

# KIC 006629993

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006629993-01	OBS	4392.01	118.649361	171.914028	381.1	18.313	12.8	12.5	0.79	5017	1.55	1.89

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006629993-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET—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 006629993-01

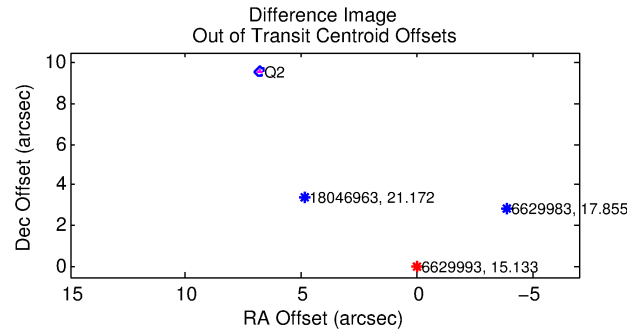
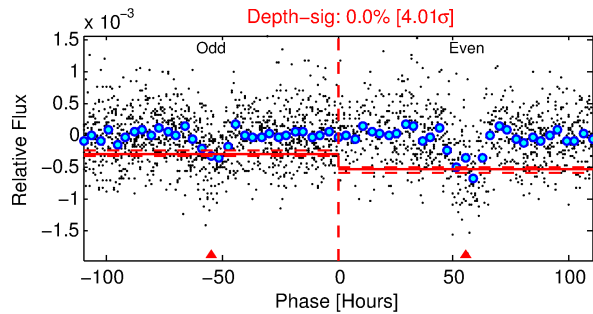
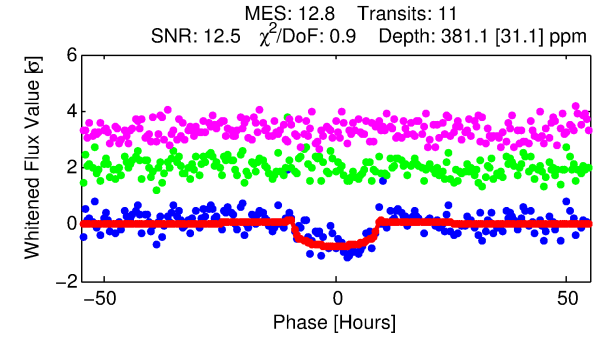
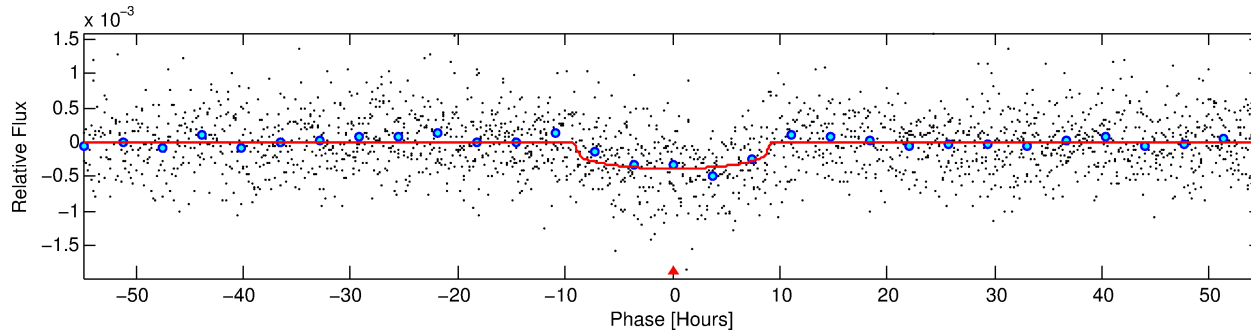
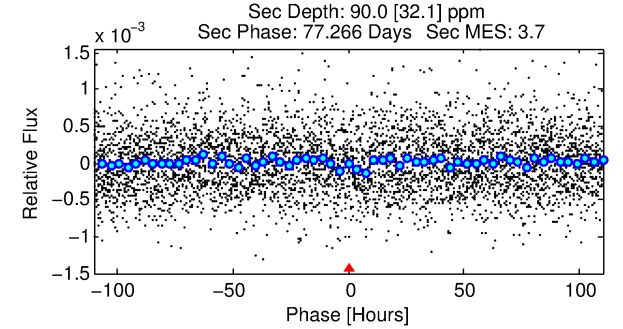
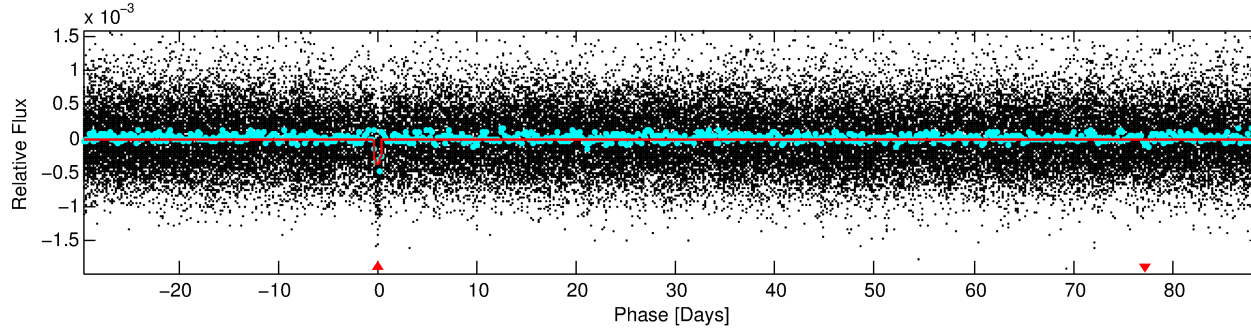
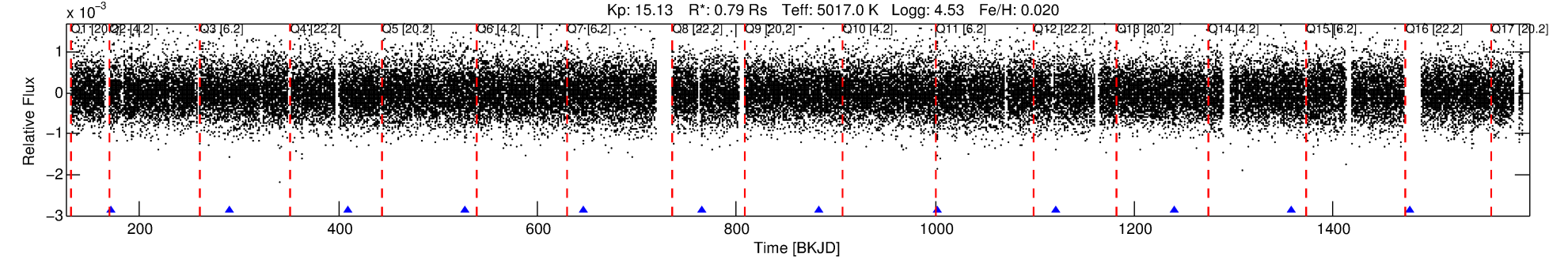
No Significant Match Found

# DV One-Page Summary

KIC: 6629993 Candidate: 1 of 1 Period: 118.649 d

KOI: K04392.01 Corr: 0.834

Kp: 15.13 R\*: 0.79 Rs Teff: 5017.0 K Logg: 4.53 Fe/H: 0.020



## DV Fit Results:

Period = 118.64936 [0.00325] d  
Epoch = 171.9140 [0.0198] BKJD  
Rp/R\* = 0.0179 [0.0116]  
a/R\* = 45.04 [100.10]  
b = 0.46 [3.90]  
Seff = 1.89 [0.32]  
Teq = 299 [13] K  
Rp = 1.55 [1.02] Re  
a = 0.4345 [0.0363] AU  
Ag = 3909.10 [5288.48] [0.74σ]  
Teff = 3653 [1235] K [2.71σ]

