

# KIC 010350655

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010350655-01	OBS	No	383.509331	471.080339	328.5	20.374	7.7	7.6	0.95	6060	1.80	1.00

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010350655-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

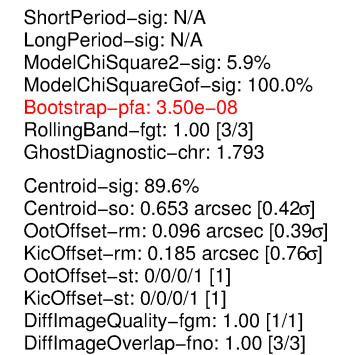
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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.

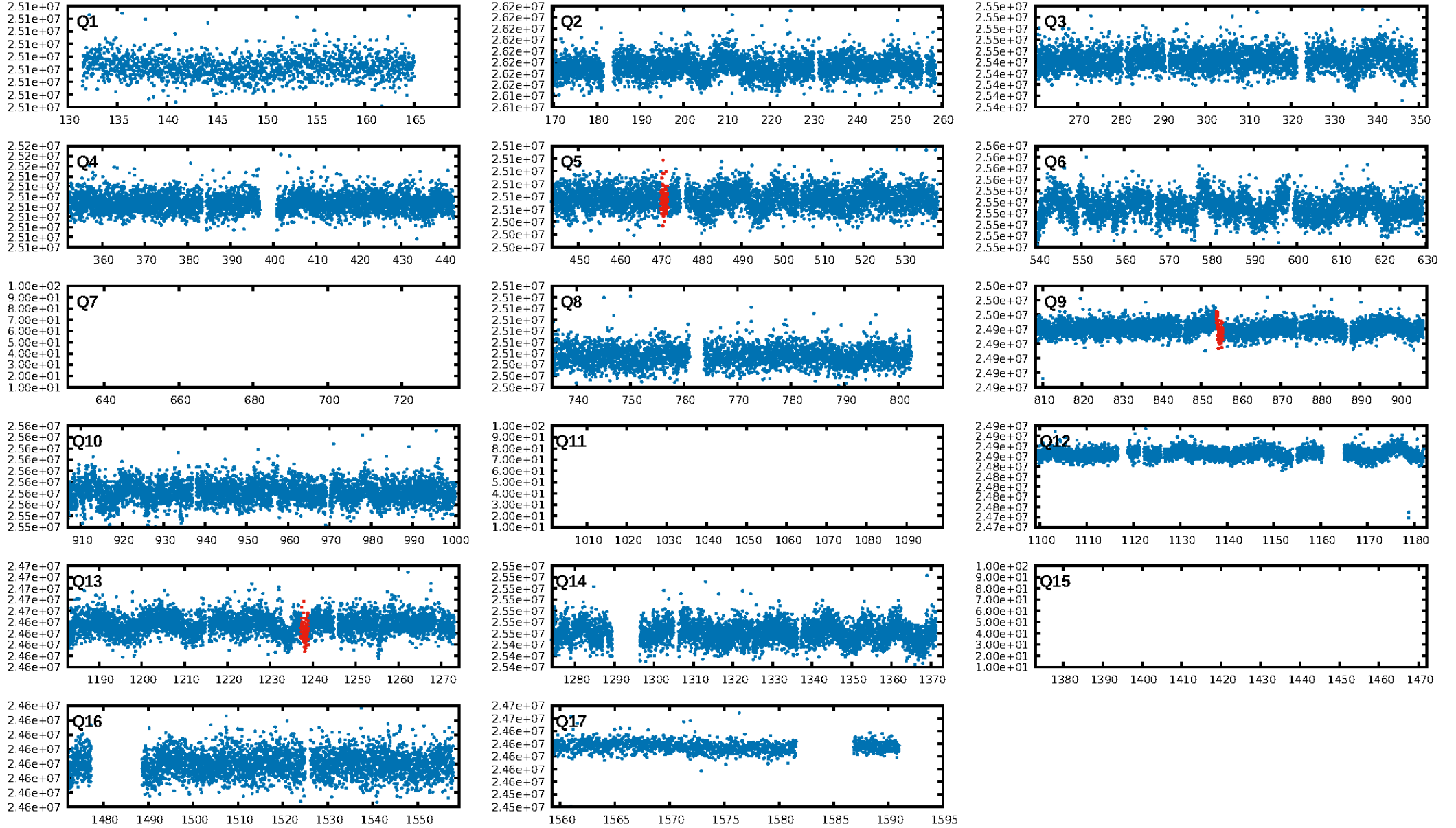
## Ephemeris Match Information For 010350655-01

No Significant Match Found

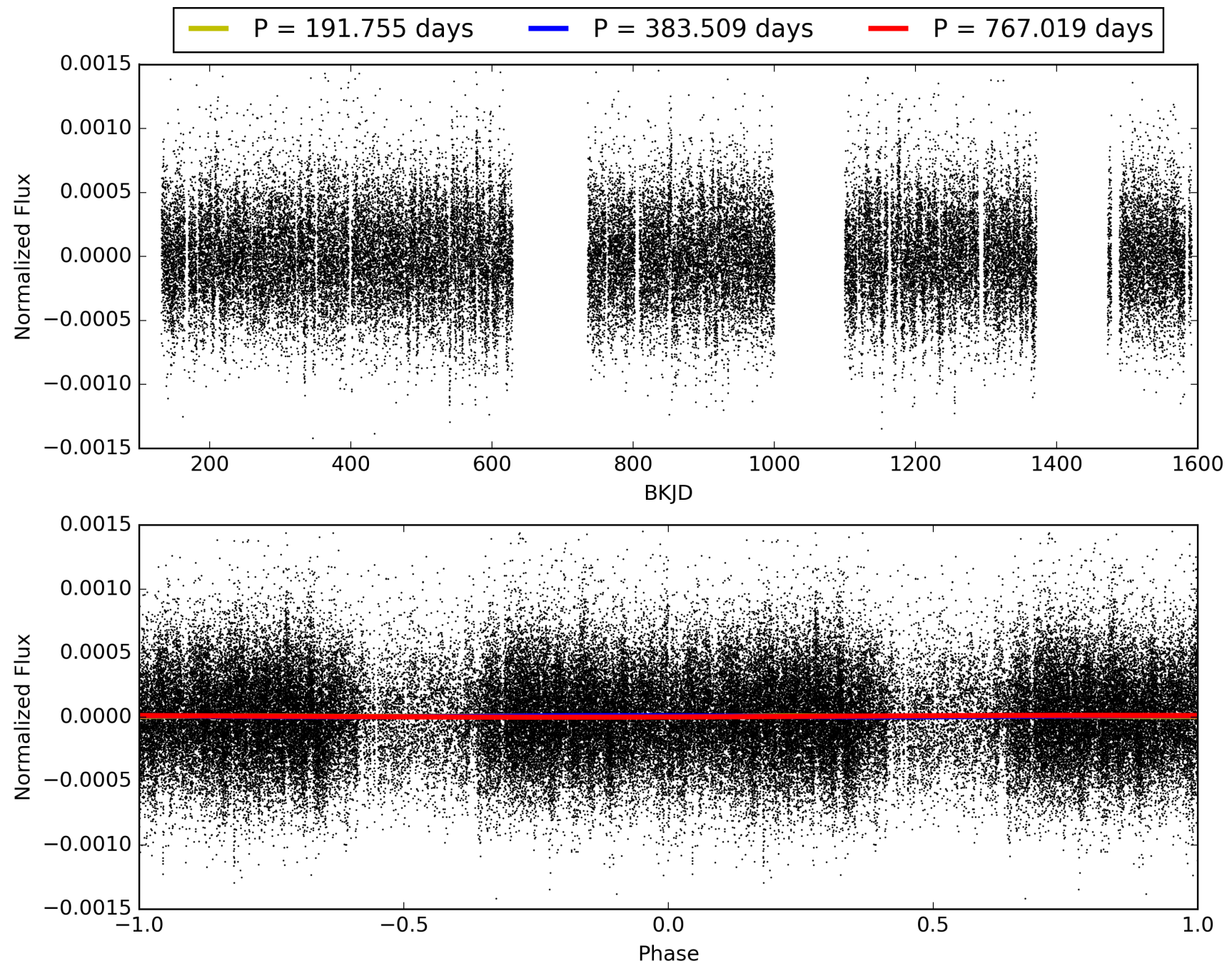
KIC: 10350655    Candidate: 1 of 1    Period: 383.509 d



