

# KIC 011075410

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011075410-01	OBS	No	413.541850	142.562336	259.3	2.873	9.8	4.5	0.85	5120	1.66	0.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011075410-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—MOD_TER_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.

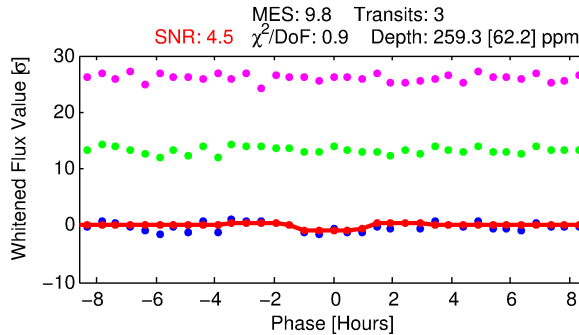
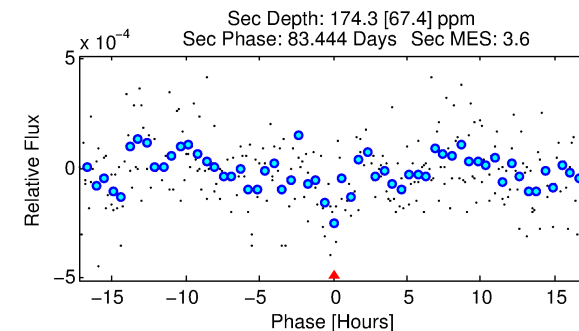
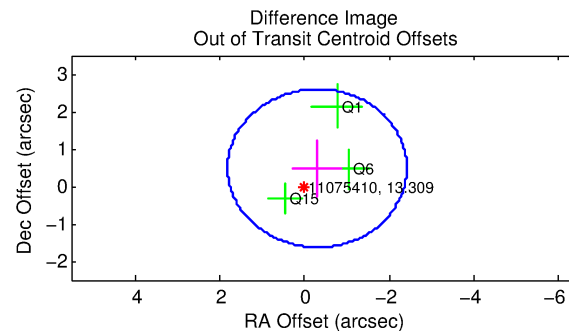
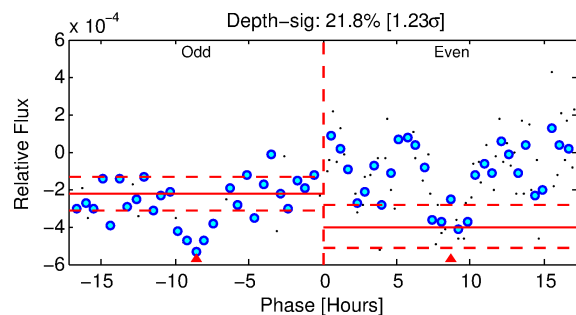
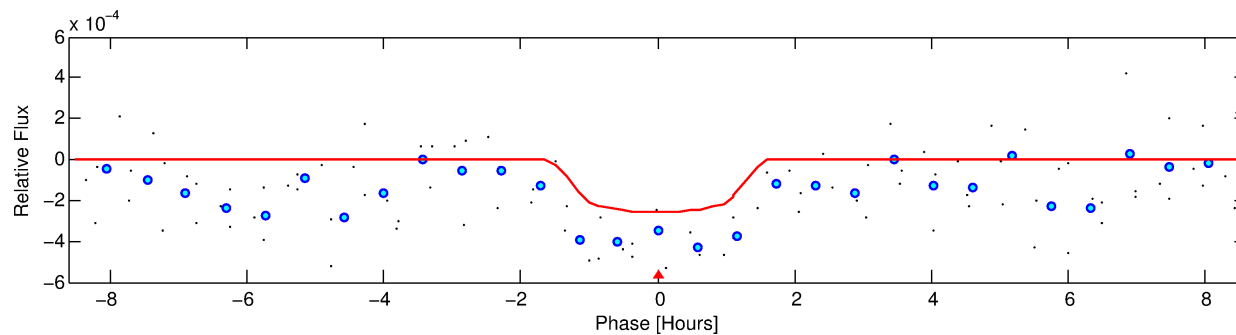
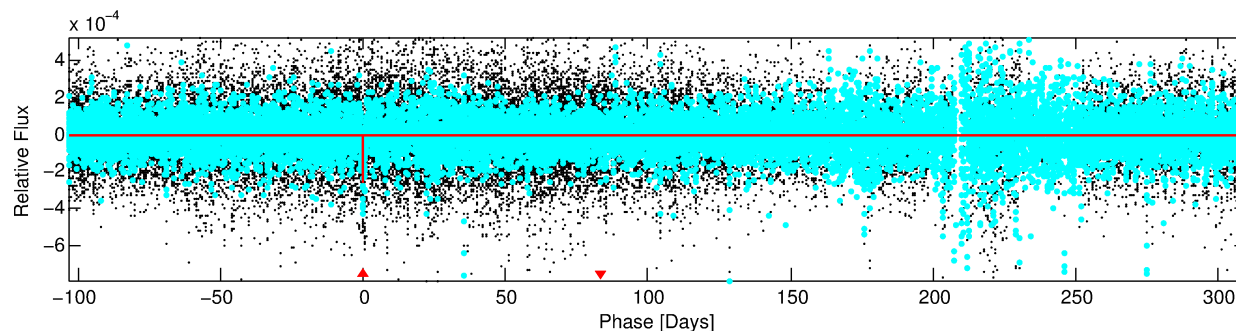
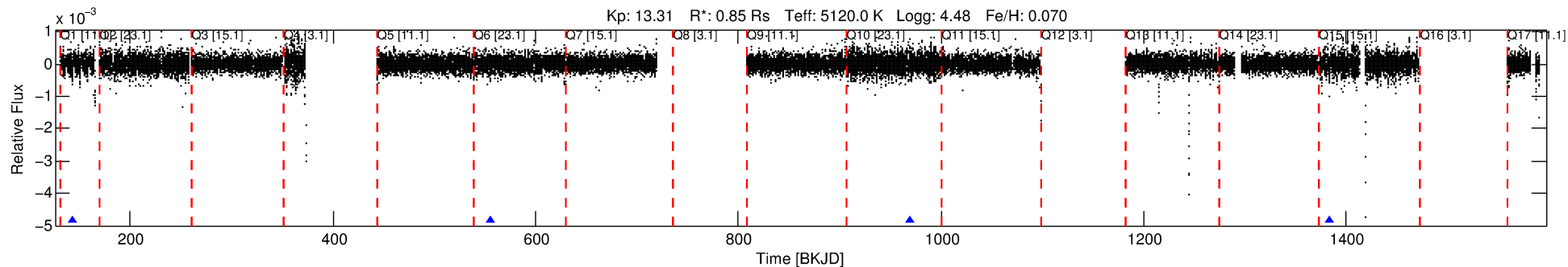
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011075410-01

No Significant Match Found

# DV One-Page Summary

KIC: 11075410 Candidate: 1 of 1 Period: 413.542 d



## DV Fit Results:

Period = 413.54185 [0.00597] d  
Epoch = 142.5623 [0.0091] BKJD  
Rp/R\* = 0.0179 [0.0260]  
a/R\* = 528.45 [3110.33]  
b = 0.90 [1.30]  
Seff = 0.44 [0.09]  
Teq = 208 [11] K  
Rp = 1.66 [2.43] Re  
a = 1.0077 [0.1095] AU  
Ag = 35185.97 [103399.73] [0.34 $\sigma$ ]  
Teffp = 4401 [3230] K [1.30 $\sigma$ ]

