

# KIC 006130679

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006130679-01	OBS	No	405.751853	452.976491	432.4	15.668	8.6	8.2	1.66	5407	3.96	1.90

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006130679-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—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.

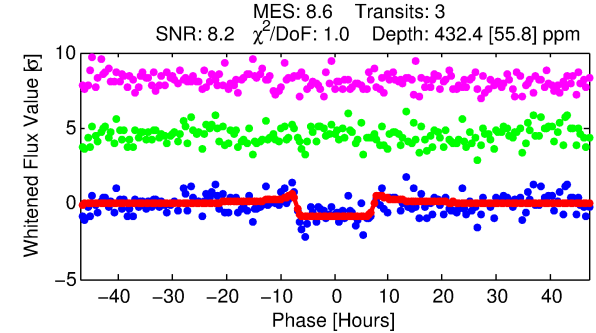
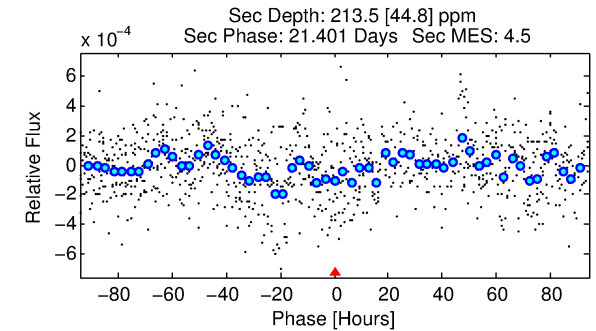
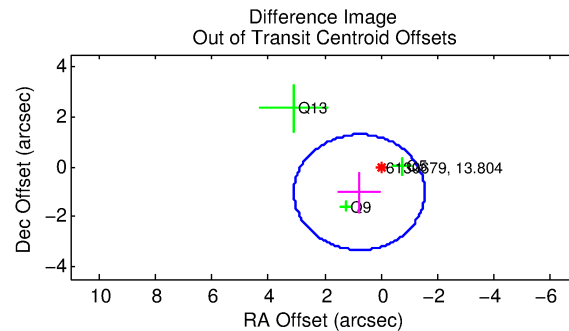
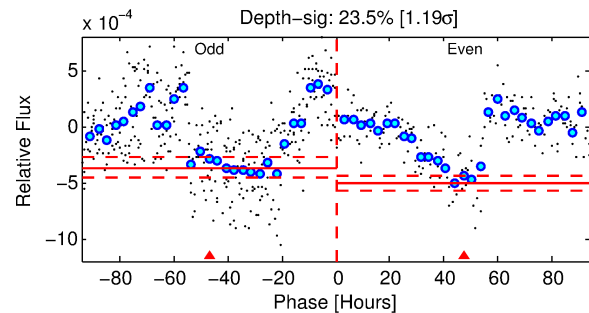
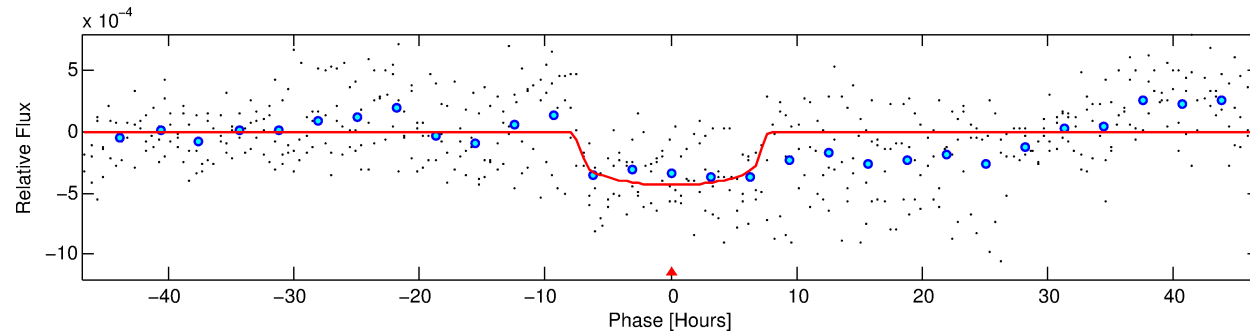
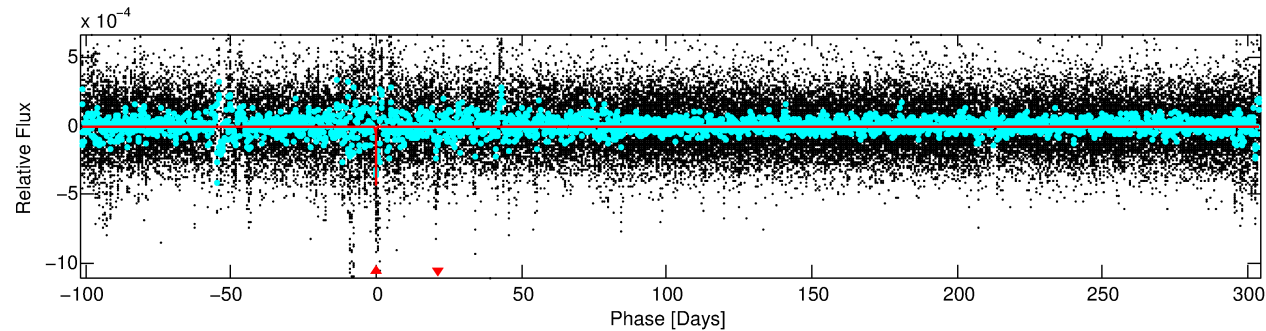
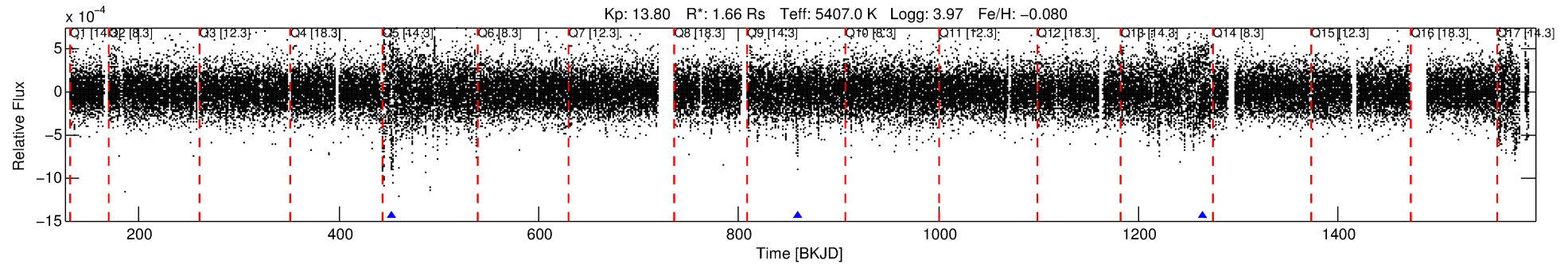
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006130679-01

No Significant Match Found

# DV One-Page Summary

KIC: 6130679 Candidate: 1 of 1 Period: 405.752 d



## DV Fit Results:

Period = 405.75185 [0.01363] d  
Epoch = 452.9765 [0.0177] BKJD  
Rp/R\* = 0.0219 [0.0029]  
a/R\* = 112.29 [51.19]  
b = 0.85 [0.15]  
Seff = 1.90 [0.49]  
Teq = 299 [19] K  
Rp = 3.96 [0.96] Re  
a = 1.0526 [0.1805] AU  
Ag = 8307.31 [3473.73] [2.39σ]  
Teffp = 4419 [379] K [10.87σ]