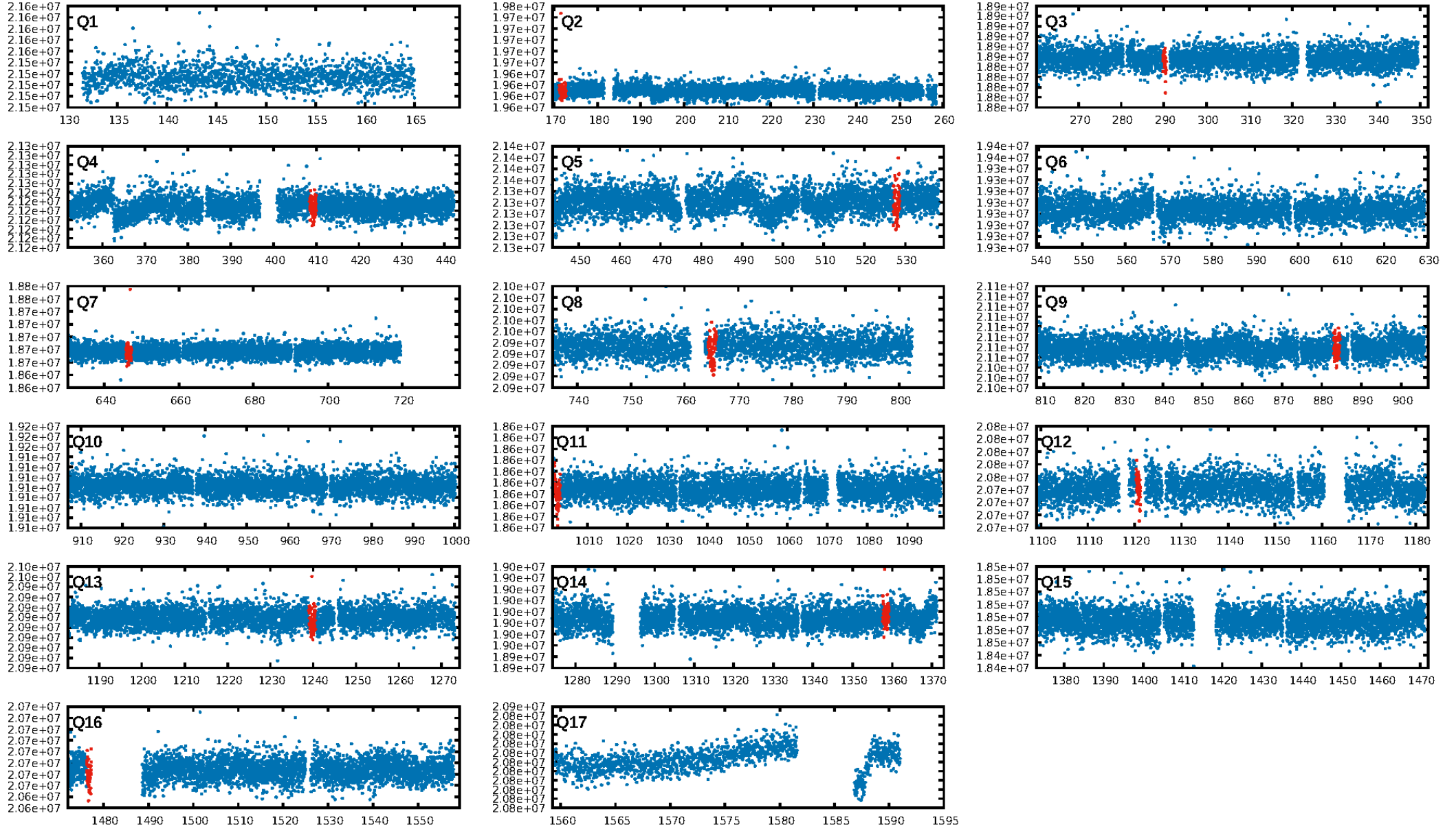
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 3.6%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: 2.51e-37  
RollingBand-fgt: 1.00 [11/11]  
GhostDiagnostic-chr: 0.1662  
Centroid-sig: 0.0%  
Centroid-so: 9.767 arcsec [6.81σ]  
OotOffset-rm: 11.746 arcsec [172.55σ]  
KicOffset-rm: 11.865 arcsec [174.30σ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [7/7]

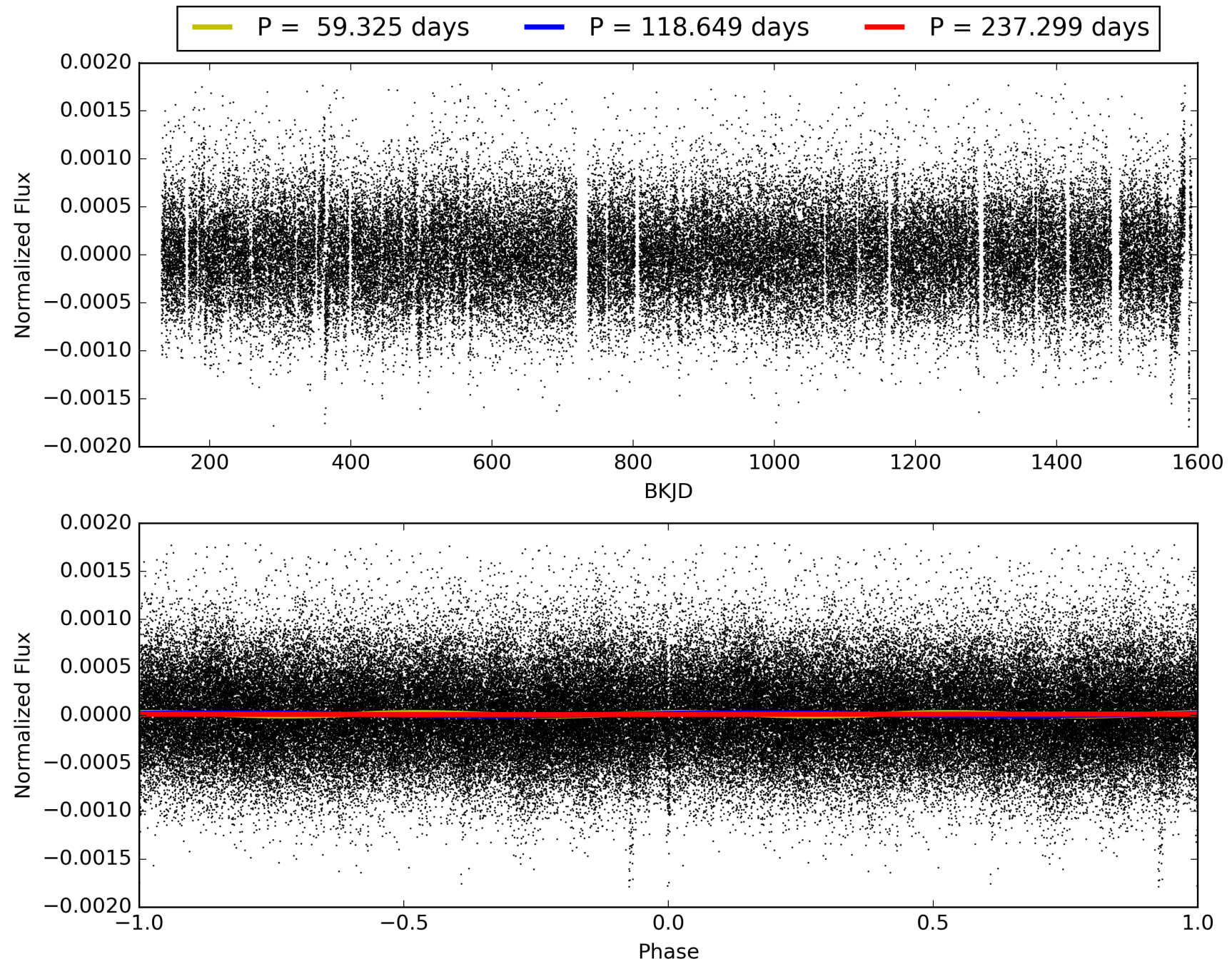
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:40:45 Z

