

# KIC 010074060

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010074060-01	OBS	No	371.567159	305.882867	834.9	7.842	7.7	7.1	0.91	5941	2.76	0.91

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010074060-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—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.

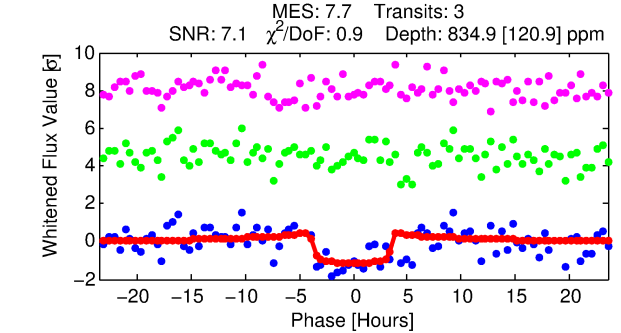
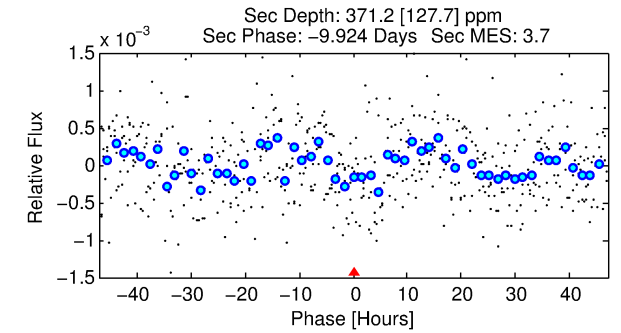
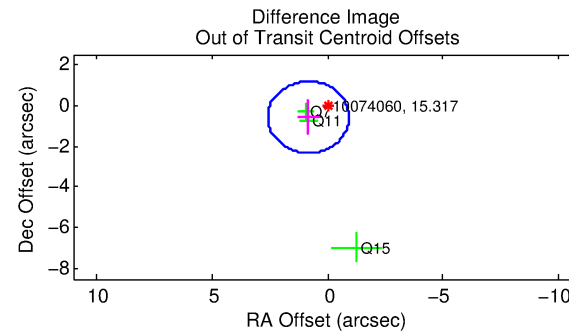
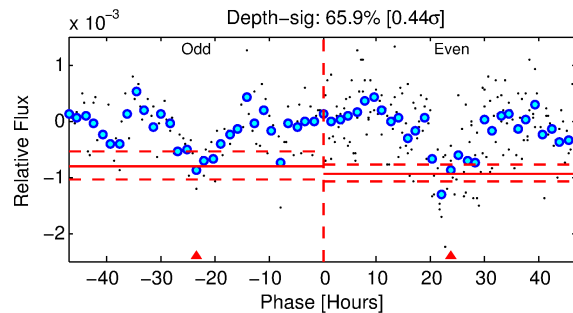
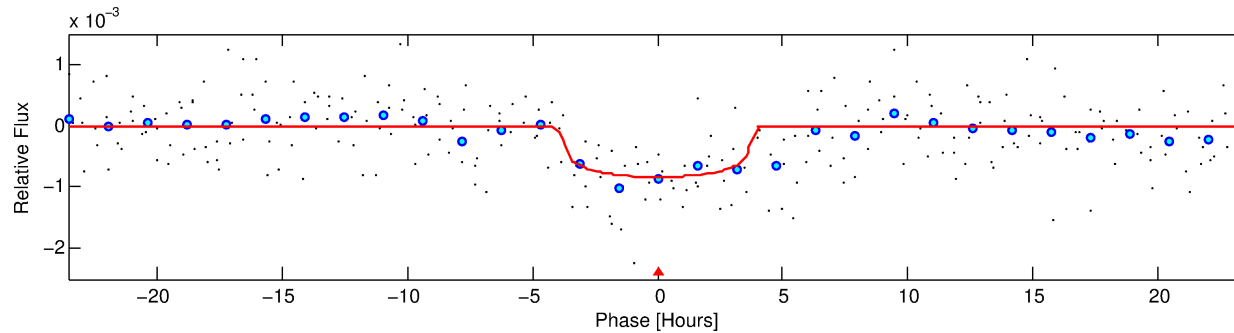
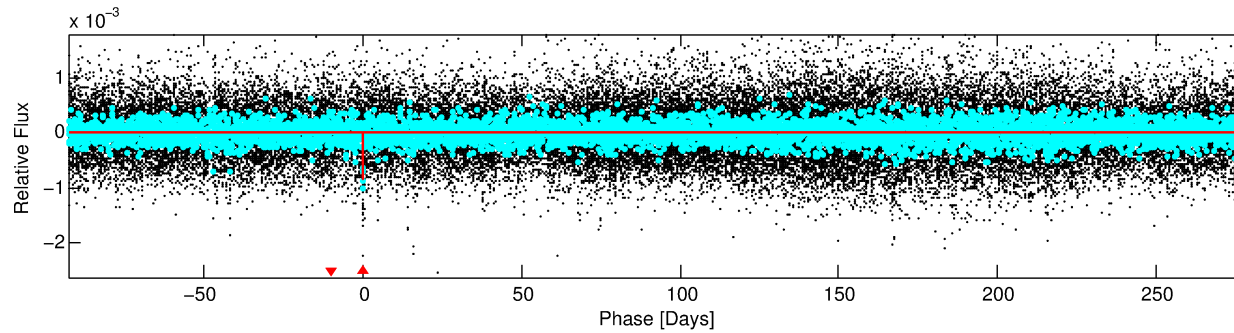
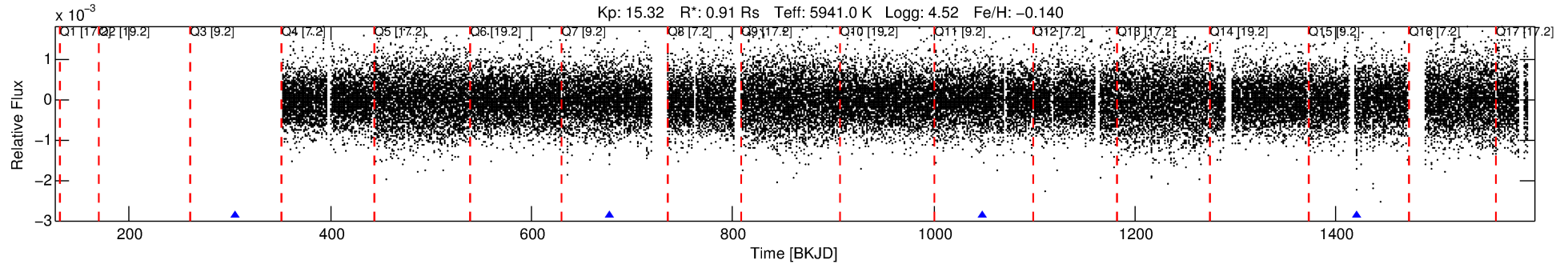
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010074060-01

No Significant Match Found

# DV One-Page Summary

KIC: 10074060 Candidate: 1 of 1 Period: 371.567 d



## DV Fit Results:

Period = 371.56716 [0.01063] d  
Epoch = 305.8829 [0.0216] BKJD  
Rp/R\* = 0.0278 [0.0182]  
a/R\* = 294.37 [894.71]  
b = 0.63 [2.95]  
Seff = 0.90 [0.38]  
Teq = 249 [26] K  
Rp = 2.76 [2.02] Re  
a = 1.0117 [0.2772] AU  
Ag = 27407.84 [38712.10] [0.71] $\sigma$   
Teffp = 4948 [1684] K [2.79] $\sigma$

