

# KIC 008038865

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008038865-01	OBS	No	369.134593	232.894899	787.6	40.032	11.0	12.3	1.00	6237	5.38	1.37

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008038865-01	OBS	FP	0.00	1	0	0	1	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS—EPHEM_MATCH

**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.

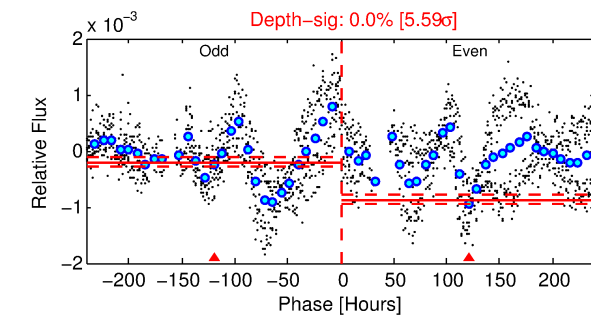
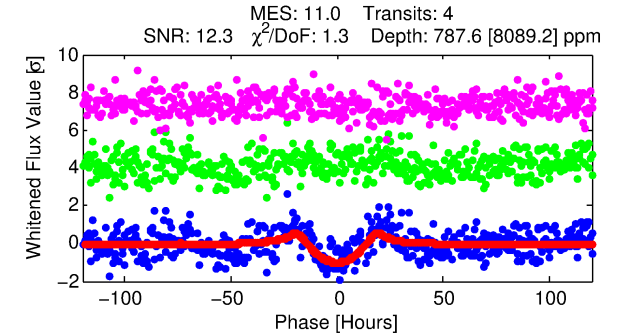
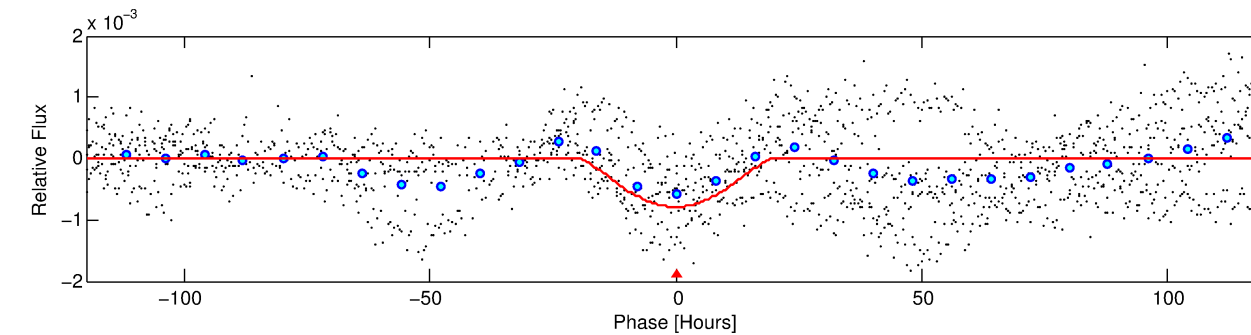
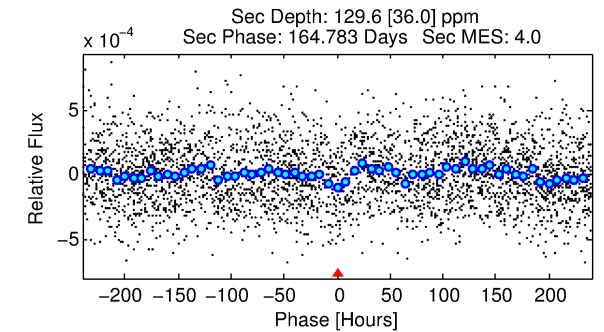
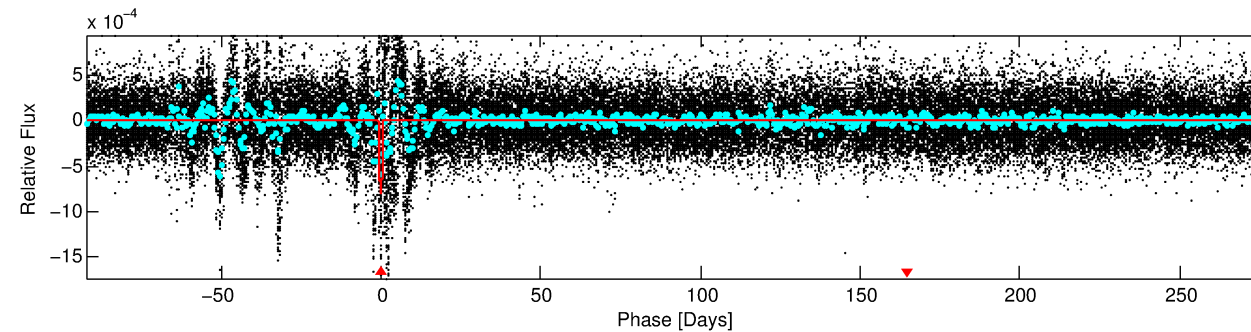
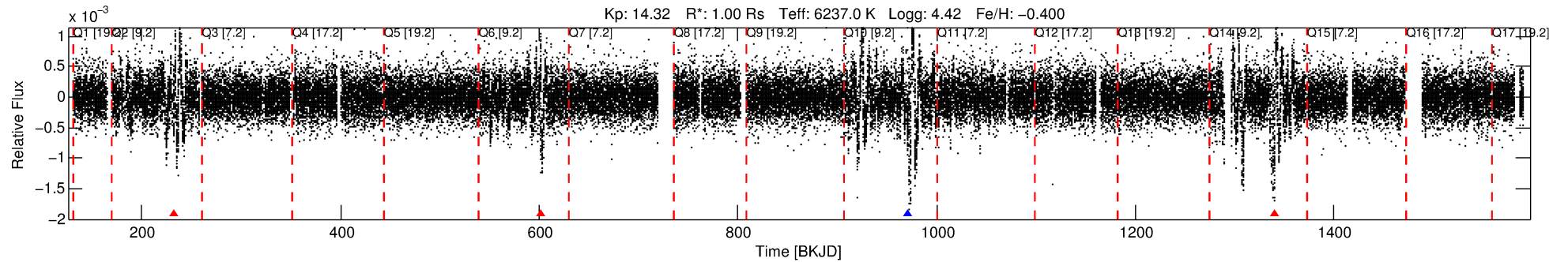
## Ephemeris Match Information For 008038865-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
008038865-01	8038865	008038823-01	8038823	1:1	52.9	14	-1	15.54	14.32	1.80	Direct-PRF	1	4.72	3.49

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 8038865 Candidate: 1 of 1 Period: 369.135 d



## DV Fit Results:

Period = 369.13459 [0.02649] d  
Epoch = 232.8949 [0.0454] BKJD  
Rp/R\* = 0.0491 [0.0683]  
a/R\* = 22.36 [7.57]  
b = 1.00 [0.25]  
Seff = 1.37 [0.54]  
Teq = 276 [27] K  
Rp = 5.38 [7.66] Re  
a = 0.9998 [0.2517] AU  
Ag = 2460.04 [6937.66] [0.35σ]  
Teffp = 3004 [2102] K [1.30σ]

