

# KIC 003527240

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003527240-01	OBS	No	527.201858	272.054317	702.4	17.413	7.3	7.5	0.81	5616	2.29	0.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003527240-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE--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.

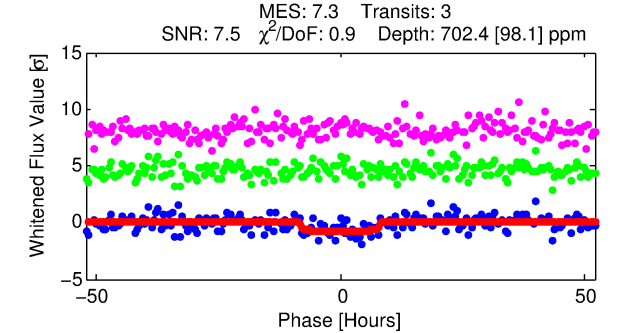
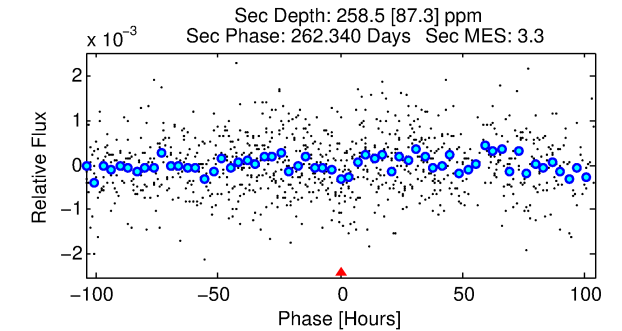
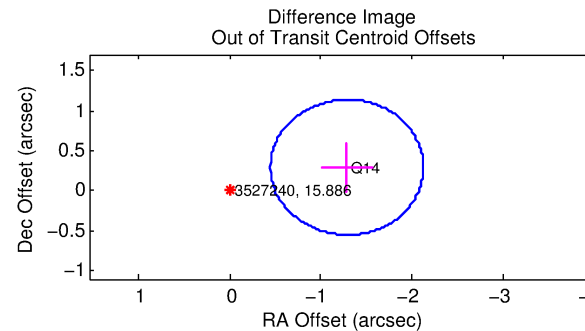
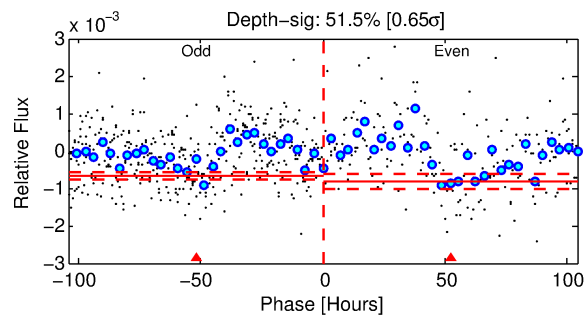
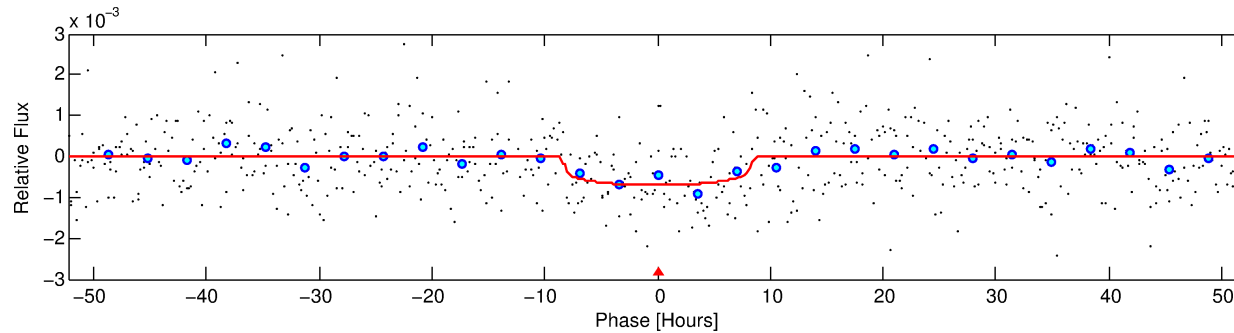
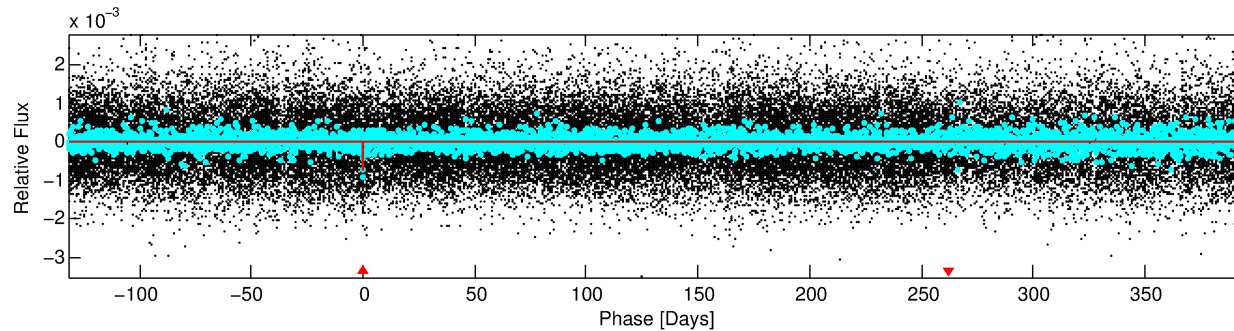
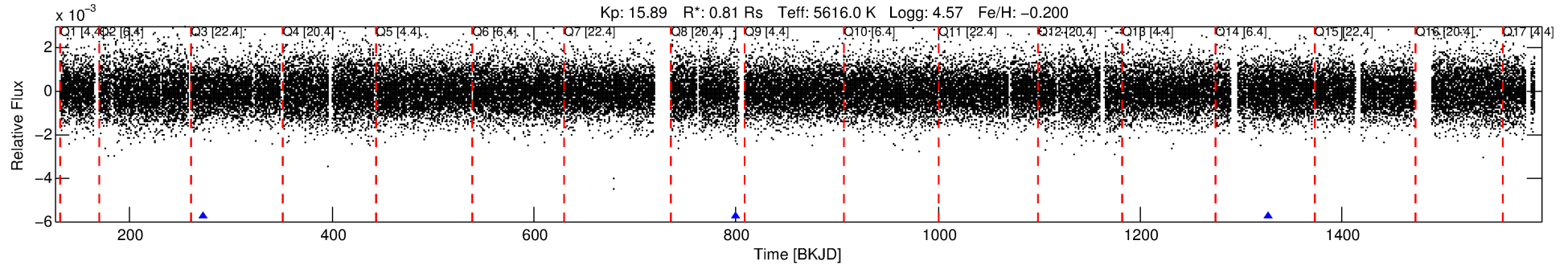
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003527240-01

No Significant Match Found

# DV One-Page Summary

KIC: 3527240 Candidate: 1 of 1 Period: 527.202 d



## DV Fit Results:

Period = 527.20186 [0.02286] d  
Epoch = 272.0543 [0.0302] BKJD  
Rp/R\* = 0.0259 [0.0106]  
a/R\* = 172.71 [298.63]  
b = 0.70 [1.26]  
Seff = 0.39 [0.11]  
Teq = 201 [14] K  
Rp = 2.29 [1.05] Re  
a = 1.2322 [0.2135] AU  
Ag = 41053.49 [37835.39] [1.09 $\sigma$ ]  
Teffp = 4421 [989] K [4.27 $\sigma$ ]