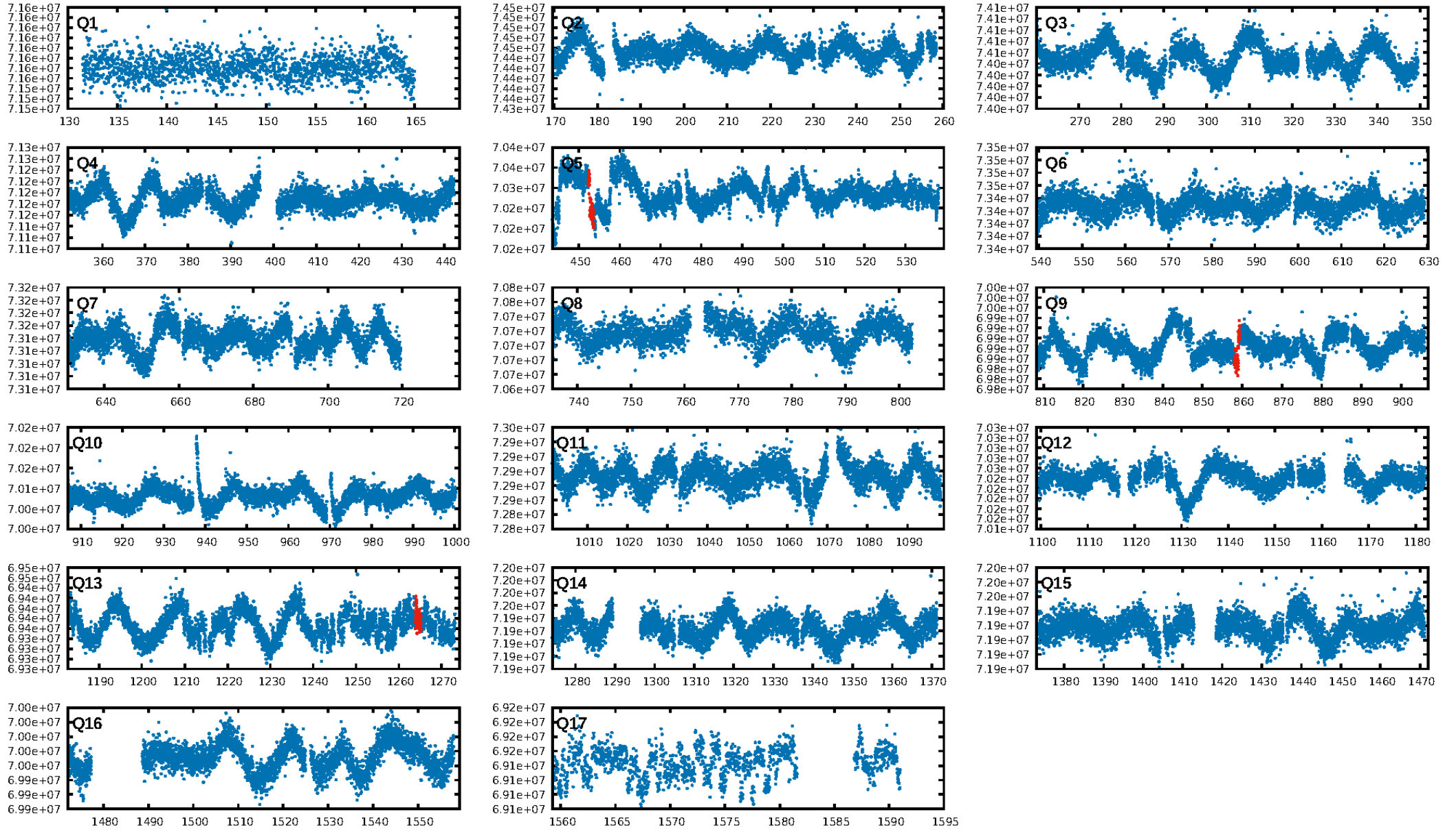
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 27.0%  
ModelChiSquareGof-sig: 96.8%  
**Bootstrap-pfa: 1.52e-10**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -0.8329  
Centroid-sig: 13.6%  
Centroid-so: 0.937 arcsec [1.28σ]  
OotOffset-rm: 1.284 arcsec [1.67σ]  
KicOffset-rm: 1.492 arcsec [1.90σ]  
OotOffset-st: 0/0/0/3 [3]  
KicOffset-st: 0/0/0/3 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

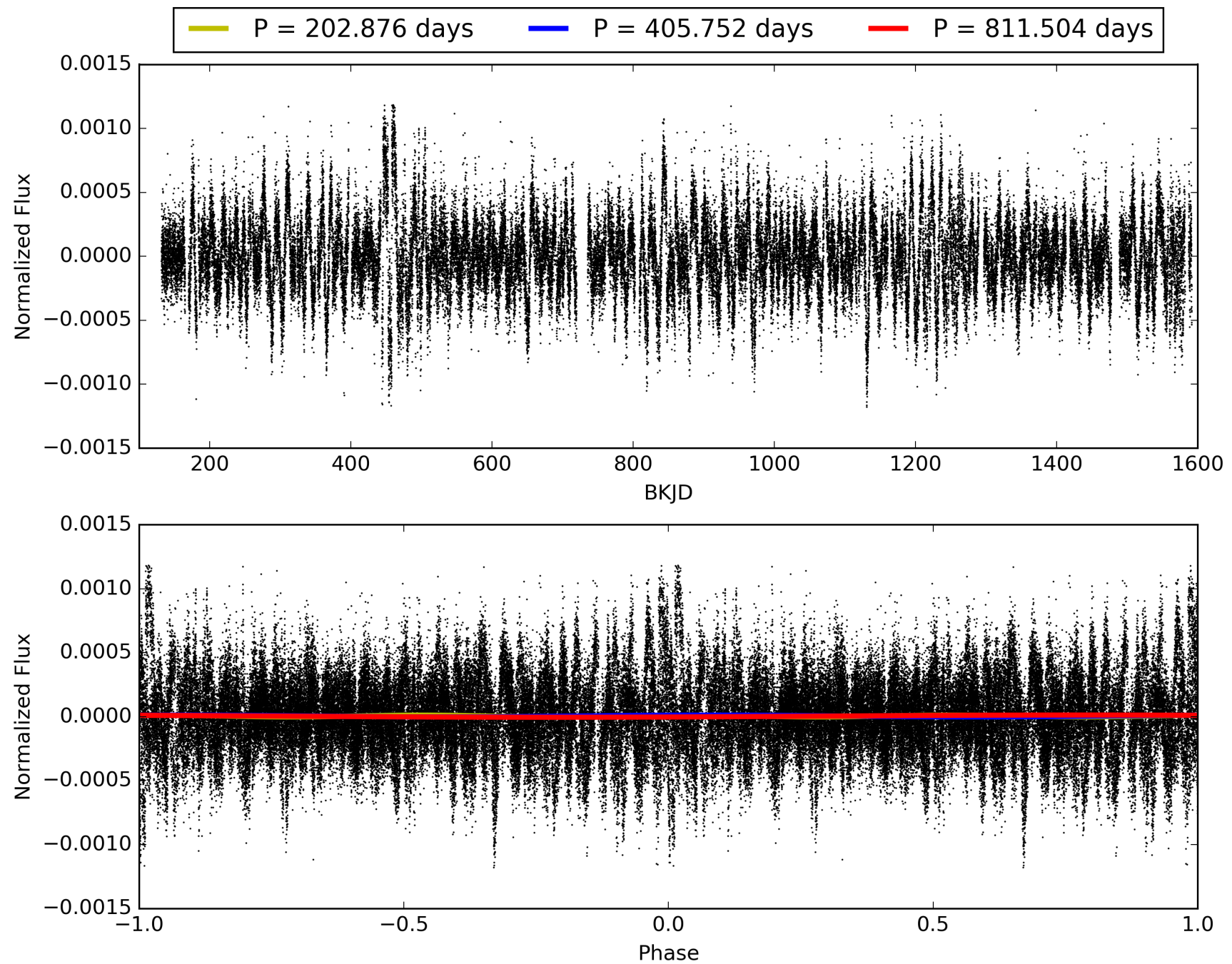
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:30:00 Z

