

# KIC 006934244

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006934244-01	OBS	No	543.809535	451.628314	330.5	8.224	7.6	7.3	1.91	6520	4.20	2.77

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006934244-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

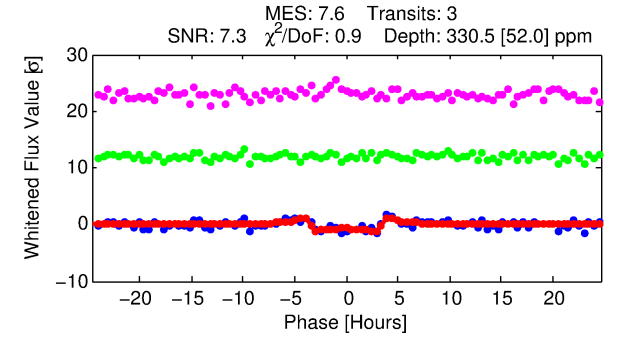
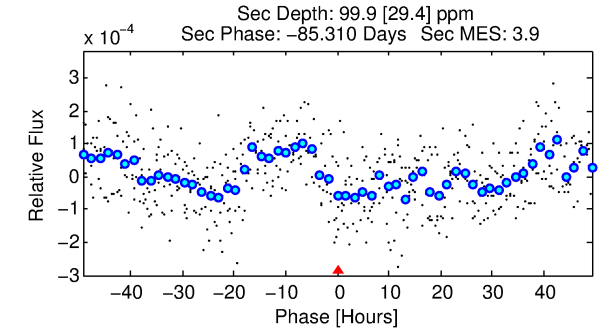
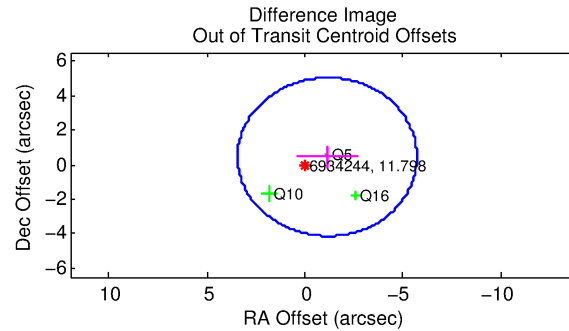
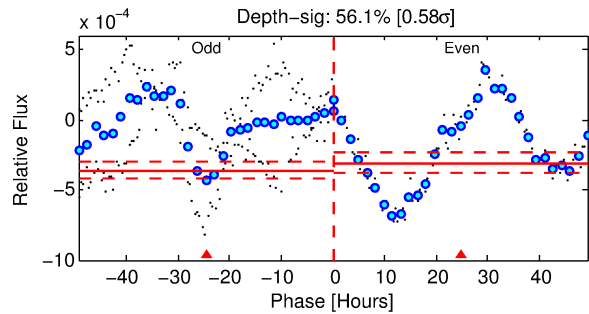
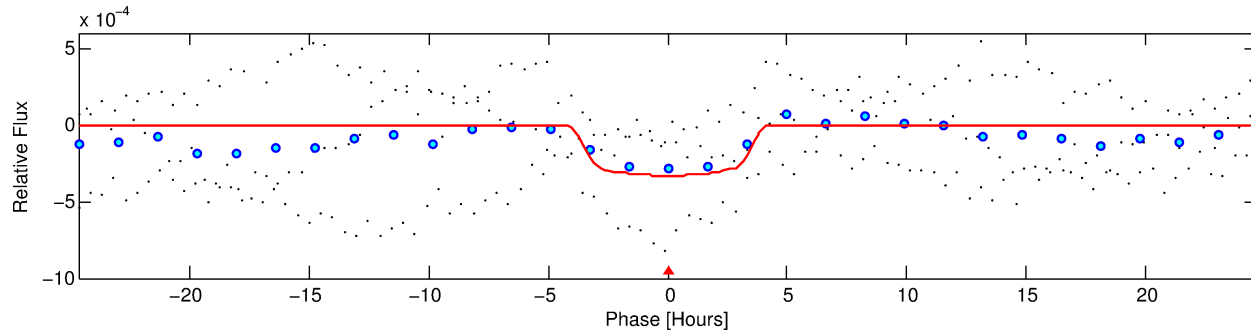
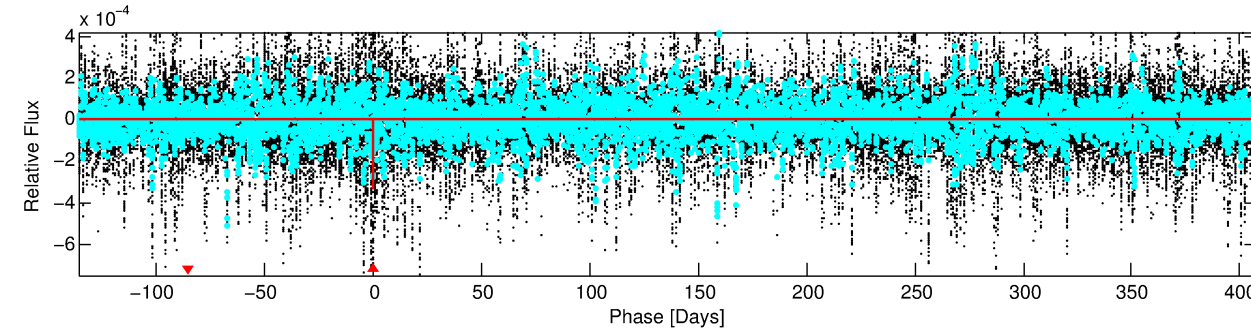
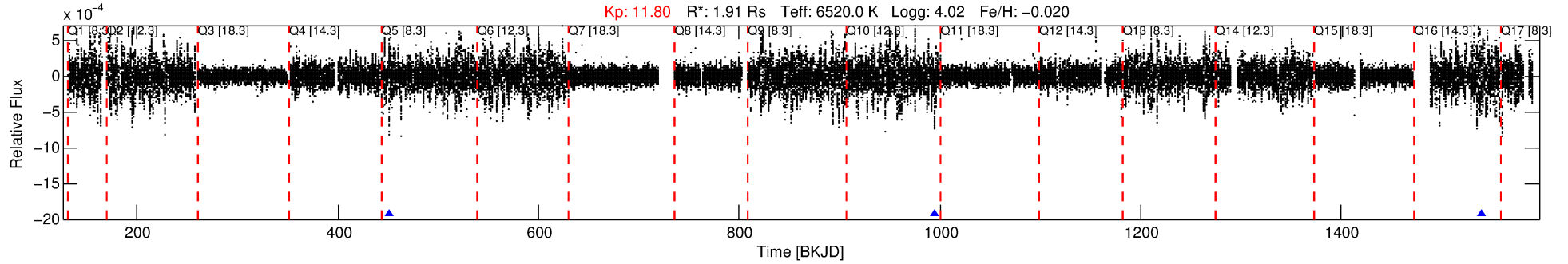
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006934244-01

No Significant Match Found

# DV One-Page Summary

KIC: 6934244 Candidate: 1 of 1 Period: 543.810 d



## DV Fit Results:

Period = 543.80954 [0.00633] d  
Epoch = 451.6283 [0.0085] BKJD  
Rp/R\* = 0.0201 [0.0019]  
a/R\* = 207.14 [43.66]  
b = 0.93 [0.03]  
Seff = 2.77 [1.48]  
Teq = 329 [44] K  
Rp = 4.20 [1.62] Re  
a = 1.4606 [0.4901] AU  
Ag = 6662.35 [4133.90] [1.61 $\sigma$ ]  
Teffp = 4593 [437] K [9.71 $\sigma$ ]

