

KIC 008509933

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})
008509933-01	OBS	No	395.544059	343.404248	392.6	6.490	9.5	7.8	1.97	7824	4.34	7.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008509933-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

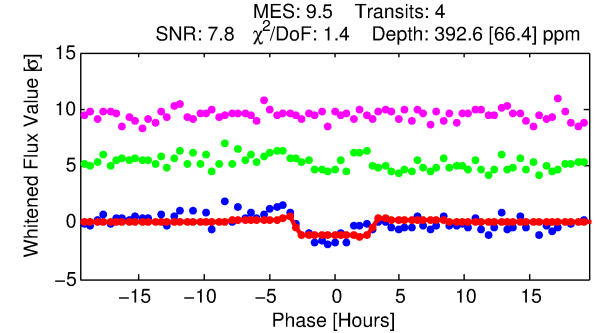
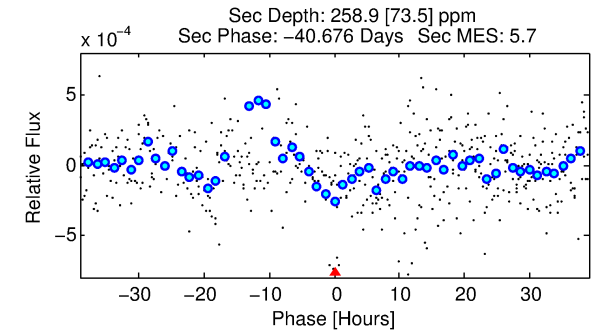
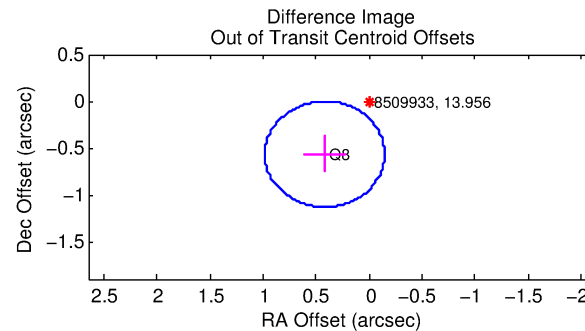
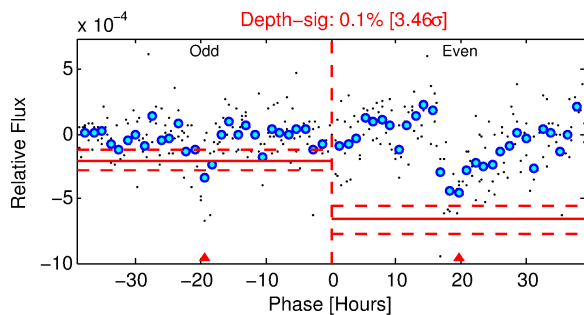
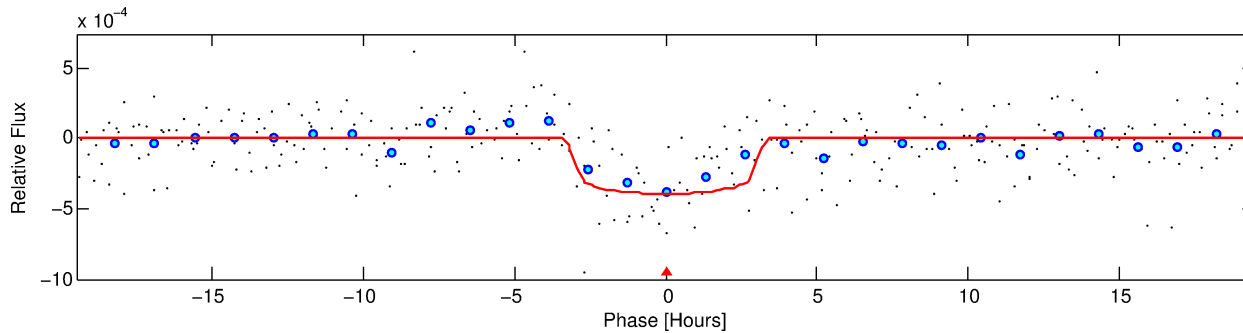
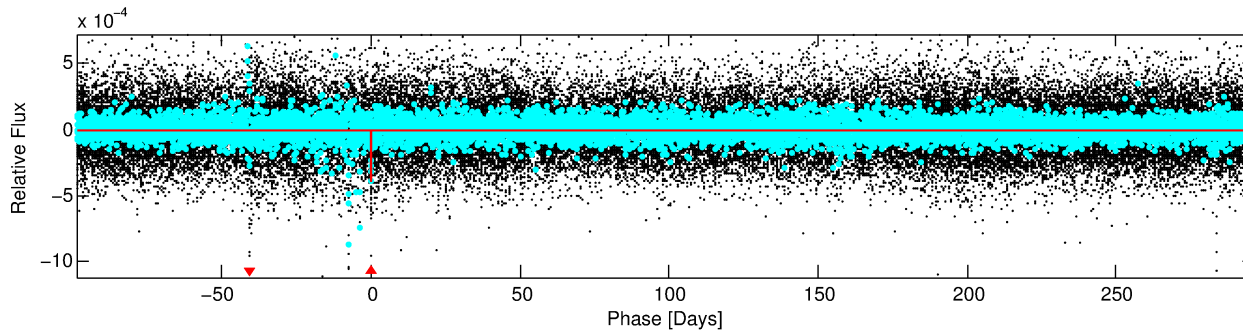
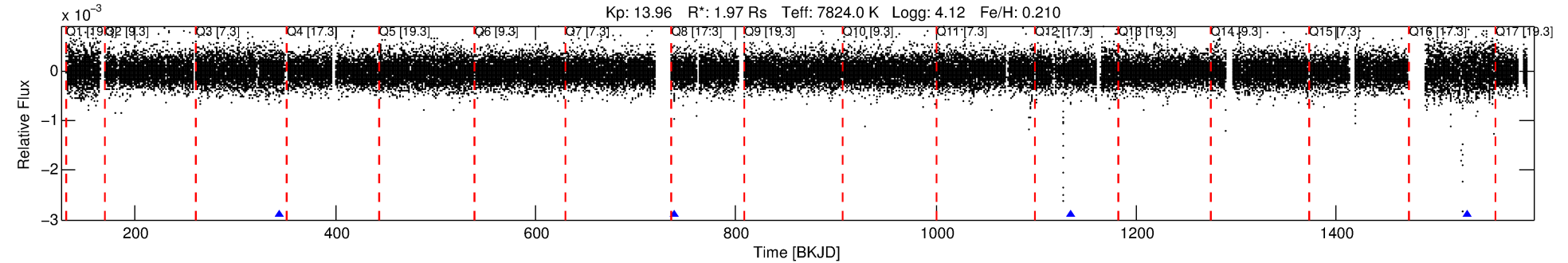
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008509933-01

No Significant Match Found

DV One-Page Summary

KIC: 8509933 Candidate: 1 of 1 Period: 395.544 d



DV Fit Results:

Period = 395.54406 [0.00652] d
Epoch = 343.4042 [0.0114] BKJD
Rp/R* = 0.0202 [0.0062]
a/R* = 275.85 [492.98]
b = 0.83 [0.67]
Seff = 7.76 [2.85]
Teff = 426 [39] K
Rp = 4.34 [1.76] Re
a = 1.2929 [0.2862] AU
Ag = 12620.64 [9479.25] [1.33 σ]
Teffp = 6975 [1224] K [5.35 σ]

