

KIC 009710394

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})
009710394-01	OBS	No	543.723094	333.880277	1331.0	13.813	10.0	9.7	0.94	5745	3.84	0.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009710394-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

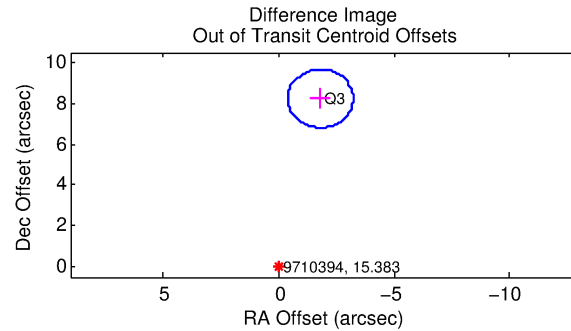
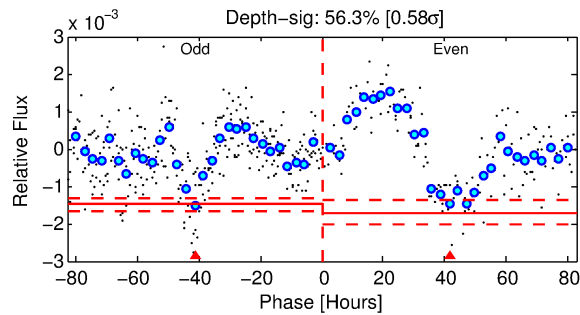
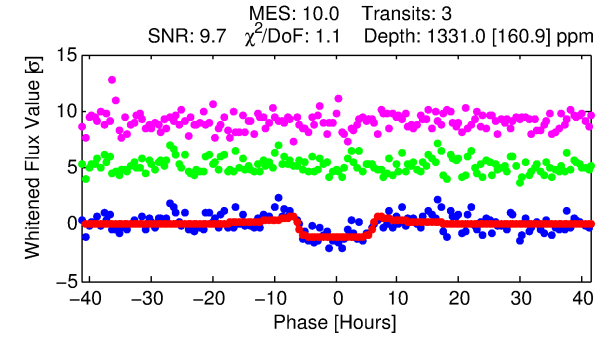
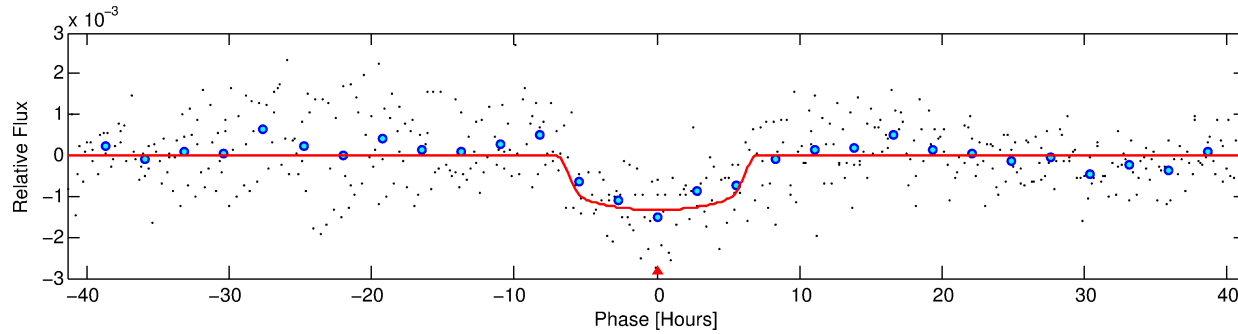
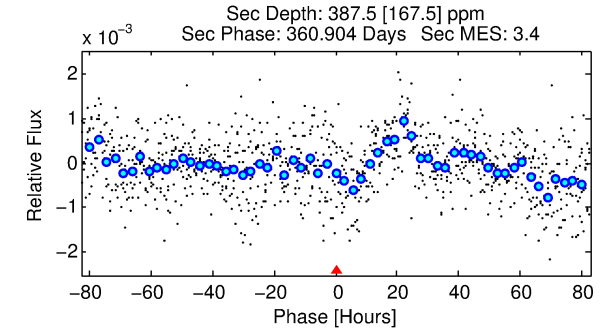
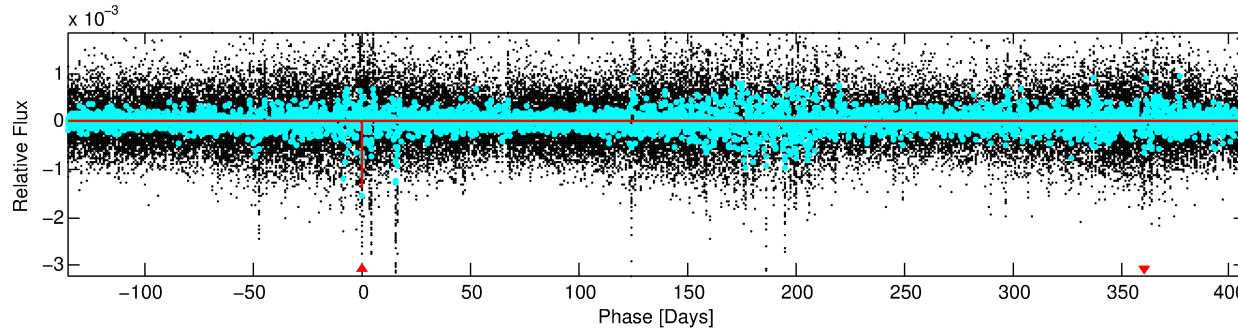
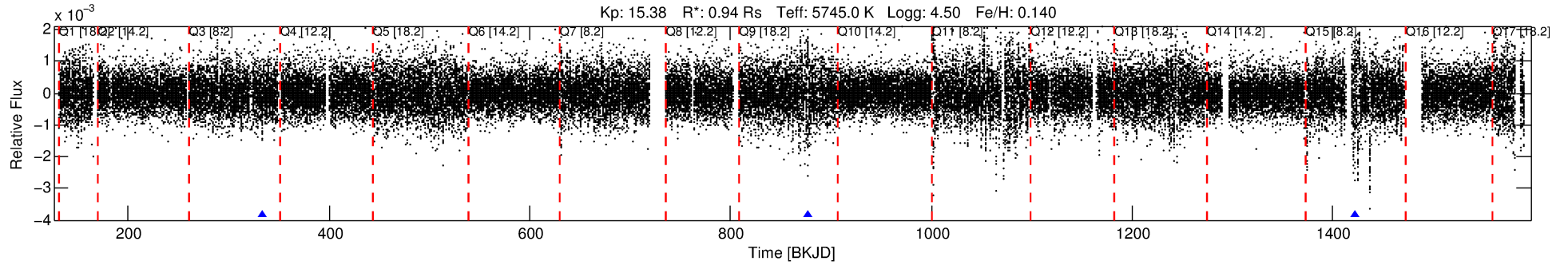
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009710394-01

No Significant Match Found

DV One-Page Summary

KIC: 9710394 Candidate: 1 of 1 Period: 543.723 d



DV Fit Results:

Period = 543.72309 [0.01157] d
Epoch = 333.8803 [0.0145] BKJD
Rp/R* = 0.0374 [0.0044]
a/R* = 194.72 [79.67]
b = 0.81 [0.18]
Seff = 0.50 [0.20]
Teq = 214 [22] K
Rp = 3.84 [1.22] Re
a = 1.3183 [0.3375] AU
Ag = 25183.67 [15681.82] [1.61σ]
Teff = 4171 [534] K [7.40σ]

