

# KIC 008183116

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008183116-01	OBS	No	377.220147	501.229165	166.4	12.453	8.5	7.0	1.51	6351	2.12	3.16

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008183116-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_UNRESOLVED_OFFSET

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

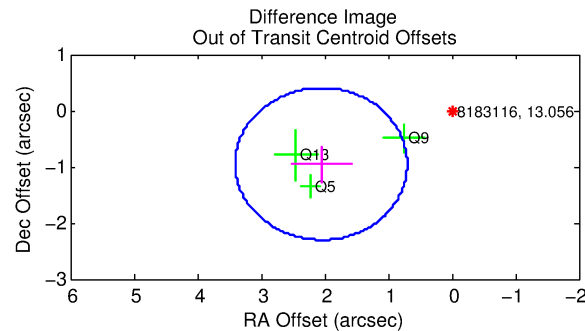
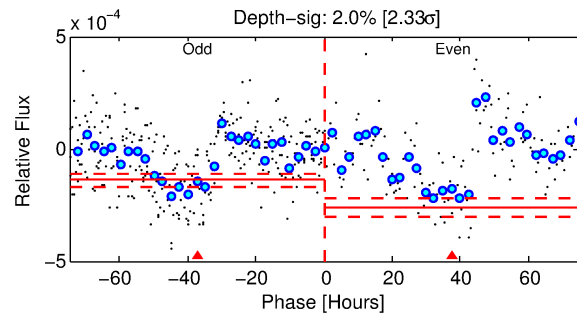
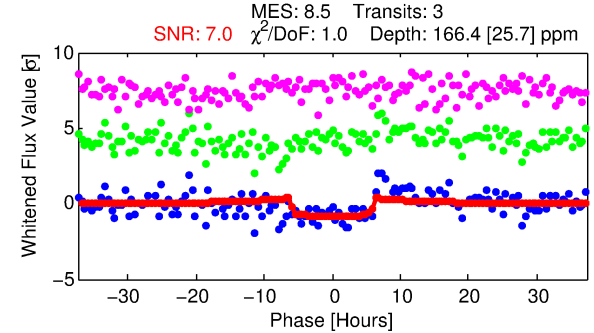
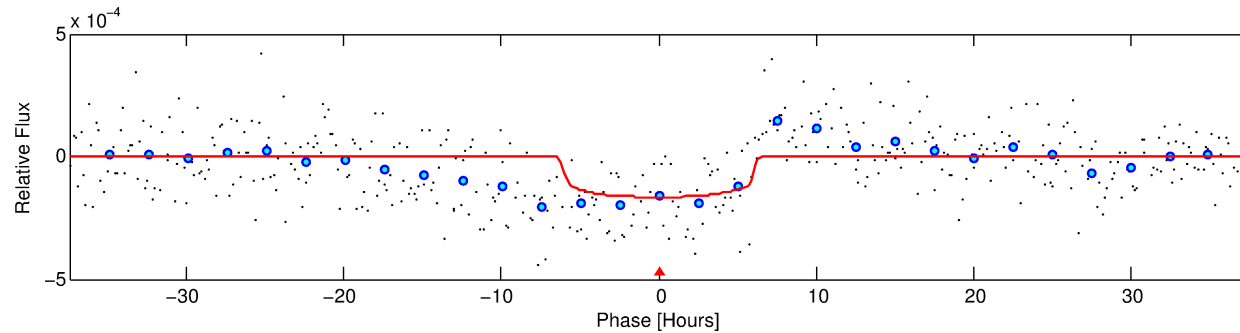
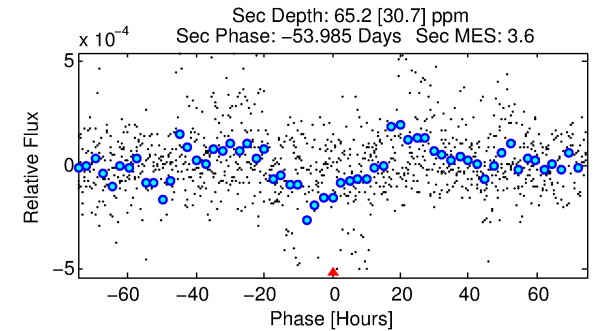
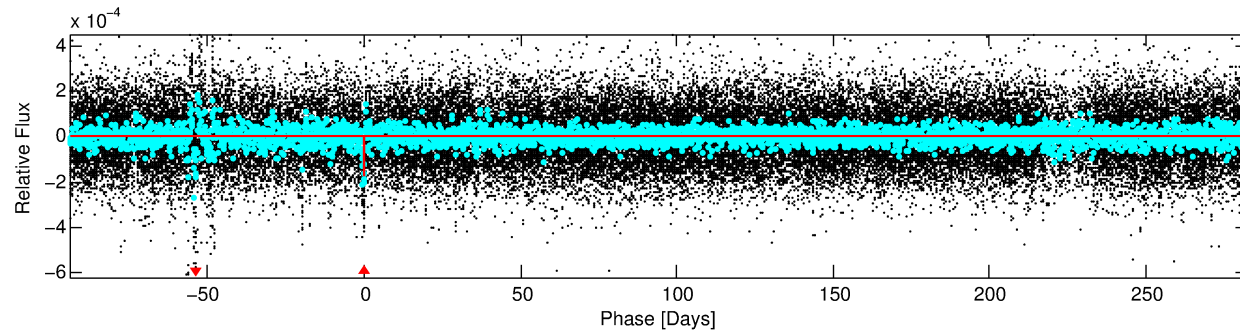
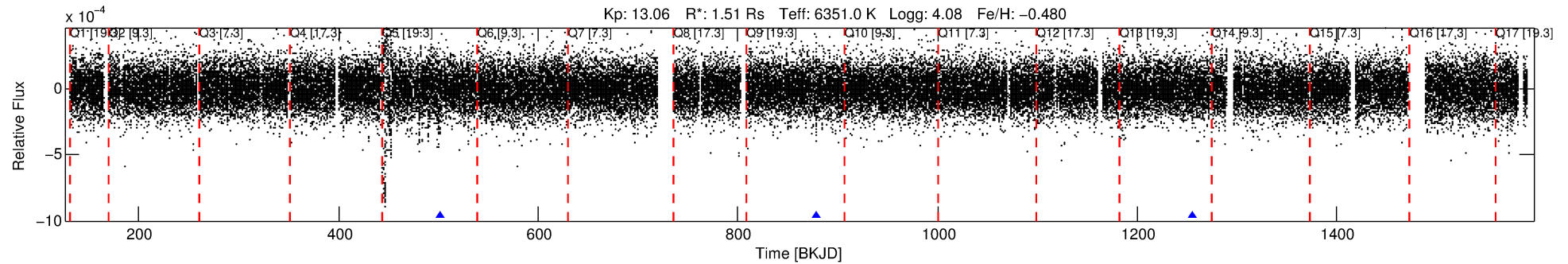
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008183116-01

No Significant Match Found

# DV One-Page Summary

KIC: 8183116 Candidate: 1 of 1 Period: 377.220 d



## DV Fit Results:

Period = 377.22015 [0.01261] d  
Epoch = 501.2292 [0.0173] BKJD  
Rp/R\* = 0.0129 [0.0042]  
a/R\* = 154.74 [266.55]  
b = 0.76 [0.96]  
Seff = 3.16 [1.43]  
Teff = 340 [38] K  
Rp = 2.12 [0.90] Re  
a = 1.0263 [0.2734] AU  
Ag = 8390.74 [7703.22] [1.09σ]  
Teffp = 5031 [1028] K [4.56σ]

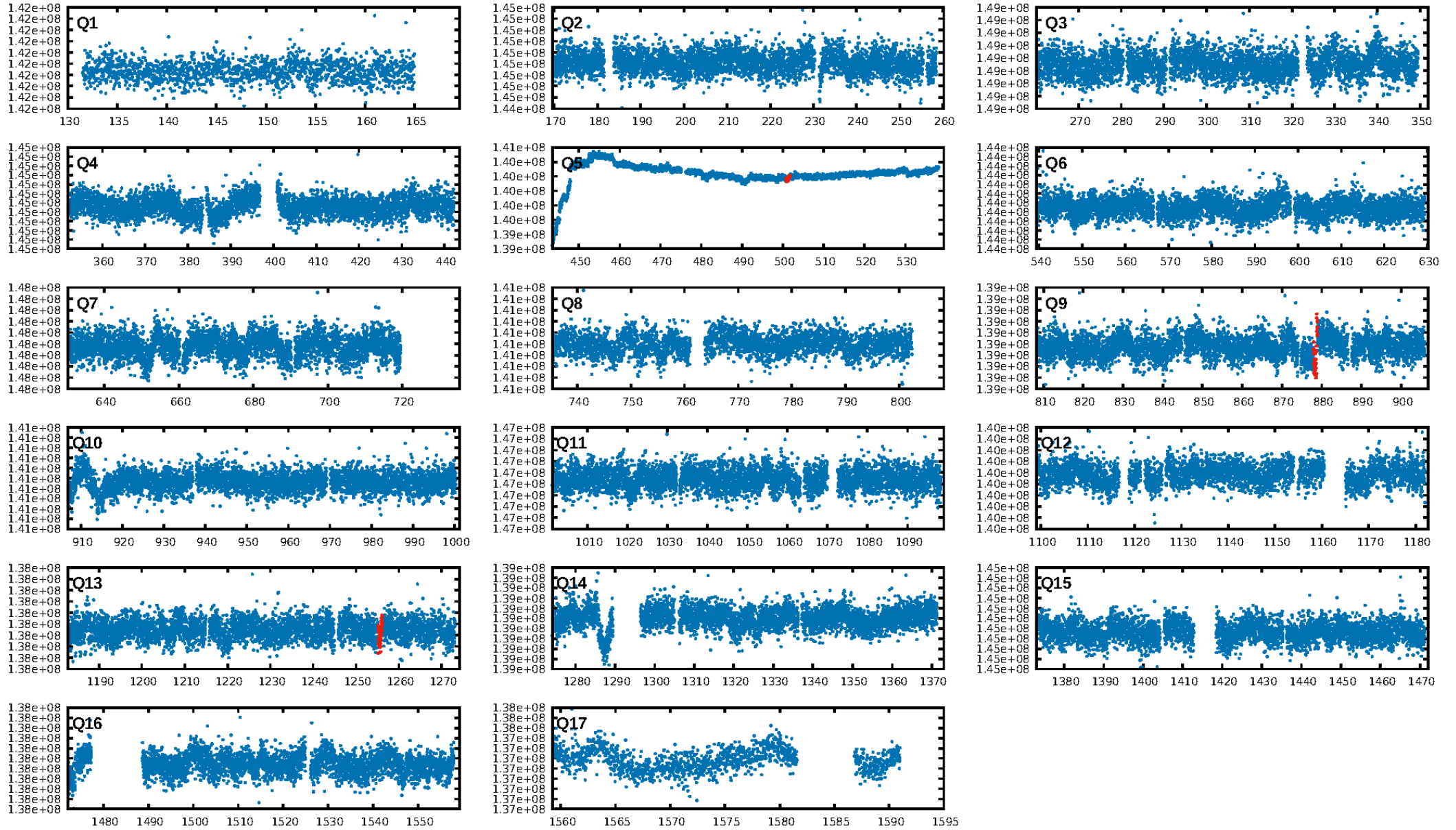
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 11.9%  
ModelChiSquareGof-sig: 98.6%  
**Bootstrap-pfa: 5.81e-10**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -5.542  
Centroid-sig: 11.2%  
Centroid-so: 1.272 arcsec [1.01σ]  
**OotOffset-rm: 2.264 arcsec [5.02σ]**  
**KicOffset-rm: 2.309 arcsec [5.02σ]**  
OotOffset-st: 0/0/0/3 [3]  
KicOffset-st: 0/0/0/3 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

