

# KIC 008687710

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008687710-01	OBS	No	376.205829	133.778497	4270.4	32.204	8.7	9.5	111.42	3495	920.30	1292.47

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008687710-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_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 008687710-01

No Significant Match Found

## KIC: 8687710    Candidate: 1 of 1    Period: 376.206 d

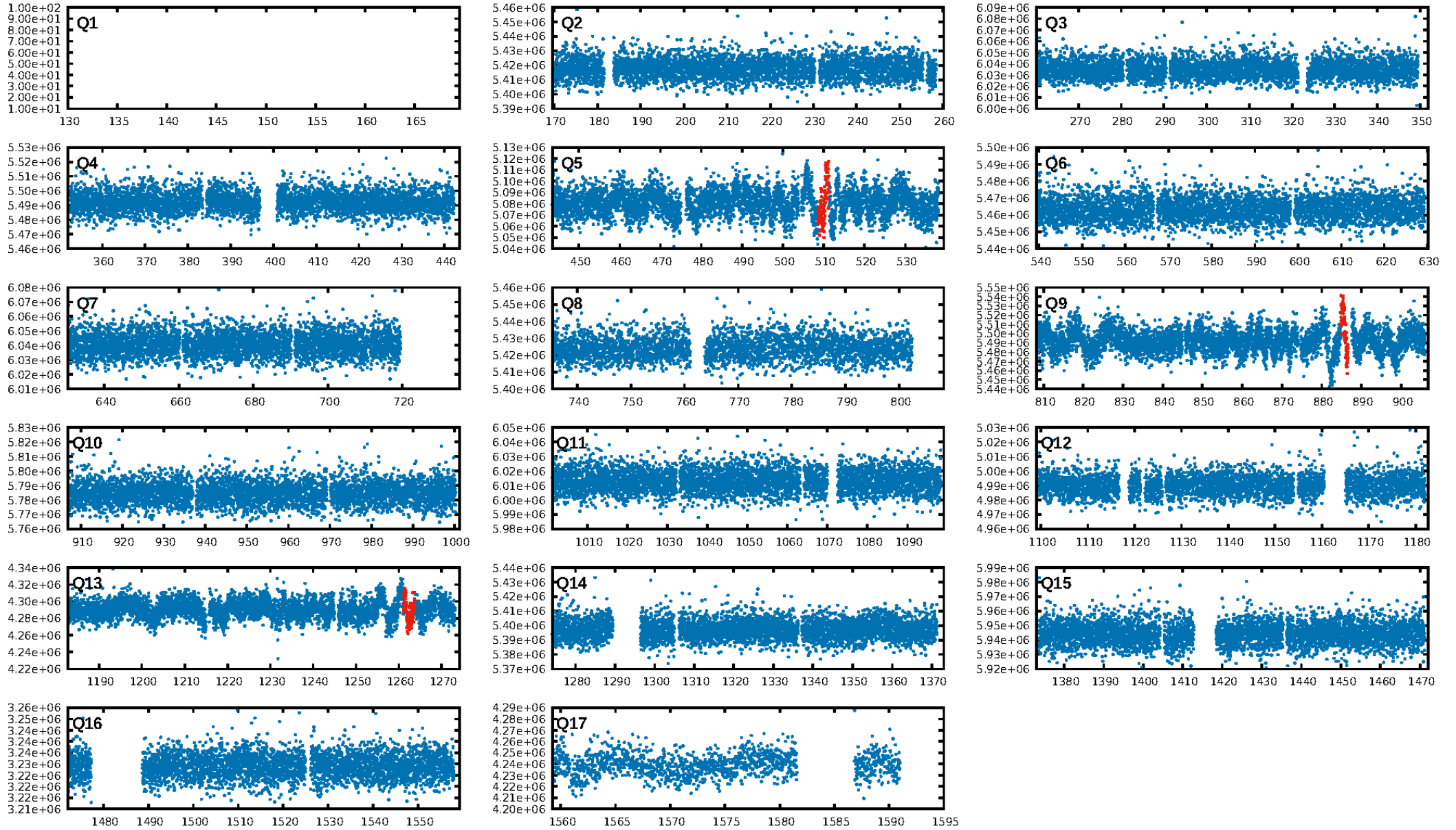


ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 59.3%  
ModelChiSquareGof-sig: 97.8%  
Bootstrap-pfa: 2.89e-12  
RollingBand-fgt: 0.00 [0/3]  
GhostDiagnostic-chr: 0.7745

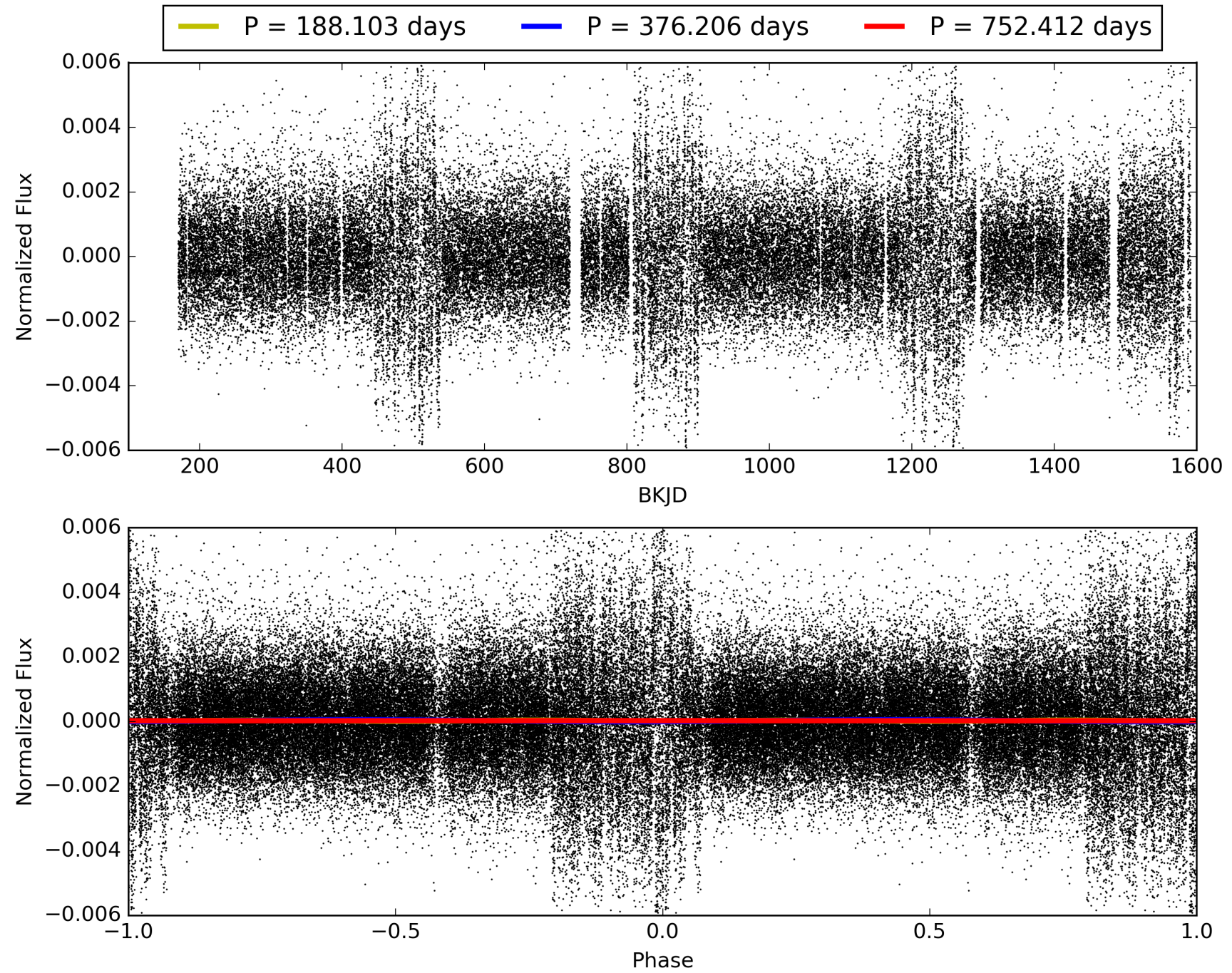
Centroid-sig: 0.0%  
Centroid-so: 3.411 arcsec [3.11σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [2/2]

