

# KIC 006389733

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006389733-01	OBS	No	435.194060	221.328831	305.0	13.866	7.6	3.4	0.60	3821	1.29	0.08

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006389733-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

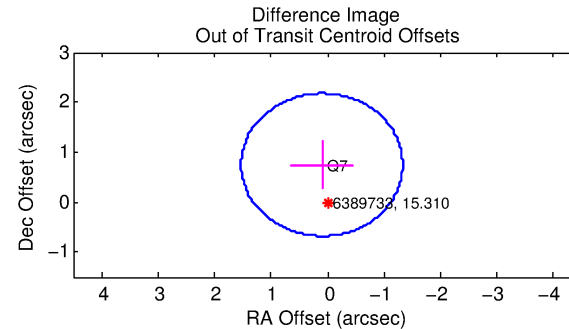
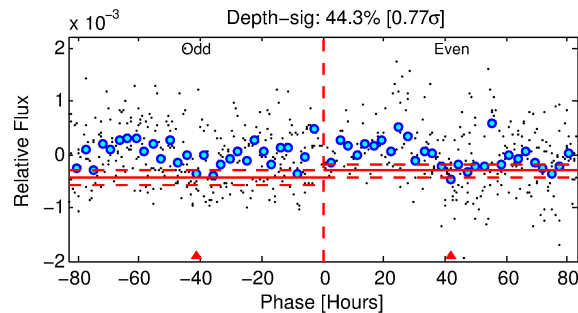
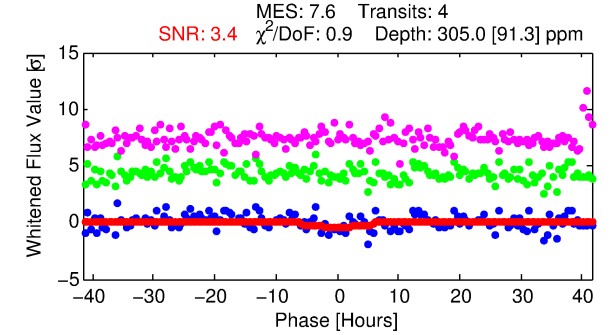
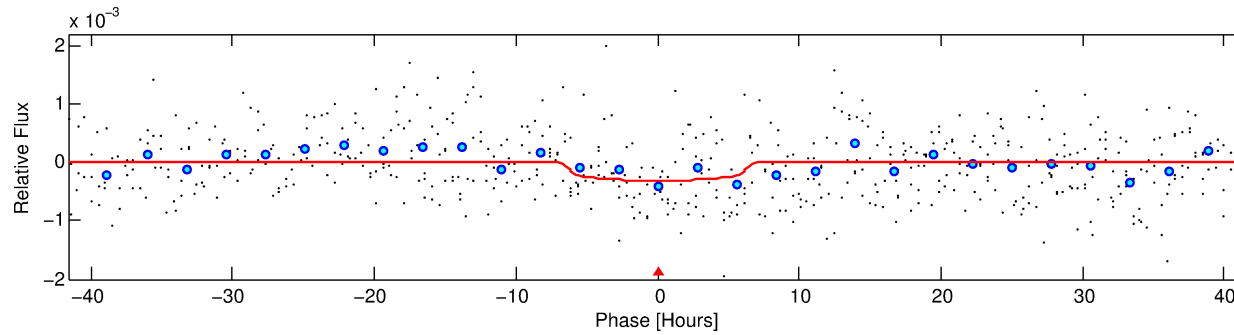
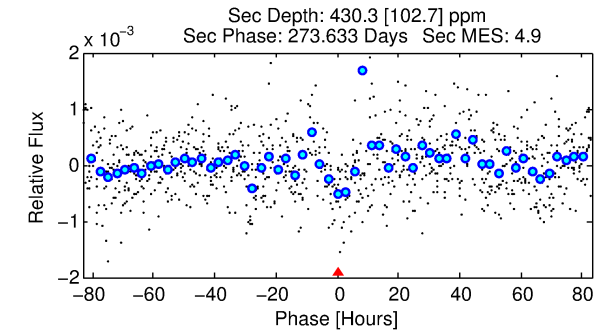
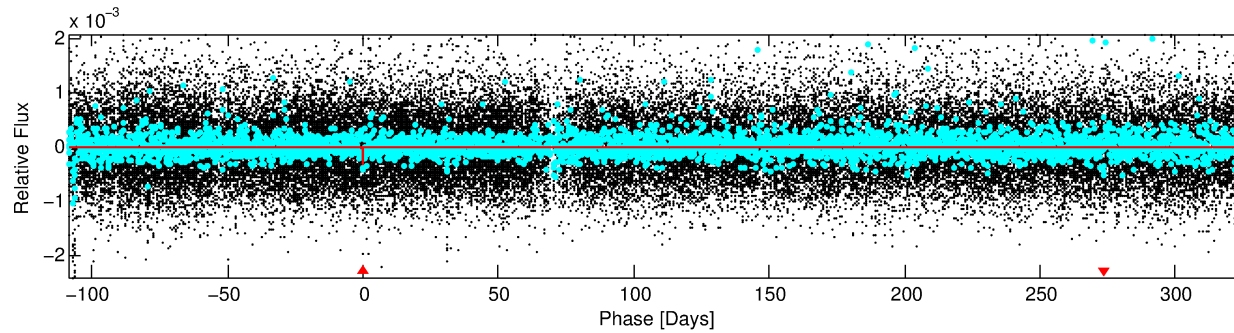
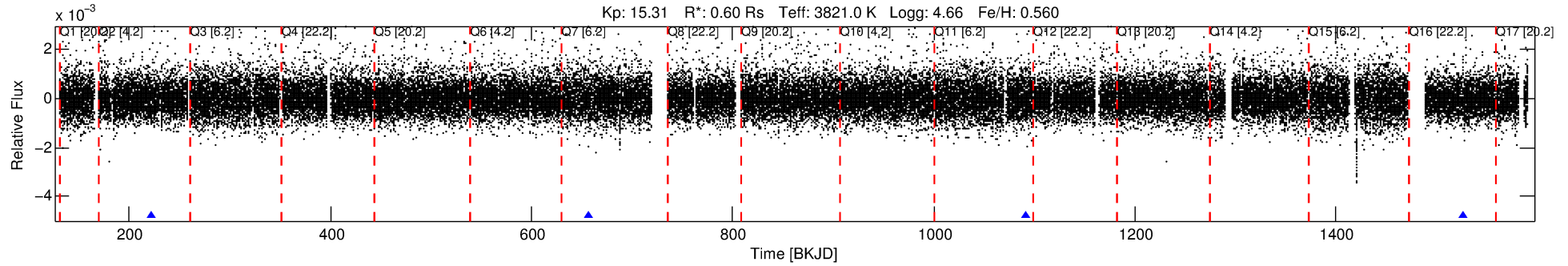
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006389733-01

No Significant Match Found

# DV One-Page Summary

KIC: 6389733 Candidate: 1 of 1 Period: 435.194 d



## DV Fit Results:

Period = 435.19406 [0.02788] d  
Epoch = 221.3288 [0.0525] BKJD  
Rp/R\* = 0.0196 [0.0087]  
a/R\* = 116.08 [179.10]  
b = 0.90 [0.34]  
Seff = 0.08 [0.02]  
Teq = 134 [7] K  
Rp = 1.29 [0.59] Re  
a = 0.9495 [0.0865] AU  
Ag = 127650.12 [118445.53] [1.08σ]  
Teffp = 3929 [916] K [4.14σ]