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

# TCE 006629993-01, PDC Light Curves

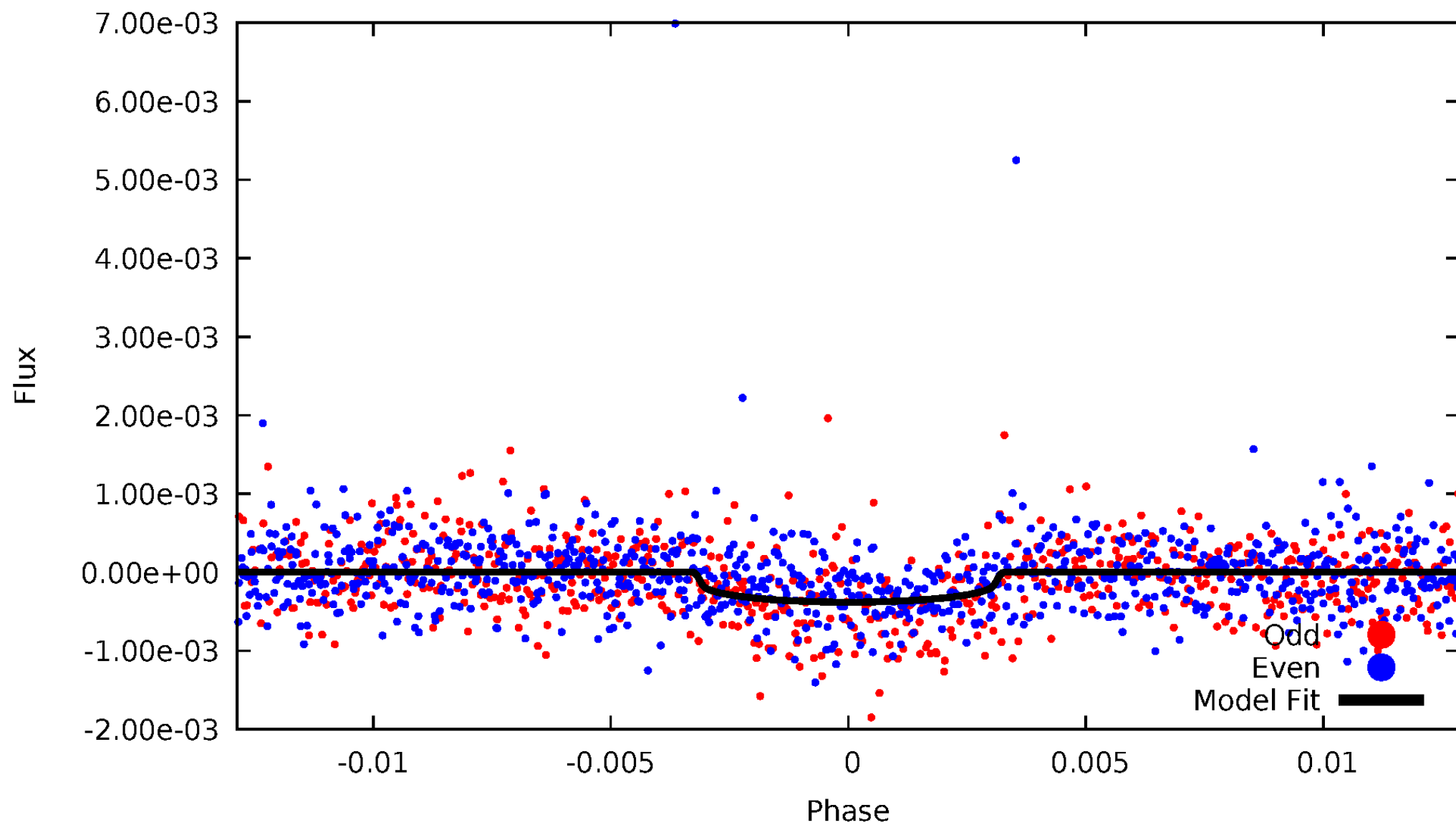


TCE 006629993-01



# DV Odd/Even

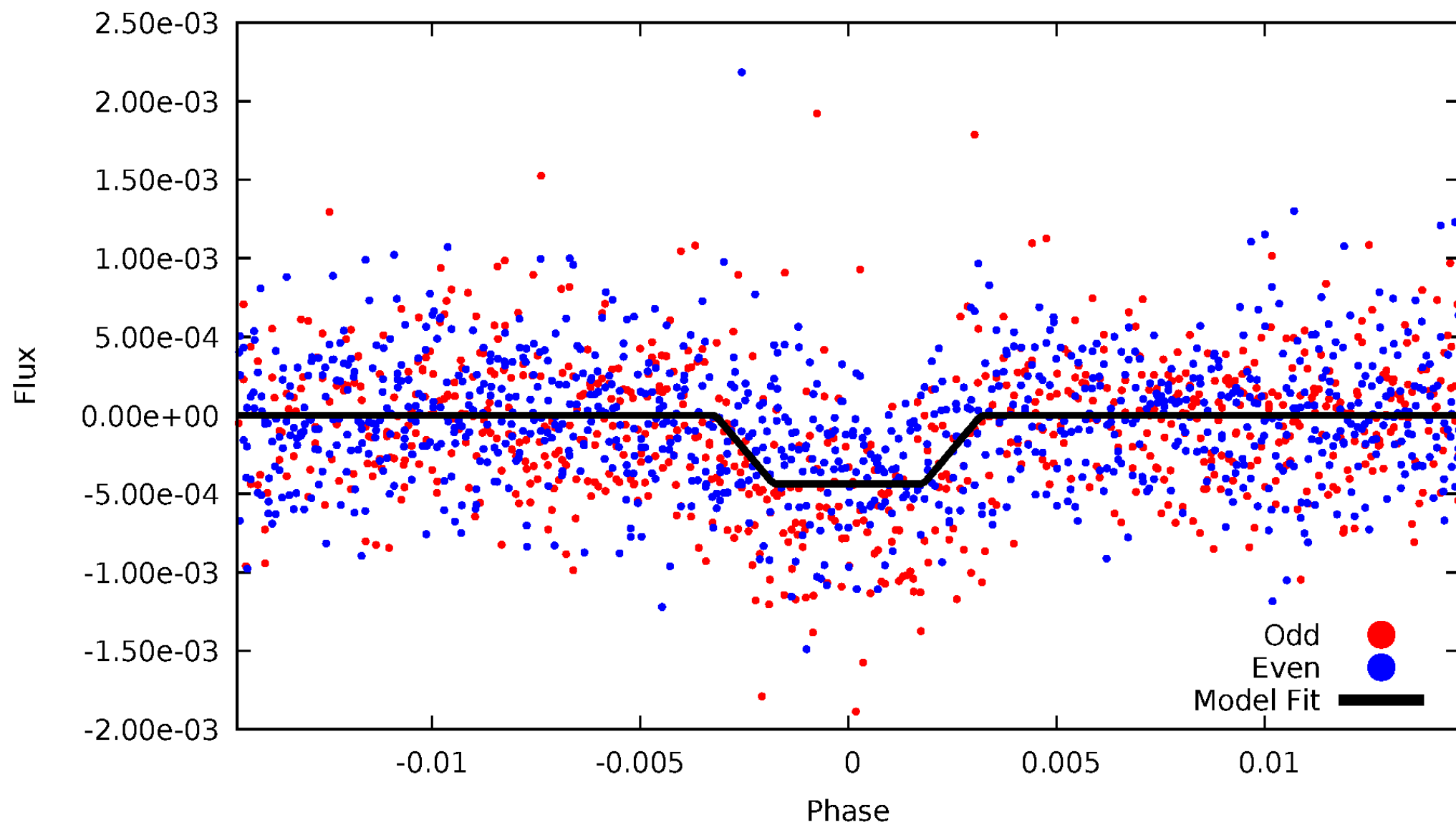
TCE 006629993-01





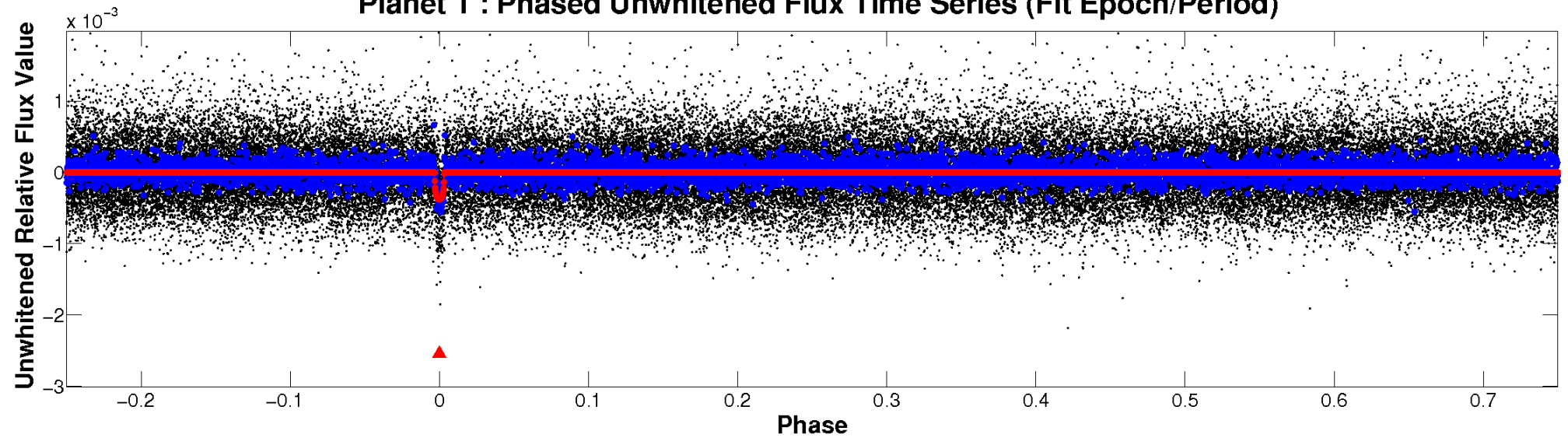
# ALT Odd/Even

TCE 006629993-01

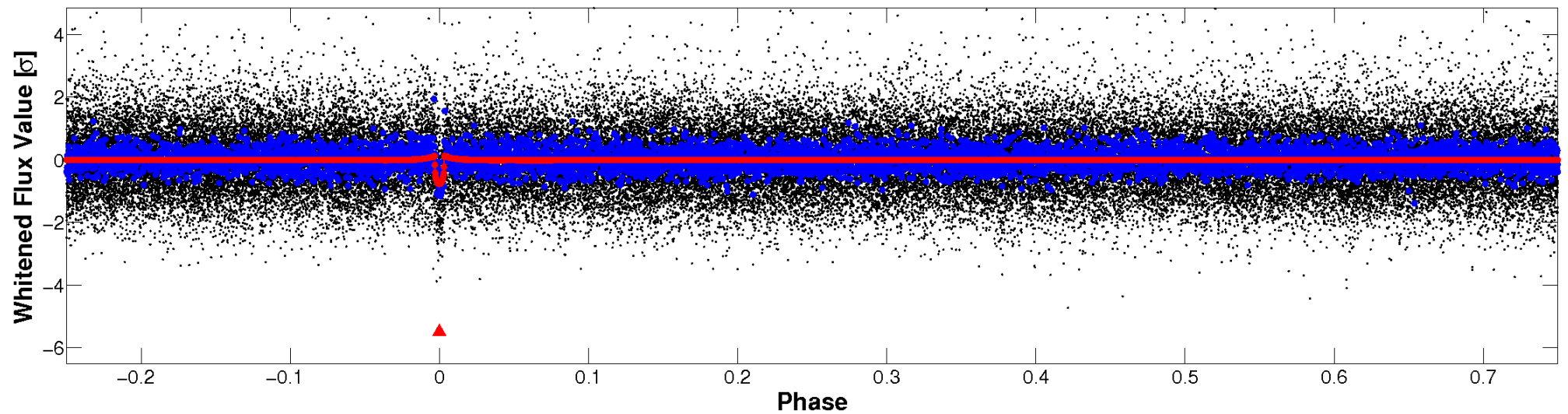


# Non-Whitened Vs. Whitened Light Curve

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