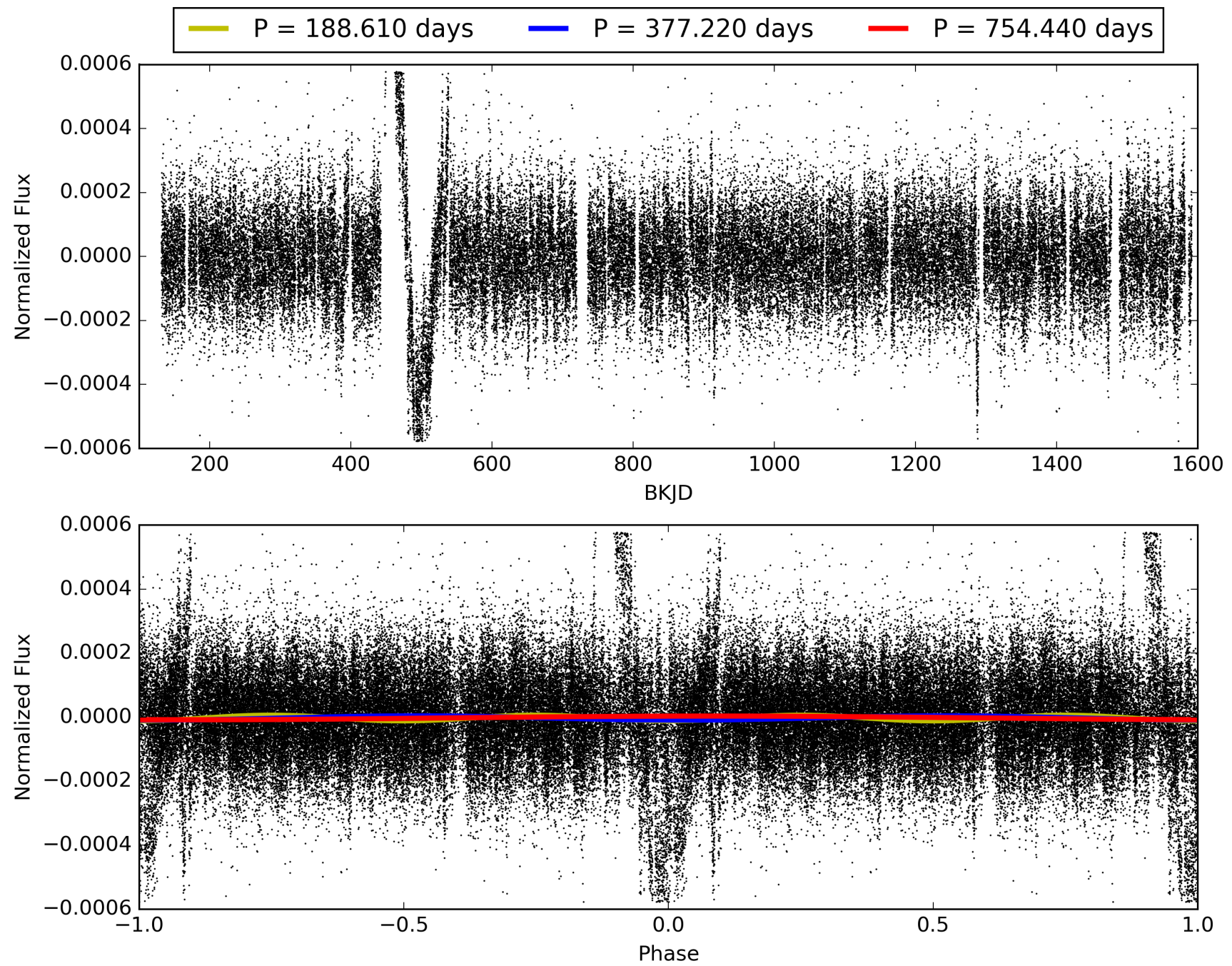
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:20:05 Z