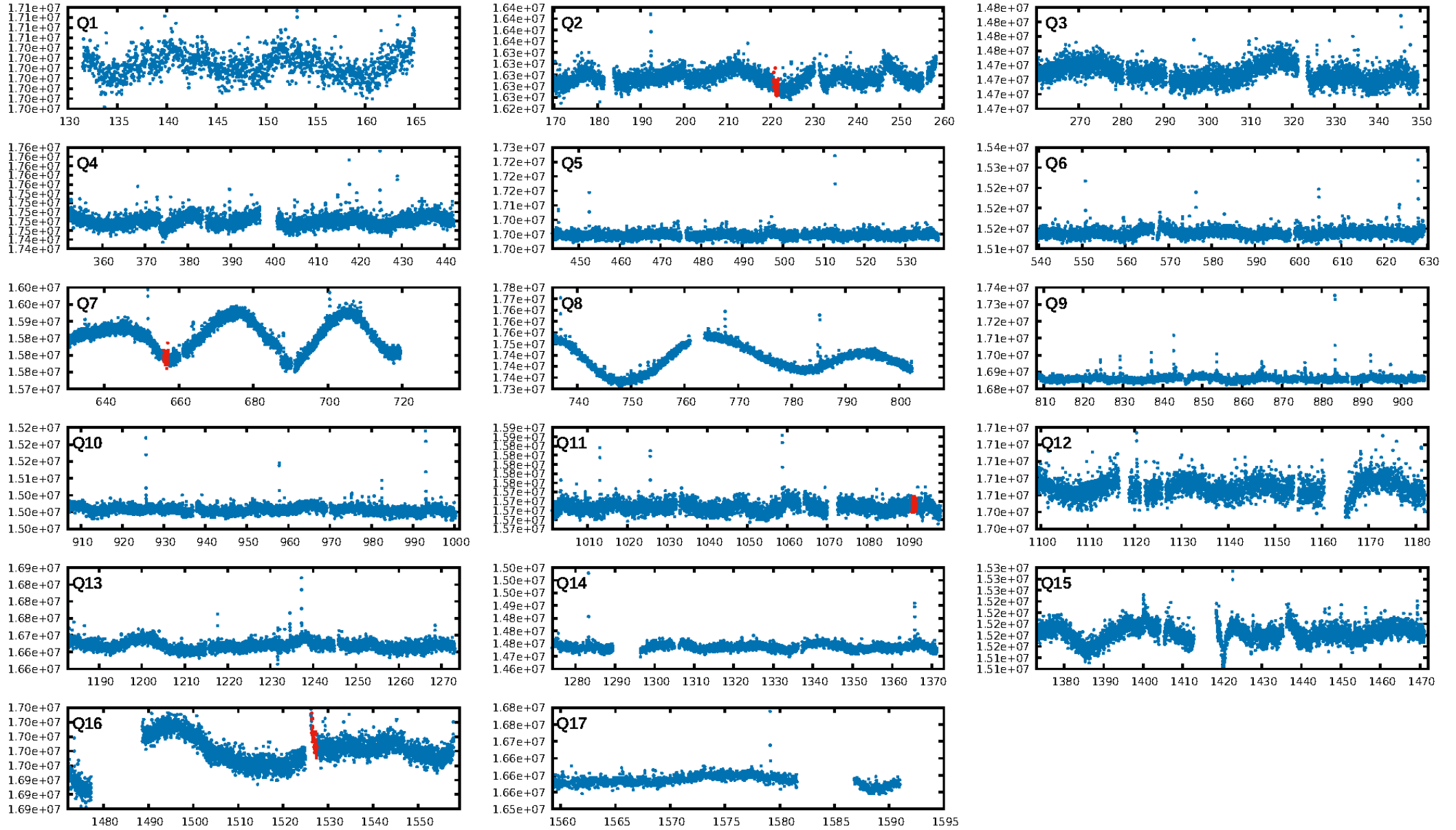
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 64.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.16e-10  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 0.03267  
Centroid-sig: 90.2%  
Centroid-so: 0.312 arcsec [0.09σ]  
OotOffset-rm: 0.755 arcsec [1.59σ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-rm: 1.136 arcsec [2.39σ]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [3/3]

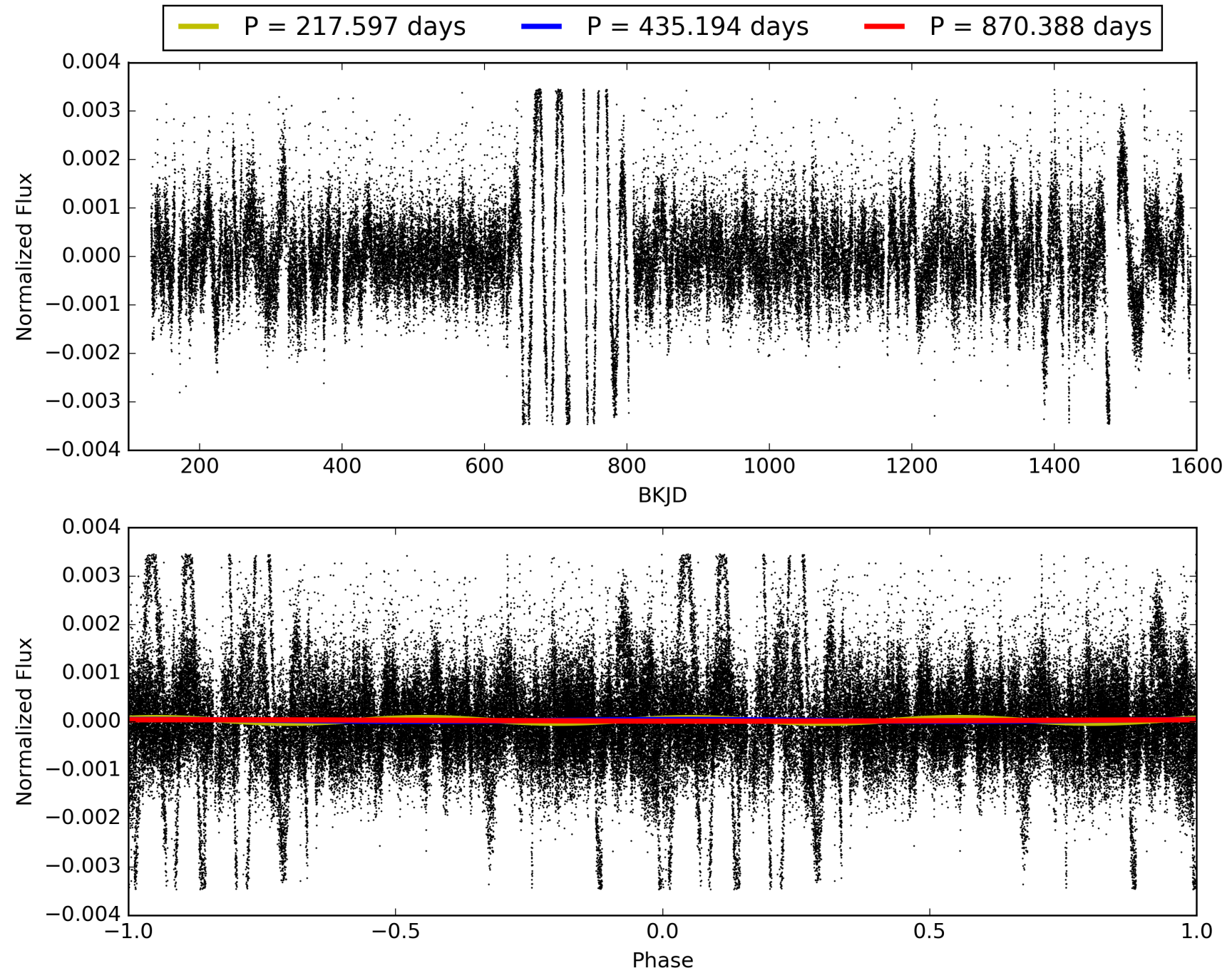
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:53:15 Z