# TCE 010350655-01, PDC Light Curves

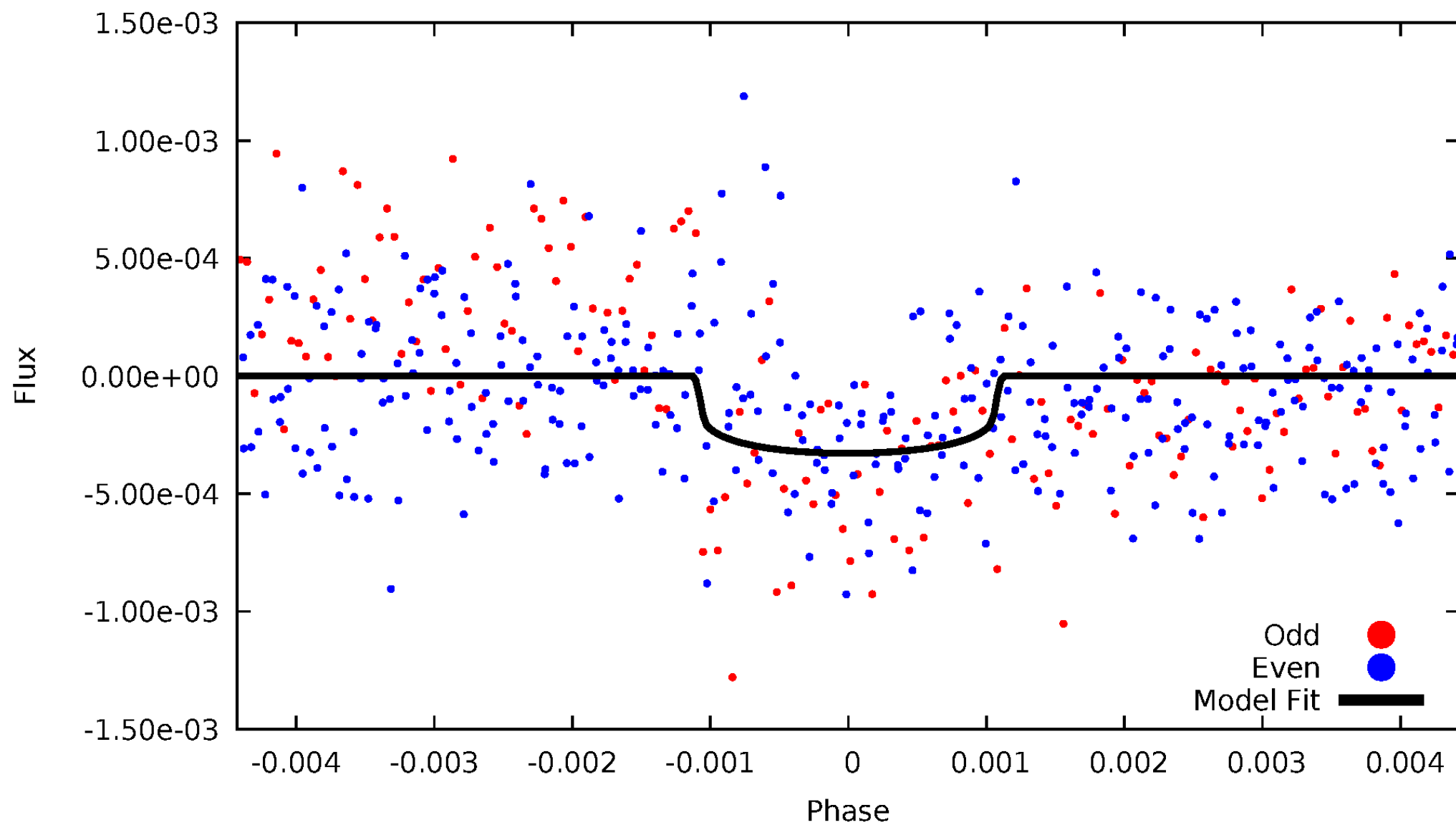


TCE 010350655-01



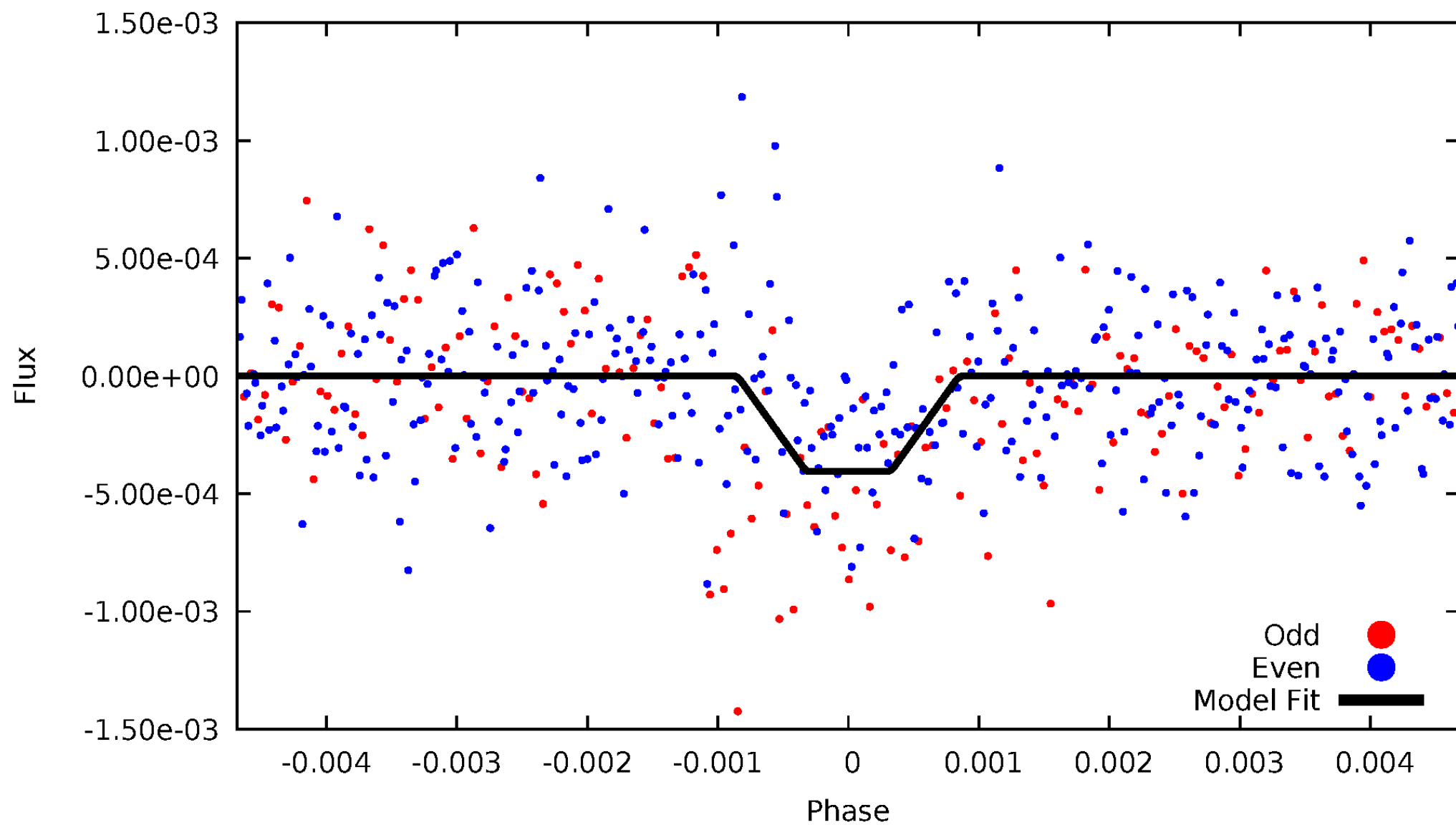
# DV Odd/Even

TCE 010350655-01



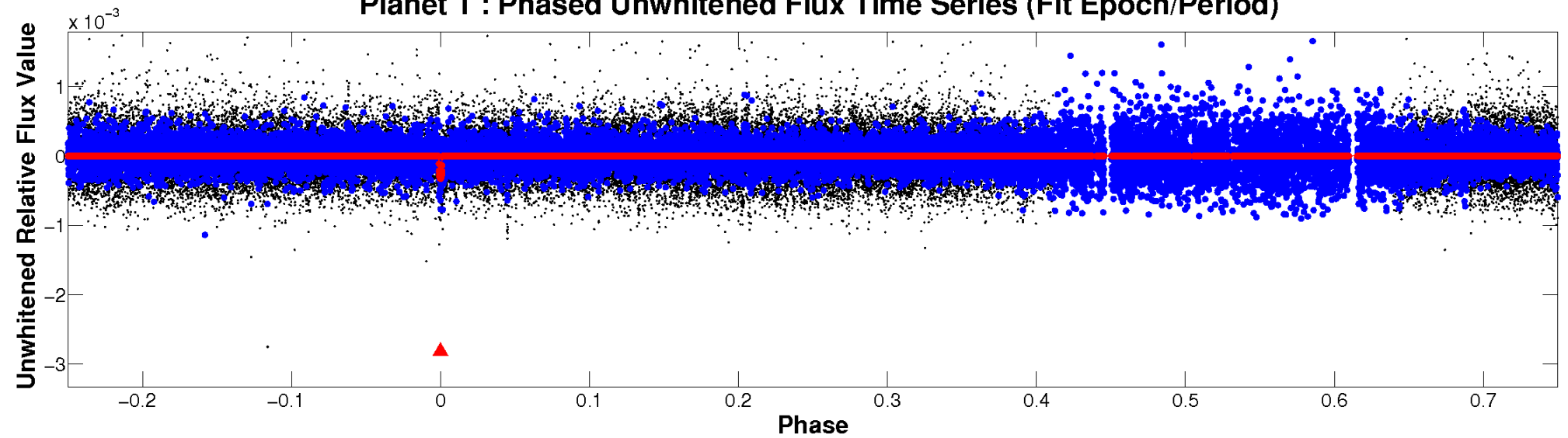
# ALT Odd/Even

TCE 010350655-01

