

# KIC 008243371

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008243371-01	OBS	No	544.597423	250.795526	252.9	19.745	7.7	6.6	1.43	6731	2.41	1.77

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008243371-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

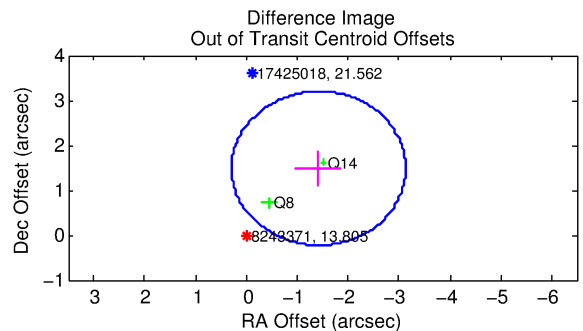
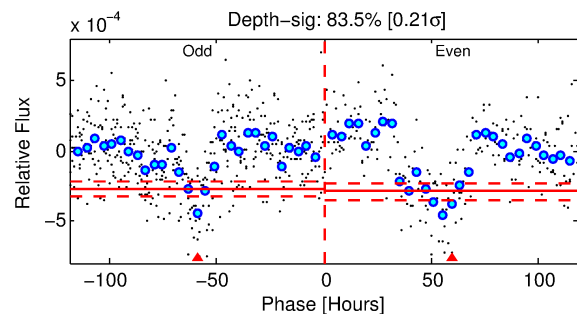
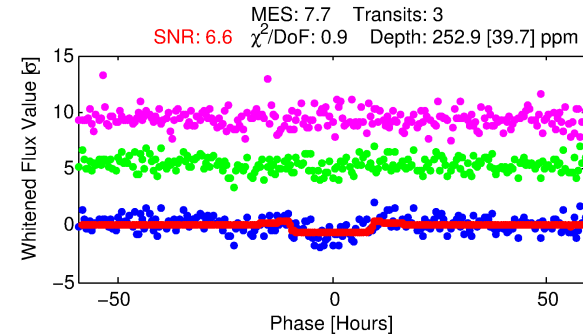
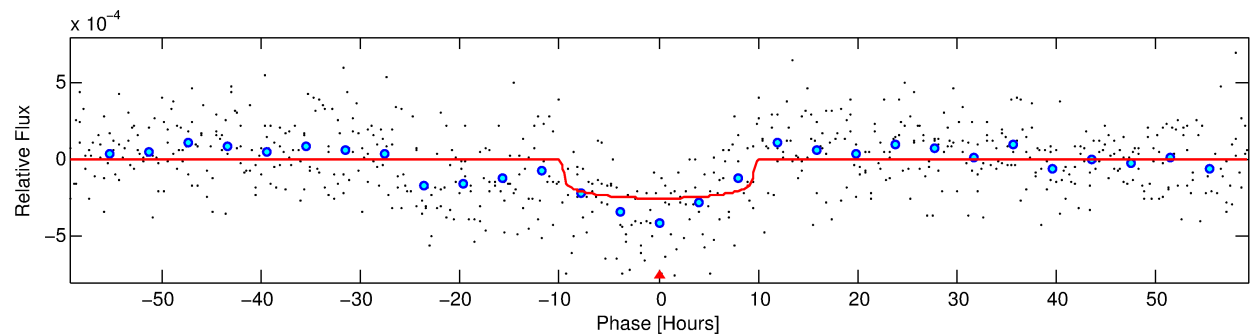
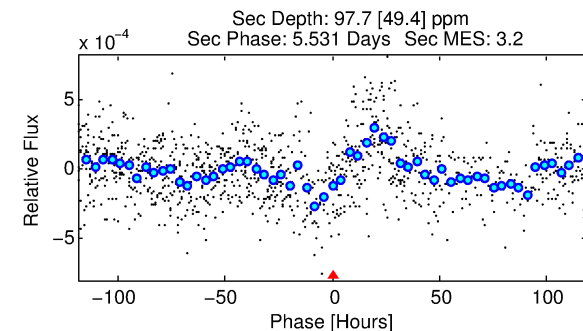
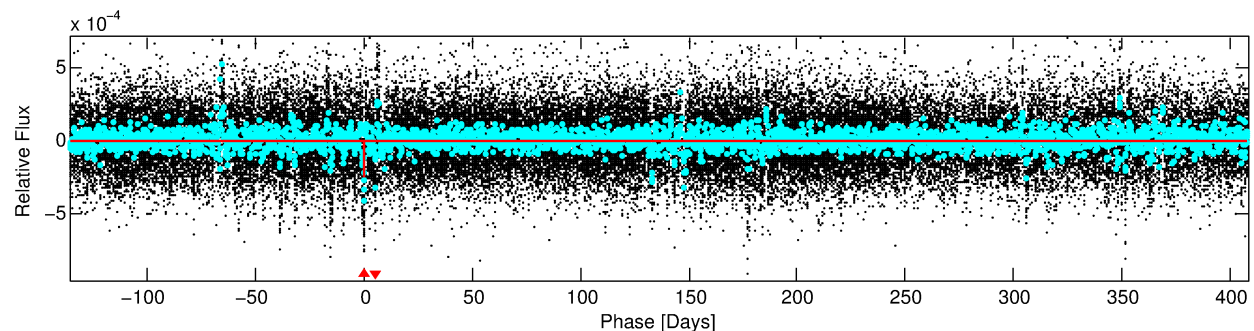
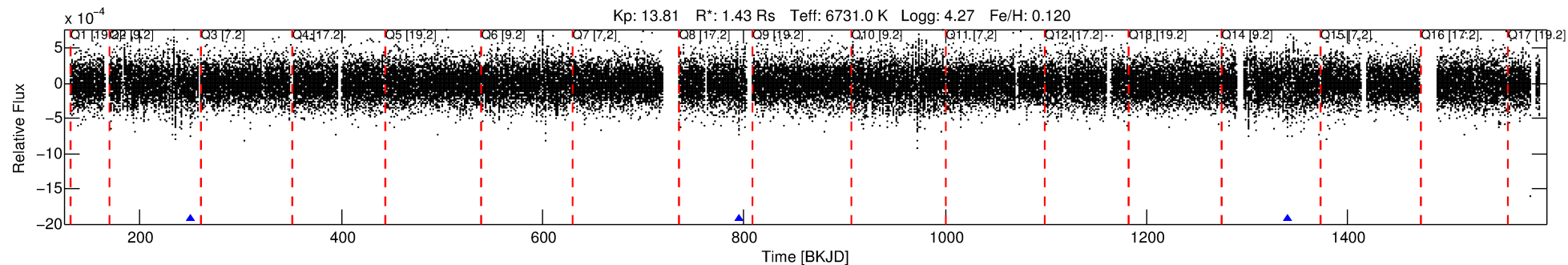
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008243371-01

No Significant Match Found

# DV One-Page Summary

KIC: 8243371 Candidate: 1 of 1 Period: 544.597 d



## DV Fit Results:

Period = 544.59742 [0.01482] d  
Epoch = 250.7955 [0.0180] BKJD  
Rp/R\* = 0.0155 [0.0052]  
a/R\* = 160.02 [285.66]  
b = 0.67 [1.45]  
Seff = 1.77 [0.73]  
Teq = 294 [30] K  
Rp = 2.41 [1.15] Re  
a = 1.4531 [0.3977] AU  
Ag = 19526.27 [18012.32] [1.08σ]  
Teffp = 5374 [1146] K [4.43σ]

