

# KIC 008953281

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008953281-01	OBS	7112.01	0.784359	132.220246	166.4	2.144	8.5	10.5	0.68	5176	1.06	1424.35

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008953281-01	OBS	PC	0.17	0	0	0	0	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 008953281-01

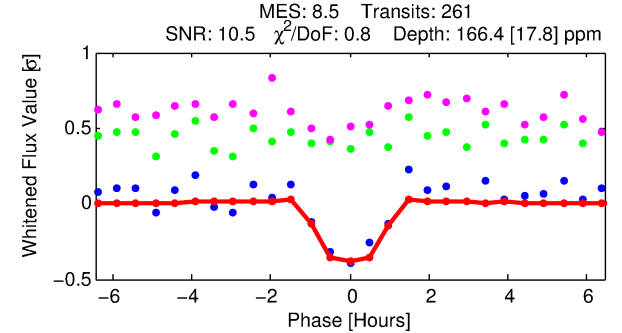
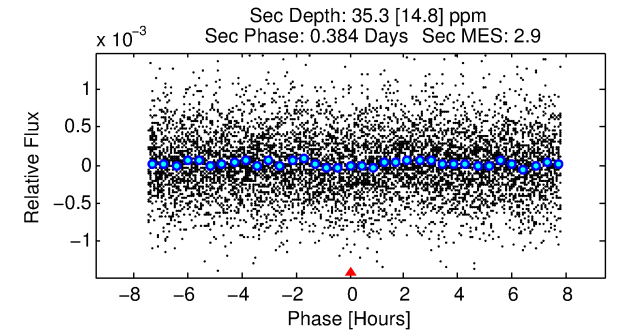
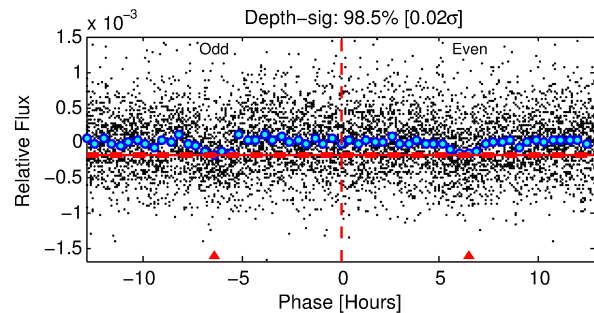
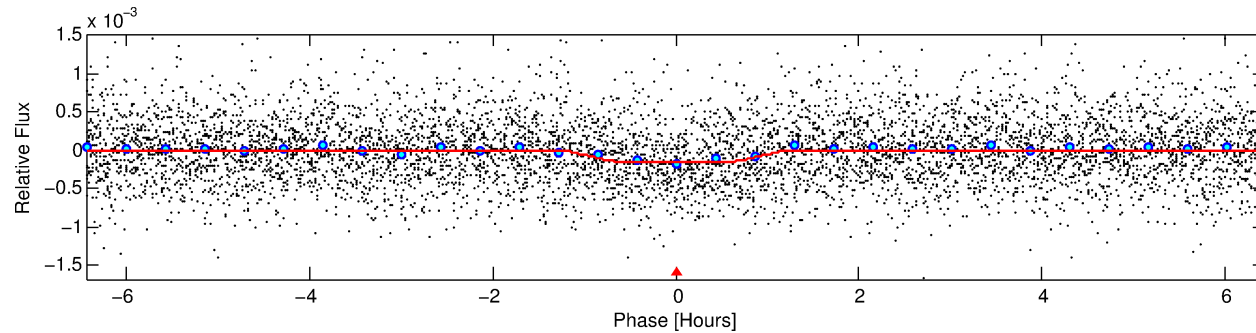
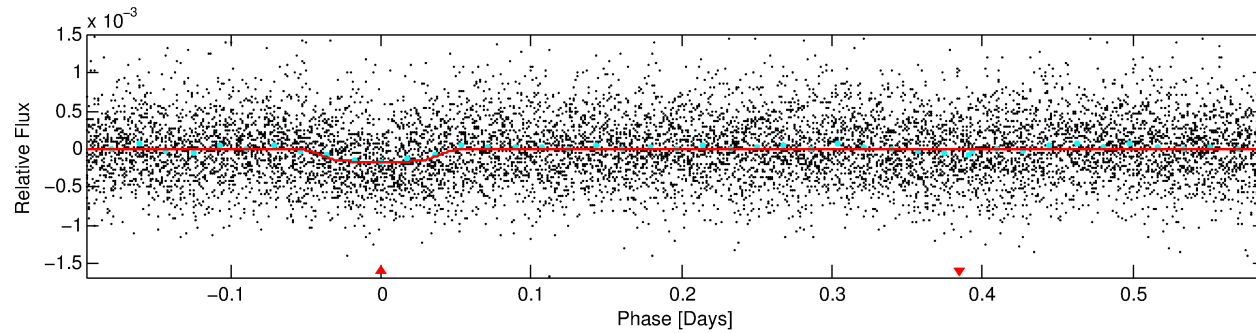
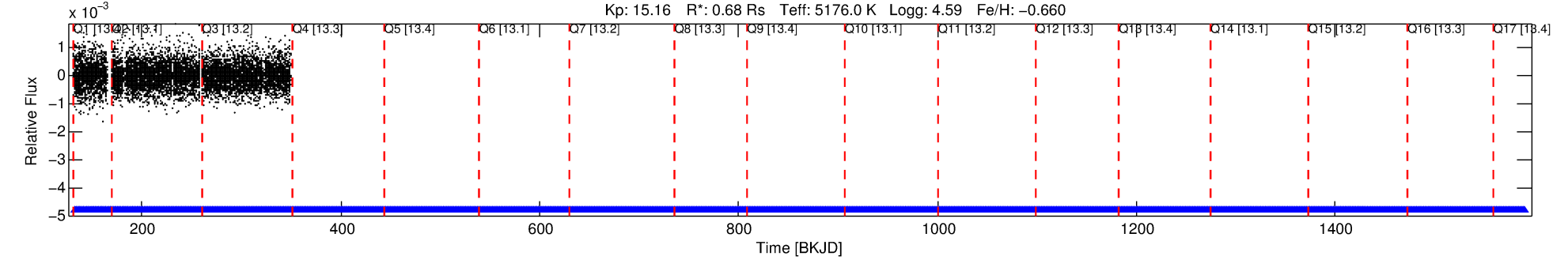
No Significant Match Found

# DV One-Page Summary

KIC: 8953281 Candidate: 1 of 1 Period: 0.784 d

KOI: K07112 Corr: No Ephemeris Match

Kp: 15.16 R\*: 0.68 Rs Teff: 5176.0 K Logg: 4.59 Fe/H: -0.660



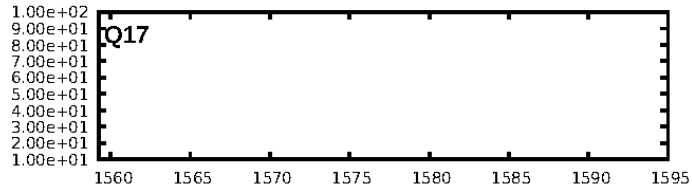
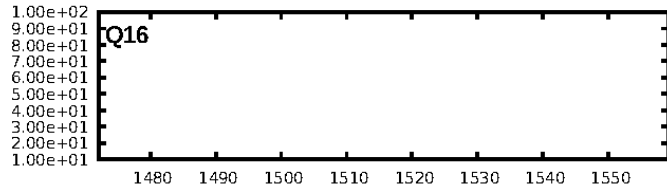
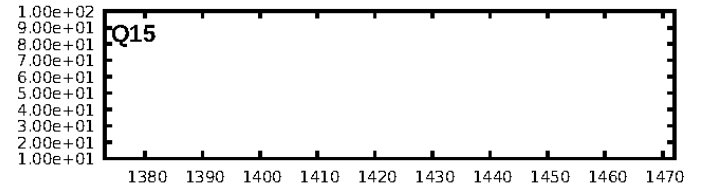
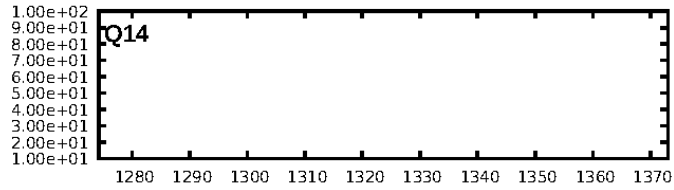
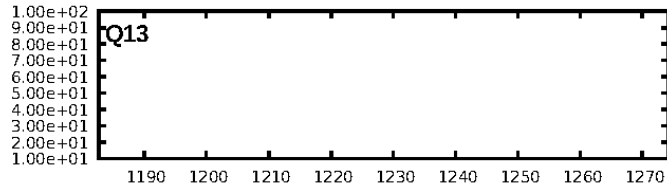
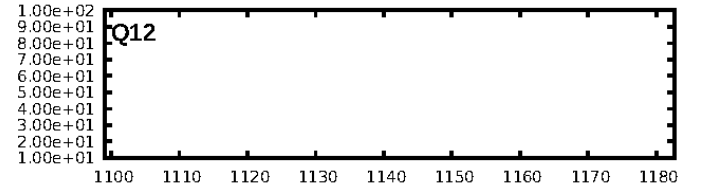
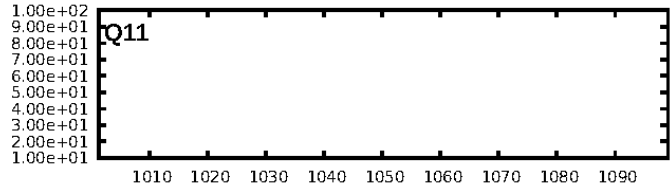
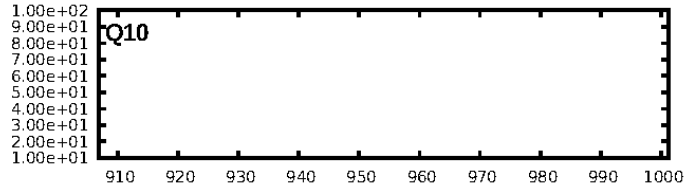
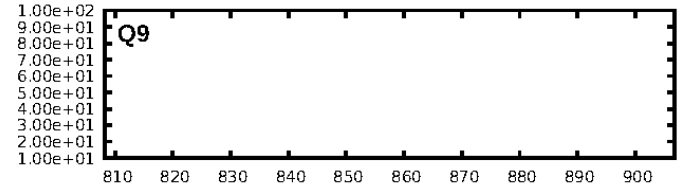
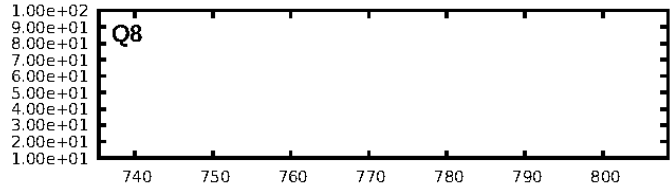
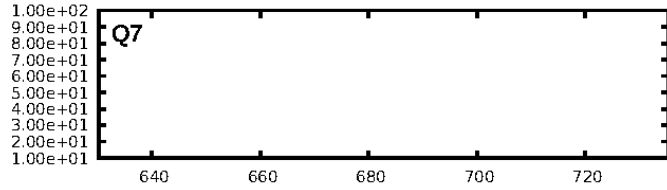
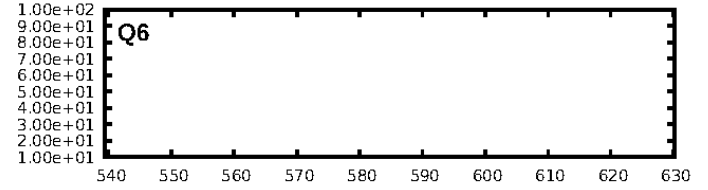
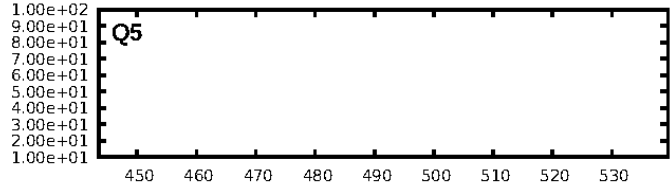
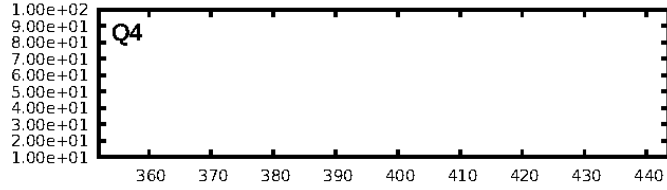
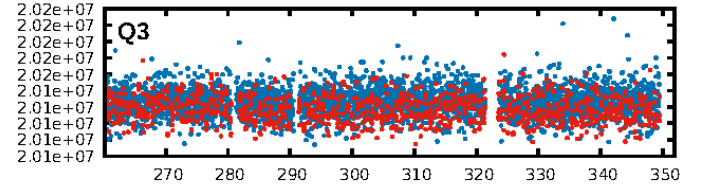
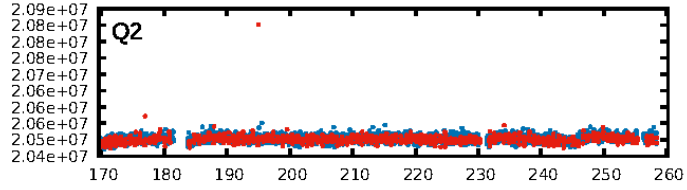
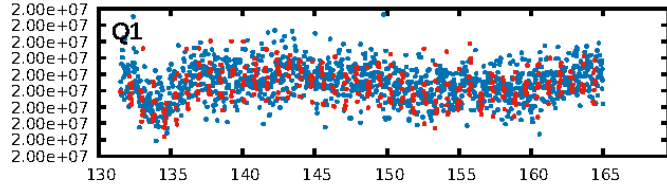
## DV Fit Results:

