

KIC 008415404

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})
008415404-01	OBS	No	572.701289	295.177709	351.8	3.198	8.5	5.6	0.72	4838	1.44	0.18

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008415404-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—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.

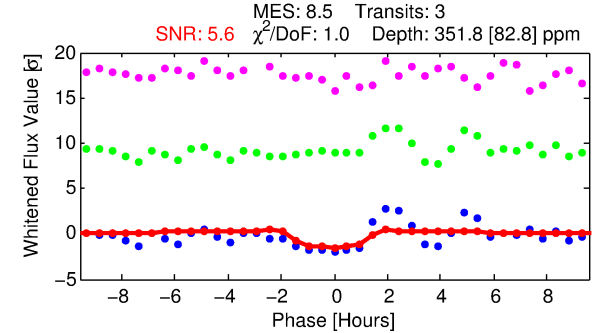
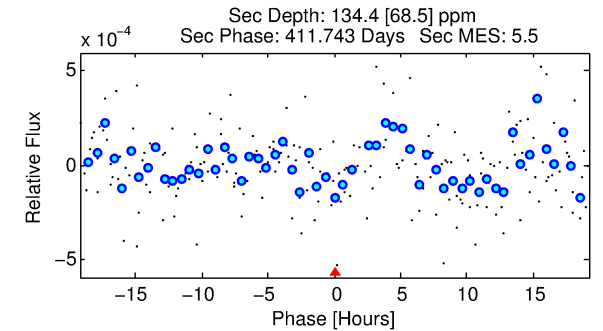
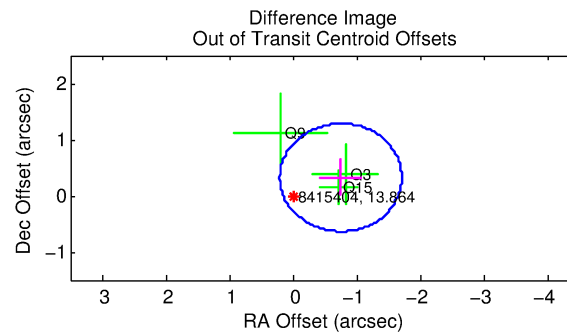
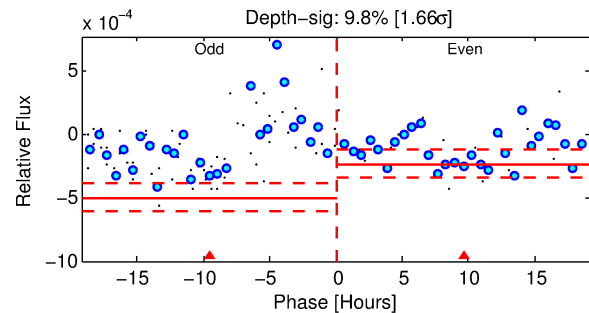
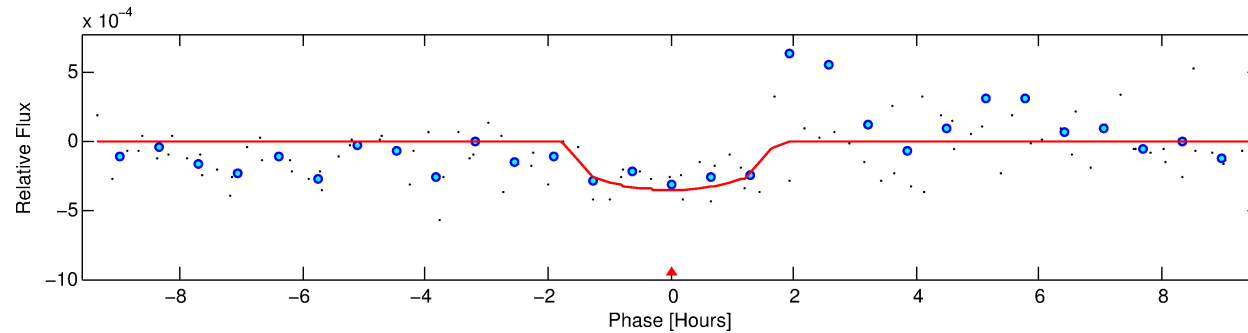
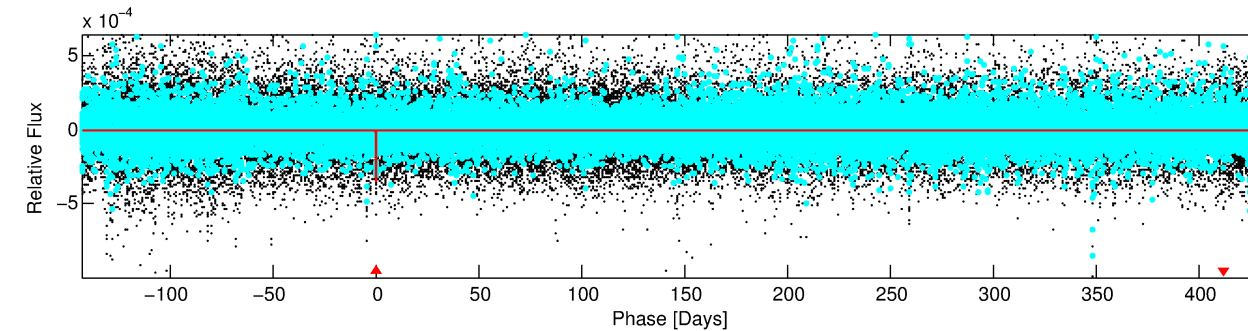
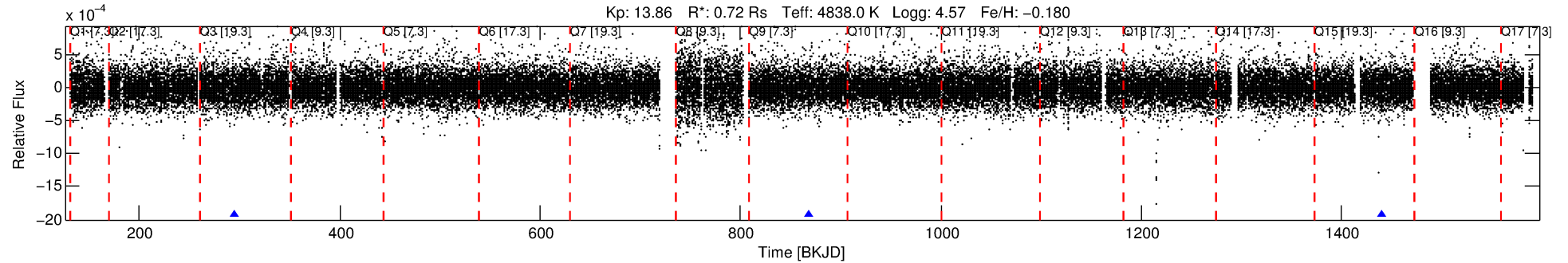
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008415404-01

No Significant Match Found

DV One-Page Summary

KIC: 8415404 Candidate: 1 of 1 Period: 572.701 d



DV Fit Results:

Period = 572.70129 [0.01018] d
Epoch = 295.1777 [0.0123] BKJD
Rp/R* = 0.0184 [0.0530]
a/R* = 1001.58 [9769.75]
b = 0.71 [7.07]
Seff = 0.18 [0.03]
Teq = 165 [7] K
Rp = 1.44 [4.15] Re
a = 1.1969 [0.1016] AU
Ag = 50936.80 [294490.32] [0.17 σ]
Teffp = 3840 [5549] K [0.66 σ]

