

# KIC 007613898

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007613898-01	OBS	No	313.299571	197.290488	481.7	11.305	7.6	5.4	0.73	5314	1.67	0.61

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007613898-01	OBS	FP	0.02	1	0	0	0	MOD_NONUNIQ_ALT—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.

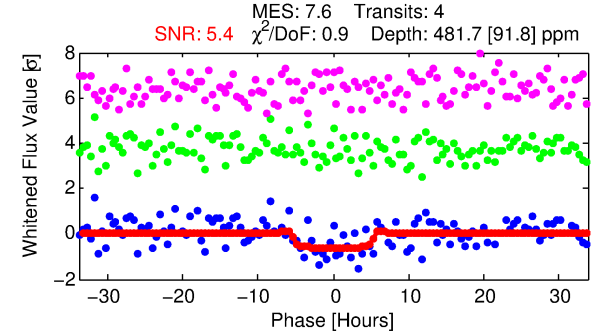
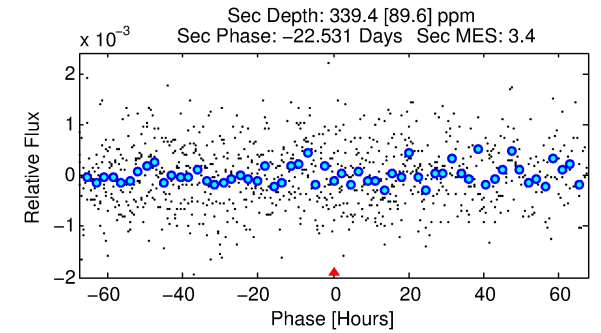
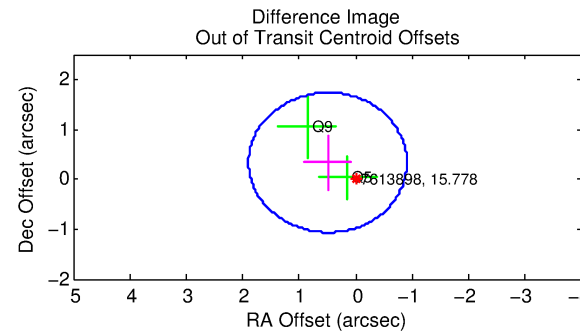
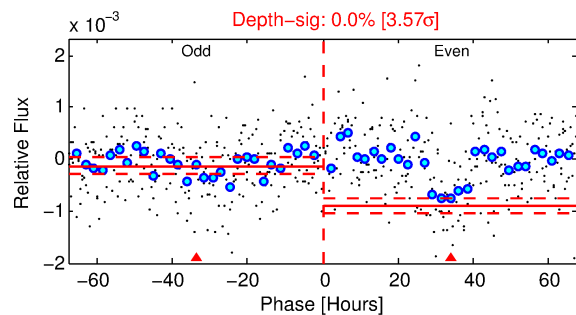
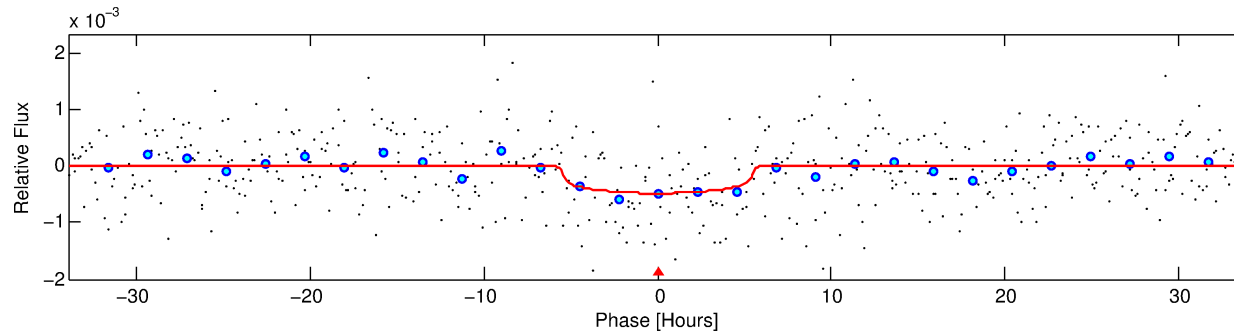
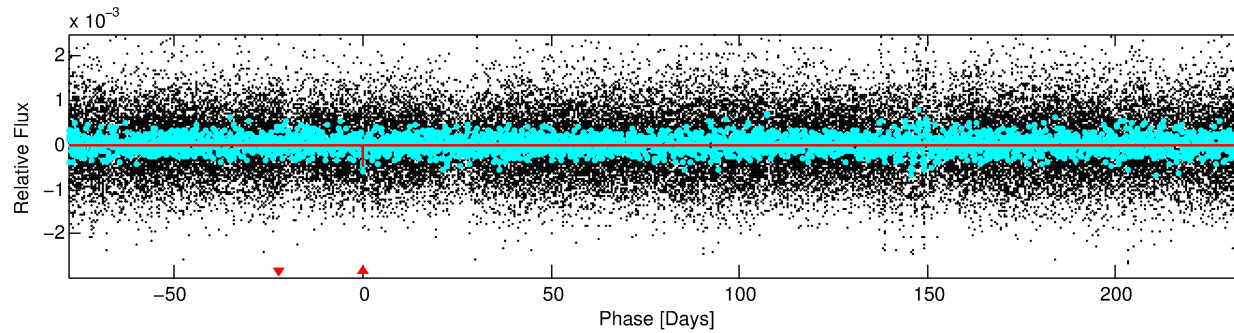
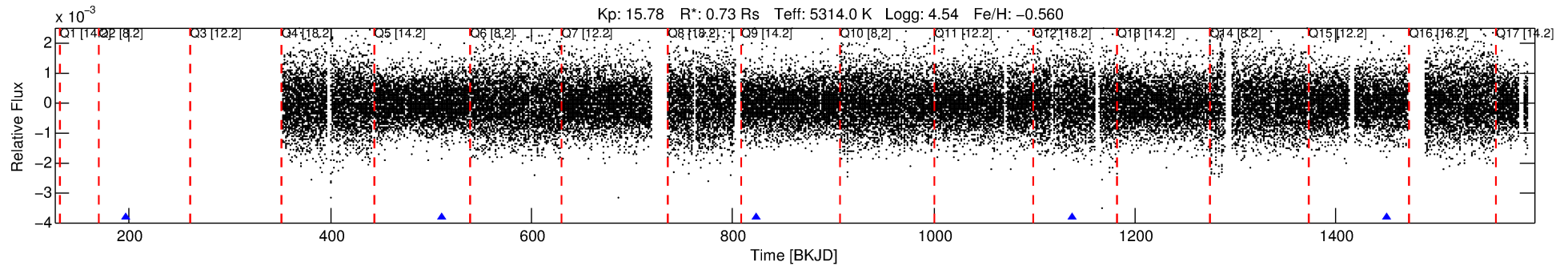
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007613898-01

No Significant Match Found

# DV One-Page Summary

KIC: 7613898 Candidate: 1 of 1 Period: 313.300 d



## DV Fit Results:

Period = 313.29957 [0.01412] d  
Epoch = 197.2905 [0.0388] BKJD  
Rp/R\* = 0.0209 [0.0249]  
a/R\* = 175.05 [864.56]  
b = 0.60 [5.34]  
Seff = 0.61 [0.14]  
Teq = 225 [13] K  
Rp = 1.67 [2.01] Re  
a = 0.7984 [0.0908] AU  
Ag = 42471.32 [102311.96] [0.42 $\sigma$ ]  
Teffp = 4993 [3004] K [1.59 $\sigma$ ]