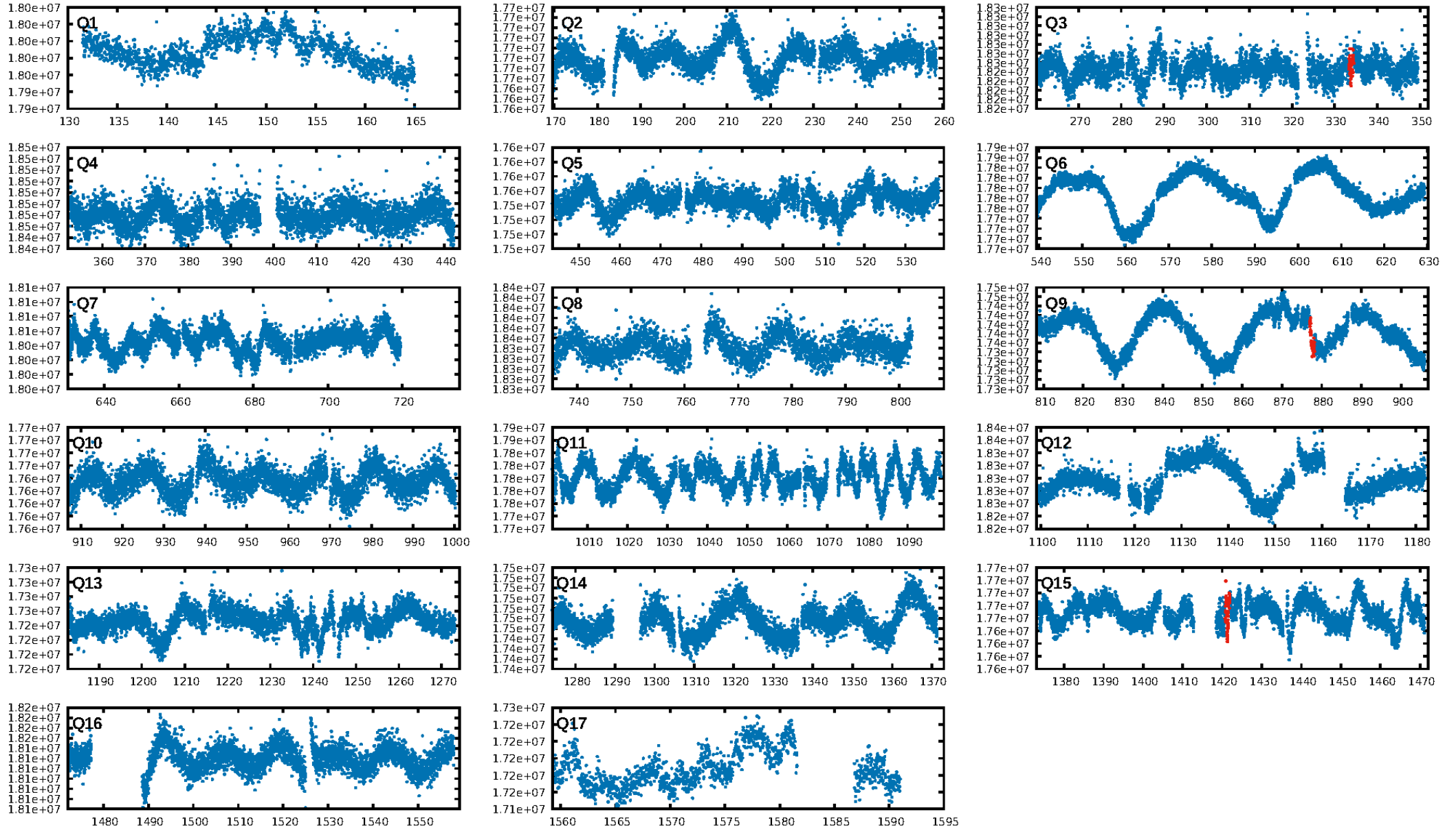
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.3%
ModelChiSquareGoF-sig: 96.8%
Bootstrap-pfa: 1.47e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.013
Centroid-sig: 21.7%
Centroid-so: 2.427 arcsec [1.52σ]
OotOffset-rm: 8.432 arcsec [17.80σ]
KicOffset-rm: 8.336 arcsec [17.62σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [3/3]

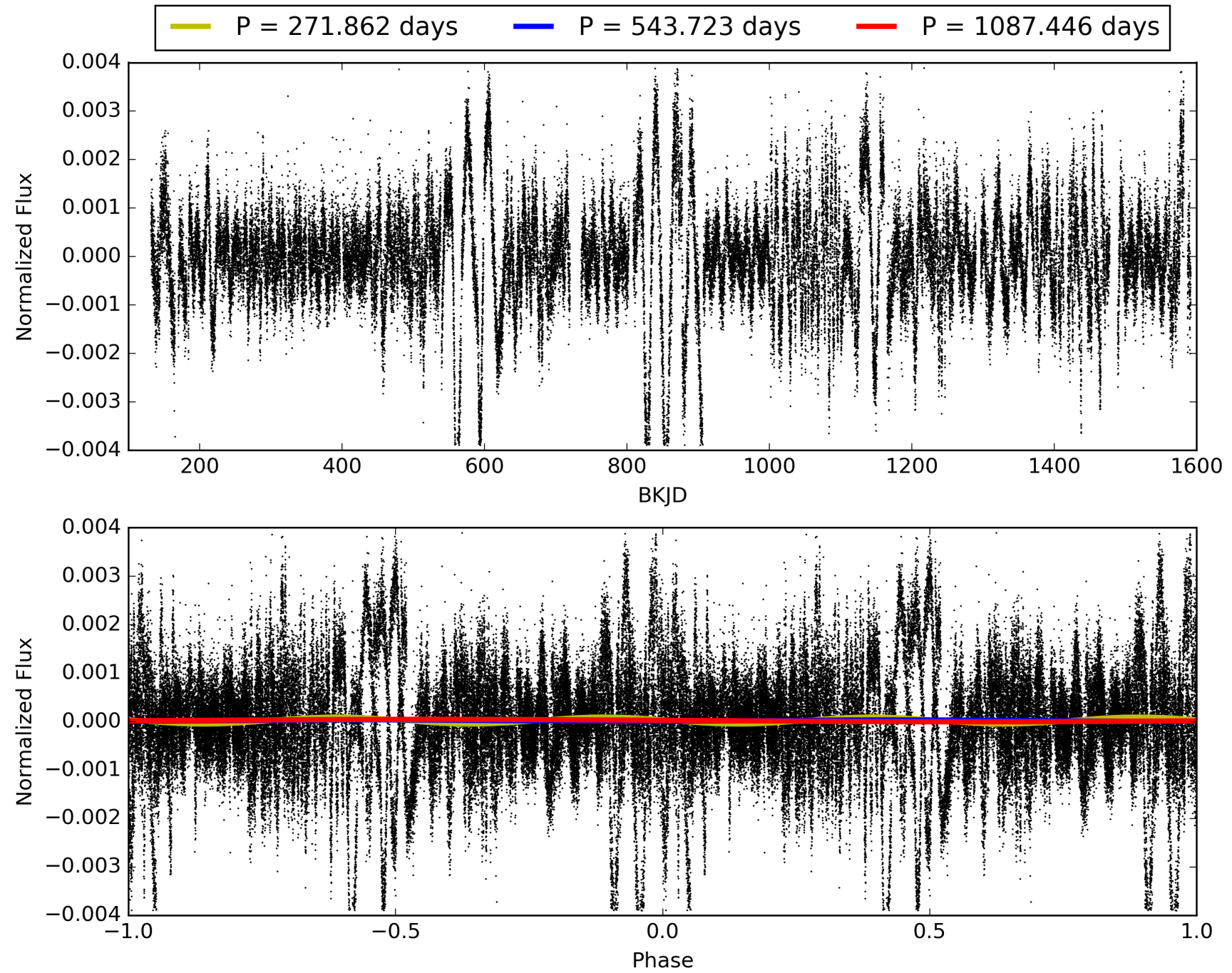
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:40:52 Z