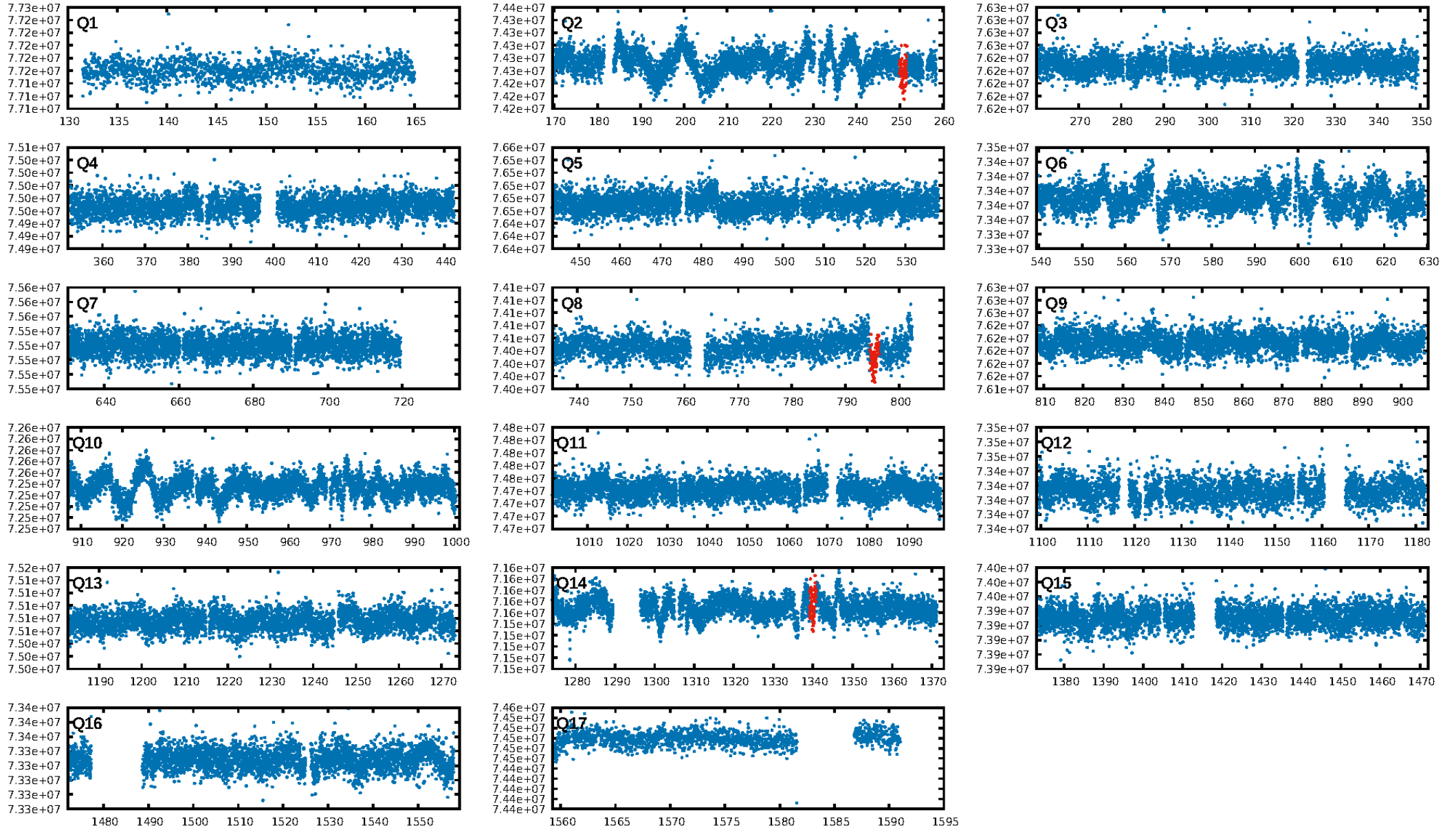
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 61.8%  
ModelChiSquareGof-sig: 98.7%  
Bootstrap-pfa: 5.33e-09  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.1317  
Centroid-sig: 0.0%  
Centroid-so: 6.345 arcsec [3.55σ]  
OotOffset-rm: 2.055 arcsec [3.60σ]  
KicOffset-rm: 1.953 arcsec [2.88σ]  
OotOffset-st: 1/0/1/0 [2]  
KicOffset-st: 1/0/1/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

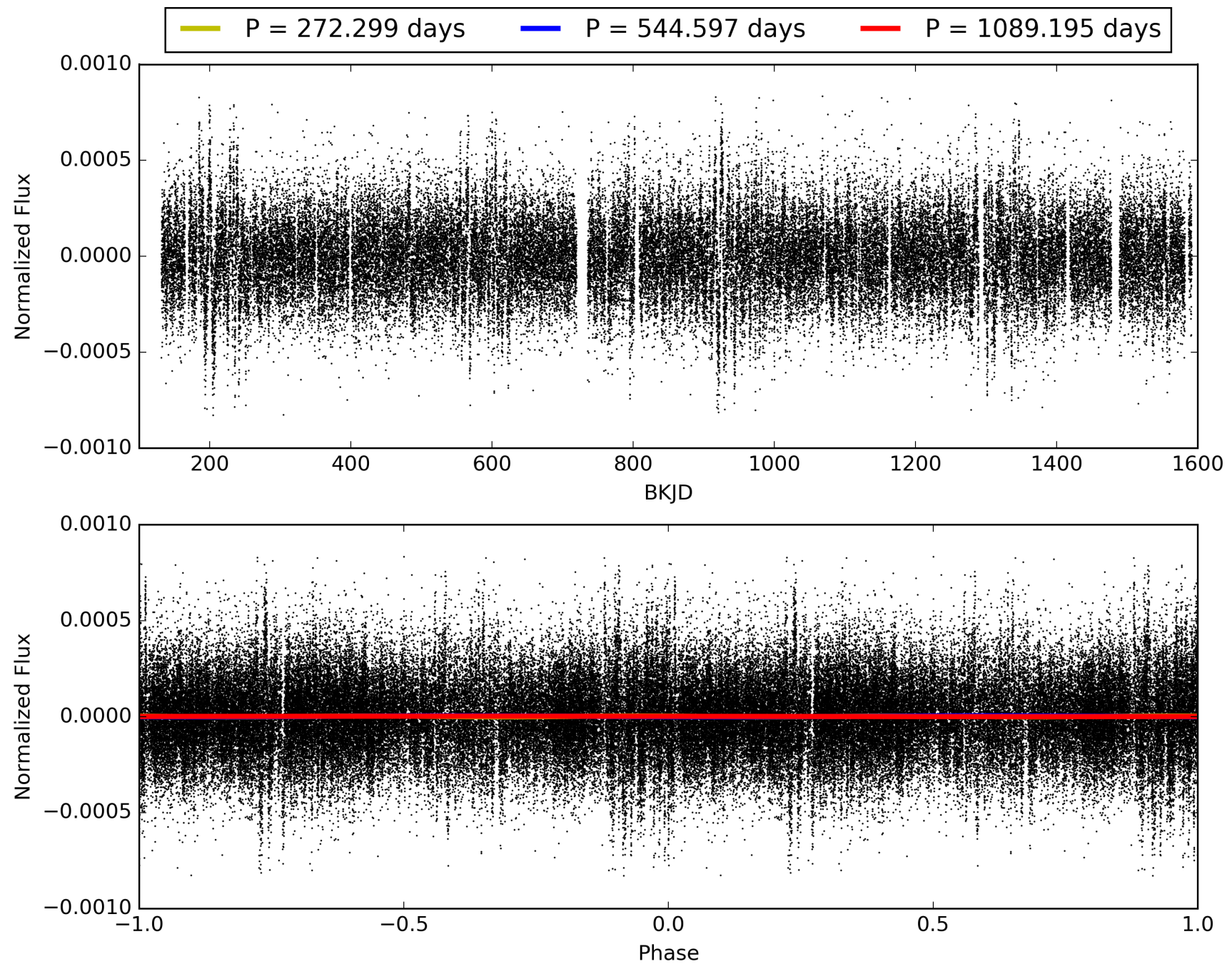
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:31:01 Z

