

KIC 008740209

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})
008740209-01	OBS	No	403.607527	514.502124	859.3	8.259	10.9	10.3	1.03	6174	3.13	1.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008740209-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_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.

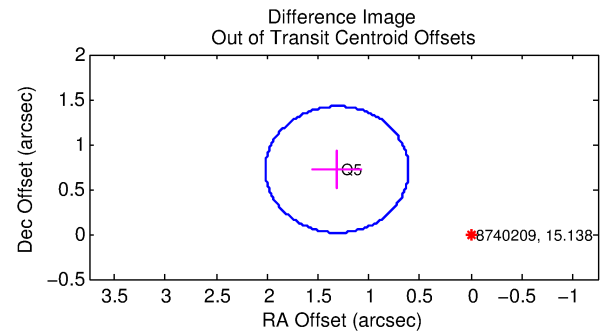
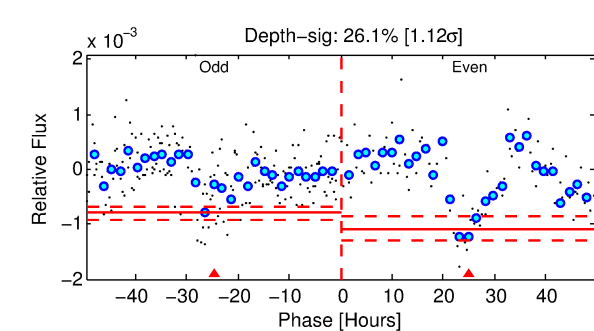
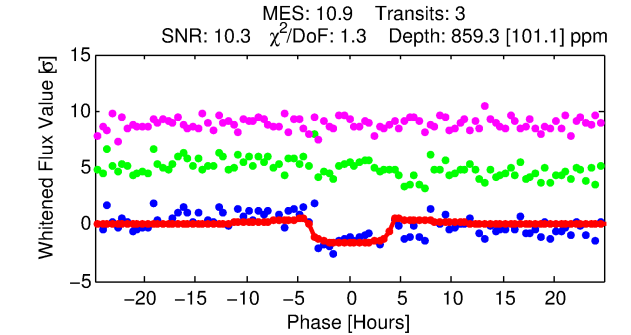
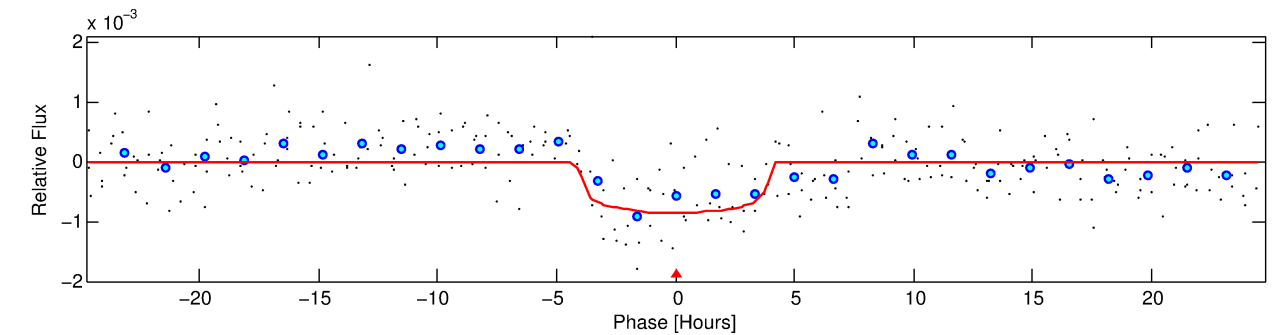
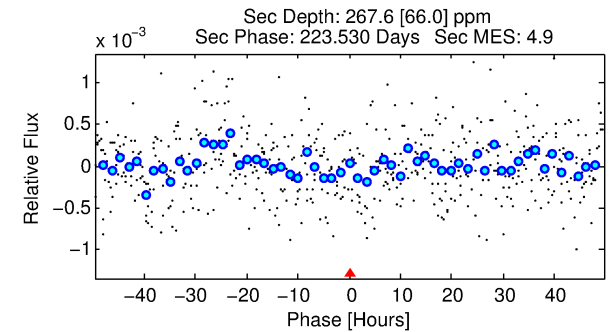
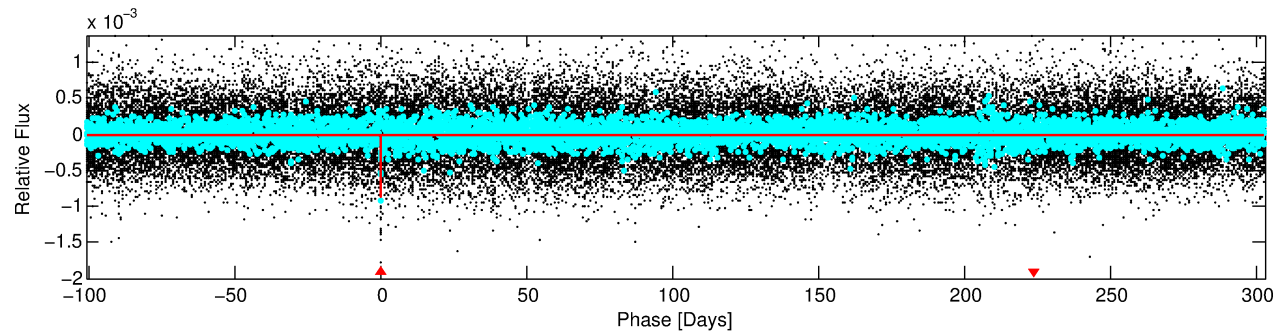
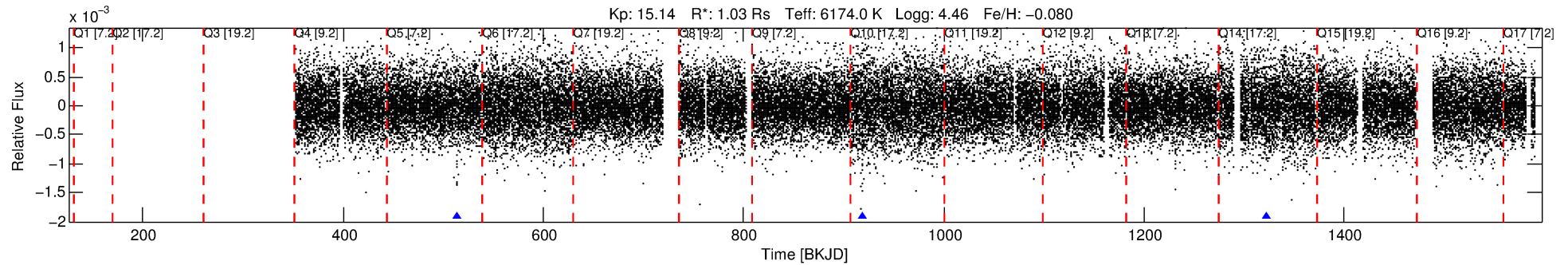
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008740209-01

No Significant Match Found

DV One-Page Summary

KIC: 8740209 Candidate: 1 of 1 Period: 403.608 d



DV Fit Results:

Period = 403.60753 [0.00921] d
Epoch = 514.5021 [0.0100] BKJD
Rp/R* = 0.0280 [0.0253]
a/R* = 317.73 [1414.34]
b = 0.58 [5.19]
Seff = 1.13 [0.51]
Teq = 263 [30] K
Rp = 3.13 [3.01] Re
a = 1.1018 [0.3132] AU
Ag = 18249.67 [34161.12] [0.53 σ]
Teffp = 4723 [2163] K [2.06 σ]