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

TCE 009710394-01, PDC Light Curves

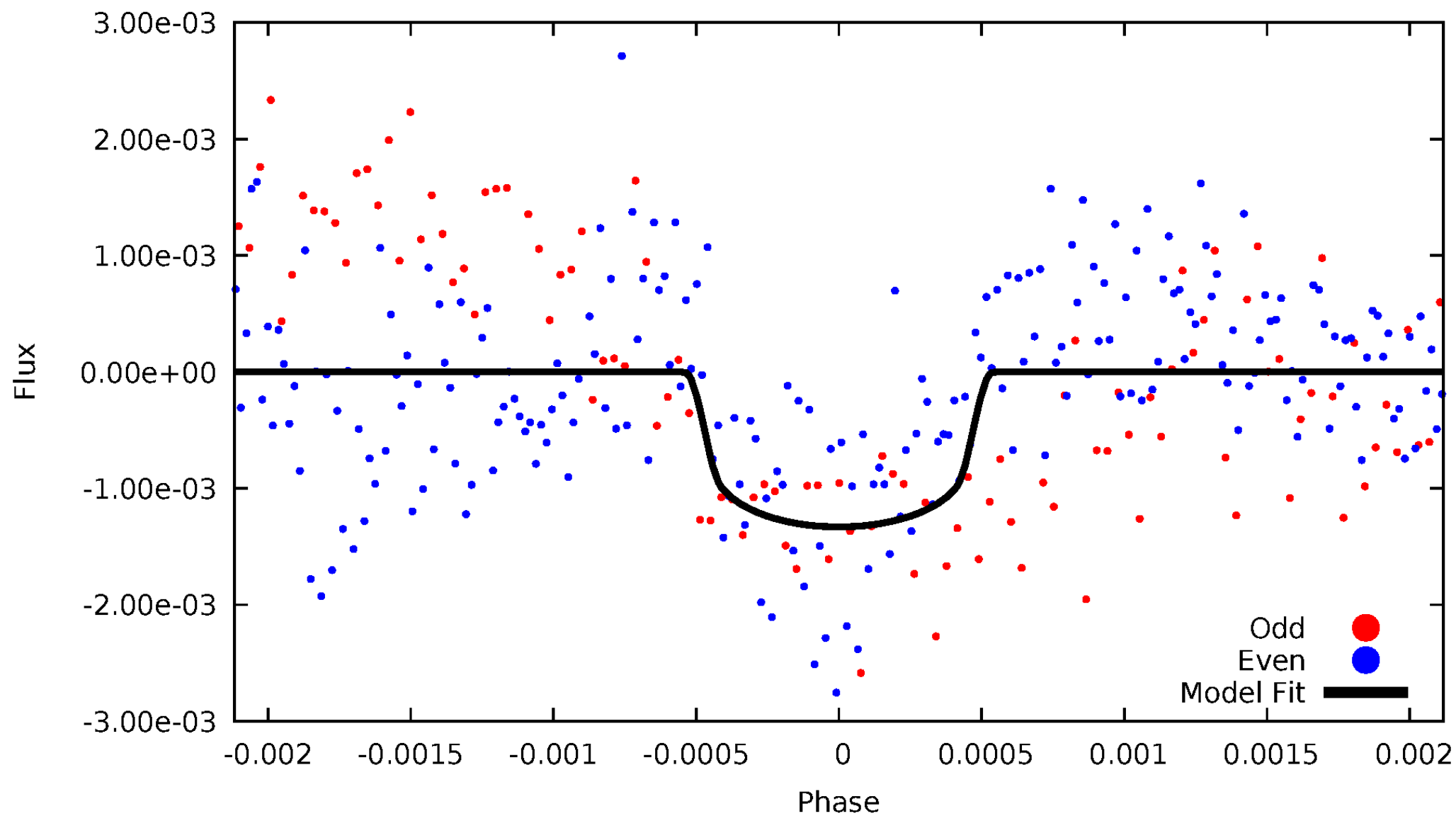


TCE 009710394-01



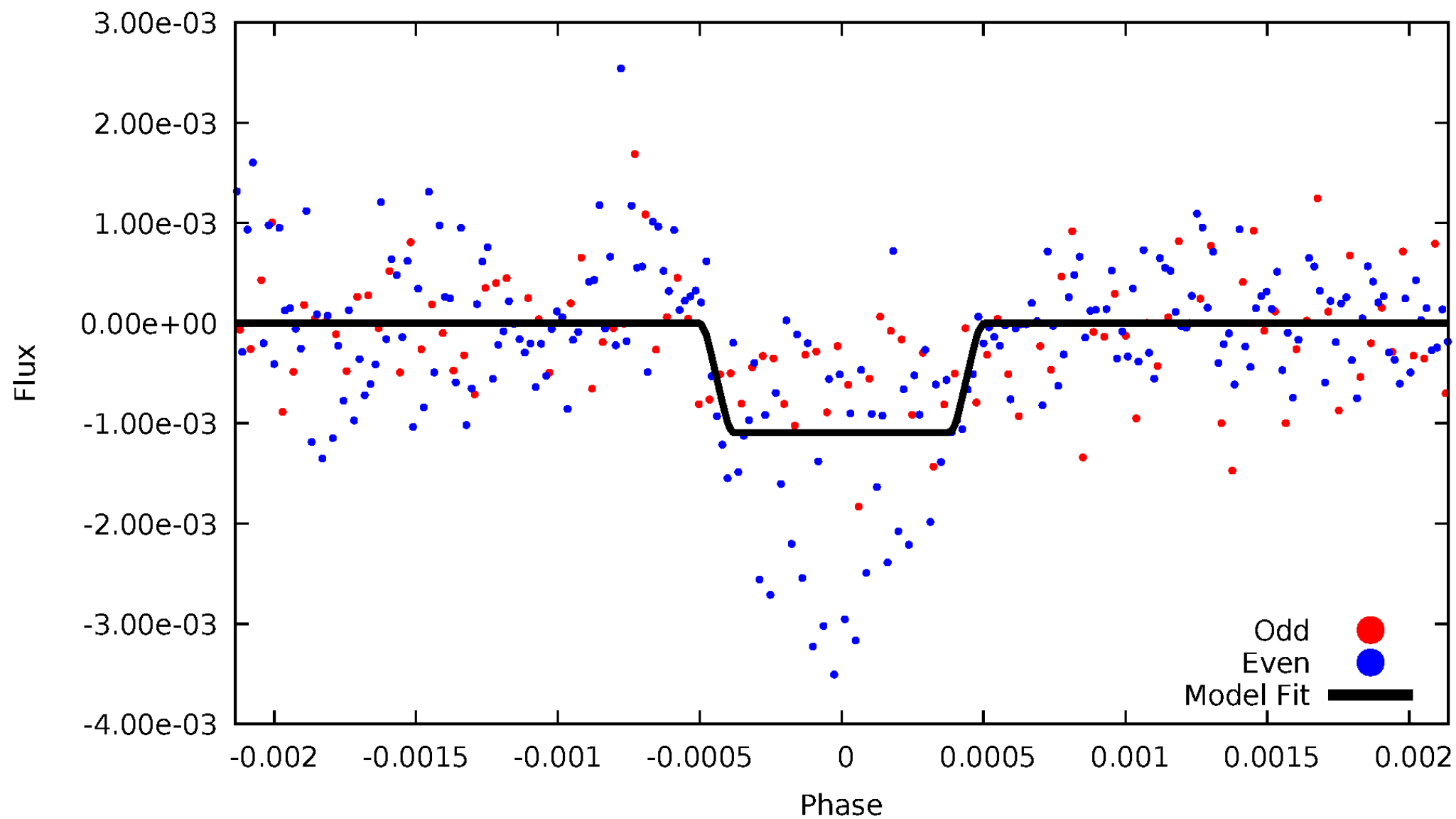
DV Odd/Even

TCE 009710394-01



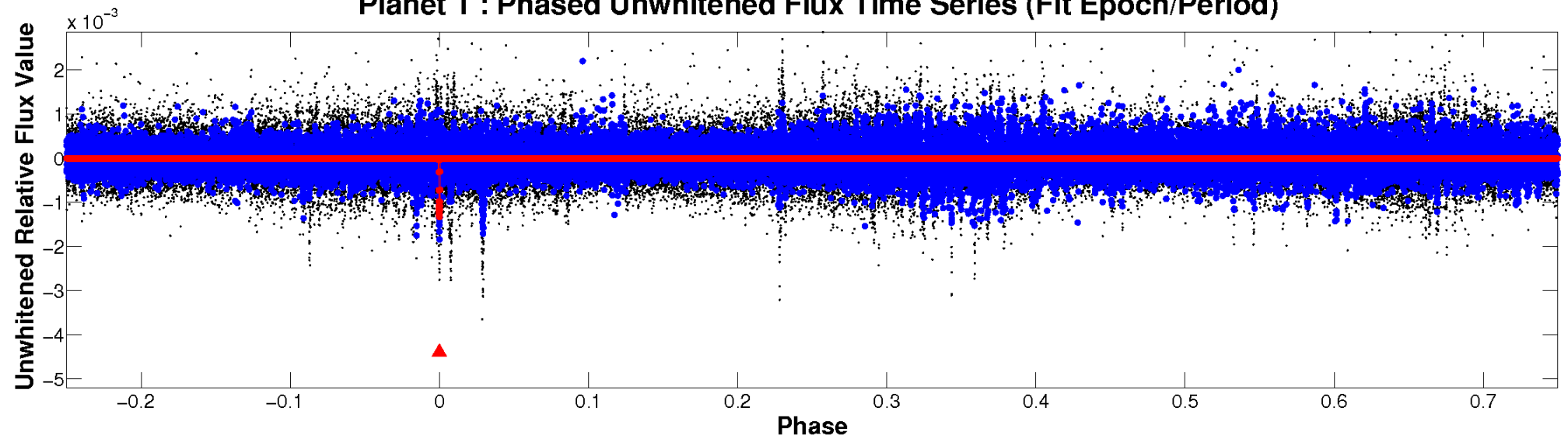
ALT Odd/Even

TCE 009710394-01

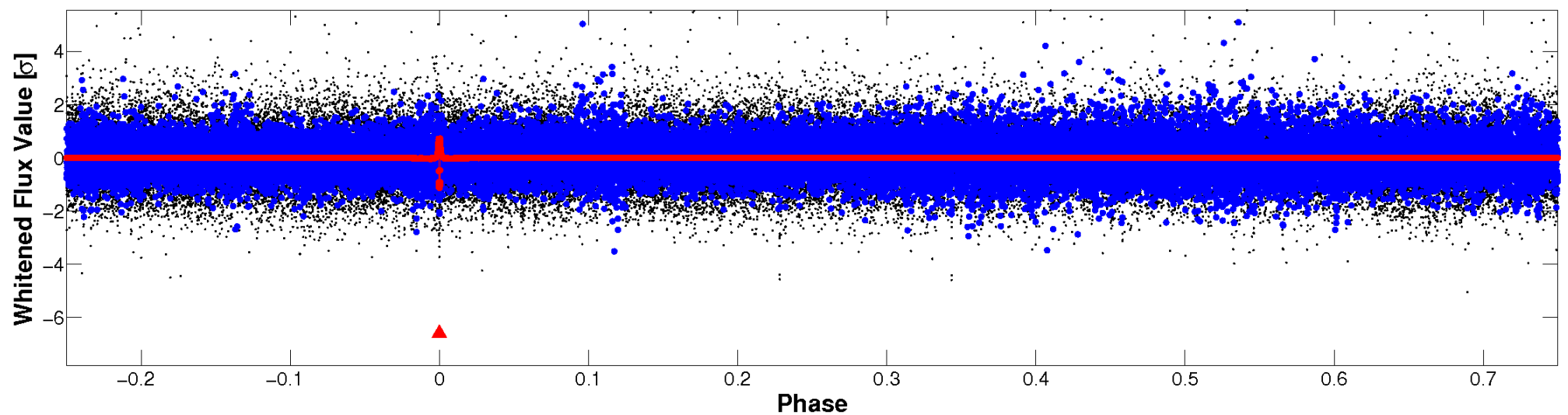


