

# KIC 010845188

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010845188-01	OBS	3602.01	249.362199	279.658127	35486.9	8.310	918.8	869.7	1.02	5940	31.48	2.15

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010845188-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED

**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.

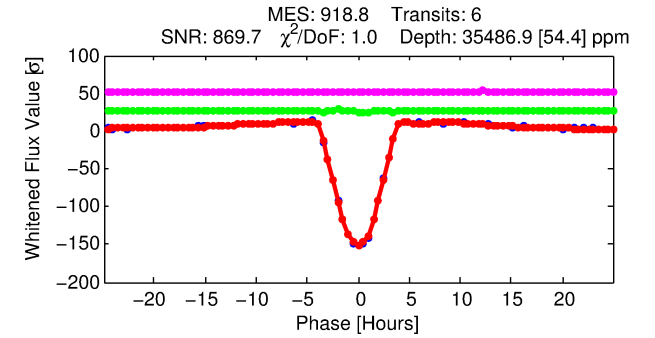
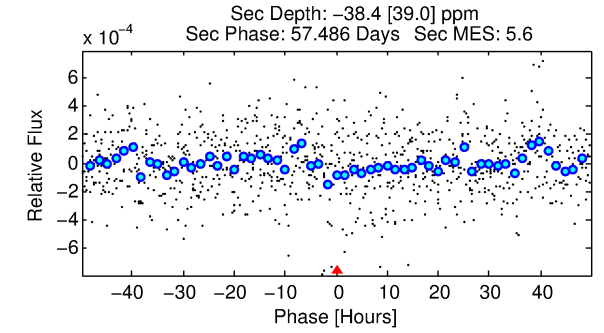
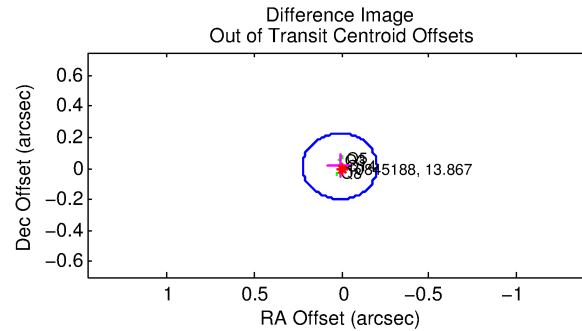
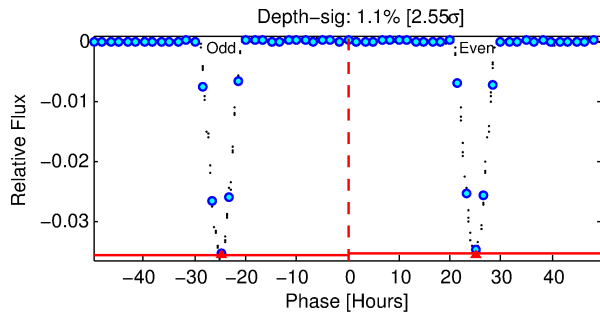
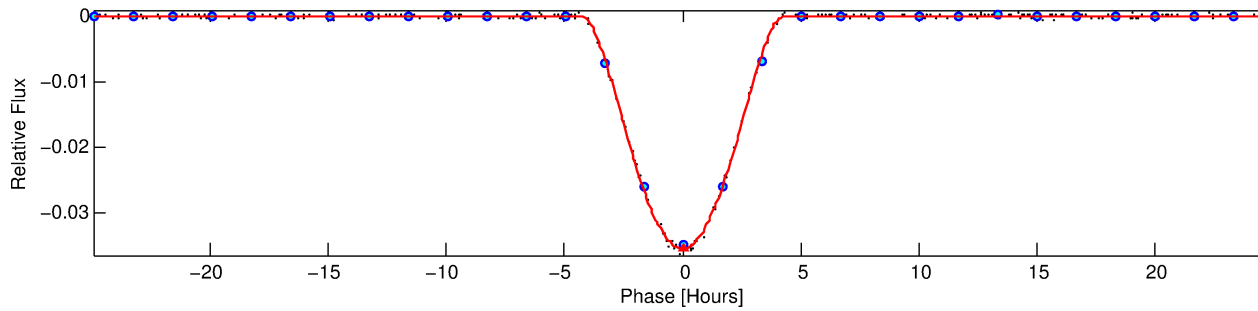
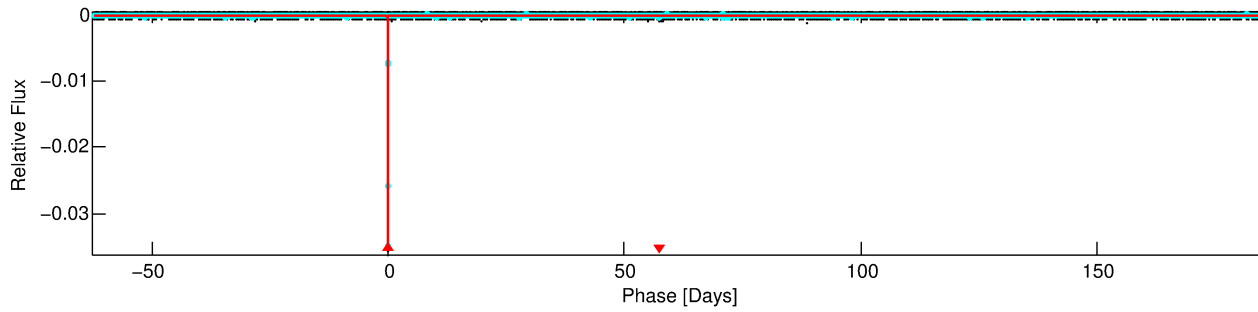
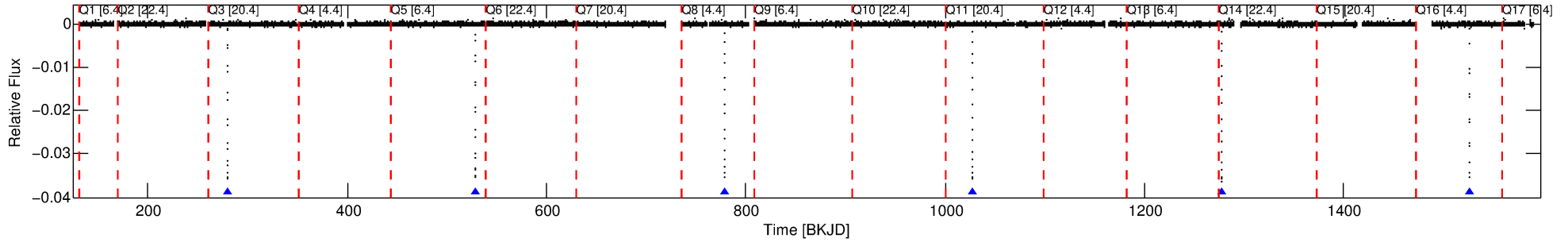
## Ephemeris Match Information For 010845188-01

No Significant Match Found

# DV One-Page Summary

KIC: 10845188 Candidate: 1 of 1 Period: 249.362 d  
KOI: K03602.01 Corr: 0.998

Kp: 13.87 R\*: 1.02 Rs Teff: 5940.0 K Logg: 4.35 Fe/H: -0.460



## DV Fit Results:

Period = 249.36220 [0.00007] d  
Epoch = 279.6581 [0.0002] BKJD  
Rp/R\* = 0.2829 [0.0189]  
a/R\* = 189.95 [0.89]  
b = 0.98 [0.03]  
Seff = 2.14 [0.75]  
Teq = 309 [27] K  
Rp = 31.49 [8.93] Re  
a = 0.7356 [0.1691] AU  
Ag = N/A  
Teffp = N/A

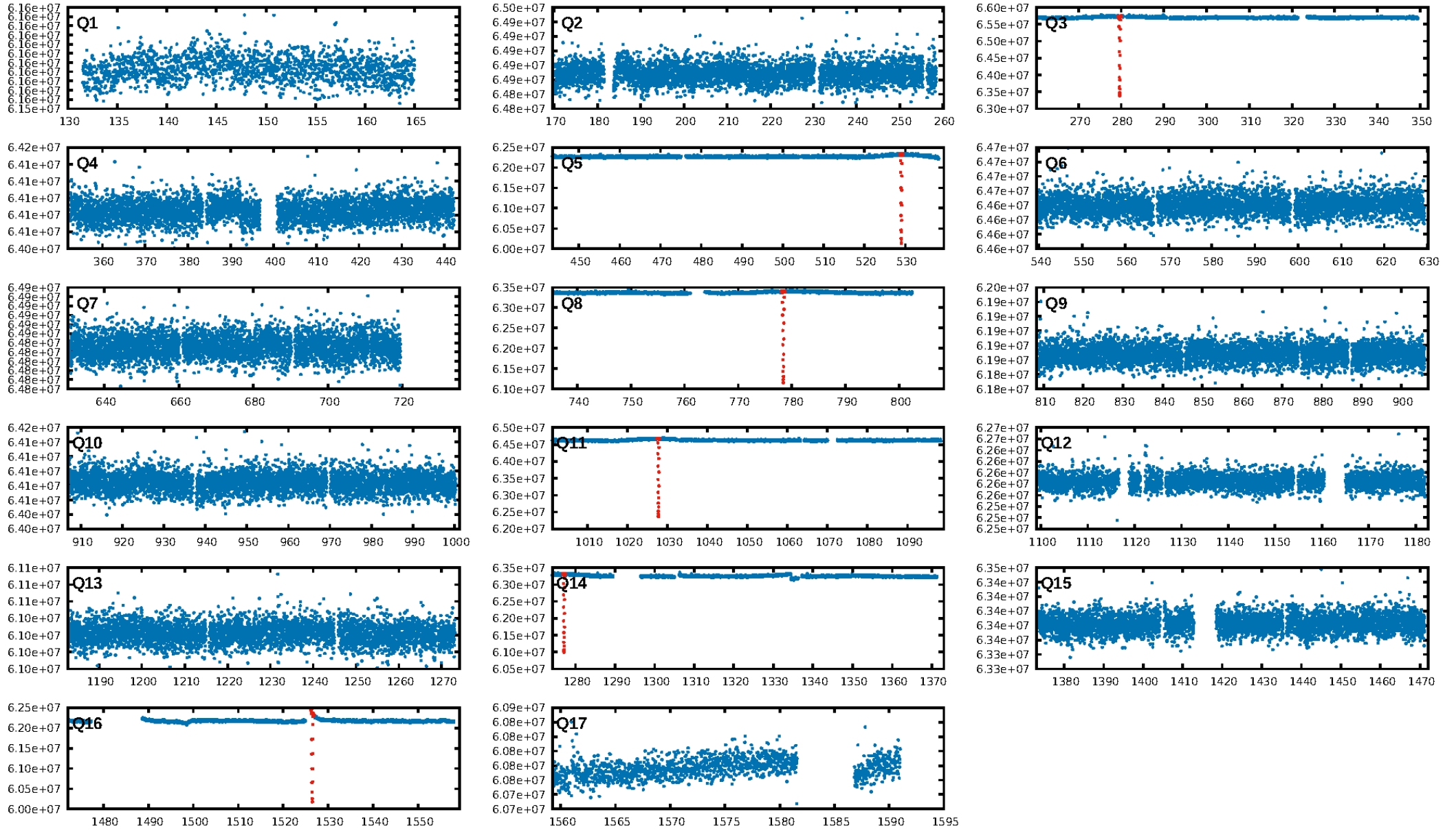
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 89.5%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: 4.005  
Centroid-sig: 0.7%  
Centroid-so: 0.180 arcsec [14.92σ]  
OotOffset-rm: 0.018 arcsec [0.26σ]  
KicOffset-rm: 0.222 arcsec [2.92σ]  
OotOffset-st: 1/1/1/1 [4]  
KicOffset-st: 1/1/1/1 [4]  
DiffImageQuality-fgm: 1.00 [4/4]  
DiffImageOverlap-fno: 1.00 [4/4]

