

# KIC 008375652

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008375652-01	OBS	No	411.304513	501.844949	1283.9	19.624	10.5	9.8	0.85	5741	3.56	0.62

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008375652-01	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.

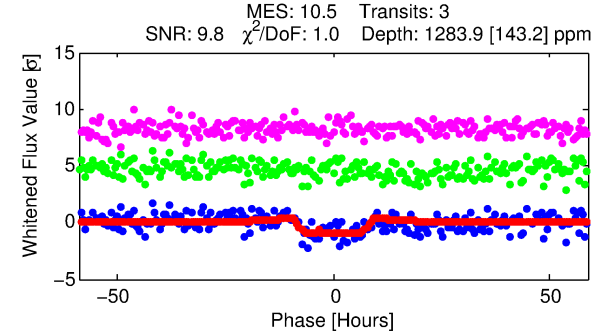
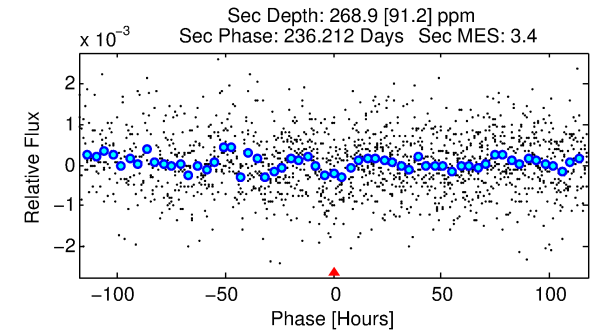
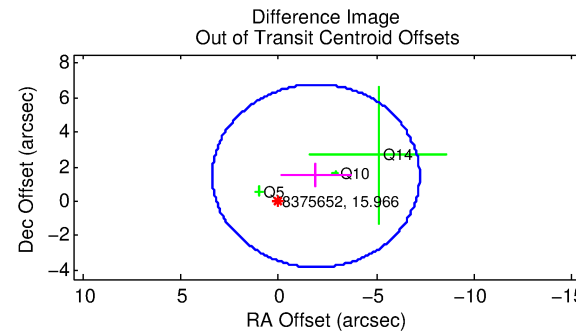
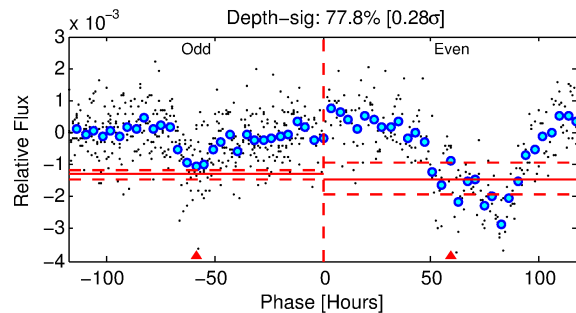
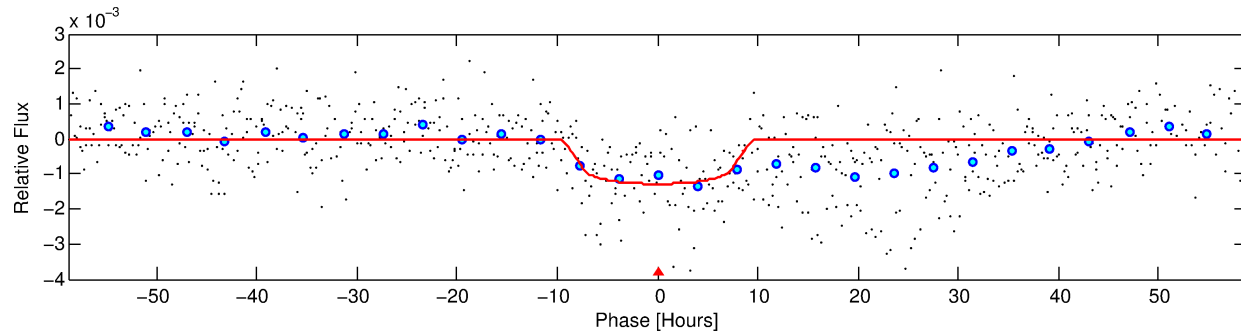
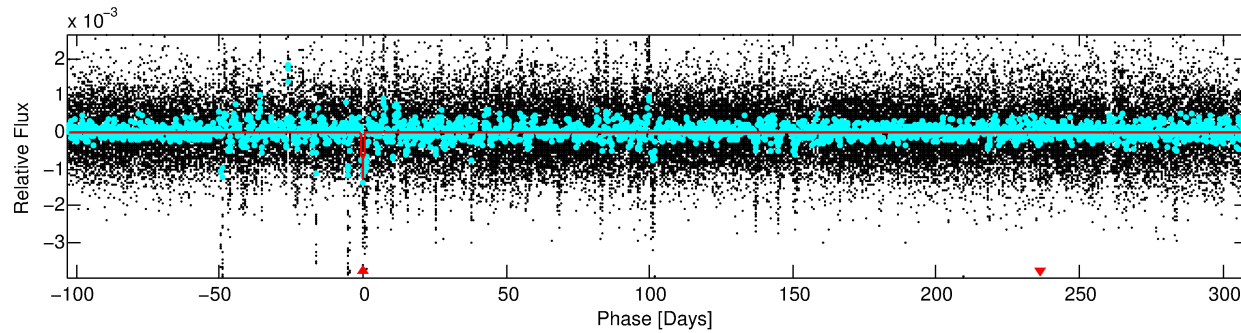
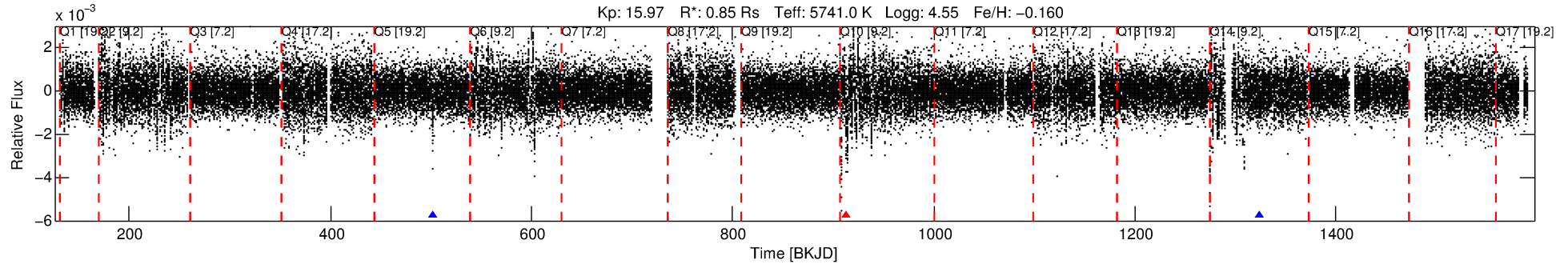
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008375652-01

No Significant Match Found

# DV One-Page Summary

KIC: 8375652 Candidate: 1 of 1 Period: 411.305 d



## DV Fit Results:

Period = 411.30451 [0.01852] d  
Epoch = 501.8449 [0.0213] BKJD  
Rp/R\* = 0.0385 [0.0035]  
a/R\* = 86.88 [25.56]  
b = 0.89 [0.07]  
Seff = 0.62 [0.21]  
Teq = 226 [19] K  
Rp = 3.55 [1.00] Re  
a = 1.0594 [0.2355] AU  
Ag = 13137.99 [6604.17] [1.99 $\sigma$ ]  
Teffp = 3746 [378] K [9.30 $\sigma$ ]