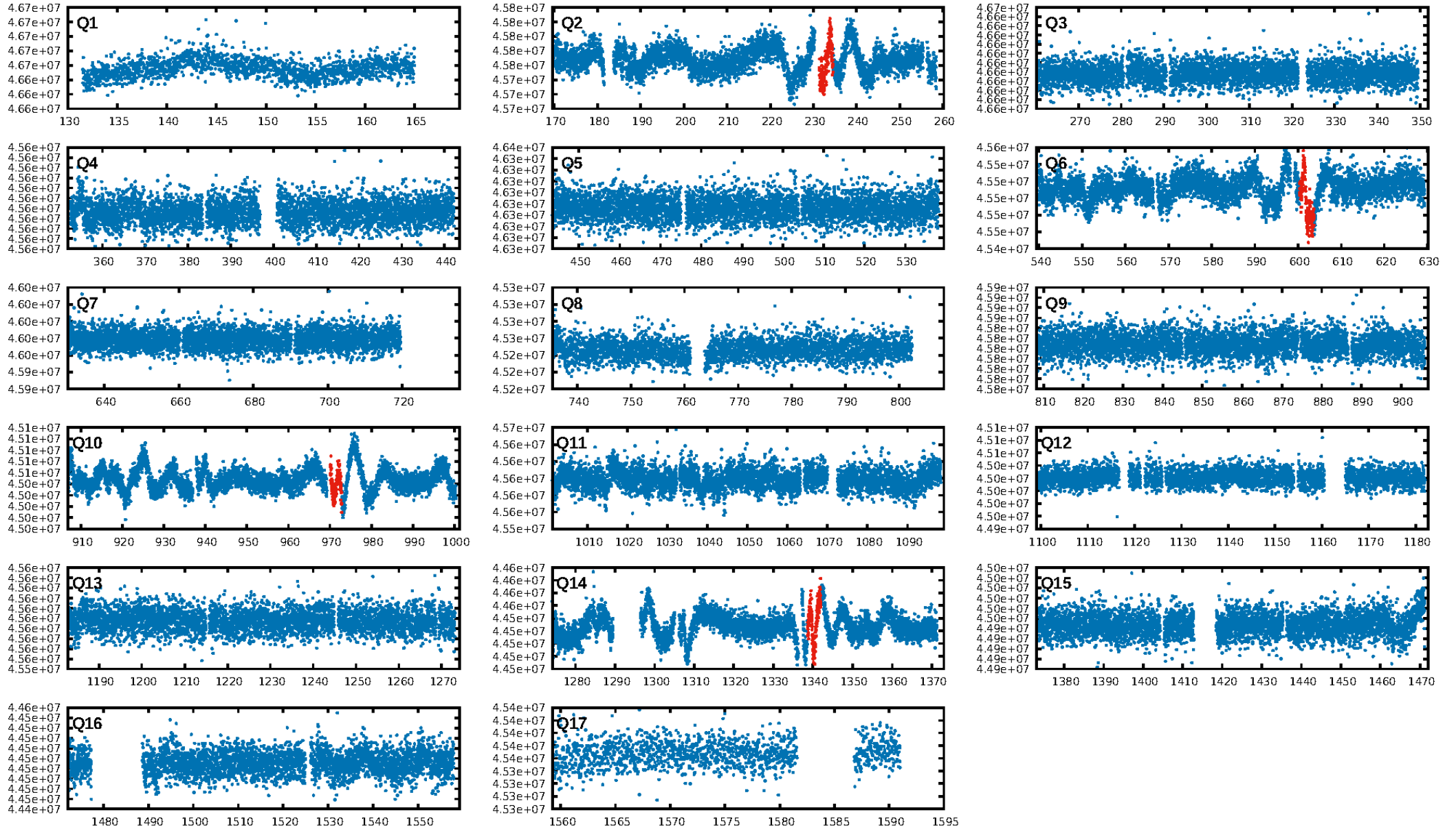
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 57.5%  
Bootstrap-pfa: 2.75e-16  
RollingBand-fgt: 0.25 [1/4]  
GhostDiagnostic-chr: 7.368  
Centroid-sig: 0.1%  
Centroid-so: 6.766 arcsec [3.25σ]  
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: N/A

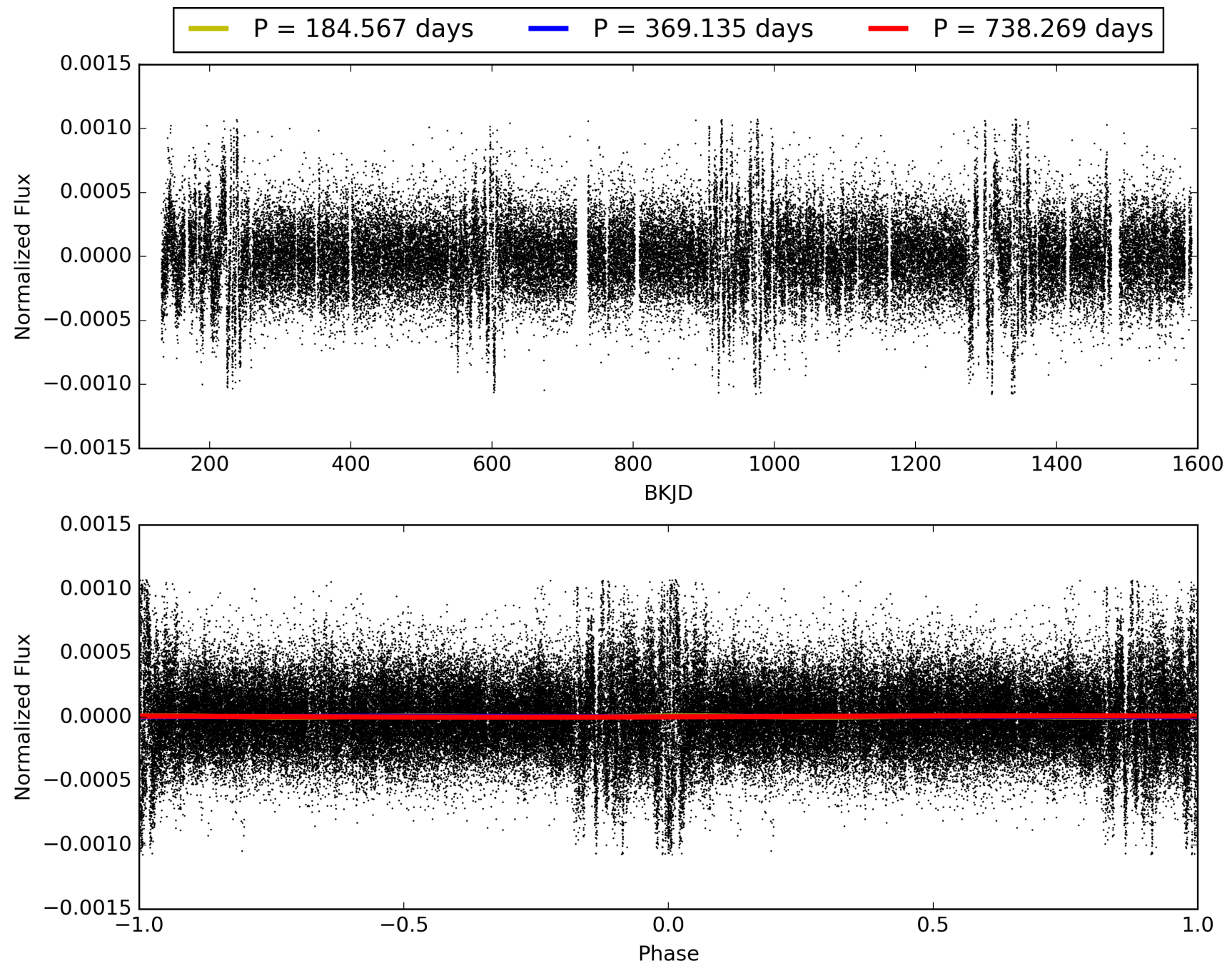
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:15:49 Z