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

# TCE 008687710-01, PDC Light Curves

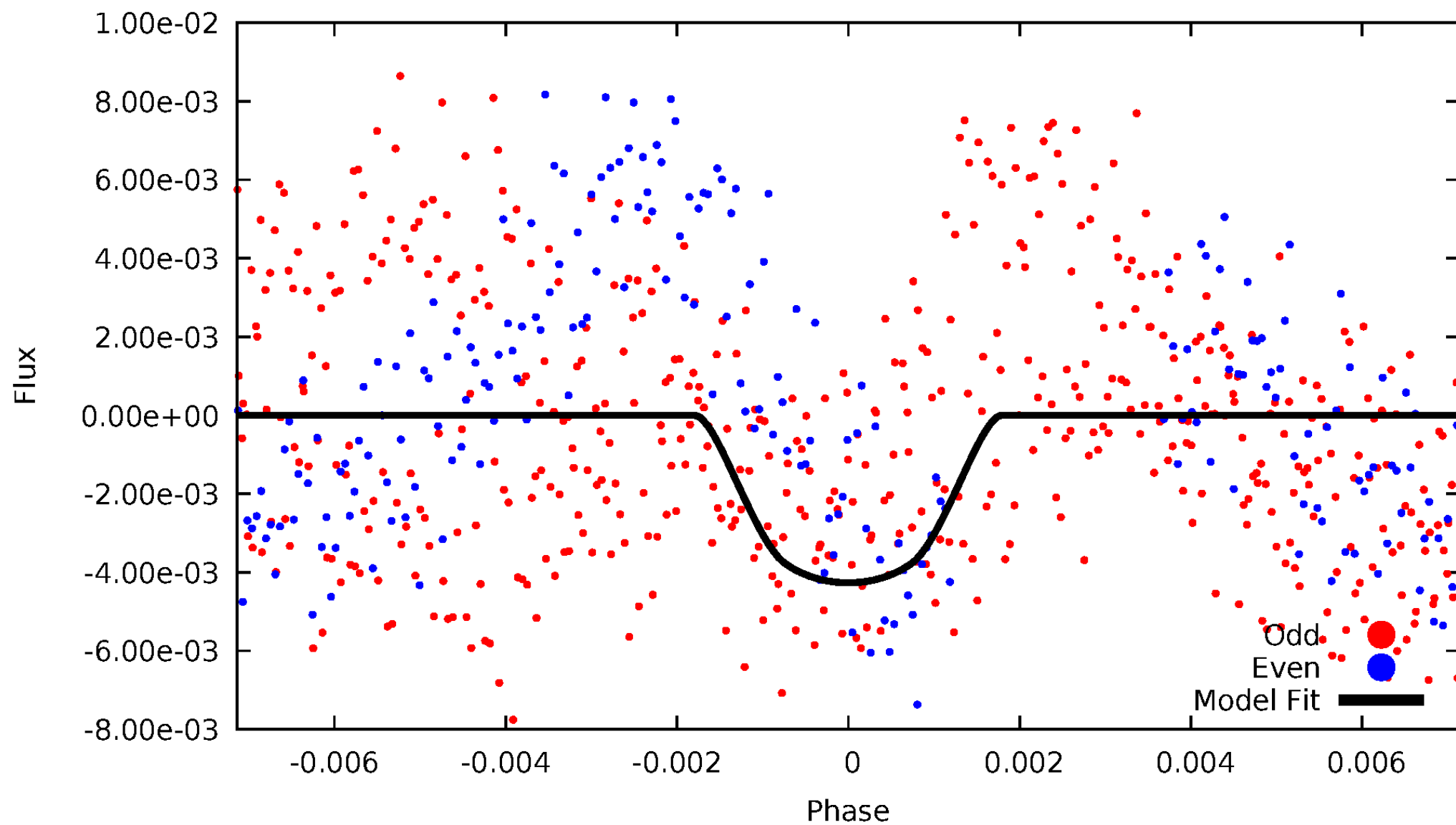


TCE 008687710-01



