

# KIC 006634603

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006634603-01	OBS	No	638.356452	273.110269	624.7	16.256	8.0	7.5	0.79	5646	2.02	0.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006634603-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—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.

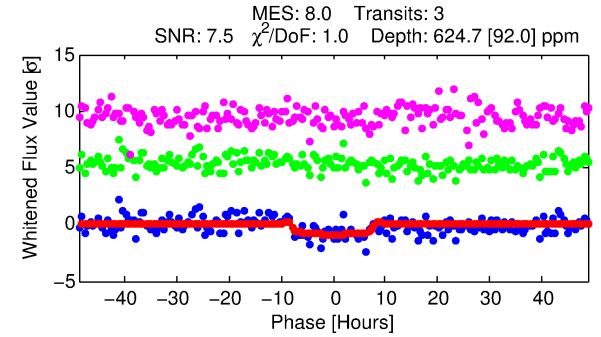
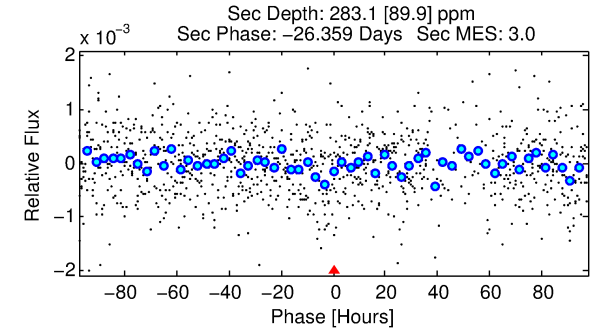
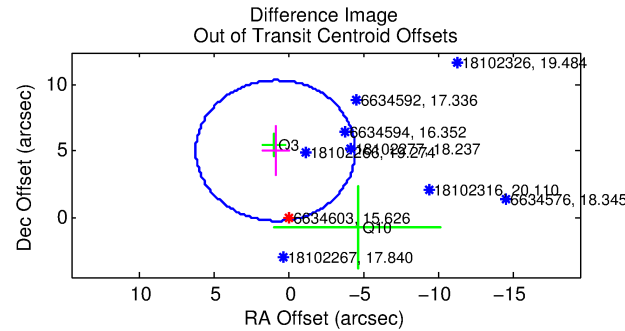
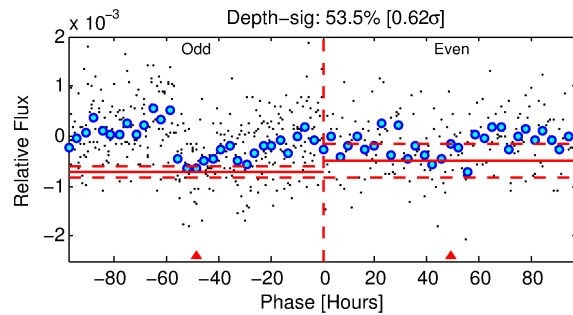
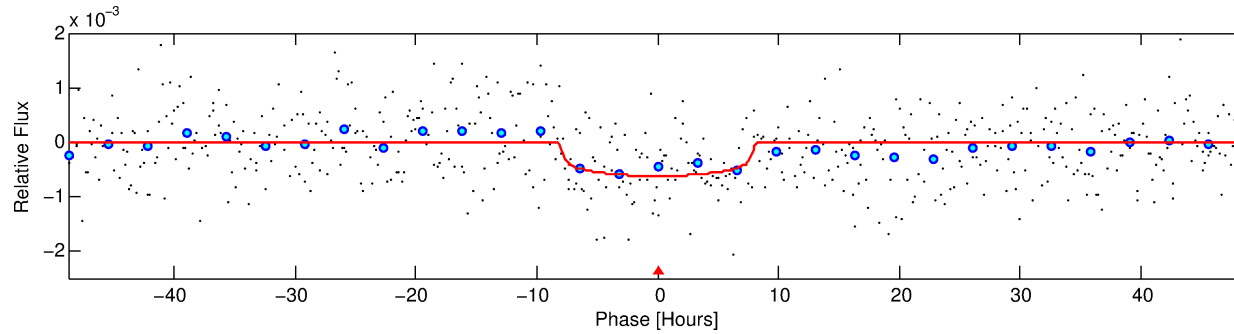
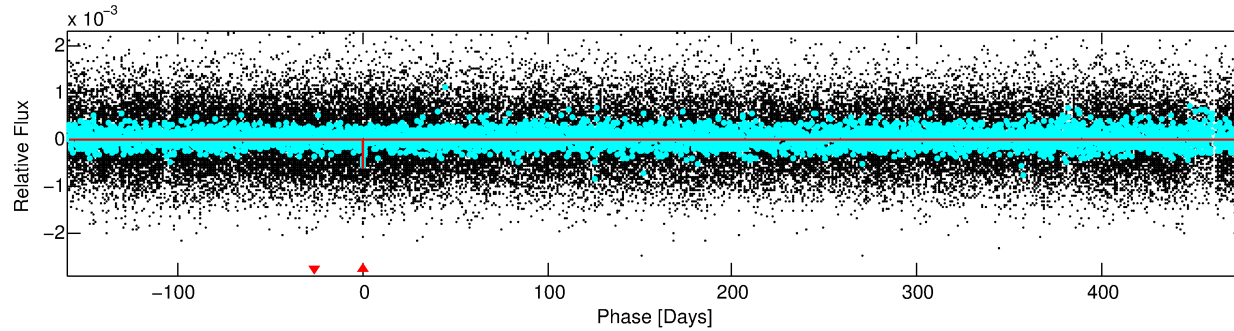
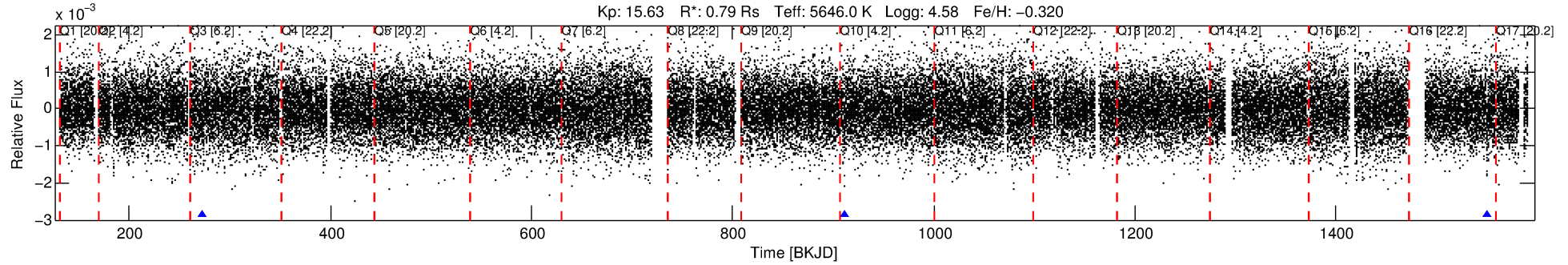
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006634603-01

No Significant Match Found

# DV One-Page Summary

KIC: 6634603 Candidate: 1 of 1 Period: 638.356 d



## DV Fit Results:

Period = 638.35645 [0.02000] d  
Epoch = 273.1103 [0.0284] BKJD  
Rp/R\* = 0.0235 [0.0201]  
a/R\* = 265.45 [1002.56]  
b = 0.51 [5.43]  
Seff = 0.30 [0.08]  
Teq = 188 [13] K  
Rp = 2.02 [1.78] Re  
a = 1.3828 [0.2486] AU  
Ag = 73164.97 [128648.07] [0.57 $\sigma$ ]  
Teff = 4781 [2083] K [2.20 $\sigma$ ]

