

# KIC 008620348

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008620348-01	OBS	No	374.668966	174.139131	982.2	47.832	8.4	11.1	0.85	5256	3.46	0.54

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008620348-01	OBS	FP	0.00	1	0	0	1	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS—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.

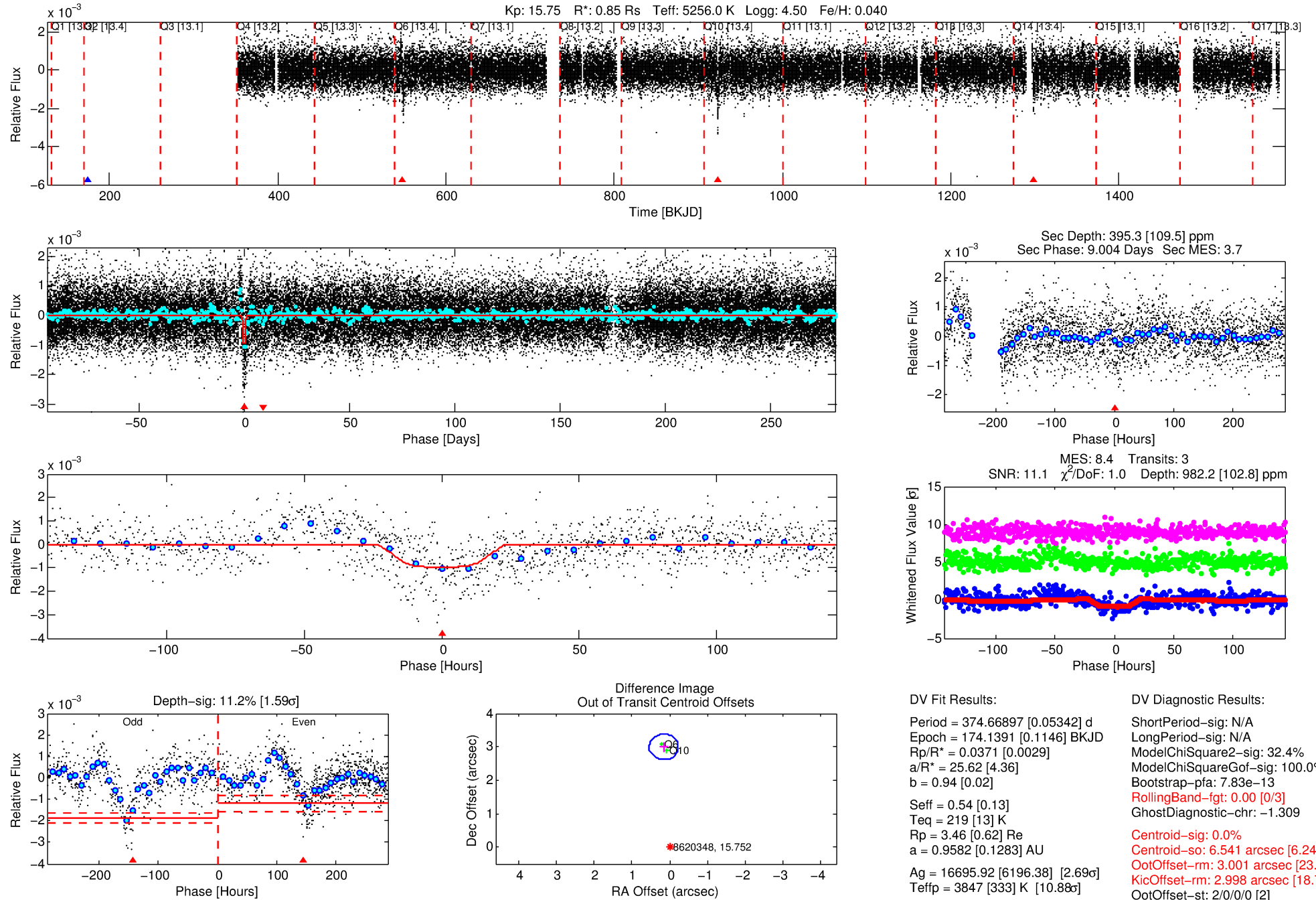
## Ephemeris Match Information For 008620348-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
008620348-01	8620348	008880123-02	8880123	1:1	1721.7	-2	433	15.22	15.75	0.49	Col-Anomaly	1	2.05	1.59

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

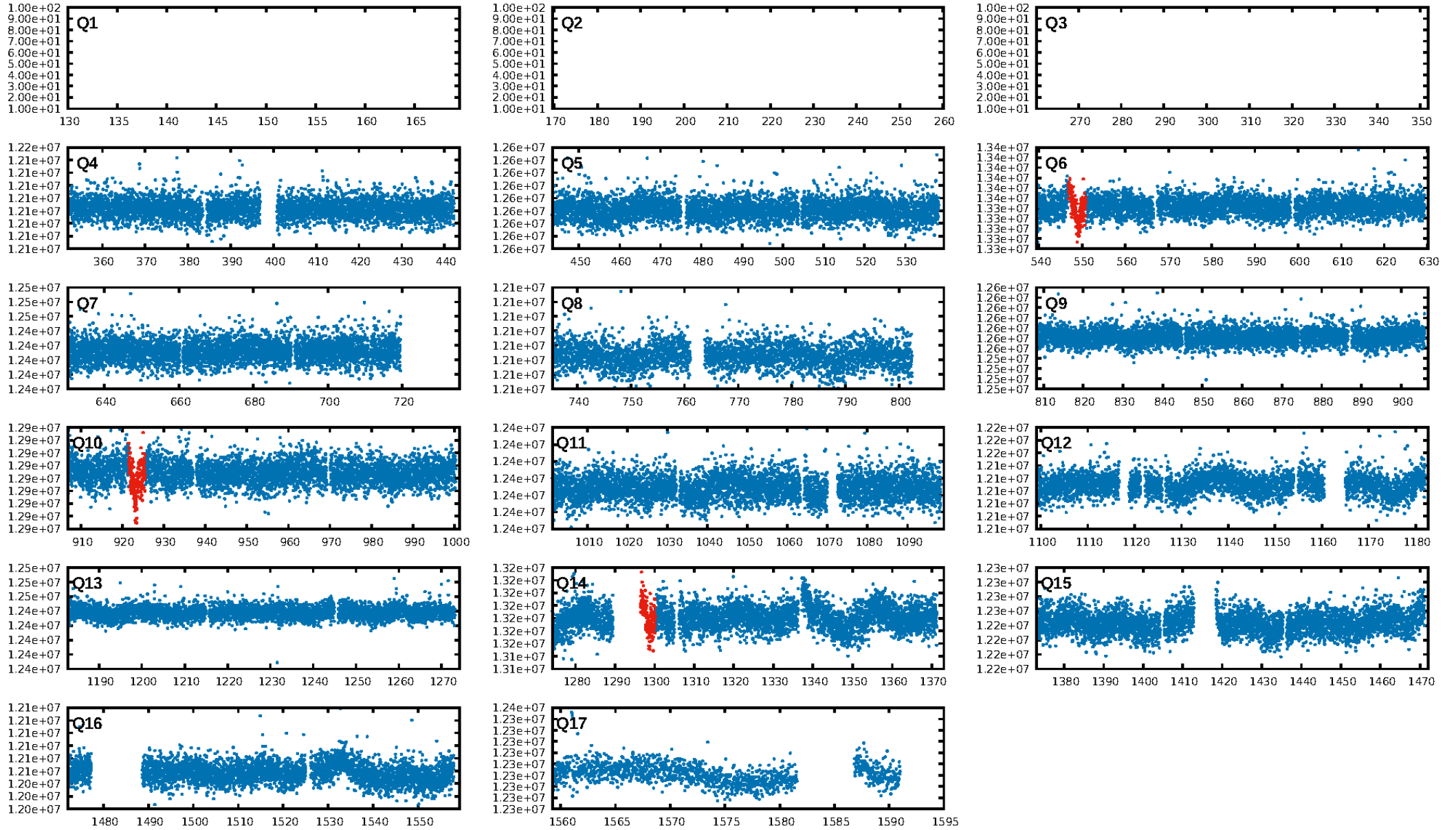
KIC: 8620348 Candidate: 1 of 1 Period: 374.669 d



