

# KIC 005185328

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005185328-01	OBS	No	518.051759	159.311955	162.8	15.919	7.5	7.7	1.54	6353	2.14	2.02

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005185328-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—CENT_FEW_DIFFS

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

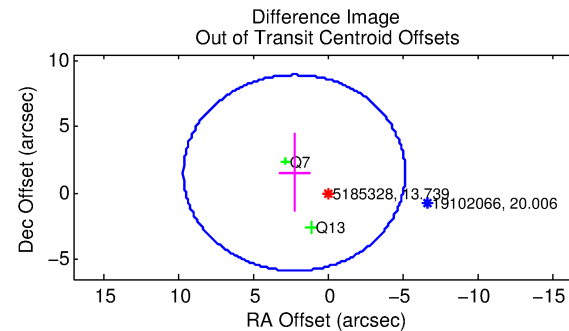
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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 005185328-01

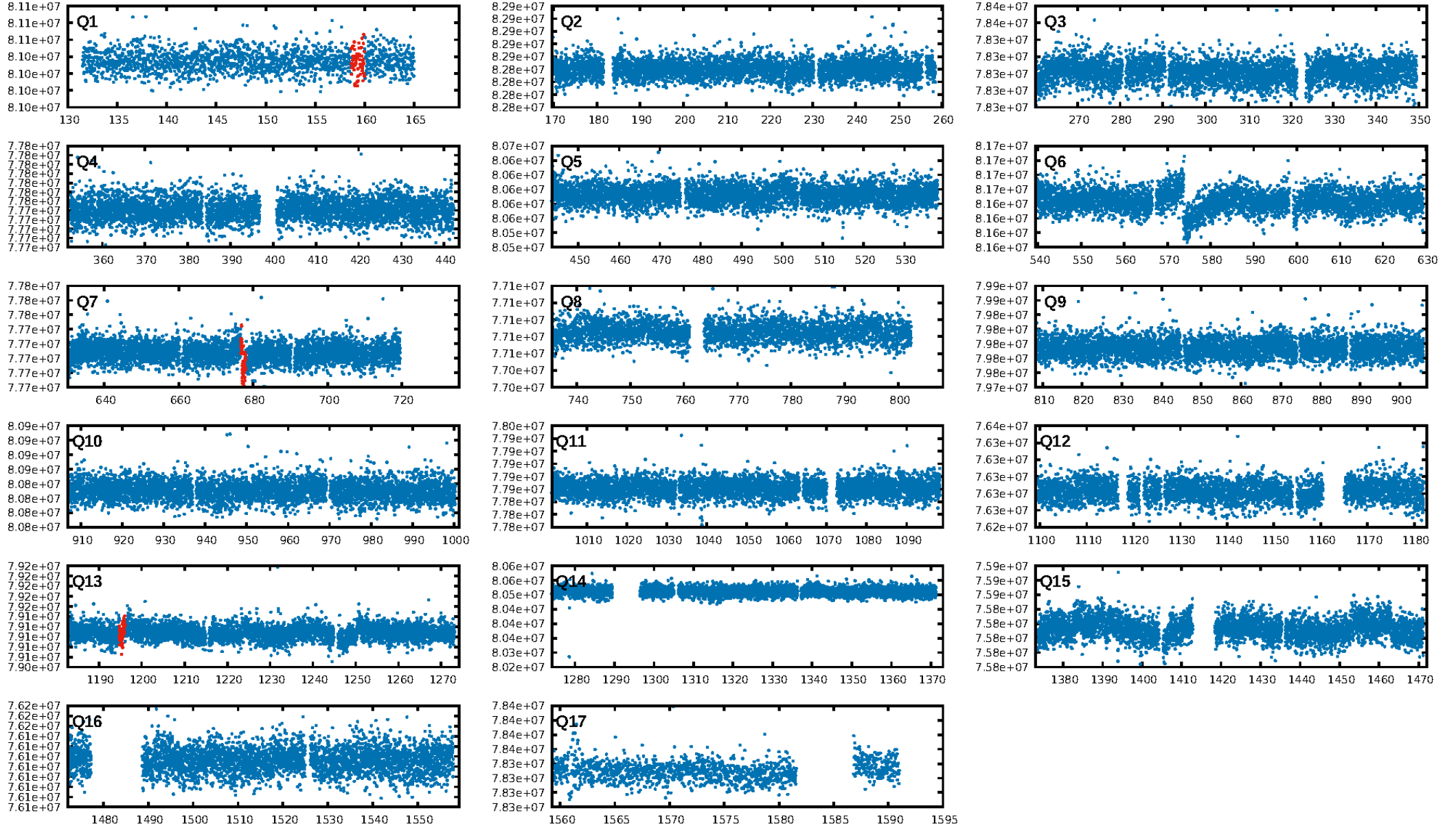
No Significant Match Found

## KIC: 5185328    Candidate: 1 of 1    Period: 518.052 d

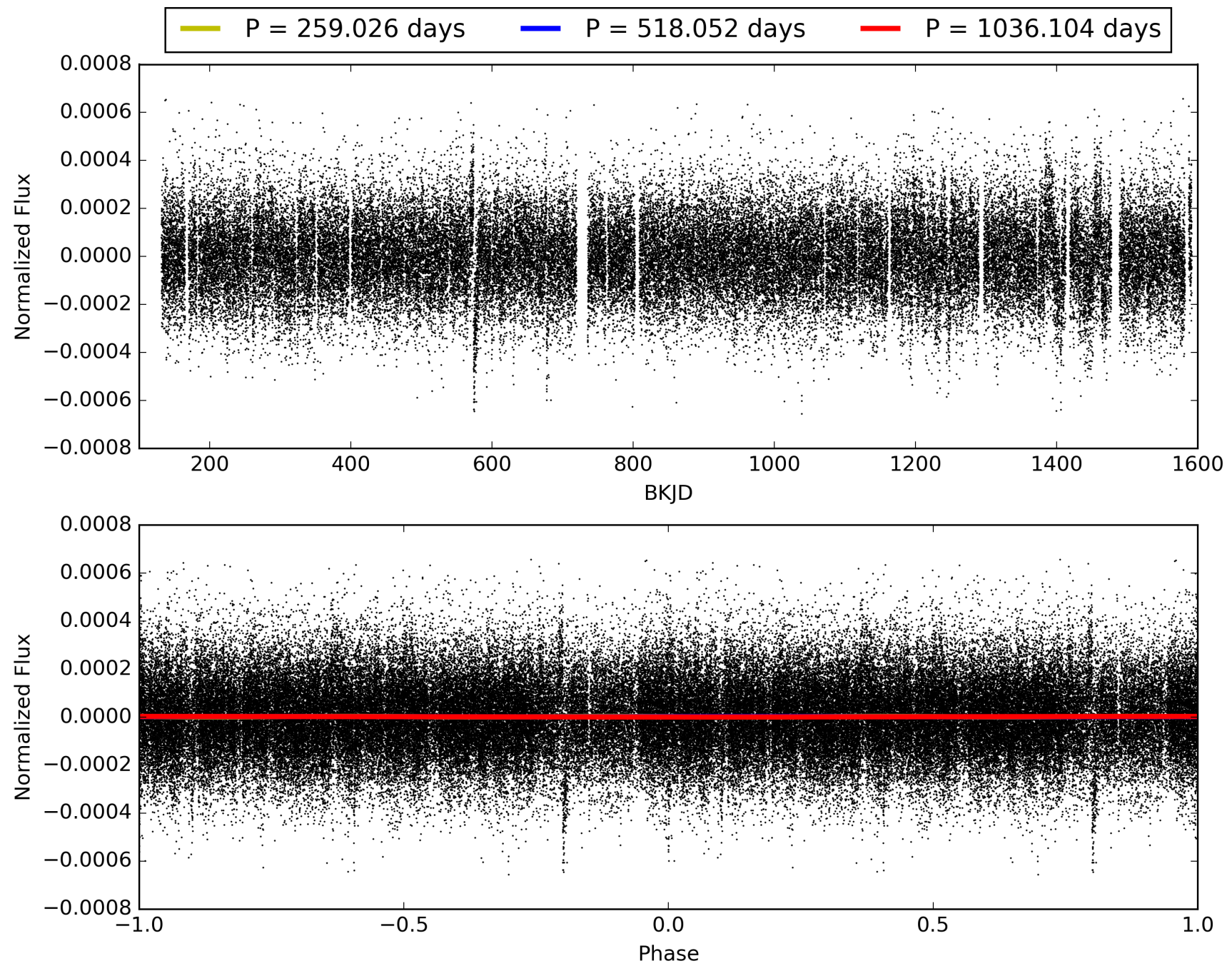


ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 78.8%  
Bootstrap-pfa: 1.54e-11  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: 3.174  
  
Centroid-sig: 1.0%  
Centroid-so: 3.087 arcsec [2.15σ]  
OotOffset-rm: 2.693 arcsec [1.09σ]  
KicOffset-rm: 2.736 arcsec [1.81σ]  
OotOffset-st: 0/1/0/1 [2]  
KicOffset-st: 0/1/0/1 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

