

# KIC 008685827

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008685827-01	OBS	No	577.162959	196.136274	487.1	8.431	7.8	8.0	0.79	5776	1.88	0.37

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008685827-01	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.

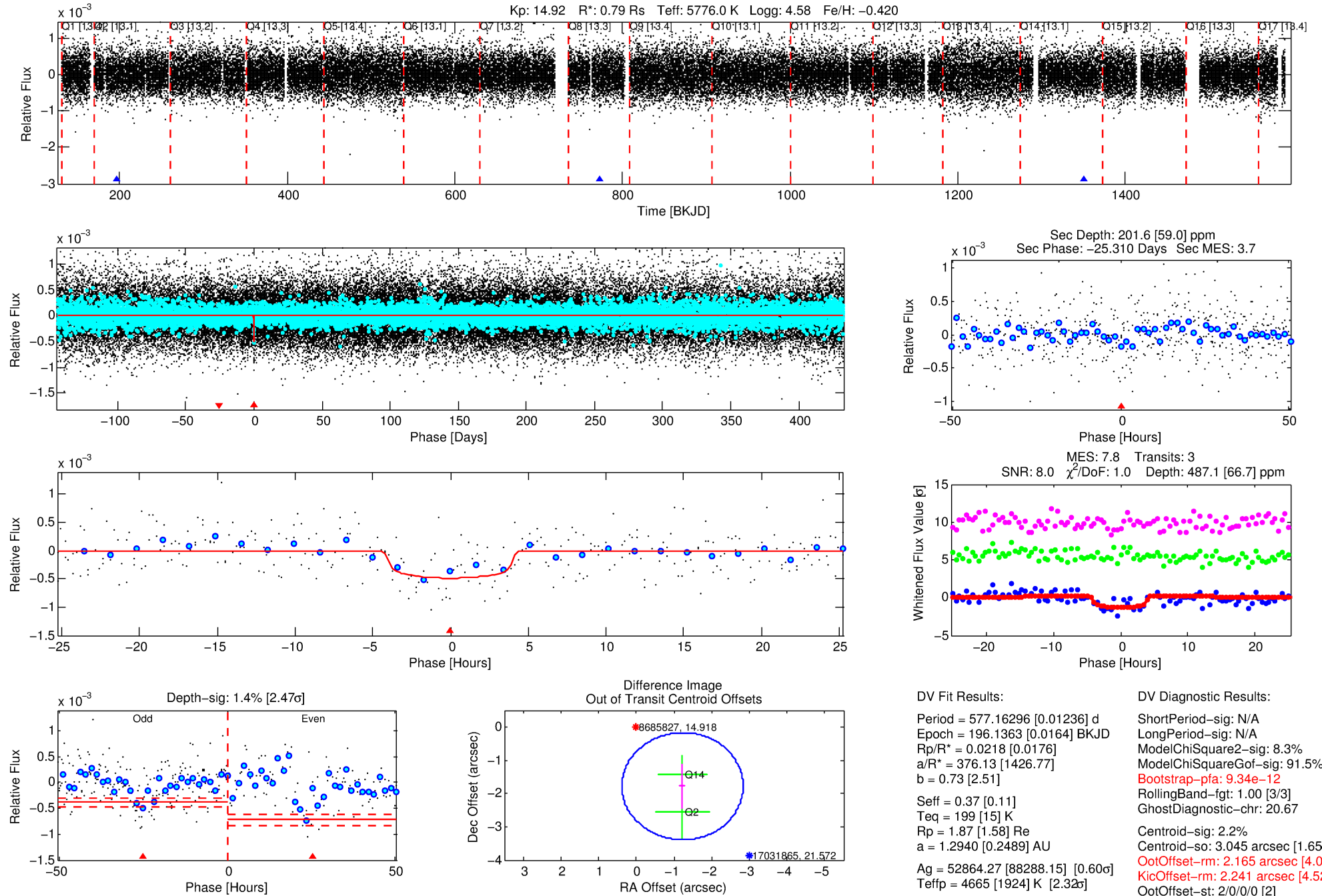
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008685827-01

No Significant Match Found

# DV One-Page Summary

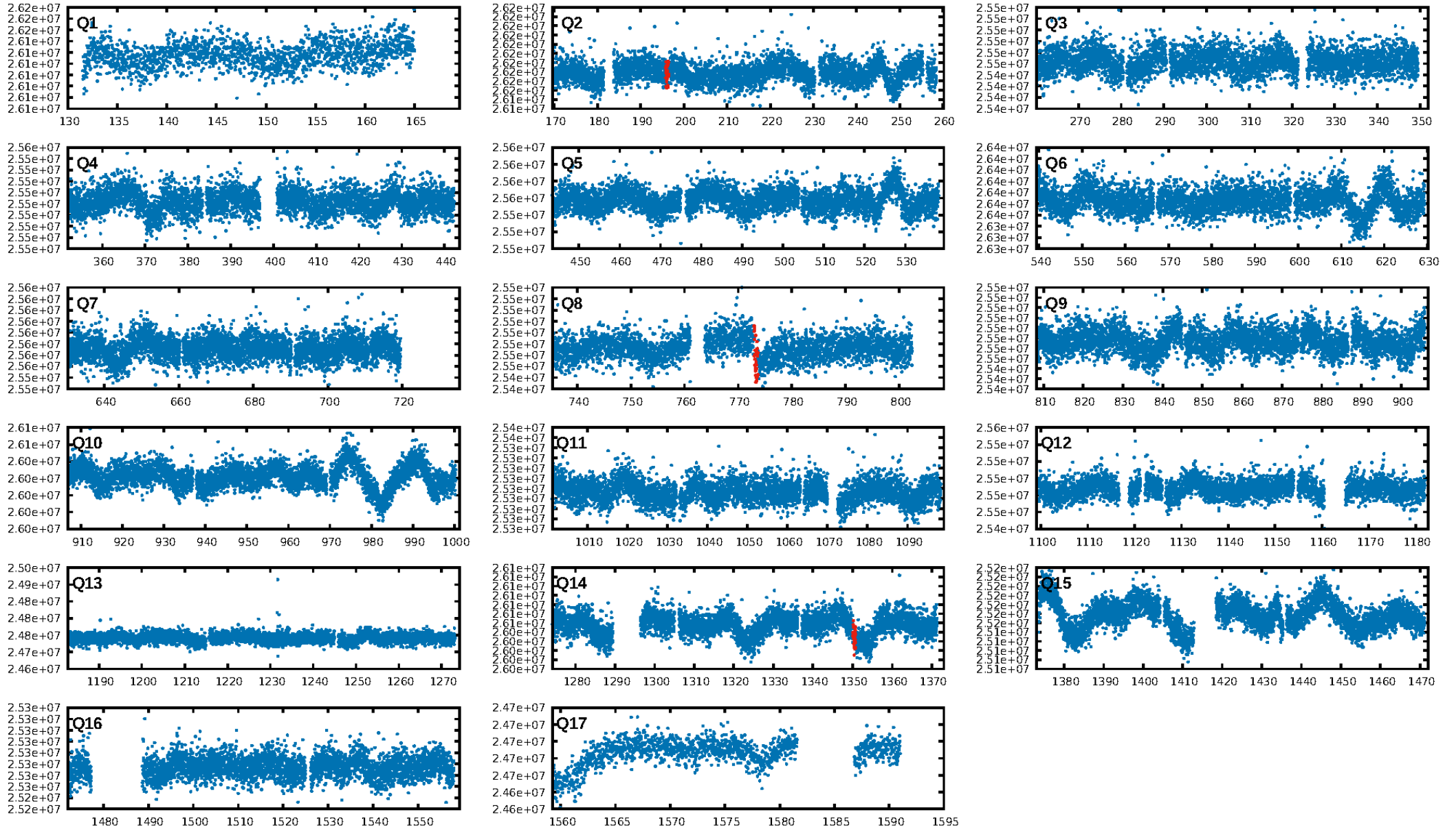
KIC: 8685827 Candidate: 1 of 1 Period: 577.163 d



