

# KIC 007747835

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
007747835-01	OBS	8143.01	373.748777	259.923465	565.8	28.456	8.3	9.2	0.94	6131	2.52	1.08

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007747835-01	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_SKYE—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH

**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.

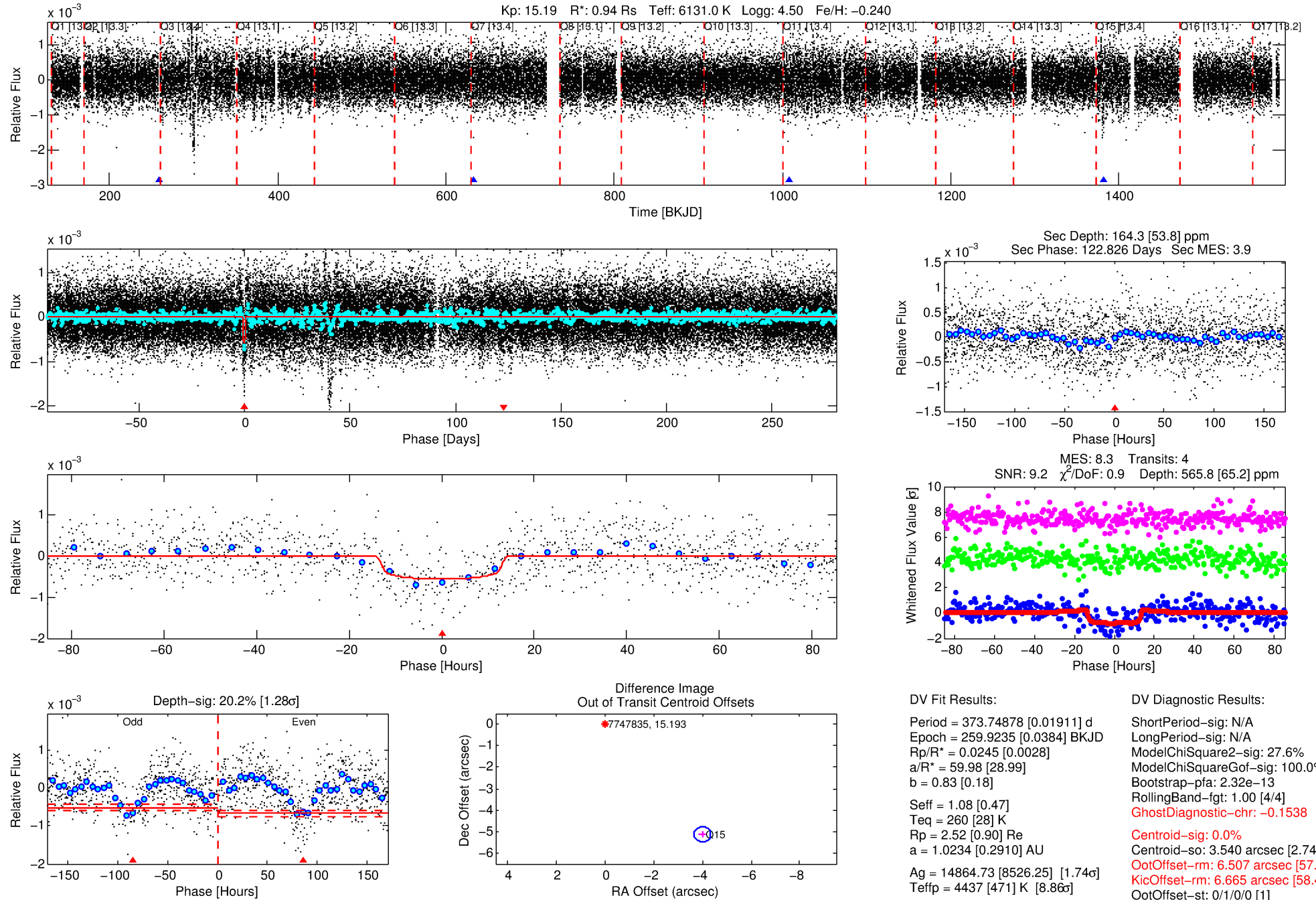
## Ephemeris Match Information For 007747835-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	ΔRow	ΔCol	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	σ <sub>P</sub>	σ <sub>T</sub>
007747835-01	7747835	007953895-01	7953895	1:1	1640.3	-6	-412	15.14	15.19	1.24	Col-Anomaly	1	0.98	1.11

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's. σ<sub>P</sub> and σ<sub>T</sub> are the significance of the match in period and epoch. For a match to be considered significant σ<sub>P</sub> < 5.0 and σ<sub>T</sub> < 5.0. Matches which have σ<sub>P</sub> and σ<sub>T</sub> very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

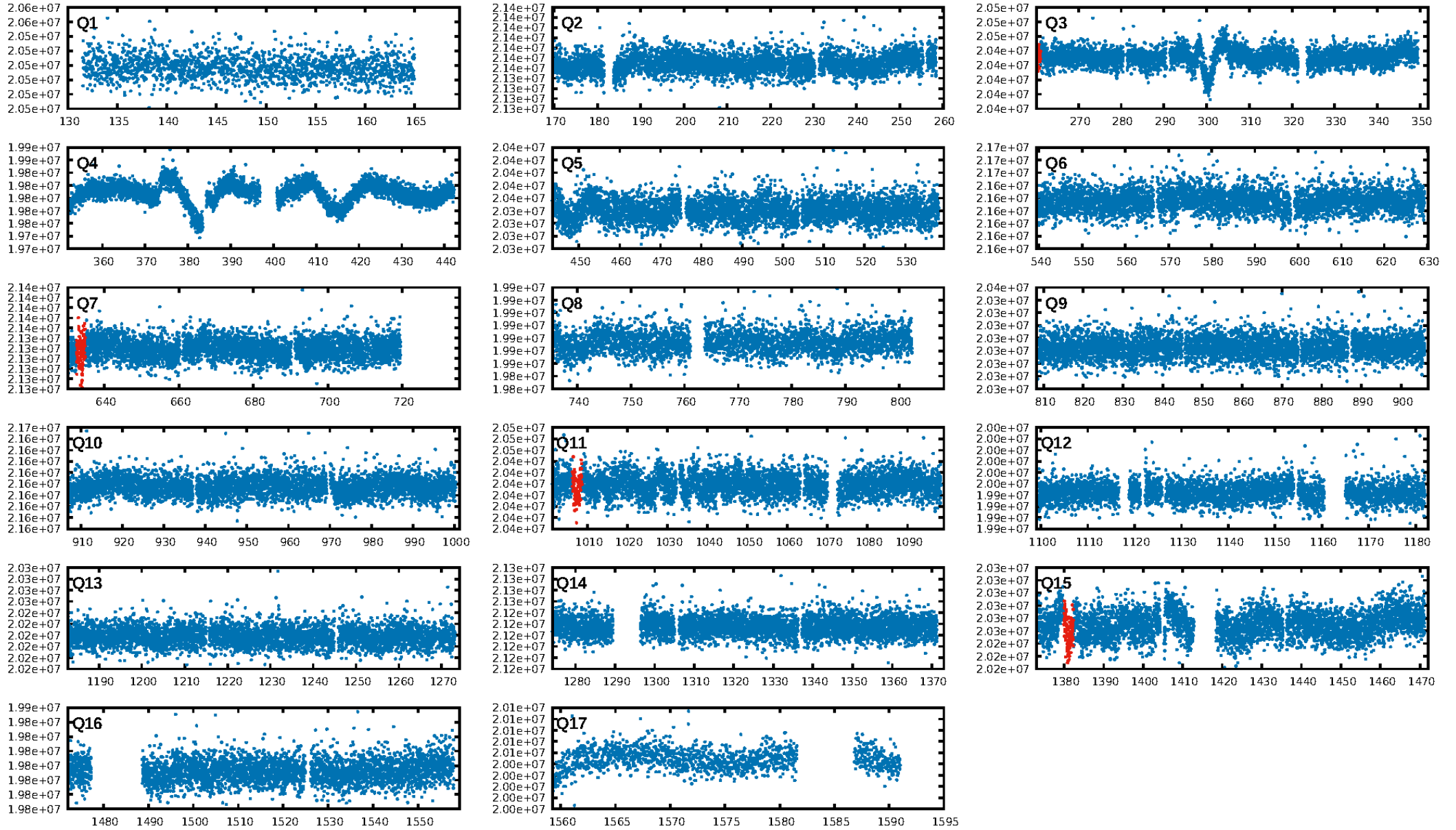
KIC: 7747835 Candidate: 1 of 1 Period: 373.749 d



