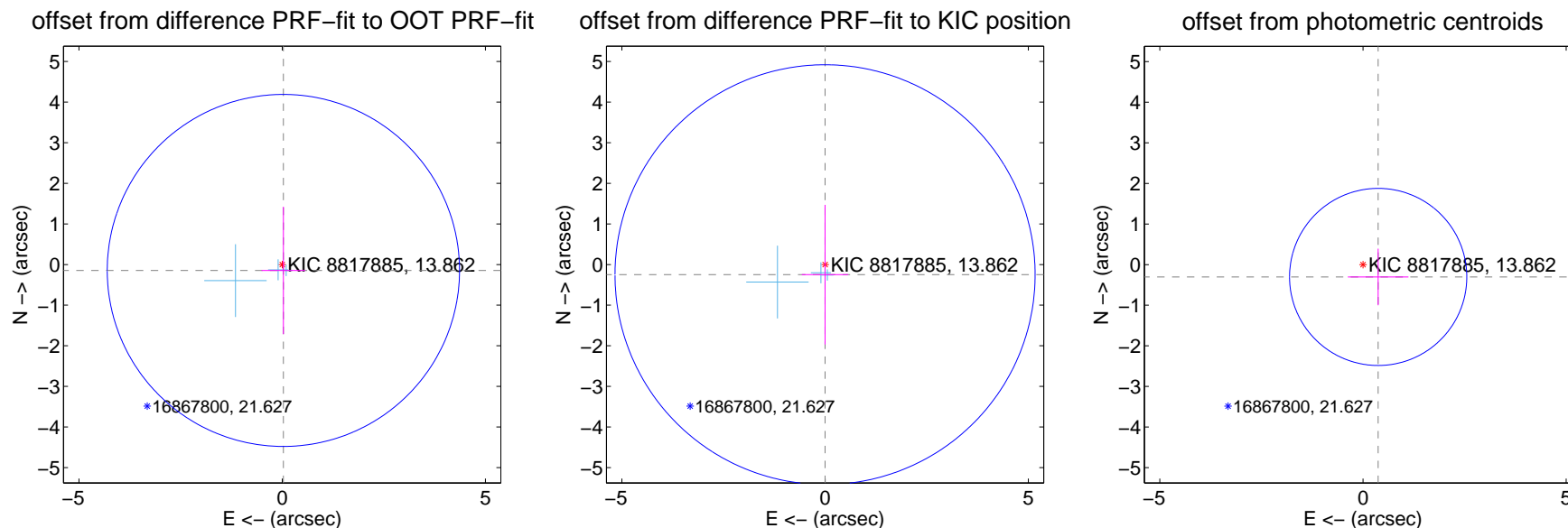
DV Centroid Data

Supplemental centroid analysis for 008817885-08. Kepler magnitude: 13.86. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