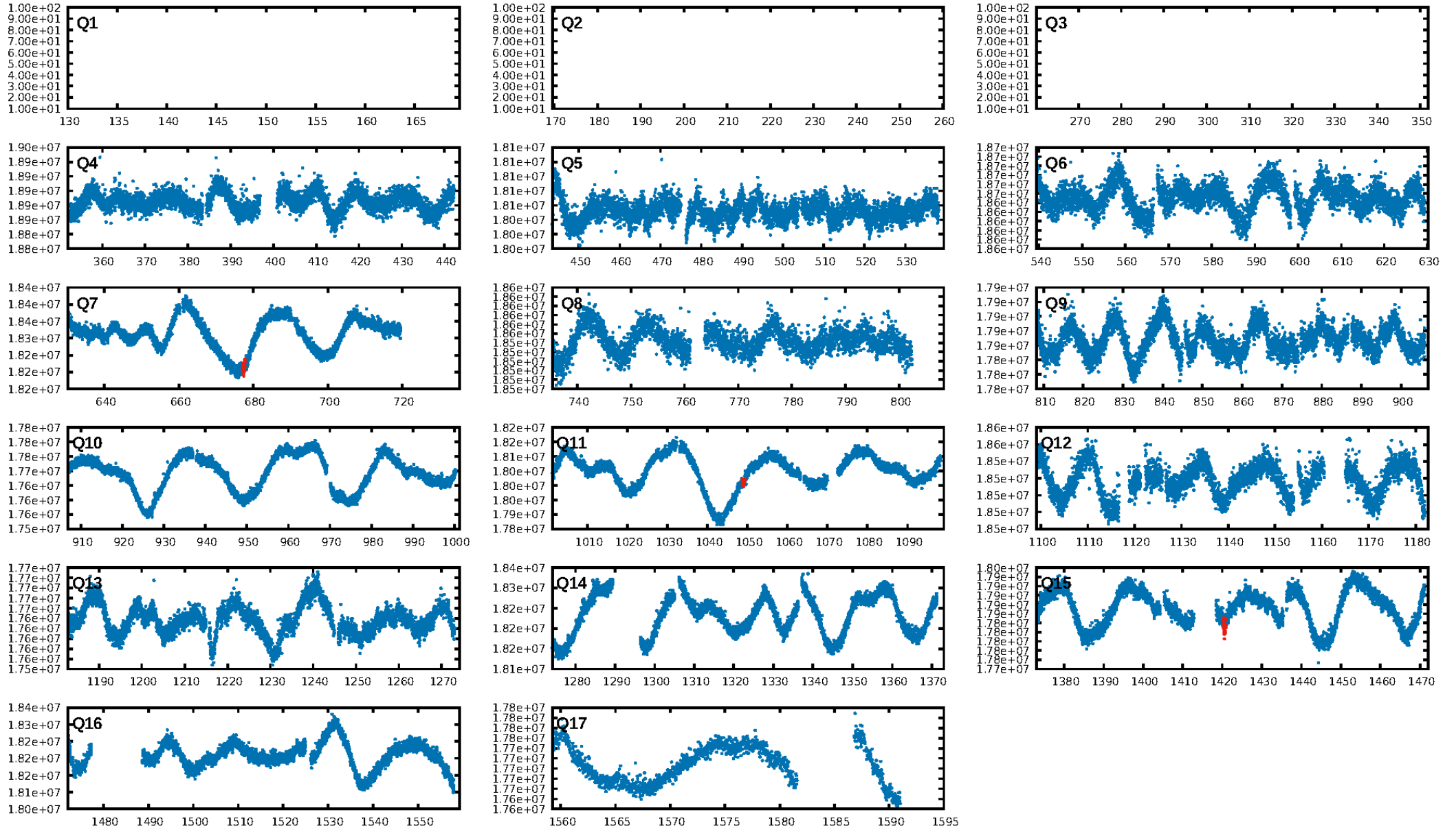
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 18.0%  
ModelChiSquareGof-sig: 99.8%  
**Bootstrap-pfa: 6.26e-11**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.37  
Centroid-sig: 1.9%  
Centroid-so: 4.296 arcsec [1.95] $\sigma$   
OotOffset-rm: 1.012 arcsec [1.74] $\sigma$   
OotOffset-st: 0/3/0/0 [3]  
KicOffset-rm: 1.088 arcsec [2.76] $\sigma$   
KicOffset-st: 0/3/0/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

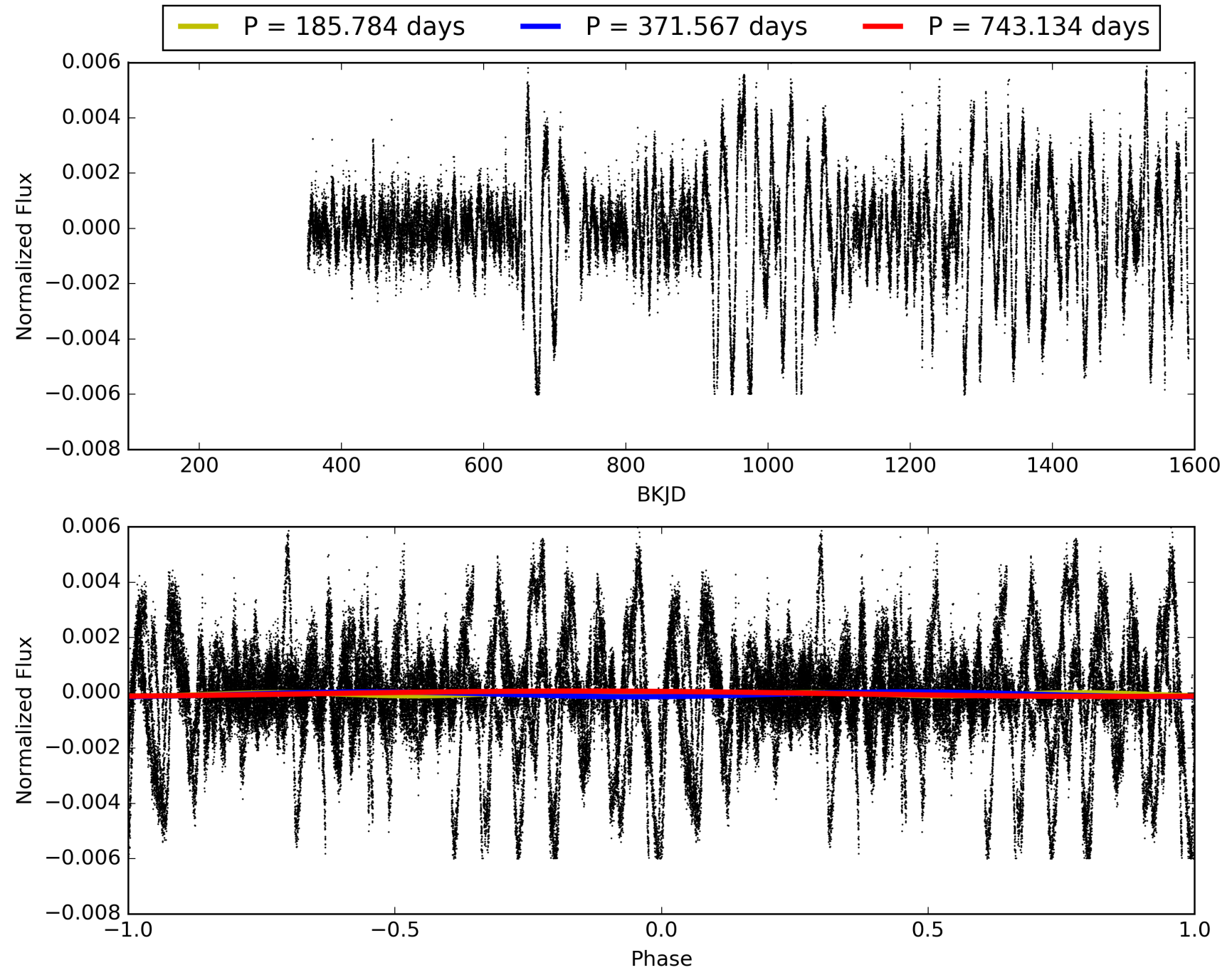
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:19:58 Z