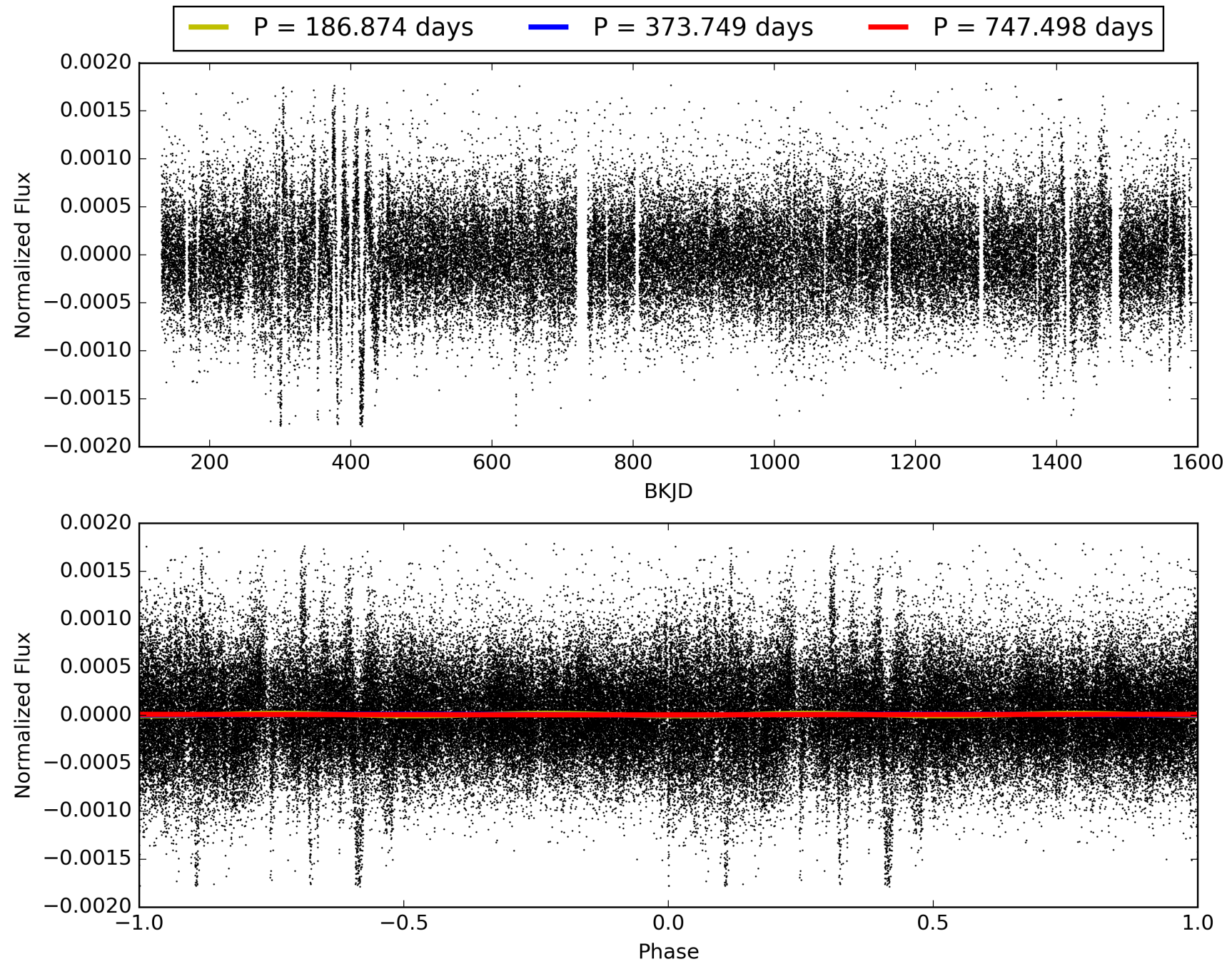
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:16:45 Z