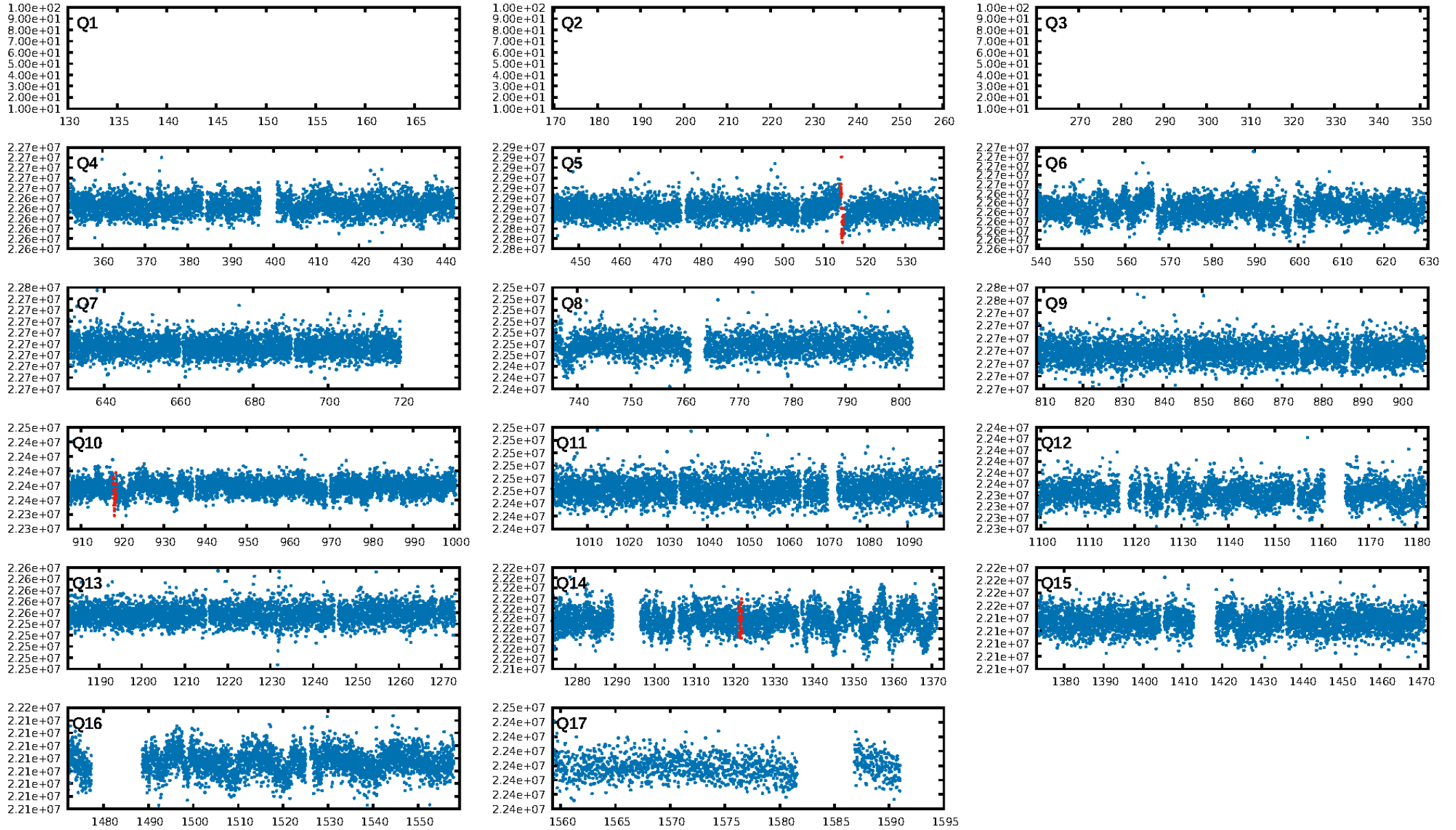
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 74.4%
Bootstrap-pfa: 1.12e-17
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -9.636
Centroid-sig: 0.2%
Centroid-so: 3.574 arcsec [2.27 σ]
OotOffset-rm: 1.497 arcsec [6.39 σ]
KicOffset-rm: 1.390 arcsec [5.93 σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

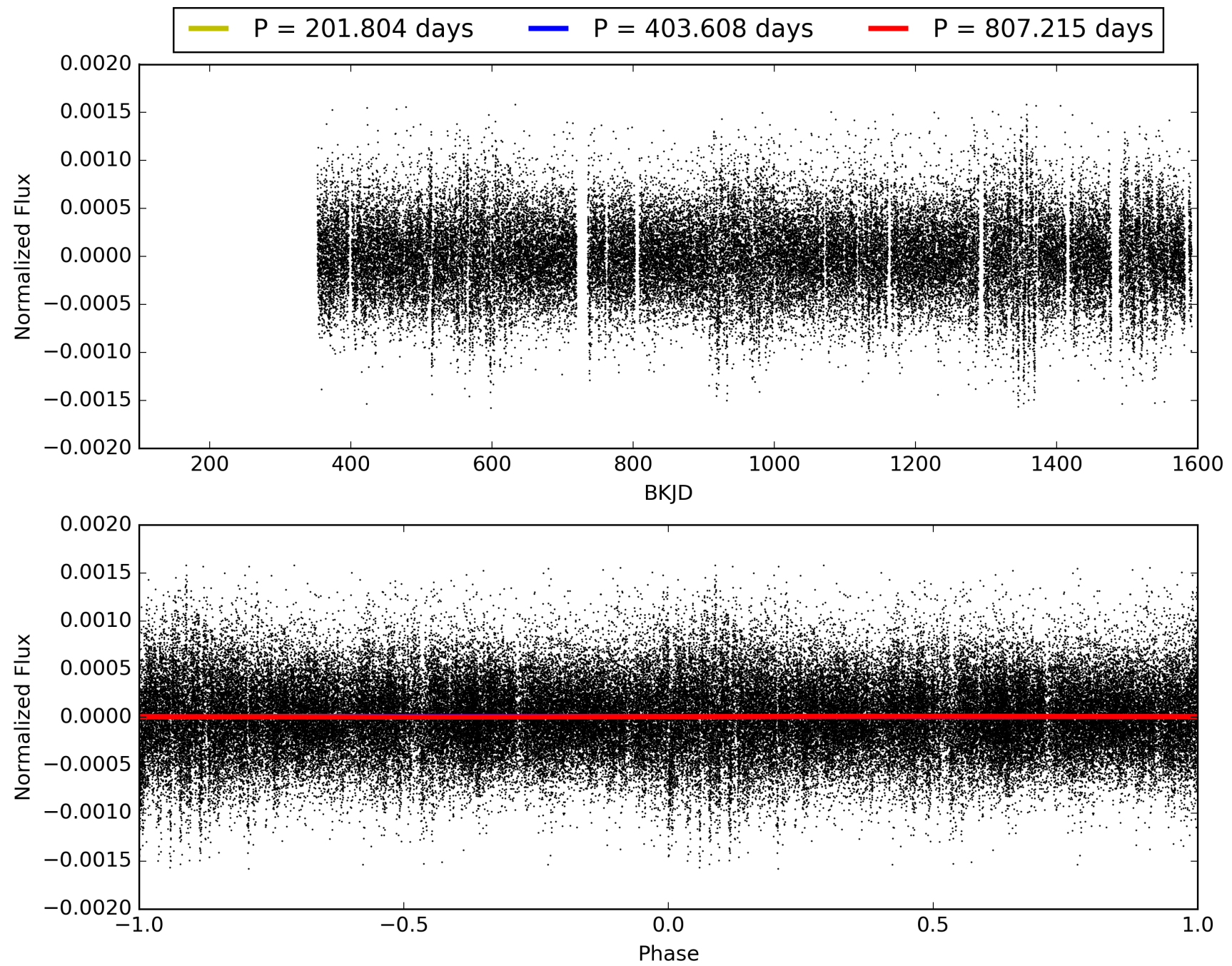
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:29:02 Z

