

KIC 009033076

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})
009033076-01	OBS	No	23.222909	151.095213	967.3	4.786	12.6	7.1	2.21	5069	7.11	126.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009033076-01	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—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.

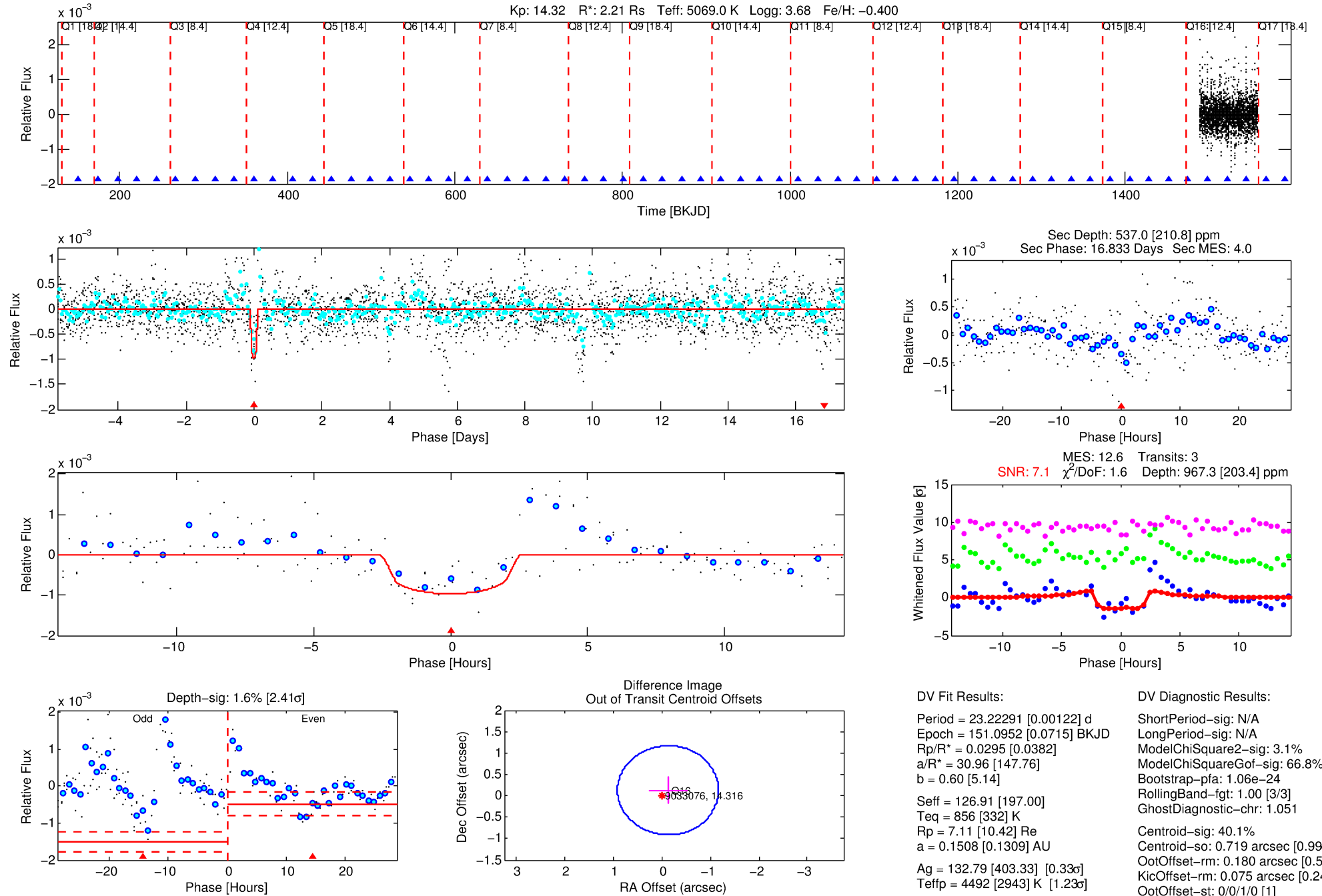
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009033076-01

No Significant Match Found

DV One-Page Summary

KIC: 9033076 Candidate: 1 of 1 Period: 23.223 d



DV Fit Results:

Period = 23.22291 [0.00122] d
Epoch = 151.0952 [0.0715] BKJD
Rp/R* = 0.0295 [0.0382]
a/R* = 30.96 [147.76]
b = 0.60 [5.14]
Seff = 126.91 [197.00]
Teq = 856 [332] K
Rp = 7.11 [10.42] Re
a = 0.1508 [0.1309] AU
Ag = 132.79 [403.33] [0.33 σ]
Teffp = 4492 [2943] K [1.23 σ]

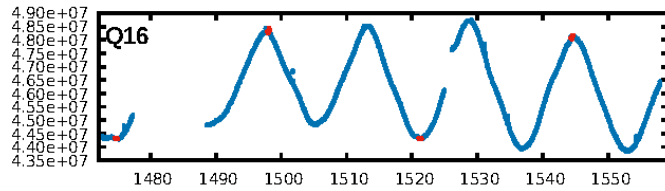
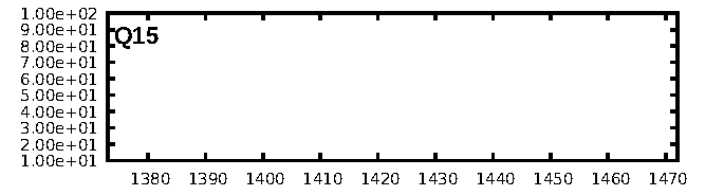
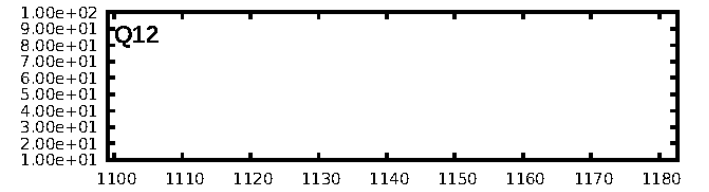
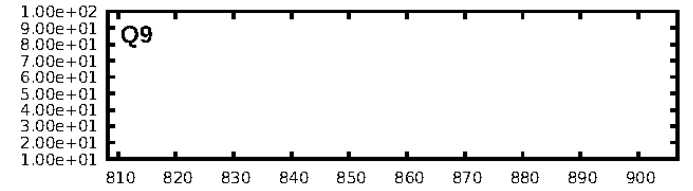
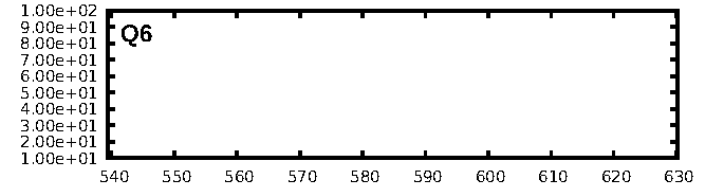
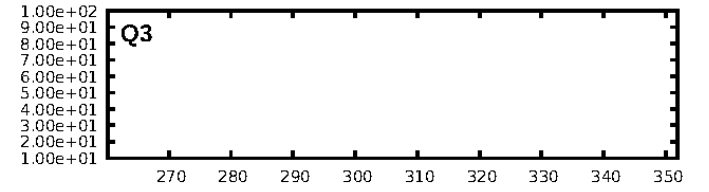
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.1%
ModelChiSquareGof-sig: 66.8%
Bootstrap-pfa: 1.06e-24
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.051
Centroid-sig: 40.1%
Centroid-so: 0.719 arcsec [0.99 σ]
OotOffset-rm: 0.180 arcsec [0.52 σ]
KicOffset-rm: 0.075 arcsec [0.24 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 [1/1]

