

# KIC 009592855

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009592855-01	OBS	7196.01	0.609661	131.947980	132352.2	3.954	3235.7	2186.5	2.27	7498	121.88	51178.25

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009592855-01	OBS	FP	0.00	1	0	0	1	LPP_DV—EPHEM_MATCH

**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 009592855-01

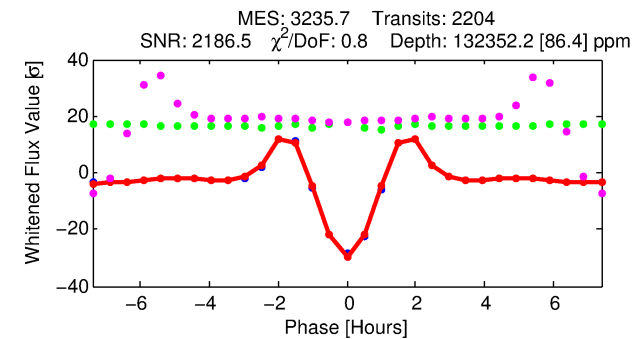
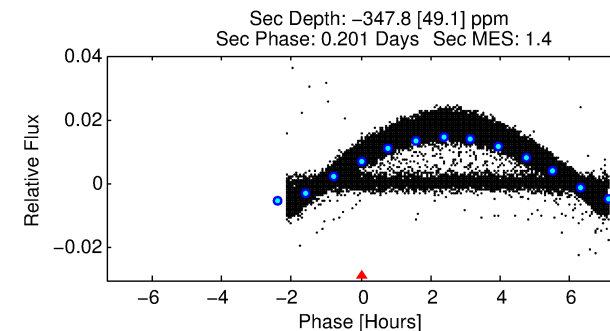
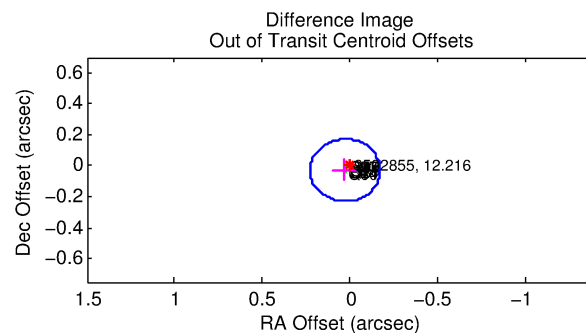
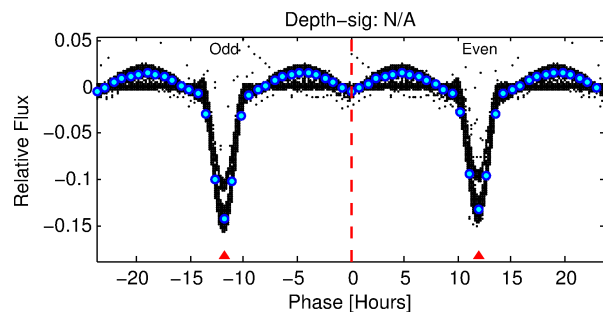
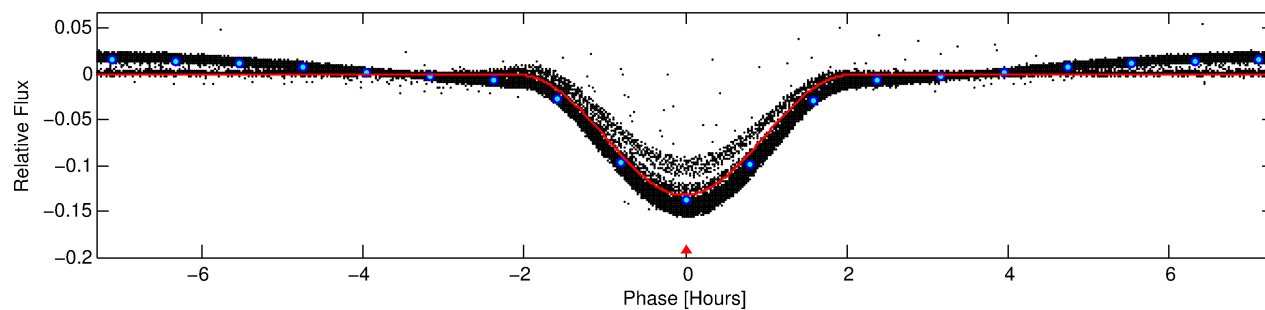
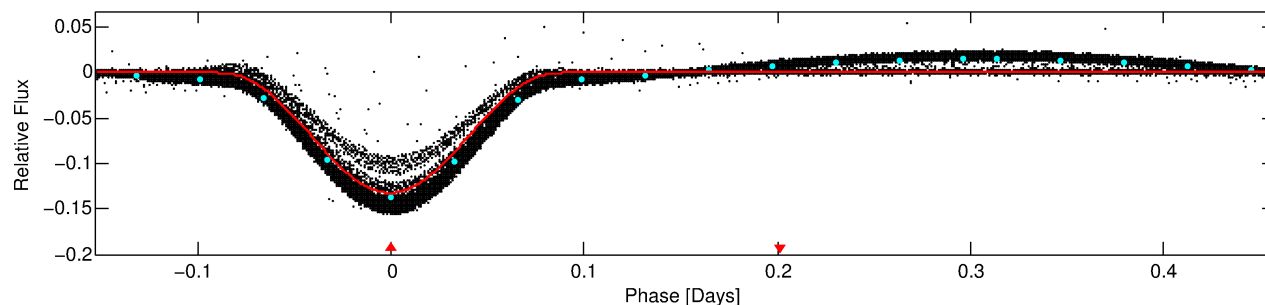
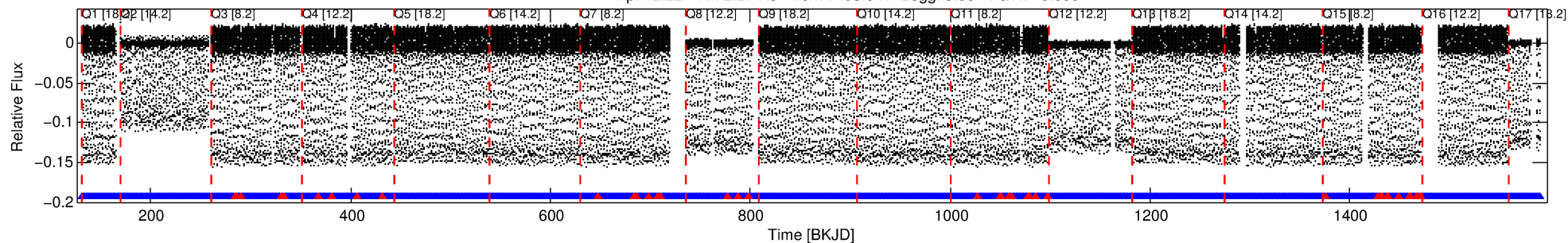
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
009592855-01	9592855	3883.01	9592850	1:2	6.9	0	1	16.40	12.22	3.53	Direct-PRF	0	0.11	0.07

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 9592855 Candidate: 1 of 1 Period: 0.610 d  
KOI: K07196 Corr: No Ephemeris Match

Kp: 12.22 R\*: 2.27 Rs Teff: 7498.0 K Logg: 3.96 Fe/H: -0.060



## DV Fit Results:

Period = 0.60966 [0.00000] d  
Epoch = 131.9480 [0.0000] BKJD  
Rp/R\* = 0.4912 [0.0128]  
a/R\* = 1.82 [0.01]  
b = 0.90 [0.02]  
Seff = 51178.25 [22606.11]  
Teq = 3835 [424] K  
Rp = 121.88 [38.72] Re  
a = 0.0169 [0.0046] AU  
Ag = N/A  
Teffp = N/A

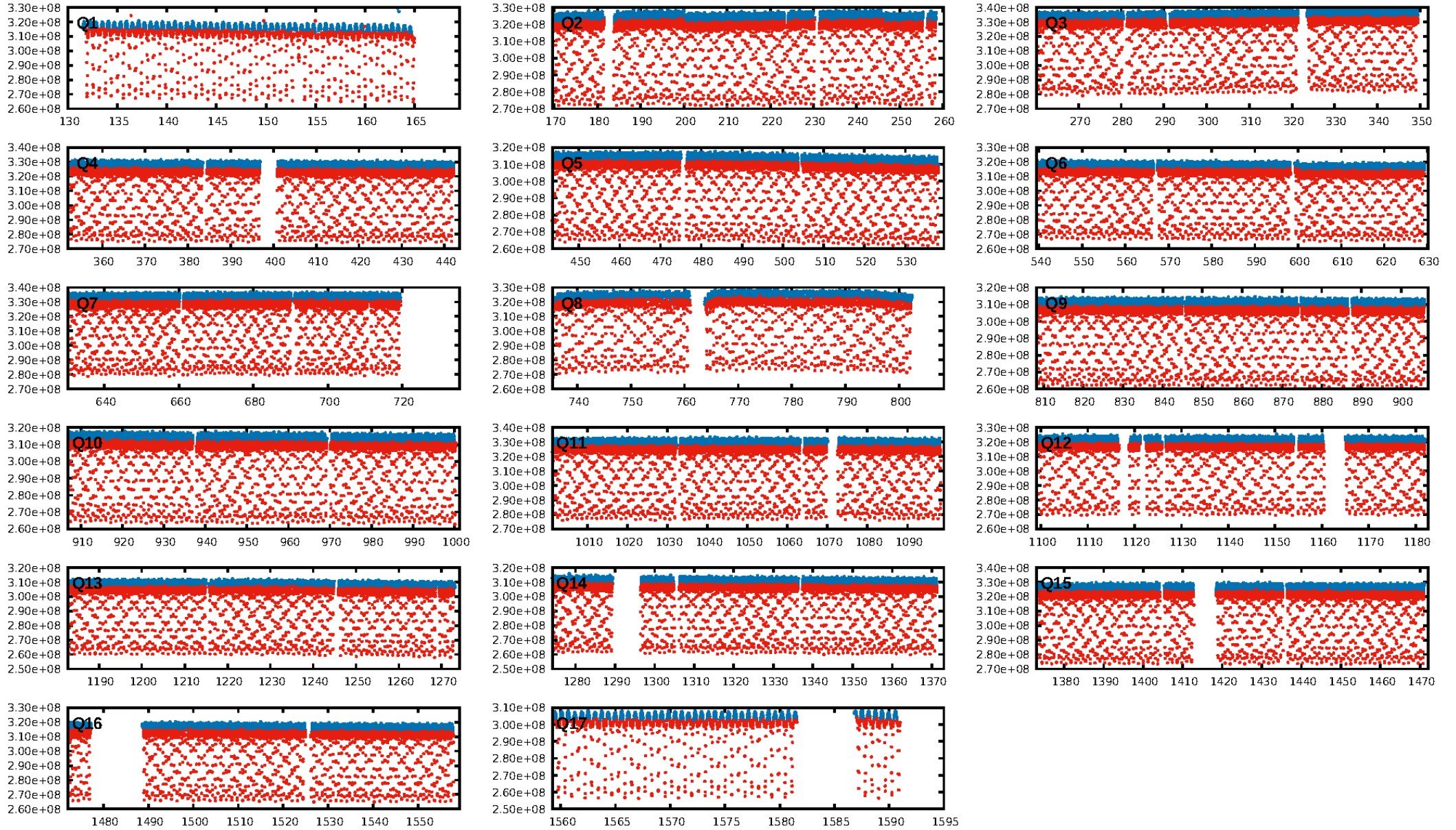
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.98 [2064/2105]  
GhostDiagnostic-chr: 1.316  
Centroid-sig: 0.0%  
Centroid-so: 0.149 arcsec [604.31σ]  
OotOffset-rm: 0.041 arcsec [0.61σ]  
KicOffset-rm: 0.168 arcsec [2.45σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

