

# KIC 006277209

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006277209-01	OBS	No	369.388795	309.785155	925.8	25.919	9.3	9.1	0.88	5799	5.21	0.78

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006277209-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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.

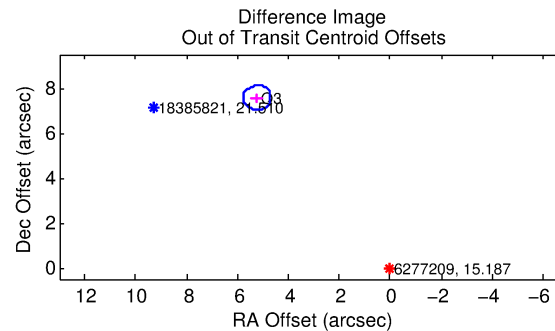
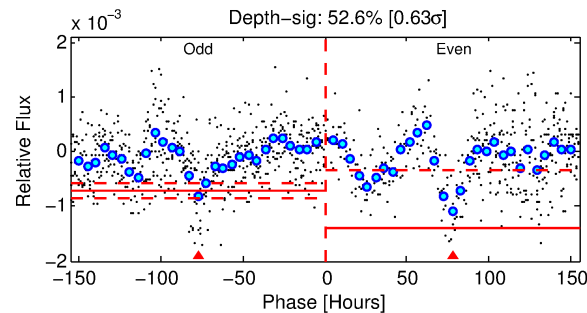
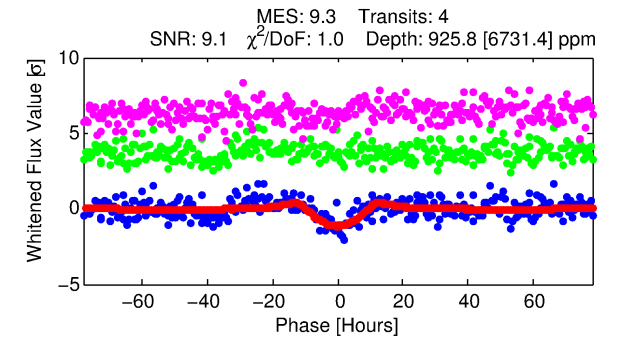
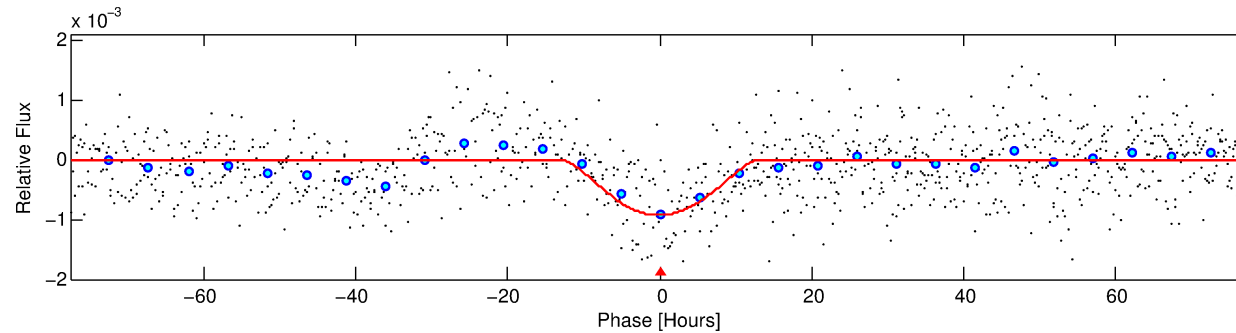
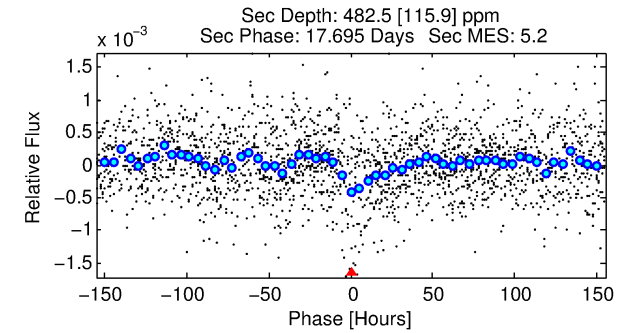
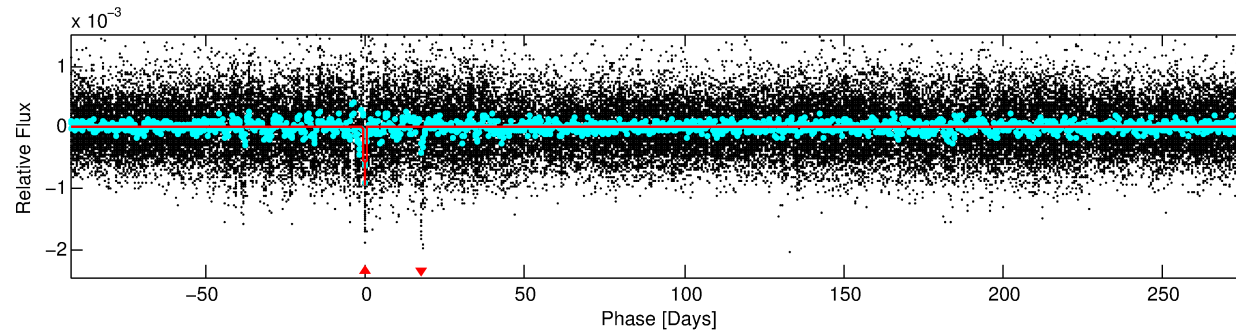
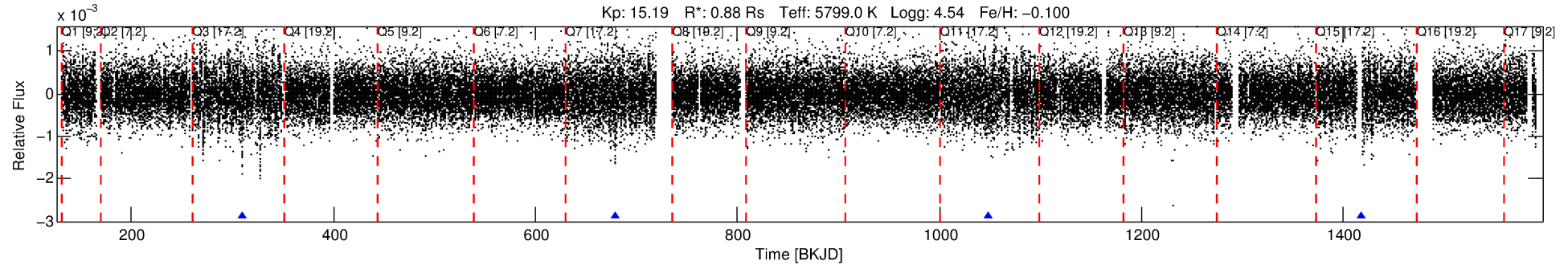
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006277209-01

No Significant Match Found

# DV One-Page Summary

KIC: 6277209 Candidate: 1 of 1 Period: 369.389 d



## DV Fit Results:

Period = 369.38880 [0.03193] d  
Epoch = 309.7852 [0.0406] BKJD  
Rp/R\* = 0.0543 [0.1404]  
a/R\* = 36.39 [22.26]  
b = 1.00 [0.06]  
Seff = 0.78 [0.27]  
Teq = 240 [21] K  
Rp = 5.21 [13.52] Re  
a = 0.9985 [0.2211] AU  
Ag = 9761.29 [50572.11] [0.19σ]  
Teff = 3687 [4767] K [0.72σ]

