

# KIC 008293631

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008293631-01	OBS	8274.01	449.561028	142.811278	945.9	17.727	7.9	7.5	15.07	5323	54.23	64.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008293631-01	OBS	FP	0.29	1	0	0	0	INCONSISTENT_TRANS

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

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

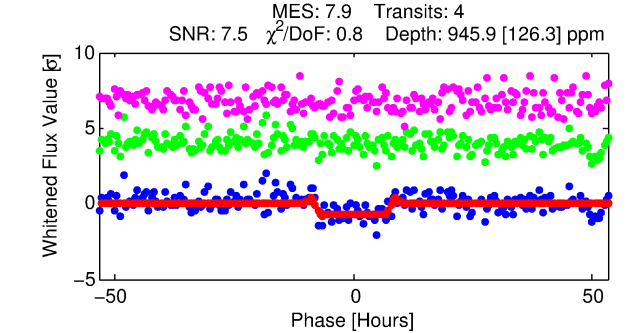
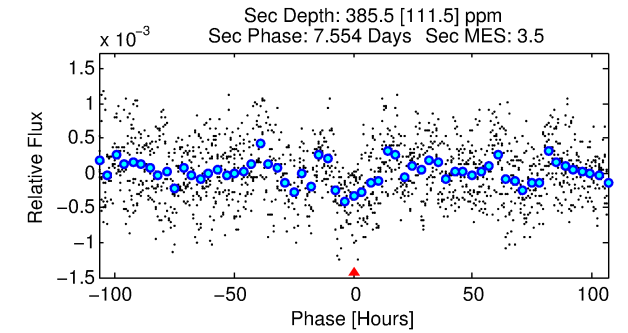
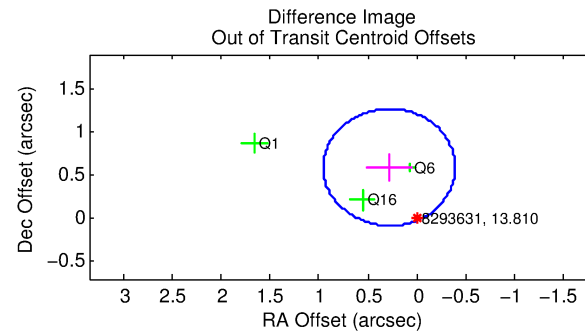
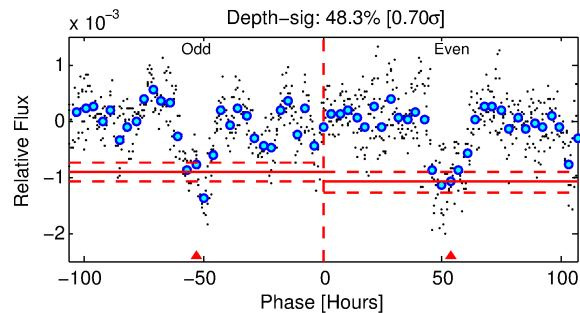
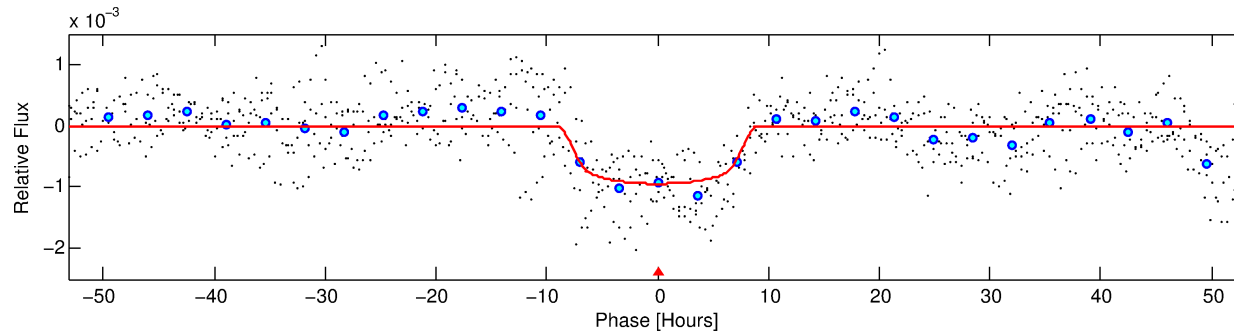
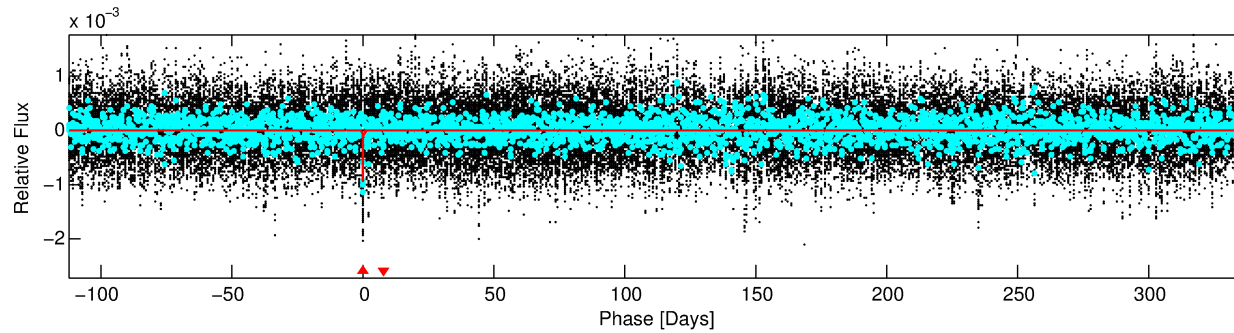
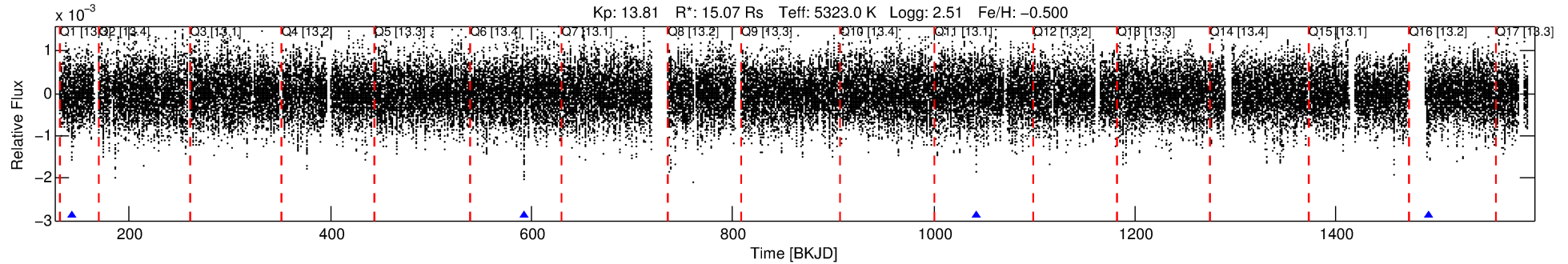
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008293631-01

No Significant Match Found

# DV One-Page Summary

KIC: 8293631 Candidate: 1 of 1 Period: 449.561 d



## DV Fit Results:

Period = 449.56103 [0.00976] d  
Epoch = 142.8113 [0.0183] BKJD  
Rp/R\* = 0.0330 [0.0025]  
a/R\* = 104.91 [15.66]  
b = 0.88 [0.04]  
Seff = 64.17 [21.67]  
Teq = 722 [61] K  
Rp = 54.23 [18.76] Re  
a = 1.5961 [0.3620] AU  
Ag = 183.76 [73.58] [2.48 $\sigma$ ]  
Teff = 4108 [420] K [7.99 $\sigma$ ]

