

KIC 009573164

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})
009573164-01	OBS	No	422.567604	406.166169	694.1	8.283	7.2	7.7	0.75	5324	2.14	0.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009573164-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

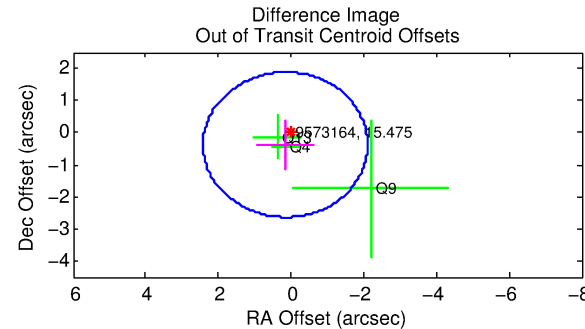
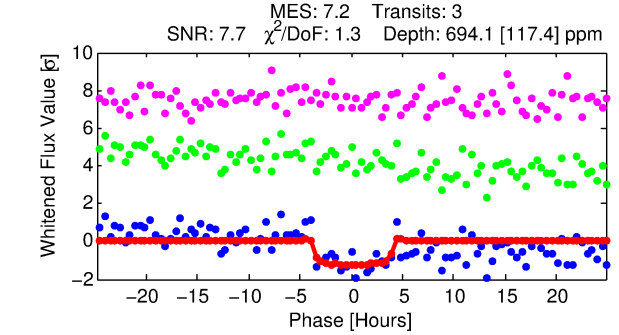
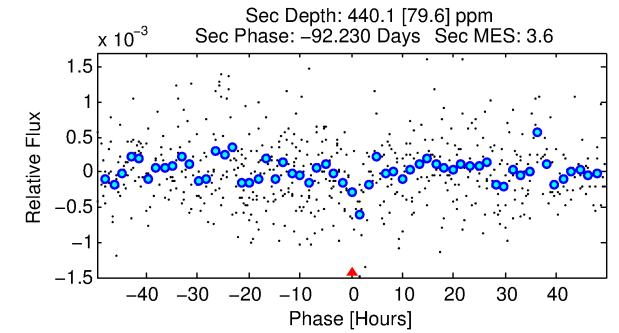
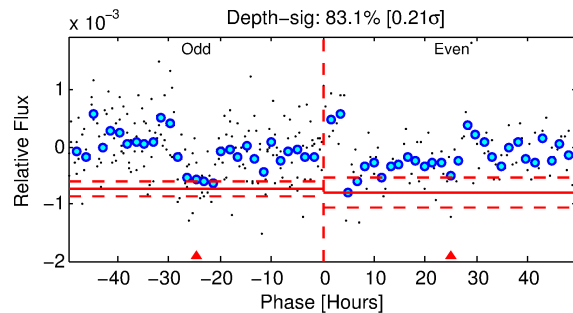
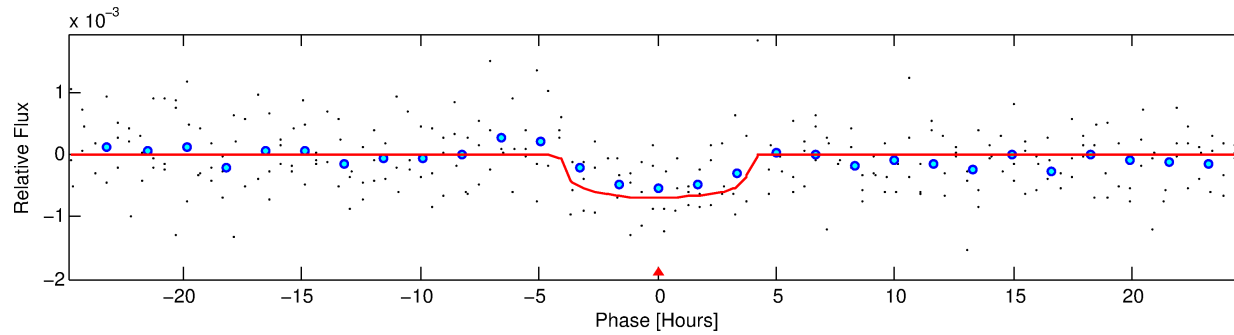
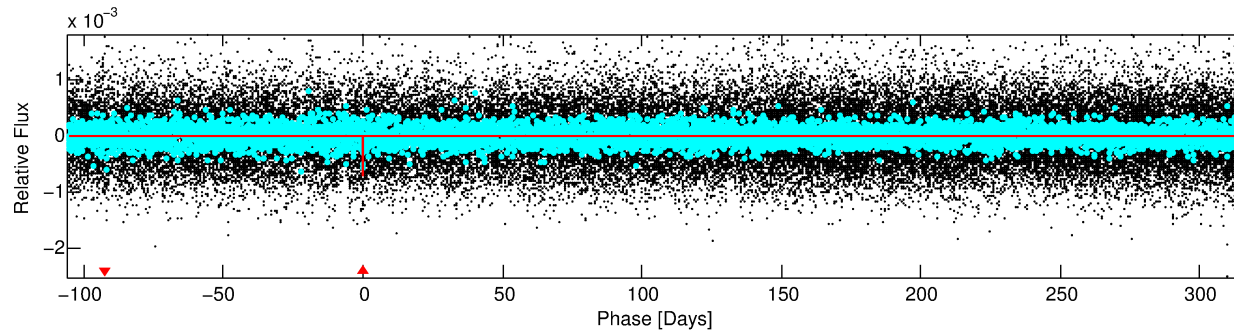
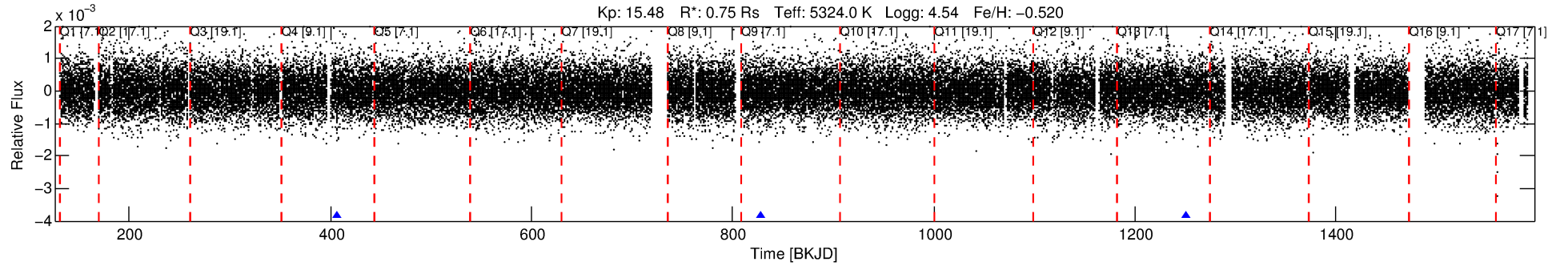
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009573164-01

No Significant Match Found

DV One-Page Summary

KIC: 9573164 Candidate: 1 of 1 Period: 422.568 d



DV Fit Results:

Period = 422.56760 [0.01494] d
Epoch = 406.1662 [0.0218] BKJD
Rp/R* = 0.0262 [0.0128]
a/R* = 275.61 [550.28]
b = 0.74 [1.21]
Seff = 0.42 [0.09]
Teq = 205 [11] K
Rp = 2.14 [1.08] Re
a = 0.9785 [0.1049] AU
Ag = 50823.23 [51125.77] [0.99 σ]
Teffp = 4767 [1194] K [3.82 σ]

