

# KIC 010749684

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010749684-01	OBS	No	644.843563	264.523865	207.6	24.204	7.4	8.1	1.09	6423	1.67	0.78

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010749684-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_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.

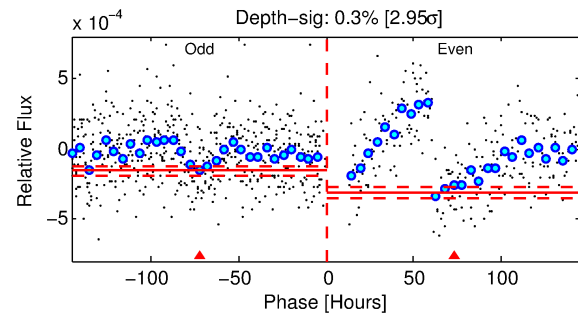
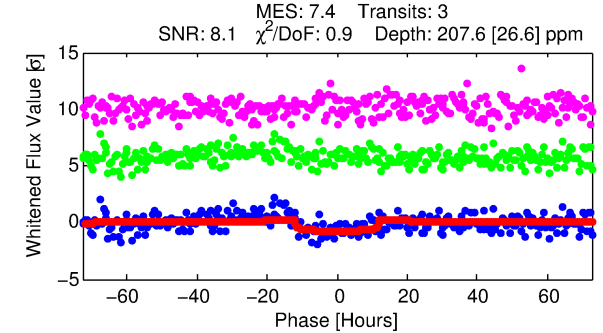
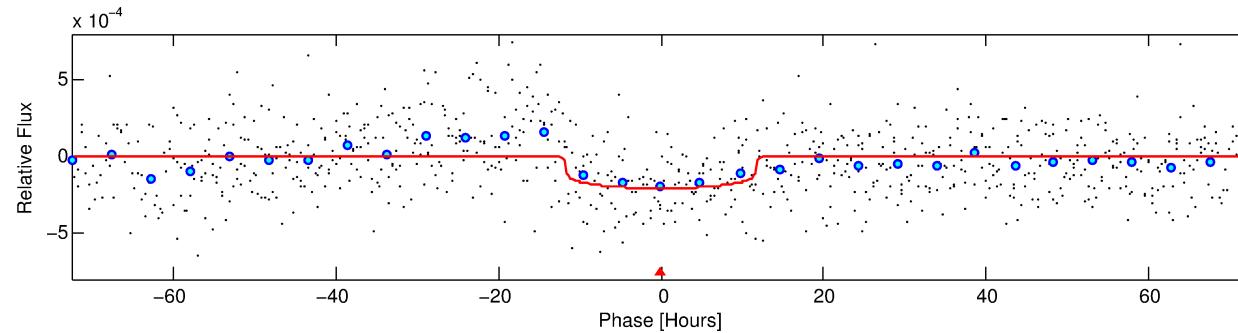
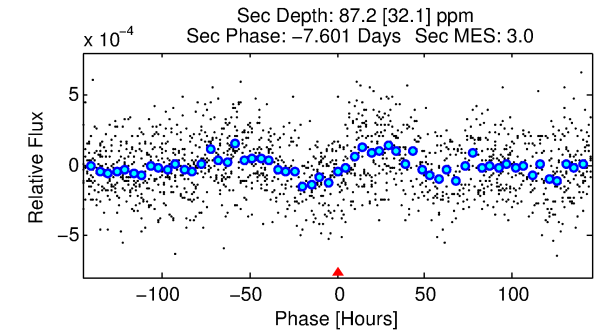
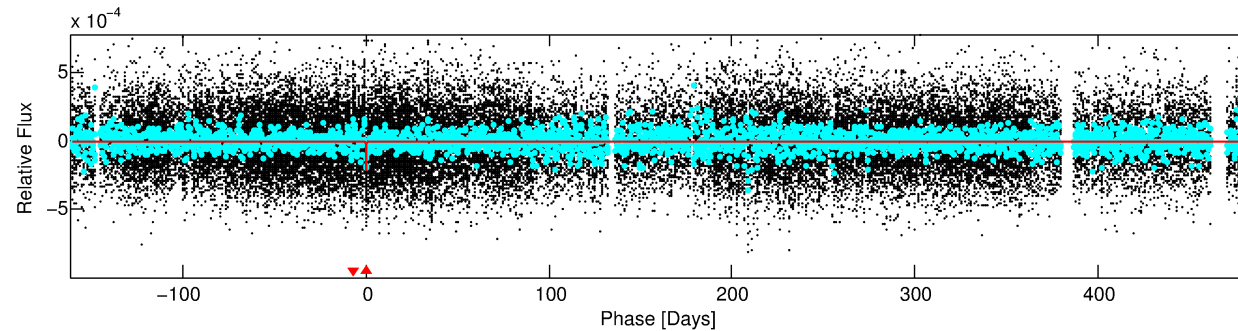
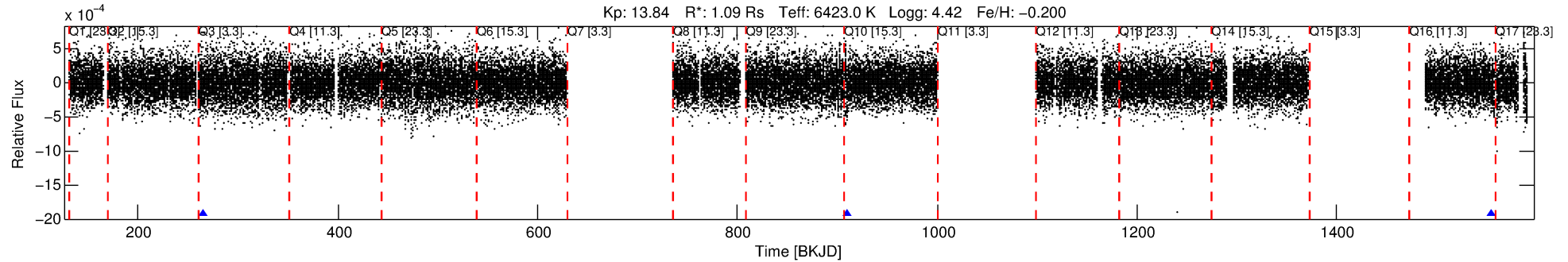
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010749684-01

No Significant Match Found

# DV One-Page Summary

KIC: 10749684 Candidate: 1 of 1 Period: 644.844 d



## DV Fit Results:

Period = 644.84356 [0.02215] d  
Epoch = 264.5239 [0.0306] BKJD  
Rp/R\* = 0.0141 [0.0033]  
a/R\* = 152.88 [181.70]  
b = 0.68 [0.94]  
Seff = 0.78 [0.32]  
Teq = 240 [25] K  
Rp = 1.67 [0.68] Re  
a = 1.5202 [0.4215] AU  
Ag = 39923.20 [28517.15] [1.40σ]  
Teffp = 5234 [791] K [6.31σ]