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

# TCE 010074060-01, PDC Light Curves

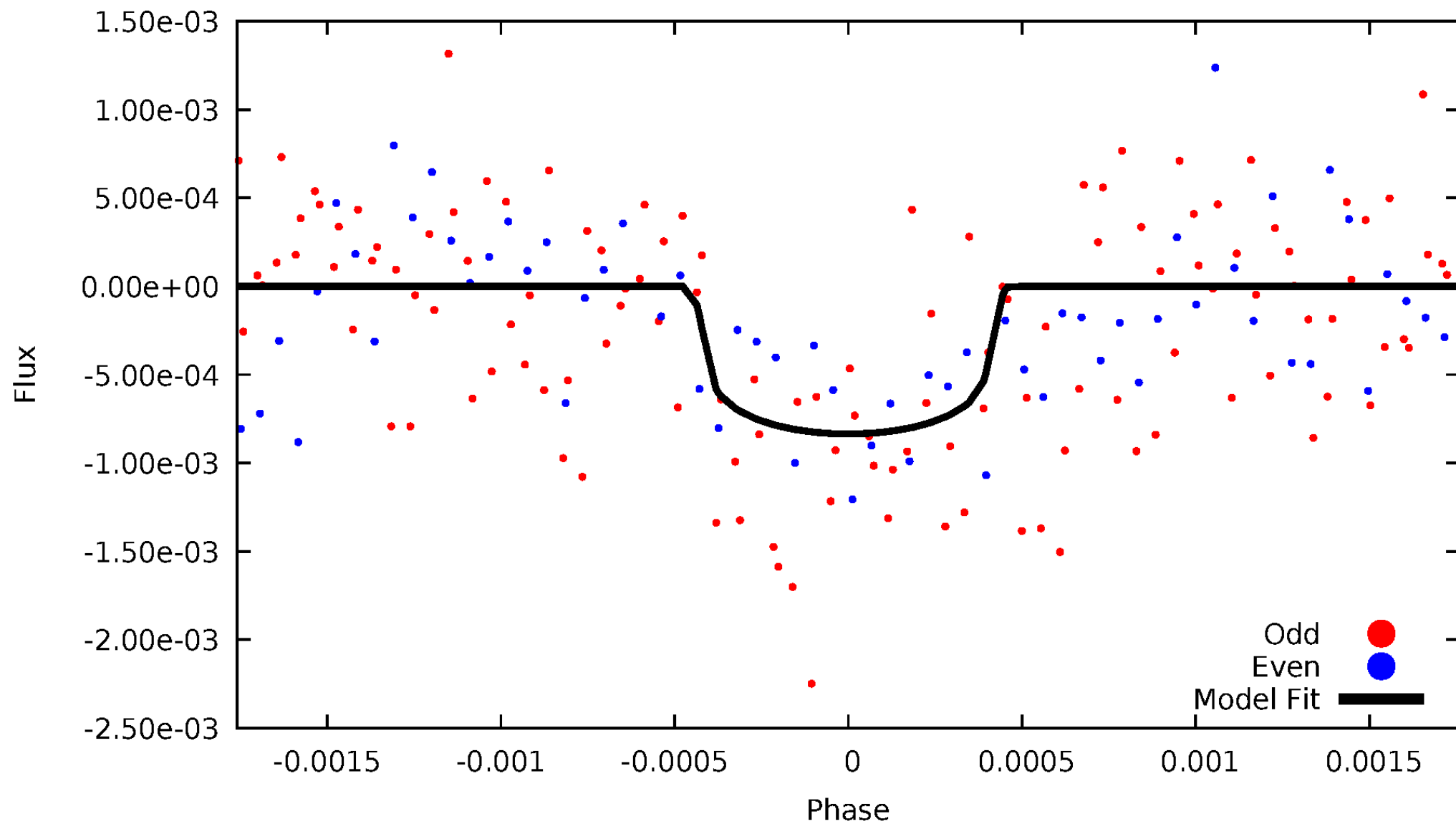


# TCE 010074060-01



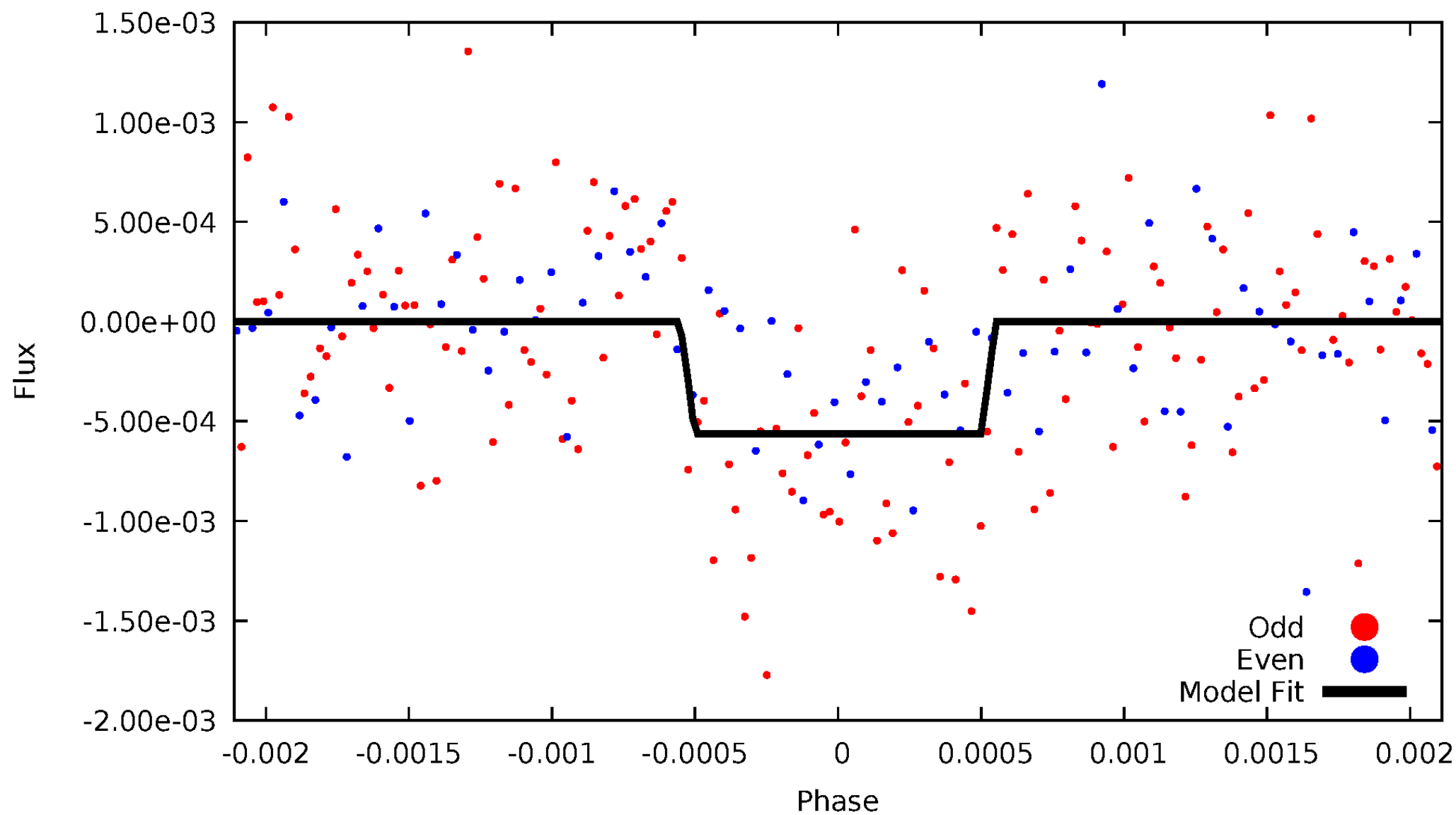
# DV Odd/Even

TCE 010074060-01

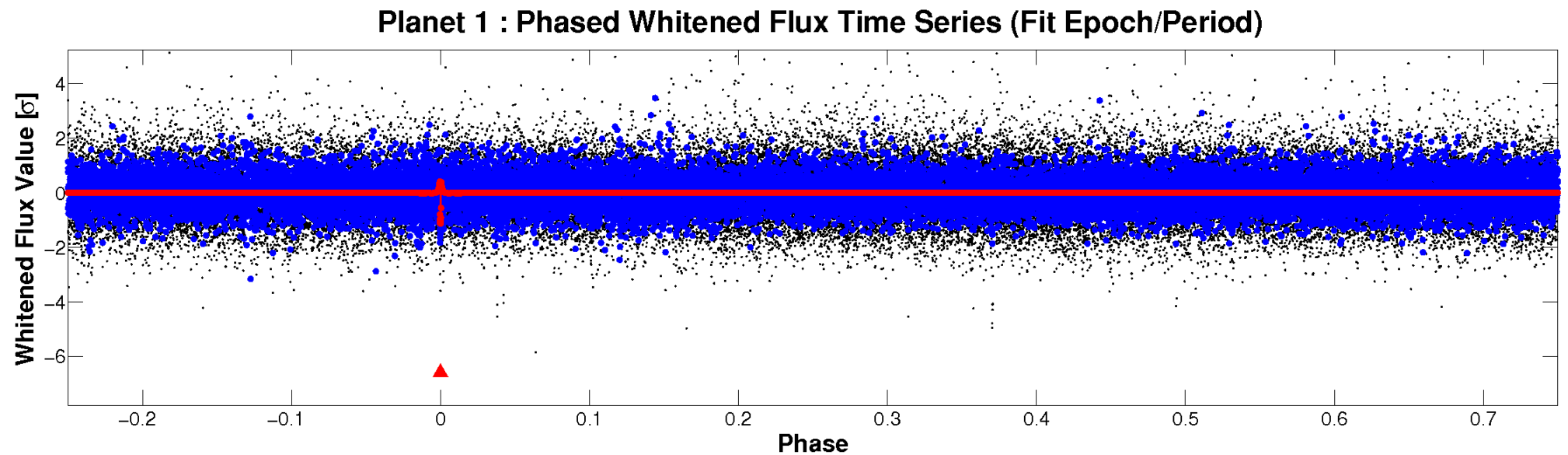
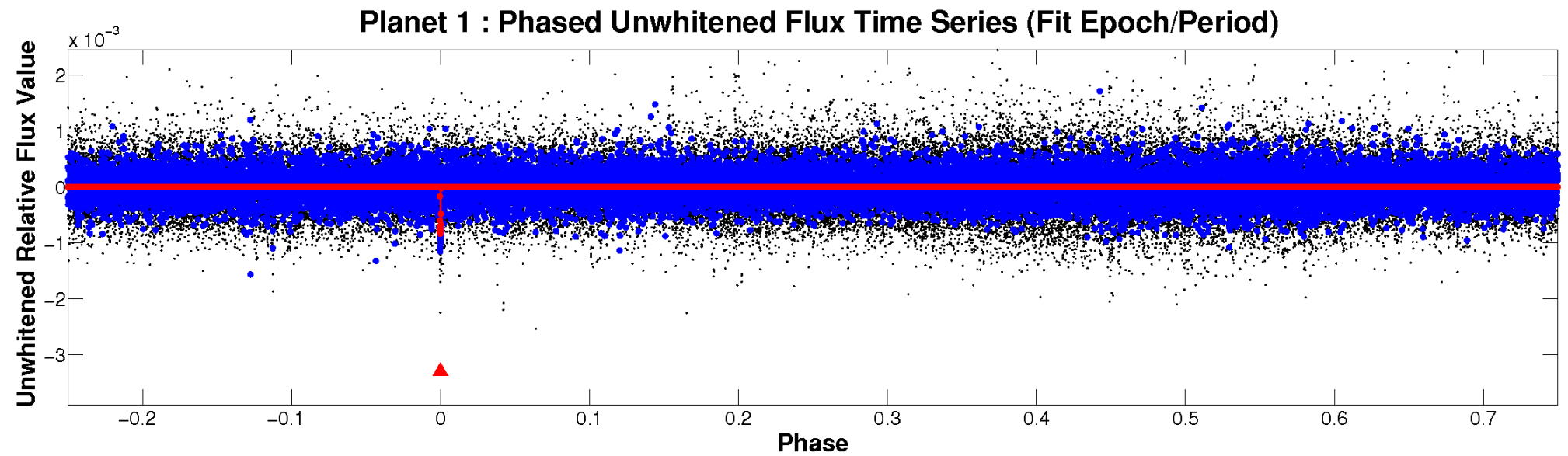