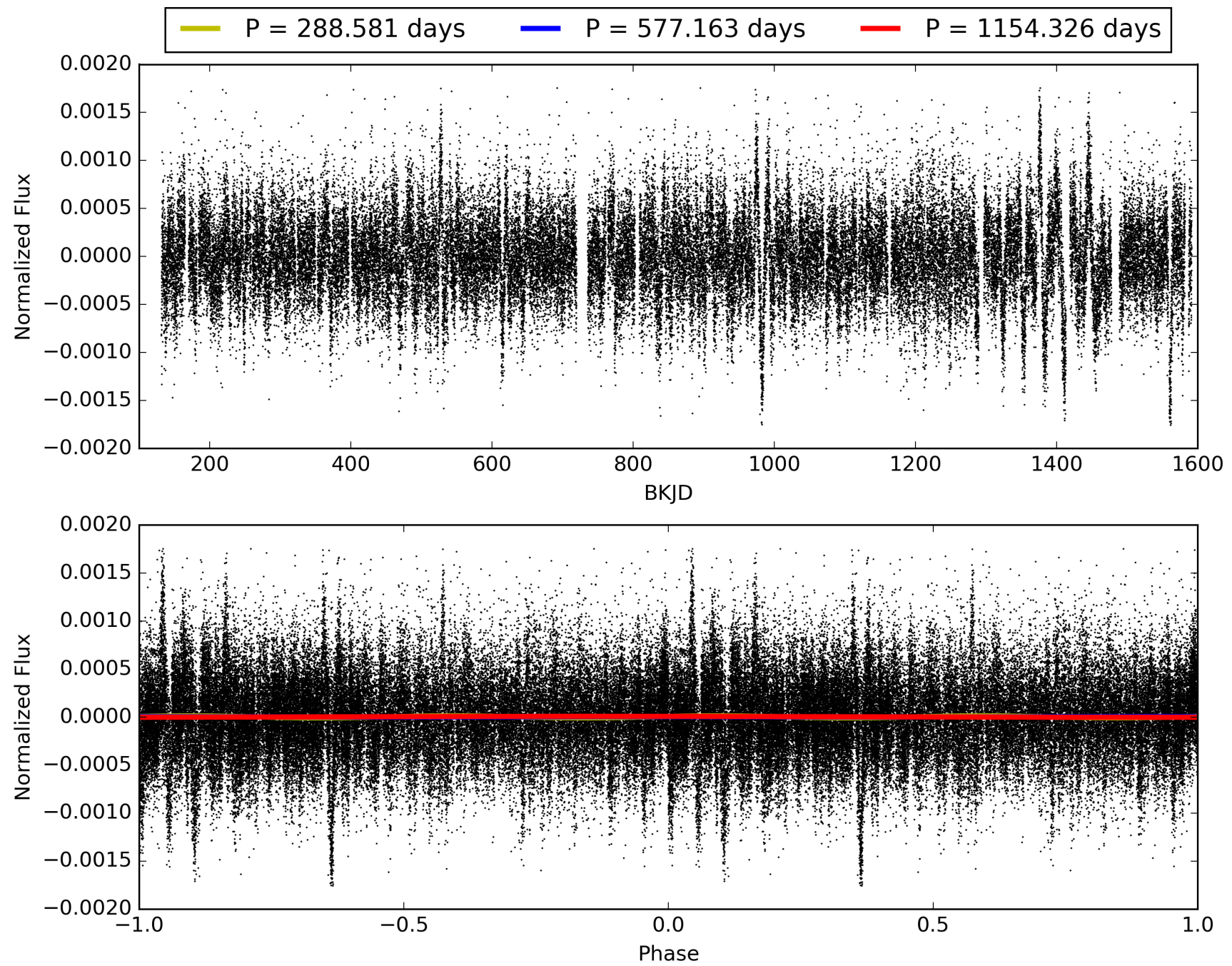
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:37:00 Z