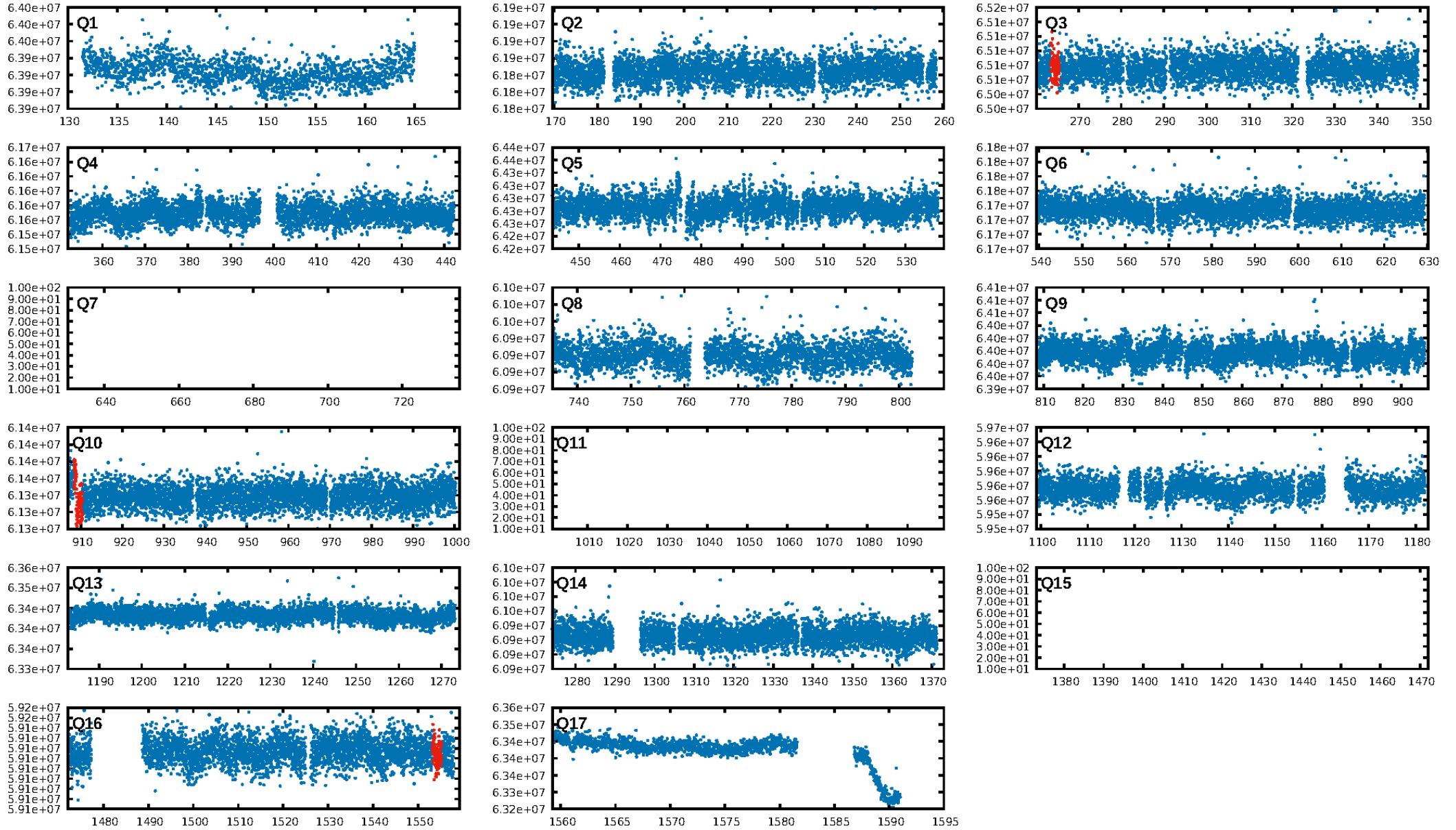
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 4.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 8.29e-13  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.954  
Centroid-sig: 4.2%  
Centroid-so: 2.873 arcsec [1.70σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [2/2]

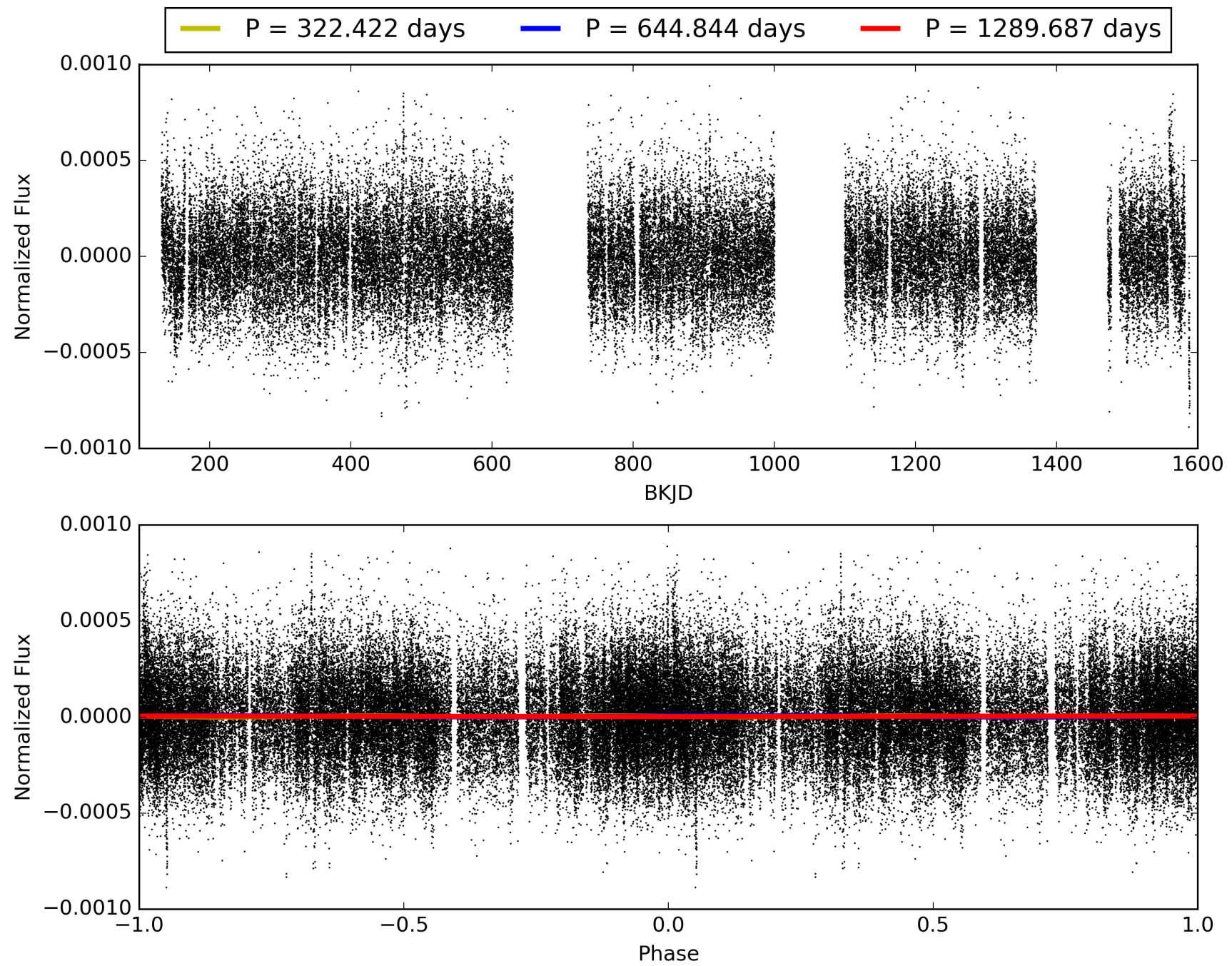
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:33:55 Z