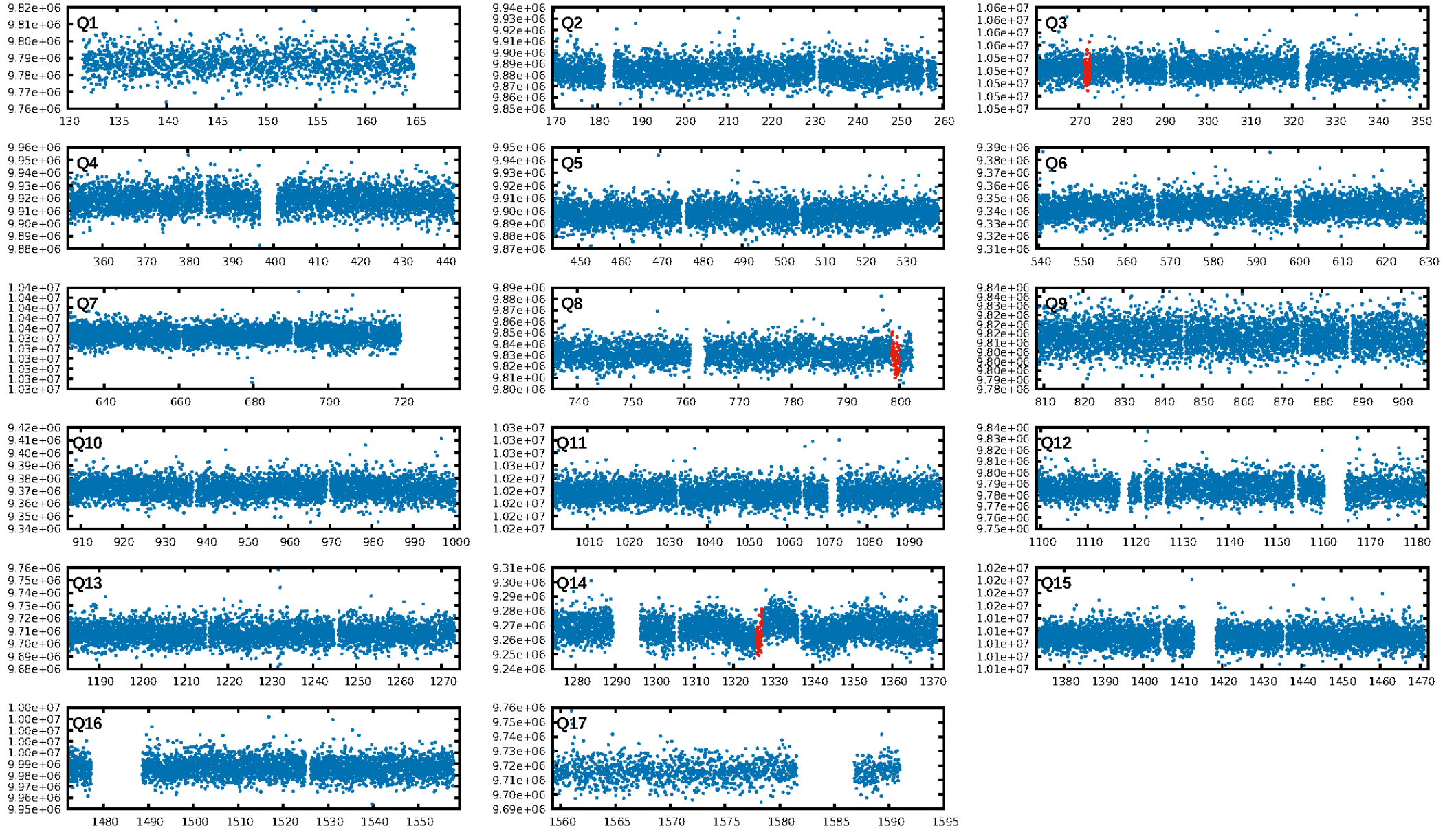
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 69.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.60e-16  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -2.905  
Centroid-sig: 17.7%  
Centroid-so: 1.943 arcsec [1.10 $\sigma$ ]  
OotOffset-rm: 1.320 arcsec [4.70 $\sigma$ ]  
KicOffset-rm: 1.361 arcsec [4.83 $\sigma$ ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [2/2]

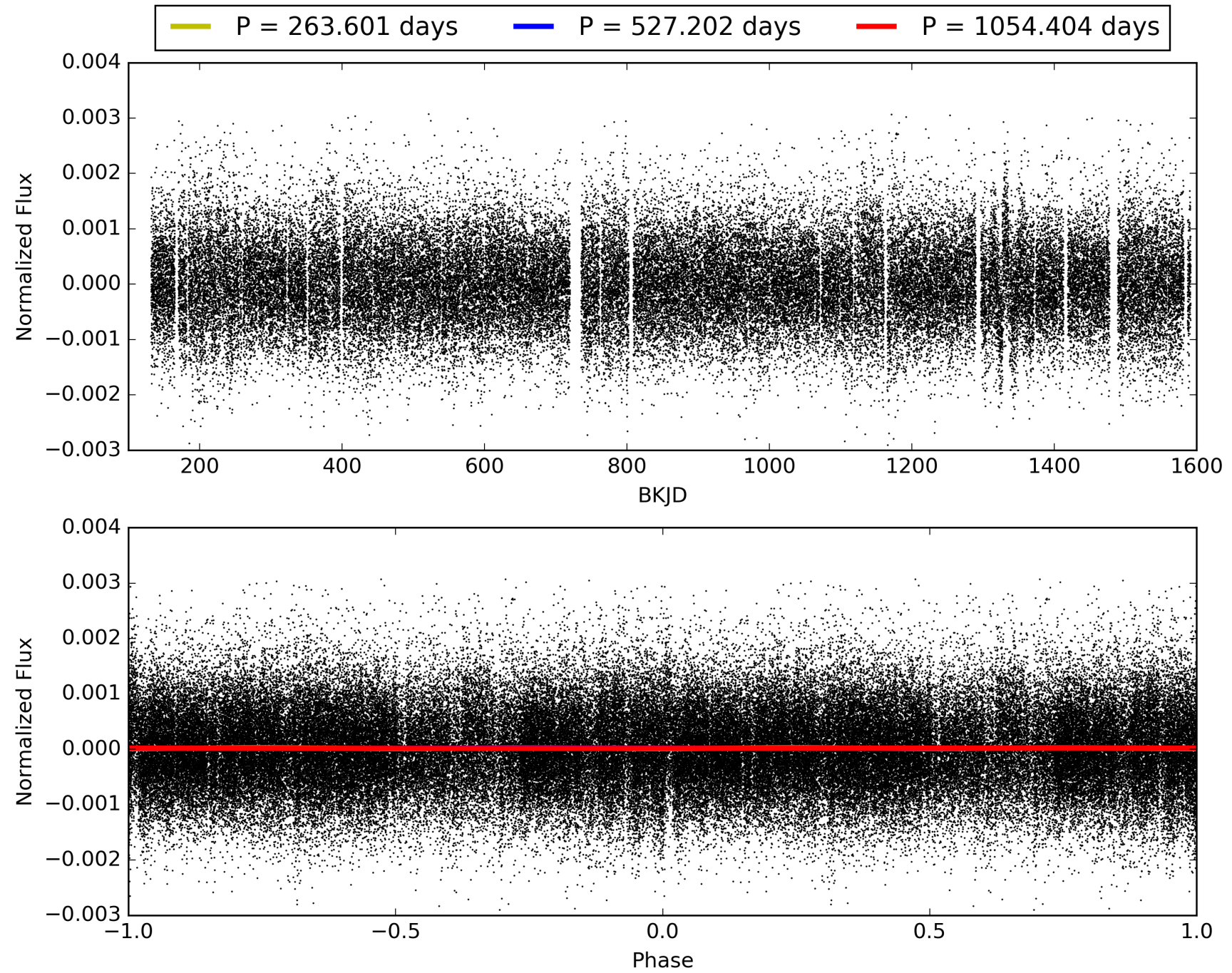
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:05:37 Z