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

# TCE 007747835-01, PDC Light Curves

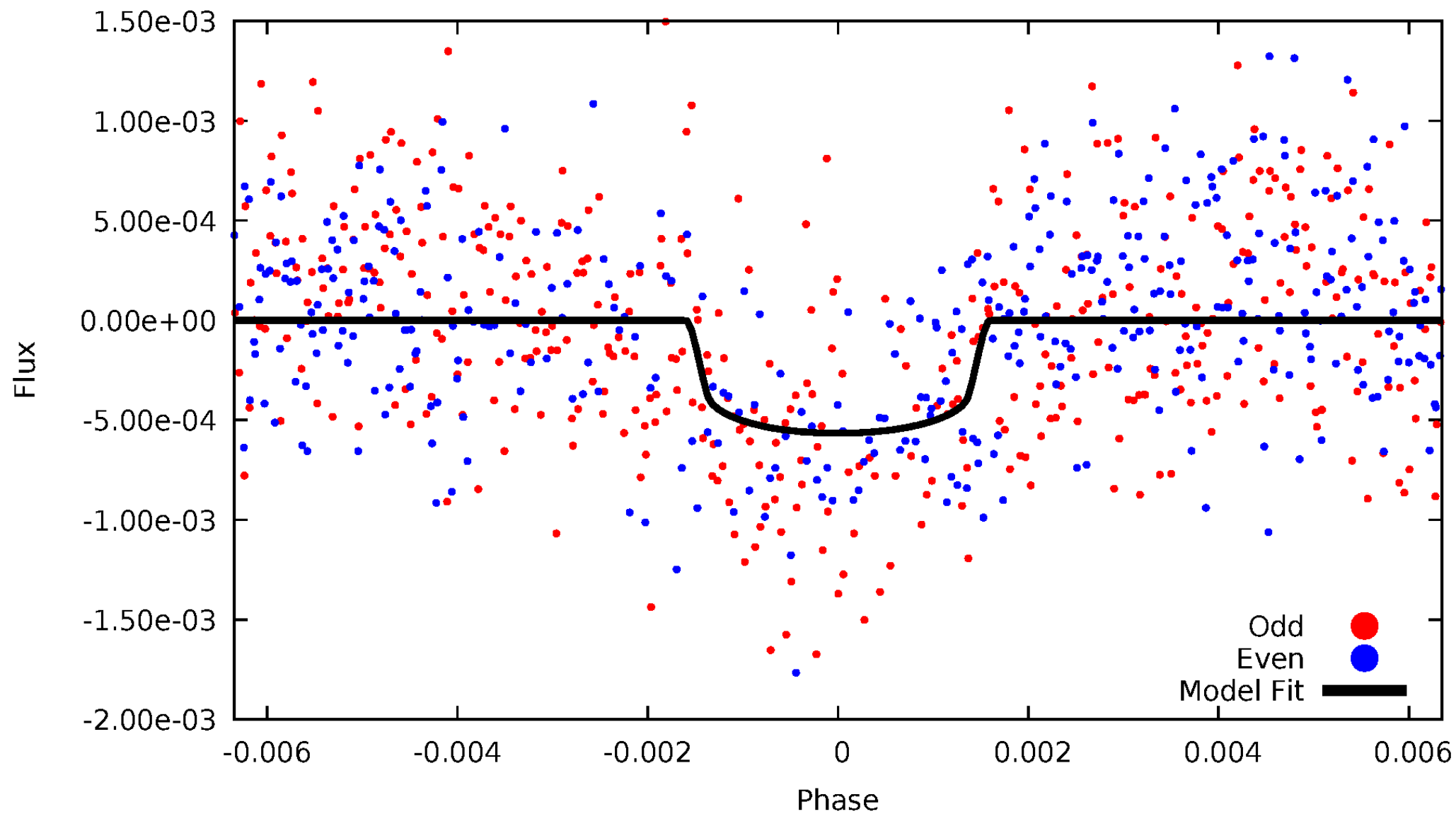


TCE 007747835-01



# DV Odd/Even

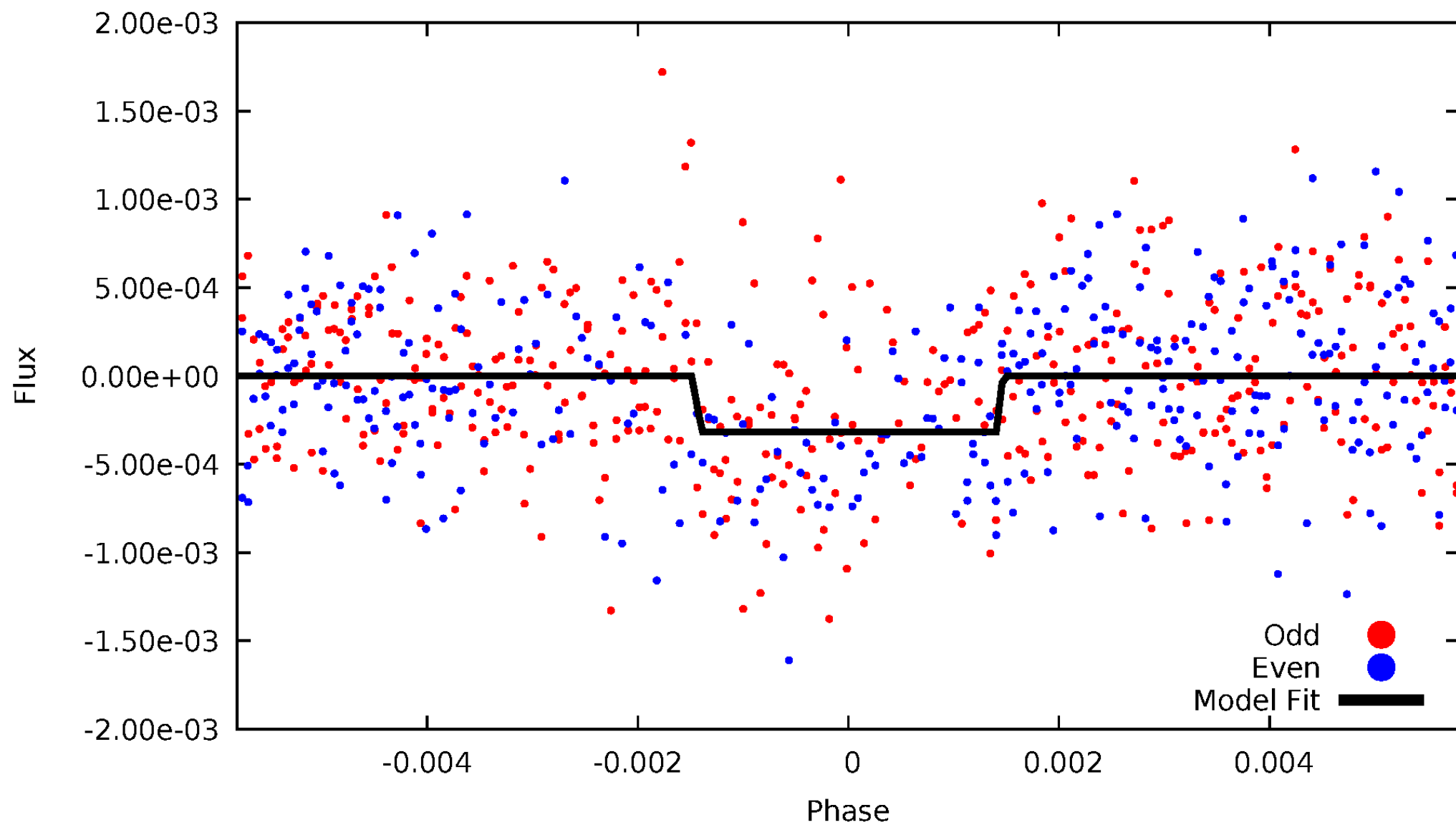
TCE 007747835-01





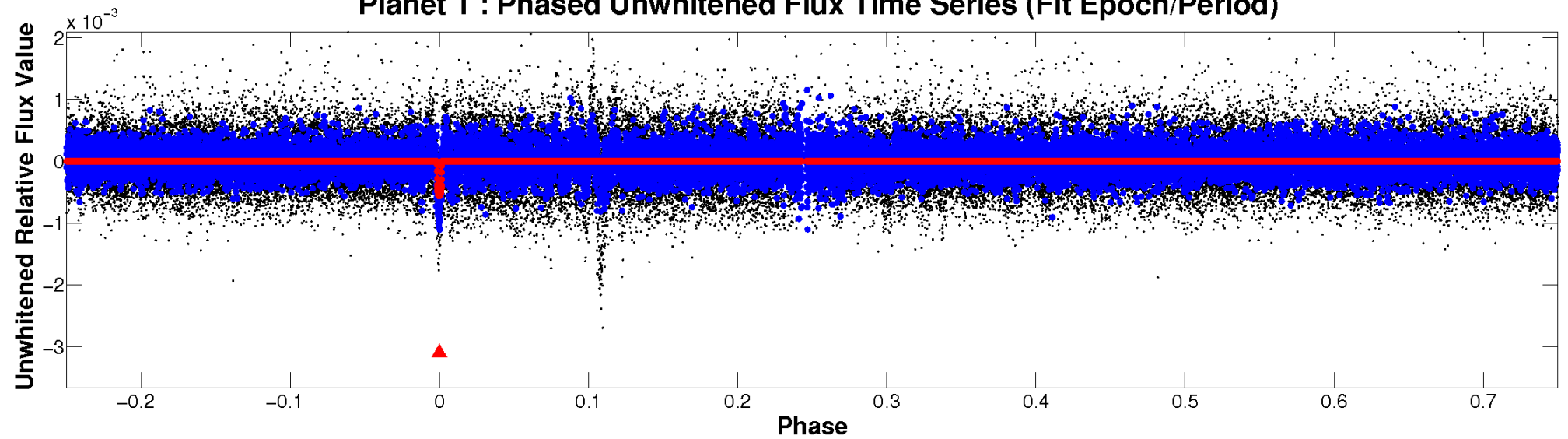
