

KIC 010813078

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})
010813078-01	OBS	5831.01	10.552234	132.650625	853.0	3.085	9.5	10.2	0.58	4031	2.05	13.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010813078-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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 010813078-01

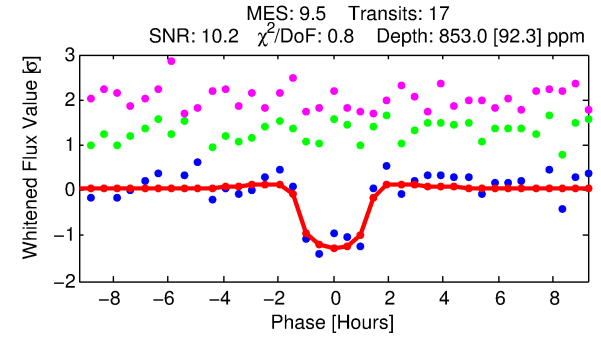
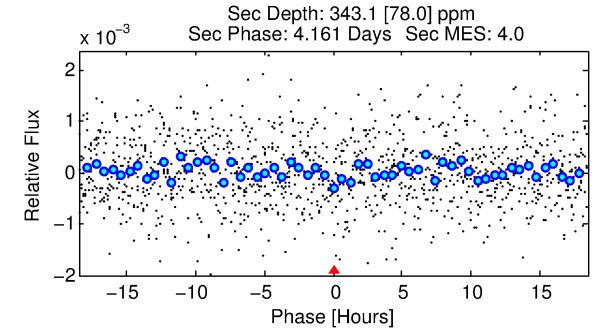
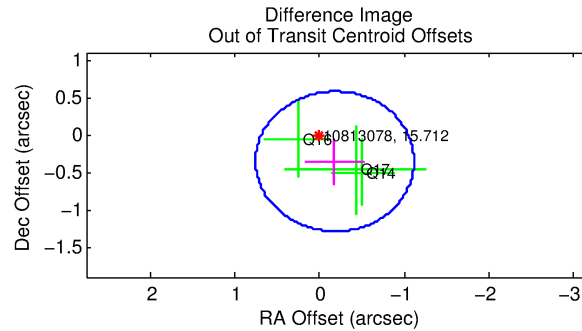
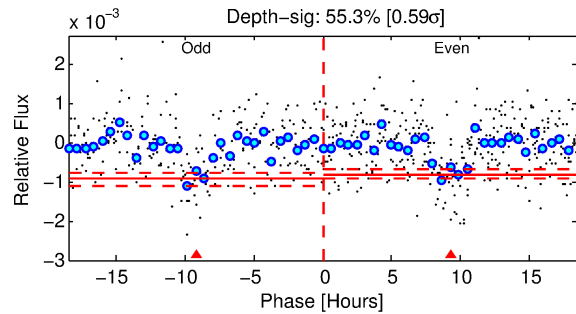
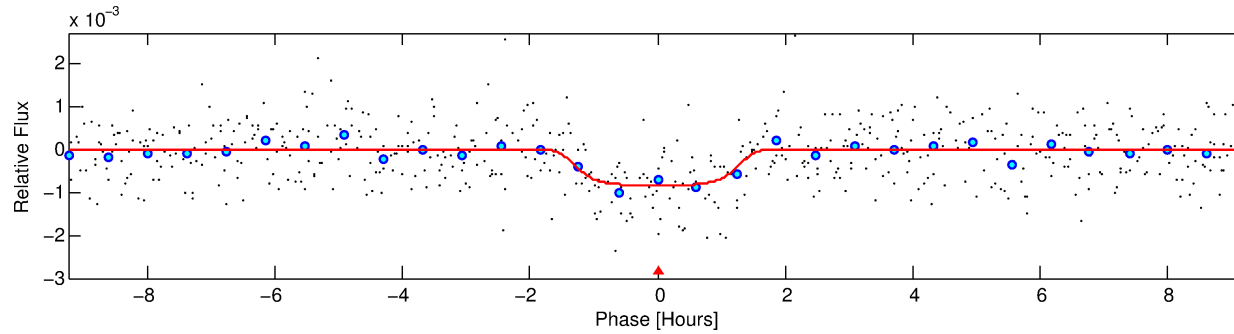
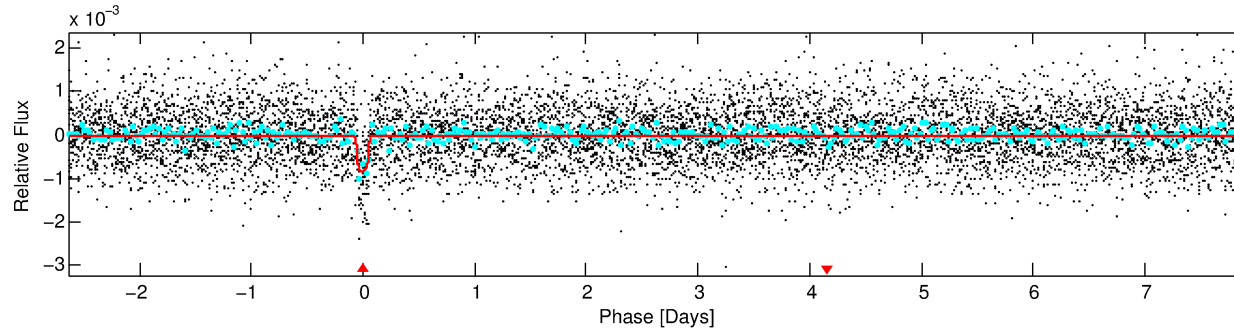
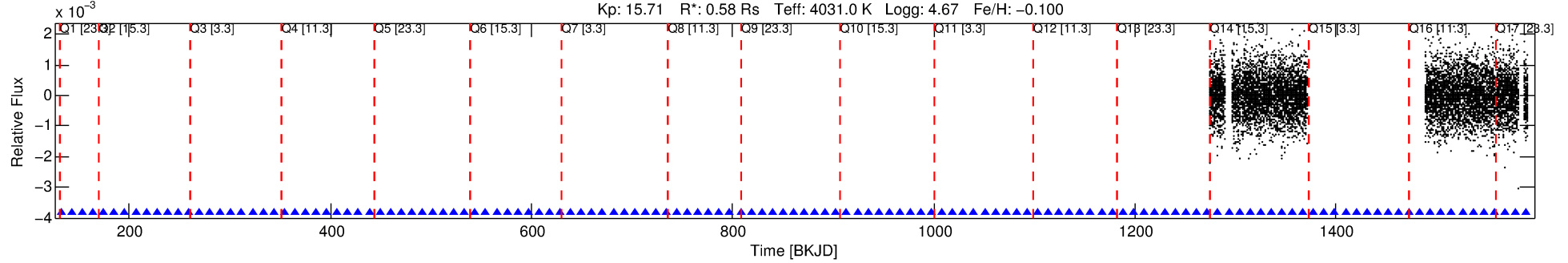
No Significant Match Found

DV One-Page Summary

KIC: 10813078 Candidate: 1 of 1 Period: 10.552 d

KOI: K05831.01 Corr: 0.940

Kp: 15.71 R*: 0.58 Rs Teff: 4031.0 K Logg: 4.67 Fe/H: -0.100



DV Fit Results:

