

# KIC 006604312

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006604312-01	OBS	No	440.292632	240.761288	841.0	23.757	8.1	6.6	0.86	5915	3.06	0.66

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006604312-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

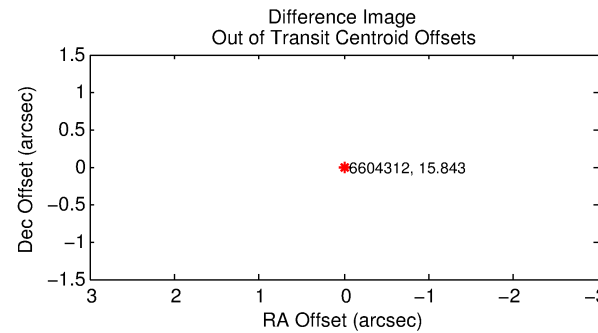
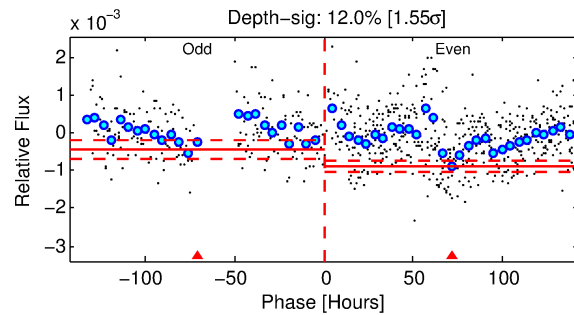
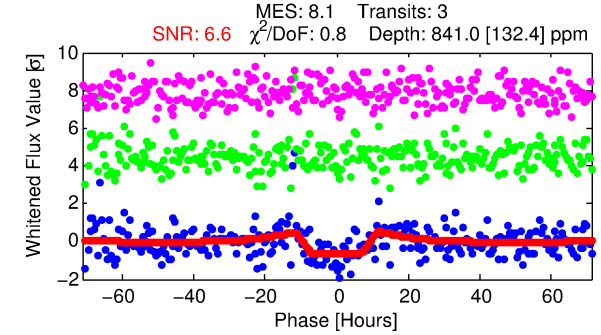
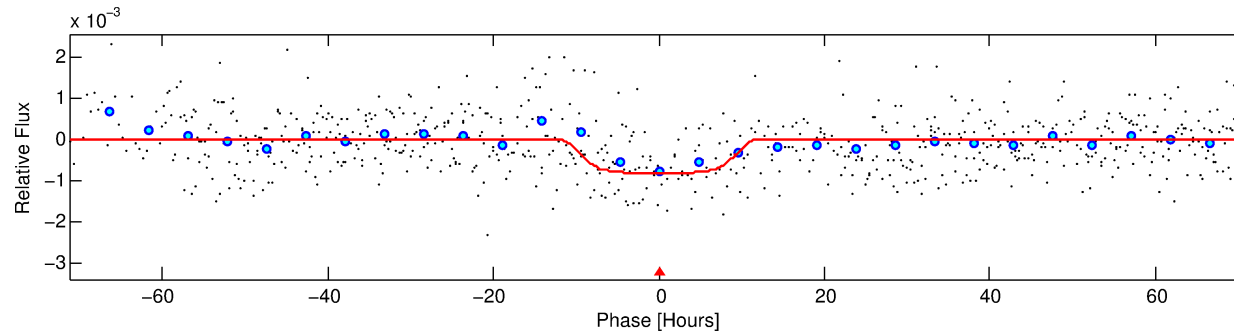
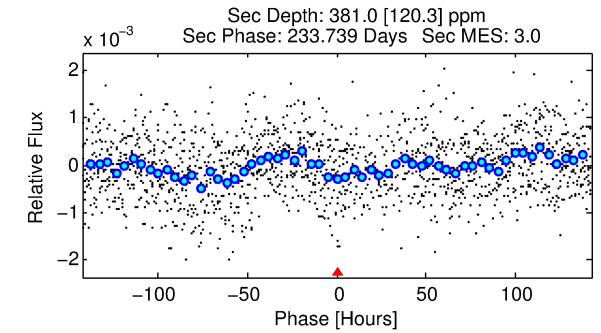
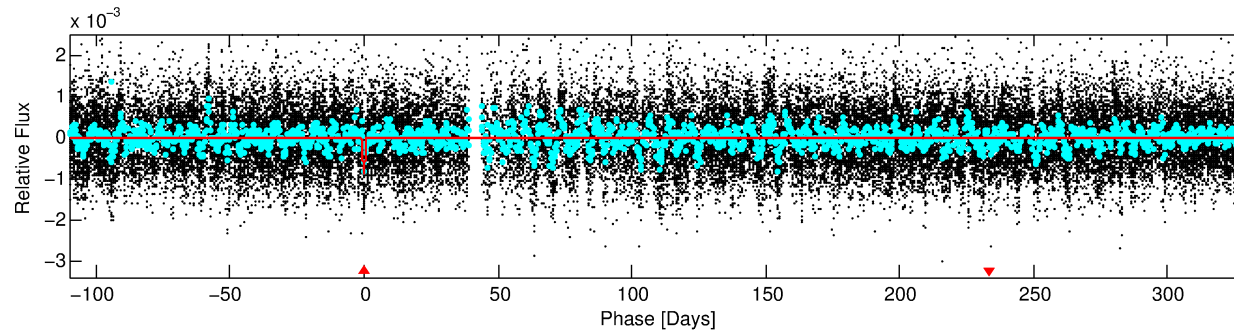
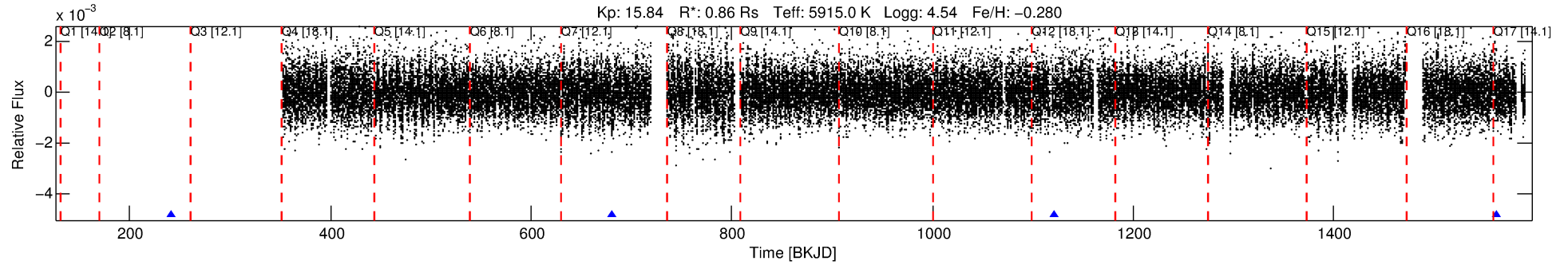
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006604312-01