Period = 0.78436 [0.00003] d  
Epoch = 132.2202 [0.0039] BKJD  
Rp/R\* = 0.0143 [0.0110]  
a/R\* = 1.58 [3.24]  
b = 0.91 [0.69]  
Seff = 1424.35 [264.26]  
Teq = 1566 [73] K  
Rp = 1.06 [0.83] Re  
a = 0.0145 [0.0014] AU  
Ag = 3.60 [5.77] [0.45σ]  
Teffp = 3335 [1336] K [1.32σ]

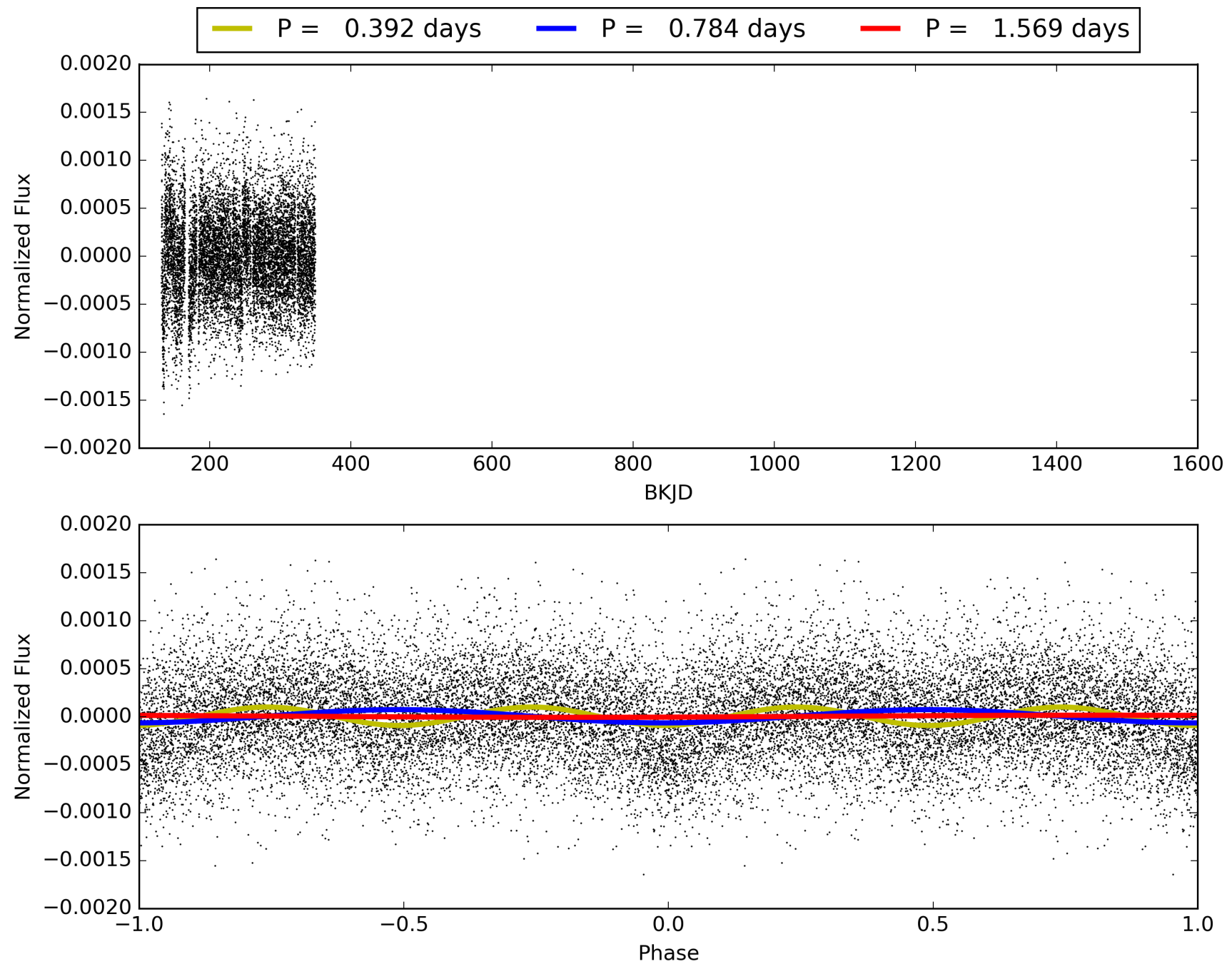
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.89e-21  
RollingBand-fgt: 1.00 [219/219]  
**GhostDiagnostic-chr: 0.2936**  
**Centroid-sig: 0.0%**  
**Centroid-so: 10.719 arcsec [7.17σ]**  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [3/3]

