

# KIC 010460258

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010460258-01	OBS	No	603.254664	329.263127	229.3	14.074	10.5	10.1	1.64	6779	2.72	2.40

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010460258-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_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.

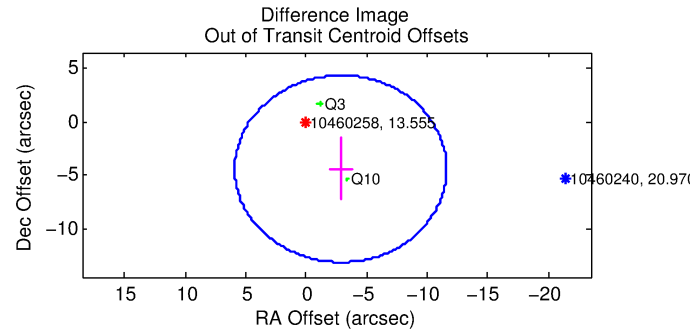
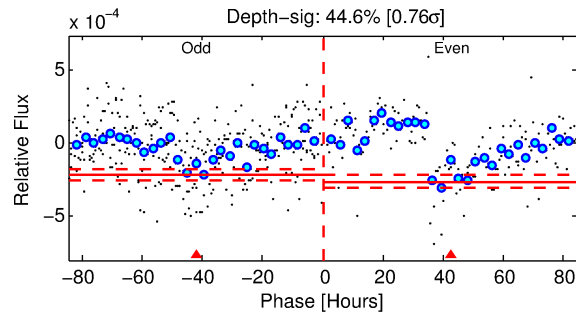
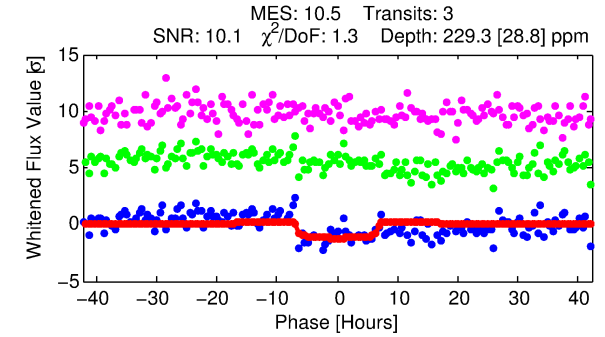
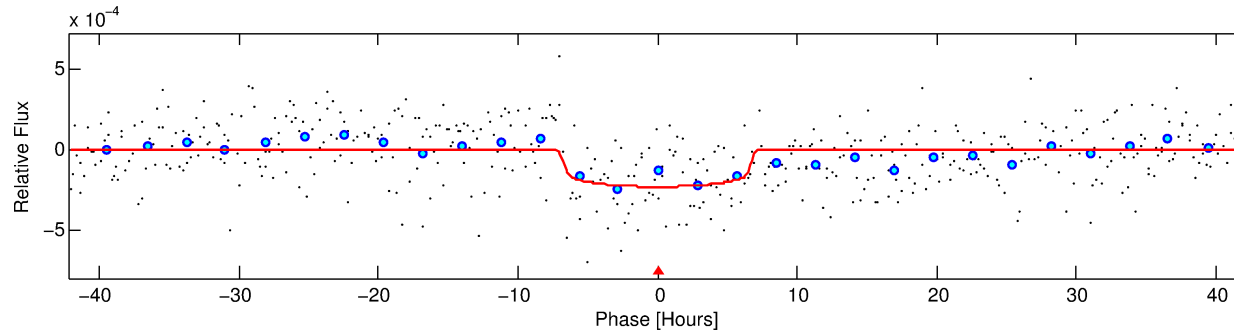
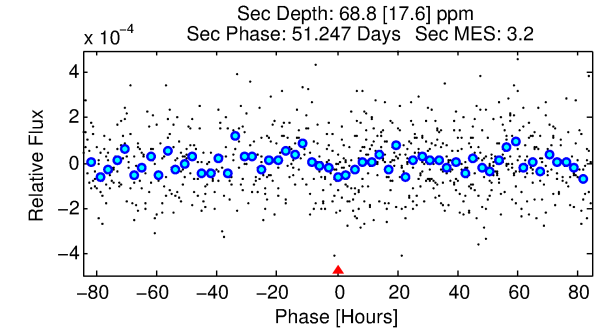
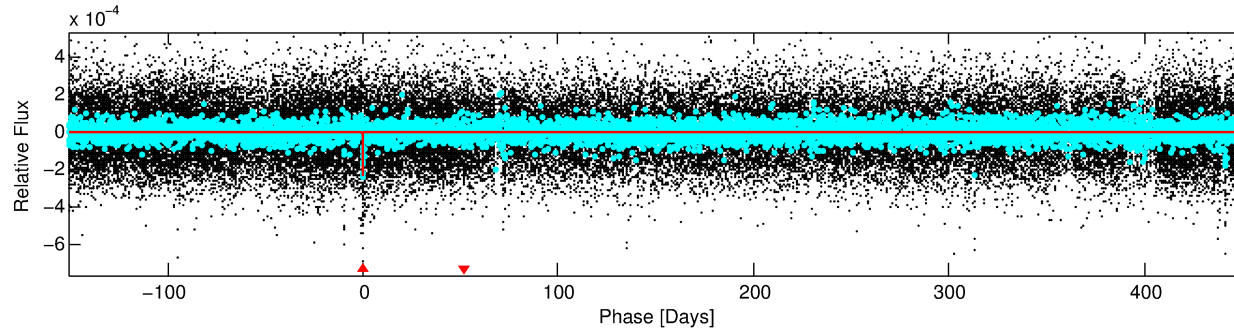
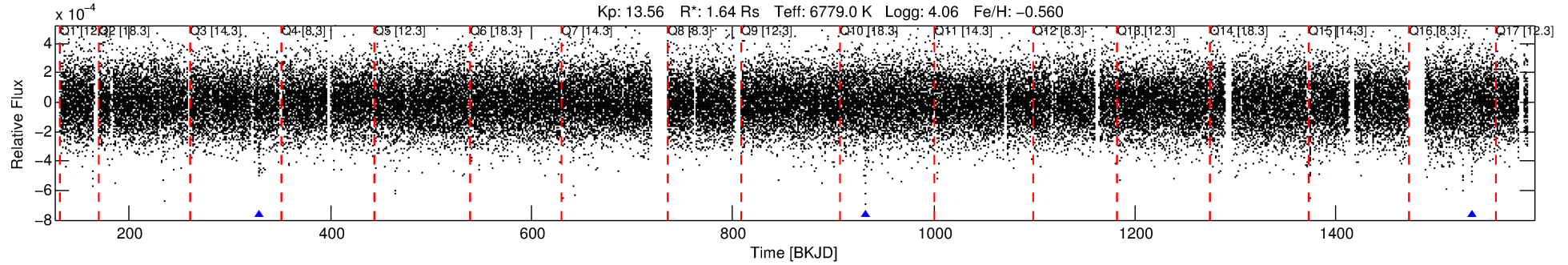
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010460258-01

No Significant Match Found

# DV One-Page Summary

KIC: 10460258 Candidate: 1 of 1 Period: 603.255 d



## DV Fit Results:

Period = 603.25466 [0.01543] d  
Epoch = 329.2631 [0.0185] BKJD  
Rp/R\* = 0.0152 [0.0040]  
a/R\* = 209.34 [310.22]  
b = 0.79 [0.71]  
Seff = 2.40 [1.23]  
Teq = 317 [41] K  
Rp = 2.72 [1.11] Re  
a = 1.4534 [0.4449] AU  
Ag = 10780.24 [8267.71] [1.30σ]  
Teffp = 5000 [750] K [6.23σ]