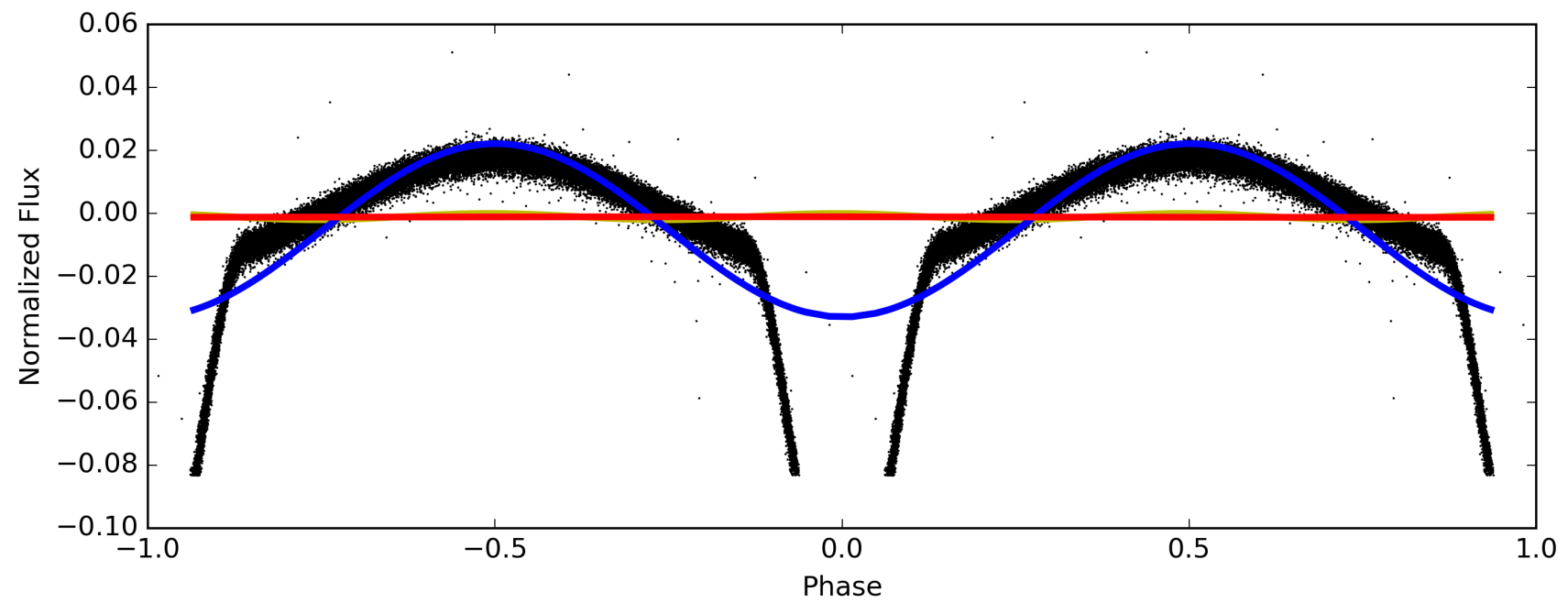
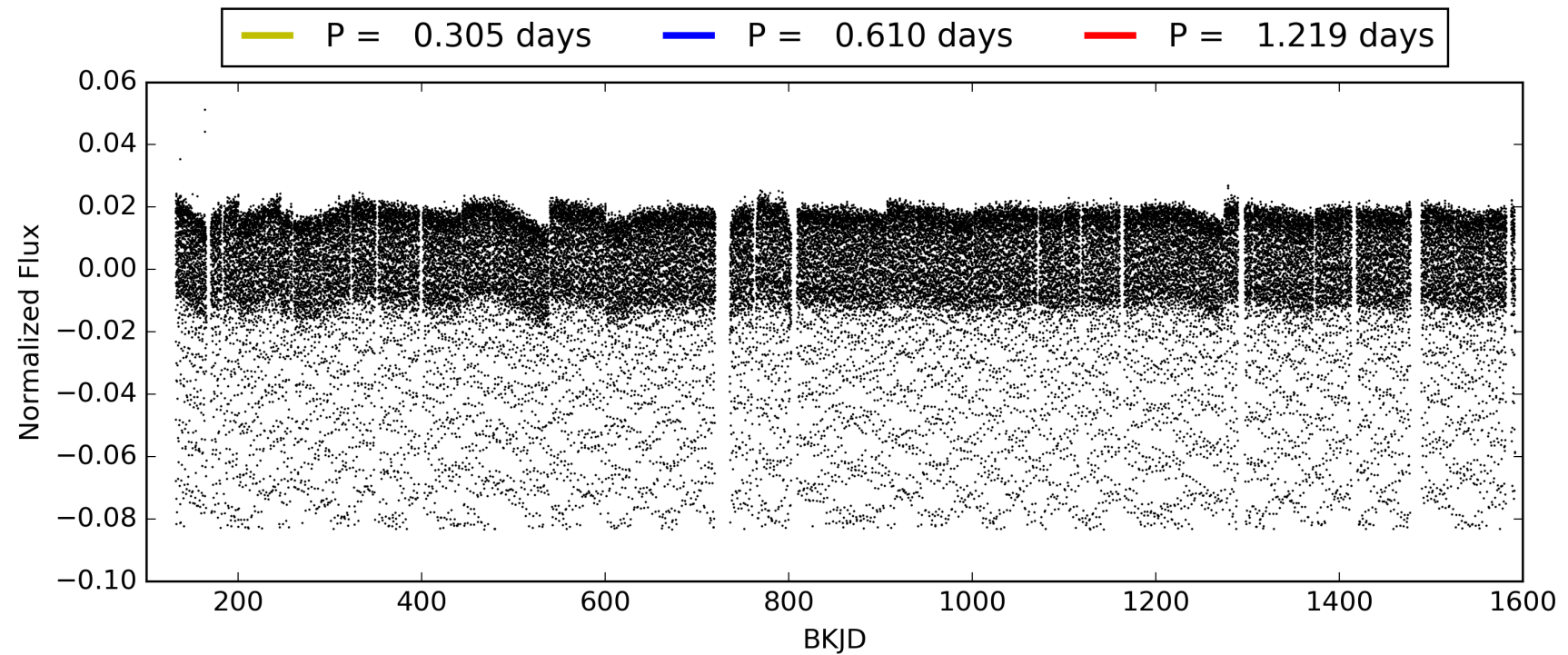
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:49:54 Z