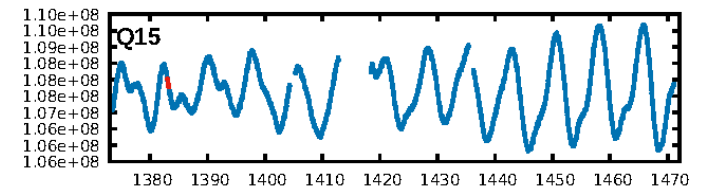
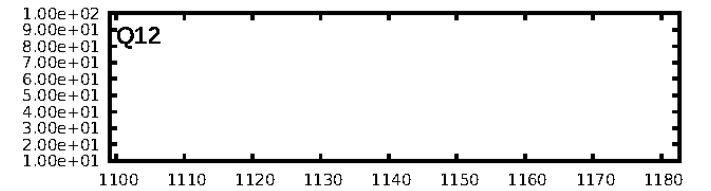
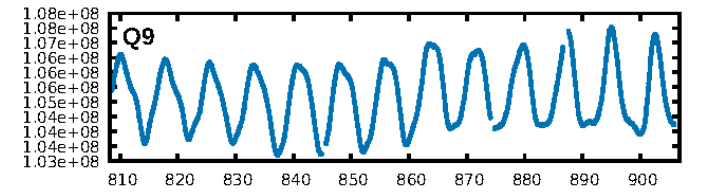
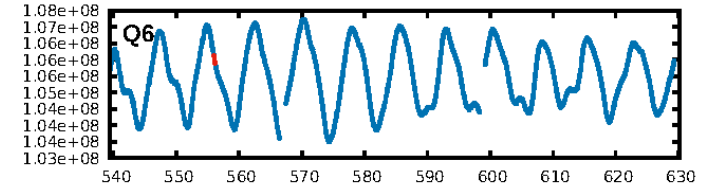
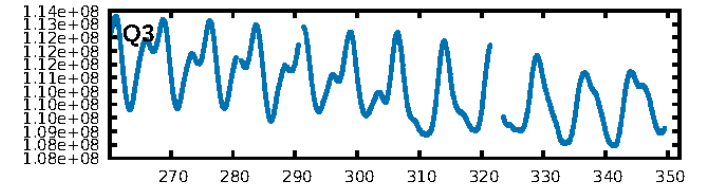
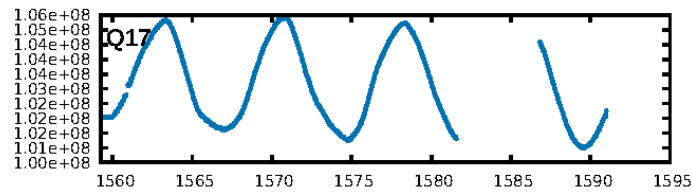
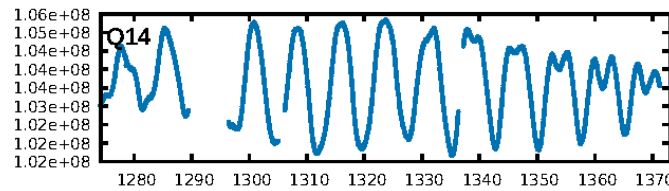
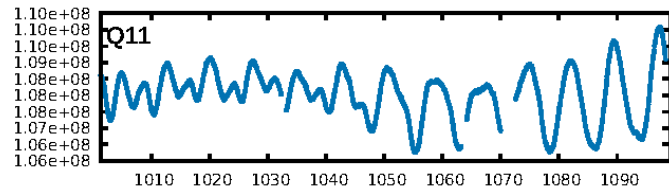
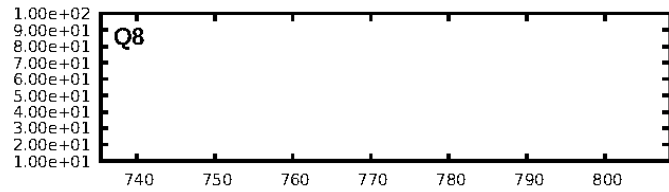
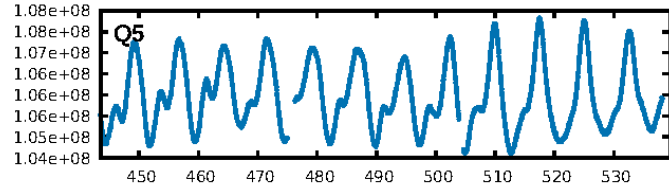
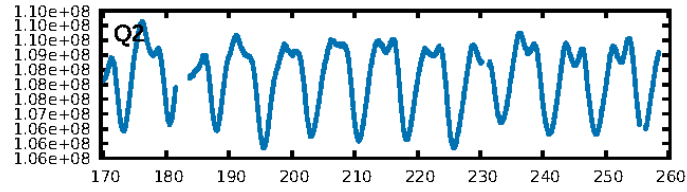
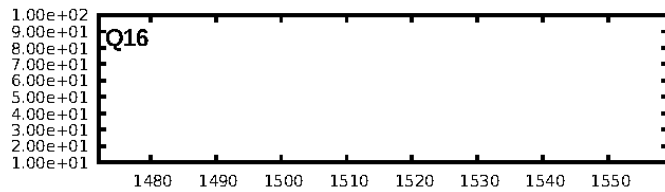
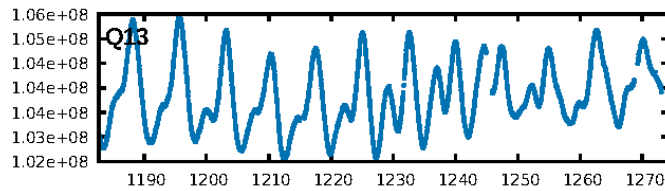
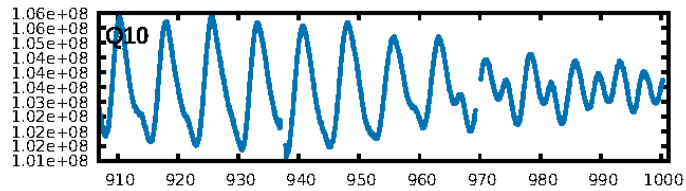
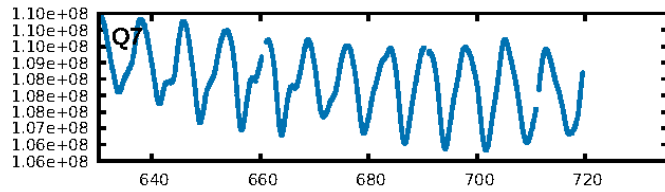
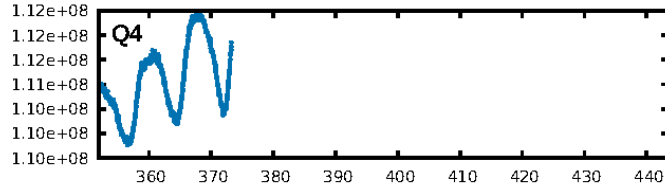
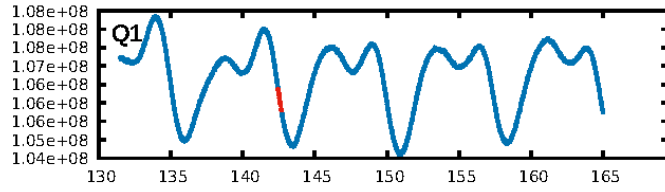
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 61.0%  
ModelChiSquareGof-sig: 99.5%  
Bootstrap-pfa: 9.72e-08  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: 0.8405  
Centroid-sig: 20.3%  
Centroid-so: 3.132 arcsec [1.60 $\sigma$ ]  
OotOffset-rm: 0.571 arcsec [0.81 $\sigma$ ]  
OotOffset-st: 1/1/0/1 [3]  
KicOffset-rm: 0.688 arcsec [0.93 $\sigma$ ]  
KicOffset-st: 1/1/0/1 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

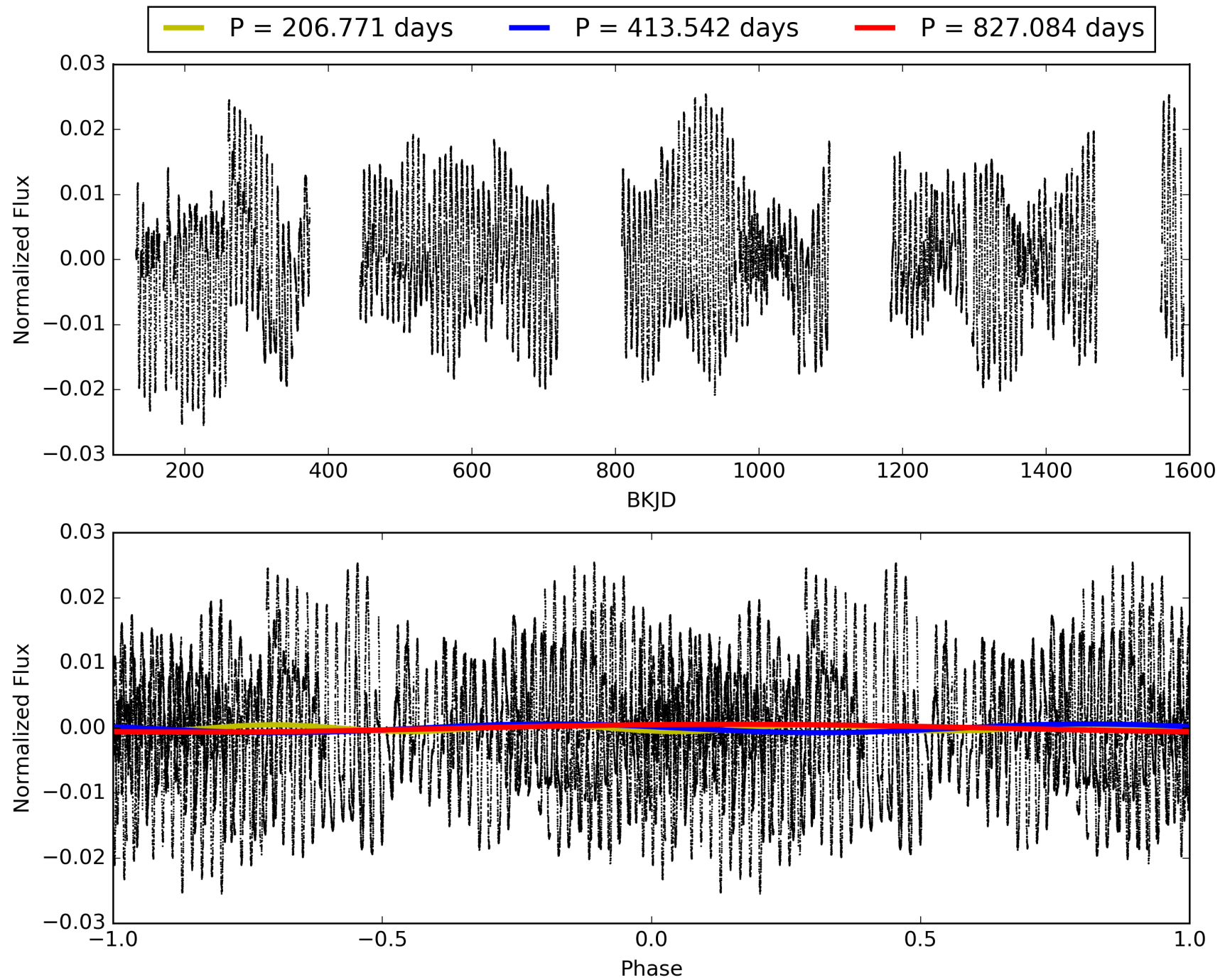
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:58:05 Z