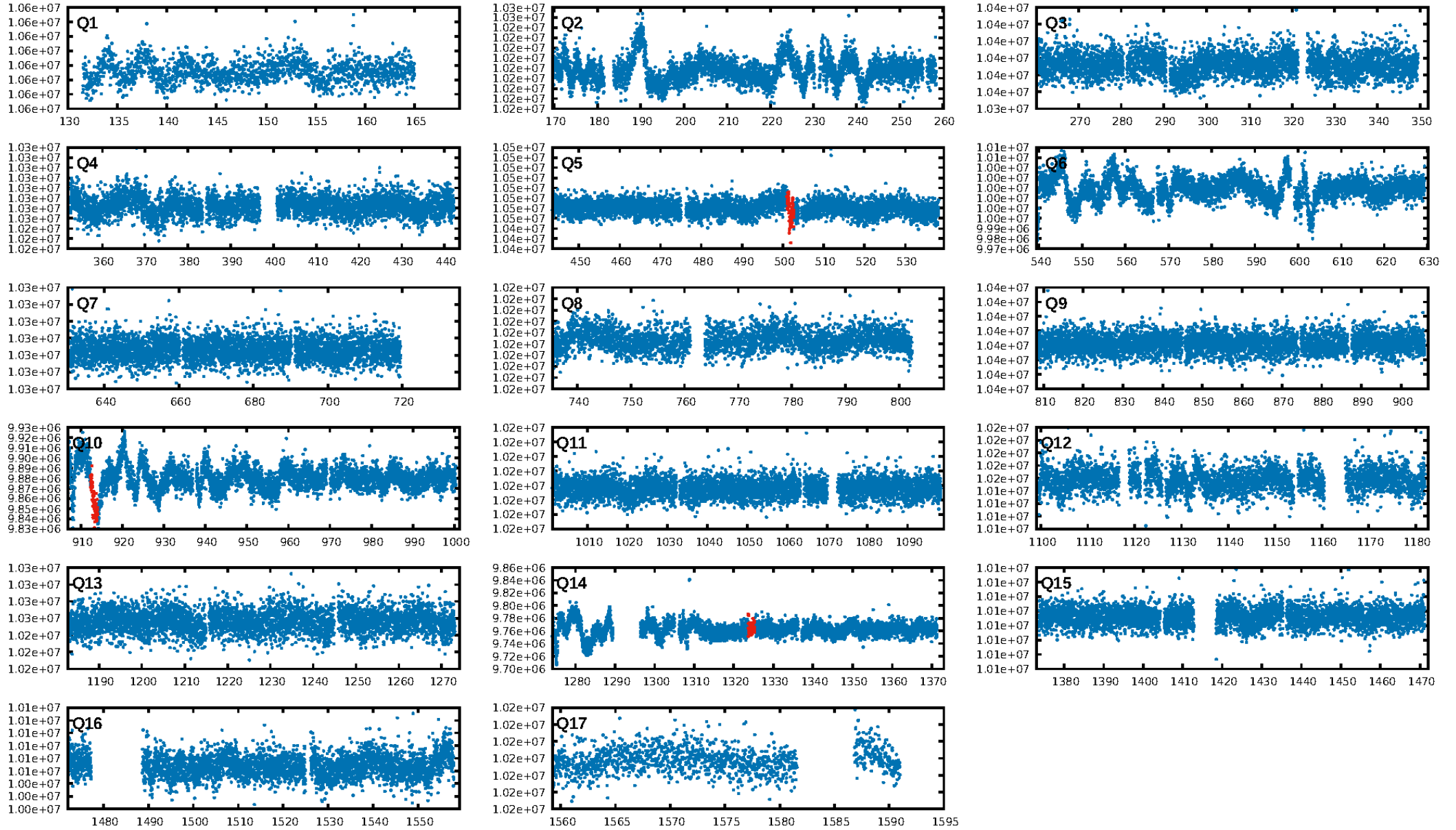
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 19.6%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 2.47e-11**  
**RollingBand-fgt: 0.67 [2/3]**  
GhostDiagnostic-chr: -0.7234  
Centroid-sig: 78.5%  
Centroid-so: 0.951 arcsec [0.57 $\sigma$ ]  
OotOffset-rm: 2.416 arcsec [1.37 $\sigma$ ]  
OotOffset-st: 2/0/0/1 [3]  
KicOffset-rm: 2.492 arcsec [1.92 $\sigma$ ]  
KicOffset-st: 2/0/0/1 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [3/3]

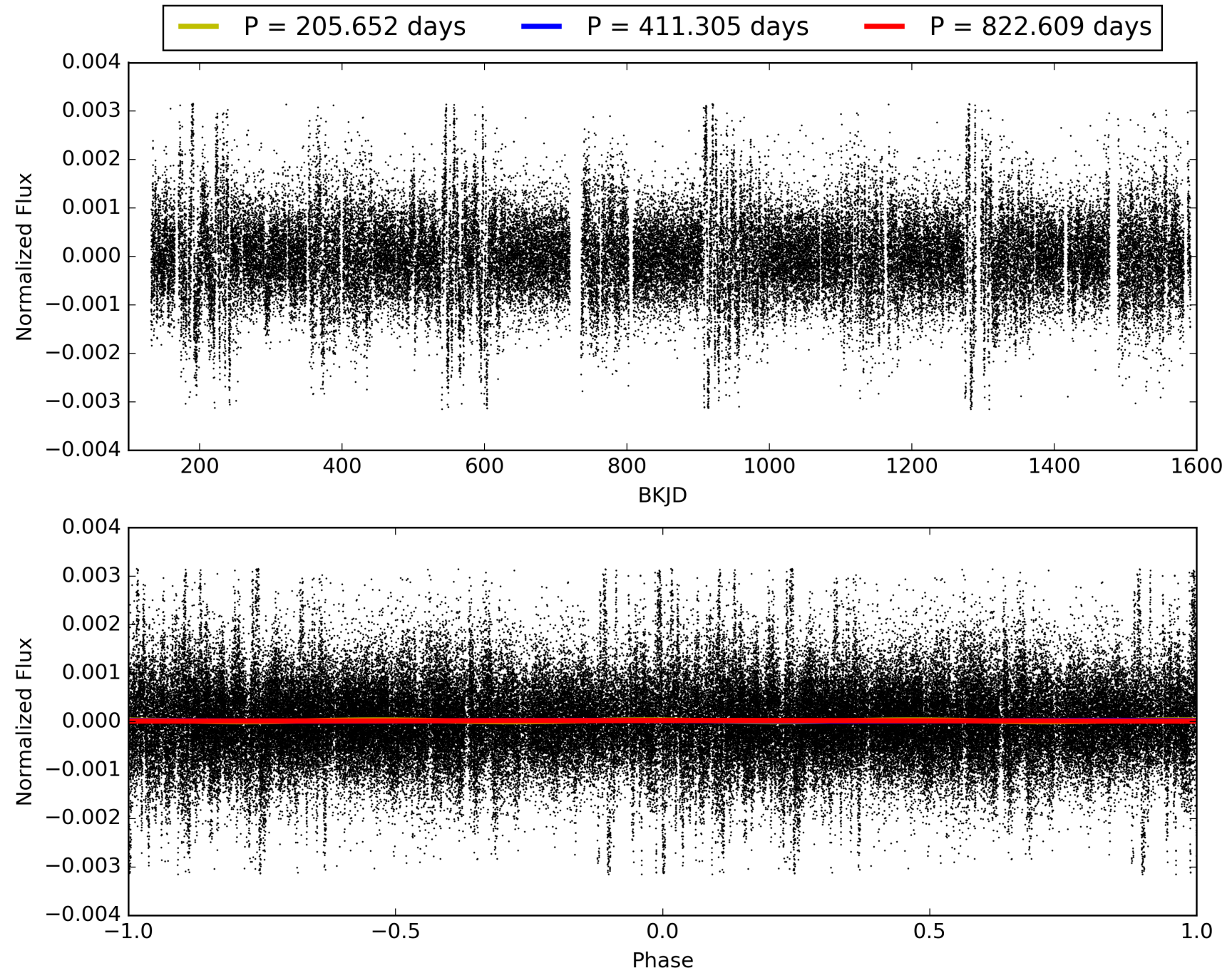
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:13:33 Z

