

# KIC 005683450

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005683450-01	OBS	No	300.899784	217.305970	860.9	9.907	7.8	7.8	0.70	4993	2.16	0.46

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005683450-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—ALL_TRANS_CHASES—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.

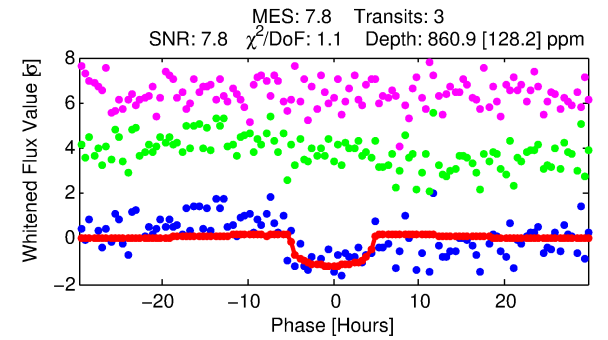
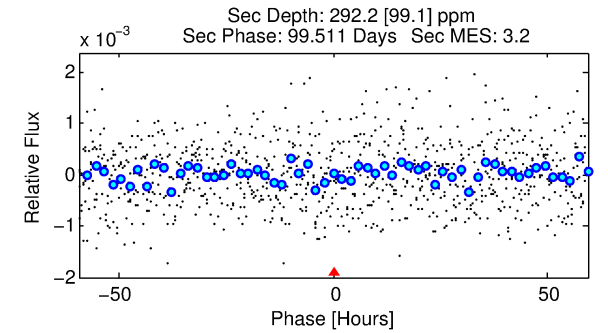
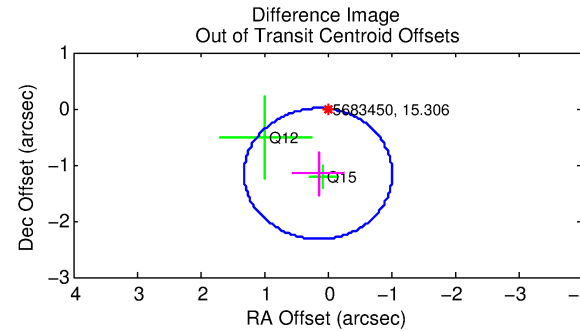
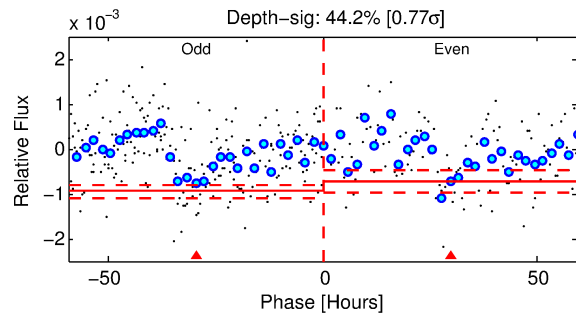
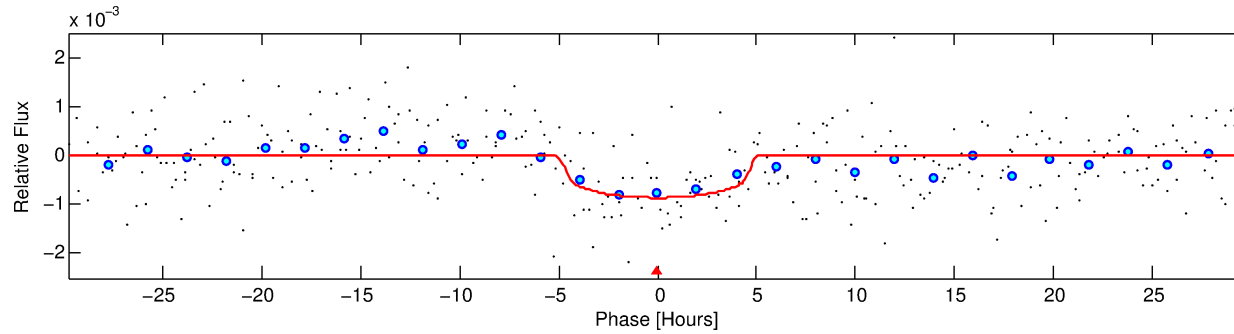
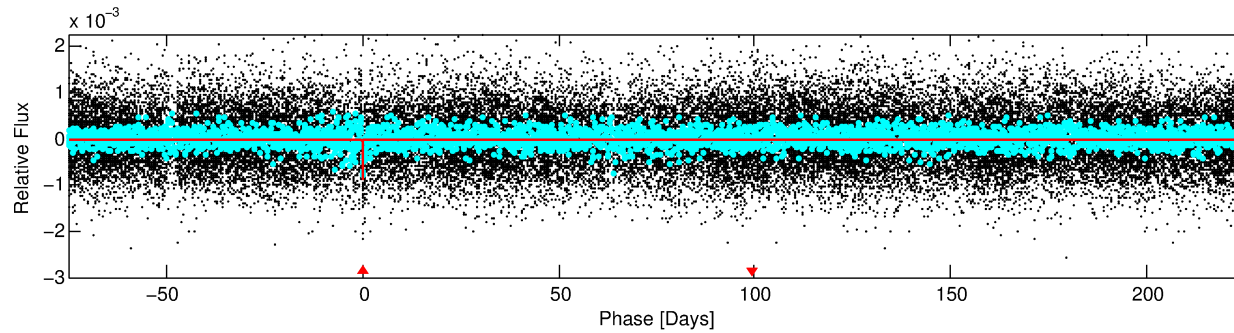
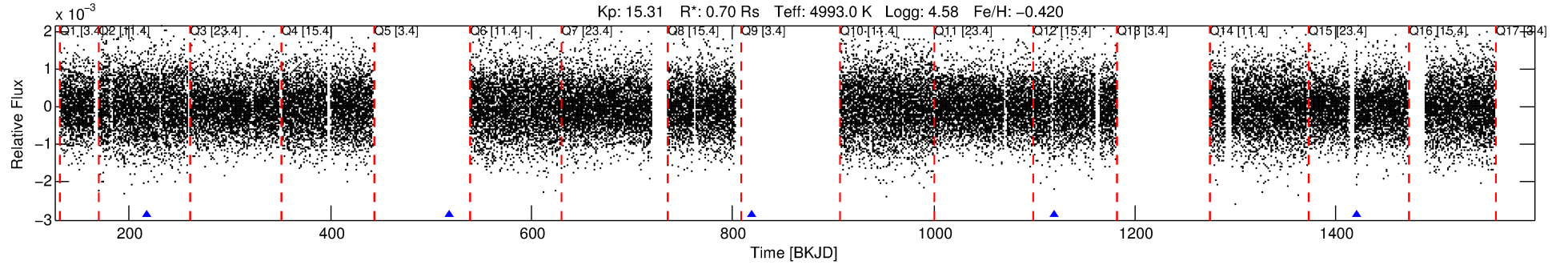
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005683450-01

No Significant Match Found

# DV One-Page Summary

KIC: 5683450 Candidate: 1 of 1 Period: 300.900 d



## DV Fit Results:

Period = 300.89978 [0.00691] d  
Epoch = 217.3060 [0.0210] BKJD  
Rp/R\* = 0.0284 [0.0233]  
a/R\* = 179.73 [535.36]  
b = 0.68 [2.42]  
Seff = 0.46 [0.08]  
Teq = 209 [9] K  
Rp = 2.16 [1.79] Re  
a = 0.7698 [0.0692] AU  
Ag = 20446.63 [34401.82] [0.59 $\sigma$ ]  
Teffp = 3872 [1628] K [2.25 $\sigma$ ]