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

# TCE 003527240-01, PDC Light Curves

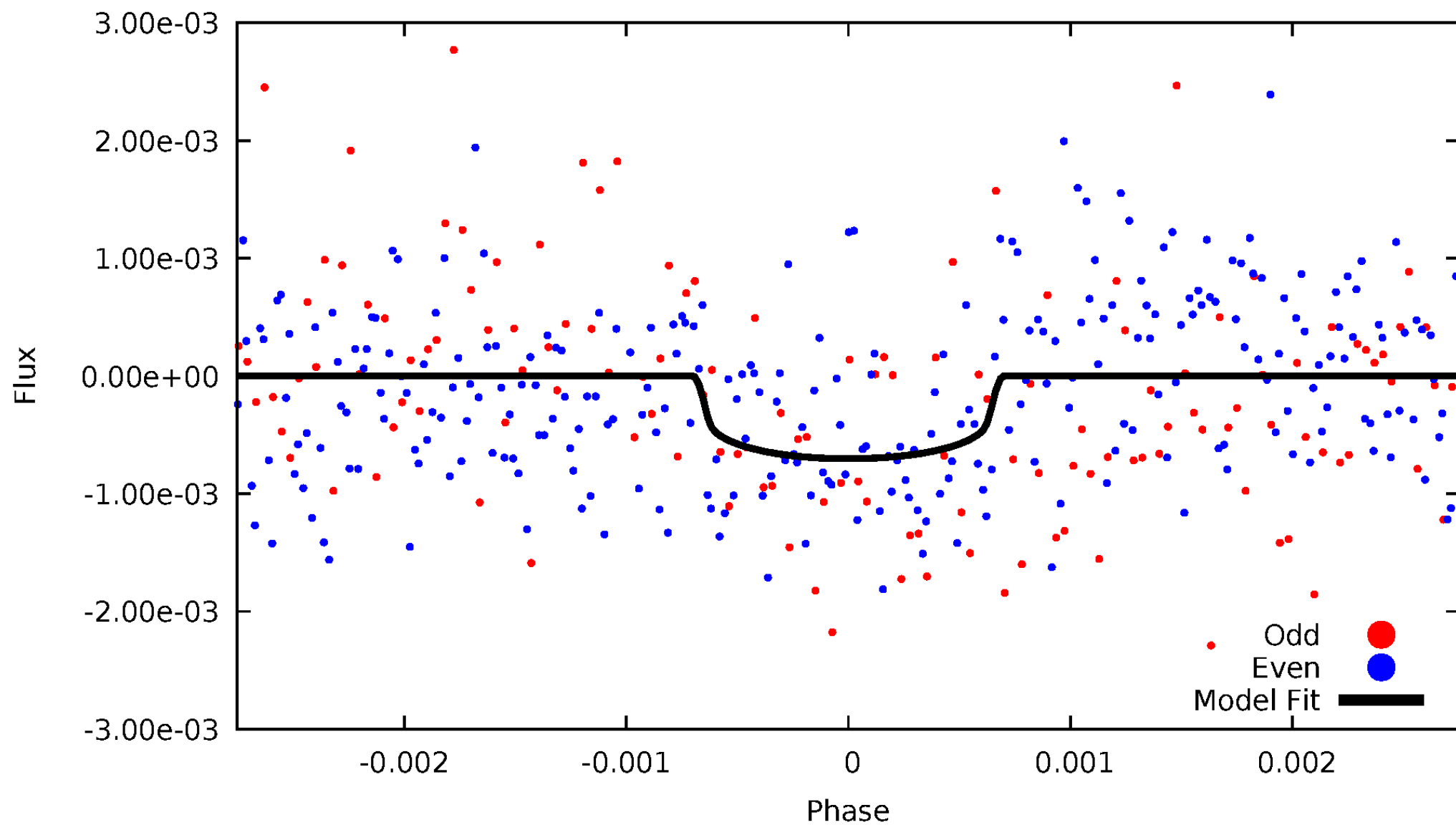


TCE 003527240-01



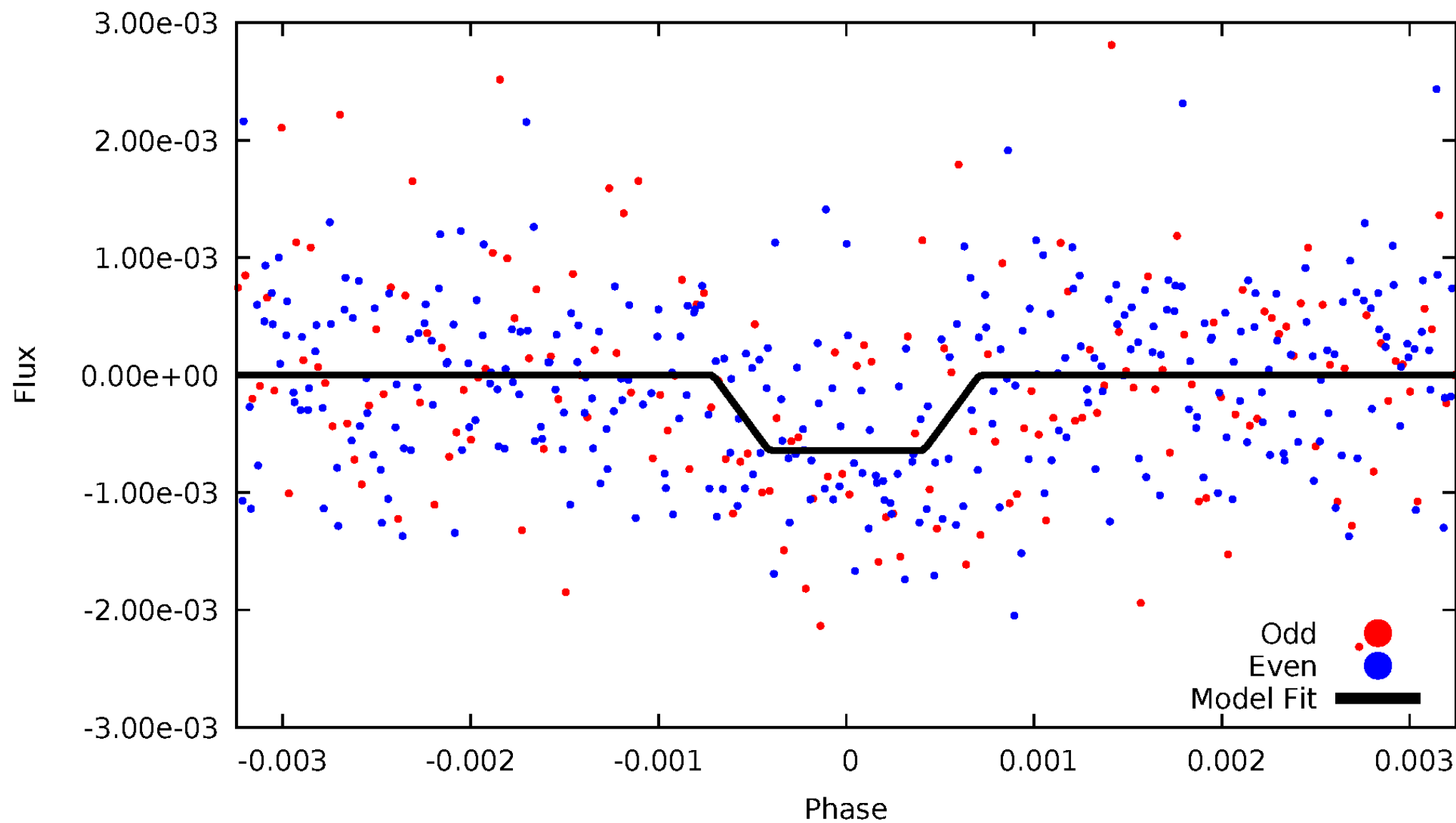
# DV Odd/Even

TCE 003527240-01



# ALT Odd/Even

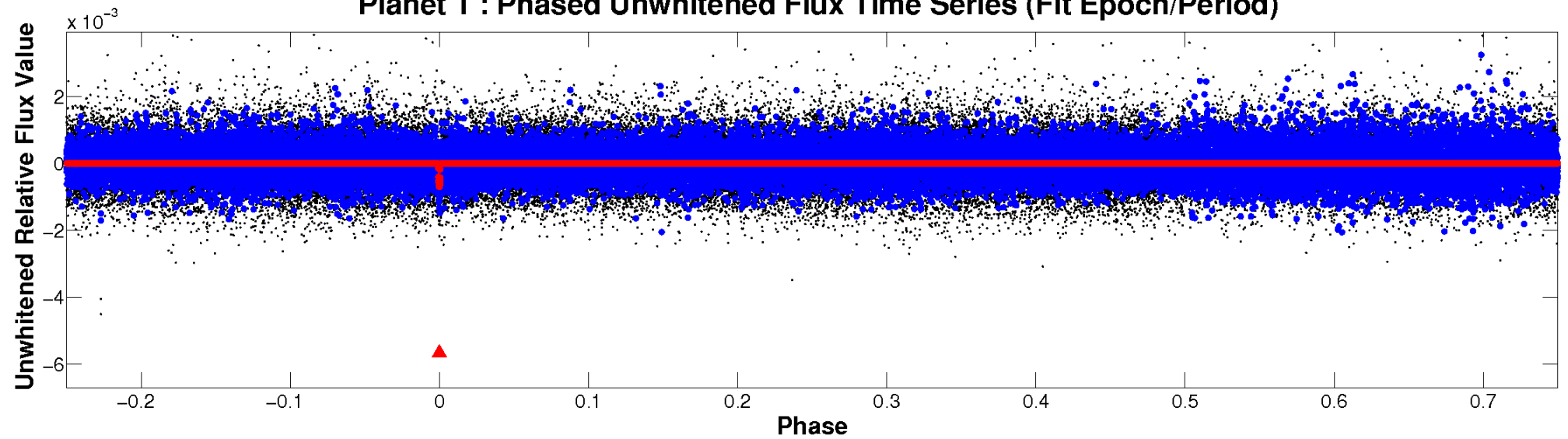