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

# TCE 008375652-01, PDC Light Curves

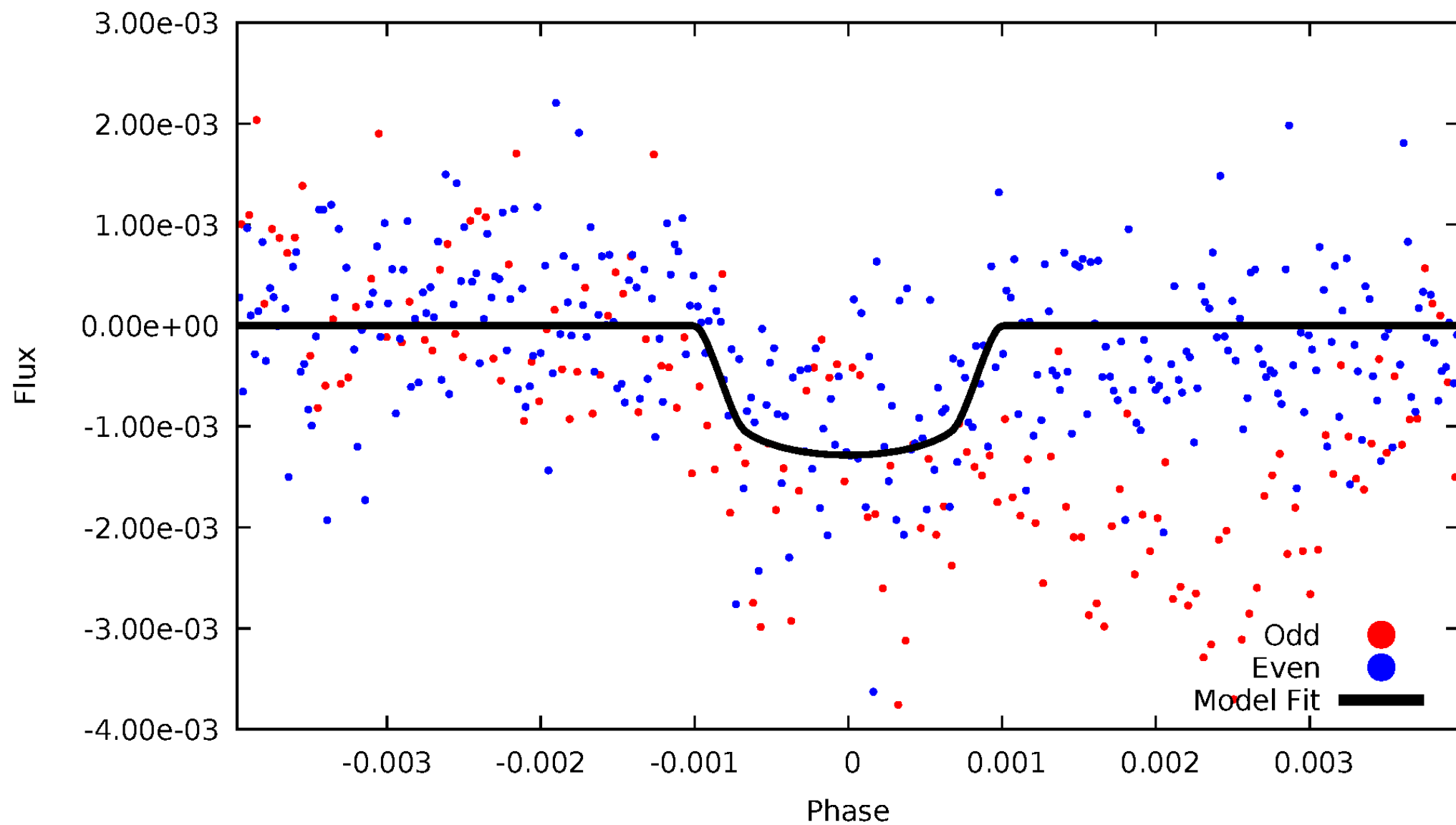


TCE 008375652-01



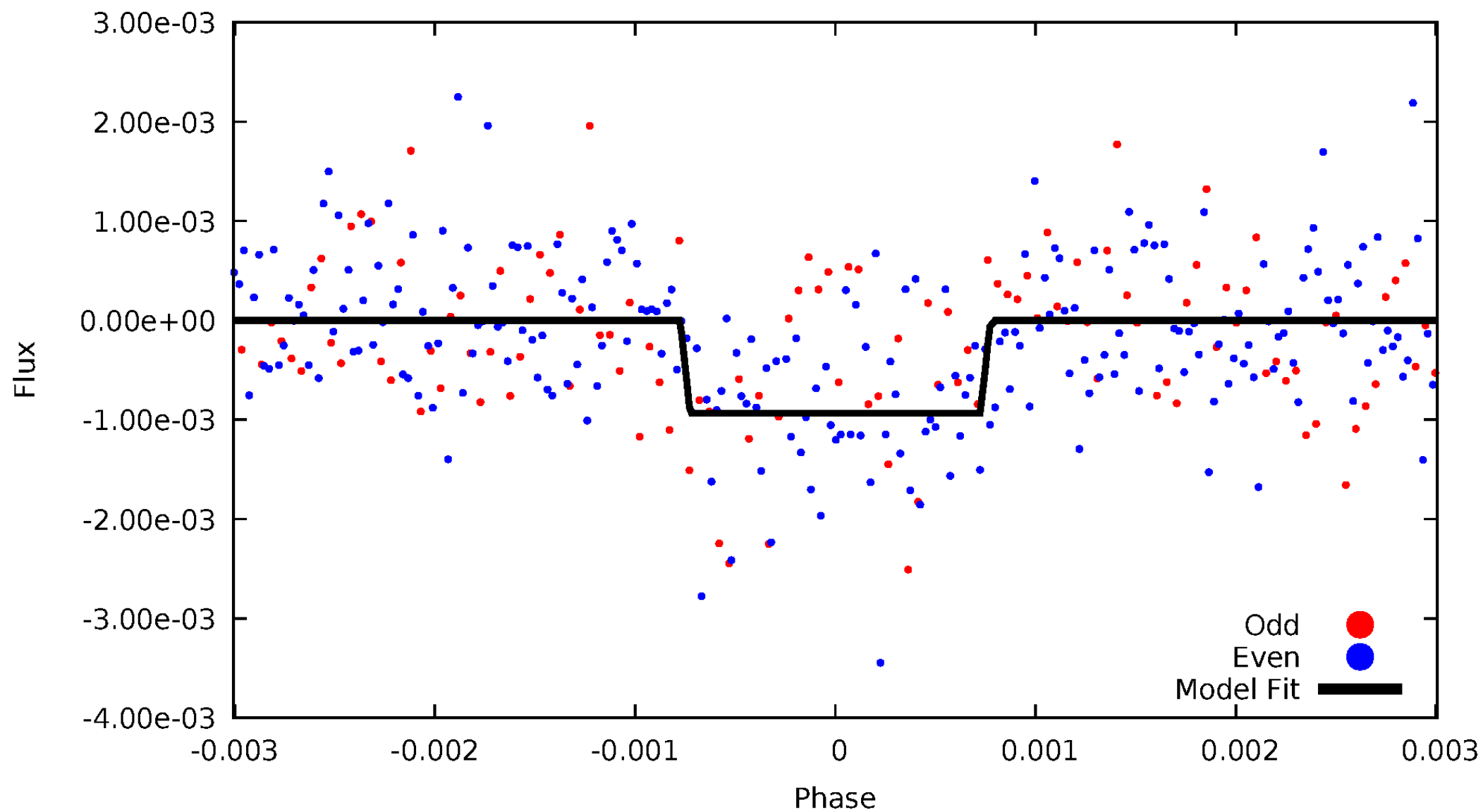
# DV Odd/Even

TCE 008375652-01



# ALT Odd/Even

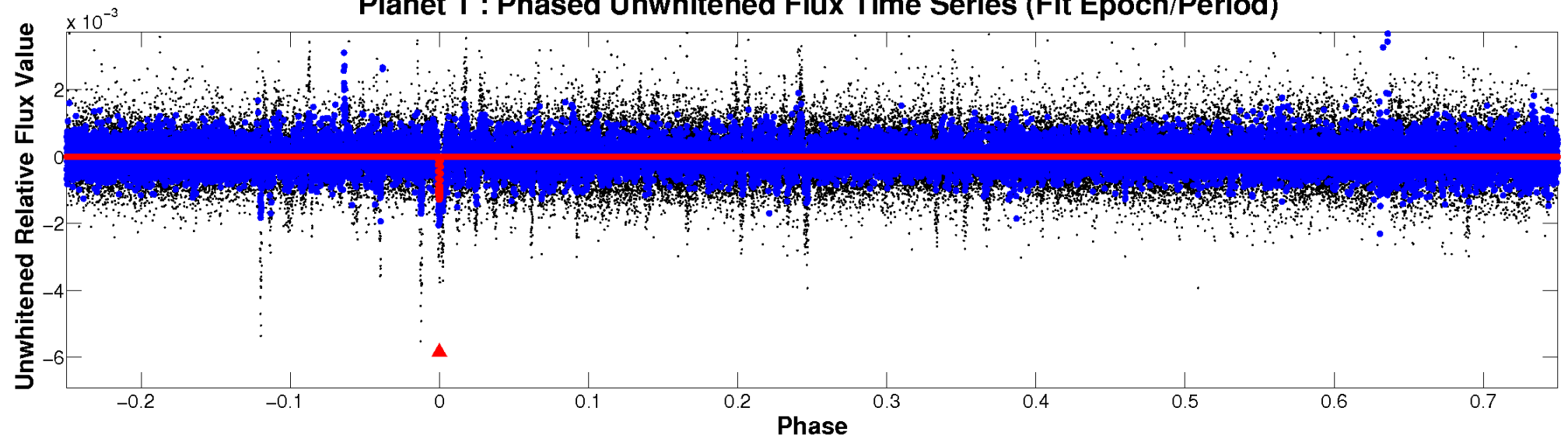
TCE 008375652-01



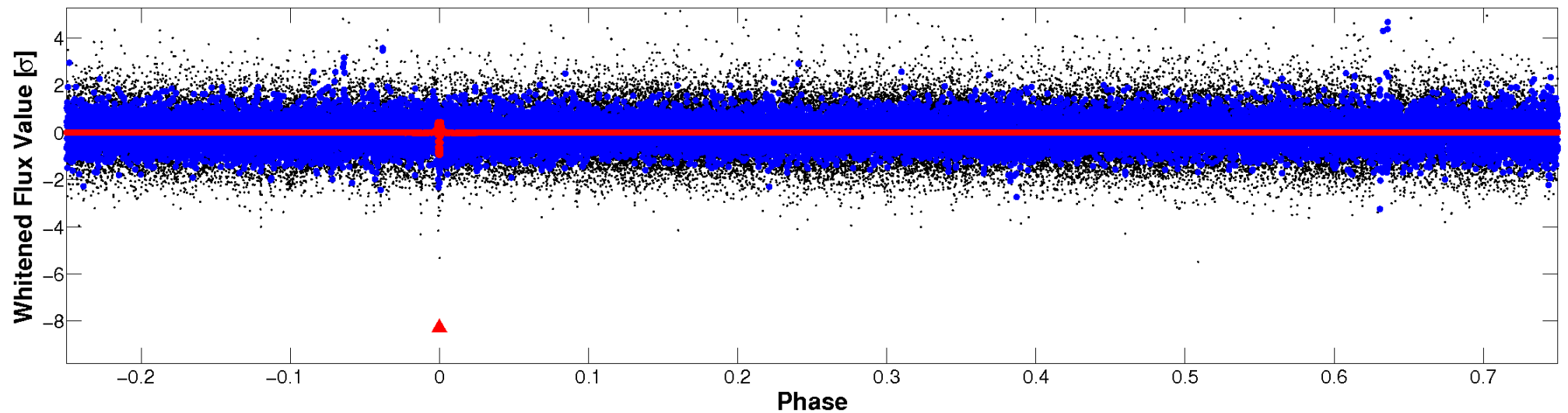


# Non-Whitened Vs. Whitened Light Curve

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