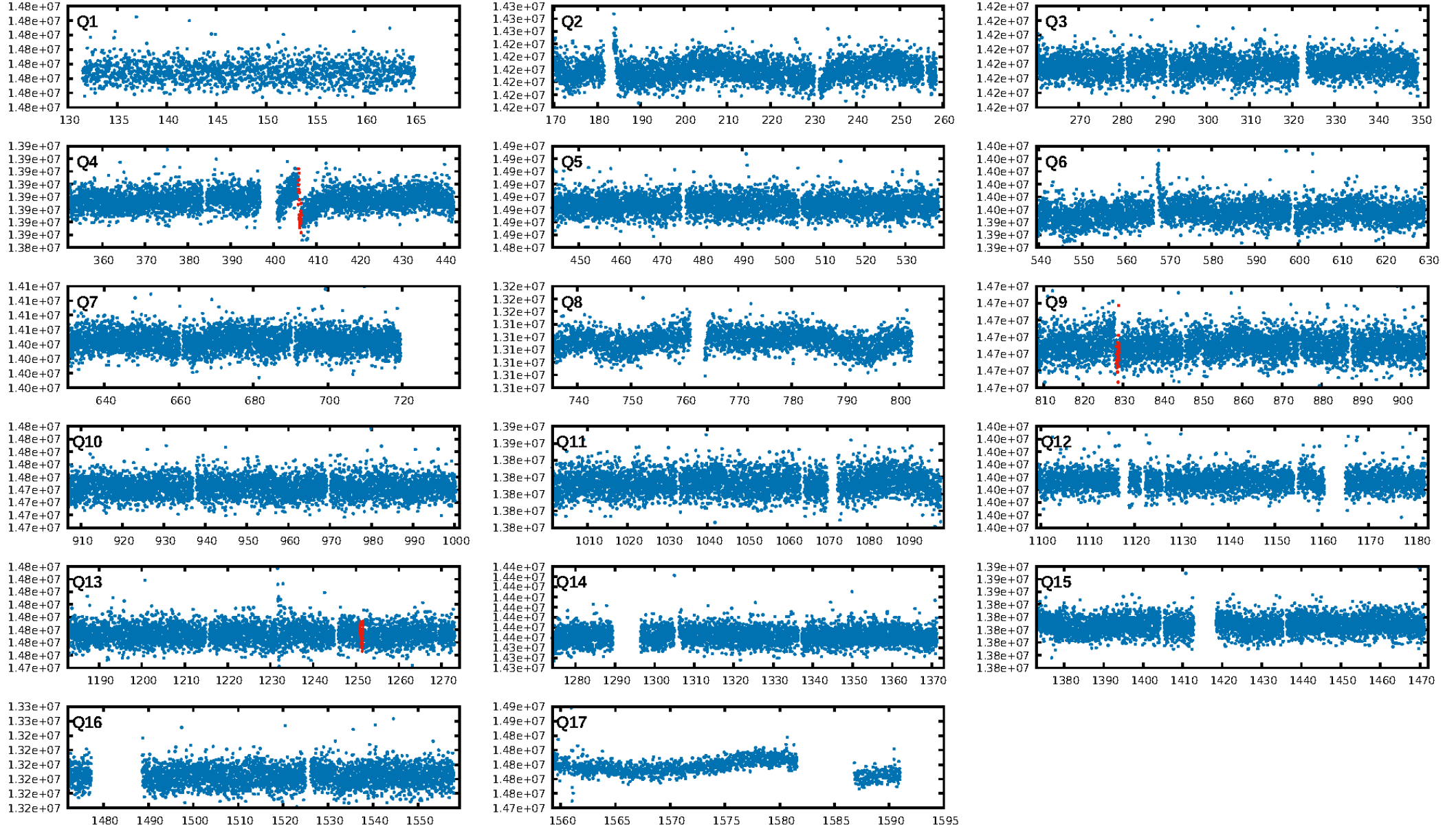
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 82.6%
Bootstrap-pfa: 5.80e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.093
Centroid-sig: 3.3%
Centroid-so: 3.481 arcsec [1.86 σ]
OotOffset-rm: 0.412 arcsec [0.55 σ]
KicOffset-rm: 0.957 arcsec [1.27 σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

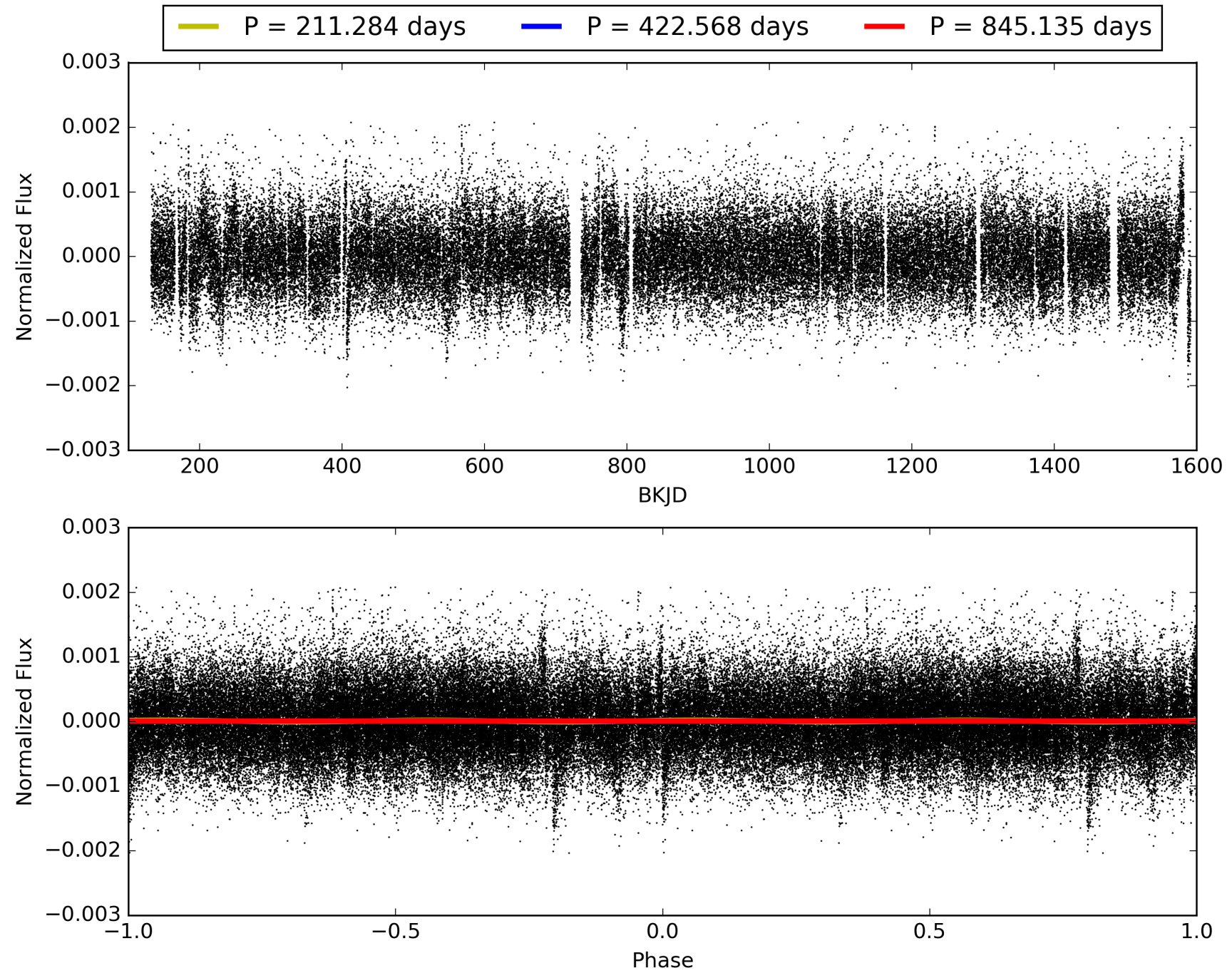
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:16:27 Z