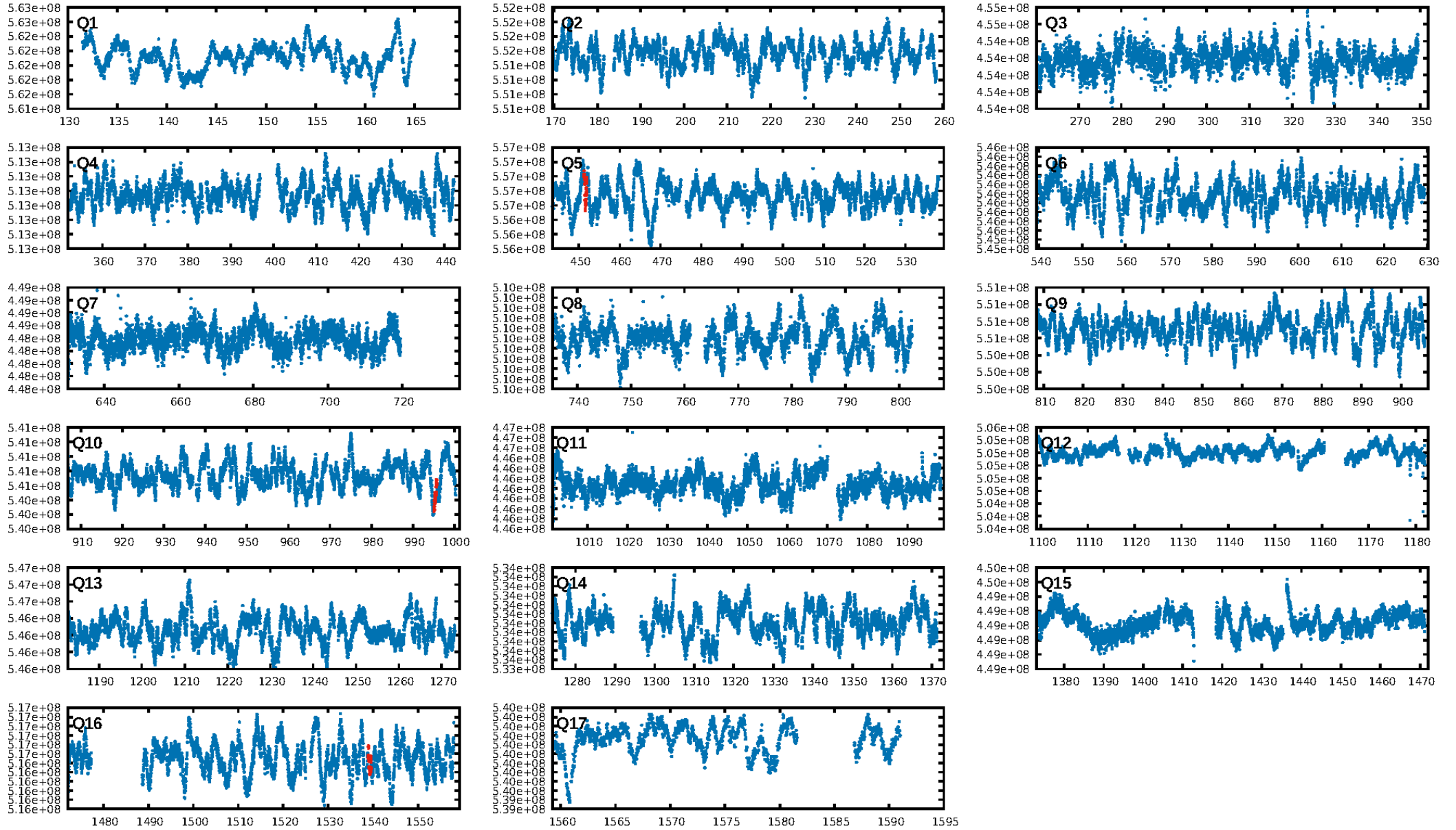
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 73.0%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 7.92e-11**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -83.73  
Centroid-sig: 53.9%  
Centroid-so: 0.311 arcsec [0.55 $\sigma$ ]  
OotOffset-rm: 1.221 arcsec [0.80 $\sigma$ ]  
OotOffset-st: 1/0/1/1 [3]  
KicOffset-rm: 1.245 arcsec [1.35 $\sigma$ ]  
KicOffset-st: 1/0/1/1 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

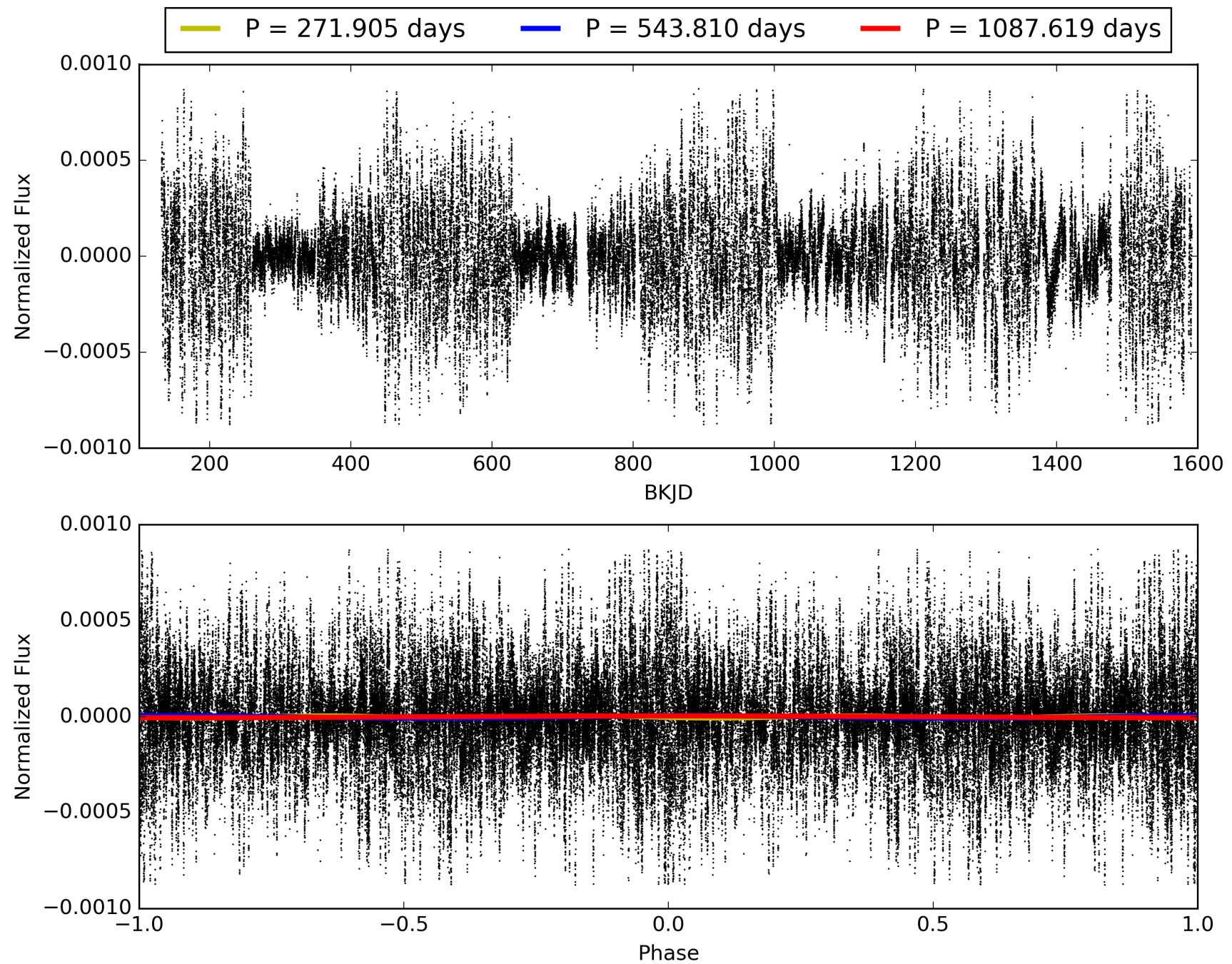
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:20:27 Z

