

# KIC 010610298

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010610298-01	OBS	No	319.314179	159.547941	551.7	5.789	8.7	8.4	1.25	5825	3.16	2.22

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010610298-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS

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

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

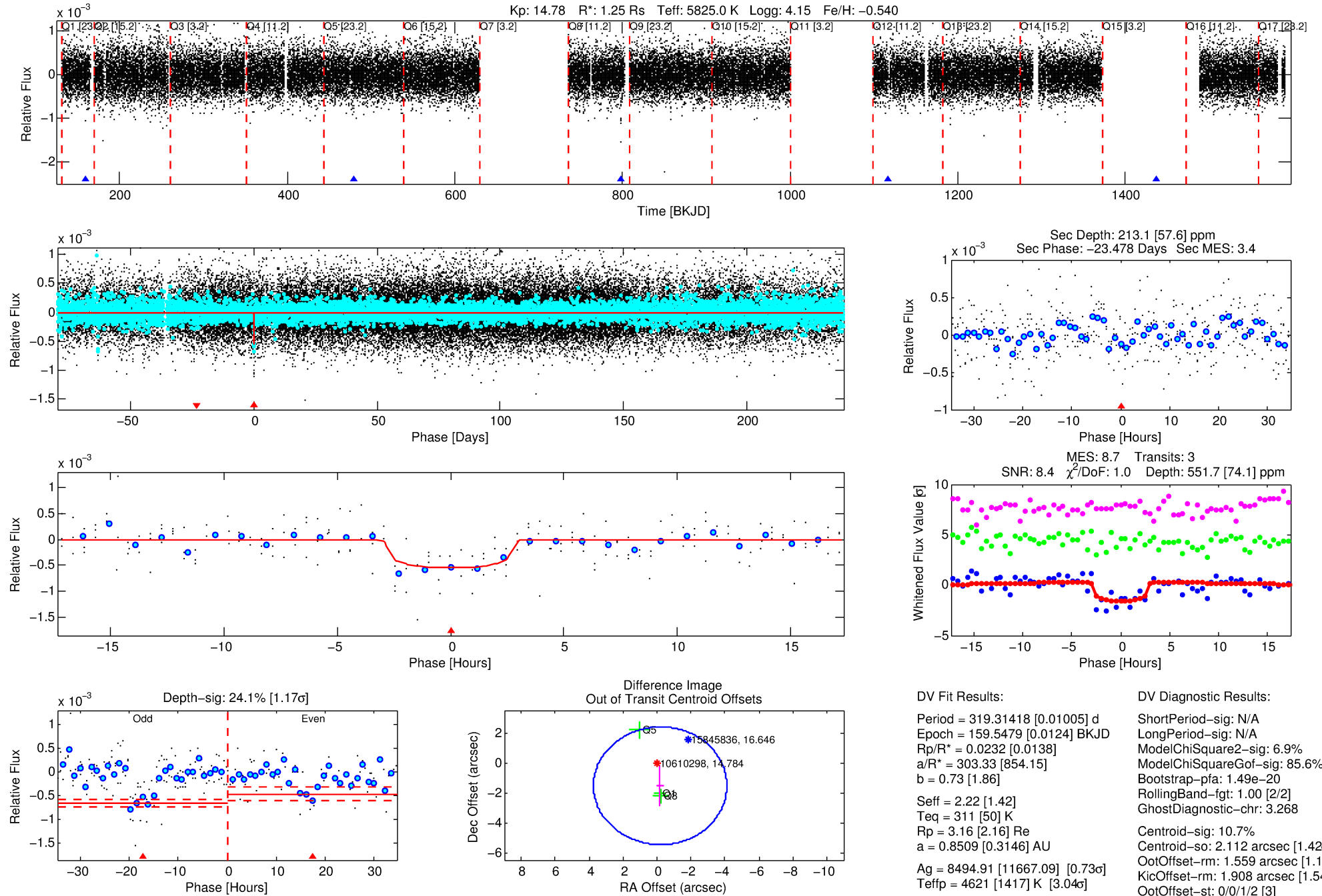
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010610298-01

No Significant Match Found

# DV One-Page Summary

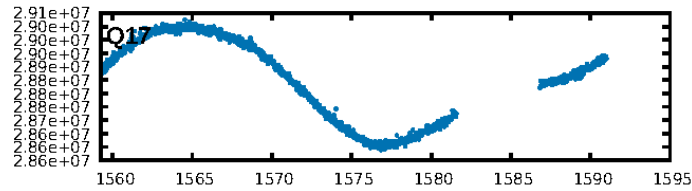
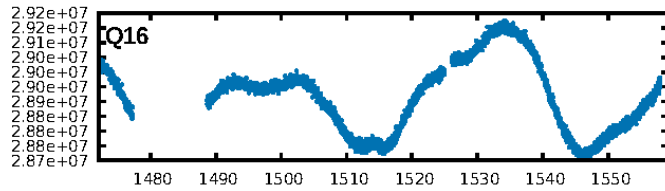
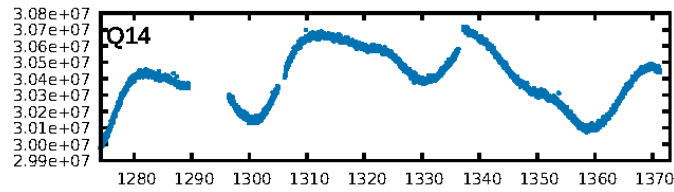
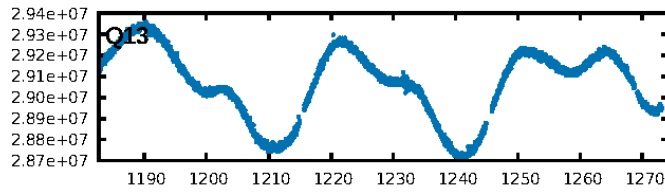
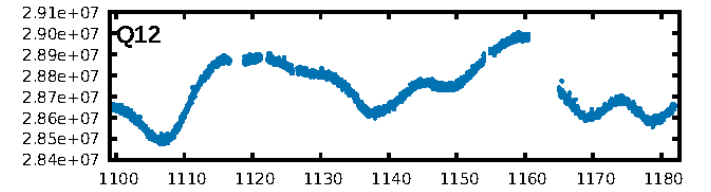
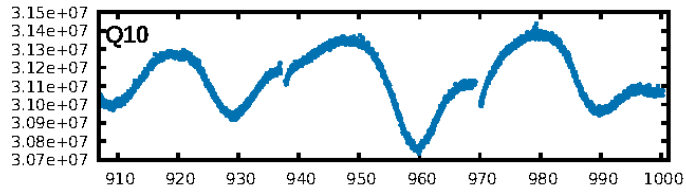
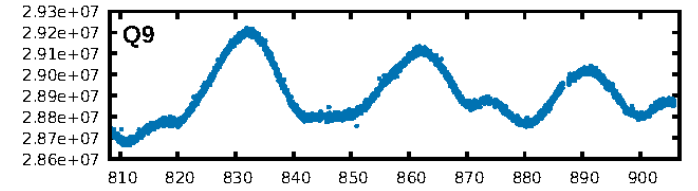
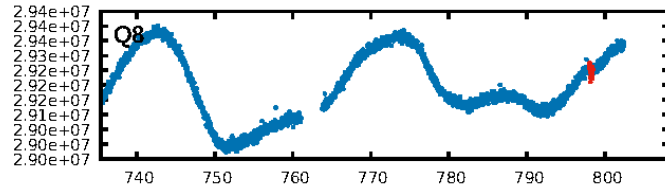
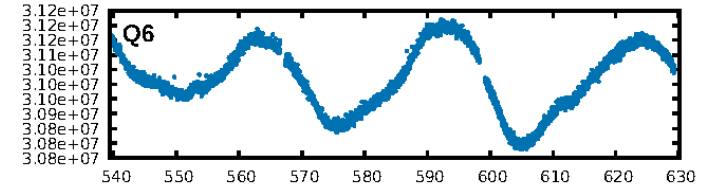
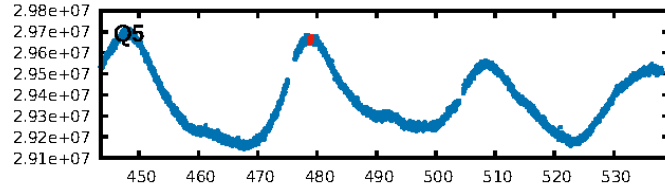
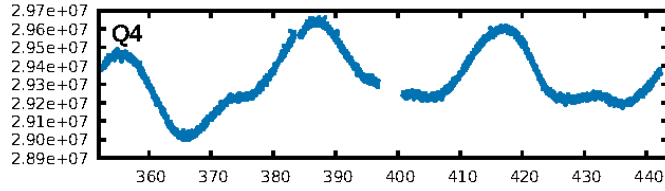
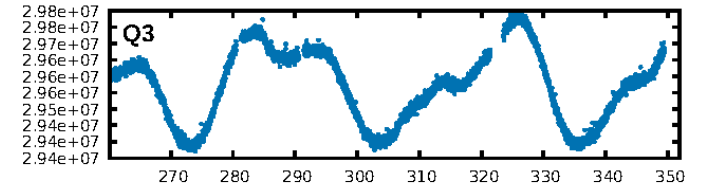
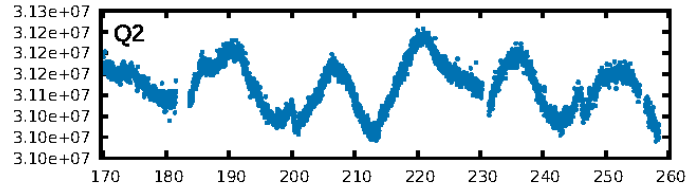
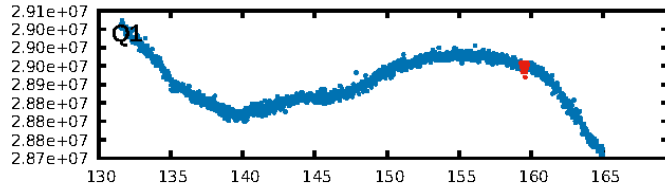
KIC: 10610298 Candidate: 1 of 1 Period: 319.314 d