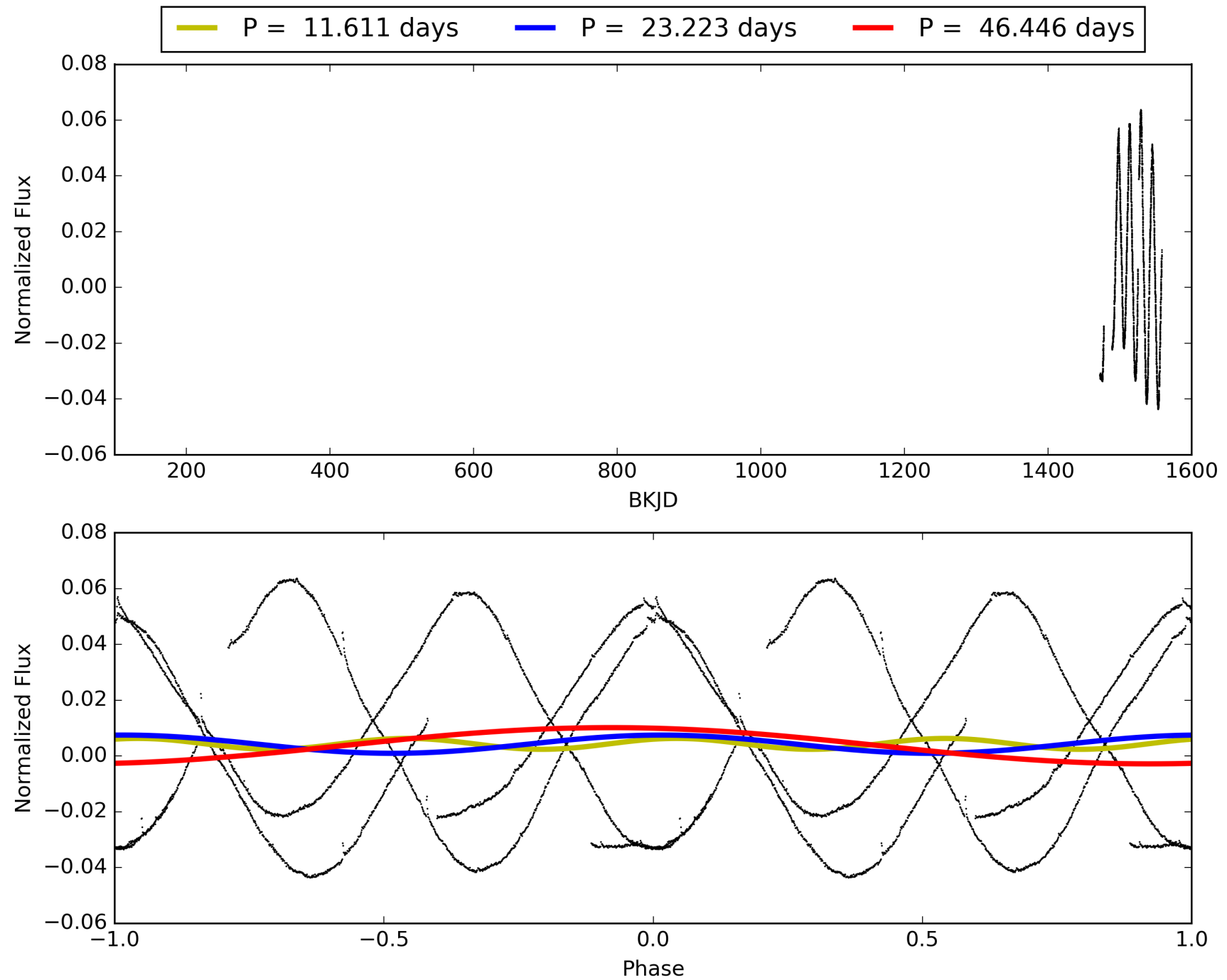
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:06:13 Z

