

# KIC 010843203

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010843203-01	OBS	1287.01	4.429739	133.642254	4173.3	2.866	189.4	112.0	0.81	5344	9.95	193.12

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010843203-01	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV—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.

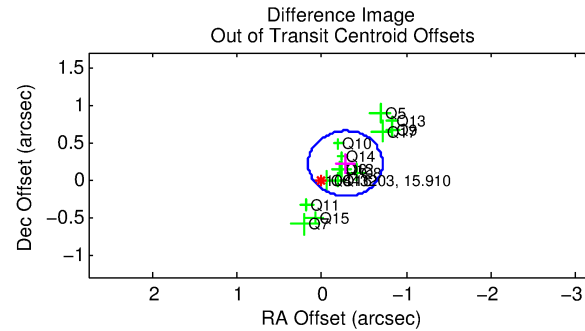
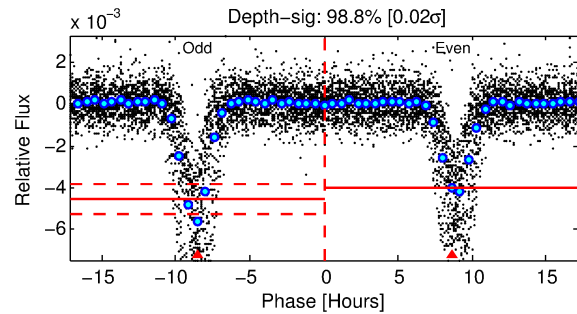
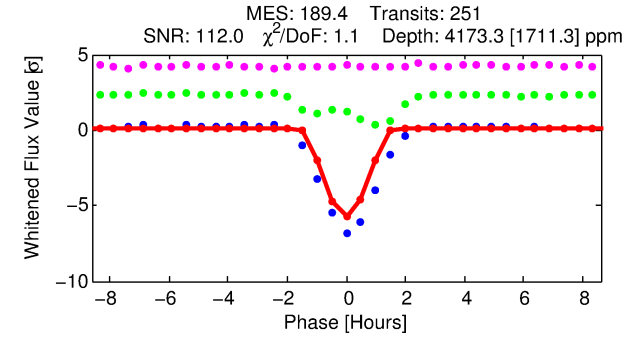
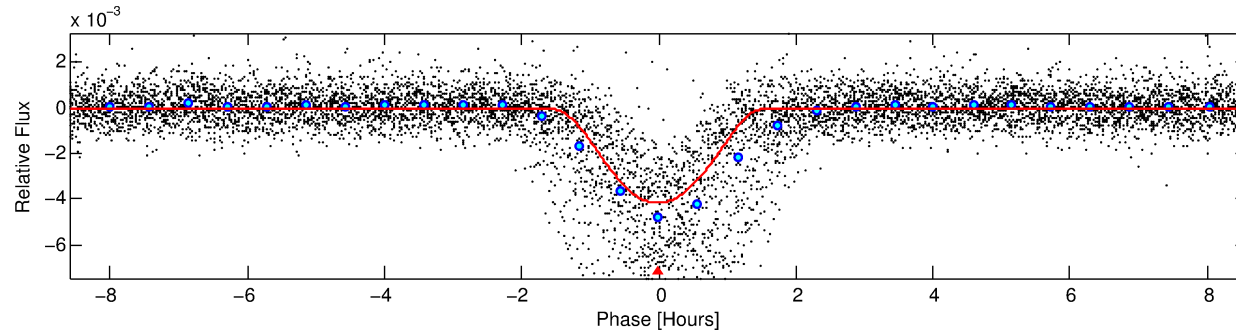
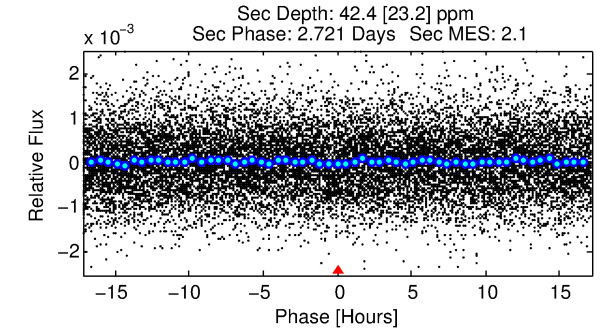
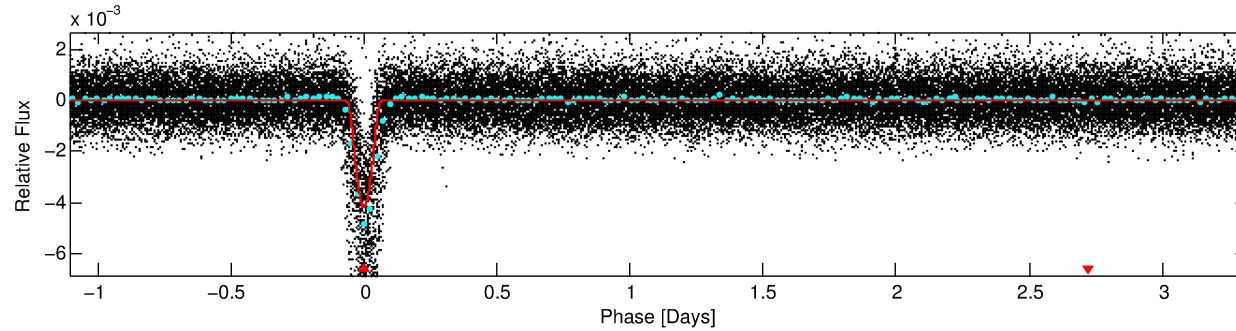
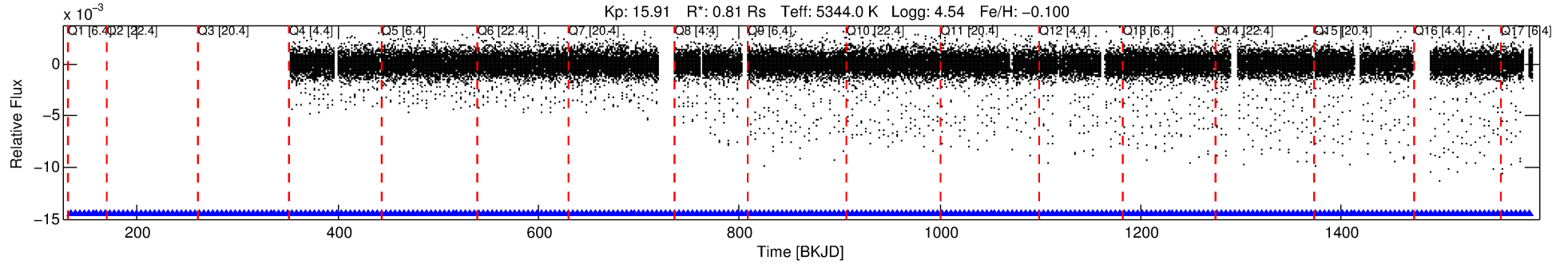
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010843203-01