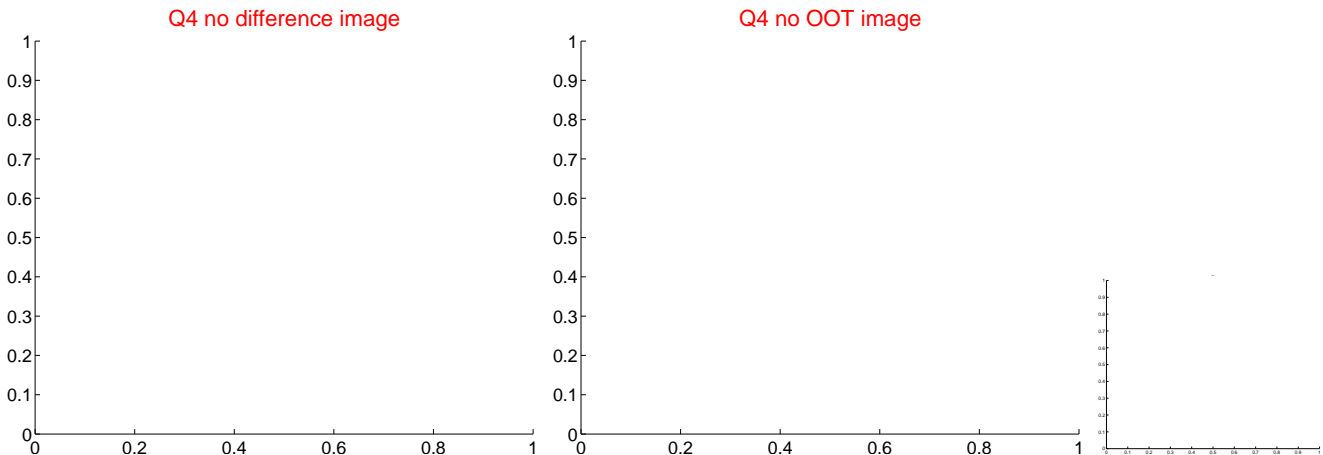
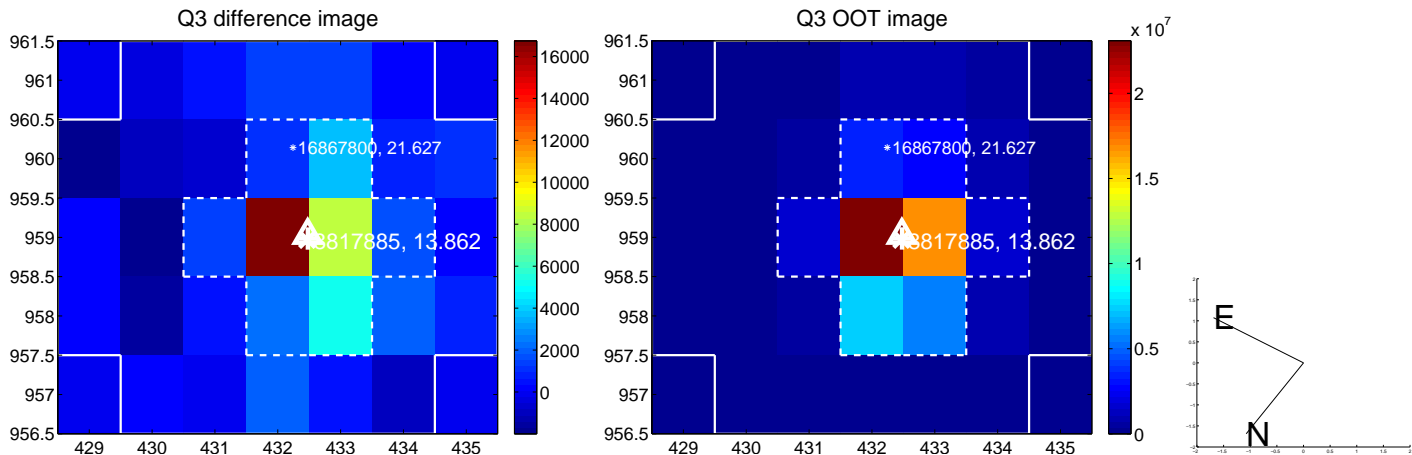
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.148 ± 1.444	0.10	-0.029 ± 0.538	-0.145 ± 1.570
PRF-fit source offset from KIC position	0.249 ± 1.722	0.14	0.002 ± 0.571	-0.249 ± 1.719
photometric centroid source offset	0.48 ± 0.73	0.66	-0.37 ± 0.75	-0.30 ± 0.70

