

# KIC 005783891

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005783891-01	OBS	No	485.493933	409.648014	599.8	27.984	7.9	10.8	0.91	5970	2.24	0.64

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005783891-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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.

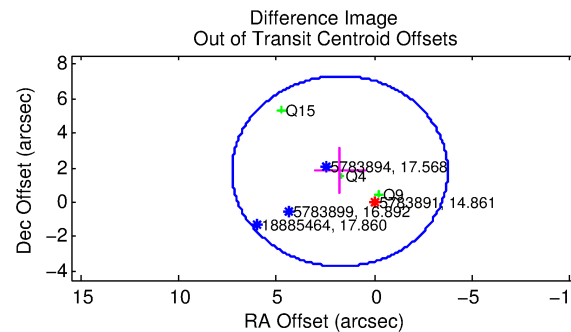
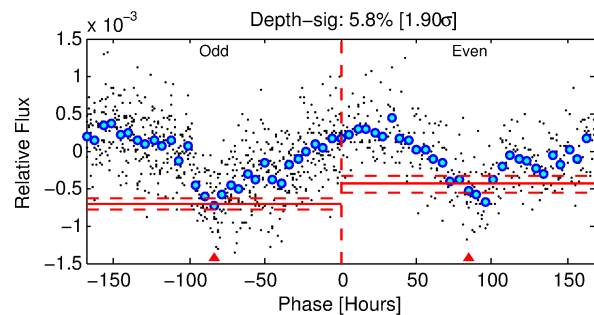
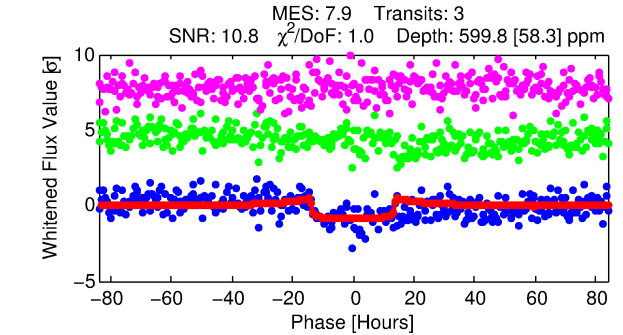
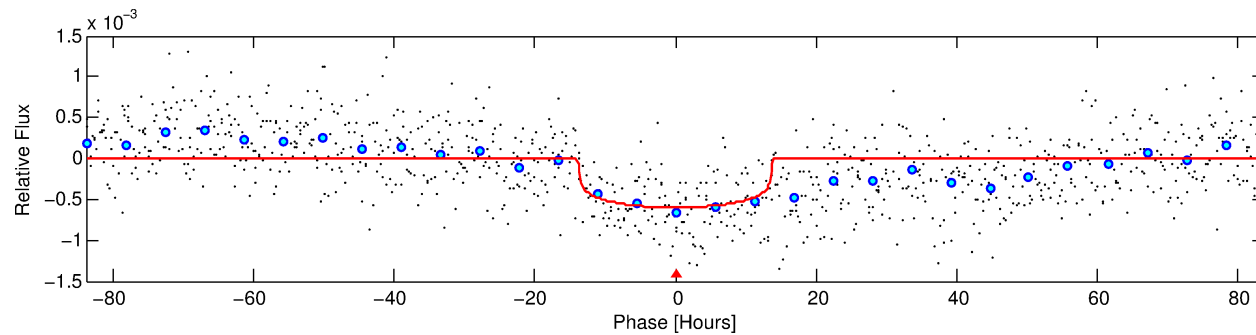
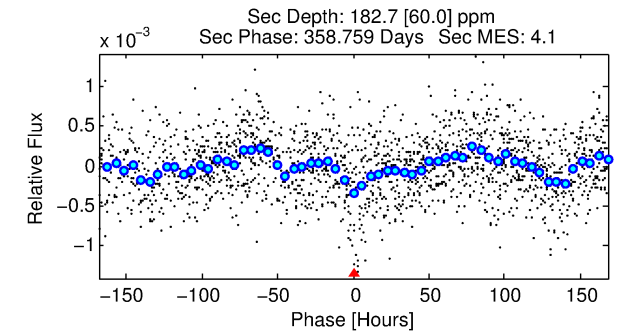
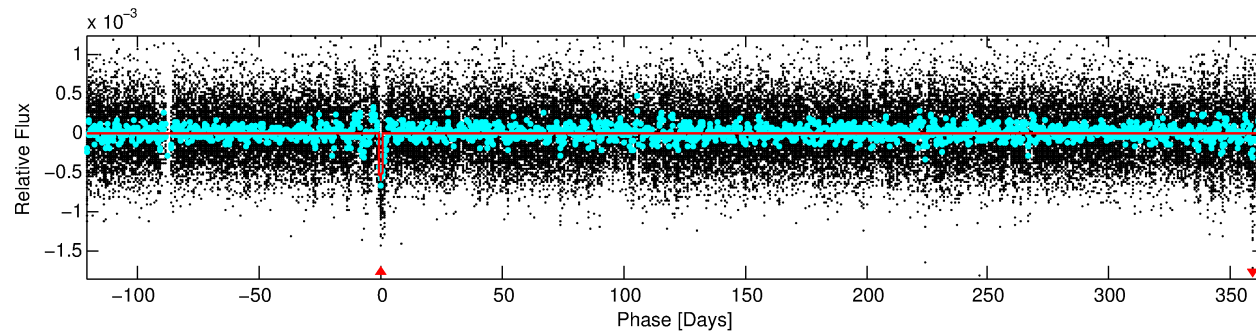
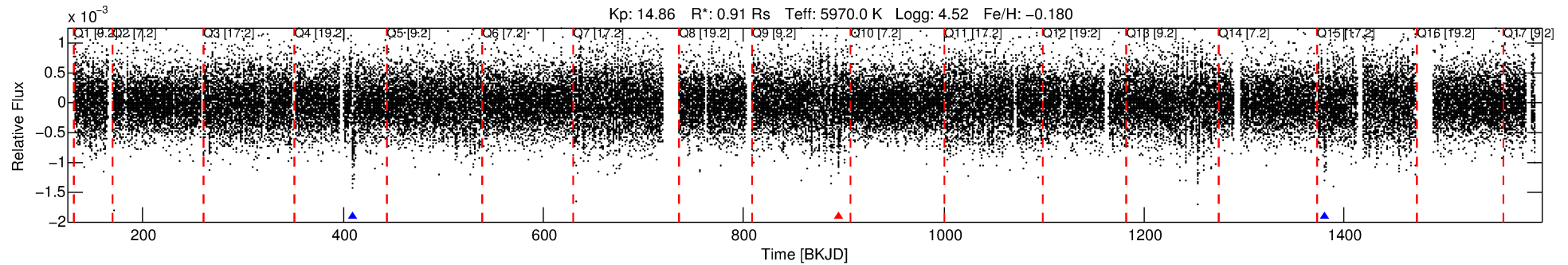
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005783891-01

No Significant Match Found

# DV One-Page Summary

KIC: 5783891 Candidate: 1 of 1 Period: 485.494 d



## DV Fit Results:

Period = 485.49393 [0.01345] d  
Epoch = 409.6480 [0.0170] BKJD  
Rp/R\* = 0.0226 [0.0071]  
a/R\* = 129.07 [188.79]  
b = 0.31 [4.26]  
Seff = 0.64 [0.22]  
Teq = 228 [20] K  
Rp = 2.24 [0.91] Re  
a = 1.2084 [0.2648] AU  
Ag = 29310.03 [22798.96] [1.29 $\sigma$ ]  
Teff = 4619 [830] K [5.29 $\sigma$ ]