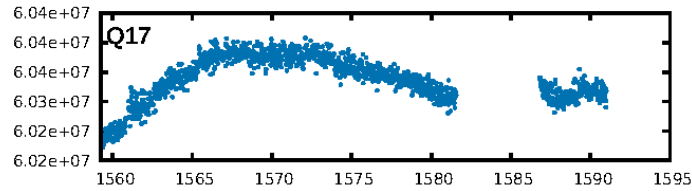
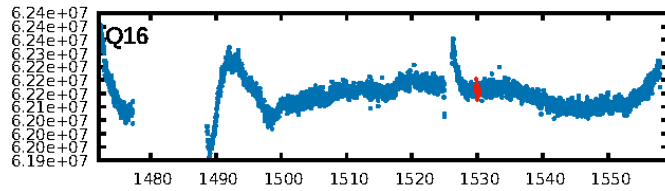
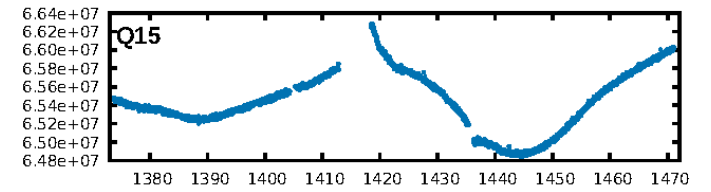
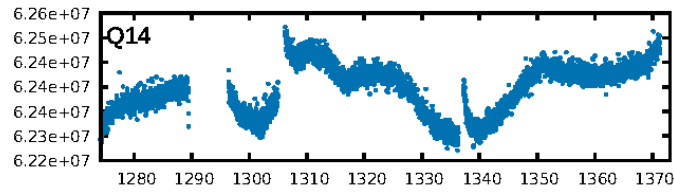
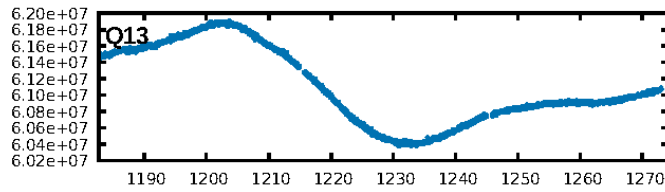
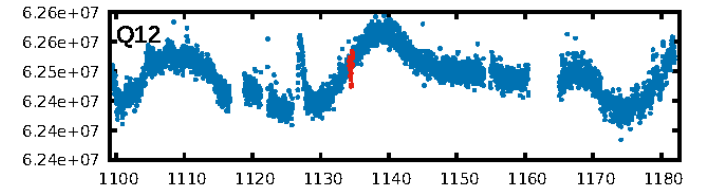
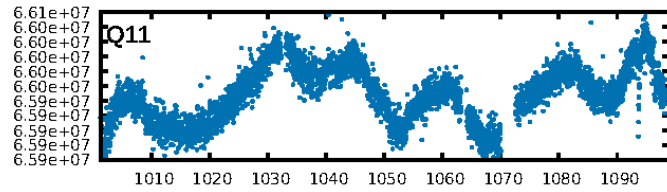
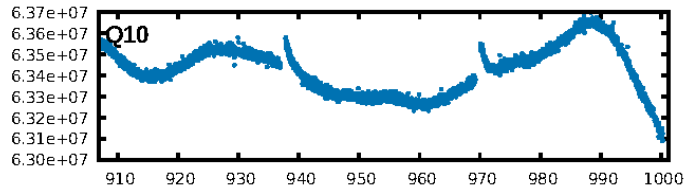
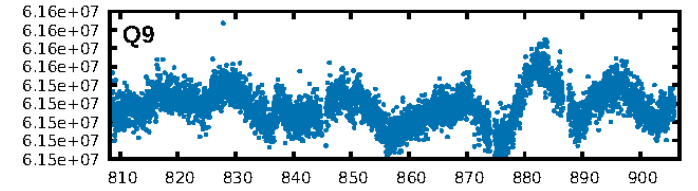
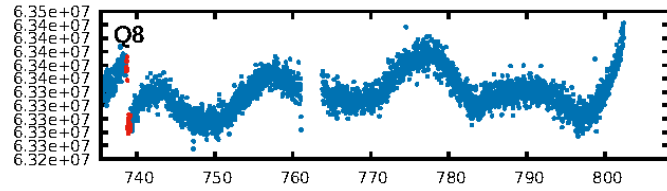
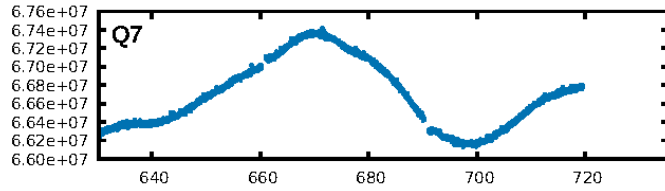
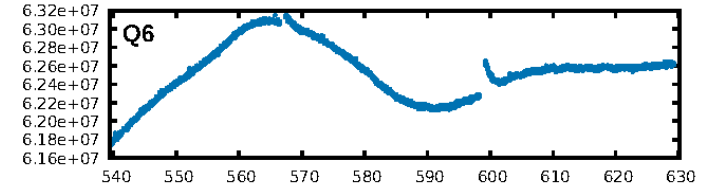
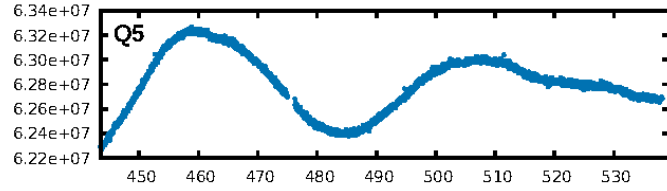
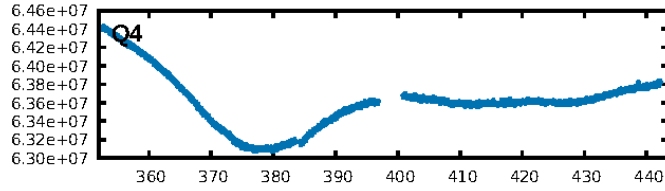
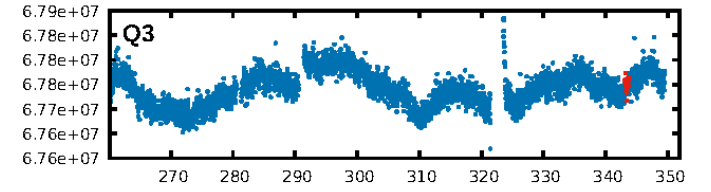
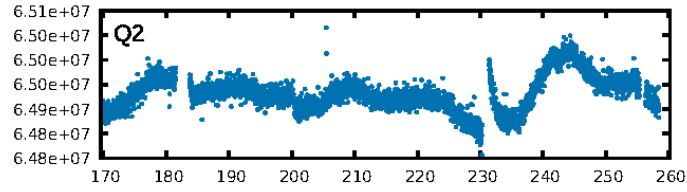
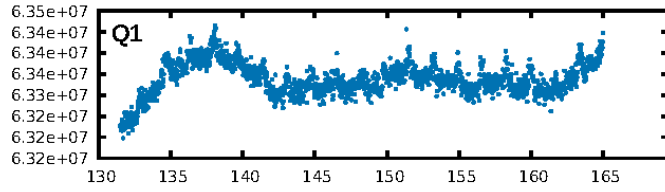
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 26.9%
Bootstrap-pfa: 1.60e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.704
Centroid-sig: 50.1%
Centroid-so: 0.877 arcsec [0.86 σ]
OotOffset-rm: 0.705 arcsec [3.74 σ]
KicOffset-rm: 0.685 arcsec [3.65 σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

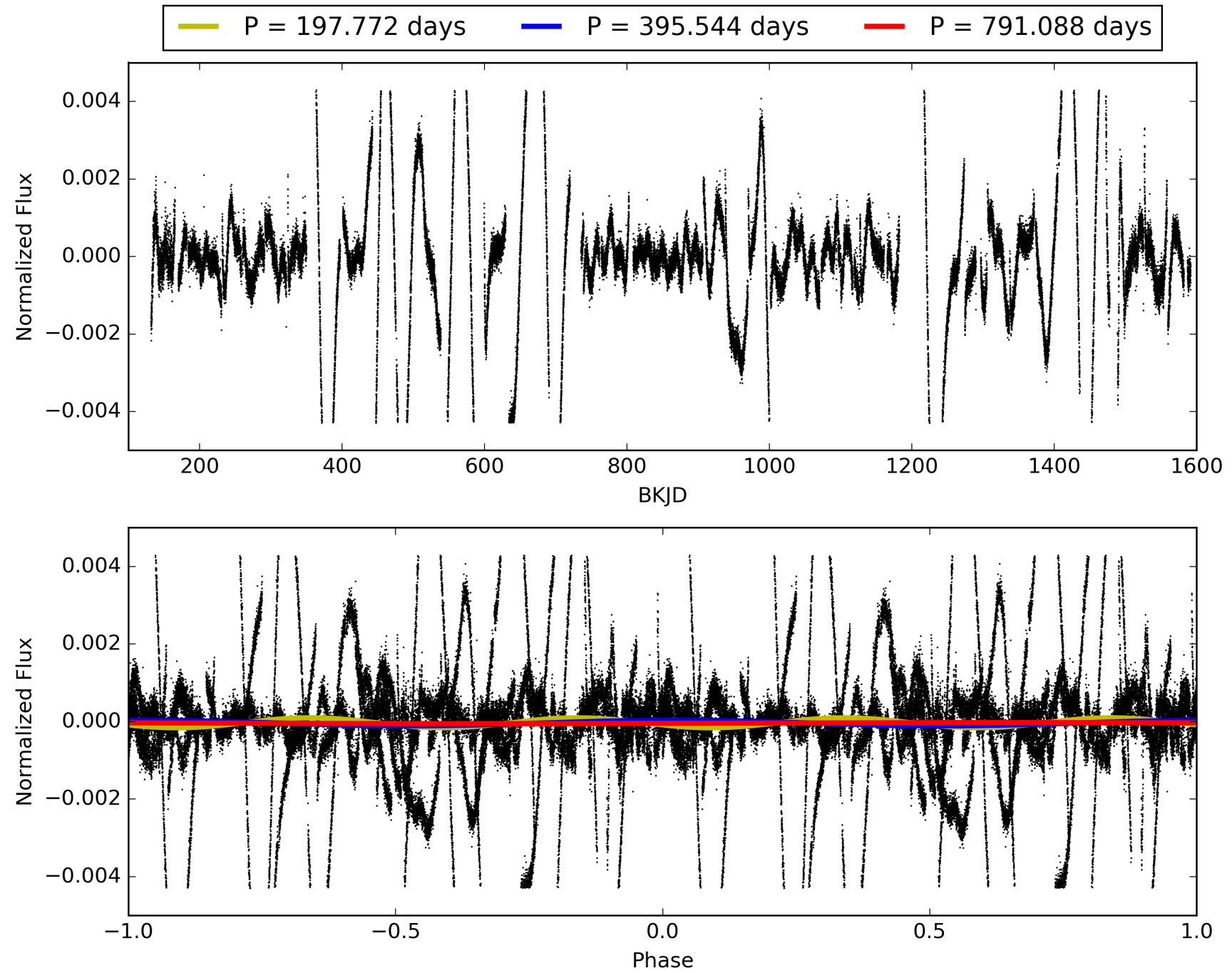
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:21:21 Z

