

# KIC 007098355

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007098355-01	OBS	0454.01	29.007946	141.544691	888.7	5.178	36.6	38.7	0.80	5295	2.73	14.61

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007098355-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

**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.

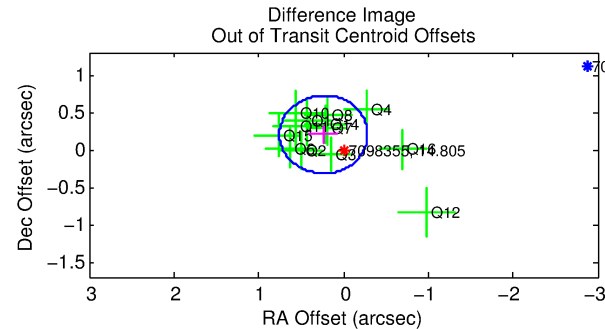
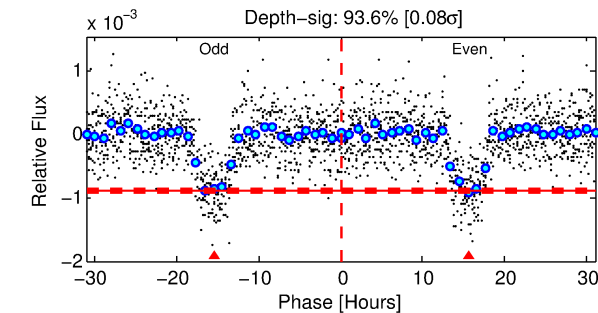
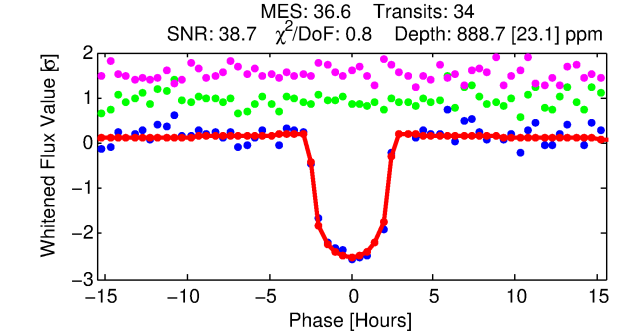
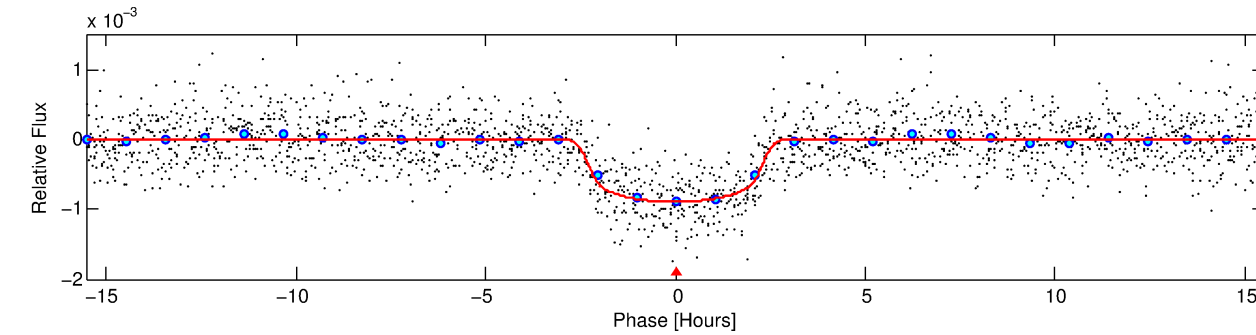
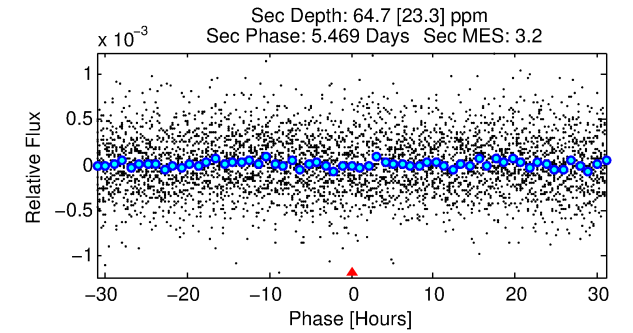
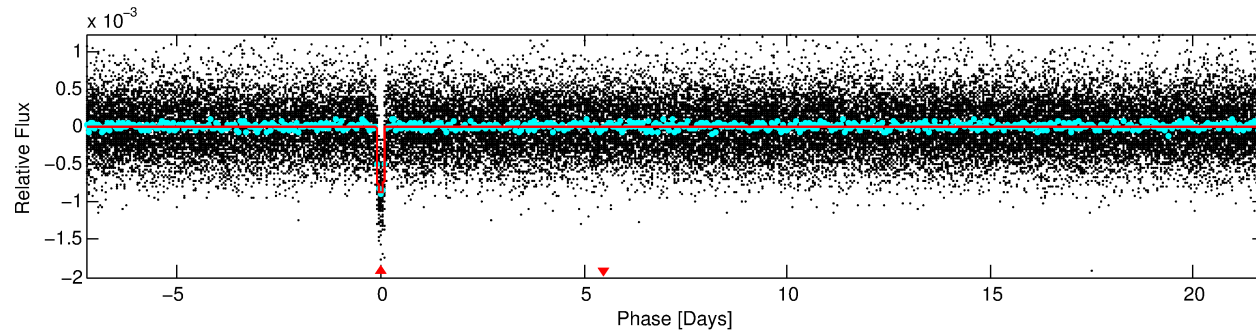
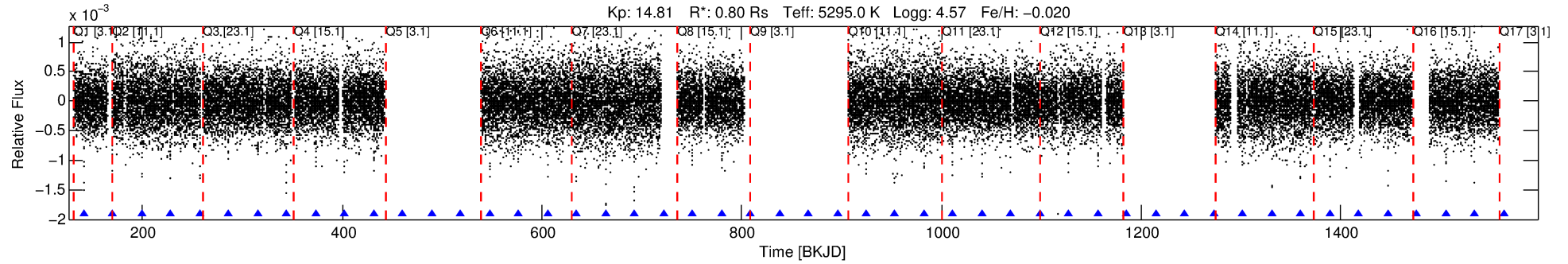
## Ephemeris Match Information For 007098355-01

No Significant Match Found

# DV One-Page Summary

KIC: 7098355 Candidate: 1 of 1 Period: 29.008 d

KOI: K00454.01 Corr: 0.965



## DV Fit Results:

Period = 29.00795 [0.00009] d  
Epoch = 141.5447 [0.0025] BKJD  
Rp/R\* = 0.0312 [0.0027]  
a/R\* = 25.87 [8.66]  
b = 0.84 [0.12]  
Seff = 14.61 [3.35]  
Teff = 499 [29] K  
Rp = 2.72 [0.51] Re  
a = 0.1758 [0.0240] AU  
Ag = 148.21 [66.01] [2.23σ]  
Teffp = 2690 [281] K [7.7σ]