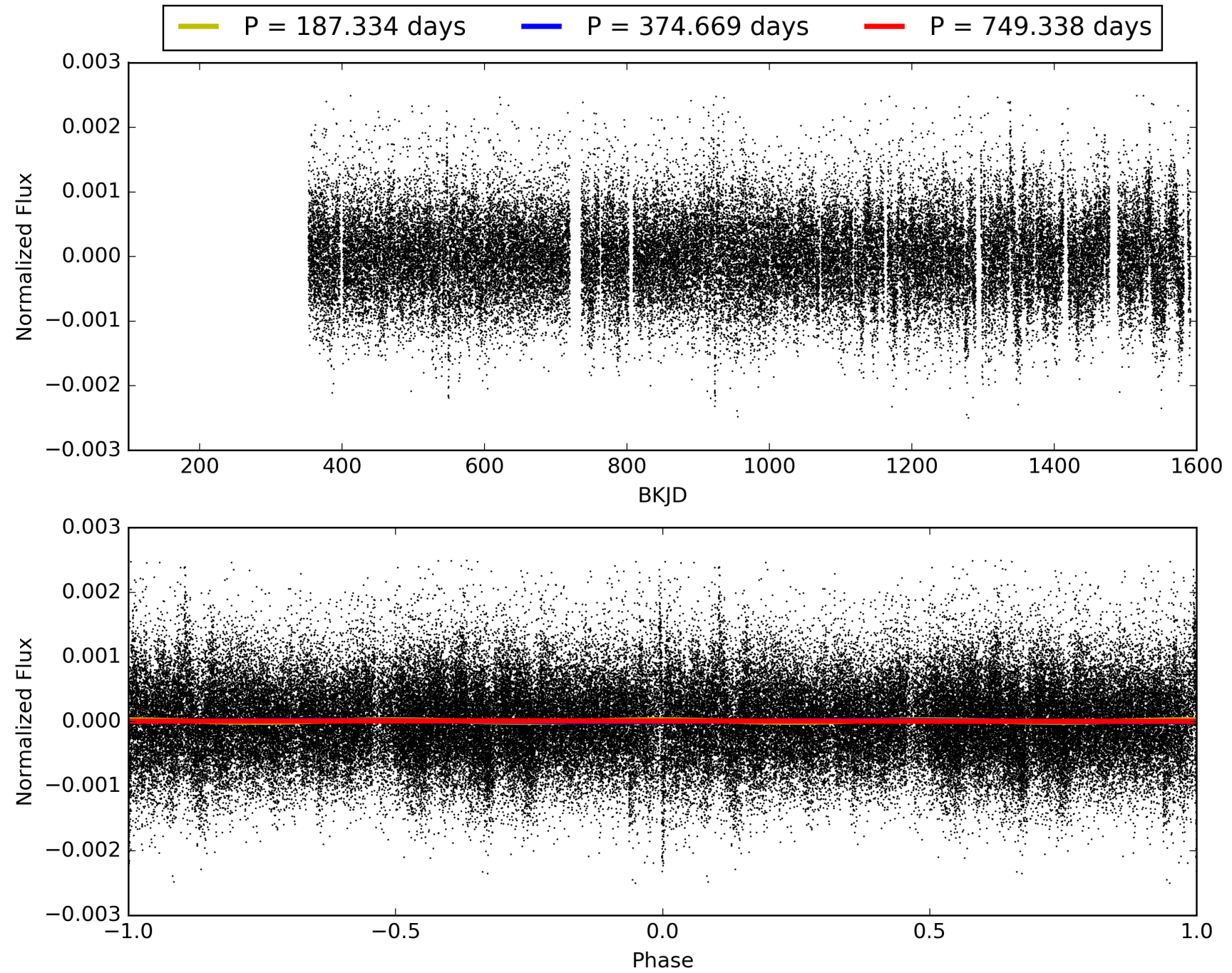
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:55:19 Z