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

# TCE 006130679-01, PDC Light Curves

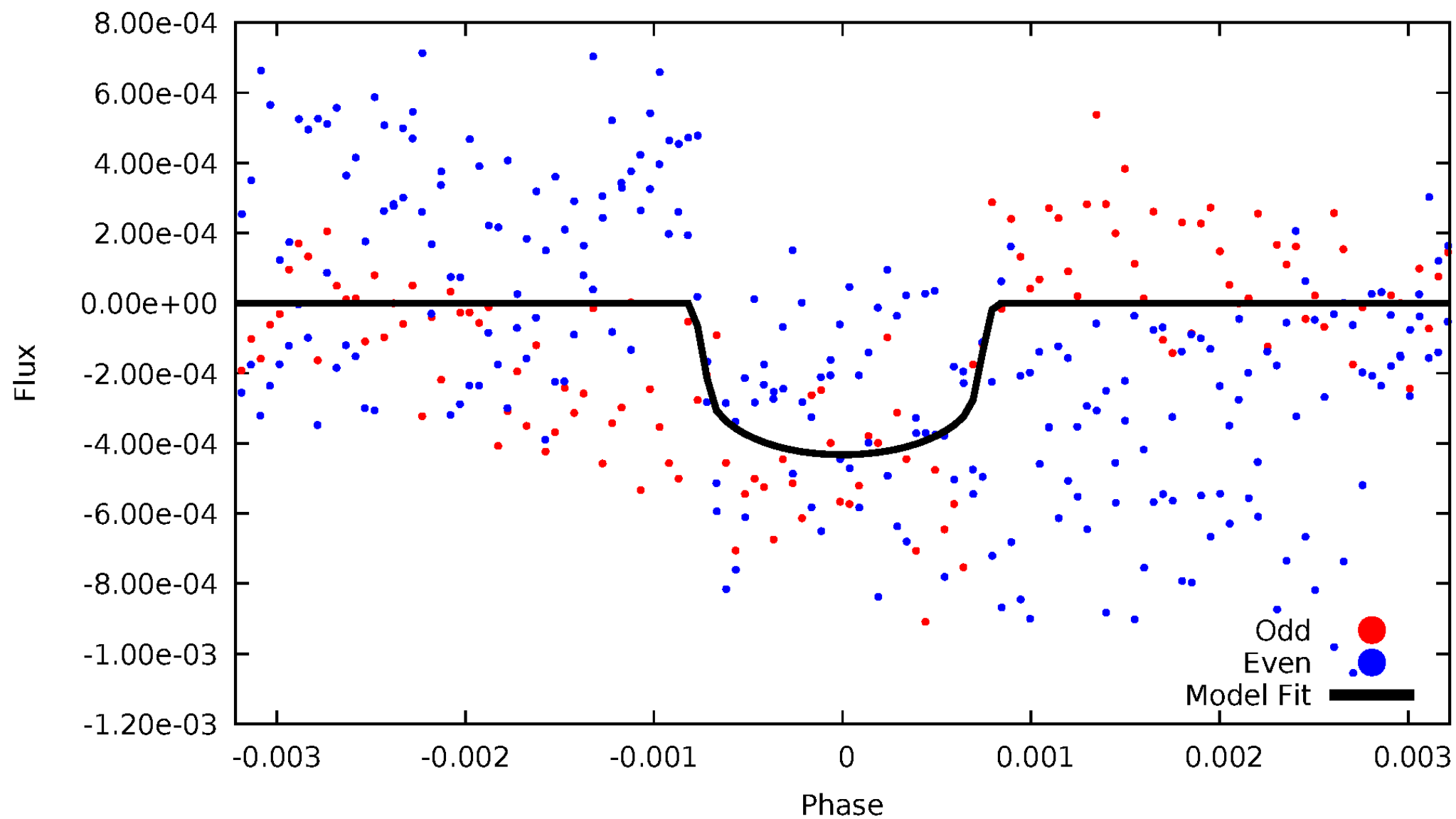


TCE 006130679-01



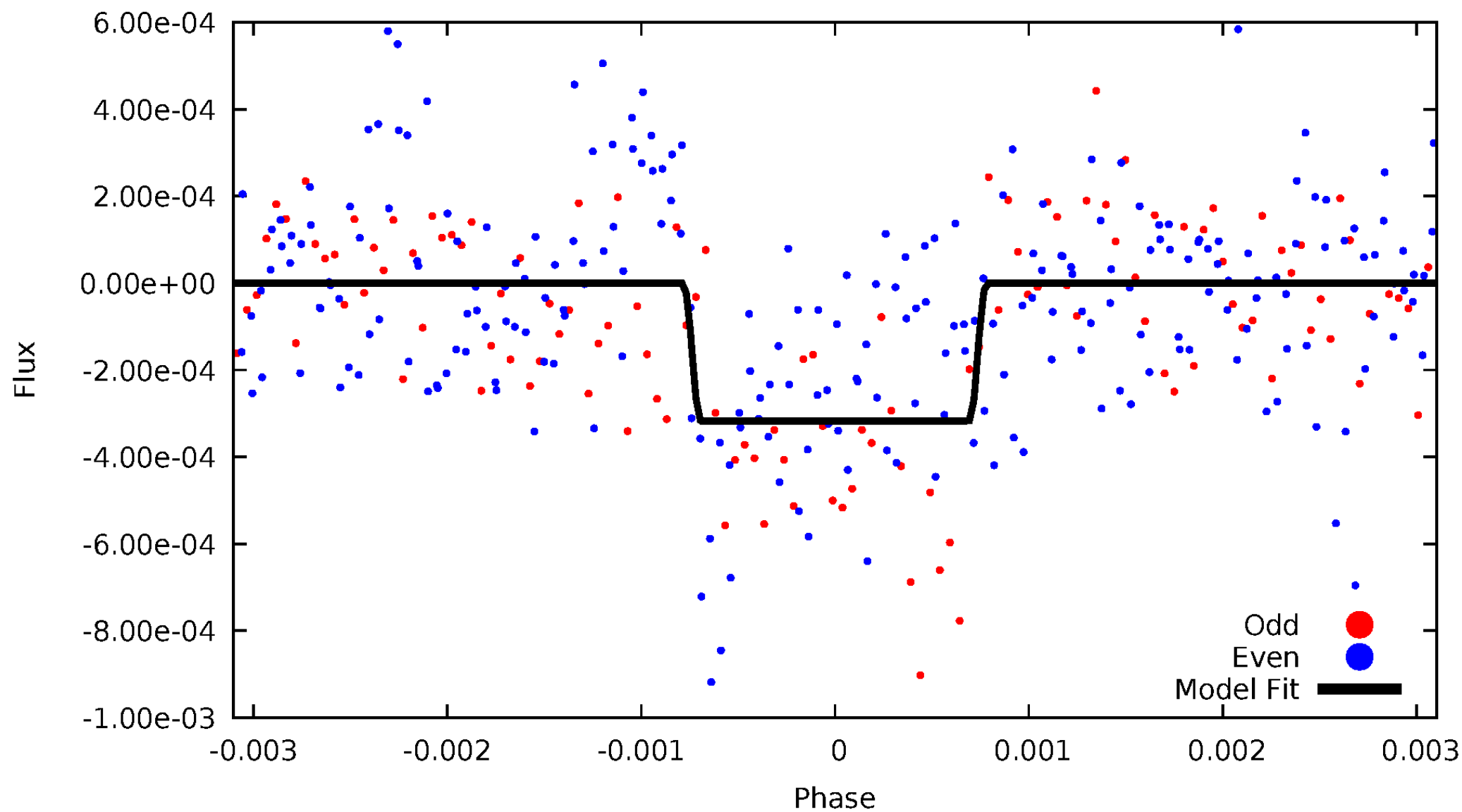
# DV Odd/Even

TCE 006130679-01



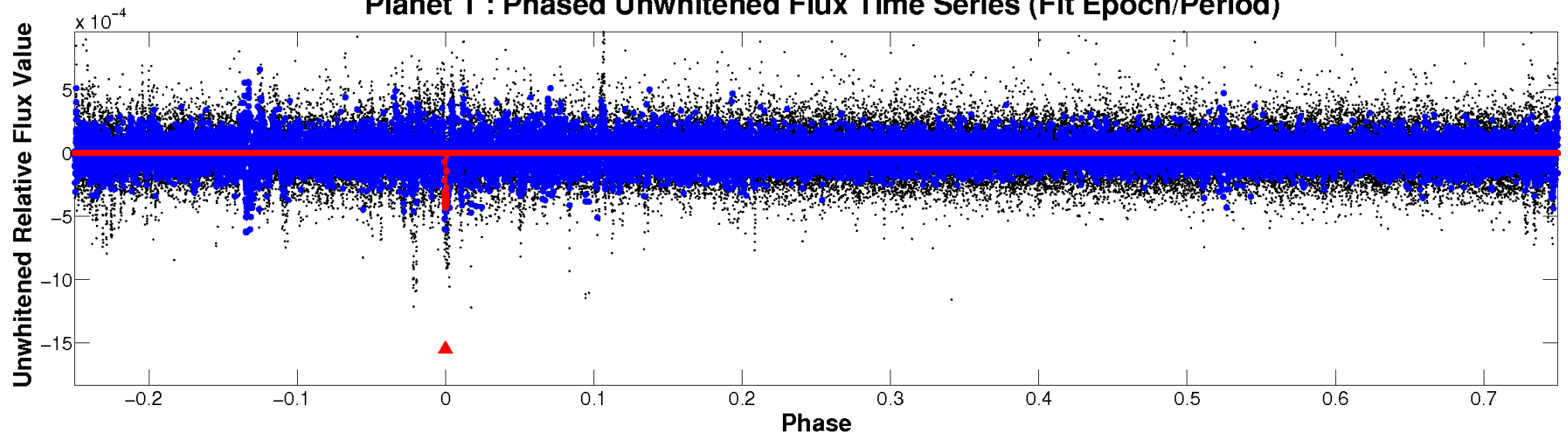