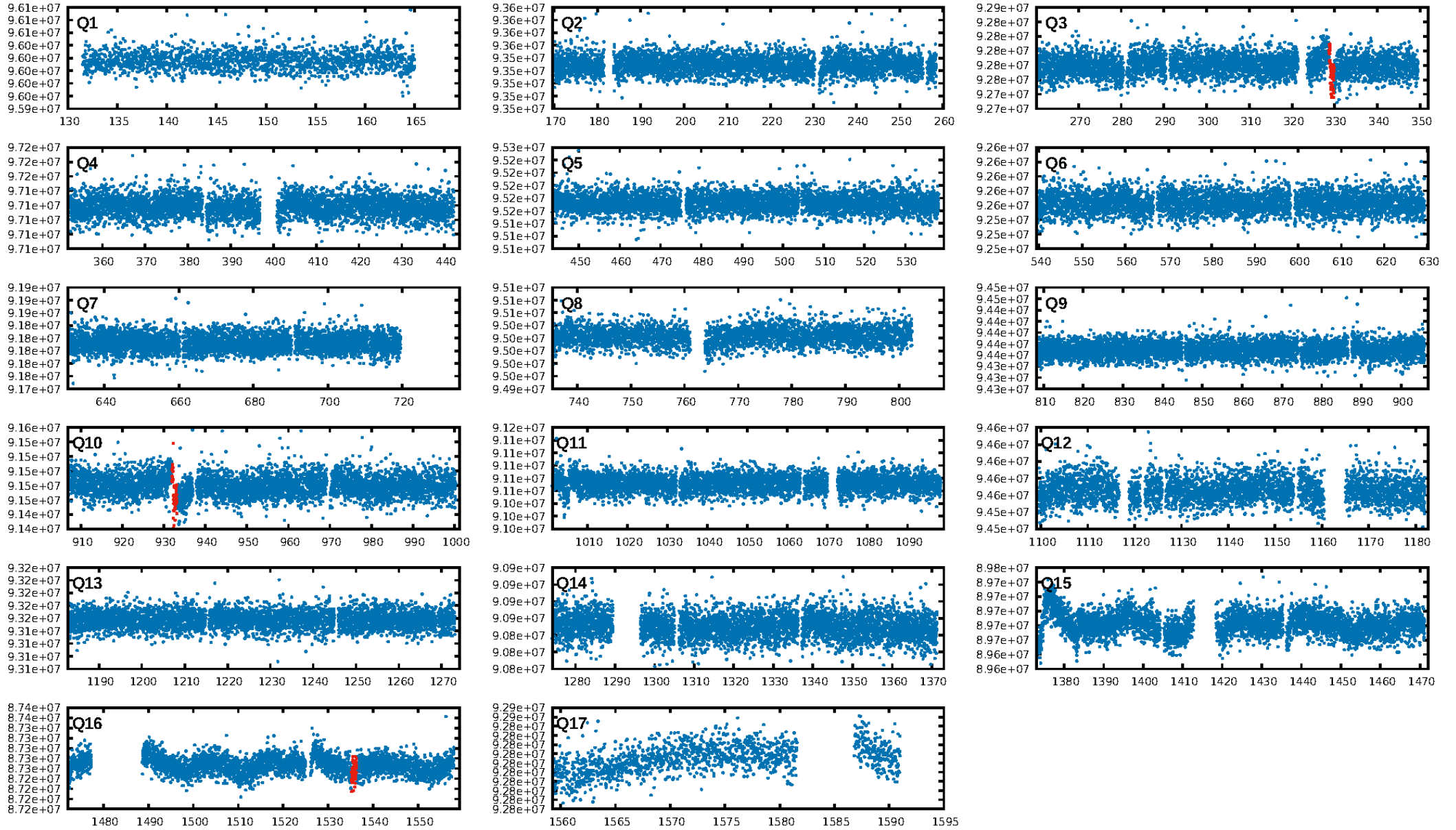
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.2%  
ModelChiSquareGof-sig: 81.0%  
Bootstrap-pfa: 1.44e-12  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 58.54  
Centroid-sig: 2.1%  
Centroid-so: 2.631 arcsec [2.61σ]  
OotOffset-rm: 5.235 arcsec [1.80σ]  
KicOffset-rm: 5.925 arcsec [1.73σ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

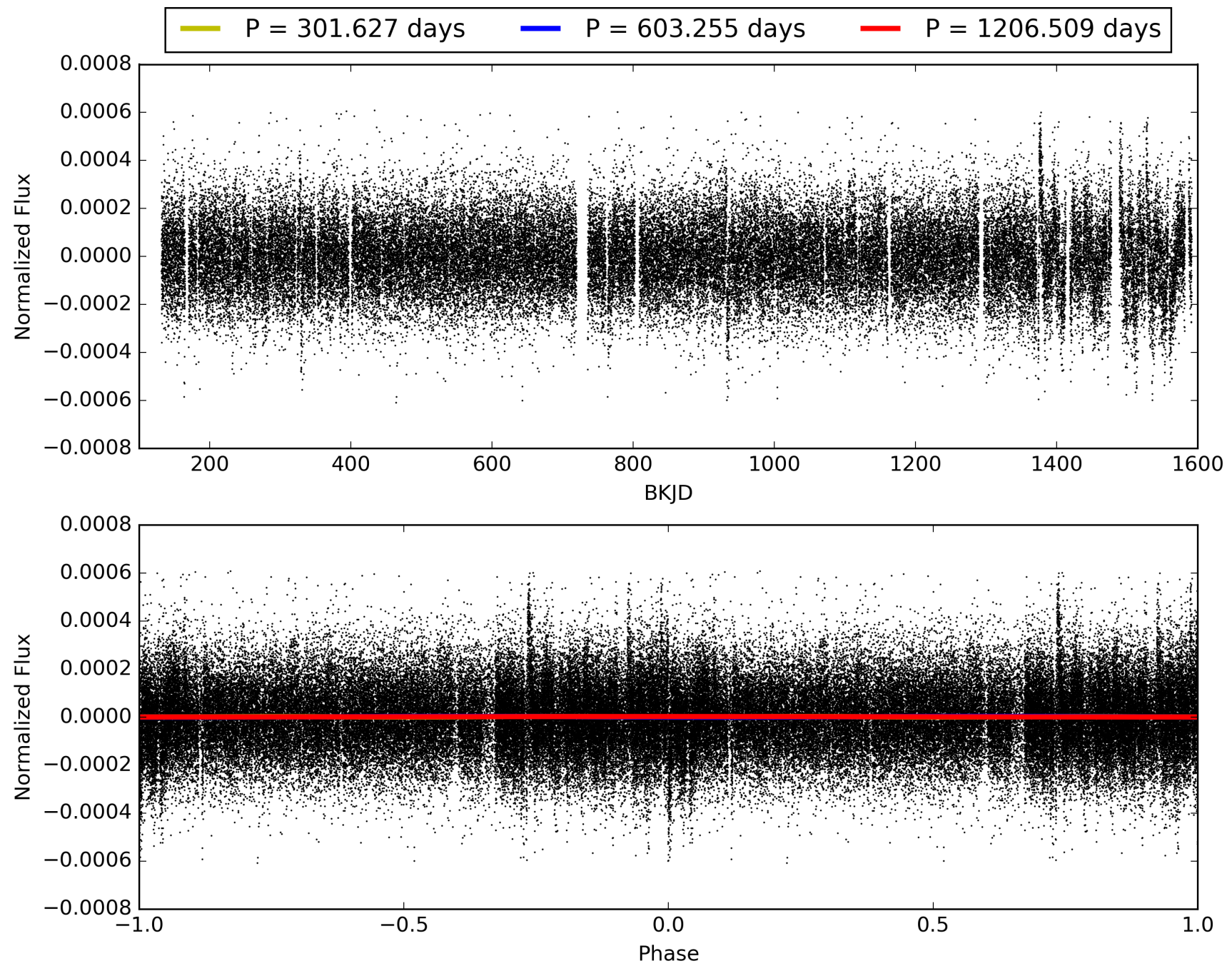
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:19:14 Z