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

# TCE 011075410-01, PDC Light Curves

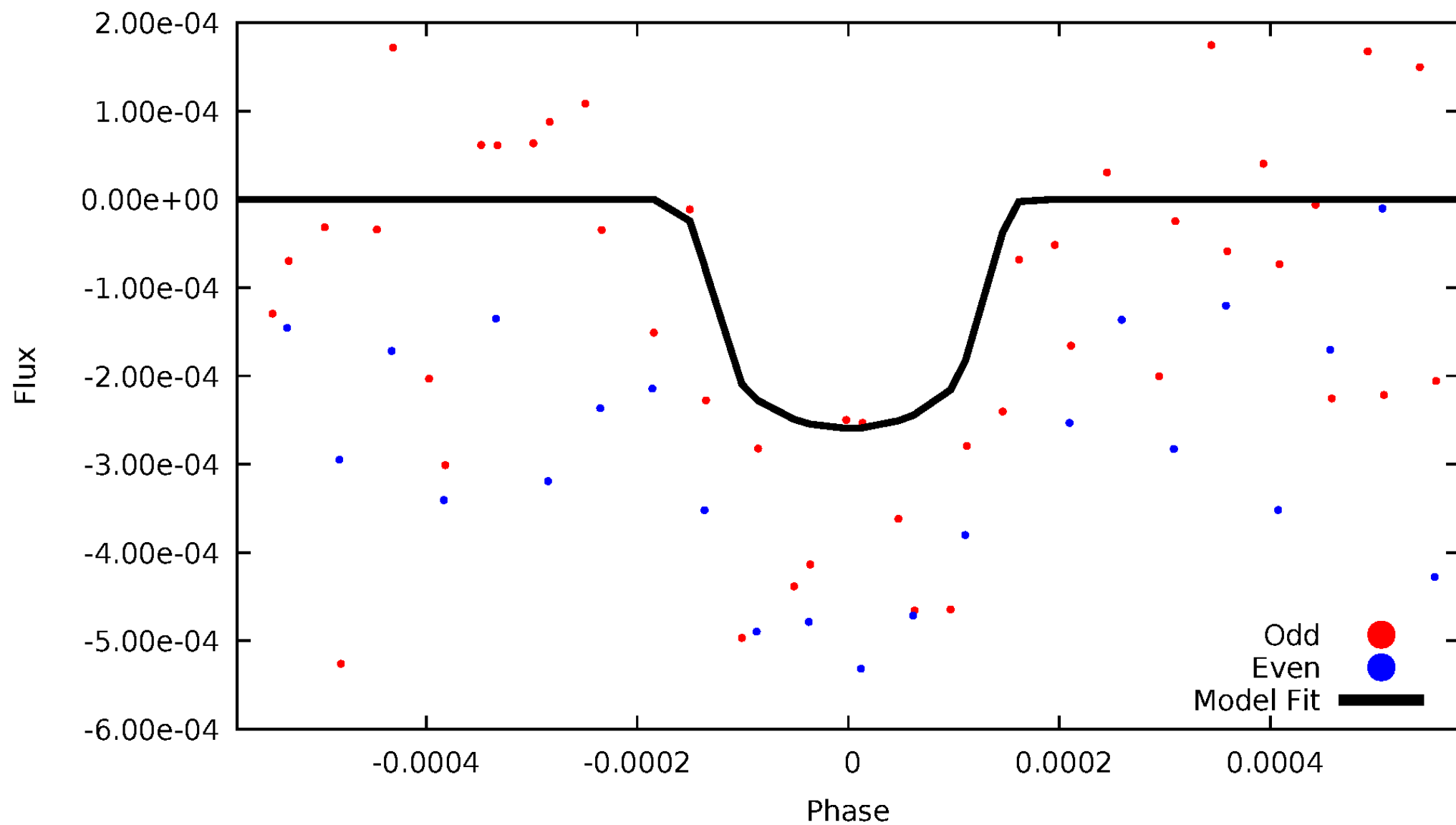


# TCE 011075410-01



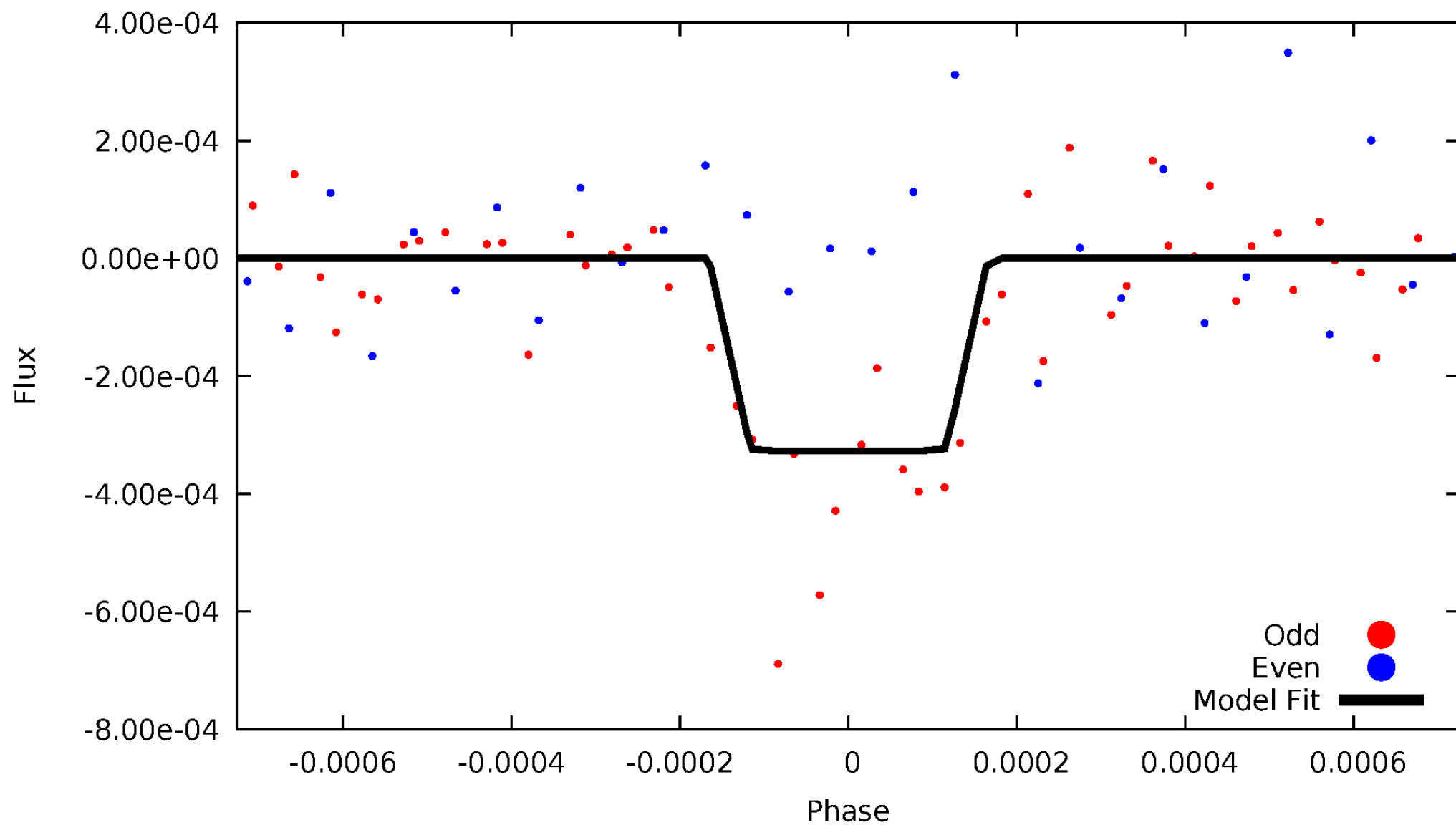
# DV Odd/Even

TCE 011075410-01



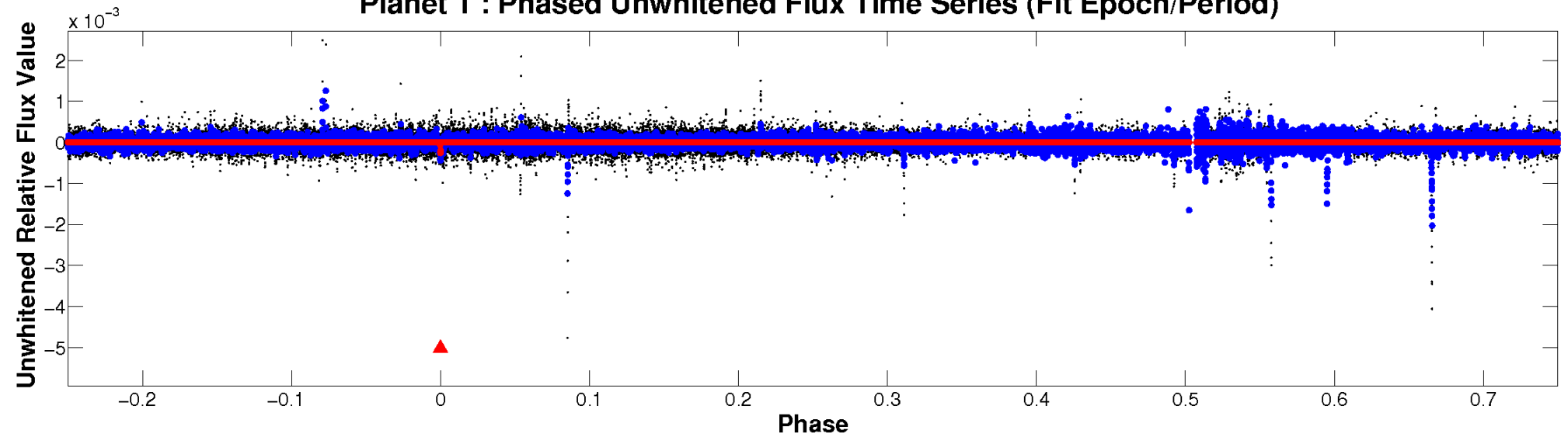
# ALT Odd/Even

TCE 011075410-01