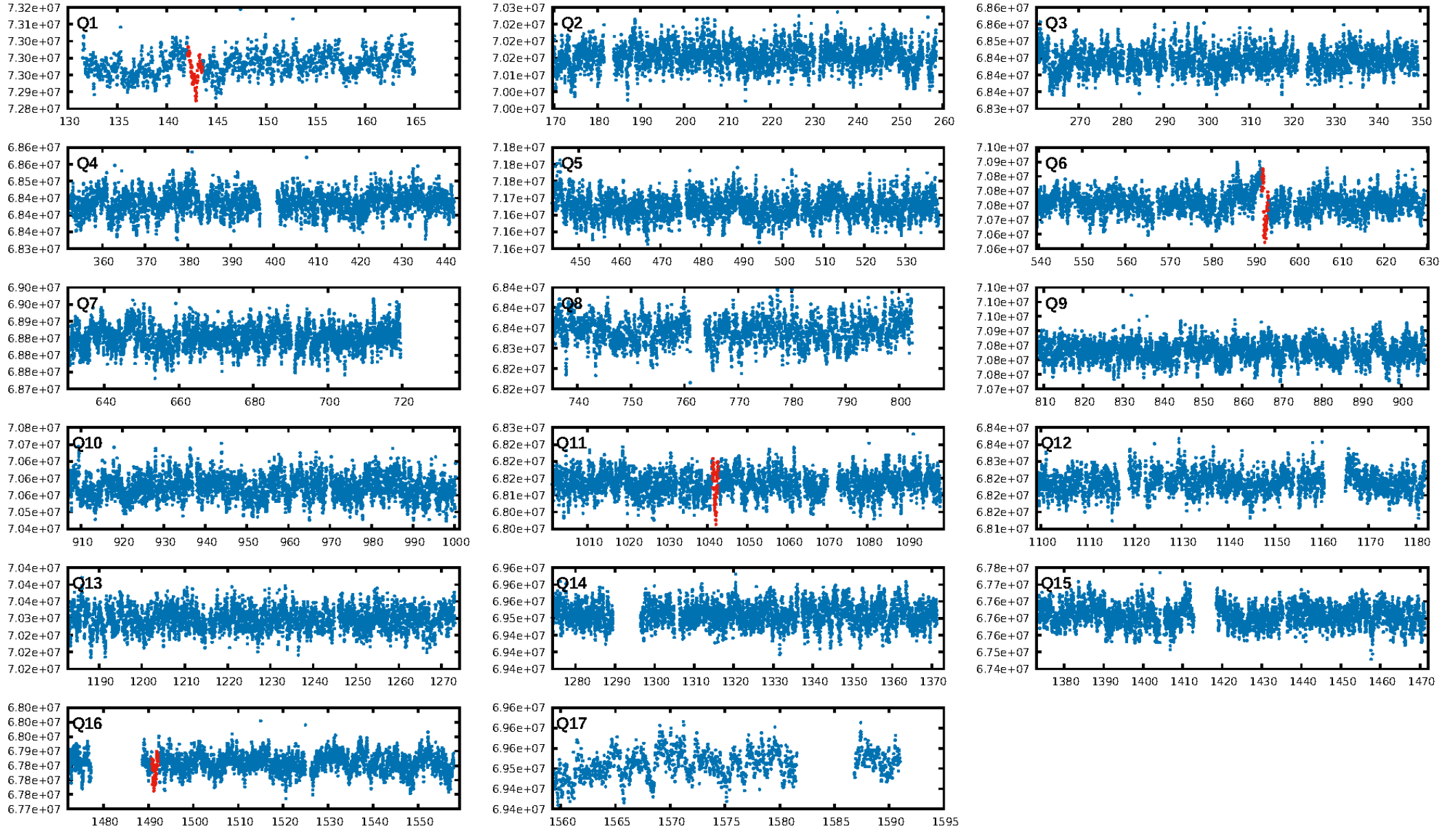
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 61.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.63e-14  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 2.014  
Centroid-sig: 8.2%  
Centroid-so: 0.404 arcsec [1.55 $\sigma$ ]  
OotOffset-rm: 0.656 arcsec [2.91 $\sigma$ ]  
KicOffset-rm: 0.636 arcsec [2.68 $\sigma$ ]  
OotOffset-st: 1/0/1/1 [3]  
KicOffset-st: 1/0/1/1 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

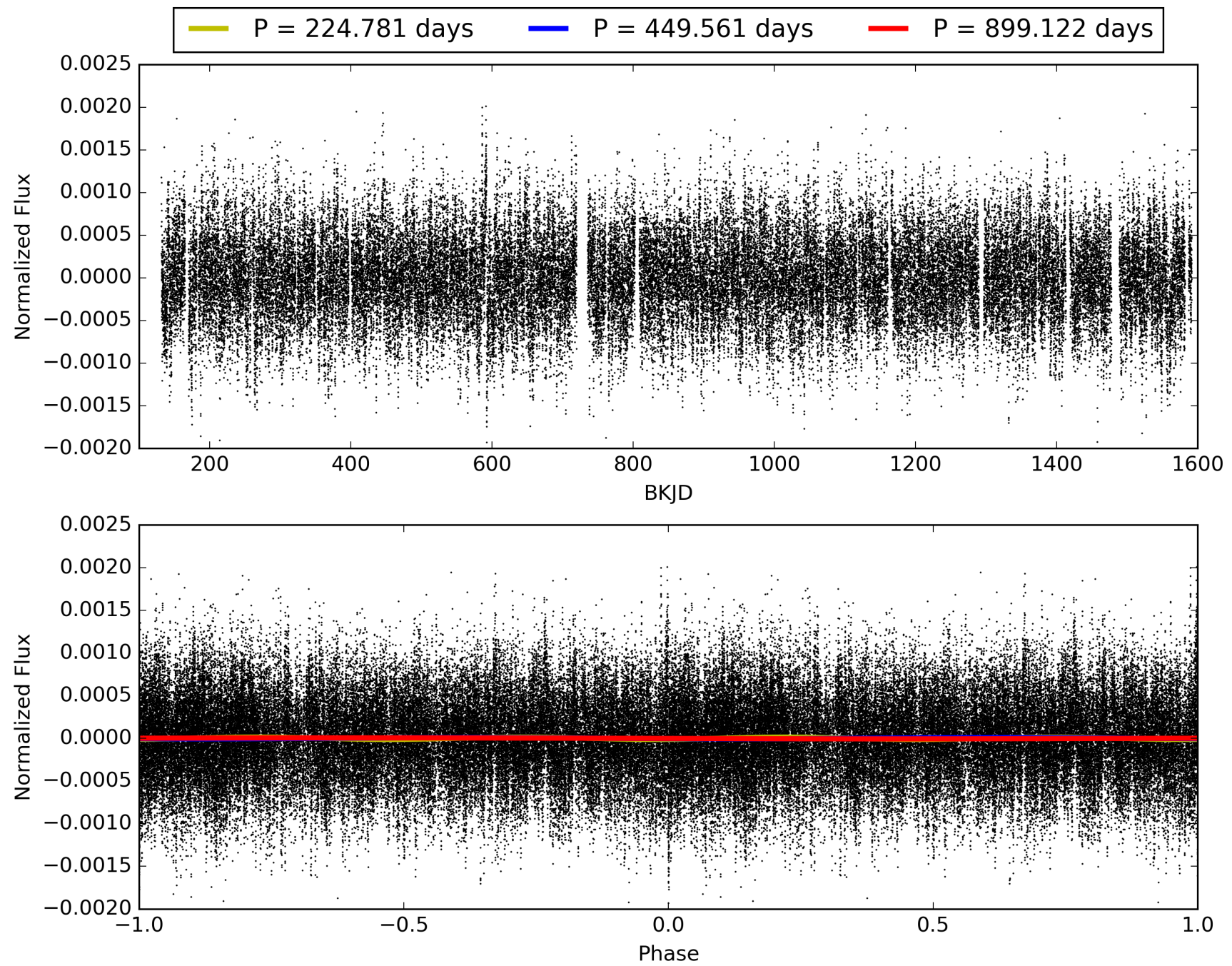
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:04:43 Z