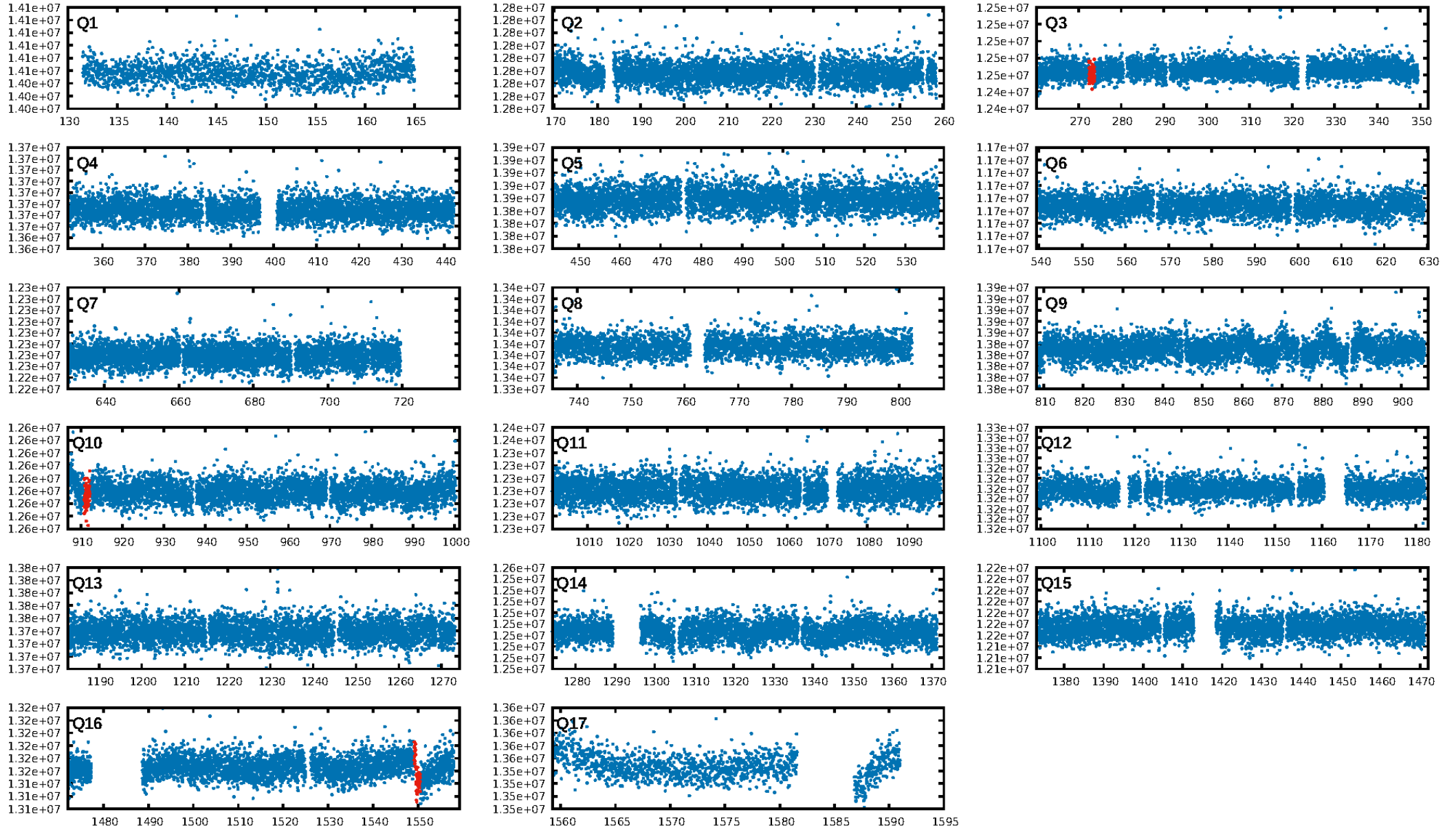
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 12.5%  
ModelChiSquareGof-sig: 99.9%  
Bootstrap-pfa: 2.31e-13  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -2.635  
Centroid-sig: 31.5%  
Centroid-so: 0.801 arcsec [0.53 $\sigma$ ]  
OotOffset-rm: 5.126 arcsec [2.89 $\sigma$ ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-rm: 5.076 arcsec [1.48 $\sigma$ ]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 1.00 [2/2]

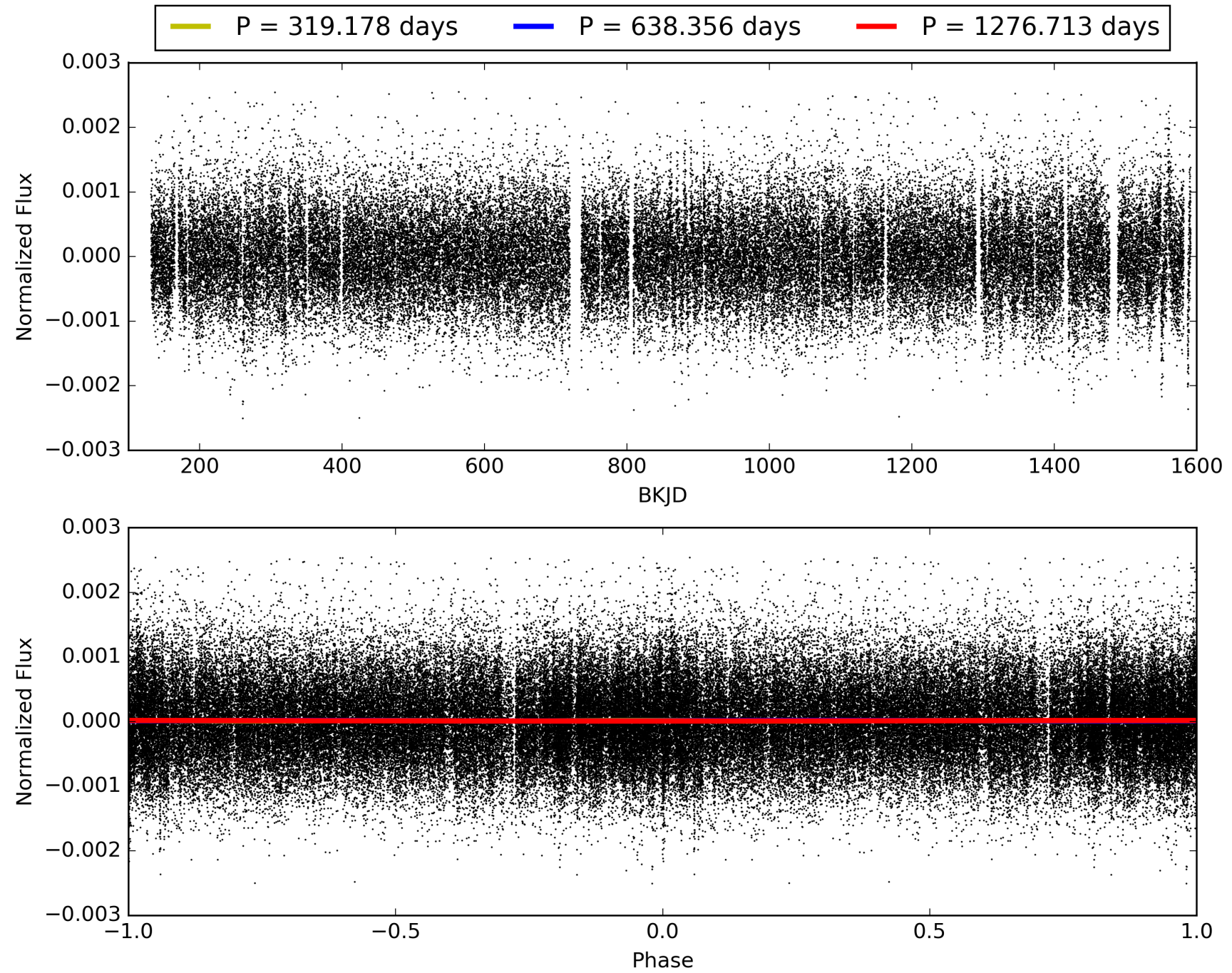
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:24:33 Z