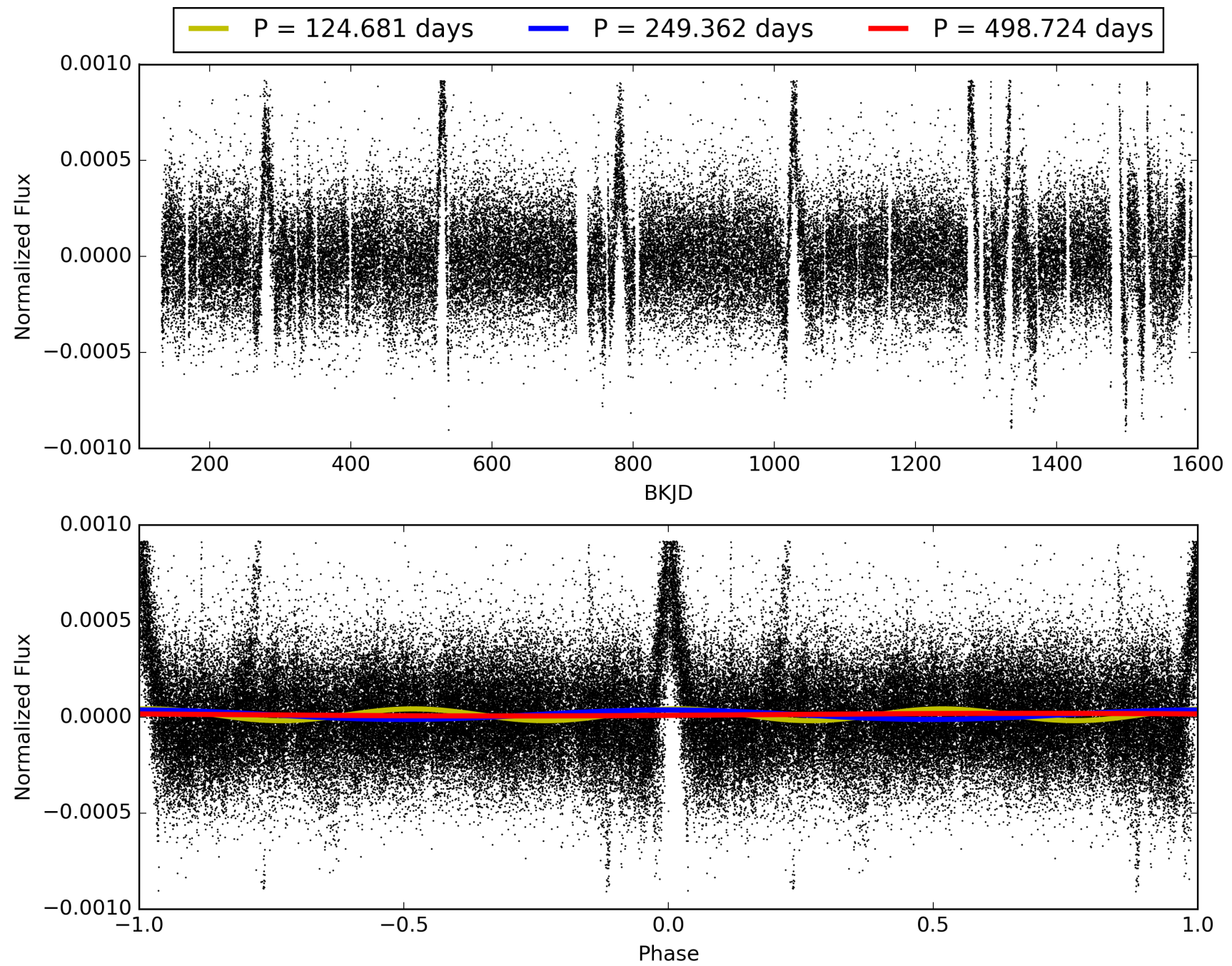
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:55:30 Z