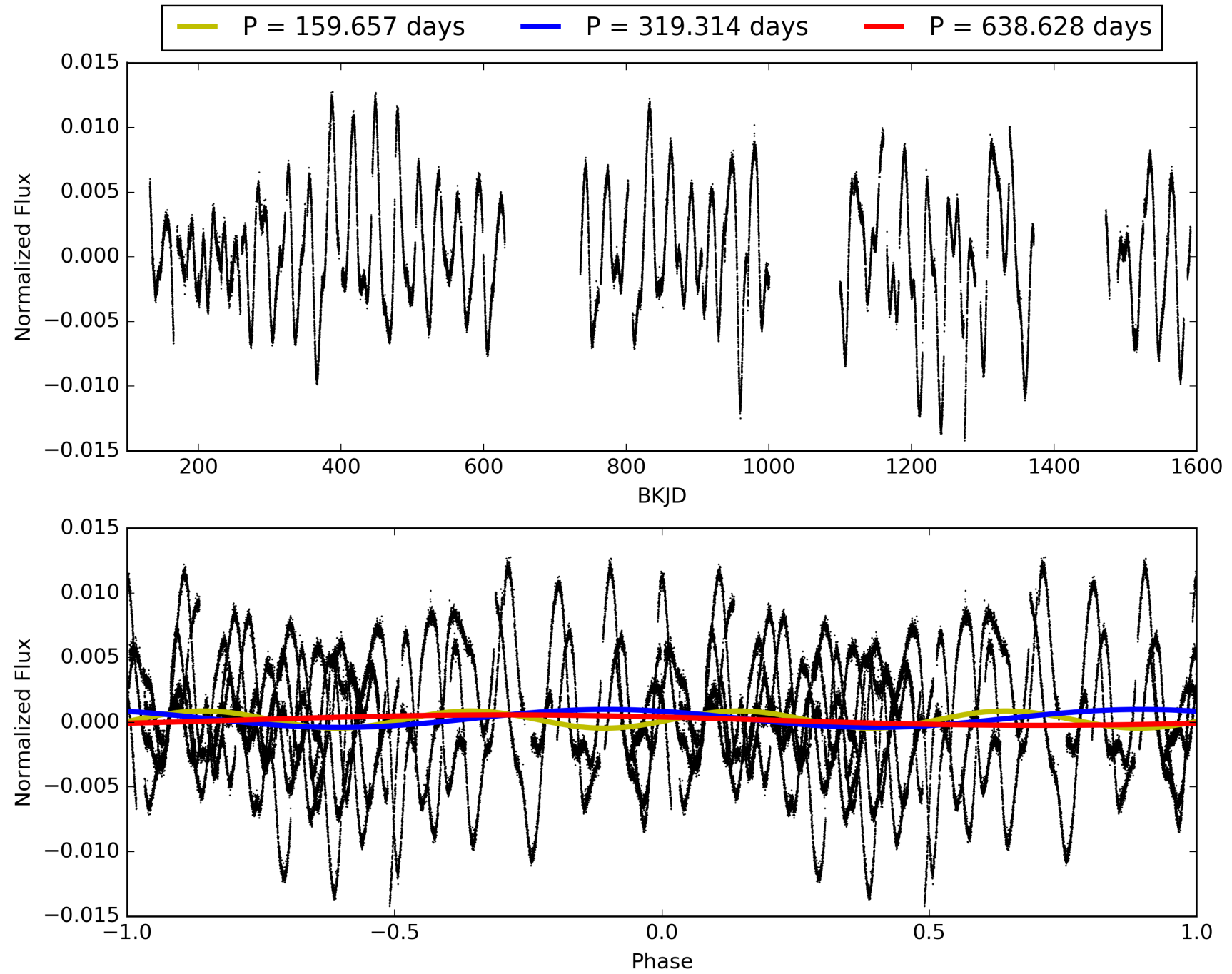
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:34:10 Z