# TCE 005185328-01, PDC Light Curves

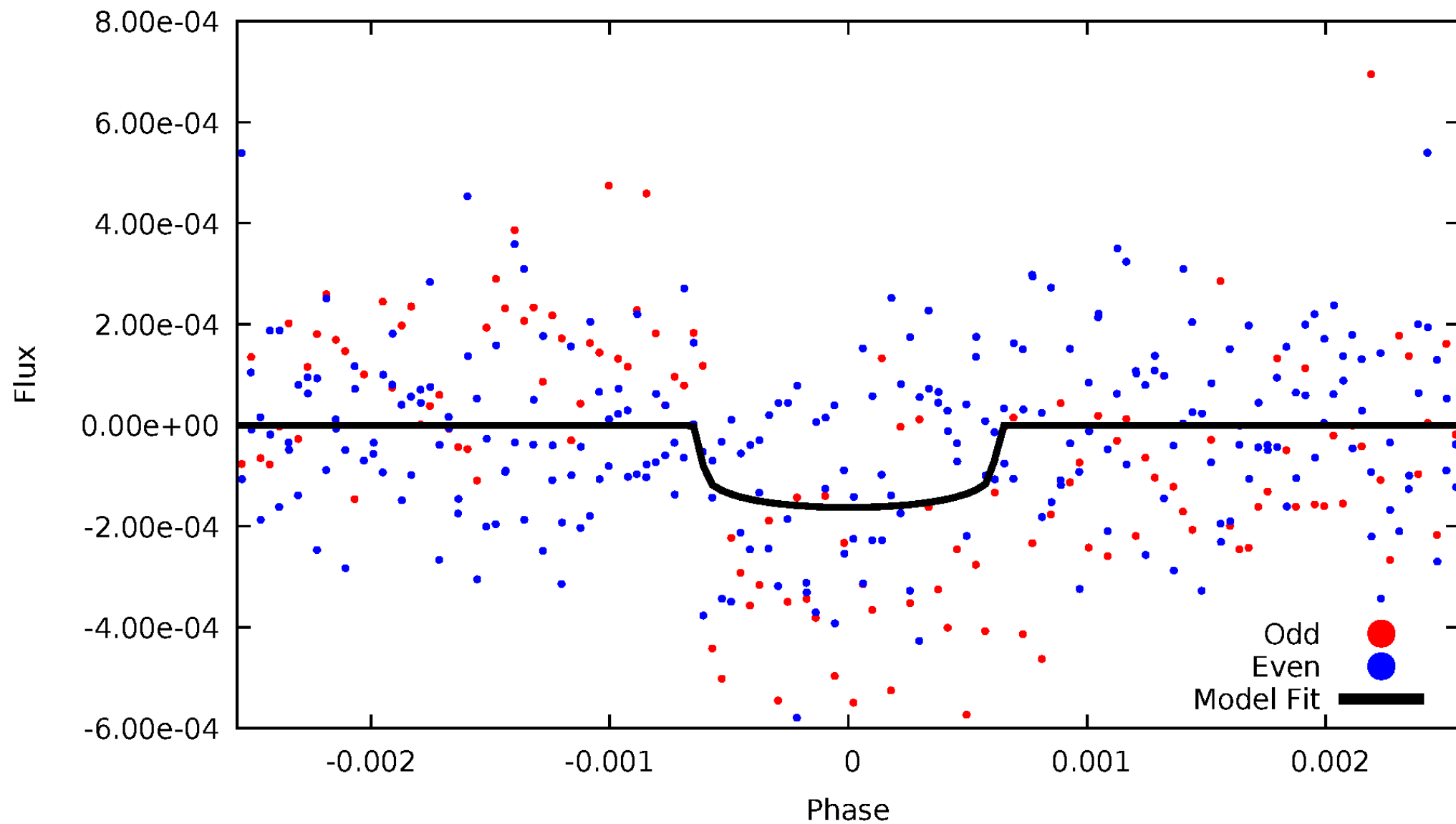


# TCE 005185328-01



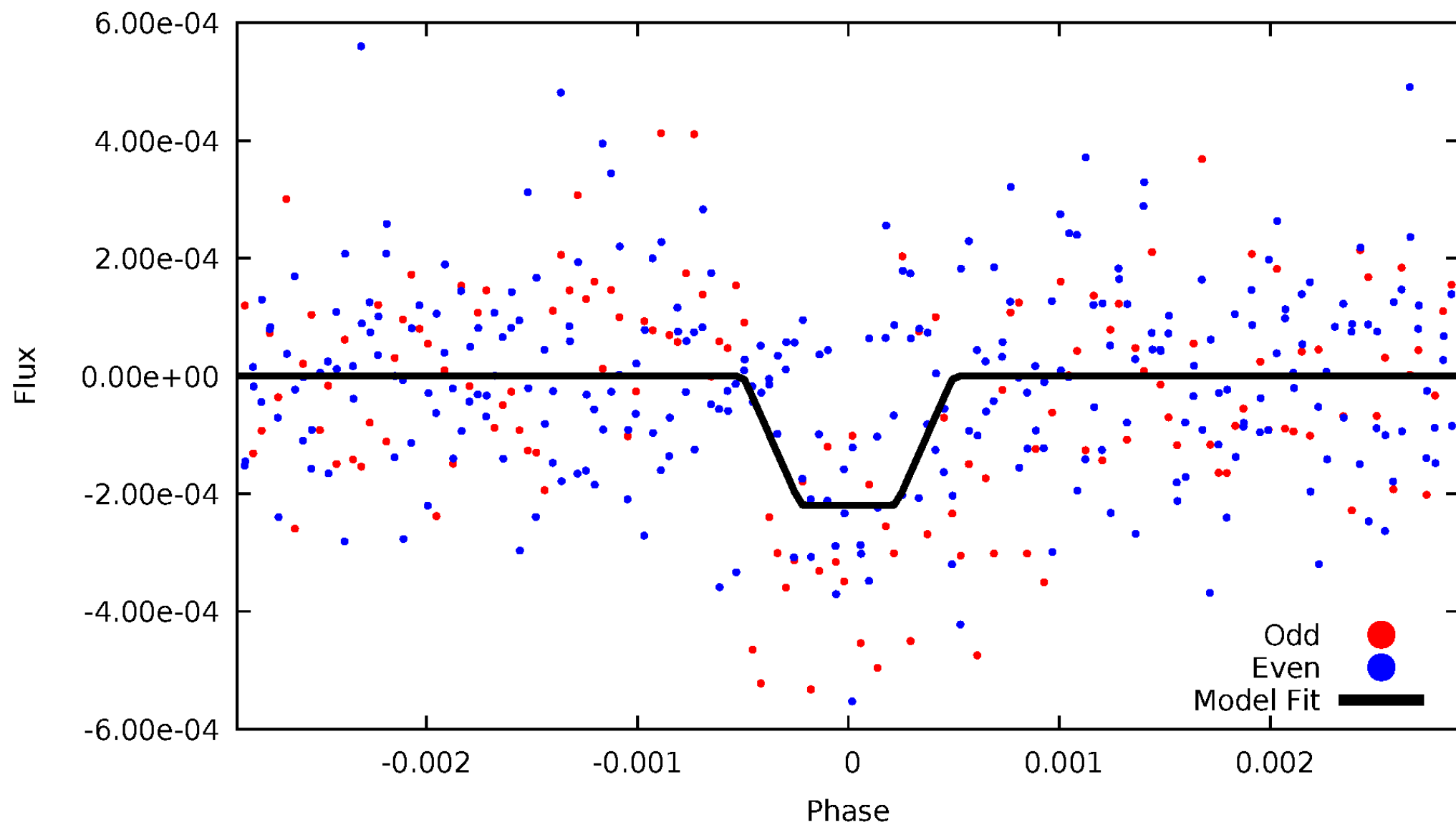