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

# TCE 008293631-01, PDC Light Curves

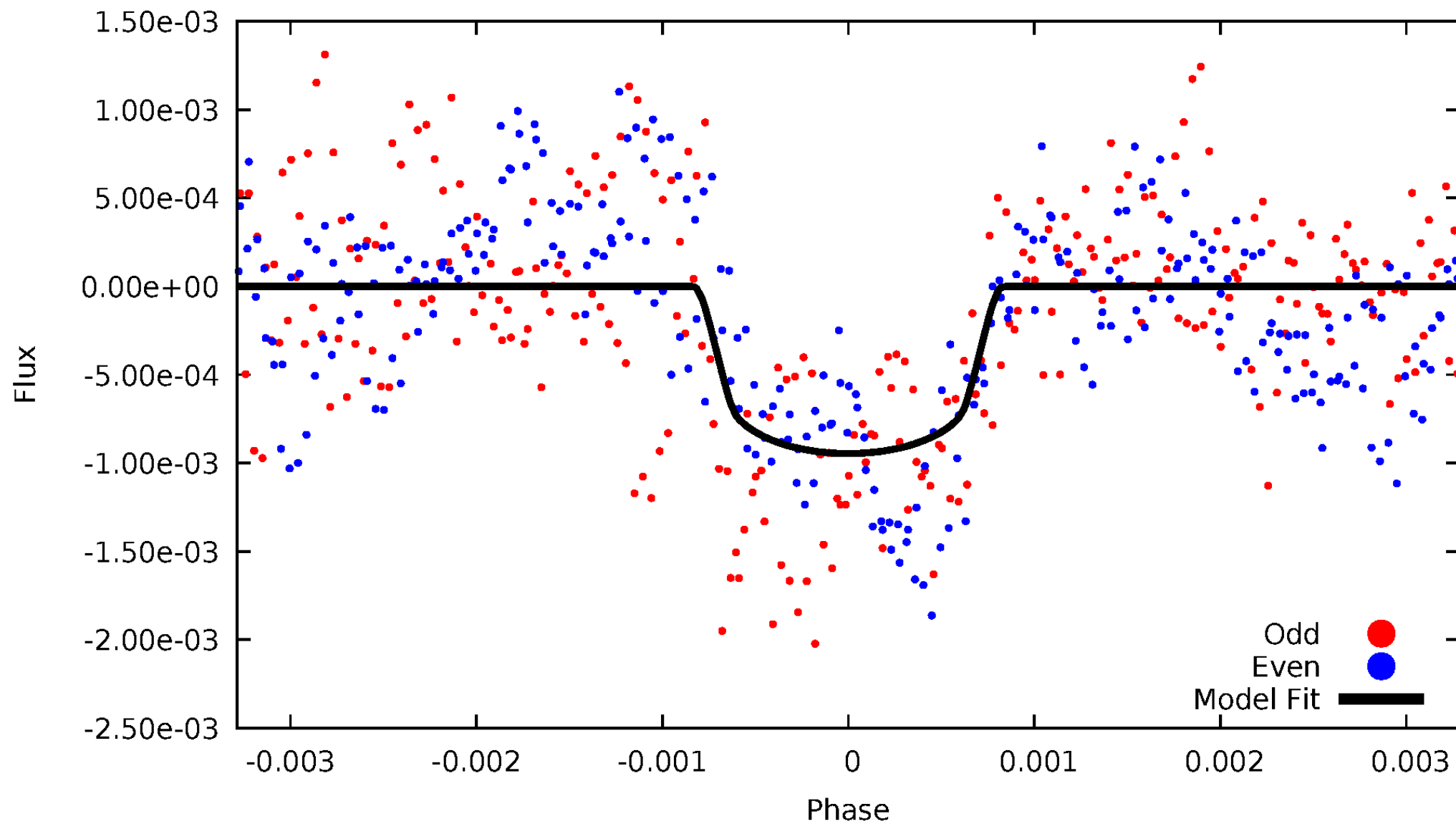


TCE 008293631-01



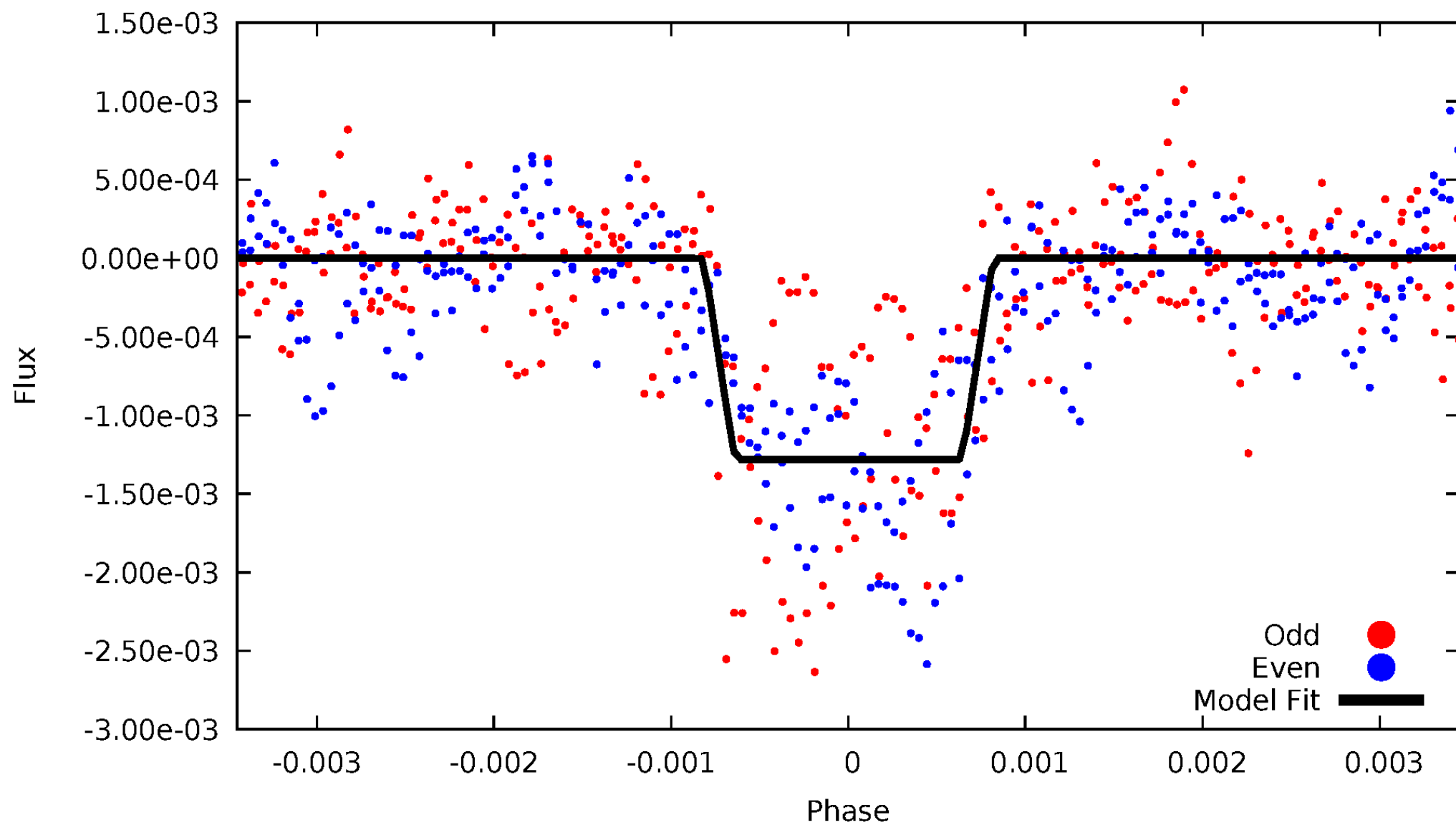
# DV Odd/Even

TCE 008293631-01



# ALT Odd/Even

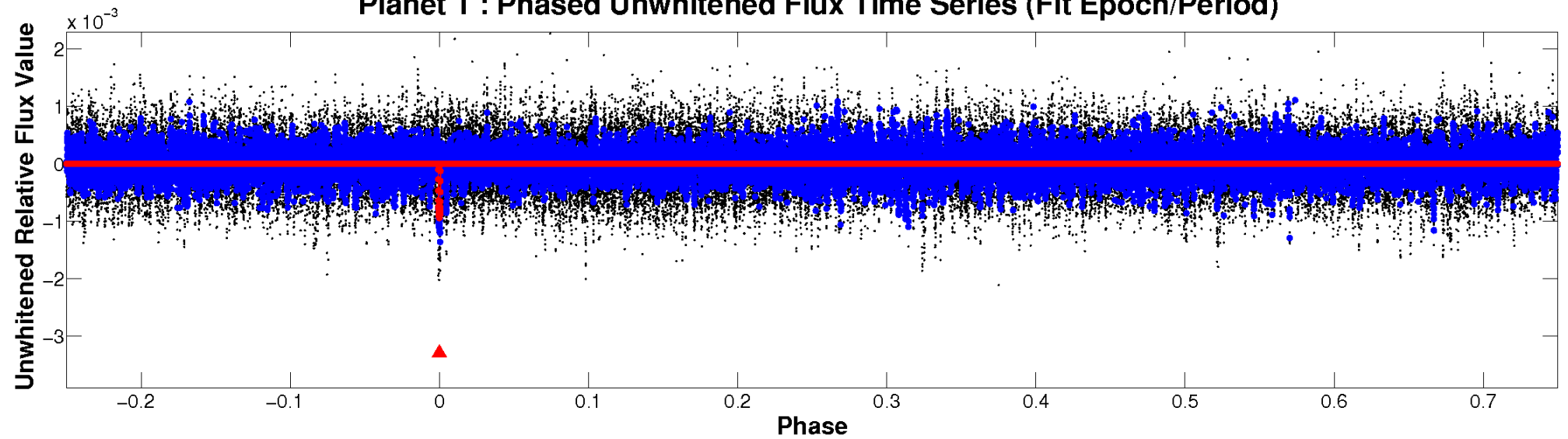