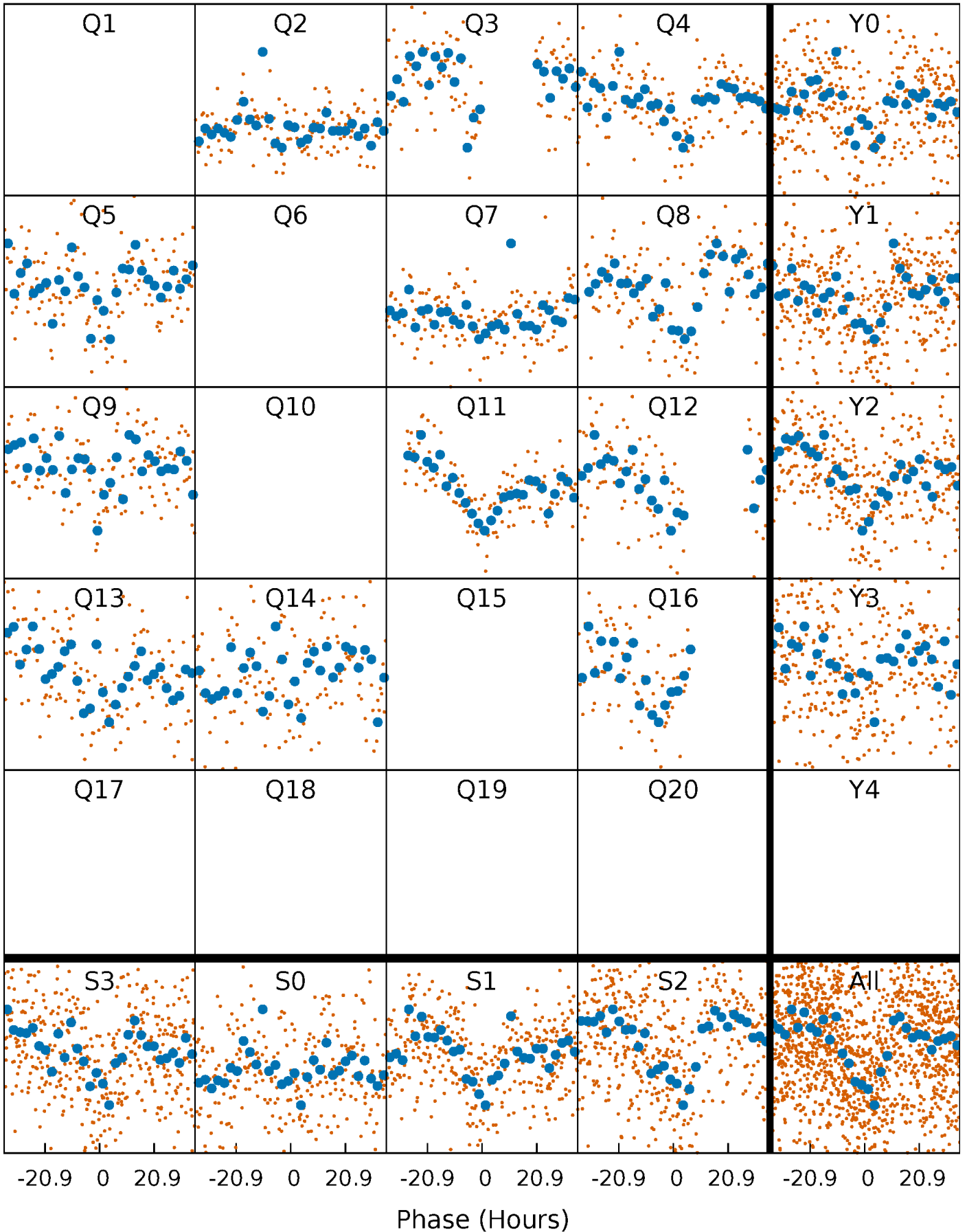


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

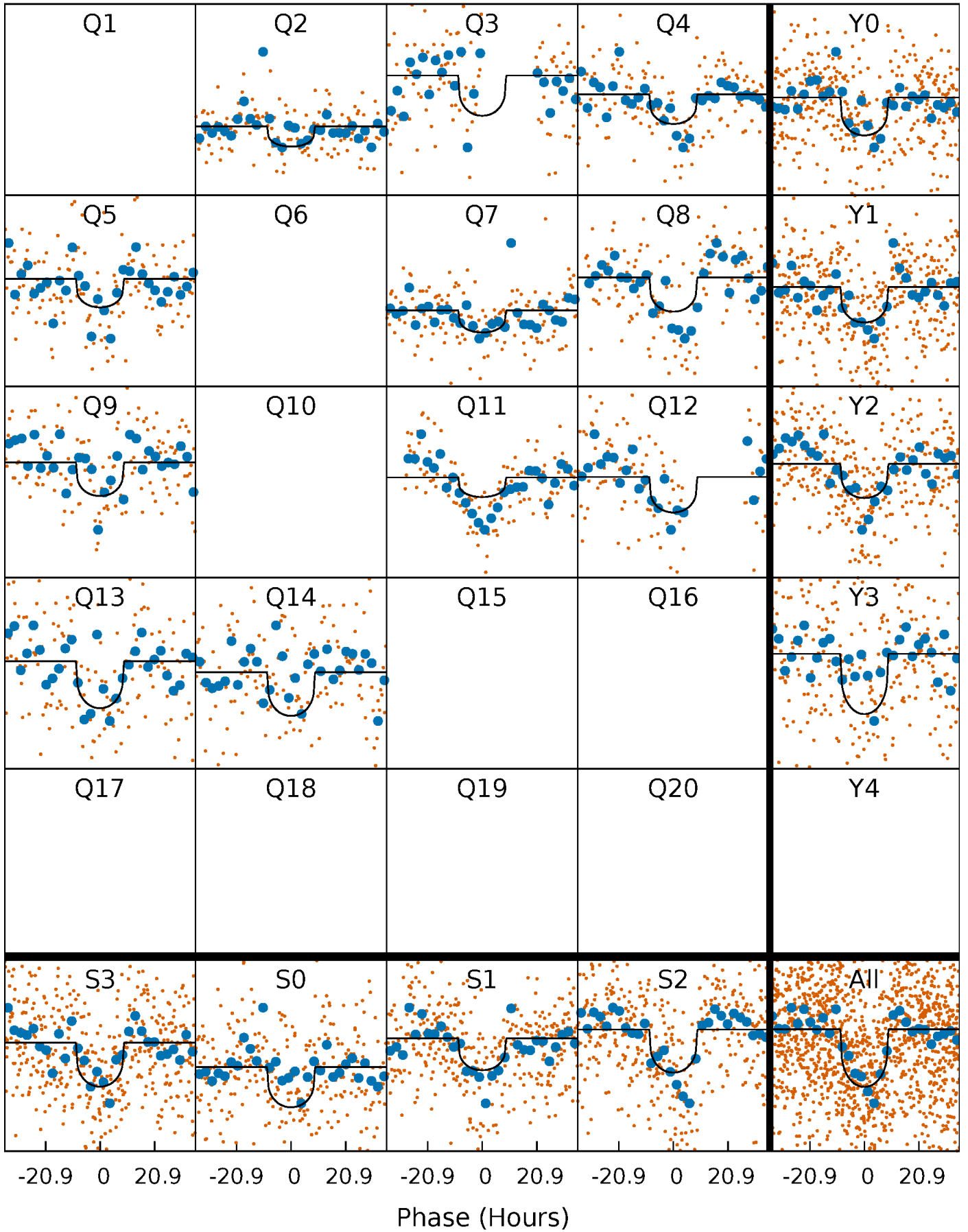
TCE 006629993-01 P=118.649361 Days  $T_0=171.914028$  (BKJD)





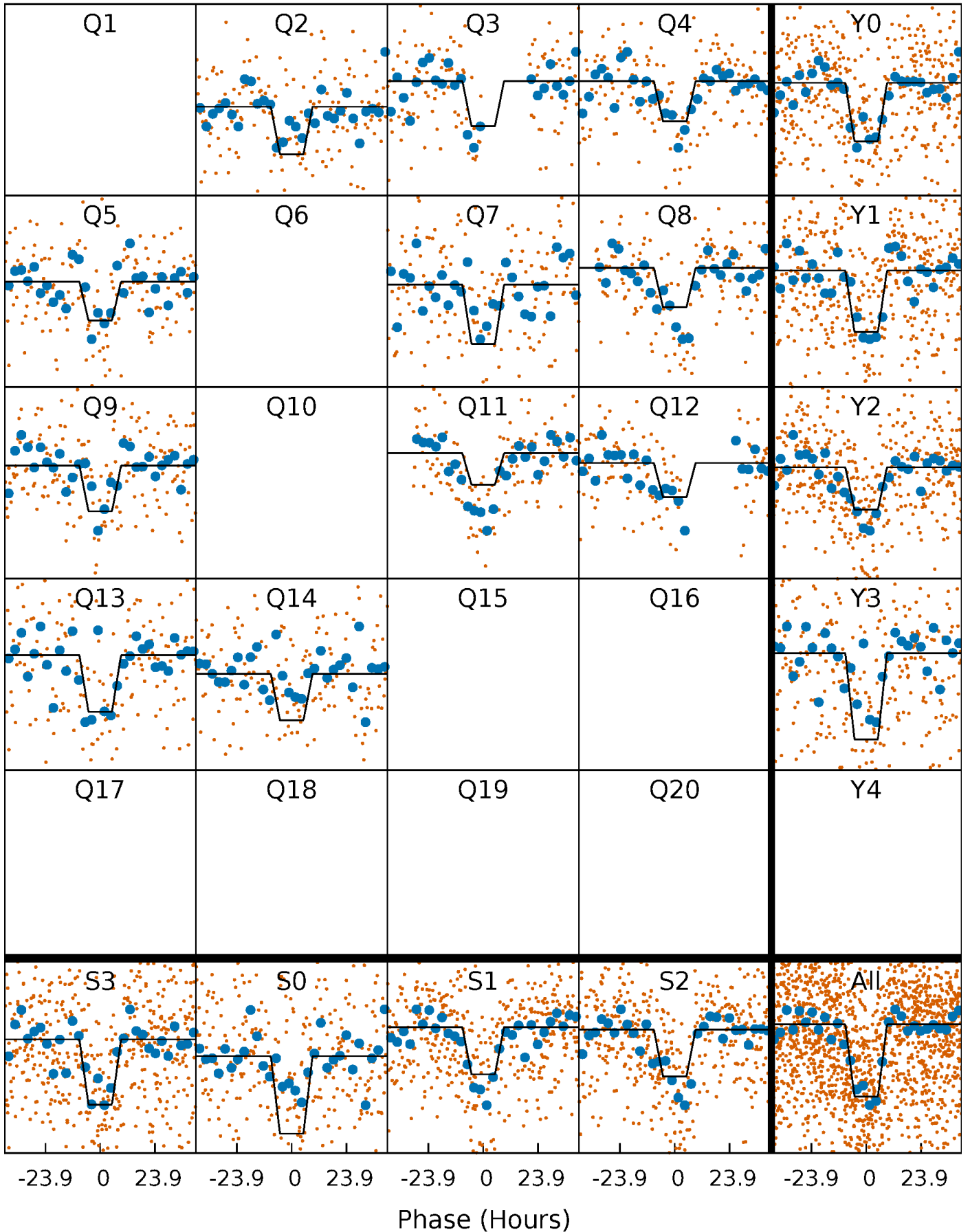
# DV Quarter-Phased Transit Curves

TCE 006629993-01 P=118.649361 Days  $T_0=171.914028$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