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

# TCE 008038865-01, PDC Light Curves

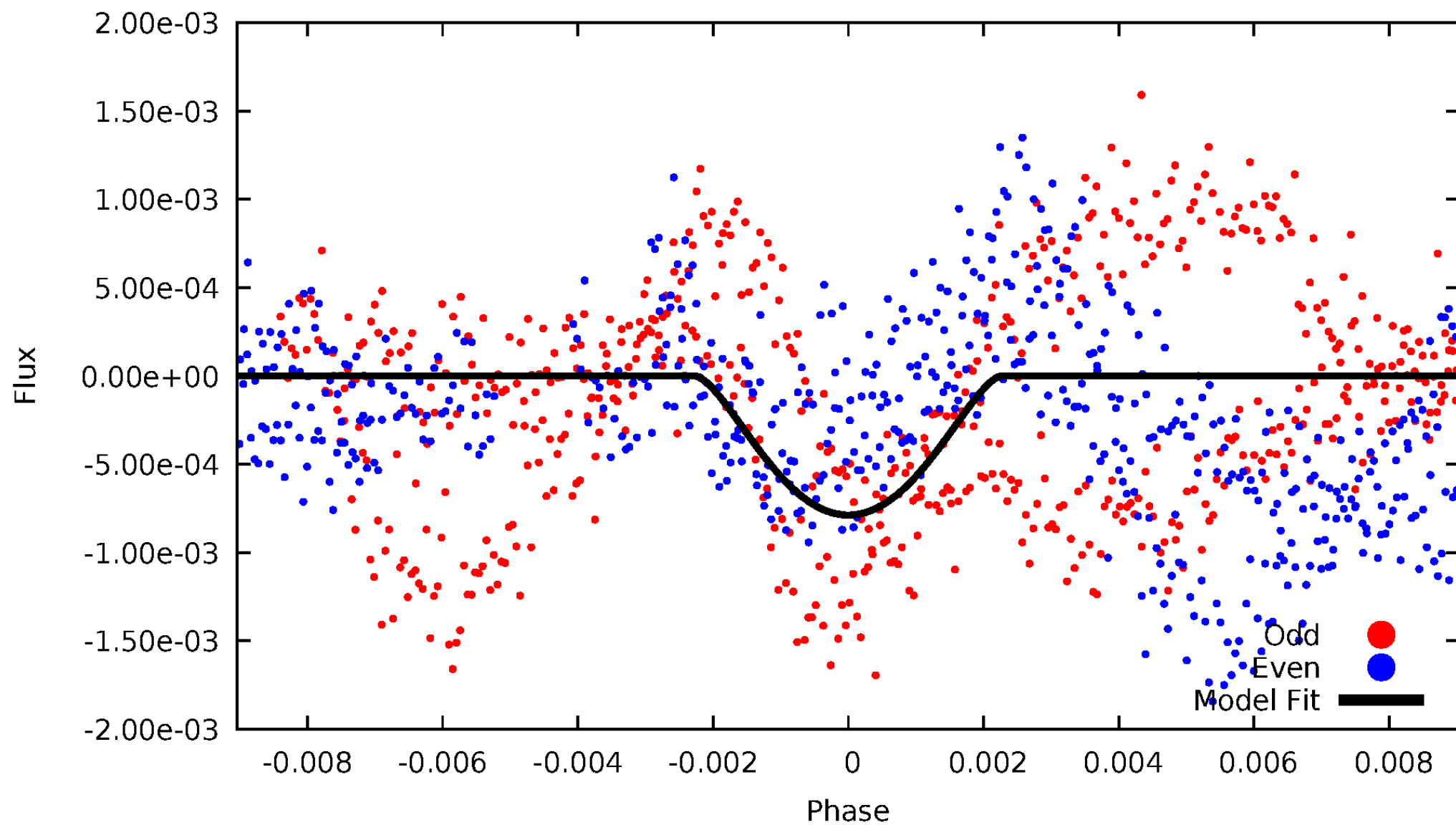


TCE 008038865-01



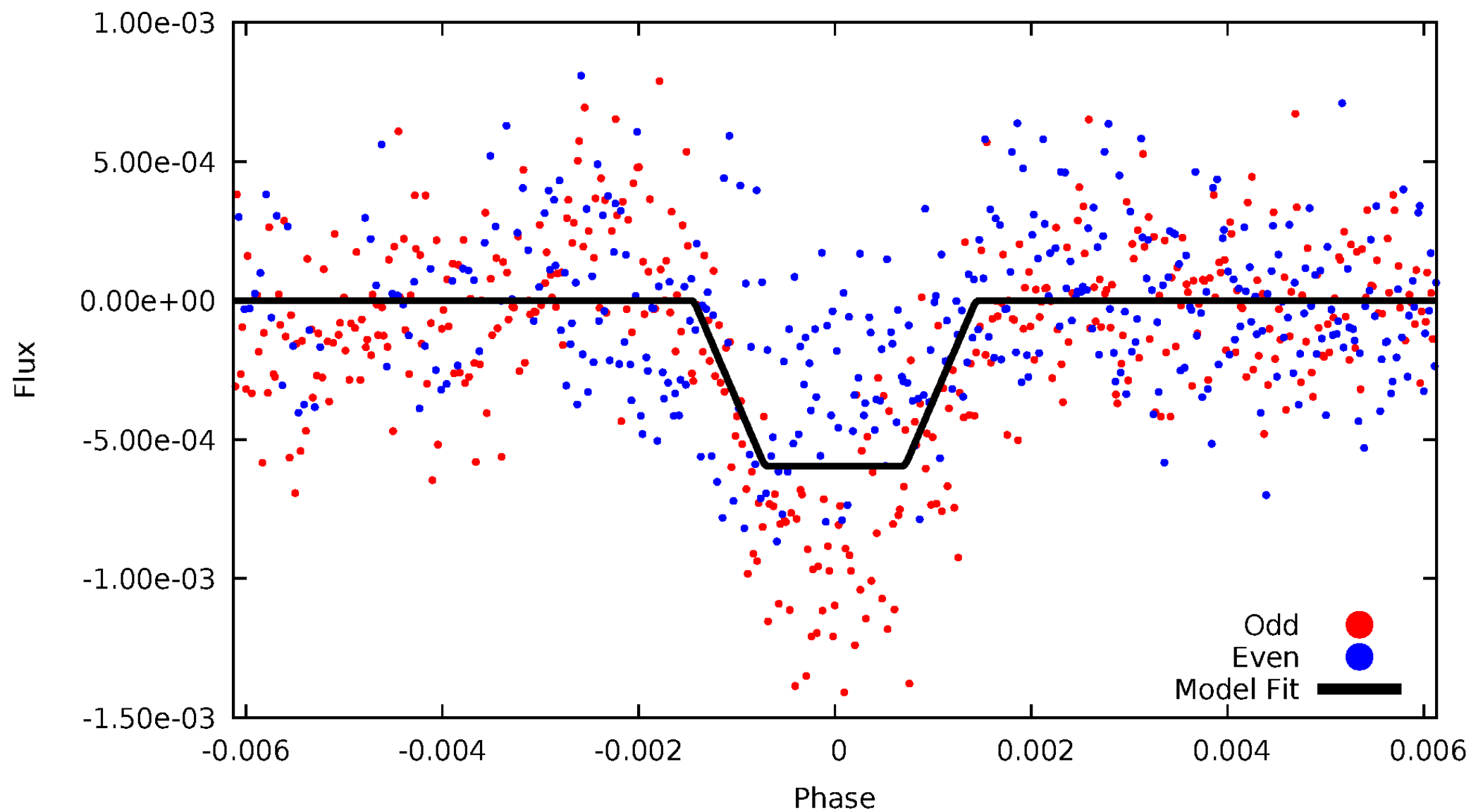
# DV Odd/Even

TCE 008038865-01



# ALT Odd/Even

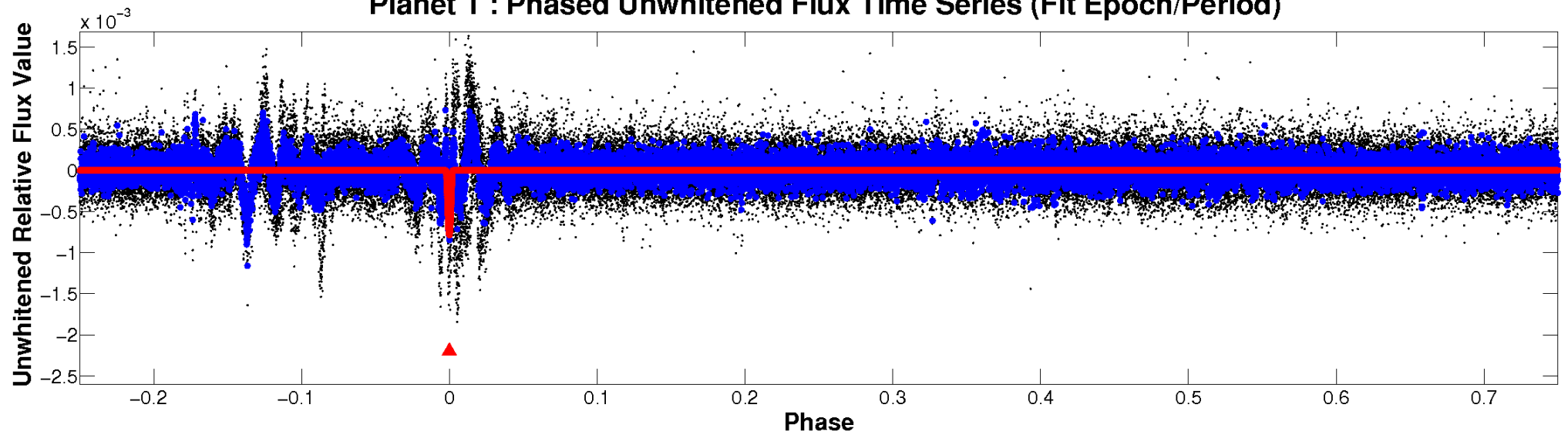
TCE 008038865-01