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

# TCE 008243371-01, PDC Light Curves

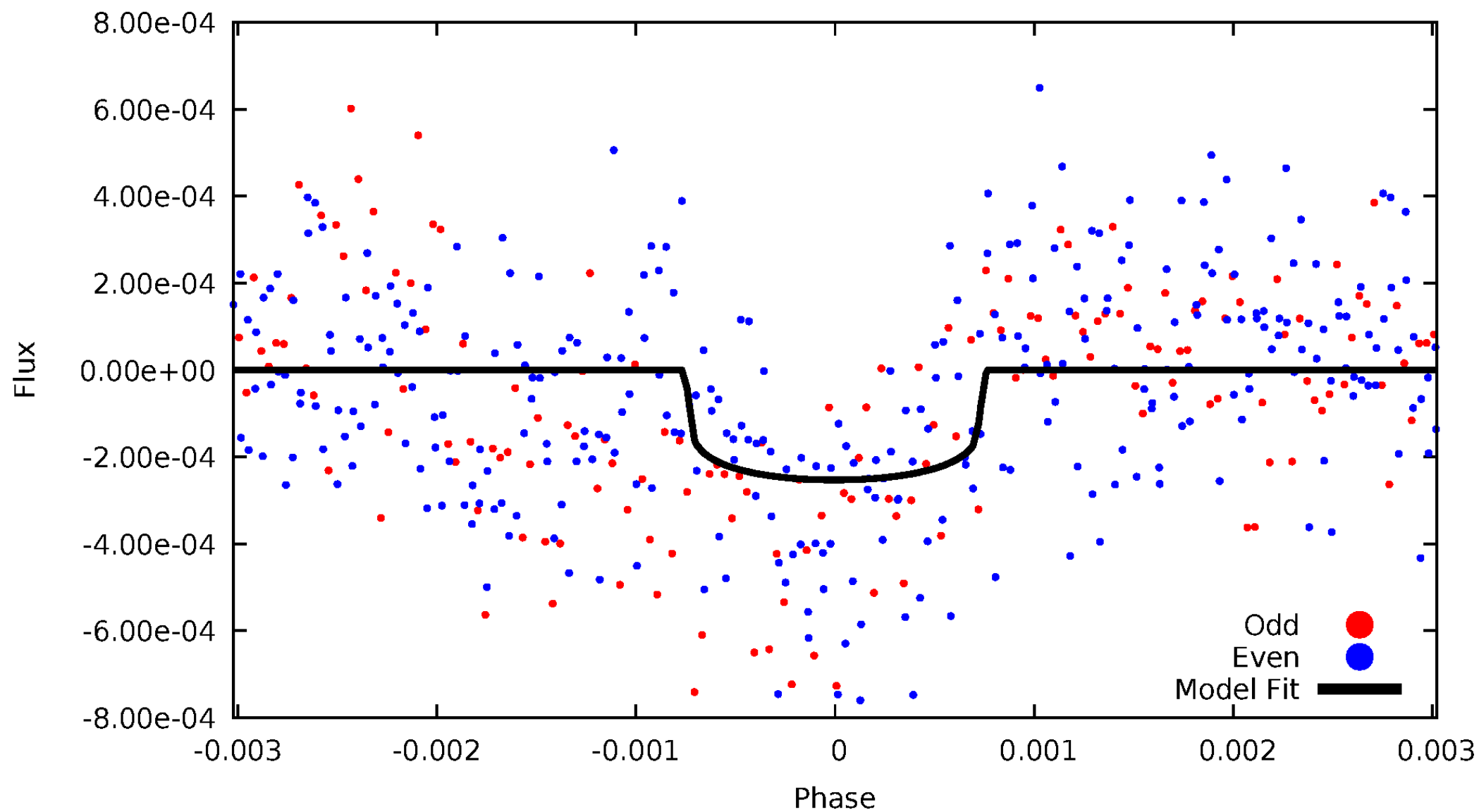


TCE 008243371-01



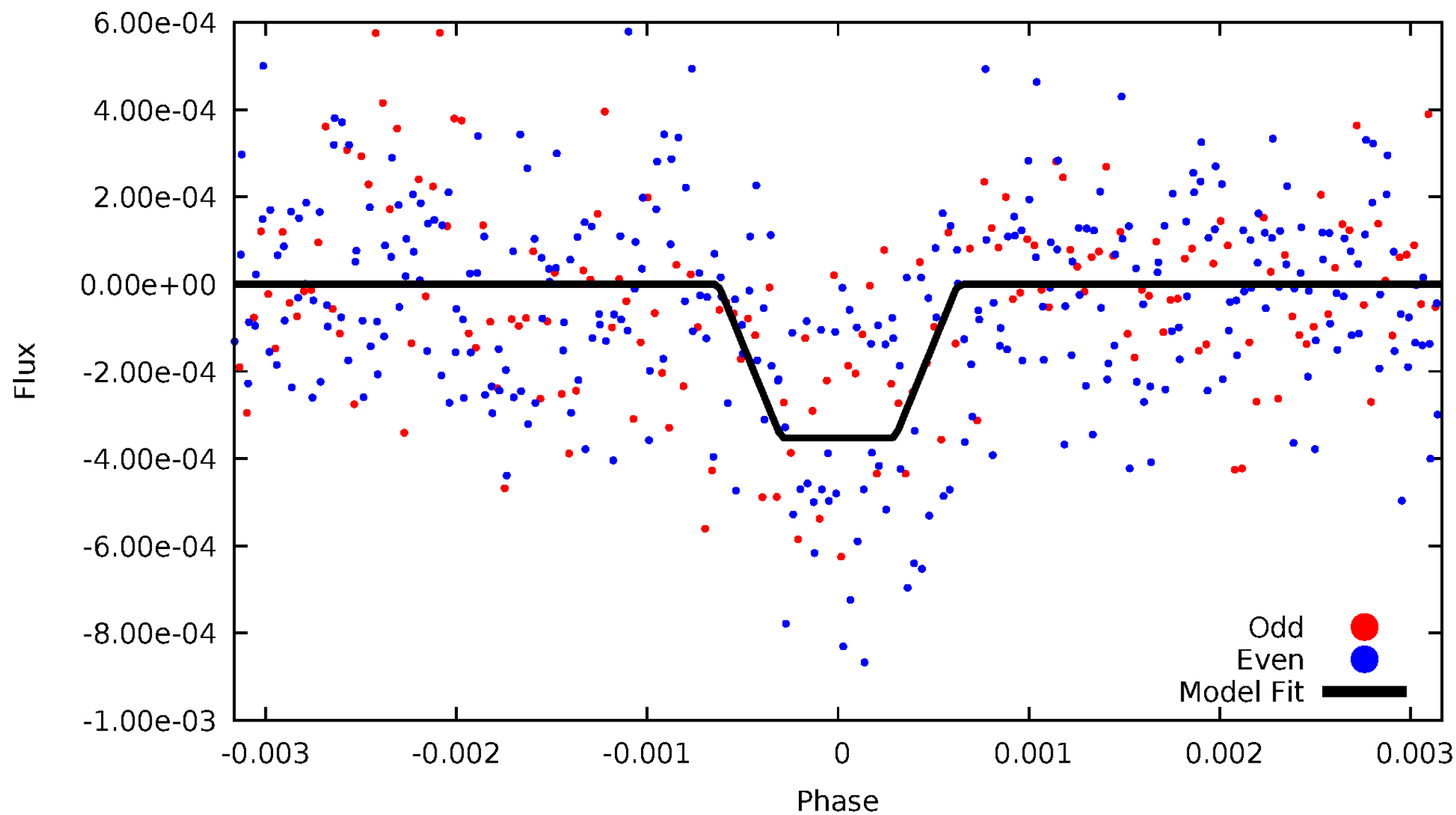
# DV Odd/Even

TCE 008243371-01



# ALT Odd/Even

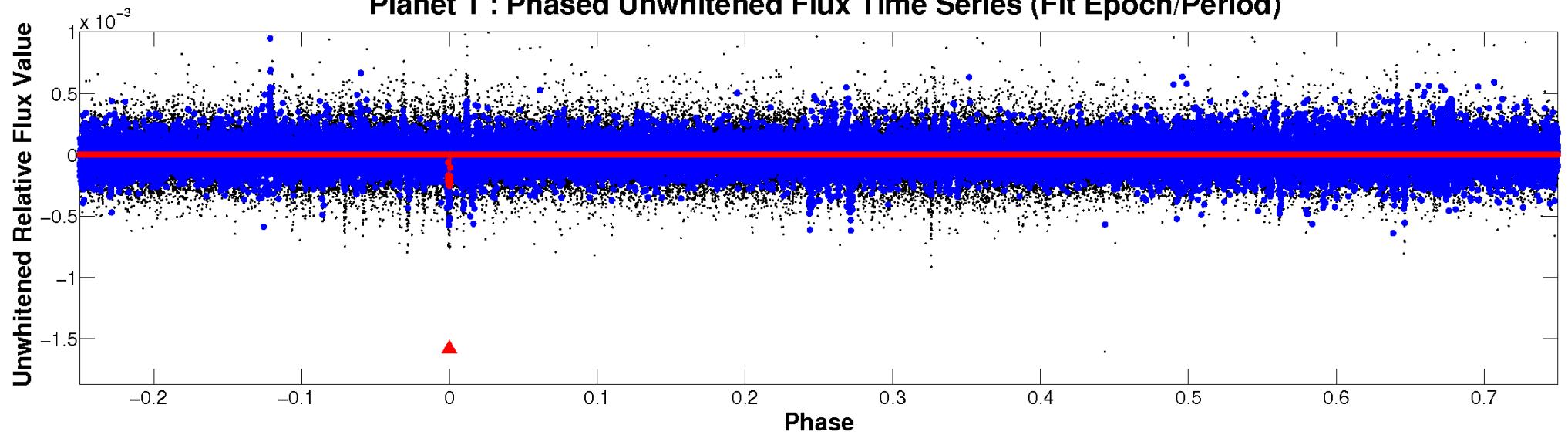