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

# TCE 006634603-01, PDC Light Curves

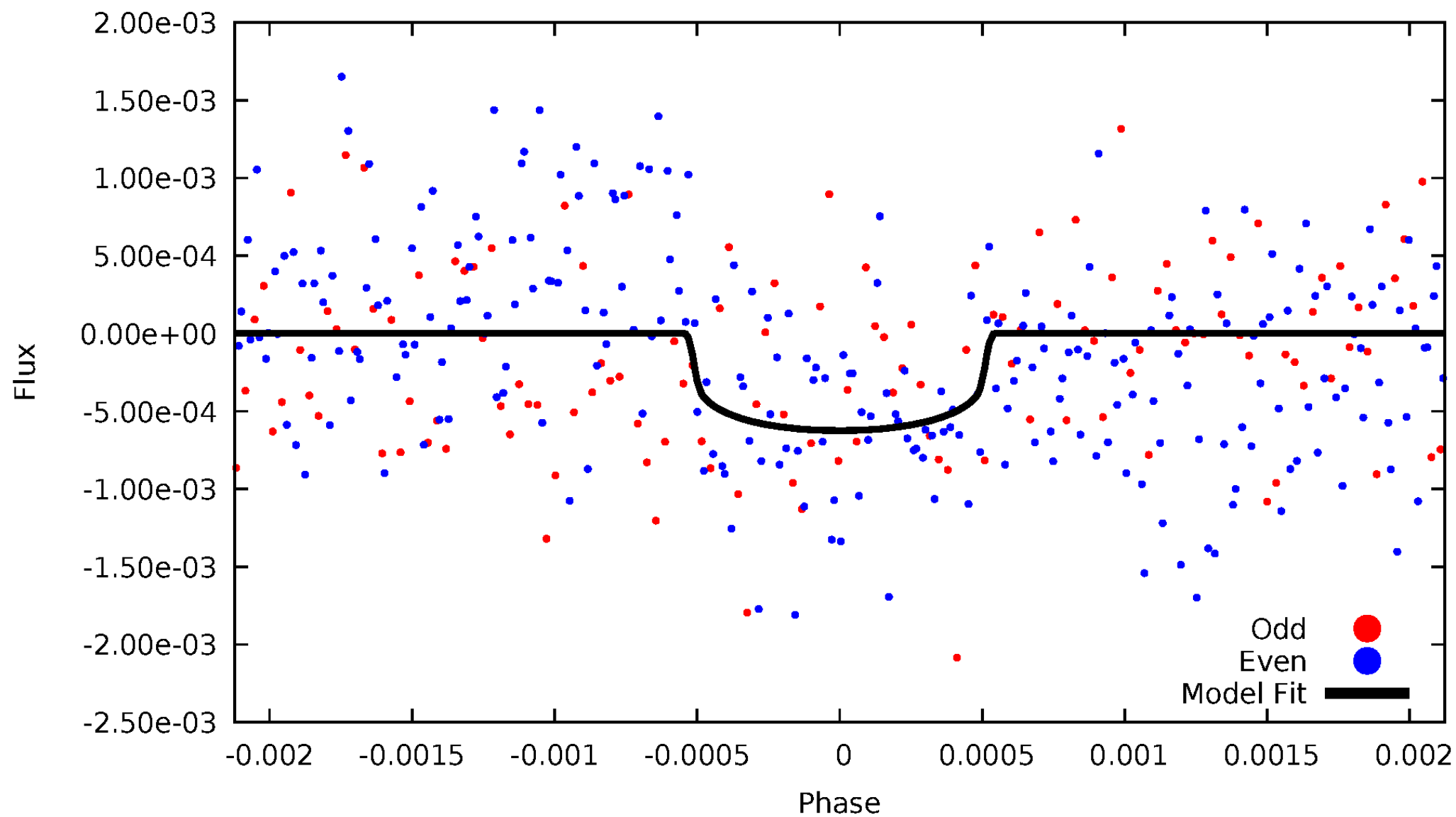


TCE 006634603-01



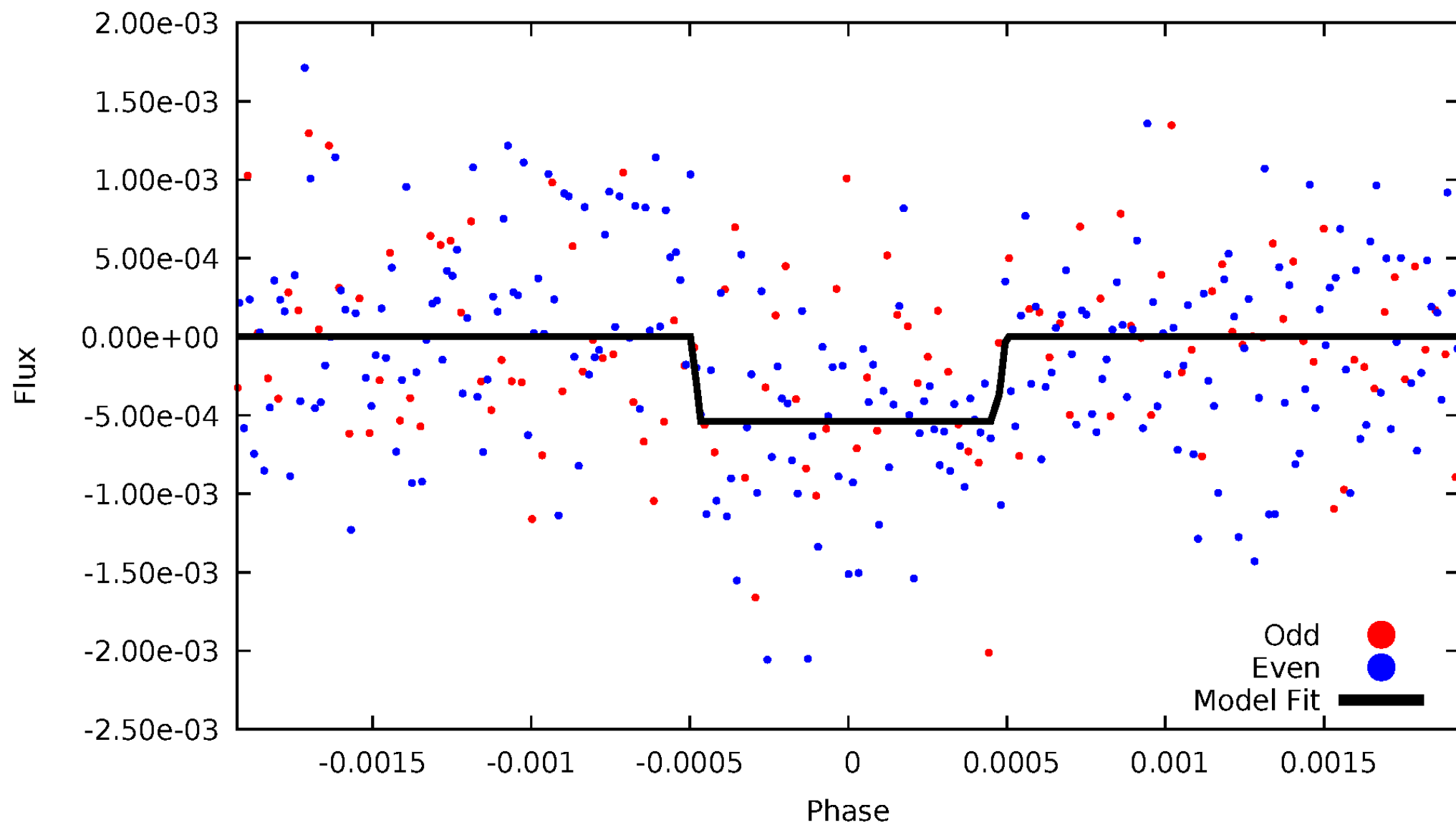
# DV Odd/Even

TCE 006634603-01



# ALT Odd/Even

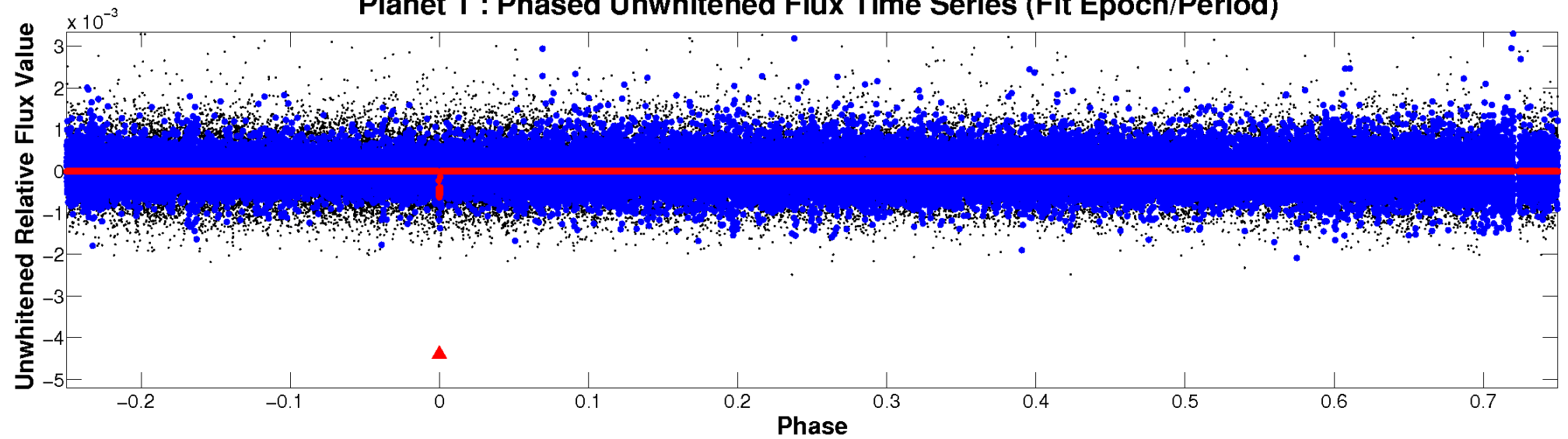
TCE 006634603-01