No Significant Match Found

# DV One-Page Summary

KIC: 10843203 Candidate: 1 of 1 Period: 4.430 d  
KOI: K01287.01 Corr: 0.918



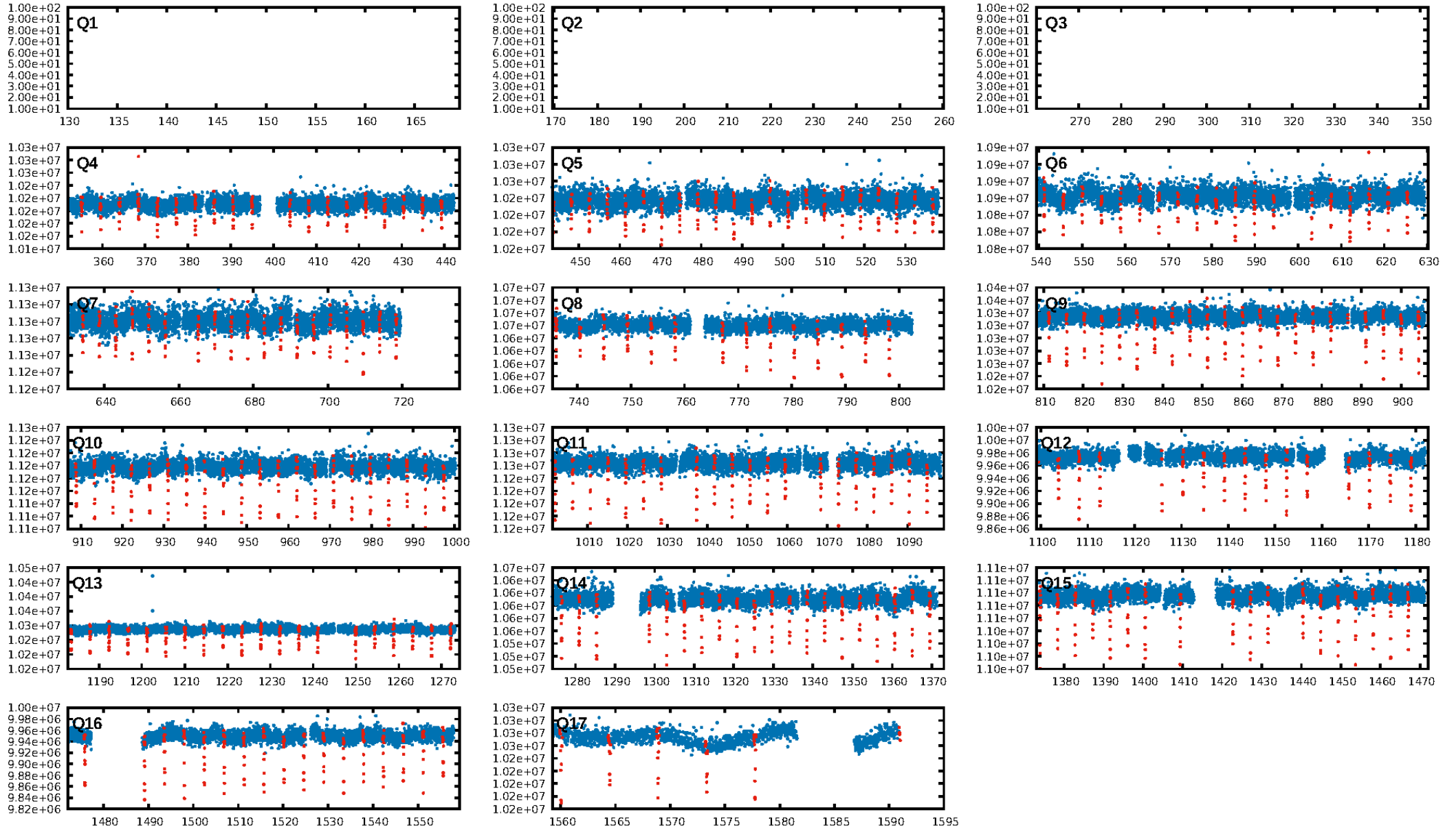
## DV Fit Results:

Period = 4.42974 [0.00000] d  
Epoch = 133.6423 [0.0006] BKJD  
Rp/R\* = 0.1127 [0.0599]  
a/R\* = 5.85 [0.55]  
b = 1.00 [0.05]  
Seff = 193.12 [49.70]  
Teq = 951 [61] K  
Rp = 9.95 [5.57] Re  
a = 0.0498 [0.0072] AU  
Ag = 0.58 [0.71] [-0.59 $\sigma$ ]  
Teffp = 1285 [387] K [0.85 $\sigma$ ]