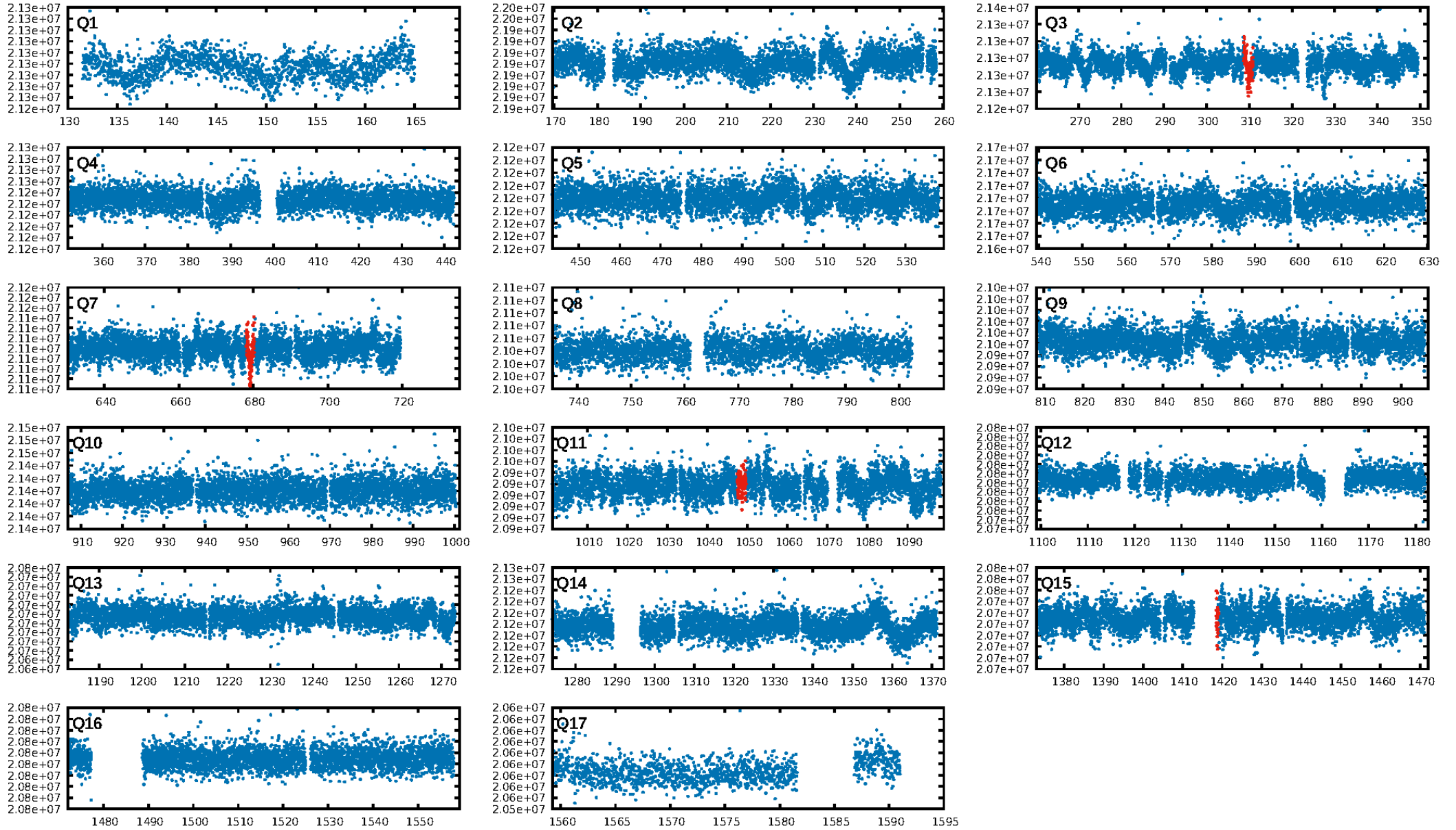
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.3%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: 1.90e-18  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -1.147  
Centroid-sig: 81.1%  
Centroid-so: 0.925 arcsec [0.55σ]  
OotOffset-rm: 9.210 arcsec [51.42σ]  
KicOffset-rm: 9.166 arcsec [51.11σ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [3/3]

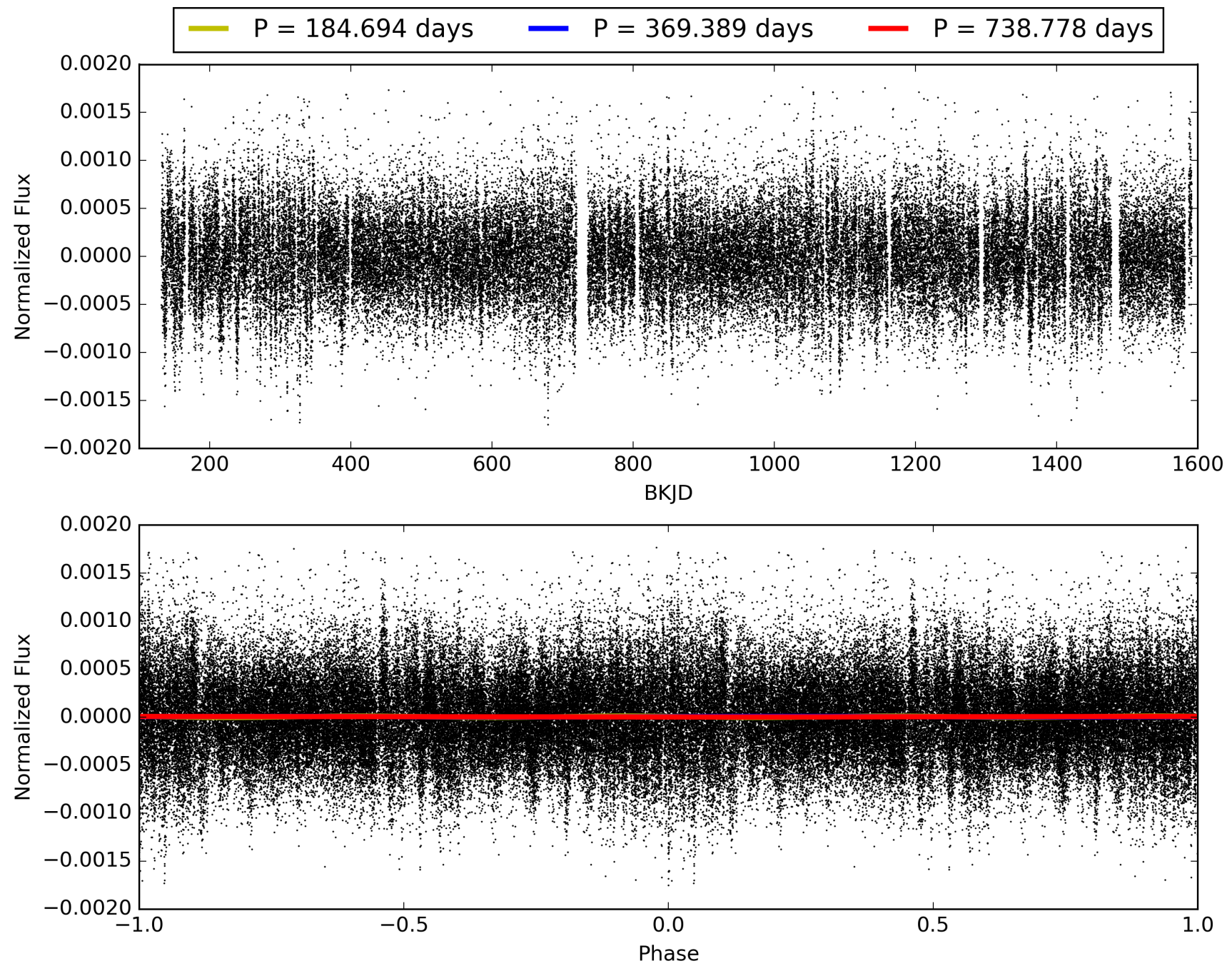
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 17:19:37 Z

