

# KIC 008684232

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008684232-01	OBS	No	375.259796	177.132144	634.0	96.877	9.3	18.2	0.96	5687	3.36	0.96

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008684232-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

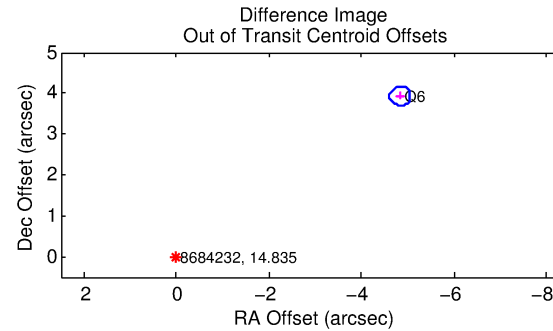
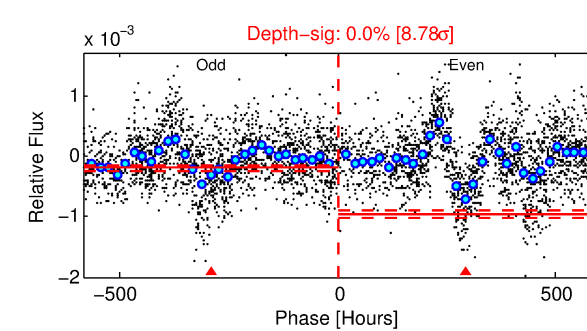
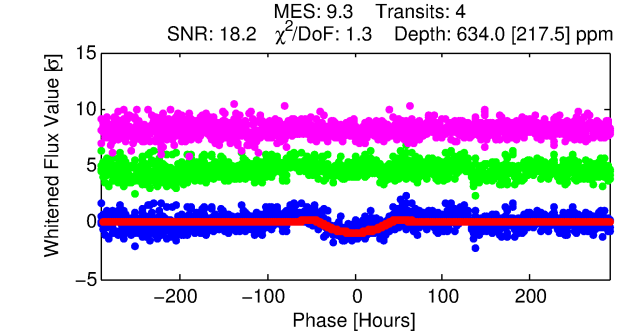
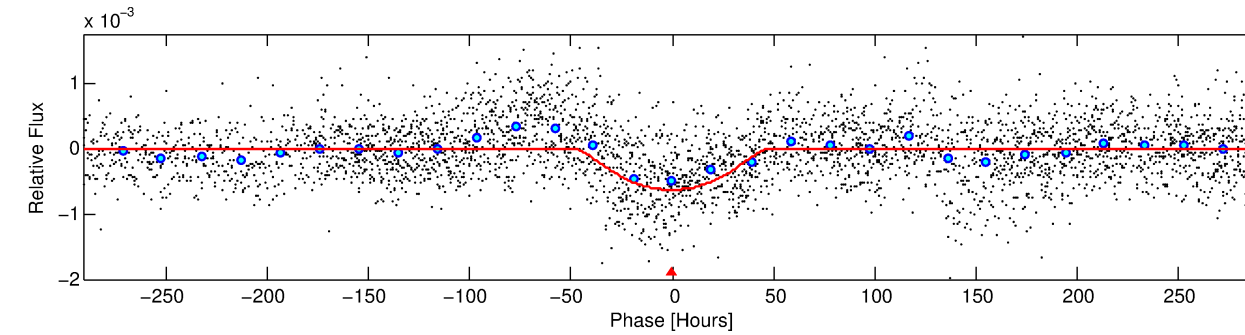
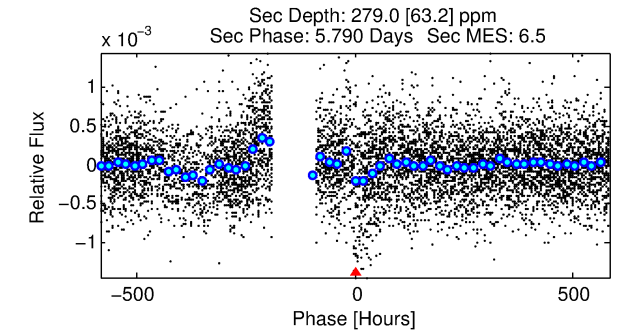
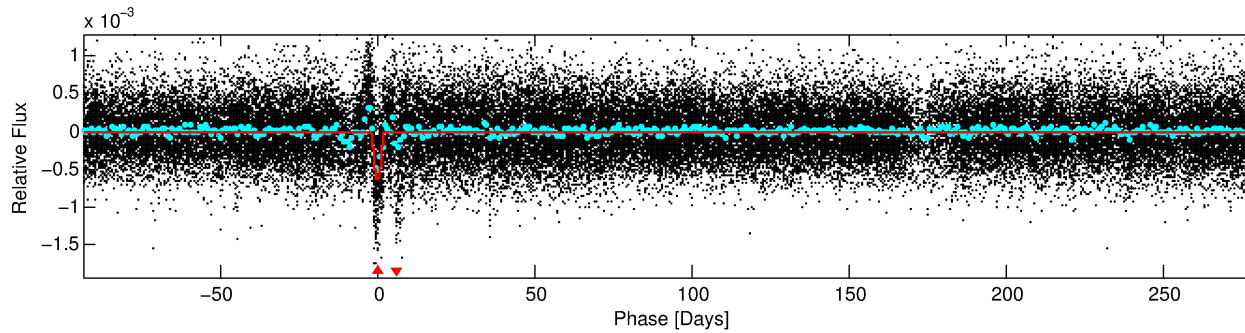
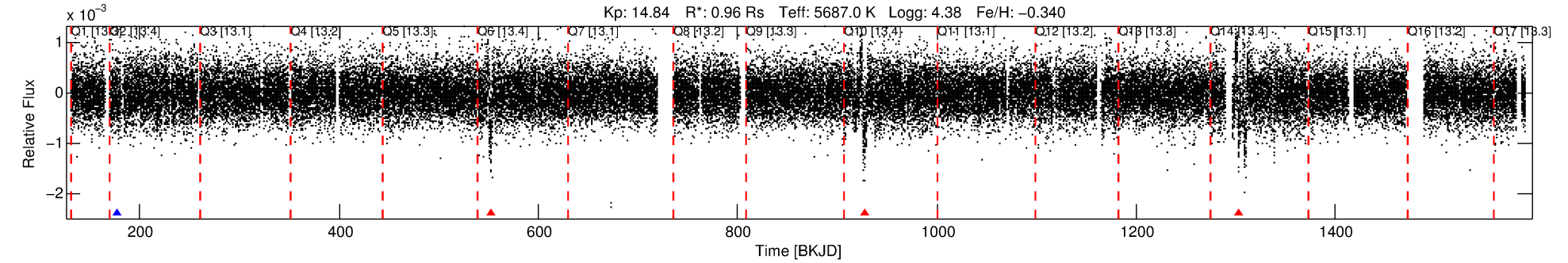
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008684232-01