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

TCE 009033076-01, PDC Light Curves

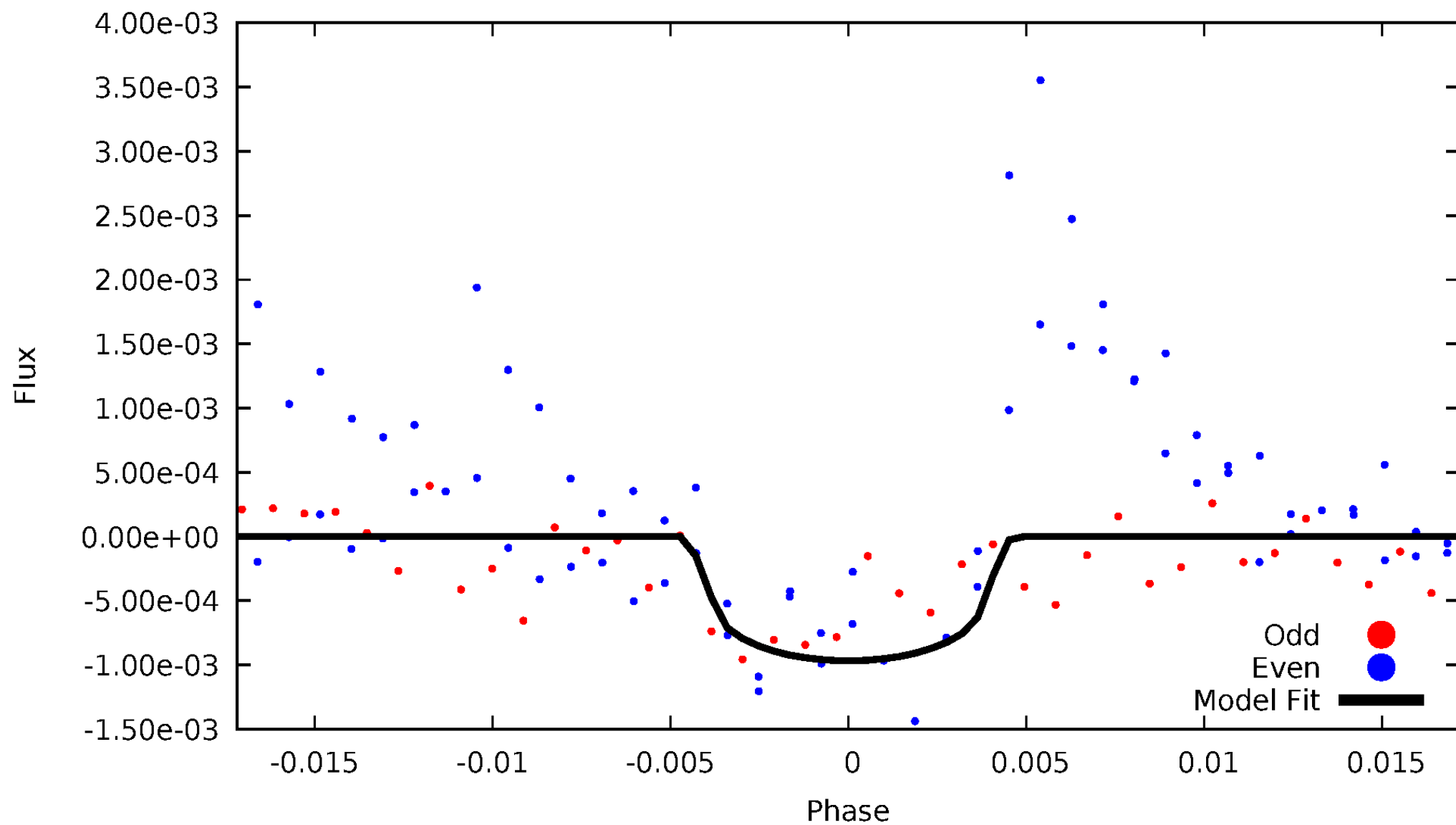


TCE 009033076-01



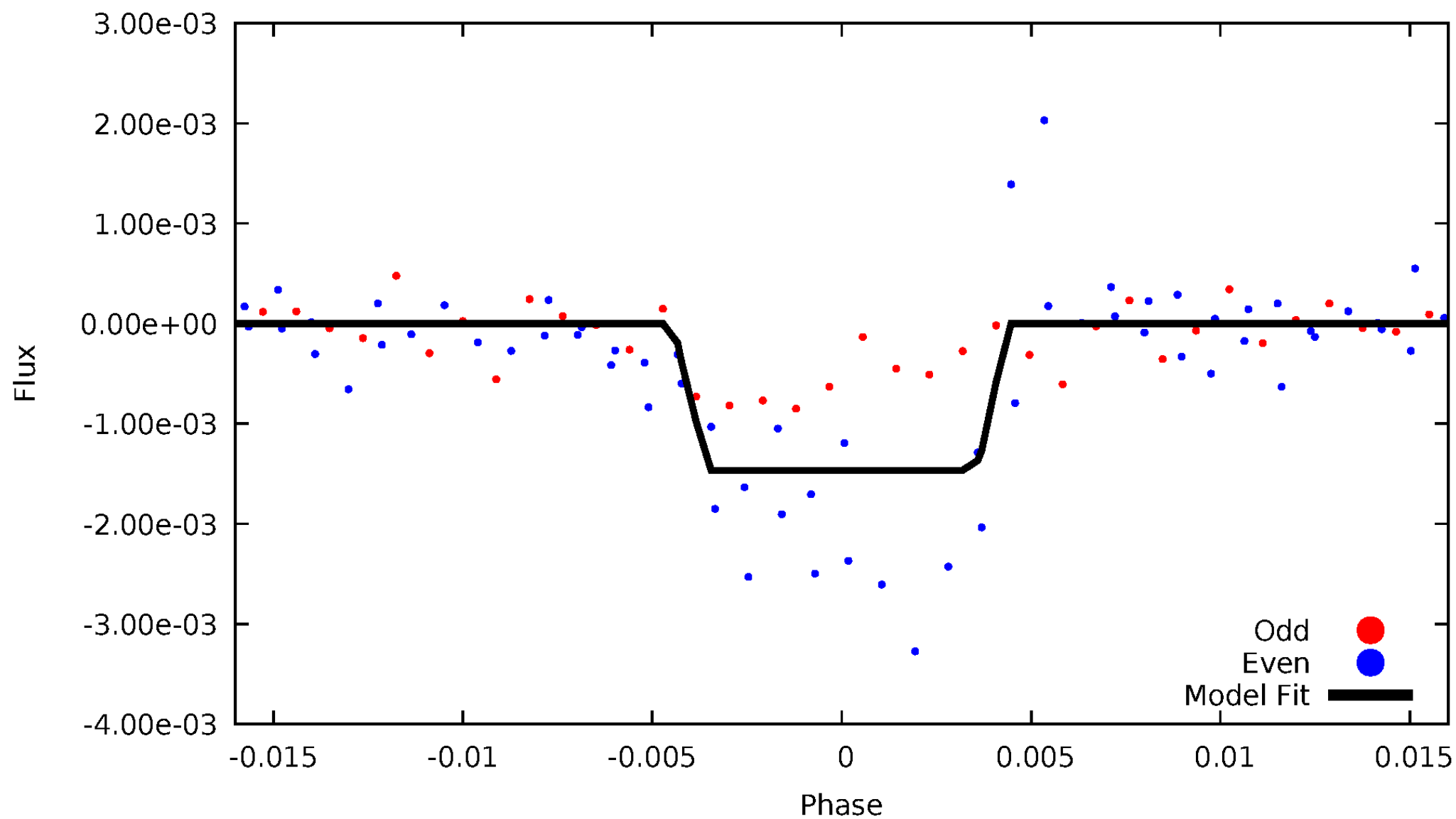
DV Odd/Even

TCE 009033076-01



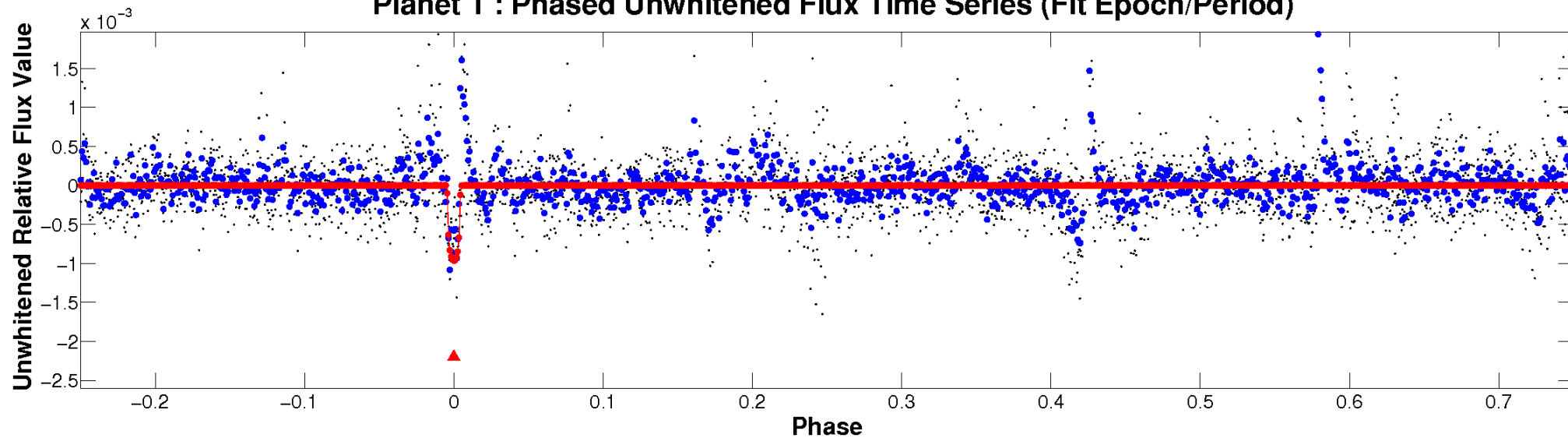
ALT Odd/Even