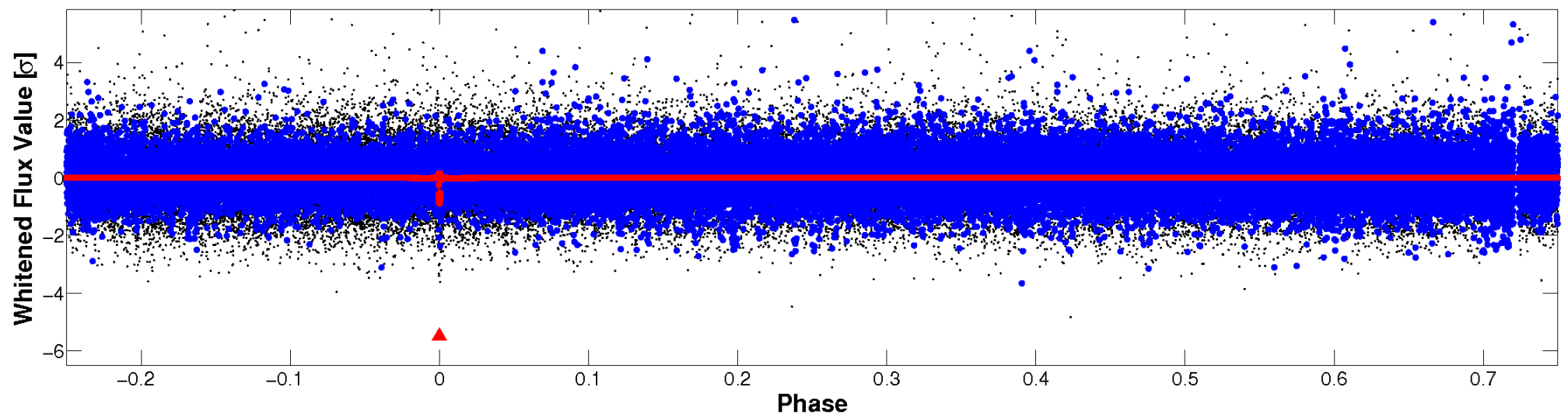


# Non-Whitened Vs. Whitened Light Curve

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

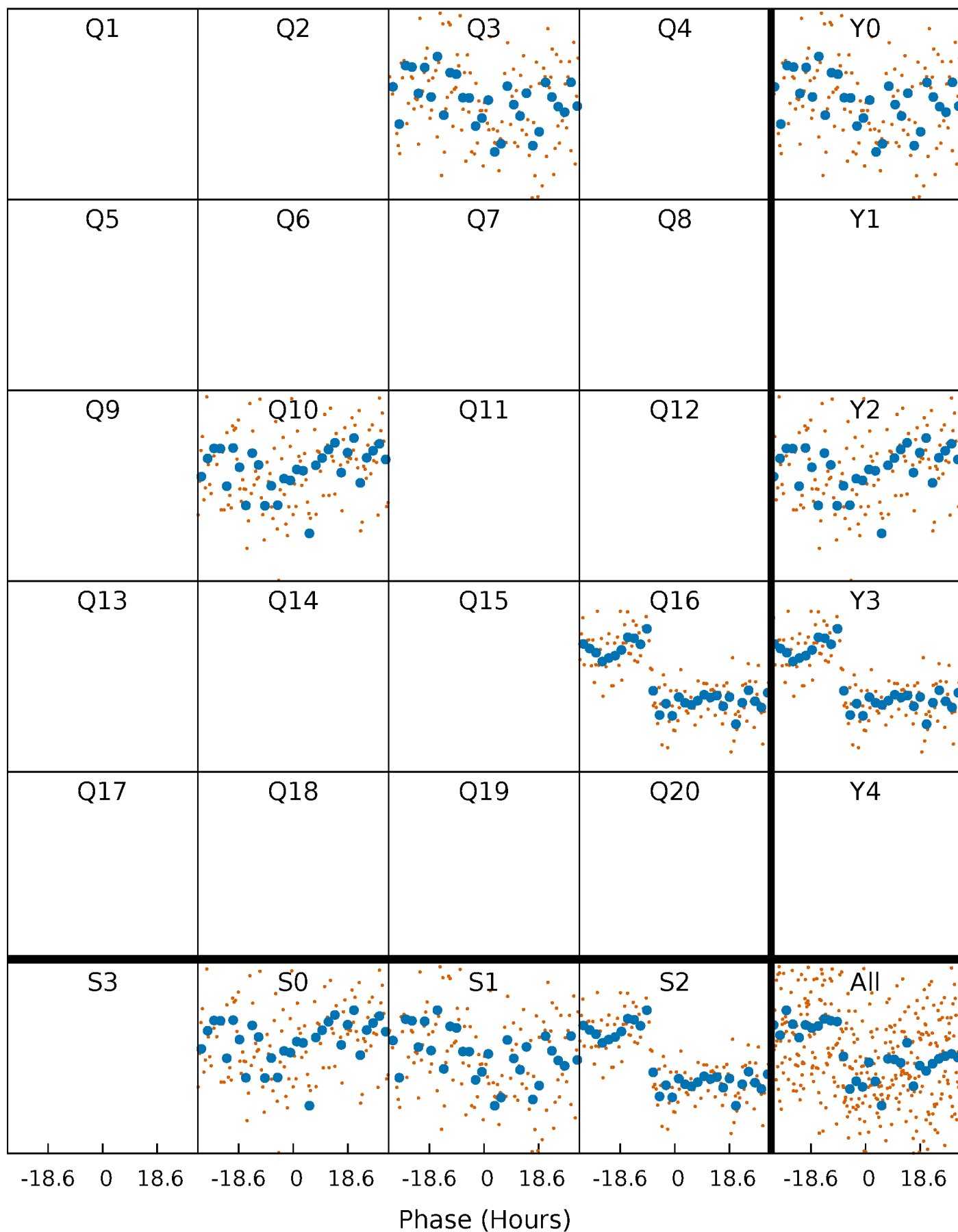


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

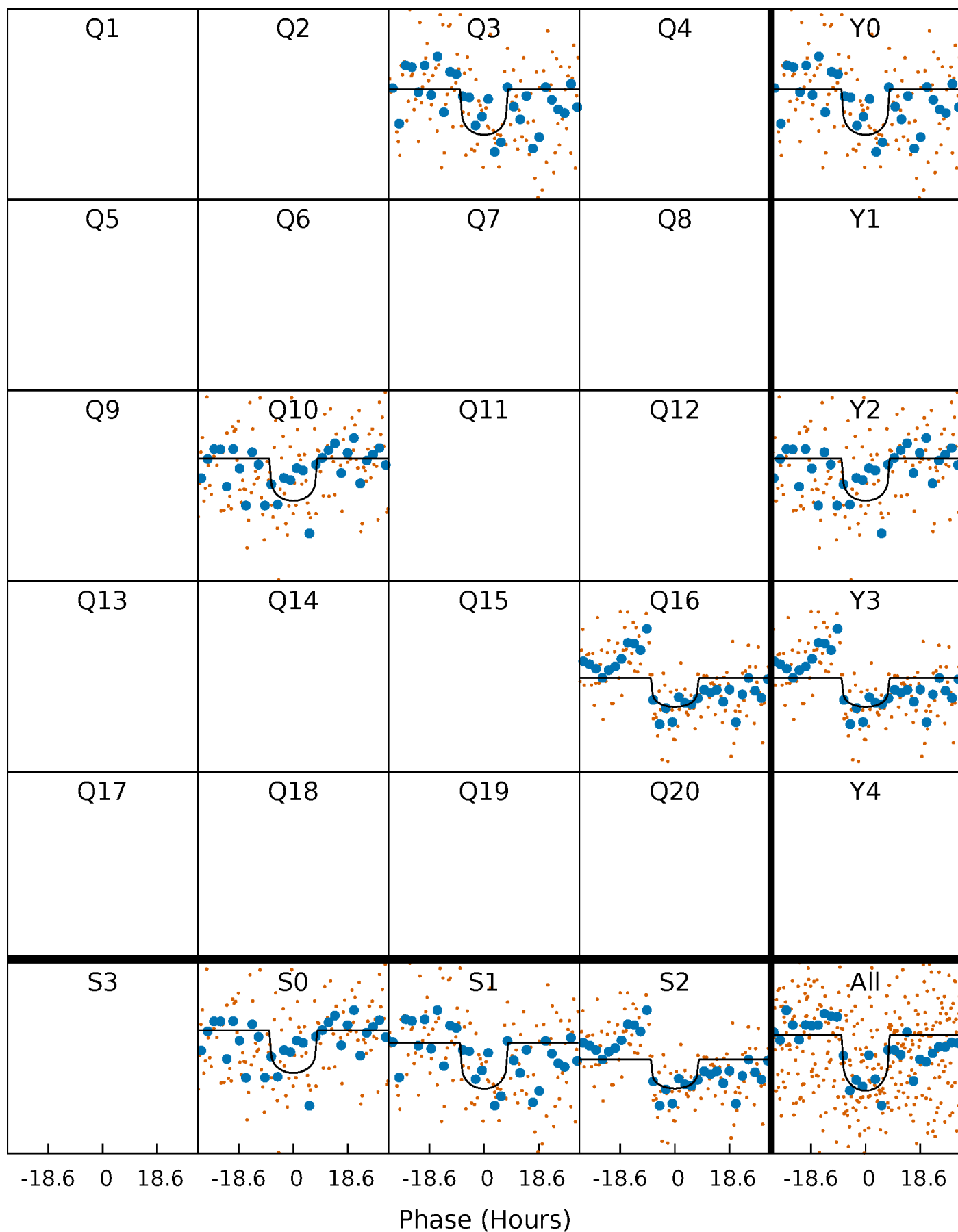
TCE 006634603-01 P=638.356452 Days  $T_0=273.110269$  (BKJD)





