

# KIC 011091597

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011091597-01	OBS	No	562.004526	177.695153	2765.8	4.889	16.1	7.7	0.82	5285	4.39	0.32

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011091597-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

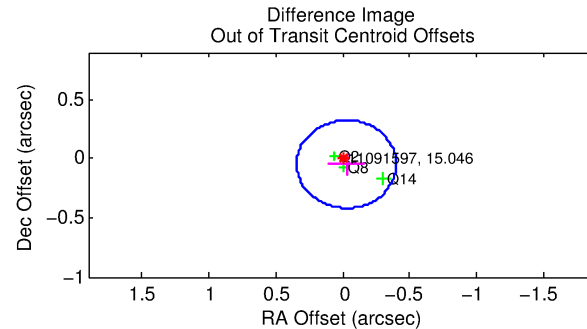
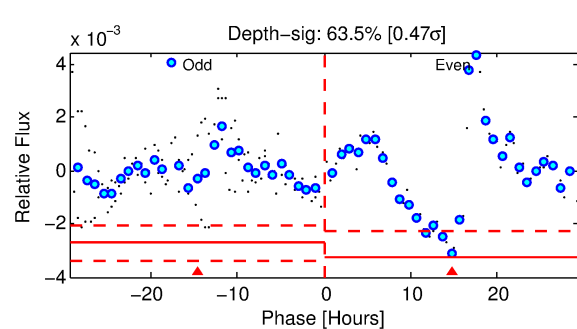
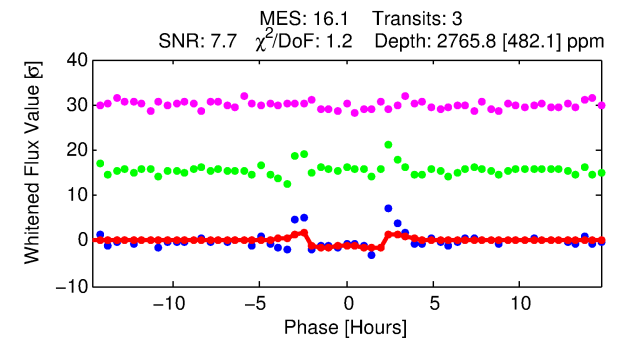
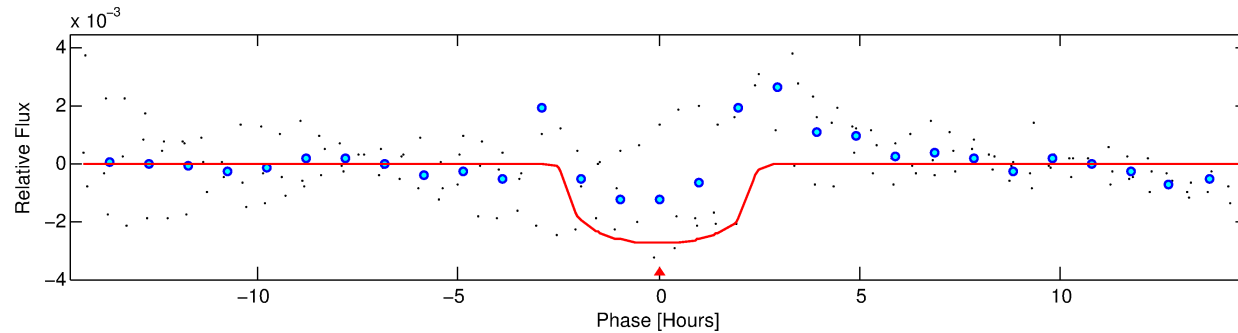
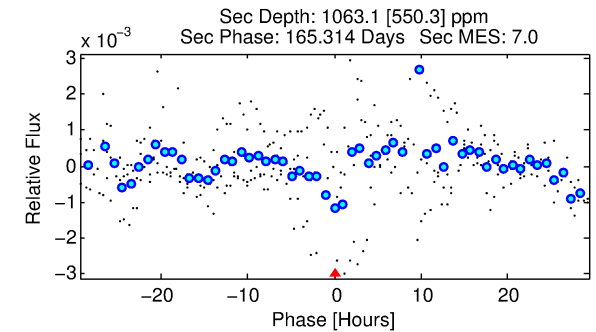
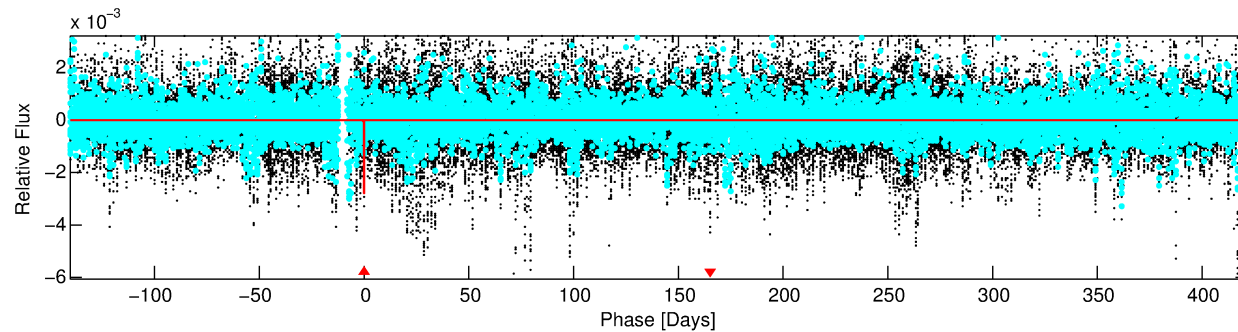
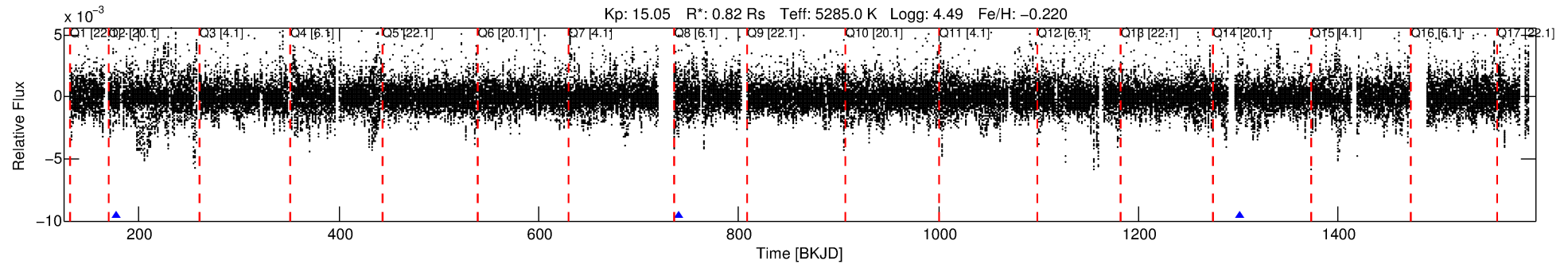
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011091597-01

No Significant Match Found

# DV One-Page Summary

KIC: 11091597 Candidate: 1 of 1 Period: 562.005 d



## DV Fit Results:

Period = 562.00453 [0.00500] d  
Epoch = 177.6952 [0.0057] BKJD  
Rp/R\* = 0.0488 [0.0239]  
a/R\* = 817.39 [1422.63]  
b = 0.48 [2.79]  
Seff = 0.32 [0.10]  
Teq = 192 [15] K  
Rp = 4.39 [2.31] Re  
a = 1.2156 [0.2268] AU  
Ag = 44897.16 [51491.12] [0.87 $\sigma$ ]  
Teffp = 4320 [1203] K [3.43 $\sigma$ ]