Non-Whitened Vs. Whitened Light Curve

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

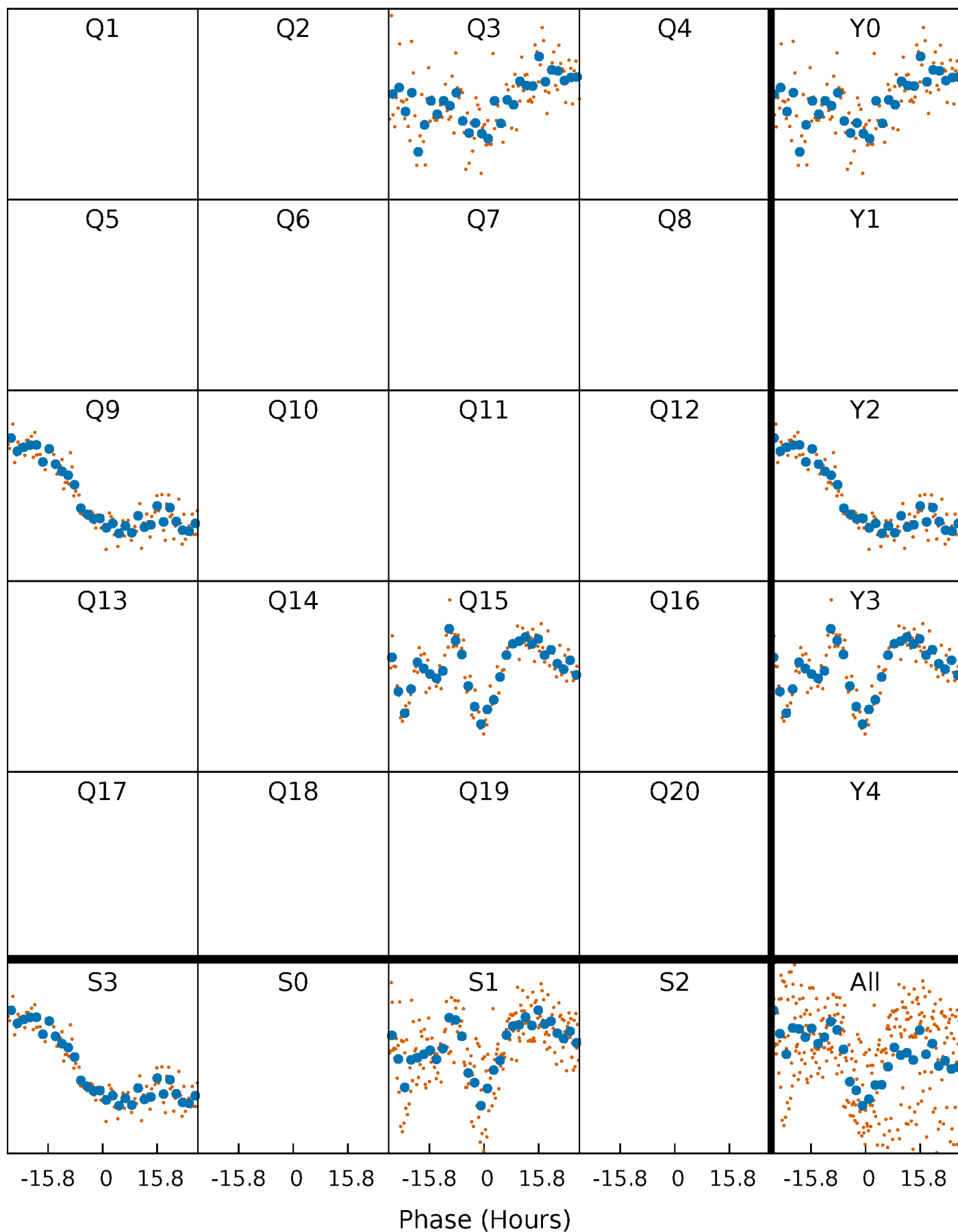


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



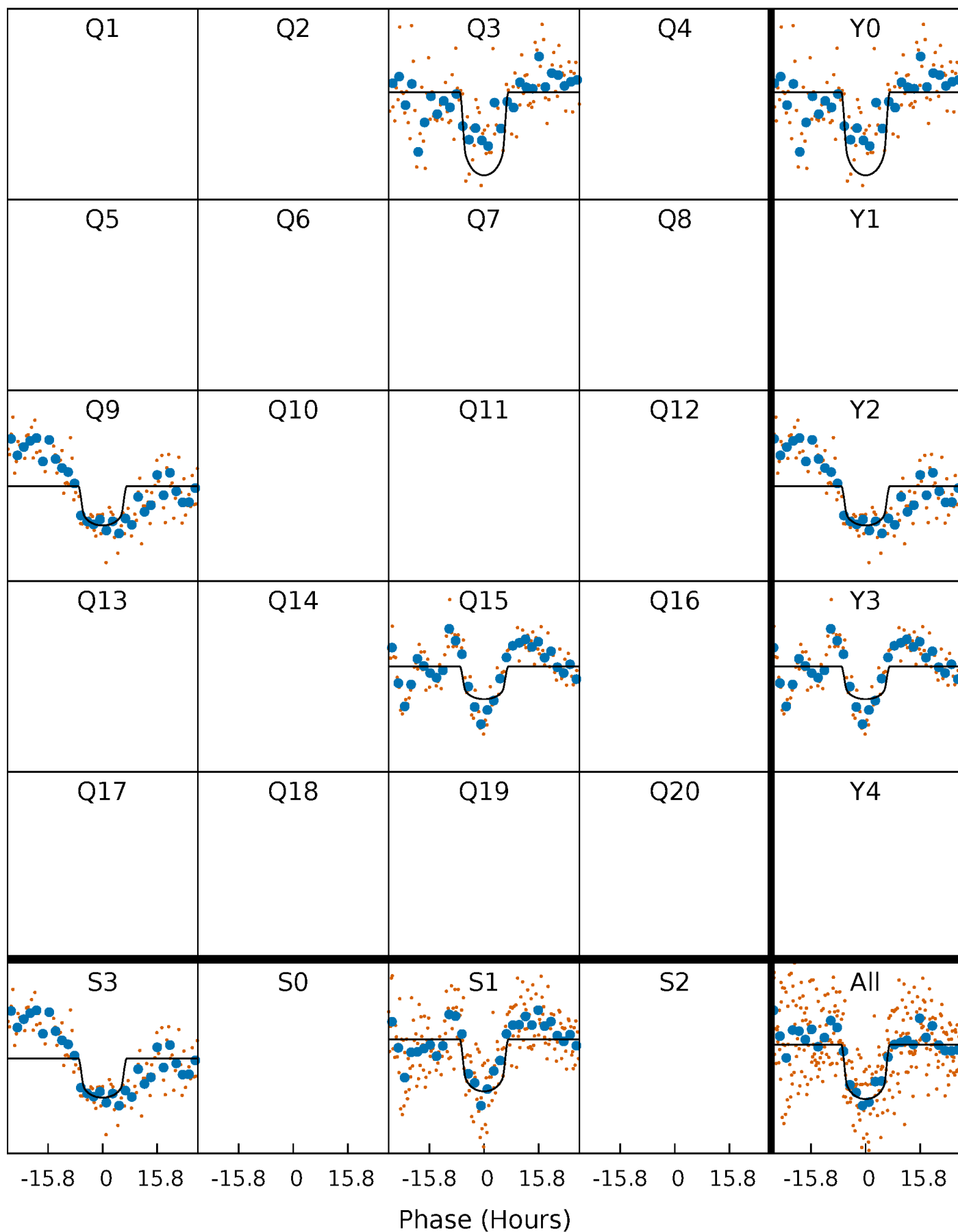
PDC Quarter-Phased Transit Curves

TCE 009710394-01 P=543.723094 Days $T_0=333.880277$ (BKJD)



