

# KIC 002693162

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002693162-01	OBS	No	531.488518	338.158844	199.3	13.556	7.6	7.1	2.34	5278	3.79	2.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002693162-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_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.

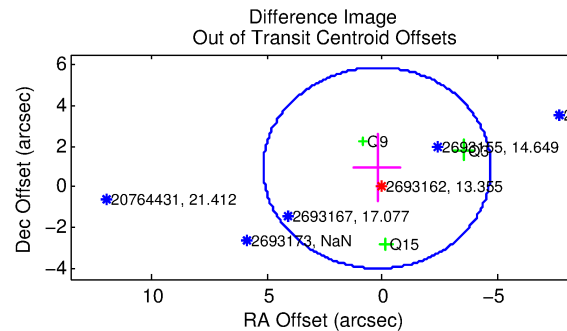
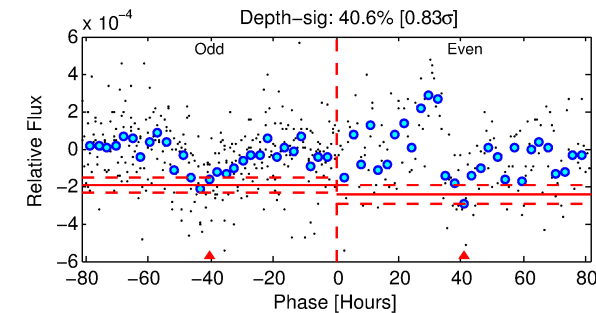
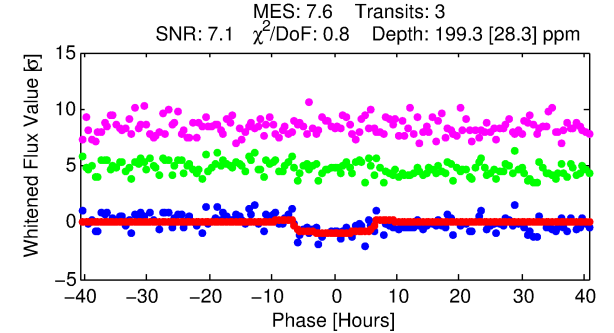
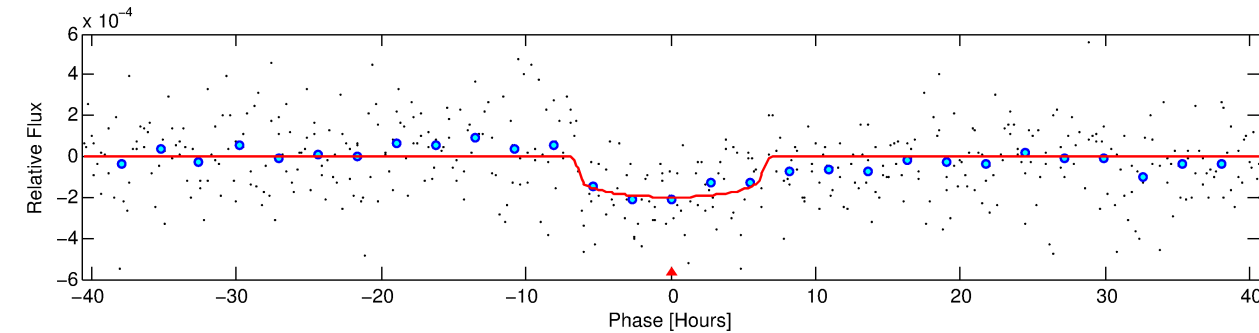
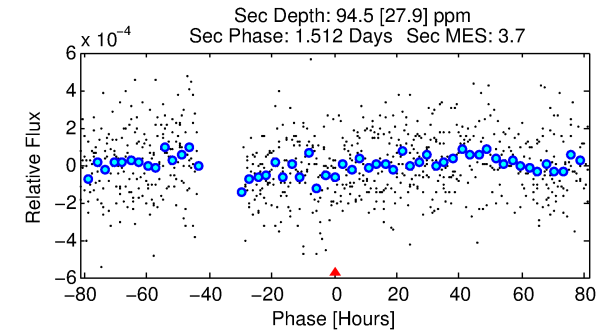
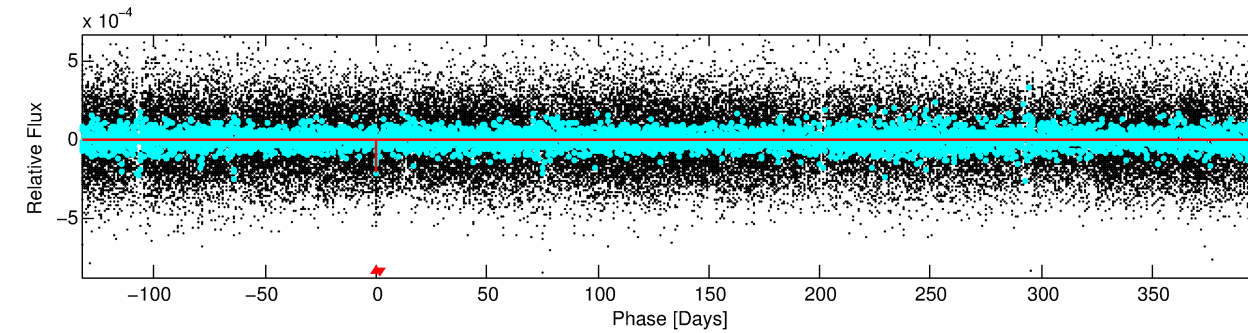
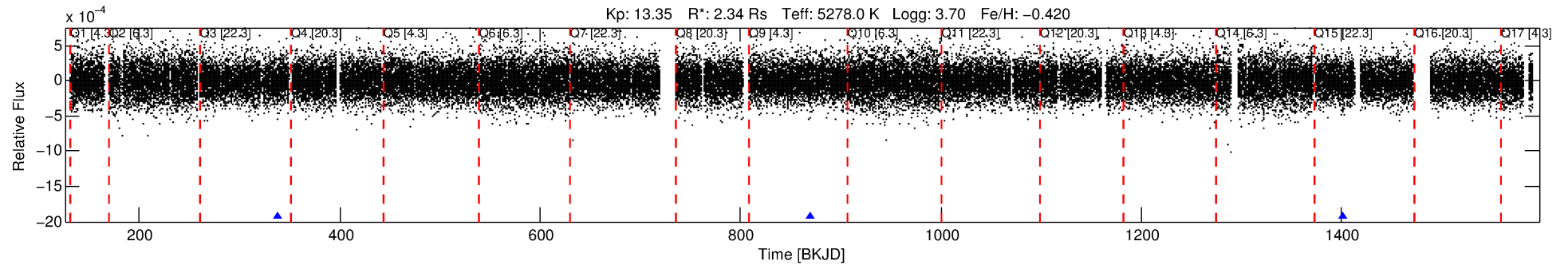
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 002693162-01

No Significant Match Found

# DV One-Page Summary

KIC: 2693162 Candidate: 1 of 1 Period: 531.489 d



## DV Fit Results:

Period = 531.48852 [0.01622] d  
Epoch = 338.1588 [0.0215] BKJD  
Rp/R\* = 0.0148 [0.0049]  
a/R\* = 166.43 [231.45]  
b = 0.85 [0.46]  
Seff = 2.31 [3.30]  
Teq = 314 [112] K  
Rp = 3.79 [2.76] Re  
a = 1.2855 [1.0353] AU  
Ag = 5980.48 [9565.68] [0.63σ]  
Teffp = 4273 [785] K [4.99σ]