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

# TCE 010749684-01, PDC Light Curves

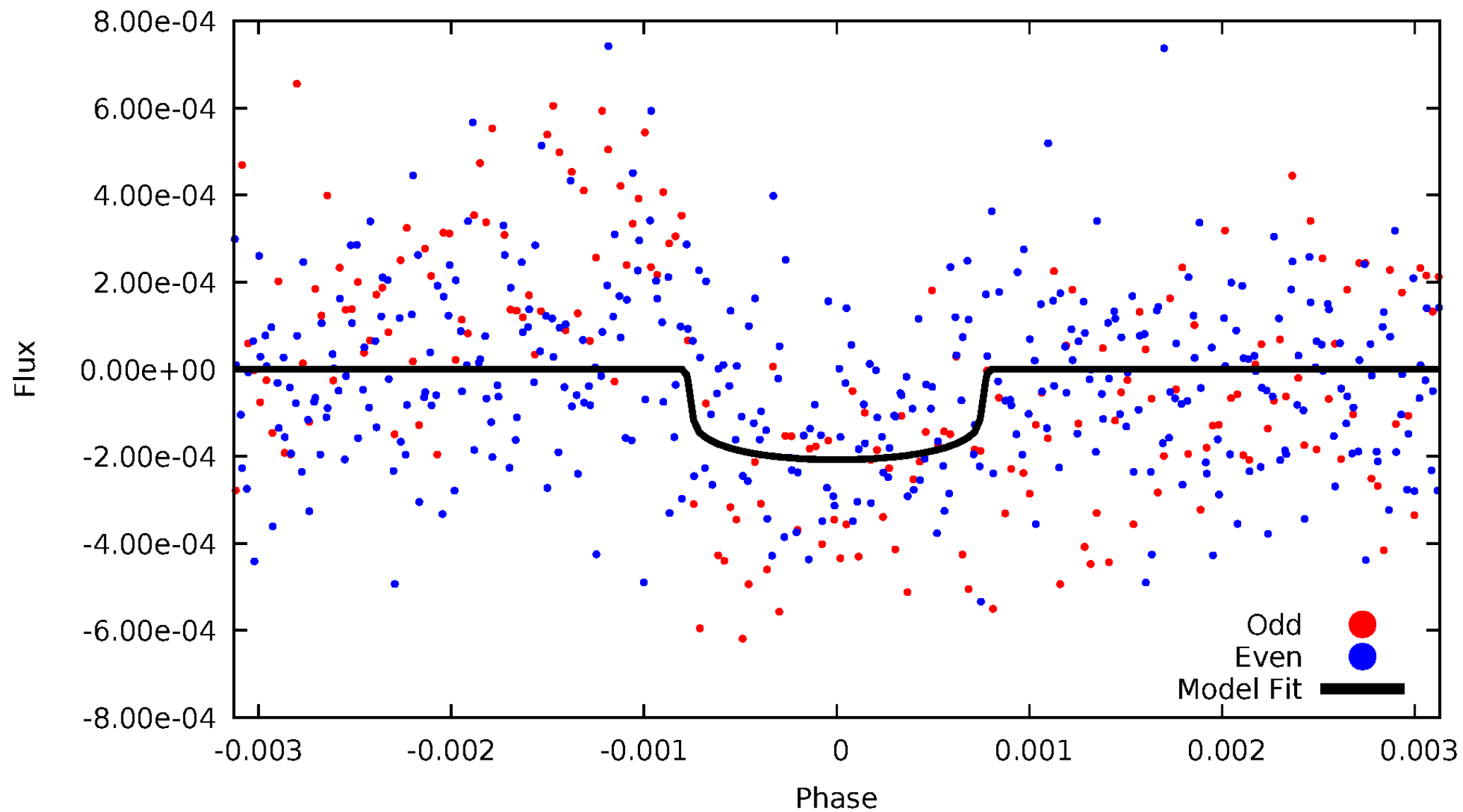


