

# KIC 009635529

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009635529-01	OBS	7206.01	2.351956	131.916809	204386.8	6.045	42422.9	25173.7	1.23	6550	71.12	1876.63

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009635529-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED

**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.

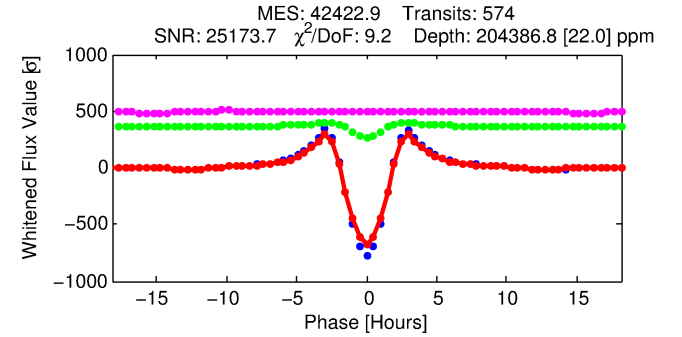
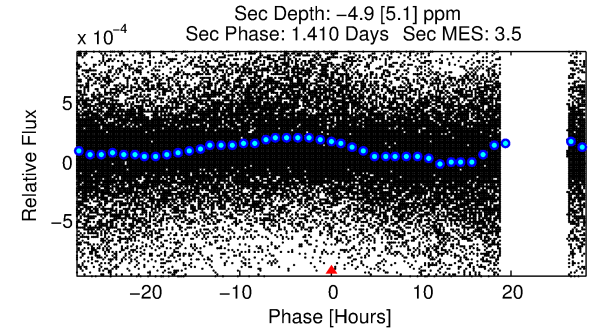
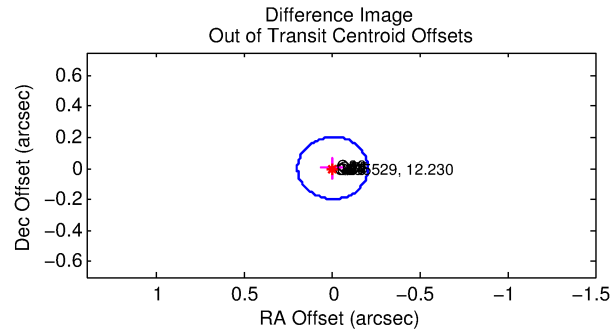
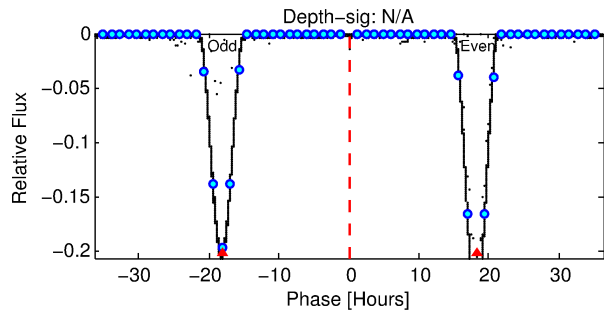
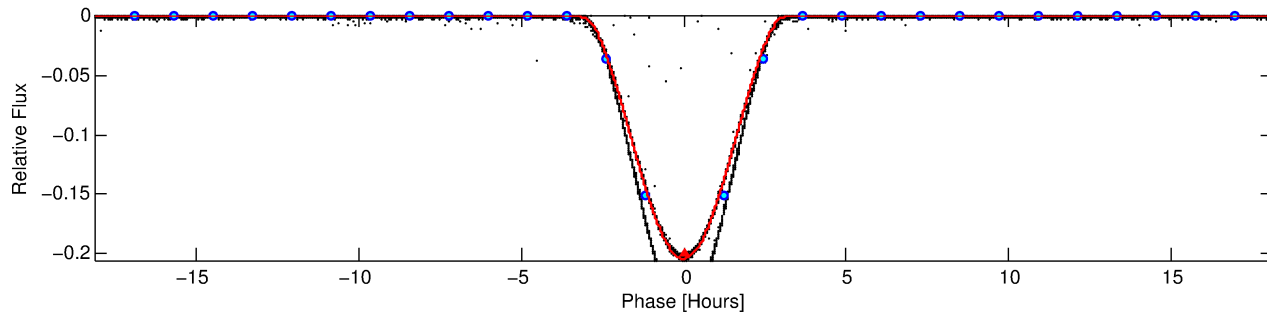
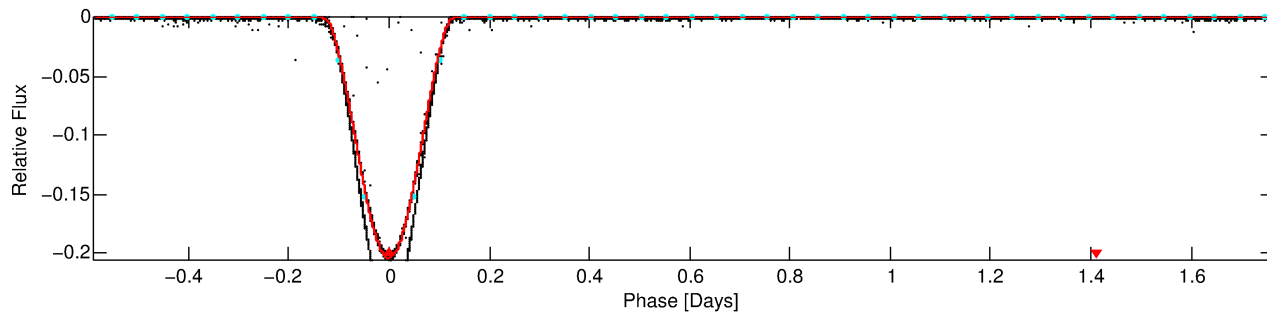
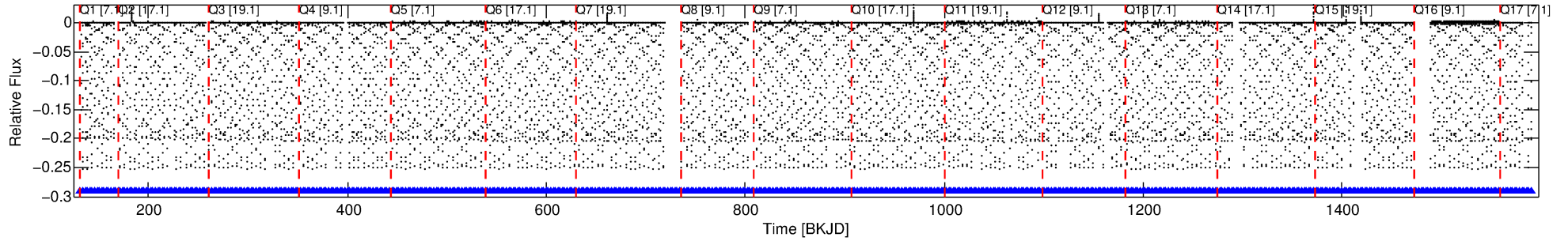
## Ephemeris Match Information For 009635529-01

No Significant Match Found

# DV One-Page Summary

KIC: 9635529 Candidate: 1 of 1 Period: 2.352 d  
KOI: K07206.01 Corr: 0.998

Kp: 12.23 R\*: 1.23 Rs Teff: 6550.0 K Logg: 4.32 Fe/H: -0.220



## DV Fit Results:

Period = 2.35196 [0.00000] d  
Epoch = 131.9168 [0.0000] BKJD  
Rp/R\* = 0.5321 [0.0032]  
a/R\* = 4.10 [0.00]  
b = 0.76 [0.01]  
Seff = 1876.63 [717.52]  
Teq = 1678 [160] K  
Rp = 71.12 [22.24] Re  
a = 0.0363 [0.0093] AU  
Ag = N/A  
Teffp = N/A

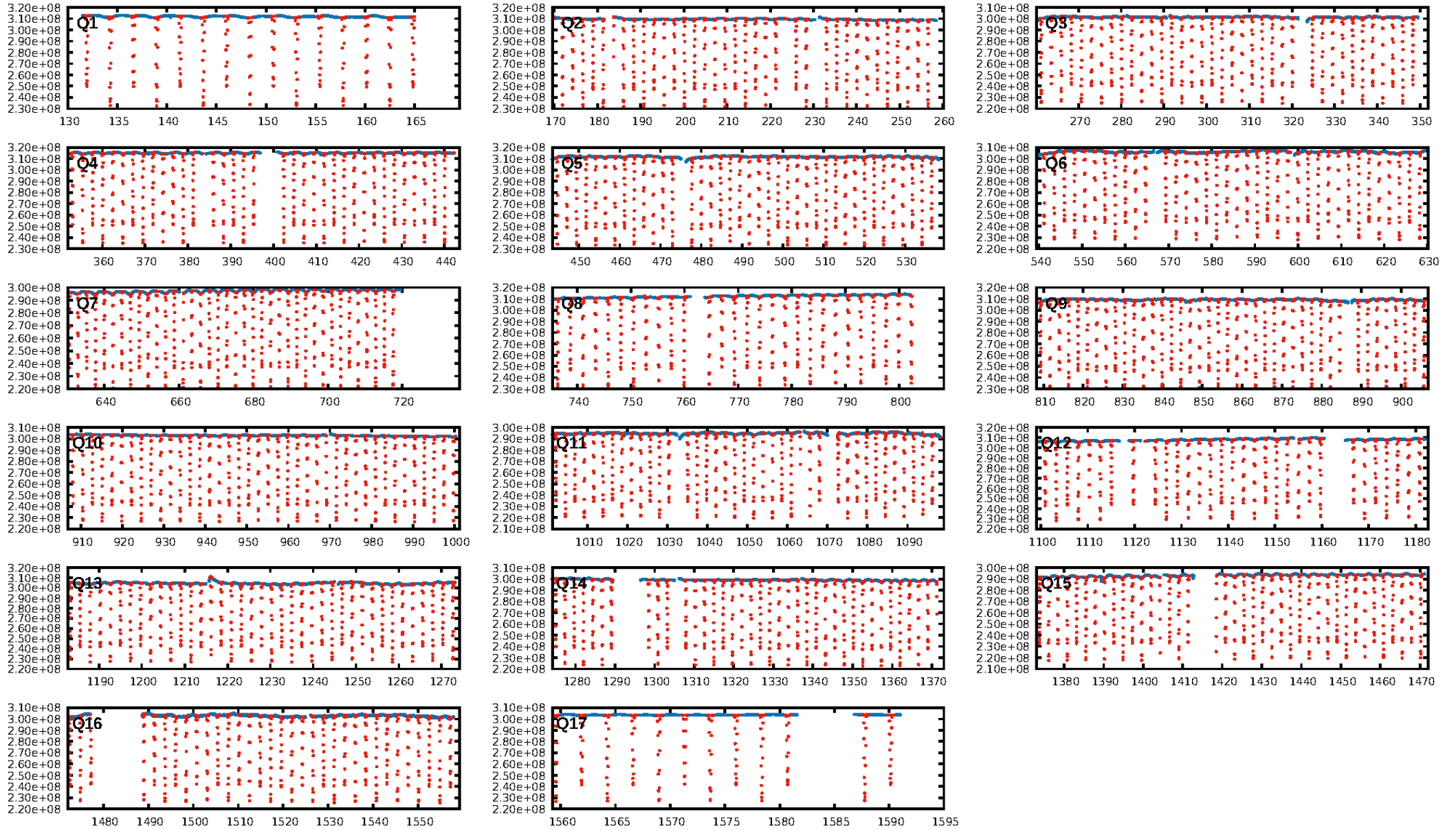
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [547/547]  
GhostDiagnostic-chr: 1.53  
Centroid-sig: N/A  
Centroid-so: 0.224 arcsec [1282.13σ]  
OotOffset-rm: 0.005 arcsec [0.07σ]  
KicOffset-rm: 0.232 arcsec [3.43σ]  
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]