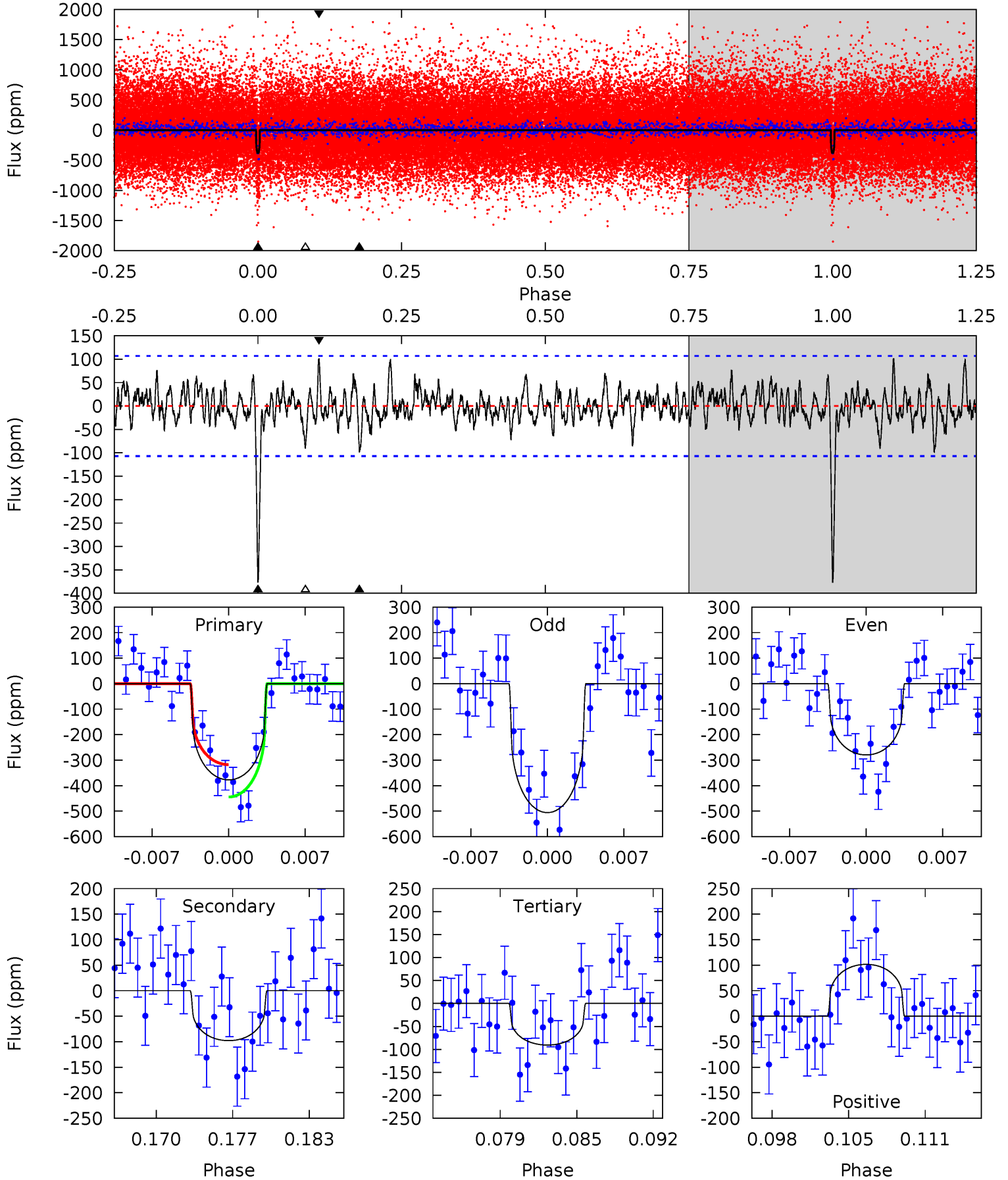
TCE 006629993-01 P=118.650872 Days  $T_0=171.938754$  (BKJD)



# DV Model-Shift Uniqueness Test

006629993-01, P = 118.649361 Days, E = 53.264667 Days

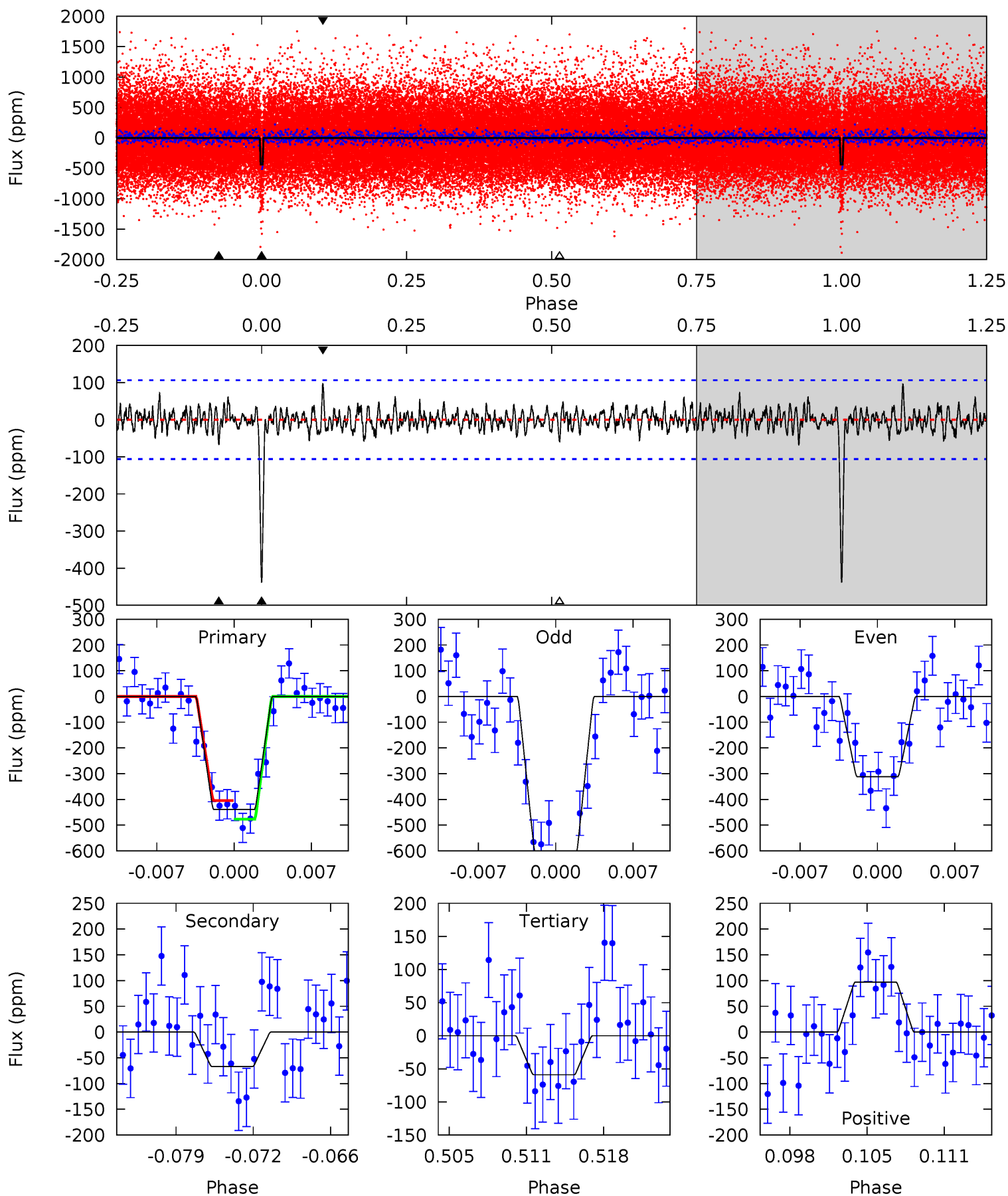
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	4.67	4.32	4.85	5.11	2.72	1.30	13.7	13.2	0.35	-0.18	5.36	1.12	0.21	3.02



# Alt Model-Shift Uniqueness Test

006629993-01,  $P = 118.650872$  Days,  $E = 53.287882$  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
21.1	3.22	2.83	4.67	5.11	2.72	1.01	18.3	16.4	0.39	-1.45	7.07	1.03	0.18	1.74



### Stellar Parameters For KIC 006629993

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5017^{+151}_{-151}$	$4.531^{+0.066}_{-0.054}$	$0.020^{+0.250}_{-0.300}$	$0.792^{+0.072}_{-0.079}$	$0.776^{+0.078}_{-0.064}$	$2.199^{+0.640}_{-0.415}$
	+3%/-3%	+1%/-1%	+1250%/-1500%	+9%/-10%	+10%/-8%	+29%/-19%
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 006629993-01 / KOI 4392.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-98 \pm 21$	$1.63^{+1.02}_{-0.92}$	$417^{+15}_{-16}$	$3901^{+1507}_{-584}$	$3769^{+16673}_{-2376}$
Alt.	$-67 \pm 21$	$1.90^{+0.97}_{-0.96}$	$418^{+15}_{-17}$	$3501^{+904}_{-468}$	$1966^{+5433}_{-1188}$