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

# TCE 010610298-01, PDC Light Curves

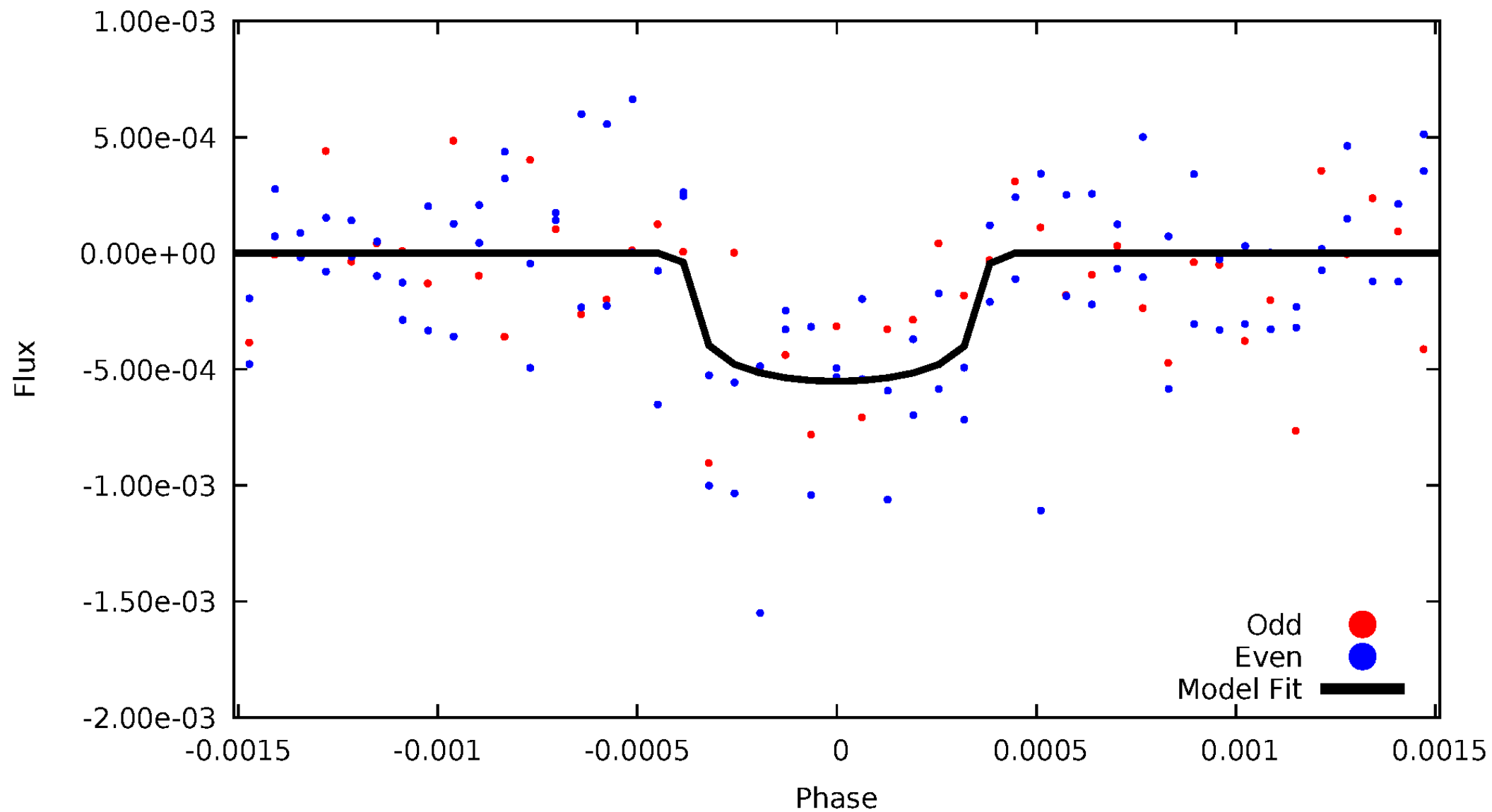


TCE 010610298-01



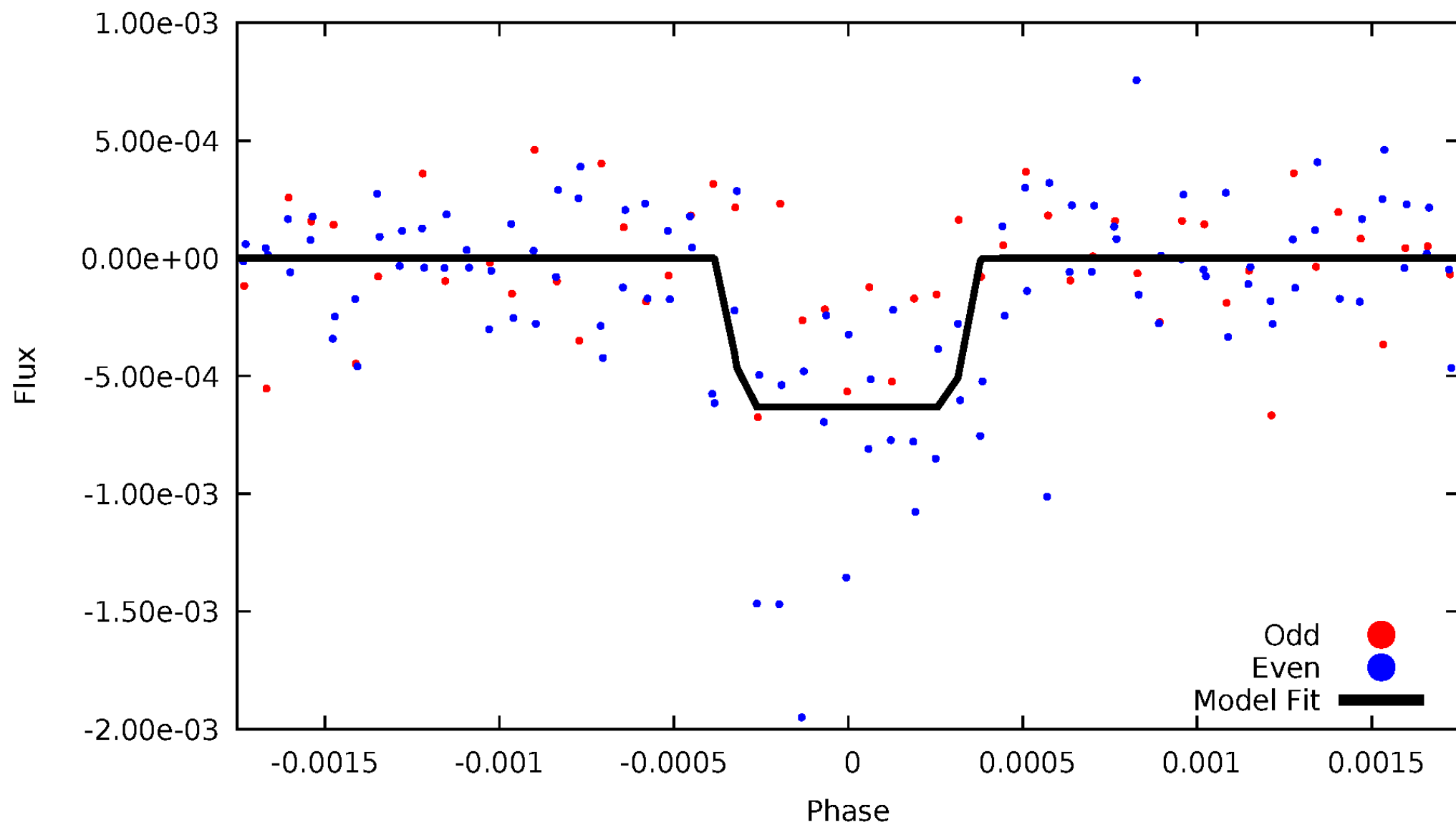
# DV Odd/Even

TCE 010610298-01



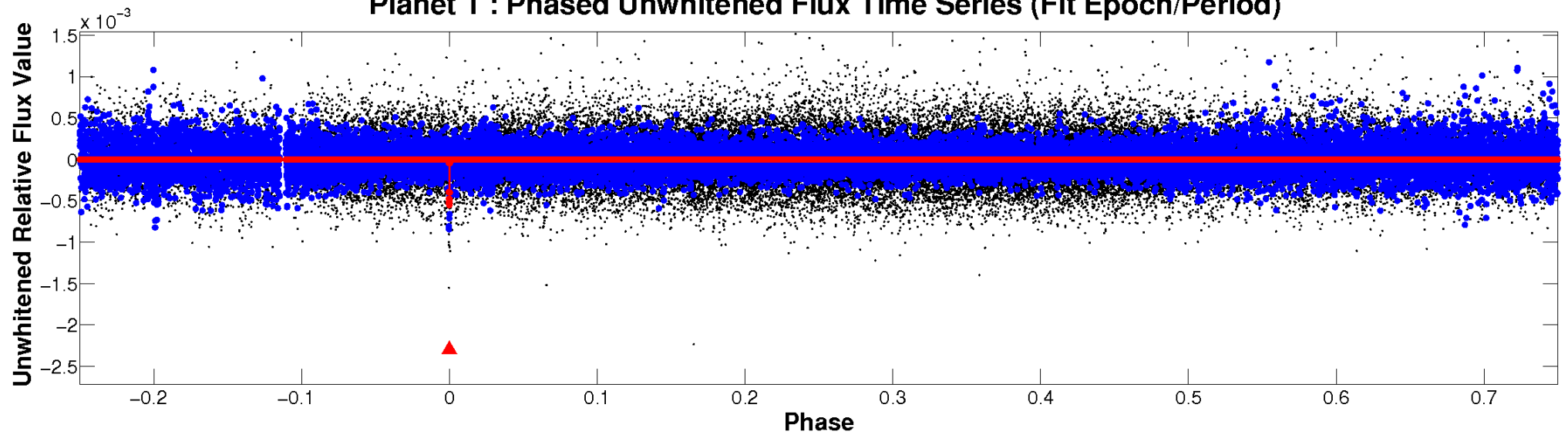
