

# KIC 005296838

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005296838-01	OBS	No	393.623274	283.604509	430.0	3.639	7.1	7.5	1.11	6077	4.35	1.37

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005296838-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

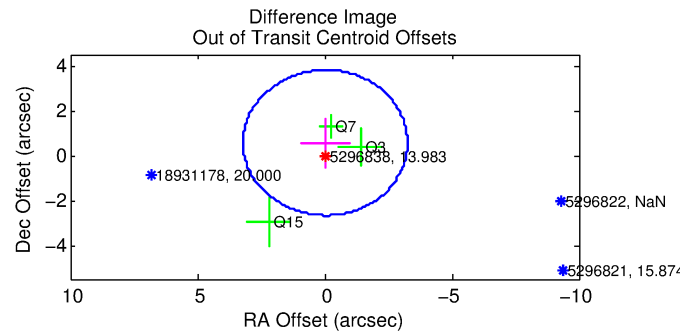
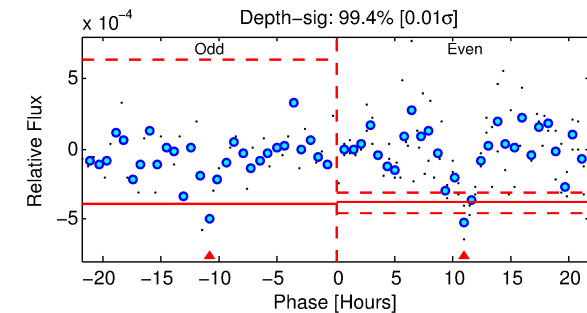
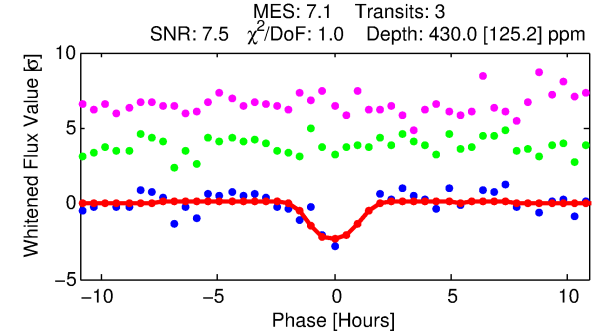
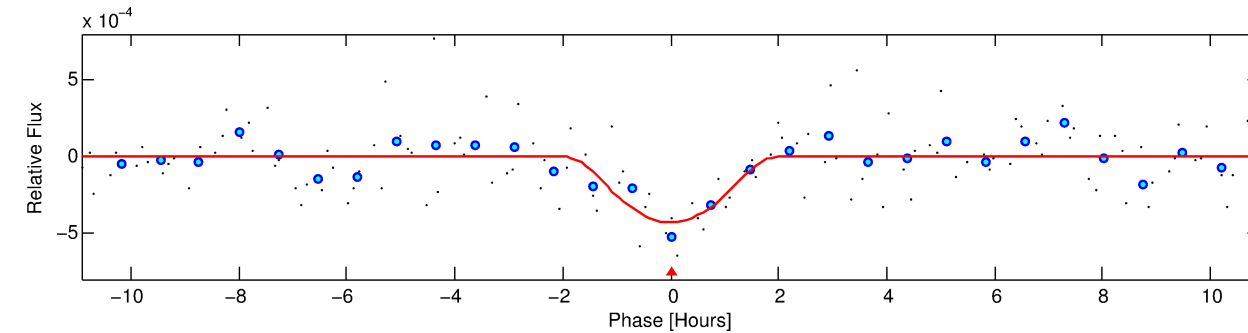
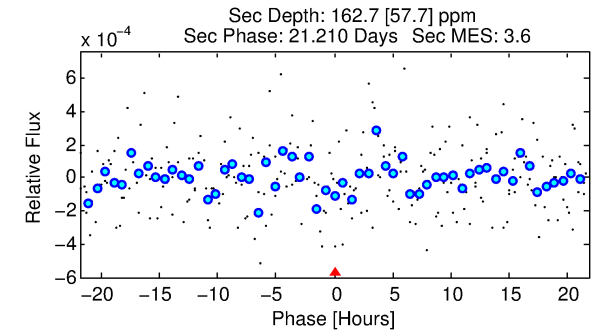
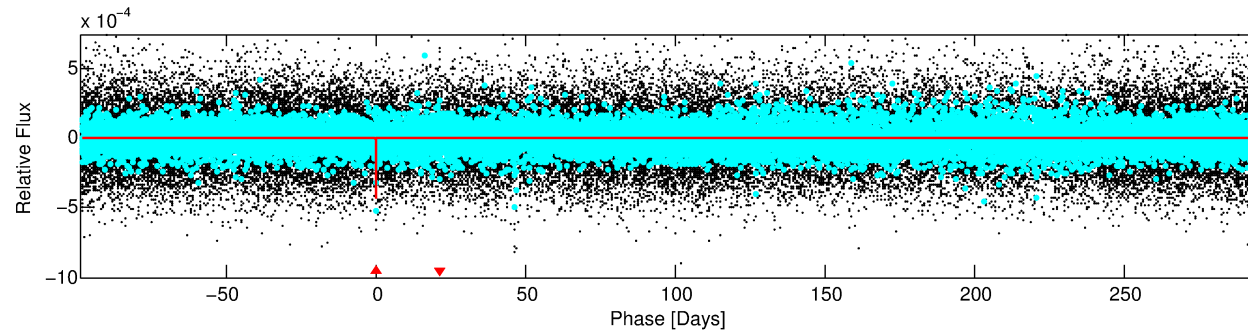
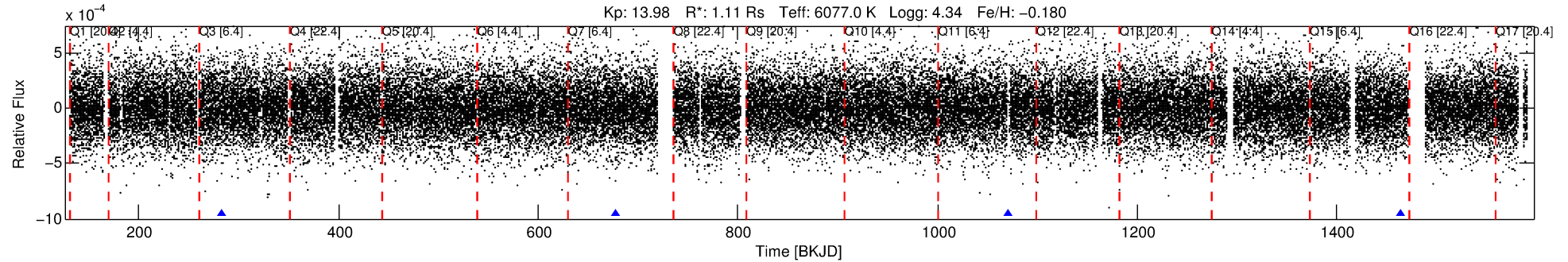
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005296838-01

No Significant Match Found

# DV One-Page Summary

KIC: 5296838 Candidate: 1 of 1 Period: 393.623 d



## DV Fit Results:

Period = 393.62327 [0.00550] d  
Epoch = 283.6045 [0.0107] BKJD  
Rp/R\* = 0.0359 [0.2361]  
a/R\* = 230.68 [410.80]  
b = 1.00 [0.36]  
Seff = 1.37 [0.52]  
Teq = 276 [26] K  
Rp = 4.35 [28.63] Re  
a = 1.0479 [0.2618] AU  
Ag = 5196.79 [68396.45] [0.08σ]  
Teffp = 3622 [11914] K [0.28σ]