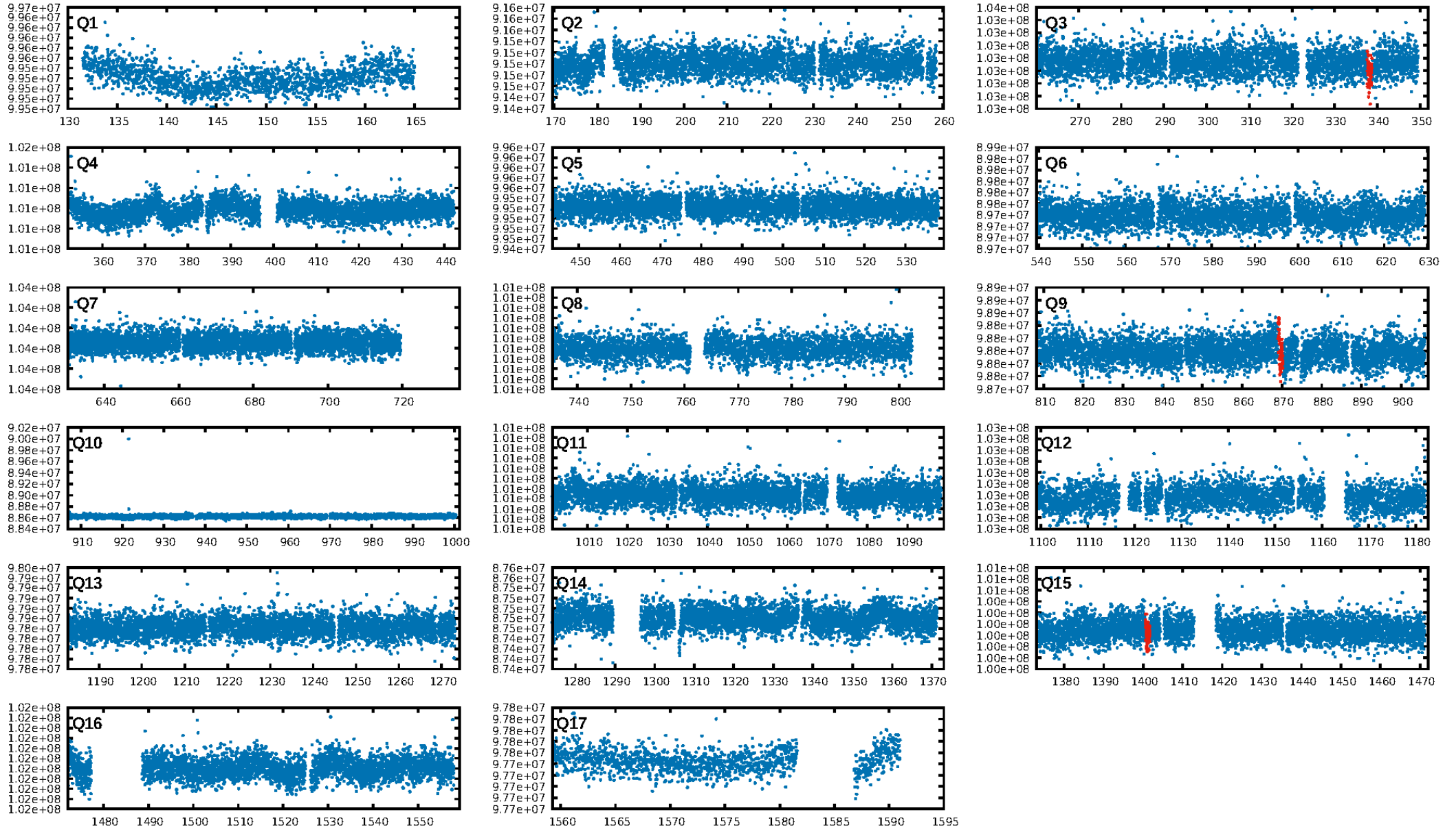
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 96.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.59e-14  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -2.567  
Centroid-sig: 33.0%  
Centroid-so: 1.925 arcsec [1.10σ]  
OotOffset-rm: 0.961 arcsec [0.59σ]  
KicOffset-rm: 0.937 arcsec [0.57σ]  
OotOffset-st: 0/2/0/1 [3]  
KicOffset-st: 0/2/0/1 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

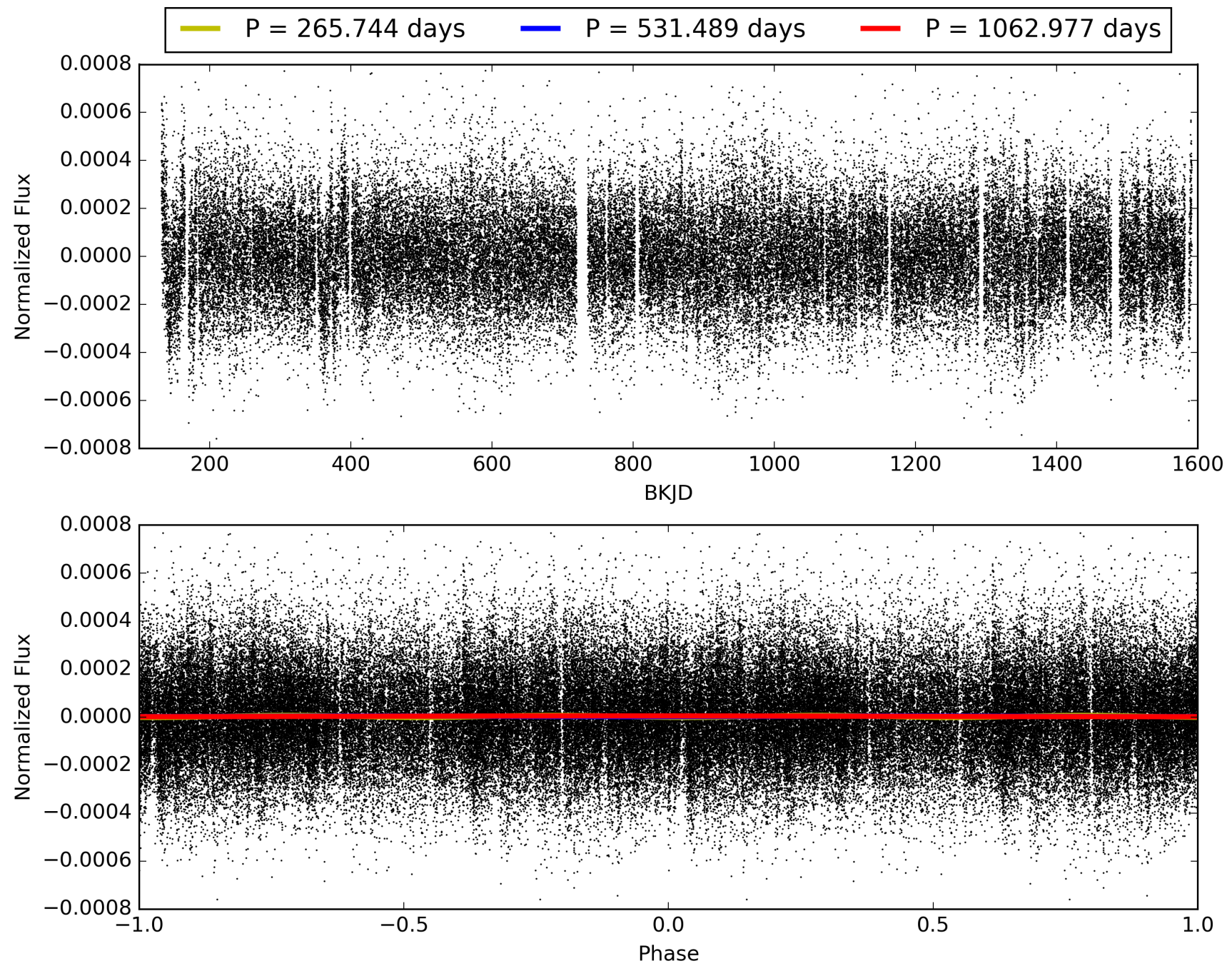
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:35:17 Z