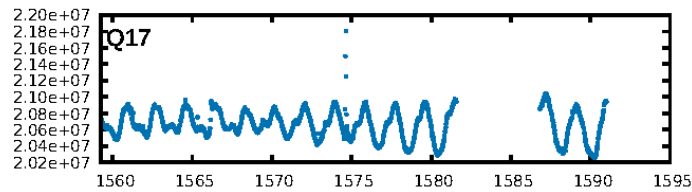
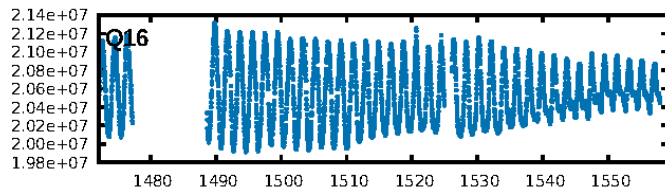
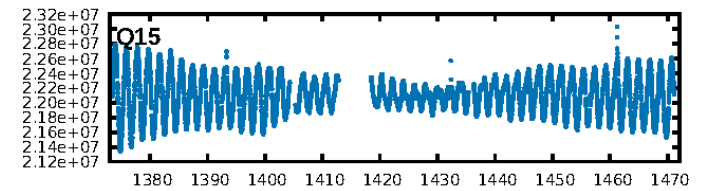
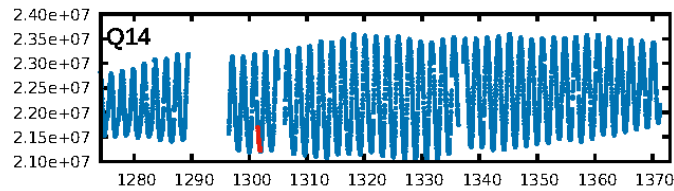
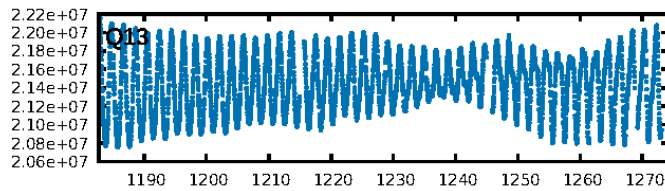
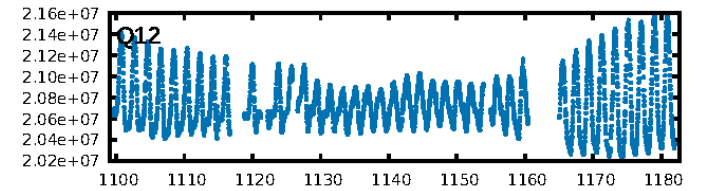
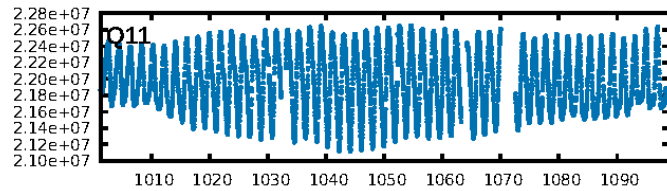
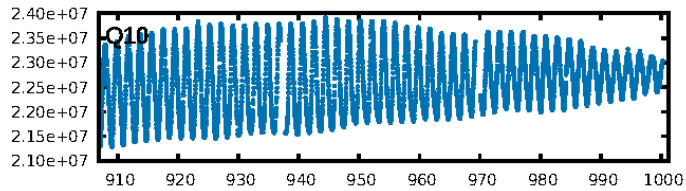
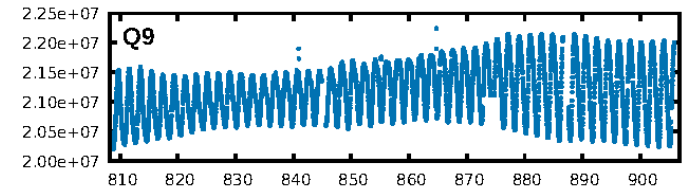
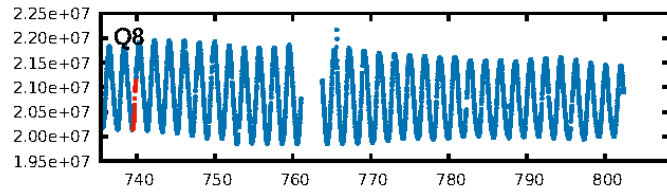
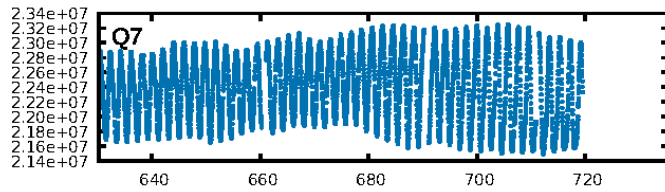
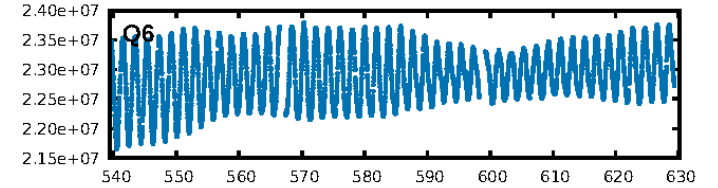
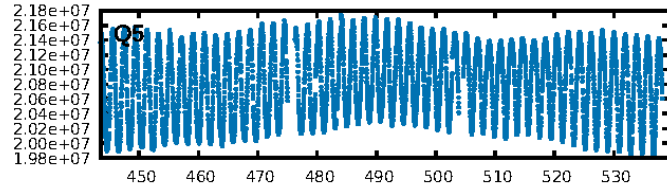
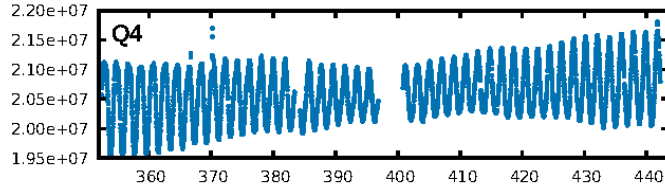
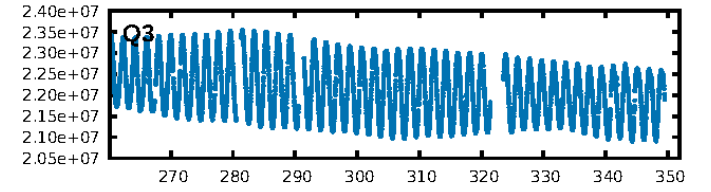
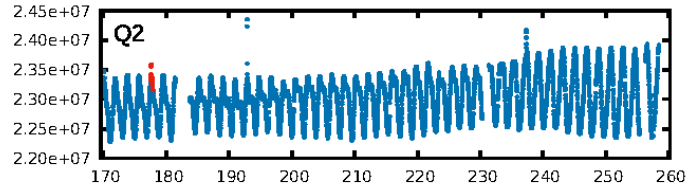
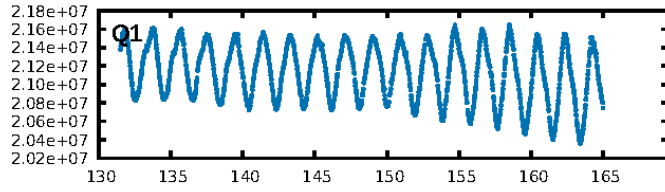
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.3%  
ModelChiSquareGof-sig: 28.5%  
Bootstrap-pfa: 6.37e-13  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -4.508  
Centroid-sig: 24.0%  
Centroid-so: 0.352 arcsec [0.68 $\sigma$ ]  
OotOffset-rm: 0.054 arcsec [0.44 $\sigma$ ]  
KicOffset-rm: 0.135 arcsec [1.09 $\sigma$ ]  
OotOffset-st: 2/0/1/0 [3]  
KicOffset-st: 2/0/1/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

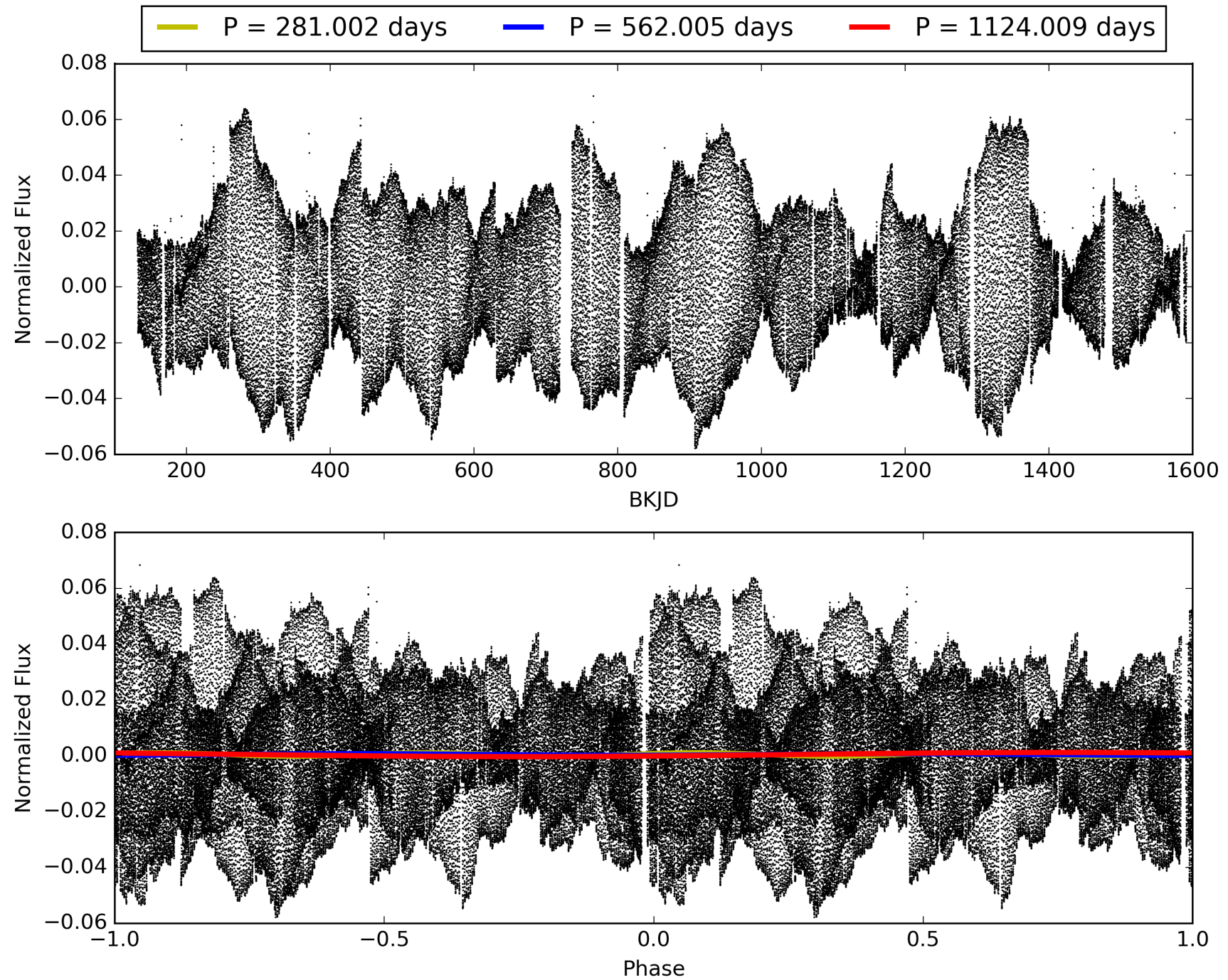
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:35:24 Z

