

# KIC 012004679

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
012004679-01	OBS	7502.01	2.521235	132.859952	282948.3	2.500	35453.3	-1.0	0.85	5605	45.85	562.36

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012004679-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_ALT—CENT_NOFITS

**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.

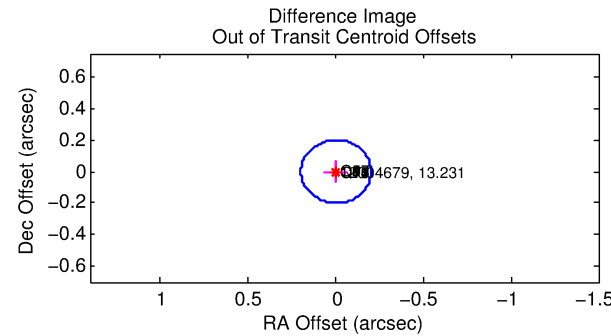
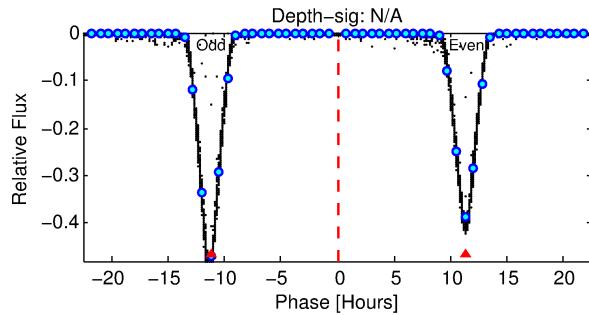
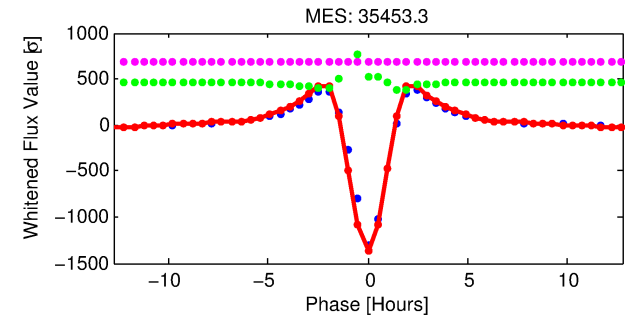
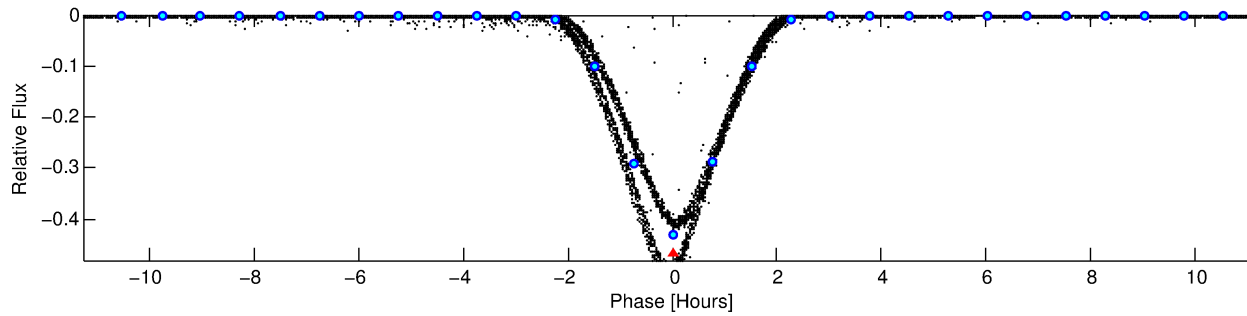
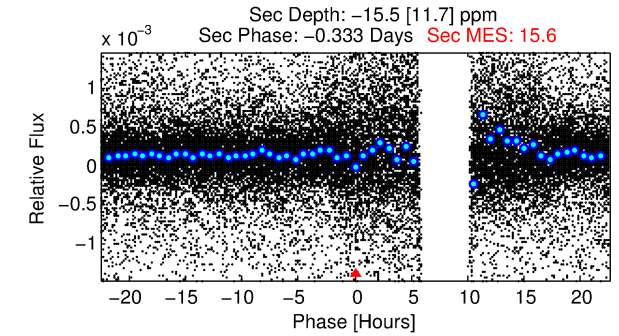
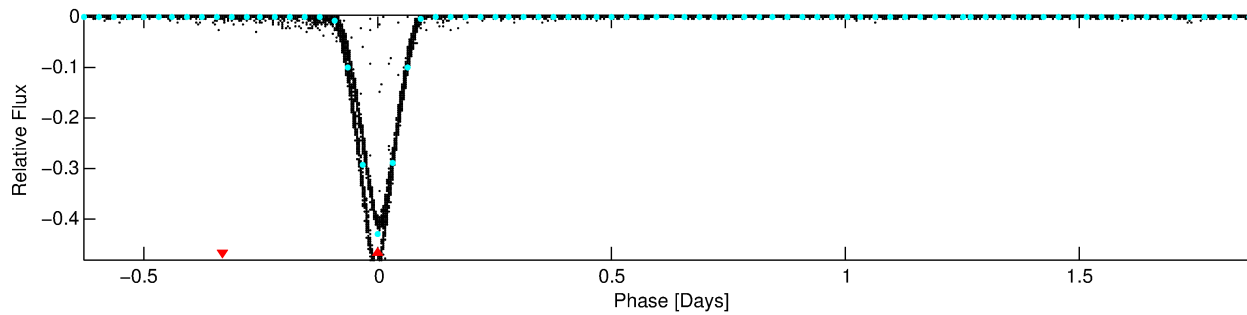
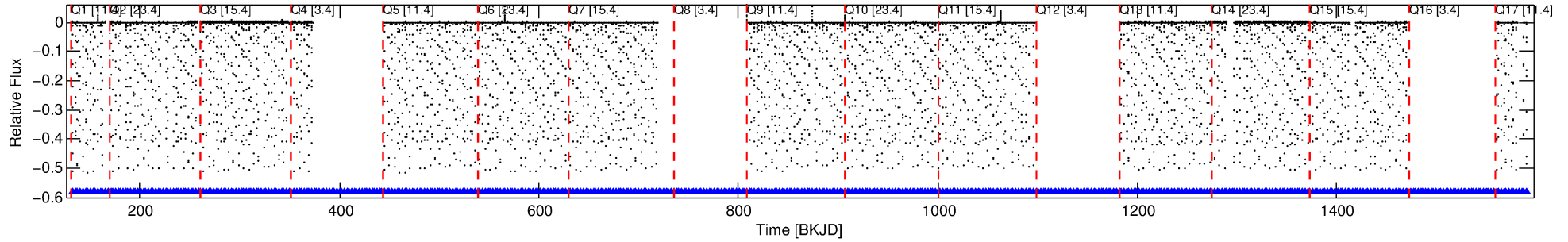
## Ephemeris Match Information For 012004679-01

No Significant Match Found

# DV One-Page Summary

KIC: 12004679 Candidate: 1 of 1 Period: 2.521 d  
KOI: K07502.01 Corr: 0.771

Kp: 13.23 R\*: 0.85 Rs Teff: 5605.0 K Logg: 4.49 Fe/H: -0.320



TPS TCE Results:

Period = 2.52123 d  
Epoch = 132.8600 BKJD

DV fit results are unavailable

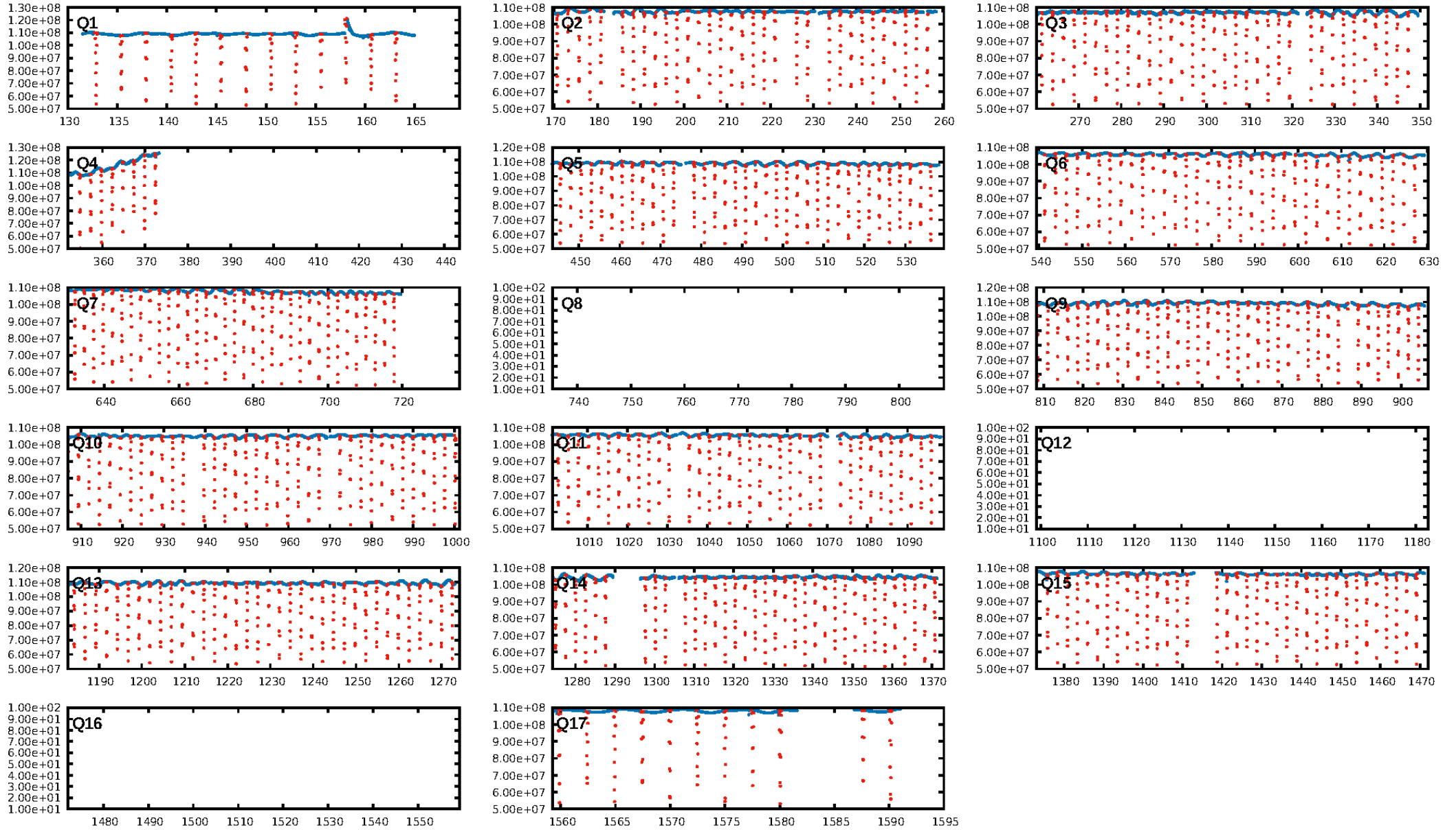
DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [389/389]  
GhostDiagnostic-chr: 1.159  
Centroid-sig: 0.0%  
Centroid-so: 0.158 arcsec [554.94σ]  
OotOffset-rm: 0.003 arcsec [0.04σ]  
KicOffset-rm: 0.062 arcsec [0.91σ]  
OotOffset-st: 4/4/1/5 [14]  
KicOffset-st: 4/4/1/5 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