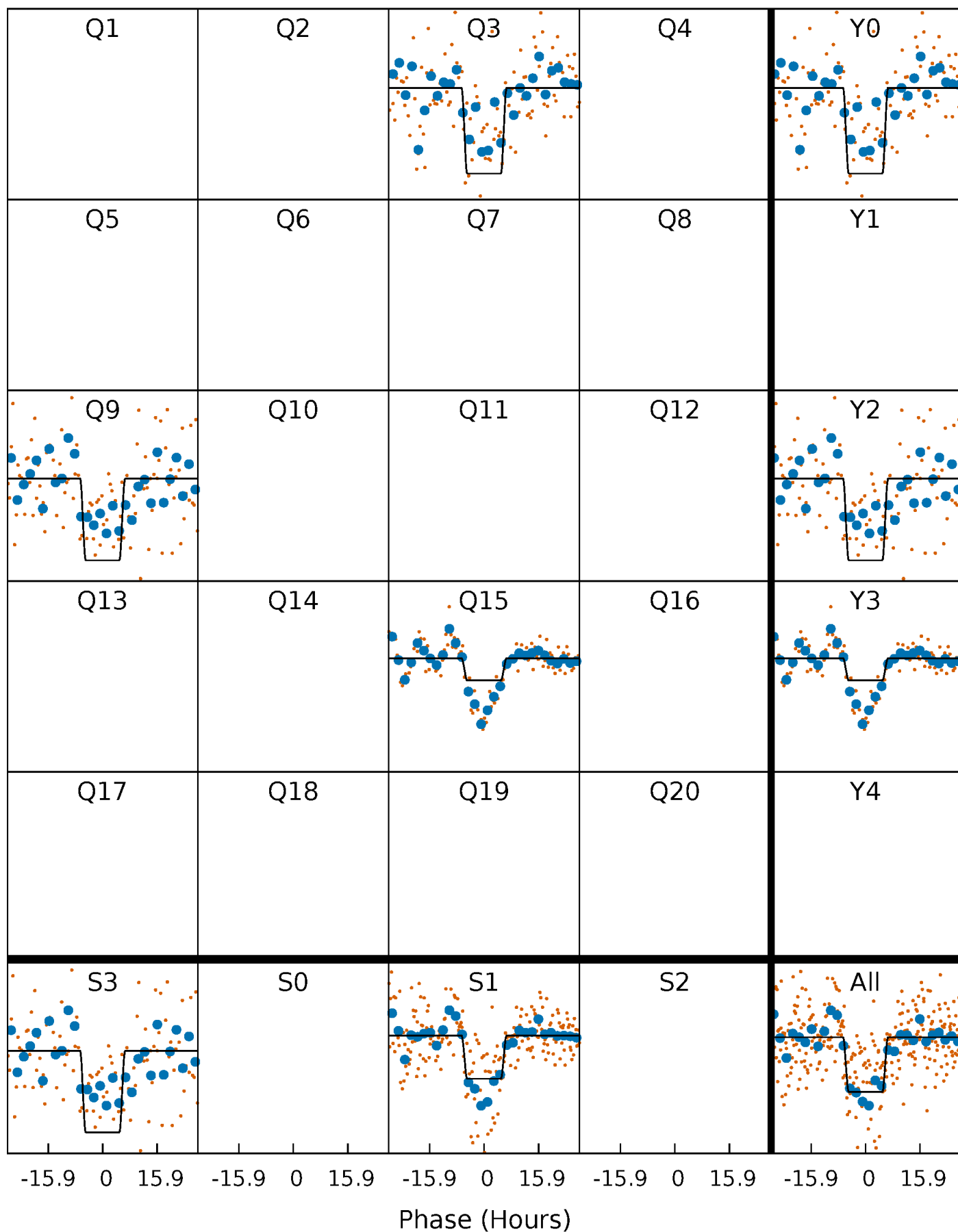
DV Quarter-Phased Transit Curves

TCE 009710394-01 P=543.723094 Days $T_0=333.880277$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

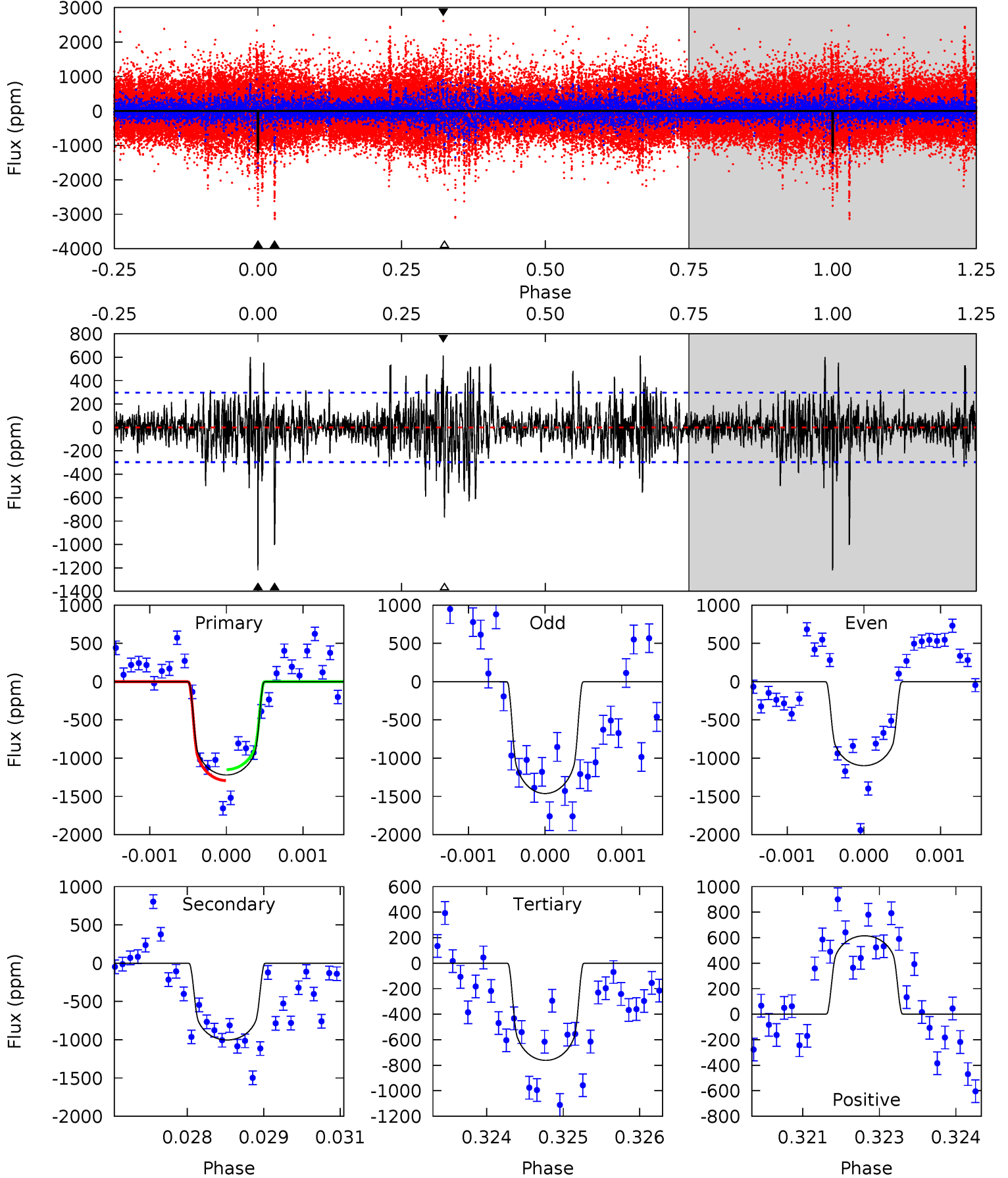
TCE 009710394-01 P=543.723409 Days $T_0=333.888971$ (BKJD)