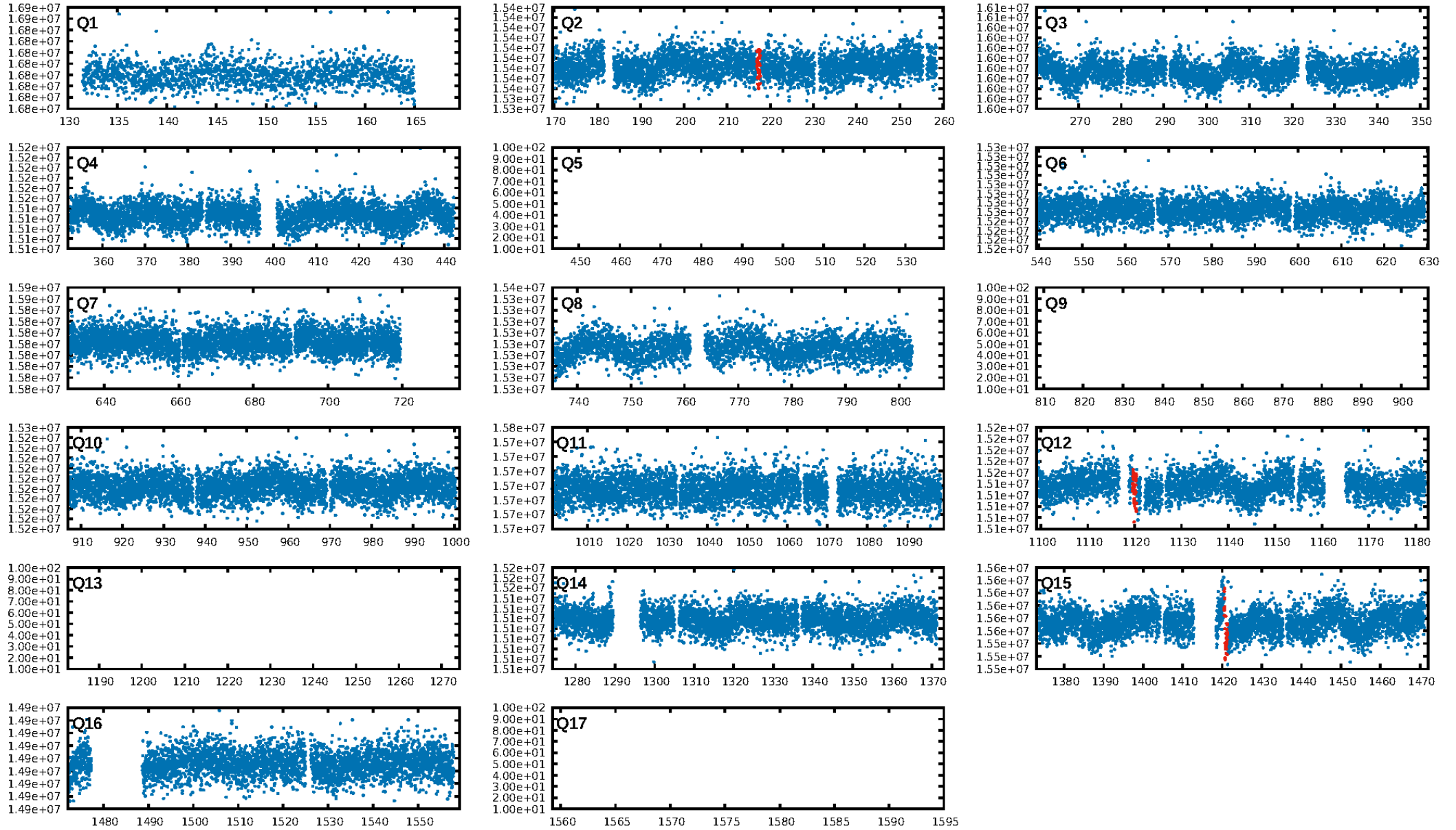
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 5.8%  
ModelChiSquareGof-sig: 98.5%  
**Bootstrap-pfa: 7.56e-11**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 9.56  
Centroid-sig: 9.0%  
Centroid-so: 1.543 arcsec [0.82 $\sigma$ ]  
**OotOffset-rm: 1.171 arcsec [3.02 $\sigma$ ]**  
OotOffset-st: 0/1/1/0 [2]  
KicOffset-st: 0/1/1/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

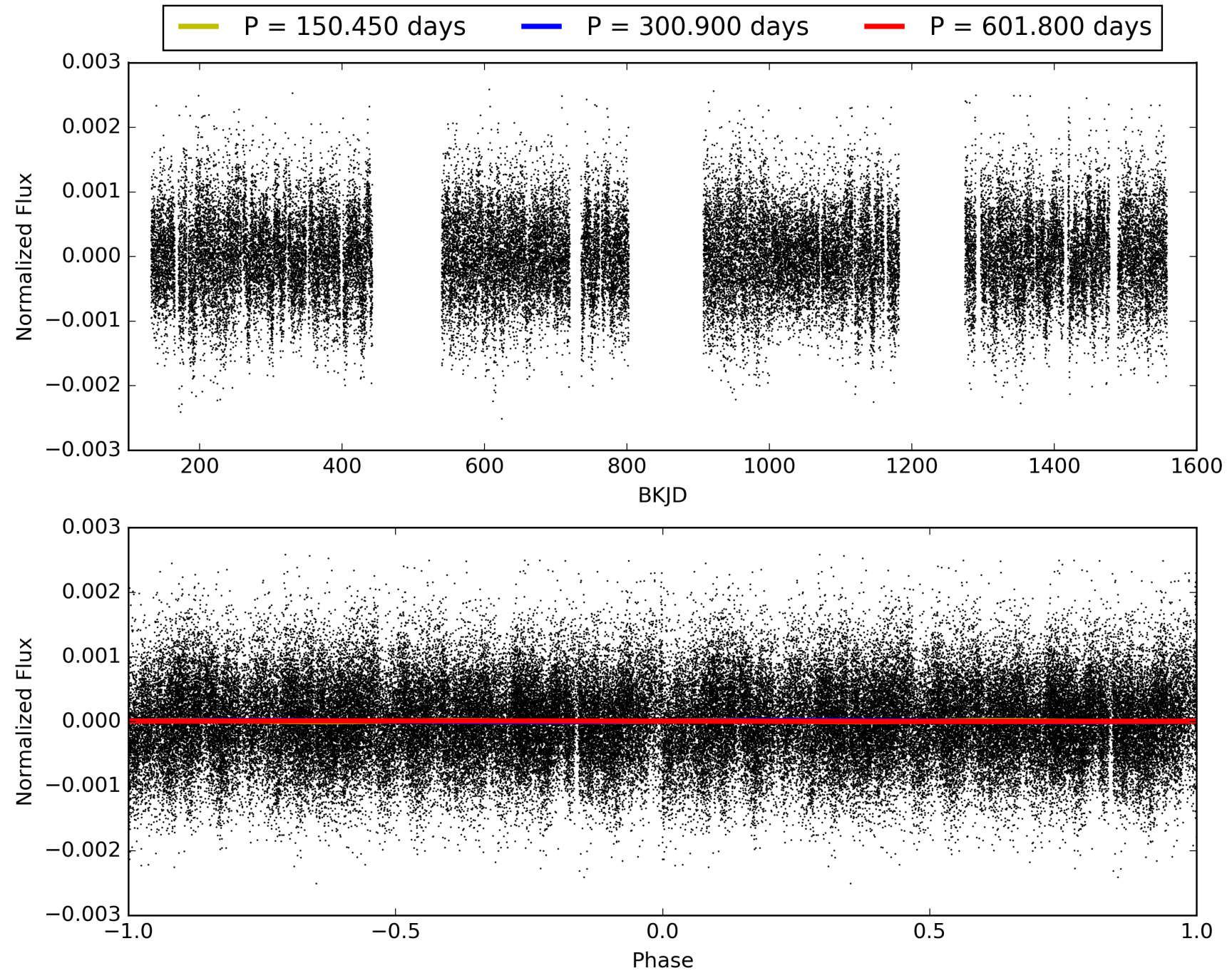
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:50:14 Z