TCE 003527240-01



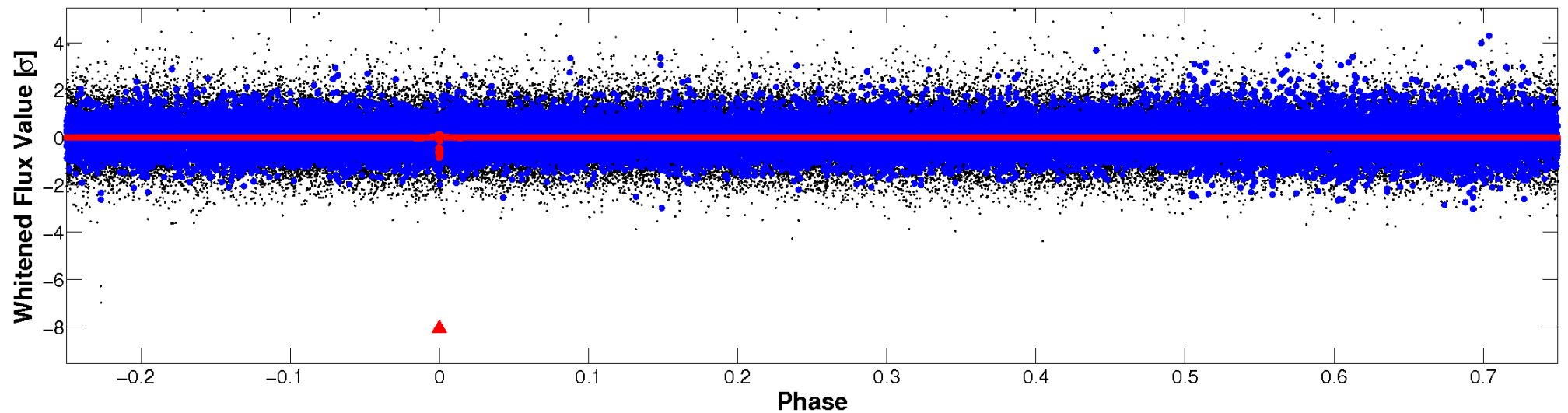


# Non-Whitened Vs. Whitened Light Curve

**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

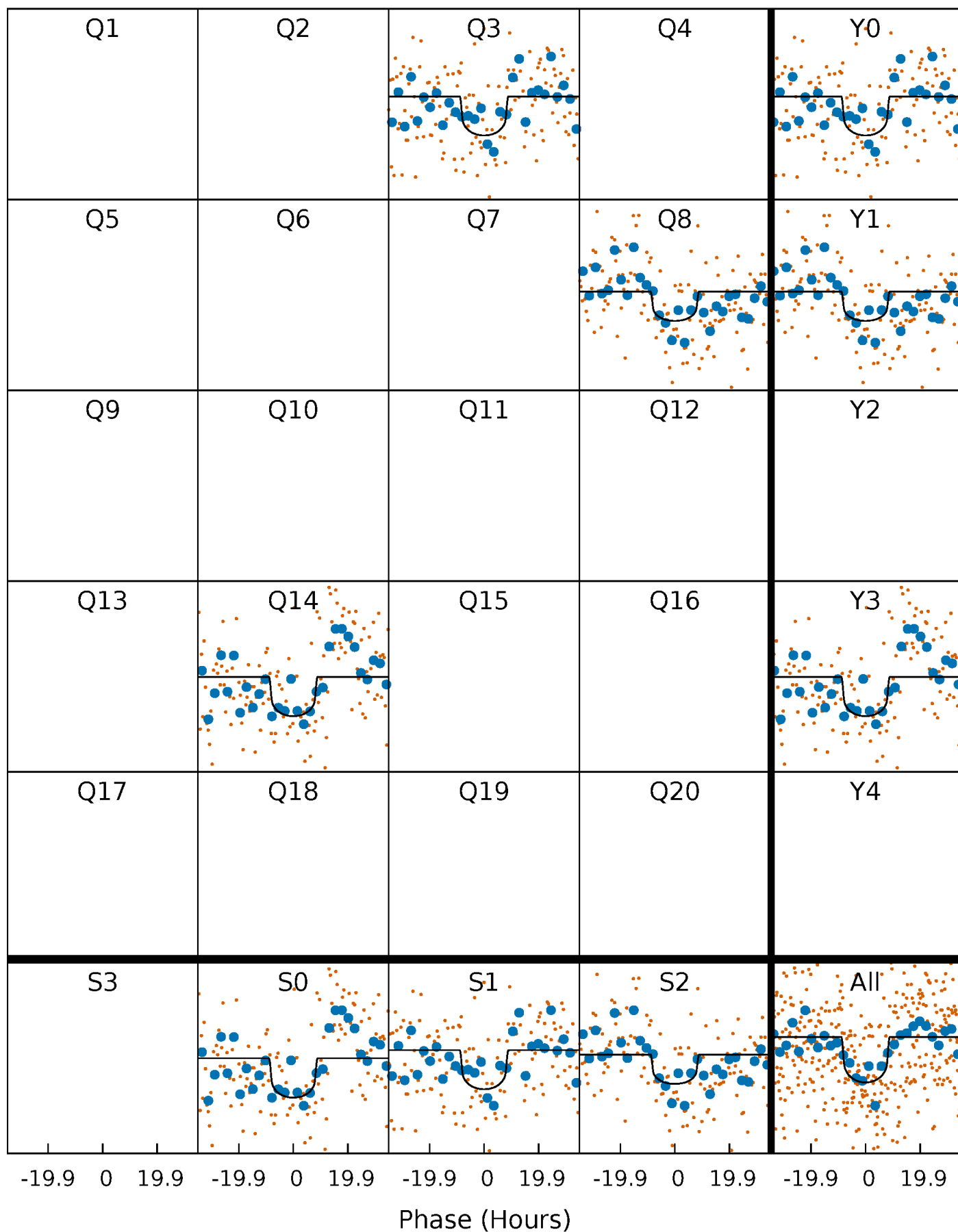
TCE 003527240-01 P=527.201858 Days  $T_0=272.054317$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 003527240-01 P=527.201858 Days  $T_0=272.054317$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

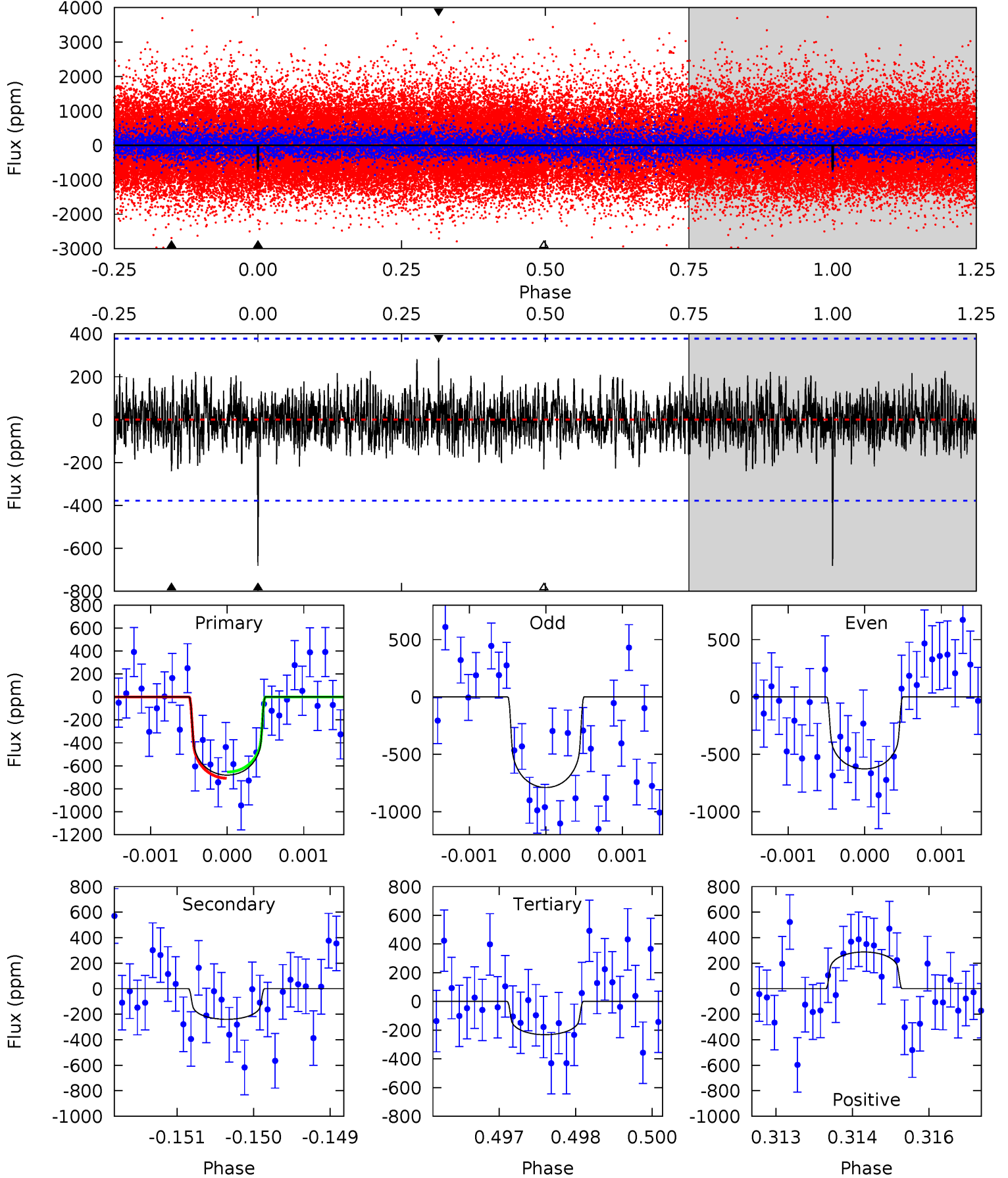
TCE 003527240-01 P=527.179037 Days  $T_0=272.112011$  (BKJD)