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

# TCE 002693162-01, PDC Light Curves

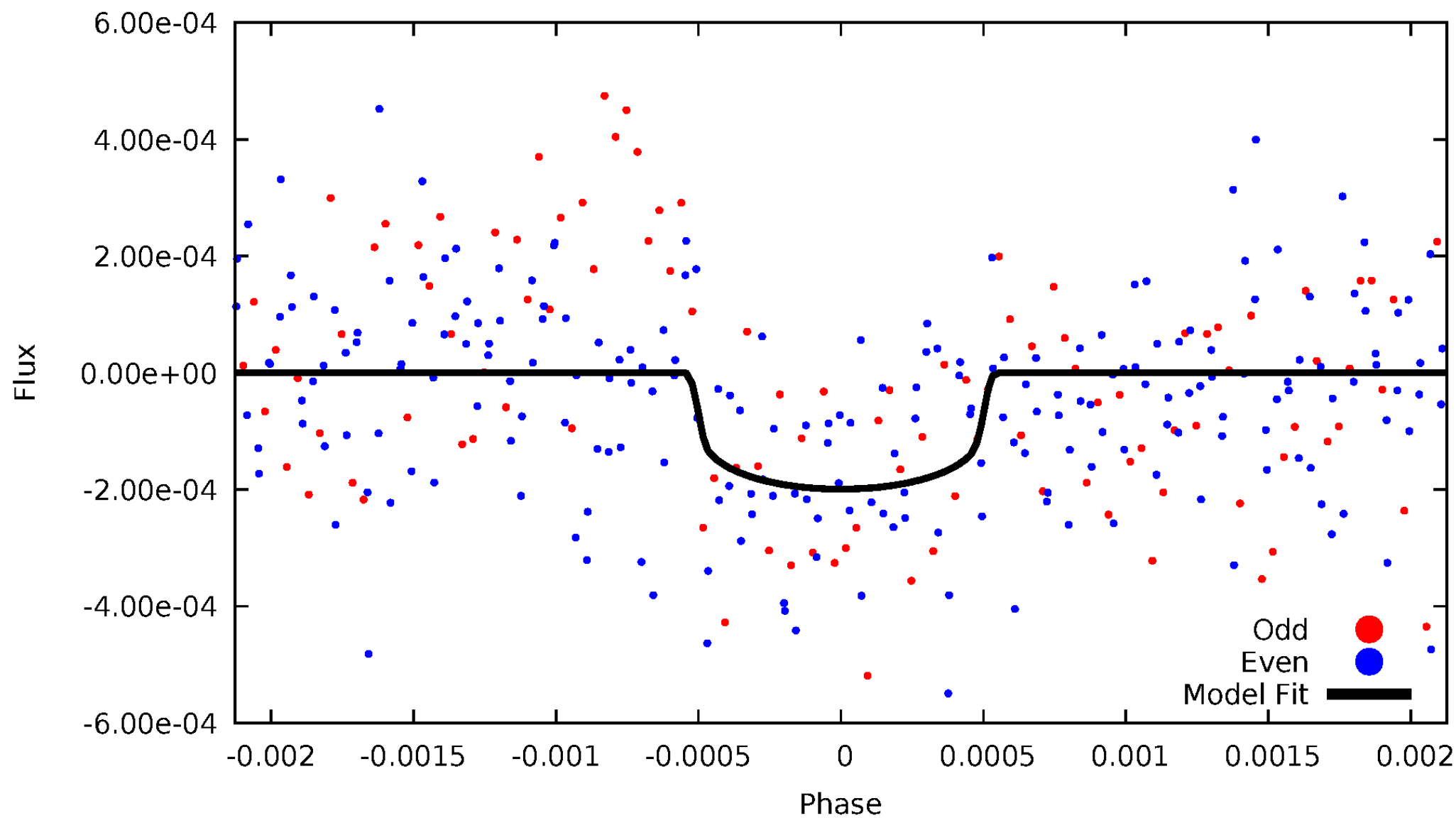


TCE 002693162-01



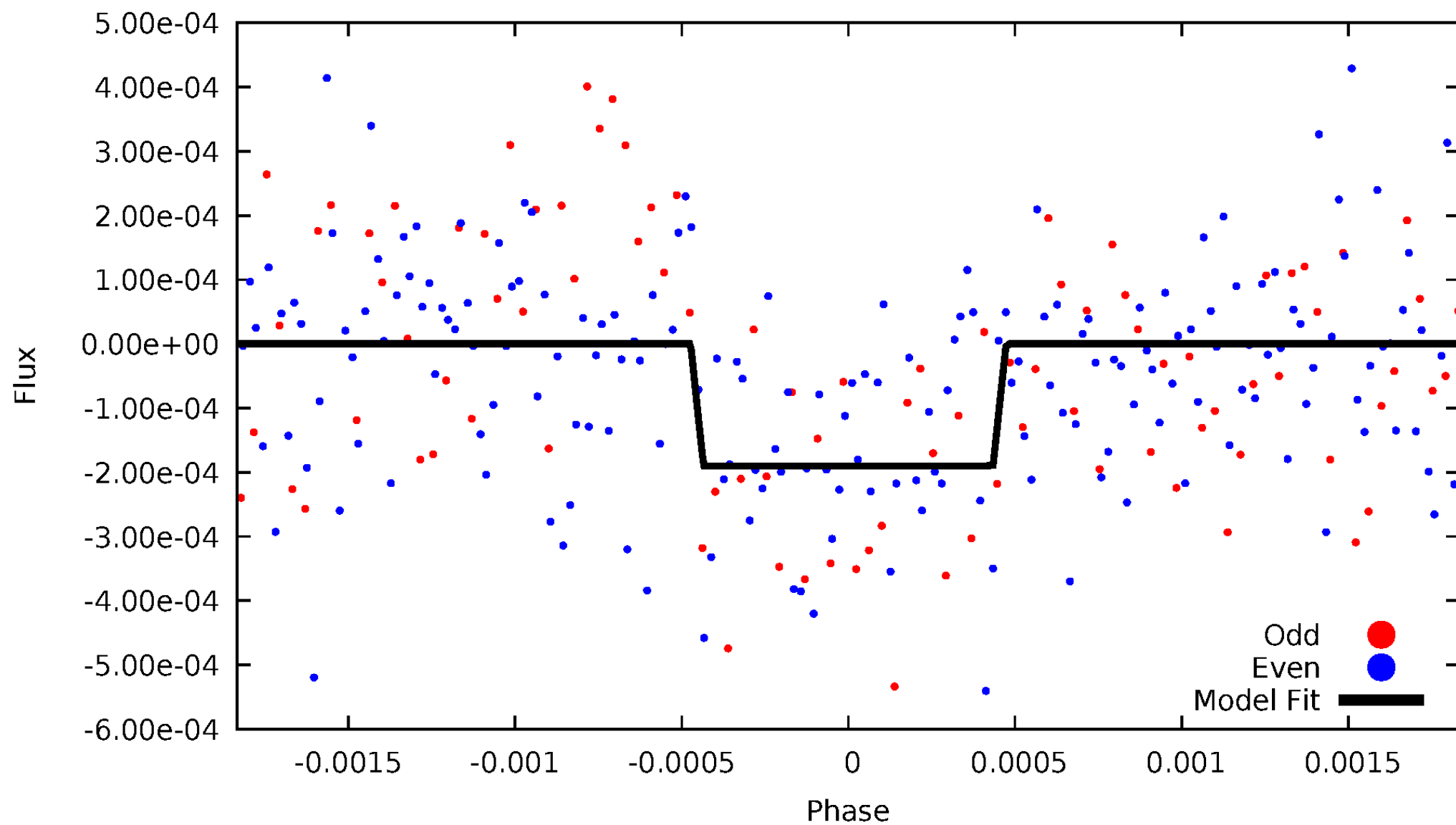
# DV Odd/Even

TCE 002693162-01



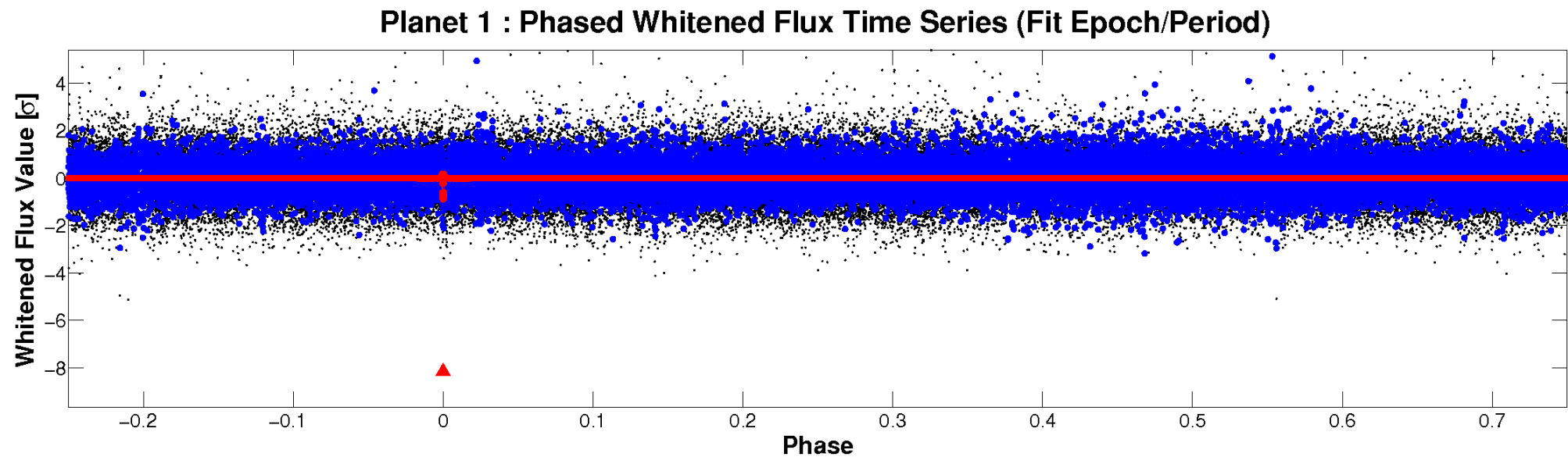
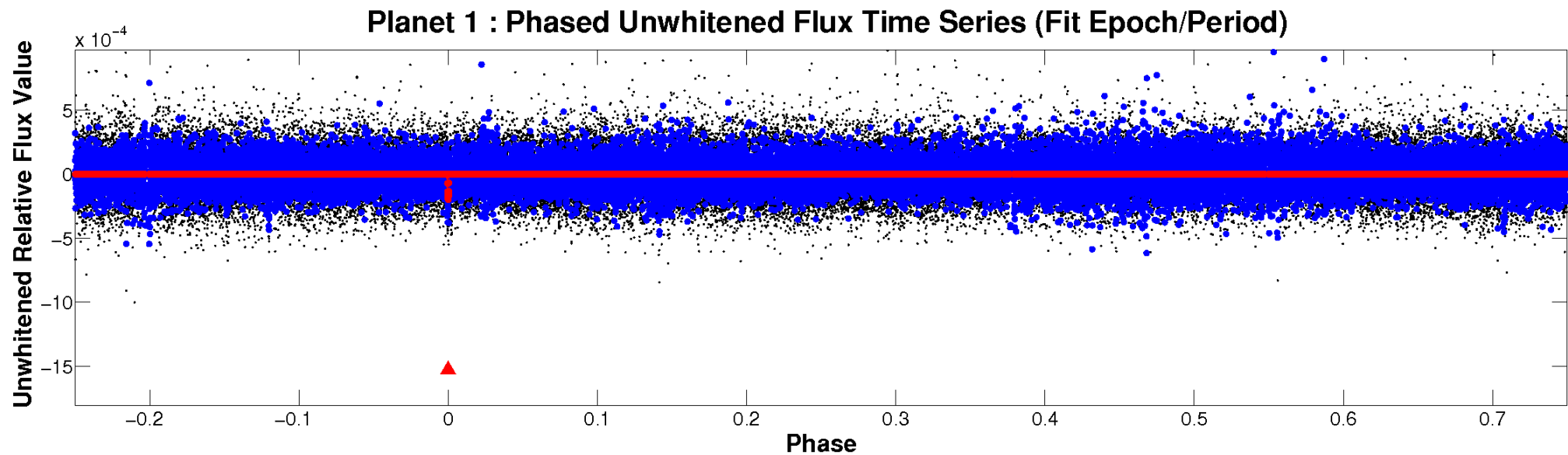
# ALT Odd/Even

TCE 002693162-01





# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

TCE 002693162-01 P=531.488518 Days  $T_0=338.158844$  (BKJD)