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

# TCE 005683450-01, PDC Light Curves

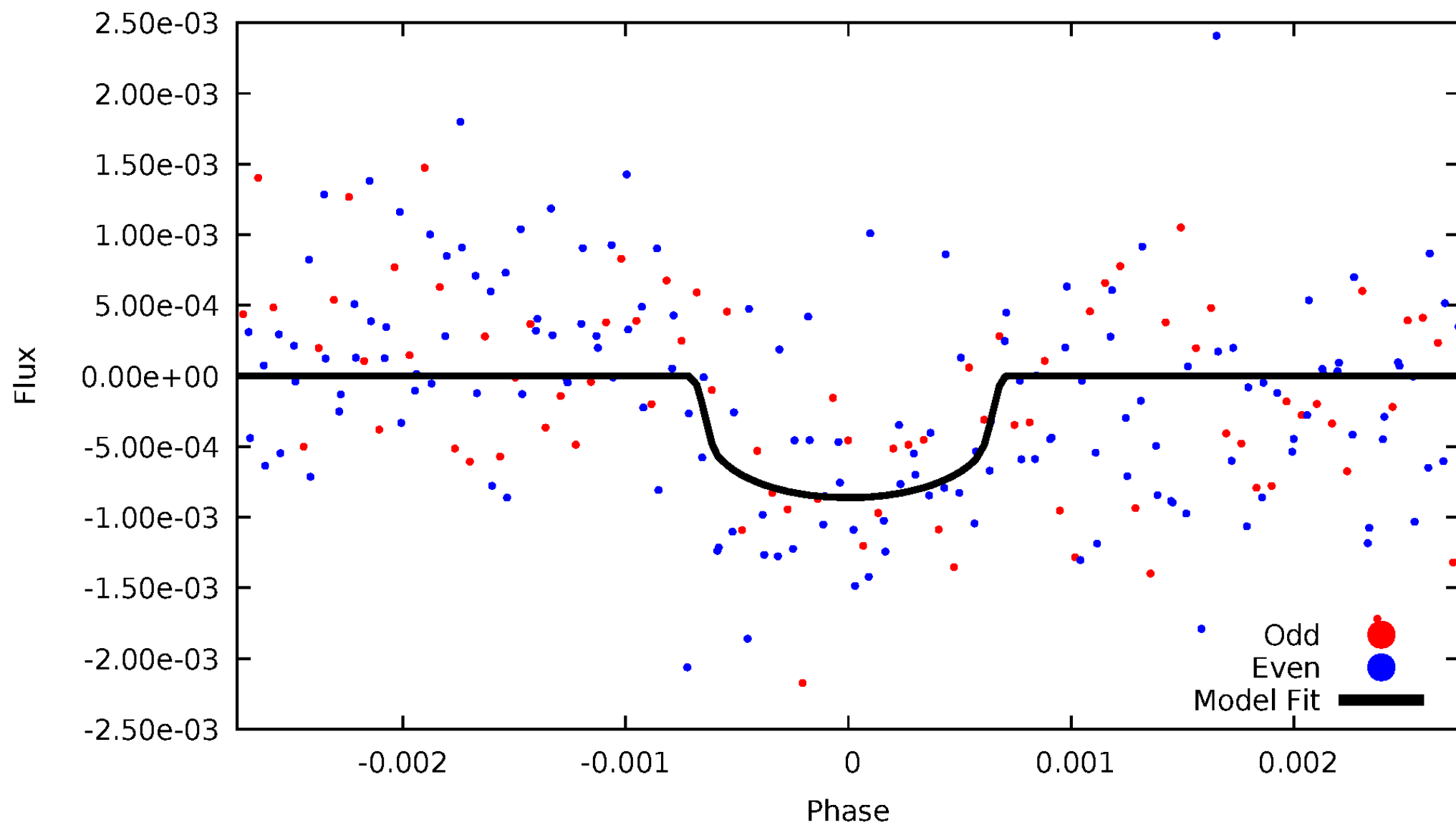


TCE 005683450-01



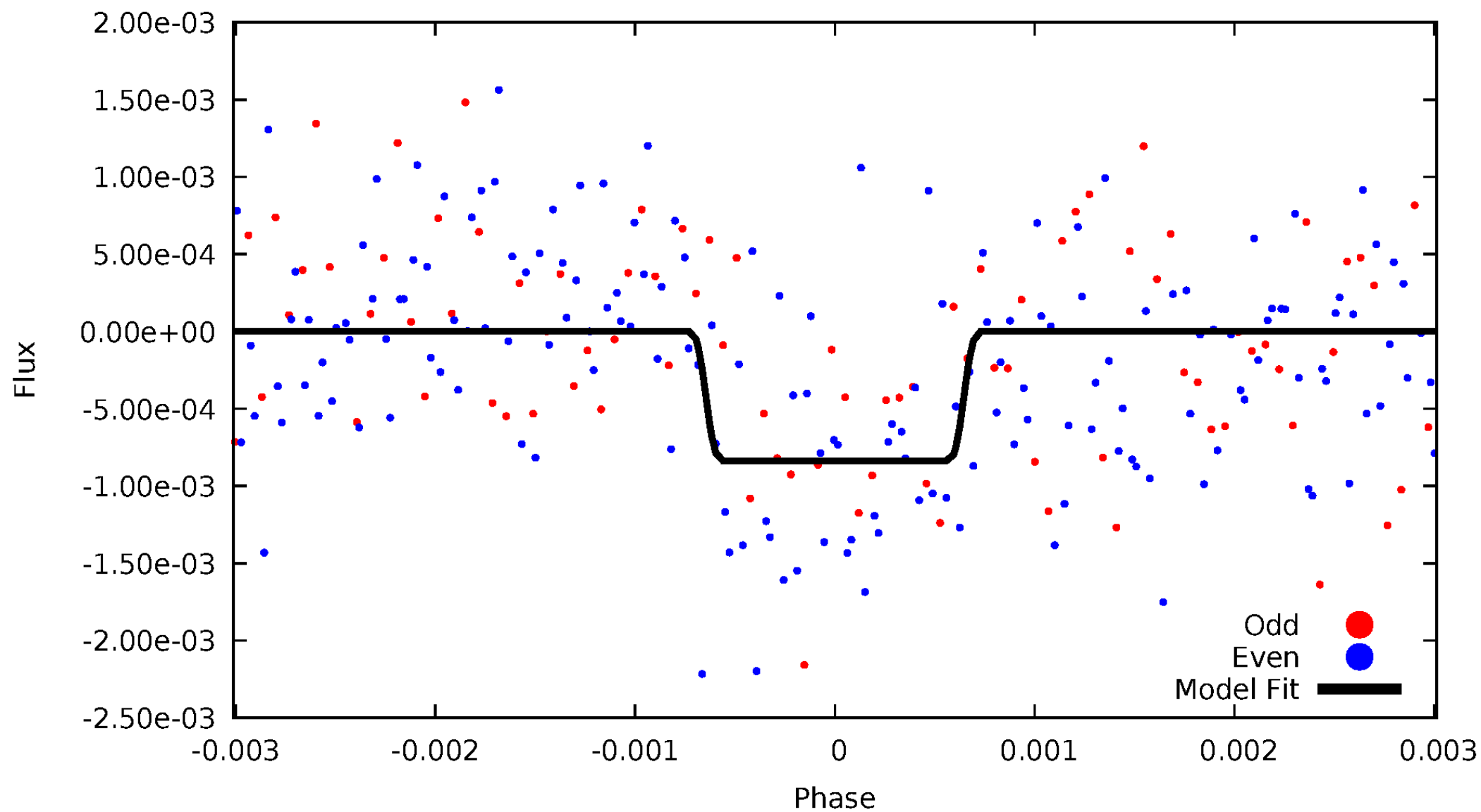
# DV Odd/Even

TCE 005683450-01



# ALT Odd/Even

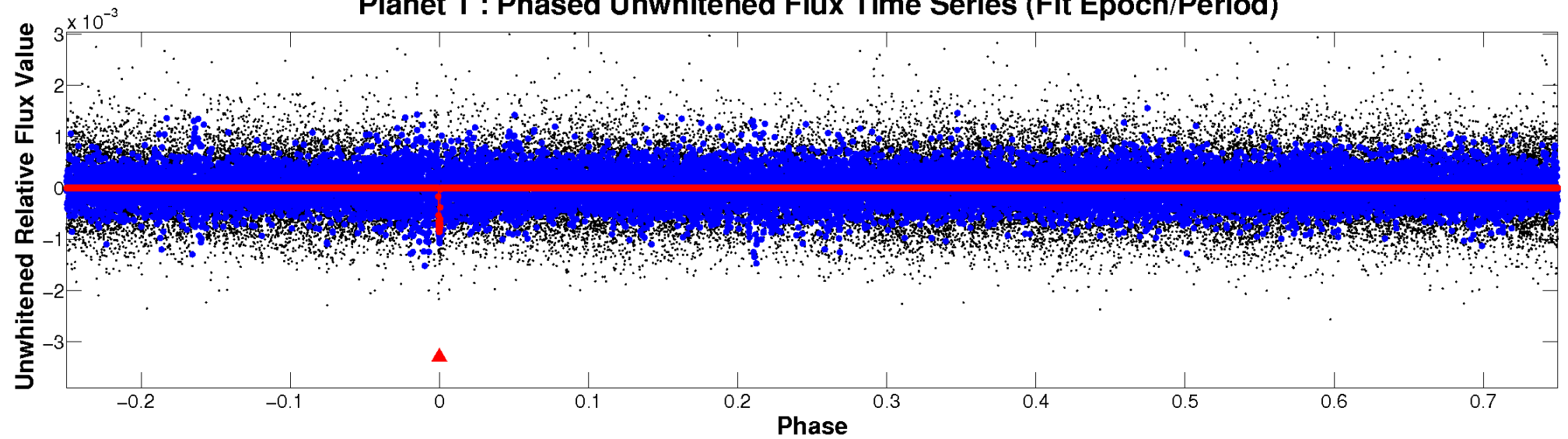
TCE 005683450-01



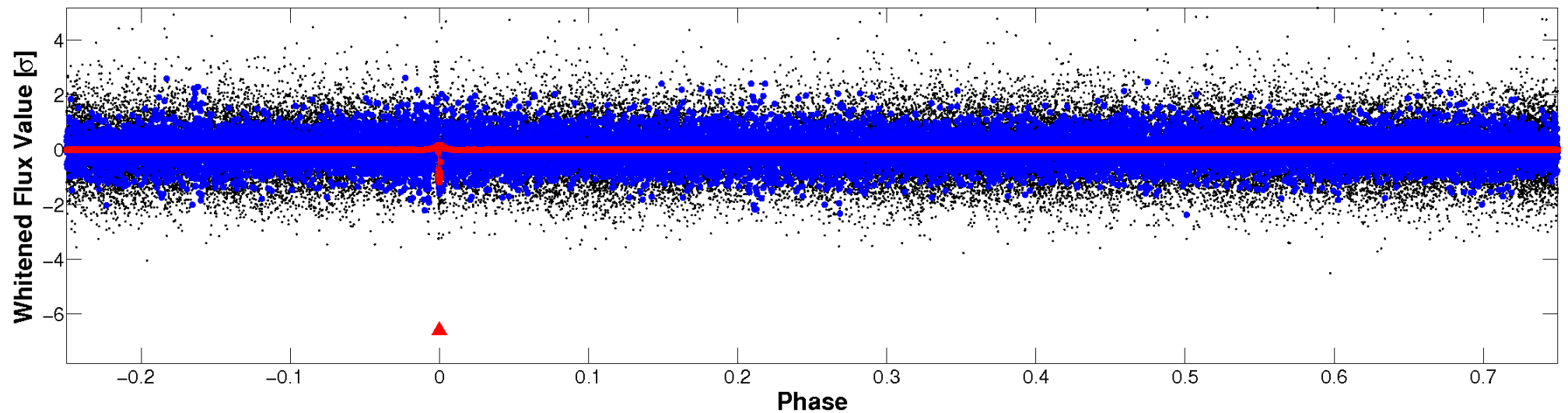


