

# KIC 008229383

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008229383-01	OBS	No	500.008913	177.229818	166.5	11.806	7.3	7.2	1.53	6234	2.20	2.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008229383-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—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.

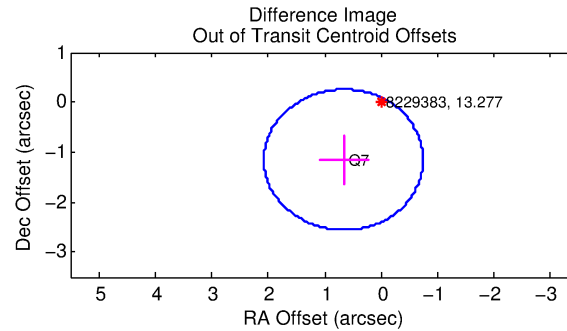
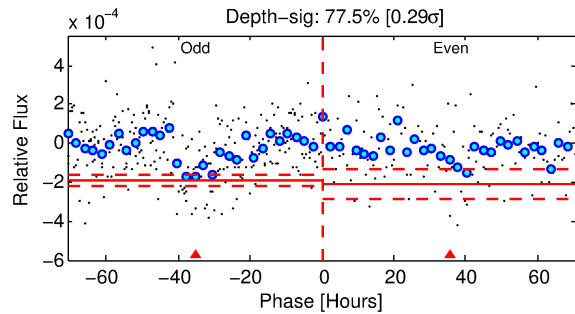
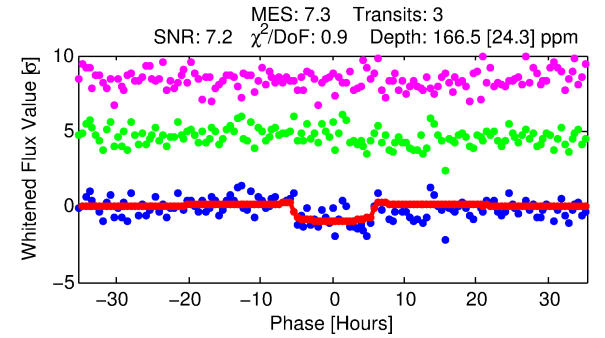
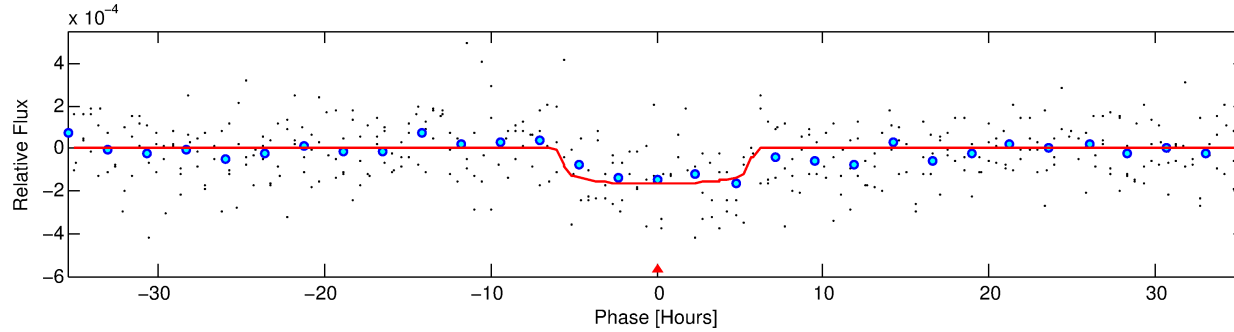
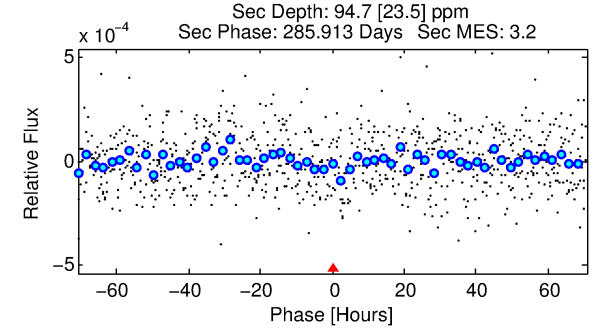
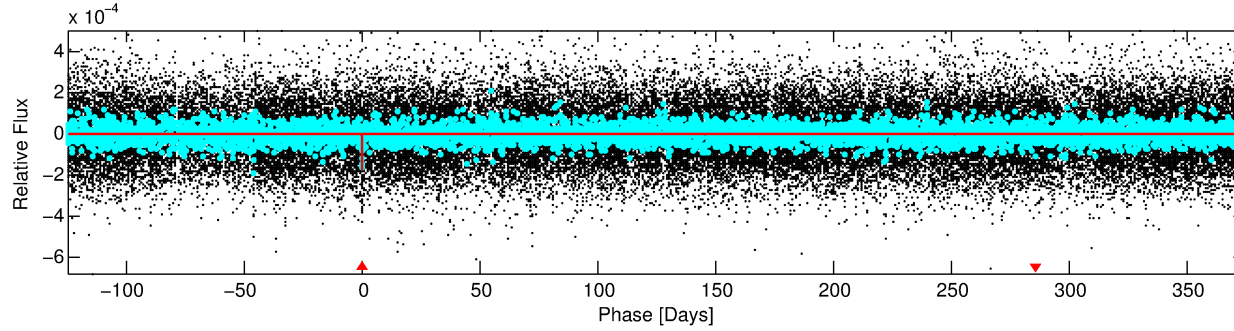
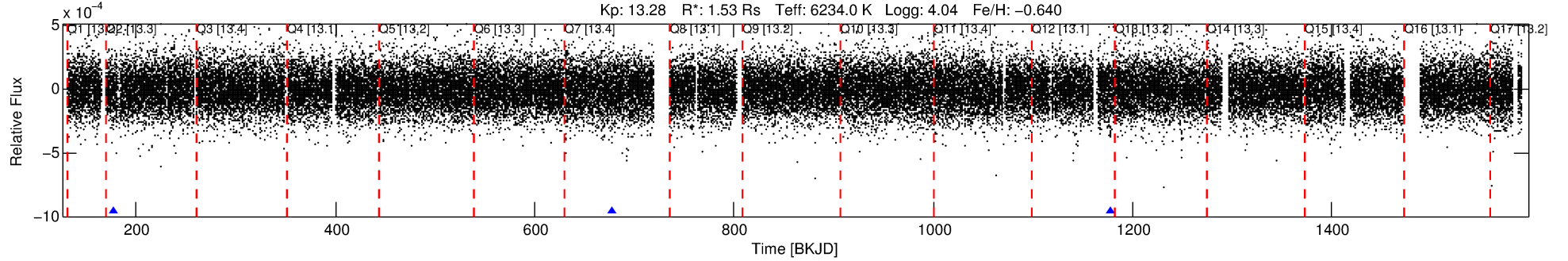
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008229383-01

No Significant Match Found

# DV One-Page Summary

KIC: 8229383 Candidate: 1 of 1 Period: 500.009 d



## DV Fit Results:

Period = 500.00891 [0.01297] d  
Epoch = 177.2298 [0.0188] BKJD  
Rp/R\* = 0.0132 [0.0072]  
a/R\* = 190.59 [571.74]  
b = 0.82 [1.18]  
Seff = 2.17 [1.47]  
Teq = 310 [53] K  
Rp = 2.20 [1.47] Re  
a = 1.2057 [0.4818] AU  
Ag = 15648.28 [20430.86] [0.77σ]  
Teffp = 5352 [1516] K [3.32σ]

