

# KIC 008425478

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008425478-01	OBS	No	391.369830	165.789877	1118.0	13.406	9.0	8.8	1.00	5697	3.32	0.82

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008425478-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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.

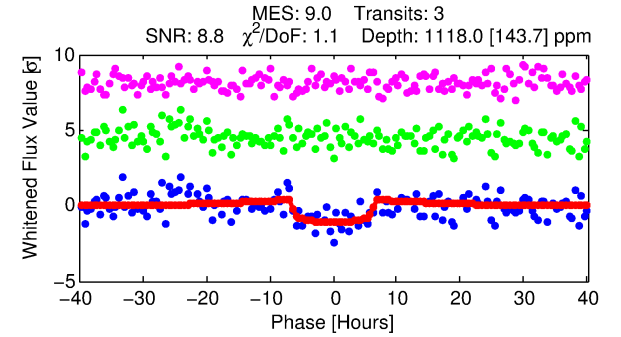
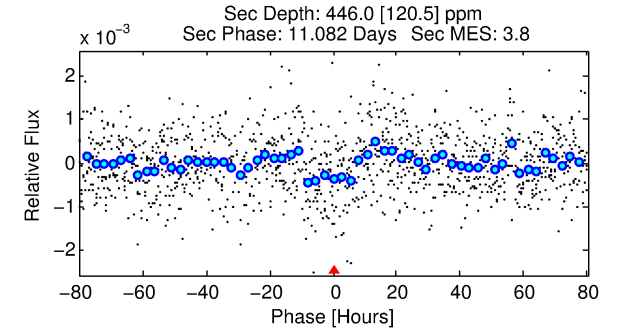
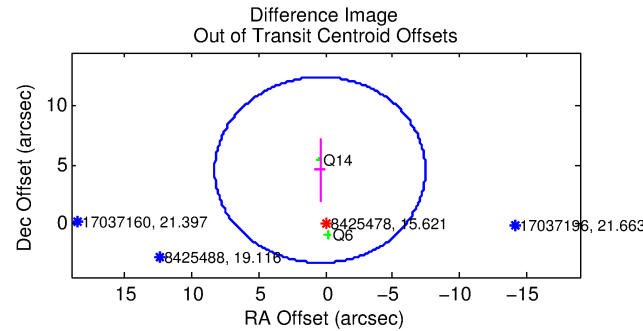
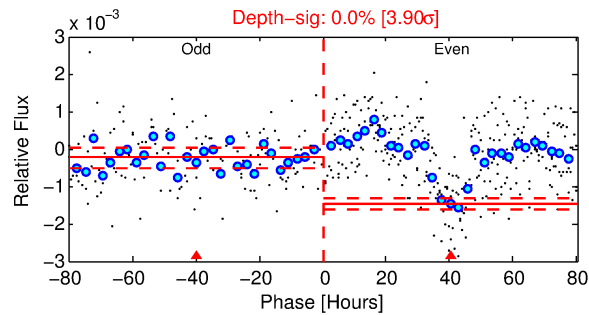
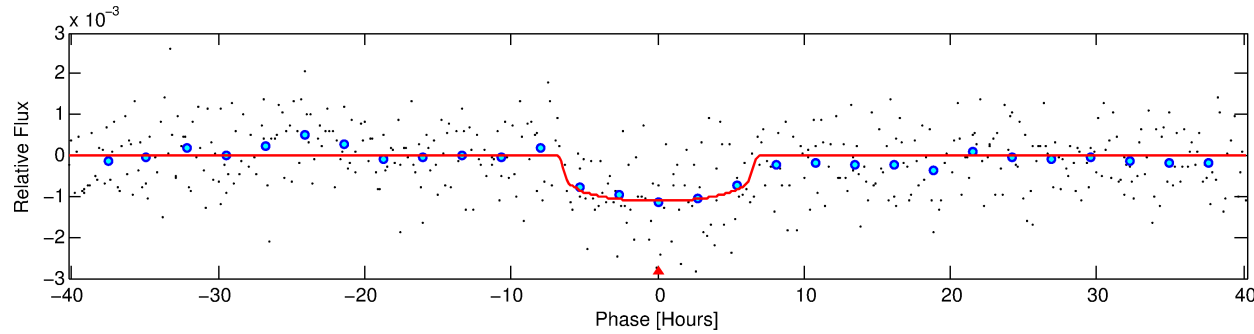
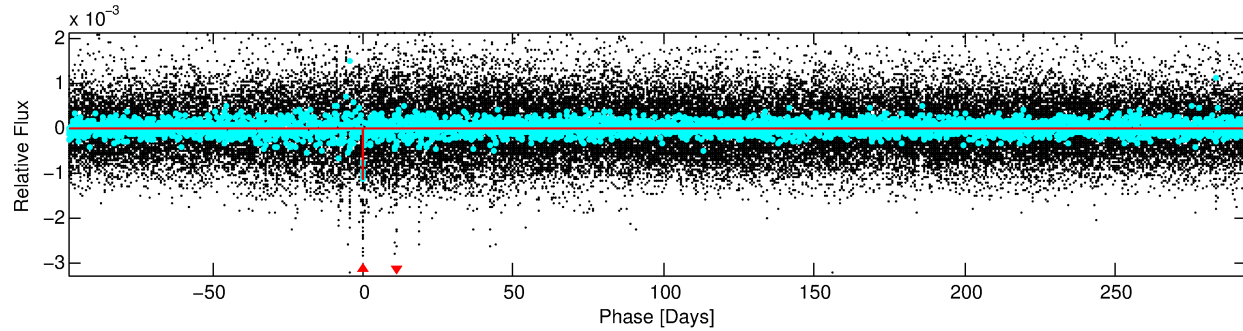
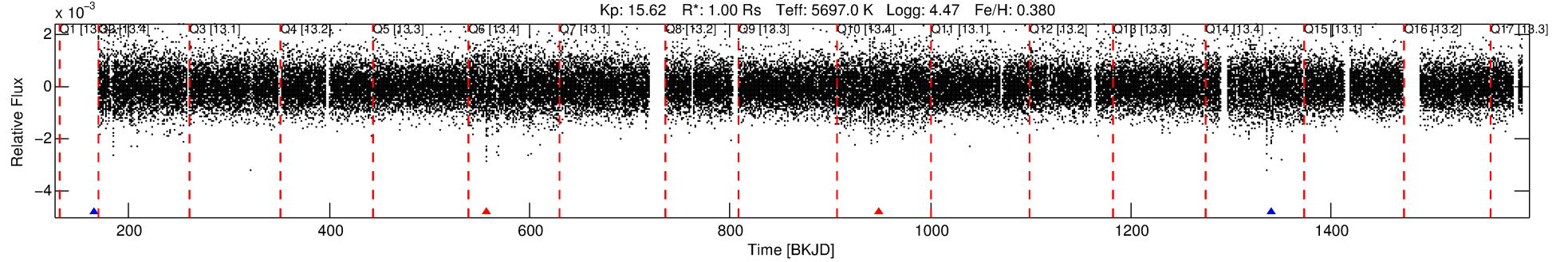
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008425478-01

No Significant Match Found

# DV One-Page Summary

KIC: 8425478 Candidate: 1 of 1 Period: 391.370 d



## DV Fit Results:

Period = 391.36983 [0.01272] d  
Epoch = 165.7899 [0.0282] BKJD  
Rp/R\* = 0.0303 [0.0305]  
a/R\* = 222.70 [902.14]  
b = 0.25 [15.02]  
Seff = 0.82 [0.33]  
Teq = 243 [24] K  
Rp = 3.32 [3.48] Re  
a = 1.0747 [0.2717] AU  
Ag = 25718.19 [53149.44] [0.48 $\sigma$ ]  
Teff = 4754 [2421] K [1.86 $\sigma$ ]