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



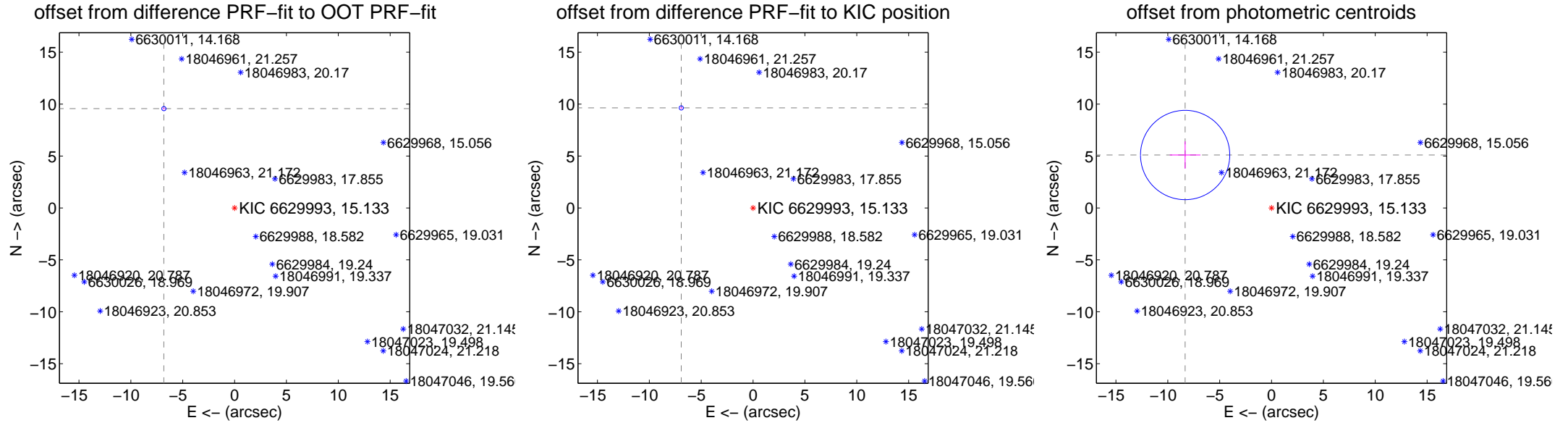
## DV Centroid Data

Supplemental centroid analysis for 006629993-01. Kepler magnitude: 15.13. Transit SNR 12.45

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	11.746 $\pm$ 0.068	172.55	6.816 $\pm$ 0.068	9.566 $\pm$ 0.068
PRF-fit source offset from KIC position	11.865 $\pm$ 0.068	174.30	6.923 $\pm$ 0.068	9.636 $\pm$ 0.068
photometric centroid source offset	9.77 $\pm$ 1.43	6.81	8.33 $\pm$ 1.48	5.10 $\pm$ 1.32



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.

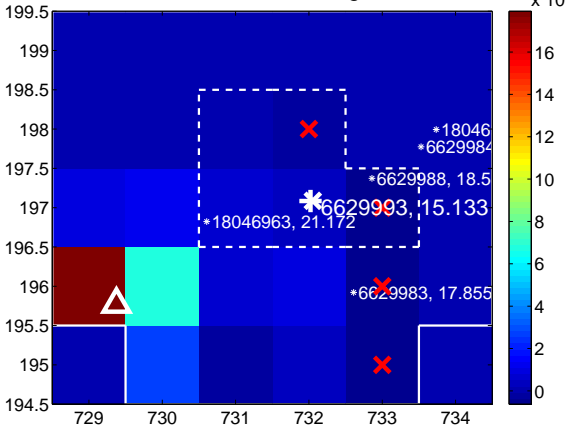
Q1 no difference image



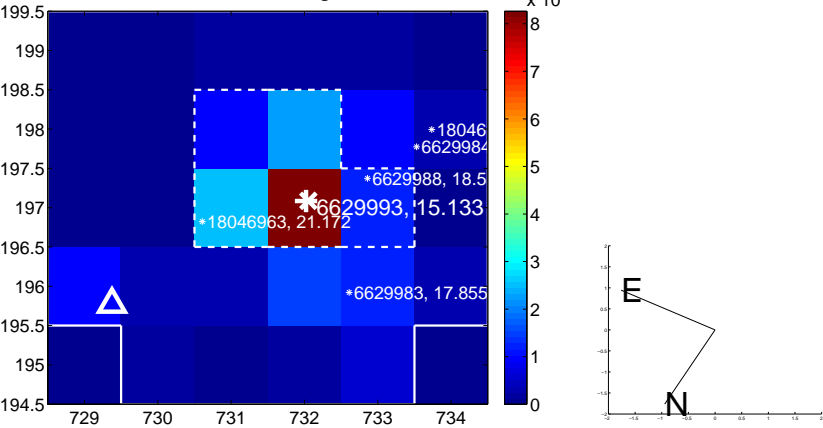
Q1 no OOT image



Q2 difference image



Q2 OOT image



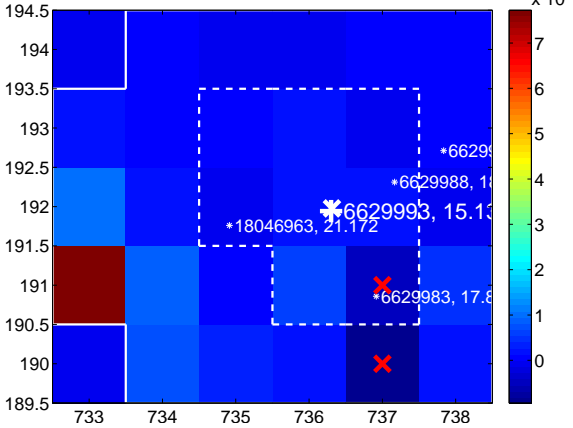
Q3 no difference image



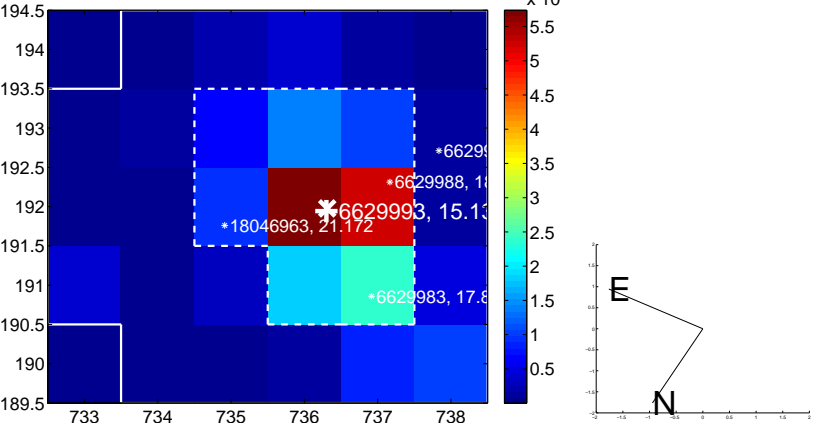
Q3 no OOT image



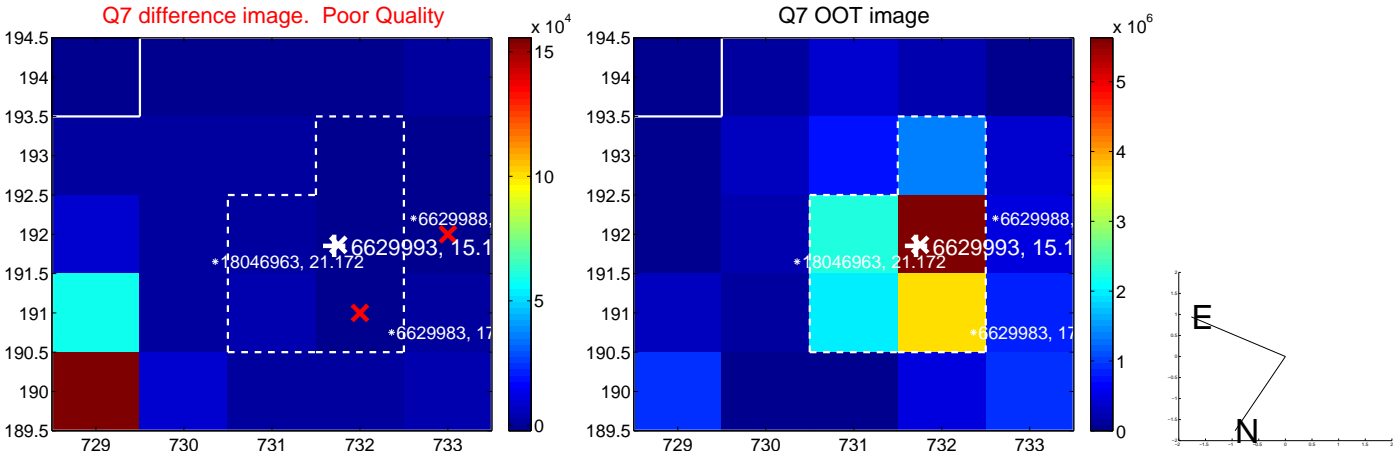
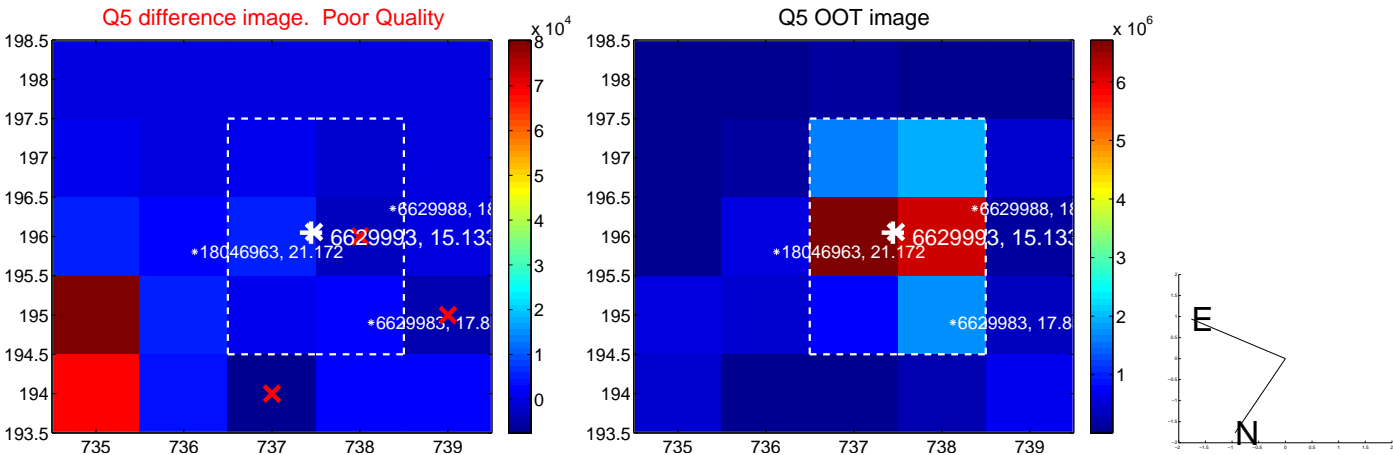
Q4 difference image. Poor Quality