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

TCE 009573164-01, PDC Light Curves

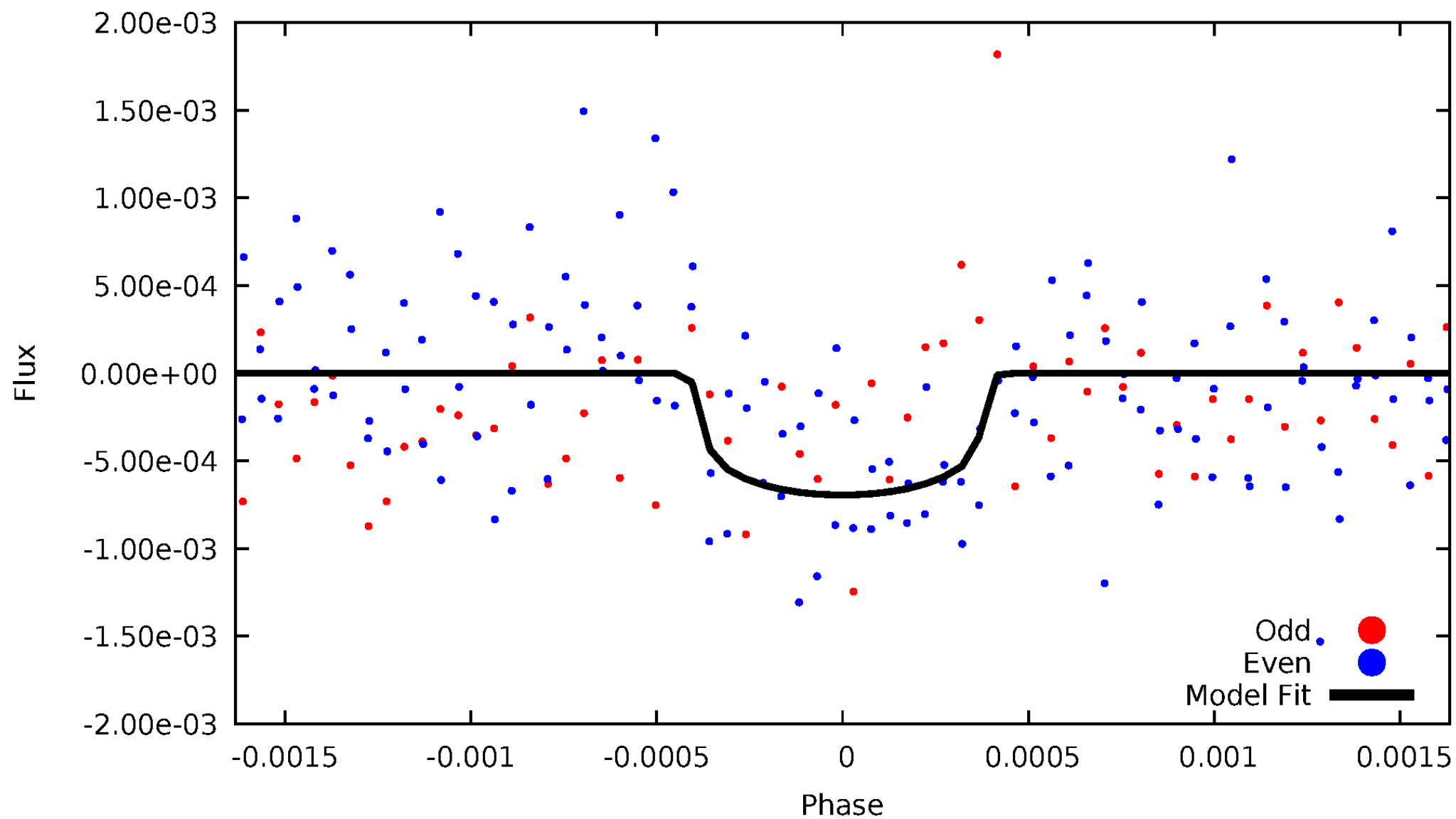


TCE 009573164-01



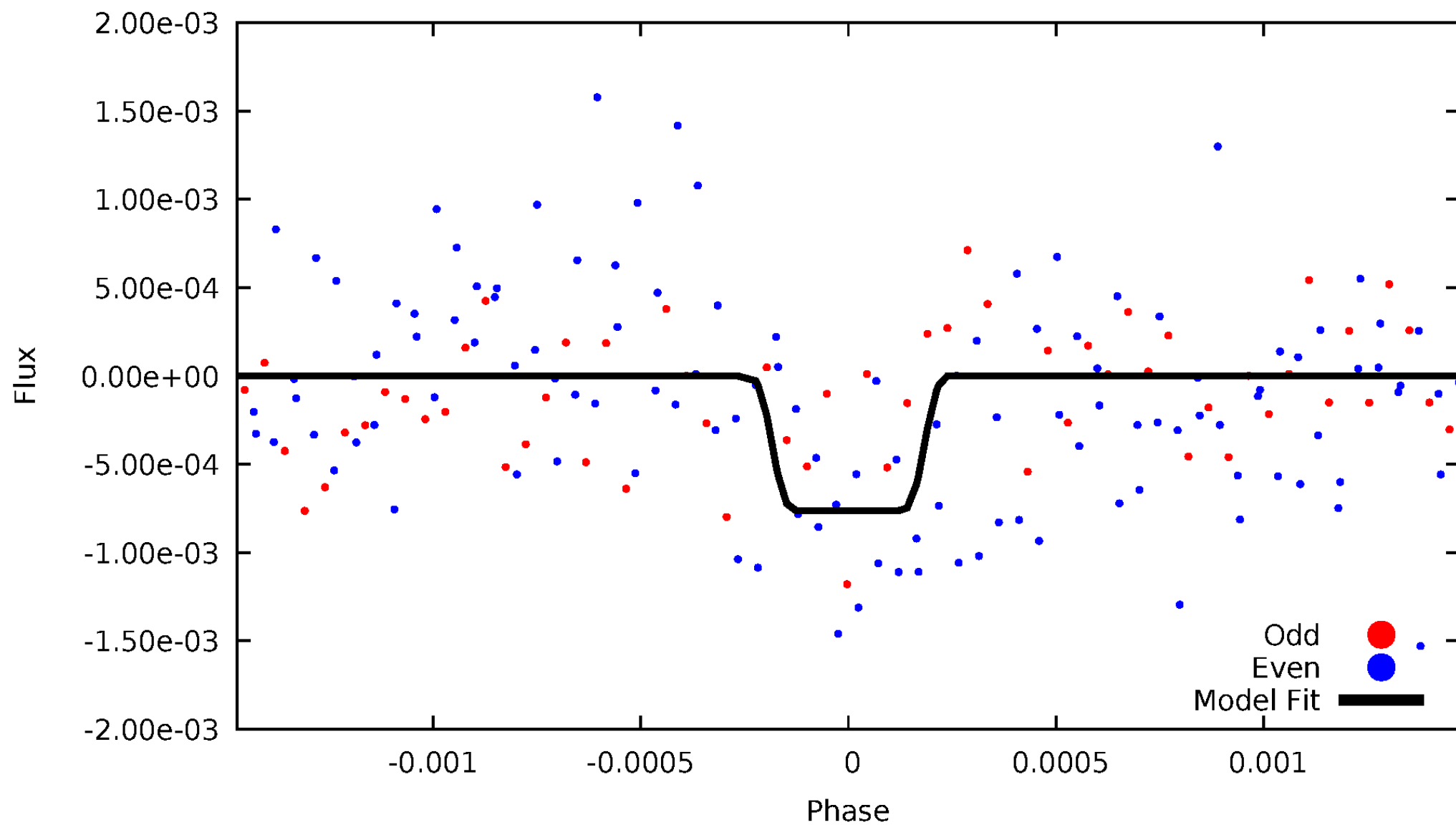
DV Odd/Even

TCE 009573164-01



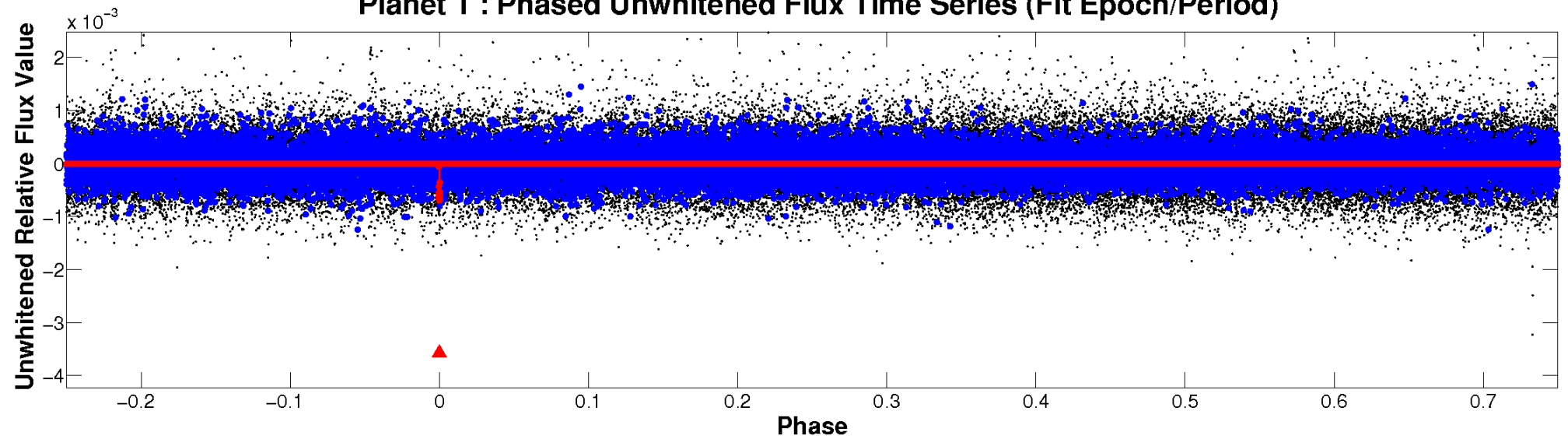
ALT Odd/Even

TCE 009573164-01

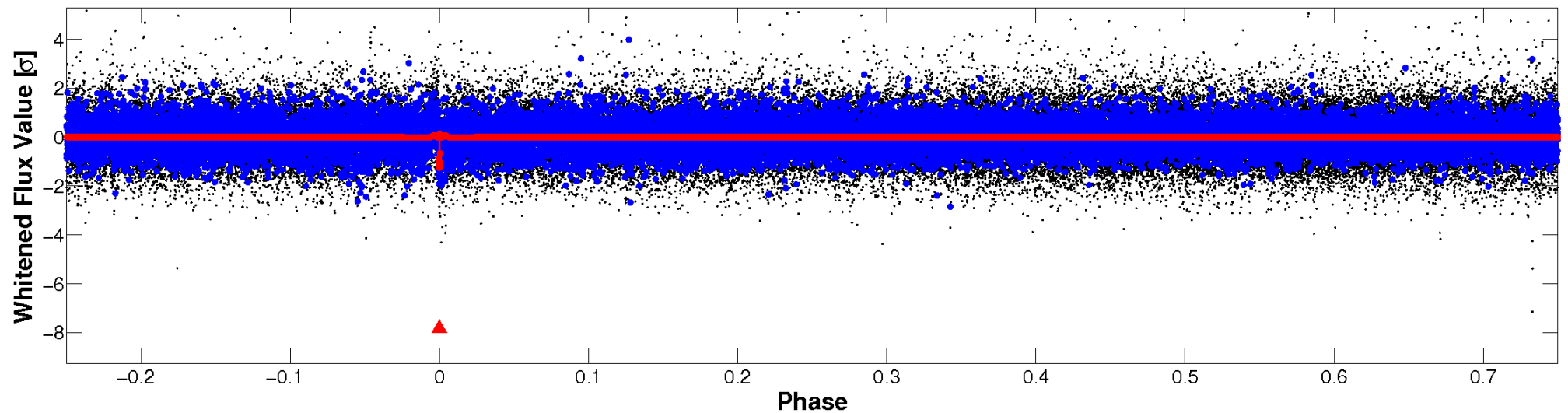


Non-Whitened Vs. Whitened Light Curve

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

