

# KIC 009710792

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009710792-01	OBS	7960.01	365.557065	132.652671	872.0	17.172	8.5	9.3	1.08	6306	3.78	1.51

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009710792-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE--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.

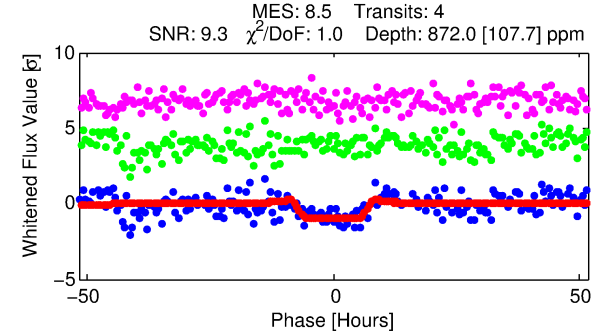
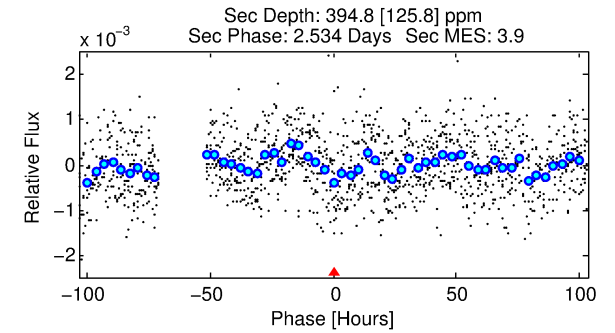
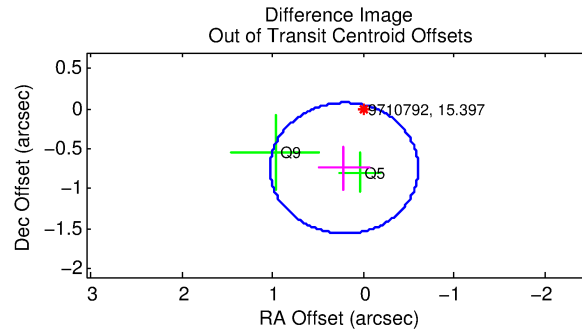
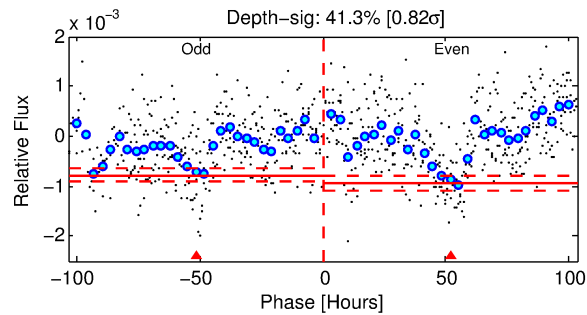
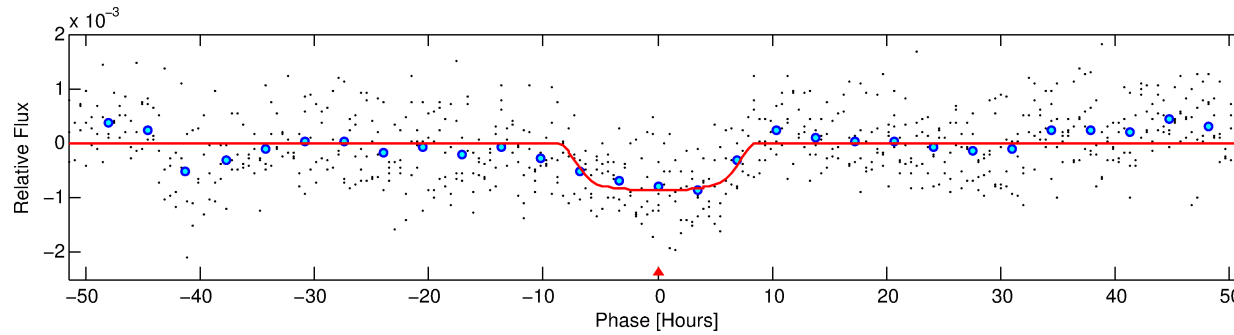
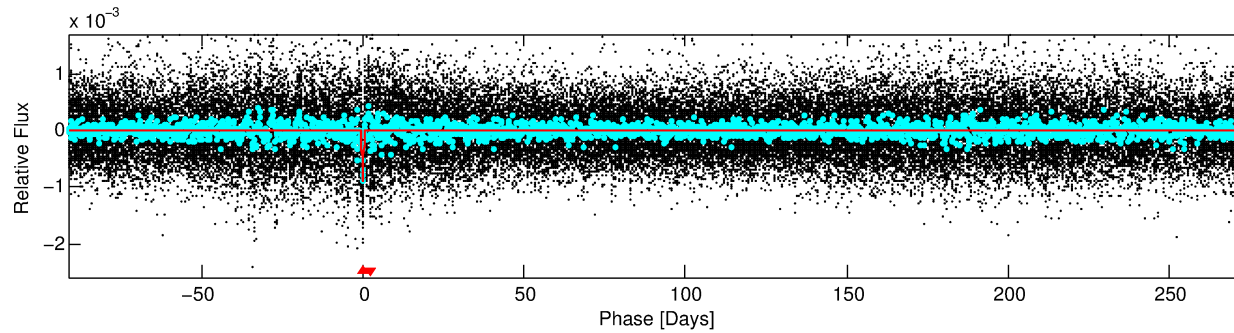
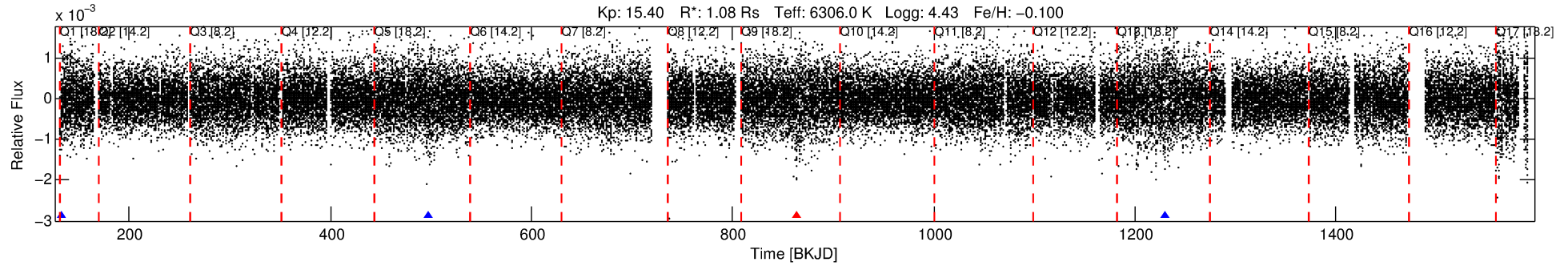
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009710792-01

No Significant Match Found

# DV One-Page Summary

KIC: 9710792 Candidate: 1 of 1 Period: 365.557 d



## DV Fit Results:

Period = 365.55707 [0.01543] d  
Epoch = 132.6527 [0.0276] BKJD  
Rp/R\* = 0.0322 [0.0028]  
a/R\* = 77.44 [20.71]  
b = 0.92 [0.05]  
Seff = 1.51 [0.55]  
Teq = 283 [26] K  
Rp = 3.78 [1.09] Re  
a = 1.0412 [0.2425] AU  
Ag = 16451.91 [8172.60] [2.01 $\sigma$ ]  
Teffp = 4952 [476] K [9.80 $\sigma$ ]