No Significant Match Found

# DV One-Page Summary

KIC: 6604312 Candidate: 1 of 1 Period: 440.293 d



## DV Fit Results:

Period = 440.29263 [0.02813] d  
Epoch = 240.7613 [0.0637] BKJD  
Rp/R\* = 0.0325 [0.0034]  
a/R\* = 62.82 [17.05]  
b = 0.93 [0.04]  
Seff = 0.66 [0.27]  
Teq = 230 [23] K  
Rp = 3.06 [0.98] Re  
a = 1.1122 [0.2882] AU  
Ag = 27712.83 [14942.96] [1.85σ]  
Teffp = 4583 [462] K [9.41σ]

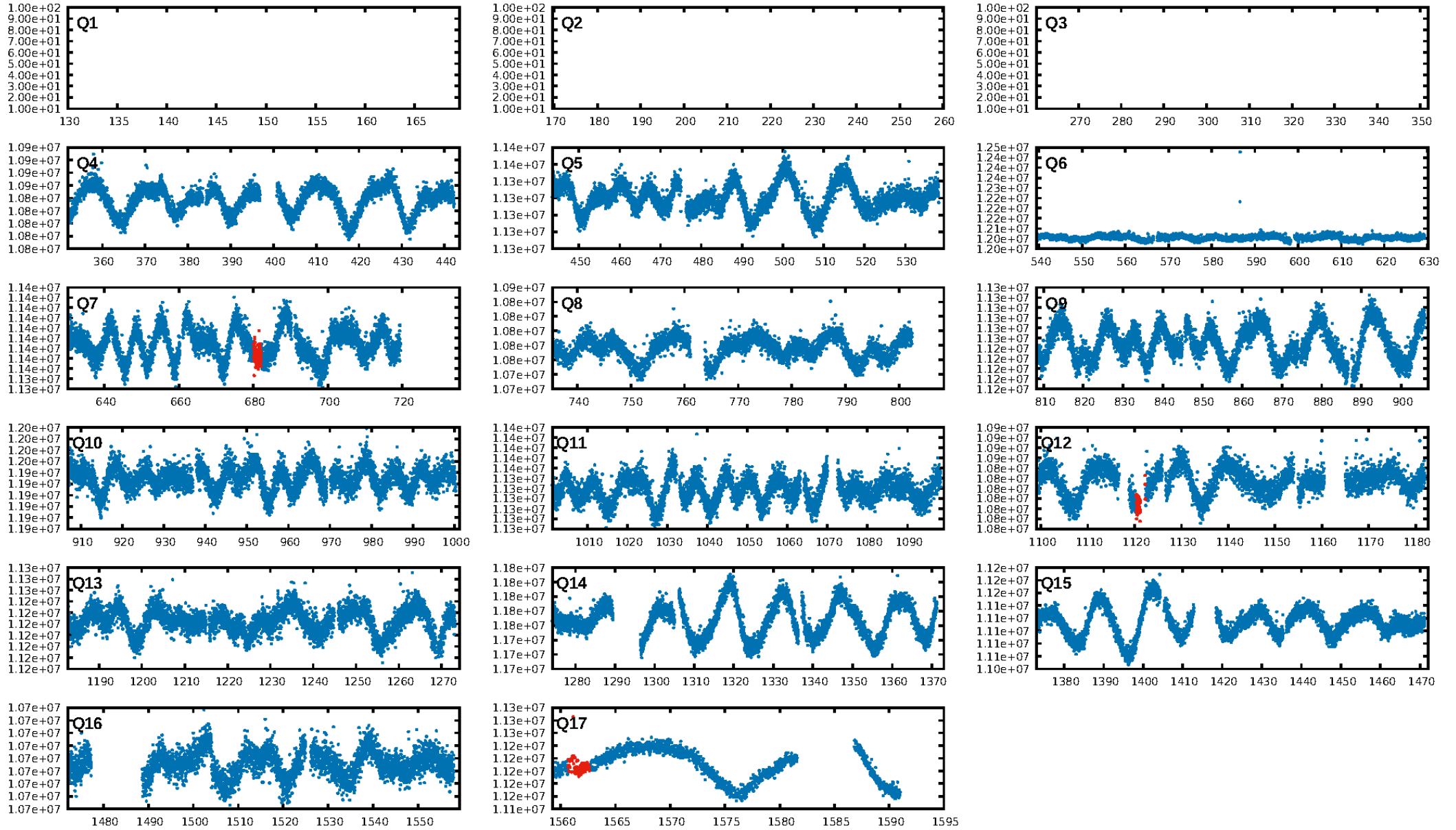
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 58.9%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 8.17e-11**  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: 8.163  
Centroid-sig: 71.9%  
Centroid-so: 1.834 arcsec [1.45σ]  
OotOffset-rm: N/A  
**KicOffset-rm: 1.670 arcsec [4.68σ]**  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 0/1/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [1/1]