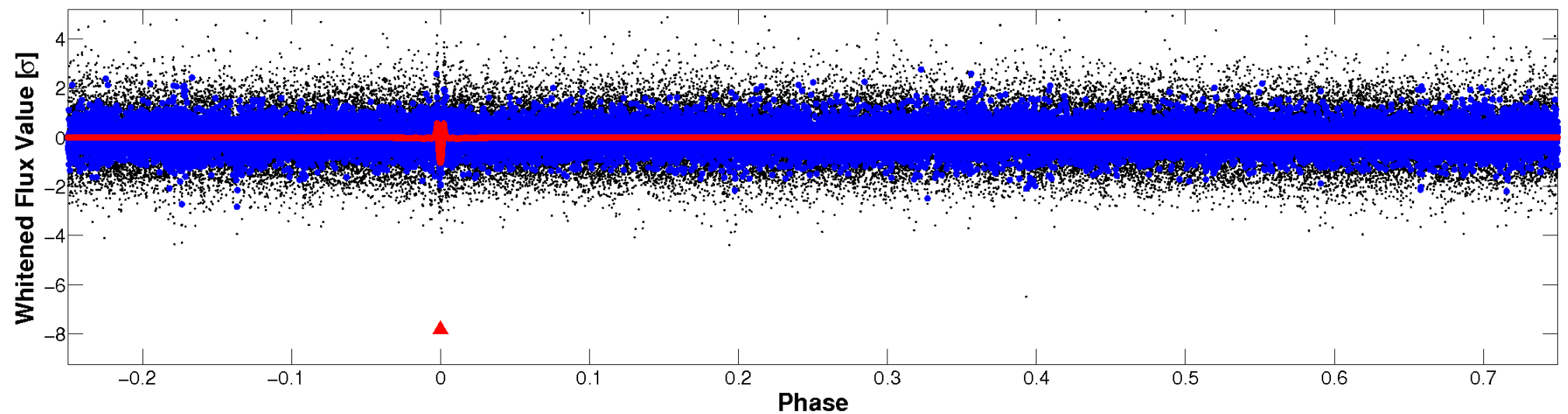


# Non-Whitened Vs. Whitened Light Curve

**Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

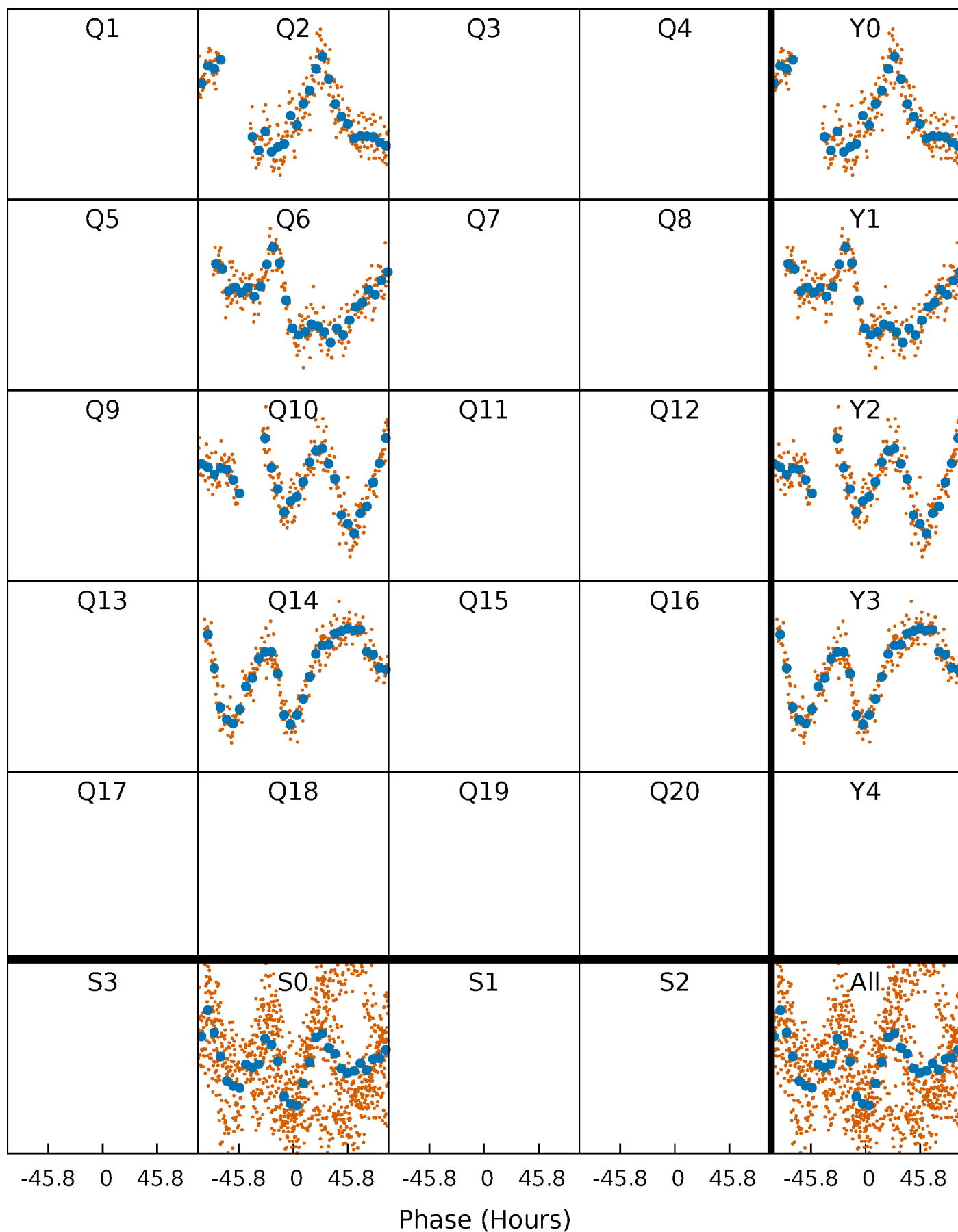


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

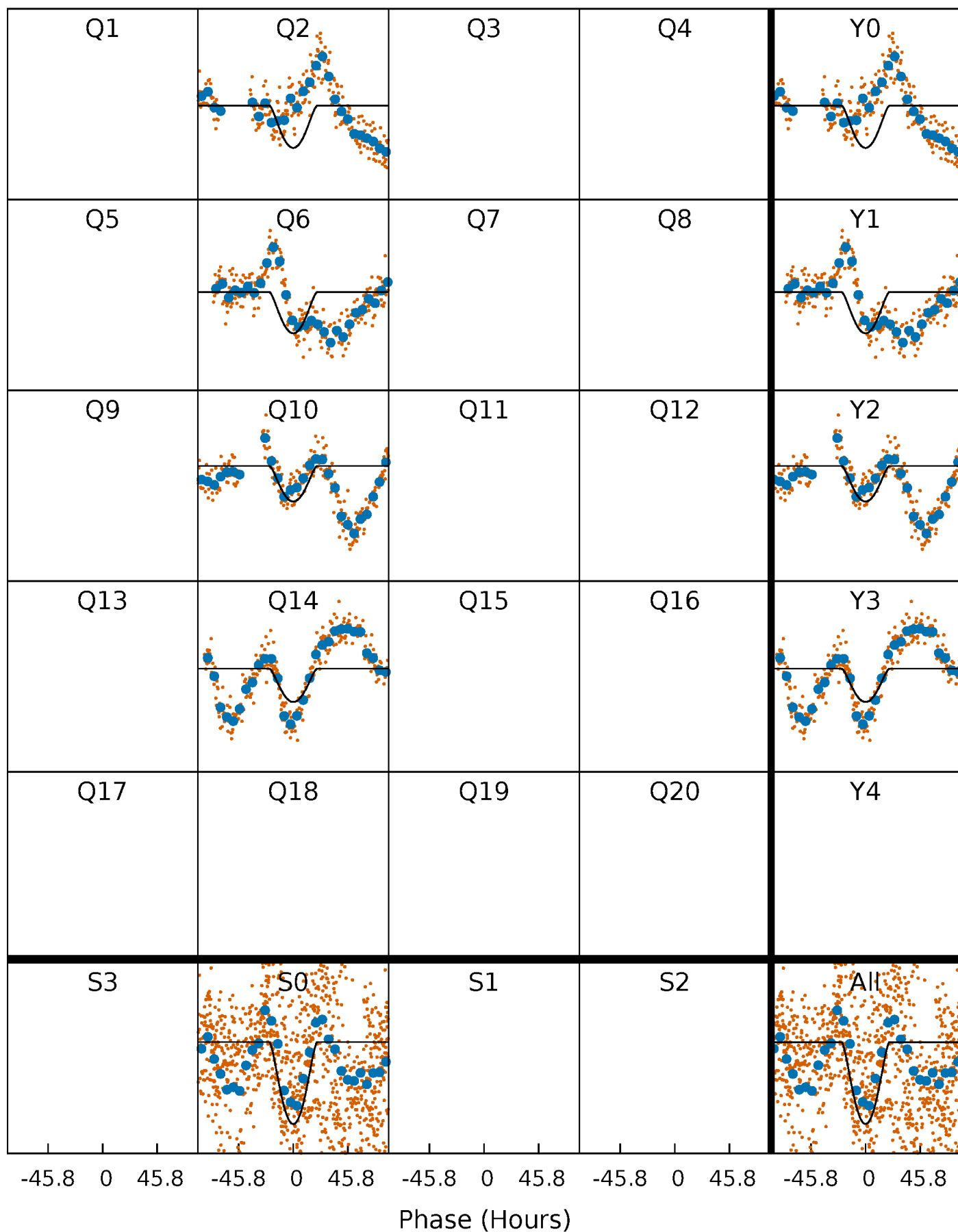
TCE 008038865-01 P=369.134593 Days  $T_0=232.894900$  (BKJD)