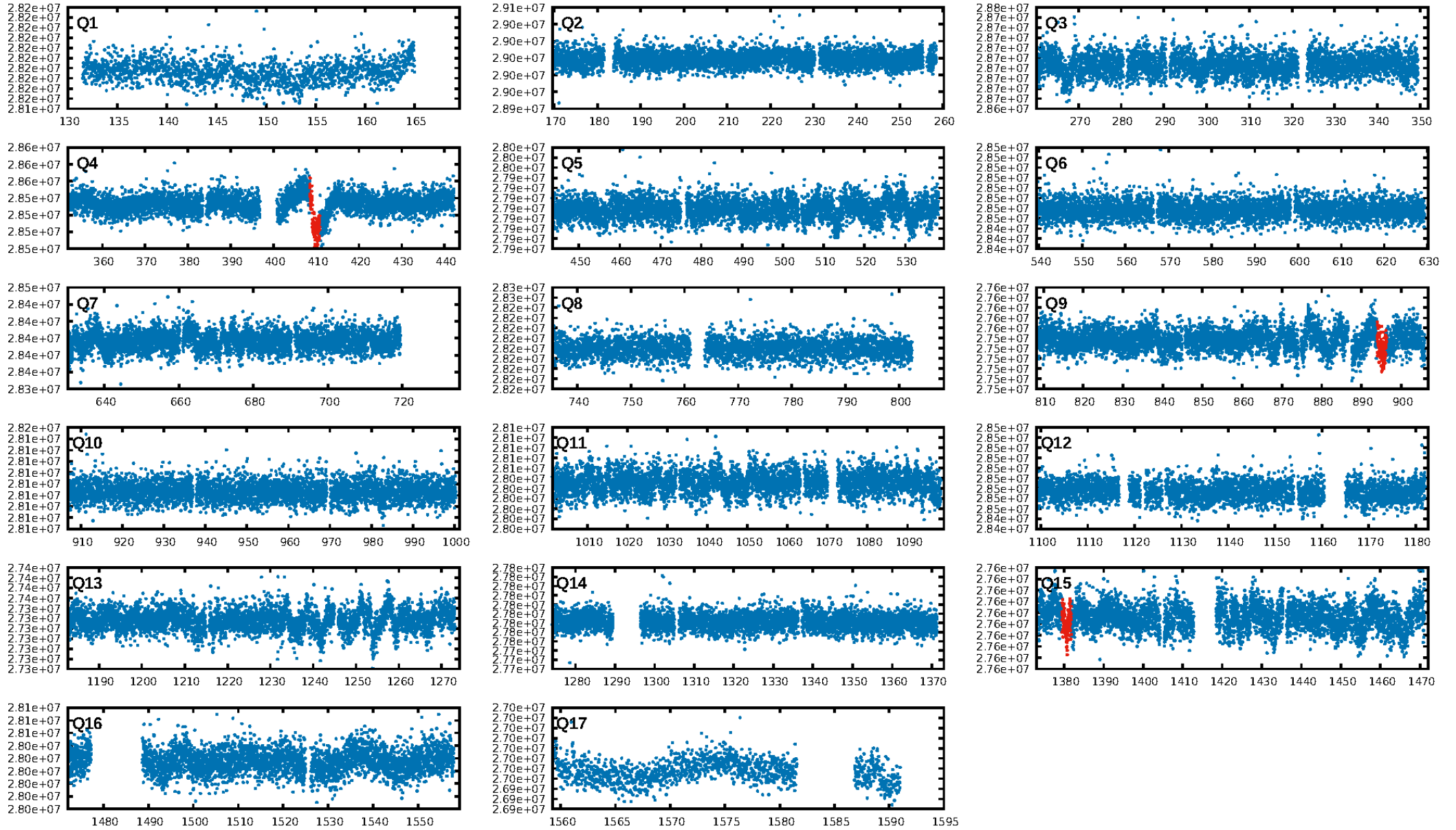
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 2.3%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 3.25e-11**  
**RollingBand-fgt: 0.67 [2/3]**  
GhostDiagnostic-chr: 1.767  
Centroid-sig: 30.9%  
Centroid-so: 1.691 arcsec [1.13 $\sigma$ ]  
OotOffset-rm: 2.516 arcsec [1.37 $\sigma$ ]  
OotOffset-st: 0/1/1/1 [3]  
KicOffset-rm: 2.602 arcsec [1.36 $\sigma$ ]  
KicOffset-st: 0/1/1/1 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [3/3]

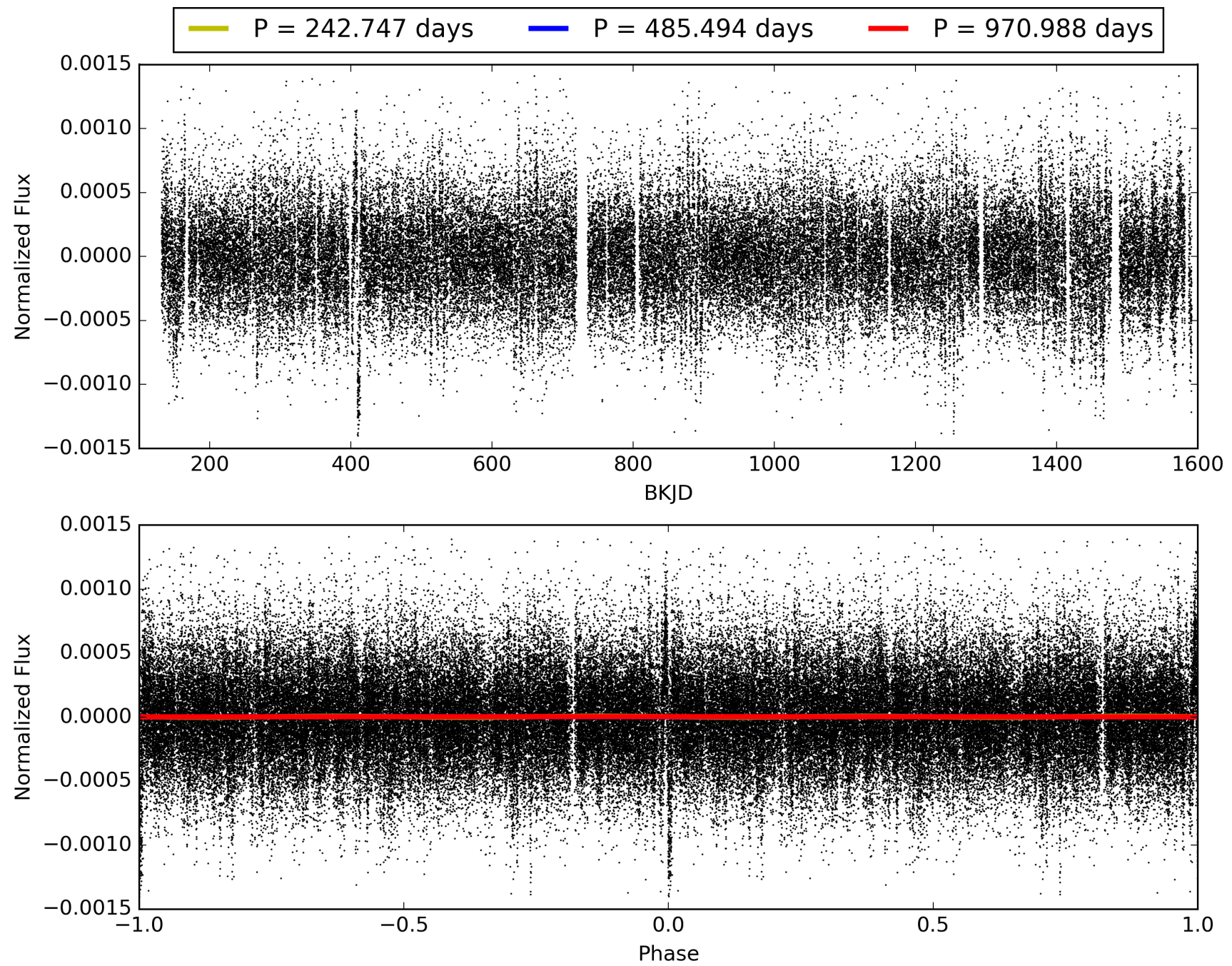
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:44:54 Z