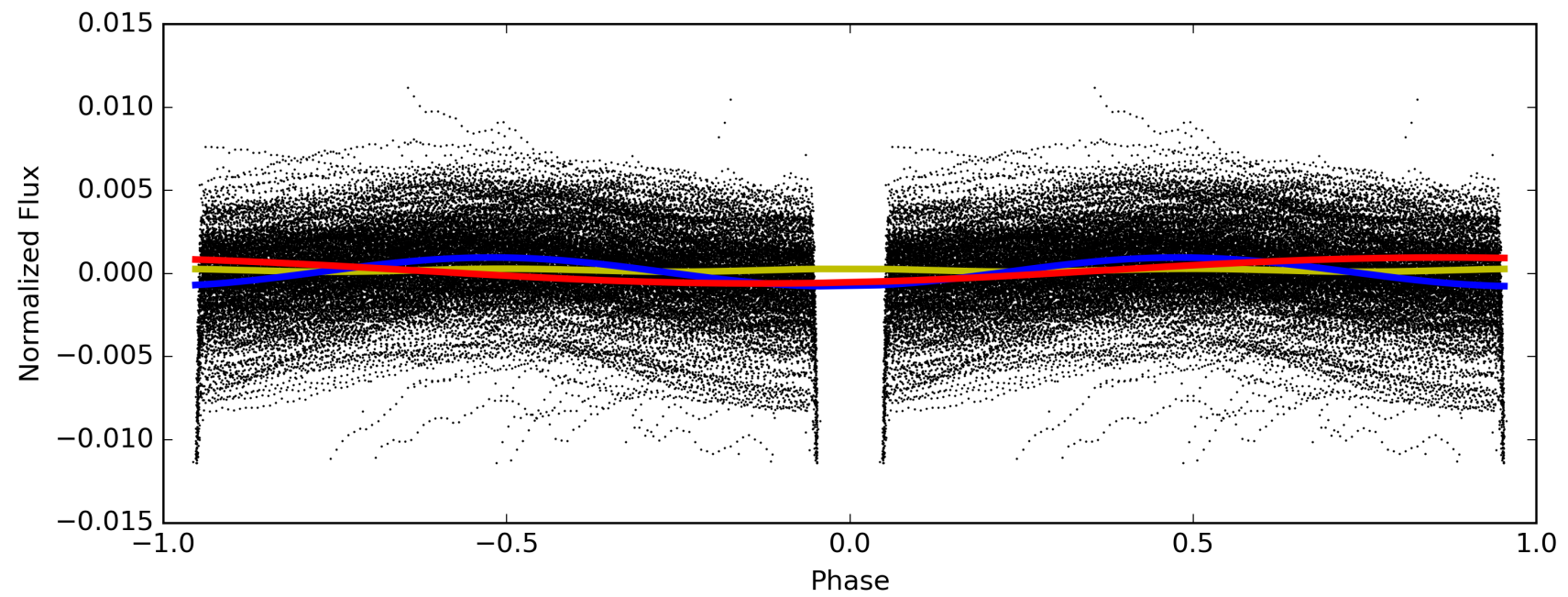
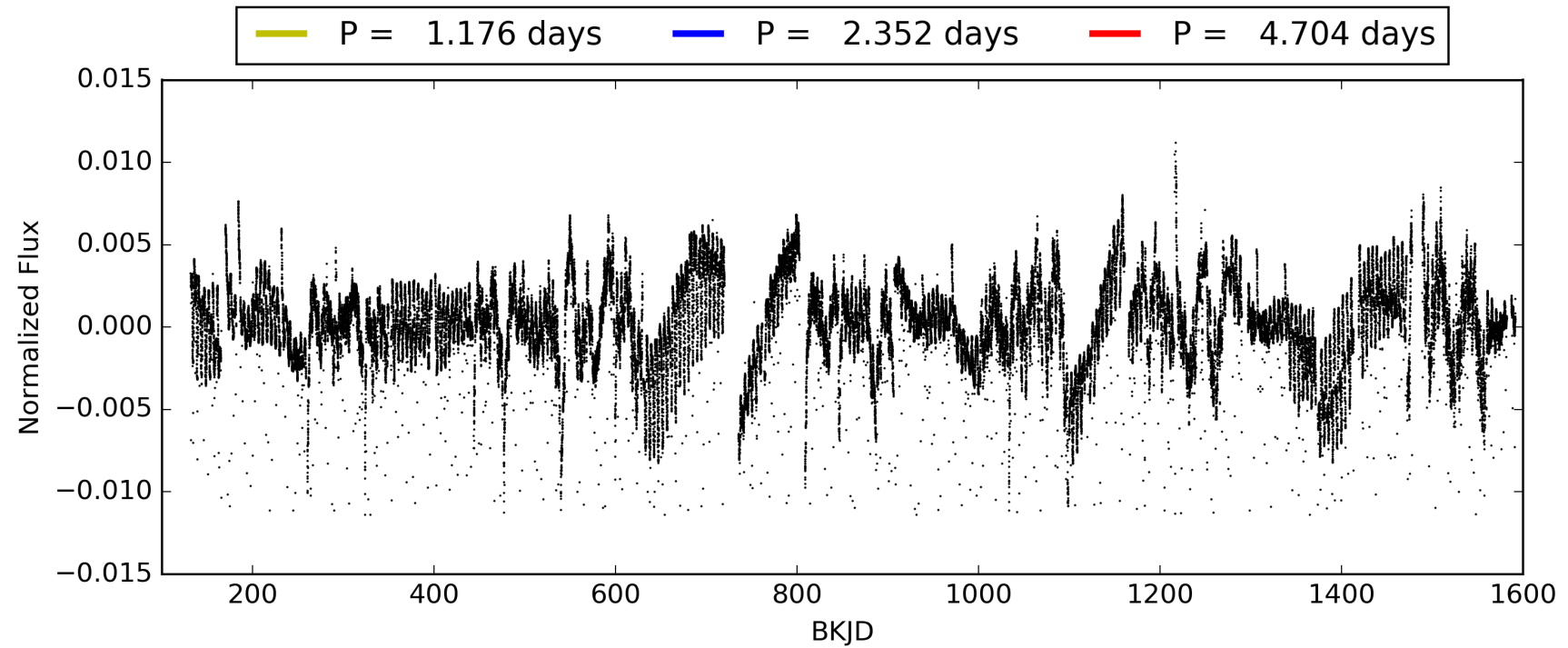
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:49:52 Z