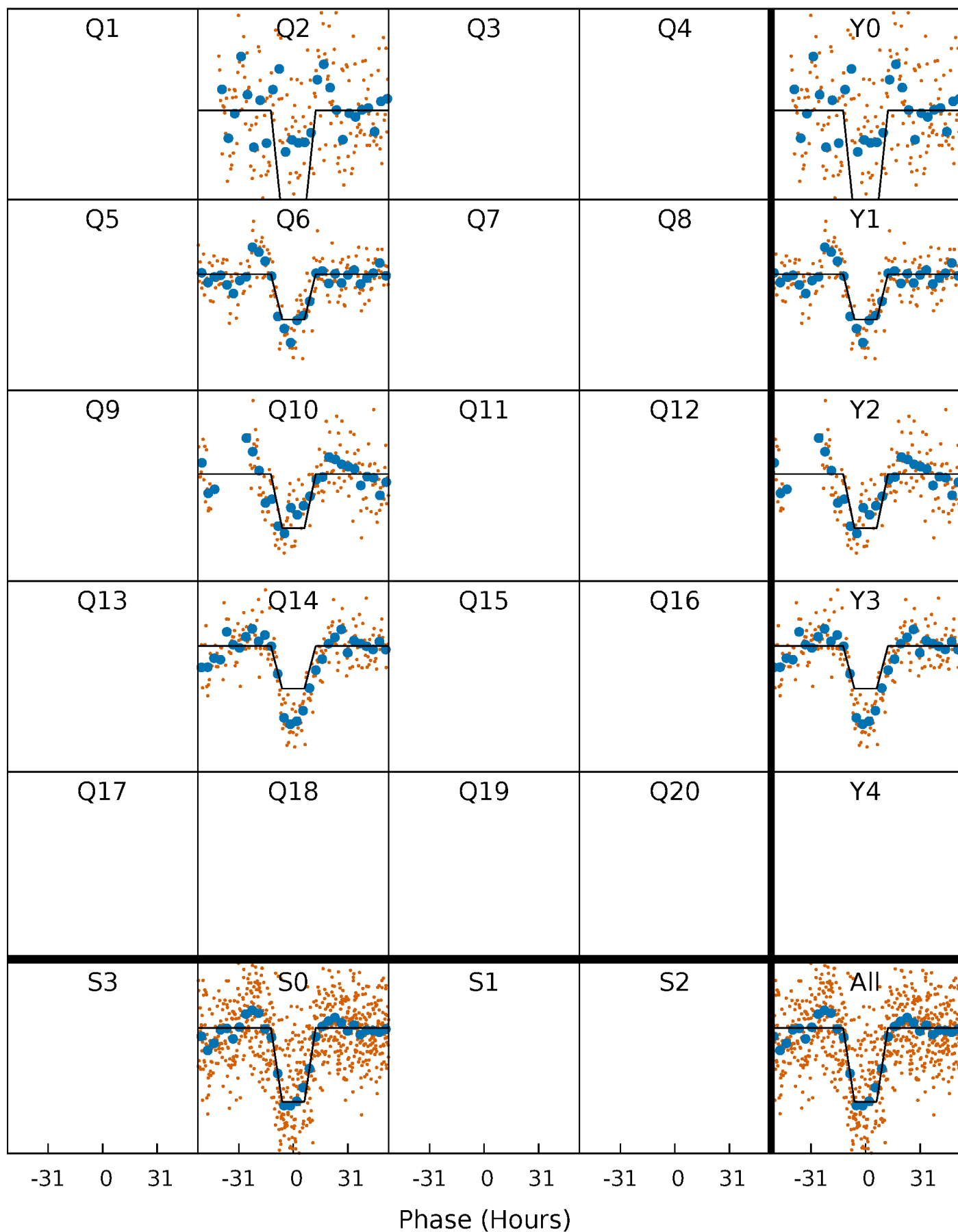
# DV Quarter-Phased Transit Curves

TCE 008038865-01 P=369.134593 Days  $T_0=232.894900$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

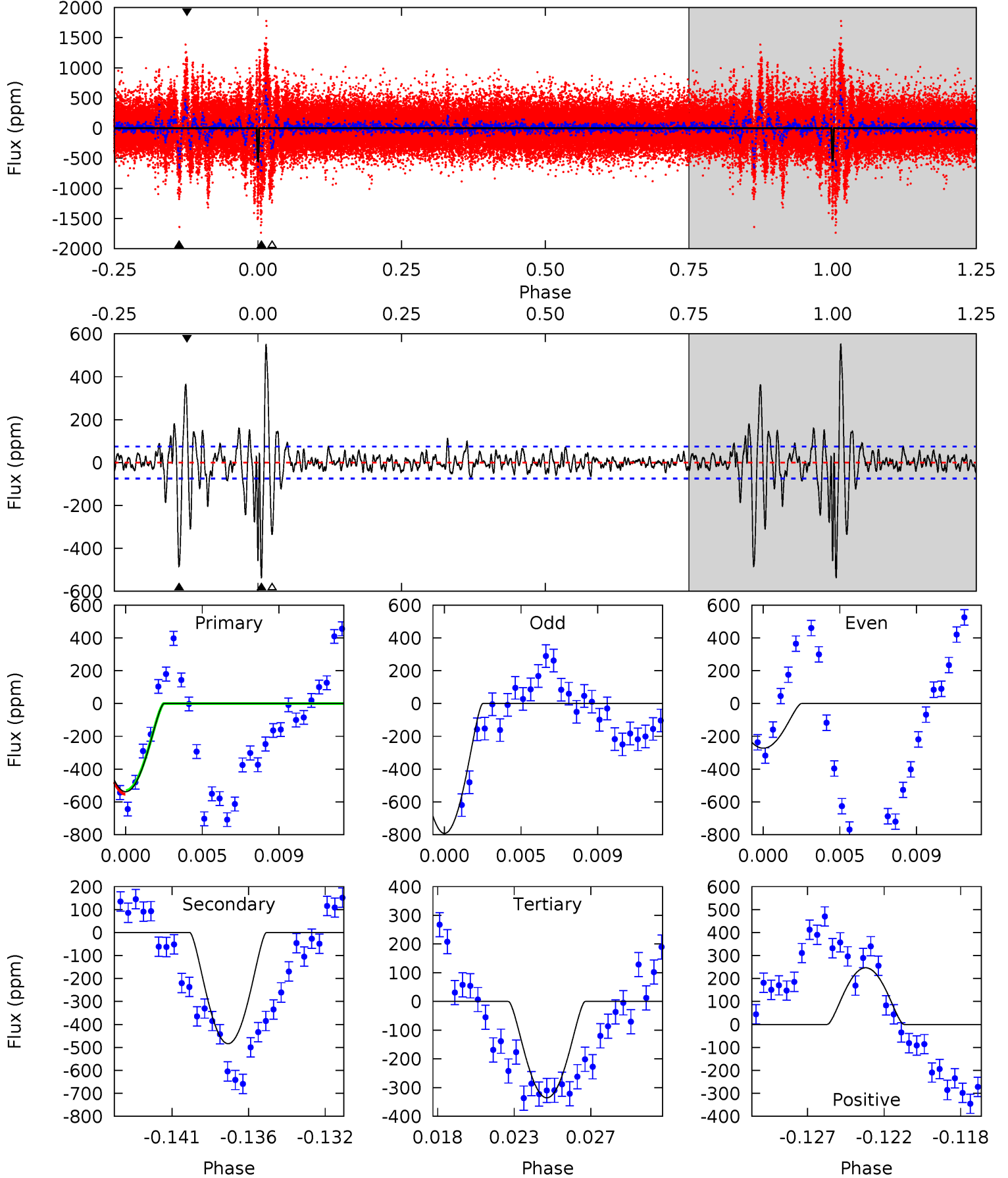
TCE 008038865-01 P=369.002849 Days  $T_0=233.159380$  (BKJD)