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

TCE 008740209-01, PDC Light Curves

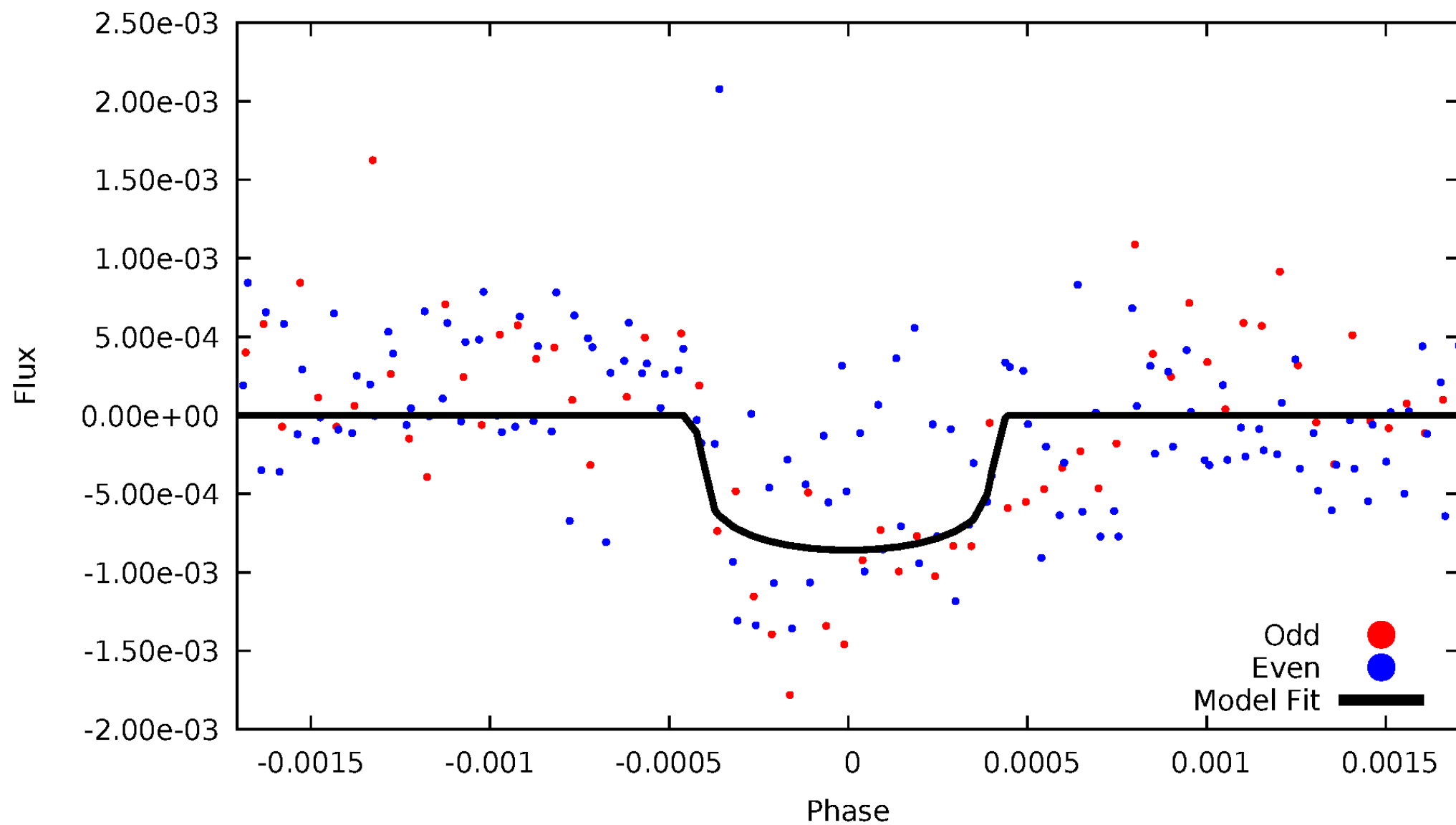


TCE 008740209-01



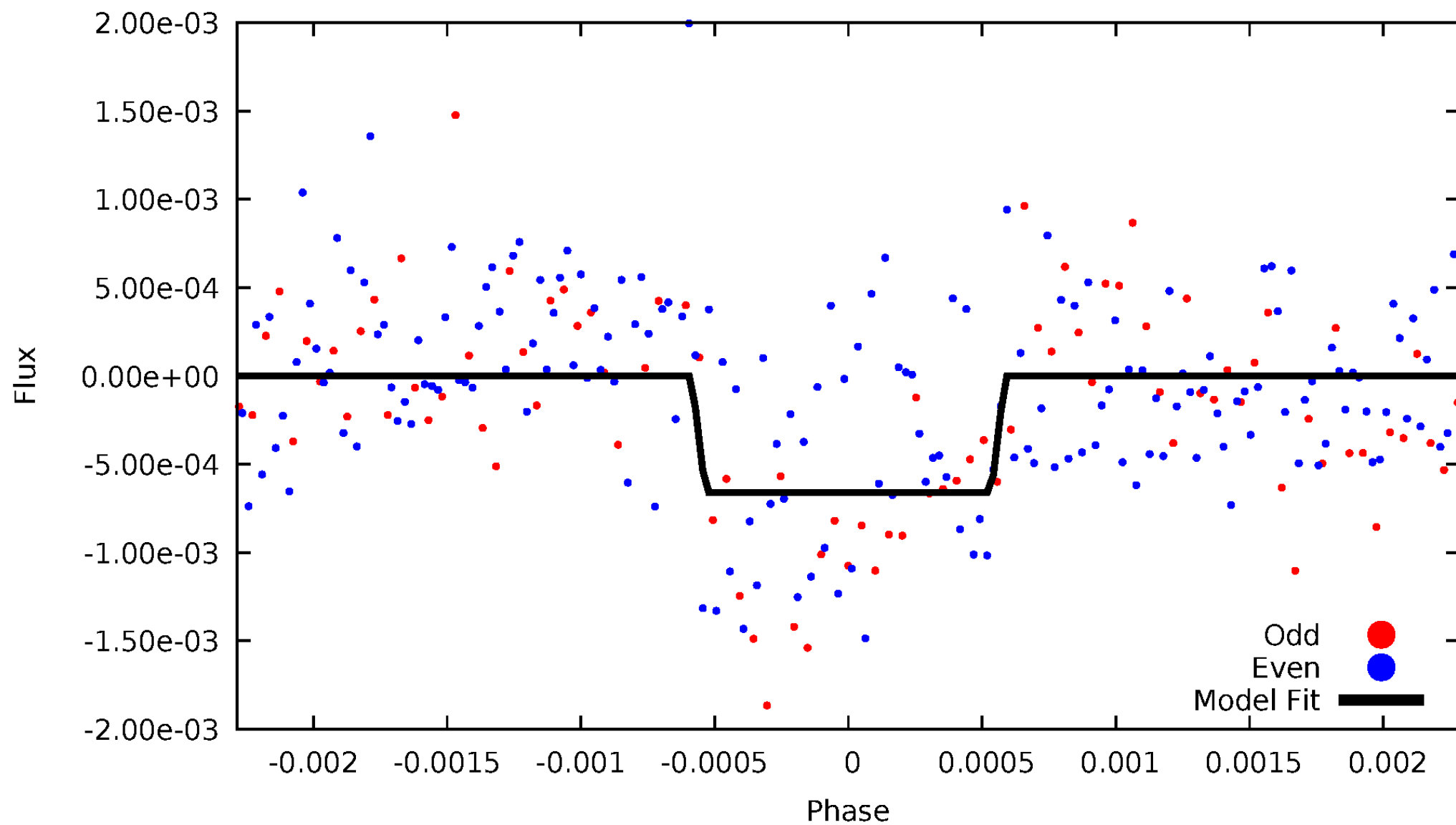
DV Odd/Even

TCE 008740209-01



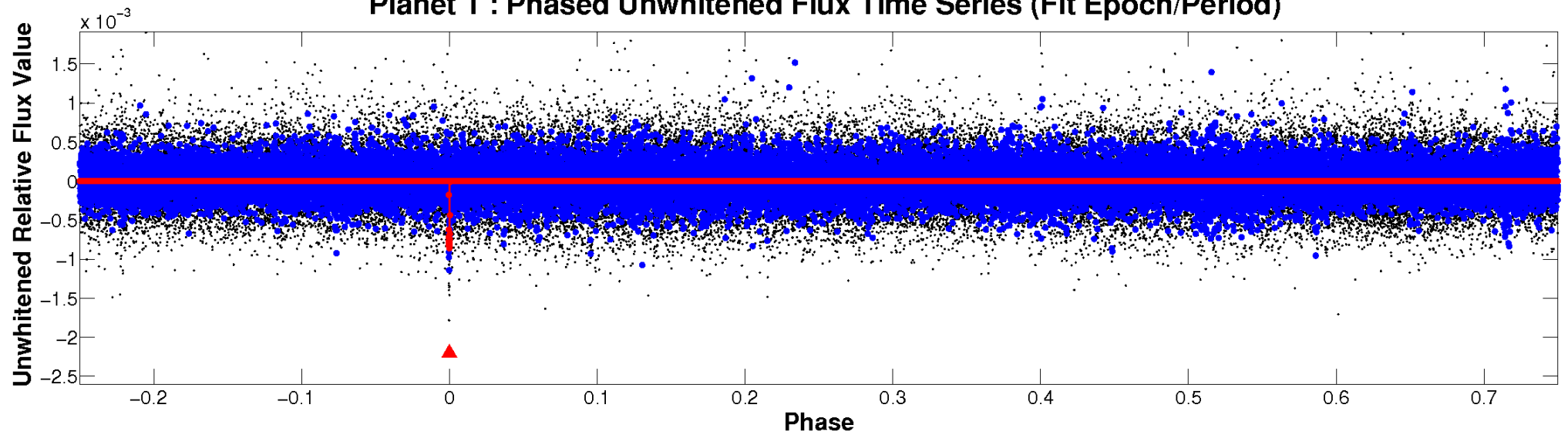
ALT Odd/Even

TCE 008740209-01

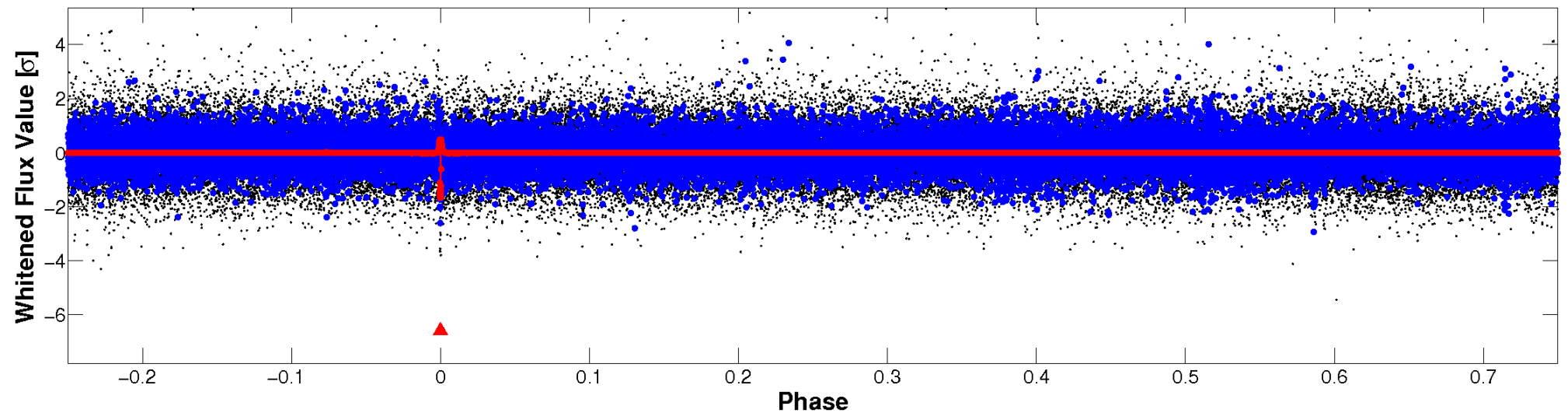


