

# KIC 008233326

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008233326-01	OBS	4834.01	3.741004	132.207356	29.2	5.499	8.4	8.5	3.23	5110	2.04	2135.43

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008233326-01	OBS	PC	0.86	0	0	0	0	NO_COMMENT

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

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

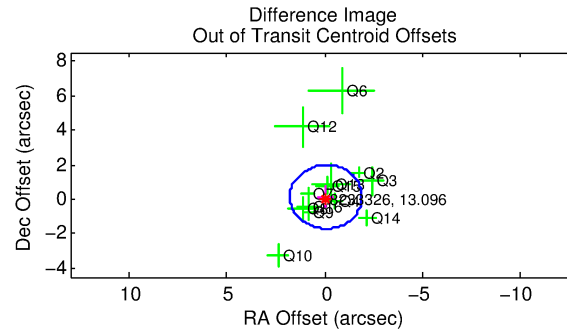
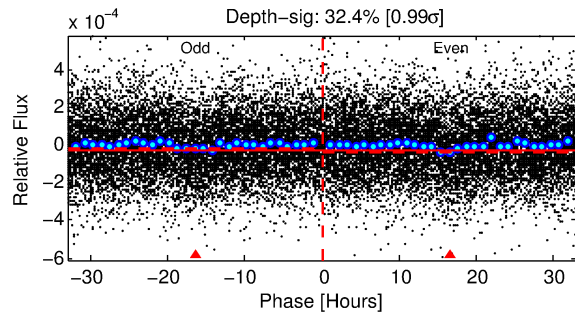
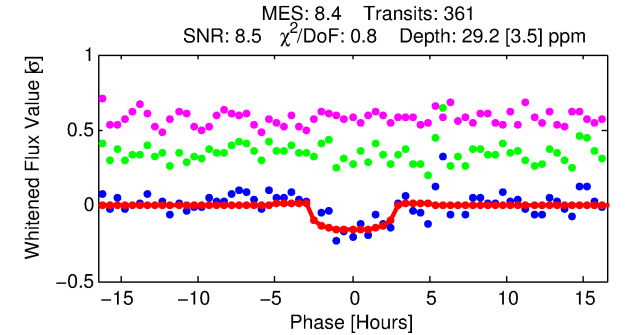
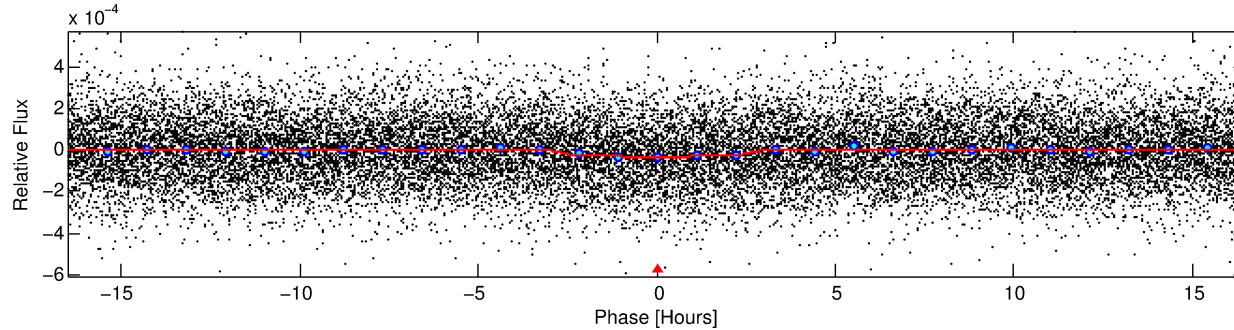
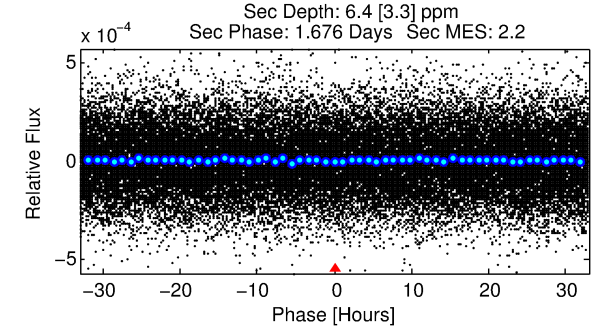
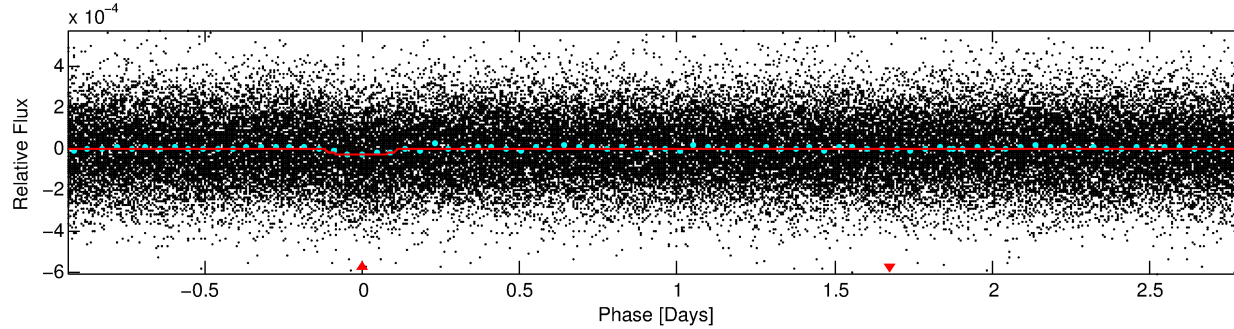
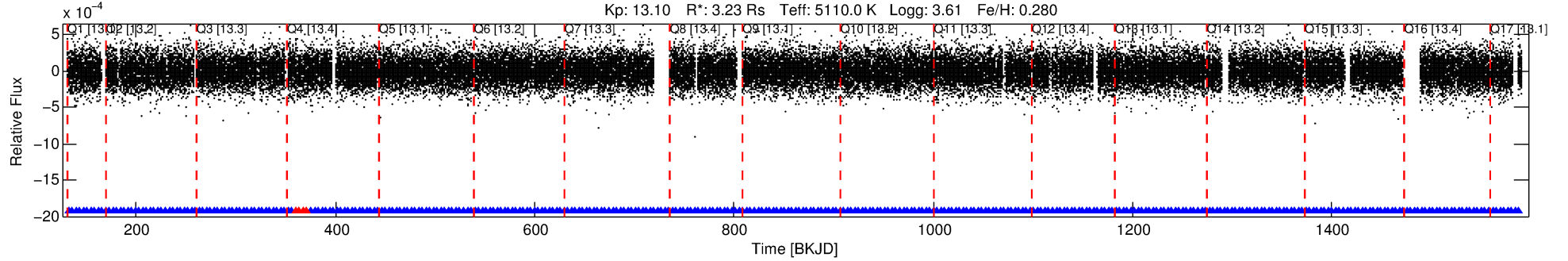
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008233326-01

No Significant Match Found

# DV One-Page Summary

KIC: 8233326 Candidate: 1 of 1 Period: 3.741 d  
KOI: K04834.01 Corr: 0.954



## DV Fit Results:

Period = 3.74100 [0.00004] d  
Epoch = 132.2074 [0.0078] BKJD  
Rp/R\* = 0.0058 [0.0030]  
a/R\* = 2.87 [5.15]  
b = 0.86 [0.64]  
Seff = 2135.43 [1001.04]  
Teq = 1733 [203] K  
Rp = 2.04 [1.29] Re  
a = 0.0546 [0.0166] AU  
Ag = 2.53 [3.15] [0.49σ]  
Teffp = 3380 [989] K [1.63σ]