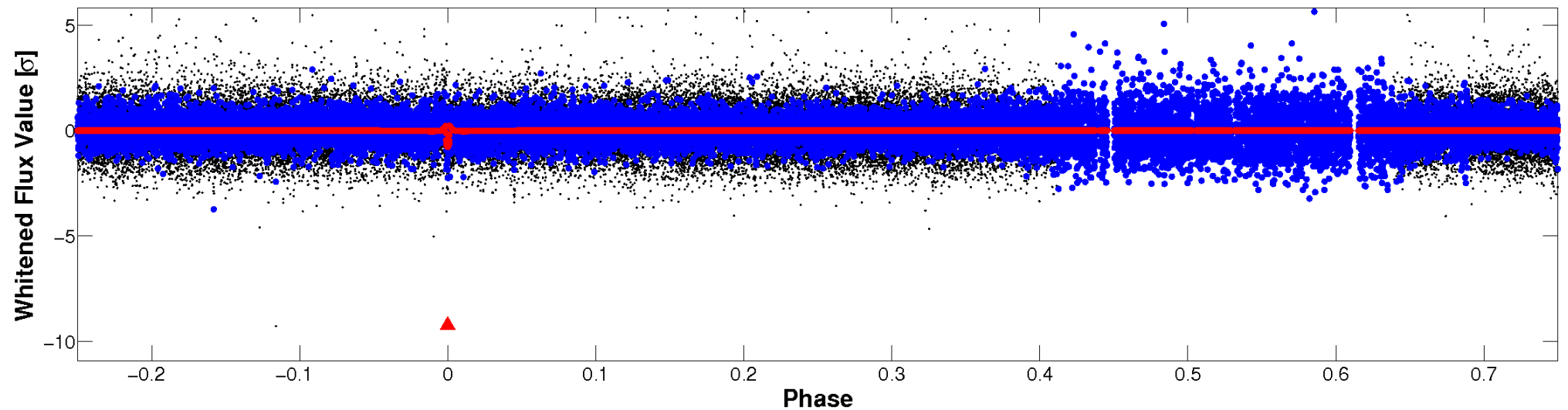


# Non-Whitened Vs. Whitened Light Curve

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



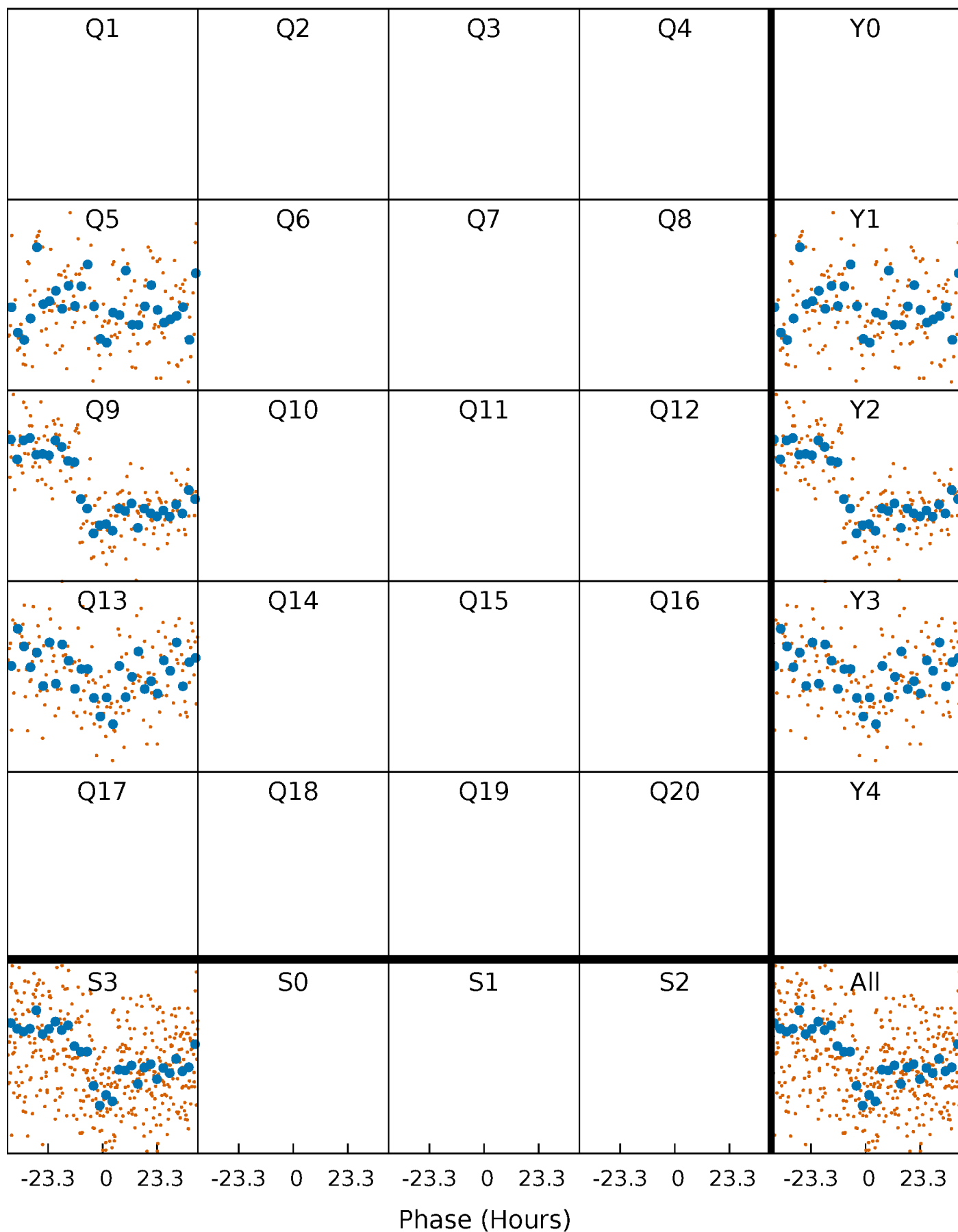
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