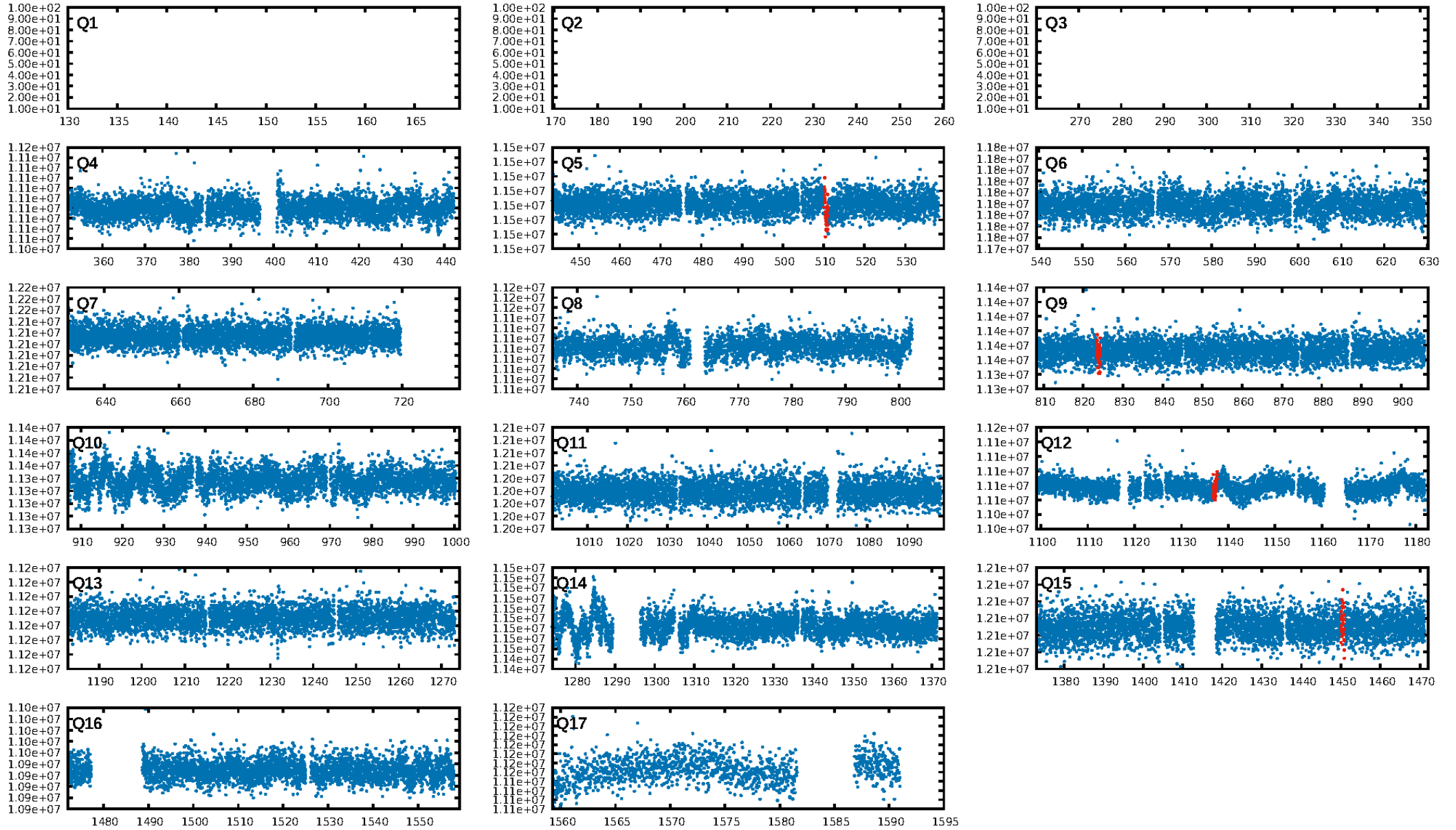
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGof-sig: 99.5%  
Bootstrap-pfa: 2.42e-13  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 2.811  
Centroid-sig: 7.3%  
Centroid-so: 2.855 arcsec [1.45 $\sigma$ ]  
OotOffset-rm: 0.598 arcsec [1.28 $\sigma$ ]  
KicOffset-rm: 0.252 arcsec [0.48 $\sigma$ ]  
OotOffset-st: 0/0/0/2 [2]  
KicOffset-st: 0/0/0/2 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

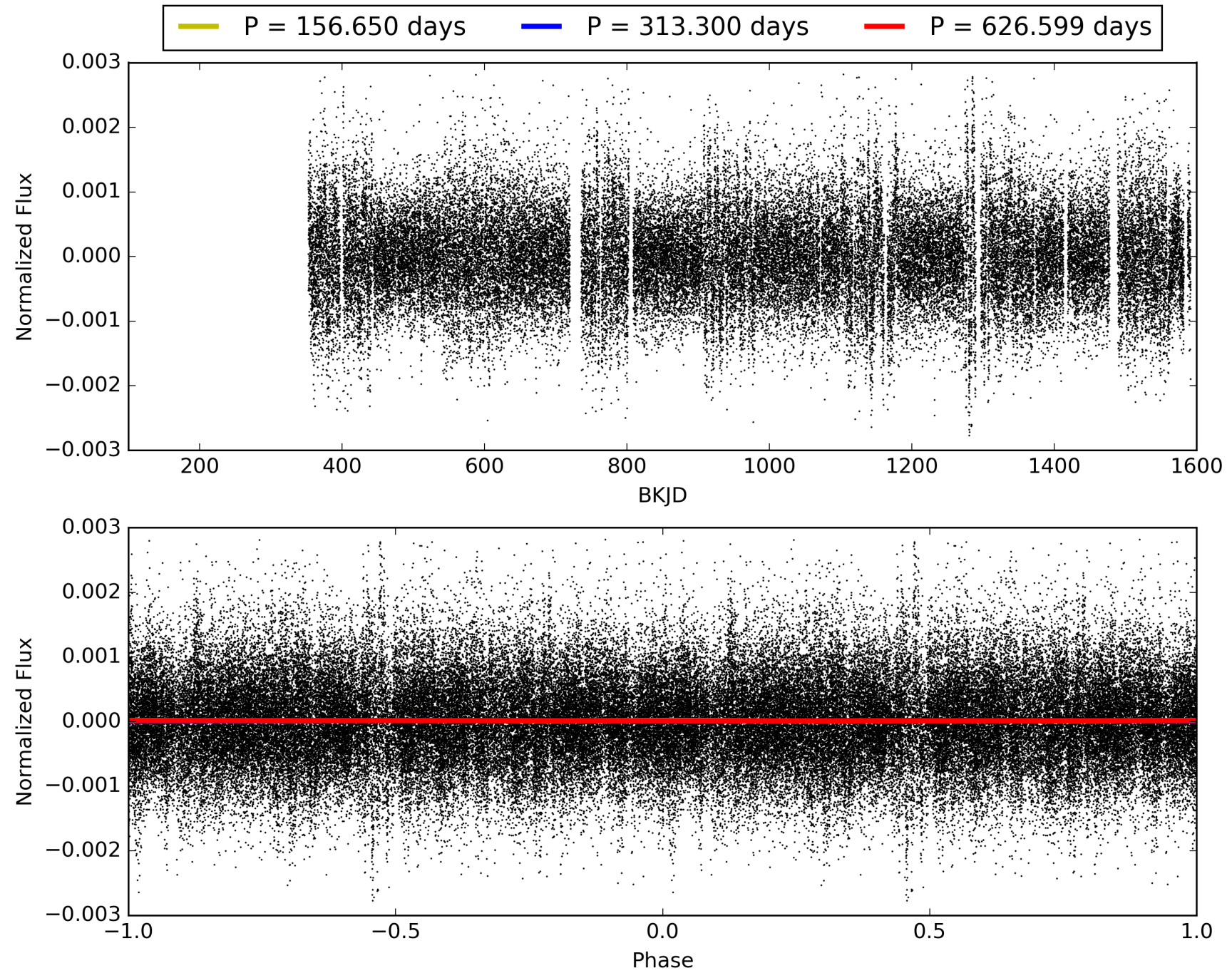
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:54:13 Z