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

# TCE 009592855-01, PDC Light Curves

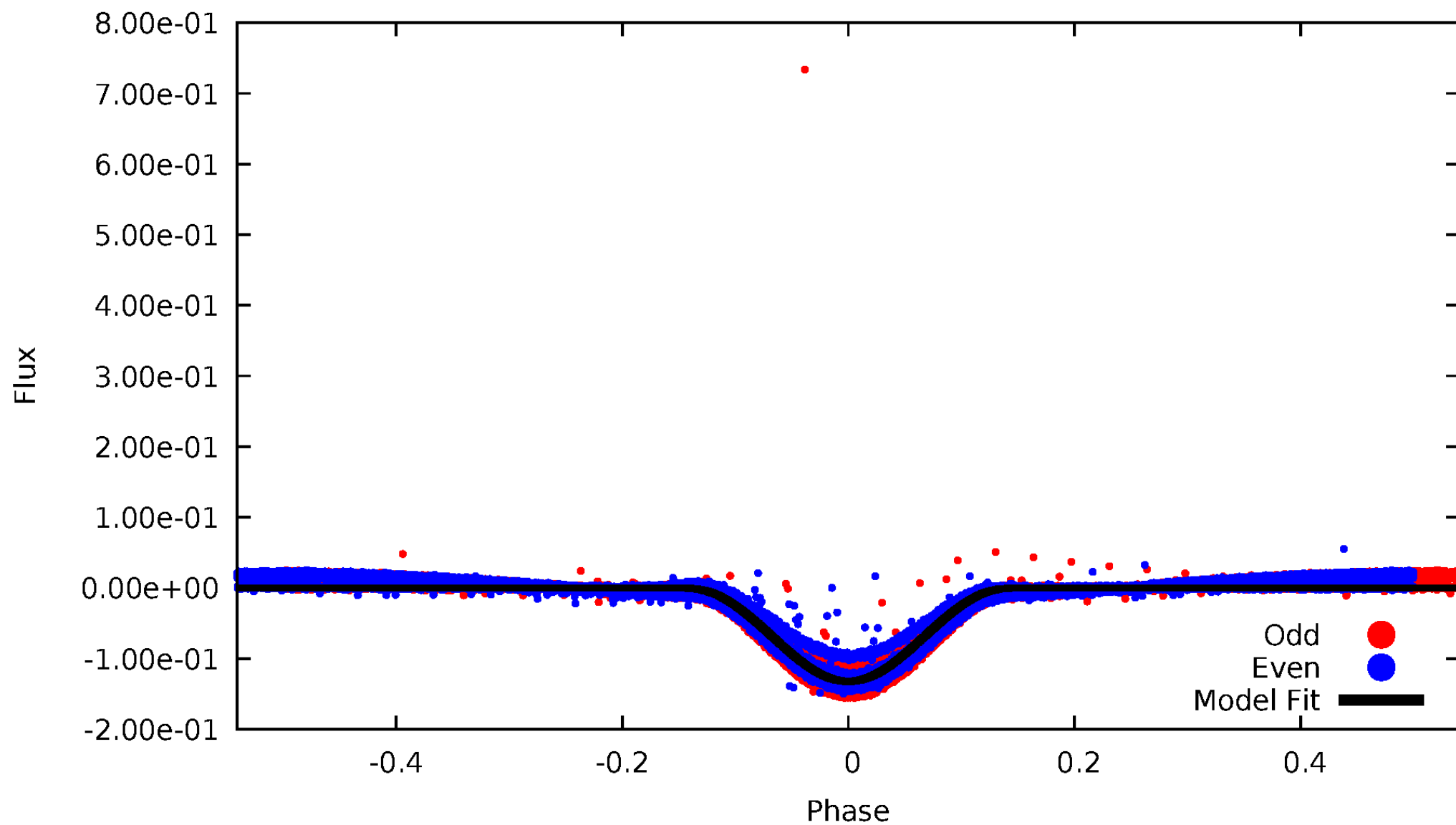


TCE 009592855-01



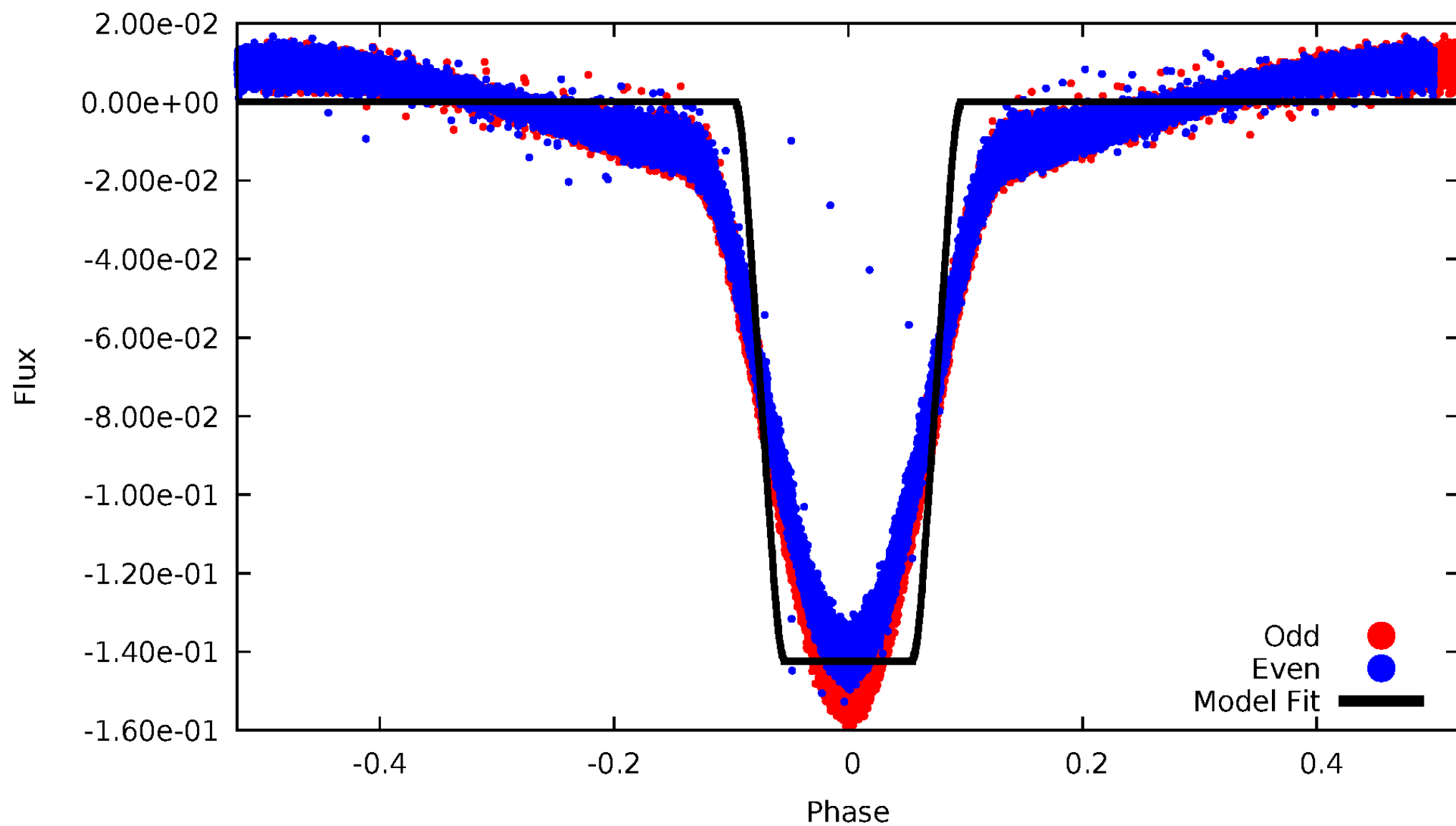
# DV Odd/Even

TCE 009592855-01



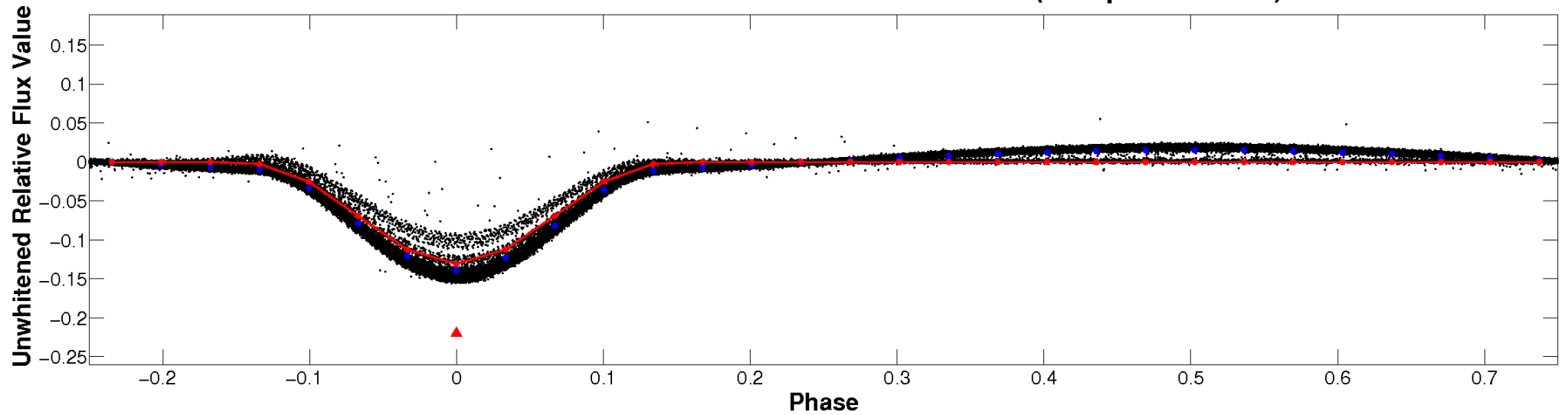
# ALT Odd/Even

TCE 009592855-01