No Significant Match Found

# DV One-Page Summary

KIC: 8684232 Candidate: 1 of 1 Period: 375.260 d



## DV Fit Results:

Period = 375.25980 [0.06151] d  
Epoch = 177.1321 [0.0977] BKJD  
Rp/R\* = 0.0321 [0.0142]  
a/R\* = 10.08 [1.85]  
b = 0.97 [0.03]  
Seff = 0.96 [0.35]  
Teq = 252 [23] K  
Rp = 3.36 [1.75] Re  
a = 0.9500 [0.2233] AU  
Ag = 12250.58 [11952.63] [1.02σ]  
Teffp = 4104 [944] K [4.08σ]

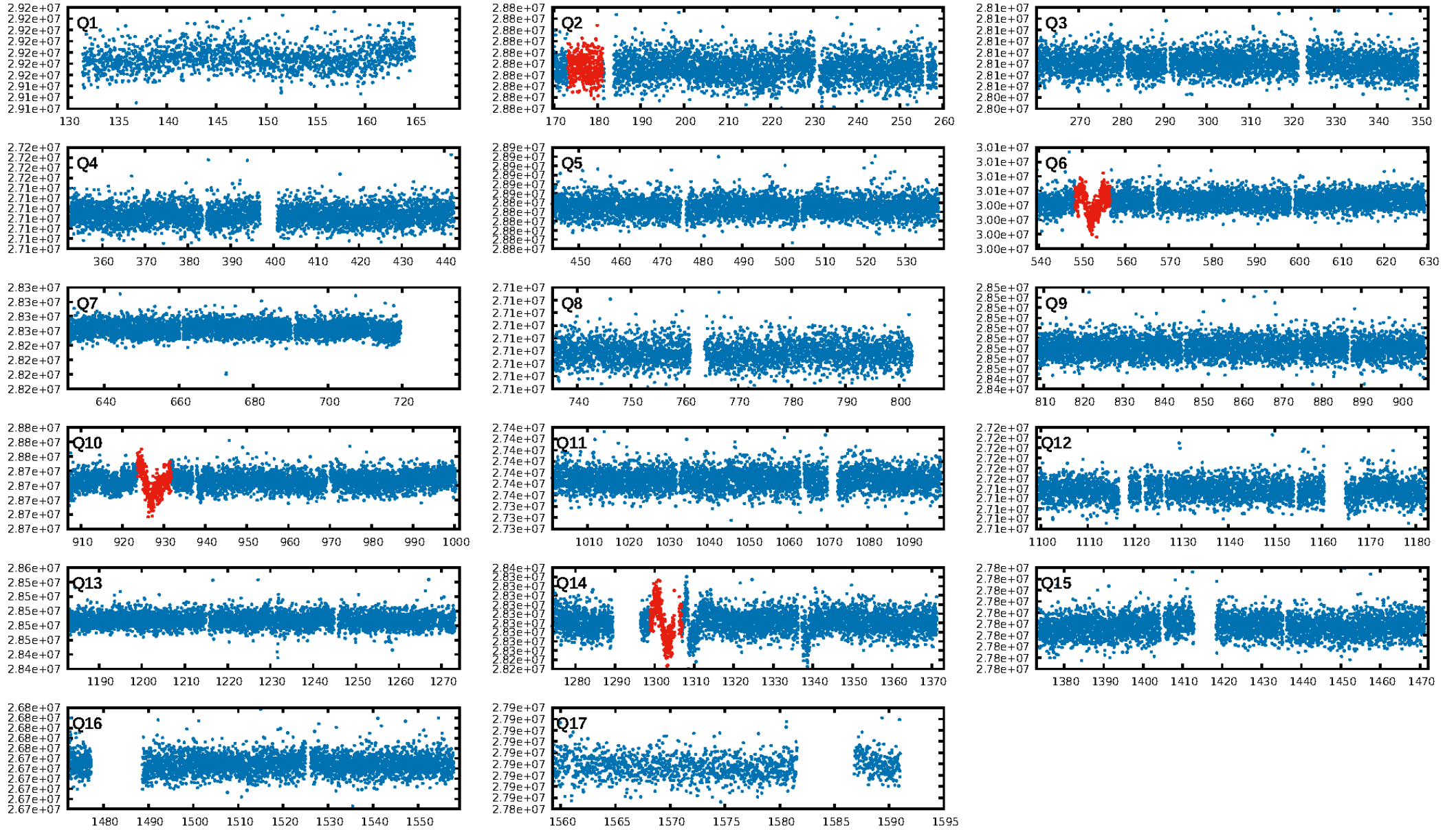
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: 2.28e-17  
RollingBand-figt: 0.25 [1/4]  
GhostDiagnostic-chr: 0.4989  
Centroid-sig: 1.4%  
Centroid-so: 1.236 arcsec [1.85σ]  
OotOffset-rm: 6.230 arcsec [81.83σ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-rm: 6.164 arcsec [80.95σ]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [1/1]

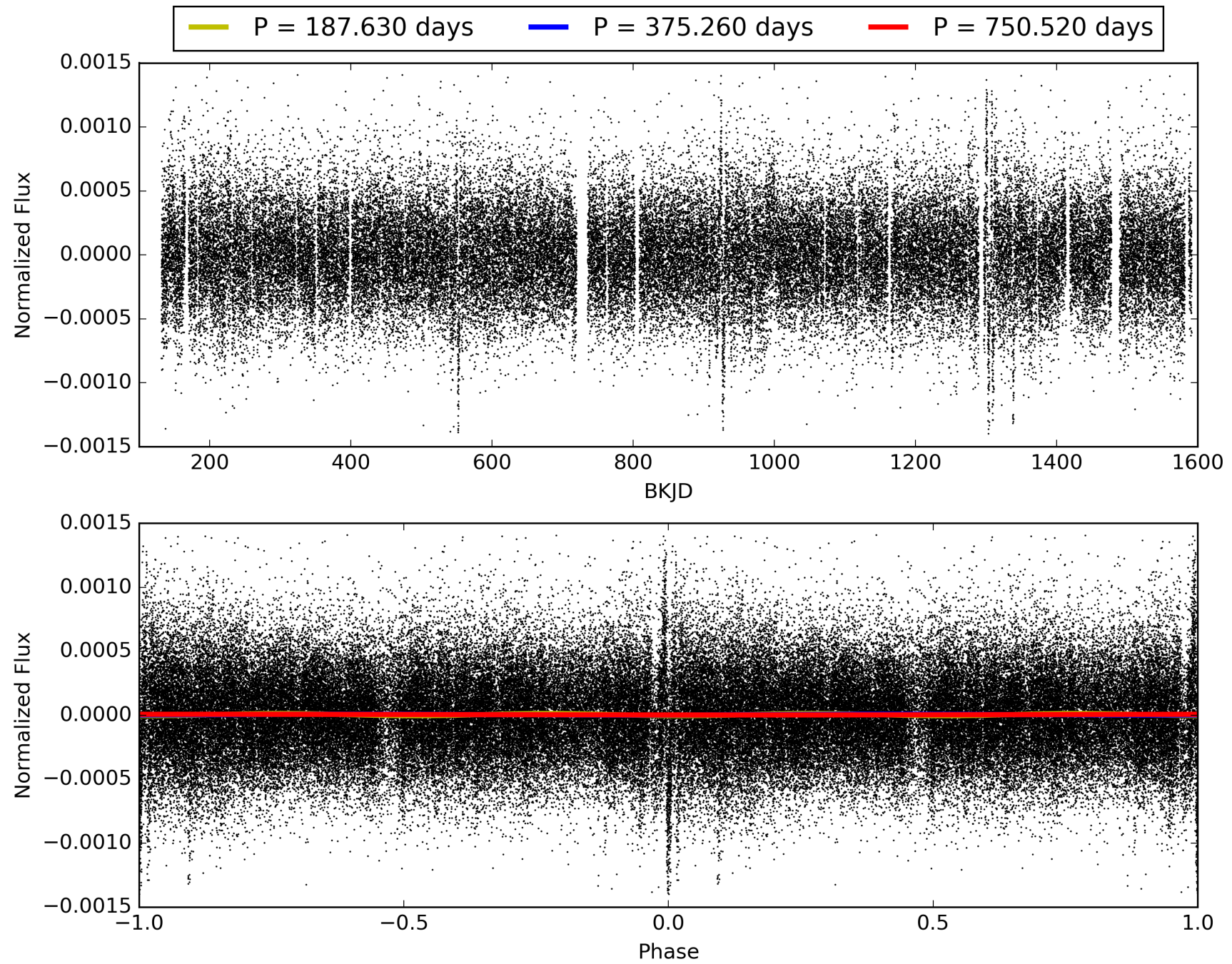
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:34:08 Z