TCE 008243371-01



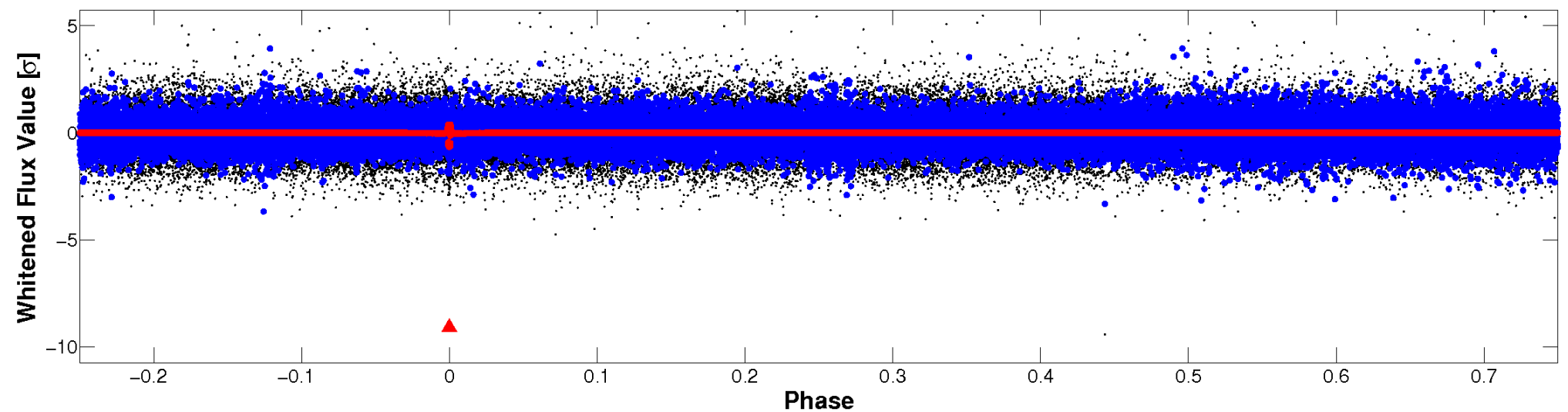


# Non-Whitened Vs. Whitened Light Curve

**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

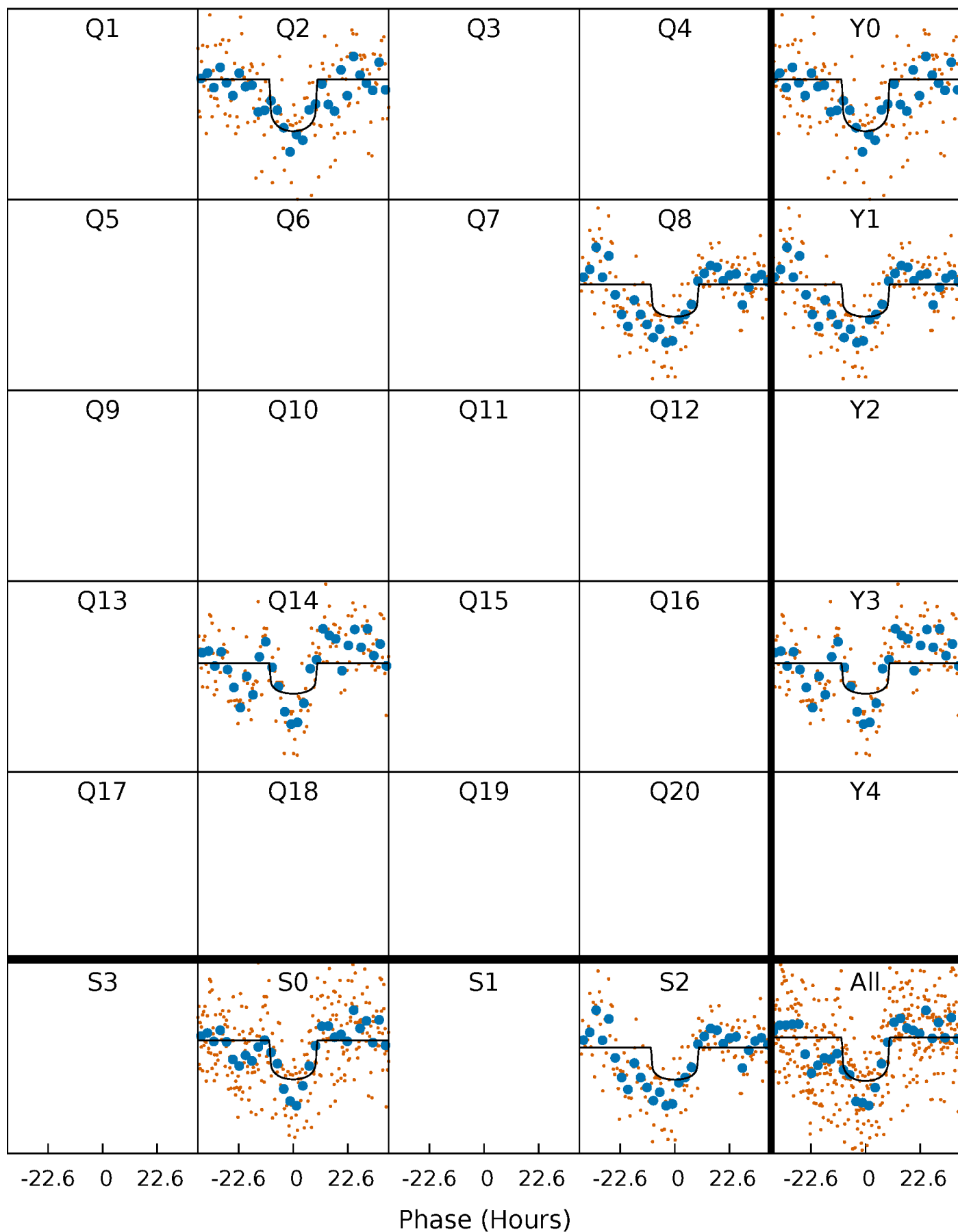
TCE 008243371-01 P=544.597423 Days  $T_0=250.795526$  (BKJD)