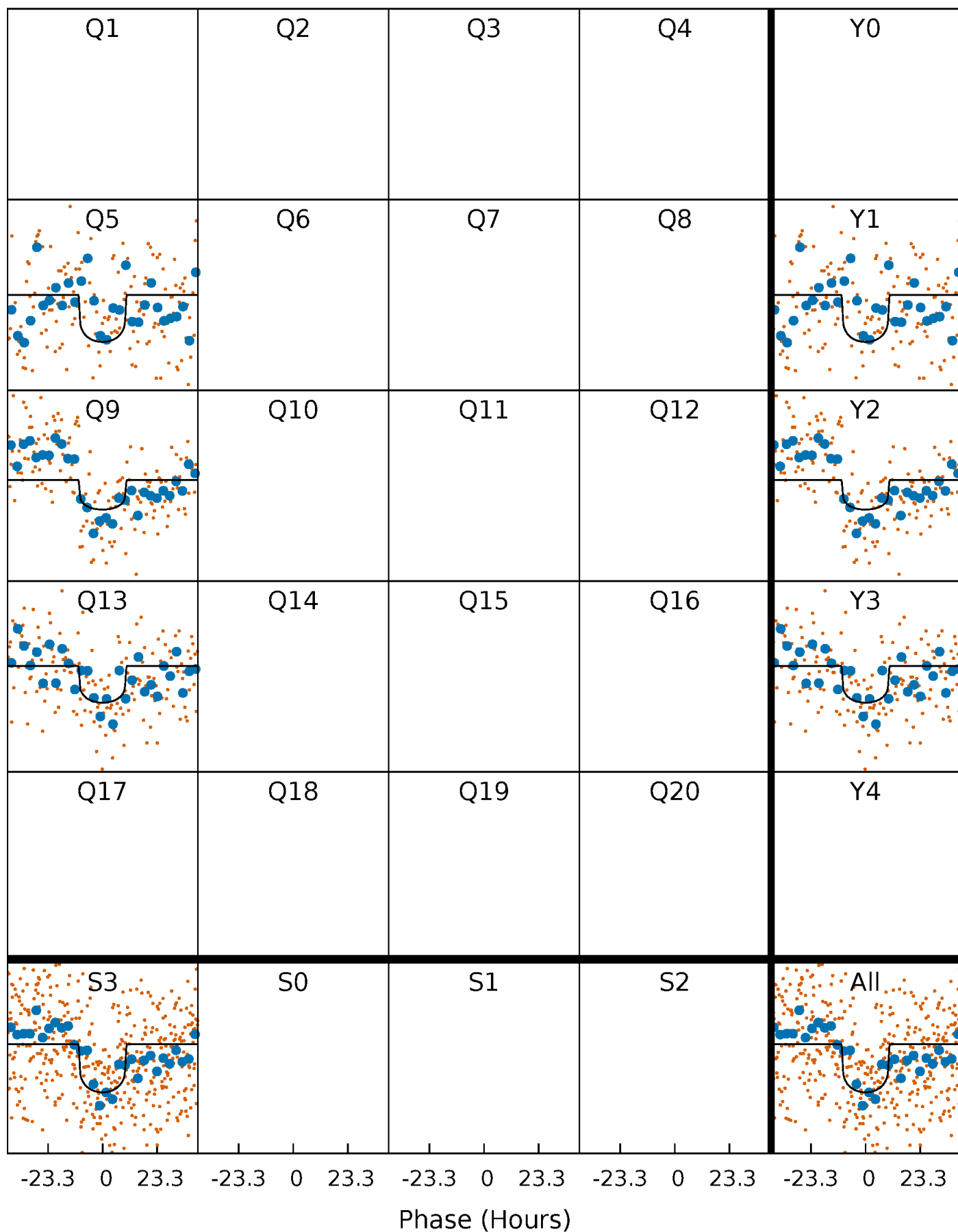
TCE 010350655-01 P=383.509331 Days  $T_0=471.080339$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 010350655-01 P=383.509331 Days  $T_0=471.080339$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