# ALT Odd/Even

TCE 010074060-01

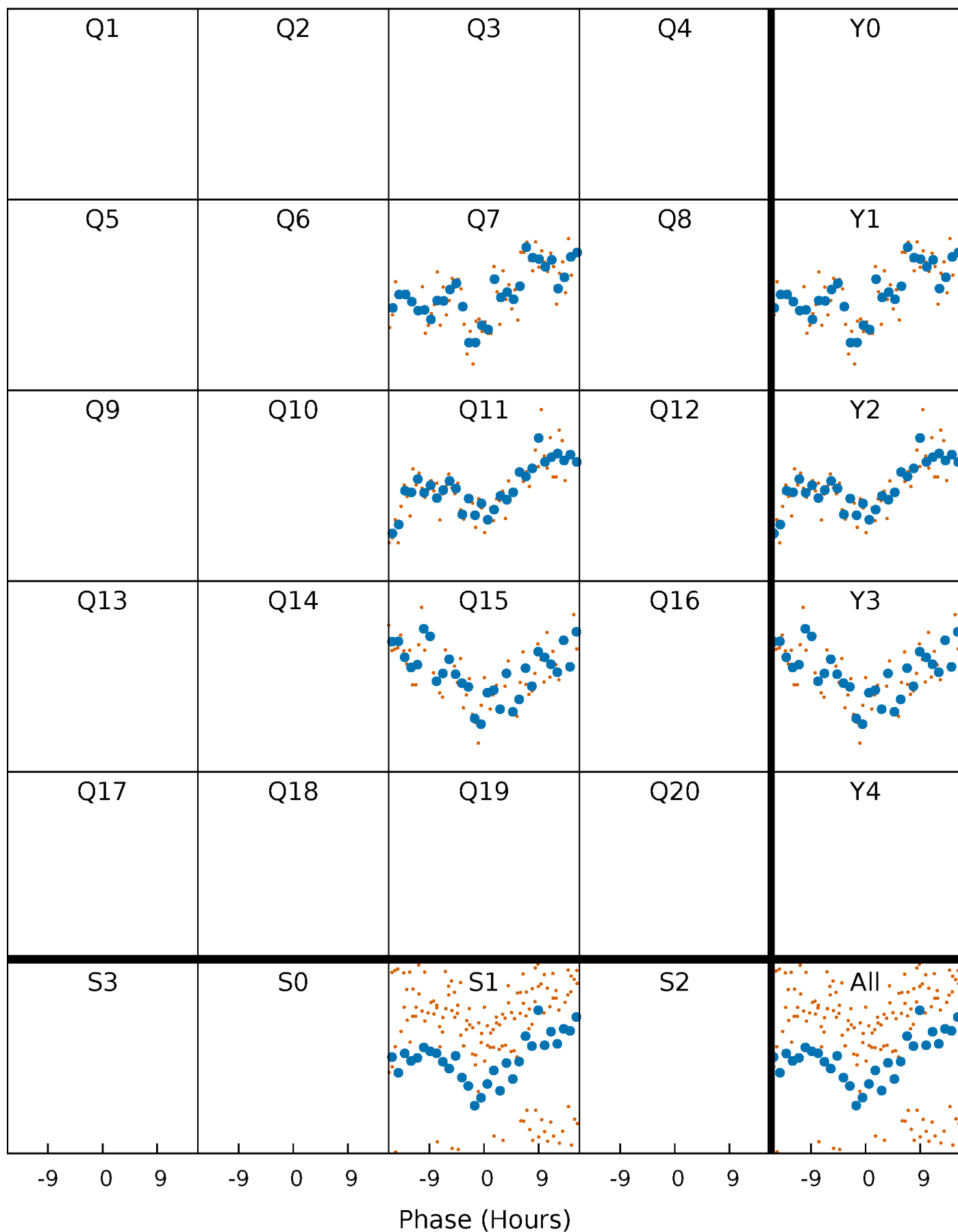


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

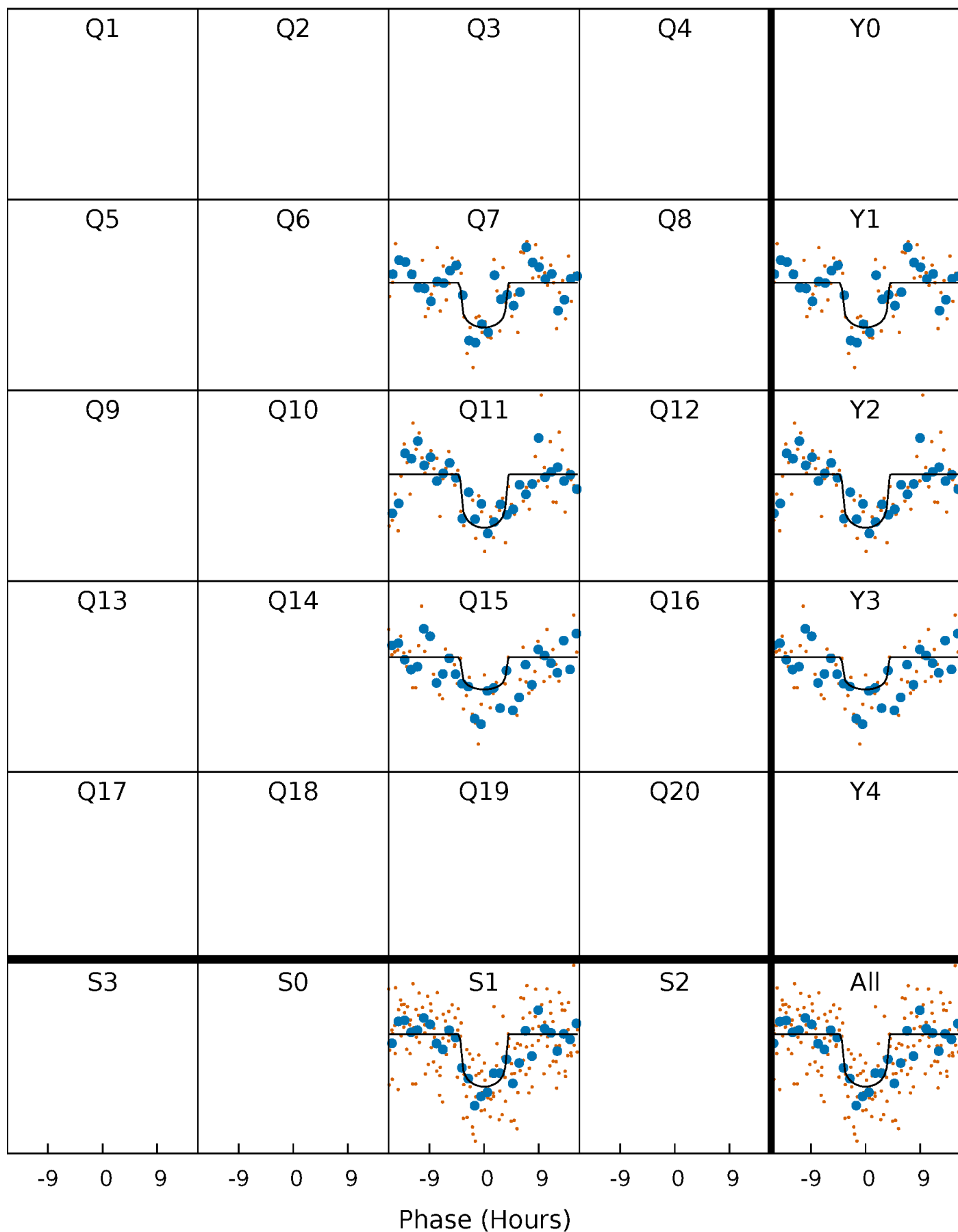
TCE 010074060-01 P=371.567159 Days  $T_0=305.882867$  (BKJD)





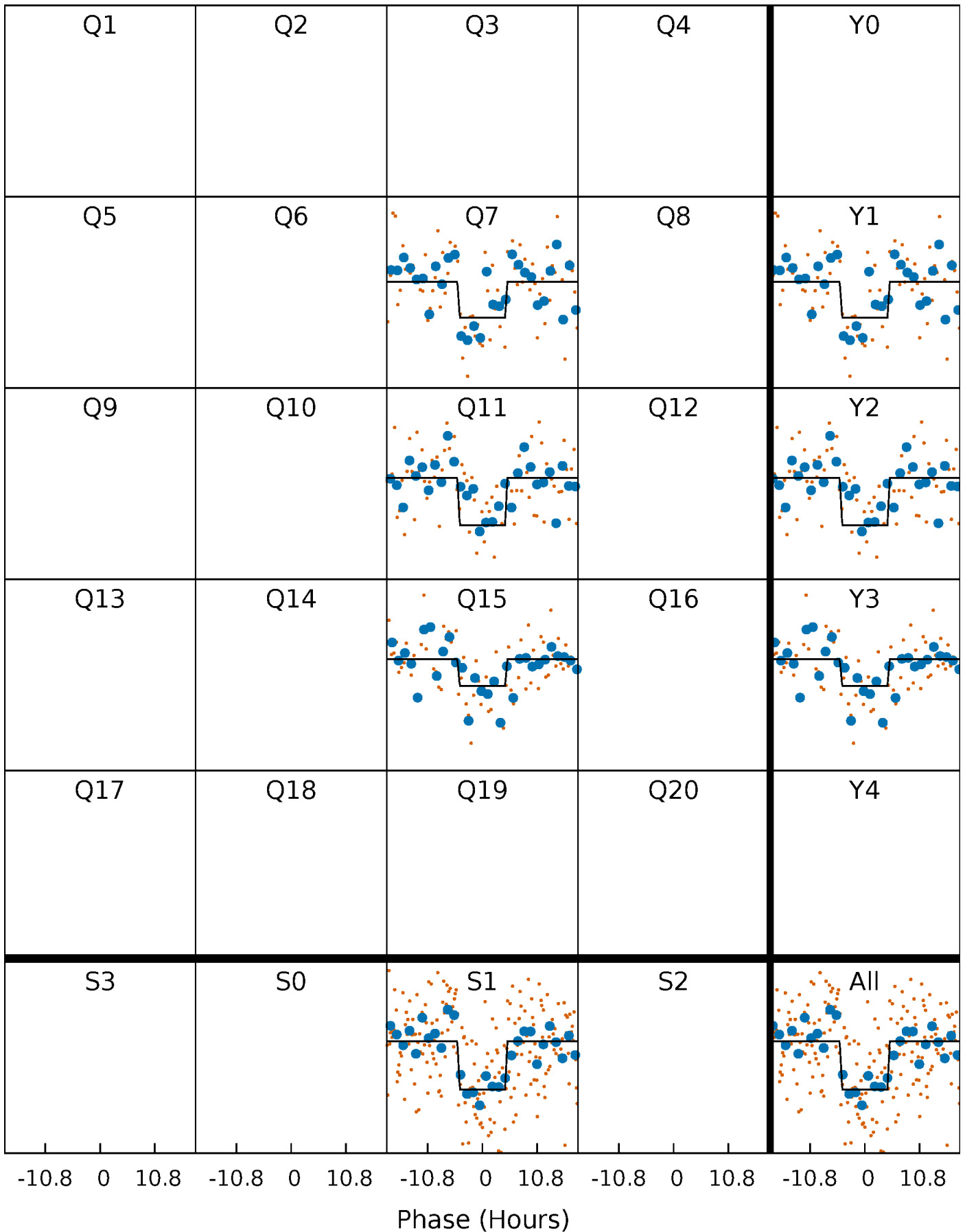