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

# TCE 005783891-01, PDC Light Curves

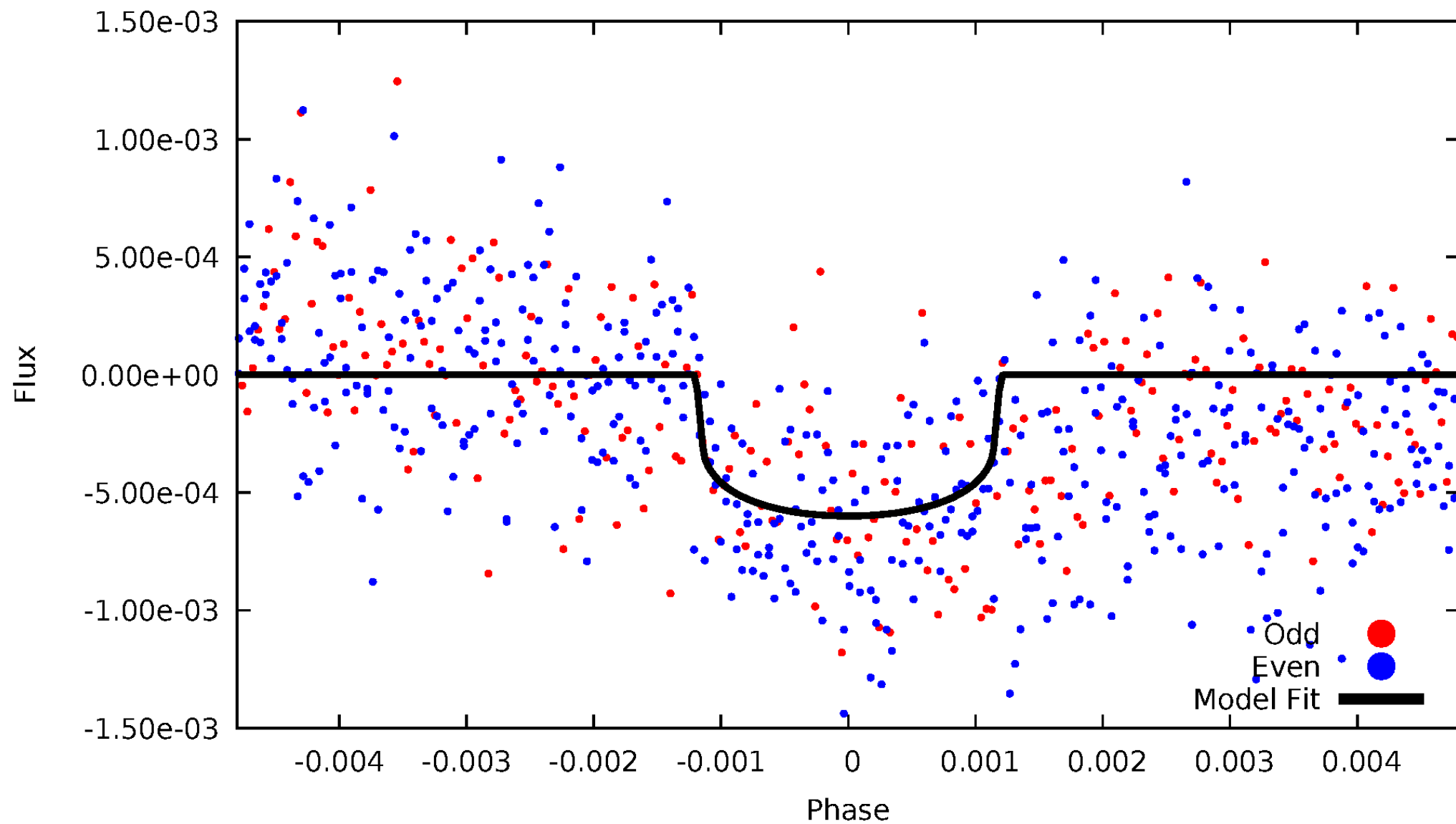


TCE 005783891-01



# DV Odd/Even

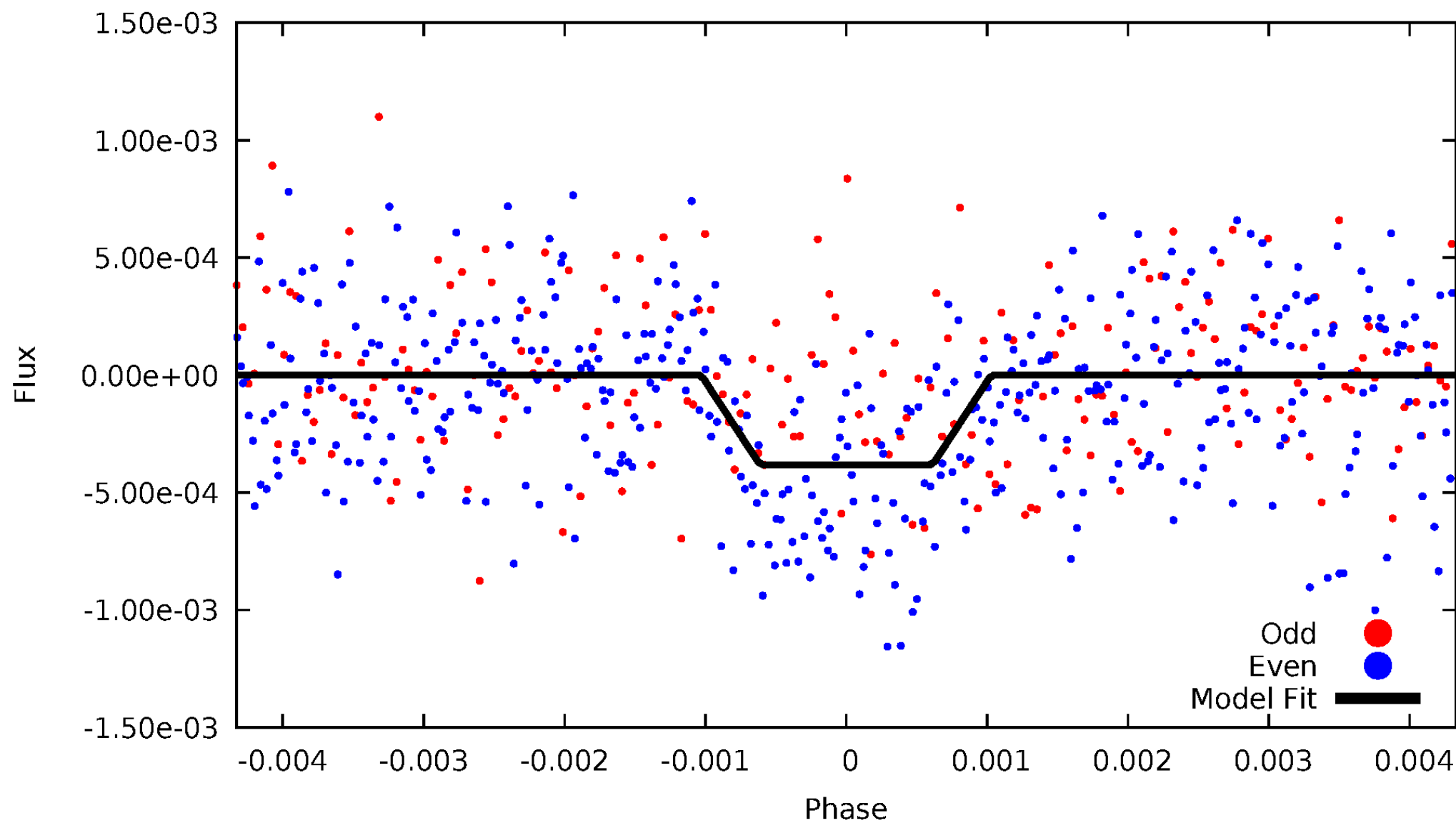
TCE 005783891-01





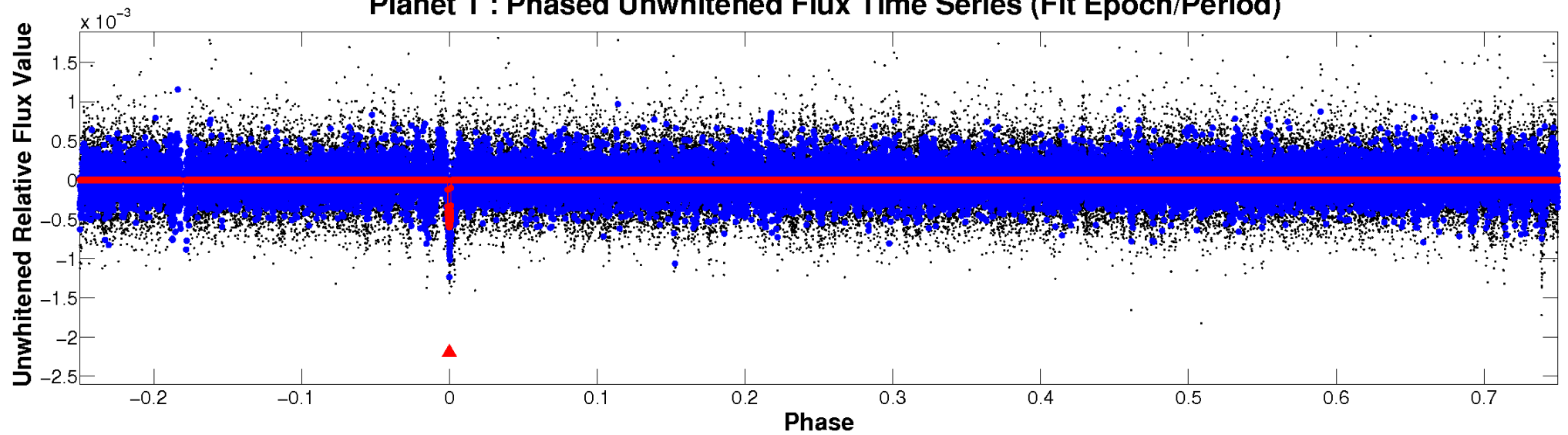
# ALT Odd/Even

TCE 005783891-01