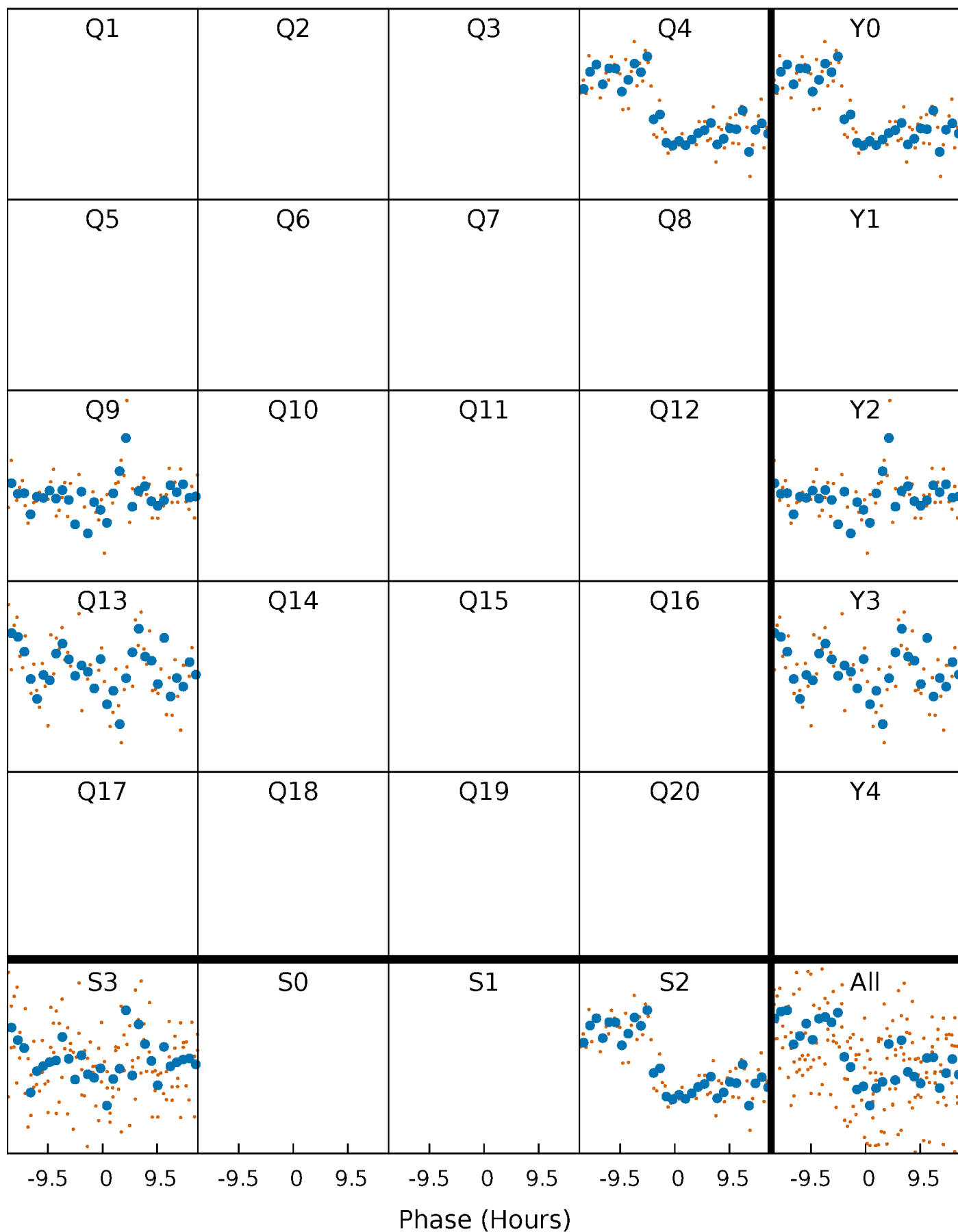


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



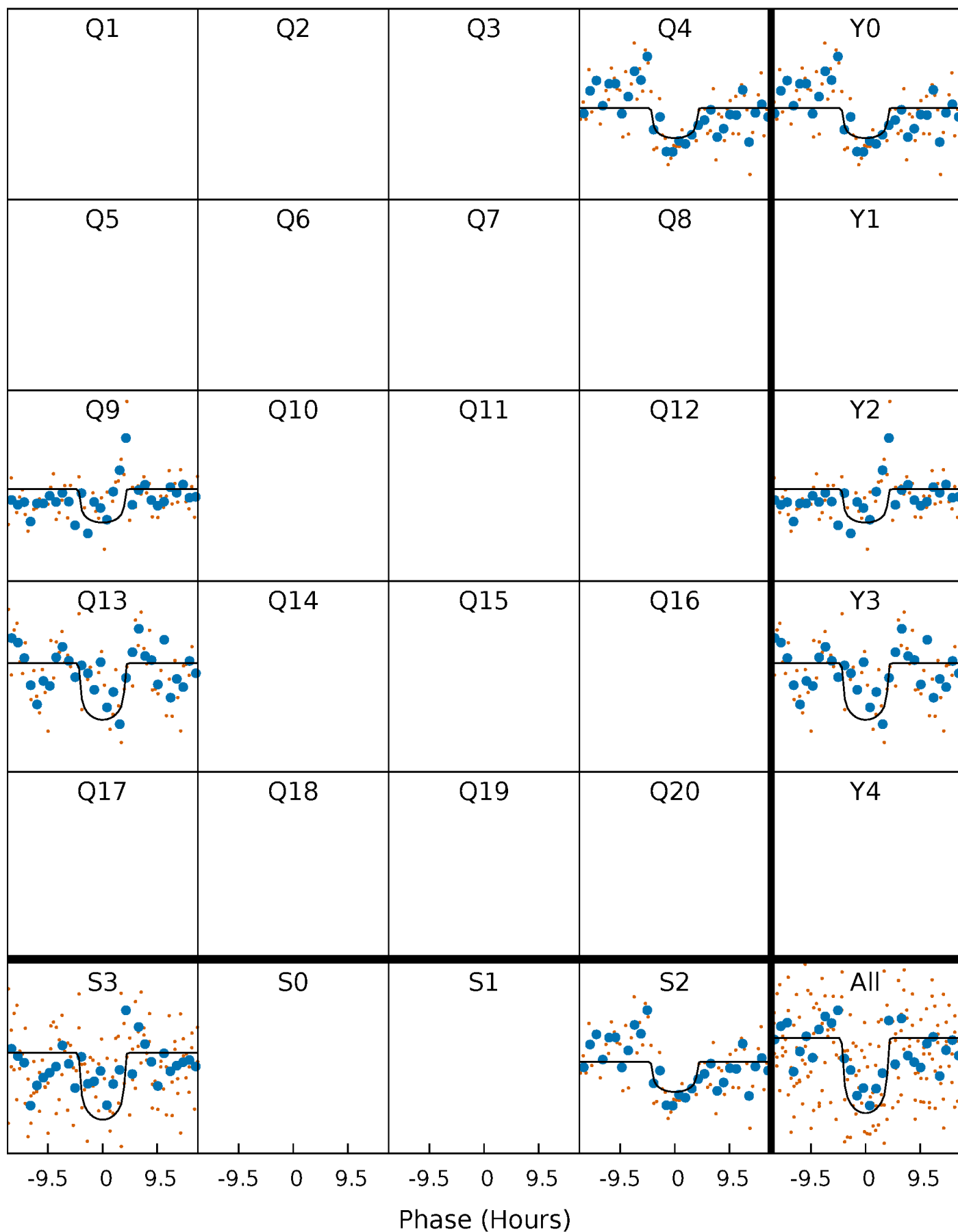
PDC Quarter-Phased Transit Curves

TCE 009573164-01 P=422.567604 Days $T_0=406.166169$ (BKJD)



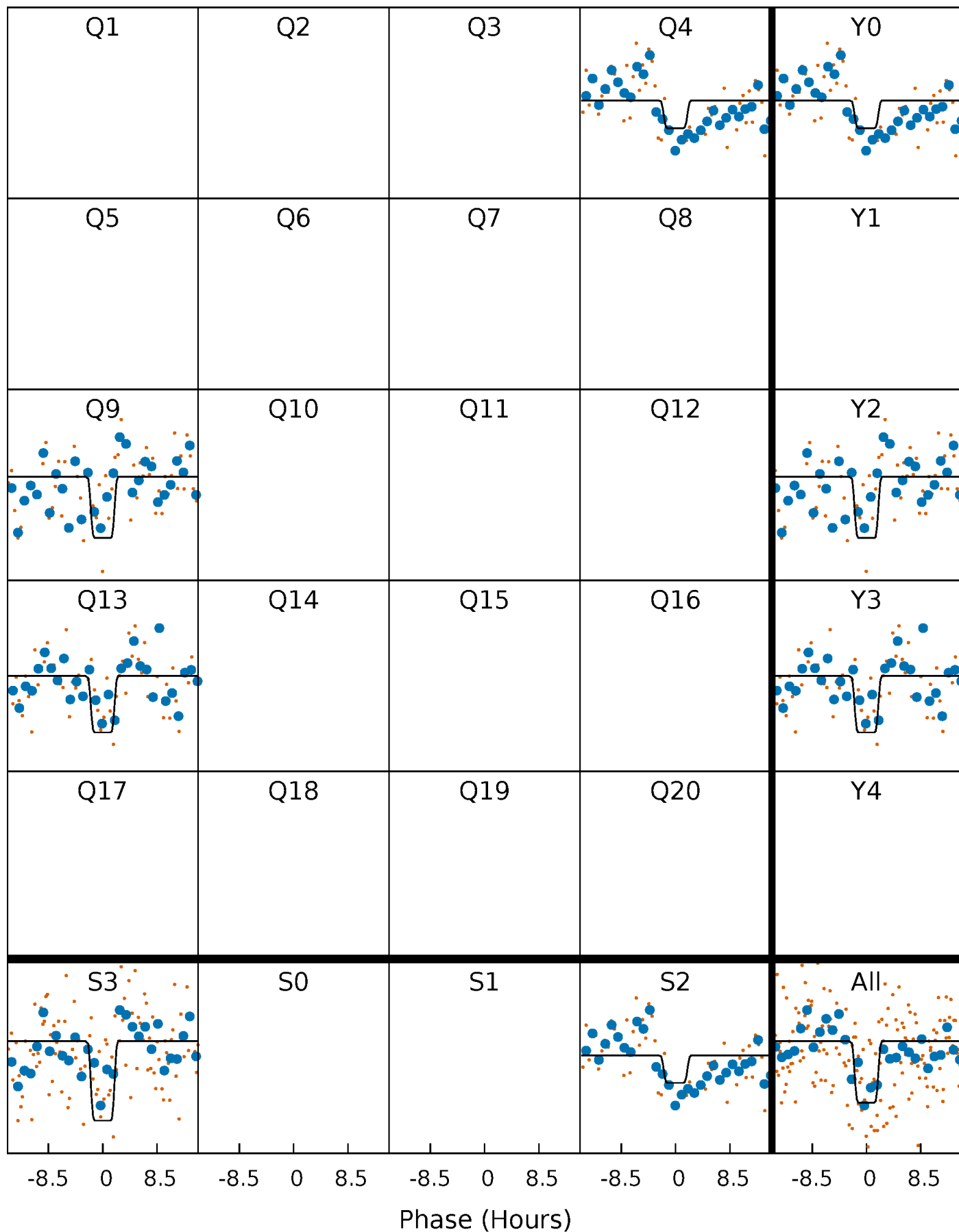
DV Quarter-Phased Transit Curves

TCE 009573164-01 P=422.567604 Days $T_0=406.166169$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