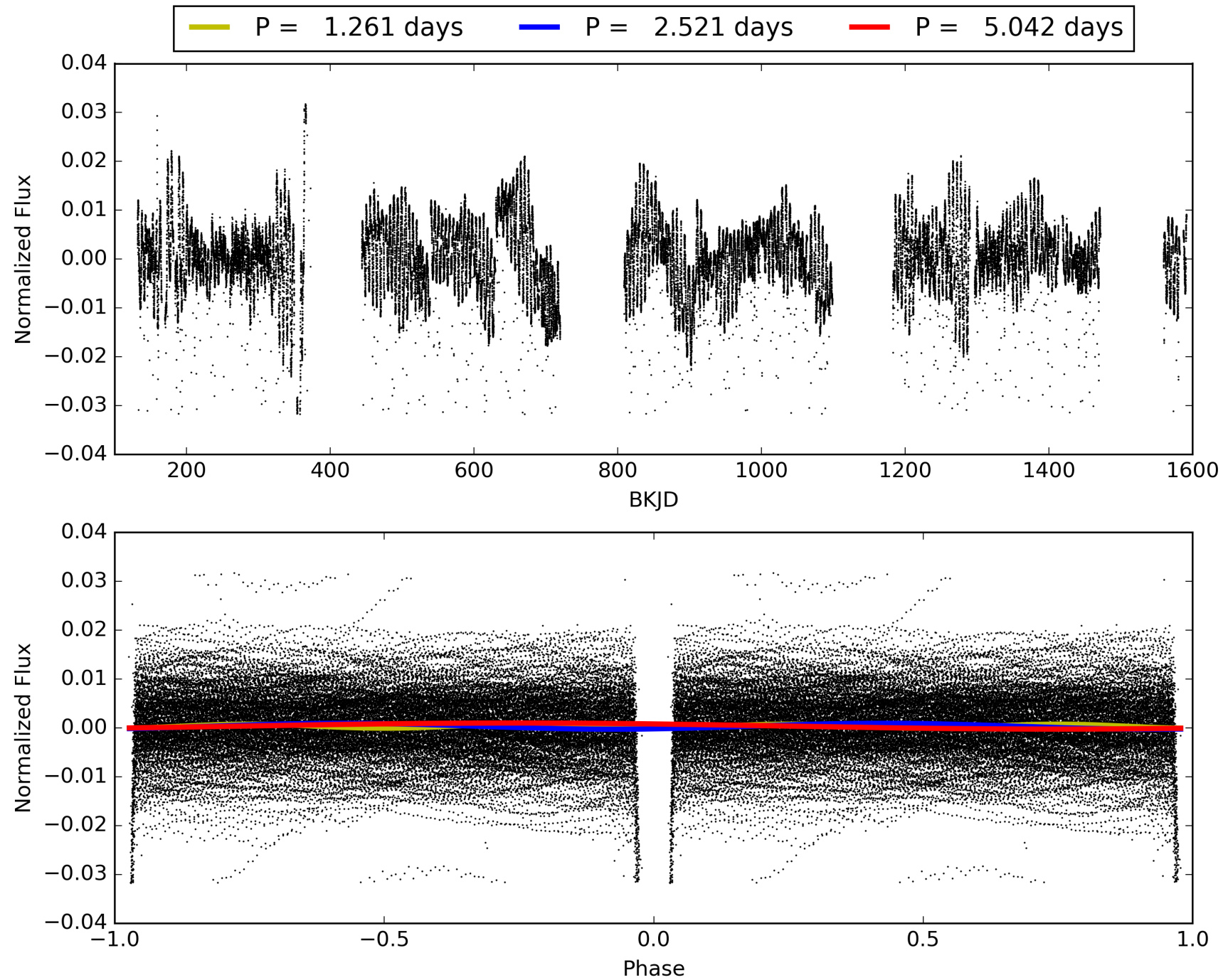
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 09:53:48 Z