Period = 10.55223 [0.00014] d
Epoch = 132.6506 [0.0154] BKJD
Rp/R* = 0.0322 [0.0103]
a/R* = 13.36 [17.85]
b = 0.90 [0.30]
Seff = 13.15 [2.67]
Teq = 486 [25] K
Rp = 2.05 [0.71] Re
a = 0.0785 [0.0079] AU
Ag = 275.76 [191.00] [1.44σ]
Teff = 3059 [532] K [4.83σ]

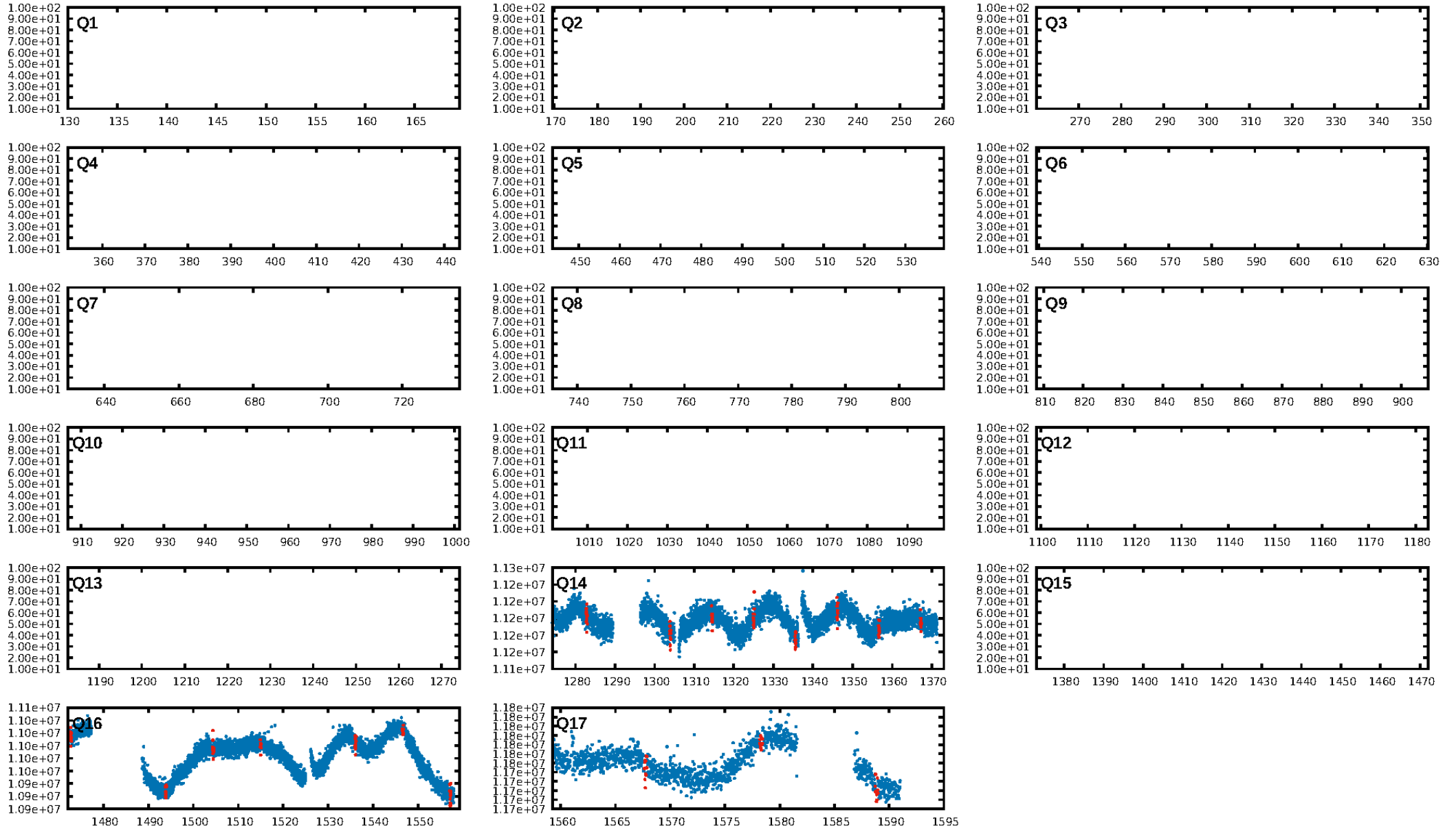
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.16e-21
RollingBand-fgt: 1.00 [14/14]
GhostDiagnostic-chr: 2.208
Centroid-sig: 13.3%
Centroid-so: 1.741 arcsec [1.12σ]
OotOffset-rm: 0.401 arcsec [1.29σ]
KicOffset-rm: 0.371 arcsec [1.18σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

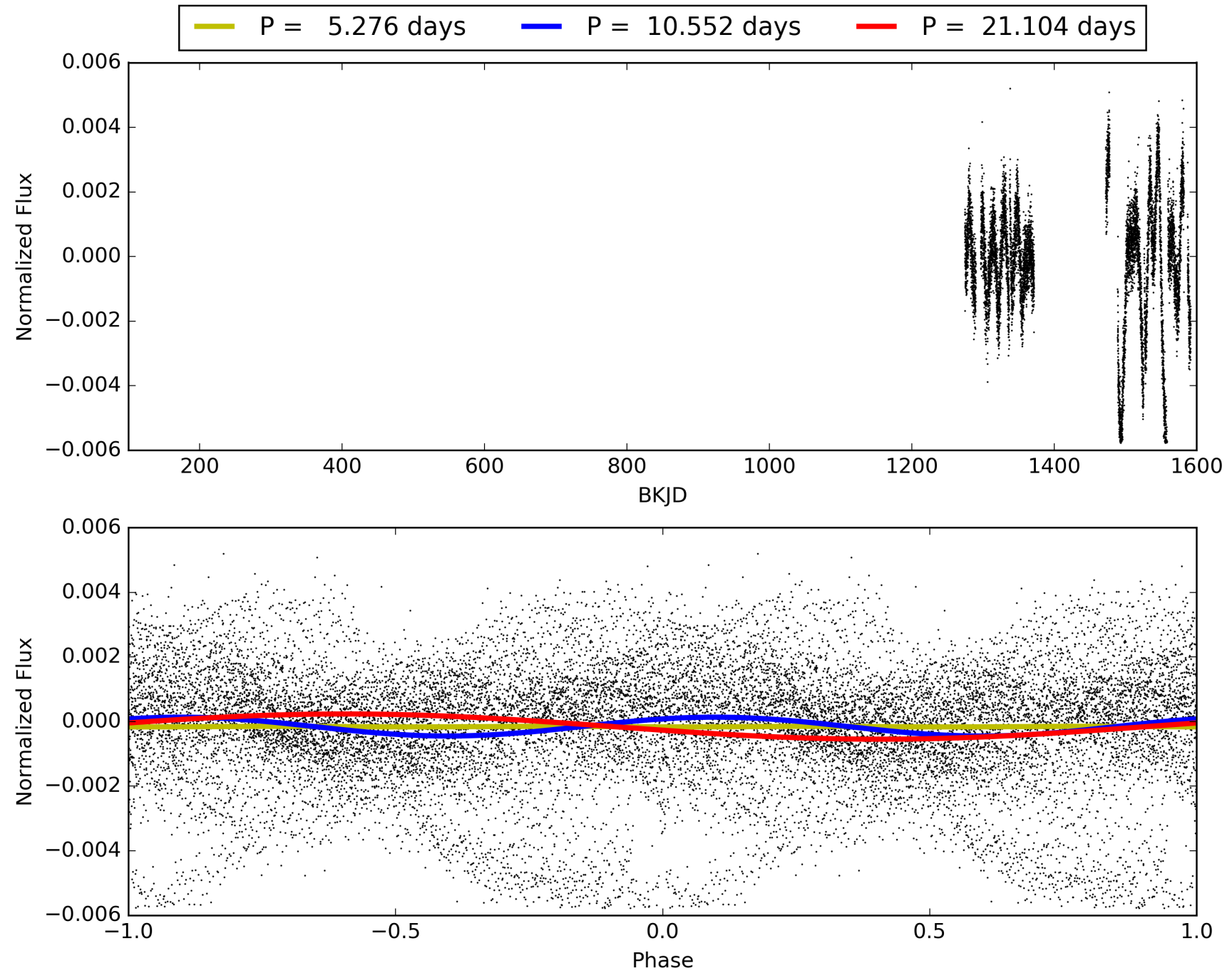
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:23:44 Z