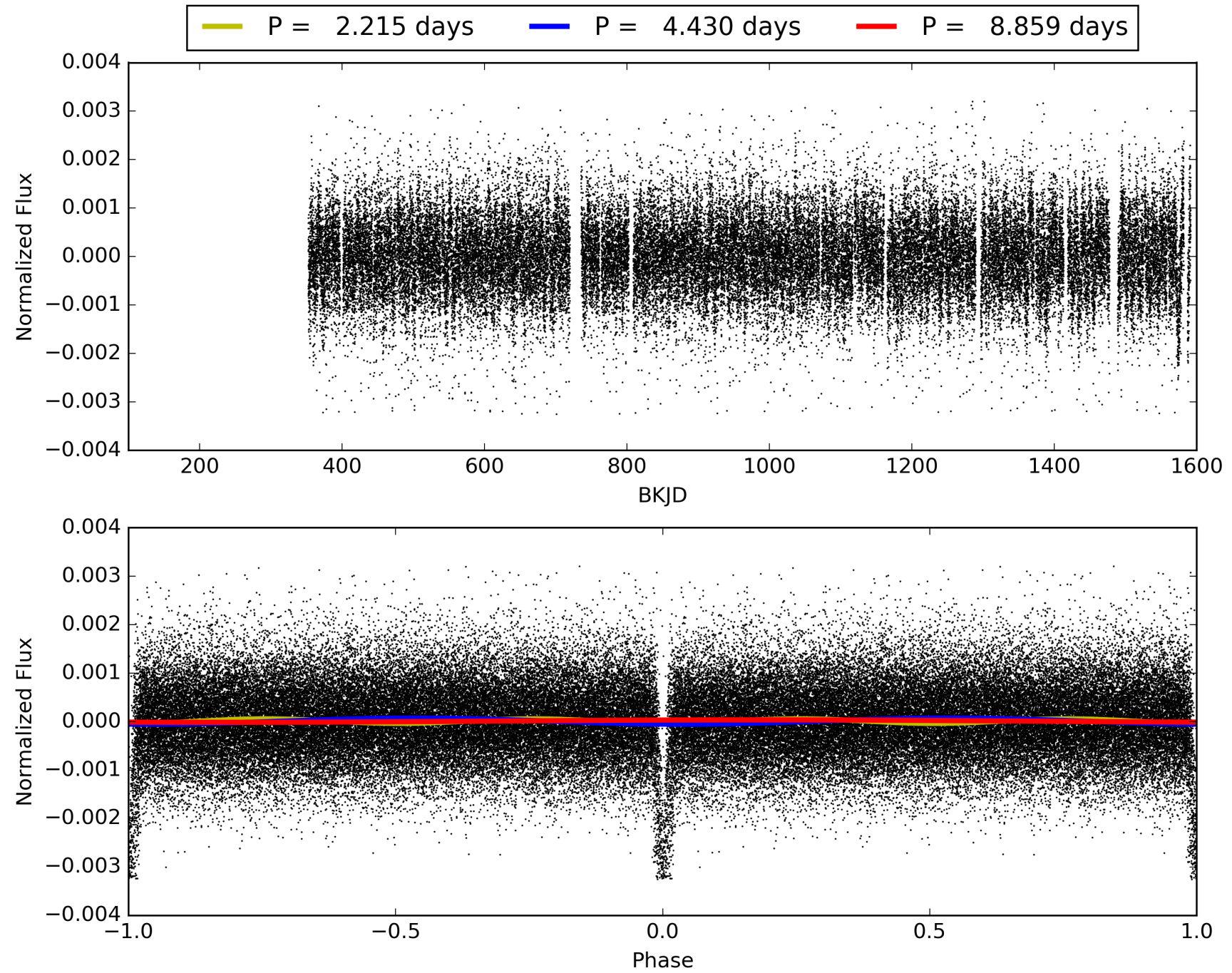
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [245/245]  
GhostDiagnostic-chr: 2.83  
Centroid-sig: 0.0%  
Centroid-so: 0.499 arcsec [6.86 $\sigma$ ]  
OotOffset-rm: 0.354 arcsec [2.43 $\sigma$ ]  
KicOffset-rm: 0.135 arcsec [1.65 $\sigma$ ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 010843203-01, PDC Light Curves