# DV Quarter-Phased Transit Curves

TCE 010074060-01 P=371.567159 Days  $T_0=305.882867$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

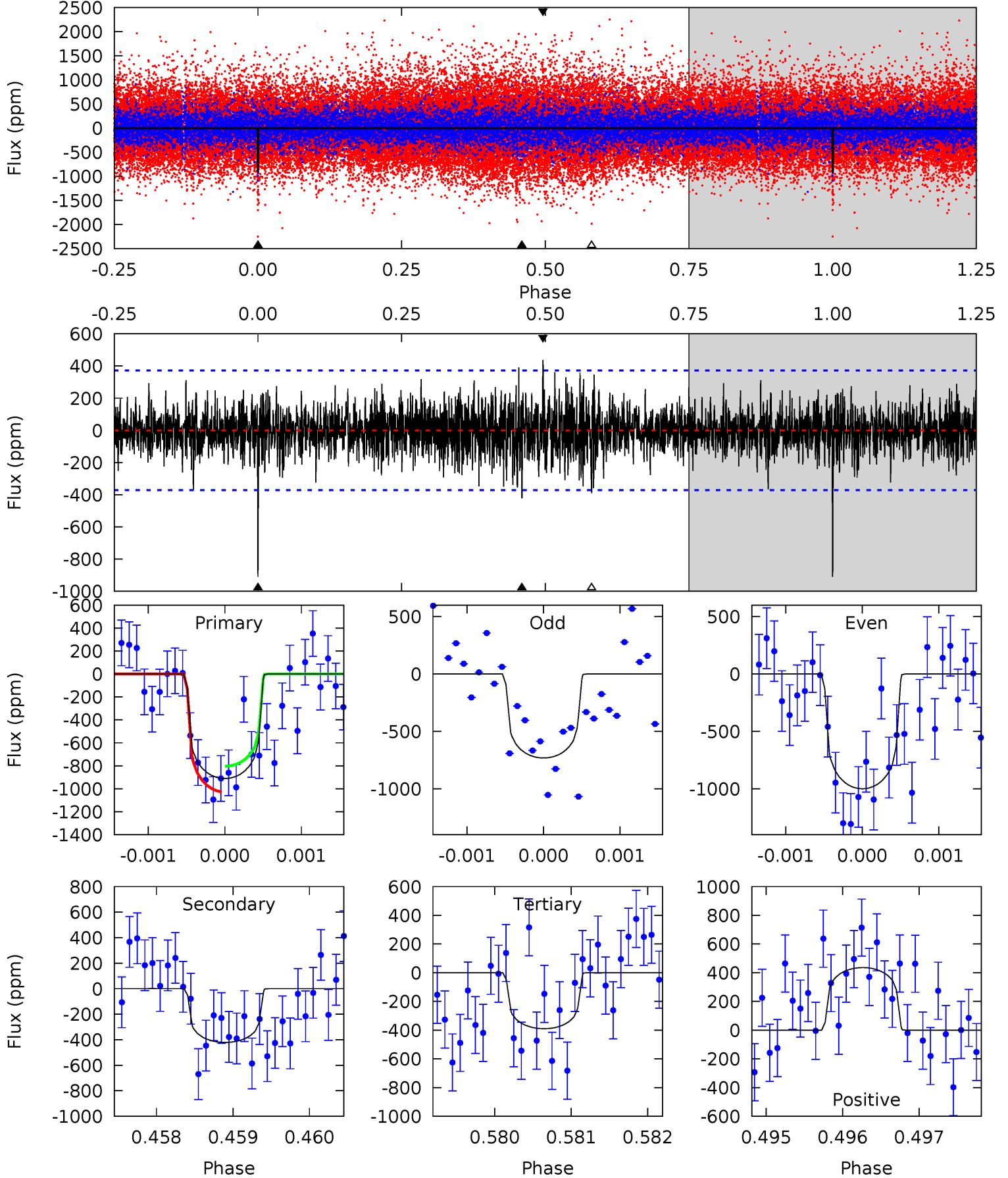
TCE 010074060-01     $P=371.570666$  Days     $T_0=305.925498$  (BKJD)