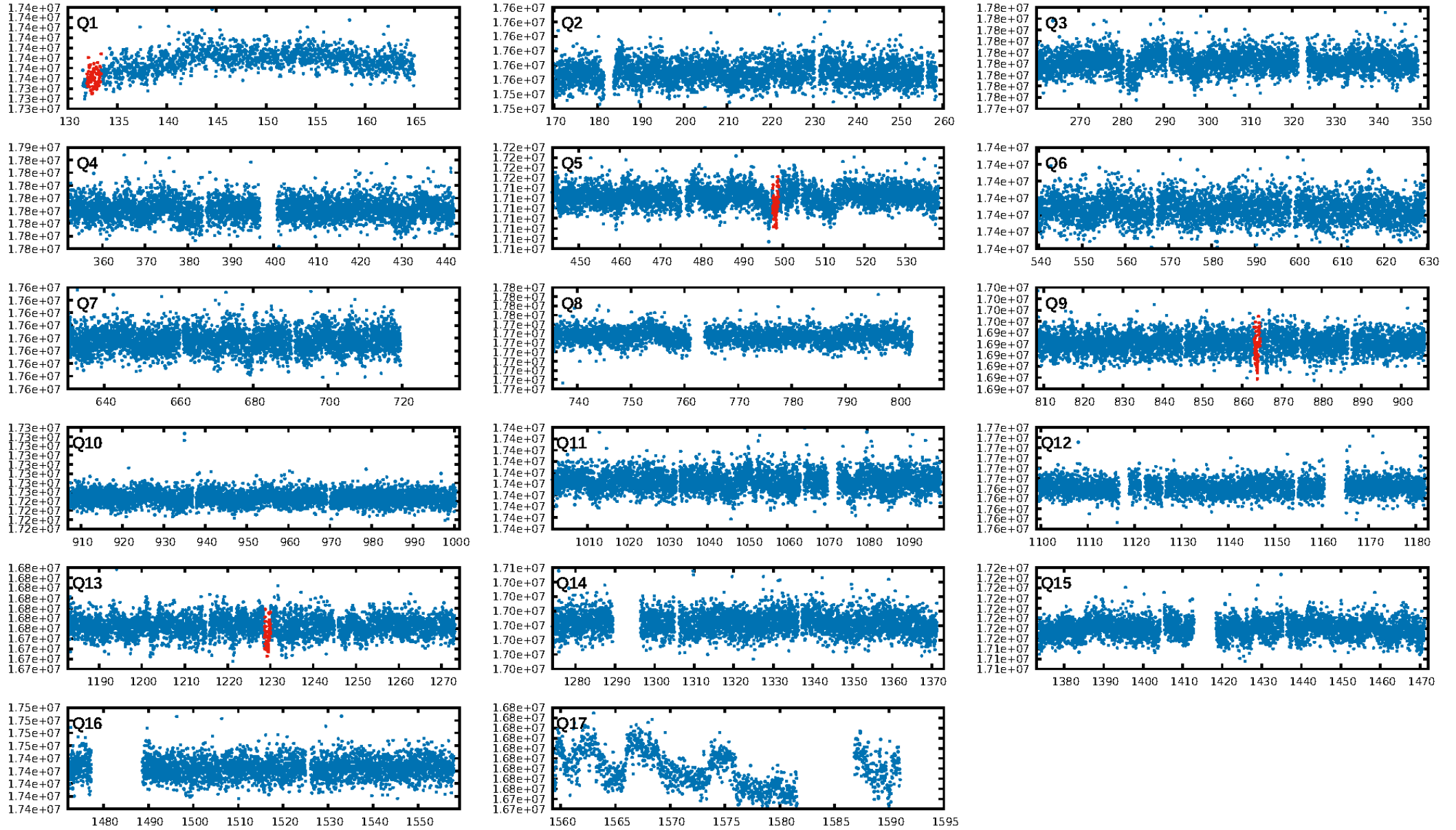
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 6.8%  
ModelChiSquareGof-sig: 99.2%  
Bootstrap-pfa: 1.43e-12  
RollingBand-fgt: 0.67 [2/3]  
GhostDiagnostic-chr: -5.837  
Centroid-sig: 47.7%  
Centroid-so: 1.035 arcsec [0.88 $\sigma$ ]  
OotOffset-rm: 0.774 arcsec [2.84 $\sigma$ ]  
OotOffset-st: 0/0/0/2 [2]  
KicOffset-rm: 0.835 arcsec [3.07 $\sigma$ ]  
KicOffset-st: 0/0/0/2 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 1.00 [2/2]

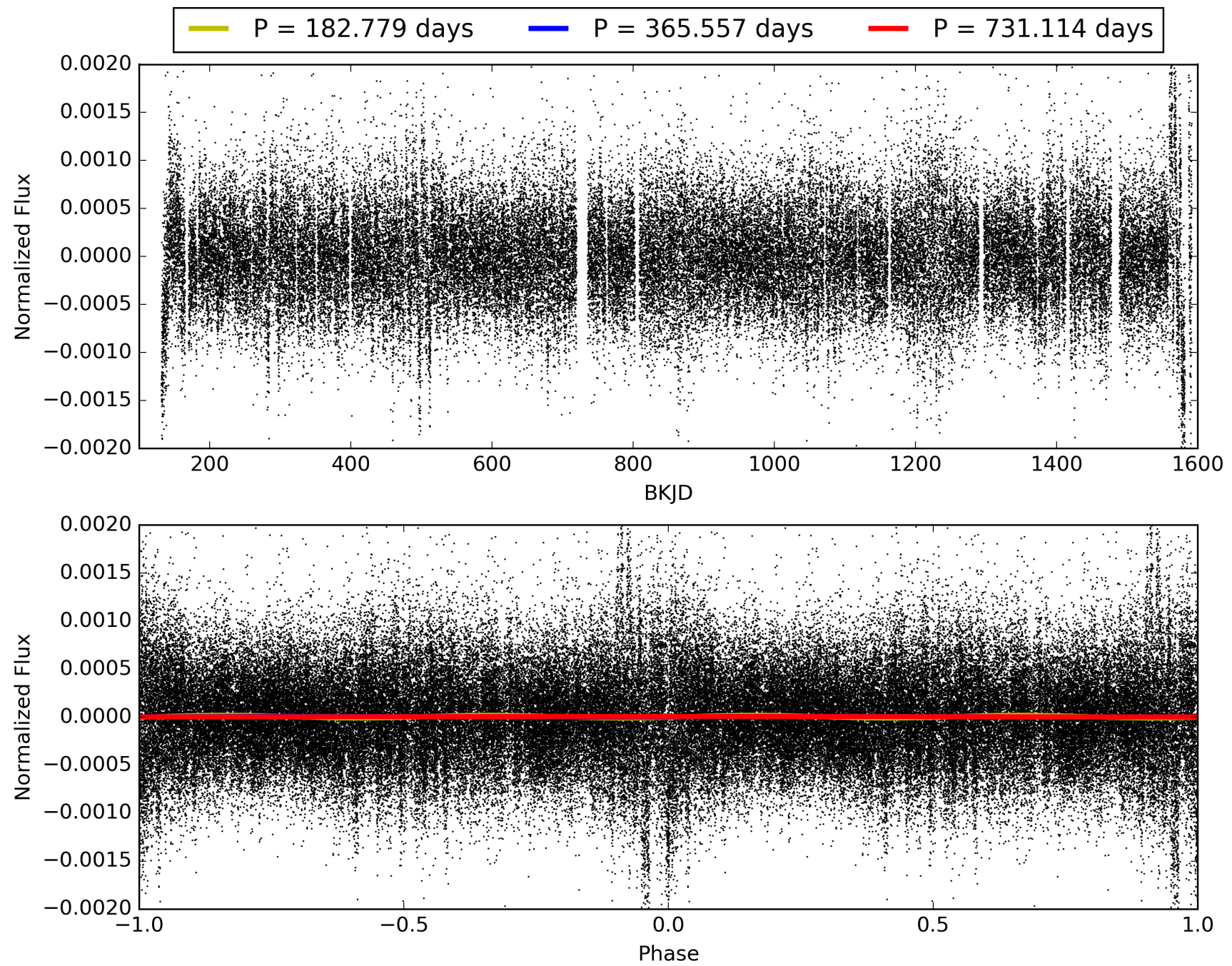
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:48:26 Z