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

# TCE 009635529-01, PDC Light Curves

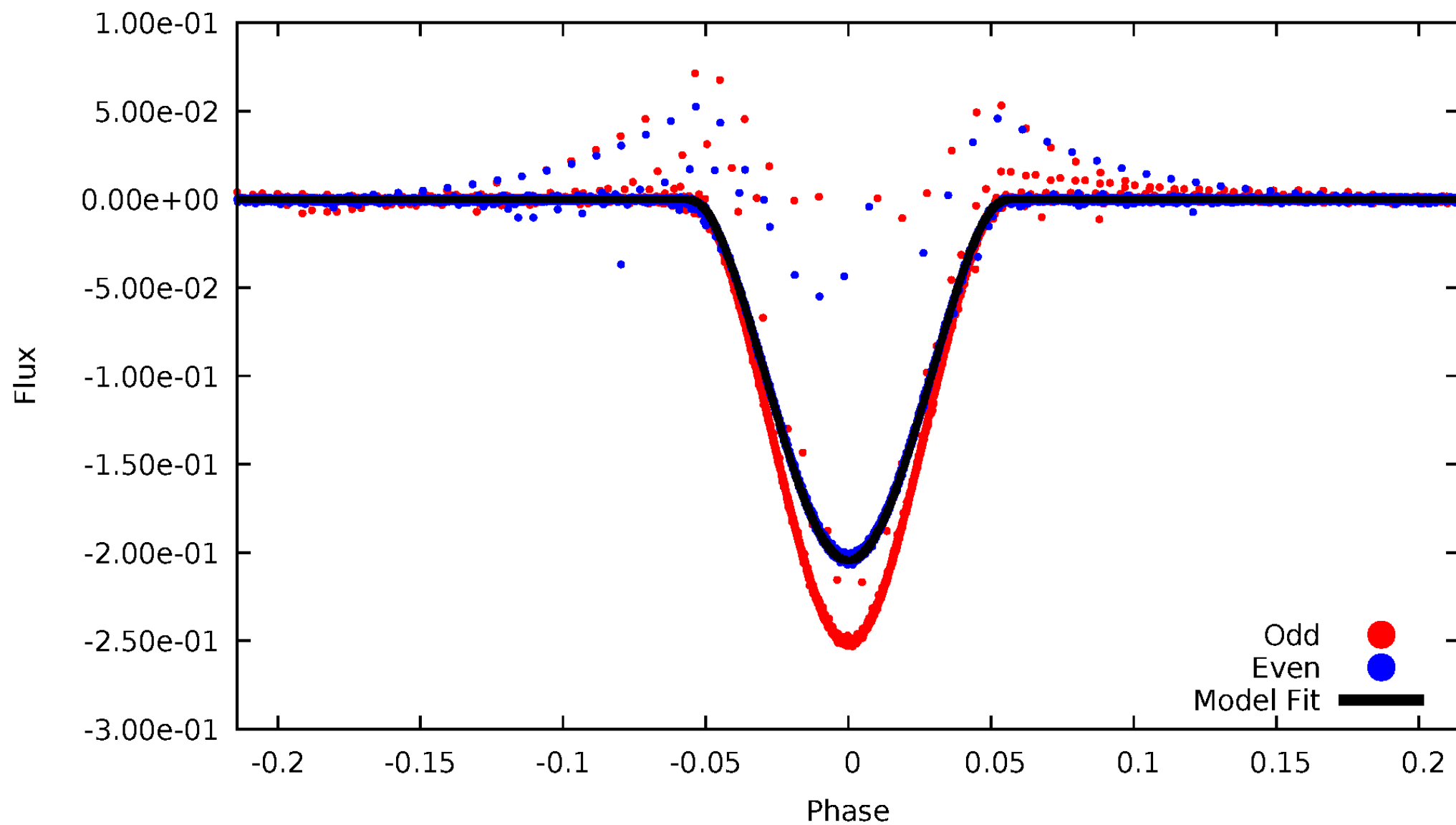


TCE 009635529-01



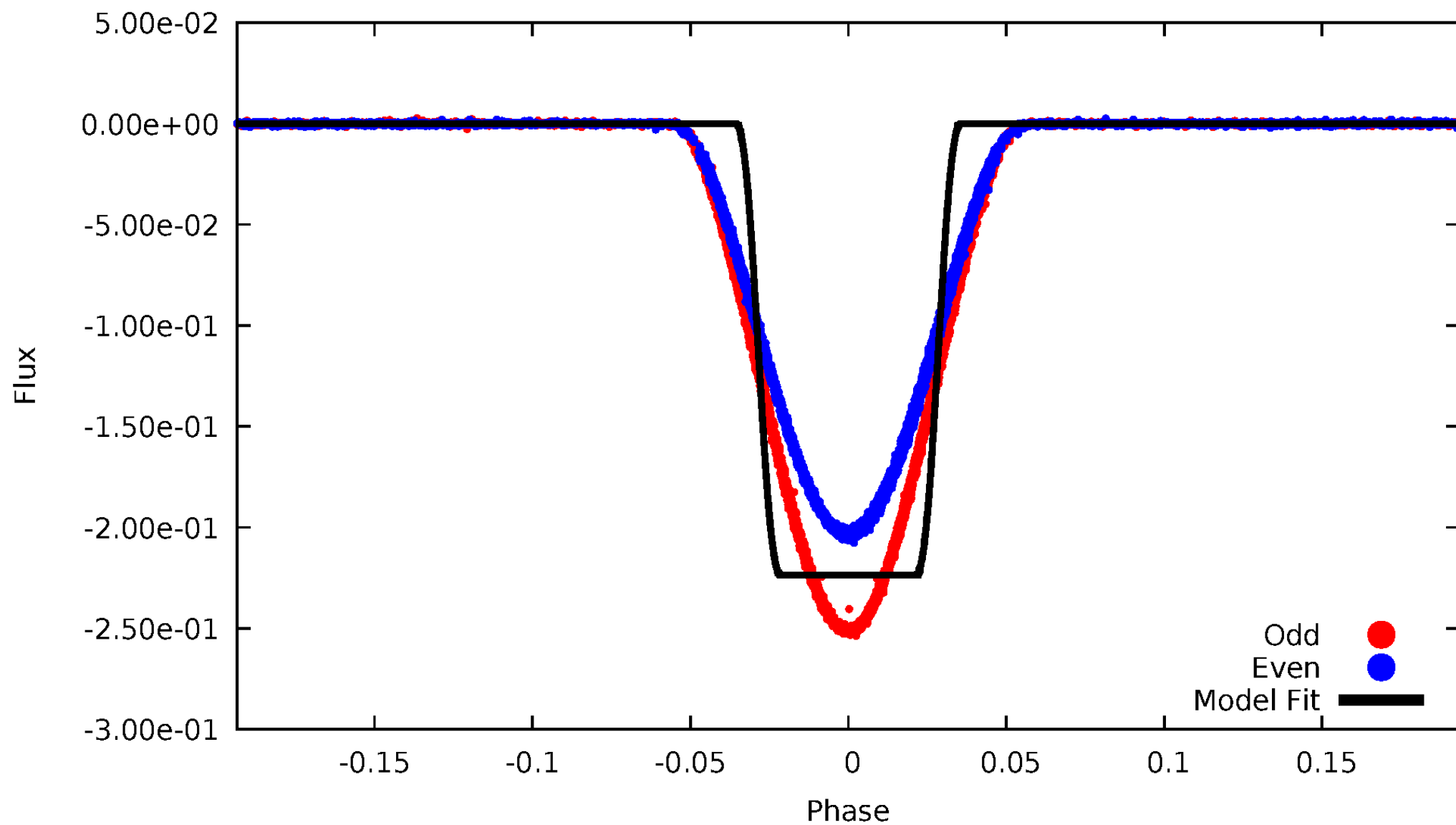
# DV Odd/Even

TCE 009635529-01



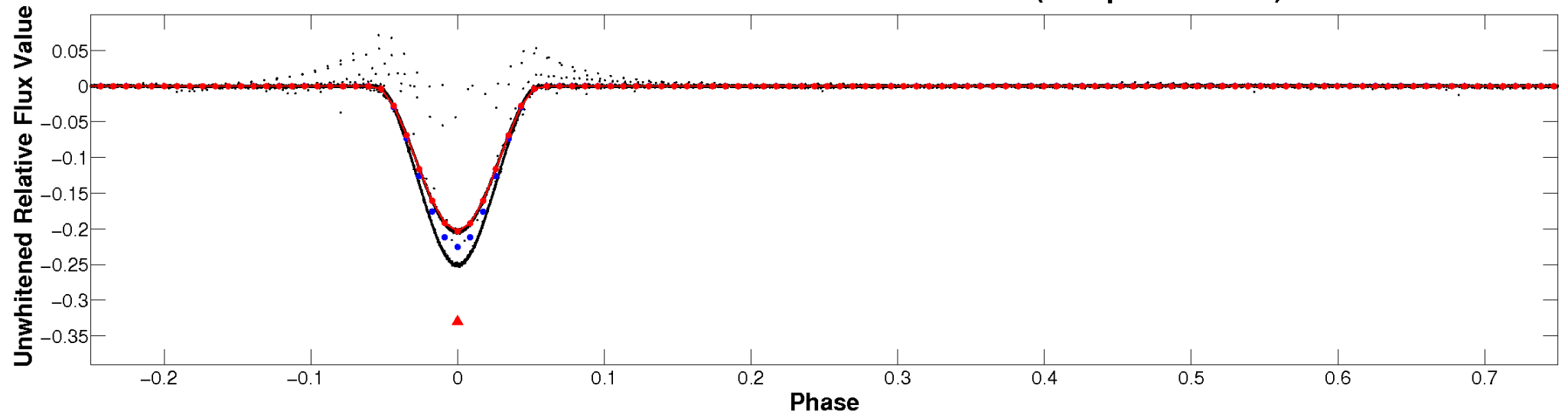
# ALT Odd/Even

TCE 009635529-01