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

# TCE 010845188-01, PDC Light Curves

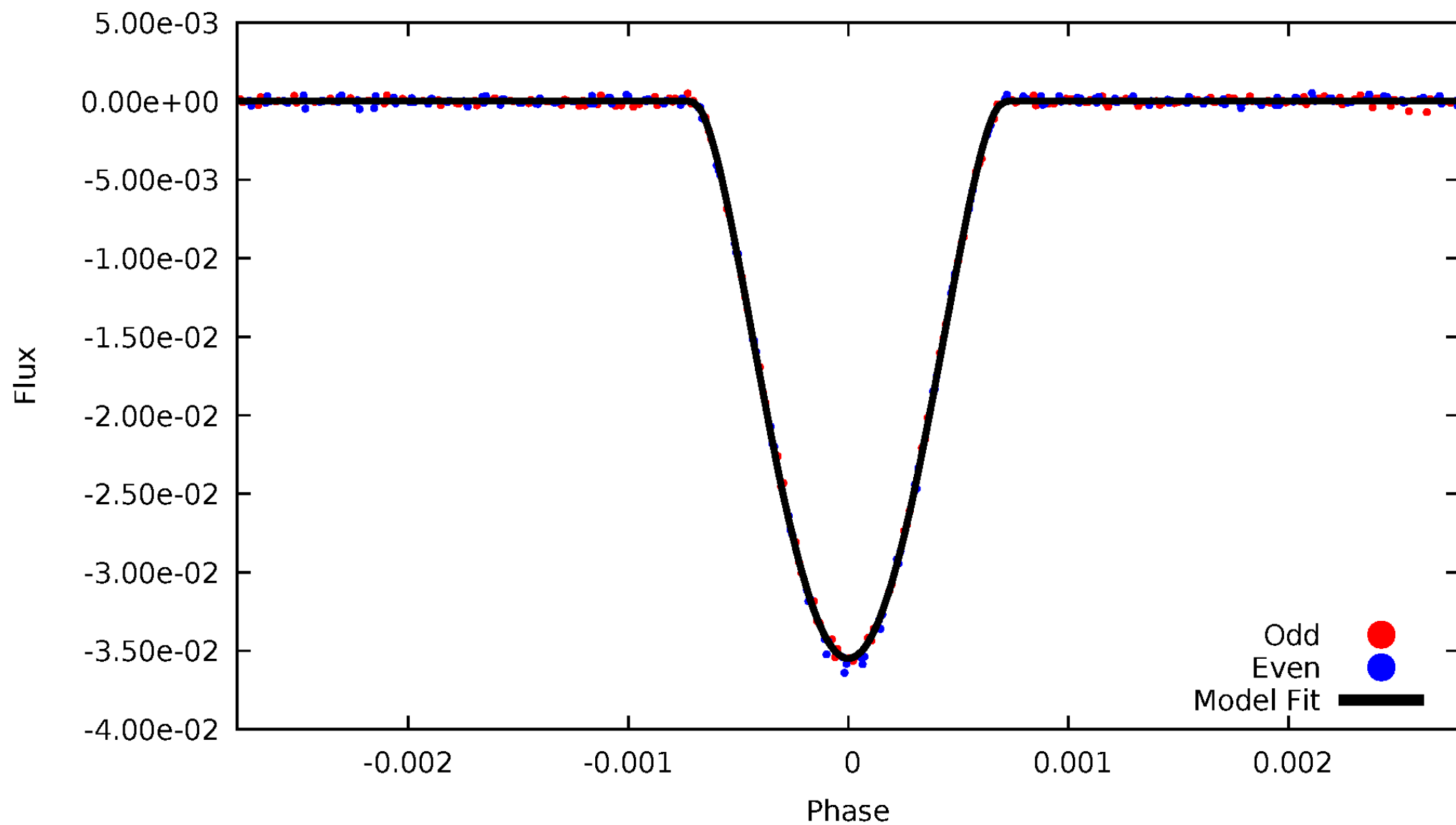


# TCE 010845188-01



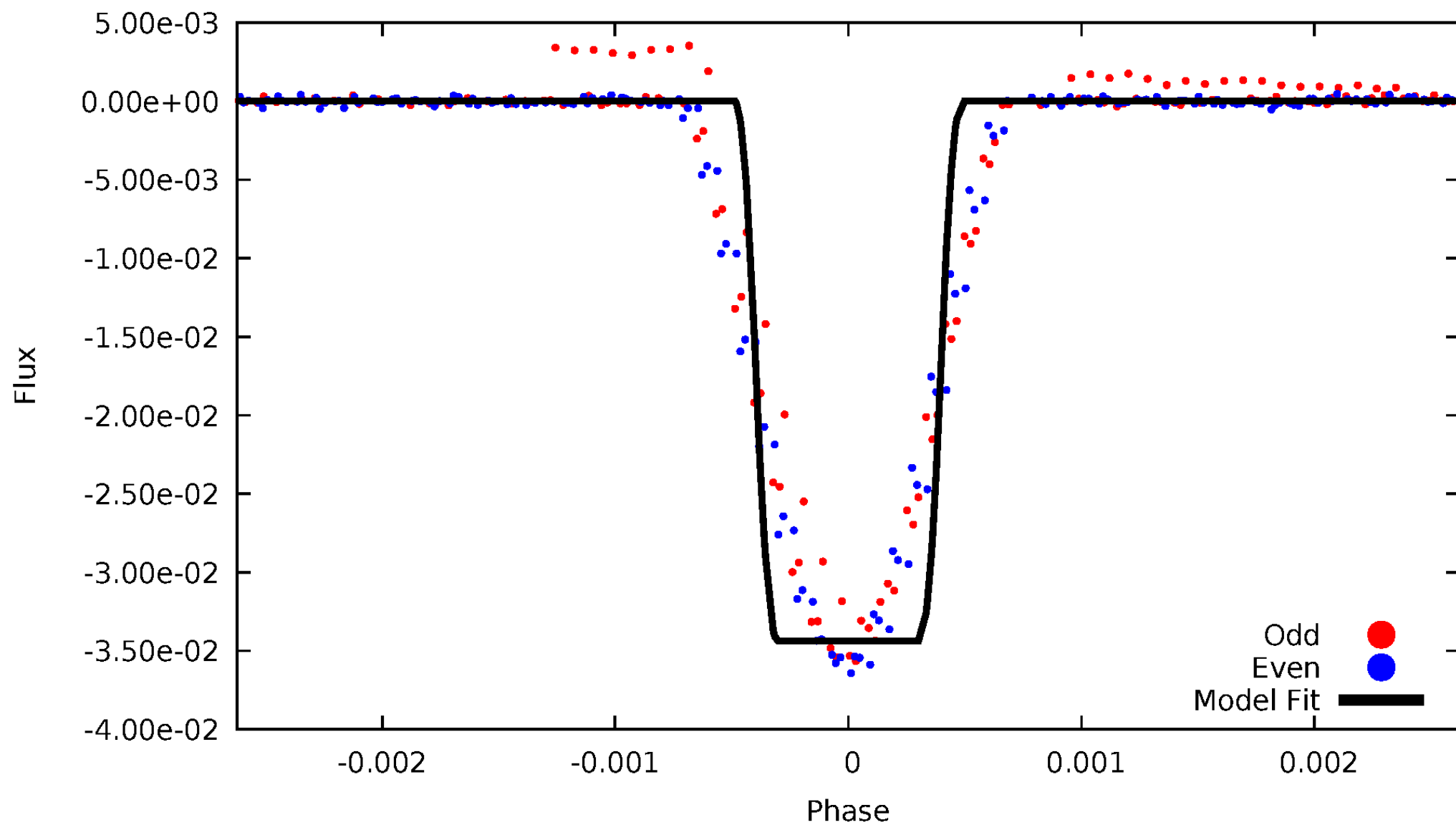
# DV Odd/Even

TCE 010845188-01



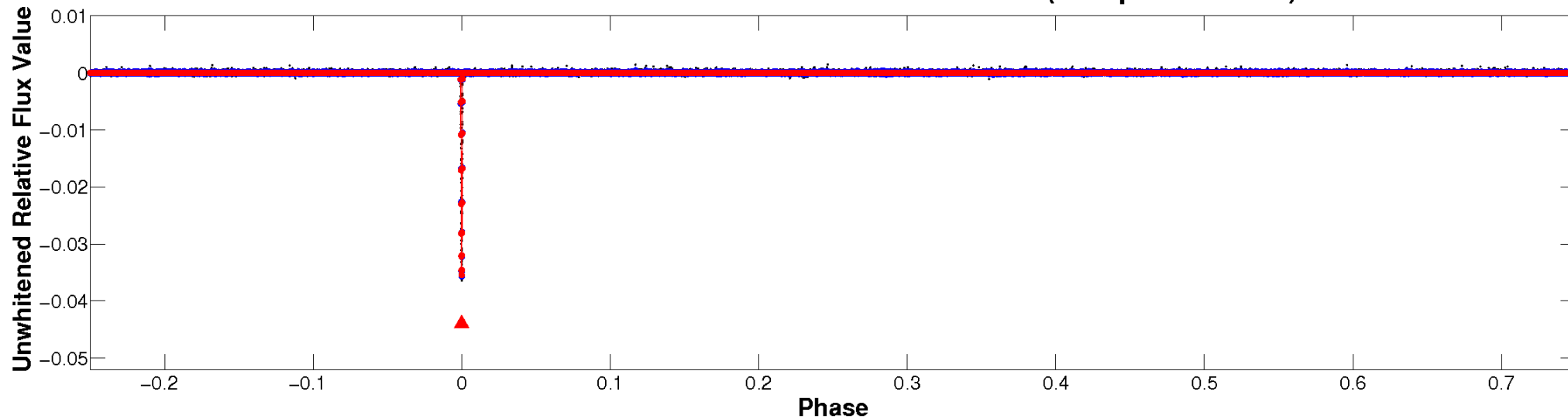
# ALT Odd/Even

TCE 010845188-01

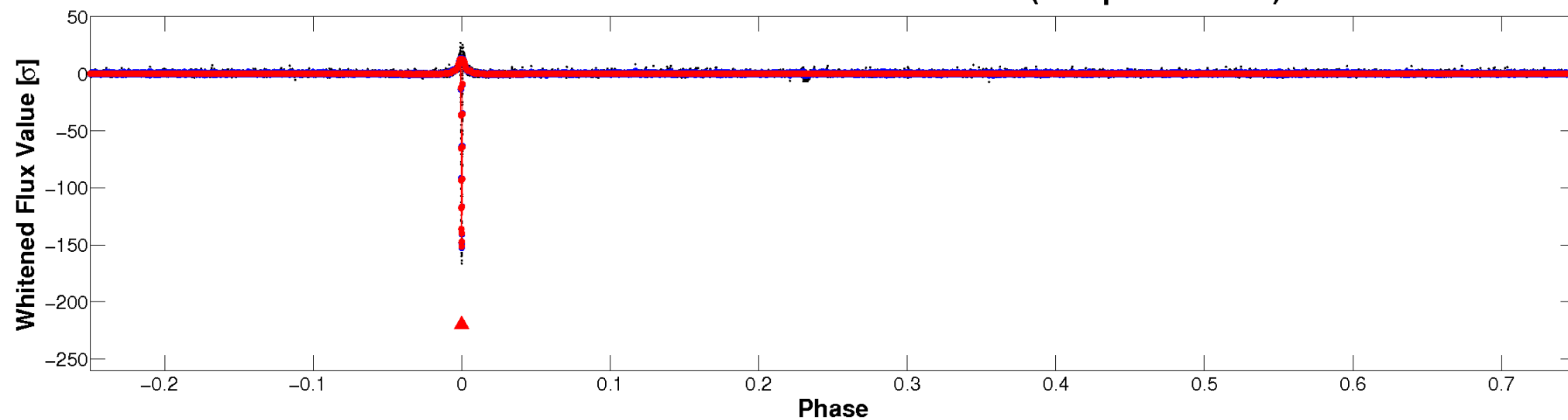


# Non-Whitened Vs. Whitened Light Curve

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

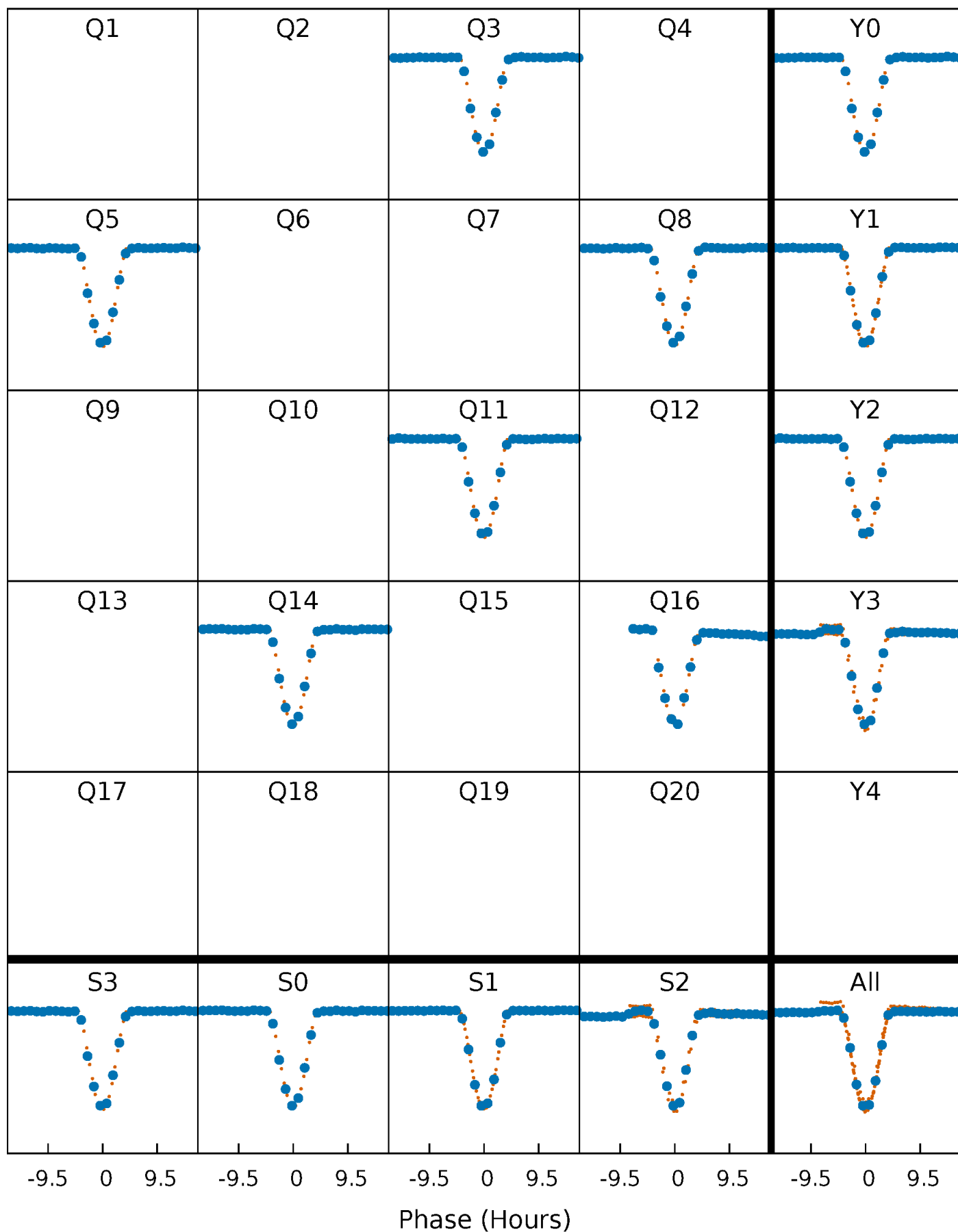