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

# TCE 008183116-01, PDC Light Curves

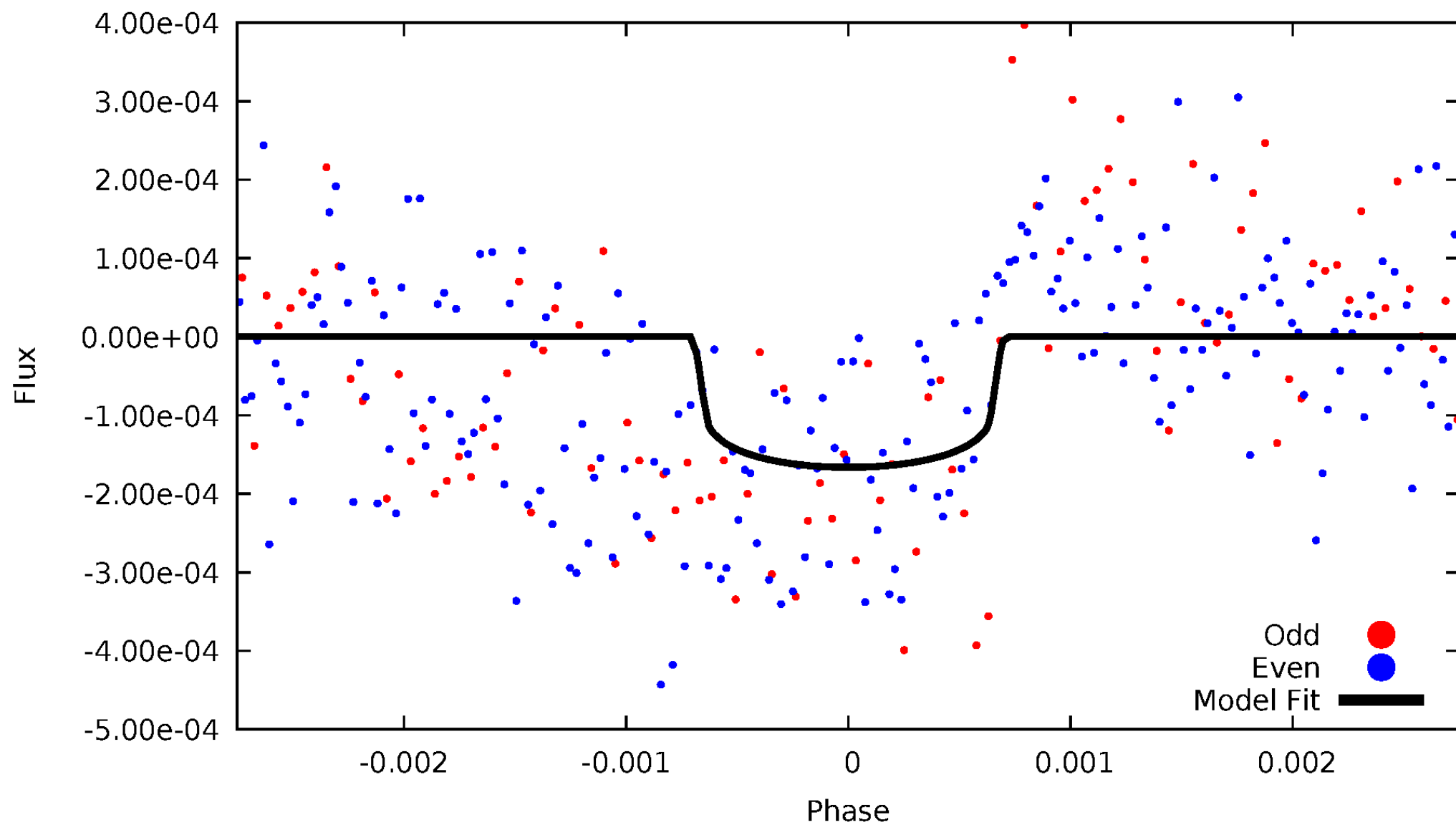


# TCE 008183116-01



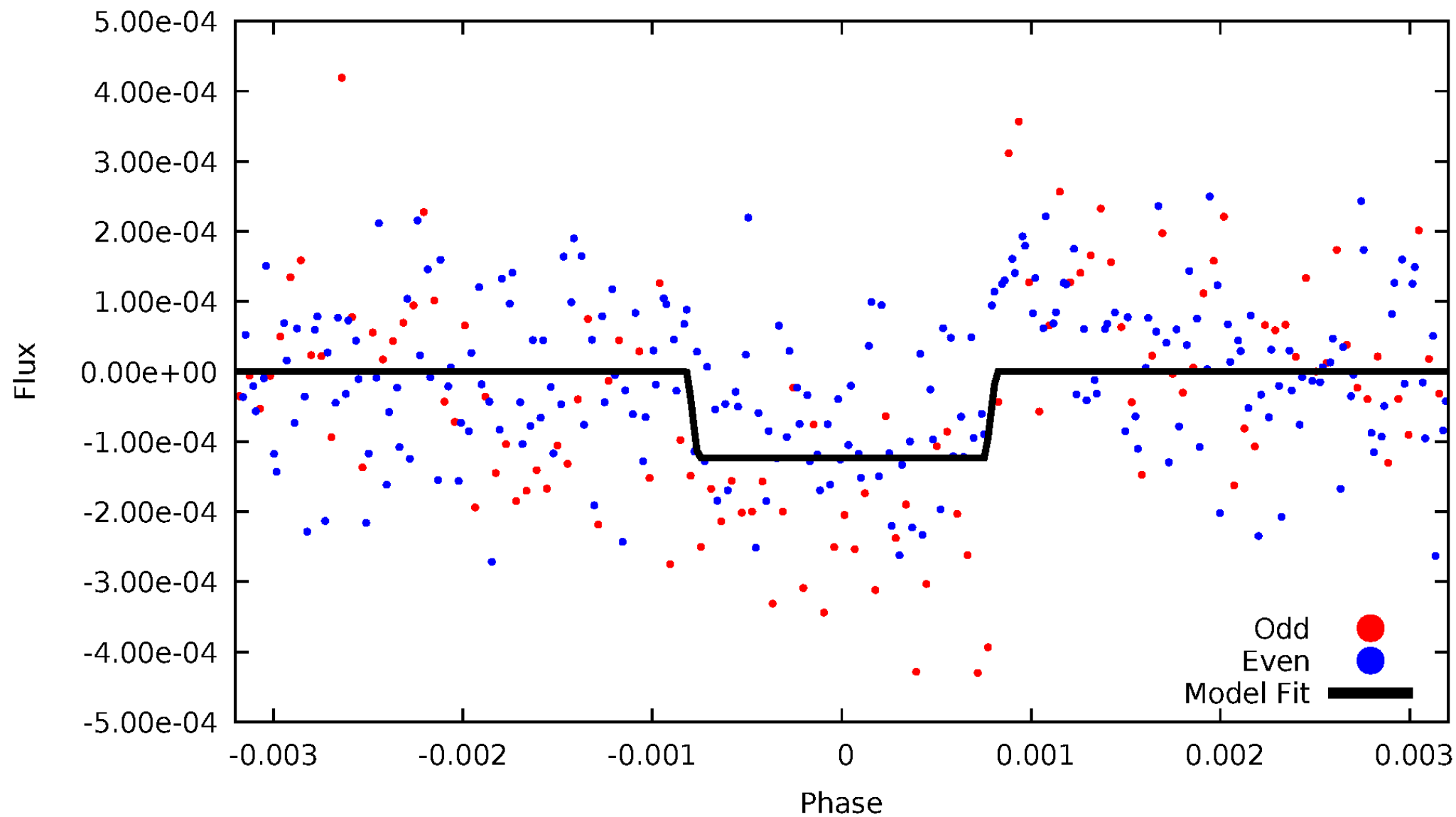
# DV Odd/Even

TCE 008183116-01



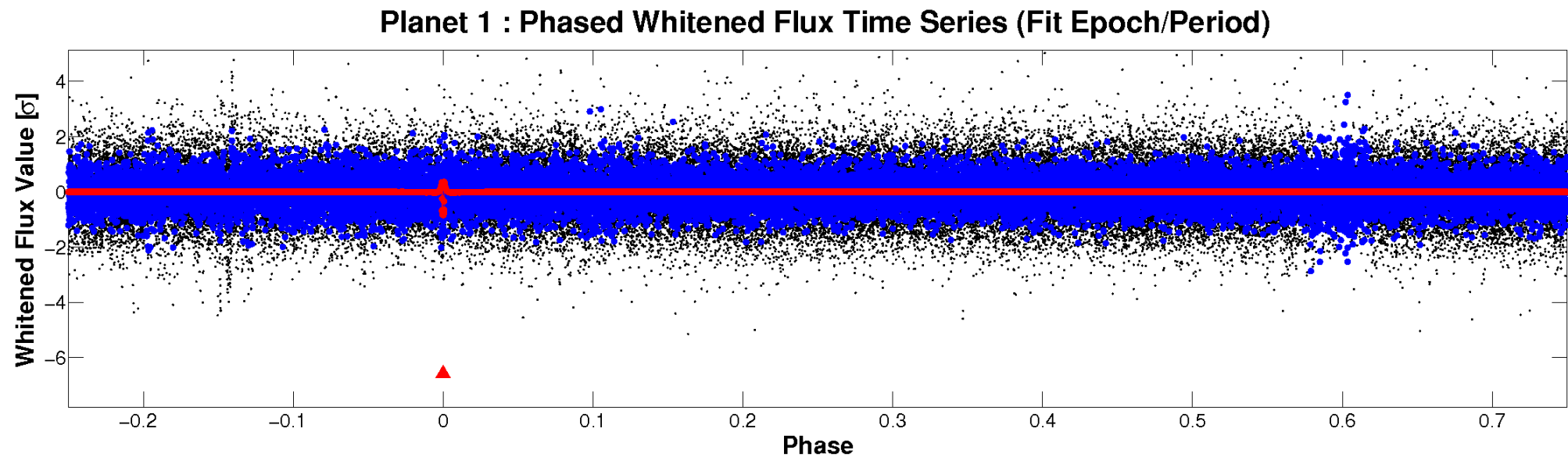
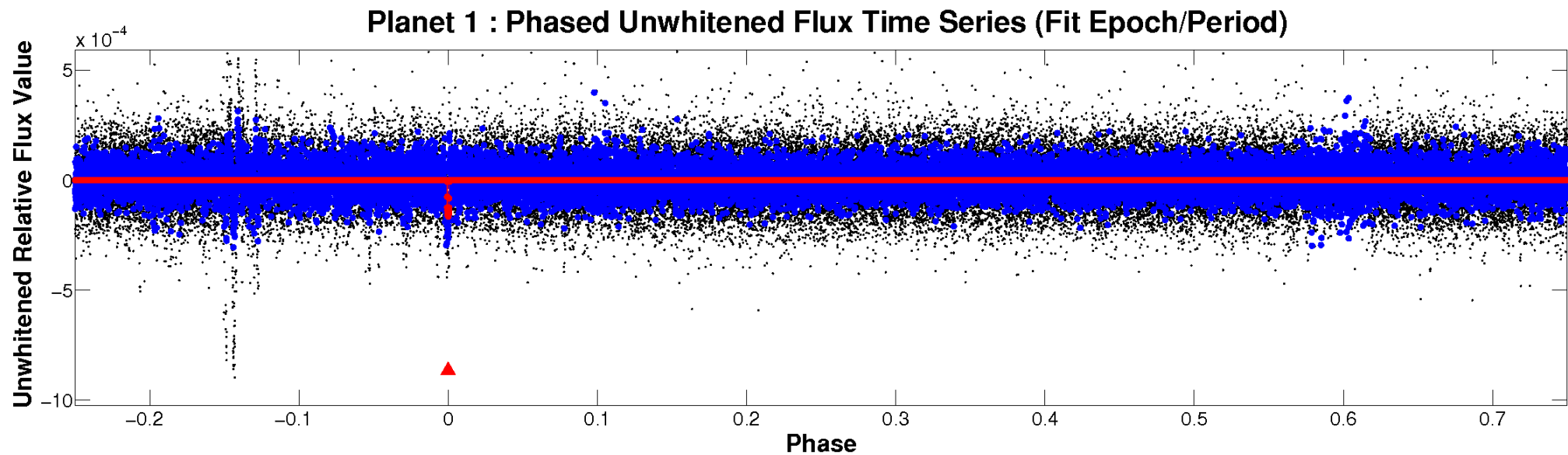
# ALT Odd/Even

TCE 008183116-01



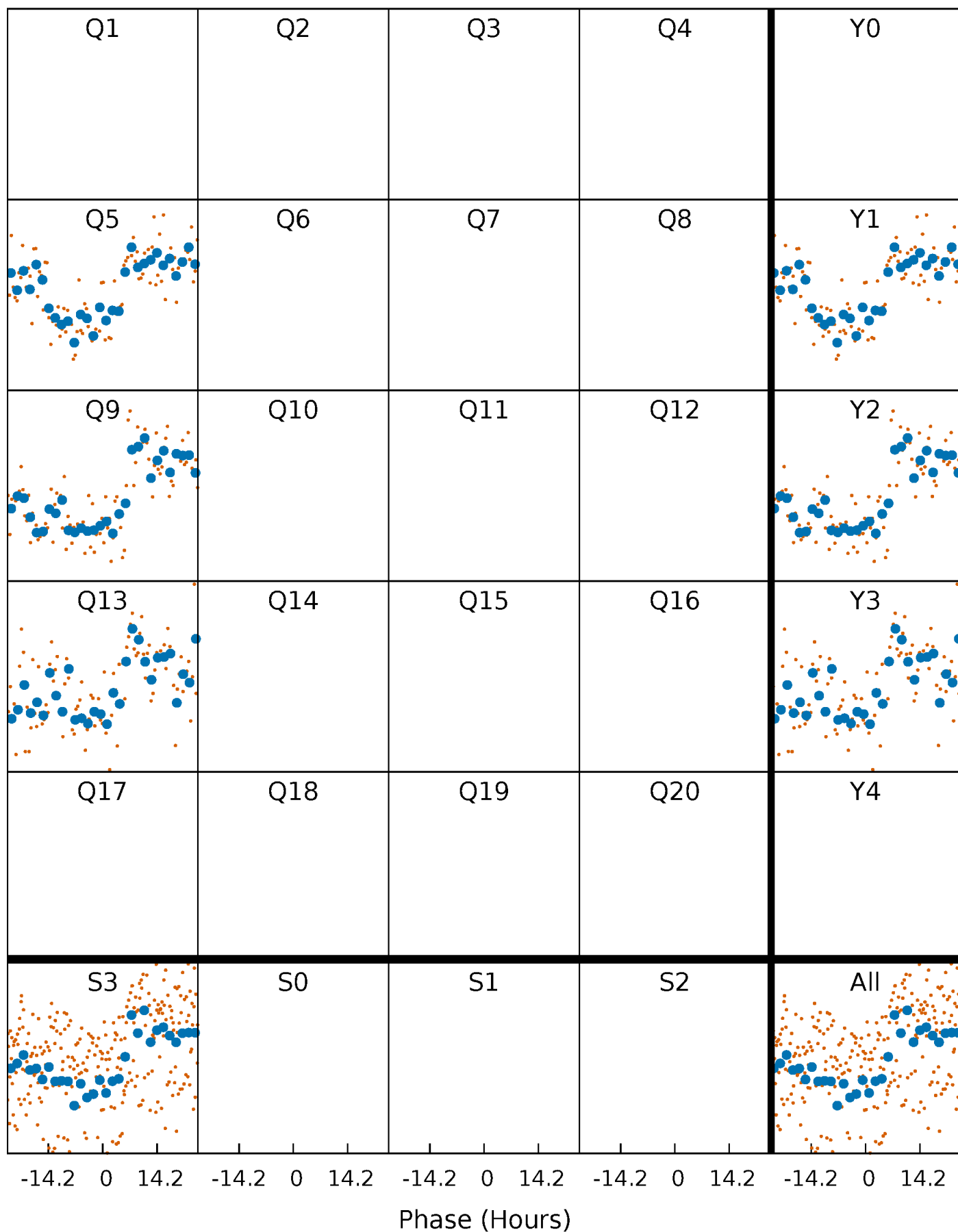


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

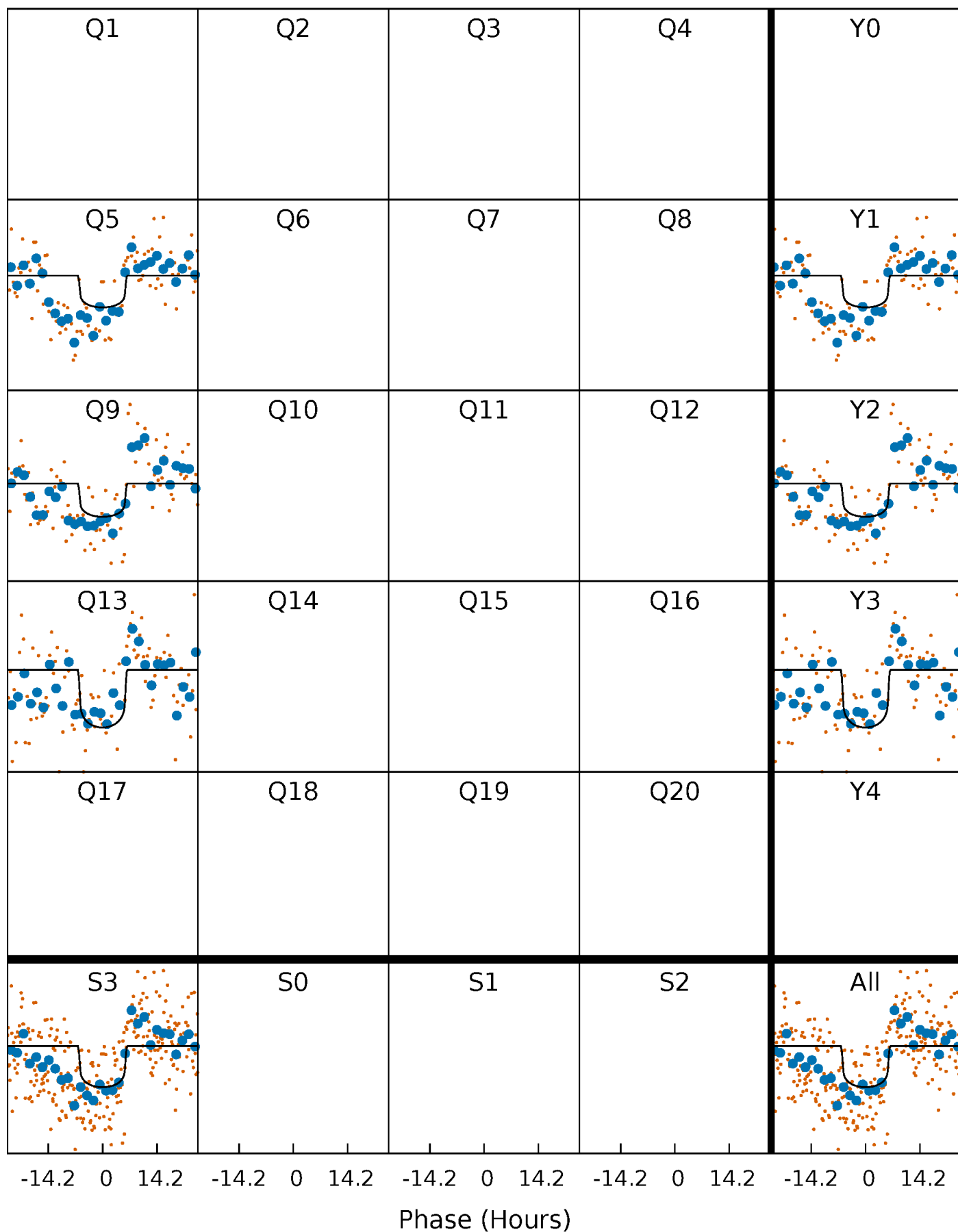
TCE 008183116-01 P=377.220147 Days  $T_0=501.229165$  (BKJD)