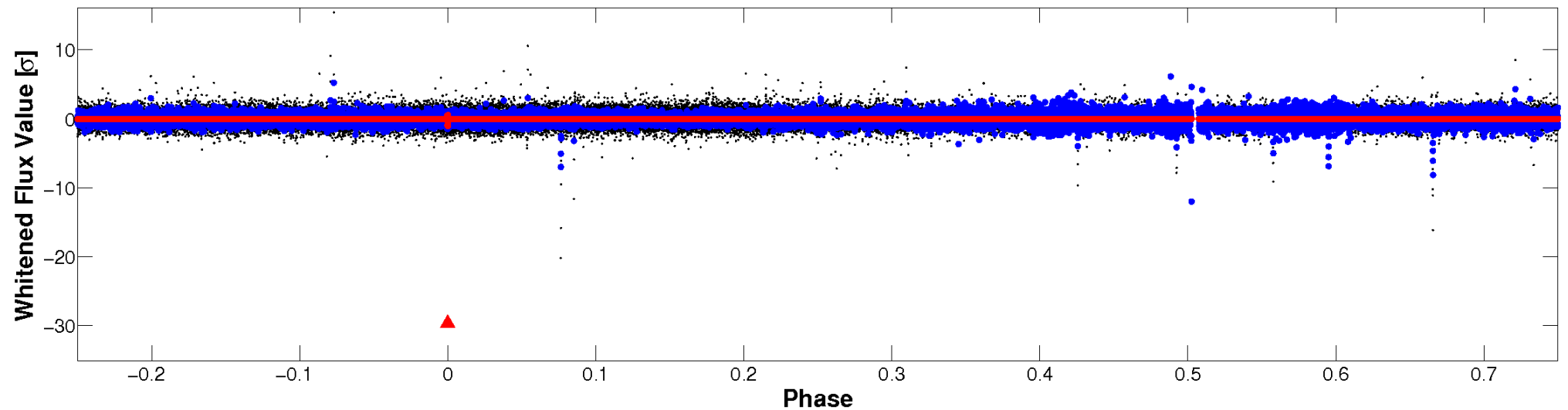


# Non-Whitened Vs. Whitened Light Curve

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

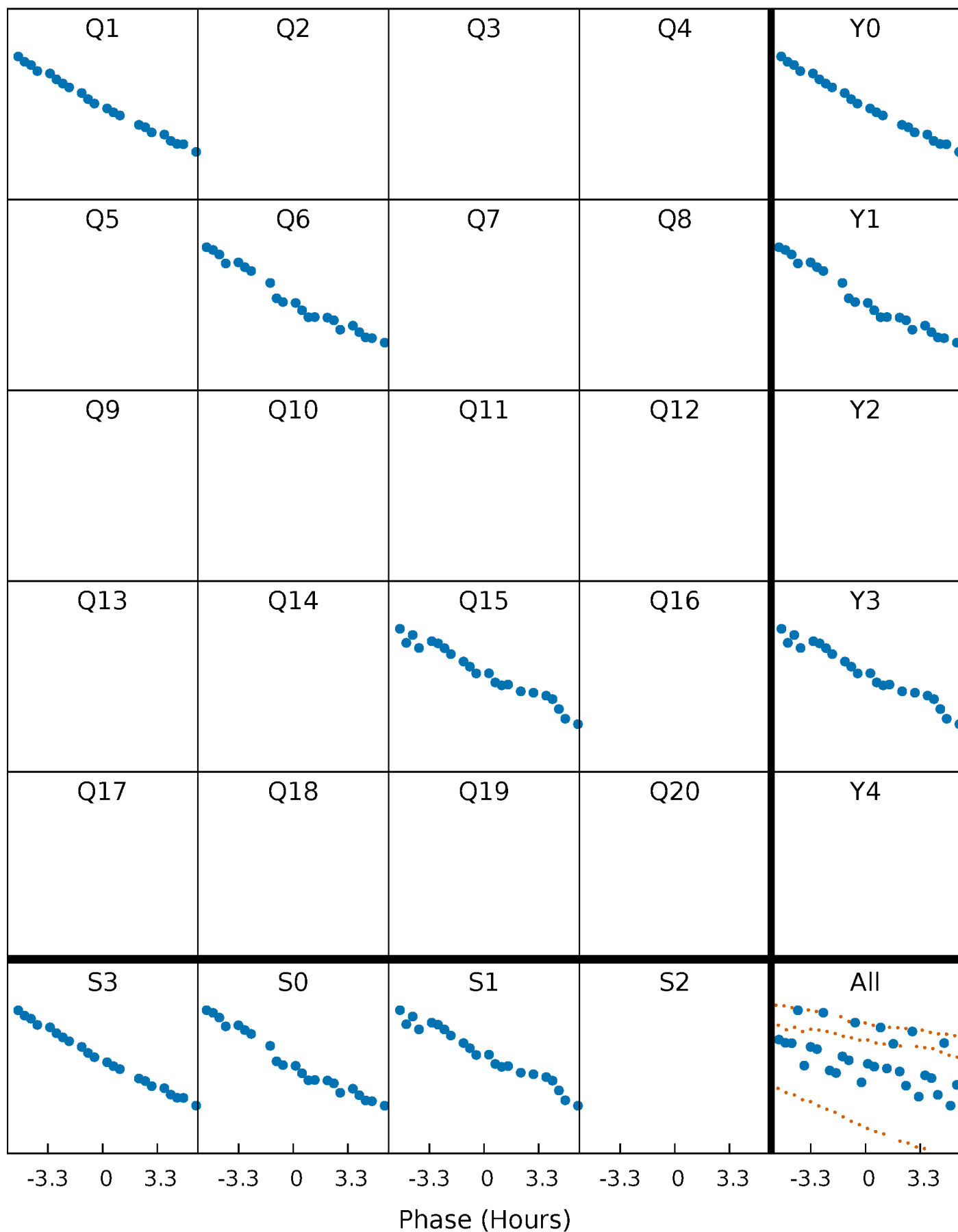


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

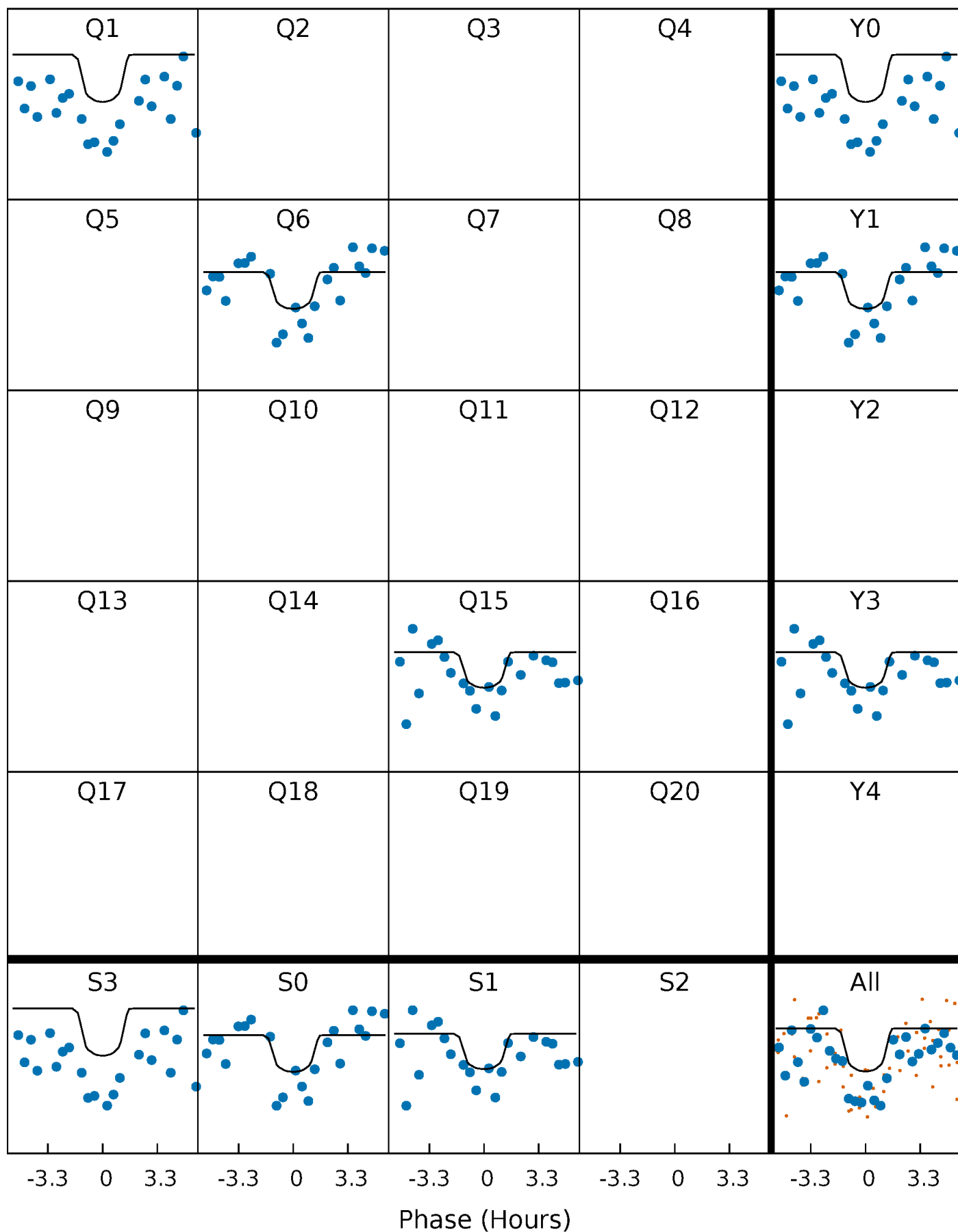
TCE 011075410-01 P=413.541850 Days  $T_0=142.562336$  (BKJD)