# DV Odd/Even

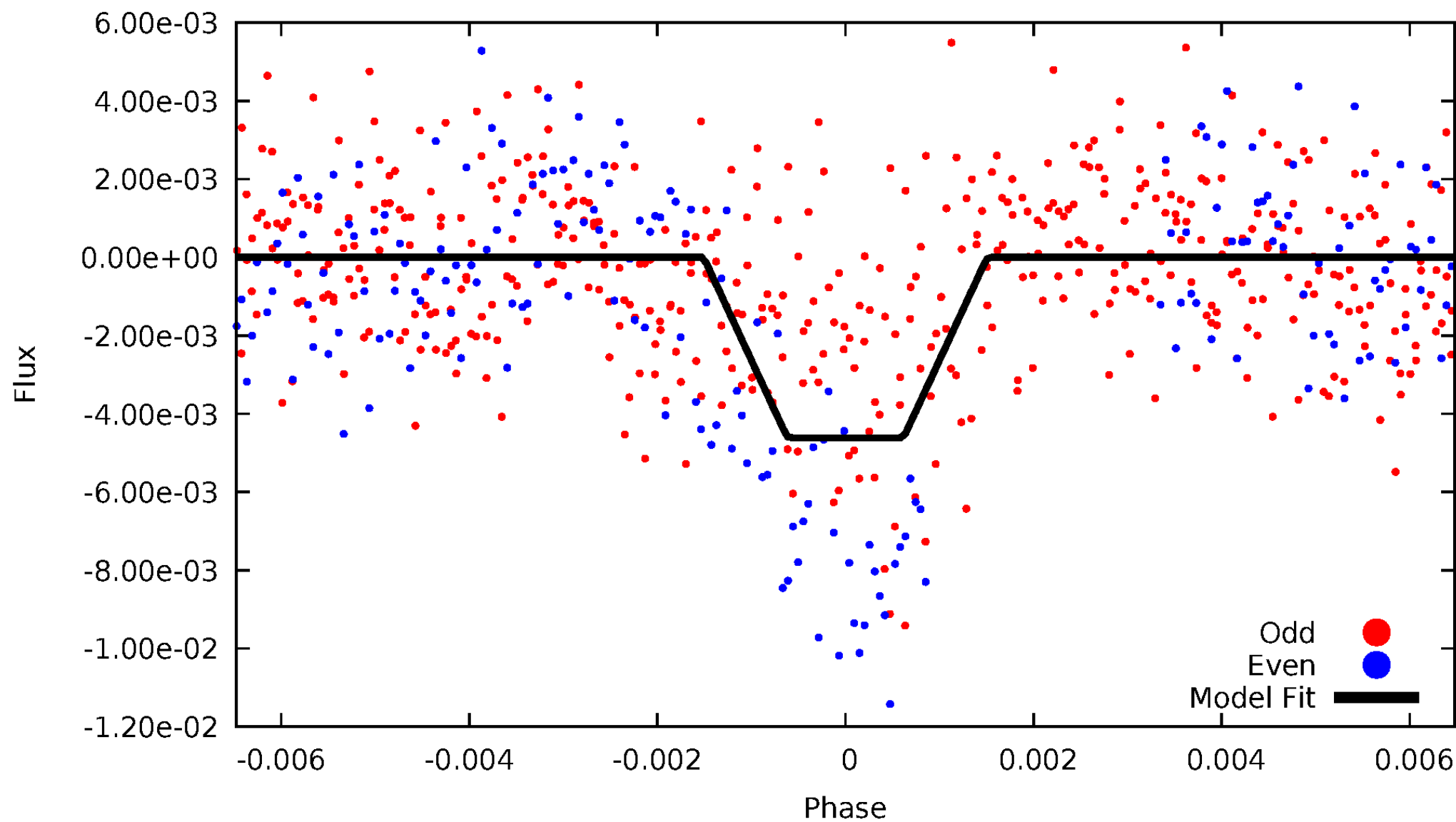
TCE 008687710-01



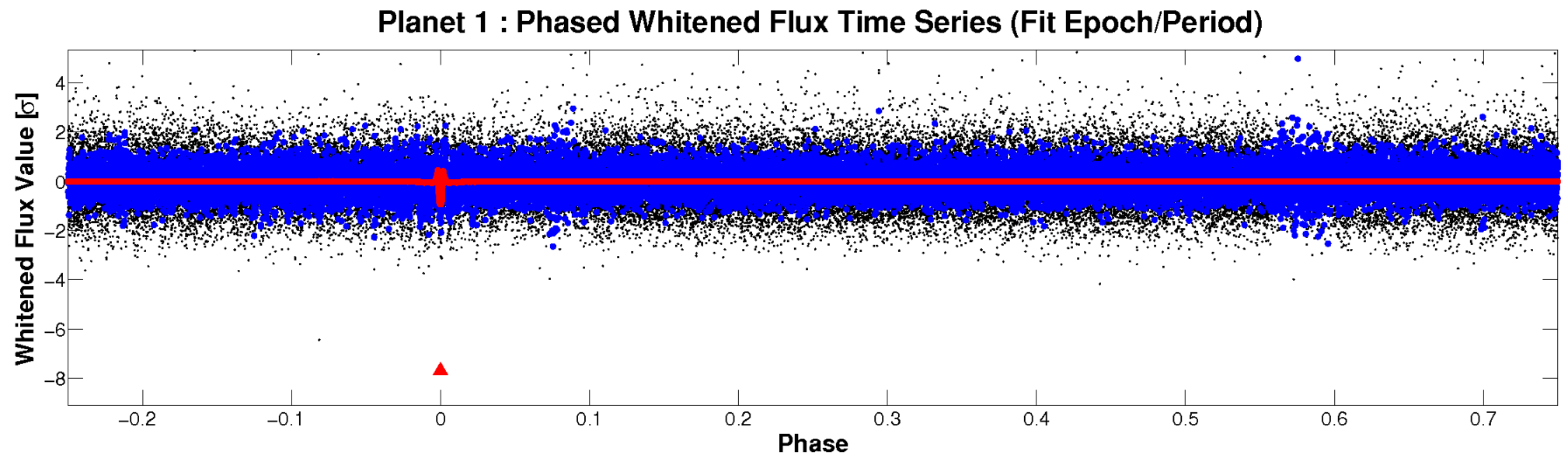
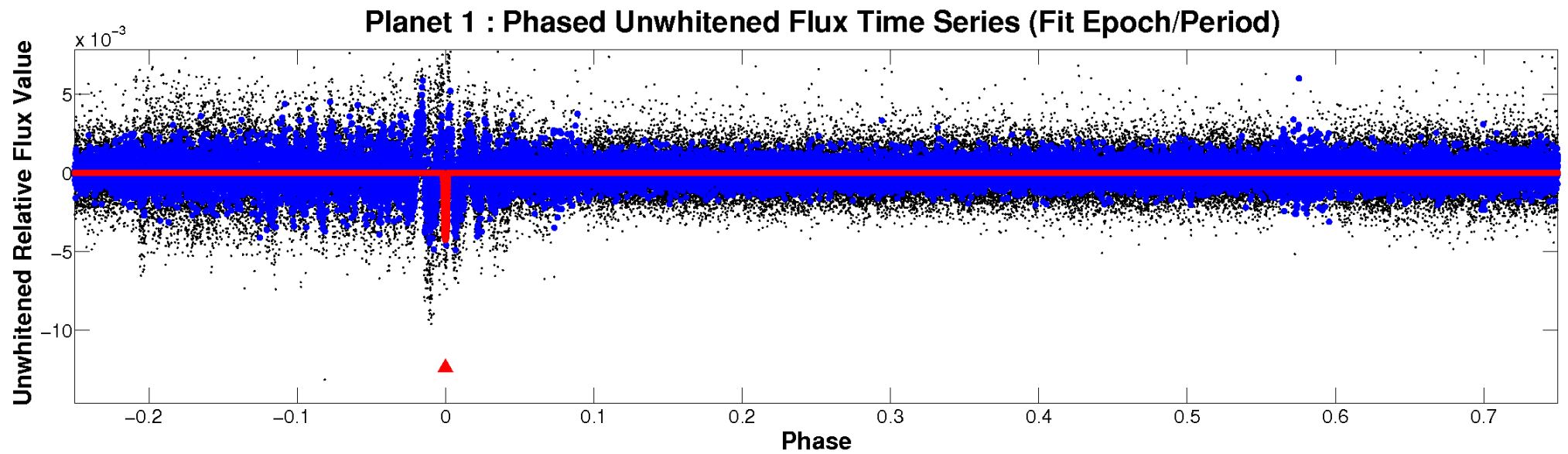