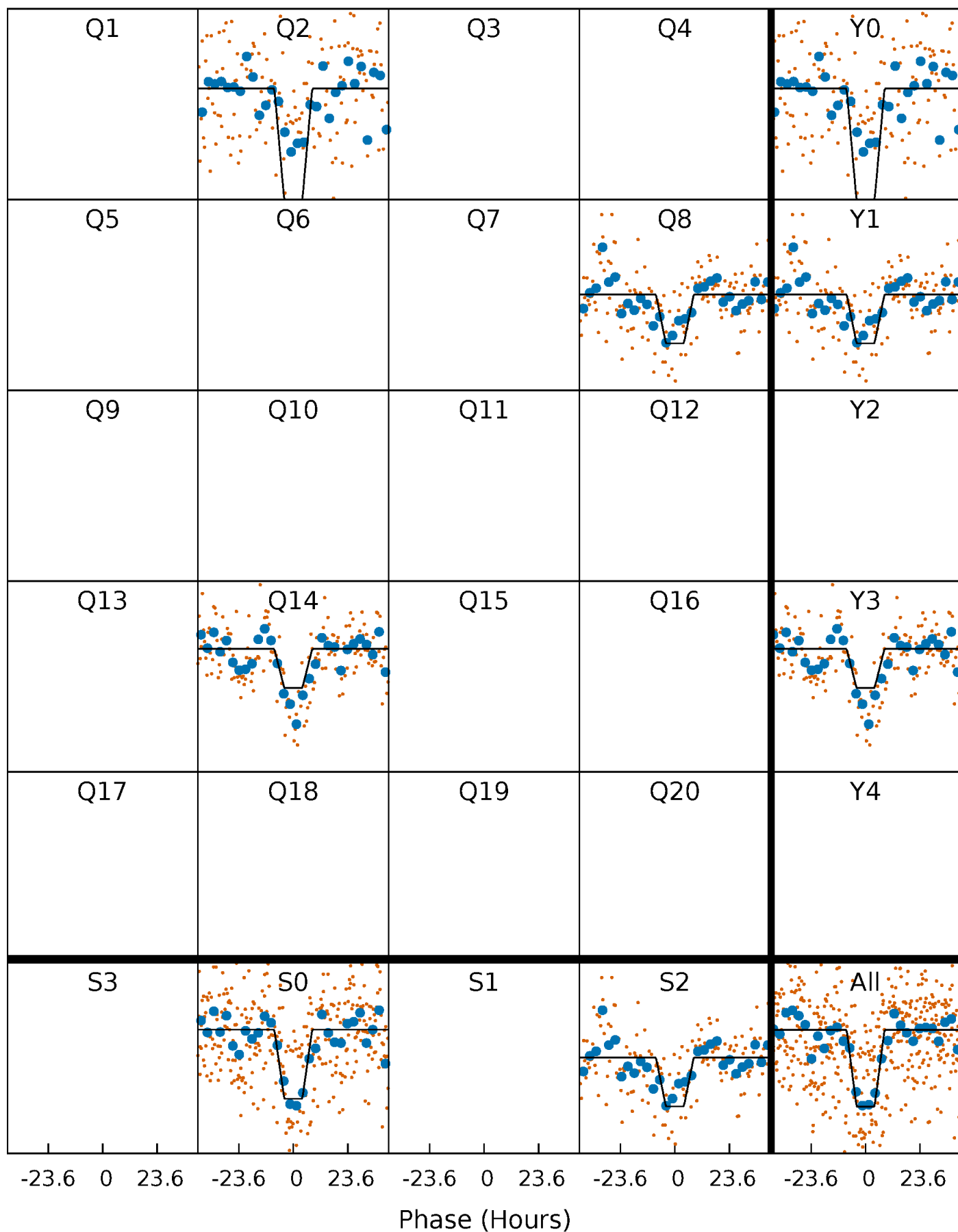
# DV Quarter-Phased Transit Curves

TCE 008243371-01 P=544.597423 Days  $T_0=250.795526$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

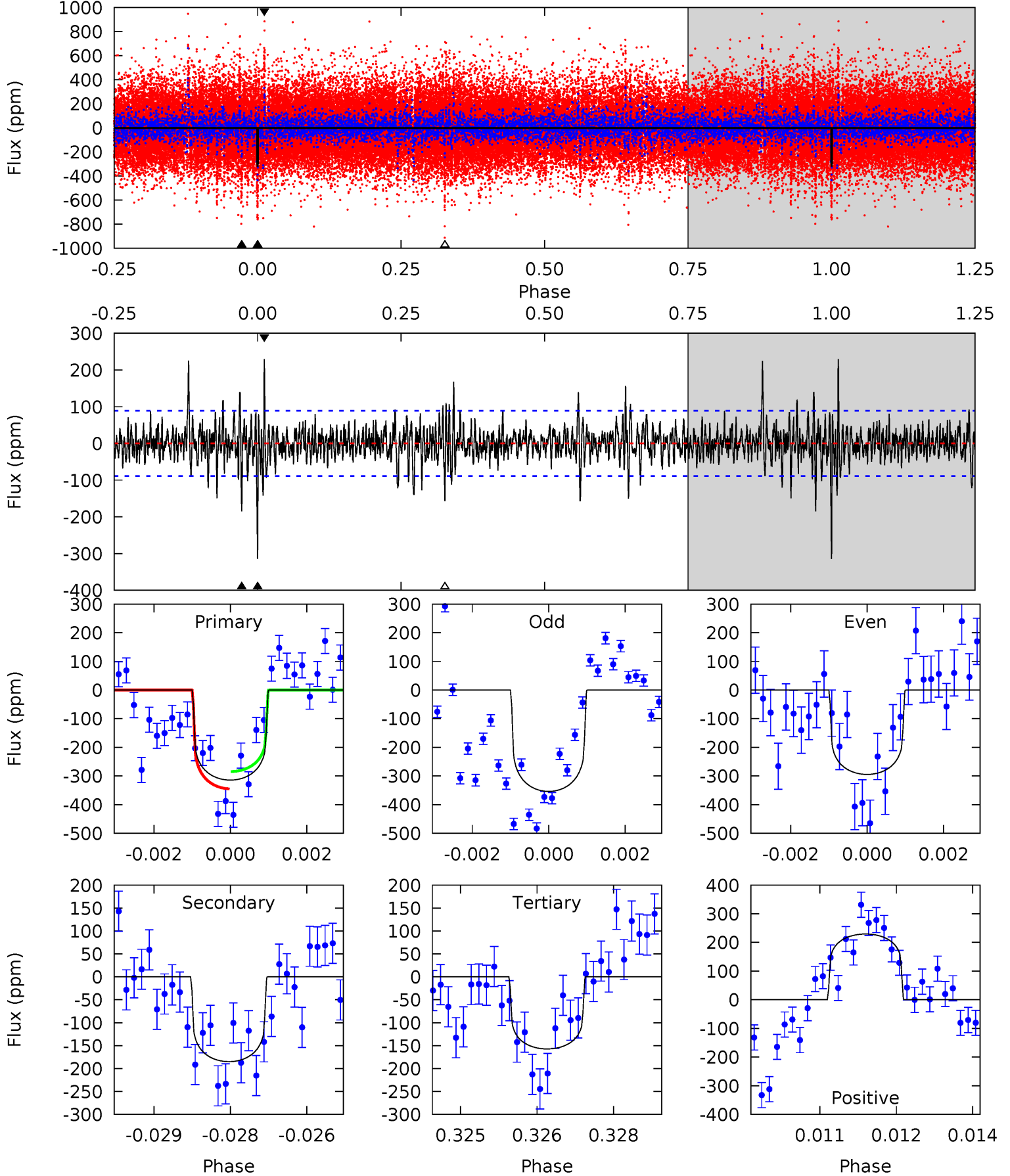
TCE 008243371-01 P=544.595241 Days  $T_0=250.792959$  (BKJD)



# DV Model-Shift Uniqueness Test

008243371-01, P = 544.597423 Days, E = 250.795526 Days

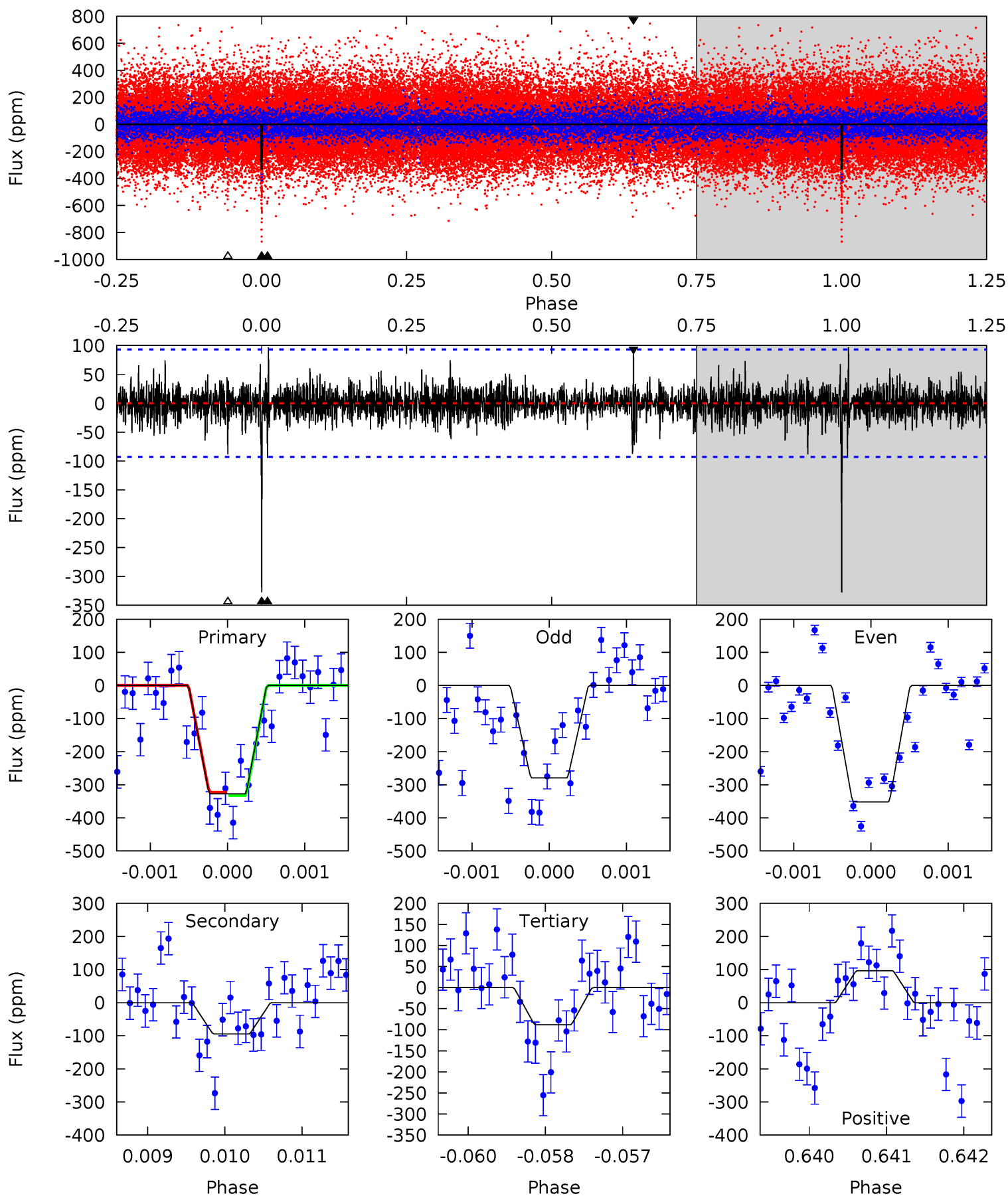
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.0	11.2	9.50	13.9	5.37	3.17	2.33	9.48	5.13	1.67	-2.69	1.69	0.96	0.42	1.81