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

# TCE 006277209-01, PDC Light Curves

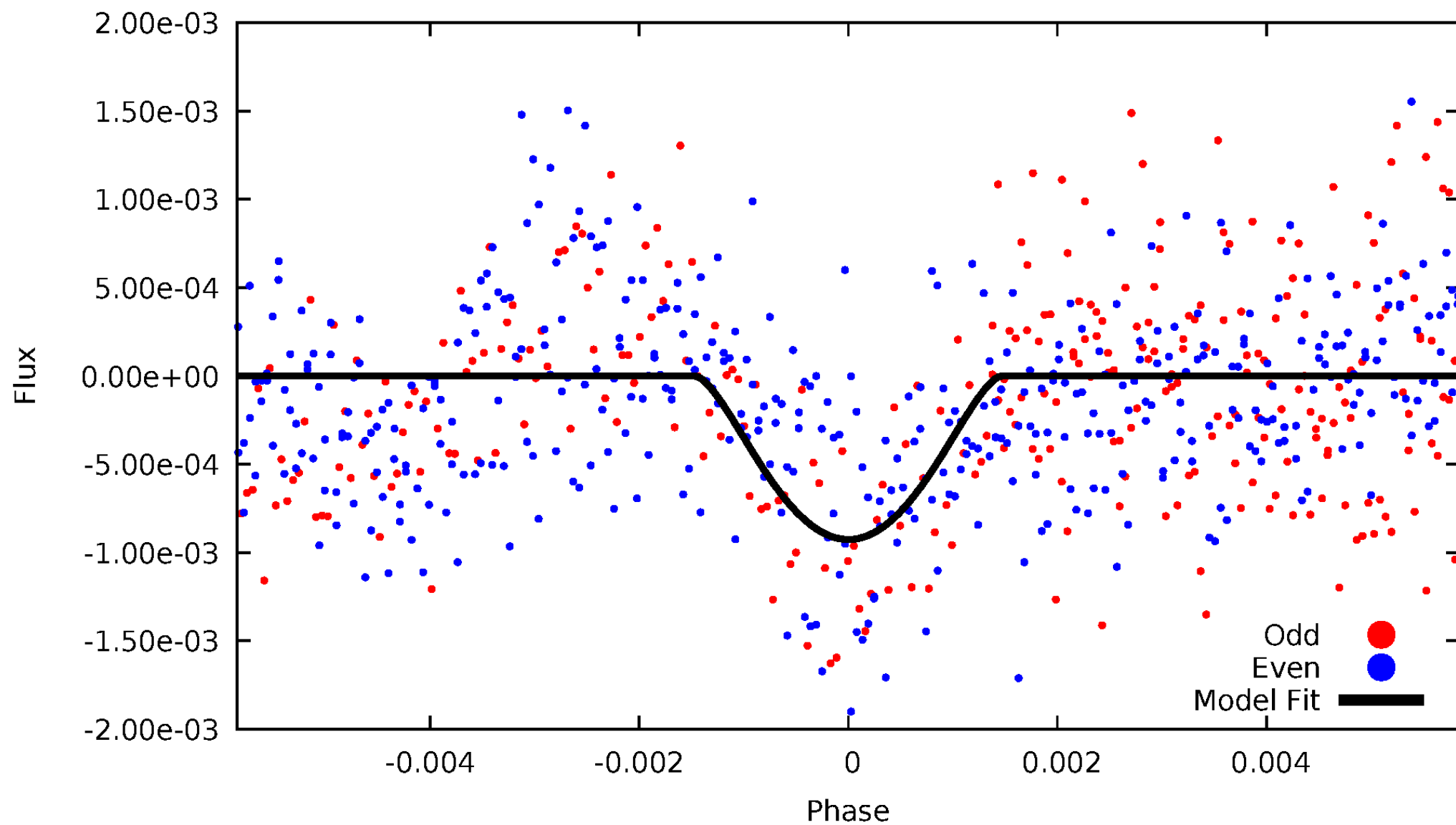


TCE 006277209-01



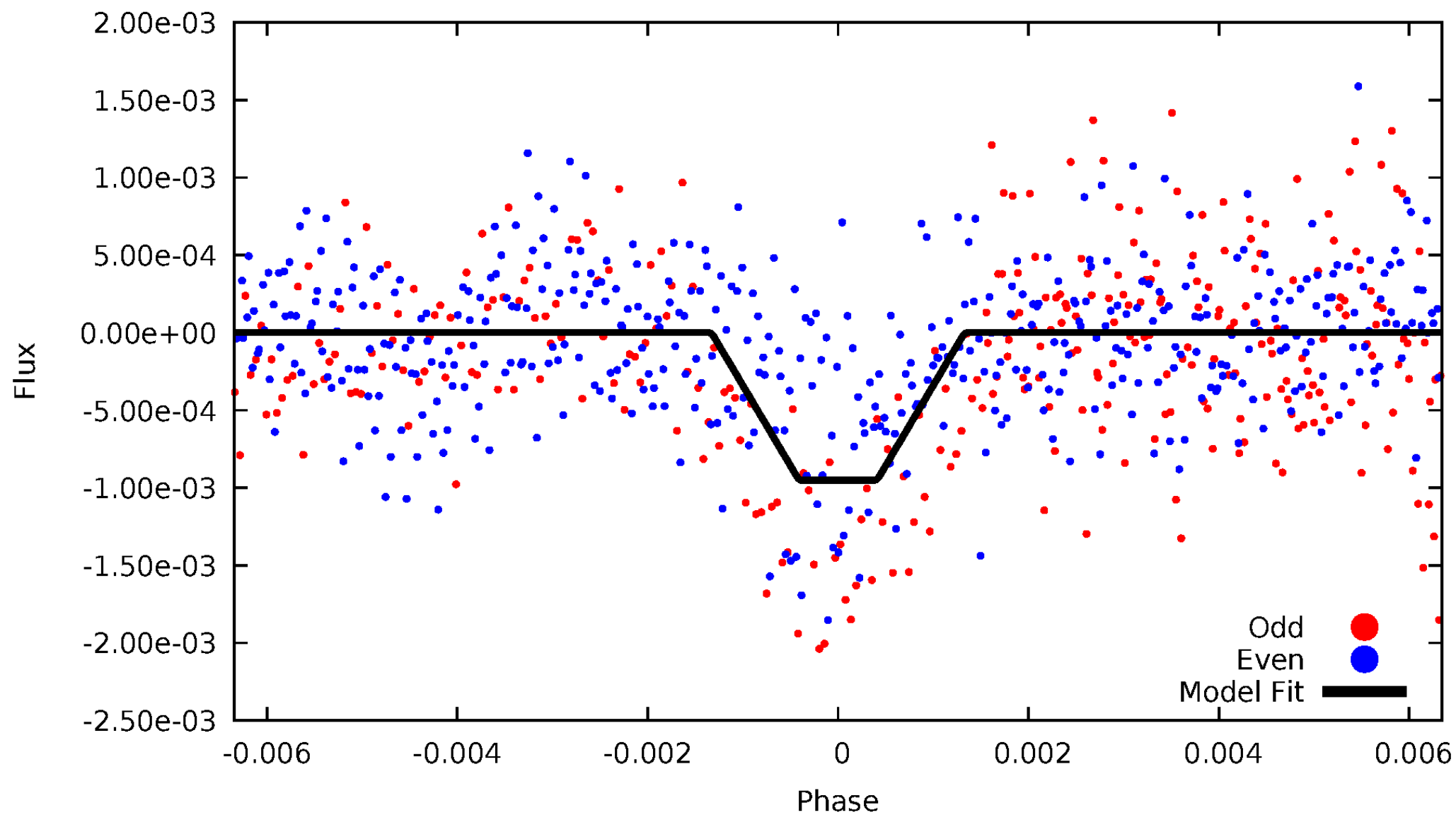
# DV Odd/Even

TCE 006277209-01



# ALT Odd/Even

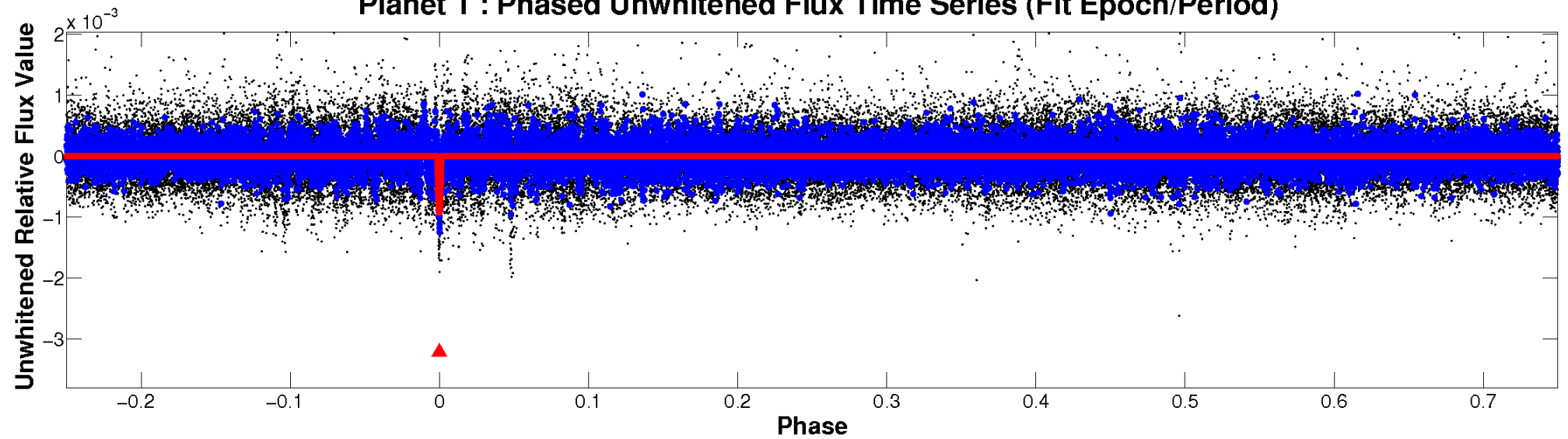
TCE 006277209-01