# ALT Odd/Even

TCE 008687710-01

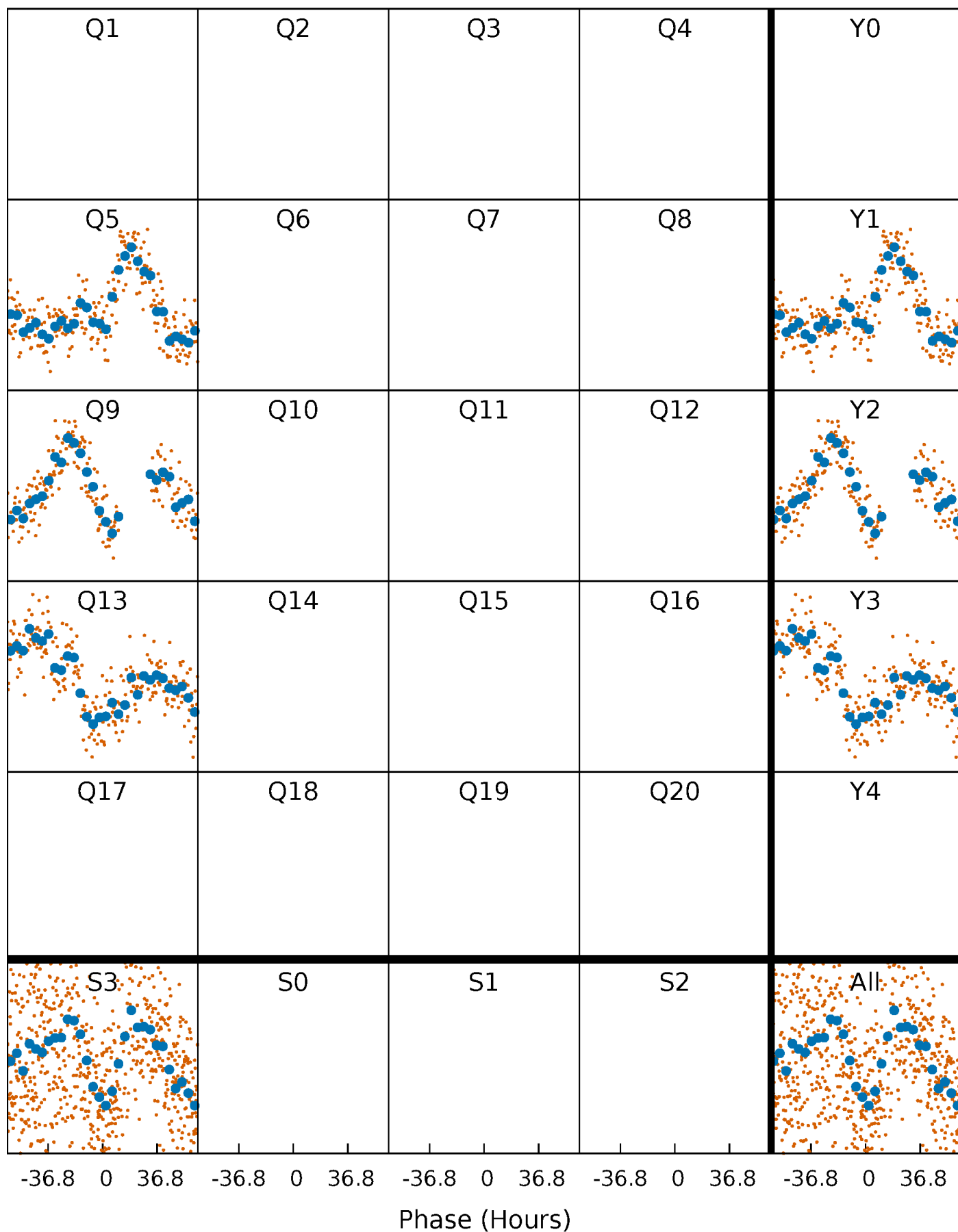


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

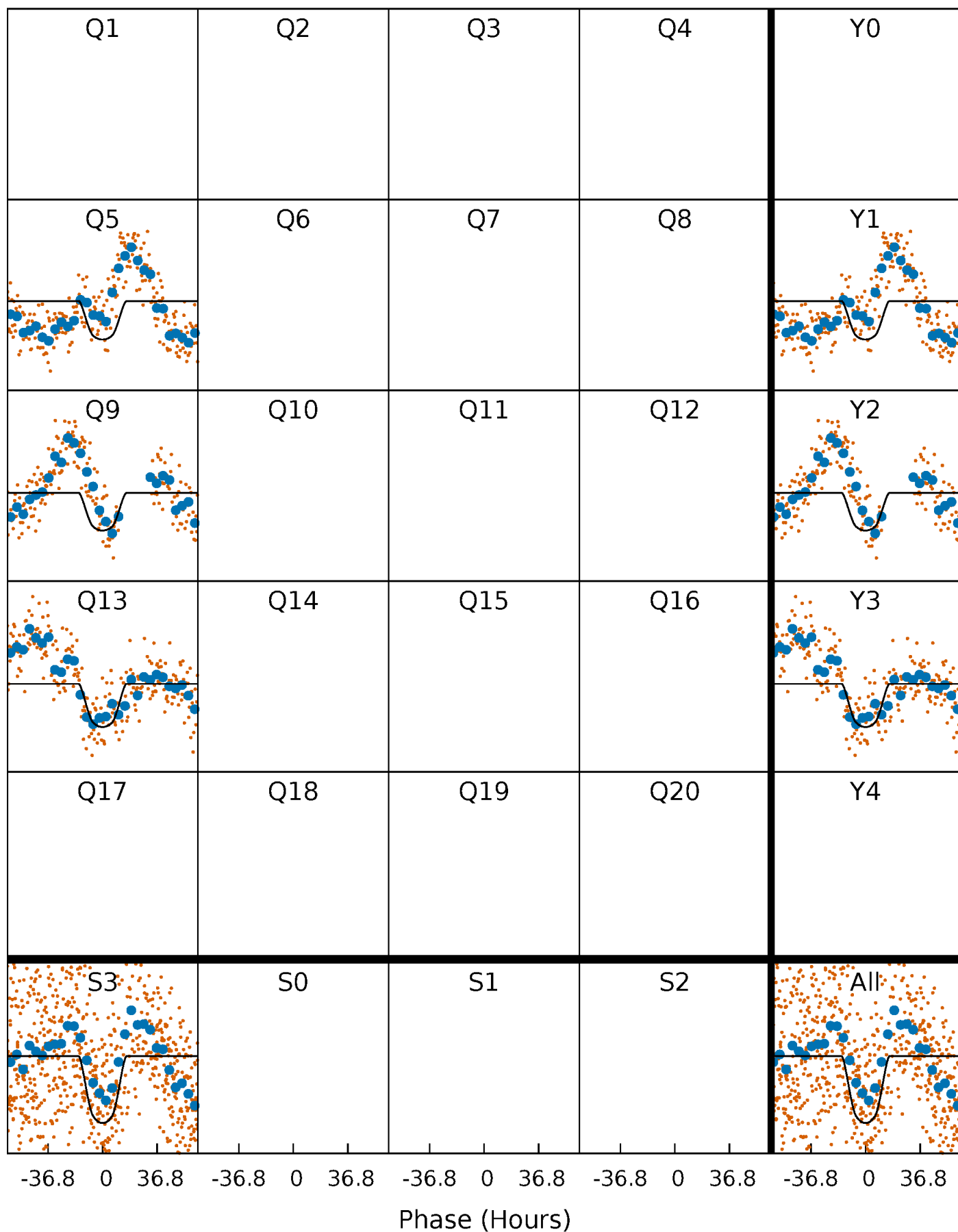
TCE 008687710-01 P=376.205829 Days  $T_0=133.778497$  (BKJD)