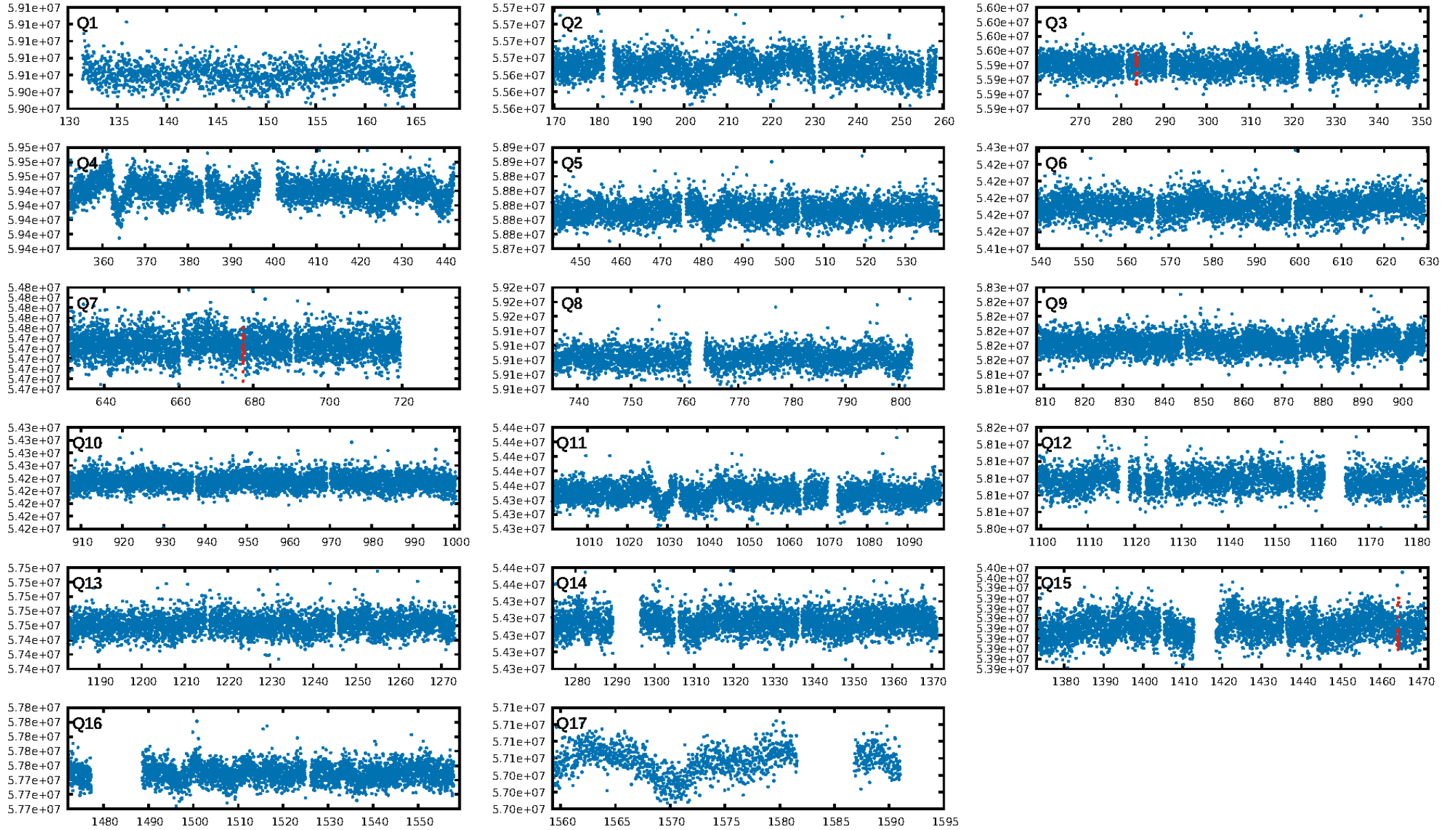
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 55.0%  
ModelChiSquareGof-sig: 98.5%  
**Bootstrap-pfa: 2.20e-12**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.539  
Centroid-sig: 26.5%  
Centroid-so: 1.891 arcsec [0.97σ]  
OotOffset-rm: 0.565 arcsec [0.52σ]  
KicOffset-rm: 0.430 arcsec [0.30σ]  
OotOffset-st: 0/3/0/0 [3]  
KicOffset-st: 0/3/0/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

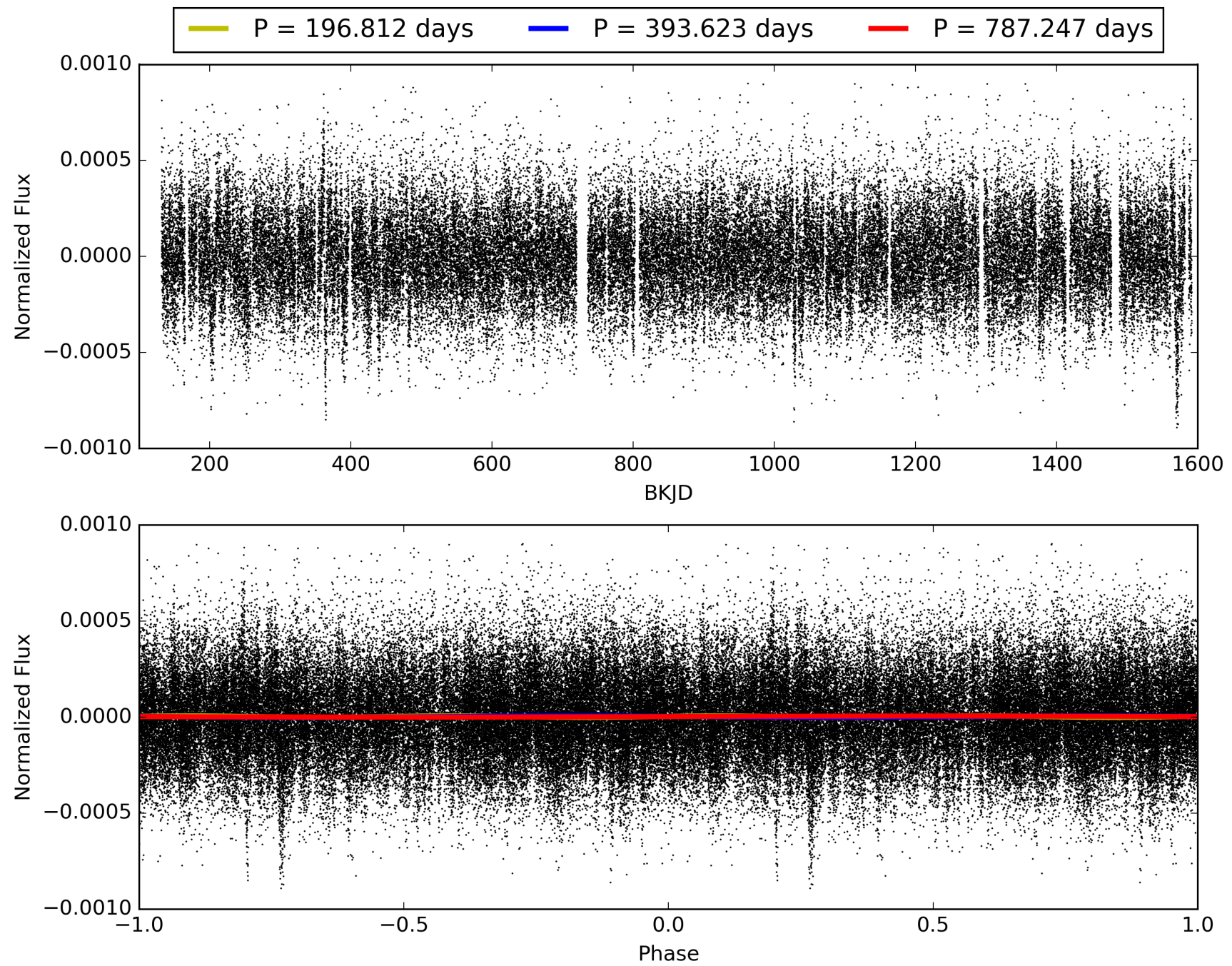
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:13:18 Z