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

# TCE 012004679-01, PDC Light Curves

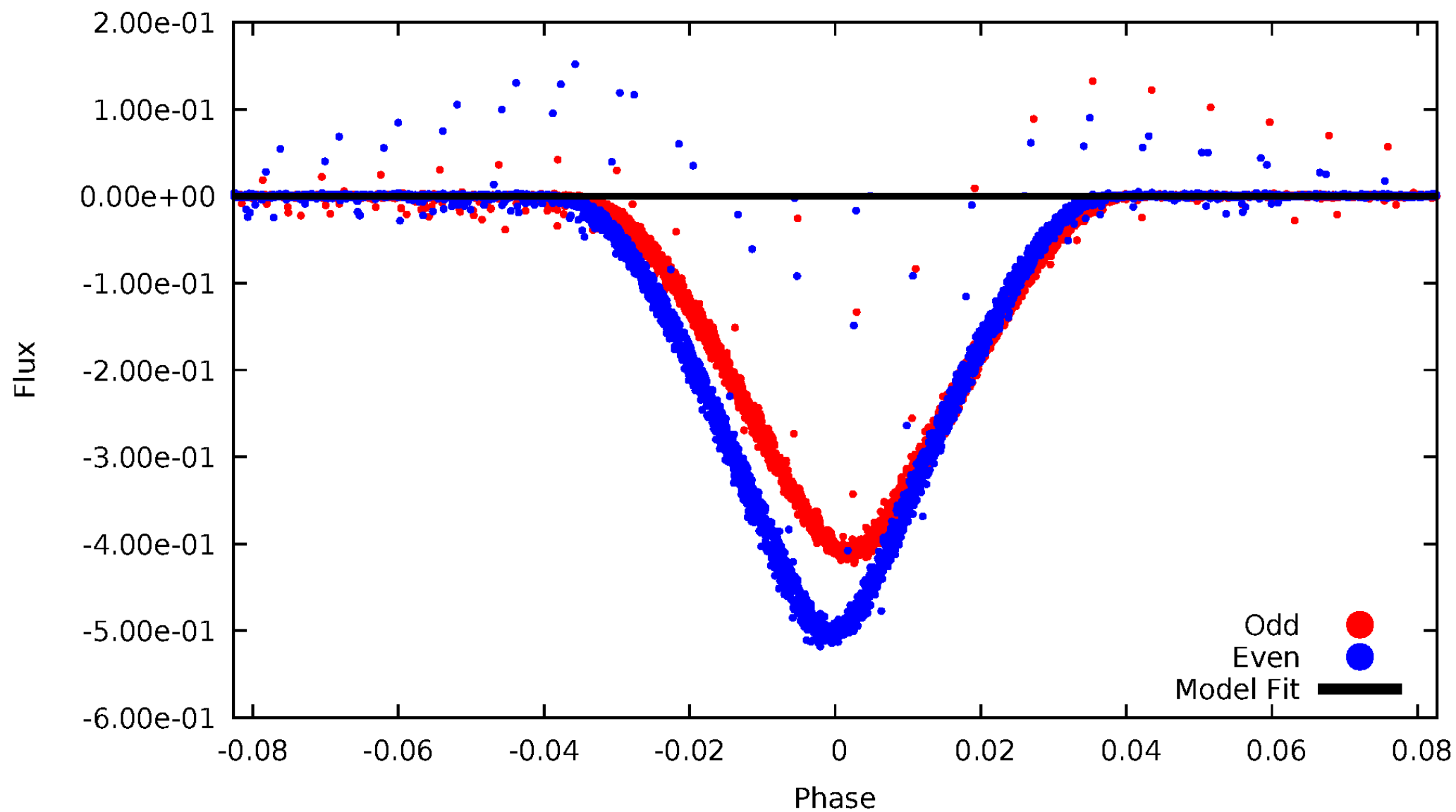


TCE 012004679-01



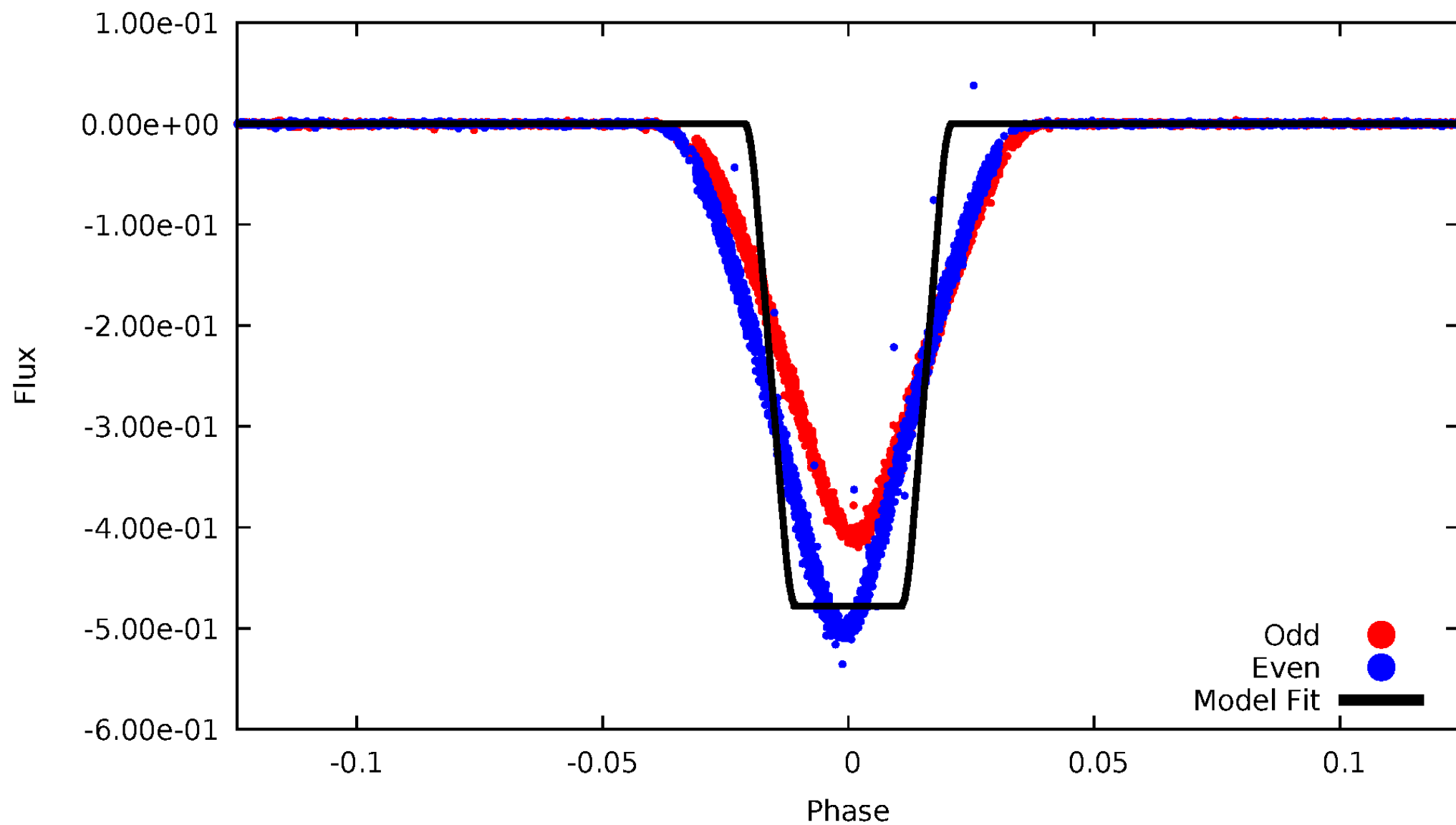
# DV Odd/Even

TCE 012004679-01



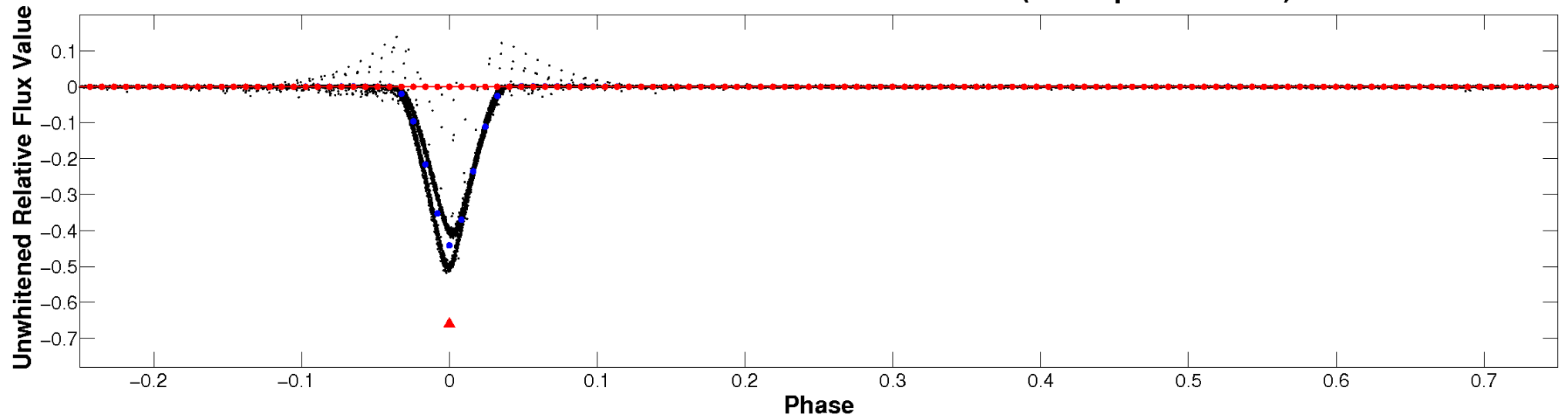
# ALT Odd/Even

TCE 012004679-01



# Non-Whitened Vs. Whitened Light Curve

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

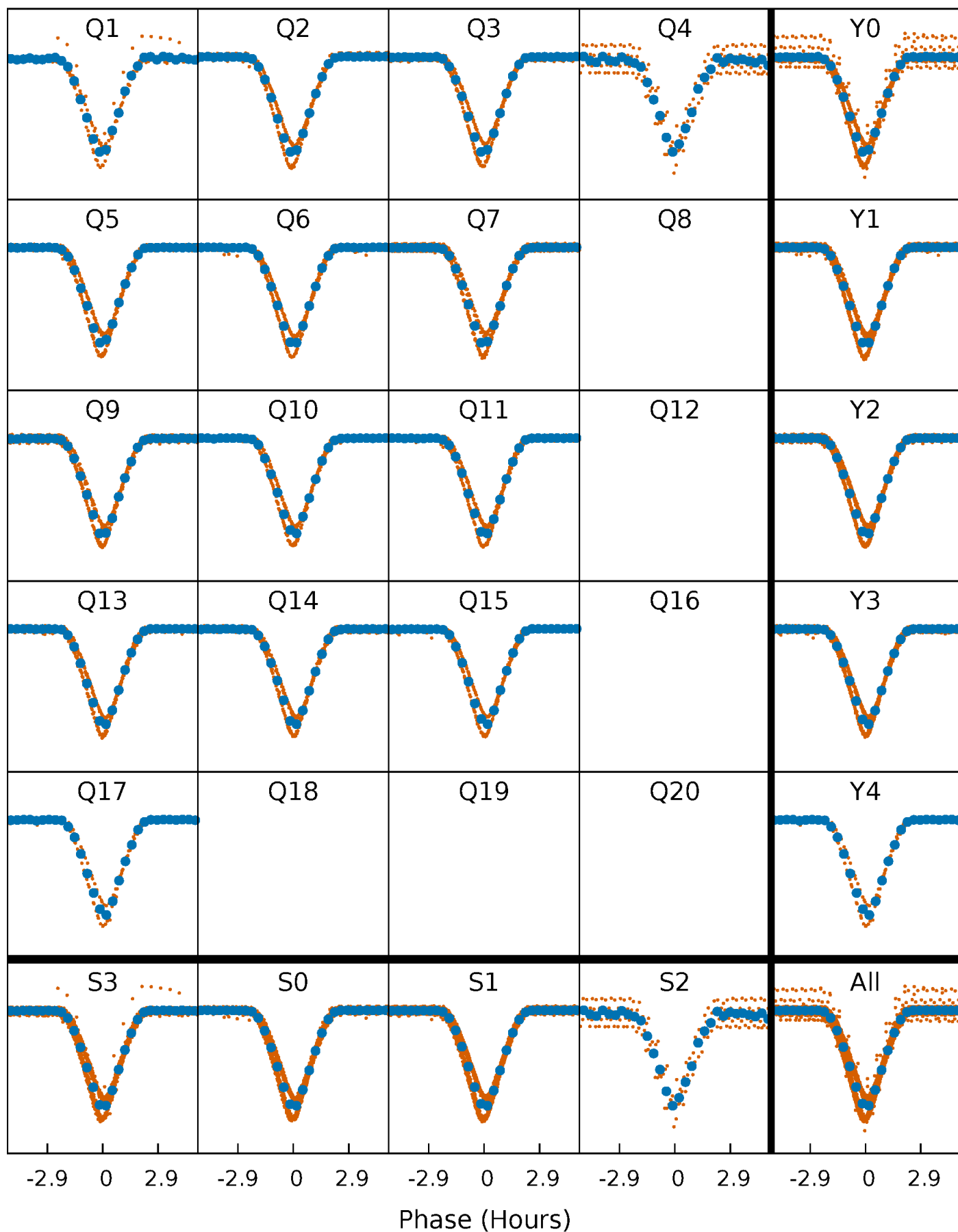


**Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

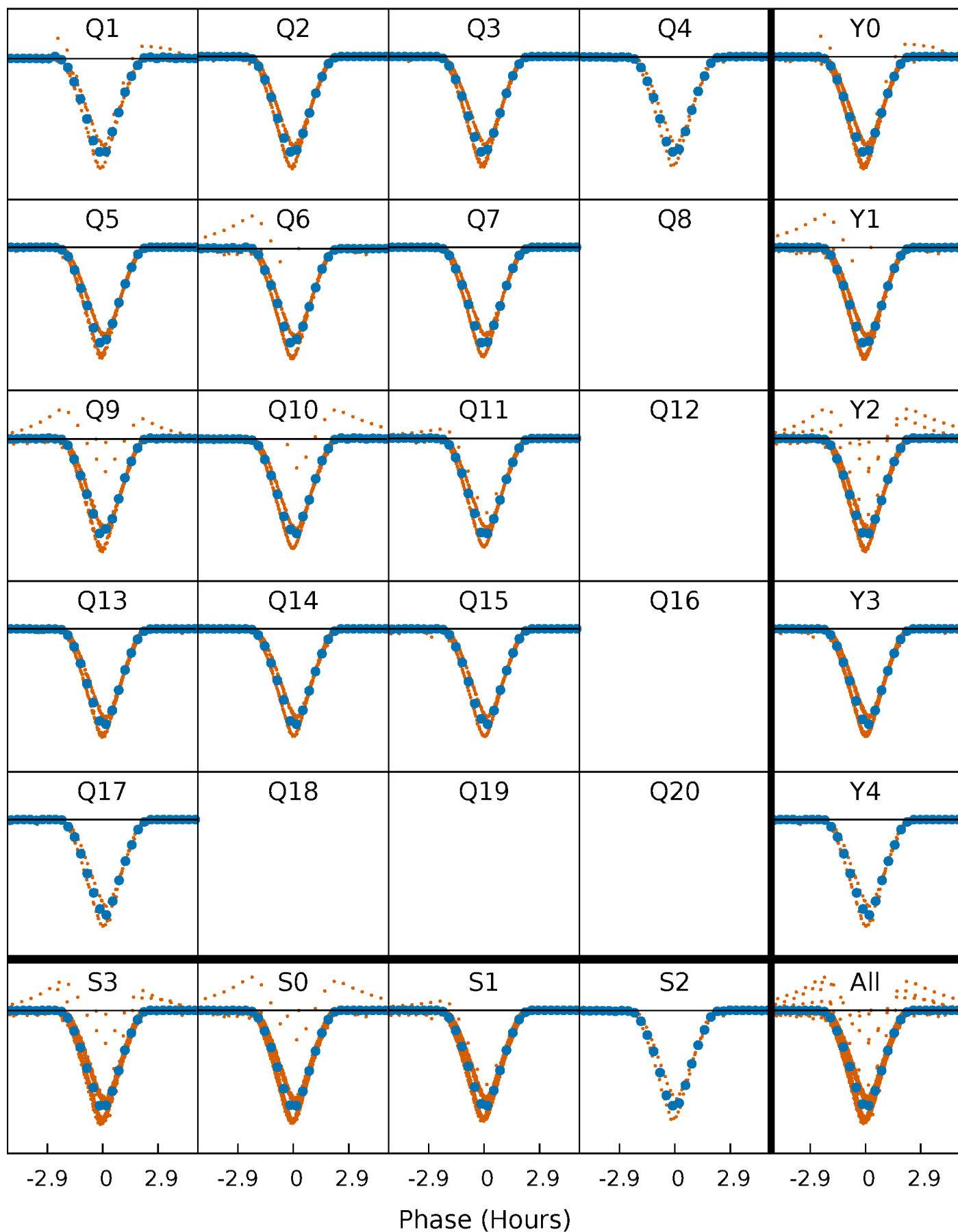
TCE 012004679-01 P= 2.521235 Days  $T_0=132.859952$  (BKJD)





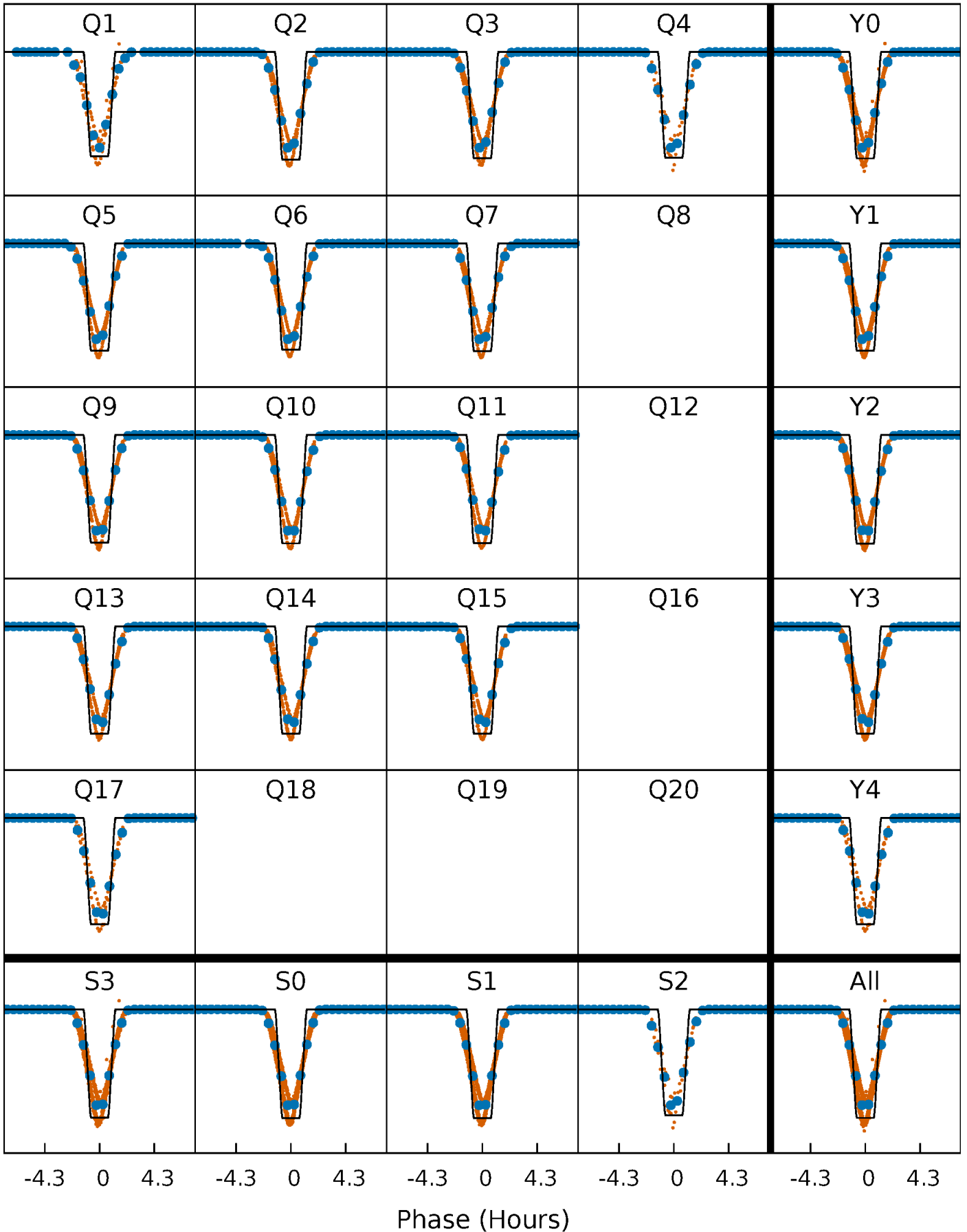
# DV Quarter-Phased Transit Curves

TCE 012004679-01 P= 2.521235 Days  $T_0=132.859952$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

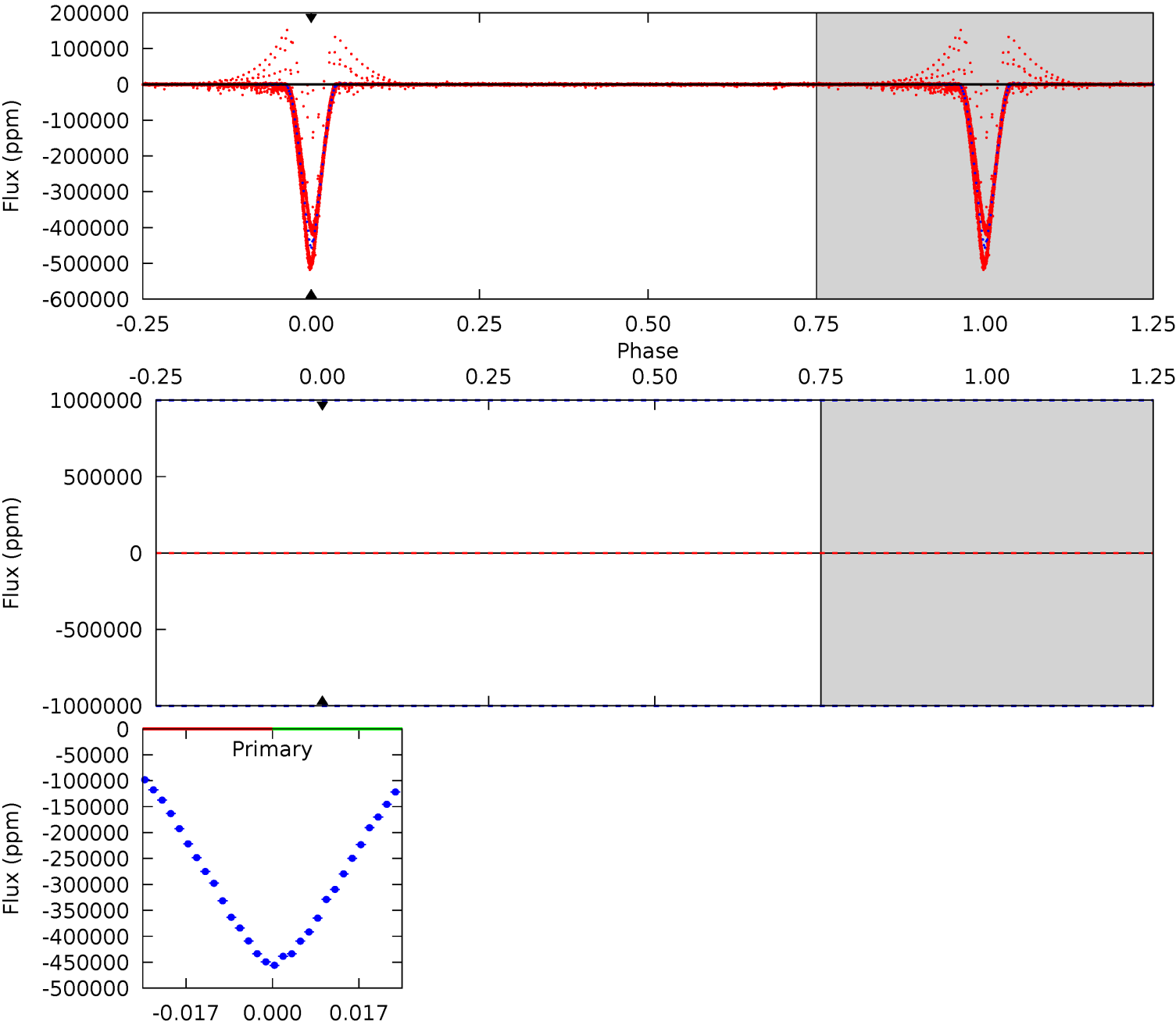
TCE 012004679-01 P= 2.521235 Days  $T_0=132.861368$  (BKJD)