# DV Odd/Even

TCE 005185328-01



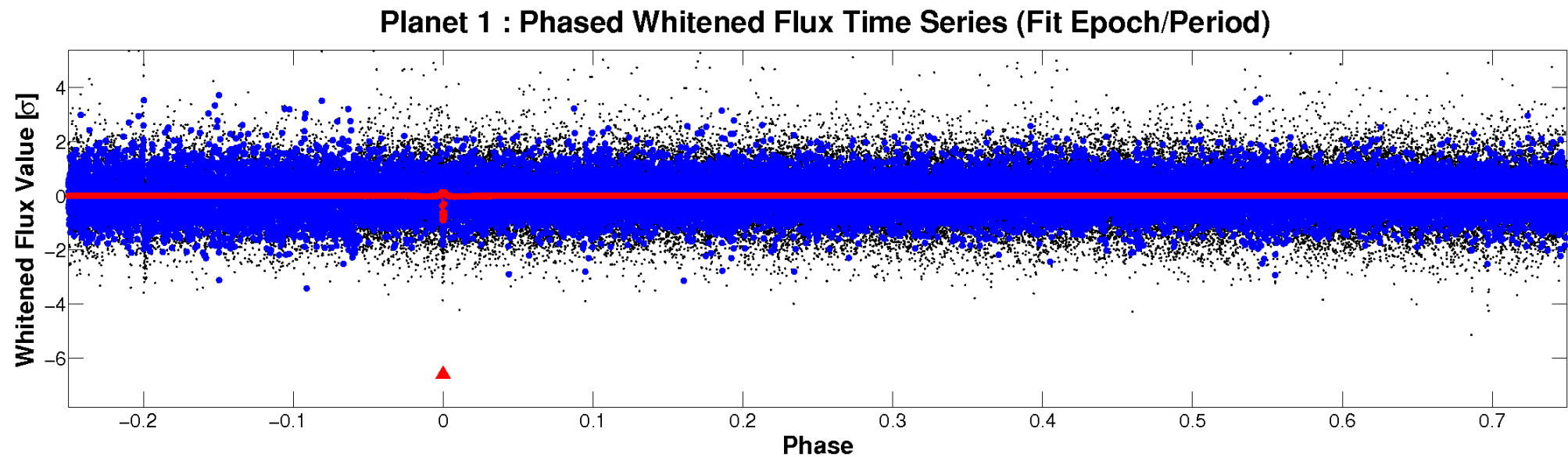
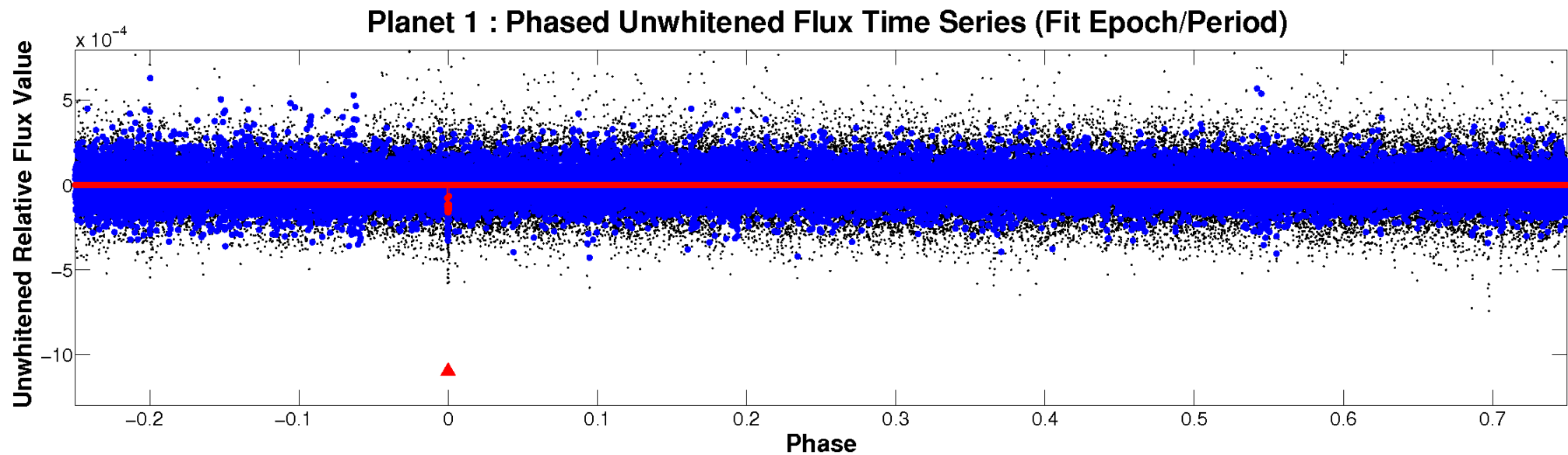
# ALT Odd/Even