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

# TCE 006934244-01, PDC Light Curves

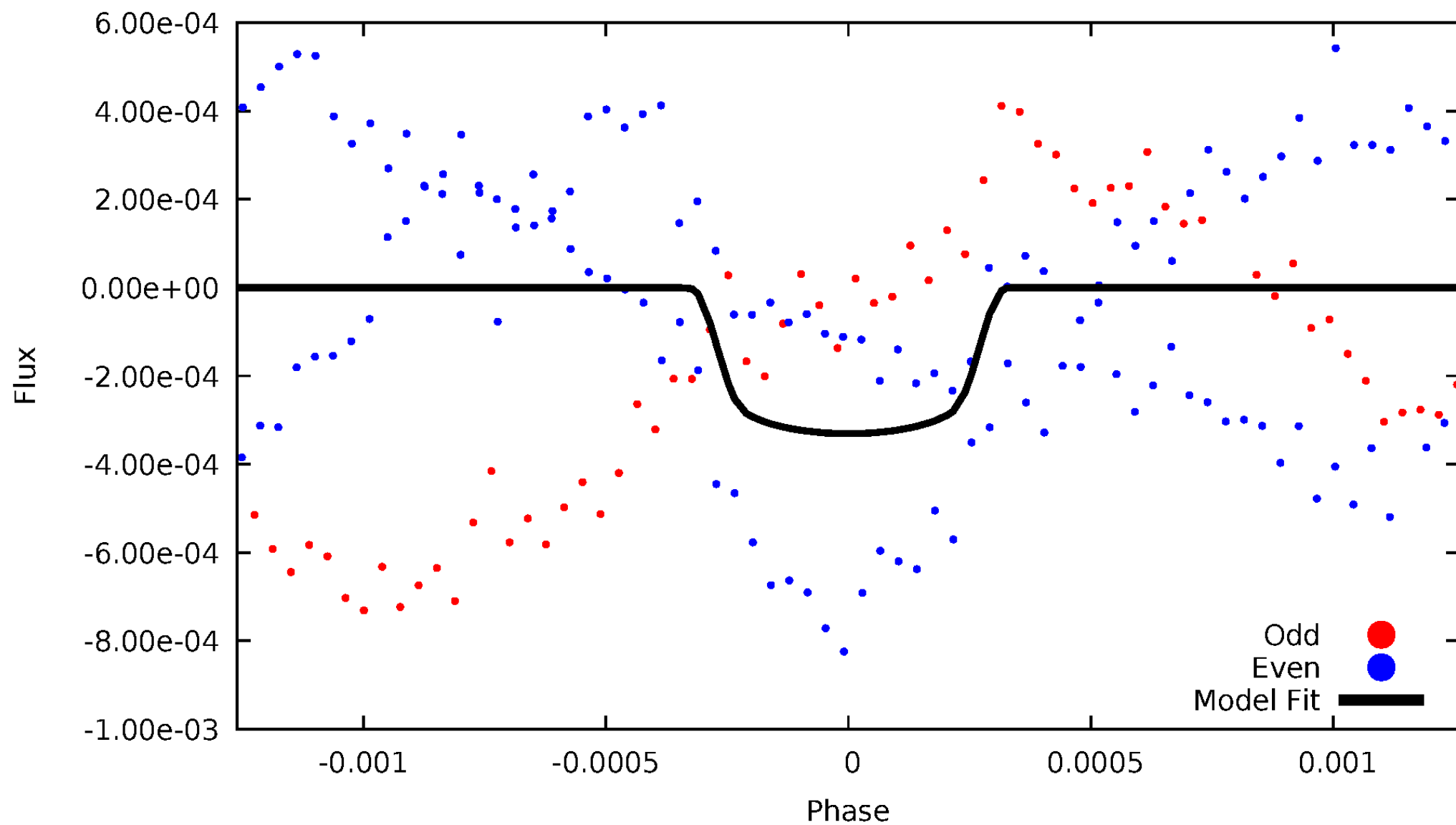


TCE 006934244-01



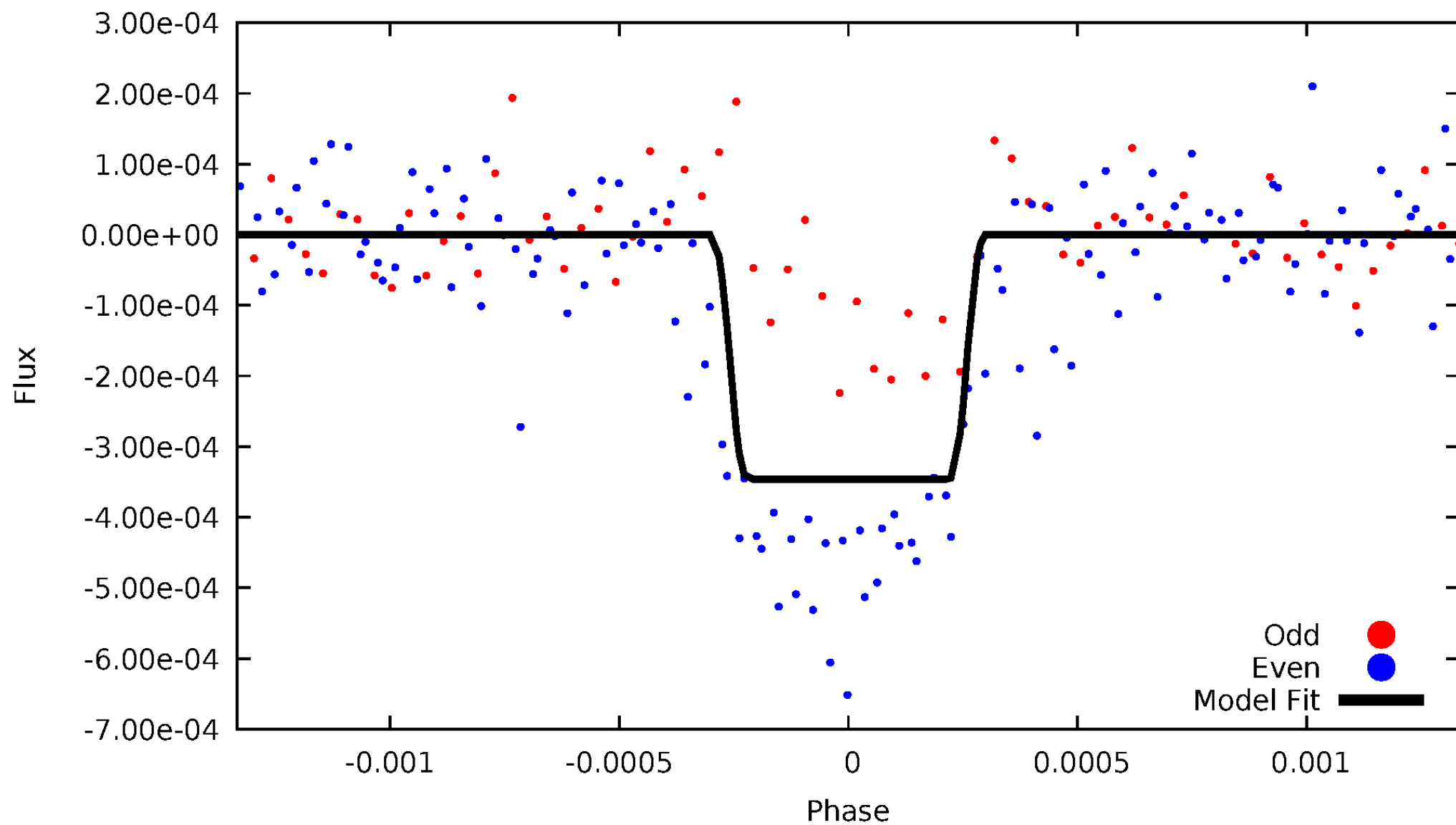
# DV Odd/Even

TCE 006934244-01



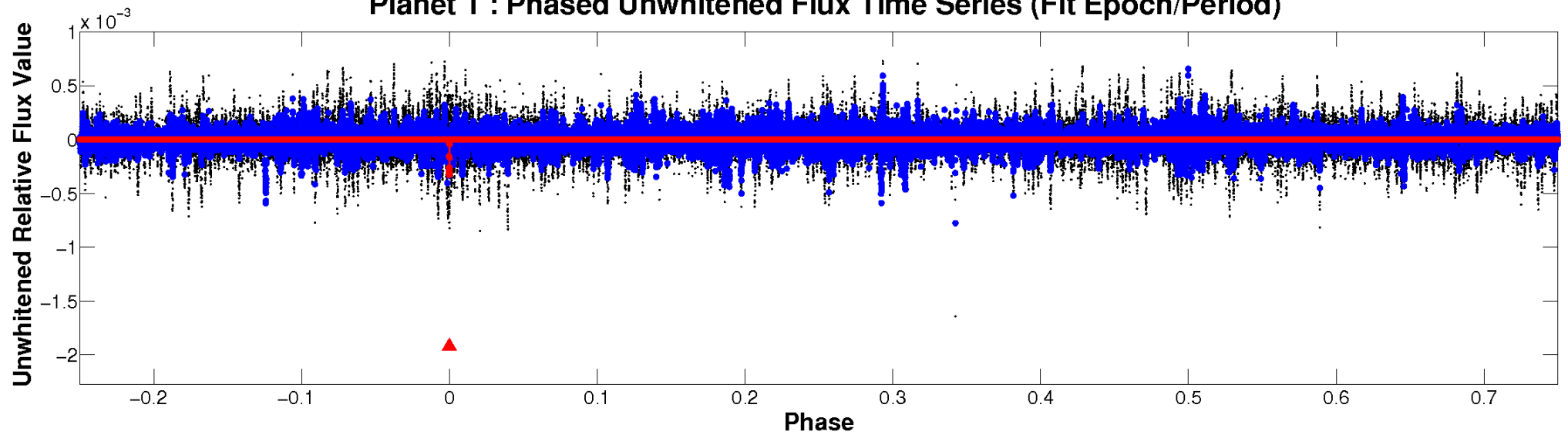