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

# TCE 007613898-01, PDC Light Curves

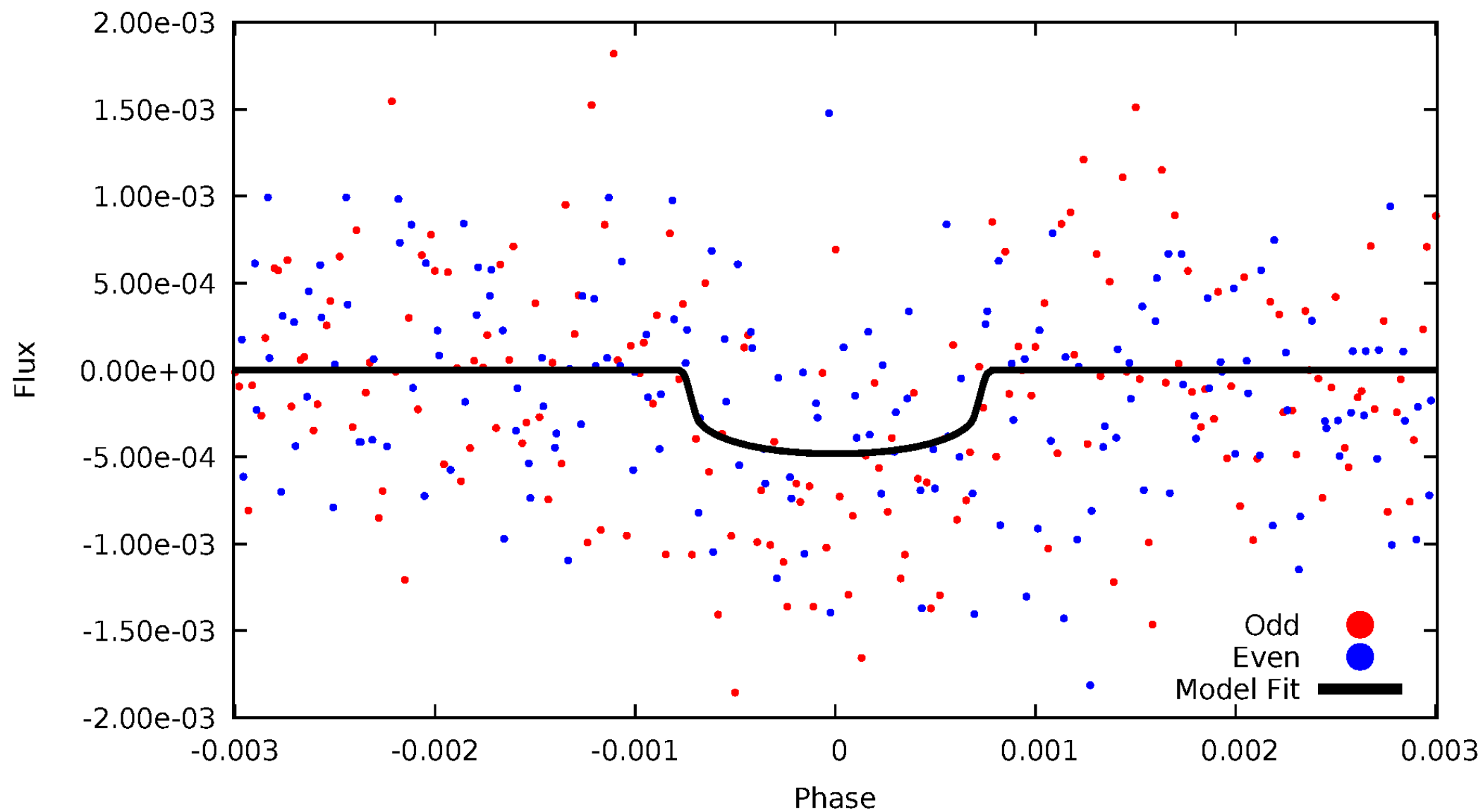


TCE 007613898-01



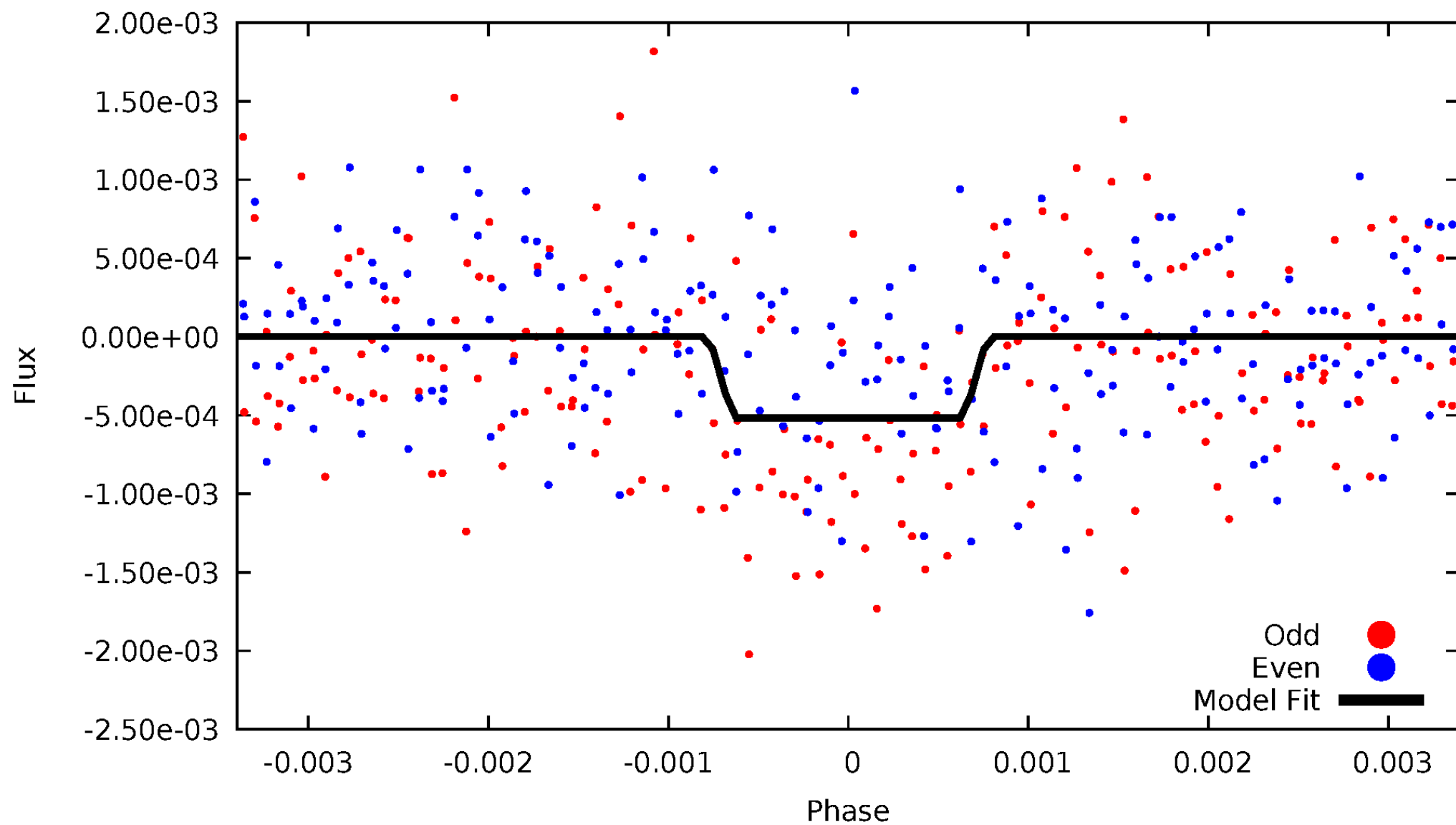
# DV Odd/Even

TCE 007613898-01



# ALT Odd/Even

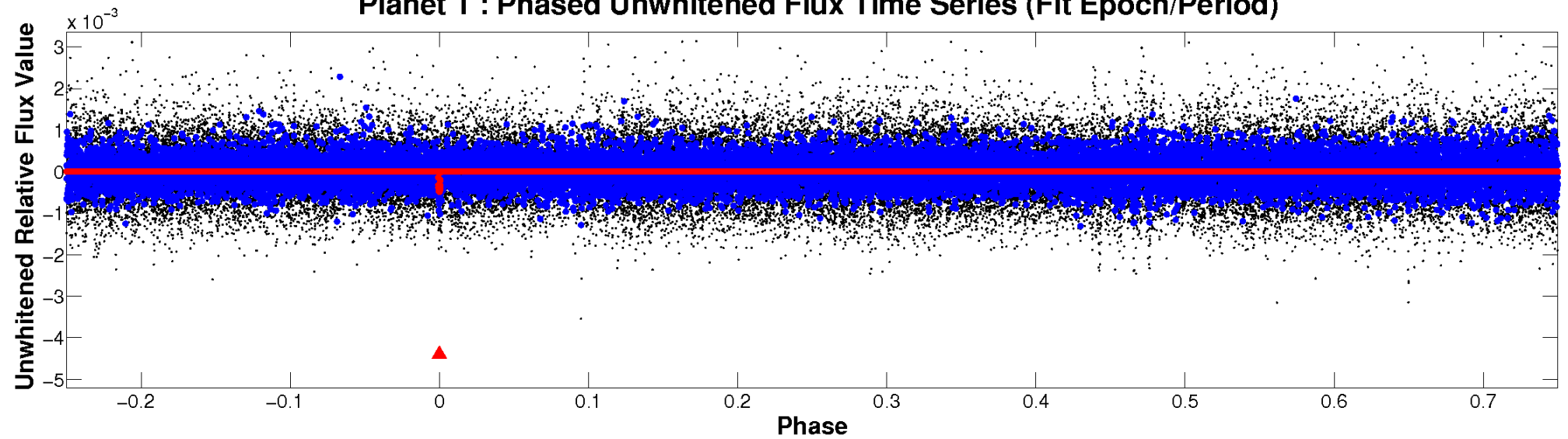
TCE 007613898-01