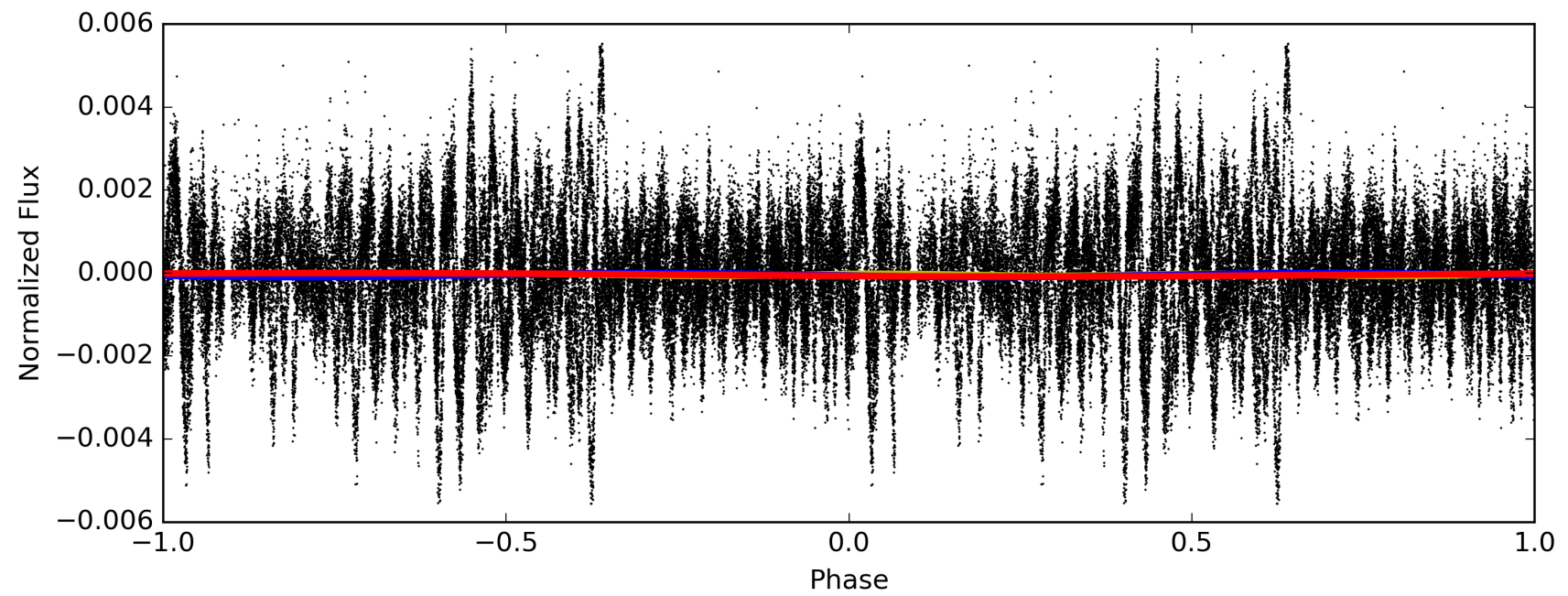
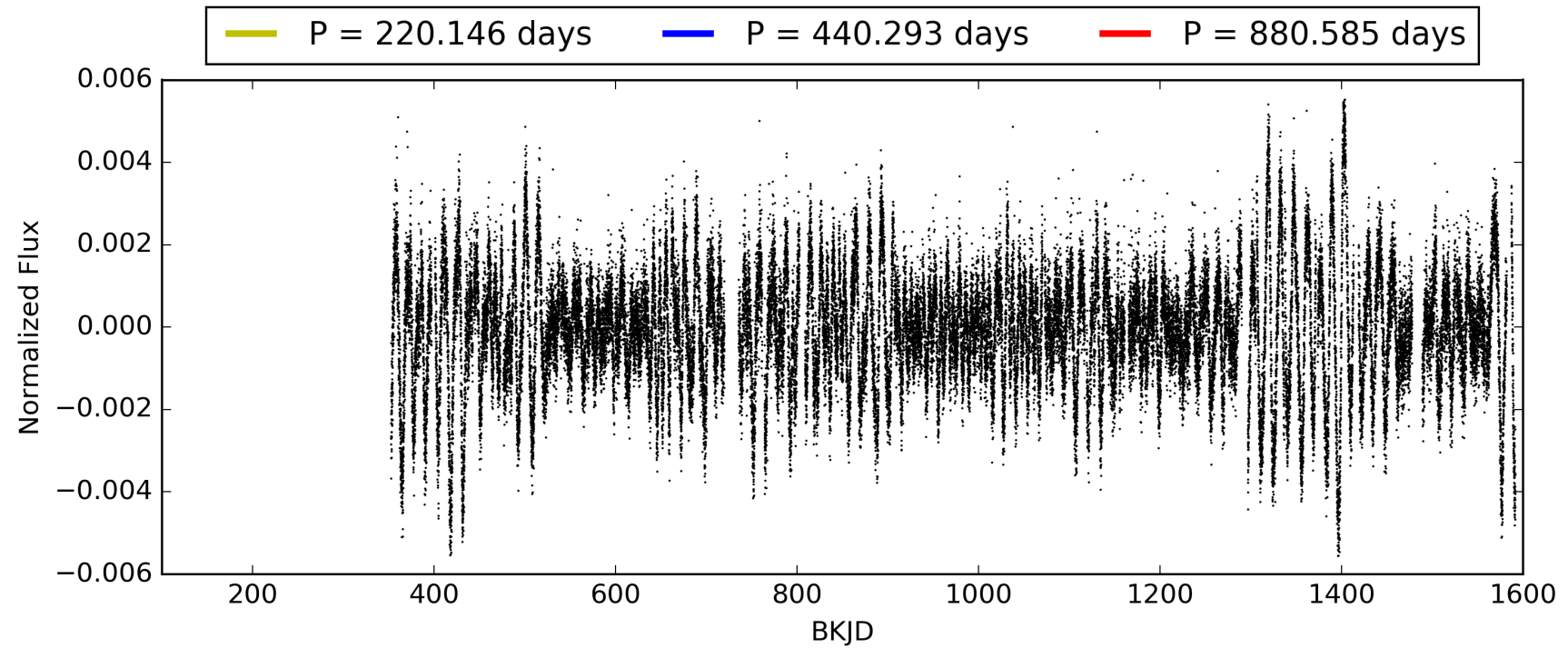
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:48:46 Z