# TCE 010749684-01



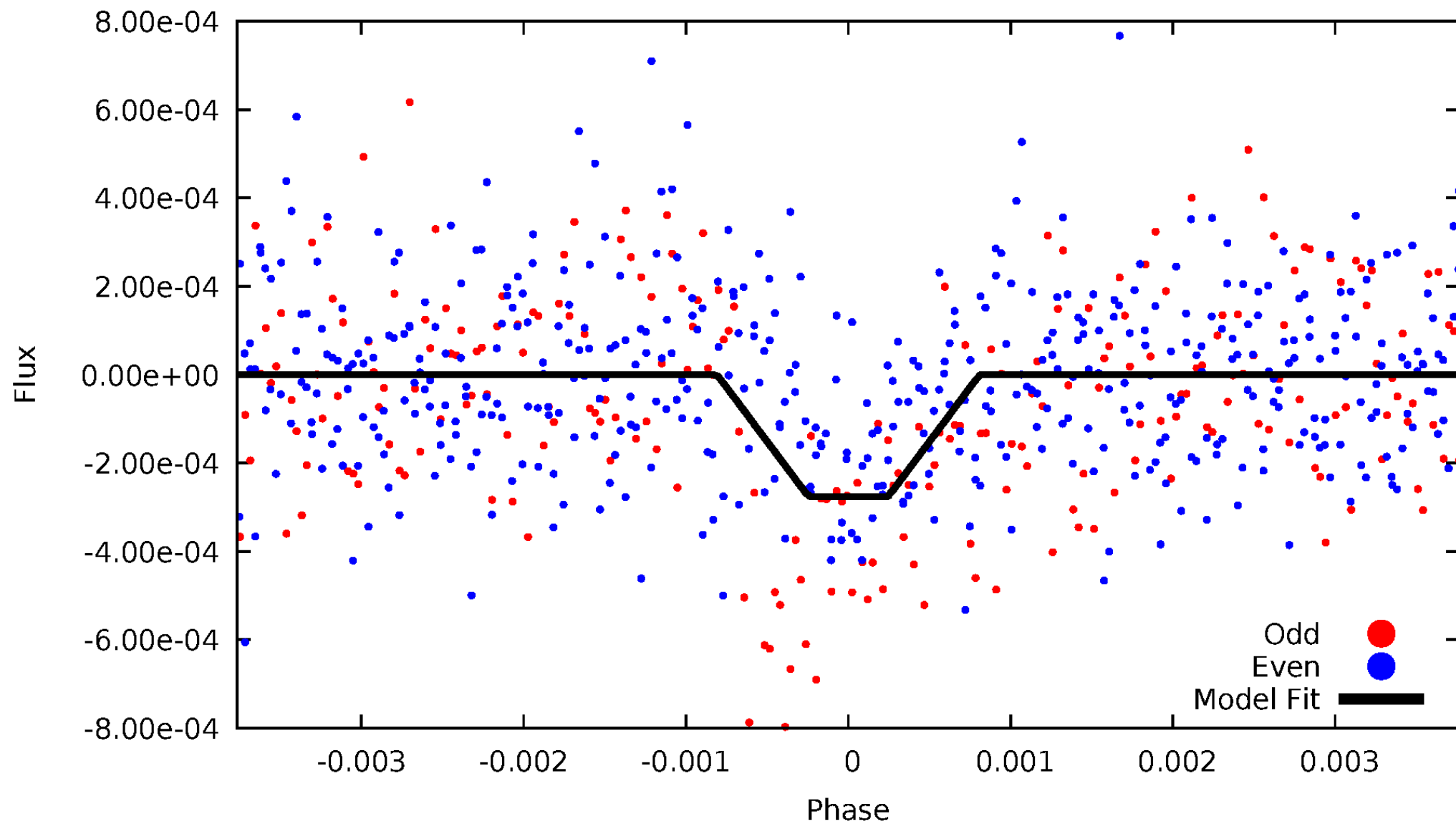
# DV Odd/Even

TCE 010749684-01

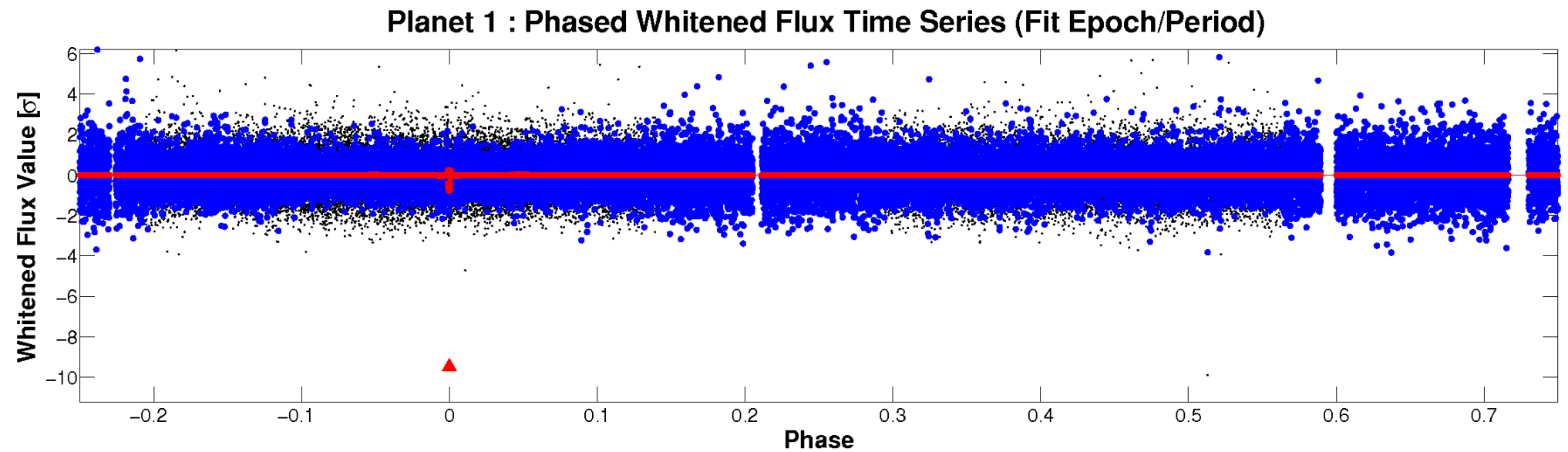
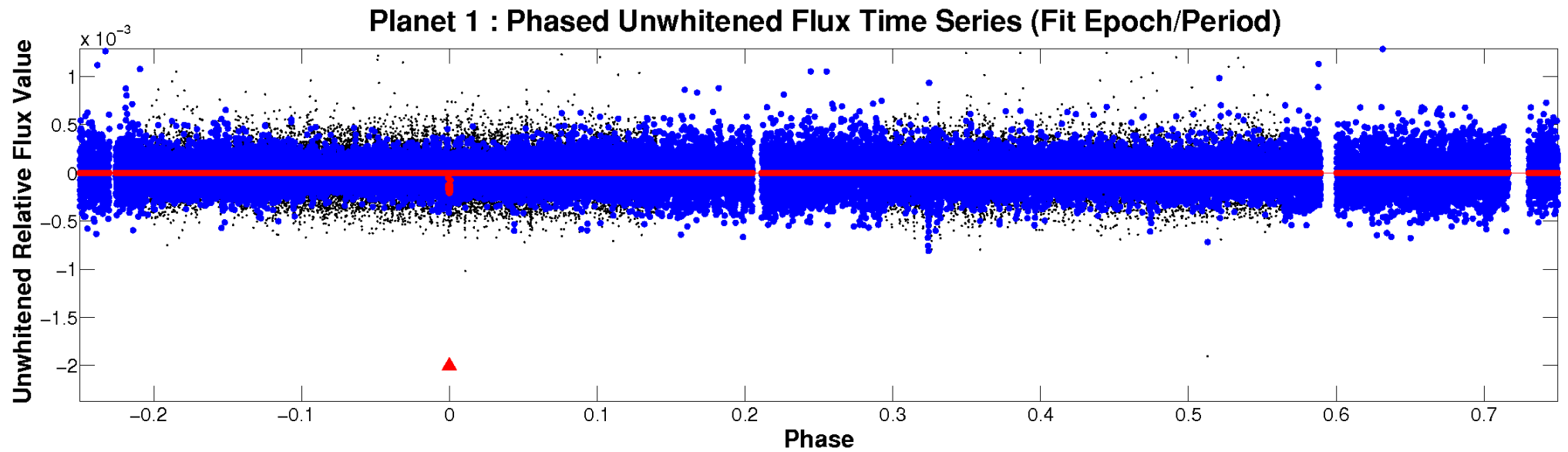