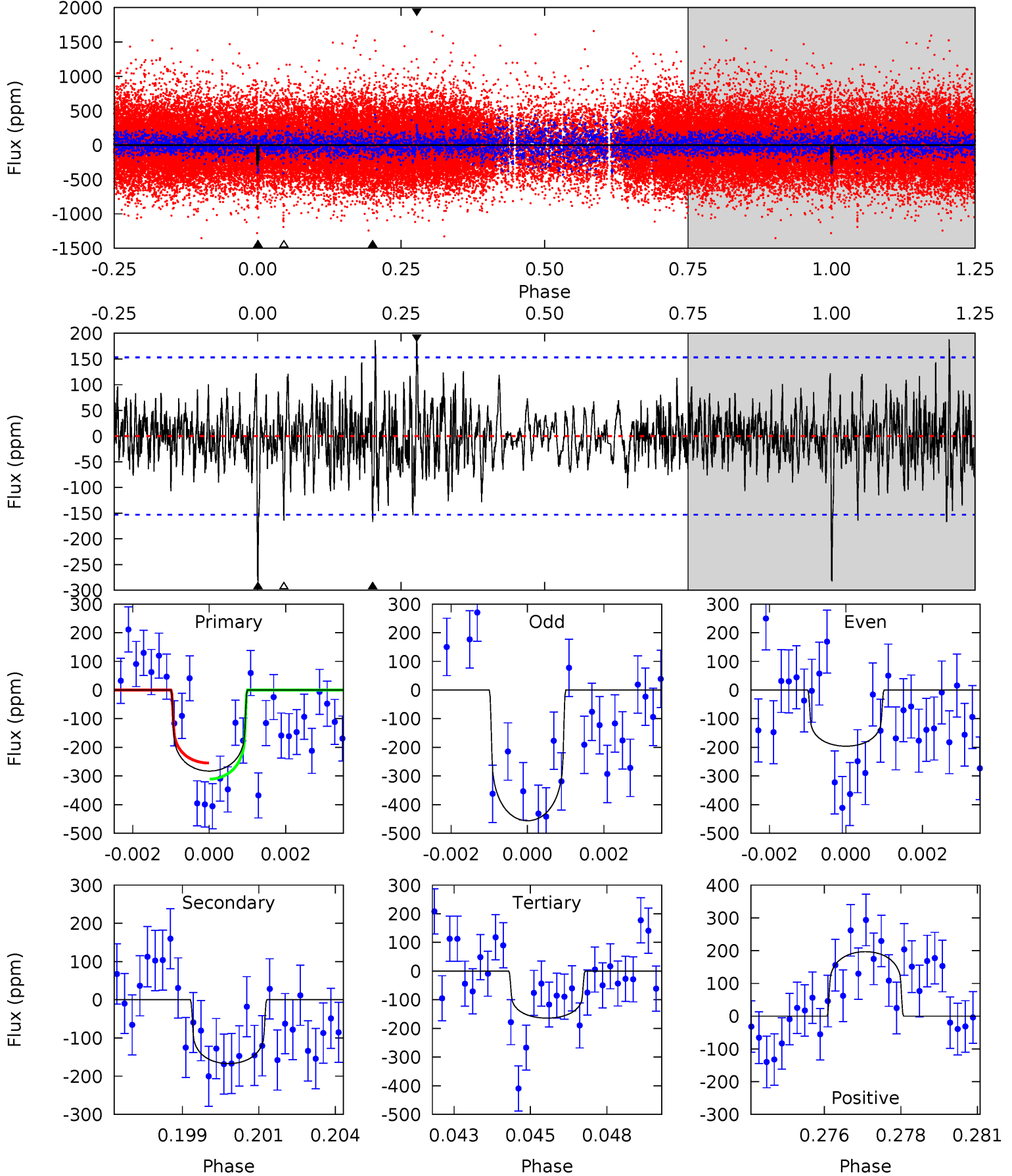
TCE 010350655-01 P=383.490243 Days  $T_0=471.102723$  (BKJD)



# DV Model-Shift Uniqueness Test

010350655-01,  $P = 383.509331$  Days,  $E = 87.571008$  Days

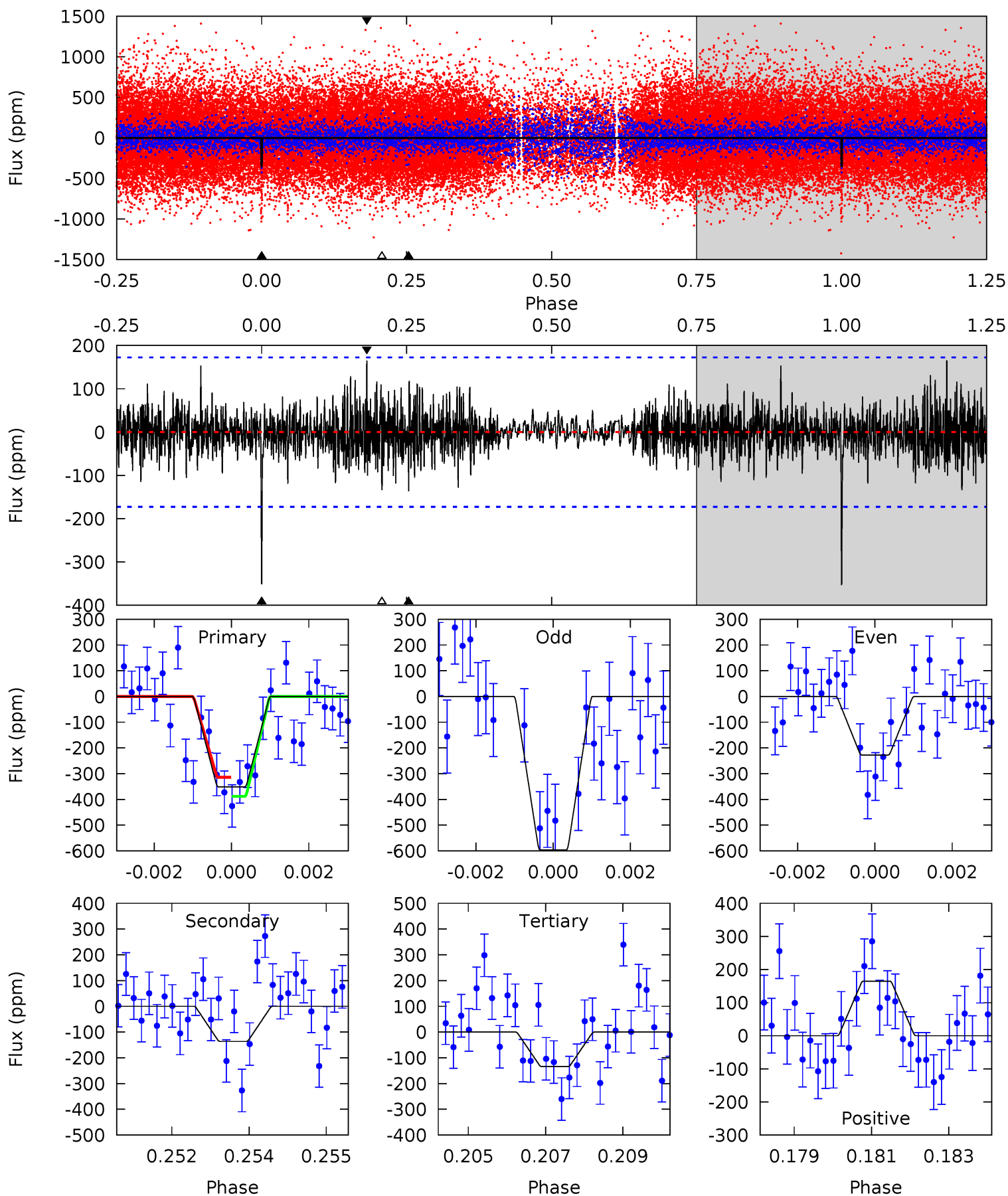
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.81	5.79	5.69	6.83	5.30	3.05	1.55	4.12	2.98	0.10	-1.03	4.28	0.91	0.41	0.97