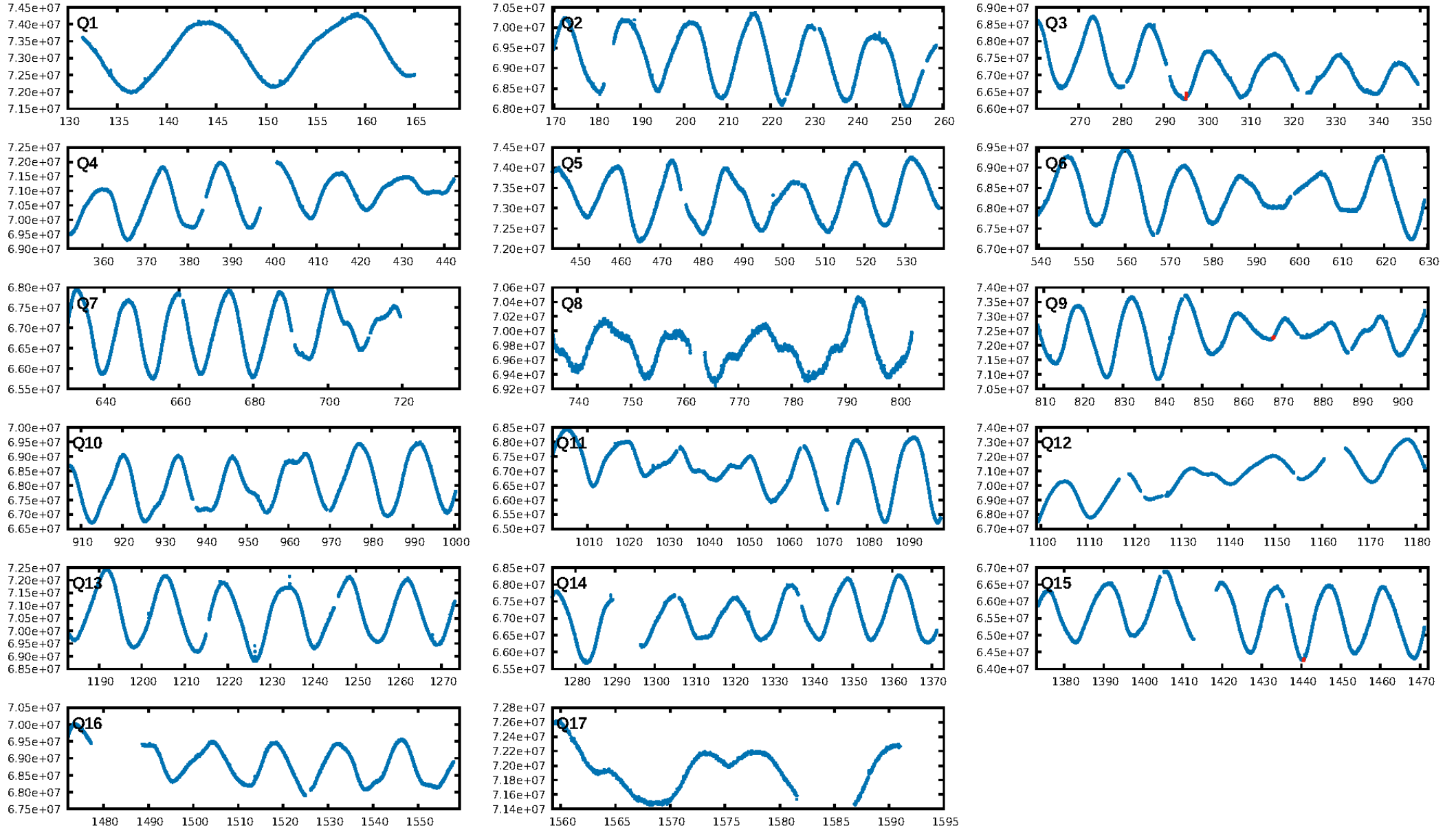
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.7%
ModelChiSquareGof-sig: 92.7%
Bootstrap-pfa: 4.54e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.306
Centroid-sig: 0.2%
Centroid-so: 2.443 arcsec [1.69 σ]
OotOffset-rm: 0.819 arcsec [2.56 σ]
KicOffset-rm: 0.916 arcsec [2.88 σ]
OotOffset-st: 0/2/0/1 [3]
KicOffset-st: 0/2/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

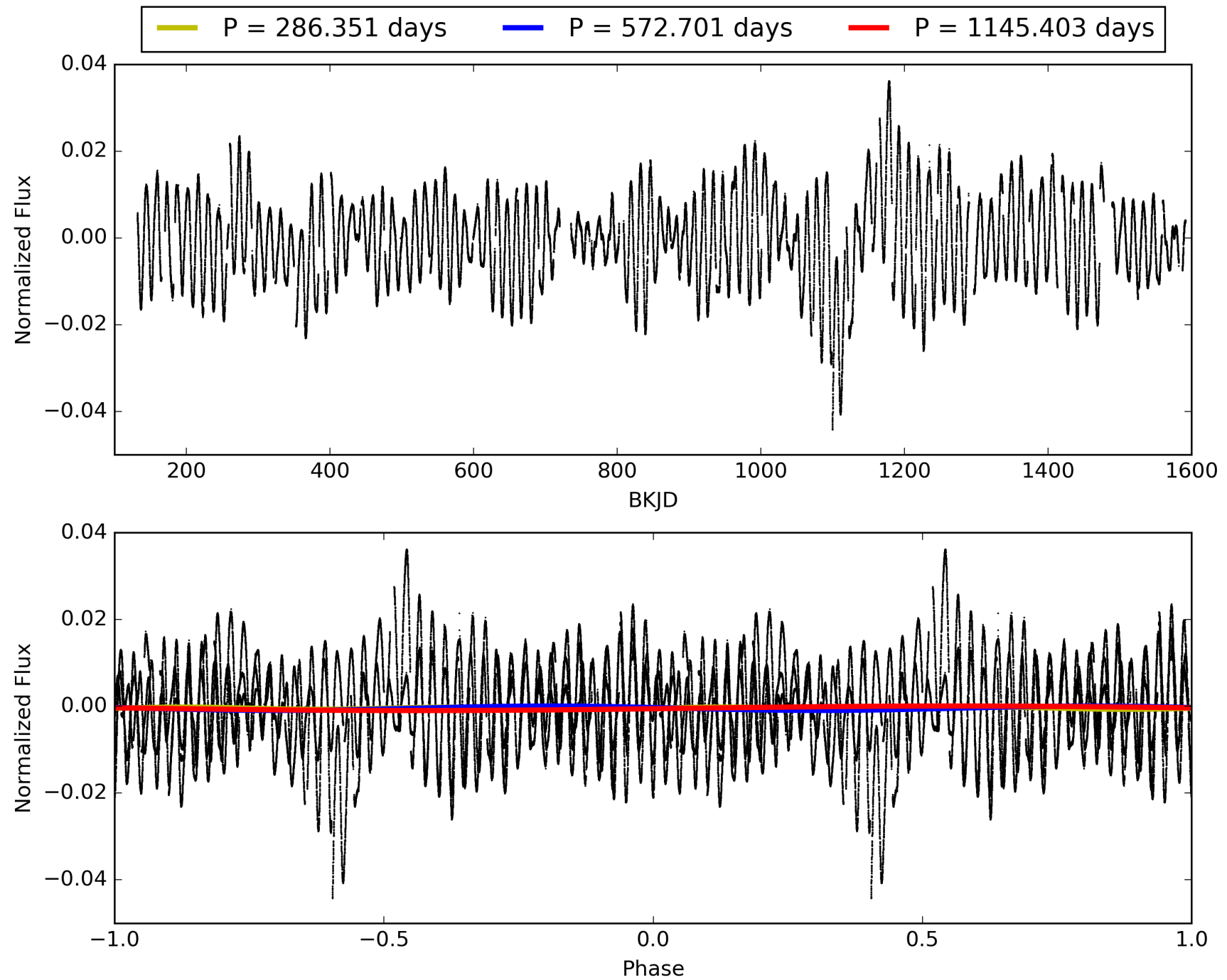
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:16:59 Z