# ALT Odd/Even

TCE 010610298-01

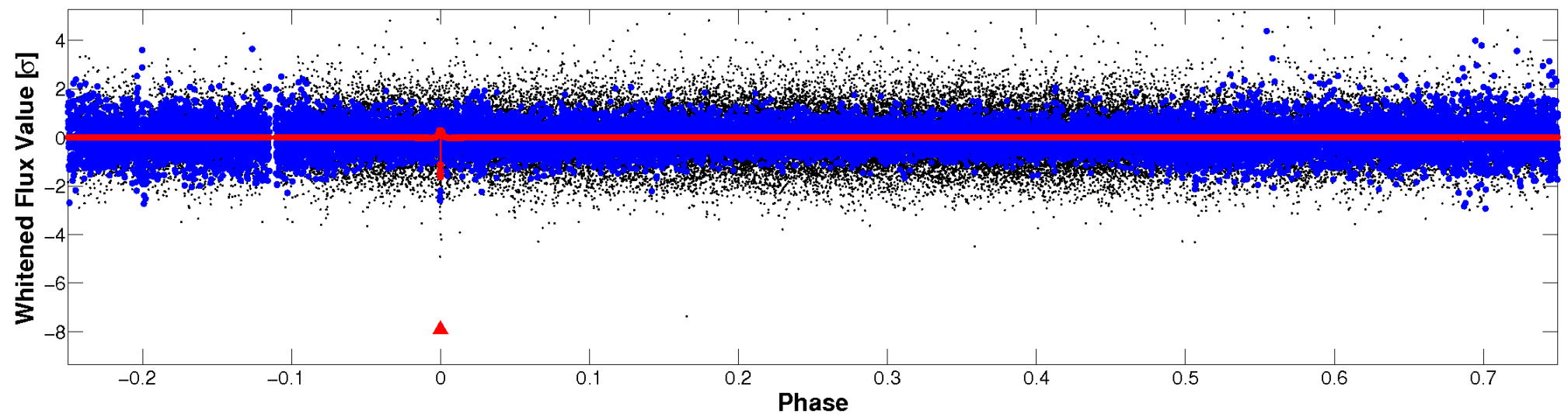


# Non-Whitened Vs. Whitened Light Curve

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

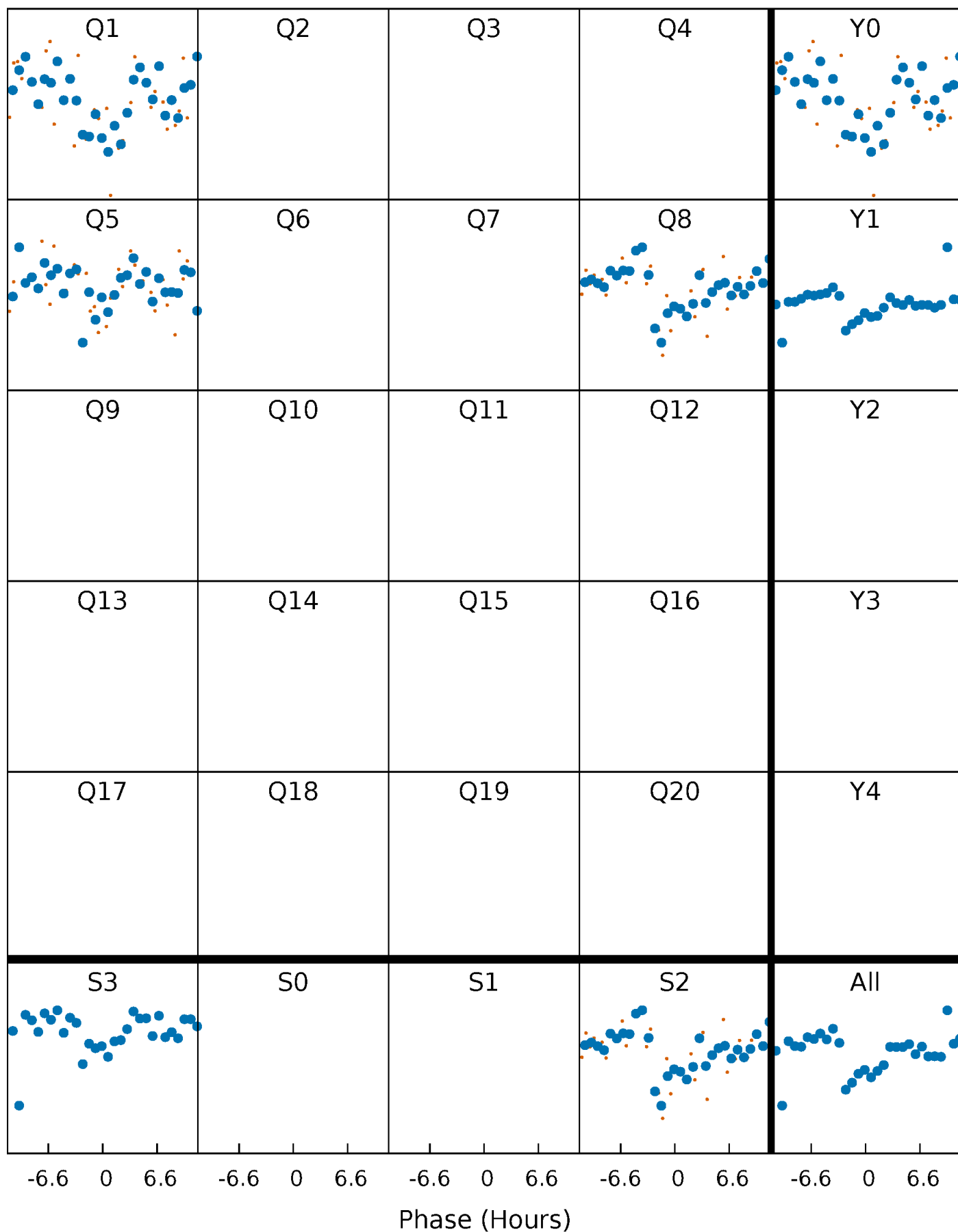


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