# Alt Model-Shift Uniqueness Test

010350655-01, P = 383.490243 Days, E = 87.612480 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
10.9	4.23	4.16	5.12	5.35	3.13	1.17	6.76	5.79	0.07	-0.89	5.44	1.33	0.32	1.14



### Stellar Parameters For KIC 010350655

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6060^{+162}_{-216}$	$4.495^{+0.052}_{-0.208}$	$-0.140^{+0.250}_{-0.350}$	$0.953^{+0.292}_{-0.097}$	$1.036^{+0.127}_{-0.141}$	$1.684^{+0.442}_{-0.879}$
	+3%/-4%	+1%/-5%	+179%/-250%	+31%/-10%	+12%/-14%	+26%/-52%
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 010350655-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-167 \pm 29$	$1.92^{+0.87}_{-0.92}$	$363^{+26}_{-17}$	$5199^{+1789}_{-736}$	$26327^{+69006}_{-14391}$
Alt.	$-136 \pm 32$	$2.23^{+0.88}_{-1.01}$	$363^{+24}_{-18}$	$4700^{+1513}_{-615}$	$16136^{+39953}_{-8567}$

$T_{max}$  = 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

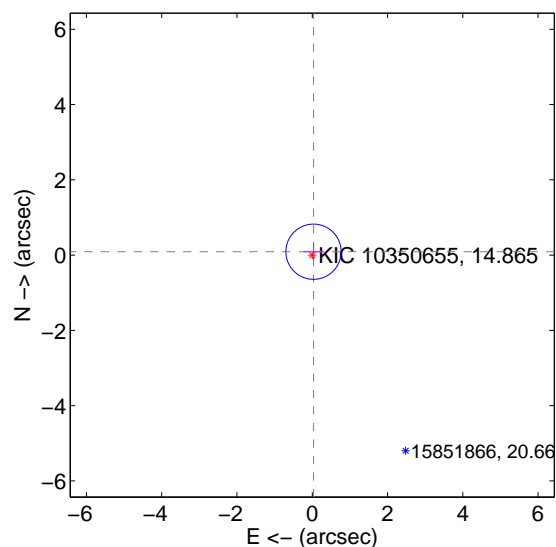
Supplemental centroid analysis for 010350655-01. Kepler magnitude: 14.87. Transit SNR 7.56

There are 1 quarters with good PRF difference image offsets

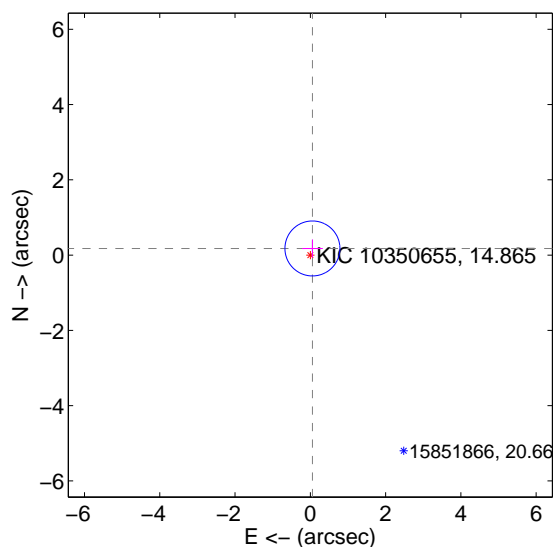
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.096 \pm 0.245$	0.39	$-0.034 \pm 0.274$	$0.090 \pm 0.240$
PRF-fit source offset from KIC position	$0.185 \pm 0.244$	0.76	$-0.056 \pm 0.274$	$0.177 \pm 0.240$
photometric centroid source offset	$0.65 \pm 1.57$	0.42	$0.61 \pm 1.55$	$0.23 \pm 1.72$

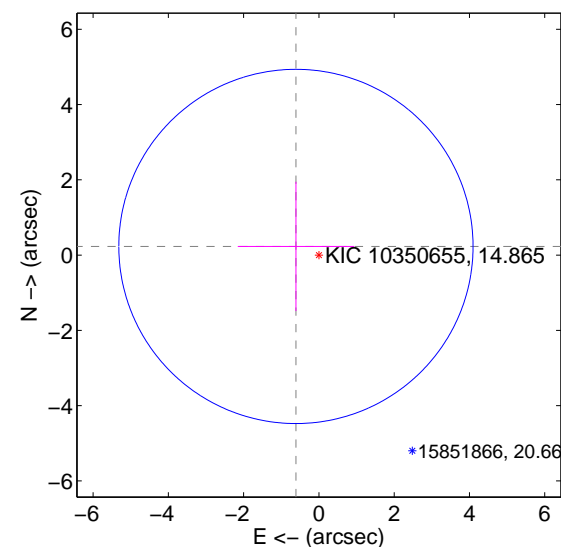
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