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

# TCE 008620348-01, PDC Light Curves

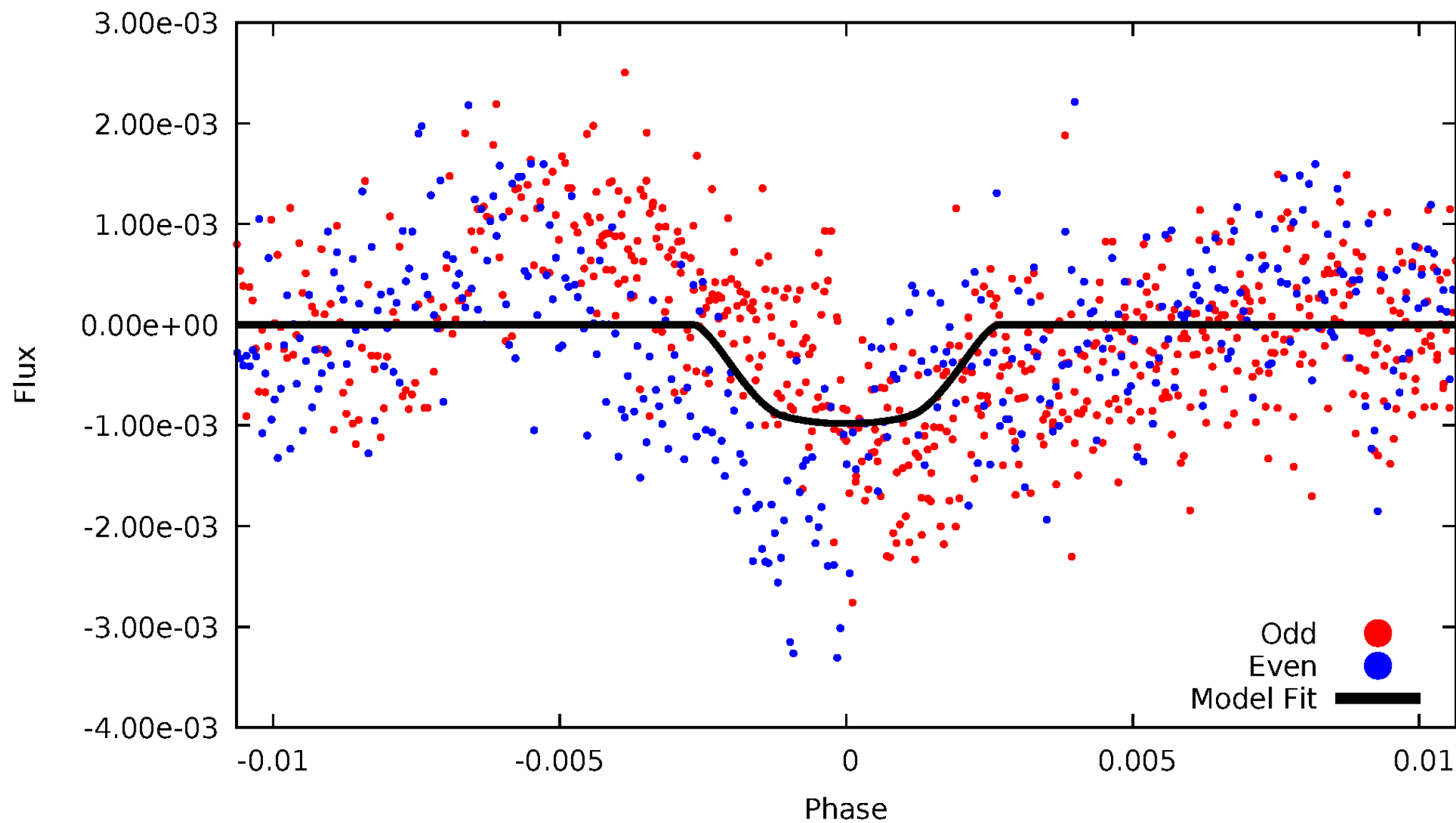


TCE 008620348-01



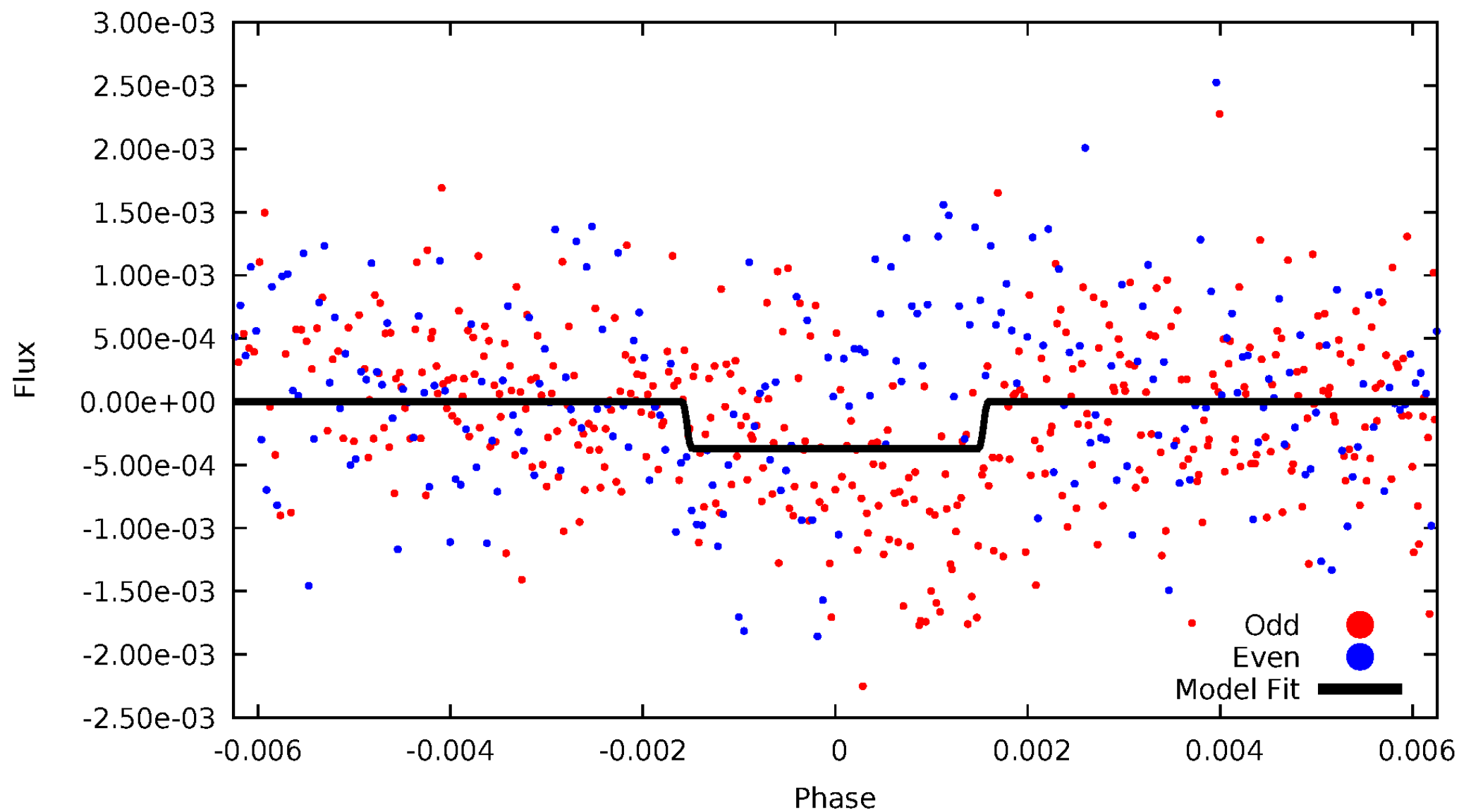
# DV Odd/Even

TCE 008620348-01



# ALT Odd/Even

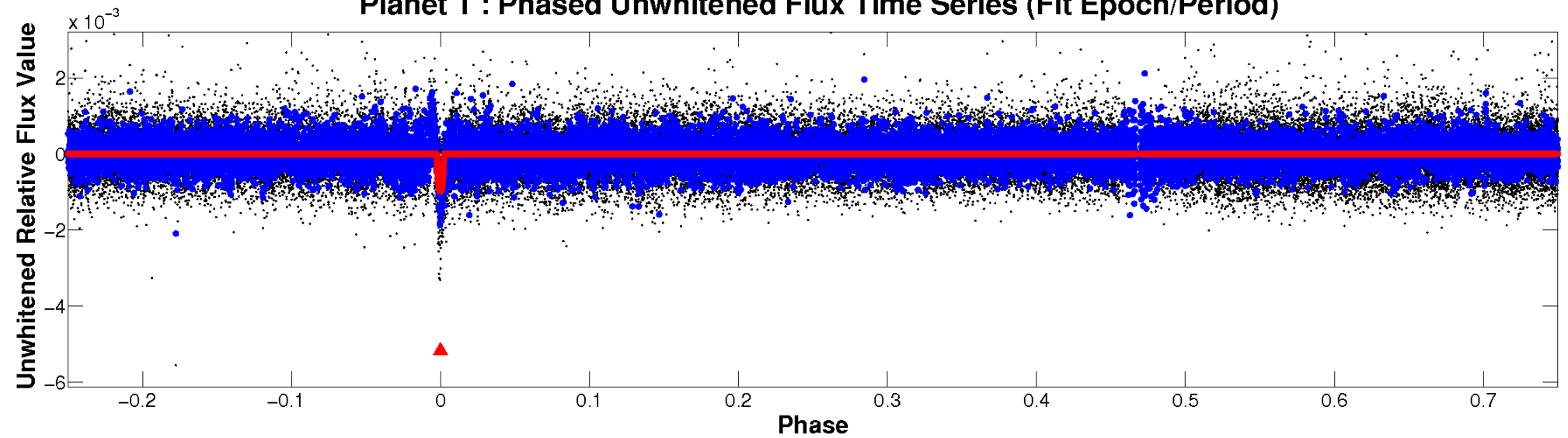
