

# KIC 007899038

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007899038-01	OBS	No	309.497619	295.752668	748.2	11.713	7.3	6.9	0.94	5926	3.03	1.19

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007899038-01	OBS	FP	0.05	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—MOD_NONUNIQ_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.

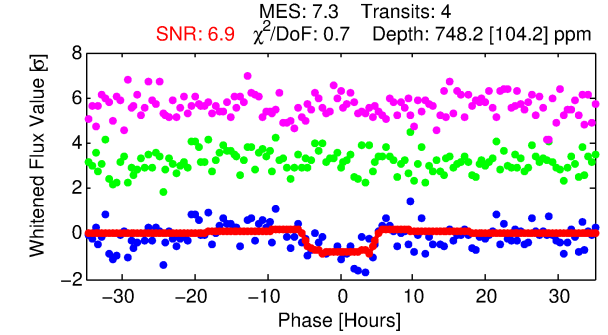
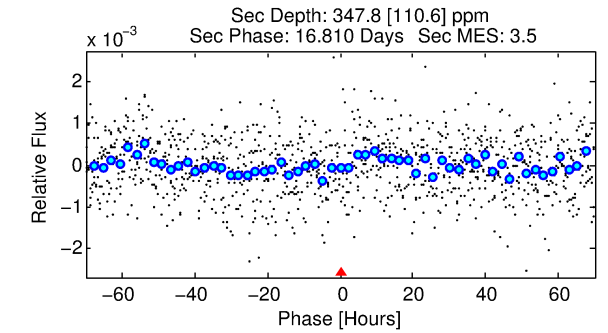
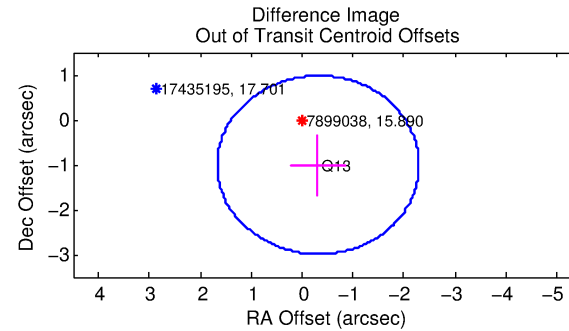
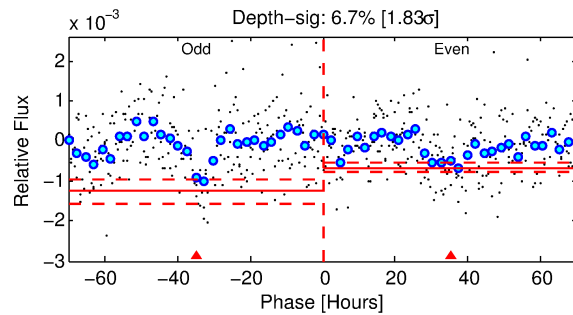
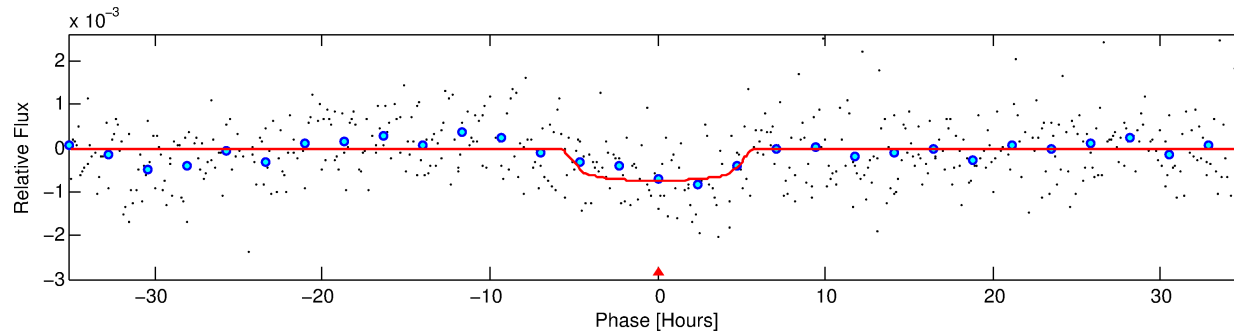
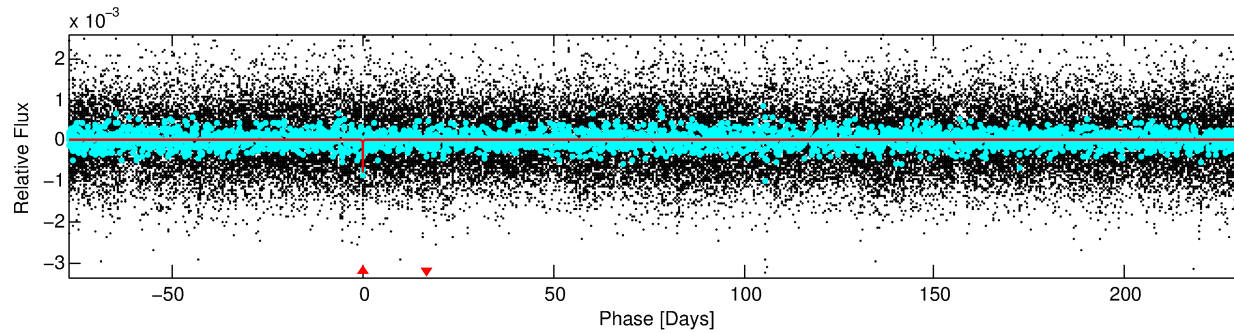
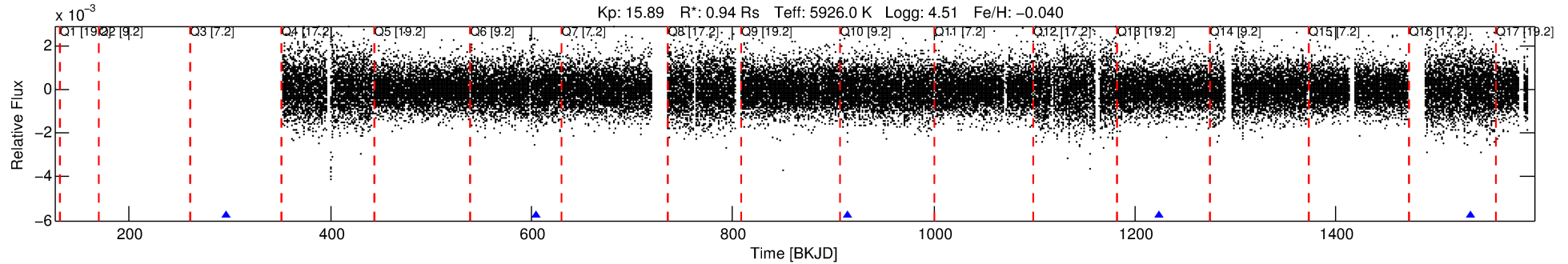
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007899038-01

No Significant Match Found

# DV One-Page Summary

KIC: 7899038 Candidate: 1 of 1 Period: 309.498 d



## DV Fit Results:

Period = 309.49762 [0.01360] d  
Epoch = 295.7527 [0.0364] BKJD  
Rp/R\* = 0.0296 [0.0042]  
a/R\* = 102.24 [57.96]  
b = 0.90 [0.13]  
Seff = 1.19 [0.41]  
Teq = 266 [23] K  
Rp = 3.03 [0.88] Re  
a = 0.9049 [0.1947] AU  
Ag = 17062.01 [9095.61] [1.88 $\sigma$ ]  
Teff = 4706 [529] K [8.38 $\sigma$ ]