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

# TCE 005296838-01, PDC Light Curves

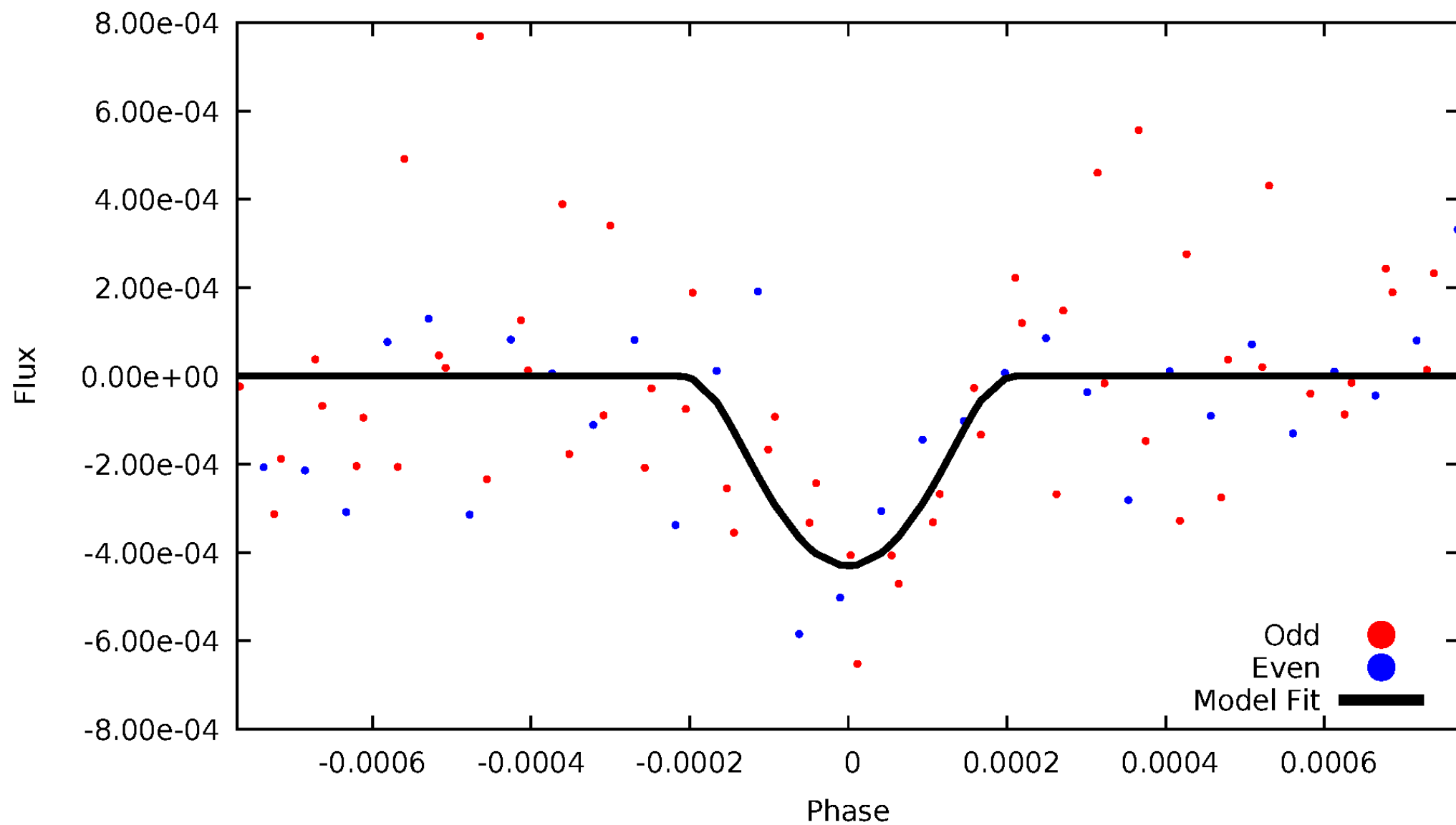


TCE 005296838-01



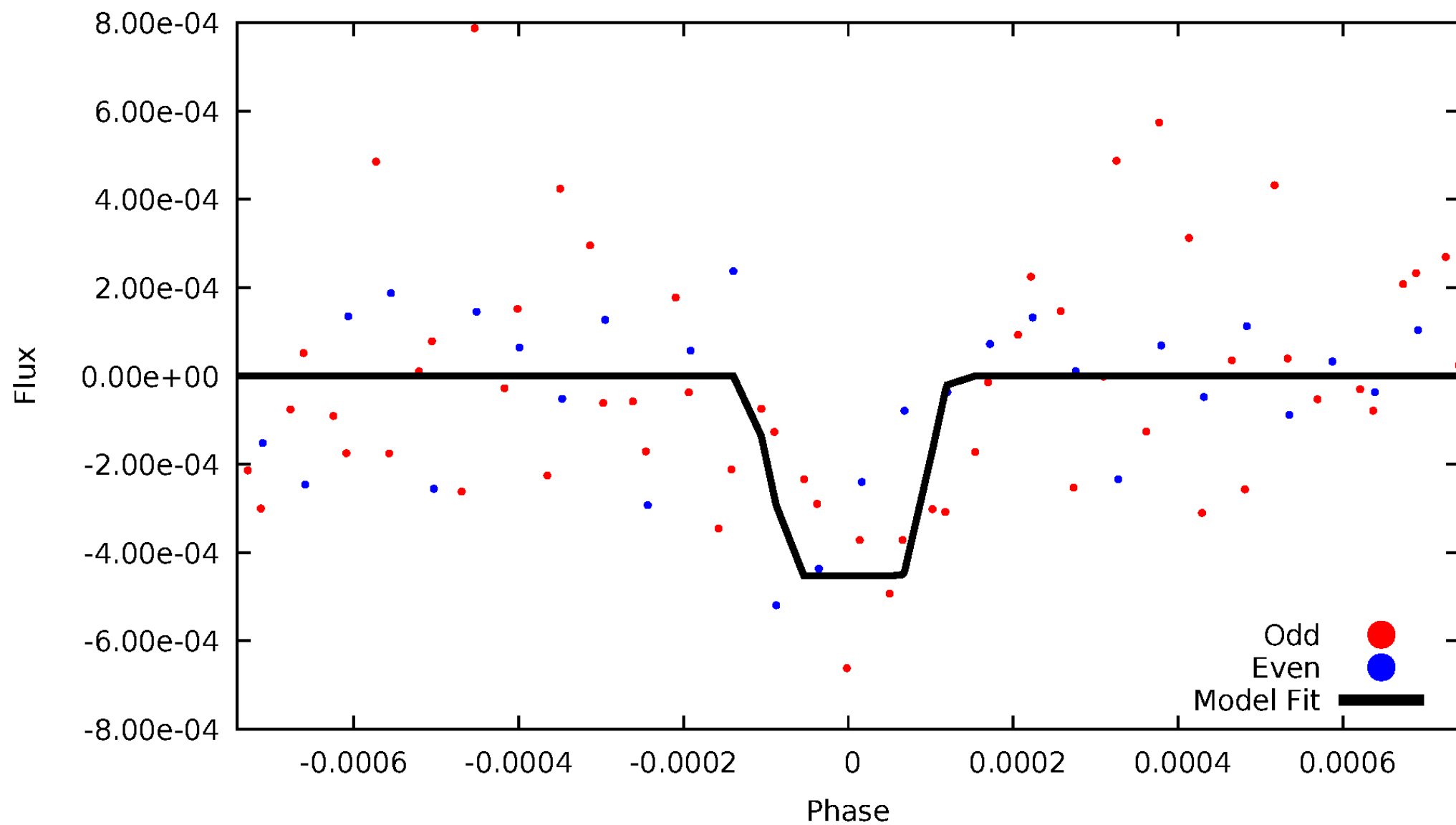
# DV Odd/Even

TCE 005296838-01



# ALT Odd/Even

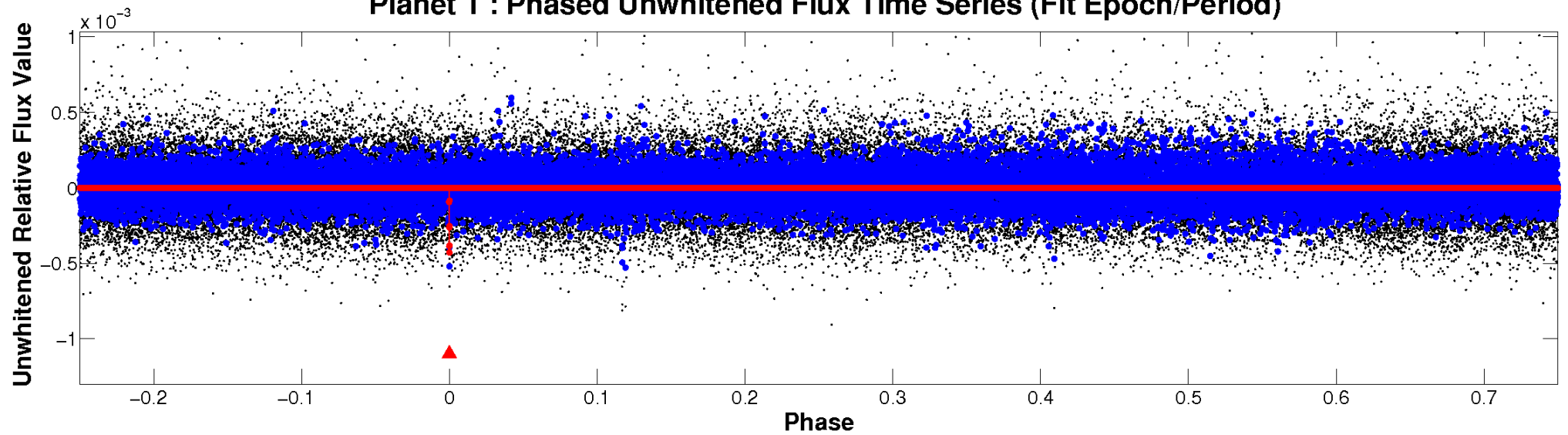