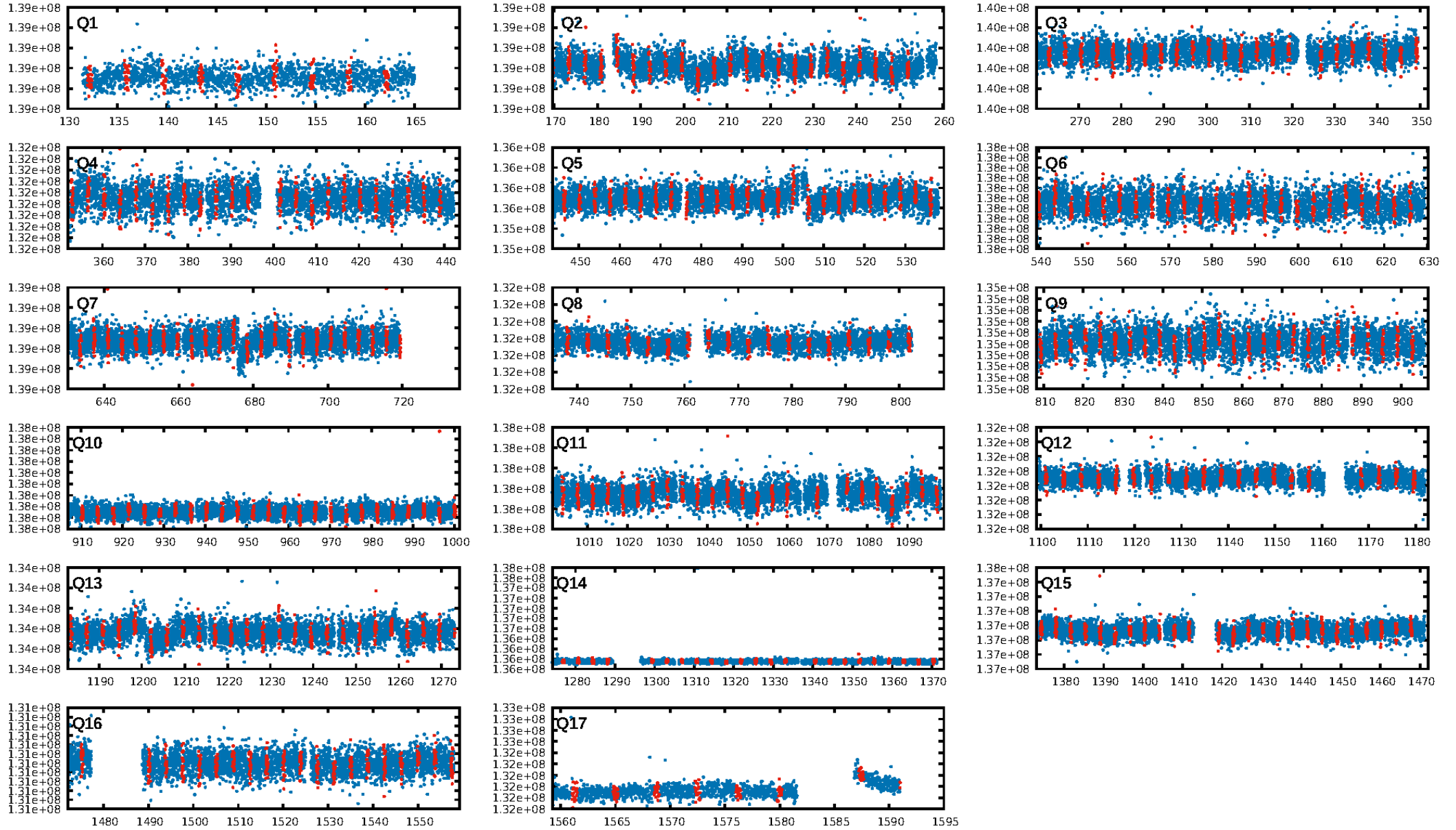
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.91e-16  
RollingBand-fgt: 0.99 [341/345]  
GhostDiagnostic-chr: 2.087  
Centroid-sig: 12.3%  
Centroid-so: 1.683 arcsec [1.41σ]  
OotOffset-rm: 0.147 arcsec [0.24σ]  
KicOffset-rm: 0.277 arcsec [0.42σ]  
OotOffset-st: 4/3/4/2 [13]  
KicOffset-st: 4/3/4/2 [13]  
DiffImageQuality-fgm: 0.69 [9/13]  
DiffImageOverlap-fno: 1.00 [17/17]

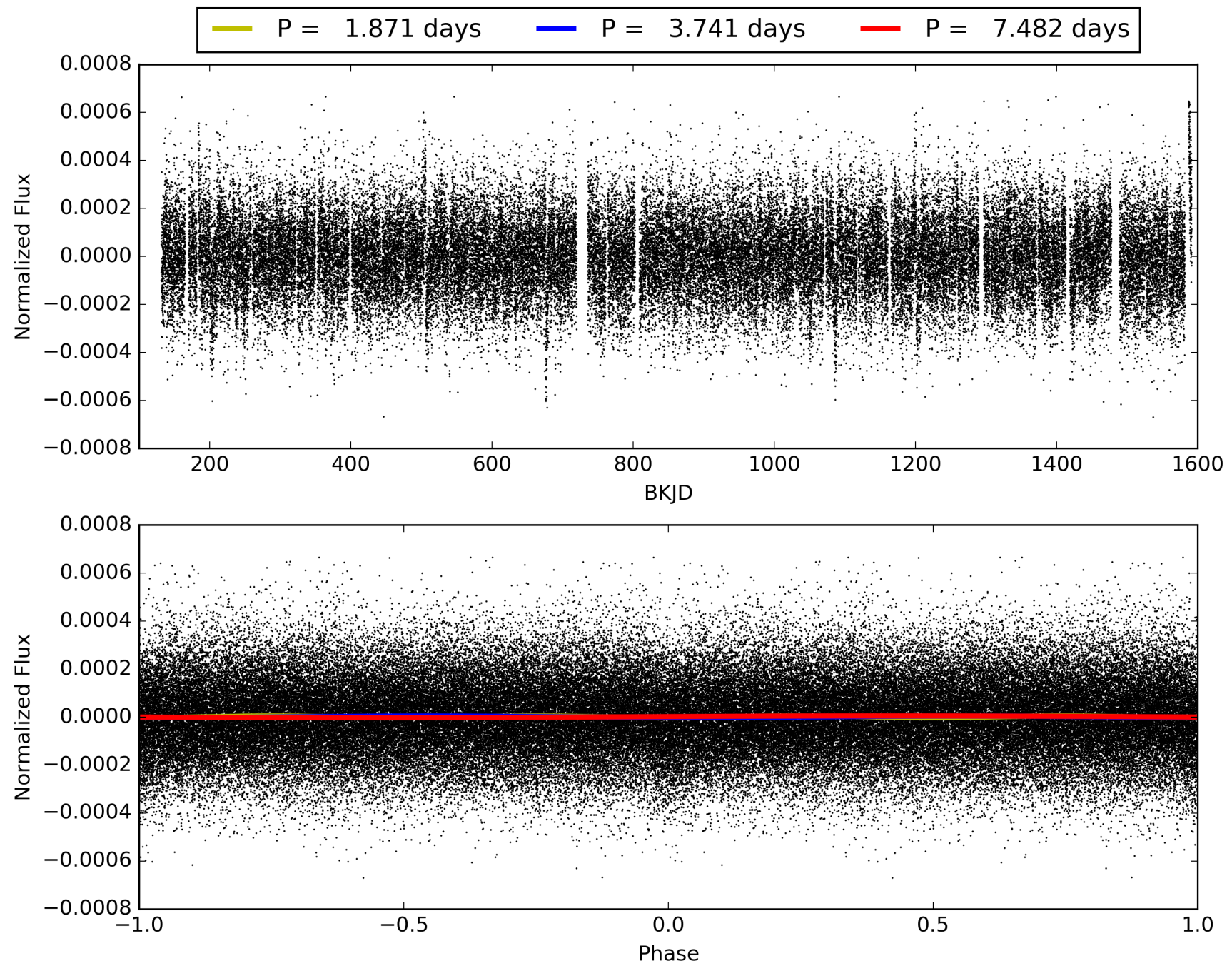
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:23:03 Z