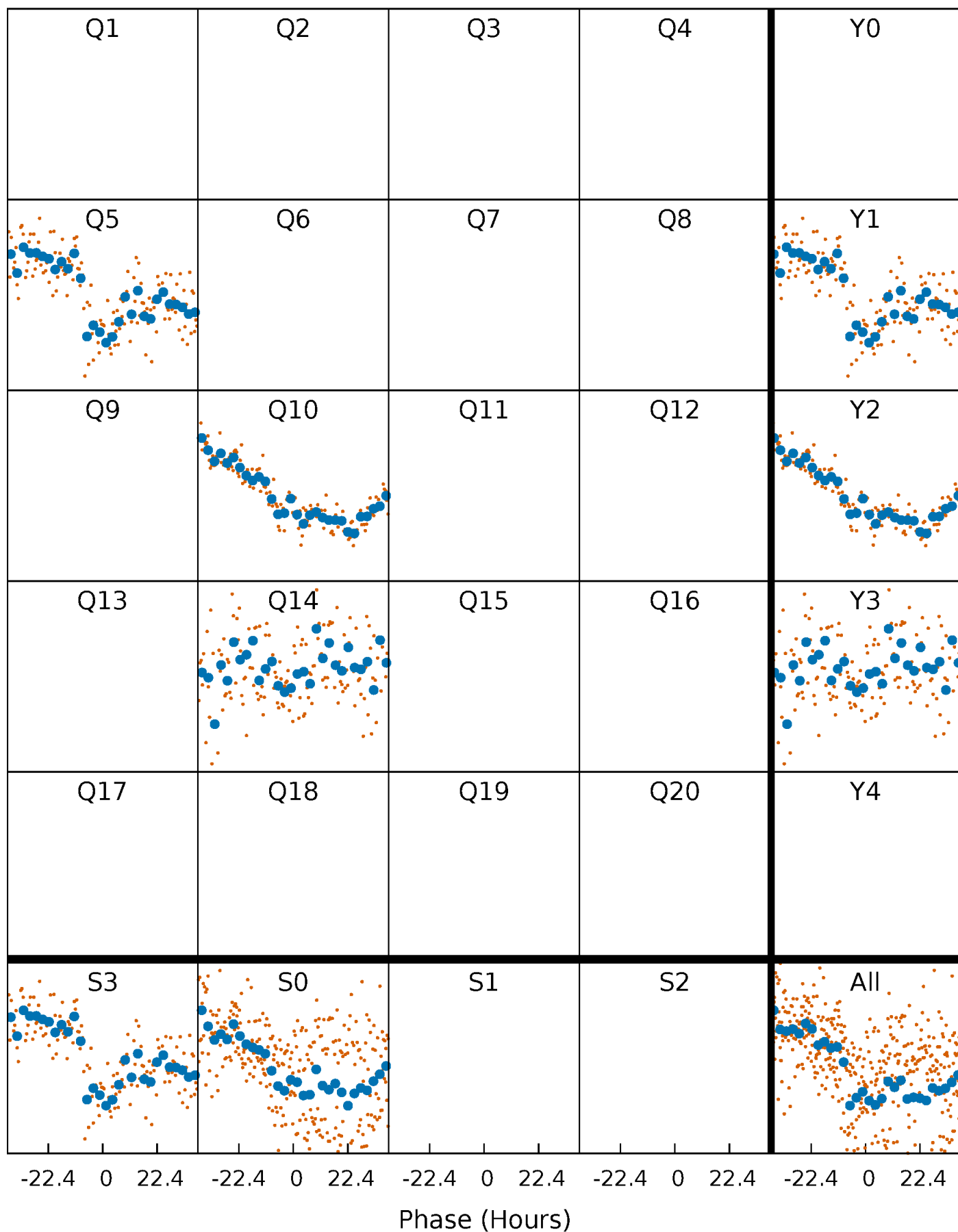


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

TCE 008375652-01   P=411.304512 Days    $T_0=501.844949$  (BKJD)





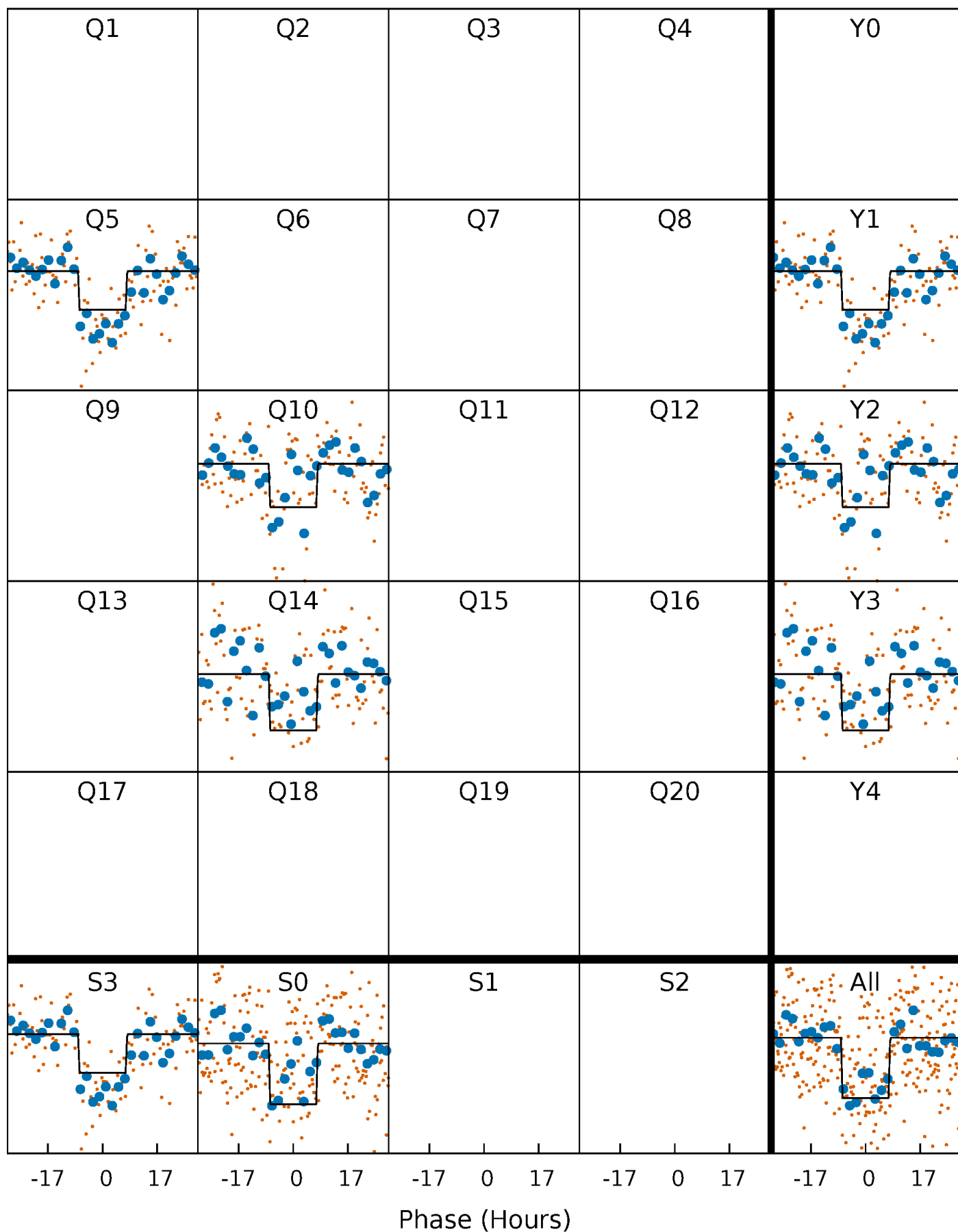
# DV Quarter-Phased Transit Curves

TCE 008375652-01 P=411.304512 Days  $T_0=501.844949$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

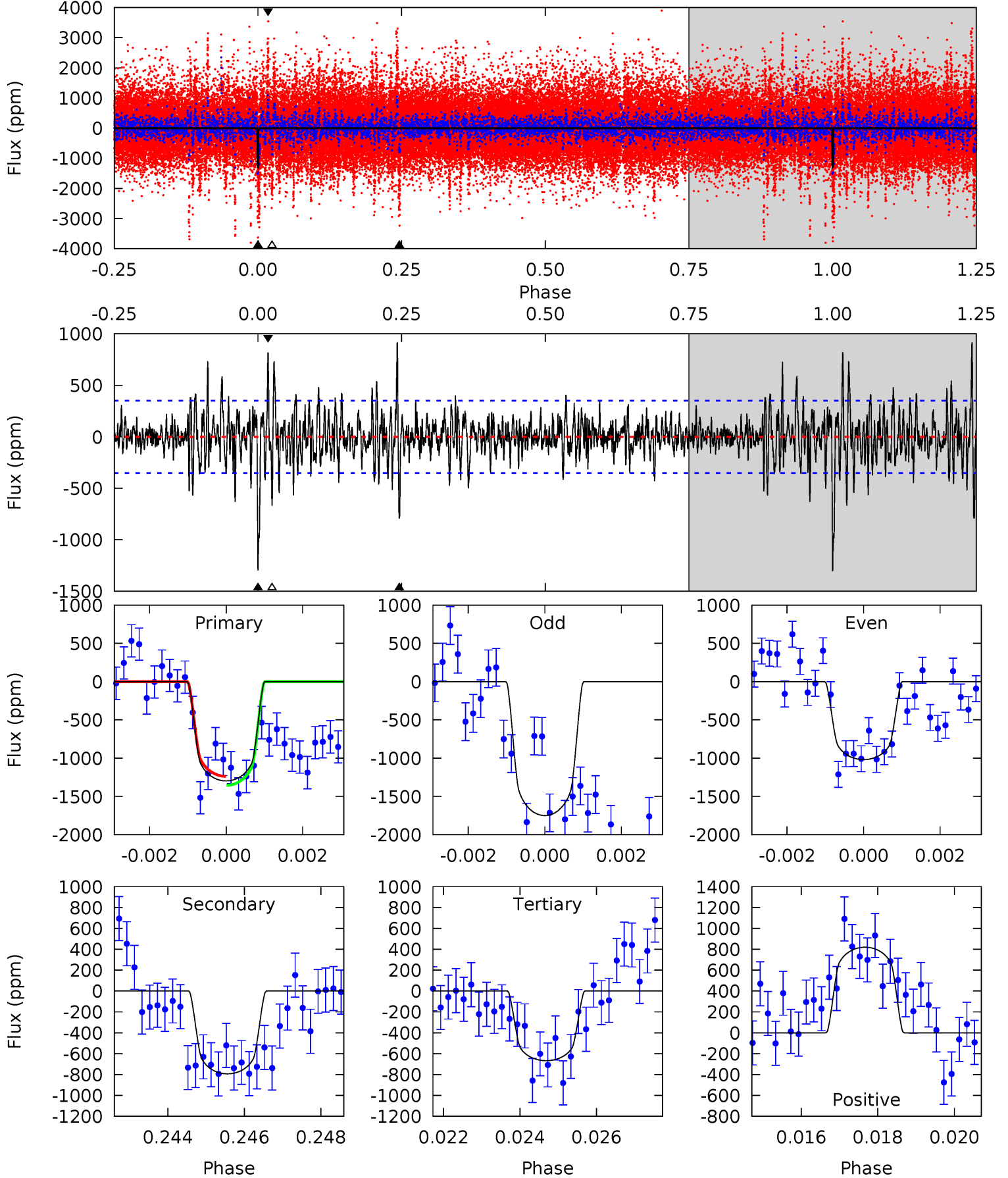
TCE 008375652-01 P=411.313940 Days  $T_0=501.818999$  (BKJD)