TCE 005296838-01



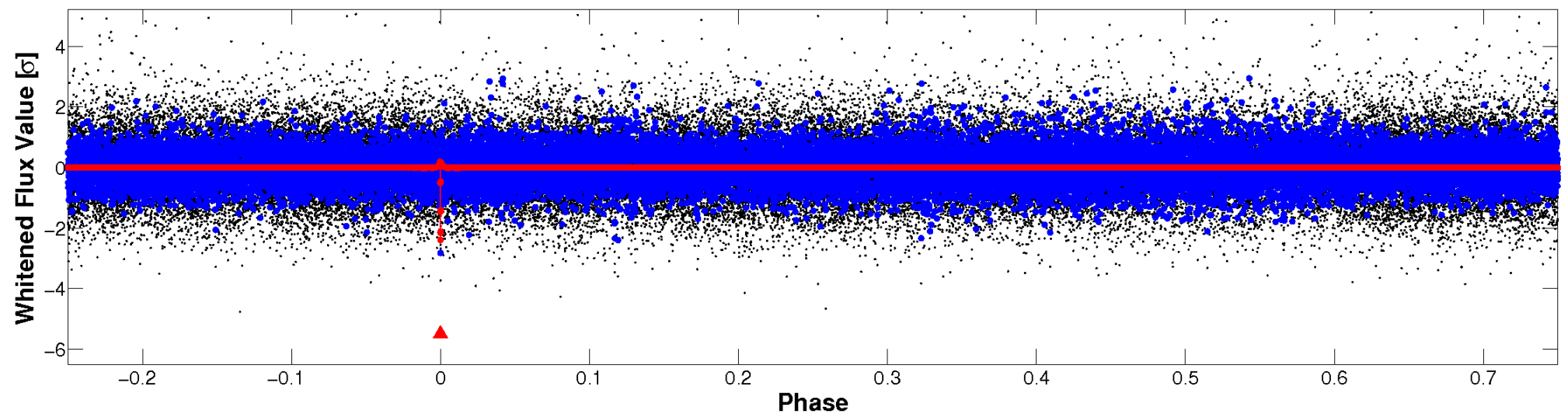


# Non-Whitened Vs. Whitened Light Curve

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

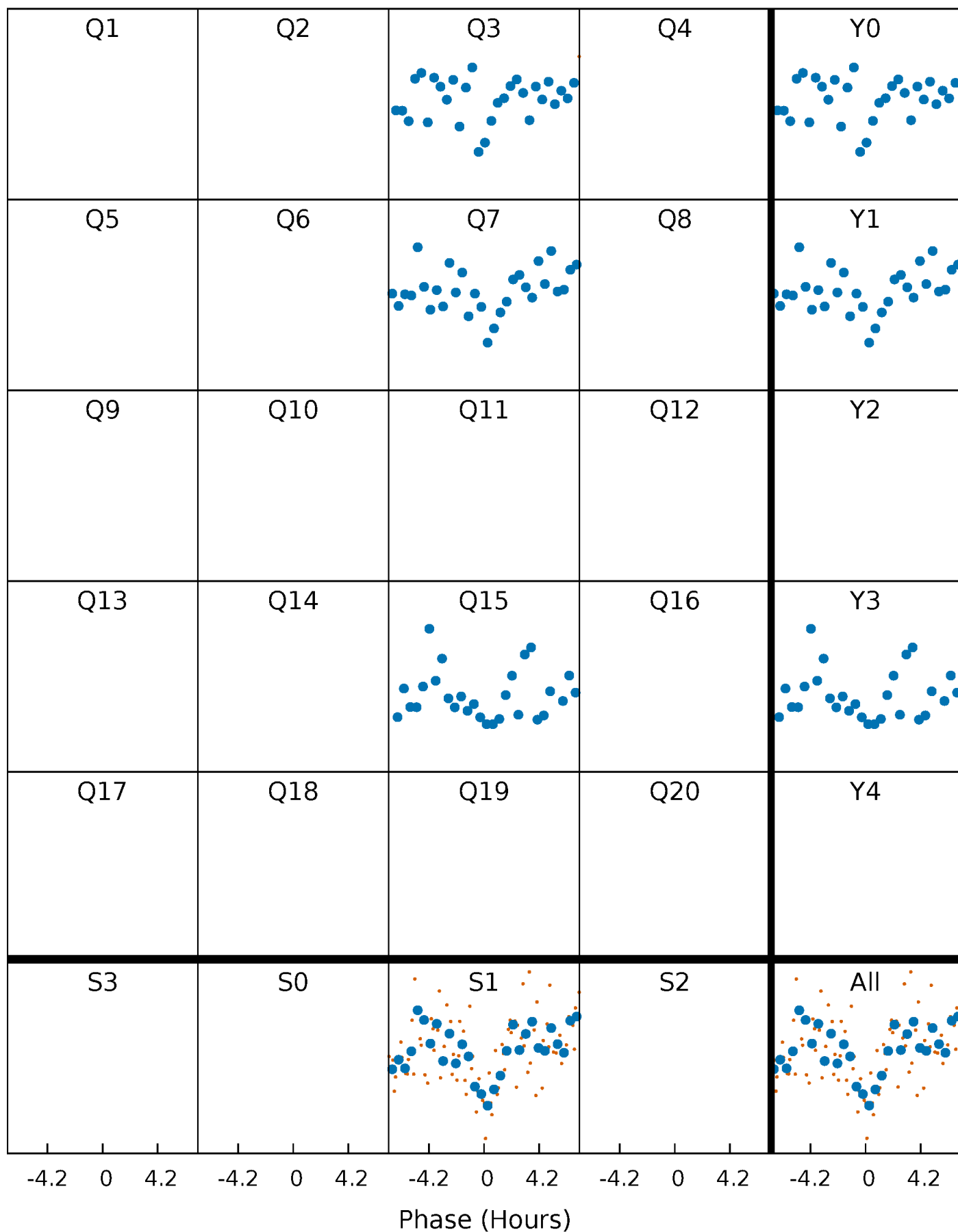


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