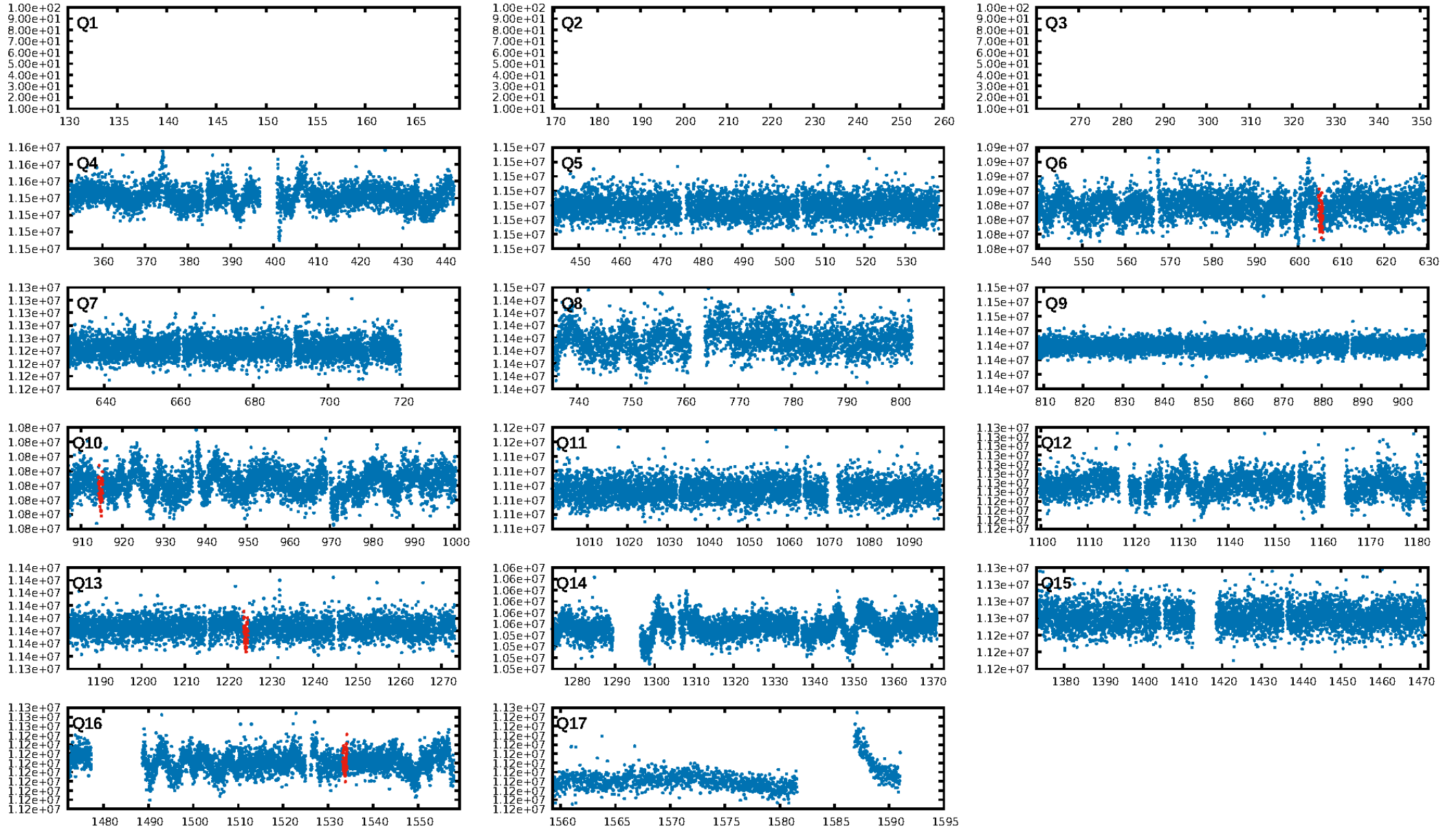
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 84.4%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 1.40e-10**  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 2.995  
Centroid-sig: 61.2%  
Centroid-so: 2.738 arcsec [2.26 $\sigma$ ]  
OotOffset-rm: 1.056 arcsec [1.60 $\sigma$ ]  
OotOffset-st: 0/0/0/1 [1]  
KicOffset-rm: 0.860 arcsec [1.55 $\sigma$ ]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [3/3]

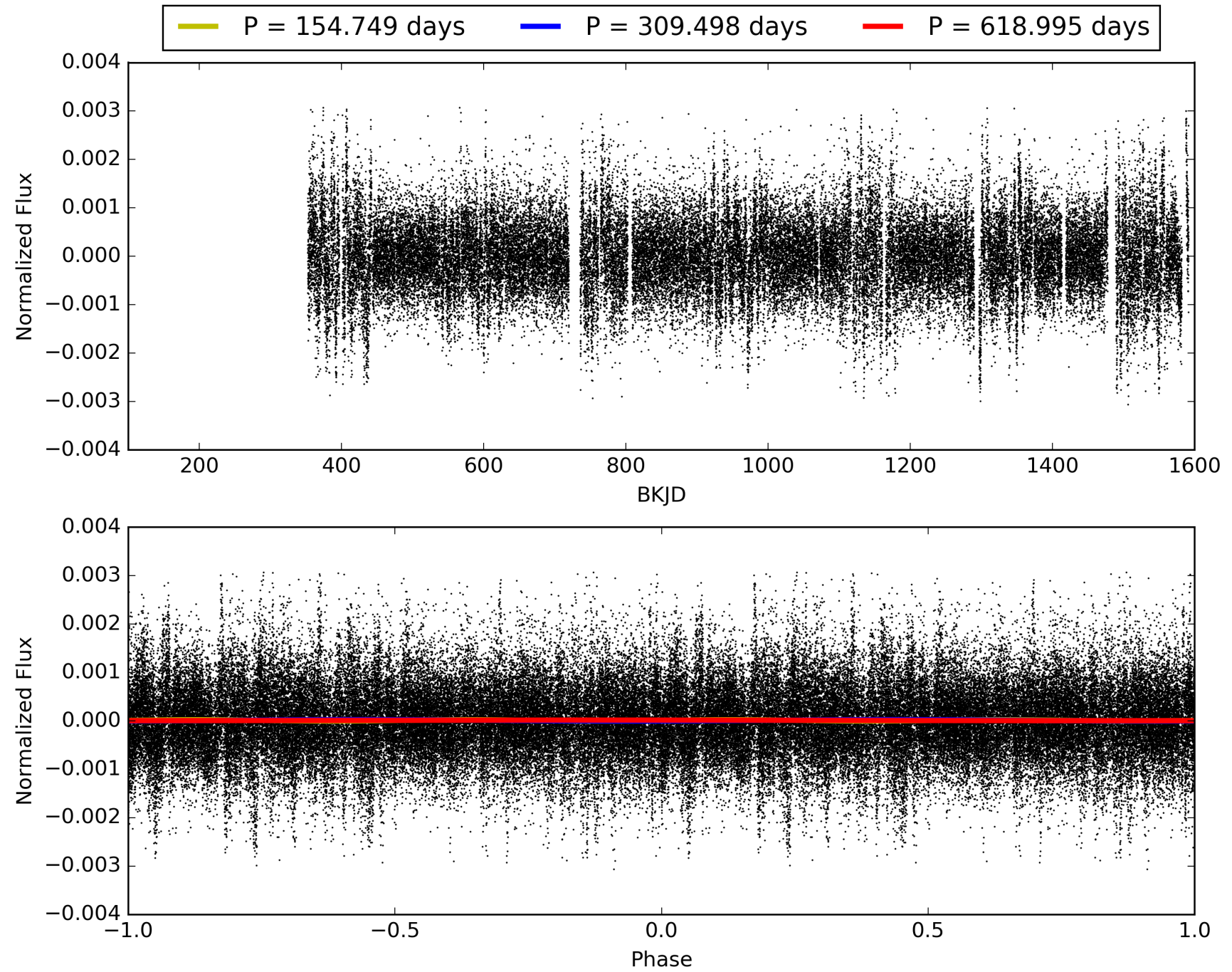
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:41:51 Z