# ALT Odd/Even

TCE 006934244-01

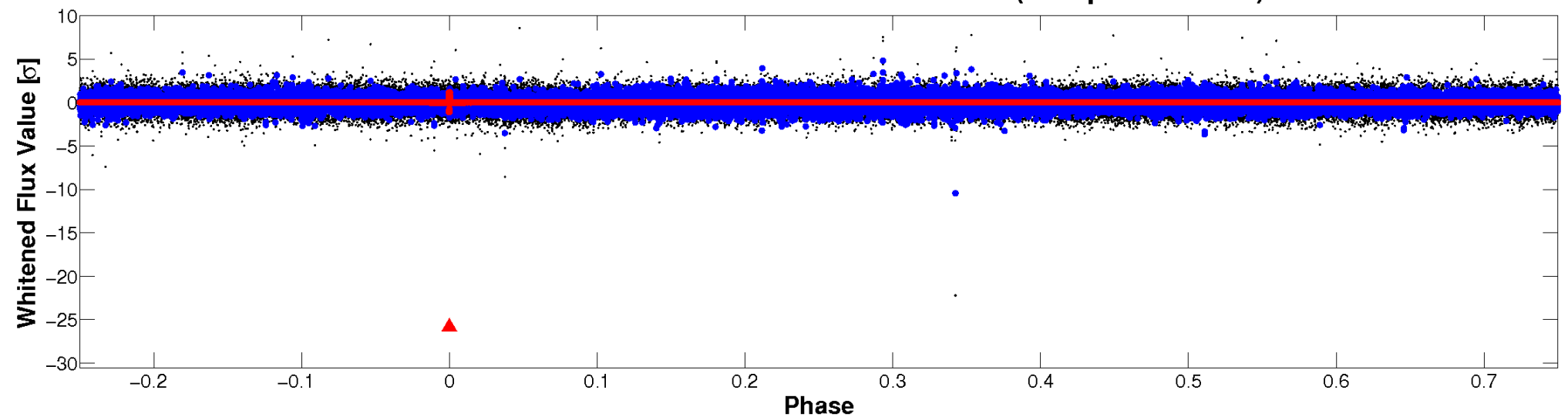


# Non-Whitened Vs. Whitened Light Curve

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



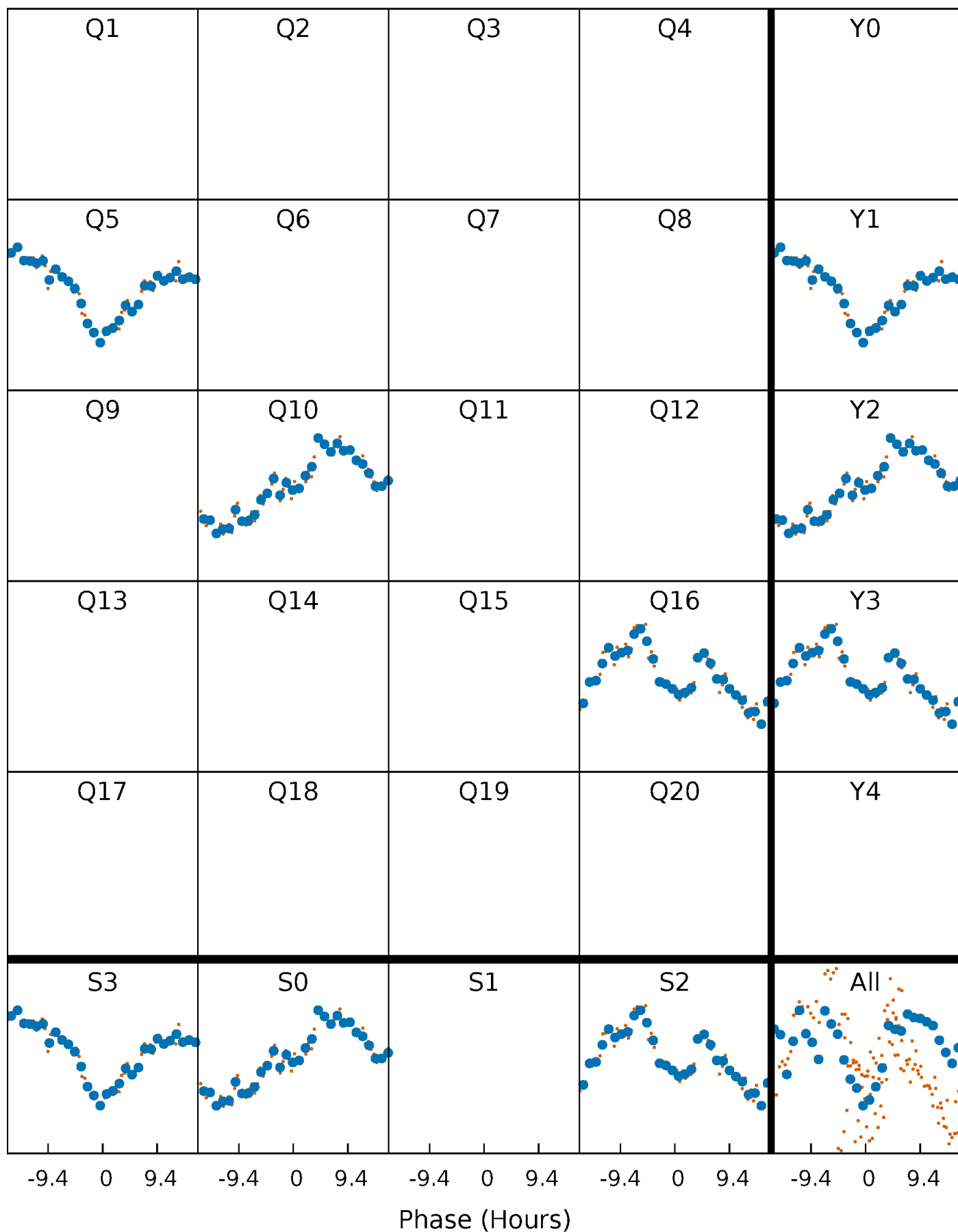
Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