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

# TCE 008685827-01, PDC Light Curves

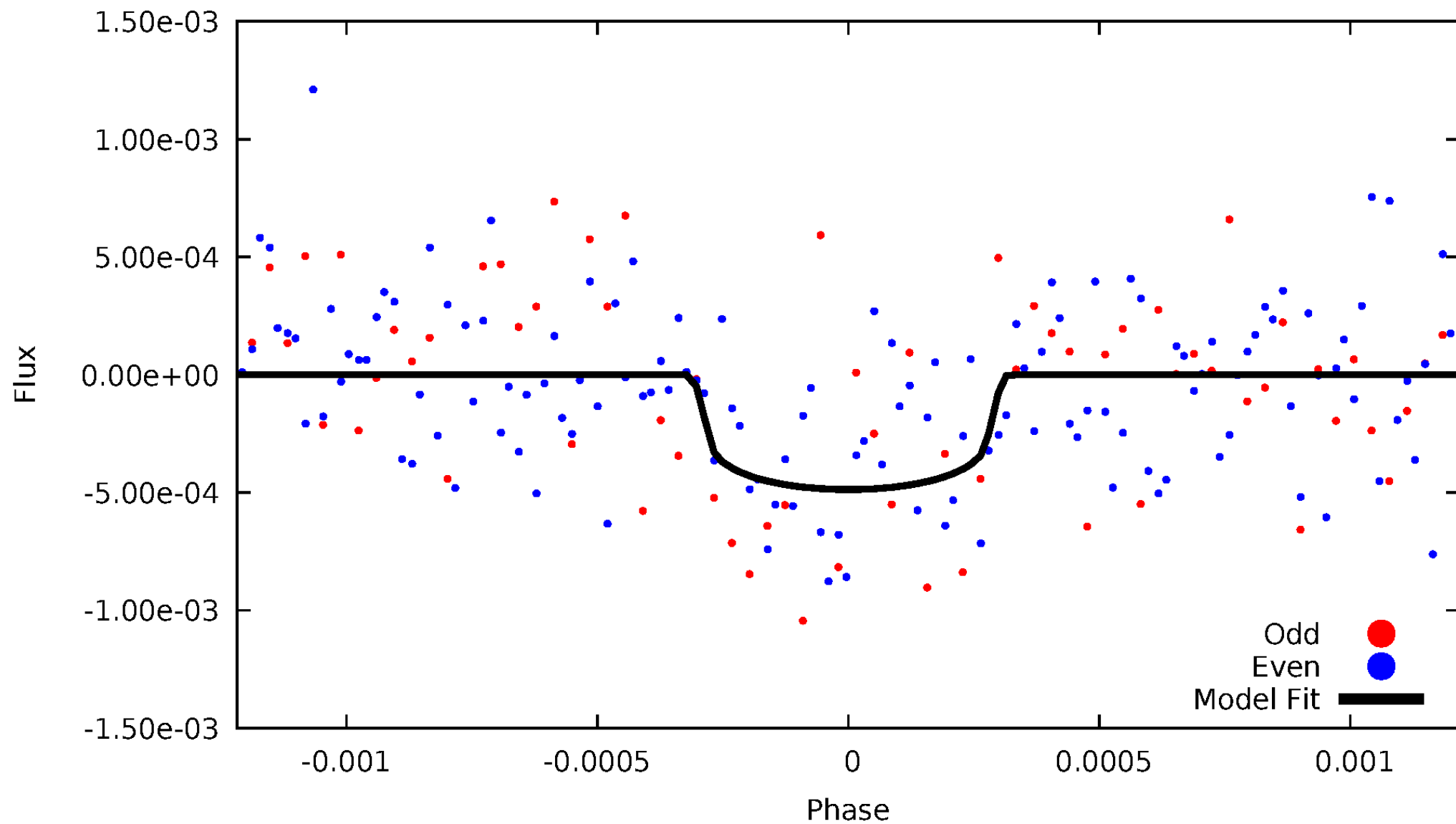


TCE 008685827-01



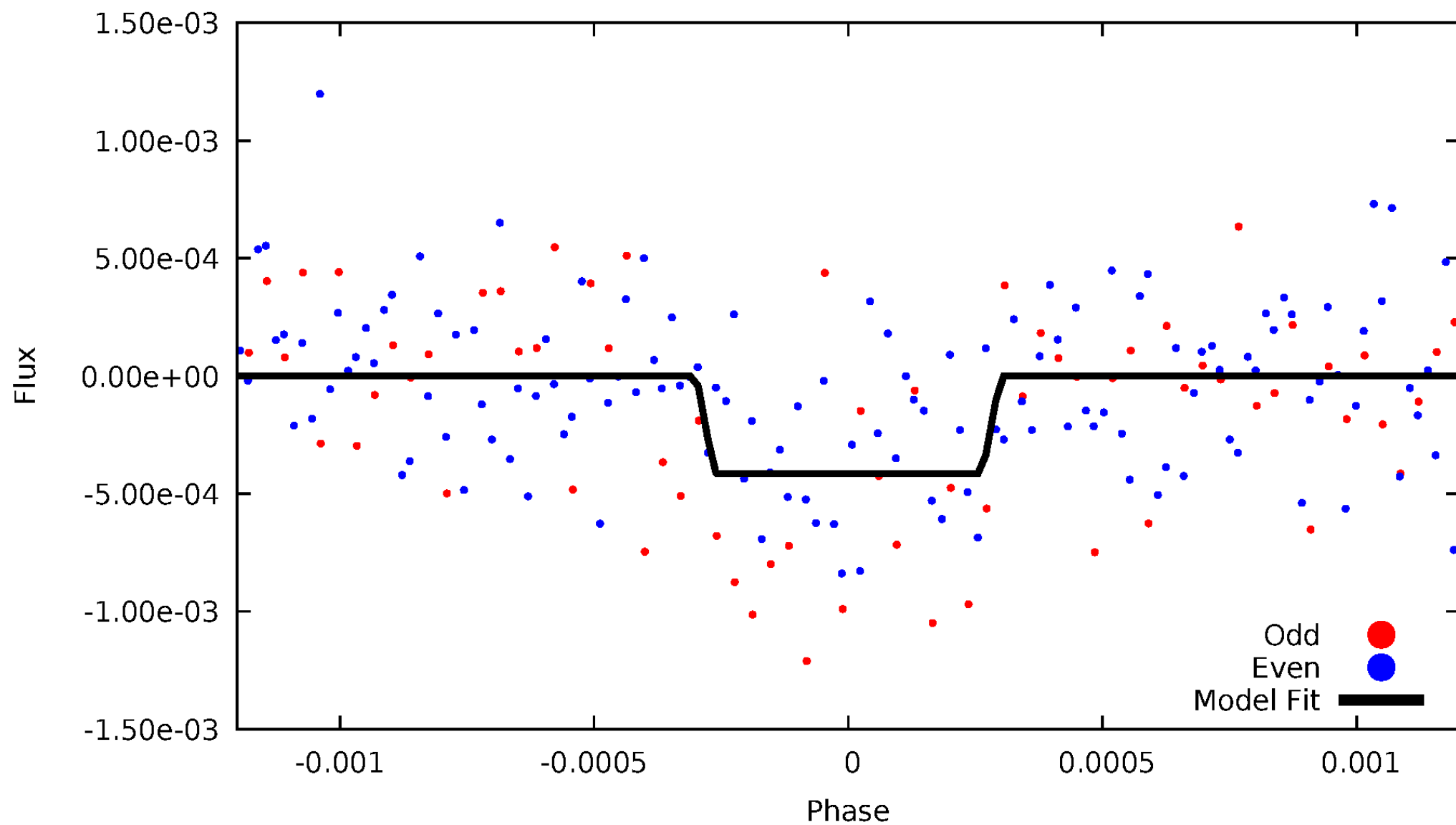
# DV Odd/Even

TCE 008685827-01



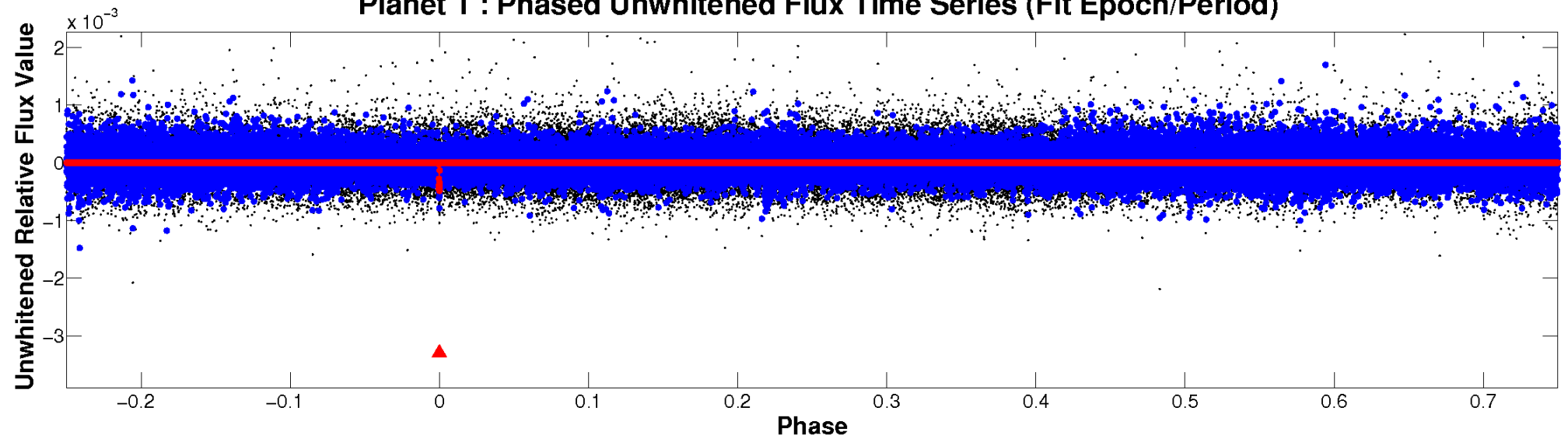
# ALT Odd/Even

TCE 008685827-01