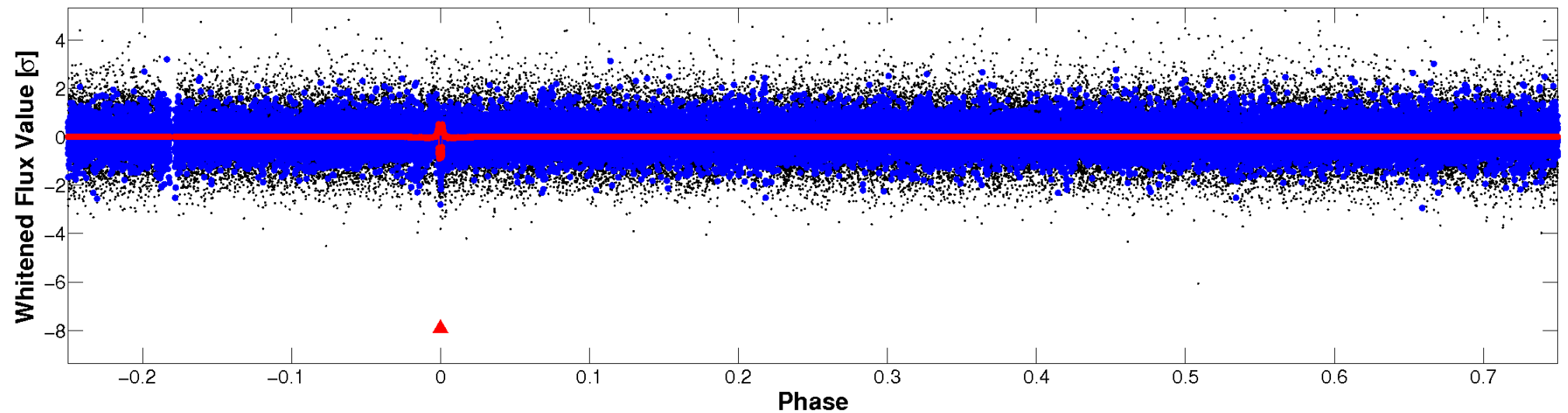


# Non-Whitened Vs. Whitened Light Curve

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

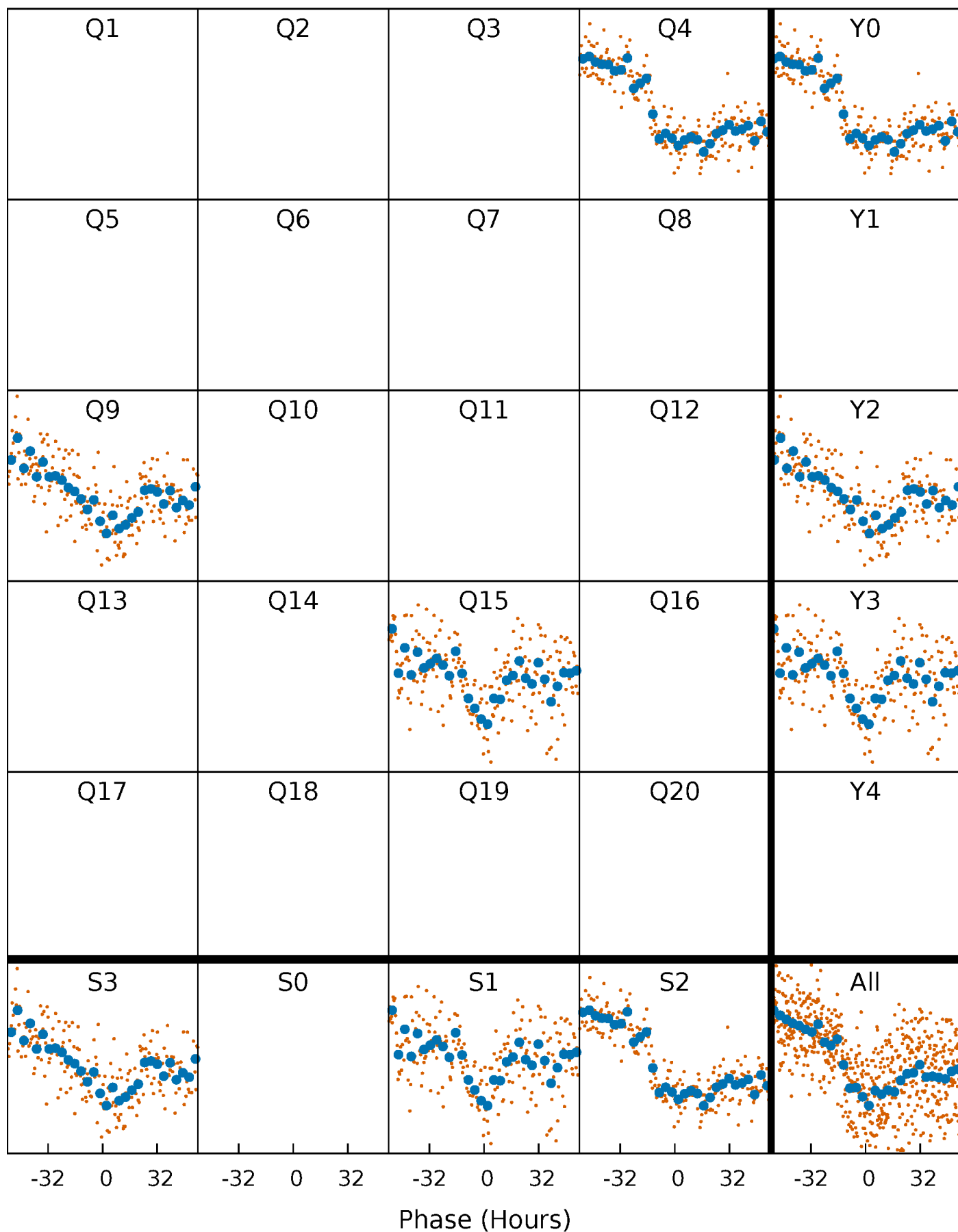


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

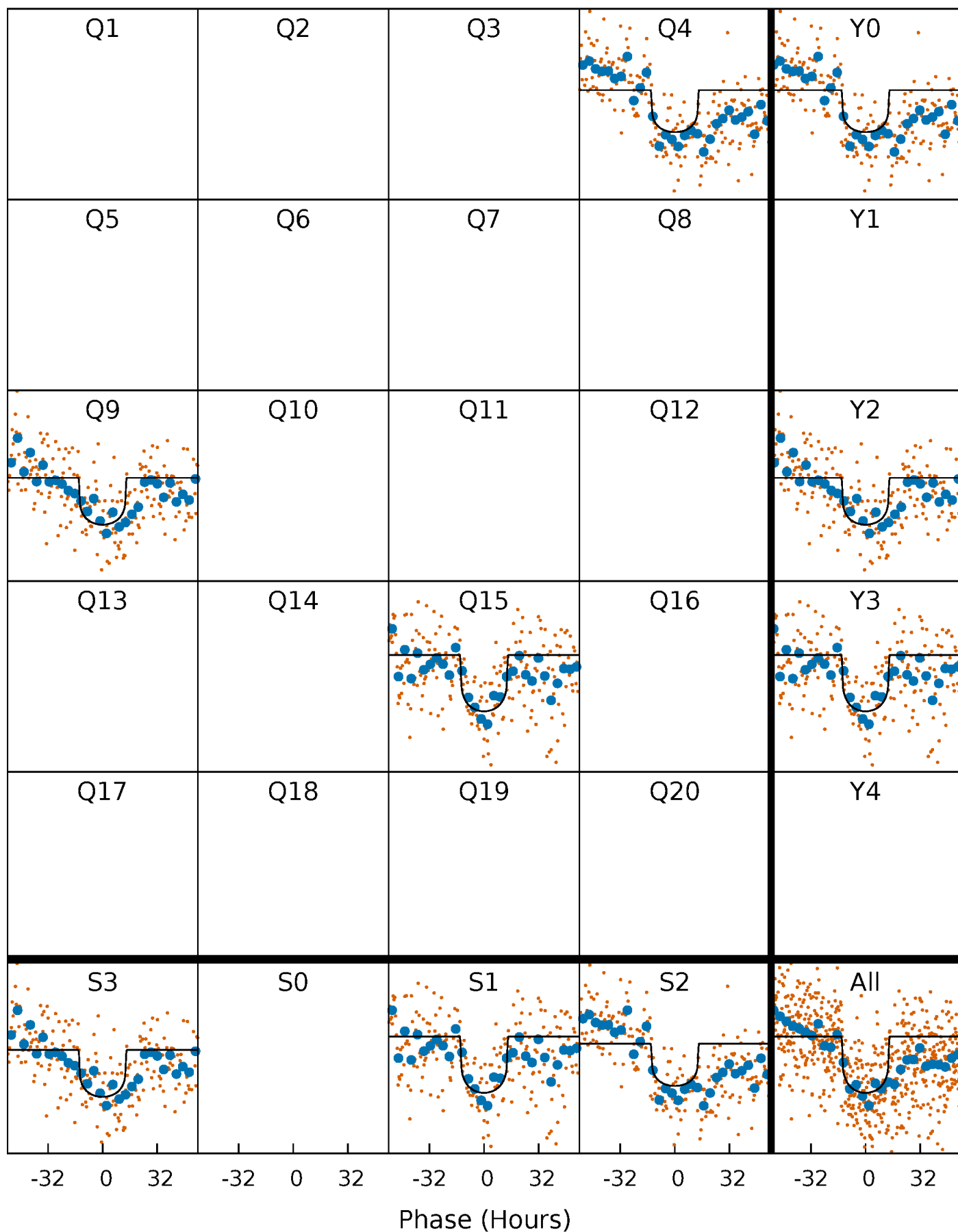
TCE 005783891-01 P=485.493933 Days  $T_0=409.648014$  (BKJD)