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

# TCE 008684232-01, PDC Light Curves



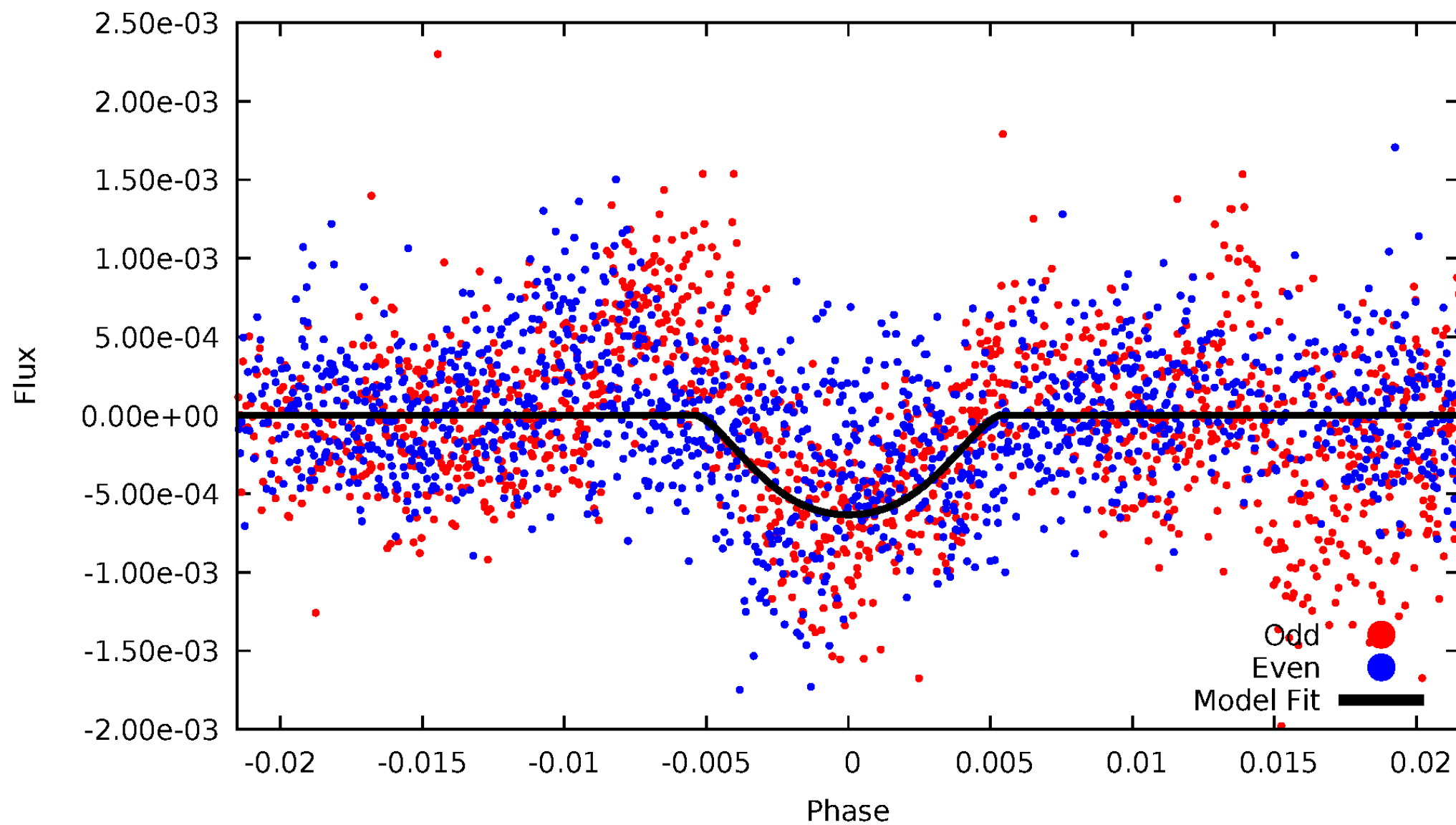
TCE 008684232-01





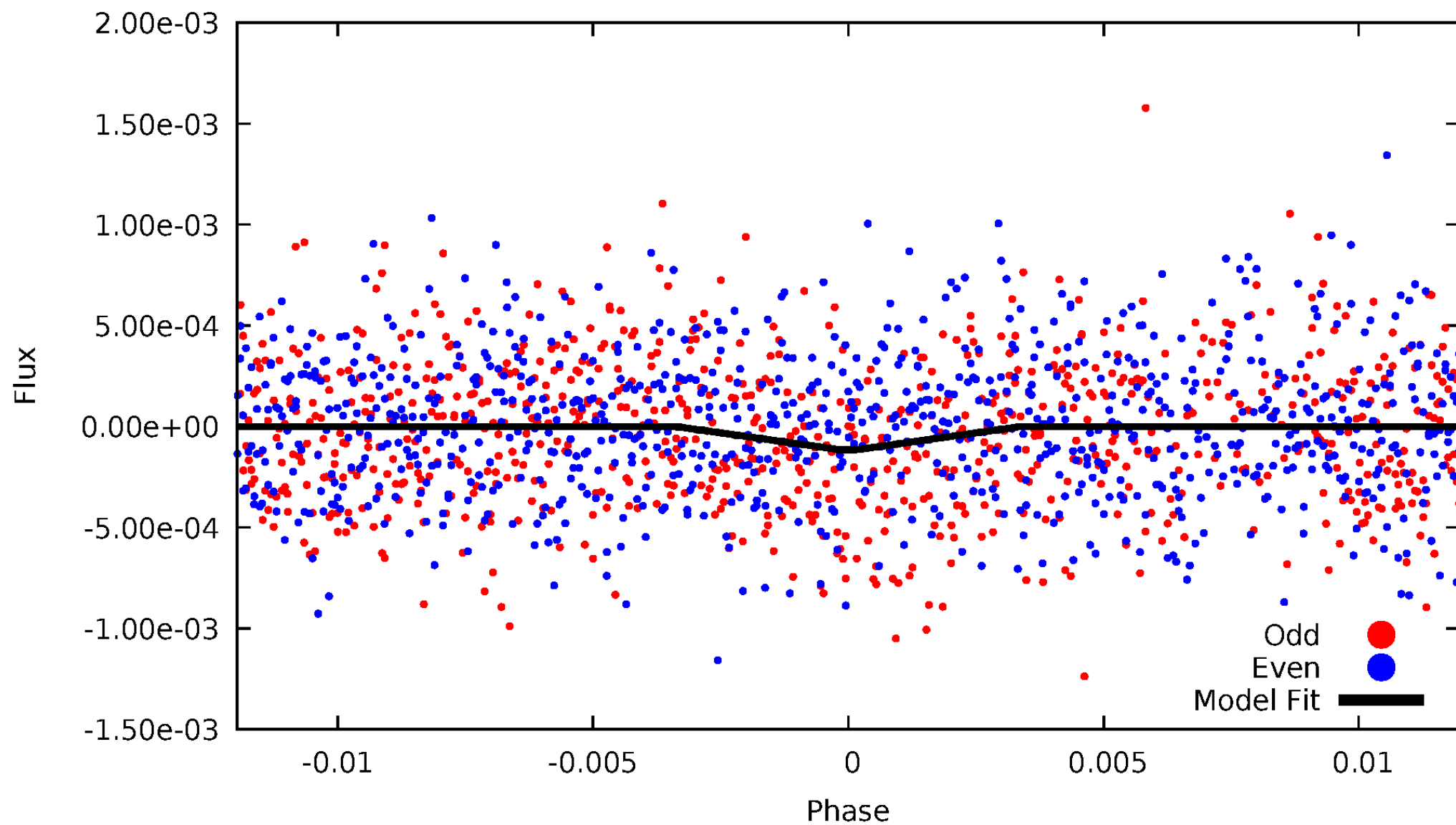
# DV Odd/Even

TCE 008684232-01