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

# TCE 007899038-01, PDC Light Curves

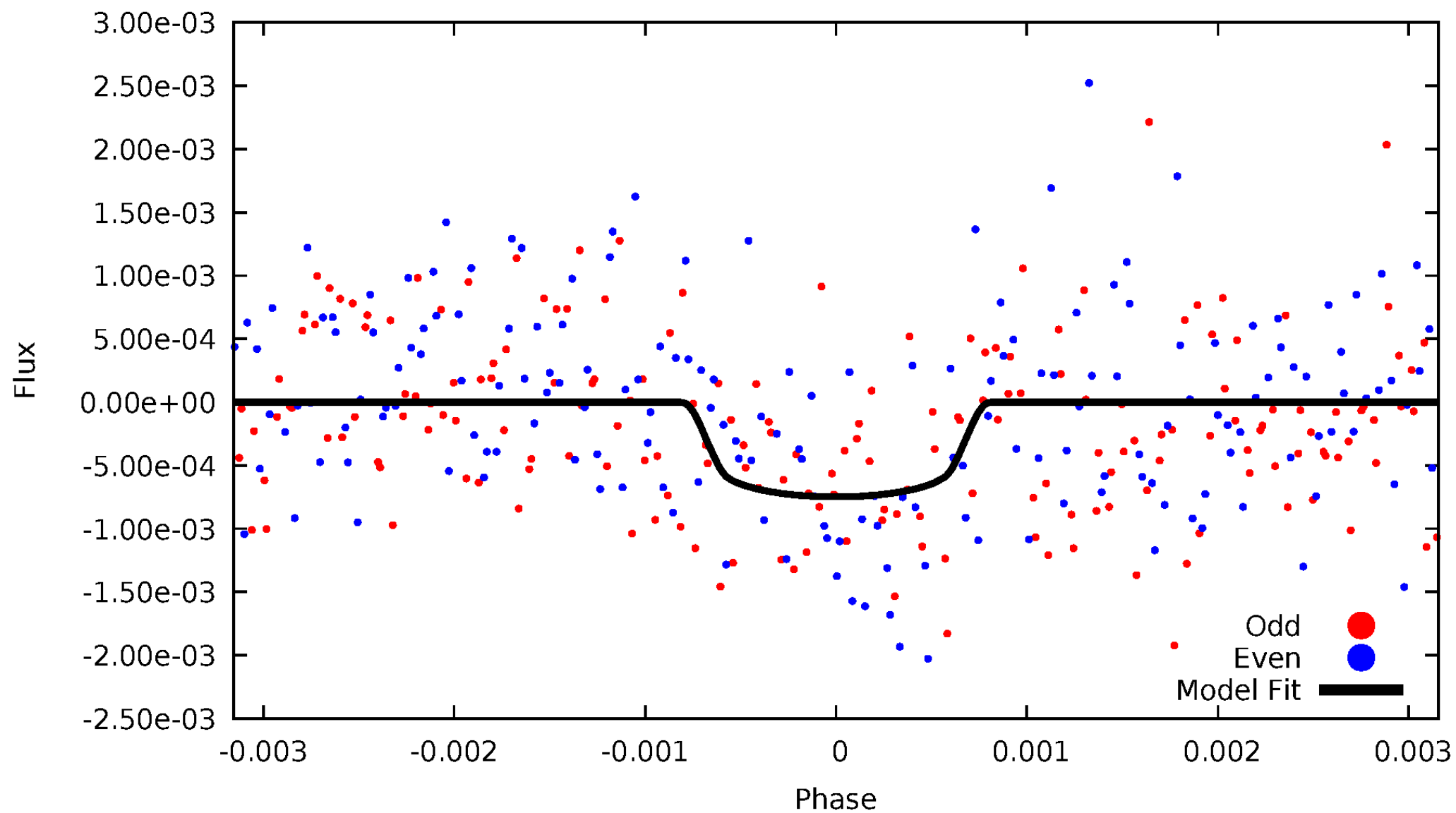


# TCE 007899038-01



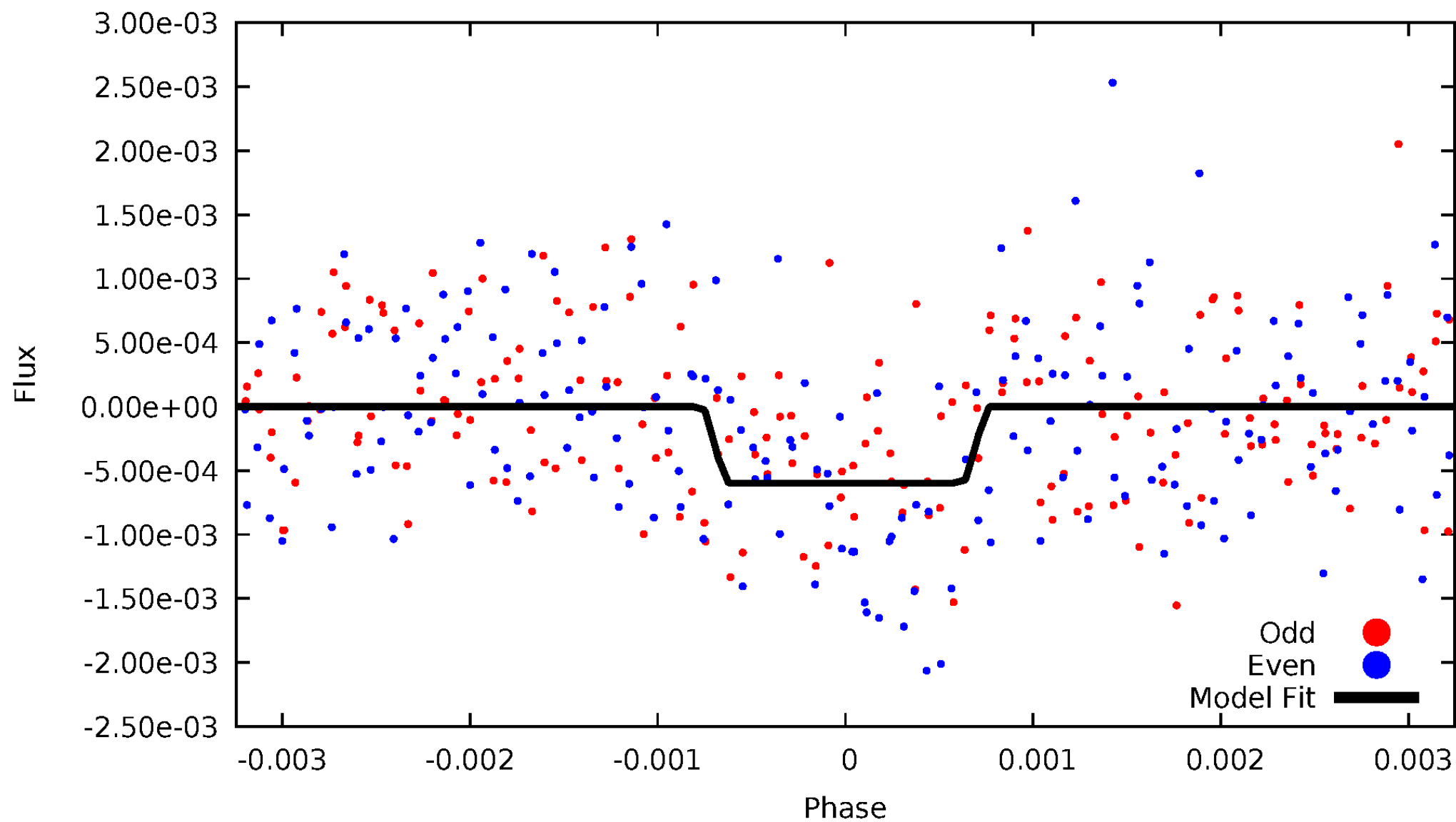
# DV Odd/Even

TCE 007899038-01



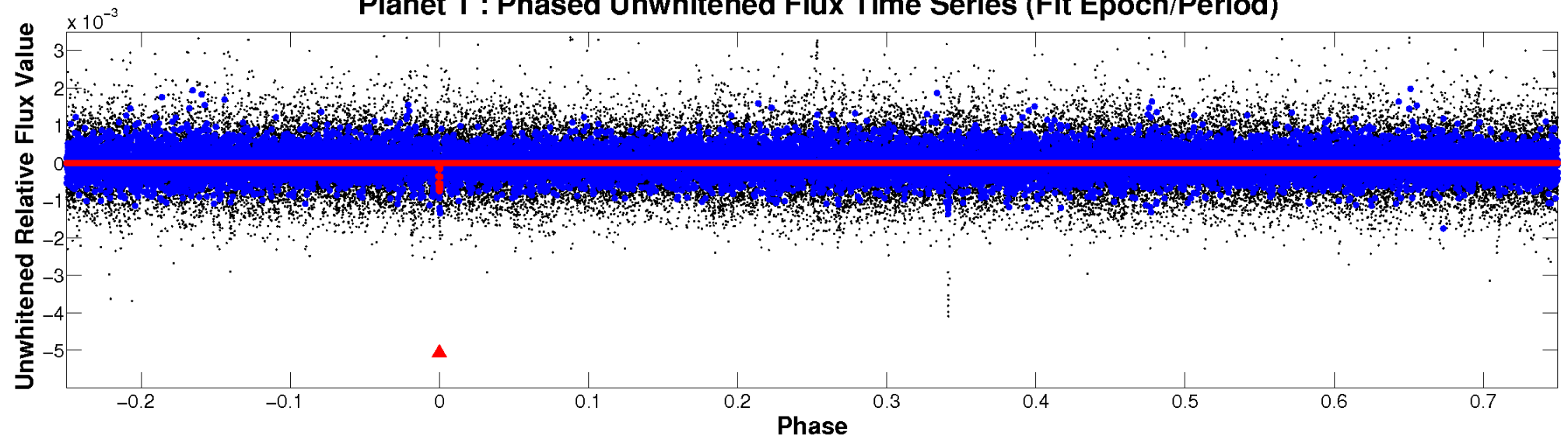