# ALT Odd/Even

TCE 010749684-01



# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

TCE 010749684-01     $P=644.843563$  Days     $T_0=264.523865$  (BKJD)





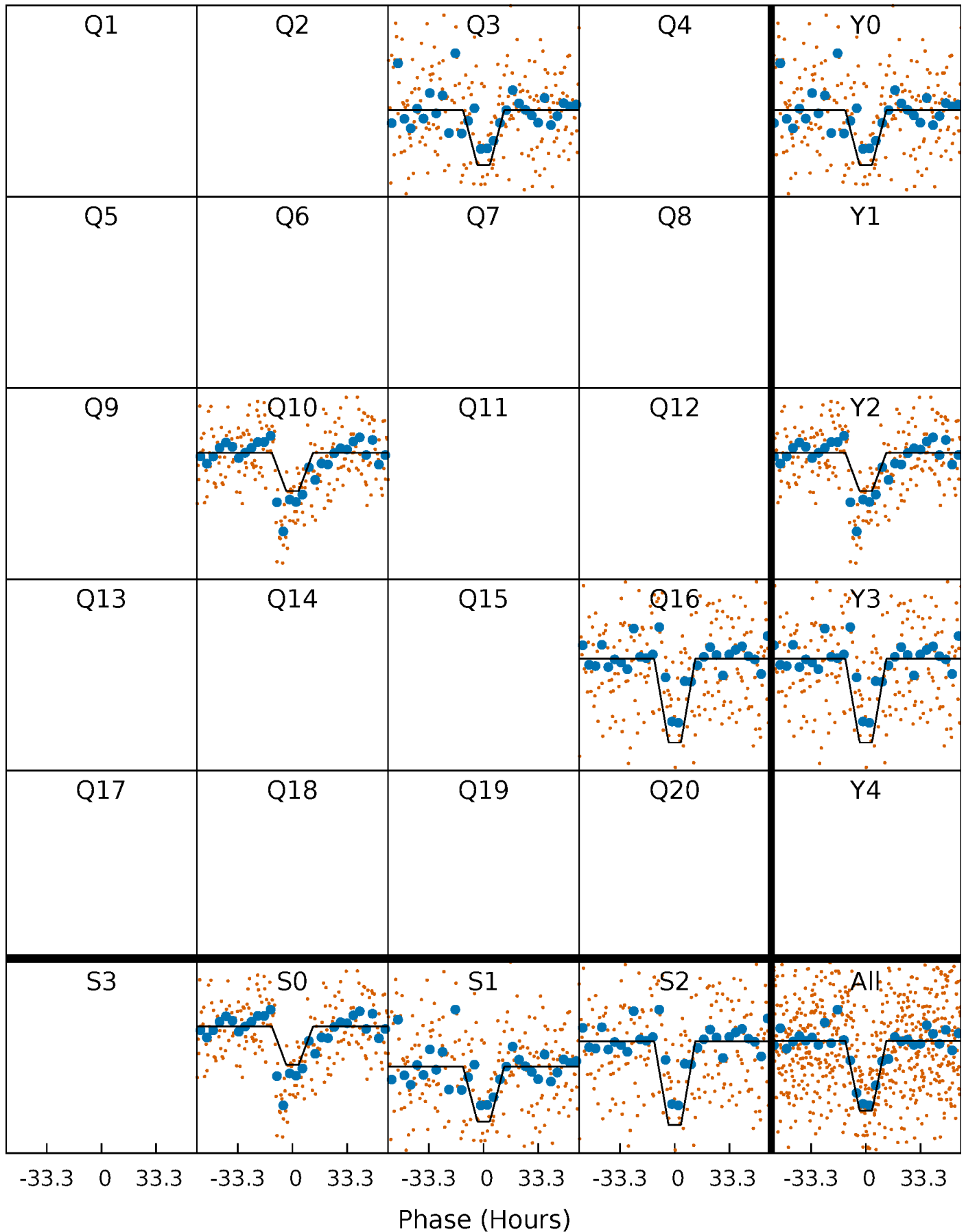
# DV Quarter-Phased Transit Curves

TCE 010749684-01 P=644.843563 Days  $T_0=264.523865$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

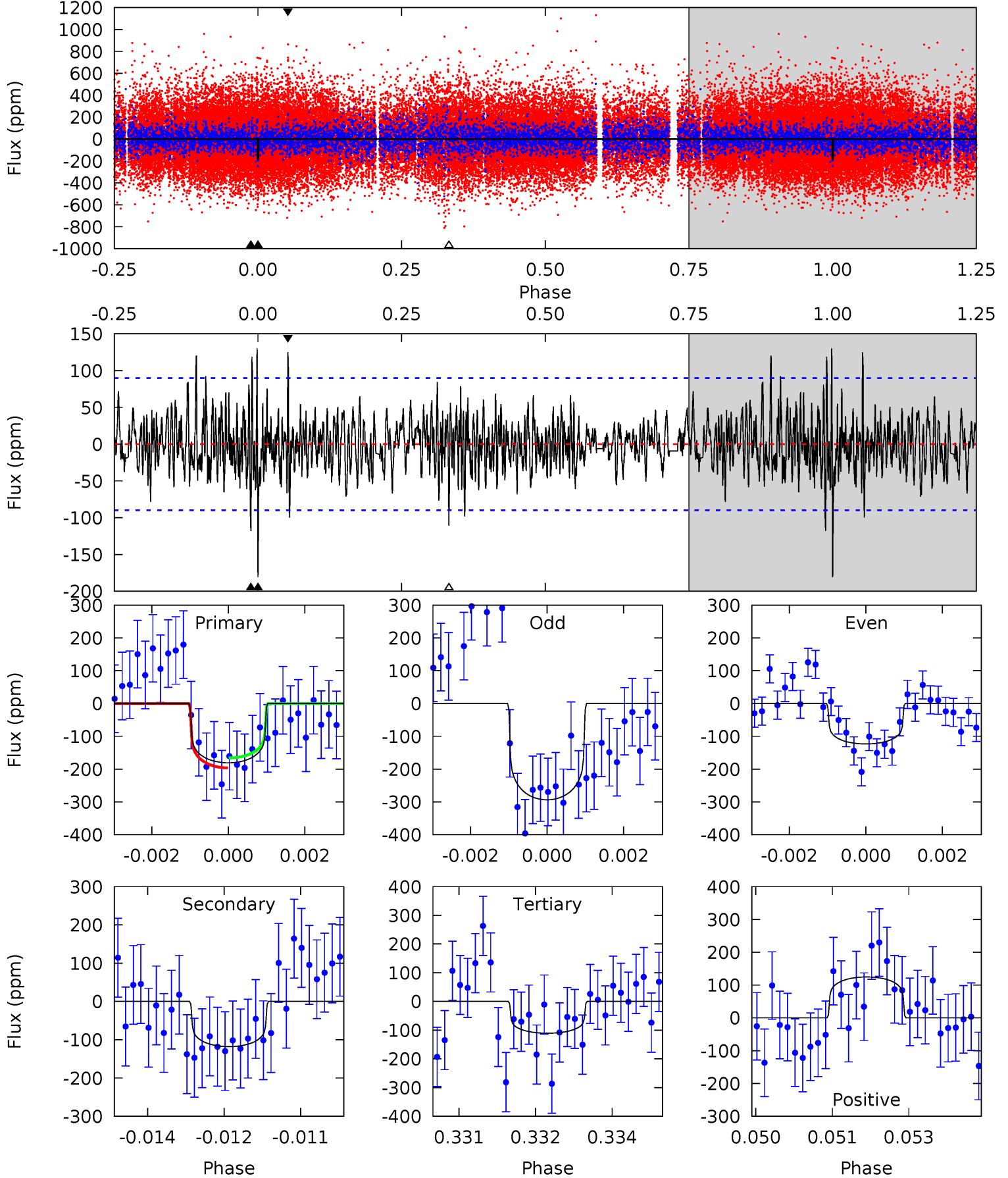
TCE 010749684-01 P=644.760552 Days  $T_0=264.542103$  (BKJD)