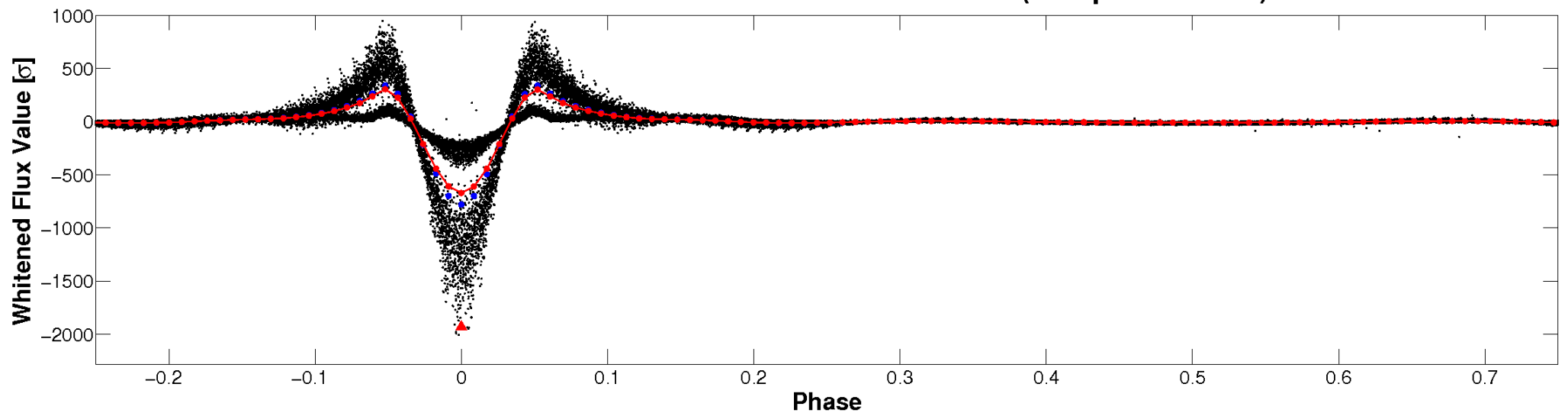


# Non-Whitened Vs. Whitened Light Curve

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

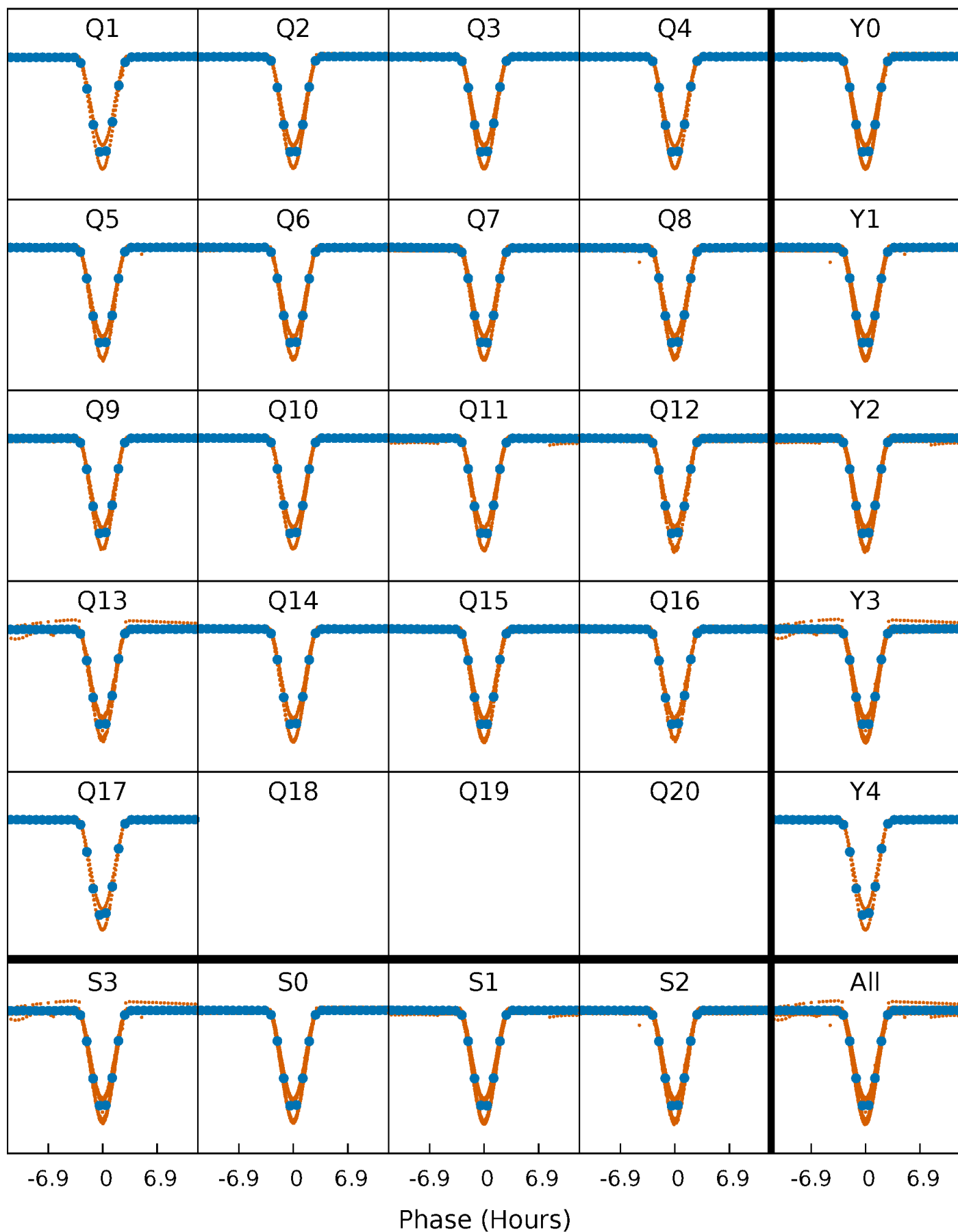


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

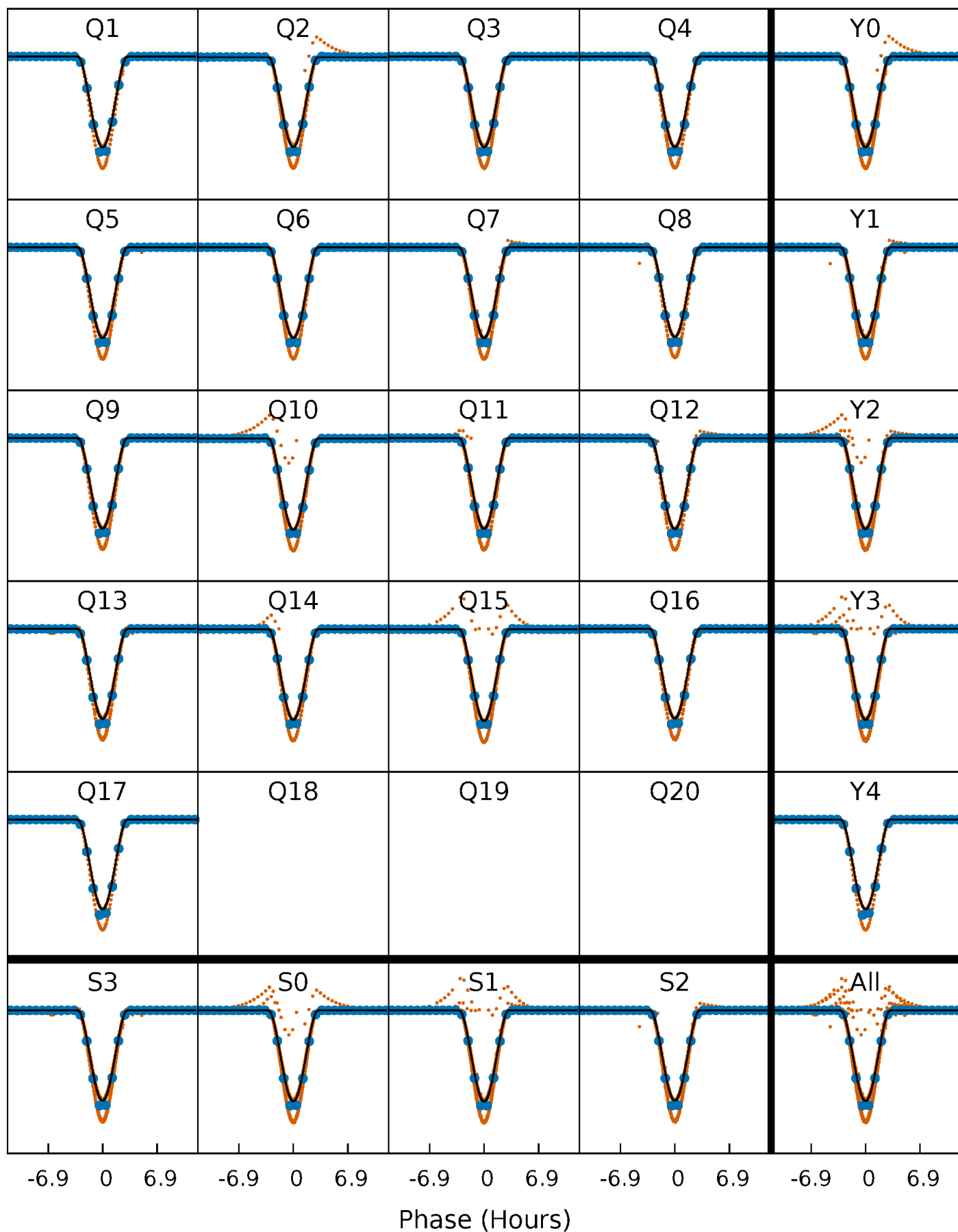
TCE 009635529-01 P= 2.351956 Days  $T_0=131.916809$  (BKJD)