TCE 008293631-01



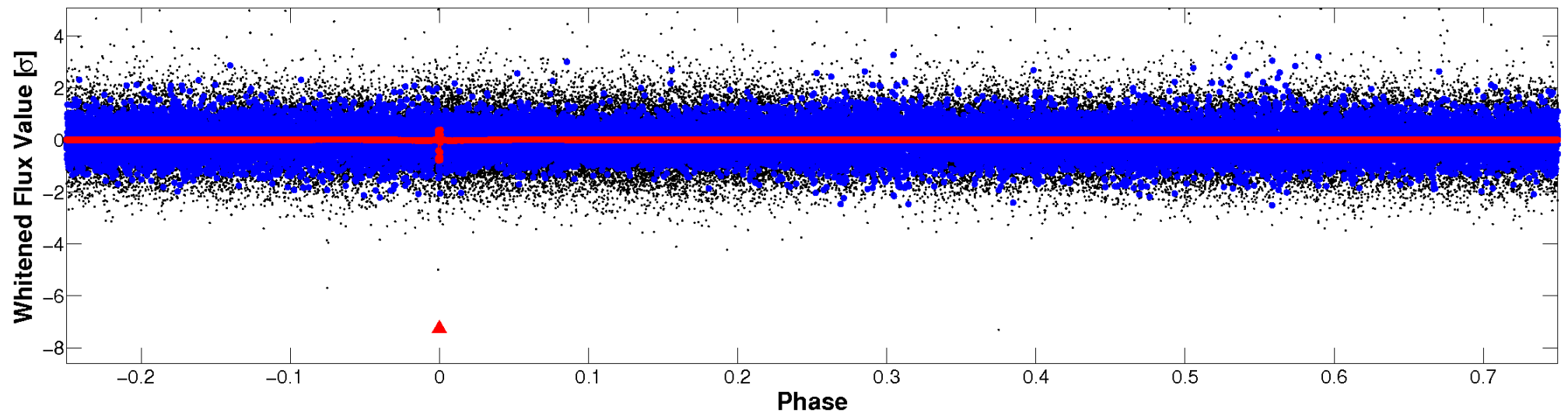


# Non-Whitened Vs. Whitened Light Curve

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

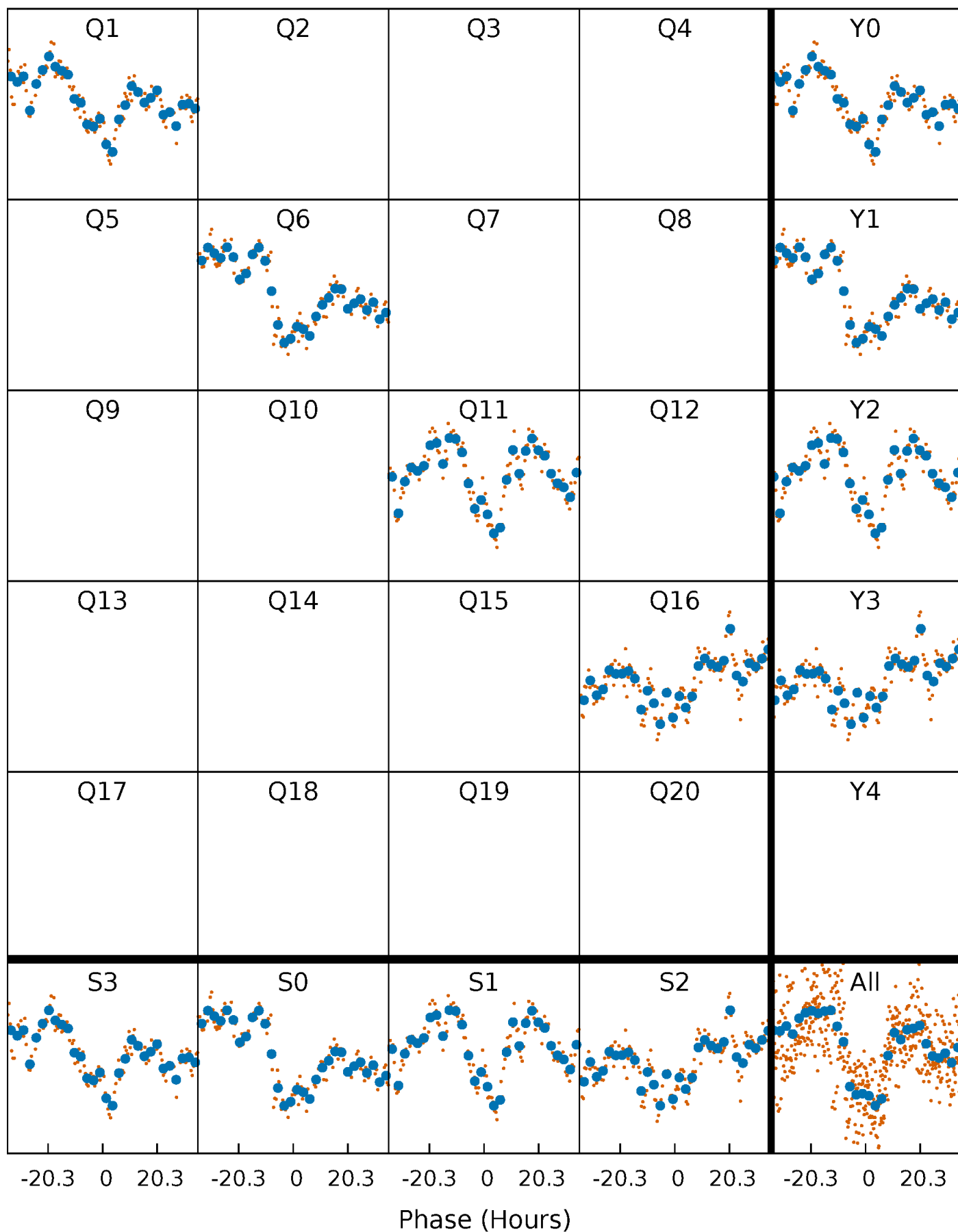


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