# ALT Odd/Even

TCE 007899038-01

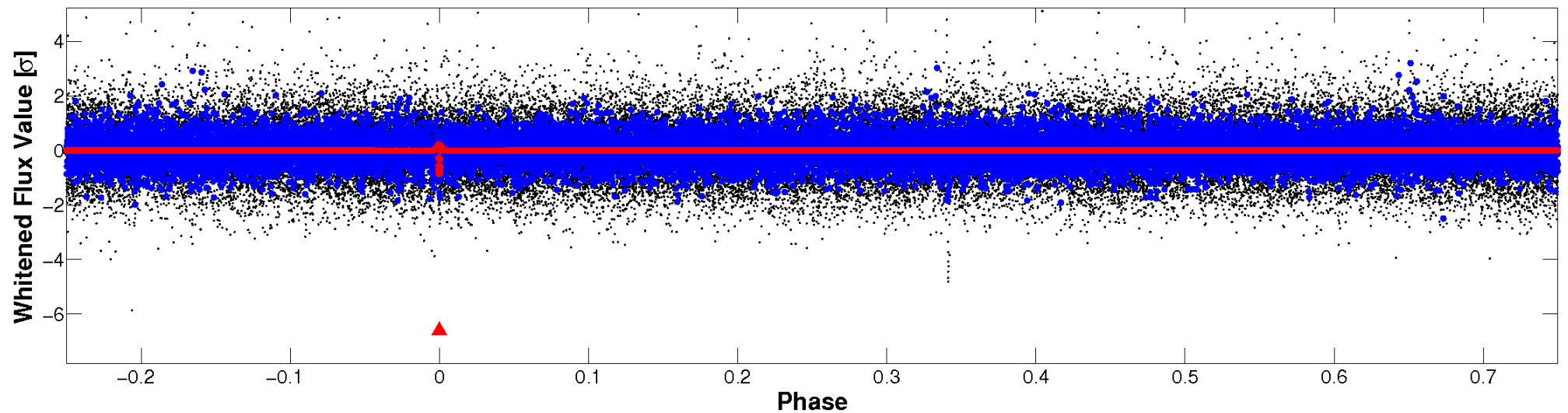


# Non-Whitened Vs. Whitened Light Curve

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

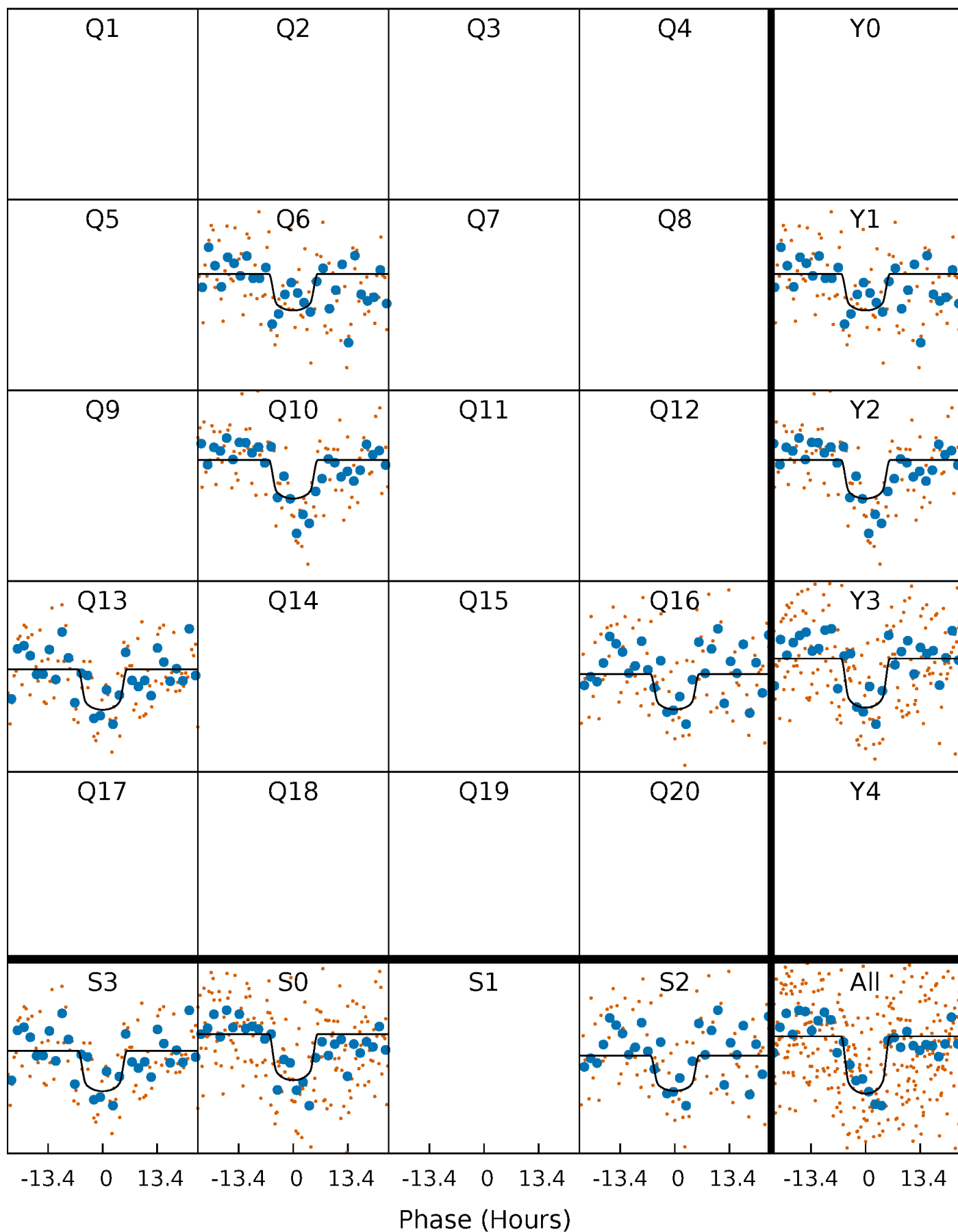
TCE 007899038-01 P=309.497619 Days  $T_0=295.752668$  (BKJD)





