

# KIC 008308722

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008308722-01	OBS	No	369.293879	234.147993	738.4	9.714	8.4	8.3	1.04	5262	3.15	0.78

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008308722-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

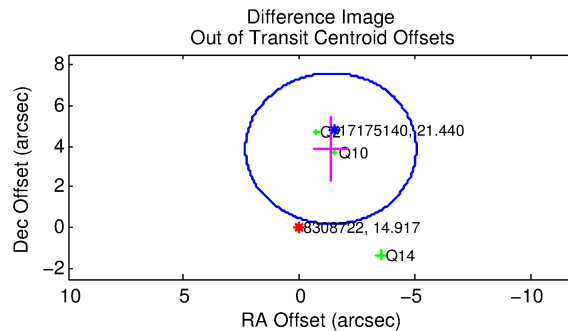
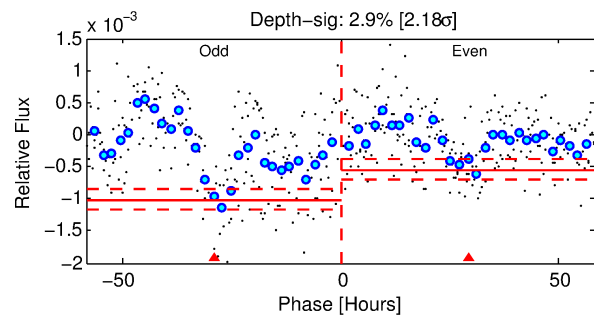
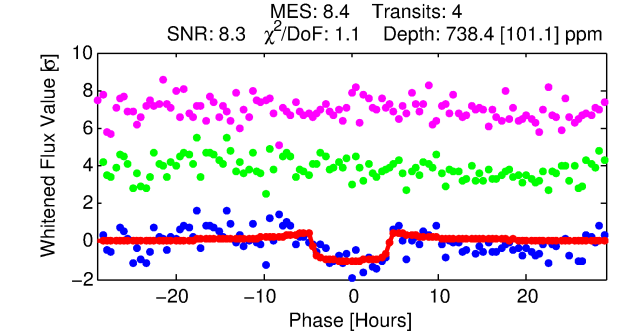
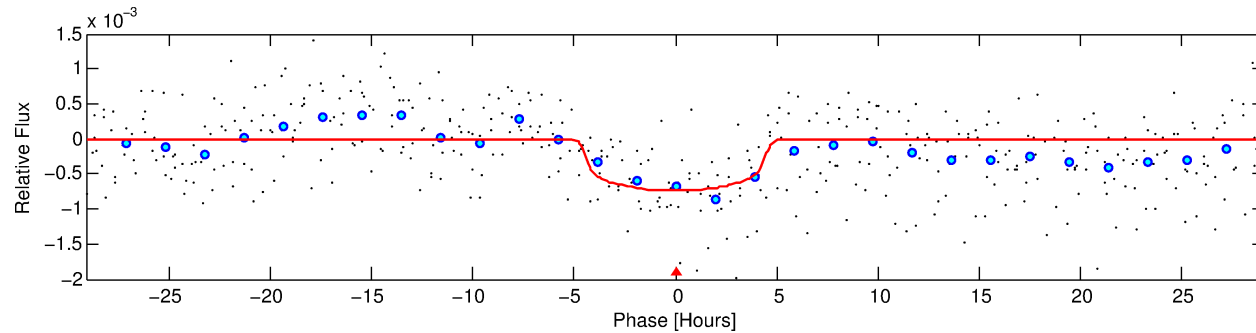
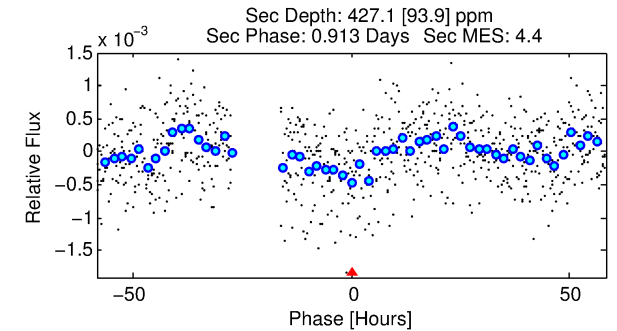
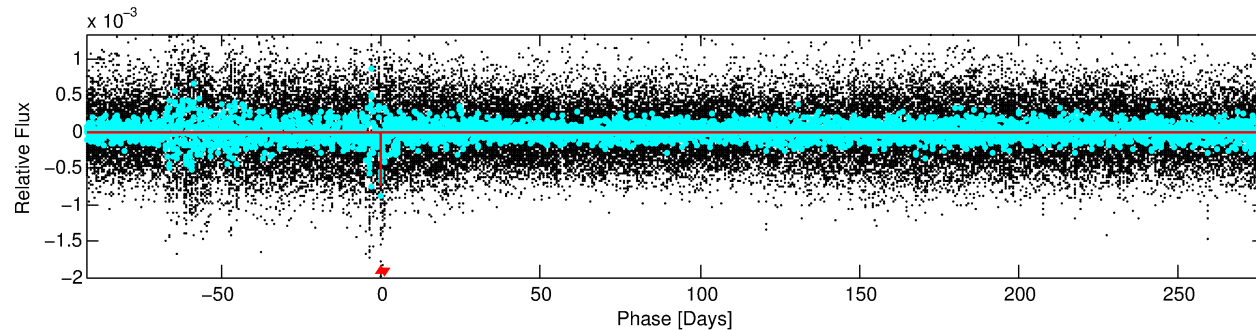
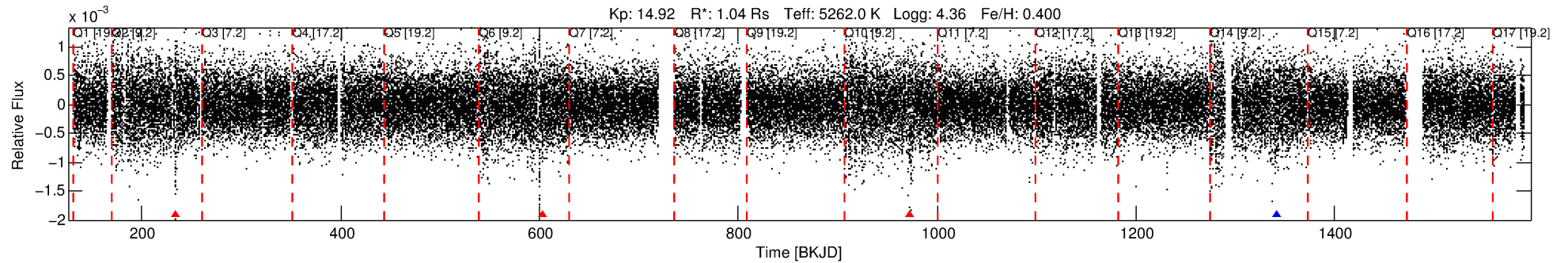
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008308722-01

No Significant Match Found

# DV One-Page Summary

KIC: 8308722 Candidate: 1 of 1 Period: 369.294 d



## DV Fit Results:

Period = 369.29388 [0.00795] d  
Epoch = 234.1480 [0.0148] BKJD  
Rp/R\* = 0.0278 [0.0072]  
a/R\* = 188.33 [171.12]  
b = 0.80 [0.42]  
Seff = 0.78 [0.32]  
Teff = 240 [25] K  
Rp = 3.15 [1.24] Re  
a = 0.9737 [0.2528] AU  
Ag = 22457.74 [15460.16] [1.45 $\sigma$ ]  
Teffp = 4537 [658] K [6.52 $\sigma$ ]