TCE 008620348-01



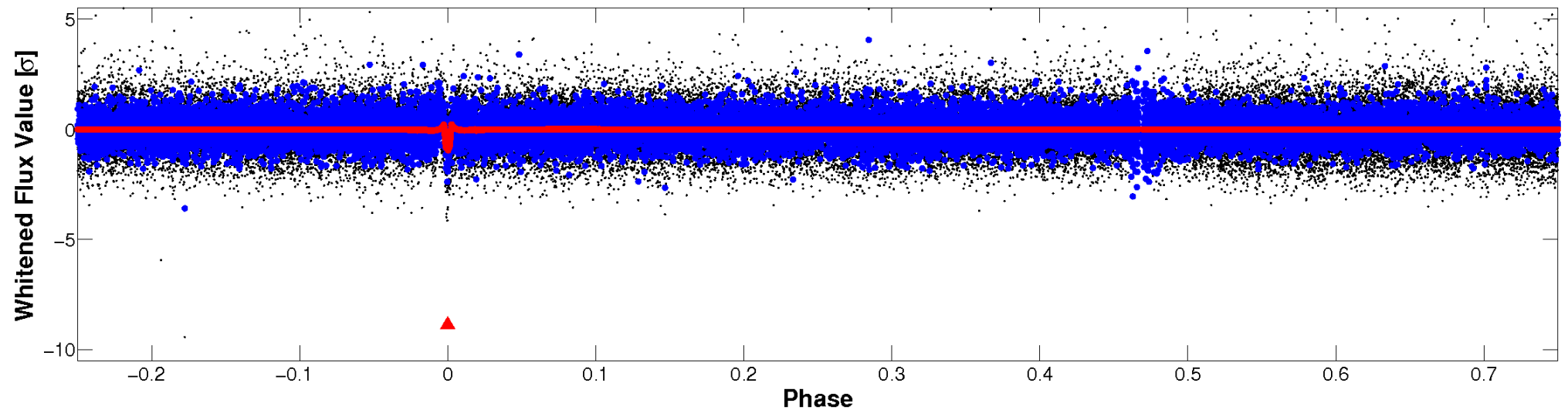


# Non-Whitened Vs. Whitened Light Curve

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

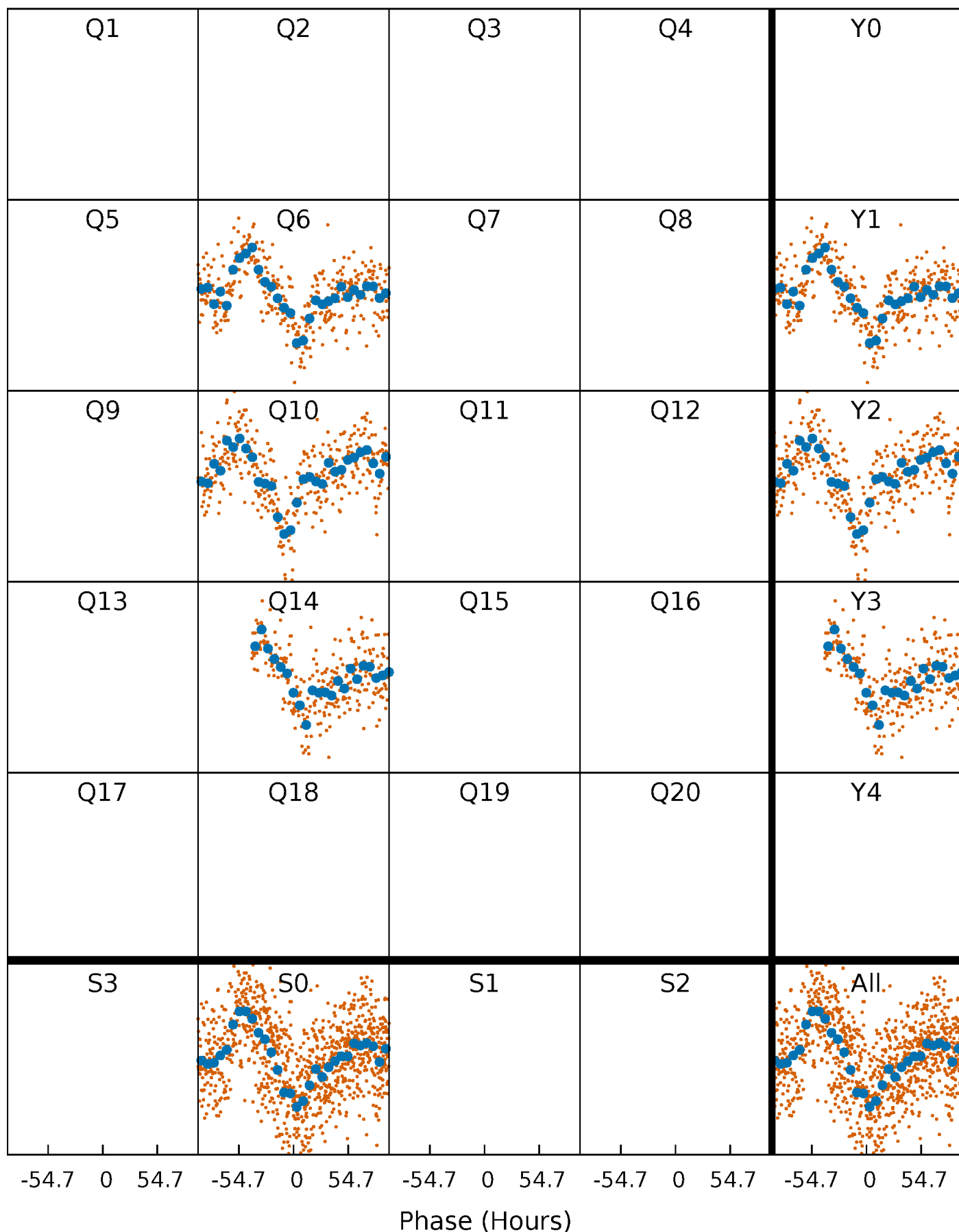


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