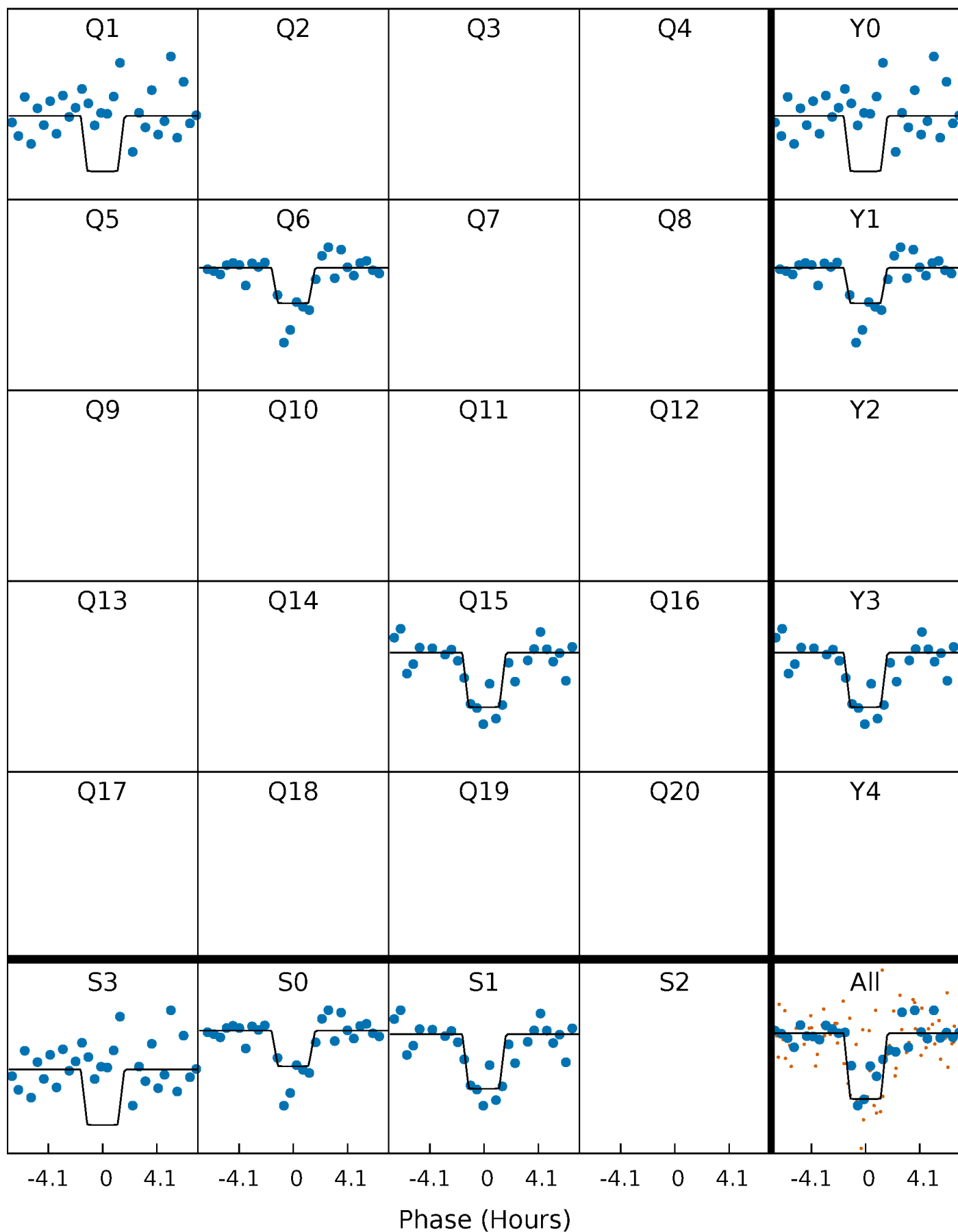
# DV Quarter-Phased Transit Curves

TCE 011075410-01 P=413.541850 Days  $T_0=142.562336$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

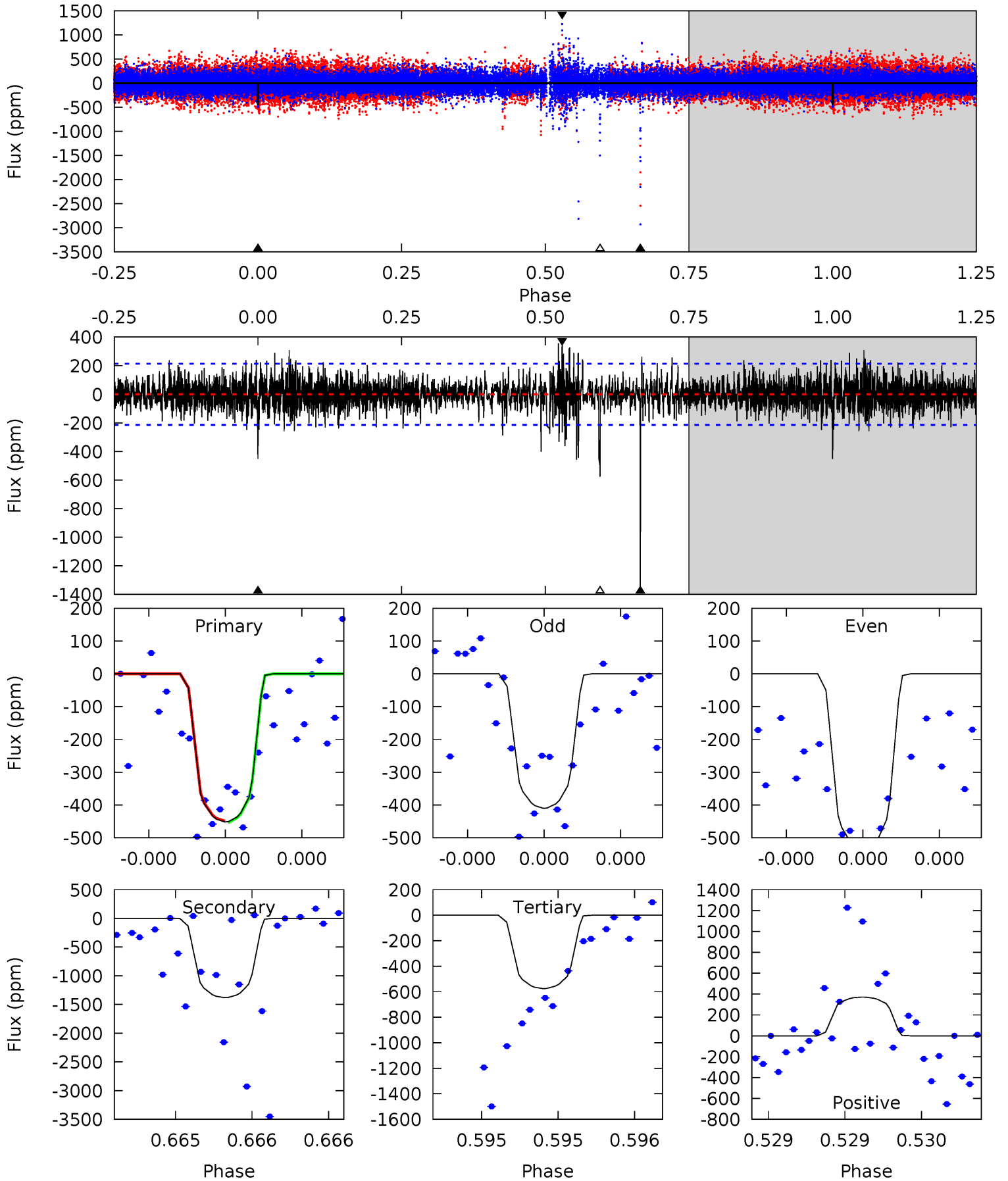
TCE 011075410-01 P=413.541199 Days  $T_0=142.555743$  (BKJD)