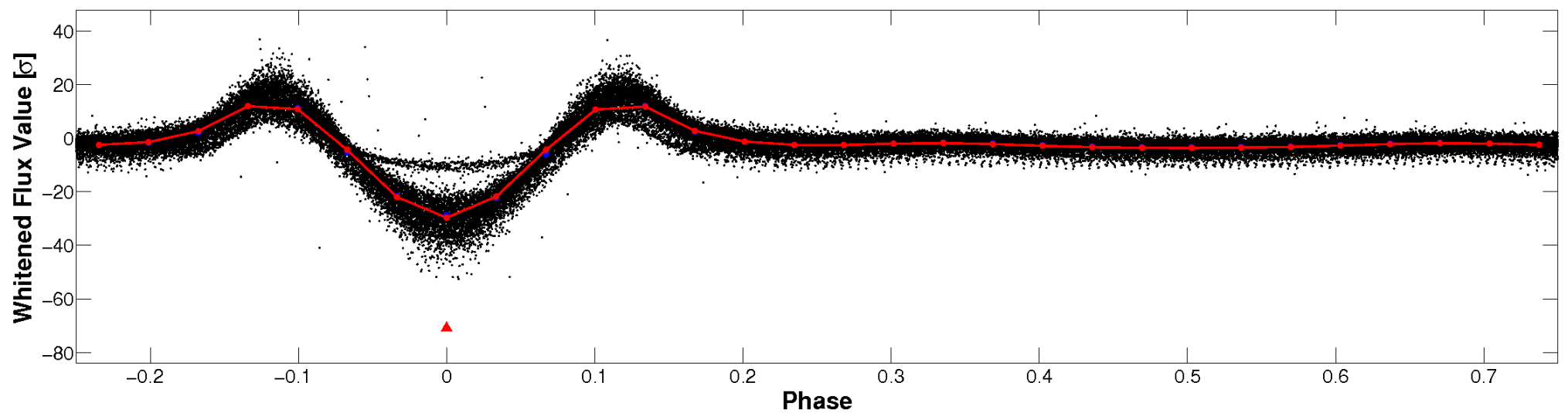


# Non-Whitened Vs. Whitened Light Curve

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

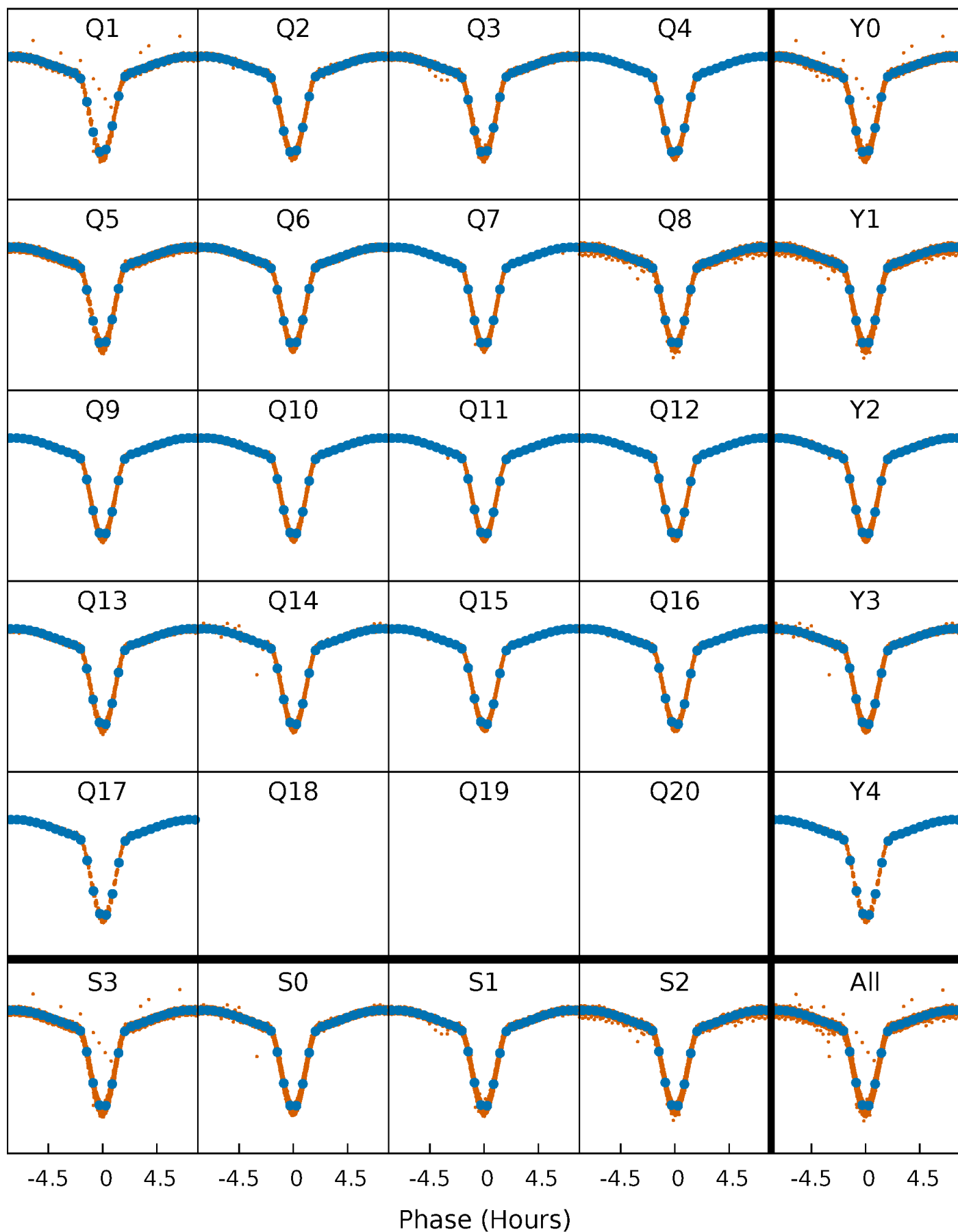


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

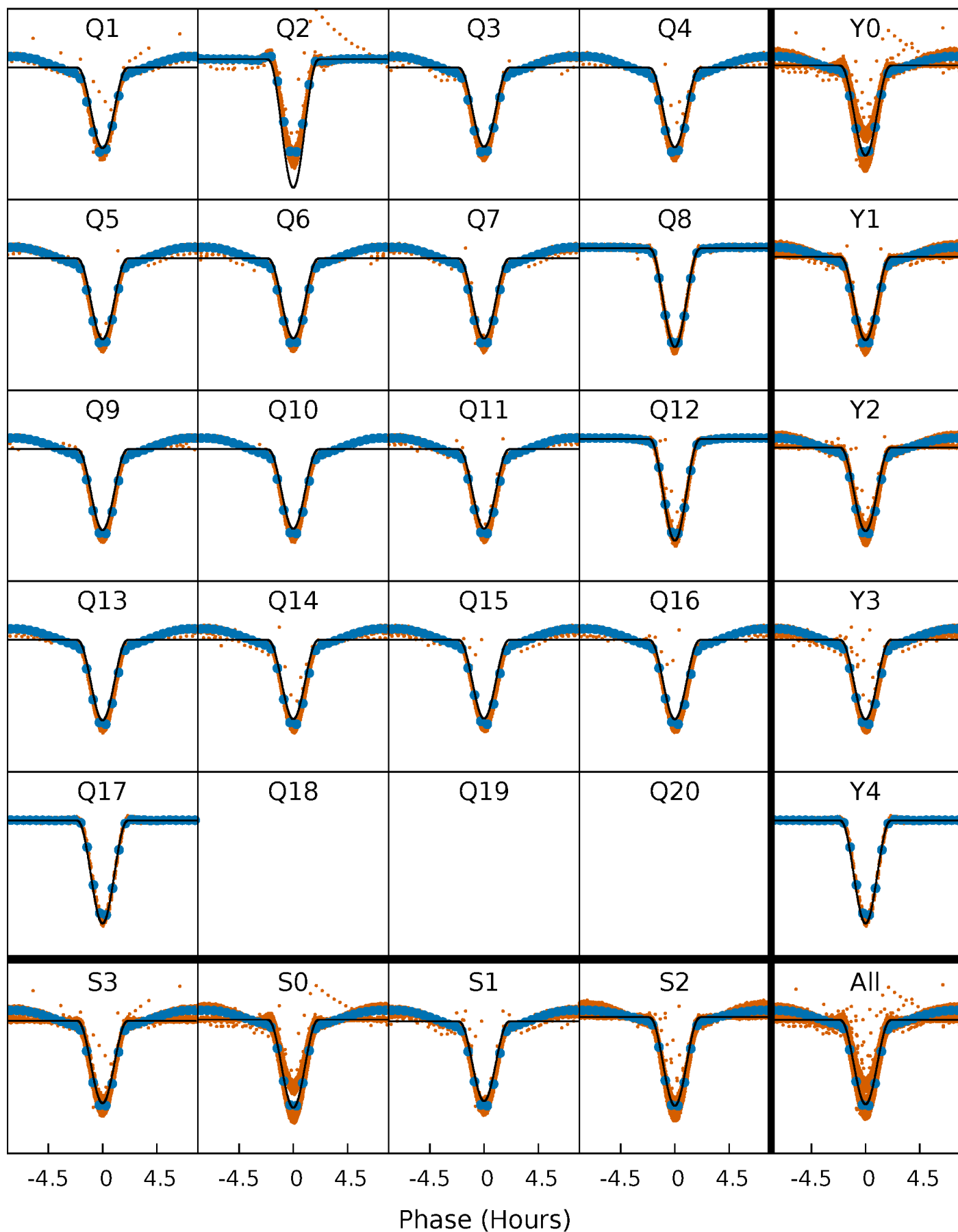
TCE 009592855-01   P= 0.609661 Days    $T_0=131.947980$  (BKJD)