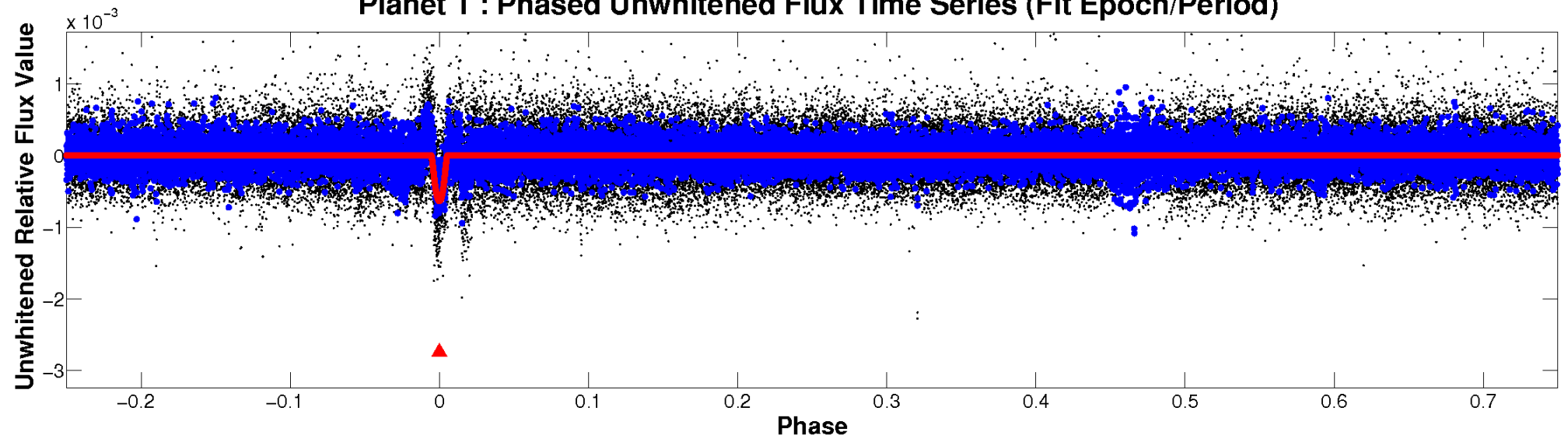
# ALT Odd/Even

TCE 008684232-01

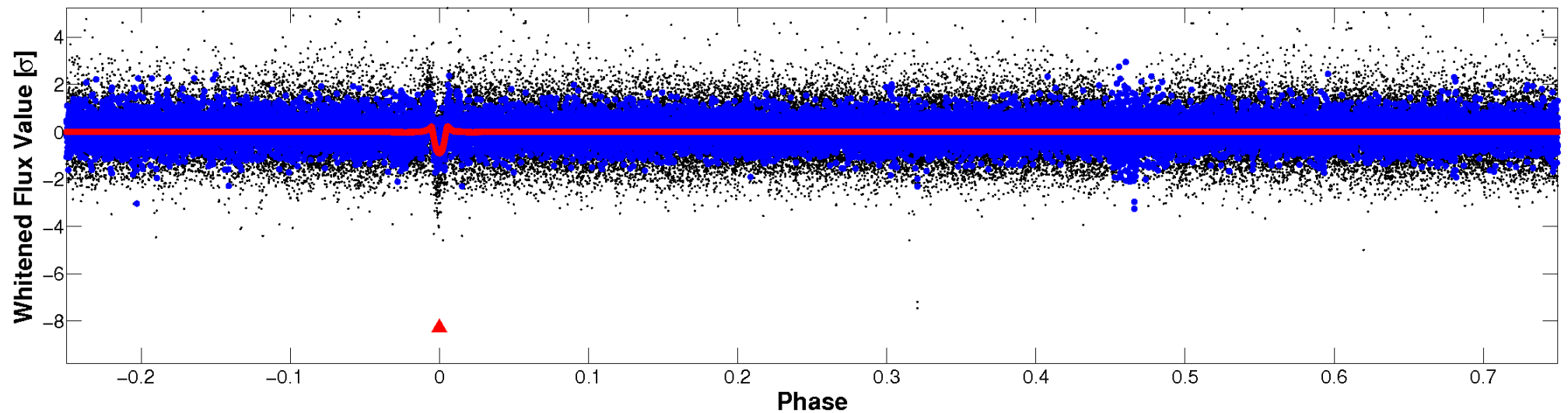


# Non-Whitened Vs. Whitened Light Curve

**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

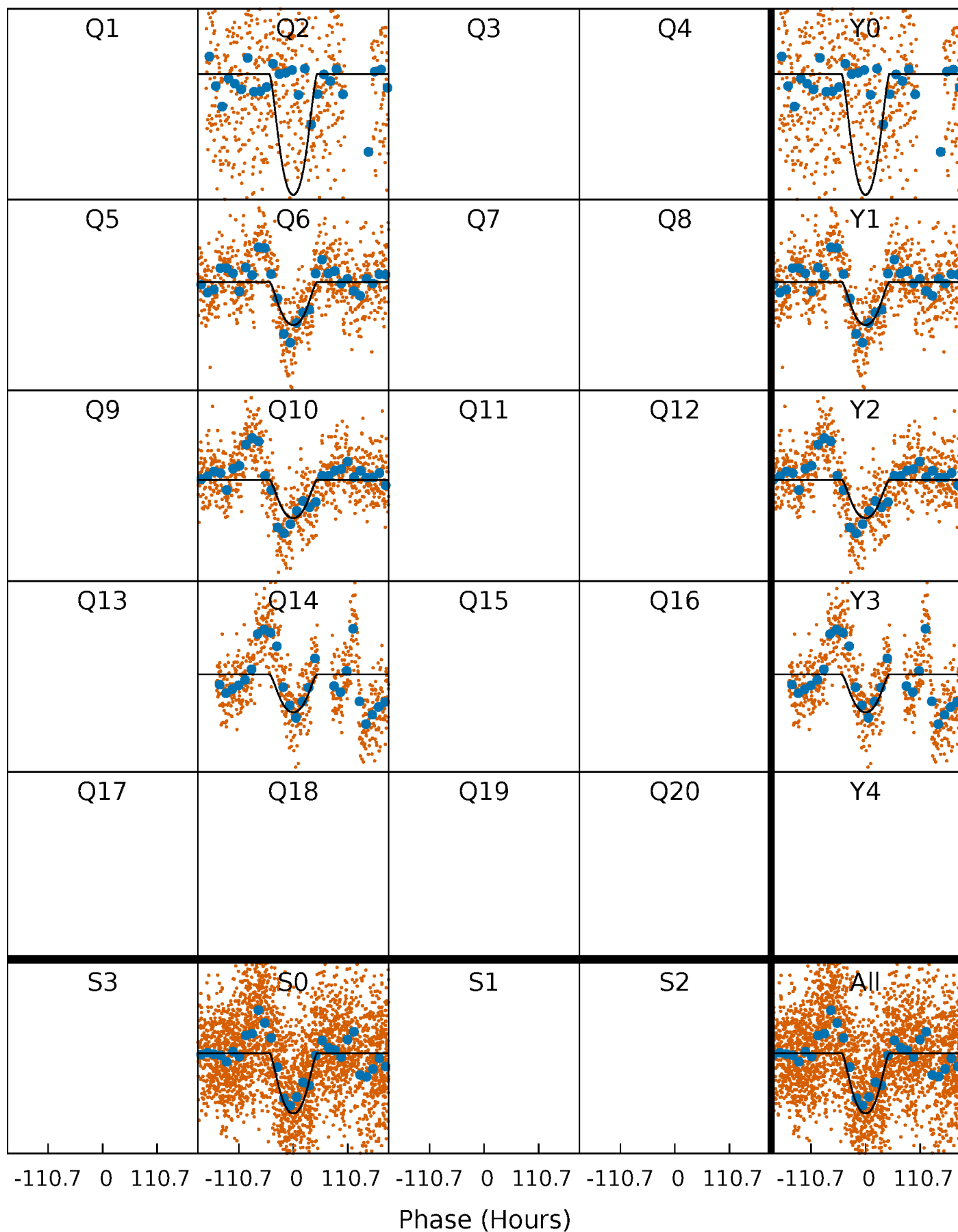