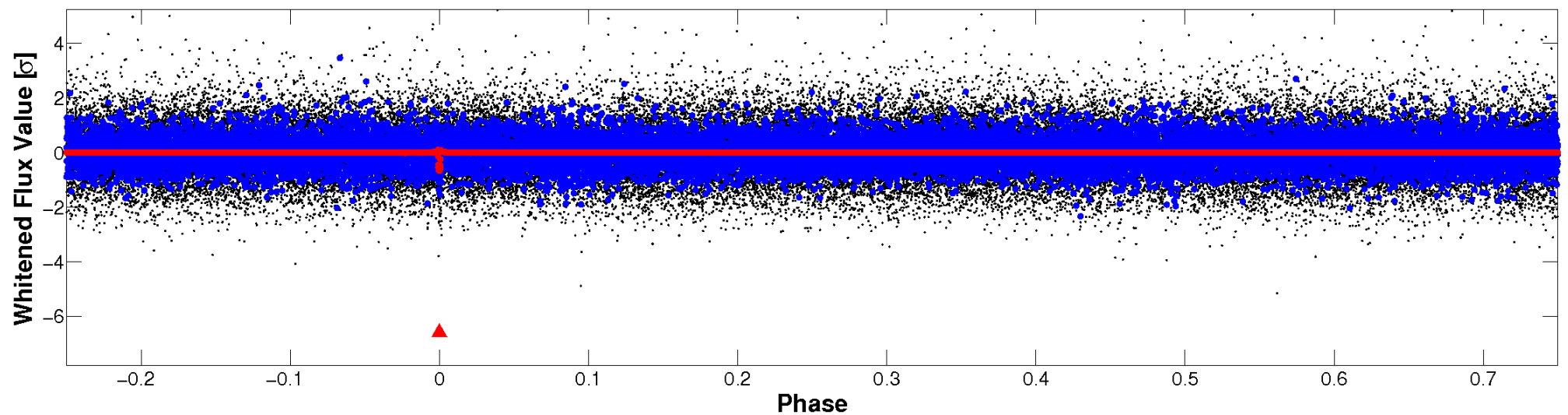


# Non-Whitened Vs. Whitened Light Curve

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

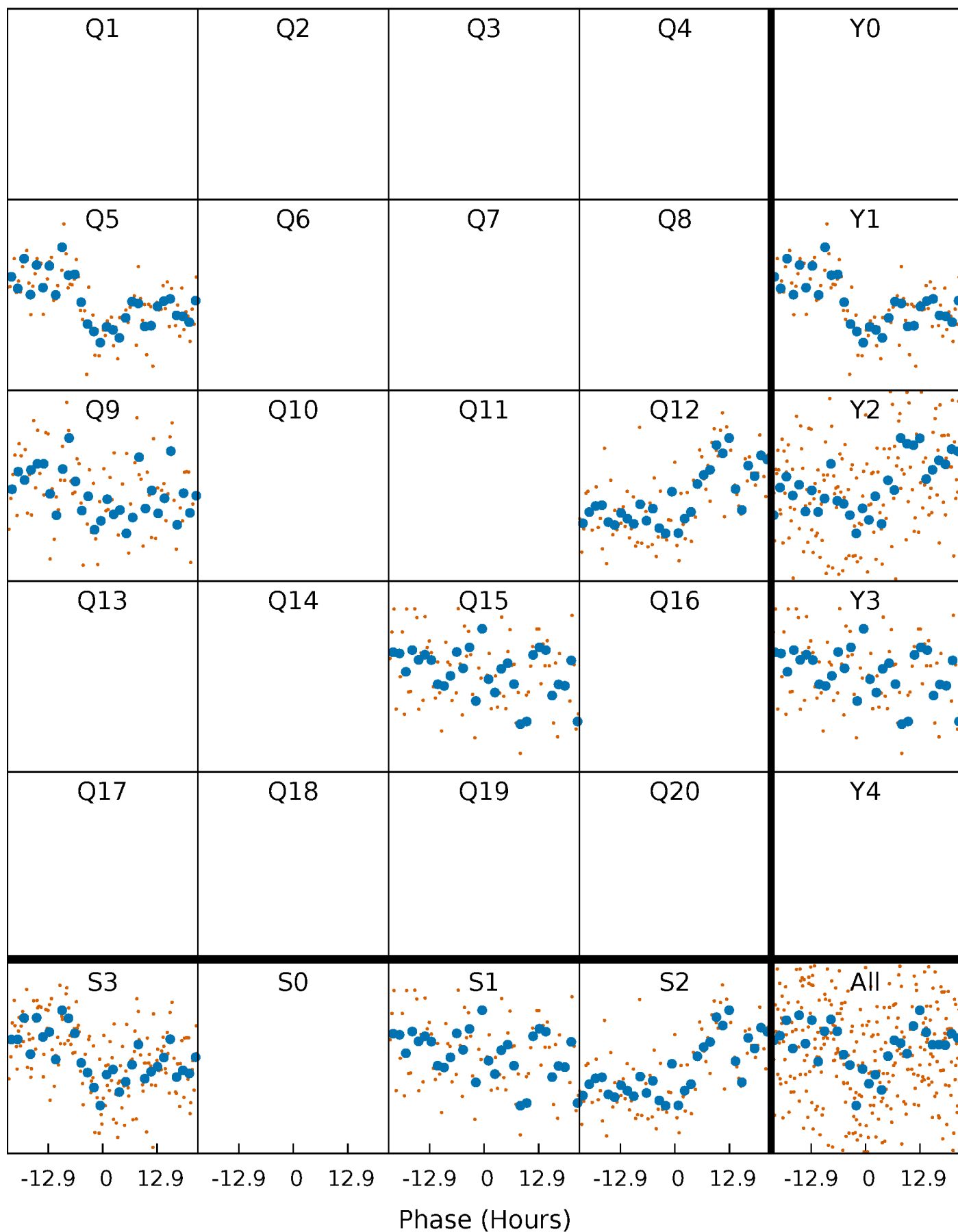


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

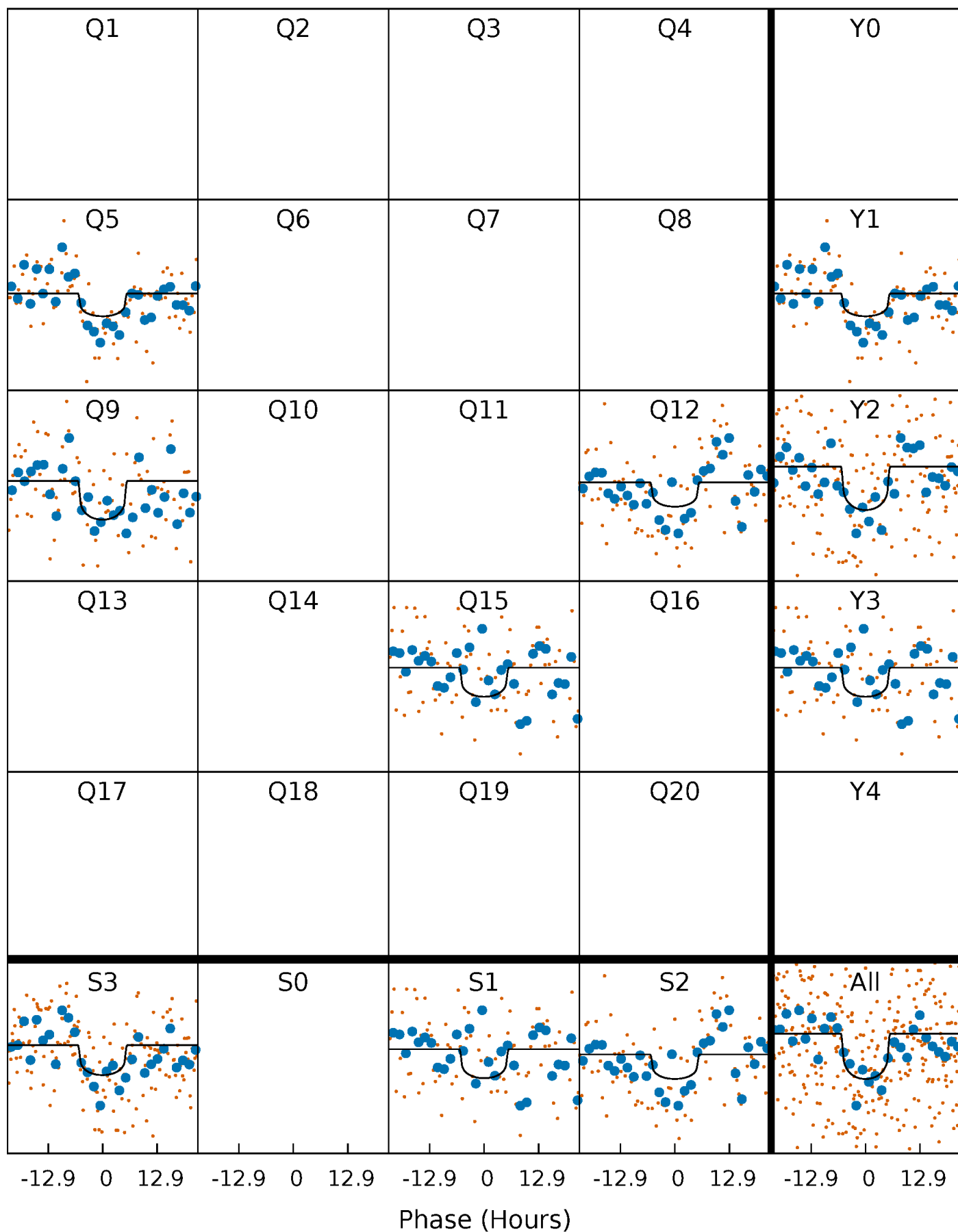
TCE 007613898-01 P=313.299571 Days  $T_0=197.290488$  (BKJD)