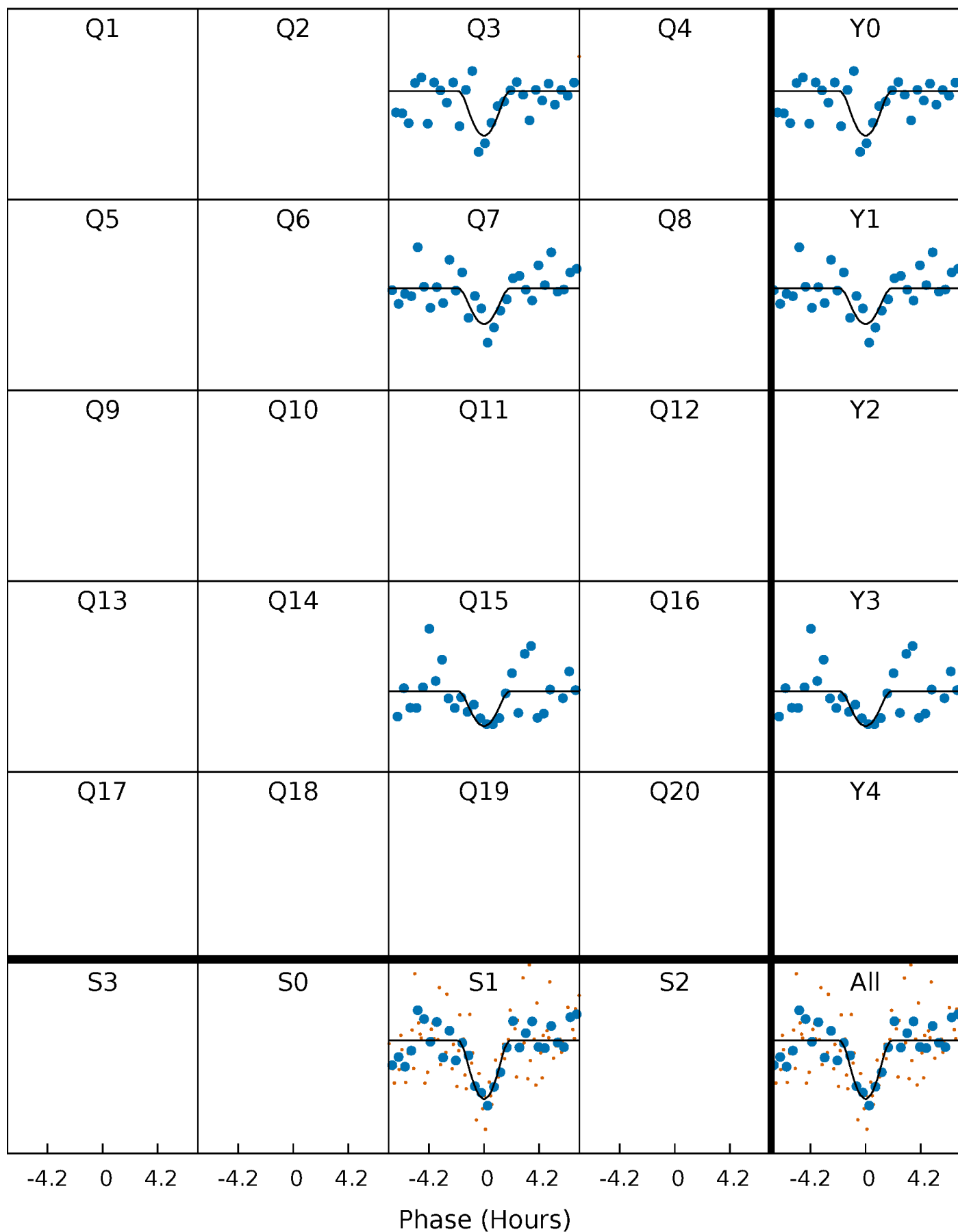
TCE 005296838-01 P=393.623274 Days  $T_0=283.604509$  (BKJD)





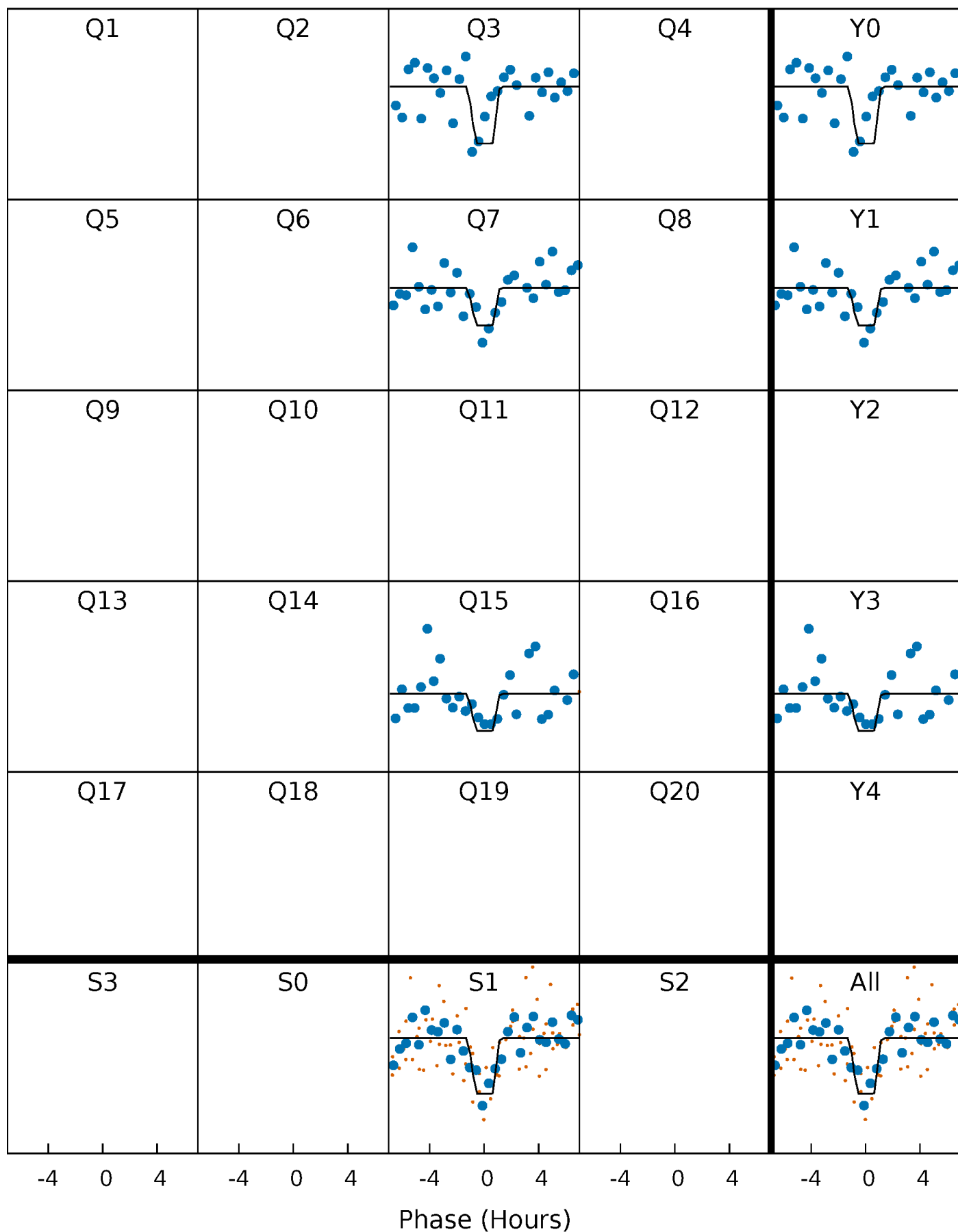
# DV Quarter-Phased Transit Curves

TCE 005296838-01 P=393.623274 Days  $T_0=283.604509$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