# ALT Odd/Even

TCE 007747835-01

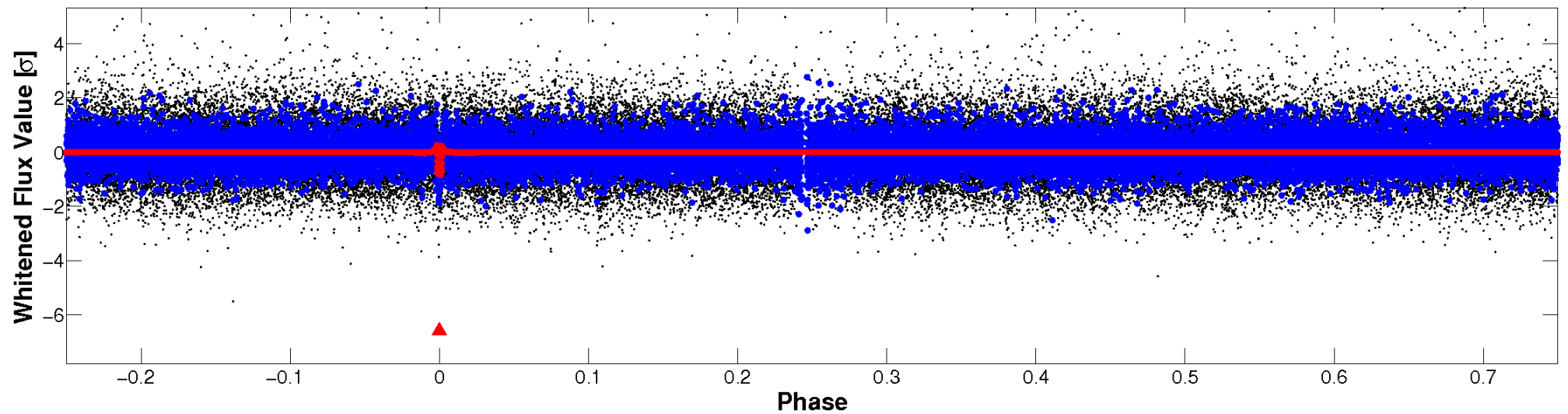


# Non-Whitened Vs. Whitened Light Curve

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

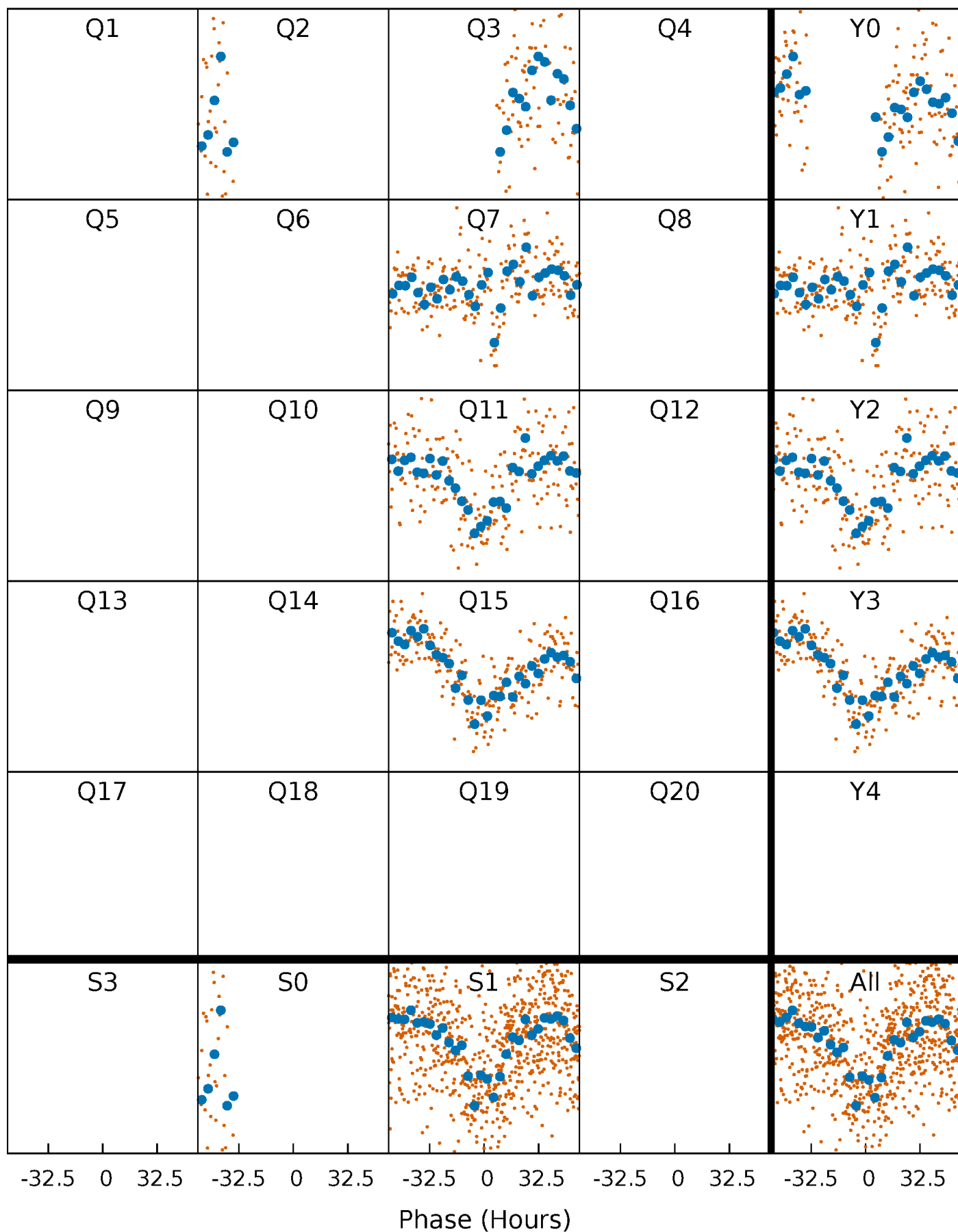


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