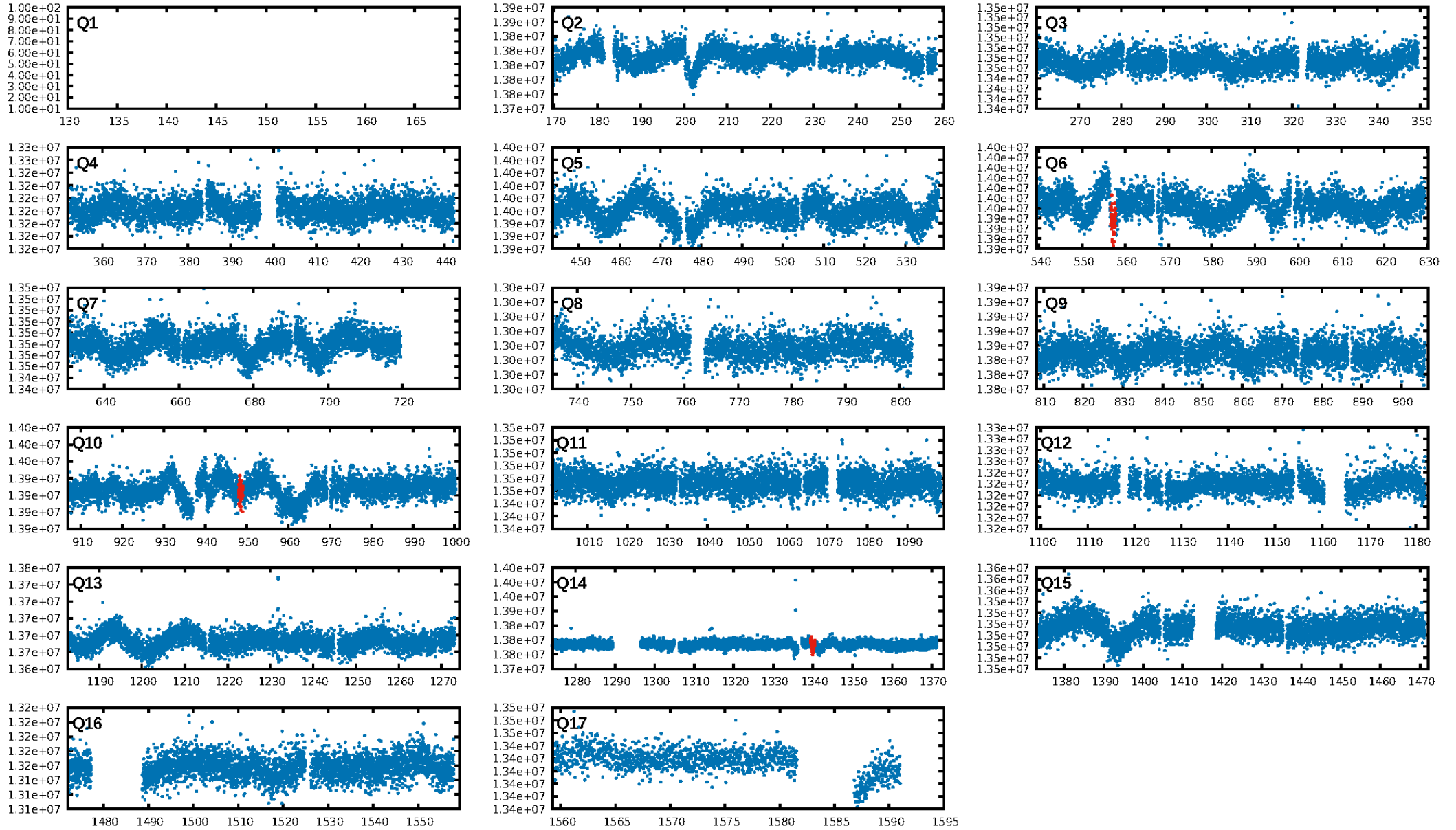
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.6%  
ModelChiSquareGof-sig: 90.2%  
Bootstrap-pfa: 6.46e-11  
RollingBand-fgt: 0.33 [1/3]  
GhostDiagnostic-chr: 0.5094  
Centroid-sig: 53.6%  
Centroid-so: 1.151 arcsec [0.63 $\sigma$ ]  
OotOffset-rm: 4.569 arcsec [1.74 $\sigma$ ]  
KicOffset-rm: 4.631 arcsec [1.51 $\sigma$ ]  
OotOffset-st: 2/0/0/0 [2]  
KicOffset-st: 2/0/0/0 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 1.00 [3/3]

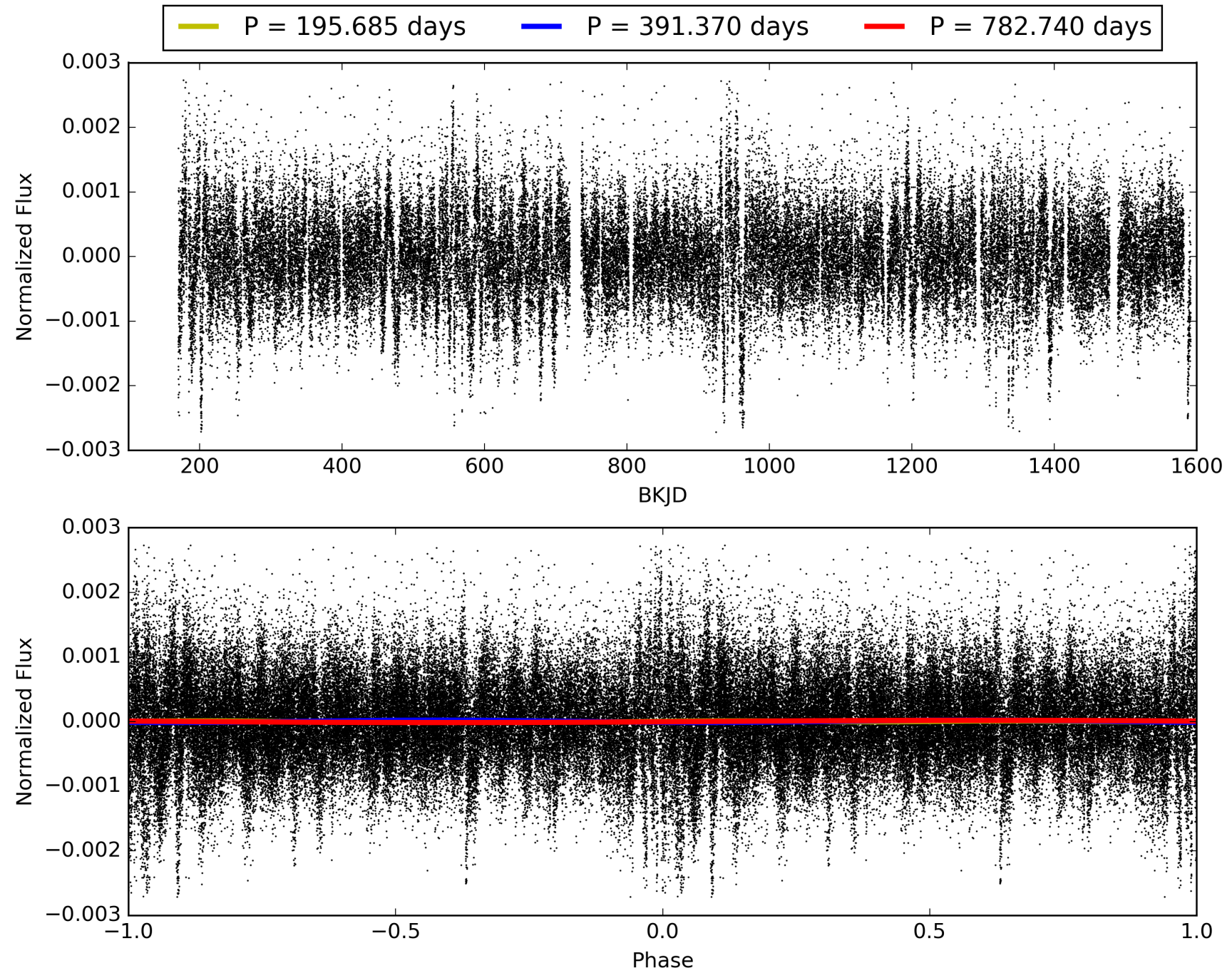
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:42:49 Z

