

# KIC 006114503

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006114503-01	OBS	No	465.940009	304.404071	379.0	27.381	7.6	7.1	1.01	6263	2.65	0.97

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006114503-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—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.

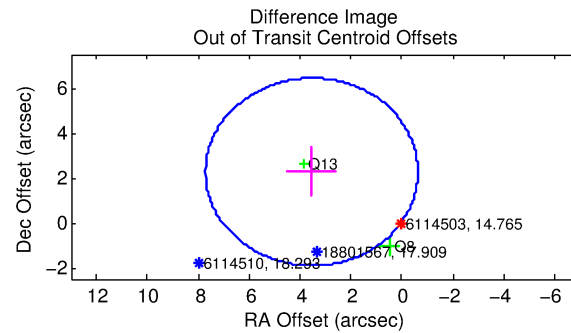
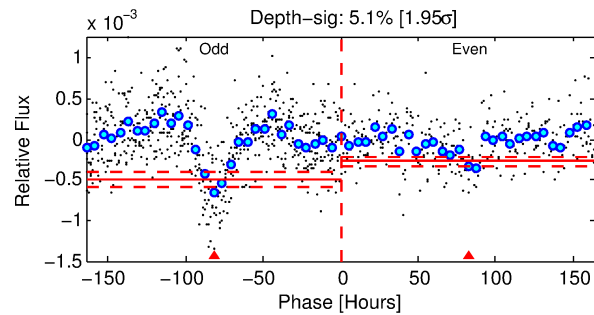
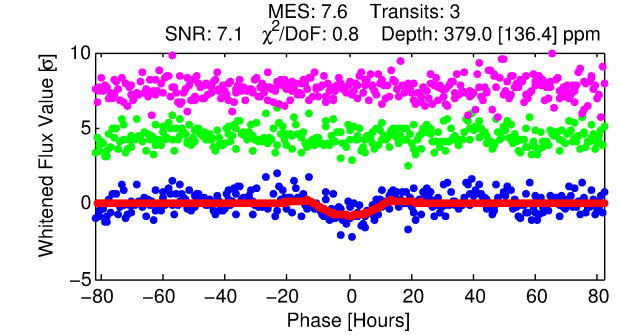
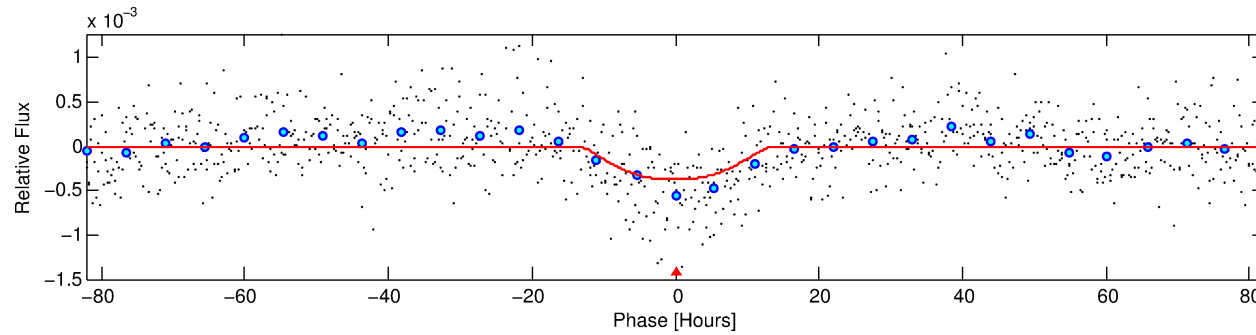
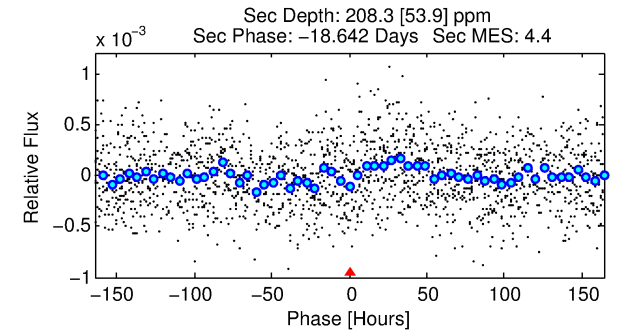
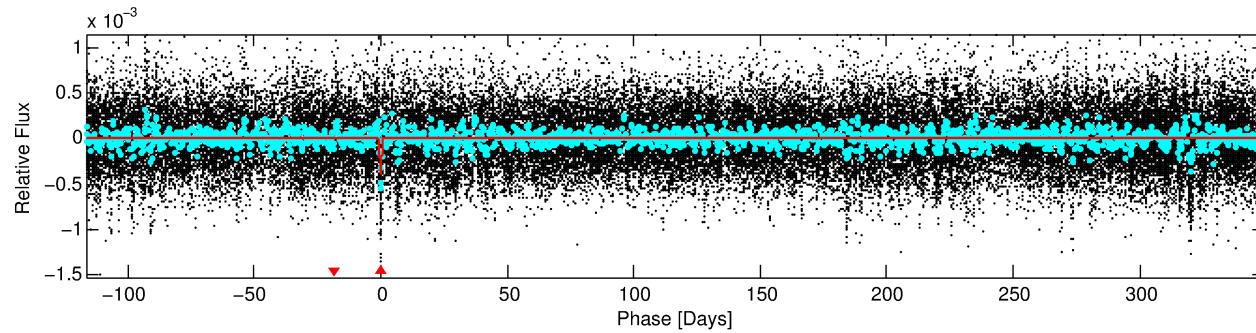
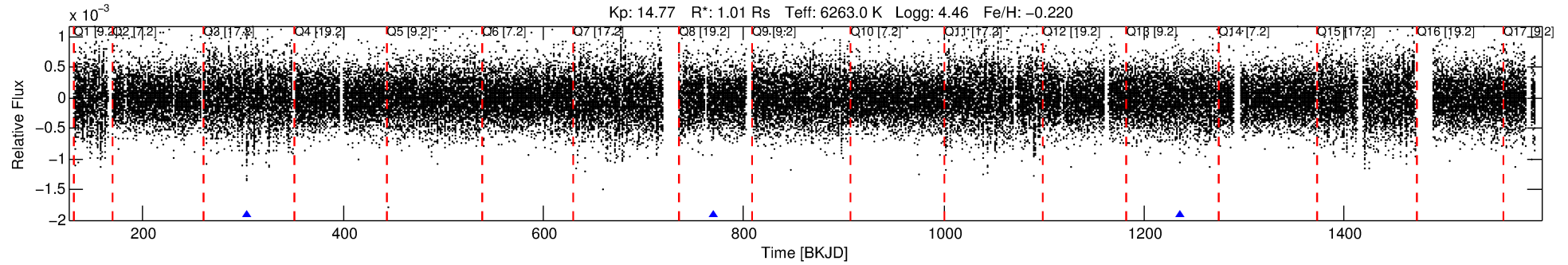
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006114503-01