# DV Model-Shift Uniqueness Test

008375652-01, P = 411.304512 Days, E = 90.540437 Days

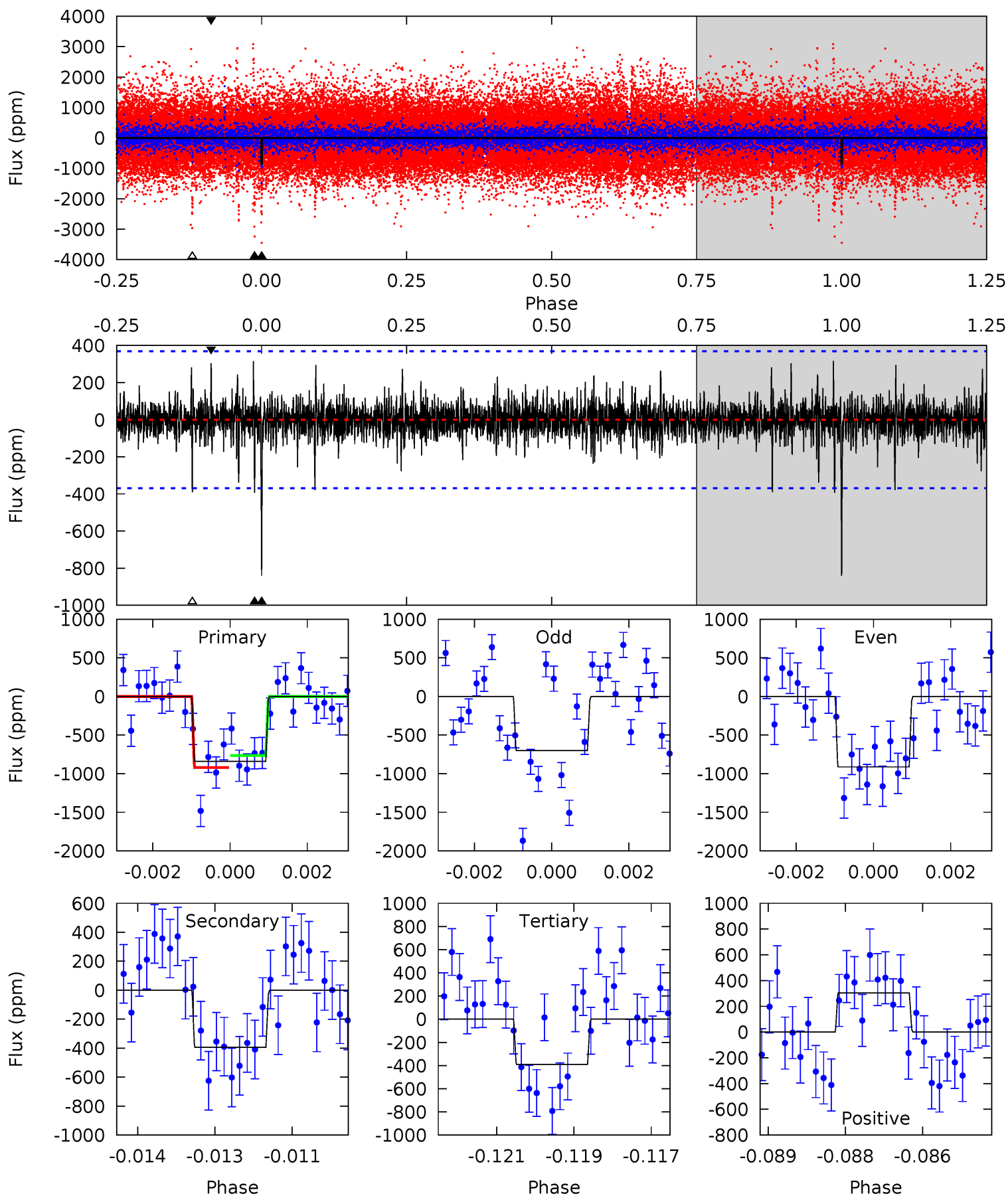
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	12.0	10.1	12.4	5.33	3.09	2.59	9.54	7.24	1.91	-0.40	5.22	0.79	0.41	0.90



# Alt Model-Shift Uniqueness Test

008375652-01,  $P = 411.313940$  Days,  $E = 90.505059$  Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	5.73	5.68	4.43	5.37	3.16	0.98	6.55	7.81	0.05	1.31	1.46	1.21	0.27	1.14



### Stellar Parameters For KIC 008375652

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5741^{+155}_{-172}$	$4.555^{+0.044}_{-0.176}$	$-0.160^{+0.300}_{-0.300}$	$0.846^{+0.224}_{-0.075}$	$0.938^{+0.100}_{-0.110}$	$2.178^{+0.396}_{-1.066}$
	+3%/-3%	+1%/-4%	+188%/-188%	+26%/-9%	+11%/-12%	+18%/-49%
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 008375652-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-793 \pm 66$	$3.68^{+0.51}_{-0.42}$	$322^{+19}_{-14}$	$4985^{+249}_{-244}$	$35201^{+10202}_{-8065}$
Alt.	$-394 \pm 69$	$2.91^{+0.49}_{-0.42}$	$322^{+19}_{-14}$	$4771^{+314}_{-305}$	$28406^{+9763}_{-8258}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{\text{obs}}$  = 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

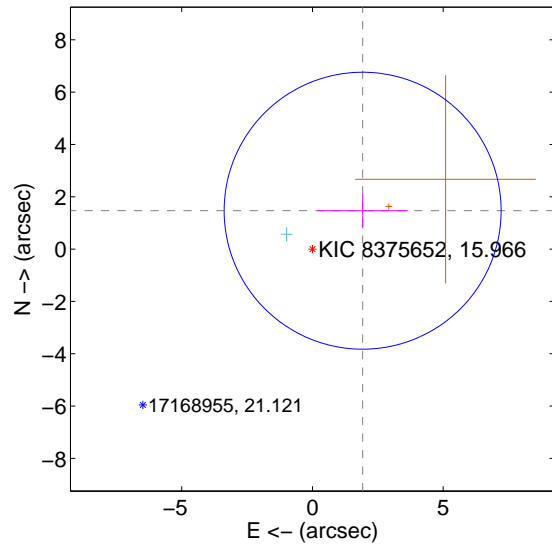
Supplemental centroid analysis for 008375652-01. Kepler magnitude: 15.97. Transit SNR 9.77

There are 1 quarters with good PRF difference image offsets

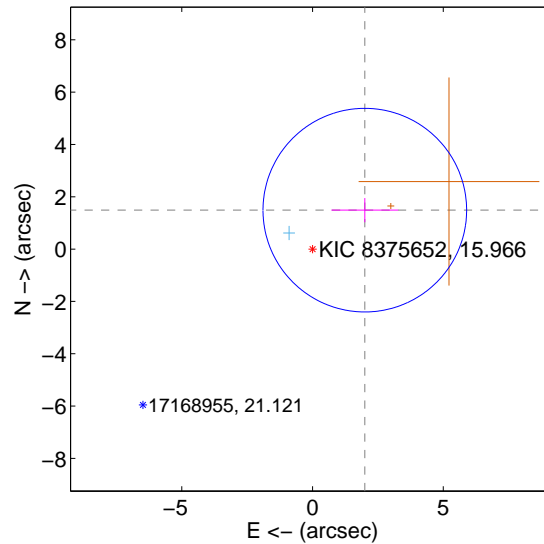
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.416 \pm 1.765$	1.37	$-1.919 \pm 1.728$	$1.467 \pm 0.650$
PRF-fit source offset from KIC position	$2.492 \pm 1.297$	1.92	$-1.999 \pm 1.280$	$1.489 \pm 0.461$
photometric centroid source offset	$0.95 \pm 1.66$	0.57	$-0.95 \pm 1.66$	$-0.00 \pm 1.36$

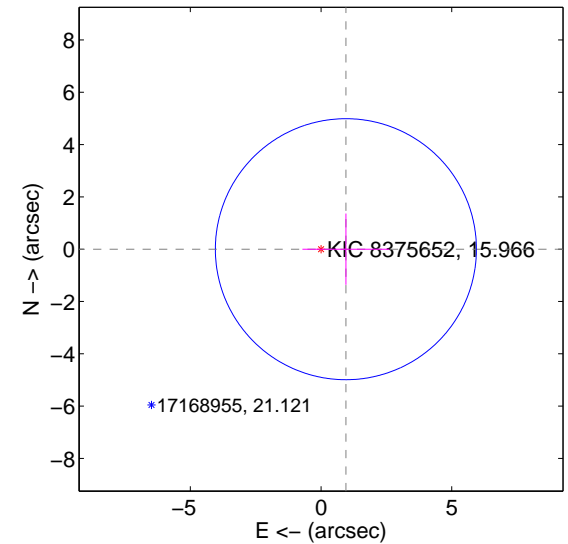
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