# DV Model-Shift Uniqueness Test

010074060-01, P = 371.567159 Days, E = 305.882867 Days

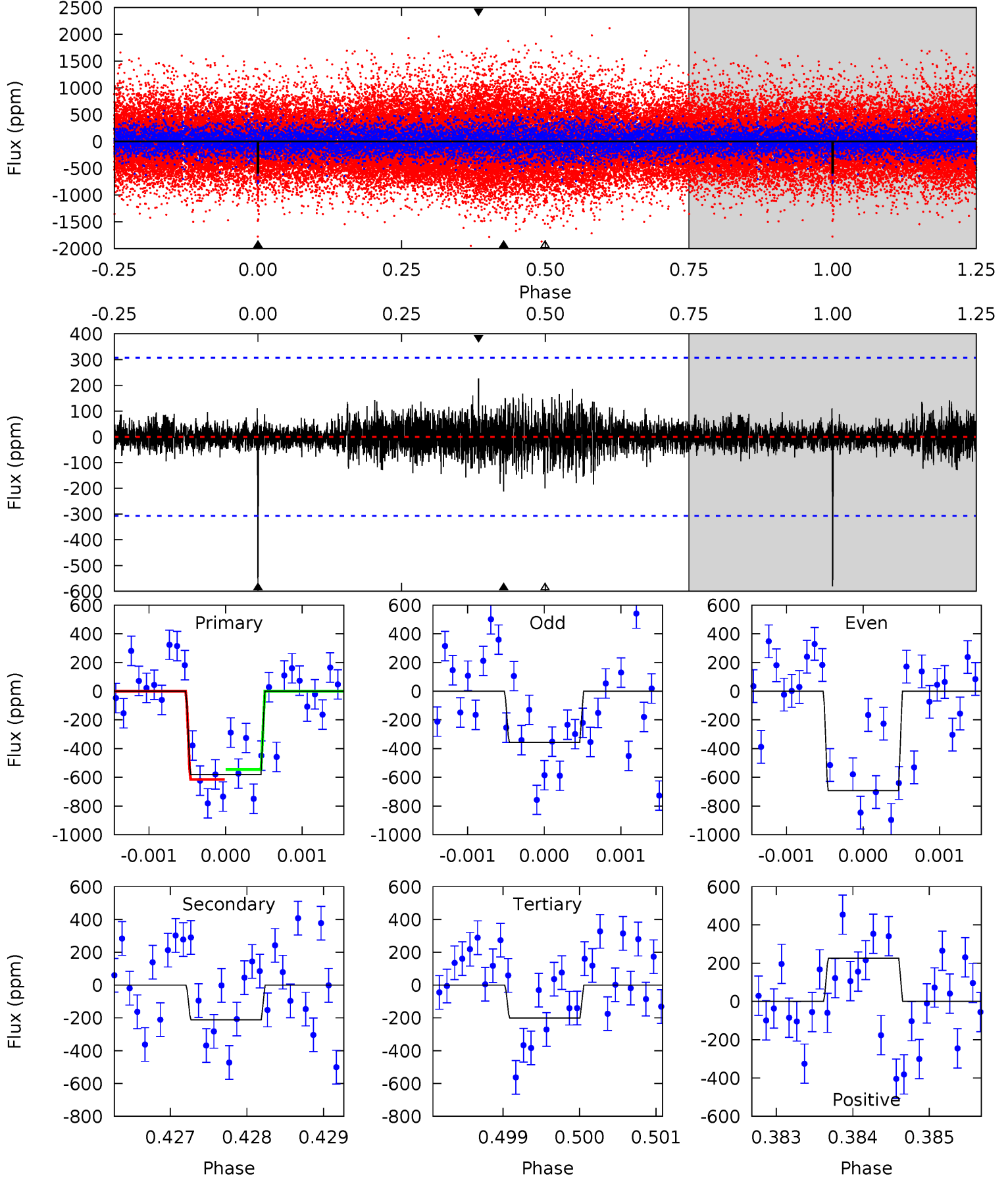
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	6.20	5.74	6.42	5.47	3.32	1.54	7.67	6.99	0.46	-0.22	1.87	1.22	0.32	1.64



# Alt Model-Shift Uniqueness Test

010074060-01,  $P = 371.570666$  Days,  $E = 305.925498$  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
10.3	3.75	3.54	4.00	5.44	3.27	0.75	6.73	6.27	0.21	-0.25	2.85	0.97	0.28	0.62



### Stellar Parameters For KIC 010074060

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5941^{+187}_{-208}$	$4.519^{+0.039}_{-0.221}$	$-0.140^{+0.300}_{-0.300}$	$0.911^{+0.294}_{-0.078}$	$1.001^{+0.122}_{-0.134}$	$1.865^{+0.404}_{-1.020}$
	+3%/-4%	+1%/-5%	+214%/-214%	+32%/-9%	+12%/-13%	+22%/-55%
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 010074060-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-421 \pm 68$	$3.11^{+1.86}_{-1.68}$	$356^{+27}_{-18}$	$5024^{+2408}_{-873}$	$23618^{+94823}_{-14316}$
Alt.	$-212 \pm 57$	$2.66^{+1.87}_{-1.58}$	$356^{+25}_{-18}$	$4653^{+2279}_{-856}$	$16192^{+75915}_{-10898}$

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

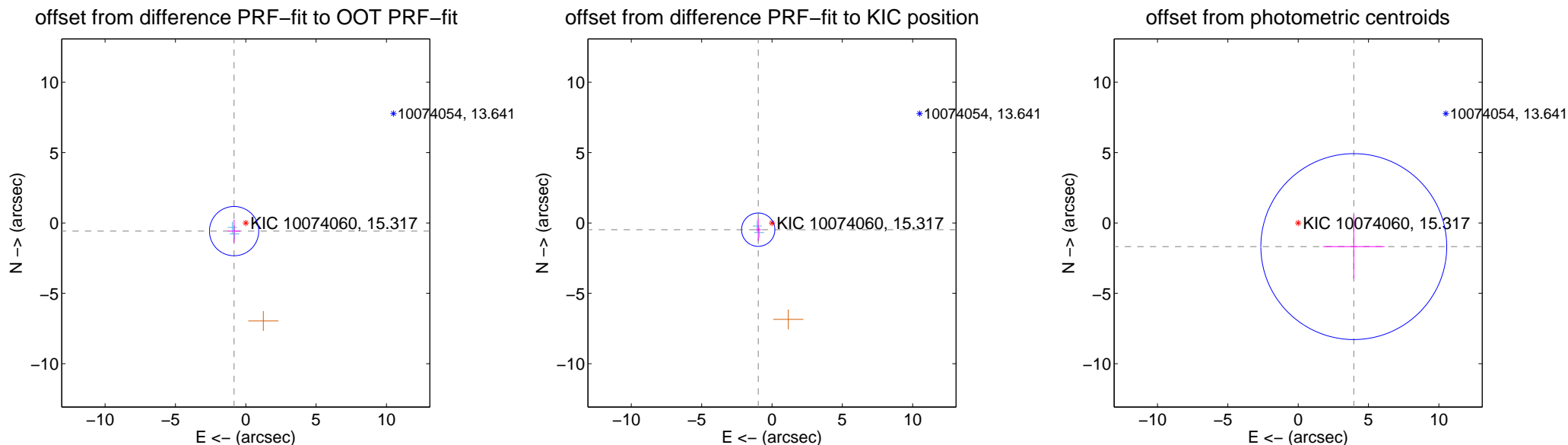
## DV Centroid Data

Supplemental centroid analysis for 010074060-01. Kepler magnitude: 15.32. Transit SNR 7.14