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

# TCE 006604312-01, PDC Light Curves

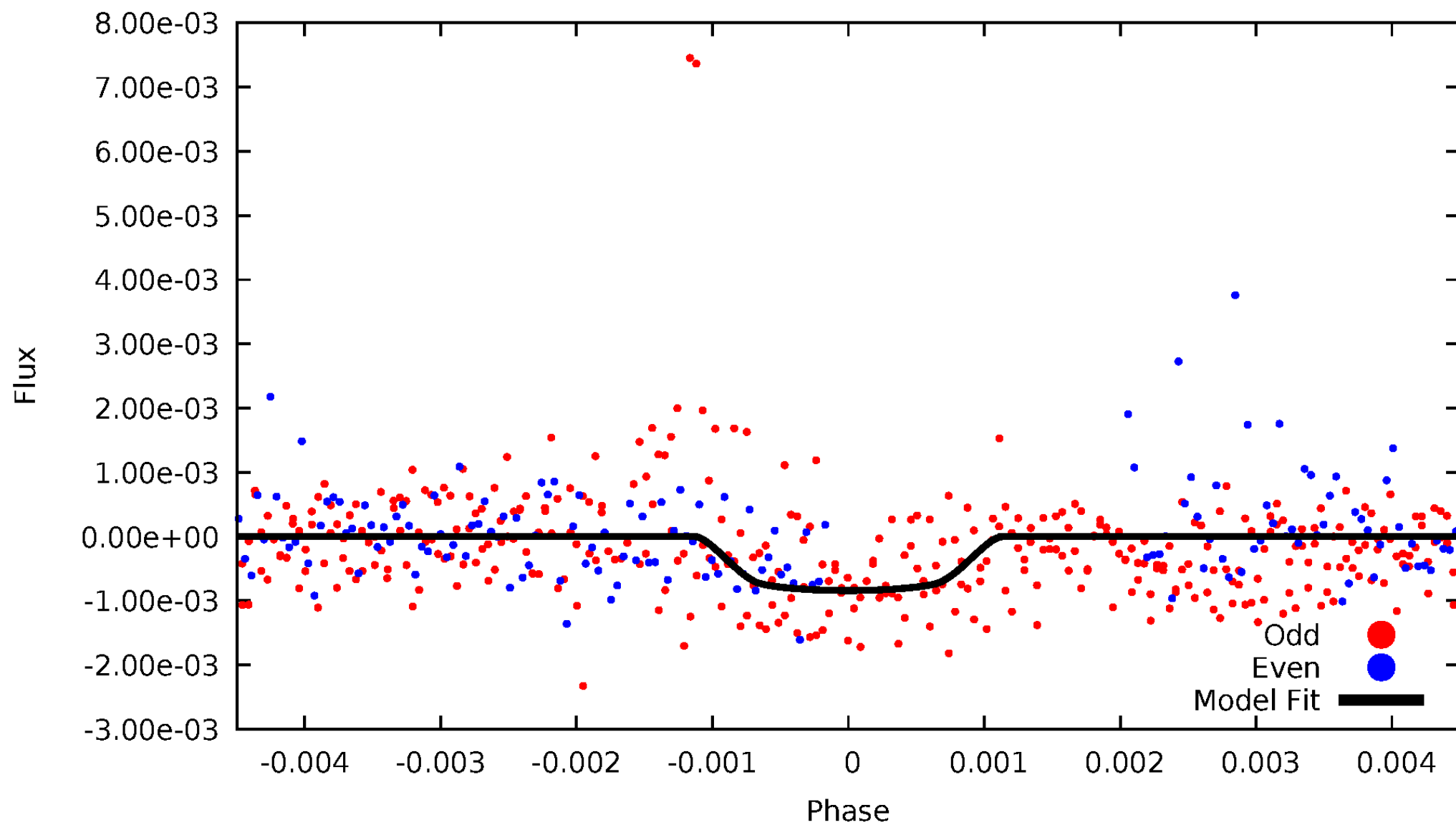


TCE 006604312-01



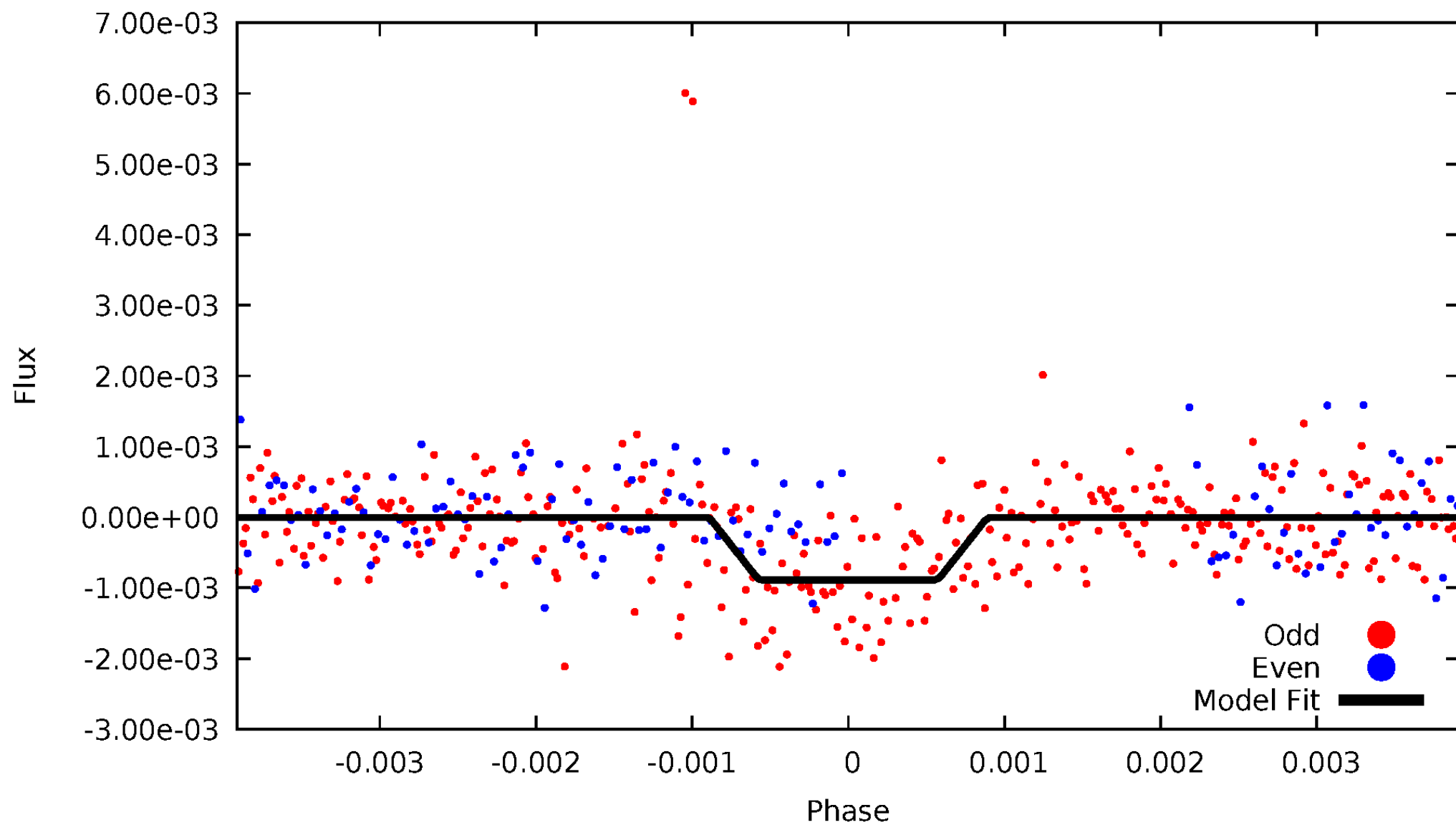
# DV Odd/Even

TCE 006604312-01



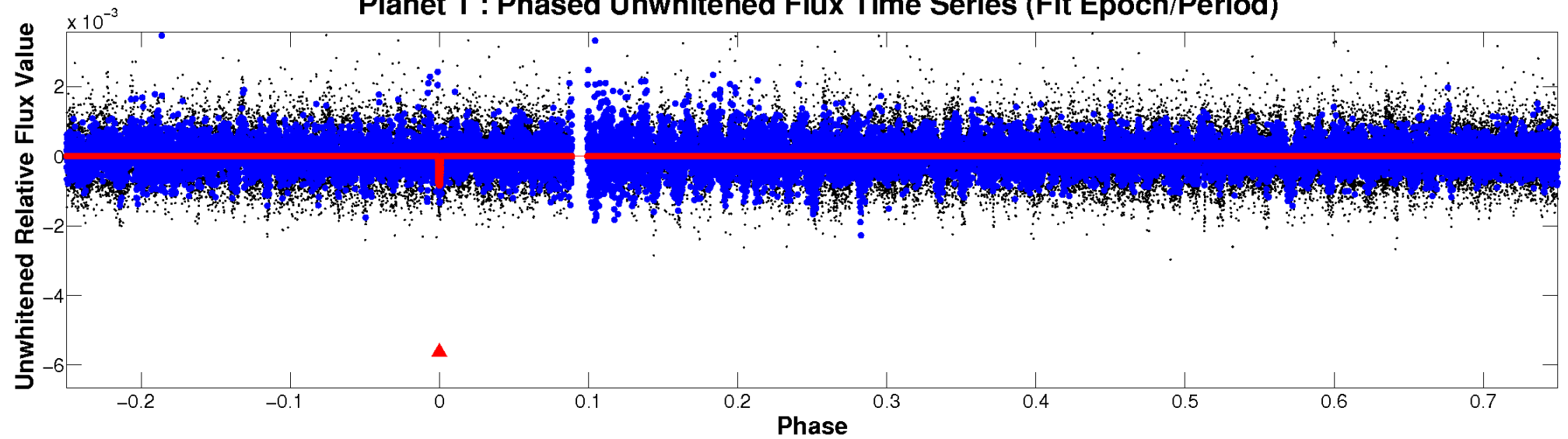