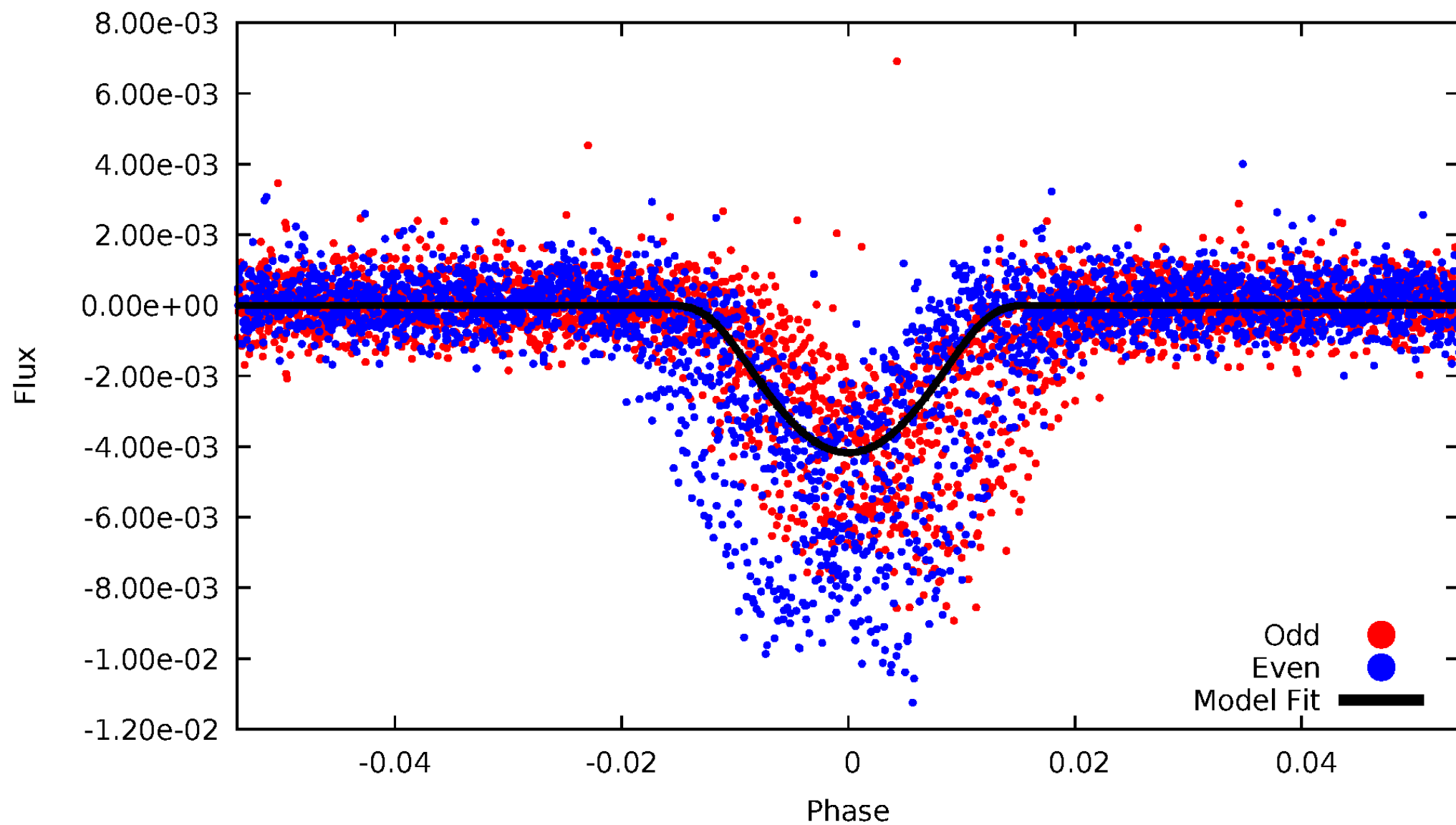


TCE 010843203-01