# DV Model-Shift Uniqueness Test

008038865-01, P = 369.134593 Days, E = 232.894900 Days

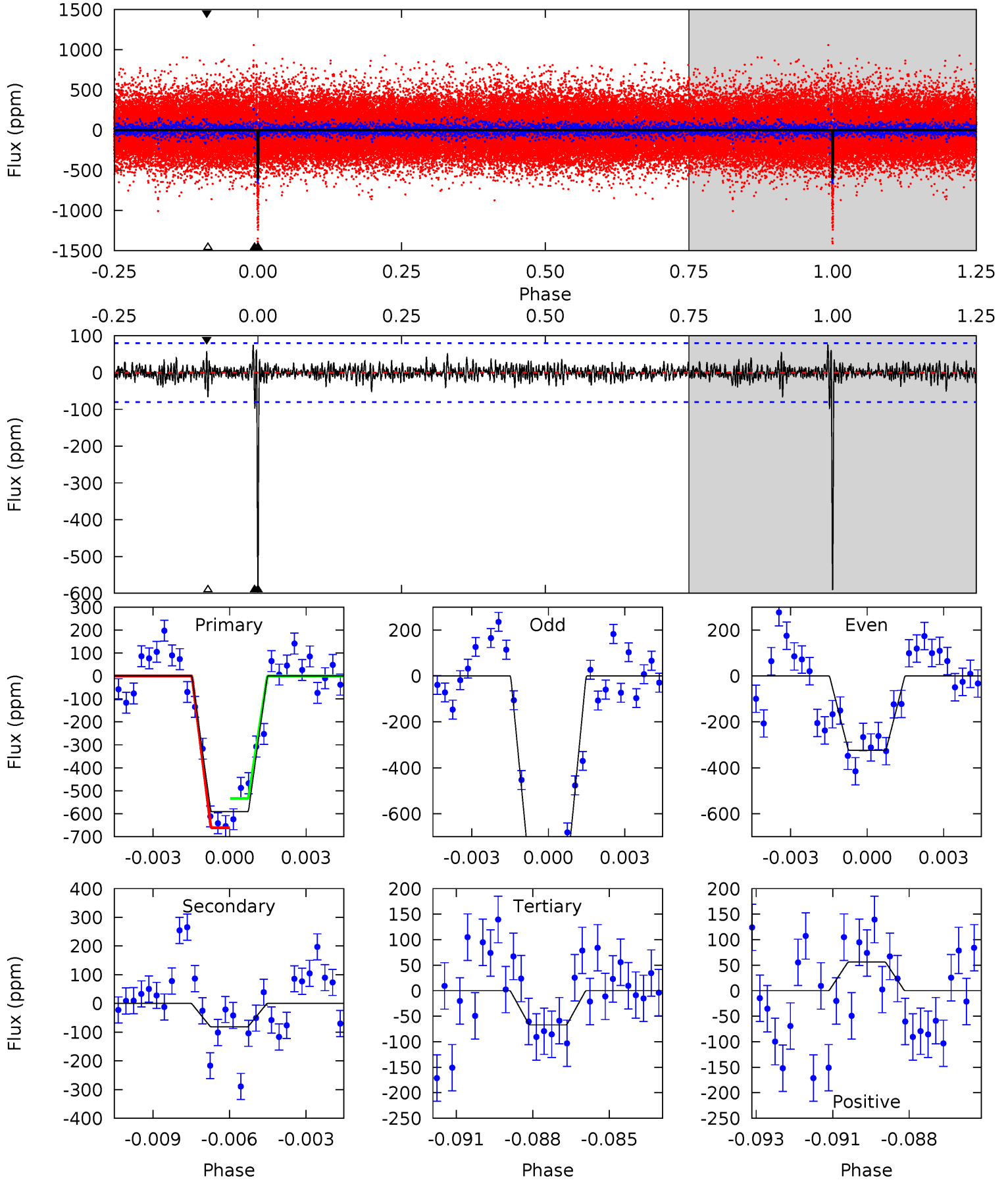
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.4	33.6	23.3	17.1	5.18	2.84	5.07	14.1	20.2	10.3	16.5	18.2	1.11	0.51	0.78



# Alt Model-Shift Uniqueness Test

008038865-01,  $P = 369.002849$  Days,  $E = 233.159380$  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
38.8	5.35	4.41	3.69	5.26	2.98	0.85	34.4	35.1	0.94	1.66	17.6	0.97	0.11	4.20



### Stellar Parameters For KIC 008038865

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6237^{+169}_{-207}$	$4.424^{+0.087}_{-0.203}$	$-0.400^{+0.300}_{-0.300}$	$1.005^{+0.298}_{-0.128}$	$0.976^{+0.135}_{-0.111}$	$1.355^{+0.595}_{-0.659}$
	+3%/-3%	+2%/-5%	+75%/-75%	+30%/-13%	+14%/-11%	+44%/-49%
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 008038865-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-484 \pm 14$	$7.87^{+6.40}_{-4.87}$	$390^{+29}_{-20}$	$3866^{+1786}_{-677}$	$4257^{+25219}_{-2965}$
Alt.	$-81 \pm 15$	$6.57^{+6.28}_{-4.43}$	$391^{+29}_{-21}$	$3100^{+1465}_{-517}$	$1002^{+8482}_{-734}$

$T_{\text{max}}$  = 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

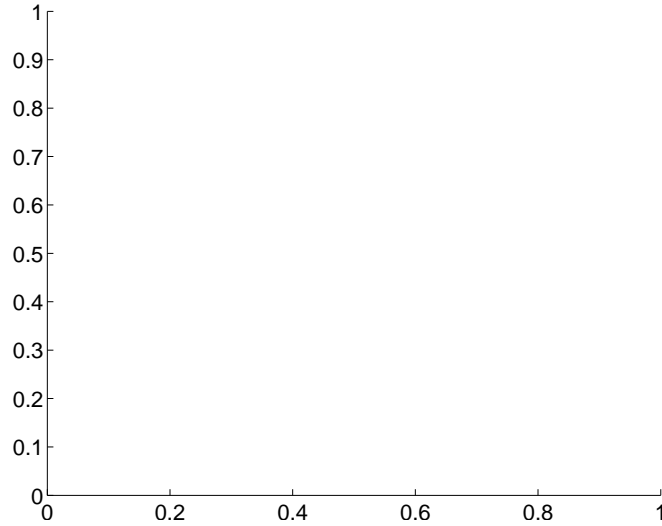
Supplemental centroid analysis for 008038865-01. Kepler magnitude: 14.32. Transit SNR 12.29

There are 0 quarters with good PRF difference image offsets

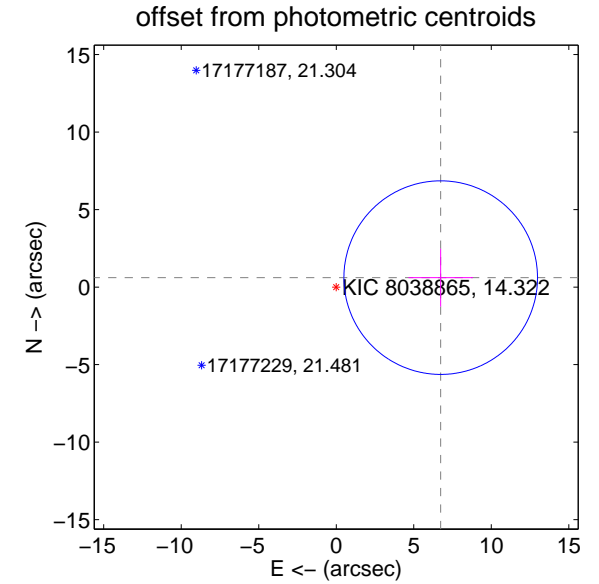
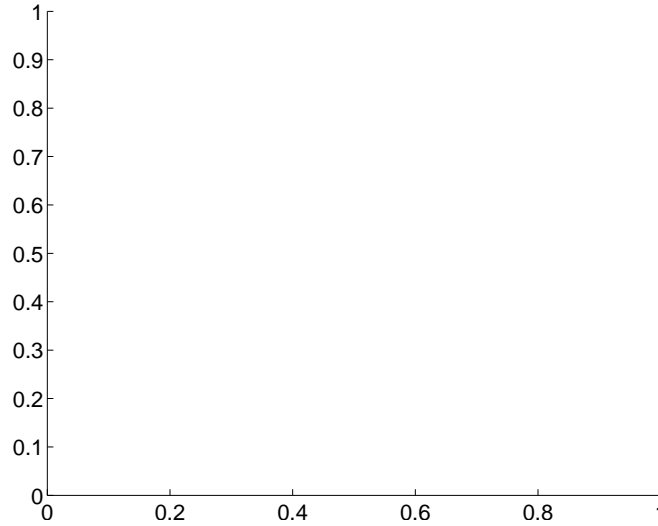
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	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	$6.77 \pm 2.08$	3.25	$-6.74 \pm 2.08$	$0.61 \pm 1.87$