No Significant Match Found

# DV One-Page Summary

KIC: 6114503 Candidate: 1 of 1 Period: 465.940 d



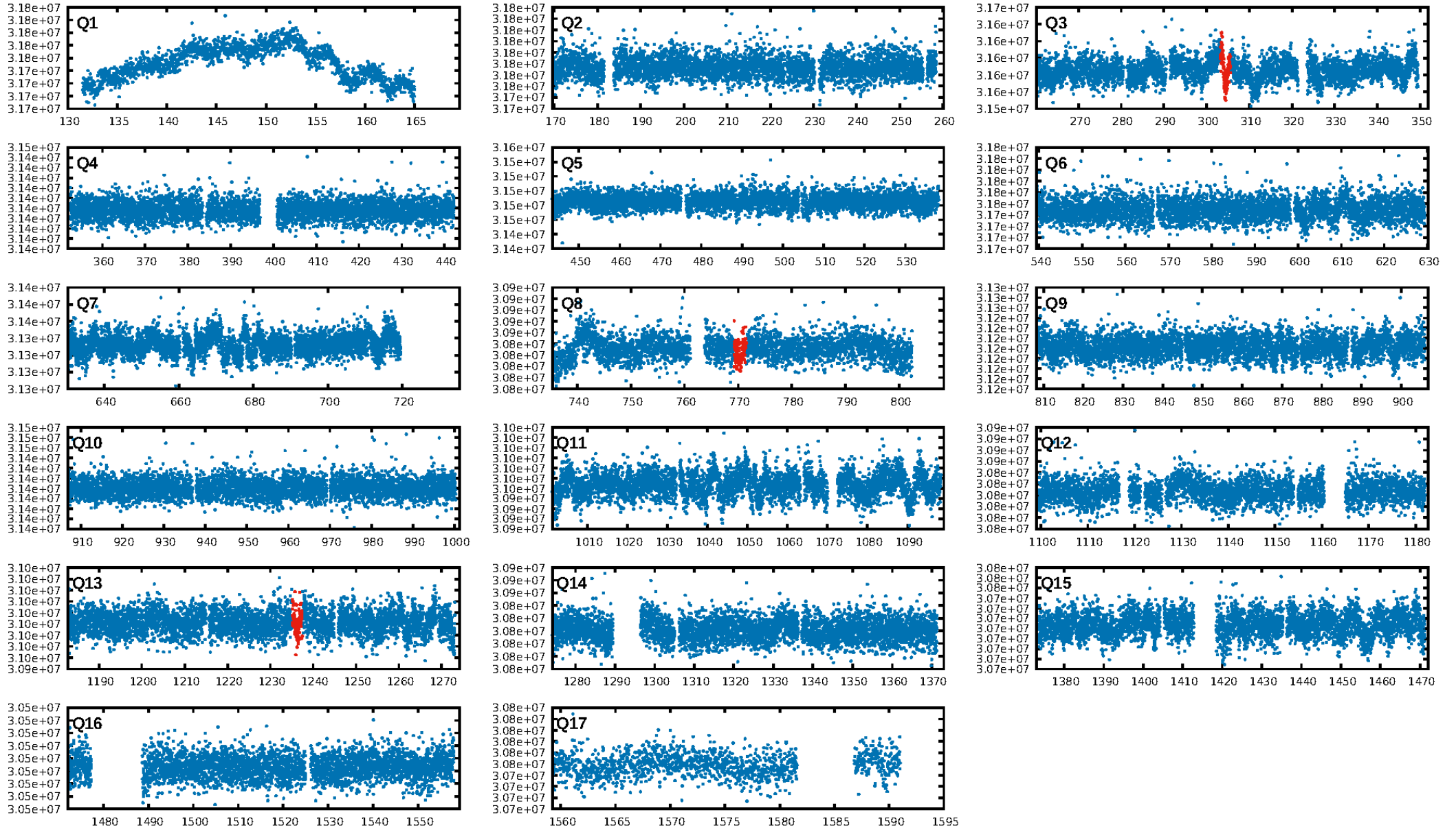
## DV Fit Results:

Period = 465.94001 [0.05370] d  
Epoch = 304.4041 [0.0711] BKJD  
Rp/R\* = 0.0241 [0.0080]  
a/R\* = 39.25 [11.26]  
b = 0.98 [0.02]  
Seff = 0.97 [0.41]  
Teq = 253 [27] K  
Rp = 2.66 [1.23] Re  
a = 1.2037 [0.3317] AU  
Ag = 23541.72 [19279.59] [1.22] $\sigma$   
Teffp = 4845 [876] K [5.24] $\sigma$

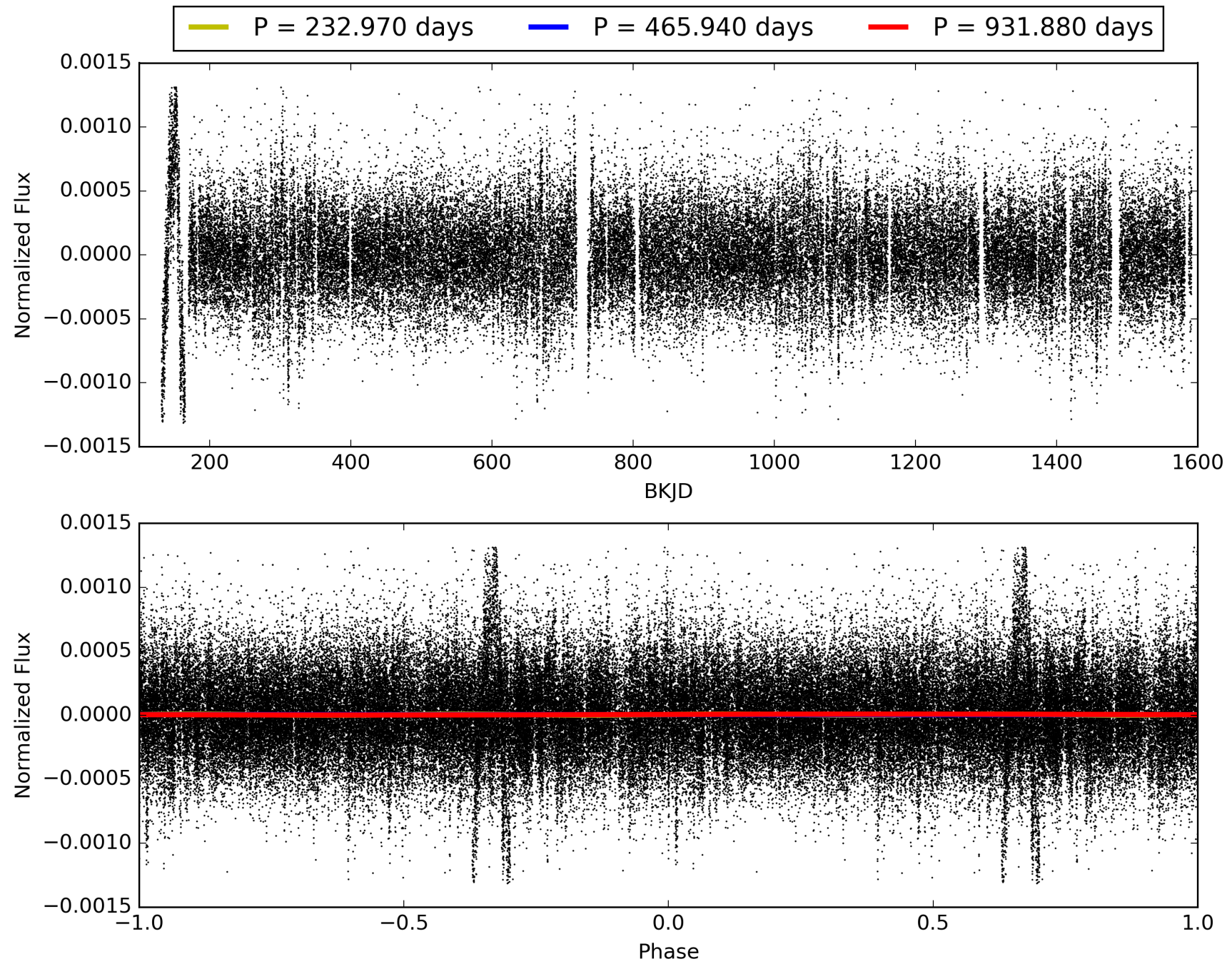
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 2.0%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 3.73e-10**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 80.01  
Centroid-sig: 3.2%  
Centroid-so: 3.093 arcsec [1.81] $\sigma$   
**OutOffset-rm: 4.203 arcsec [3.02] $\sigma$**   
KicOffset-rm: 4.486 arcsec [2.24] $\sigma$   
OotOffset-st: 0/0/1/1 [2]  
KicOffset-st: 0/0/1/1 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