# Alt Model-Shift Uniqueness Test

008243371-01, P = 544.595241 Days, E = 250.792959 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
19.0	5.50	5.13	5.62	5.41	3.23	1.11	13.9	13.4	0.38	-0.12	1.98	1.16	0.23	0.28



### Stellar Parameters For KIC 008243371

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6731^{+160}_{-260}$	$4.270^{+0.087}_{-0.203}$	$0.120^{+0.200}_{-0.350}$	$1.425^{+0.481}_{-0.206}$	$1.380^{+0.195}_{-0.214}$	$0.671^{+0.268}_{-0.367}$
	+2%/-4%	+2%/-5%	+167%/-292%	+34%/-14%	+14%/-16%	+40%/-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 008243371-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	-185±17	$2.51^{+0.91}_{-0.80}$	$416^{+31}_{-25}$	$6195^{+1455}_{-775}$	$33480^{+39655}_{-15248}$
Alt.	-95±17	$3.02^{+0.94}_{-0.88}$	$416^{+31}_{-24}$	$4884^{+858}_{-459}$	$11630^{+12252}_{-4876}$

$T_{max}$  = 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

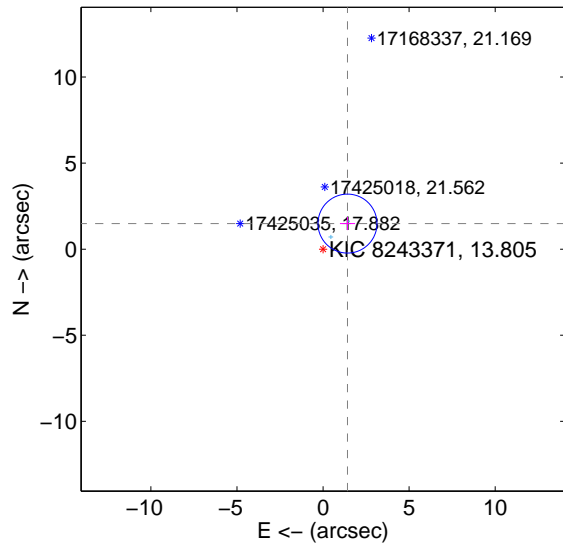
Supplemental centroid analysis for 008243371-01. Kepler magnitude: 13.80. Transit SNR 6.60

There are 2 quarters with good PRF difference image offsets

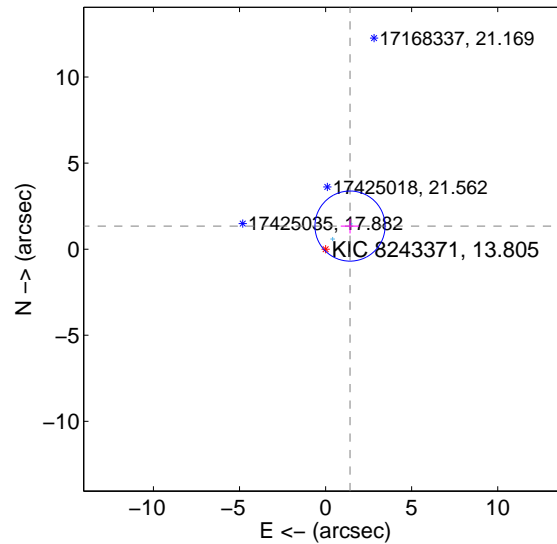
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.055 \pm 0.571$	3.60	$-1.420 \pm 0.438$	$1.486 \pm 0.377$
PRF-fit source offset from KIC position	$1.953 \pm 0.679$	2.88	$-1.419 \pm 0.535$	$1.342 \pm 0.427$
photometric centroid source offset	$6.35 \pm 1.79$	3.55	$-4.55 \pm 1.76$	$-4.42 \pm 1.82$

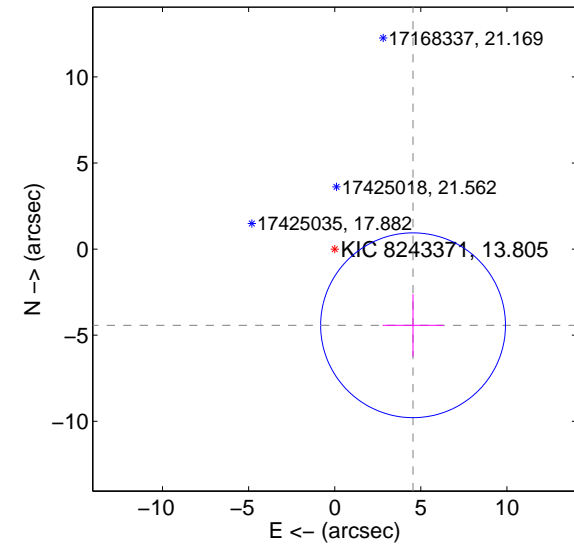
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