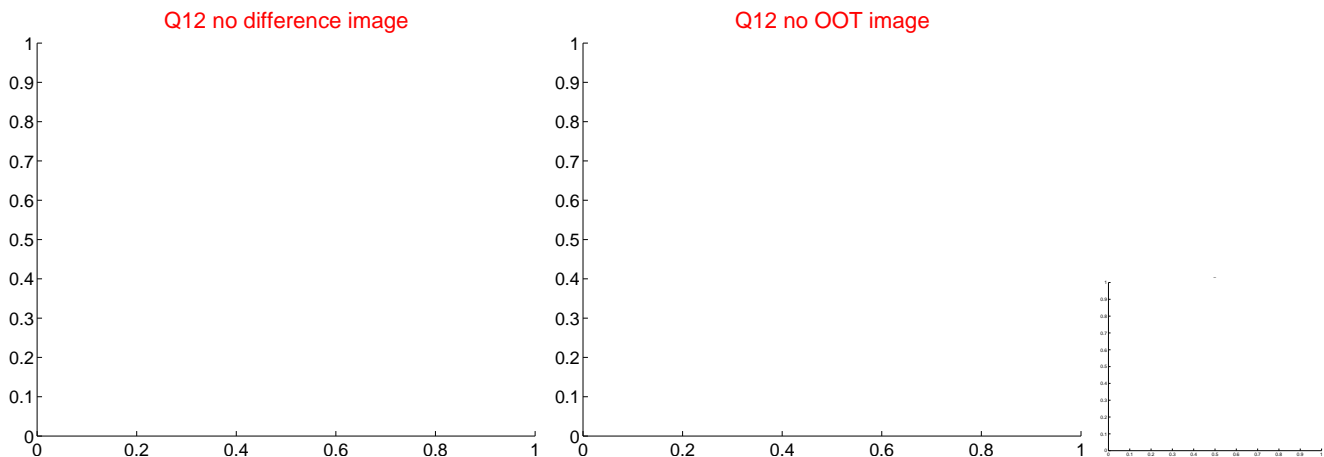
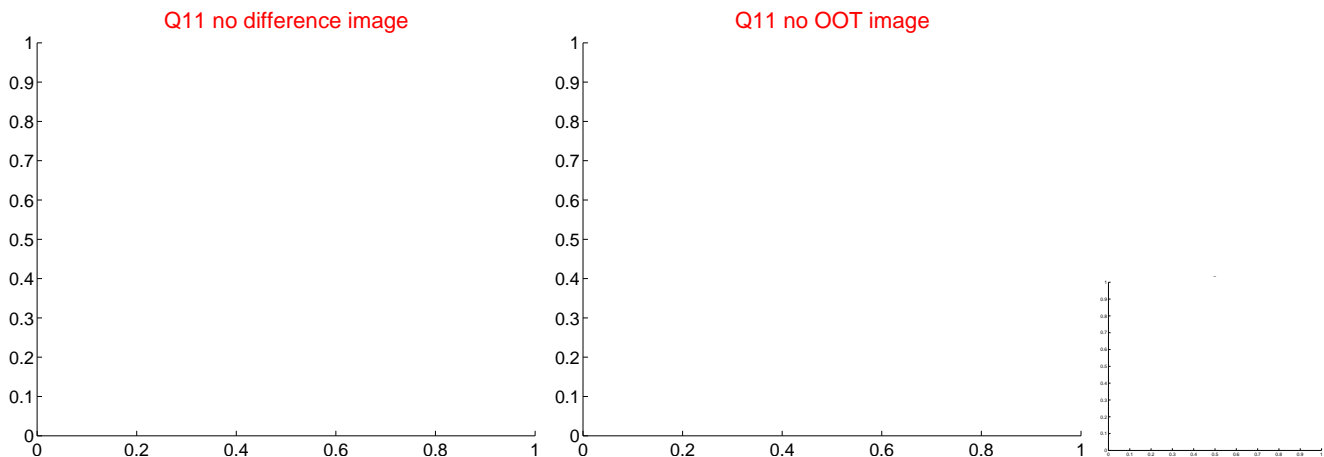
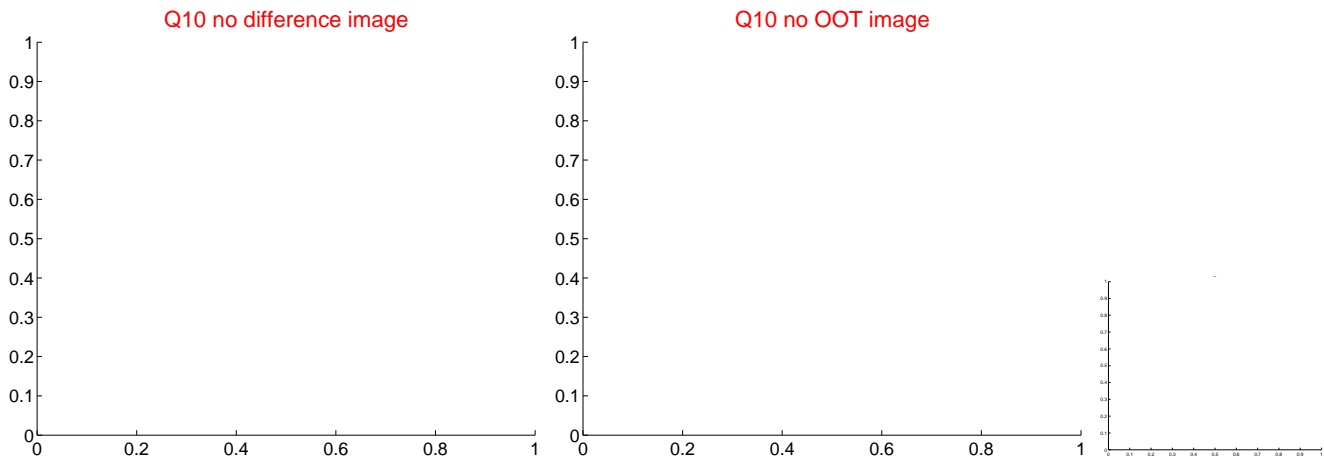
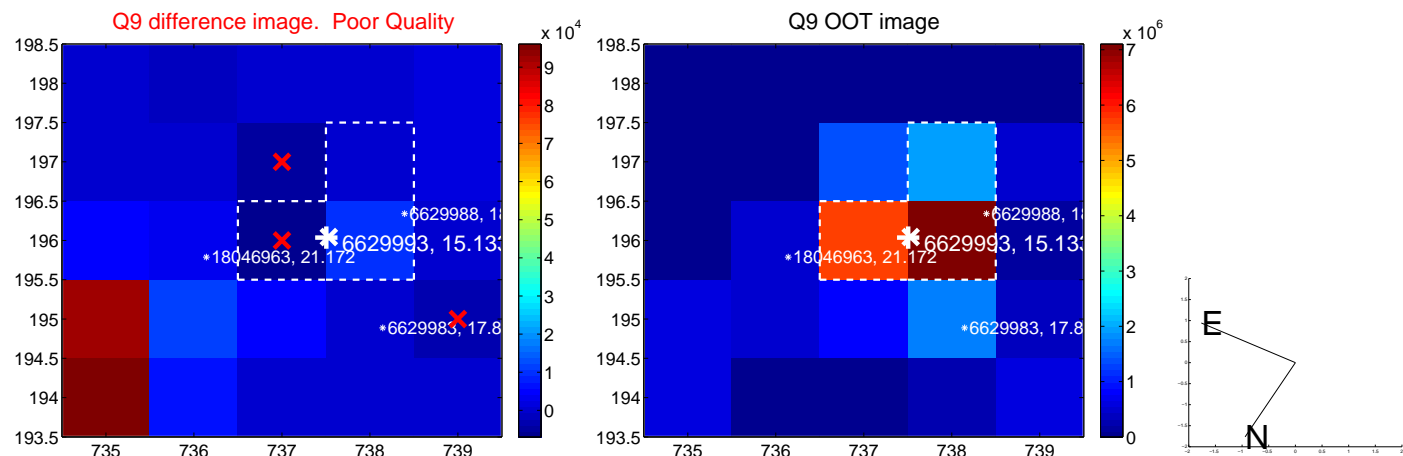
Q4 OOT image