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

# TCE 008233326-01, PDC Light Curves

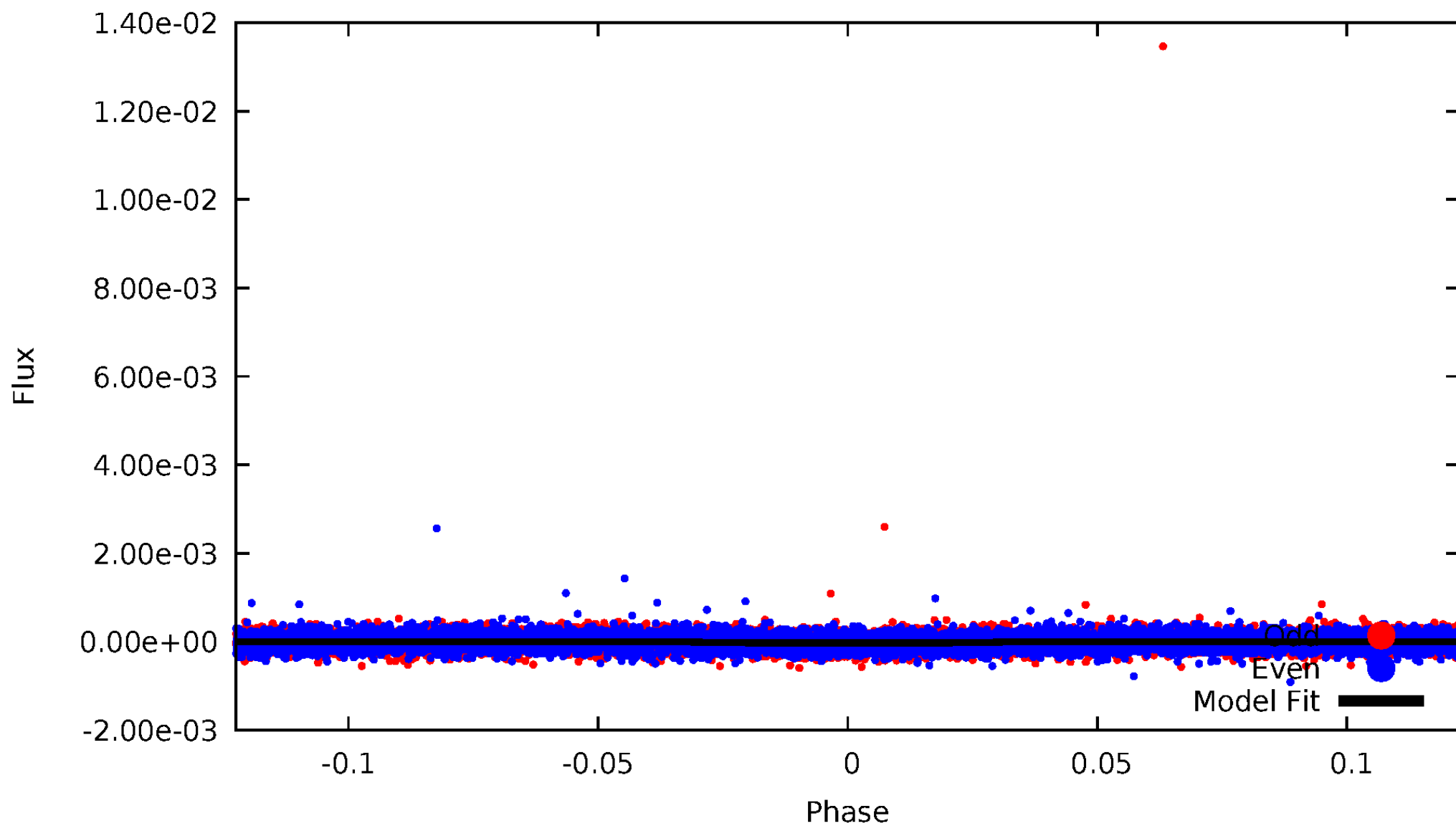


TCE 008233326-01



# DV Odd/Even

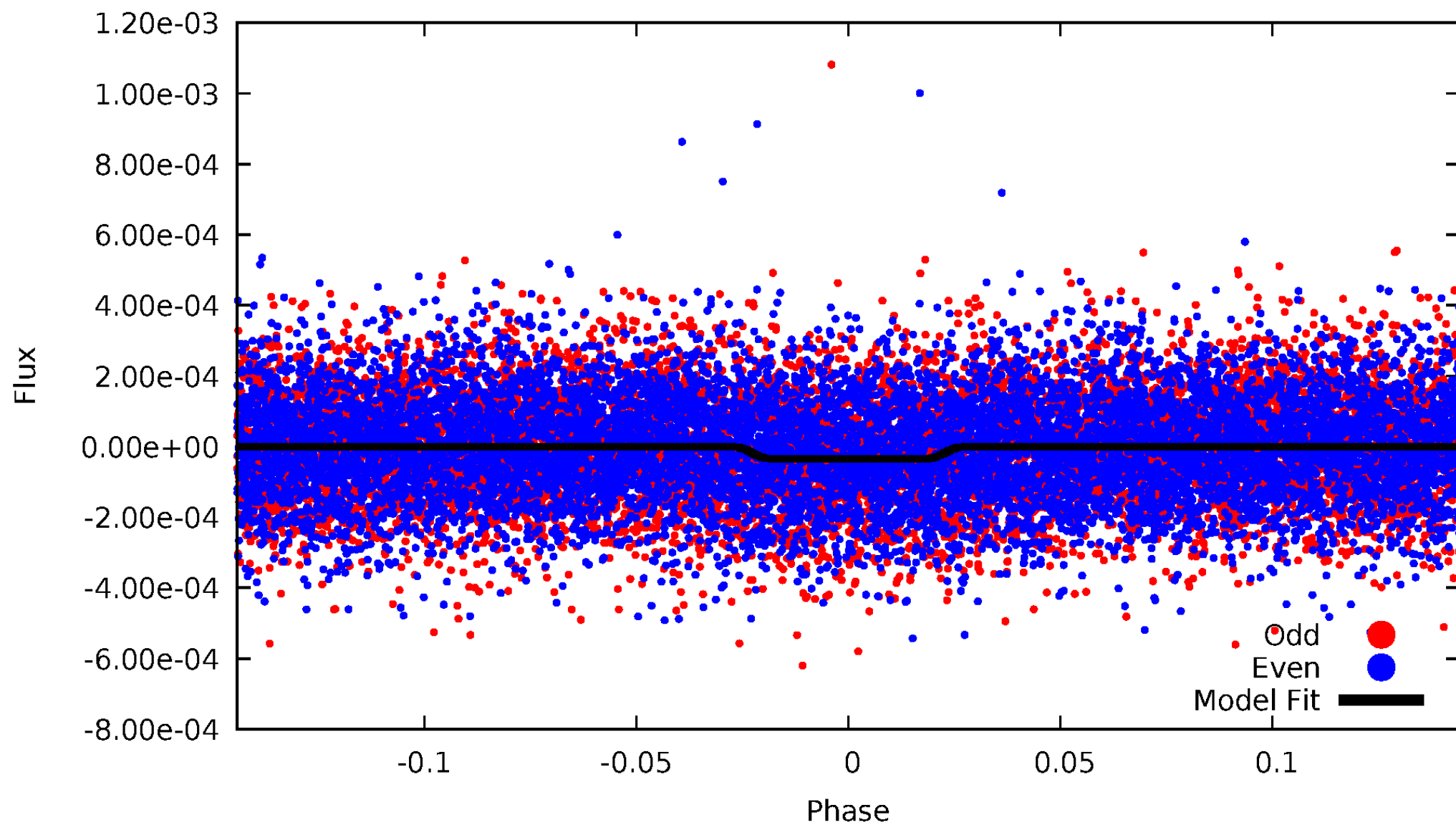
TCE 008233326-01





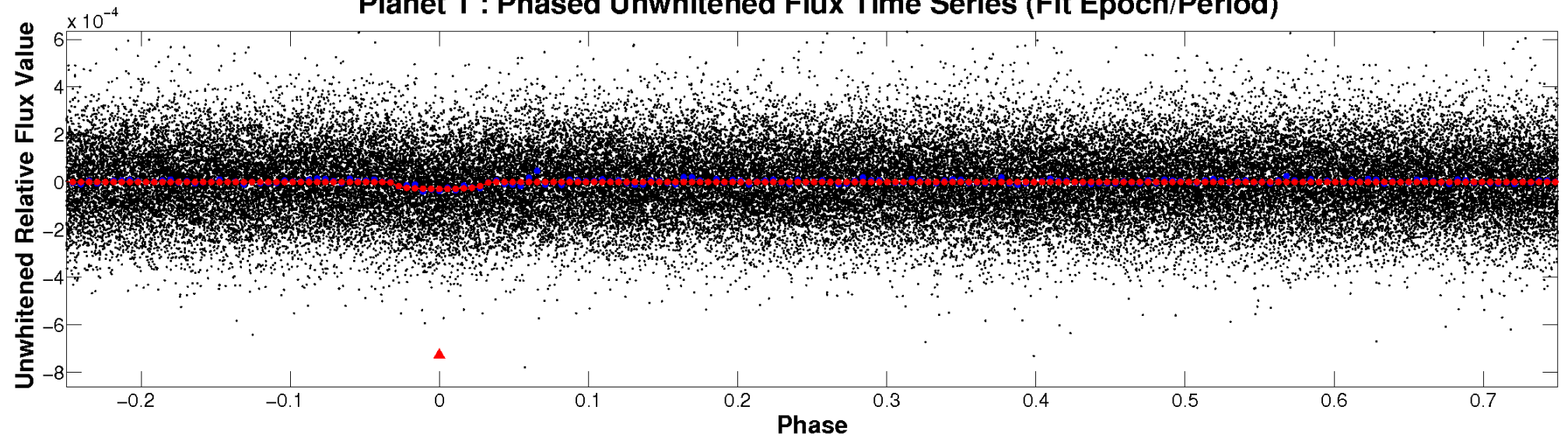
# ALT Odd/Even

TCE 008233326-01

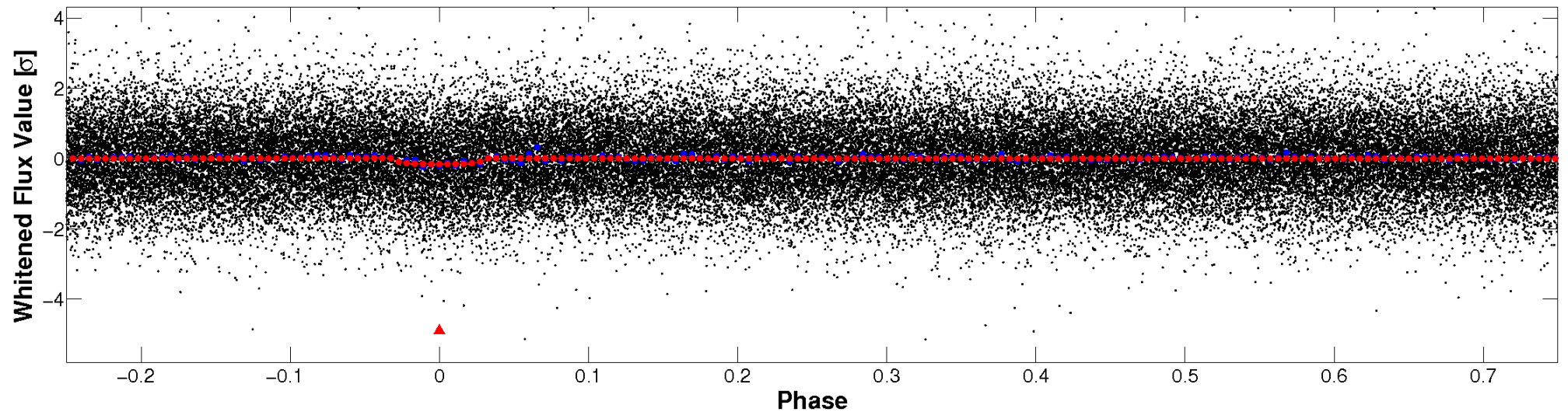


# Non-Whitened Vs. Whitened Light Curve

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