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

TCE 008415404-01, PDC Light Curves

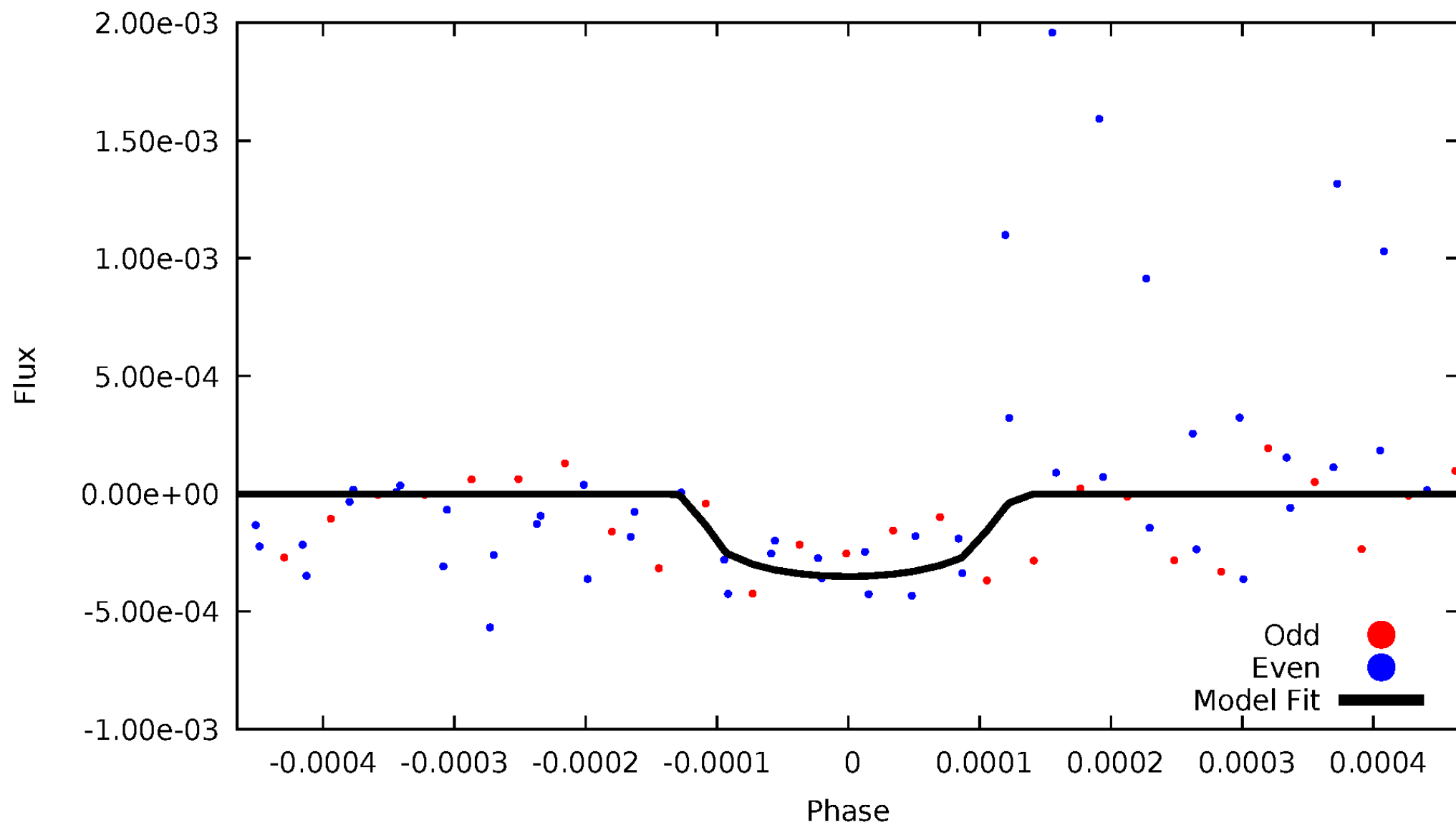


TCE 008415404-01



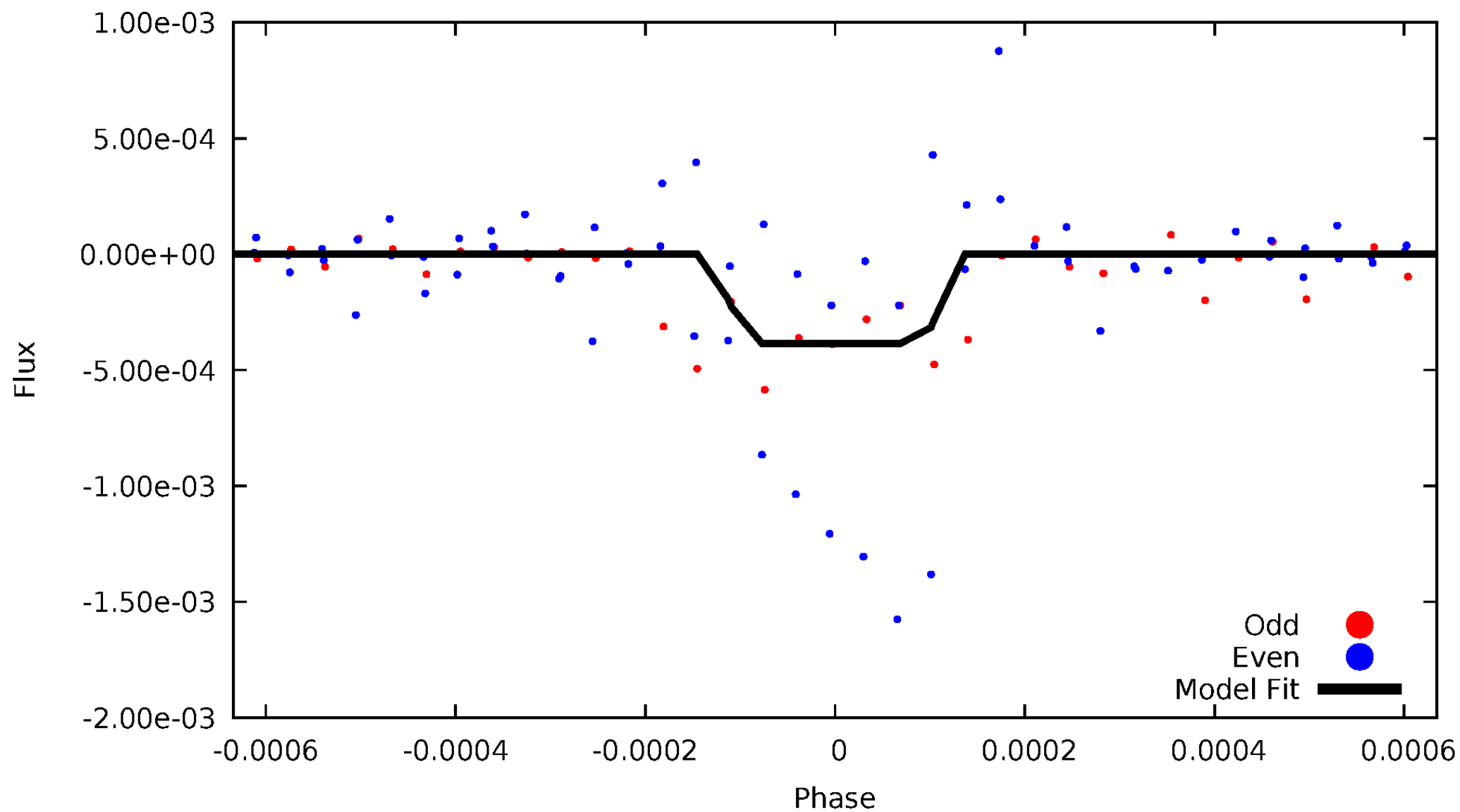
DV Odd/Even

TCE 008415404-01

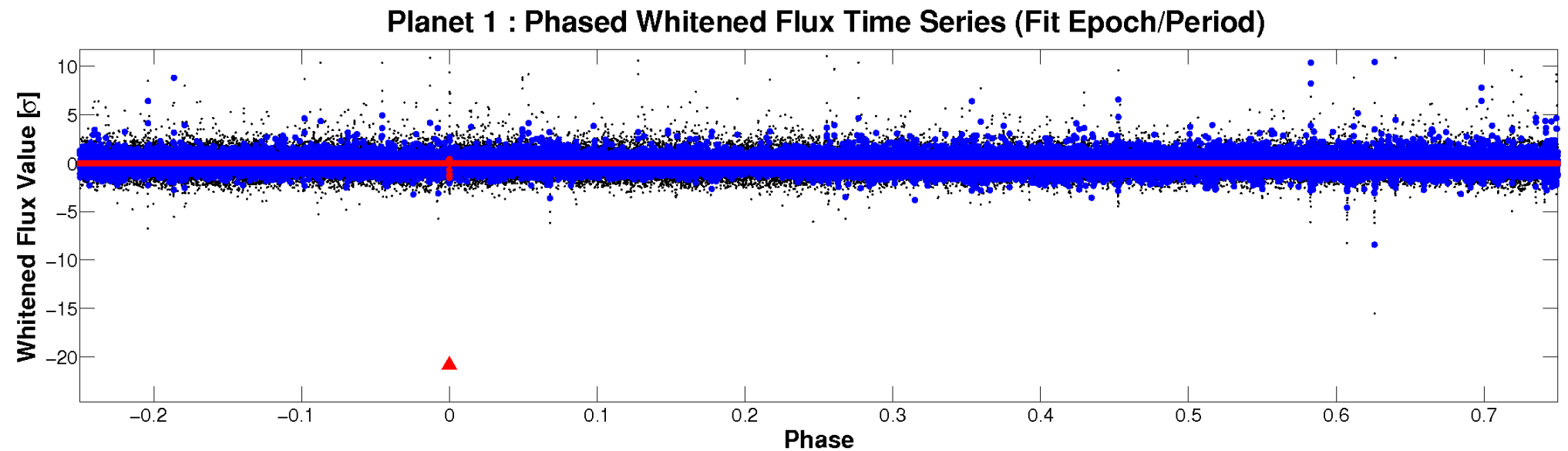
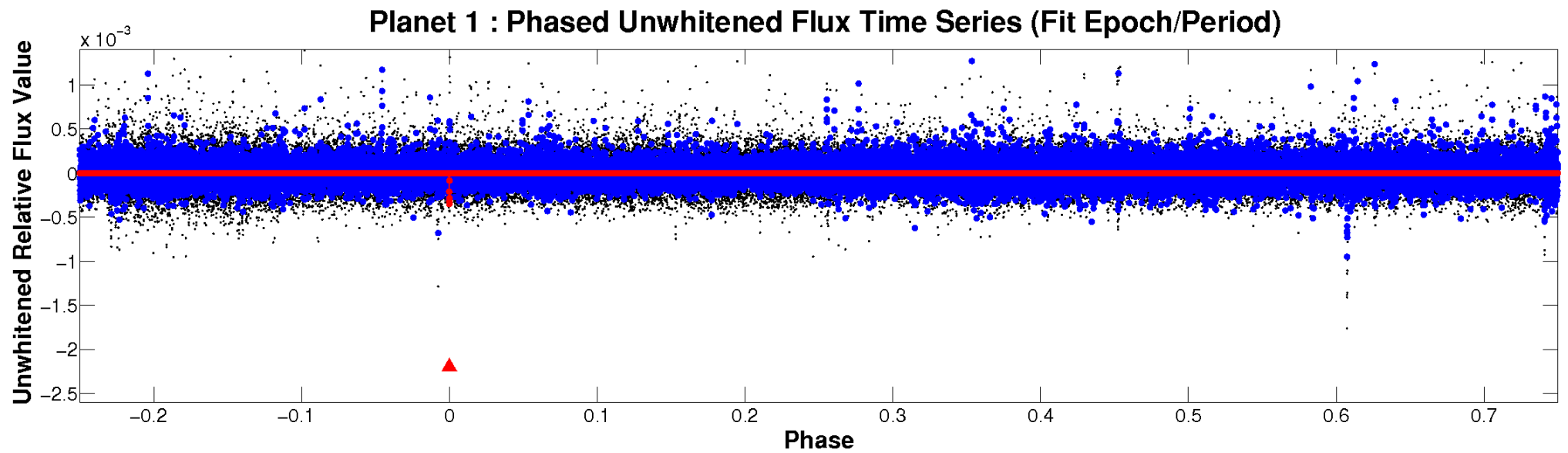