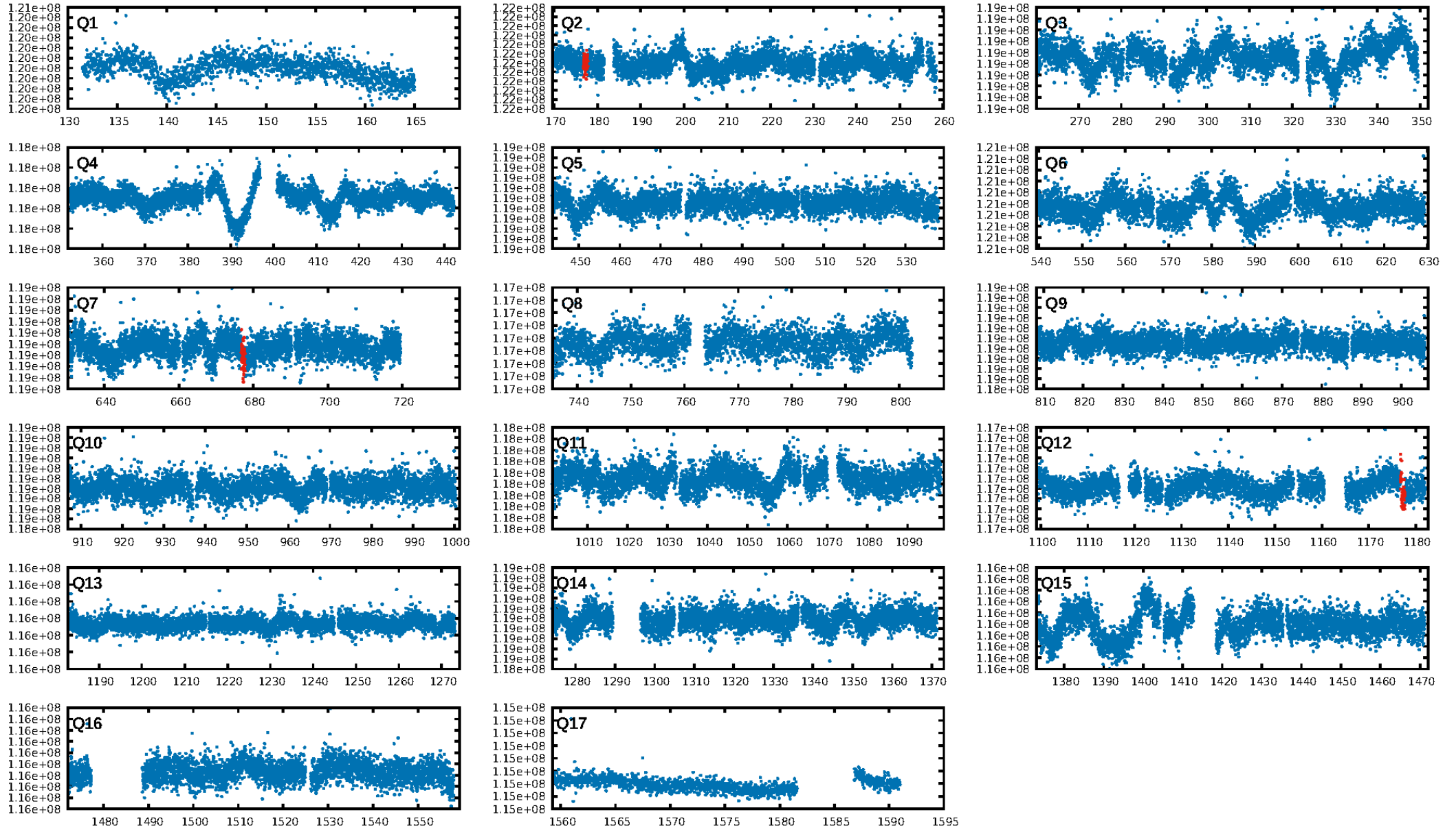
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 2.8%  
ModelChiSquareGof-sig: 98.4%  
**Bootstrap-pfa: 6.99e-09**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 2.003  
Centroid-sig: 80.4%  
Centroid-so: 0.599 arcsec [0.26σ]  
OotOffset-rm: 1.331 arcsec [2.83σ]  
KicOffset-rm: 1.346 arcsec [2.89σ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [2/2]

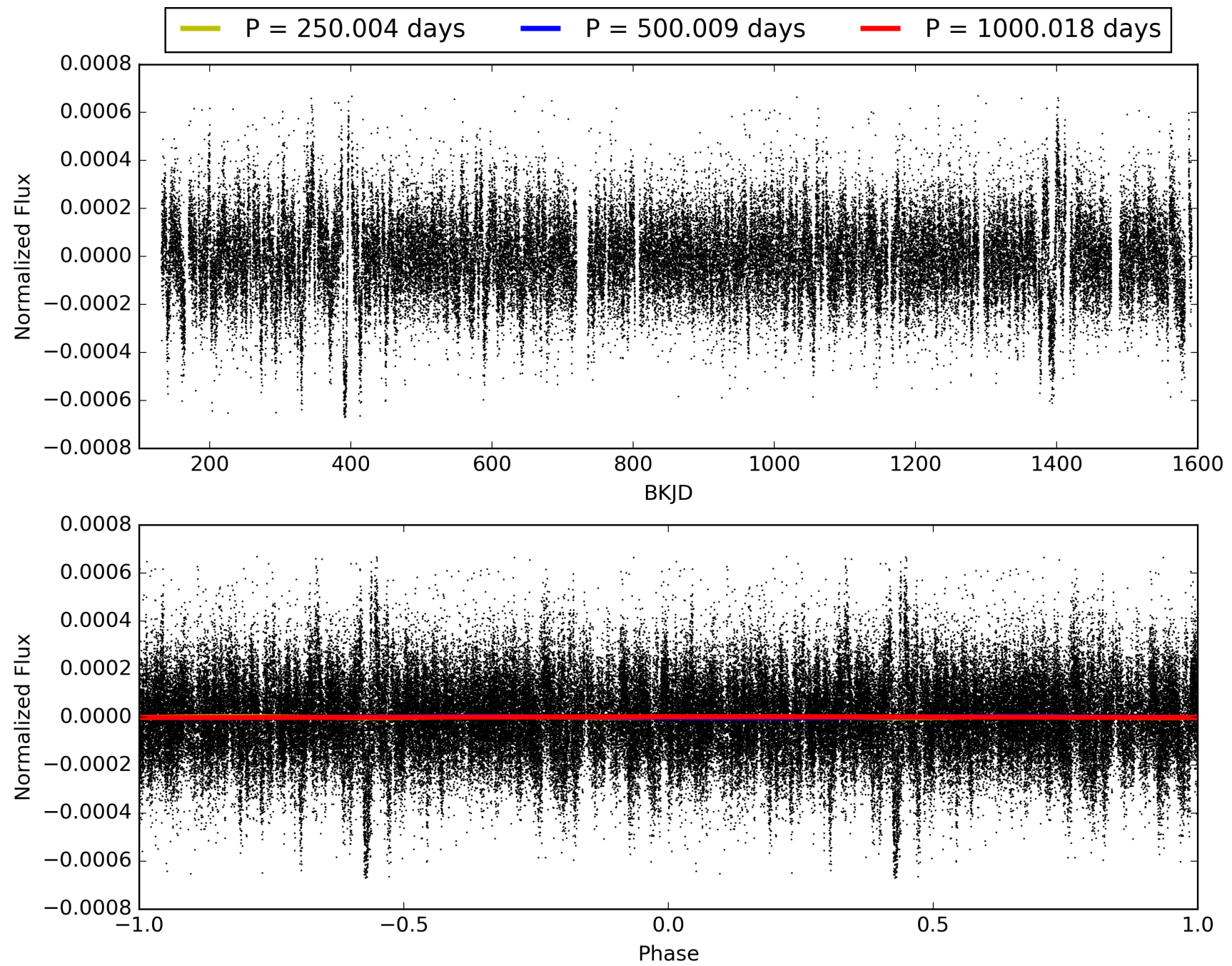
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:20:27 Z