## TCE 008953281-01, PDC Light Curves

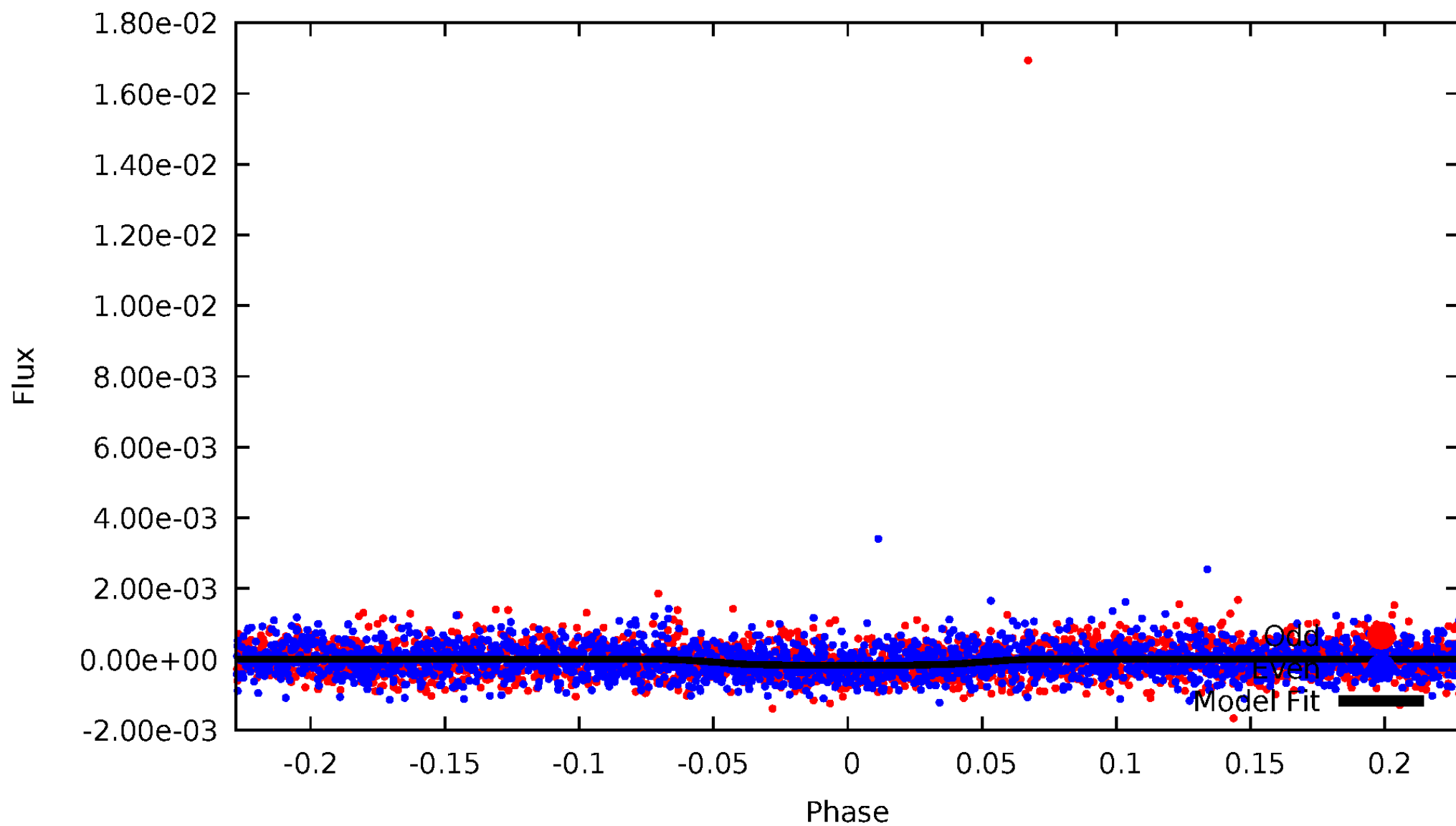


TCE 008953281-01



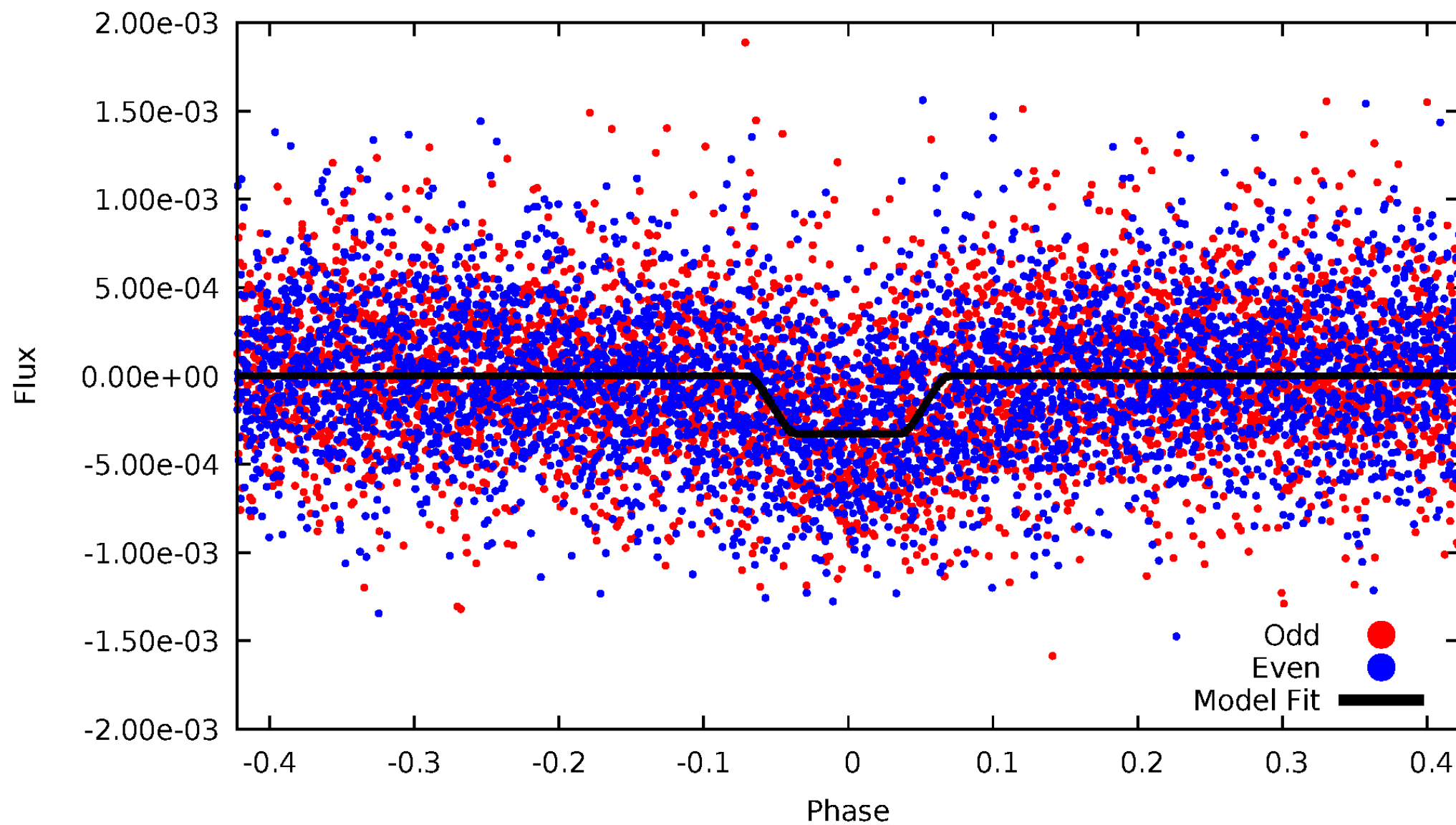
# DV Odd/Even

TCE 008953281-01



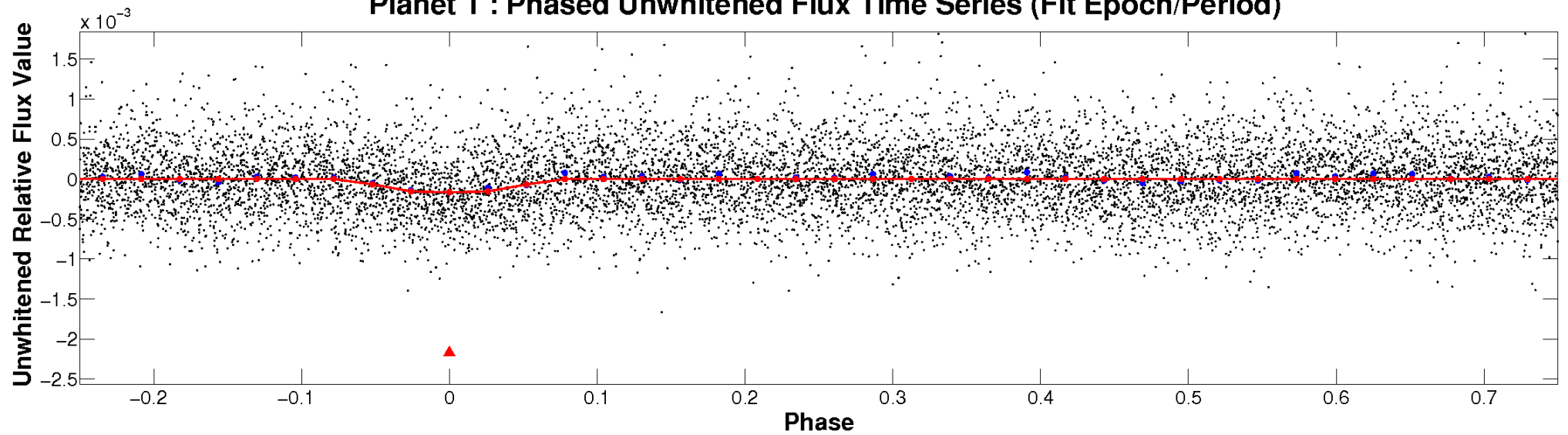
# ALT Odd/Even

TCE 008953281-01

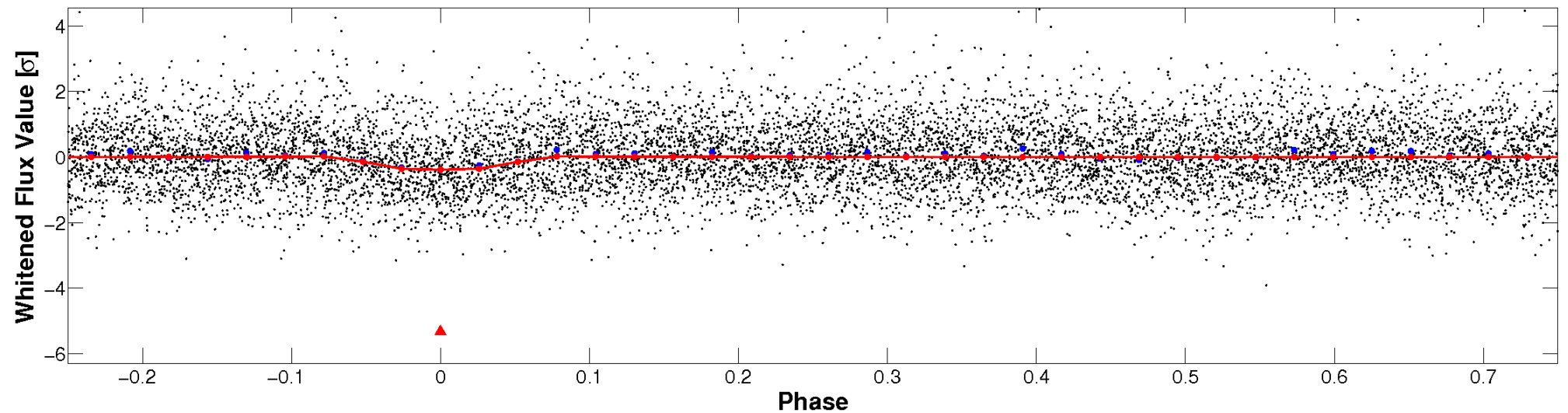


# Non-Whitened Vs. Whitened Light Curve

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