TCE 009033076-01

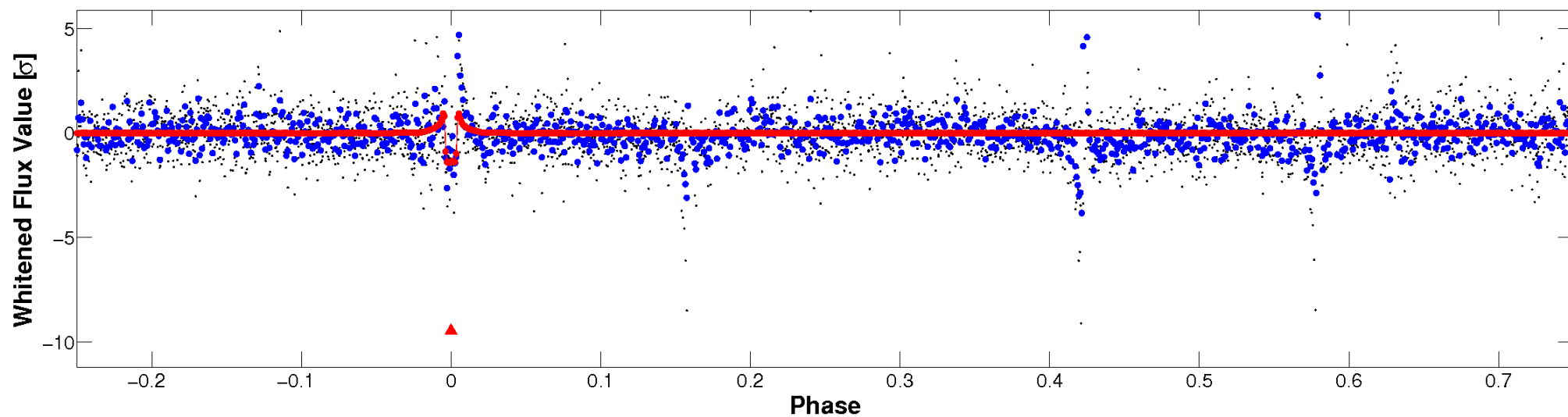


Non-Whitened Vs. Whitened Light Curve

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

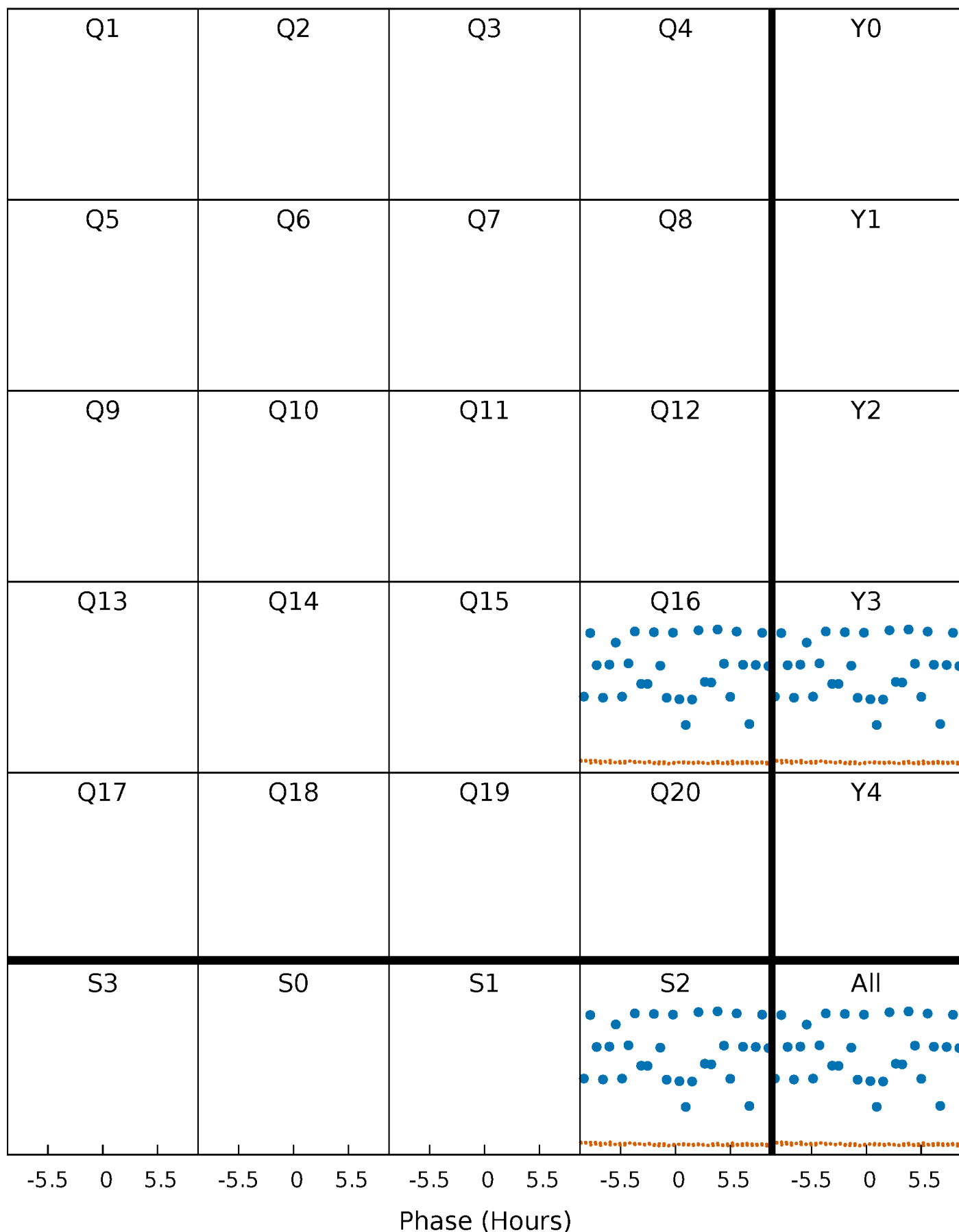


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



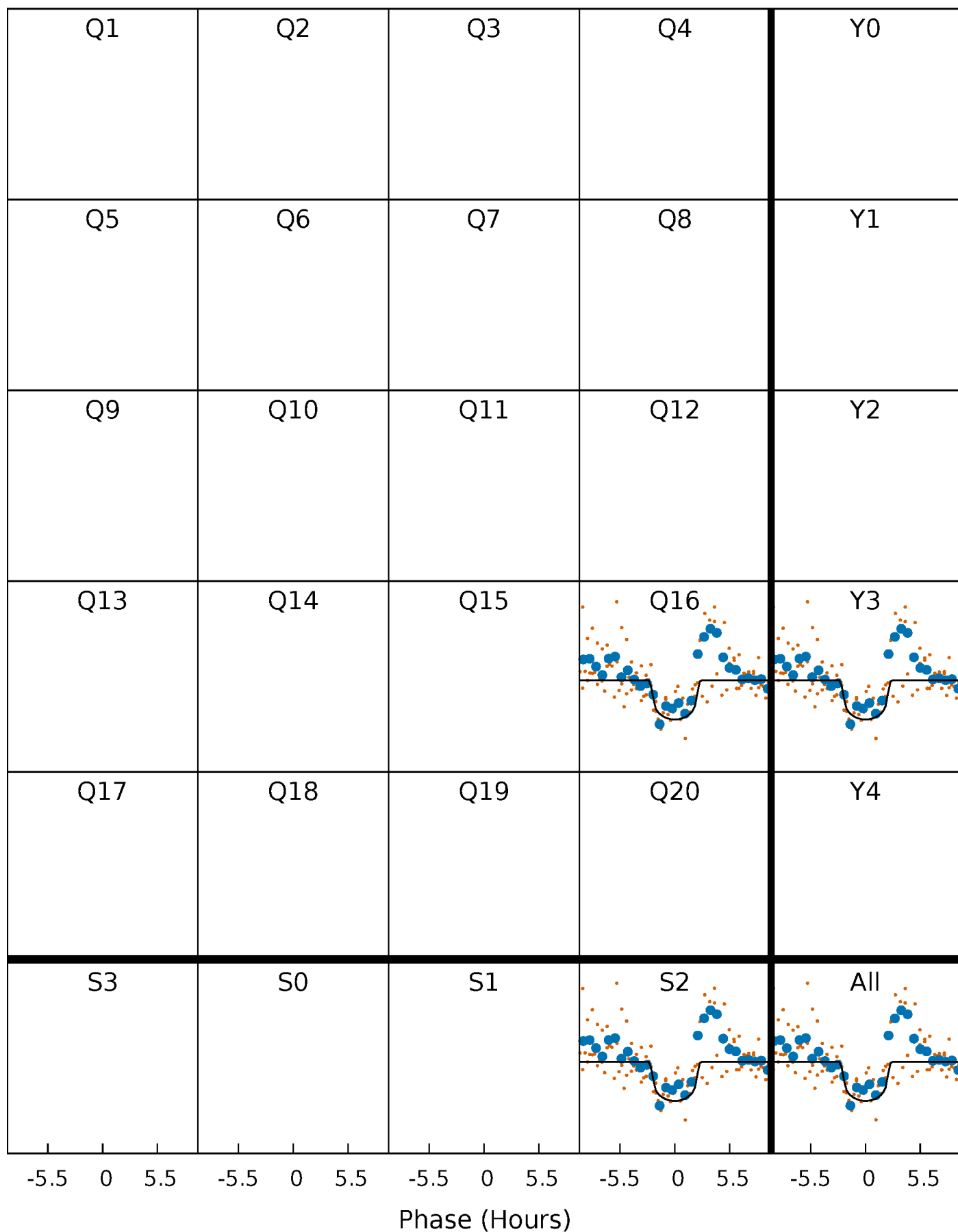