TCE 005185328-01



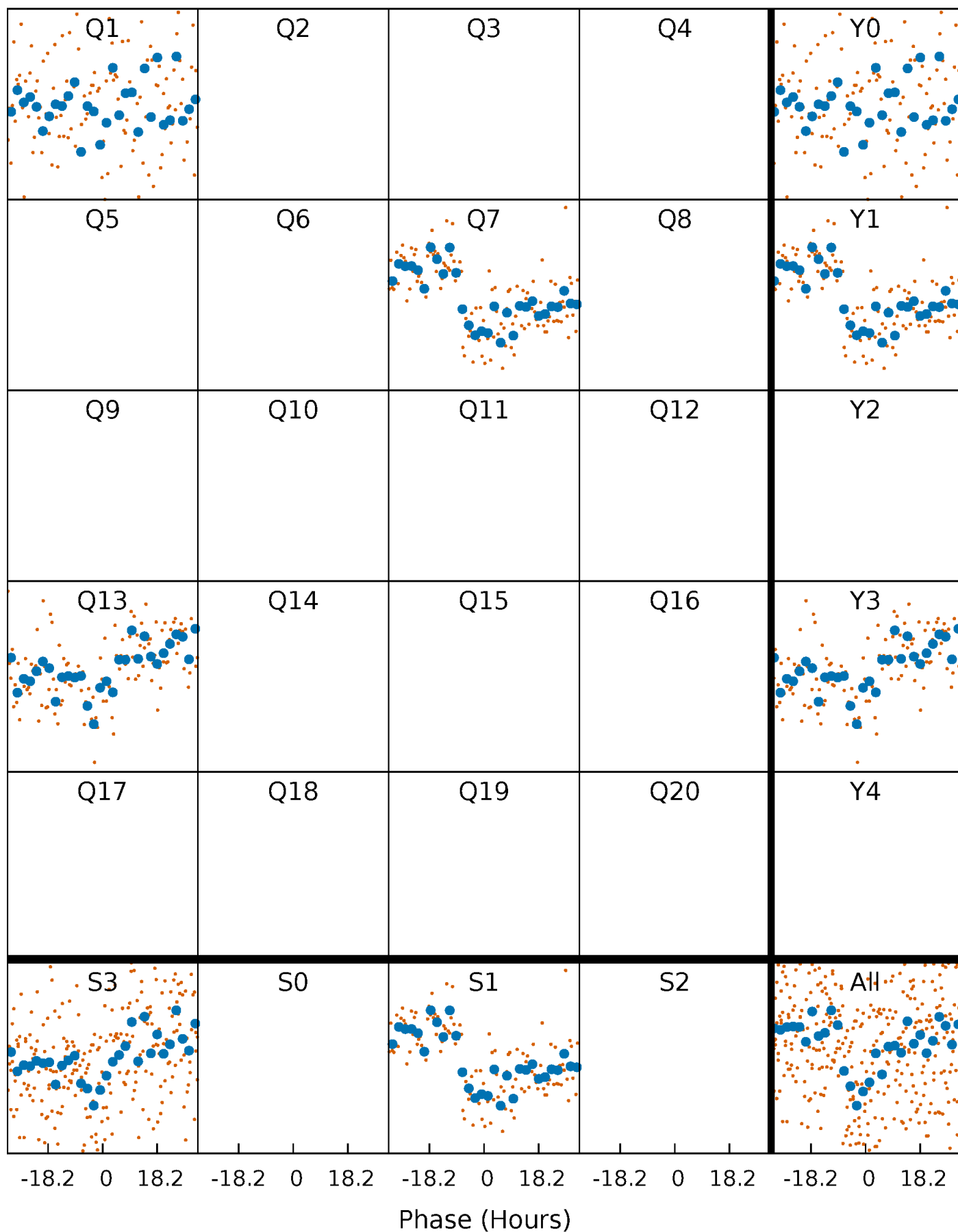


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

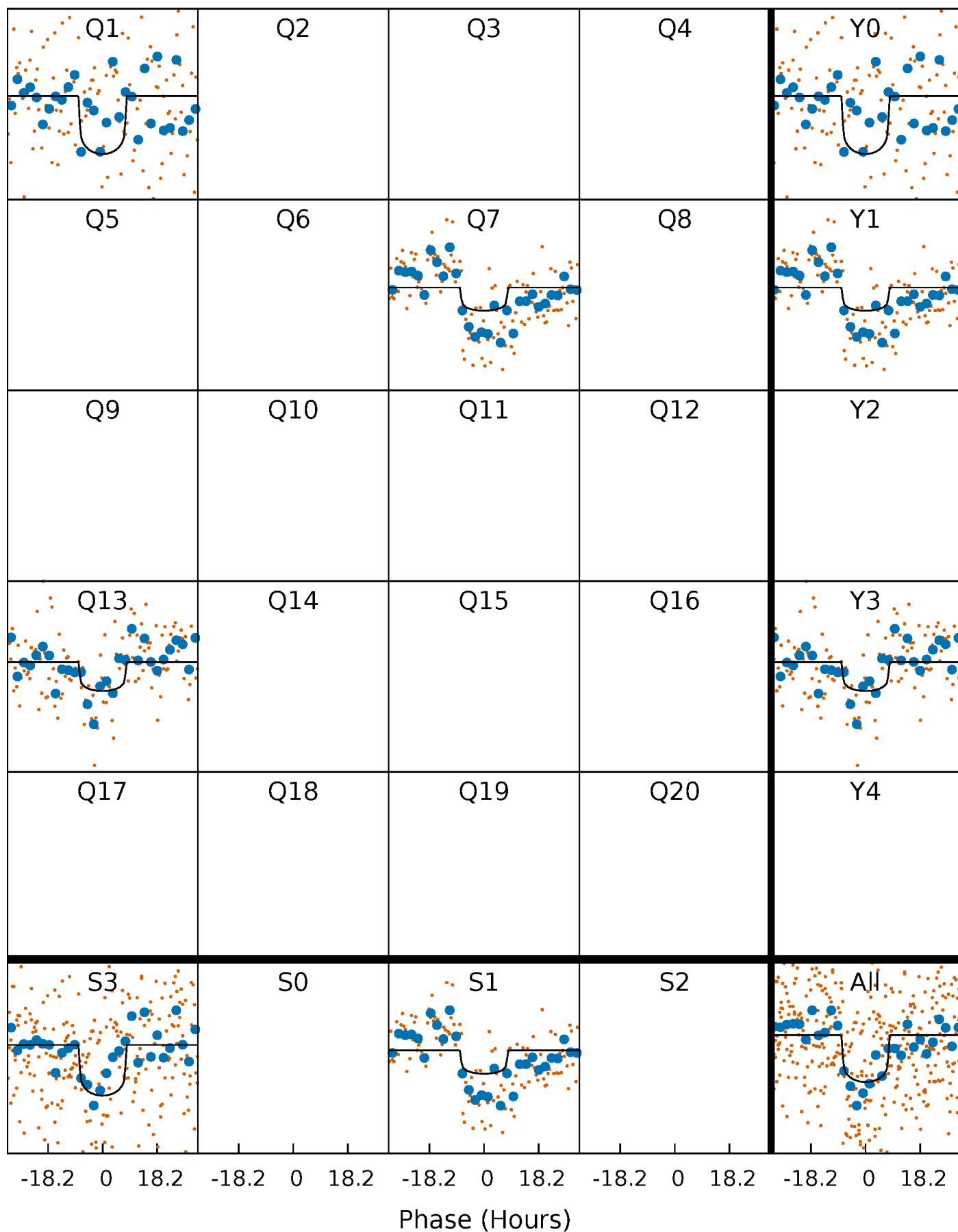
TCE 005185328-01 P=518.051759 Days  $T_0=159.311956$  (BKJD)