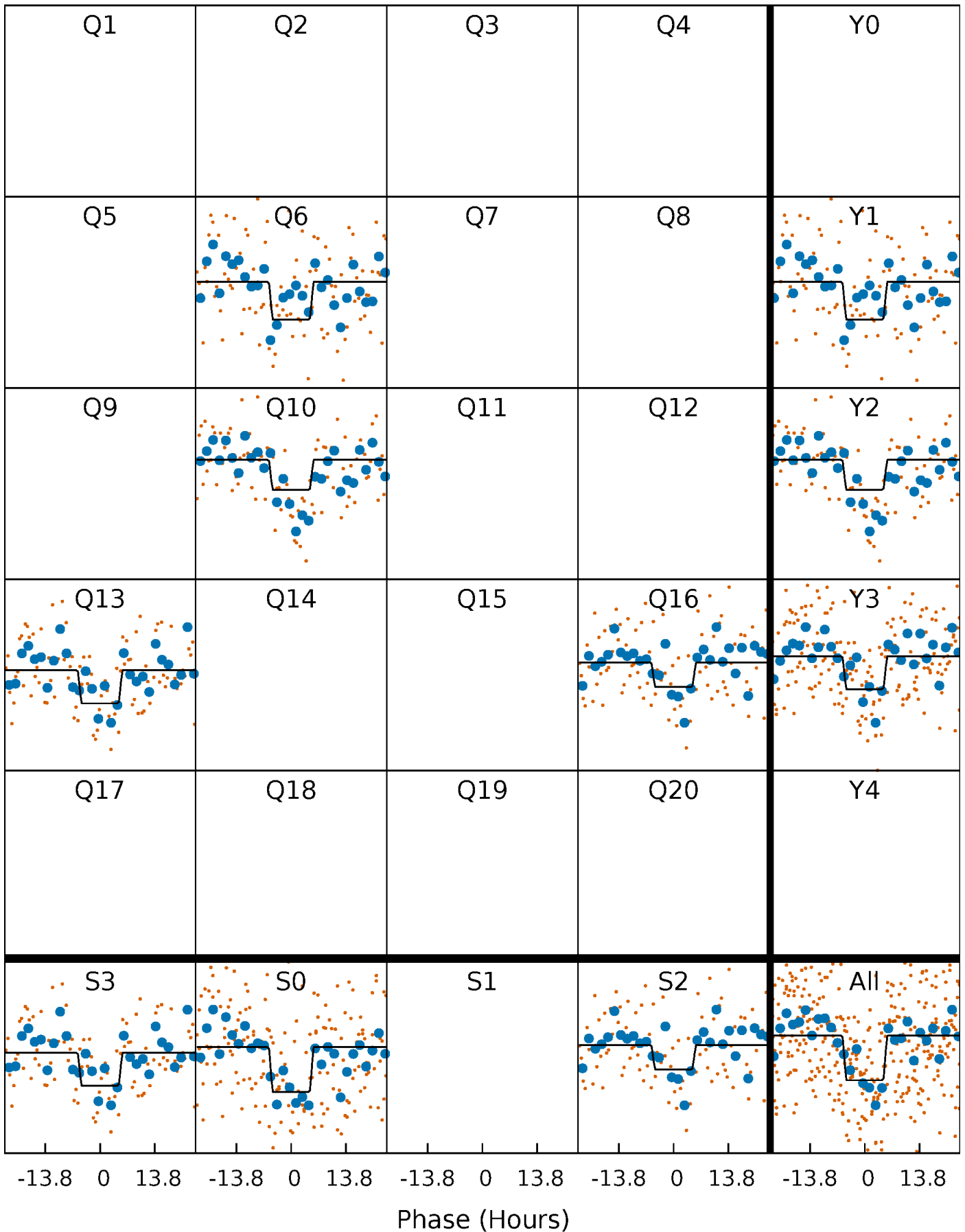
# DV Quarter-Phased Transit Curves

TCE 007899038-01 P=309.497619 Days  $T_0=295.752668$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

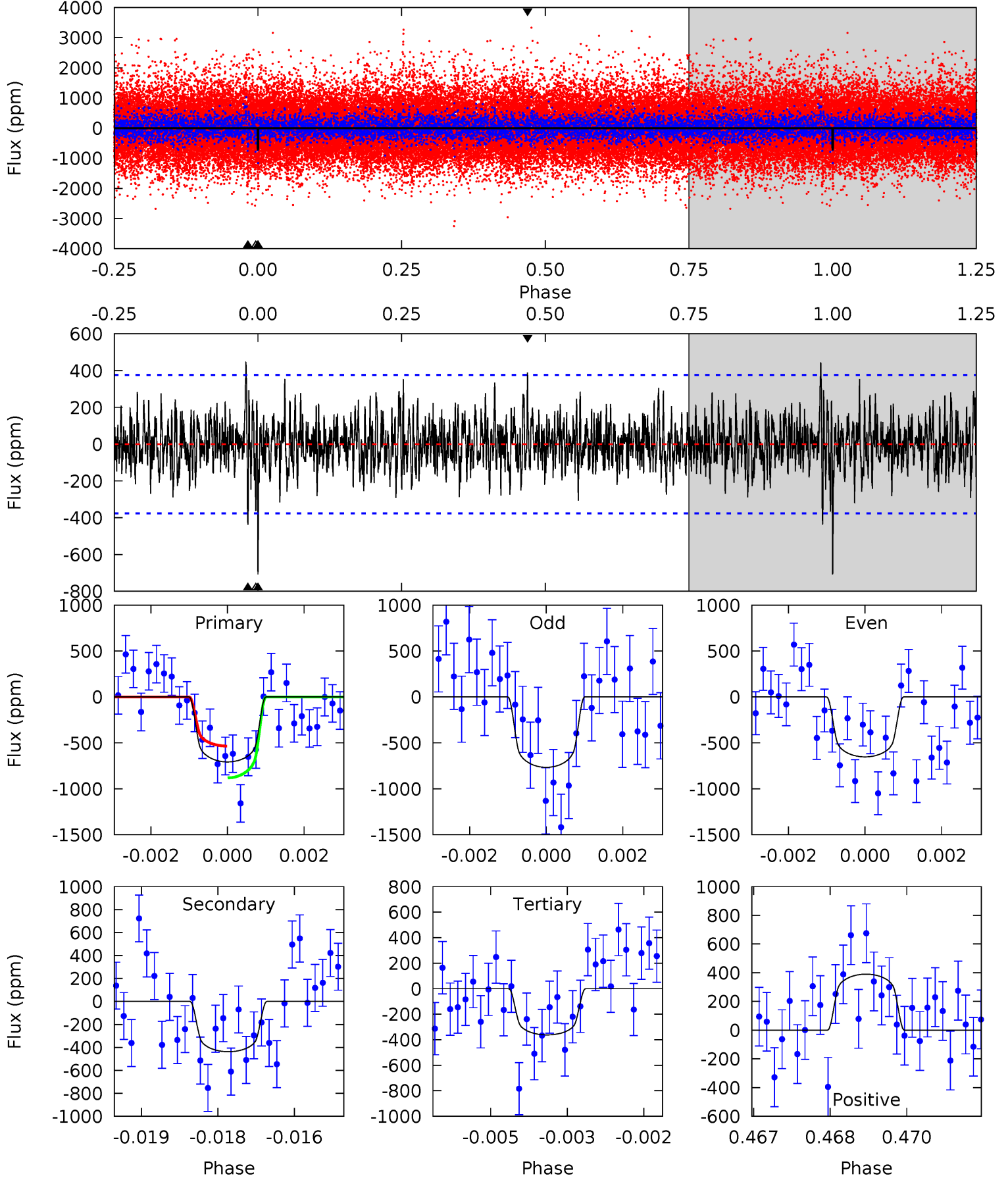
TCE 007899038-01 P=309.486700 Days  $T_0=295.765942$  (BKJD)



# DV Model-Shift Uniqueness Test

007899038-01, P = 309.497619 Days, E = 295.752668 Days

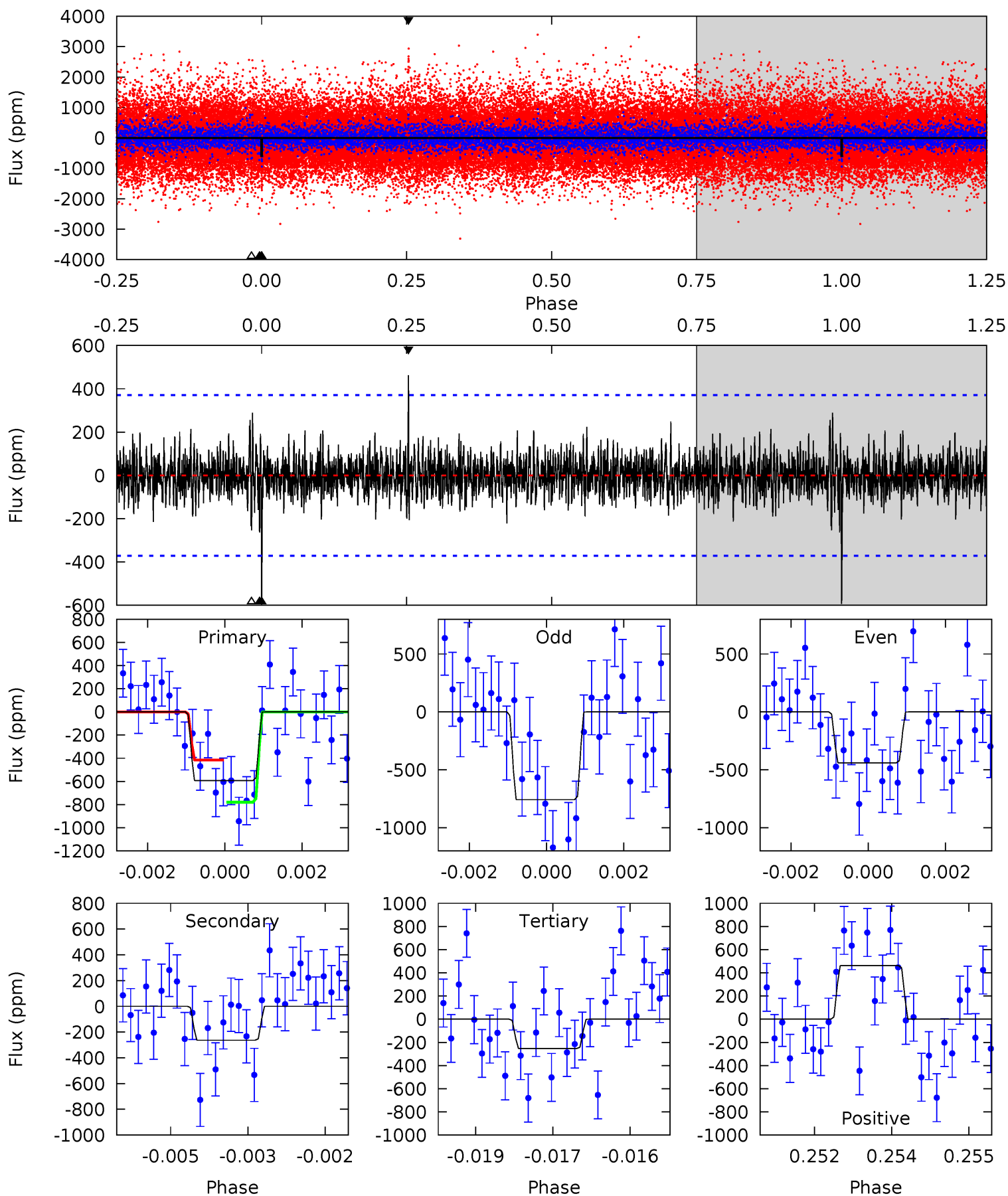
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	6.24	5.17	5.56	5.37	3.15	1.52	4.92	4.53	1.07	0.68	0.81	1.08	0.39	2.47