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

TCE 010813078-01, PDC Light Curves

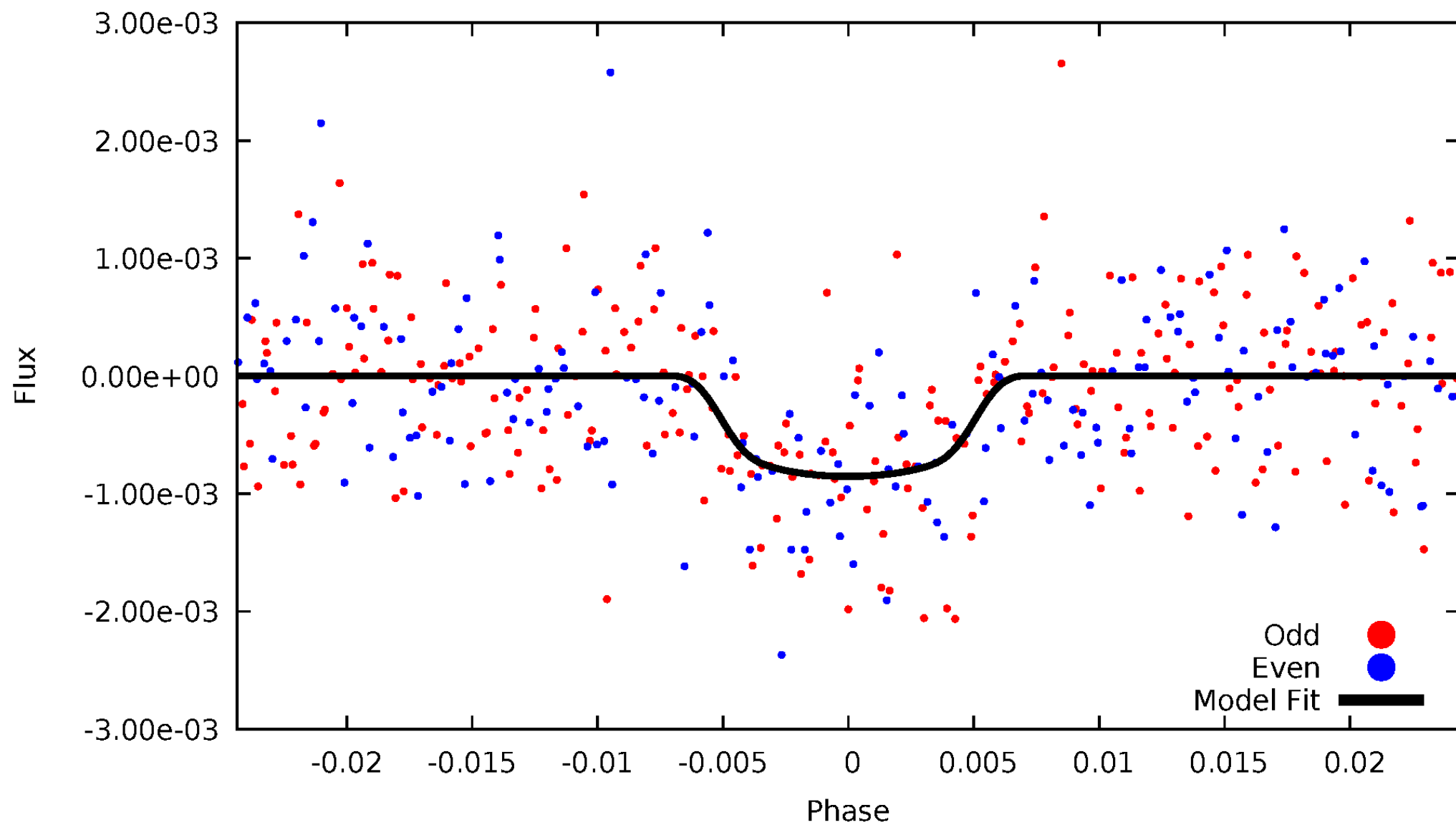


TCE 010813078-01