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

# TCE 010460258-01, PDC Light Curves

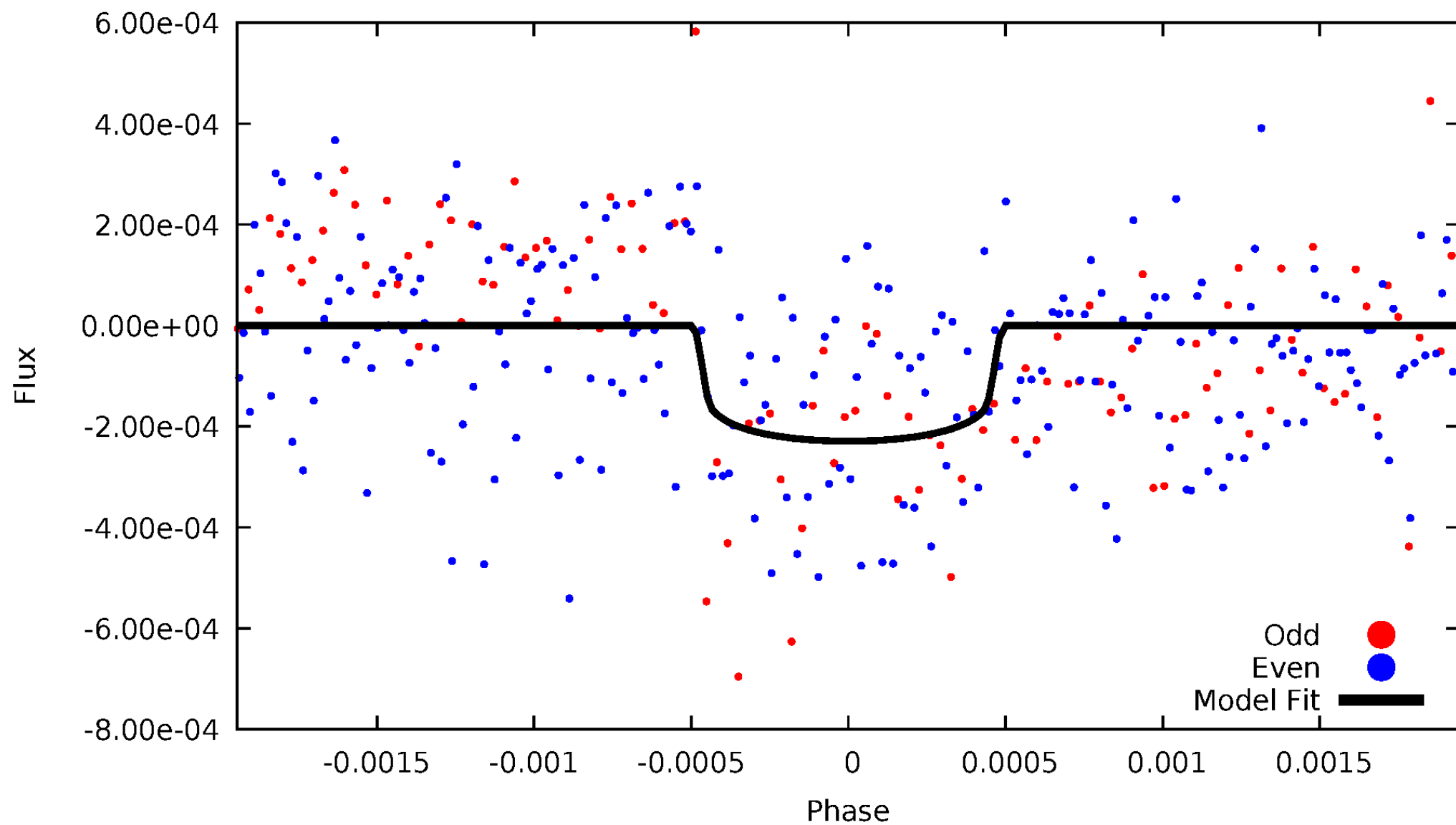


# TCE 010460258-01



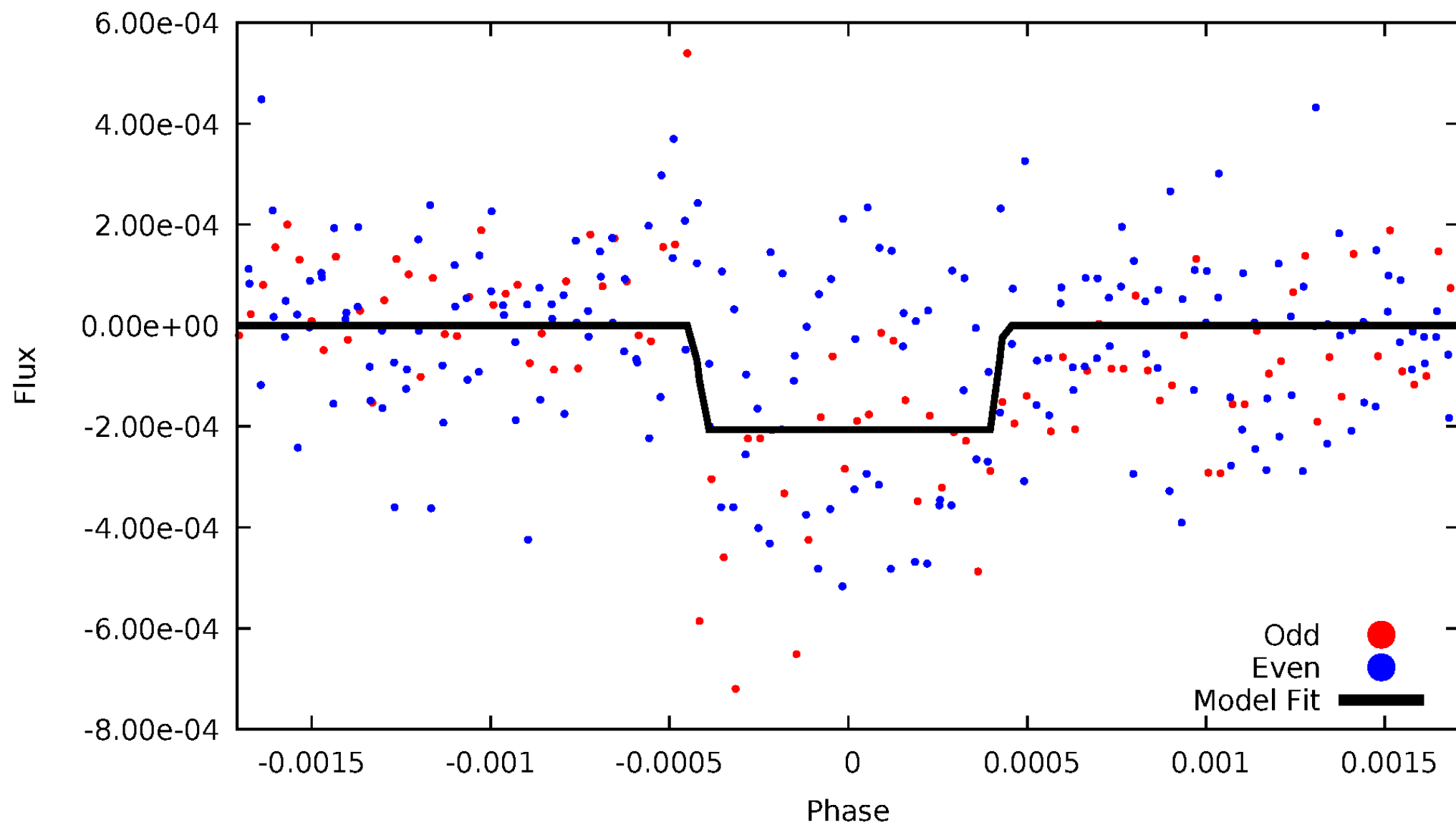
# DV Odd/Even

TCE 010460258-01



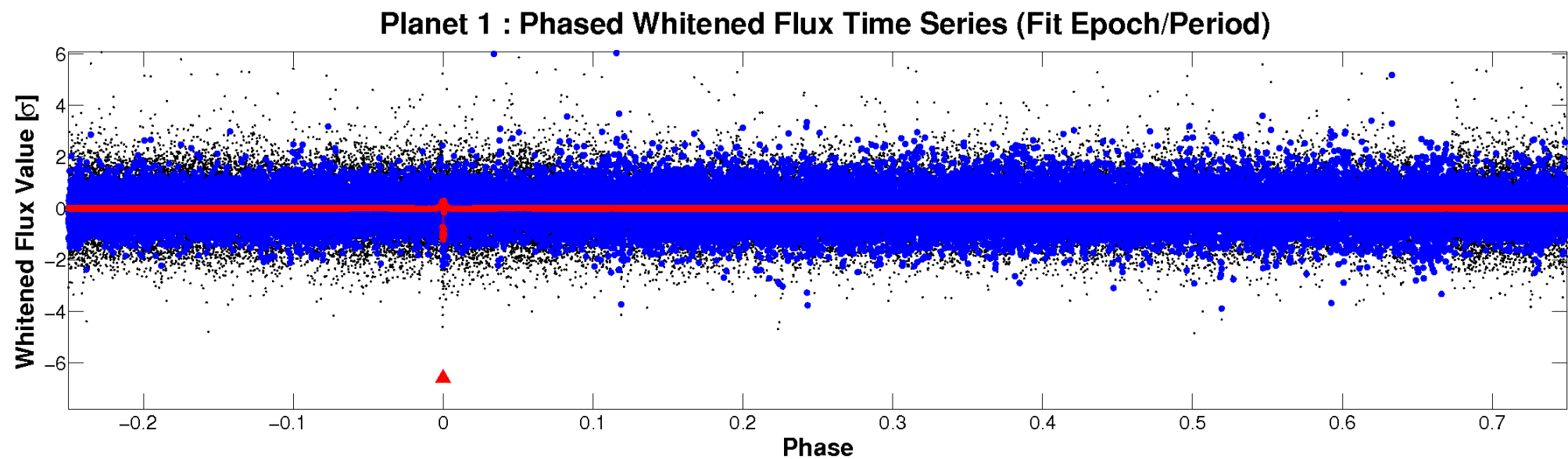
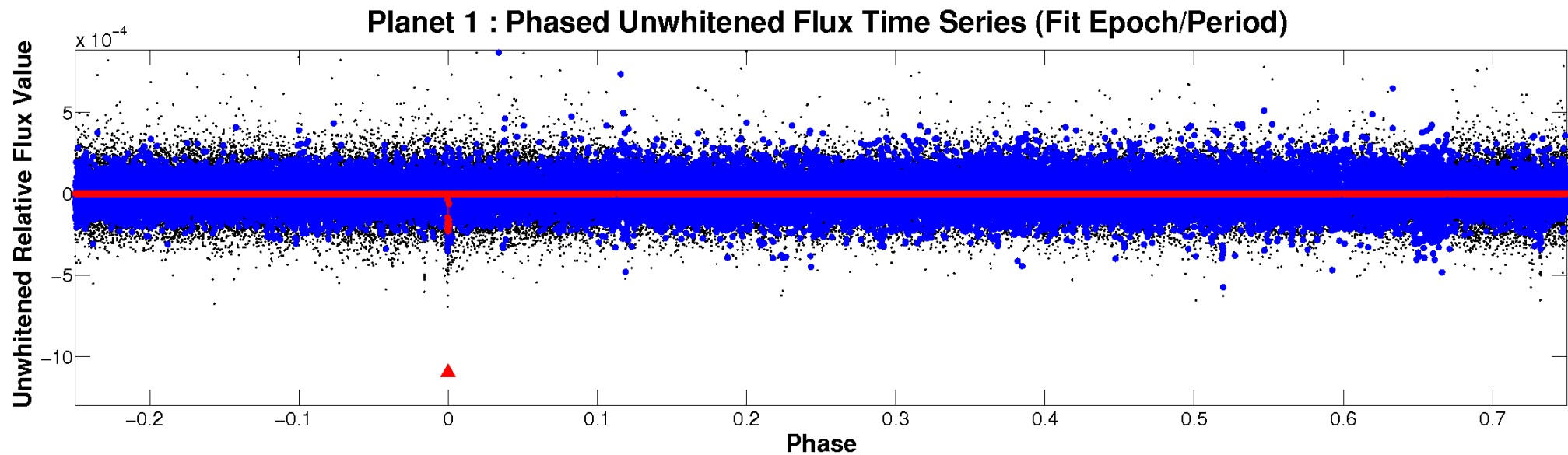
# ALT Odd/Even

TCE 010460258-01





# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

TCE 010460258-01 P=603.254664 Days  $T_0=329.263127$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 010460258-01 P=603.254664 Days  $T_0=329.263127$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