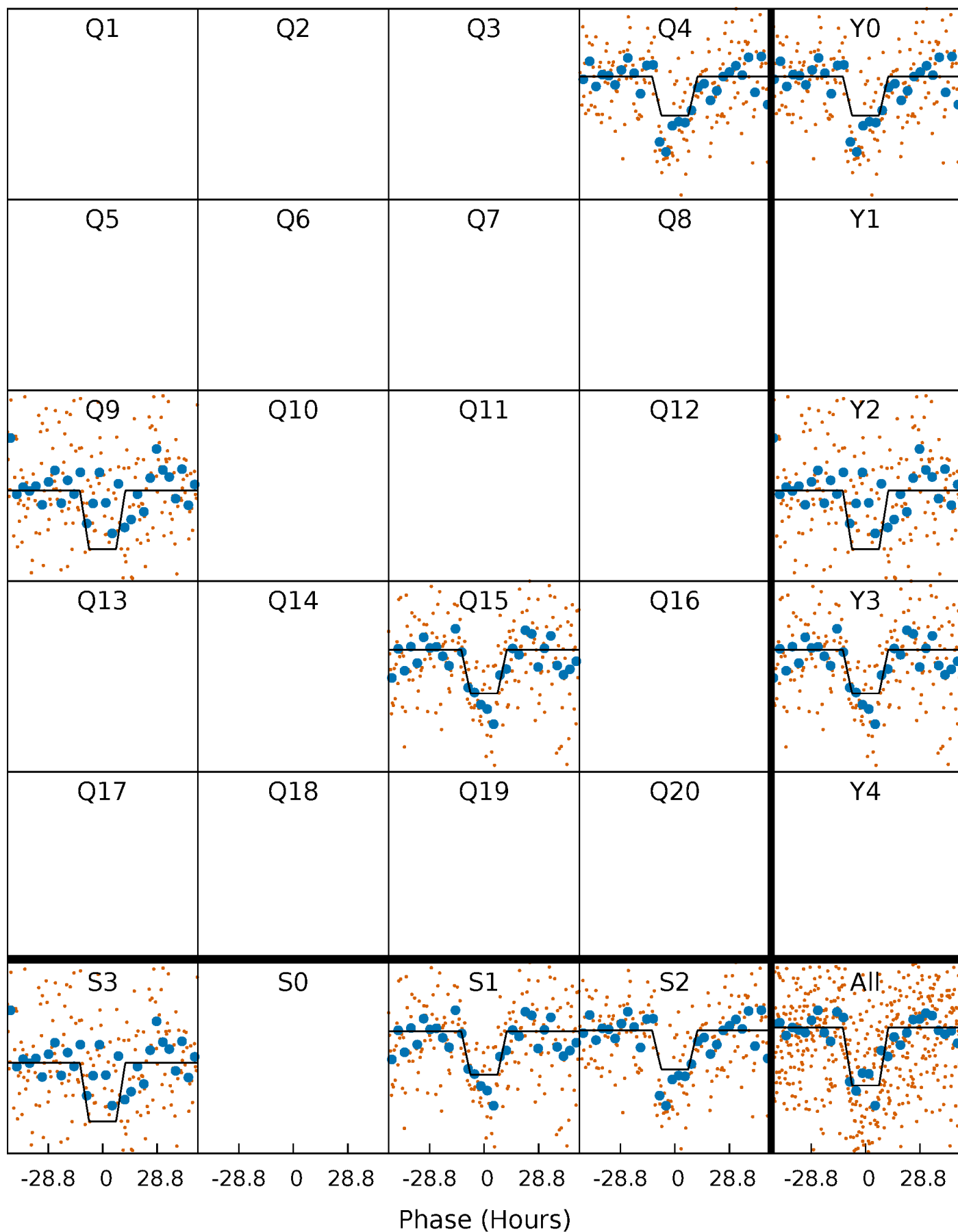
# DV Quarter-Phased Transit Curves

TCE 005783891-01 P=485.493933 Days  $T_0=409.648014$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

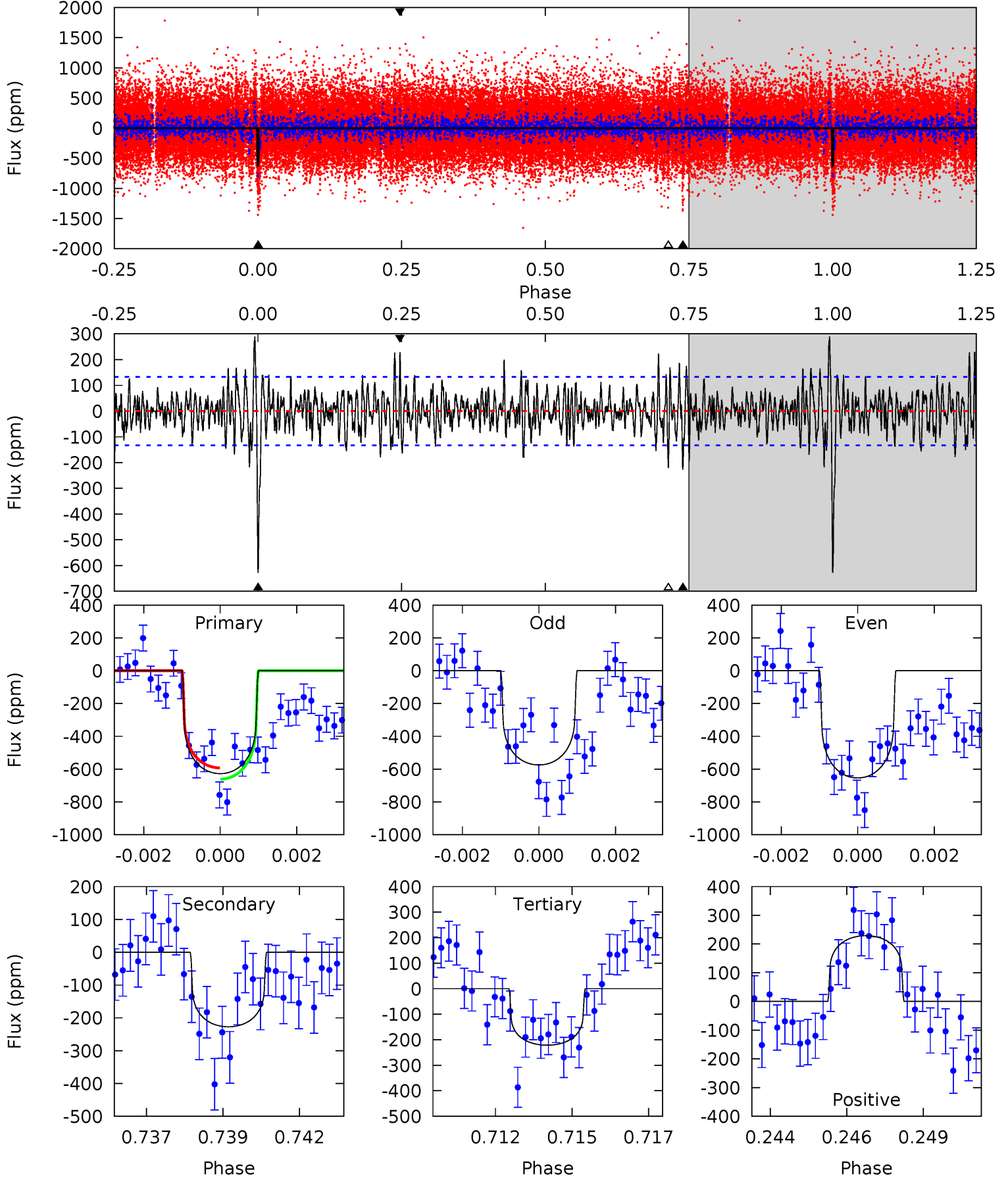
TCE 005783891-01 P=485.542253 Days  $T_0=409.489485$  (BKJD)