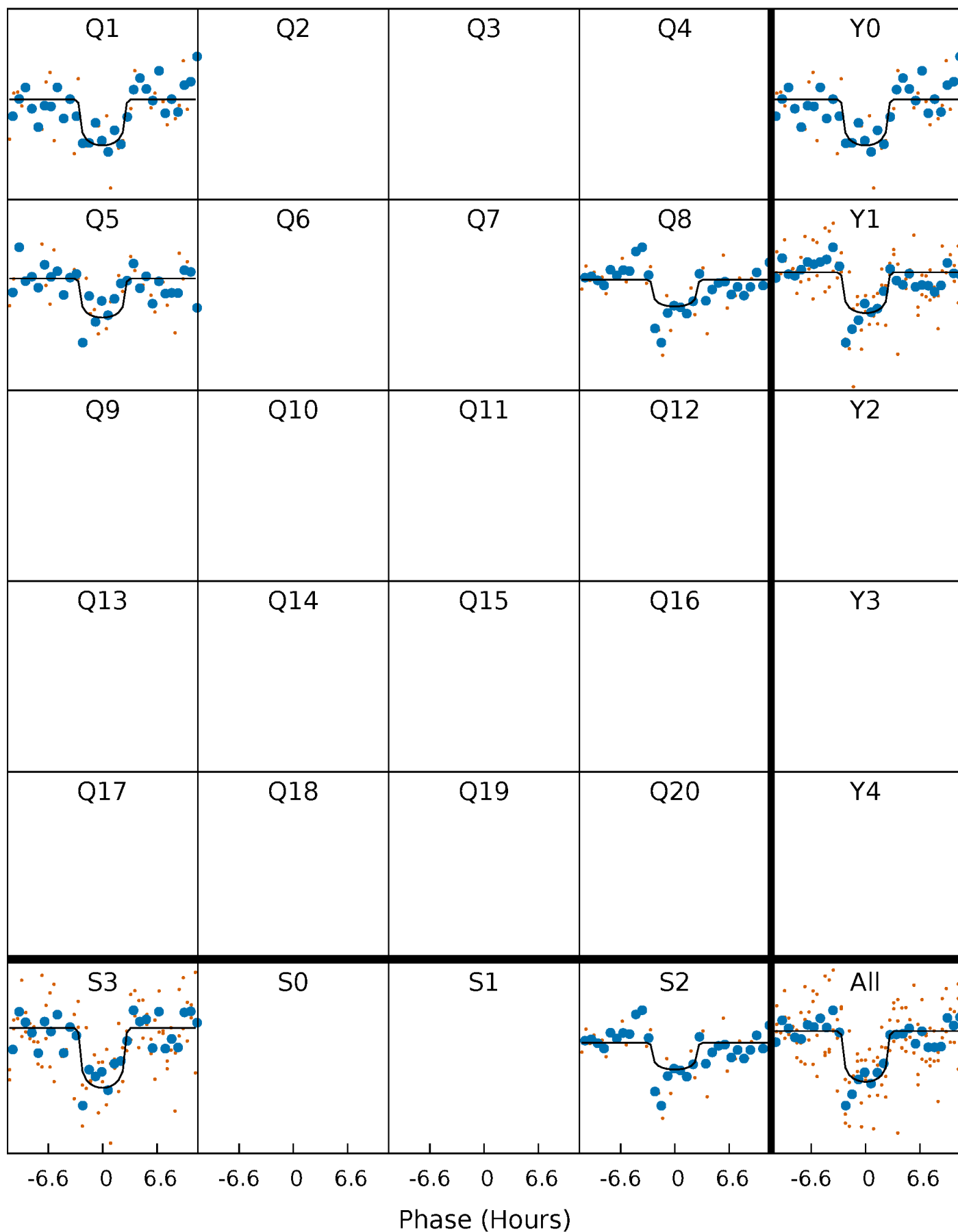
TCE 010610298-01 P=319.314179 Days  $T_0=159.547941$  (BKJD)





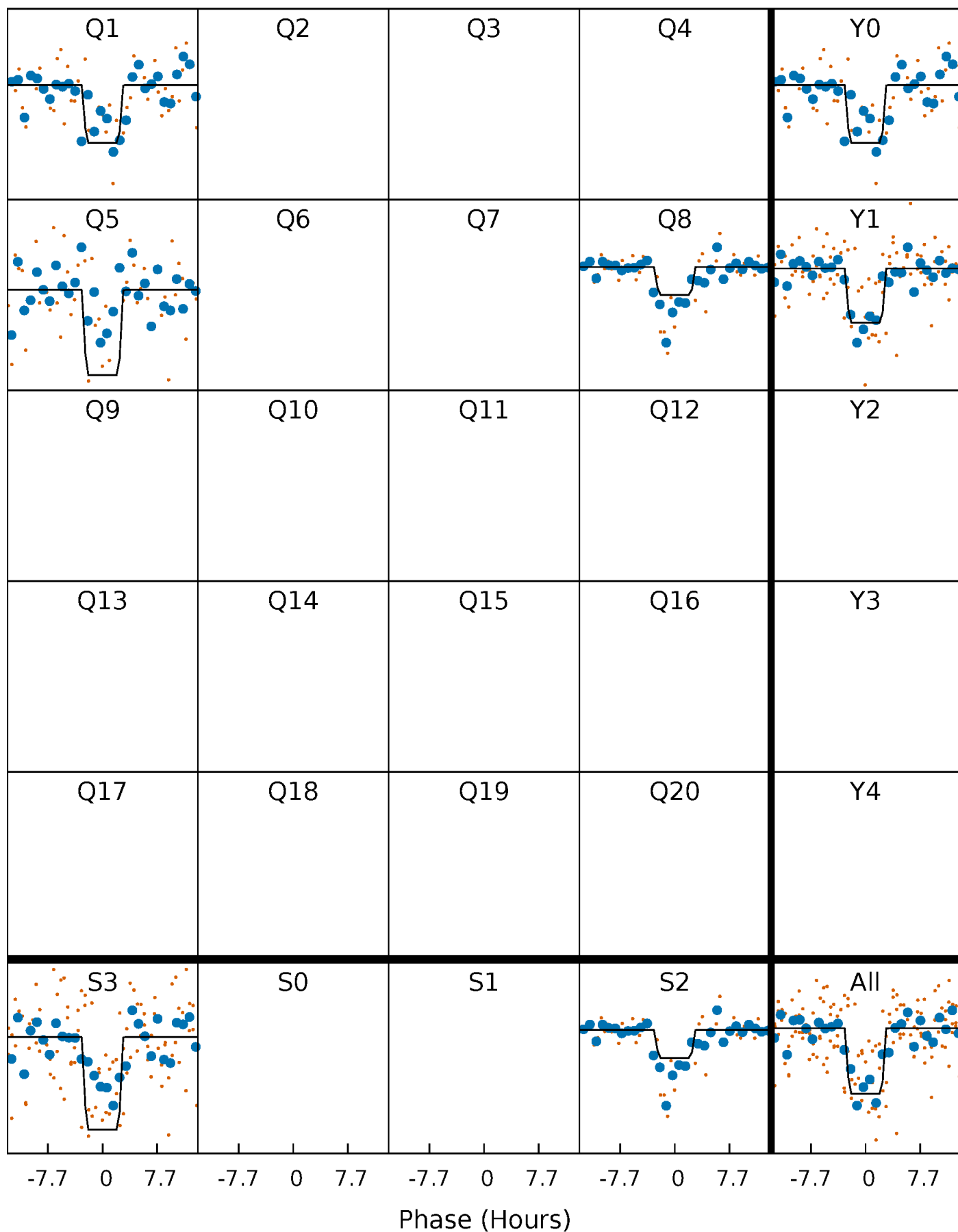
# DV Quarter-Phased Transit Curves

TCE 010610298-01     $P=319.314179$  Days     $T_0=159.547941$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