# Non-Whitened Vs. Whitened Light Curve

**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

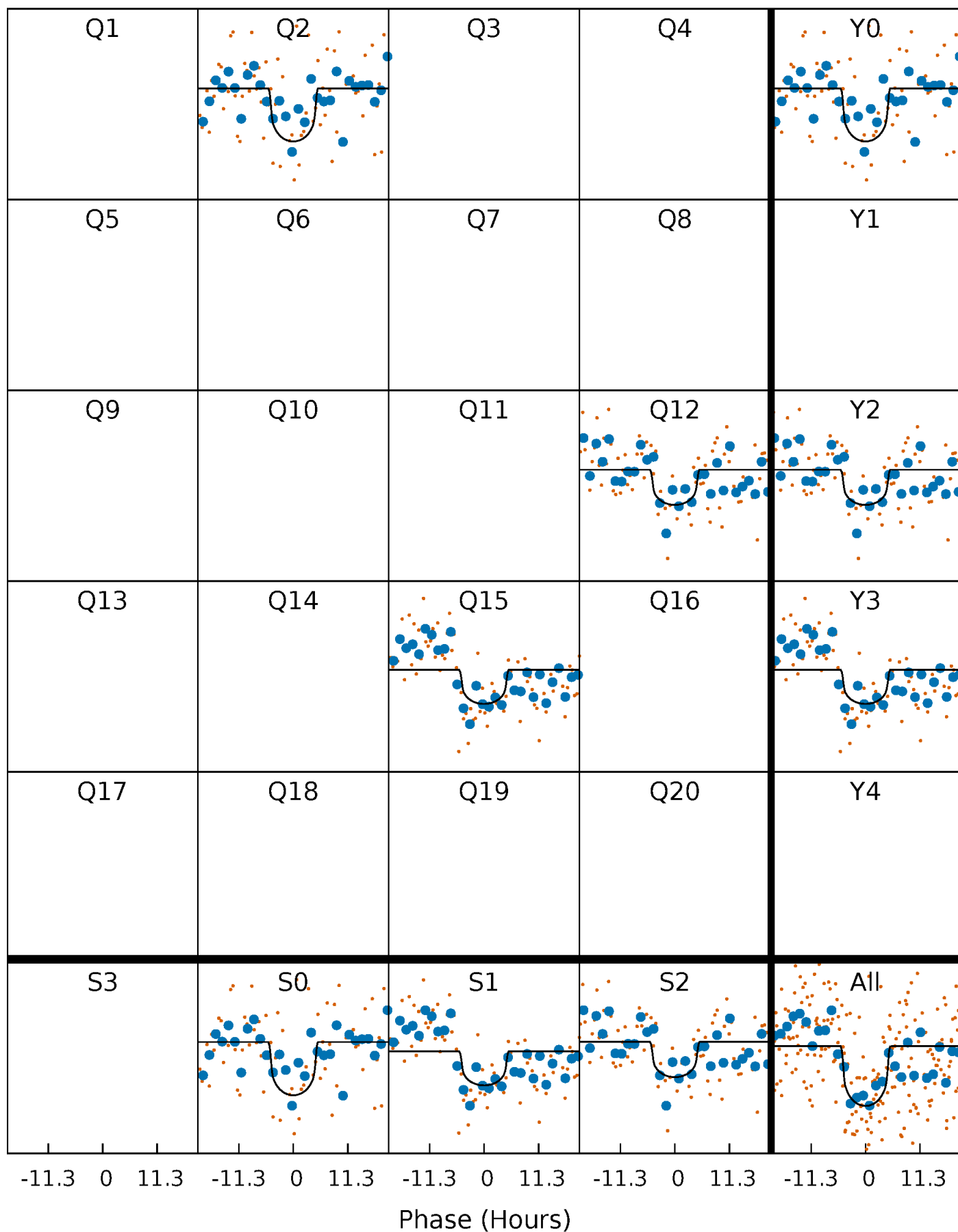
TCE 005683450-01 P=300.899784 Days  $T_0=217.305970$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 005683450-01 P=300.899784 Days  $T_0=217.305970$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