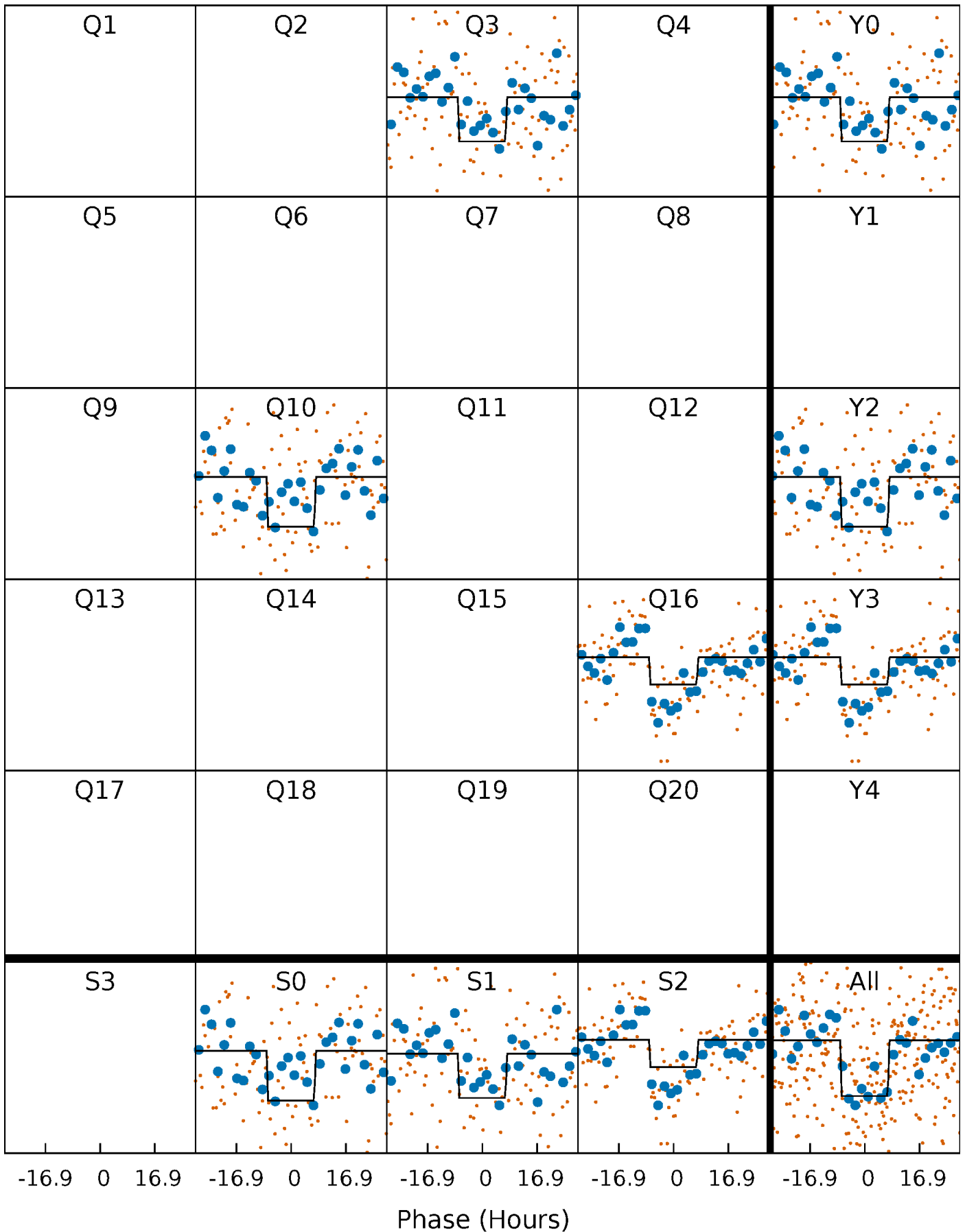
# DV Quarter-Phased Transit Curves

TCE 006634603-01 P=638.356452 Days  $T_0=273.110269$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

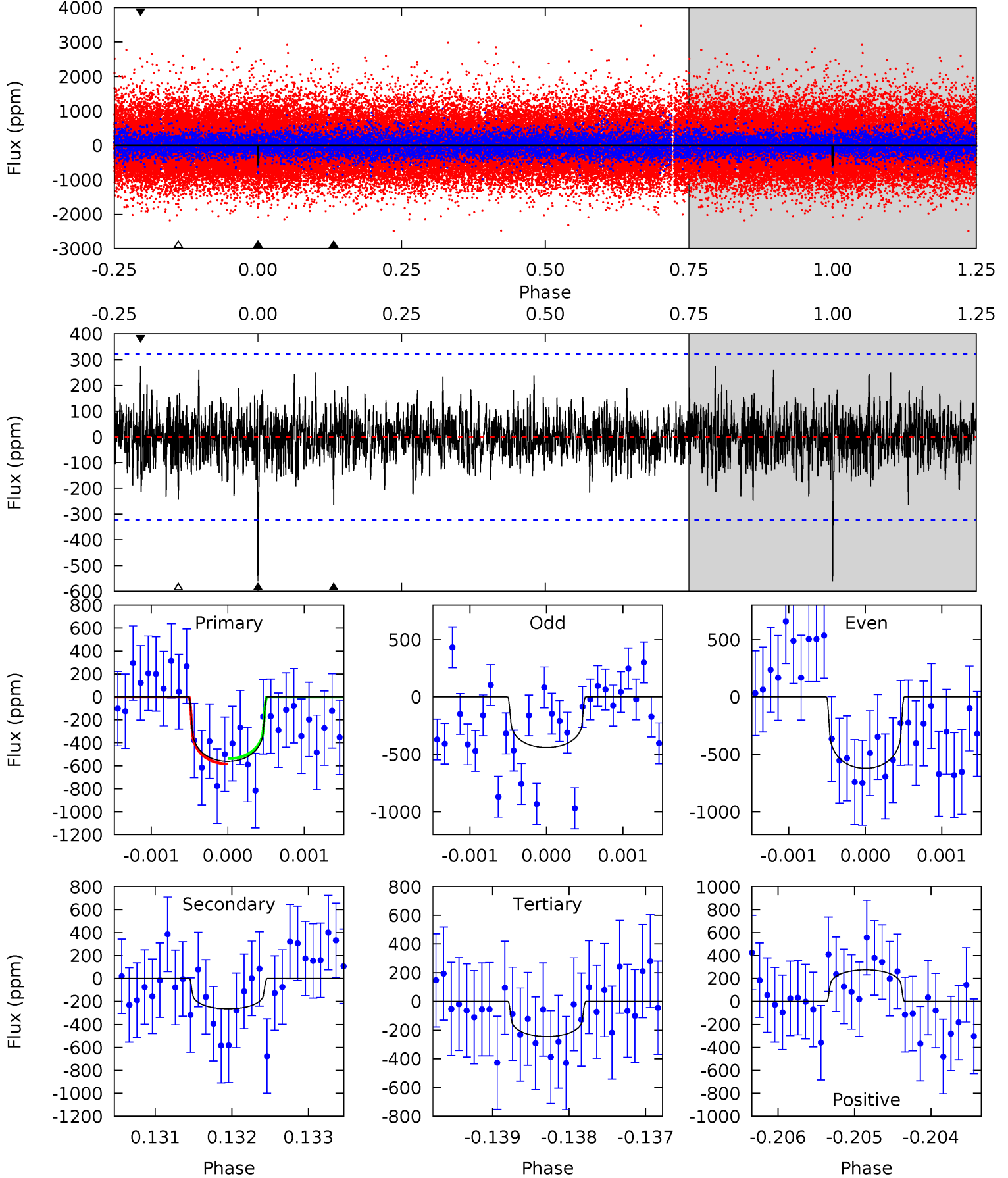
TCE 006634603-01 P=638.358037 Days  $T_0=273.088913$  (BKJD)



