

# KIC 006209759

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006209759-01	OBS	No	362.312415	394.547014	1164.1	4.197	9.6	8.6	15.58	4935	72.71	61.79

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006209759-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

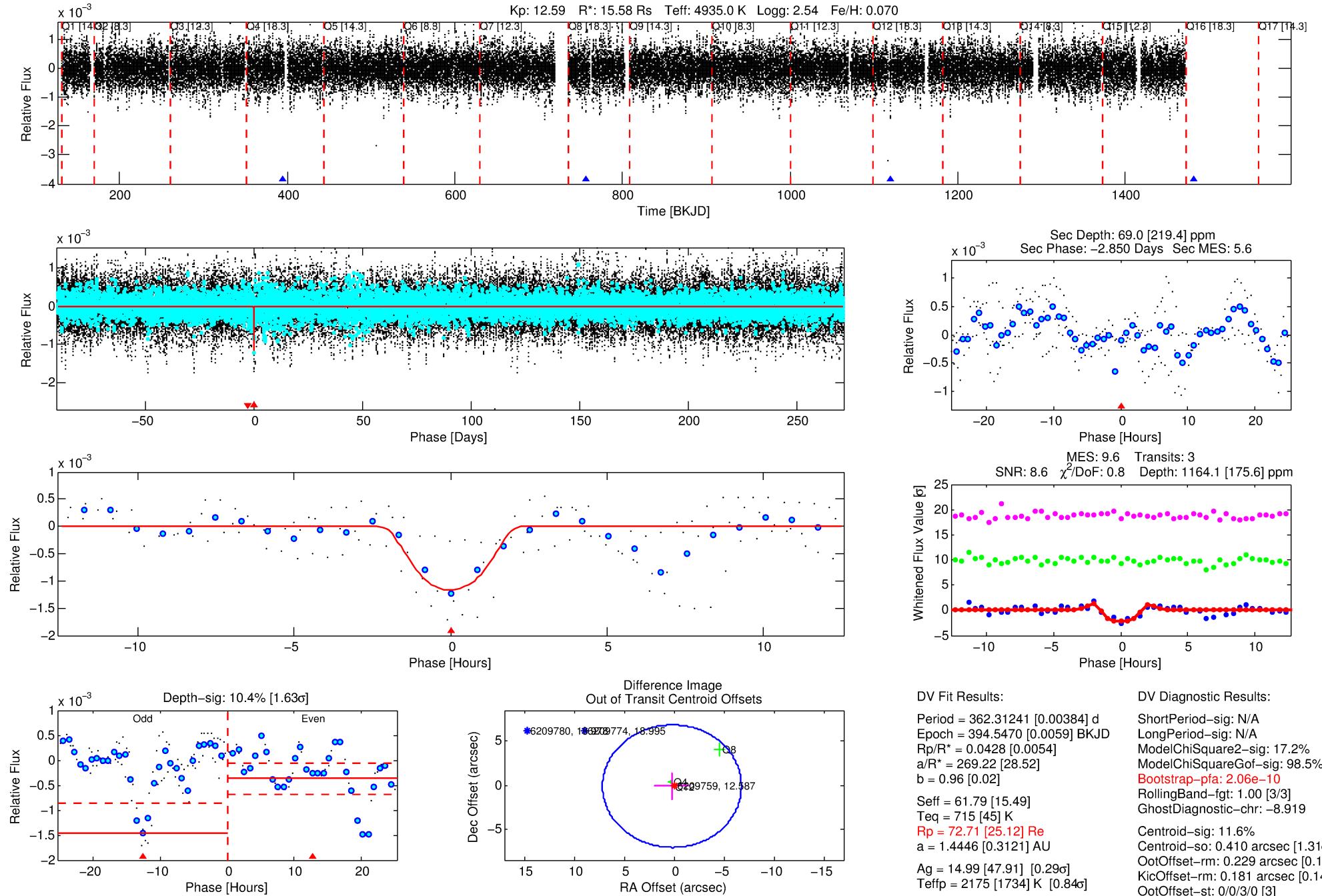
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006209759-01

No Significant Match Found

# DV One-Page Summary

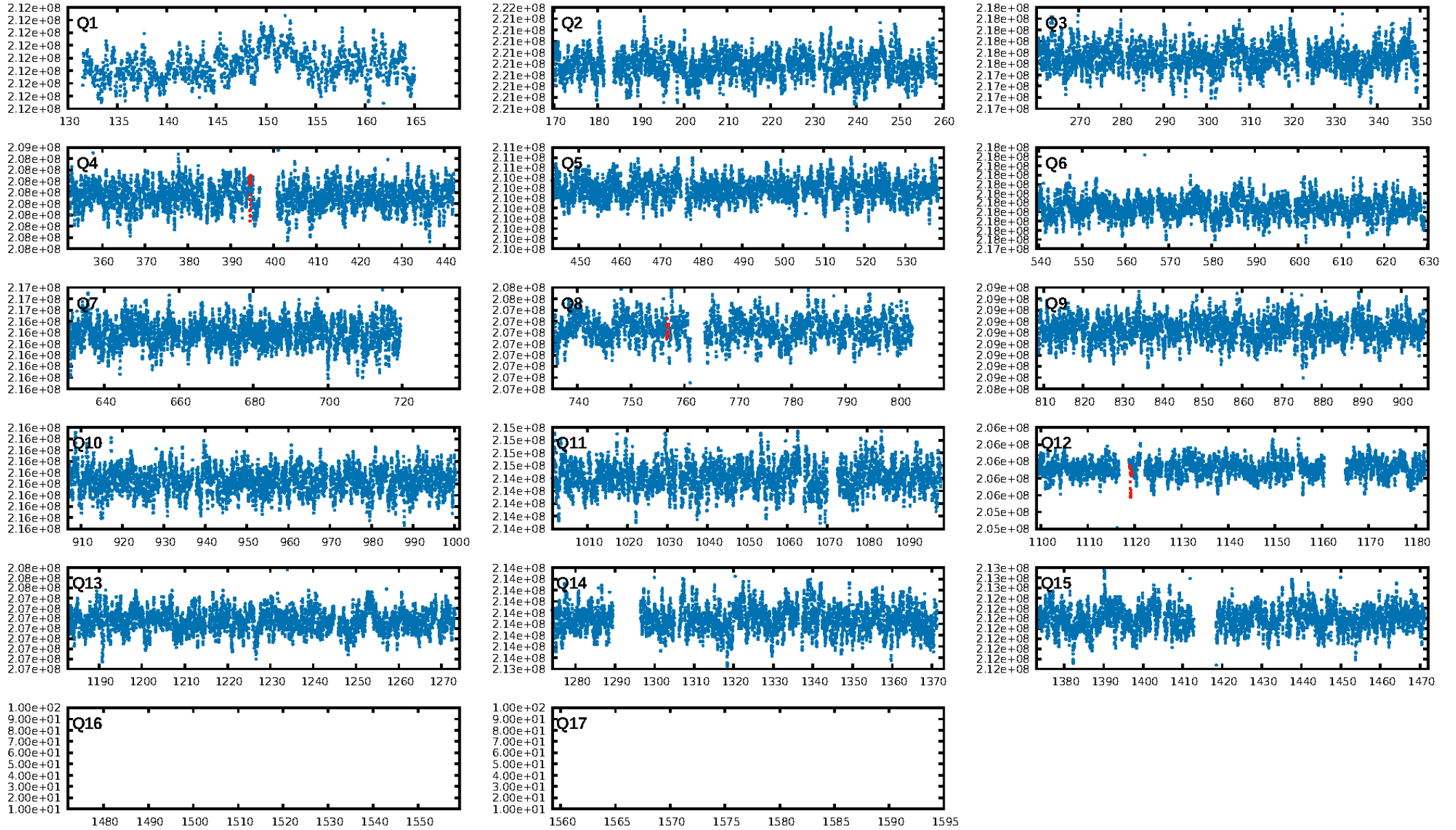
KIC: 6209759 Candidate: 1 of 1 Period: 362.312 d