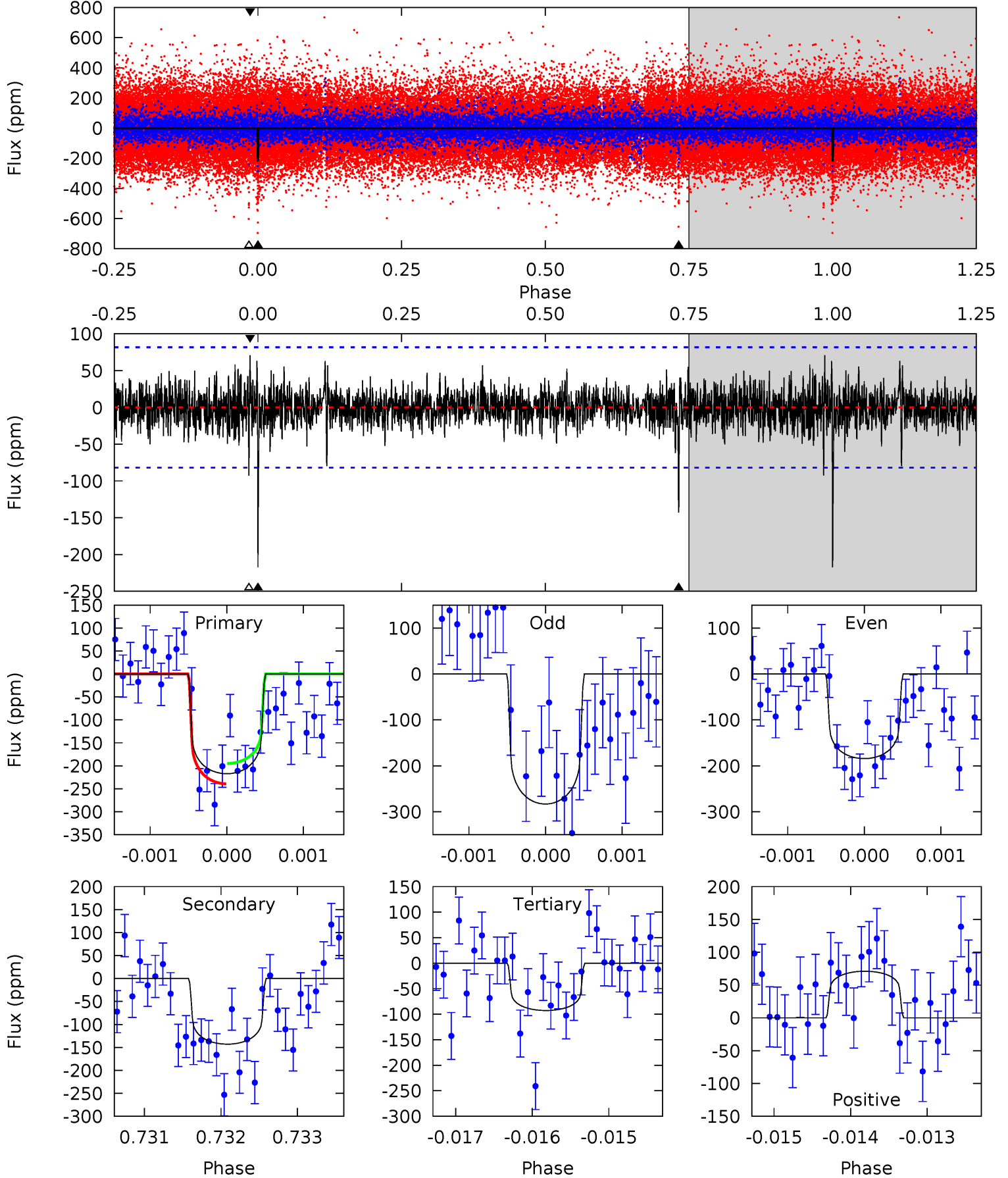
TCE 010460258-01 P=603.280425 Days  $T_0=329.215979$  (BKJD)



# DV Model-Shift Uniqueness Test

010460258-01, P = 603.254664 Days, E = 329.263127 Days

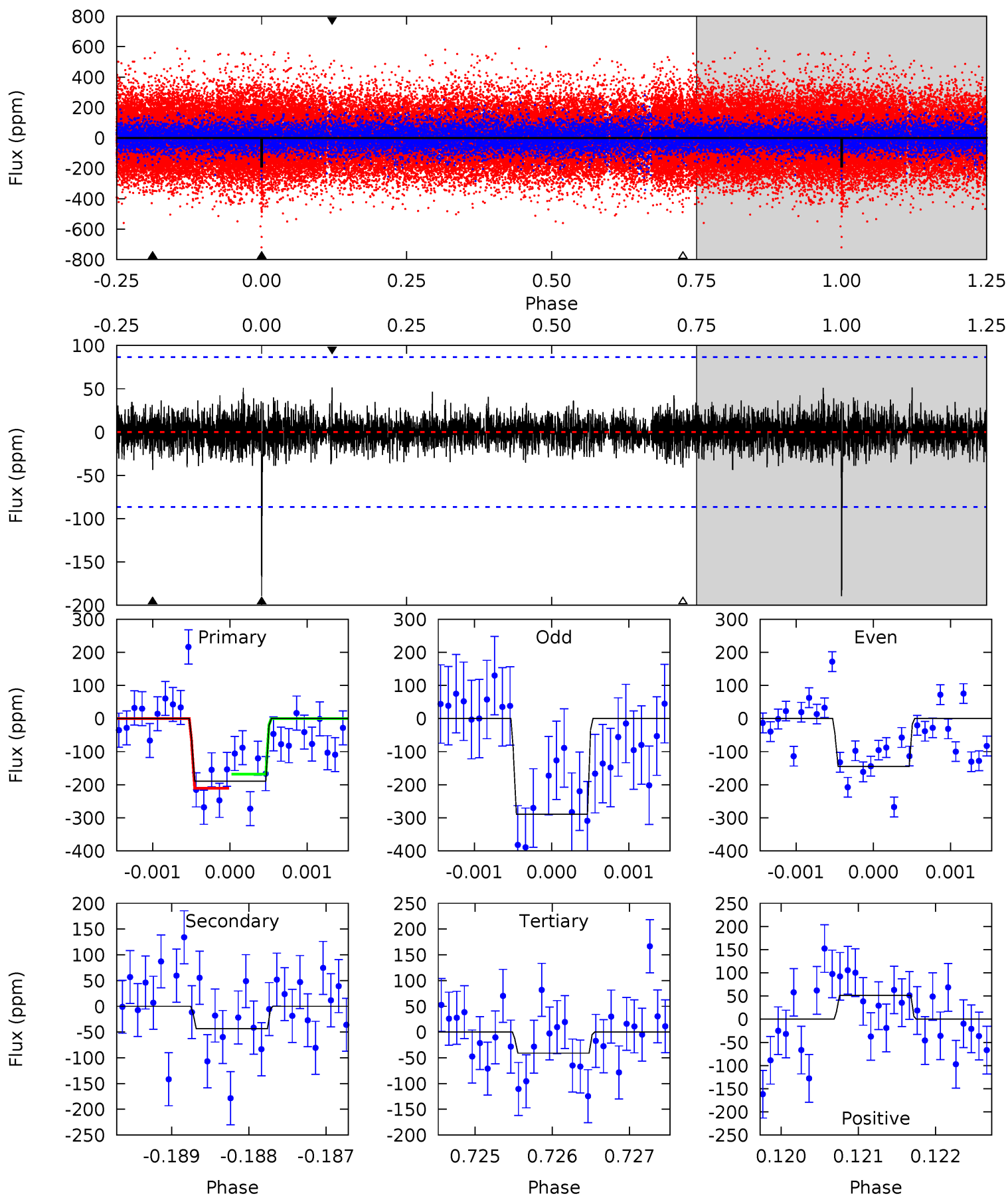
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	9.53	6.18	4.73	5.45	3.29	1.18	8.30	9.74	3.35	4.79	3.13	0.77	0.25	1.48



# Alt Model-Shift Uniqueness Test

010460258-01, P = 603.280425 Days, E = 329.215979 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
12.0	2.76	2.59	3.27	5.48	3.33	0.77	9.40	8.73	0.17	-0.51	4.36	0.67	0.21	1.36



### Stellar Parameters For KIC 010460258

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6779^{+183}_{-224}$	$4.061^{+0.293}_{-0.158}$	$-0.560^{+0.300}_{-0.300}$	$1.637^{+0.417}_{-0.510}$	$1.124^{+0.178}_{-0.146}$	$0.361^{+0.665}_{-0.153}$
	+3%/-3%	+7%/-4%	+54%/-54%	+25%/-31%	+16%/-13%	+184%/-42%
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 010460258-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-143 \pm 15$	$2.59^{+0.90}_{-0.79}$	$437^{+32}_{-41}$	$5977^{+1045}_{-649}$	$24615^{+26745}_{-10941}$
Alt.	$-44 \pm 16$	$2.51^{+0.82}_{-0.78}$	$438^{+34}_{-39}$	$4691^{+772}_{-588}$	$7868^{+9279}_{-3984}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$