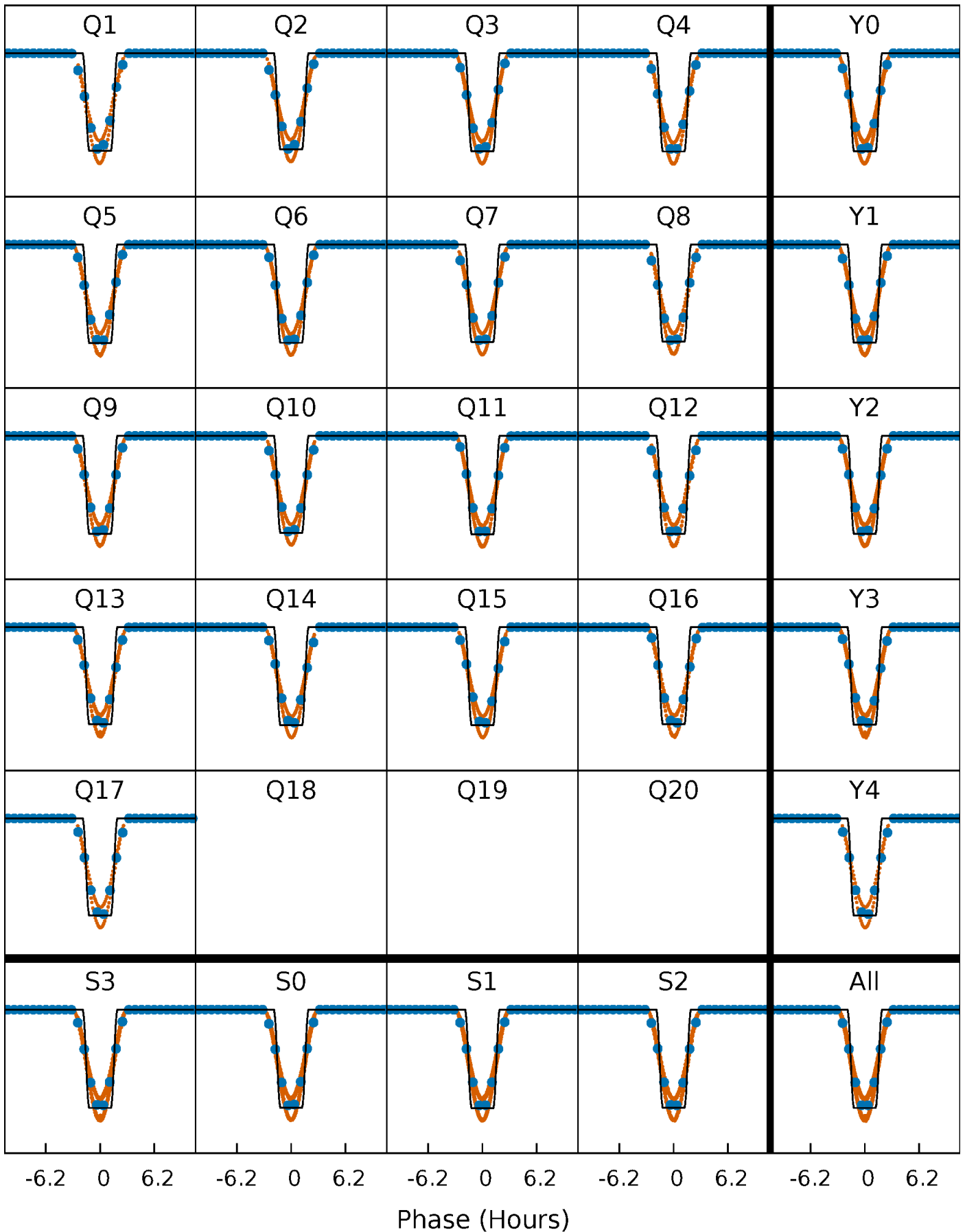
# DV Quarter-Phased Transit Curves

TCE 009635529-01 P= 2.351956 Days  $T_0=131.916809$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

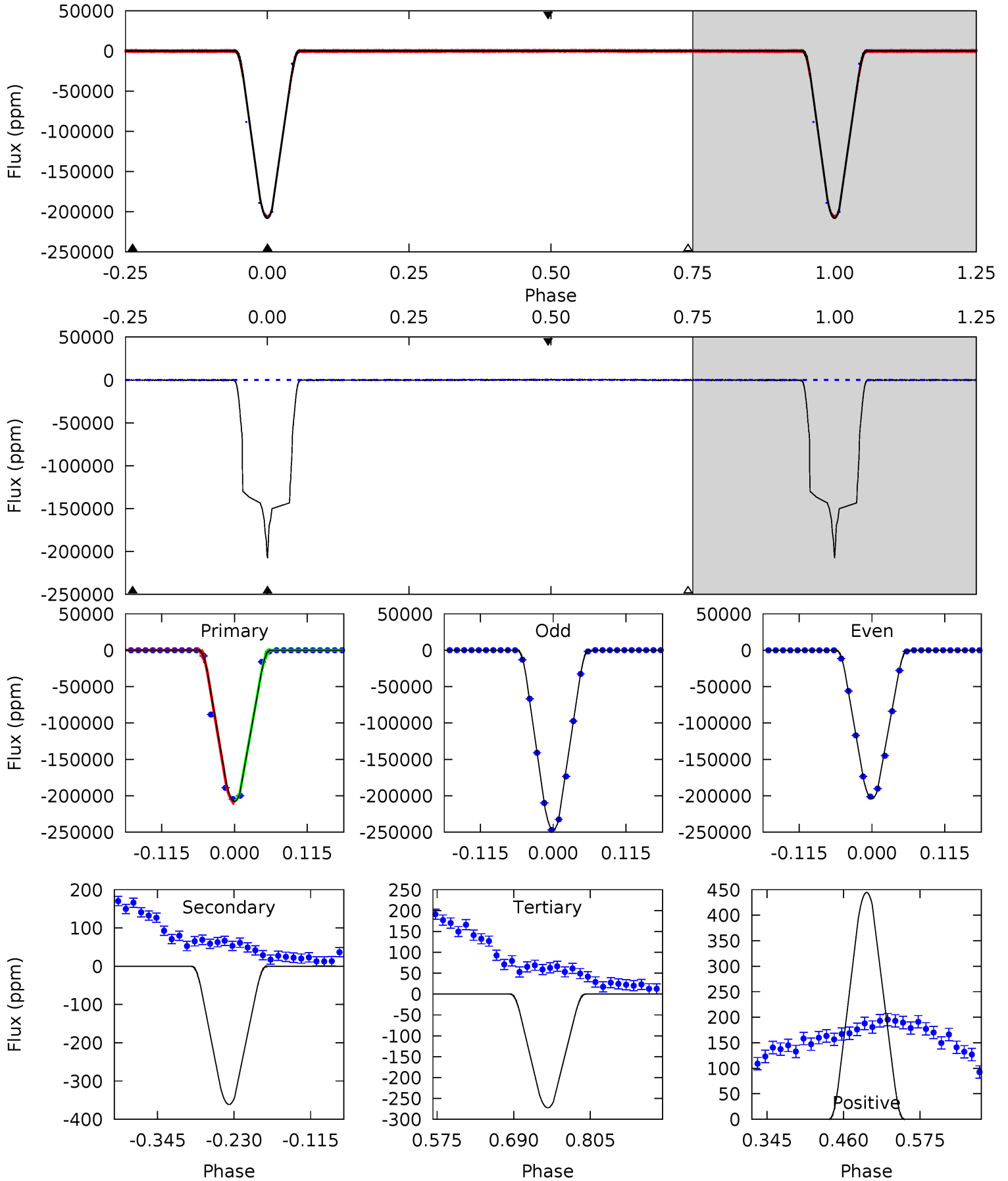
TCE 009635529-01 P= 2.351948 Days  $T_0=131.919139$  (BKJD)