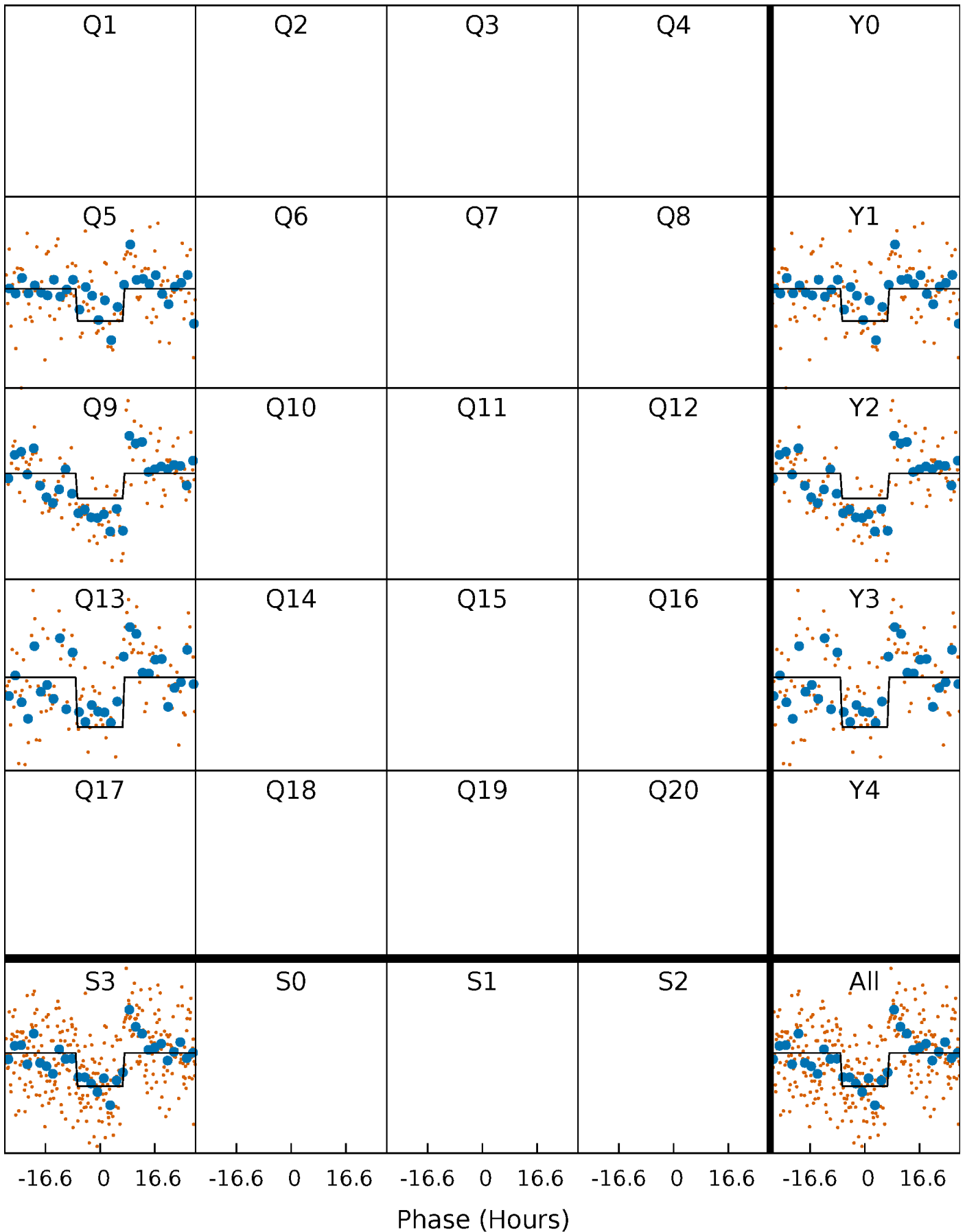
# DV Quarter-Phased Transit Curves

TCE 008183116-01 P=377.220147 Days  $T_0=501.229165$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

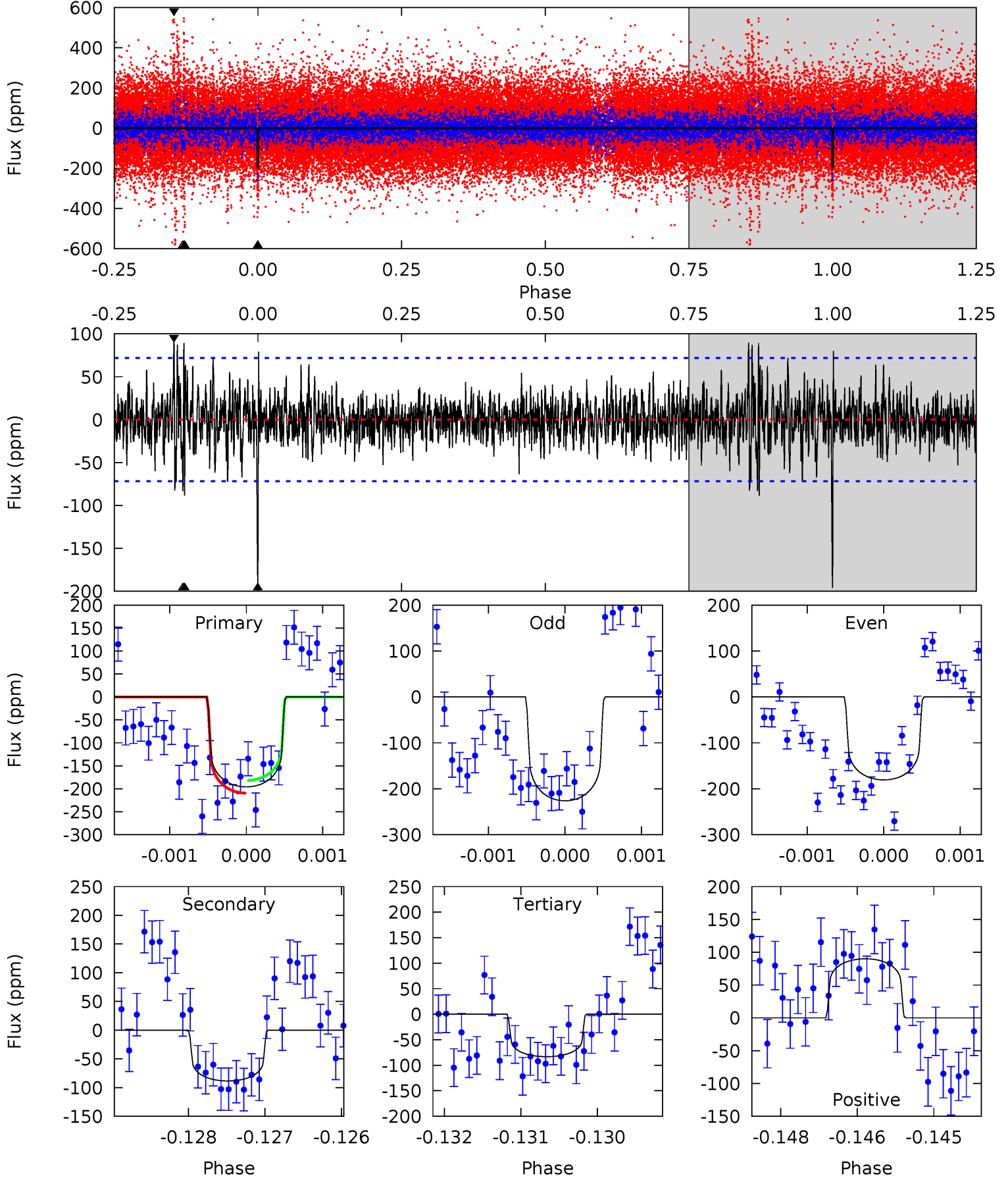
TCE 008183116-01 P=377.237573 Days  $T_0=501.158017$  (BKJD)