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

# TCE 008425478-01, PDC Light Curves

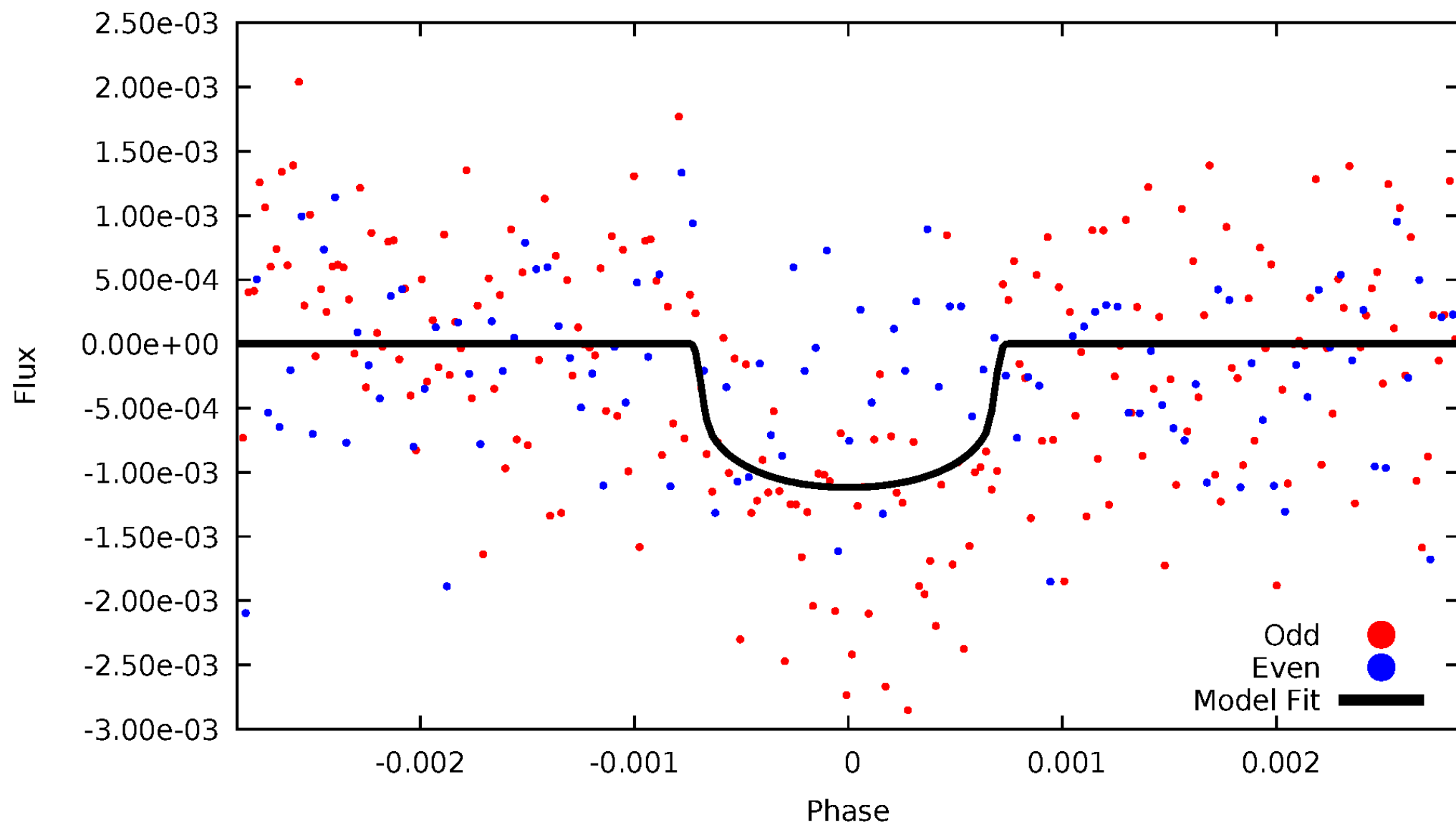


TCE 008425478-01



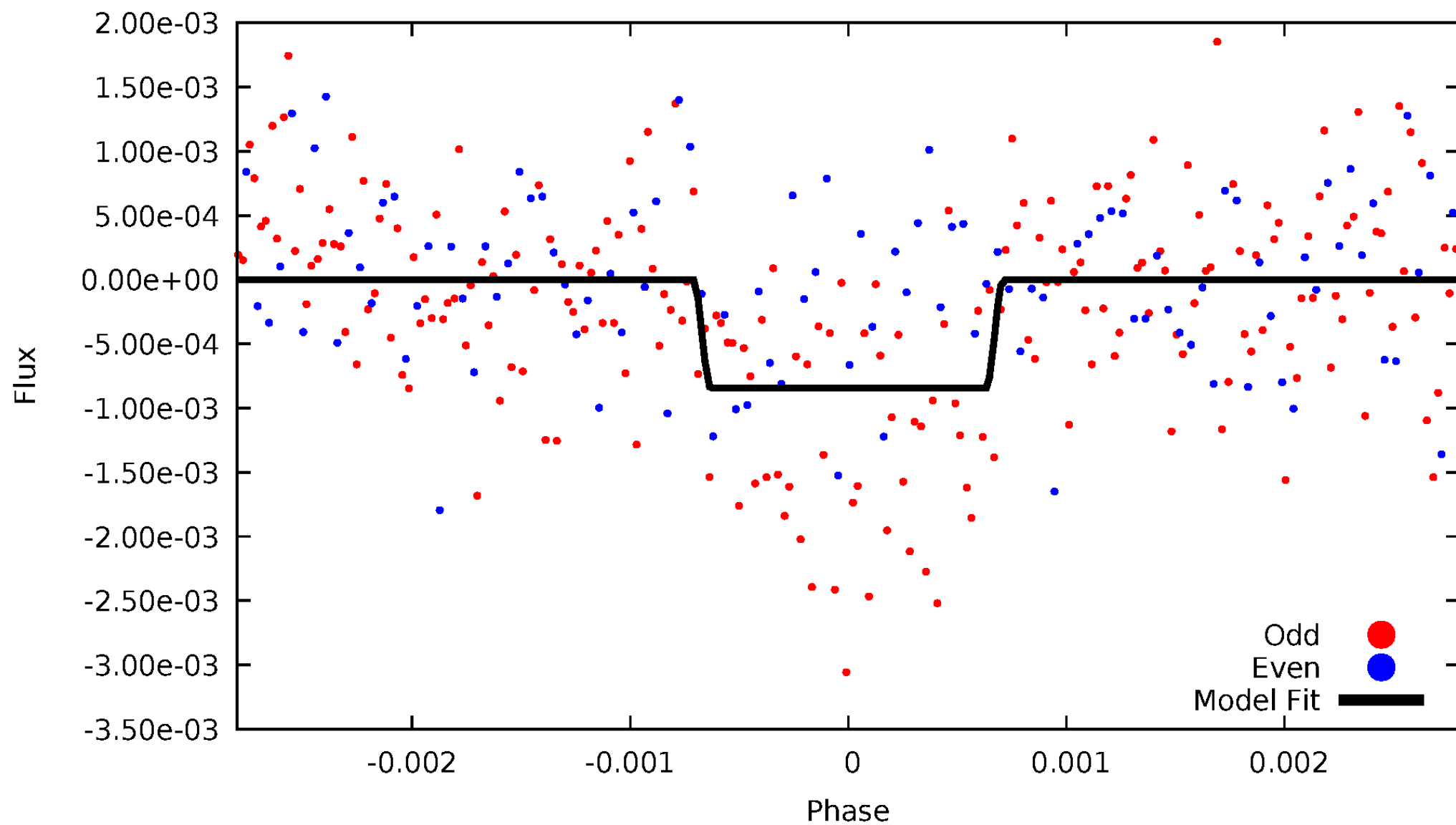
# DV Odd/Even

TCE 008425478-01



# ALT Odd/Even

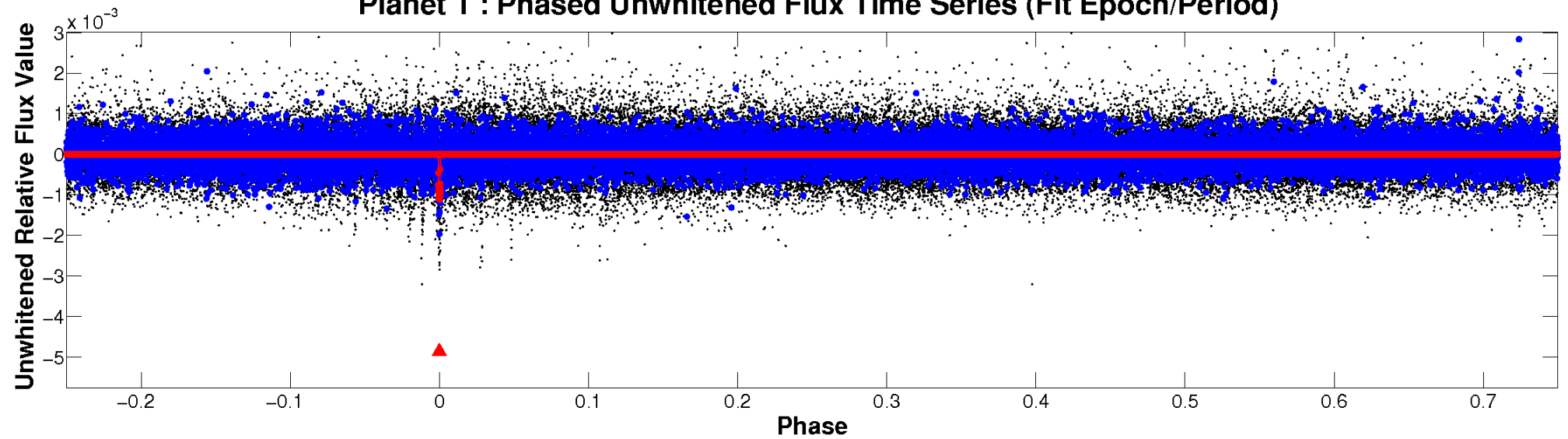
TCE 008425478-01