# DV Model-Shift Uniqueness Test

009635529-01, P = 2.351956 Days, E = 129.564853 Days

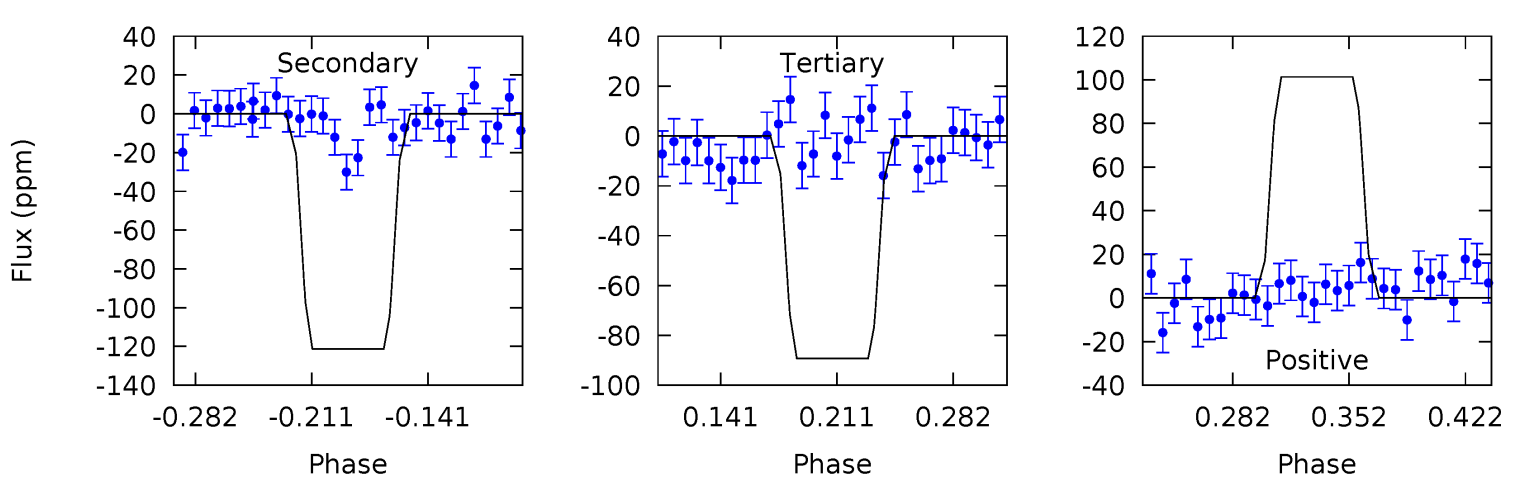
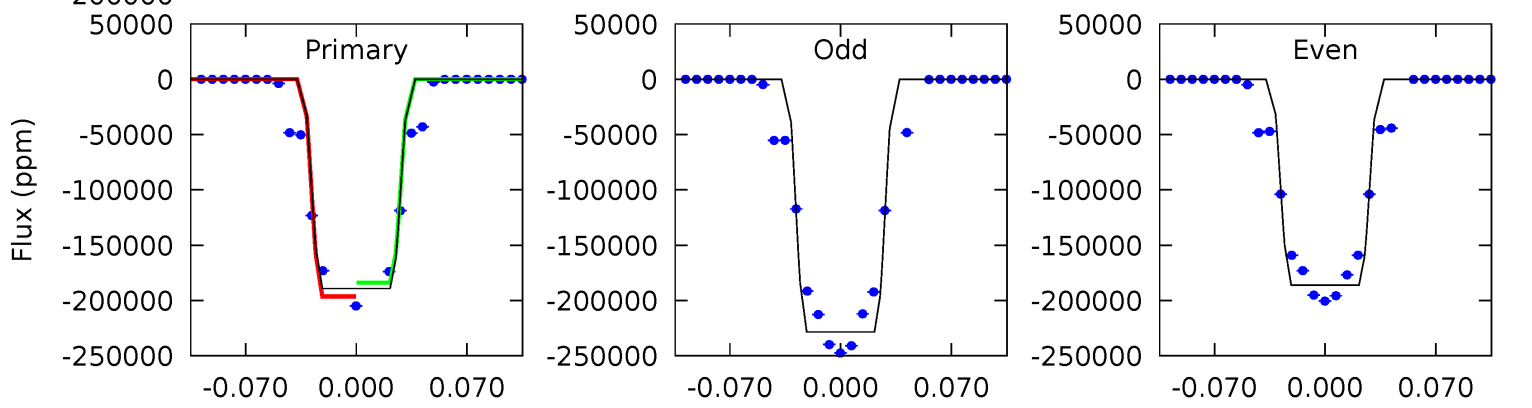
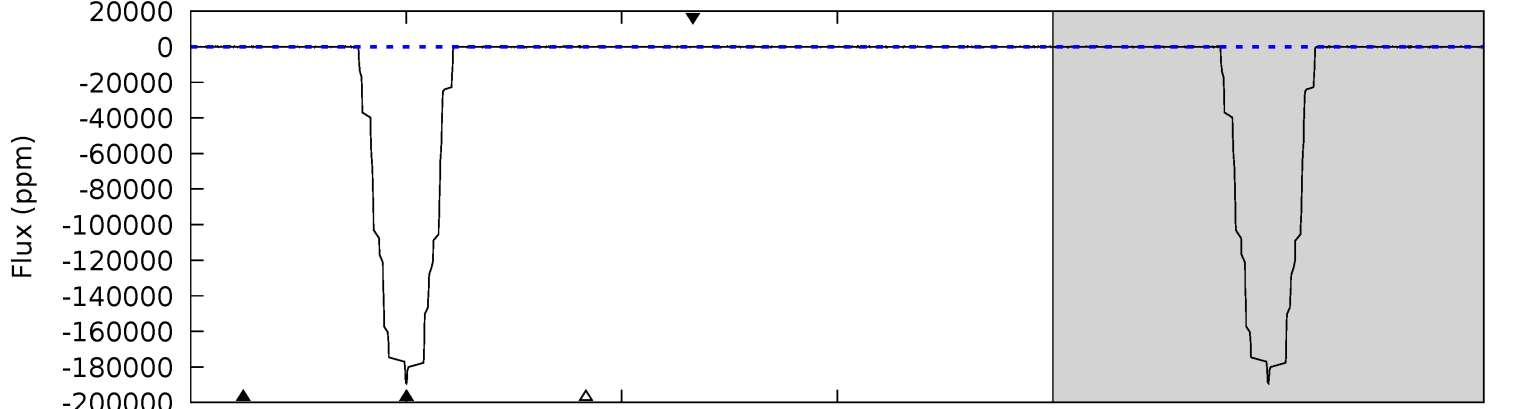
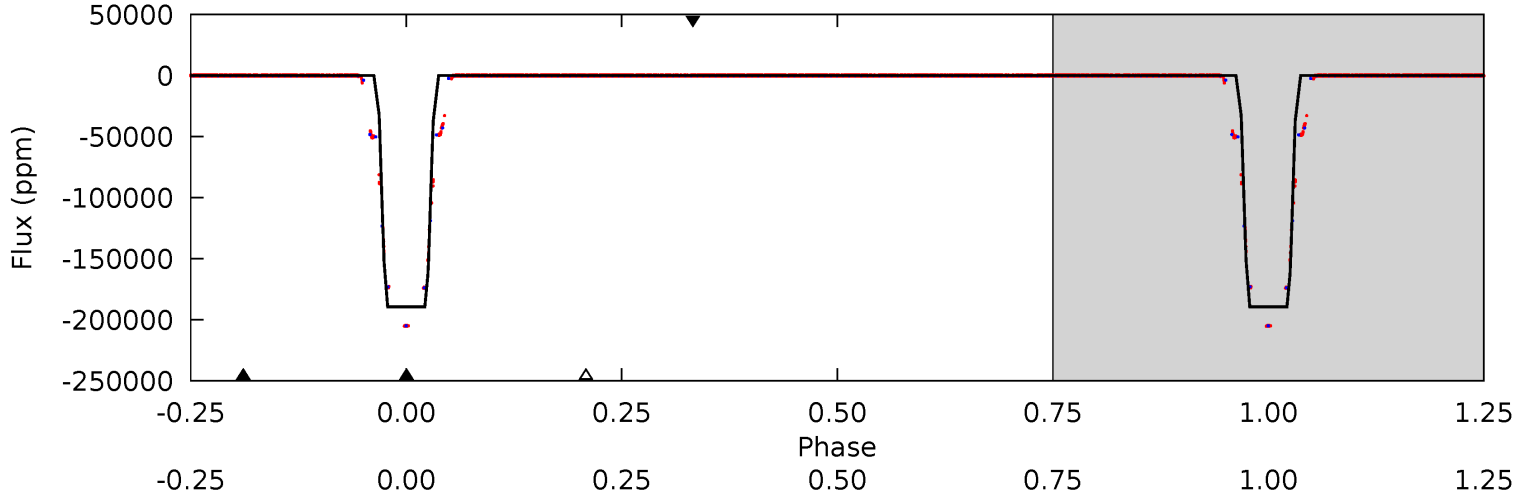
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21609	37.6	28.3	46.2	4.54	1.58	13.9	21581	21563	9.23	-8.66	4820	1.08	0.00	0



# Alt Model-Shift Uniqueness Test

009635529-01, P = 2.351948 Days, E = 129.567191 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
7791	4.99	3.67	4.17	4.64	1.81	1.14	7788	7787	1.32	0.82	2726	1.09	0.00	0



### Stellar Parameters For KIC 009635529

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6550^{+148}_{-181}$	$4.324^{+0.084}_{-0.196}$	$-0.220^{+0.250}_{-0.300}$	$1.225^{+0.383}_{-0.164}$	$1.157^{+0.178}_{-0.146}$	$0.886^{+0.406}_{-0.445}$
	+2%/-3%	+2%/-5%	+114%/-136%	+31%/-13%	+15%/-13%	+46%/-50%
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 009635529-01 / KOI 7206.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-361 \pm 10$	$72.77^{+11.72}_{-6.57}$	$2378^{+168}_{-122}$	$-2658^{+77}_{-114}$	$0.050^{+0.008}_{-0.012}$
Alt.	$-121 \pm 24$	$63.70^{+11.07}_{-5.14}$	$2372^{+172}_{-117}$	$-2689^{+71}_{-110}$	$0.021^{+0.006}_{-0.006}$

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

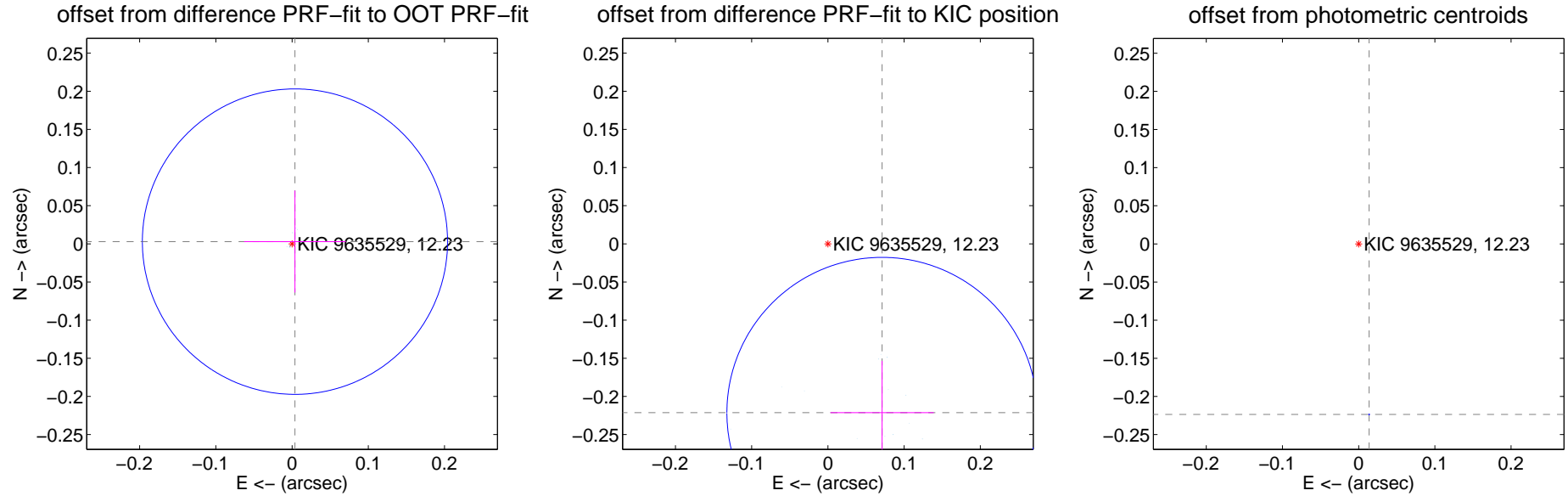
## DV Centroid Data

Supplemental centroid analysis for 009635529-01. Kepler magnitude: 12.23. Transit SNR 25173.75