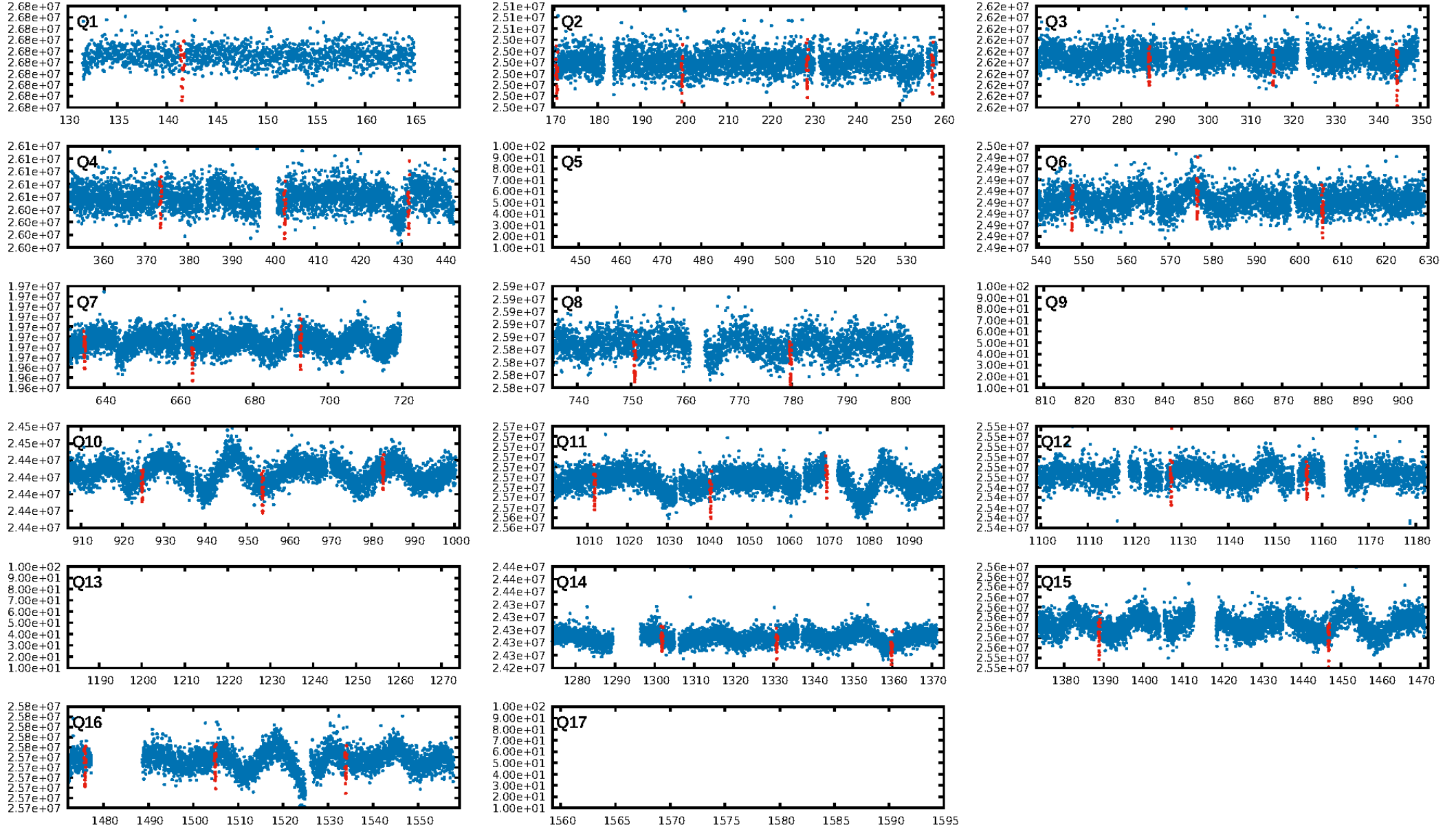
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 97.3%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 6.15e-282  
RollingBand-fgt: 1.00 [33/33]  
GhostDiagnostic-chr: 15.37  
Centroid-sig: 2.4%  
Centroid-so: 0.689 arcsec [2.24σ]  
OotOffset-rm: 0.311 arcsec [1.79σ]  
KicOffset-rm: 0.153 arcsec [0.89σ]  
OotOffset-st: 4/4/4/1 [13]  
KicOffset-st: 4/4/4/1 [13]  
DiffImageQuality-fgm: 1.00 [13/13]  
DiffImageOverlap-fno: 1.00 [13/13]

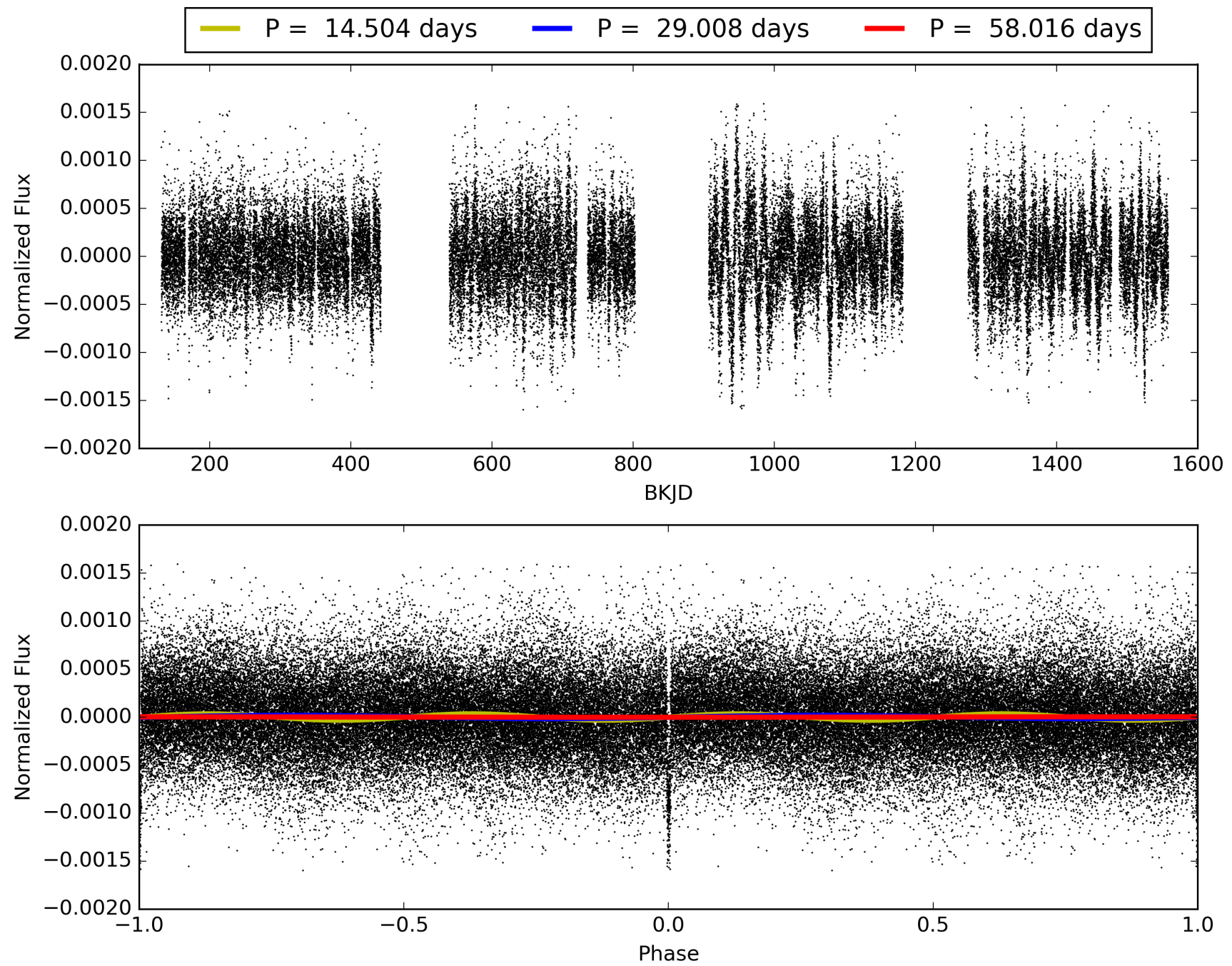
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:11:03 Z