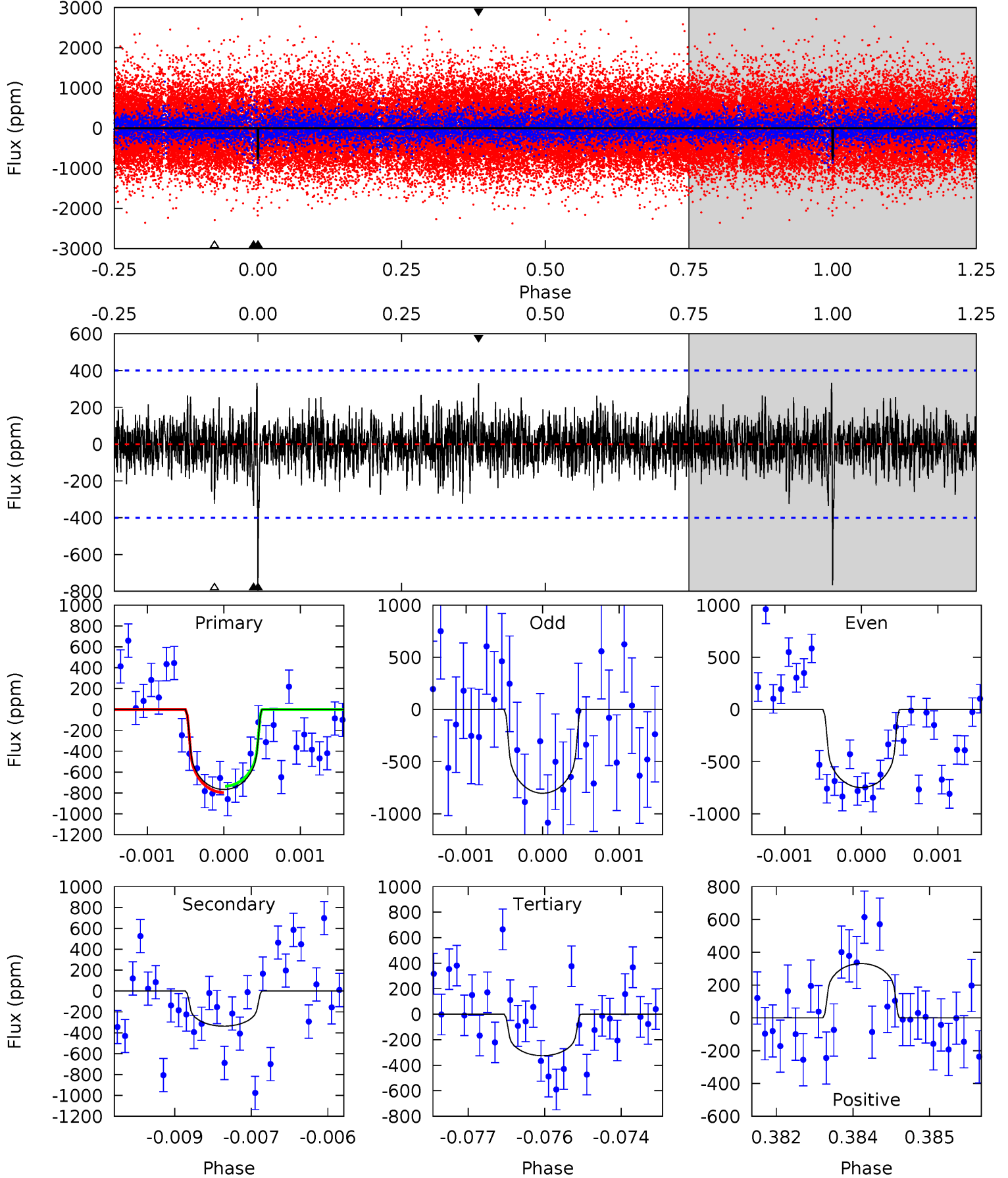
TCE 005683450-01 P=300.897793 Days  $T_0=217.296243$  (BKJD)



# DV Model-Shift Uniqueness Test

005683450-01, P = 300.899784 Days, E = 217.305970 Days

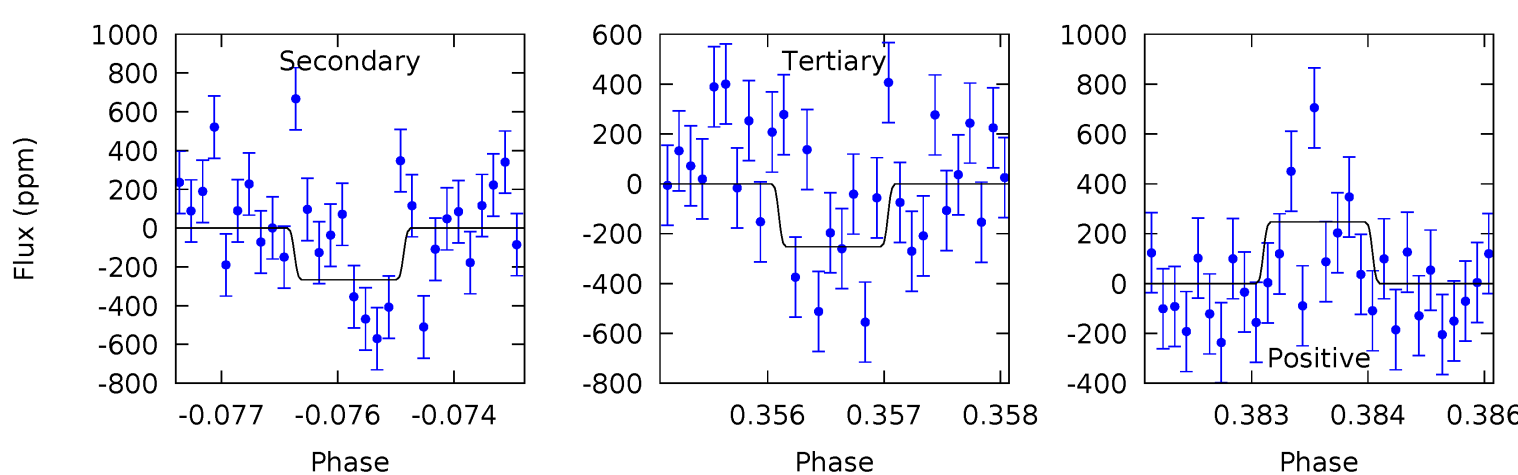
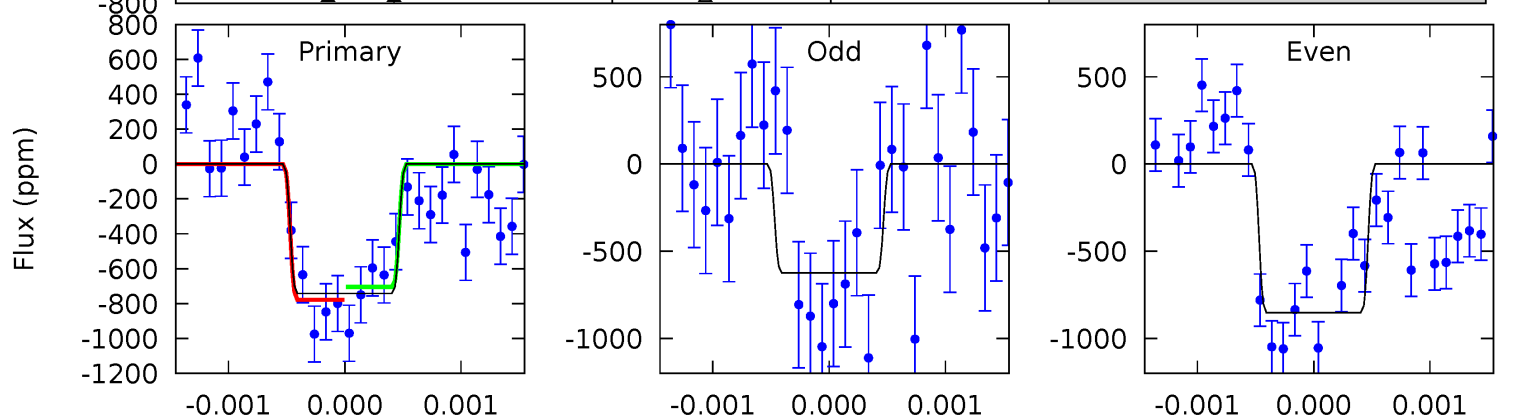
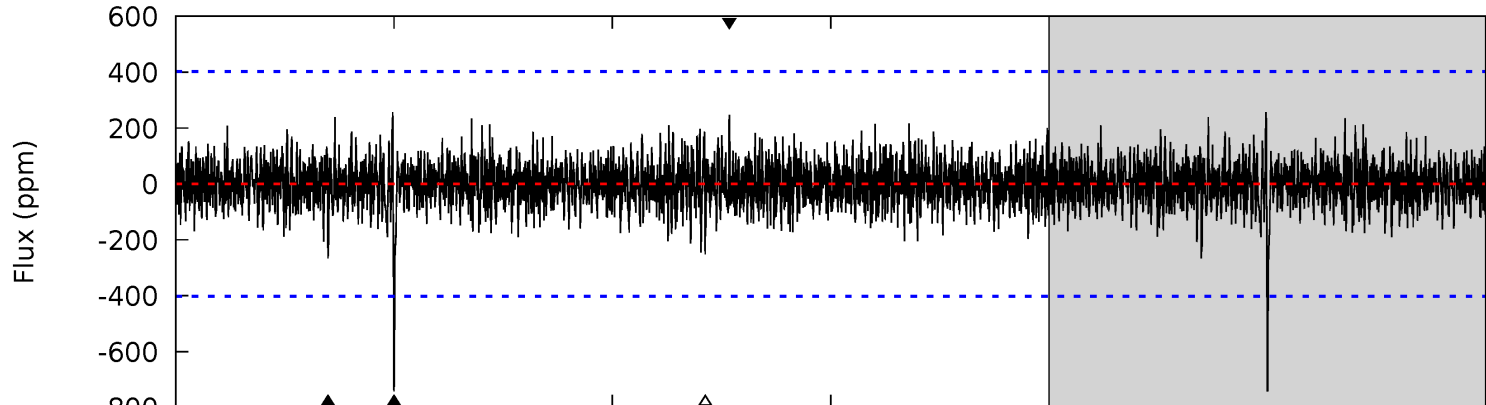
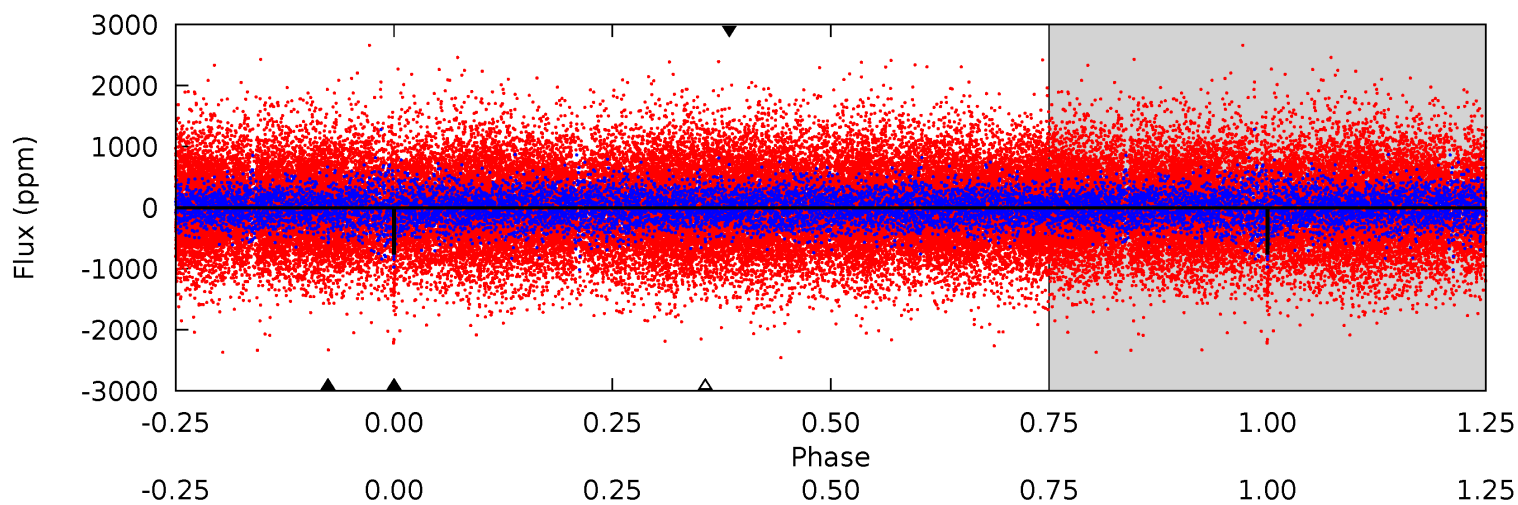
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	4.53	4.37	4.45	5.39	3.19	1.17	5.95	5.86	0.16	0.08	0.35	0.95	0.30	0.41