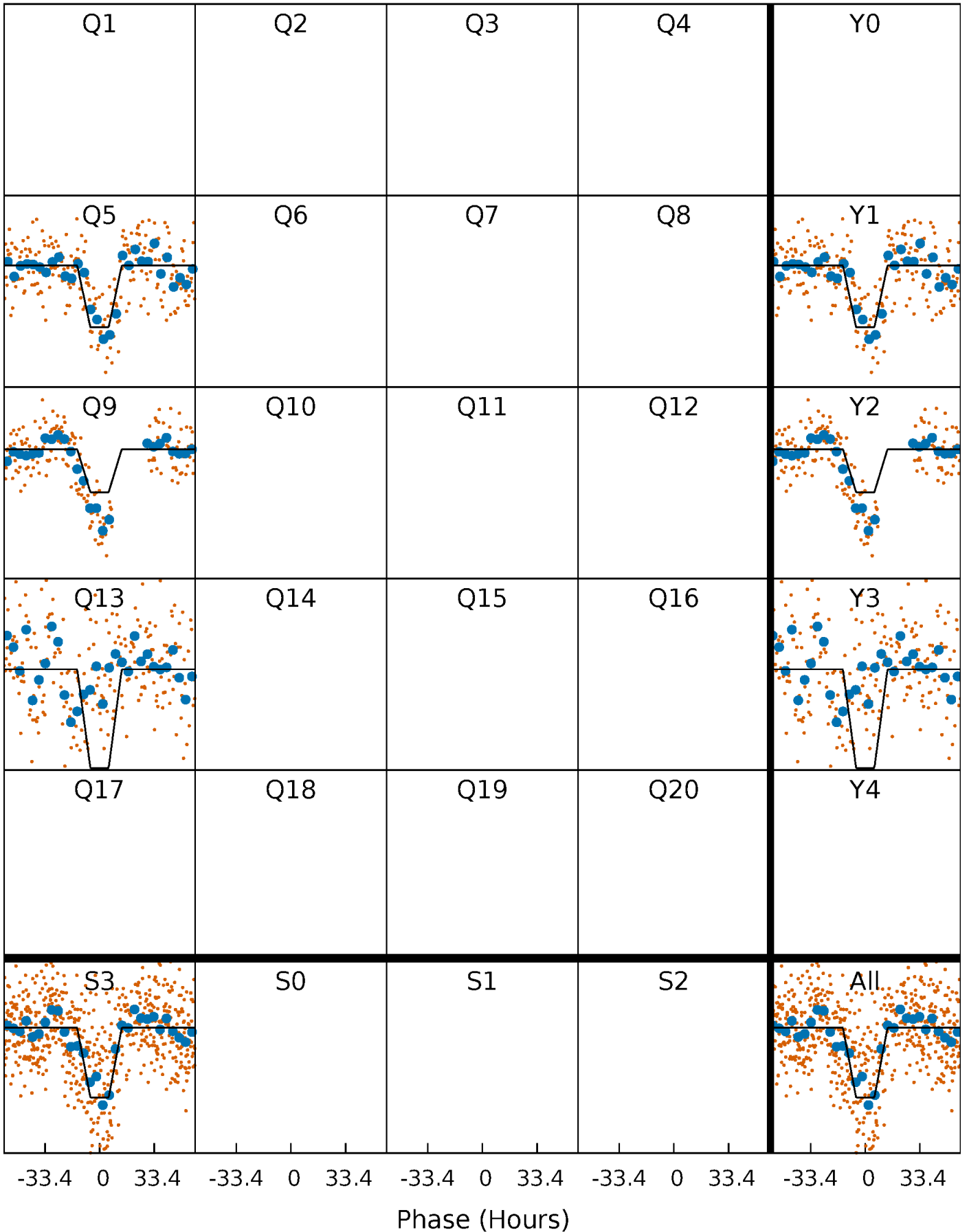
# DV Quarter-Phased Transit Curves

TCE 008687710-01 P=376.205829 Days  $T_0=133.778497$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

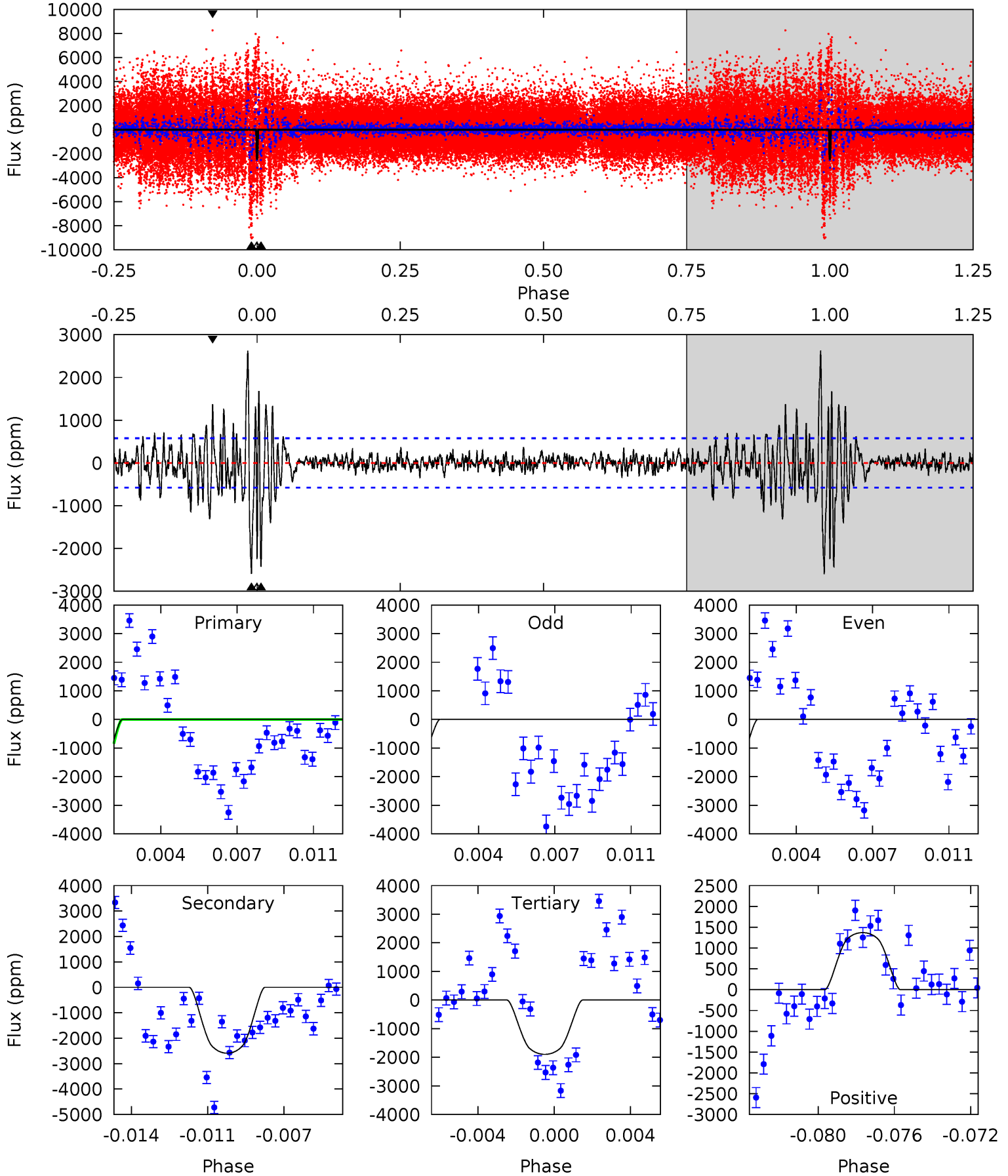
TCE 008687710-01 P=376.427042 Days  $T_0=133.460840$  (BKJD)