DV Model-Shift Uniqueness Test

012004679-01, P = 2.521235 Days, E = 130.338717 Days

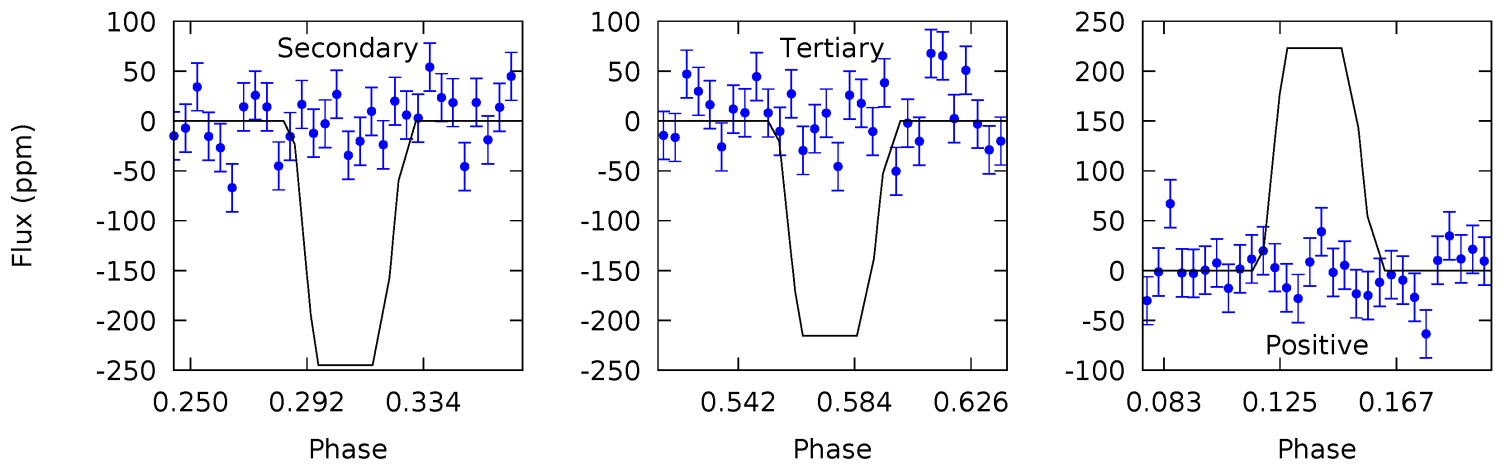
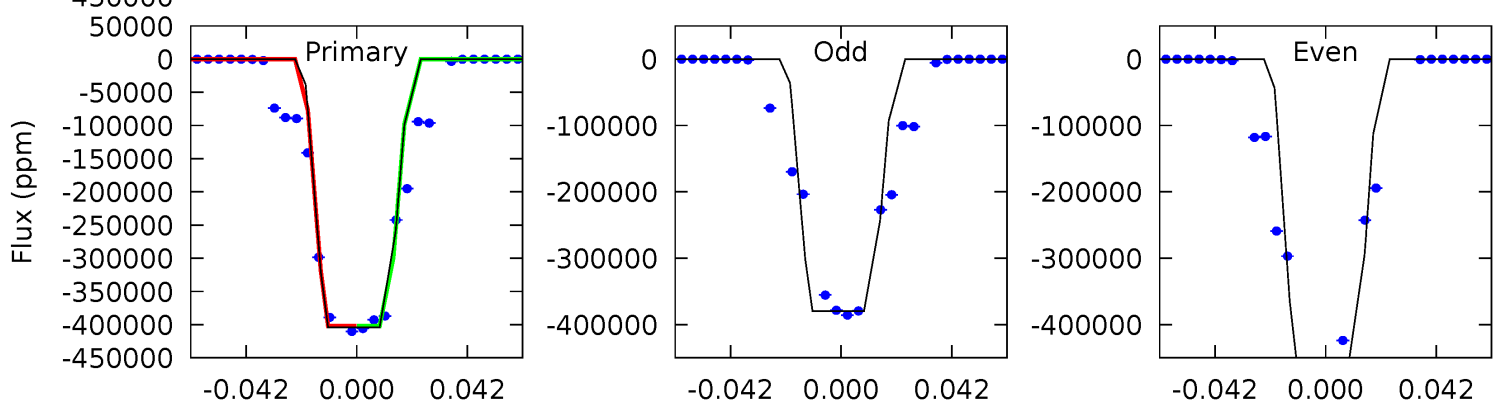
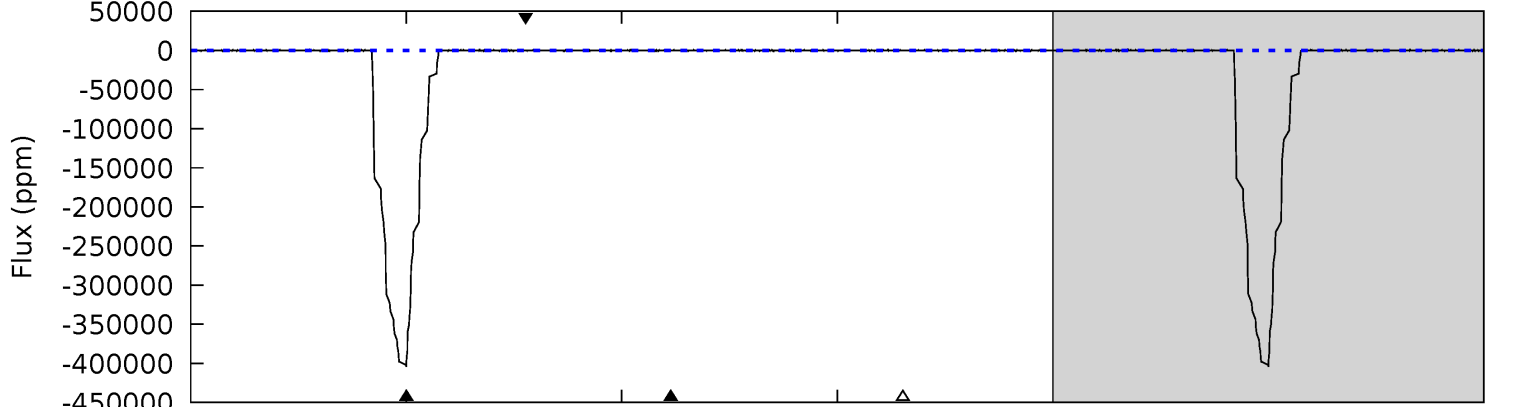
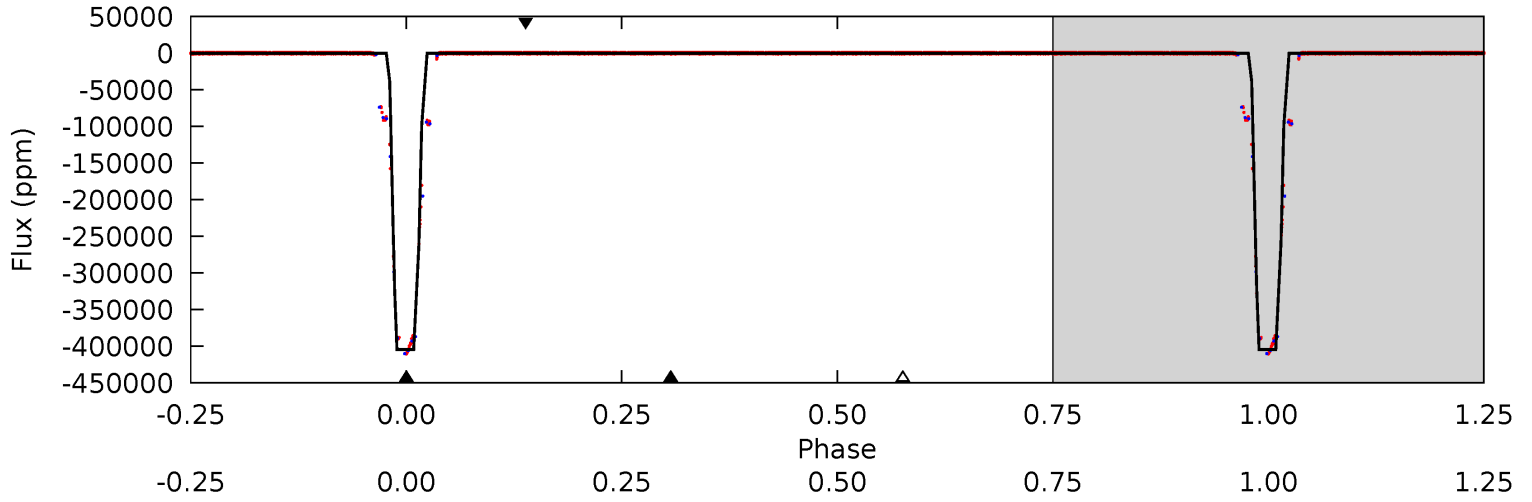
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

012004679-01, P = 2.521235 Days, E = 130.340133 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
7612	4.61	4.05	4.20	4.75	2.04	1.15	7607	7607	0.56	0.42	1041	0.98	0.00	0



### Stellar Parameters For KIC 012004679

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5605^{+152}_{-135}$	$4.486^{+0.096}_{-0.156}$	$-0.320^{+0.300}_{-0.300}$	$0.854^{+0.189}_{-0.102}$	$0.816^{+0.106}_{-0.071}$	$1.845^{+0.763}_{-0.744}$
	+3%/-2%	+2%/-3%	+94%/-94%	+22%/-12%	+13%/-9%	+41%/-40%
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 012004679-01 / KOI 7502.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$46.87^{+11.46}_{-10.18}$	$1748^{+95}_{-80}$	$-2571^{+7277}_{-2017}$	$-0.486^{+33.153}_{-27.644}$
Alt.	$-245 \pm 53$	$65.77^{+12.62}_{-11.04}$	$1753^{+98}_{-80}$	$-2303^{+56}_{-73}$	$0.035^{+0.019}_{-0.012}$