# DV Model-Shift Uniqueness Test

006634603-01, P = 638.356452 Days, E = 273.110269 Days

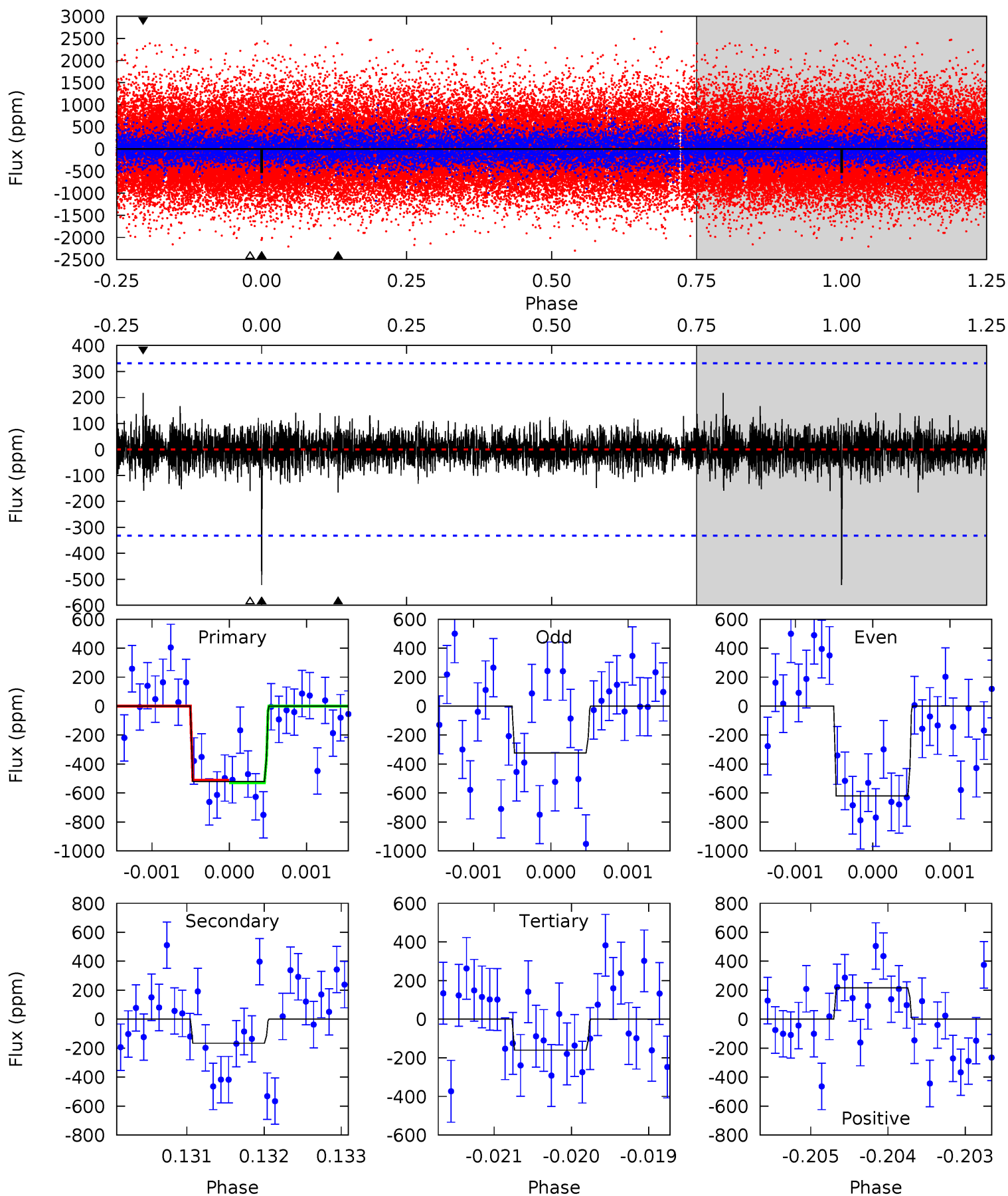
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.47	4.45	4.12	4.64	5.44	3.27	1.17	5.35	4.83	0.33	-0.19	1.45	1.18	0.33	0.38



# Alt Model-Shift Uniqueness Test

006634603-01, P = 638.358037 Days, E = 273.088913 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
8.57	2.72	2.63	3.56	5.45	3.29	0.67	5.94	5.01	0.09	-0.83	2.31	1.50	0.29	0.15



### Stellar Parameters For KIC 006634603

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5646^{+152}_{-169}$	$4.582^{+0.038}_{-0.142}$	$-0.320^{+0.300}_{-0.300}$	$0.788^{+0.169}_{-0.073}$	$0.872^{+0.088}_{-0.097}$	$2.515^{+0.467}_{-1.002}$
	+3%/-3%	+1%/-3%	+94%/-94%	+21%/-9%	+10%/-11%	+19%/-40%
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 006634603-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-264 \pm 59$	$2.32^{+1.70}_{-1.45}$	$267^{+13}_{-11}$	$4589^{+2880}_{-840}$	$52058^{+333782}_{-36492}$
Alt.	$-166 \pm 61$	$2.37^{+1.71}_{-1.42}$	$267^{+13}_{-11}$	$4154^{+1910}_{-778}$	$29219^{+137086}_{-20683}$

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

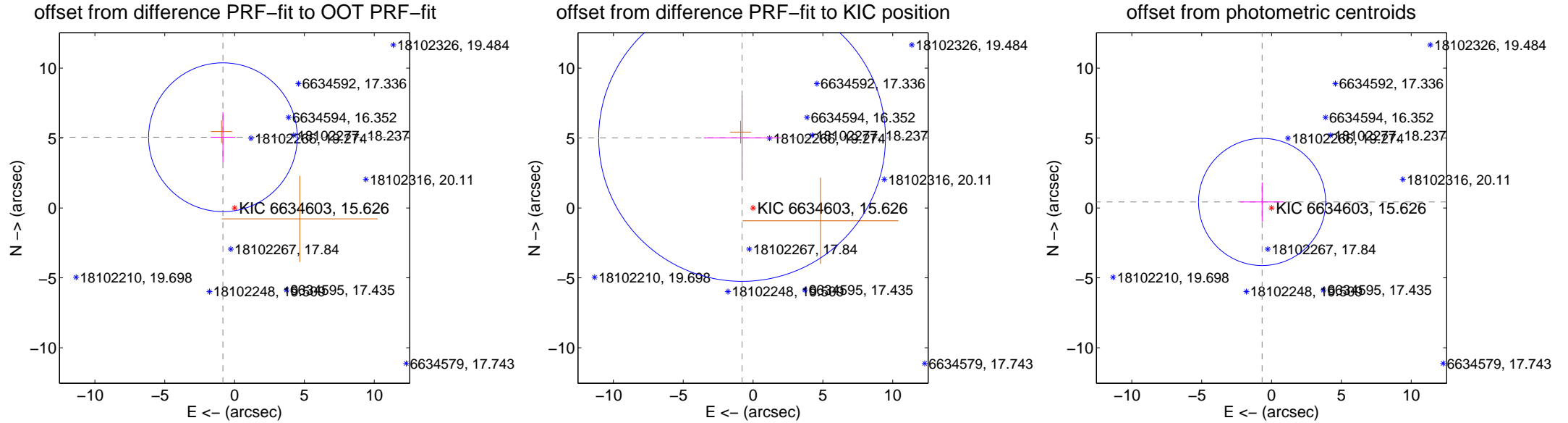
## DV Centroid Data

Supplemental centroid analysis for 006634603-01. Kepler magnitude: 15.63. Transit SNR 7.53