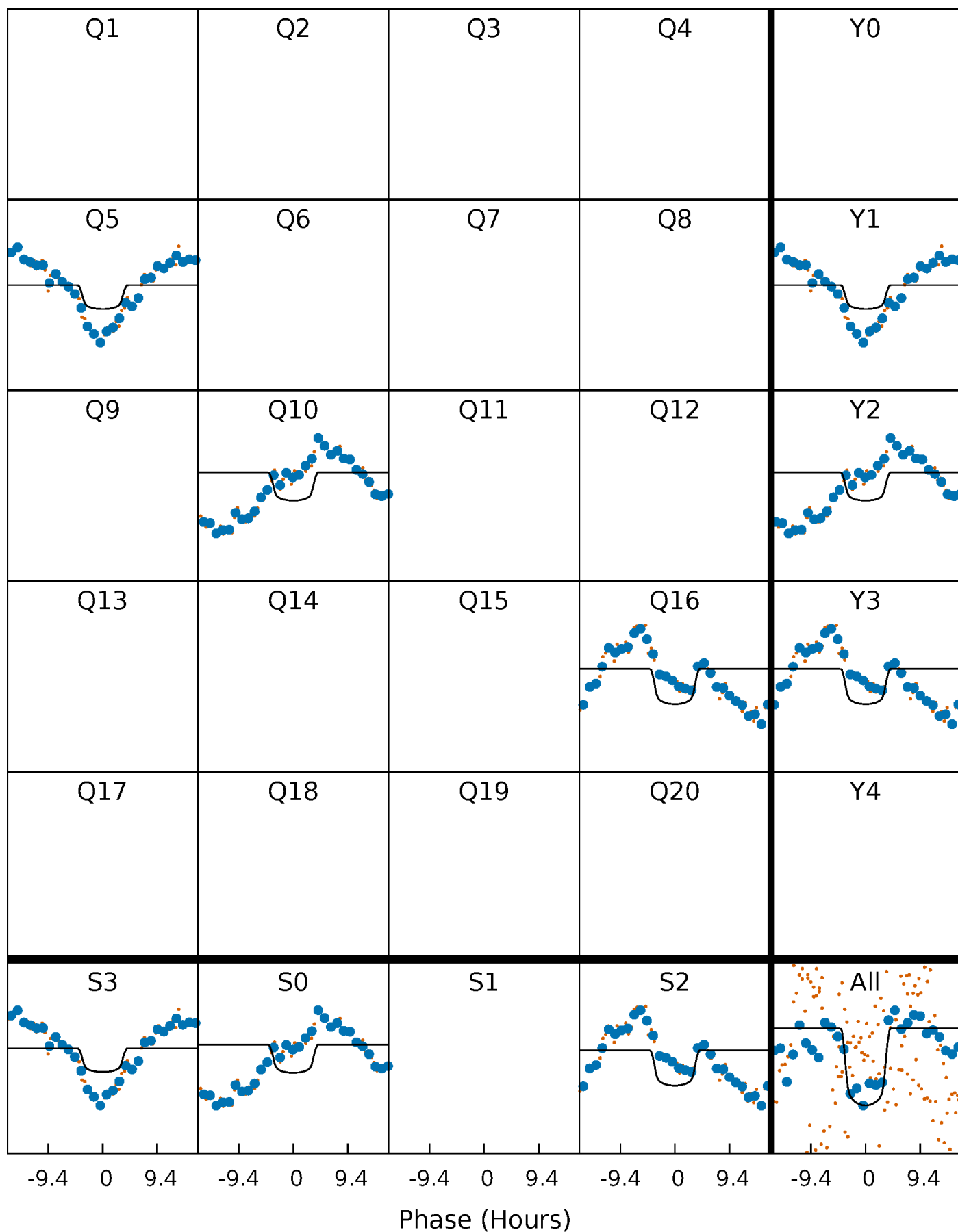
TCE 006934244-01 P=543.809535 Days  $T_0=451.628314$  (BKJD)





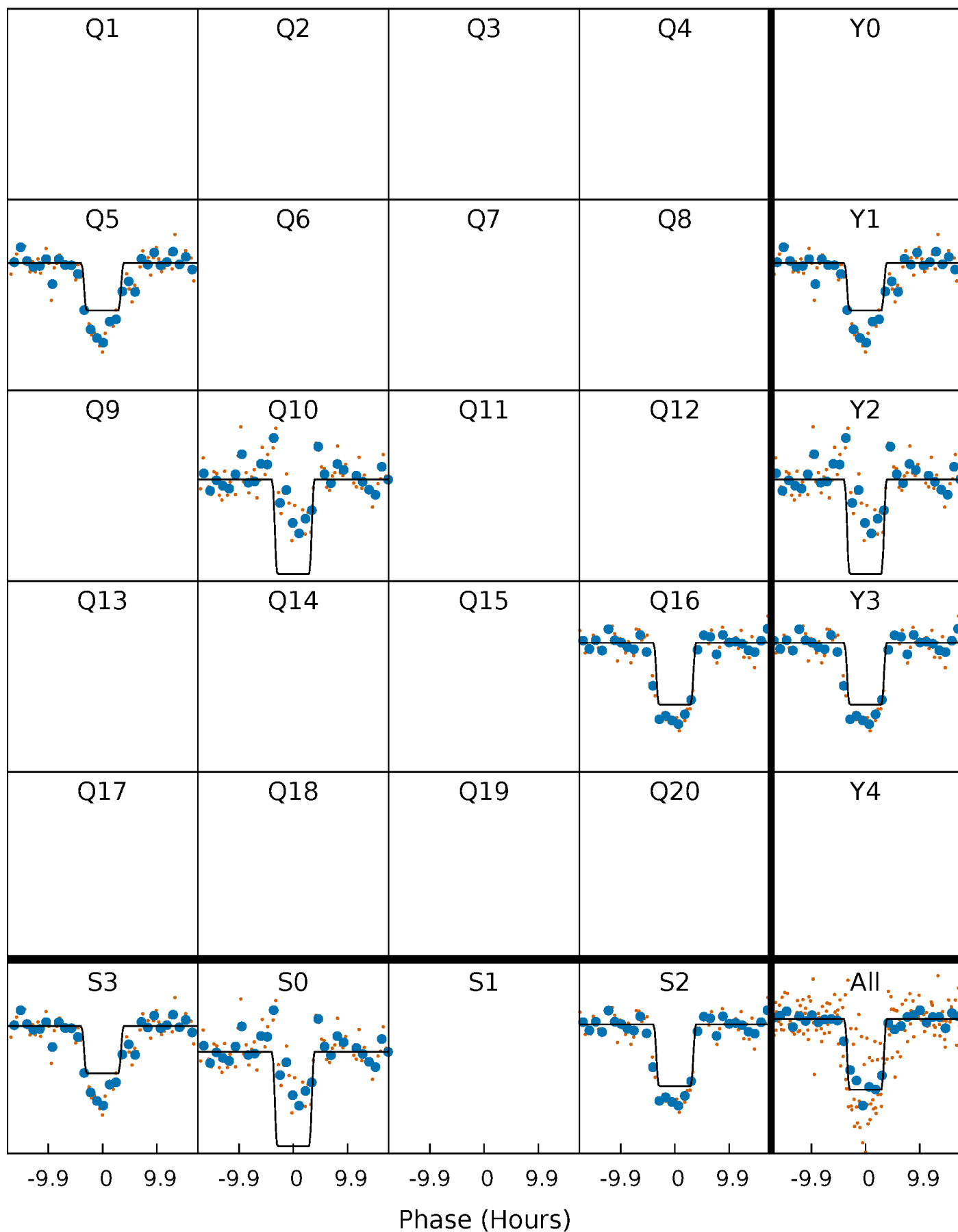
# DV Quarter-Phased Transit Curves

TCE 006934244-01 P=543.809535 Days  $T_0=451.628314$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