# ALT Odd/Even

TCE 006130679-01

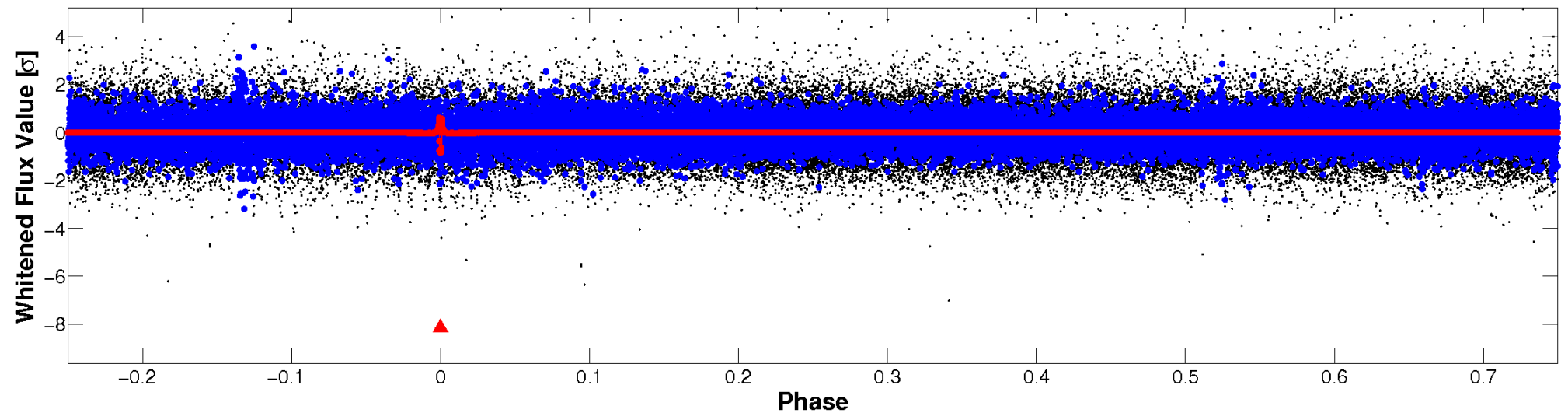


# Non-Whitened Vs. Whitened Light Curve

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



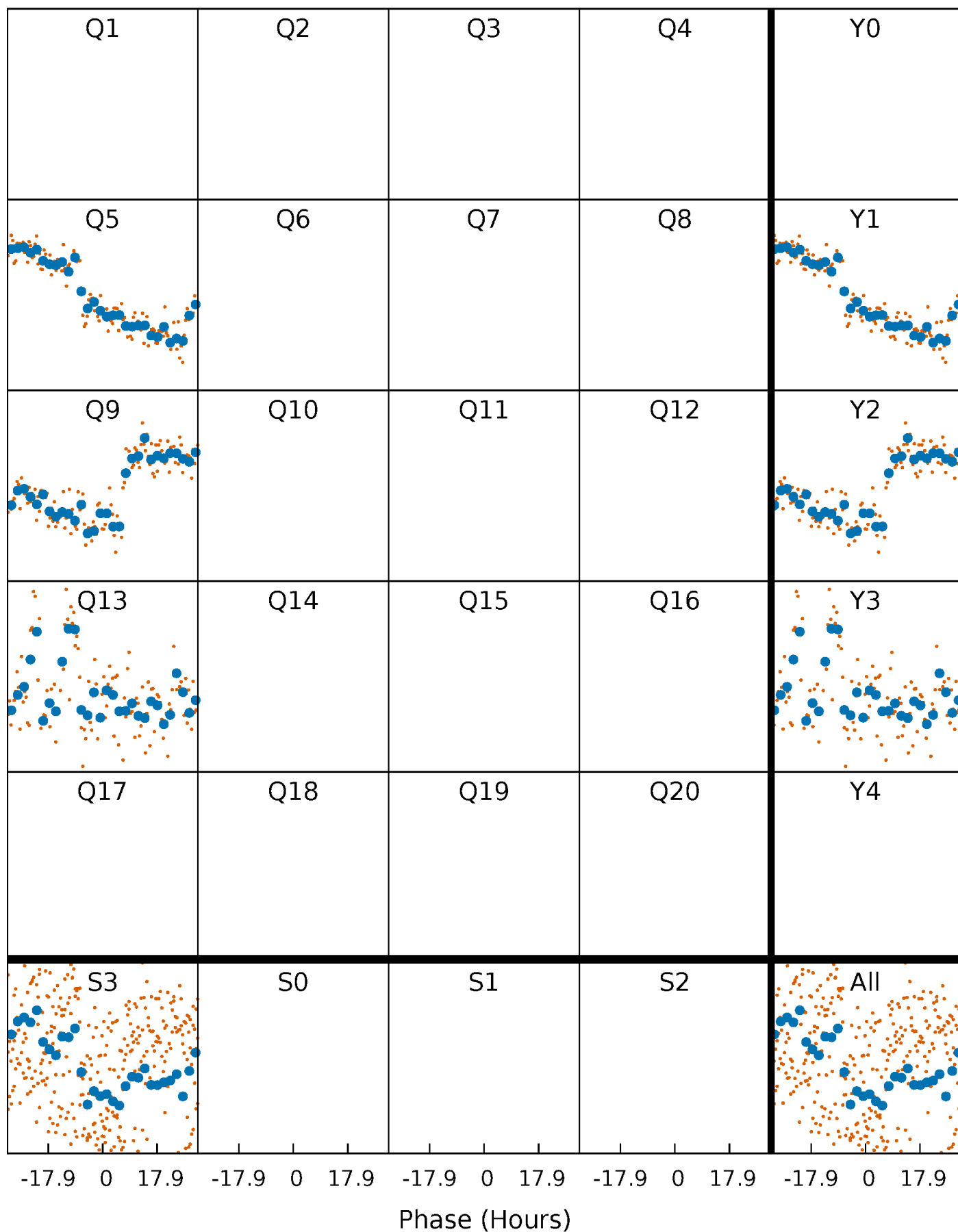
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