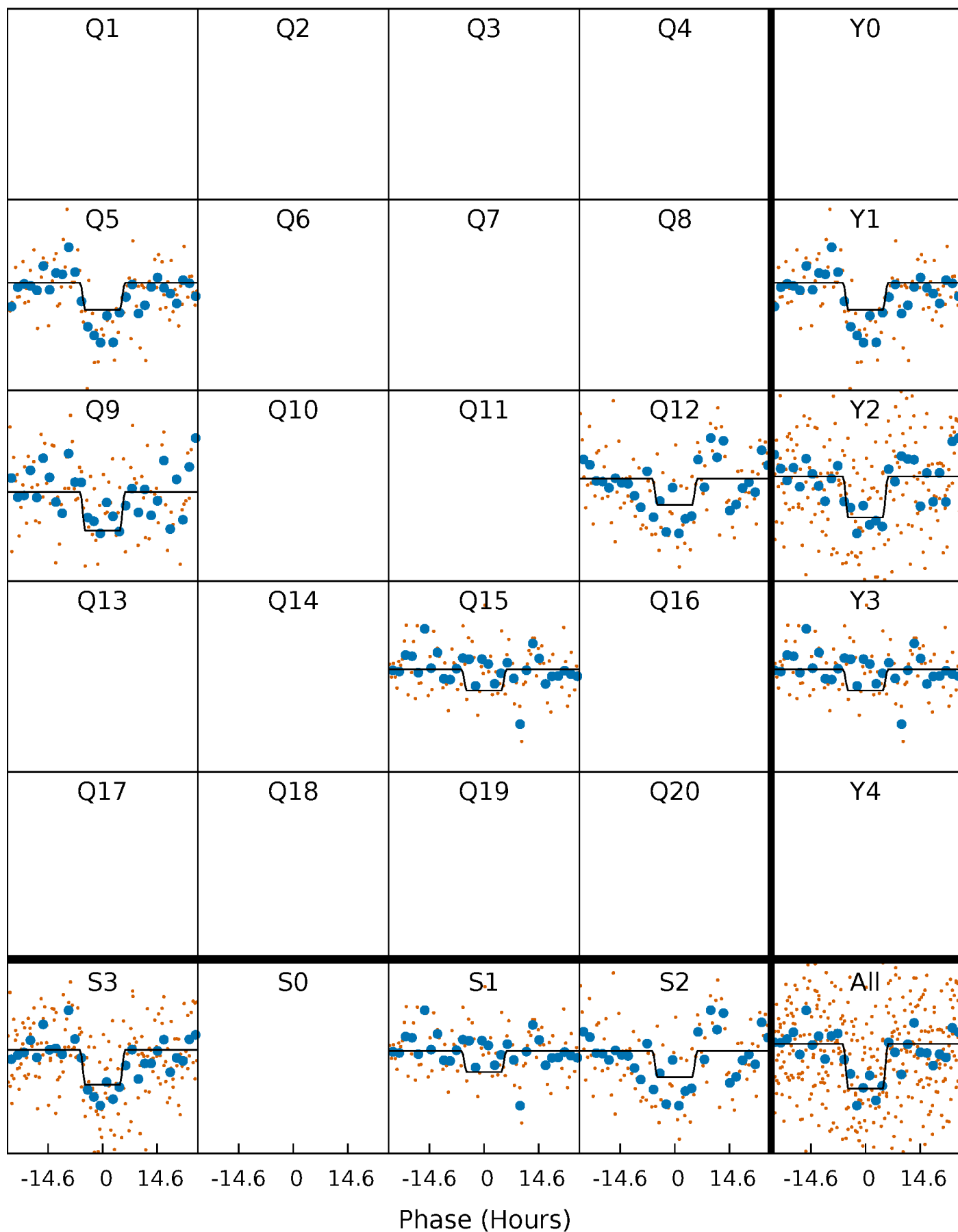
# DV Quarter-Phased Transit Curves

TCE 007613898-01 P=313.299571 Days  $T_0=197.290488$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

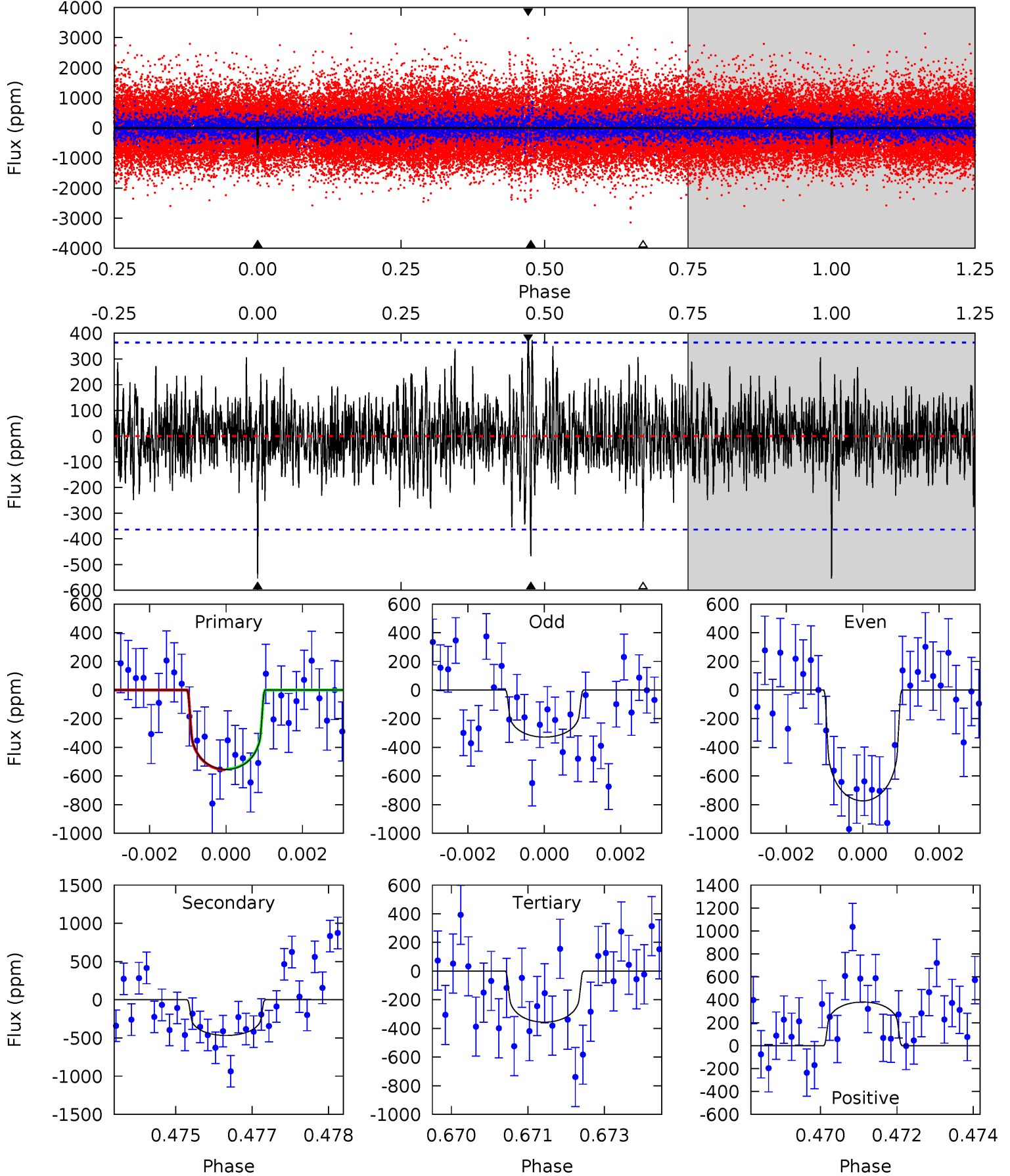
TCE 007613898-01 P=313.287342 Days  $T_0=197.318715$  (BKJD)