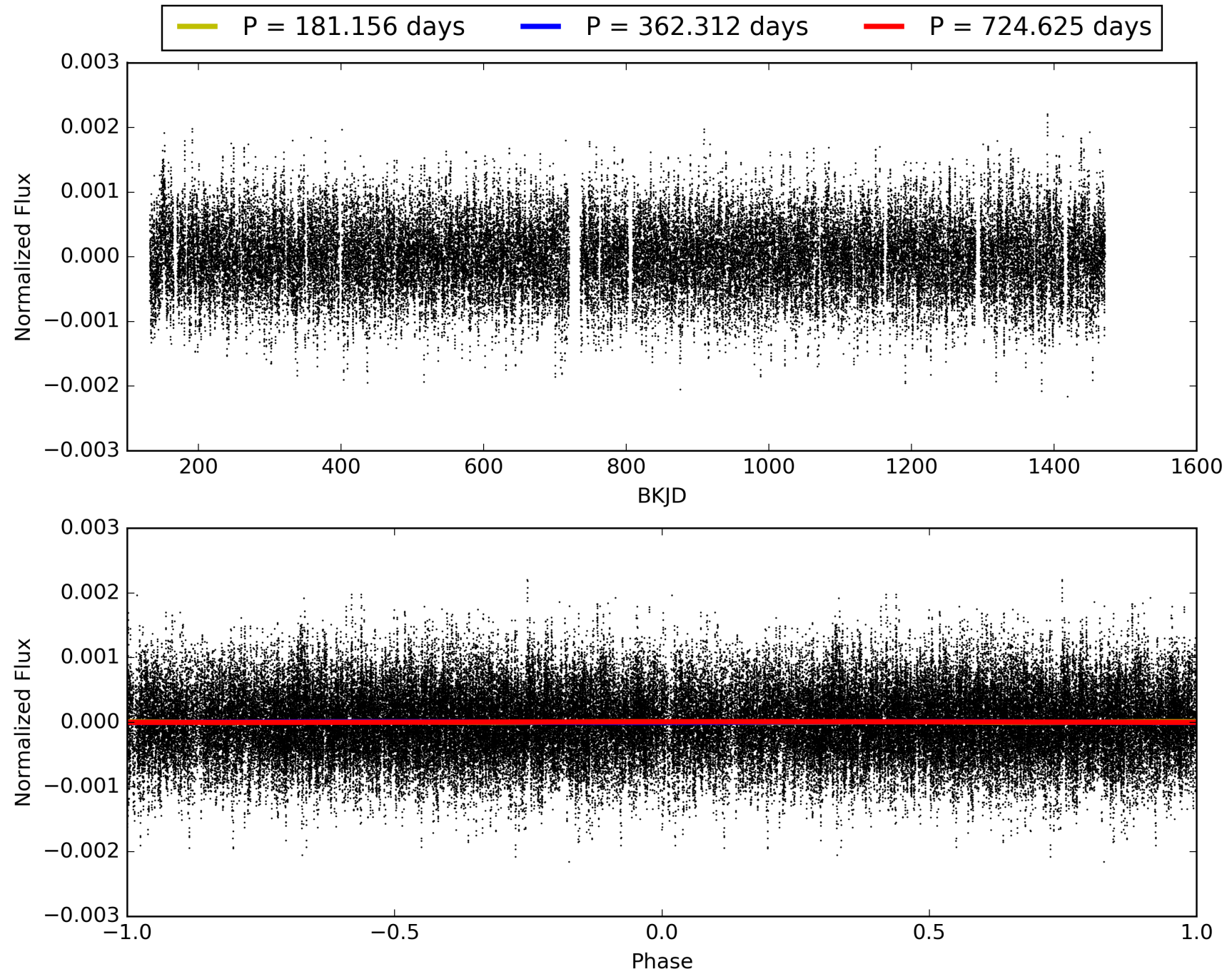
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:04:24 Z