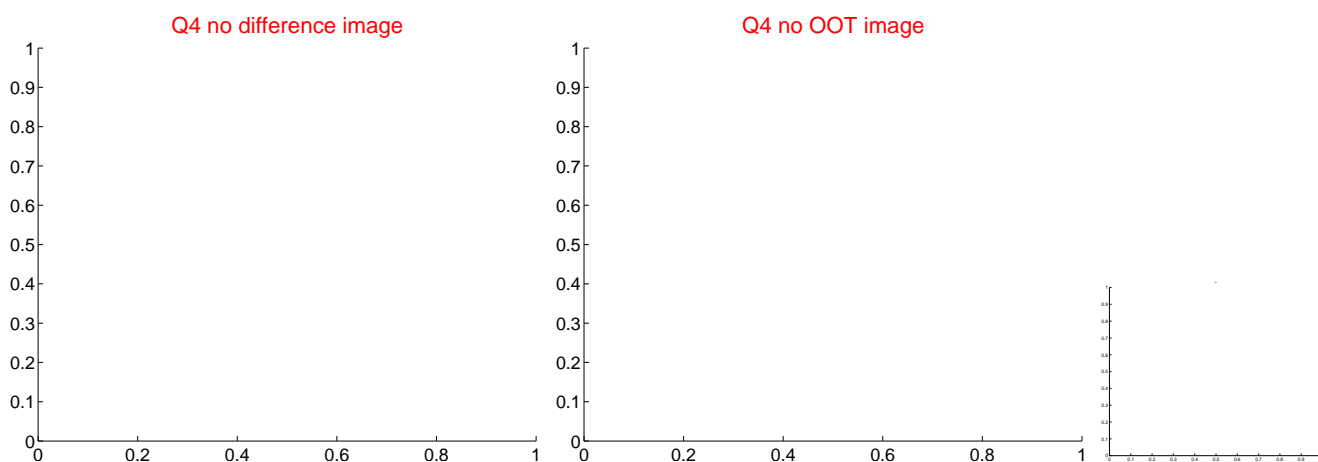
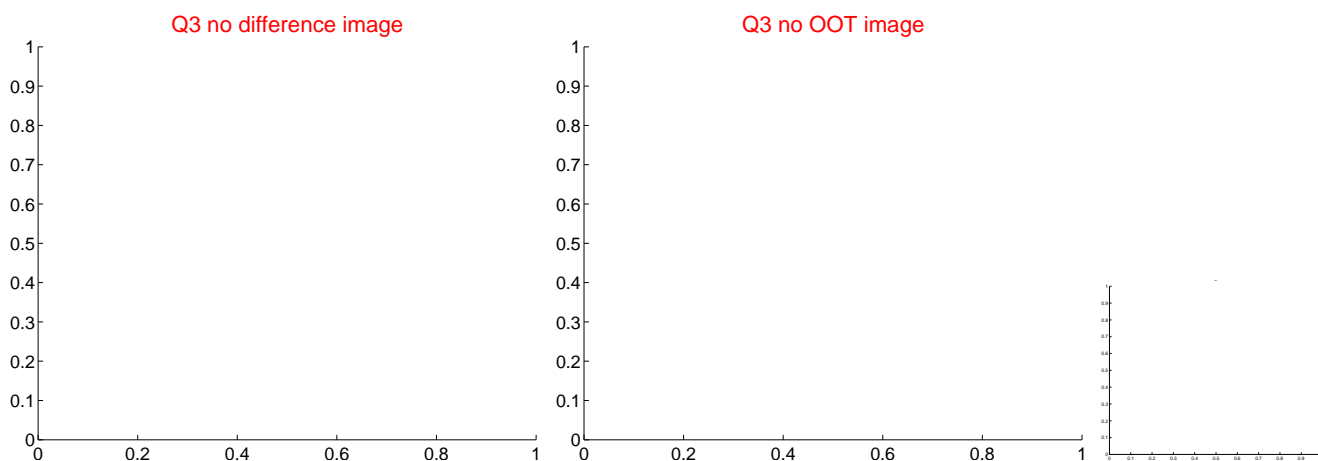
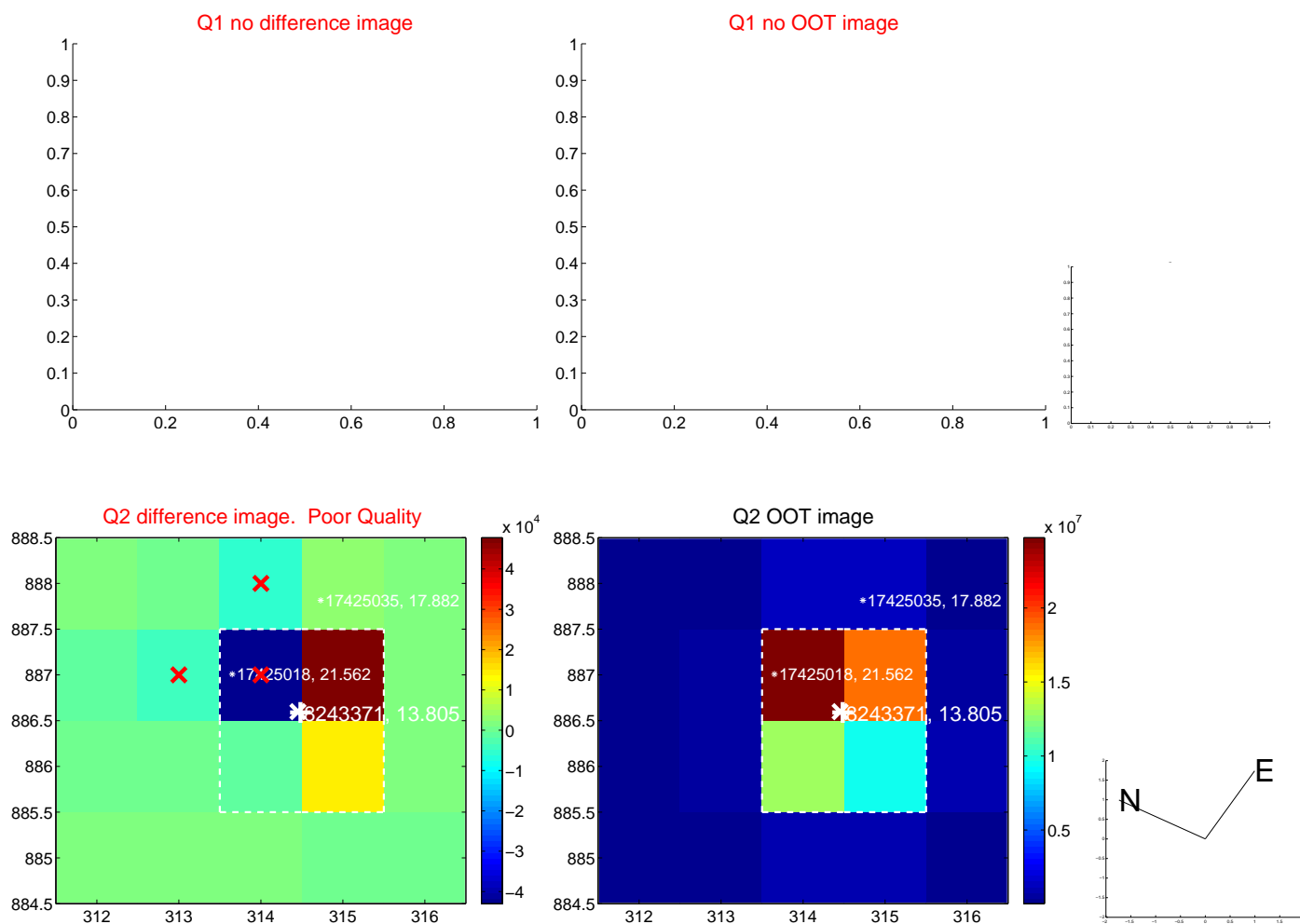


offset from photometric centroids



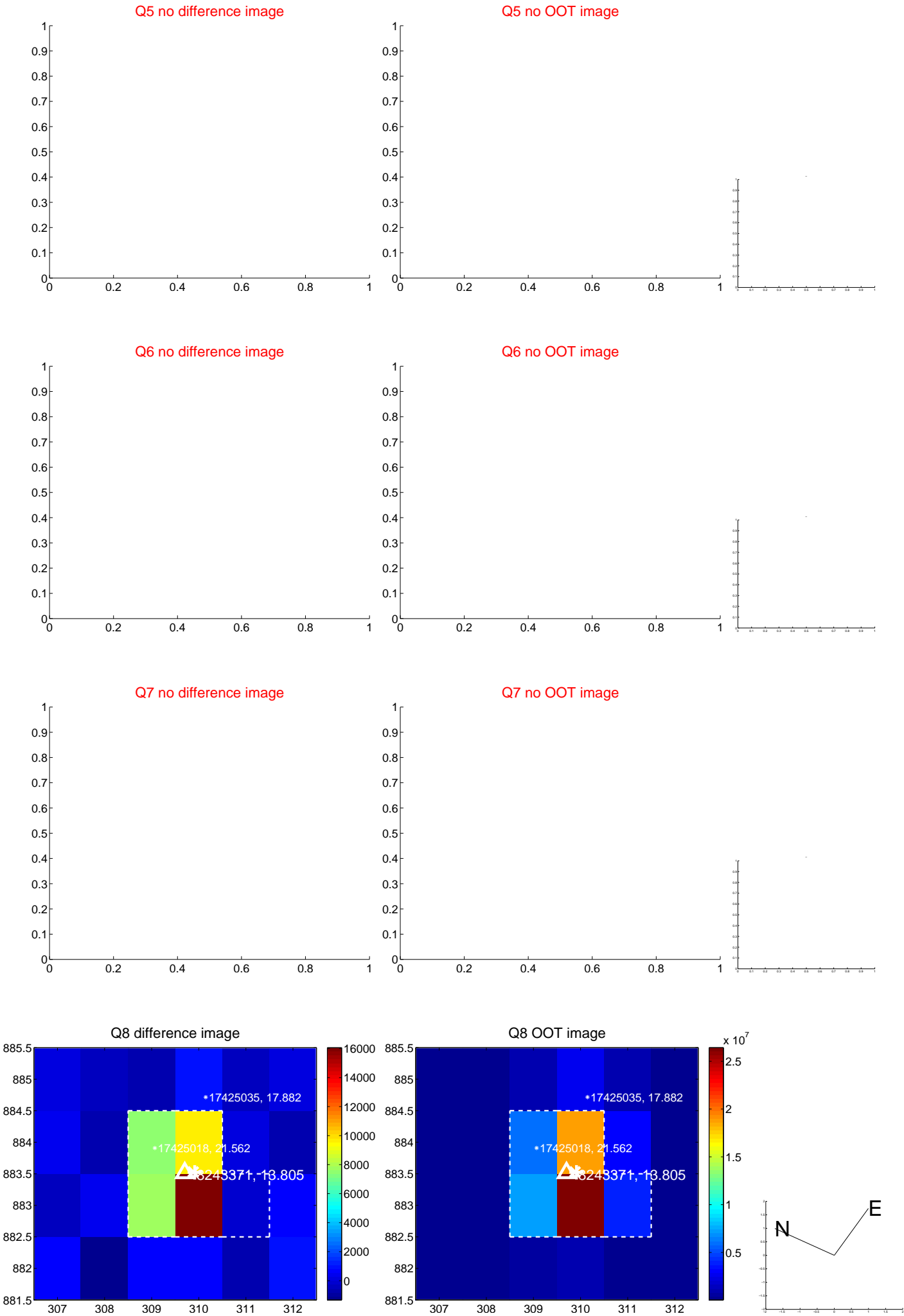
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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