# DV Model-Shift Uniqueness Test

003527240-01, P = 527.201858 Days, E = 272.054317 Days

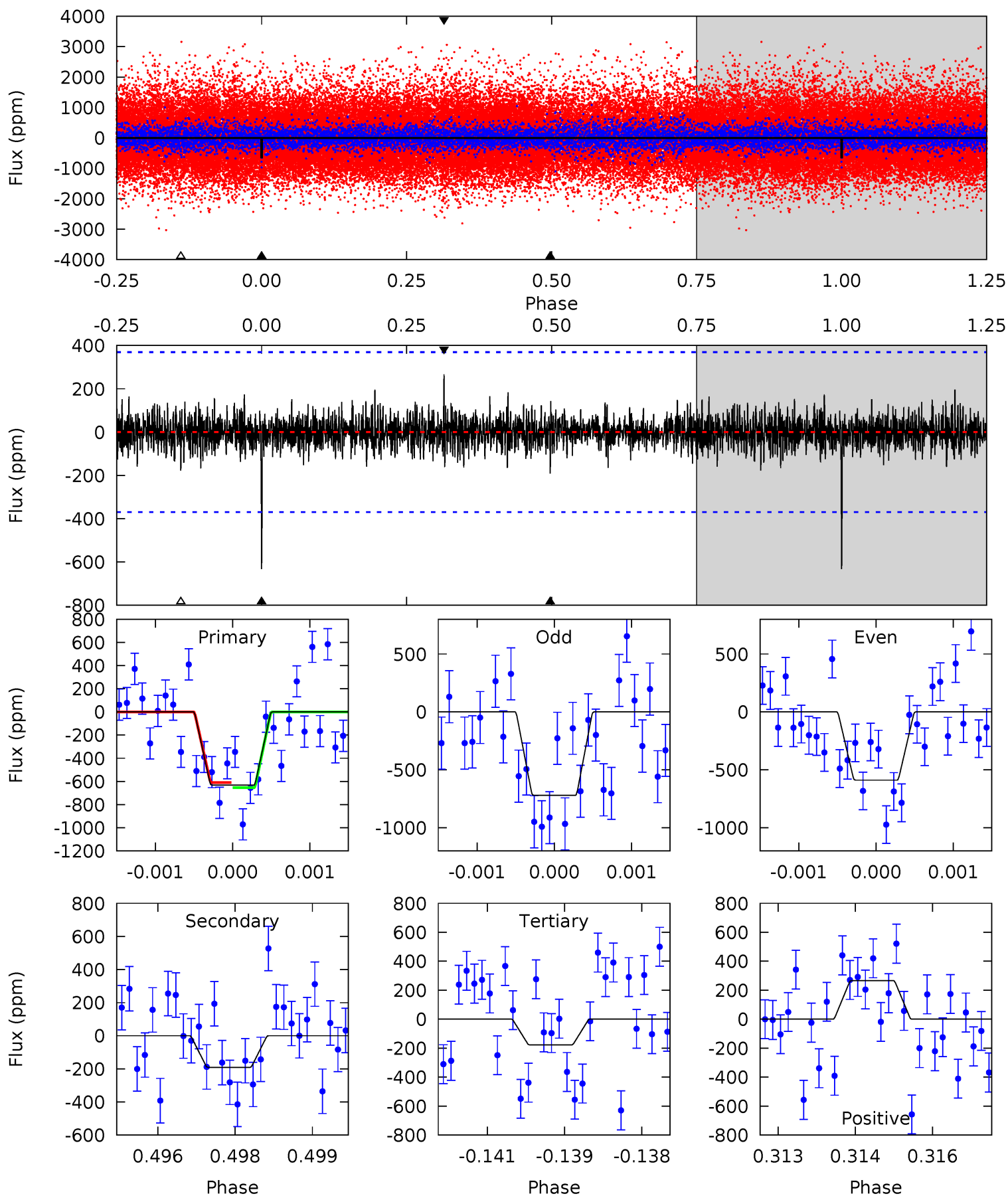
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.72	3.43	3.30	4.11	5.39	3.19	1.09	6.42	5.62	0.12	-0.68	1.10	1.06	0.30	0.39



# Alt Model-Shift Uniqueness Test

003527240-01, P = 527.179037 Days, E = 272.112011 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
9.22	2.78	2.59	3.88	5.39	3.19	0.77	6.64	5.34	0.20	-1.10	0.92	0.88	0.30	0.32



### Stellar Parameters For KIC 003527240

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5616^{+152}_{-169}$	$4.574^{+0.034}_{-0.136}$	$-0.200^{+0.300}_{-0.300}$	$0.810^{+0.168}_{-0.067}$	$0.905^{+0.085}_{-0.104}$	$2.400^{+0.430}_{-0.884}$
	+3%/-3%	+1%/-3%	+150%/-150%	+21%/-8%	+9%/-11%	+18%/-37%
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 003527240-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-240 \pm 70$	$2.42^{+1.07}_{-1.04}$	$286^{+14}_{-12}$	$4476^{+1213}_{-599}$	$34079^{+67881}_{-19146}$
Alt.	$-191 \pm 69$	$2.36^{+1.00}_{-1.02}$	$285^{+16}_{-12}$	$4309^{+1136}_{-587}$	$27395^{+58388}_{-15516}$

$T_{\text{max}}$  = 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

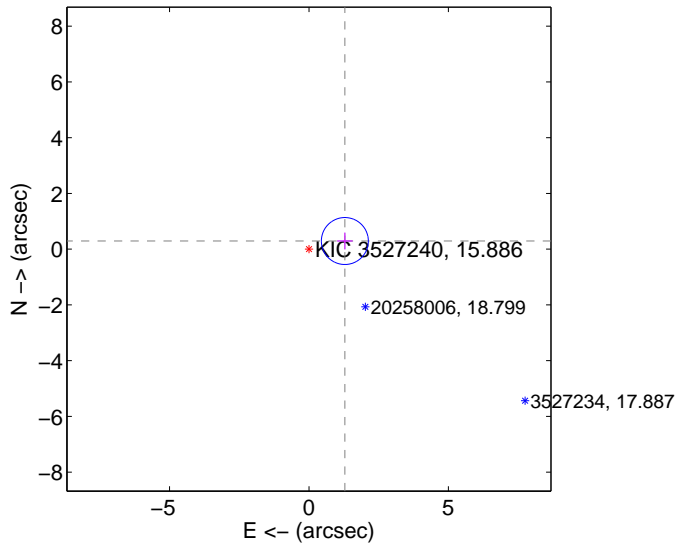
Supplemental centroid analysis for 003527240-01. Kepler magnitude: 15.89. Transit SNR 7.54

There are 1 quarters with good PRF difference image offsets

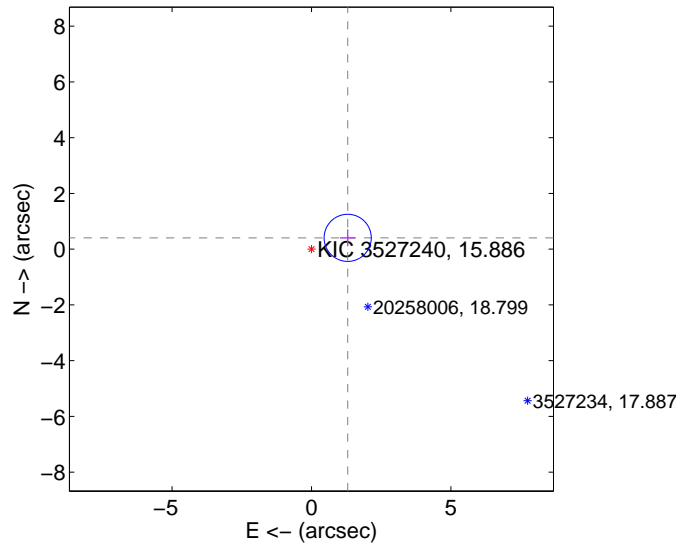
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.320 \pm 0.281$	4.70	$-1.287 \pm 0.280$	$0.292 \pm 0.303$
PRF-fit source offset from KIC position	$1.361 \pm 0.282$	4.83	$-1.299 \pm 0.280$	$0.407 \pm 0.303$
photometric centroid source offset	$1.94 \pm 1.76$	1.10	$-1.81 \pm 1.78$	$0.71 \pm 1.66$