TCE 008684232-01 P=375.259796 Days  $T_0=177.132144$  (BKJD)





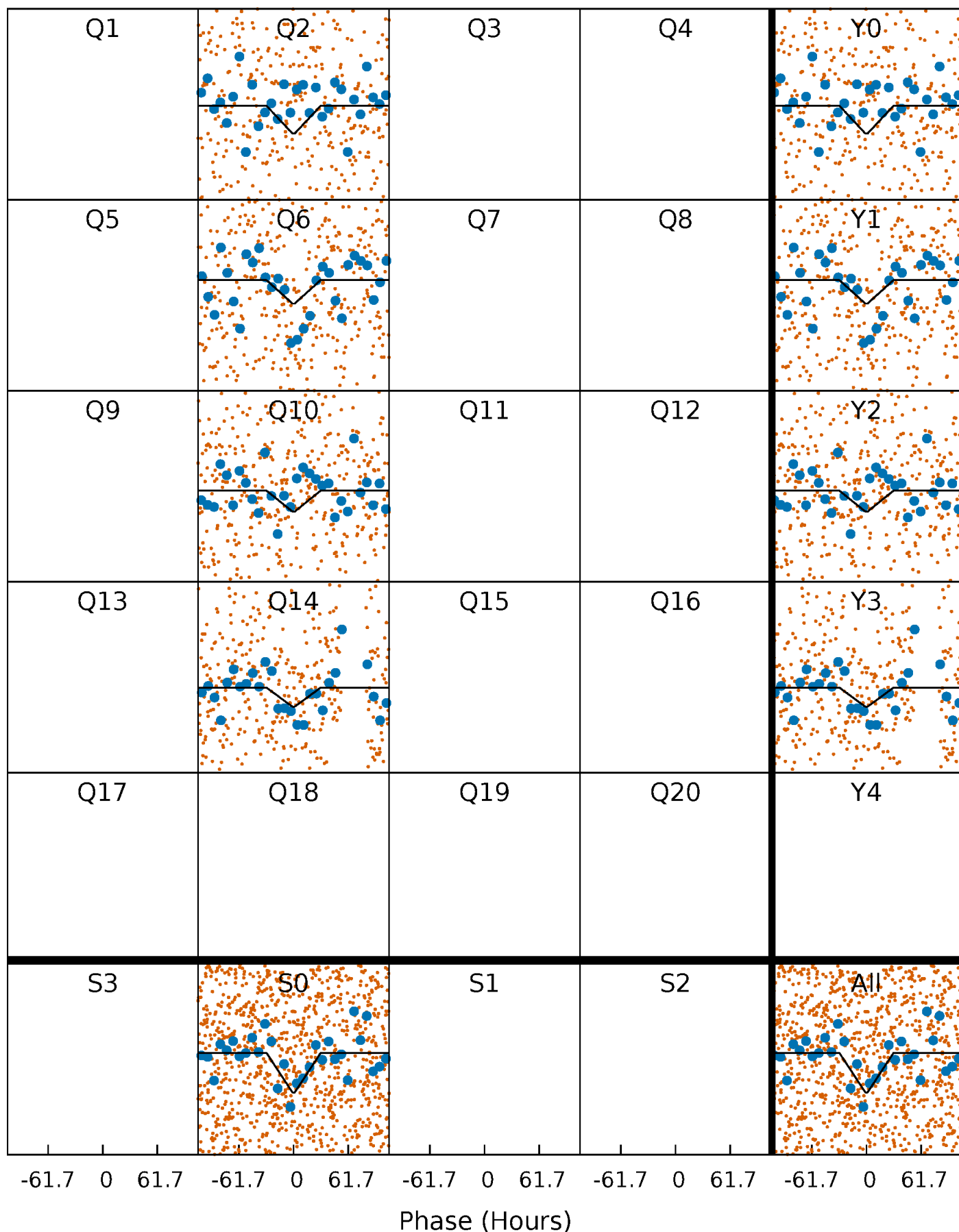
# DV Quarter-Phased Transit Curves

TCE 008684232-01 P=375.259796 Days  $T_0=177.132144$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