DV Model-Shift Uniqueness Test

009710394-01, P = 543.723094 Days, E = 333.880277 Days

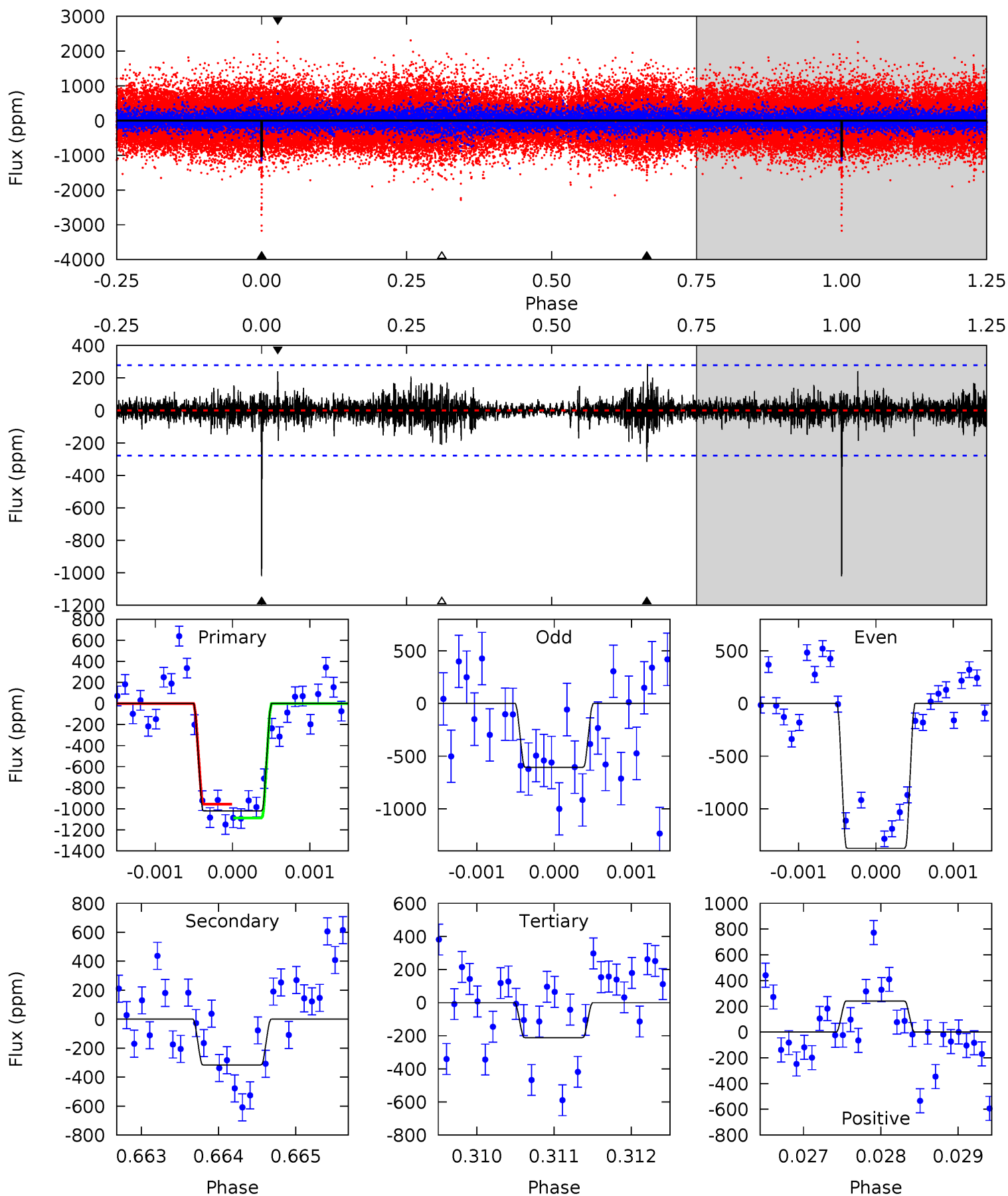
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.4	18.4	14.0	11.3	5.44	3.27	2.61	8.39	11.1	4.43	7.13	3.10	0.83	0.34	1.32



Alt Model-Shift Uniqueness Test

009710394-01, P = 543.723409 Days, E = 333.888971 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.0	6.19	4.14	4.73	5.45	3.29	0.90	15.9	15.3	2.05	1.46	7.30	1.85	0.22	1.29



Stellar Parameters For KIC 009710394

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5745^{+160}_{-200}	$4.505^{+0.050}_{-0.212}$	$0.140^{+0.200}_{-0.300}$	$0.941^{+0.279}_{-0.093}$	$1.034^{+0.110}_{-0.134}$	$1.745^{+0.363}_{-0.926}$
	+3%/-3%	+1%/-5%	+143%/-214%	+30%/-10%	+11%/-13%	+21%/-53%
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 009710394-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1004 ± 55	$4.00^{+0.77}_{-0.61}$	305^{+23}_{-14}	5292^{+367}_{-285}	58104^{+22492}_{-15675}
Alt.	-316 ± 51	$3.55^{+0.74}_{-0.56}$	307^{+20}_{-15}	4399^{+334}_{-253}	23195^{+10235}_{-7350}

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

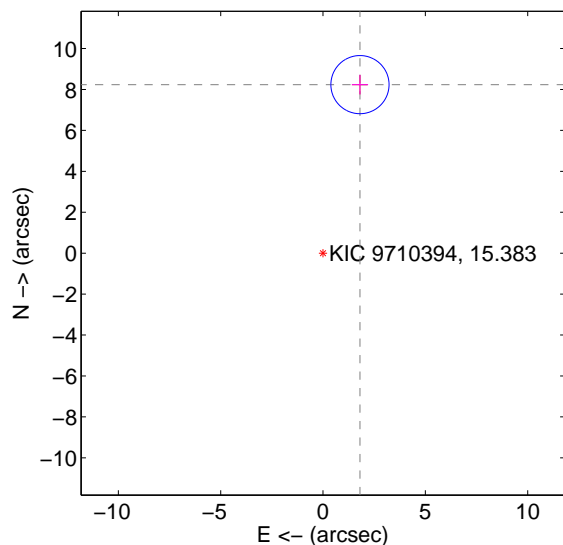
Supplemental centroid analysis for 009710394-01. Kepler magnitude: 15.38. Transit SNR 9.66

There are 0 quarters with good PRF difference image offsets

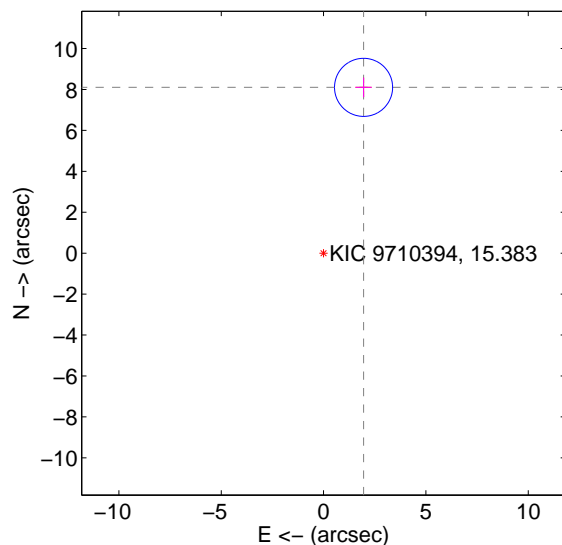
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.432 ± 0.474	17.80	-1.804 ± 0.400	8.237 ± 0.477
PRF-fit source offset from KIC position	8.336 ± 0.473	17.62	-1.954 ± 0.400	8.104 ± 0.477
photometric centroid source offset	2.43 ± 1.59	1.52	-2.21 ± 1.49	1.01 ± 2.01

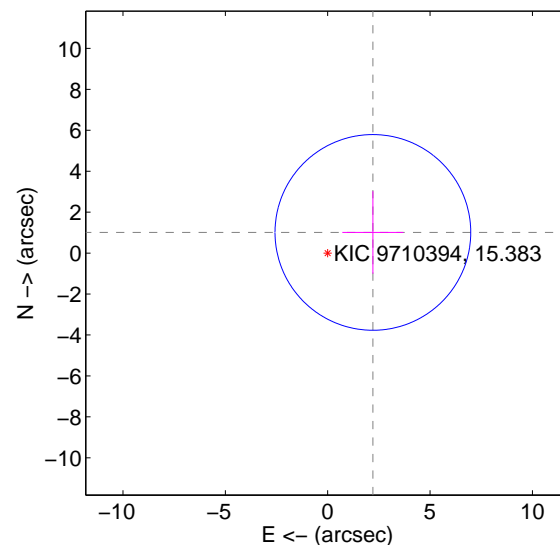
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