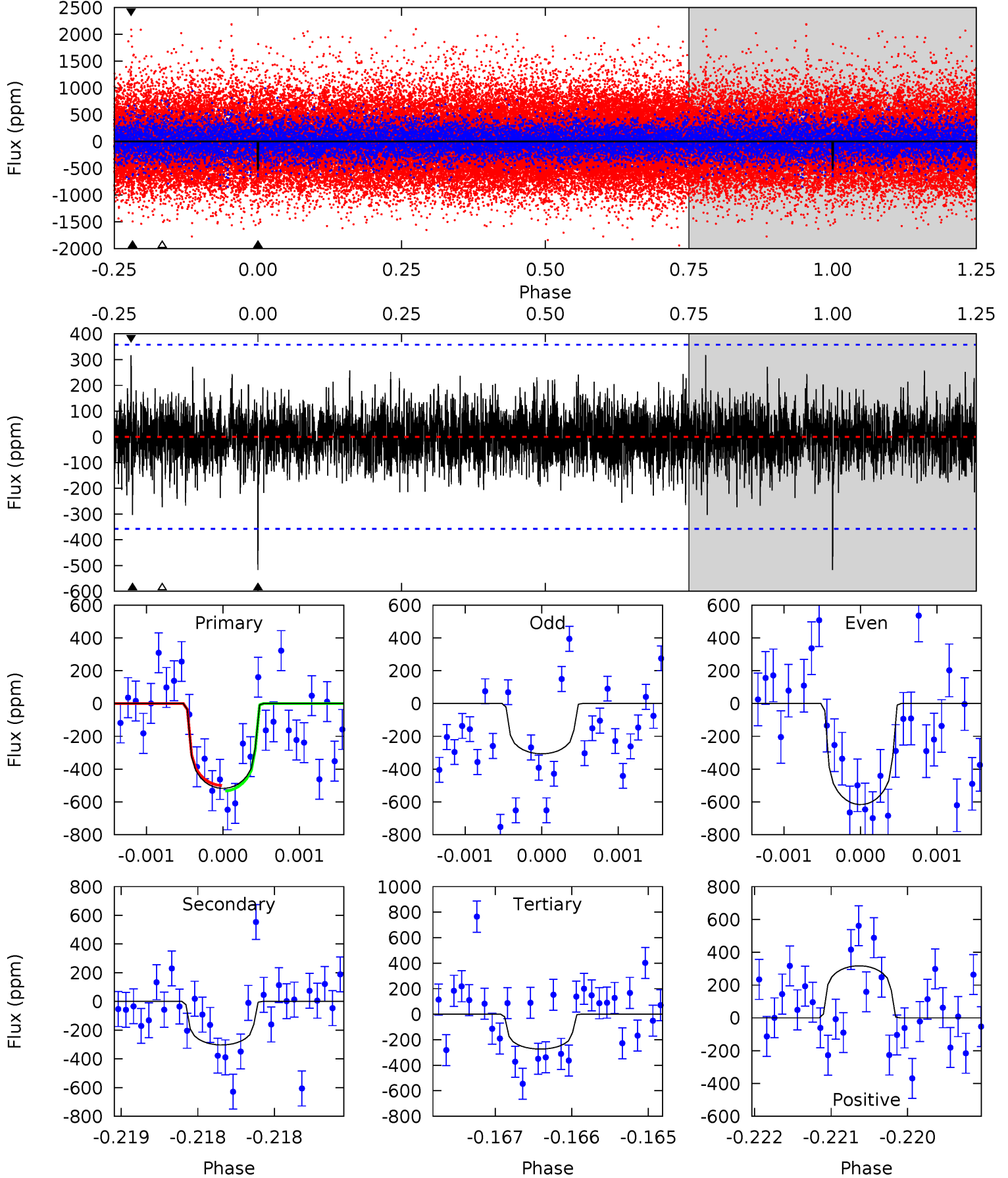
TCE 009573164-01 P=422.620510 Days $T_0=406.127121$ (BKJD)



DV Model-Shift Uniqueness Test

009573164-01, P = 422.567604 Days, E = 406.166169 Days

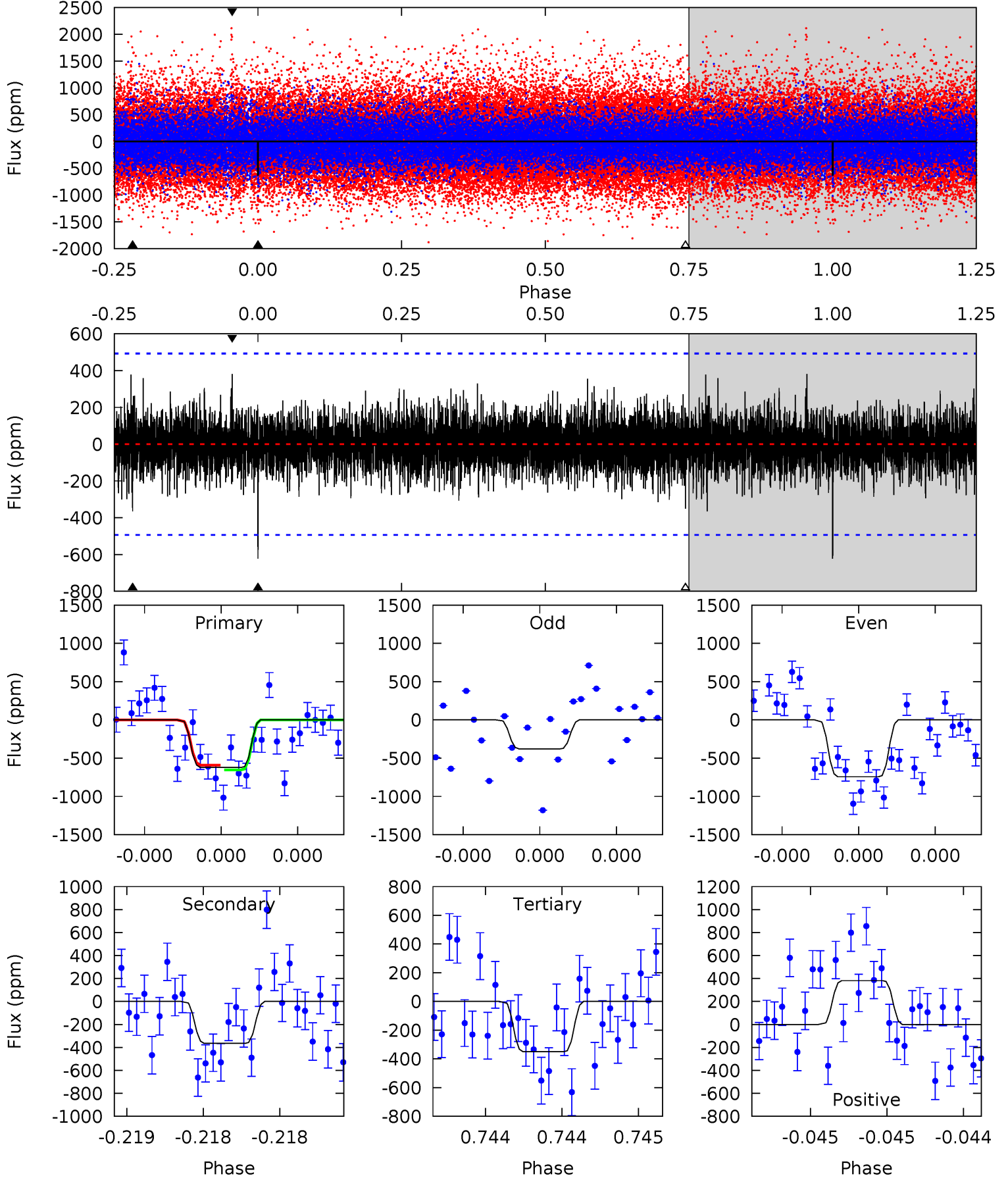
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.92	4.64	4.18	4.86	5.48	3.33	1.13	3.75	3.07	0.46	-0.22	2.23	1.35	0.38	0.26



Alt Model-Shift Uniqueness Test

009573164-01, P = 422.620510 Days, E = 406.127121 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.04	4.13	3.97	4.32	5.59	3.50	1.04	3.07	2.72	0.17	-0.19	1.95	1.44	0.38	0.35