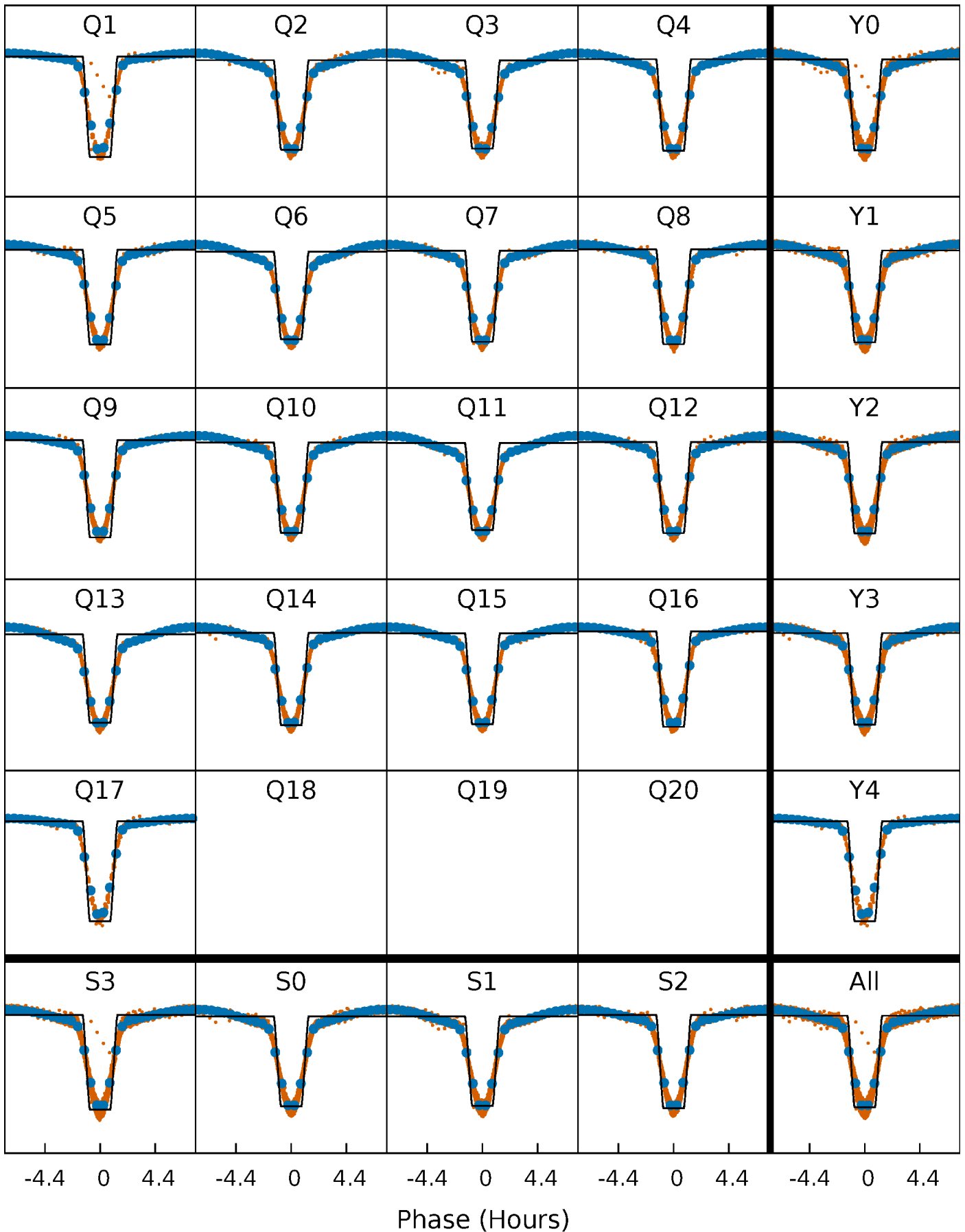
# DV Quarter-Phased Transit Curves

TCE 009592855-01 P= 0.609661 Days  $T_0=131.947980$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

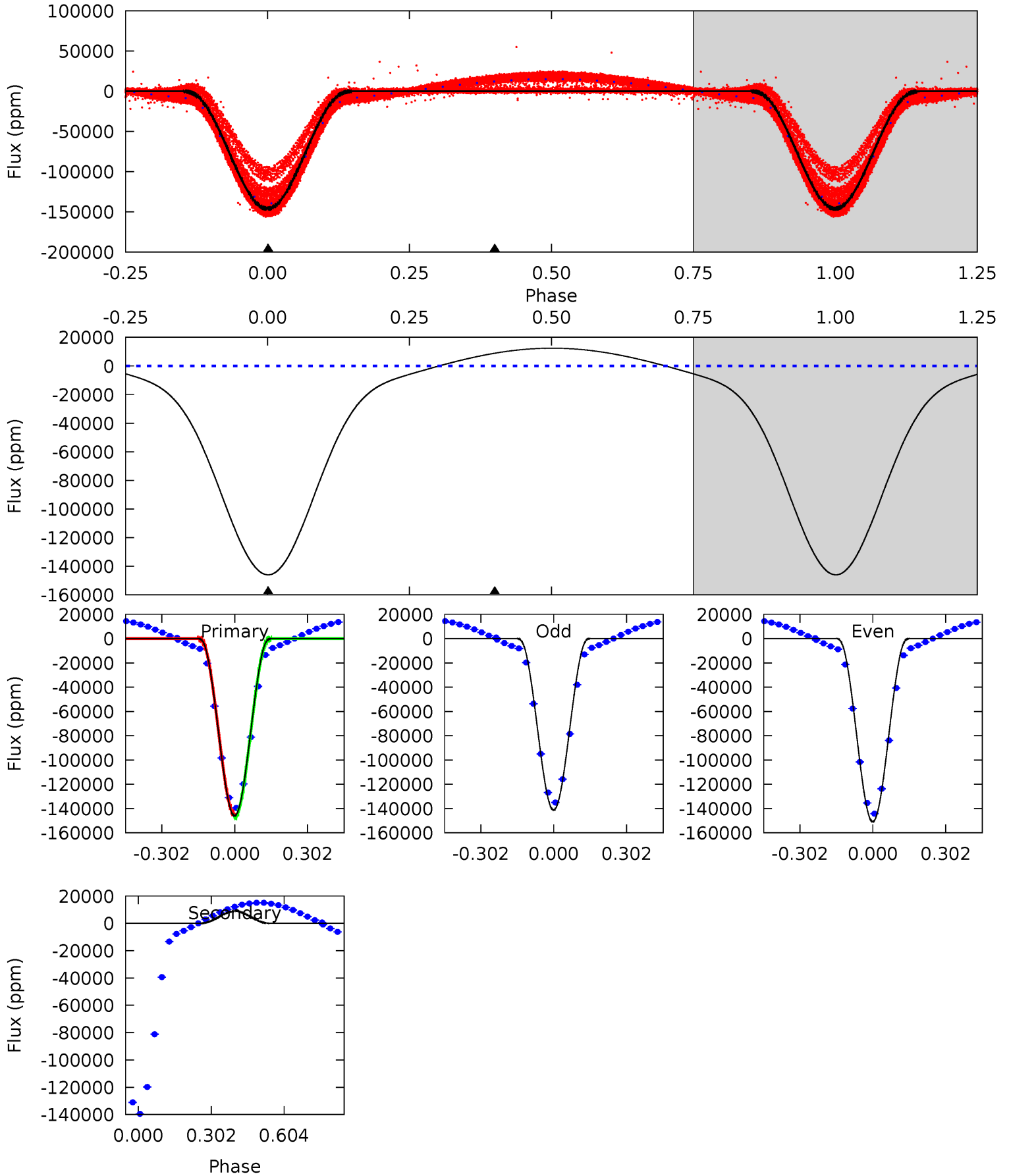
TCE 009592855-01   P= 0.609663 Days    $T_0=131.945819$  (BKJD)