## DV Centroid Data

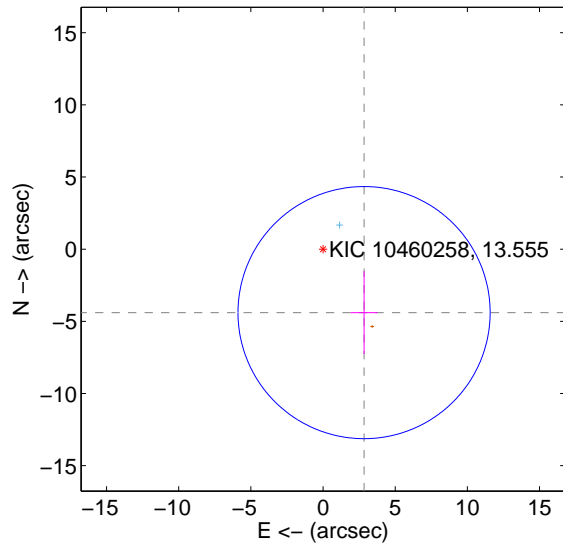
Supplemental centroid analysis for 010460258-01. Kepler magnitude: 13.55. Transit SNR 10.07

There are 1 quarters with good PRF difference image offsets

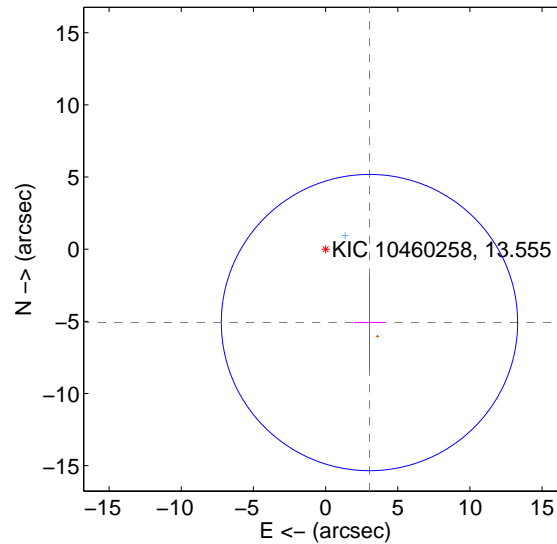
The direct PRF centroid is offset from the target star catalog position by about 0.71 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.235 \pm 2.911$	1.80	$-2.843 \pm 0.927$	$-4.396 \pm 2.869$
PRF-fit source offset from KIC position	$5.925 \pm 3.421$	1.73	$-3.041 \pm 1.071$	$-5.085 \pm 3.347$
photometric centroid source offset	$2.63 \pm 1.01$	2.61	$-1.65 \pm 0.98$	$-2.05 \pm 1.02$

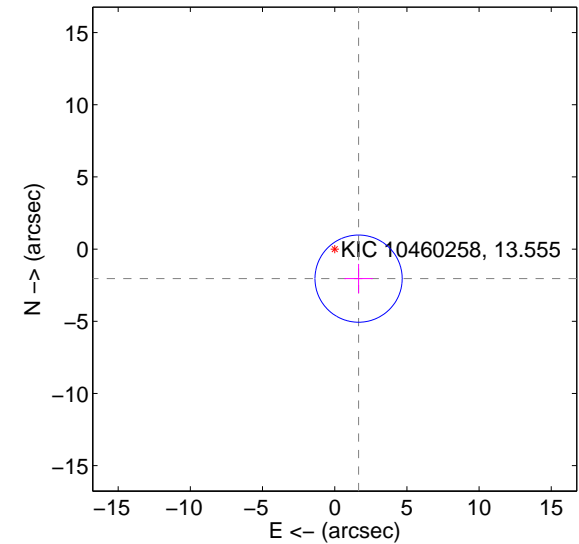
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

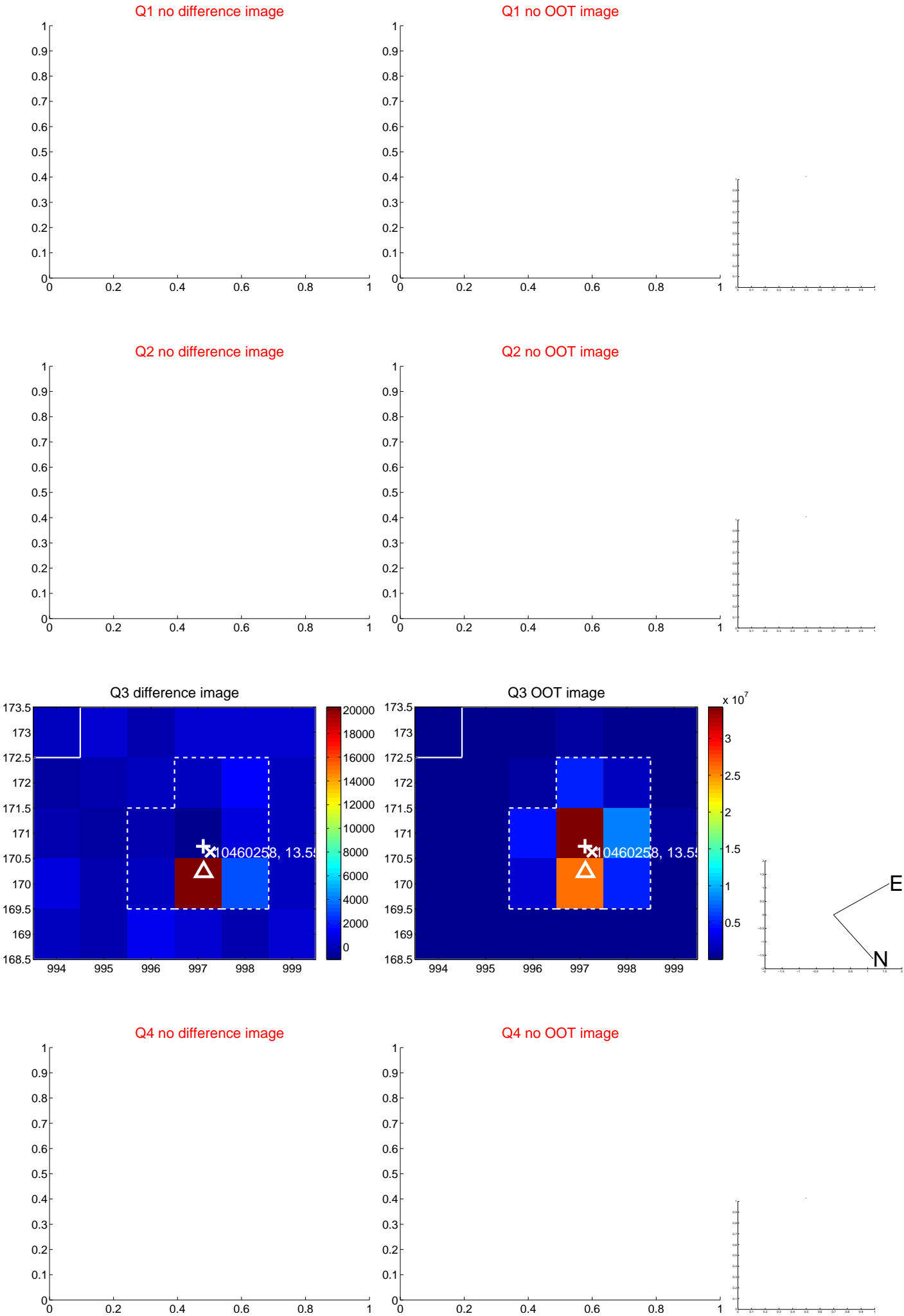


offset from photometric centroids



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.