Stellar Parameters For KIC 009573164

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5324^{+175}_{-159}	$4.535^{+0.090}_{-0.072}$	$-0.520^{+0.300}_{-0.300}$	$0.748^{+0.092}_{-0.083}$	$0.699^{+0.104}_{-0.037}$	$2.351^{+0.906}_{-0.549}$
	+3%/-3%	+2%/-2%	+58%/-58%	+12%/-11%	+15%/-5%	+39%/-23%
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 009573164-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-303 ± 65	$2.18^{+1.07}_{-1.00}$	286^{+13}_{-13}	4435^{+1377}_{-612}	32842^{+83991}_{-18015}
Alt.	-365 ± 88	$2.32^{+1.08}_{-1.00}$	286^{+14}_{-12}	4556^{+1170}_{-680}	36518^{+78759}_{-20749}

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

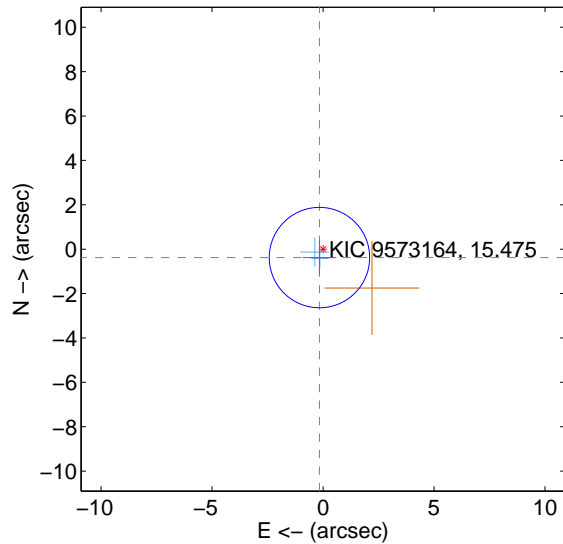
Supplemental centroid analysis for 009573164-01. Kepler magnitude: 15.47. Transit SNR 7.66

There are 2 quarters with good PRF difference image offsets

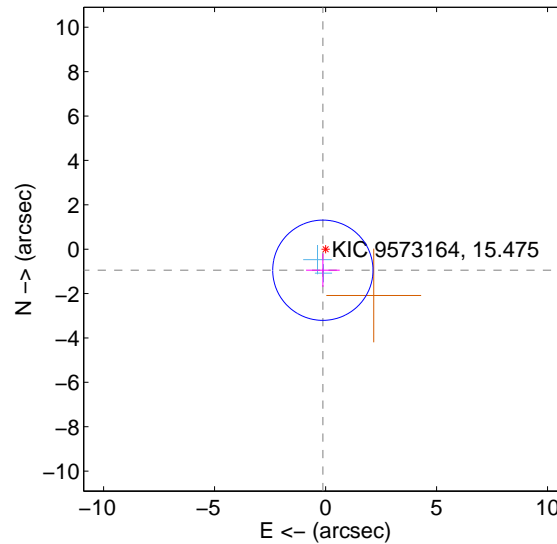
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.412 ± 0.754	0.55	0.161 ± 0.758	-0.379 ± 0.753
PRF-fit source offset from KIC position	0.957 ± 0.753	1.27	0.123 ± 0.758	-0.949 ± 0.753
photometric centroid source offset	3.48 ± 1.87	1.86	3.05 ± 1.89	-1.68 ± 1.78

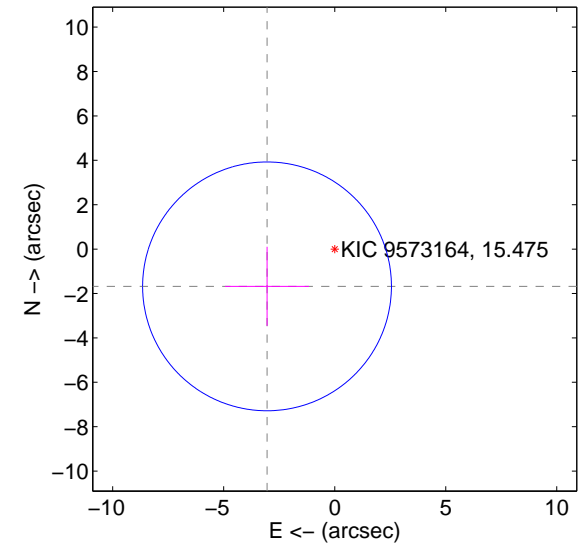
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

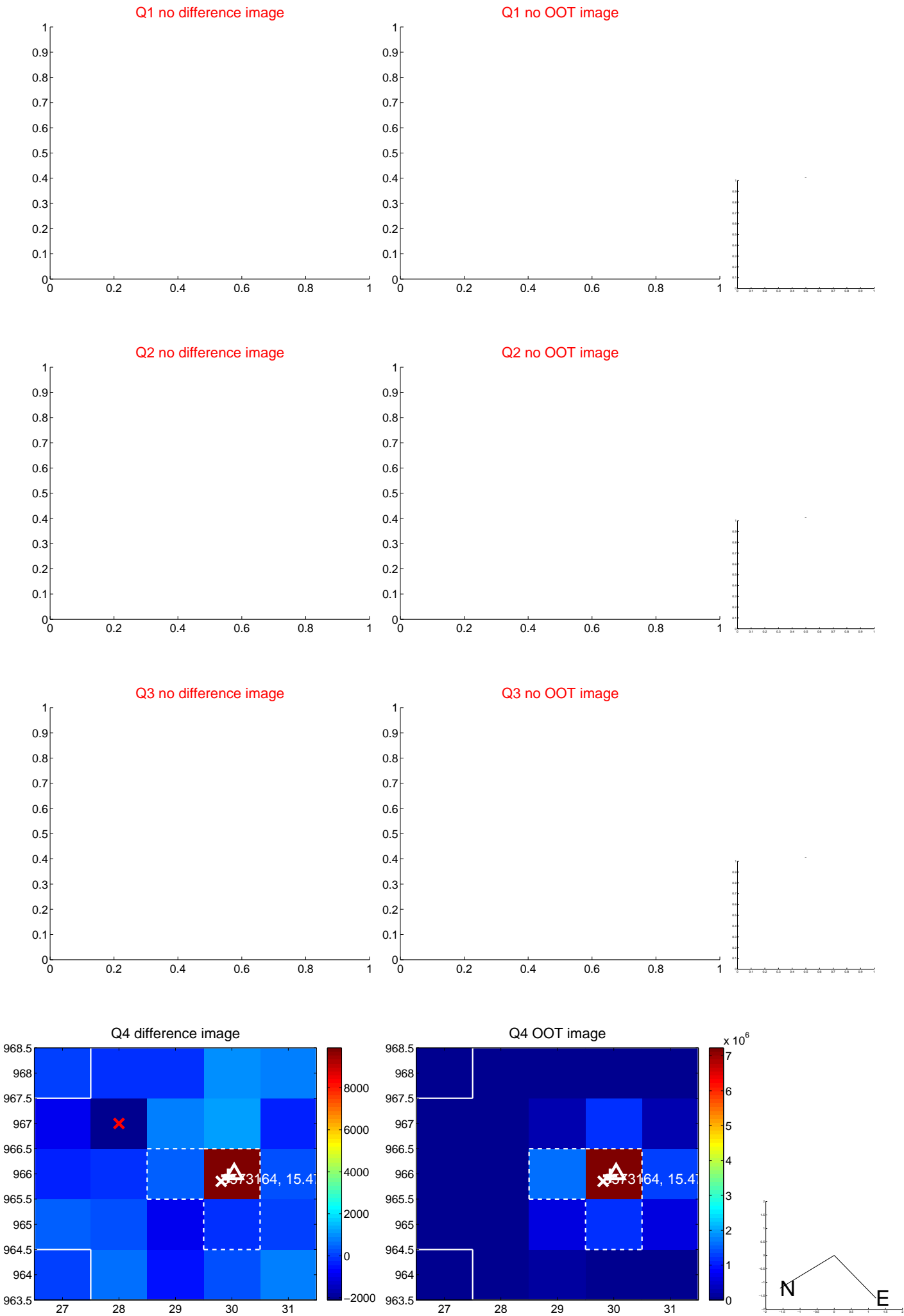


offset from photometric centroids



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.