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

# TCE 006209759-01, PDC Light Curves

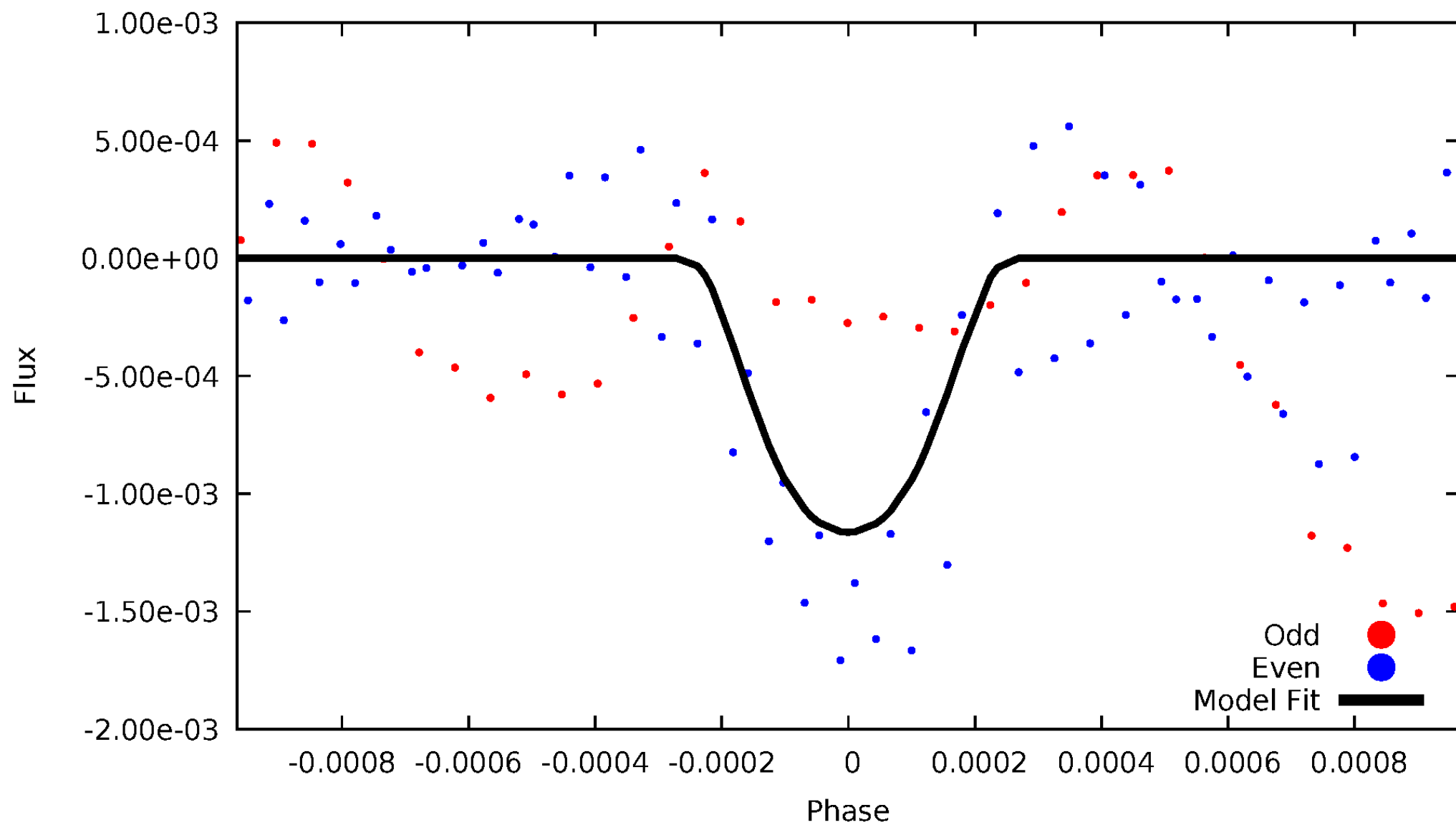


TCE 006209759-01



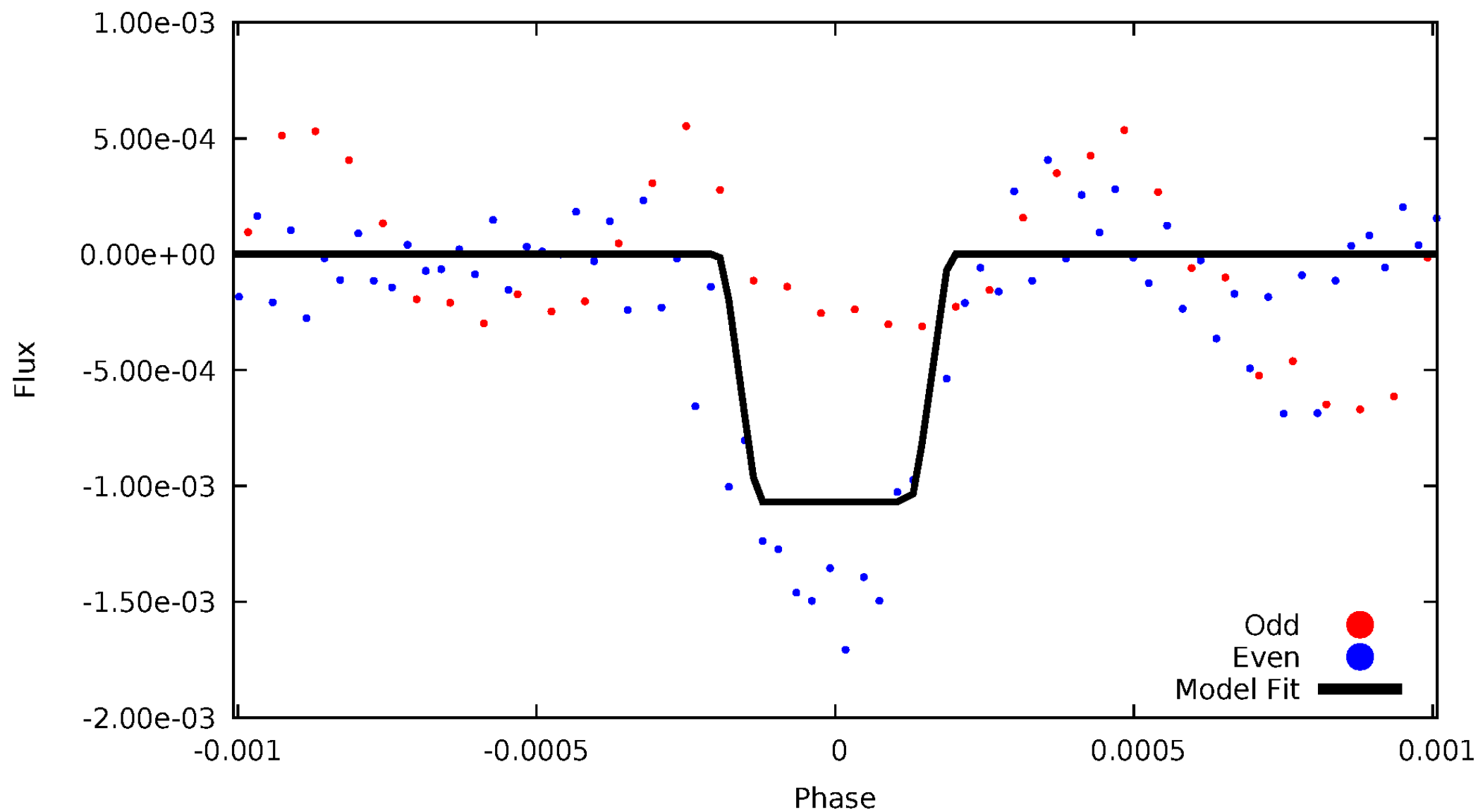
# DV Odd/Even

TCE 006209759-01



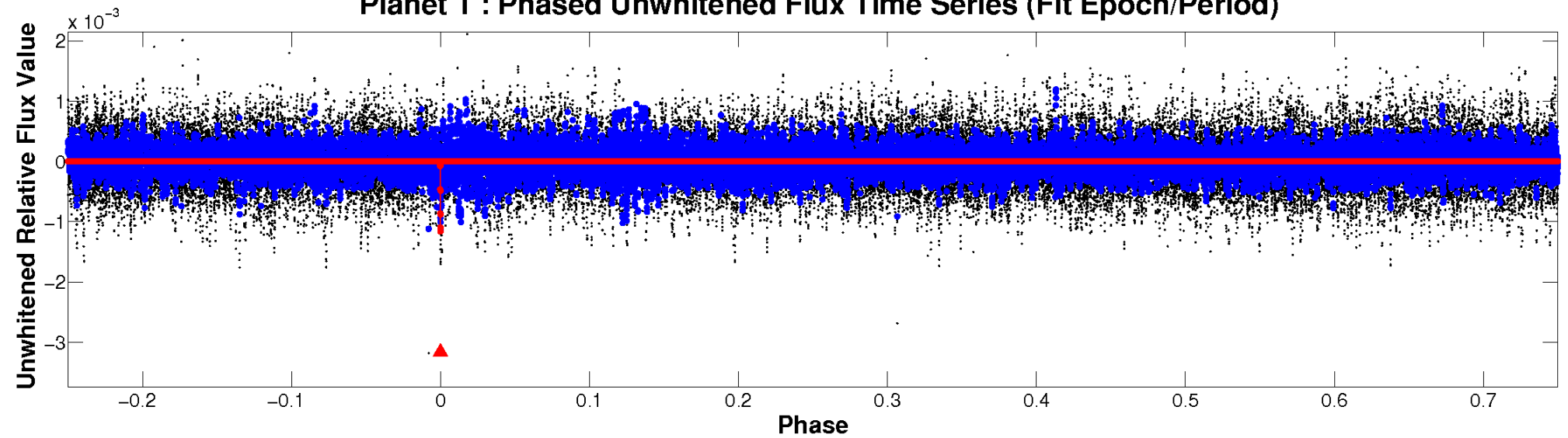
# ALT Odd/Even

TCE 006209759-01