# Alt Model-Shift Uniqueness Test

005683450-01,  $P = 300.897793$  Days,  $E = 217.296243$  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
9.95	3.58	3.39	3.31	5.39	3.20	0.89	6.56	6.64	0.19	0.26	1.44	1.19	0.26	0.50



### Stellar Parameters For KIC 005683450

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4993^{+150}_{-135}$	$4.580^{+0.072}_{-0.044}$	$-0.420^{+0.350}_{-0.300}$	$0.696^{+0.067}_{-0.074}$	$0.671^{+0.088}_{-0.044}$	$2.810^{+0.845}_{-0.452}$
	+3%/-3%	+2%/-1%	+83%/-71%	+10%/-11%	+13%/-7%	+30%/-16%
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 005683450-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-337 \pm 74$	$2.36^{+1.65}_{-1.30}$	$292^{+10}_{-11}$	$4057^{+1661}_{-669}$	$19208^{+87486}_{-12431}$
Alt.	$-267 \pm 75$	$2.38^{+1.72}_{-1.39}$	$292^{+10}_{-11}$	$3847^{+1667}_{-612}$	$14402^{+75371}_{-9392}$

$T_{\text{max}}$  = 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

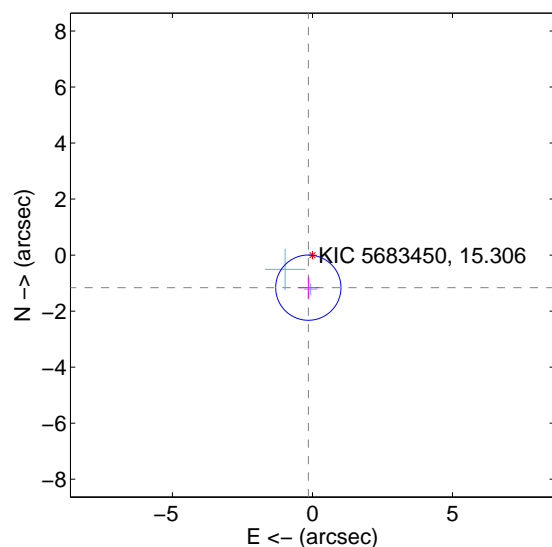
Supplemental centroid analysis for 005683450-01. Kepler magnitude: 15.31. Transit SNR 7.80

There are 2 quarters with good PRF difference image offsets

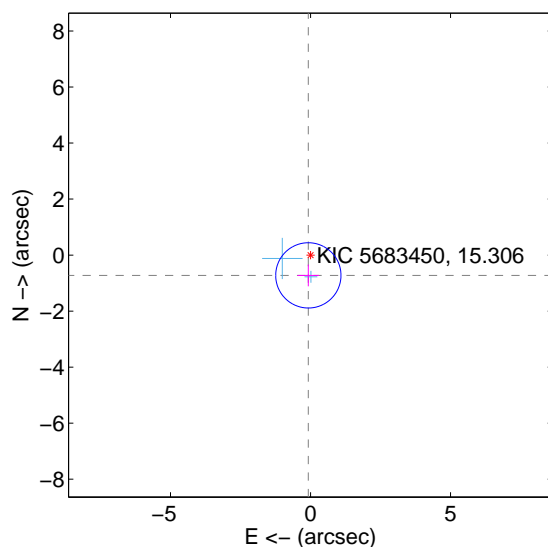
The direct PRF centroid is offset from the target star catalog position by about 0.45 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.171 \pm 0.388$	3.02	$0.147 \pm 0.384$	$-1.162 \pm 0.389$
PRF-fit source offset from KIC position	$0.728 \pm 0.388$	1.87	$0.078 \pm 0.384$	$-0.724 \pm 0.389$
photometric centroid source offset	$1.54 \pm 1.89$	0.82	$1.37 \pm 1.87$	$-0.71 \pm 1.96$