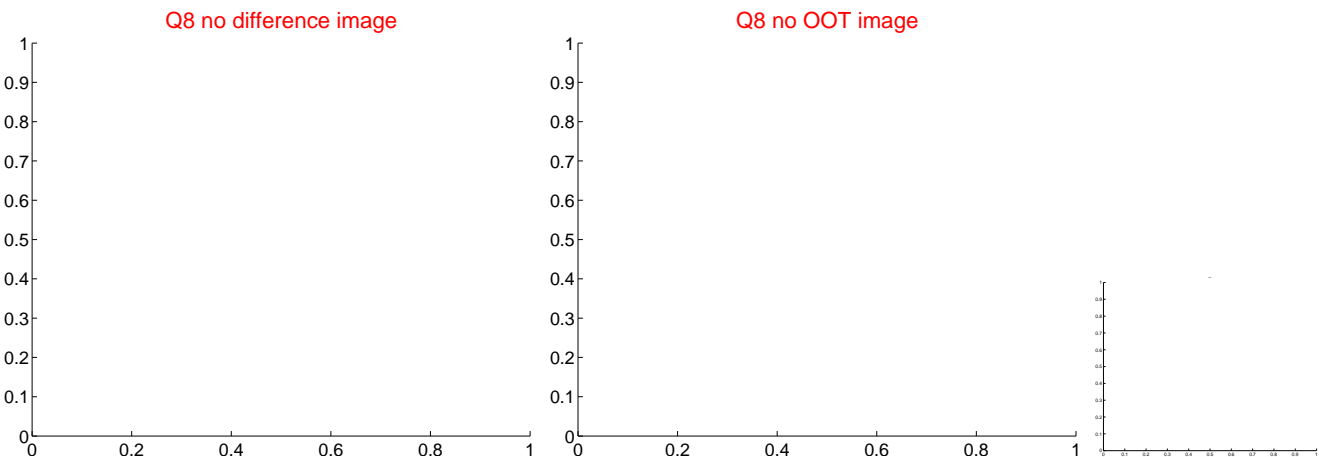
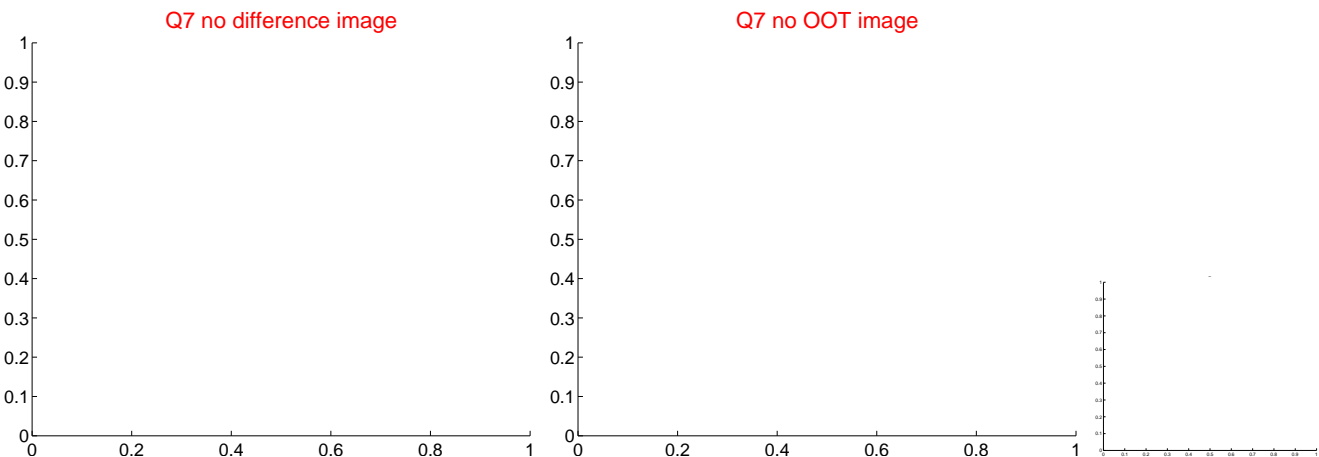
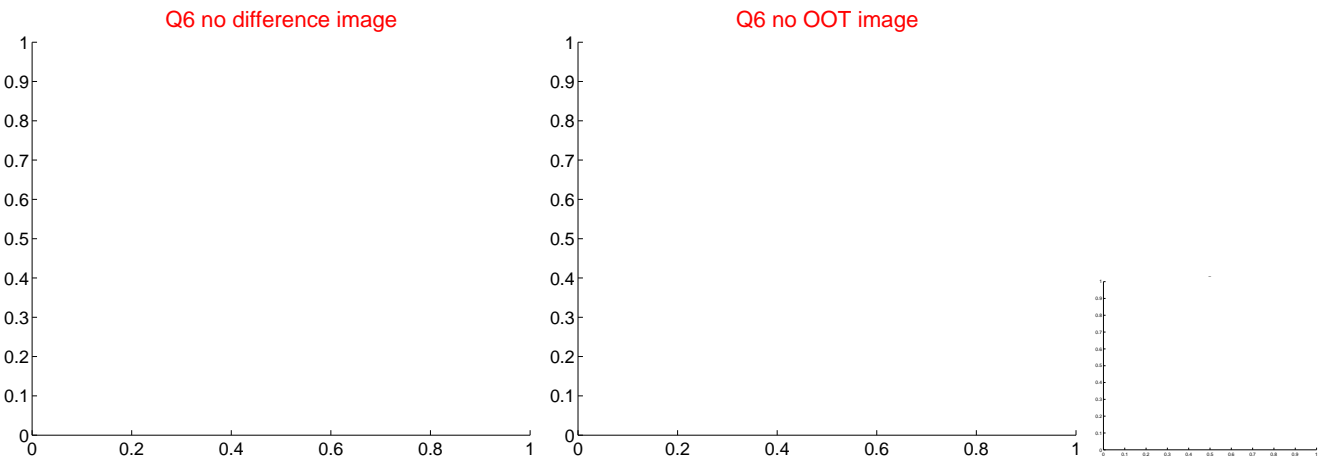
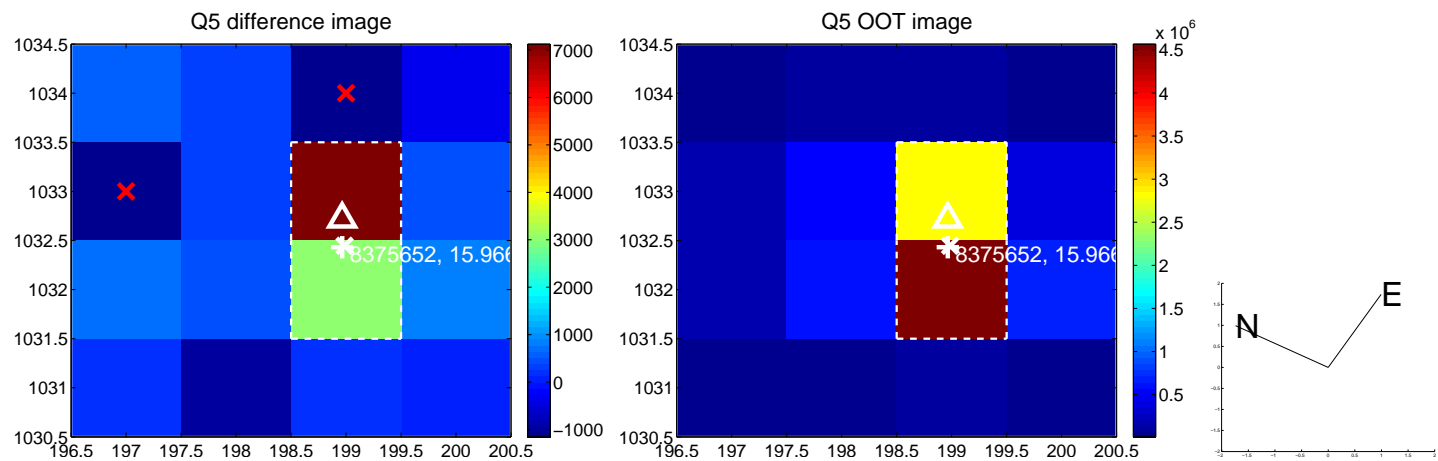
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