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

# TCE 009710792-01, PDC Light Curves

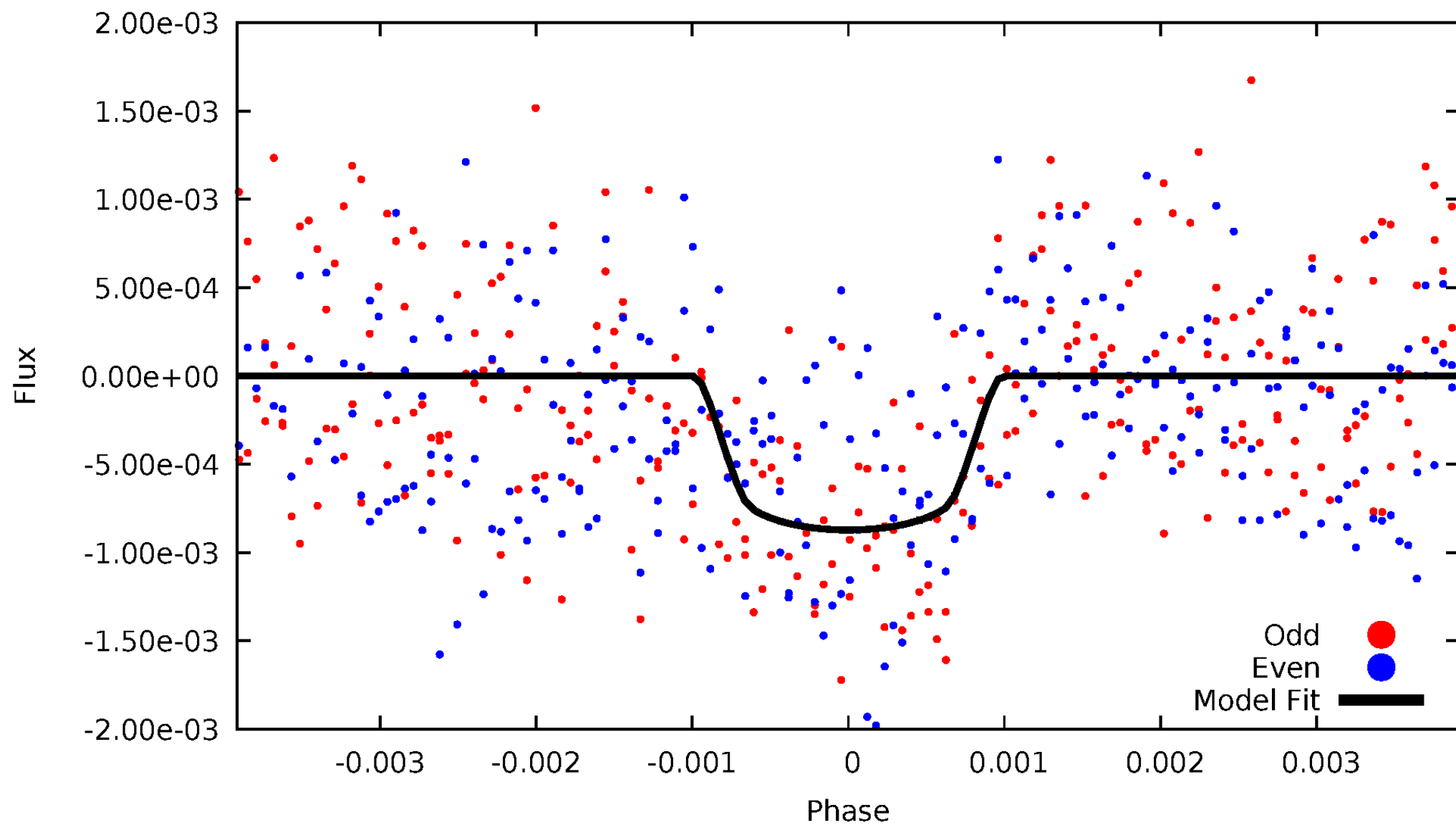


# TCE 009710792-01



# DV Odd/Even

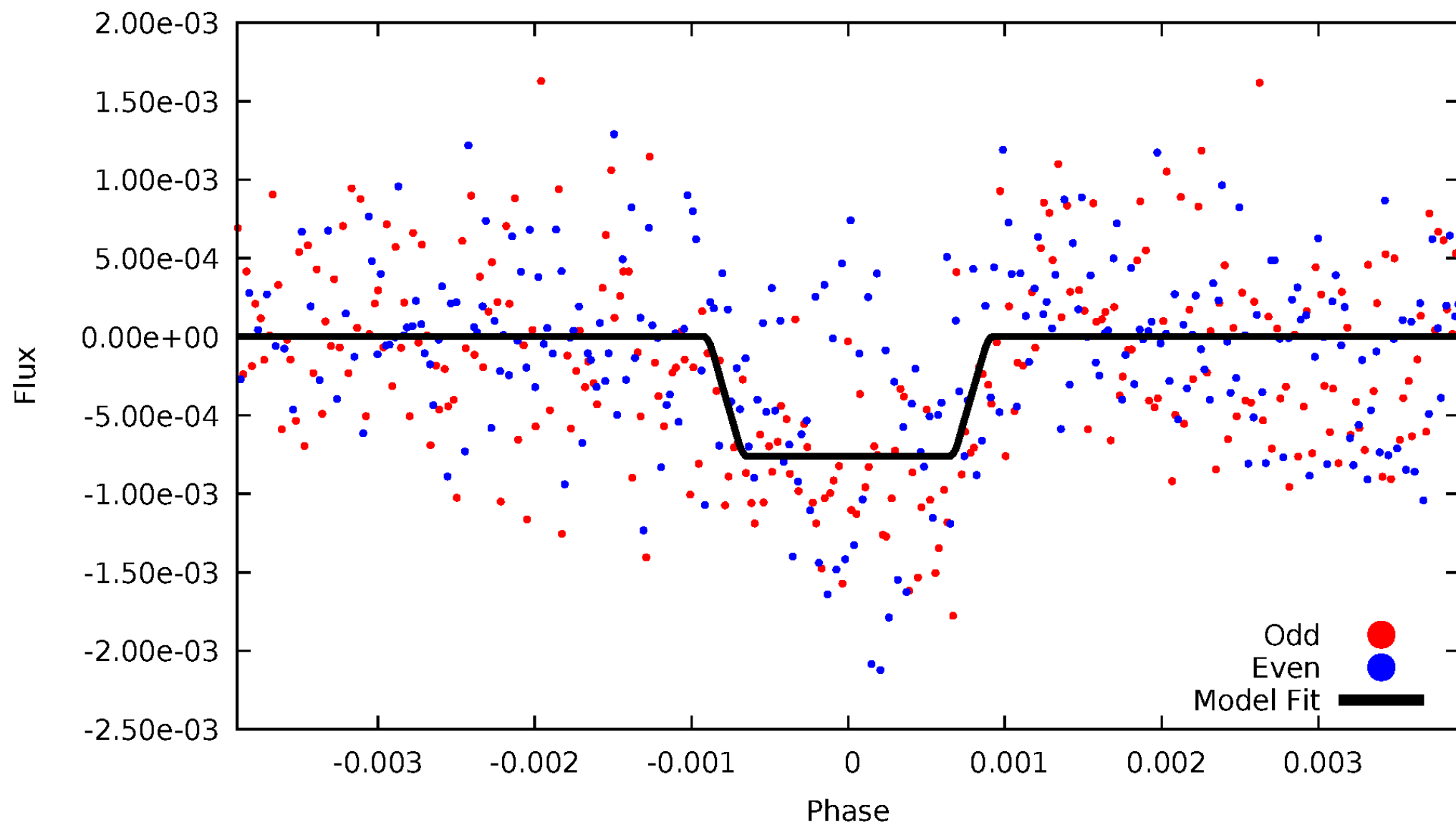
TCE 009710792-01





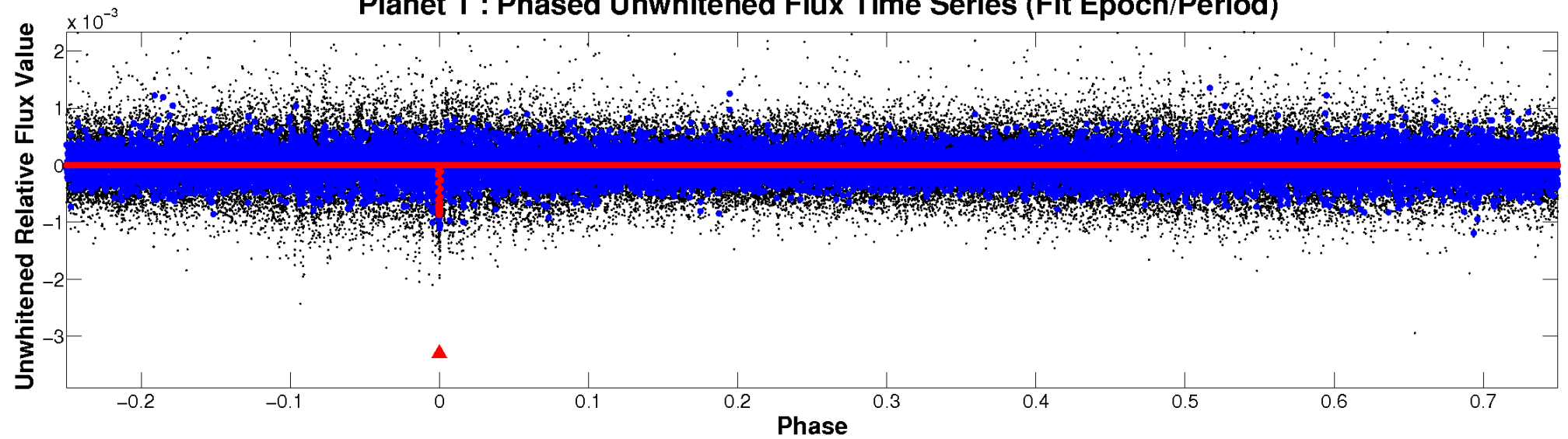
# ALT Odd/Even

TCE 009710792-01