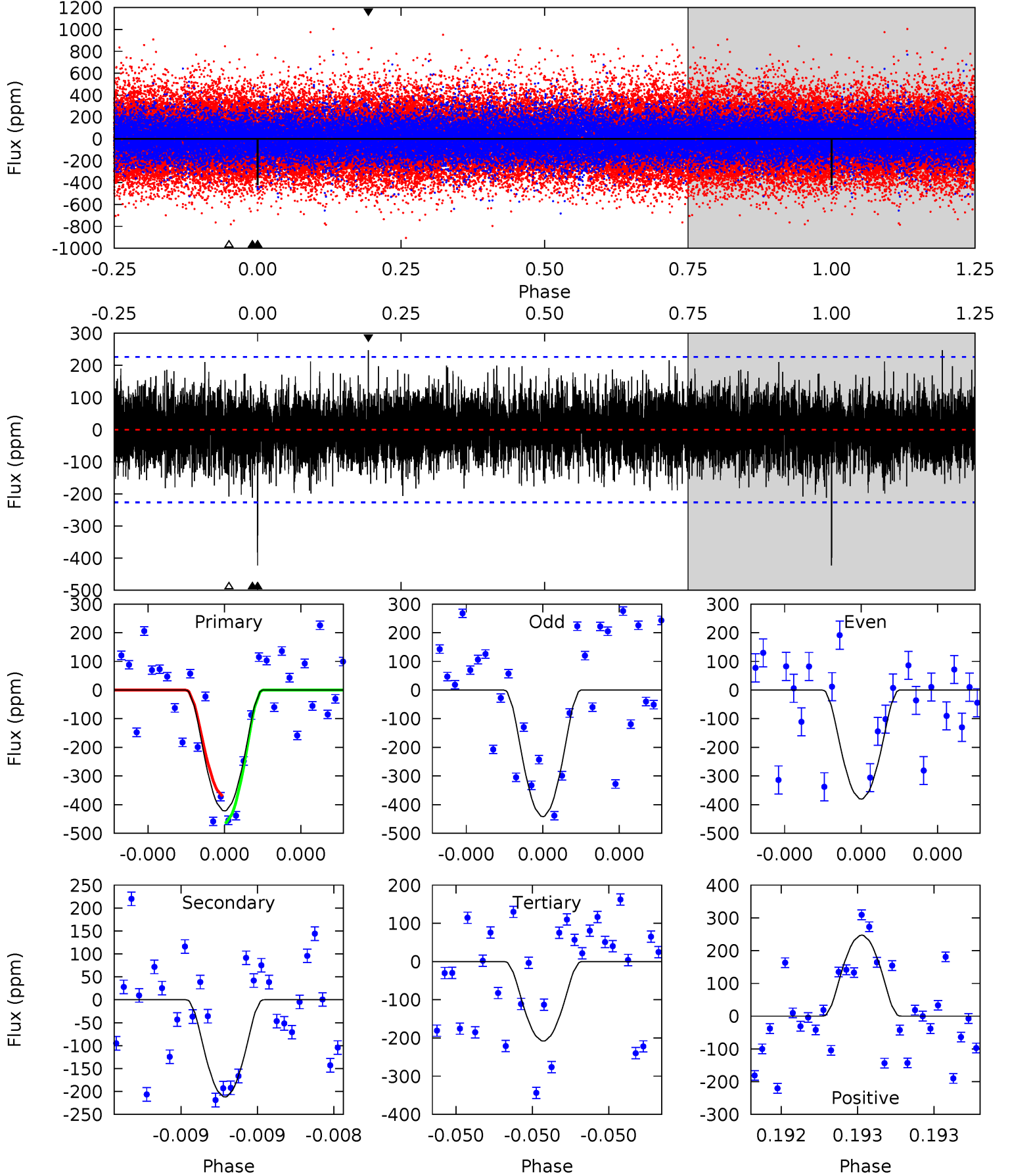
TCE 005296838-01 P=393.618477 Days  $T_0=283.614540$  (BKJD)



# DV Model-Shift Uniqueness Test

005296838-01, P = 393.623274 Days, E = 283.604509 Days

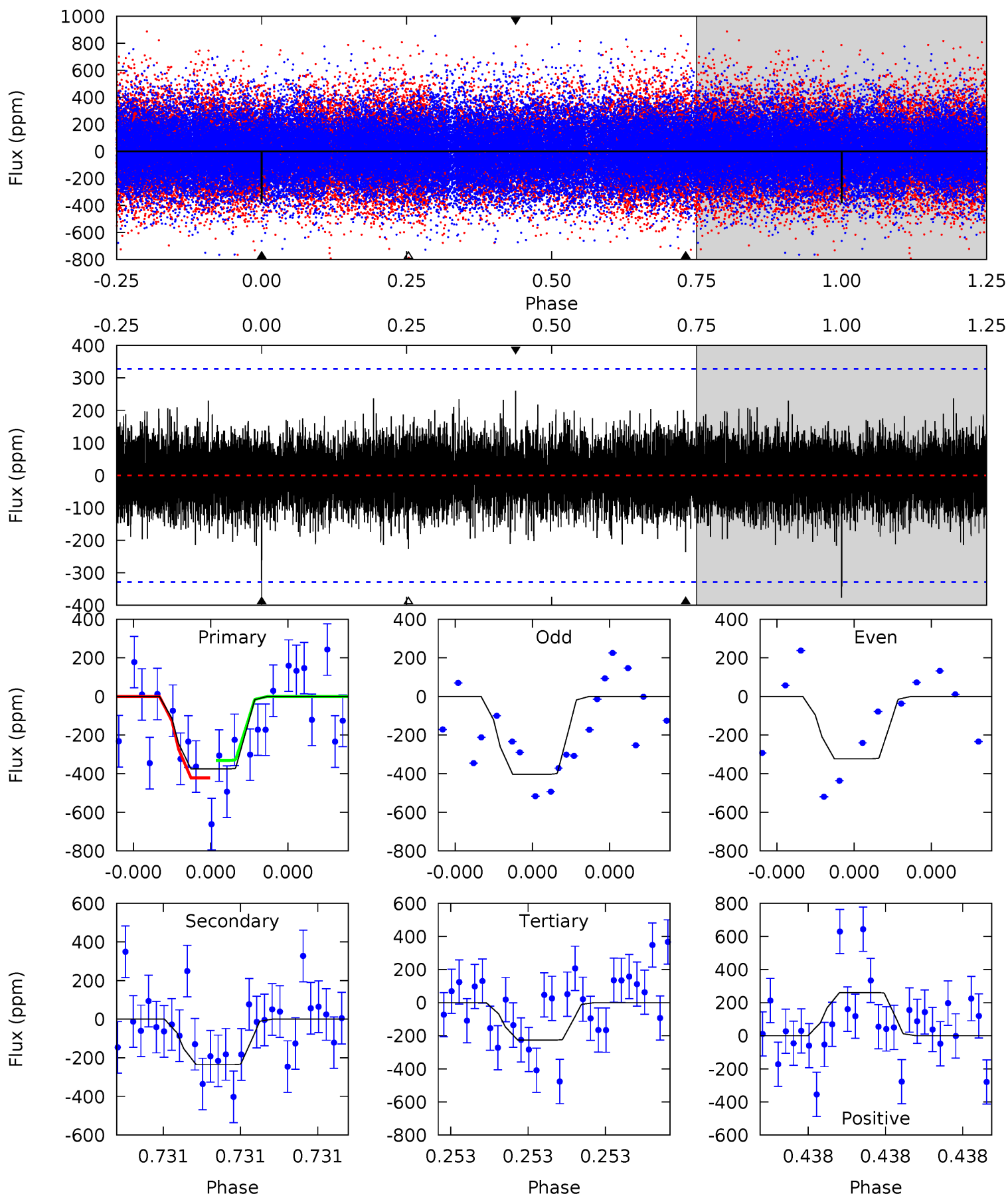
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	5.25	5.16	6.12	5.60	3.52	1.49	5.30	4.33	0.09	-0.87	0.71	1.01	0.37	1.16



# Alt Model-Shift Uniqueness Test

005296838-01, P = 393.618477 Days, E = 283.614540 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
6.55	4.10	3.94	4.54	5.72	3.71	1.04	2.61	2.01	0.15	-0.44	0.66	1.12	0.41	0.78