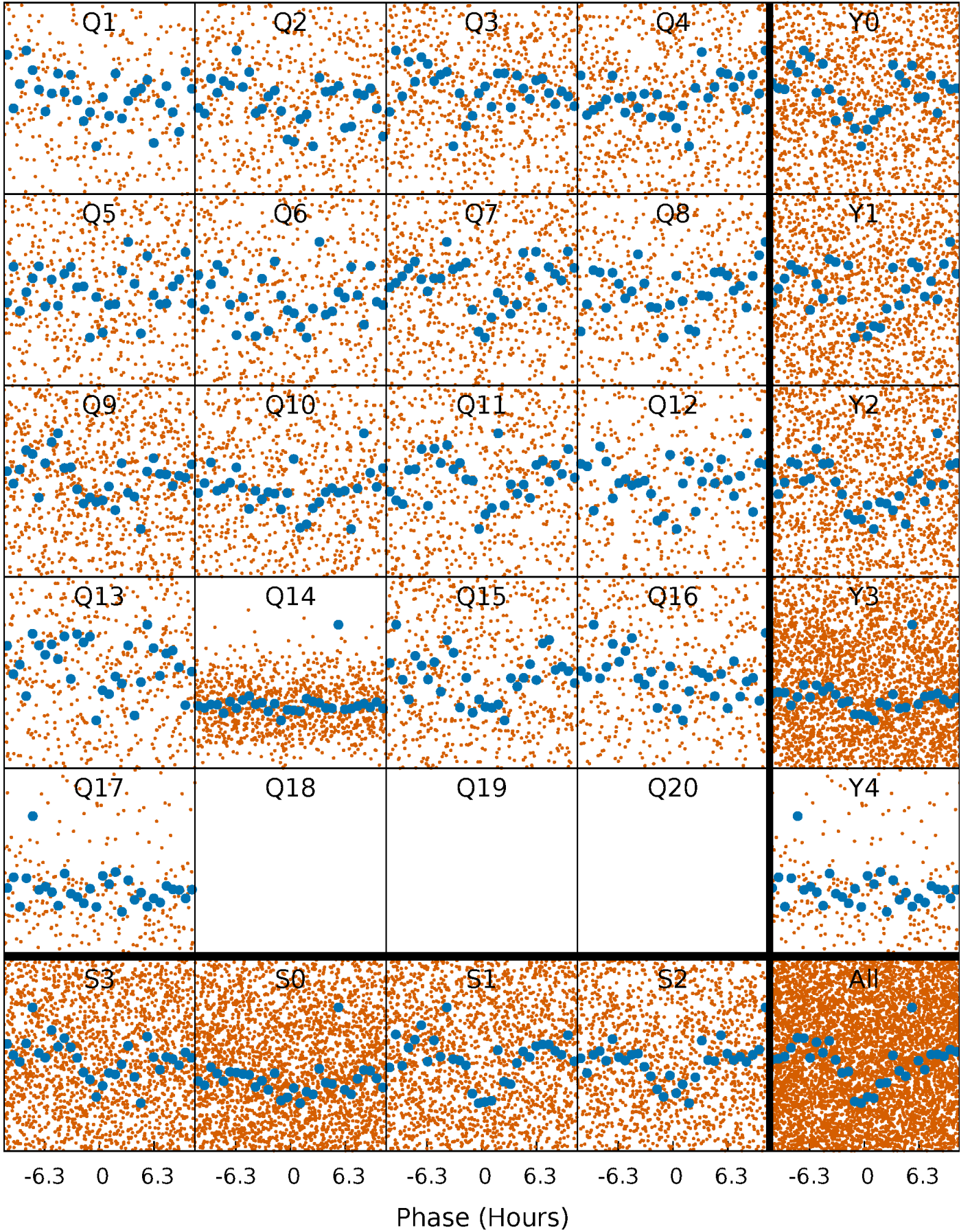


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

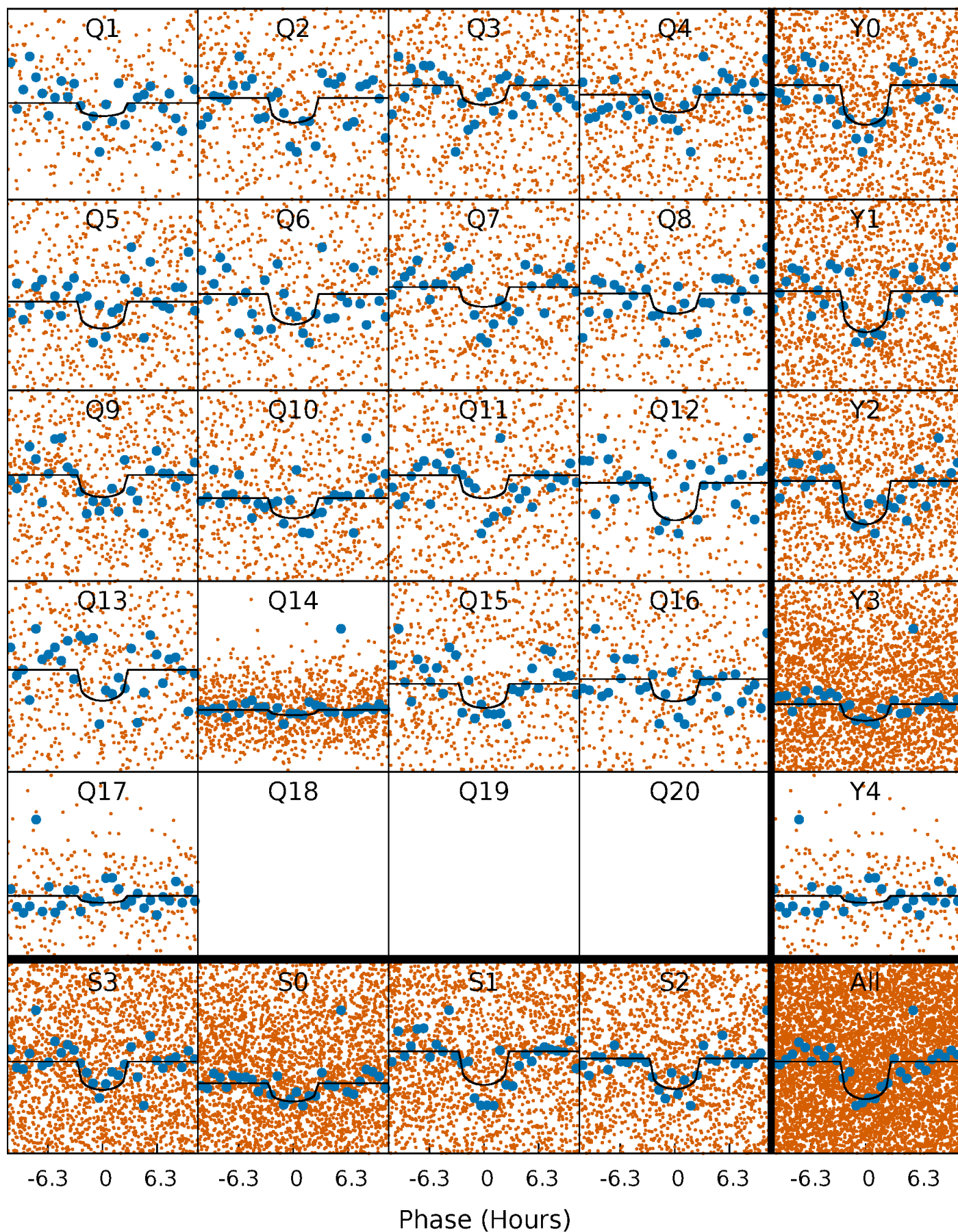
TCE 008233326-01 P= 3.741004 Days  $T_0=132.207357$  (BKJD)





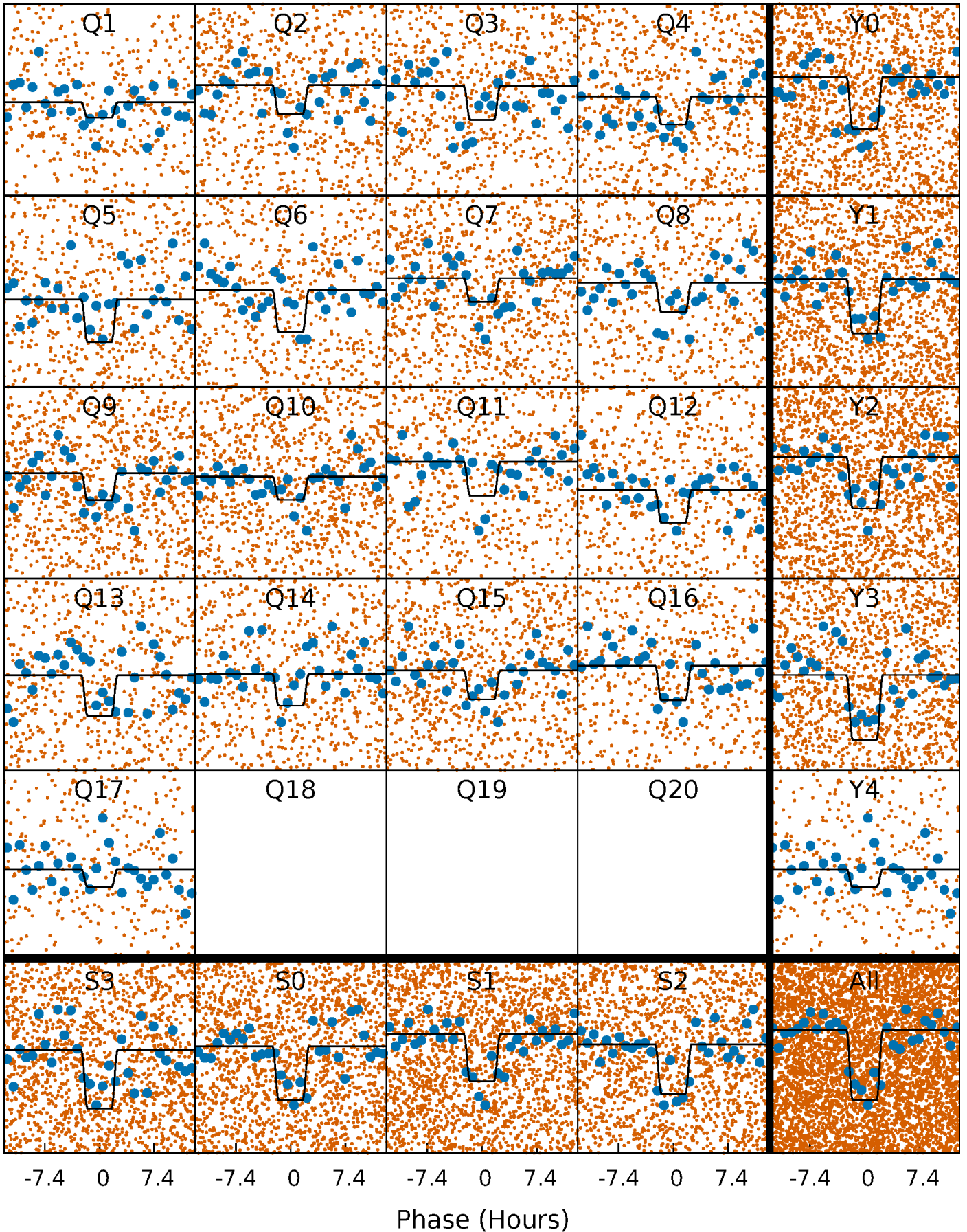
# DV Quarter-Phased Transit Curves

TCE 008233326-01 P= 3.741004 Days  $T_0=132.207357$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