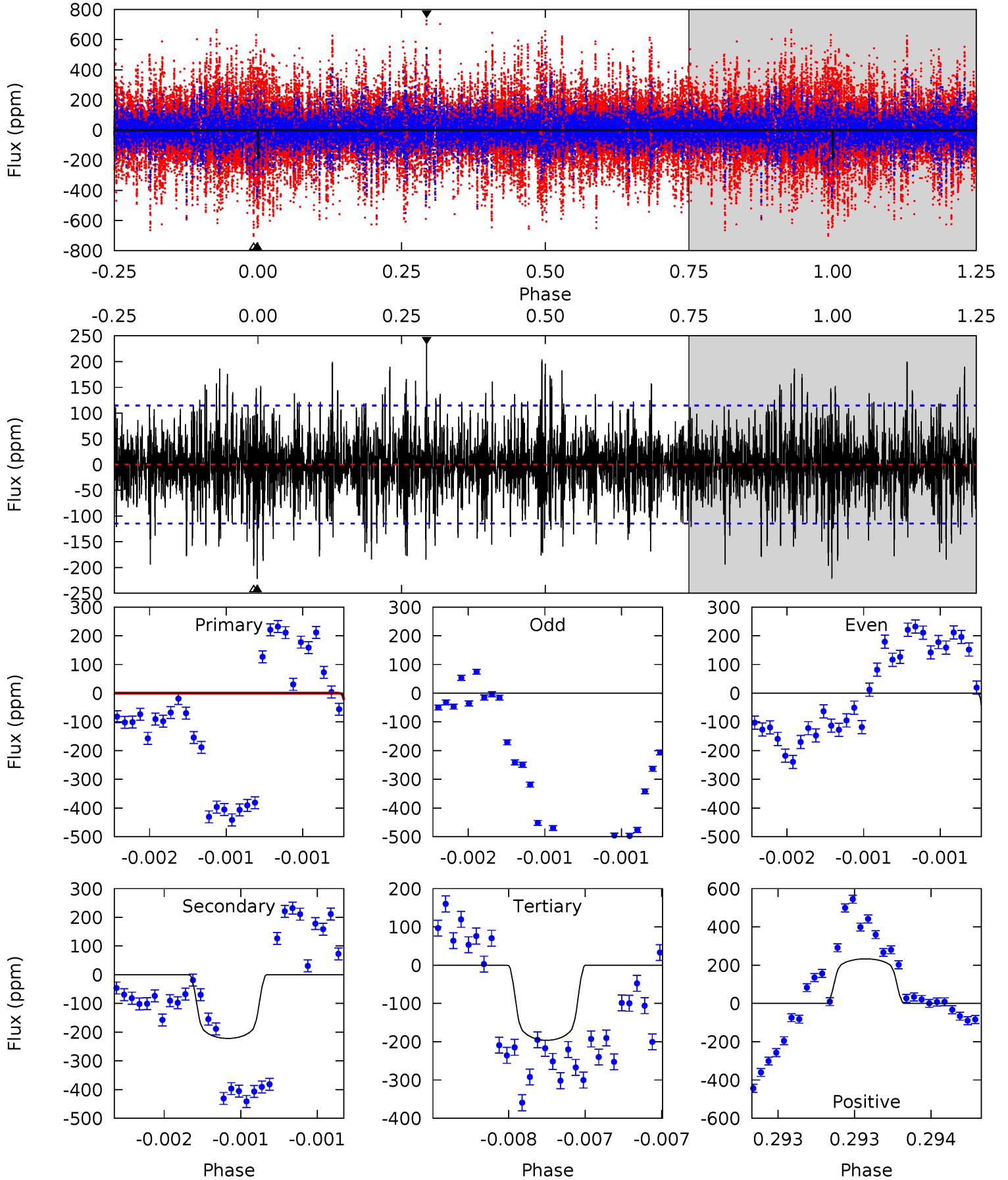
TCE 006934244-01 P=543.811955 Days  $T_0=451.624290$  (BKJD)



# DV Model-Shift Uniqueness Test

006934244-01, P = 543.809535 Days, E = 451.628314 Days

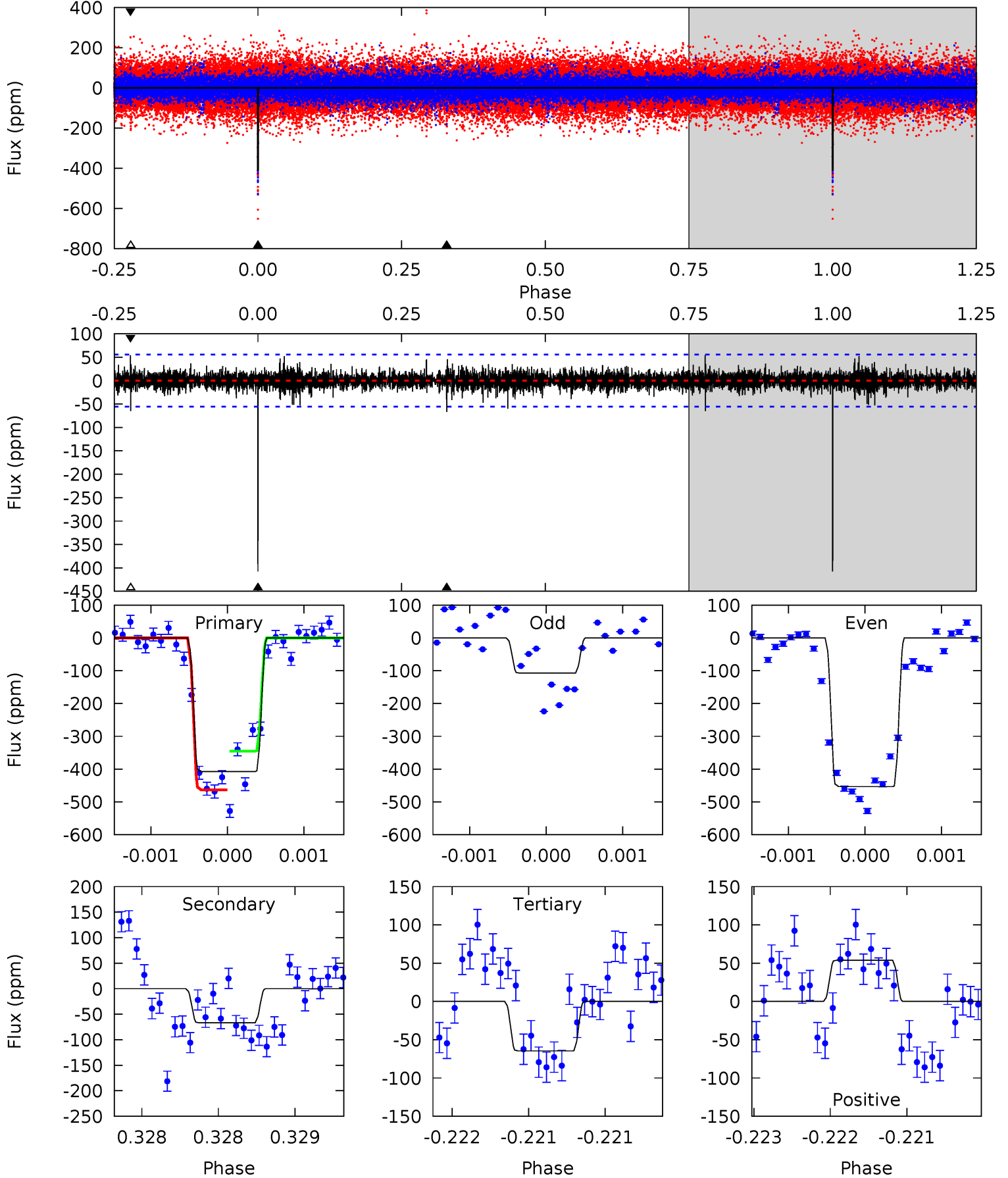
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.31	10.7	9.46	11.2	5.53	3.41	2.56	-0.15	-1.92	1.24	-0.54	8.98	2.13	0.51	0.81



# Alt Model-Shift Uniqueness Test

006934244-01, P = 543.811955 Days, E = 451.624290 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
40.6	6.67	6.44	5.38	5.55	3.44	1.11	34.2	35.2	0.23	1.29	17.6	0.80	0.12	5.90



### Stellar Parameters For KIC 006934244

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6520^{+179}_{-247}$	$4.024^{+0.292}_{-0.157}$	$-0.020^{+0.250}_{-0.300}$	$1.909^{+0.536}_{-0.715}$	$1.409^{+0.197}_{-0.321}$	$0.285^{+0.579}_{-0.128}$
	+3%/-4%	+7%/-4%	+1250%/-1500%	+28%/-37%	+14%/-23%	+203%/-45%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 006934244-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-222 \pm 21$	$4.03^{+0.78}_{-0.81}$	$451^{+36}_{-43}$	$5588^{+365}_{-270}$	$15877^{+8293}_{-4758}$
Alt.	$-67 \pm 10$	$3.85^{+0.69}_{-0.77}$	$455^{+39}_{-40}$	$4486^{+262}_{-230}$	$5299^{+2855}_{-1550}$