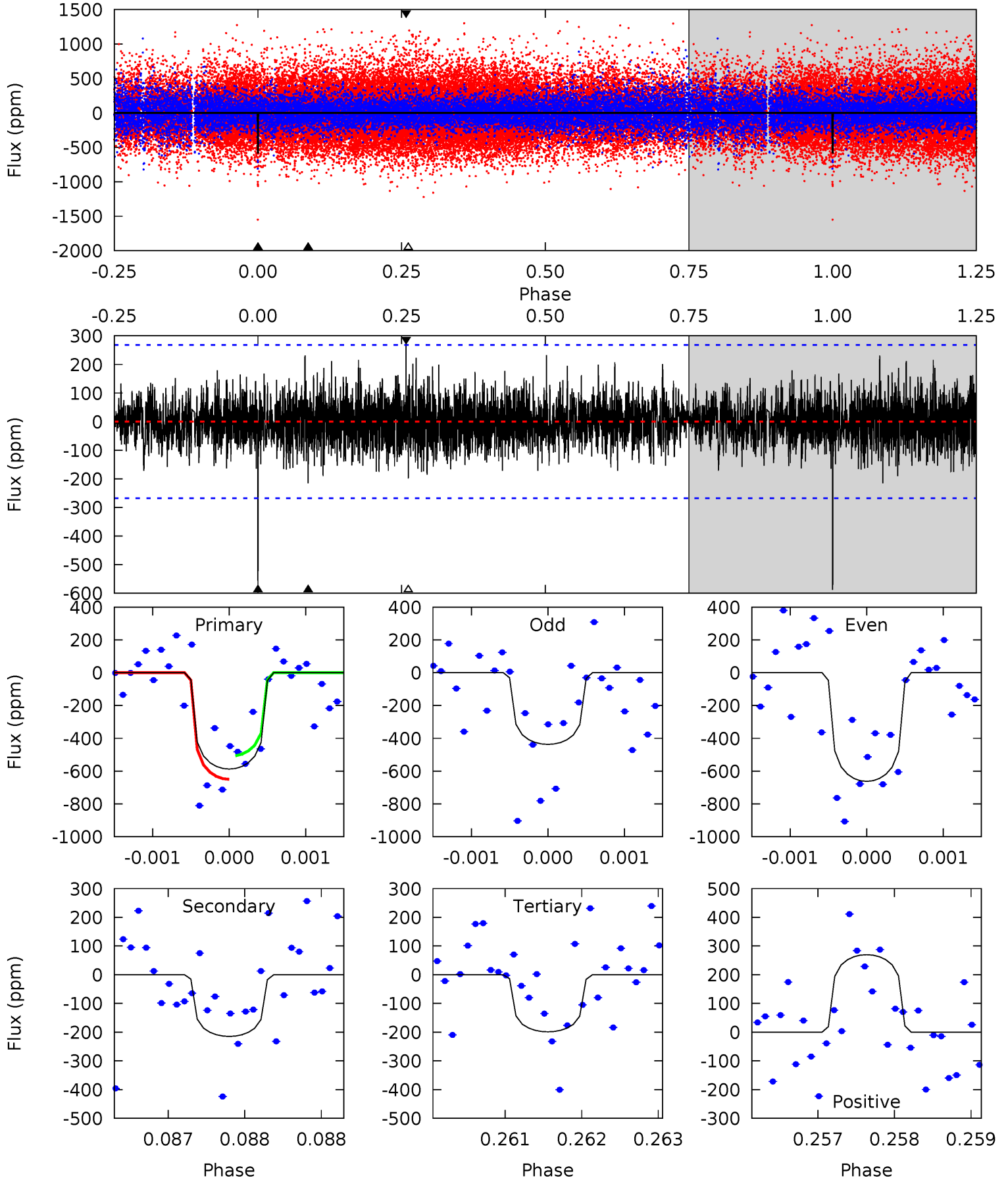
TCE 010610298-01 P=319.315242 Days  $T_0=159.527190$  (BKJD)



# DV Model-Shift Uniqueness Test

010610298-01, P = 319.314179 Days, E = 159.547941 Days

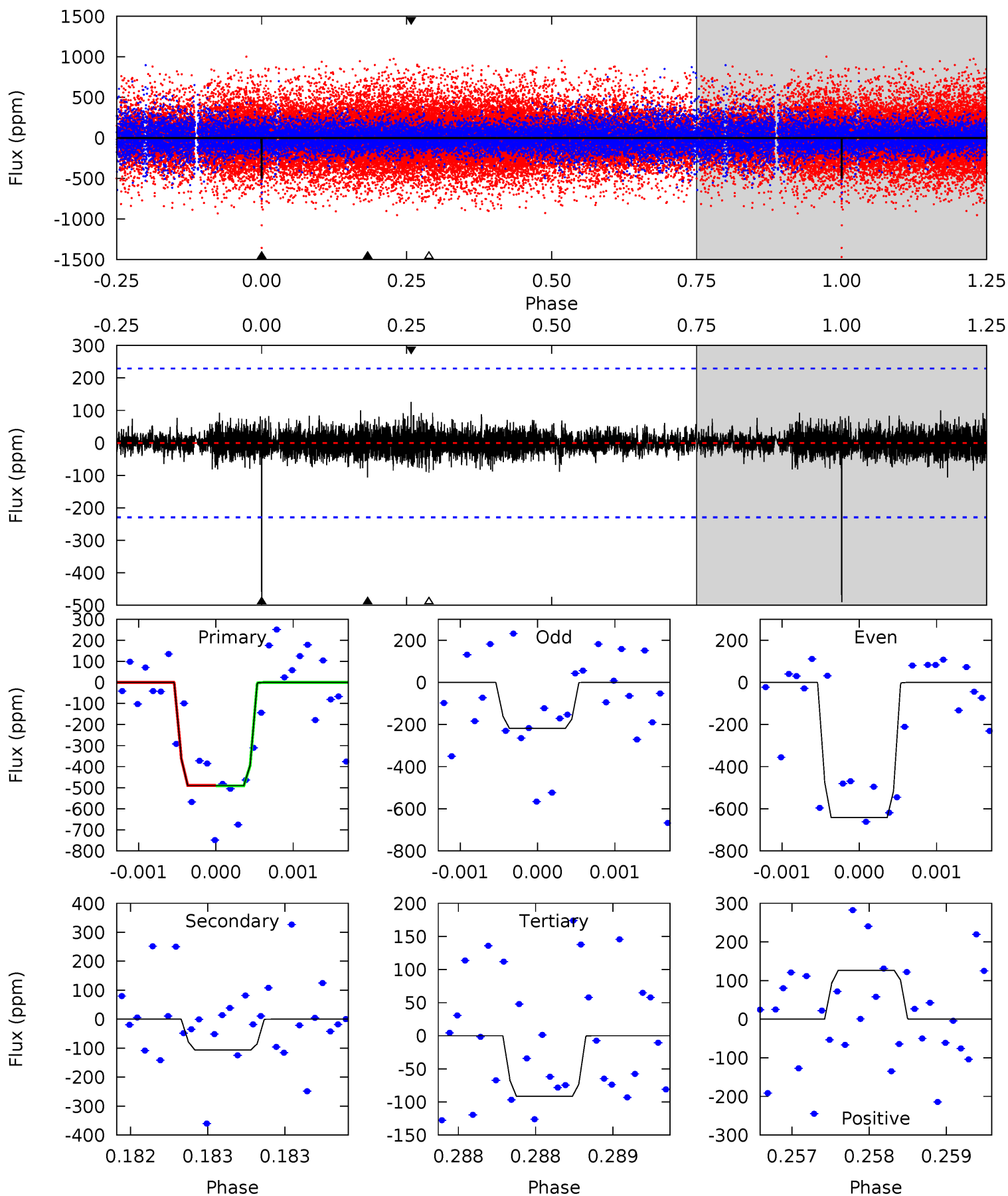
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	4.41	4.08	5.54	5.50	3.36	1.23	7.98	6.52	0.33	-1.13	2.19	1.12	0.31	1.47