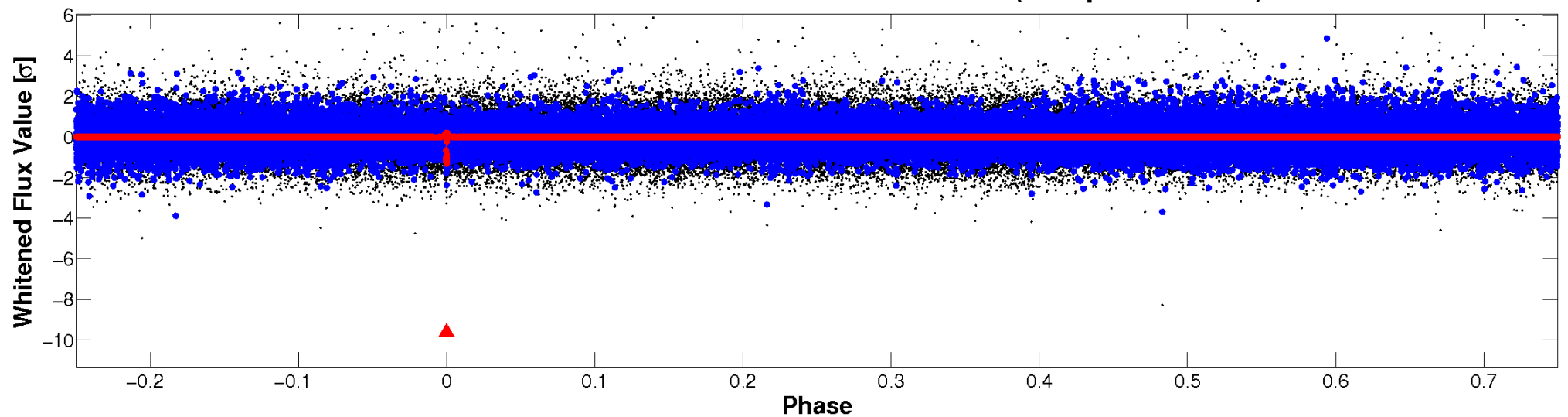


# Non-Whitened Vs. Whitened Light Curve

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



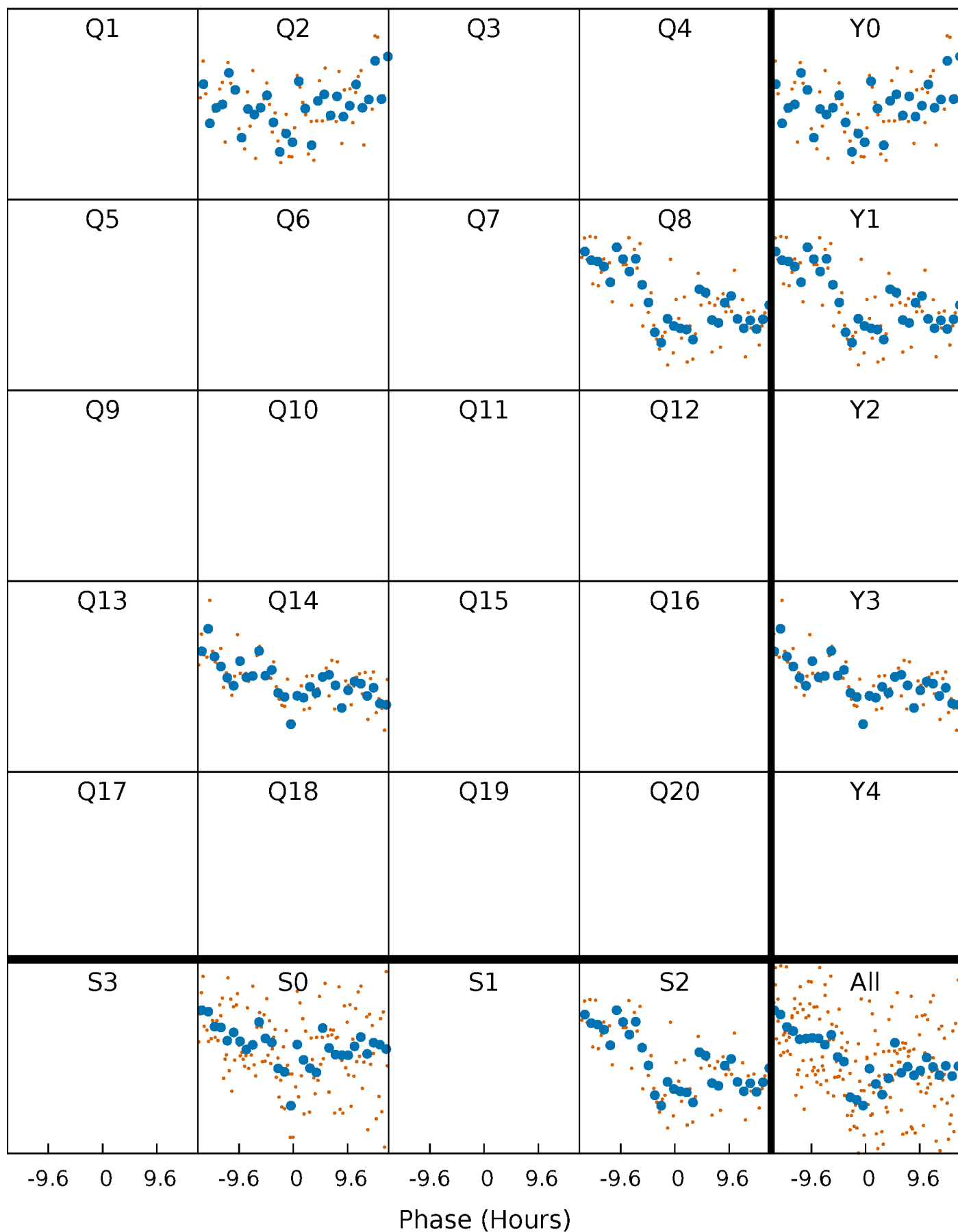
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

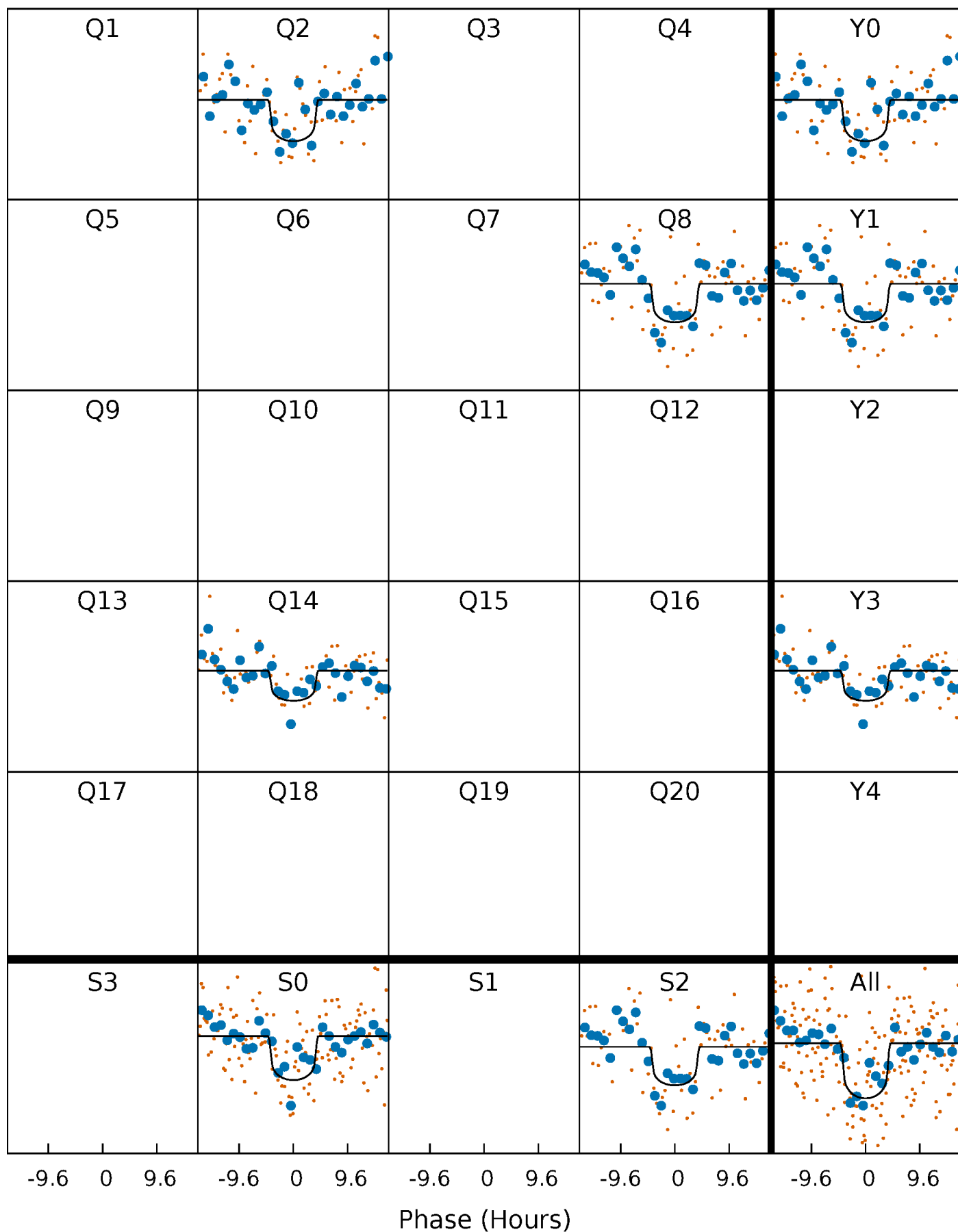
TCE 008685827-01 P=577.162959 Days  $T_0=196.136274$  (BKJD)