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

# TCE 008229383-01, PDC Light Curves

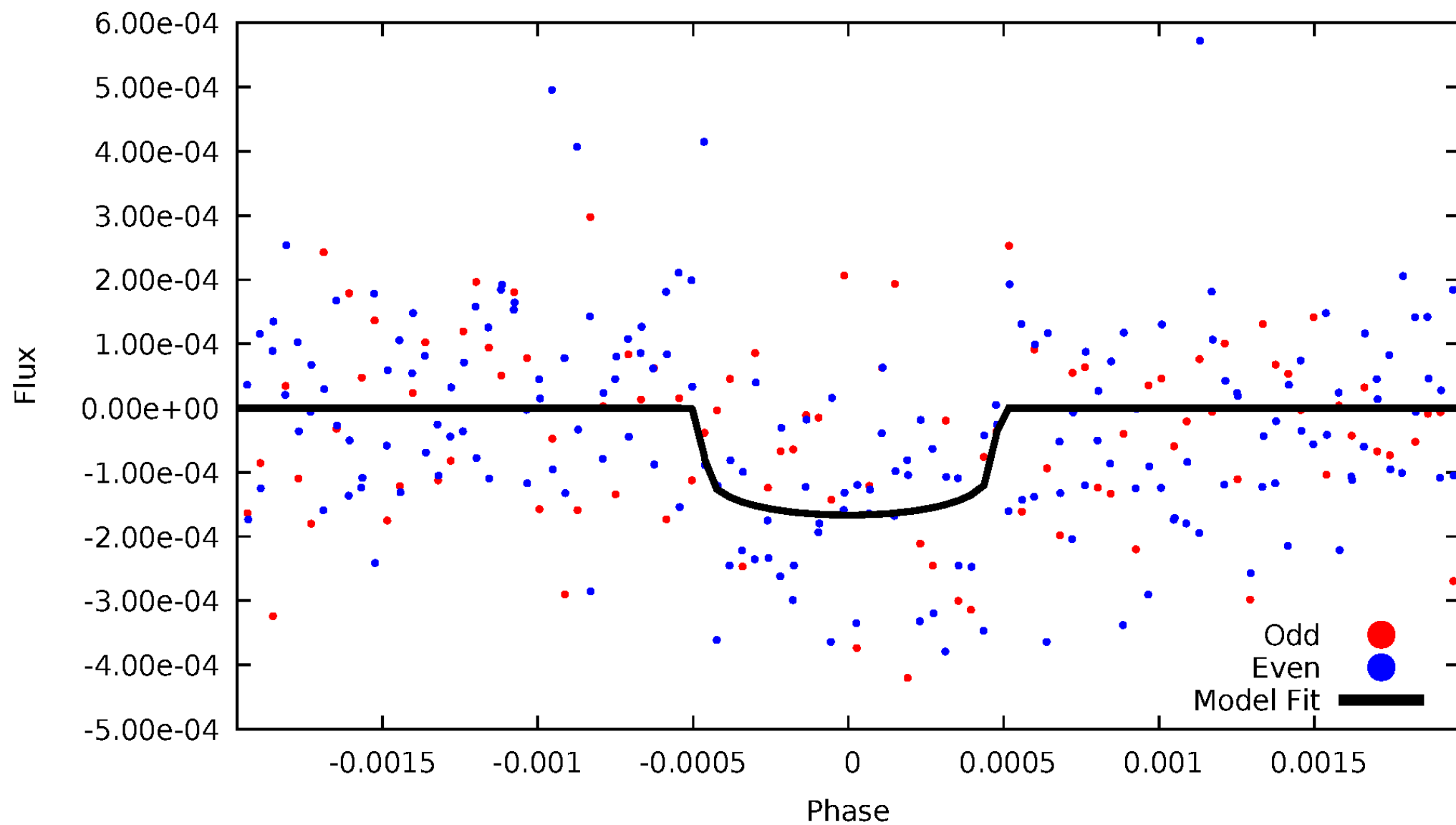


# TCE 008229383-01