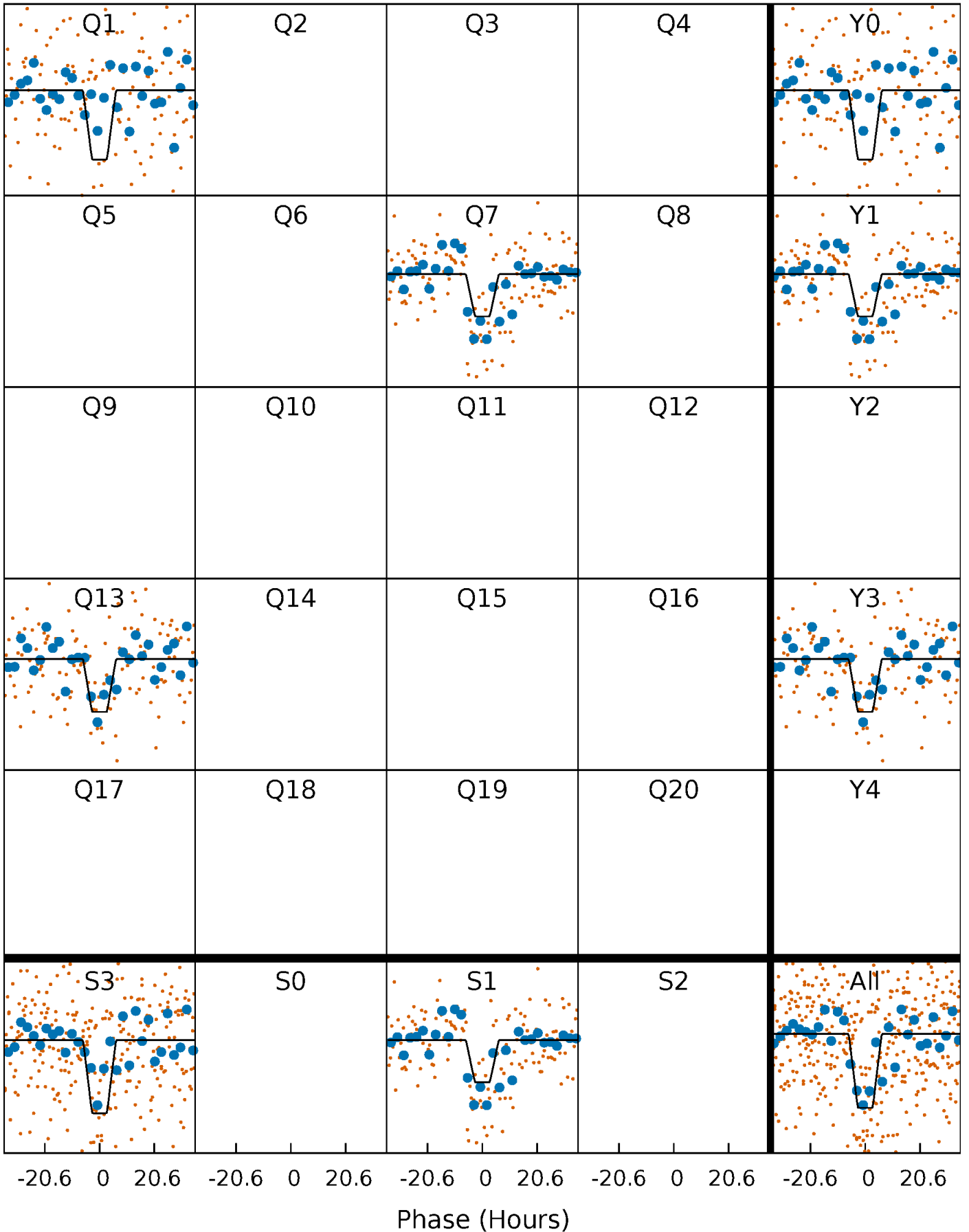
# DV Quarter-Phased Transit Curves

TCE 005185328-01 P=518.051759 Days  $T_0=159.311956$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