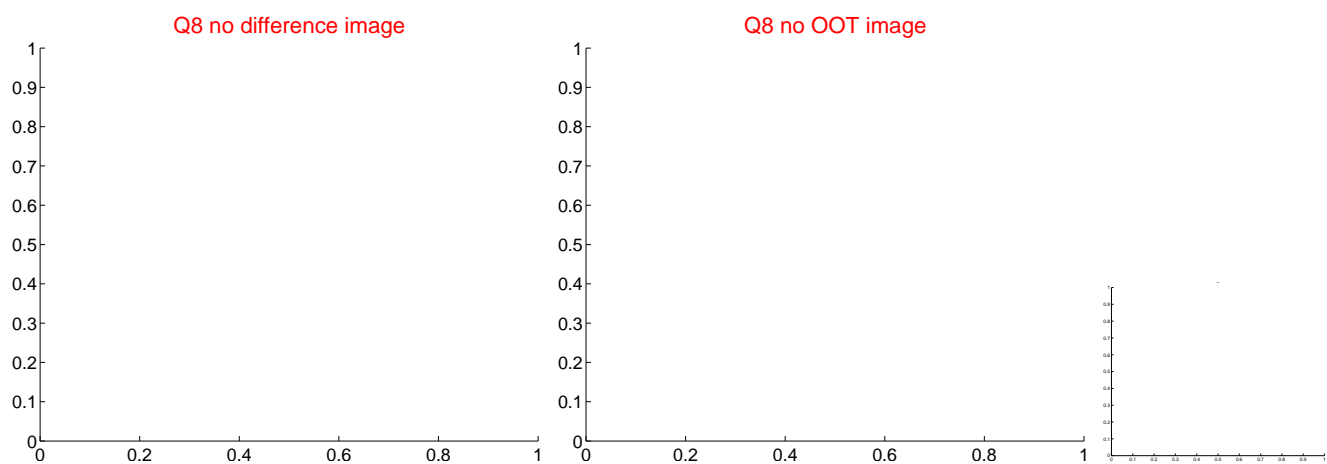
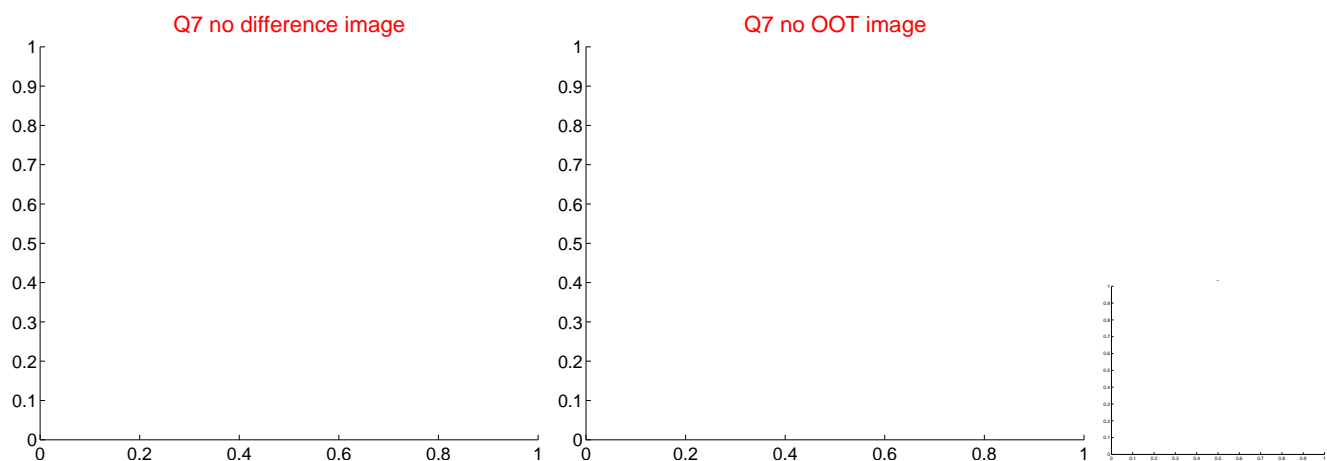
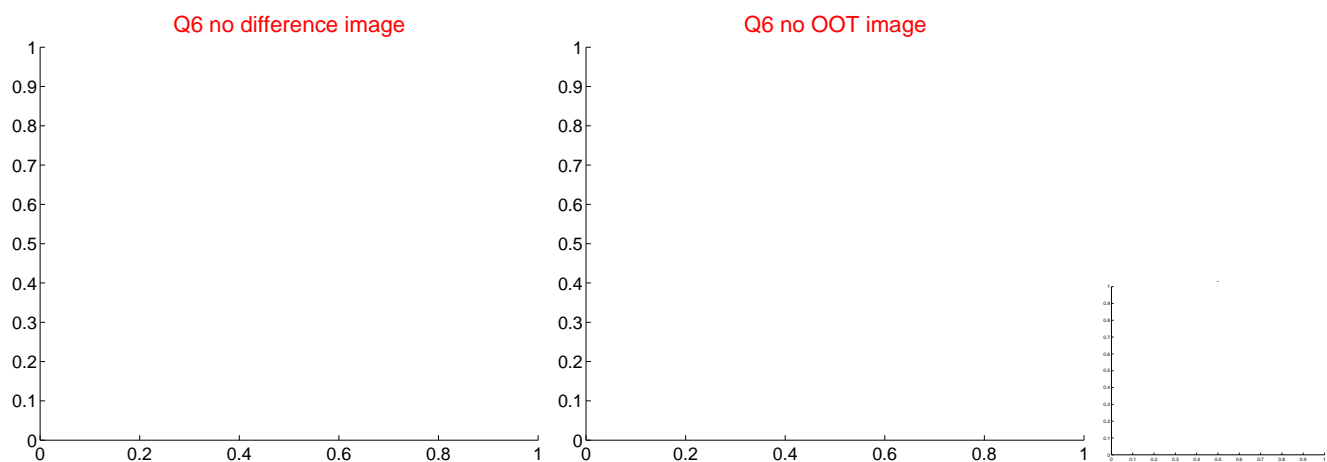
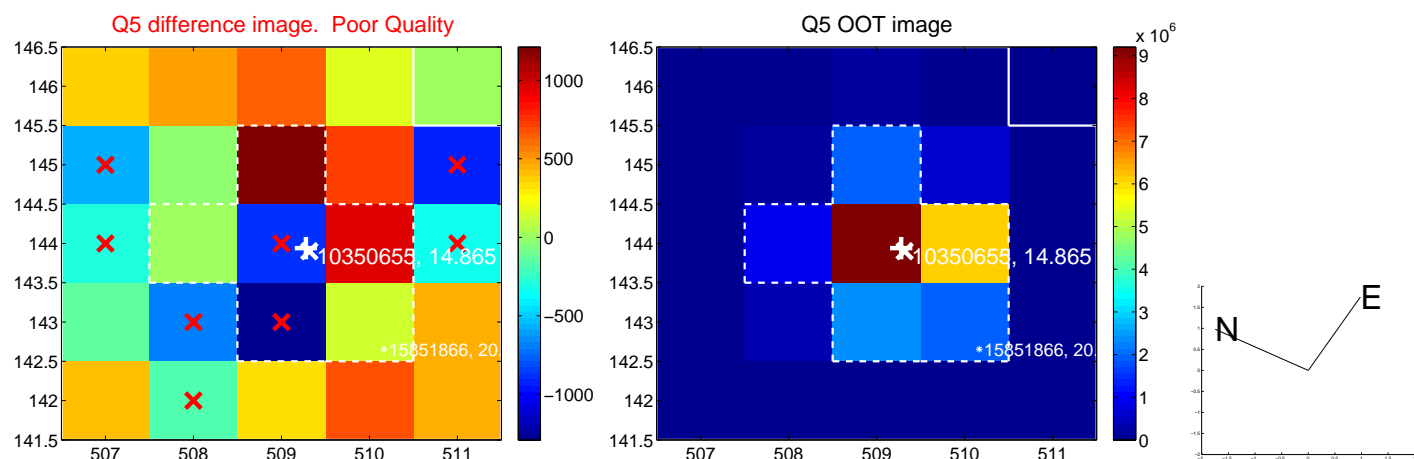
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