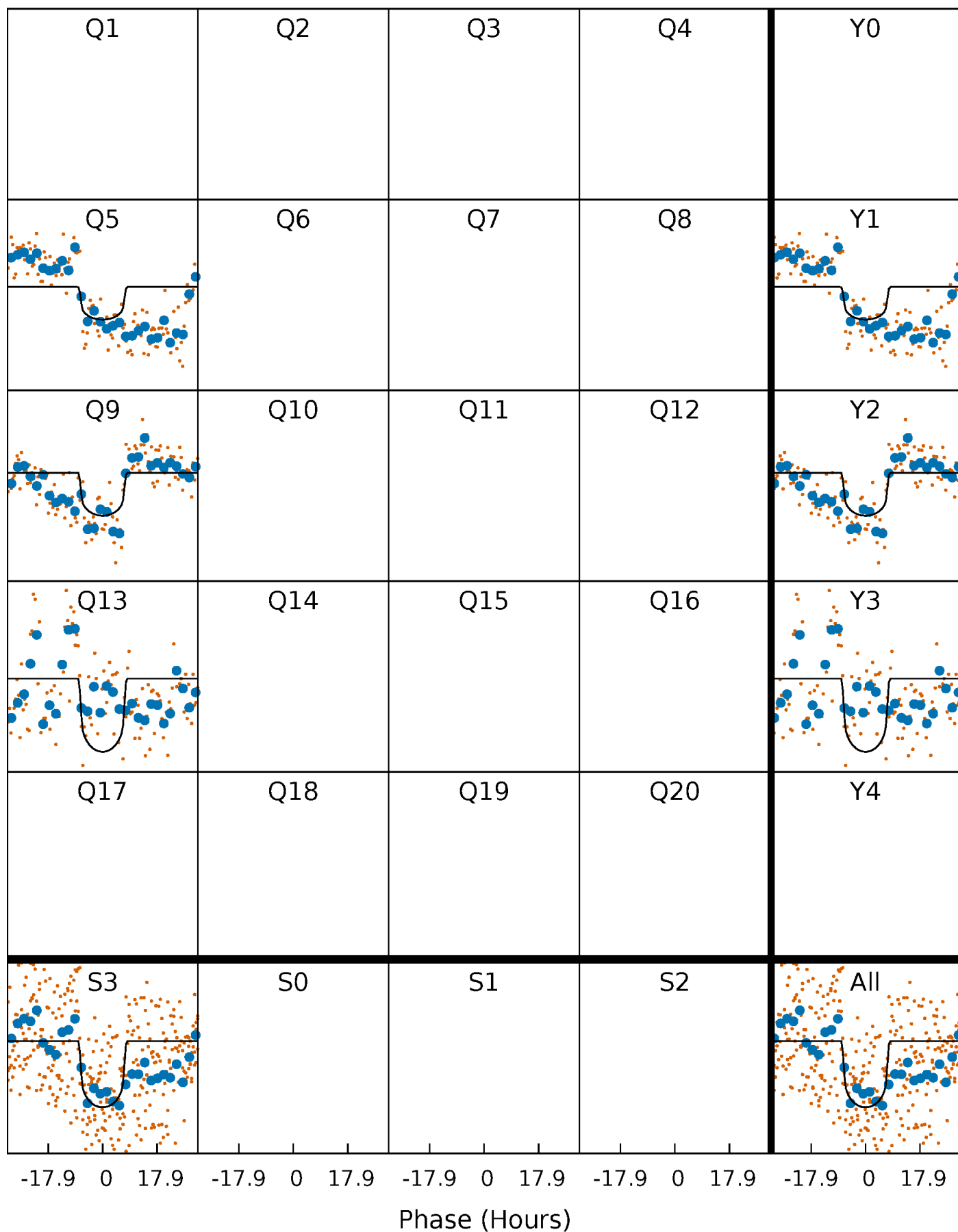
TCE 006130679-01 P=405.751853 Days  $T_0=452.976491$  (BKJD)





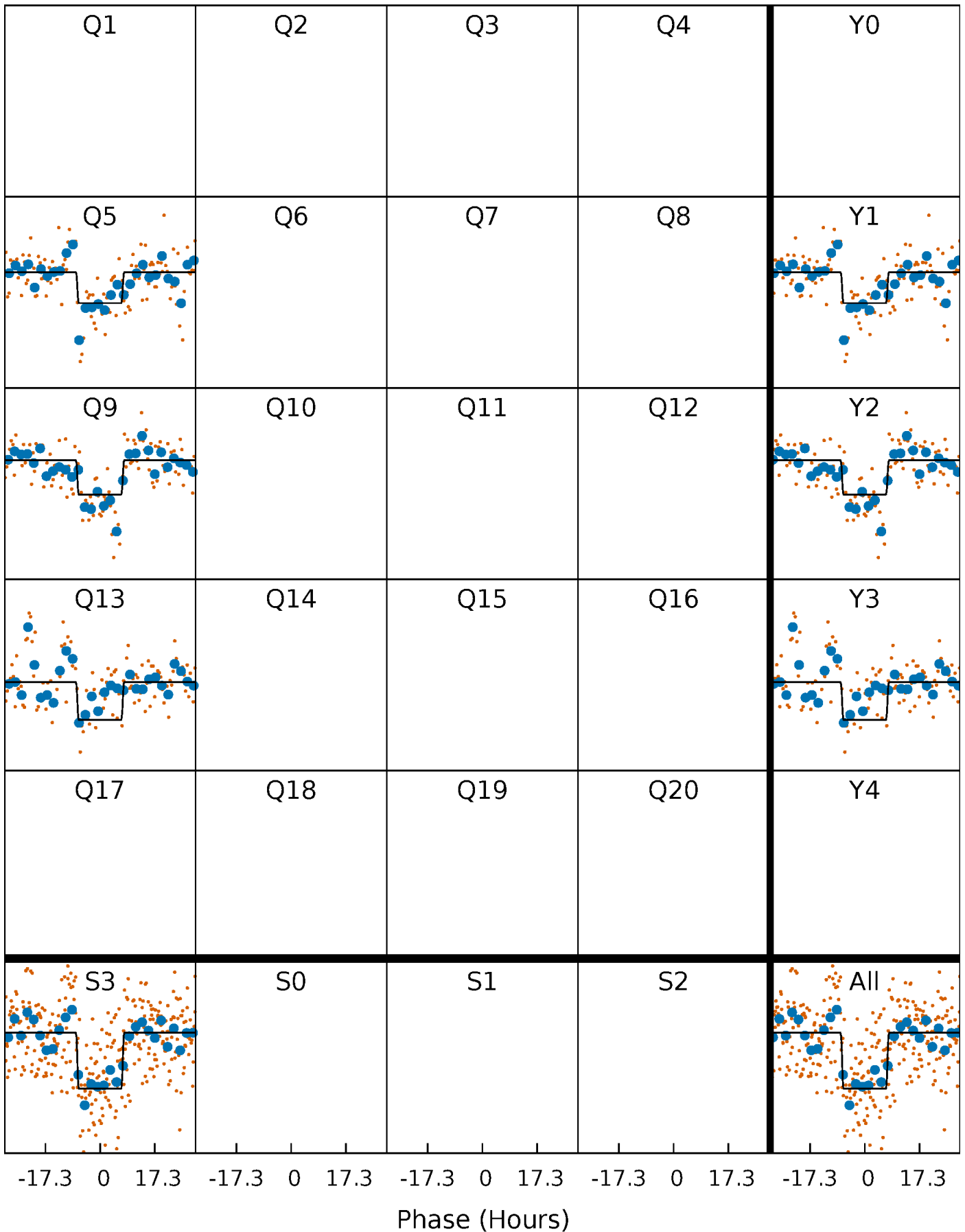
# DV Quarter-Phased Transit Curves

TCE 006130679-01 P=405.751853 Days  $T_0=452.976491$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