ALT Odd/Even

TCE 008415404-01

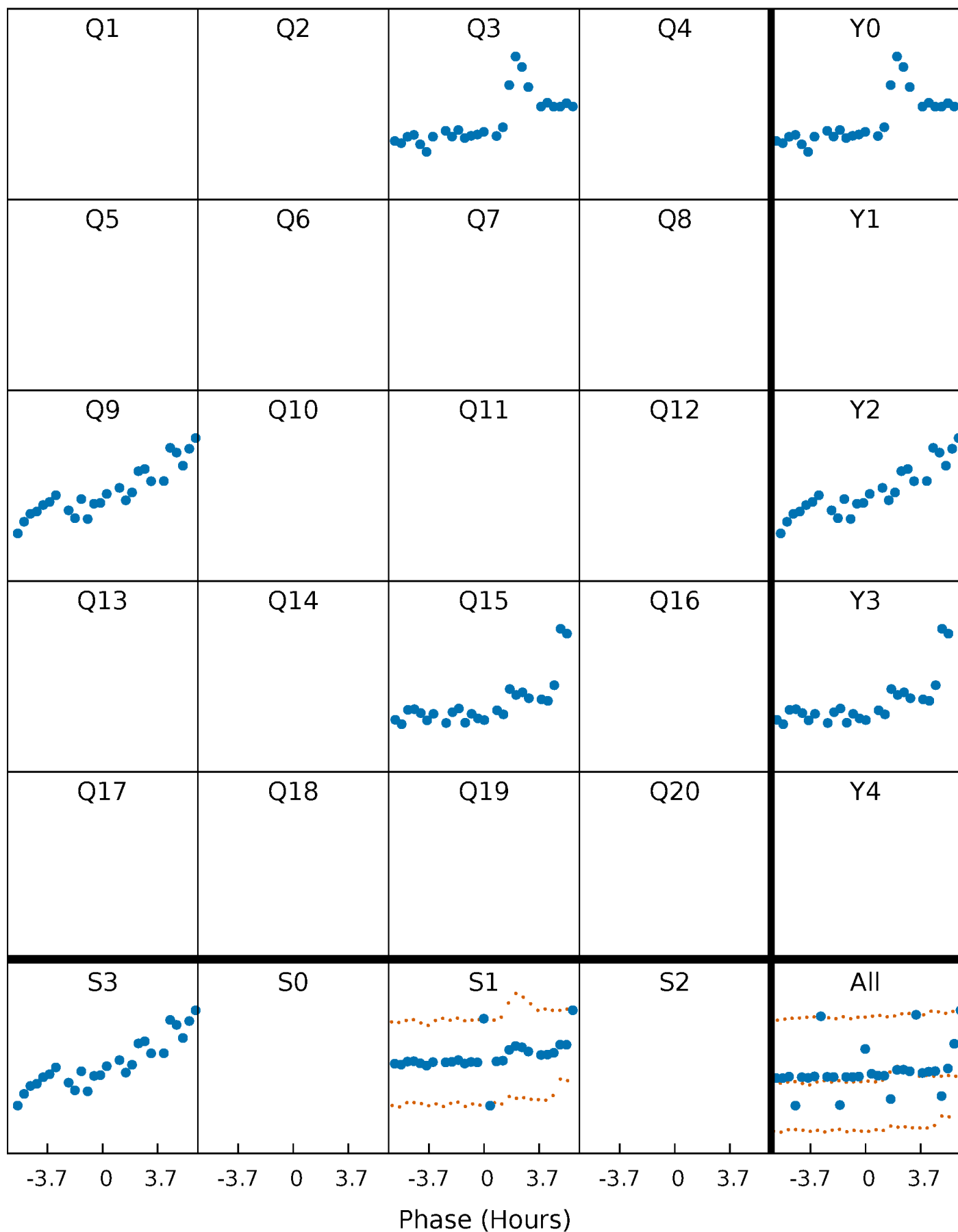


Non-Whitened Vs. Whitened Light Curve



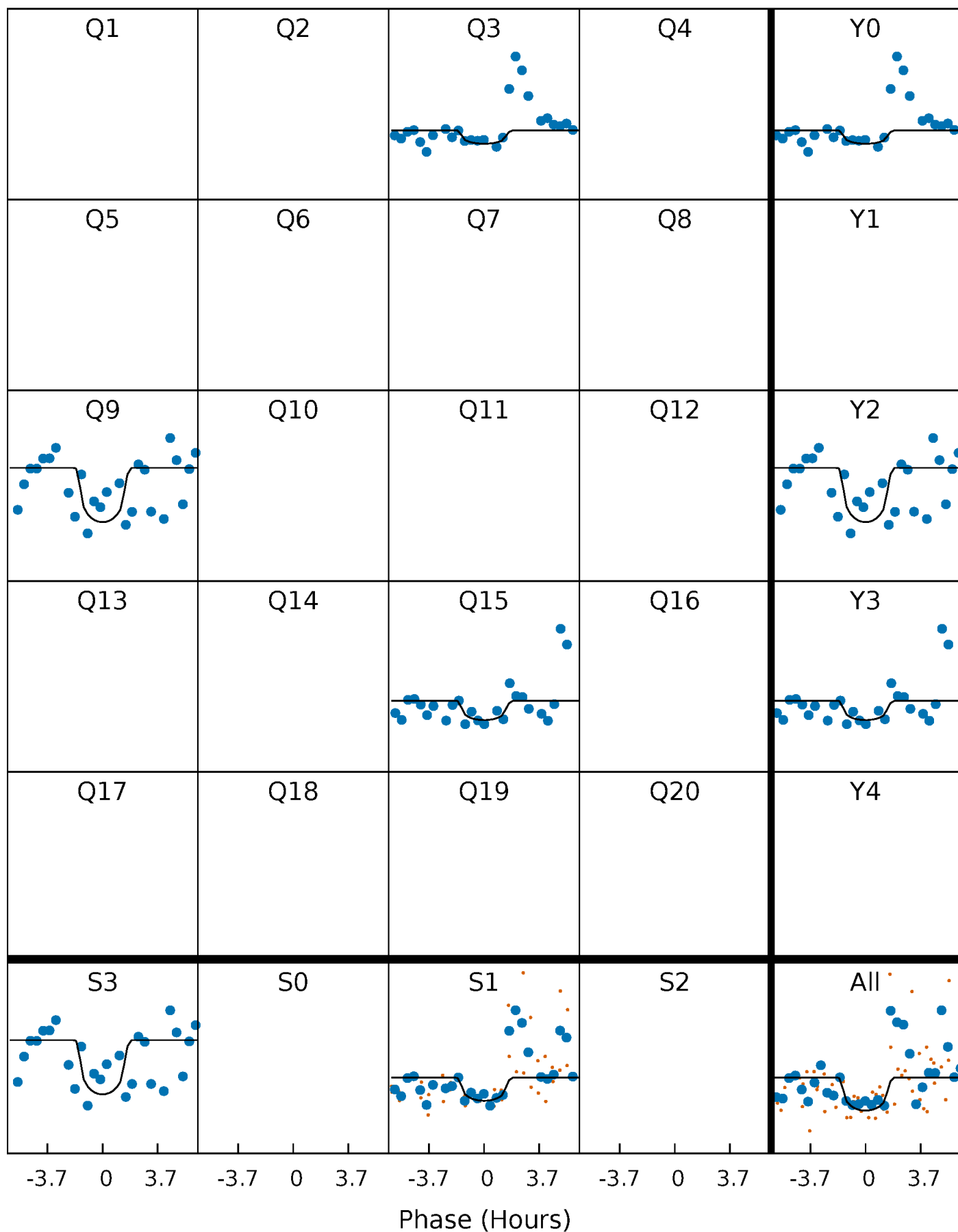
PDC Quarter-Phased Transit Curves

TCE 008415404-01 P=572.701289 Days $T_0=295.177709$ (BKJD)