# DV Model-Shift Uniqueness Test

008183116-01, P = 377.220147 Days, E = 124.009018 Days

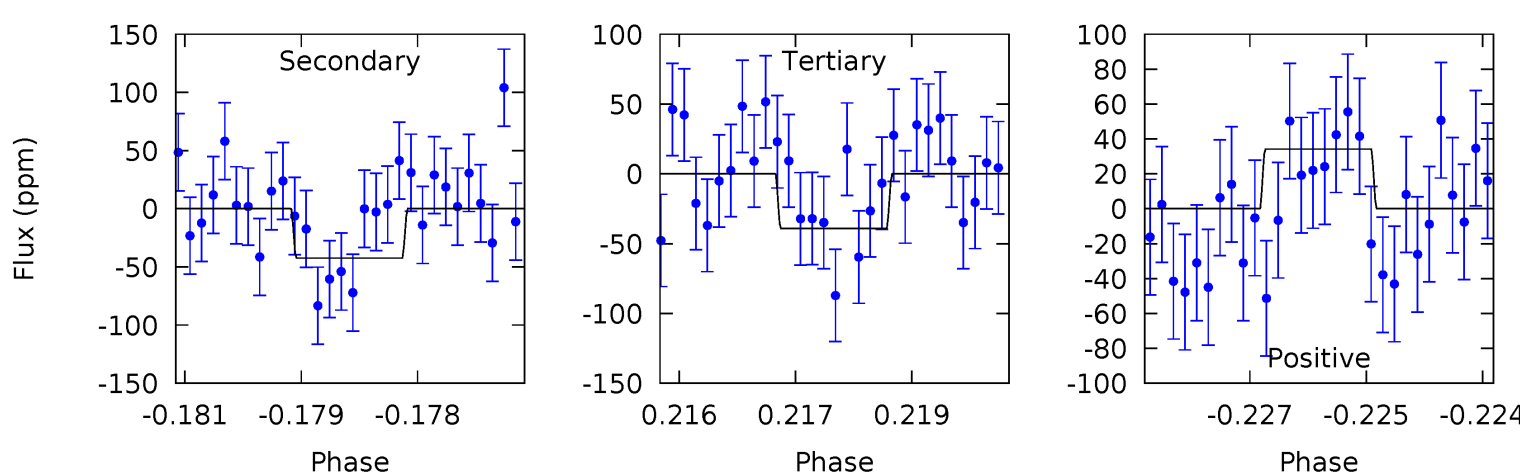
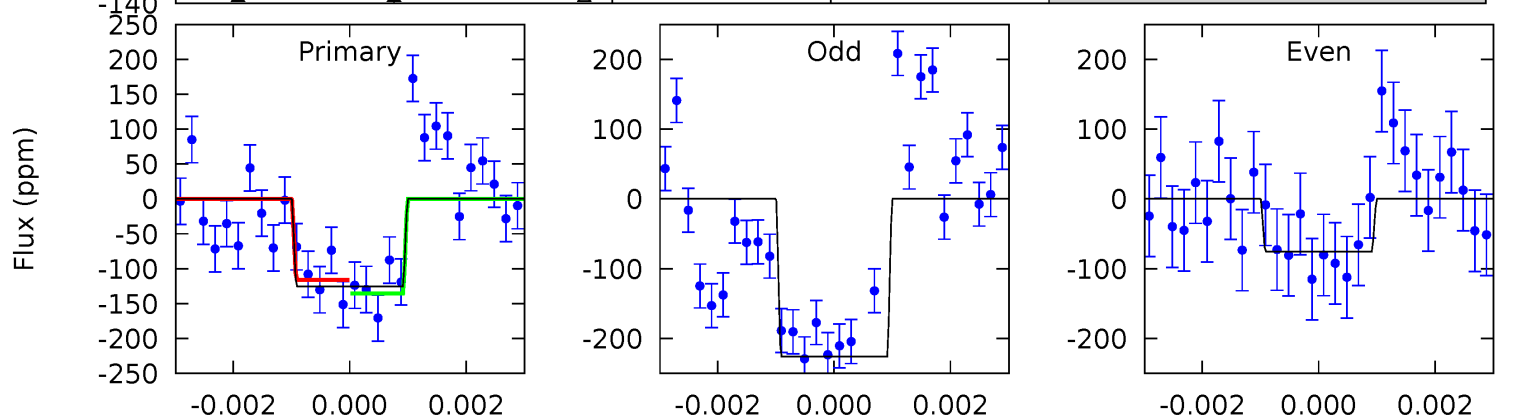
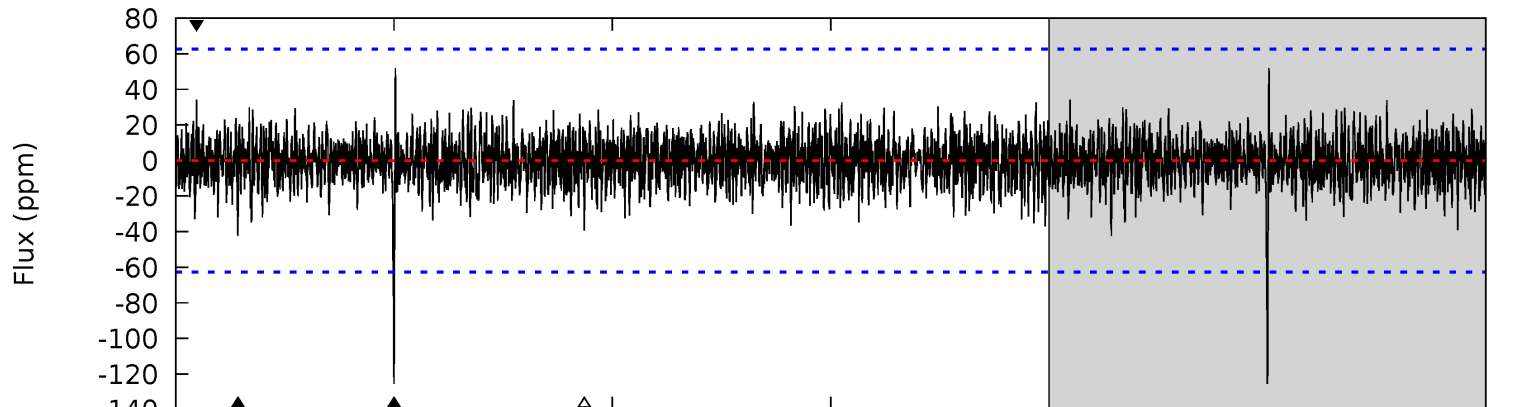
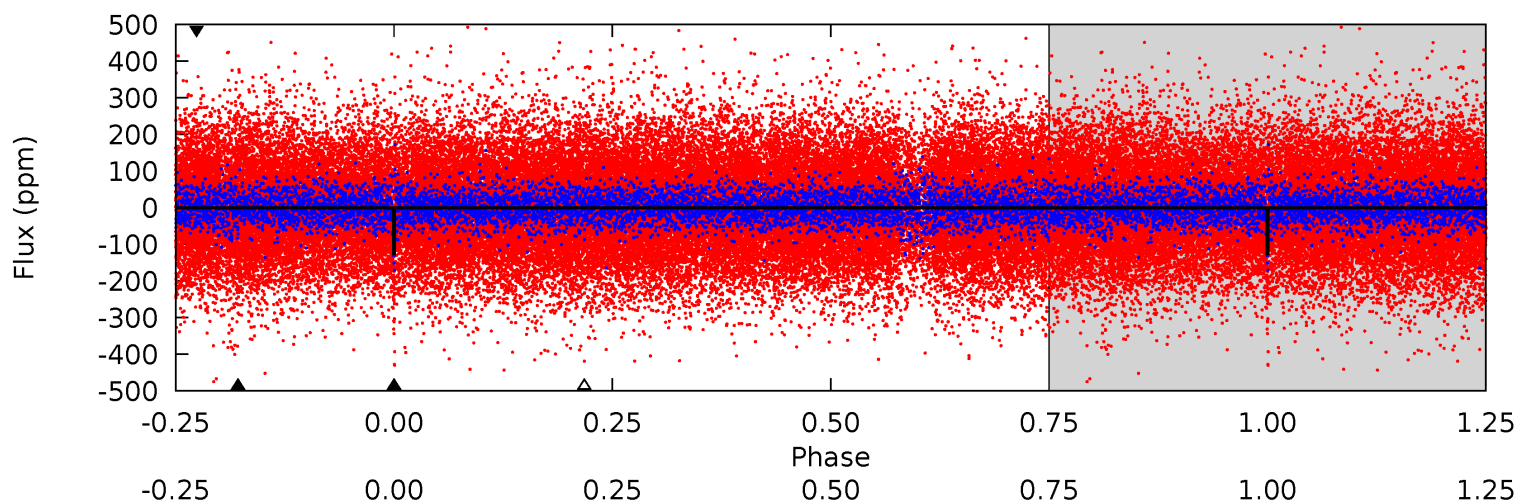
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	6.65	6.25	6.76	5.39	3.20	1.44	8.47	7.95	0.40	-0.11	1.64	0.87	0.31	1.04



# Alt Model-Shift Uniqueness Test

008183116-01,  $P = 377.237573$  Days,  $E = 123.920444$  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
10.7	3.63	3.35	2.92	5.36	3.15	0.91	7.39	7.82	0.27	0.70	5.36	1.60	0.29	0.82



### Stellar Parameters For KIC 008183116

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$\rho_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6351^{+175}_{-194}$	$4.085^{+0.259}_{-0.111}$	$-0.480^{+0.300}_{-0.300}$	$1.511^{+0.329}_{-0.402}$	$1.014^{+0.162}_{-0.133}$	$0.414^{+0.577}_{-0.154}$
	+3%/-3%	+6%/-3%	+62%/-62%	+22%/-27%	+16%/-13%	+140%/-37%
Source	PHO1	FLK73	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 008183116-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-88 \pm 13$	$2.01^{+0.73}_{-0.67}$	$466^{+29}_{-33}$	$5470^{+1088}_{-663}$	$12724^{+16268}_{-5950}$
Alt.	$-42 \pm 12$	$1.72^{+0.77}_{-0.62}$	$466^{+29}_{-37}$	$4914^{+1209}_{-674}$	$8090^{+12783}_{-4572}$

$T_{\text{max}}$  = 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

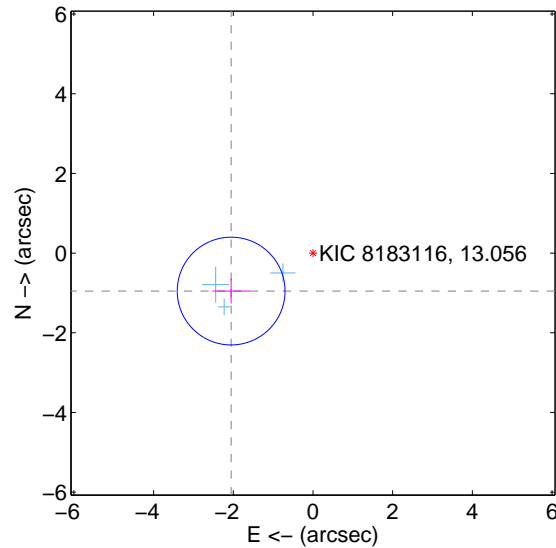
Supplemental centroid analysis for 008183116-01. Kepler magnitude: 13.06. Transit SNR 6.98

There are 3 quarters with good PRF difference image offsets

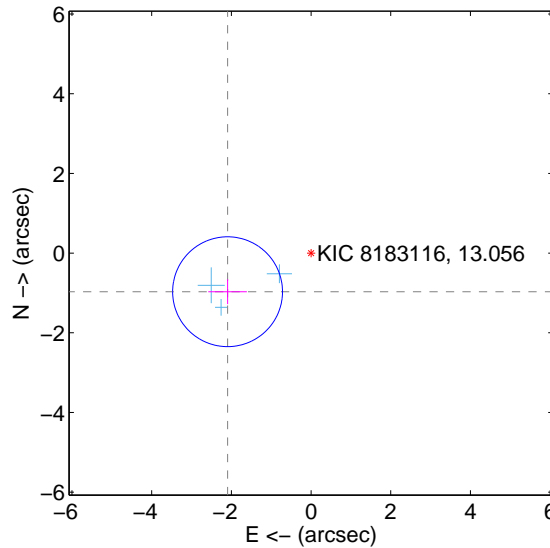
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.264 \pm 0.451$	5.02	$2.054 \pm 0.475$	$-0.953 \pm 0.316$
PRF-fit source offset from KIC position	$2.309 \pm 0.460$	5.02	$2.095 \pm 0.485$	$-0.969 \pm 0.313$
photometric centroid source offset	$1.27 \pm 1.26$	1.01	$0.36 \pm 1.09$	$-1.22 \pm 1.28$

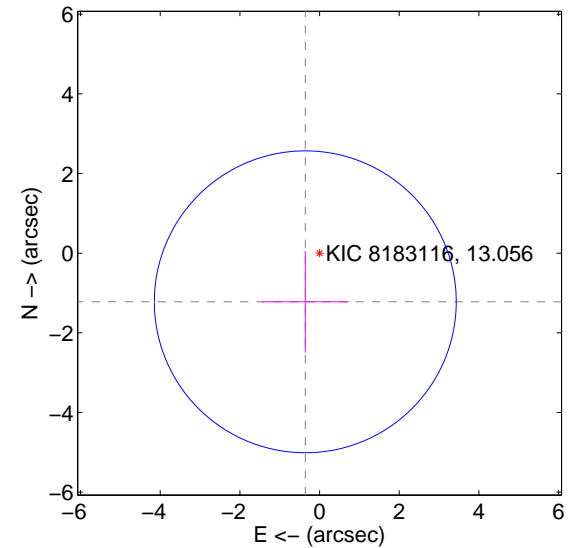
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