# DV Model-Shift Uniqueness Test

011075410-01, P = 413.541850 Days, E = 142.562336 Days

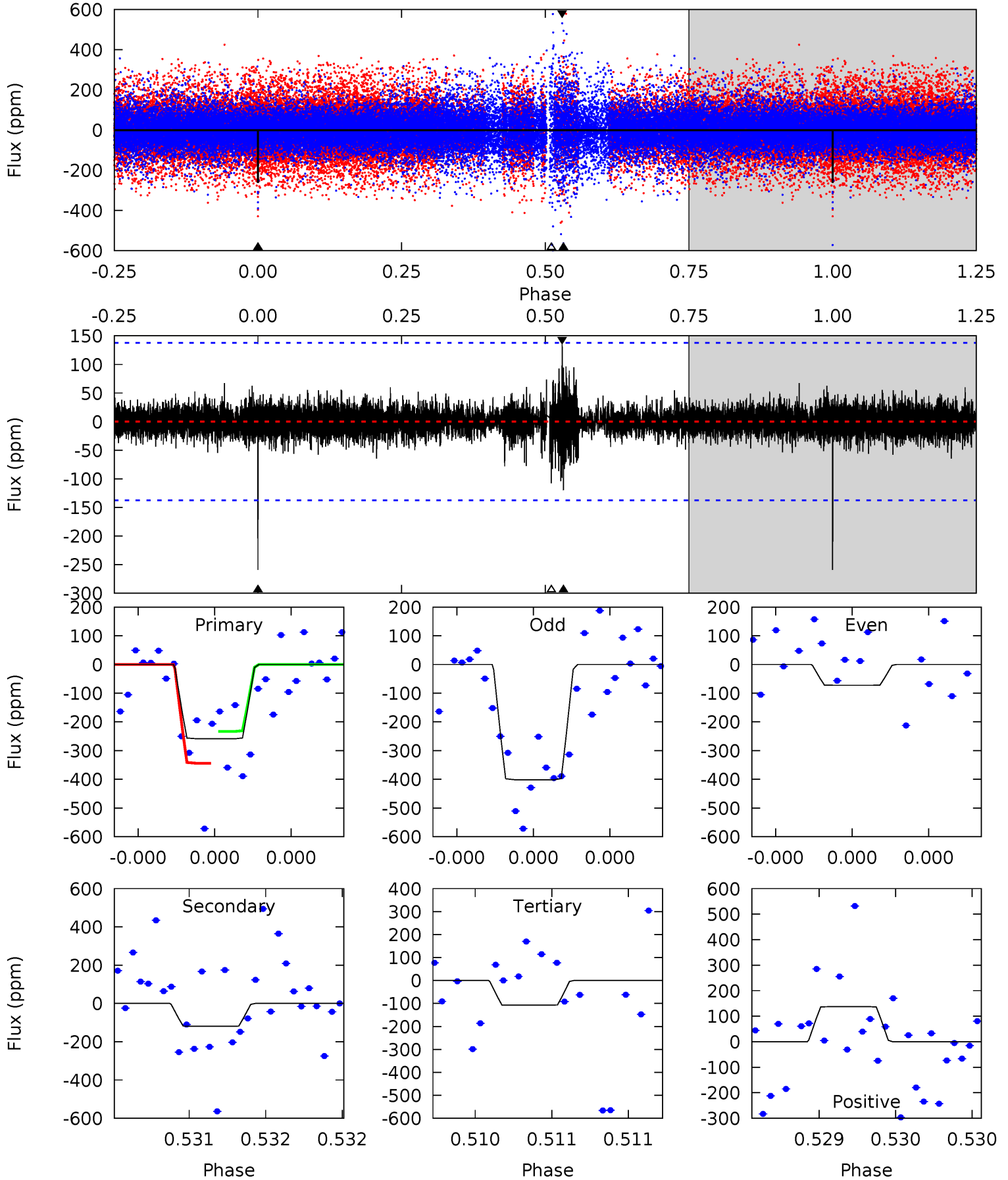
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	36.5	15.2	9.83	5.65	3.61	1.80	-3.27	2.12	21.3	26.7	1.49	1.04	0.21	0.05



# Alt Model-Shift Uniqueness Test

011075410-01, P = 413.541199 Days, E = 142.555743 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
10.6	4.91	4.43	5.66	5.65	3.60	0.63	6.21	4.98	0.49	-0.74	7.12	0.71	0.35	2.12



### Stellar Parameters For KIC 011075410

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5120^{+154}_{-139}$	$4.478^{+0.095}_{-0.085}$	$0.070^{+0.250}_{-0.300}$	$0.853^{+0.093}_{-0.103}$	$0.797^{+0.085}_{-0.064}$	$1.808^{+0.768}_{-0.497}$
	+3%/-3%	+2%/-2%	+357%/-429%	+11%/-12%	+11%/-8%	+42%/-27%
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 011075410-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-1381 \pm 38$	$2.42^{+2.11}_{-1.67}$	$290^{+13}_{-12}$	$6049^{+7124}_{-1444}$	$132150^{+1252216}_{-94720}$
Alt.	$-120 \pm 24$	$2.38^{+2.02}_{-1.66}$	$290^{+13}_{-12}$	$3696^{+2162}_{-657}$	$11369^{+101873}_{-8195}$

$T_{\text{max}}$  = 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

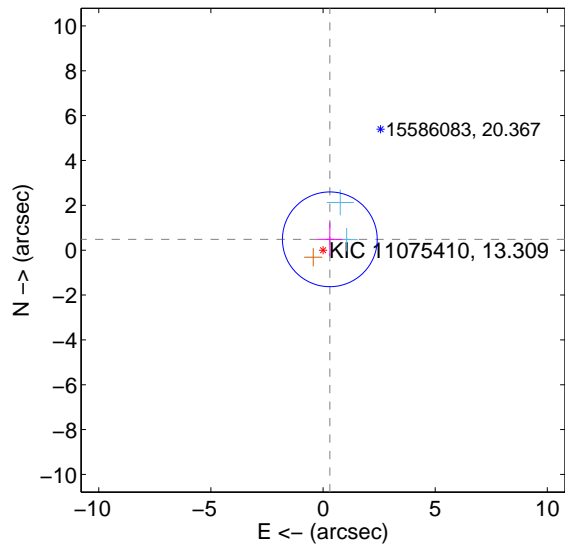
Supplemental centroid analysis for 011075410-01. Kepler magnitude: 13.31. Transit SNR 4.50

There are 2 quarters with good PRF difference image offsets

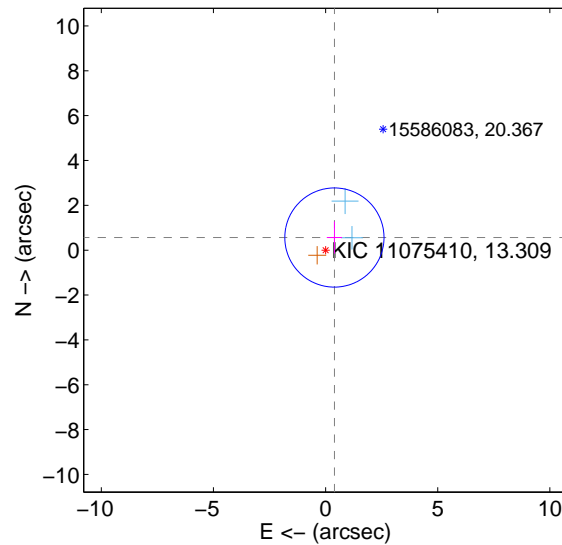
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.571 \pm 0.704$	0.81	$-0.303 \pm 0.561$	$0.484 \pm 0.753$
PRF-fit source offset from KIC position	$0.688 \pm 0.737$	0.93	$-0.393 \pm 0.341$	$0.564 \pm 0.712$
photometric centroid source offset	$3.13 \pm 1.95$	1.60	$-3.12 \pm 1.95$	$0.33 \pm 1.77$