# Alt Model-Shift Uniqueness Test

007899038-01, P = 309.486700 Days, E = 295.765942 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
8.58	3.81	3.66	6.68	5.37	3.16	0.99	4.92	1.89	0.15	-2.88	2.30	1.06	0.44	2.63



### Stellar Parameters For KIC 007899038

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5926^{+184}_{-205}$	$4.506^{+0.044}_{-0.176}$	$-0.040^{+0.250}_{-0.300}$	$0.939^{+0.236}_{-0.101}$	$1.030^{+0.115}_{-0.140}$	$1.752^{+0.409}_{-0.822}$
	+3%/-3%	+1%/-4%	+625%/-750%	+25%/-11%	+11%/-14%	+23%/-47%
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 007899038-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-438 \pm 70$	$3.16^{+0.61}_{-0.54}$	$379^{+26}_{-18}$	$5053^{+418}_{-366}$	$19479^{+8656}_{-6483}$
Alt.	$-263 \pm 69$	$2.59^{+0.58}_{-0.51}$	$380^{+25}_{-18}$	$4909^{+524}_{-428}$	$17012^{+10580}_{-7041}$

$T_{max}$  = 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

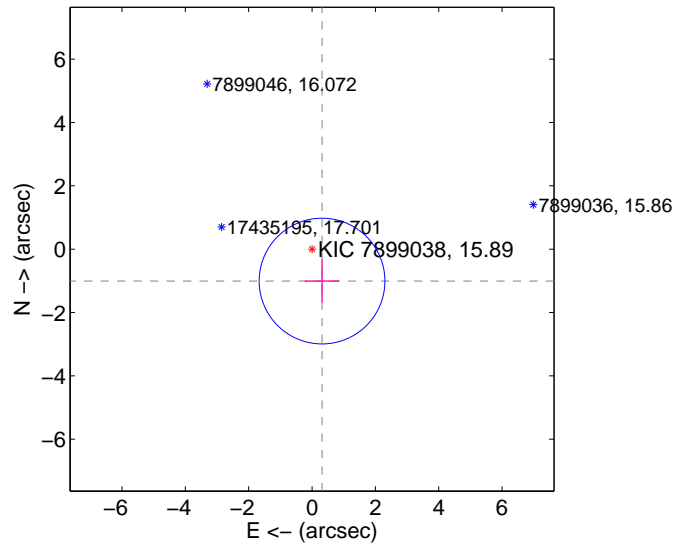
Supplemental centroid analysis for 007899038-01. Kepler magnitude: 15.89. Transit SNR 6.94

There are 0 quarters with good PRF difference image offsets

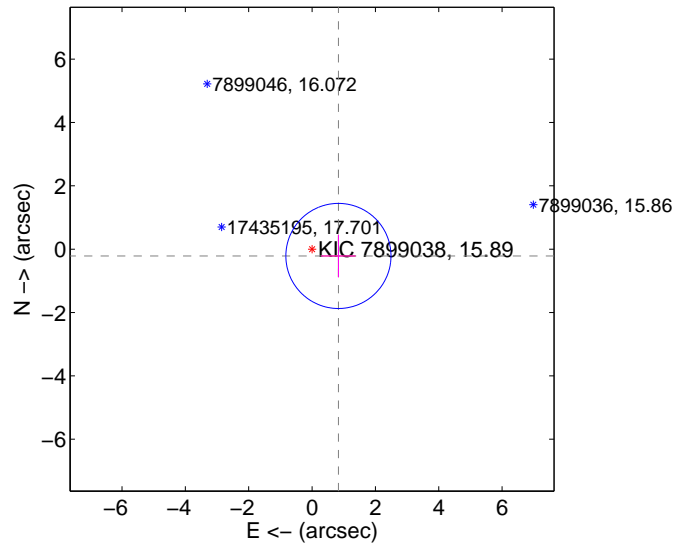
The direct PRF centroid is offset from the target star catalog position by about 0.95 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.056 \pm 0.662$	1.60	$-0.316 \pm 0.544$	$-1.007 \pm 0.672$
PRF-fit source offset from KIC position	$0.860 \pm 0.553$	1.55	$-0.833 \pm 0.544$	$-0.214 \pm 0.672$
photometric centroid source offset	$2.74 \pm 1.21$	2.26	$-1.76 \pm 1.23$	$2.09 \pm 1.20$

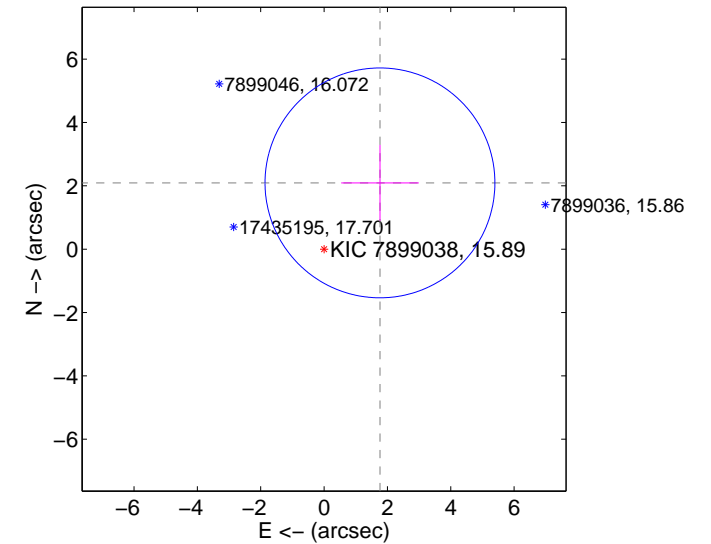
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