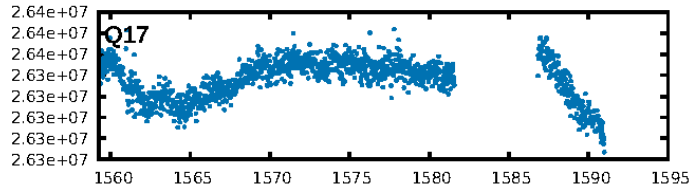
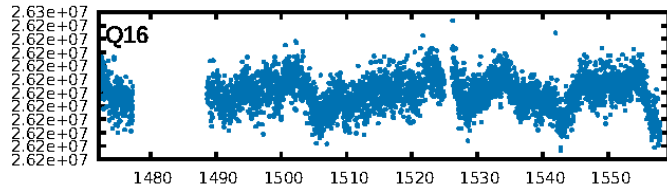
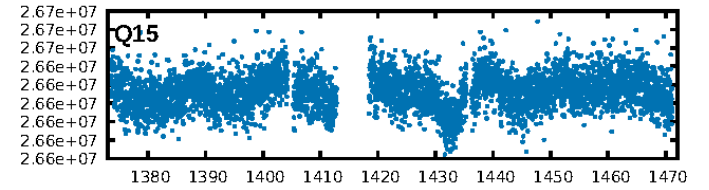
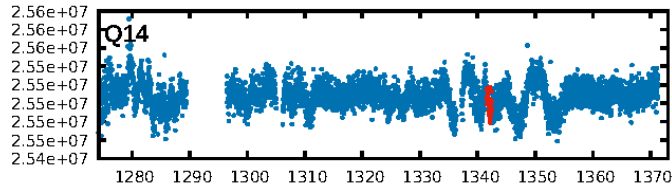
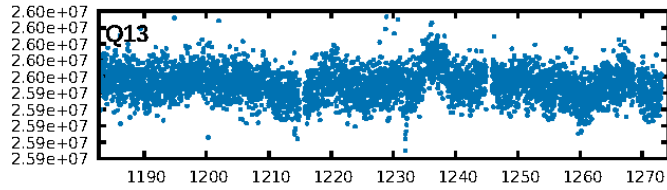
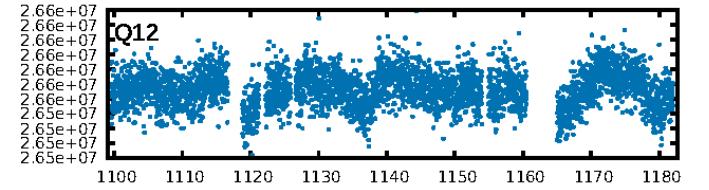
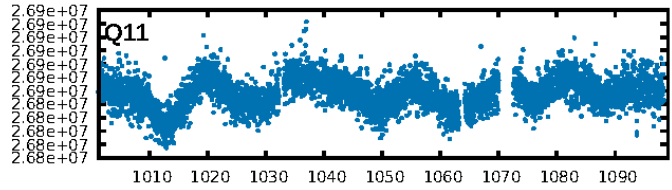
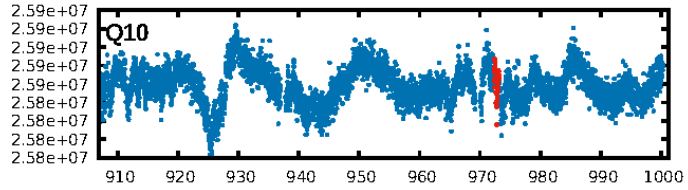
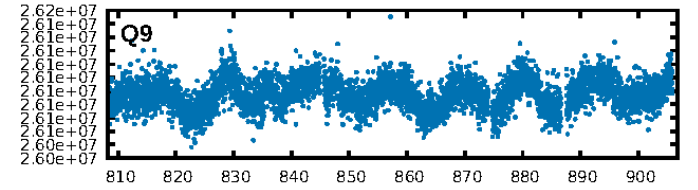
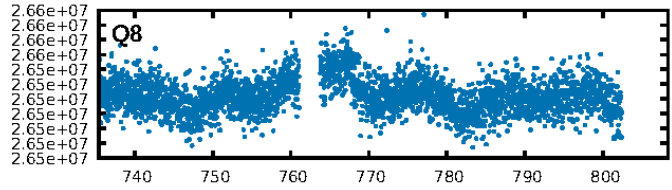
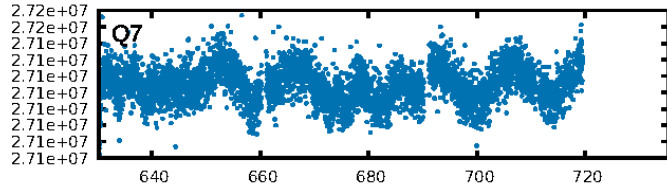
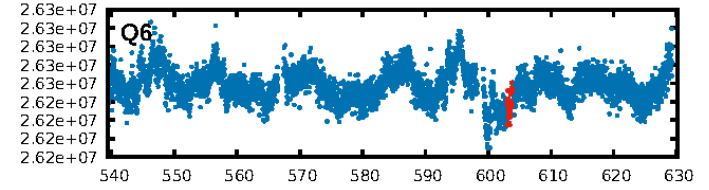
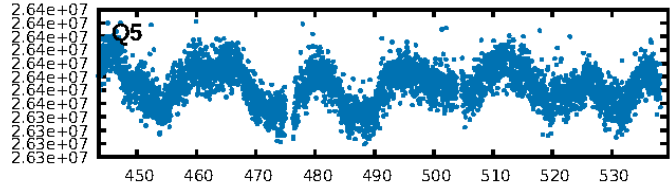
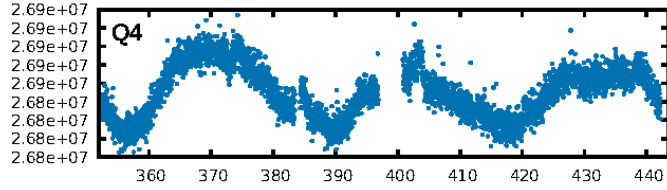
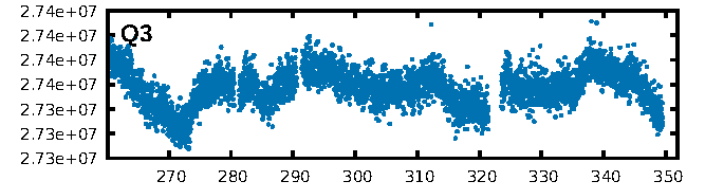
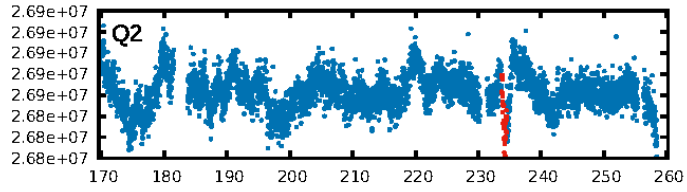
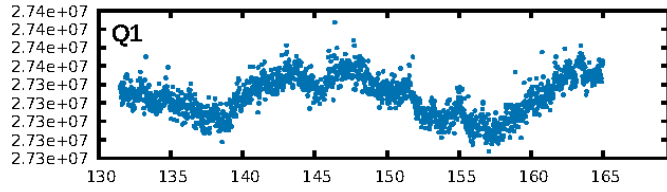
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 15.2%  
ModelChiSquareGof-sig: 99.9%  
**Bootstrap-pfa: 2.44e-11**  
**RollingBand-fgt: 0.25 [1/4]**  
GhostDiagnostic-chr: 2.103  
Centroid-sig: 83.0%  
Centroid-so: 0.961 arcsec [0.47 $\sigma$ ]  
**OotOffset-rm: 4.116 arcsec [3.34 $\sigma$ ]**  
**KicOffset-rm: 4.403 arcsec [3.10 $\sigma$ ]**  
OotOffset-st: 3/0/0/0 [3]  
KicOffset-st: 3/0/0/0 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [4/4]

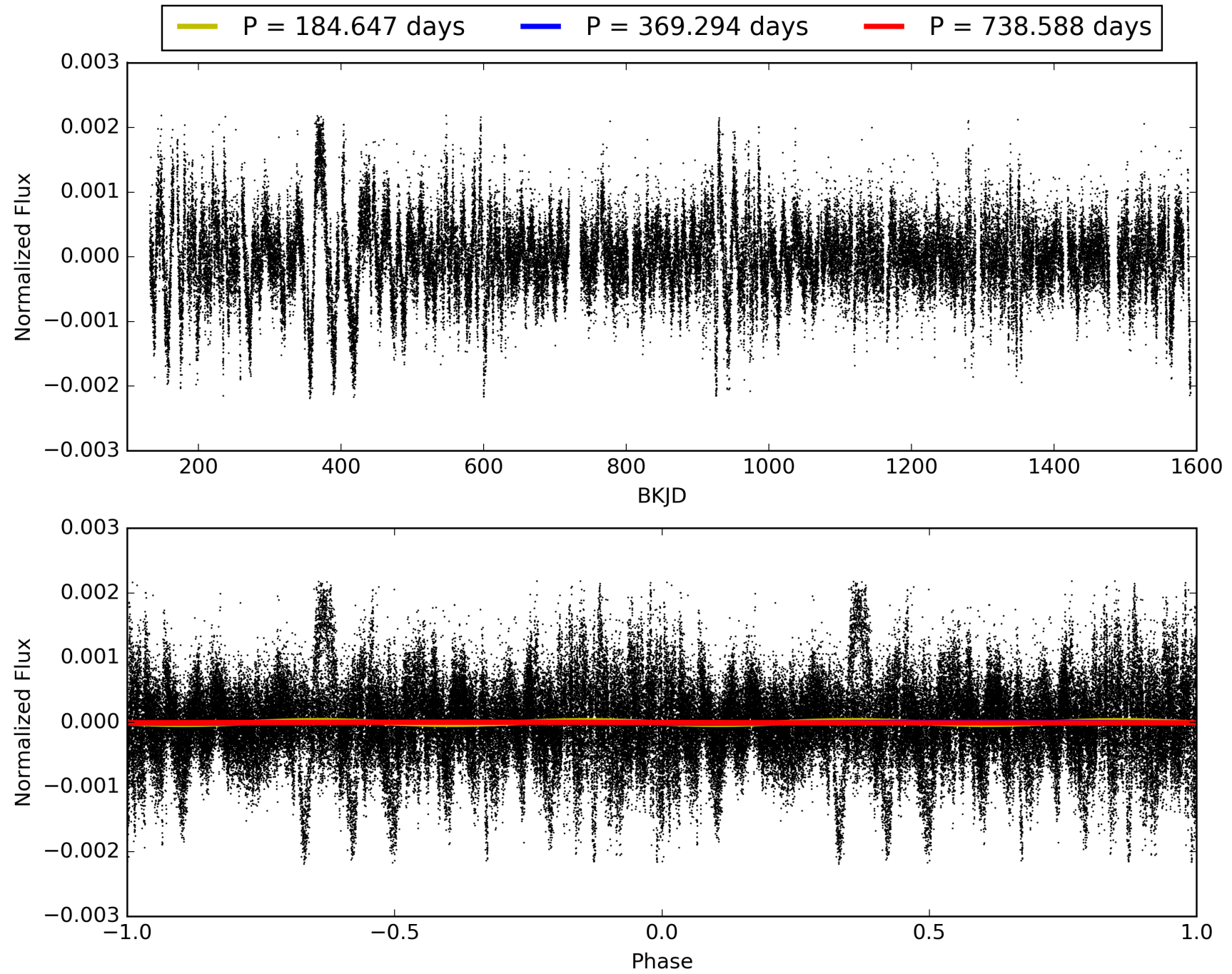
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:11:31 Z