# DV Model-Shift Uniqueness Test

007613898-01, P = 313.299571 Days, E = 197.290488 Days

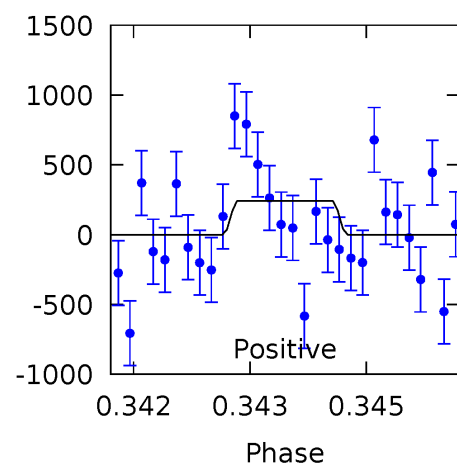
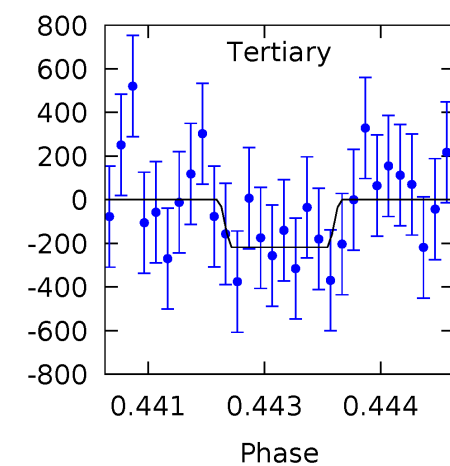
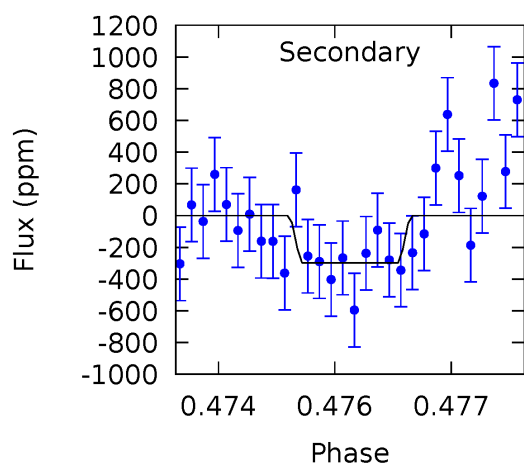
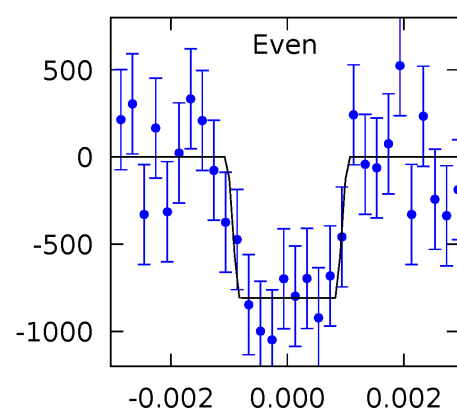
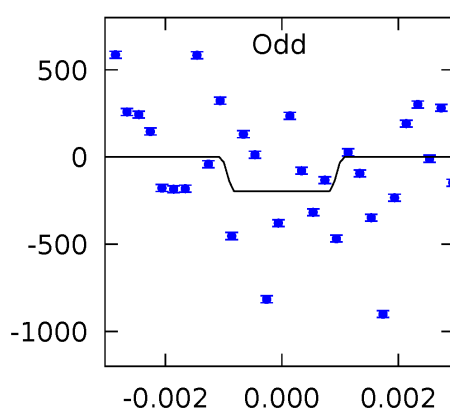
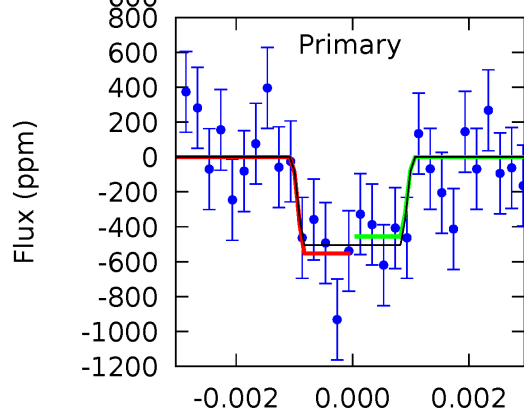
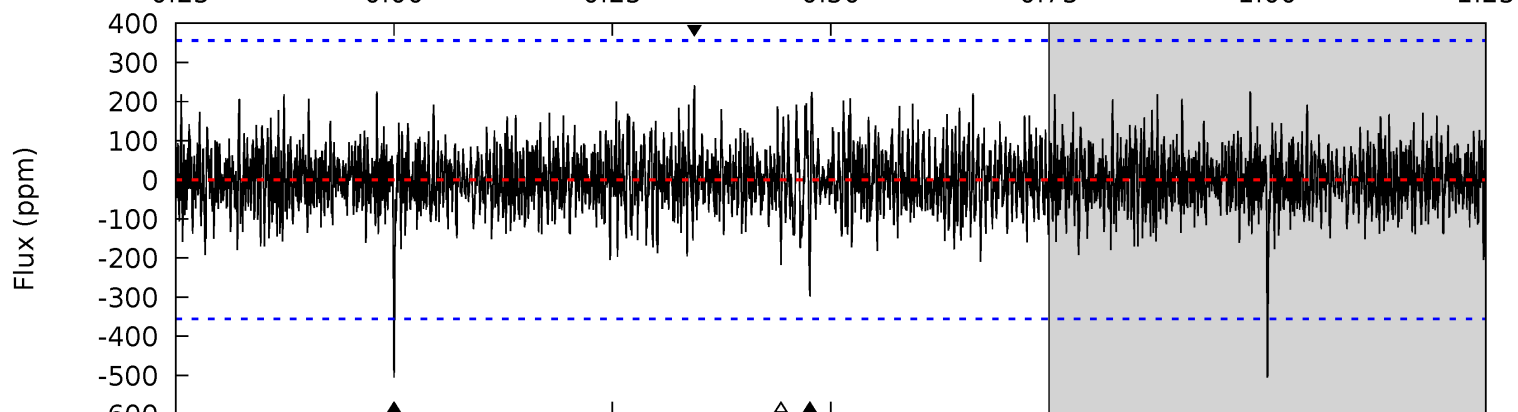
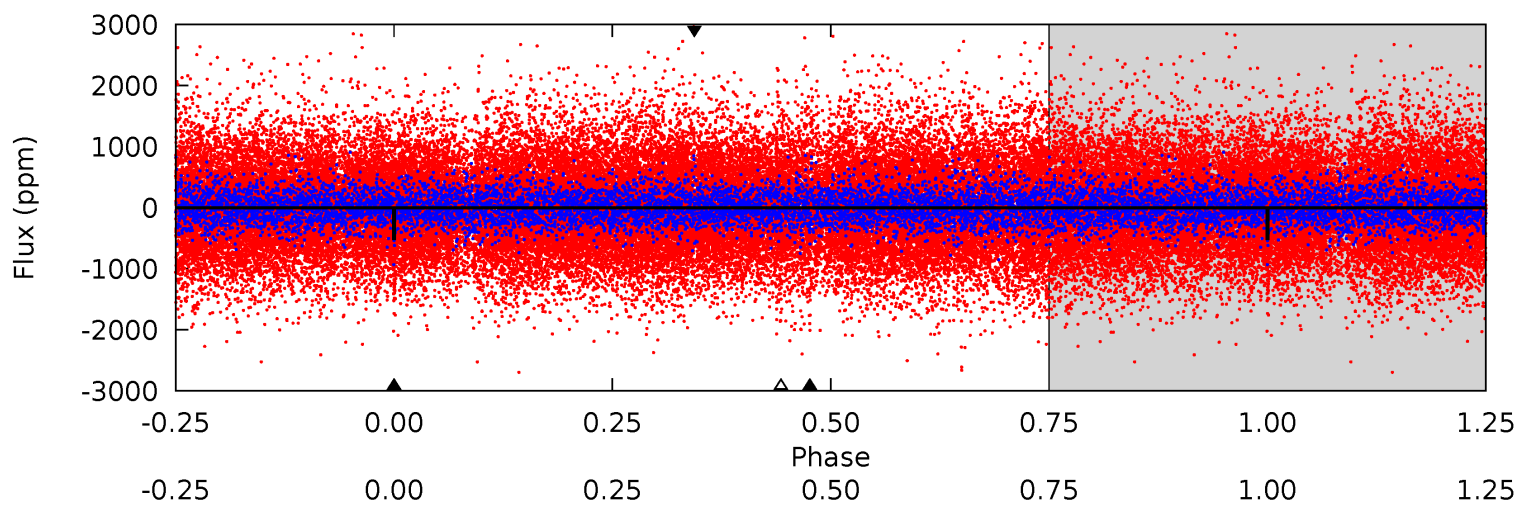
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.18	6.89	5.26	5.61	5.37	3.17	1.44	2.92	2.57	1.63	1.28	3.31	0.90	0.41	0.04