# Alt Model-Shift Uniqueness Test

010610298-01, P = 319.315242 Days, E = 159.527190 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
11.8	2.55	2.20	3.04	5.51	3.39	0.55	9.59	8.75	0.36	-0.49	5.05	1.27	0.21	0.02



### Stellar Parameters For KIC 010610298

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5825^{+177}_{-177}$	$4.151^{+0.383}_{-0.206}$	$-0.540^{+0.300}_{-0.250}$	$1.249^{+0.420}_{-0.420}$	$0.805^{+0.110}_{-0.055}$	$0.582^{+1.560}_{-0.286}$
	+3%/-3%	+9%/-5%	+56%/-46%	+34%/-34%	+14%/-7%	+268%/-49%
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 010610298-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-215 \pm 49$	$3.19^{+1.78}_{-1.67}$	$430^{+39}_{-47}$	$4656^{+1814}_{-691}$	$8268^{+30326}_{-4911}$
Alt.	$-106 \pm 42$	$3.31^{+2.03}_{-1.67}$	$430^{+39}_{-45}$	$3957^{+1237}_{-599}$	$3594^{+11757}_{-2399}$

$T_{\text{max}}$  = 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

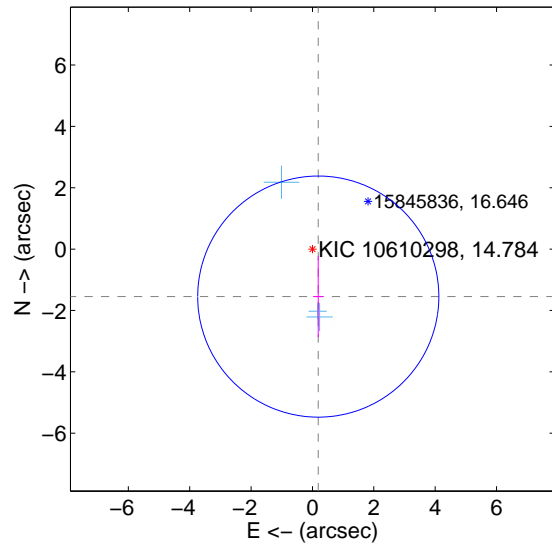
Supplemental centroid analysis for 010610298-01. Kepler magnitude: 14.78. Transit SNR 8.39

There are 3 quarters with good PRF difference image offsets

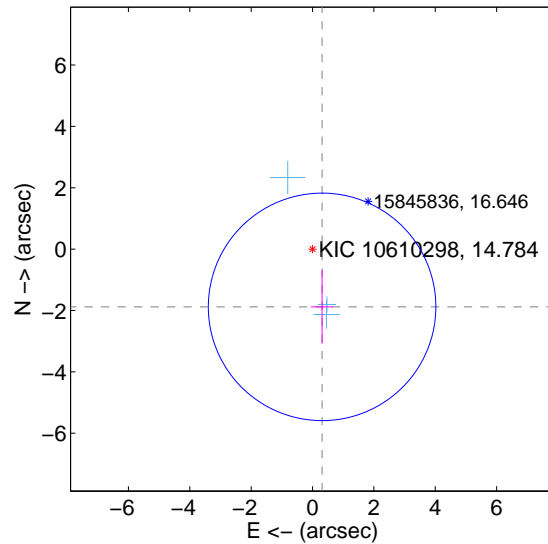
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.559 \pm 1.309$	1.19	$-0.190 \pm 0.170$	$-1.548 \pm 1.319$
PRF-fit source offset from KIC position	$1.908 \pm 1.236$	1.54	$-0.311 \pm 0.359$	$-1.882 \pm 1.194$
photometric centroid source offset	$2.11 \pm 1.49$	1.42	$-1.09 \pm 1.53$	$-1.81 \pm 1.47$

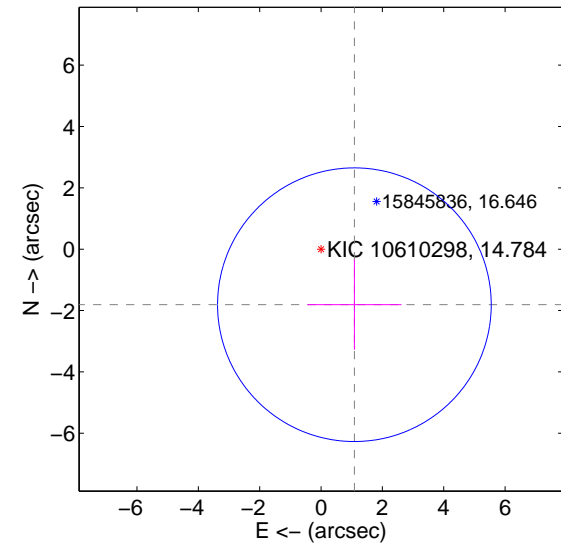
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