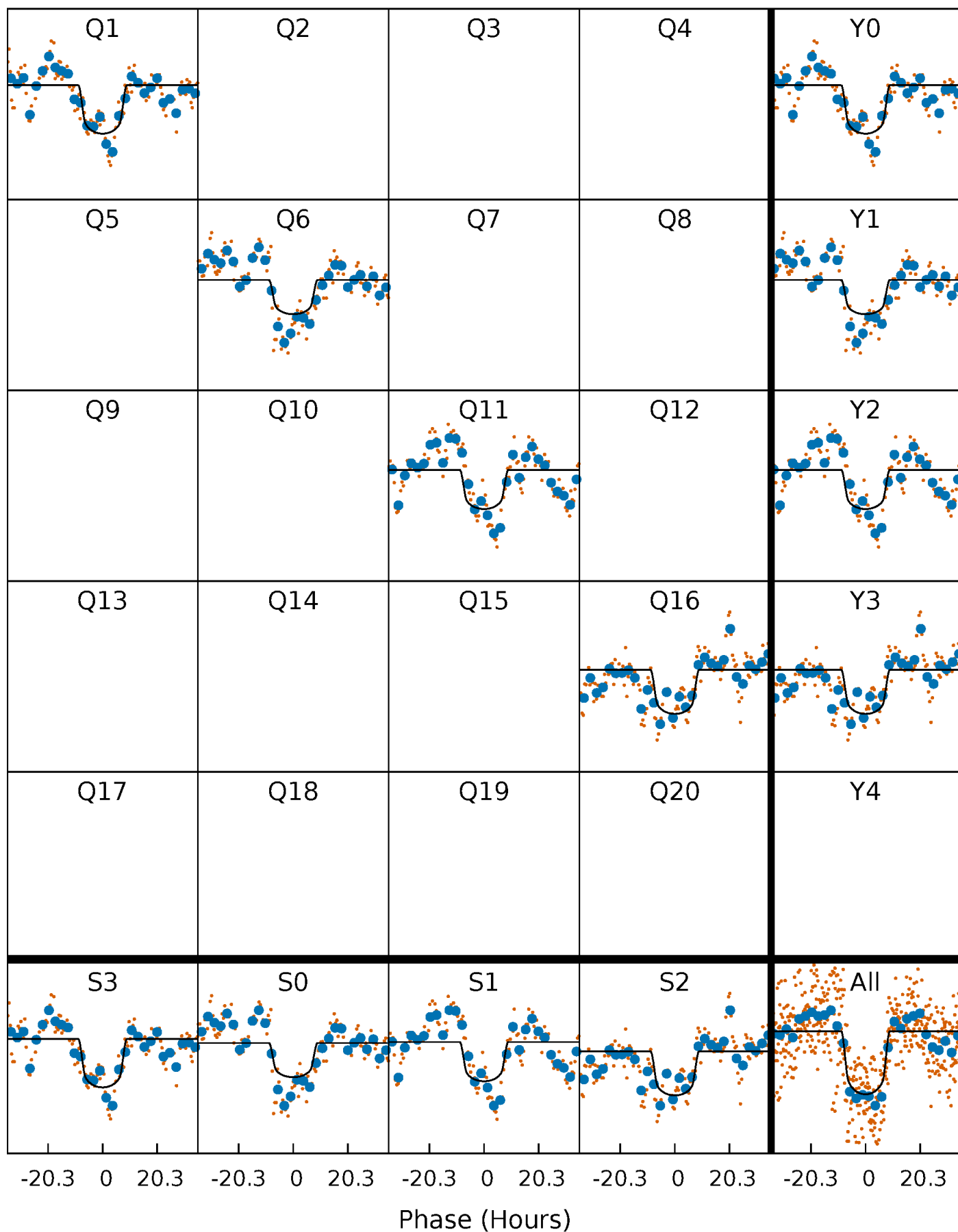
TCE 008293631-01 P=449.561028 Days  $T_0=142.811278$  (BKJD)





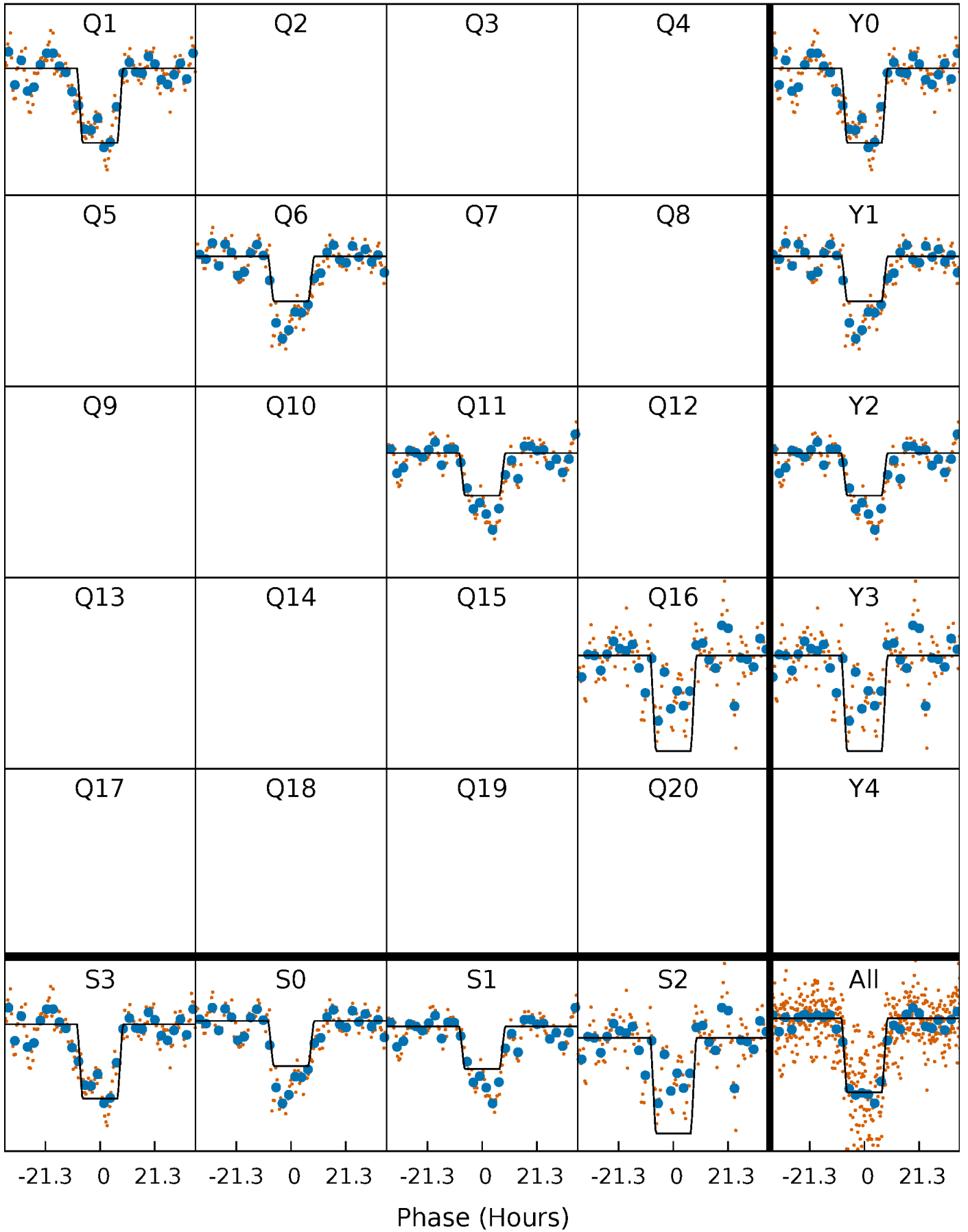
# DV Quarter-Phased Transit Curves

TCE 008293631-01 P=449.561028 Days  $T_0=142.811278$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