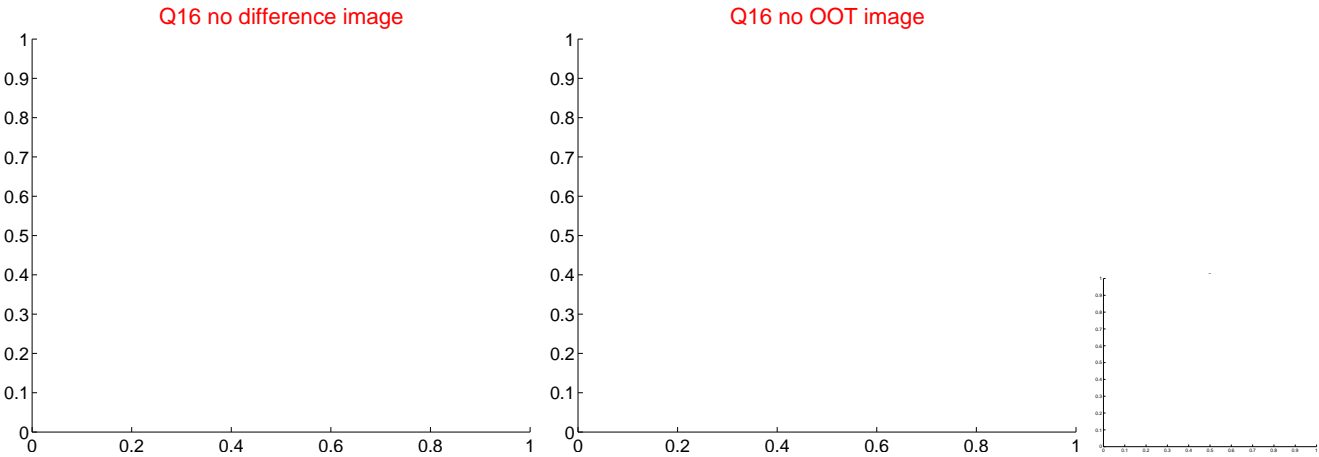
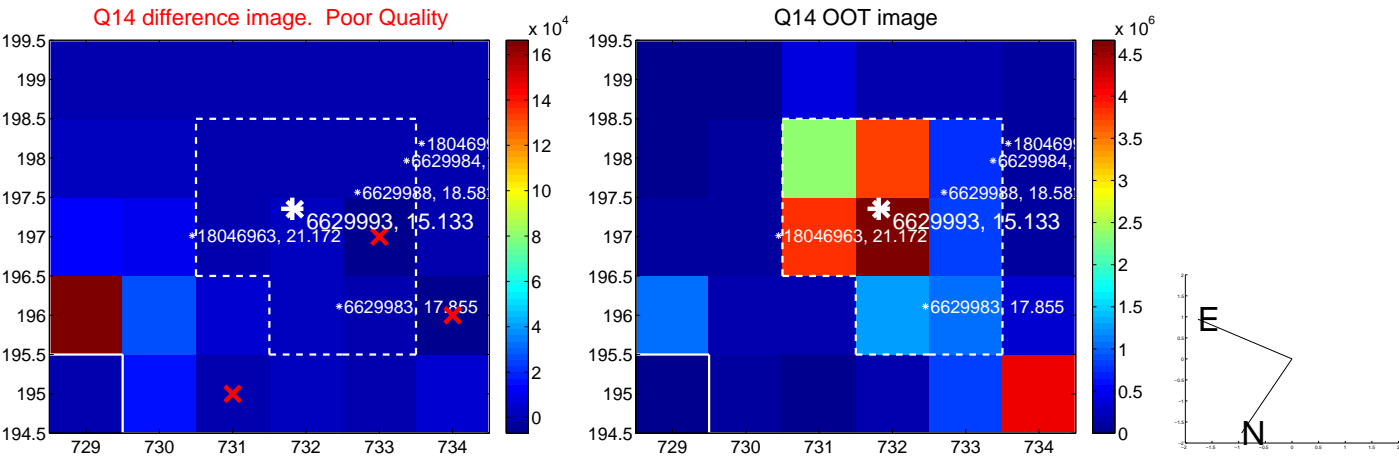
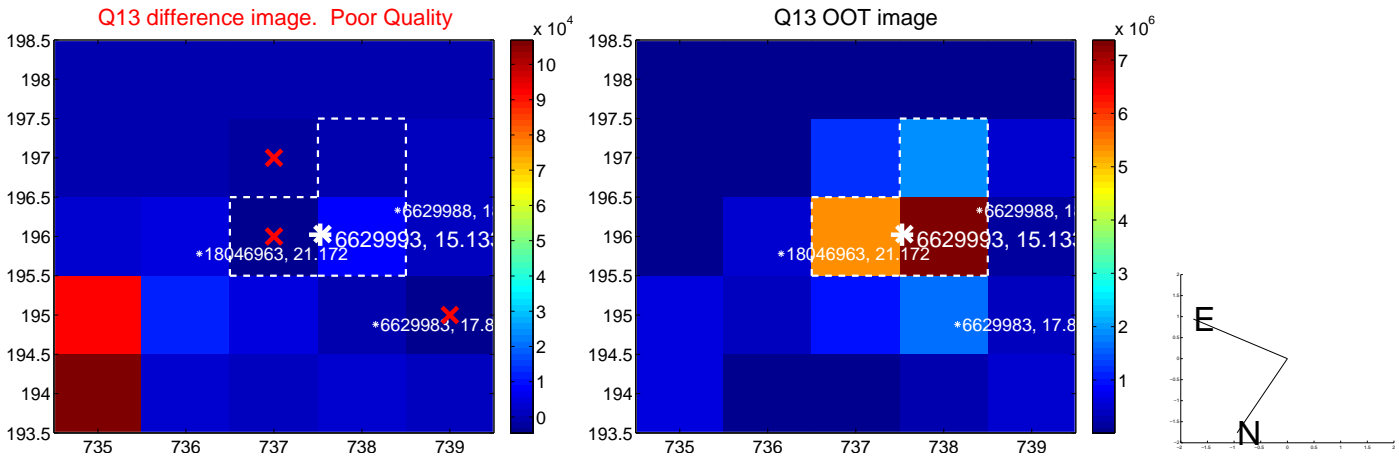
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

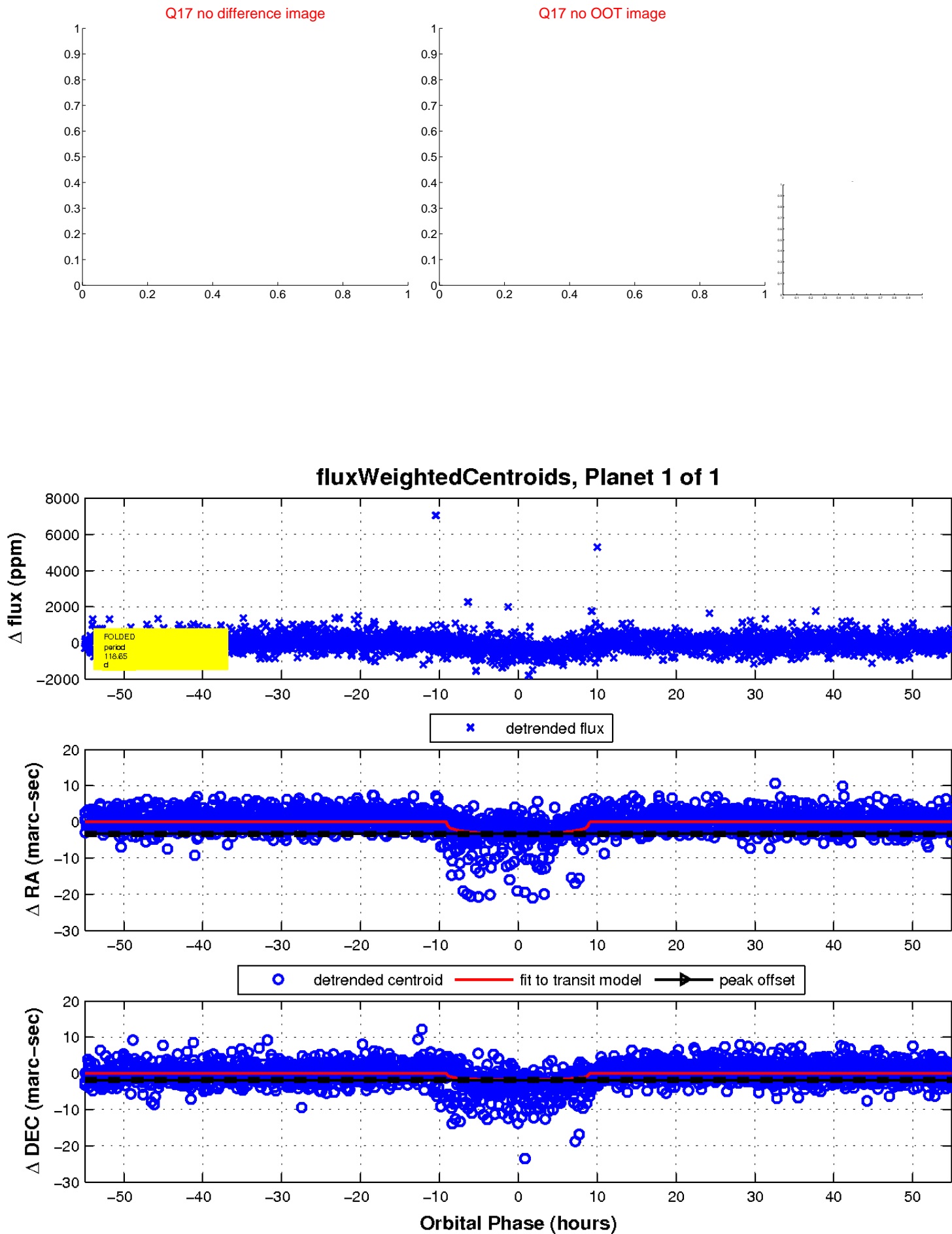


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