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

# TCE 006389733-01, PDC Light Curves

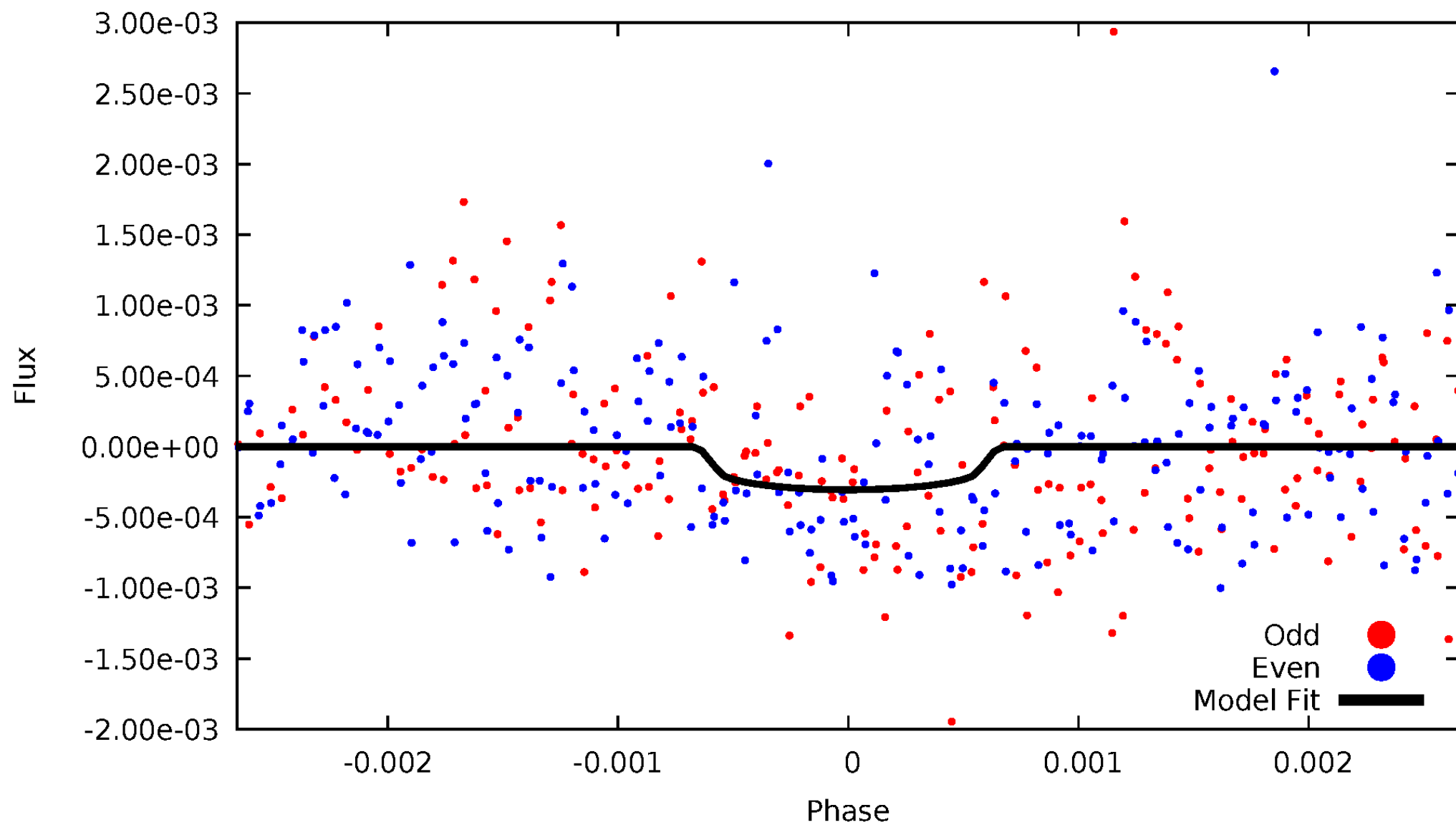


TCE 006389733-01



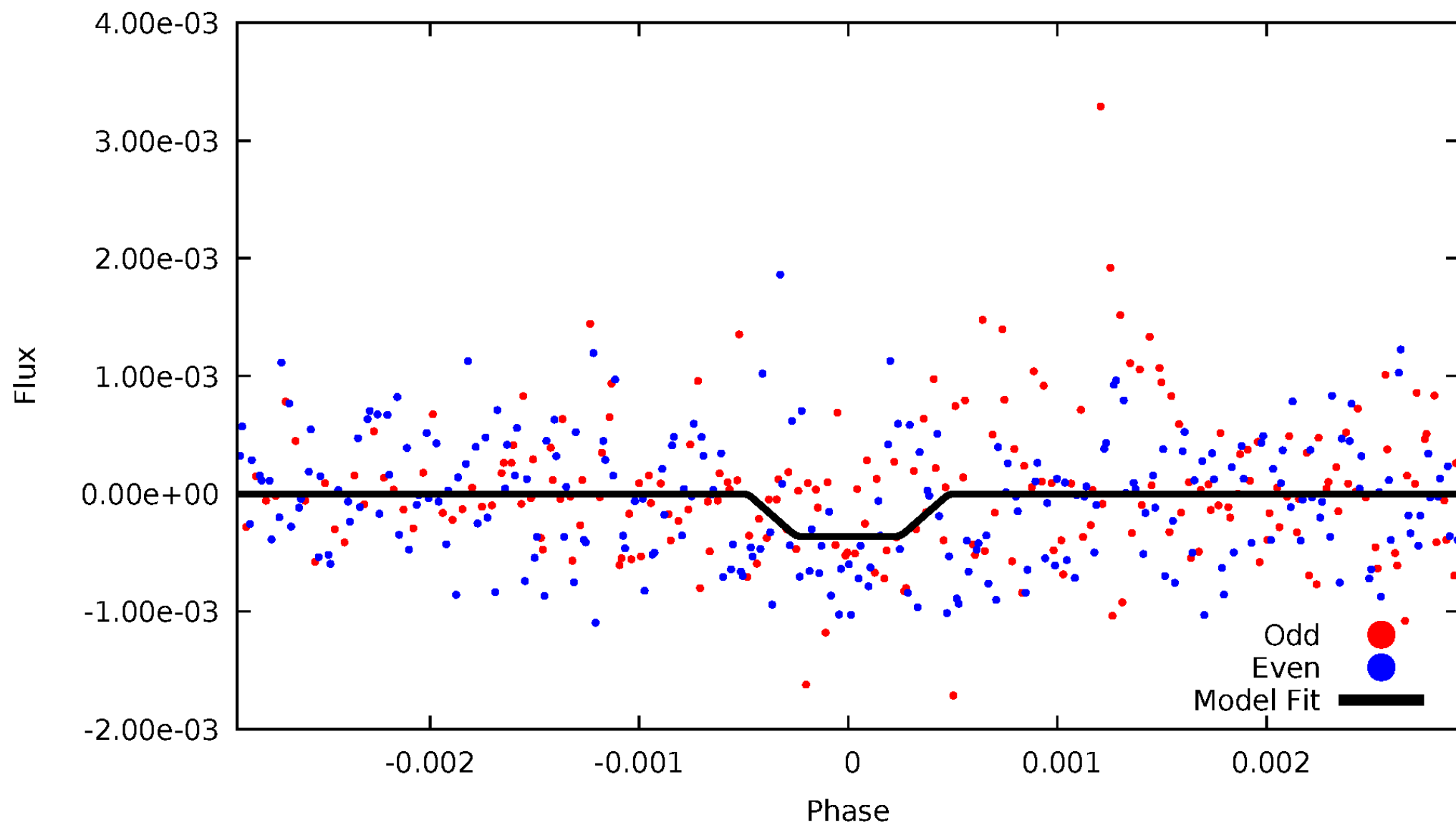
# DV Odd/Even

TCE 006389733-01



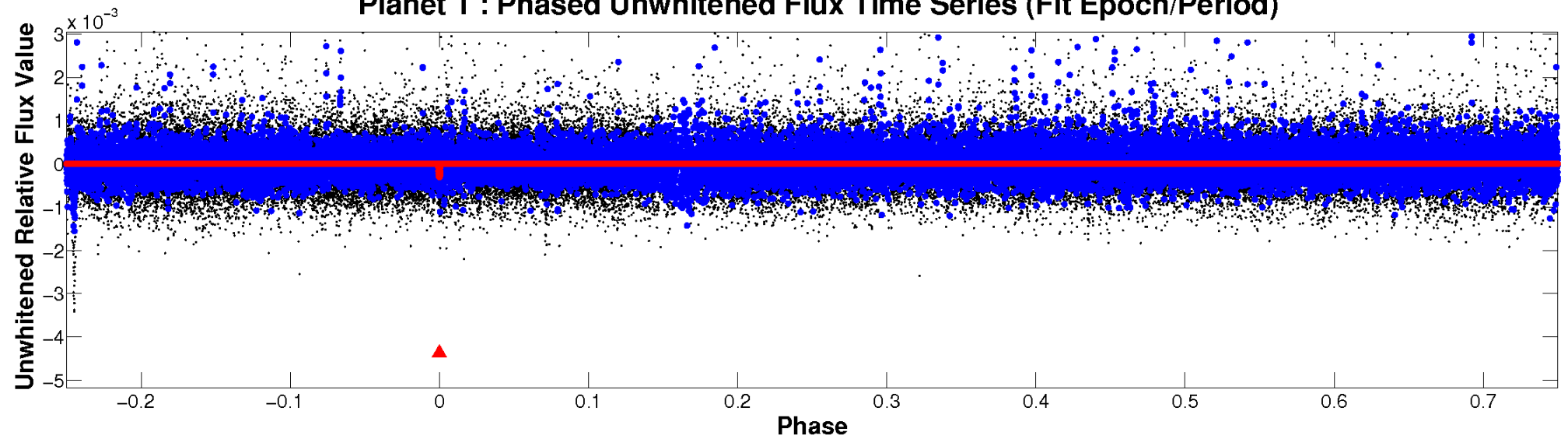
# ALT Odd/Even

TCE 006389733-01