### Stellar Parameters For KIC 005296838

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6077^{+181}_{-199}$	$4.343^{+0.144}_{-0.192}$	$-0.180^{+0.300}_{-0.300}$	$1.110^{+0.336}_{-0.181}$	$0.990^{+0.154}_{-0.112}$	$1.019^{+0.609}_{-0.513}$
	+3%/-3%	+3%/-4%	+167%/-167%	+30%/-16%	+16%/-11%	+60%/-50%
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 005296838-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-212 \pm 40$	$21.32^{+22.38}_{-15.56}$	$387^{+29}_{-23}$	$2589^{+1224}_{-407}$	$287^{+3690}_{-224}$
Alt.	$-235 \pm 57$	$20.32^{+25.14}_{-14.41}$	$388^{+29}_{-26}$	$2623^{+1199}_{-427}$	$330^{+3508}_{-260}$

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

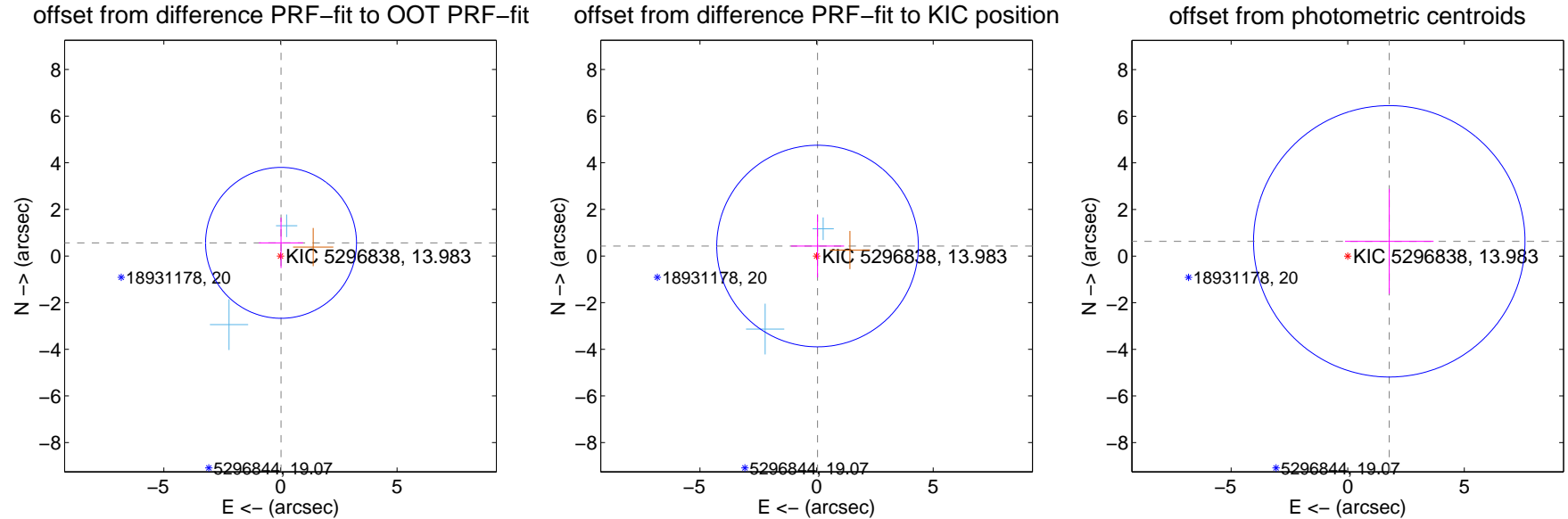
## DV Centroid Data

Supplemental centroid analysis for 005296838-01. Kepler magnitude: 13.98. Transit SNR 7.51

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.565 \pm 1.078$	0.52	$-0.025 \pm 0.949$	$0.565 \pm 1.079$
PRF-fit source offset from KIC position	$0.430 \pm 1.441$	0.30	$-0.041 \pm 1.140$	$0.428 \pm 1.345$
photometric centroid source offset	$1.89 \pm 1.94$	0.97	$-1.78 \pm 1.90$	$0.63 \pm 2.25$



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.

Q1 no difference image



Q1 no OOT image



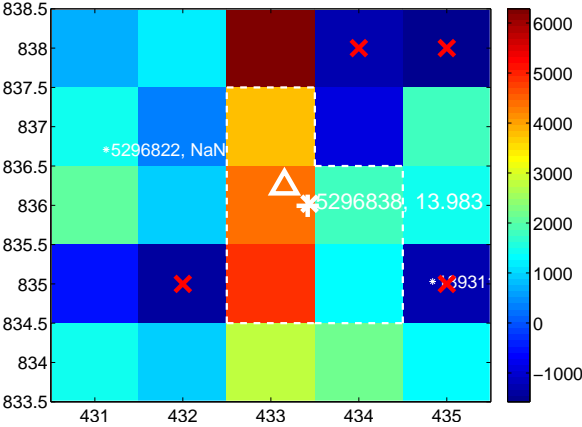
Q2 no difference image



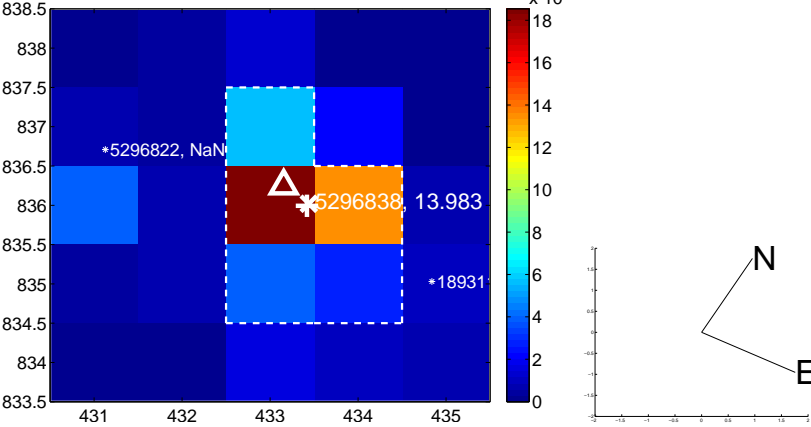
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



Q4 no difference image



Q4 no OOT image





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

Q5 no difference image



Q5 no OOT image



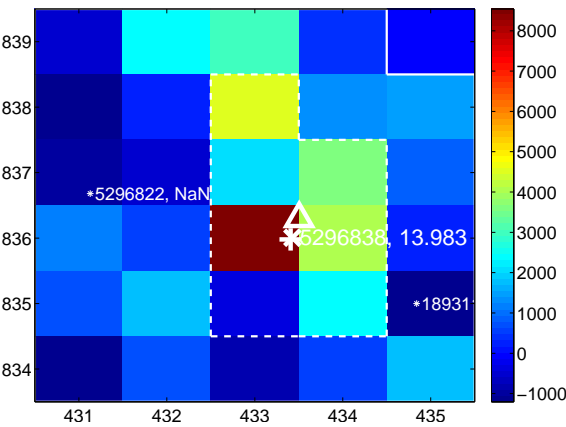
Q6 no difference image



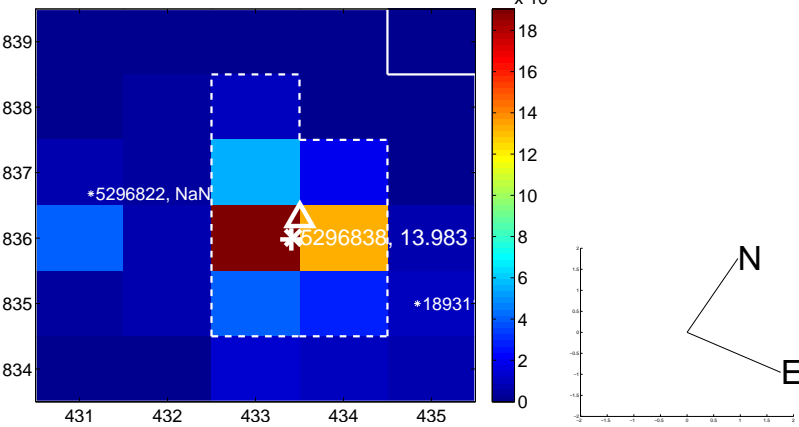
Q6 no OOT image



Q7 difference image



Q7 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.