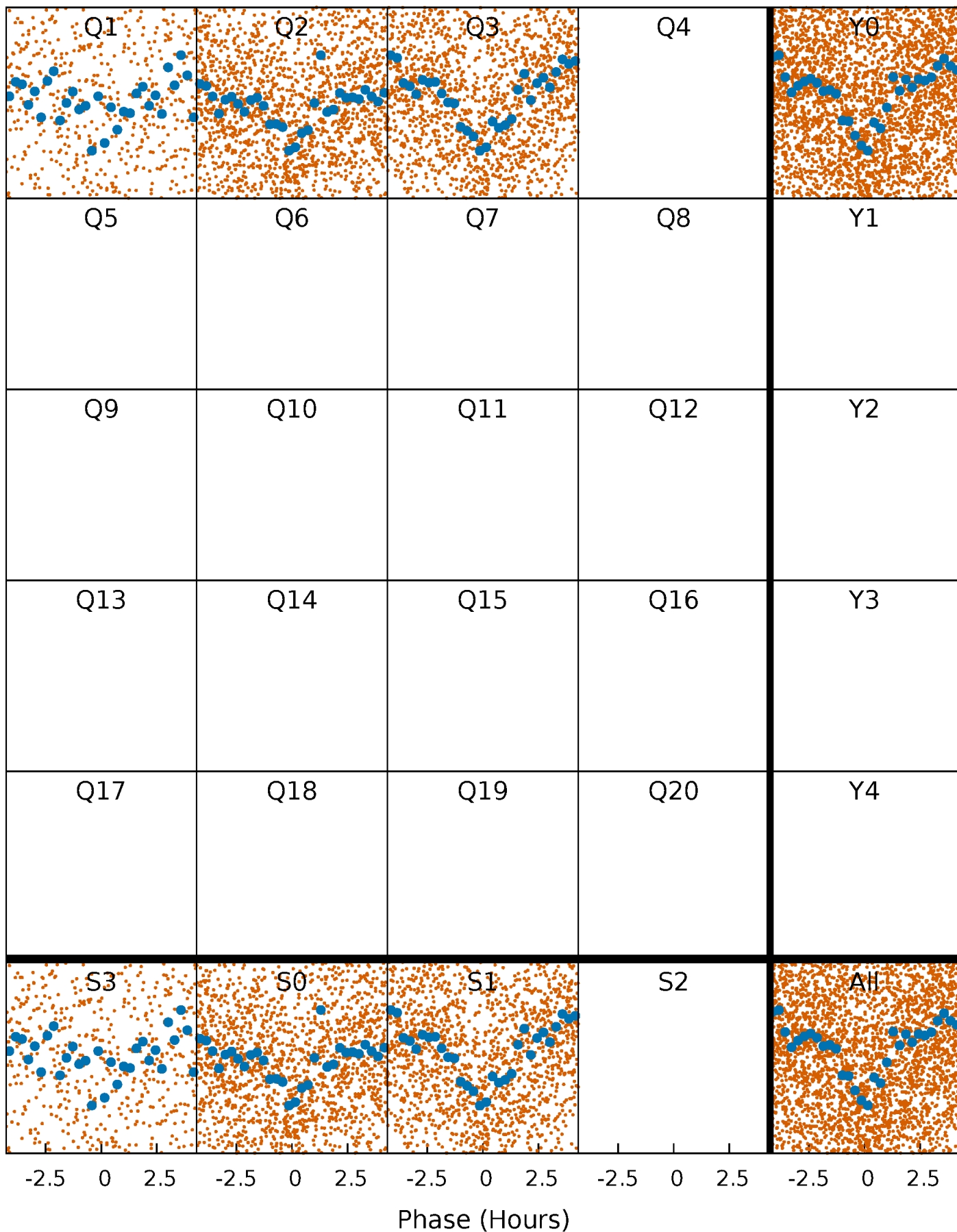
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

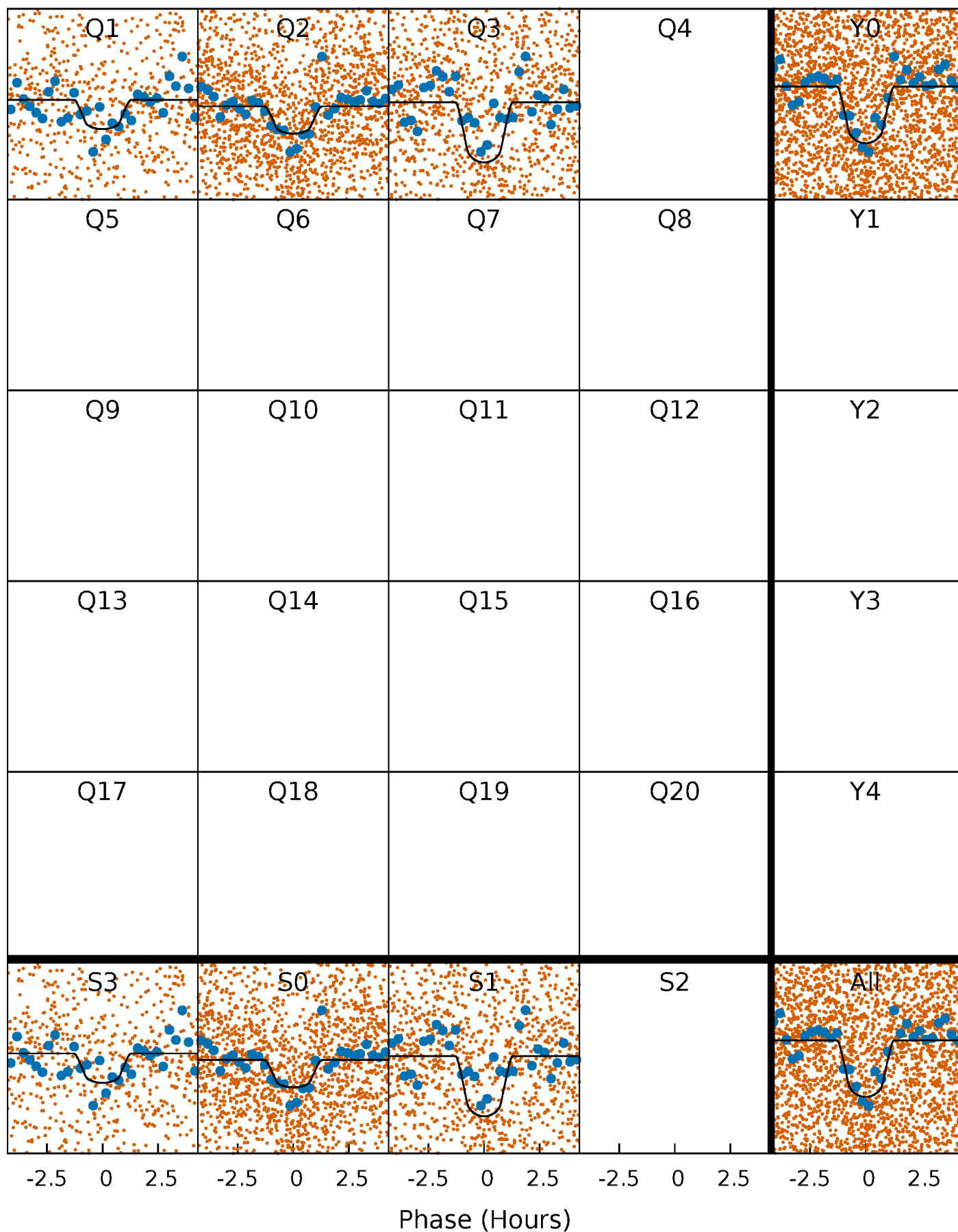
TCE 008953281-01   P= 0.784359 Days    $T_0=132.220246$  (BKJD)





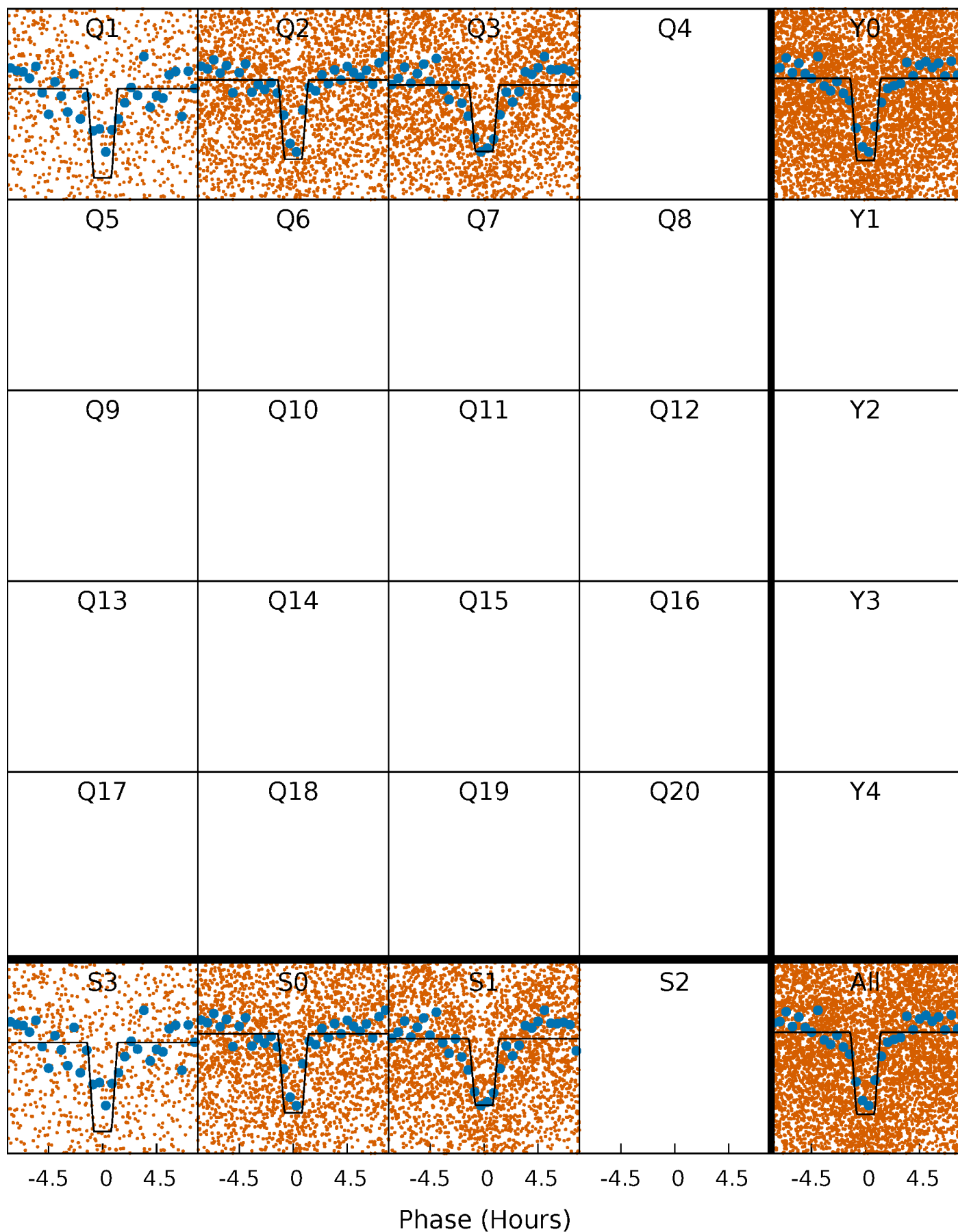
# DV Quarter-Phased Transit Curves

TCE 008953281-01   P= 0.784359 Days    $T_0=132.220246$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