# DV Model-Shift Uniqueness Test

010749684-01, P = 644.843563 Days, E = 264.523865 Days

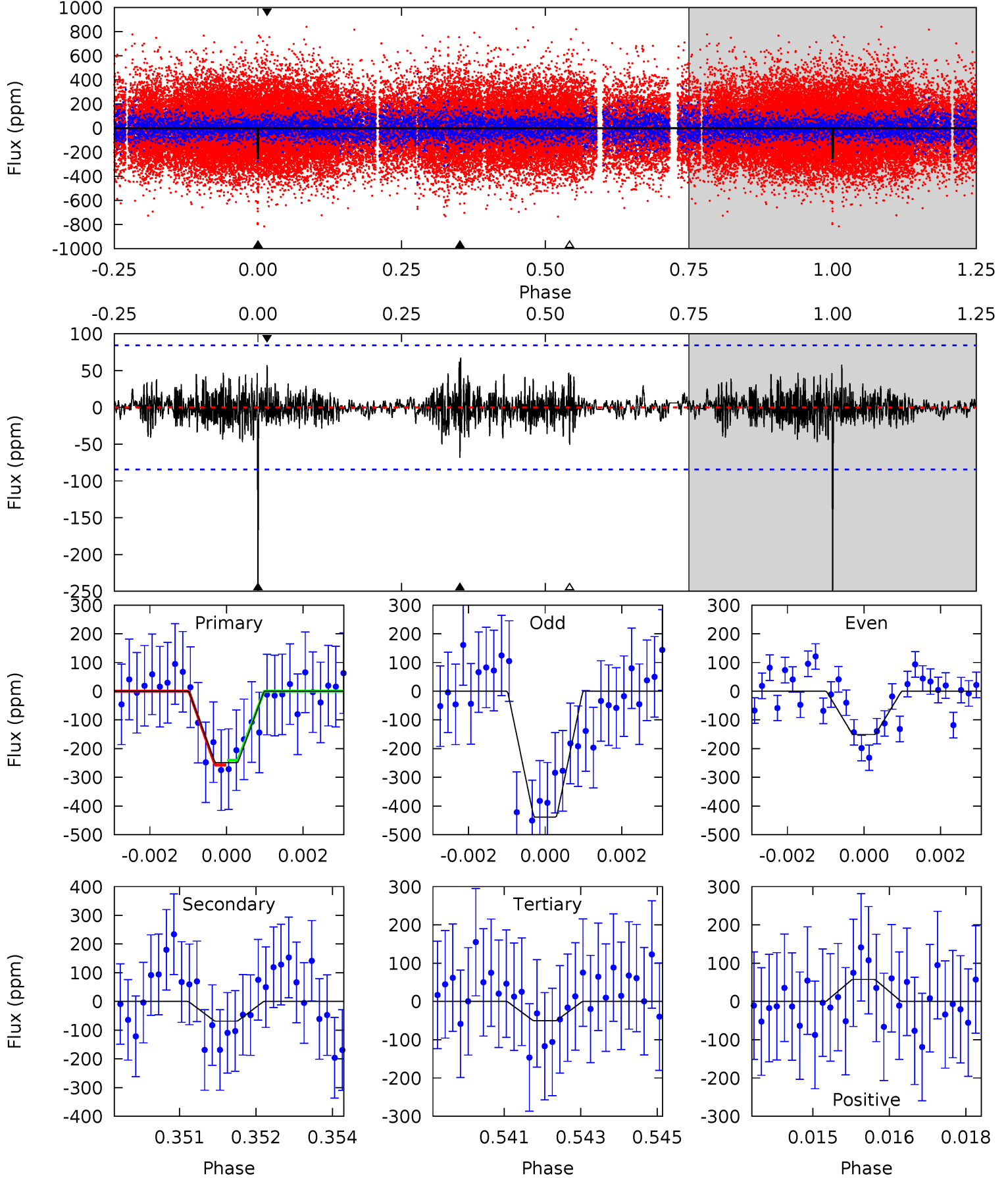
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	7.06	6.62	7.46	5.37	3.16	1.81	4.20	3.36	0.44	-0.41	4.90	1.26	0.42	0.91



# Alt Model-Shift Uniqueness Test

010749684-01, P = 644.760552 Days, E = 264.542103 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
15.8	4.35	3.21	3.65	5.36	3.15	0.91	12.6	12.2	1.15	0.70	8.72	1.58	0.21	0.55



### Stellar Parameters For KIC 010749684

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6423^{+161}_{-193}$	$4.418^{+0.054}_{-0.216}$	$-0.200^{+0.250}_{-0.300}$	$1.086^{+0.362}_{-0.121}$	$1.126^{+0.168}_{-0.152}$	$1.237^{+0.348}_{-0.642}$
	+3%/-3%	+1%/-5%	+125%/-150%	+33%/-11%	+15%/-13%	+28%/-52%
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 010749684-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-118 \pm 17$	$1.78^{+0.52}_{-0.47}$	$343^{+27}_{-17}$	$5614^{+893}_{-551}$	$46891^{+36432}_{-18878}$
Alt.	$-68 \pm 16$	$2.06^{+0.48}_{-0.44}$	$342^{+24}_{-16}$	$4666^{+518}_{-376}$	$20012^{+13472}_{-7824}$