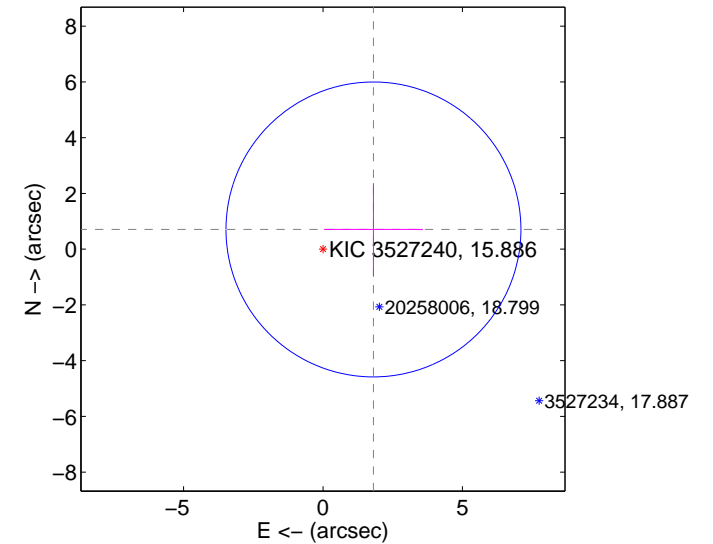
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



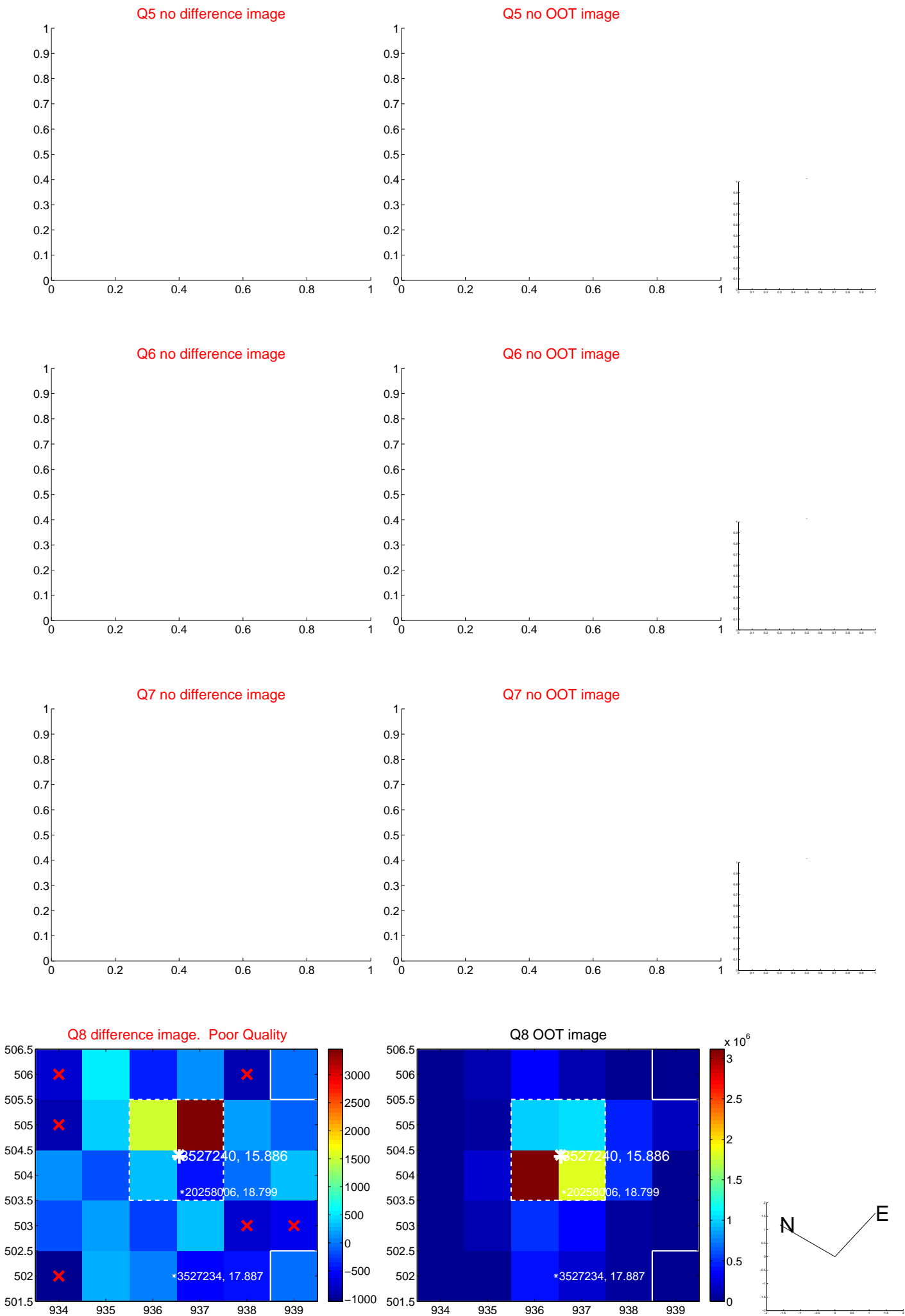
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



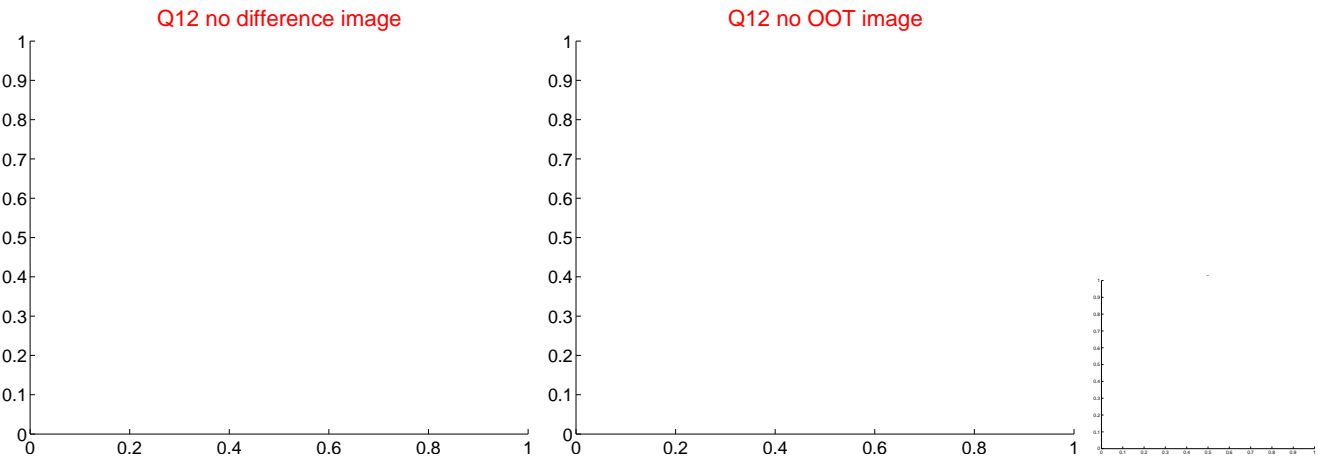
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