Non-Whitened Vs. Whitened Light Curve

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

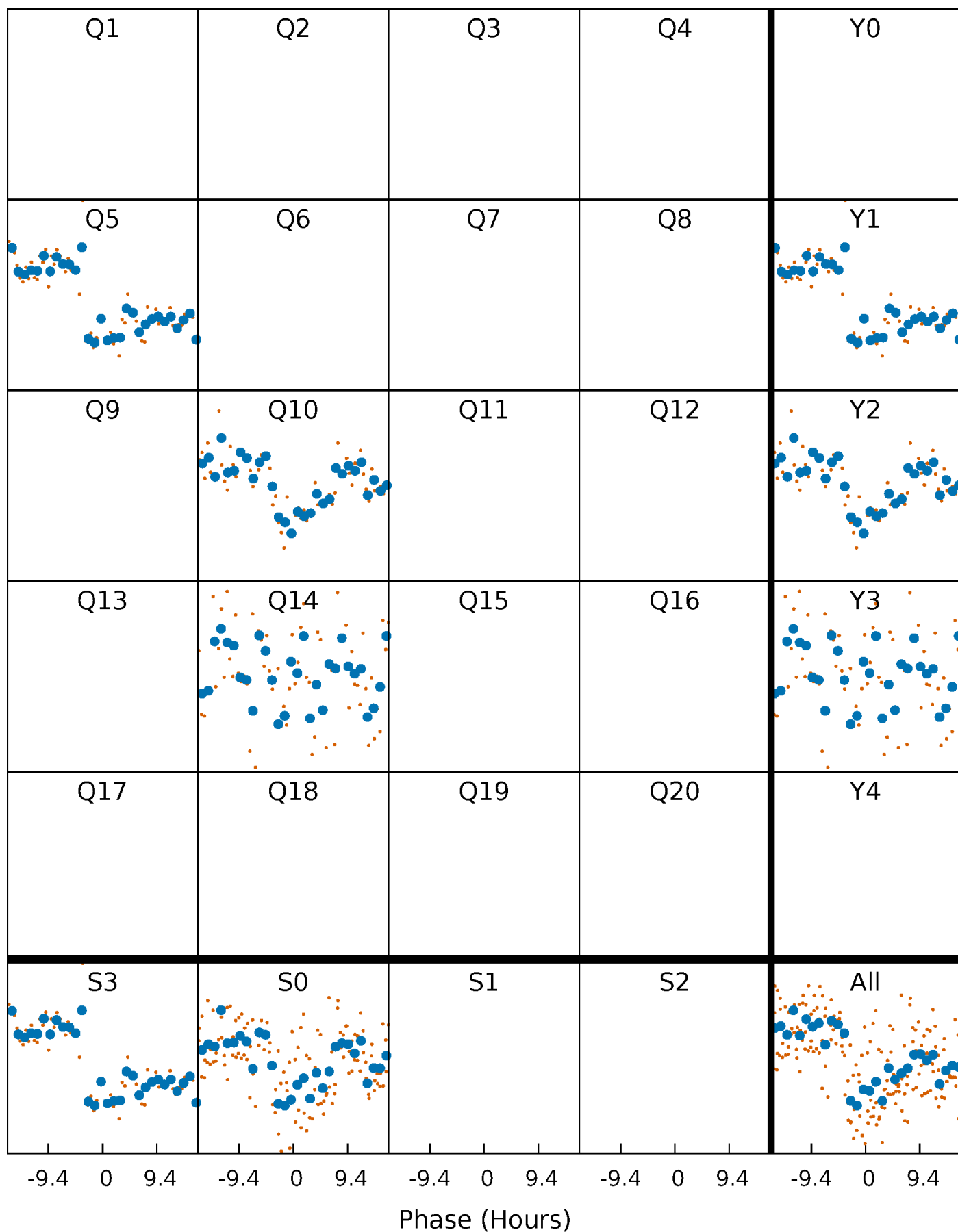


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



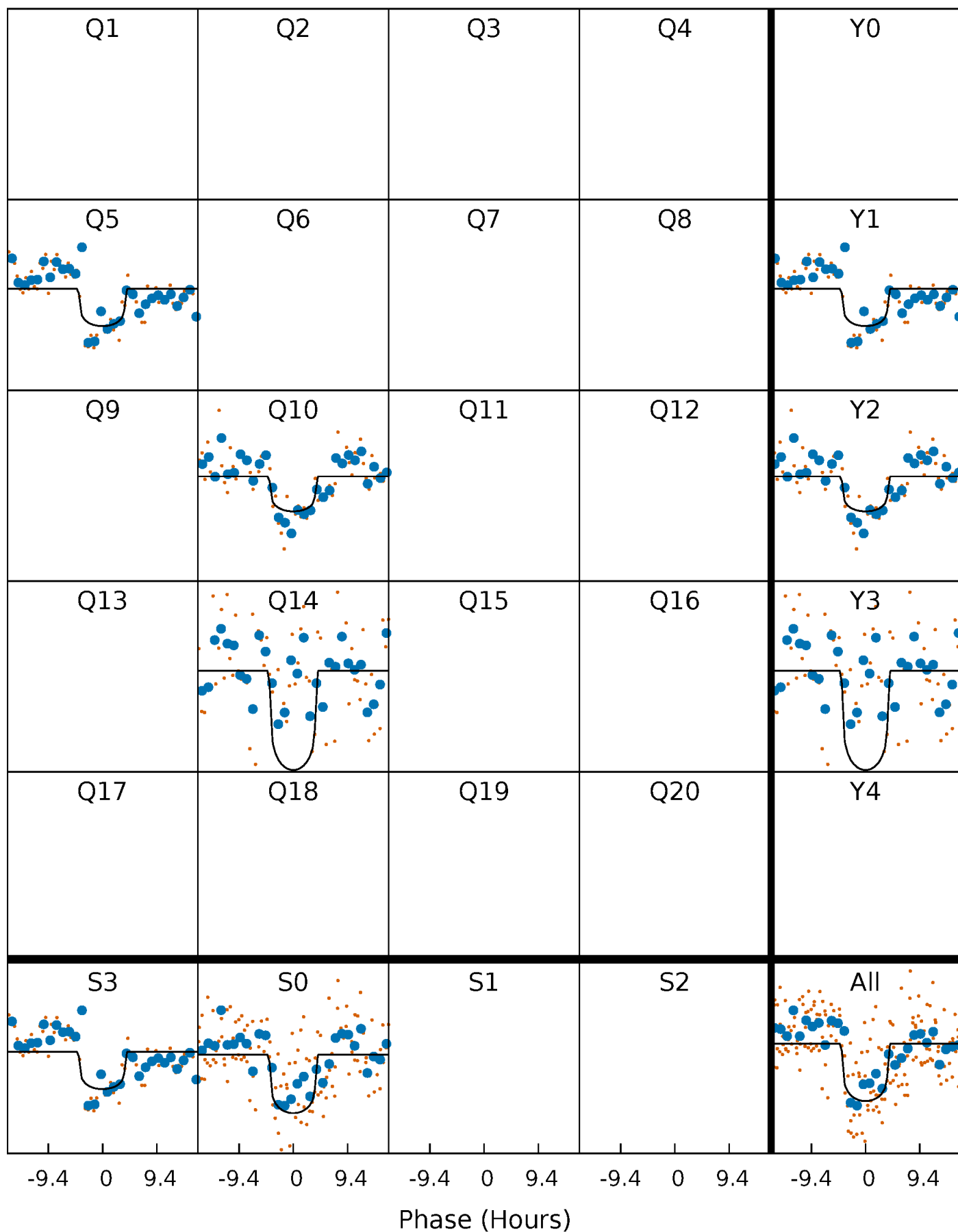
PDC Quarter-Phased Transit Curves

TCE 008740209-01 P=403.607527 Days $T_0=514.502124$ (BKJD)