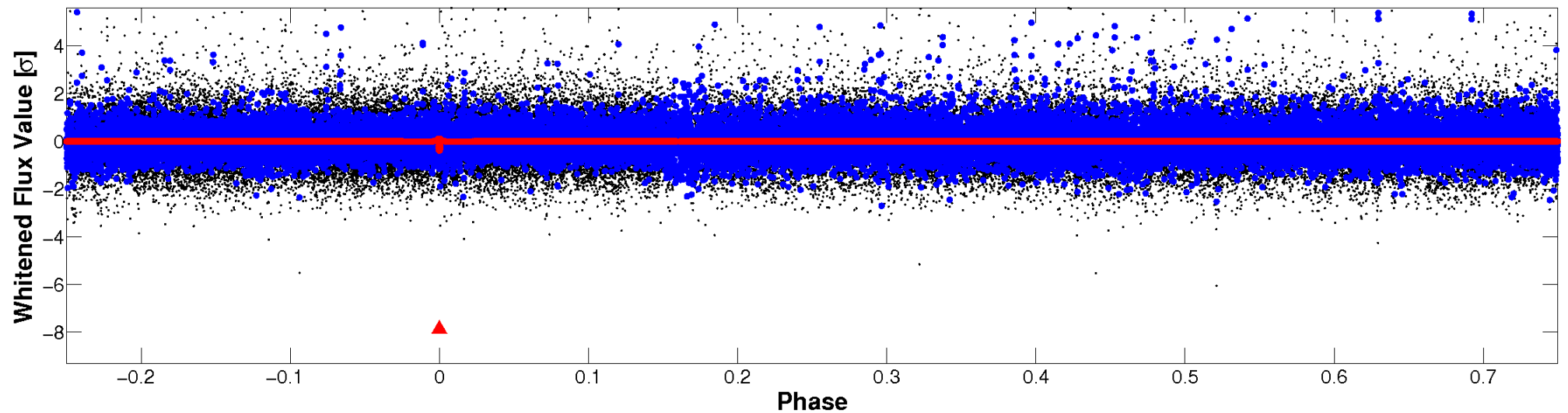


# Non-Whitened Vs. Whitened Light Curve

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



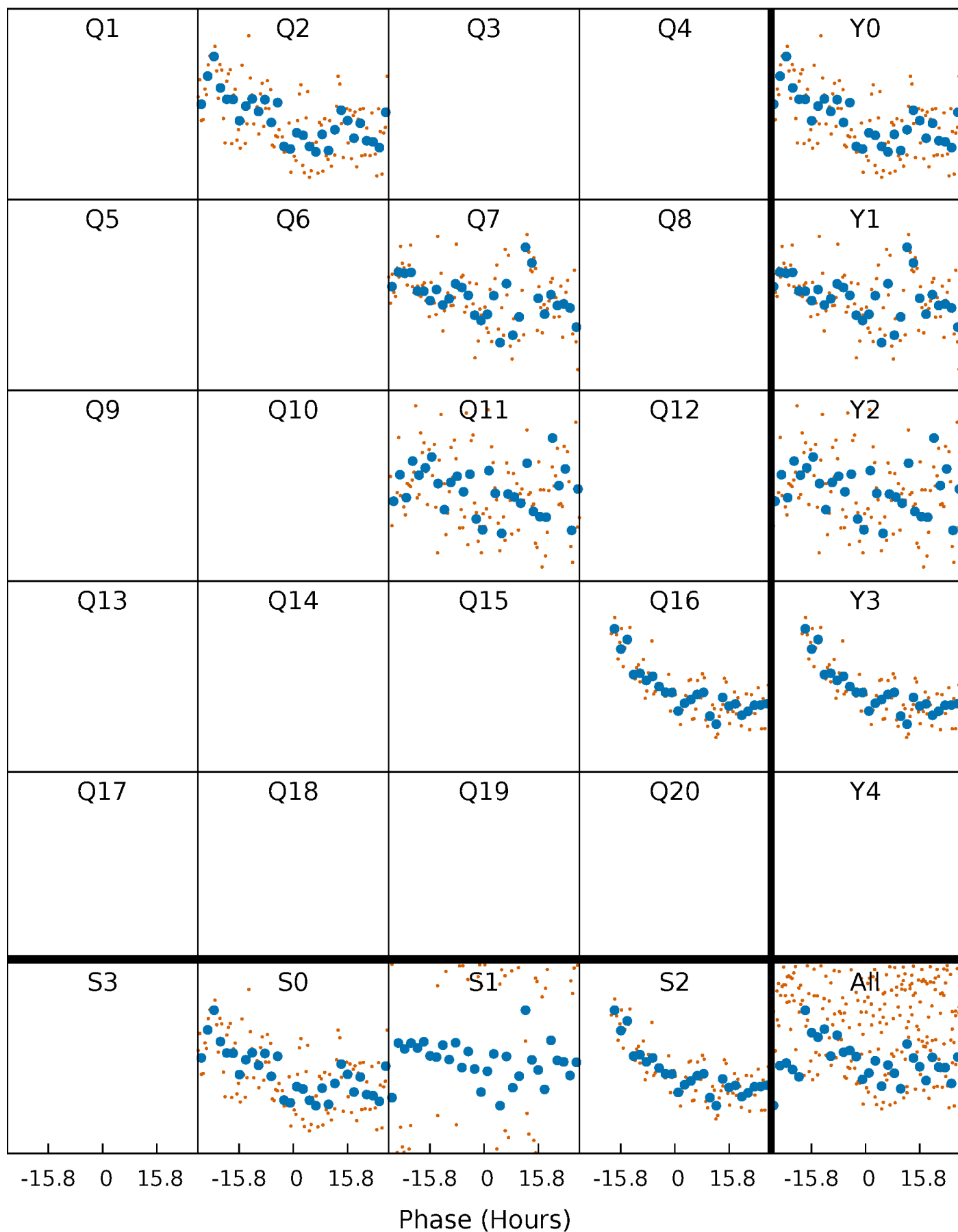
Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

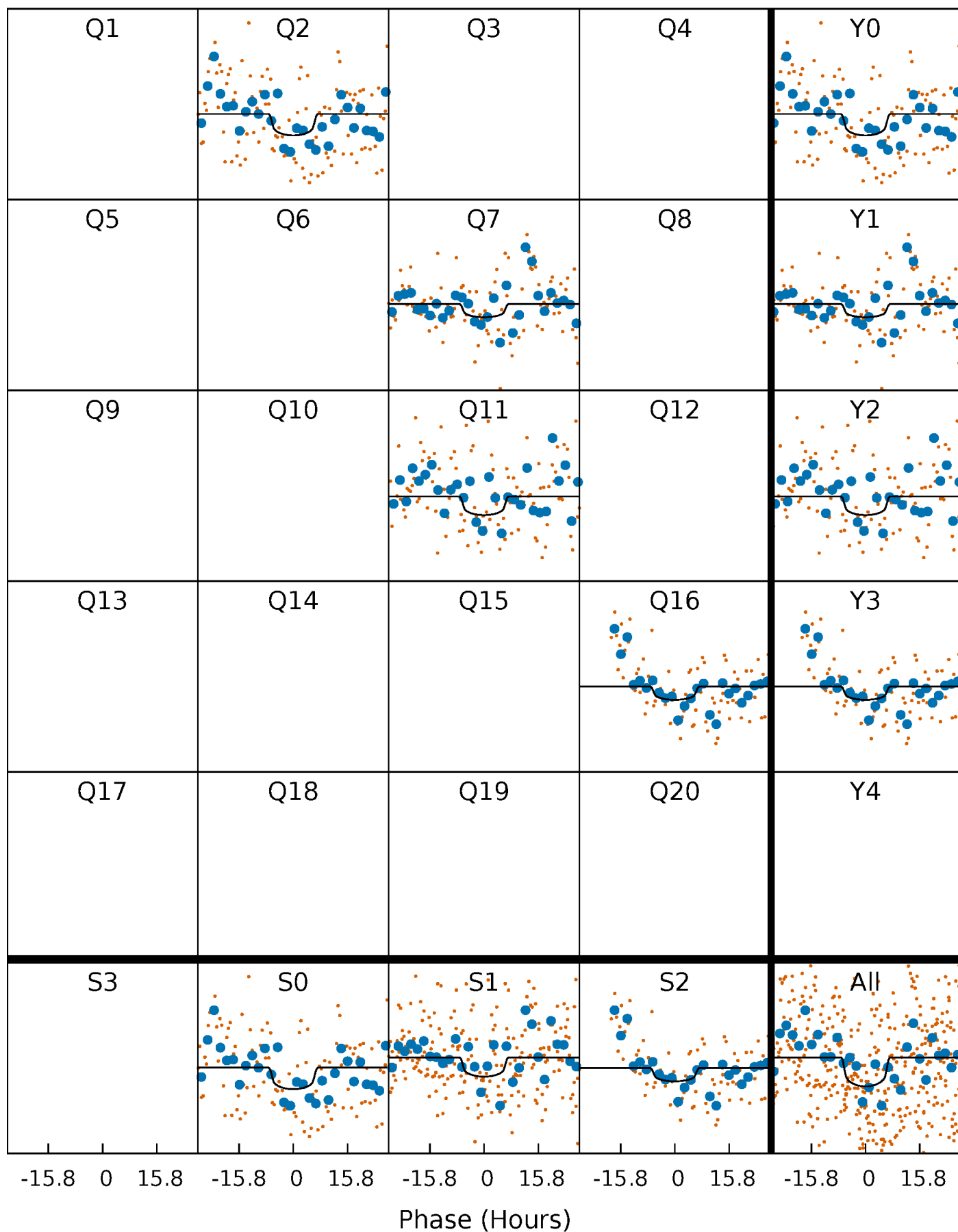
TCE 006389733-01 P=435.194060 Days  $T_0=221.328831$  (BKJD)