# DV Model-Shift Uniqueness Test

005783891-01, P = 485.493933 Days, E = 409.648014 Days

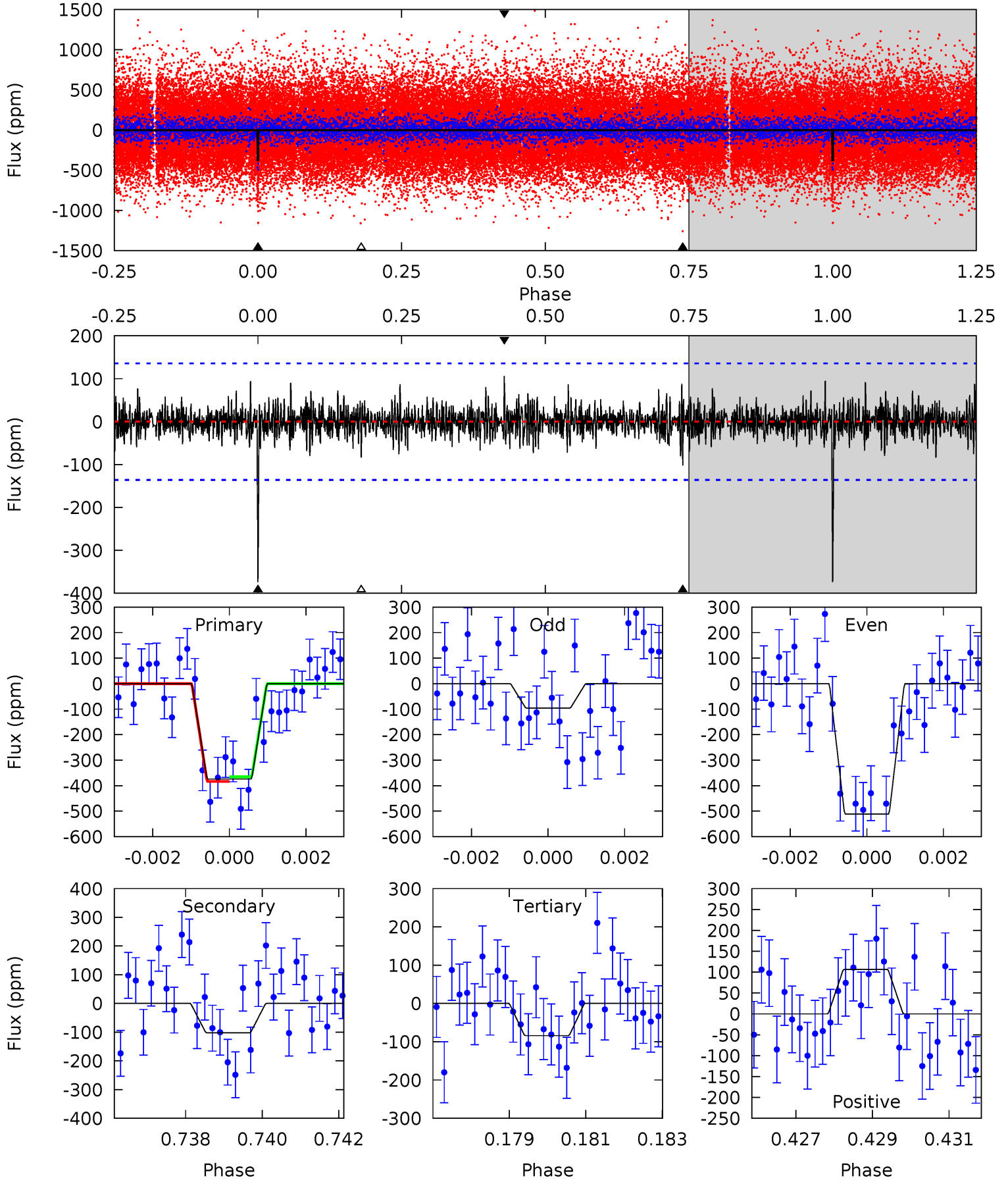
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.0	9.05	8.82	9.13	5.29	3.03	2.56	16.2	15.9	0.23	-0.07	1.49	1.09	0.32	1.37



# Alt Model-Shift Uniqueness Test

005783891-01, P = 485.542253 Days, E = 409.489485 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
14.7	4.00	3.29	4.18	5.32	3.08	0.96	11.4	10.5	0.70	-0.18	7.60	0.79	0.22	0.35



### Stellar Parameters For KIC 005783891

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5970^{+161}_{-179}$	$4.521^{+0.044}_{-0.176}$	$-0.180^{+0.300}_{-0.300}$	$0.908^{+0.235}_{-0.084}$	$0.996^{+0.109}_{-0.134}$	$1.877^{+0.427}_{-0.858}$
	+3%/-3%	+1%/-4%	+167%/-167%	+26%/-9%	+11%/-13%	+23%/-46%
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 005783891-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-227 \pm 25$	$2.33^{+0.80}_{-0.71}$	$325^{+20}_{-14}$	$4962^{+907}_{-553}$	$33448^{+34432}_{-15408}$
Alt.	$-102 \pm 26$	$1.97^{+0.78}_{-0.73}$	$324^{+21}_{-14}$	$4467^{+956}_{-517}$	$19605^{+30907}_{-10057}$

$T_{max}$  = 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

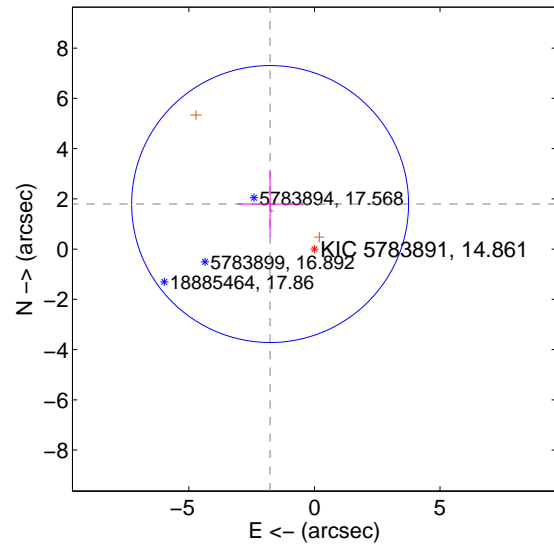
Supplemental centroid analysis for 005783891-01. Kepler magnitude: 14.86. Transit SNR 10.81

There are 1 quarters with good PRF difference image offsets

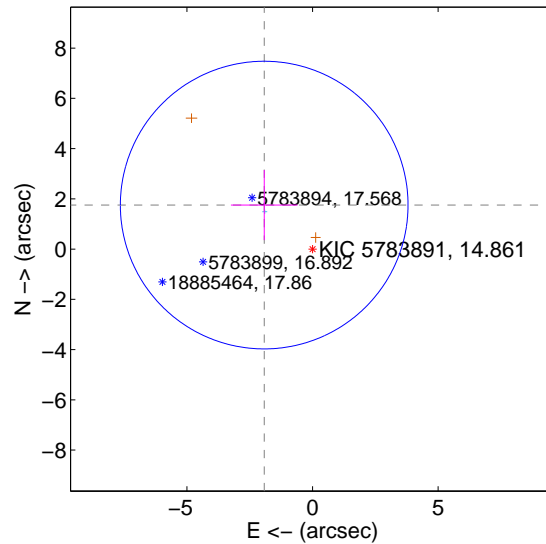
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.516 \pm 1.837$	1.37	$1.765 \pm 1.299$	$1.793 \pm 1.305$
PRF-fit source offset from KIC position	$2.602 \pm 1.908$	1.36	$1.923 \pm 1.326$	$1.752 \pm 1.395$
photometric centroid source offset	$1.69 \pm 1.49$	1.13	$1.61 \pm 1.51$	$-0.53 \pm 1.33$