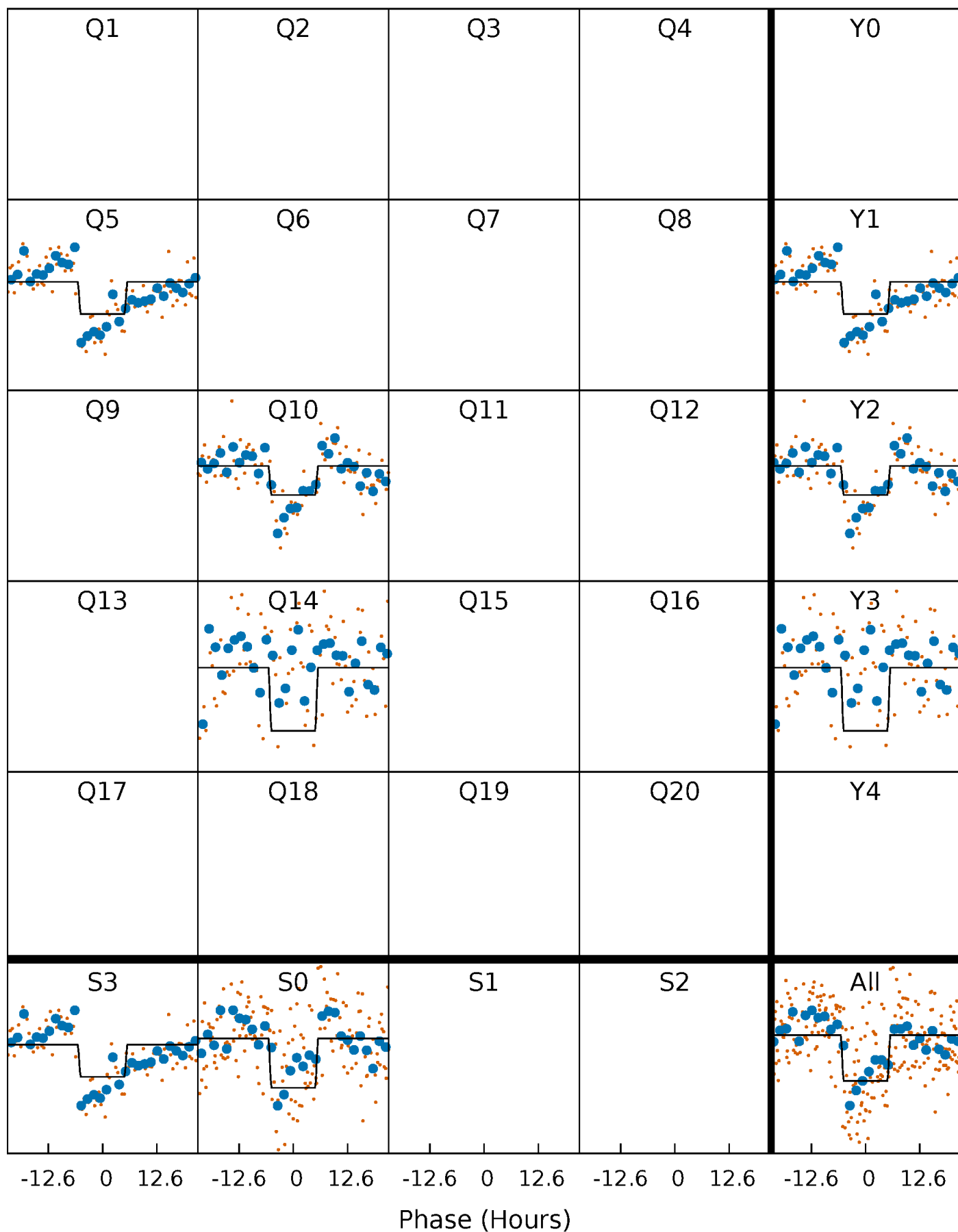
DV Quarter-Phased Transit Curves

TCE 008740209-01 P=403.607527 Days $T_0=514.502124$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

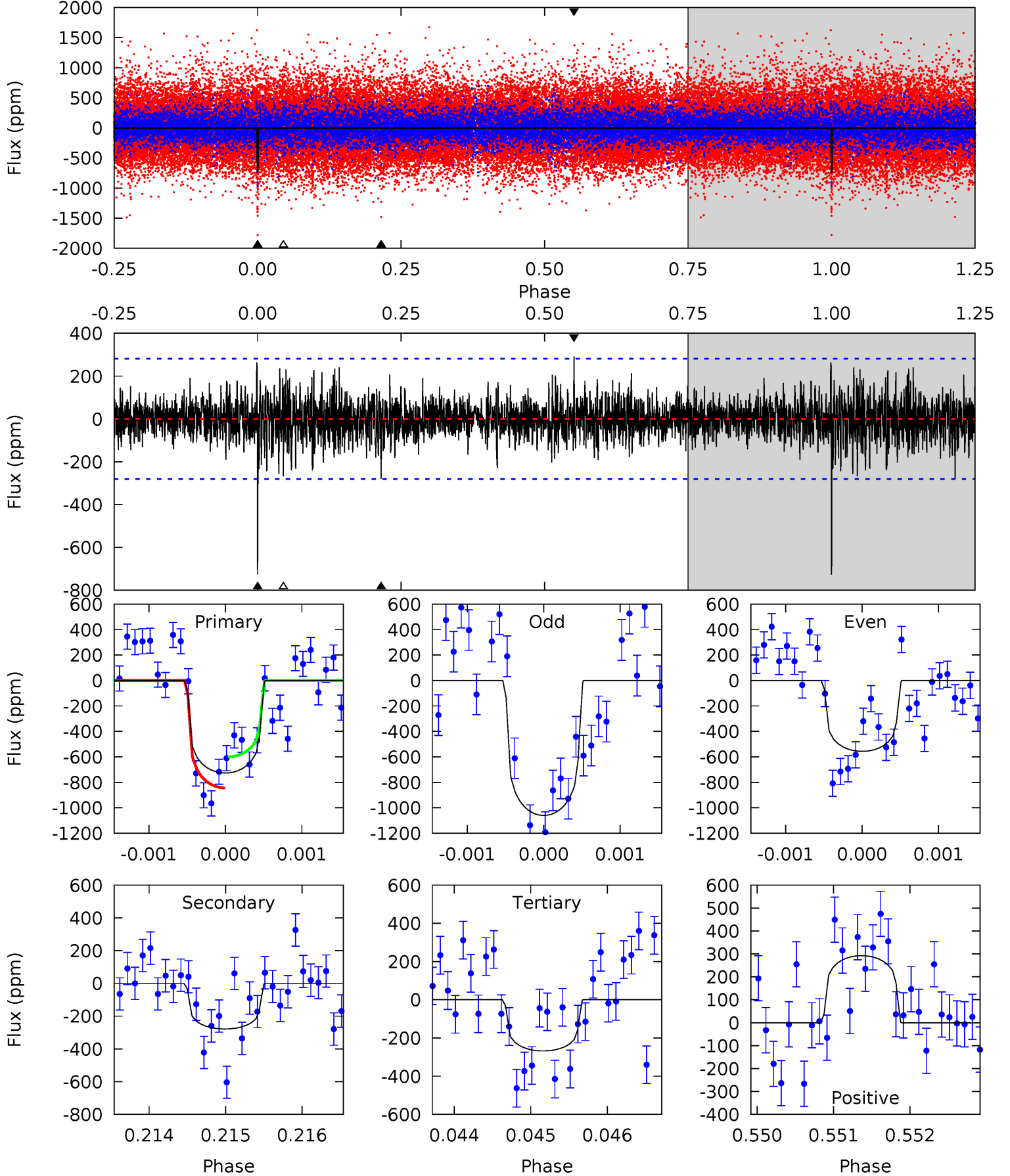
TCE 008740209-01 P=403.569621 Days $T_0=514.597007$ (BKJD)



DV Model-Shift Uniqueness Test

008740209-01, $P = 403.607527$ Days, $E = 110.894597$ Days

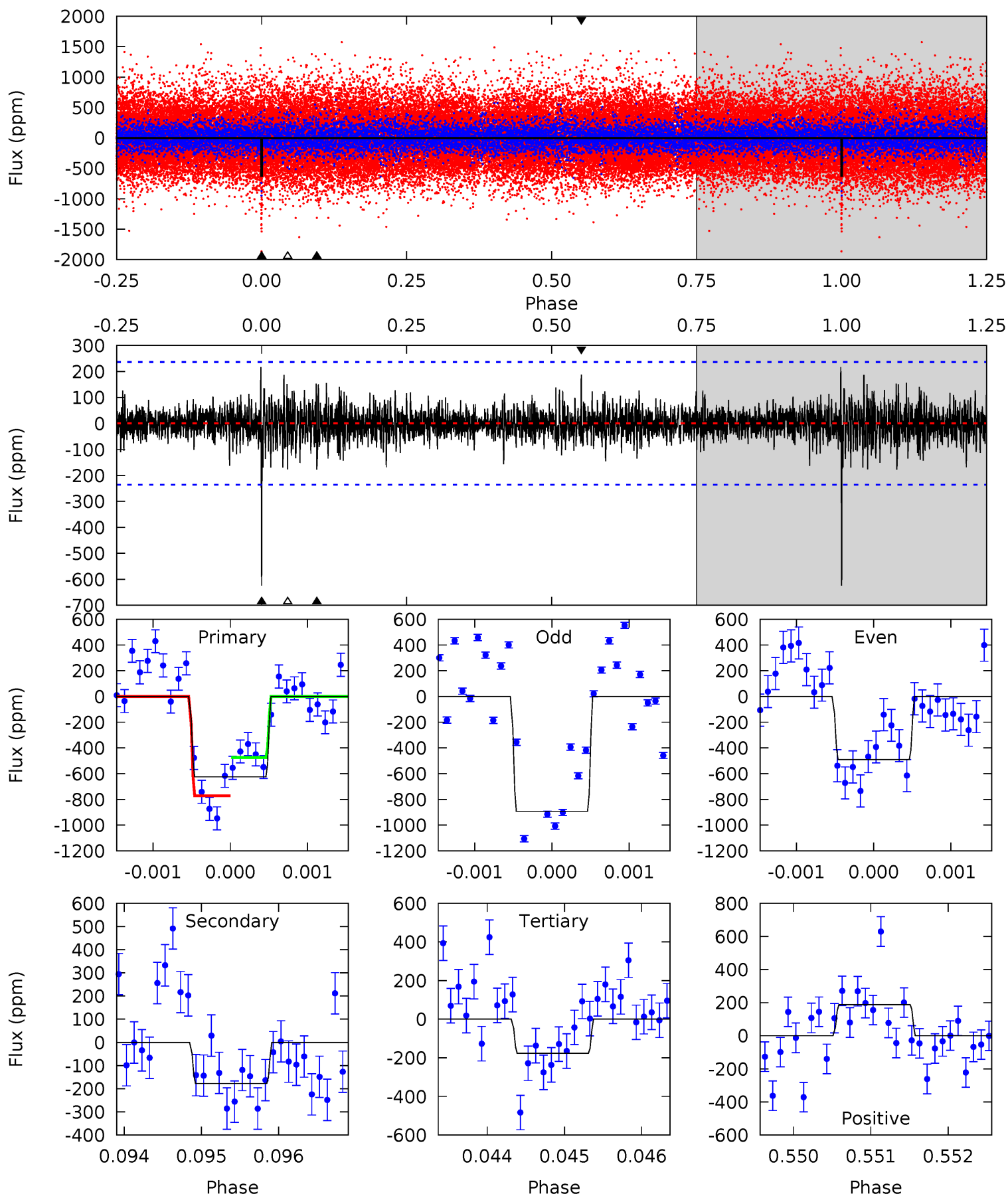
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	5.43	5.23	5.70	5.48	3.33	1.30	8.95	8.48	0.21	-0.27	4.63	0.83	0.29	2.36