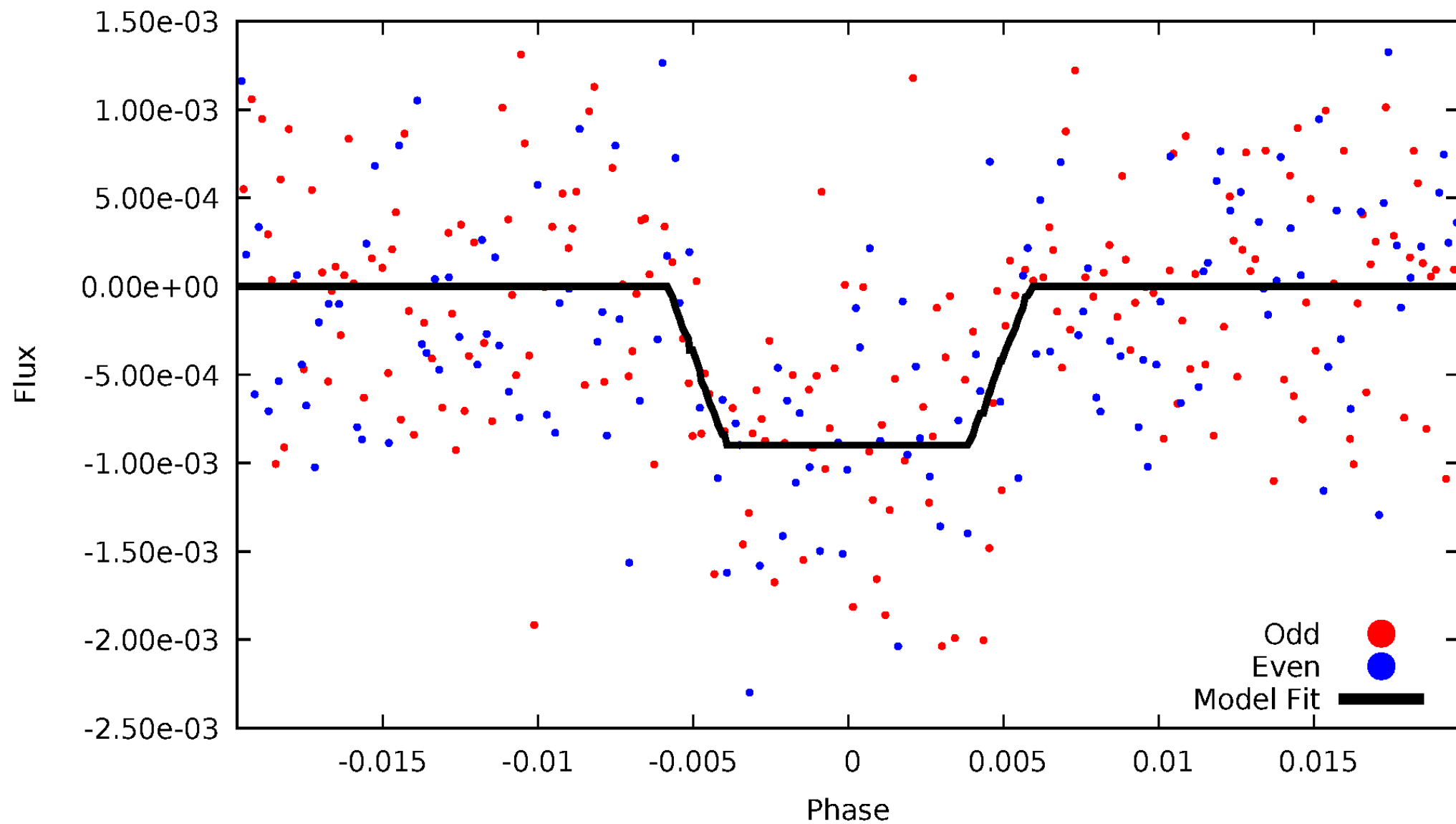
DV Odd/Even

TCE 010813078-01

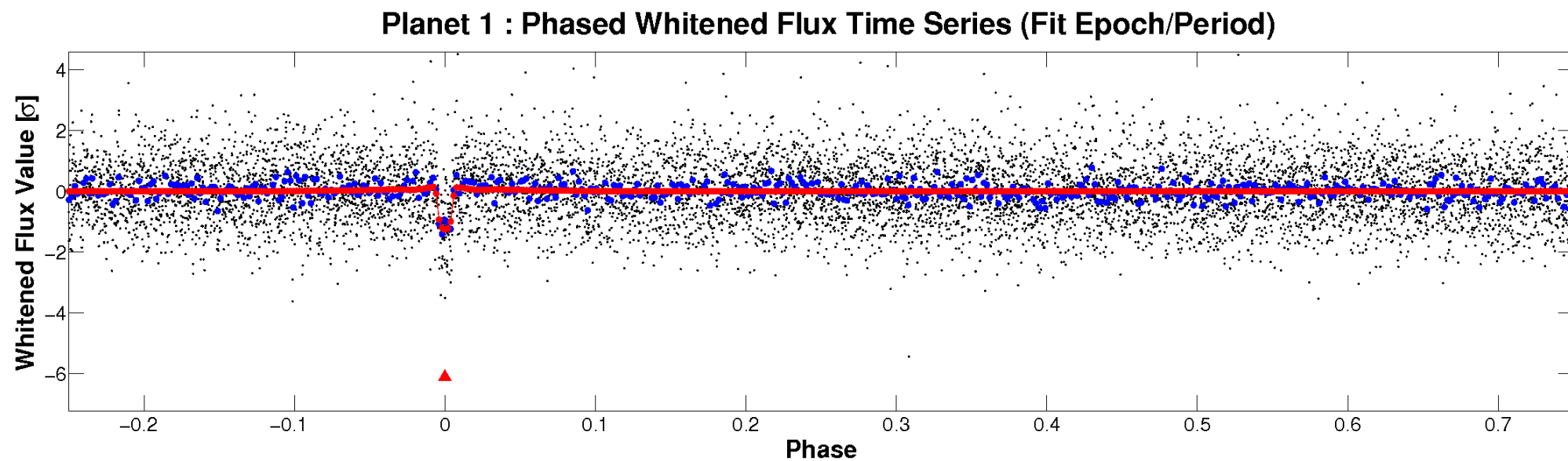
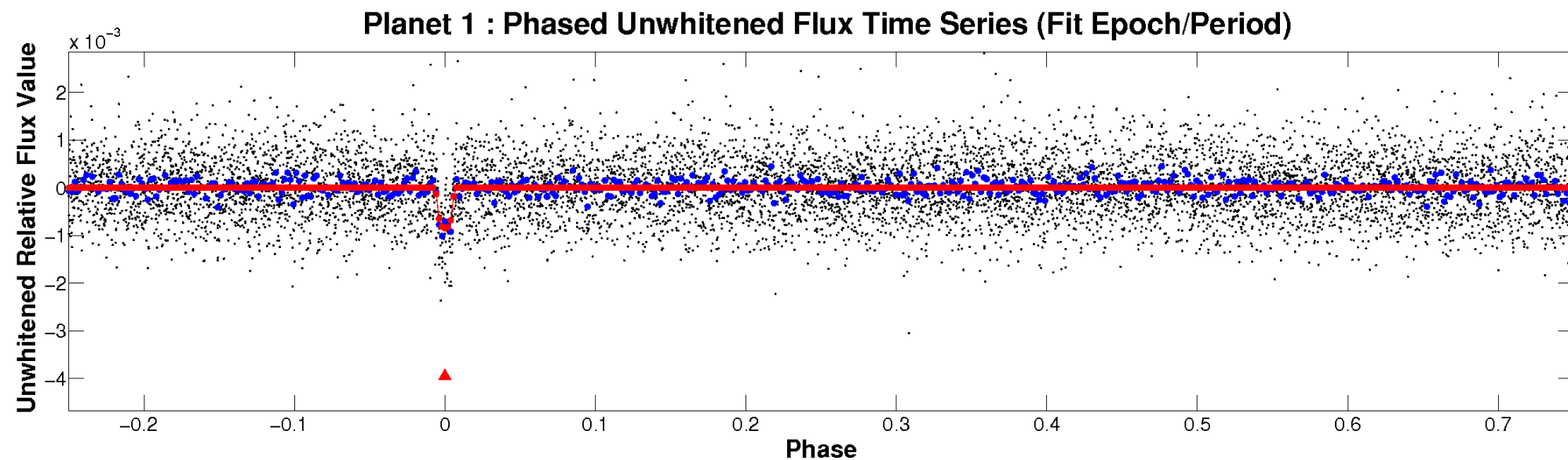