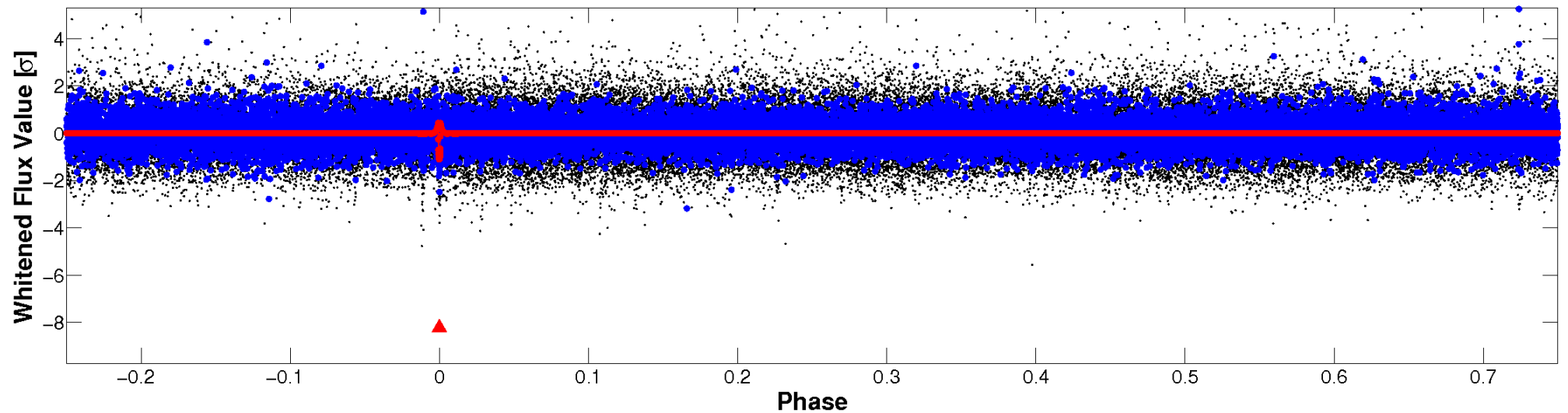


# Non-Whitened Vs. Whitened Light Curve

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

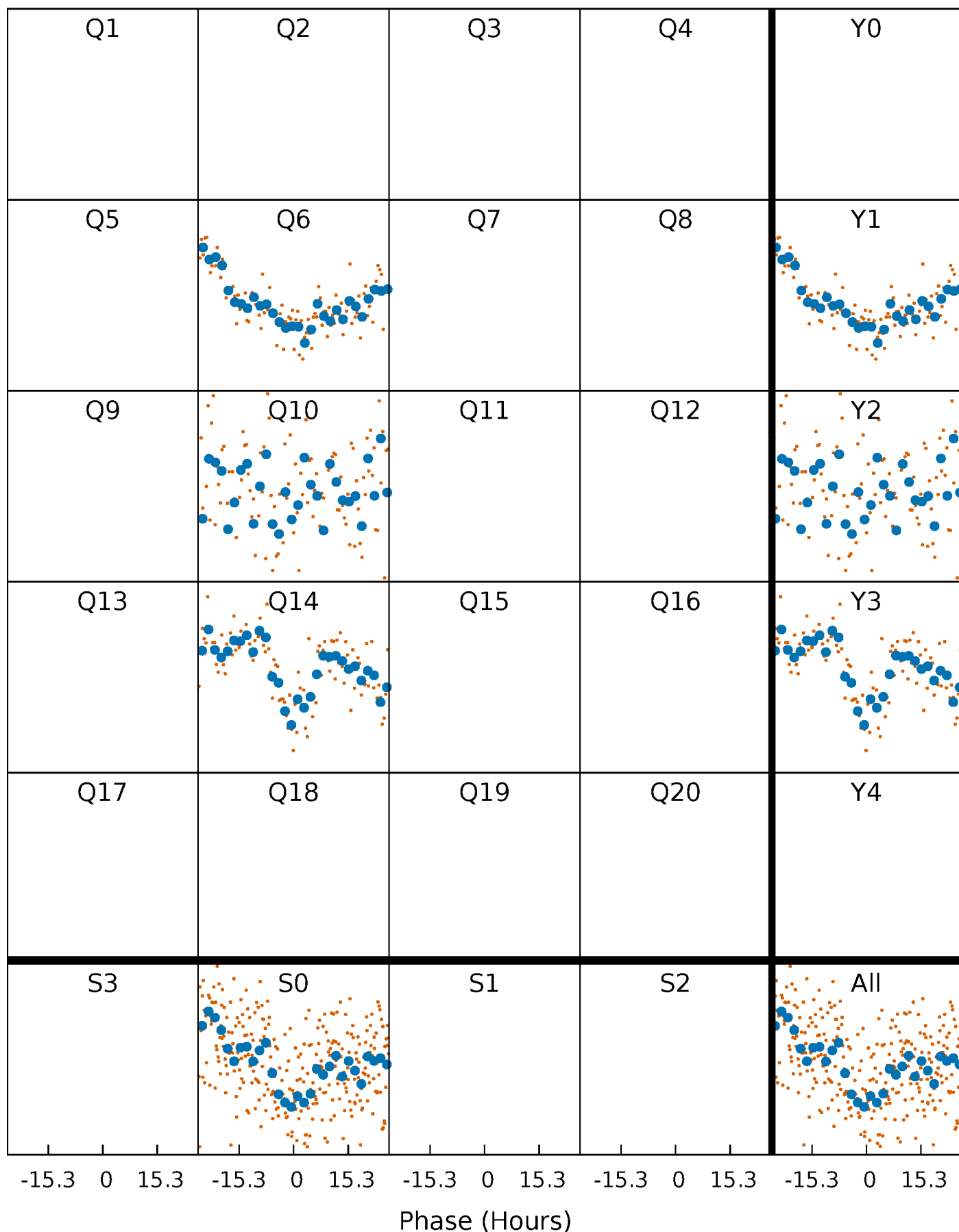


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

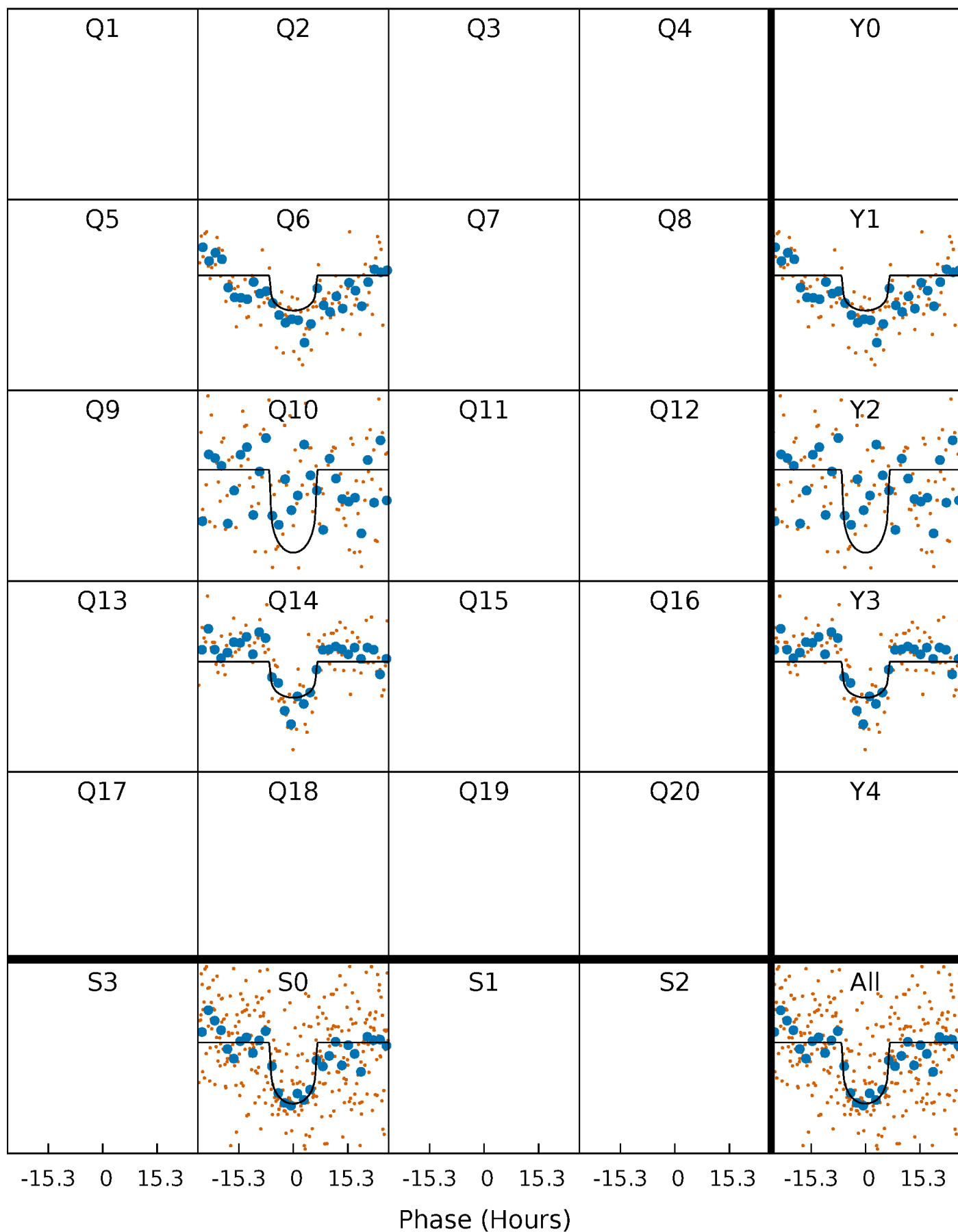
TCE 008425478-01 P=391.369830 Days  $T_0=165.789877$  (BKJD)