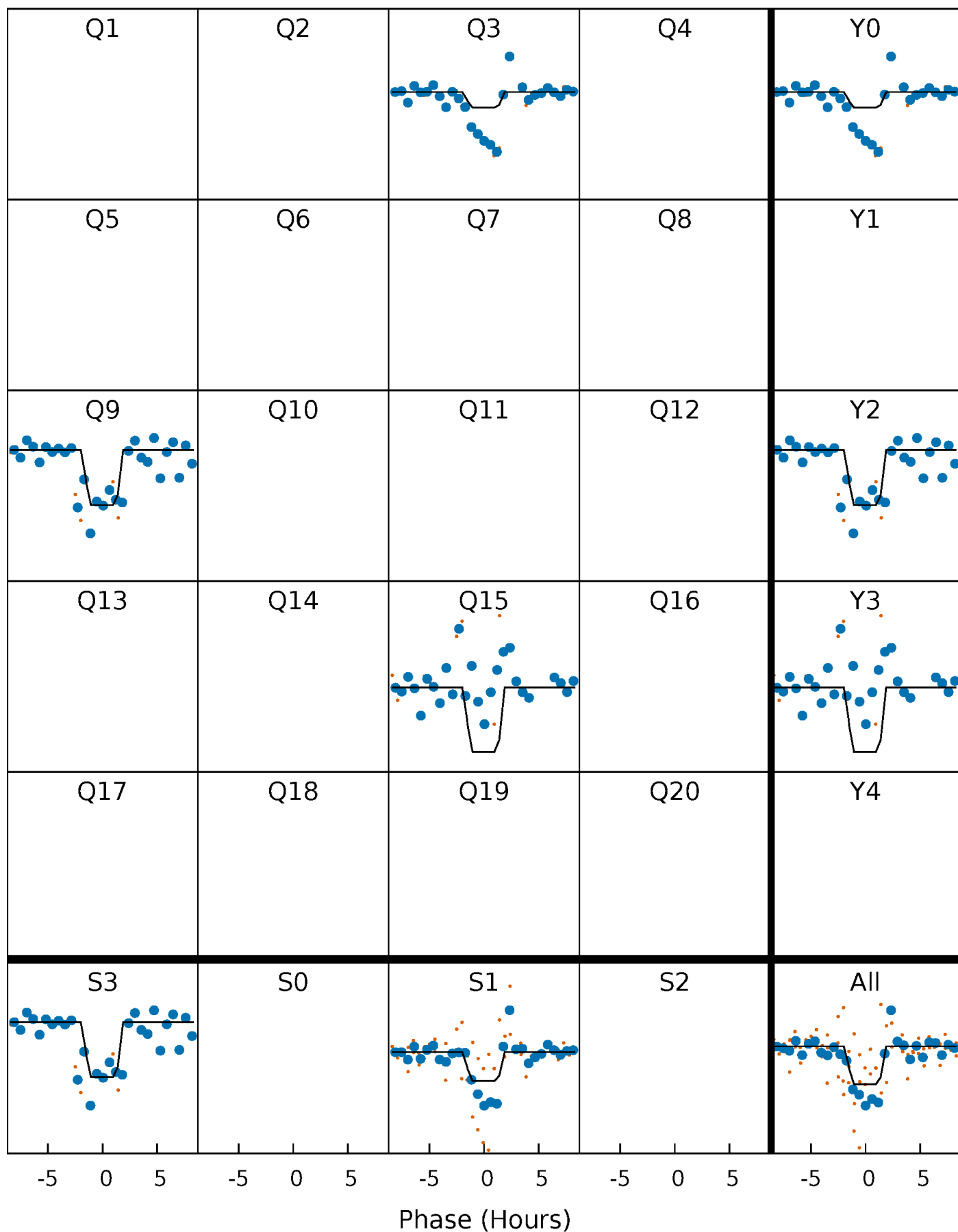
DV Quarter-Phased Transit Curves

TCE 008415404-01 P=572.701289 Days $T_0=295.177709$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

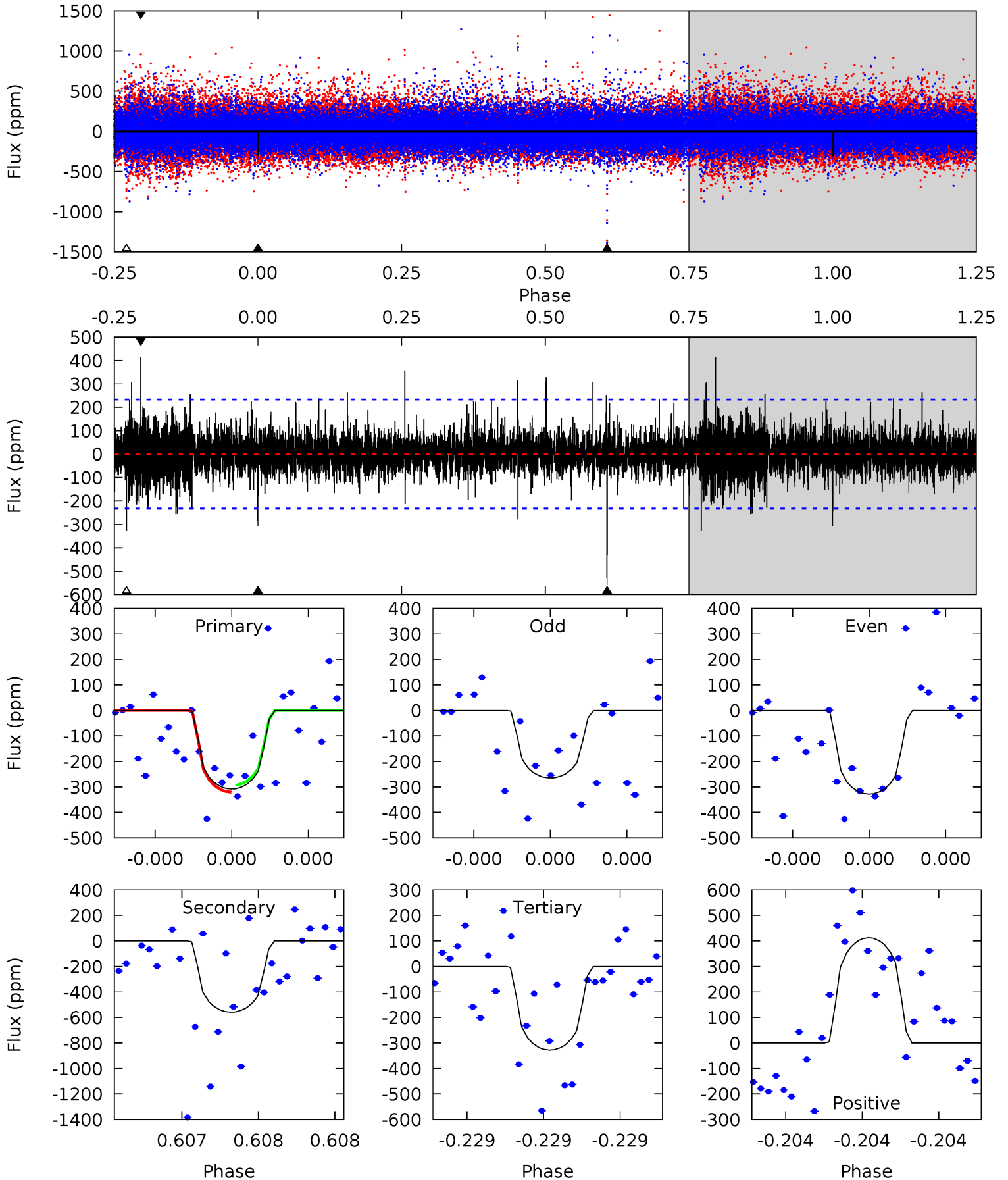
TCE 008415404-01 P=572.711820 Days $T_0=295.167756$ (BKJD)