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

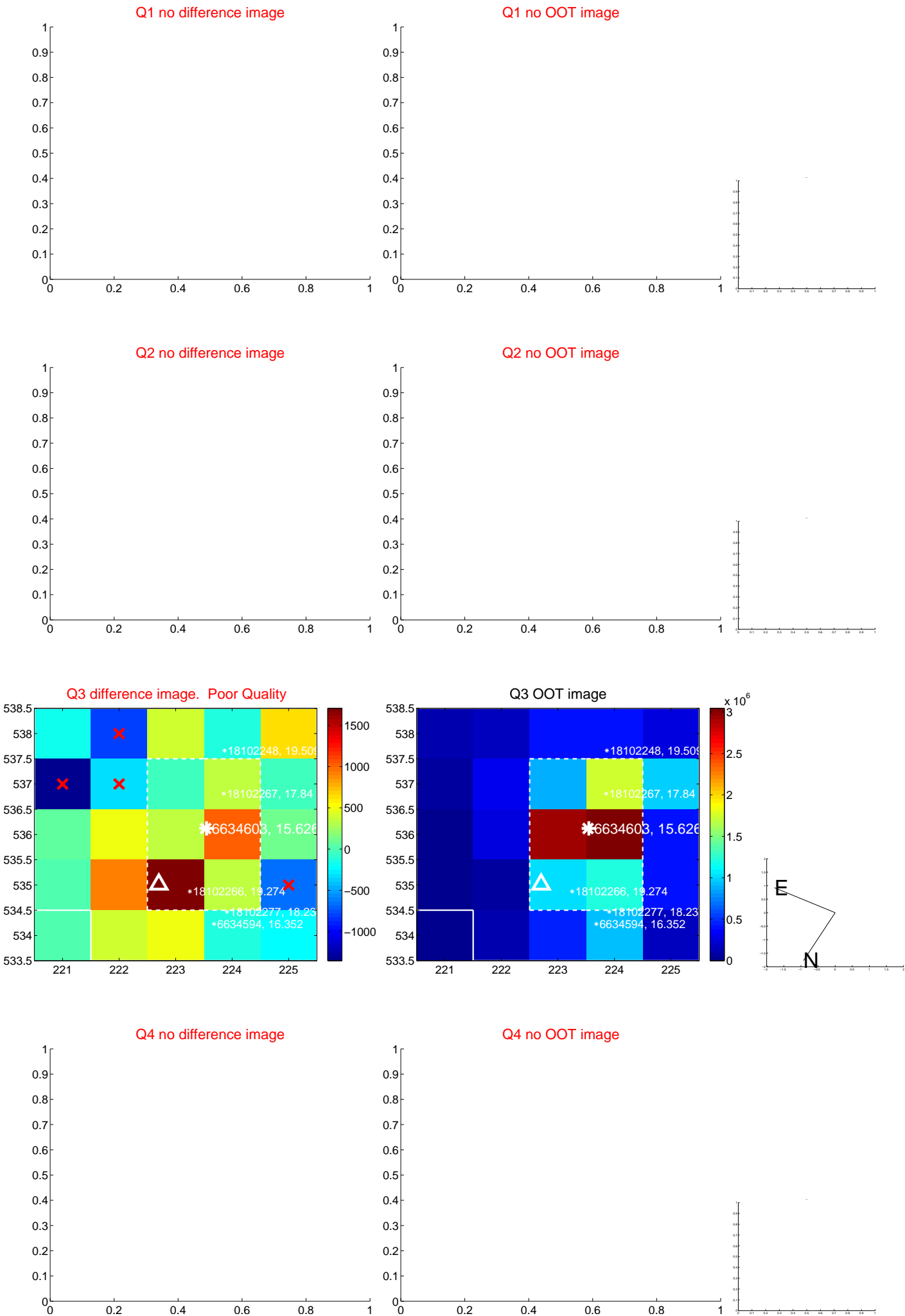
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.126 \pm 1.774$	2.89	$0.834 \pm 0.876$	$5.058 \pm 1.792$
PRF-fit source offset from KIC position	$5.076 \pm 3.421$	1.48	$0.786 \pm 2.737$	$5.015 \pm 3.035$
photometric centroid source offset	$0.80 \pm 1.52$	0.53	$0.68 \pm 1.56$	$0.43 \pm 1.40$



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.