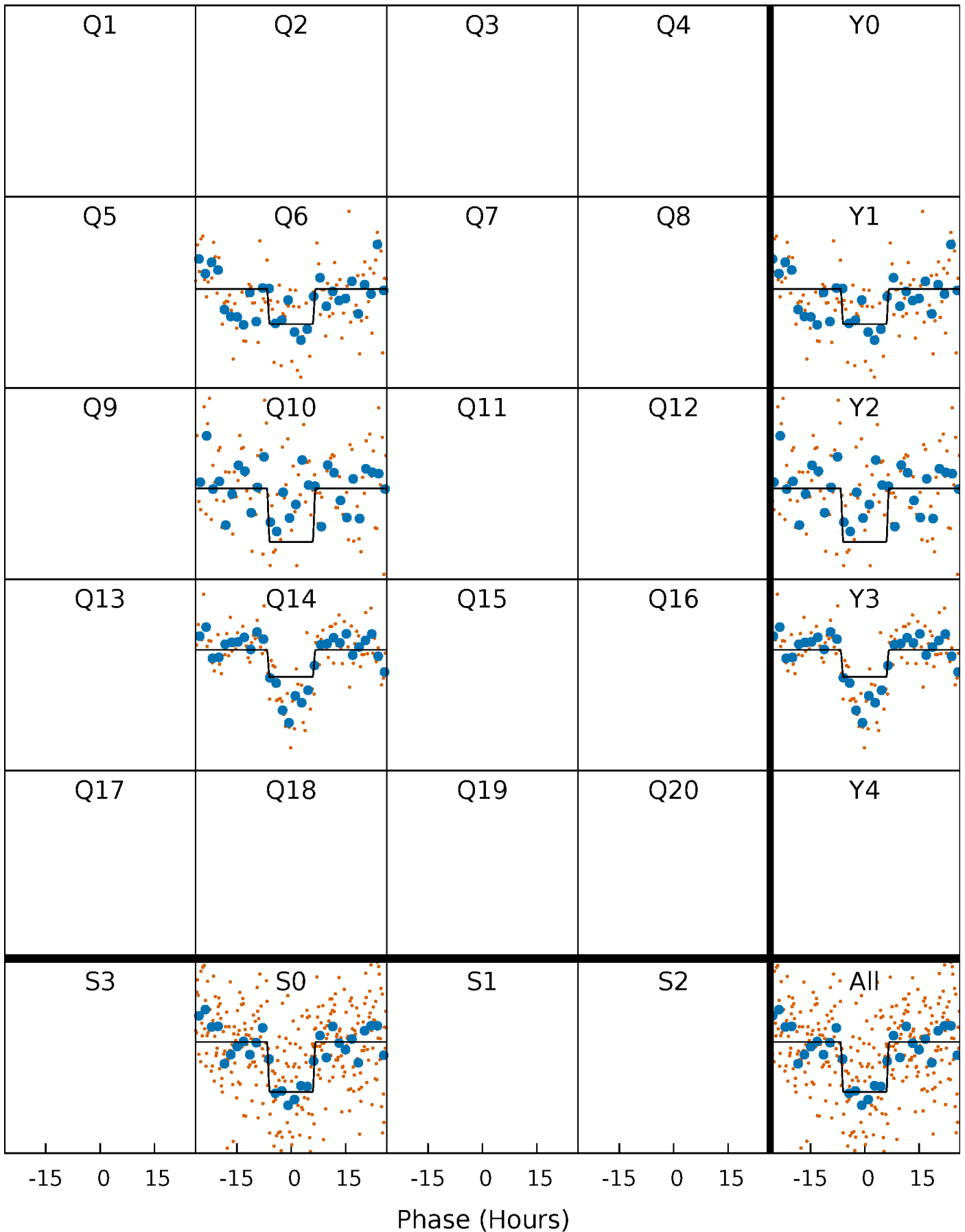
# DV Quarter-Phased Transit Curves

TCE 008425478-01 P=391.369830 Days  $T_0=165.789877$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

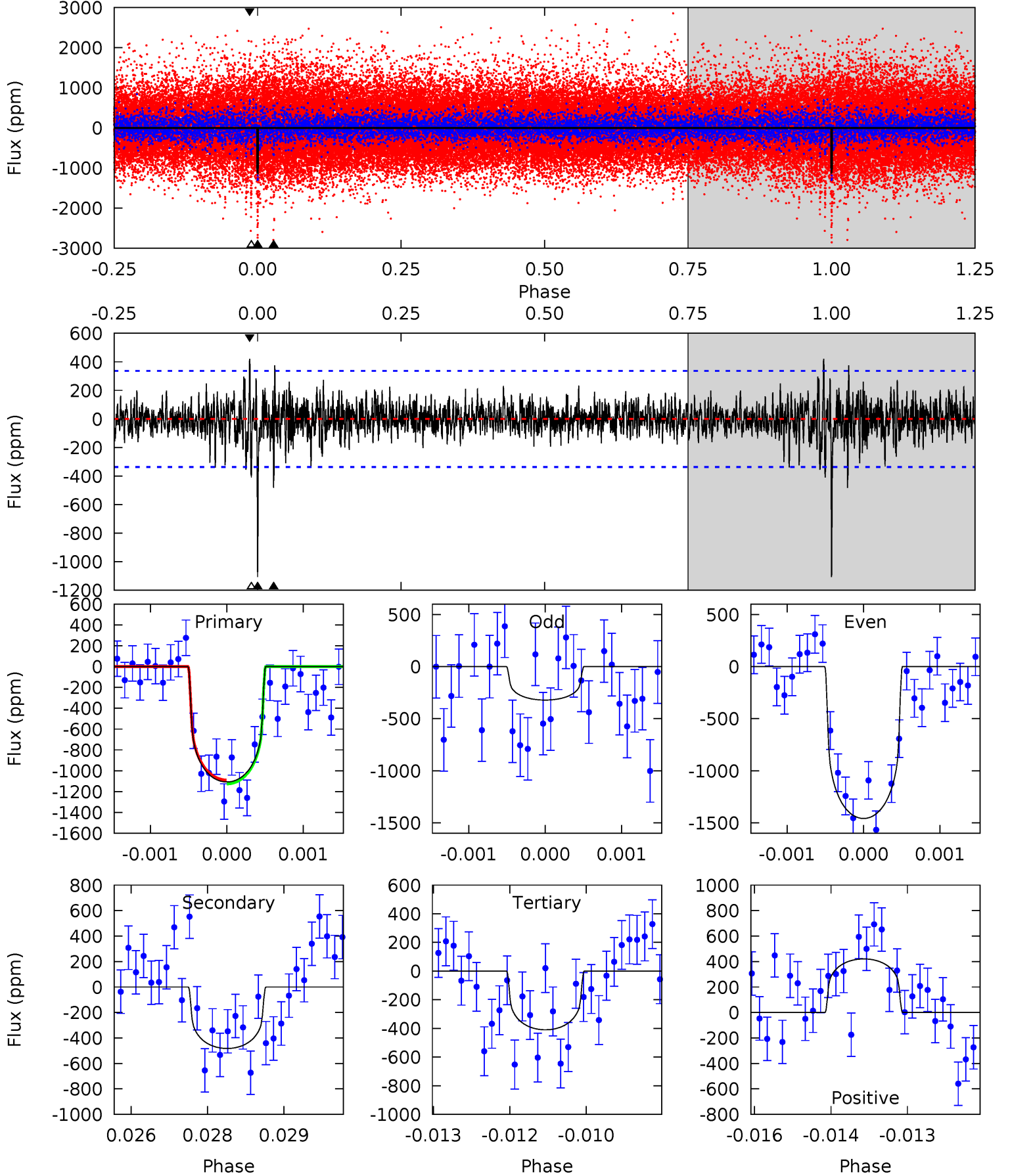
TCE 008425478-01 P=391.370786 Days  $T_0=165.787366$  (BKJD)