DV Model-Shift Uniqueness Test

008415404-01, P = 572.701289 Days, E = 295.177709 Days

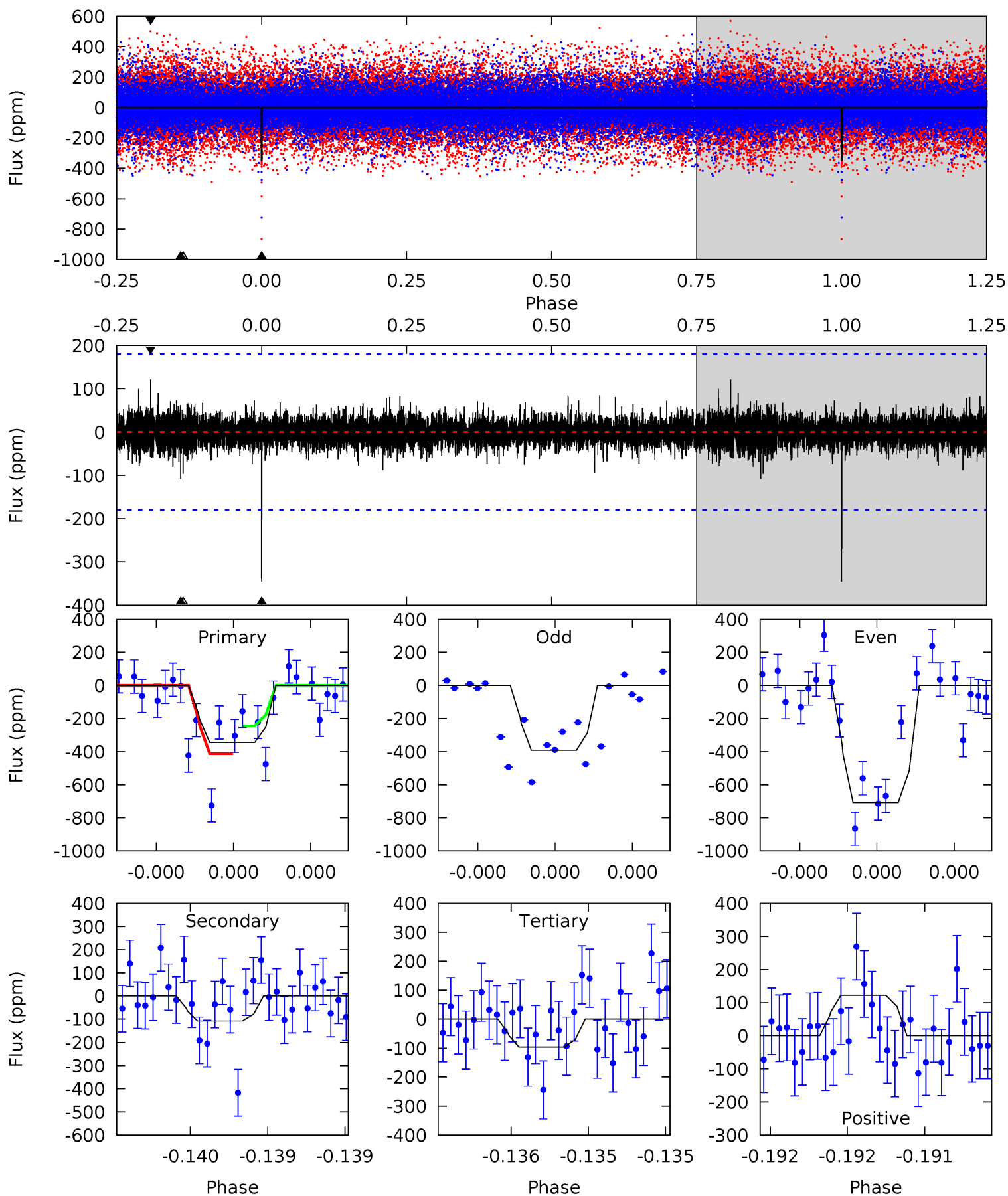
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.53	13.6	8.01	10.1	5.69	3.66	1.37	-0.48	-2.55	5.62	3.56	0.72	1.07	0.42	0.33



Alt Model-Shift Uniqueness Test

008415404-01, P = 572.711820 Days, E = 295.167756 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	3.41	3.04	3.85	5.69	3.66	0.56	7.88	7.07	0.37	-0.44	5.65	1.40	0.26	2.63



Stellar Parameters For KIC 008415404

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4838^{+131}_{-131}	$4.569^{+0.065}_{-0.035}$	$-0.180^{+0.300}_{-0.300}$	$0.718^{+0.056}_{-0.074}$	$0.698^{+0.081}_{-0.054}$	$2.659^{+0.768}_{-0.339}$
	+3%/-3%	+1%/-1%	+167%/-167%	+8%/-10%	+12%/-8%	+29%/-13%
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 008415404-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-558 ± 41	$3.68^{+3.31}_{-2.61}$	230^{+7}_{-7}	3776^{+2356}_{-710}	$33214^{+341878}_{-24228}$
Alt.	-108 ± 32	$3.50^{+3.07}_{-2.38}$	230^{+8}_{-8}	2926^{+1283}_{-450}	6564^{+56479}_{-4768}

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

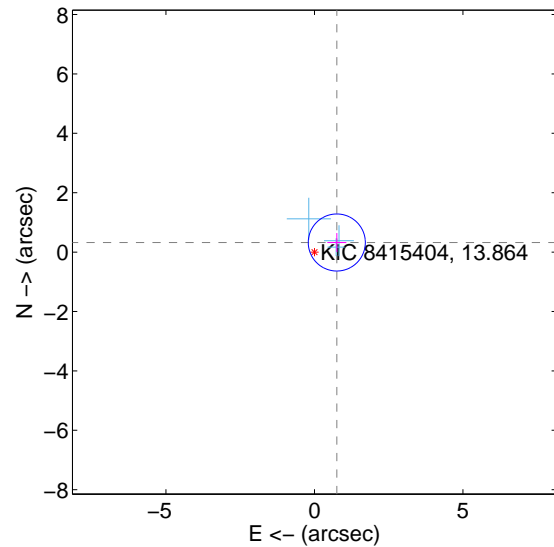
Supplemental centroid analysis for 008415404-01. Kepler magnitude: 13.86. Transit SNR 5.62

There are 3 quarters with good PRF difference image offsets

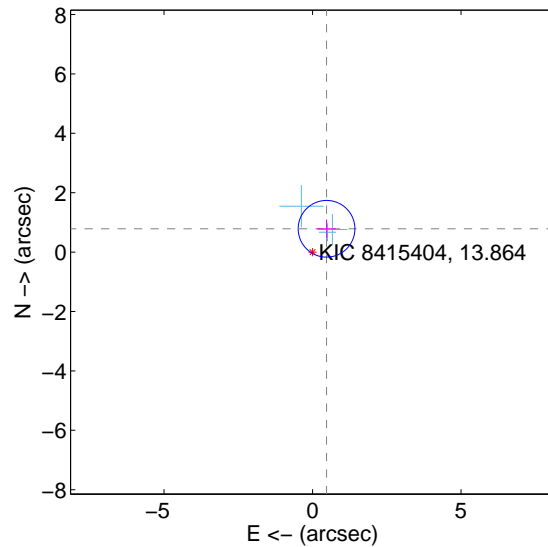
The direct PRF centroid is offset from the target star catalog position by about 0.55 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.819 ± 0.320	2.56	-0.753 ± 0.321	0.323 ± 0.317
PRF-fit source offset from KIC position	0.916 ± 0.318	2.88	-0.472 ± 0.321	0.785 ± 0.317
photometric centroid source offset	2.44 ± 1.45	1.69	0.68 ± 1.39	-2.35 ± 1.45

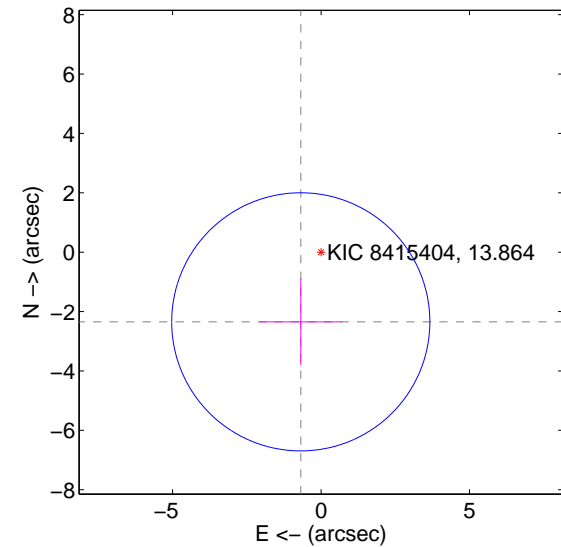
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