# DV Model-Shift Uniqueness Test

008687710-01, P = 376.205829 Days, E = 133.778497 Days

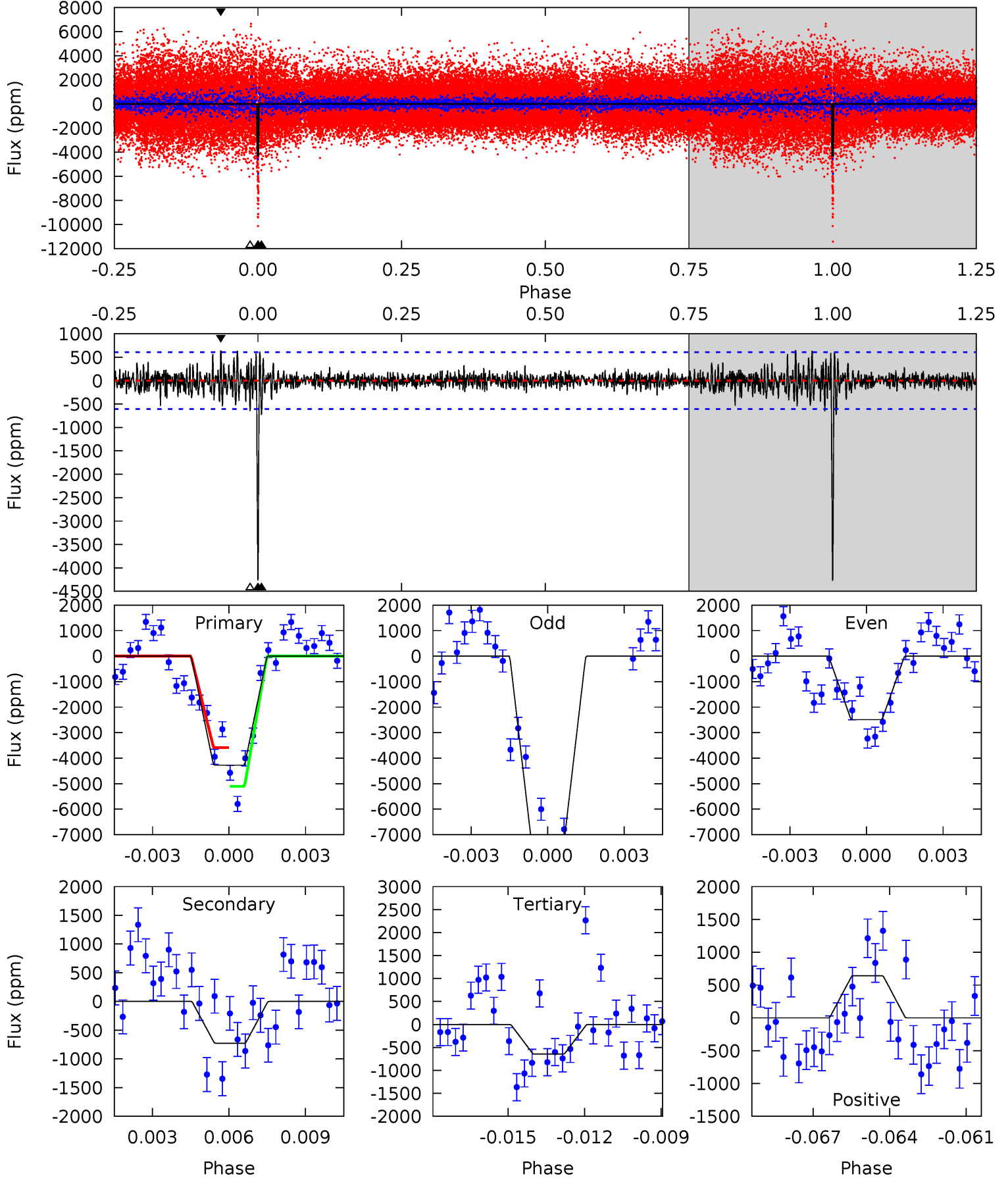
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.9	23.4	17.1	12.4	5.22	2.91	2.79	4.74	9.50	6.24	11.0	0.90	1.07	0.50	3.84



# Alt Model-Shift Uniqueness Test

008687710-01,  $P = 376.427042$  Days,  $E = 133.460840$  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
36.9	6.27	5.59	5.55	5.25	2.96	1.05	31.3	31.4	0.69	0.72	20.3	0.93	0.13	6.57



### Stellar Parameters For KIC 008687710

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$3495^{+119}_{-107}$	$0.481^{+0.294}_{-0.196}$	$-0.060^{+0.250}_{-0.200}$	$111.418^{+23.360}_{-35.039}$	$1.371^{+0.208}_{-0.312}$	$0.000^{+0.000}_{-0.000}$
	+3%/-3%	+61%/-41%	+417%/-333%	+21%/-31%	+15%/-23%	+161%/-46%
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 008687710-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-2591 \pm 111$	$916.57^{+169.36}_{-185.29}$	$2139^{+159}_{-182}$	$3040^{+149}_{-138}$	$2.205^{+1.198}_{-0.671}$
Alt.	$-726 \pm 116$	$805.92^{+178.03}_{-163.88}$	$2132^{+167}_{-170}$	$2520^{+168}_{-183}$	$0.775^{+0.438}_{-0.261}$

$T_{\text{max}}$  = 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

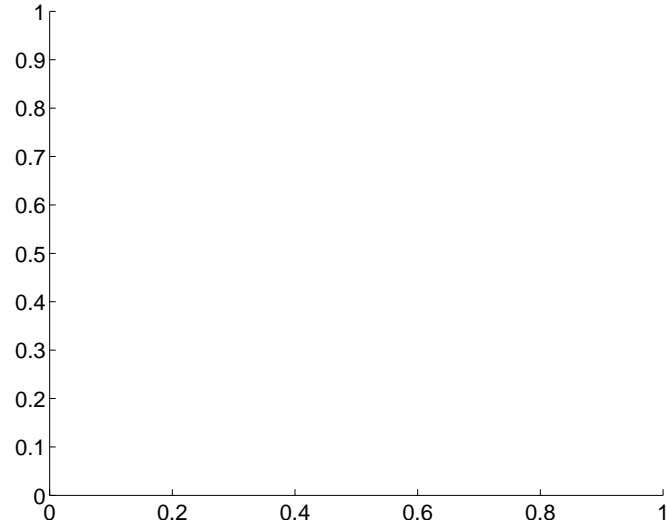
Supplemental centroid analysis for 008687710-01. Kepler magnitude: 13.81. Transit SNR 9.47