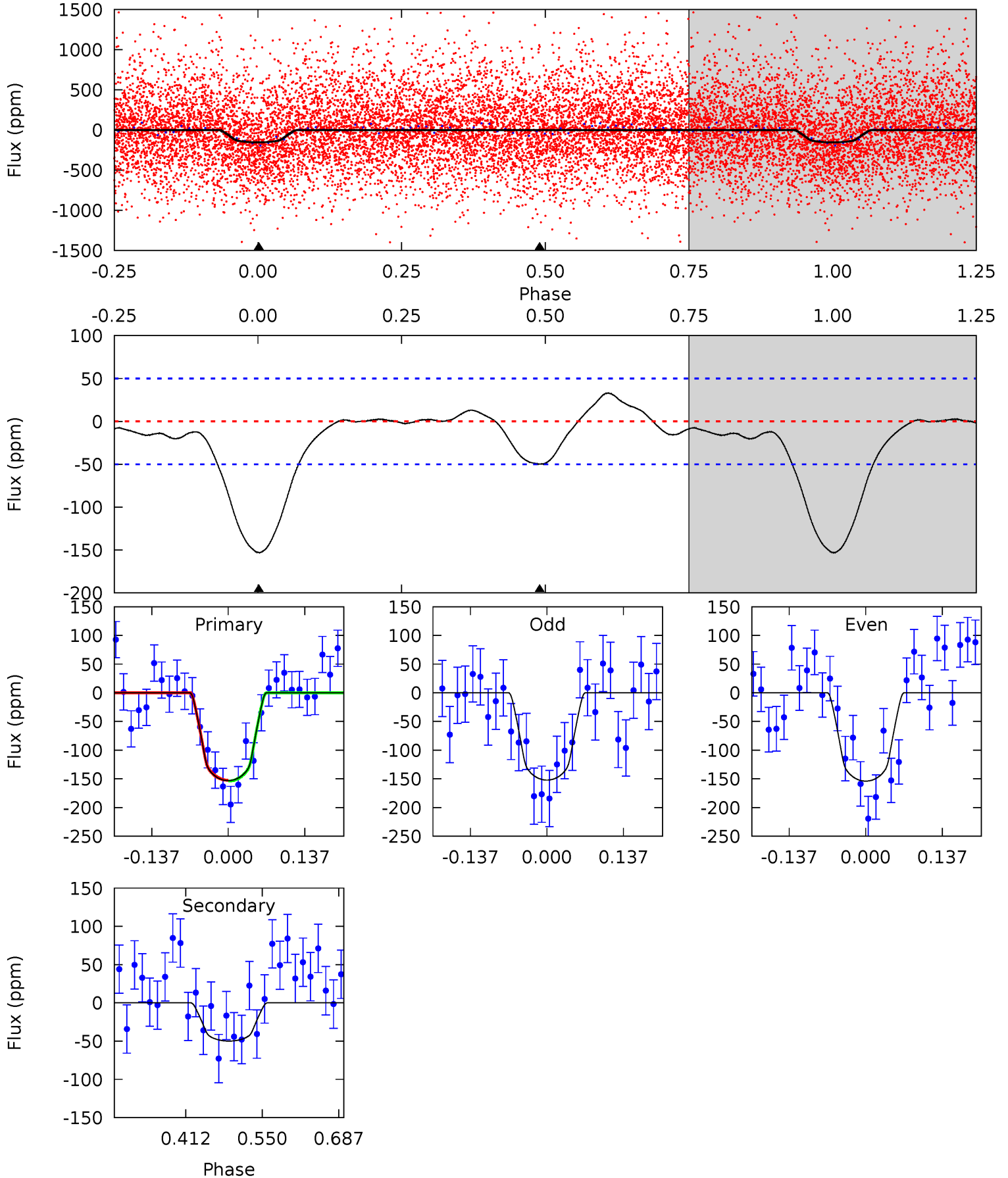
TCE 008953281-01     $P = 0.784344$  Days     $T_0 = 132.222801$  (BKJD)



# DV Model-Shift Uniqueness Test

008953281-01, P = 0.784359 Days, E = 131.435887 Days

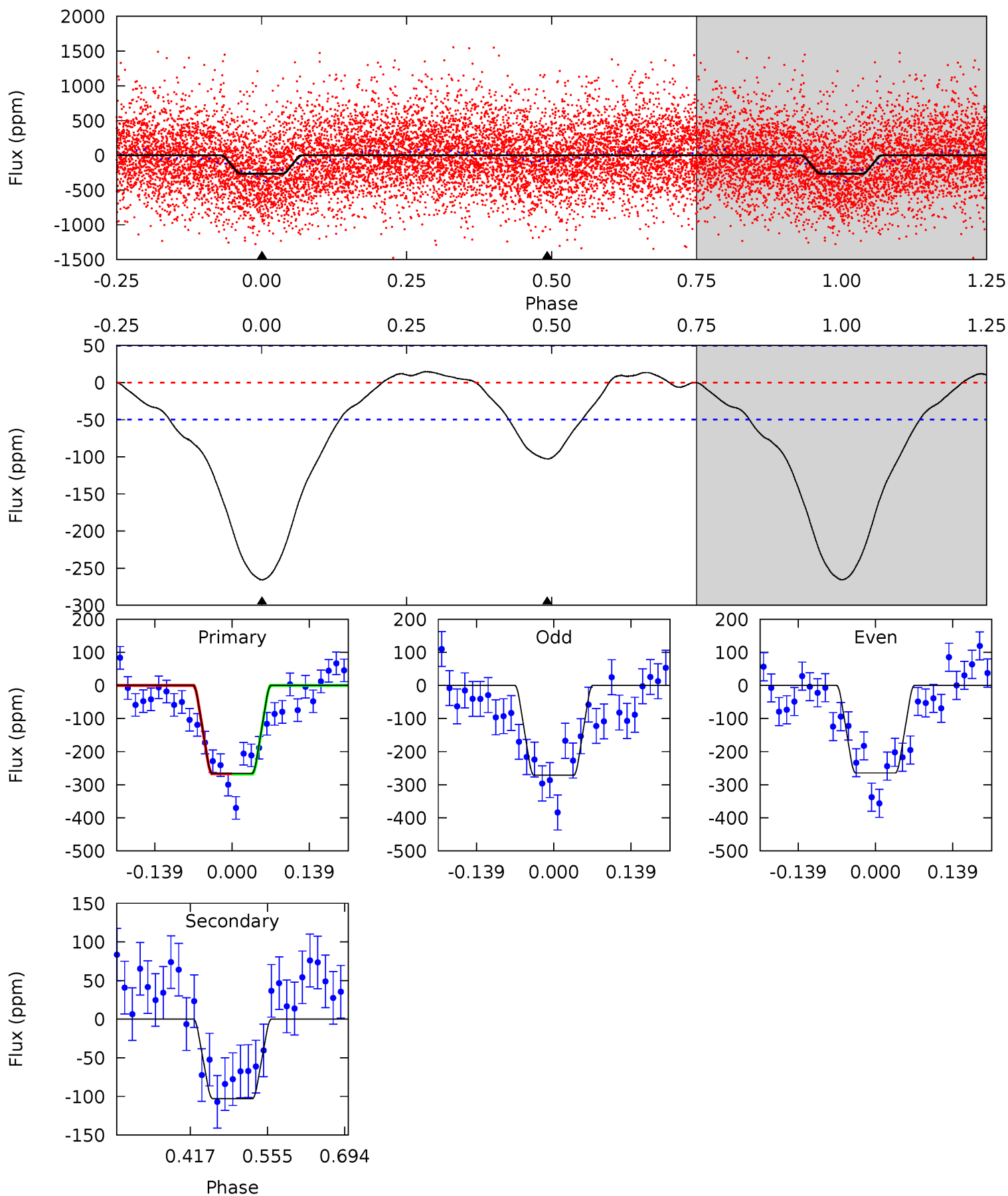
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	4.48	0	0	4.50	1.49	0.90	13.7	13.7	4.48	4.48	0.08	0.86	0.18	0.06



# Alt Model-Shift Uniqueness Test

008953281-01, P = 0.784344 Days, E = 131.438457 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
24.0	9.28	0	0	4.50	1.48	1.88	24.0	24.0	9.28	9.28	0.31	0.98	0.05	0.05



### Stellar Parameters For KIC 008953281

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5176^{+154}_{-154}$	$4.589^{+0.077}_{-0.063}$	$-0.660^{+0.350}_{-0.300}$	$0.681^{+0.081}_{-0.066}$	$0.657^{+0.083}_{-0.033}$	$2.926^{+0.939}_{-0.596}$
	+3%/-3%	+2%/-1%	+53%/-45%	+12%/-10%	+13%/-5%	+32%/-20%
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 008953281-01 / KOI 7112.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-50 \pm 11$	$1.16^{+0.74}_{-0.70}$	$2189^{+86}_{-90}$	$3800^{+1692}_{-640}$	$4.445^{+22.633}_{-2.842}$
Alt.	$-103 \pm 11$	$1.41^{+0.84}_{-0.77}$	$2188^{+82}_{-90}$	$3995^{+1635}_{-589}$	$6.036^{+23.685}_{-3.632}$

$T_{max}$  = 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

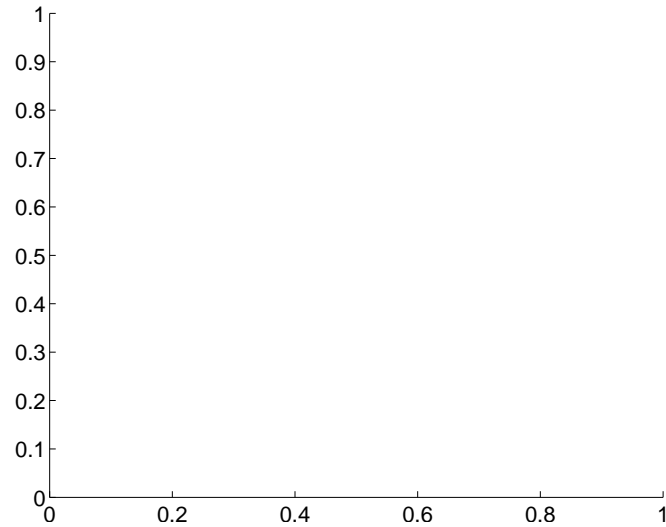
Supplemental centroid analysis for 008953281-01. Kepler magnitude: 15.16. Transit SNR 10.52