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

# TCE 011091597-01, PDC Light Curves

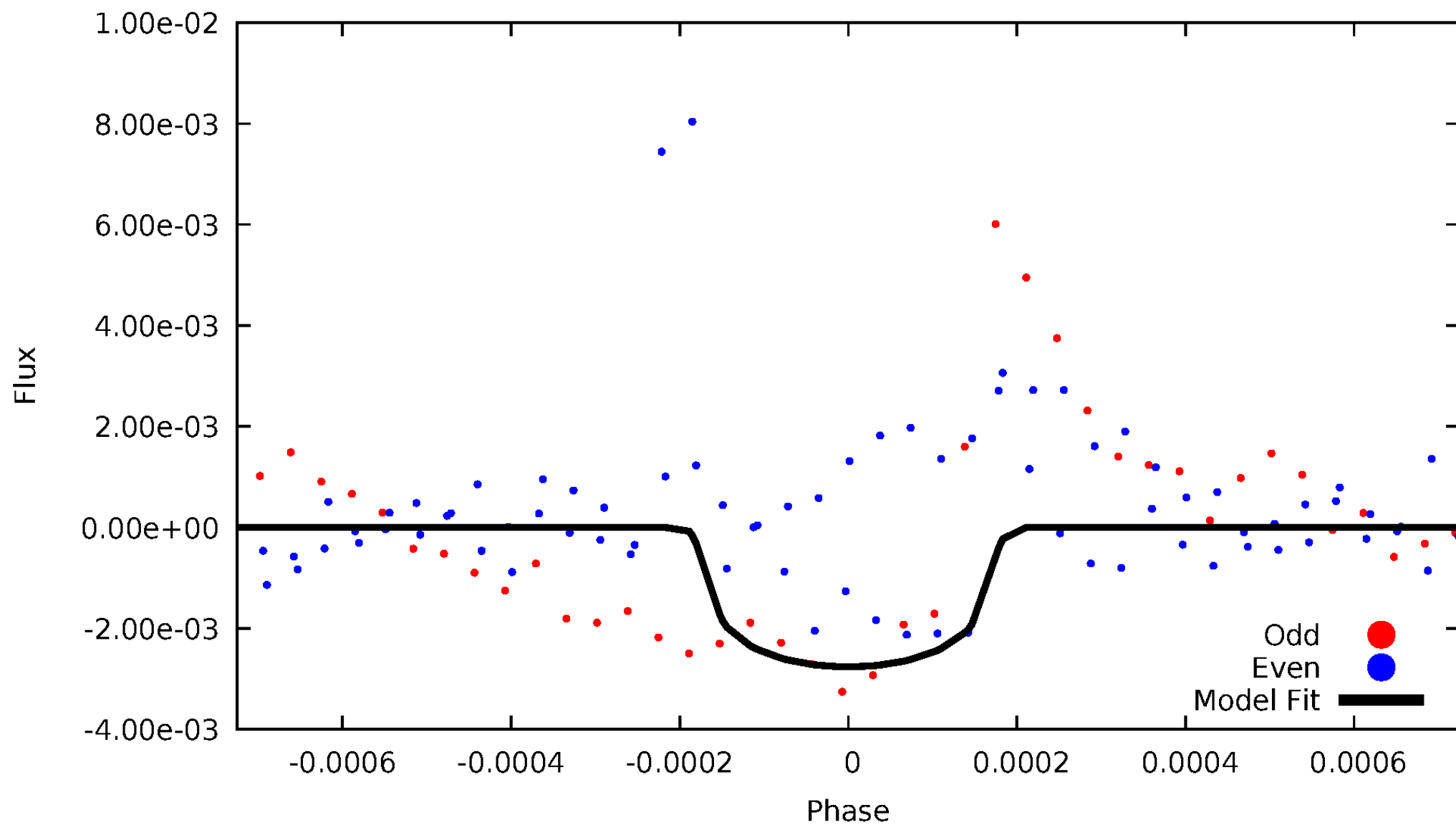


TCE 011091597-01



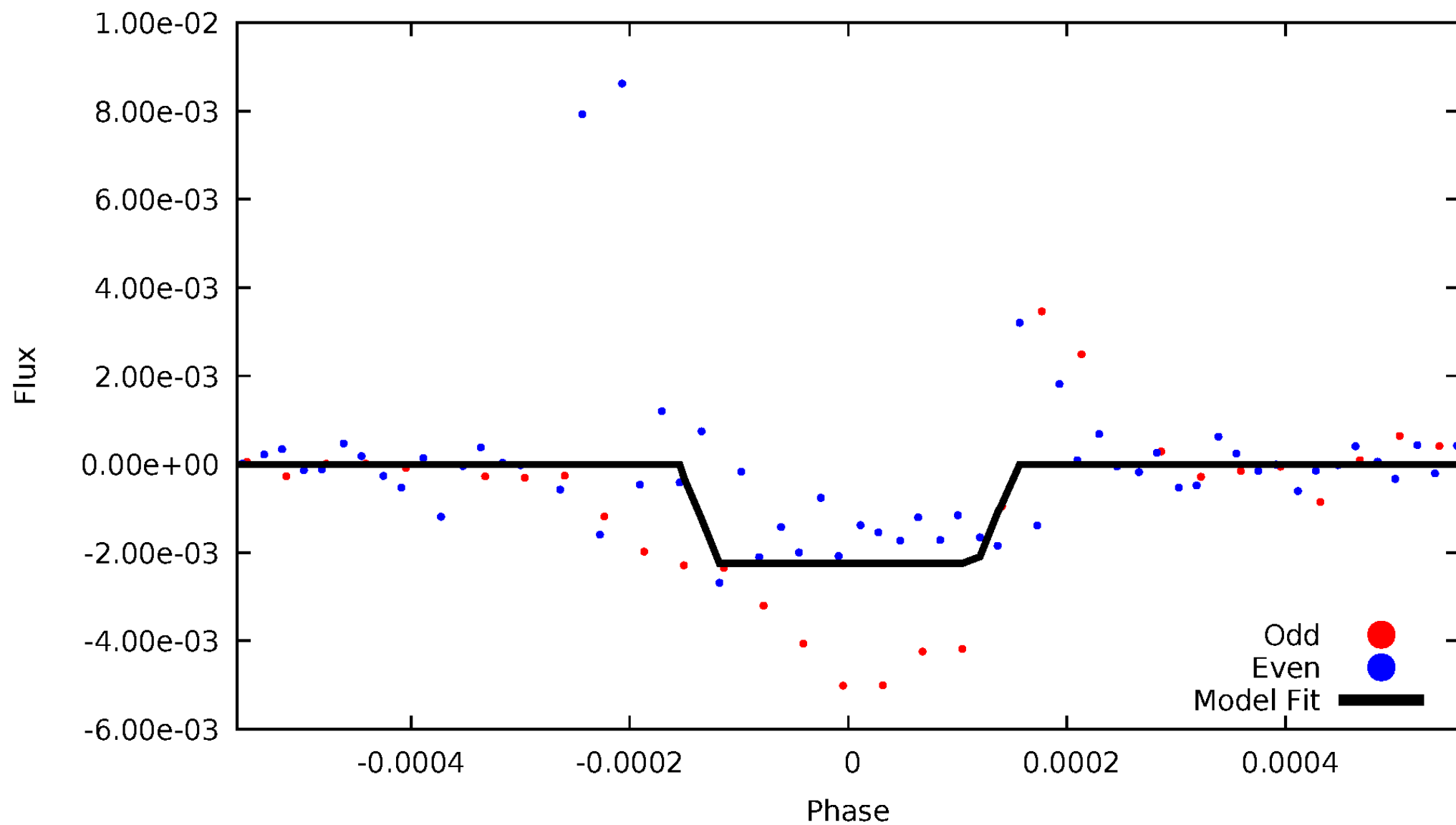
# DV Odd/Even

TCE 011091597-01



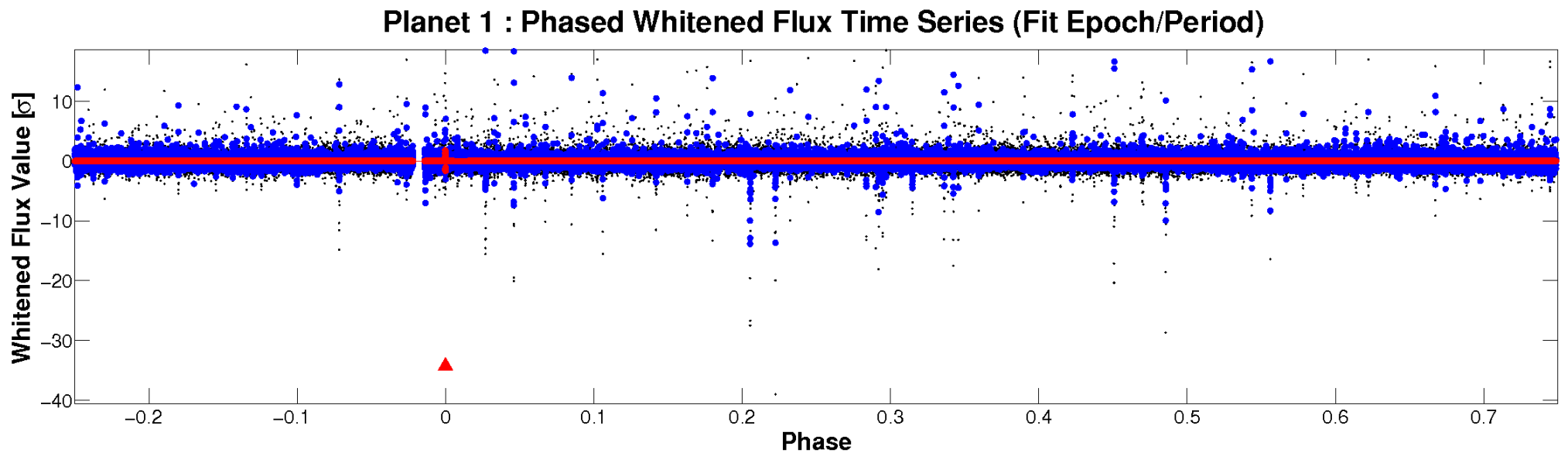