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

TCE 008509933-01, PDC Light Curves

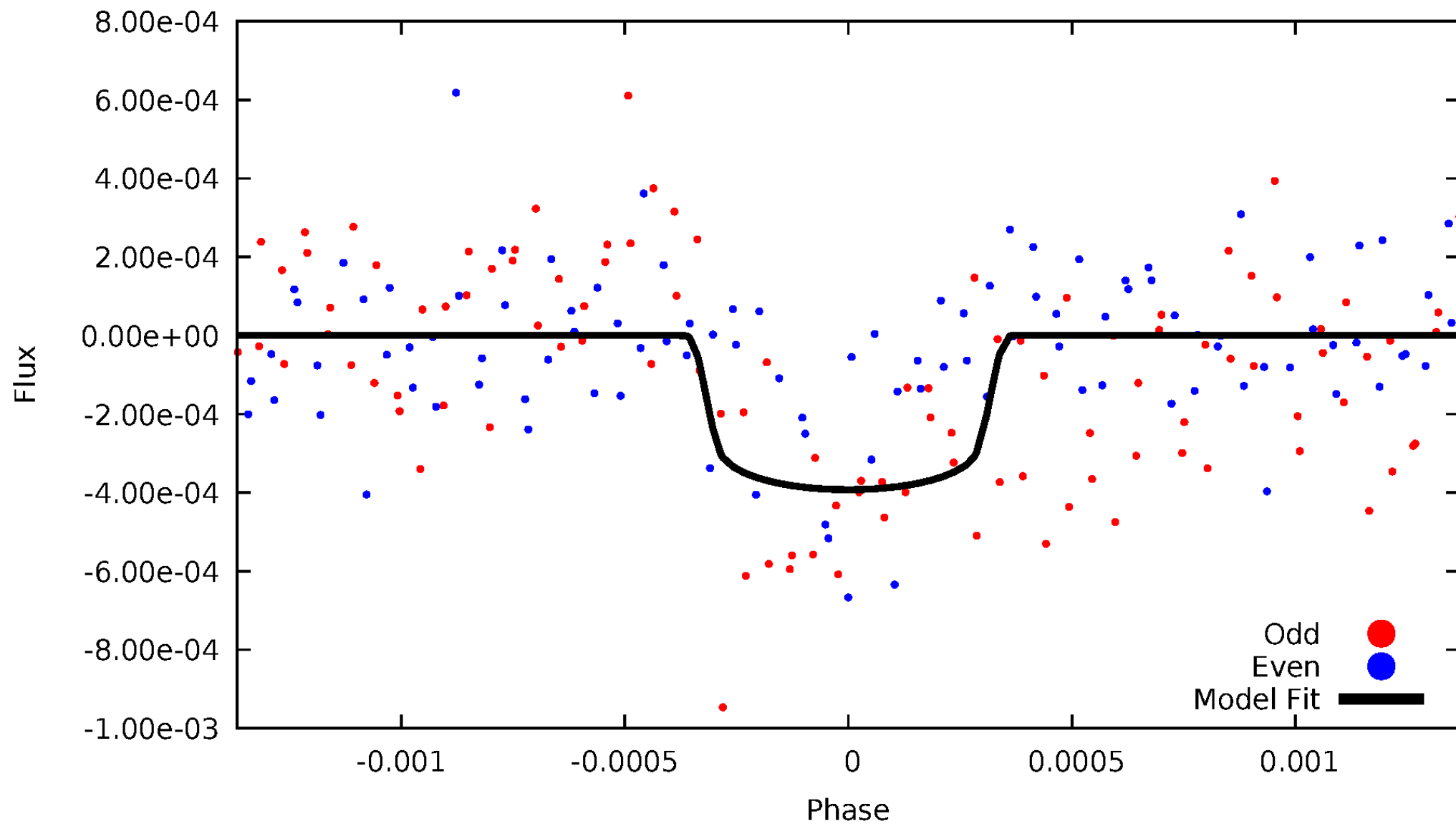


TCE 008509933-01



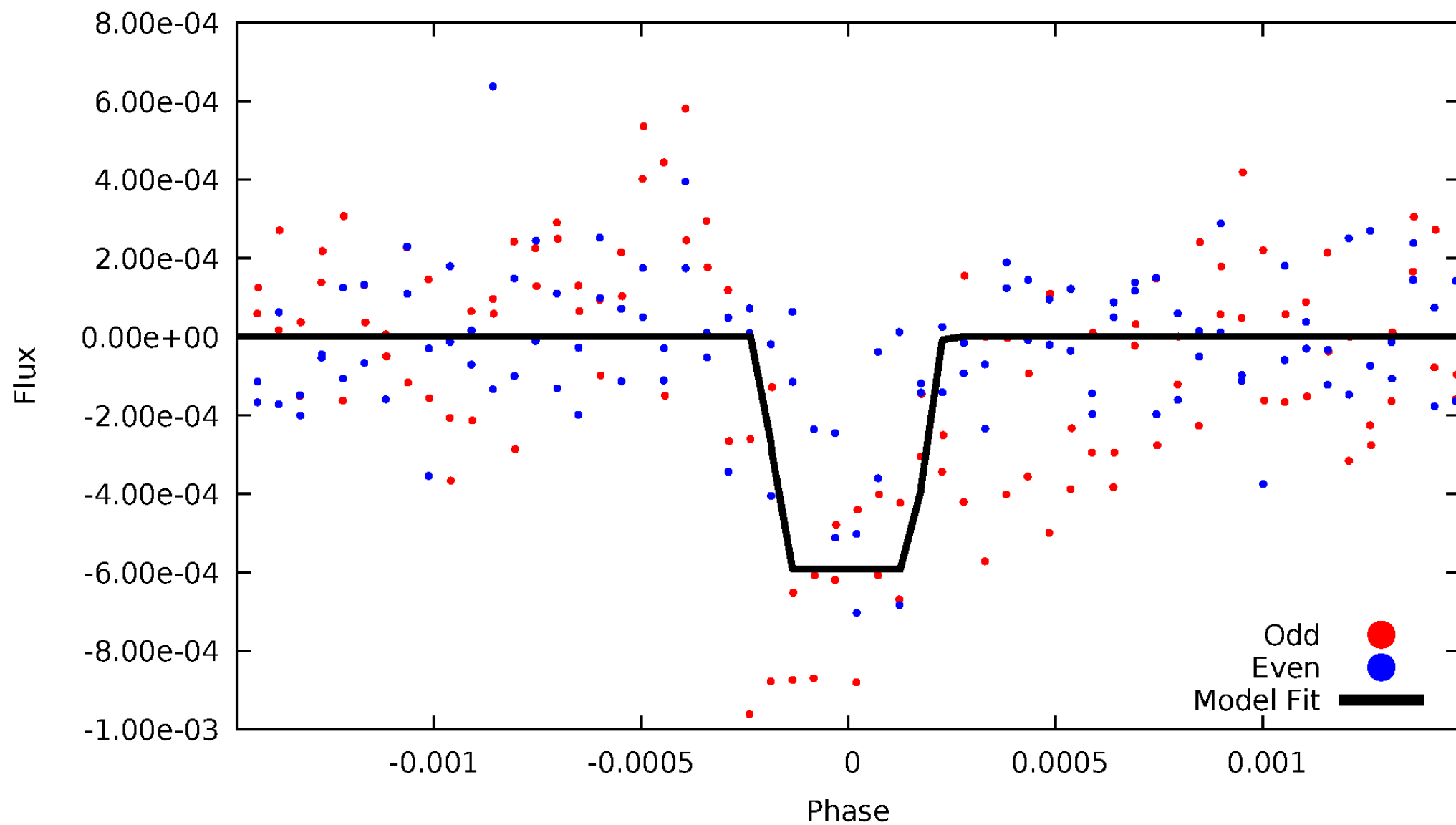
DV Odd/Even

TCE 008509933-01



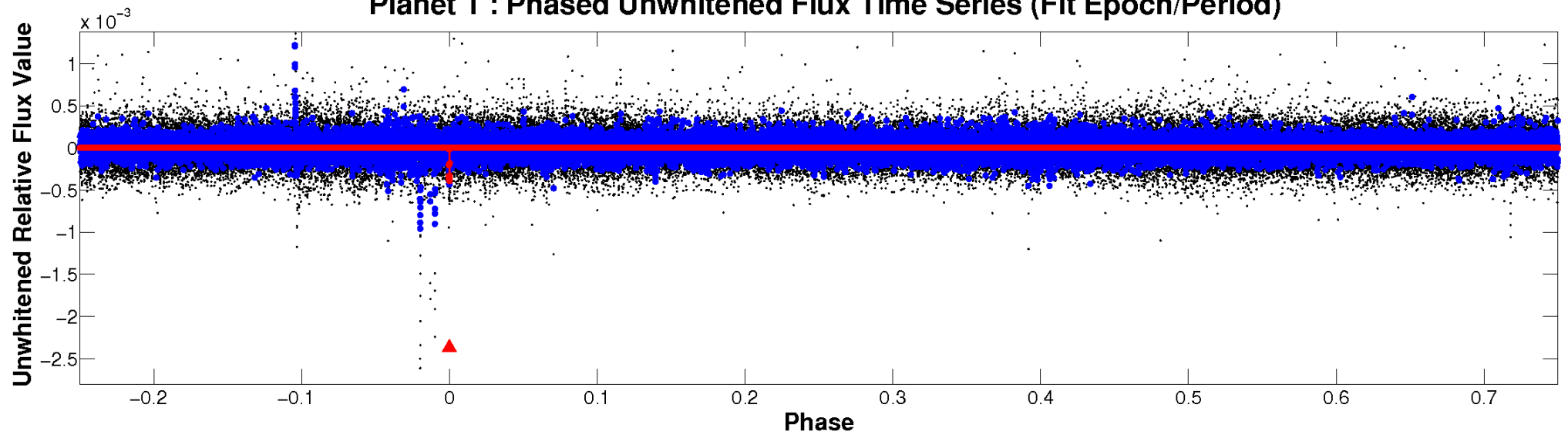
ALT Odd/Even

TCE 008509933-01