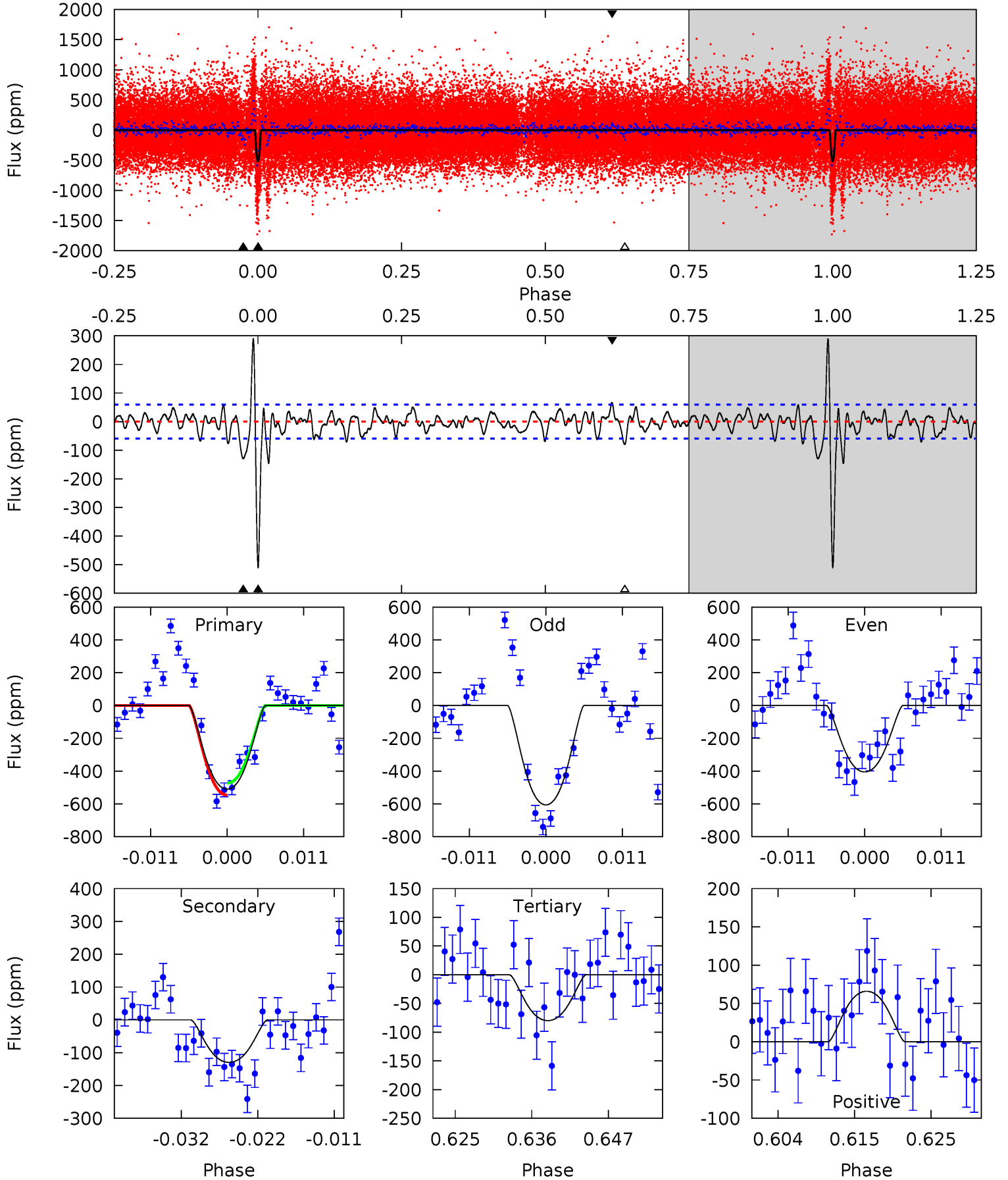
TCE 008684232-01 P=375.589266 Days  $T_0=175.998178$  (BKJD)



# DV Model-Shift Uniqueness Test

008684232-01, P = 375.259796 Days, E = 177.132144 Days

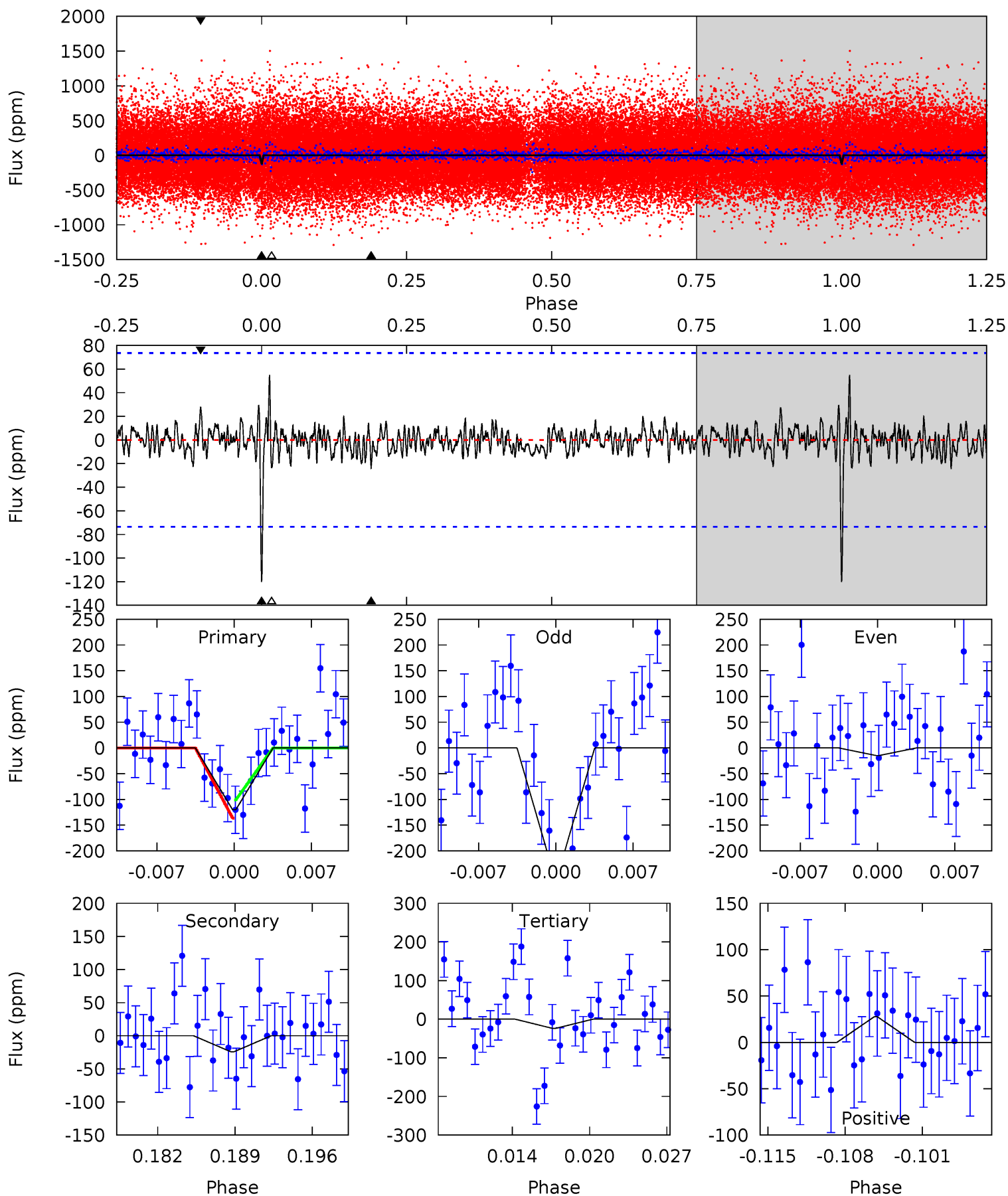
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.2	11.0	6.77	5.58	5.01	2.55	2.36	36.4	37.6	4.21	5.39	8.53	0.84	0.36	3.10