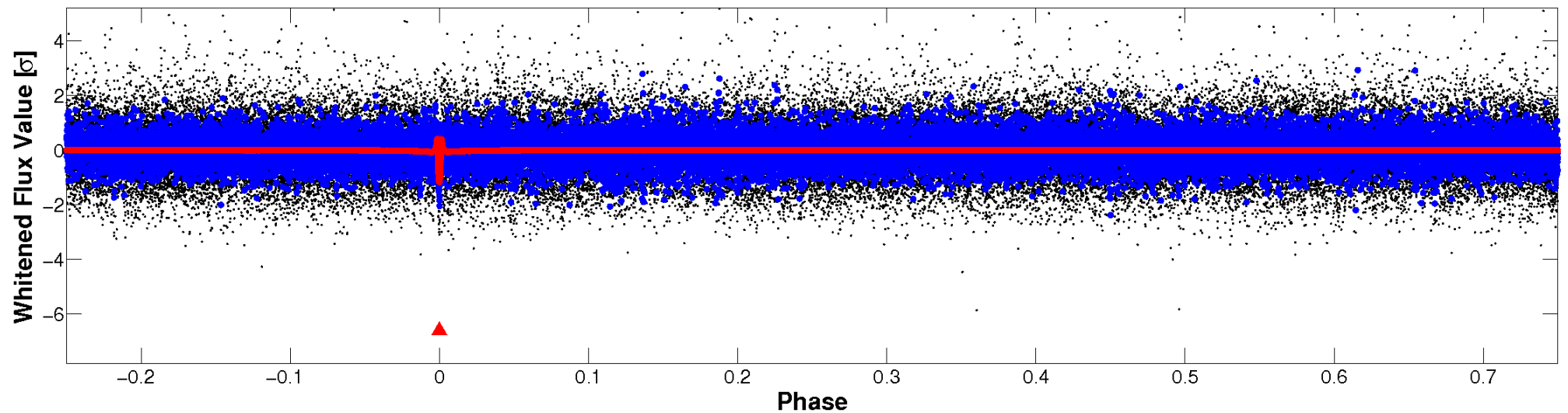


# Non-Whitened Vs. Whitened Light Curve

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

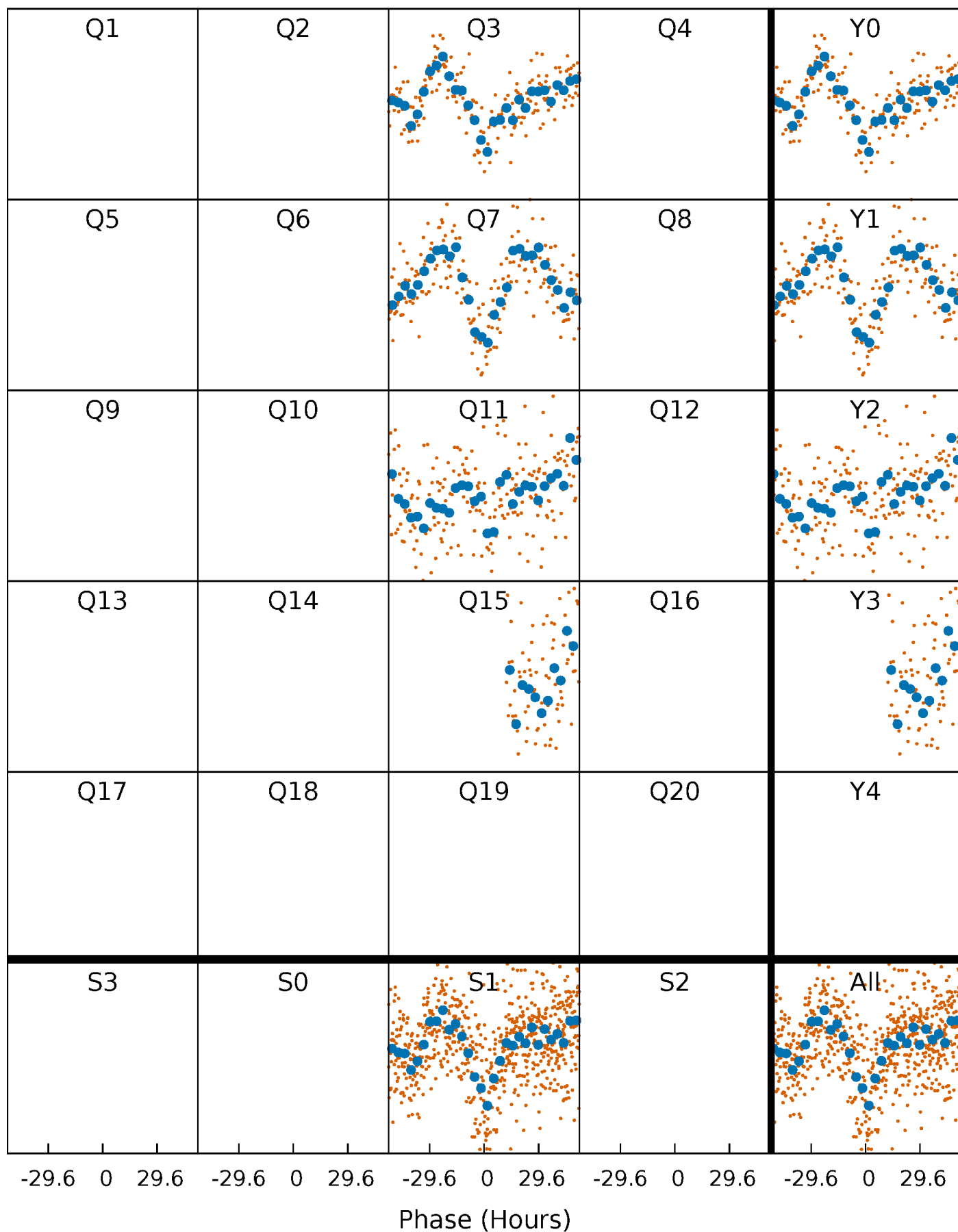


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

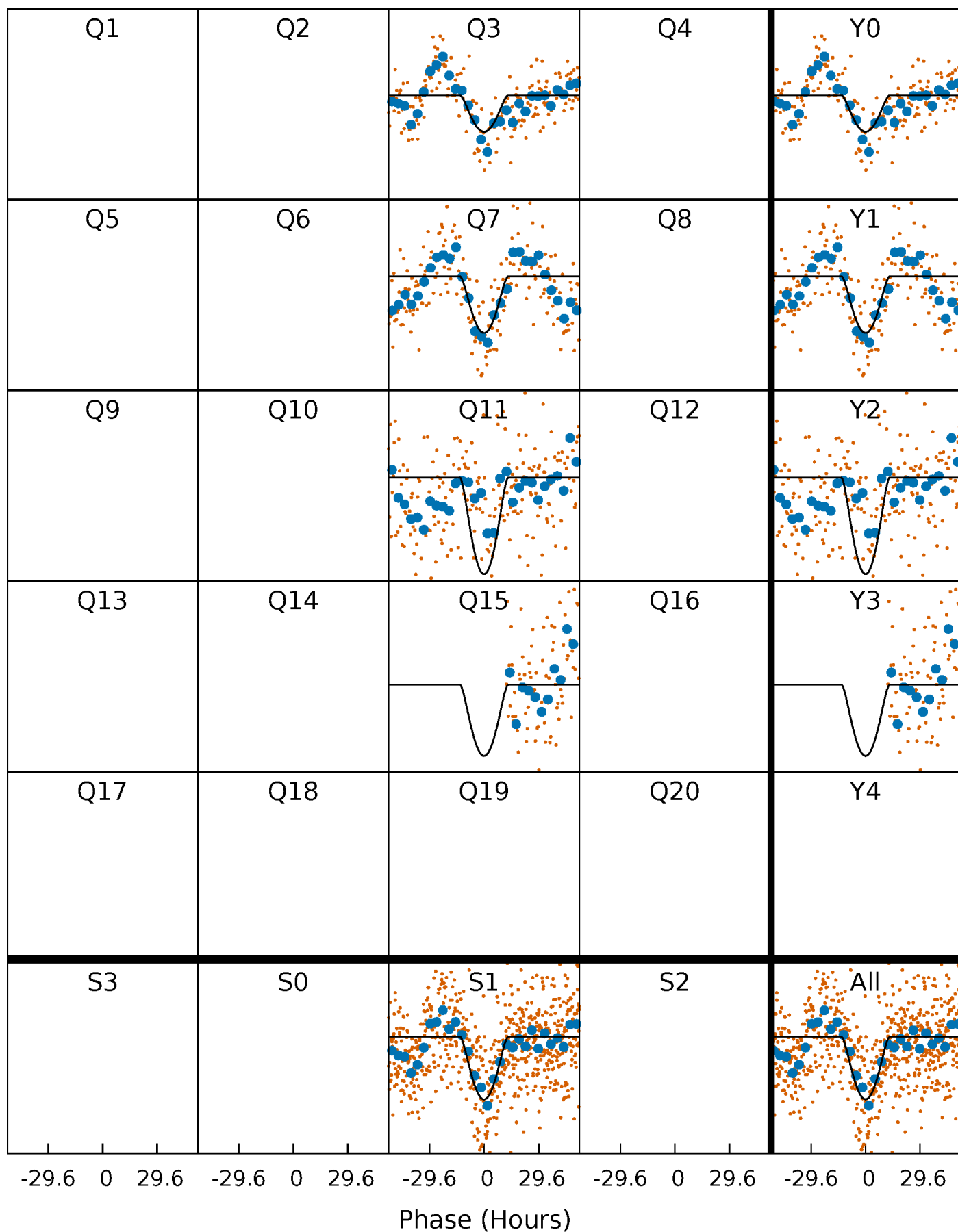
TCE 006277209-01 P=369.388795 Days  $T_0=309.785155$  (BKJD)