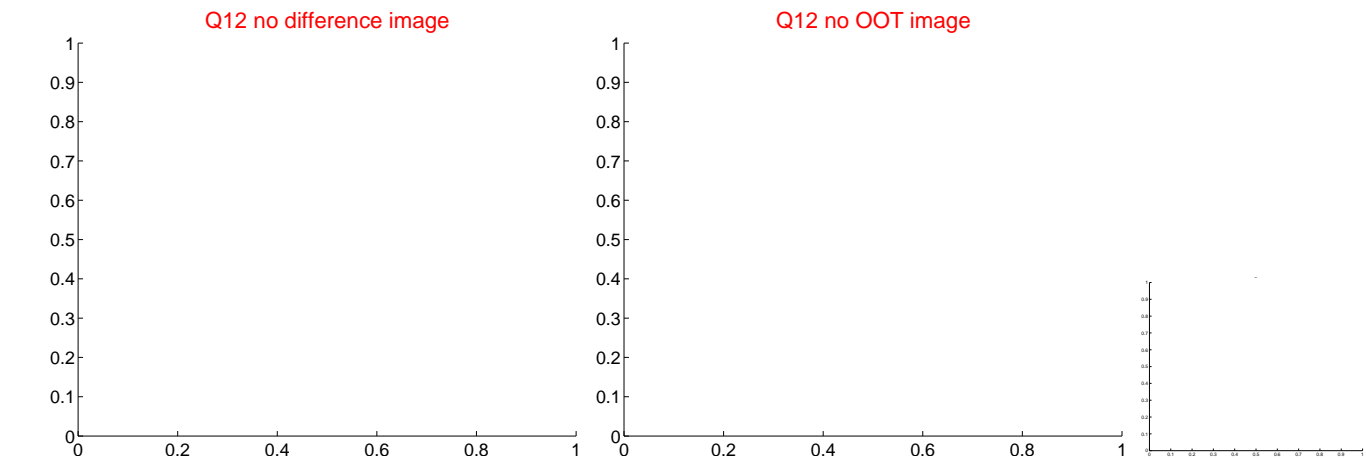
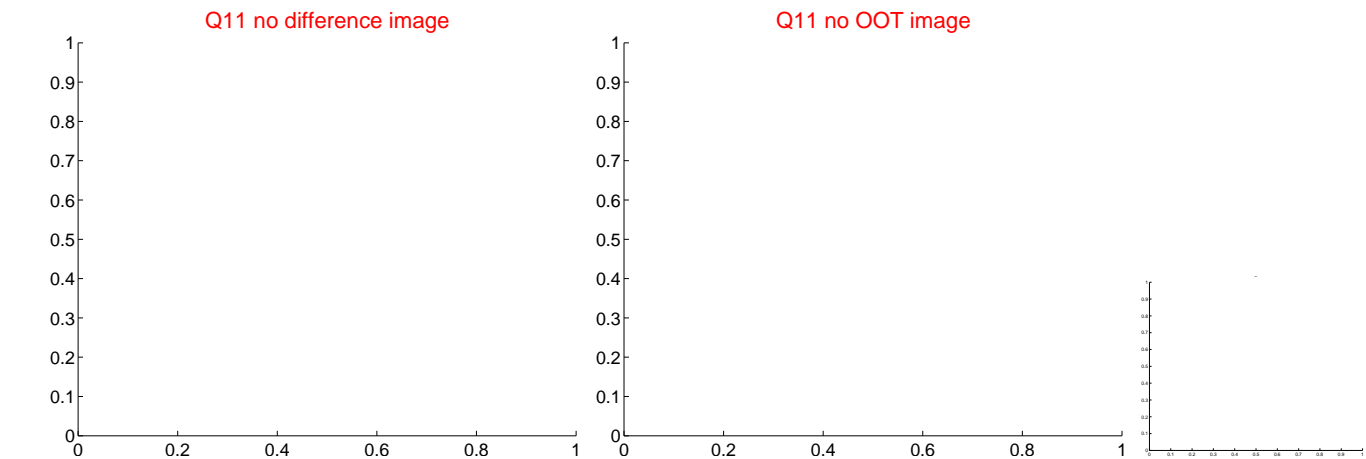
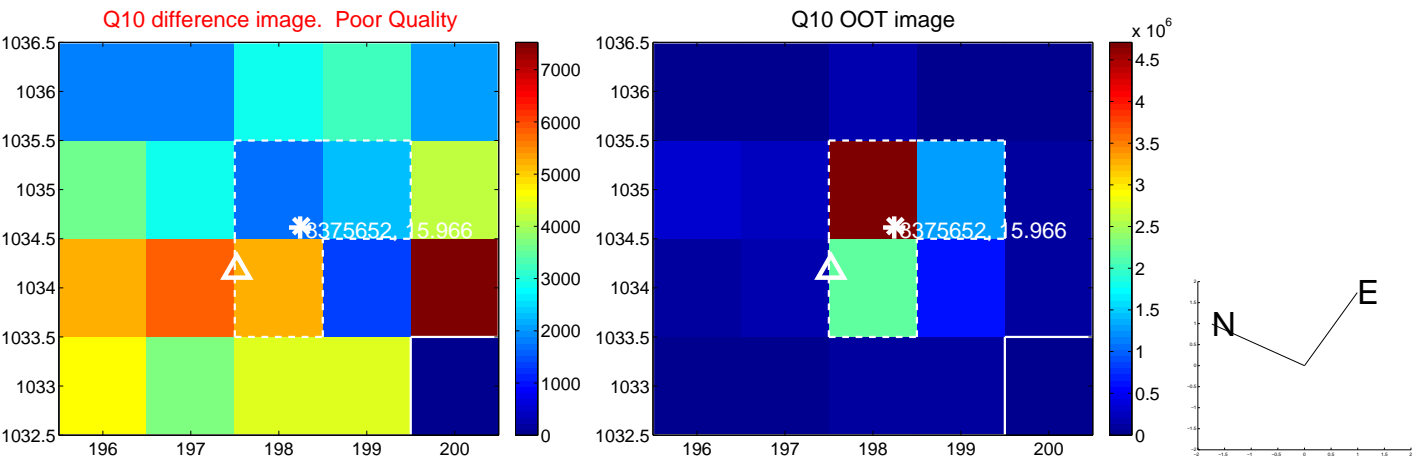
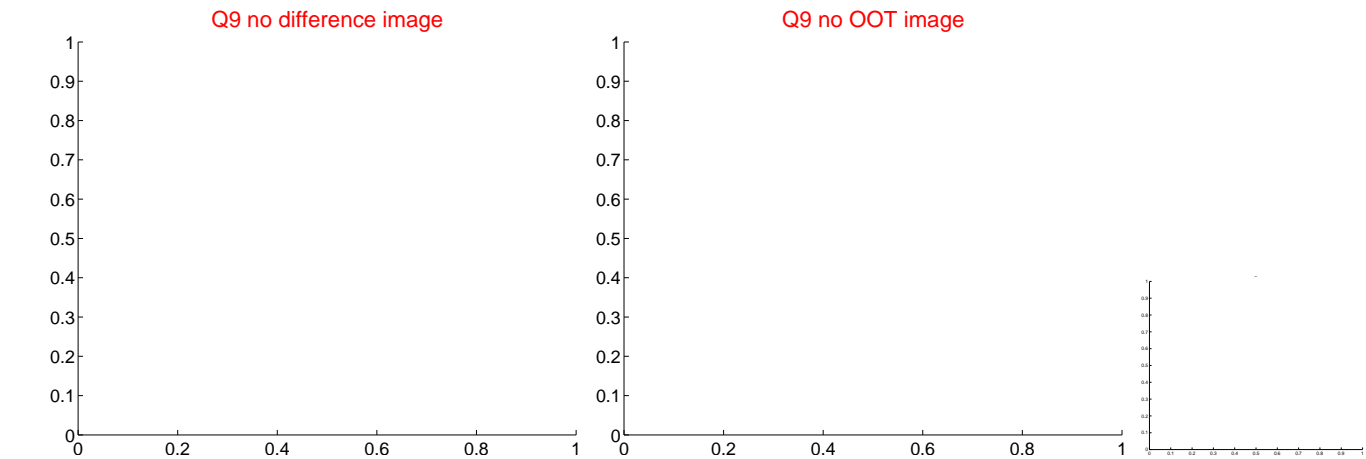