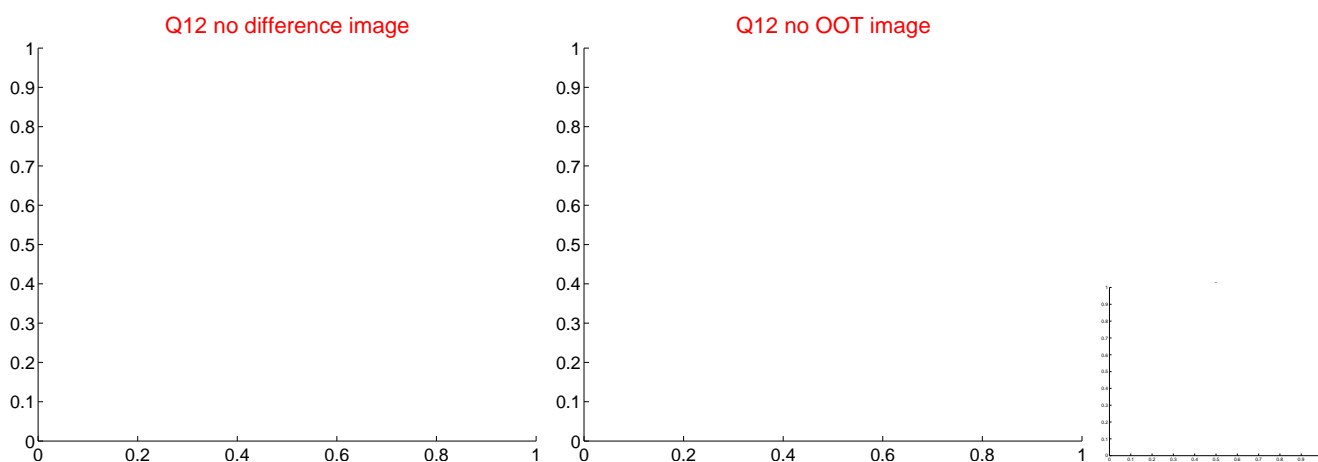
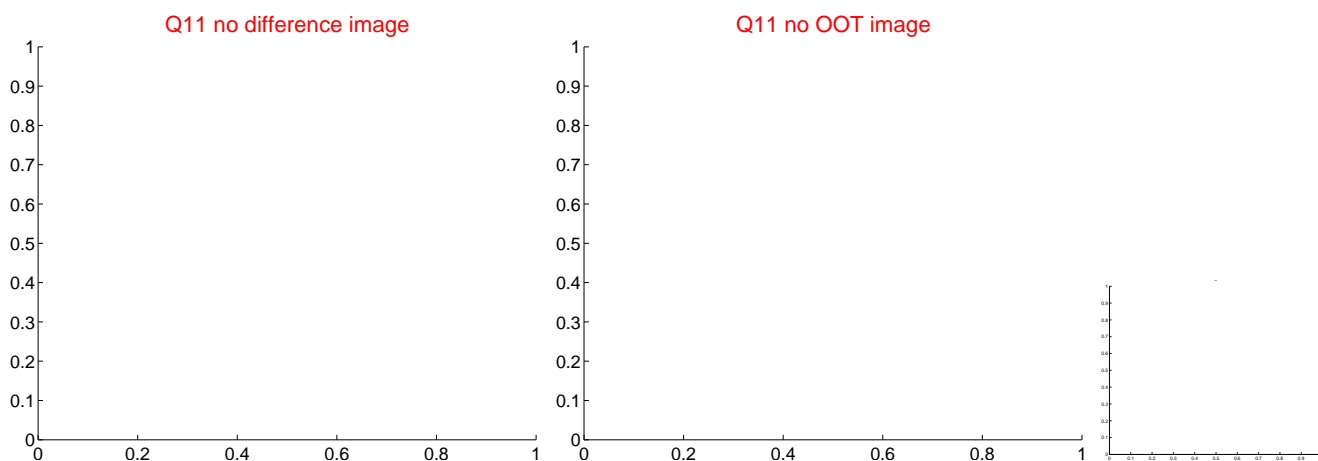
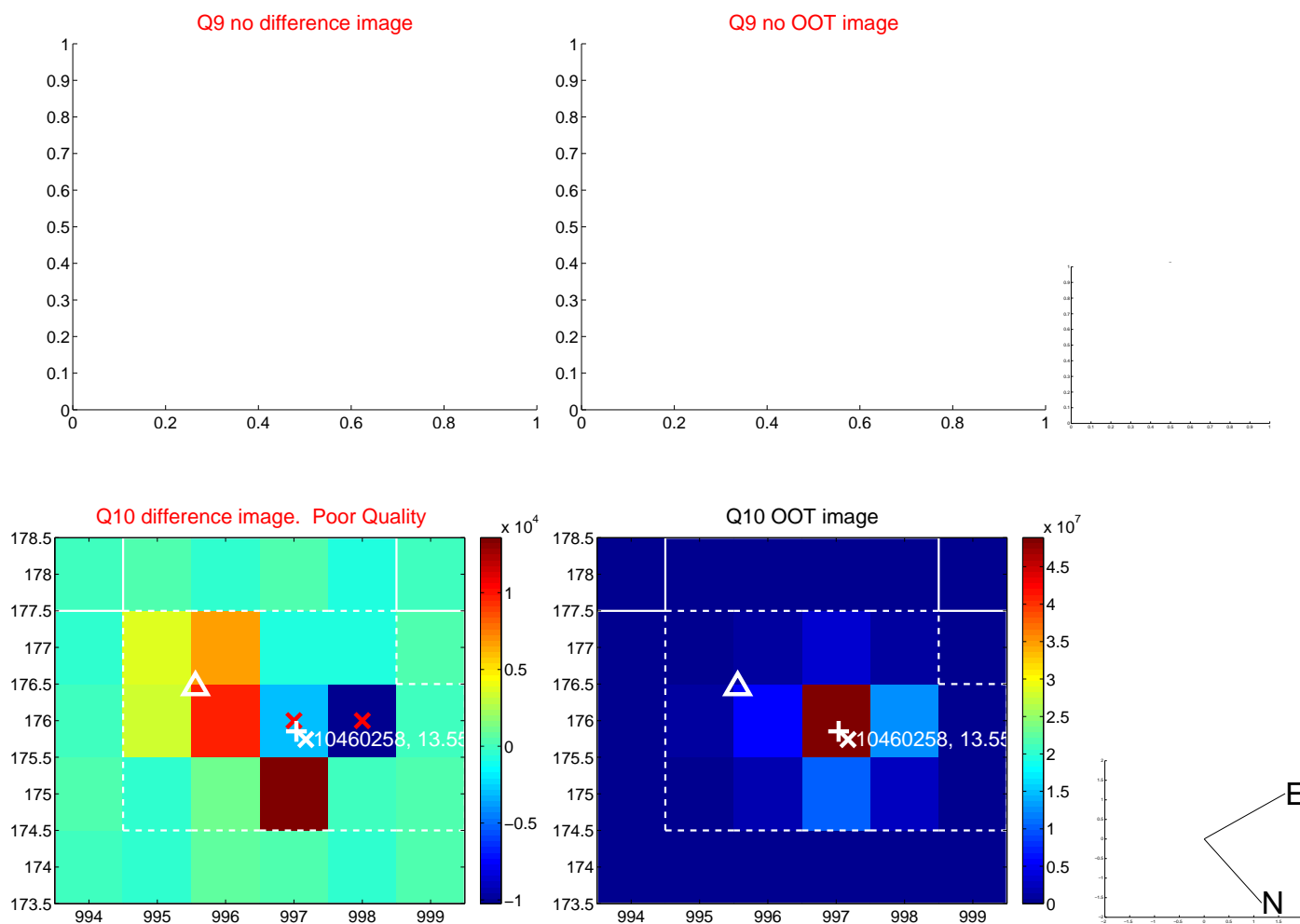