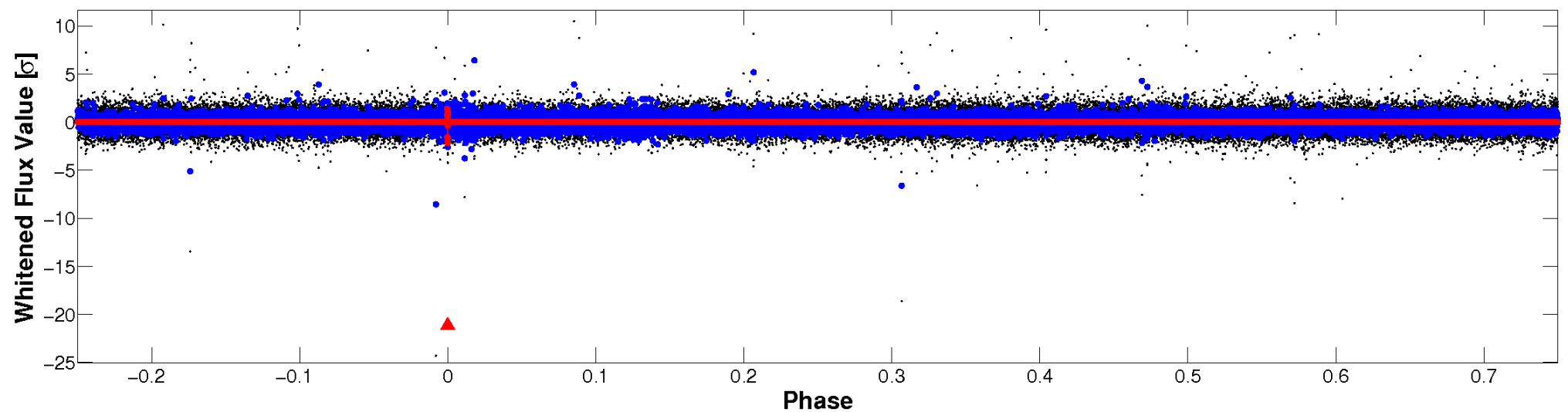


# Non-Whitened Vs. Whitened Light Curve

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



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



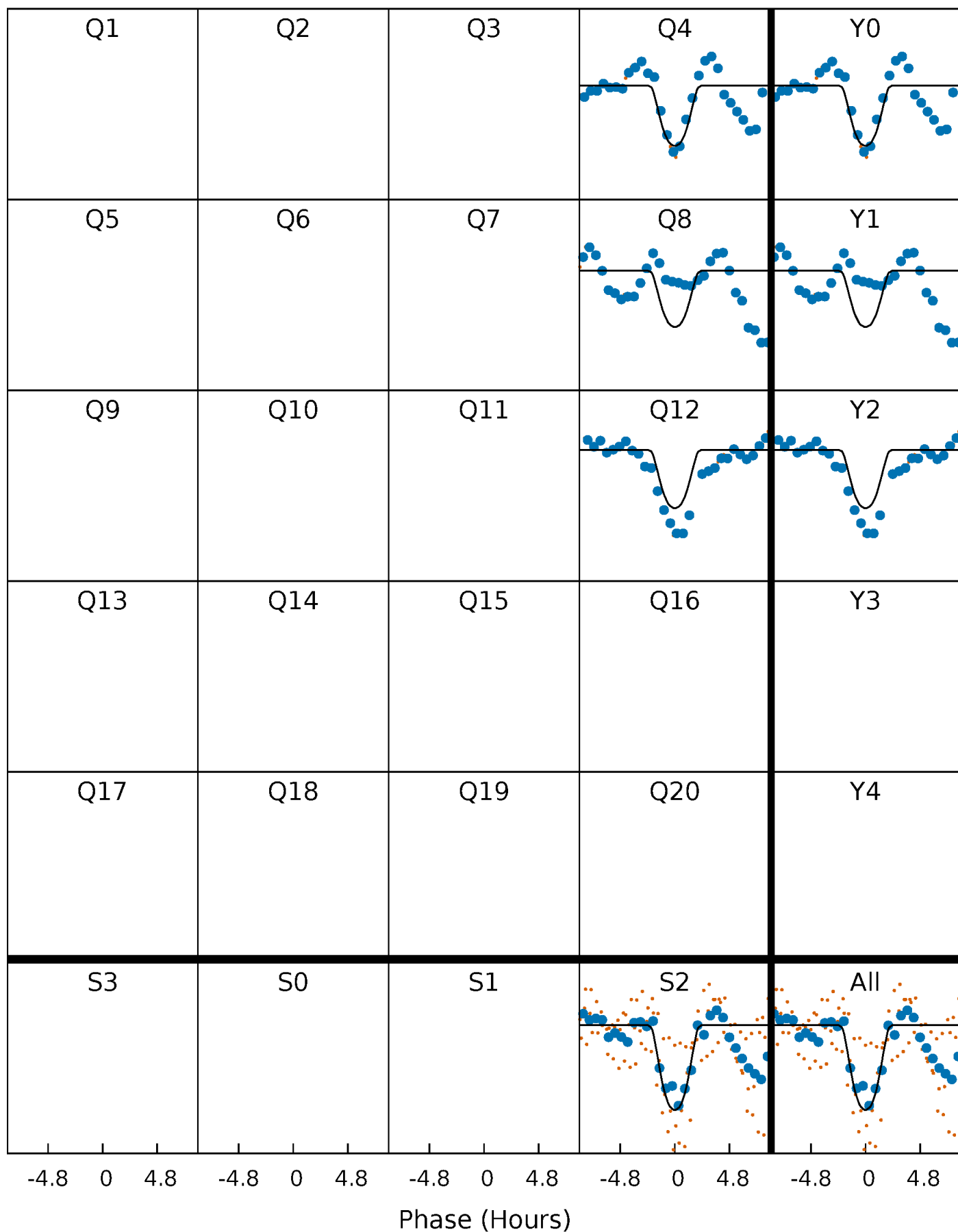
# PDC Quarter-Phased Transit Curves

TCE 006209759-01 P=362.312415 Days  $T_0=394.547014$  (BKJD)