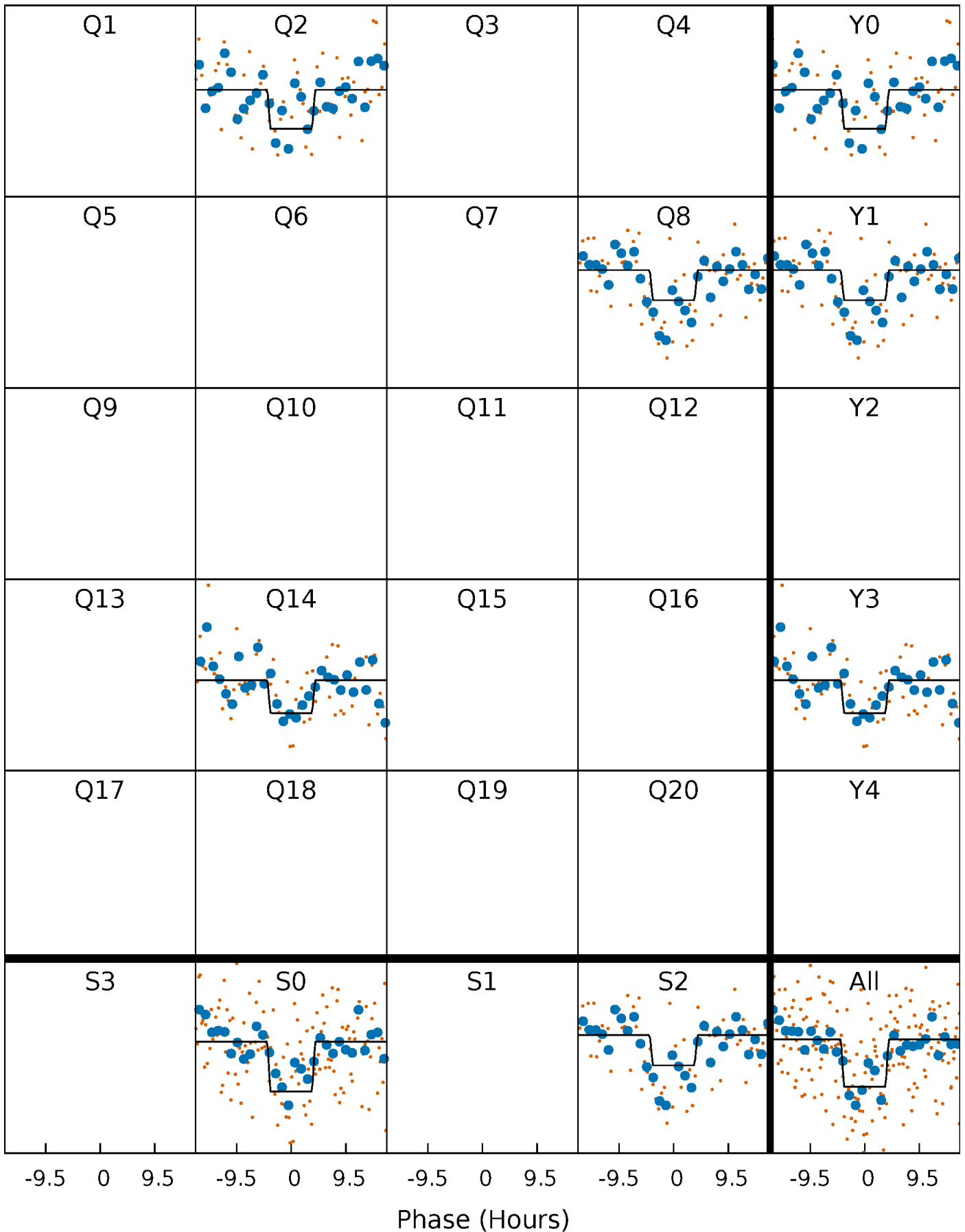
# DV Quarter-Phased Transit Curves

TCE 008685827-01 P=577.162959 Days  $T_0=196.136274$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

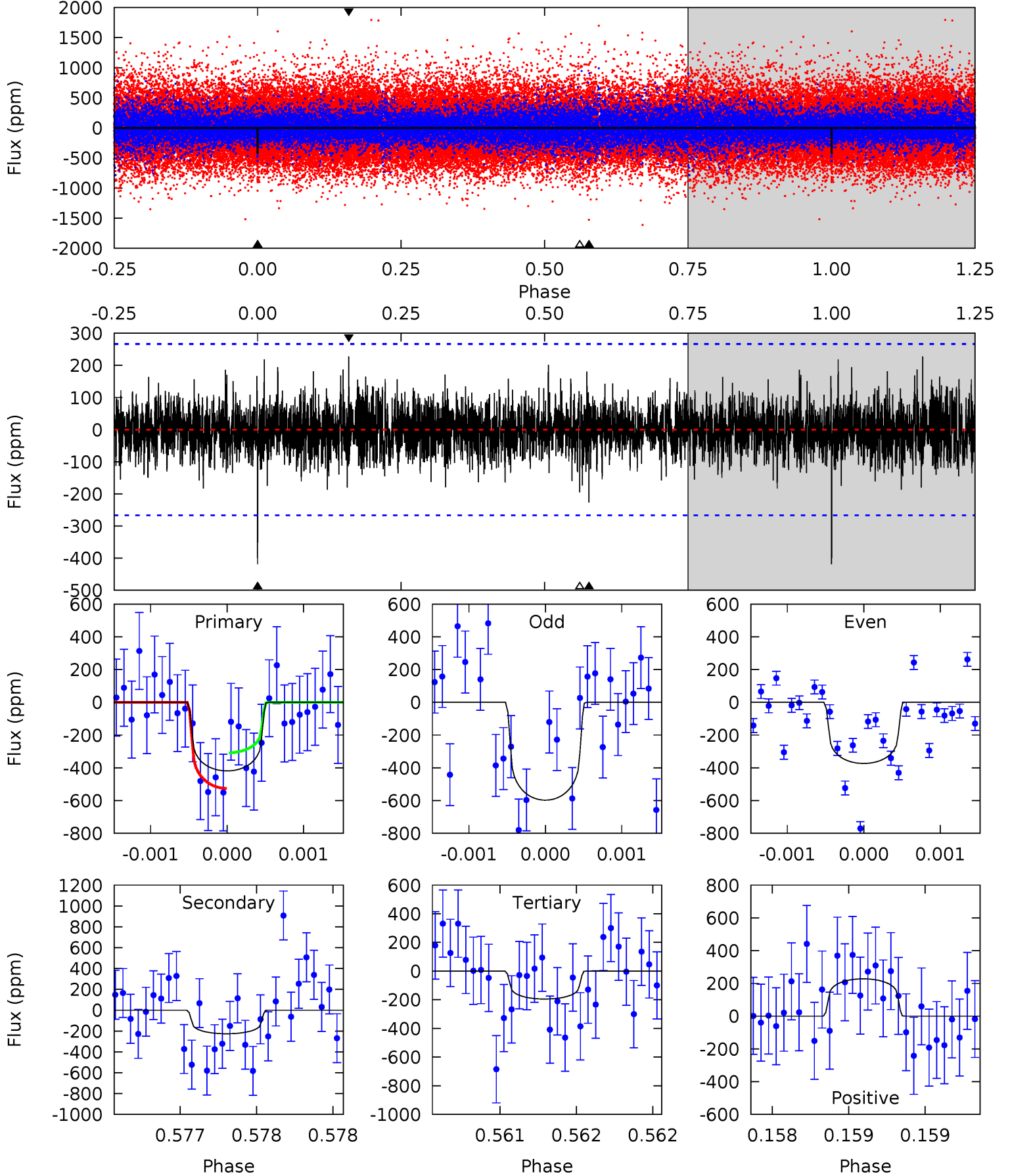
TCE 008685827-01 P=577.152713 Days  $T_0=196.141481$  (BKJD)



# DV Model-Shift Uniqueness Test

008685827-01, P = 577.162959 Days, E = 196.136274 Days

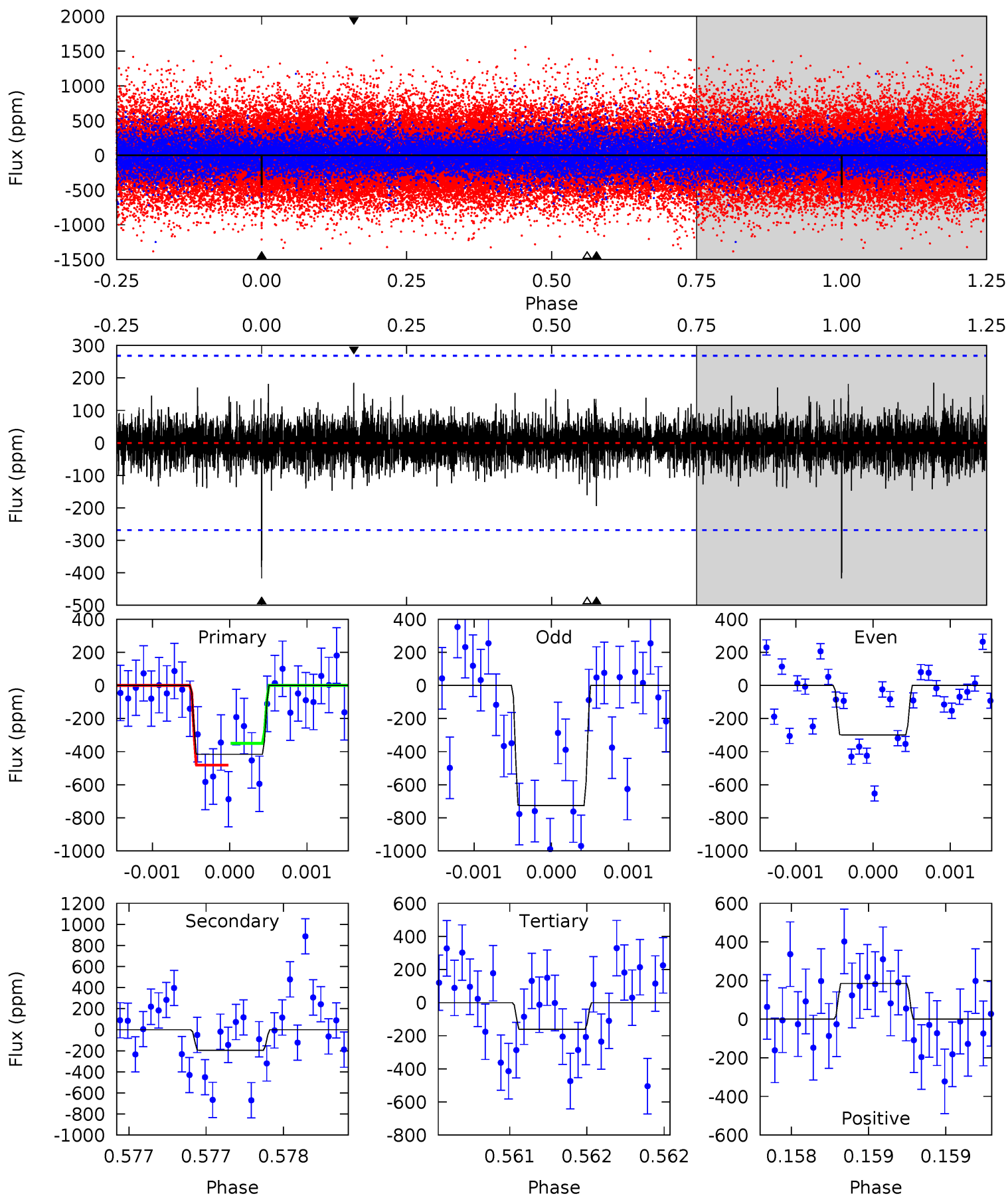
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.70	4.70	4.05	4.73	5.54	3.42	1.11	4.65	3.97	0.65	-0.03	2.14	1.08	0.35	2.26