$T_{max}$  = 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

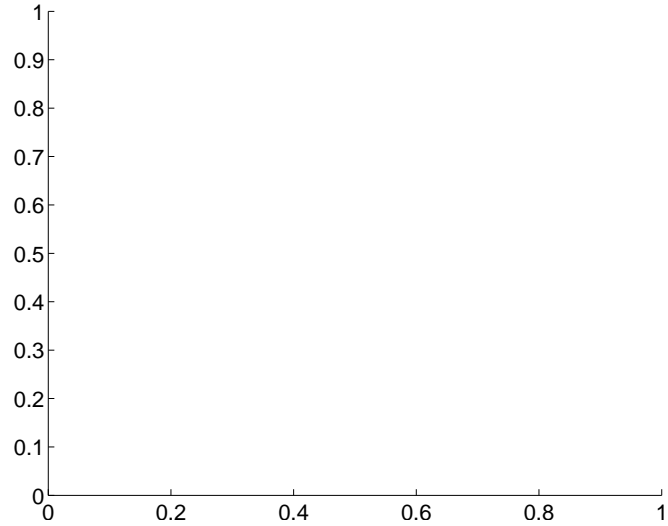
Supplemental centroid analysis for 010749684-01. Kepler magnitude: 13.84. Transit SNR 8.10

There are 0 quarters with good PRF difference image offsets

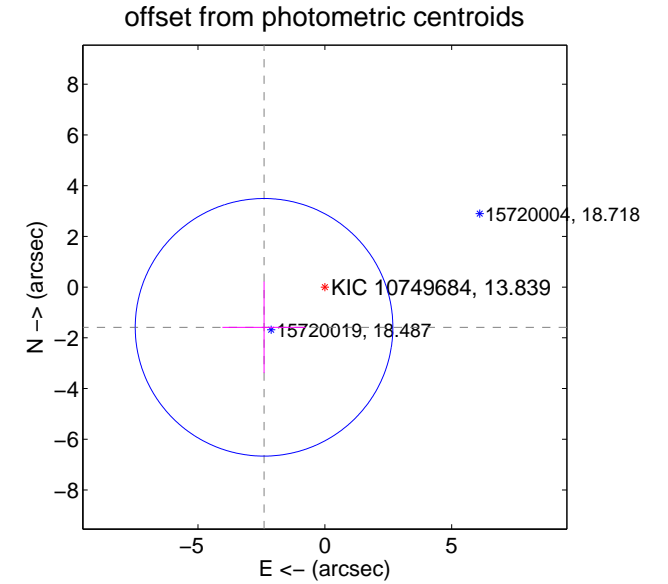
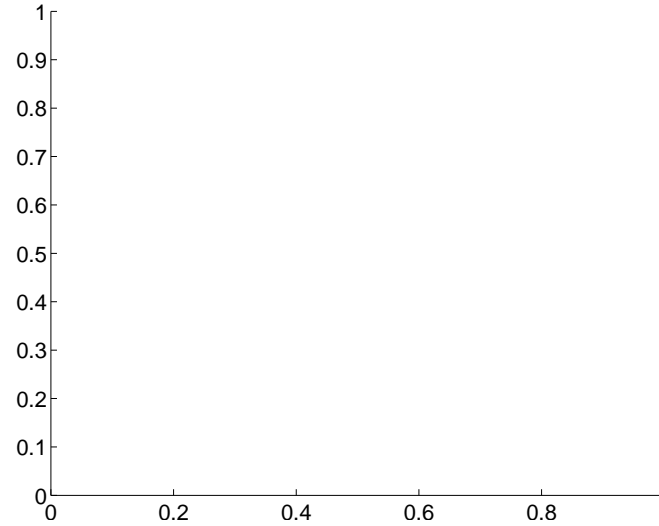
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$2.87 \pm 1.69$	1.70	$2.40 \pm 1.64$	$-1.59 \pm 1.80$

There is no PRF-fit offset from OOT-fit

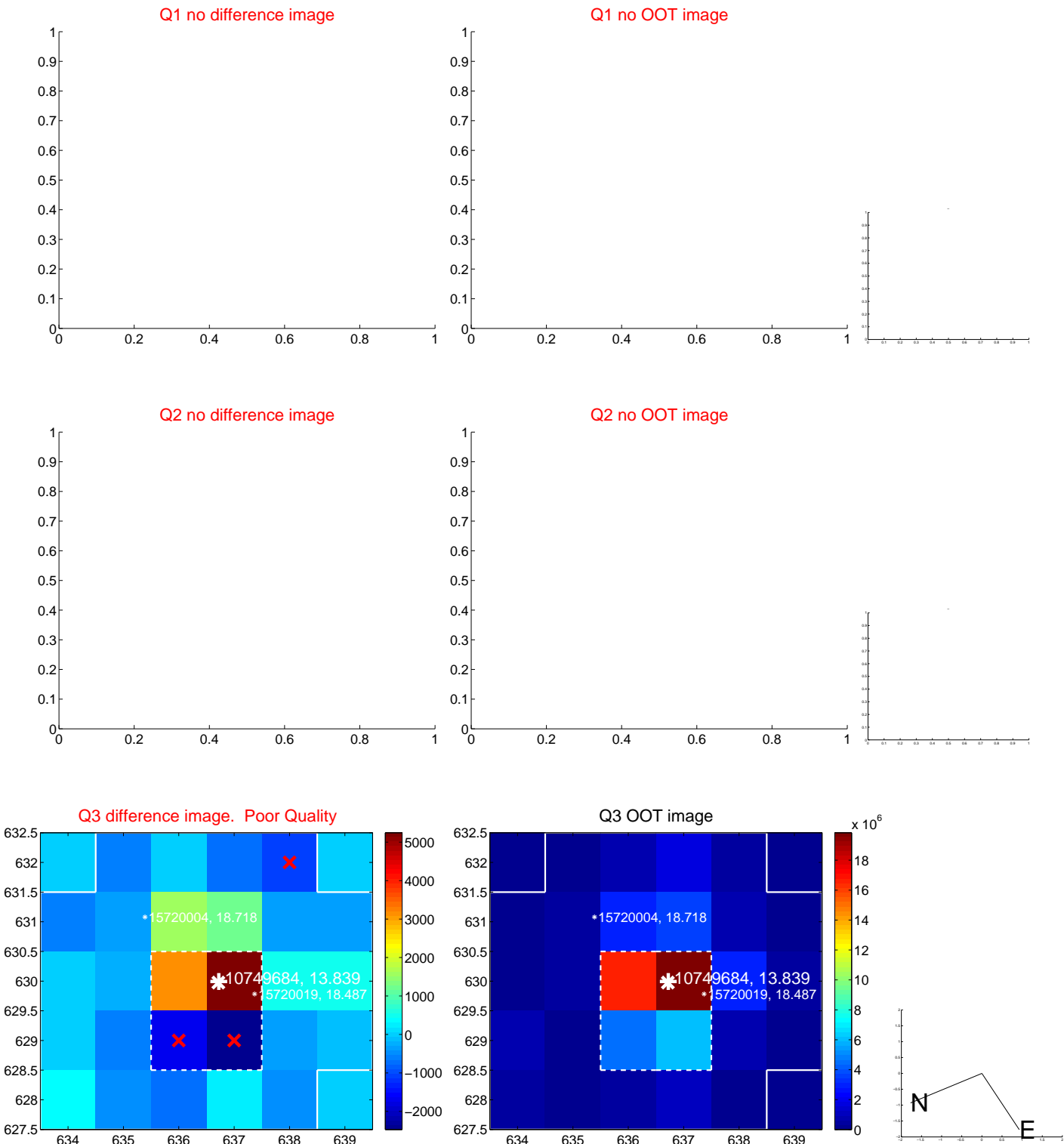


There is no PRF-fit offset from KIC



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.