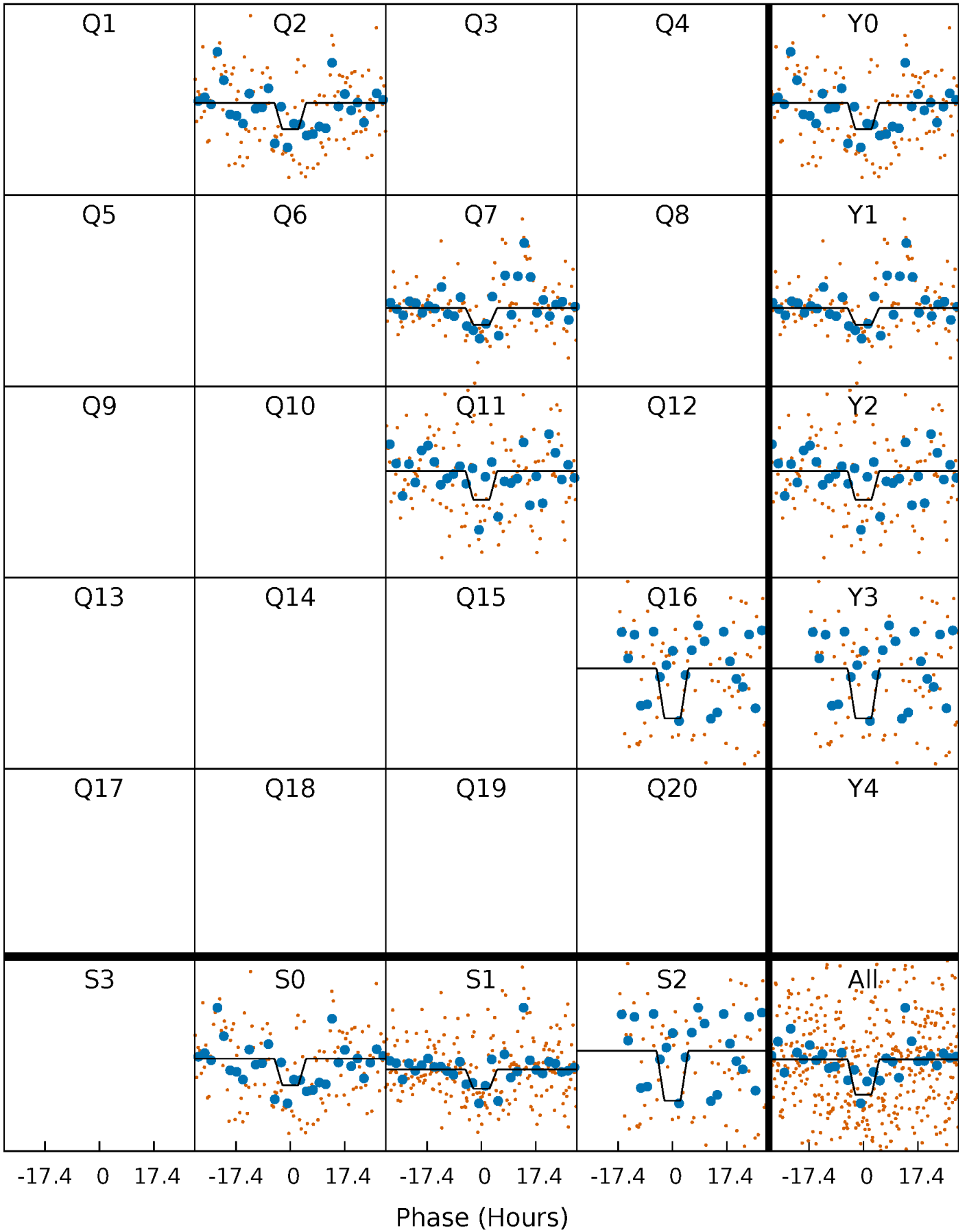
# DV Quarter-Phased Transit Curves

TCE 006389733-01 P=435.194060 Days  $T_0=221.328831$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

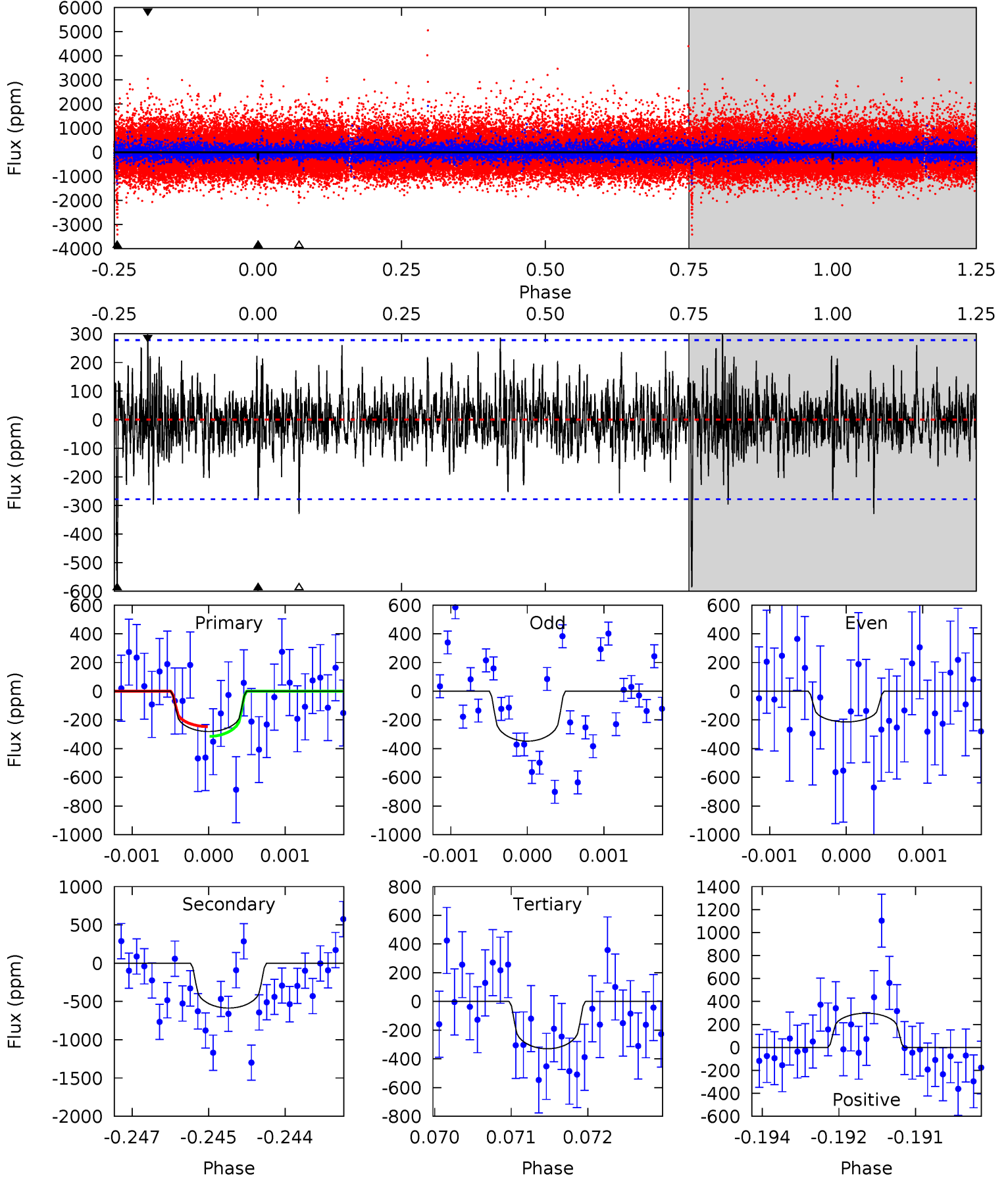
TCE 006389733-01 P=435.180339 Days  $T_0=221.319202$  (BKJD)



# DV Model-Shift Uniqueness Test

006389733-01, P = 435.194060 Days, E = 221.328831 Days

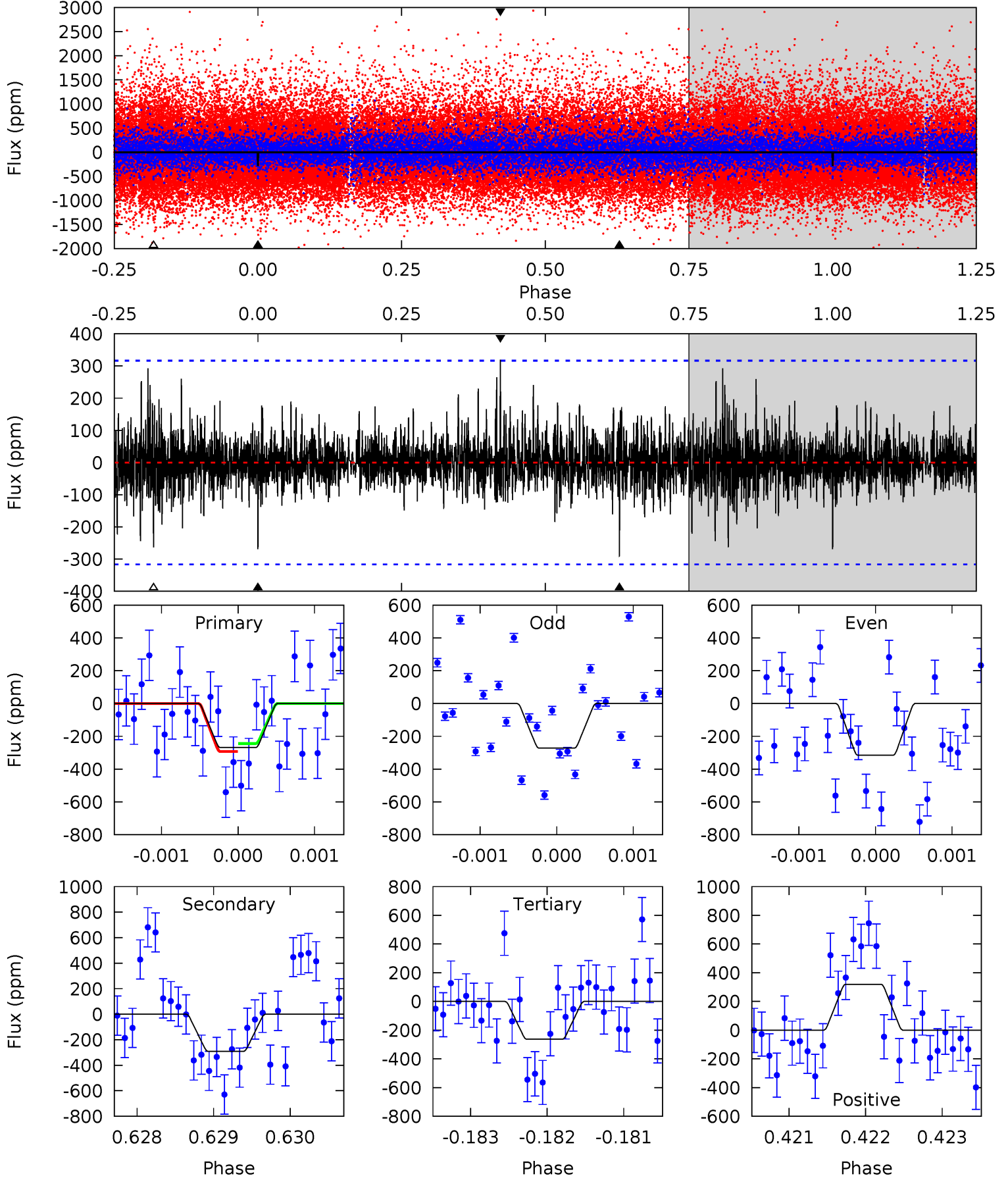
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.46	11.4	6.40	5.78	5.40	3.20	1.44	-0.94	-0.32	4.98	5.60	1.17	0.94	0.34	0.67