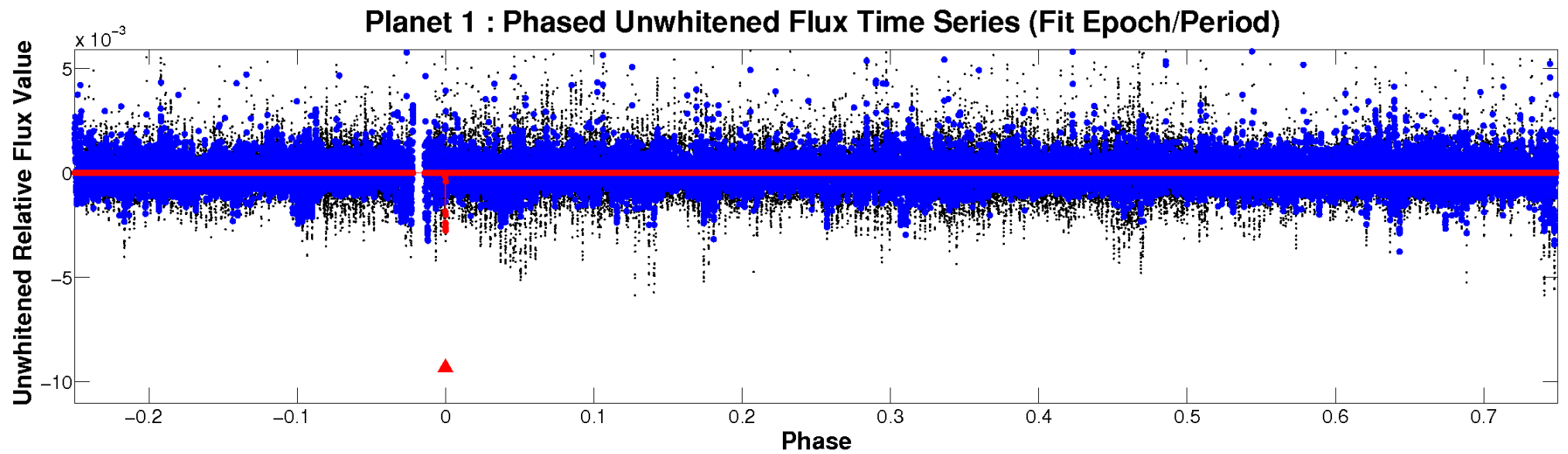
# ALT Odd/Even

TCE 011091597-01



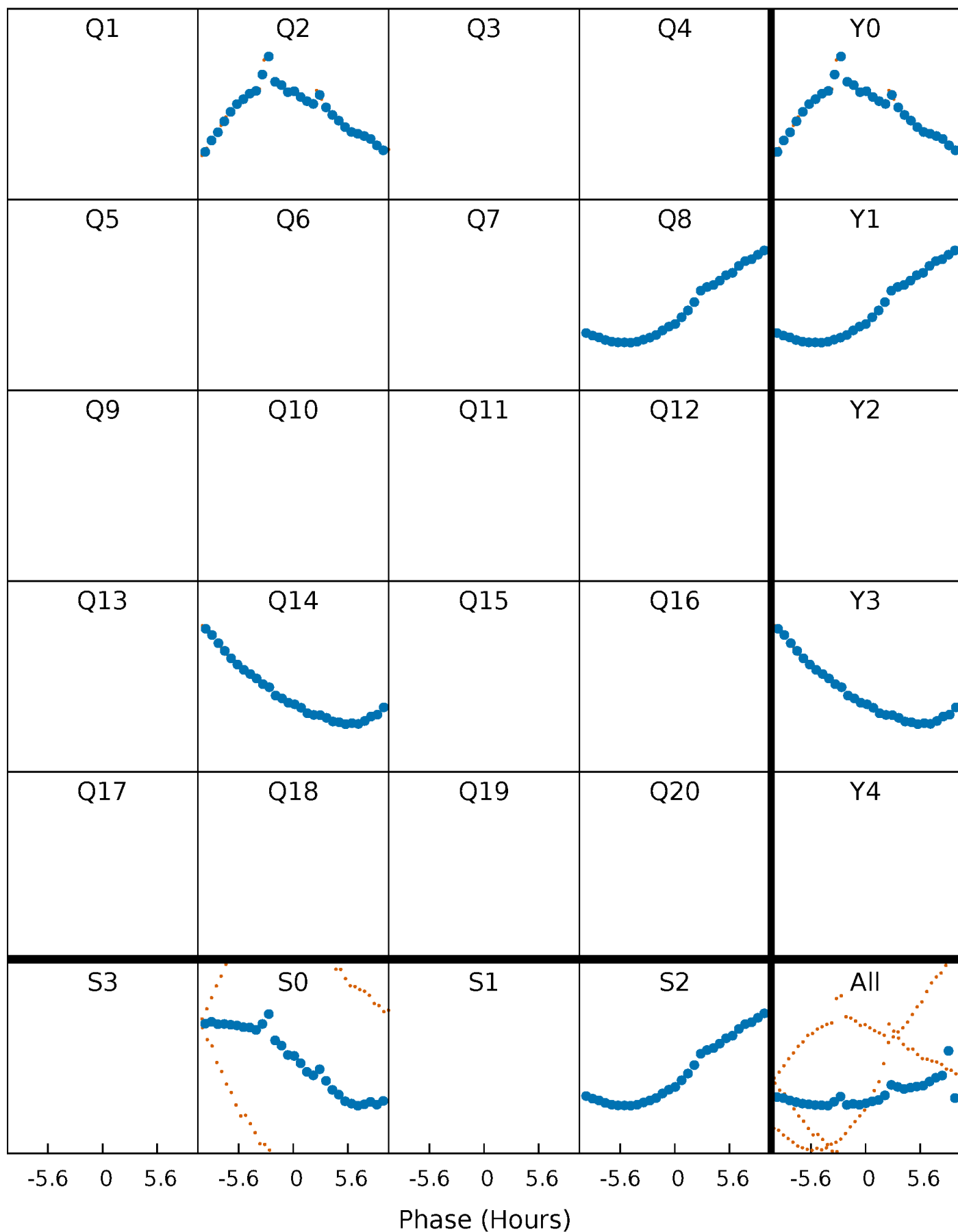


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

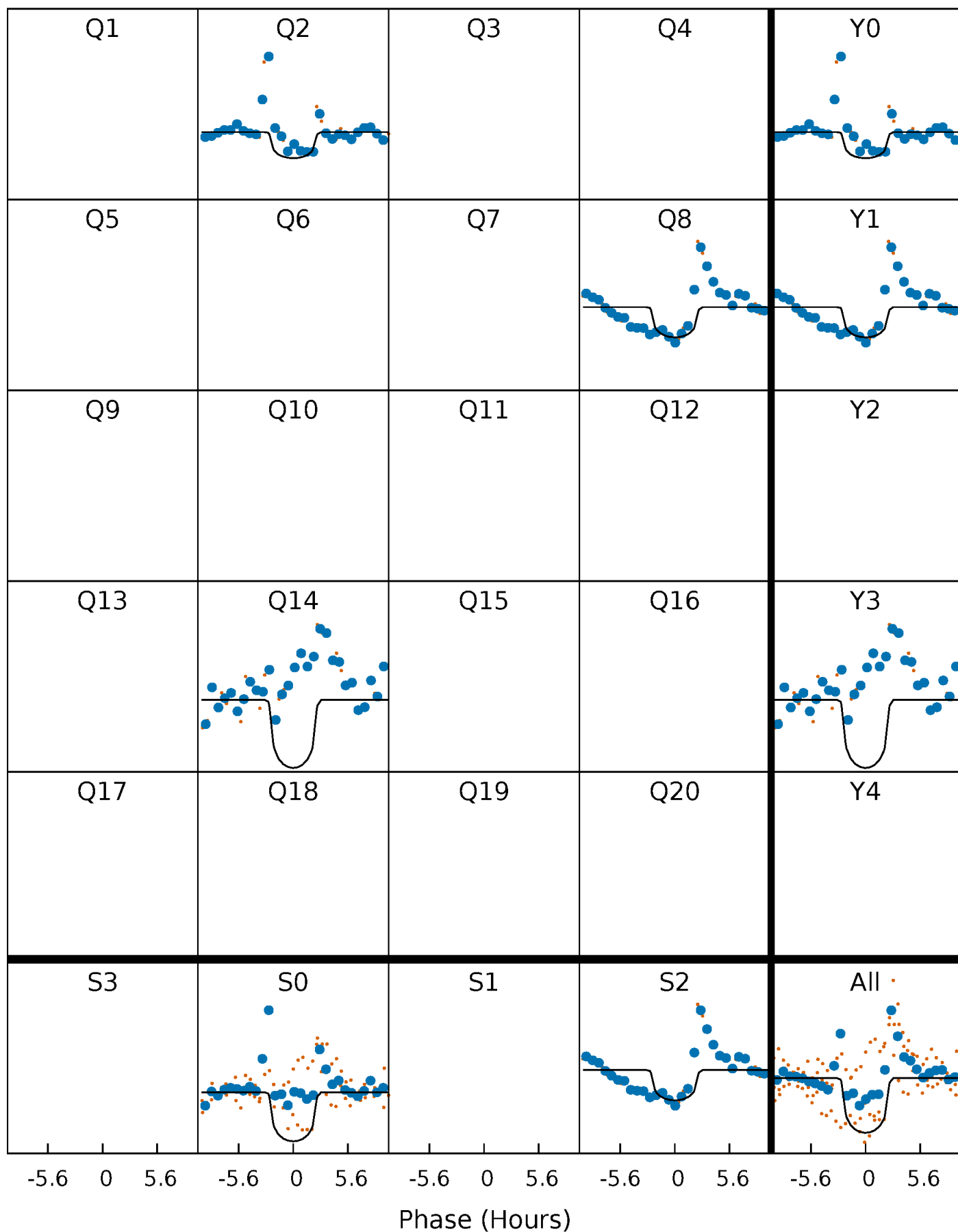
TCE 011091597-01 P=562.004526 Days  $T_0=177.695153$  (BKJD)