# DV Model-Shift Uniqueness Test

009592855-01, P = 0.609661 Days, E = 131.338319 Days

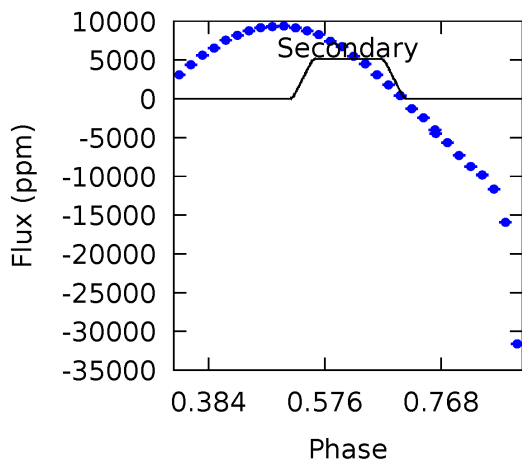
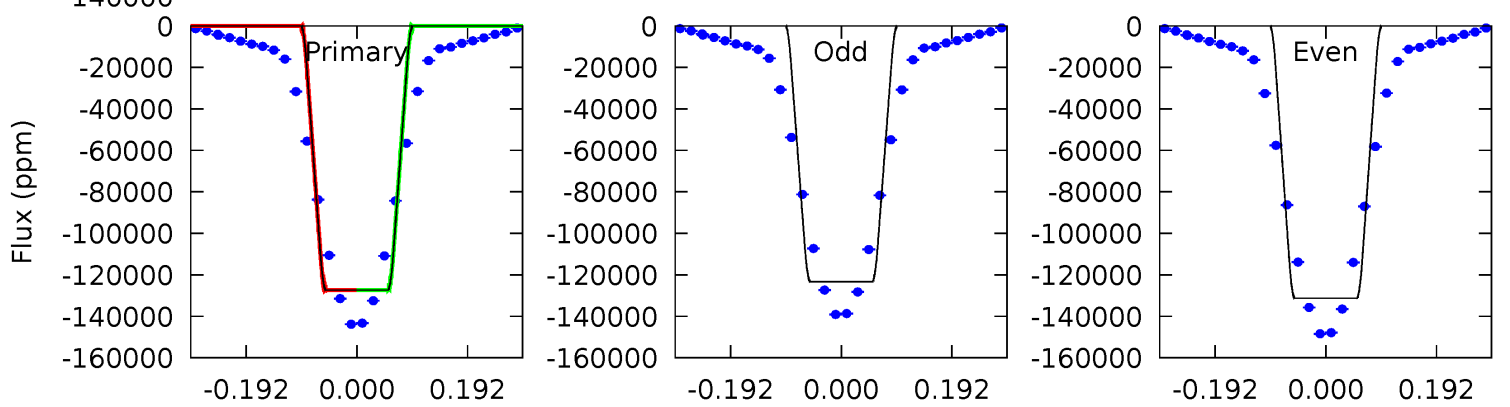
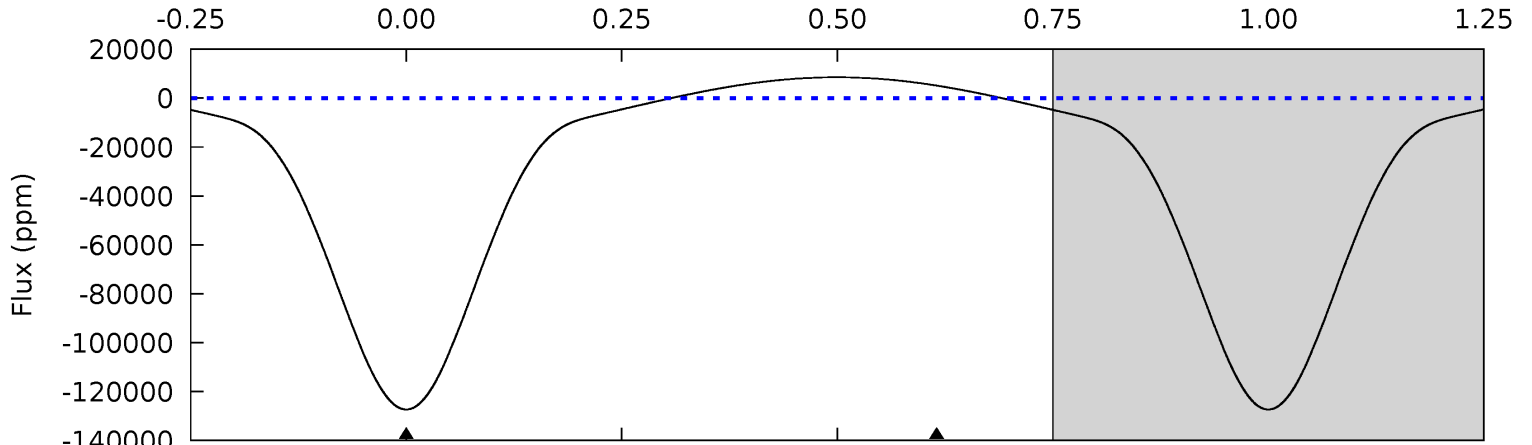
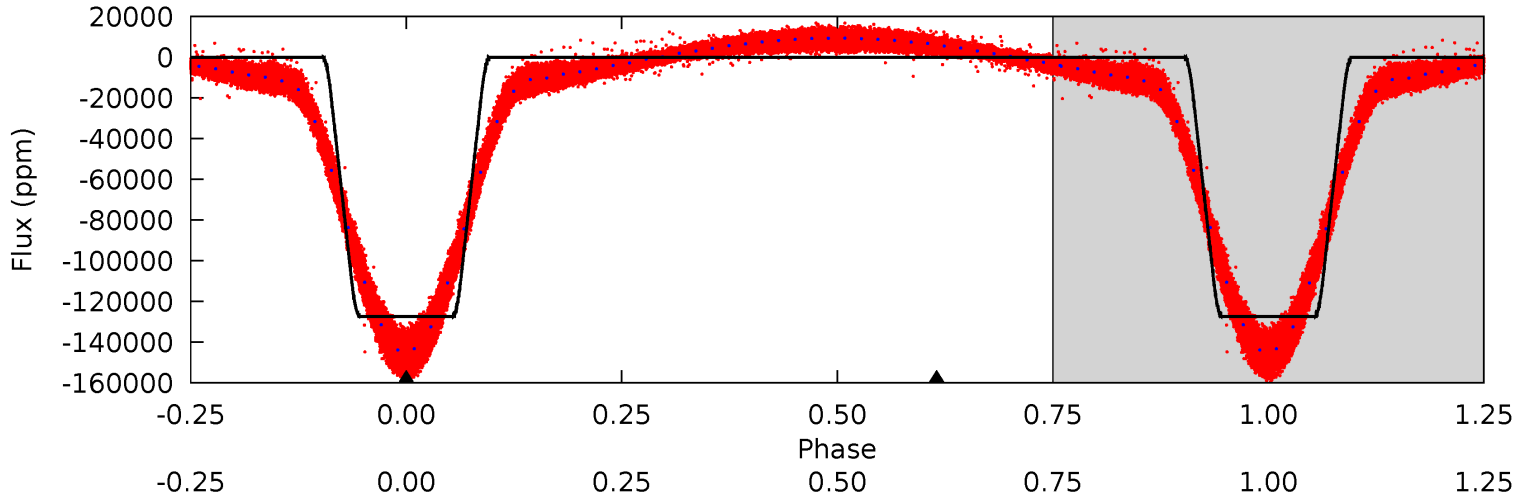
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3227	-195.9	0	0	4.33	1.03	69.8	3227	3227	-195.9	-195.9	106.3	0.98	0.08	79.8



# Alt Model-Shift Uniqueness Test

009592855-01, P = 0.609663 Days, E = 131.336156 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
2757	-111.2	0	0	4.43	1.30	107.1	2757	2757	-111.2	-111.2	86.7	1.00	0.06	1.10



### Stellar Parameters For KIC 009592855

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7498^{+235}_{-314}$	$3.964^{+0.228}_{-0.152}$	$-0.060^{+0.200}_{-0.300}$	$2.274^{+0.540}_{-0.720}$	$1.735^{+0.185}_{-0.317}$	$0.208^{+0.281}_{-0.091}$
	+3%/-4%	+6%/-4%	+333%/-500%	+24%/-32%	+11%/-18%	+136%/-44%
Source	KIC0	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 009592855-01 / KOI 7196.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$8859 \pm 45$	$121.75^{+15.77}_{-19.96}$	$5293^{+415}_{-426}$	$-4721^{+232}_{-237}$	$-0.094^{+0.021}_{-0.034}$
Alt.	$5135 \pm 46$	$93.08^{+13.03}_{-15.24}$	$5312^{+382}_{-437}$	$-4729^{+237}_{-221}$	$-0.092^{+0.020}_{-0.034}$

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

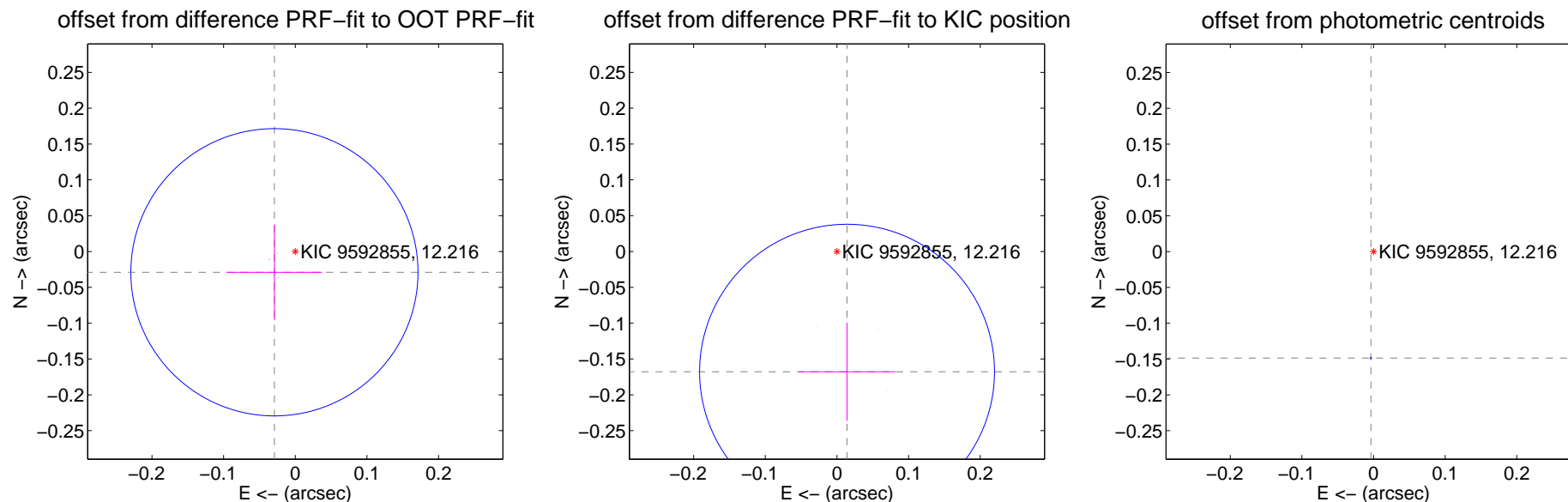
## DV Centroid Data

Supplemental centroid analysis for 009592855-01. Kepler magnitude: 12.22. Transit SNR 2186.46