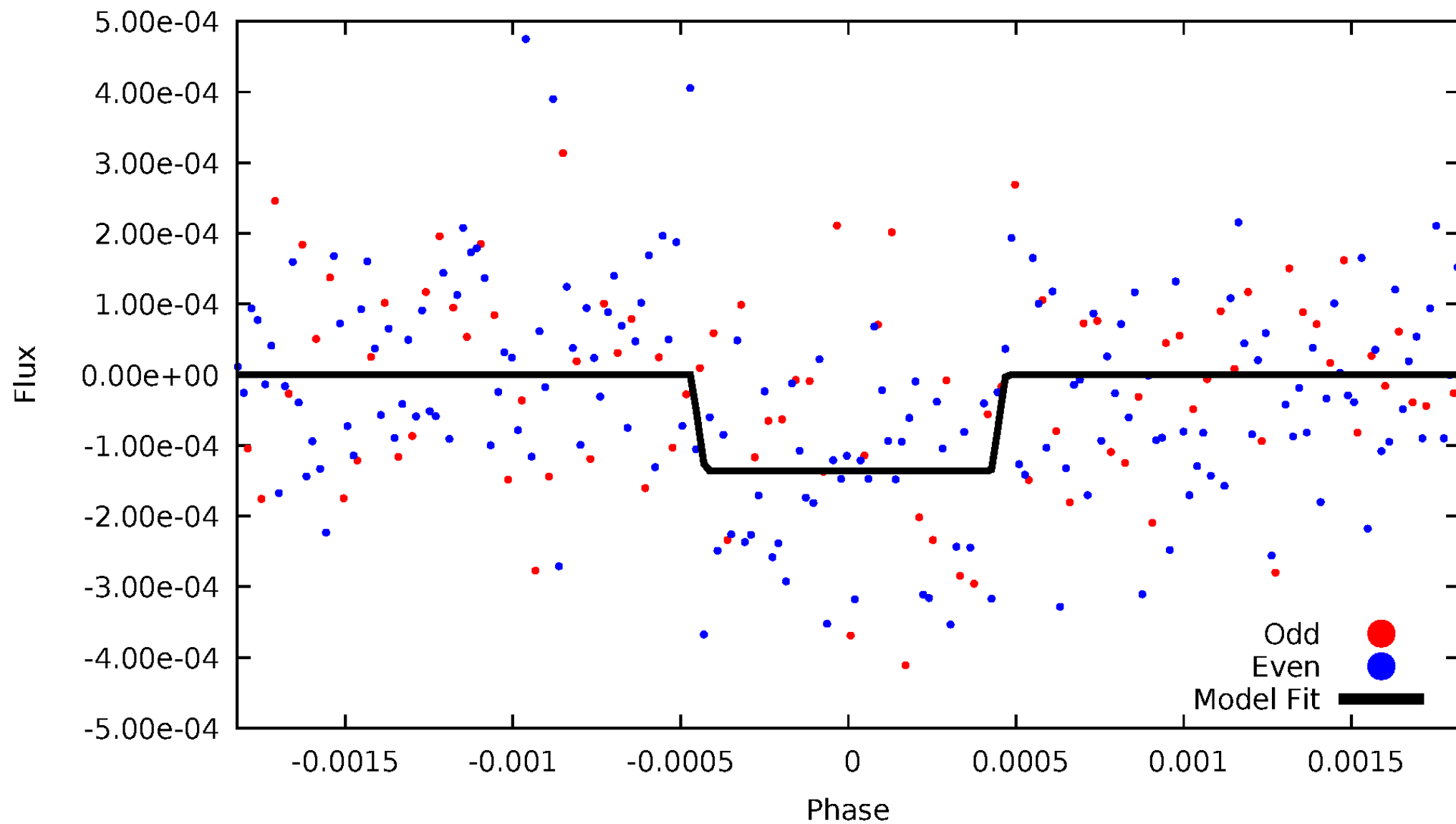
# DV Odd/Even

TCE 008229383-01



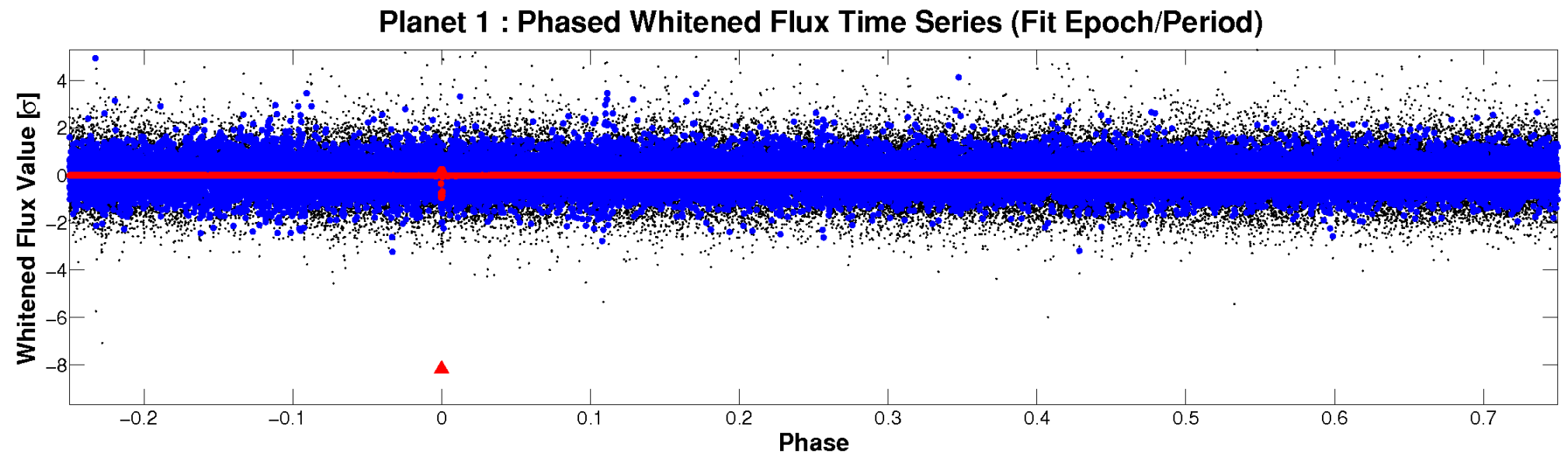
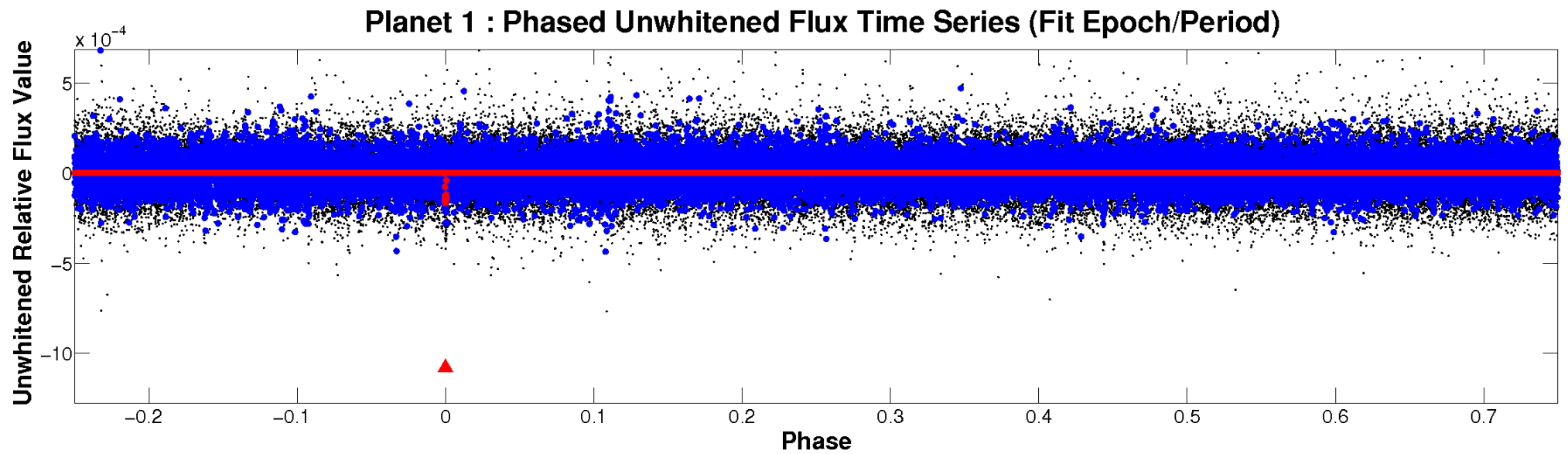
# ALT Odd/Even