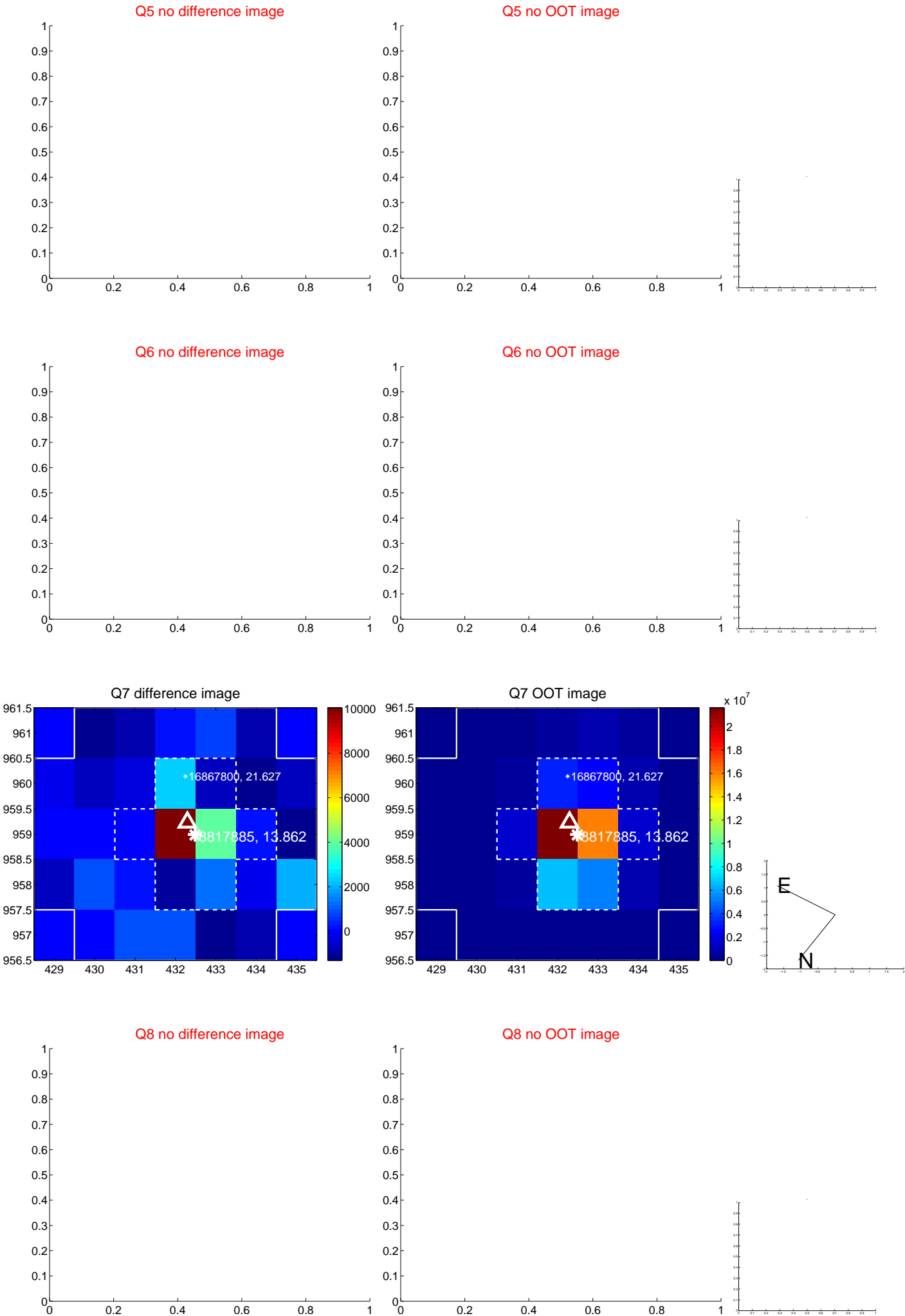


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