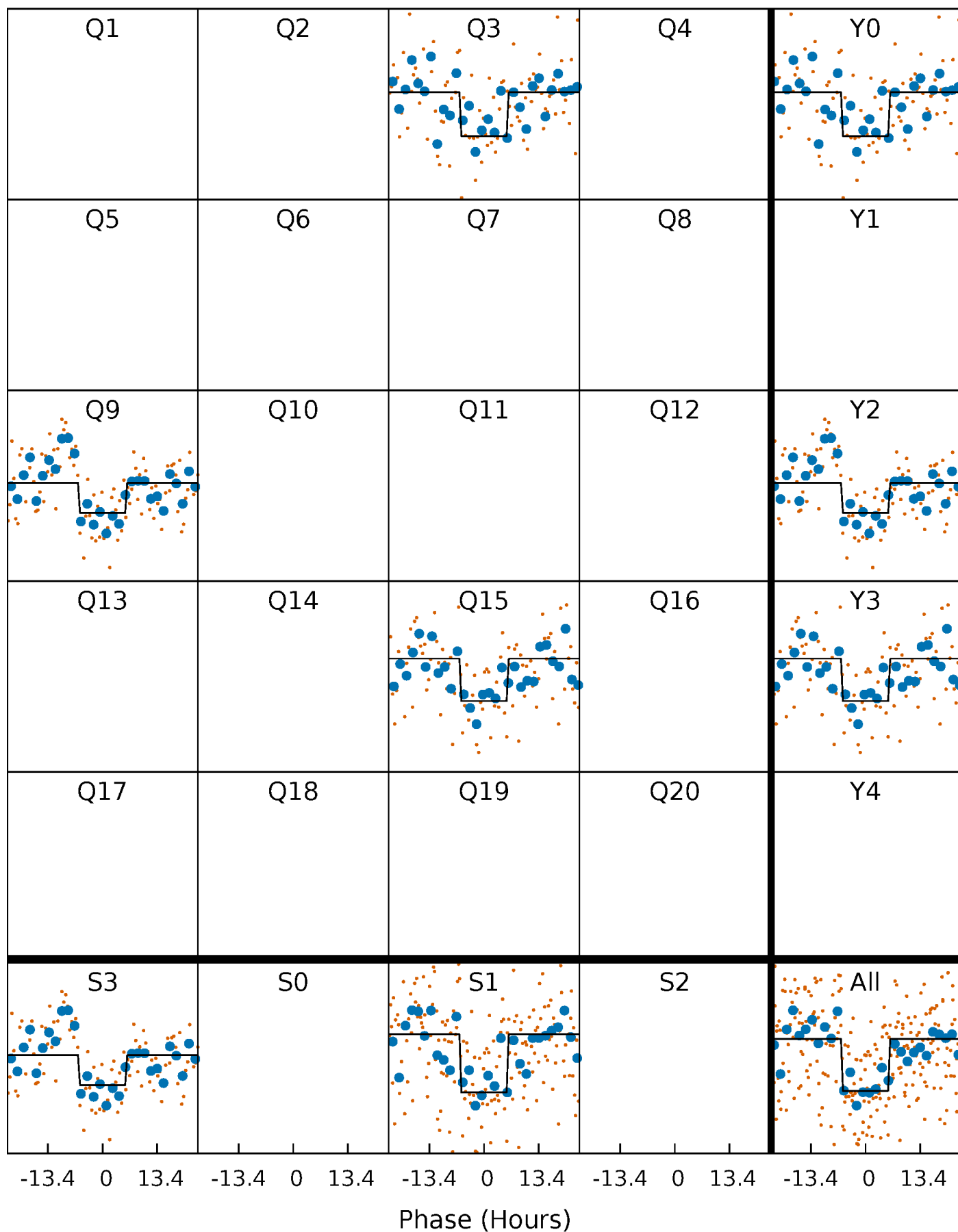
# DV Quarter-Phased Transit Curves

TCE 002693162-01     $P=531.488518$  Days     $T_0=338.158844$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

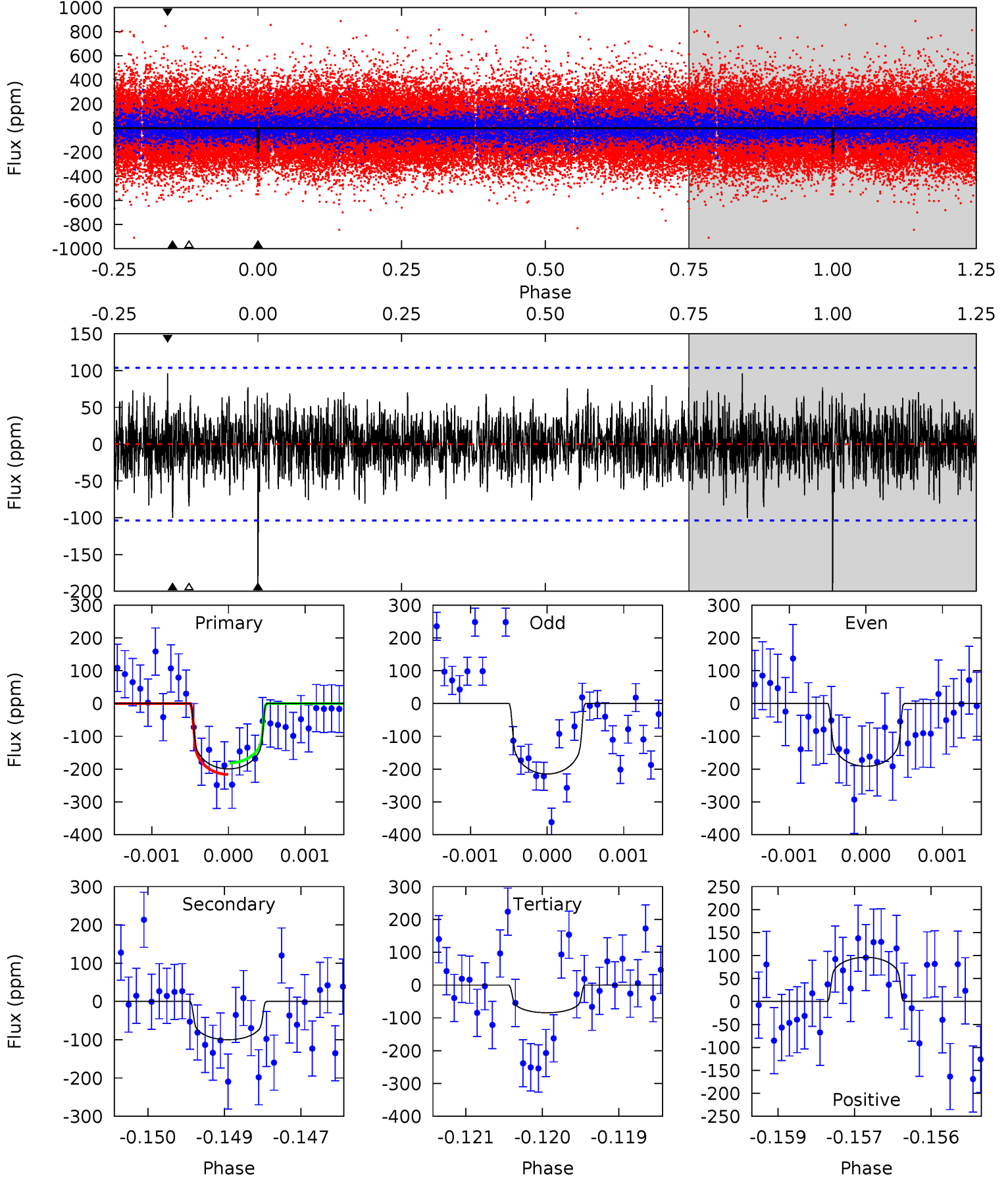
TCE 002693162-01 P=531.483707 Days  $T_0=338.139605$  (BKJD)