Q13 no difference image



Q13 no OOT image



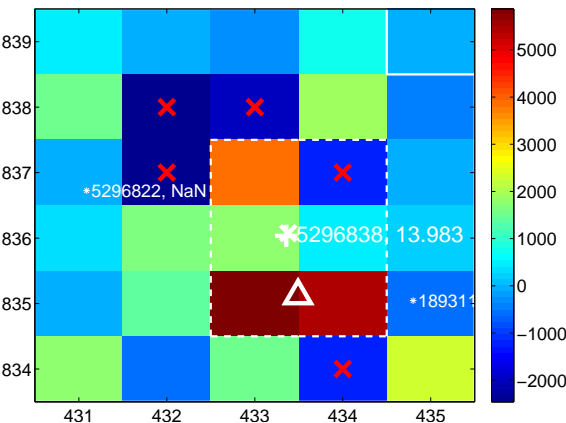
Q14 no difference image



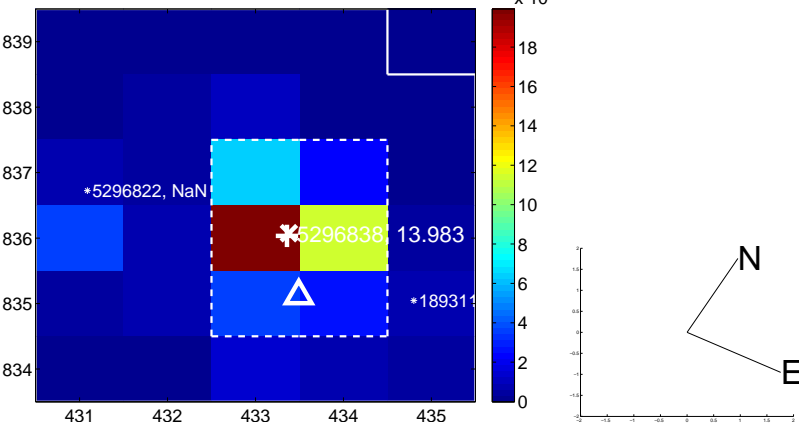
Q14 no OOT image



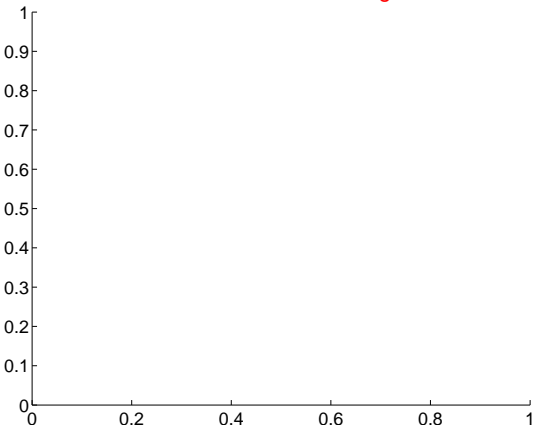
Q15 difference image



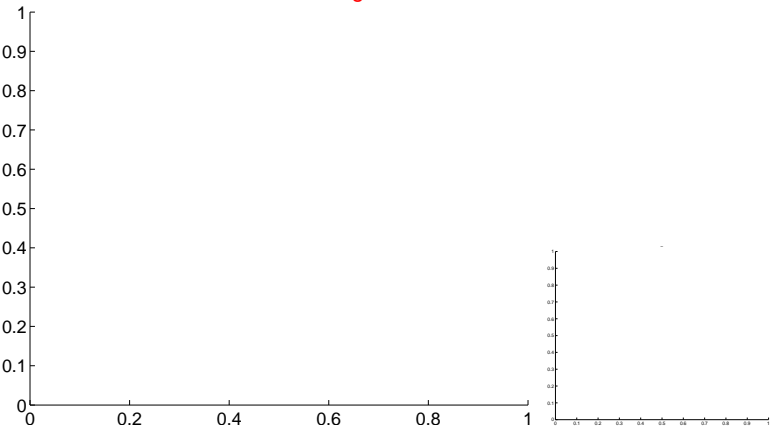
Q15 OOT image



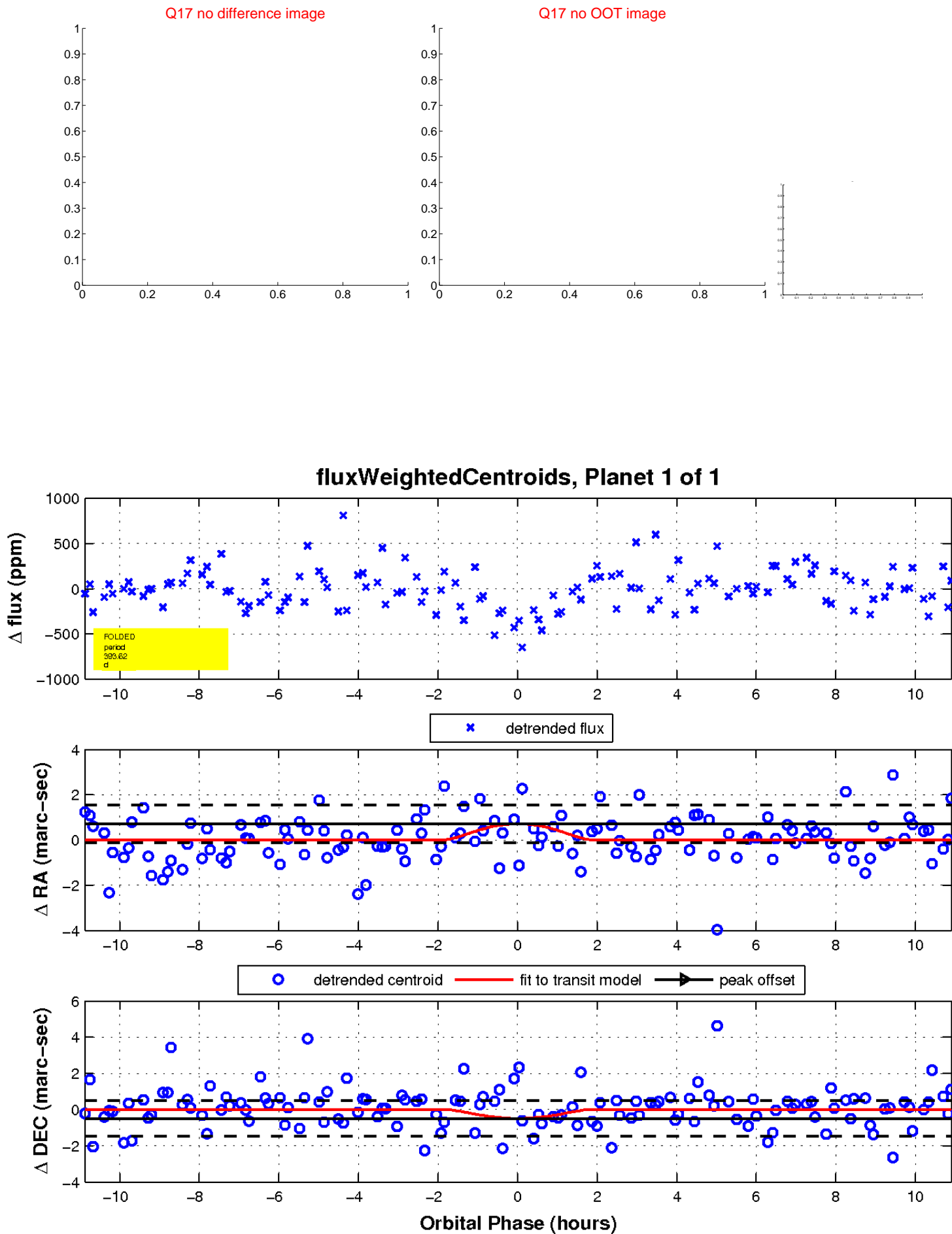
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