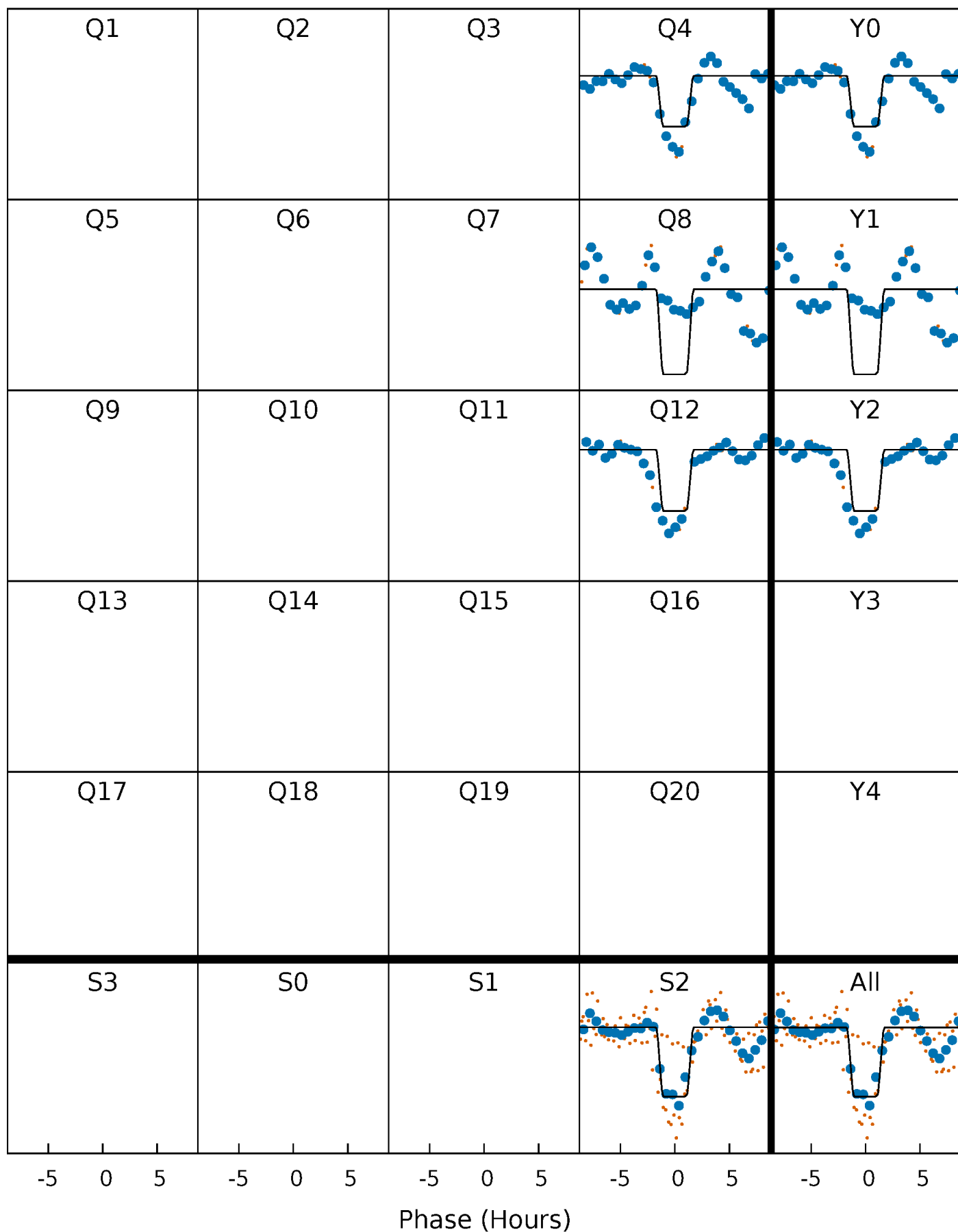
# DV Quarter-Phased Transit Curves

TCE 006209759-01 P=362.312415 Days  $T_0=394.547014$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

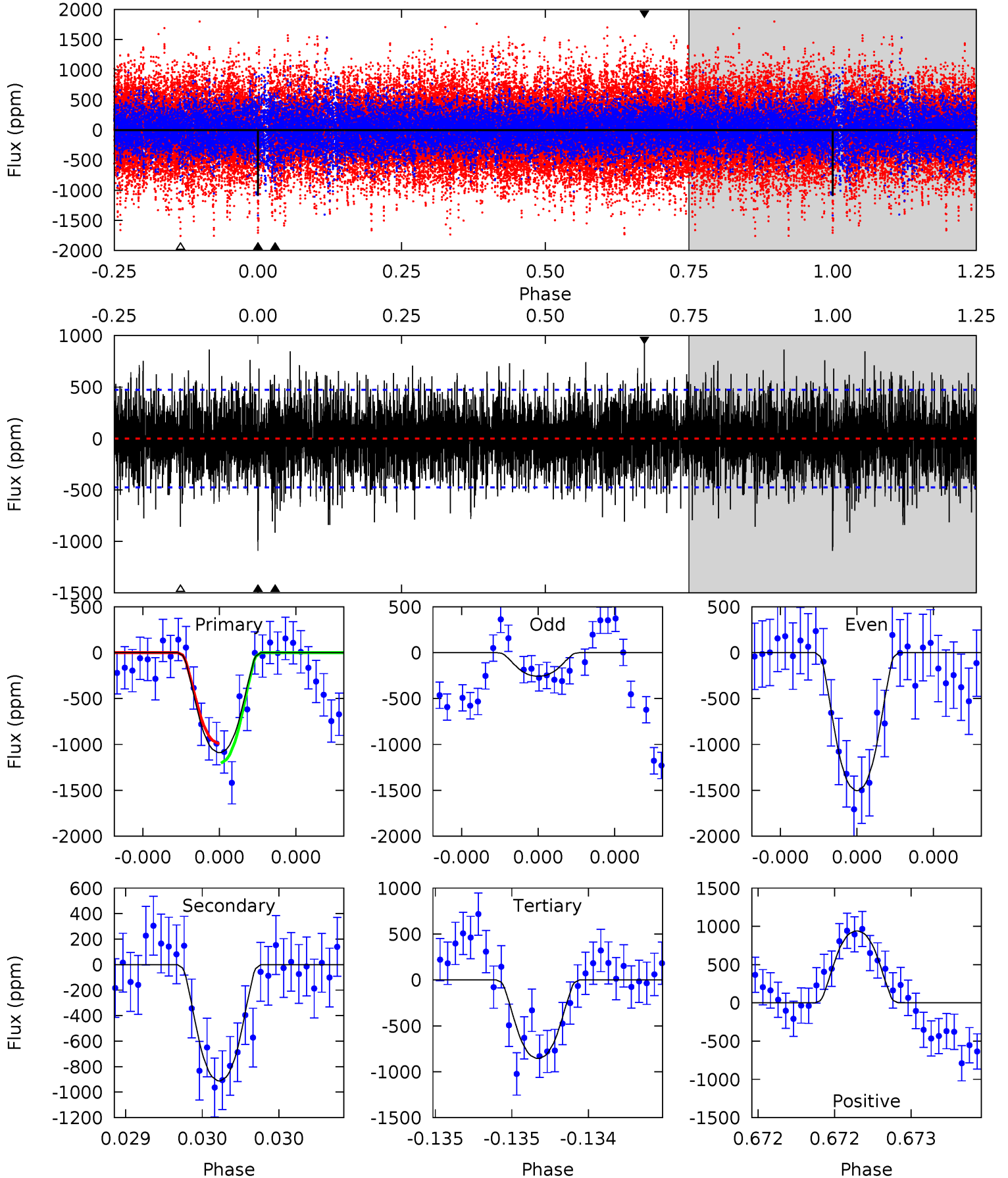
TCE 006209759-01 P=362.323186 Days  $T_0=394.544445$  (BKJD)