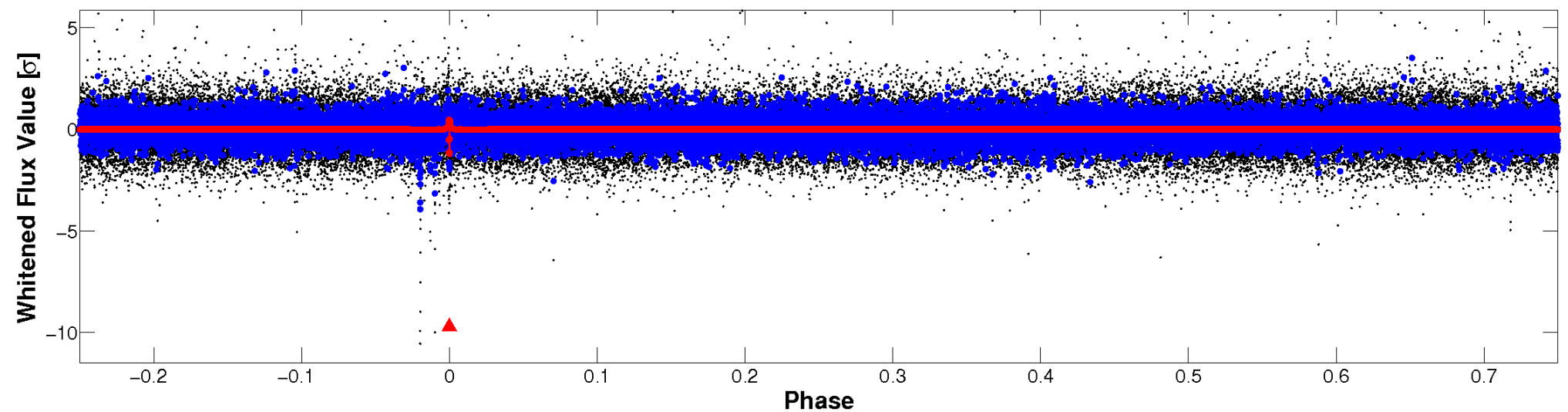


Non-Whitened Vs. Whitened Light Curve

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



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



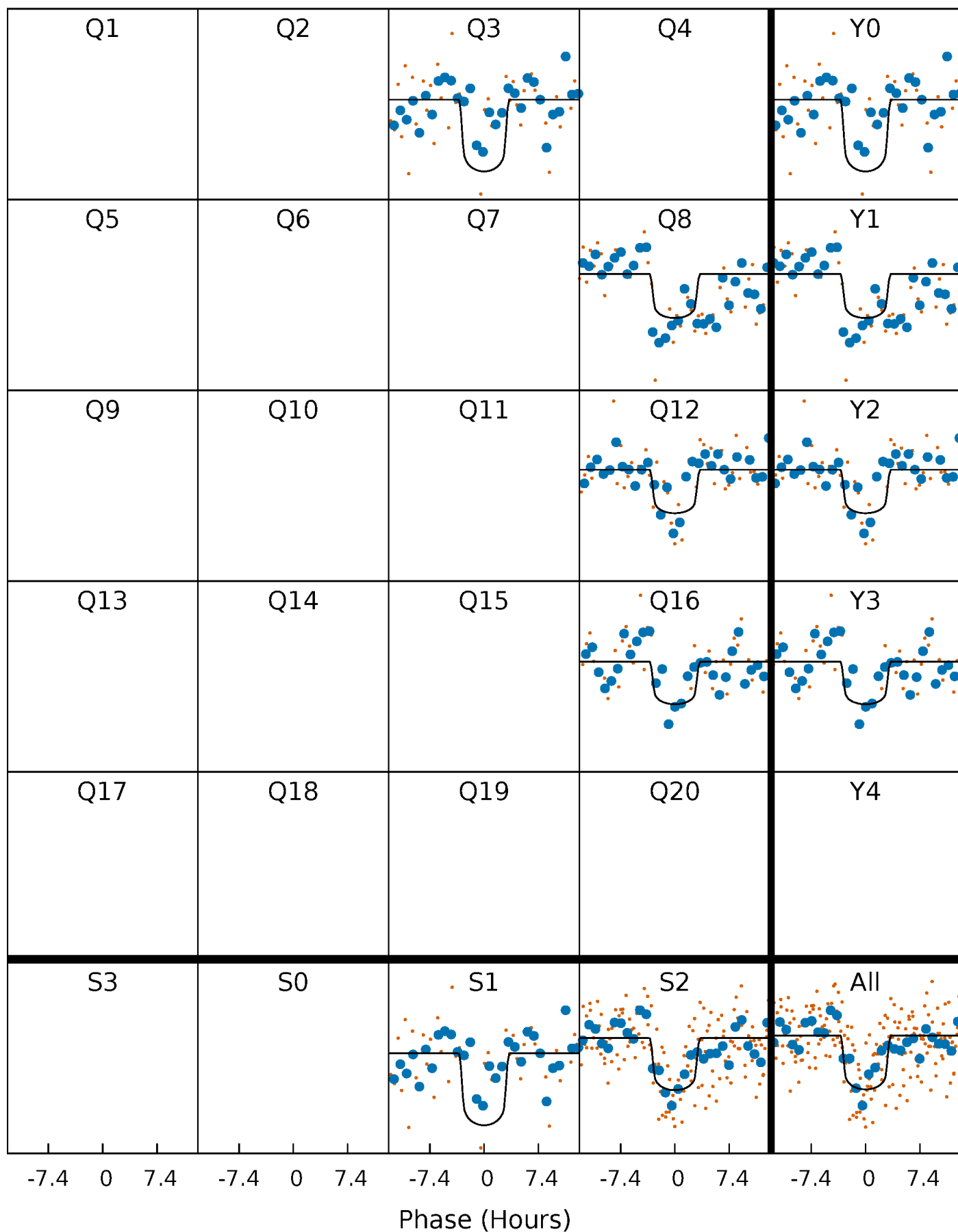
PDC Quarter-Phased Transit Curves

TCE 008509933-01 P=395.544059 Days $T_0=343.404248$ (BKJD)