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

## TCE 008308722-01, PDC Light Curves

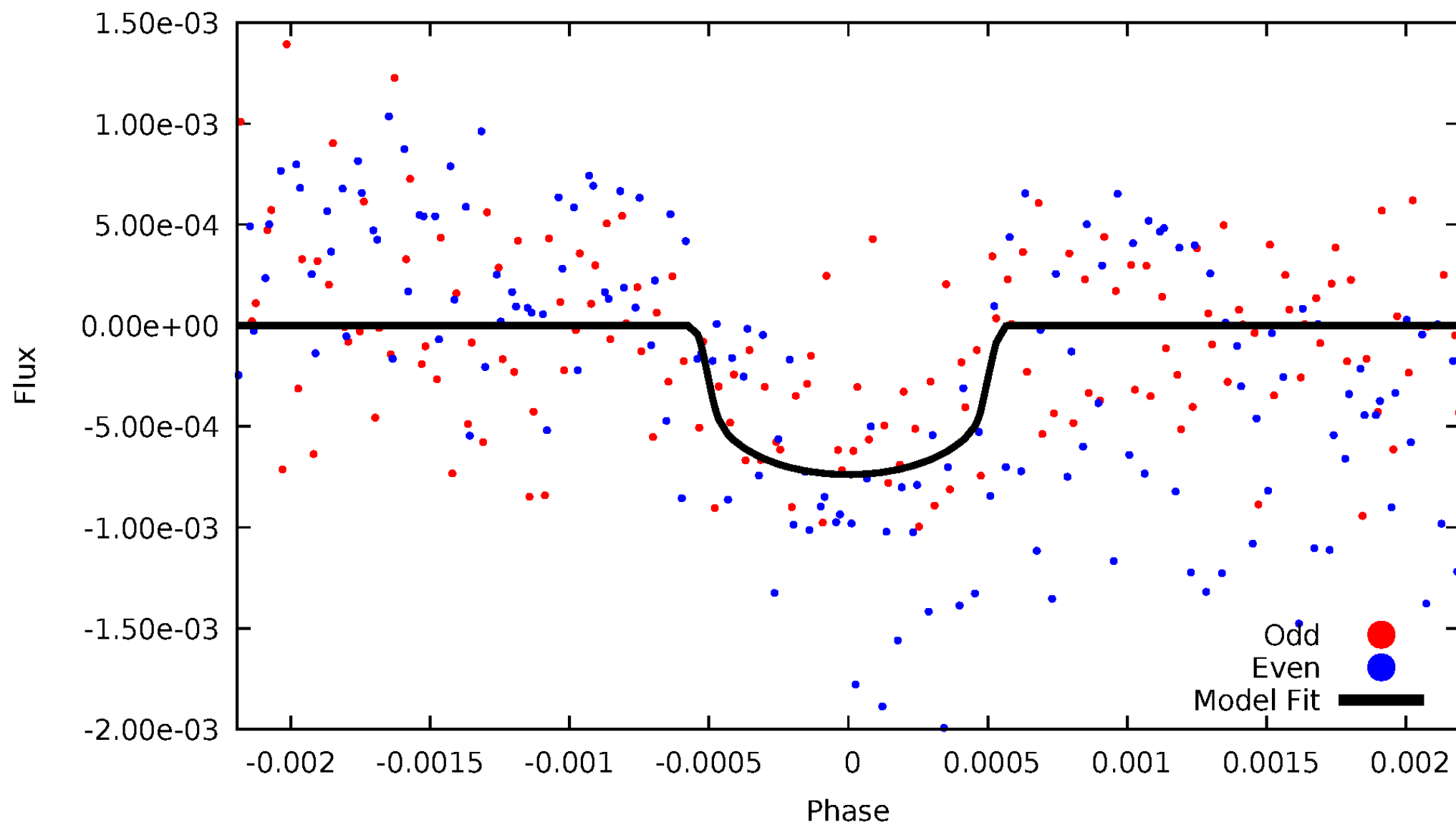


TCE 008308722-01



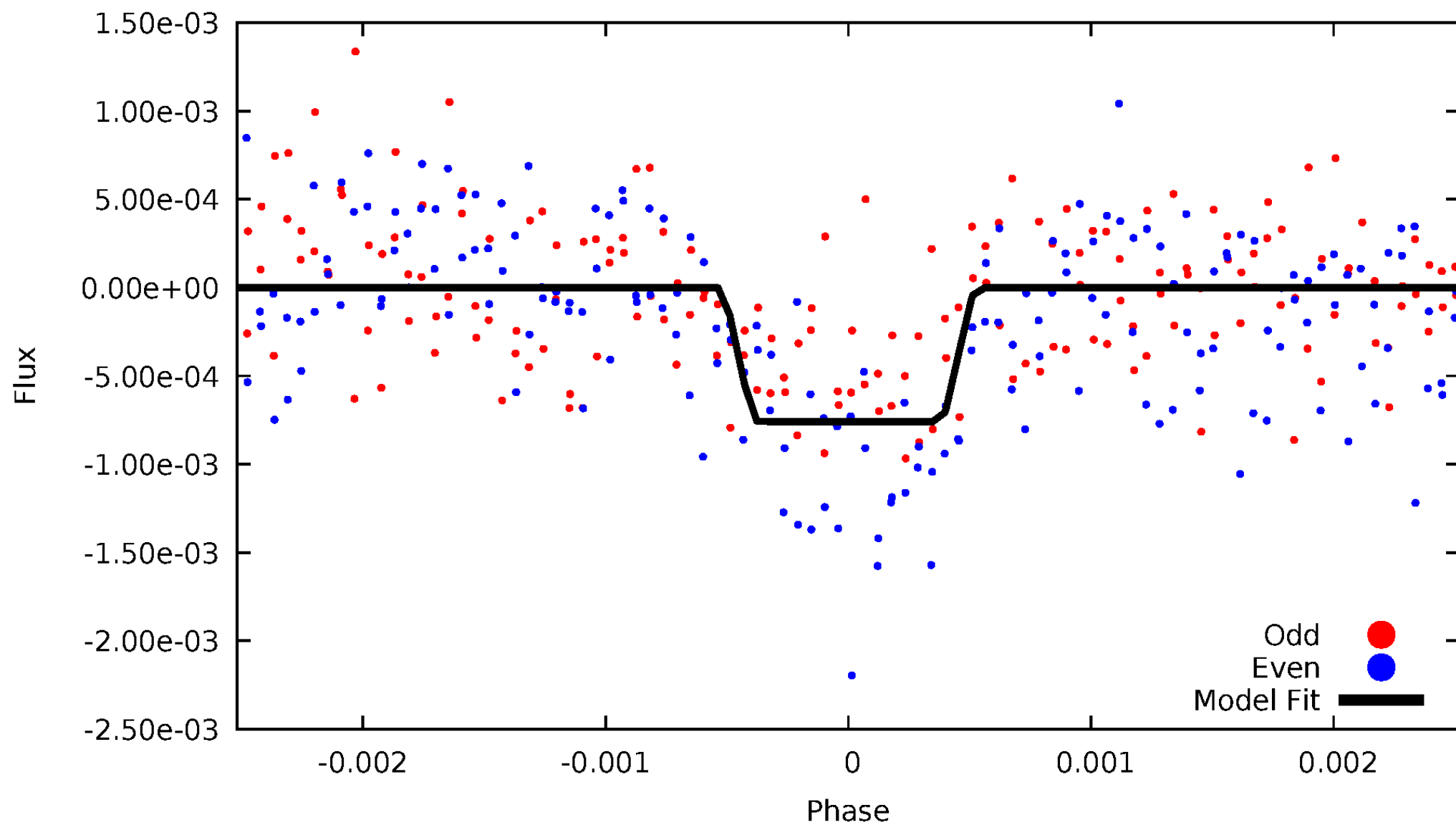
# DV Odd/Even

TCE 008308722-01



# ALT Odd/Even

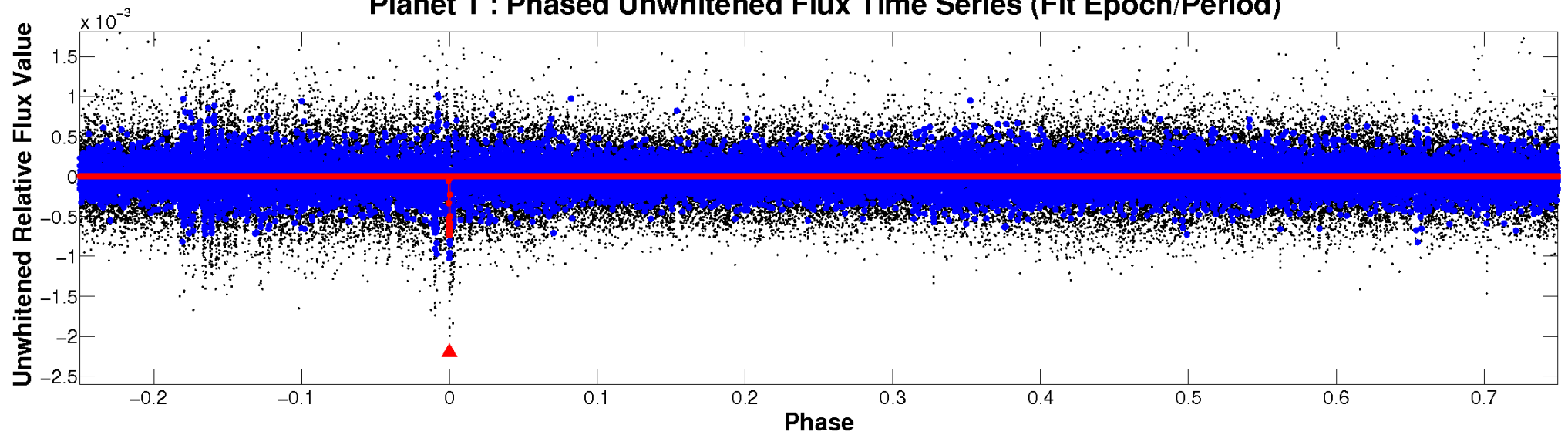
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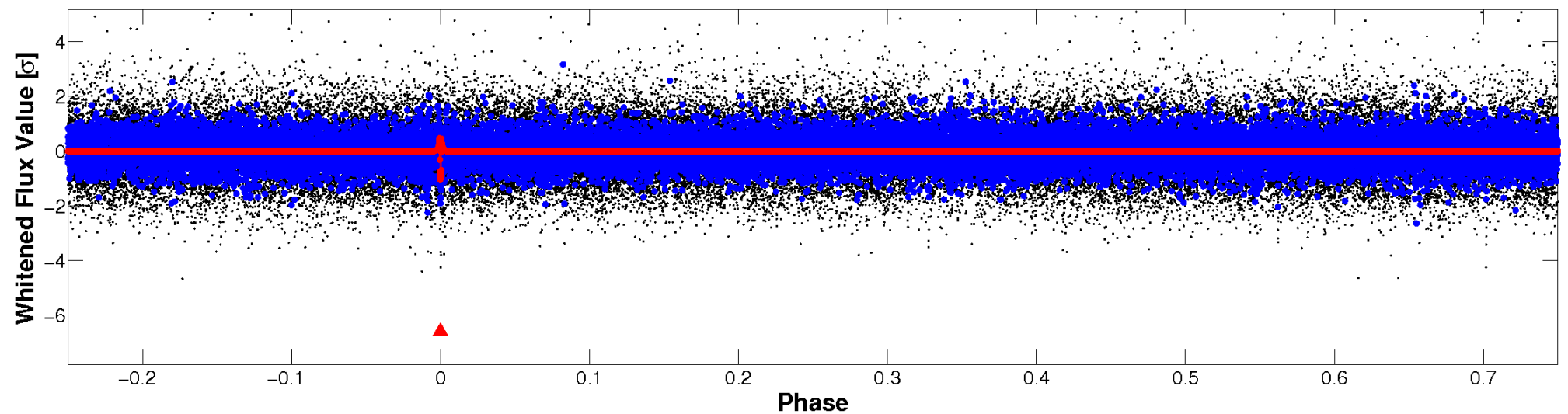