# DV Model-Shift Uniqueness Test

006209759-01, P = 362.312415 Days, E = 32.234599 Days

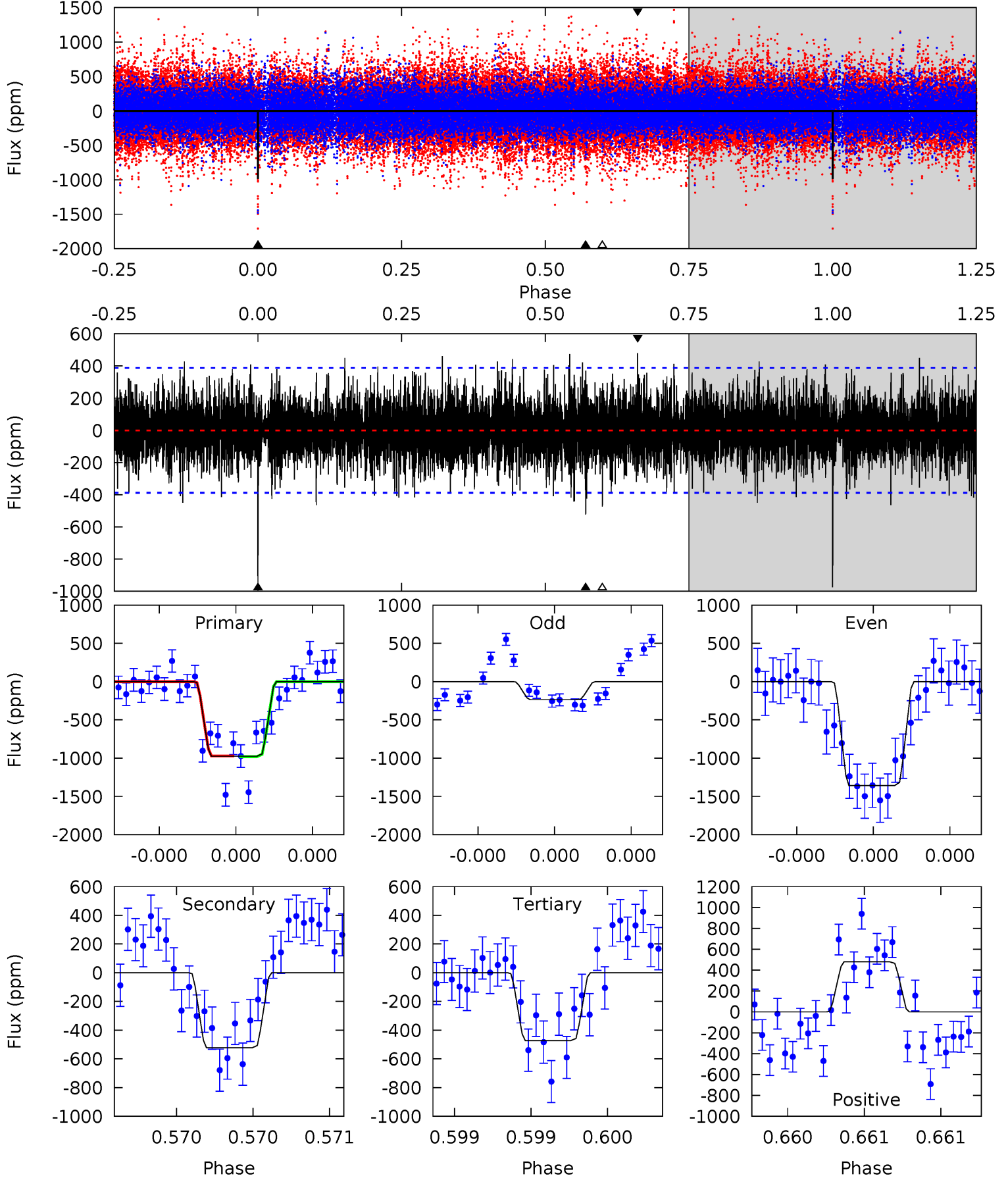
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	10.7	10.1	11.1	5.57	3.48	2.76	2.75	1.75	0.67	-0.34	6.90	0.91	0.46	1.26



# Alt Model-Shift Uniqueness Test

006209759-01, P = 362.323186 Days, E = 32.221259 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
14.1	7.57	6.84	6.95	5.62	3.55	1.82	7.27	7.16	0.73	0.63	7.75	0.74	0.33	0.07



### Stellar Parameters For KIC 006209759

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4935^{+86}_{-147}$	$2.539^{+0.033}_{-0.027}$	$0.070^{+0.150}_{-0.450}$	$15.578^{+1.253}_{-5.014}$	$3.059^{+0.181}_{-1.625}$	$0.001^{+0.001}_{-0.000}$
	+2%/-3%	+1%/-1%	+214%/-643%	+8%/-32%	+6%/-53%	+54%/-13%
Source	SPE74	AST9	SPE74	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 006209759-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-912 \pm 85$	$73.41^{+9.67}_{-11.54}$	$1000^{+24}_{-38}$	$4285^{+248}_{-220}$	$197^{+72}_{-47}$
Alt.	$-523 \pm 69$	$55.26^{+10.49}_{-11.18}$	$996^{+25}_{-34}$	$4278^{+370}_{-287}$	$199^{+103}_{-61}$

$T_{max}$  = 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

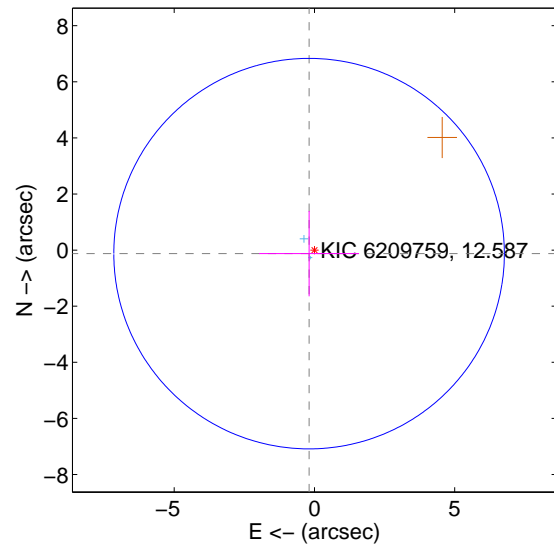
Supplemental centroid analysis for 006209759-01. Kepler magnitude: 12.59. Transit SNR 8.57

There are 2 quarters with good PRF difference image offsets

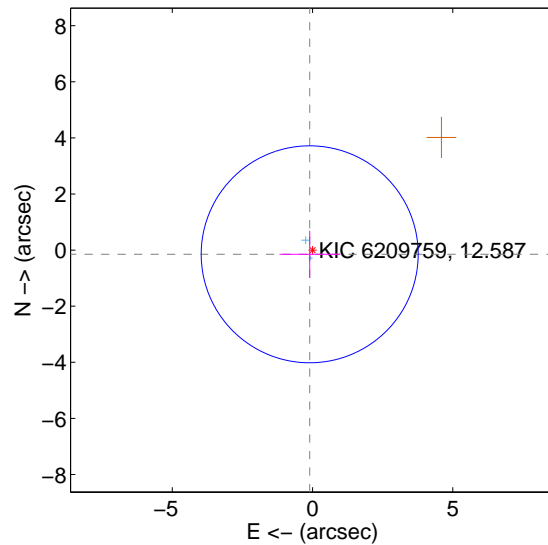
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.229 \pm 2.320$	0.10	$0.191 \pm 1.782$	$-0.126 \pm 1.521$
PRF-fit source offset from KIC position	$0.181 \pm 1.289$	0.14	$0.101 \pm 1.076$	$-0.150 \pm 0.842$
photometric centroid source offset	$0.41 \pm 0.31$	1.31	$0.27 \pm 0.32$	$0.31 \pm 0.31$

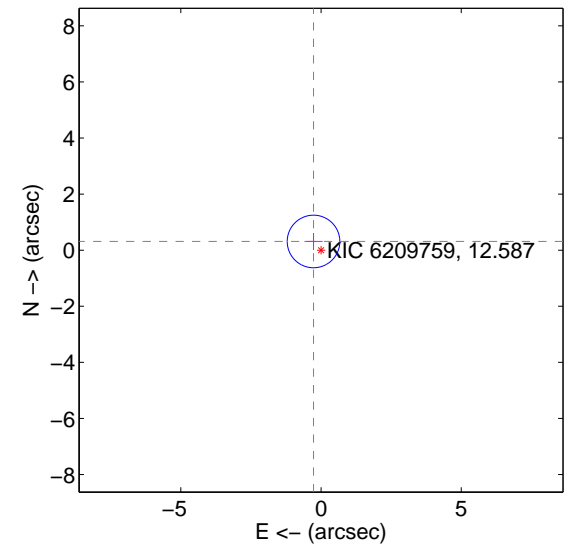
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