There are 0 quarters with good PRF difference image offsets

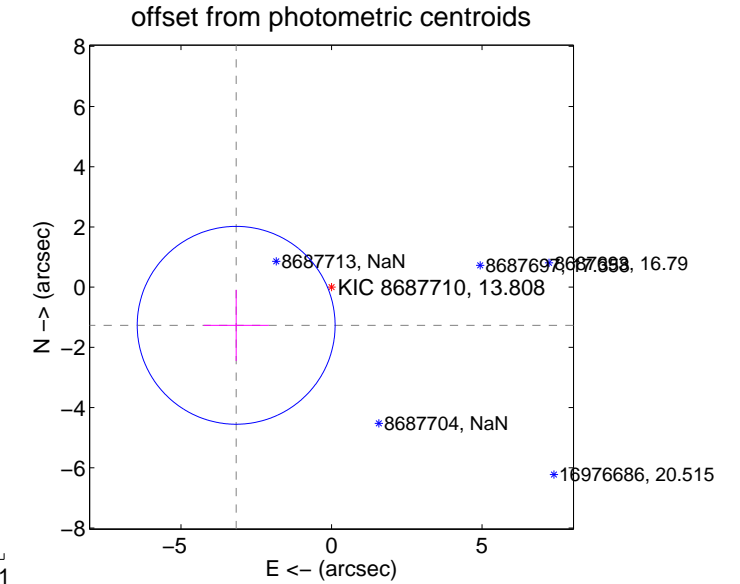
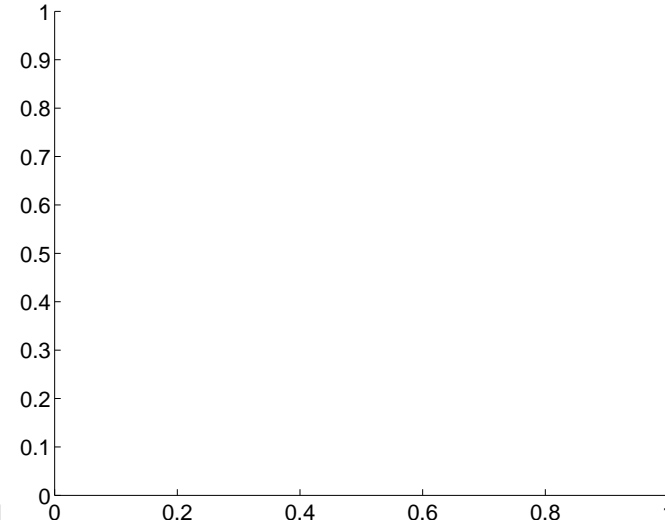
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$3.41 \pm 1.10$	3.11	$3.17 \pm 1.08$	$-1.27 \pm 1.18$

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC



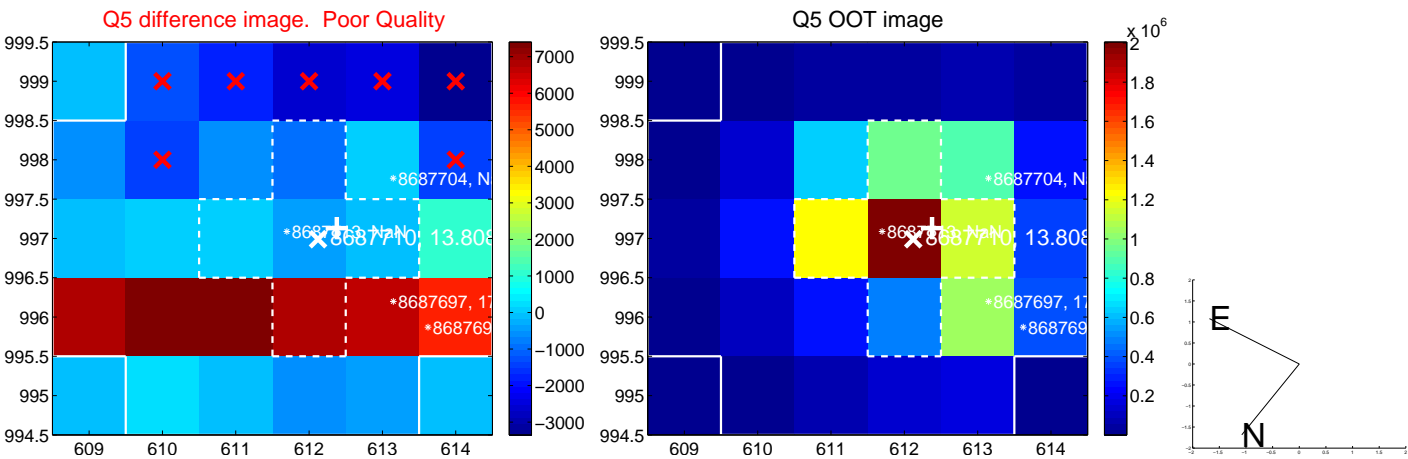
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