# TCE 006114503-01, PDC Light Curves

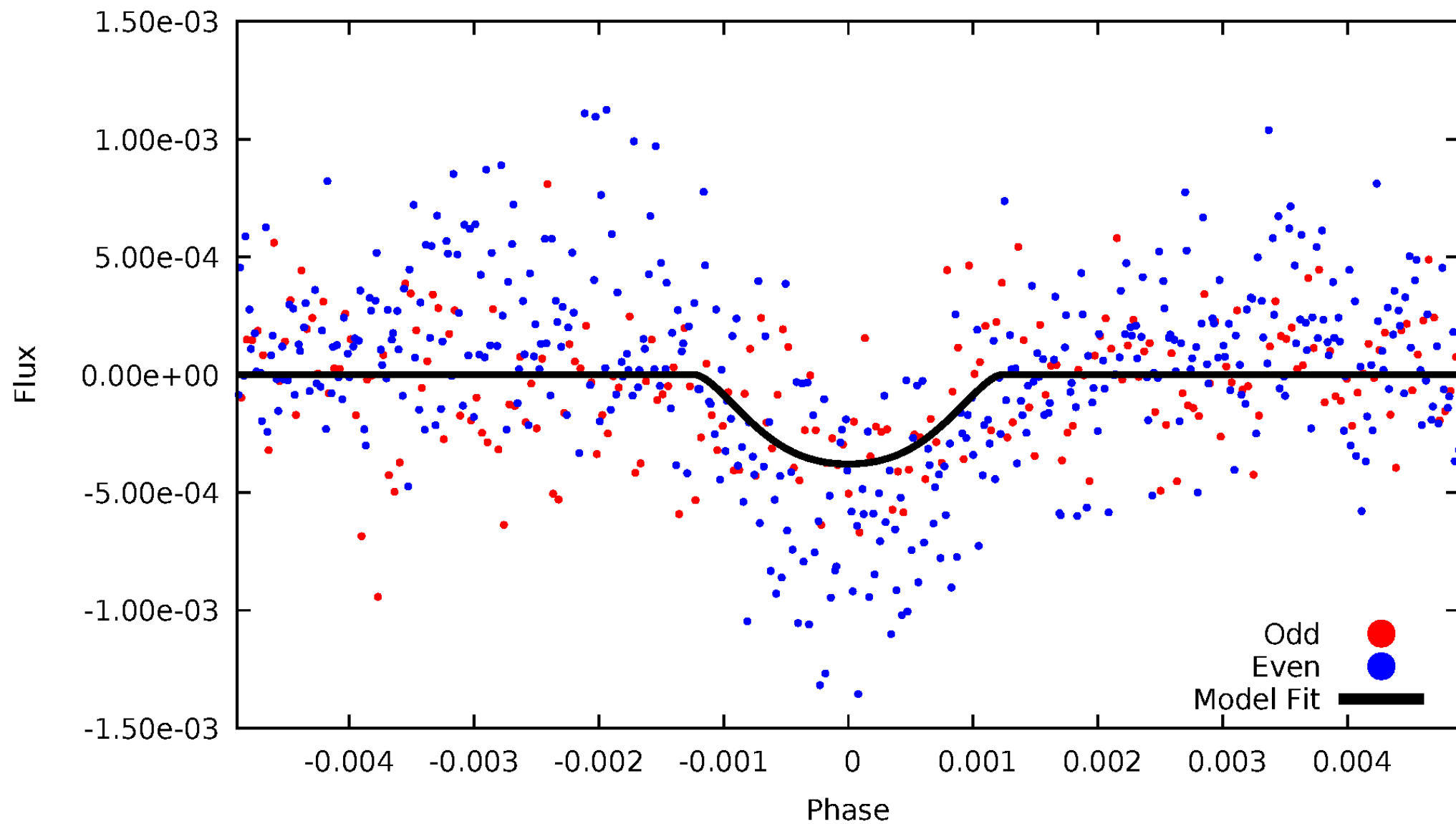


TCE 006114503-01



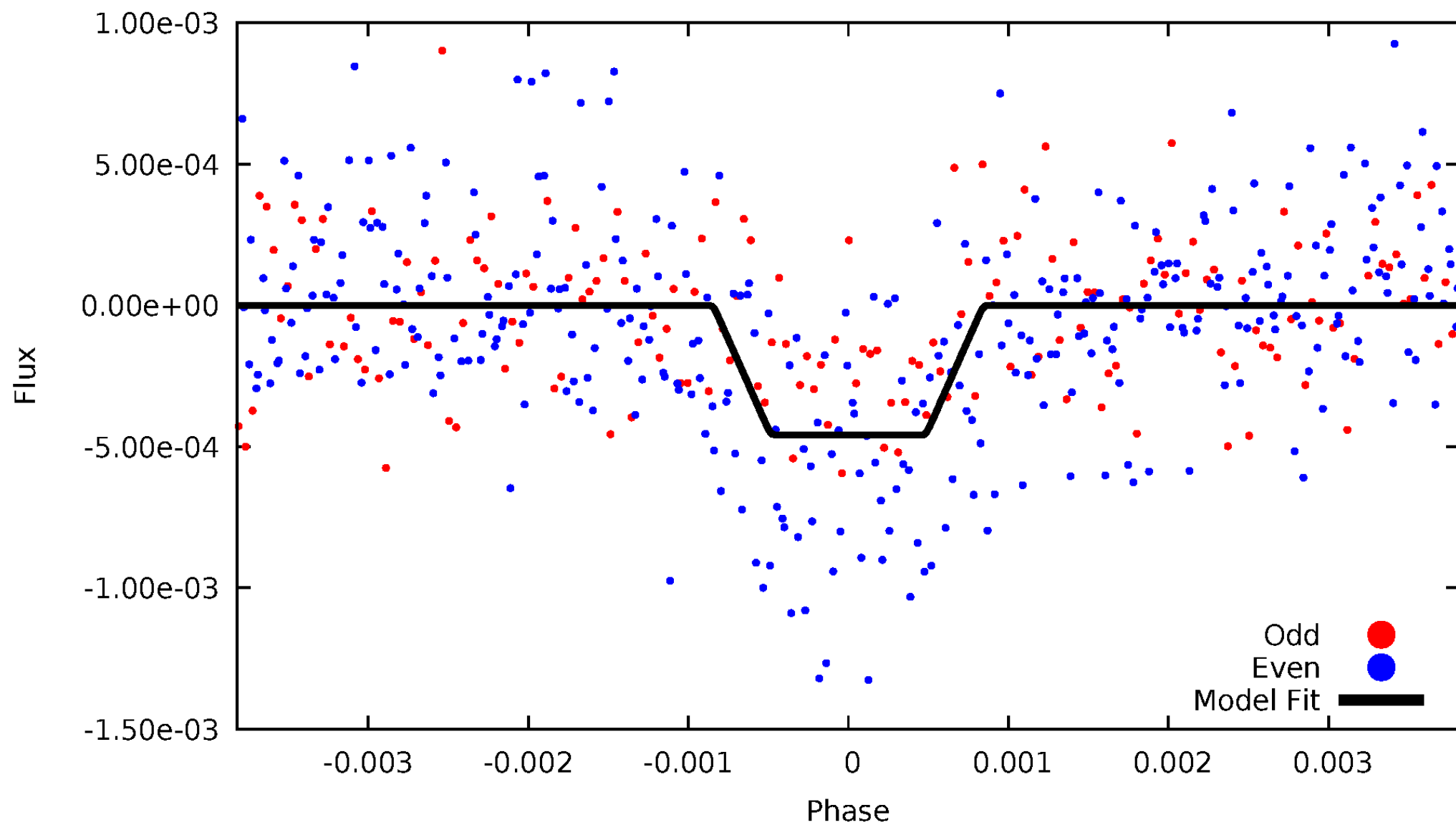
# DV Odd/Even

TCE 006114503-01



# ALT Odd/Even

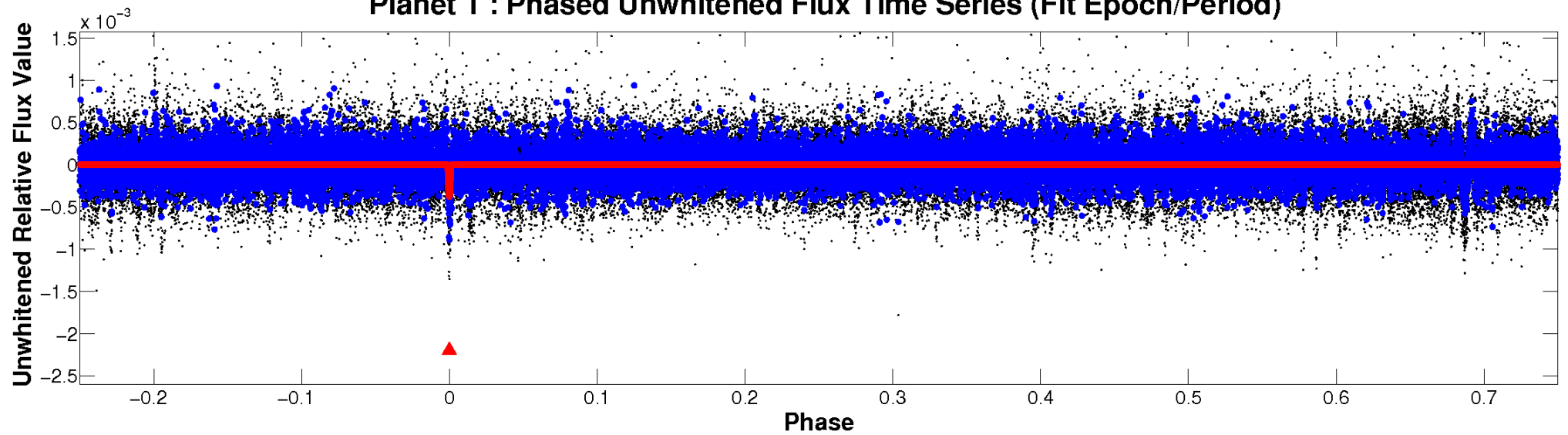
TCE 006114503-01



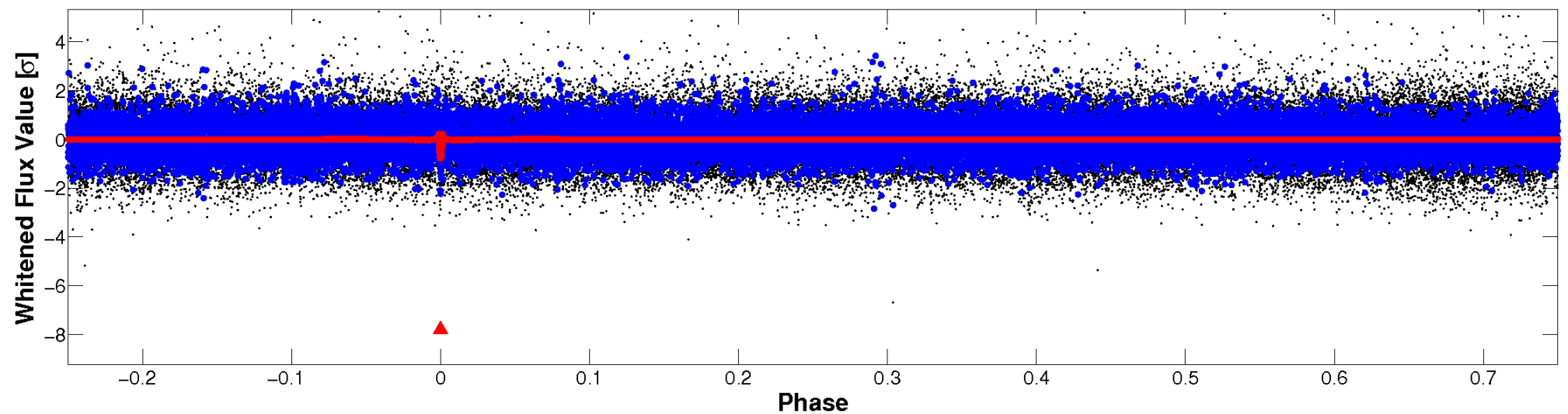


# Non-Whitened Vs. Whitened Light Curve