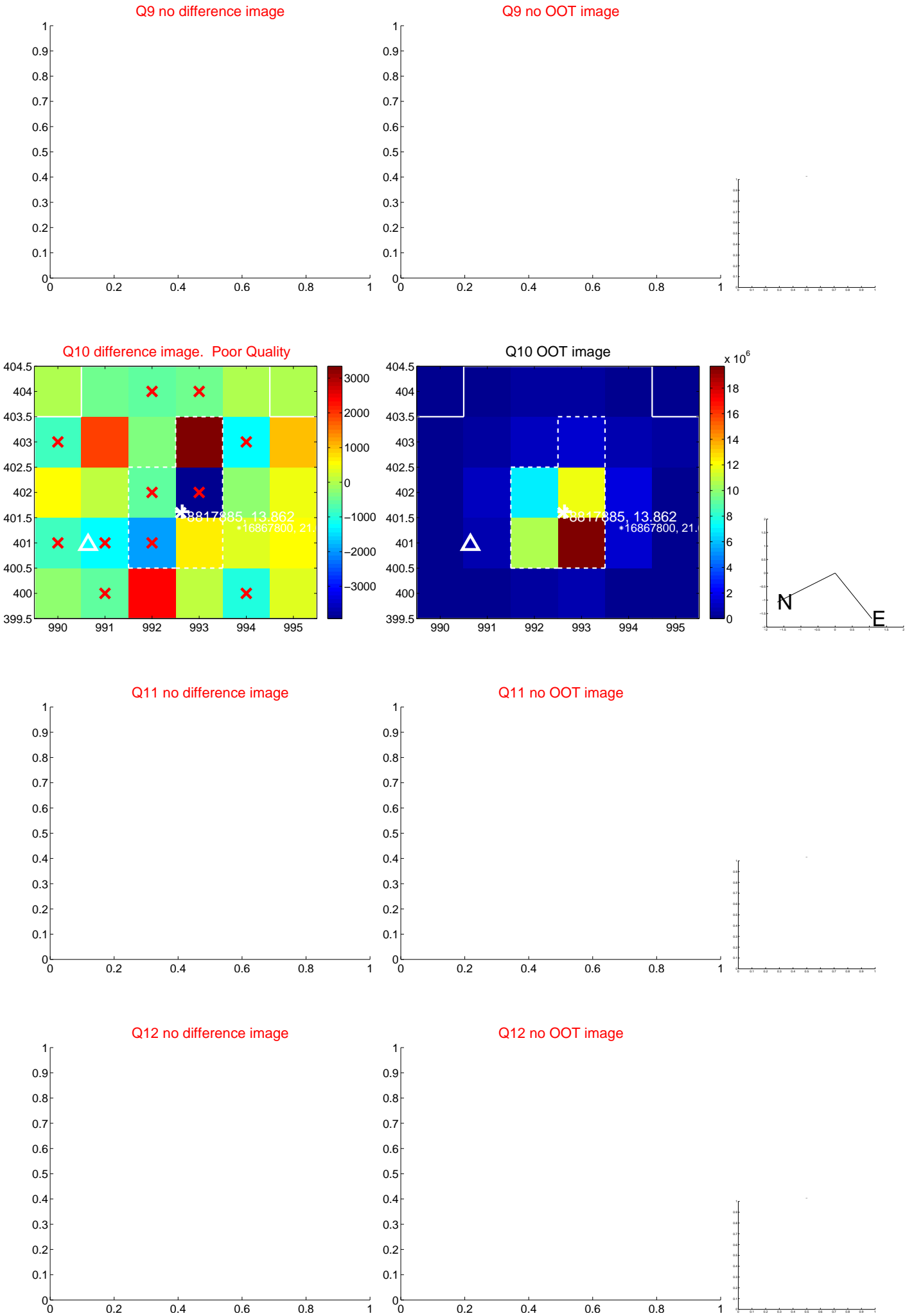
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