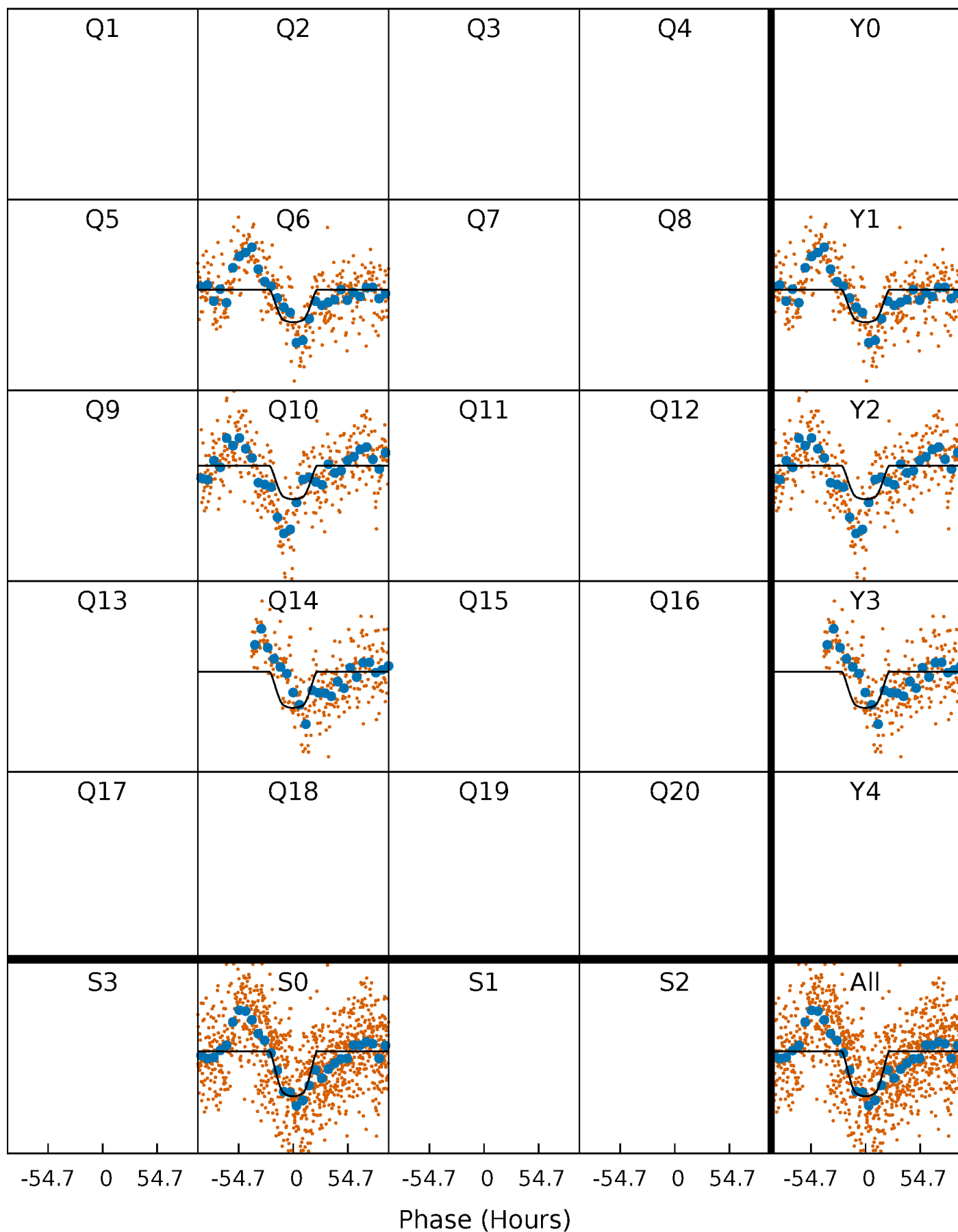
TCE 008620348-01 P=374.668966 Days  $T_0=174.139131$  (BKJD)





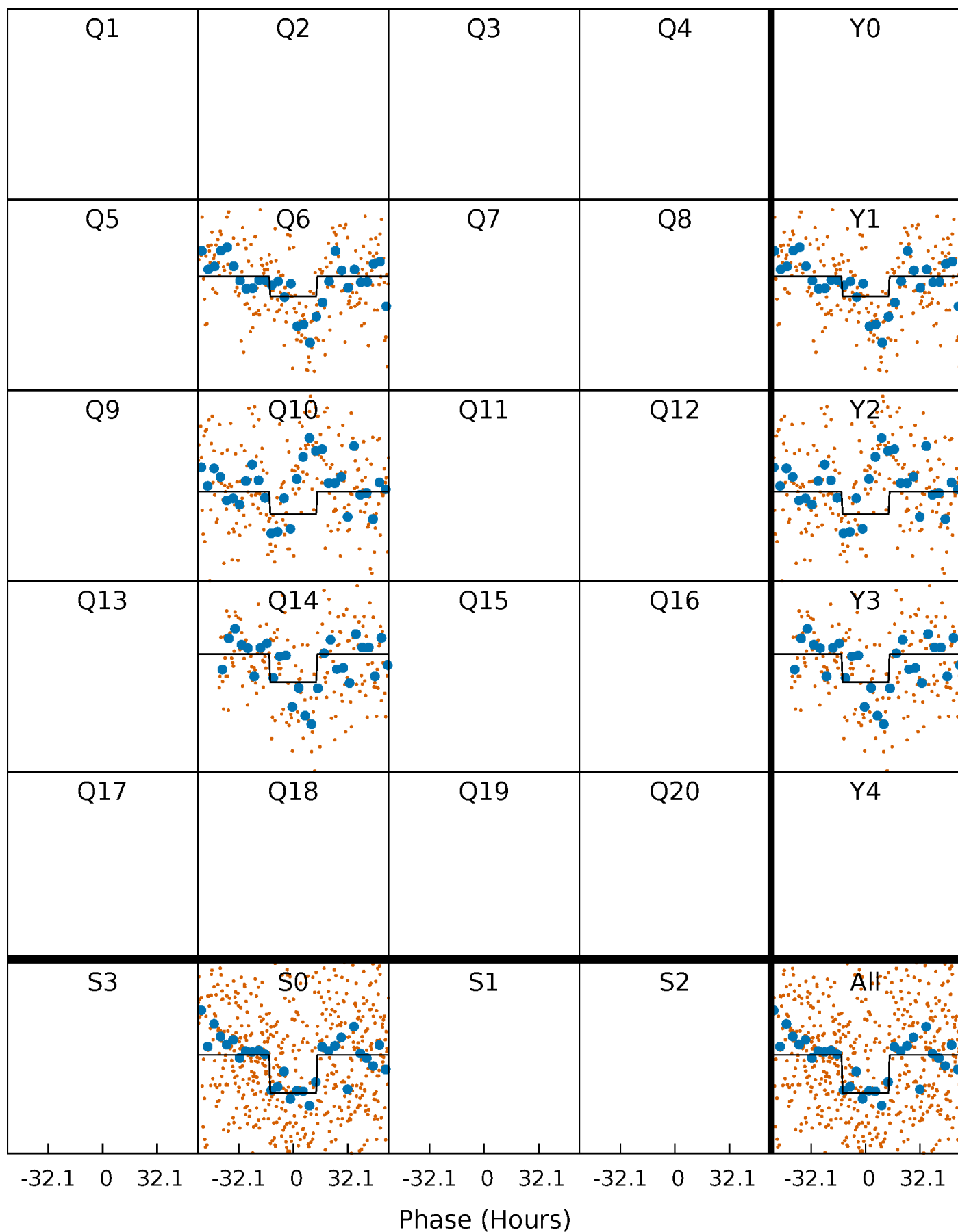
# DV Quarter-Phased Transit Curves

TCE 008620348-01 P=374.668966 Days  $T_0=174.139131$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