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

# TCE 007098355-01, PDC Light Curves

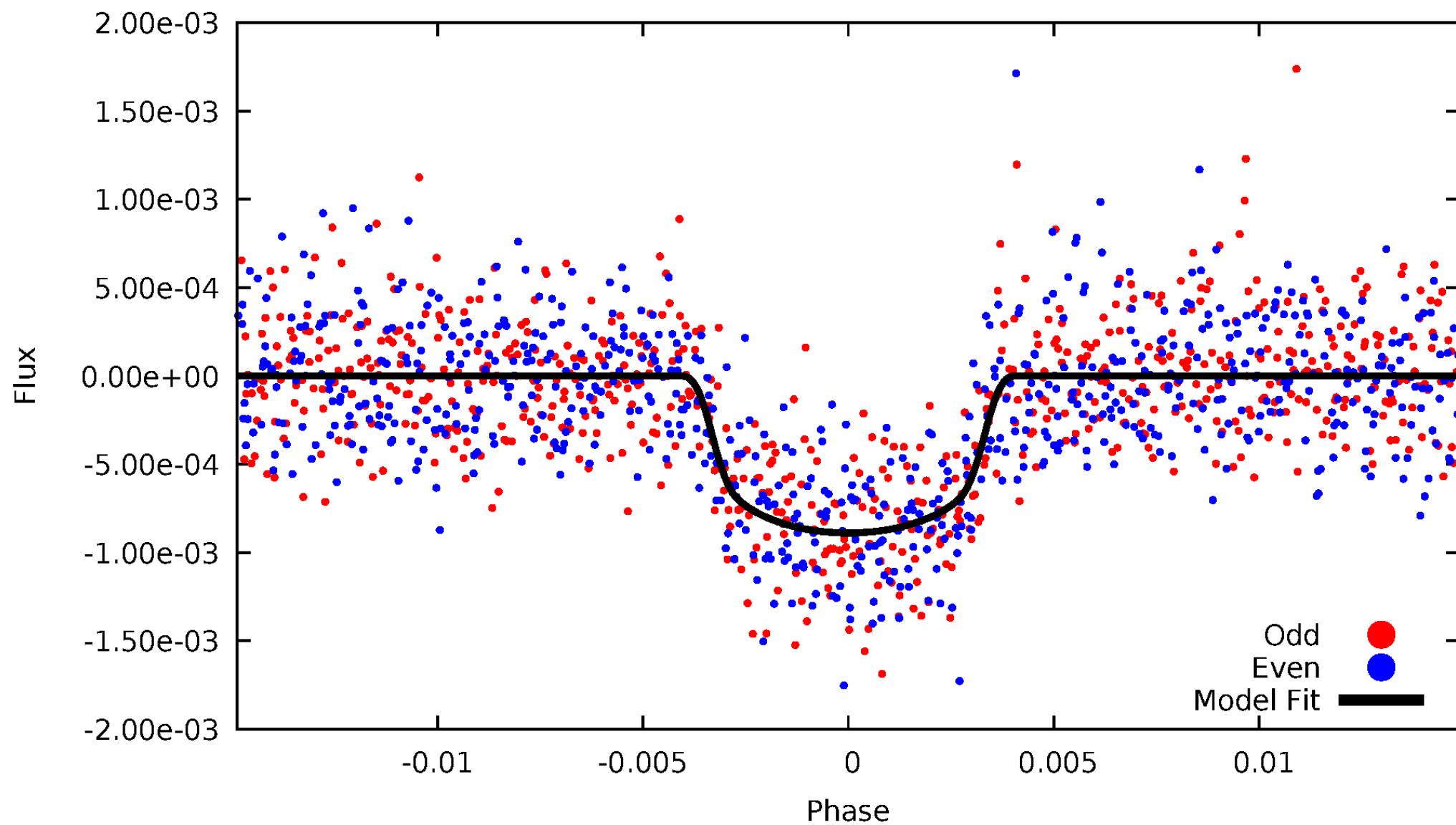


TCE 007098355-01



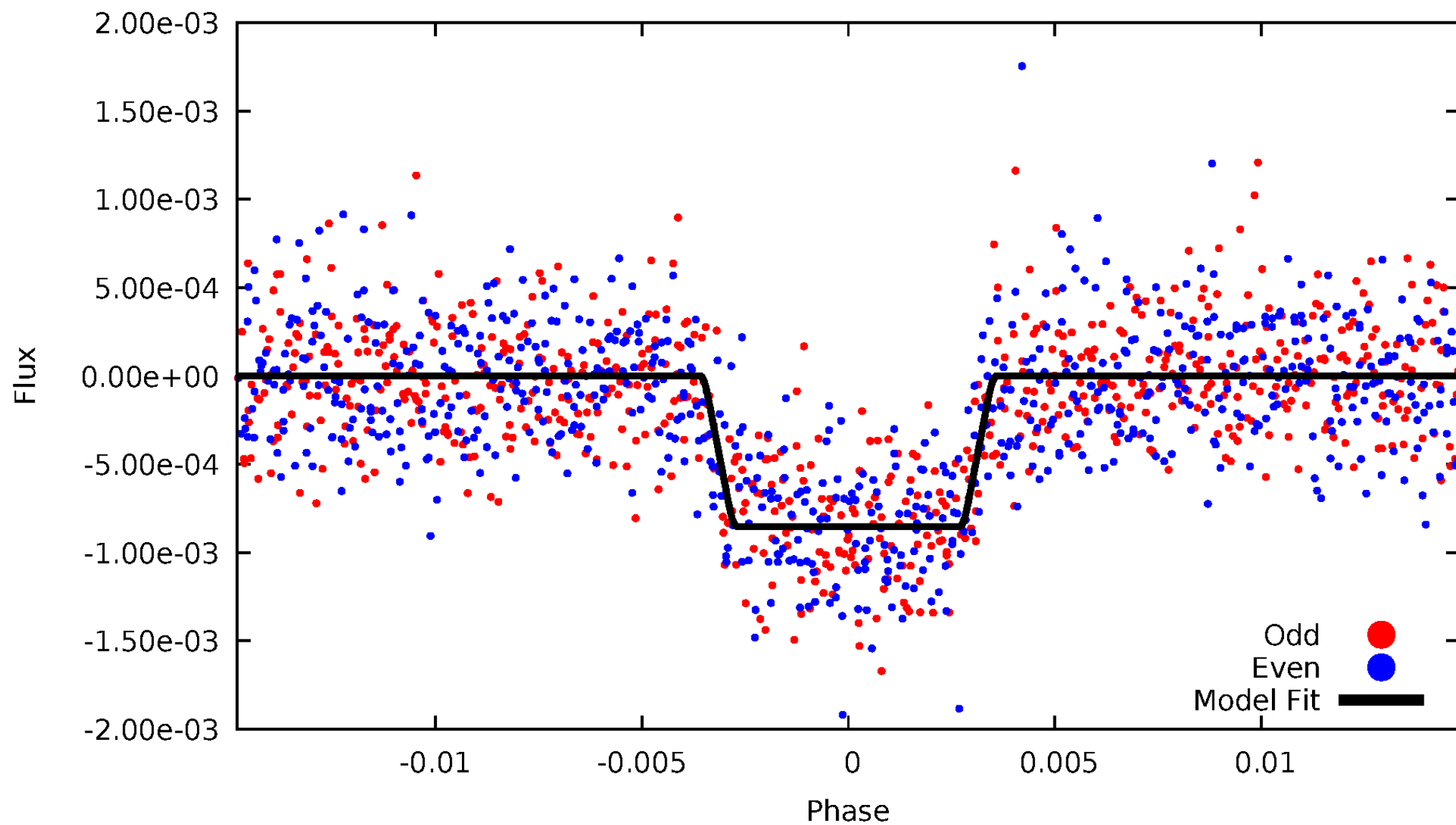
# DV Odd/Even

TCE 007098355-01



# ALT Odd/Even

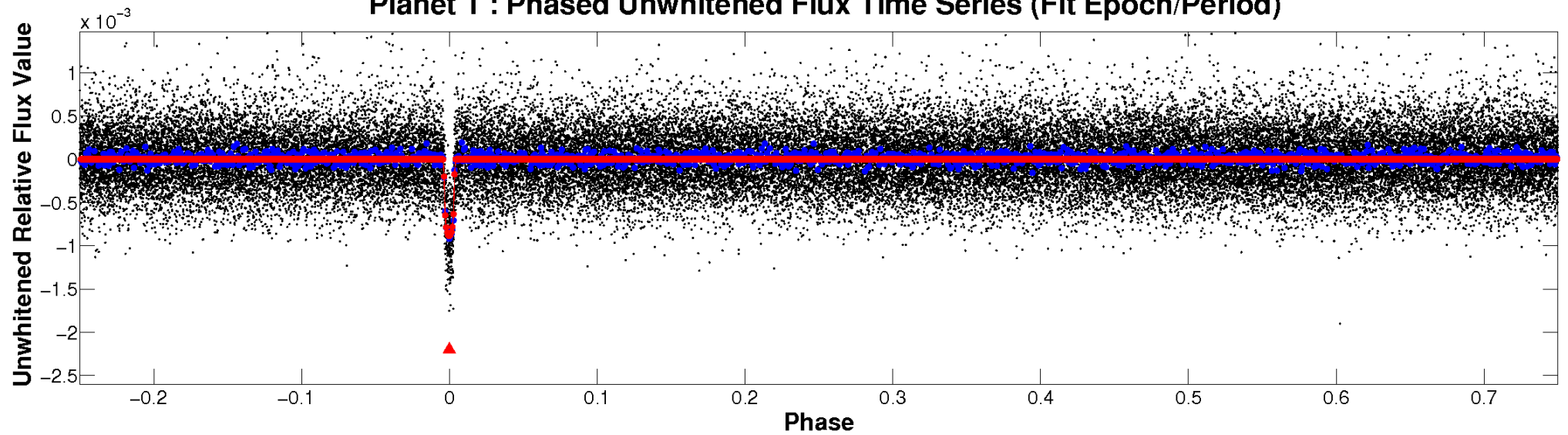
TCE 007098355-01