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

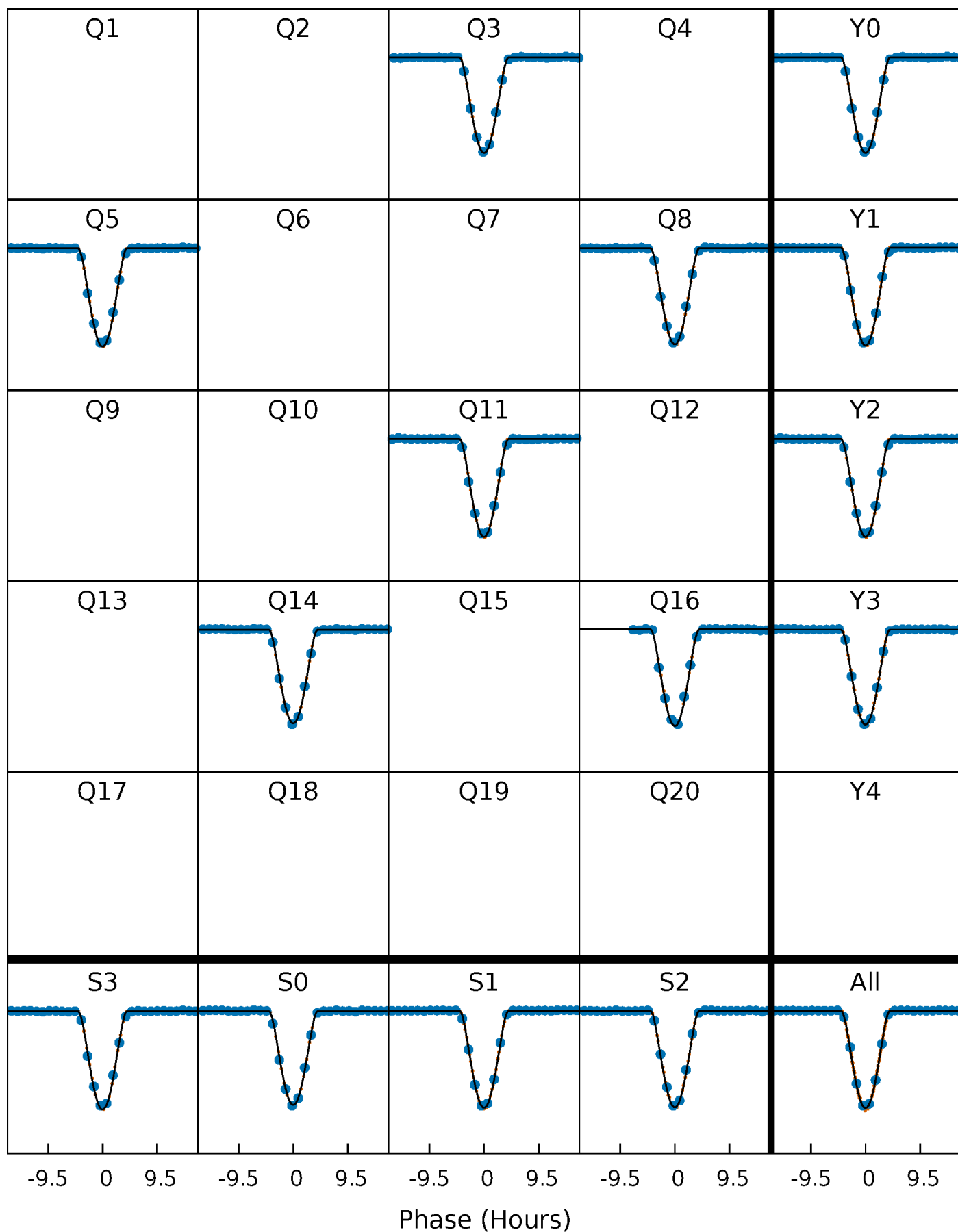
TCE 010845188-01 P=249.362199 Days  $T_0=279.658127$  (BKJD)





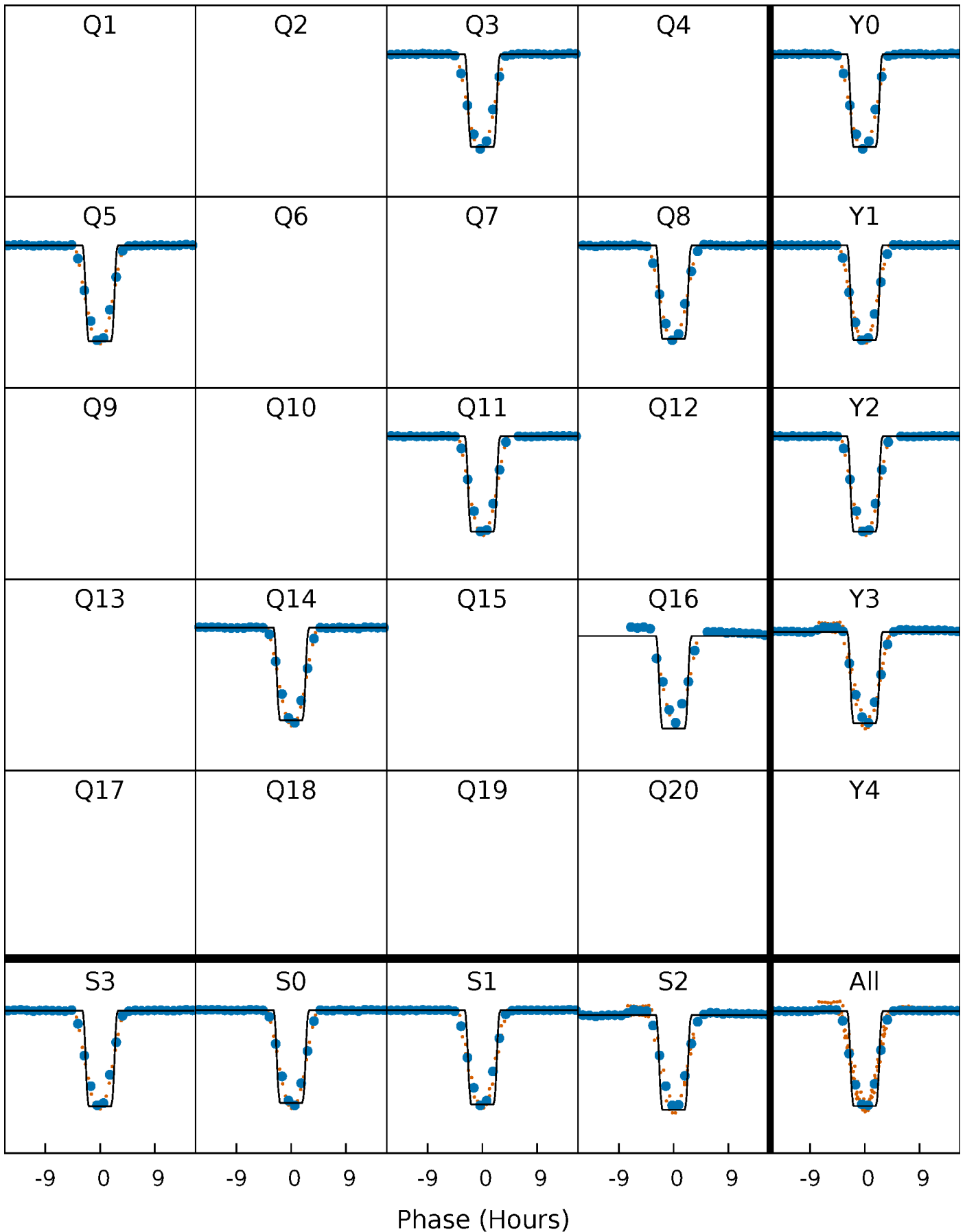
# DV Quarter-Phased Transit Curves

TCE 010845188-01 P=249.362199 Days  $T_0=279.658127$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

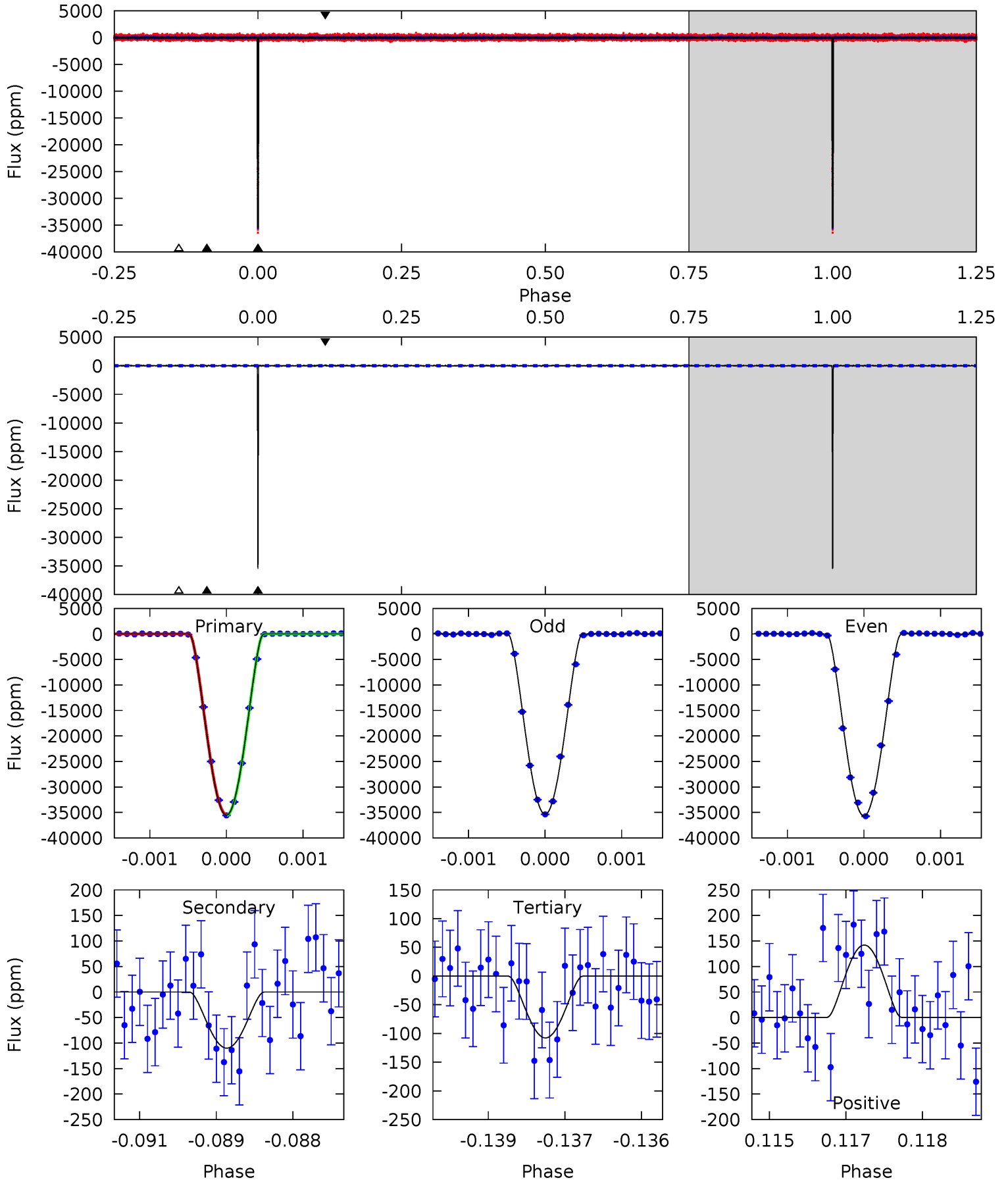
TCE 010845188-01 P=249.357544 Days  $T_0=279.669480$  (BKJD)