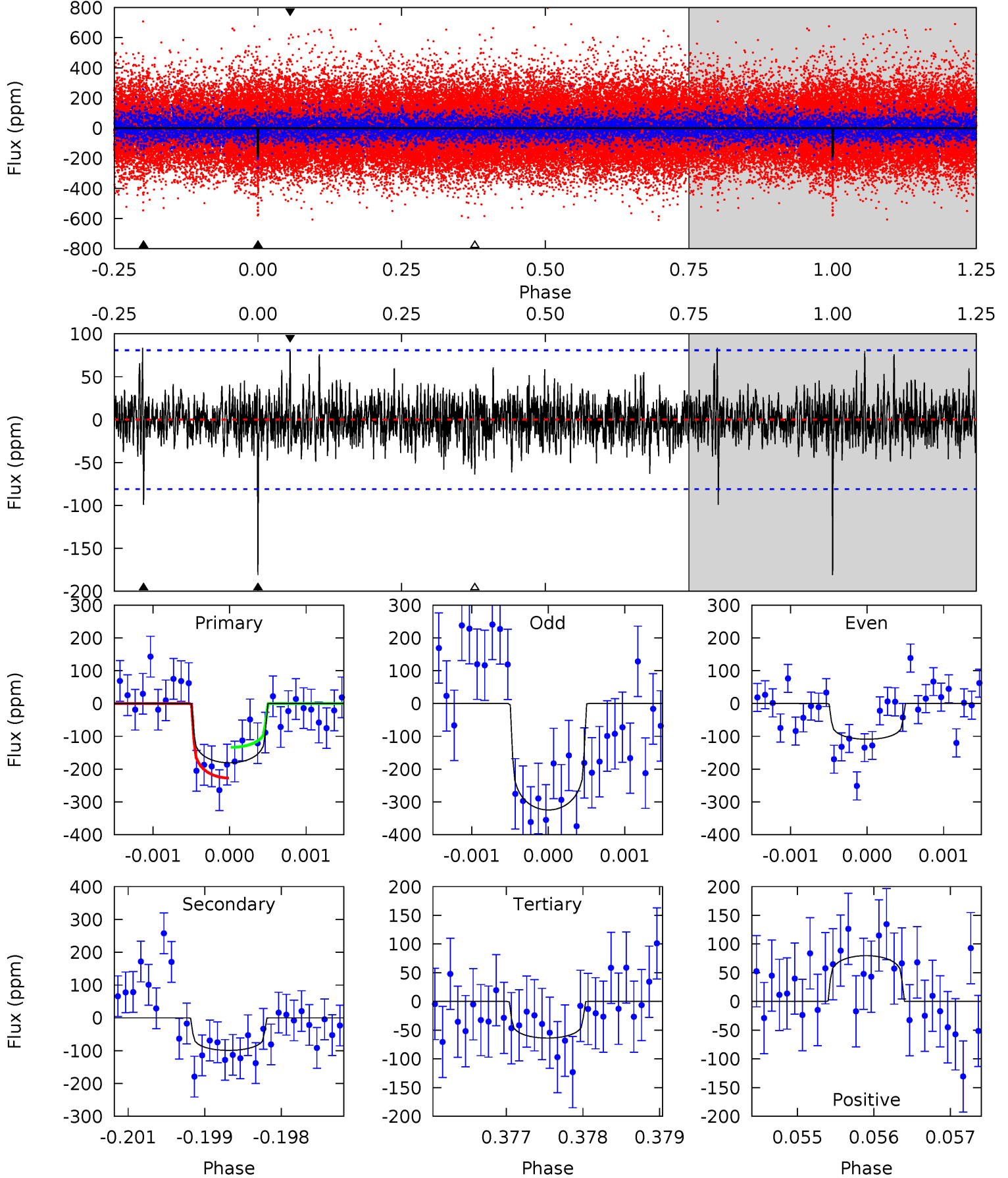
TCE 005185328-01 P=517.990746 Days  $T_0=159.312804$  (BKJD)



# DV Model-Shift Uniqueness Test

005185328-01, P = 518.051759 Days, E = 159.311956 Days

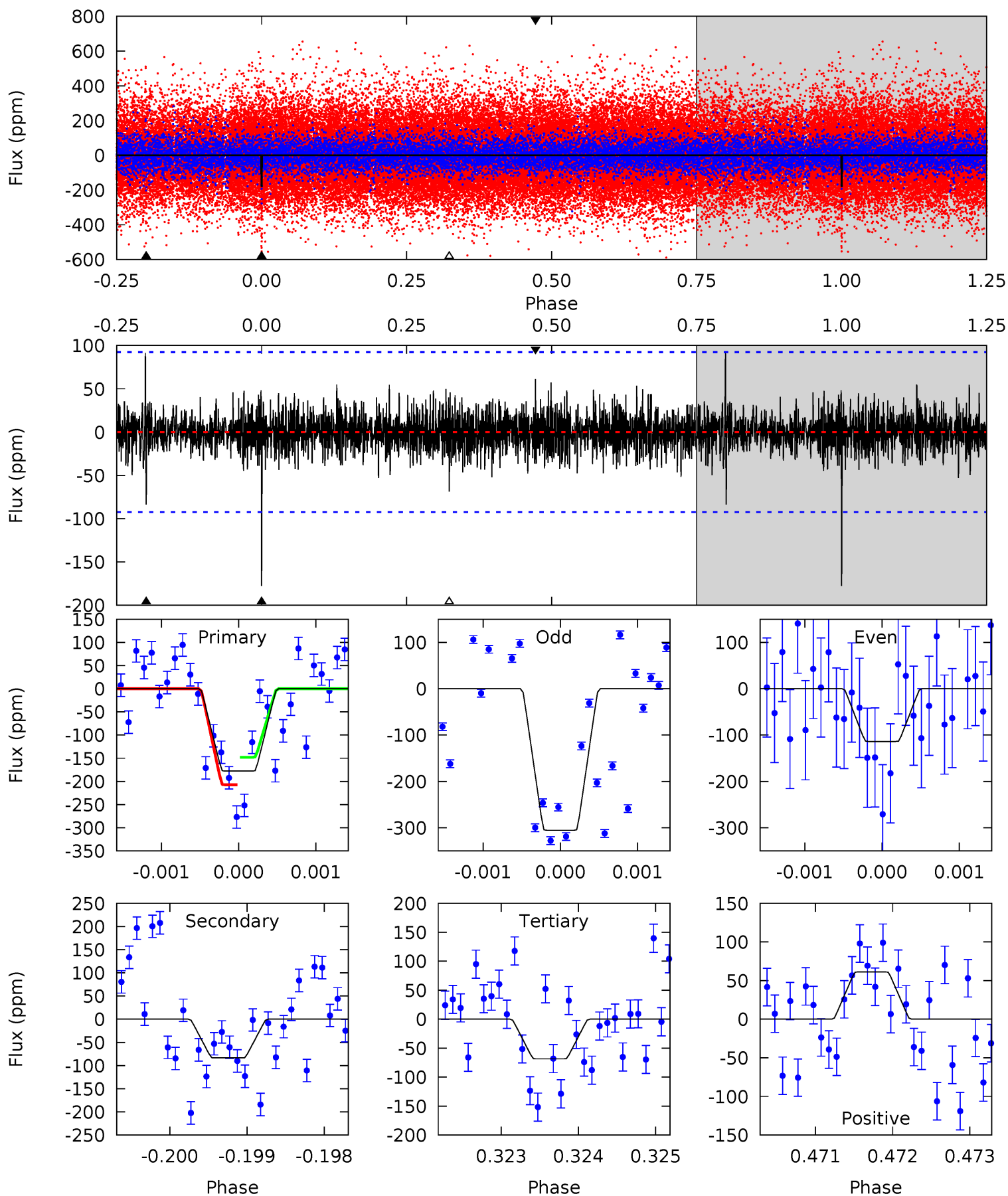
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	6.61	4.25	5.33	5.40	3.22	1.23	7.82	6.75	2.36	1.29	6.88	1.14	0.32	3.12