ALT Odd/Even

TCE 010813078-01



Non-Whitened Vs. Whitened Light Curve



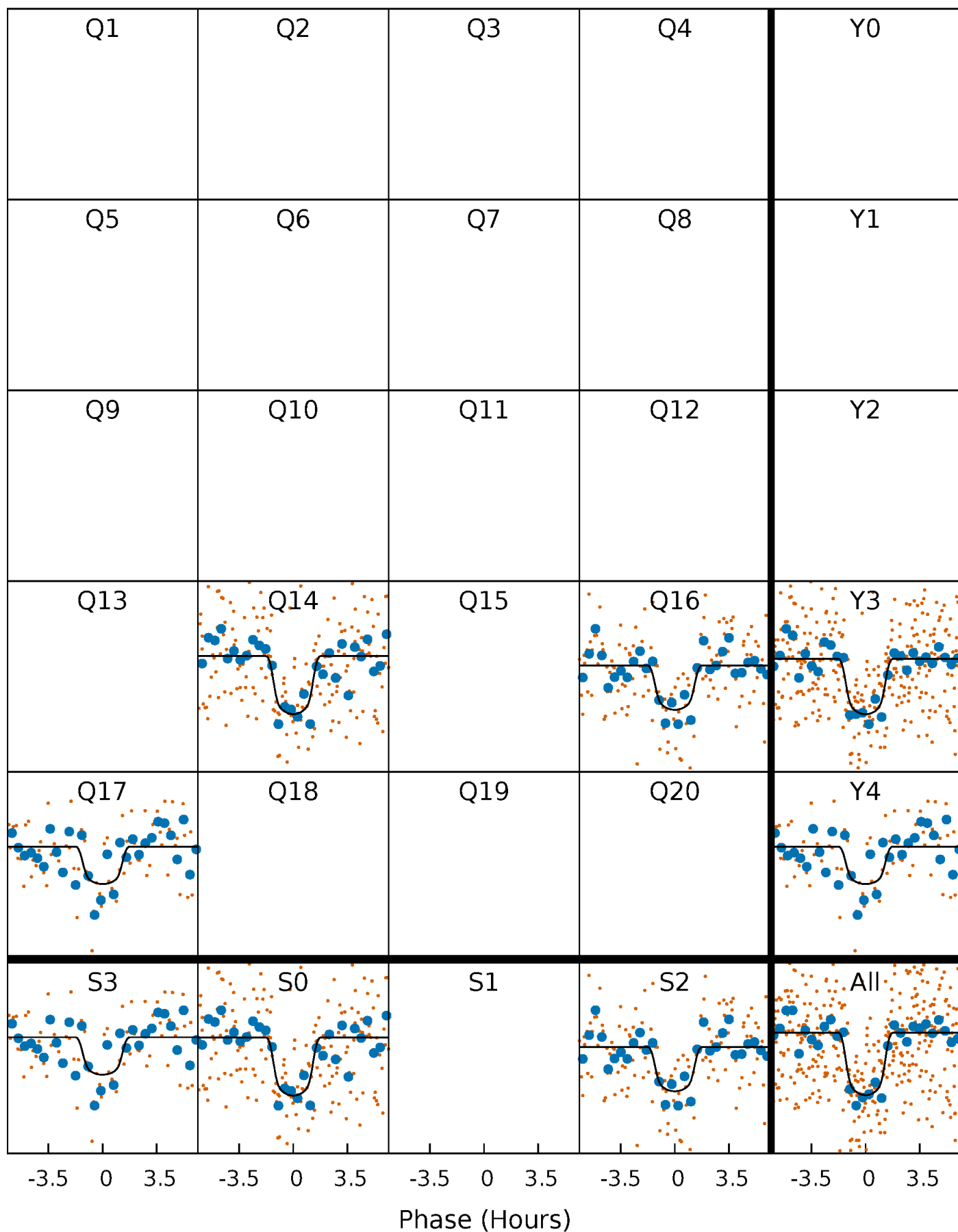
PDC Quarter-Phased Transit Curves

TCE 010813078-01 P= 10.552234 Days $T_0=132.650625$ (BKJD)



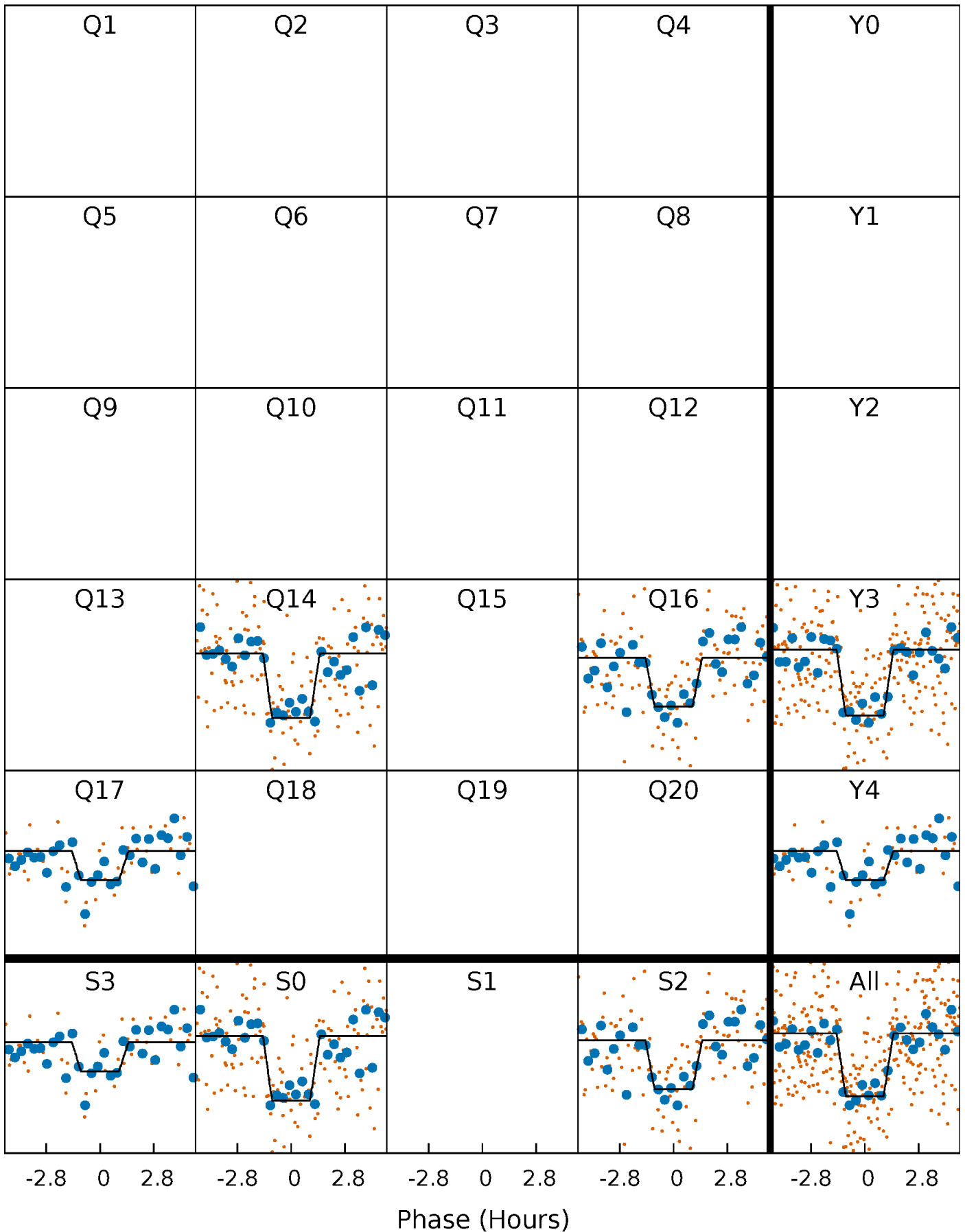
DV Quarter-Phased Transit Curves

TCE 010813078-01 P= 10.552234 Days $T_0=132.650625$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