TCE 008229383-01



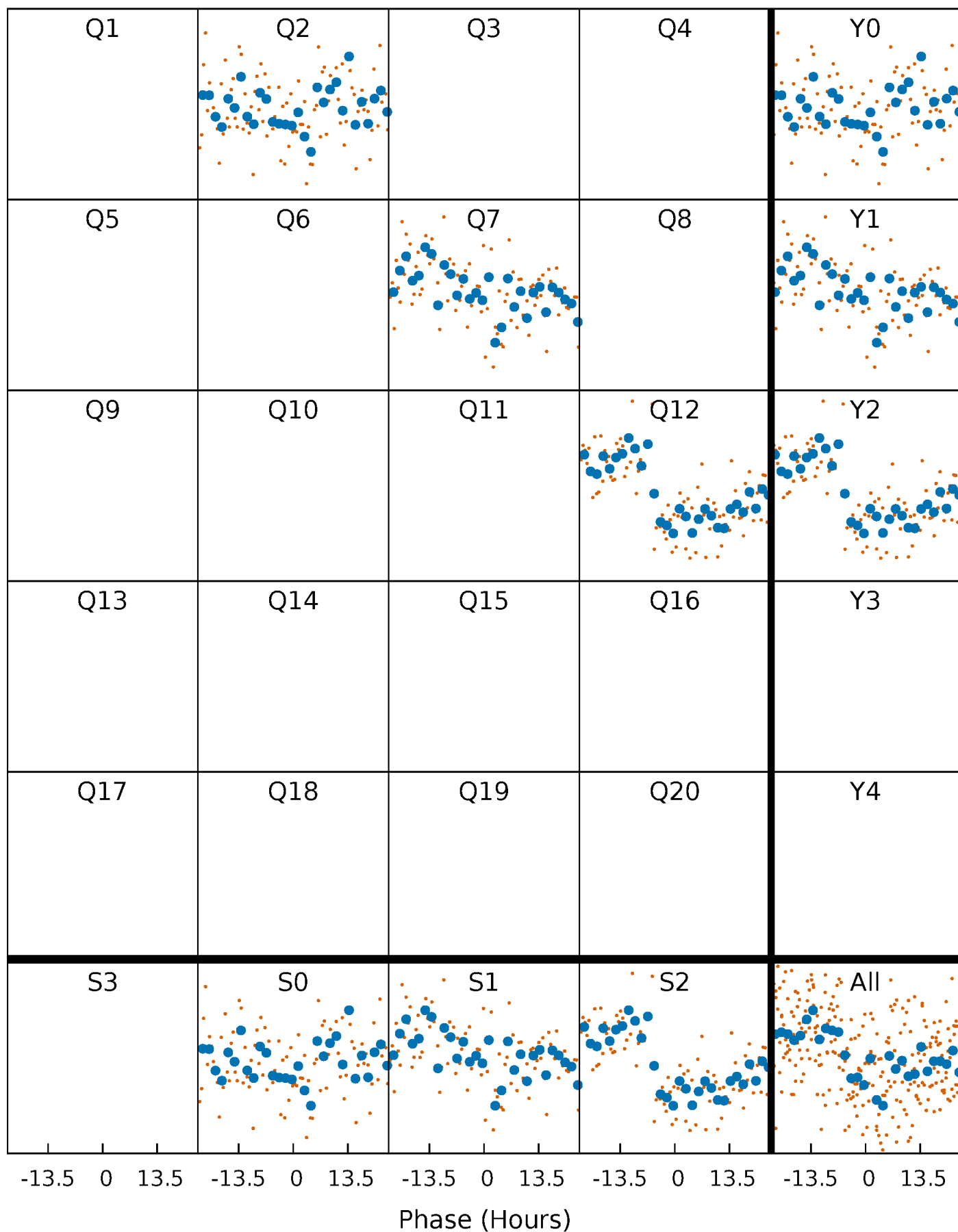


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

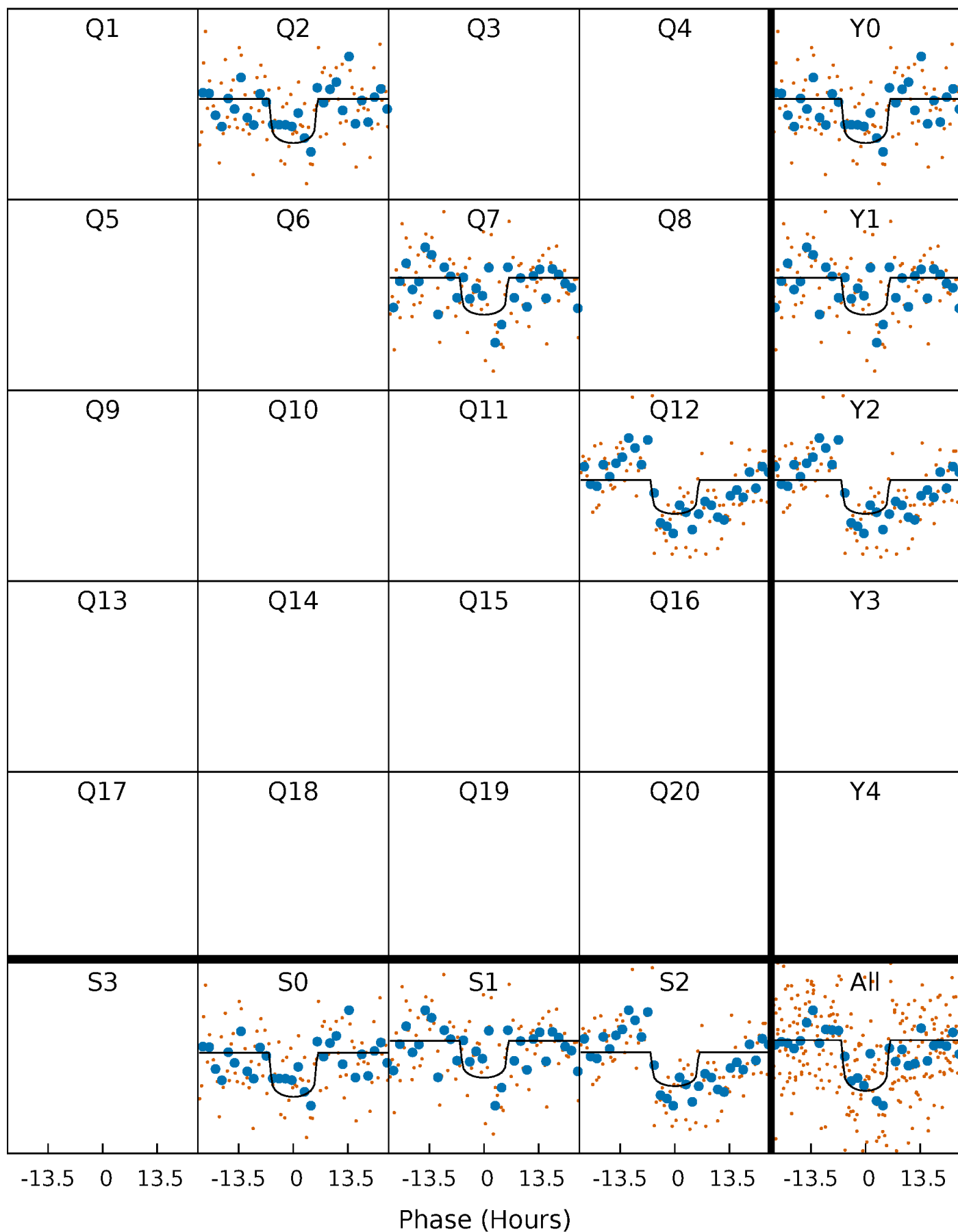
TCE 008229383-01 P=500.008913 Days  $T_0=177.229818$  (BKJD)