There is no PRF-fit offset from OOT-fit



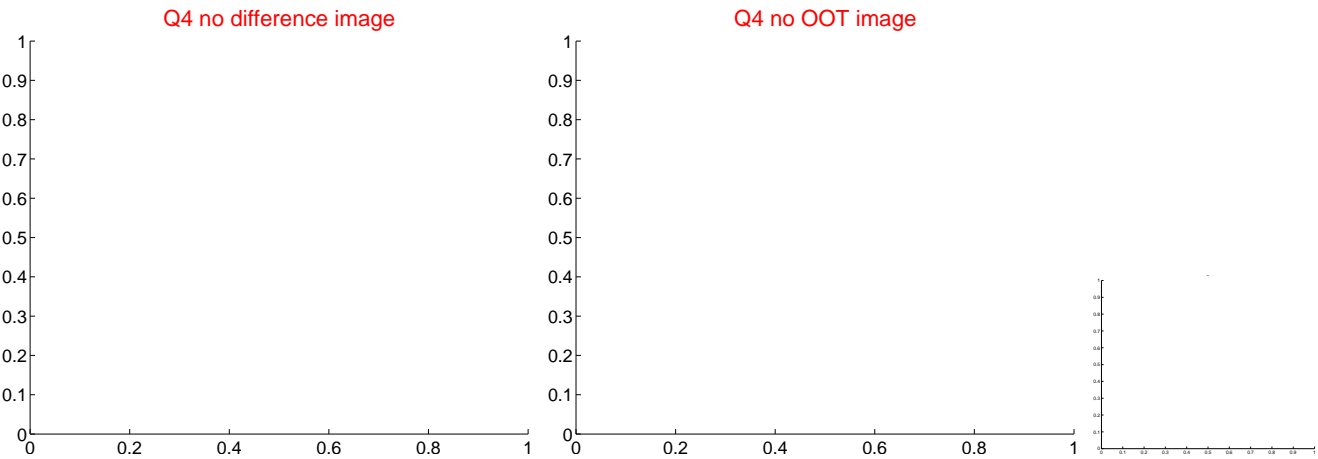
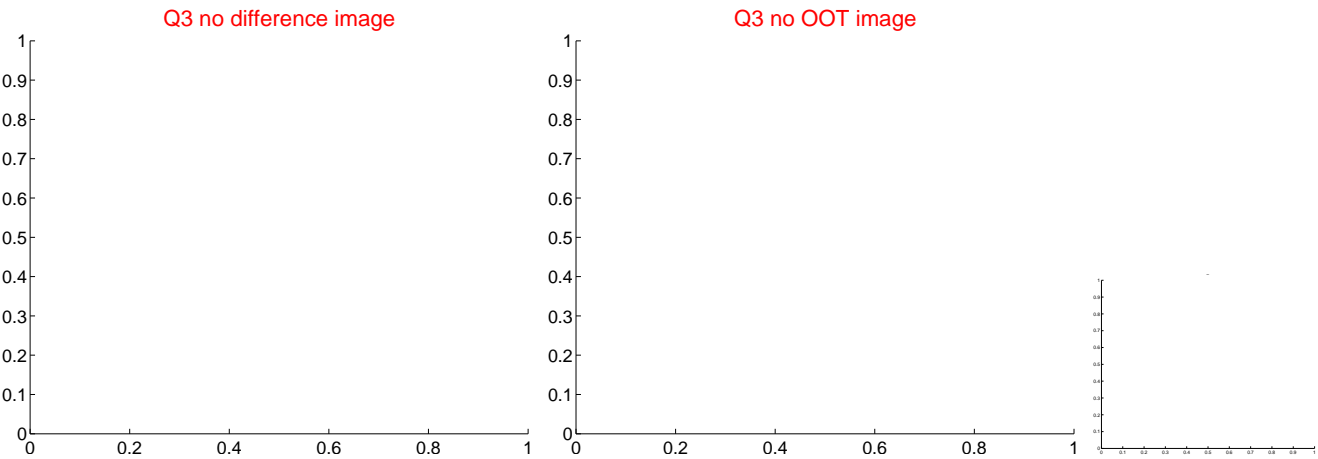
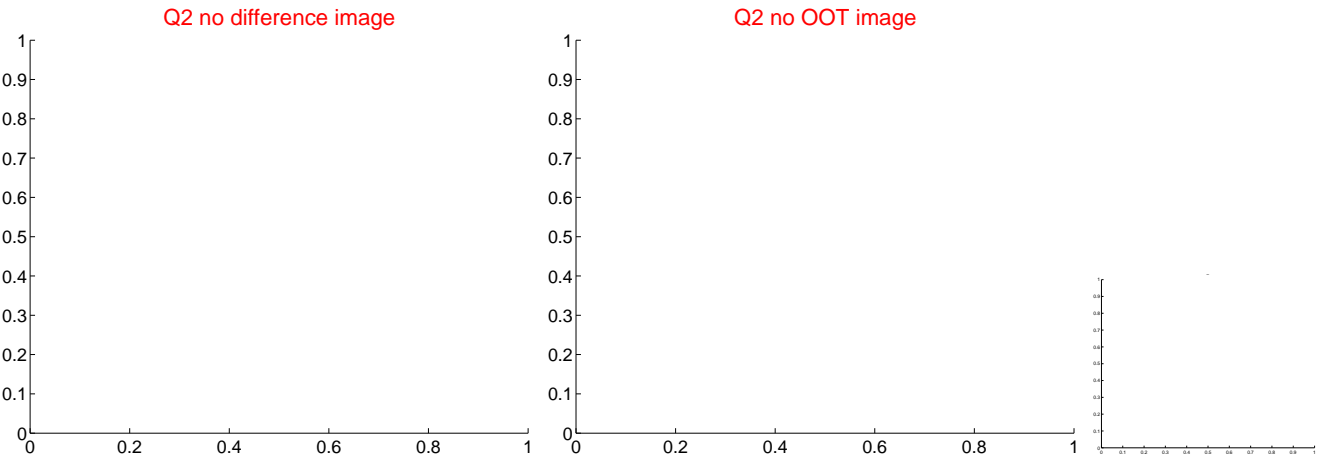
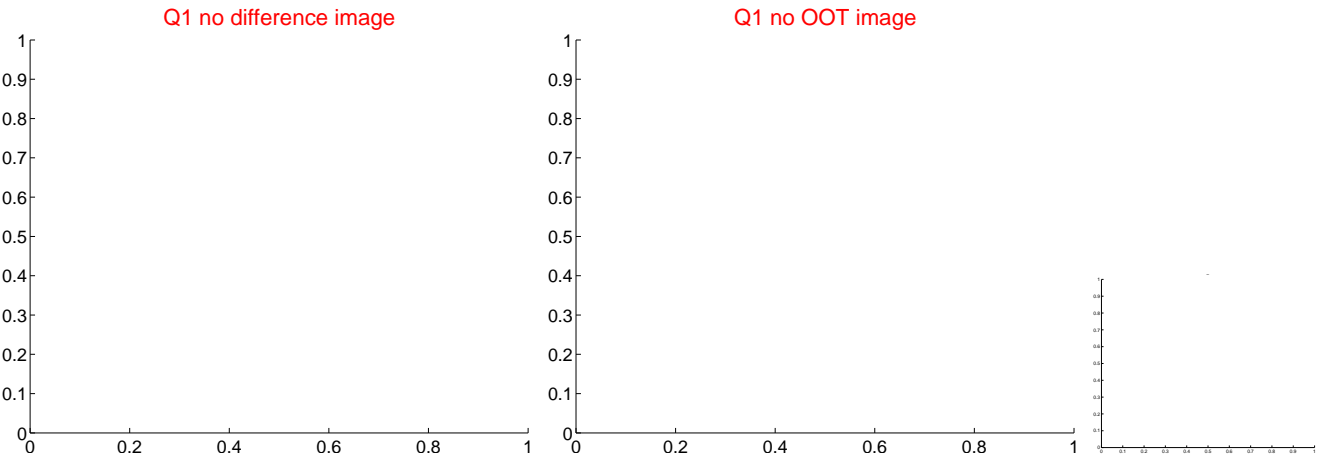
There is no PRF-fit offset from KIC