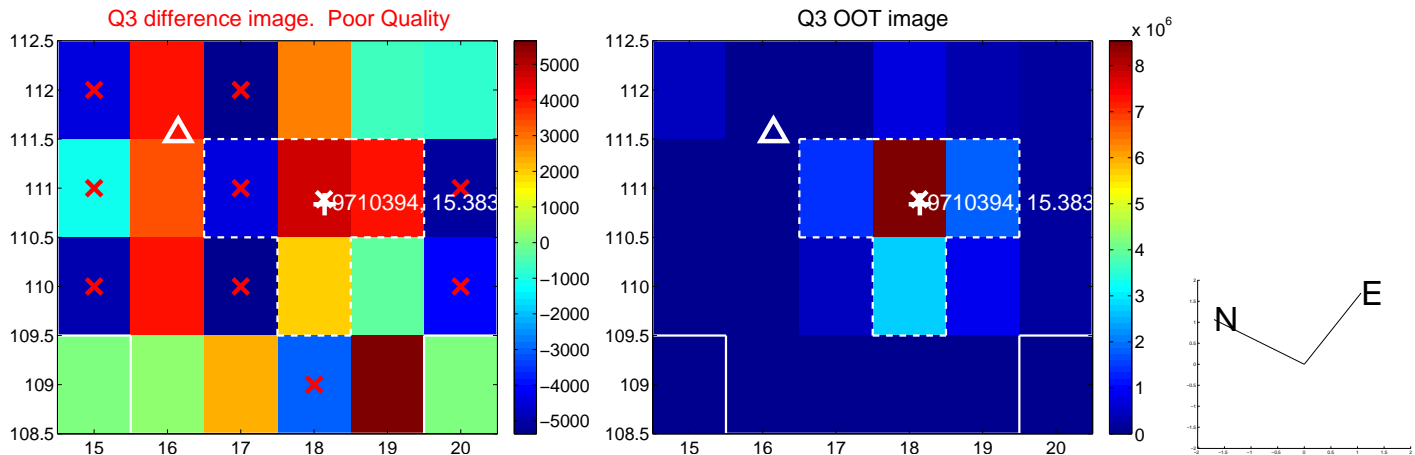


offset from photometric centroids



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 are from the UKIRT catalog.

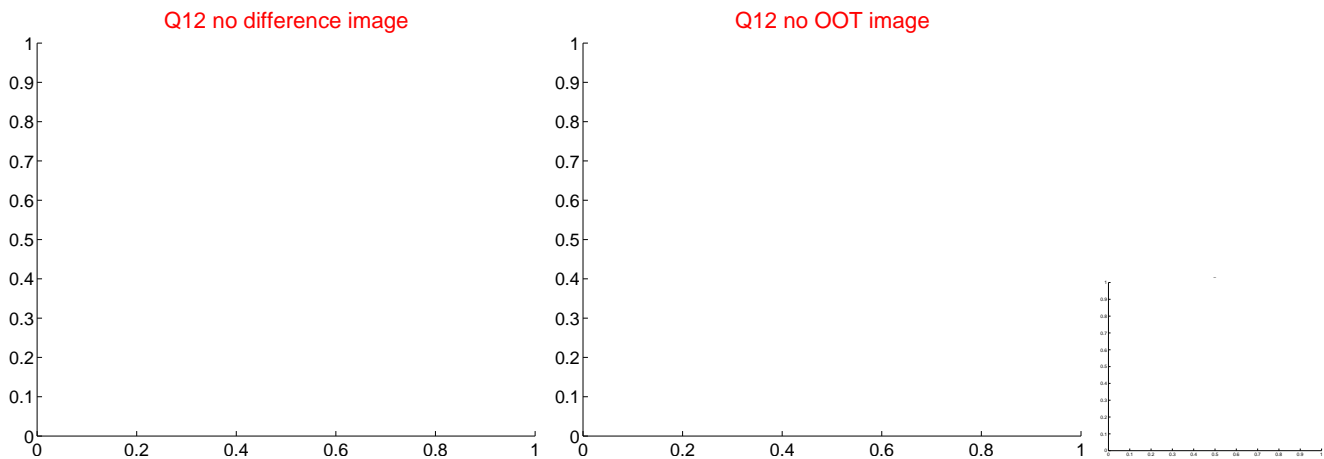
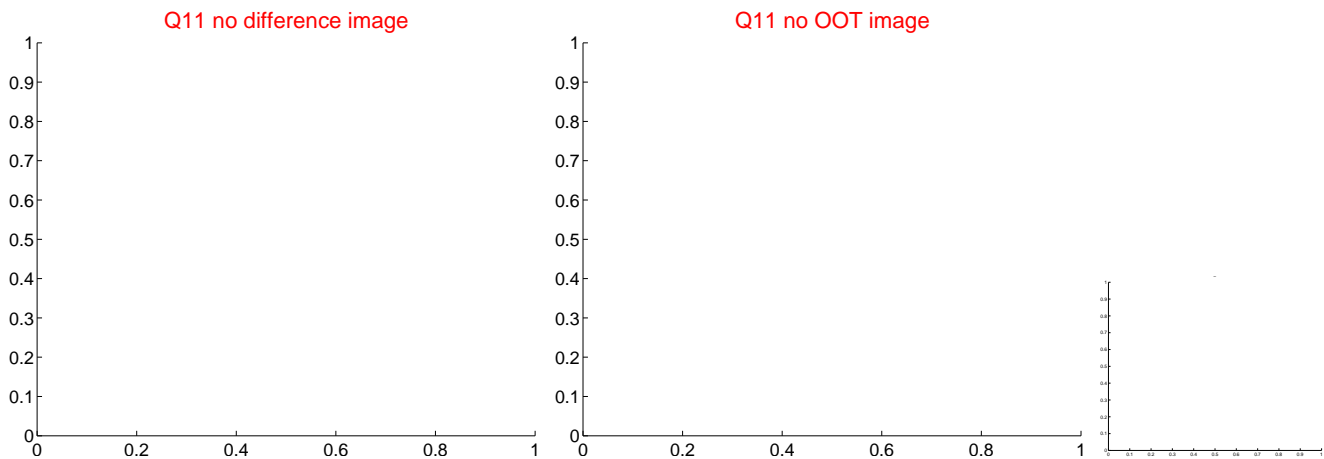
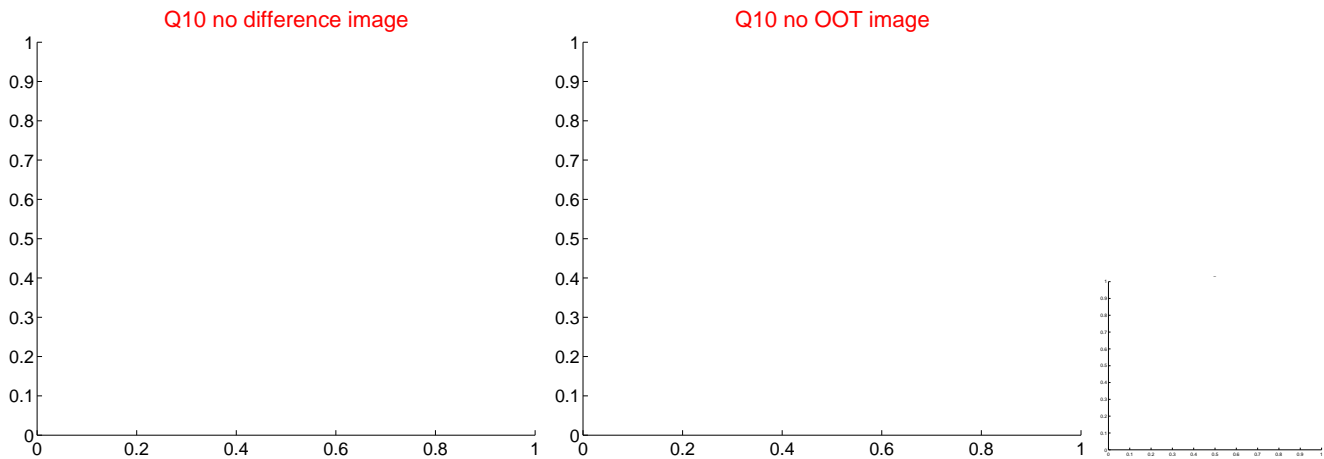
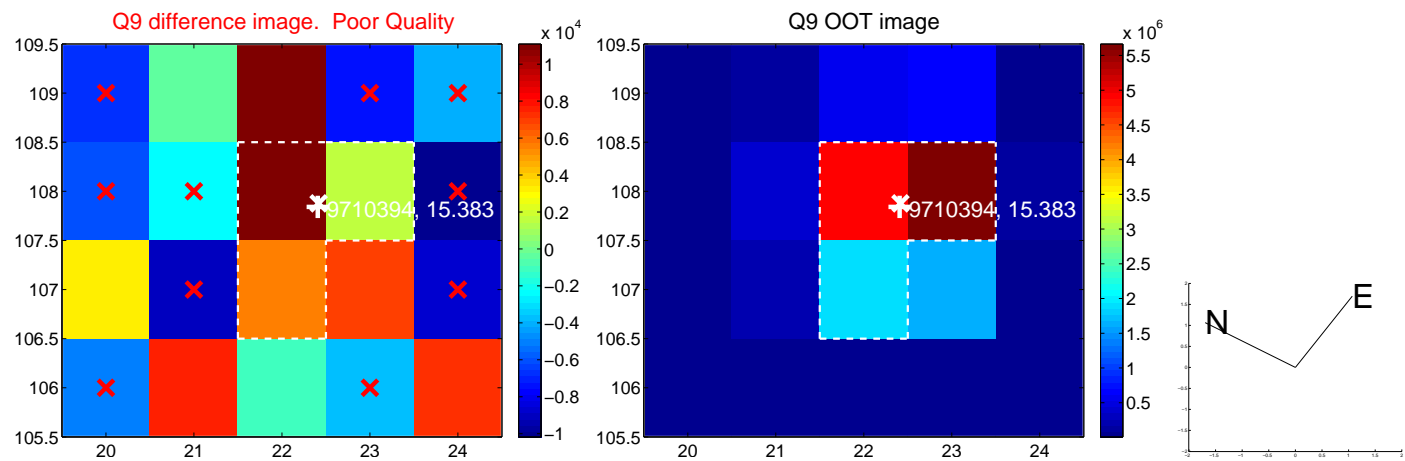
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