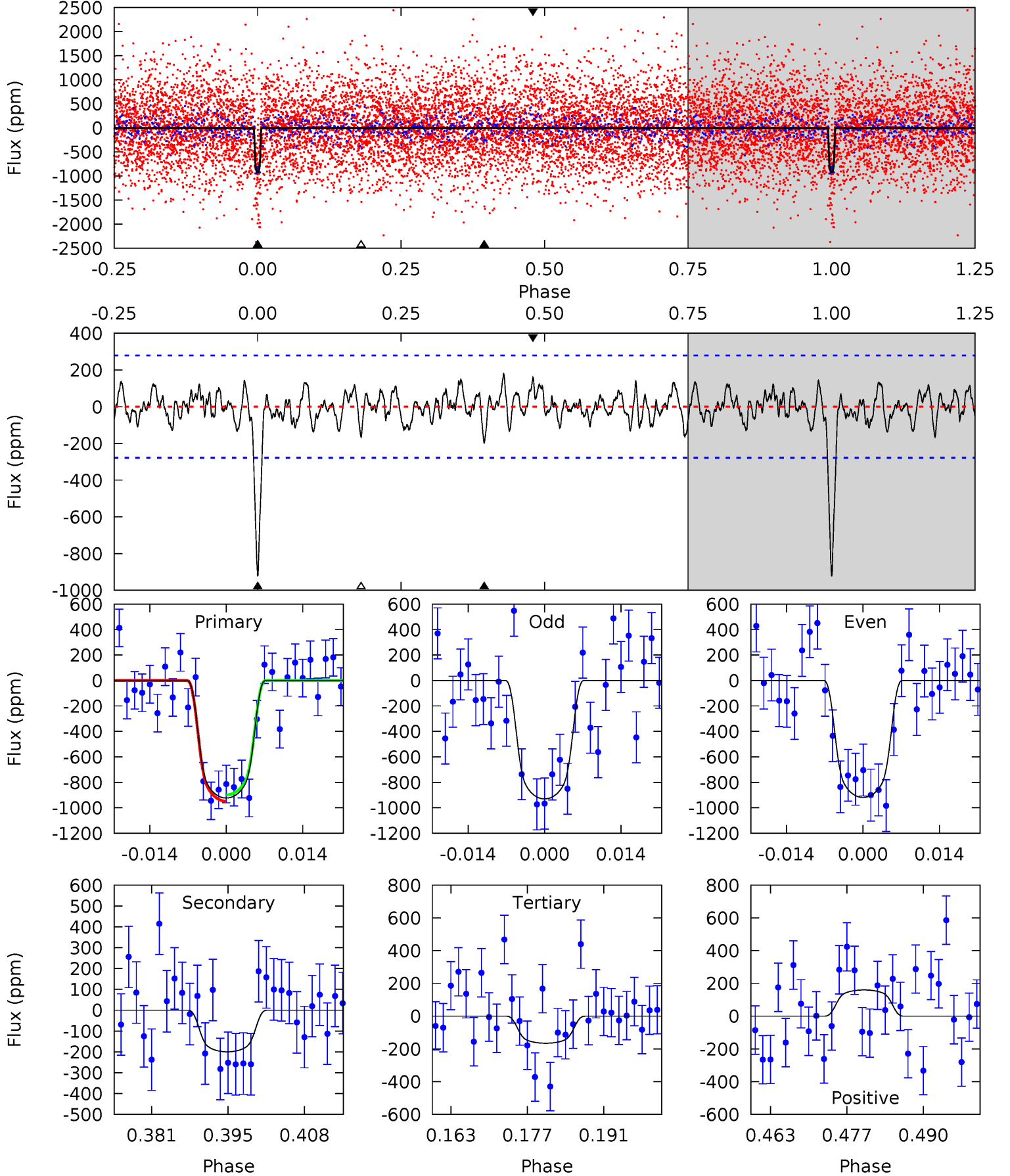
TCE 010813078-01 P= 10.552495 Days $T_0=132.620627$ (BKJD)



DV Model-Shift Uniqueness Test

010813078-01, $P = 10.552234$ Days, $E = 132.650625$ Days

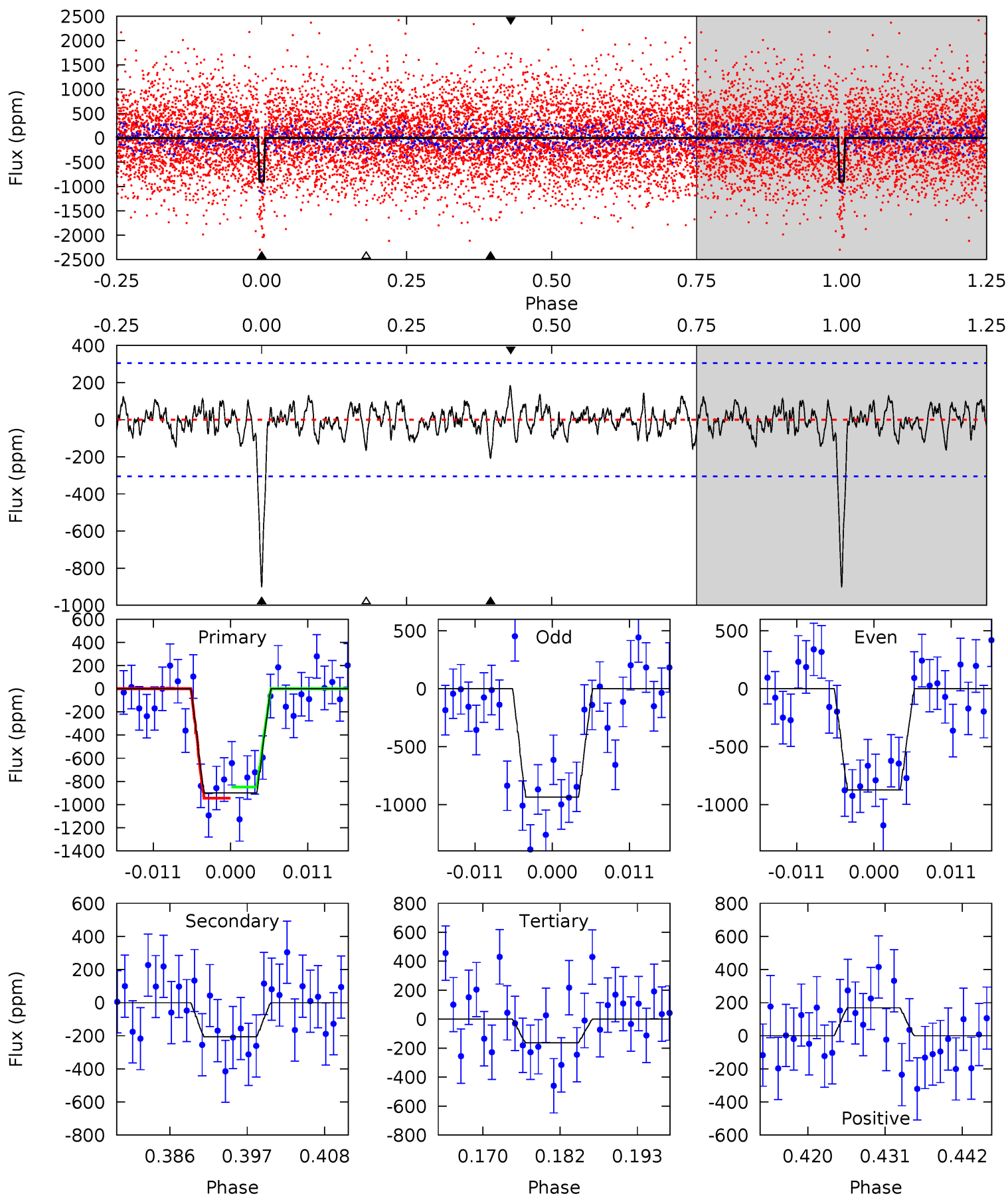
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	3.56	2.95	2.85	4.97	2.47	1.13	13.5	13.6	0.61	0.71	0.10	0.96	0.16	0.45