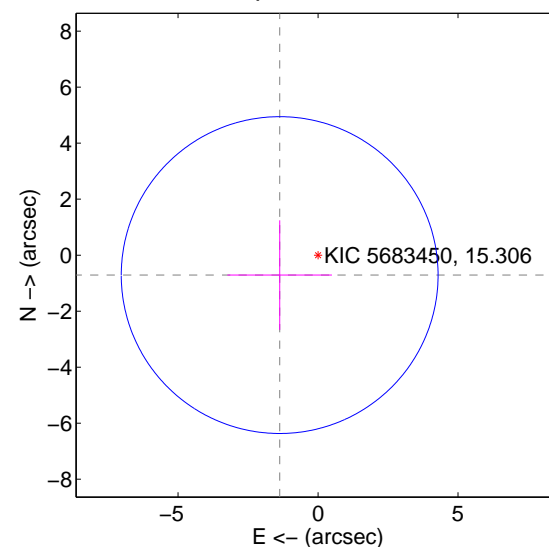
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

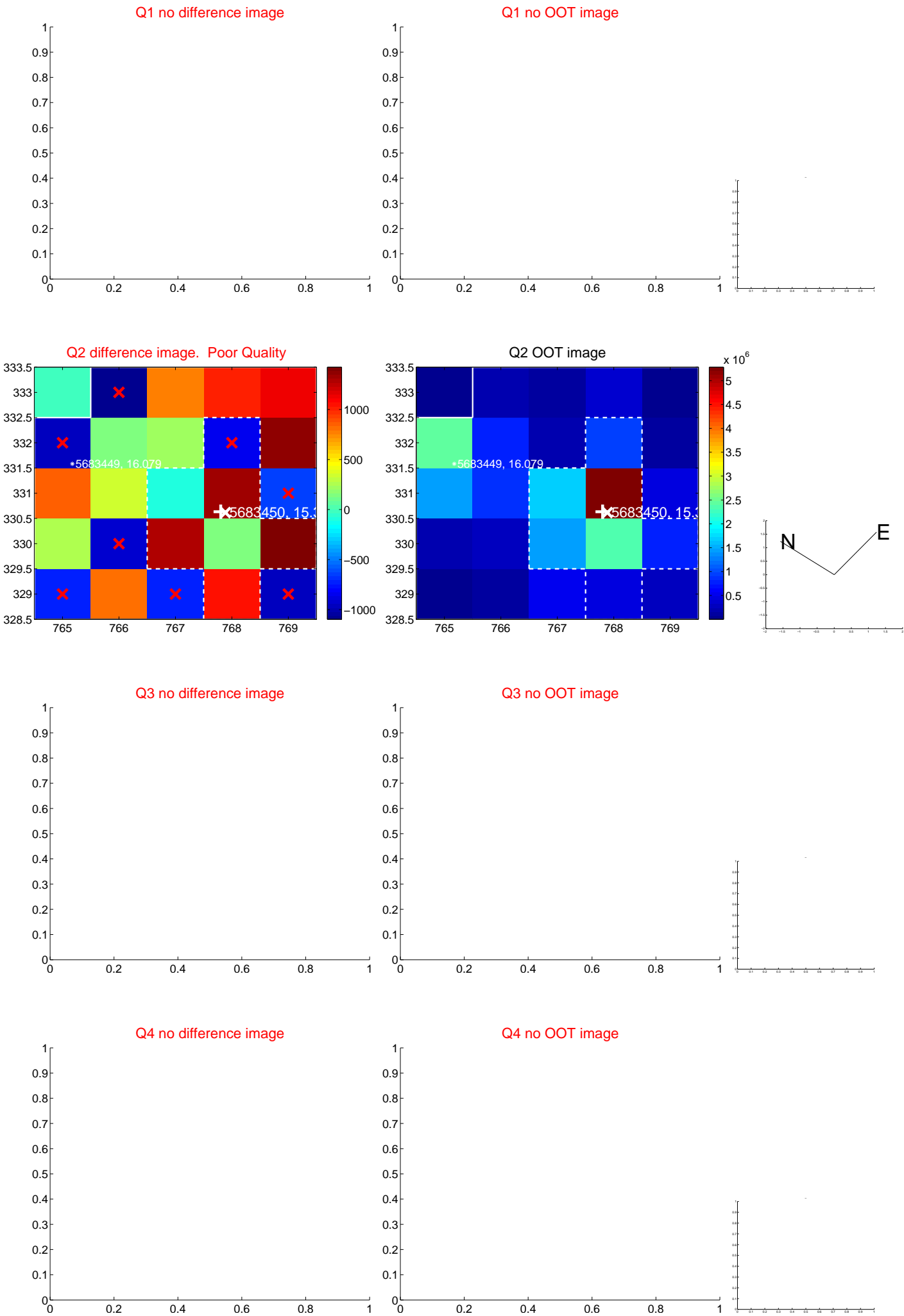


offset from photometric centroids



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.

Q9 no difference image



Q9 no OOT image



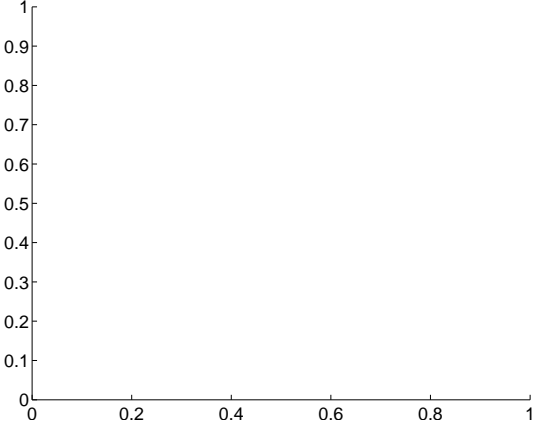
Q10 no difference image



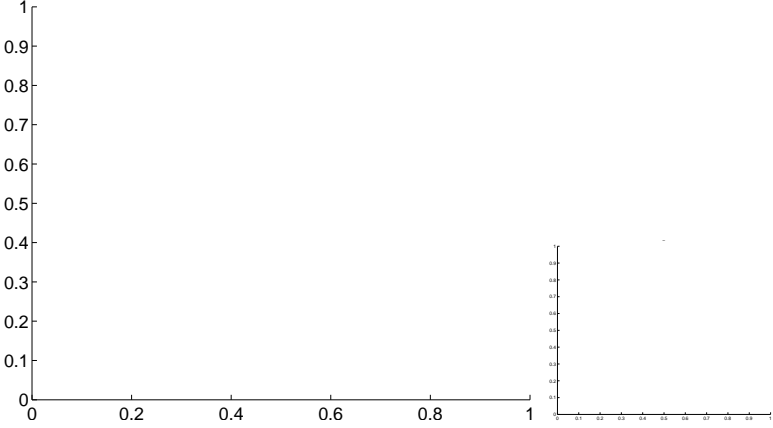
Q10 no OOT image



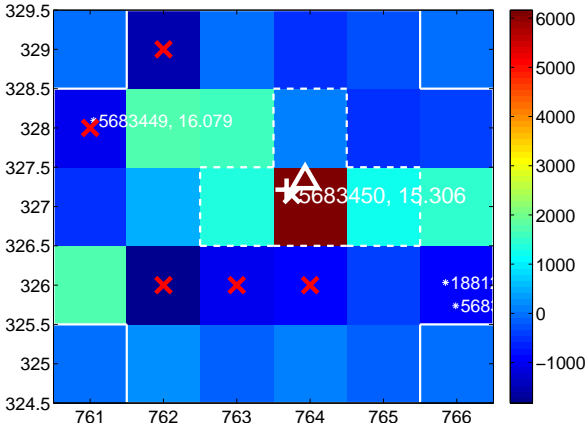
Q11 no difference image



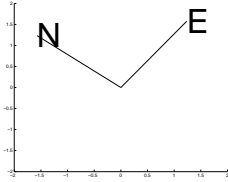
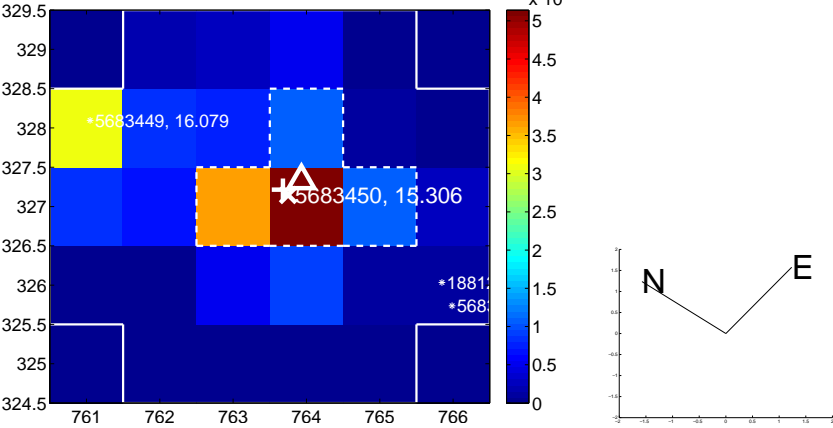
Q11 no OOT image