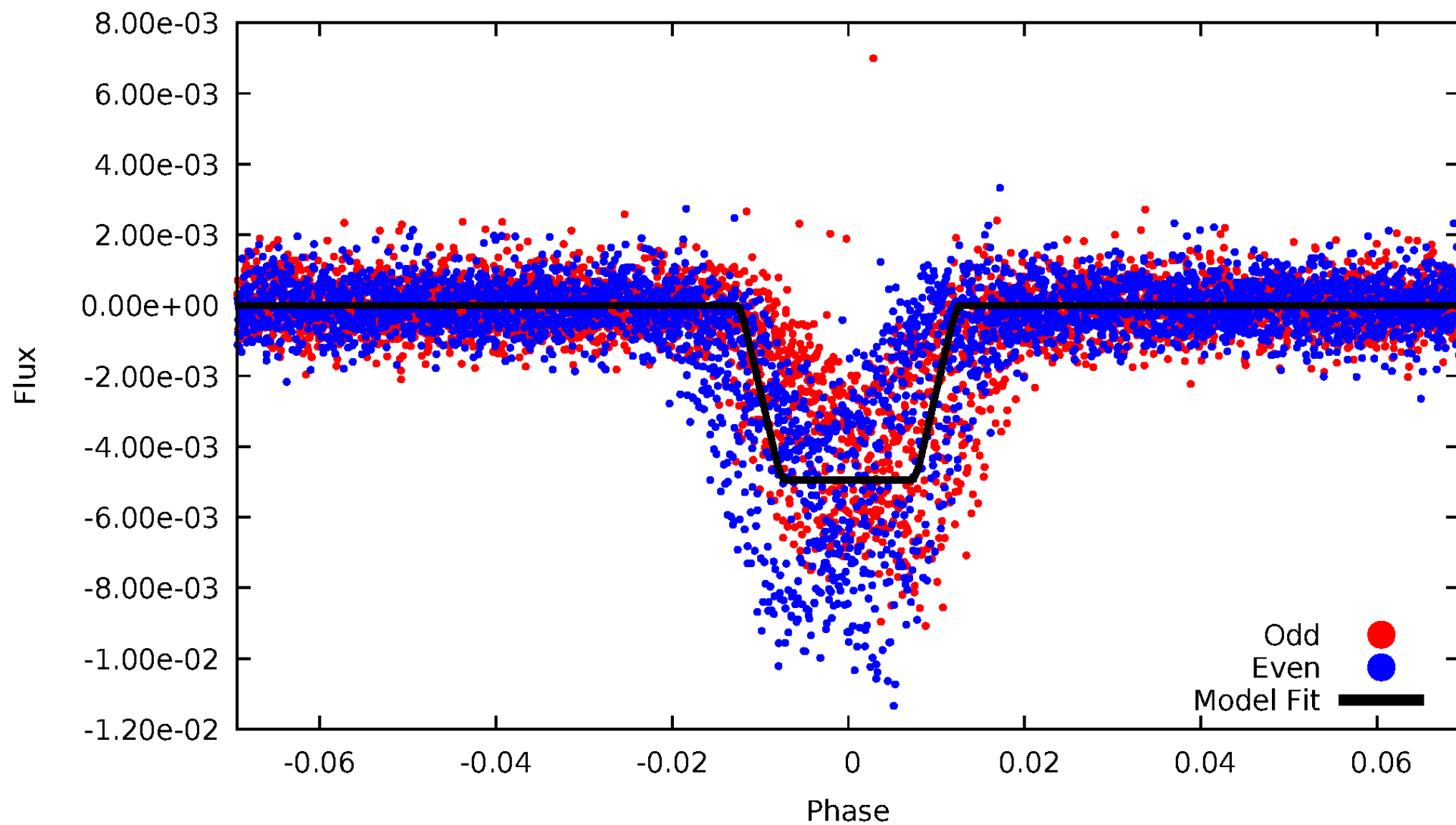
# DV Odd/Even

TCE 010843203-01