**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 006114503-01 P=465.940009 Days  $T_0=304.404071$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 006114503-01 P=465.940009 Days  $T_0=304.404071$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

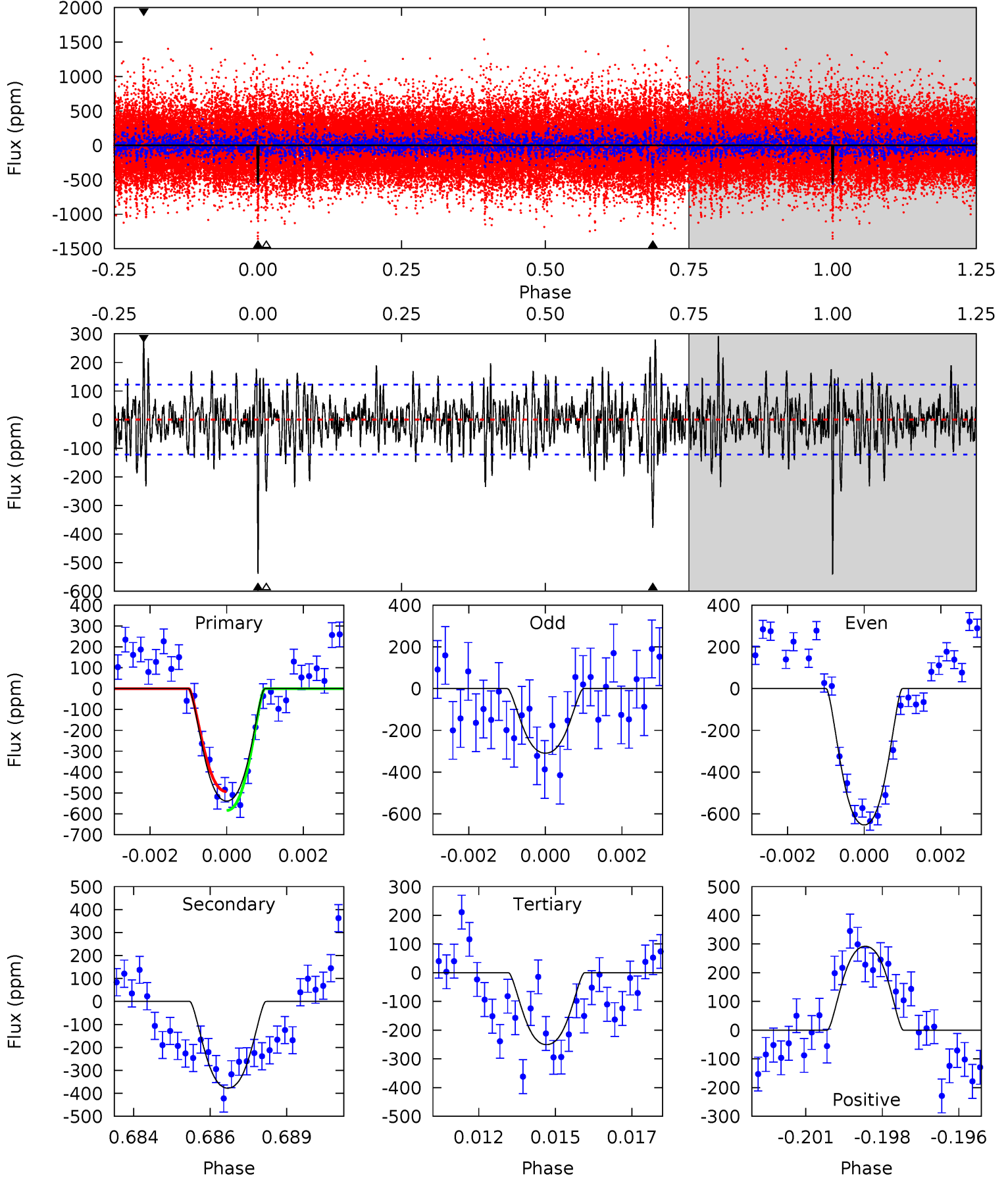
TCE 006114503-01 P=466.021392 Days  $T_0=304.382922$  (BKJD)