Alt Model-Shift Uniqueness Test

008740209-01, P = 403.569621 Days, E = 111.027386 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	4.08	4.06	4.33	5.43	3.26	0.99	10.3	10.0	0.02	-0.25	4.38	0.70	0.26	3.41



Stellar Parameters For KIC 008740209

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6174^{+193}_{-257}	$4.455^{+0.058}_{-0.232}$	$-0.080^{+0.250}_{-0.300}$	$1.026^{+0.341}_{-0.114}$	$1.090^{+0.162}_{-0.146}$	$1.423^{+0.431}_{-0.779}$
	+3%/-4%	+1%/-5%	+312%/-375%	+33%/-11%	+15%/-13%	+30%/-55%
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 008740209-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-278 ± 51	$3.70^{+2.94}_{-2.25}$	376^{+31}_{-20}	4627^{+2591}_{-856}	13007^{+71427}_{-8957}
Alt.	-177 ± 43	$3.58^{+2.71}_{-2.26}$	375^{+31}_{-22}	4294^{+2443}_{-764}	8744^{+52457}_{-5971}

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

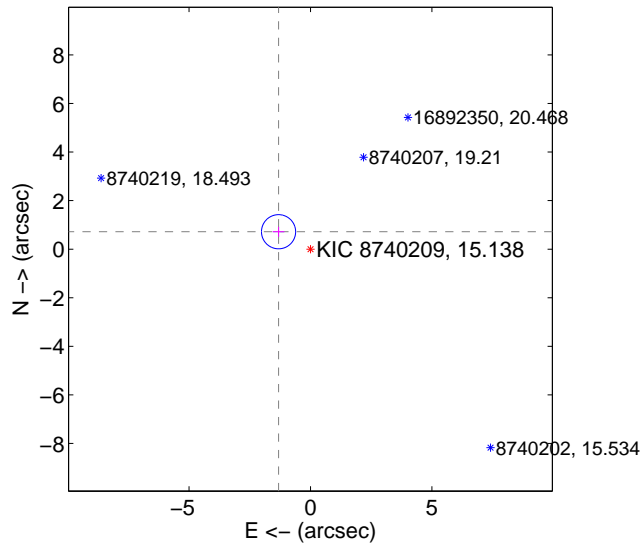
Supplemental centroid analysis for 008740209-01. Kepler magnitude: 15.14. Transit SNR 10.34

There are 1 quarters with good PRF difference image offsets

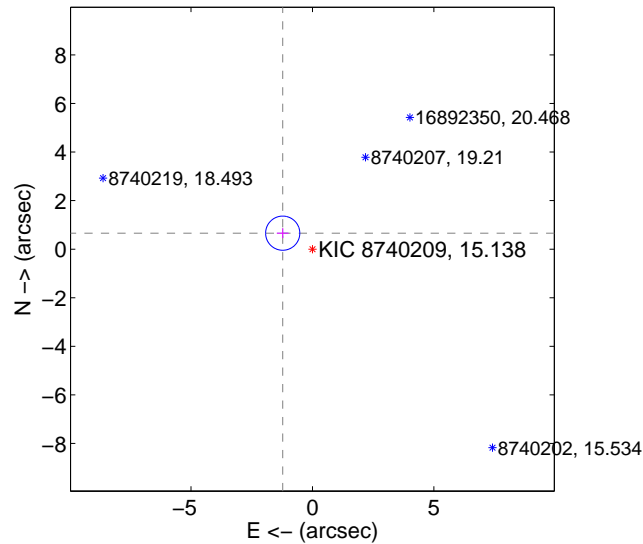
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.497 ± 0.234	6.39	1.314 ± 0.242	0.718 ± 0.205
PRF-fit source offset from KIC position	1.390 ± 0.235	5.93	1.224 ± 0.242	0.659 ± 0.205
photometric centroid source offset	3.57 ± 1.58	2.27	2.08 ± 1.29	-2.91 ± 1.70

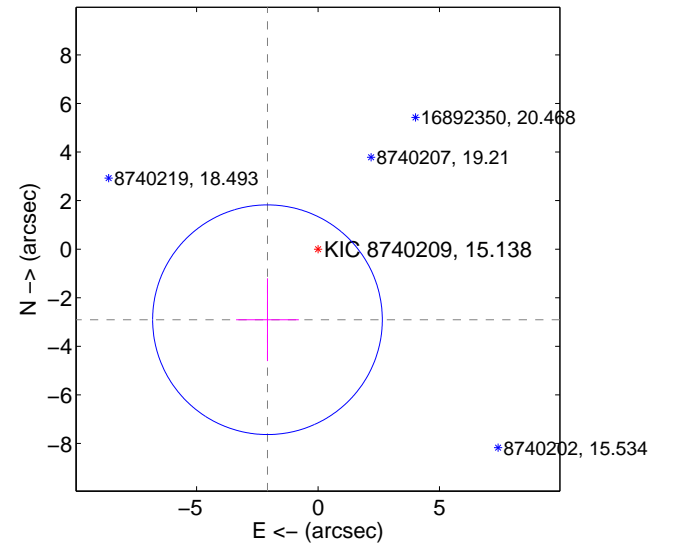
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