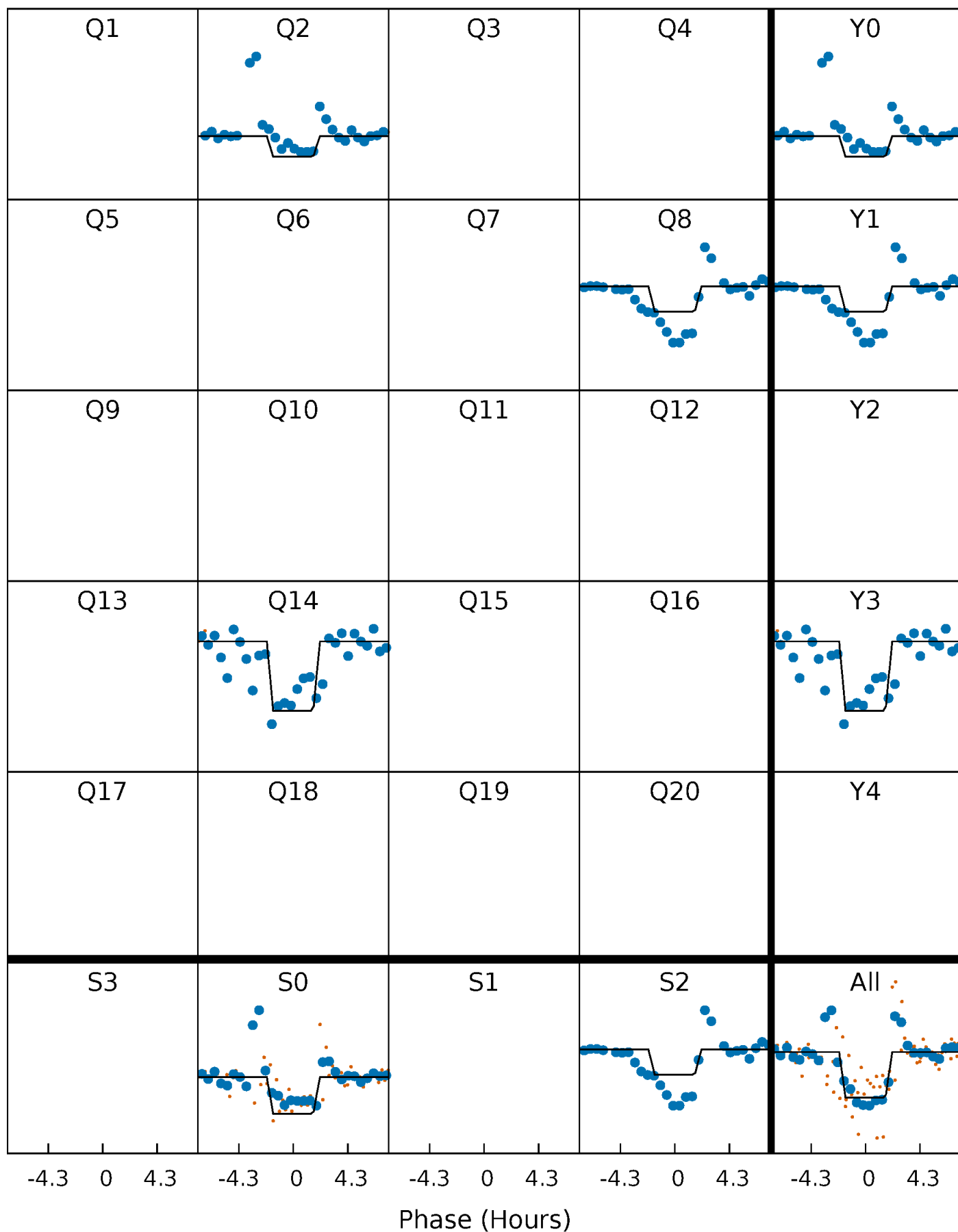
# DV Quarter-Phased Transit Curves

TCE 011091597-01 P=562.004526 Days  $T_0=177.695153$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

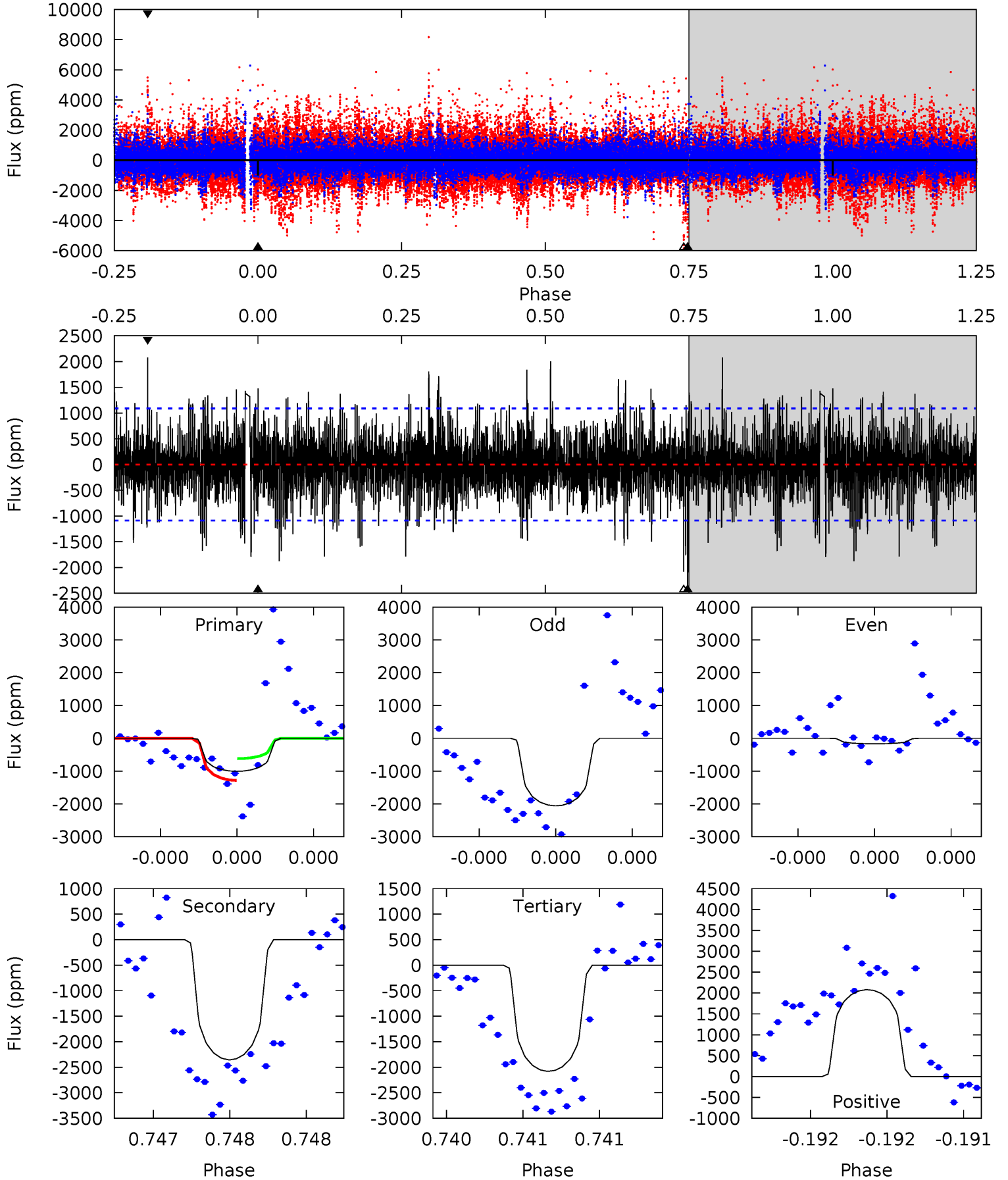
TCE 011091597-01 P=561.991012 Days  $T_0=177.707389$  (BKJD)