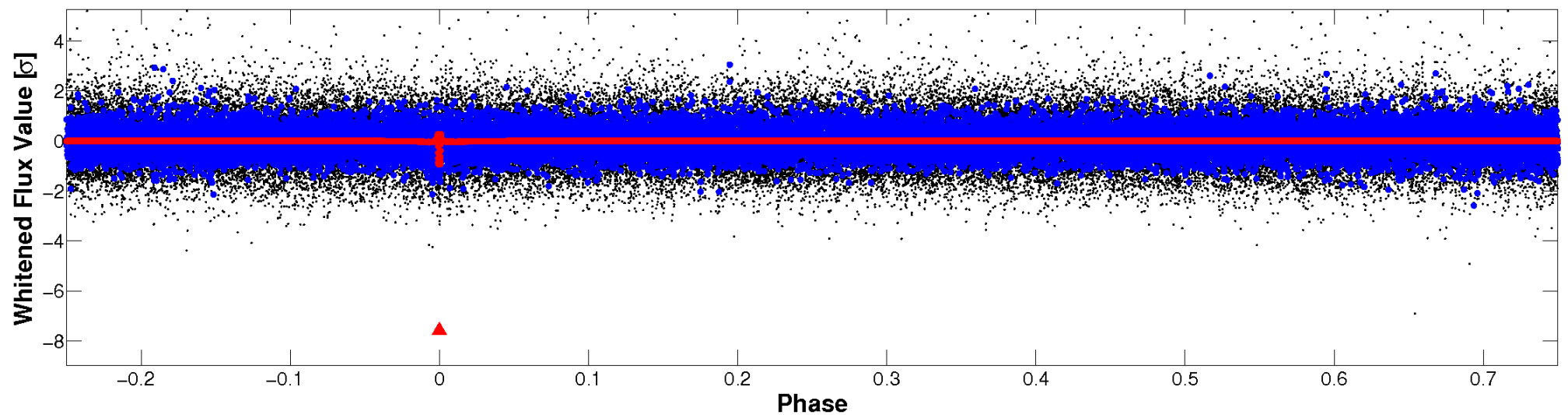


# Non-Whitened Vs. Whitened Light Curve

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

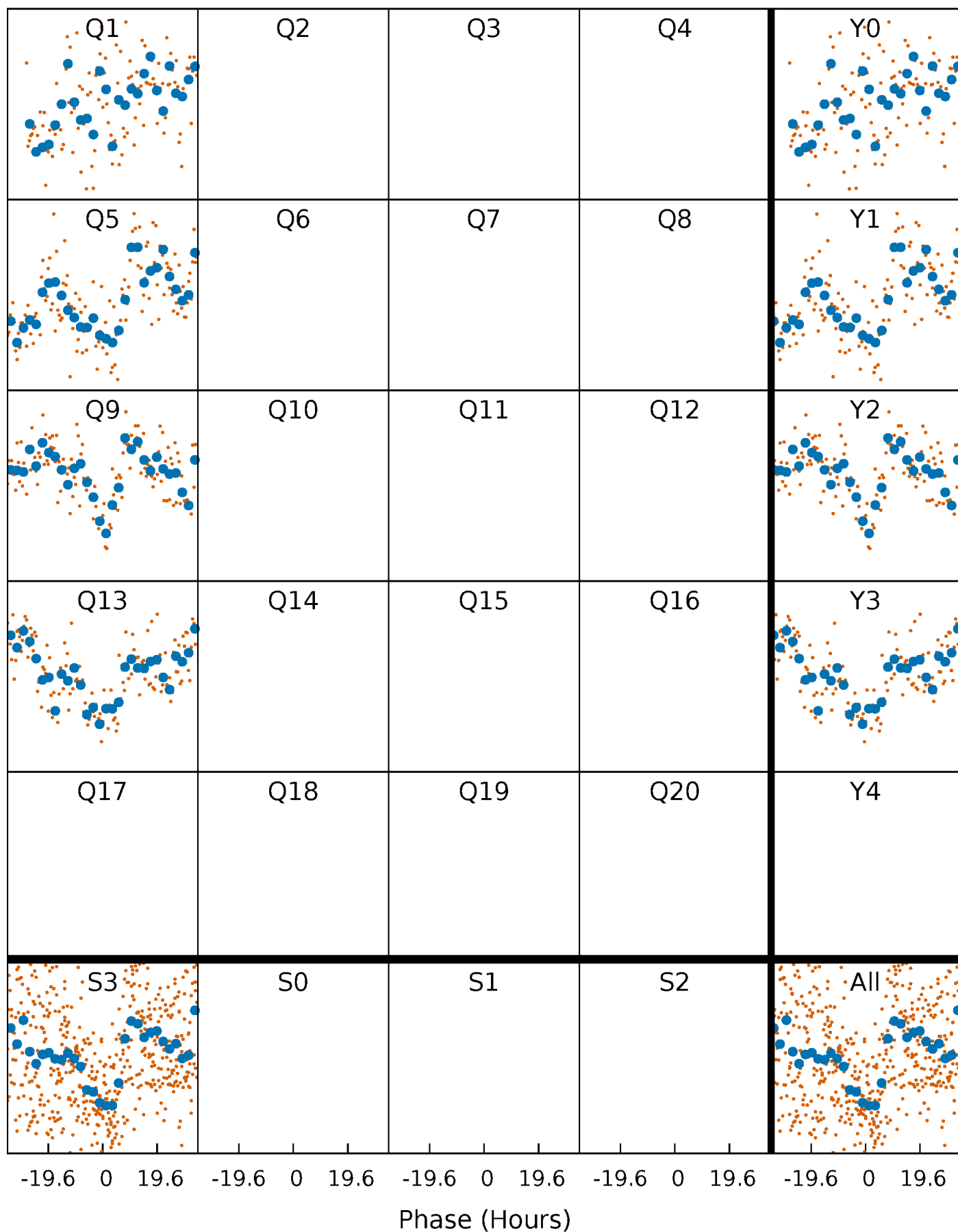


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

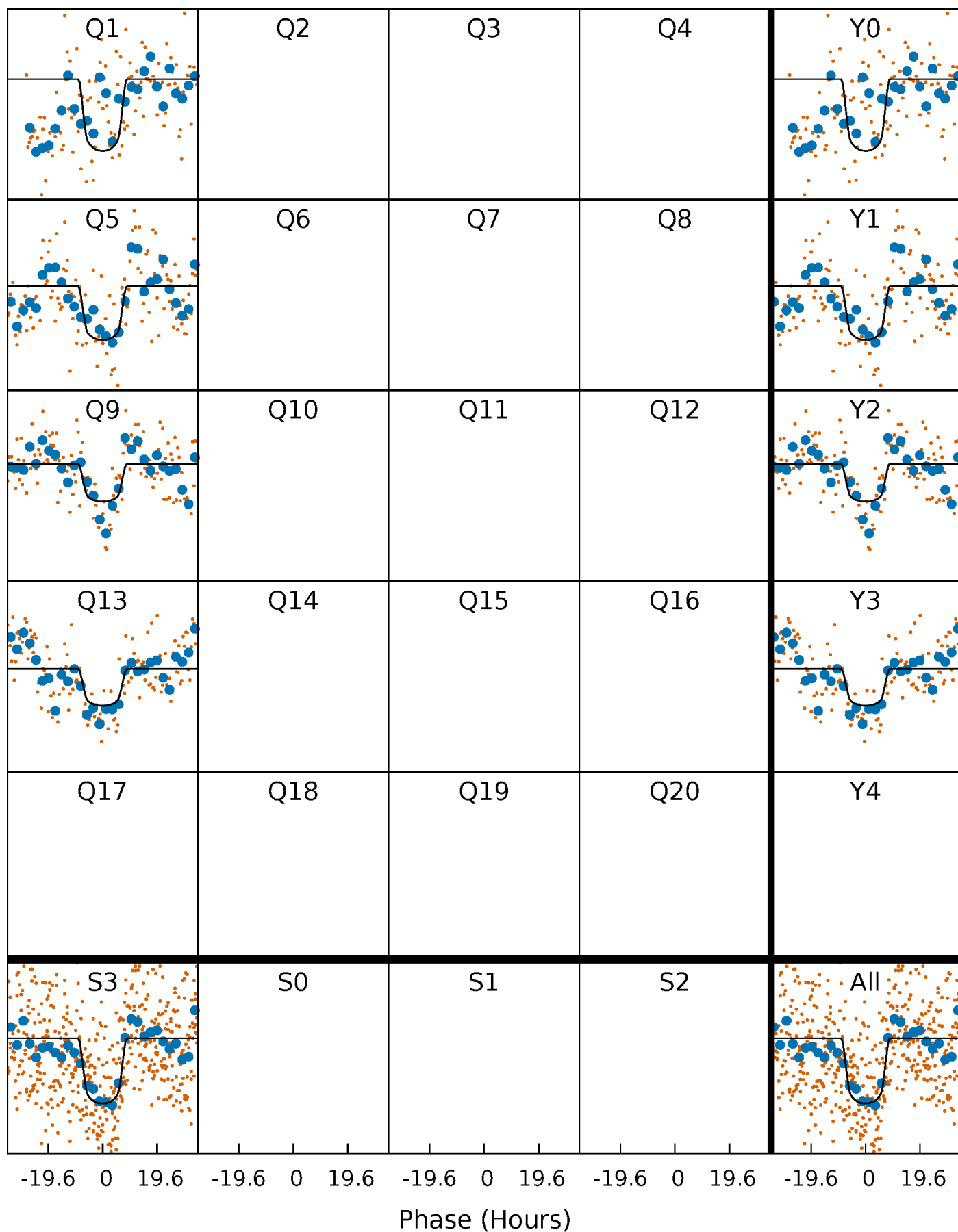
TCE 009710792-01 P=365.557065 Days  $T_0=132.652671$  (BKJD)