Alt Model-Shift Uniqueness Test

010813078-01, $P = 10.552495$ Days, $E = 132.620627$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	3.38	2.68	2.76	5.00	2.53	0.94	12.1	12.0	0.70	0.62	0.51	0.97	0.17	0.79



Stellar Parameters For KIC 010813078

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4031^{+139}_{-153}	$4.666^{+0.068}_{-0.023}$	$-0.100^{+0.300}_{-0.300}$	$0.585^{+0.044}_{-0.075}$	$0.578^{+0.059}_{-0.066}$	$4.079^{+1.363}_{-0.473}$
	+3%/-4%	+1%/-0%	+300%/-300%	+8%/-13%	+10%/-11%	+33%/-12%
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 010813078-01 / KOI 5831.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-200 ± 56	$2.03^{+0.62}_{-0.67}$	670^{+26}_{-29}	3092^{+426}_{-276}	166^{+225}_{-80}
Alt.	-206 ± 61	$1.89^{+0.64}_{-0.67}$	671^{+27}_{-29}	3161^{+479}_{-306}	190^{+297}_{-93}

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

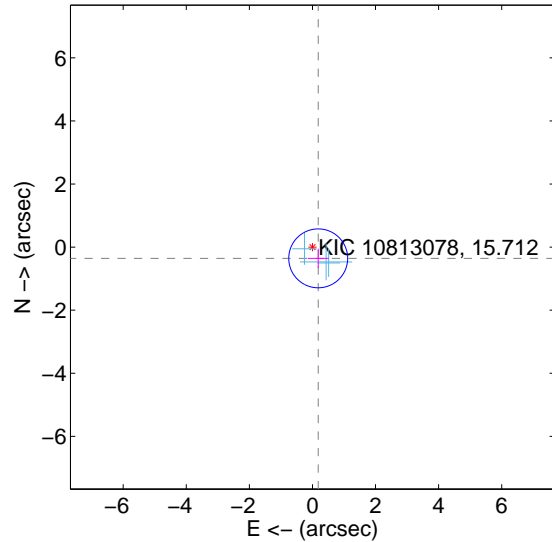
Supplemental centroid analysis for 010813078-01. Kepler magnitude: 15.71. Transit SNR 10.20

There are 3 quarters with good PRF difference image offsets

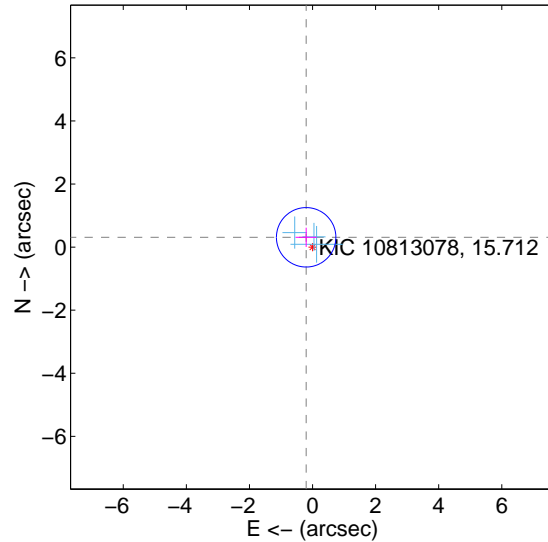
The direct PRF centroid is offset from the target star catalog position by about 0.64 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.401 ± 0.311	1.29	-0.183 ± 0.335	-0.357 ± 0.305
PRF-fit source offset from KIC position	0.371 ± 0.314	1.18	0.202 ± 0.335	0.310 ± 0.305
photometric centroid source offset	1.74 ± 1.55	1.12	1.70 ± 1.56	-0.37 ± 1.38

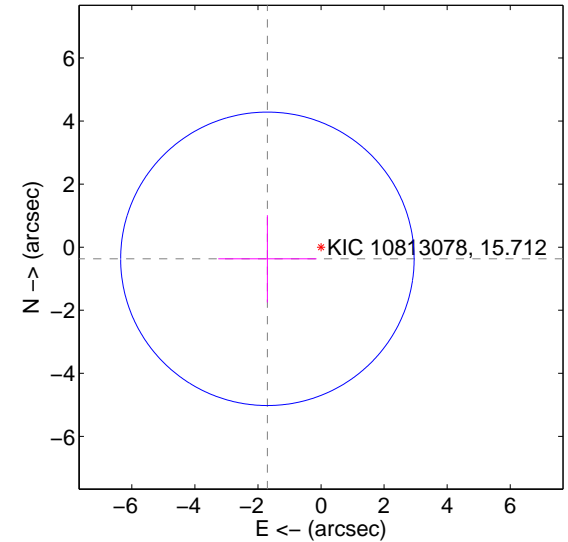
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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

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



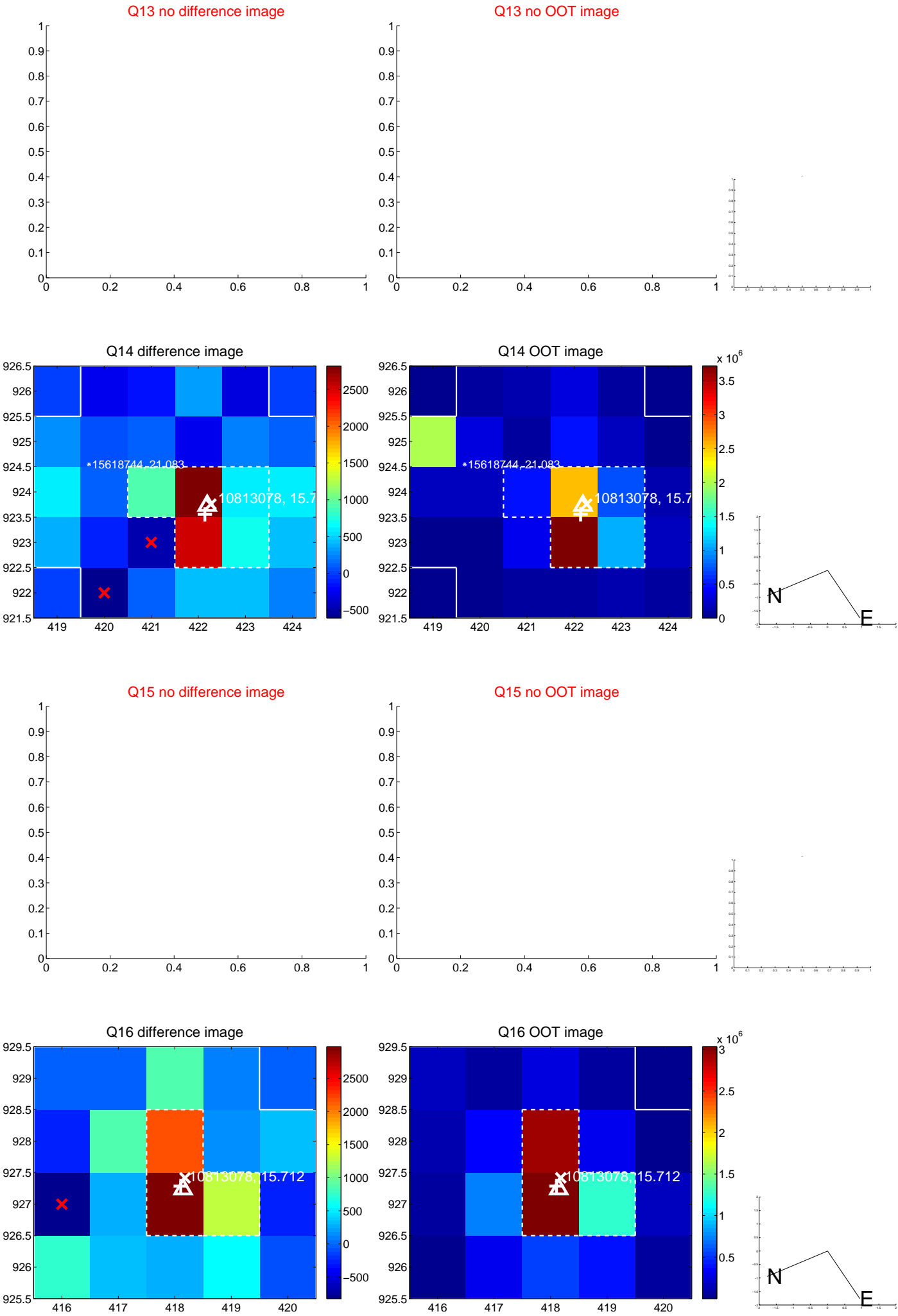
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