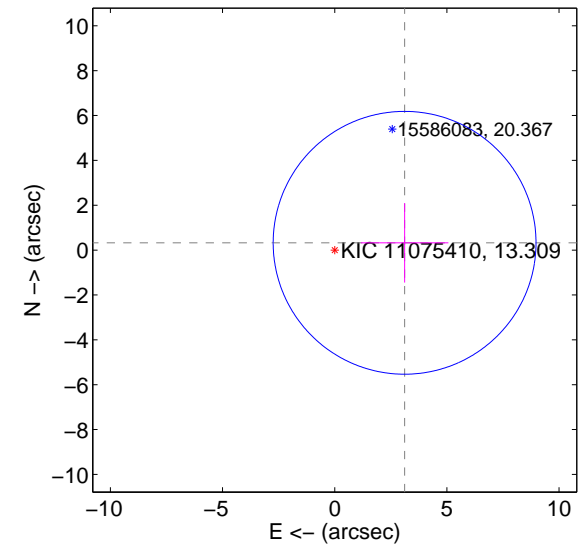
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

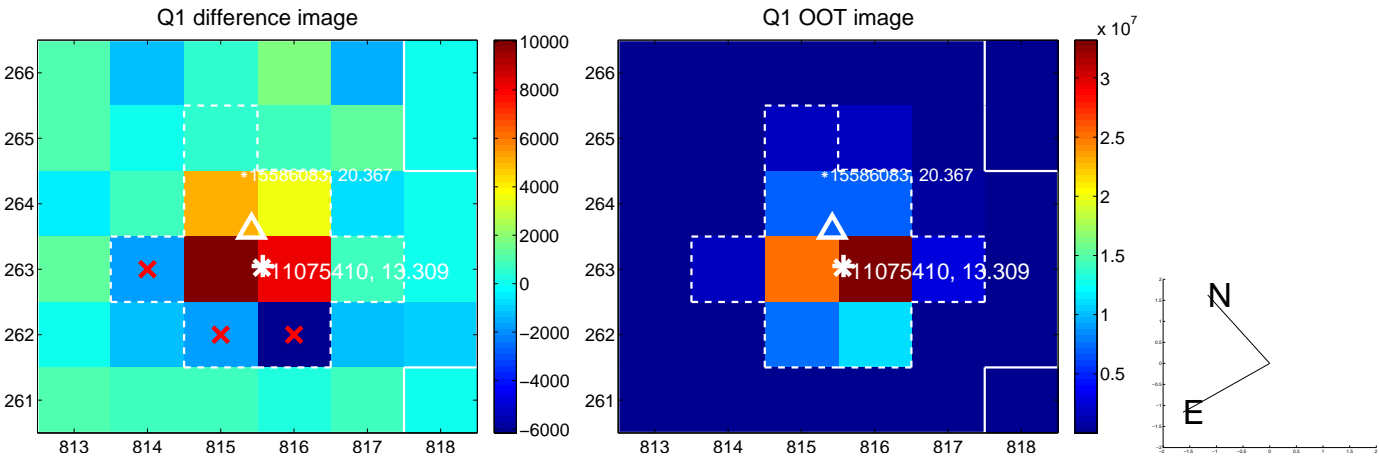


offset from photometric centroids



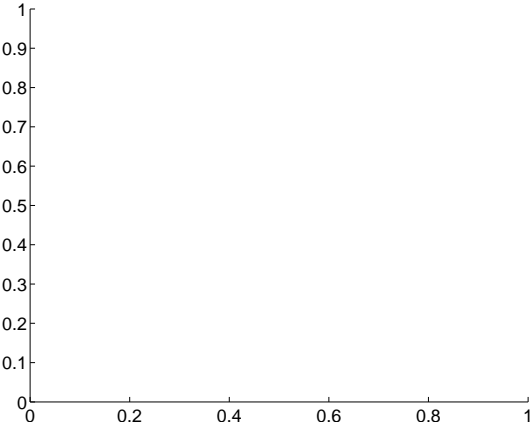
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