# Alt Model-Shift Uniqueness Test

005185328-01, P = 517.990746 Days, E = 159.312804 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
10.5	4.93	4.04	3.61	5.45	3.28	0.97	6.44	6.87	0.89	1.32	5.38	0.94	0.34	1.75



### Stellar Parameters For KIC 005185328

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6353^{+175}_{-214}$	$4.111^{+0.258}_{-0.172}$	$-0.240^{+0.250}_{-0.300}$	$1.538^{+0.411}_{-0.457}$	$1.111^{+0.174}_{-0.157}$	$0.430^{+0.692}_{-0.204}$
	+3%/-3%	+6%/-4%	+104%/-125%	+27%/-30%	+16%/-14%	+161%/-47%
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 005185328-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-99 \pm 15$	$2.13^{+0.99}_{-1.07}$	$423^{+30}_{-36}$	$5612^{+2200}_{-866}$	$20564^{+61048}_{-10905}$
Alt.	$-84 \pm 17$	$2.43^{+1.25}_{-1.06}$	$422^{+36}_{-38}$	$5014^{+1544}_{-714}$	$12917^{+28903}_{-7299}$

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

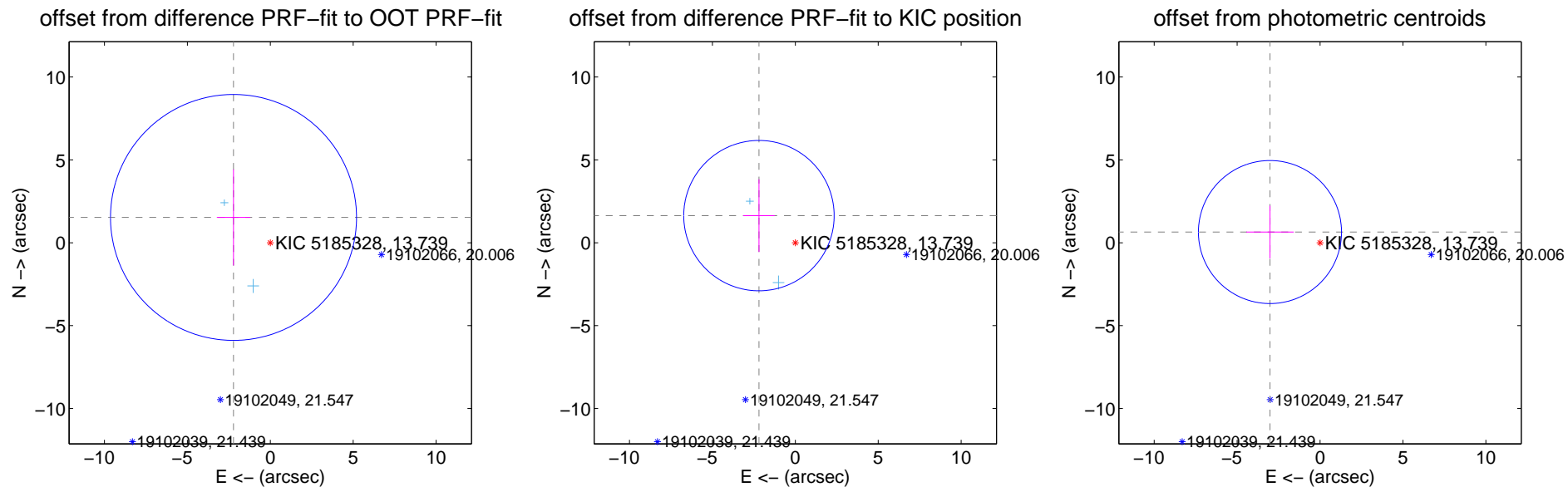
## DV Centroid Data

Supplemental centroid analysis for 005185328-01. Kepler magnitude: 13.74. Transit SNR 7.66

There are 2 quarters with good PRF difference image offsets

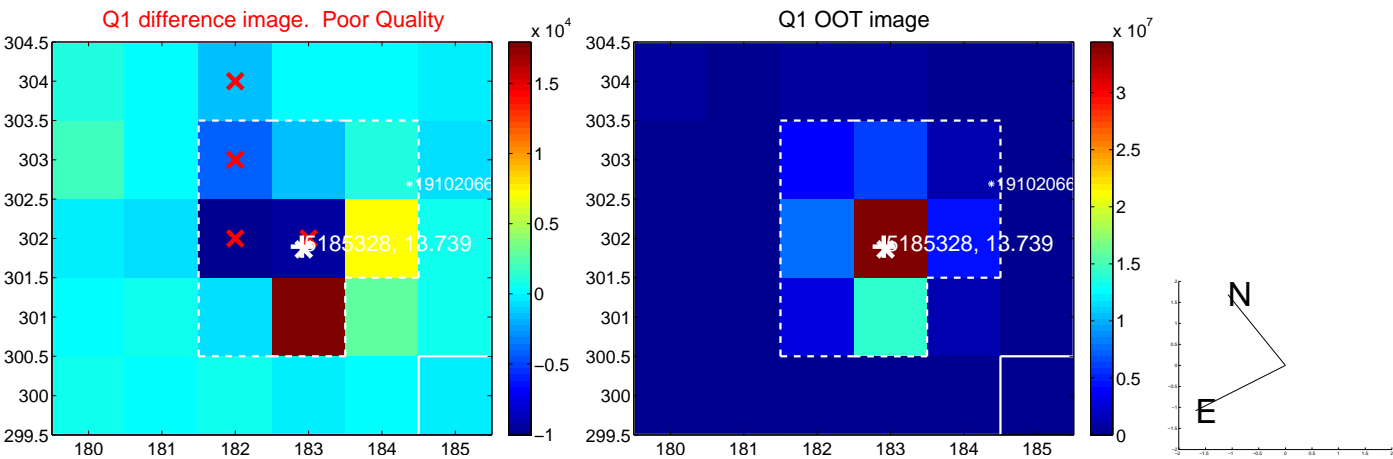
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.693 \pm 2.472$	1.09	$2.217 \pm 1.006$	$1.528 \pm 2.899$
PRF-fit source offset from KIC position	$2.736 \pm 1.511$	1.81	$2.193 \pm 0.943$	$1.636 \pm 2.189$
photometric centroid source offset	$3.09 \pm 1.44$	2.15	$3.02 \pm 1.43$	$0.65 \pm 1.59$



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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: 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