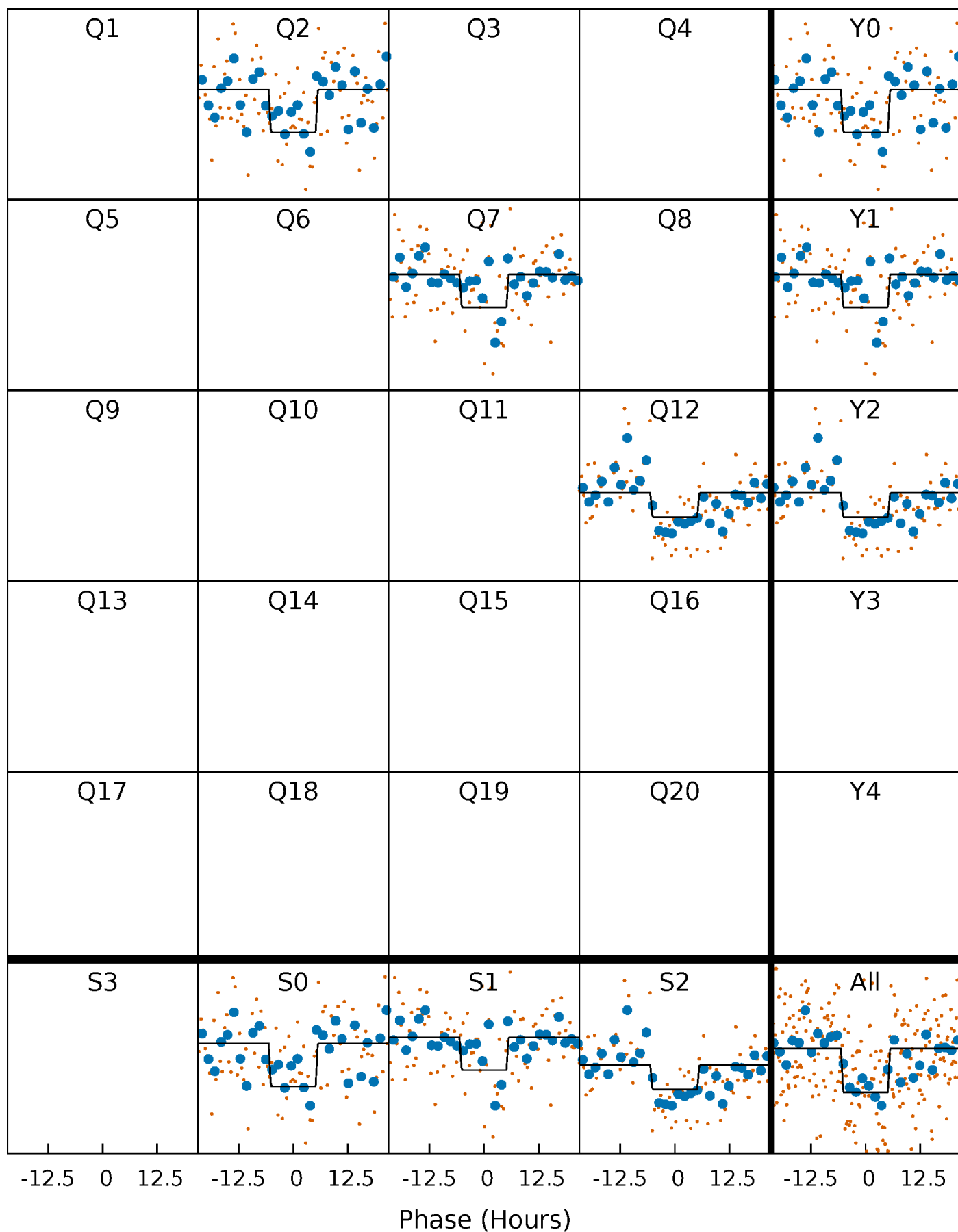
# DV Quarter-Phased Transit Curves

TCE 008229383-01 P=500.008913 Days  $T_0=177.229818$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

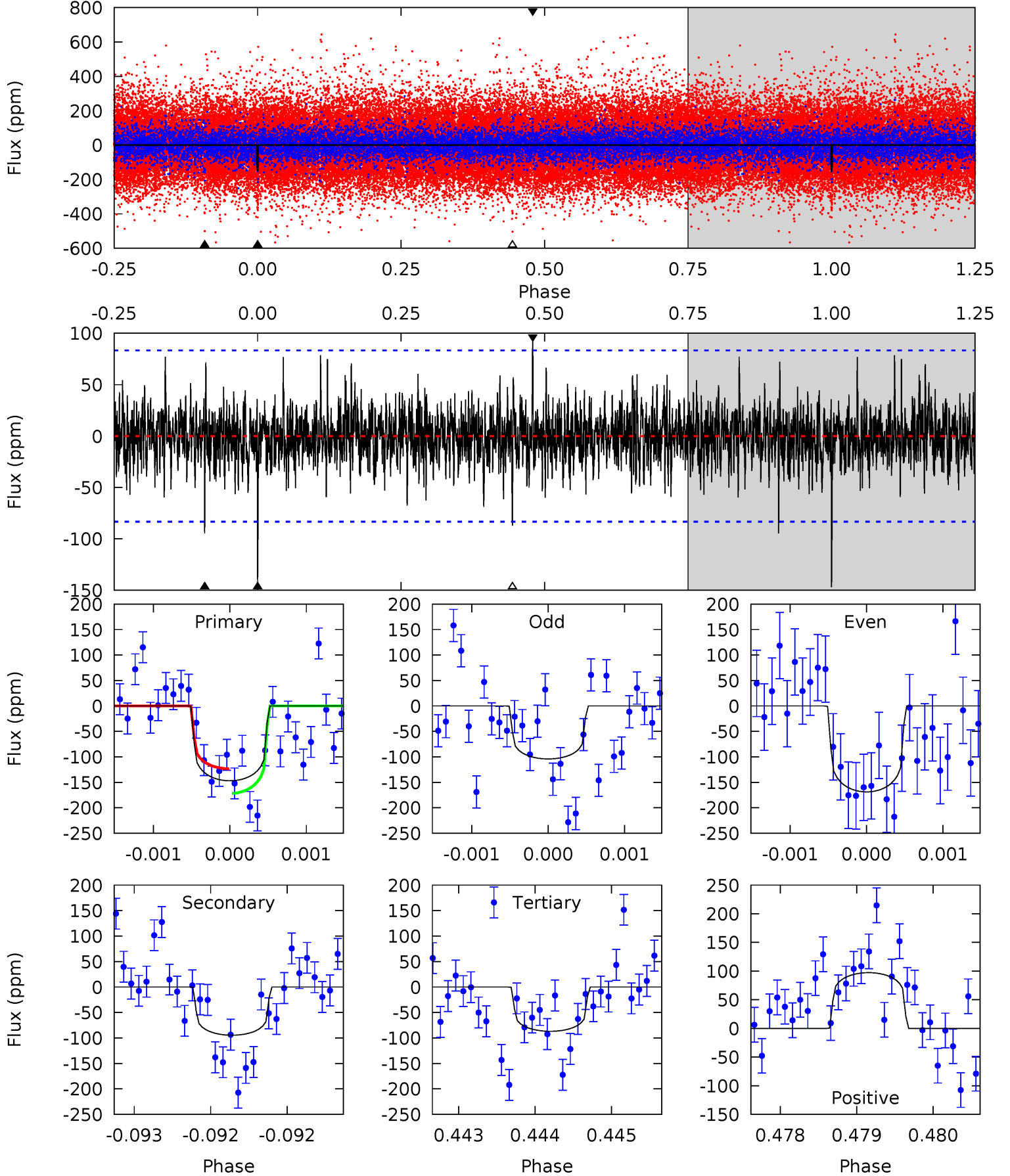
TCE 008229383-01 P=500.002402 Days  $T_0=177.246431$  (BKJD)