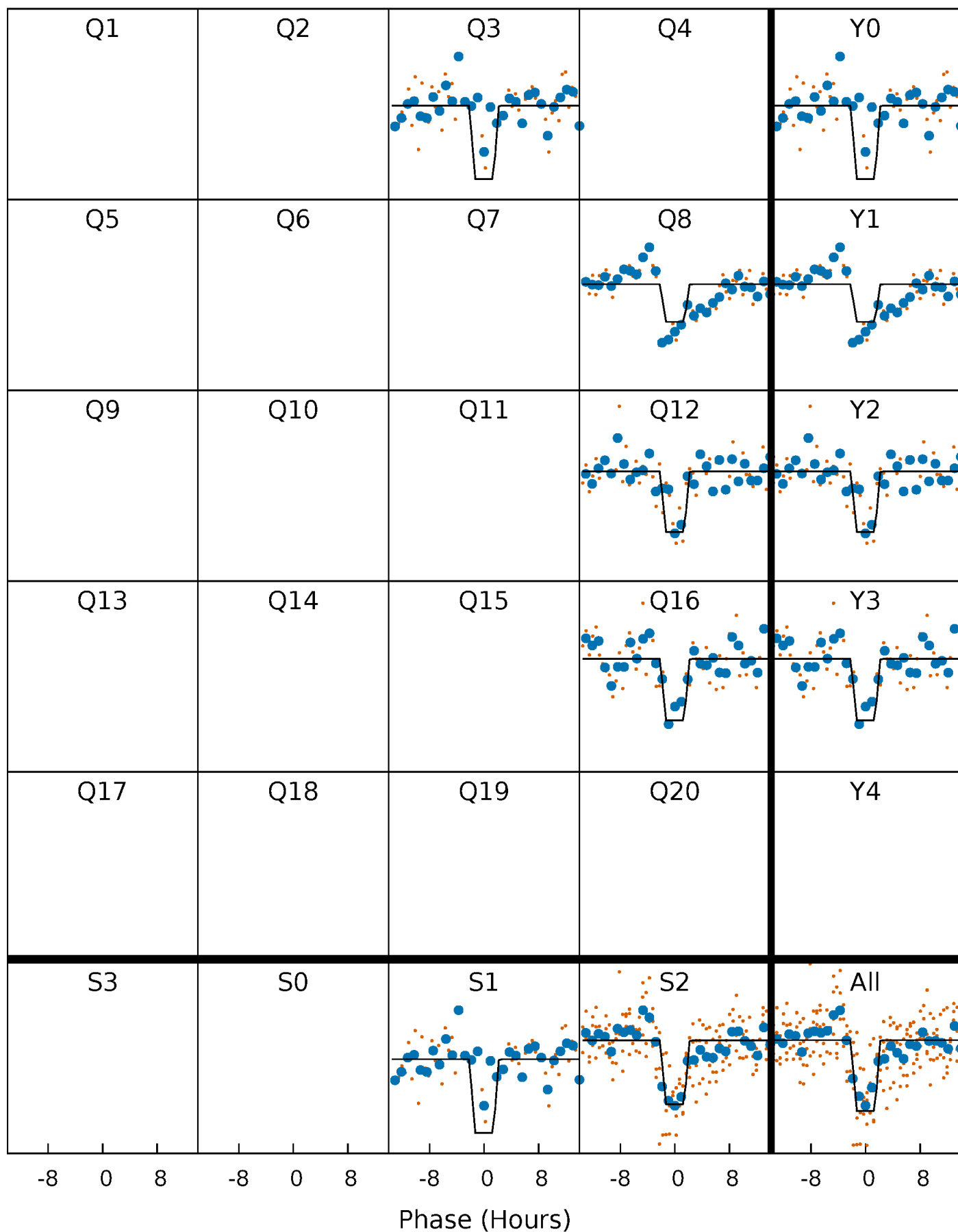
DV Quarter-Phased Transit Curves

TCE 008509933-01 P=395.544059 Days $T_0=343.404248$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

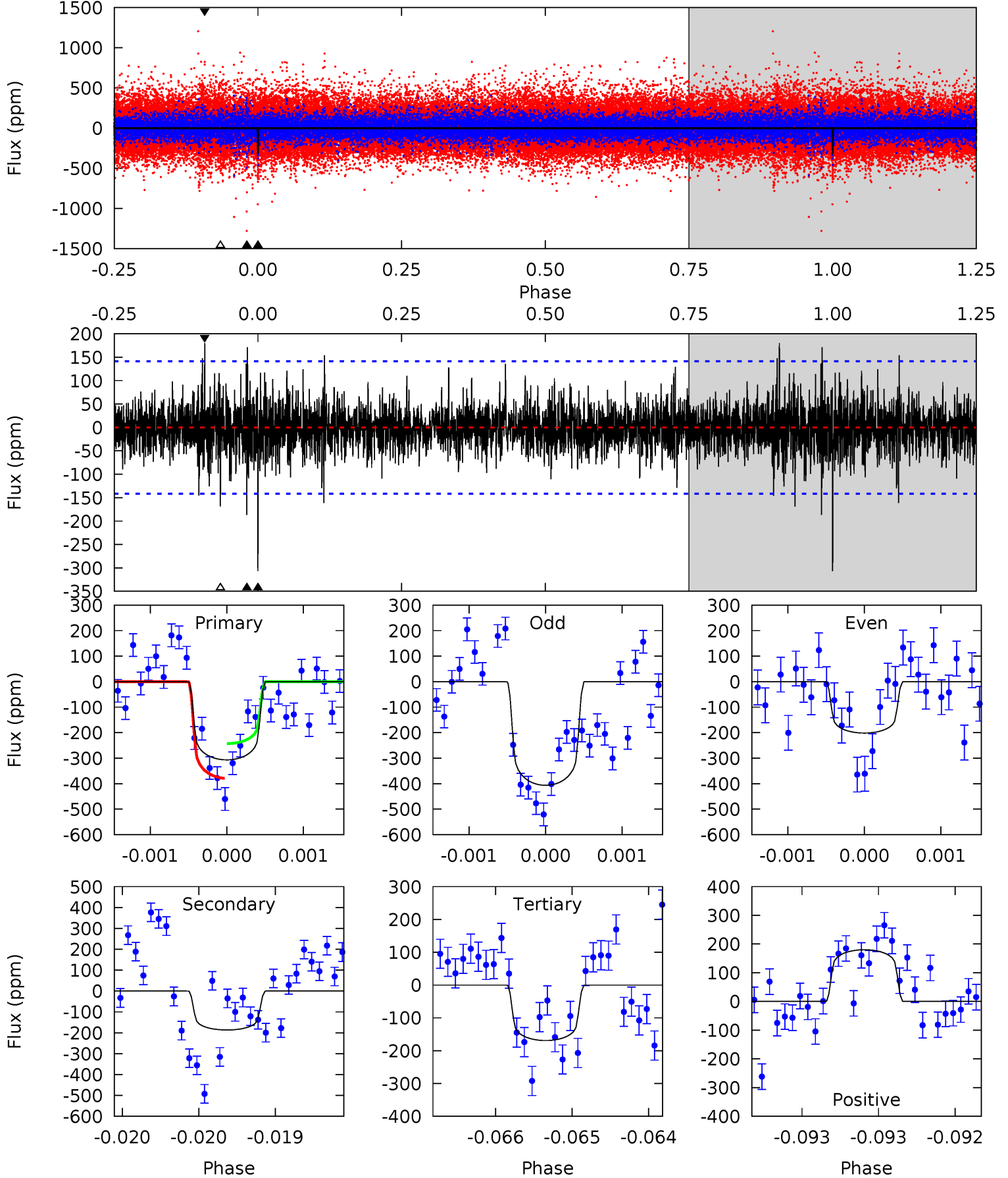
TCE 008509933-01 P=395.552855 Days $T_0=343.378648$ (BKJD)