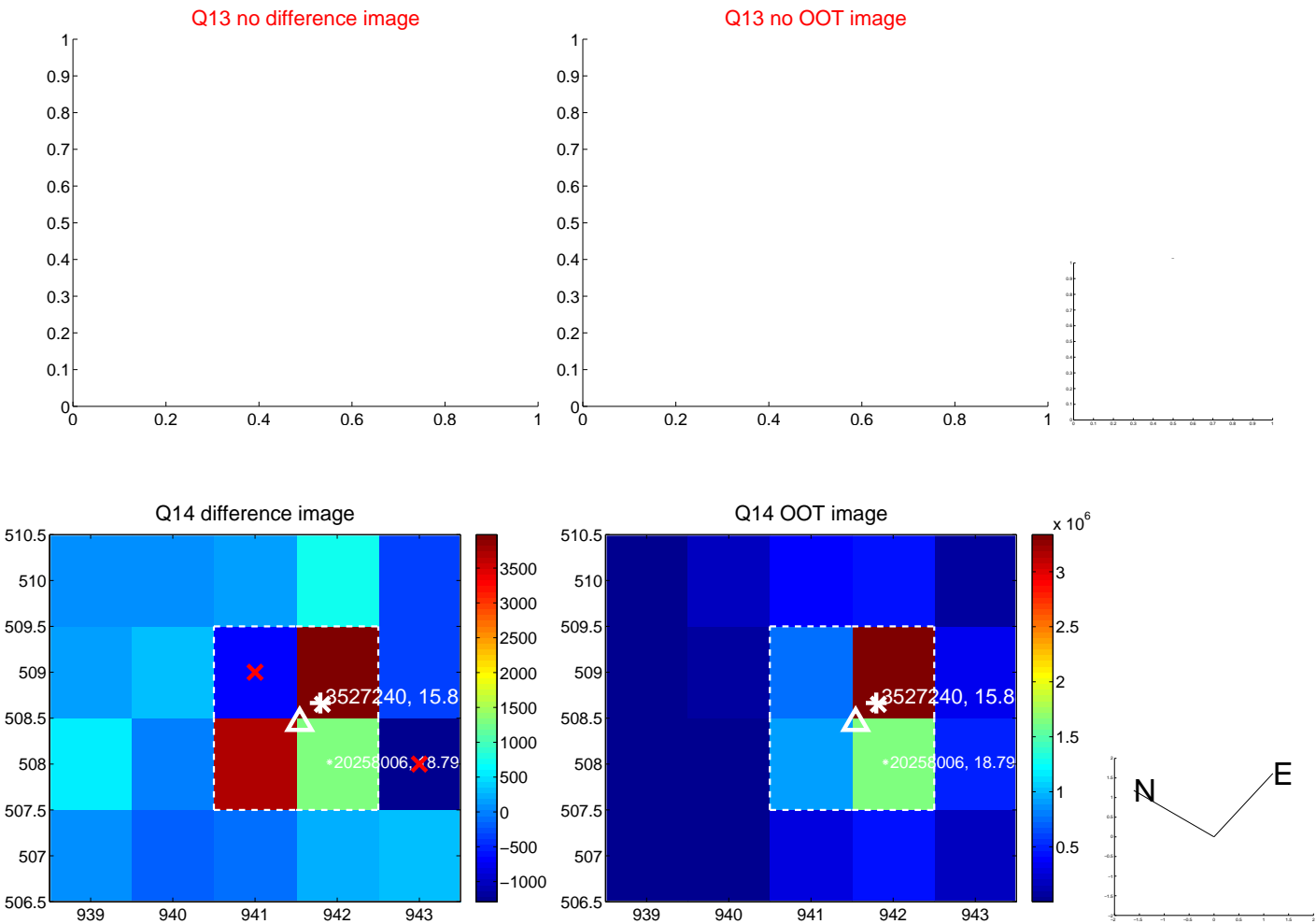
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



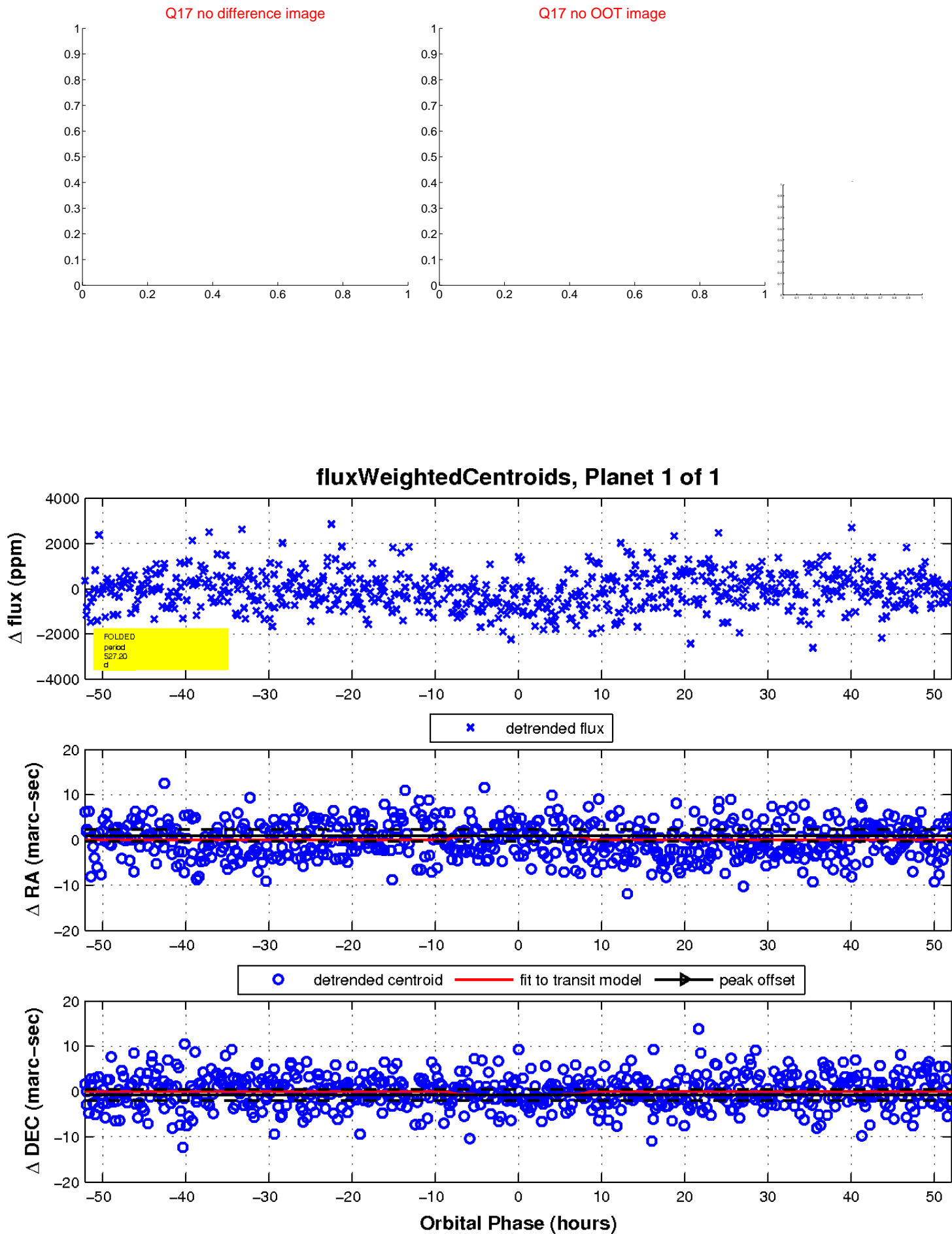
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