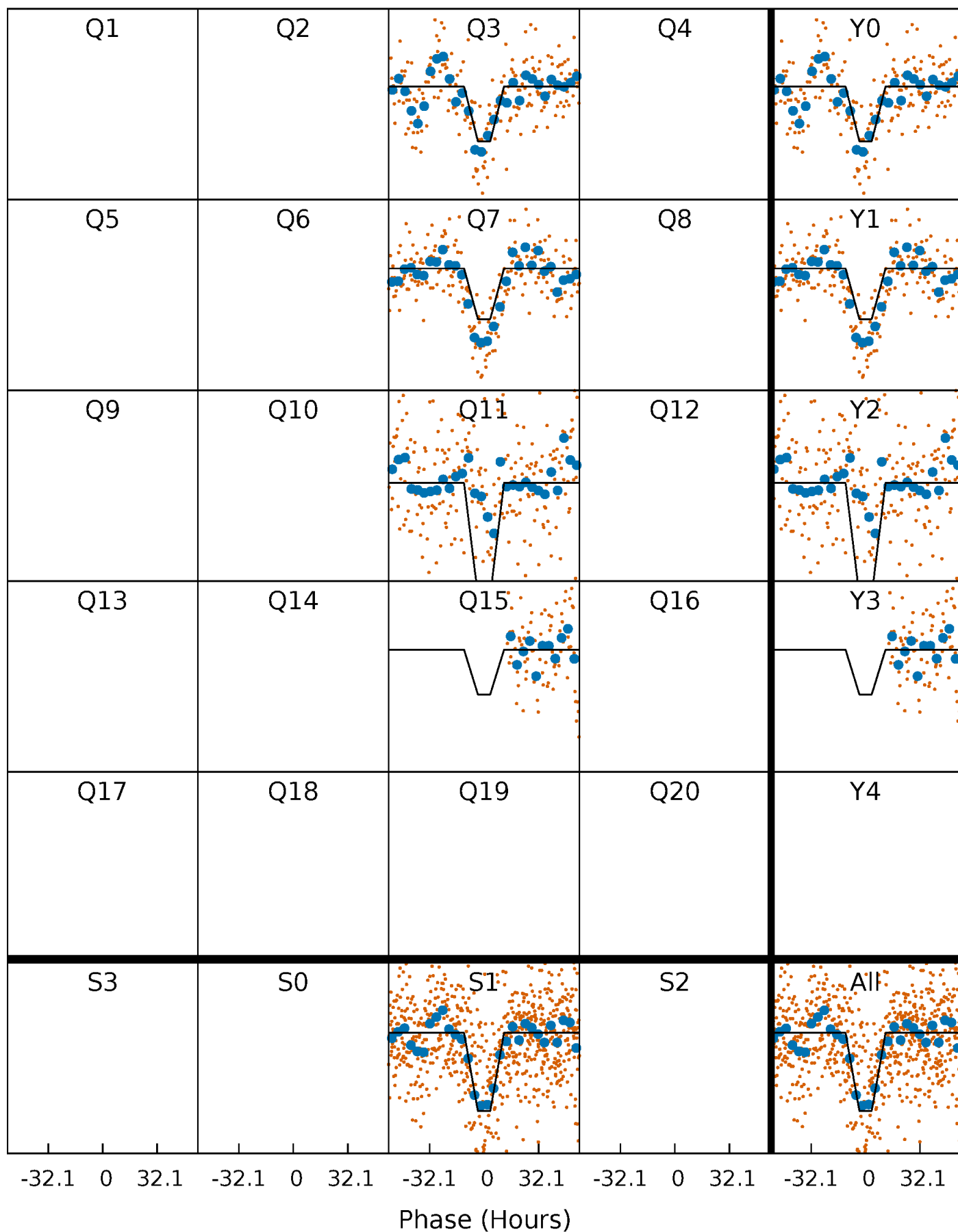
# DV Quarter-Phased Transit Curves

TCE 006277209-01 P=369.388795 Days  $T_0=309.785155$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

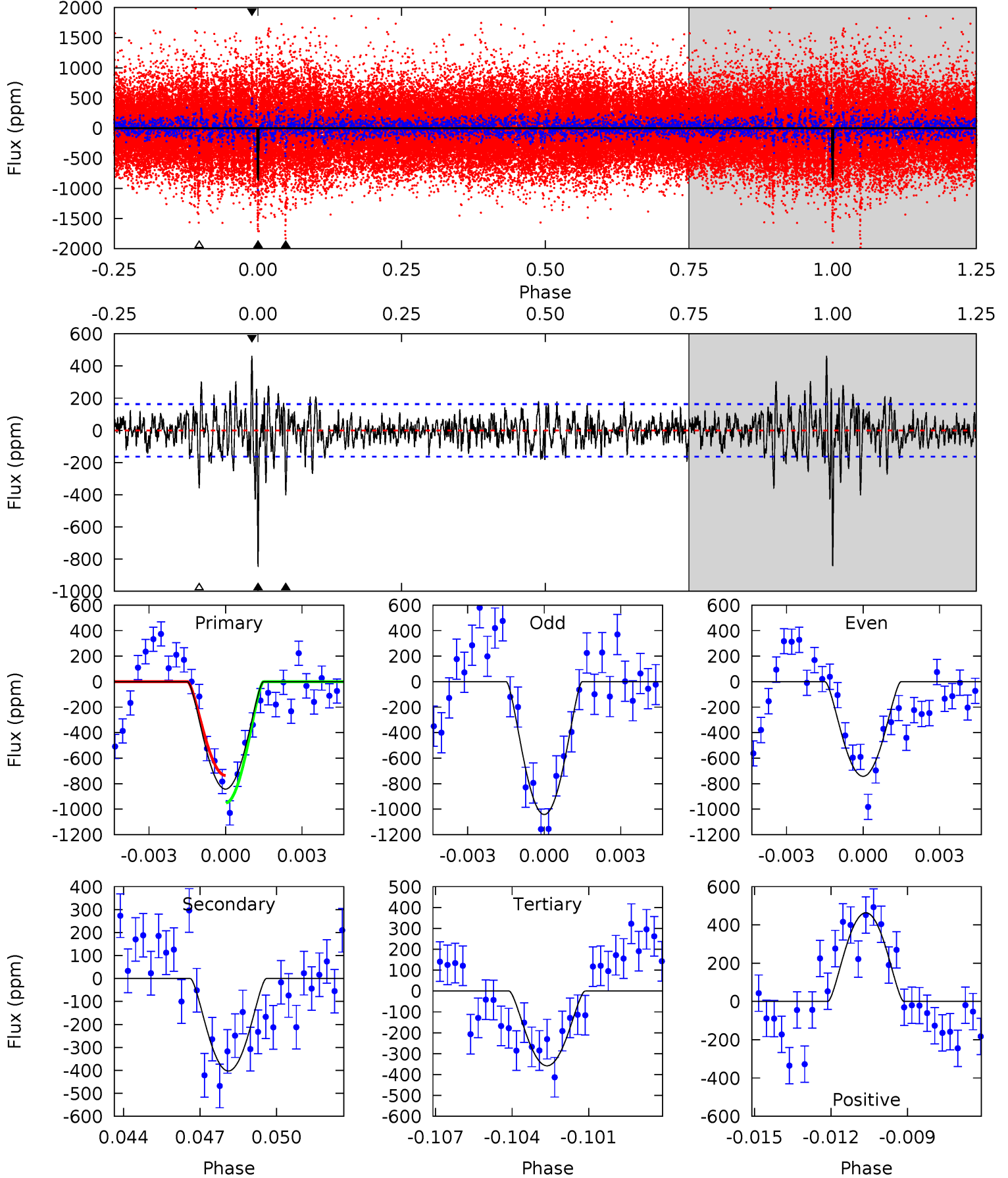
TCE 006277209-01 P=369.350219 Days  $T_0=309.834183$  (BKJD)