# Alt Model-Shift Uniqueness Test

007613898-01, P = 313.287342 Days, E = 197.318715 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
7.63	4.50	3.29	3.65	5.38	3.17	0.99	4.34	3.98	1.21	0.85	4.63	0.93	0.32	0.74



### Stellar Parameters For KIC 007613898

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5314^{+185}_{-185}$	$4.545^{+0.102}_{-0.076}$	$-0.560^{+0.350}_{-0.300}$	$0.735^{+0.091}_{-0.082}$	$0.691^{+0.095}_{-0.044}$	$2.450^{+0.984}_{-0.589}$
	+3%/-3%	+2%/-2%	+62%/-54%	+12%/-11%	+14%/-6%	+40%/-24%
Source	KIC0	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 007613898-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-467 \pm 68$	$2.13^{+1.88}_{-1.39}$	$313^{+14}_{-14}$	$4823^{+3421}_{-1014}$	$35797^{+258952}_{-25956}$
Alt.	$-298 \pm 66$	$2.29^{+1.88}_{-1.42}$	$314^{+15}_{-17}$	$4287^{+2330}_{-793}$	$19069^{+123573}_{-13101}$

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

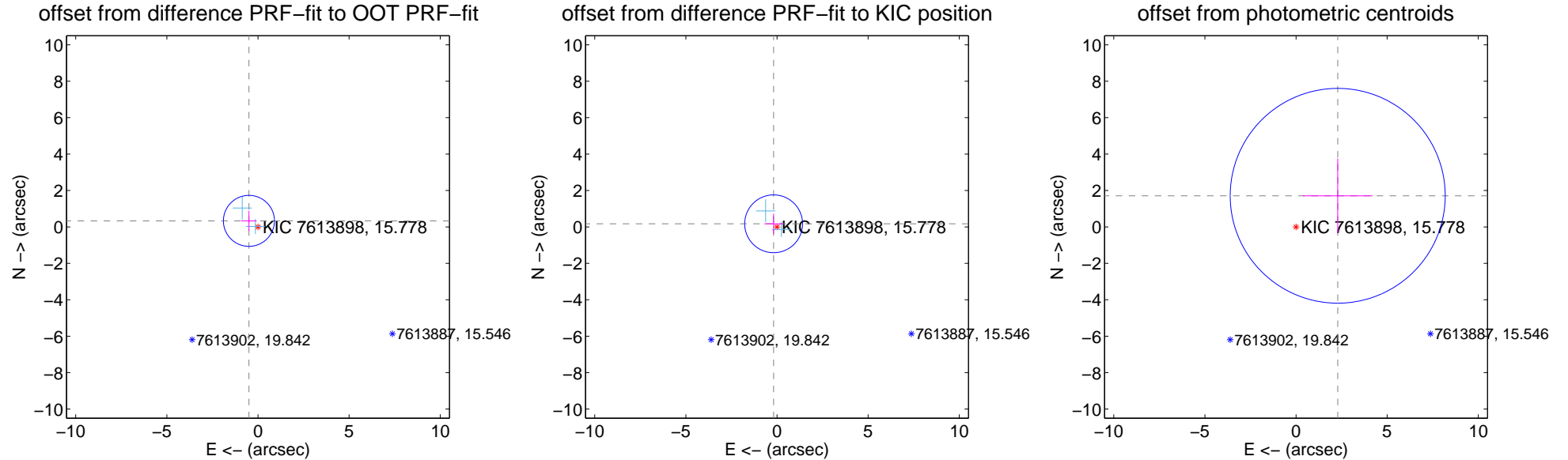
## DV Centroid Data

Supplemental centroid analysis for 007613898-01. Kepler magnitude: 15.78. Transit SNR 5.39

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.598 \pm 0.467$	1.28	$0.497 \pm 0.425$	$0.332 \pm 0.548$
PRF-fit source offset from KIC position	$0.252 \pm 0.529$	0.48	$0.185 \pm 0.511$	$0.171 \pm 0.550$
photometric centroid source offset	$2.86 \pm 1.97$	1.45	$-2.29 \pm 1.92$	$1.71 \pm 2.05$



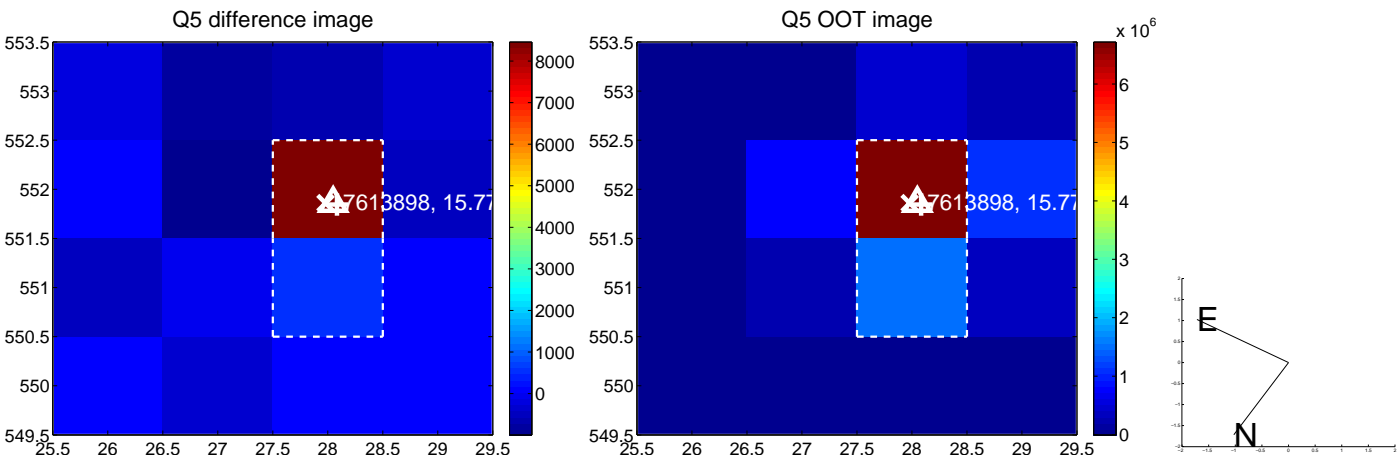
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