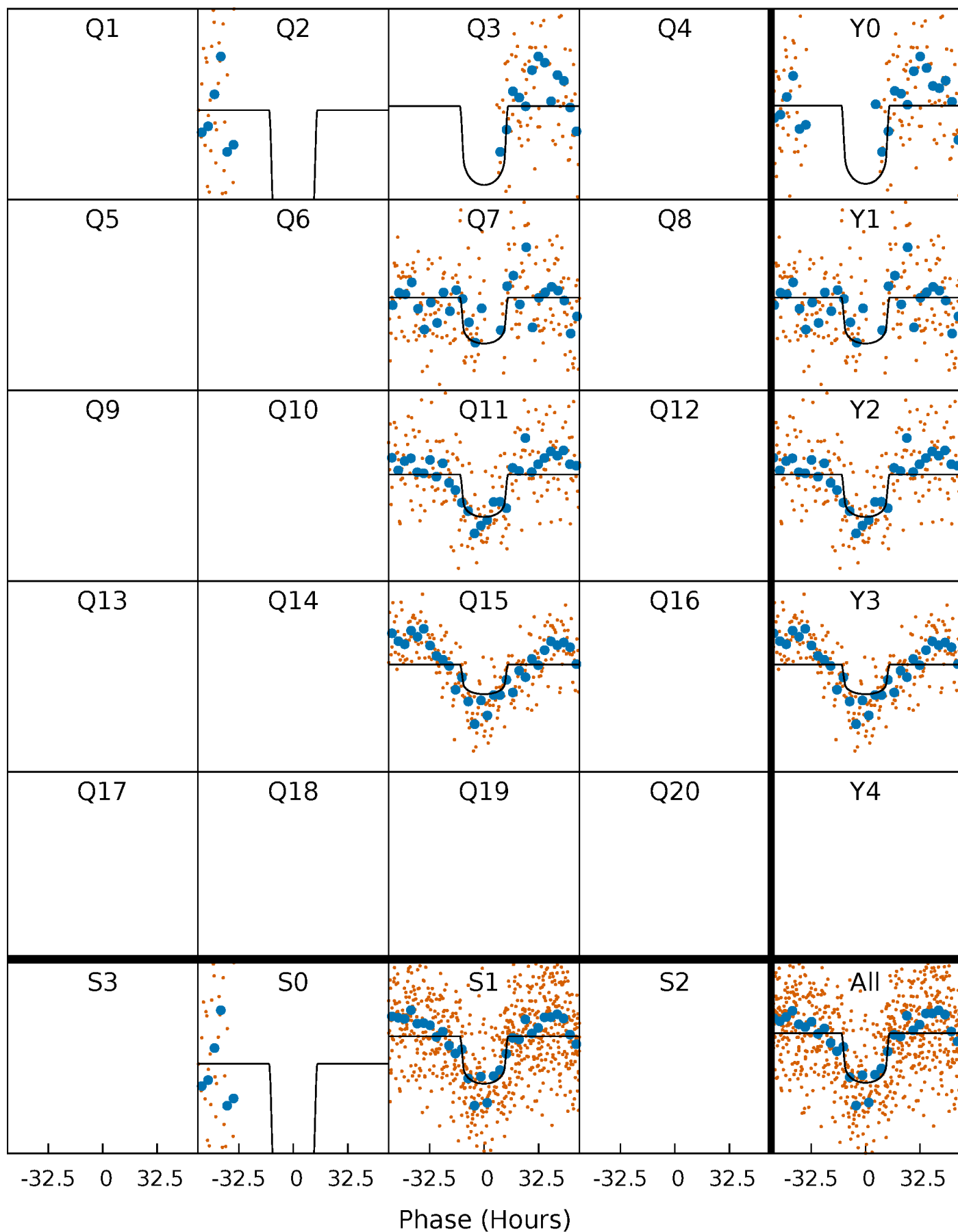
TCE 007747835-01 P=373.748777 Days  $T_0=259.923465$  (BKJD)





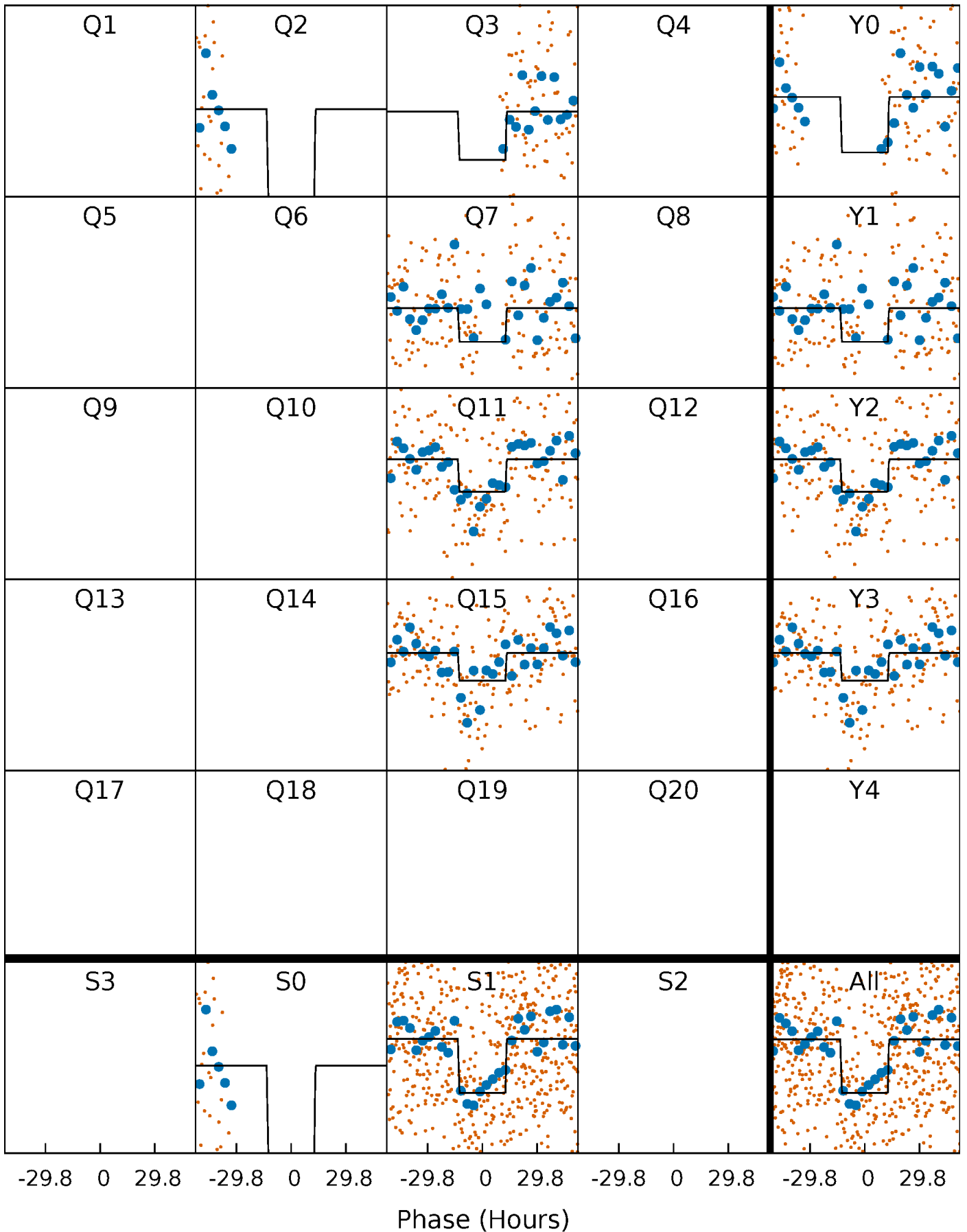
# DV Quarter-Phased Transit Curves

TCE 007747835-01 P=373.748777 Days  $T_0=259.923465$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