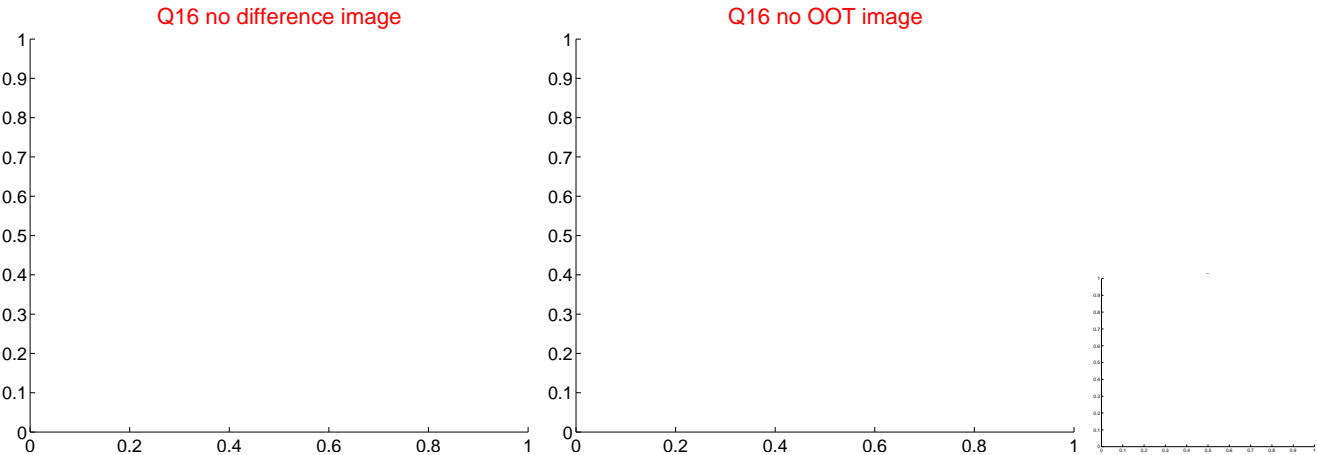
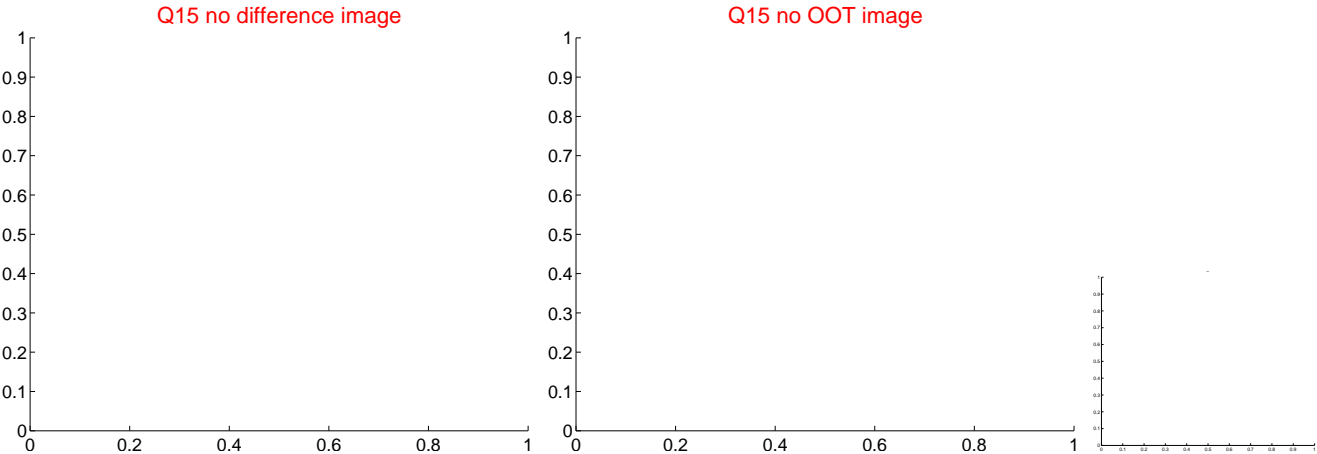
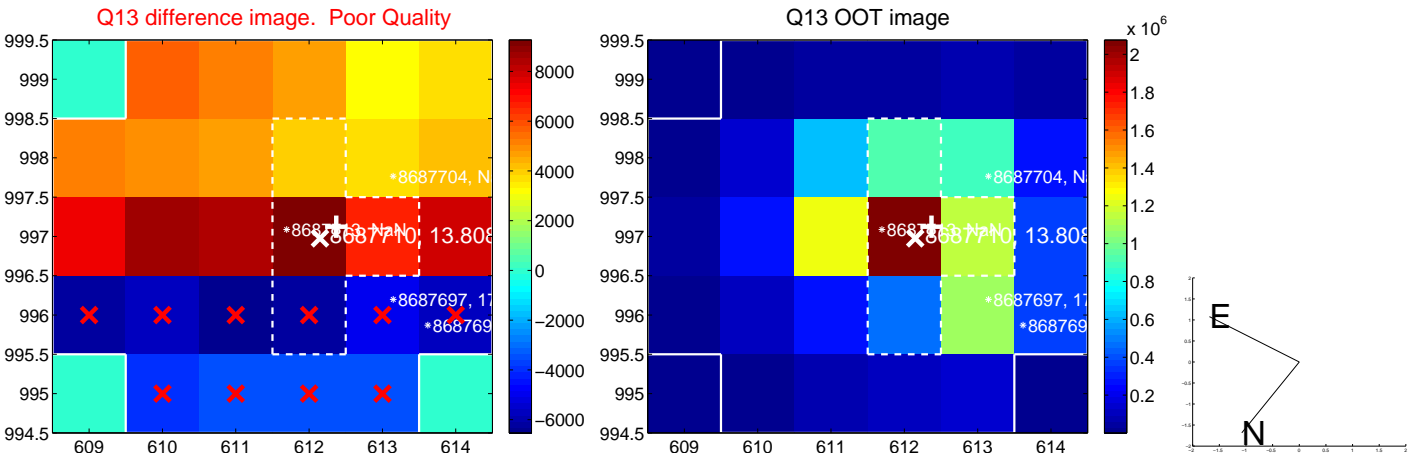
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



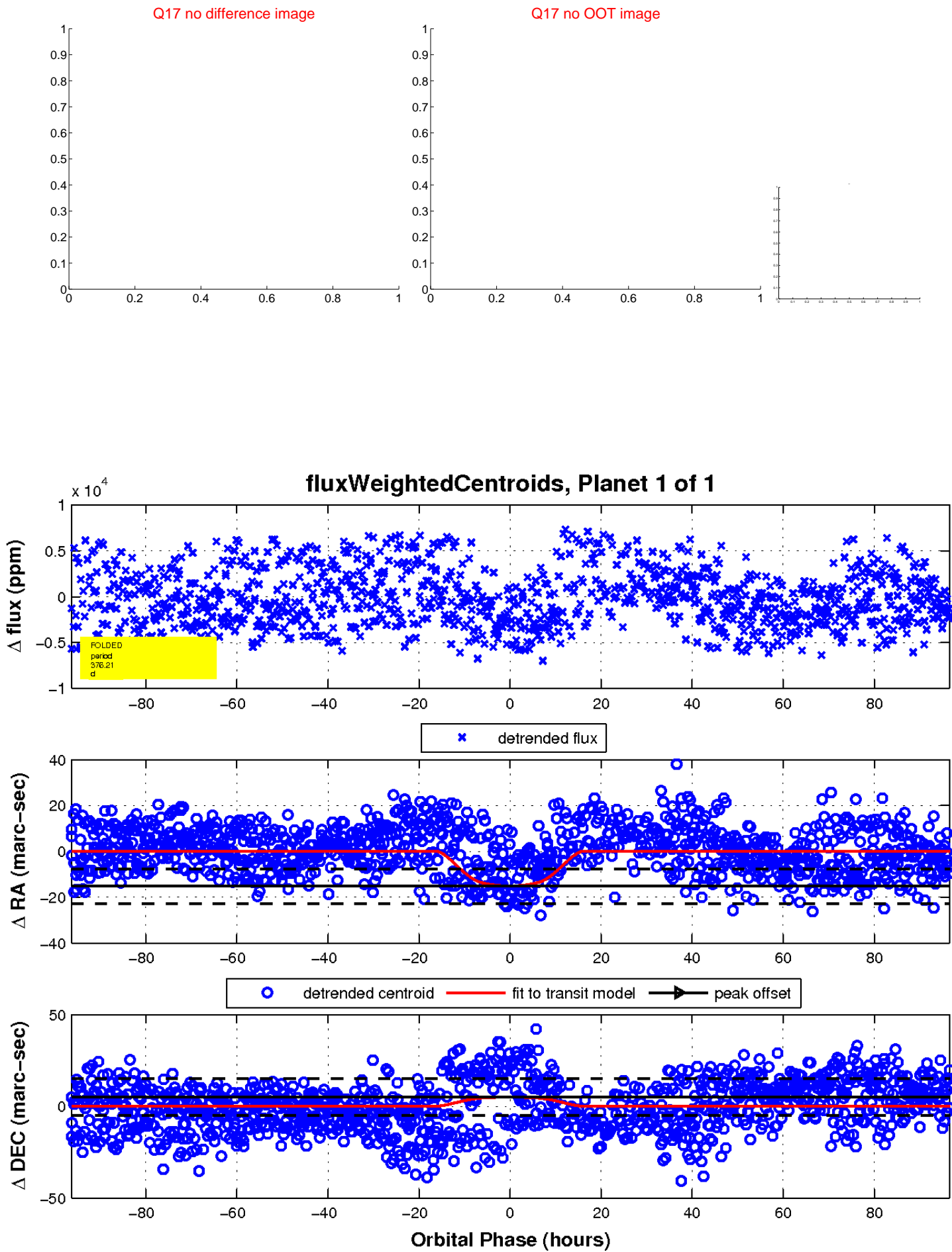
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