There are 17 quarters with good PRF difference image offsets

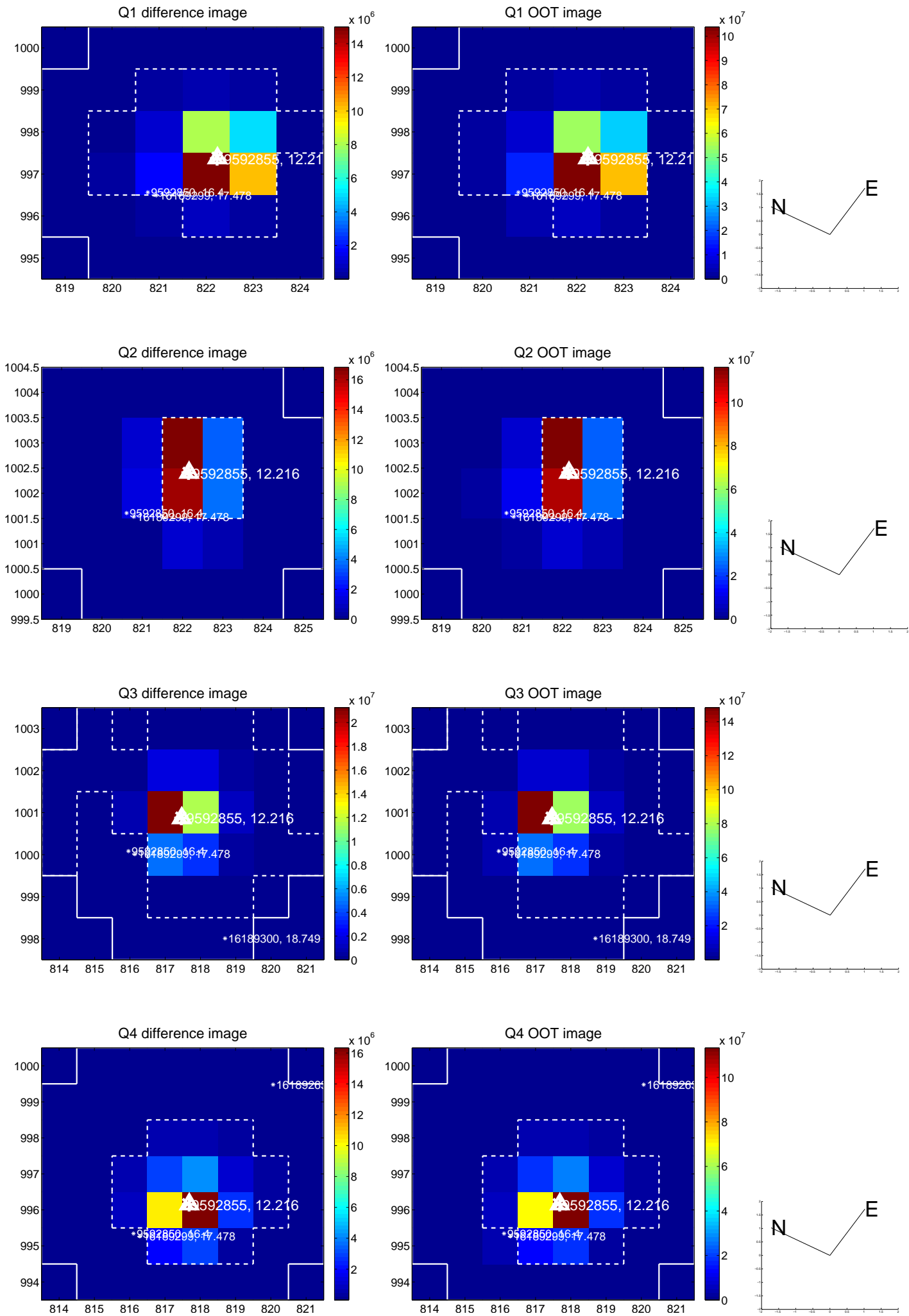
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.041 \pm 0.067$	0.61	$0.029 \pm 0.067$	$-0.029 \pm 0.067$
PRF-fit source offset from KIC position	$0.168 \pm 0.069$	2.45	$-0.014 \pm 0.068$	$-0.168 \pm 0.069$
photometric centroid source offset	$0.15 \pm 0.00$	604.31	$0.00 \pm 0.00$	$-0.15 \pm 0.00$