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

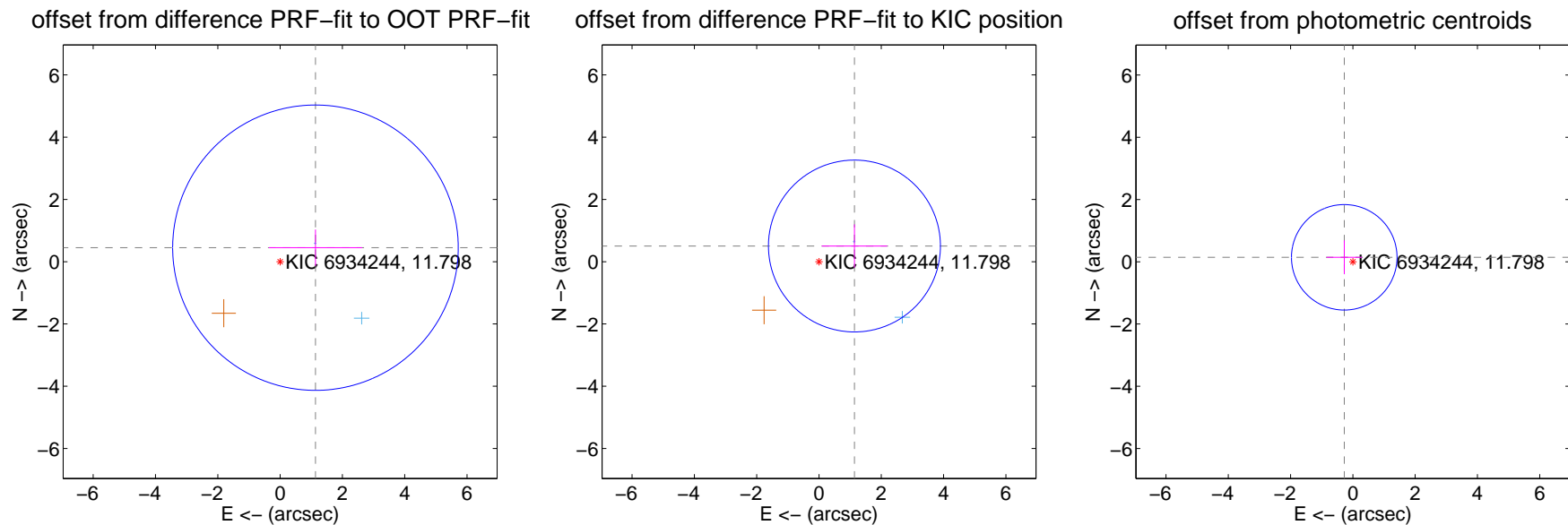
## DV Centroid Data

Supplemental centroid analysis for 006934244-01. **Kepler magnitude: 11.80.** Transit SNR 7.30

**There are 2 quarters with good PRF difference image offsets**

The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.221 \pm 1.528$	0.80	$-1.135 \pm 1.496$	$0.450 \pm 0.583$
PRF-fit source offset from KIC position	$1.245 \pm 0.920$	1.35	$-1.138 \pm 1.052$	$0.504 \pm 0.695$
photometric centroid source offset	$0.31 \pm 0.56$	0.55	$0.28 \pm 0.57$	$0.14 \pm 0.54$



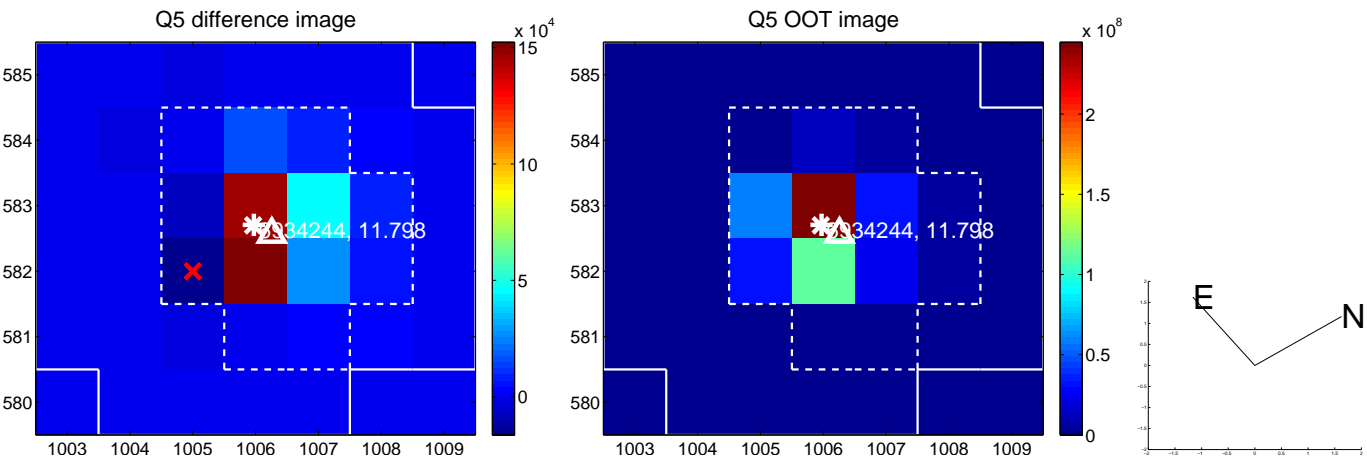
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