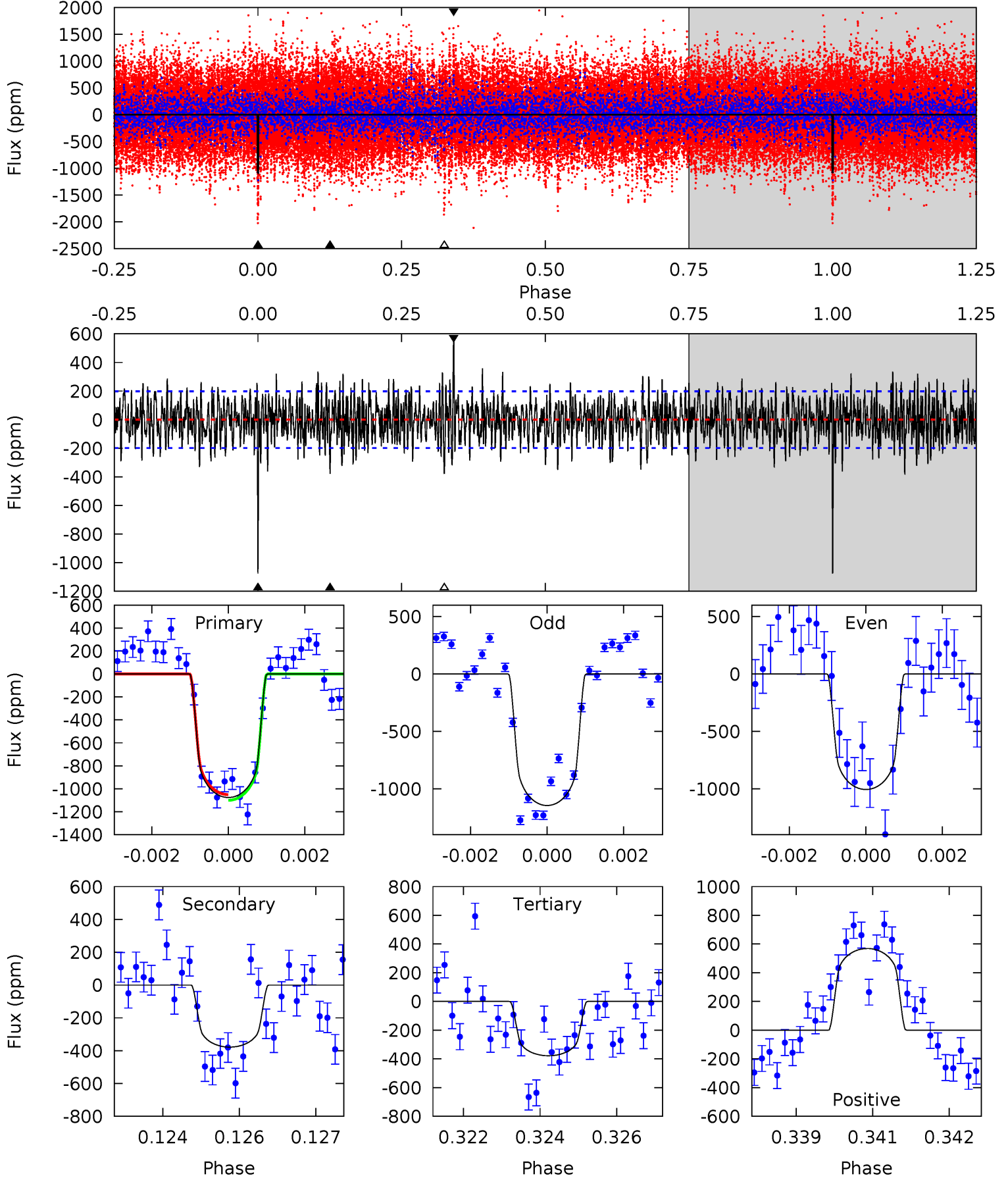
TCE 008293631-01 P=449.558754 Days  $T_0=142.818343$  (BKJD)



# DV Model-Shift Uniqueness Test

008293631-01, P = 449.561028 Days, E = 142.811278 Days

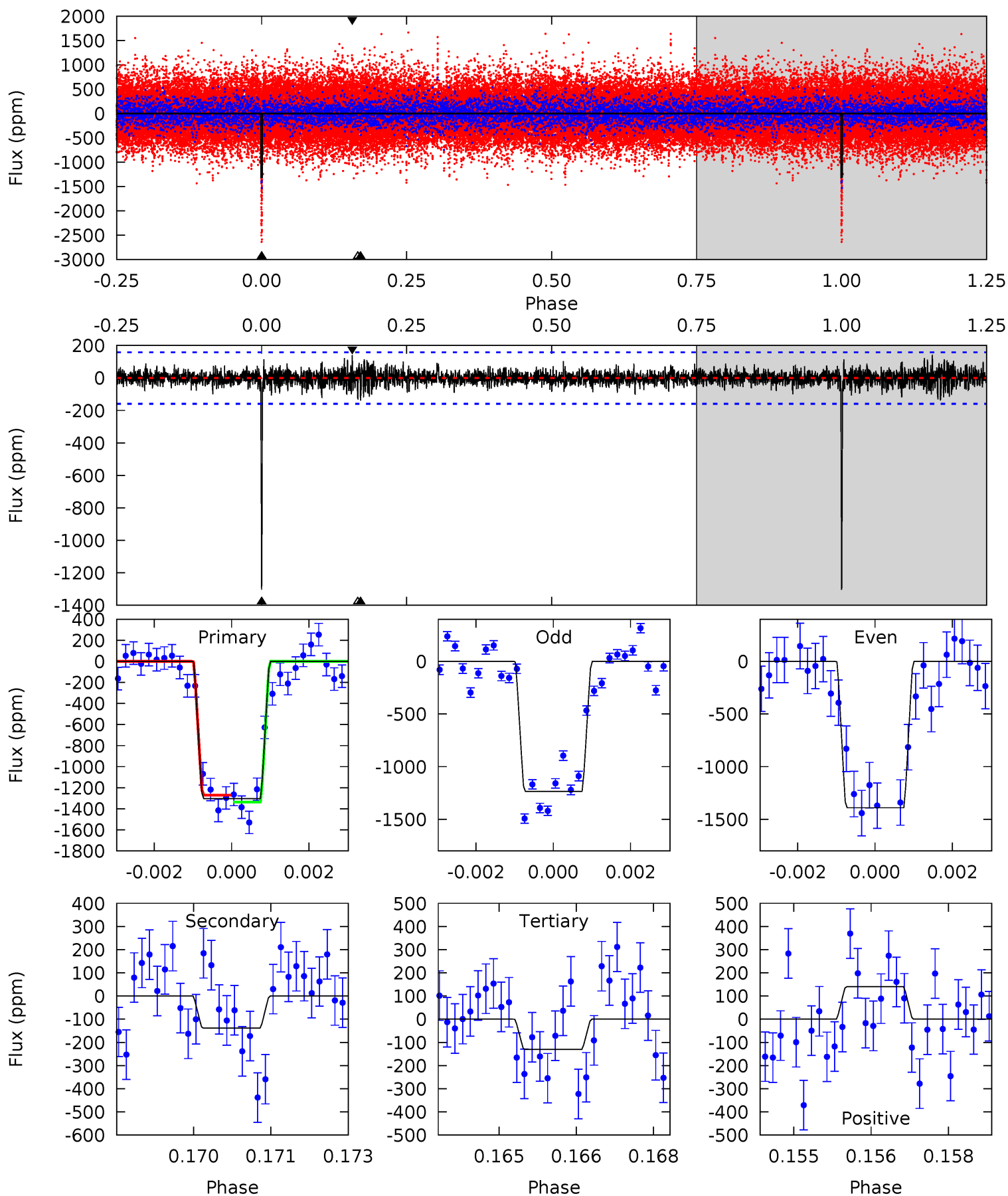
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.1	10.2	10.2	15.4	5.36	3.15	3.23	18.9	13.7	0.00	-5.15	1.89	1.07	0.35	0.67



# Alt Model-Shift Uniqueness Test

008293631-01, P = 449.558754 Days, E = 142.818343 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
44.1	4.69	4.43	4.73	5.36	3.14	1.07	39.7	39.4	0.26	-0.04	2.65	0.94	0.10	1.12



### Stellar Parameters For KIC 008293631

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$5323^{+117}_{-327}$	$2.510^{+0.036}_{-0.027}$	$-0.500^{+0.150}_{-0.500}$	$15.075^{+0.566}_{-5.090}$	$2.683^{+0.079}_{-1.510}$	$0.001^{+0.001}_{-0.000}$
	+2%/-6%	+1%/-1%	+30%/-100%	+4%/-34%	+3%/-56%	+59%/-11%
Source	PHO1	AST9	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 008293631-01 / KOI 8274.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-378 \pm 37$	$54.68^{+4.63}_{-5.17}$	$1004^{+32}_{-60}$	$4244^{+209}_{-220}$	$179^{+38}_{-31}$
Alt.	$-139 \pm 30$	$59.56^{+4.49}_{-4.98}$	$1007^{+29}_{-61}$	$3469^{+174}_{-177}$	$55^{+17}_{-13}$