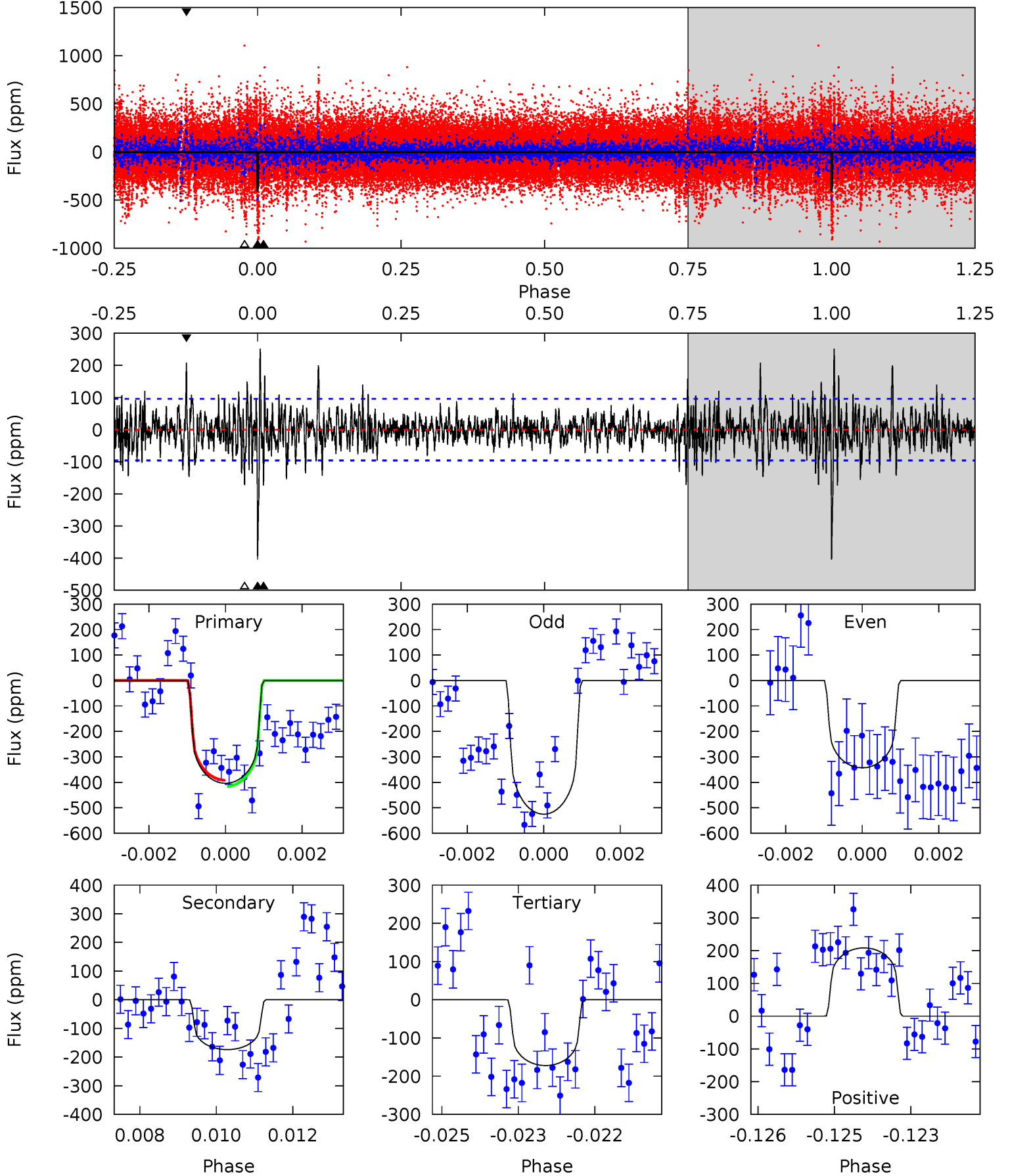
TCE 006130679-01 P=405.742390 Days  $T_0=452.985521$  (BKJD)



# DV Model-Shift Uniqueness Test

006130679-01, P = 405.751853 Days, E = 47.224638 Days

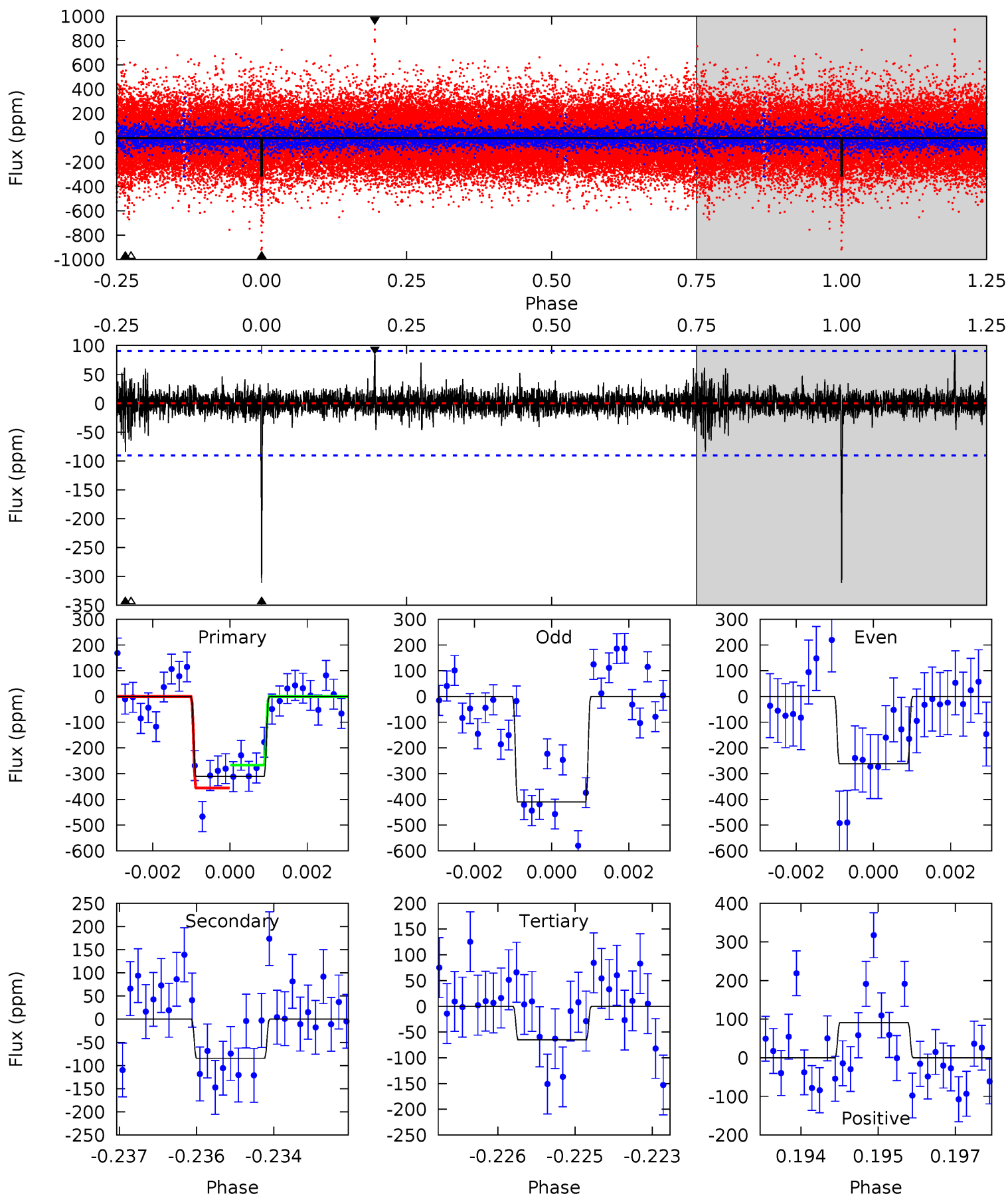
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.6	9.72	9.62	11.6	5.36	3.14	2.26	12.9	10.9	0.10	-1.92	4.87	0.77	0.38	0.69