DV Model-Shift Uniqueness Test

008509933-01, P = 395.544059 Days, E = 343.404248 Days

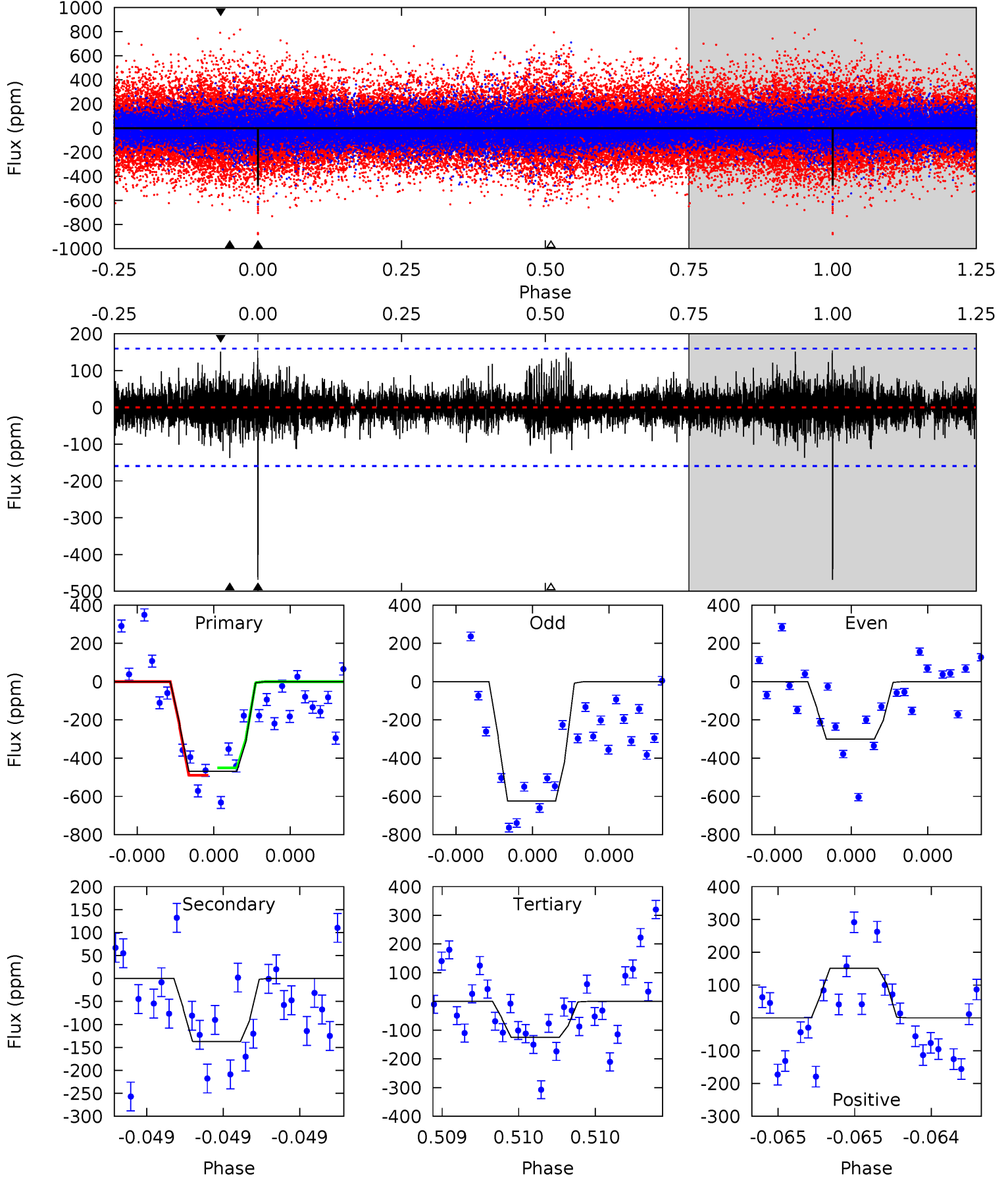
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	7.27	6.59	7.02	5.51	3.38	1.42	5.36	4.93	0.69	0.25	3.89	1.02	0.37	2.64



Alt Model-Shift Uniqueness Test

008509933-01, P = 395.552855 Days, E = 343.378648 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	4.81	4.40	5.31	5.61	3.53	1.03	12.1	11.1	0.41	-0.50	5.66	1.00	0.25	0.66



Stellar Parameters For KIC 008509933

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7824^{+214}_{-349}	$4.116^{+0.094}_{-0.175}$	$0.210^{+0.100}_{-0.400}$	$1.966^{+0.519}_{-0.346}$	$1.841^{+0.194}_{-0.291}$	$0.341^{+0.182}_{-0.163}$
	+3%/-4%	+2%/-4%	+48%/-190%	+26%/-18%	+11%/-16%	+53%/-48%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008509933-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-187 ± 26	$4.41^{+1.64}_{-1.46}$	601^{+40}_{-36}	6228^{+1475}_{-787}	8530^{+10928}_{-4106}
Alt.	-137 ± 28	$5.27^{+1.69}_{-1.47}$	601^{+40}_{-36}	5330^{+850}_{-580}	4322^{+3944}_{-1901}

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

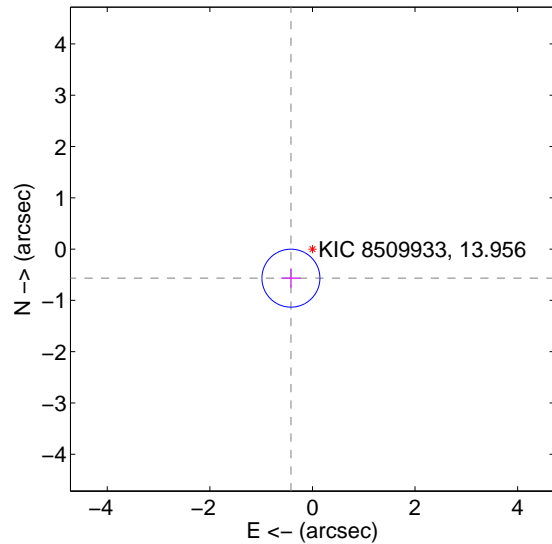
Supplemental centroid analysis for 008509933-01. Kepler magnitude: 13.96. Transit SNR 7.81

There are 1 quarters with good PRF difference image offsets

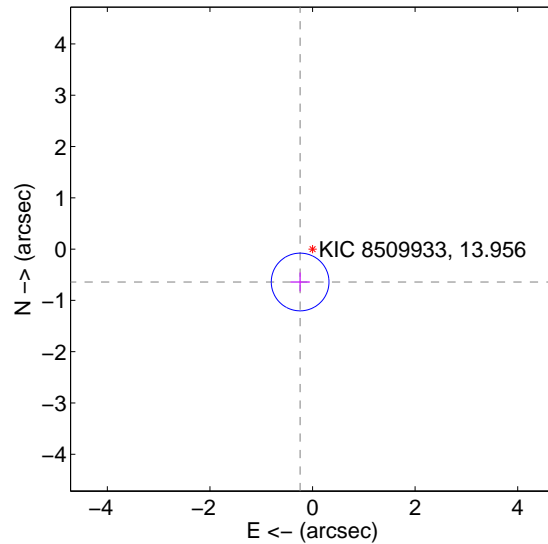
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.705 ± 0.188	3.74	0.420 ± 0.191	-0.567 ± 0.187
PRF-fit source offset from KIC position	0.685 ± 0.188	3.65	0.242 ± 0.191	-0.641 ± 0.187
photometric centroid source offset	0.88 ± 1.02	0.86	0.87 ± 1.02	-0.10 ± 1.13

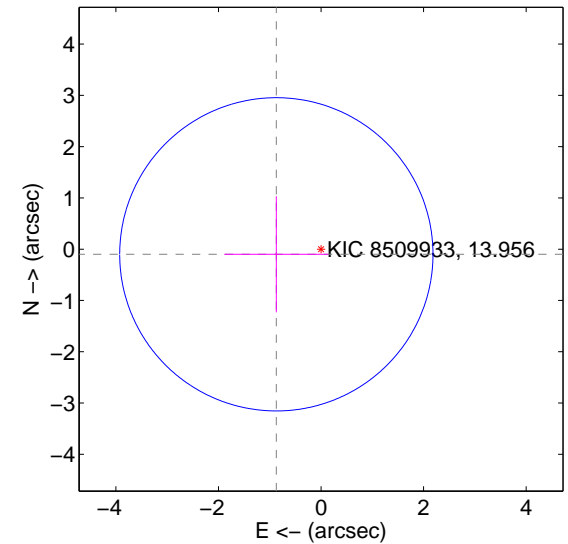
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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