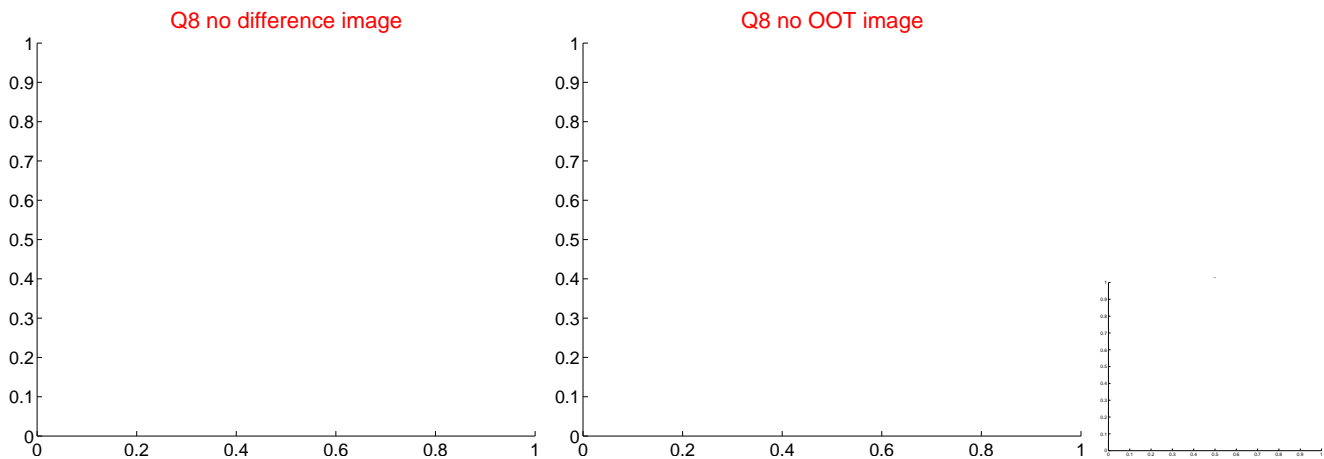
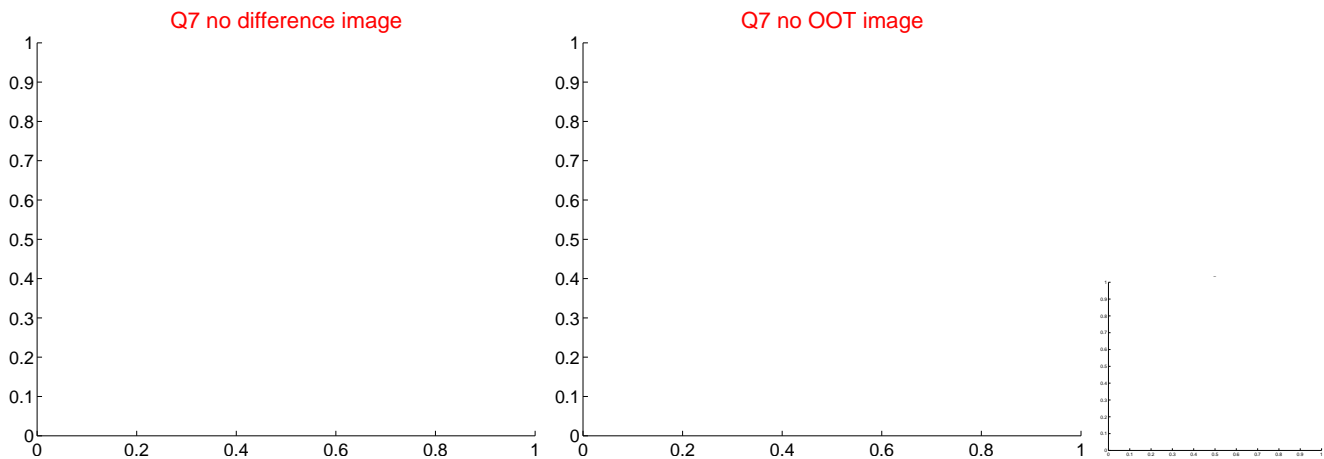
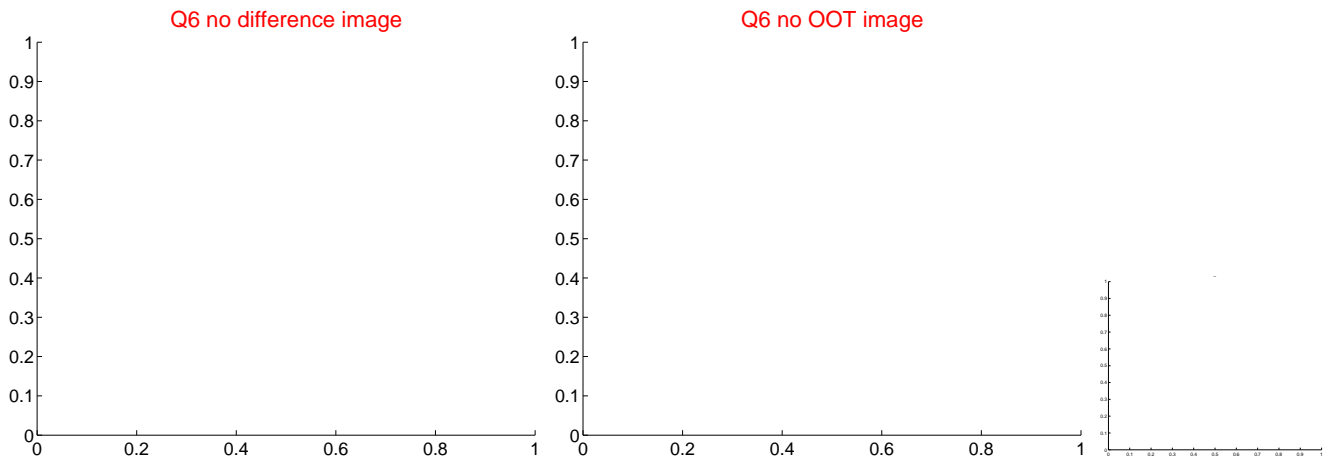
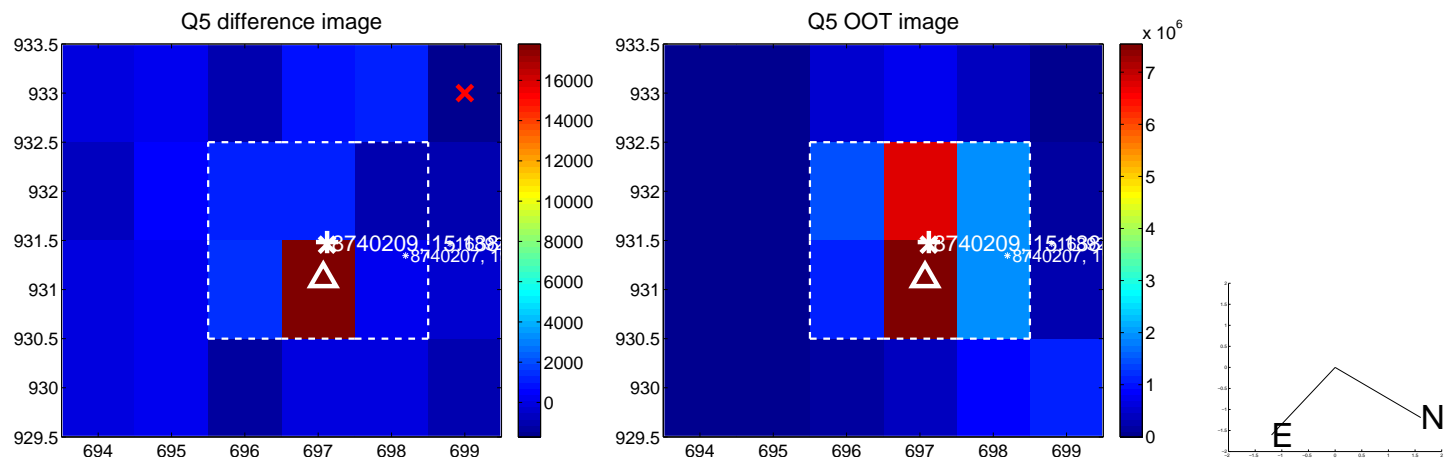


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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.

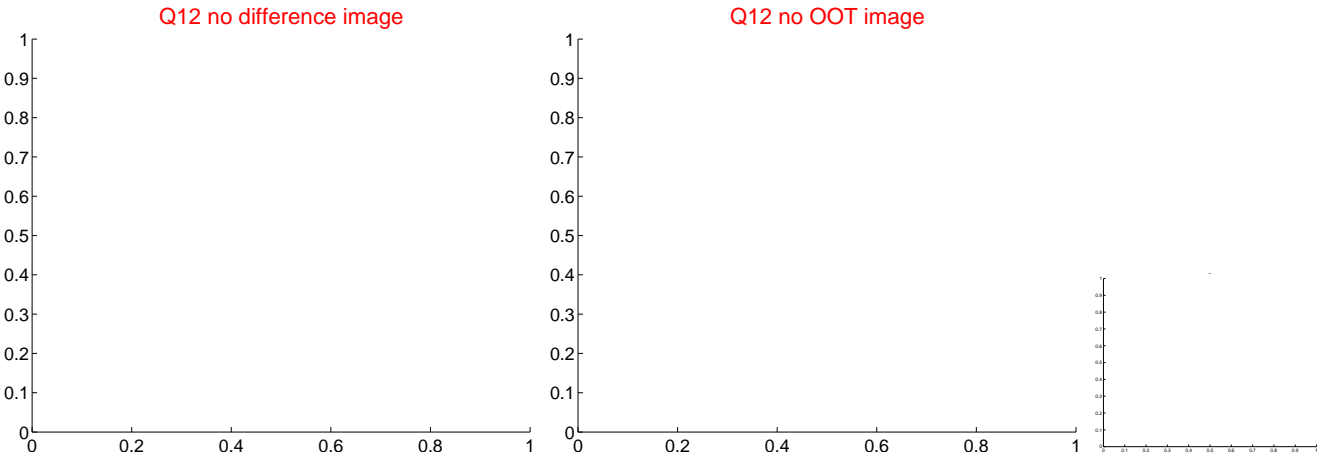
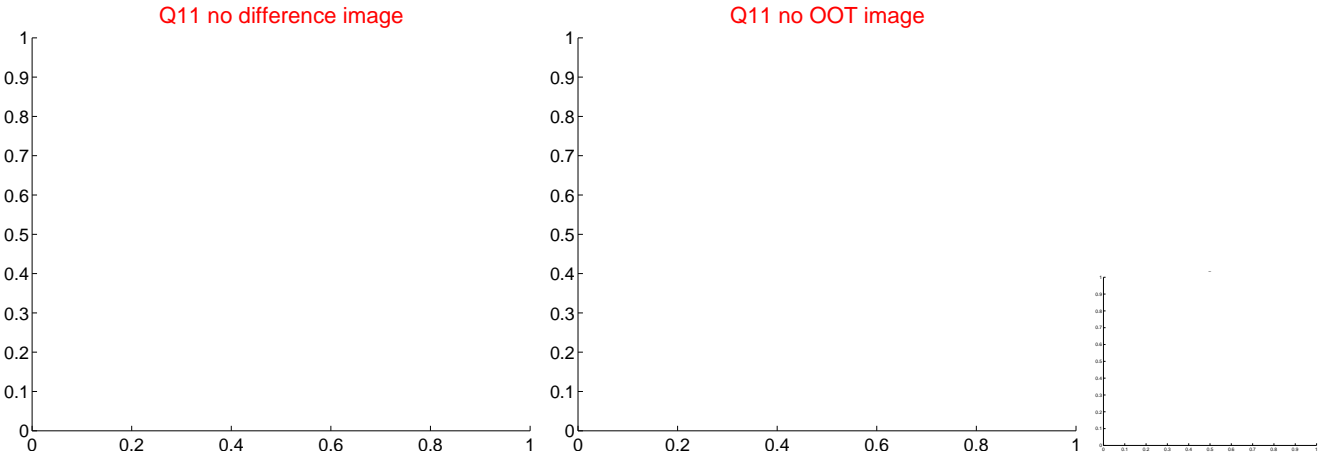
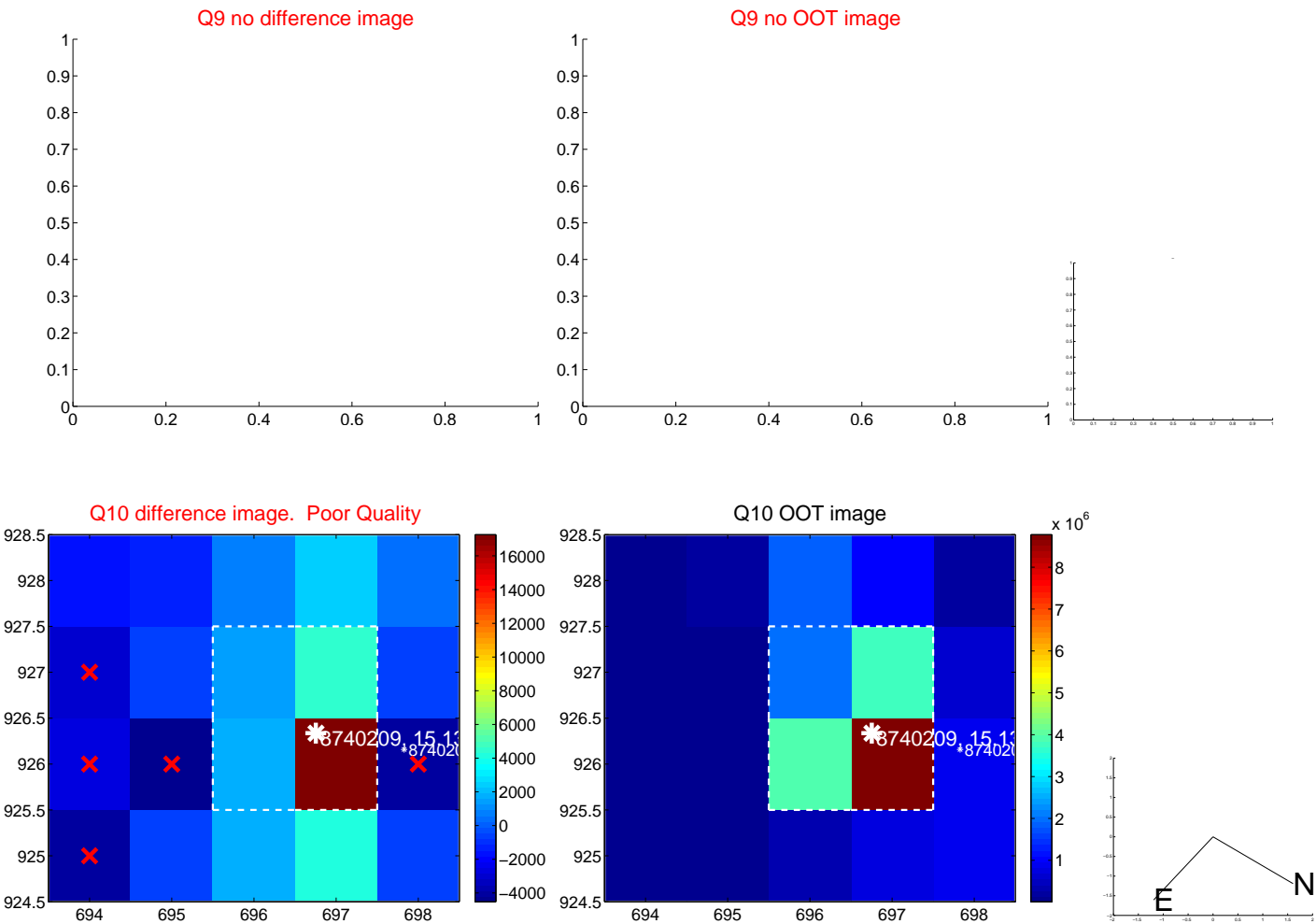
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