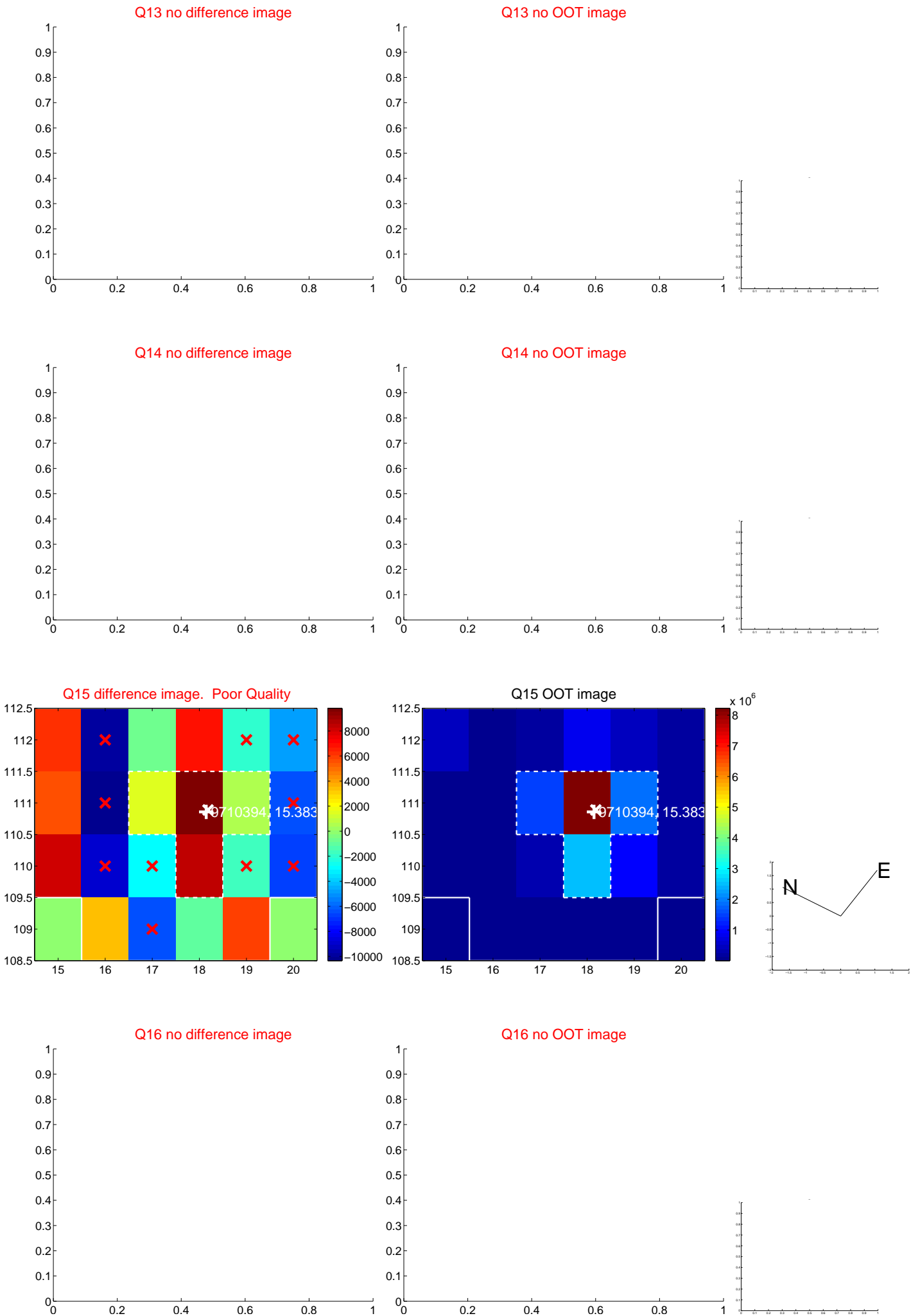
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



Q14 no difference image

Q14 no OOT image

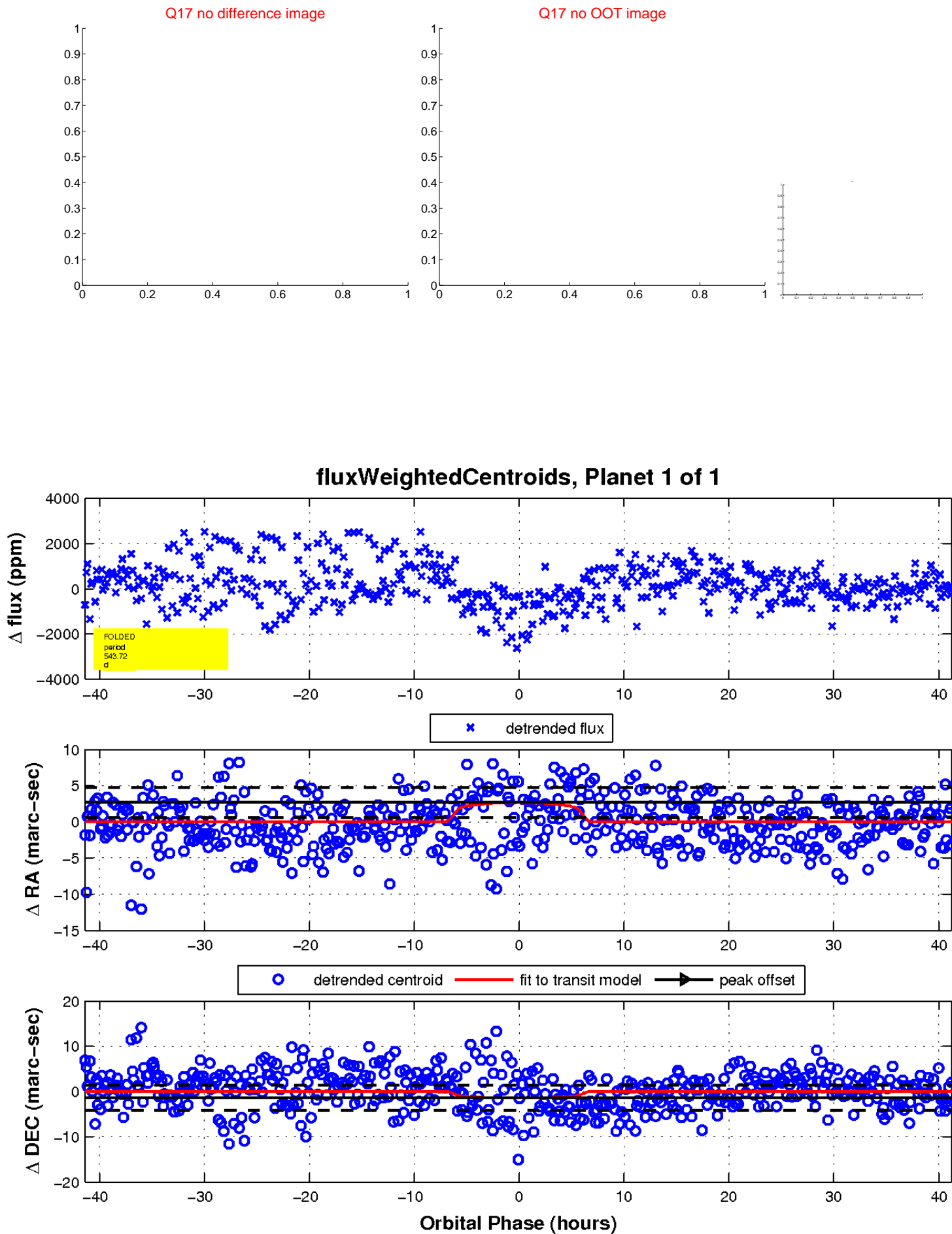
Q15 difference image. Poor Quality

Q15 OOT image

Q16 no difference image

Q16 no OOT image

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



UKIRT Image

Declination