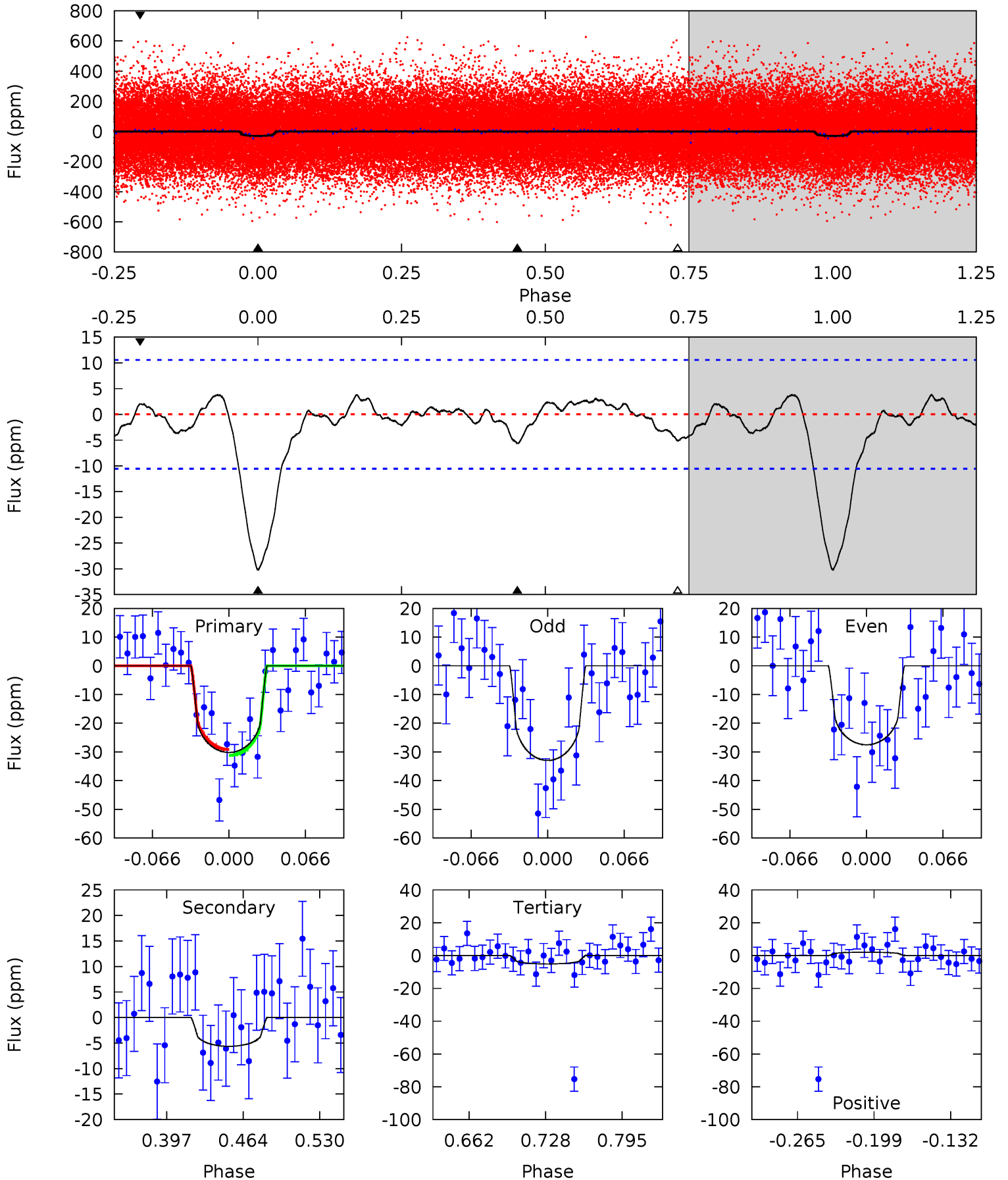
TCE 008233326-01 P= 3.740989 Days  $T_0=132.213427$  (BKJD)



# DV Model-Shift Uniqueness Test

008233326-01, P = 3.741004 Days, E = 128.466353 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
13.3	2.48	2.26	0.89	4.65	1.84	0.91	11.0	12.4	0.22	1.59	1.20	1.18	0.11	0.45

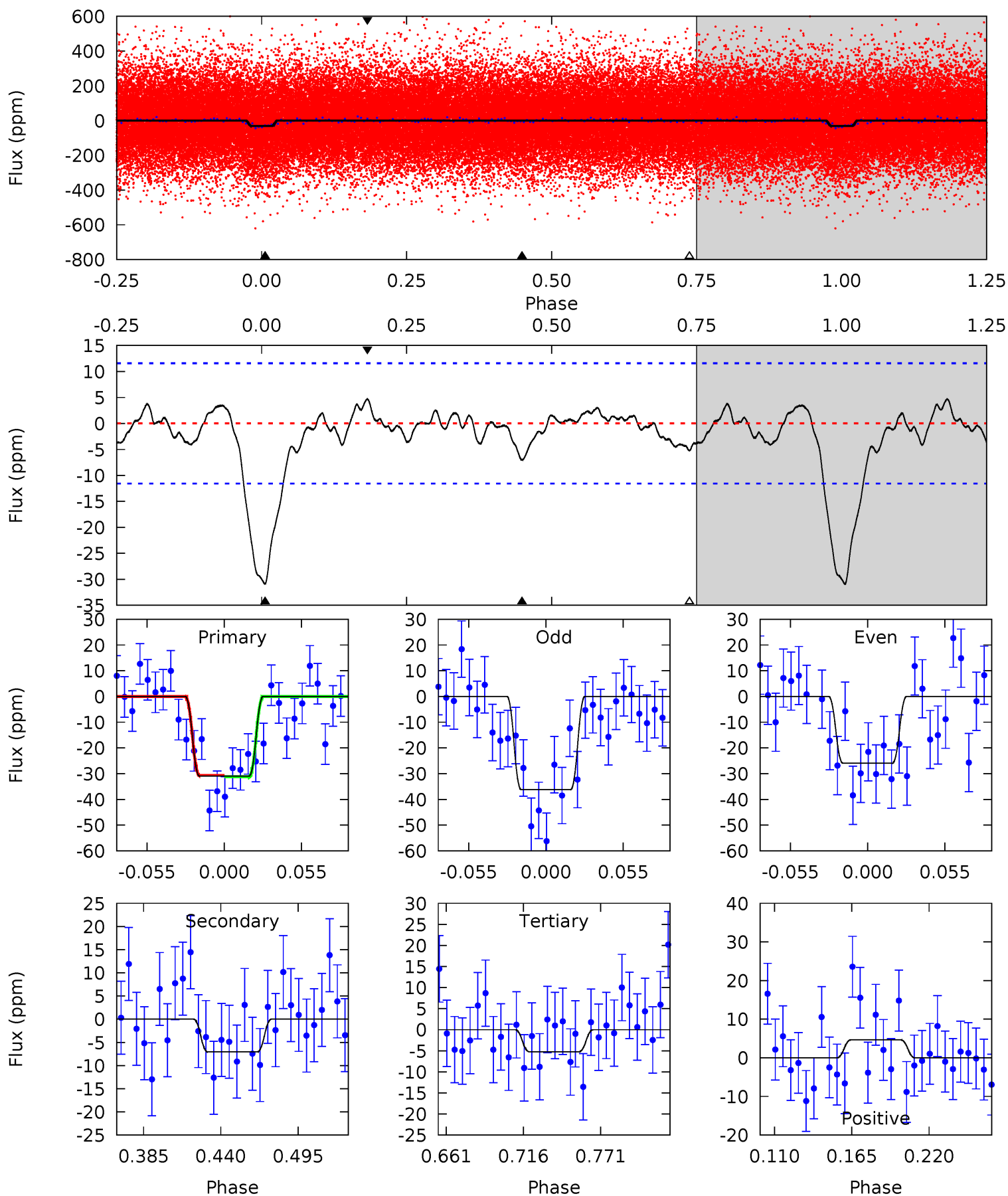




# Alt Model-Shift Uniqueness Test

008233326-01, P = 3.740989 Days, E = 128.472438 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
12.5	2.86	2.12	1.89	4.69	1.92	0.89	10.4	10.6	0.74	0.97	2.08	1.07	0.13	0.11





### Stellar Parameters For KIC 008233326

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5110^{+142}_{-177}$	$3.611^{+0.247}_{-0.152}$	$0.280^{+0.150}_{-0.350}$	$3.231^{+0.577}_{-1.155}$	$1.554^{+0.164}_{-0.492}$	$0.065^{+0.102}_{-0.026}$
	+3%/-3%	+7%/-4%	+54%/-125%	+18%/-36%	+11%/-32%	+157%/-40%
Source	PHO1	FLK73	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 008233326-01 / KOI 4834.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-6 \pm 2$	$1.99^{+1.08}_{-0.97}$	$2417^{+154}_{-202}$	$3516^{+1038}_{-597}$	$2.197^{+6.027}_{-1.389}$
Alt.	$-7 \pm 2$	$2.01^{+1.10}_{-0.96}$	$2419^{+174}_{-204}$	$3673^{+998}_{-563}$	$2.682^{+6.975}_{-1.612}$