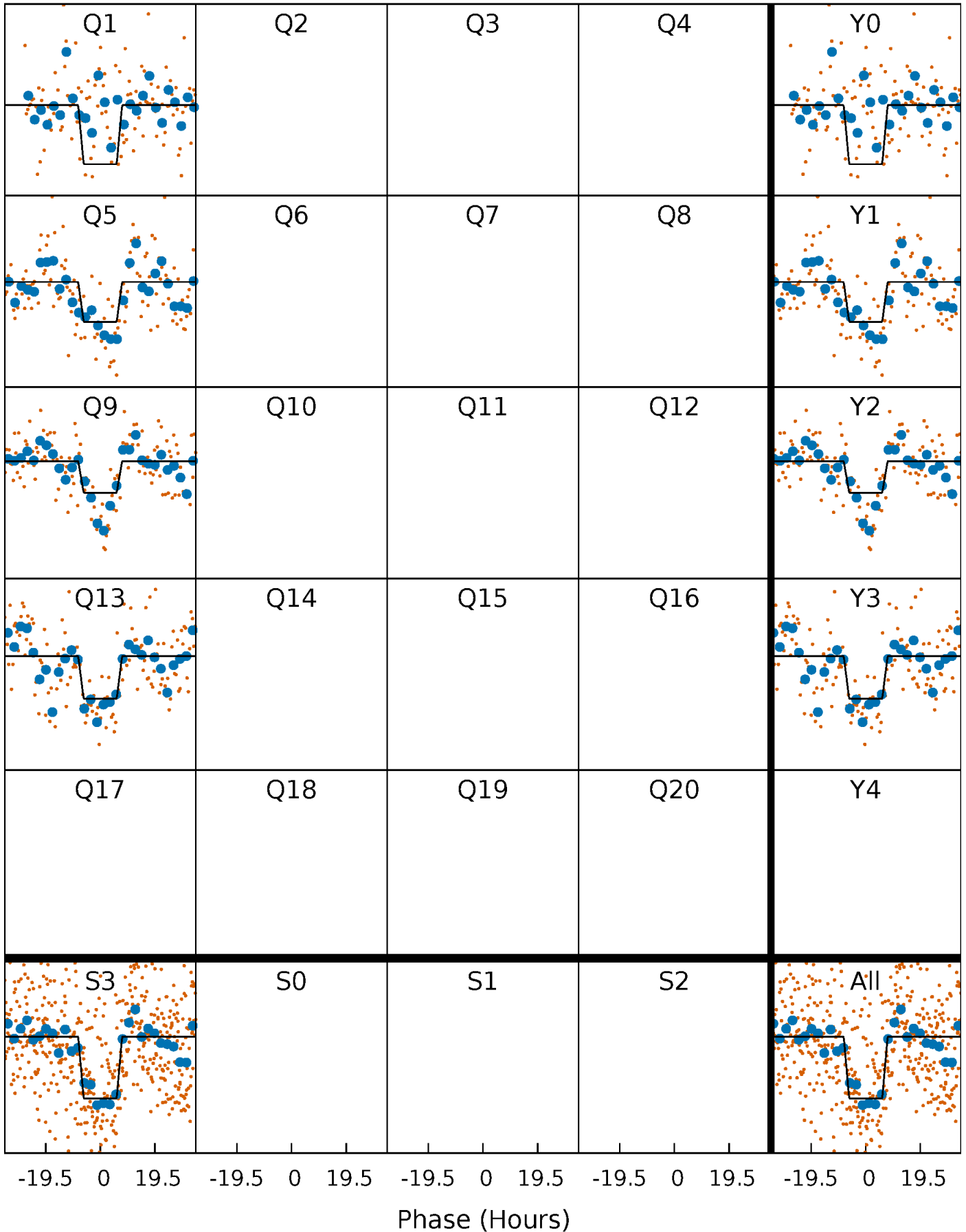
# DV Quarter-Phased Transit Curves

TCE 009710792-01     $P=365.557065$  Days     $T_0=132.652671$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

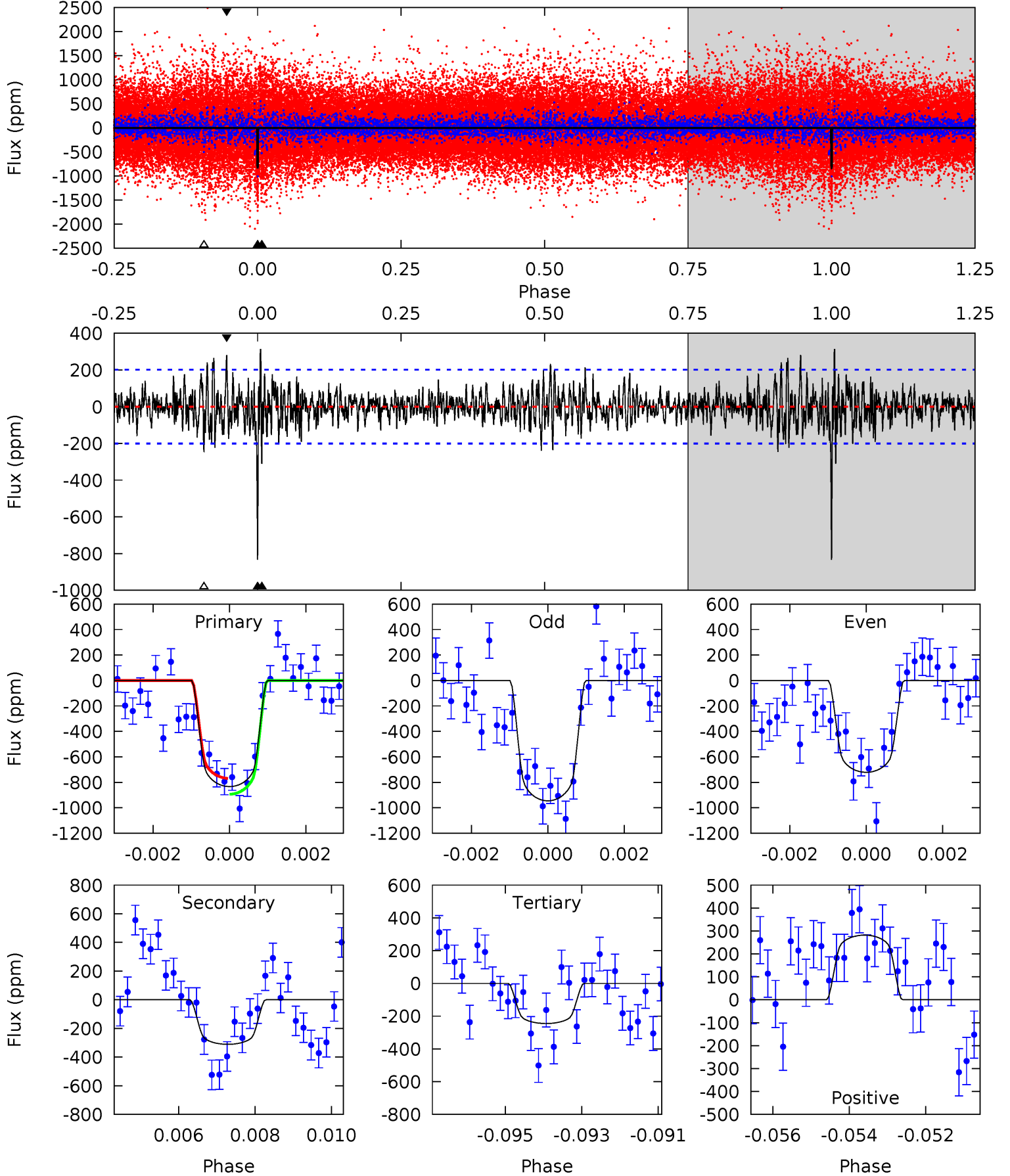
TCE 009710792-01 P=365.563200 Days  $T_0=132.630819$  (BKJD)



# DV Model-Shift Uniqueness Test

009710792-01,  $P = 365.557065$  Days,  $E = 132.652671$  Days

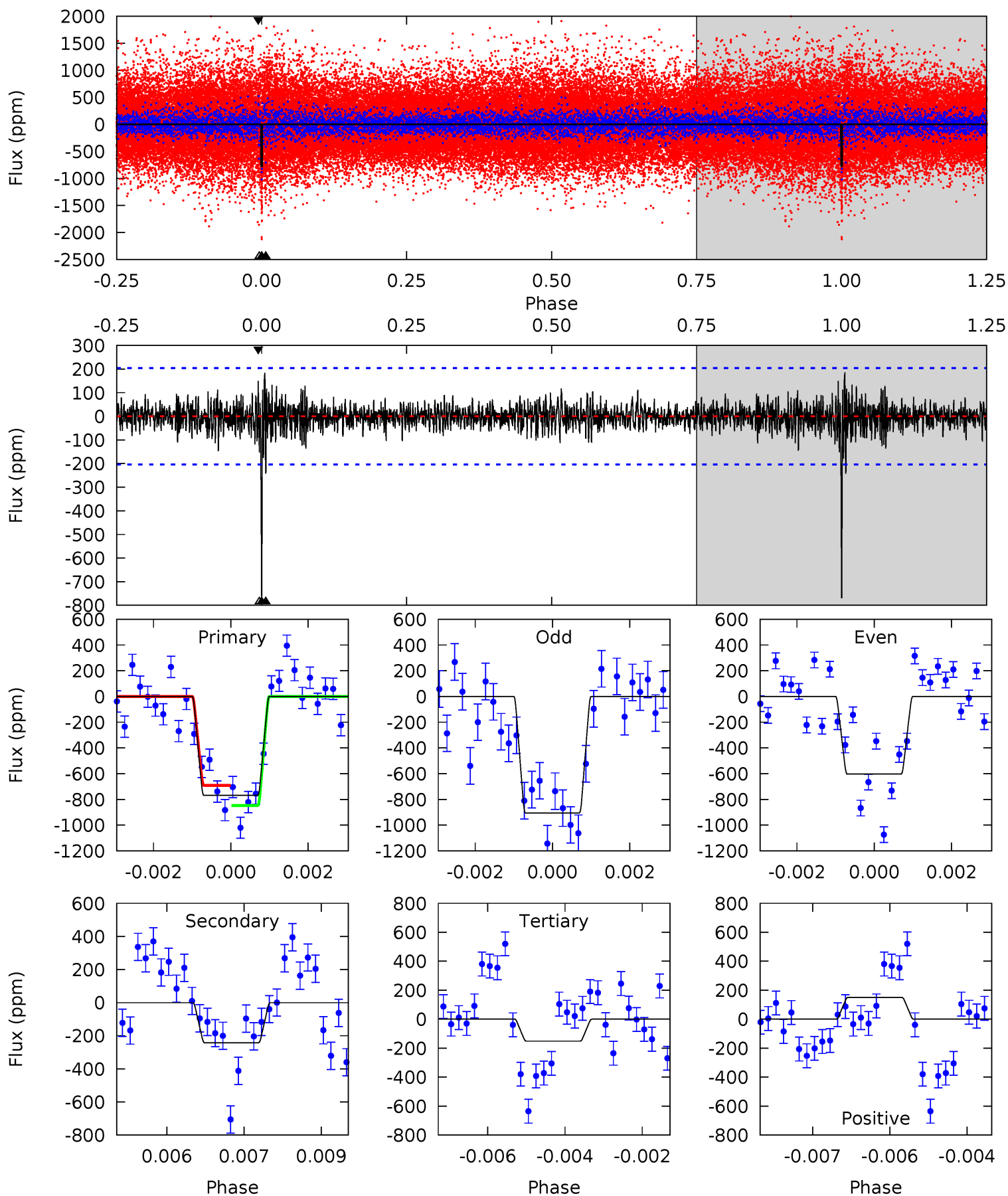
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	8.24	6.49	7.47	5.33	3.09	1.83	15.6	14.6	1.75	0.77	2.96	0.94	0.27	1.64