# Alt Model-Shift Uniqueness Test

006130679-01,  $P = 405.742390$  Days,  $E = 47.243131$  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
18.5	5.00	3.87	5.42	5.37	3.16	0.79	14.6	13.0	1.13	-0.41	4.13	0.89	0.23	2.63



### Stellar Parameters For KIC 006130679

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5407^{+97}_{-73}$	$3.974^{+0.137}_{-0.112}$	$-0.080^{+0.200}_{-0.100}$	$1.658^{+0.337}_{-0.275}$	$0.944^{+0.118}_{-0.051}$	$0.292^{+0.201}_{-0.101}$
	+2%/-1%	+3%/-3%	+250%/-125%	+20%/-17%	+12%/-5%	+69%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 006130679-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-174 \pm 18$	$3.96^{+0.65}_{-0.61}$	$418^{+19}_{-20}$	$4393^{+272}_{-240}$	$6869^{+2908}_{-1933}$
Alt.	$-84 \pm 17$	$3.20^{+0.67}_{-0.56}$	$417^{+21}_{-18}$	$4142^{+337}_{-268}$	$5072^{+2646}_{-1831}$

$T_{max}$  = 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

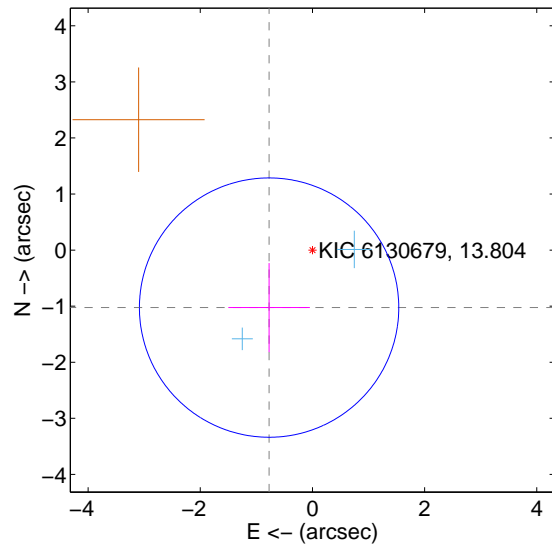
Supplemental centroid analysis for 006130679-01. Kepler magnitude: 13.80. Transit SNR 8.24

There are 2 quarters with good PRF difference image offsets

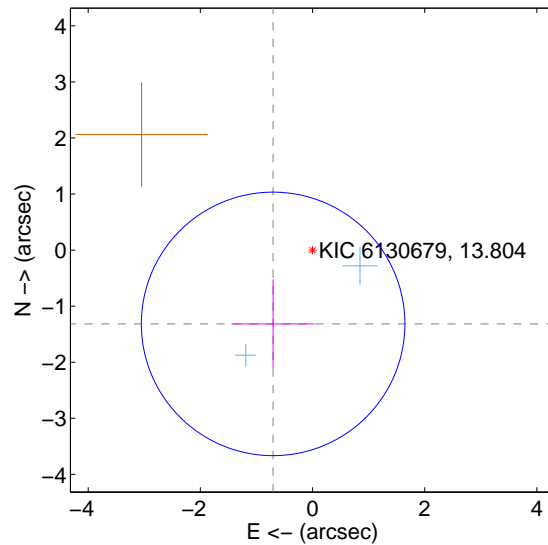
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.284 \pm 0.771$	1.67	$0.773 \pm 0.727$	$-1.025 \pm 0.794$
PRF-fit source offset from KIC position	$1.492 \pm 0.783$	1.90	$0.703 \pm 0.740$	$-1.316 \pm 0.795$
photometric centroid source offset	$0.94 \pm 0.73$	1.28	$-0.41 \pm 0.64$	$-0.84 \pm 0.75$

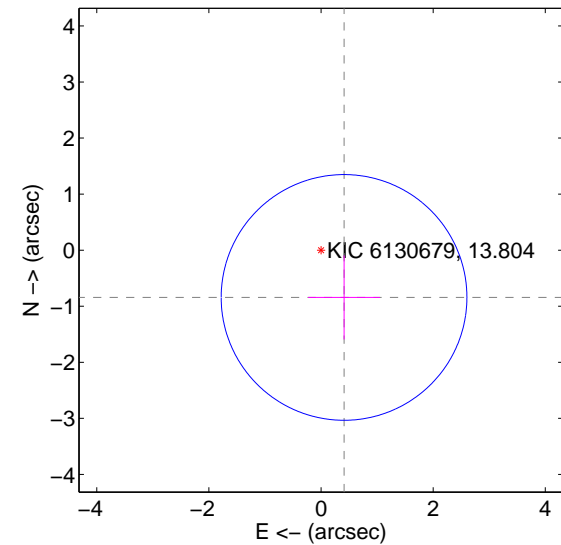
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



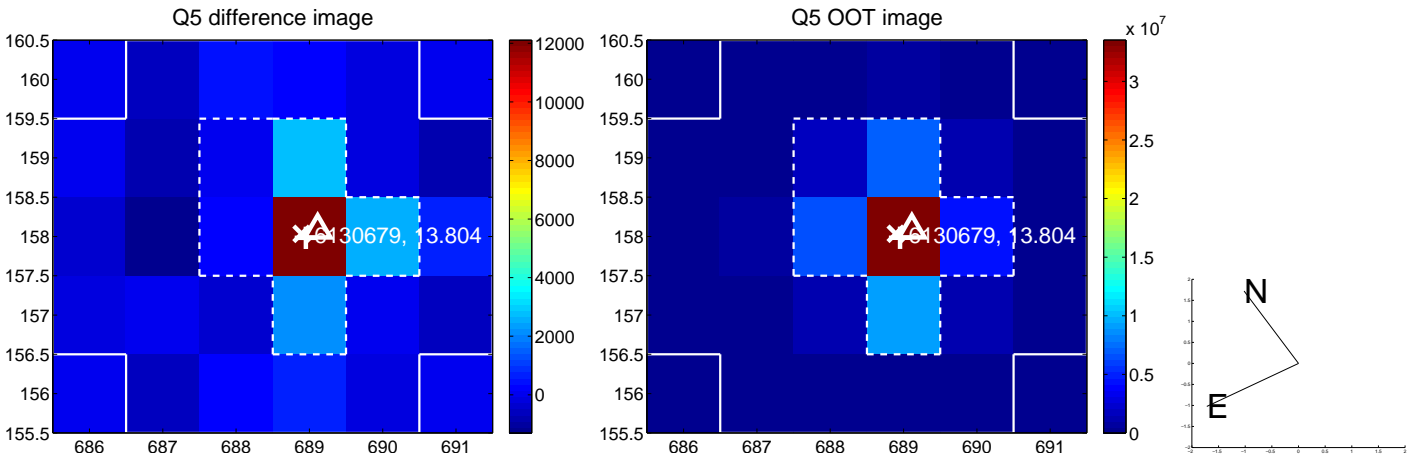
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