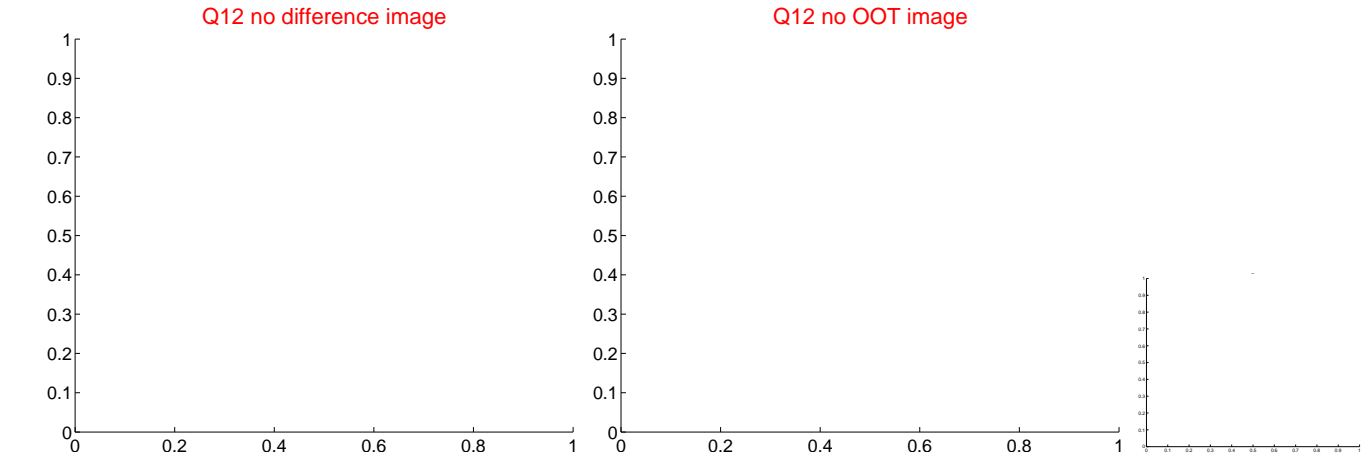
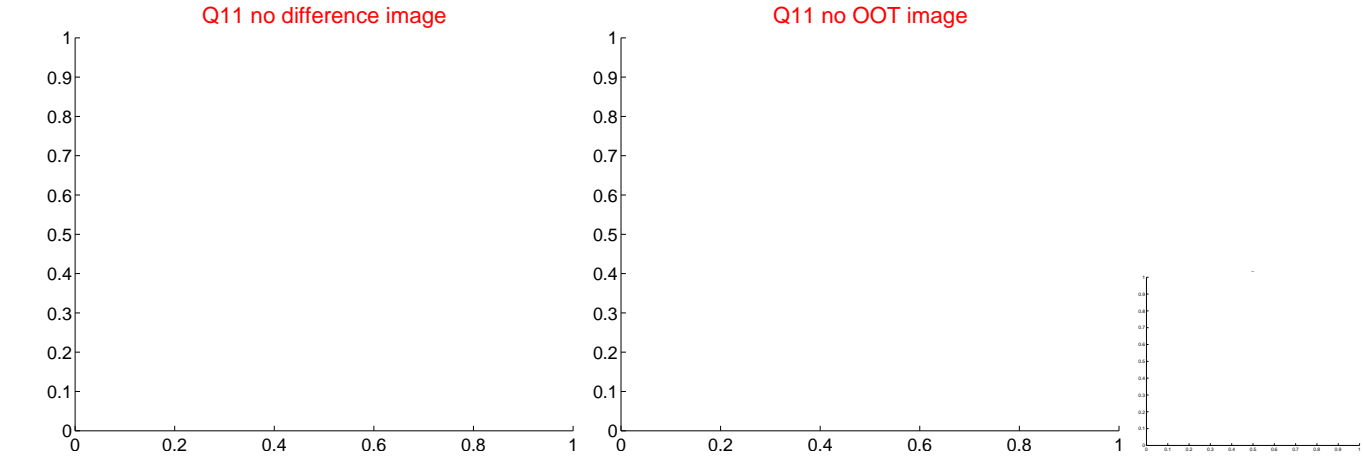
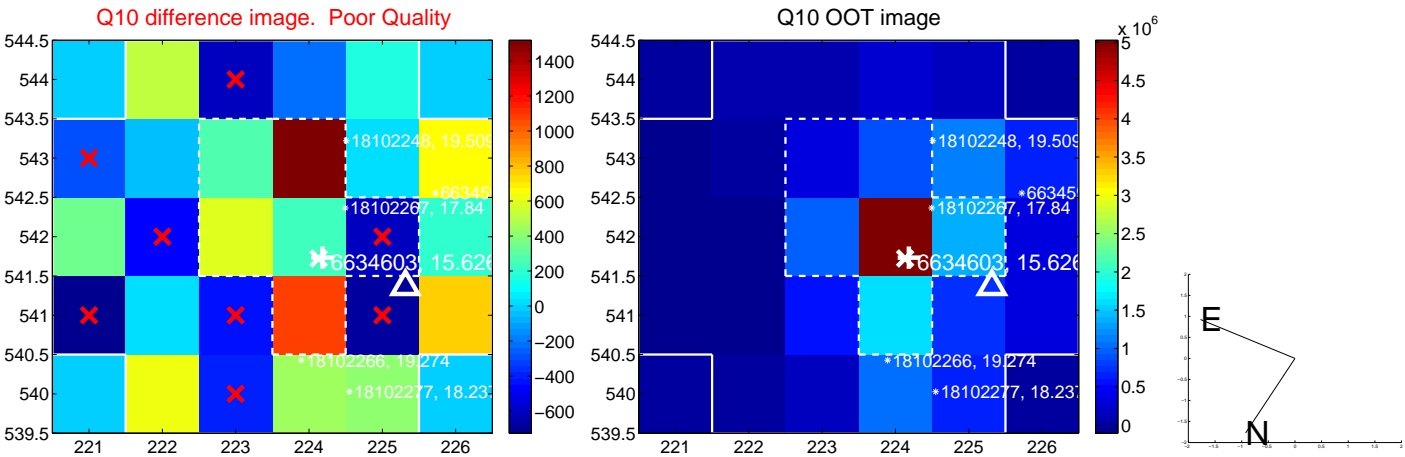
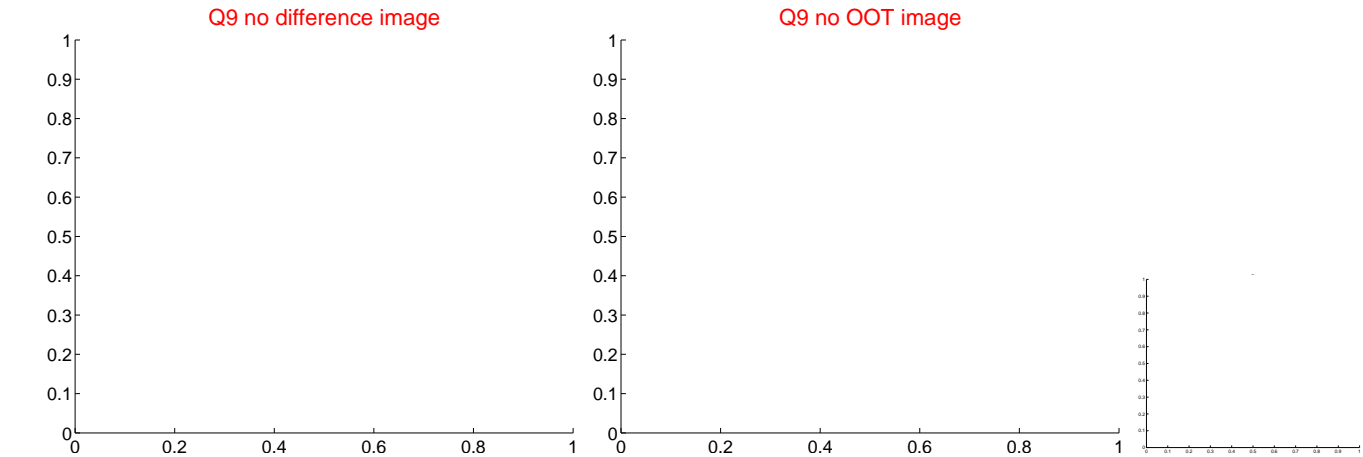
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



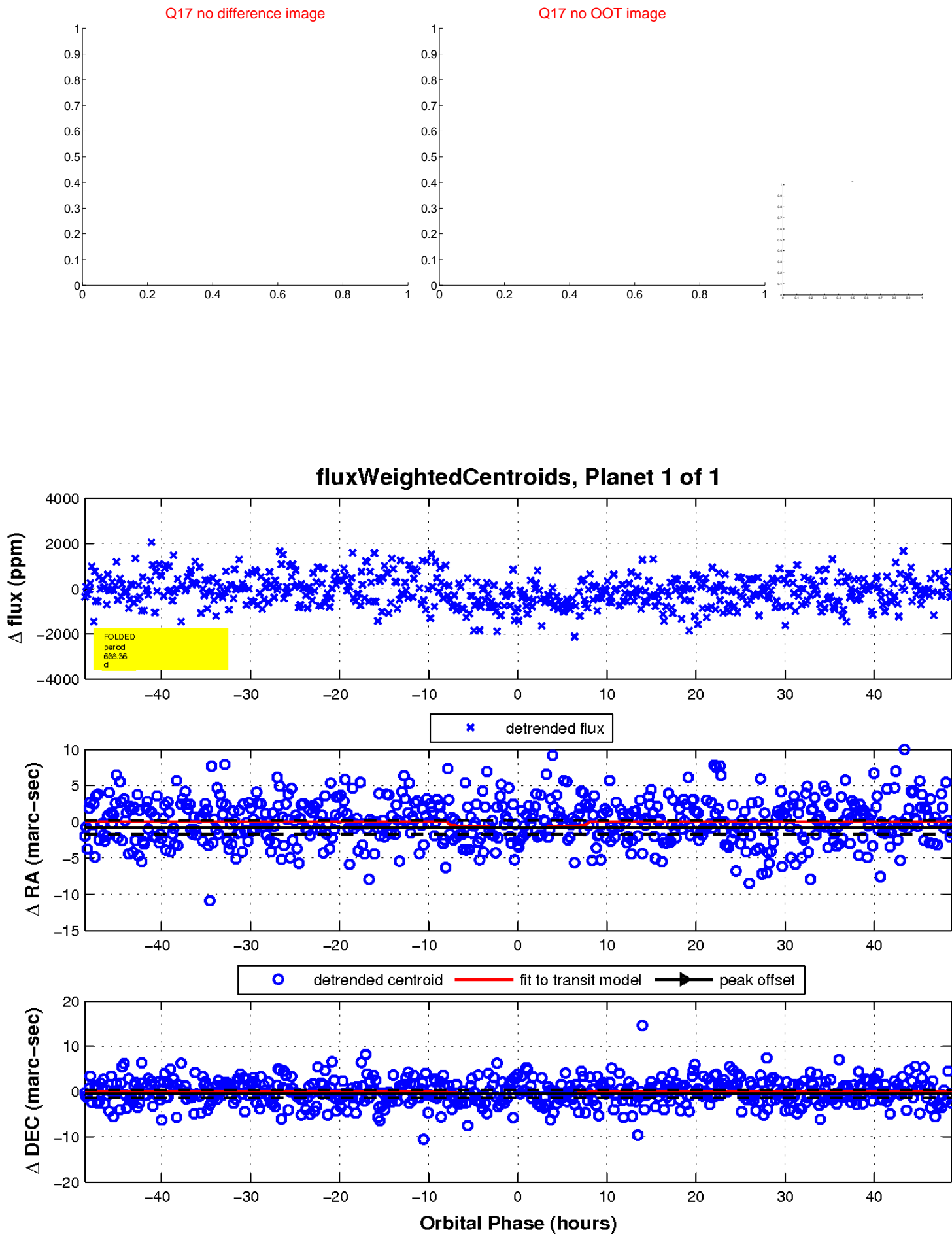
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.



# UKIRT Image

Declination