# Alt Model-Shift Uniqueness Test

009710792-01,  $P = 365.563200$  Days,  $E = 132.630819$  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
20.1	6.34	3.95	3.92	5.34	3.11	0.98	16.1	16.2	2.39	2.42	3.96	0.83	0.19	2.04



### Stellar Parameters For KIC 009710792

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6306^{+168}_{-205}$	$4.426^{+0.062}_{-0.187}$	$-0.100^{+0.250}_{-0.300}$	$1.076^{+0.296}_{-0.127}$	$1.126^{+0.145}_{-0.145}$	$1.272^{+0.397}_{-0.593}$
	+3%/-3%	+1%/-4%	+250%/-300%	+28%/-12%	+13%/-13%	+31%/-47%
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 009710792-01 / KOI 7960.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-311 \pm 38$	$3.95^{+0.62}_{-0.50}$	$403^{+27}_{-20}$	$4778^{+243}_{-222}$	$11614^{+3922}_{-3016}$
Alt.	$-242 \pm 38$	$3.37^{+0.55}_{-0.45}$	$403^{+26}_{-21}$	$4840^{+287}_{-279}$	$12380^{+4482}_{-3375}$

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

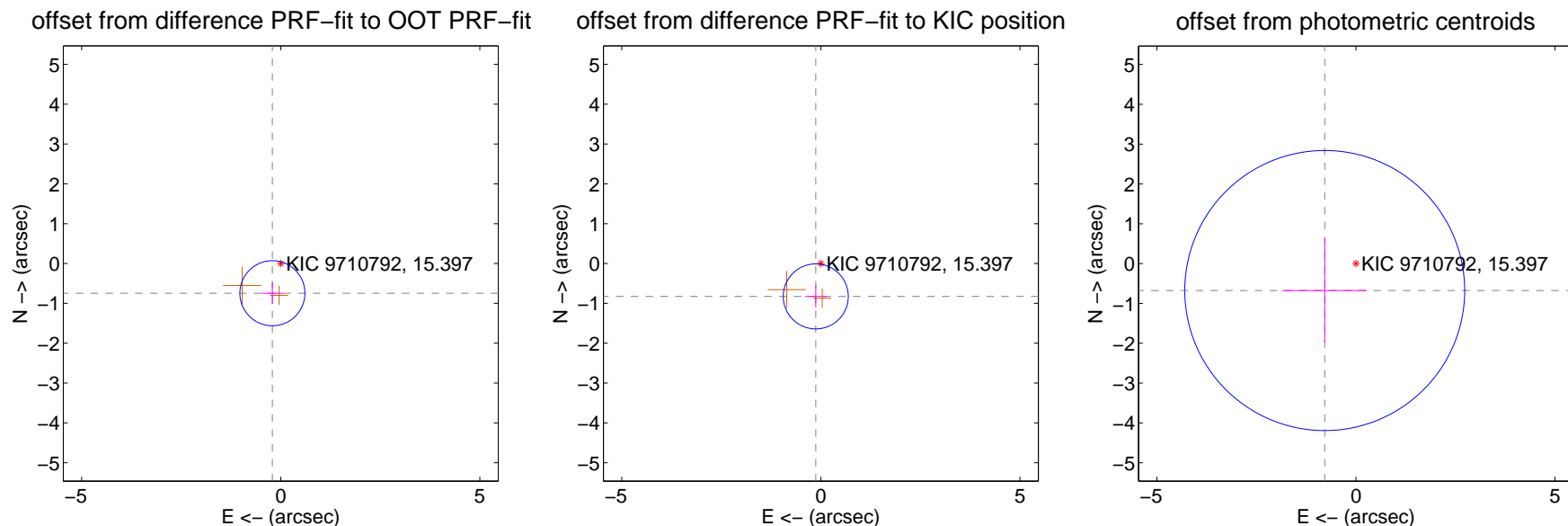
## DV Centroid Data

Supplemental centroid analysis for 009710792-01. Kepler magnitude: 15.40. Transit SNR 9.32