PDC Quarter-Phased Transit Curves

TCE 009033076-01 P= 23.222909 Days $T_0=151.095213$ (BKJD)



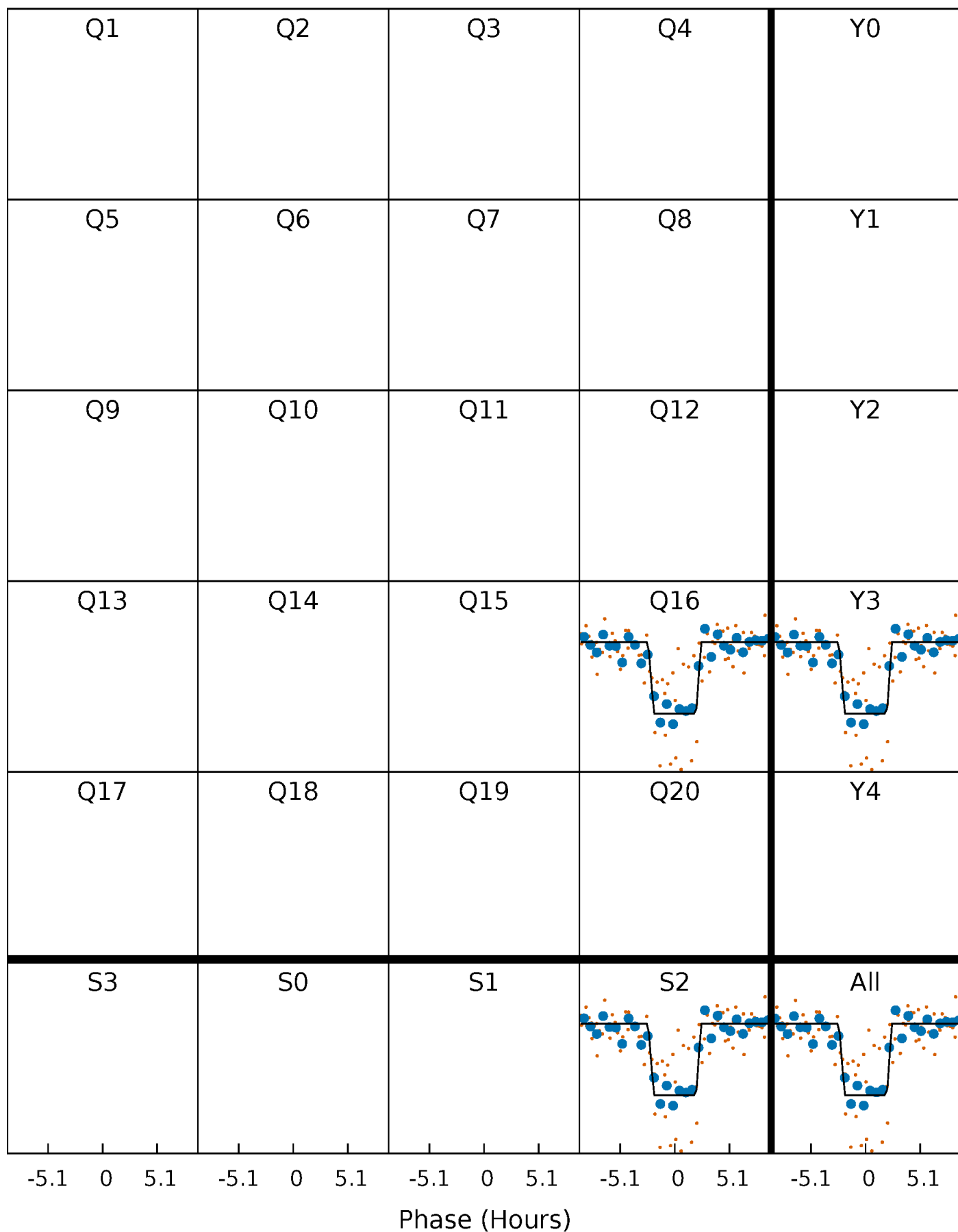
DV Quarter-Phased Transit Curves

TCE 009033076-01 P= 23.222909 Days $T_0=151.095213$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