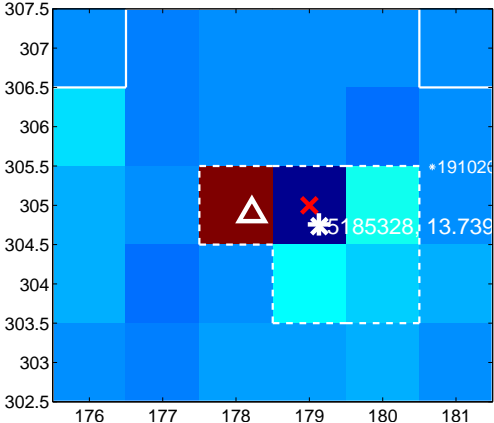
Q6 no difference image



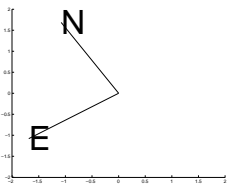
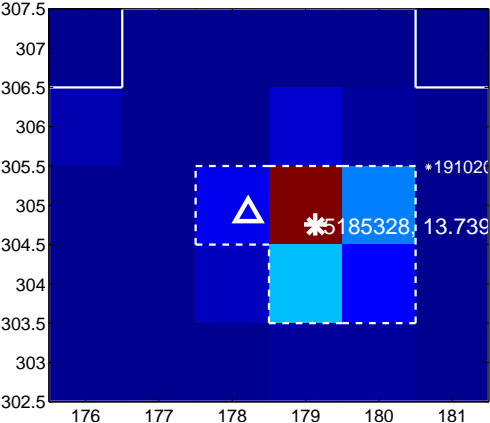
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



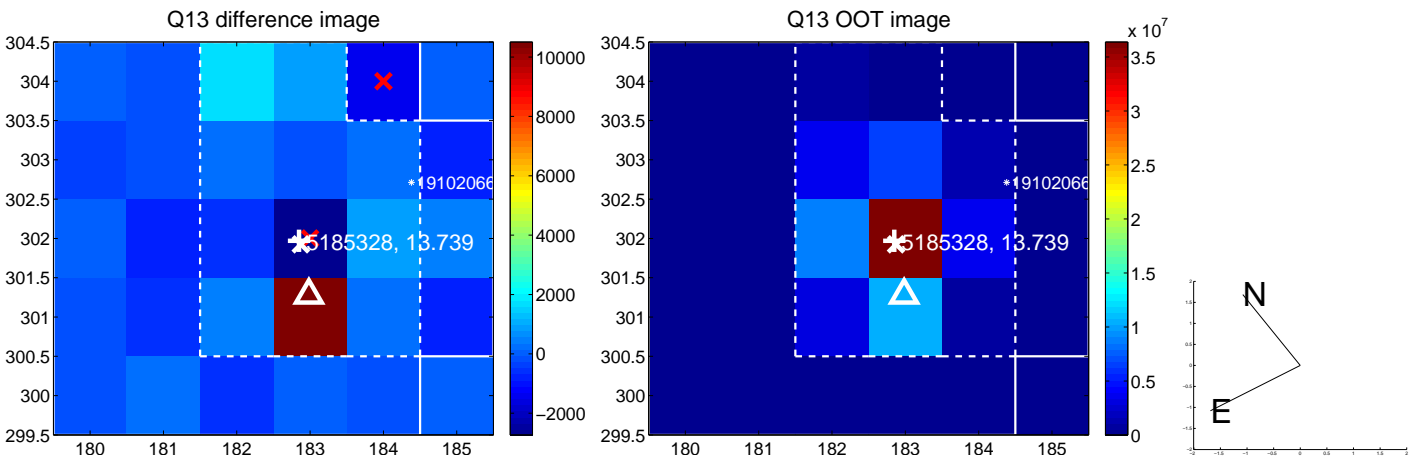
Q8 no OOT image



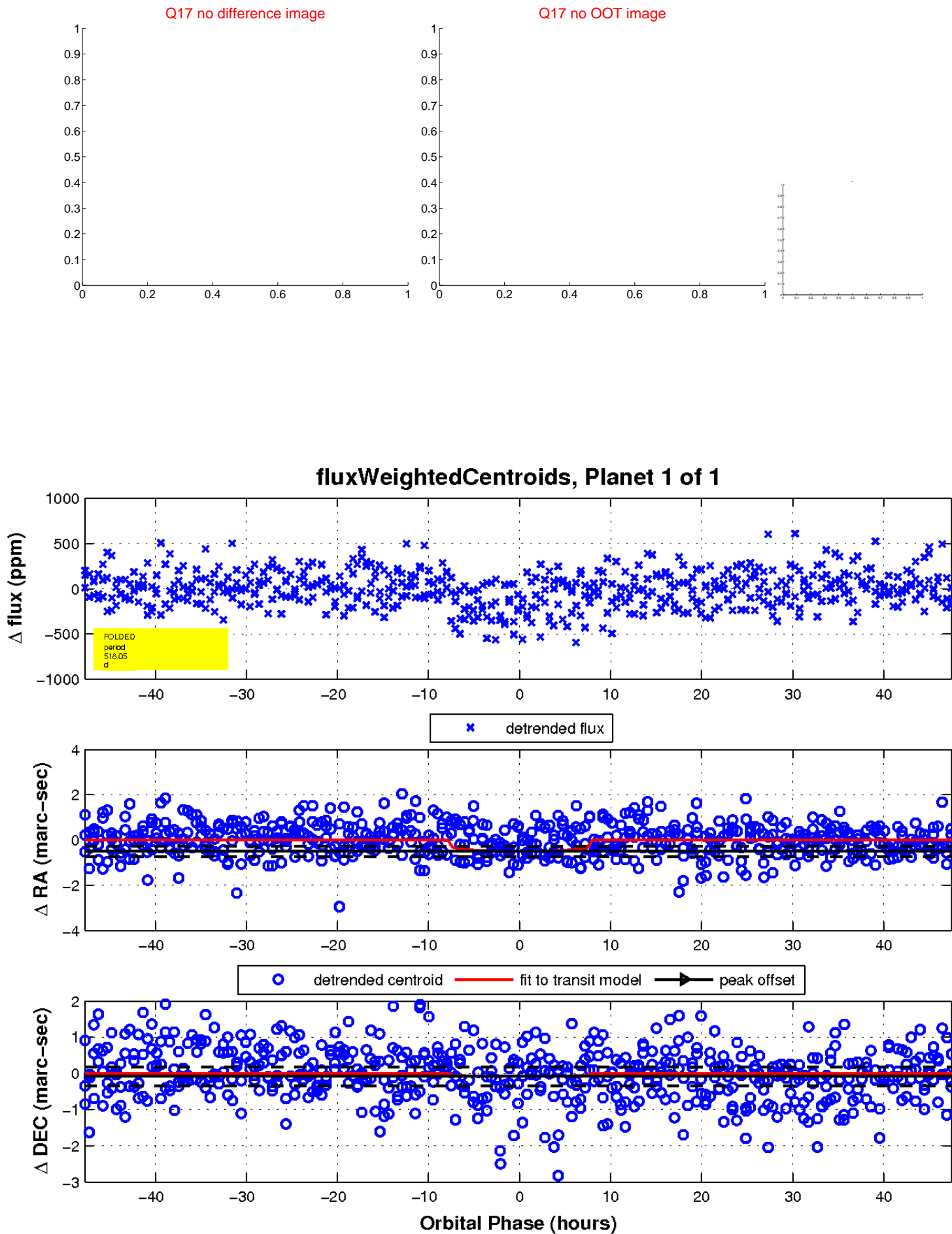
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