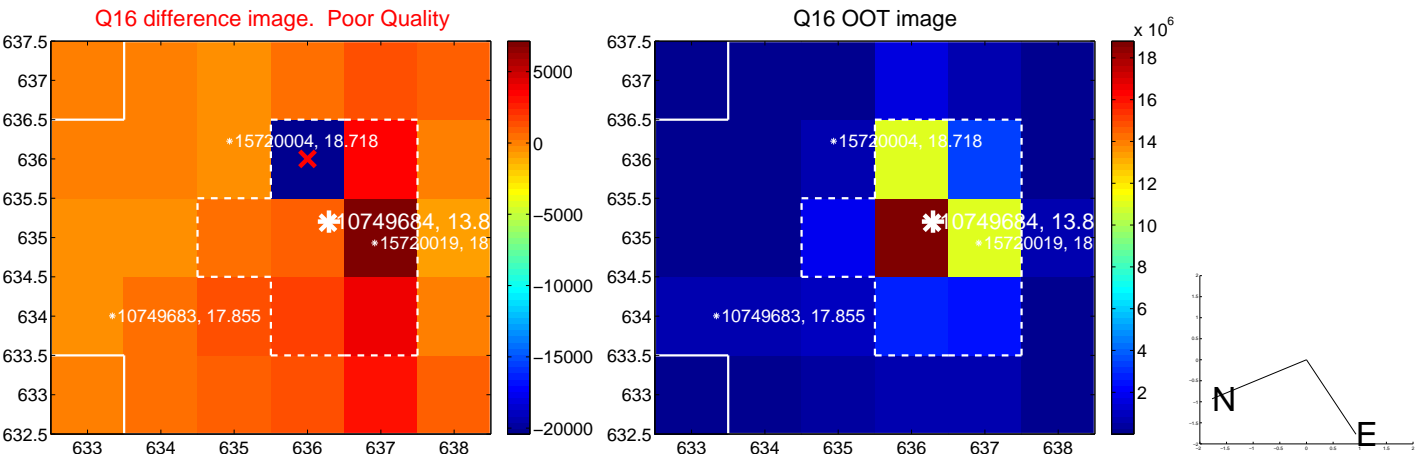
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



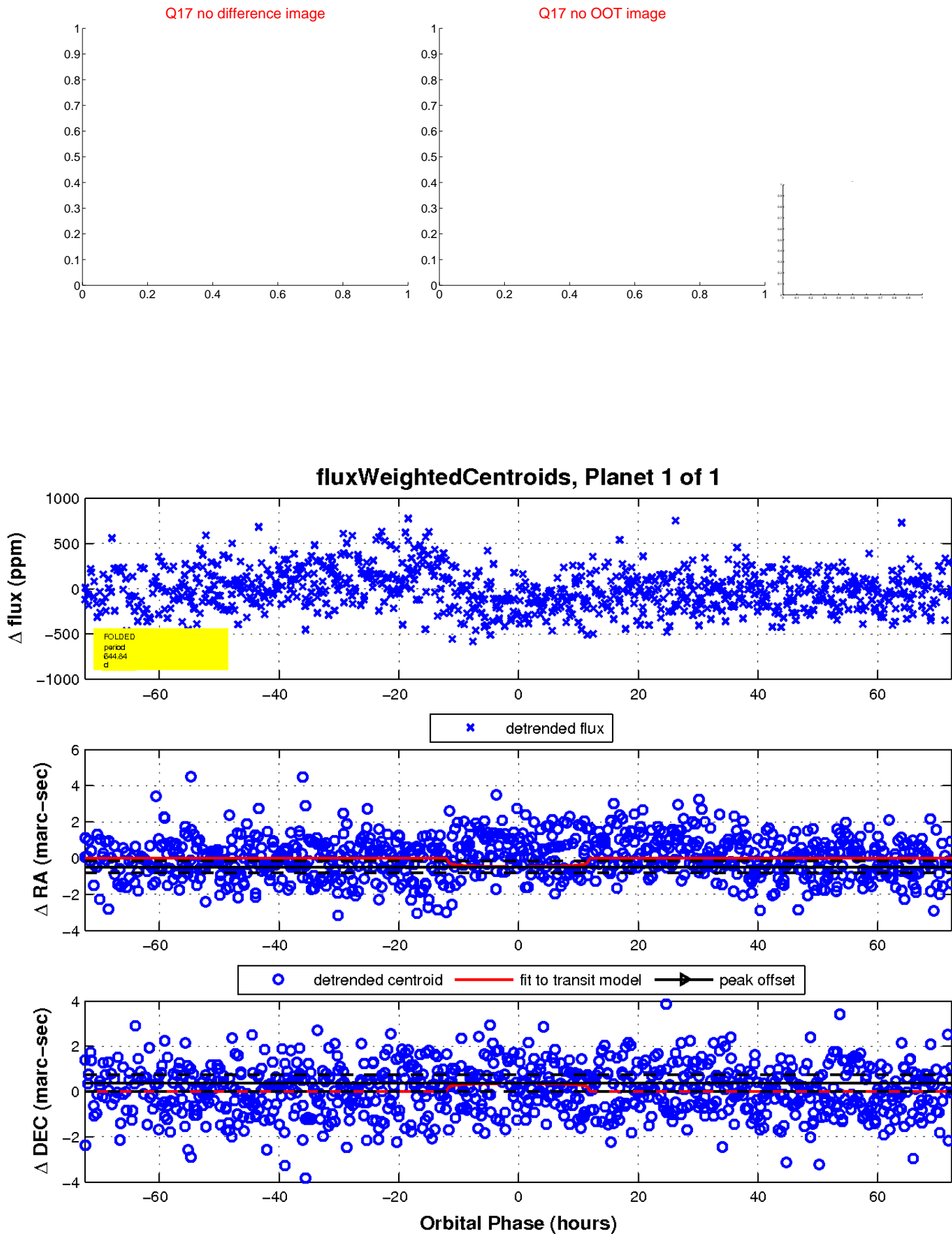
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