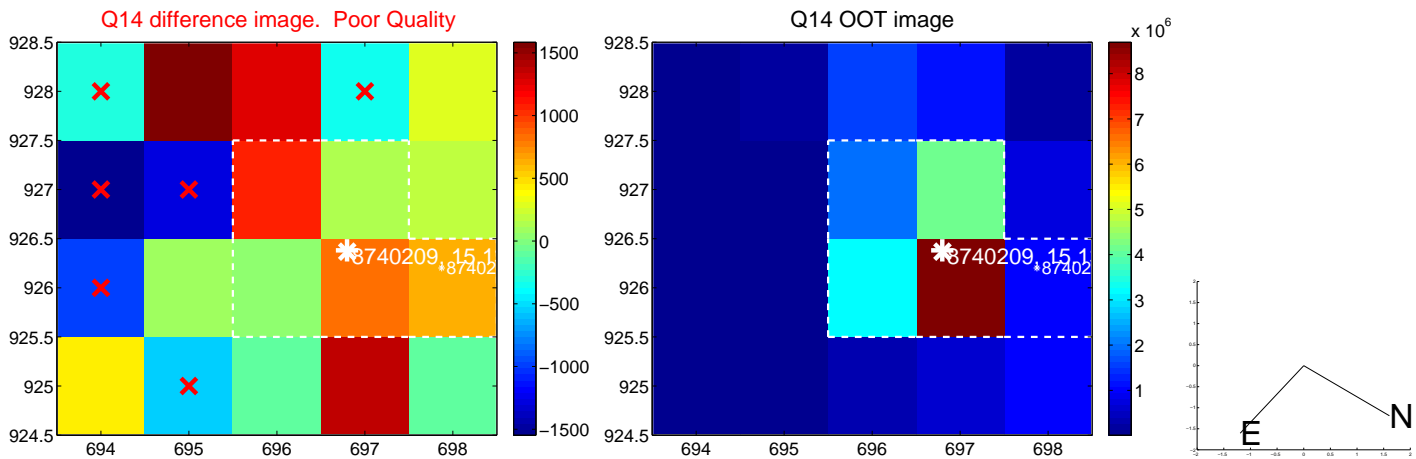
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



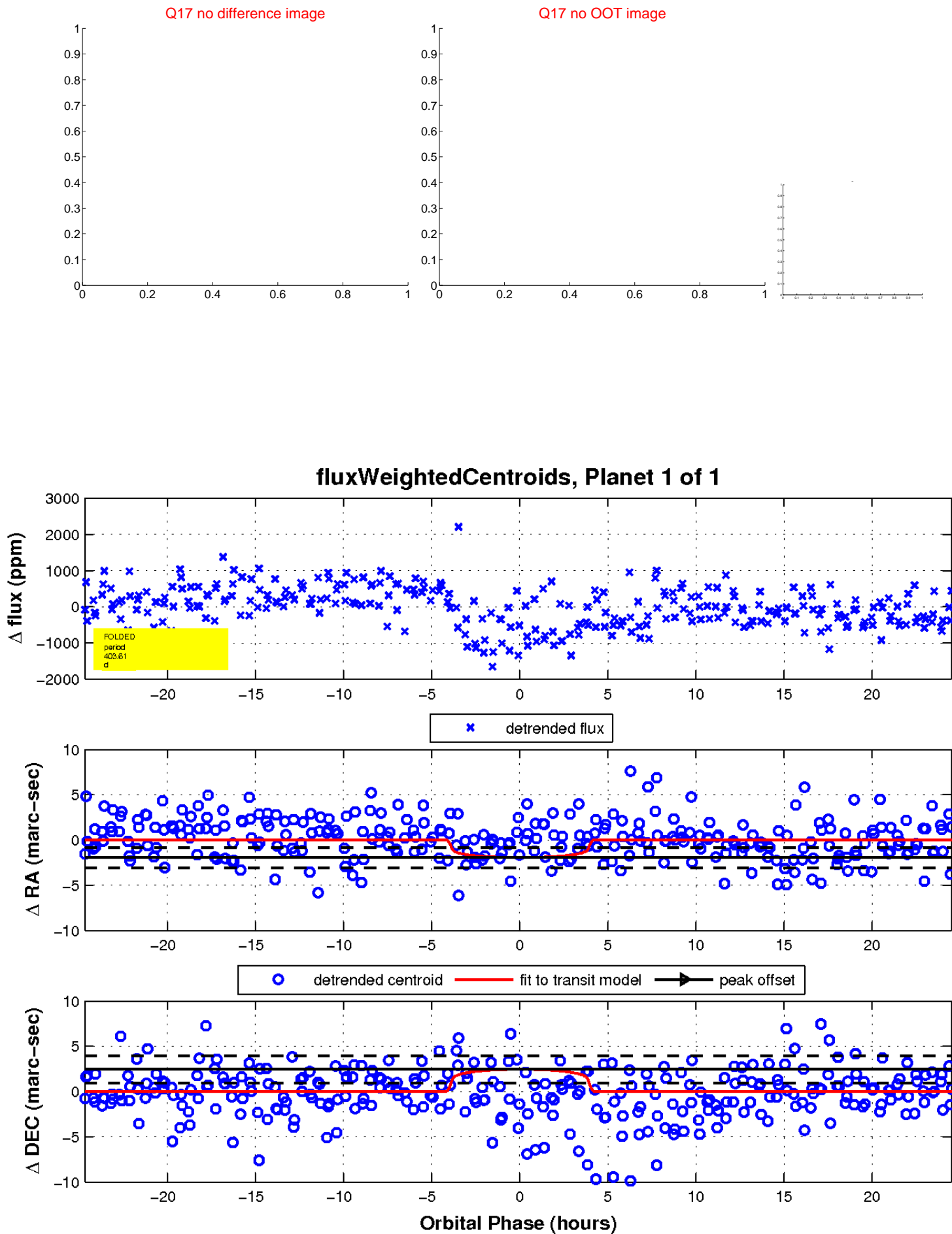
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