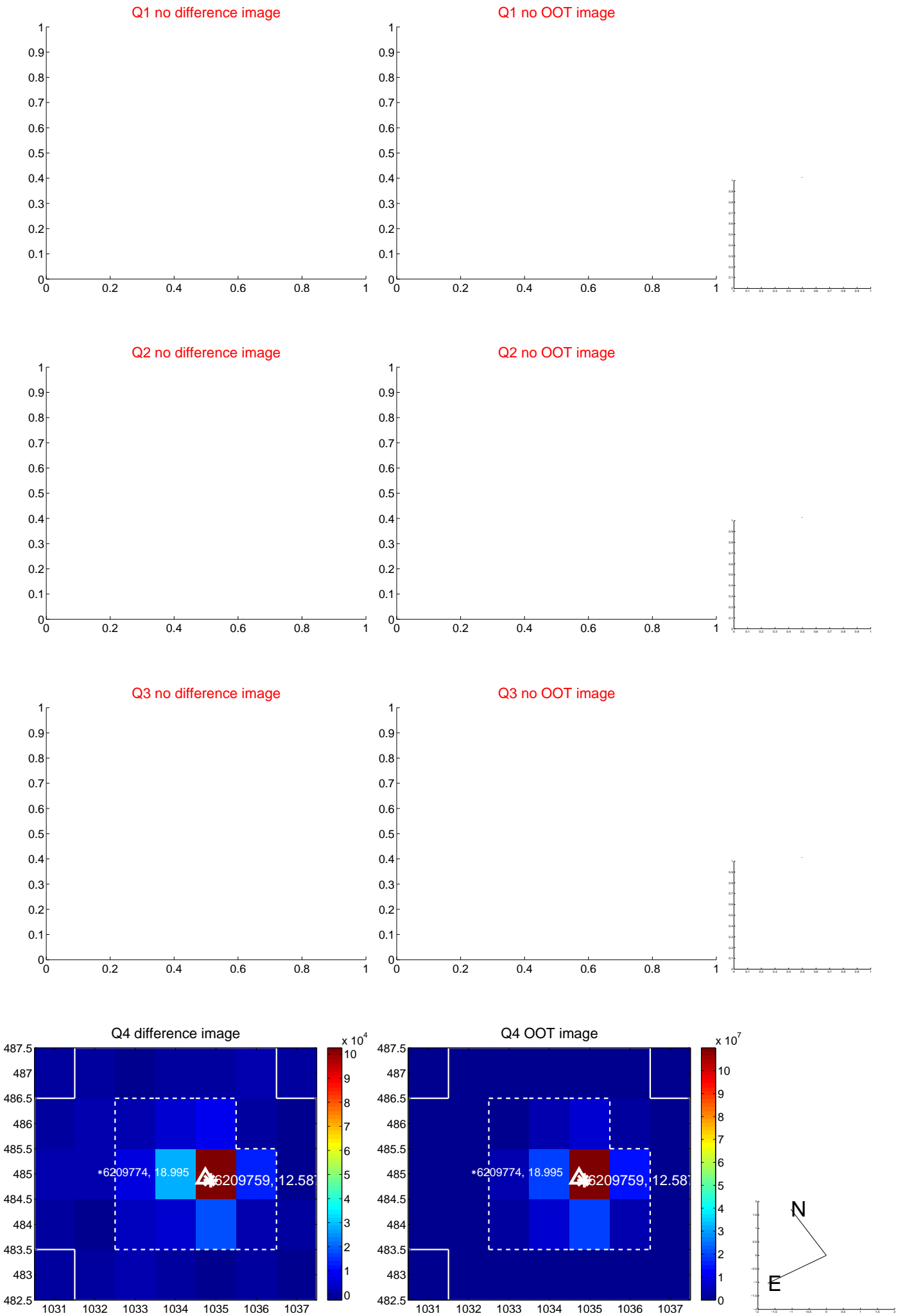


offset from photometric centroids

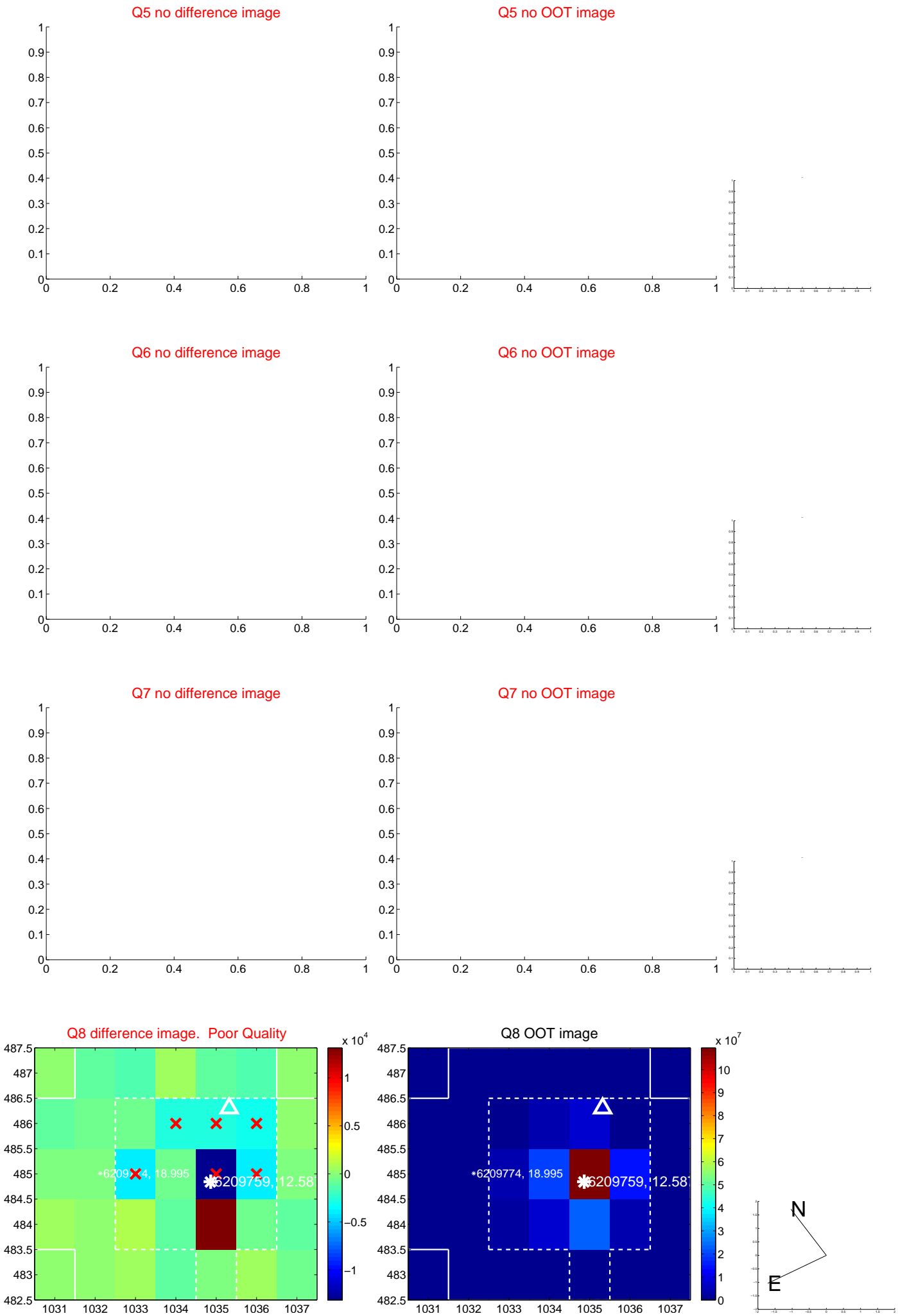


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