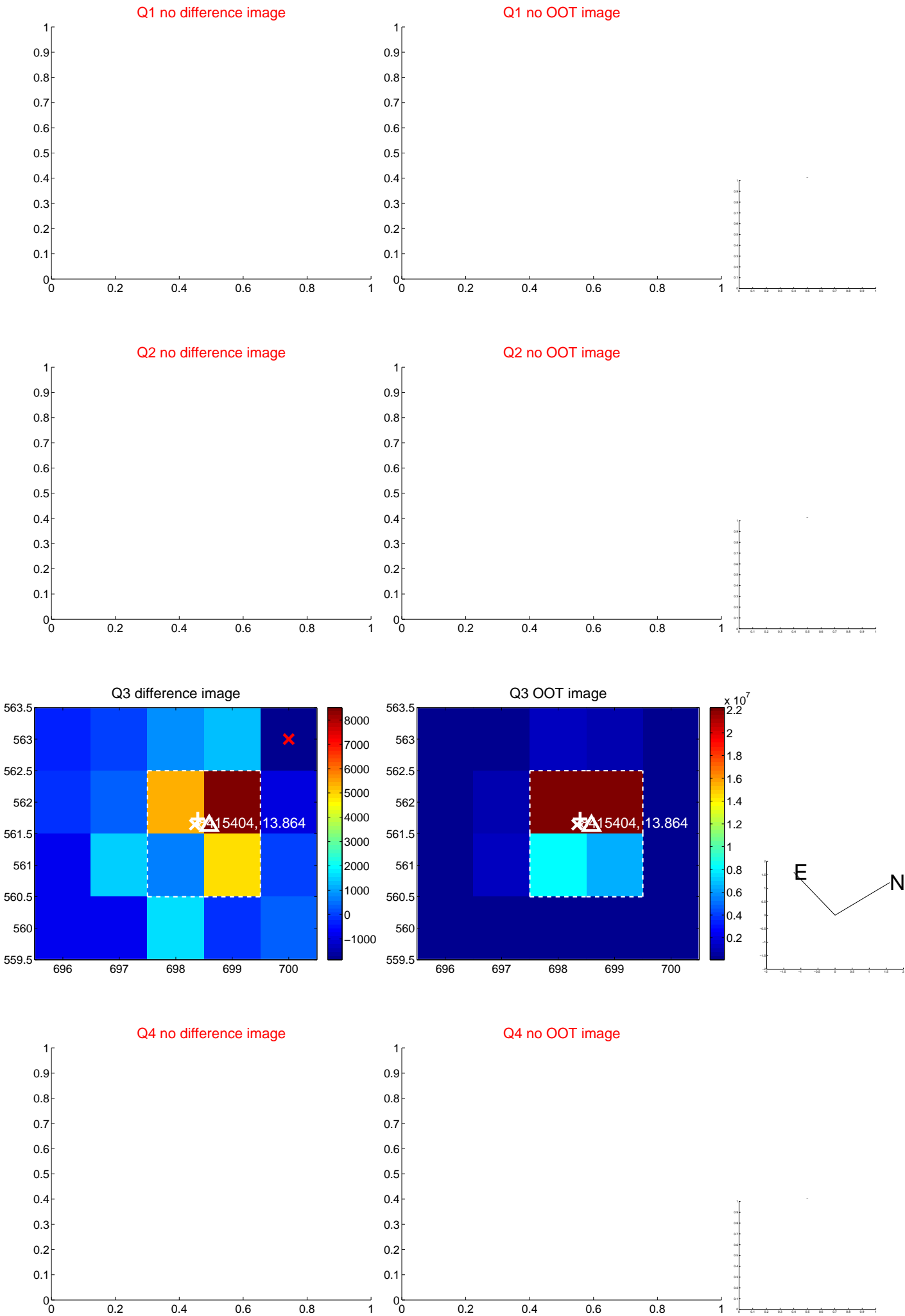


offset from photometric centroids



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.

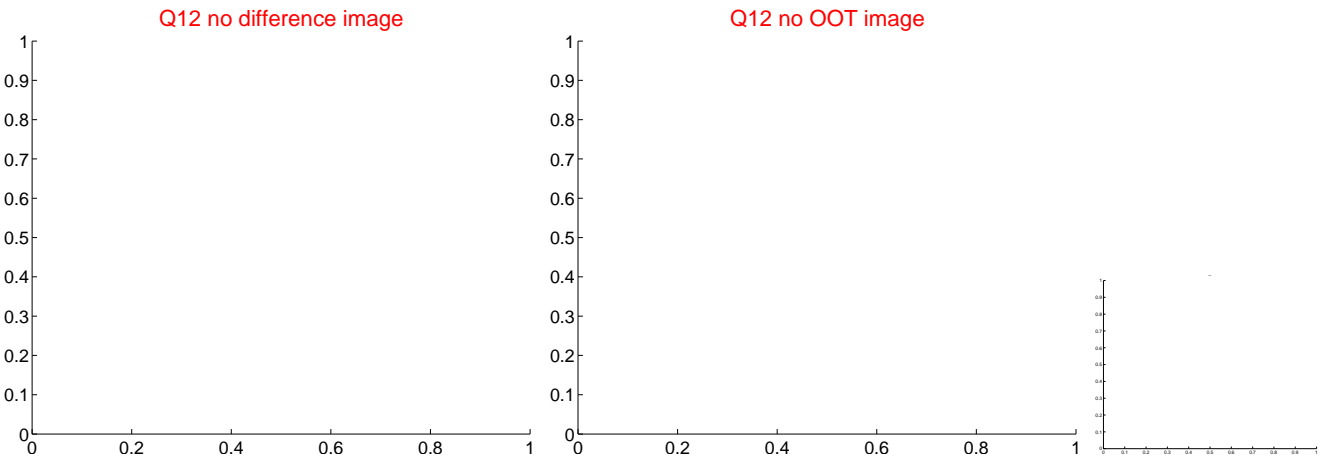
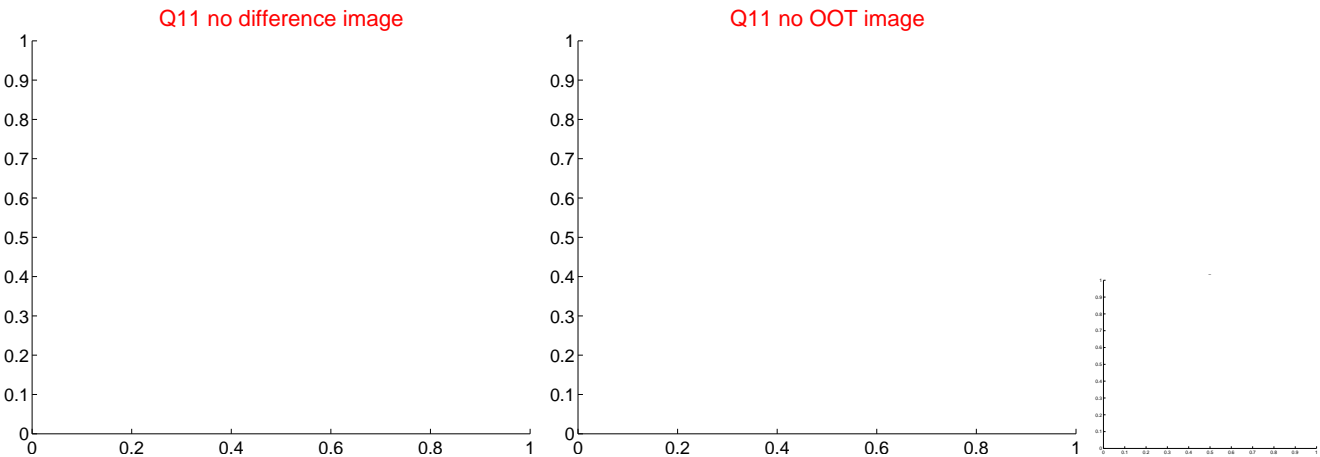
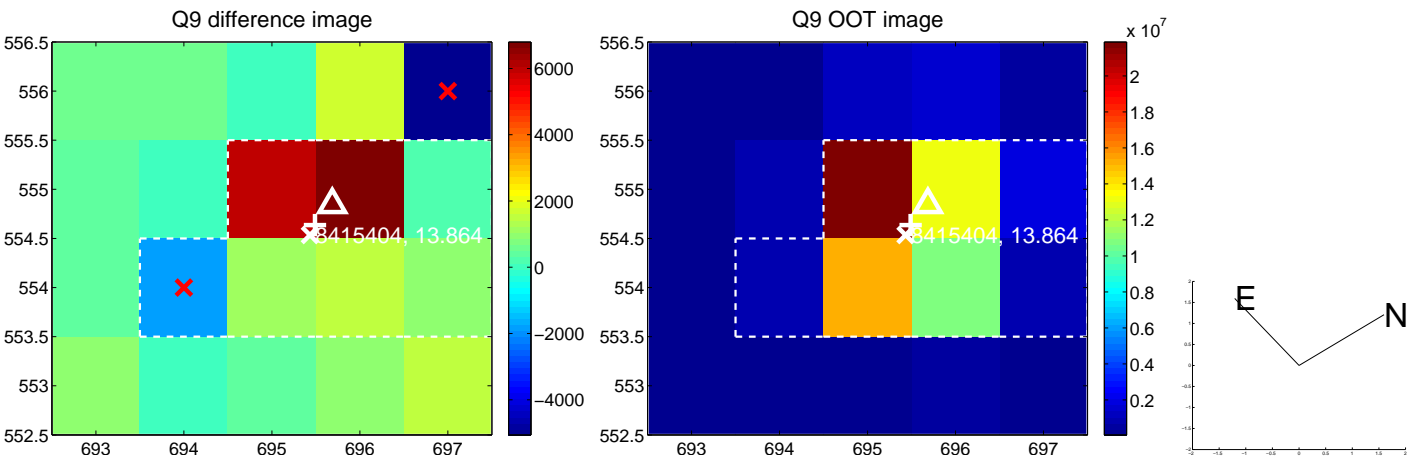
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