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

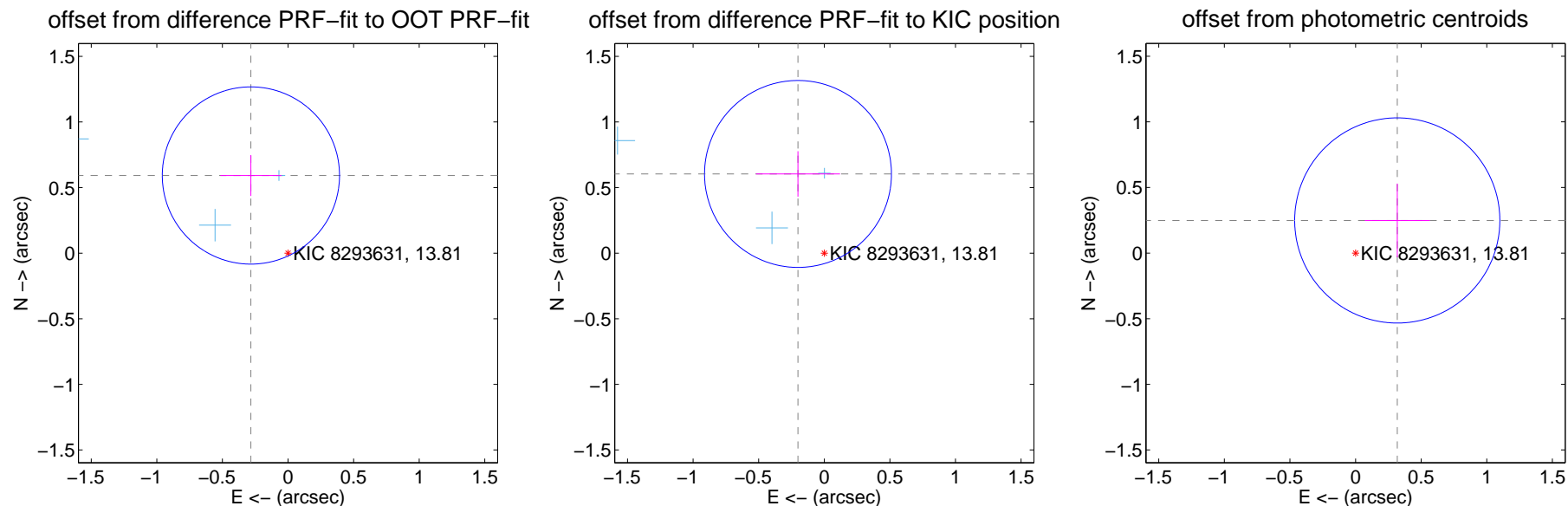
## DV Centroid Data

Supplemental centroid analysis for 008293631-01. Kepler magnitude: 13.81. Transit SNR 7.55

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

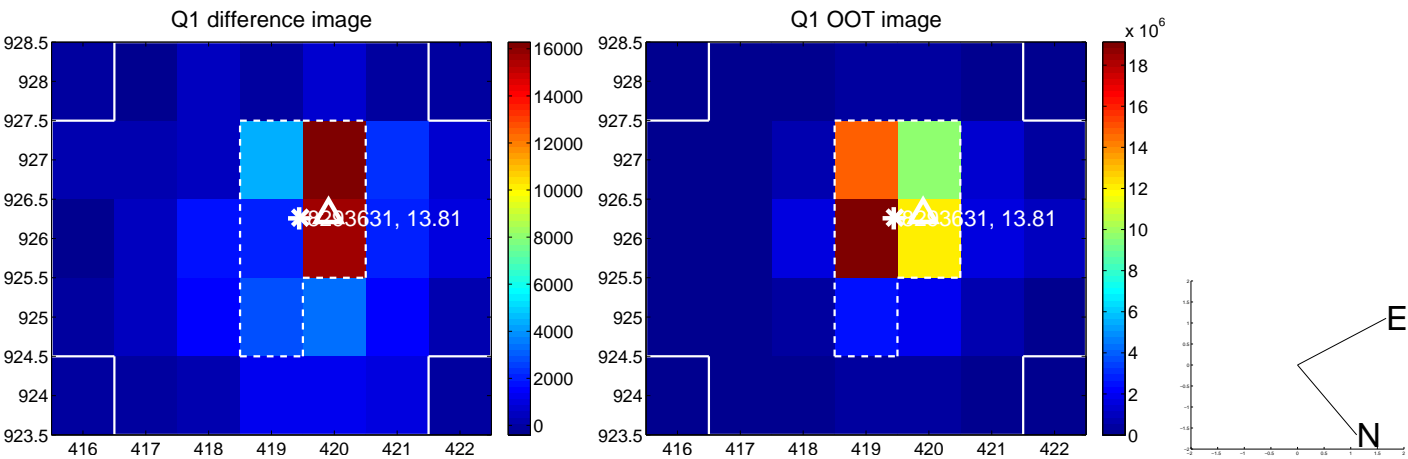
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.656 \pm 0.225$	2.91	$0.283 \pm 0.232$	$0.592 \pm 0.156$
PRF-fit source offset from KIC position	$0.636 \pm 0.237$	2.68	$0.200 \pm 0.320$	$0.604 \pm 0.173$
photometric centroid source offset	$0.40 \pm 0.26$	1.55	$-0.32 \pm 0.25$	$0.25 \pm 0.28$



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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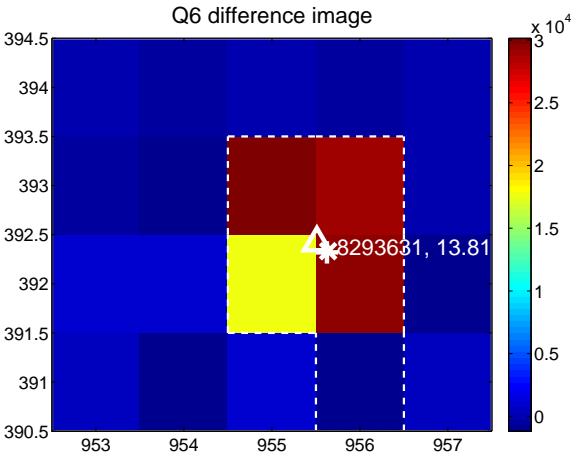
Q5 no difference image