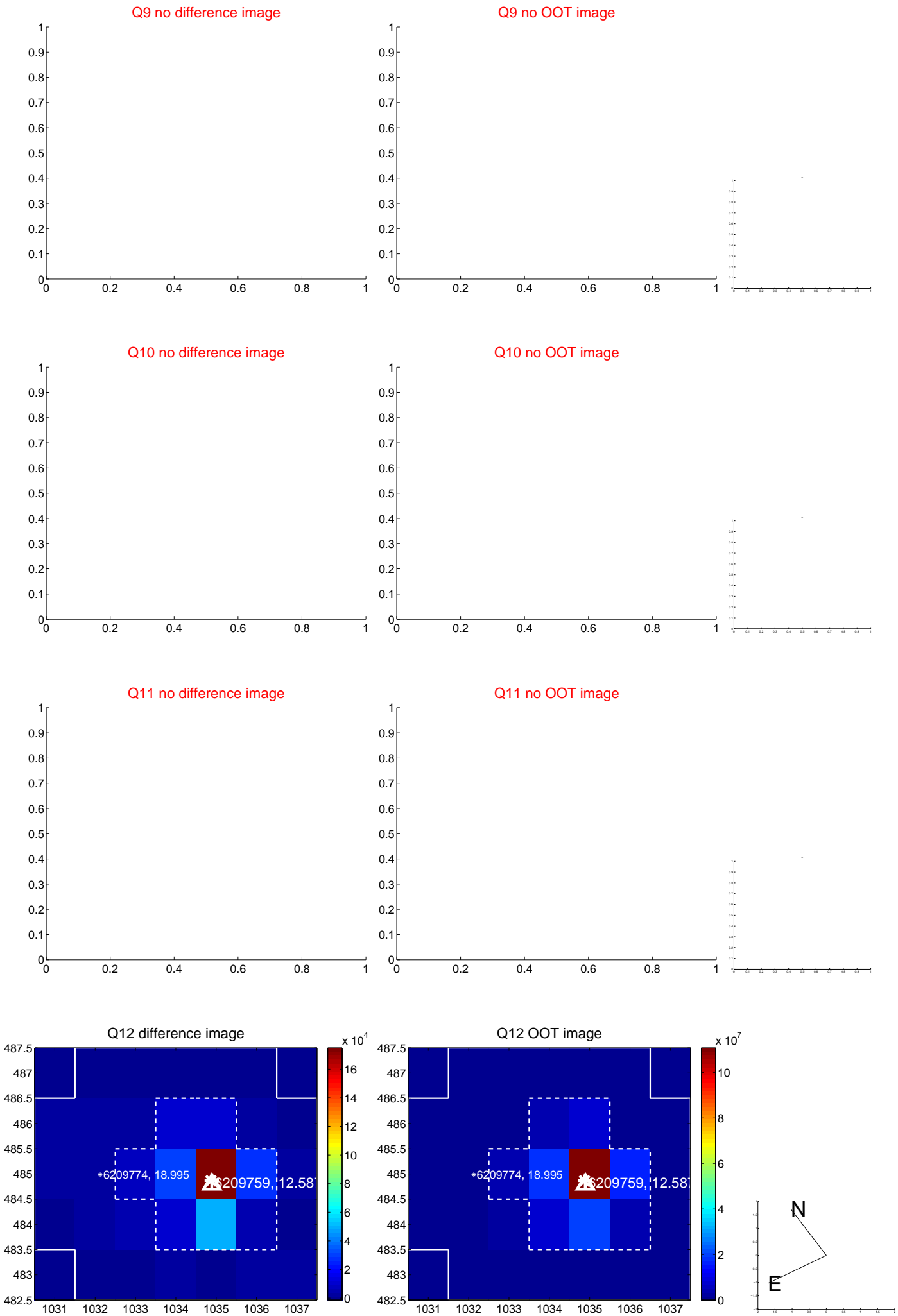
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



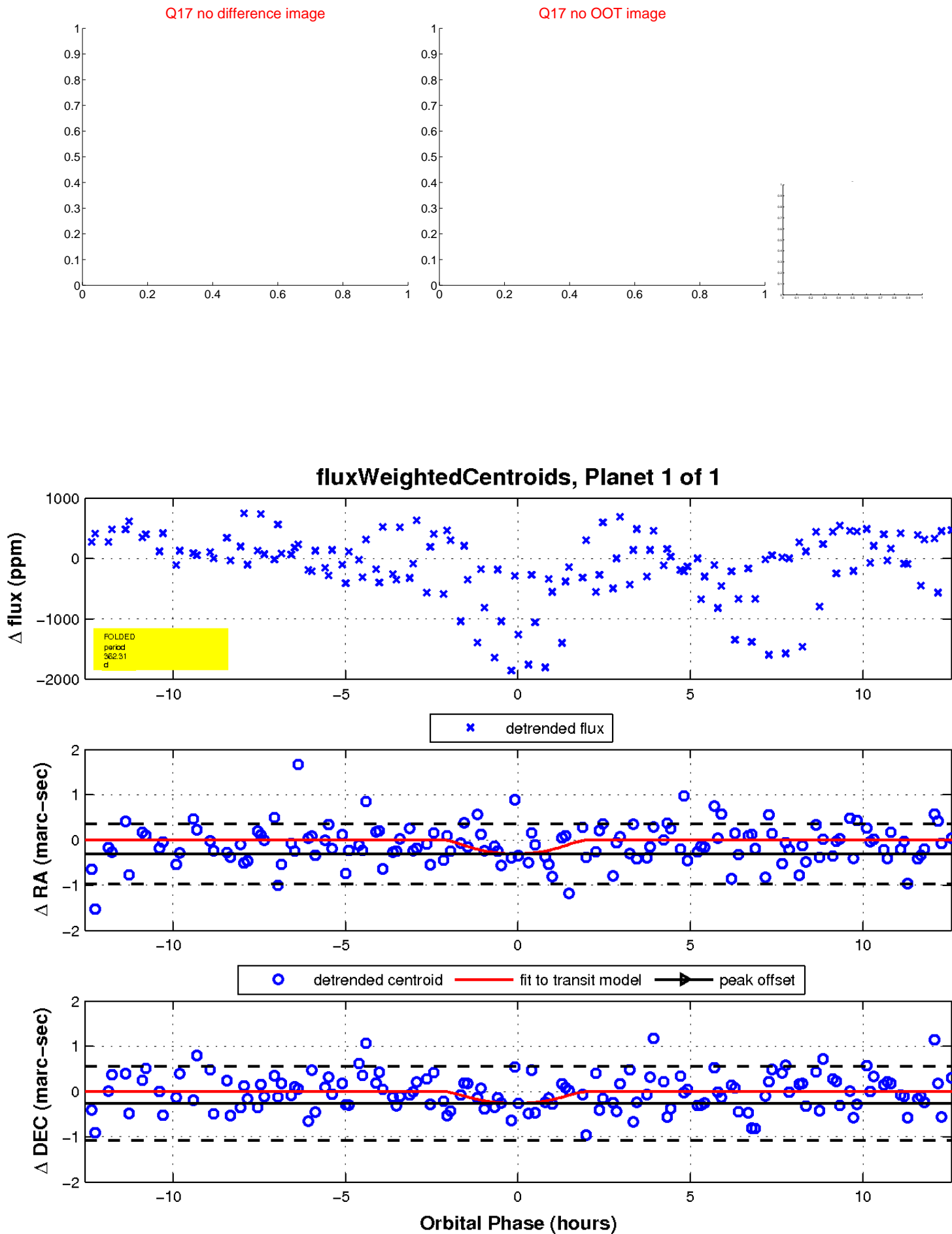
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