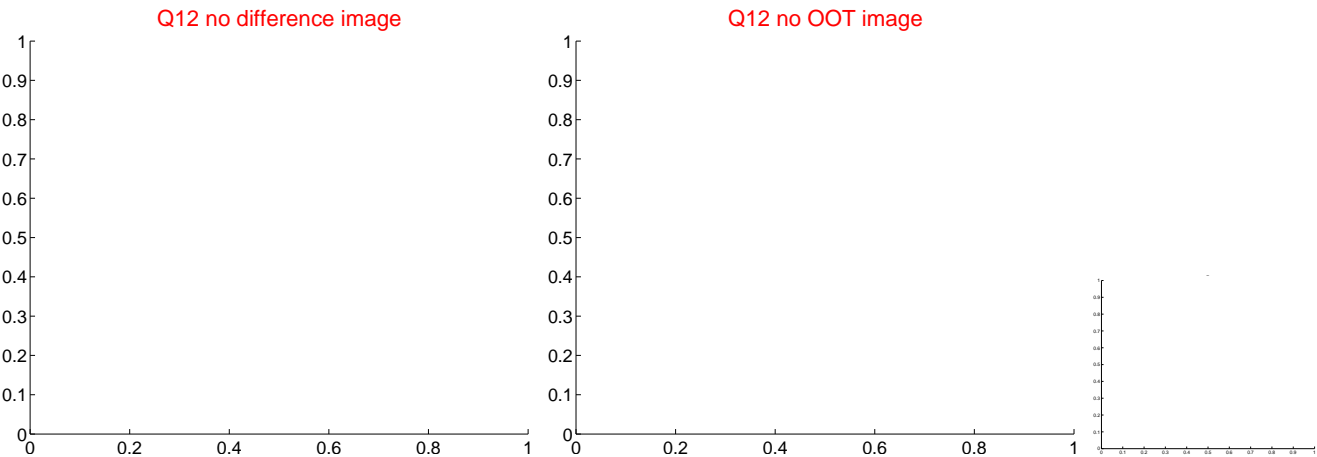
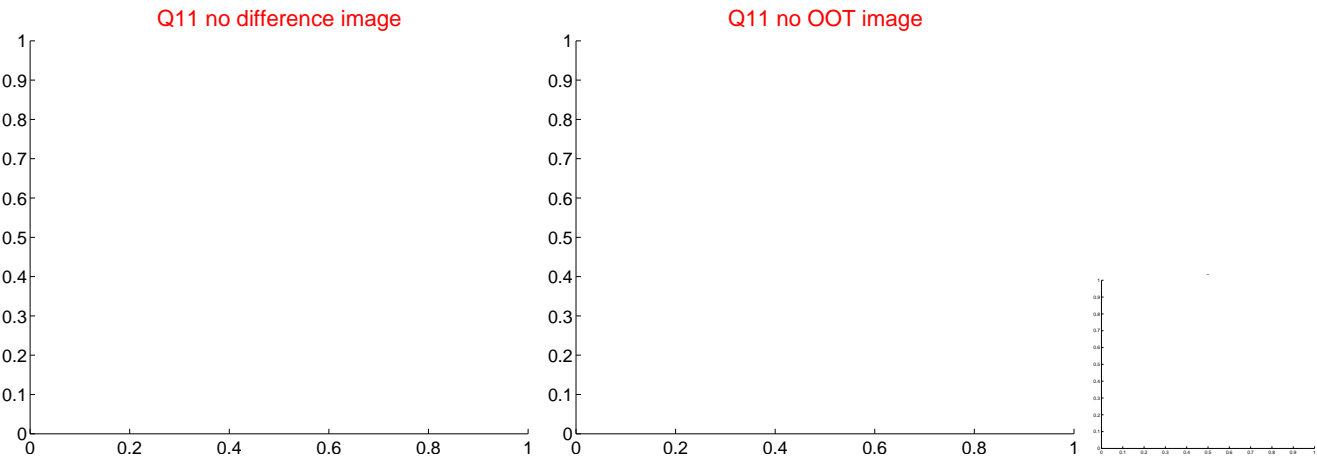
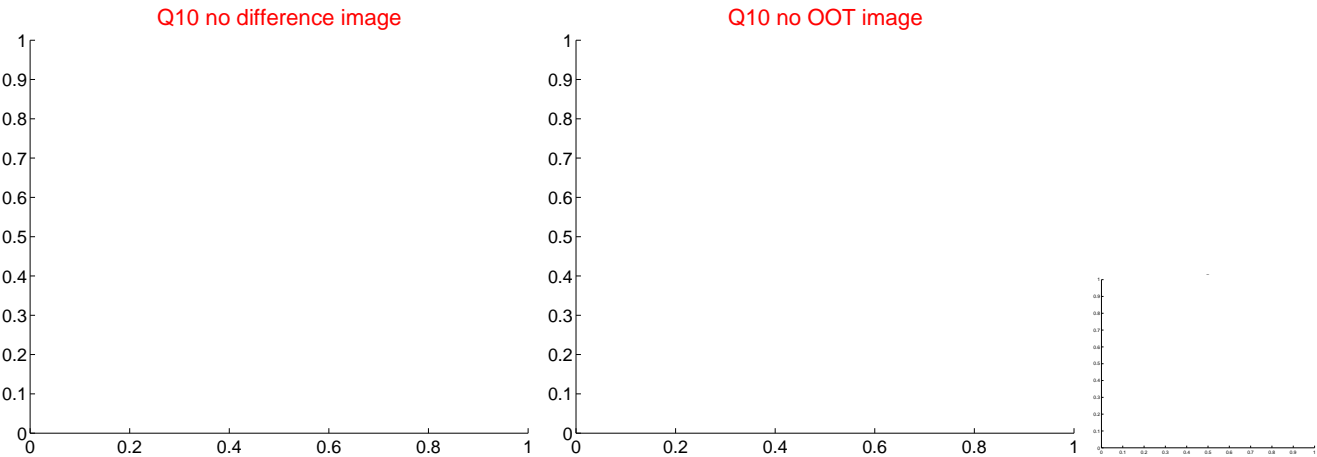
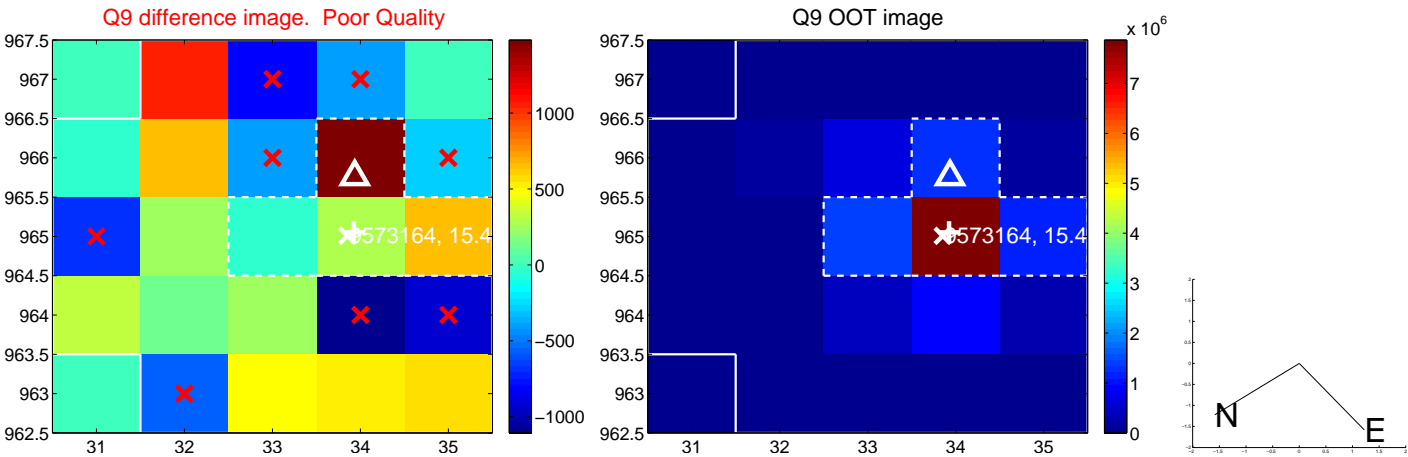
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