# DV Model-Shift Uniqueness Test

002693162-01, P = 531.488518 Days, E = 338.158844 Days

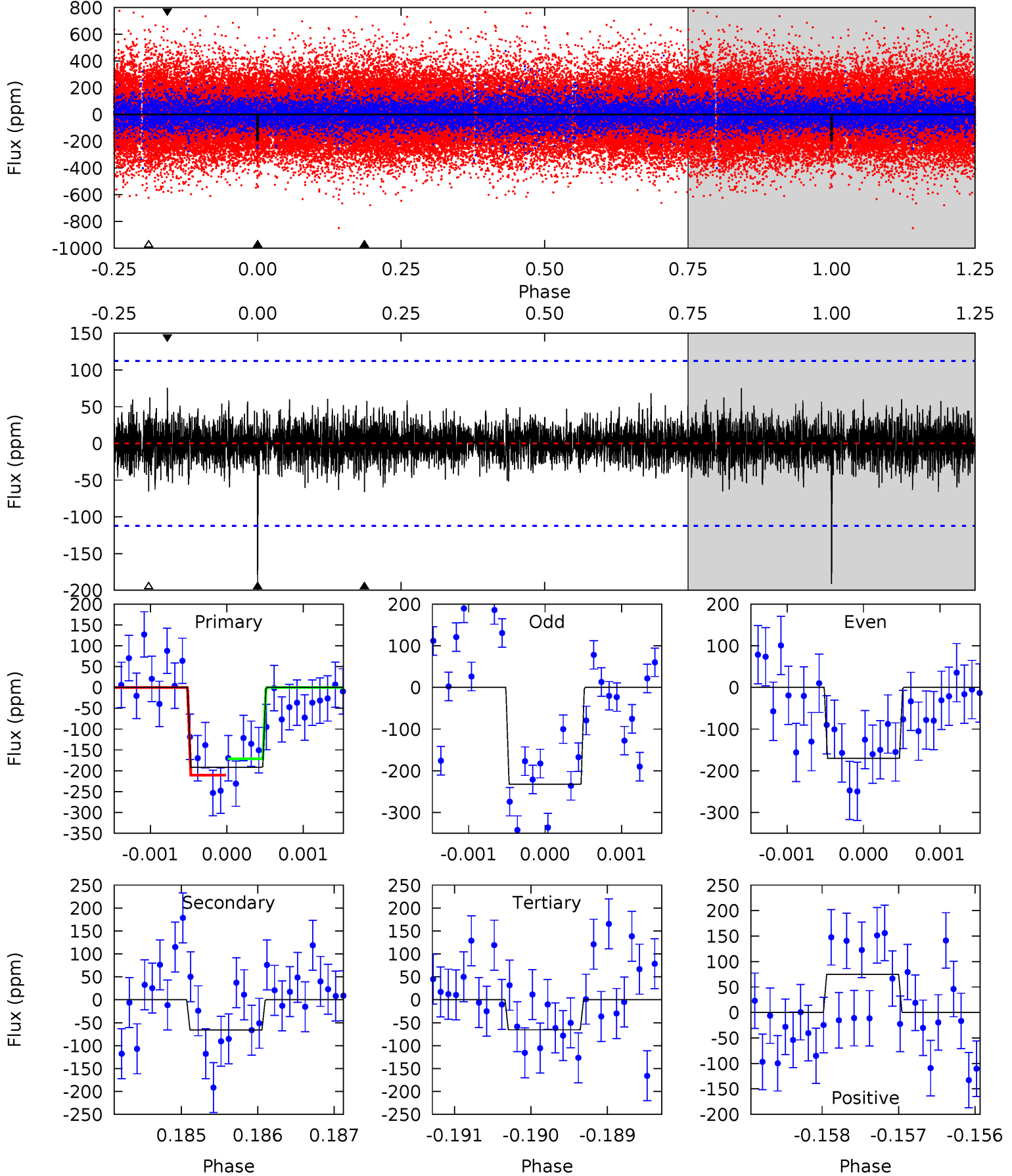
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	5.23	4.42	5.02	5.43	3.26	1.32	6.03	5.42	0.81	0.21	0.58	0.93	0.32	0.91



# Alt Model-Shift Uniqueness Test

002693162-01, P = 531.483707 Days, E = 338.139605 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
9.31	3.21	3.19	3.64	5.47	3.31	0.86	6.12	5.66	0.02	-0.43	1.44	1.04	0.28	0.96



### Stellar Parameters For KIC 002693162

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5278^{+159}_{-143}$	$3.700^{+0.885}_{-0.295}$	$-0.420^{+0.350}_{-0.250}$	$2.342^{+1.243}_{-1.520}$	$1.003^{+0.238}_{-0.214}$	$0.110^{+2.487}_{-0.071}$
	+3%/-3%	+24%/-8%	+83%/-60%	+53%/-65%	+24%/-21%	+2261%/-64%
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 002693162-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-100 \pm 19$	$3.37^{+2.03}_{-1.45}$	$428^{+66}_{-85}$	$4491^{+731}_{-477}$	$7896^{+17853}_{-4806}$
Alt.	$-66 \pm 21$	$3.28^{+1.89}_{-1.52}$	$431^{+62}_{-79}$	$4192^{+840}_{-469}$	$5287^{+14550}_{-3145}$

$T_{\text{max}}$  = 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

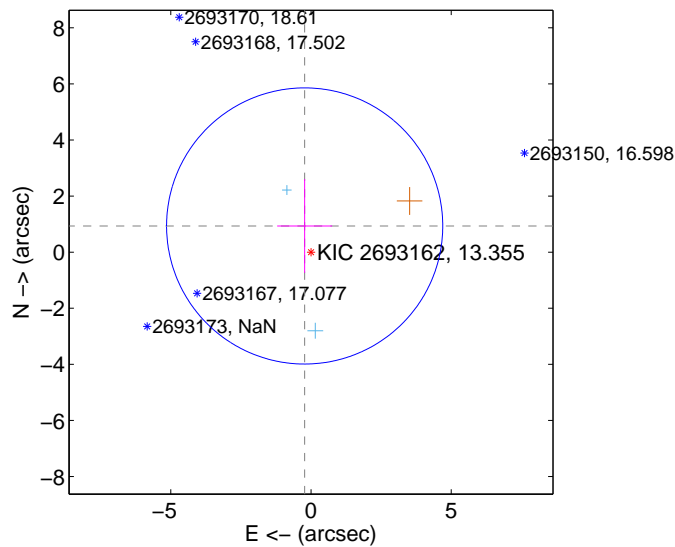
Supplemental centroid analysis for 002693162-01. Kepler magnitude: 13.36. Transit SNR 7.11

There are 2 quarters with good PRF difference image offsets

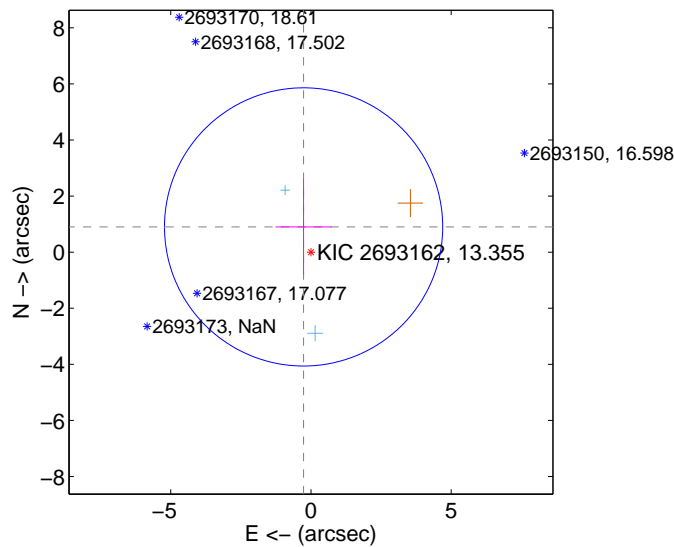
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.961 \pm 1.641$	0.59	$0.226 \pm 0.981$	$0.934 \pm 1.671$
PRF-fit source offset from KIC position	$0.937 \pm 1.653$	0.57	$0.262 \pm 1.002$	$0.900 \pm 1.697$
photometric centroid source offset	$1.93 \pm 1.75$	1.10	$-1.03 \pm 1.98$	$-1.63 \pm 1.66$