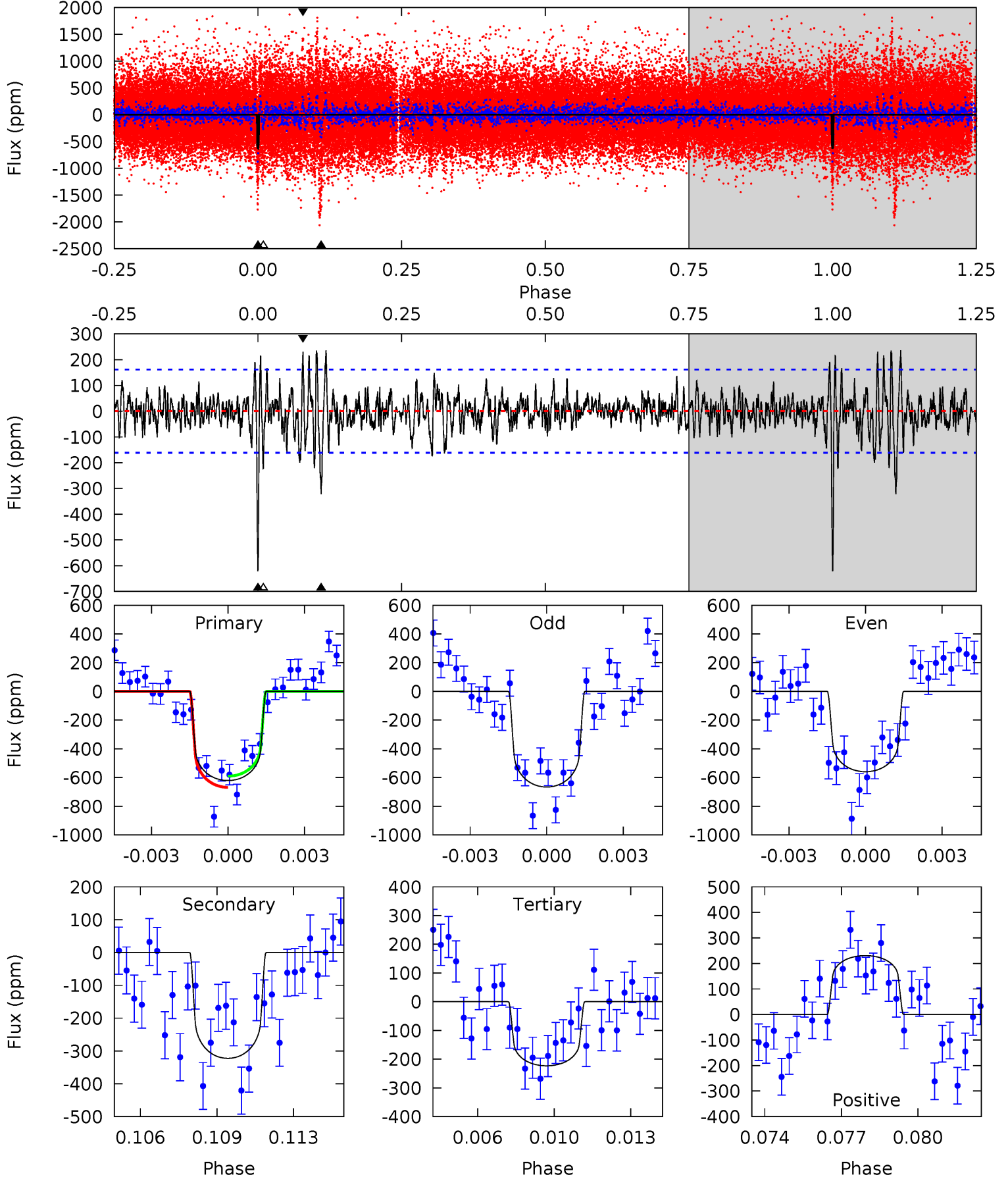
TCE 007747835-01 P=373.811547 Days  $T_0=259.843963$  (BKJD)



# DV Model-Shift Uniqueness Test

007747835-01, P = 373.748777 Days, E = 259.923465 Days

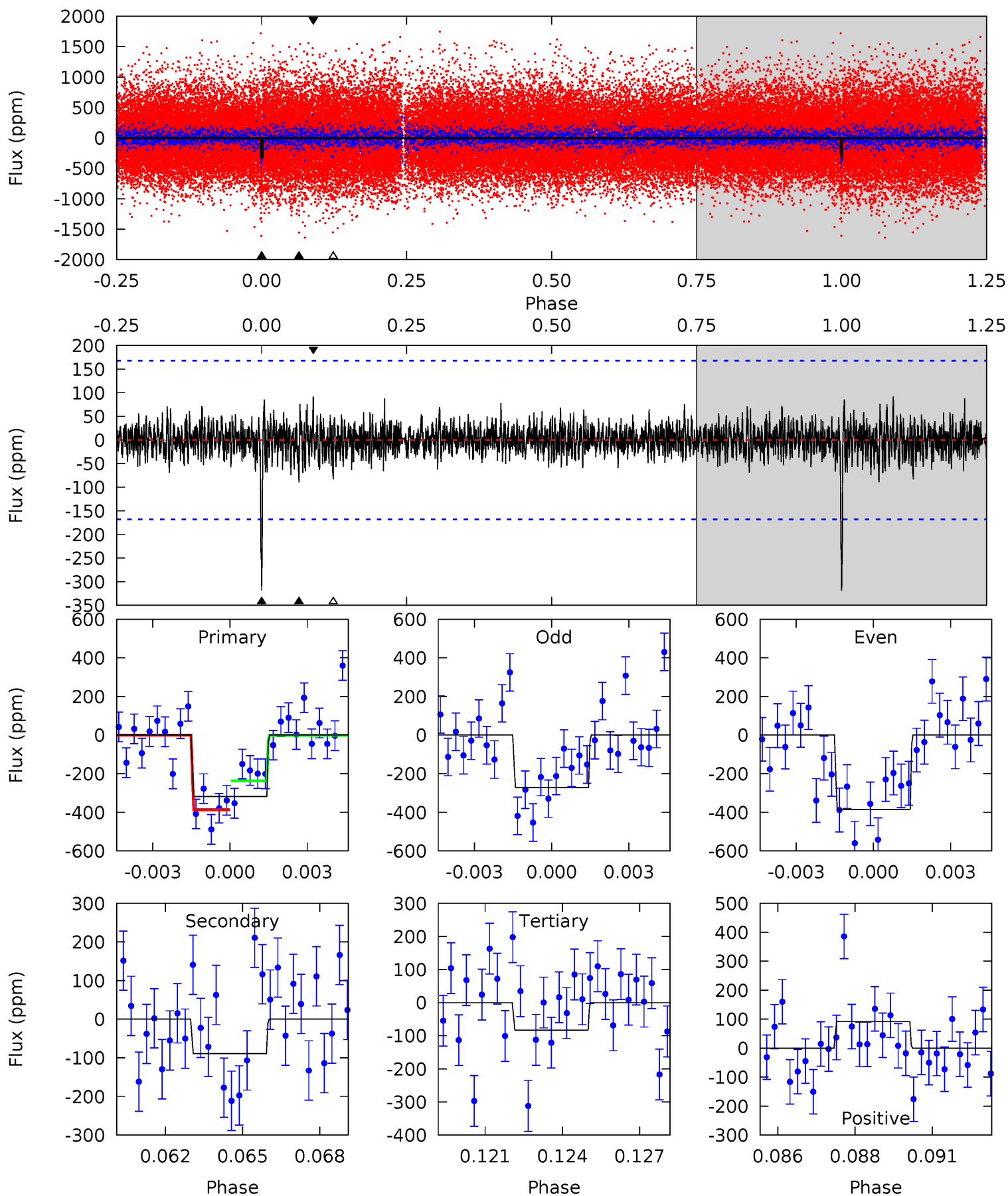
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	10.5	7.24	7.48	5.24	2.95	1.81	12.9	12.7	3.22	2.98	1.72	1.12	0.28	1.25