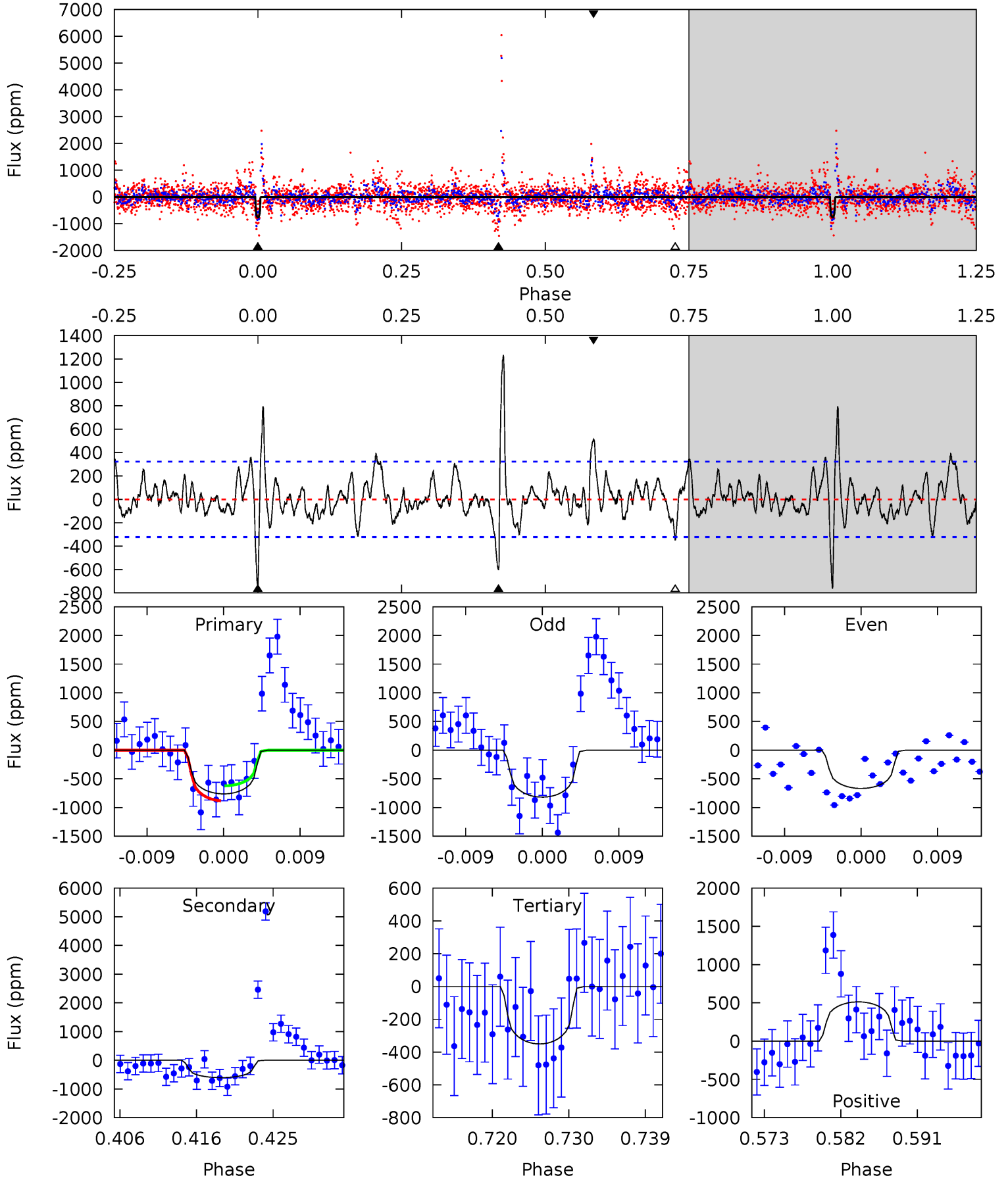
TCE 009033076-01 P= 23.221586 Days $T_0=151.173132$ (BKJD)



DV Model-Shift Uniqueness Test

009033076-01, P = 23.222909 Days, E = 151.095213 Days

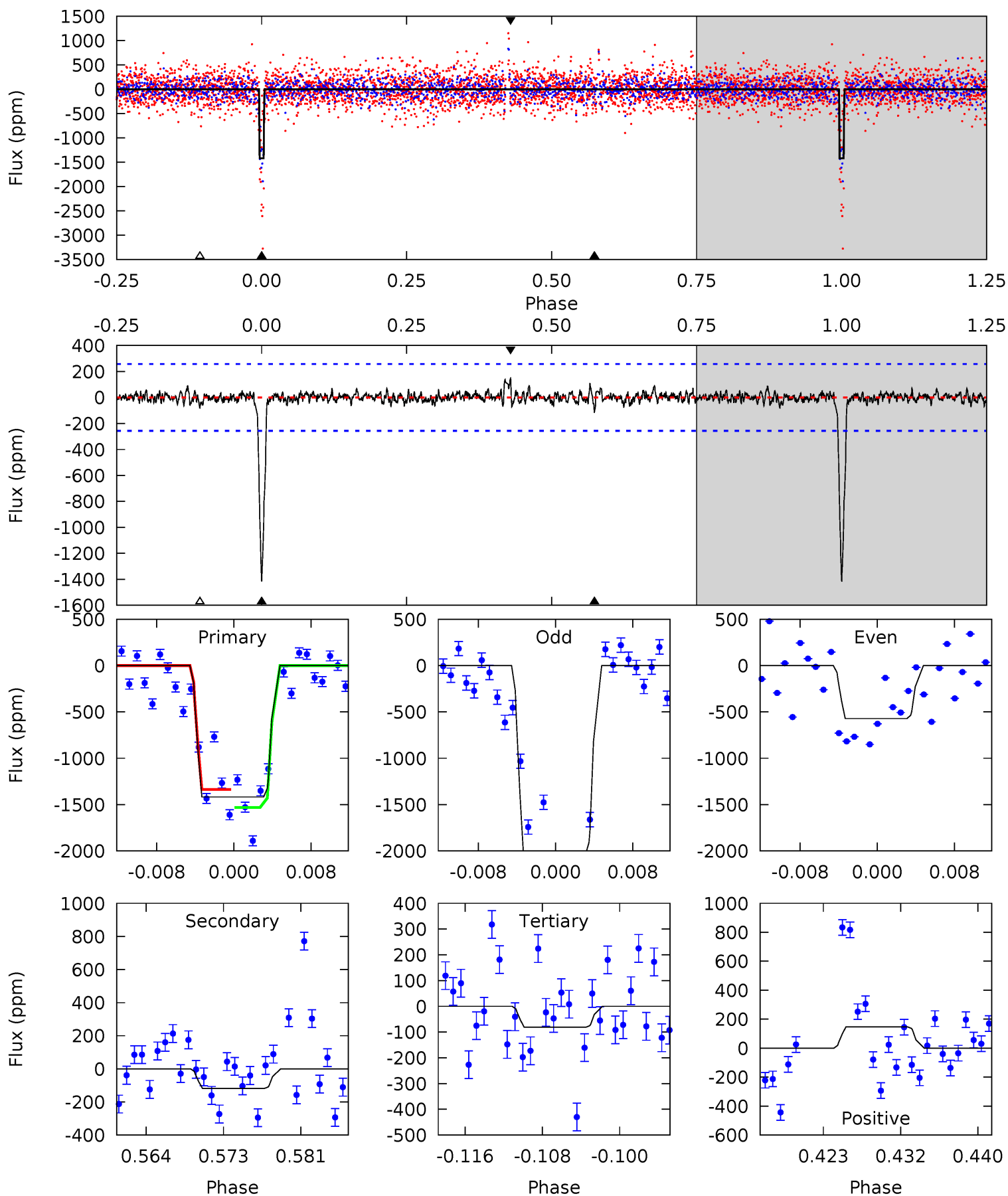
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	9.46	5.48	8.01	5.04	2.60	2.03	6.44	3.90	3.98	1.44	1.01	1.06	0.62	2.03