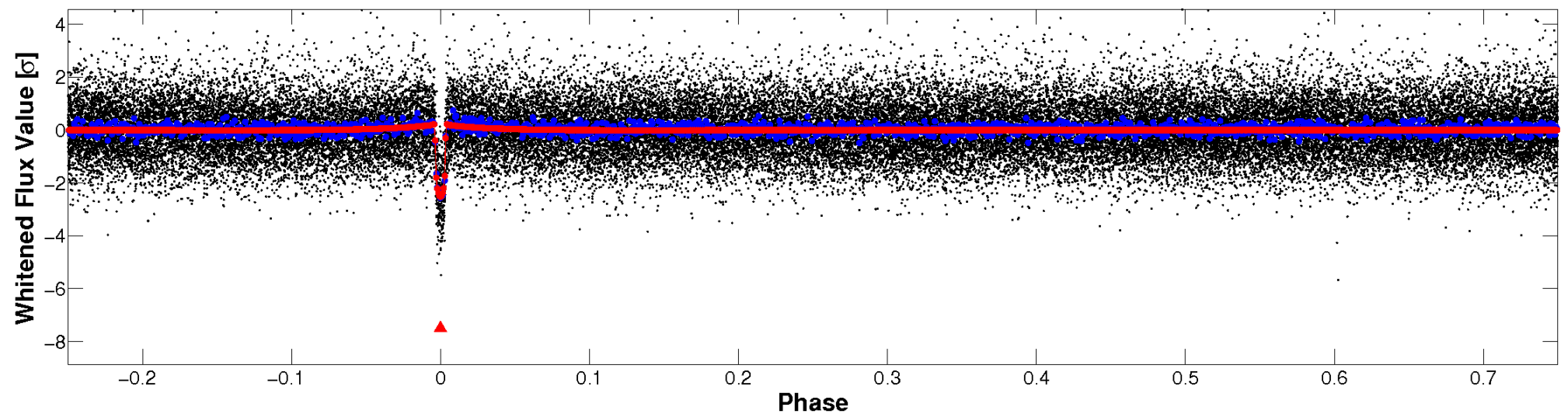


# Non-Whitened Vs. Whitened Light Curve

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

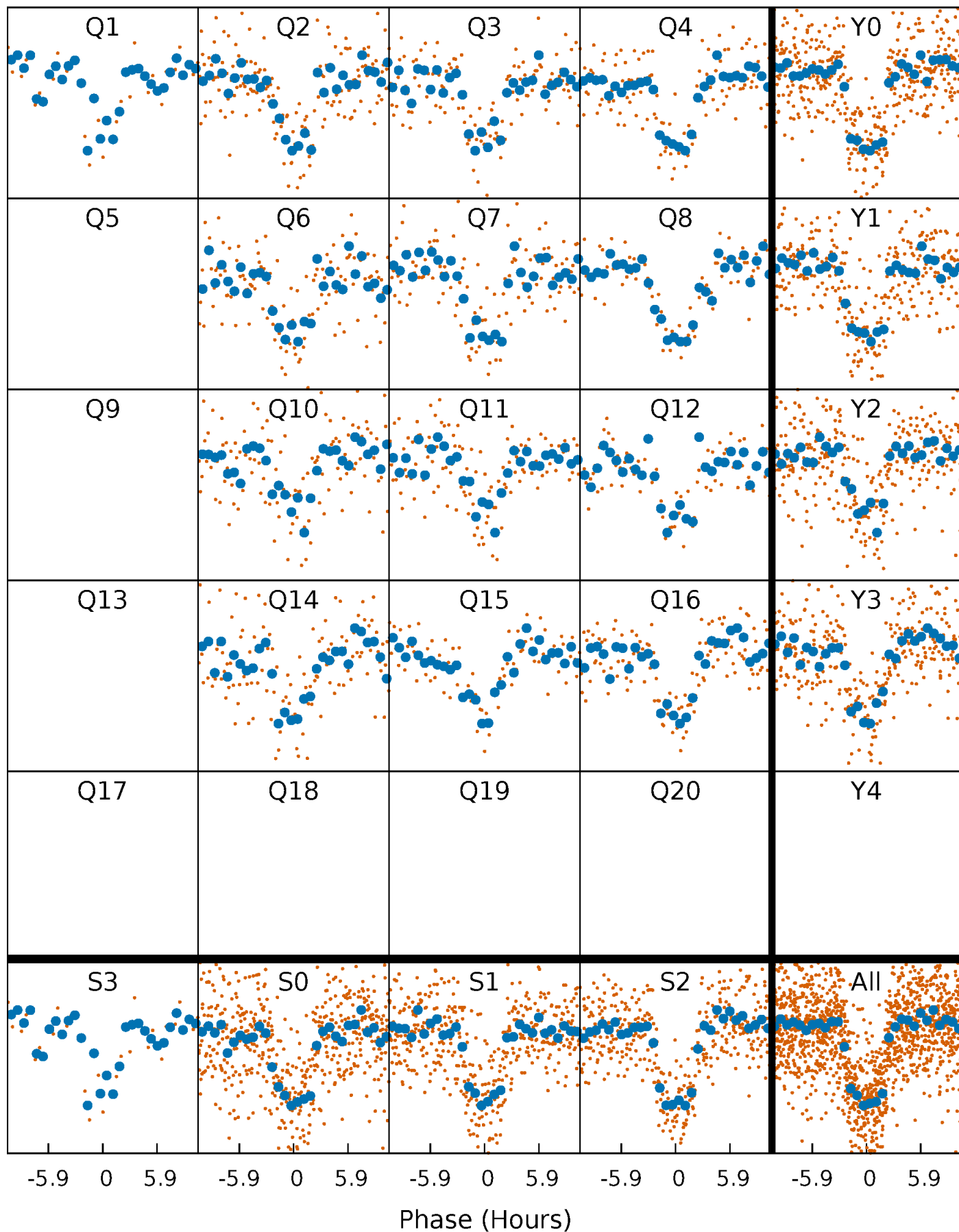


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

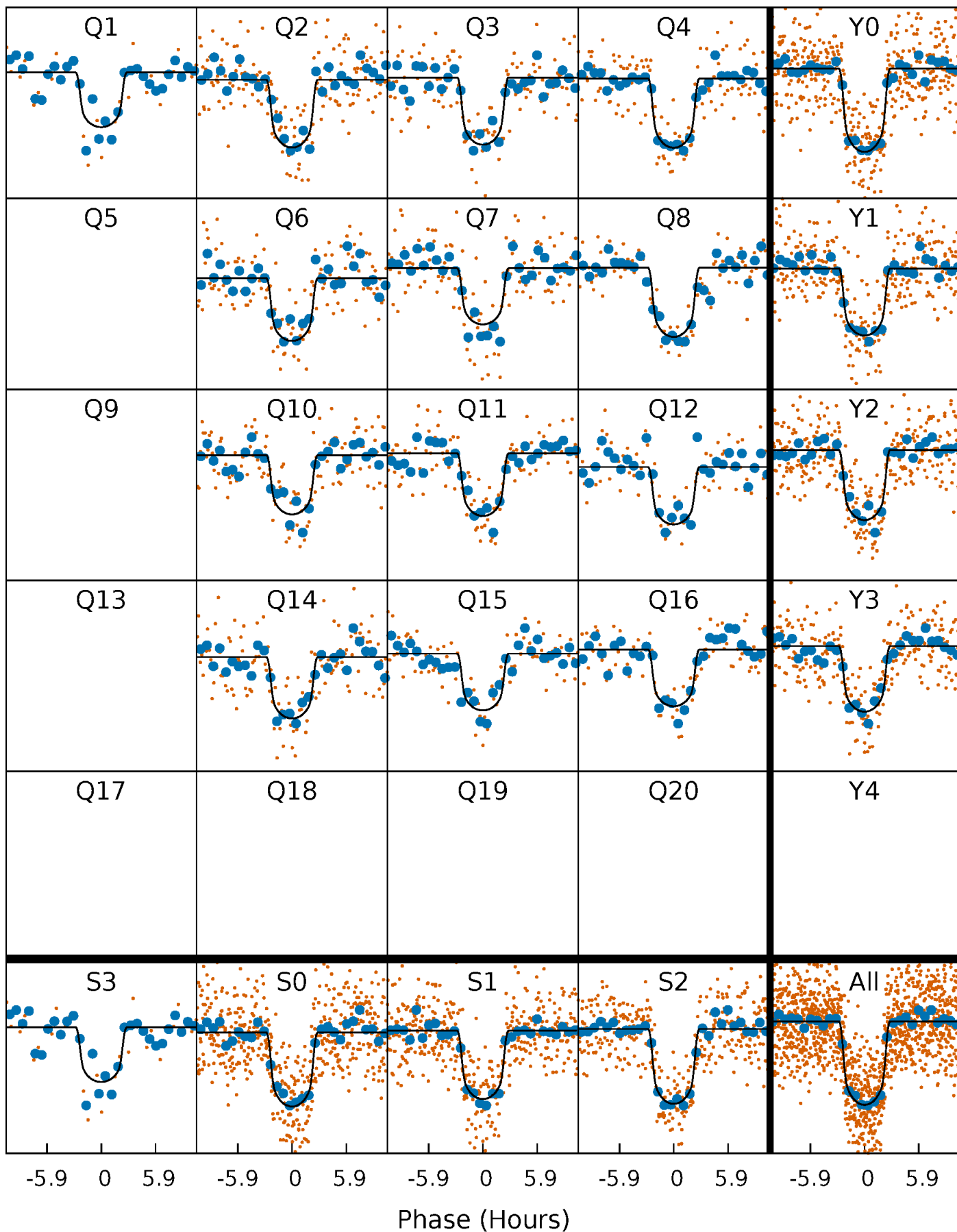
TCE 007098355-01 P= 29.007946 Days  $T_0=141.544691$  (BKJD)