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

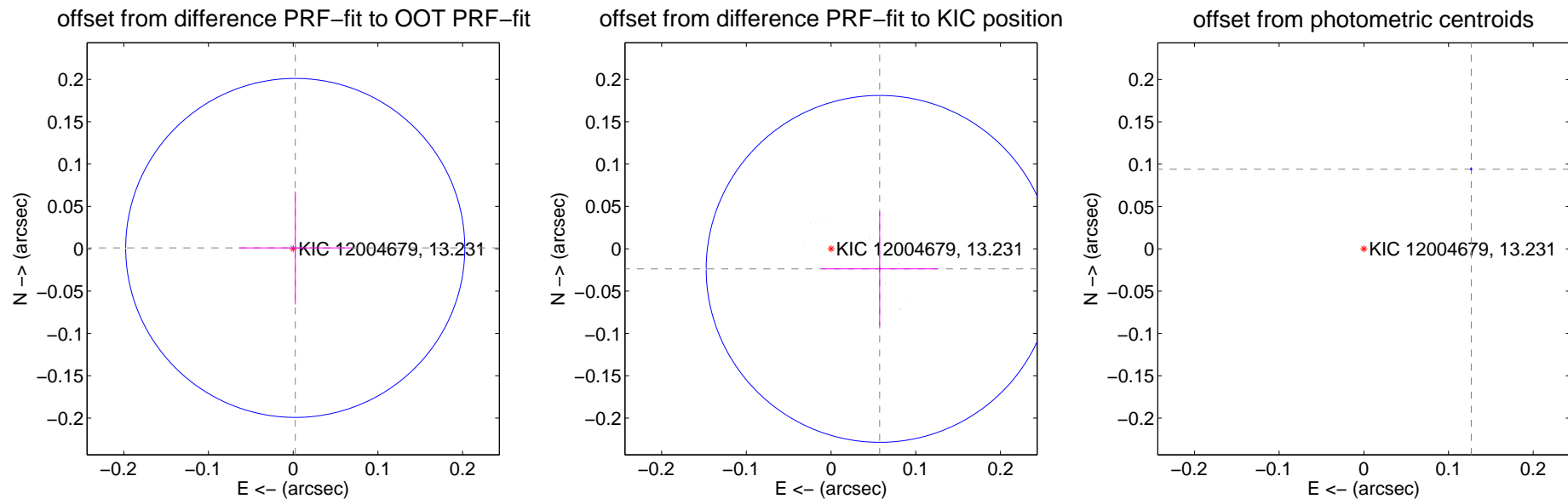
## DV Centroid Data

Supplemental centroid analysis for 012004679-01. Kepler magnitude: 13.23. Transit SNR -1.00

There are 14 quarters with good PRF difference image offsets

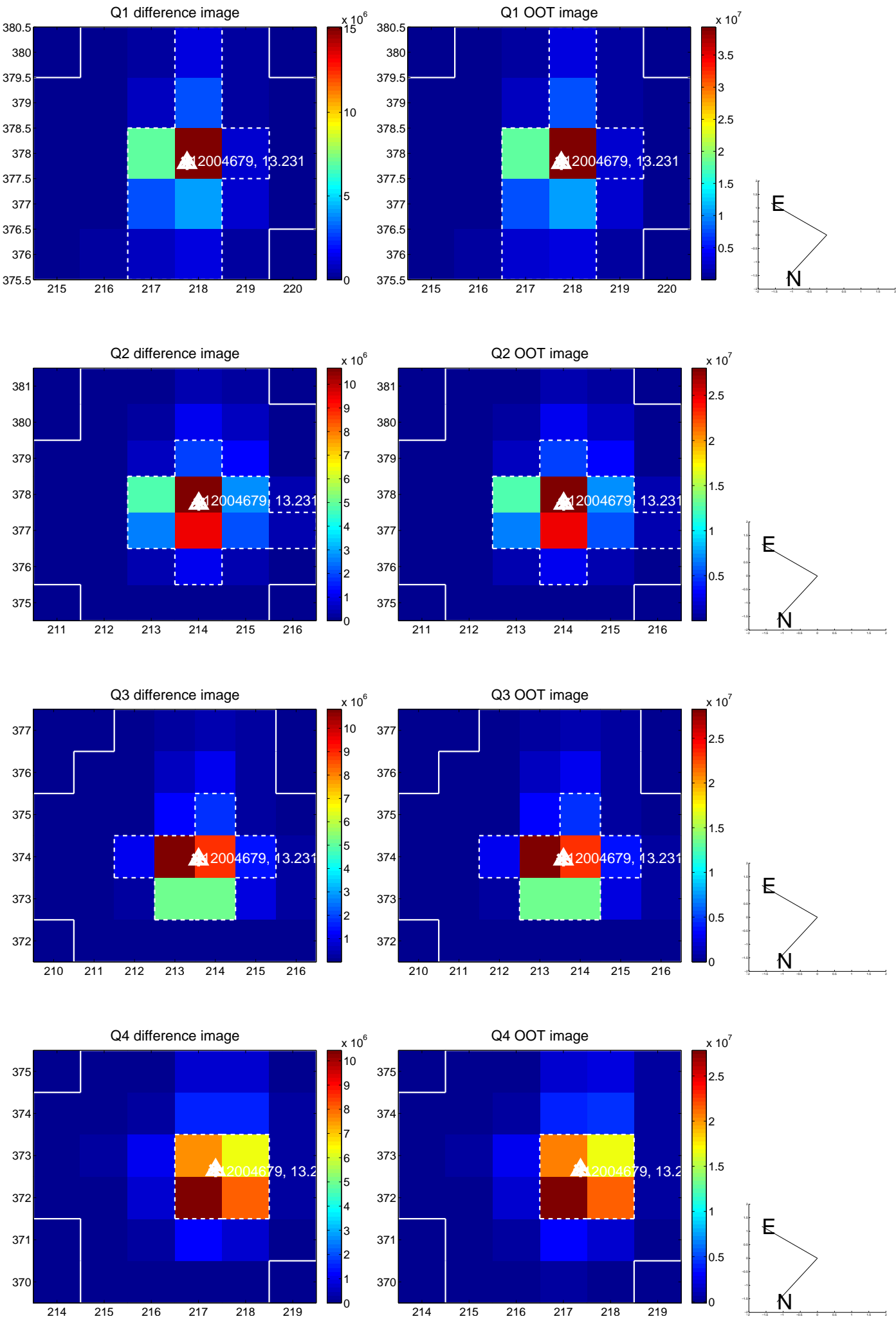
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.003 \pm 0.067$	0.04	$-0.002 \pm 0.067$	$0.001 \pm 0.067$
PRF-fit source offset from KIC position	$0.062 \pm 0.068$	0.91	$-0.057 \pm 0.068$	$-0.024 \pm 0.067$
photometric centroid source offset	$0.16 \pm 0.00$	554.94	$-0.13 \pm 0.00$	$0.09 \pm 0.00$

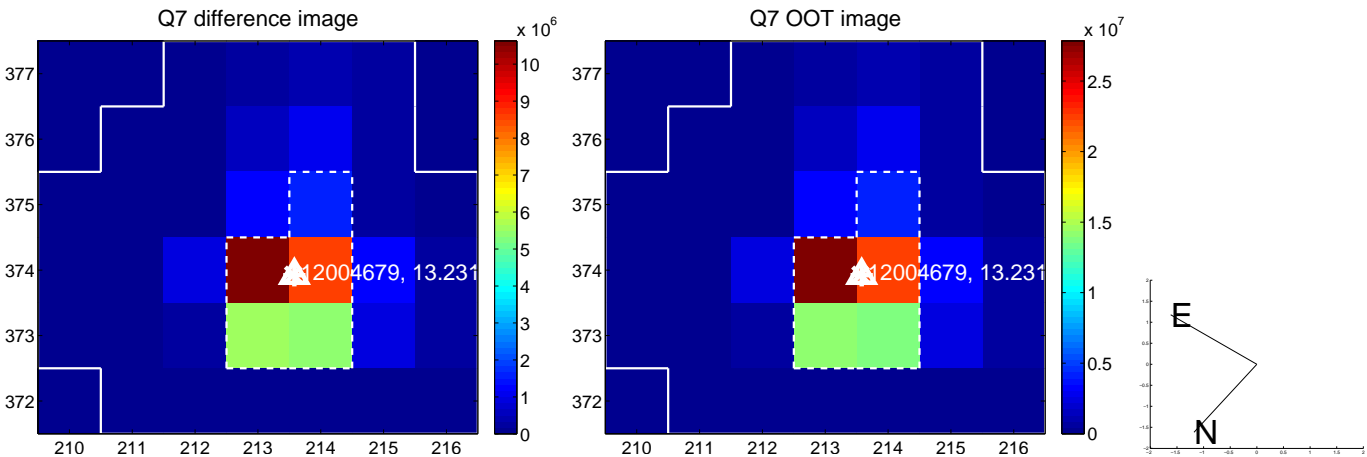
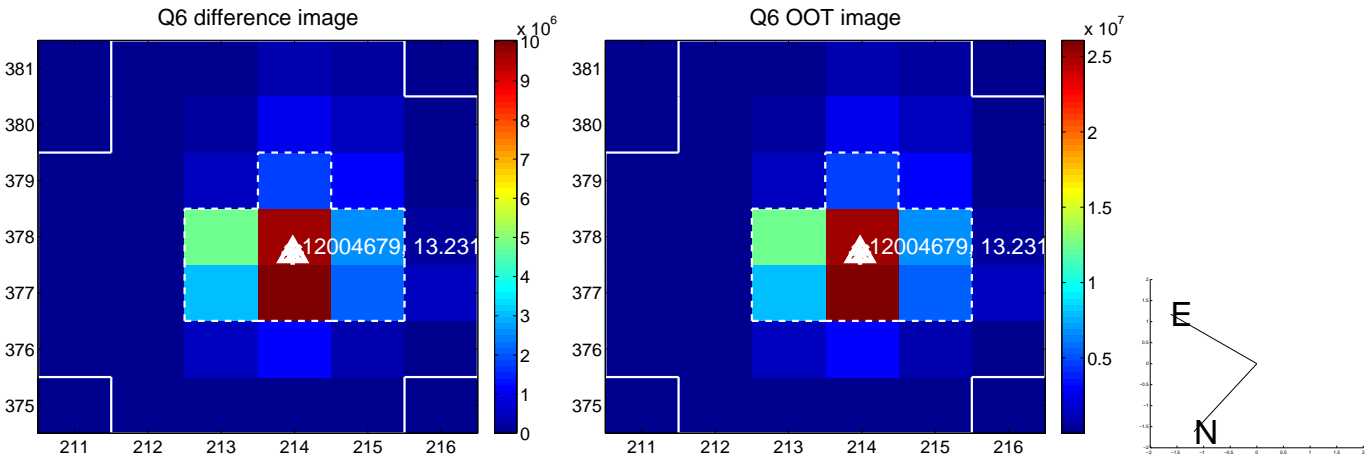
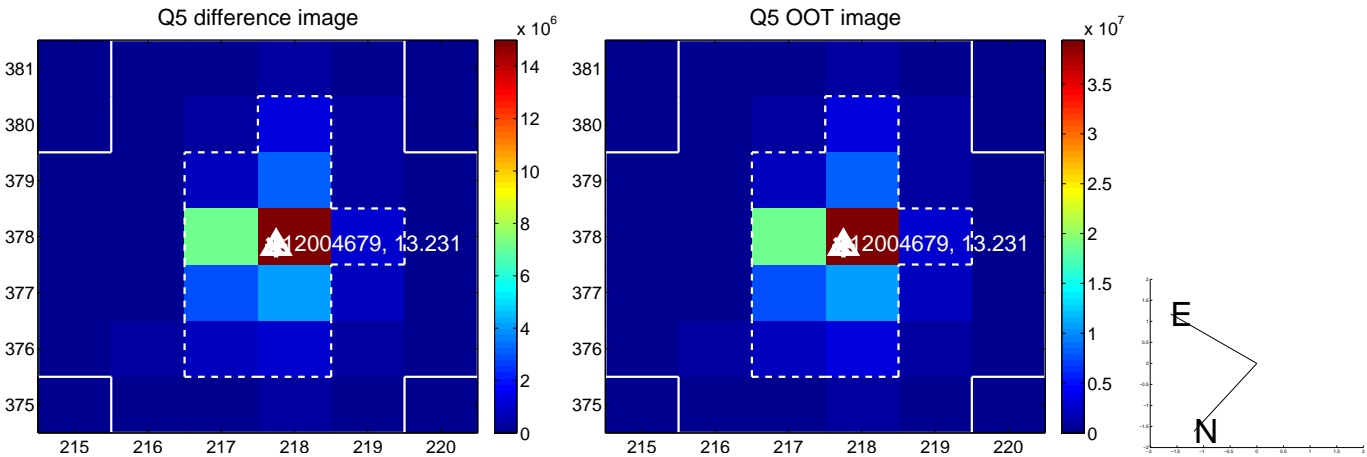