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

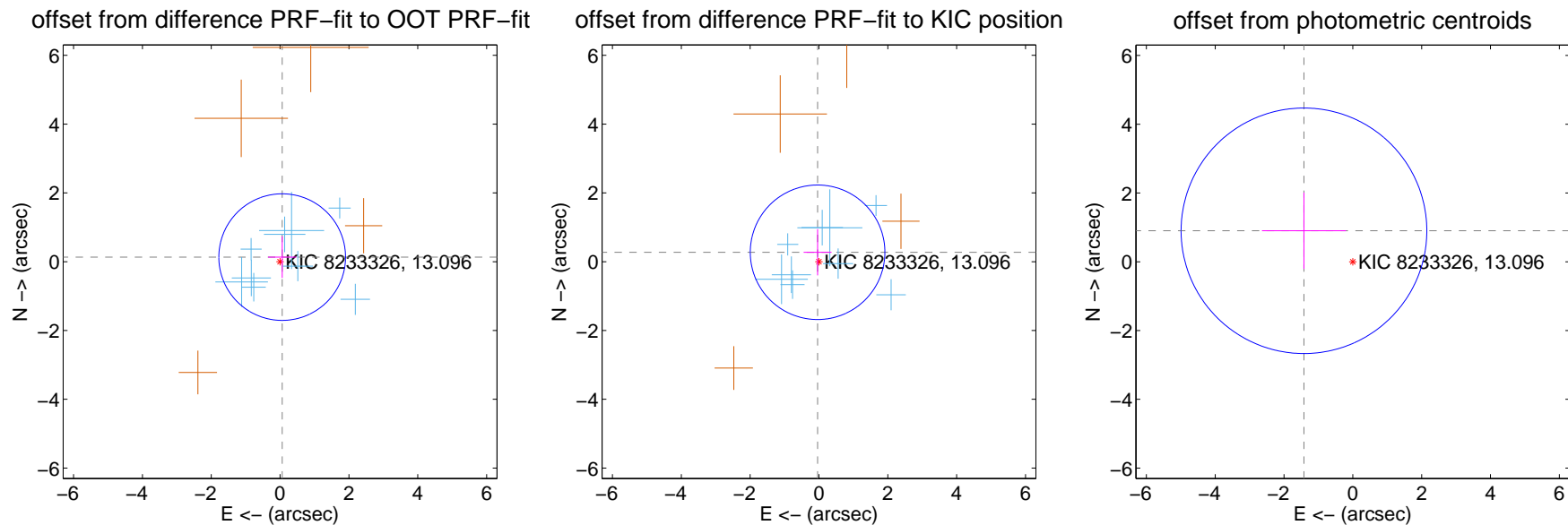
## DV Centroid Data

Supplemental centroid analysis for 008233326-01. Kepler magnitude: 13.10. Transit SNR 8.52

There are 9 quarters with good PRF difference image offsets

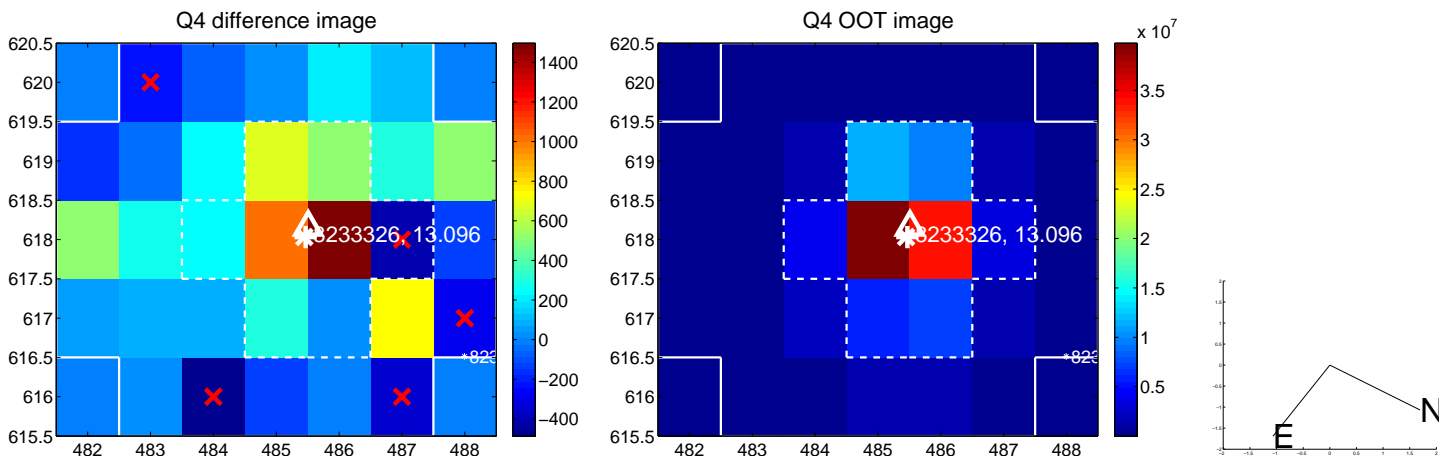
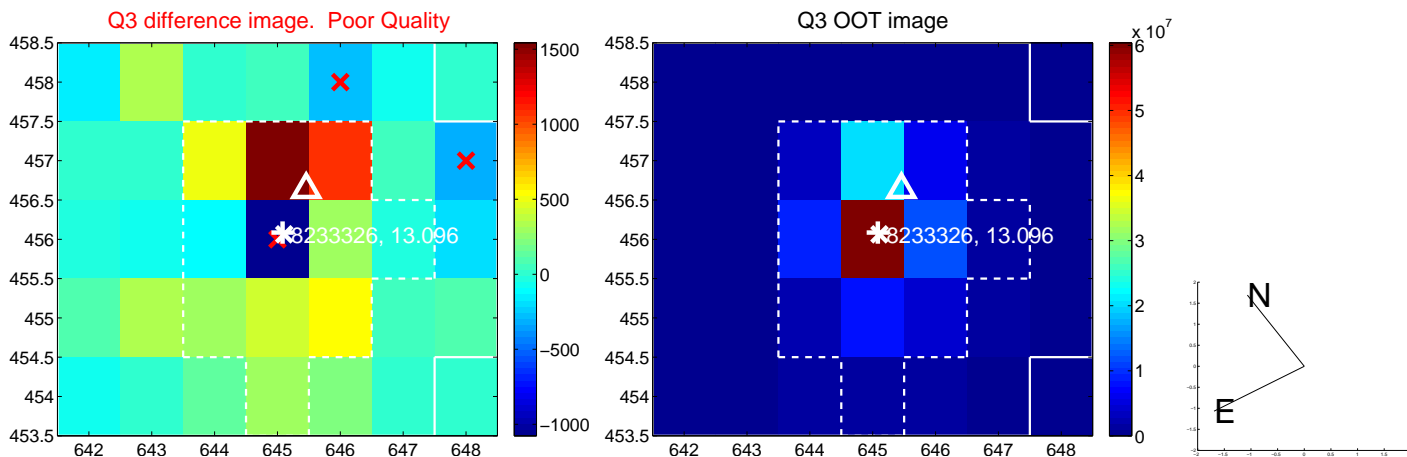
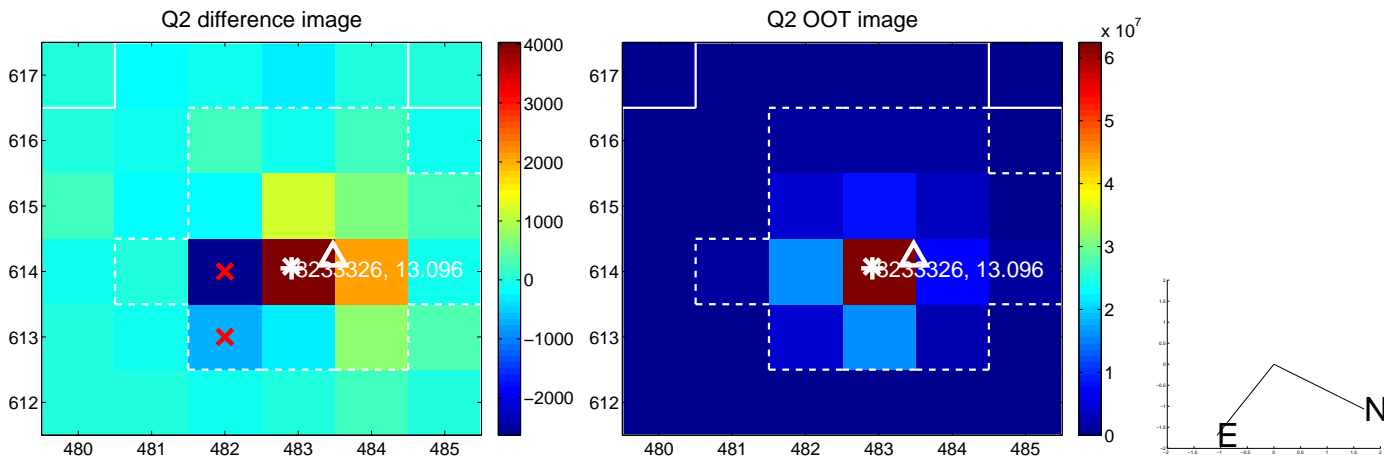
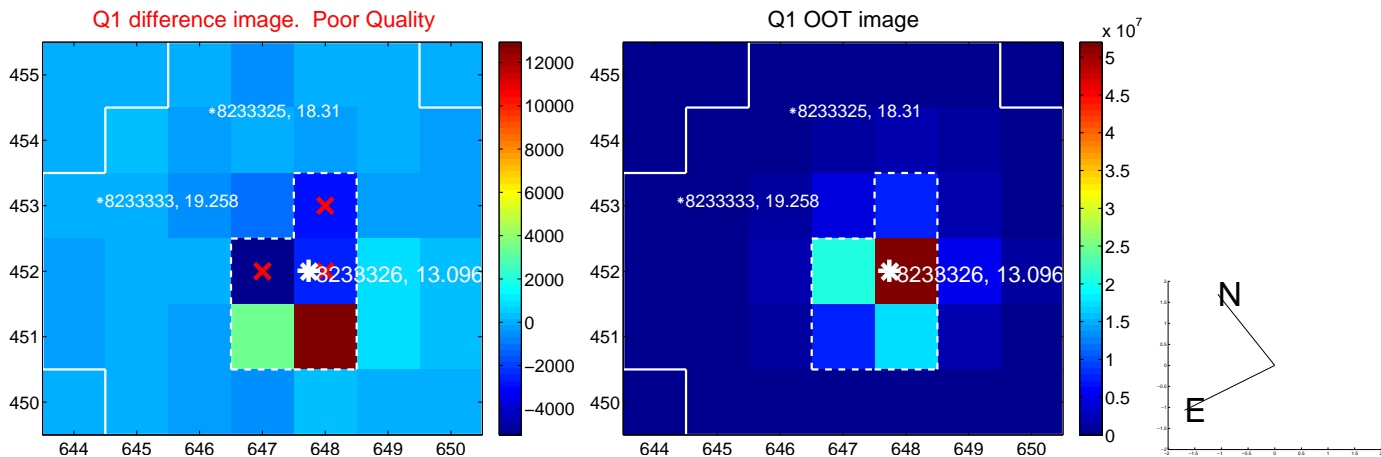
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.147 \pm 0.613$	0.24	$-0.060 \pm 0.411$	$0.134 \pm 0.603$
PRF-fit source offset from KIC position	$0.277 \pm 0.652$	0.42	$0.041 \pm 0.406$	$0.274 \pm 0.672$
photometric centroid source offset	$1.68 \pm 1.19$	1.41	$1.42 \pm 1.22$	$0.90 \pm 1.11$