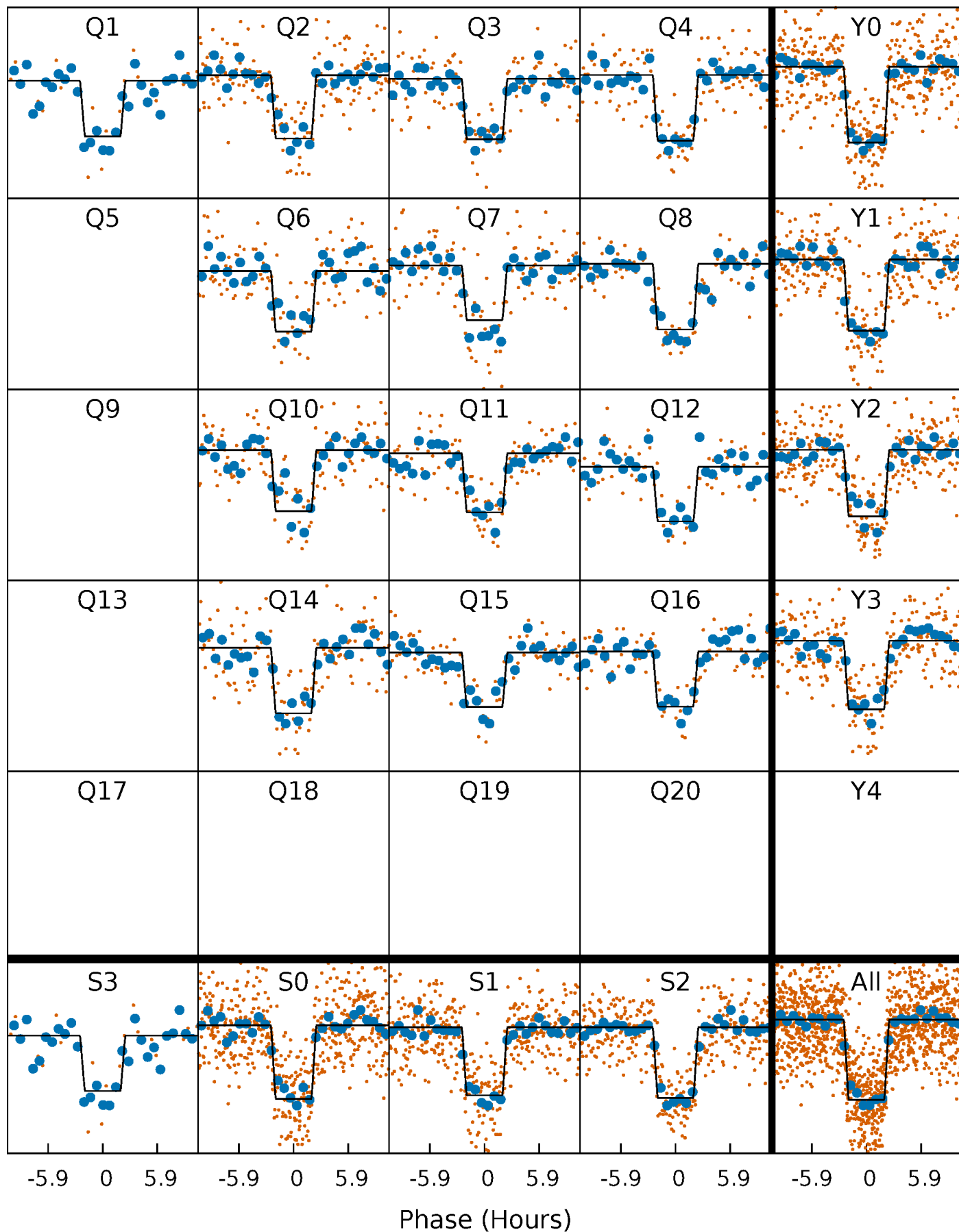
# DV Quarter-Phased Transit Curves

TCE 007098355-01 P= 29.007946 Days  $T_0=141.544691$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

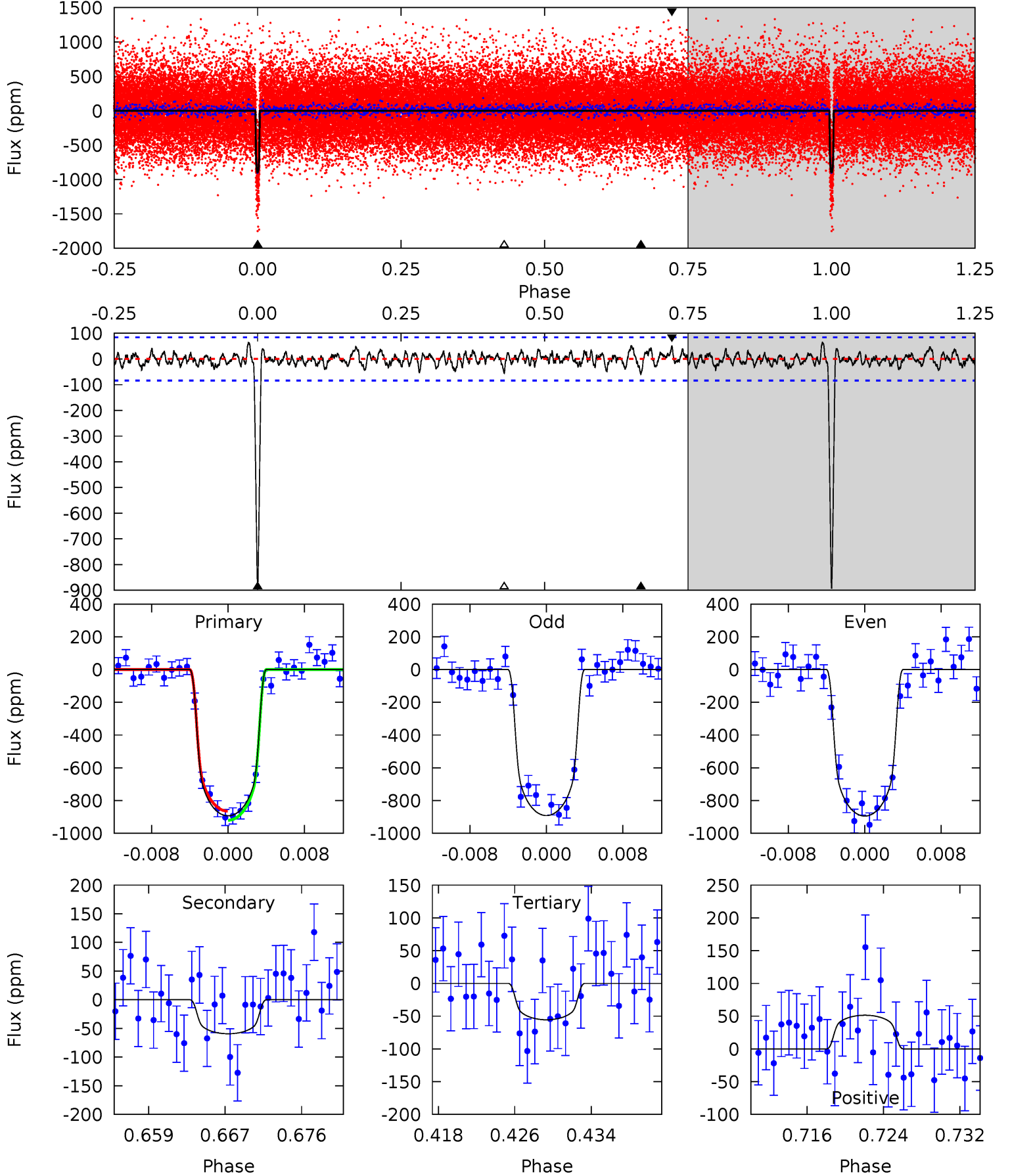
TCE 007098355-01 P= 29.007672 Days  $T_0=141.550394$  (BKJD)



# DV Model-Shift Uniqueness Test

007098355-01, P = 29.007946 Days, E = 112.536745 Days

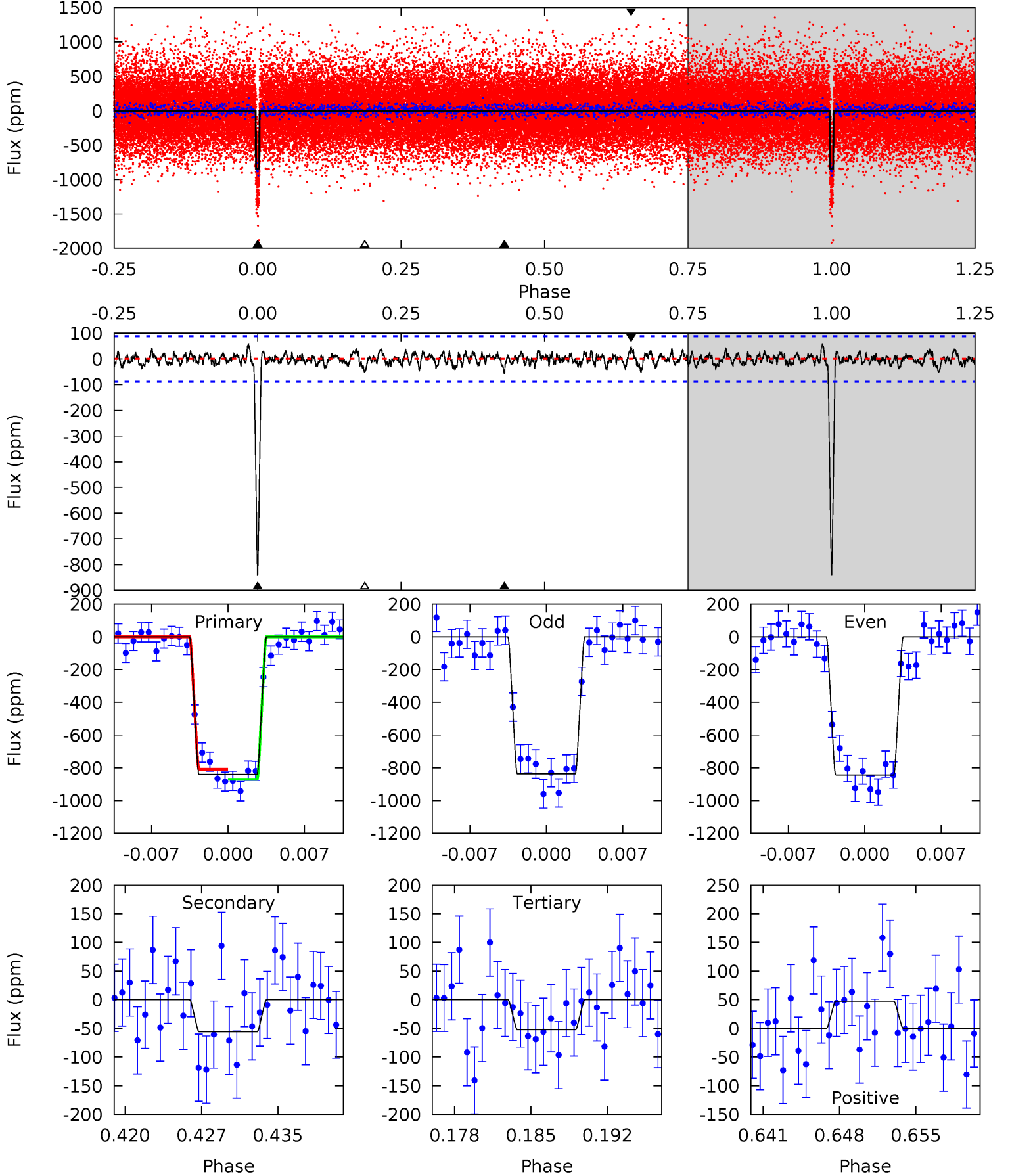
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.0	3.59	3.36	3.11	5.07	2.65	1.12	50.7	50.9	0.23	0.48	0.09	0.99	0.07	1.68