Alt Model-Shift Uniqueness Test

009033076-01, P = 23.221586 Days, E = 151.173132 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.9	2.32	1.59	2.88	5.06	2.64	0.56	26.3	25.0	0.73	-0.56	14.2	1.08	0.09	1.66



Stellar Parameters For KIC 009033076

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5069^{+139}_{-208}	$3.678^{+0.960}_{-0.320}$	$-0.400^{+0.250}_{-0.350}$	$2.209^{+1.245}_{-1.522}$	$0.848^{+0.227}_{-0.206}$	$0.111^{+3.946}_{-0.070}$
	+3%/-4%	+26%/-9%	+62%/-87%	+56%/-69%	+27%/-24%	+3565%/-63%
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 009033076-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-605 ± 64	$8.31^{+10.75}_{-5.68}$	1173^{+181}_{-272}	4145^{+2539}_{-779}	110^{+978}_{-88}
Alt.	-118 ± 51	$9.68^{+9.89}_{-6.70}$	1161^{+193}_{-240}	2994^{+1228}_{-441}	14^{+138}_{-11}

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 $A_{obs} \gg 1.0$

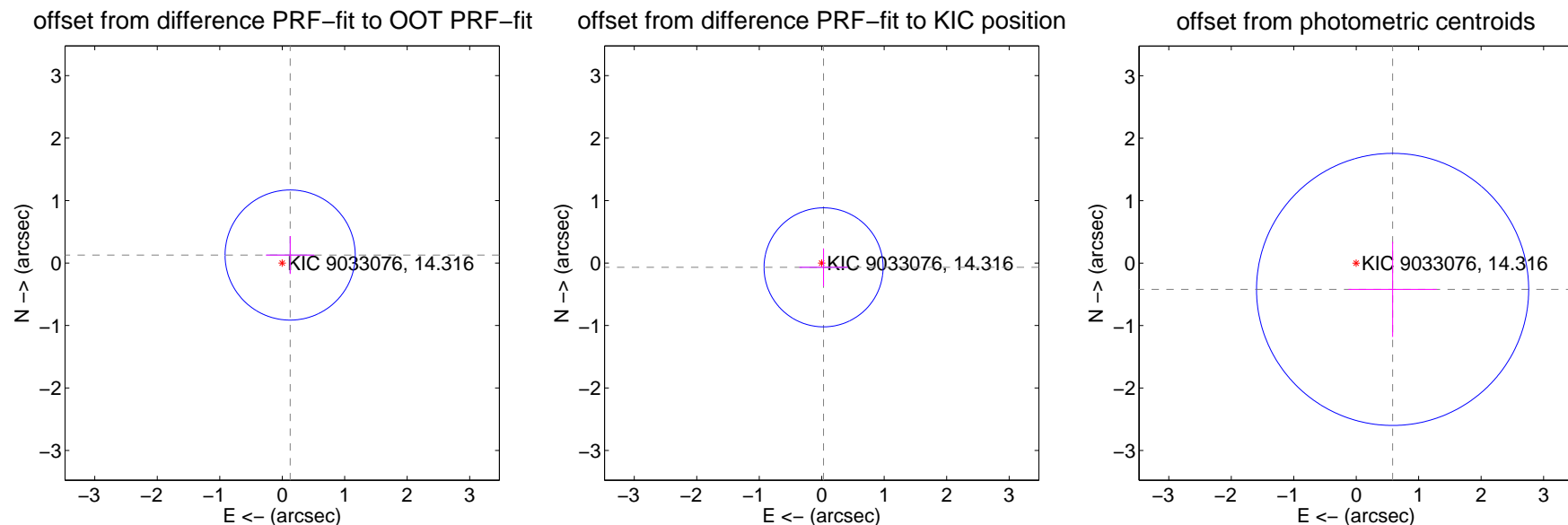
DV Centroid Data

Supplemental centroid analysis for 009033076-01. Kepler magnitude: 14.32. Transit SNR 7.07

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.180 ± 0.347	0.52	-0.127 ± 0.387	0.128 ± 0.303
PRF-fit source offset from KIC position	0.075 ± 0.318	0.24	-0.030 ± 0.387	-0.069 ± 0.303
photometric centroid source offset	0.72 ± 0.73	0.99	-0.58 ± 0.71	-0.42 ± 0.76



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.