There are 17 quarters with good PRF difference image offsets

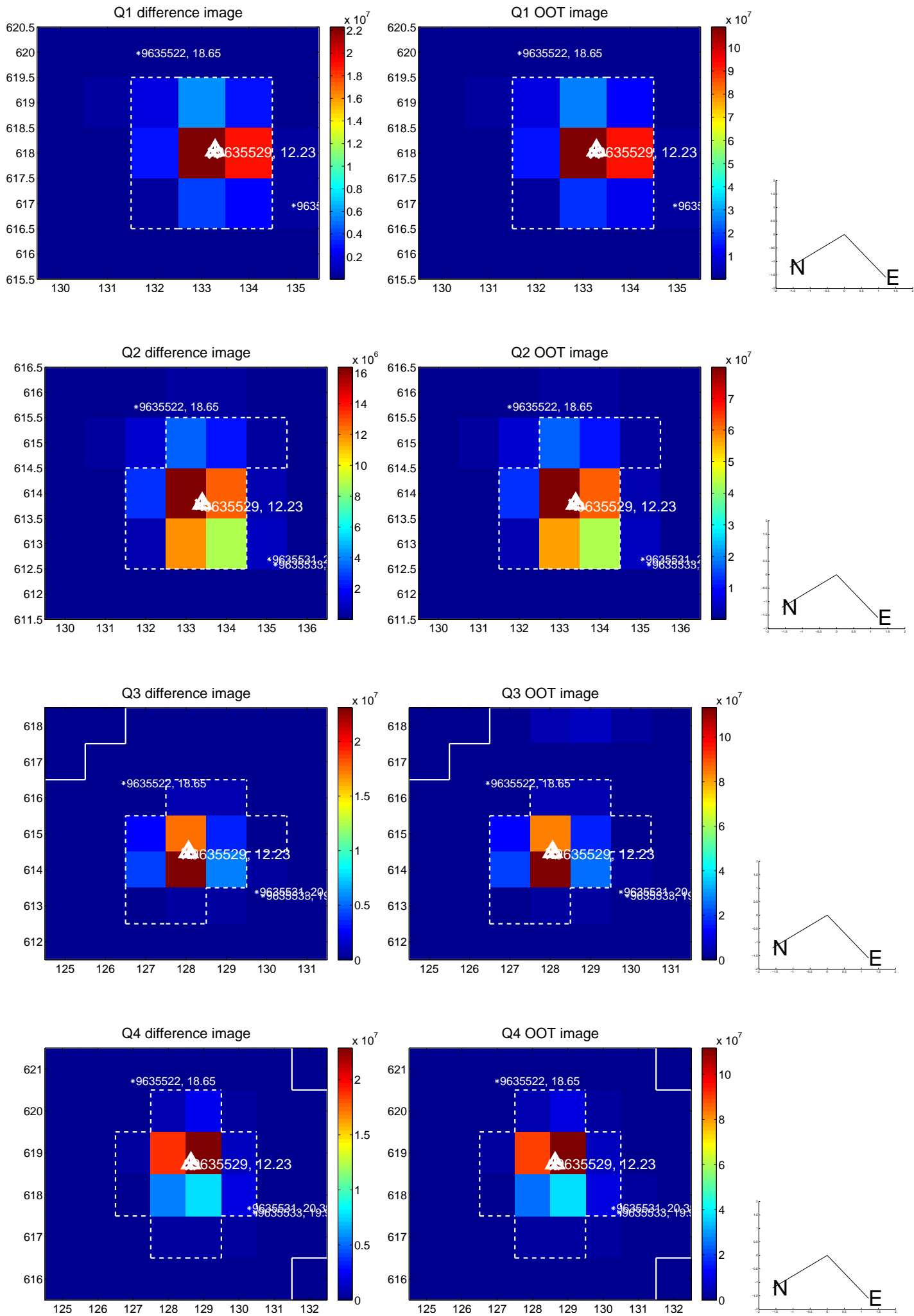
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.005 \pm 0.067$	0.07	$-0.004 \pm 0.067$	$0.003 \pm 0.067$
PRF-fit source offset from KIC position	$0.232 \pm 0.068$	3.43	$-0.071 \pm 0.068$	$-0.221 \pm 0.068$
photometric centroid source offset	$0.22 \pm 0.00$	1282.13	$-0.01 \pm 0.00$	$-0.22 \pm 0.00$