# Alt Model-Shift Uniqueness Test

008685827-01, P = 577.152713 Days, E = 196.141481 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
8.60	4.01	3.32	3.82	5.54	3.43	0.84	5.28	4.78	0.69	0.19	4.09	1.38	0.31	1.36



### Stellar Parameters For KIC 008685827

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5776^{+155}_{-155}$	$4.582^{+0.038}_{-0.152}$	$-0.420^{+0.300}_{-0.300}$	$0.789^{+0.181}_{-0.060}$	$0.879^{+0.087}_{-0.096}$	$2.517^{+0.492}_{-1.095}$
	+3%/-3%	+1%/-3%	+71%/-71%	+23%/-8%	+10%/-11%	+20%/-44%
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 008685827-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-226 \pm 48$	$2.06^{+1.60}_{-1.19}$	$283^{+15}_{-10}$	$4711^{+2419}_{-843}$	$45877^{+214505}_{-30866}$
Alt.	$-194 \pm 48$	$2.17^{+1.51}_{-1.25}$	$283^{+17}_{-11}$	$4467^{+2204}_{-725}$	$33720^{+169936}_{-21496}$

$T_{max}$  = 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

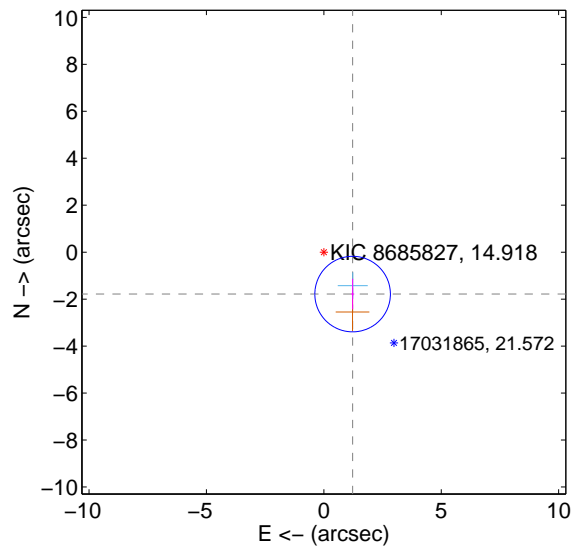
Supplemental centroid analysis for 008685827-01. Kepler magnitude: 14.92. Transit SNR 7.97

There are 1 quarters with good PRF difference image offsets

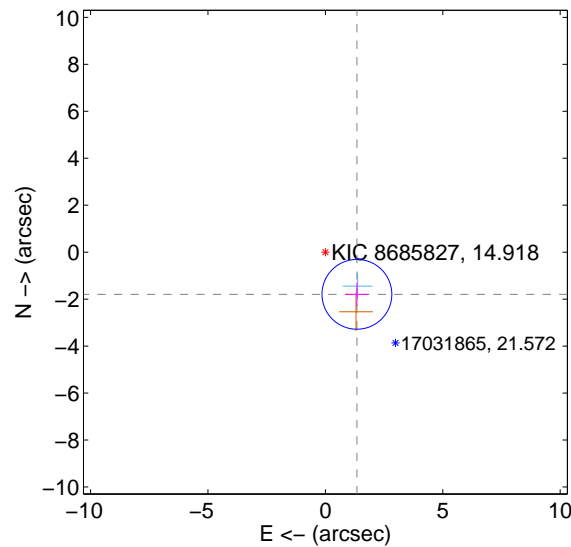
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.165 \pm 0.536$	4.04	$-1.226 \pm 0.067$	$-1.785 \pm 0.653$
PRF-fit source offset from KIC position	$2.241 \pm 0.495$	4.52	$-1.342 \pm 0.484$	$-1.794 \pm 0.502$
photometric centroid source offset	$3.04 \pm 1.85$	1.65	$1.34 \pm 1.84$	$2.73 \pm 1.85$

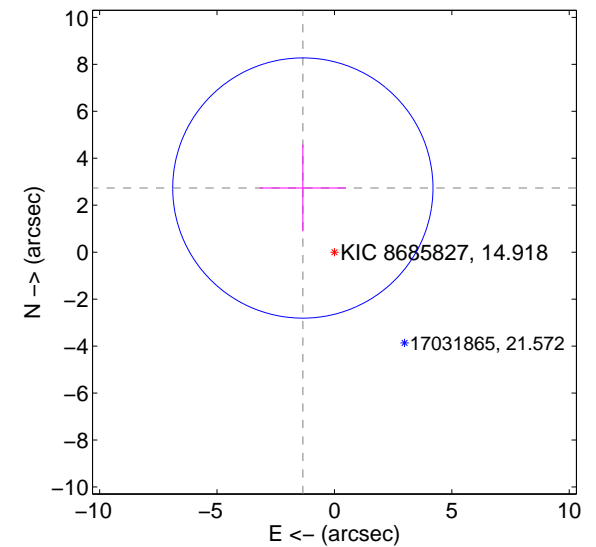
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