# DV Model-Shift Uniqueness Test

006114503-01, P = 465.940009 Days, E = 304.404071 Days

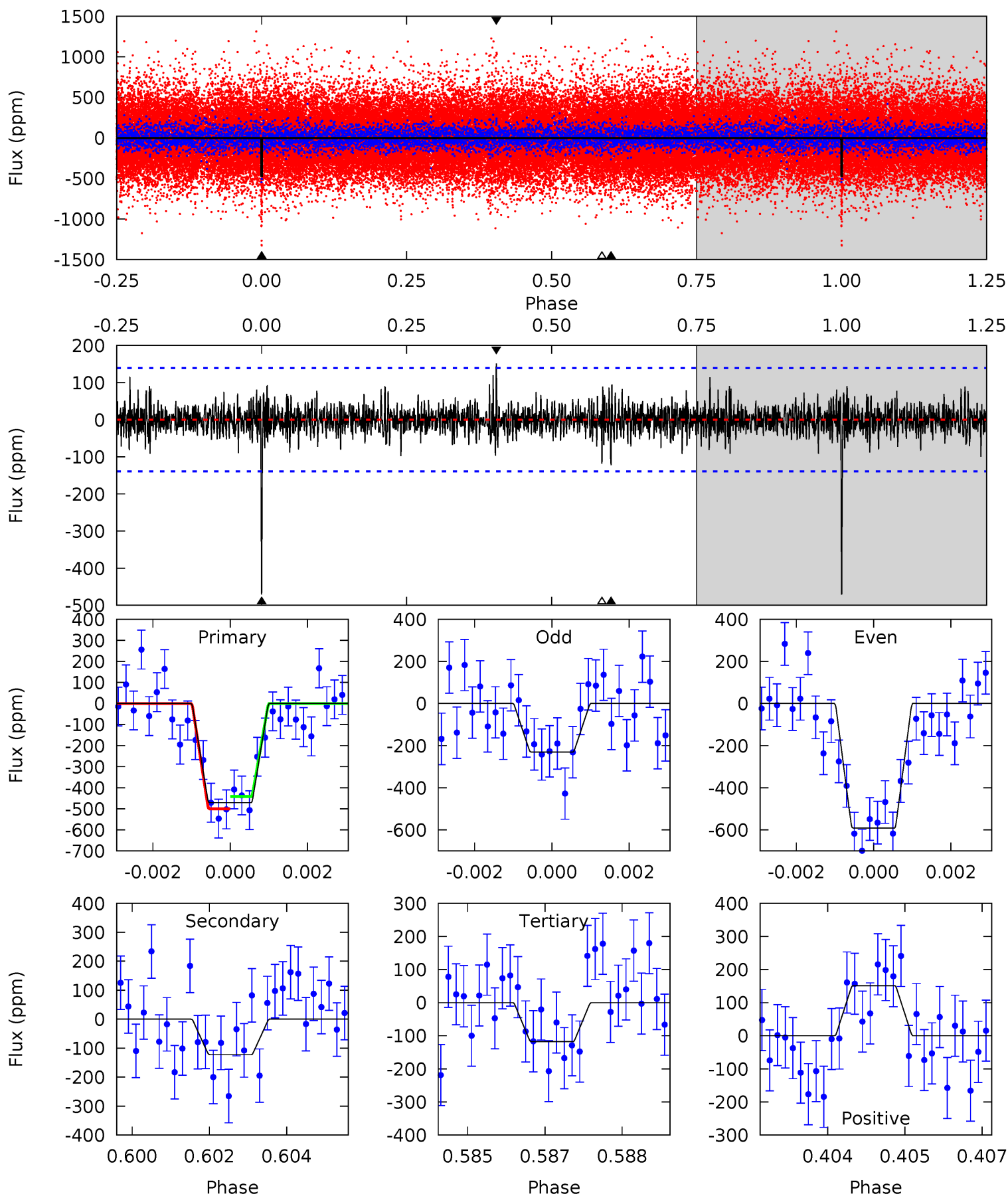
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.3	16.3	10.8	12.6	5.29	3.03	3.10	12.5	10.7	5.50	3.70	7.08	1.36	0.35	1.95



# Alt Model-Shift Uniqueness Test

006114503-01, P = 466.021392 Days, E = 304.382922 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
18.1	4.71	4.54	5.82	5.36	3.14	1.07	13.6	12.3	0.18	-1.11	6.61	1.51	0.24	1.12



### Stellar Parameters For KIC 006114503

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6263^{+169}_{-206}$	$4.460^{+0.056}_{-0.224}$	$-0.220^{+0.250}_{-0.300}$	$1.009^{+0.326}_{-0.116}$	$1.068^{+0.144}_{-0.144}$	$1.462^{+0.430}_{-0.787}$
	+3%/-3%	+1%/-5%	+114%/-136%	+32%/-11%	+13%/-13%	+29%/-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 006114503-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-378 \pm 23$	$2.86^{+0.98}_{-0.96}$	$363^{+28}_{-19}$	$5560^{+1282}_{-662}$	$35542^{+45004}_{-16011}$
Alt.	$-122 \pm 26$	$2.49^{+1.02}_{-0.99}$	$361^{+27}_{-16}$	$4610^{+1042}_{-549}$	$14906^{+27059}_{-7606}$

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

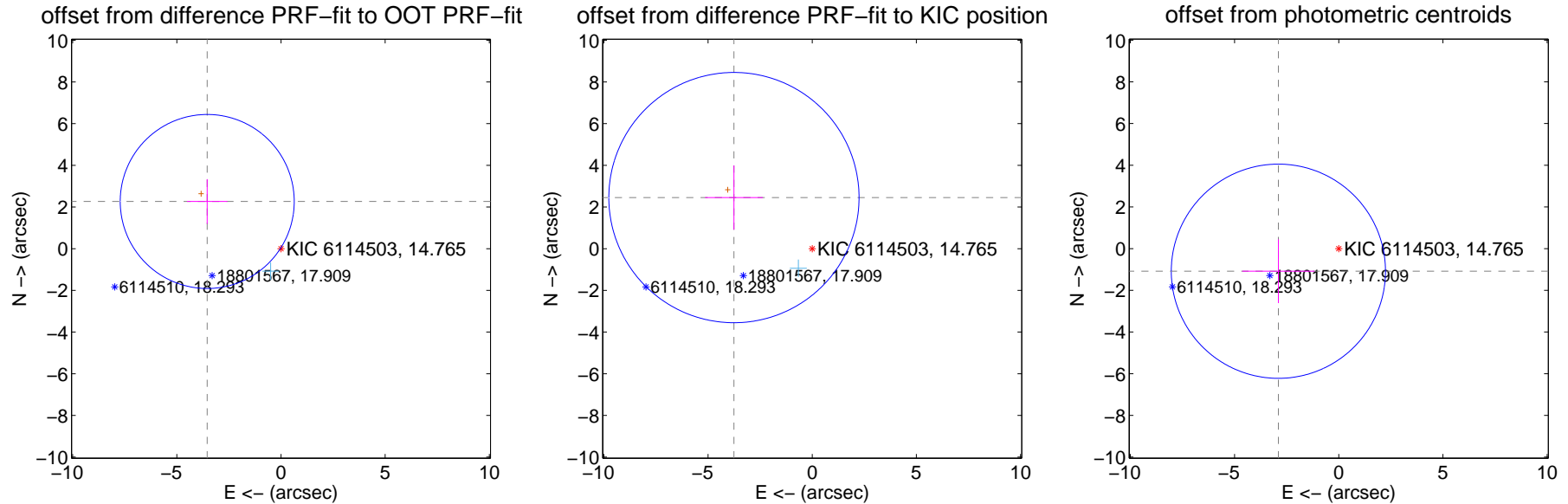
## DV Centroid Data

Supplemental centroid analysis for 006114503-01. Kepler magnitude: 14.77. Transit SNR 7.10