# DV Model-Shift Uniqueness Test

008425478-01, P = 391.369830 Days, E = 165.789877 Days

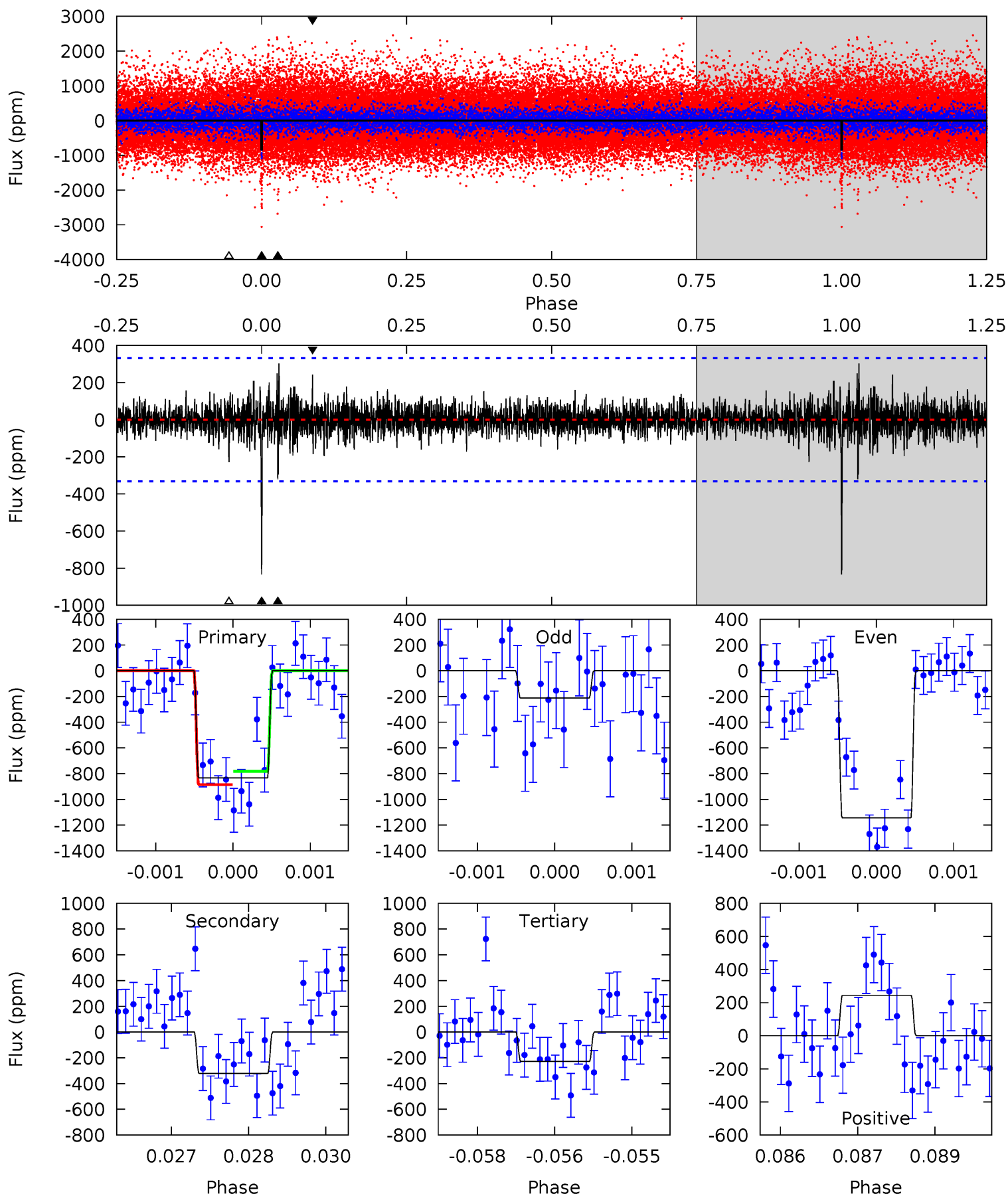
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	7.73	6.56	6.74	5.38	3.18	1.33	11.2	11.0	1.17	0.99	8.62	0.82	0.28	0.30



# Alt Model-Shift Uniqueness Test

008425478-01, P = 391.370786 Days, E = 165.787366 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
13.5	5.22	3.71	3.96	5.39	3.19	0.85	9.84	9.59	1.51	1.26	7.18	1.07	0.27	0.84



### Stellar Parameters For KIC 008425478

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5697^{+171}_{-188}$	$4.469^{+0.052}_{-0.208}$	$0.380^{+0.050}_{-0.300}$	$1.003^{+0.295}_{-0.098}$	$1.081^{+0.097}_{-0.134}$	$1.511^{+0.319}_{-0.813}$
	+3%/-3%	+1%/-5%	+13%/-79%	+29%/-10%	+9%/-12%	+21%/-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 008425478-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-482 \pm 62$	$4.24^{+3.10}_{-2.65}$	$346^{+25}_{-18}$	$4522^{+2662}_{-785}$	$16940^{+106956}_{-11481}$
Alt.	$-321 \pm 62$	$3.91^{+3.23}_{-2.54}$	$346^{+26}_{-18}$	$4336^{+2563}_{-819}$	$13102^{+94689}_{-9419}$

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

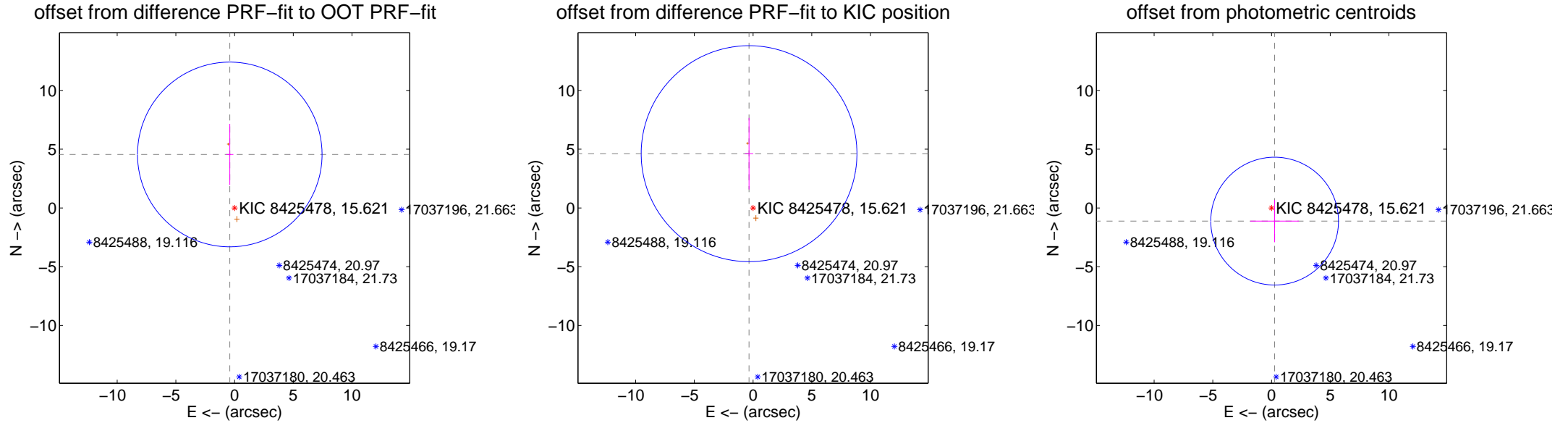
## DV Centroid Data

Supplemental centroid analysis for 008425478-01. Kepler magnitude: 15.62. Transit SNR 8.84