# ALT Odd/Even

TCE 006604312-01

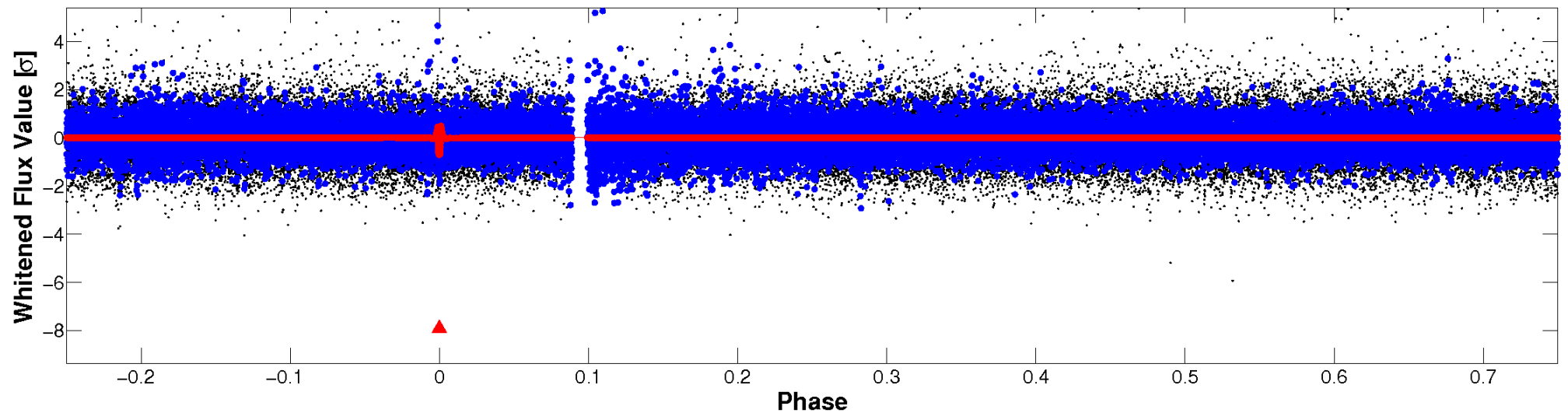


# Non-Whitened Vs. Whitened Light Curve

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 006604312-01 P=440.292632 Days  $T_0=240.761288$  (BKJD)