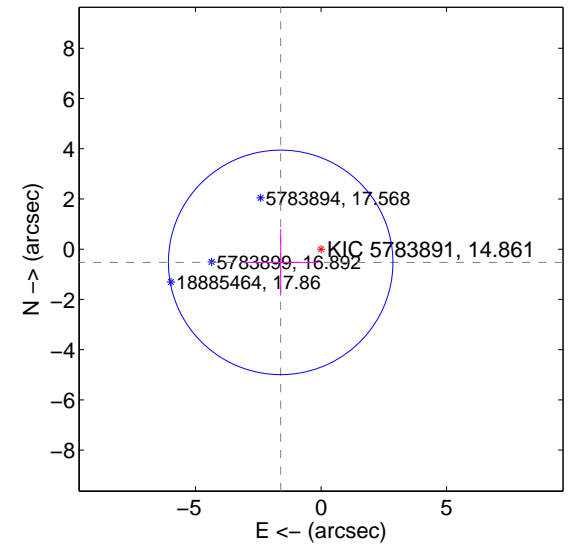
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



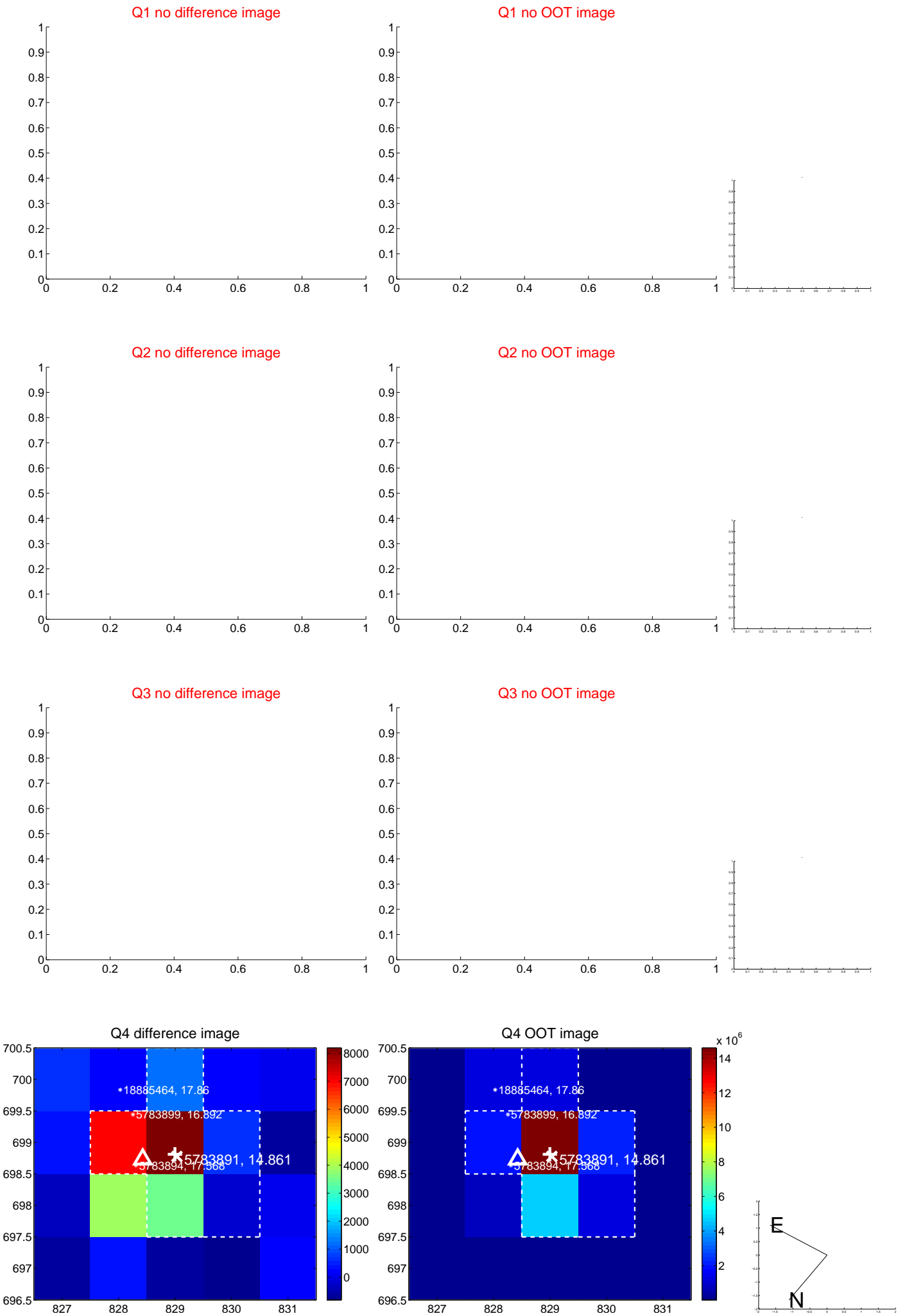
offset from photometric centroids



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.



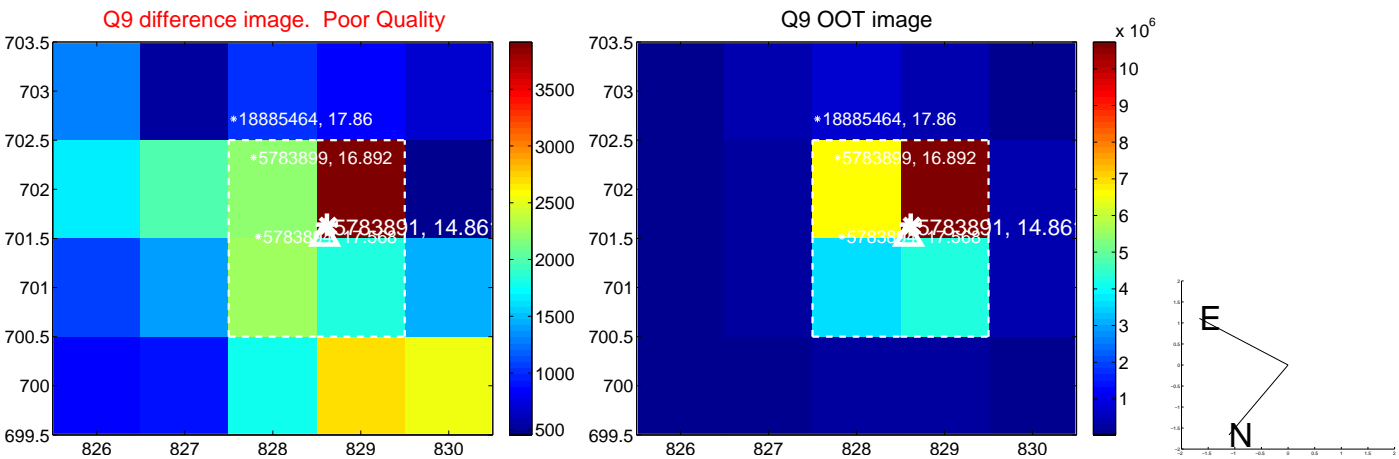
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