# Non-Whitened Vs. Whitened Light Curve

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

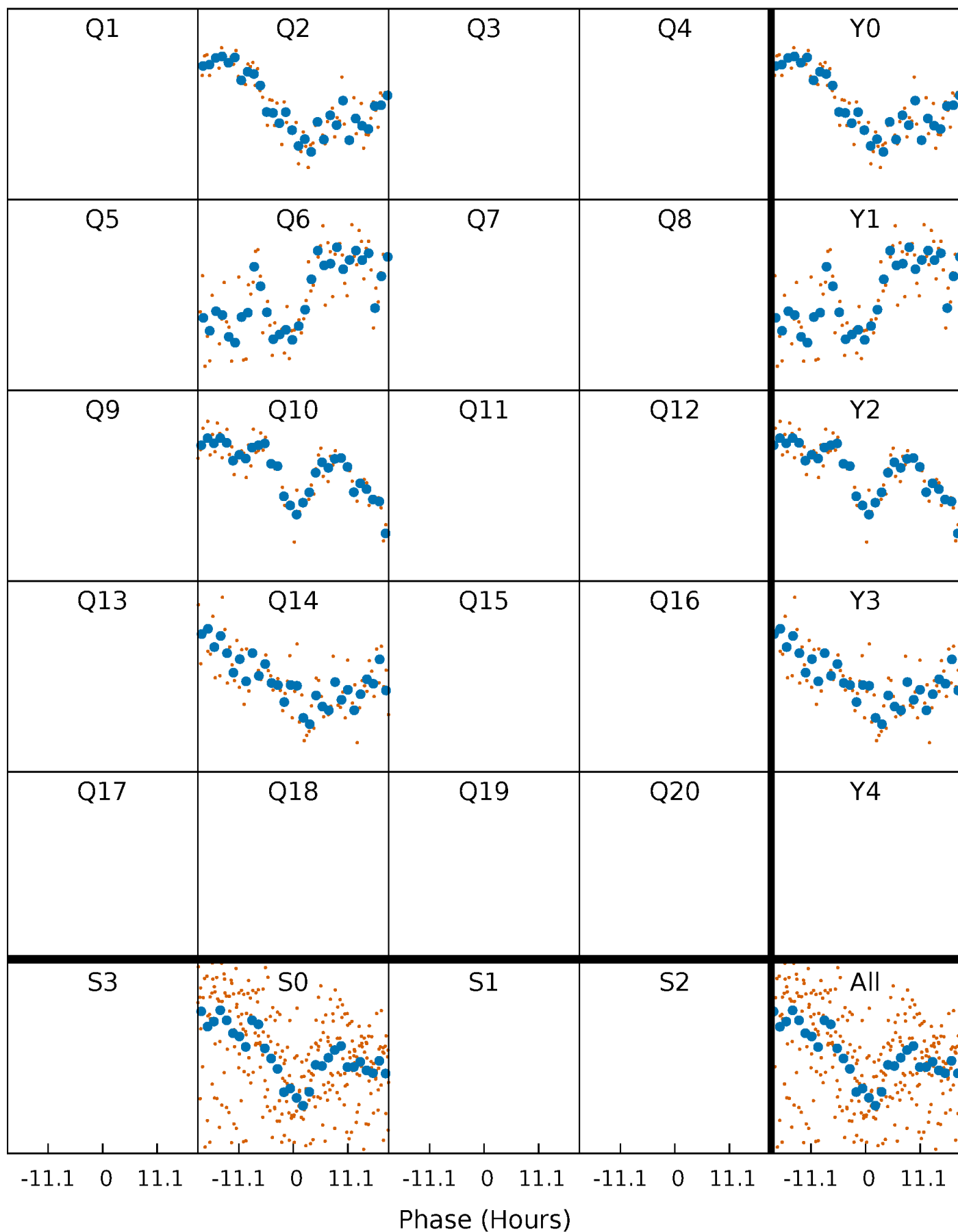


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

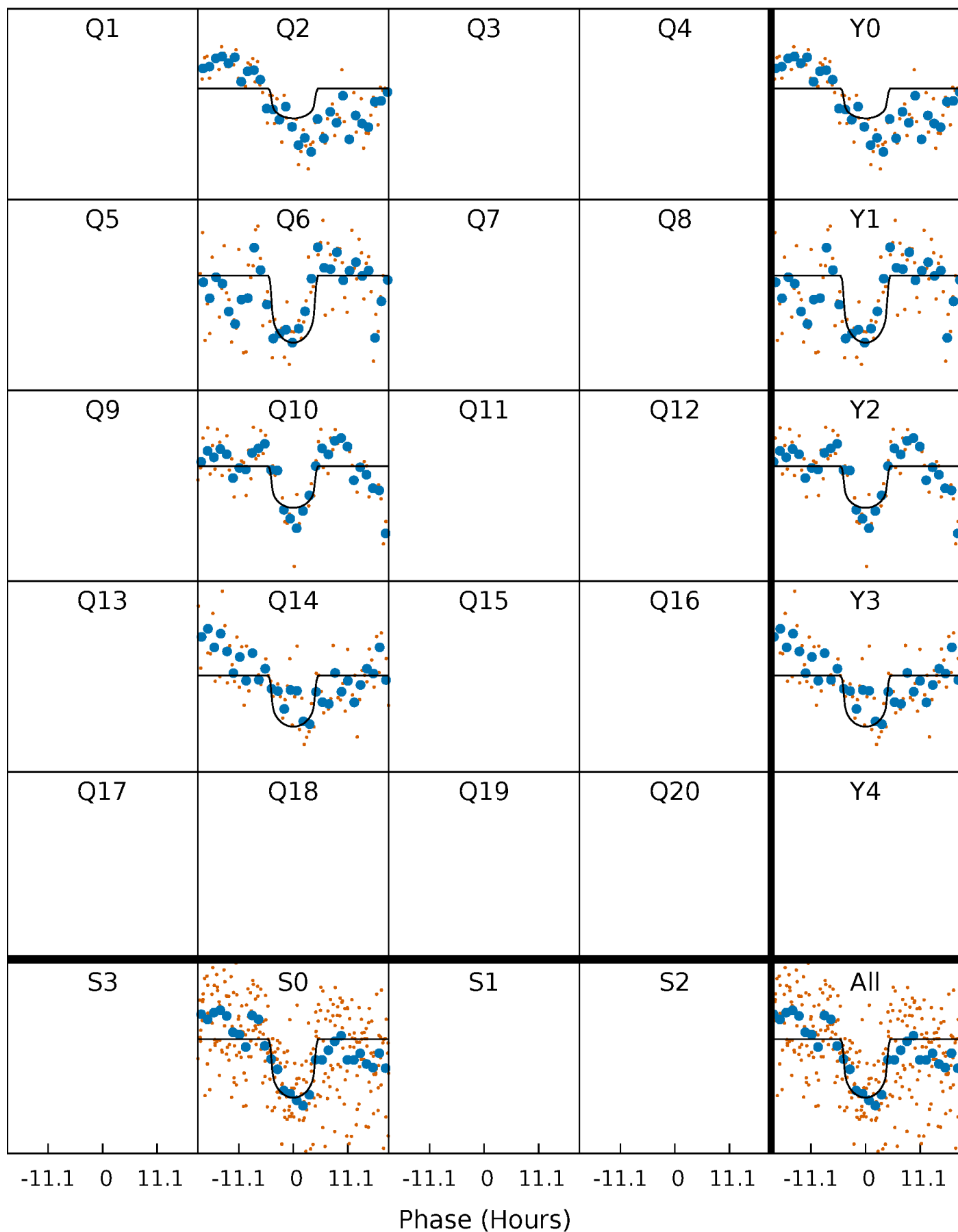
TCE 008308722-01 P=369.293879 Days  $T_0=234.147993$  (BKJD)