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

Q1 no difference image



Q1 no OOT image



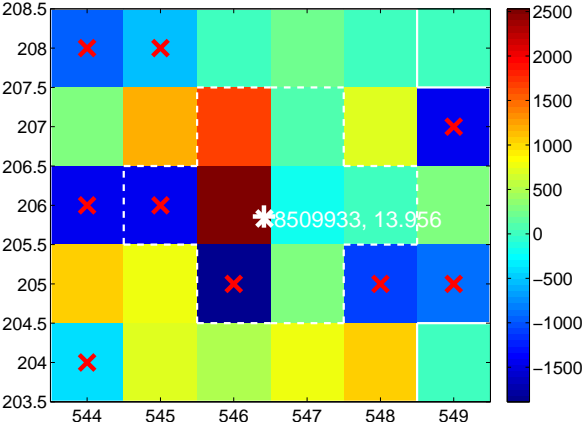
Q2 no difference image



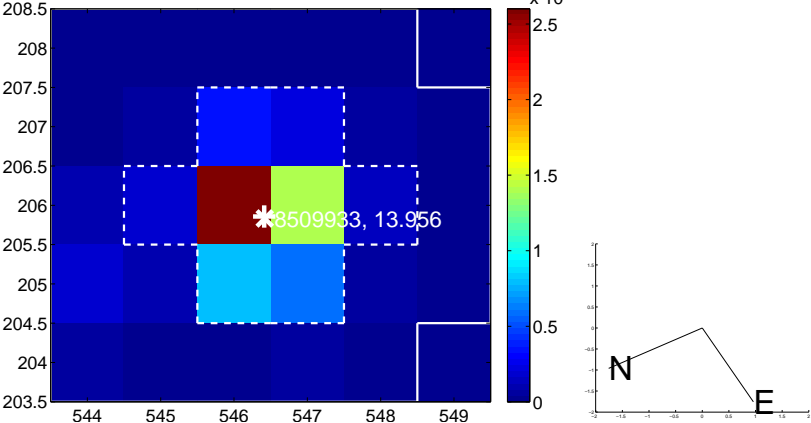
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