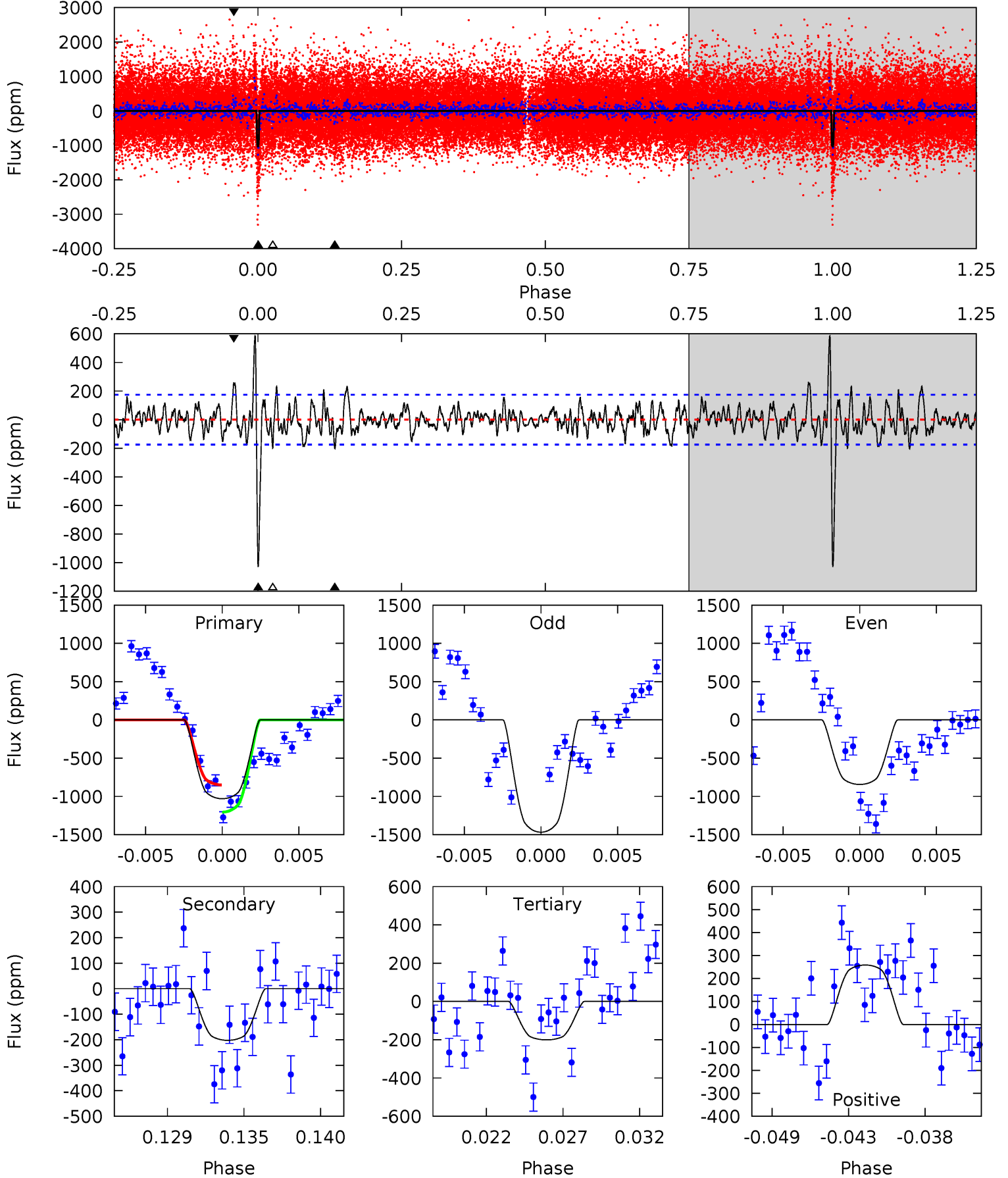
TCE 008620348-01 P=374.744679 Days  $T_0=173.997777$  (BKJD)



# DV Model-Shift Uniqueness Test

008620348-01, P = 374.668966 Days, E = 174.139131 Days

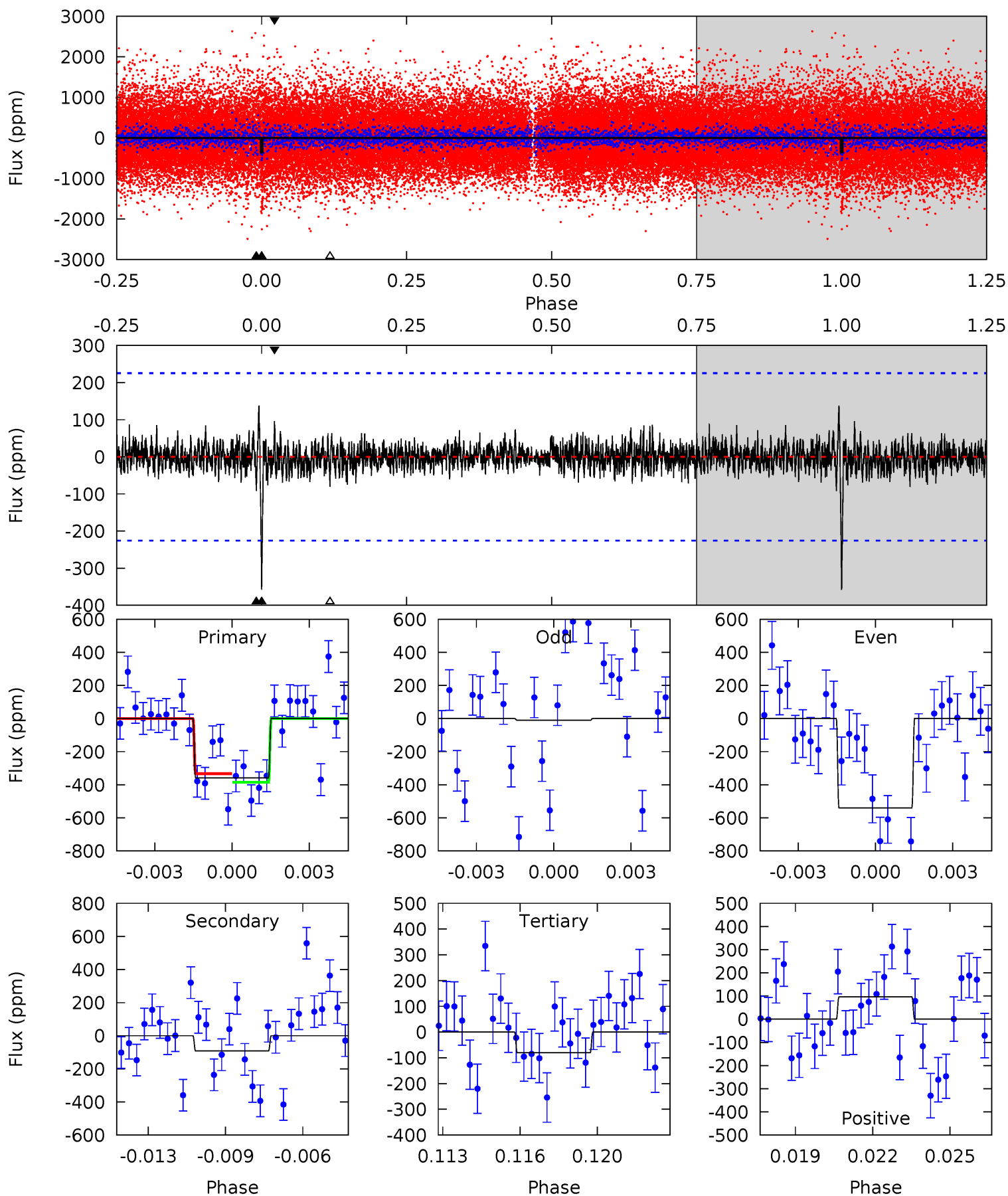
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.4	5.98	5.93	7.65	5.14	2.78	2.16	24.5	22.8	0.05	-1.67	8.73	0.94	0.36	5.25



# Alt Model-Shift Uniqueness Test

008620348-01, P = 374.744679 Days, E = 173.997777 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
8.32	2.14	1.88	2.23	5.24	2.95	0.58	6.45	6.09	0.26	-0.09	5.85	0.72	0.28	0.60