# DV Model-Shift Uniqueness Test

010845188-01, P = 249.362199 Days, E = 30.295928 Days

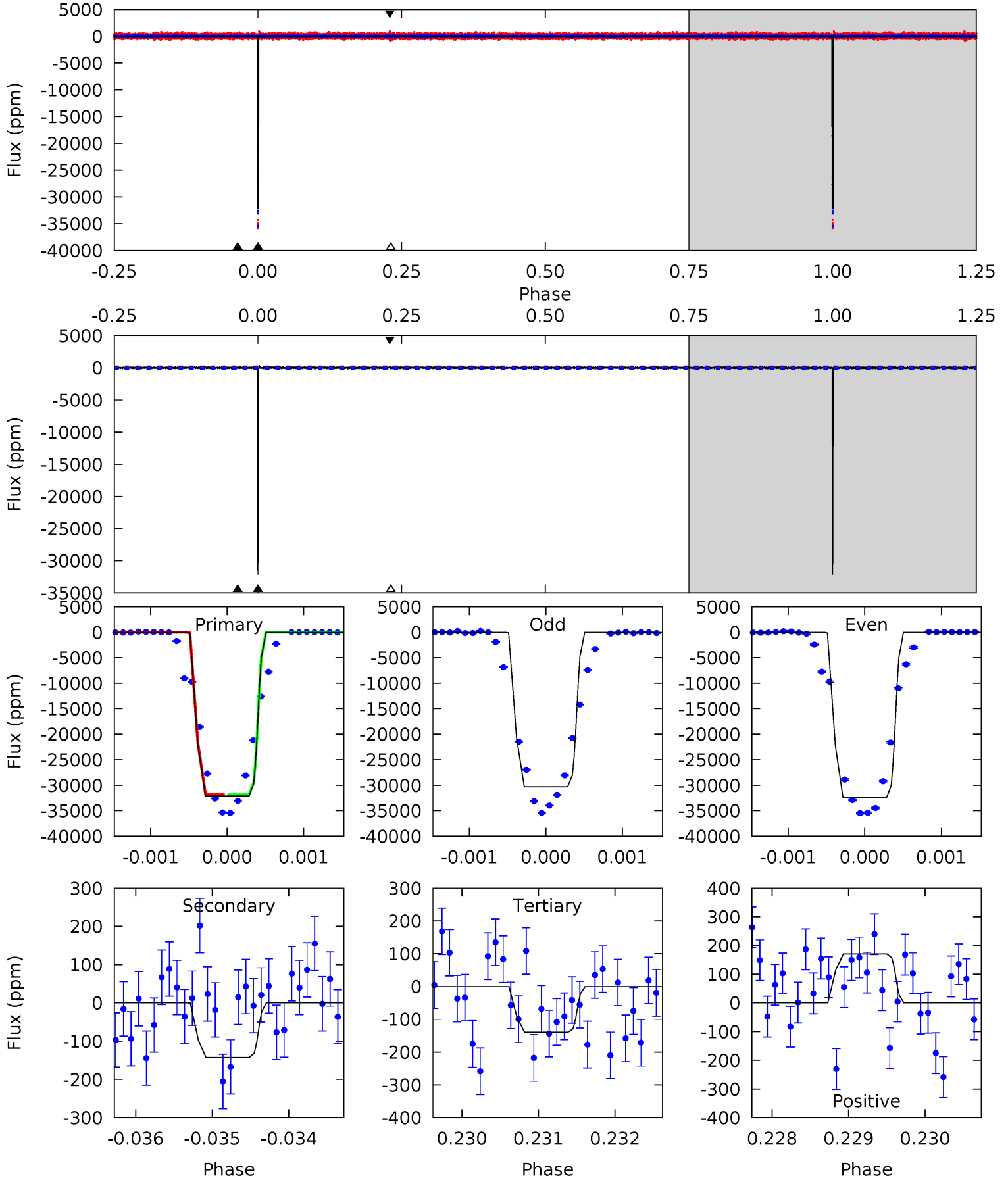
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1917	5.94	5.82	7.67	5.38	3.18	1.63	1912	1910	0.12	-1.73	9.04	1.00	0.00	5.16



# Alt Model-Shift Uniqueness Test

010845188-01, P = 249.357544 Days, E = 30.311936 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
895.9	3.97	3.89	4.75	5.45	3.30	1.13	892.0	891.2	0.08	-0.78	34.6	0.99	0.01	0



### Stellar Parameters For KIC 010845188

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5940^{+159}_{-159}$	$4.352^{+0.162}_{-0.180}$	$-0.460^{+0.300}_{-0.300}$	$1.020^{+0.281}_{-0.187}$	$0.853^{+0.116}_{-0.068}$	$1.133^{+0.972}_{-0.516}$
	+3%/-3%	+4%/-4%	+65%/-65%	+28%/-18%	+14%/-8%	+86%/-46%
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 010845188-01 / KOI 3602.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-110 \pm 19$	$31.72^{+5.35}_{-3.93}$	$432^{+30}_{-27}$	$2116^{+55}_{-61}$	$32^{+12}_{-9}$
Alt.	$-142 \pm 36$	$20.57^{+3.74}_{-3.34}$	$430^{+33}_{-27}$	$2400^{+94}_{-95}$	$100^{+50}_{-34}$

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

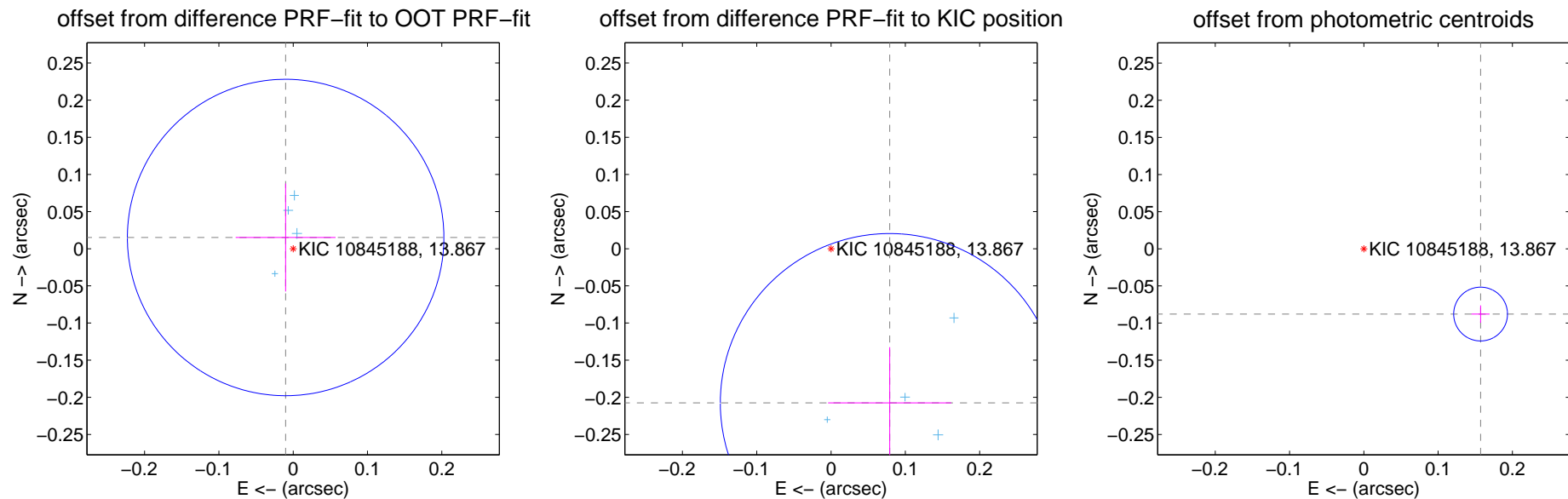
## DV Centroid Data

Supplemental centroid analysis for 010845188-01. Kepler magnitude: 13.87. Transit SNR 869.72

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

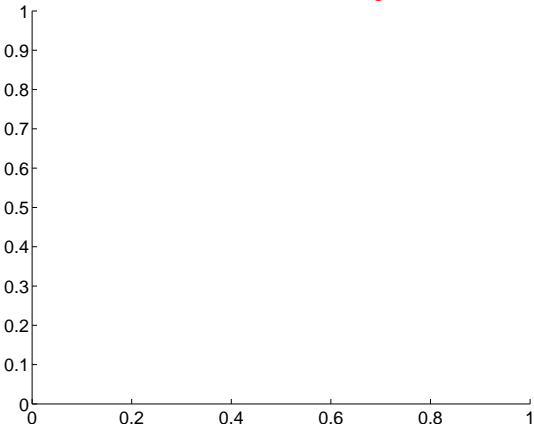
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.018 \pm 0.071$	0.26	$0.010 \pm 0.067$	$0.015 \pm 0.073$
PRF-fit source offset from KIC position	$0.222 \pm 0.076$	2.92	$-0.079 \pm 0.083$	$-0.207 \pm 0.075$
photometric centroid source offset	$0.18 \pm 0.01$	14.92	$-0.16 \pm 0.01$	$-0.09 \pm 0.01$