# Alt Model-Shift Uniqueness Test

008684232-01, P = 375.589266 Days, E = 175.998178 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
8.33	1.68	1.65	1.91	5.10	2.71	0.58	6.68	6.41	0.03	-0.24	8.14	1.08	0.31	1.23



### Stellar Parameters For KIC 008684232

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5687^{+172}_{-154}$	$4.382^{+0.158}_{-0.193}$	$-0.340^{+0.300}_{-0.300}$	$0.961^{+0.263}_{-0.175}$	$0.813^{+0.116}_{-0.062}$	$1.289^{+1.020}_{-0.666}$
	+3%/-3%	+4%/-4%	+88%/-88%	+27%/-18%	+14%/-8%	+79%/-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 008684232-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-130 \pm 12$	$3.34^{+1.64}_{-1.46}$	$354^{+26}_{-24}$	$3789^{+931}_{-440}$	$5756^{+12663}_{-3174}$
Alt.	$-24 \pm 14$	$1.61^{+1.31}_{-1.10}$	$354^{+27}_{-23}$	$3590^{+1832}_{-686}$	$3945^{+34032}_{-2989}$

$T_{max}$  = 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

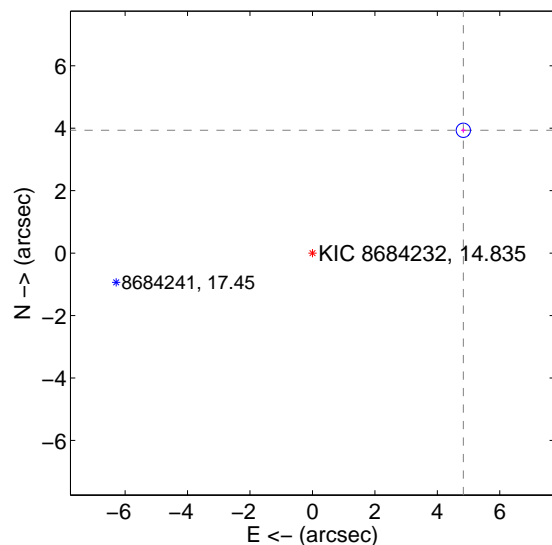
Supplemental centroid analysis for 008684232-01. Kepler magnitude: 14.84. Transit SNR 18.23

There are 0 quarters with good PRF difference image offsets

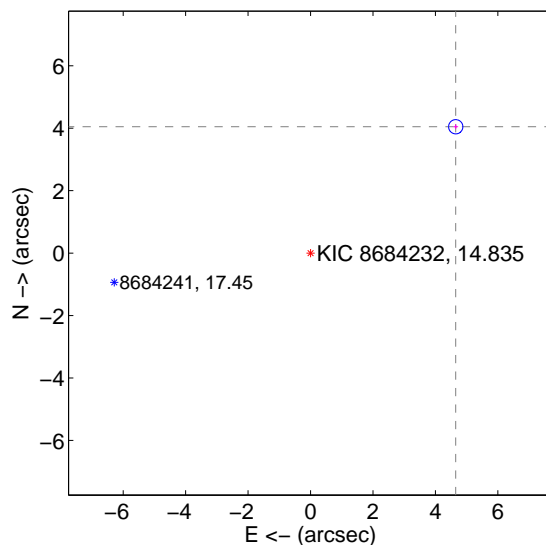
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$6.230 \pm 0.076$	81.83	$-4.832 \pm 0.076$	$3.933 \pm 0.076$
PRF-fit source offset from KIC position	$6.164 \pm 0.076$	80.95	$-4.650 \pm 0.076$	$4.047 \pm 0.076$
photometric centroid source offset	$1.24 \pm 0.67$	1.85	$-1.07 \pm 0.69$	$0.61 \pm 0.58$

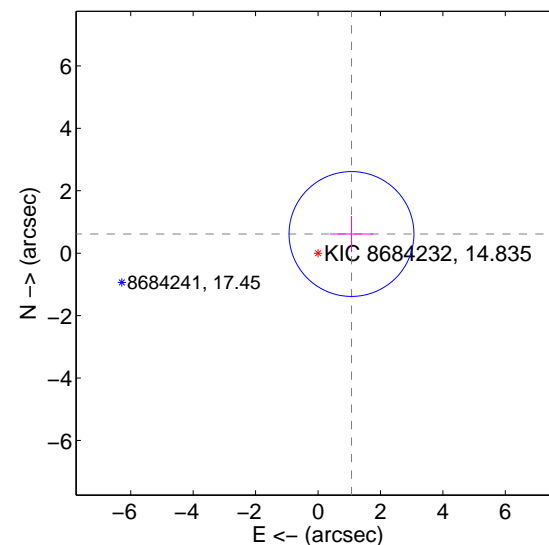
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