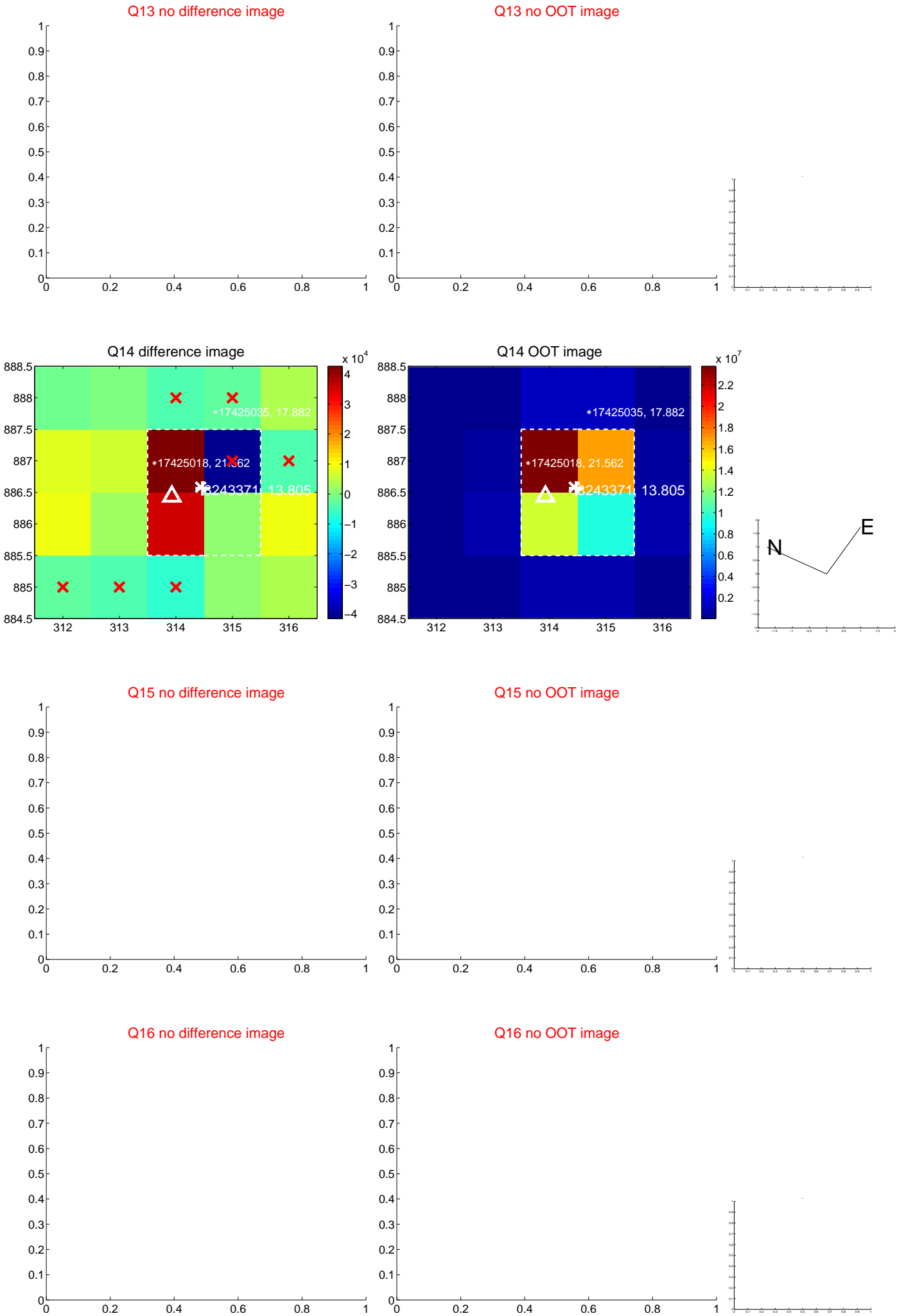
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



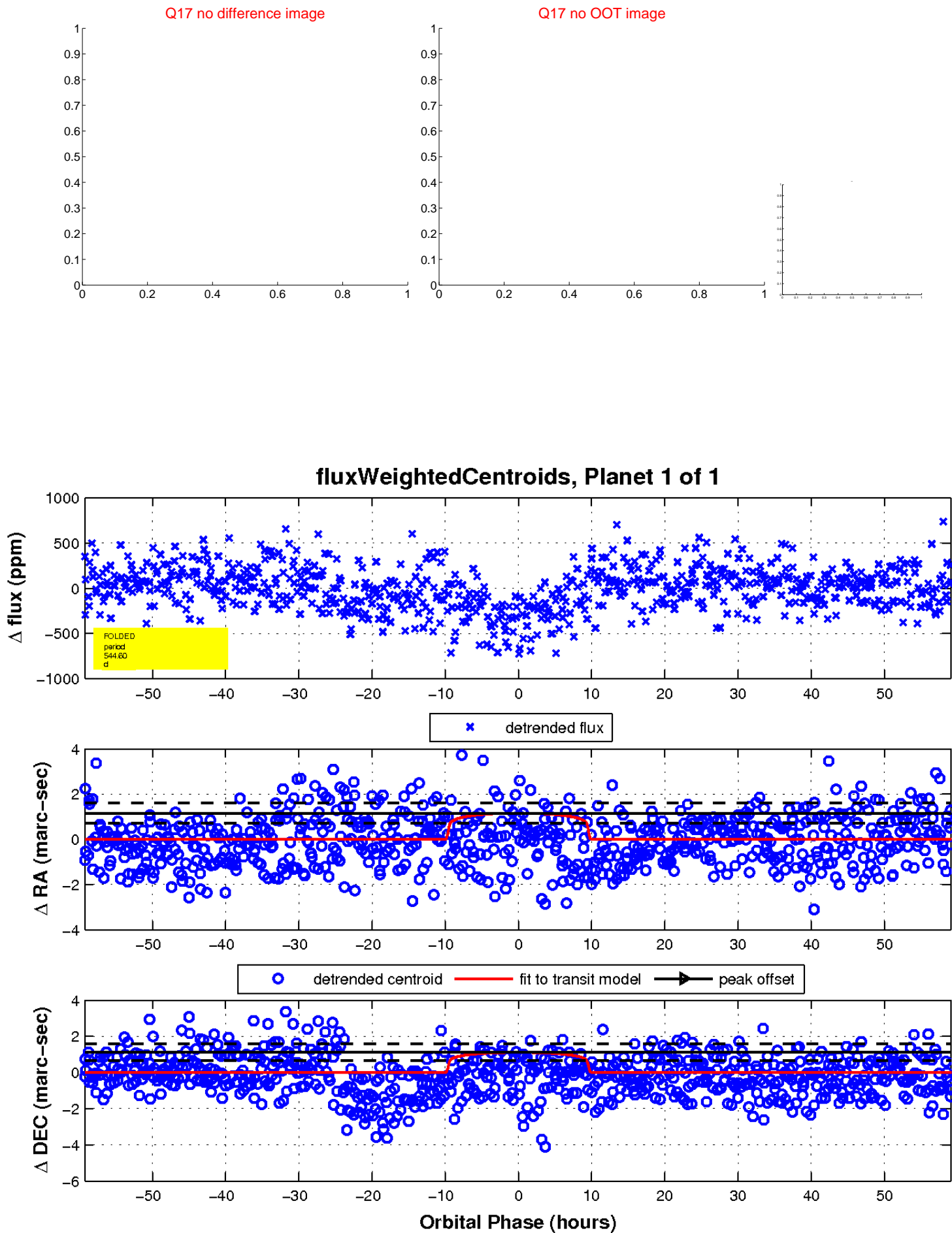
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