# Alt Model-Shift Uniqueness Test

007098355-01,  $P = 29.007672$  Days,  $E = 112.542722$  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
48.4	3.21	3.02	2.73	5.09	2.69	0.95	45.4	45.6	0.20	0.49	0.19	1.02	0.06	1.75



### Stellar Parameters For KIC 007098355

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5295^{+159}_{-143}$	$4.566^{+0.037}_{-0.105}$	$-0.020^{+0.300}_{-0.300}$	$0.801^{+0.132}_{-0.066}$	$0.861^{+0.071}_{-0.086}$	$2.360^{+0.447}_{-0.740}$
	+3%/-3%	+1%/-2%	+1500%/-1500%	+16%/-8%	+8%/-10%	+19%/-31%
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 007098355-01 / KOI 0454.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-59 \pm 17$	$2.78^{+0.33}_{-0.29}$	$705^{+32}_{-27}$	$3192^{+165}_{-168}$	$126^{+47}_{-41}$
Alt.	$-56 \pm 17$	$2.59^{+0.31}_{-0.28}$	$704^{+30}_{-25}$	$3228^{+193}_{-189}$	$138^{+58}_{-46}$

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

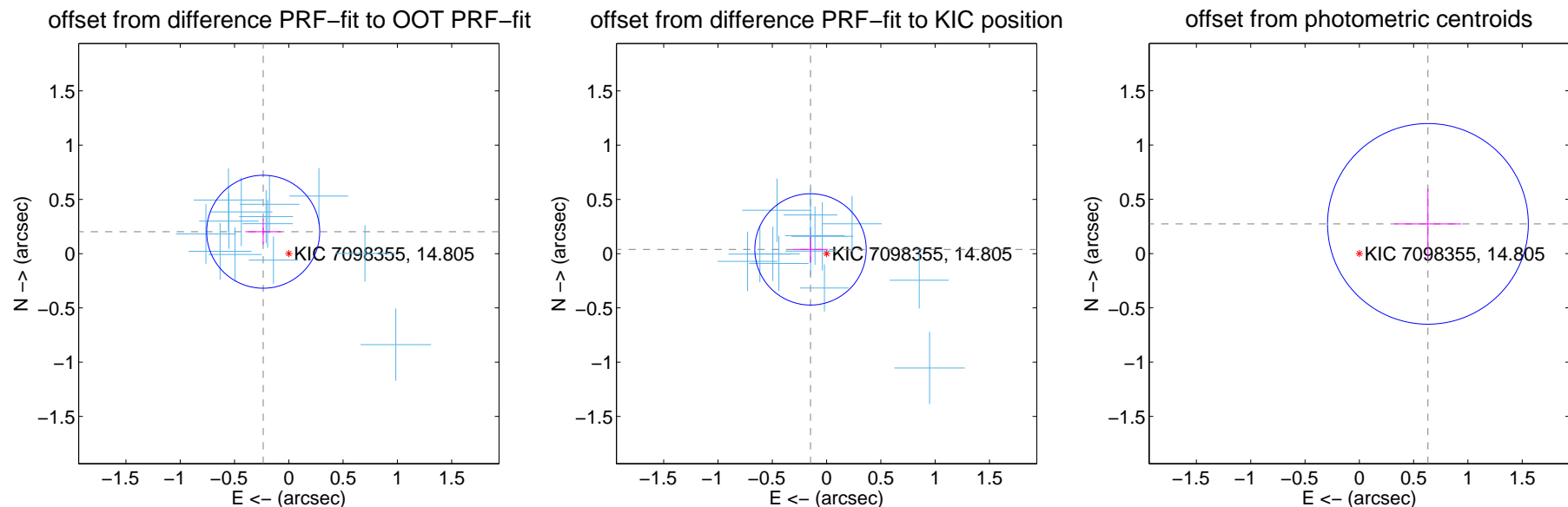
## DV Centroid Data

Supplemental centroid analysis for 007098355-01. Kepler magnitude: 14.80. Transit SNR 38.71

There are 13 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

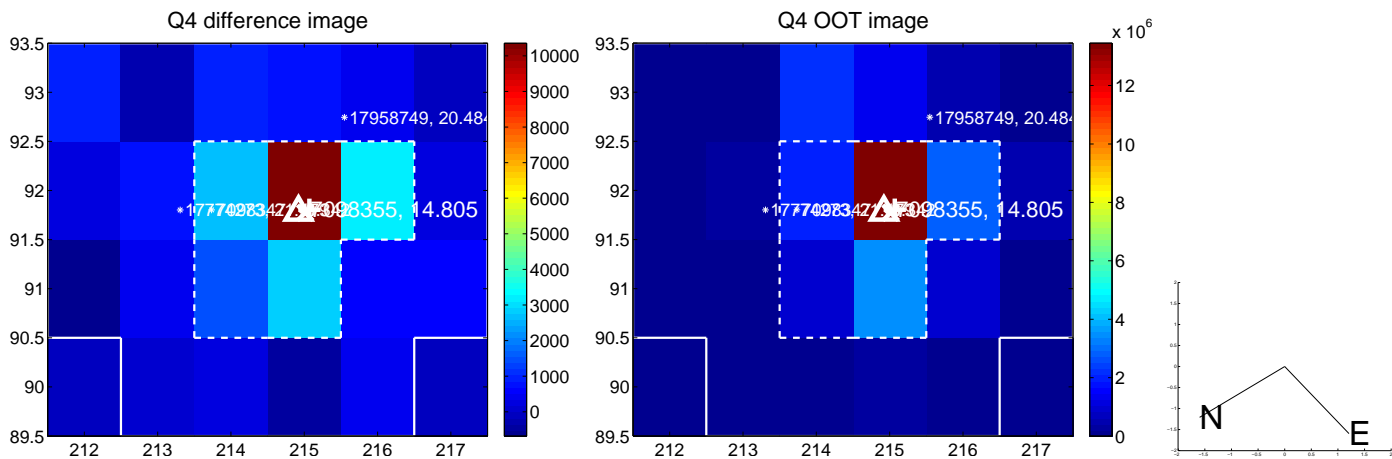
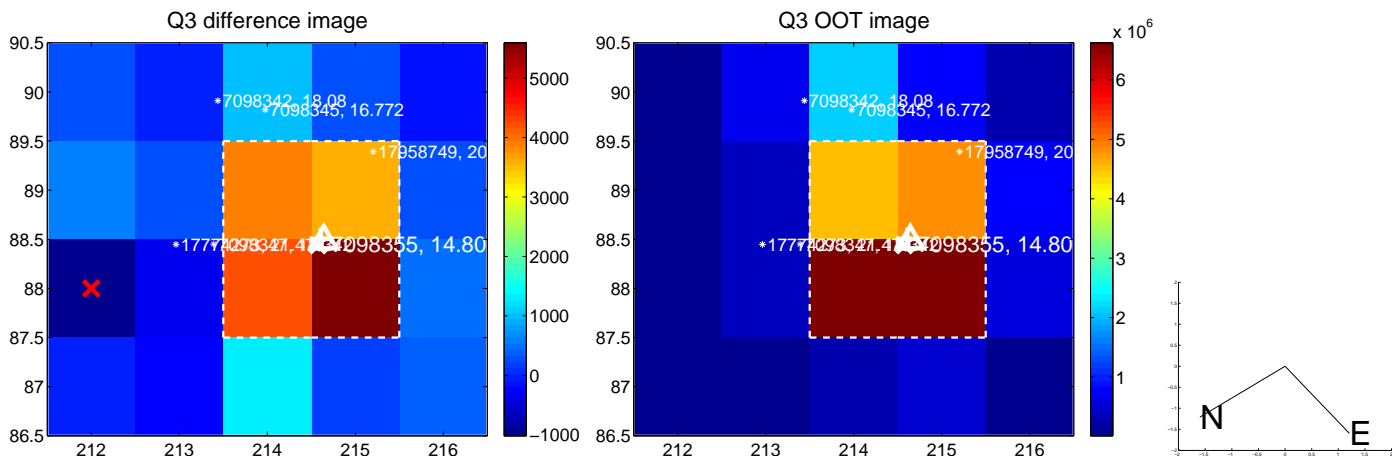
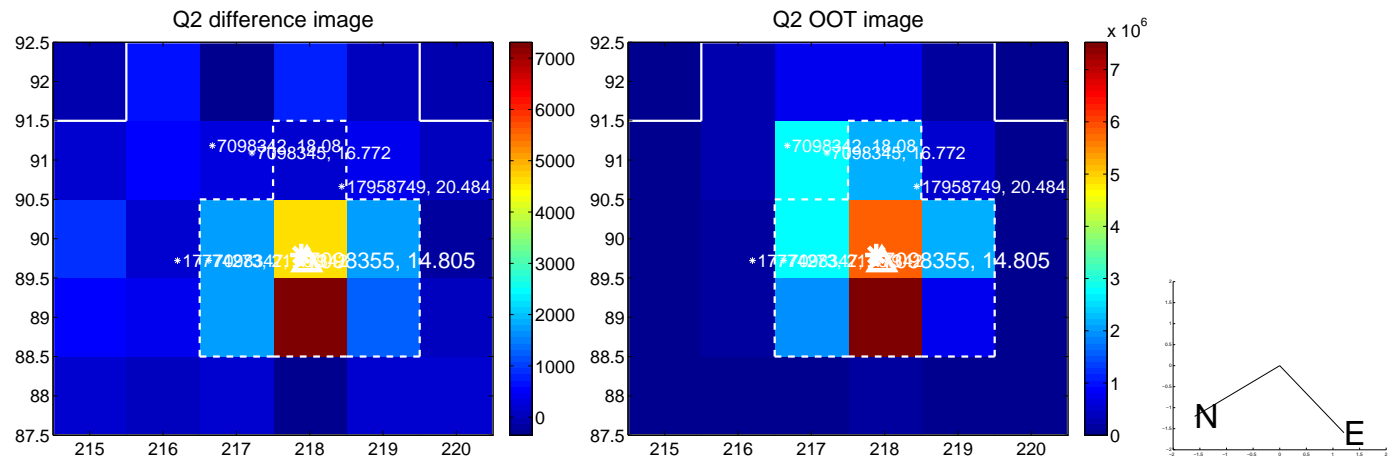
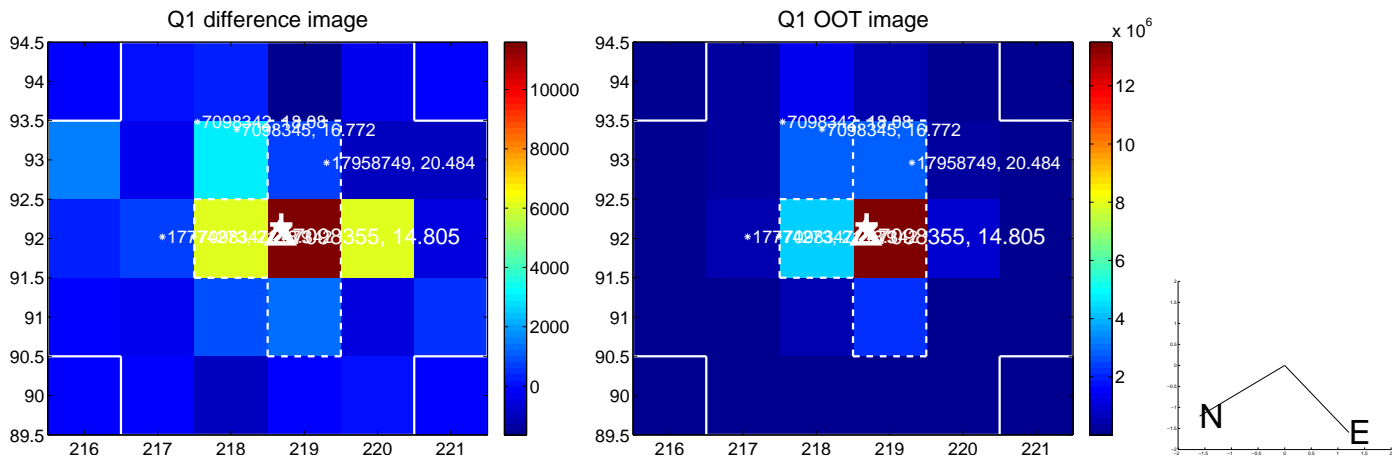
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.311 \pm 0.174$	1.79	$0.236 \pm 0.165$	$0.202 \pm 0.117$
PRF-fit source offset from KIC position	$0.153 \pm 0.171$	0.89	$0.148 \pm 0.160$	$0.039 \pm 0.118$
photometric centroid source offset	$0.69 \pm 0.31$	2.24	$-0.63 \pm 0.30$	$0.27 \pm 0.32$