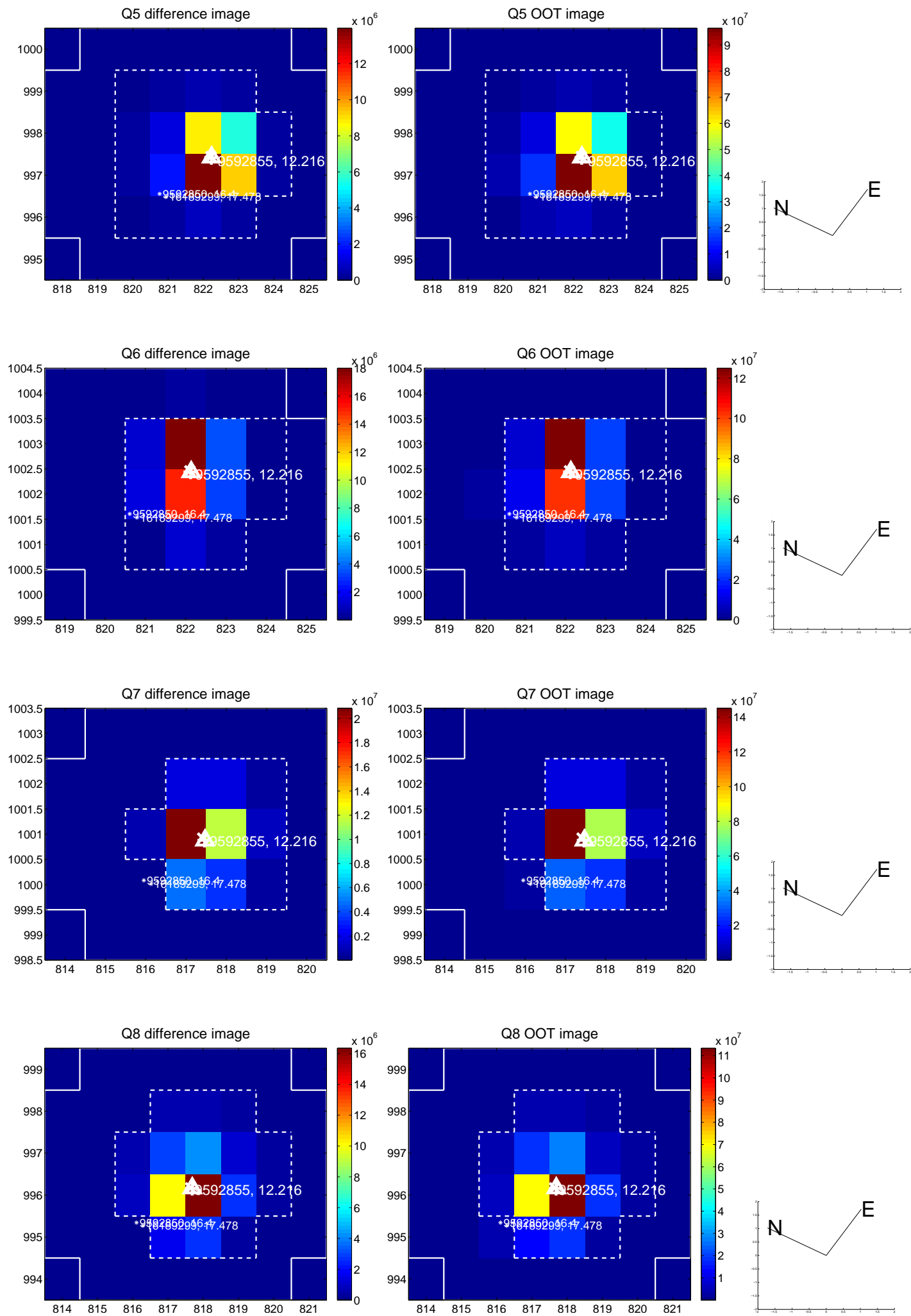


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

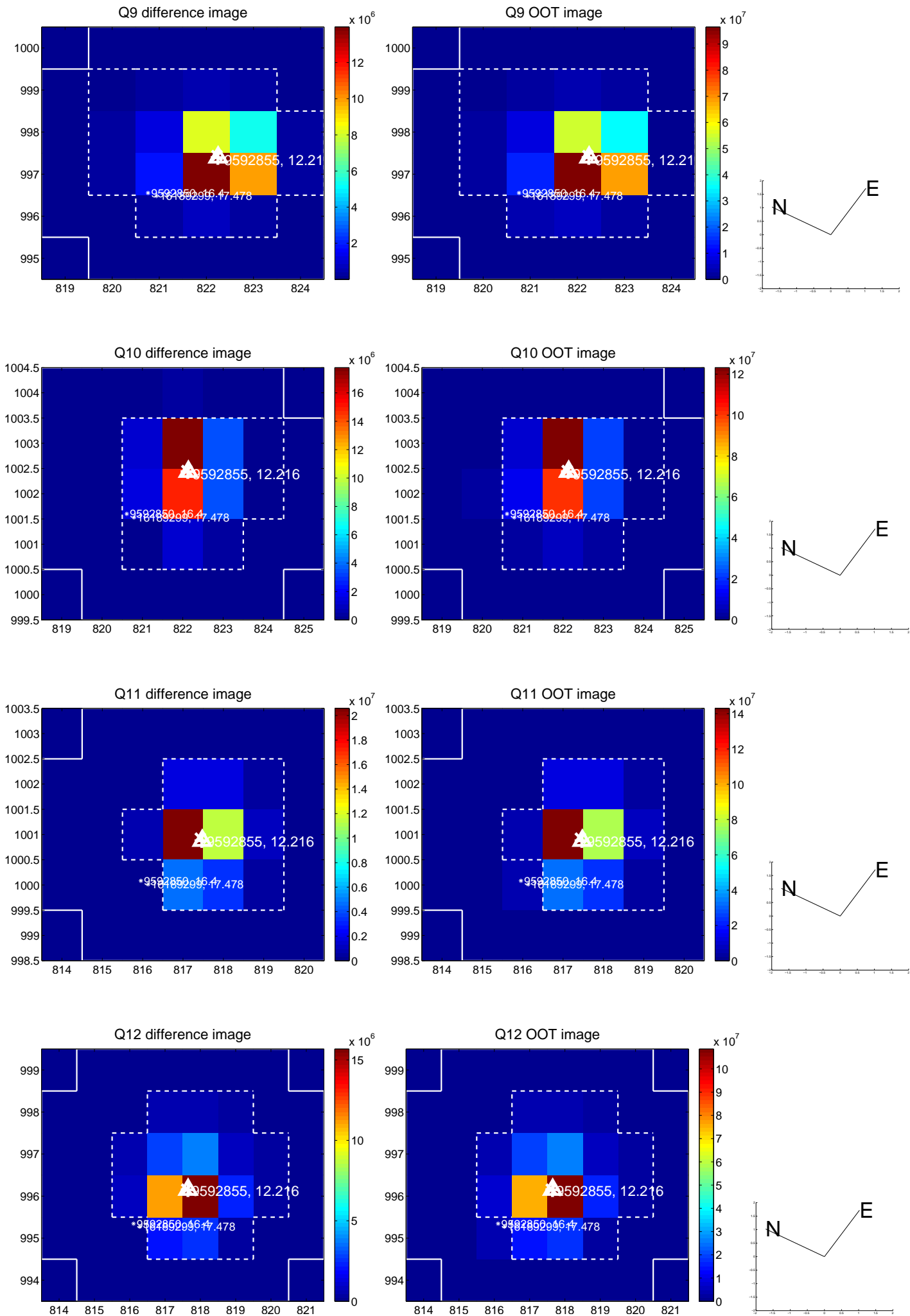


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

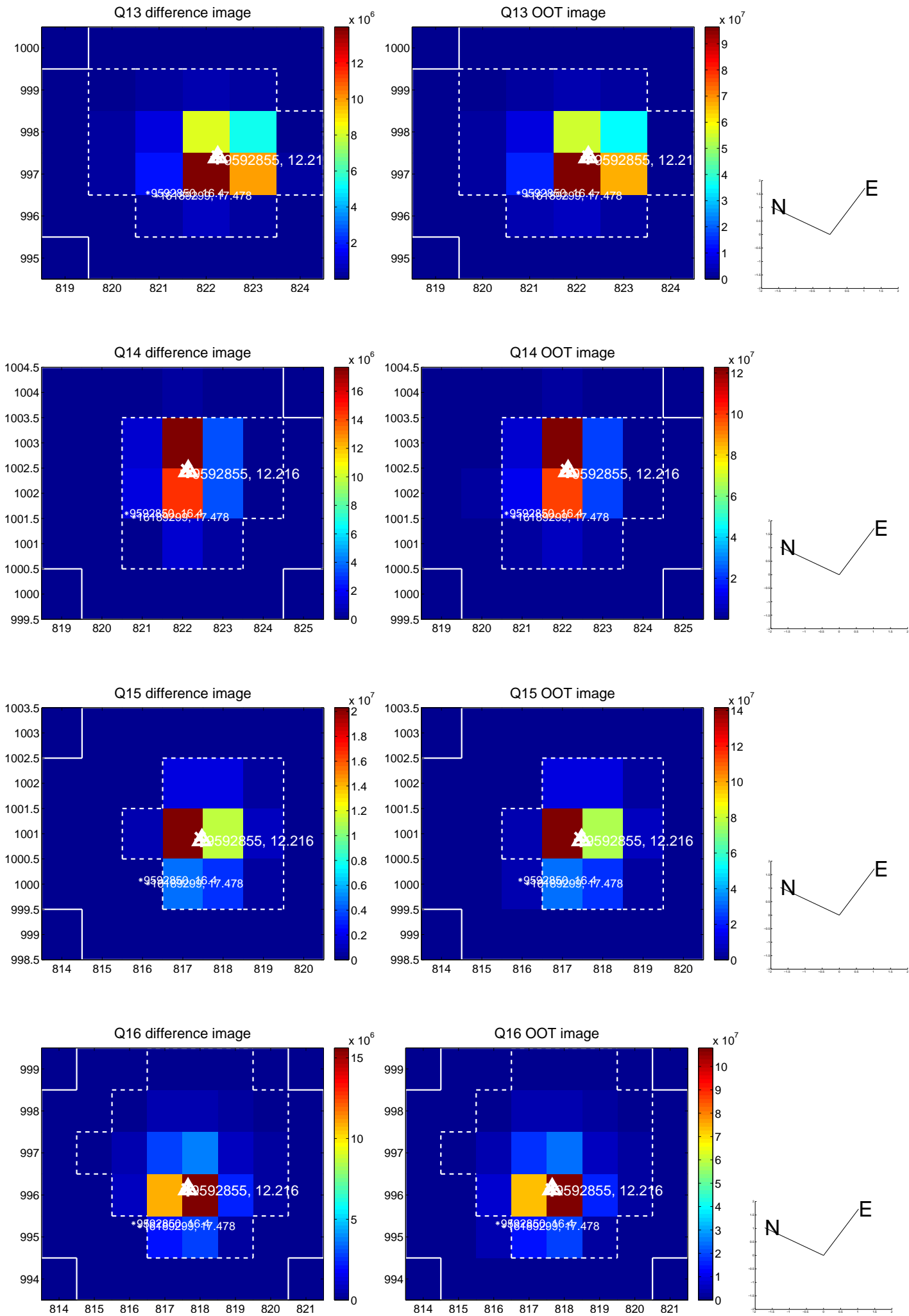




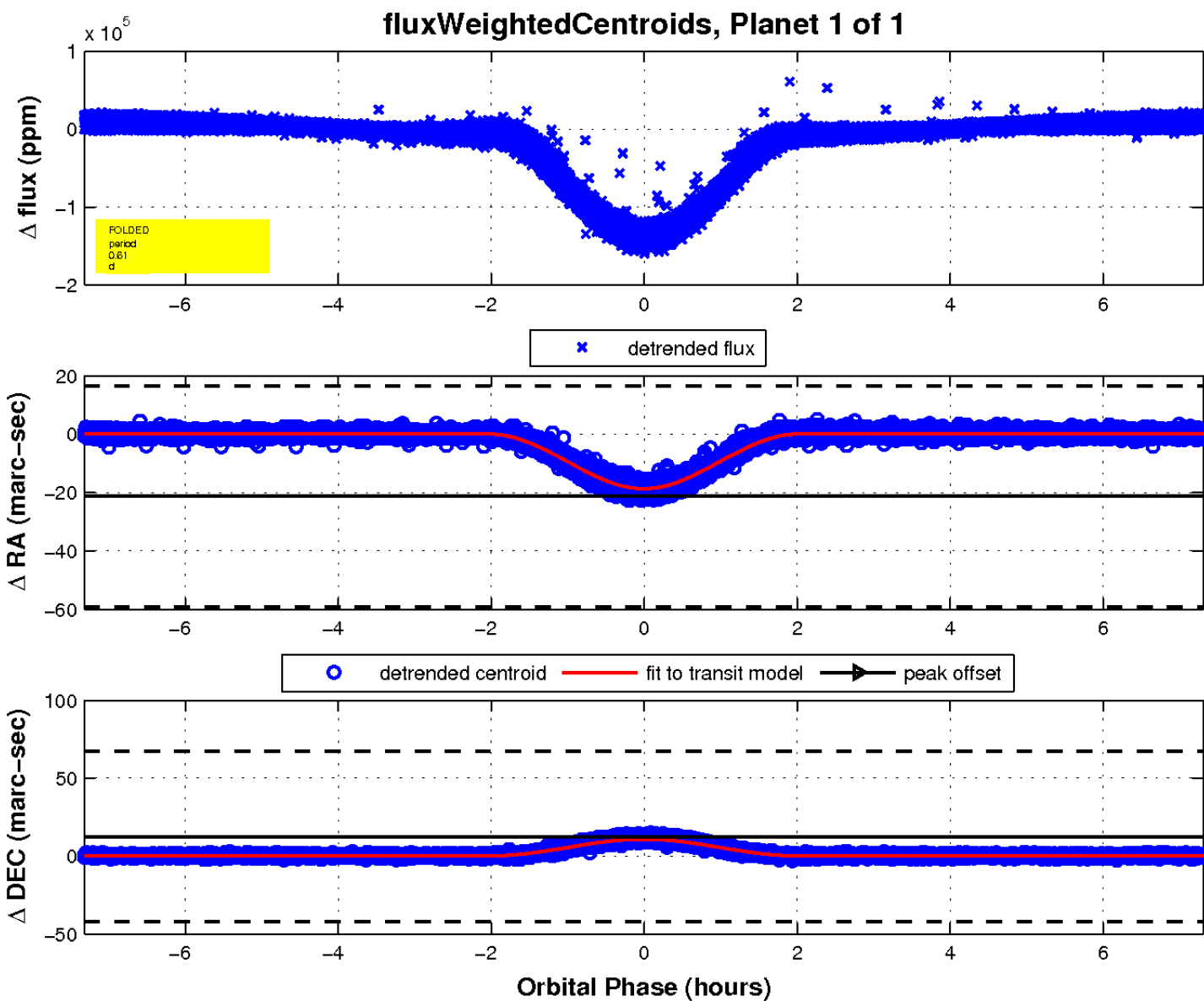
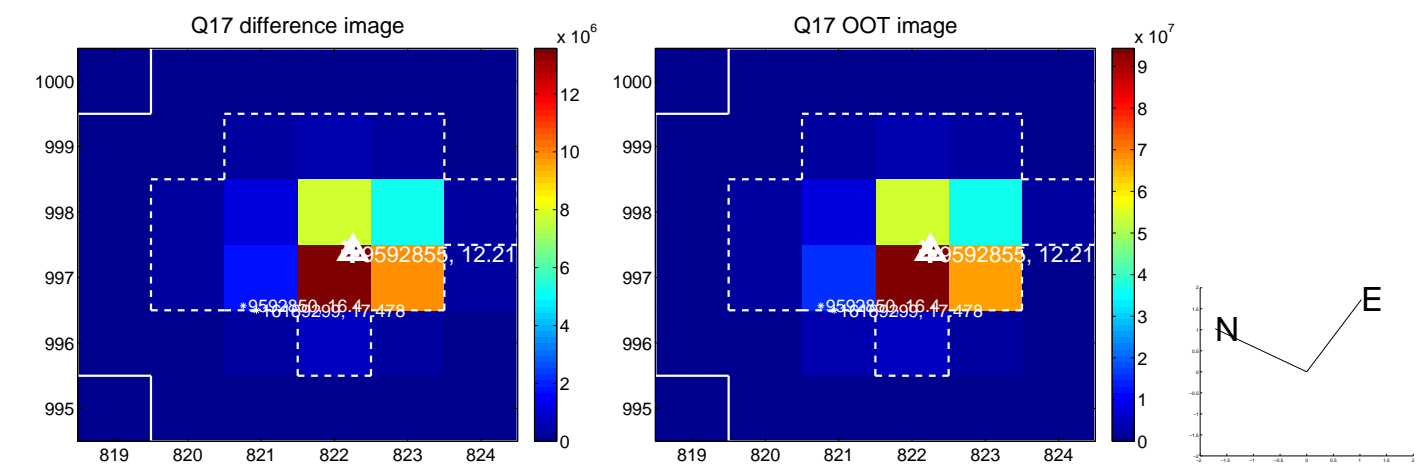
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