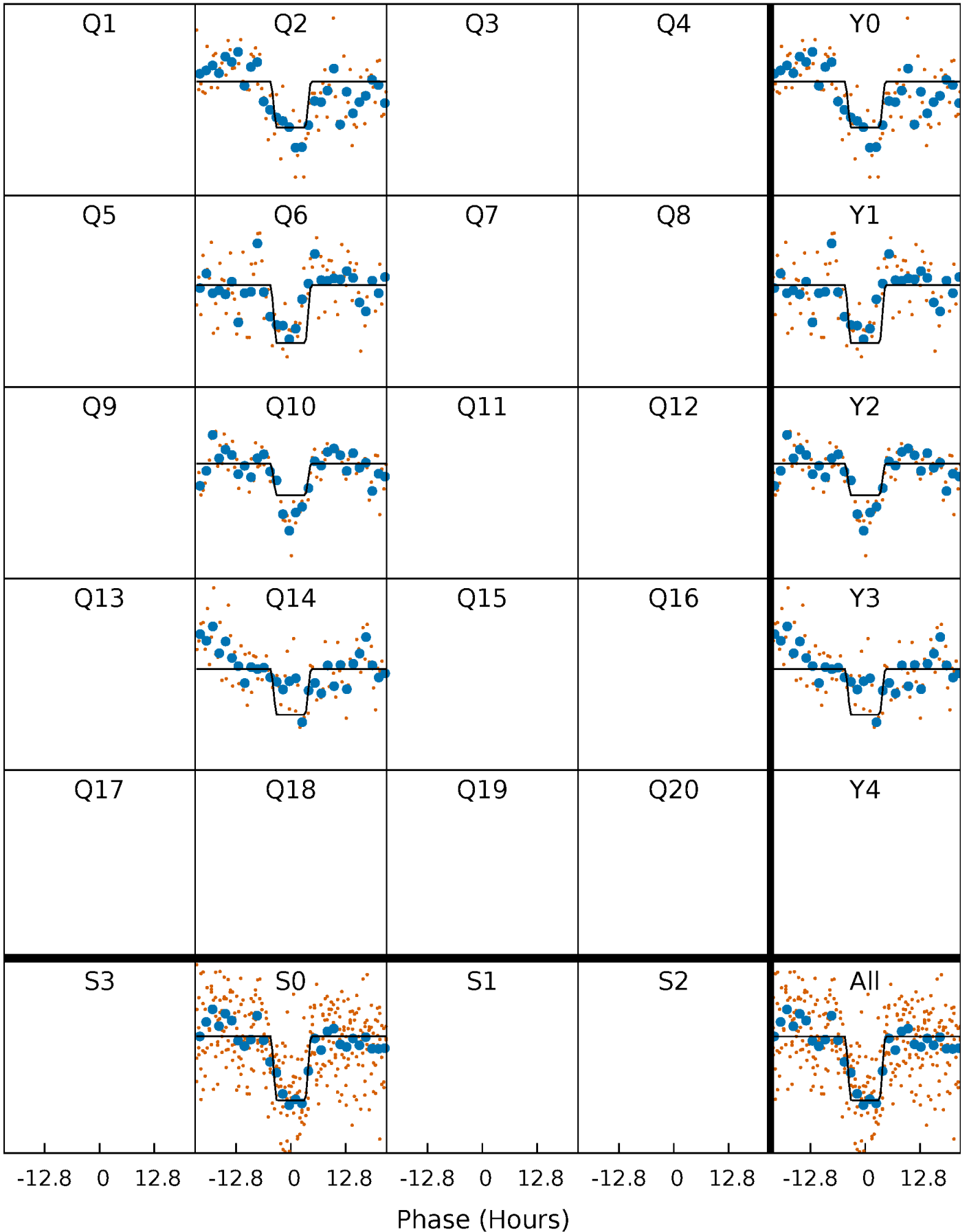
# DV Quarter-Phased Transit Curves

TCE 008308722-01 P=369.293879 Days  $T_0=234.147993$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

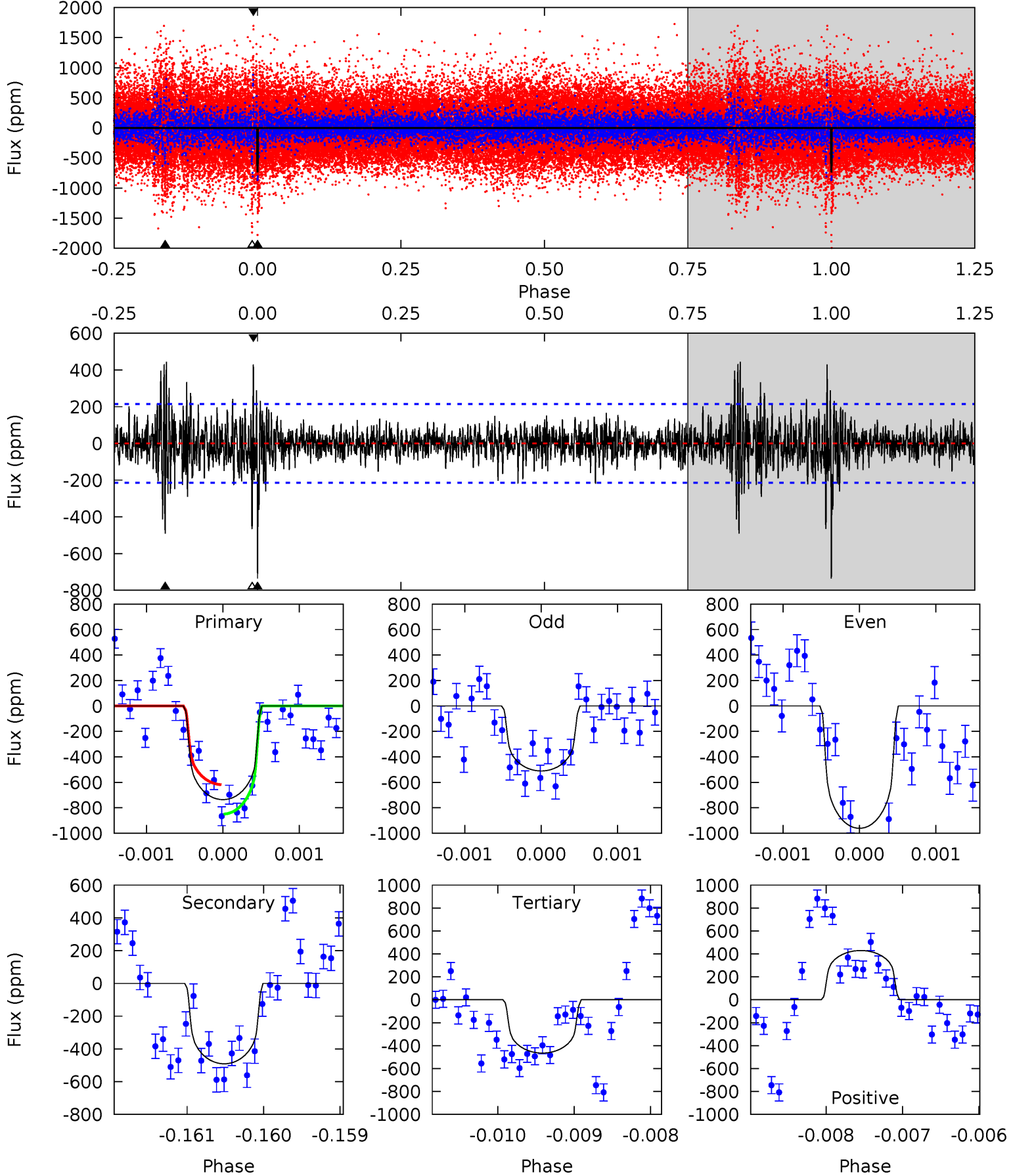
TCE 008308722-01 P=369.295730 Days  $T_0=234.148674$  (BKJD)



# DV Model-Shift Uniqueness Test

008308722-01, P = 369.293879 Days, E = 234.147993 Days

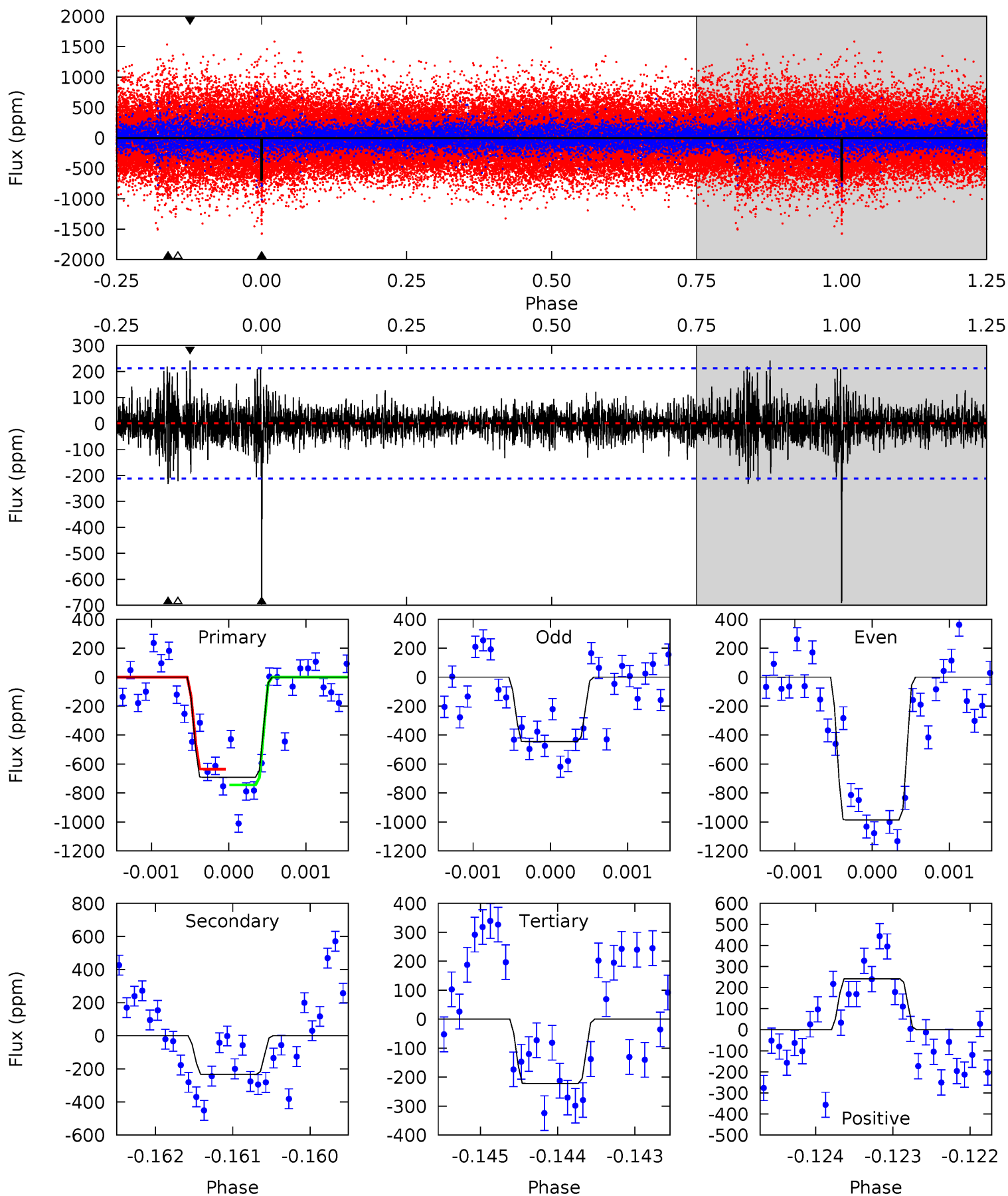
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	12.4	11.8	10.9	5.43	3.26	1.92	6.86	7.76	0.65	1.56	5.73	1.10	0.38	2.92