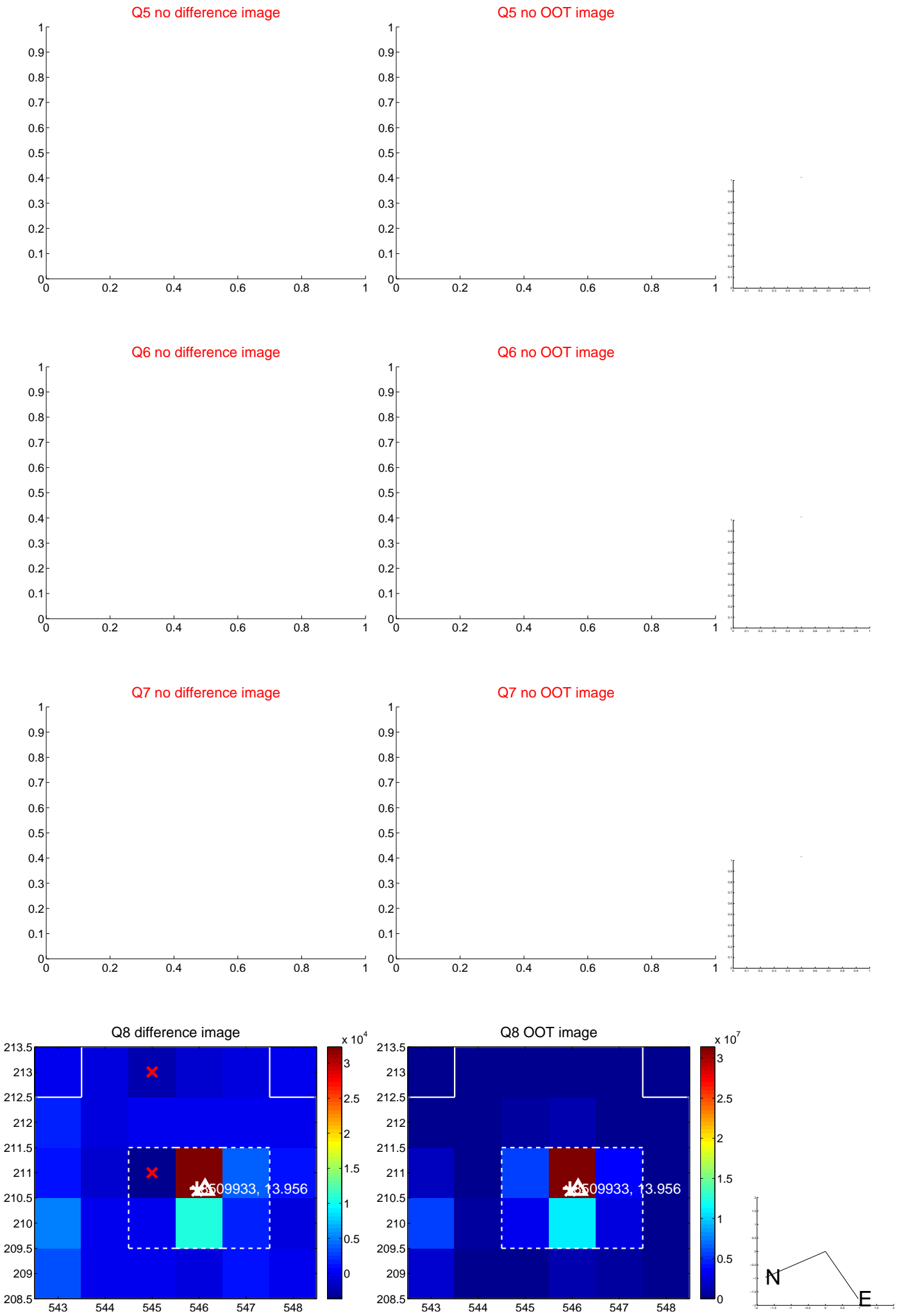
Q4 no difference image



Q4 no OOT image



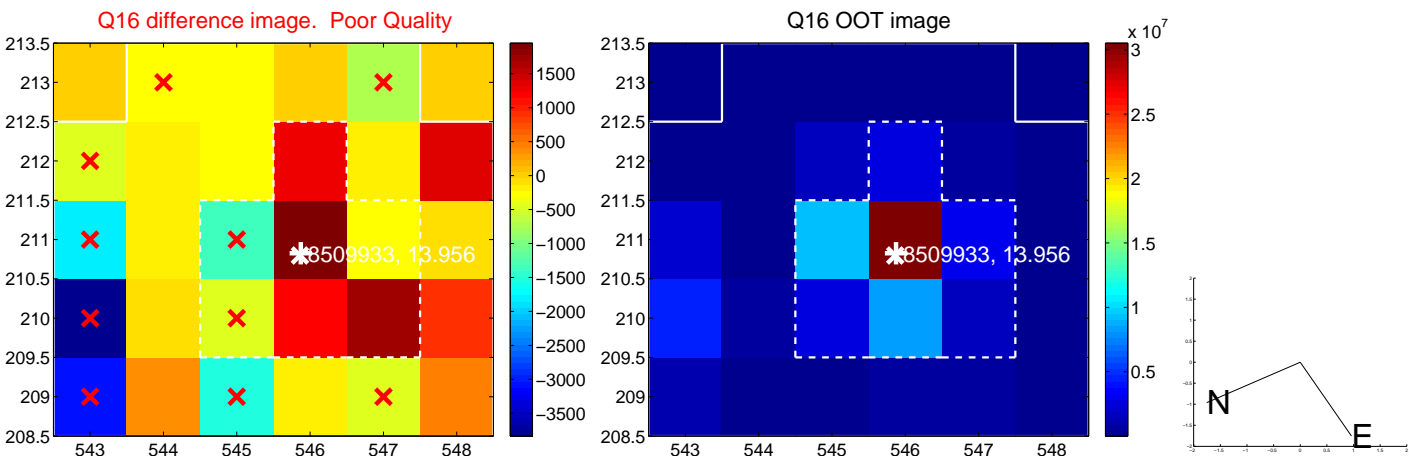
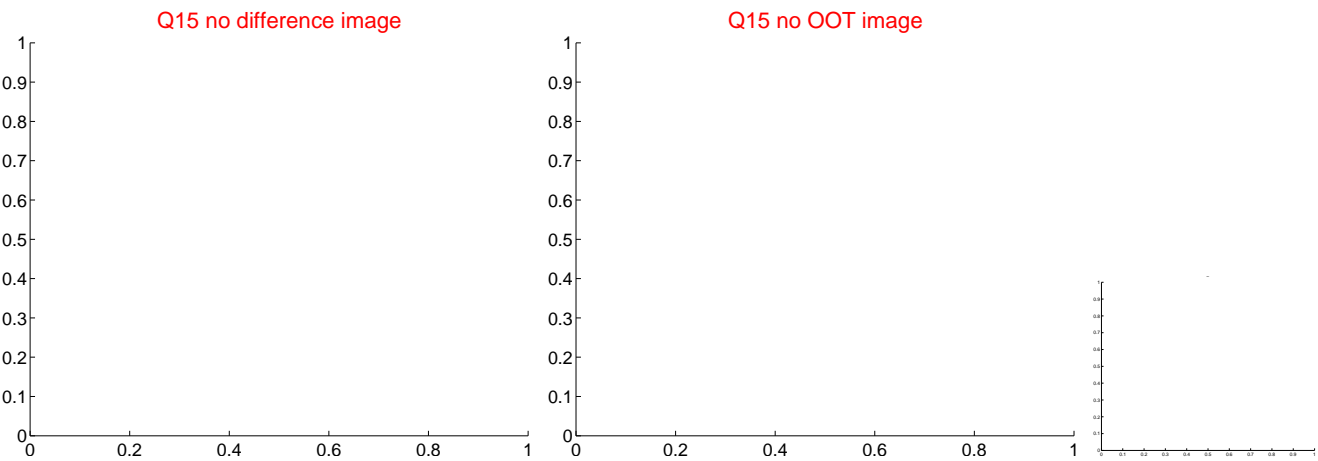
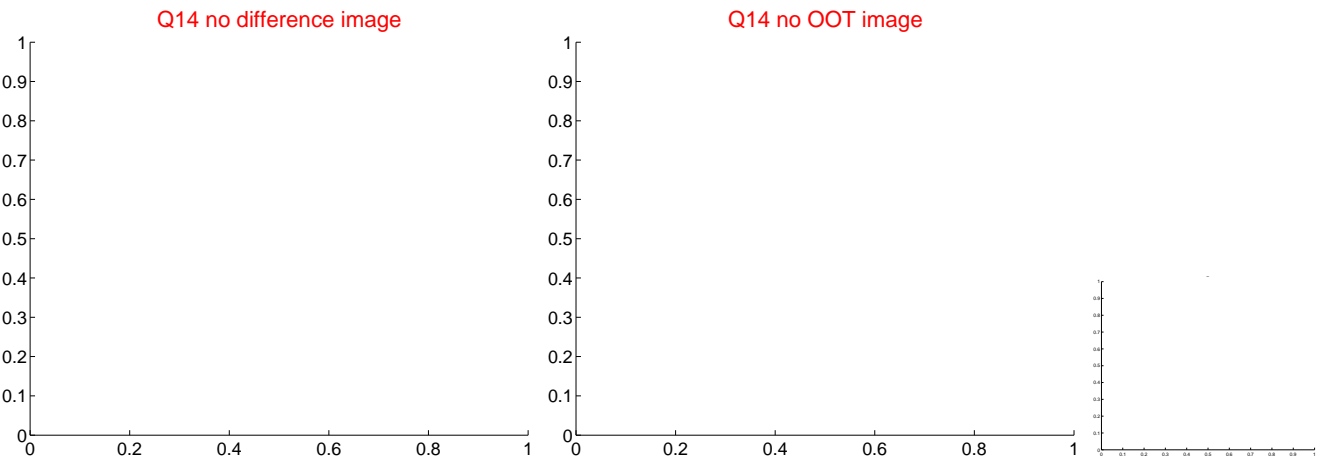
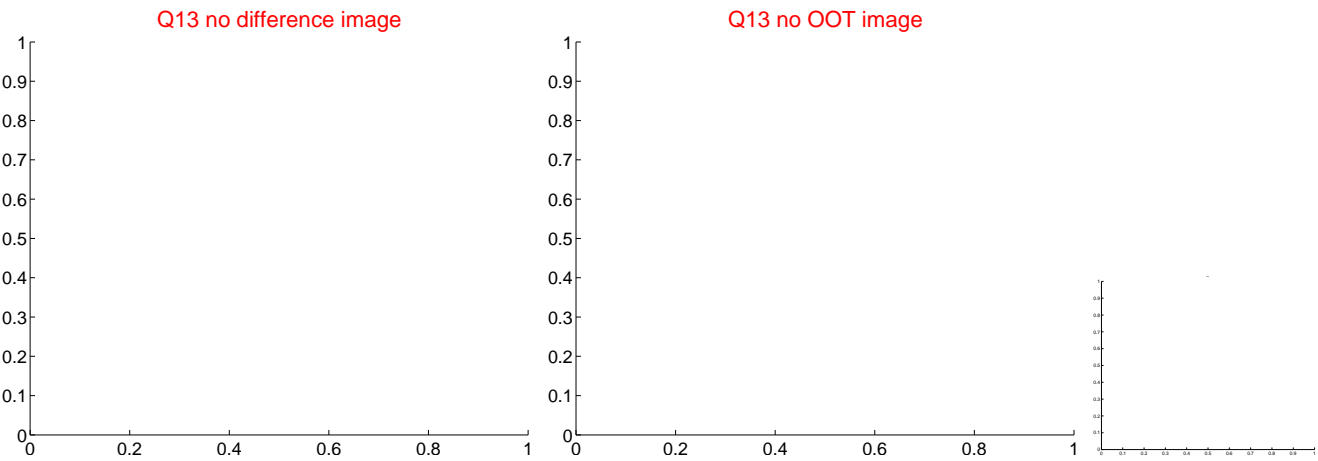
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



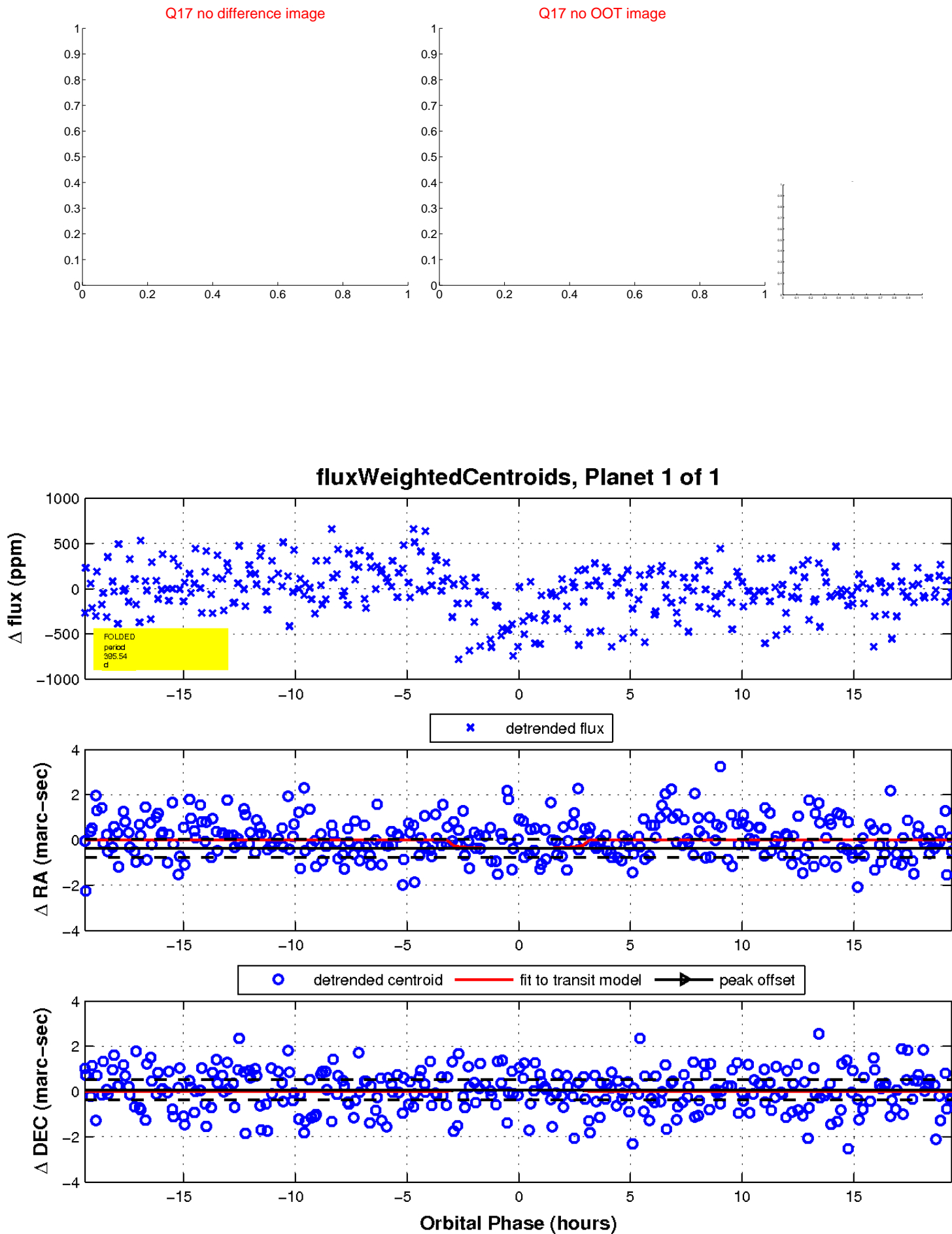
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