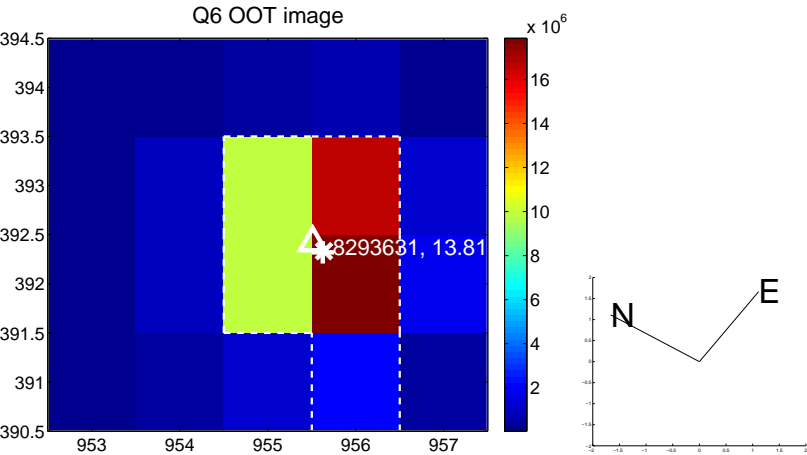
Q5 no OOT image



Q6 difference image



Q6 OOT image



Q7 no difference image



Q7 no OOT image



Q8 no difference image



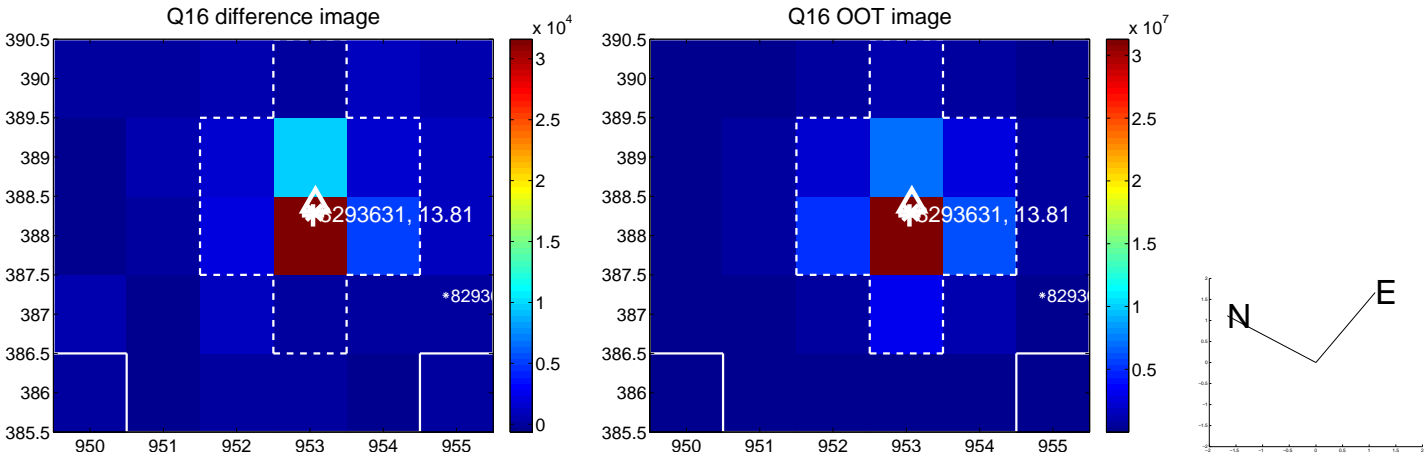
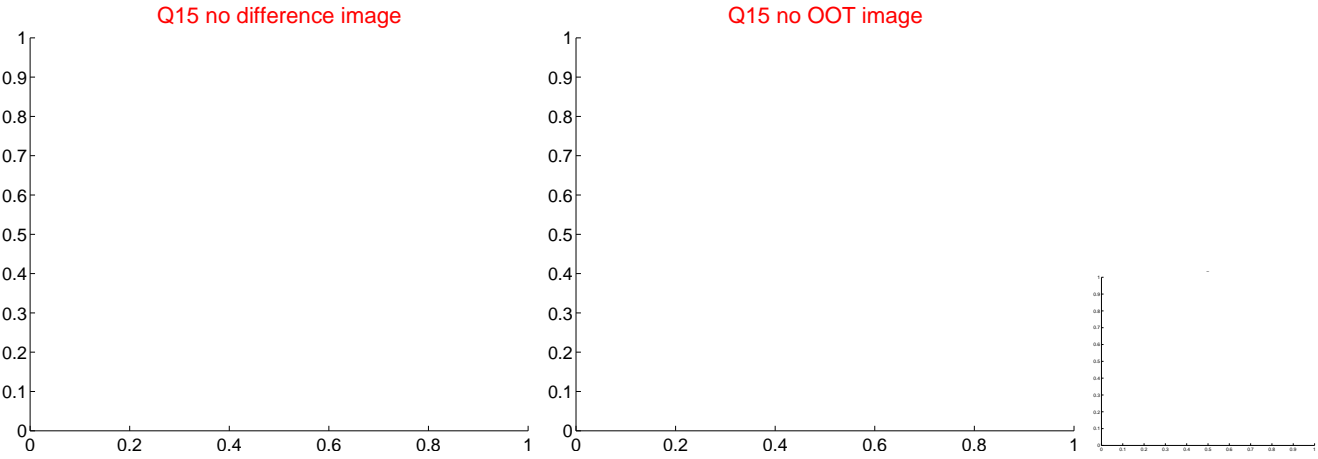
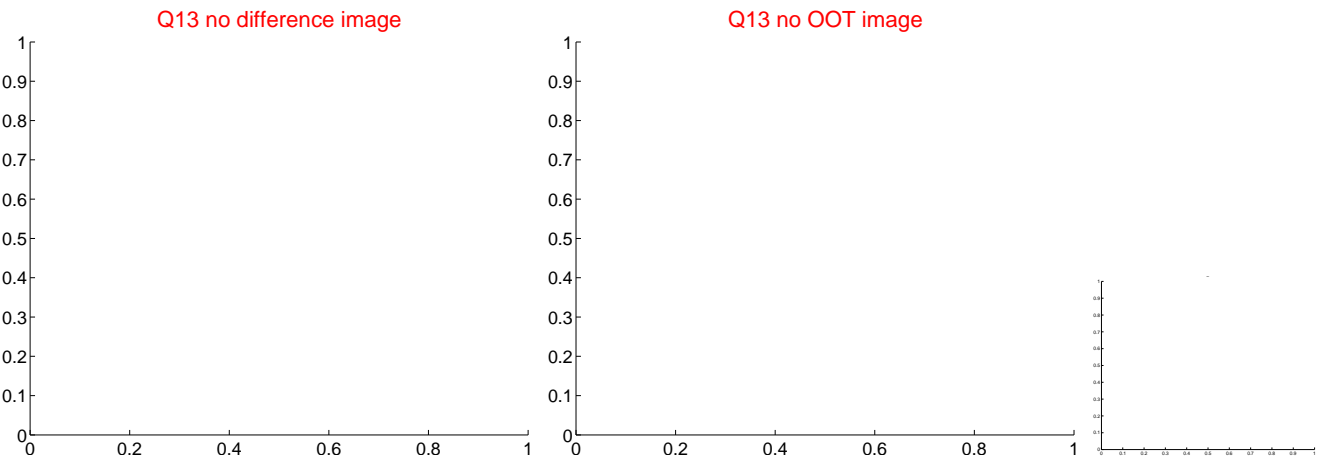
Q8 no OOT image



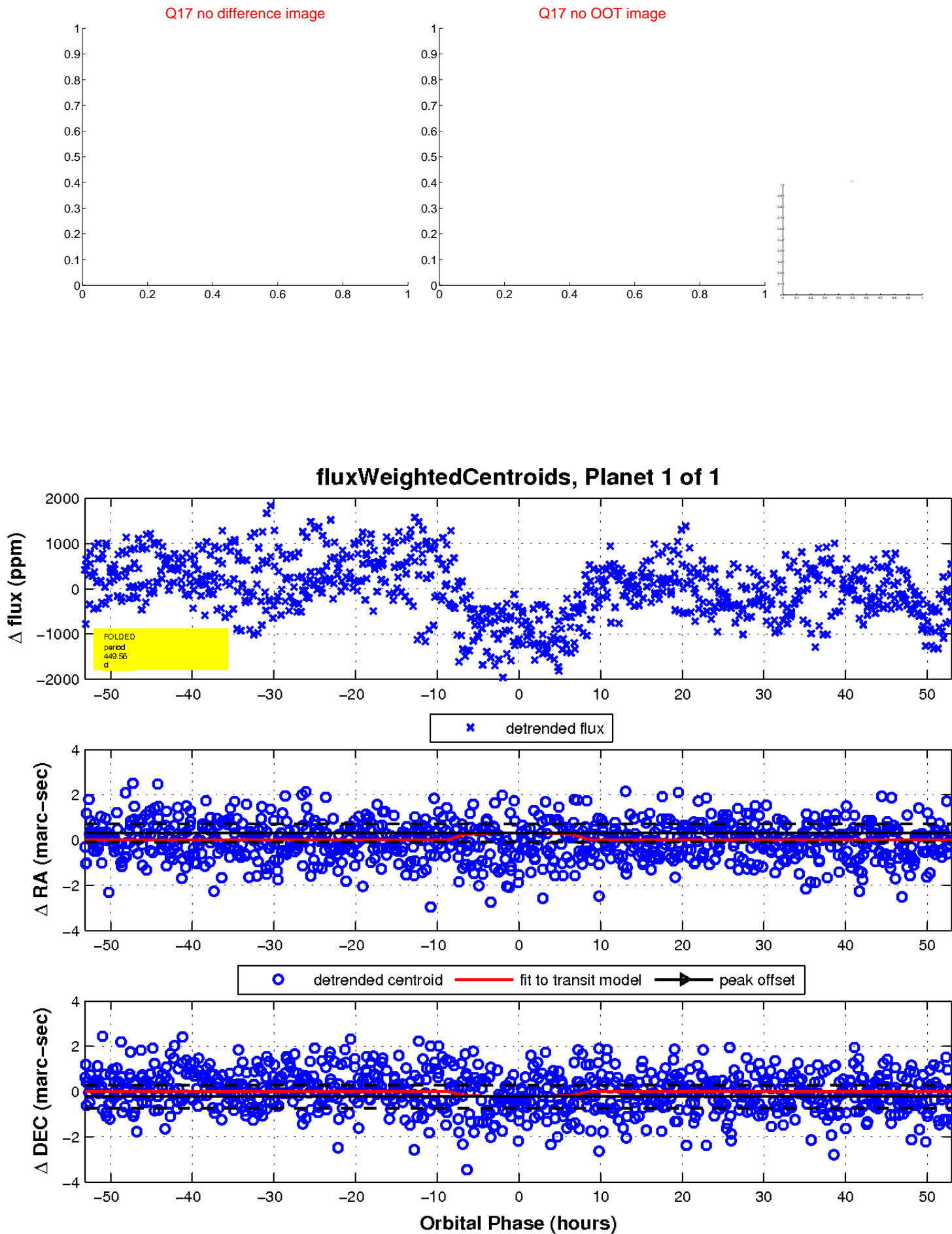
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