There are 0 quarters with good PRF difference image offsets

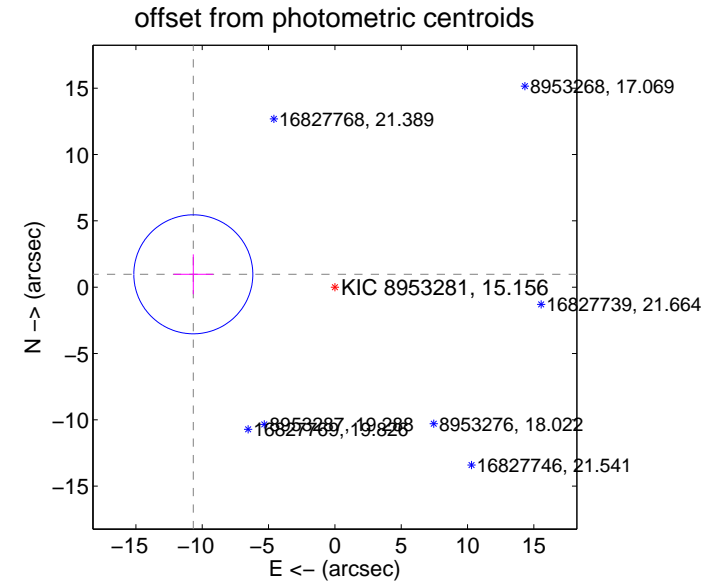
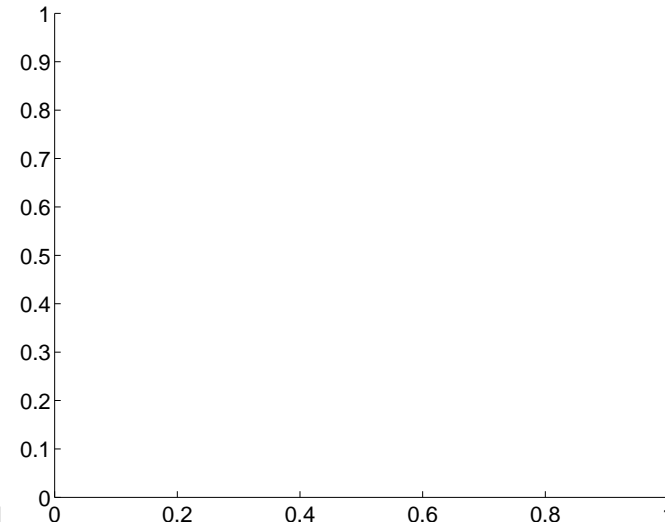
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$10.72 \pm 1.50$	7.17	$10.67 \pm 1.50$	$0.97 \pm 1.50$

There is no PRF-fit offset from OOT-fit

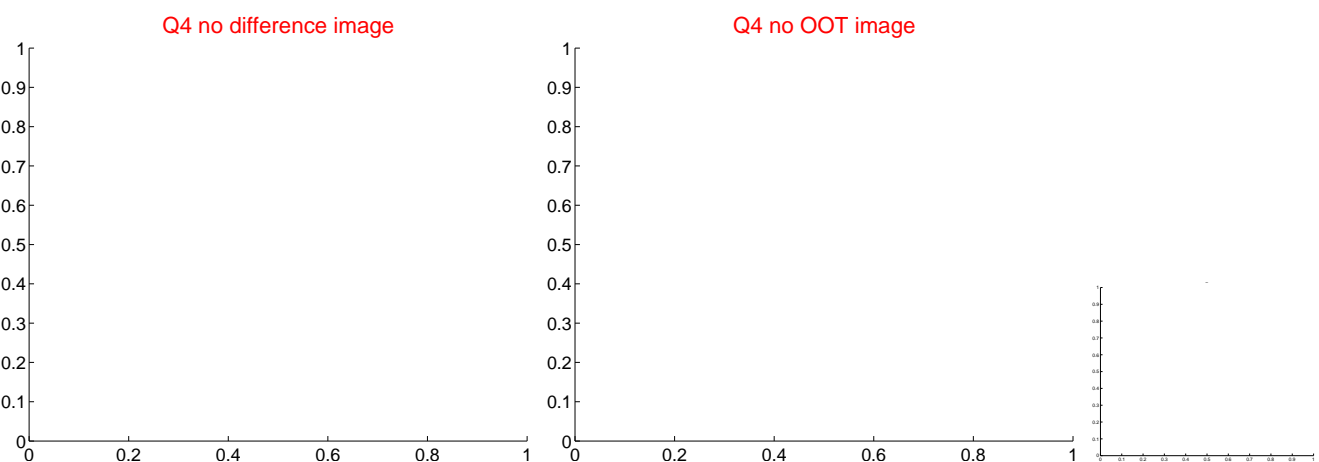
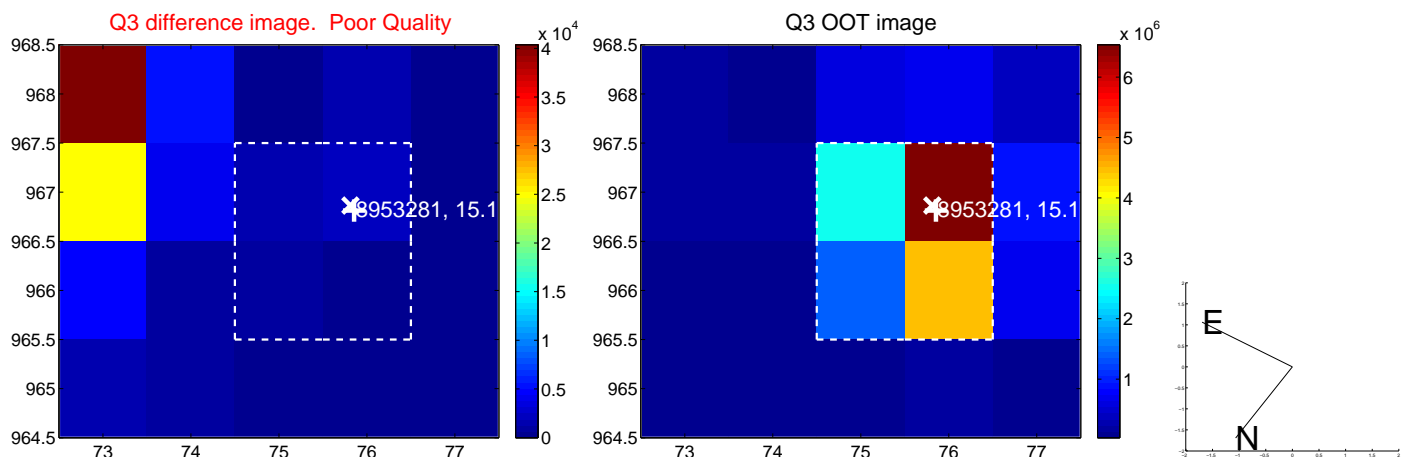
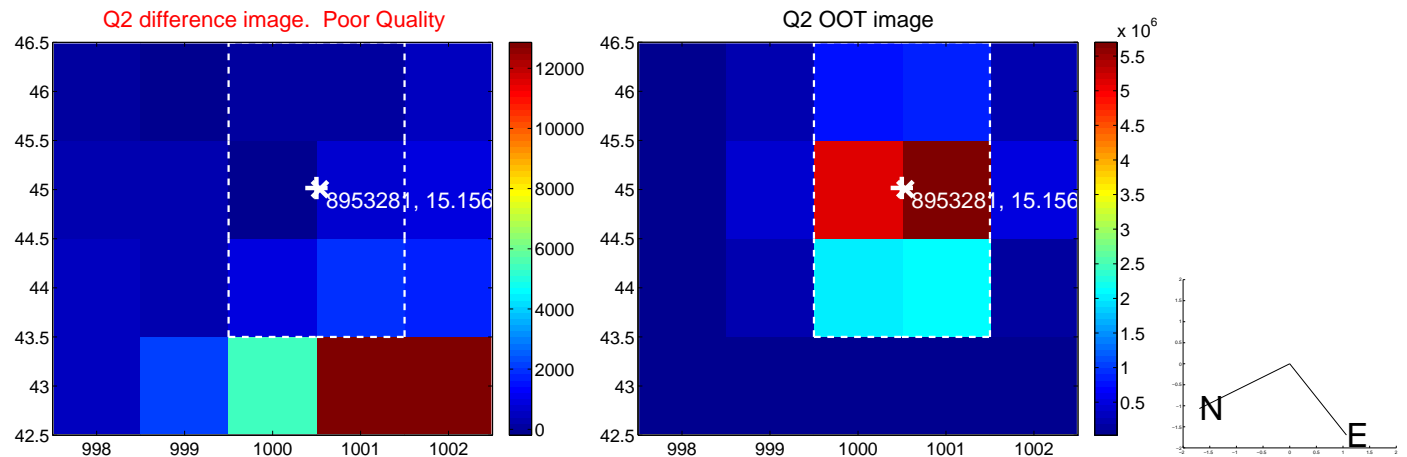
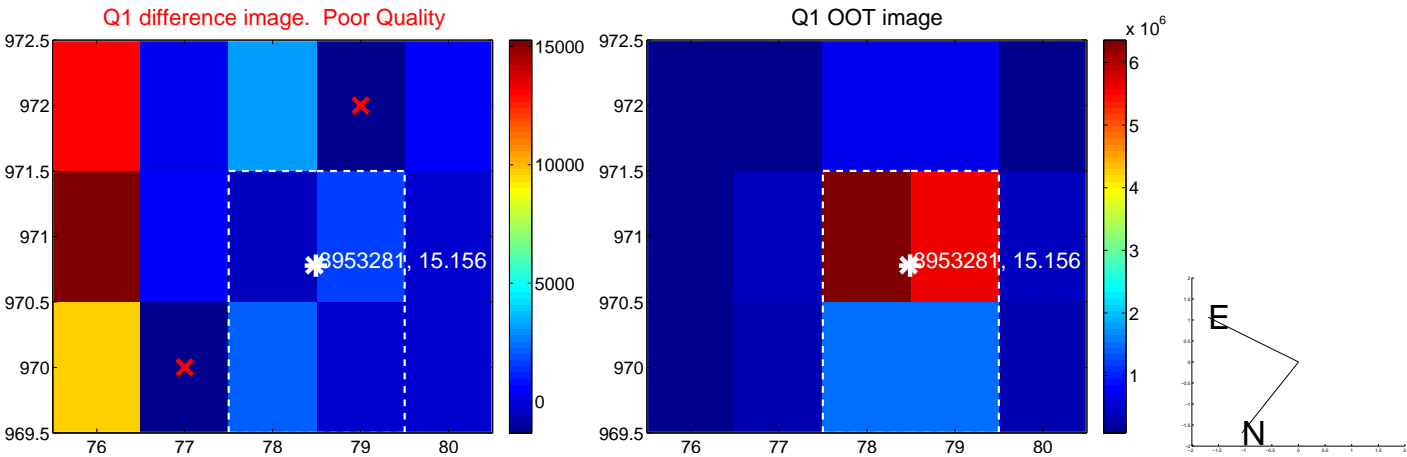