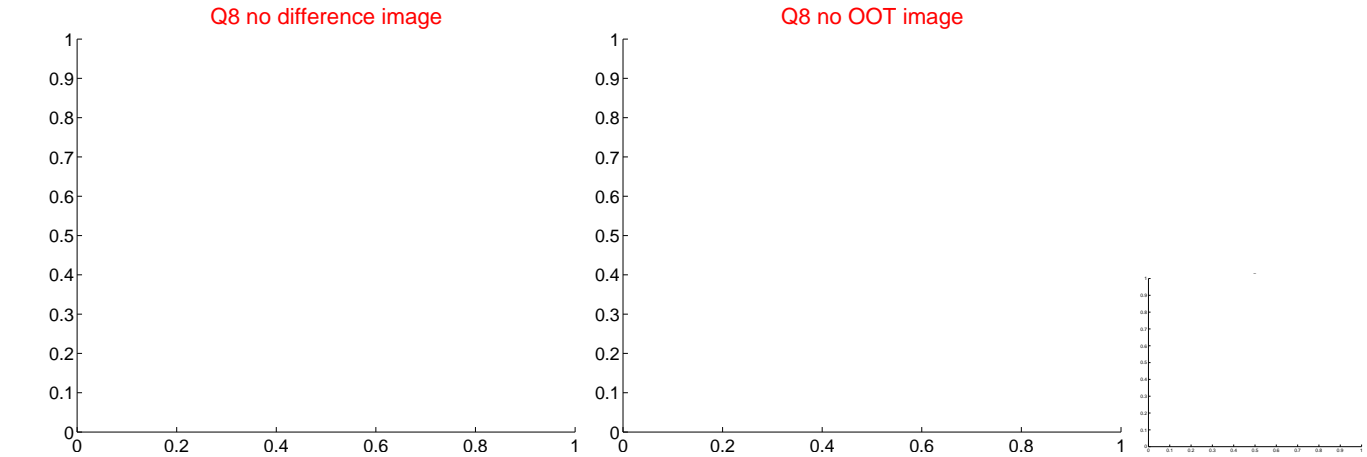
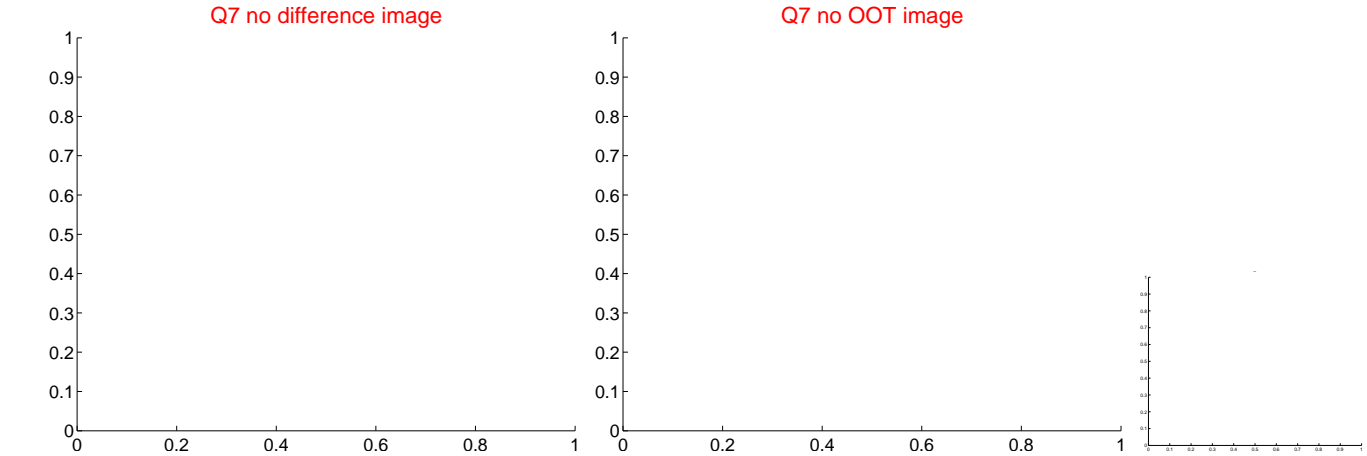
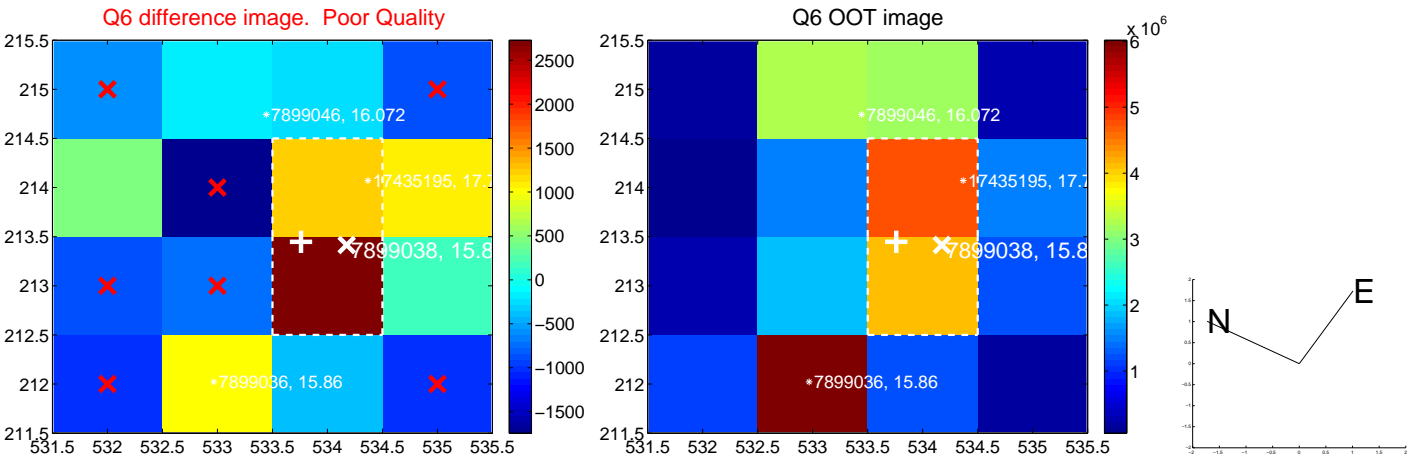
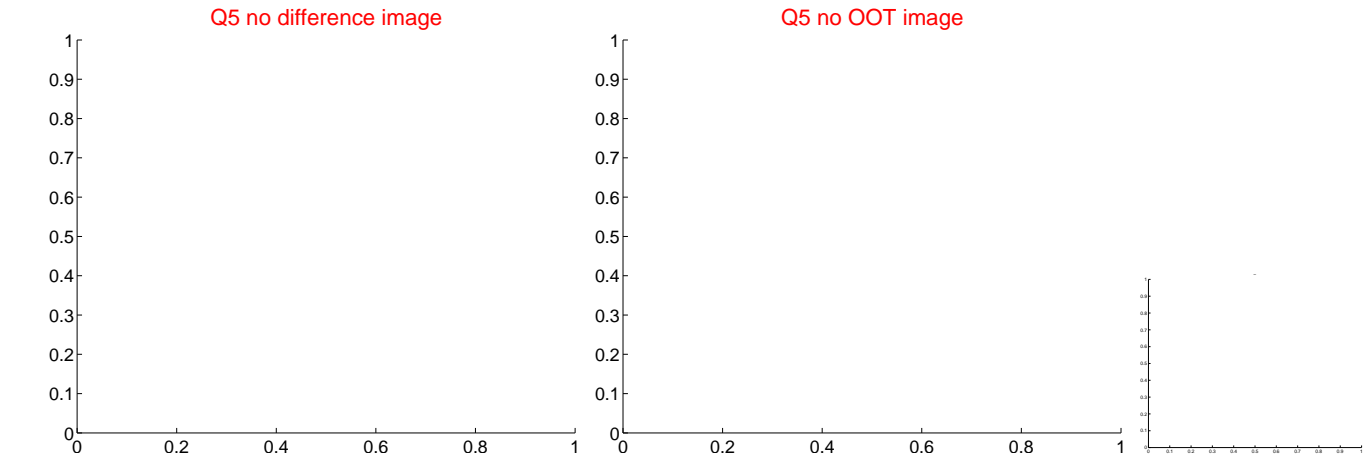
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