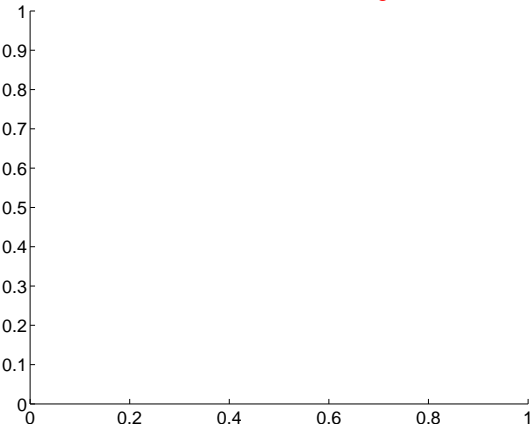


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

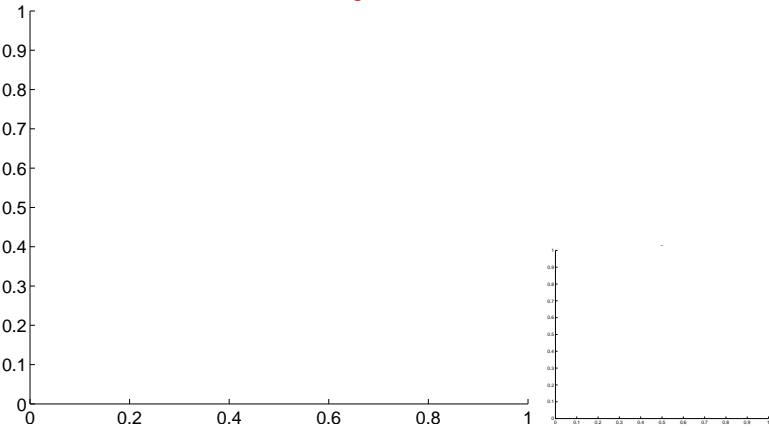


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

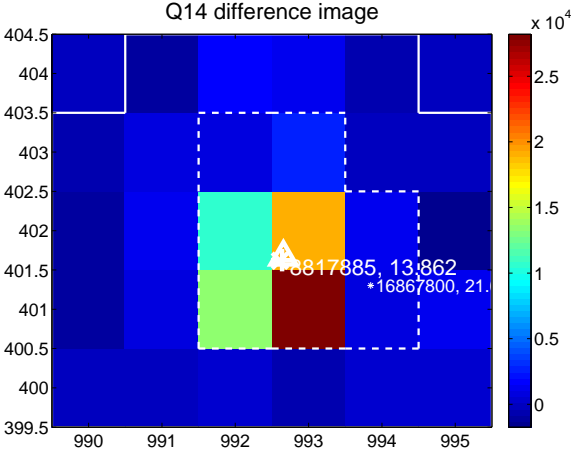