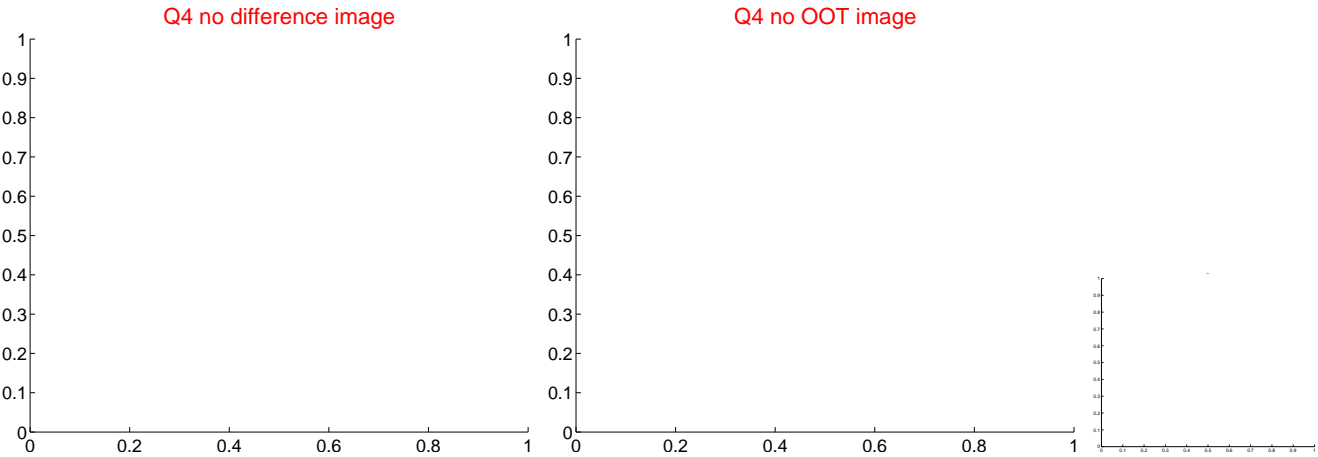
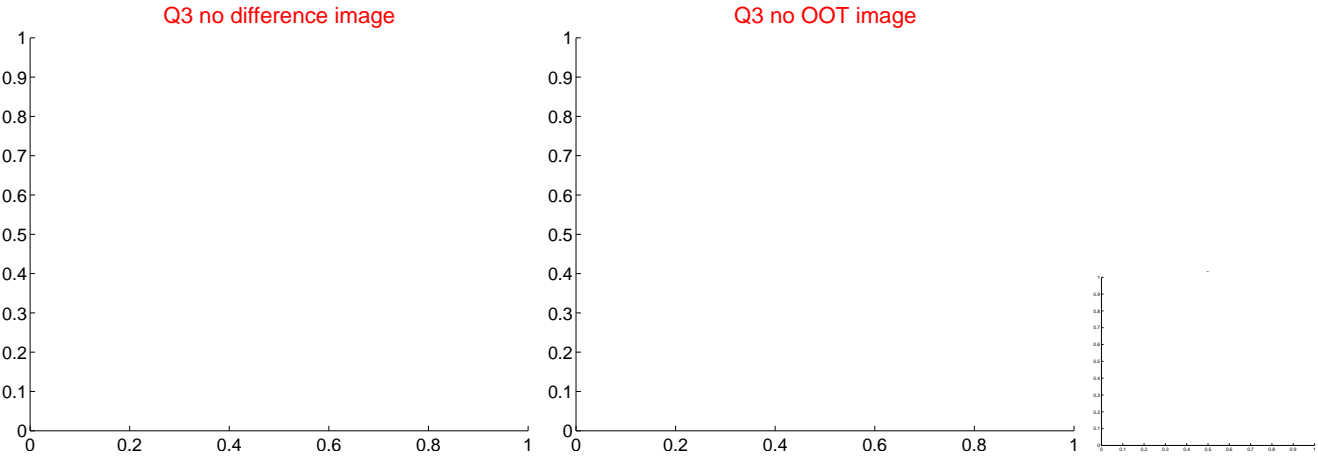
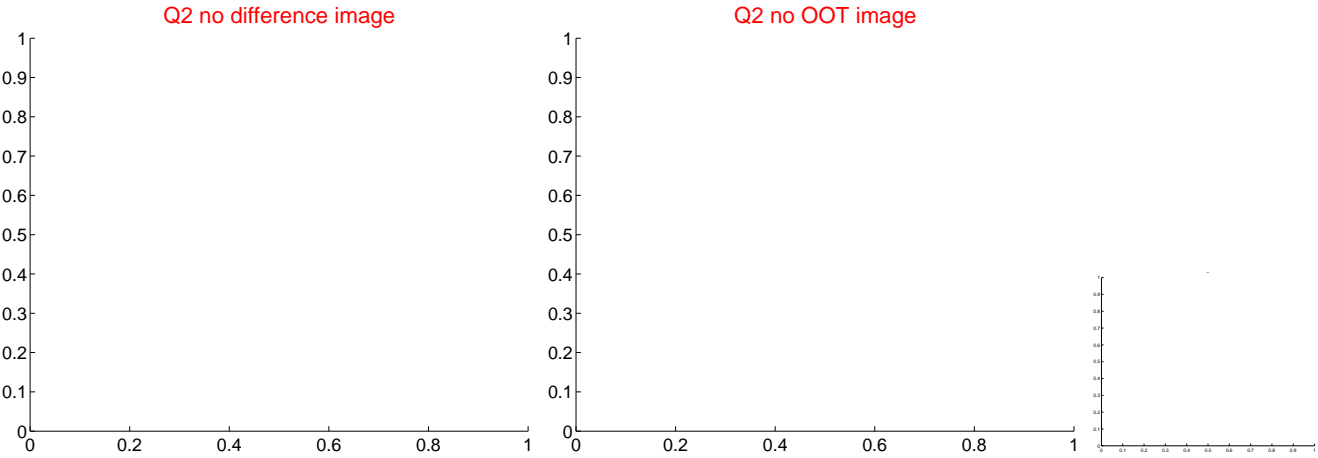
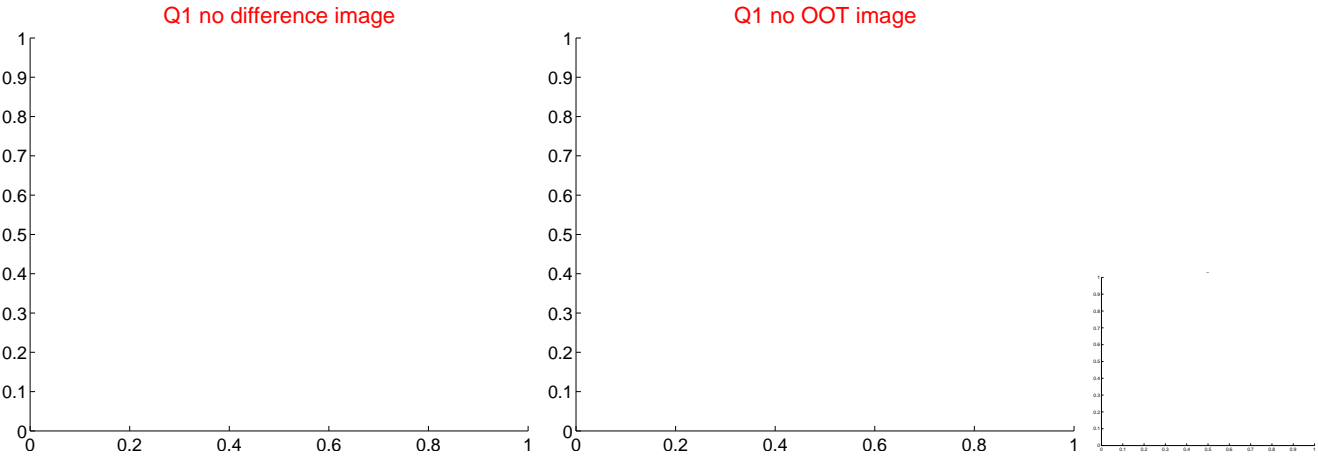
offset from photometric centroids



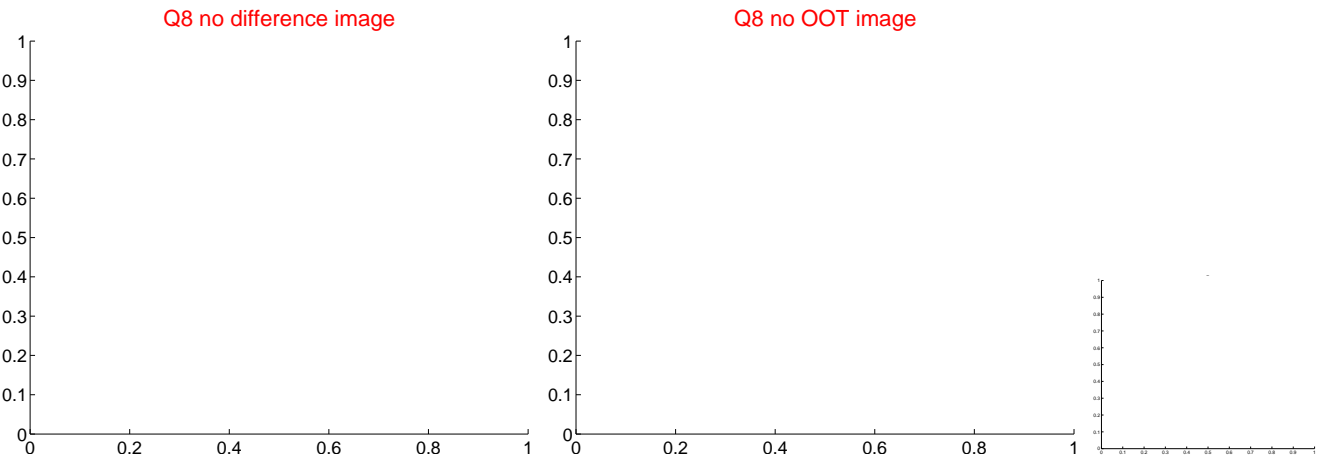
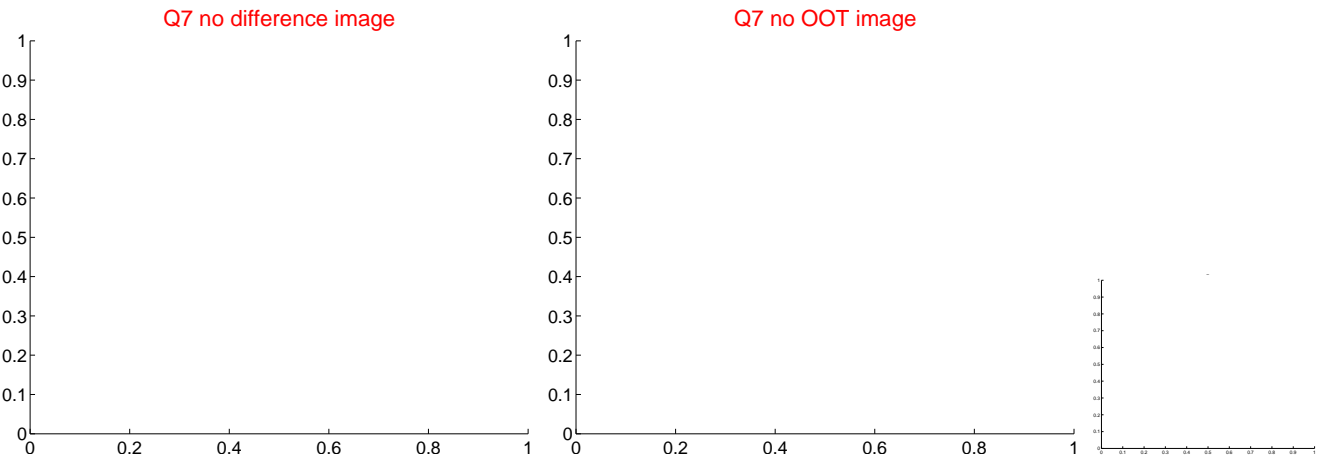
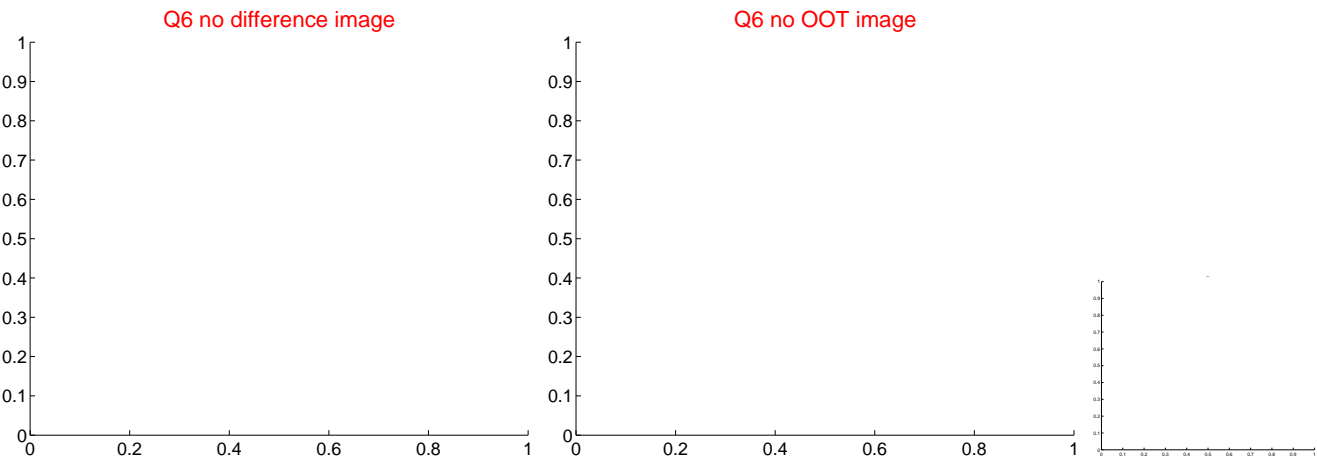
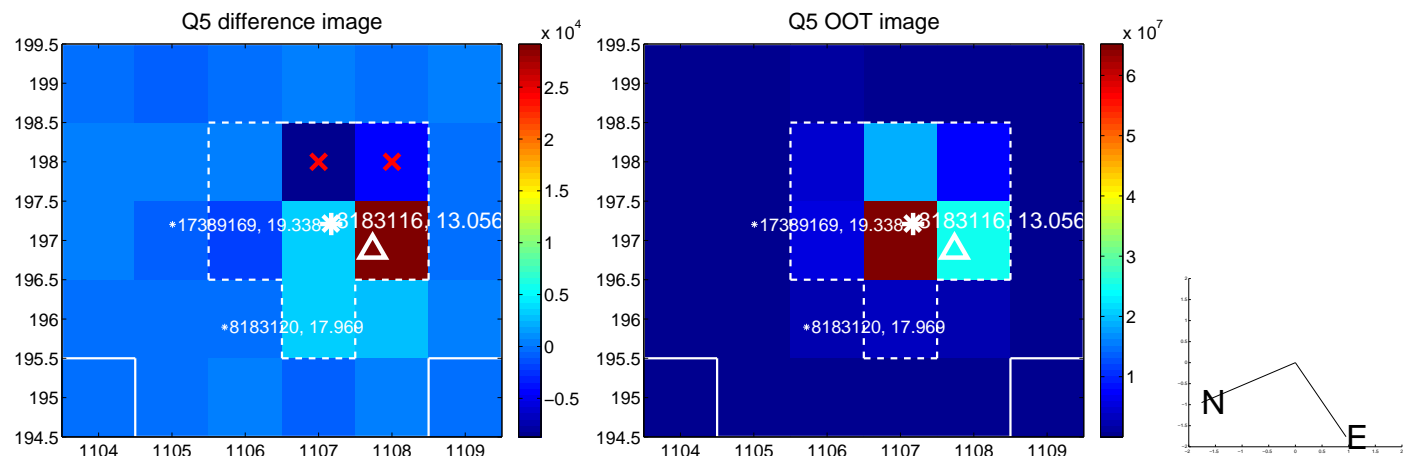
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