# DV Model-Shift Uniqueness Test

011091597-01, P = 562.004526 Days, E = 177.695153 Days

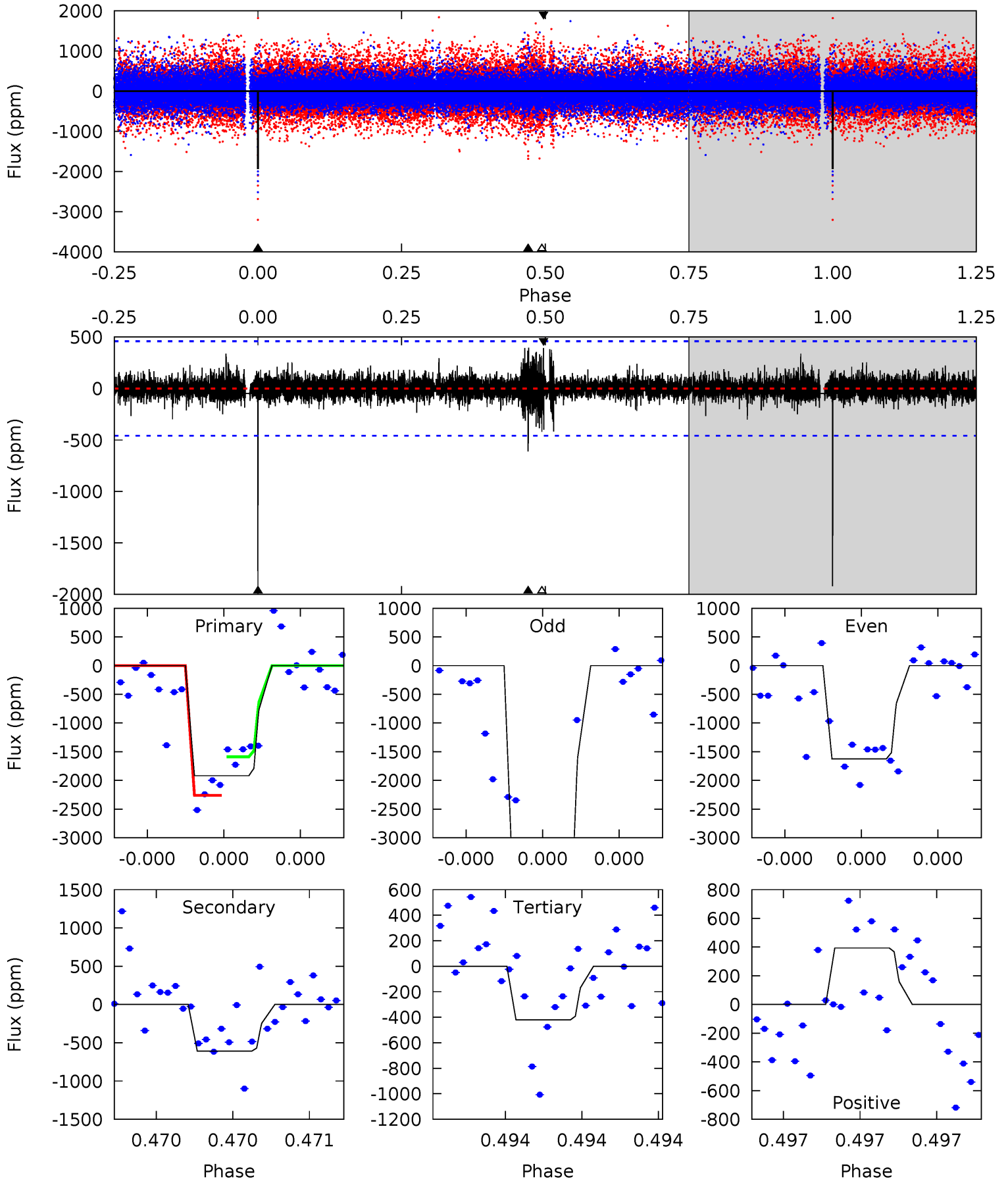
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.20	12.2	10.7	10.7	5.63	3.56	2.32	-5.54	-5.54	1.42	1.42	4.18	0.56	0.47	1.71



# Alt Model-Shift Uniqueness Test

011091597-01, P = 561.991012 Days, E = 177.707389 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
23.7	7.52	5.18	4.86	5.66	3.61	0.74	18.5	18.8	2.34	2.67	16.7	1.24	0.17	0



### Stellar Parameters For KIC 011091597

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5285^{+159}_{-159}$	$4.486^{+0.108}_{-0.175}$	$-0.220^{+0.350}_{-0.250}$	$0.824^{+0.160}_{-0.107}$	$0.759^{+0.122}_{-0.052}$	$1.911^{+0.867}_{-0.817}$
	+3%/-3%	+2%/-4%	+159%/-114%	+19%/-13%	+16%/-7%	+45%/-43%
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 011091597-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-2354 \pm 194$	$4.44^{+2.41}_{-2.07}$	$271^{+17}_{-15}$	$5309^{+1955}_{-842}$	$98340^{+247768}_{-57234}$
Alt.	$-610 \pm 81$	$4.52^{+2.15}_{-2.12}$	$270^{+18}_{-14}$	$4023^{+1061}_{-502}$	$25212^{+61319}_{-14358}$

$T_{max}$  = 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

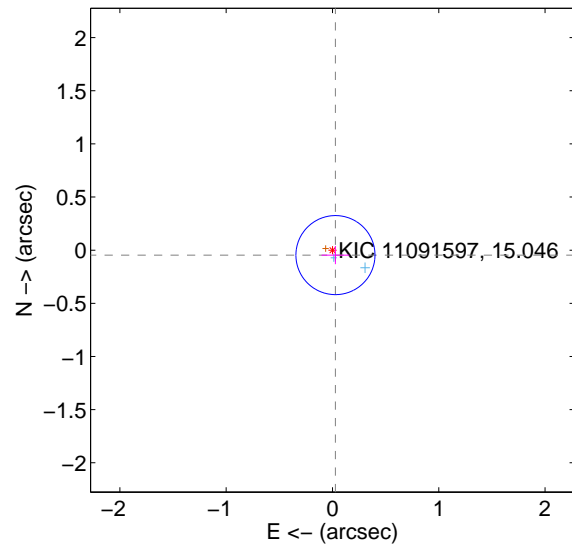
Supplemental centroid analysis for 011091597-01. Kepler magnitude: 15.05. Transit SNR 7.73

There are 2 quarters with good PRF difference image offsets

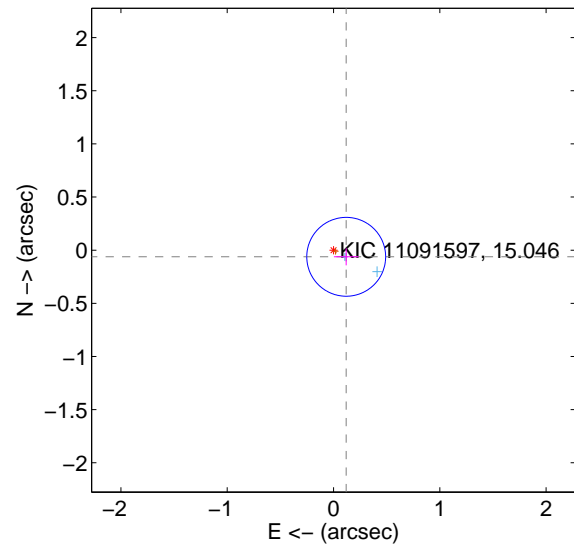
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.054 \pm 0.124$	0.44	$-0.028 \pm 0.131$	$-0.046 \pm 0.086$
PRF-fit source offset from KIC position	$0.135 \pm 0.124$	1.09	$-0.119 \pm 0.115$	$-0.062 \pm 0.080$
photometric centroid source offset	$0.35 \pm 0.51$	0.68	$0.24 \pm 0.52$	$0.26 \pm 0.51$

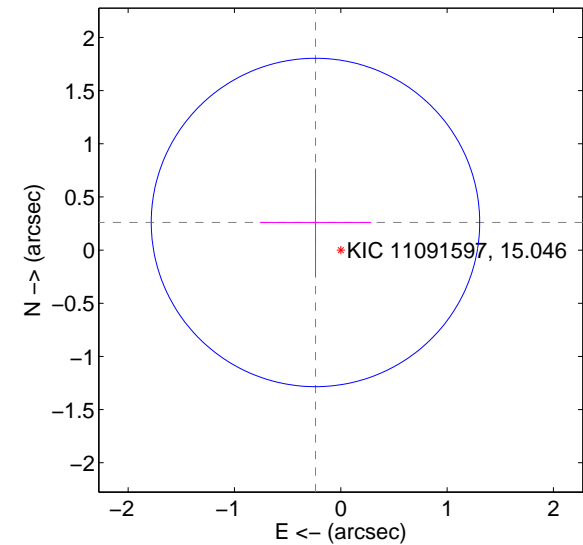
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