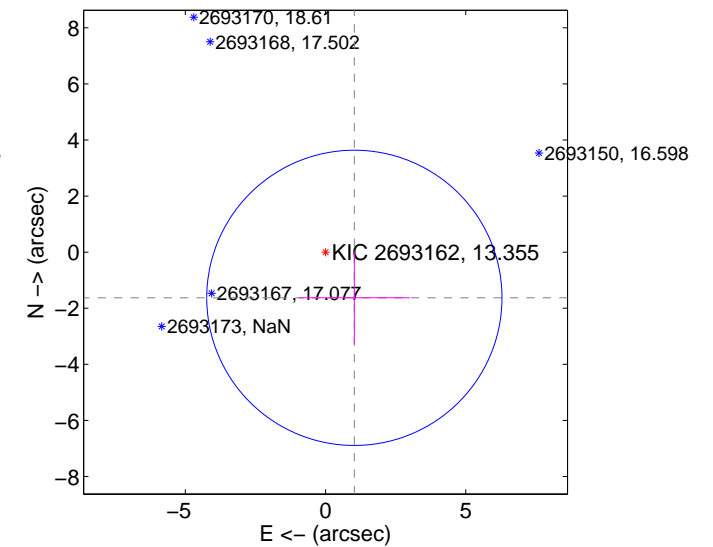
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