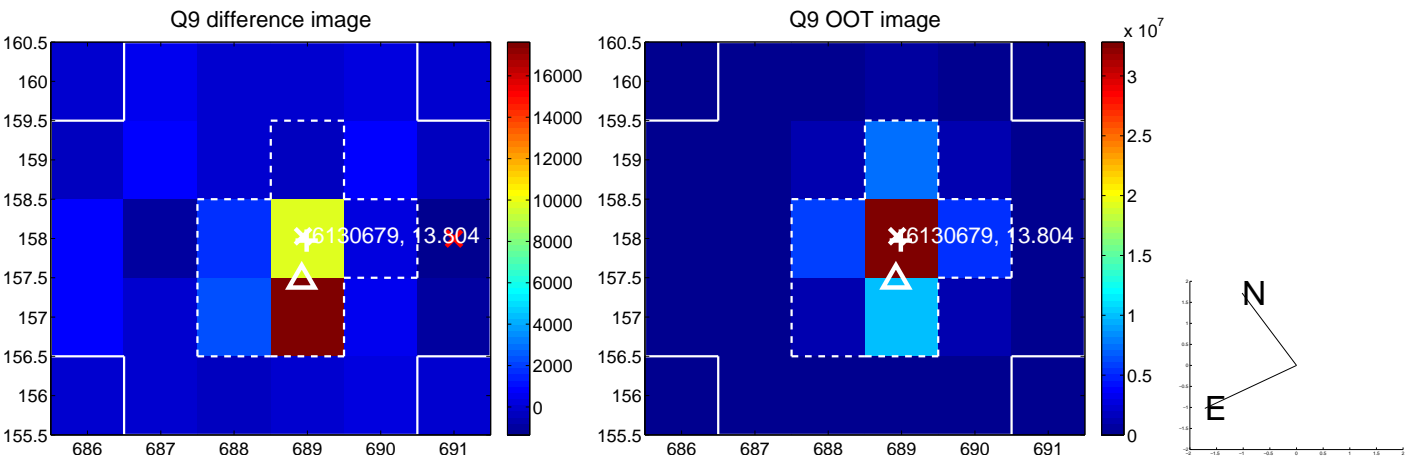




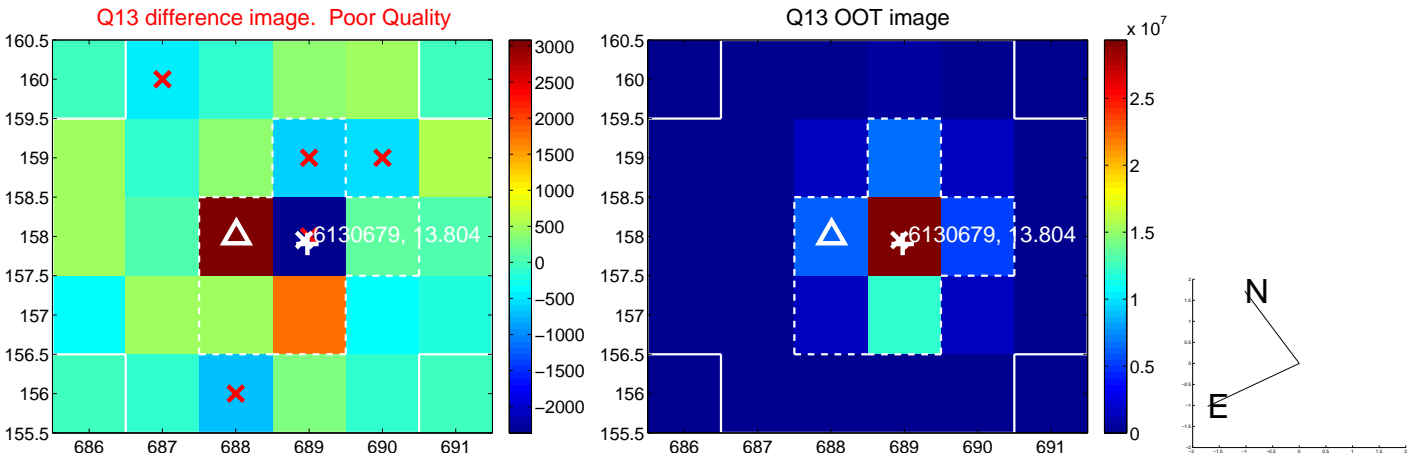
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



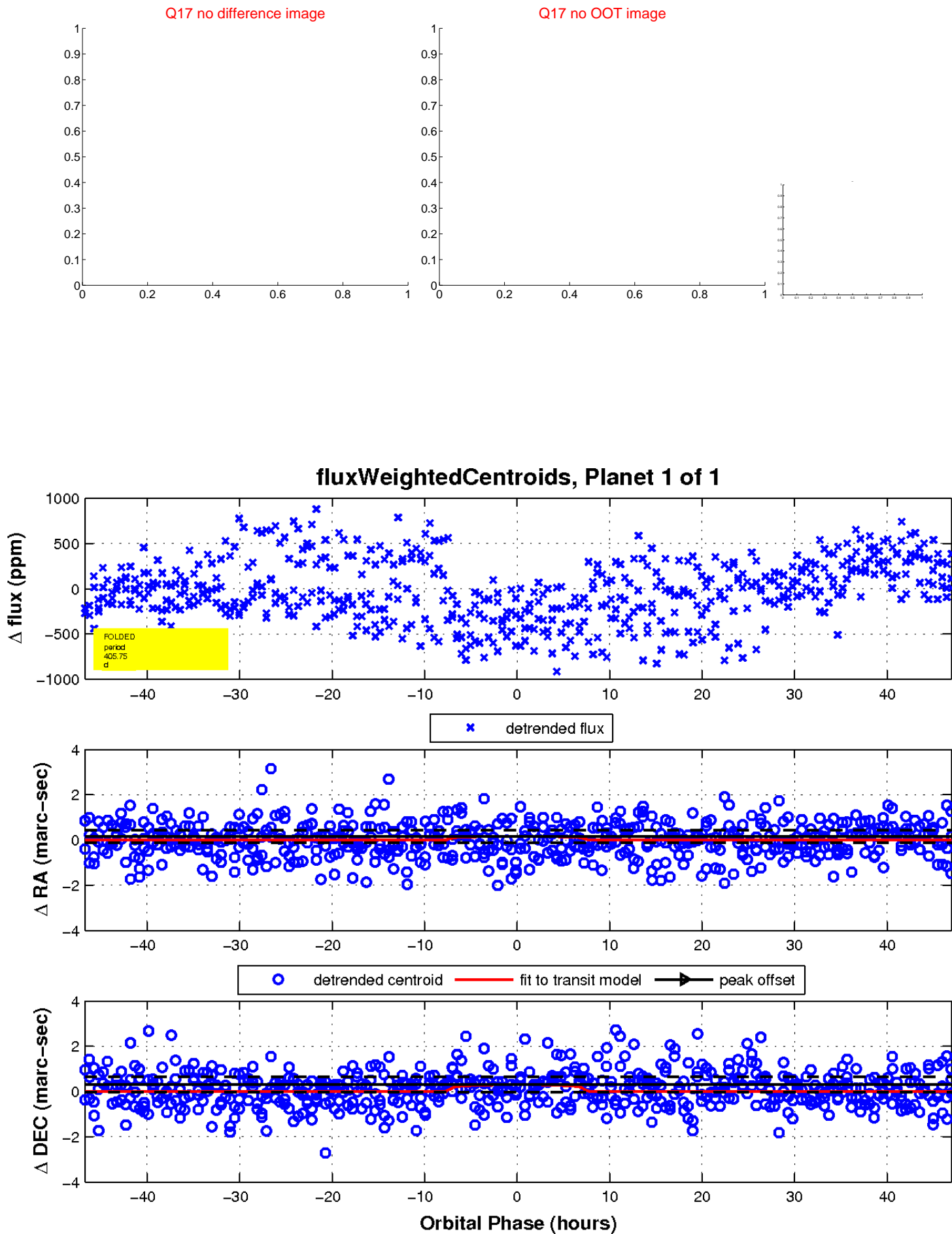
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



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



UKIRT Image

Declination