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

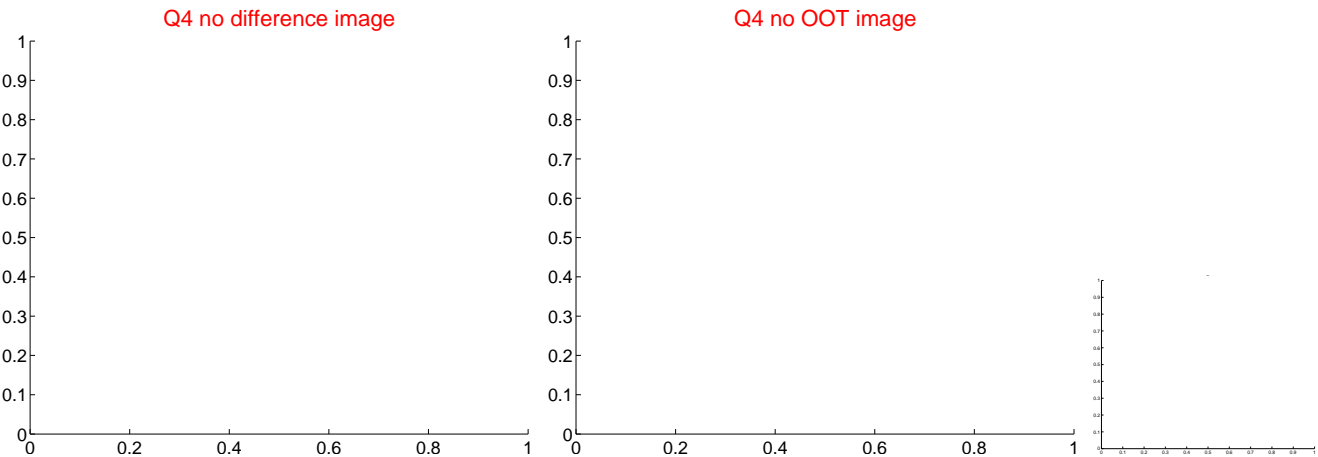
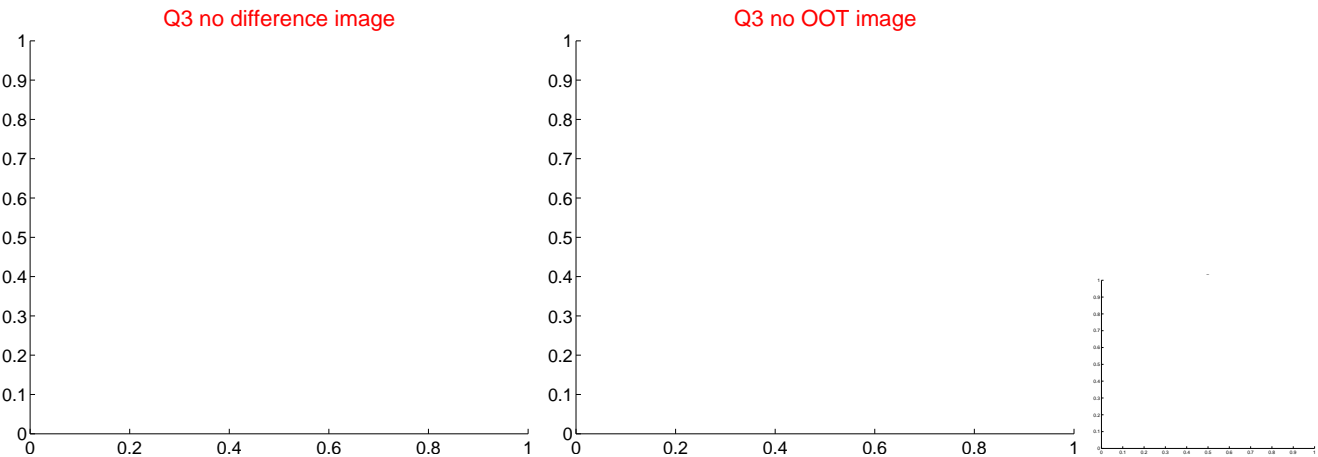
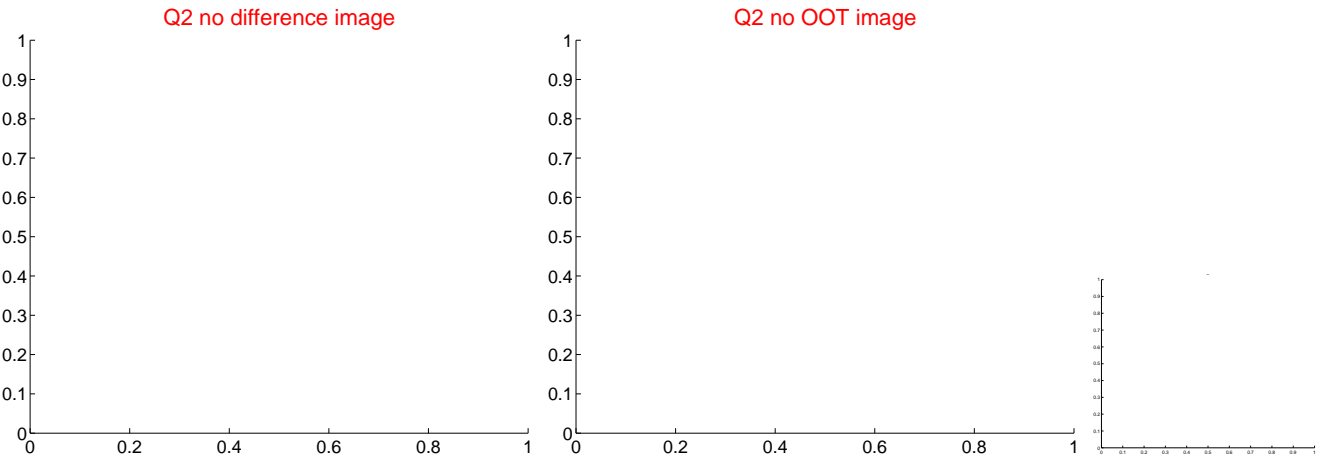
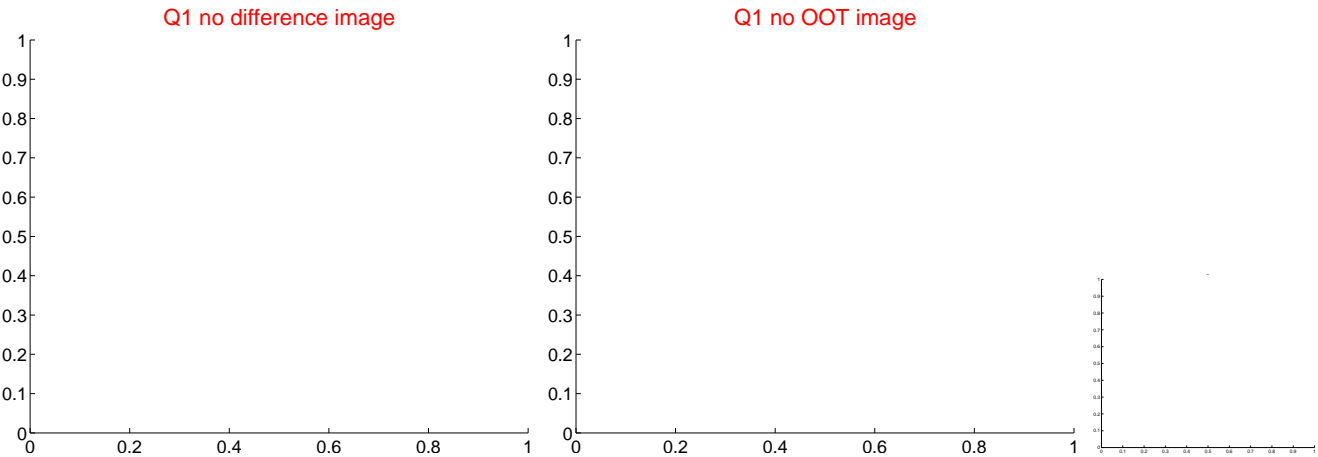
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.774 \pm 0.272$	2.84	$0.210 \pm 0.273$	$-0.745 \pm 0.272$
PRF-fit source offset from KIC position	$0.835 \pm 0.272$	3.07	$0.128 \pm 0.273$	$-0.825 \pm 0.272$
photometric centroid source offset	$1.04 \pm 1.17$	0.88	$0.78 \pm 1.06$	$-0.68 \pm 1.31$



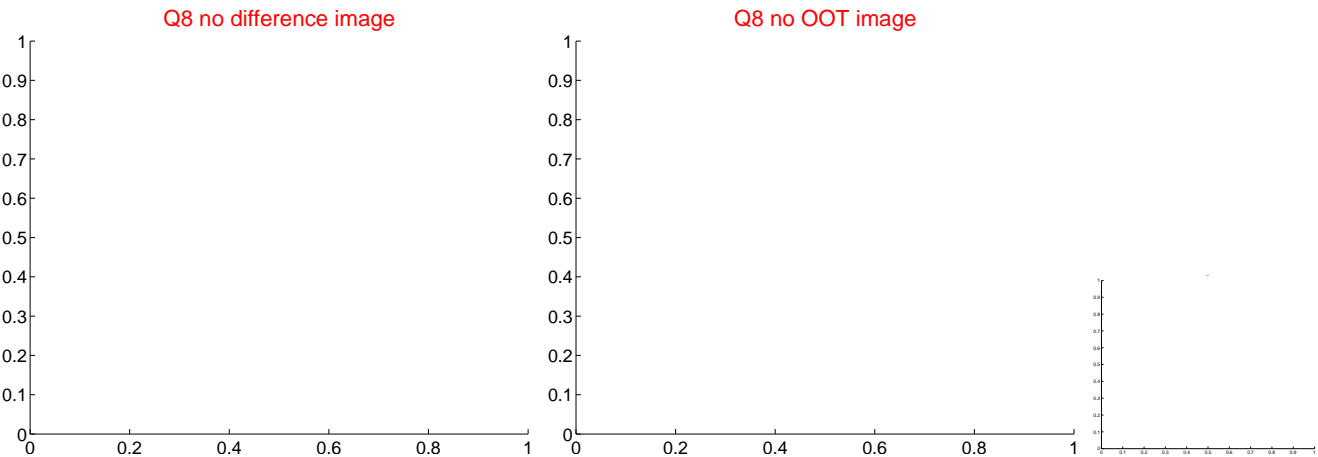
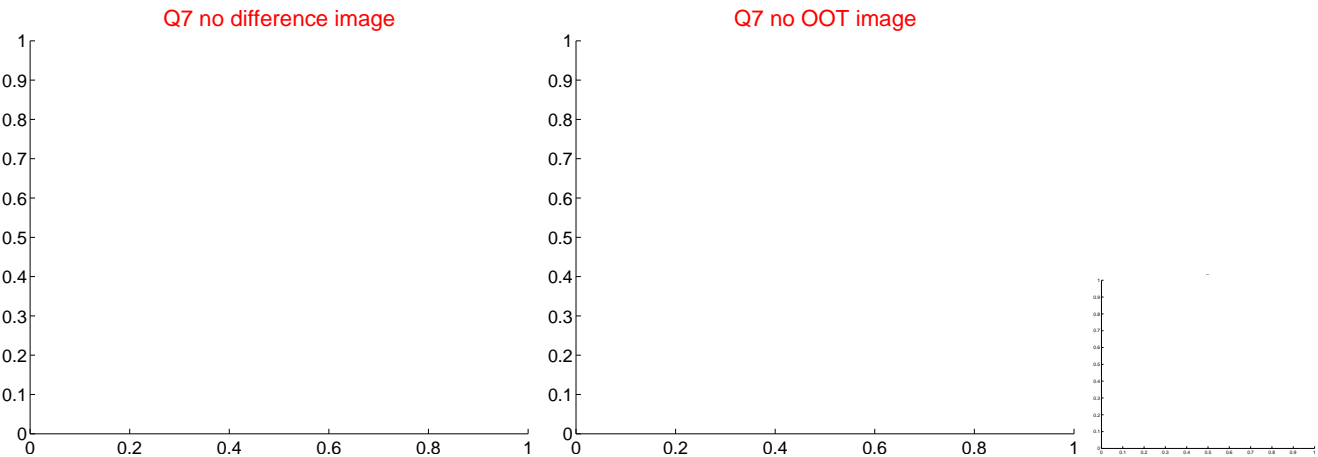
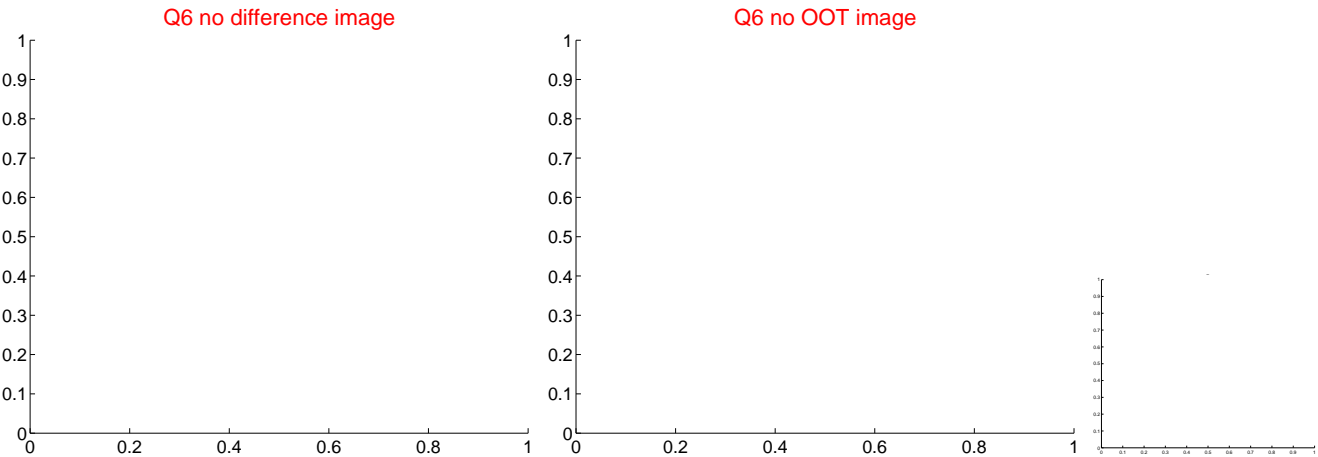
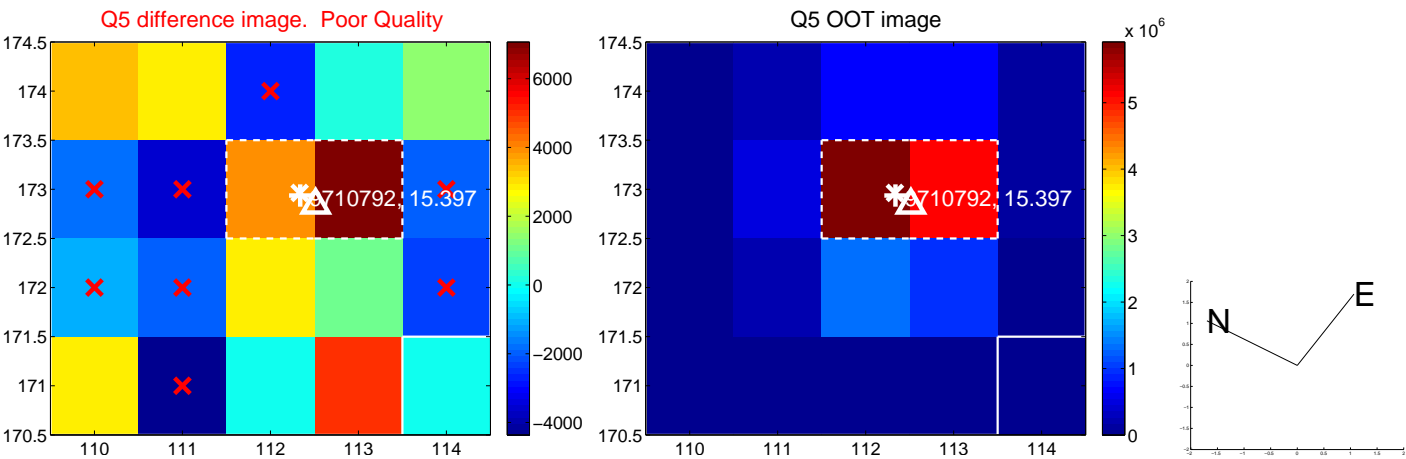
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