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

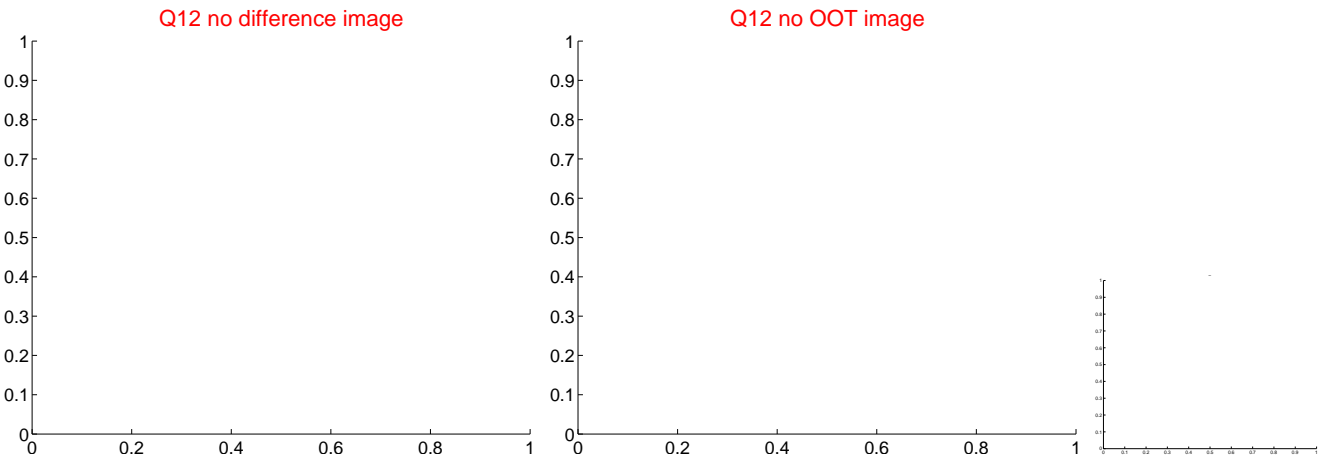
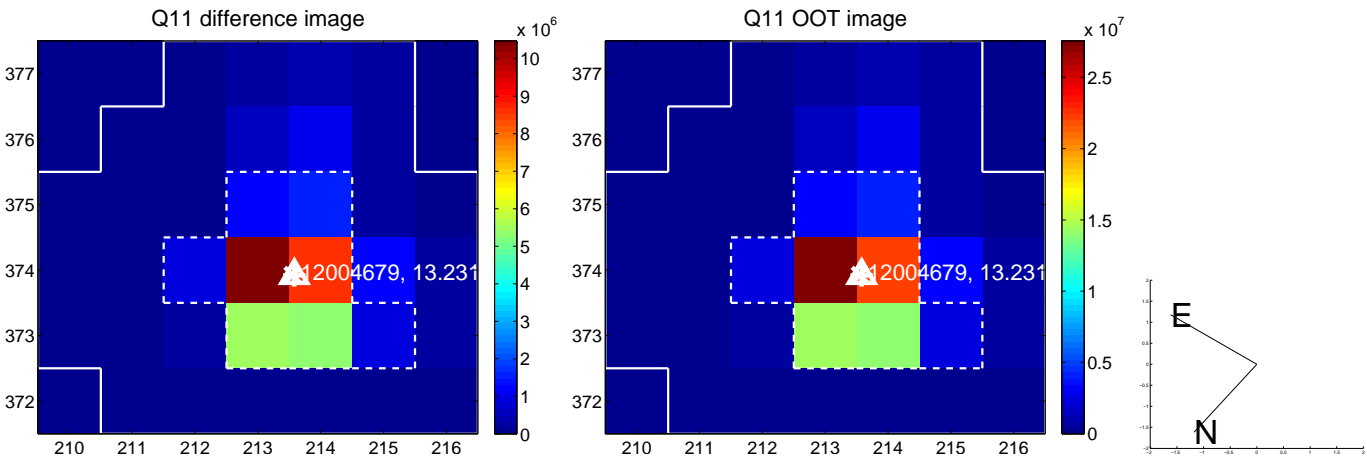
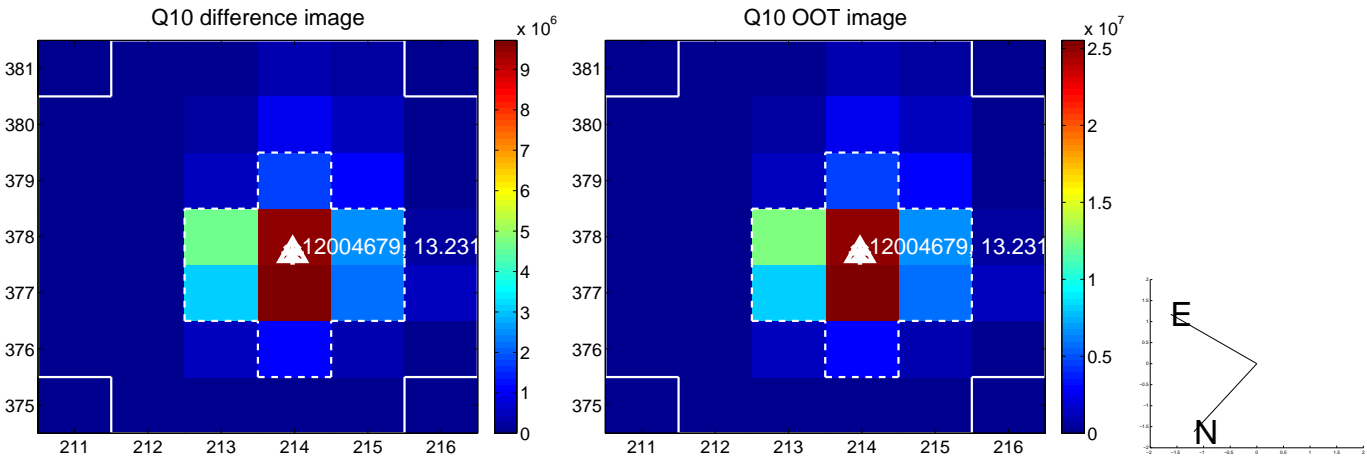
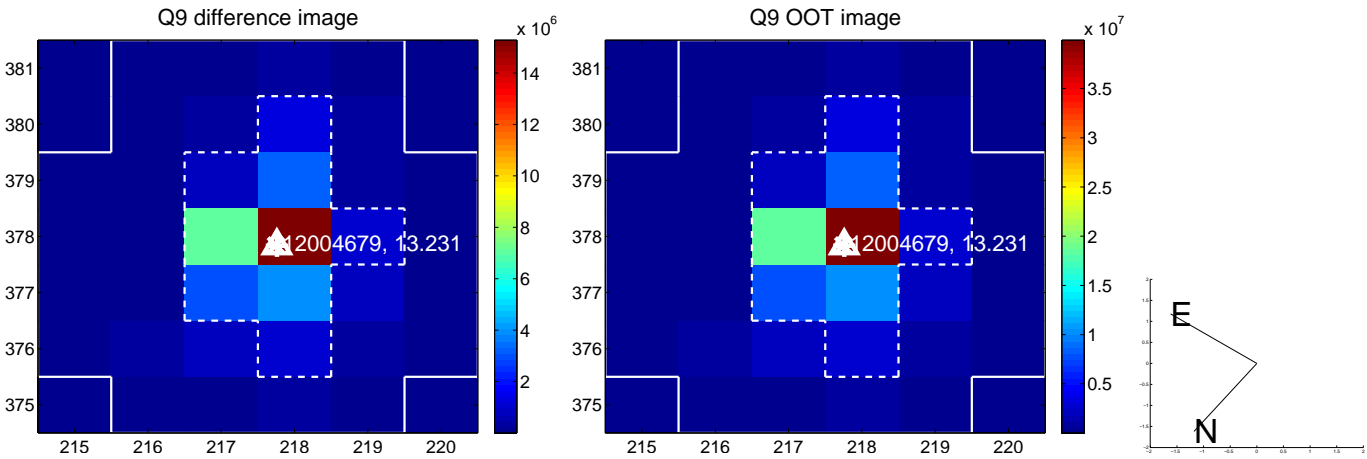