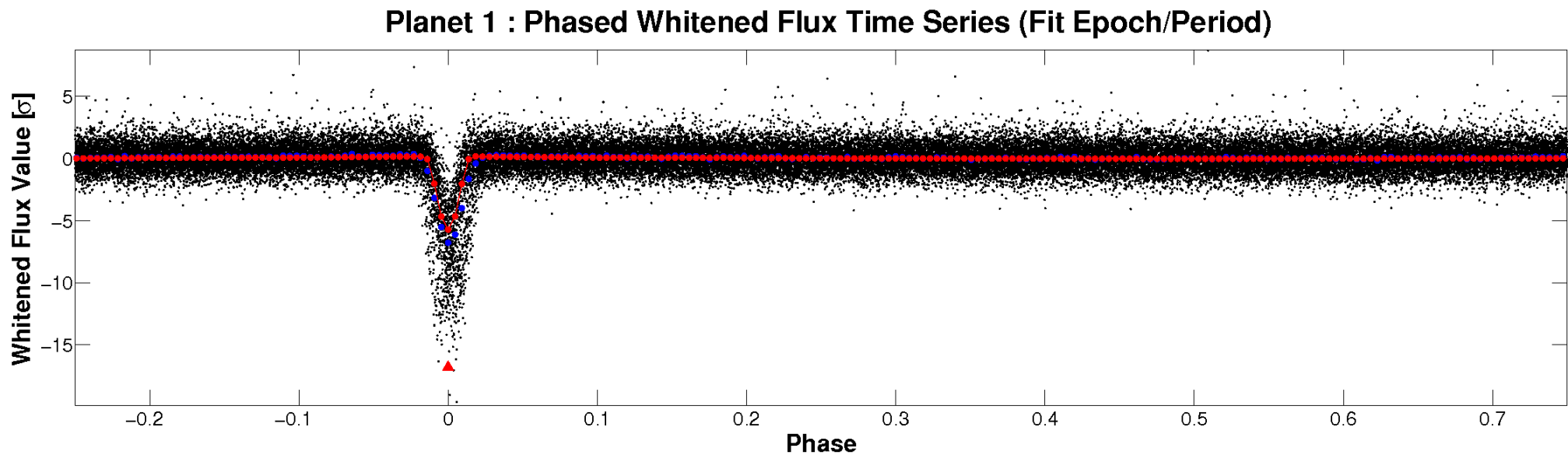
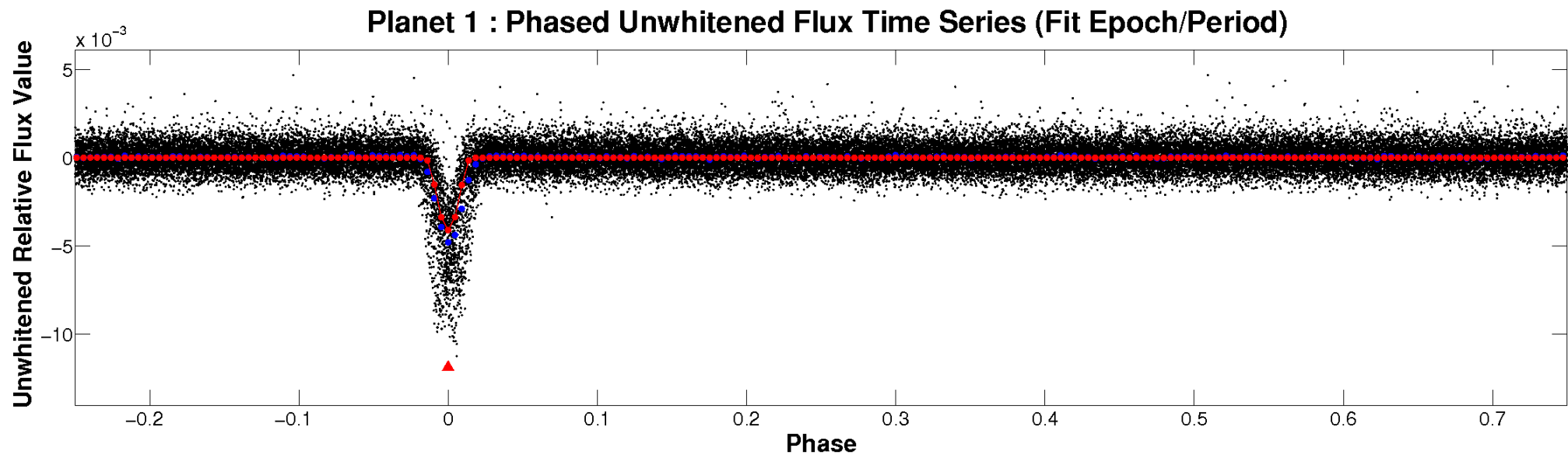
# ALT Odd/Even