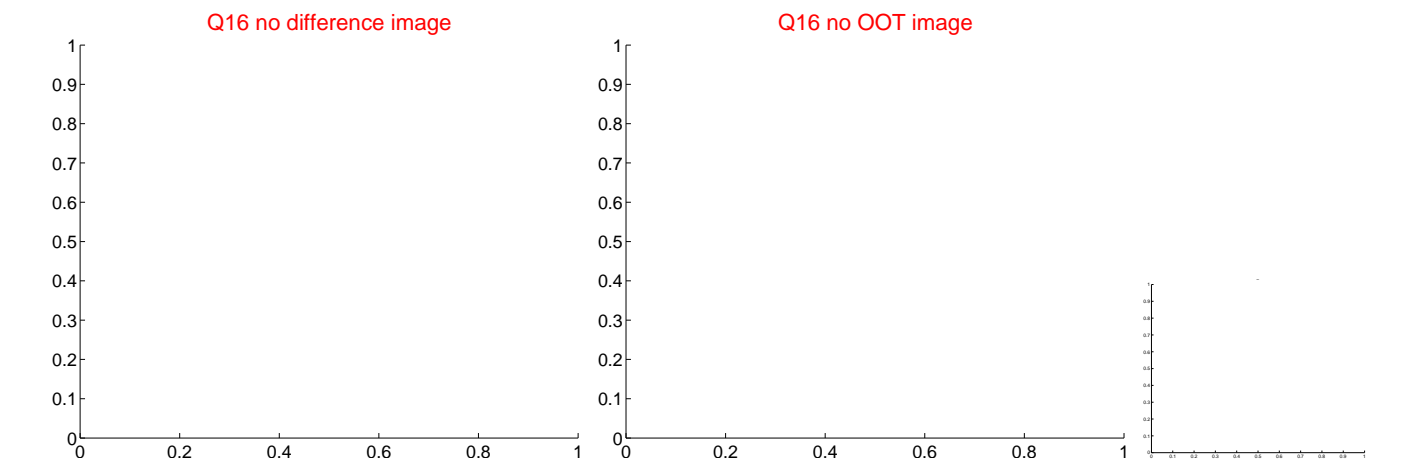
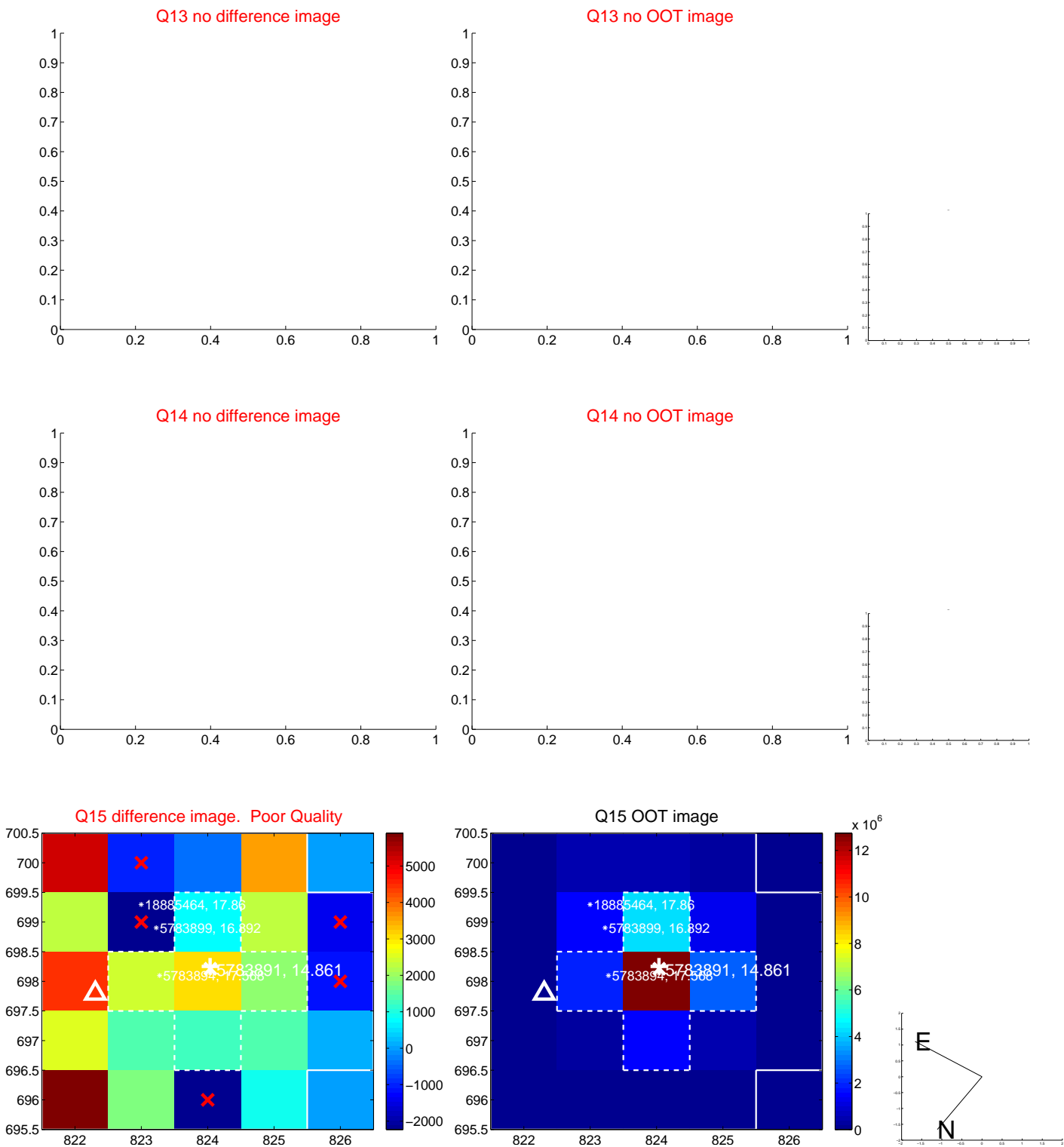
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



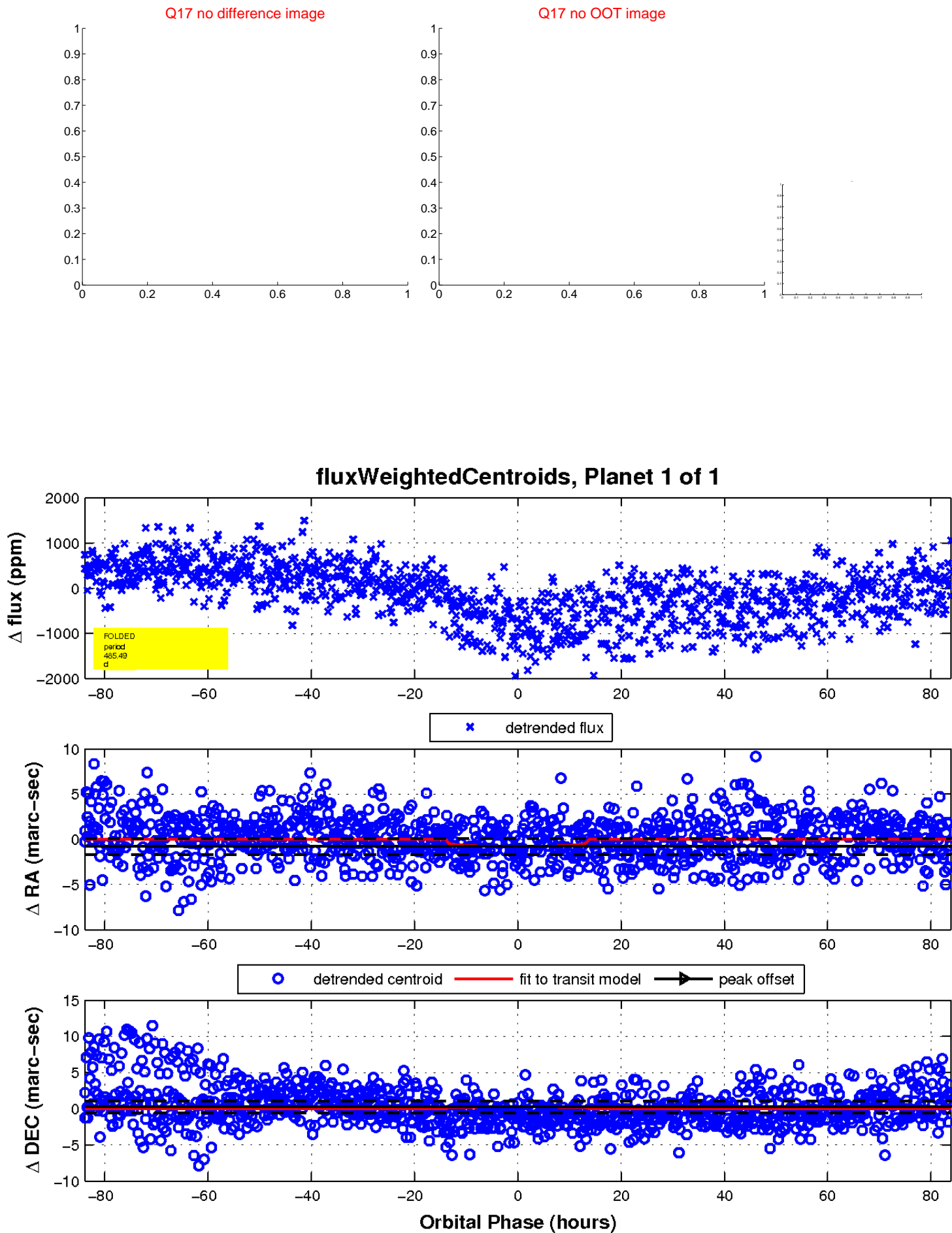
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



white ×: 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.



UKIRT Image

Declination