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

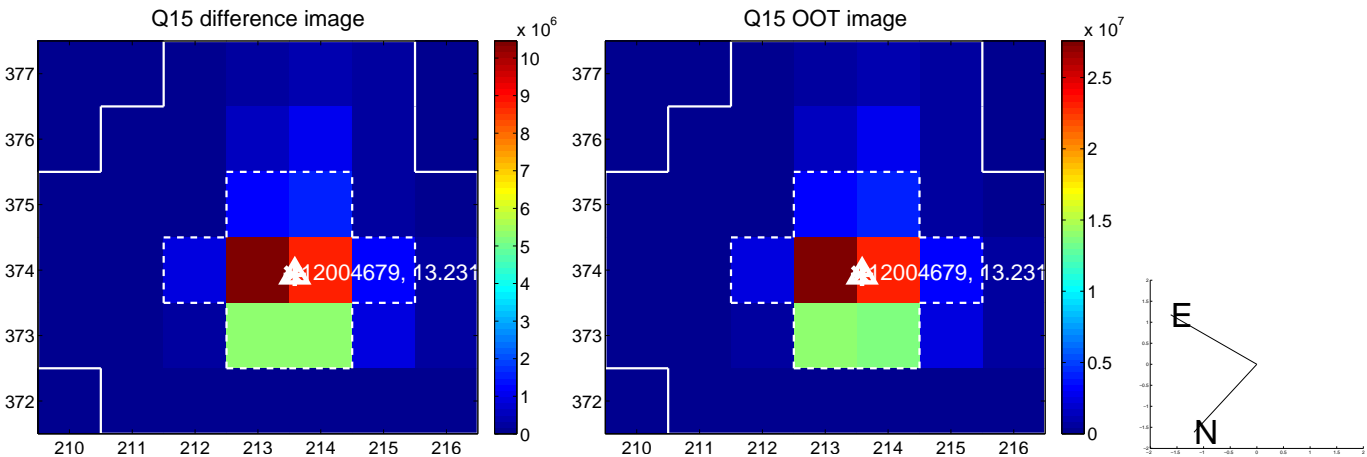
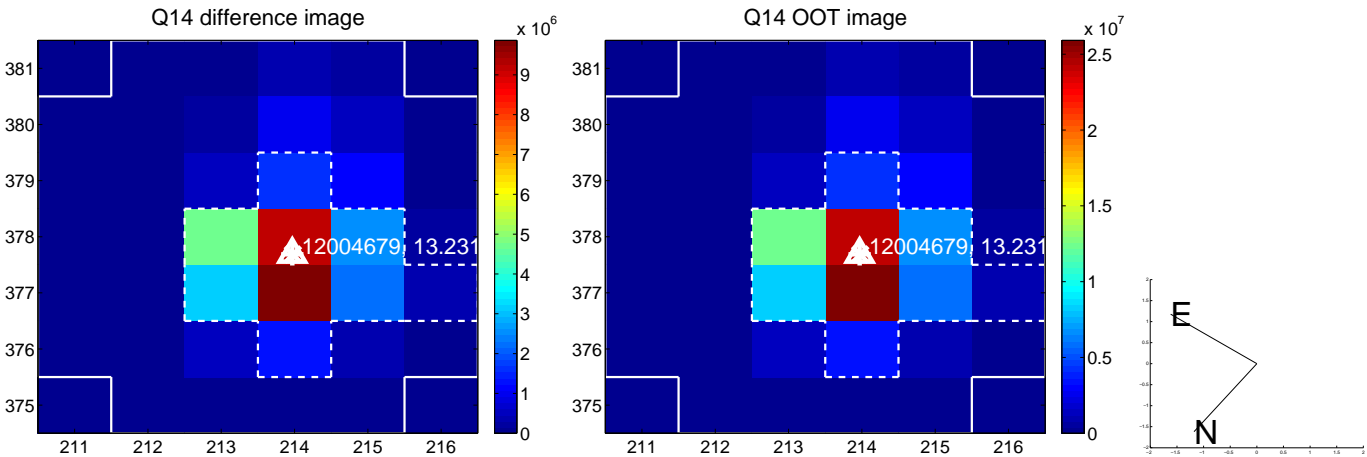
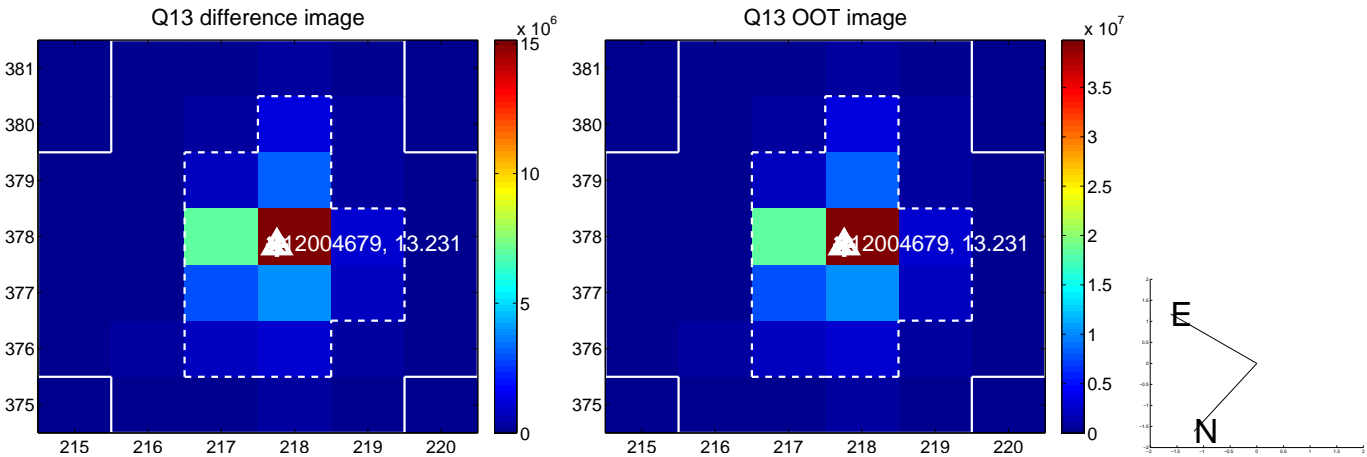




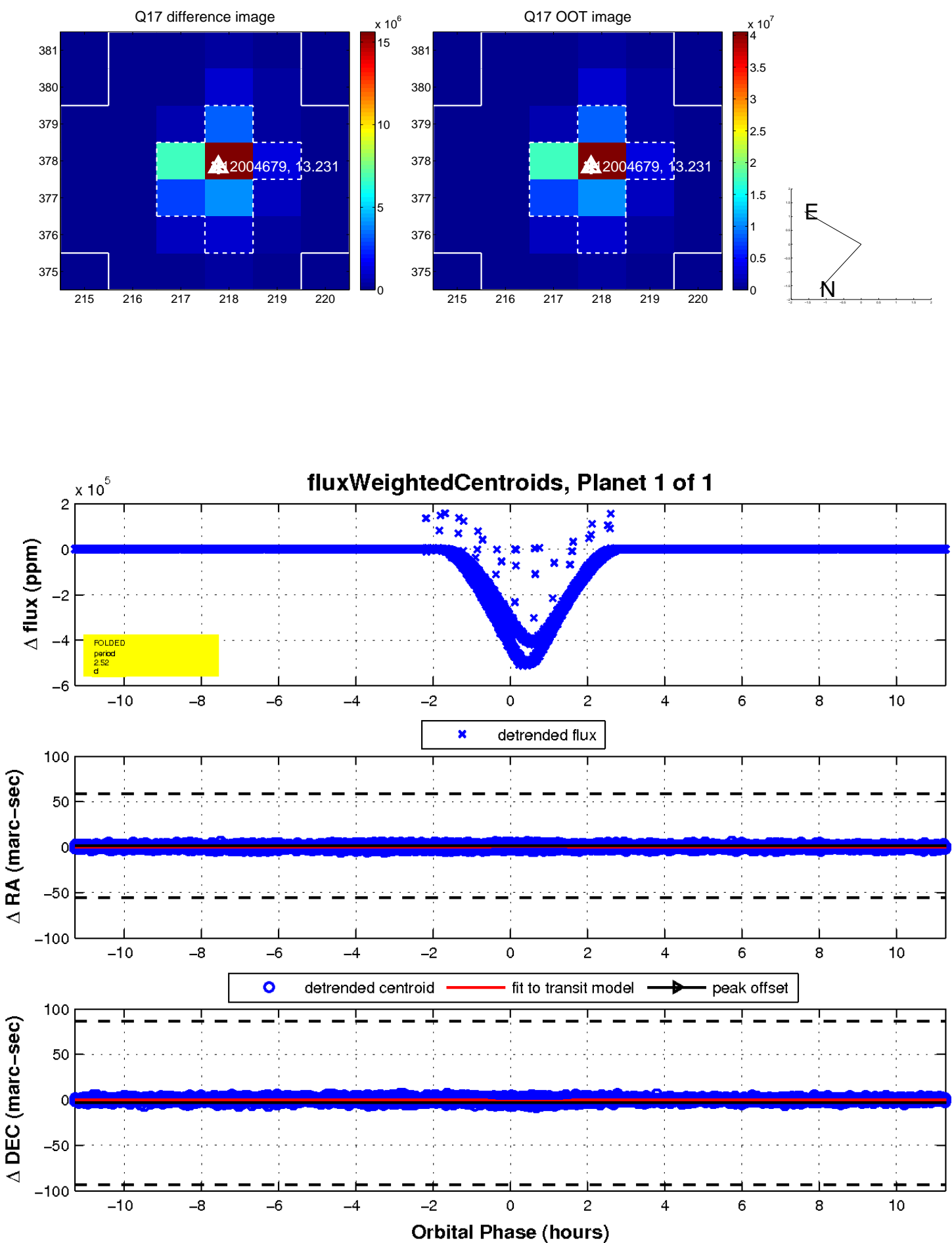
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