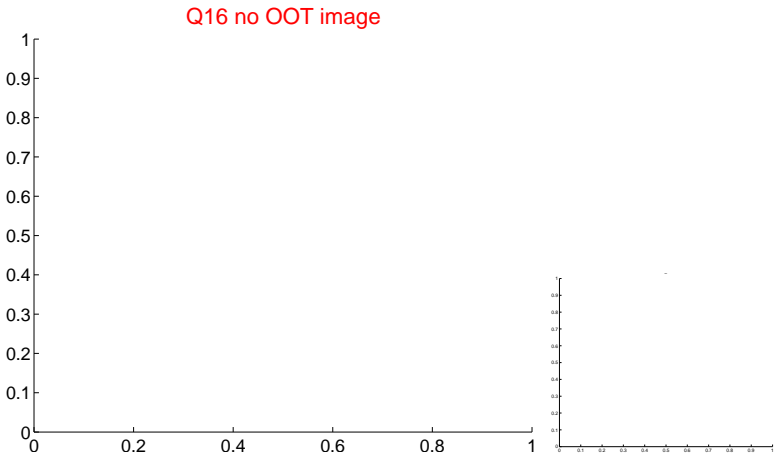
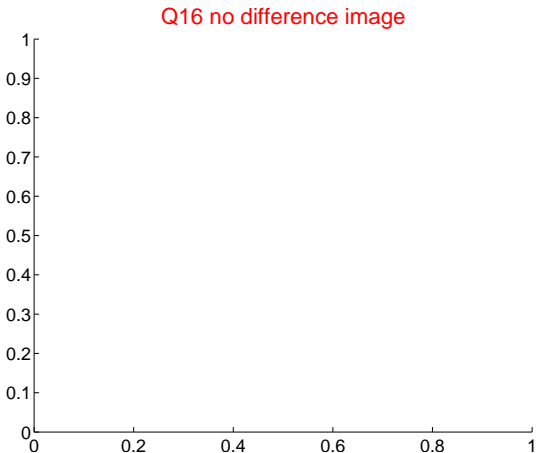
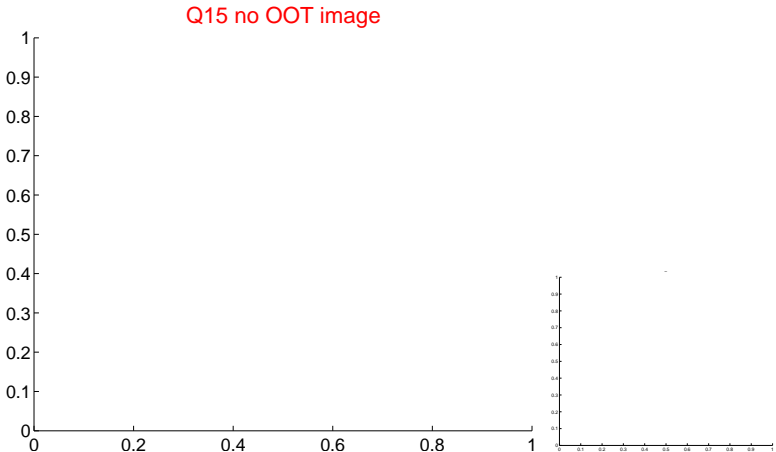
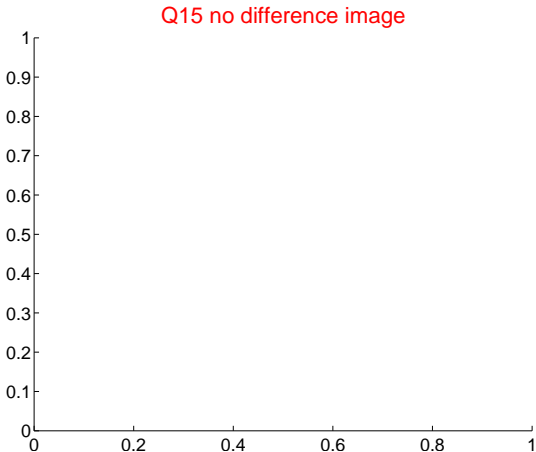
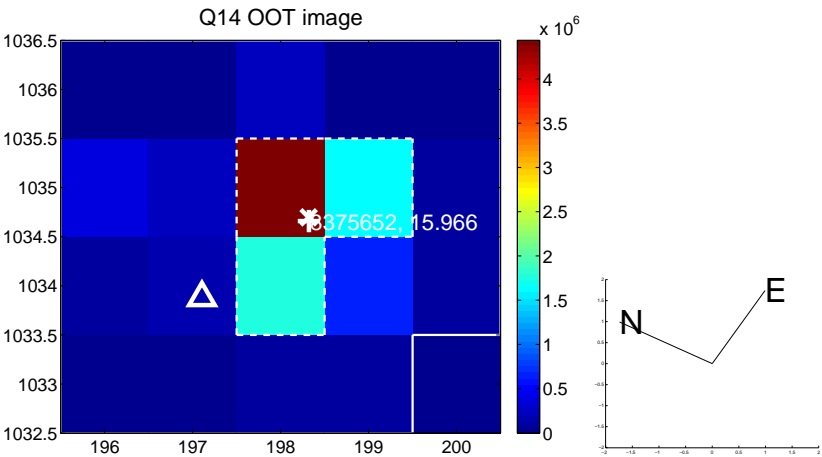
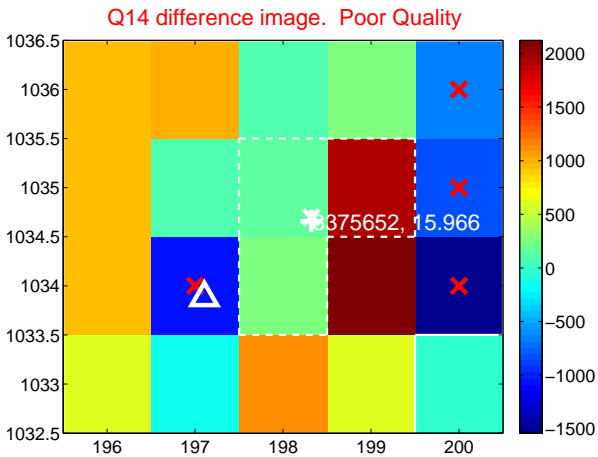
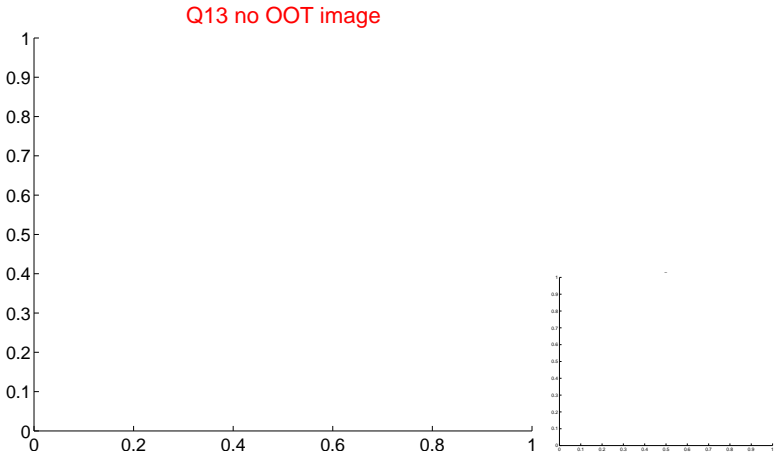
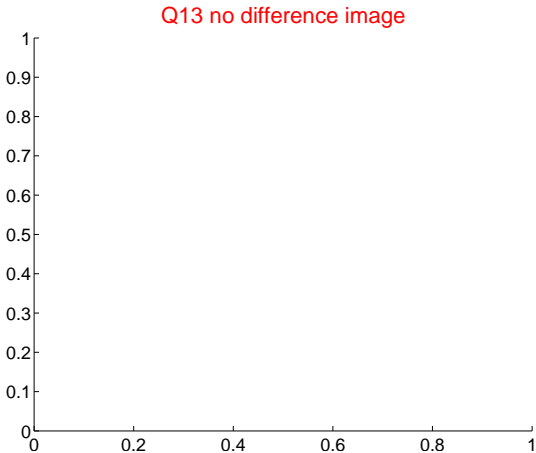
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



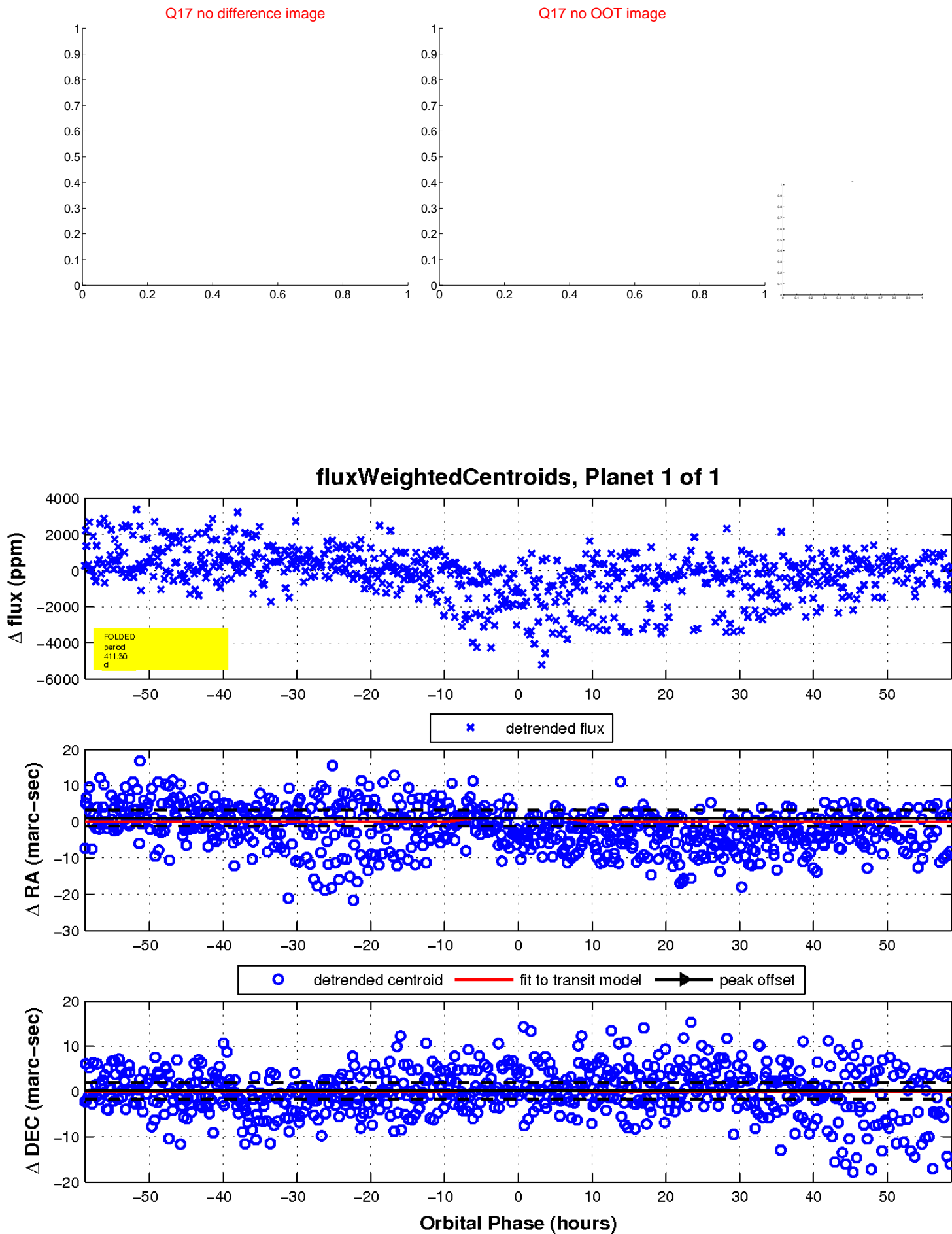
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