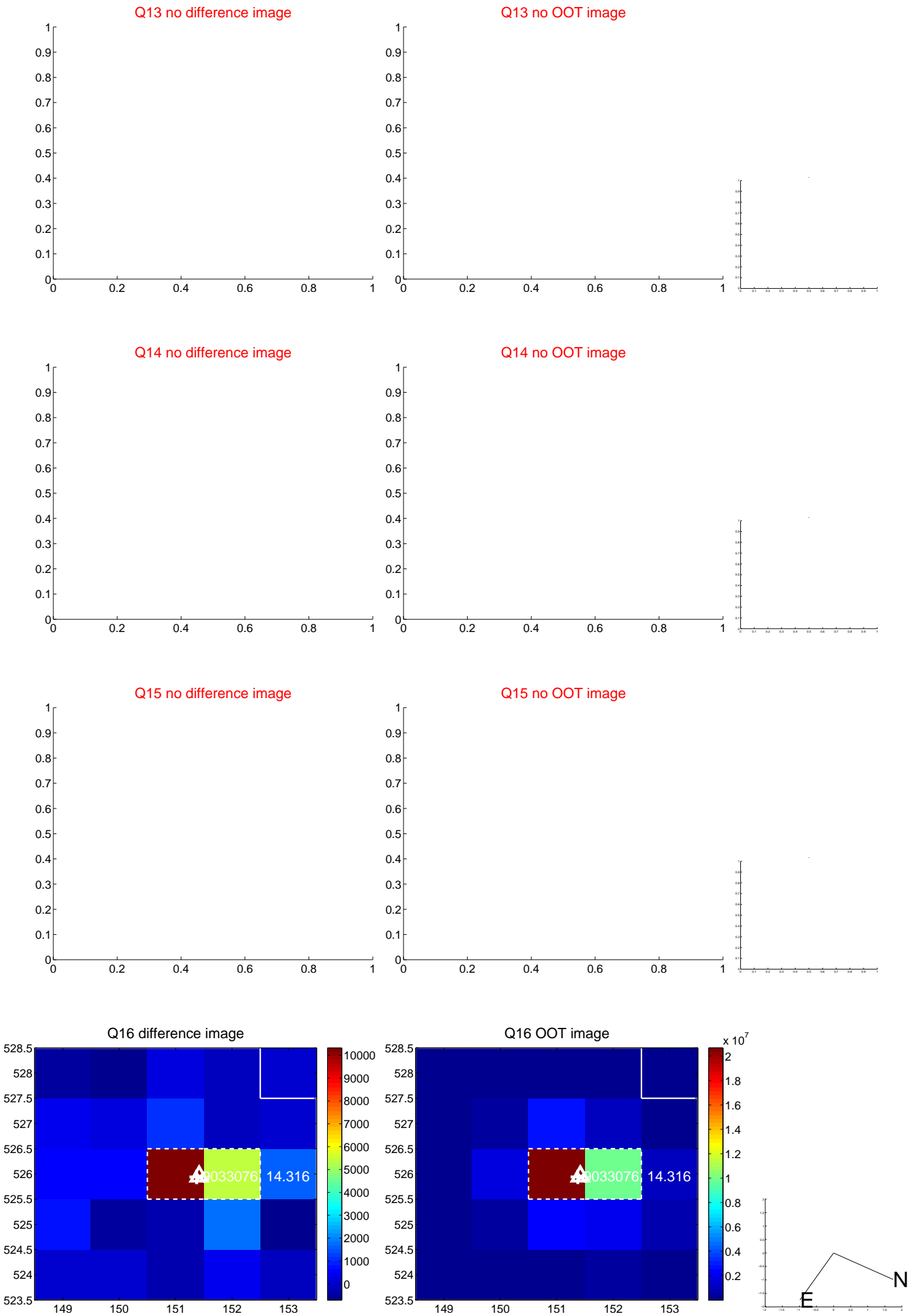
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



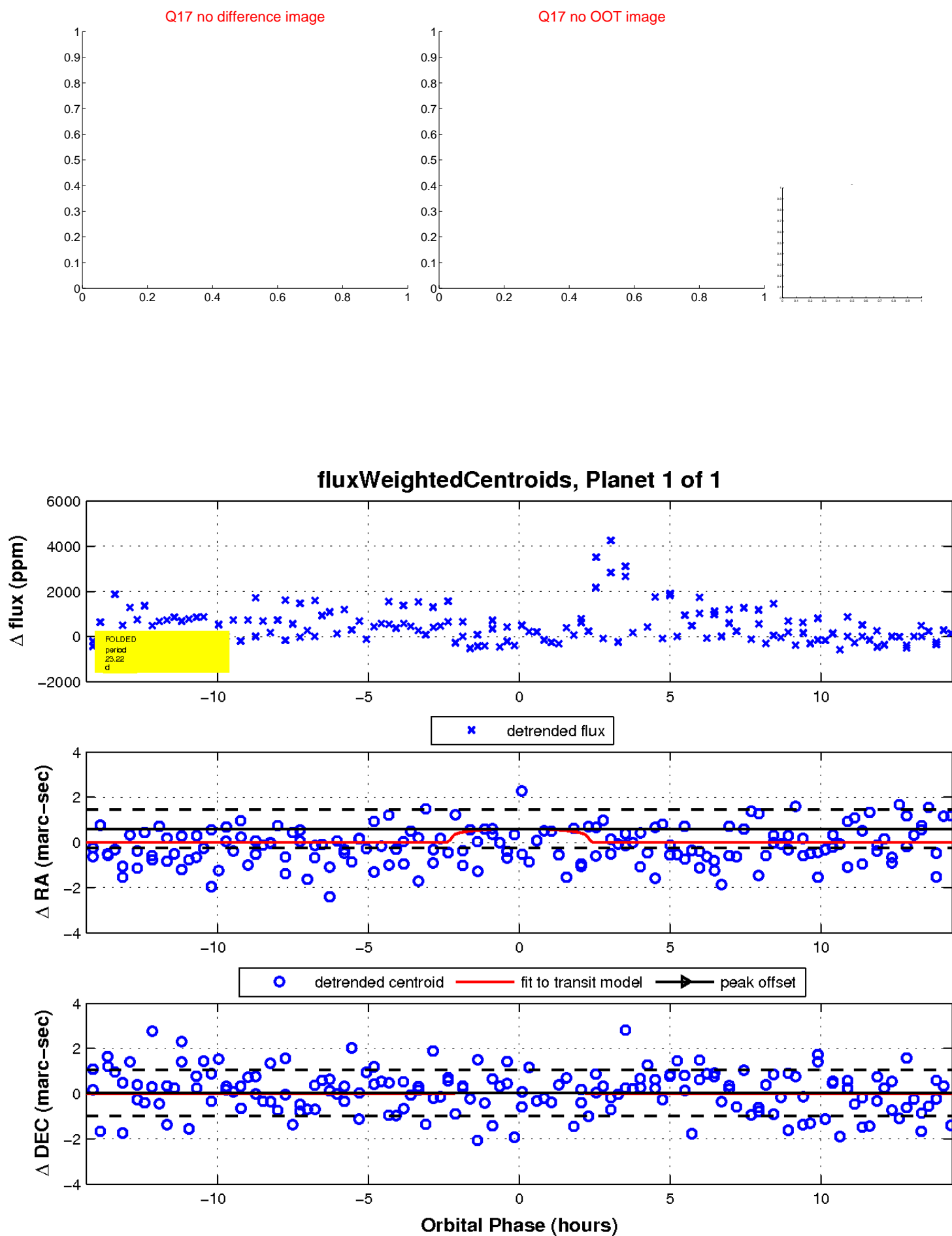
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