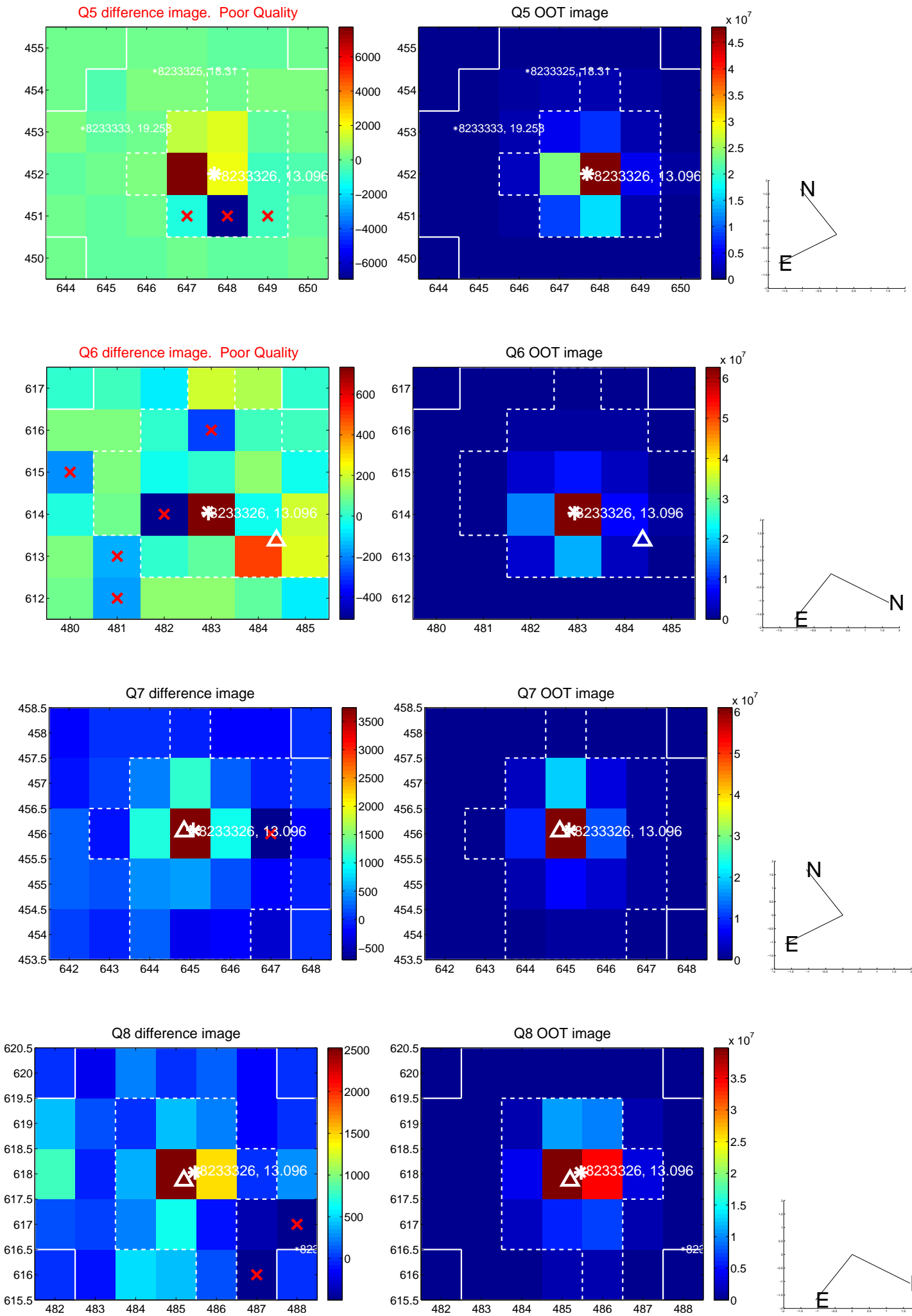


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

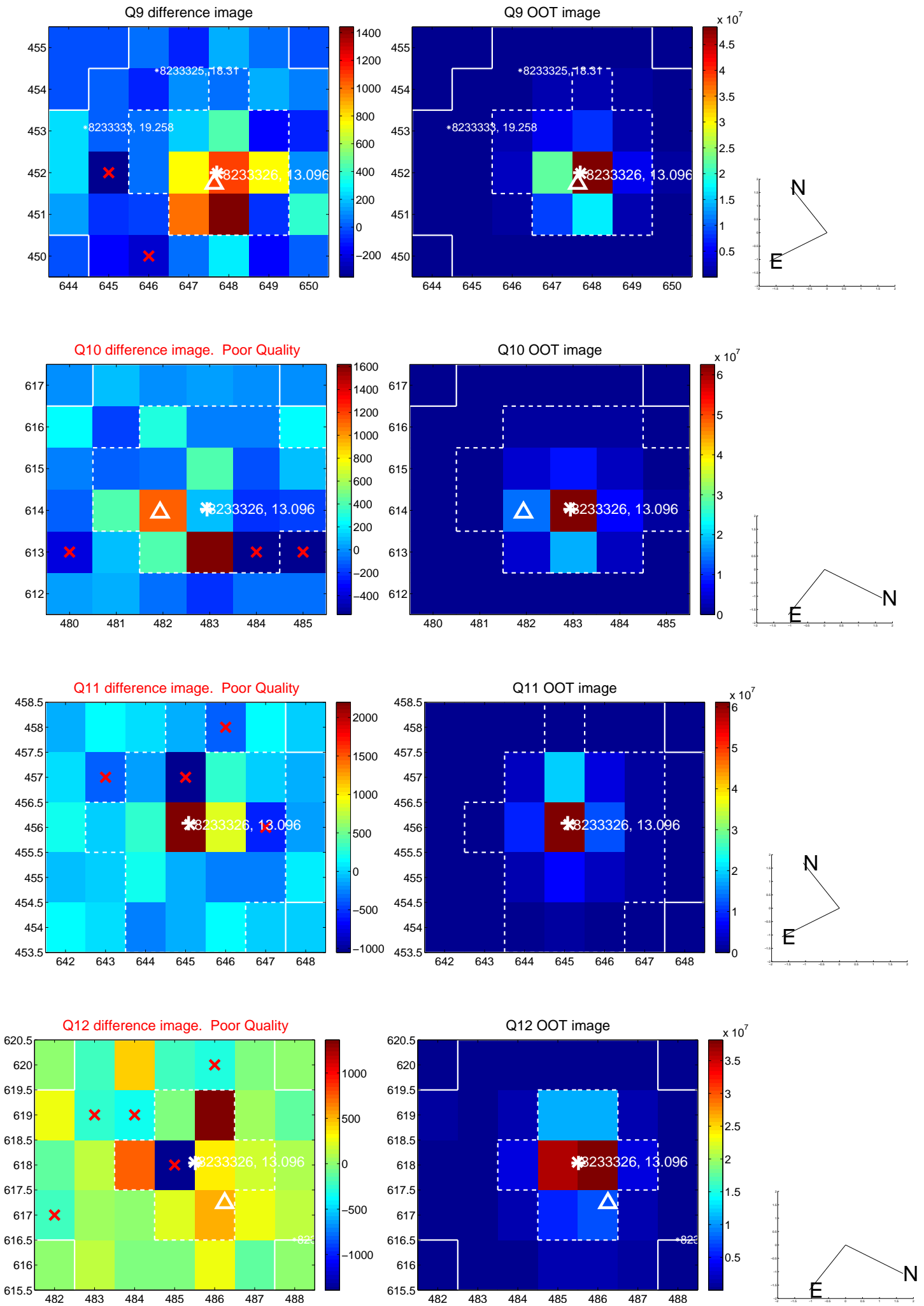


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