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.012 \pm 0.584$	1.74	$0.830 \pm 0.436$	$-0.580 \pm 0.806$
PRF-fit source offset from KIC position	$1.088 \pm 0.395$	2.76	$0.978 \pm 0.193$	$-0.478 \pm 0.808$
photometric centroid source offset	$4.30 \pm 2.20$	1.95	$-3.95 \pm 2.19$	$-1.68 \pm 2.28$

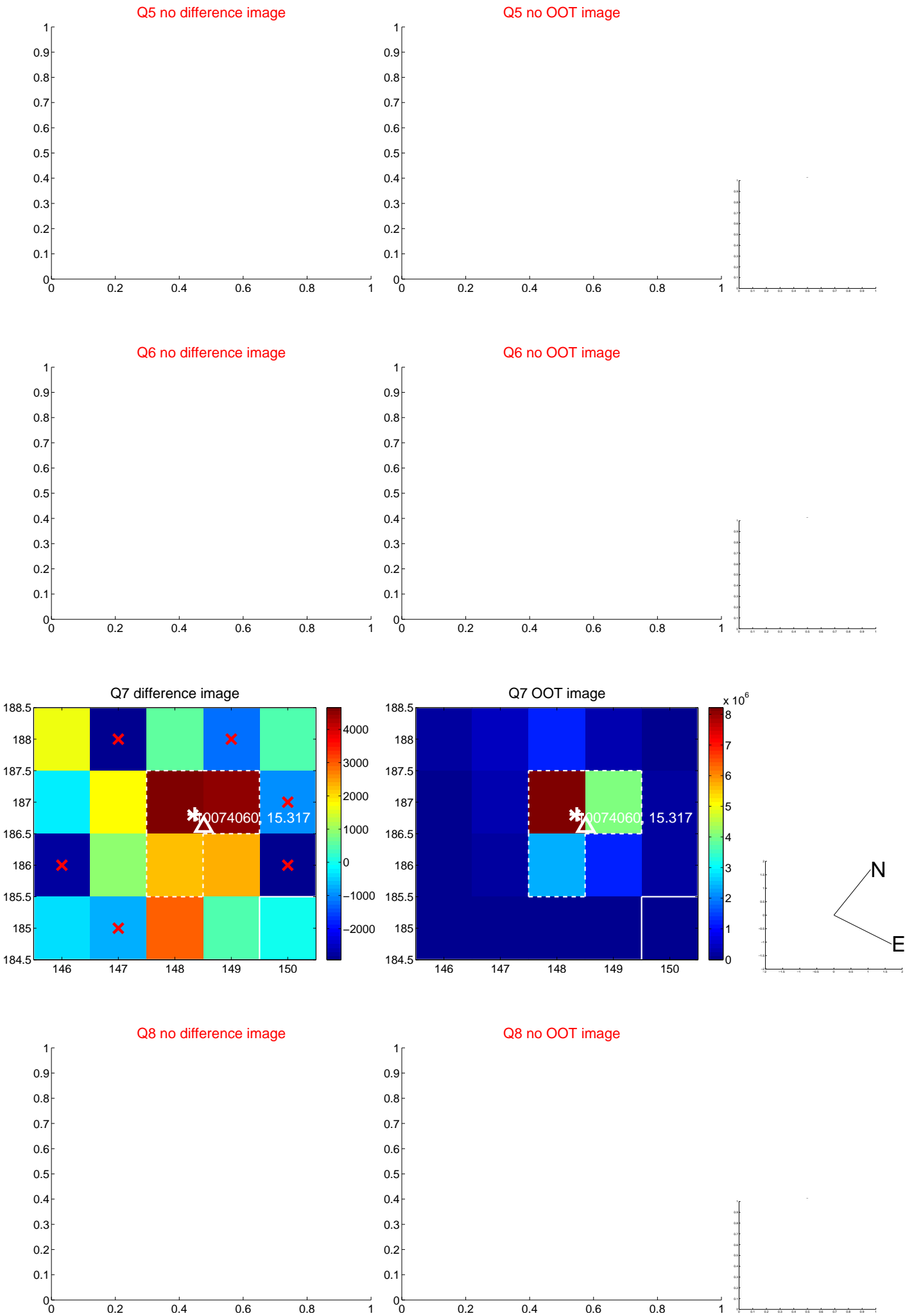