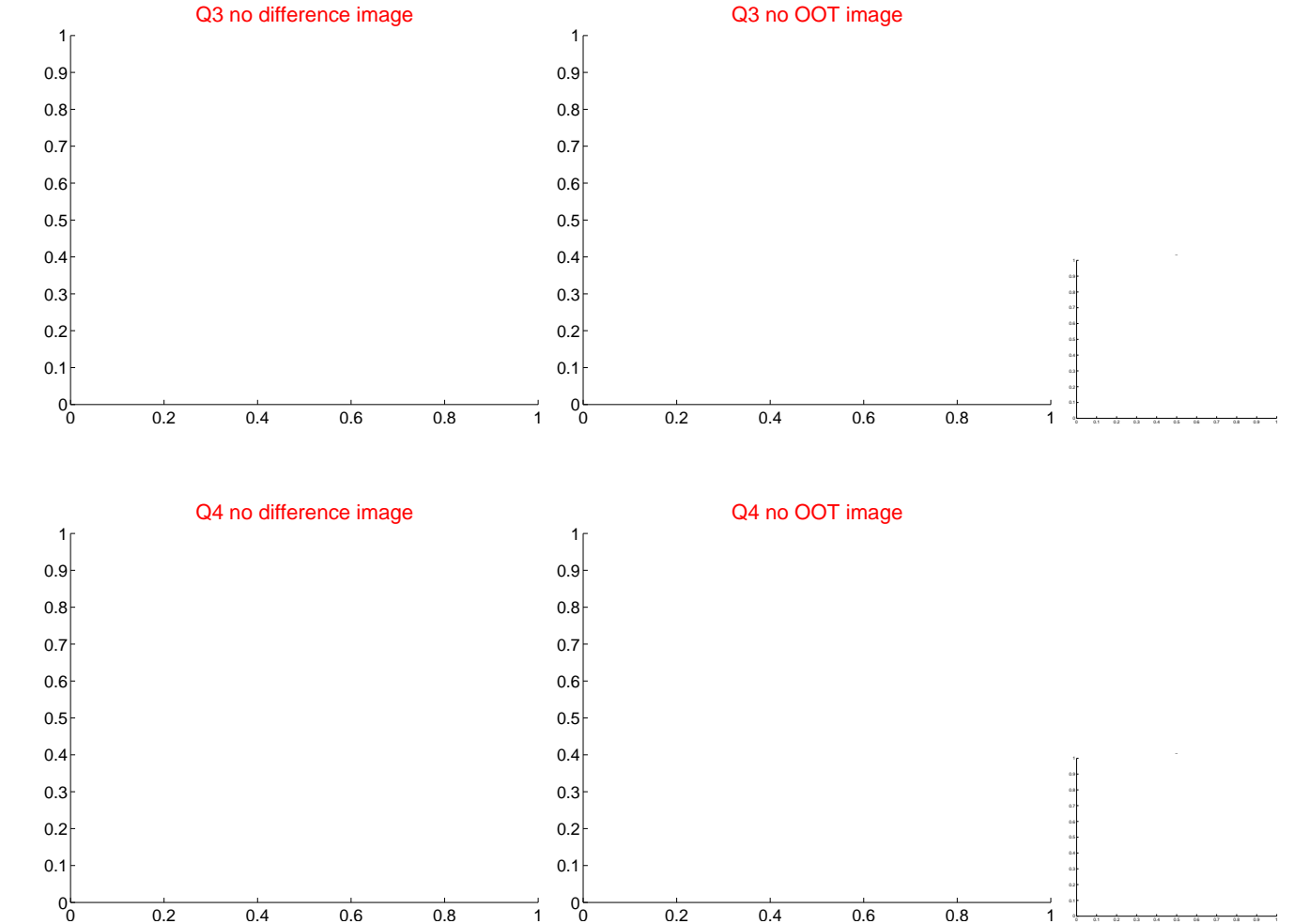
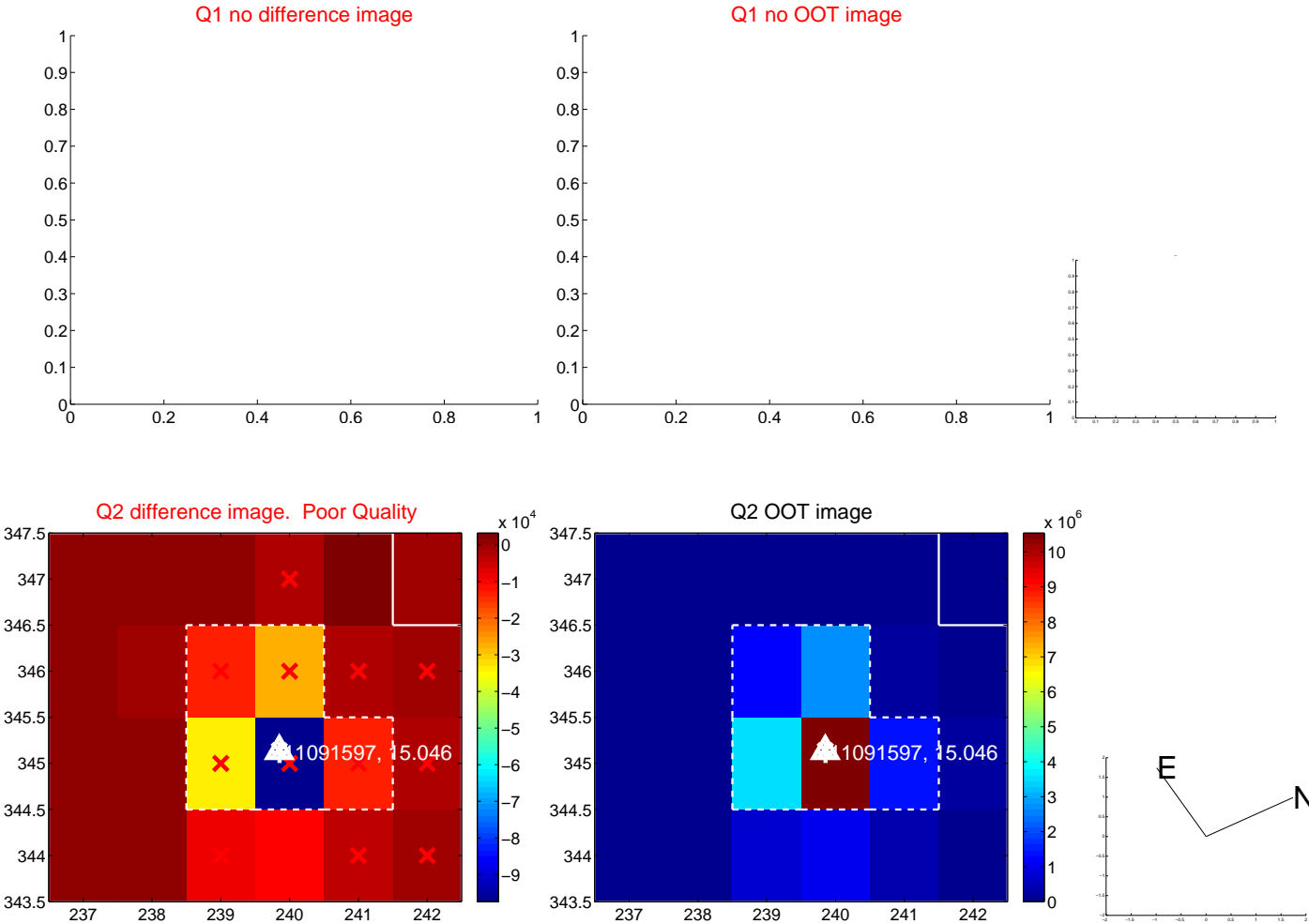


offset from photometric centroids



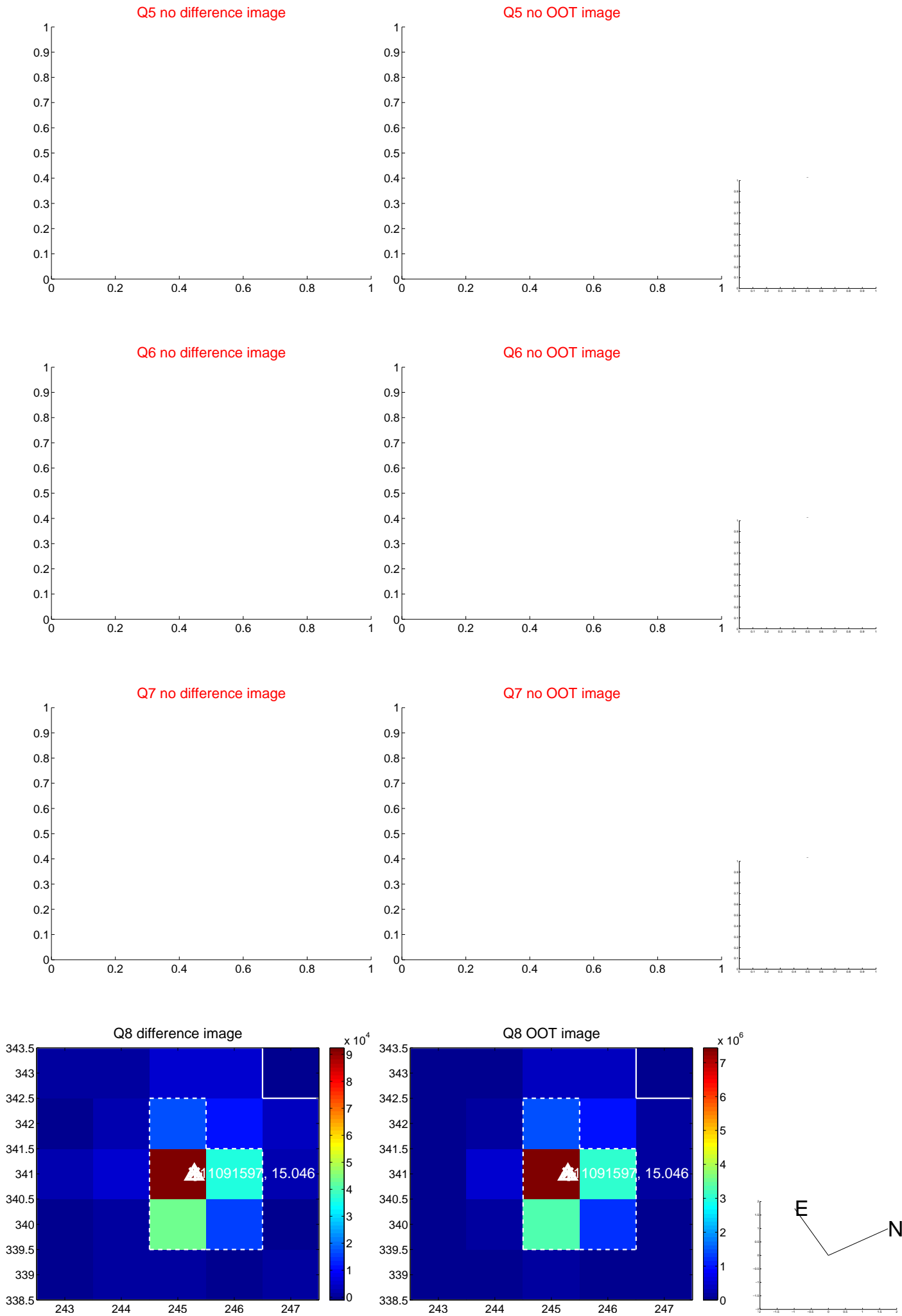
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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