# DV Model-Shift Uniqueness Test

008229383-01, P = 500.008913 Days, E = 177.229818 Days

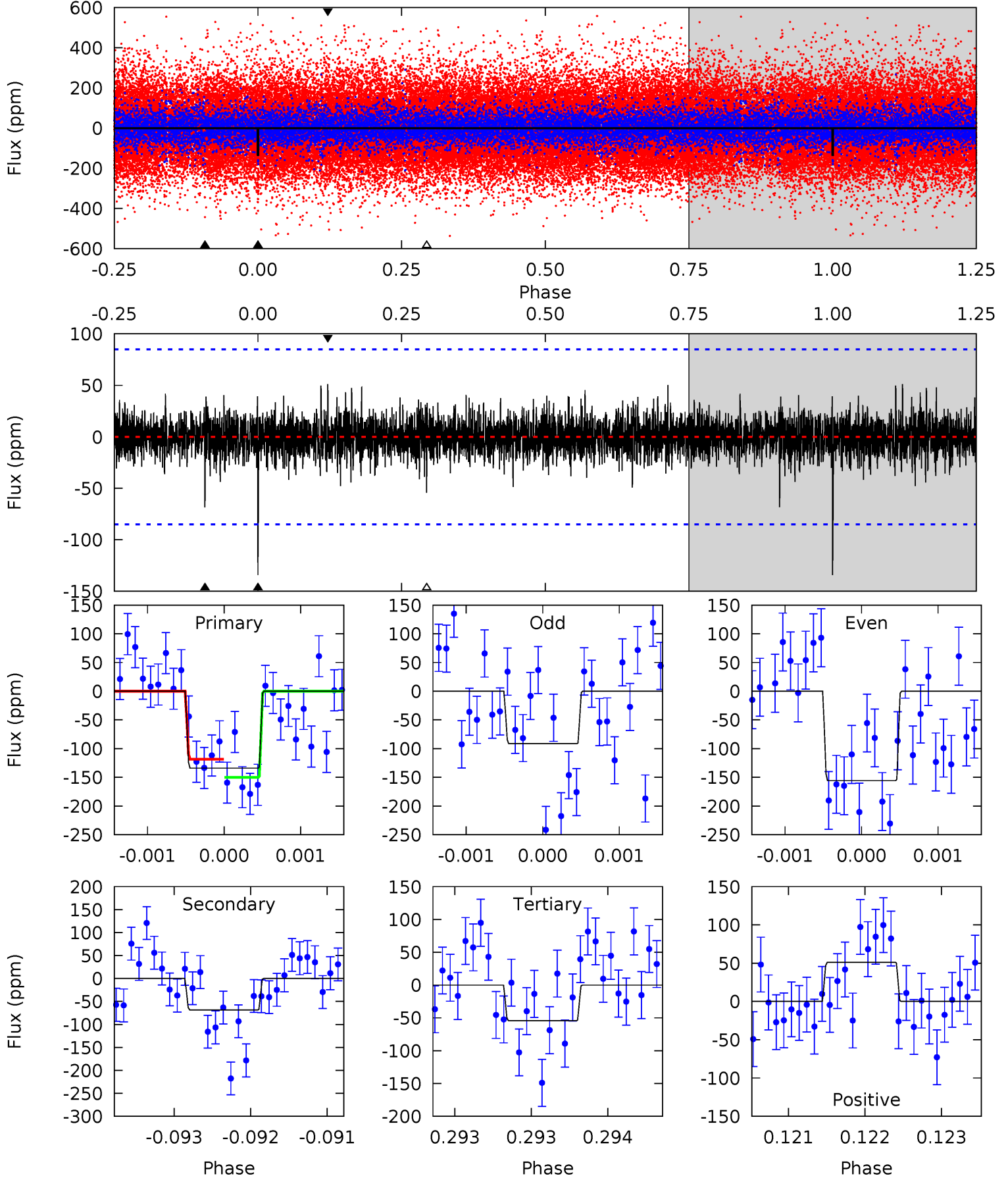
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.62	6.20	5.69	6.37	5.45	3.30	1.30	3.93	3.25	0.51	-0.17	2.03	1.24	0.40	1.59



# Alt Model-Shift Uniqueness Test

008229383-01, P = 500.002402 Days, E = 177.246431 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
8.62	4.40	3.49	3.28	5.46	3.31	0.81	5.14	5.34	0.91	1.12	1.96	1.29	0.28	1.01



### Stellar Parameters For KIC 008229383

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6234^{+198}_{-220}$	$4.041^{+0.399}_{-0.171}$	$-0.640^{+0.300}_{-0.300}$	$1.527^{+0.392}_{-0.588}$	$0.935^{+0.126}_{-0.113}$	$0.370^{+1.238}_{-0.160}$
	+3%/-4%	+10%/-4%	+47%/-47%	+26%/-39%	+13%/-12%	+335%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 008229383-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-95 \pm 15$	$2.07^{+1.17}_{-1.03}$	$425^{+37}_{-43}$	$5357^{+2302}_{-867}$	$17300^{+50761}_{-10342}$
Alt.	$-68 \pm 16$	$1.88^{+1.17}_{-1.03}$	$425^{+38}_{-42}$	$5258^{+2682}_{-938}$	$16212^{+65151}_{-10475}$

$T_{\text{max}}$  = 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

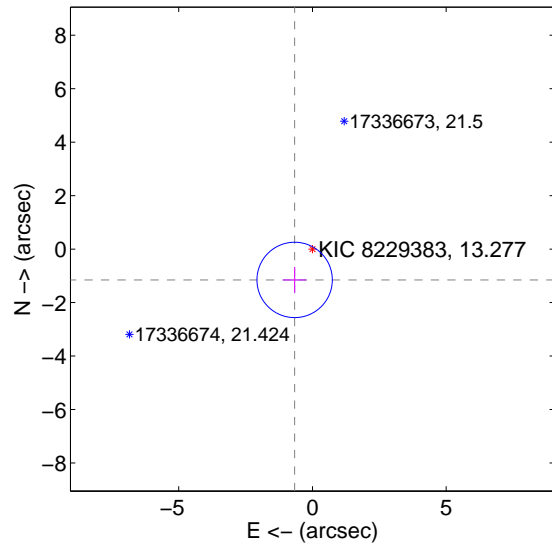
Supplemental centroid analysis for 008229383-01. Kepler magnitude: 13.28. Transit SNR 7.23

There are 1 quarters with good PRF difference image offsets

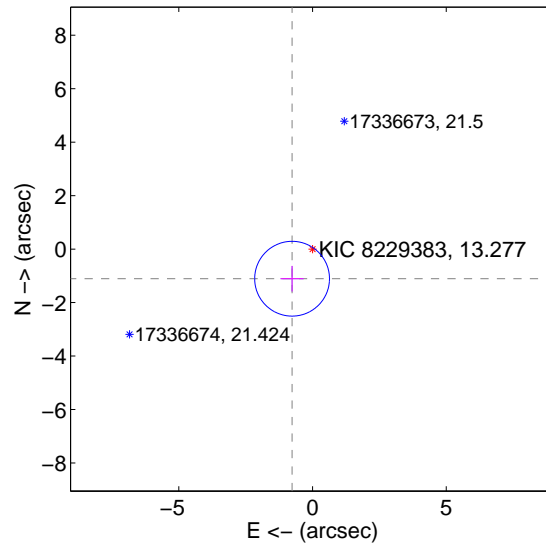
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.331 \pm 0.470$	2.83	$0.666 \pm 0.432$	$-1.153 \pm 0.481$
PRF-fit source offset from KIC position	$1.346 \pm 0.466$	2.89	$0.764 \pm 0.432$	$-1.107 \pm 0.481$
photometric centroid source offset	$0.60 \pm 2.31$	0.26	$0.02 \pm 2.09$	$-0.60 \pm 2.31$

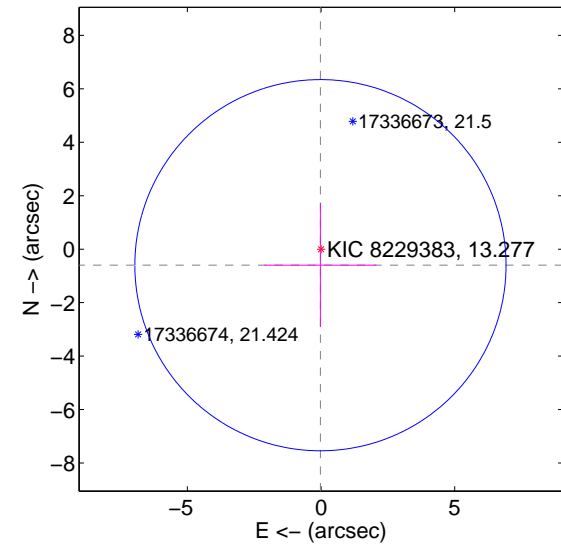
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