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

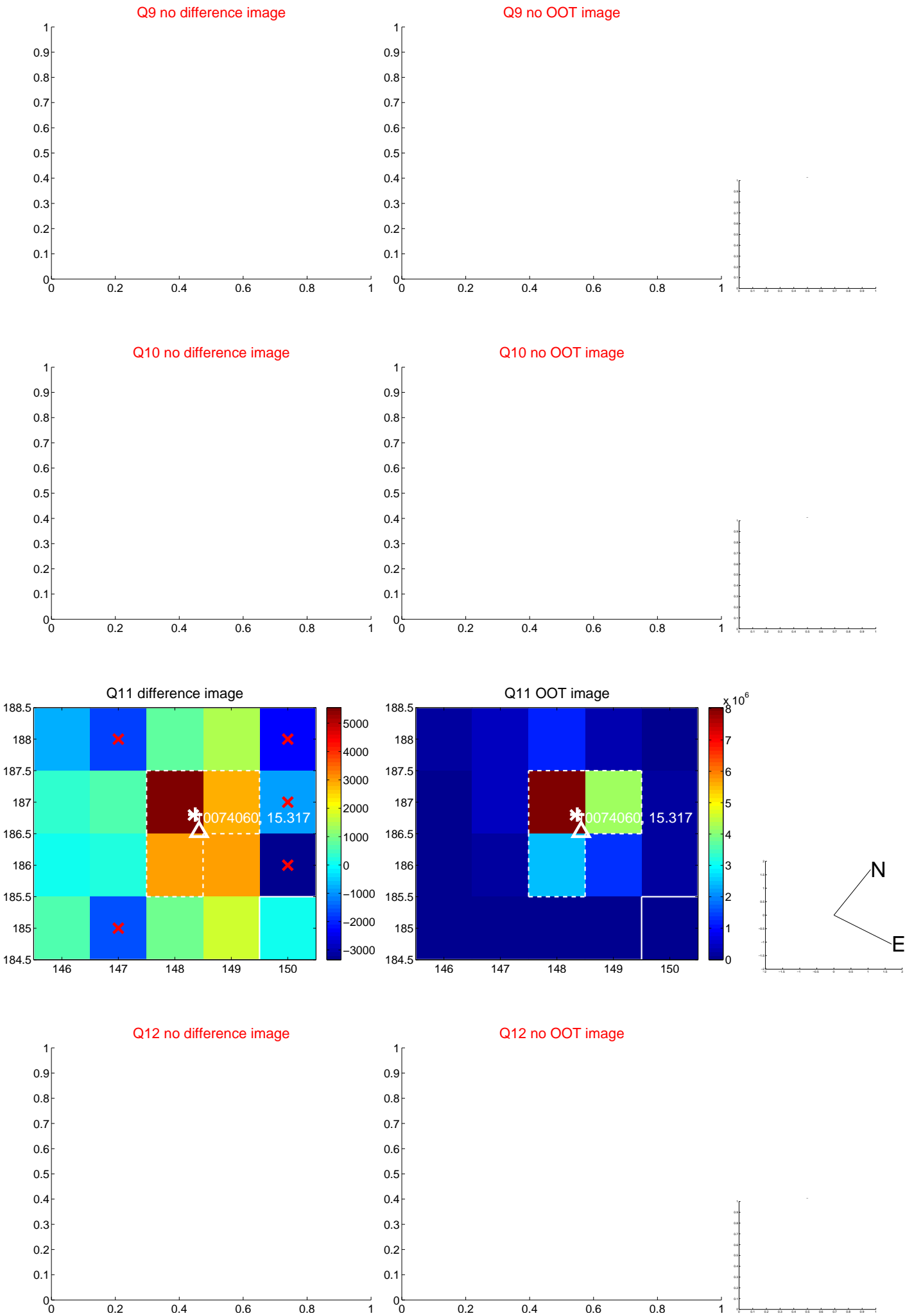


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

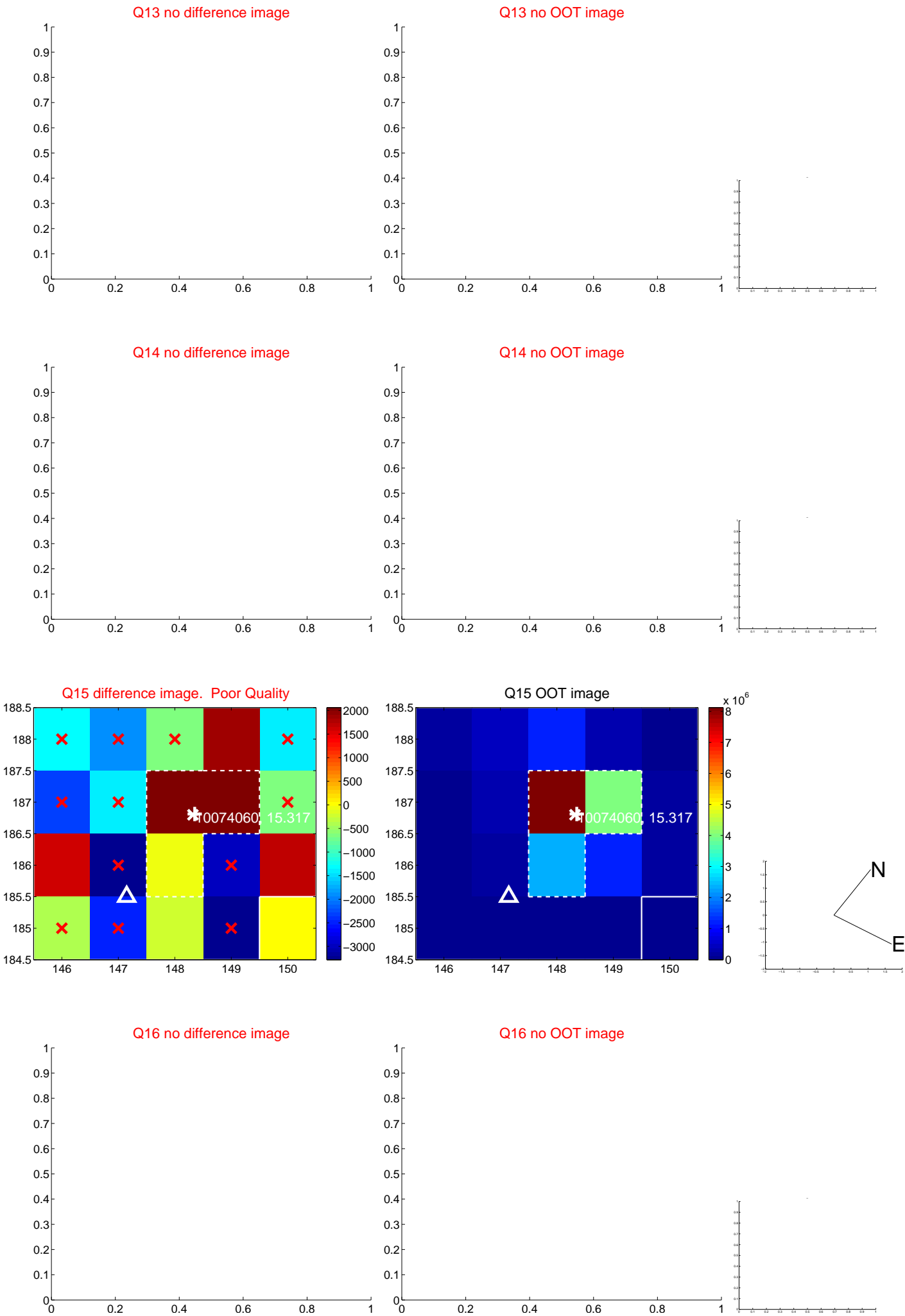




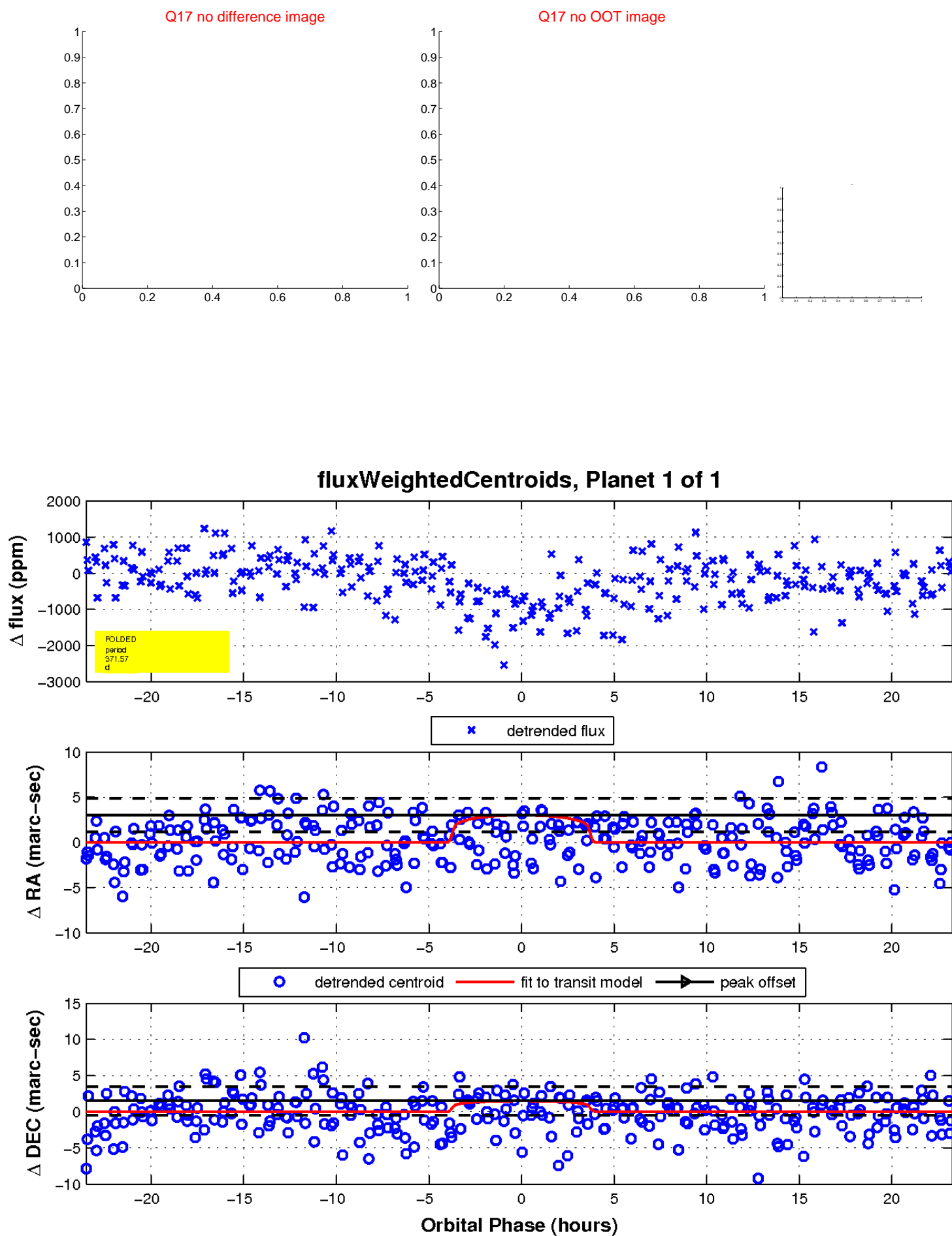
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.



UKIRT Image

Declination