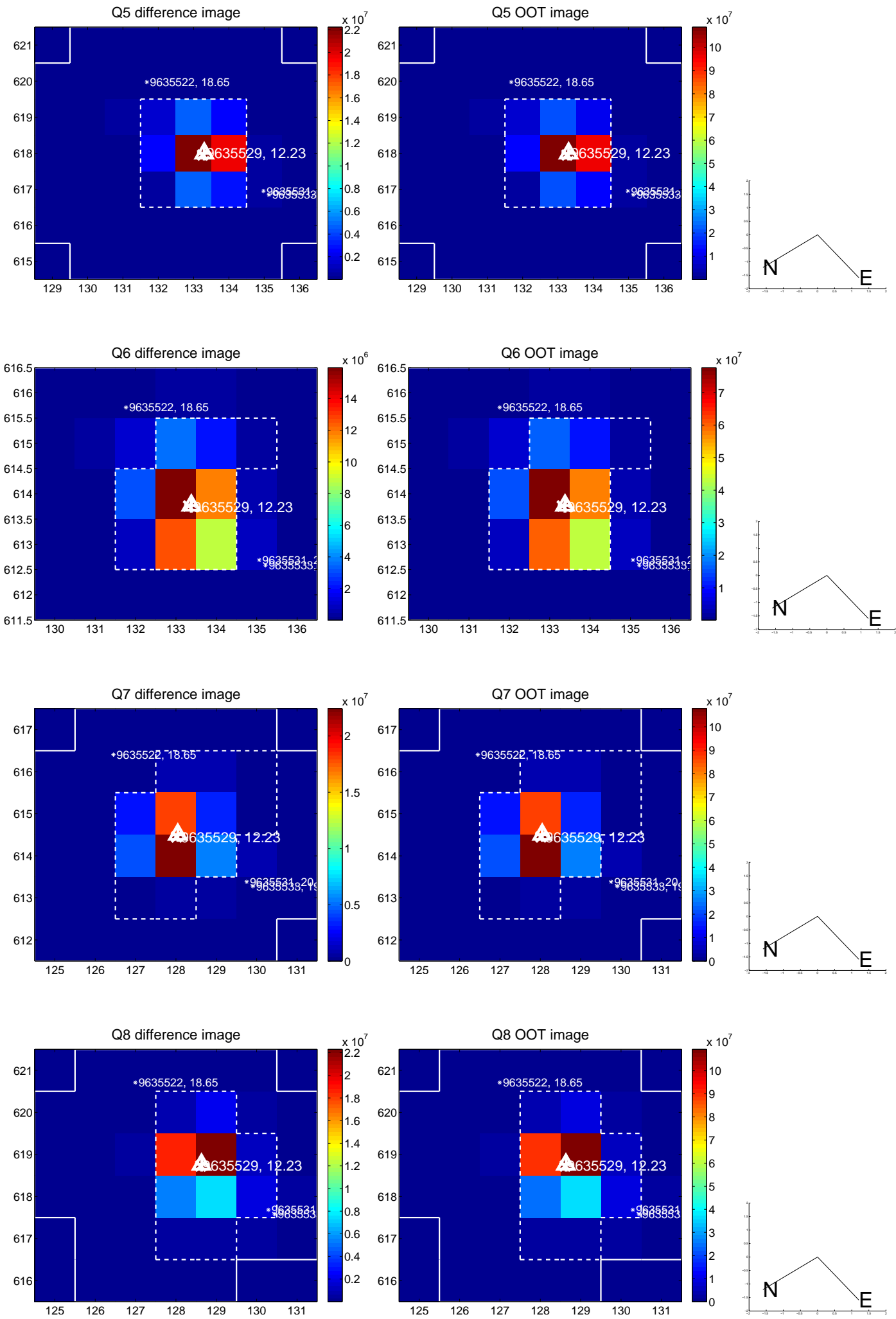


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

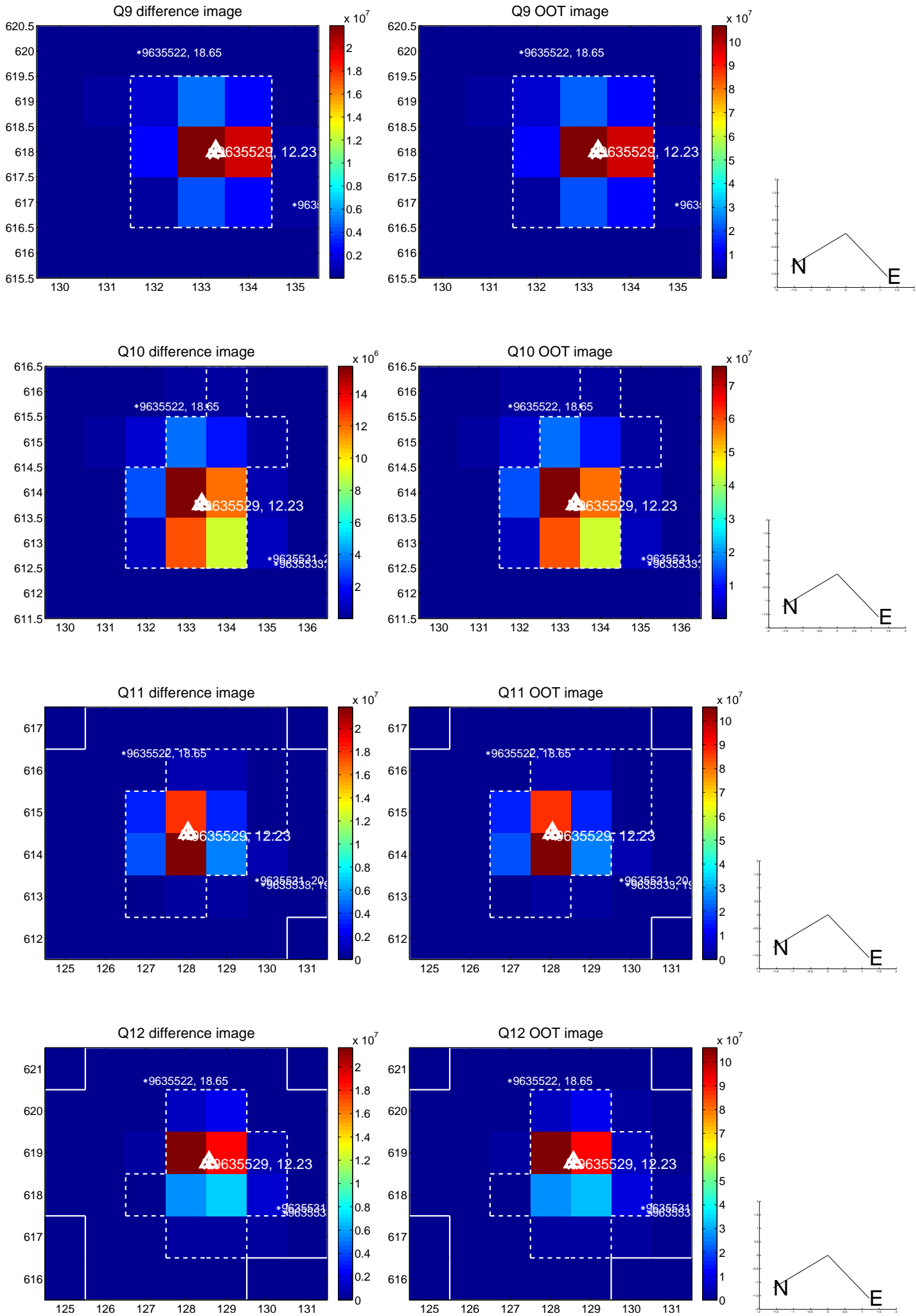


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

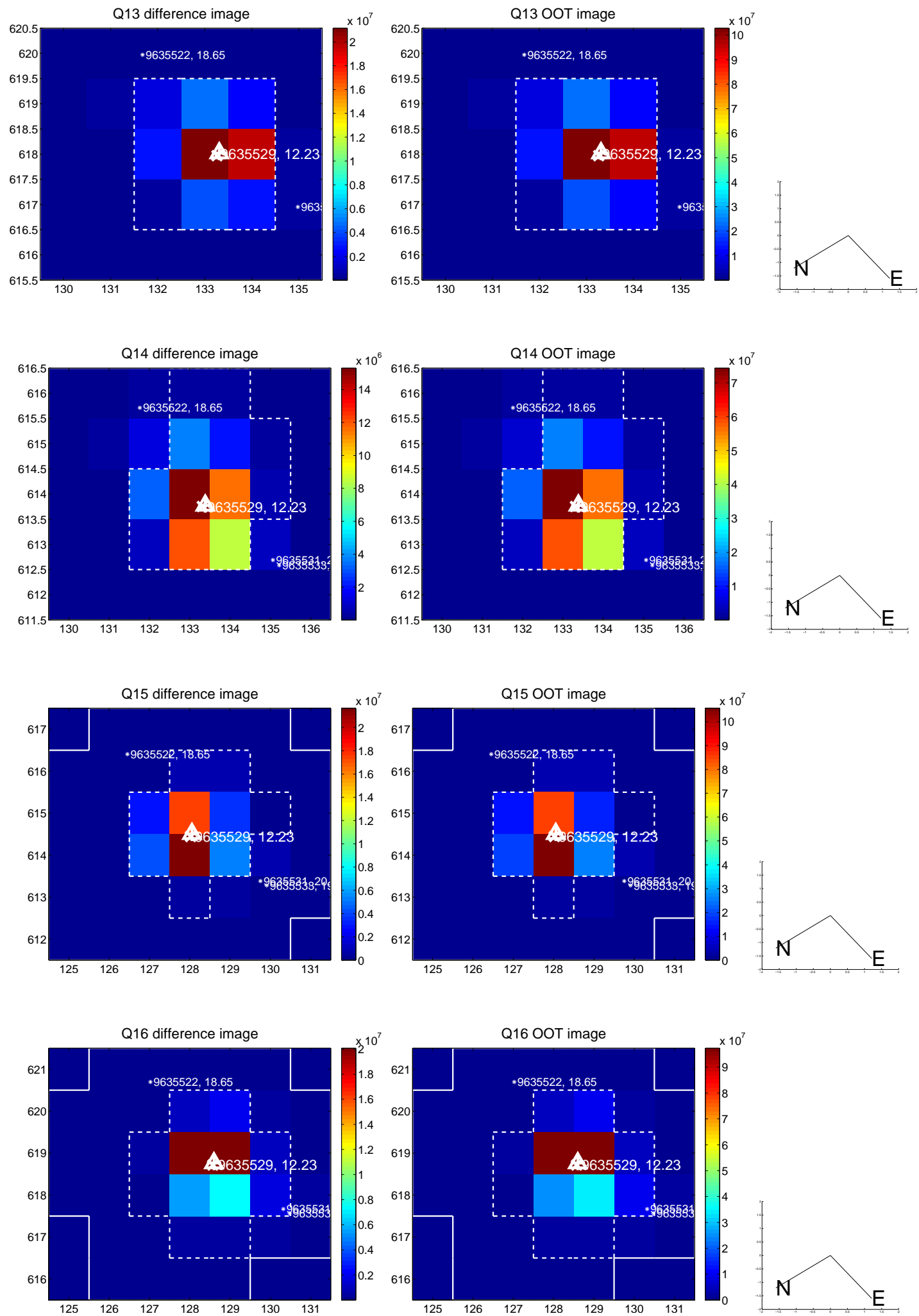




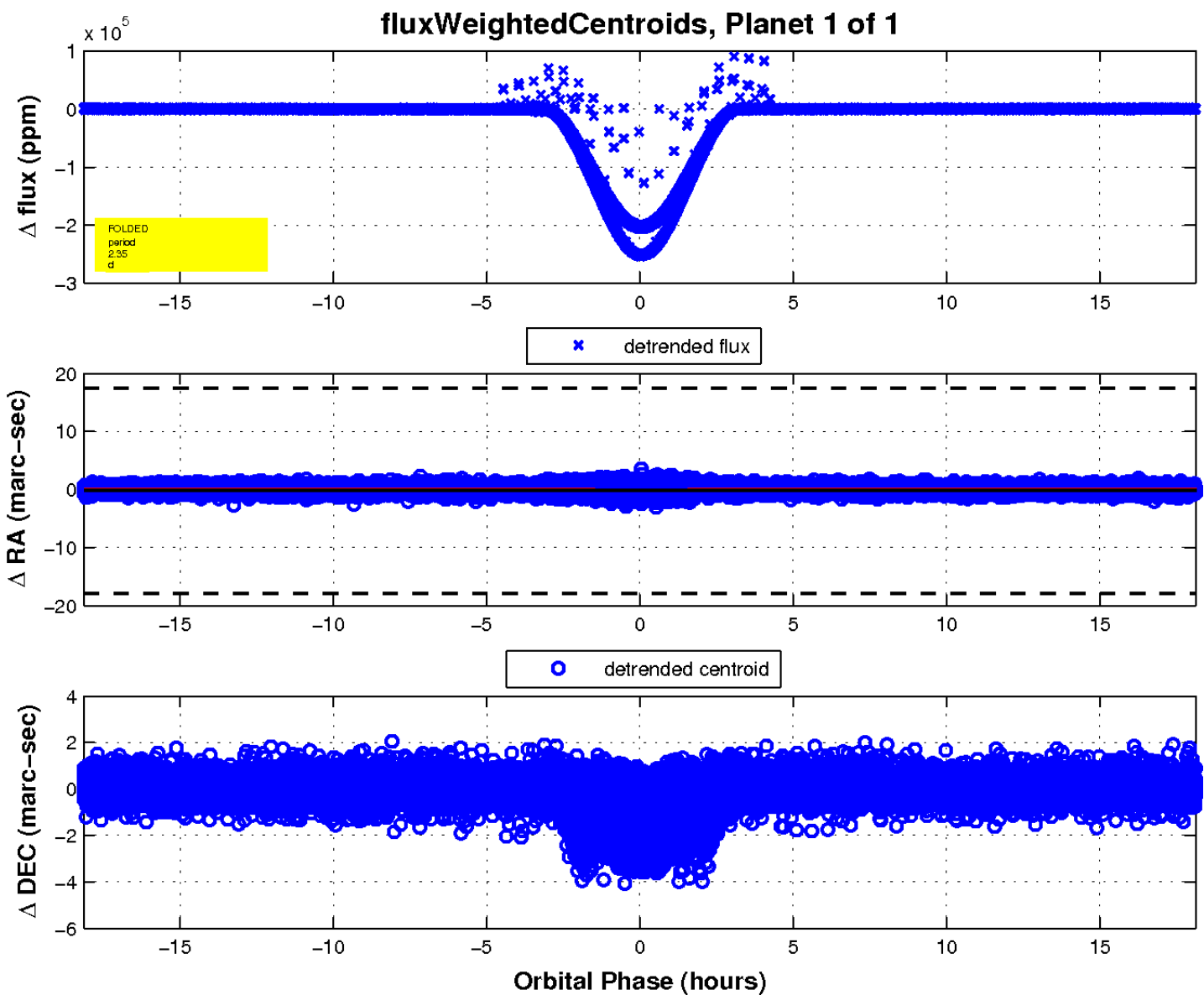
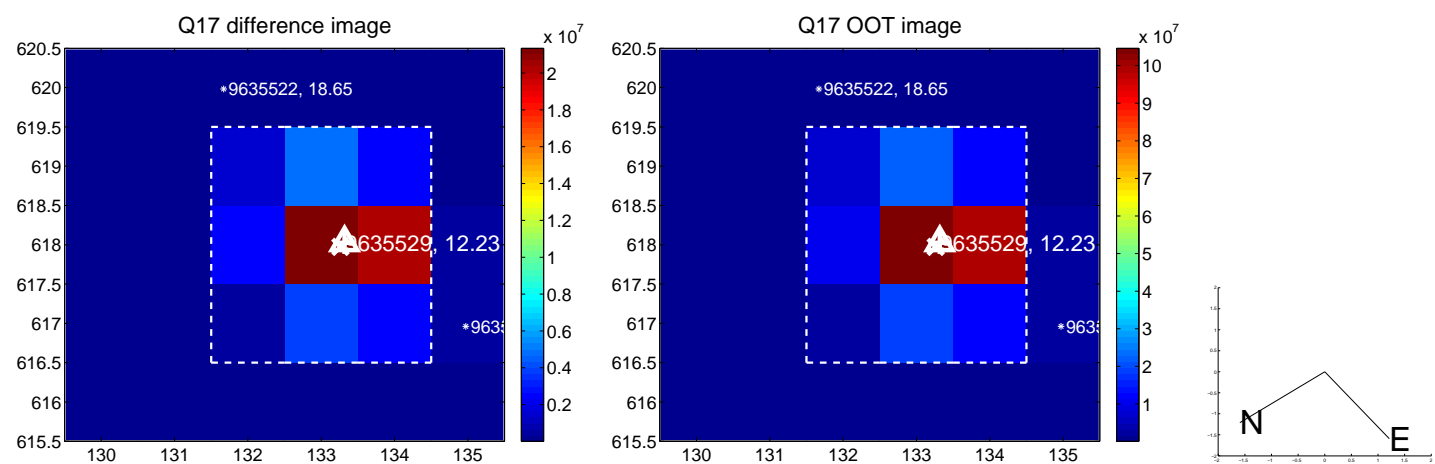
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