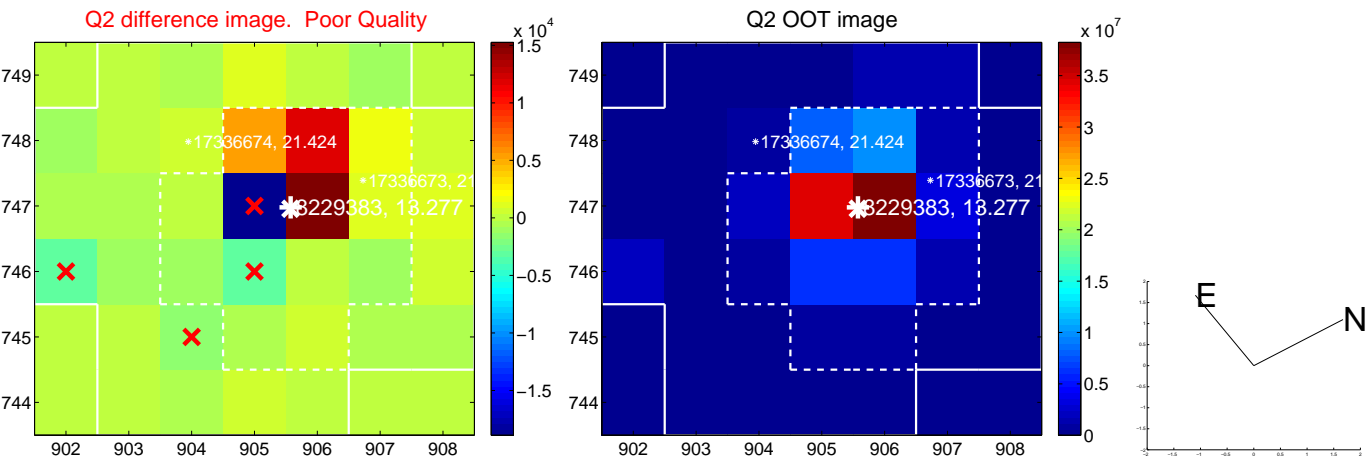


offset from photometric centroids



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



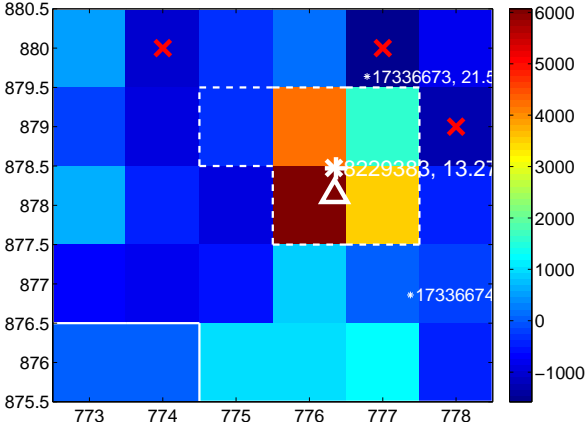
Q6 no difference image



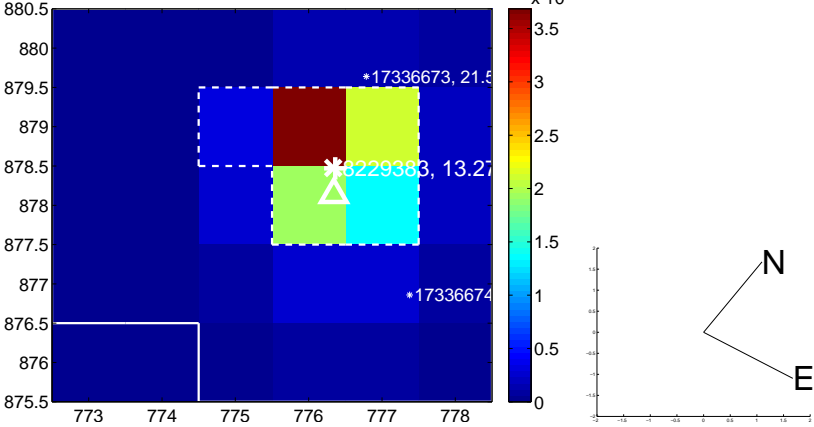
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



Q8 no OOT image



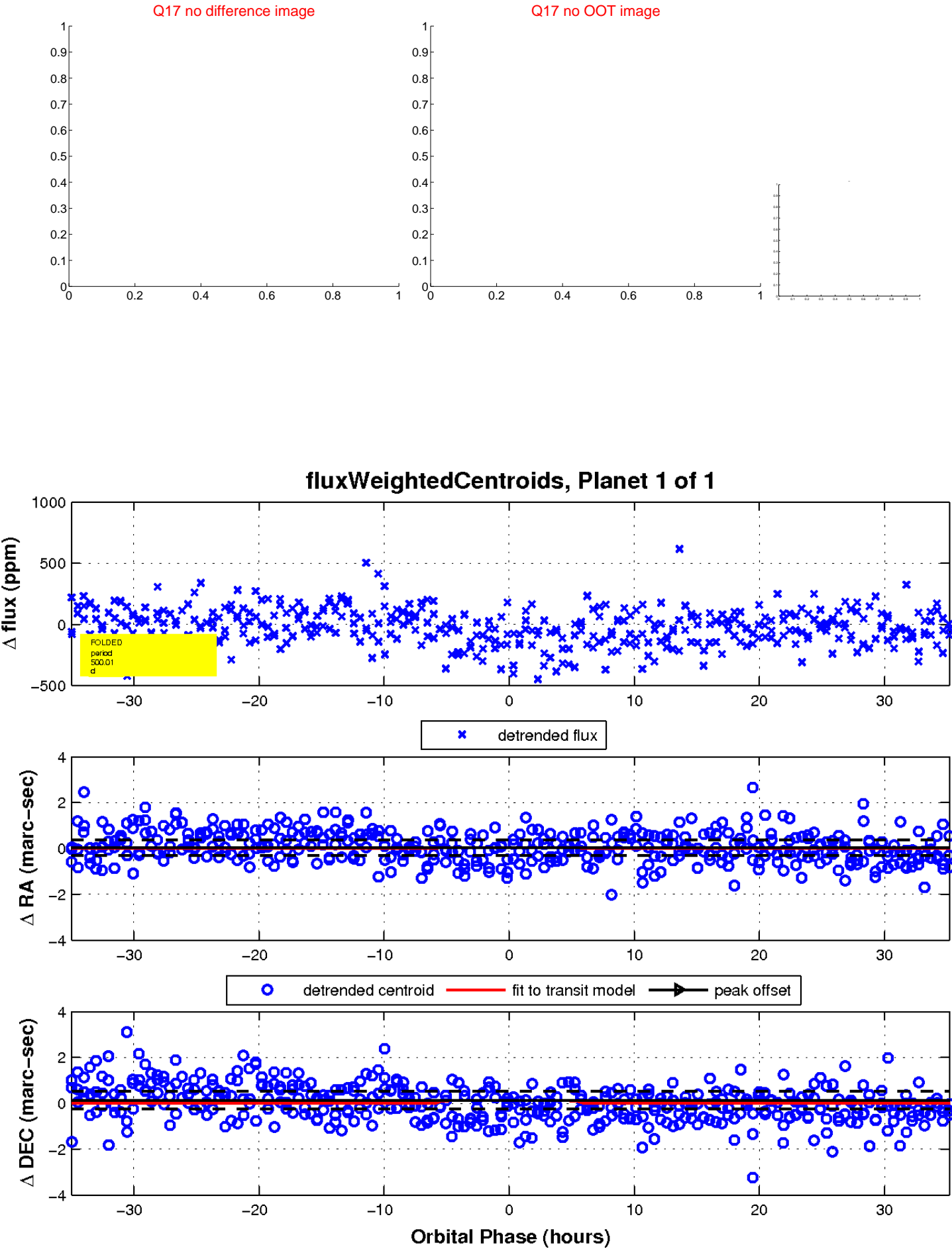
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