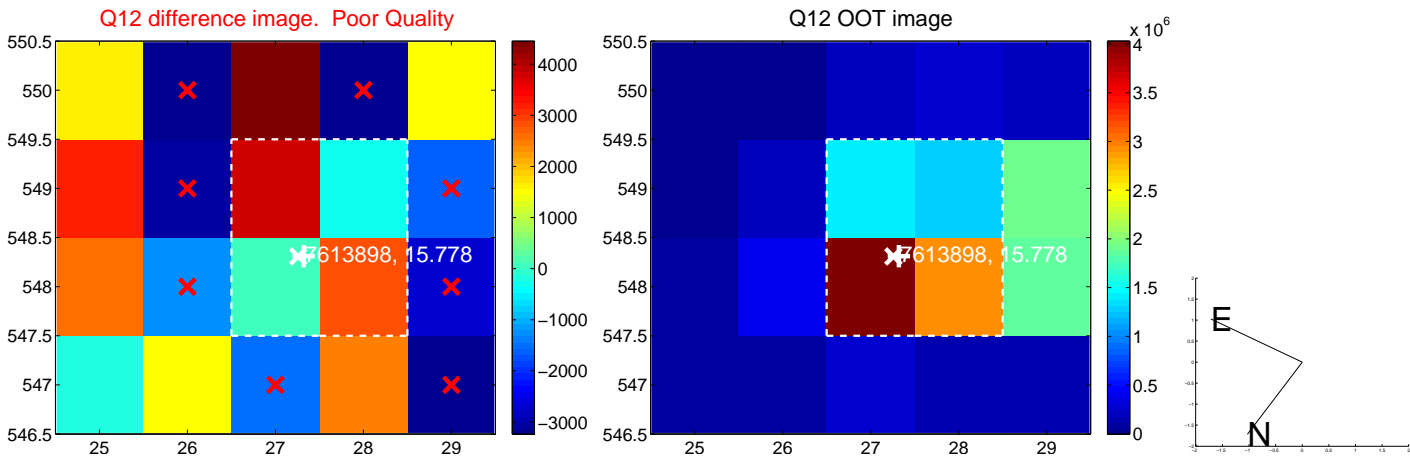
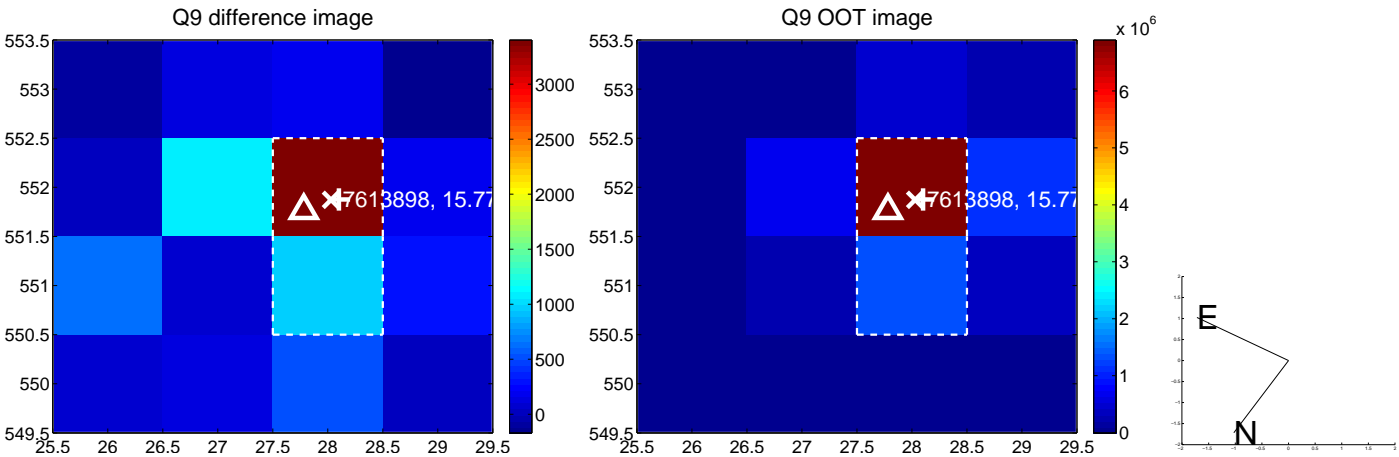
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



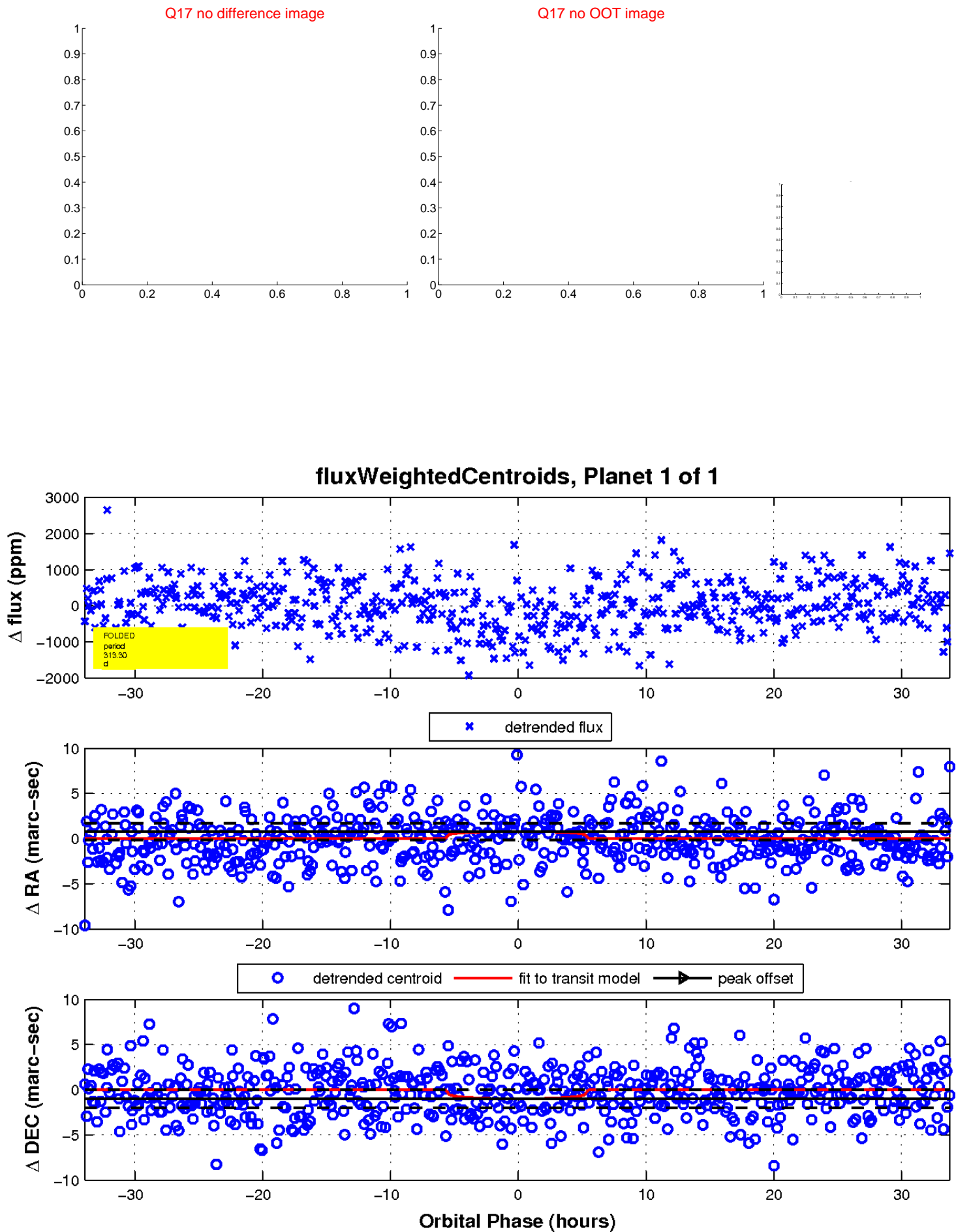
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