# Alt Model-Shift Uniqueness Test

006389733-01, P = 435.180339 Days, E = 221.319202 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
4.62	5.01	4.54	5.51	5.46	3.30	1.05	0.09	-0.88	0.47	-0.50	0.37	1.01	0.52	0.42



### Stellar Parameters For KIC 006389733

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3821^{+120}_{-147}$	$4.656^{+0.063}_{-0.018}$	$0.560^{+0.050}_{-0.300}$	$0.604^{+0.028}_{-0.070}$	$0.603^{+0.035}_{-0.060}$	$3.853^{+1.228}_{-0.340}$
	+3%/-4%	+1%/-0%	+9%/-54%	+5%/-12%	+6%/-10%	+32%/-9%
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 006389733-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-586 \pm 52$	$1.28^{+0.59}_{-0.59}$	$186^{+7}_{-8}$	$4100^{+1075}_{-515}$	$180512^{+437628}_{-96544}$
Alt.	$-291 \pm 58$	$1.25^{+0.63}_{-0.55}$	$186^{+7}_{-8}$	$3642^{+850}_{-435}$	$92268^{+205826}_{-53018}$

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

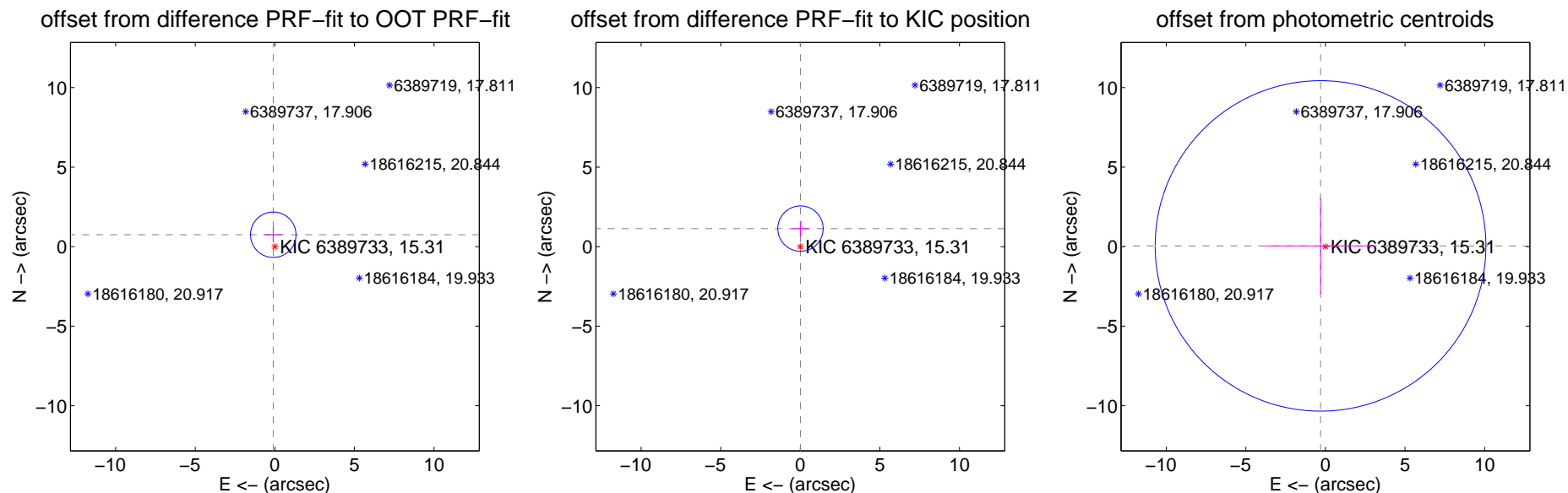
## DV Centroid Data

Supplemental centroid analysis for 006389733-01. Kepler magnitude: 15.31. Transit SNR 3.42

There are 1 quarters with good PRF difference image offsets

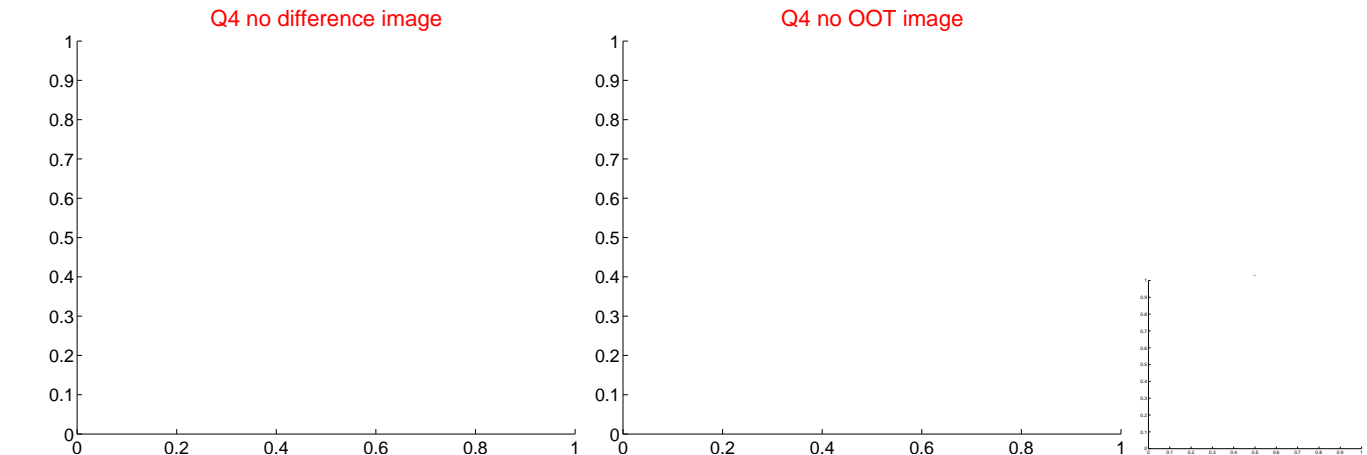
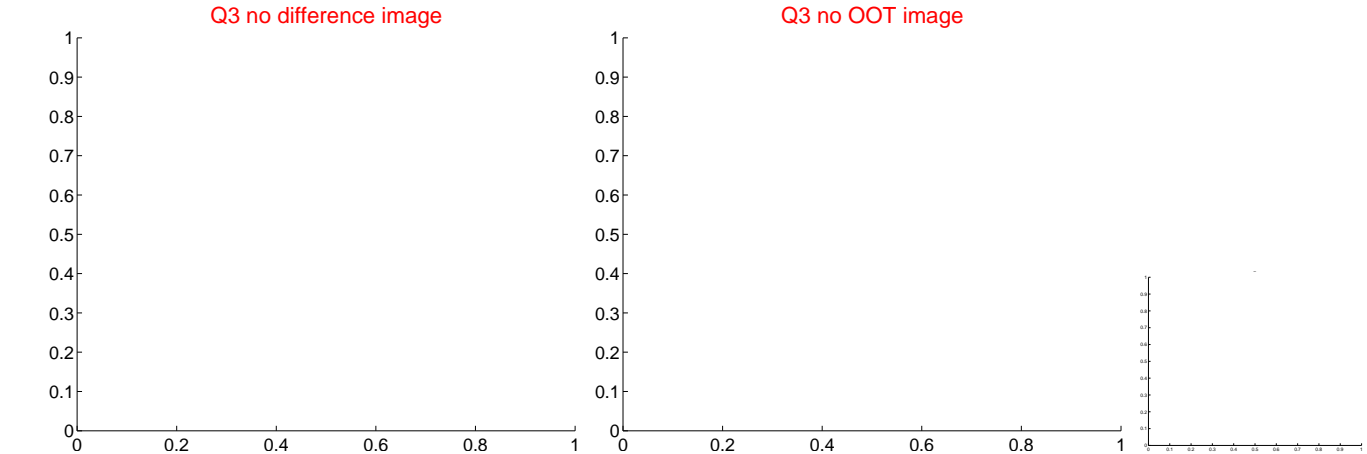
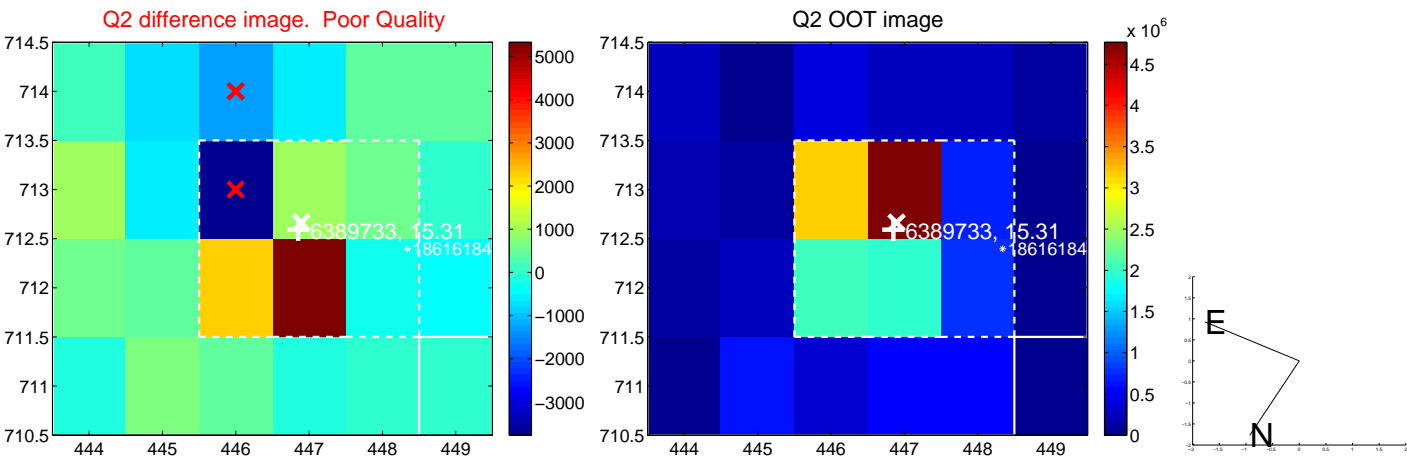
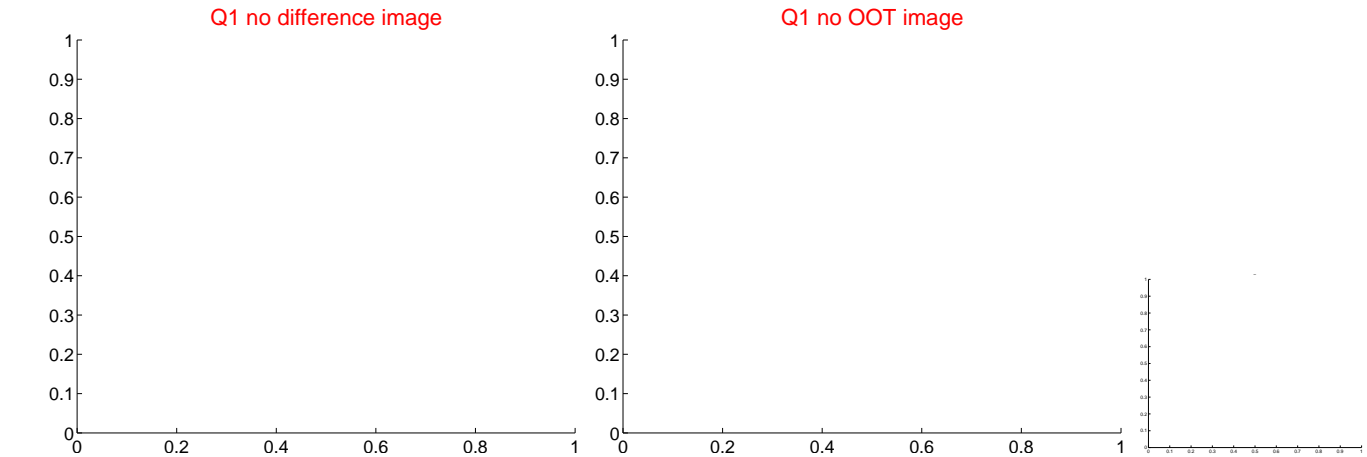
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.755 \pm 0.476$	1.59	$0.099 \pm 0.536$	$0.749 \pm 0.475$
PRF-fit source offset from KIC position	$1.136 \pm 0.475$	2.39	$-0.012 \pm 0.536$	$1.136 \pm 0.475$
photometric centroid source offset	$0.31 \pm 3.46$	0.09	$0.31 \pm 3.47$	$0.05 \pm 3.02$