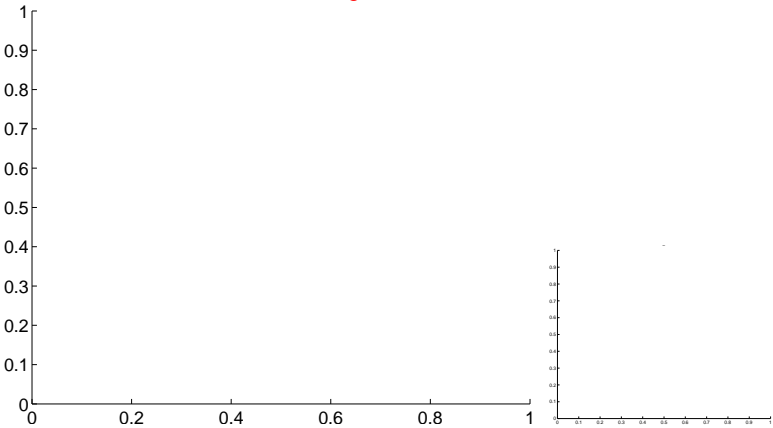
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

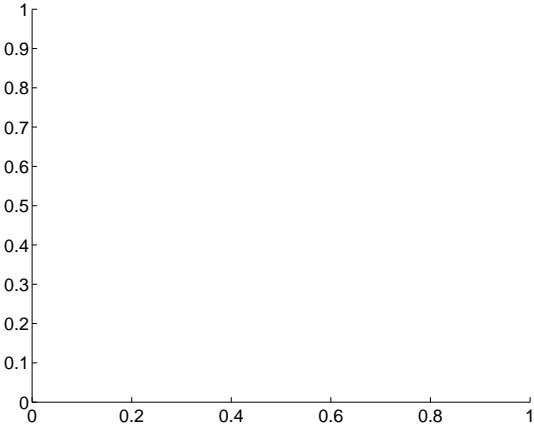
Q1 no difference image



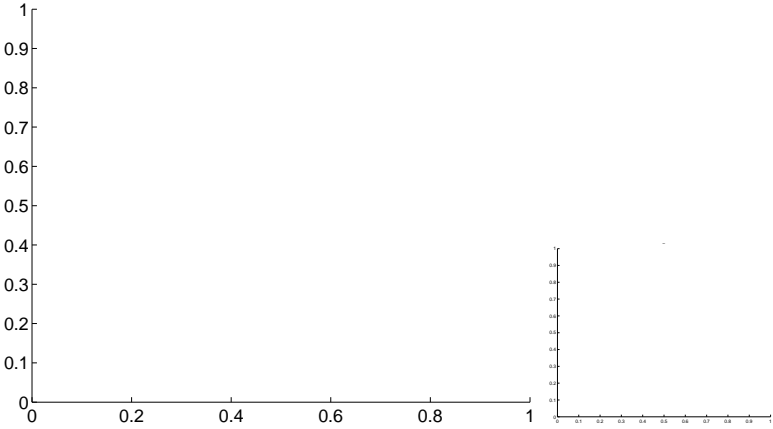
Q1 no OOT image



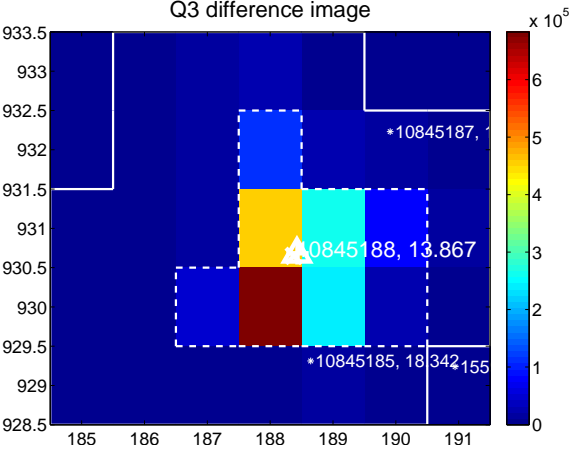
Q2 no difference image



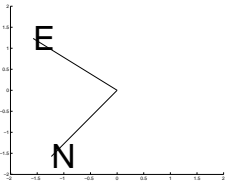
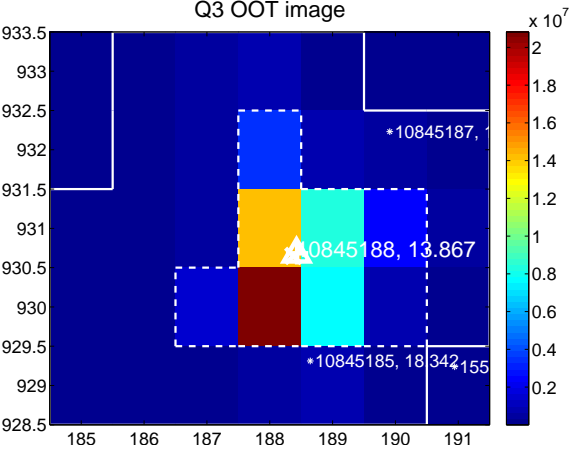
Q2 no OOT image