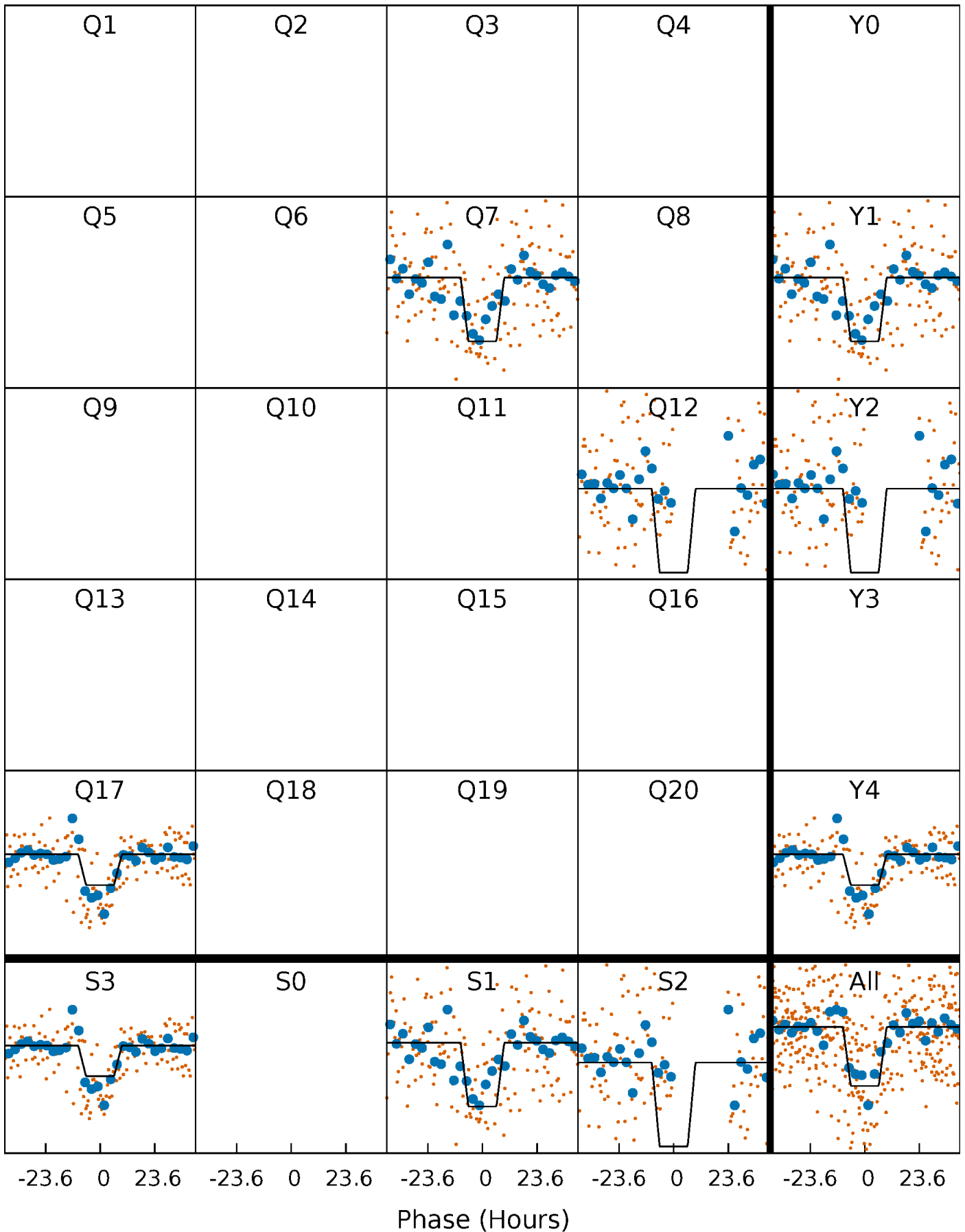
# DV Quarter-Phased Transit Curves

TCE 006604312-01 P=440.292632 Days  $T_0=240.761288$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

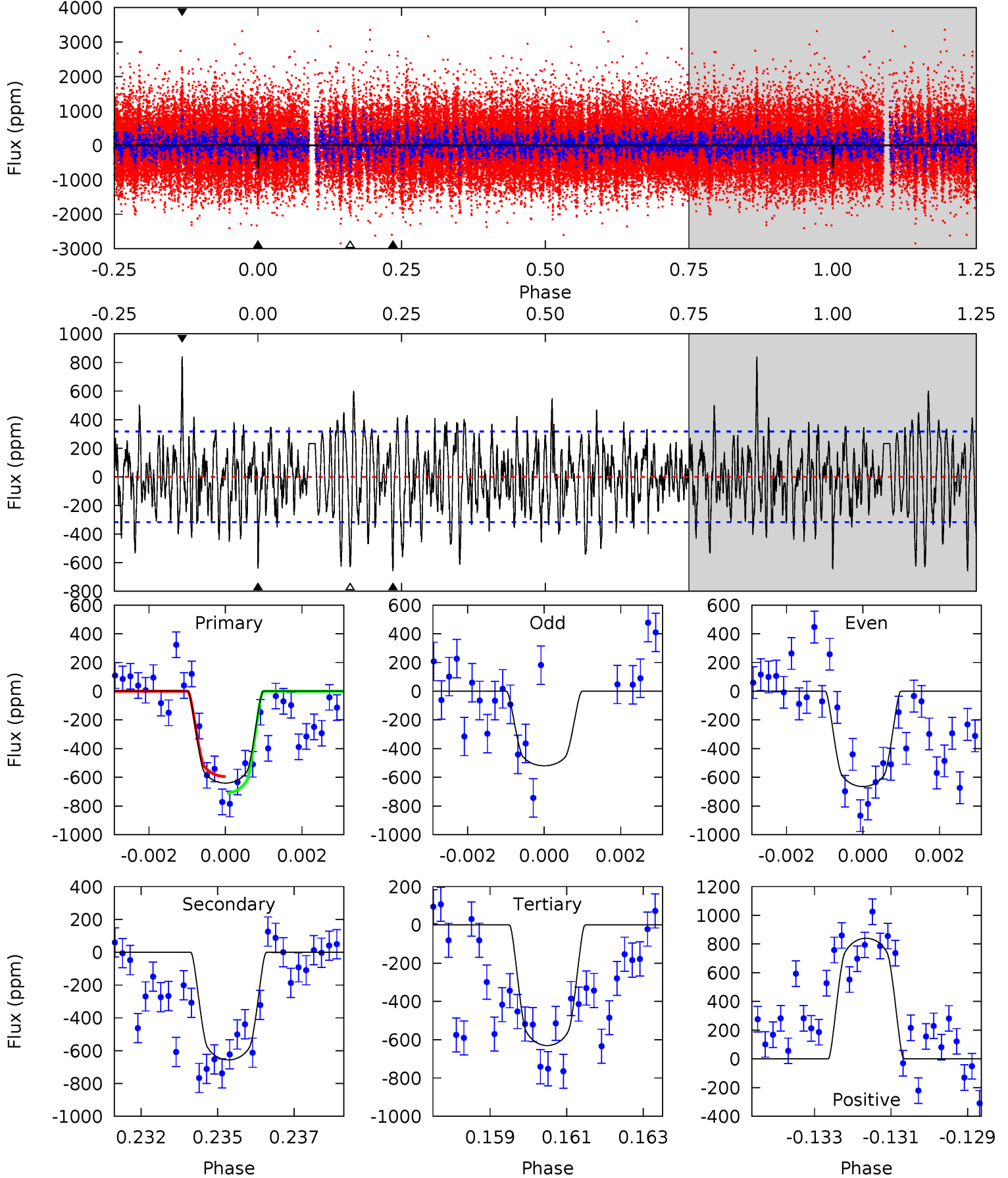
TCE 006604312-01 P=440.295540 Days  $T_0=240.699081$  (BKJD)