There are 0 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	$4.569 \pm 2.619$	1.74	$0.409 \pm 0.308$	$4.551 \pm 2.603$
PRF-fit source offset from KIC position	$4.631 \pm 3.062$	1.51	$0.340 \pm 0.347$	$4.618 \pm 3.045$
photometric centroid source offset	$1.15 \pm 1.81$	0.63	$-0.26 \pm 2.07$	$-1.12 \pm 1.80$



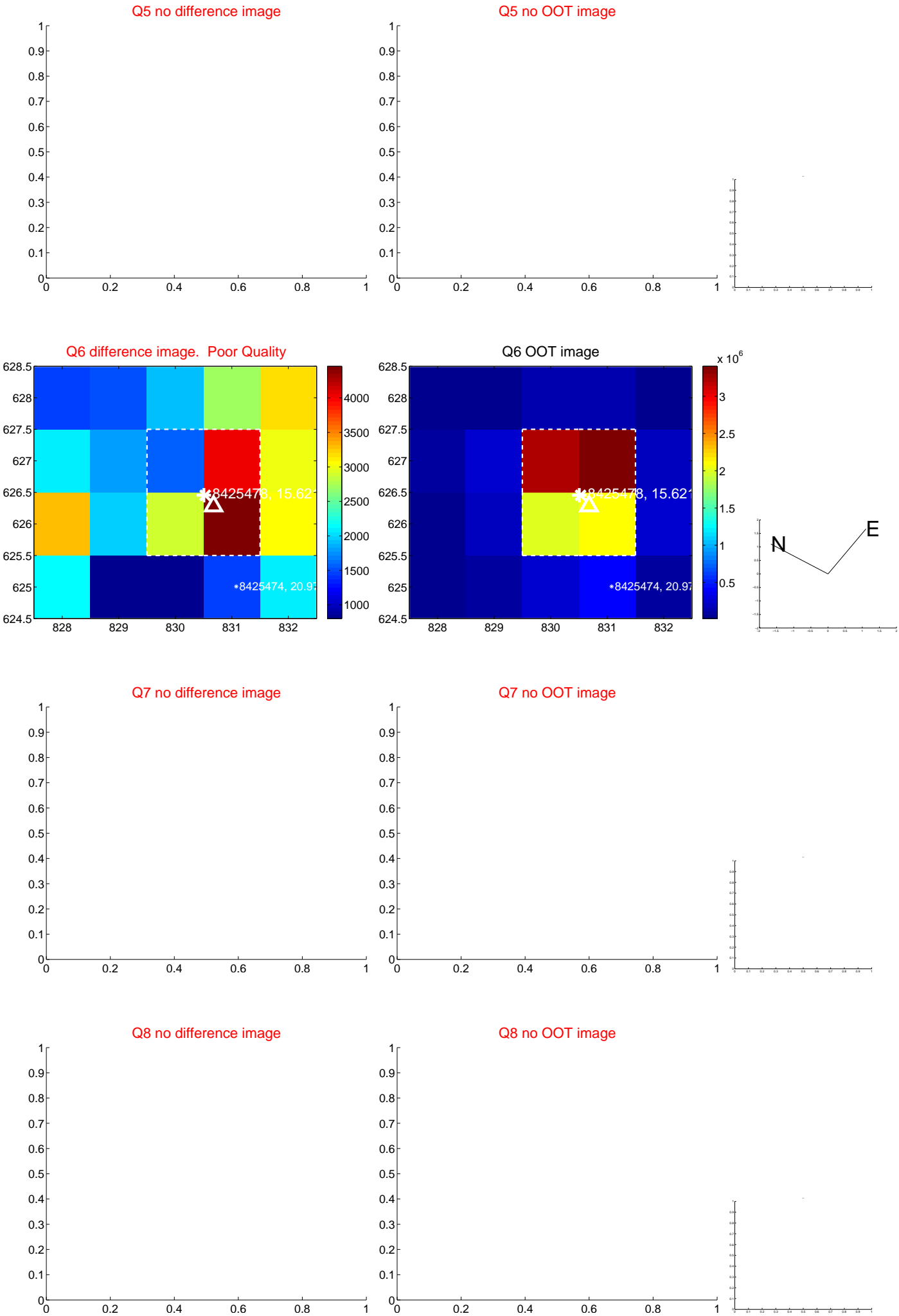
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