# Alt Model-Shift Uniqueness Test

008308722-01, P = 369.295730 Days, E = 234.148674 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
17.8	6.00	5.70	6.22	5.45	3.29	1.13	12.1	11.5	0.30	-0.22	7.02	1.05	0.26	1.40



### Stellar Parameters For KIC 008308722

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5262^{+174}_{-158}$	$4.361^{+0.167}_{-0.222}$	$0.400^{+0.100}_{-0.250}$	$1.038^{+0.305}_{-0.178}$	$0.904^{+0.075}_{-0.061}$	$1.137^{+0.918}_{-0.614}$
	+3%/-3%	+4%/-5%	+25%/-62%	+29%/-17%	+8%/-7%	+81%/-54%
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 008308722-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-491 \pm 39$	$3.09^{+1.00}_{-0.84}$	$336^{+30}_{-22}$	$4824^{+713}_{-442}$	$26992^{+24015}_{-11920}$
Alt.	$-233 \pm 39$	$3.15^{+0.95}_{-0.91}$	$336^{+27}_{-20}$	$4139^{+554}_{-332}$	$12172^{+12222}_{-5291}$

$T_{max}$  = 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

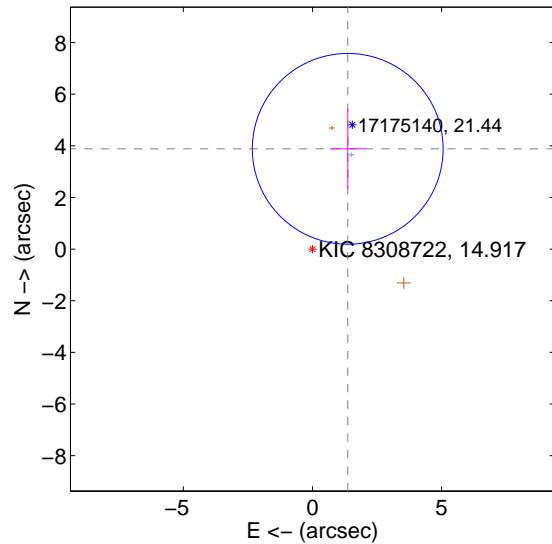
Supplemental centroid analysis for 008308722-01. Kepler magnitude: 14.92. Transit SNR 8.26

There are 1 quarters with good PRF difference image offsets

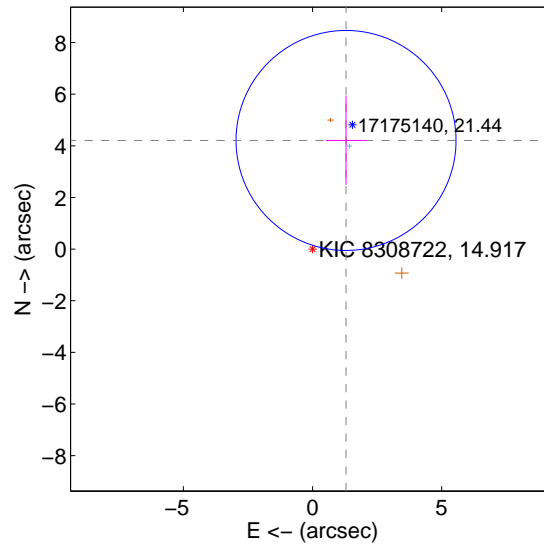
The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	4.116 $\pm$ 1.231	3.34	-1.367 $\pm$ 0.695	3.882 $\pm$ 1.547
PRF-fit source offset from KIC position	4.403 $\pm$ 1.420	3.10	-1.298 $\pm$ 0.790	4.207 $\pm$ 1.727
photometric centroid source offset	0.96 $\pm$ 2.03	0.47	0.39 $\pm$ 2.07	0.88 $\pm$ 2.02

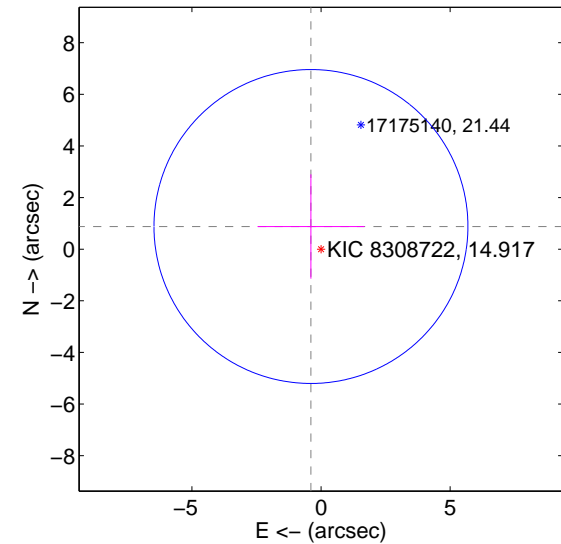
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