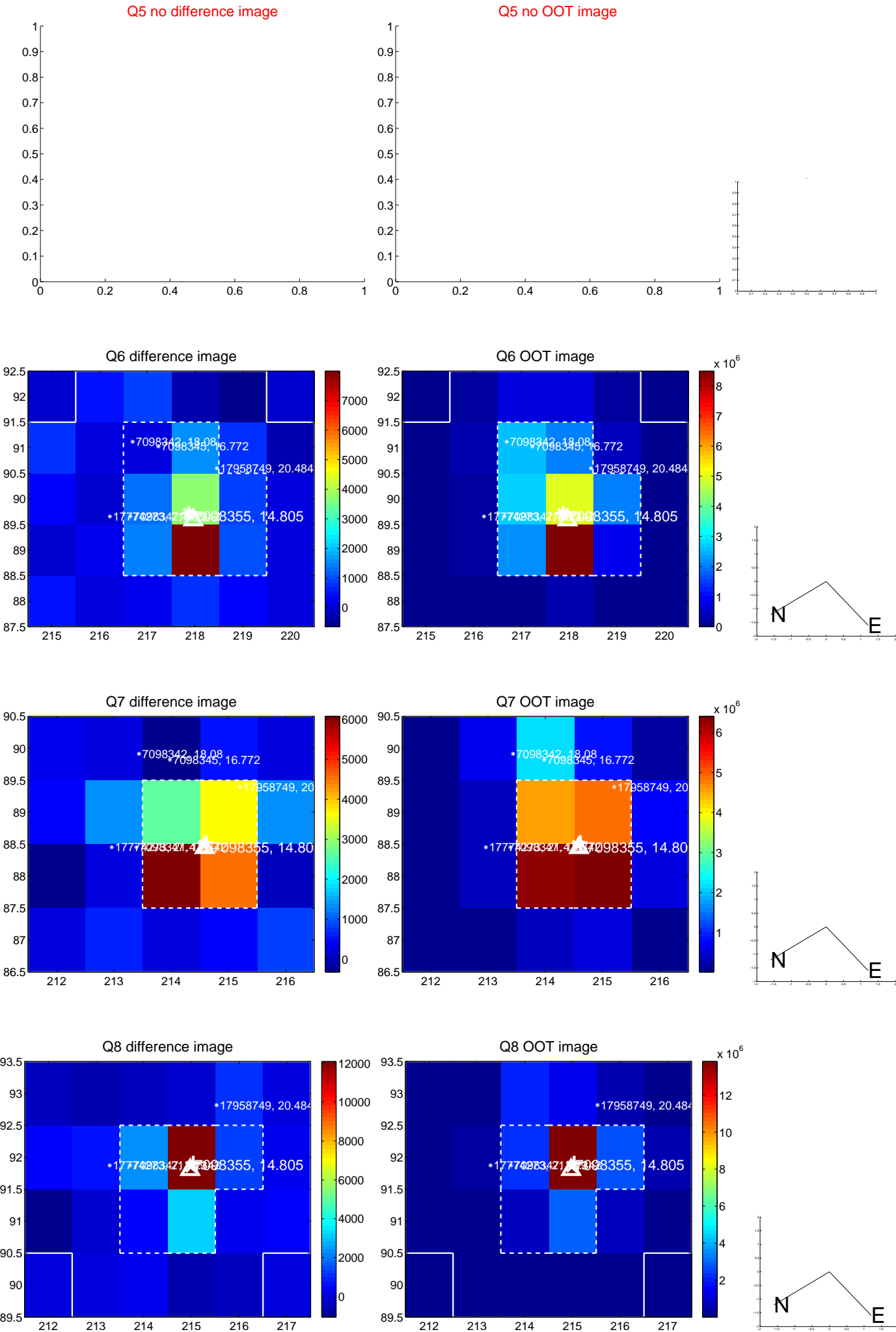
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



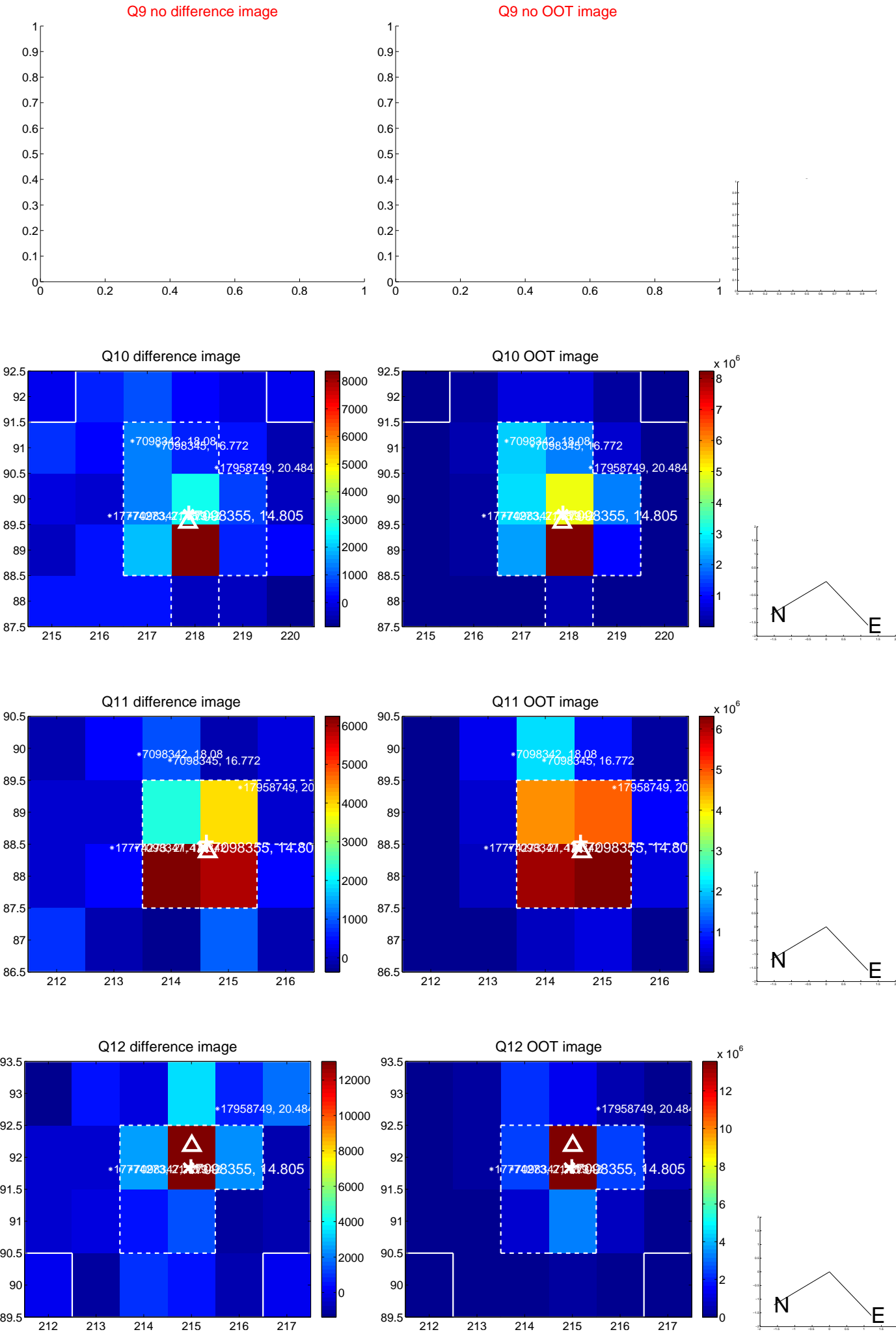
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