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

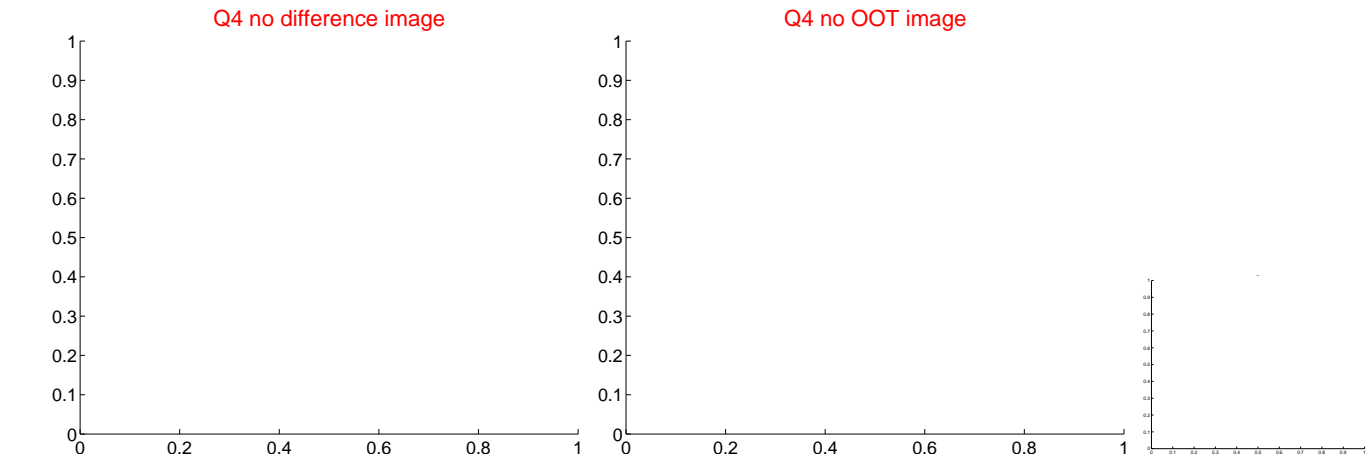
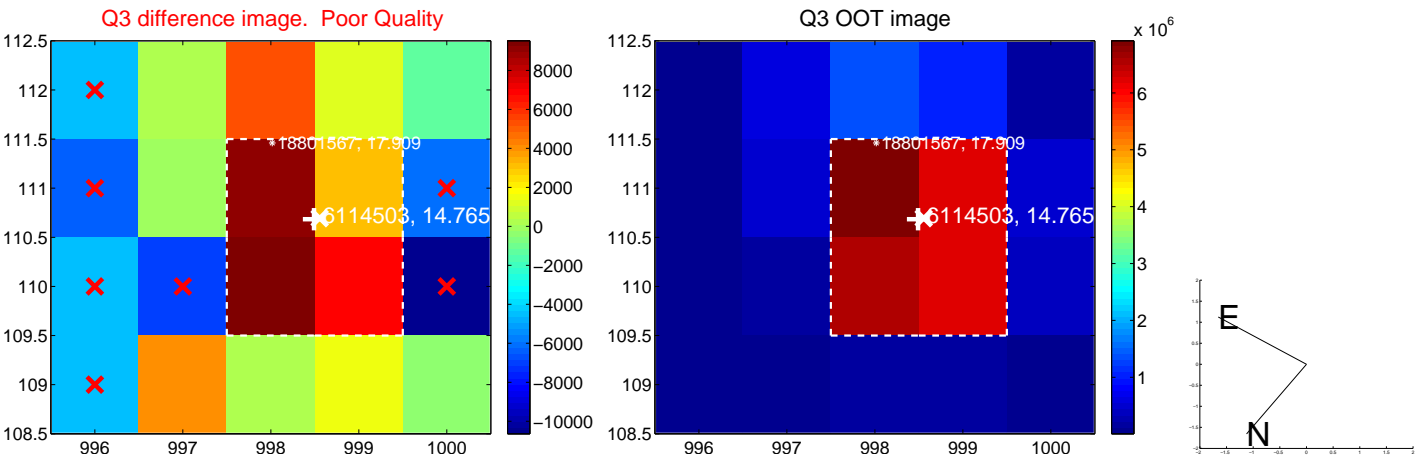
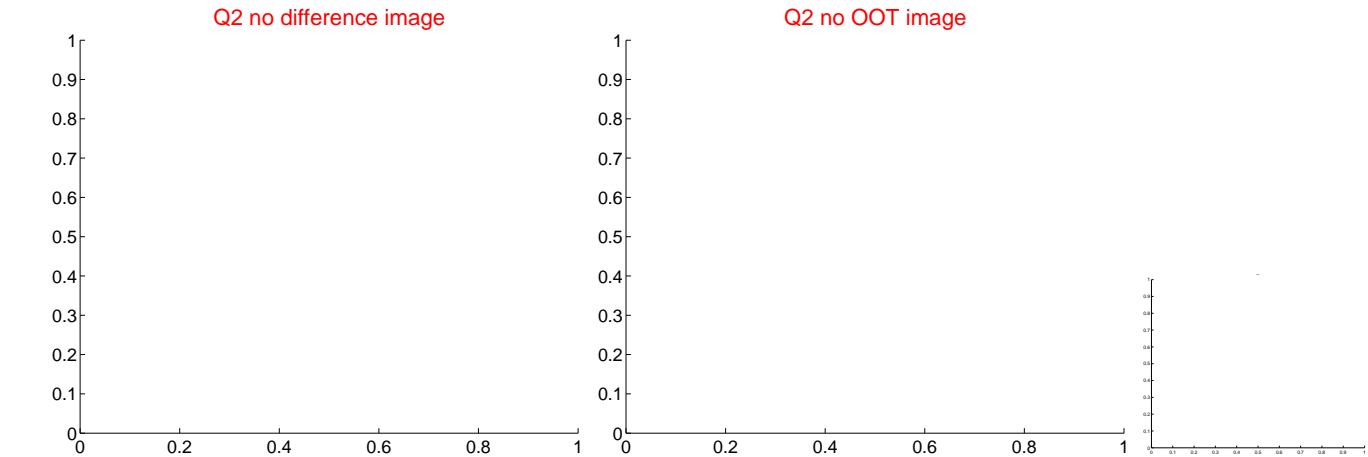
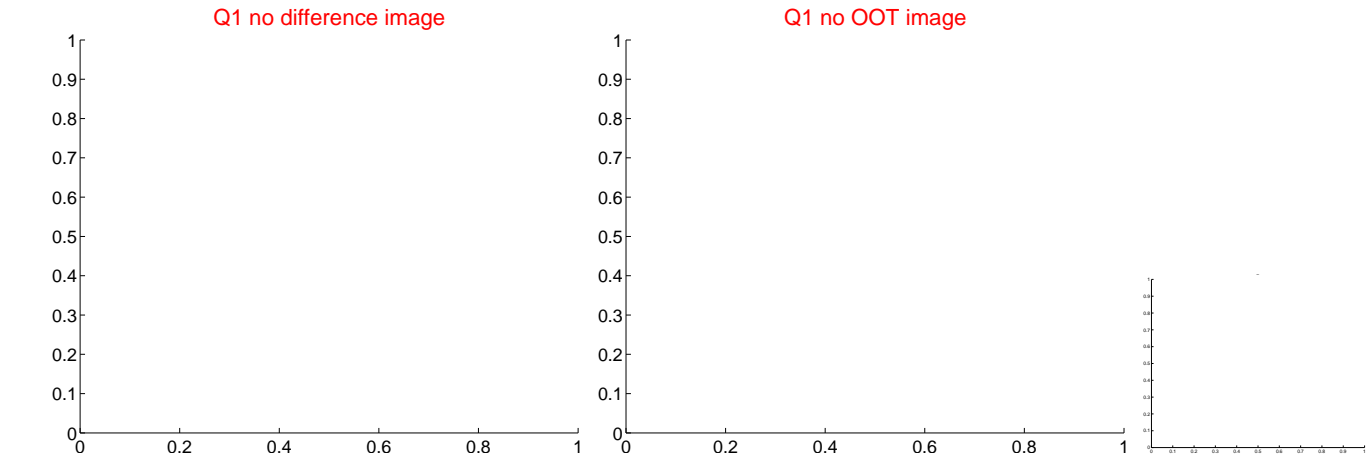
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>4.203 <math>\pm</math> 1.392</b>	<b>3.02</b>	3.540 $\pm$ 0.967	2.265 $\pm$ 1.075
PRF-fit source offset from KIC position	4.486 $\pm$ 2.001	2.24	3.757 $\pm$ 1.386	2.452 $\pm$ 1.540
photometric centroid source offset	3.09 $\pm$ 1.71	1.81	2.90 $\pm$ 1.74	-1.08 $\pm$ 1.53