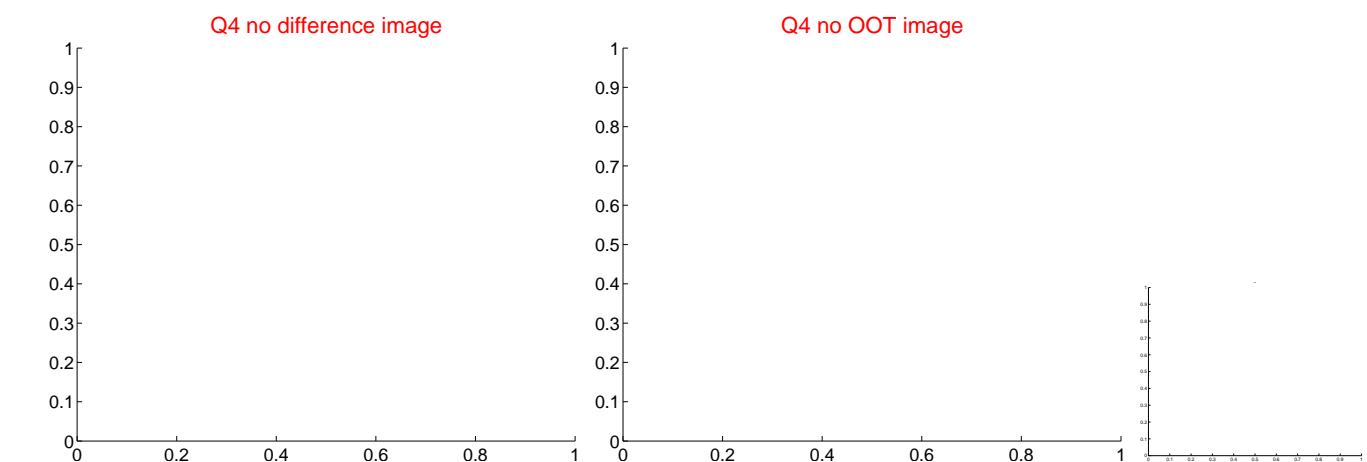
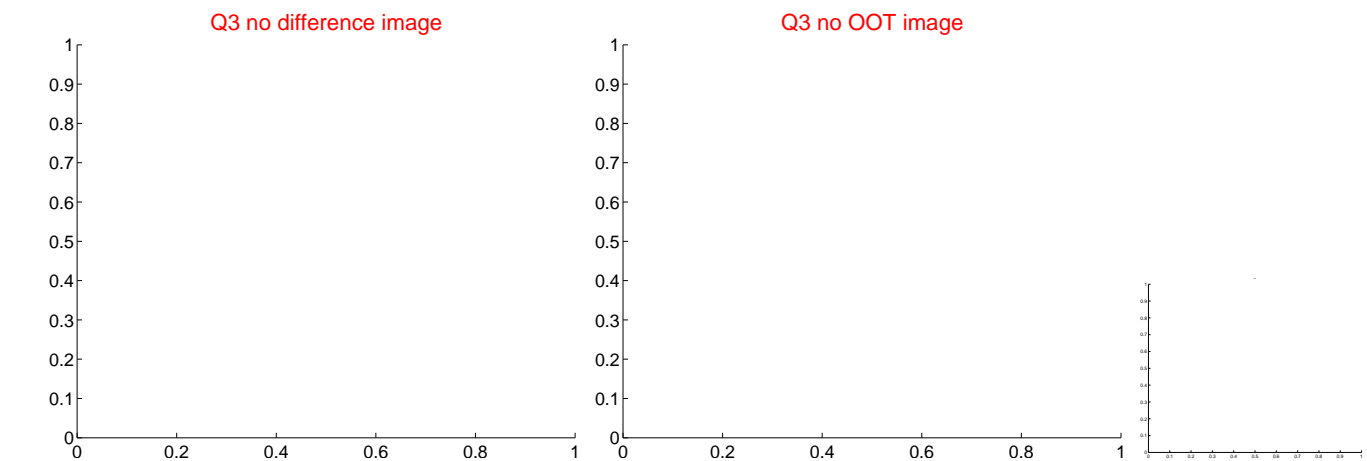
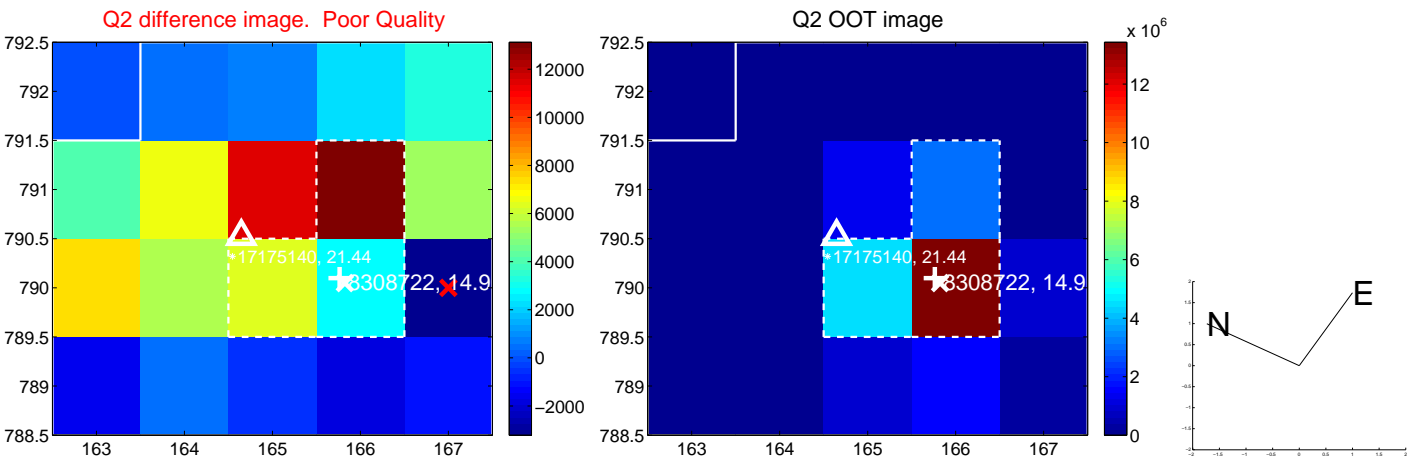
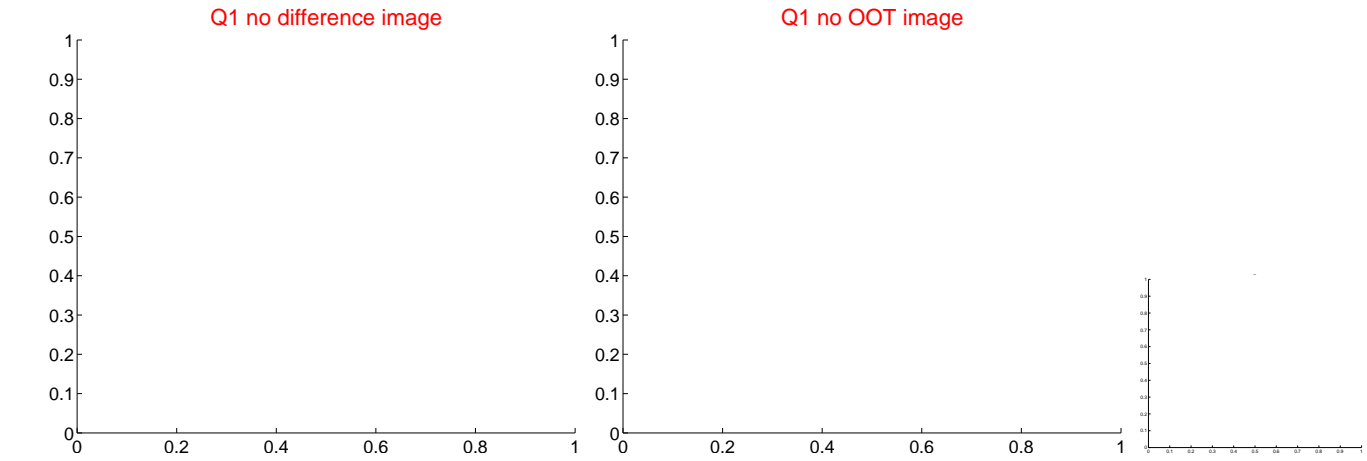


offset from photometric centroids



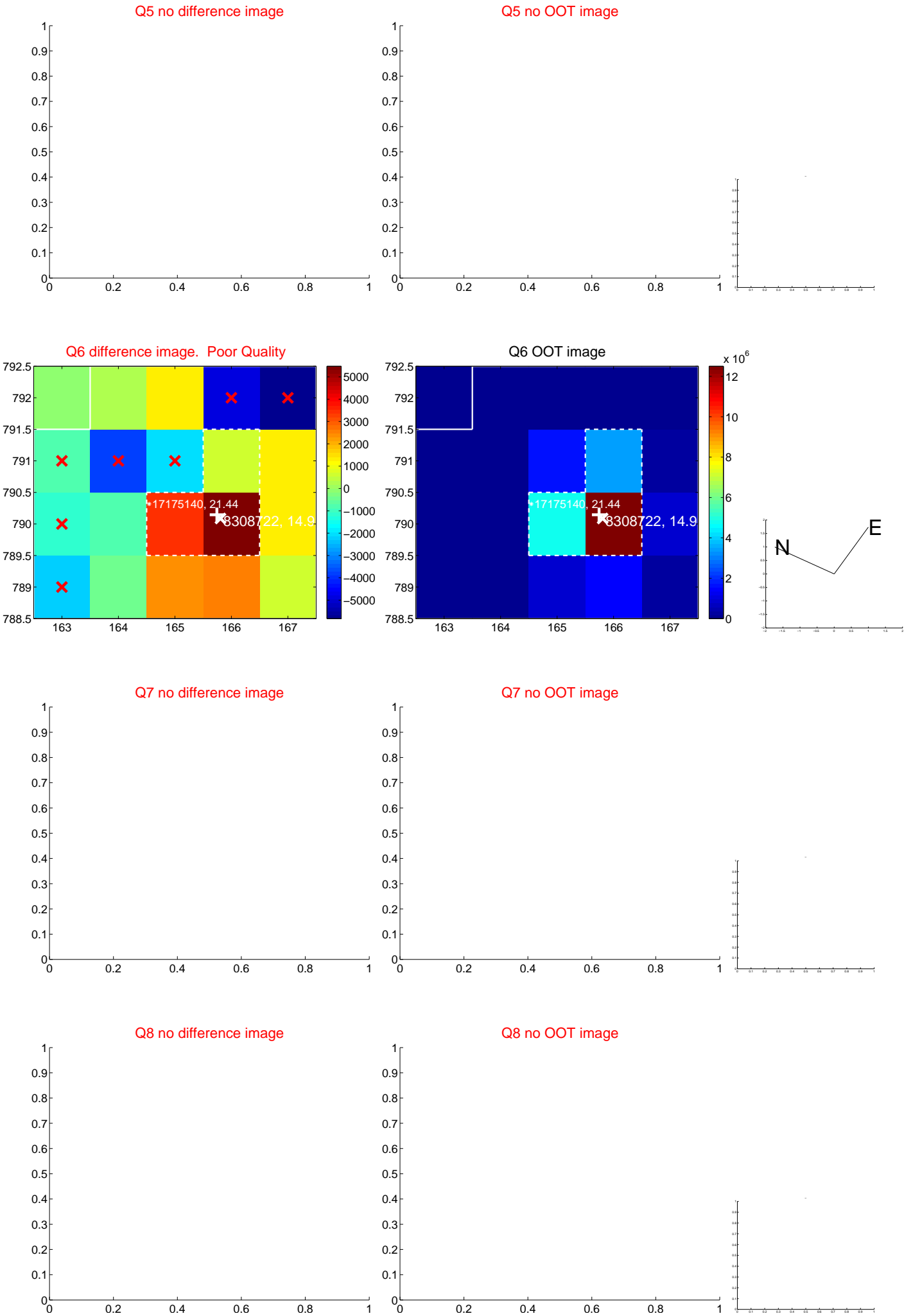
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