Q13 no difference image



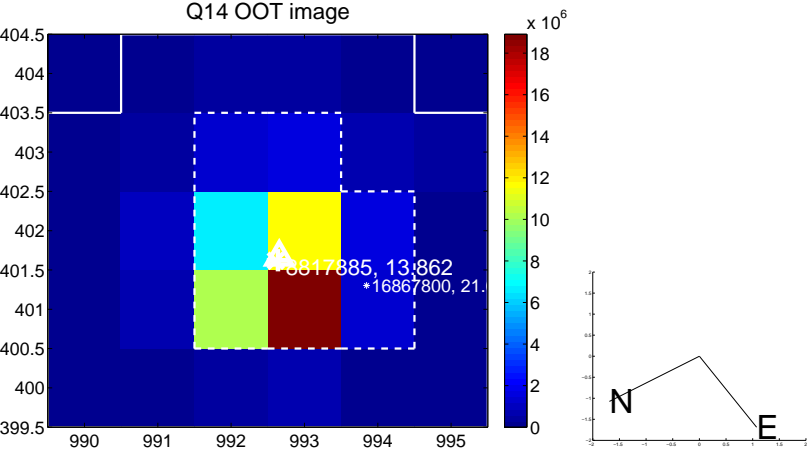
Q13 no OOT image



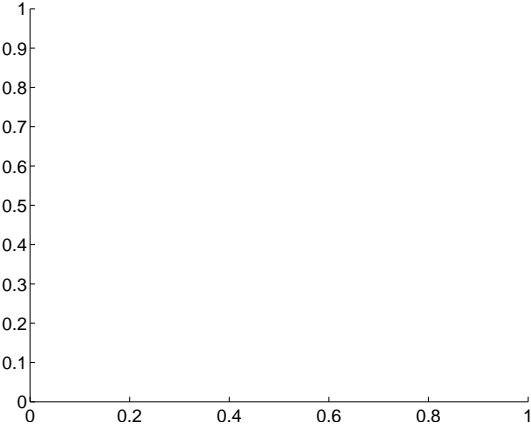
Q14 difference image



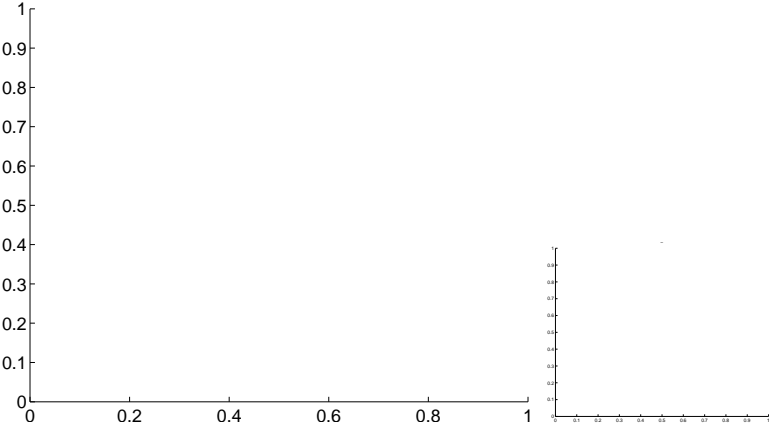
Q14 OOT image