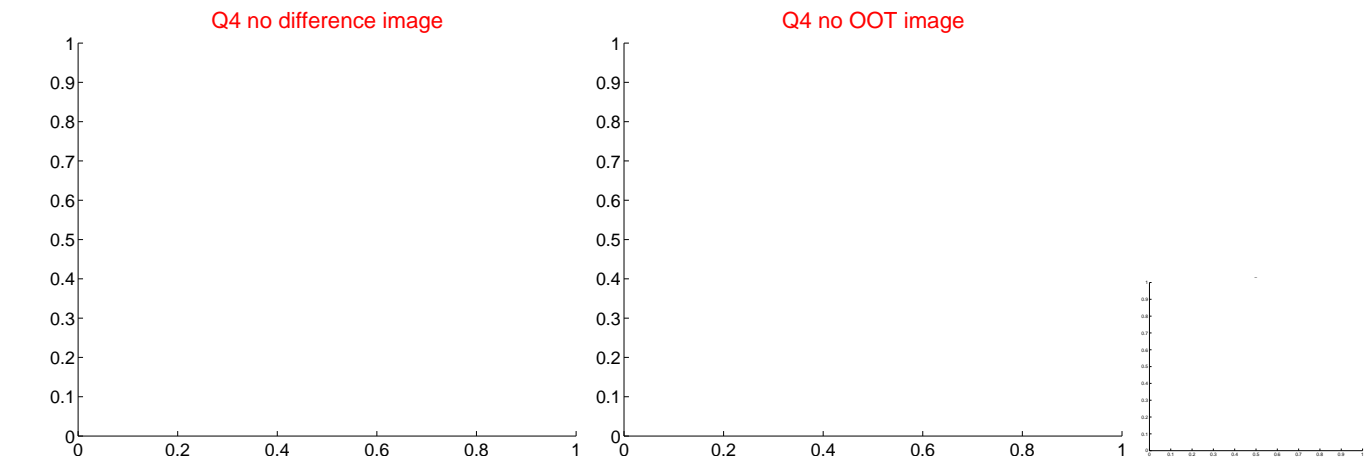
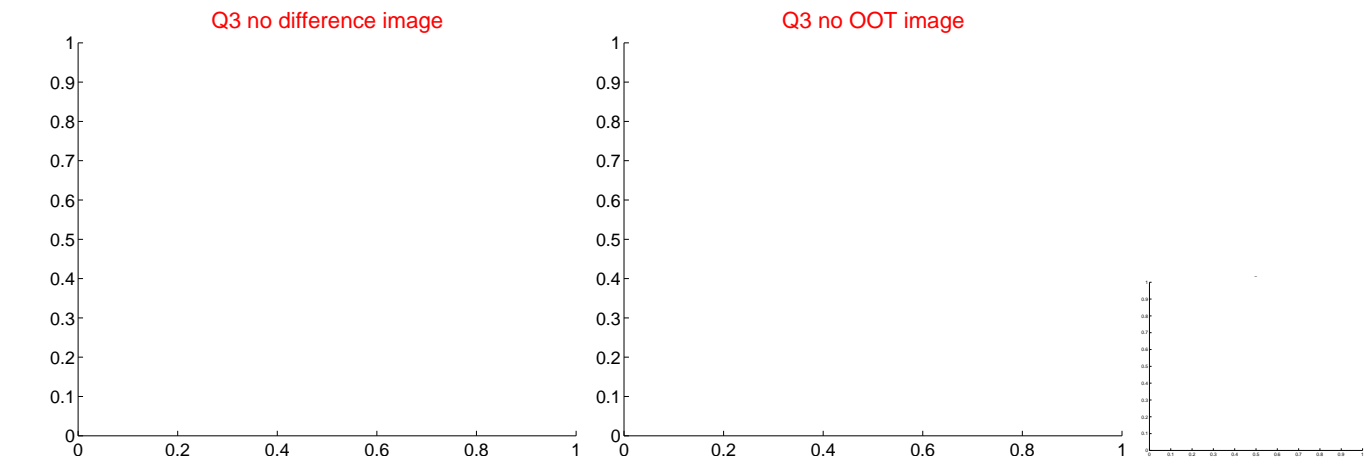
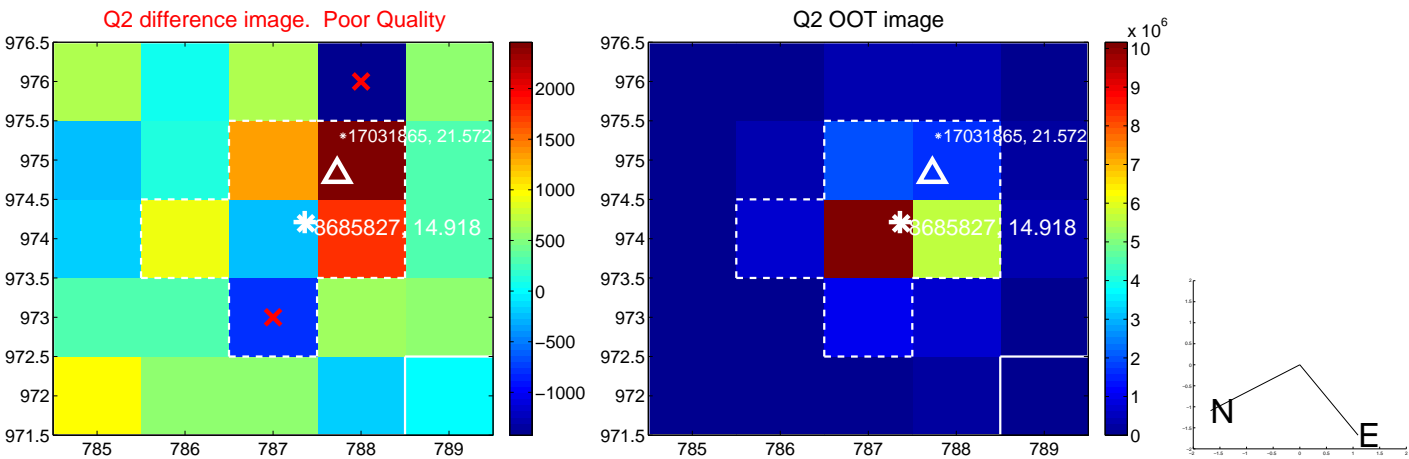
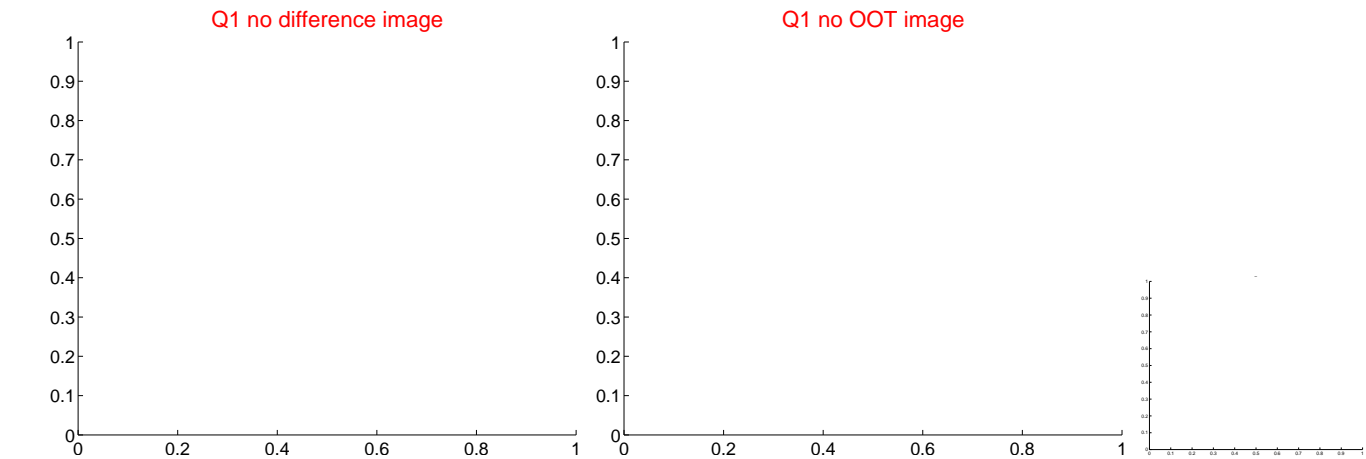