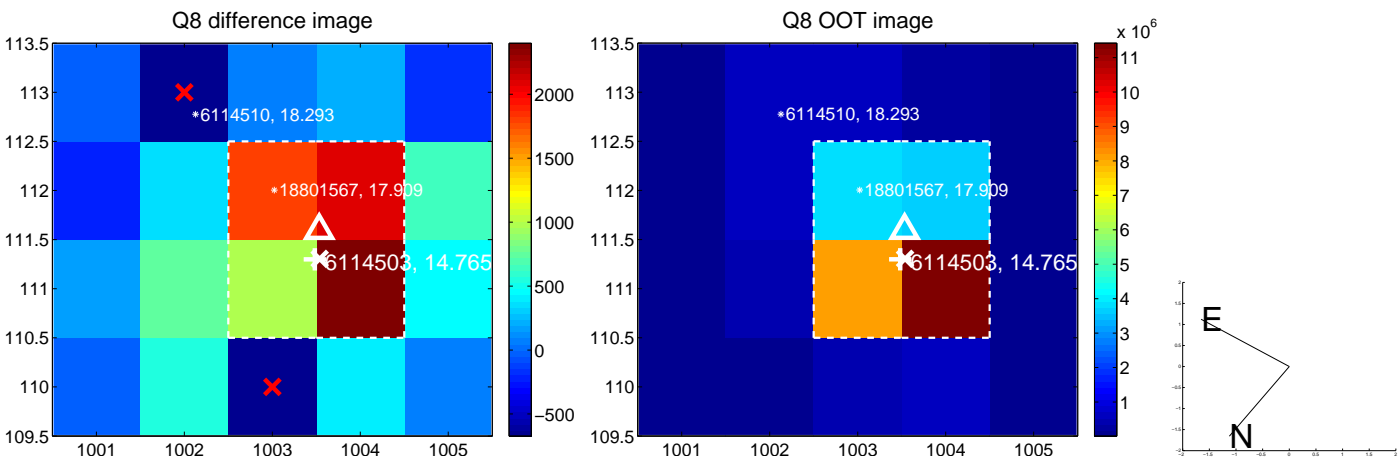
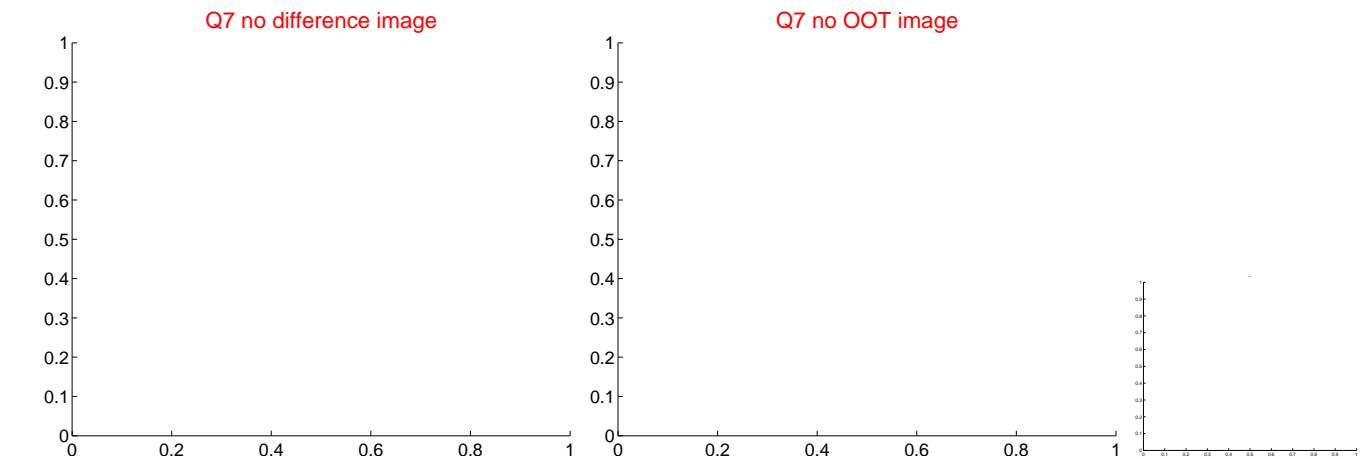
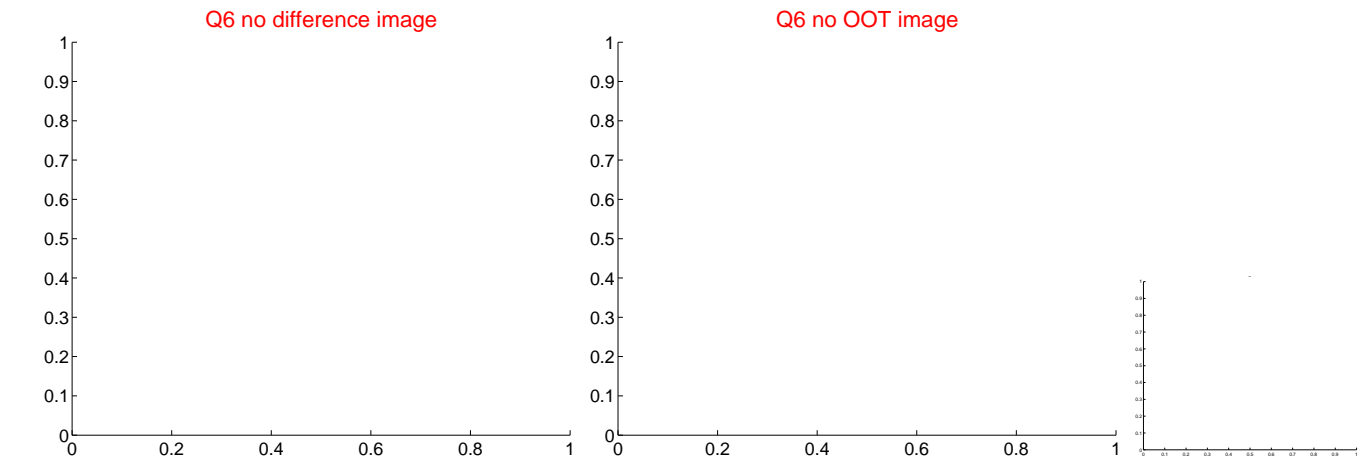
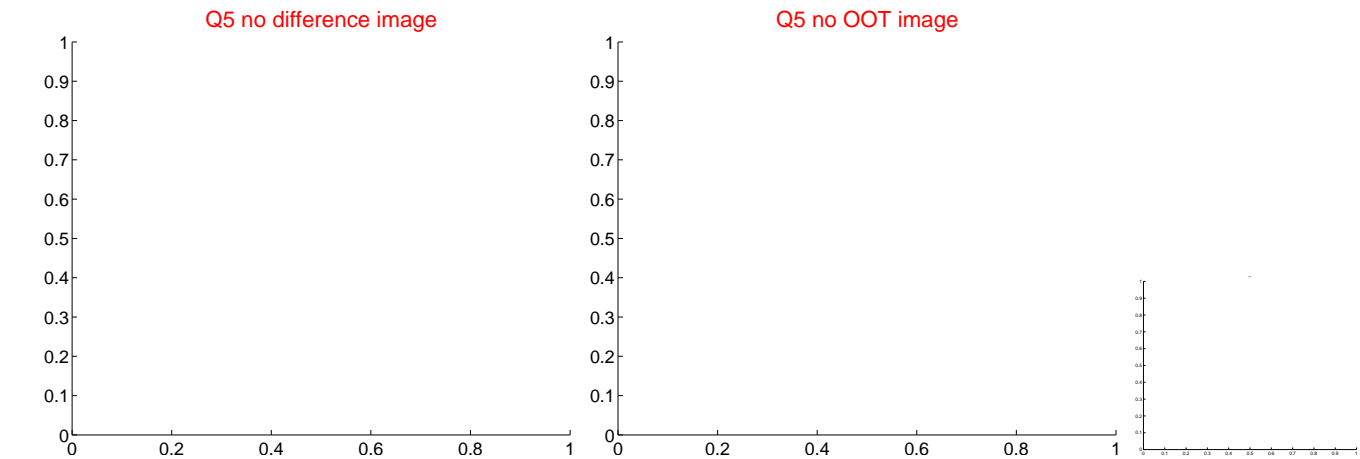
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