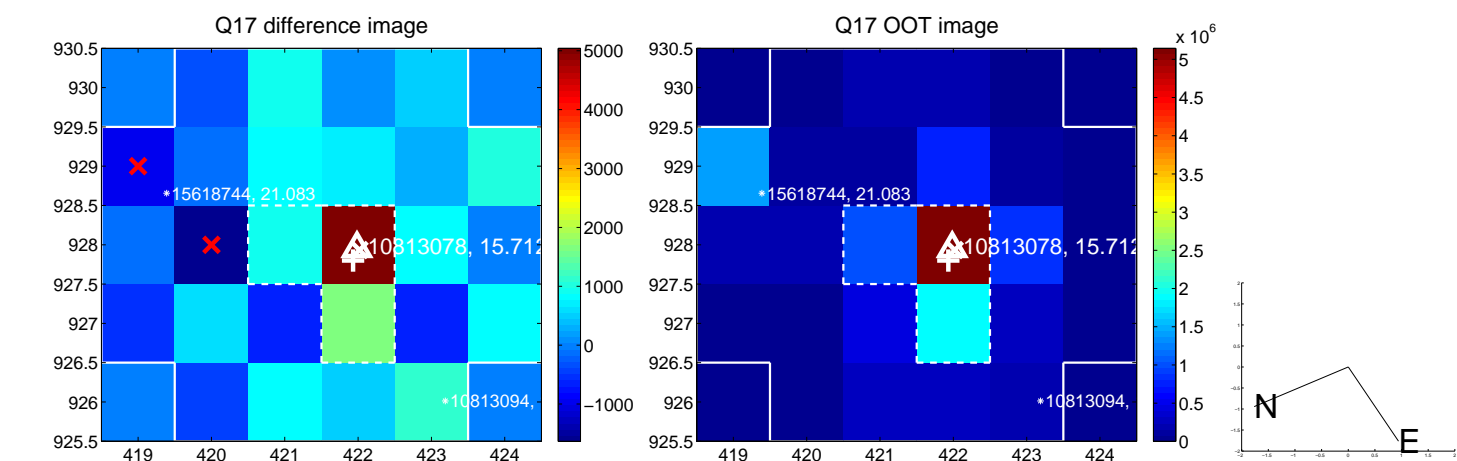
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



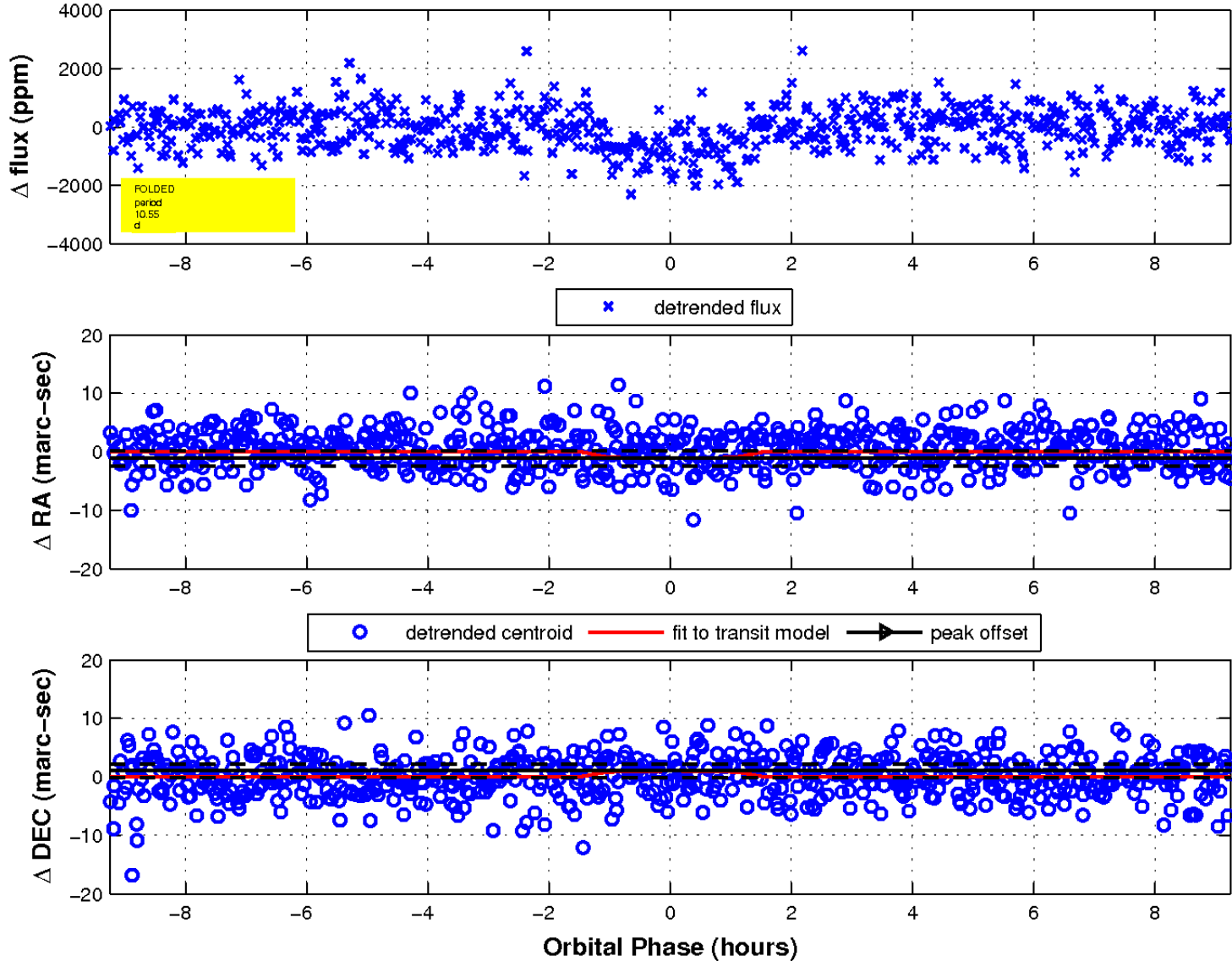
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