### Stellar Parameters For KIC 008620348

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5256^{+184}_{-184}$	$4.497^{+0.076}_{-0.105}$	$0.040^{+0.250}_{-0.300}$	$0.854^{+0.137}_{-0.091}$	$0.835^{+0.090}_{-0.074}$	$1.891^{+0.660}_{-0.622}$
	+4%/-4%	+2%/-2%	+625%/-750%	+16%/-11%	+11%/-9%	+35%/-33%
Source	KIC0	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 008620348-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-202 \pm 34$	$3.49^{+0.40}_{-0.36}$	$308^{+16}_{-15}$	$3652^{+185}_{-166}$	$8365^{+2381}_{-2010}$
Alt.	$-92 \pm 43$	$1.79^{+0.32}_{-0.27}$	$307^{+15}_{-13}$	$4006^{+394}_{-434}$	$14285^{+9368}_{-6953}$

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

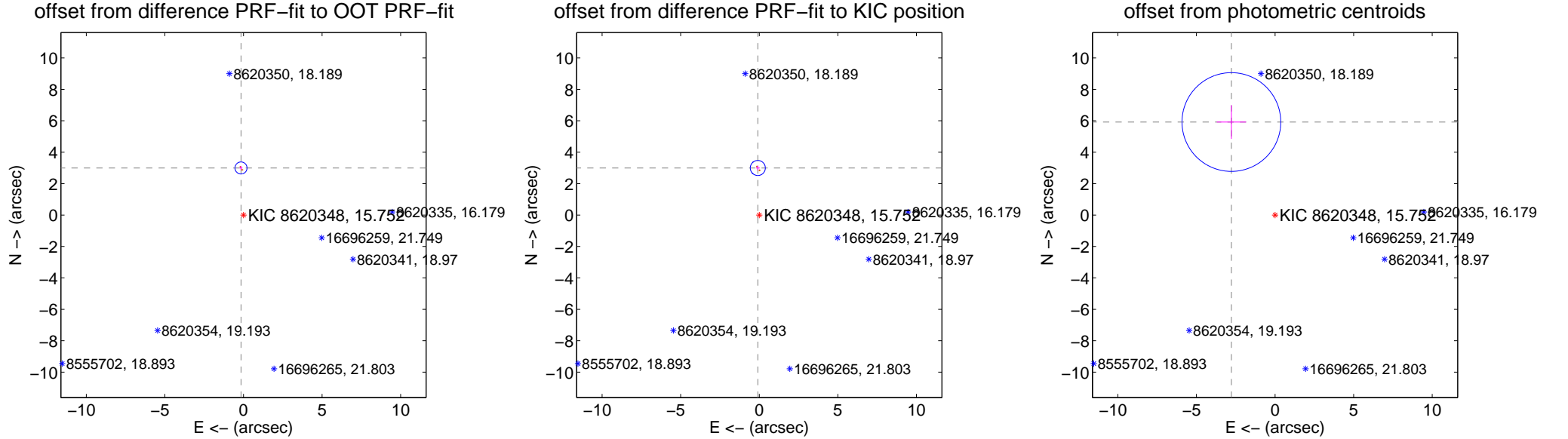
## DV Centroid Data

Supplemental centroid analysis for 008620348-01. Kepler magnitude: 15.75. Transit SNR 11.10

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.001 \pm 0.128$	23.47	$0.158 \pm 0.096$	$2.997 \pm 0.128$
PRF-fit source offset from KIC position	$2.998 \pm 0.160$	18.78	$0.092 \pm 0.120$	$2.997 \pm 0.157$
photometric centroid source offset	$6.54 \pm 1.05$	6.24	$2.78 \pm 0.93$	$5.92 \pm 1.07$



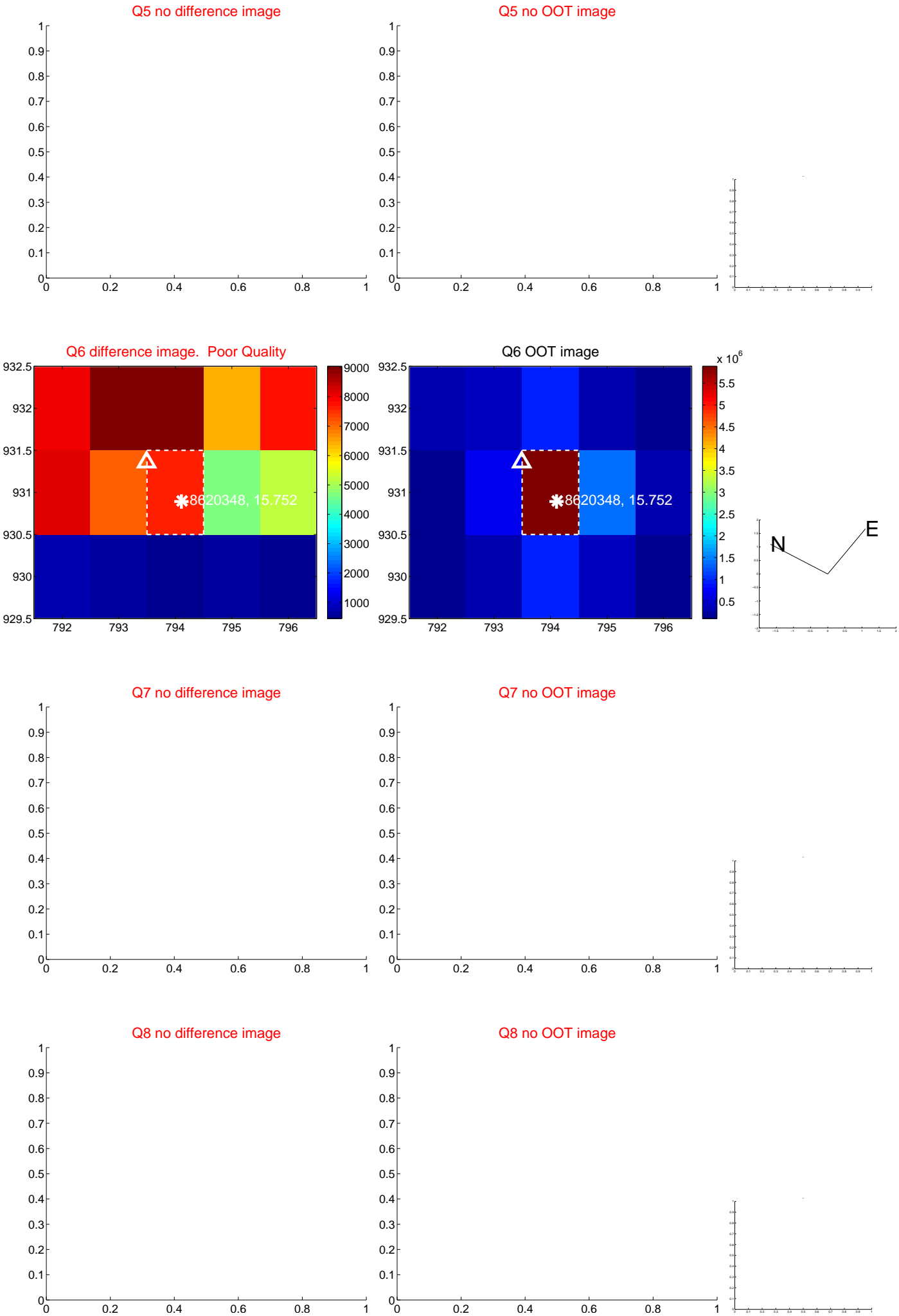
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