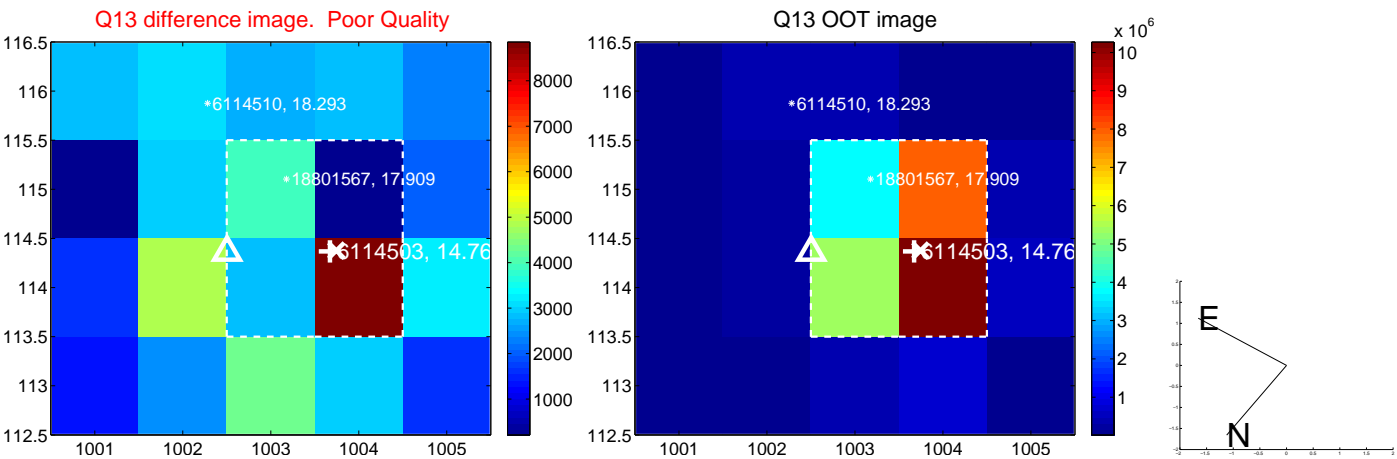
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



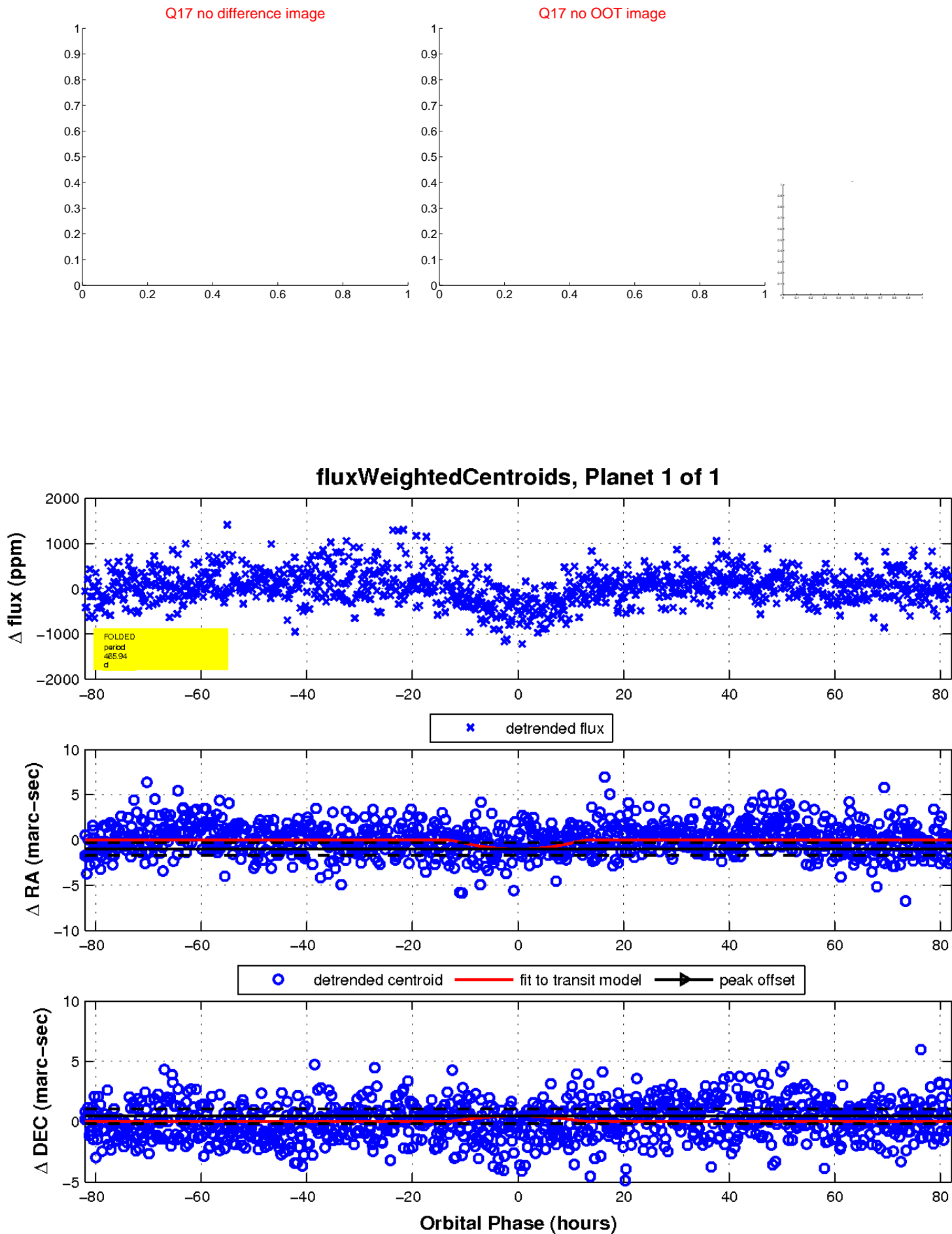
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