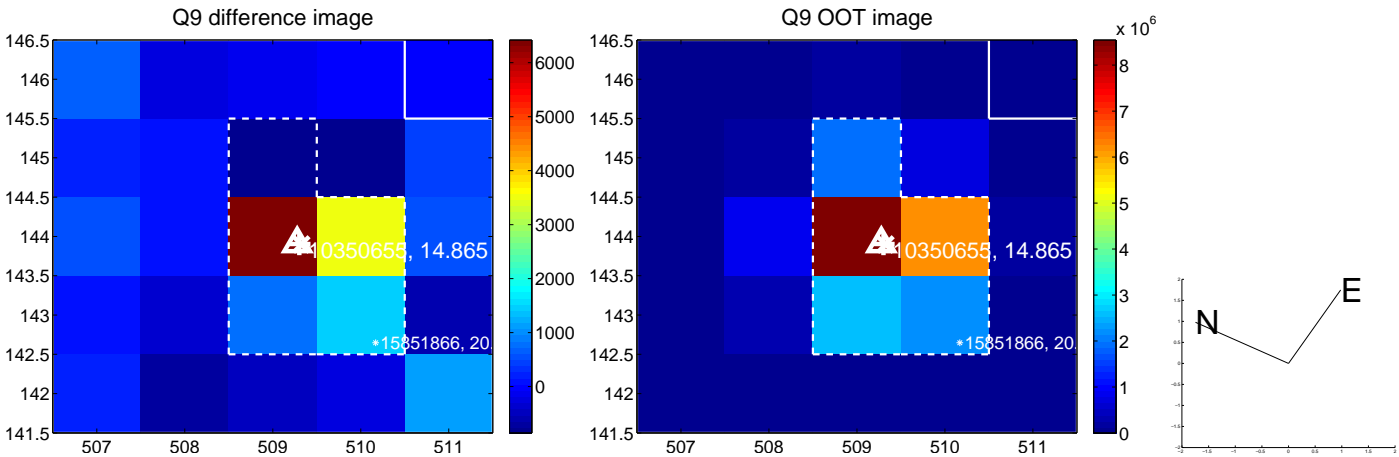




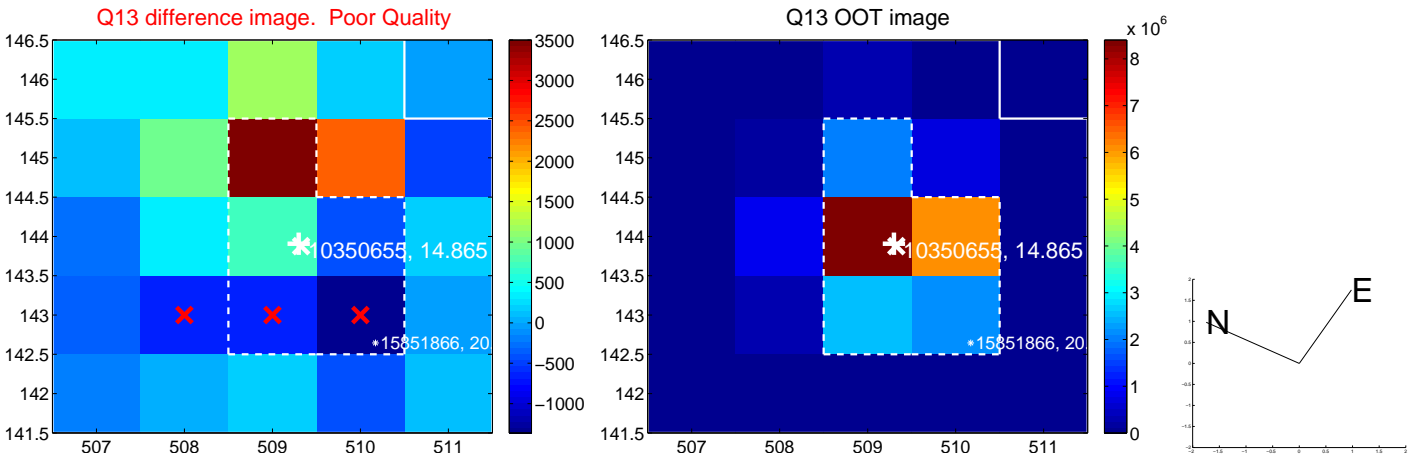
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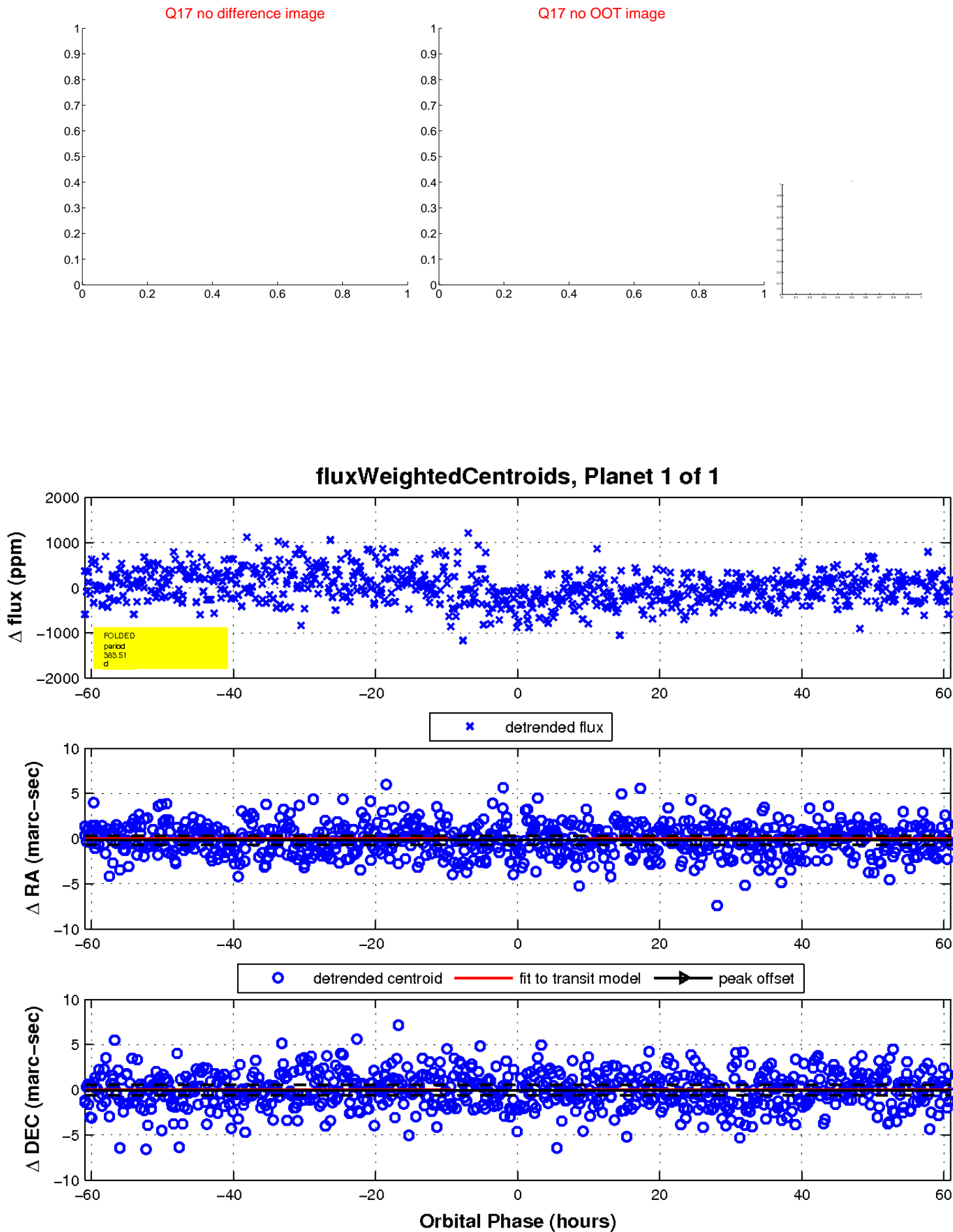
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



# UKIRT Image

Declination