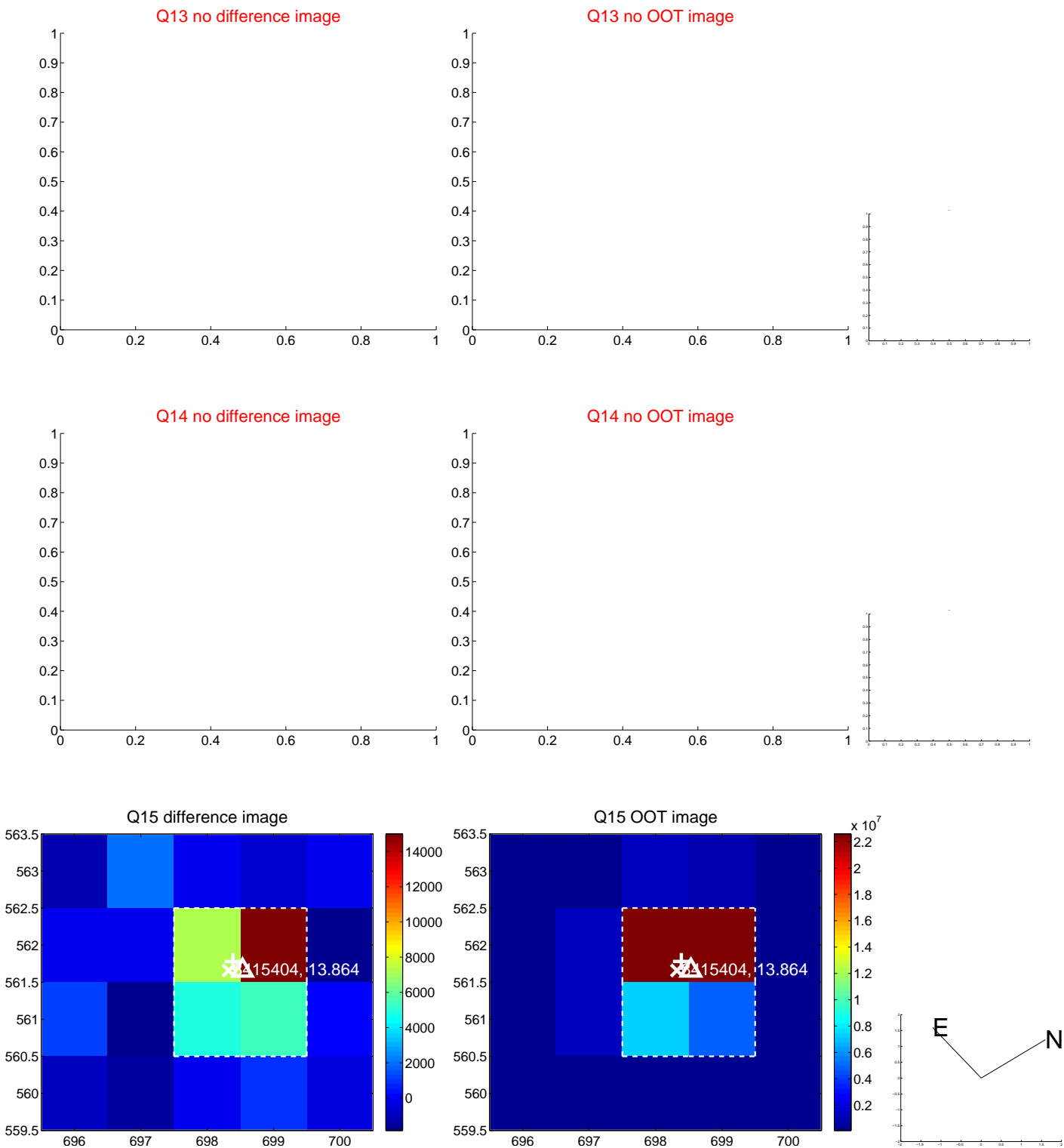
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



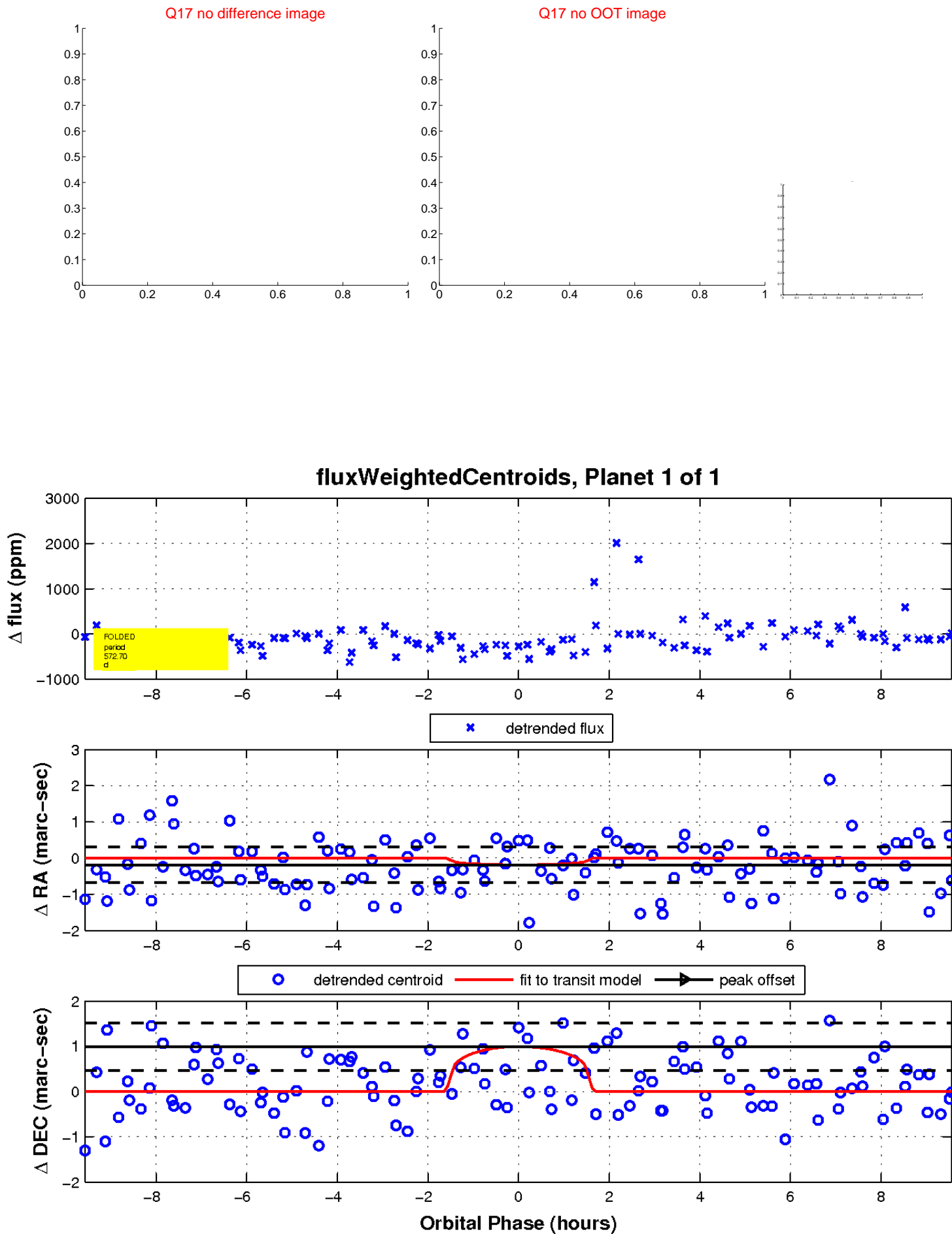
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: 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