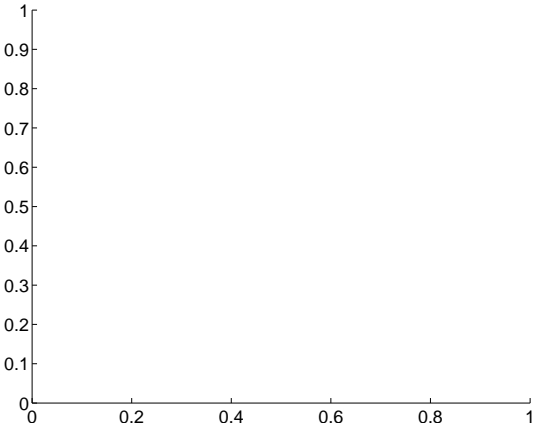
Q3 difference image



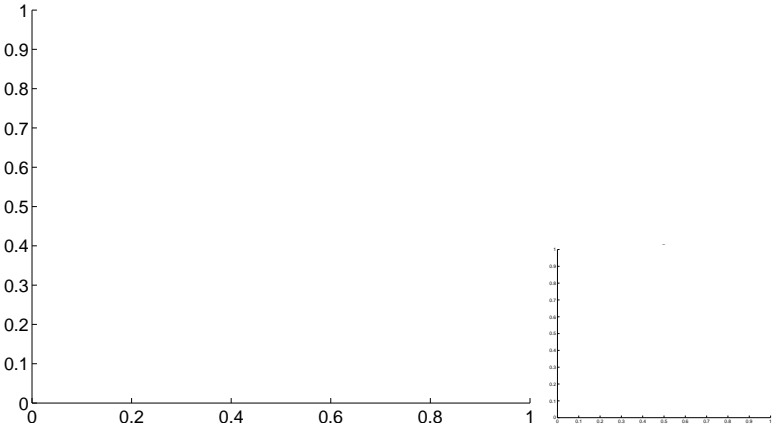
Q3 OOT image



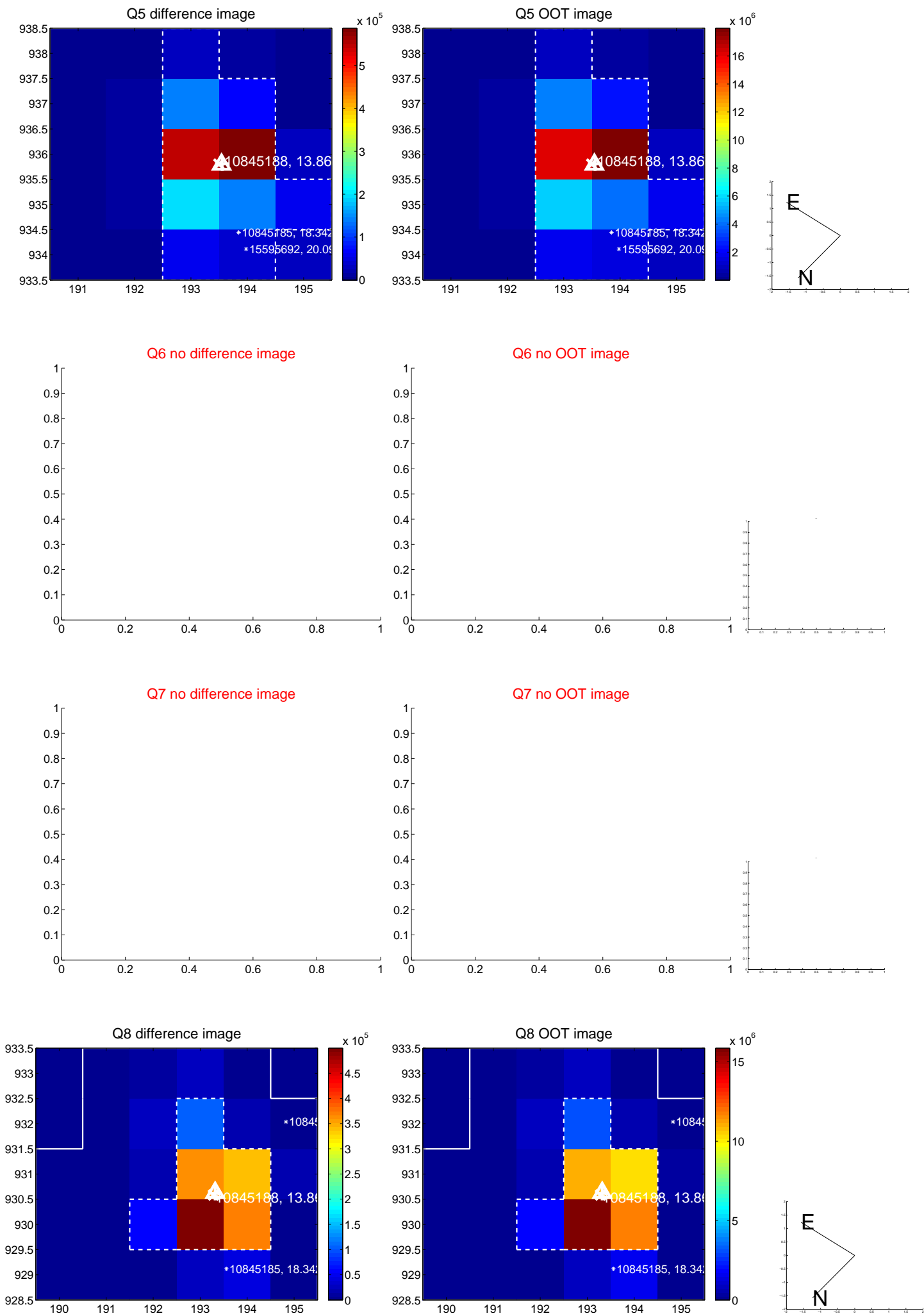
Q4 no difference image



Q4 no OOT image

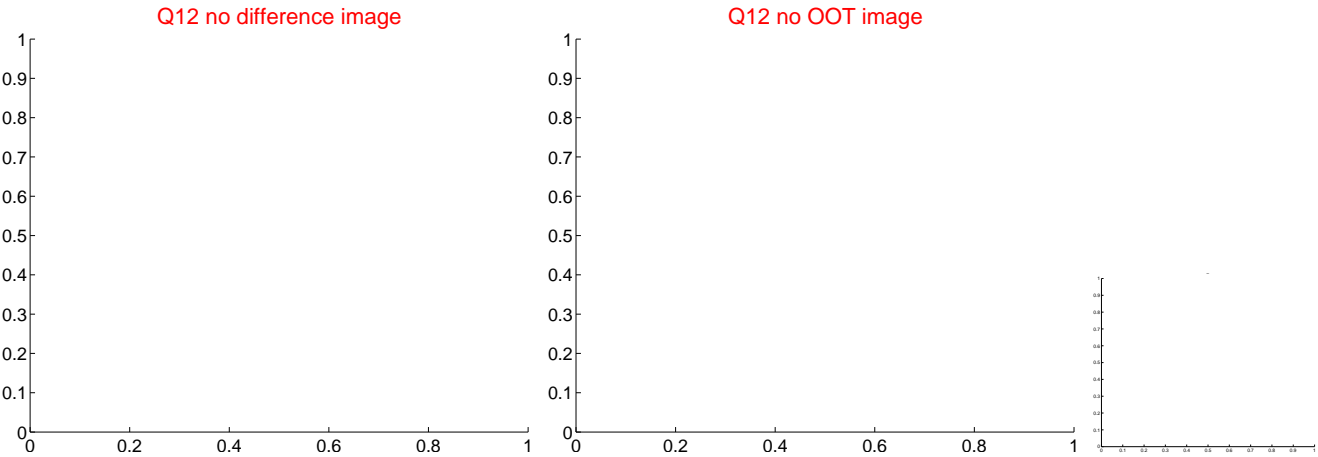
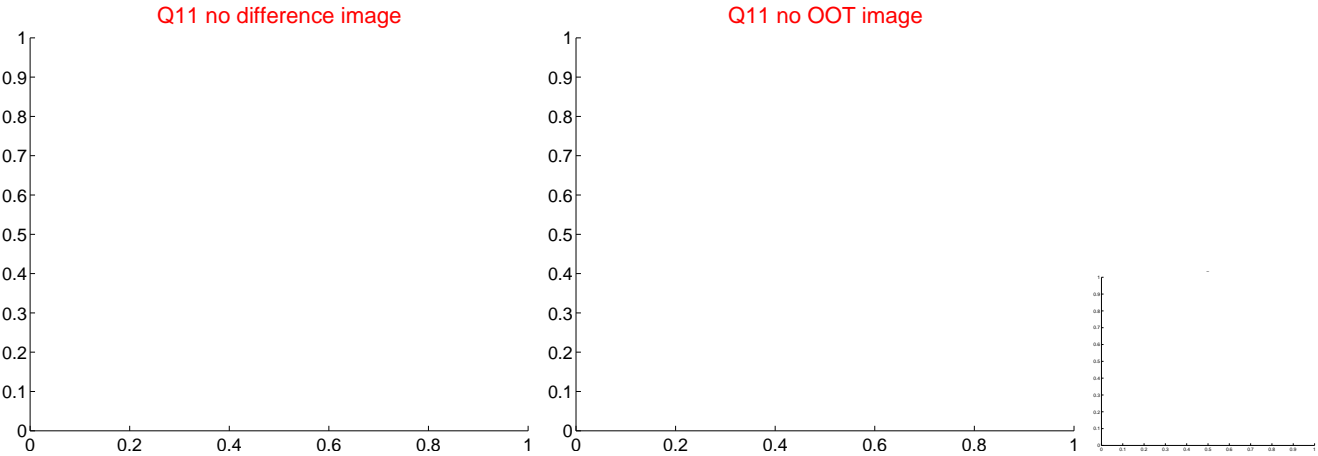
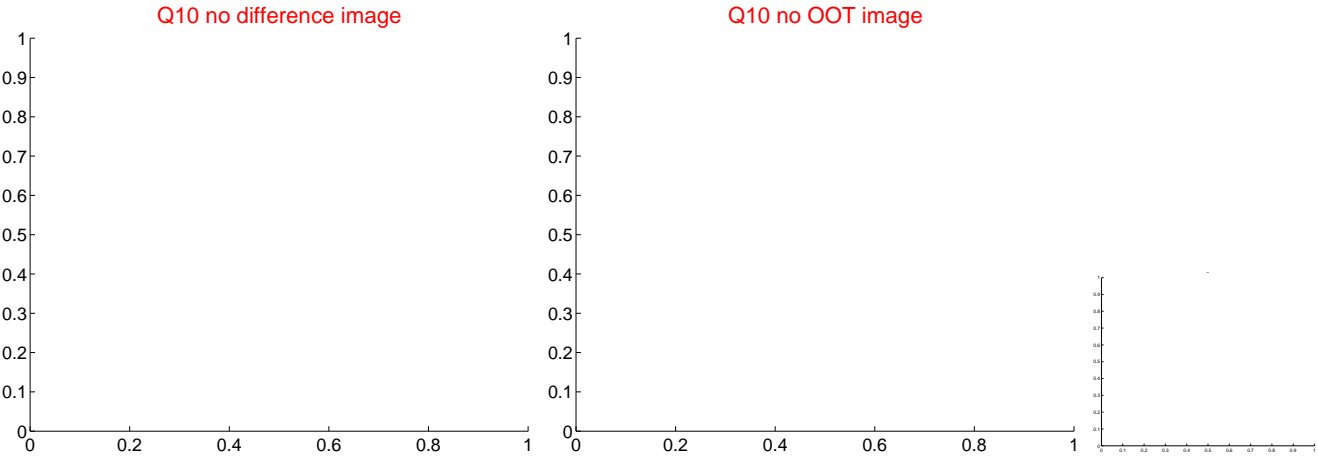
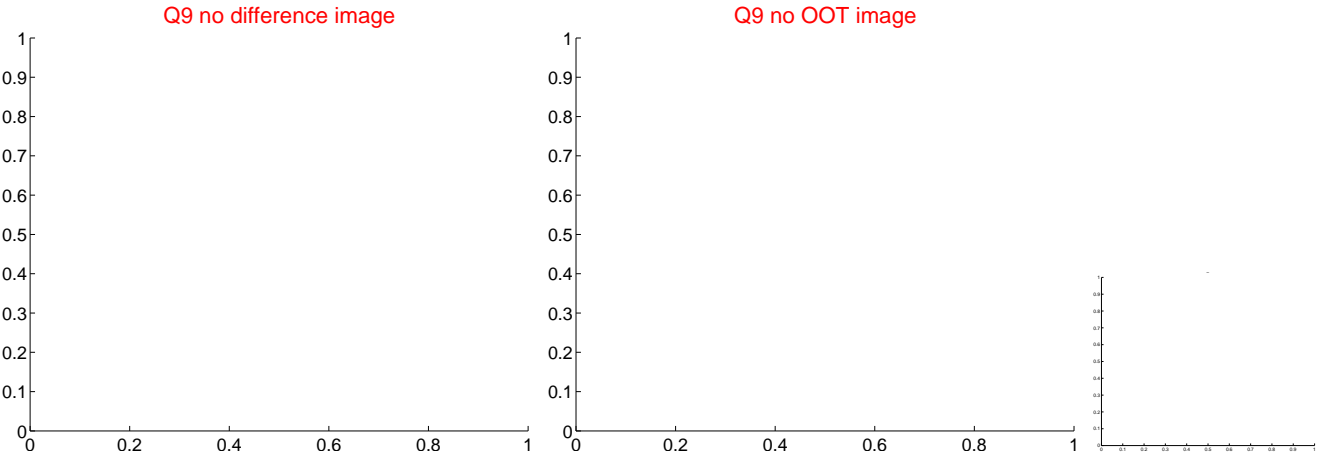