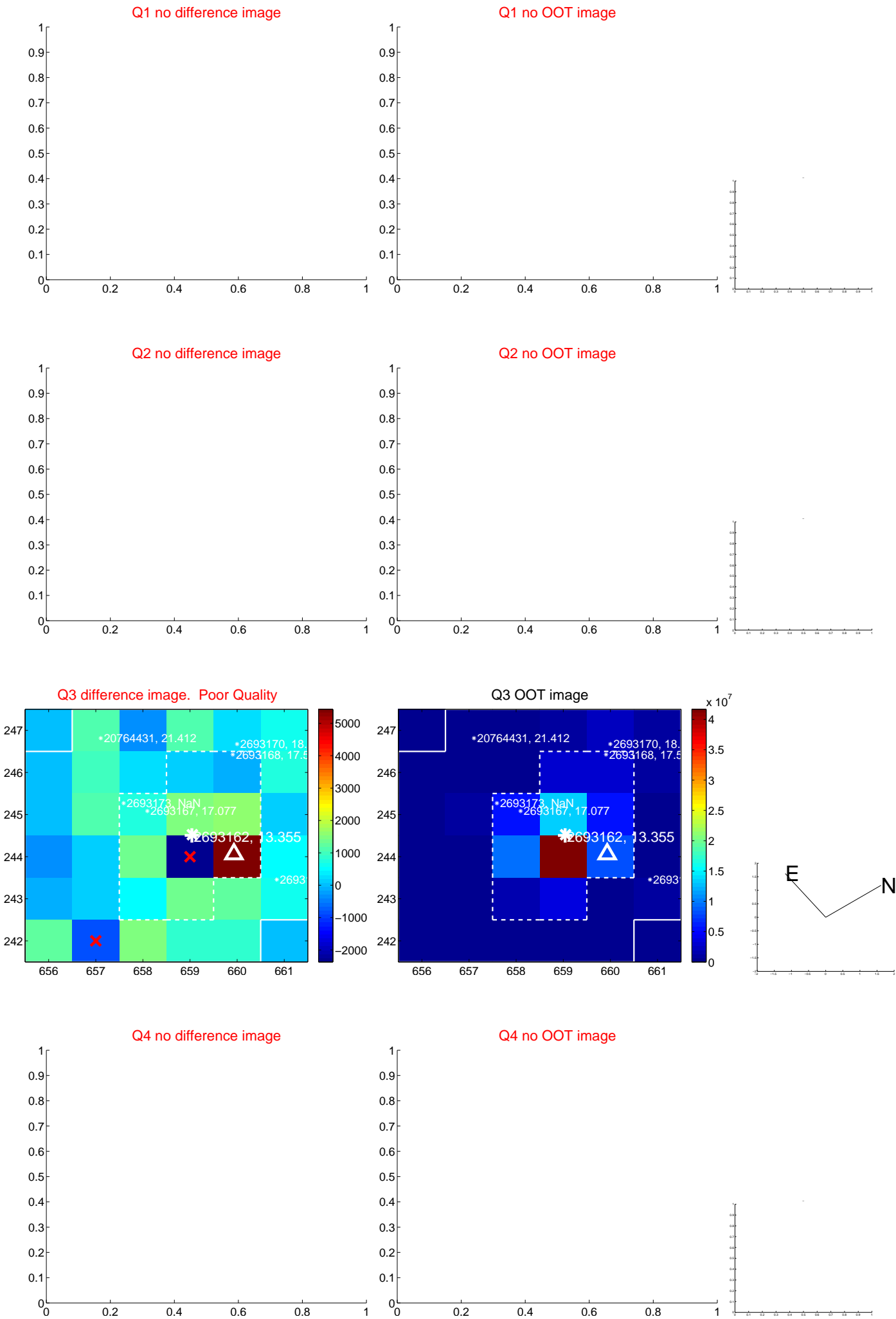


offset from photometric centroids



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

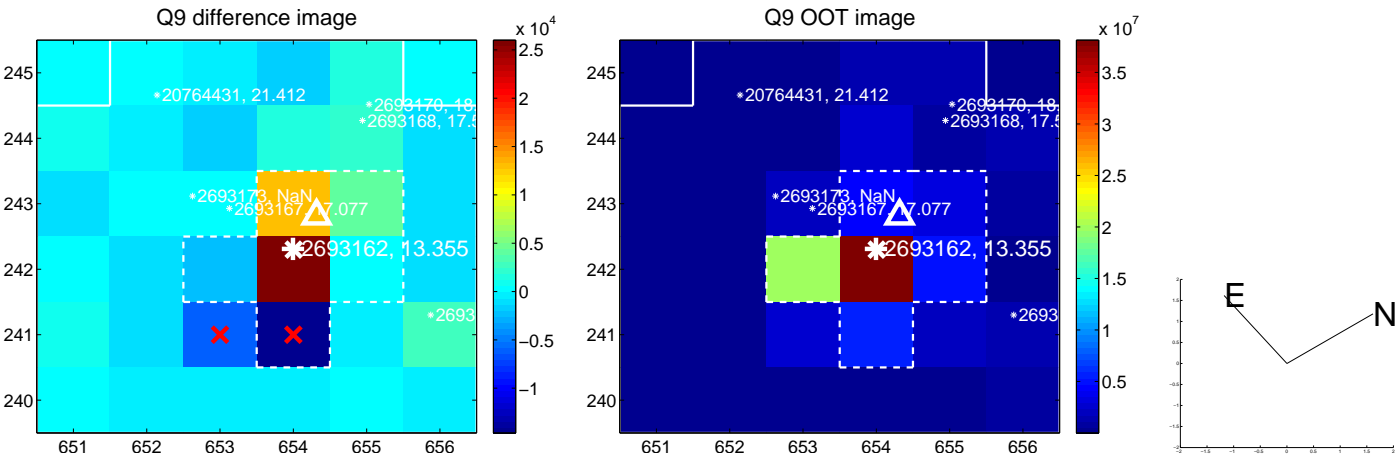




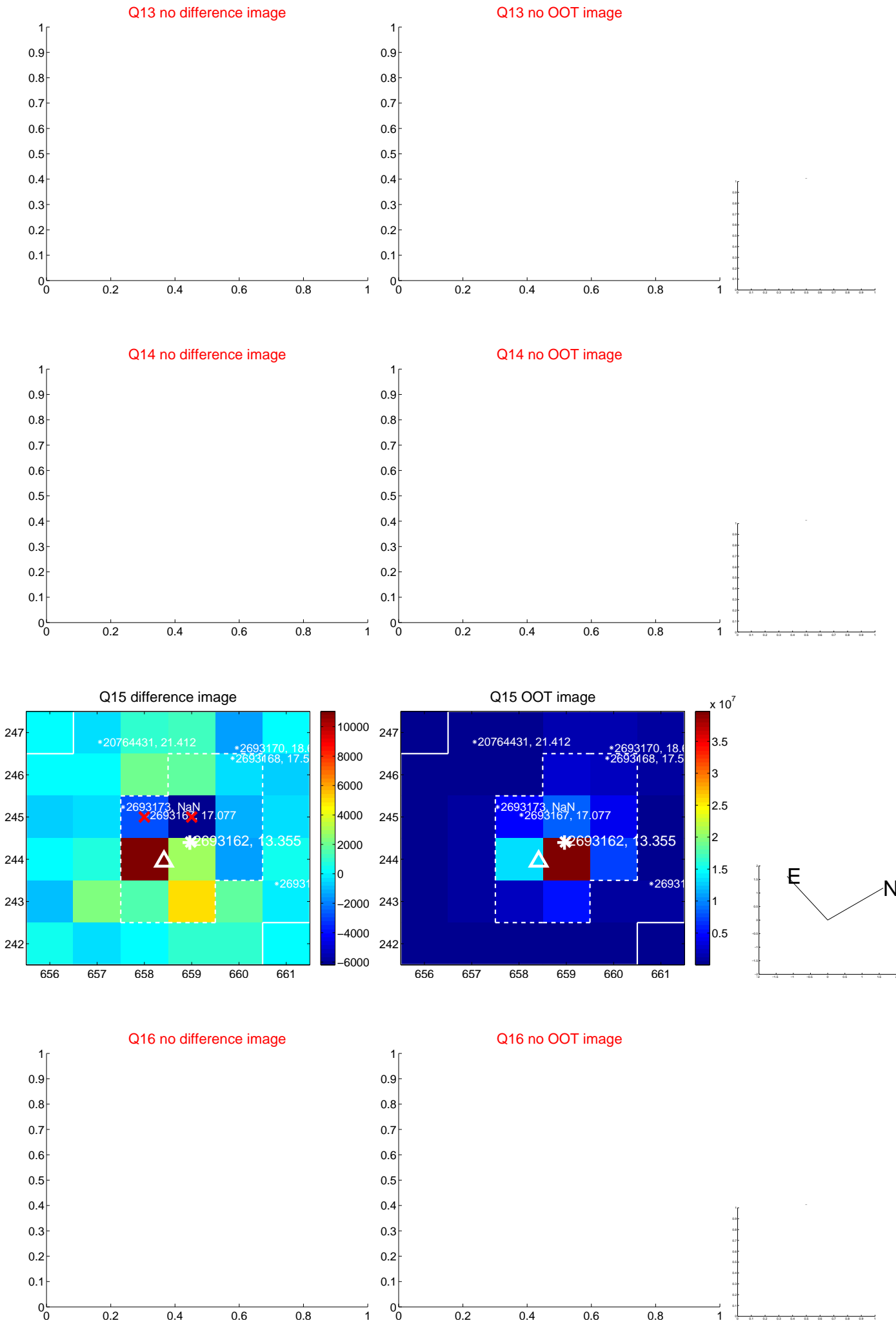