TCE 010843203-01



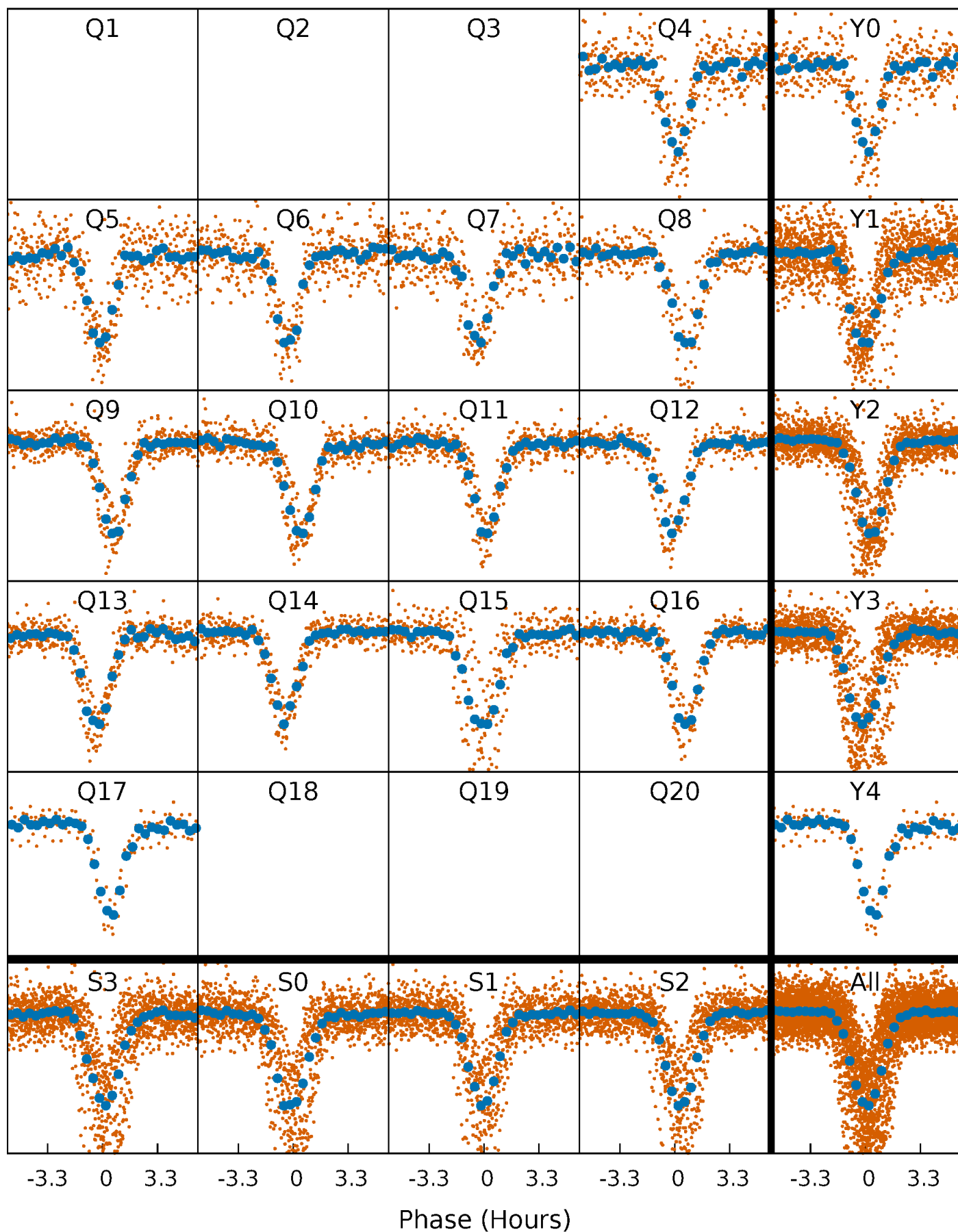


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