# DV Model-Shift Uniqueness Test

006604312-01, P = 440.292632 Days, E = 240.761288 Days

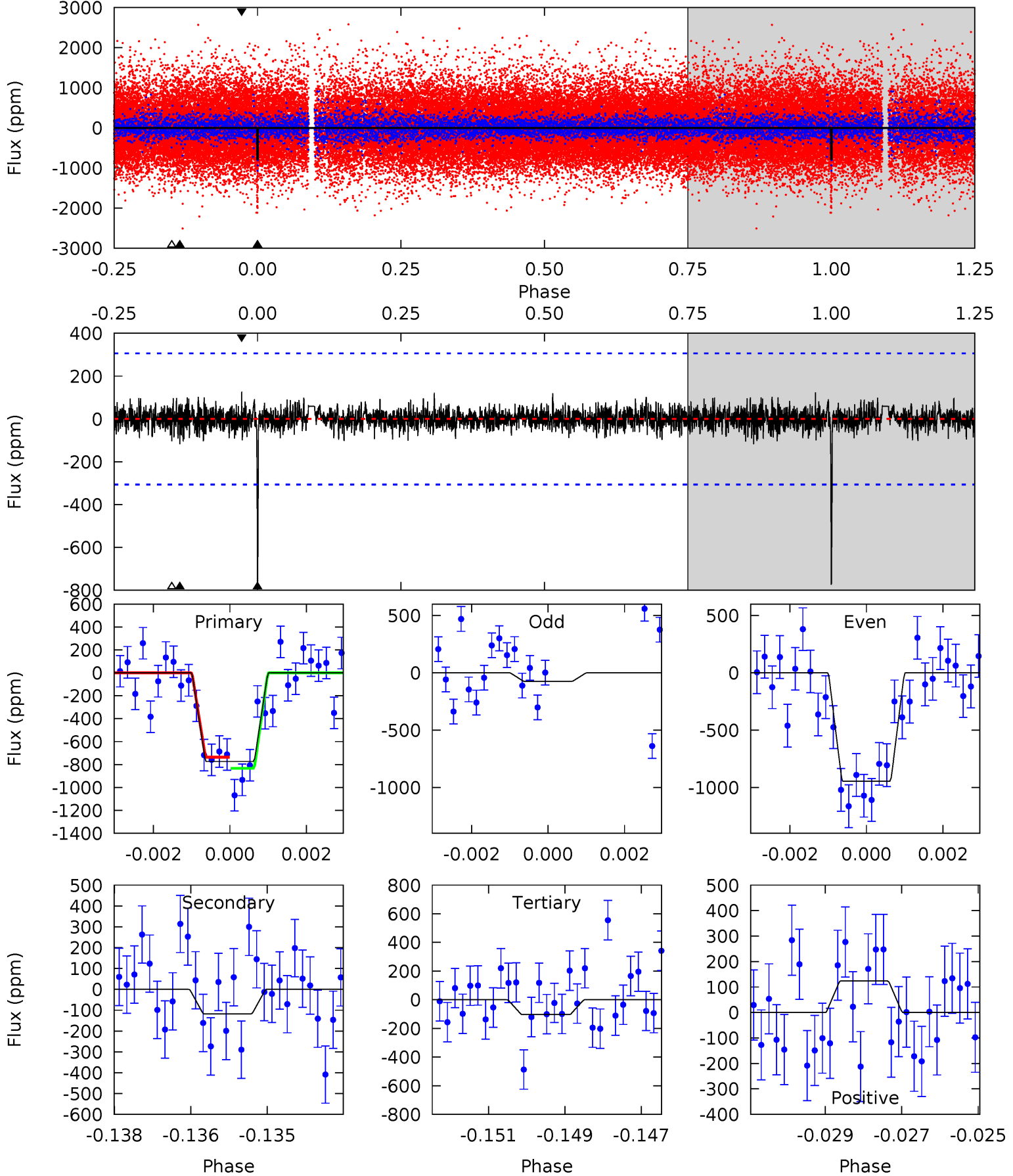
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	11.0	10.6	14.1	5.30	3.05	3.32	0.17	-3.35	0.43	-3.08	0.94	1.19	0.56	0.95



# Alt Model-Shift Uniqueness Test

006604312-01, P = 440.295540 Days, E = 240.699081 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
13.5	2.06	1.81	2.16	5.35	3.12	0.56	11.7	11.4	0.25	-0.10	6.11	1.04	0.14	0.82



### Stellar Parameters For KIC 006604312

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5915^{+184}_{-205}$	$4.543^{+0.037}_{-0.213}$	$-0.280^{+0.300}_{-0.300}$	$0.862^{+0.260}_{-0.087}$	$0.947^{+0.117}_{-0.117}$	$2.082^{+0.423}_{-1.080}$
	+3%/-3%	+1%/-5%	+107%/-107%	+30%/-10%	+12%/-12%	+20%/-52%
Source	KIC0	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 006604312-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-656 \pm 60$	$3.20^{+0.62}_{-0.44}$	$331^{+23}_{-18}$	$5294^{+336}_{-303}$	$42100^{+14002}_{-11812}$
Alt.	$-118 \pm 57$	$2.96^{+0.58}_{-0.43}$	$331^{+26}_{-16}$	$3907^{+340}_{-390}$	$8502^{+5975}_{-4189}$

$T_{\text{max}}$  = 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  $A_{\text{obs}} \gg 1.0$

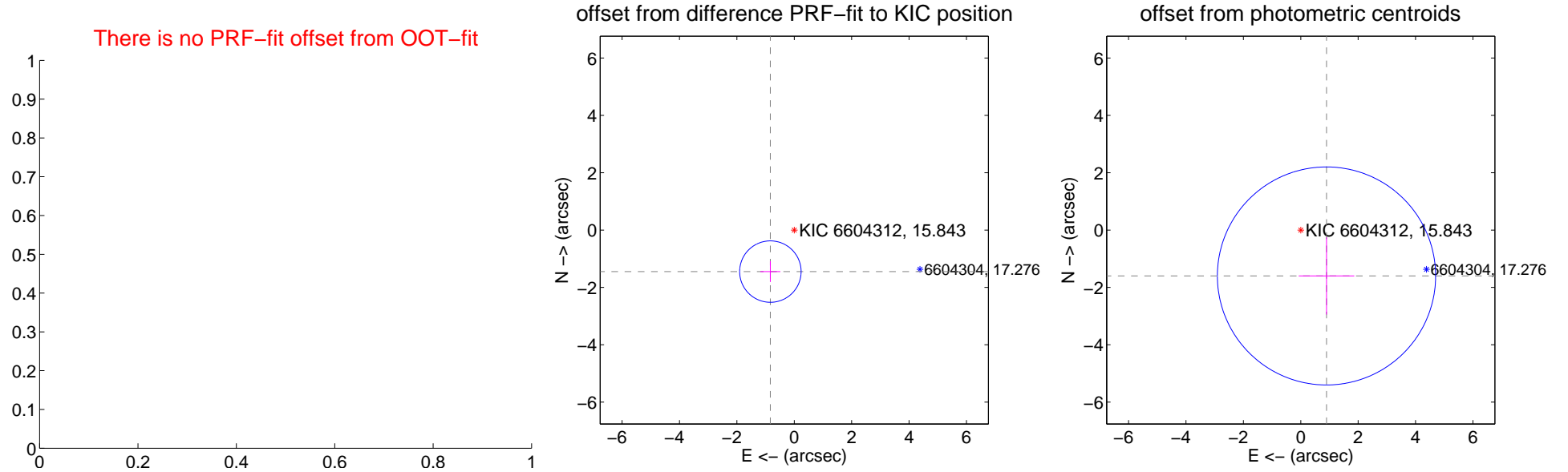
## DV Centroid Data

Supplemental centroid analysis for 006604312-01. Kepler magnitude: 15.84. Transit SNR 6.62