There is no PRF-fit offset from KIC



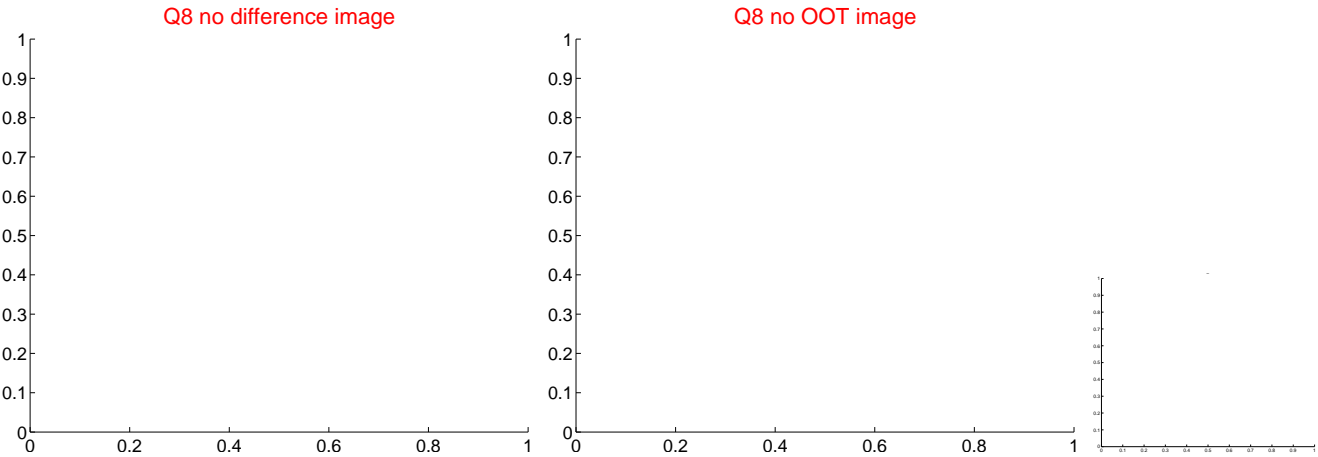
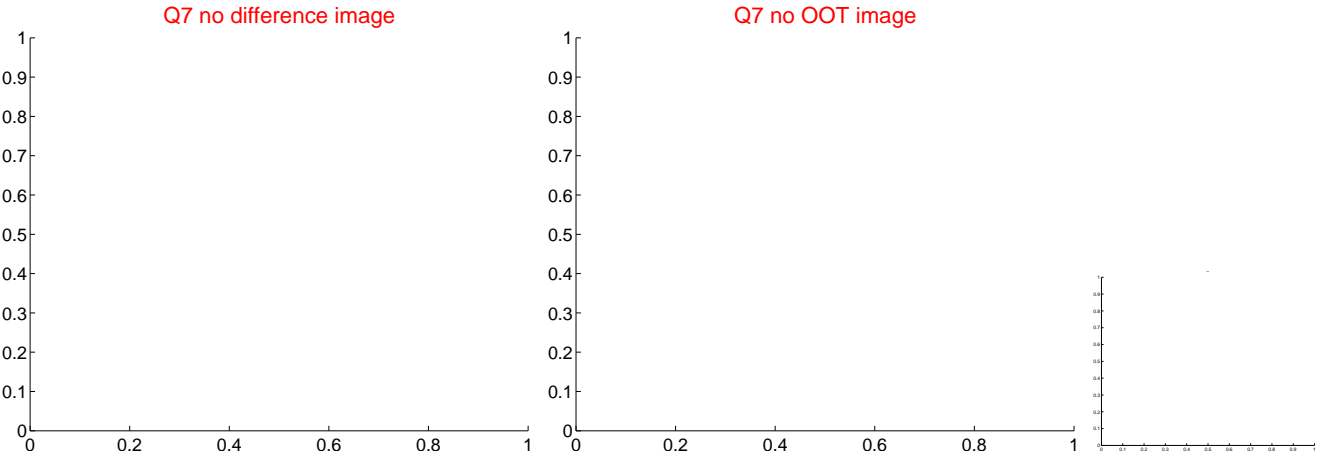
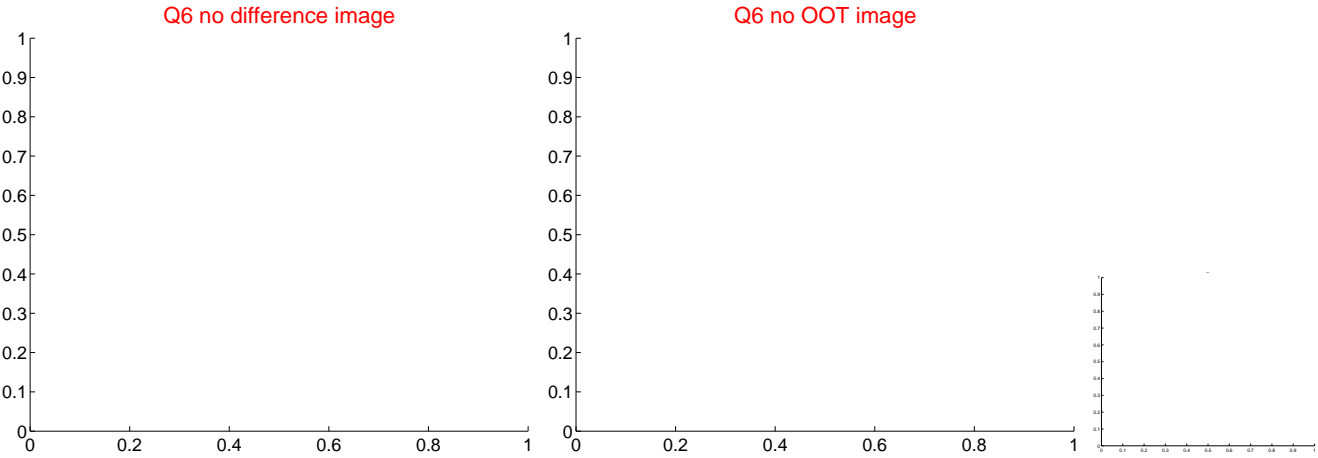
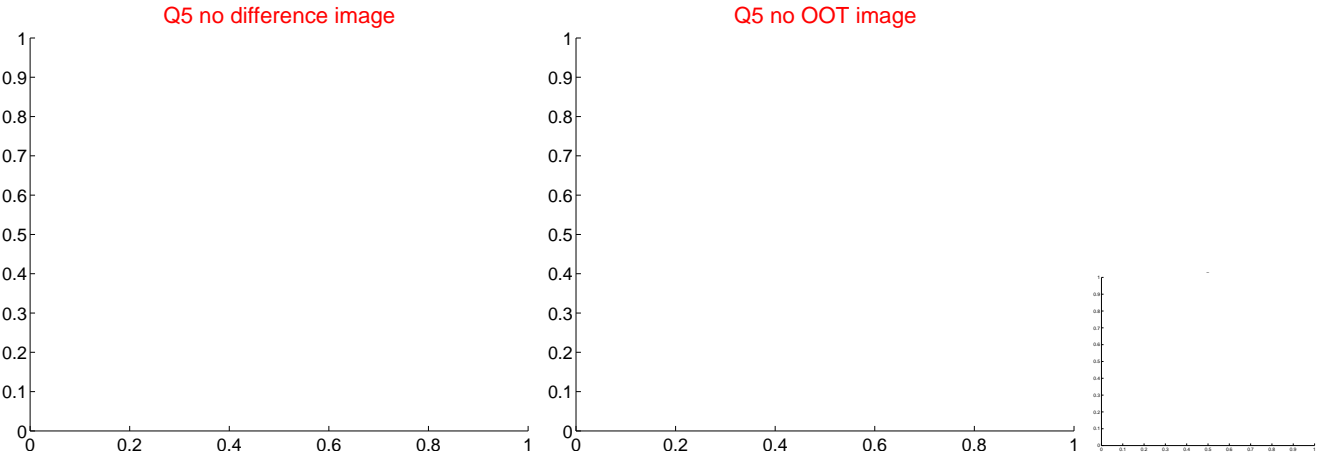
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