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



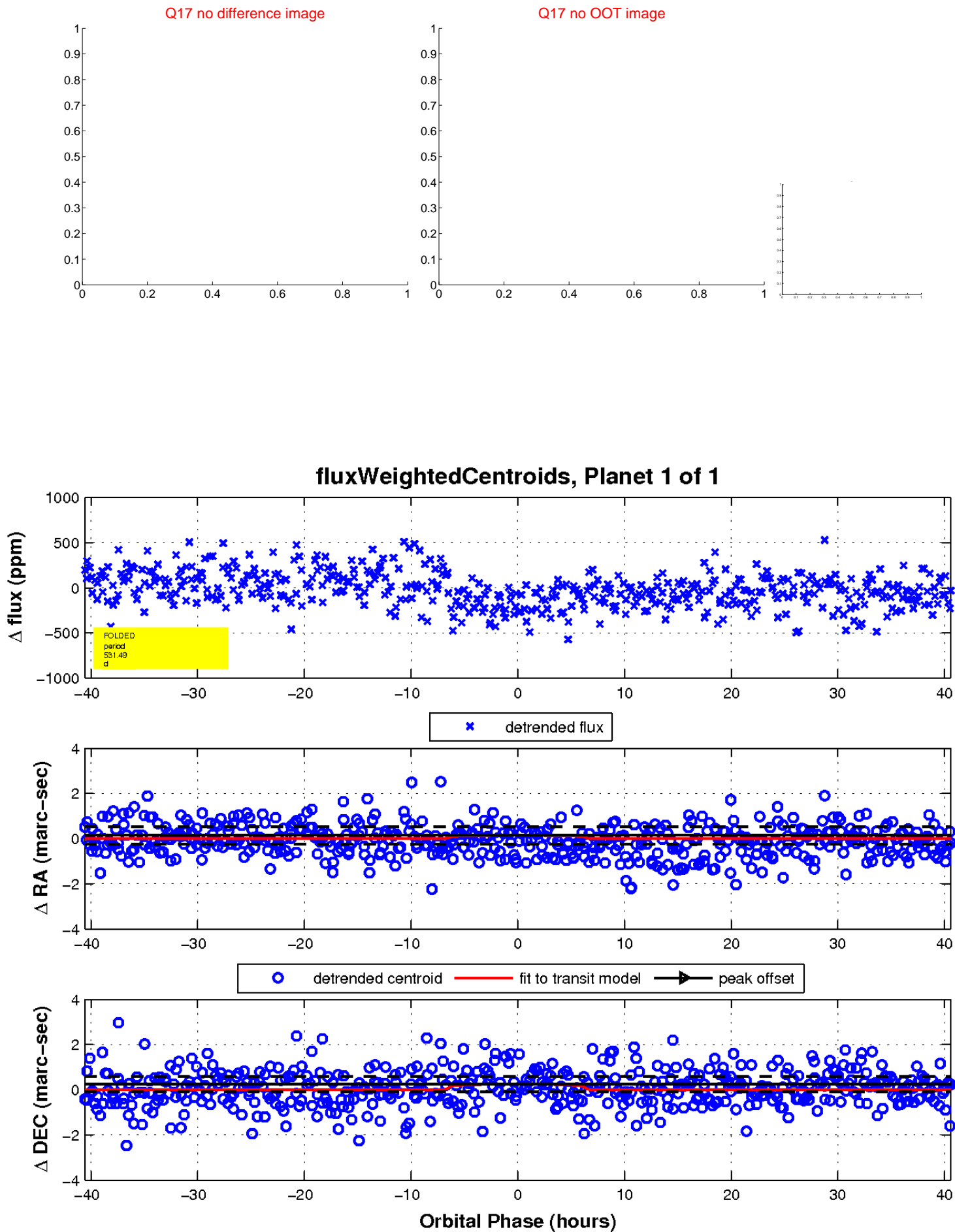
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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.



UKIRT Image

Declination