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	$1.670 \pm 0.357$	4.68	$0.832 \pm 0.346$	$-1.448 \pm 0.361$
photometric centroid source offset	$1.83 \pm 1.27$	1.45	$-0.90 \pm 0.97$	$-1.60 \pm 1.35$



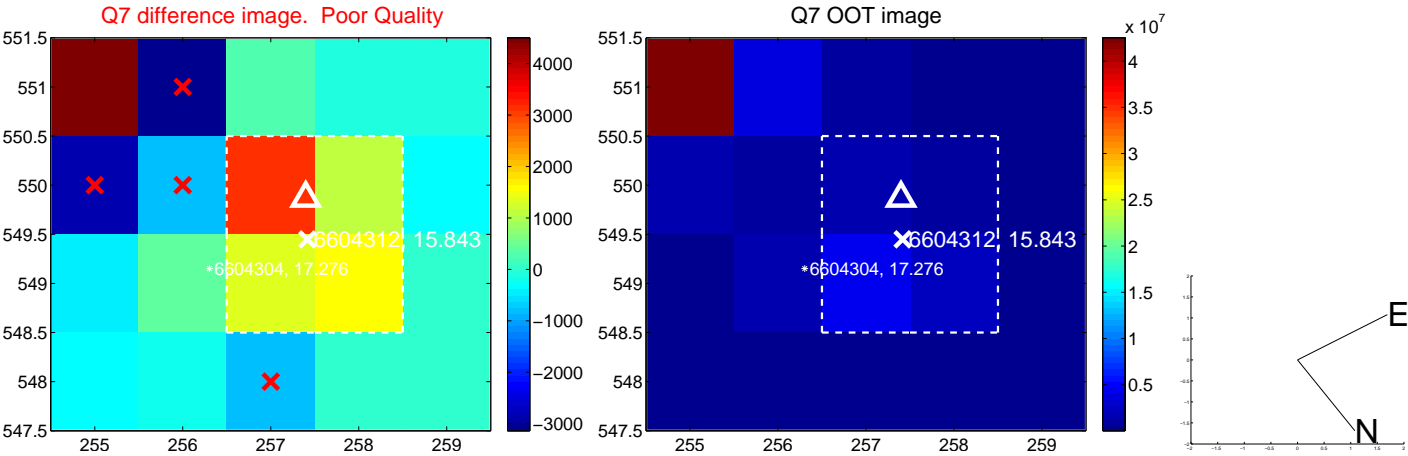
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



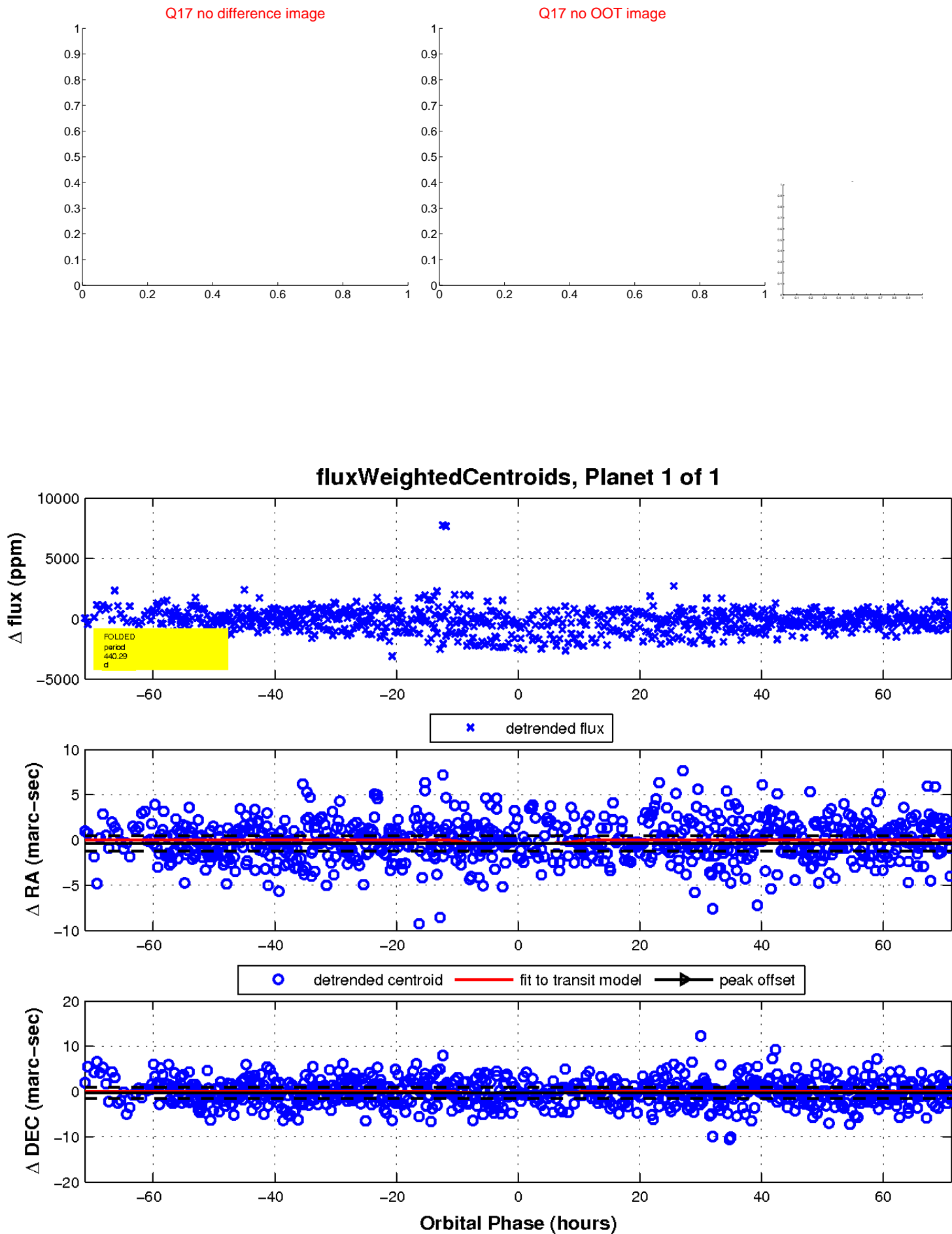
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



# UKIRT Image

Declination