# Alt Model-Shift Uniqueness Test

007747835-01, P = 373.811547 Days, E = 259.843963 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
9.98	2.80	2.60	2.87	5.26	2.97	0.69	7.38	7.11	0.20	-0.07	1.74	0.91	0.22	2.35



### Stellar Parameters For KIC 007747835

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6131^{+182}_{-219}$	$4.497^{+0.056}_{-0.224}$	$-0.240^{+0.250}_{-0.300}$	$0.945^{+0.321}_{-0.100}$	$1.023^{+0.138}_{-0.124}$	$1.707^{+0.382}_{-0.943}$
	+3%/-4%	+1%/-5%	+104%/-125%	+34%/-11%	+13%/-12%	+22%/-55%
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 007747835-01 / KOI 8143.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-323 \pm 31$	$2.65^{+0.52}_{-0.40}$	$372^{+29}_{-20}$	$5311^{+337}_{-300}$	$26174^{+9512}_{-7928}$
Alt.	$-89 \pm 32$	$1.91^{+0.43}_{-0.37}$	$371^{+29}_{-20}$	$4595^{+513}_{-433}$	$13268^{+9721}_{-6121}$

$T_{\text{max}}$  = 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

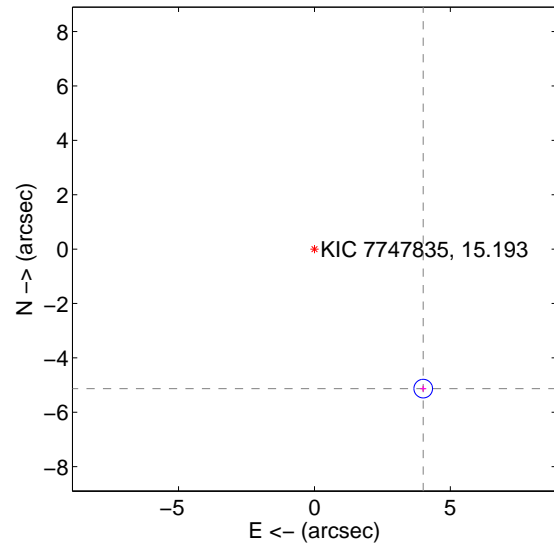
Supplemental centroid analysis for 007747835-01. Kepler magnitude: 15.19. Transit SNR 9.16

There are 0 quarters with good PRF difference image offsets

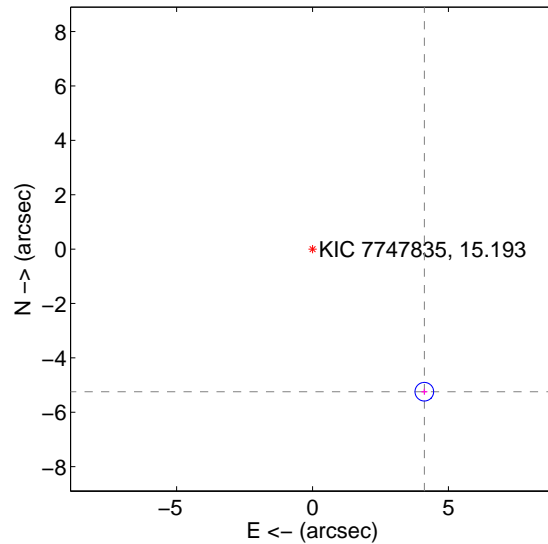
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$6.507 \pm 0.114$	57.03	$-4.001 \pm 0.114$	$-5.132 \pm 0.114$
PRF-fit source offset from KIC position	$6.665 \pm 0.114$	58.42	$-4.112 \pm 0.114$	$-5.246 \pm 0.114$
photometric centroid source offset	$3.54 \pm 1.29$	2.74	$0.50 \pm 1.41$	$-3.50 \pm 1.29$

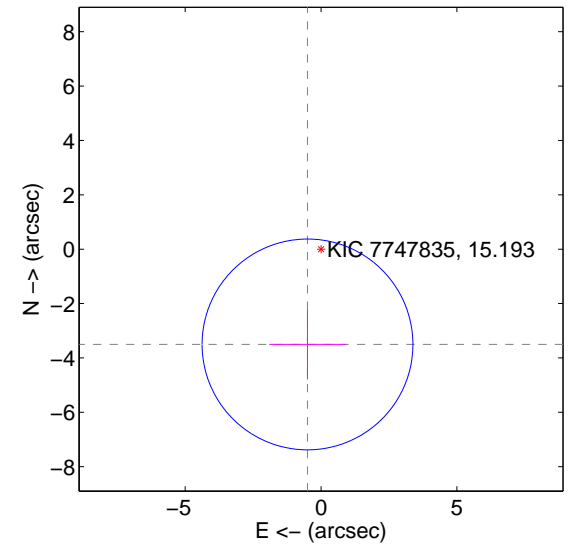
offset from difference PRF-fit to OOT PRF-fit



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.