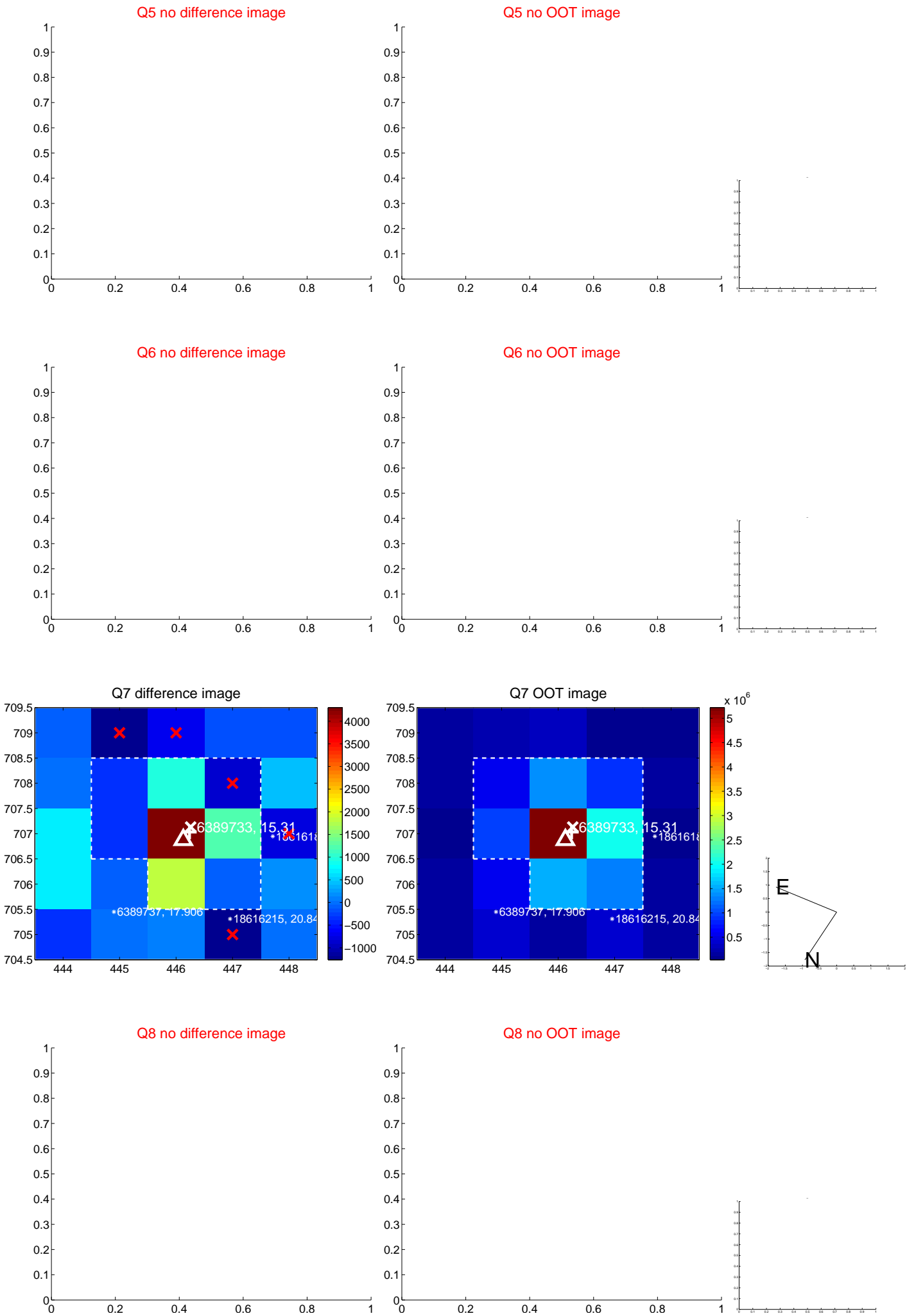
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