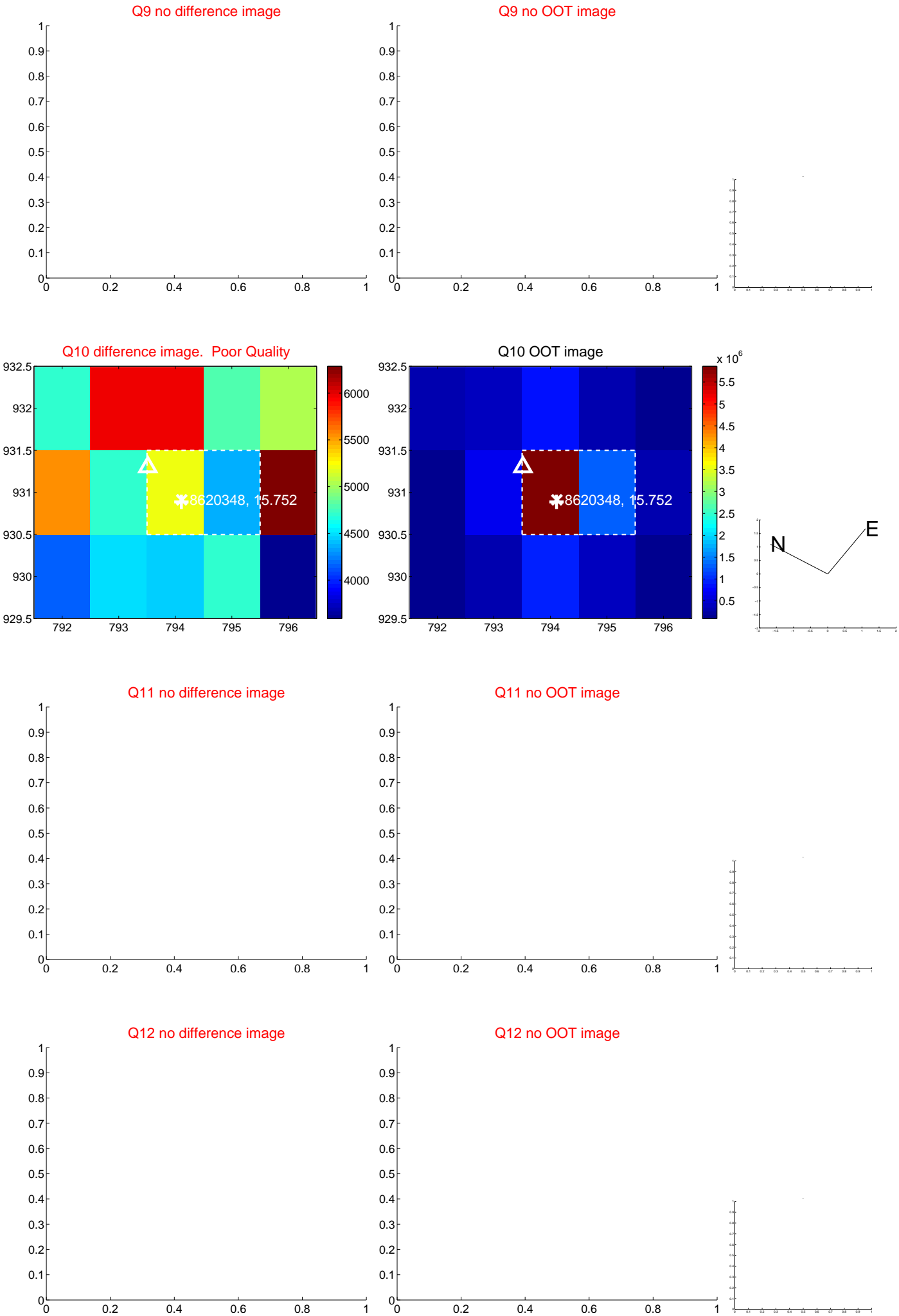




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



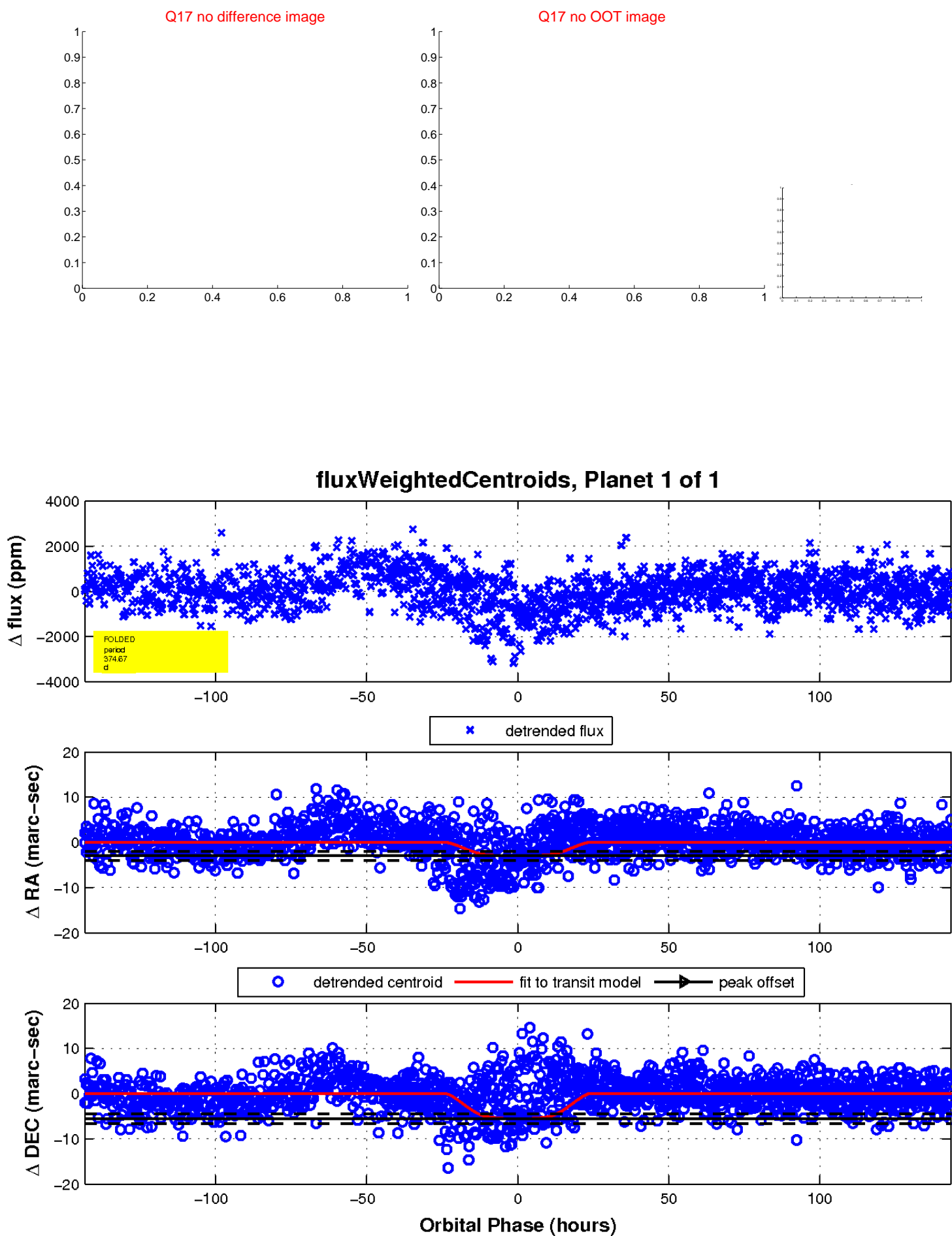
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



# UKIRT Image

Declination