# DV Model-Shift Uniqueness Test

006277209-01, P = 369.388795 Days, E = 309.785155 Days

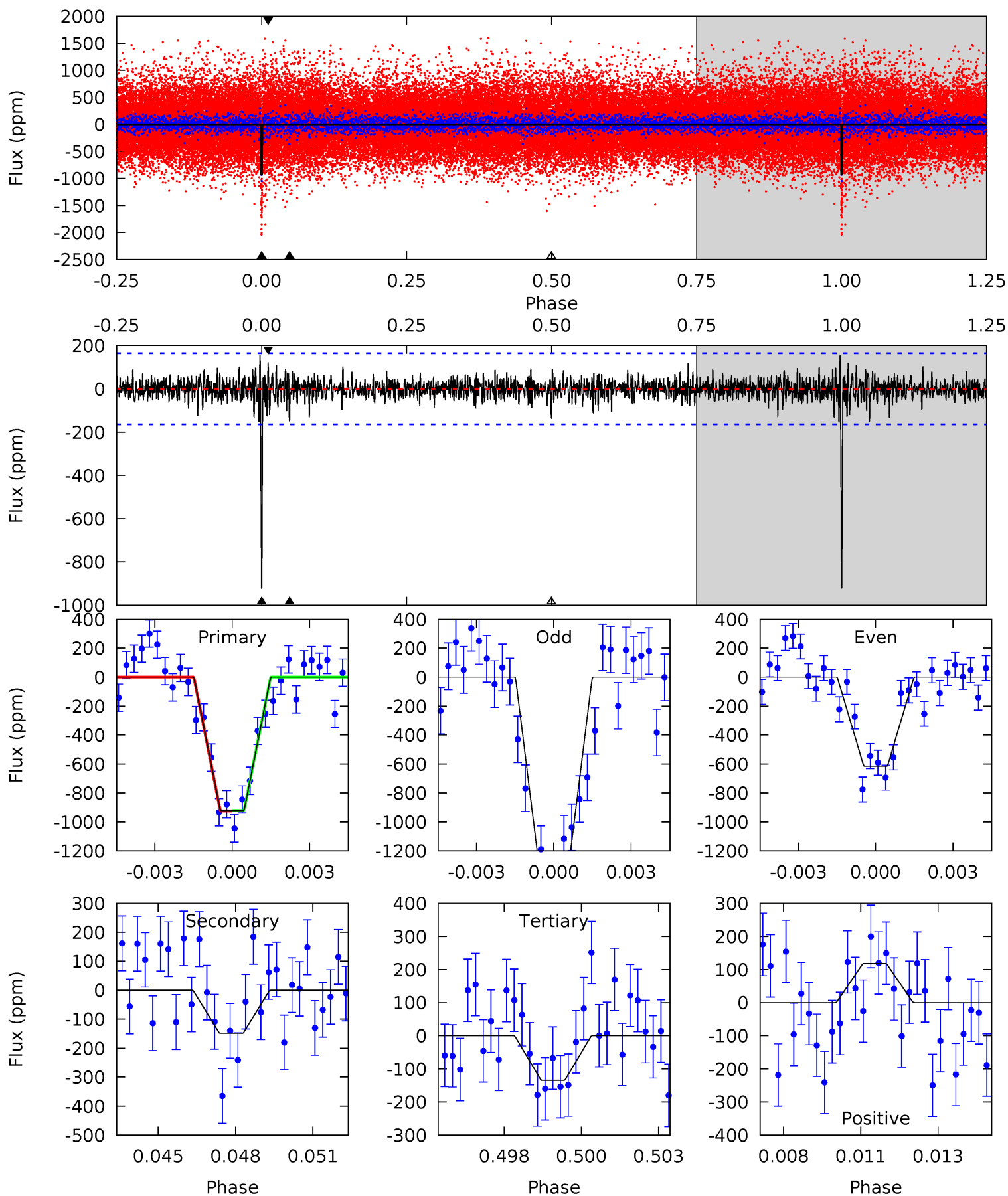
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.2	13.0	11.6	15.0	5.26	2.97	2.63	15.6	12.2	1.43	-1.96	4.59	-1.64	0.35	3.46



# Alt Model-Shift Uniqueness Test

006277209-01, P = 369.350219 Days, E = 309.834183 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
29.5	4.77	4.32	3.78	5.27	3.00	1.11	25.2	25.8	0.45	0.99	13.0	0.87	0.14	0.06



### Stellar Parameters For KIC 006277209

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5799^{+146}_{-175}$	$4.539^{+0.044}_{-0.176}$	$-0.100^{+0.250}_{-0.300}$	$0.878^{+0.231}_{-0.077}$	$0.975^{+0.104}_{-0.127}$	$2.026^{+0.366}_{-0.984}$
	+3%/-3%	+1%/-4%	+250%/-300%	+26%/-9%	+11%/-13%	+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 006277209-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-403 \pm 31$	$11.61^{+11.53}_{-7.73}$	$342^{+19}_{-15}$	$3057^{+1334}_{-509}$	$1626^{+12886}_{-1218}$
Alt.	$-149 \pm 31$	$10.46^{+10.88}_{-7.66}$	$341^{+21}_{-16}$	$2737^{+1362}_{-462}$	$690^{+9498}_{-528}$

$T_{max}$  = 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  $A_{obs} \gg 1.0$

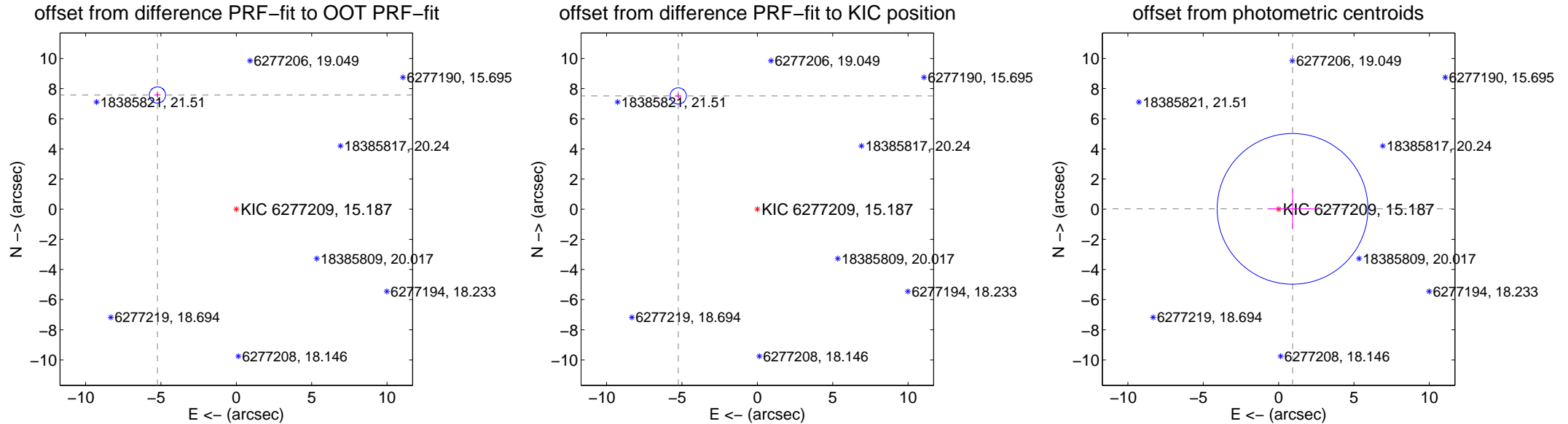
## DV Centroid Data

Supplemental centroid analysis for 006277209-01. Kepler magnitude: 15.19. Transit SNR 9.15