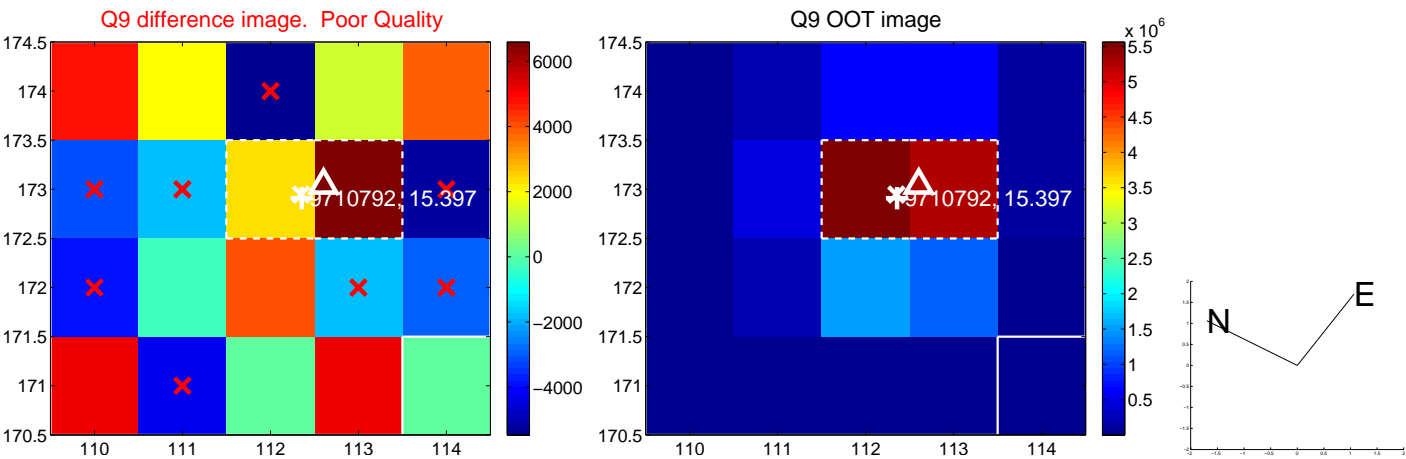
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



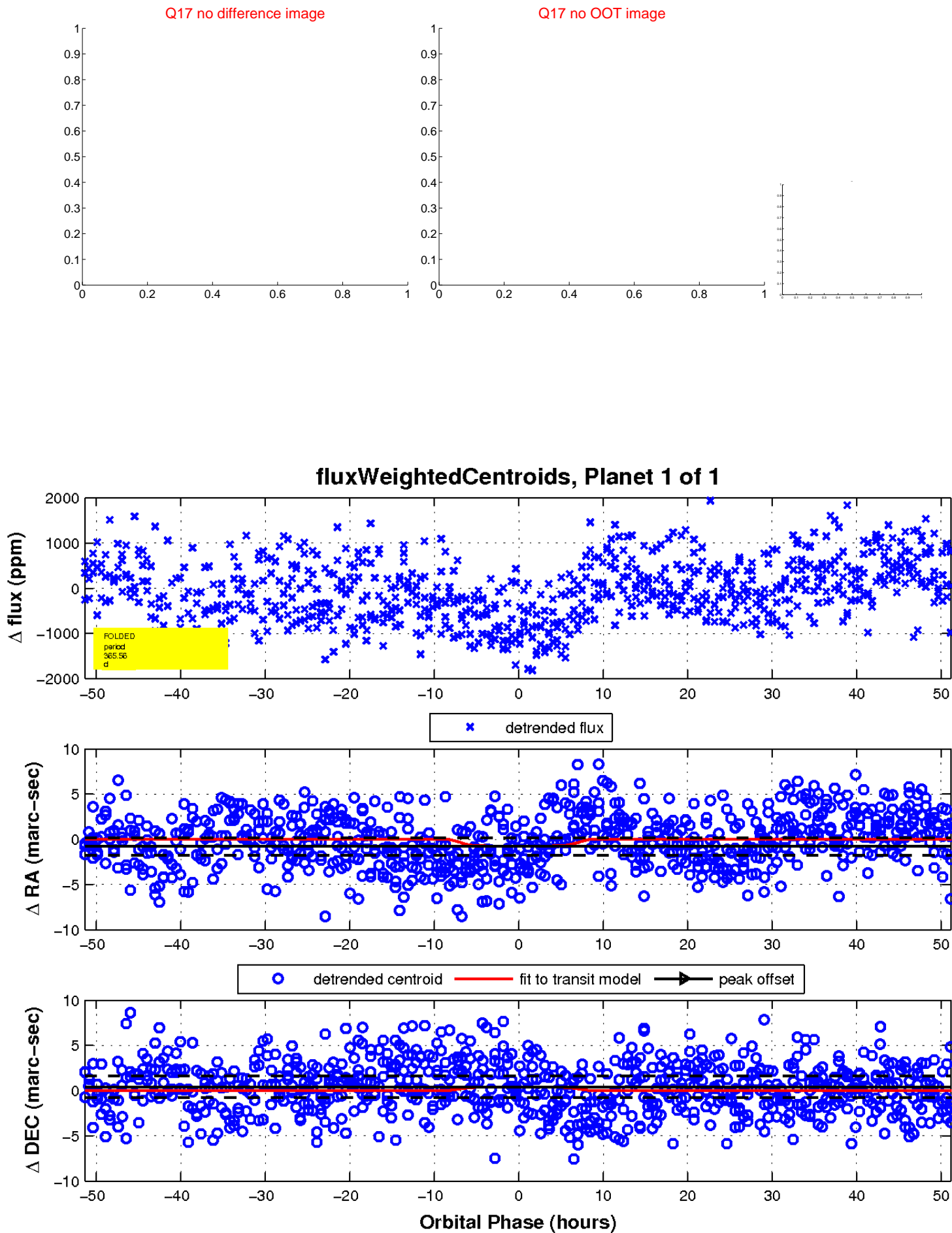
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