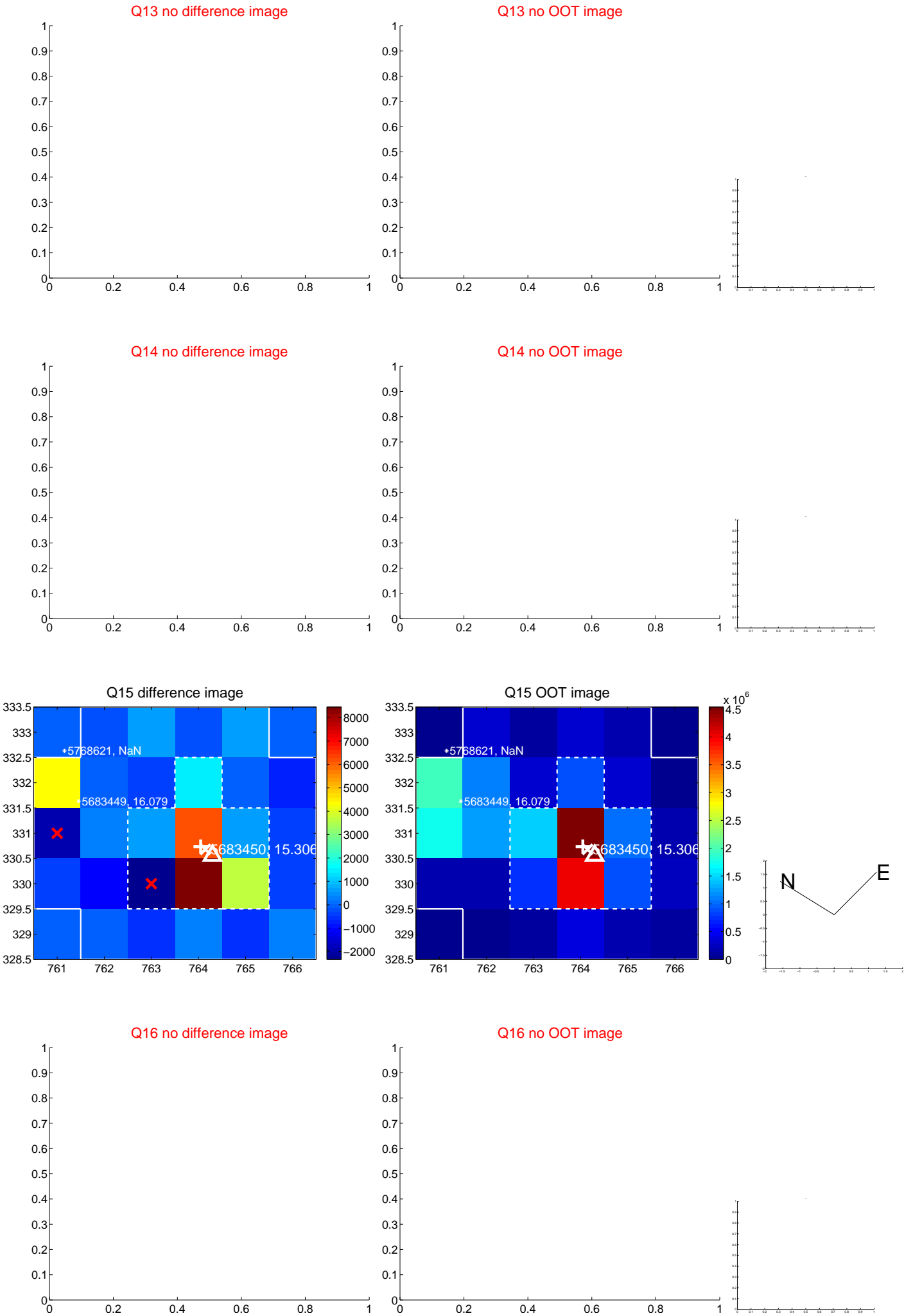
Q12 difference image



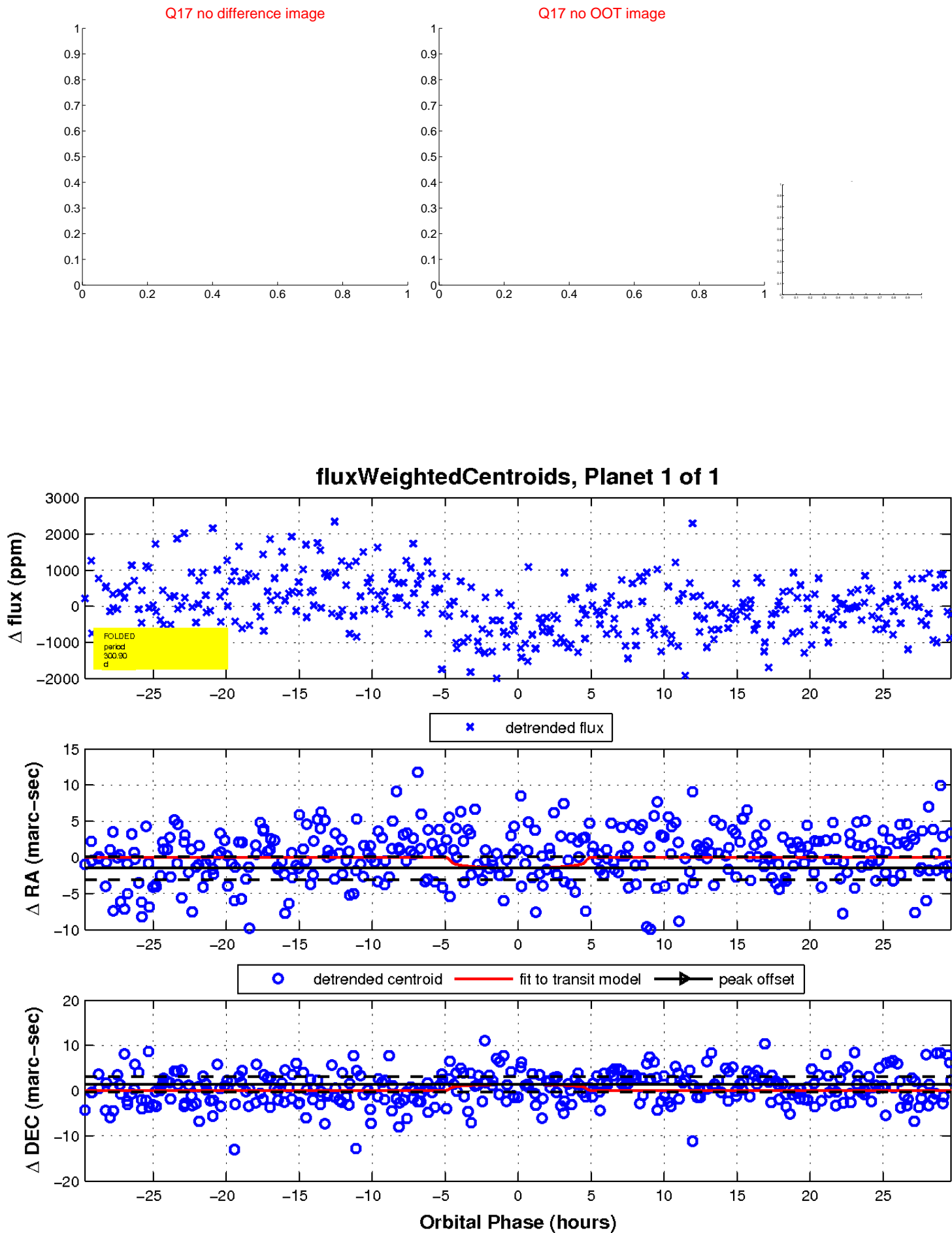
Q12 OOT image



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