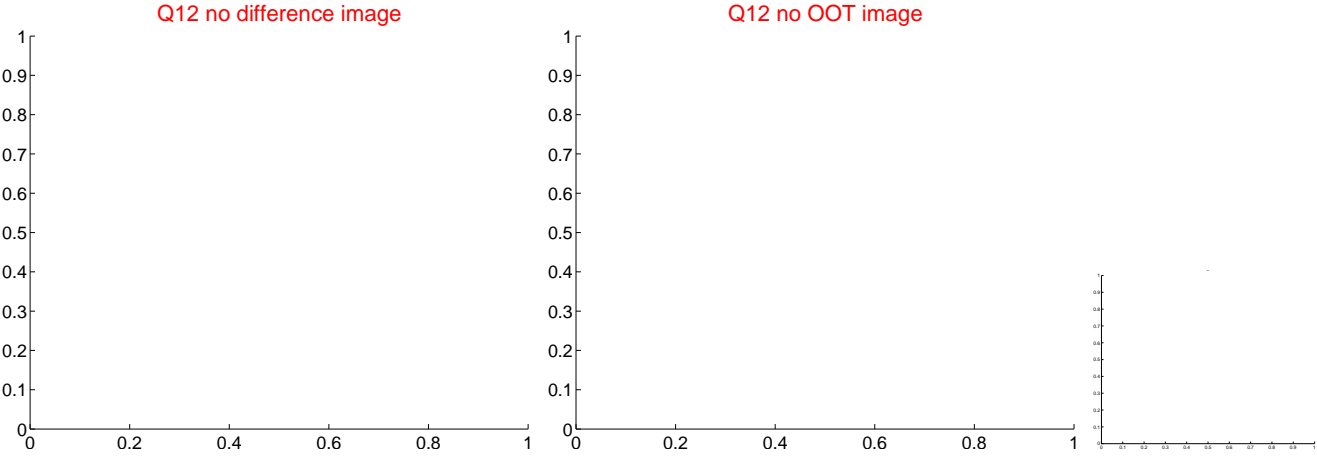
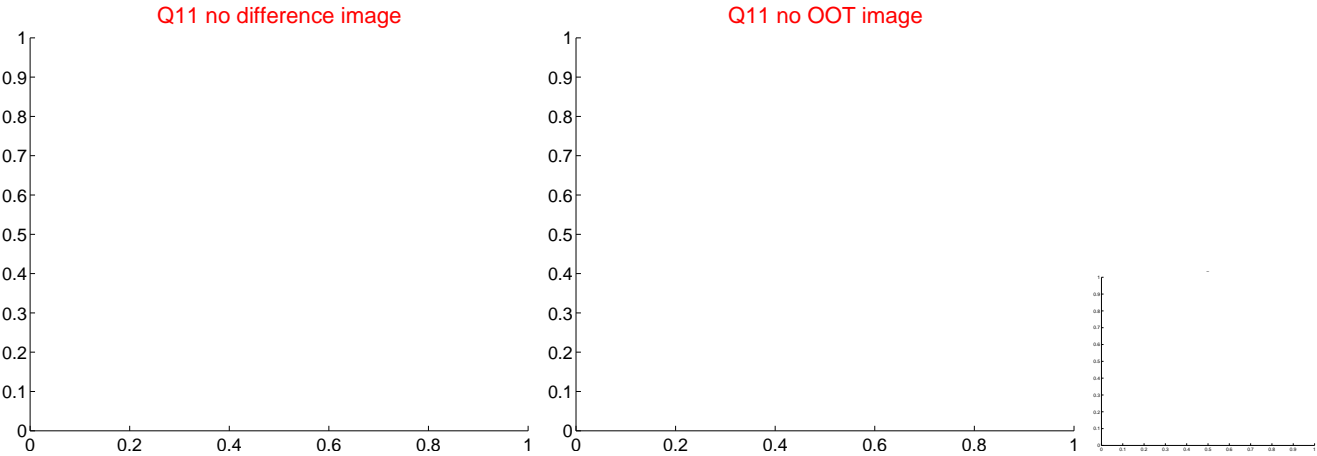
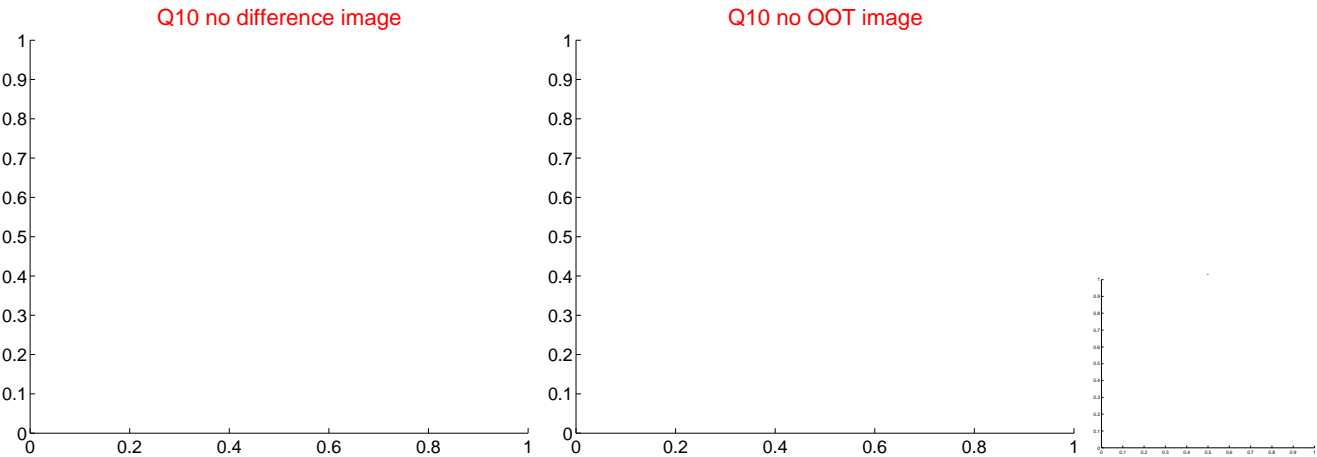
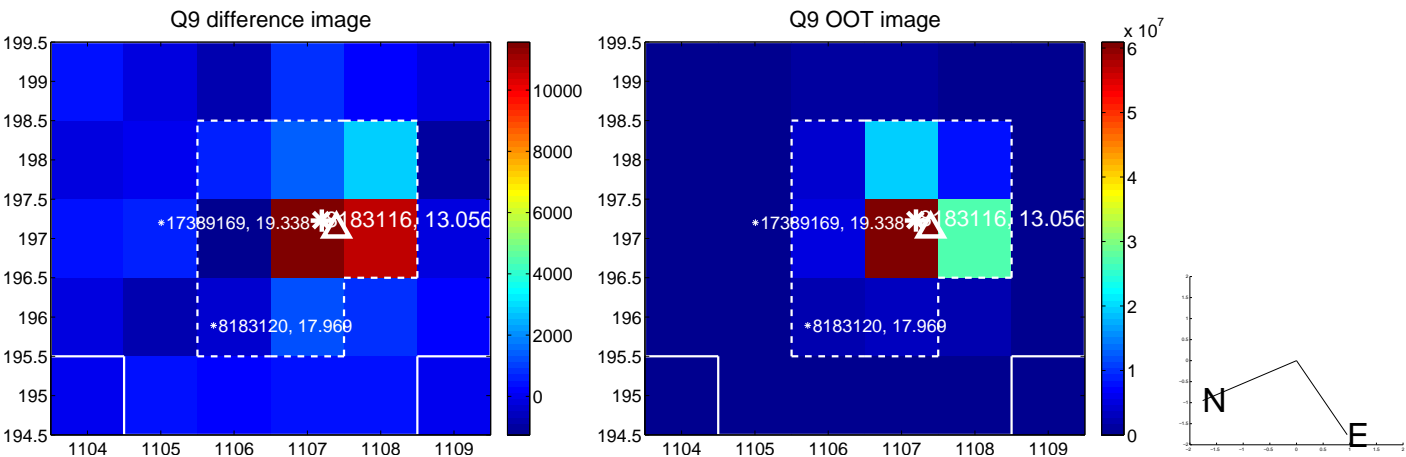
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