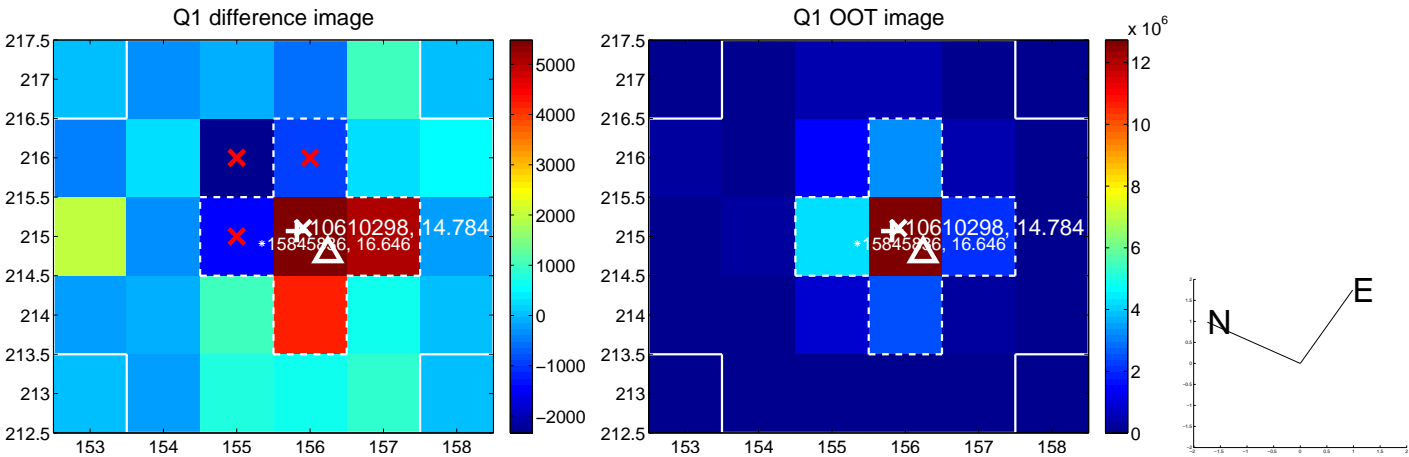


offset from photometric centroids

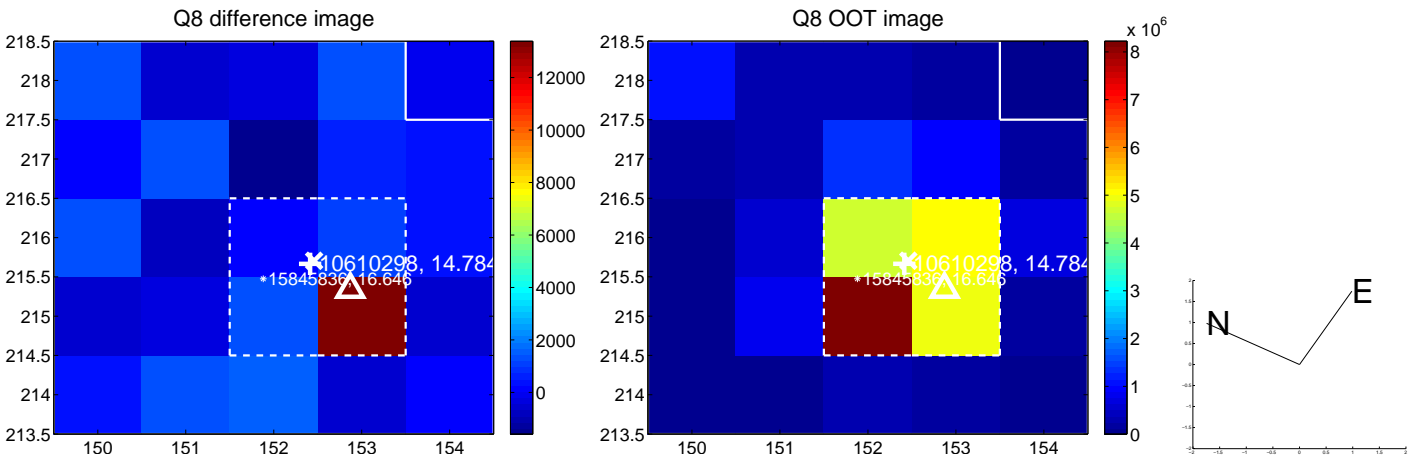
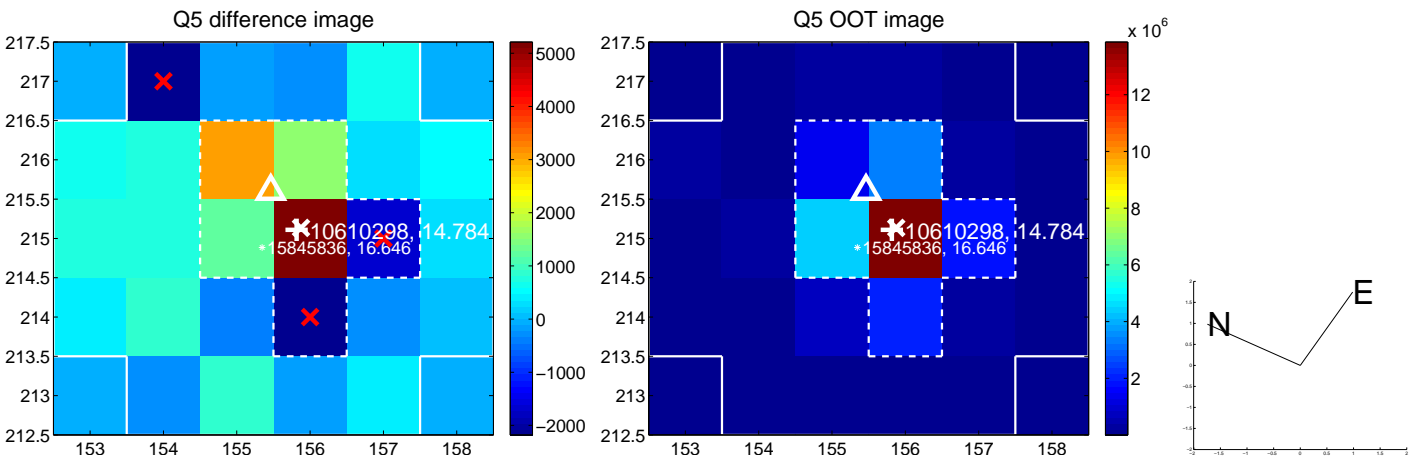


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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





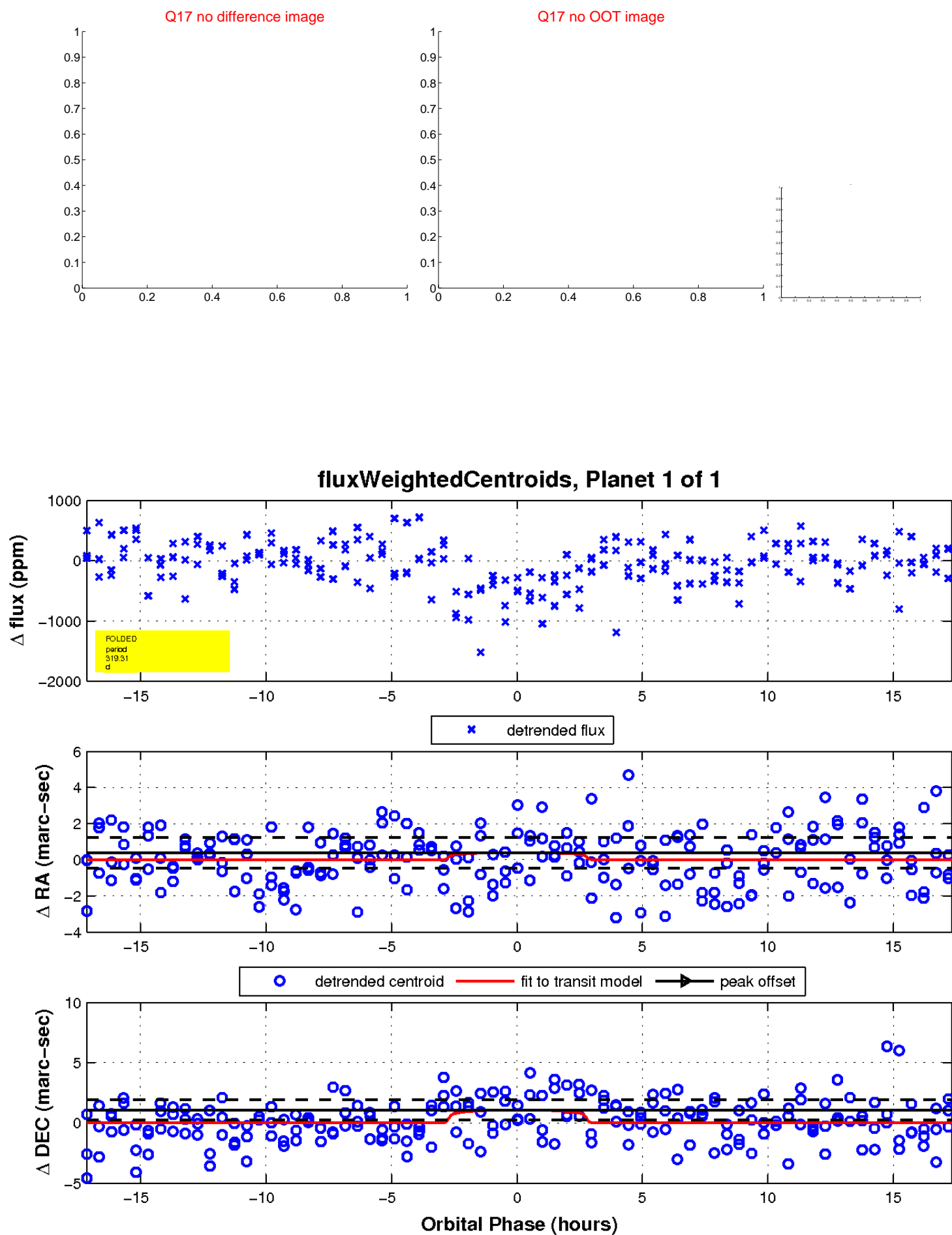
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