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



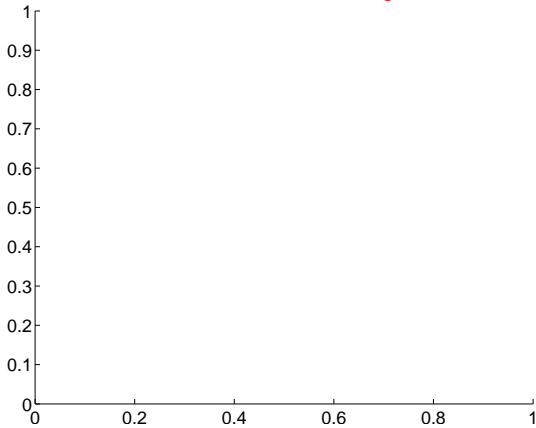


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

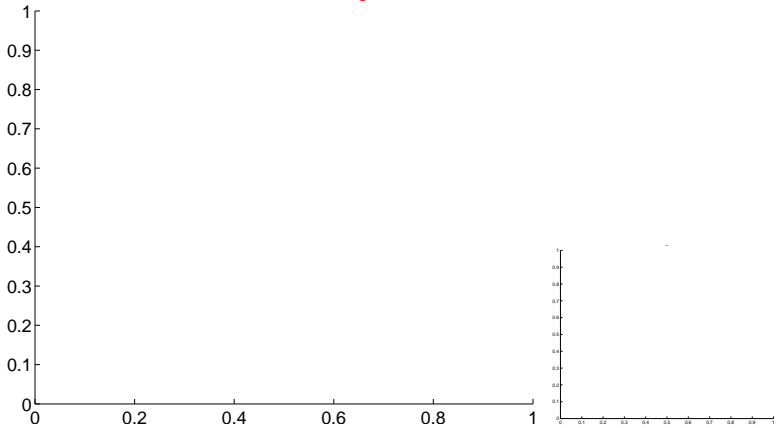


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

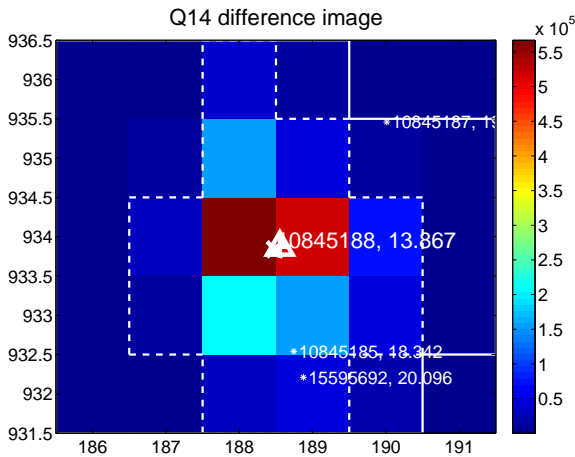
Q13 no difference image



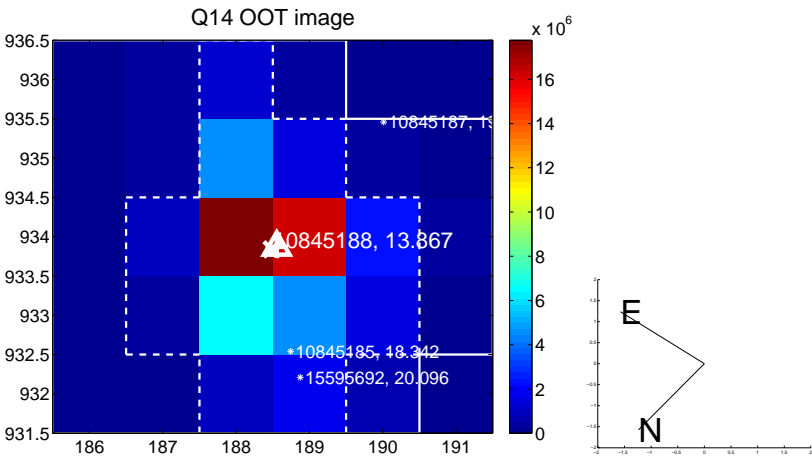
Q13 no OOT image



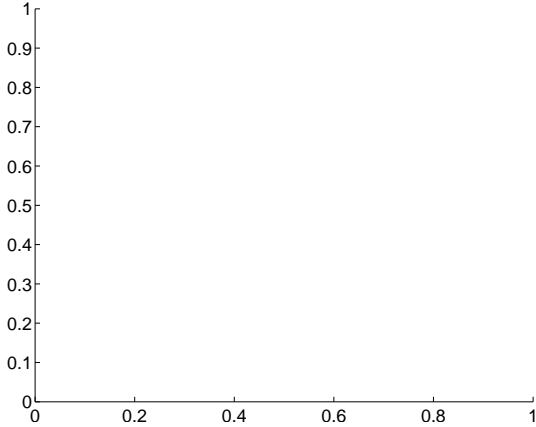
Q14 difference image



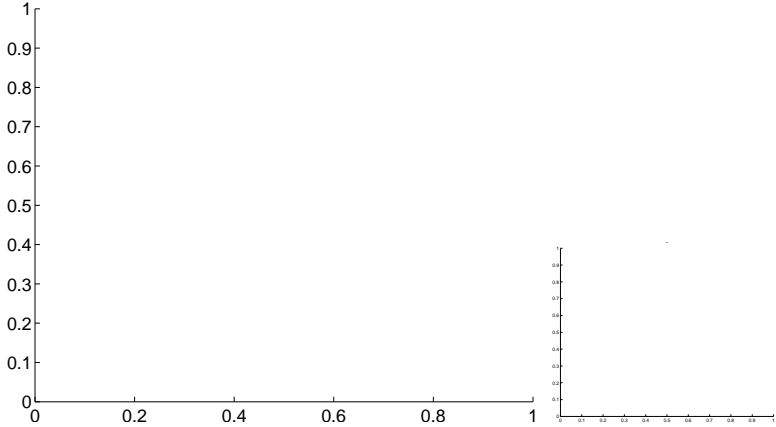
Q14 OOT image



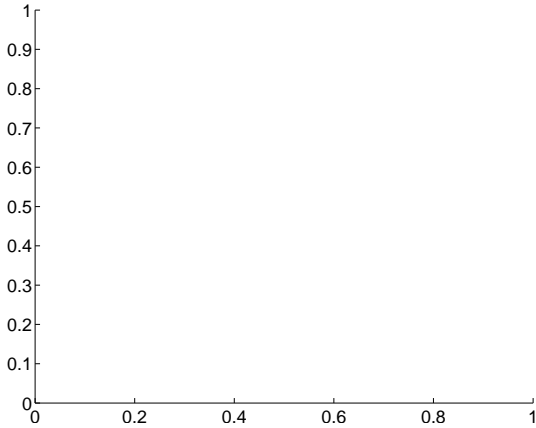
Q15 no difference image



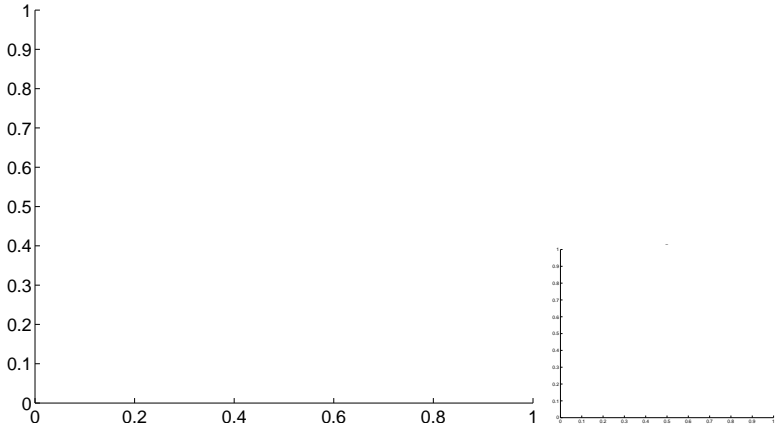
Q15 no OOT image



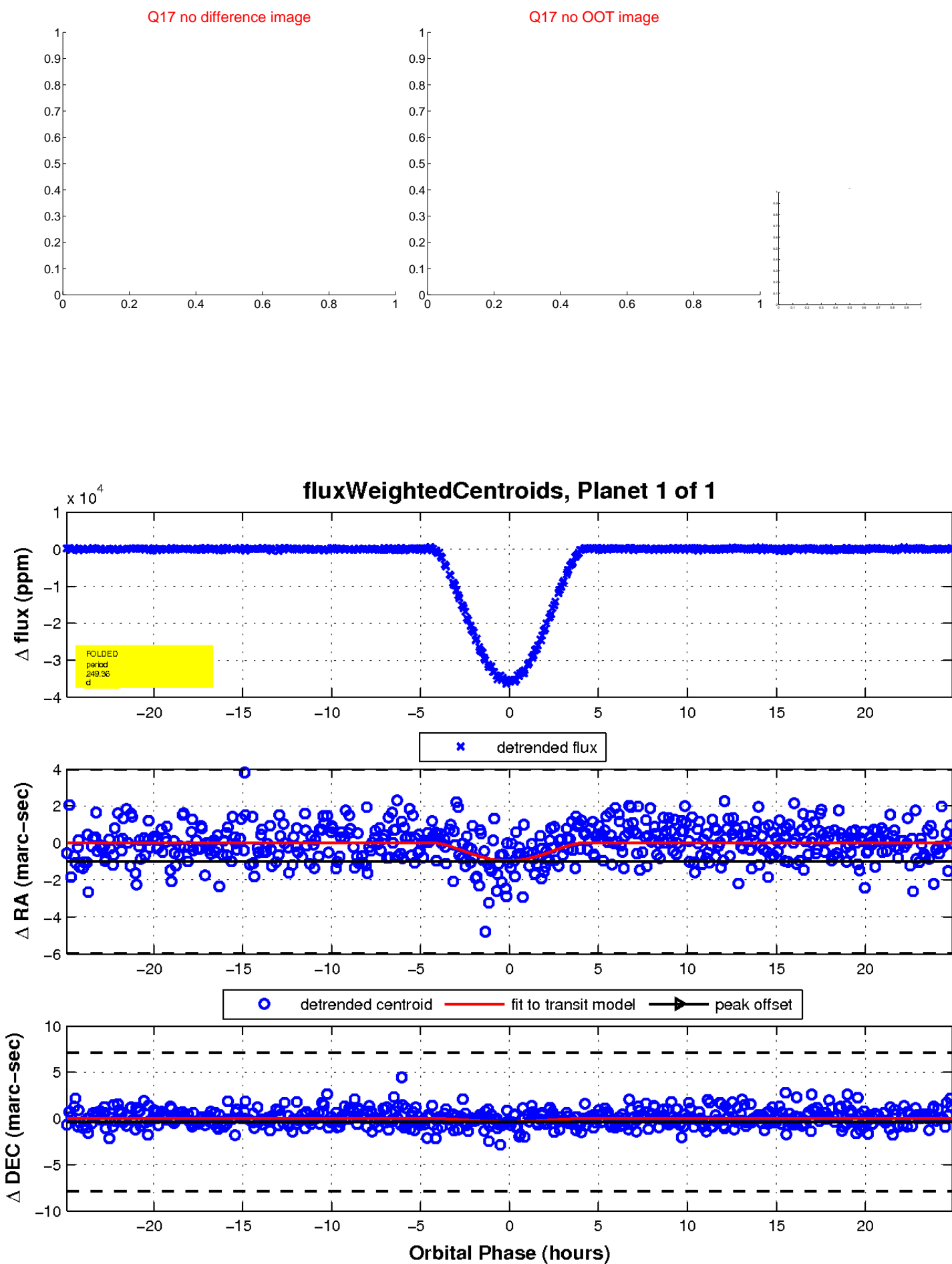
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