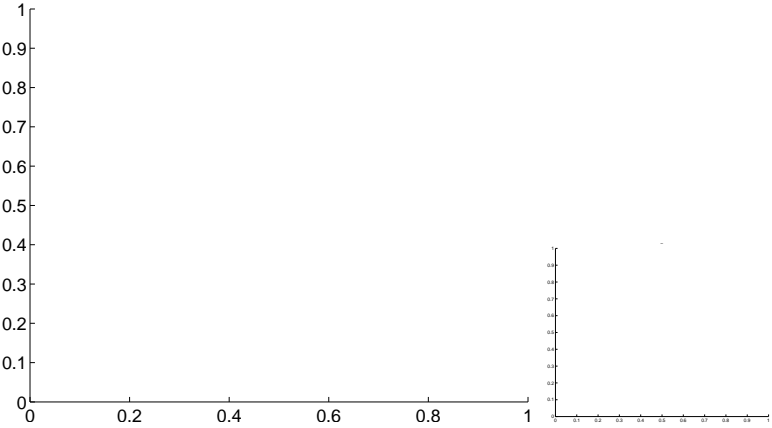


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

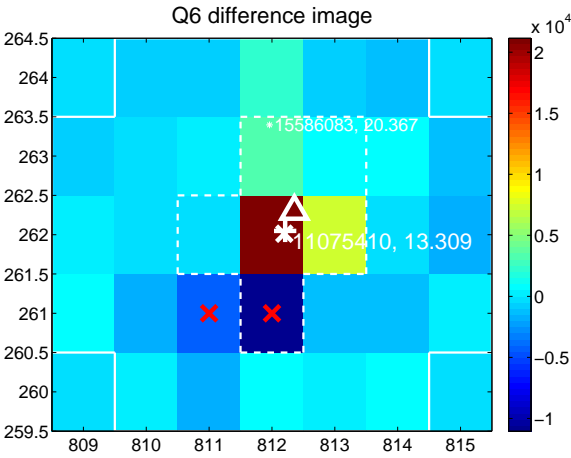
Q5 no difference image



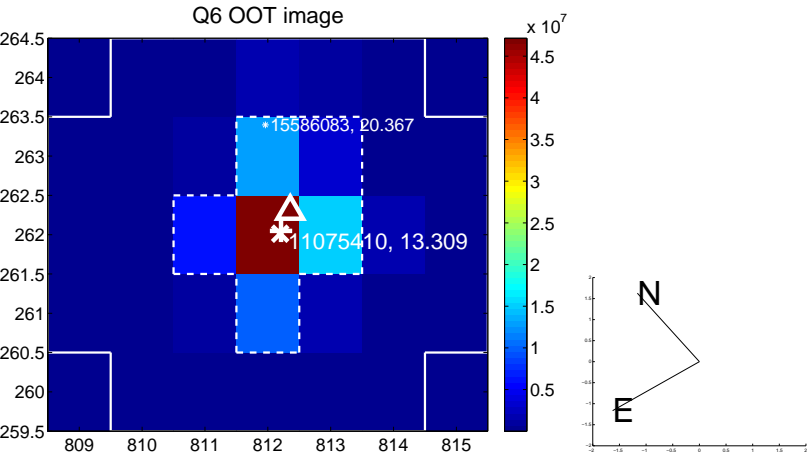
Q5 no OOT image



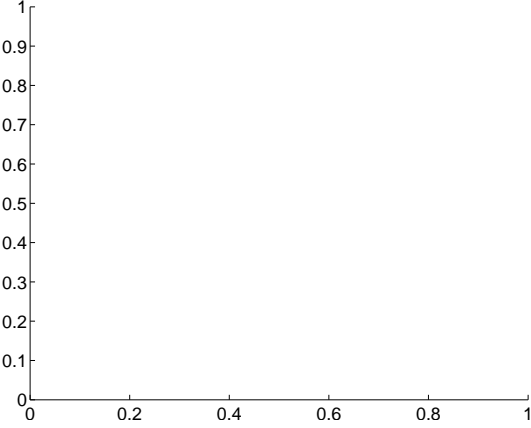
Q6 difference image



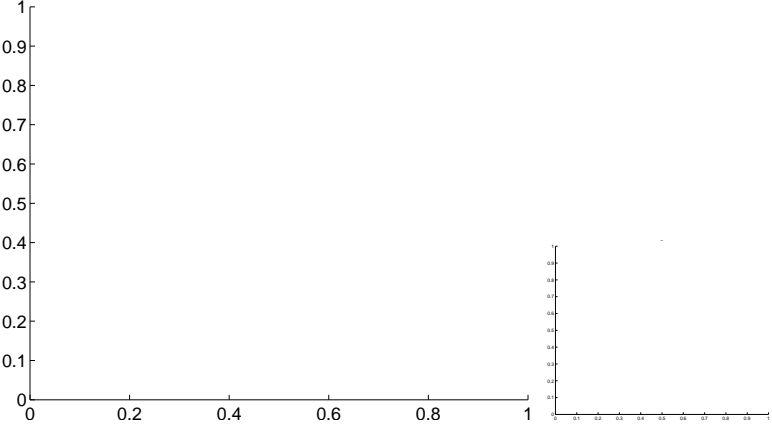
Q6 OOT image



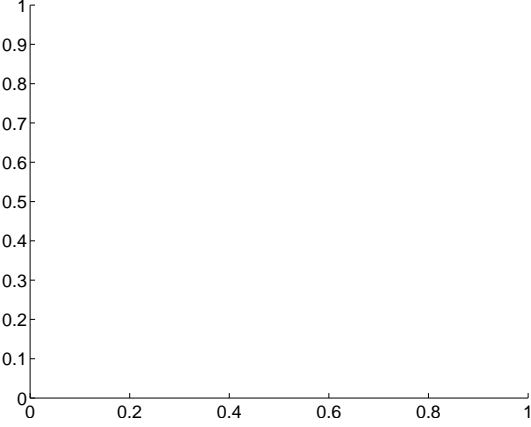
Q7 no difference image



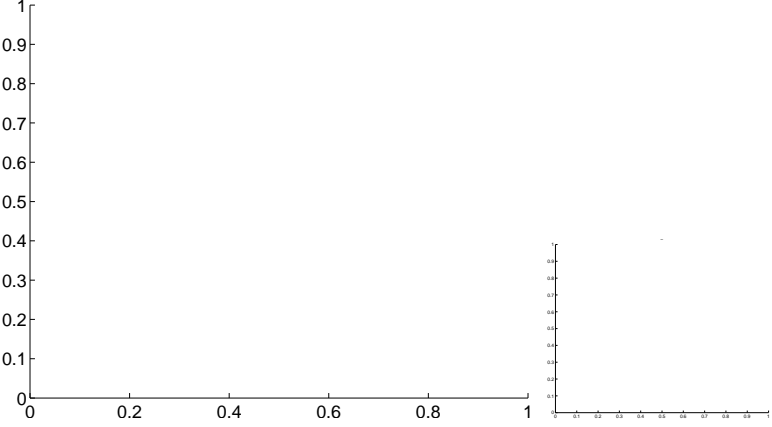
Q7 no OOT image



Q8 no difference image



Q8 no OOT image





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.

Q13 no difference image



Q13 no OOT image



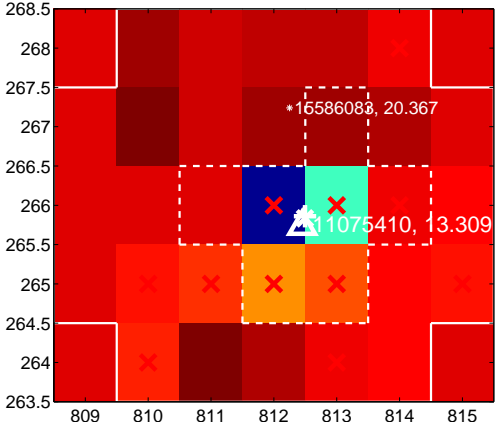
Q14 no difference image



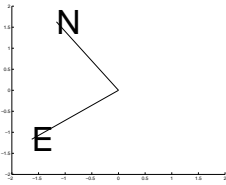
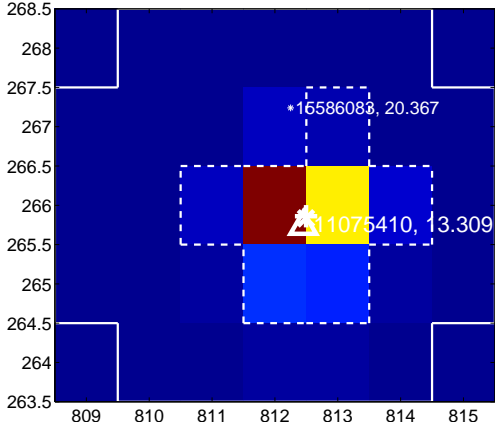
Q14 no OOT image



Q15 difference image. Poor Quality



Q15 OOT image



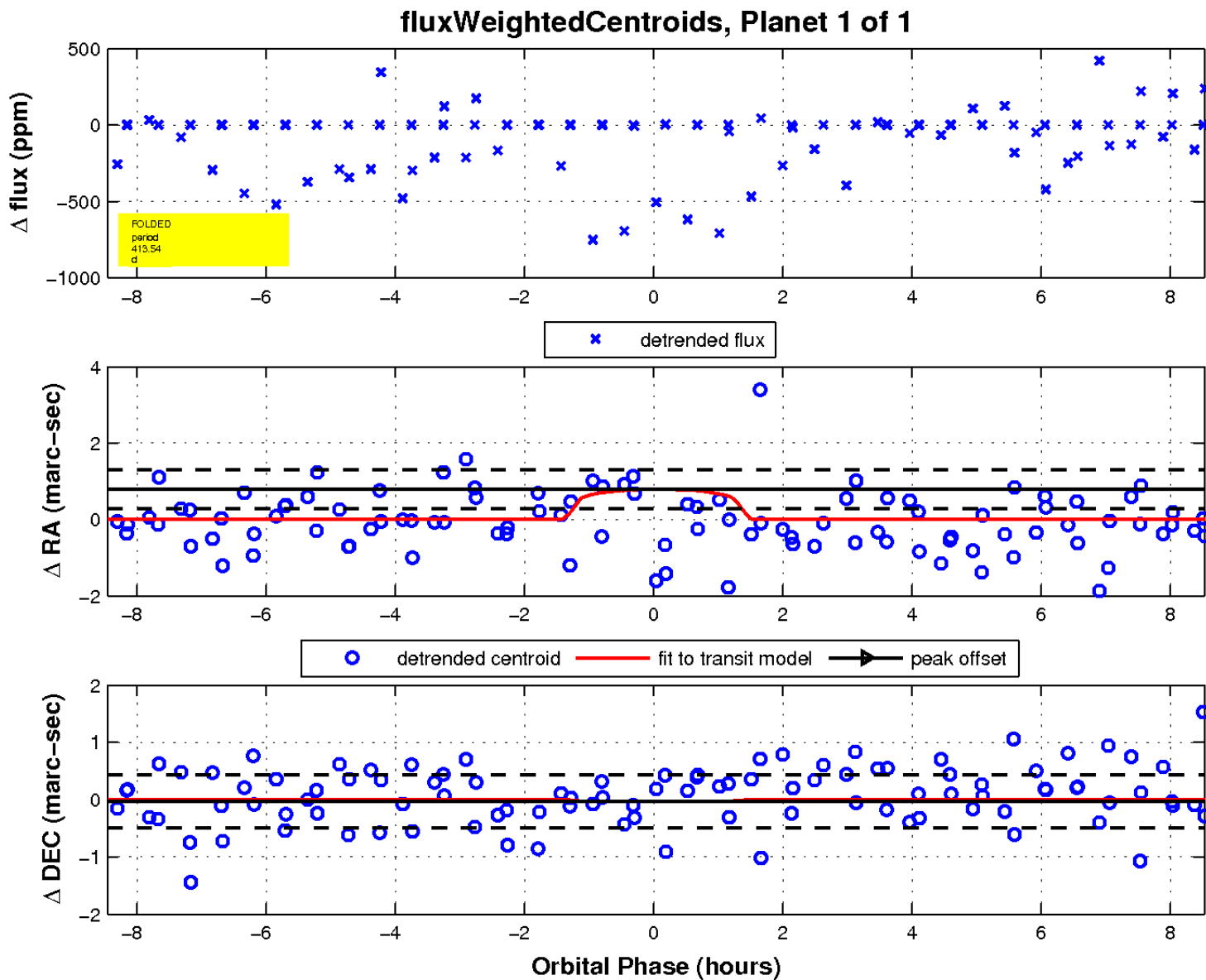
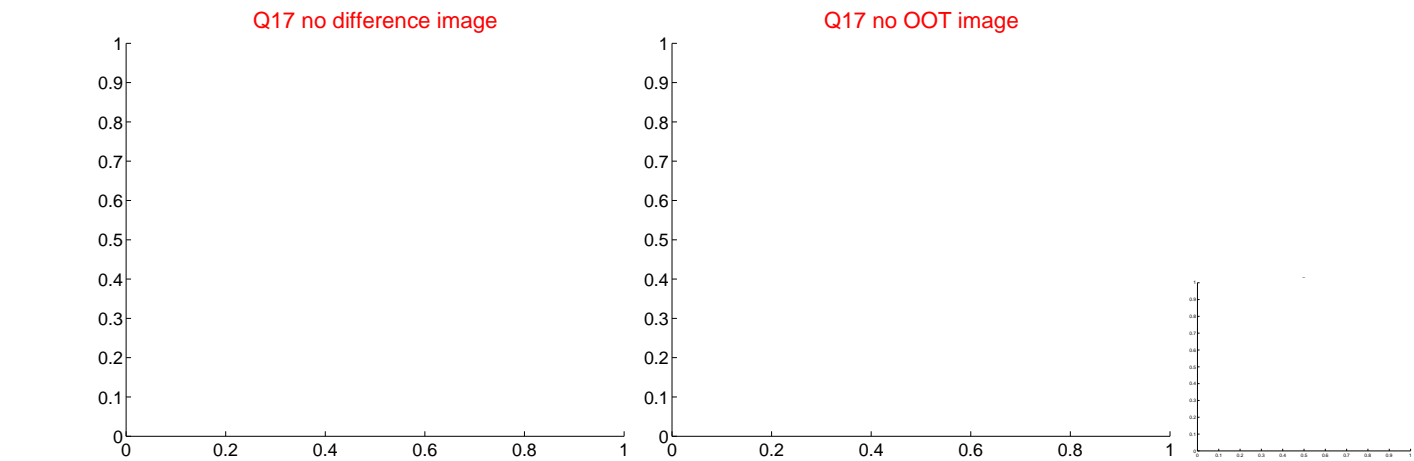
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