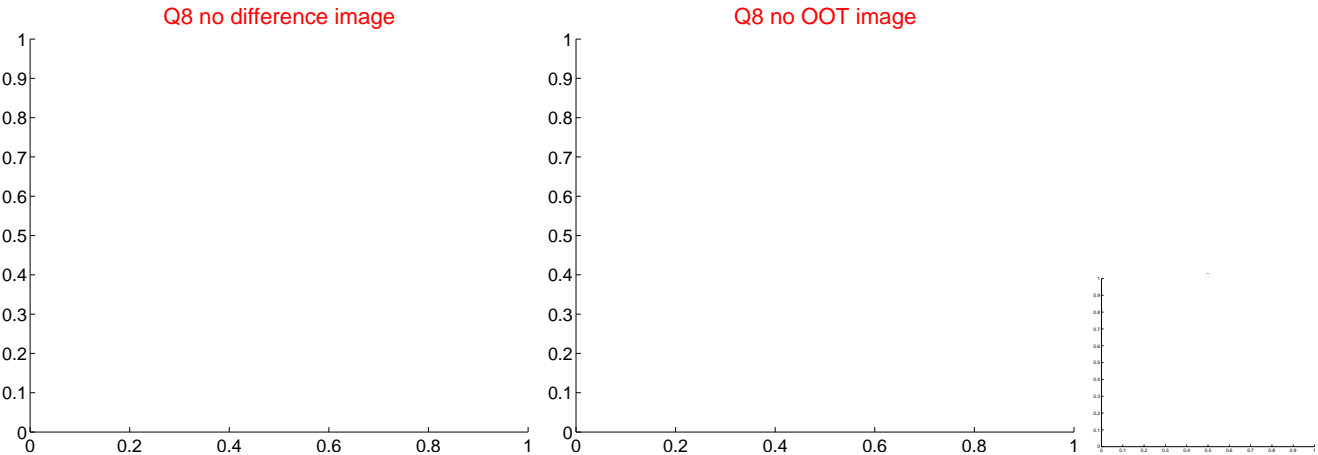
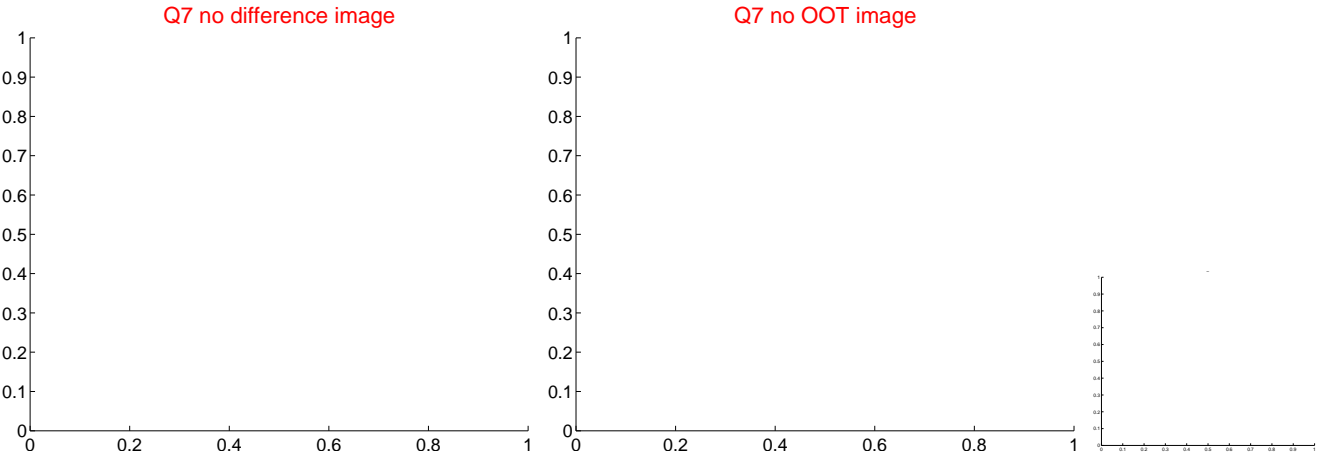
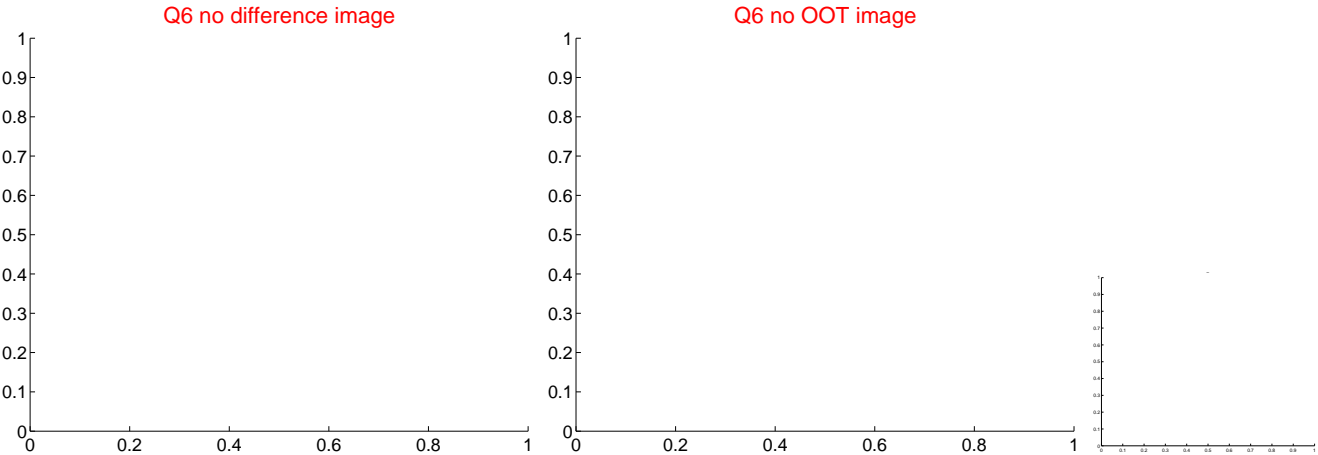
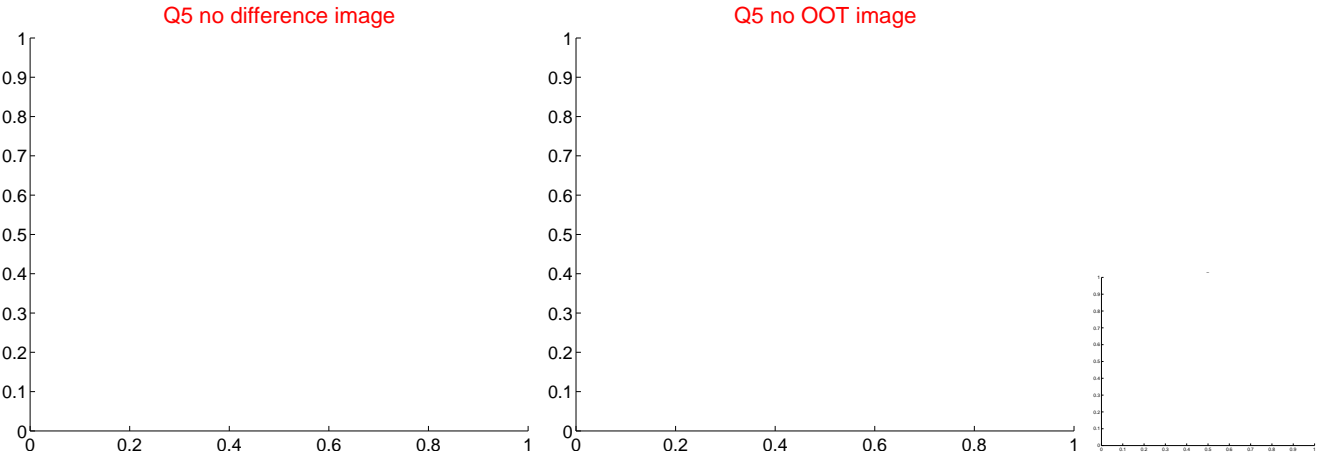
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



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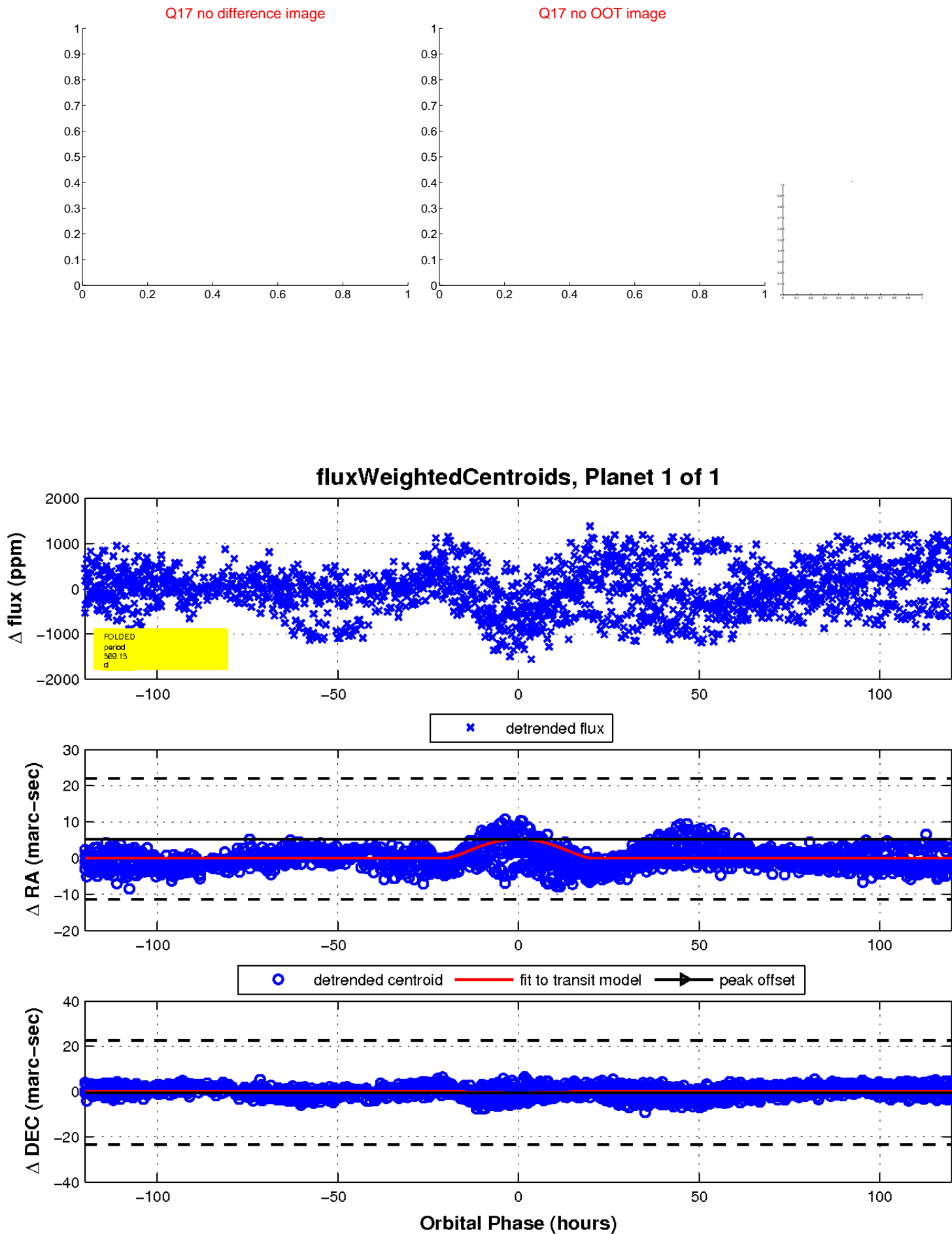
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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# UKIRT Image

Declination