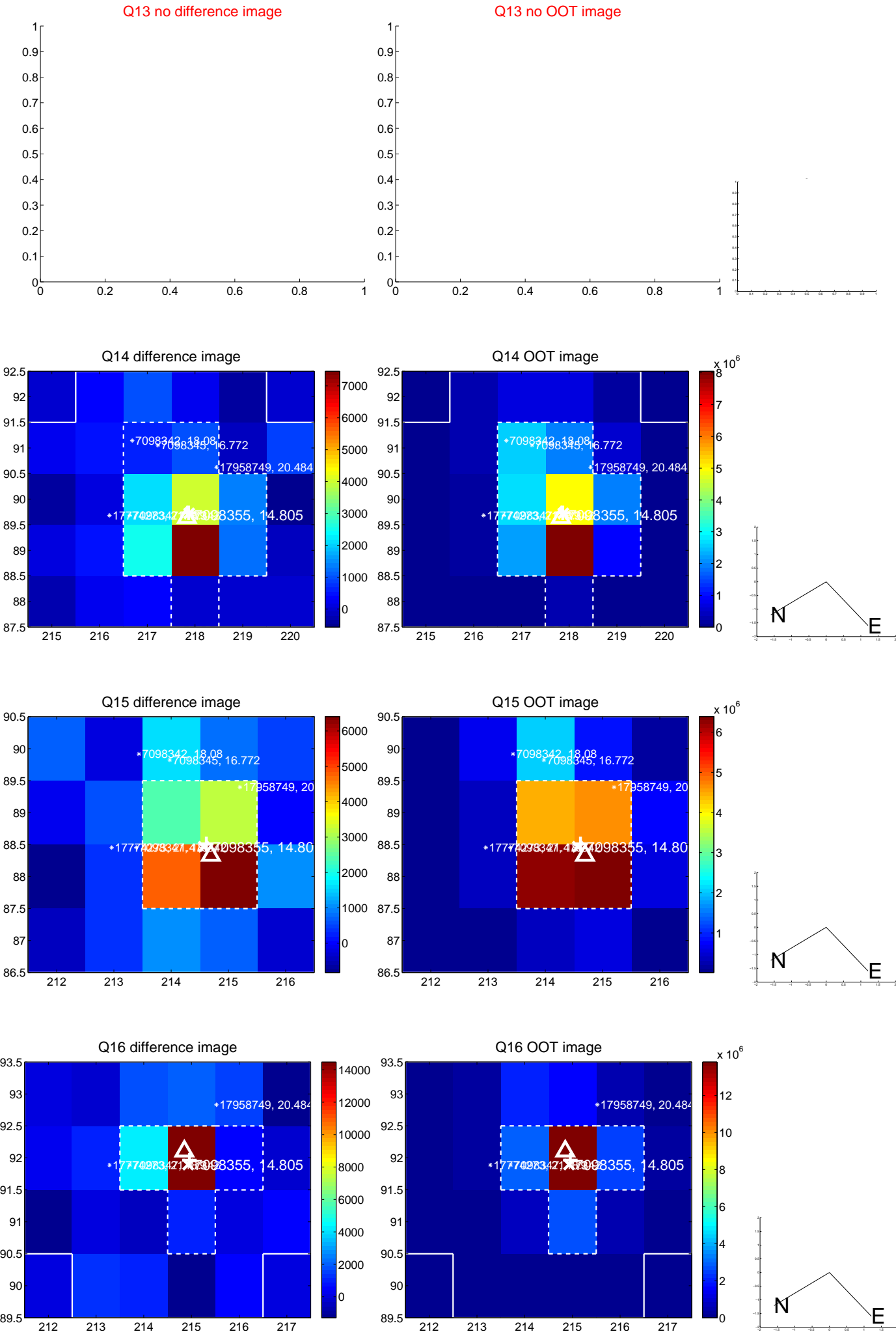
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



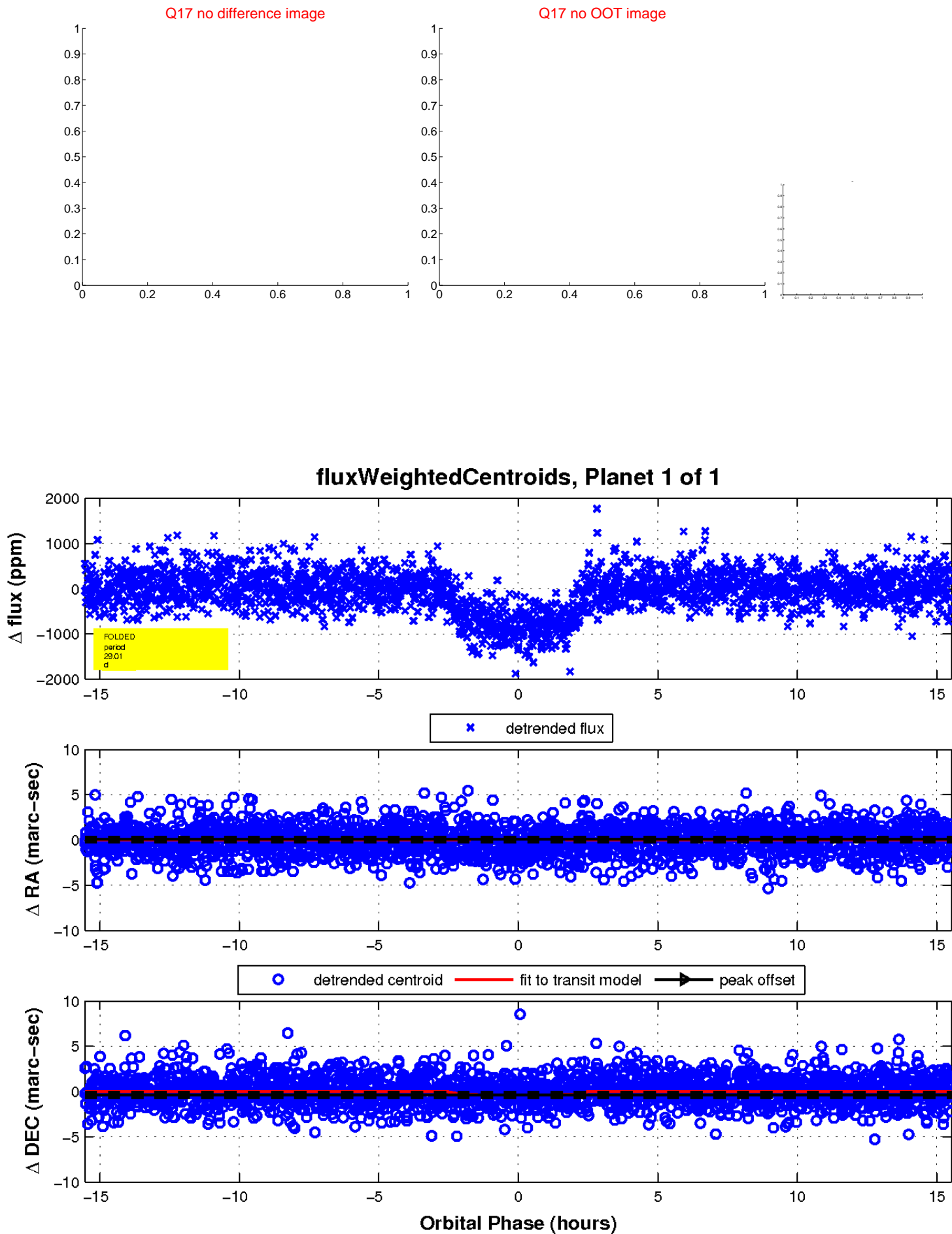
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