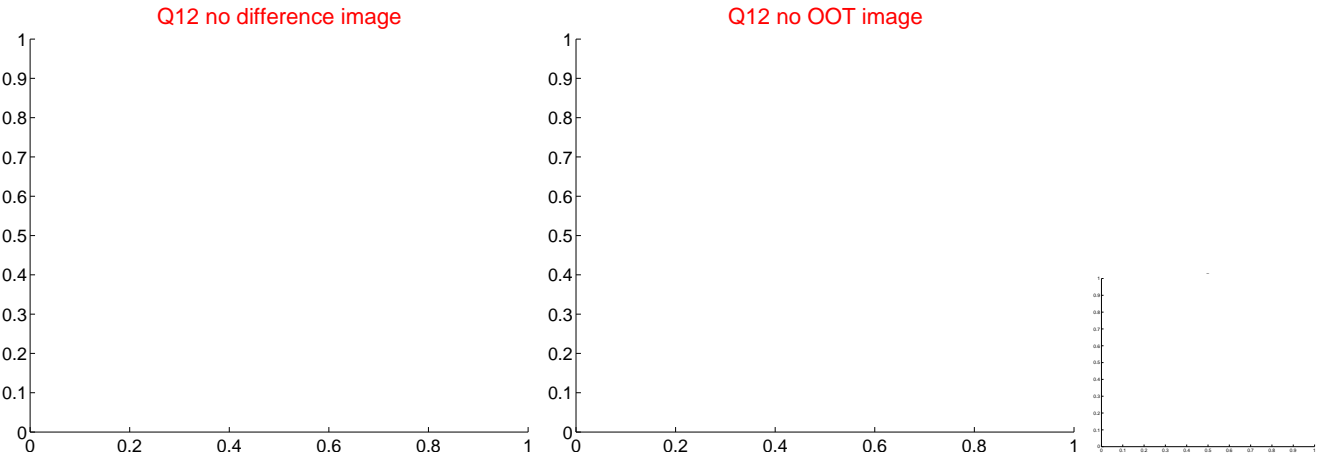
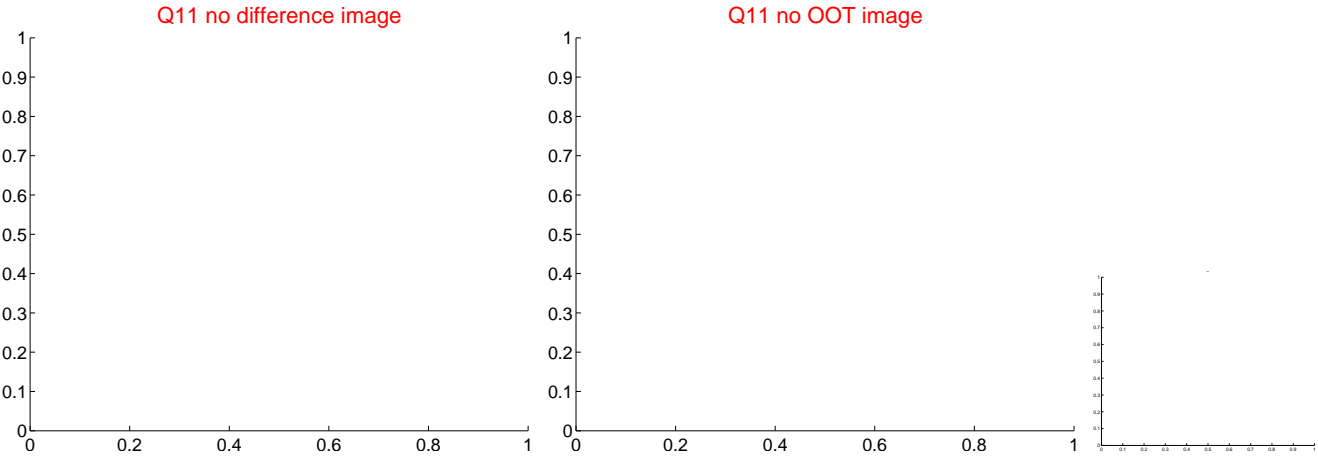
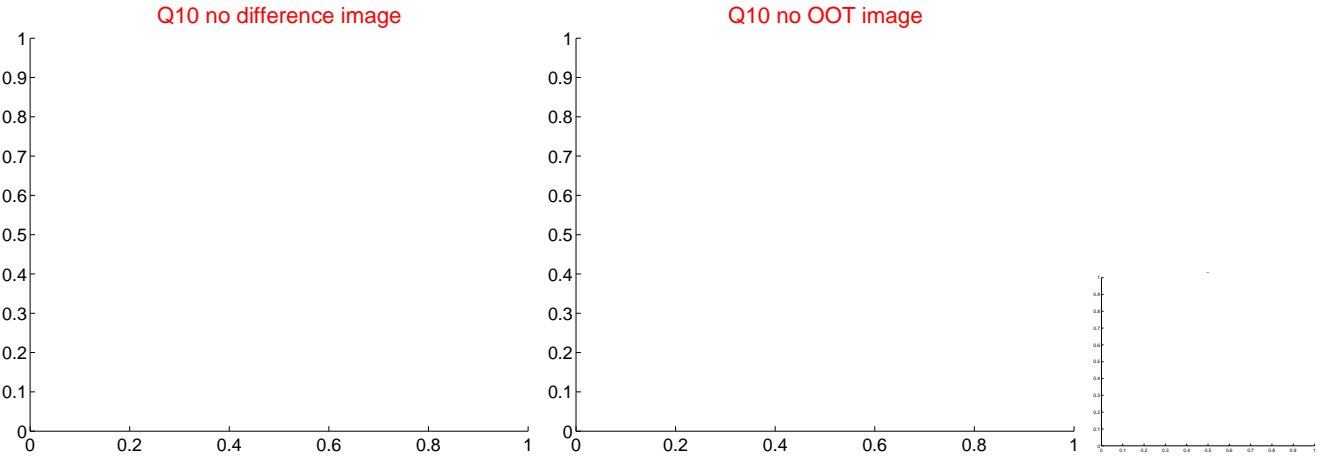
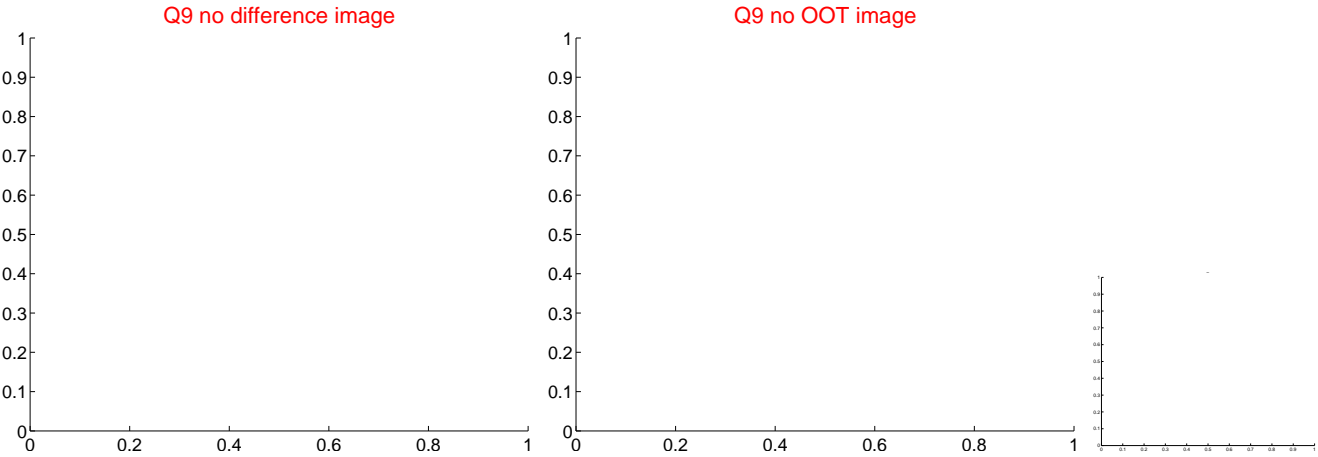




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



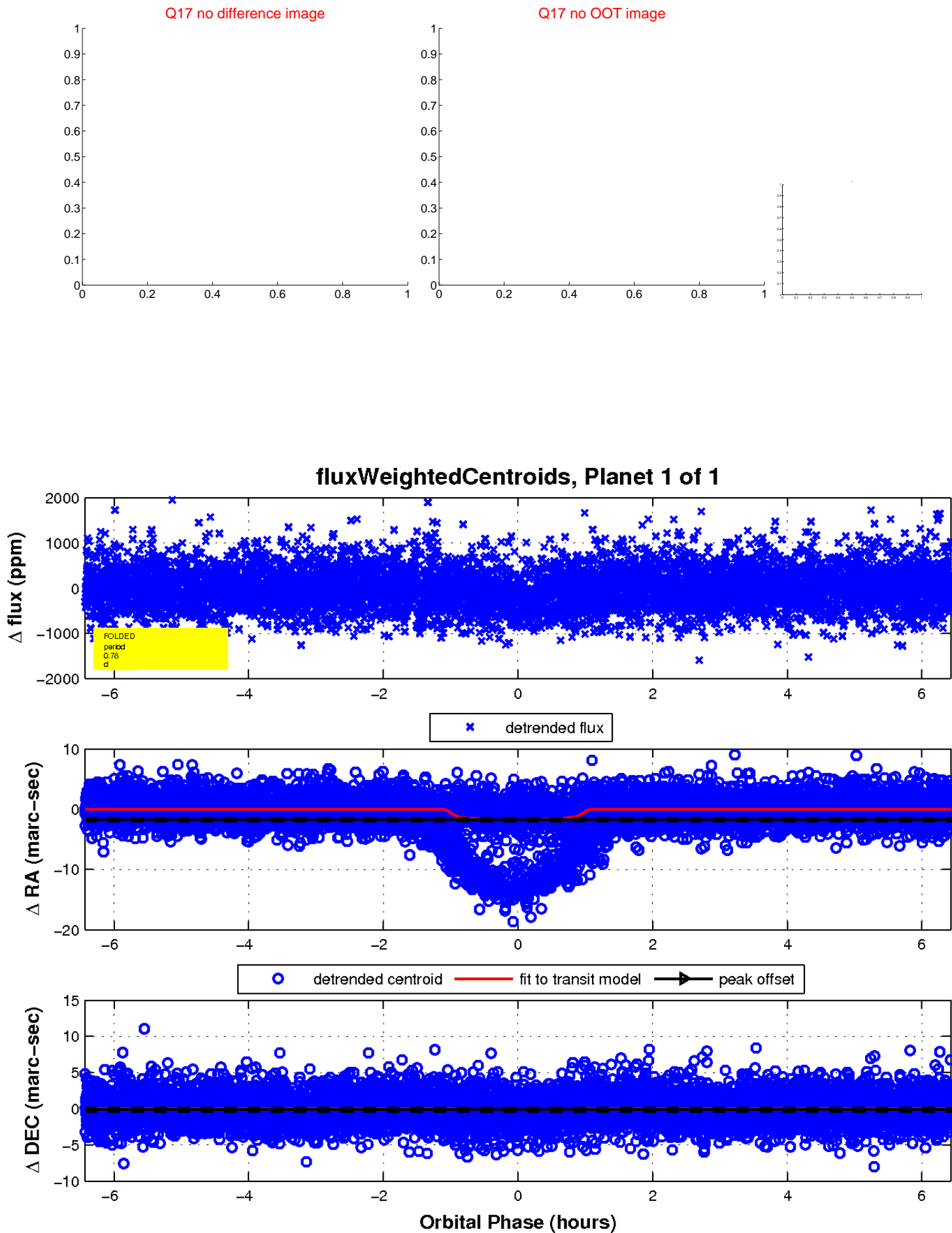
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