offset from photometric centroids



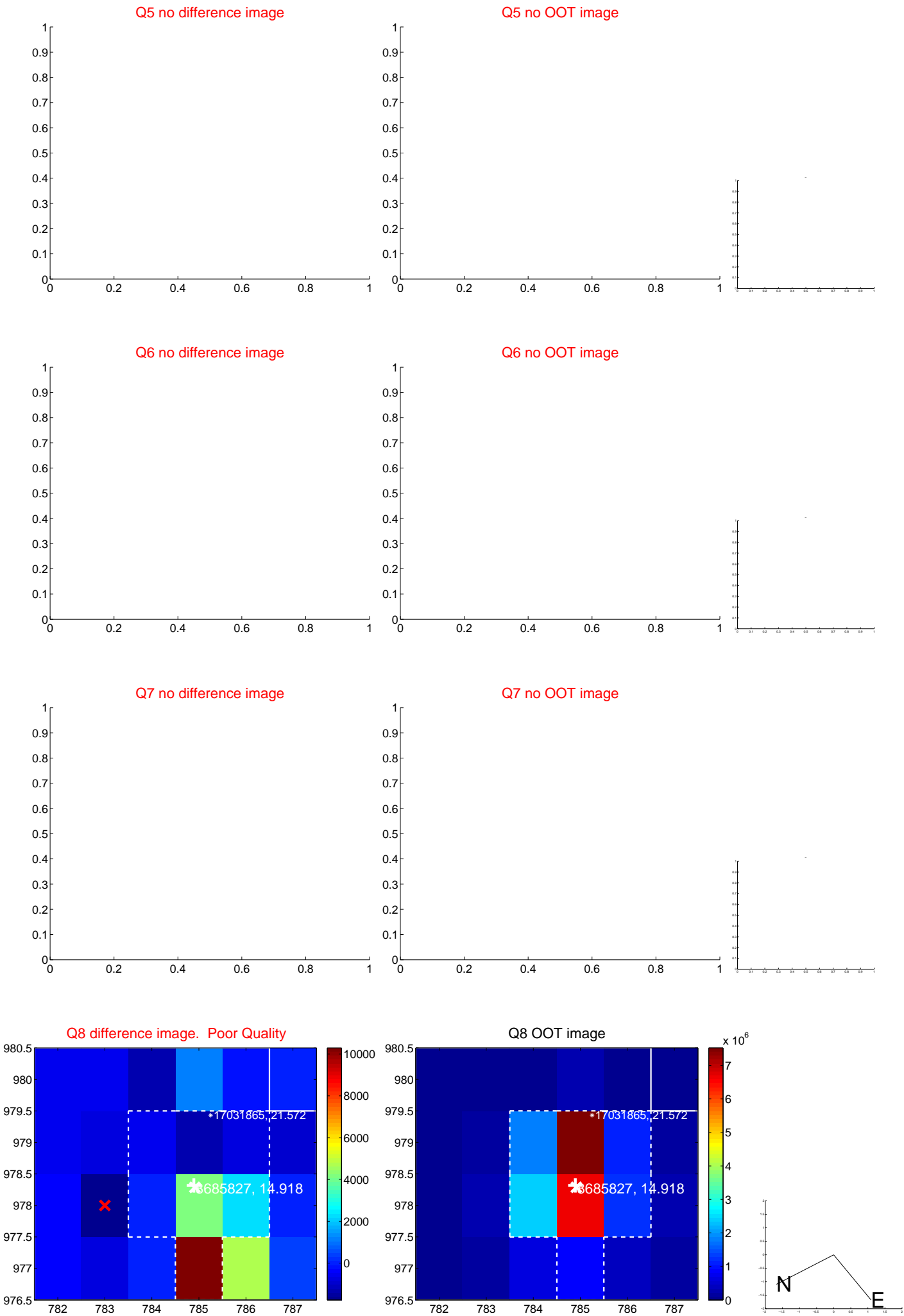
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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





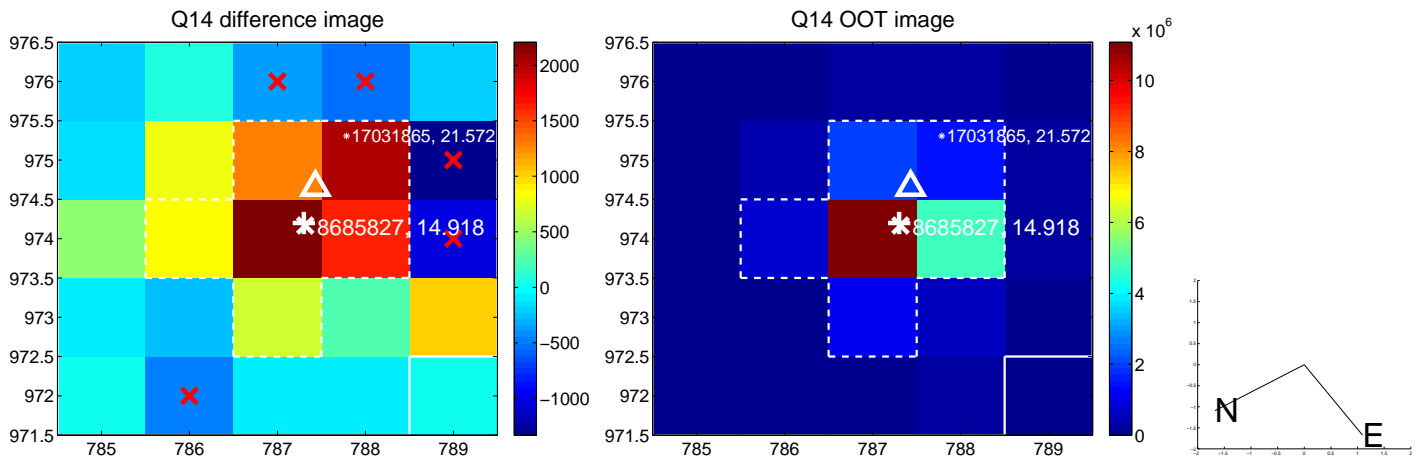
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



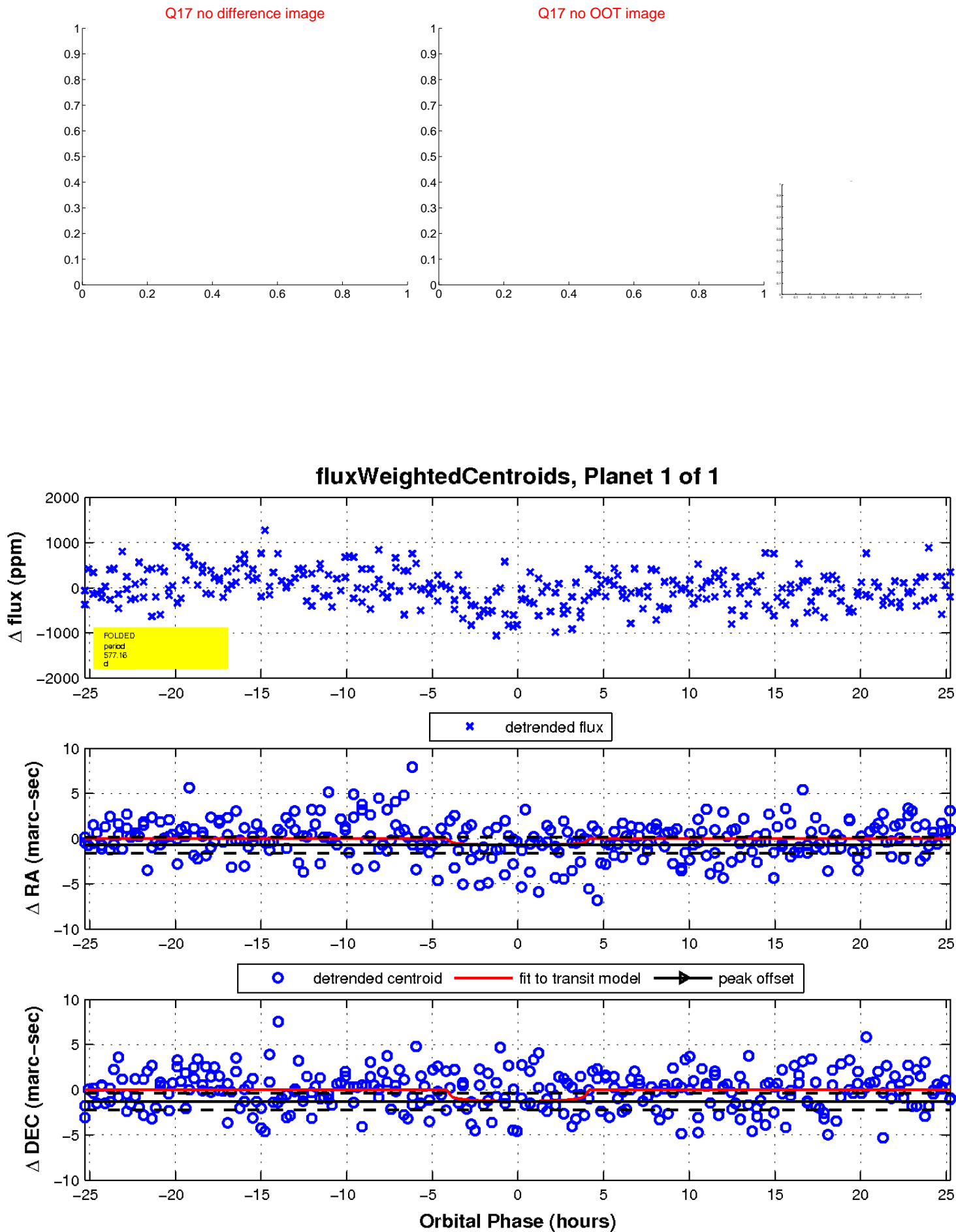
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