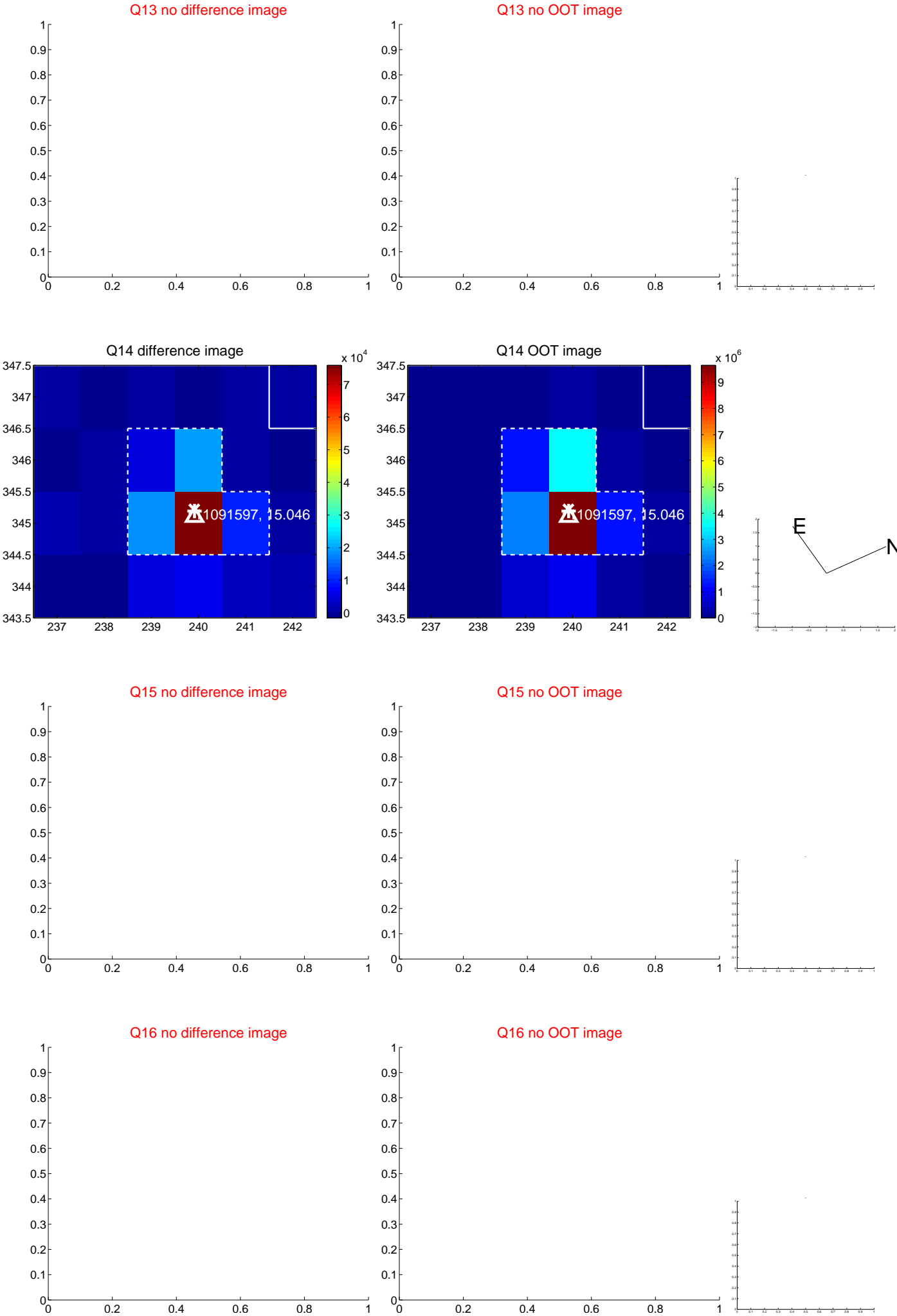
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



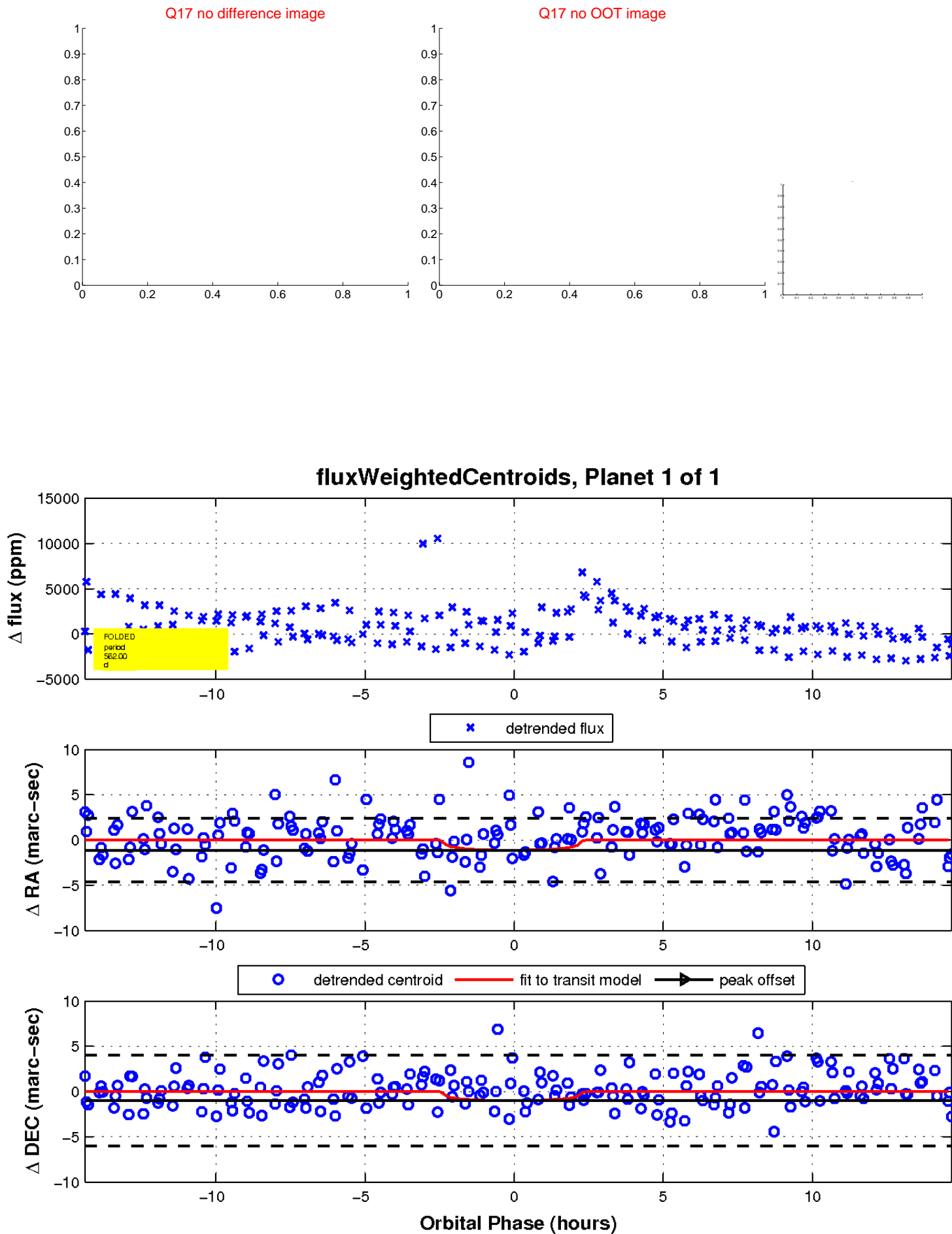
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