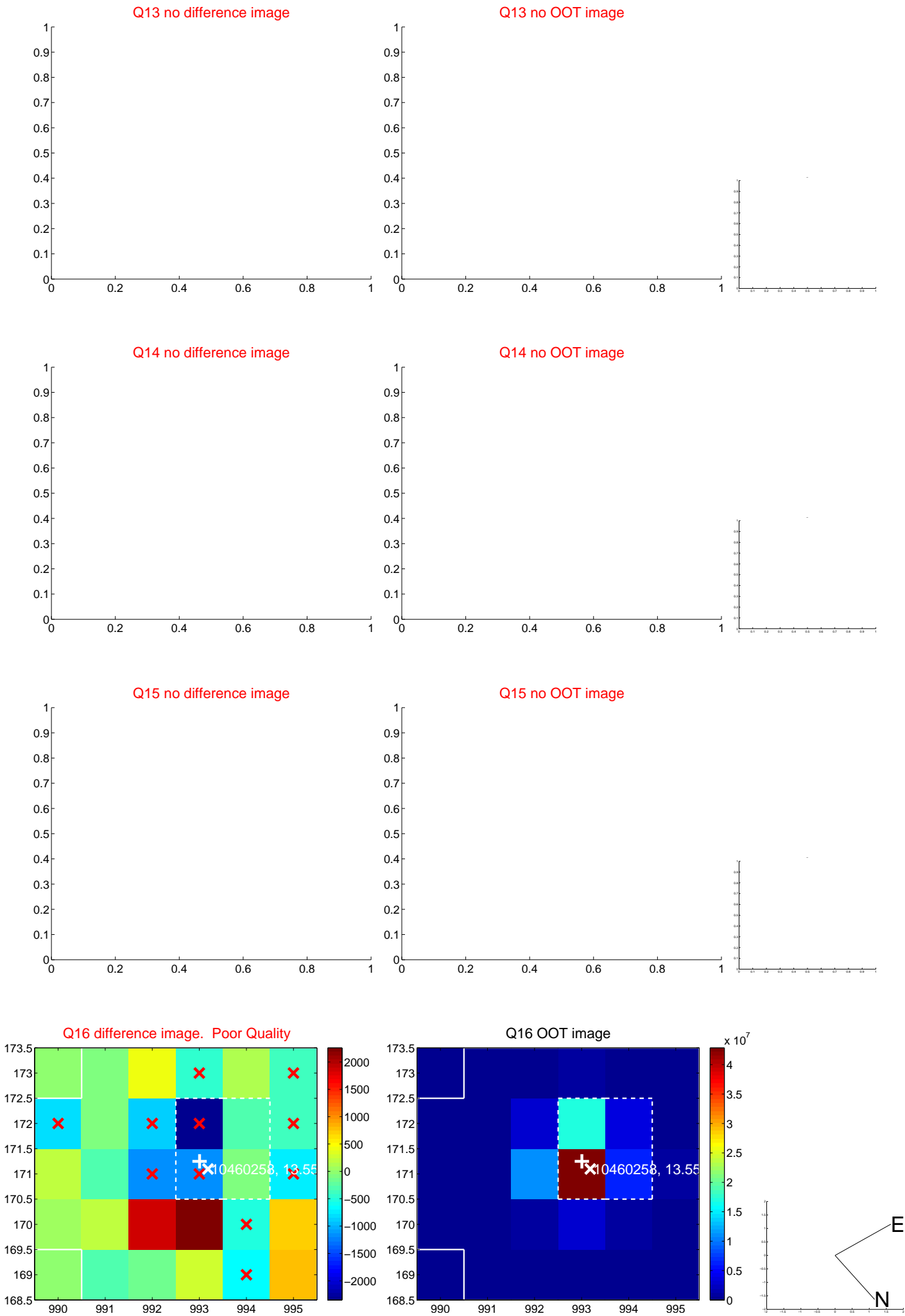
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



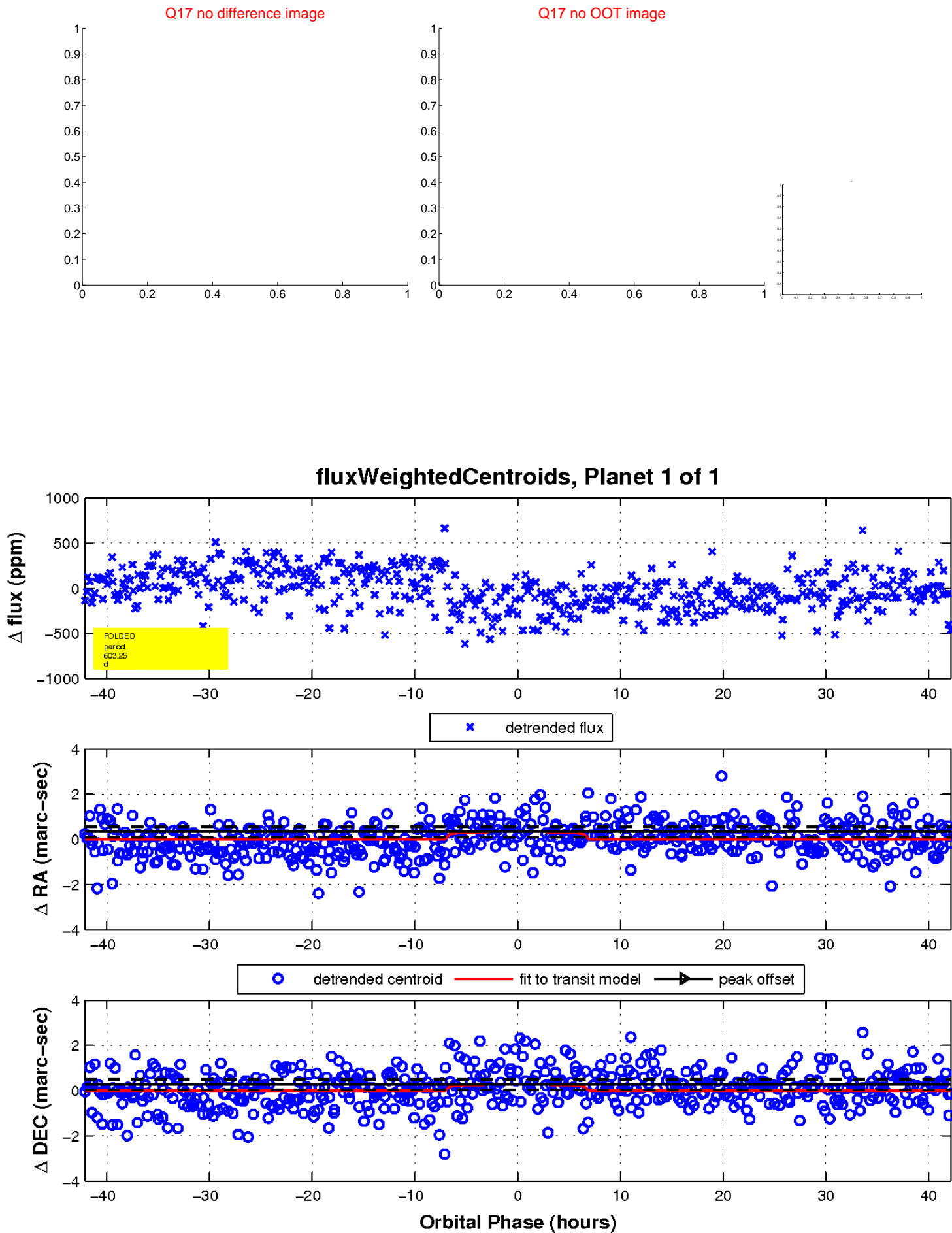
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



white ×: 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.



UKIRT Image

Declination