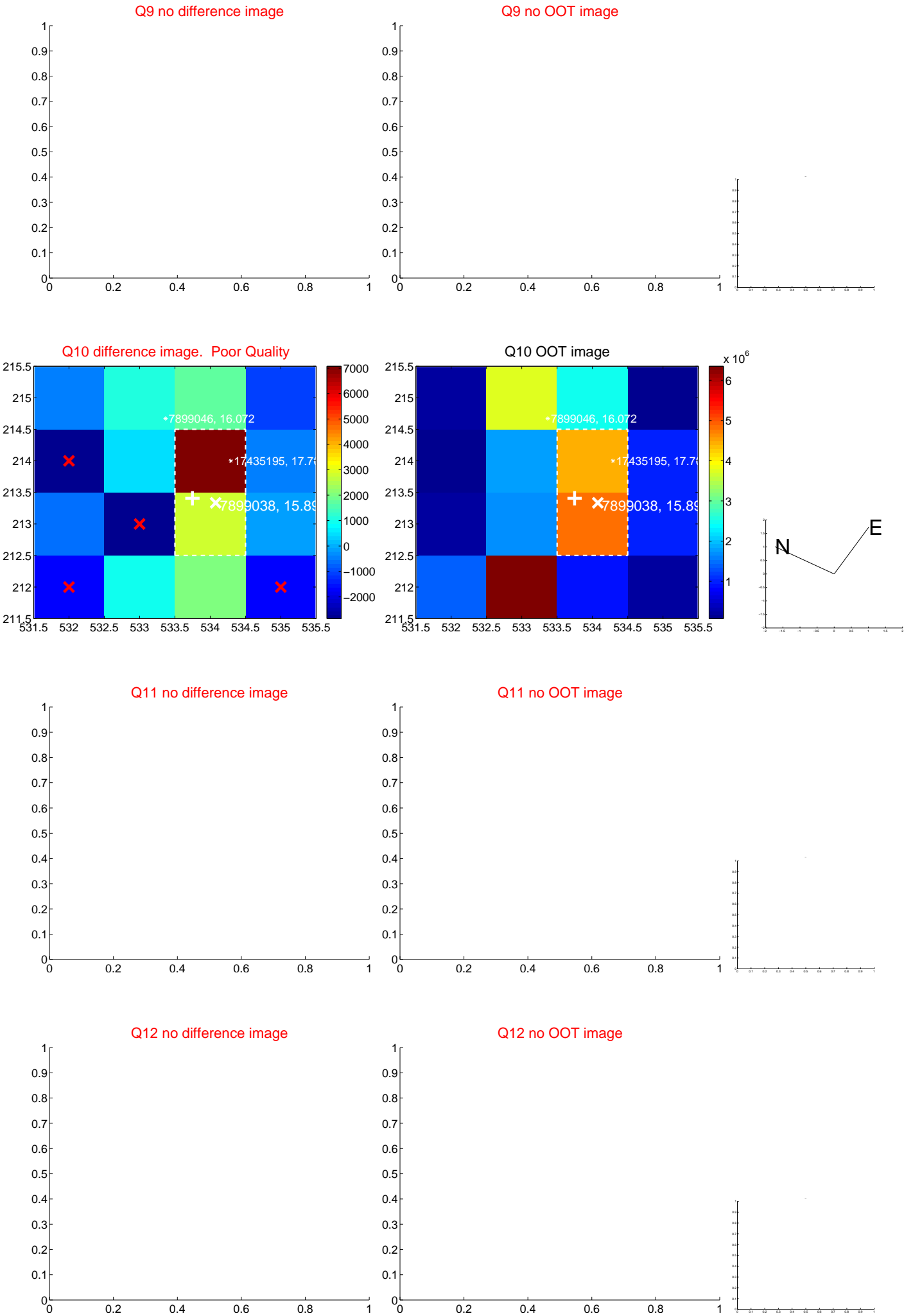




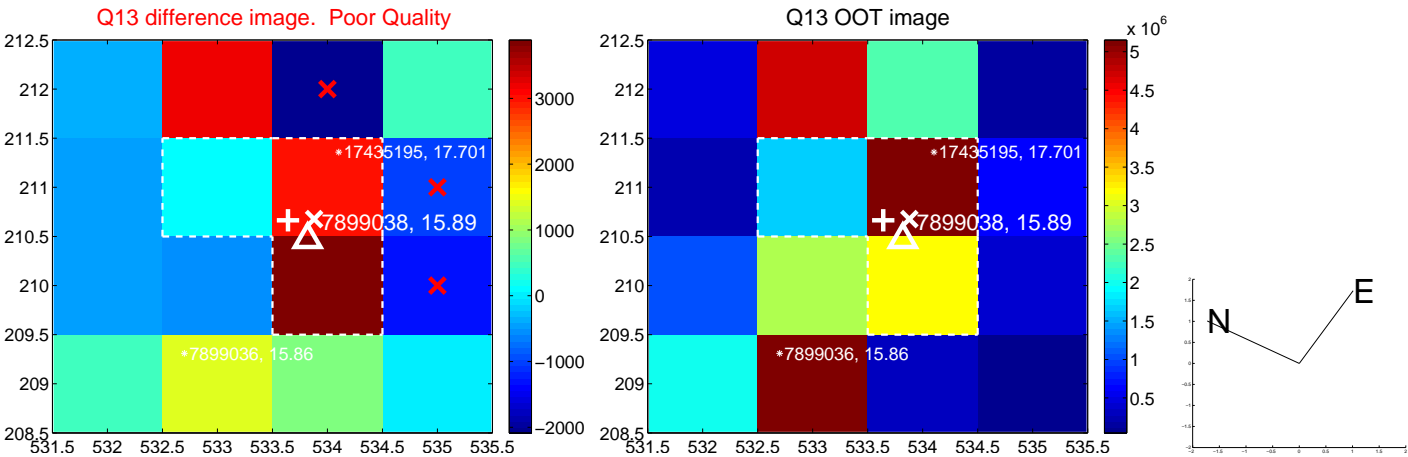
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



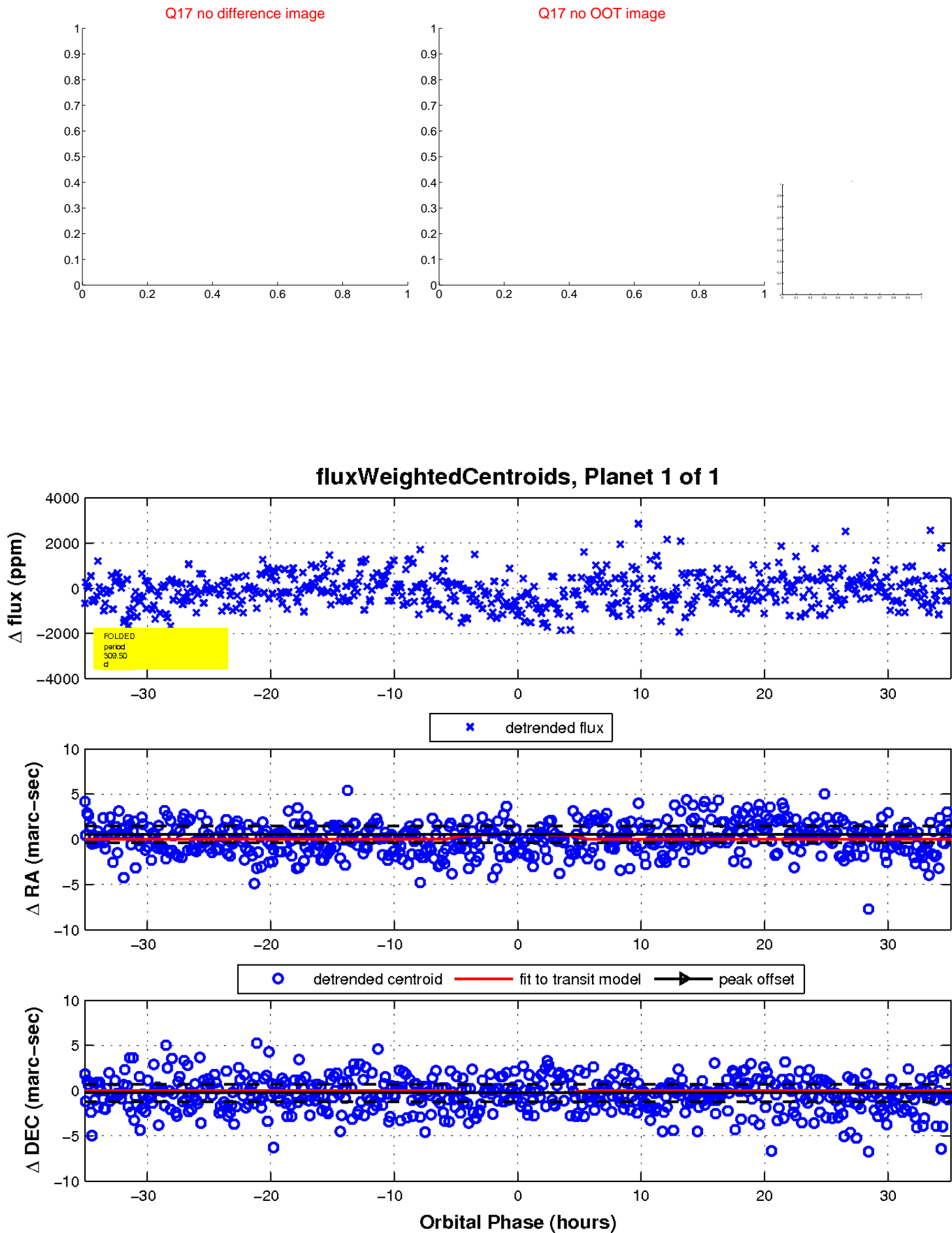
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



white ×: 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