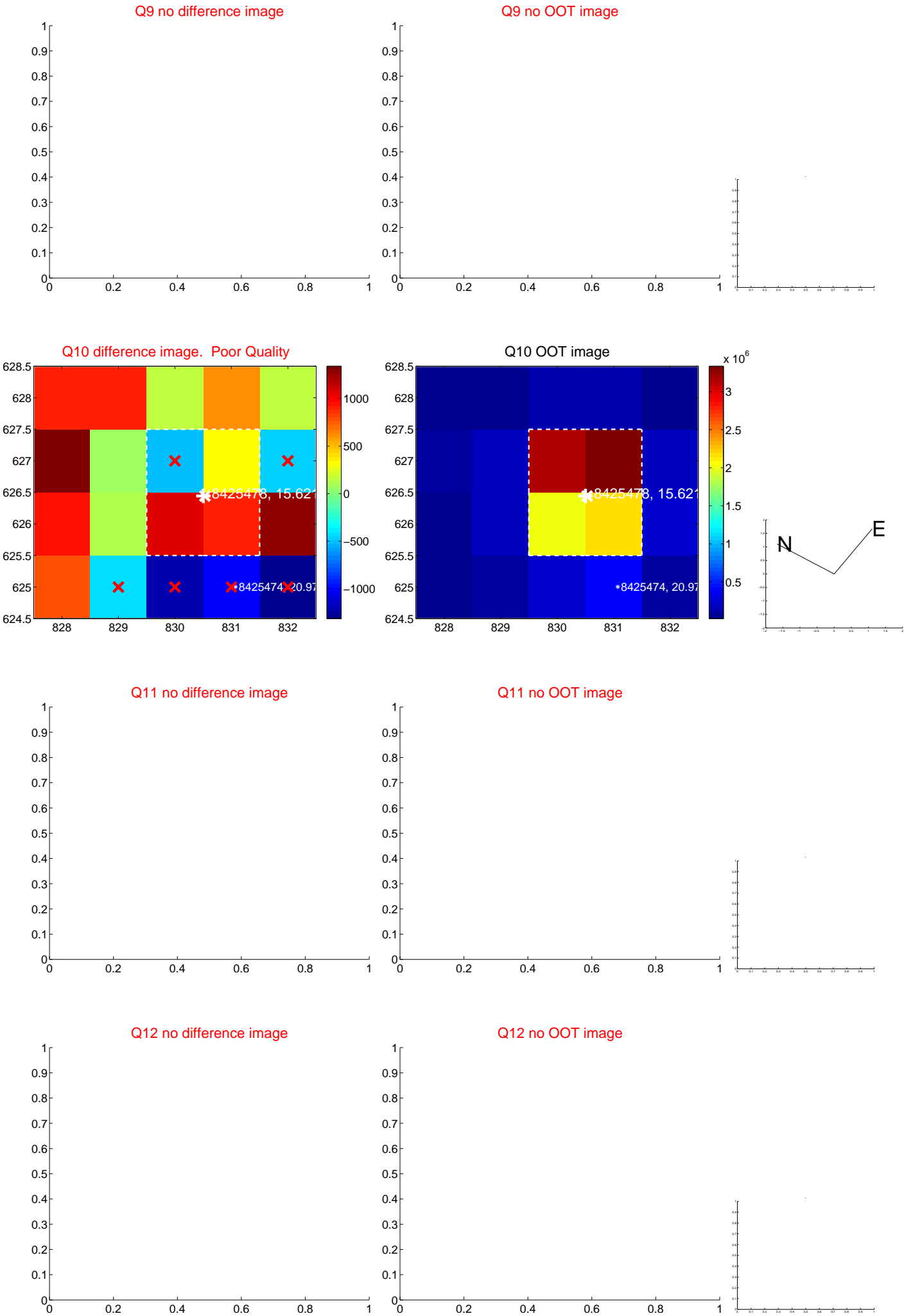




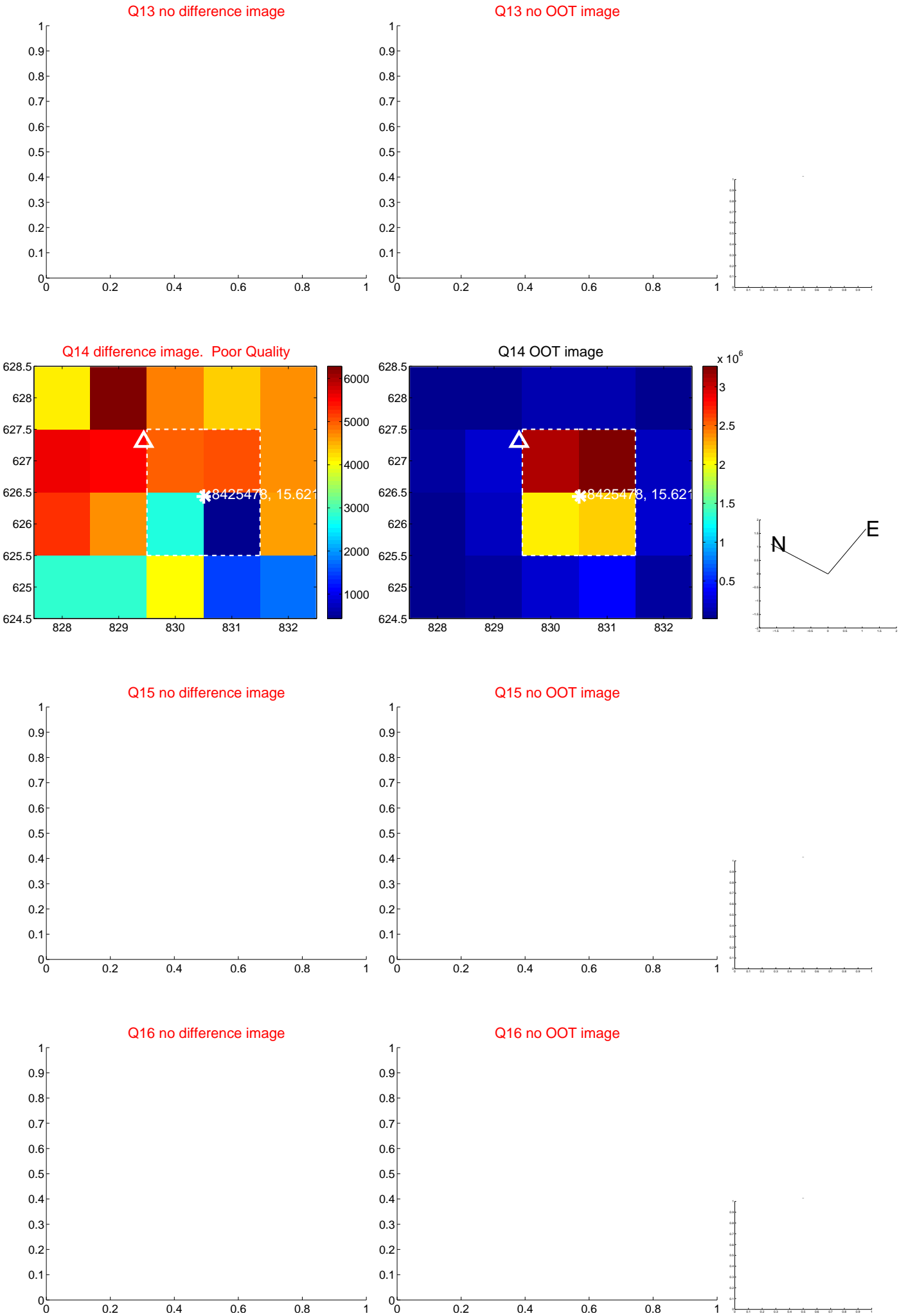
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



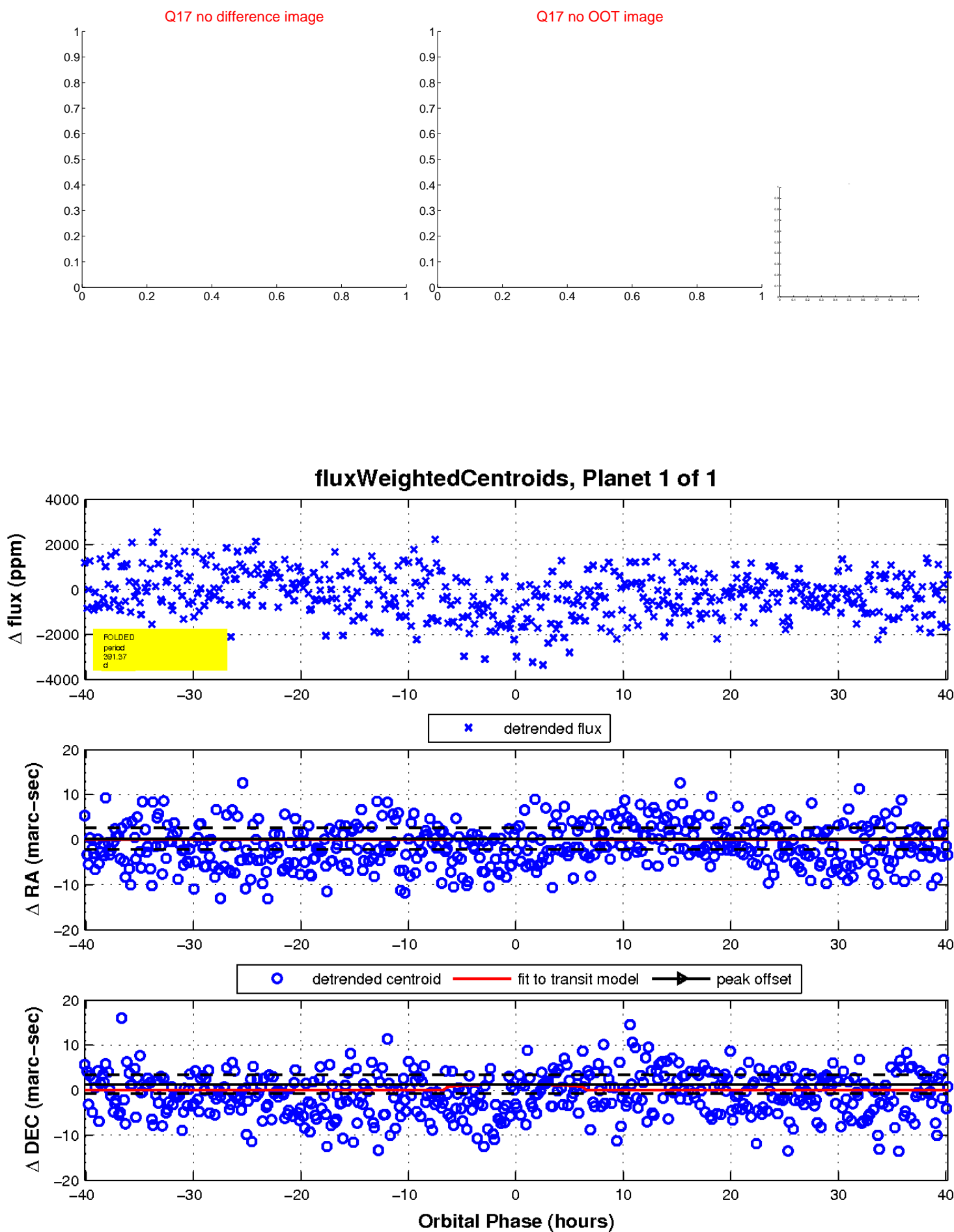
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