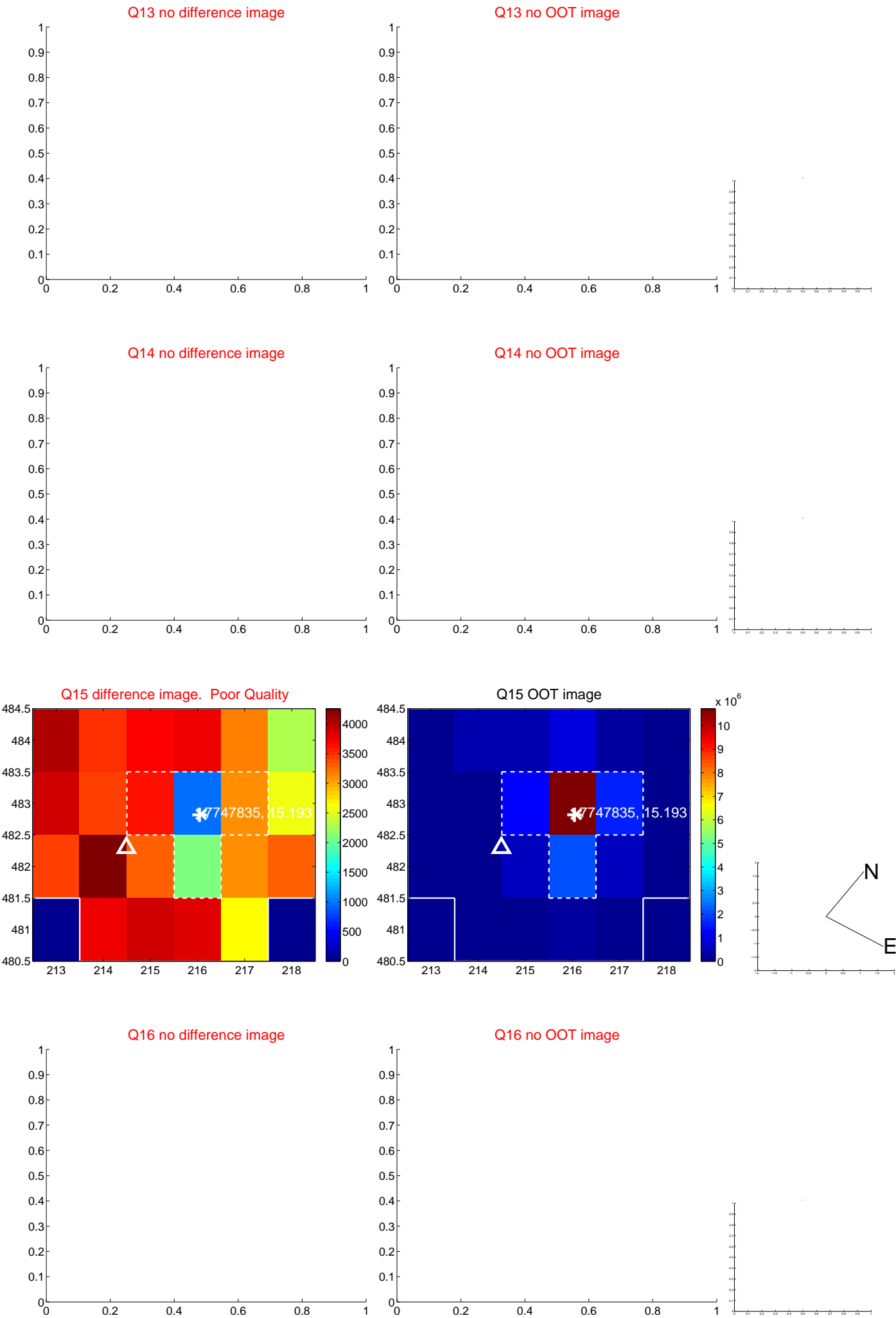
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



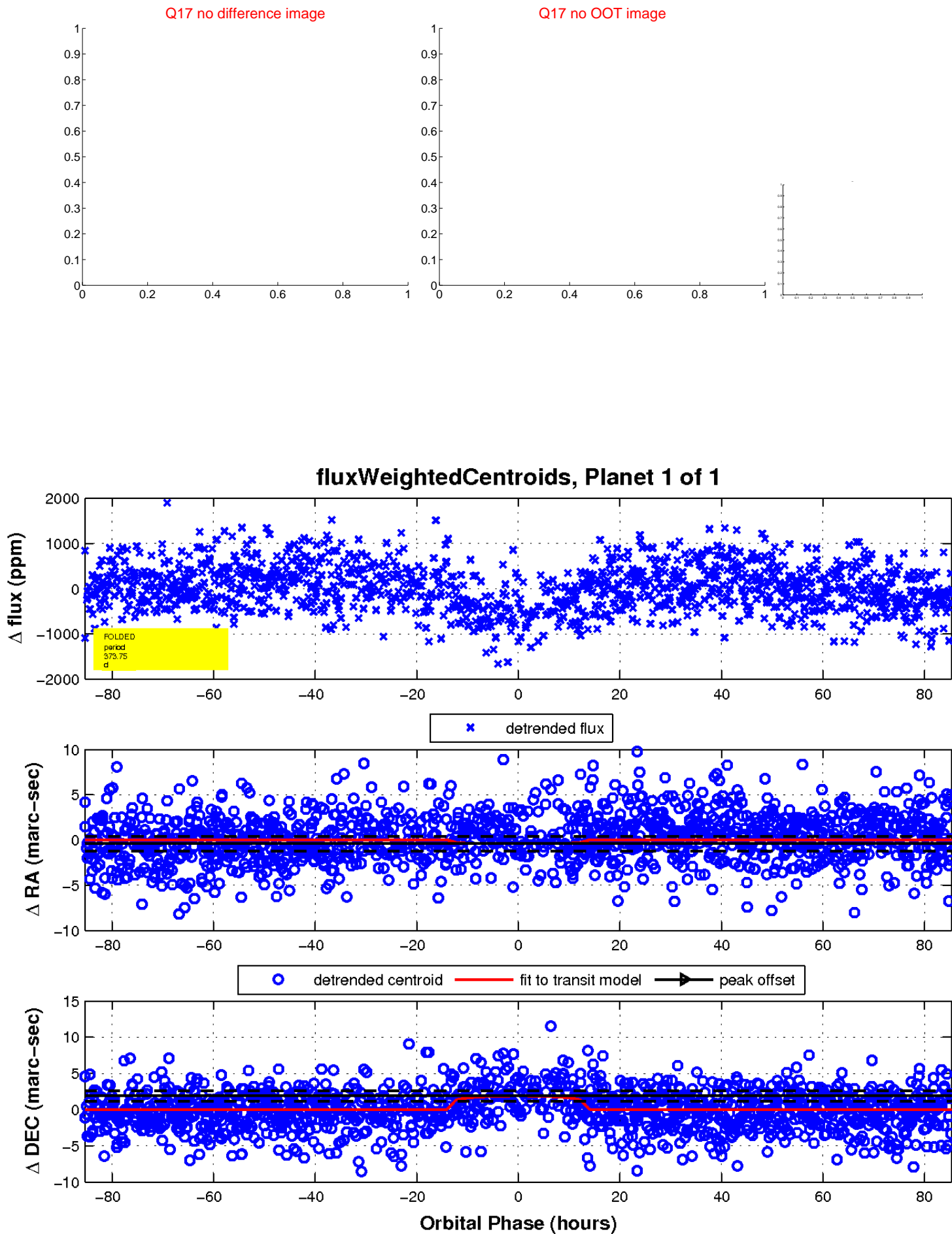
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



# UKIRT Image

Declination