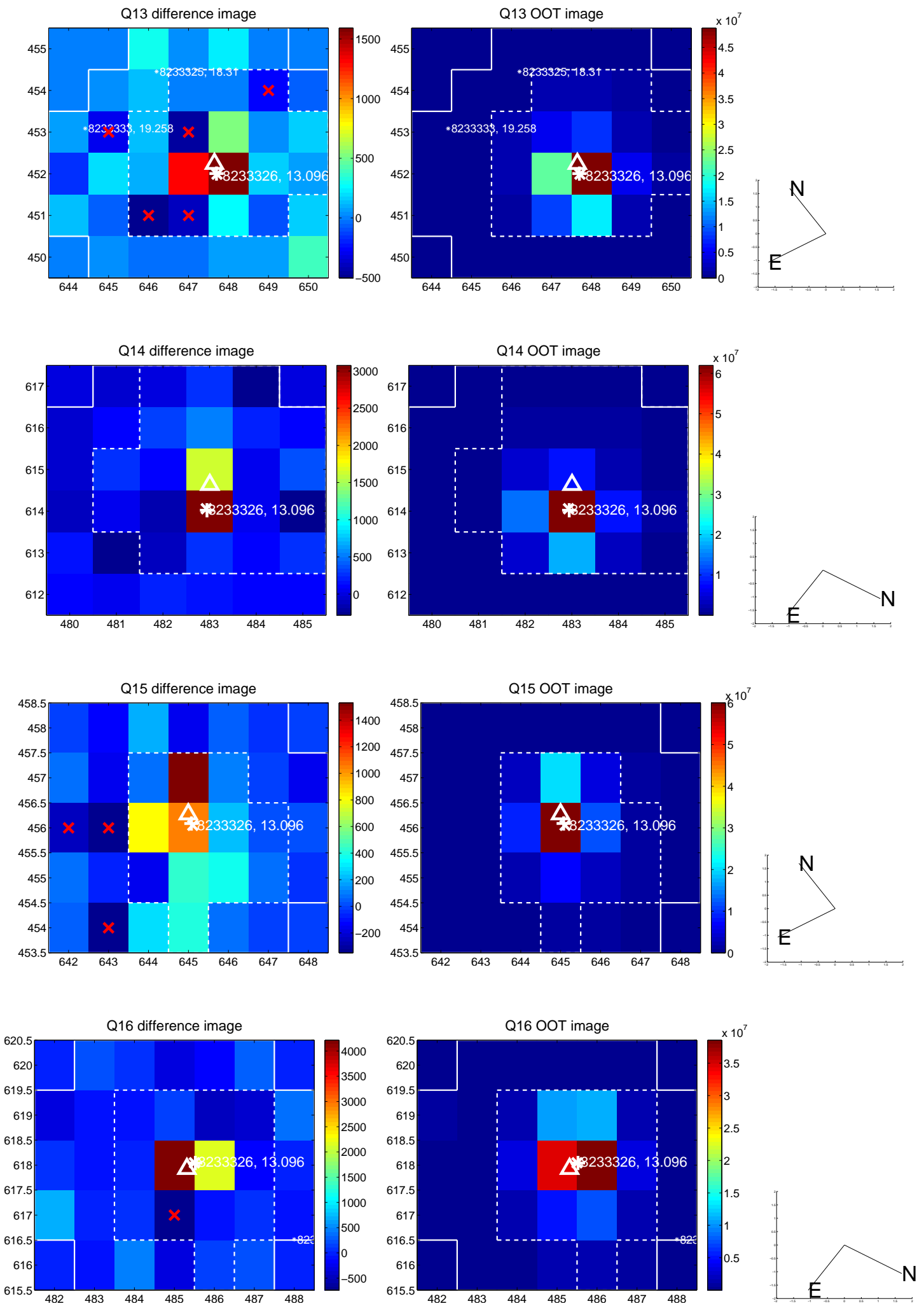




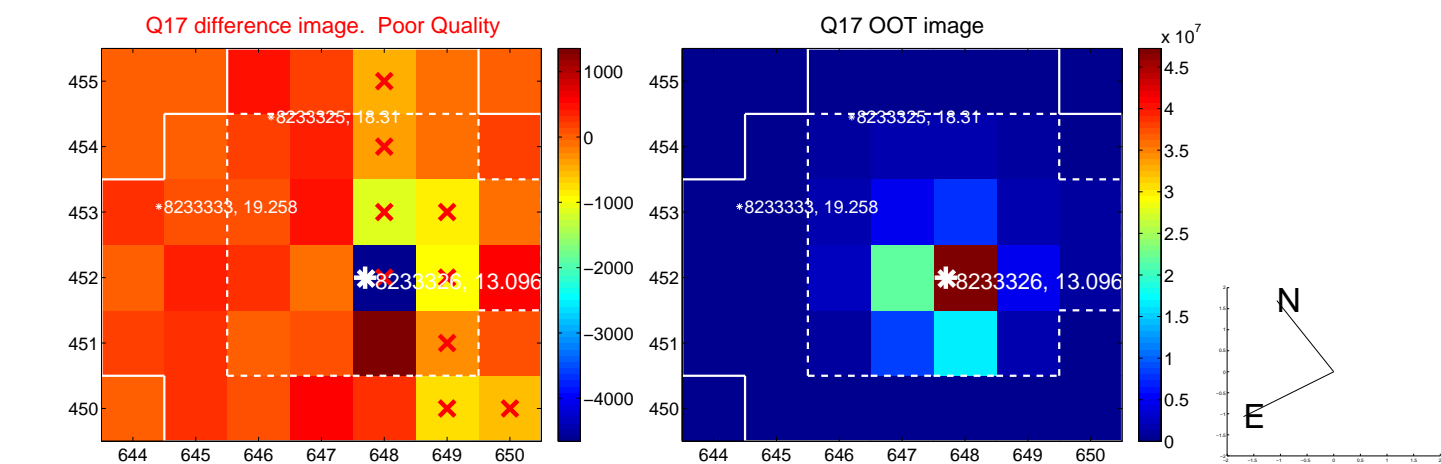
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



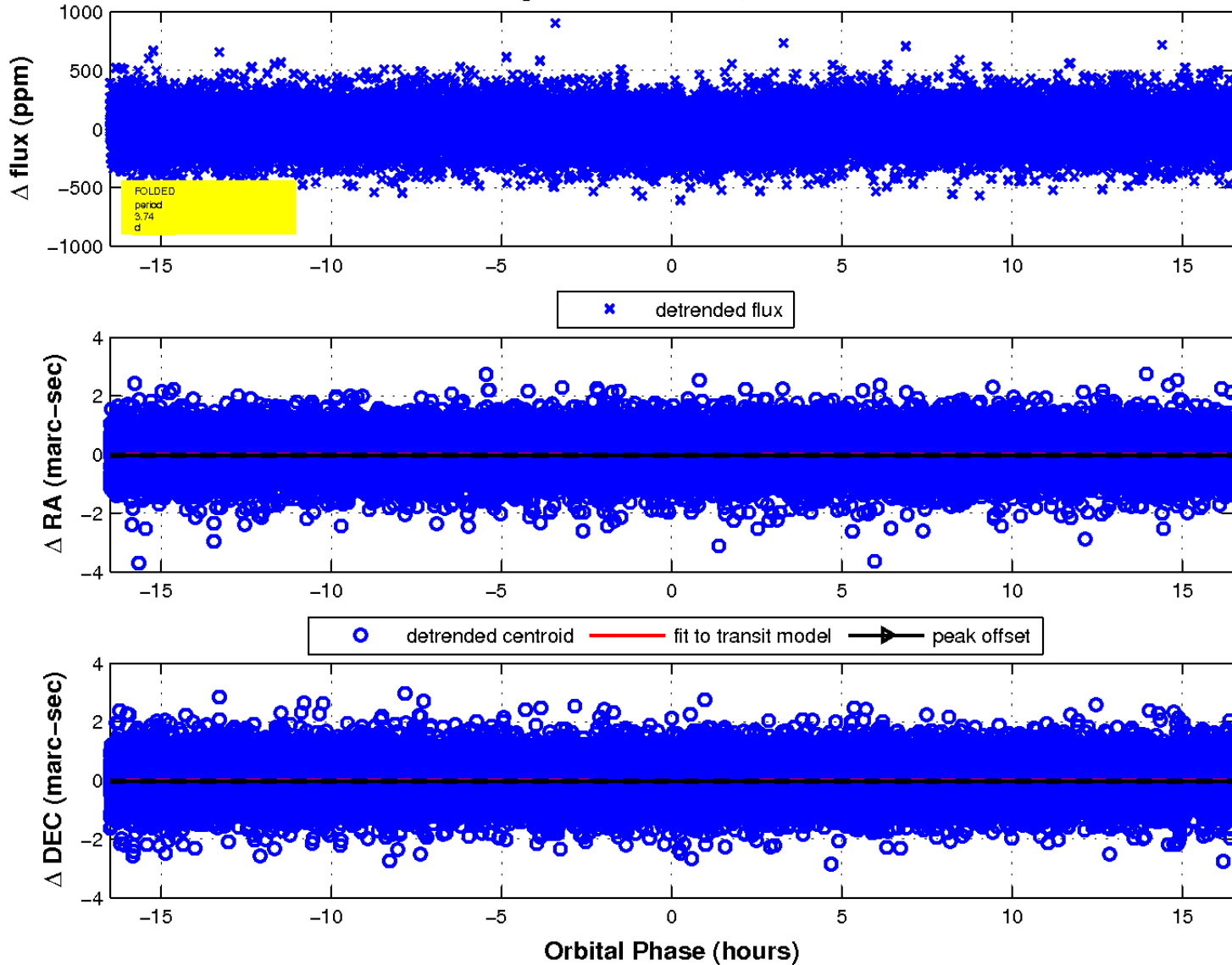
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