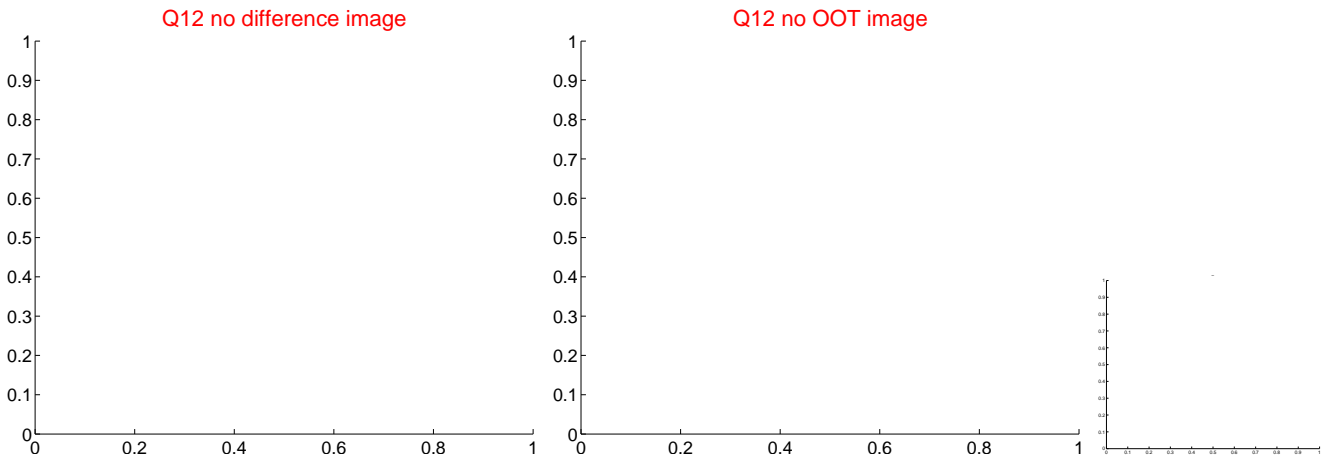
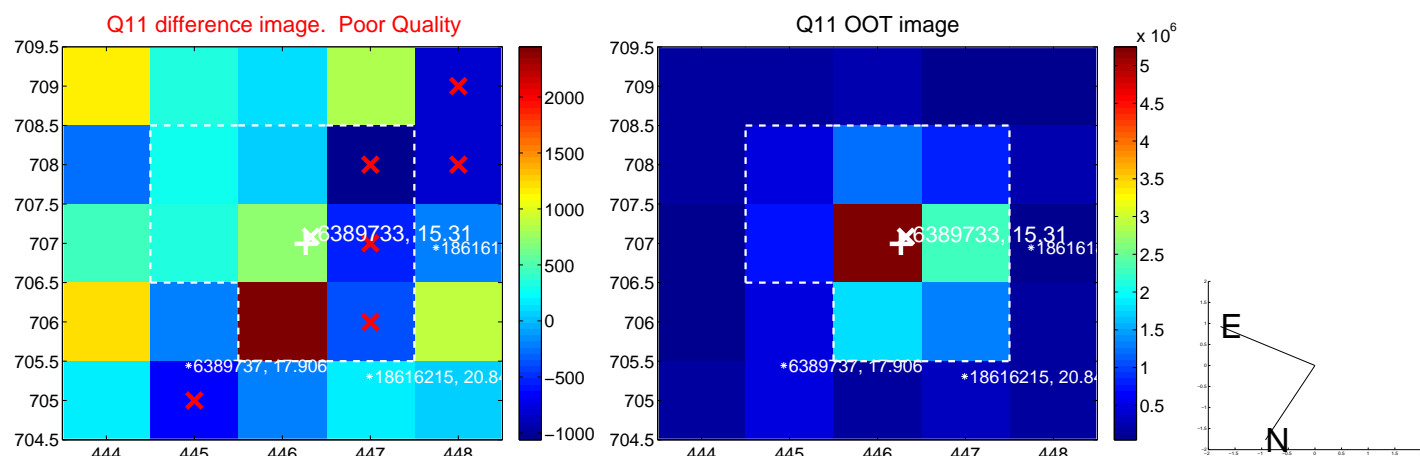
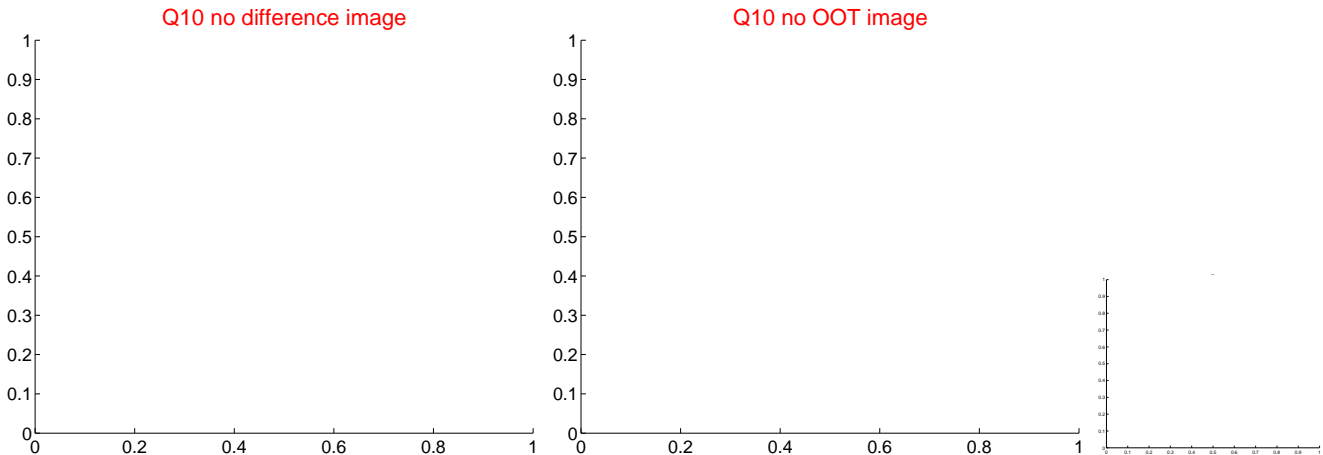
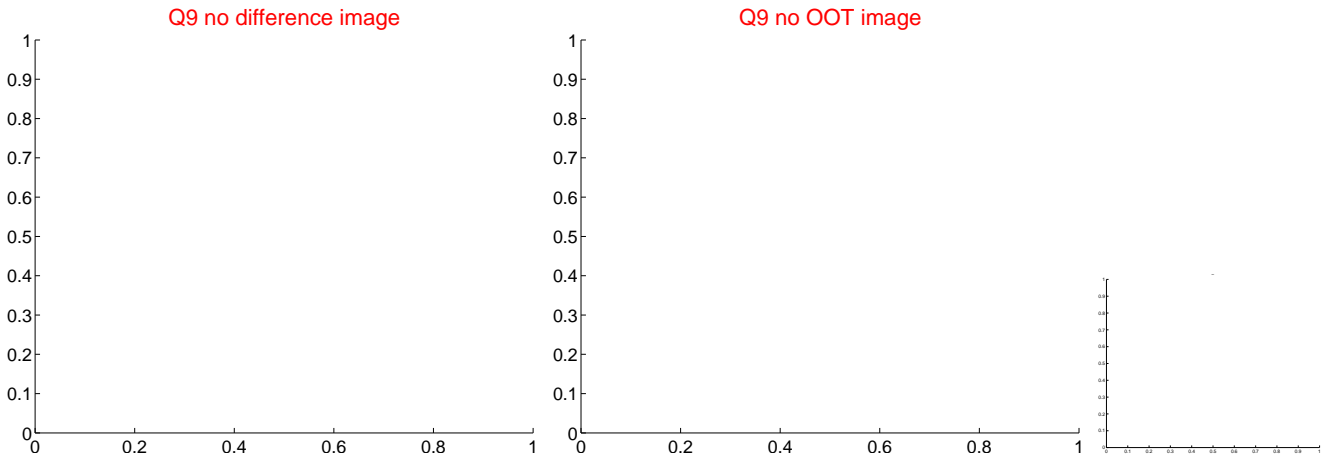




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



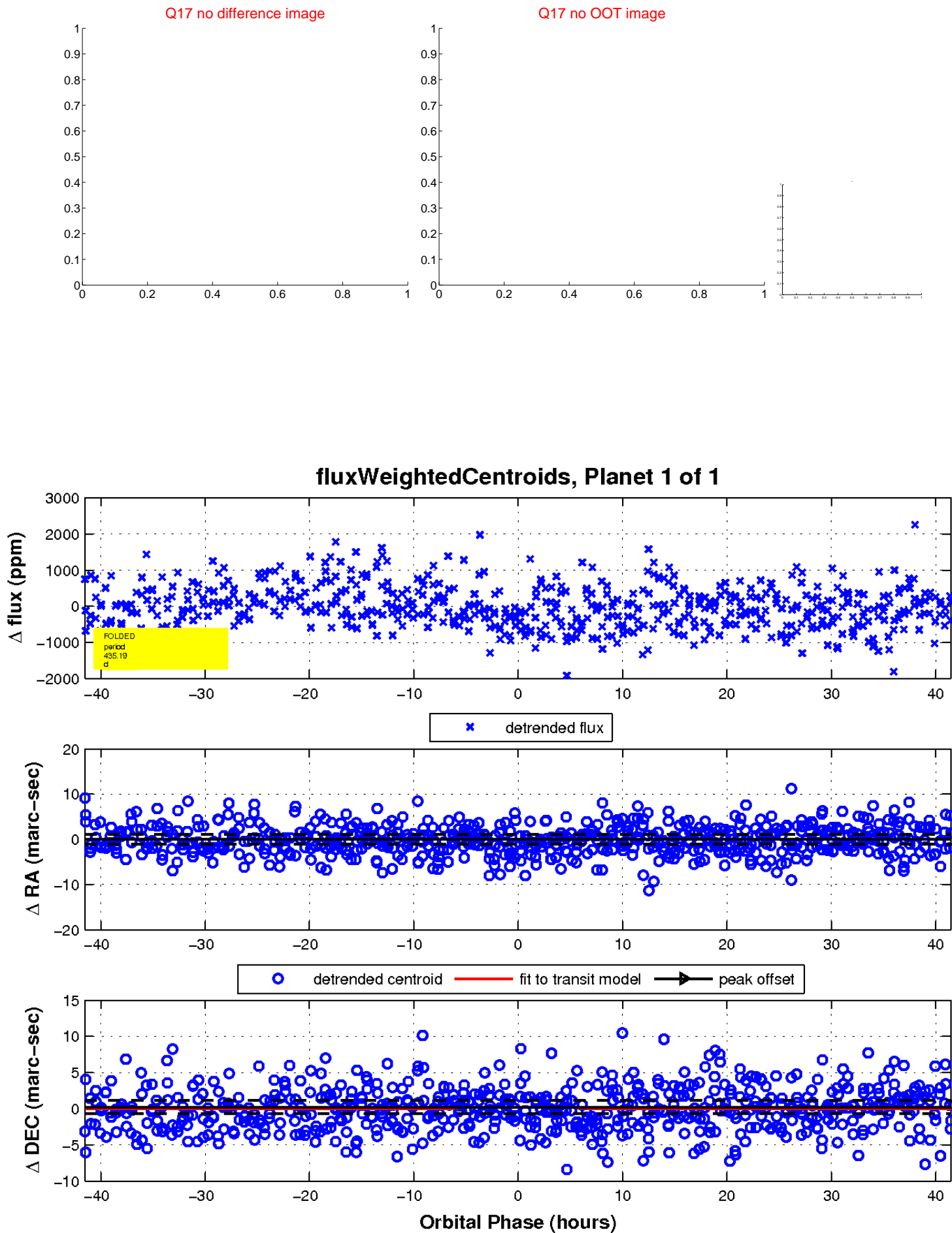
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



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



UKIRT Image

Declination