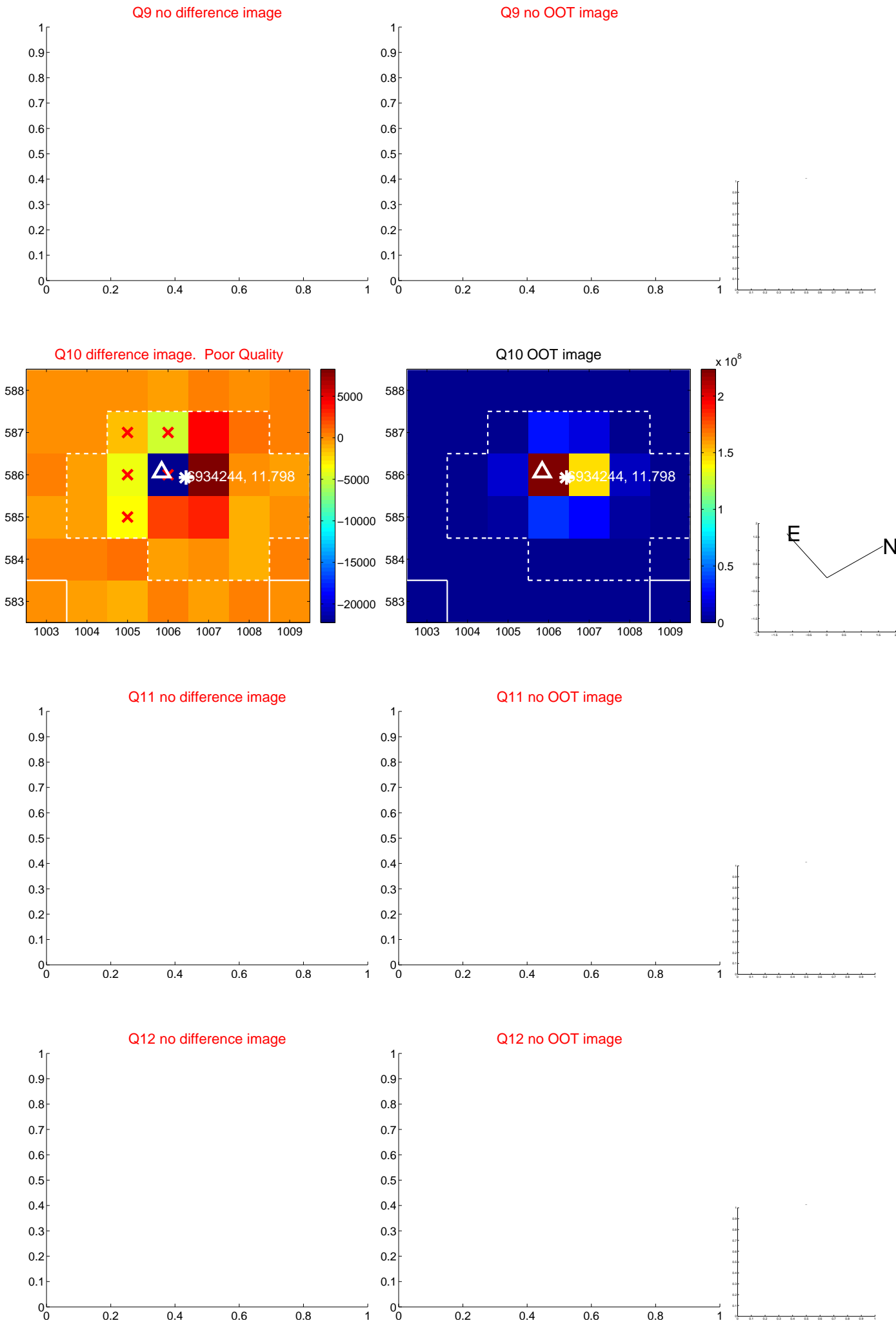




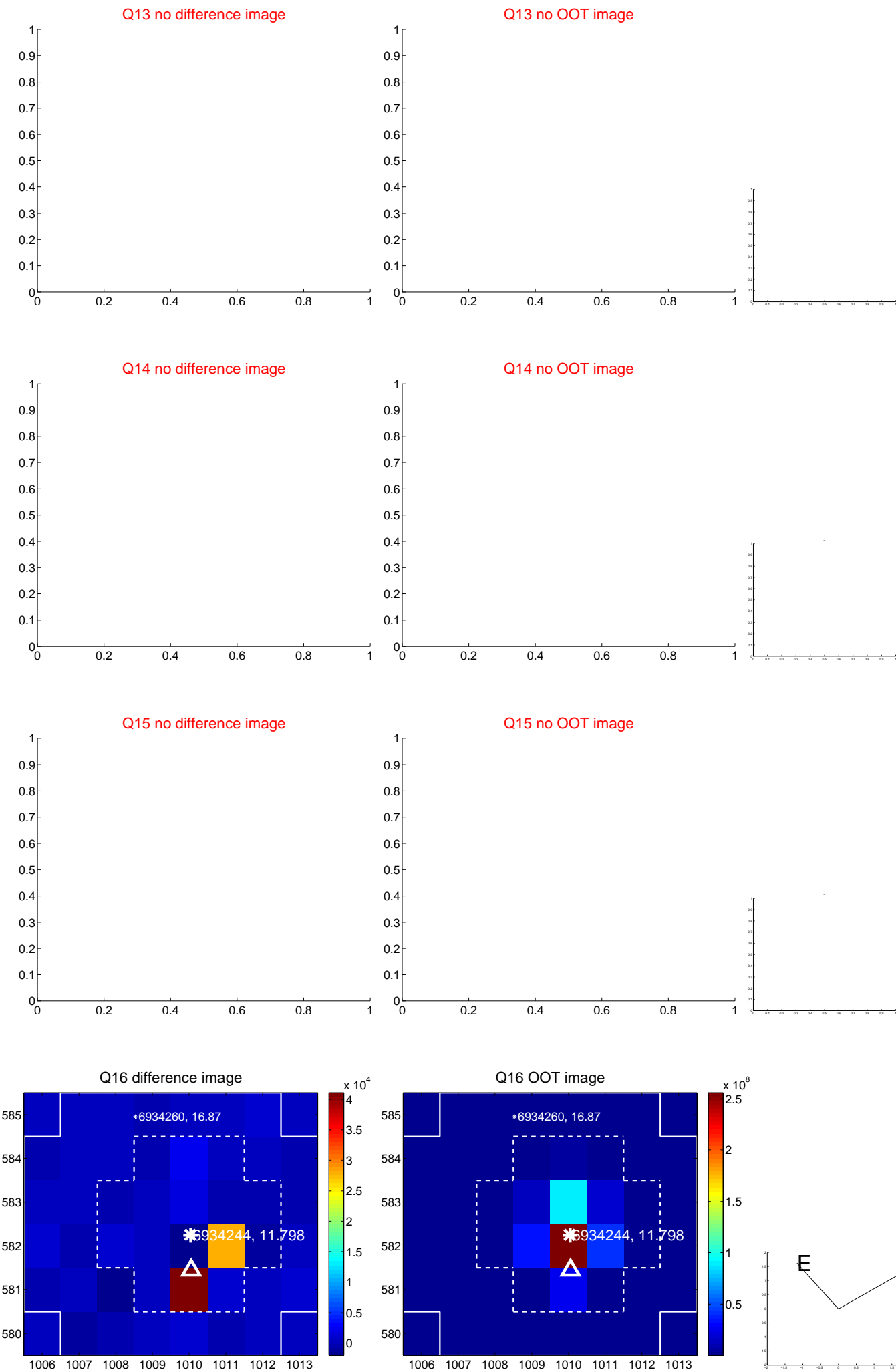
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



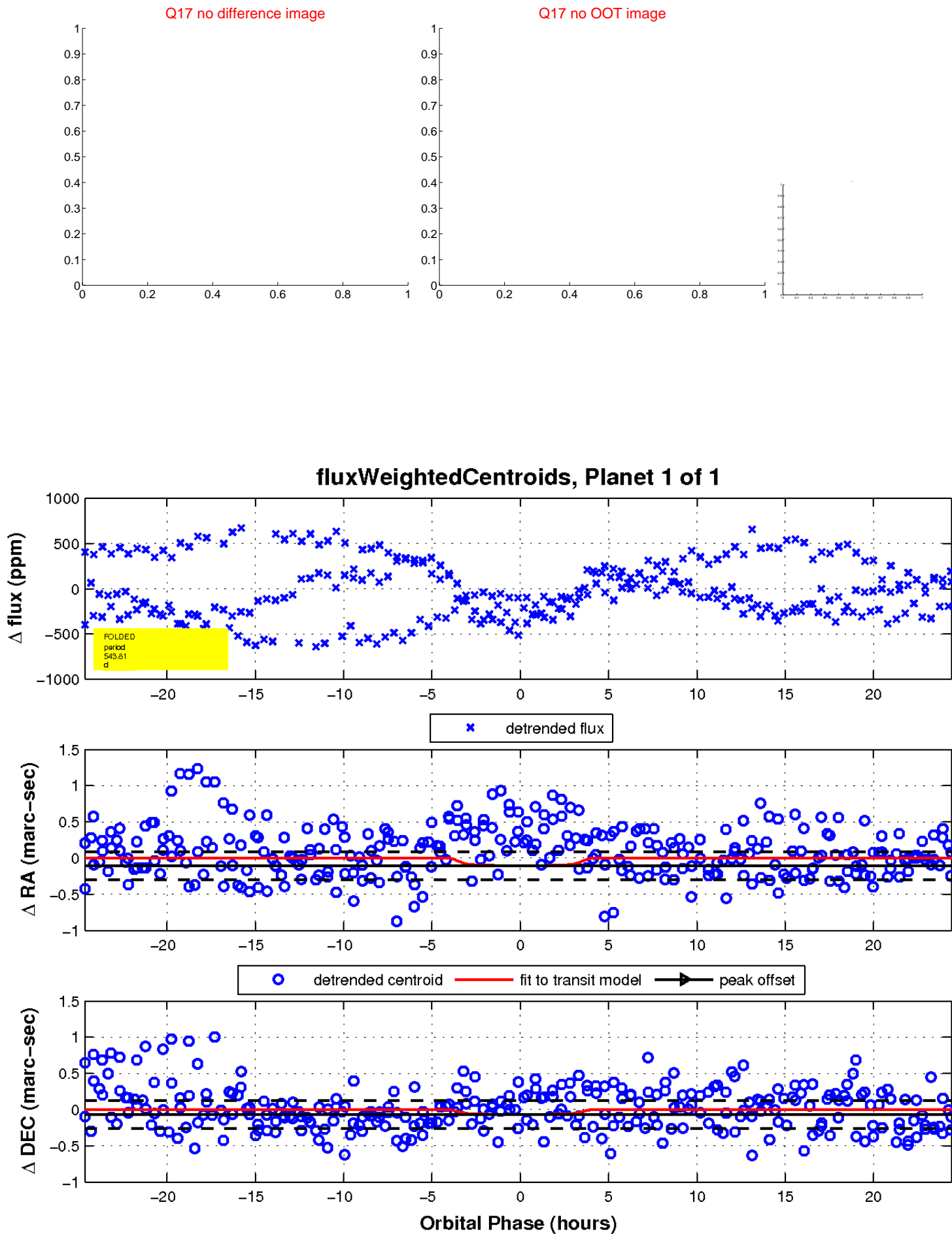
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