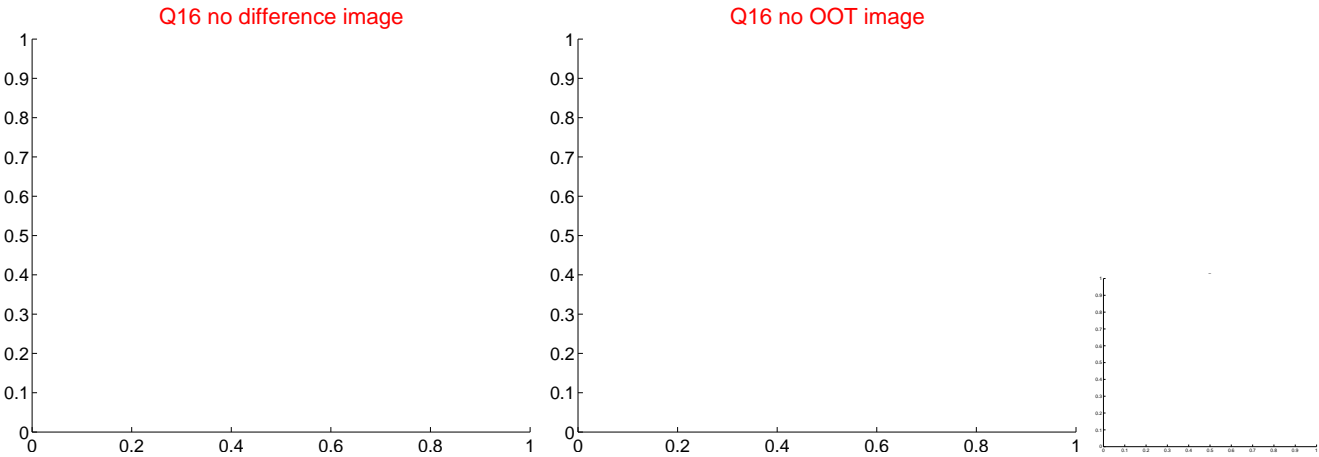
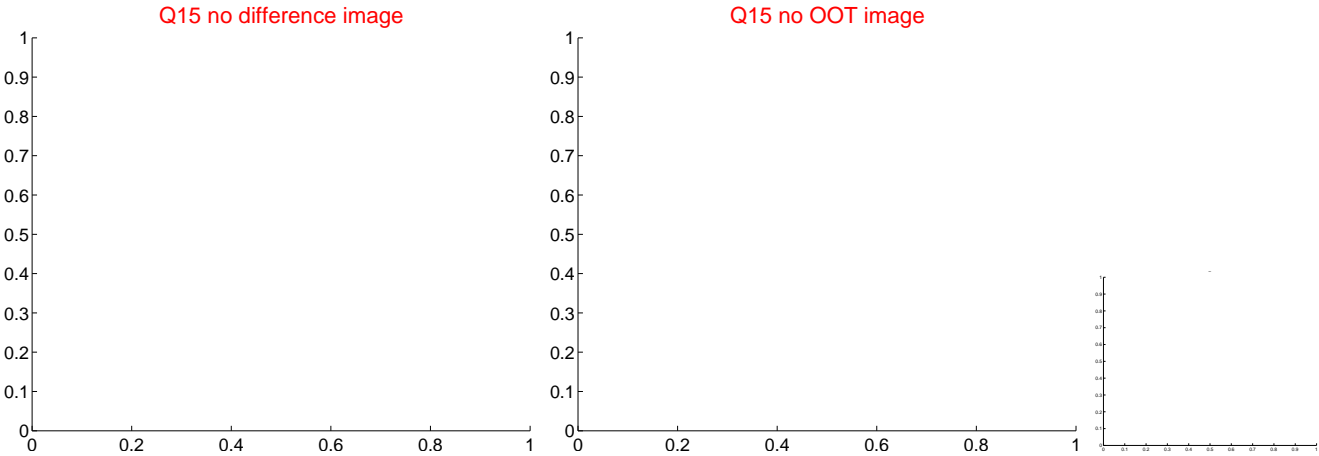
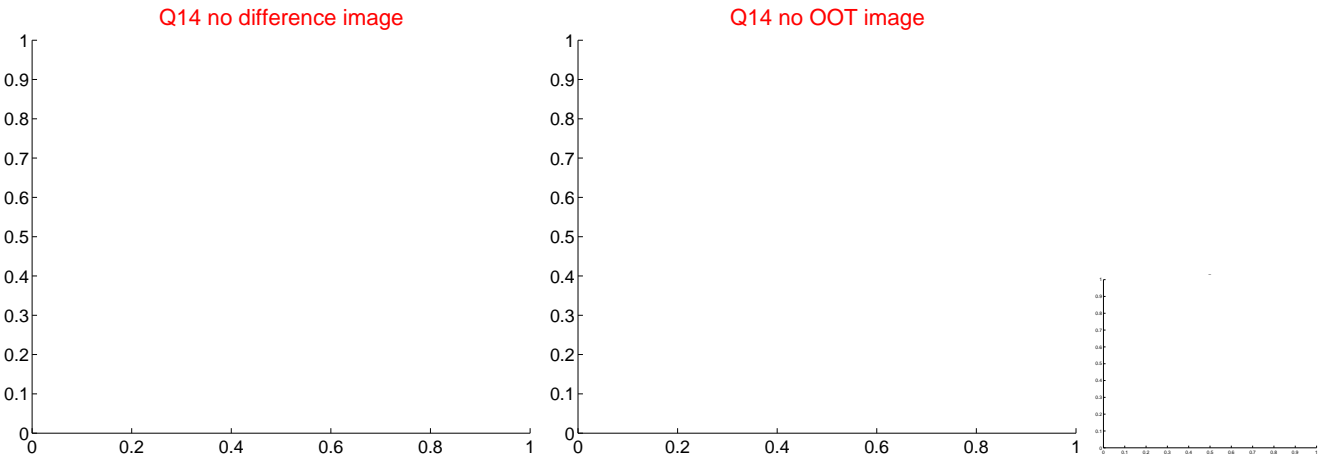
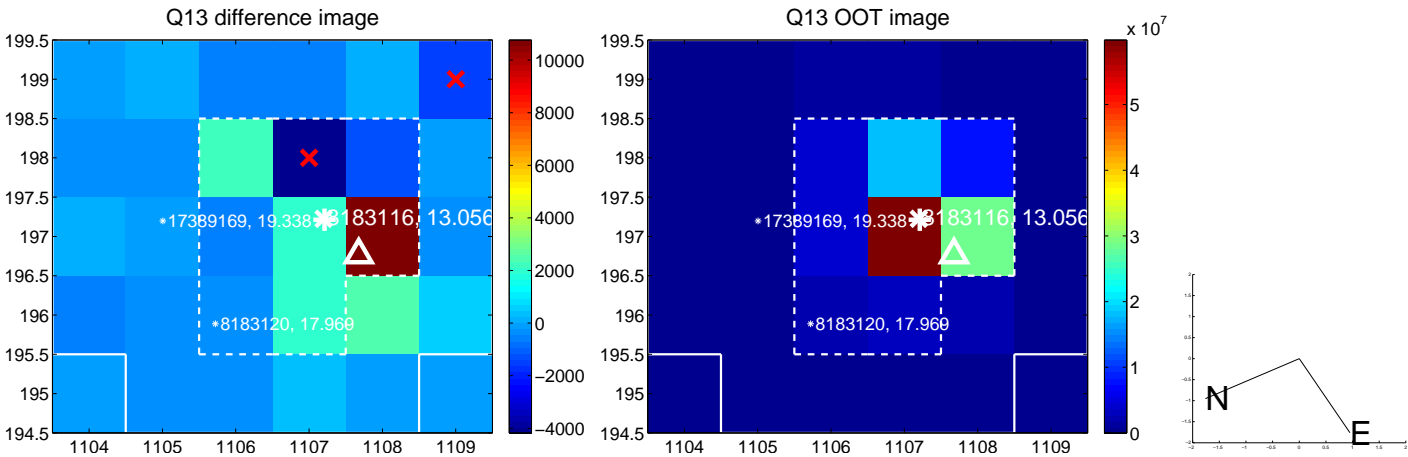
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



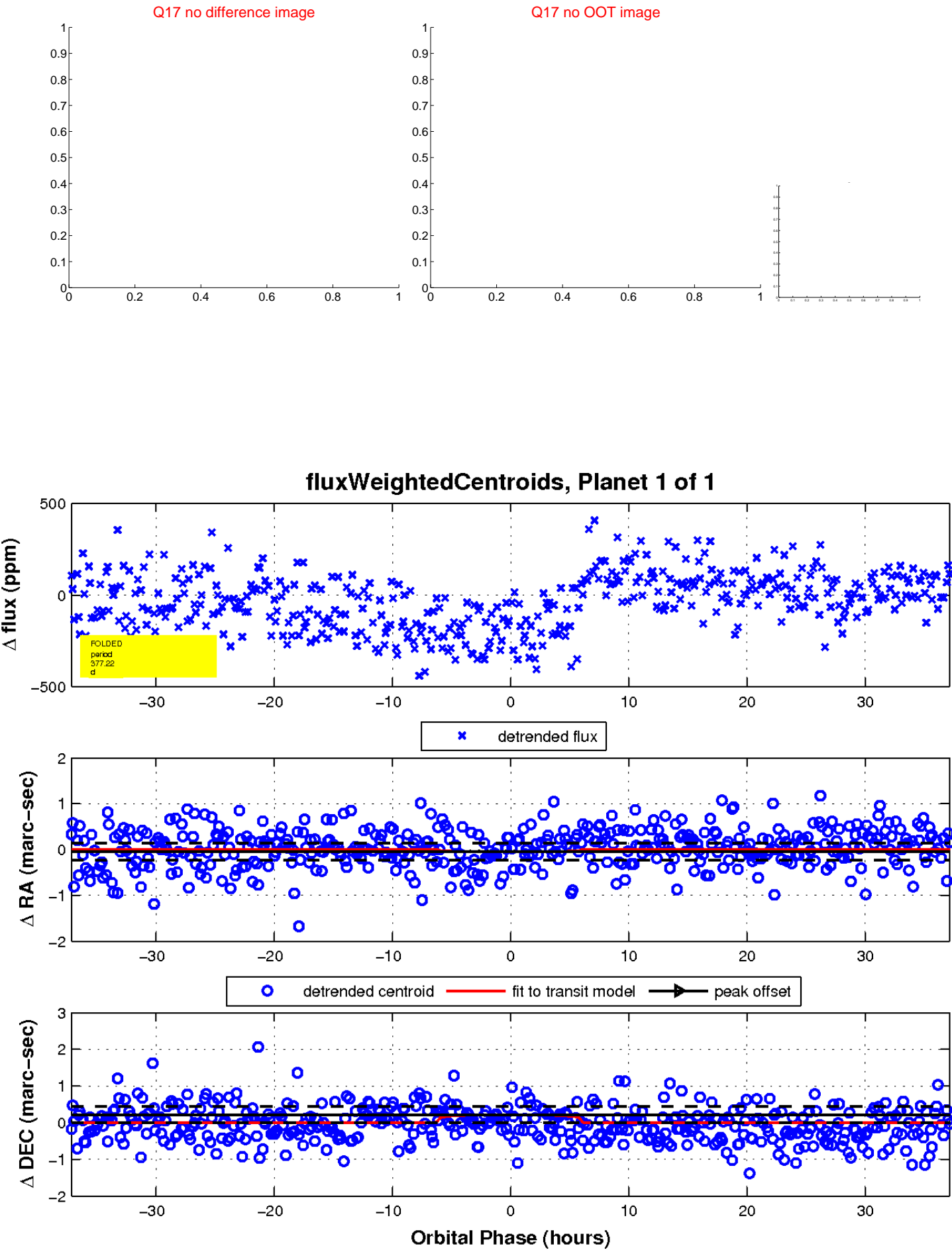
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



# UKIRT Image

Declination