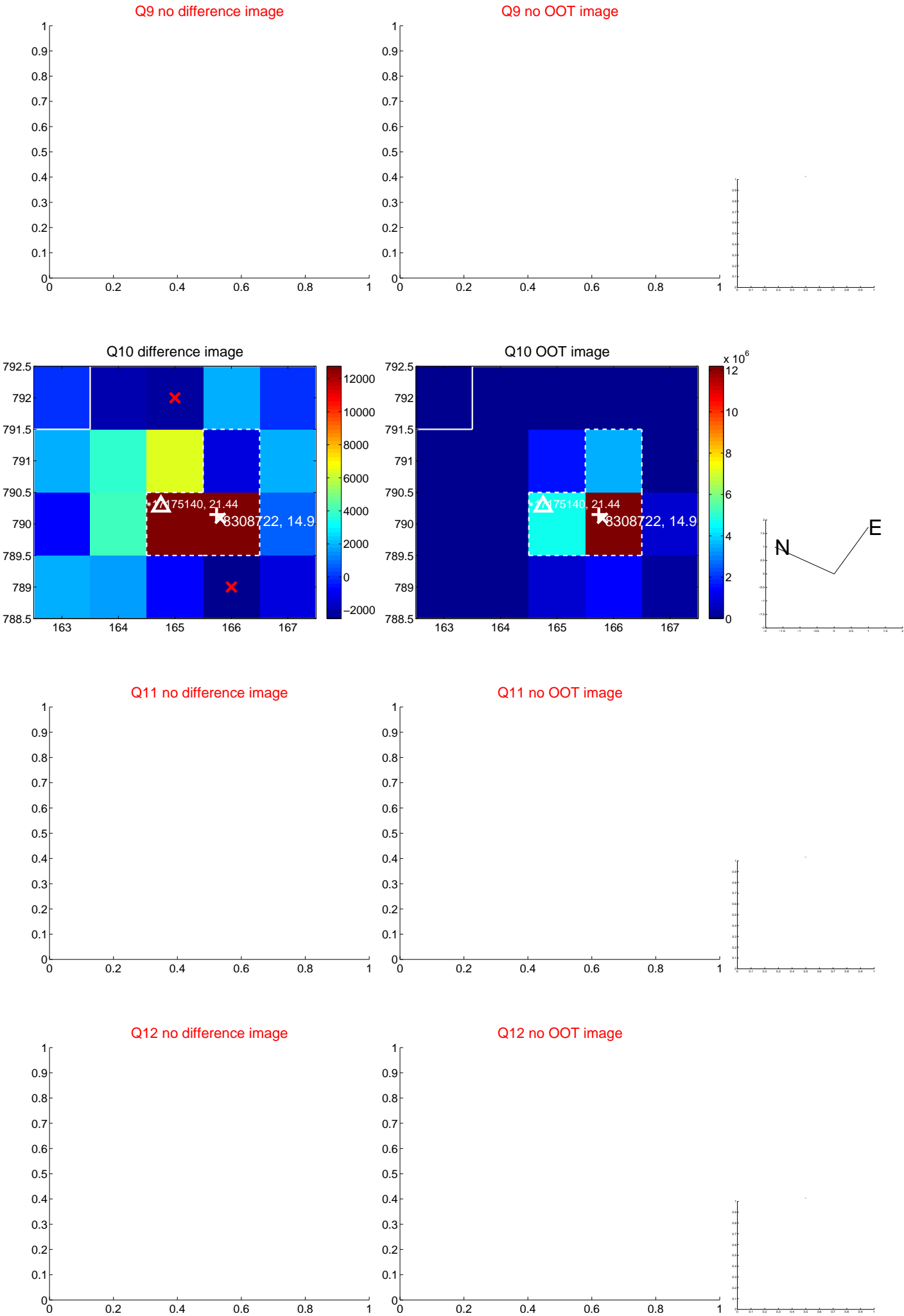




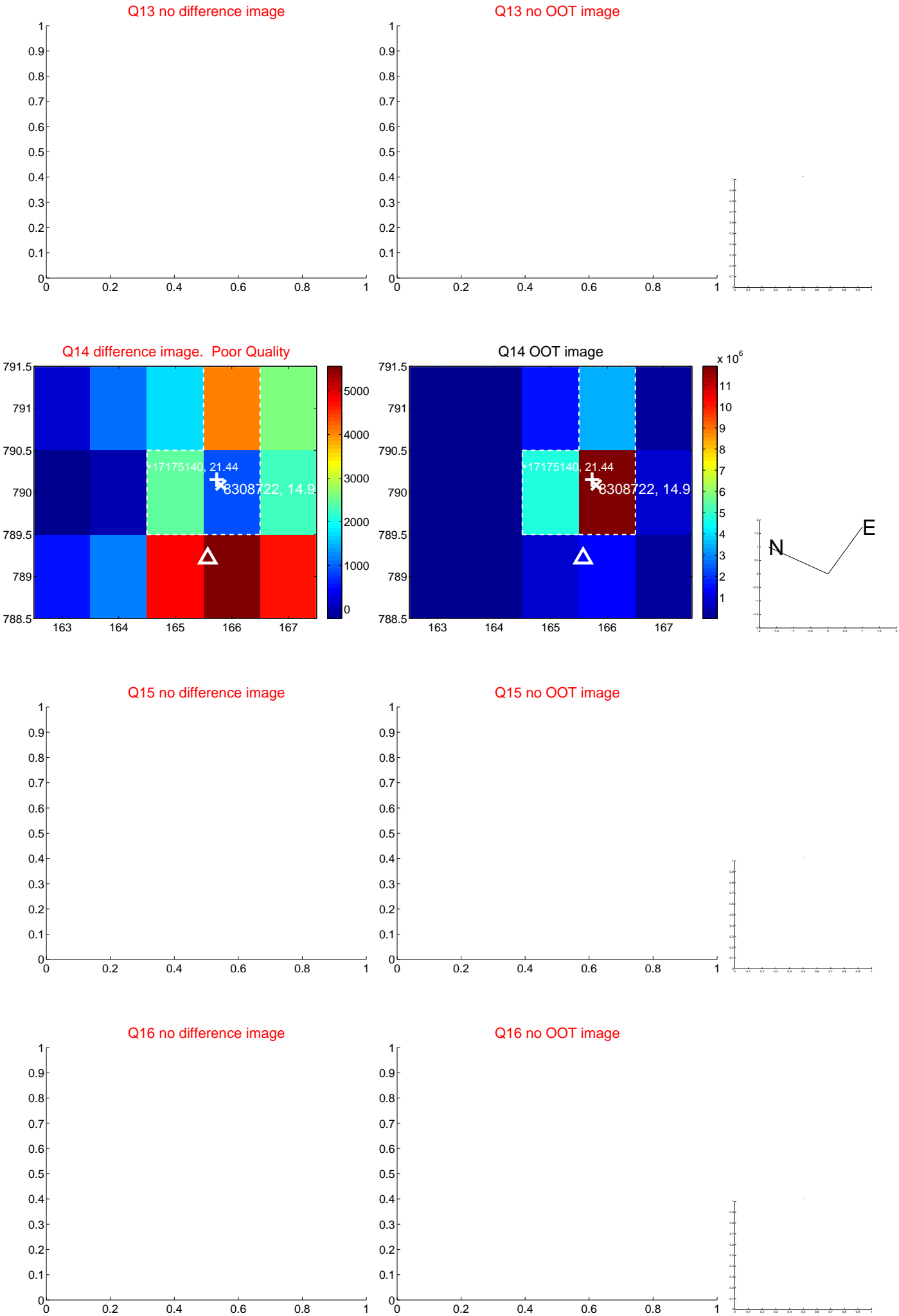
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



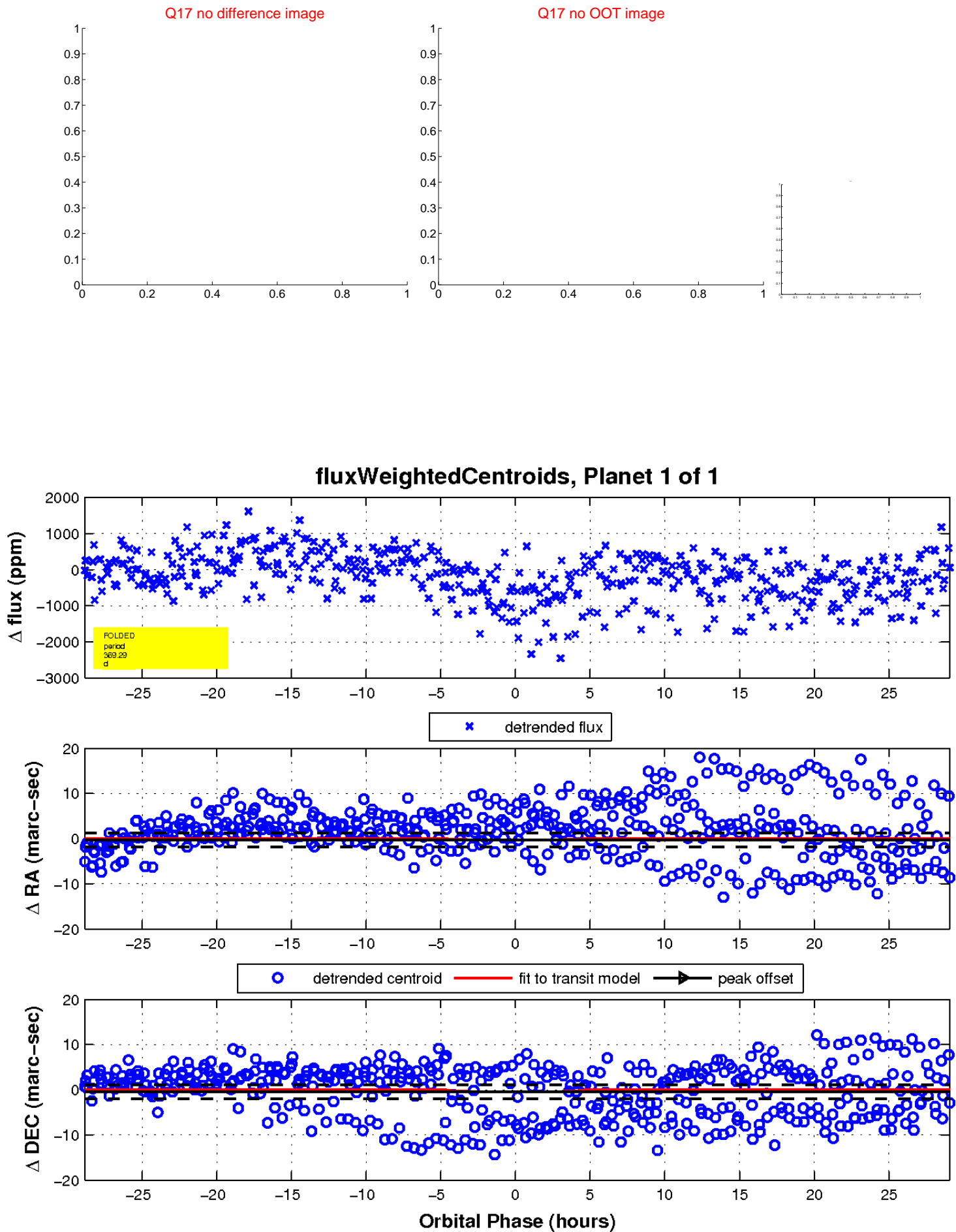
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