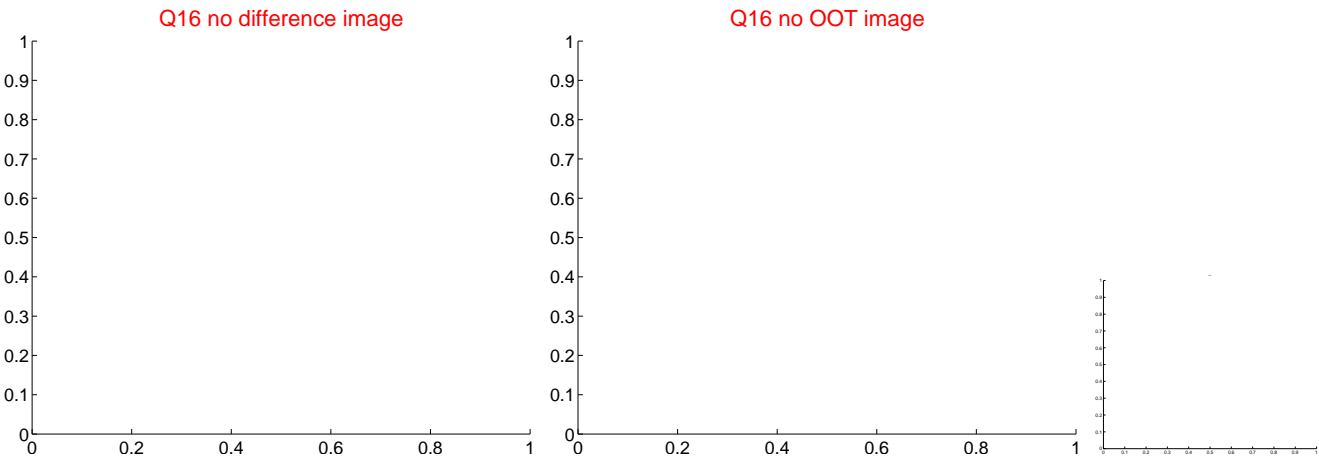
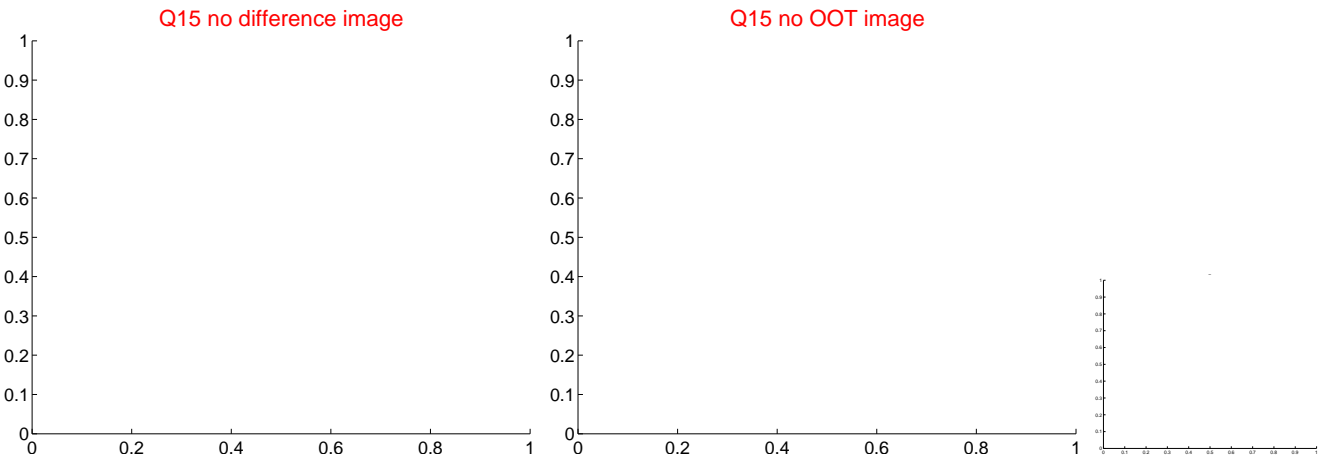
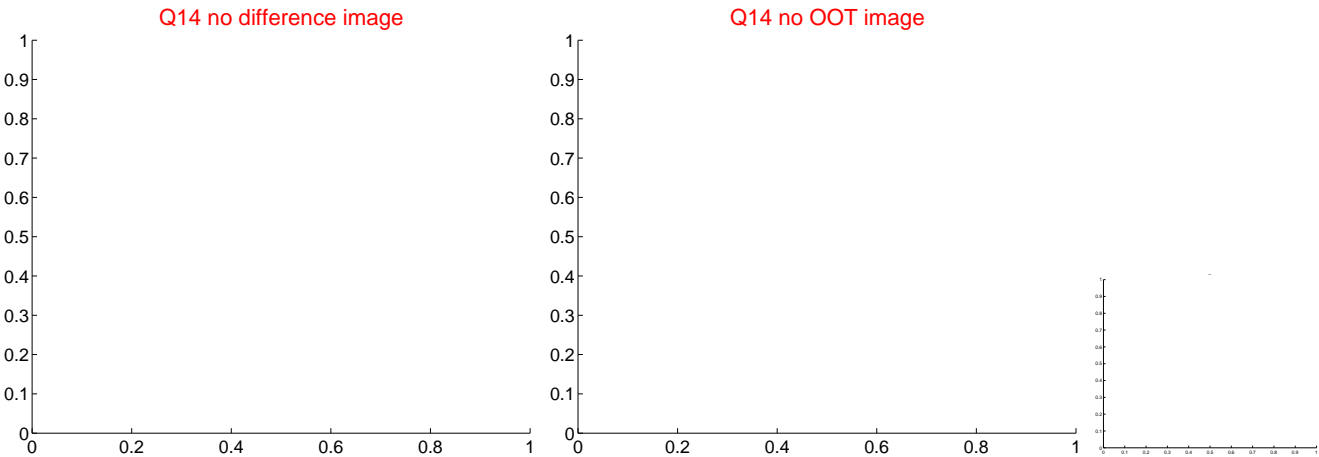
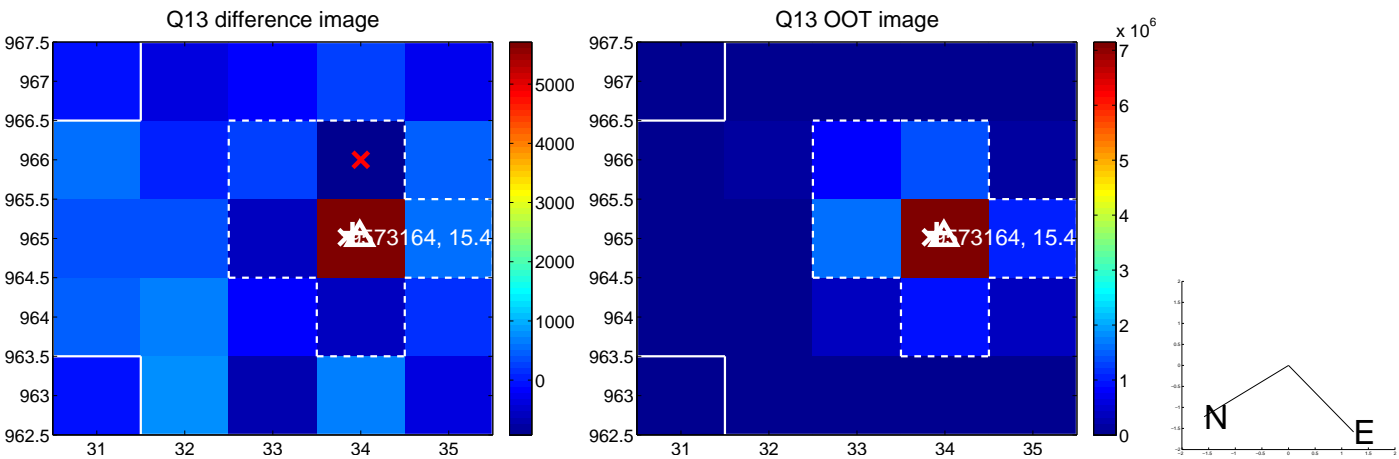
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



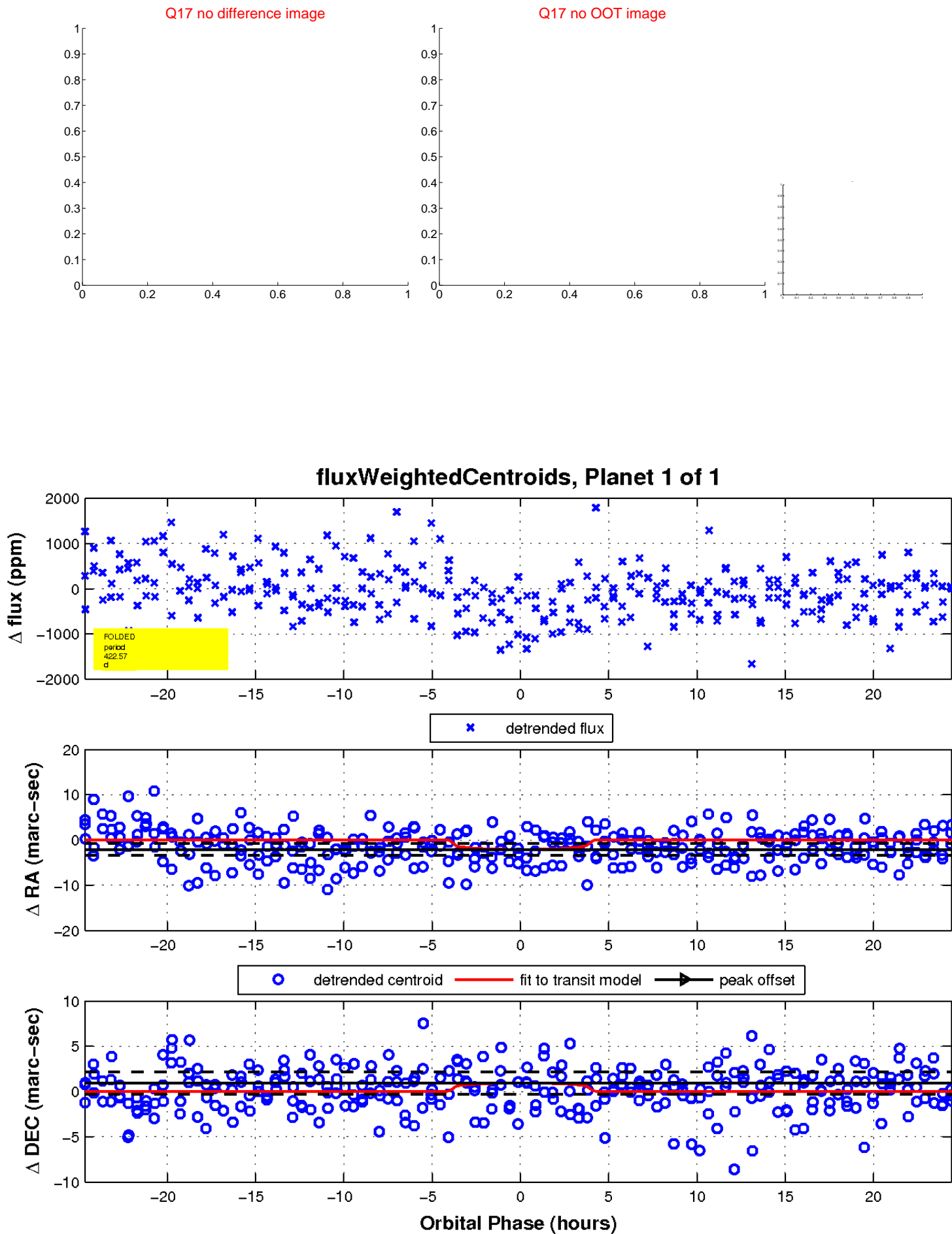
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



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



UKIRT Image

Declination