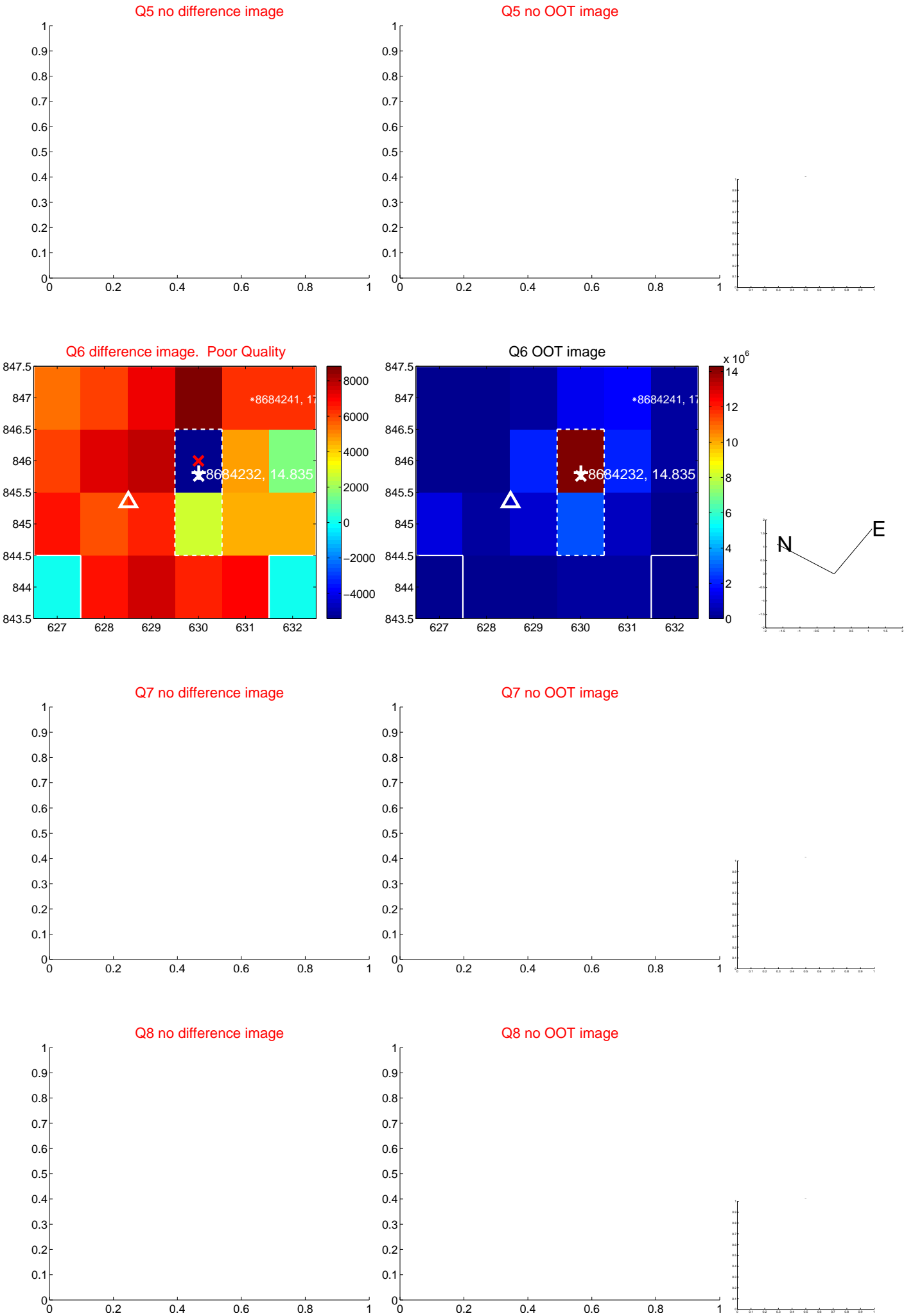


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



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

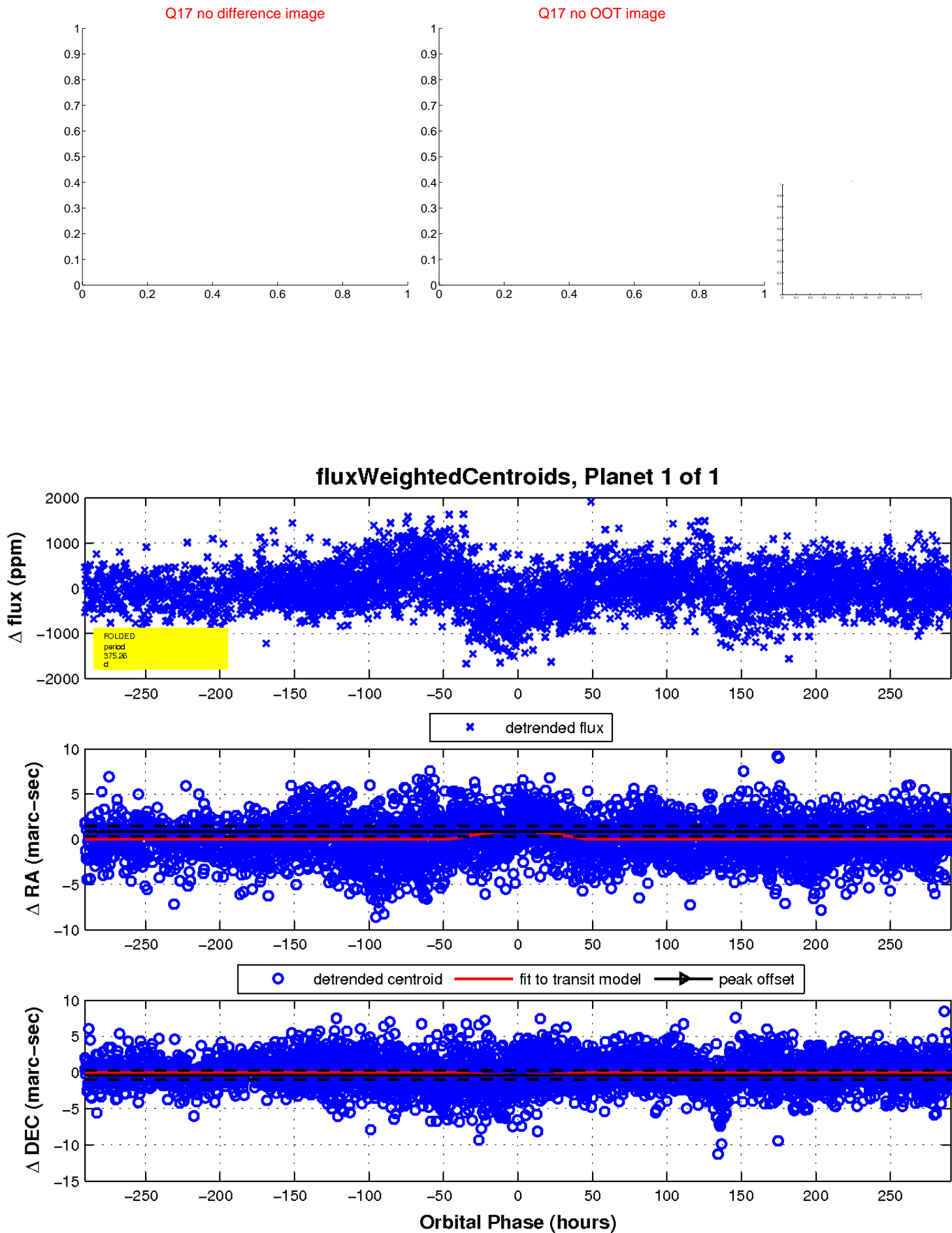


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