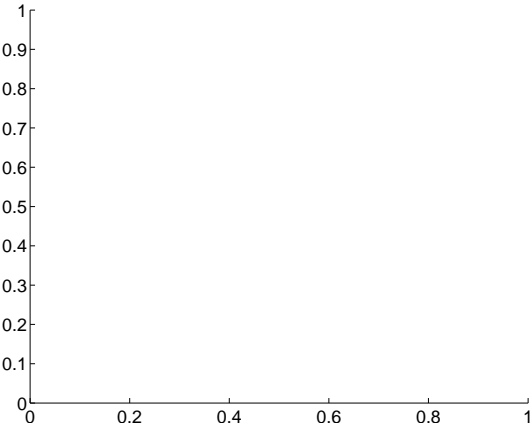
Q15 no difference image



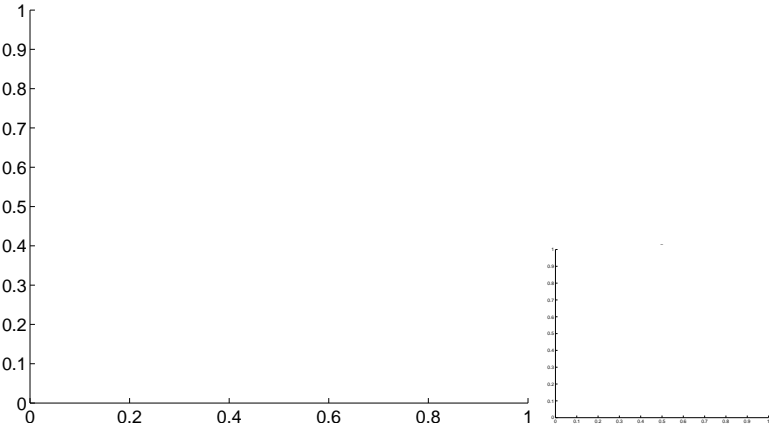
Q15 no OOT image



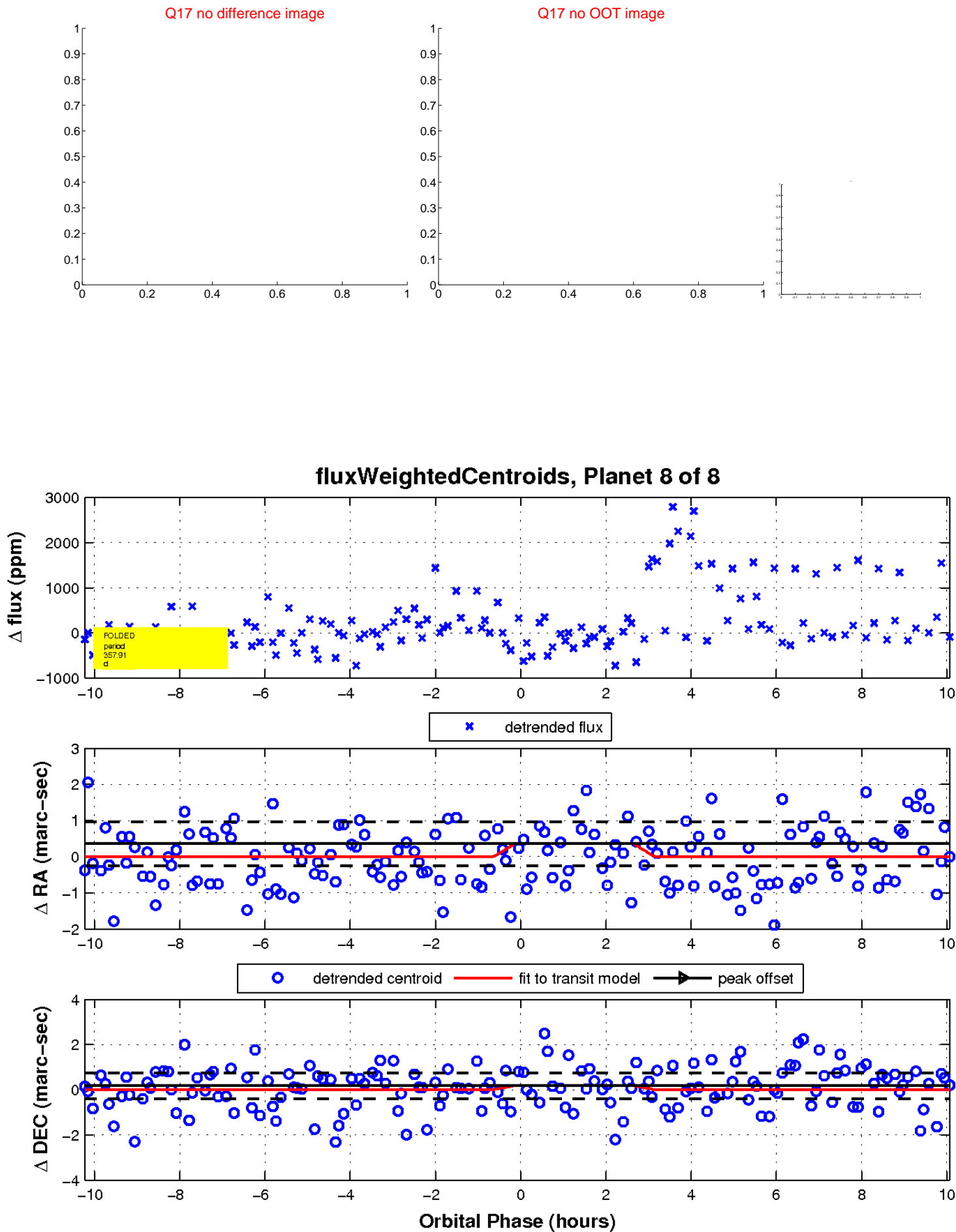
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