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

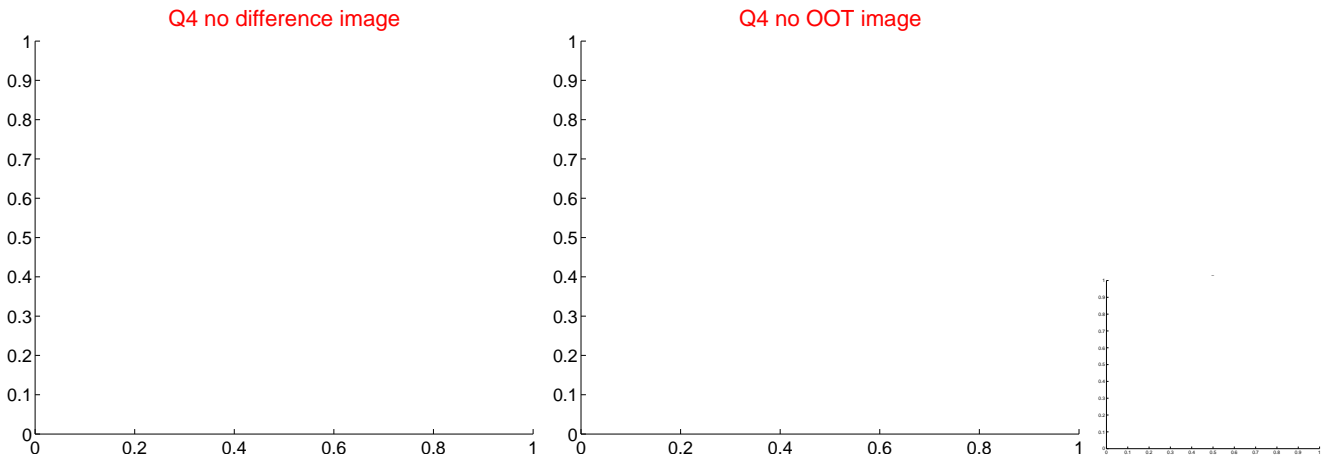
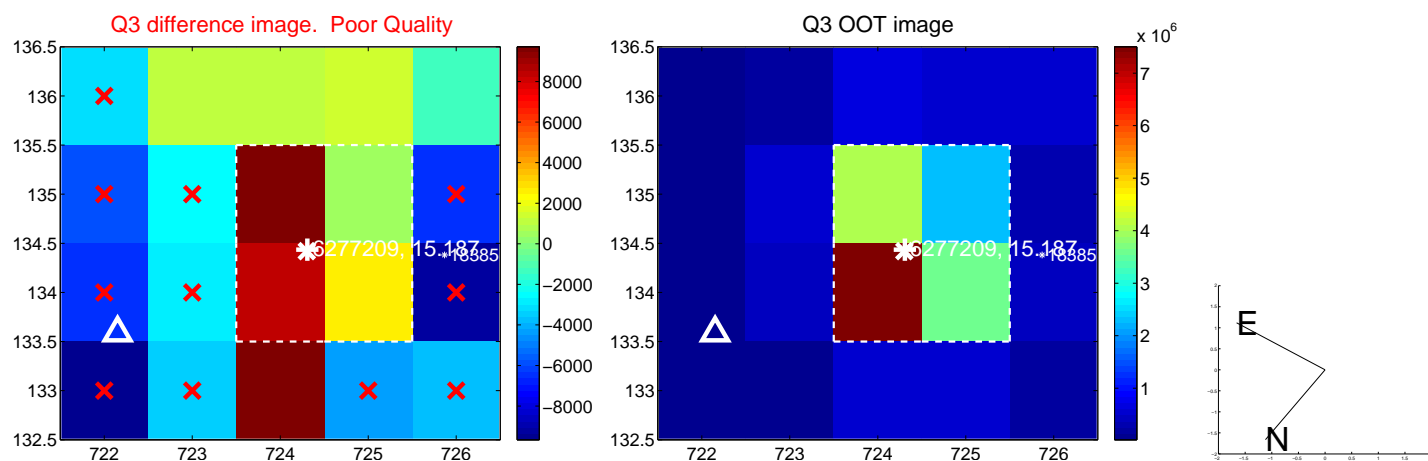
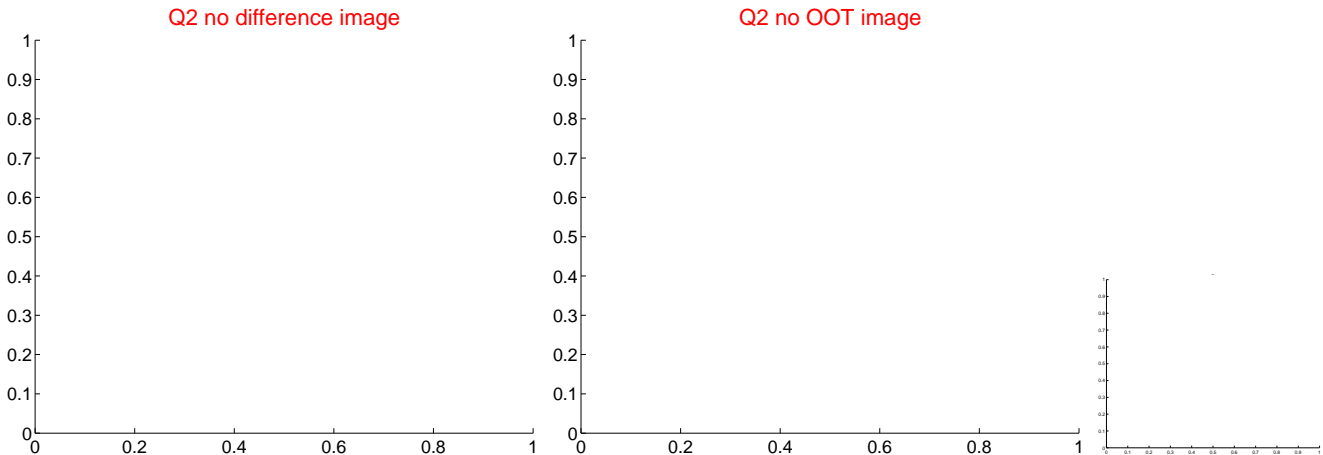
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	9.210 $\pm$ 0.179	51.42	5.231 $\pm$ 0.207	7.580 $\pm$ 0.164
PRF-fit source offset from KIC position	9.166 $\pm$ 0.179	51.11	5.247 $\pm$ 0.207	7.515 $\pm$ 0.164
photometric centroid source offset	0.92 $\pm$ 1.67	0.55	-0.92 $\pm$ 1.67	0.02 $\pm$ 1.31



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



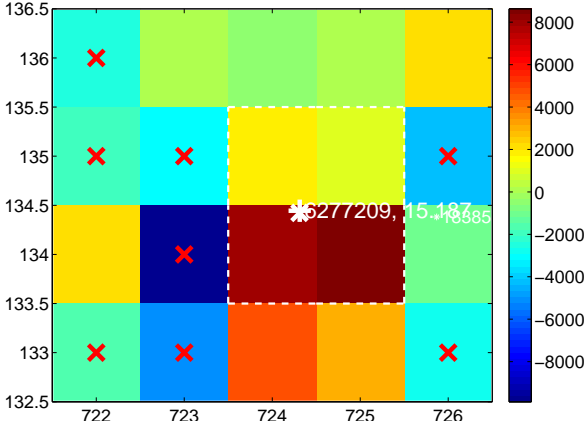
Q6 no difference image



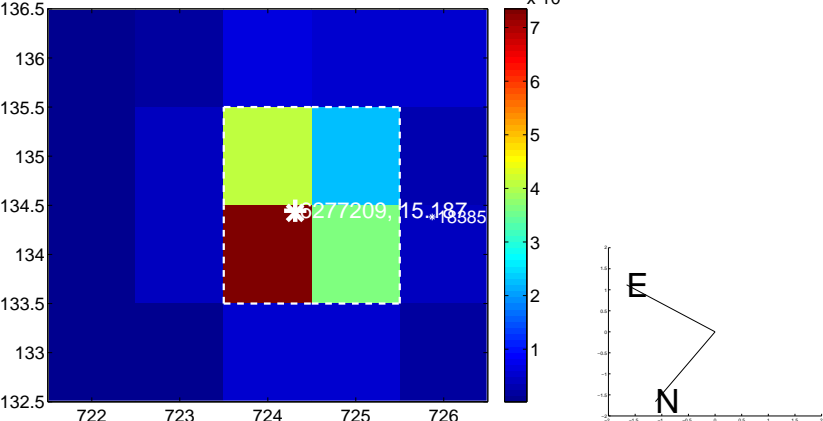
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 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.

Q9 no difference image



Q9 no OOT image



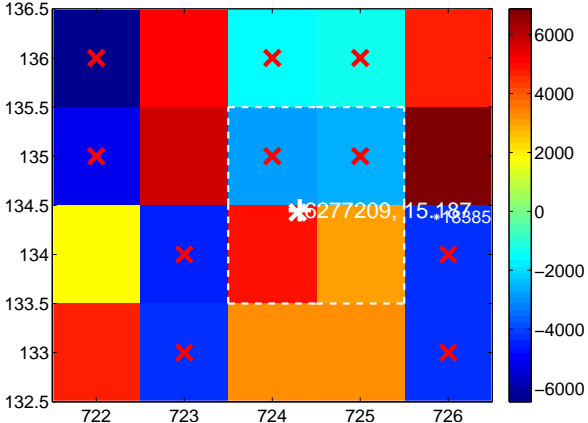
Q10 no difference image



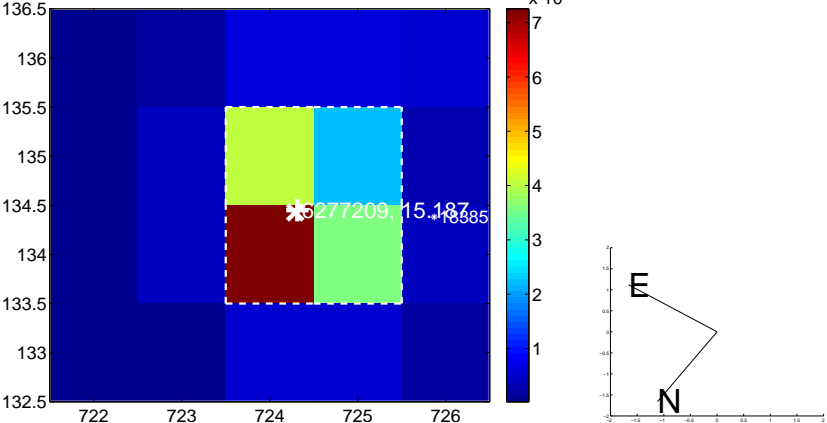
Q10 no OOT image



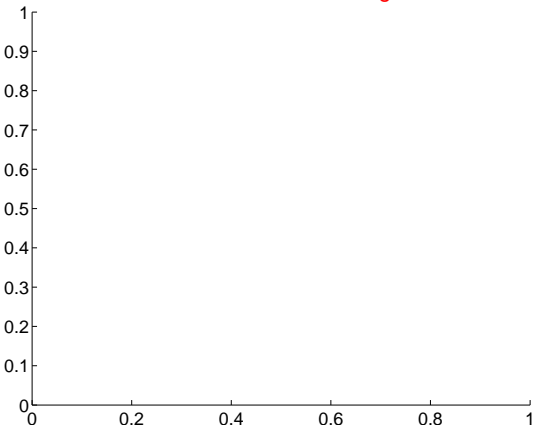
Q11 difference image. Poor Quality



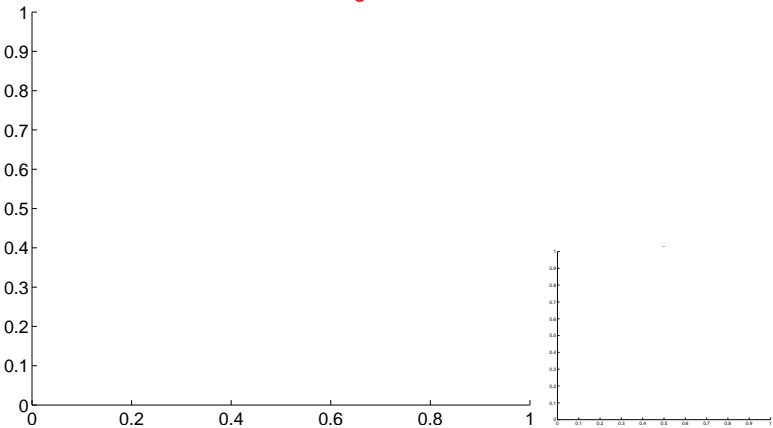
Q11 OOT image



Q12 no difference image



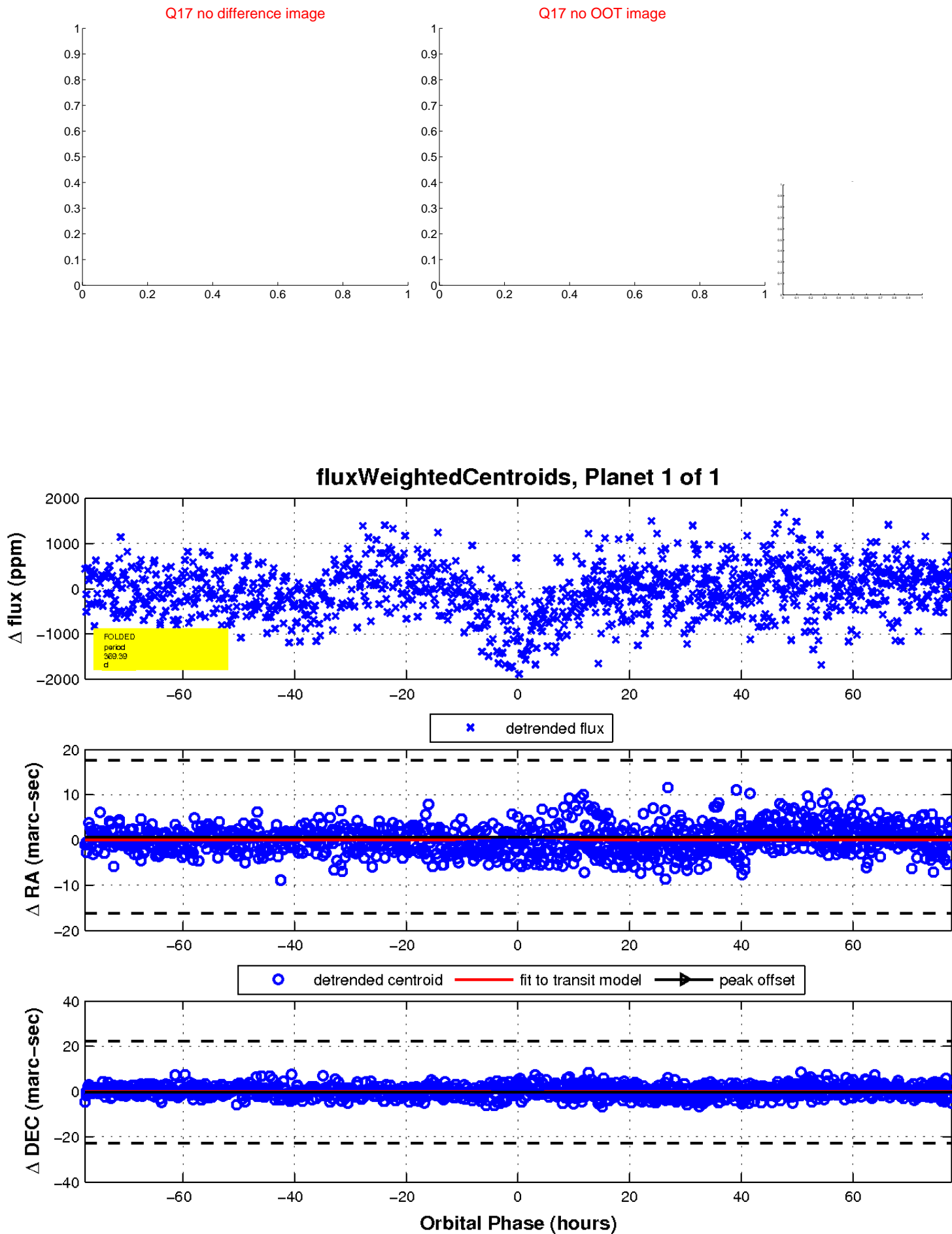
Q12 no OOT image



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.



UKIRT Image

Declination