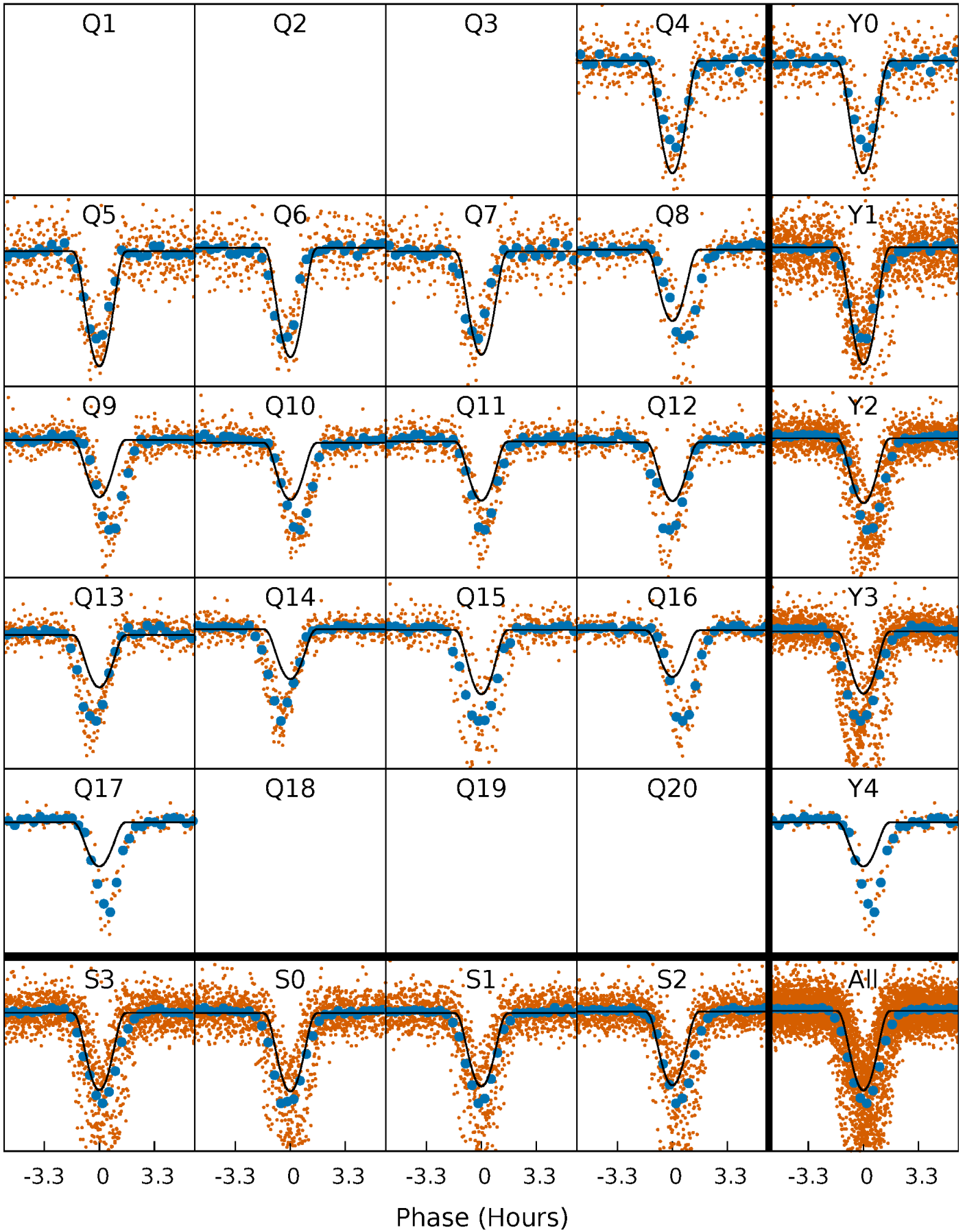
TCE 010843203-01 P= 4.429739 Days  $T_0=133.642254$  (BKJD)





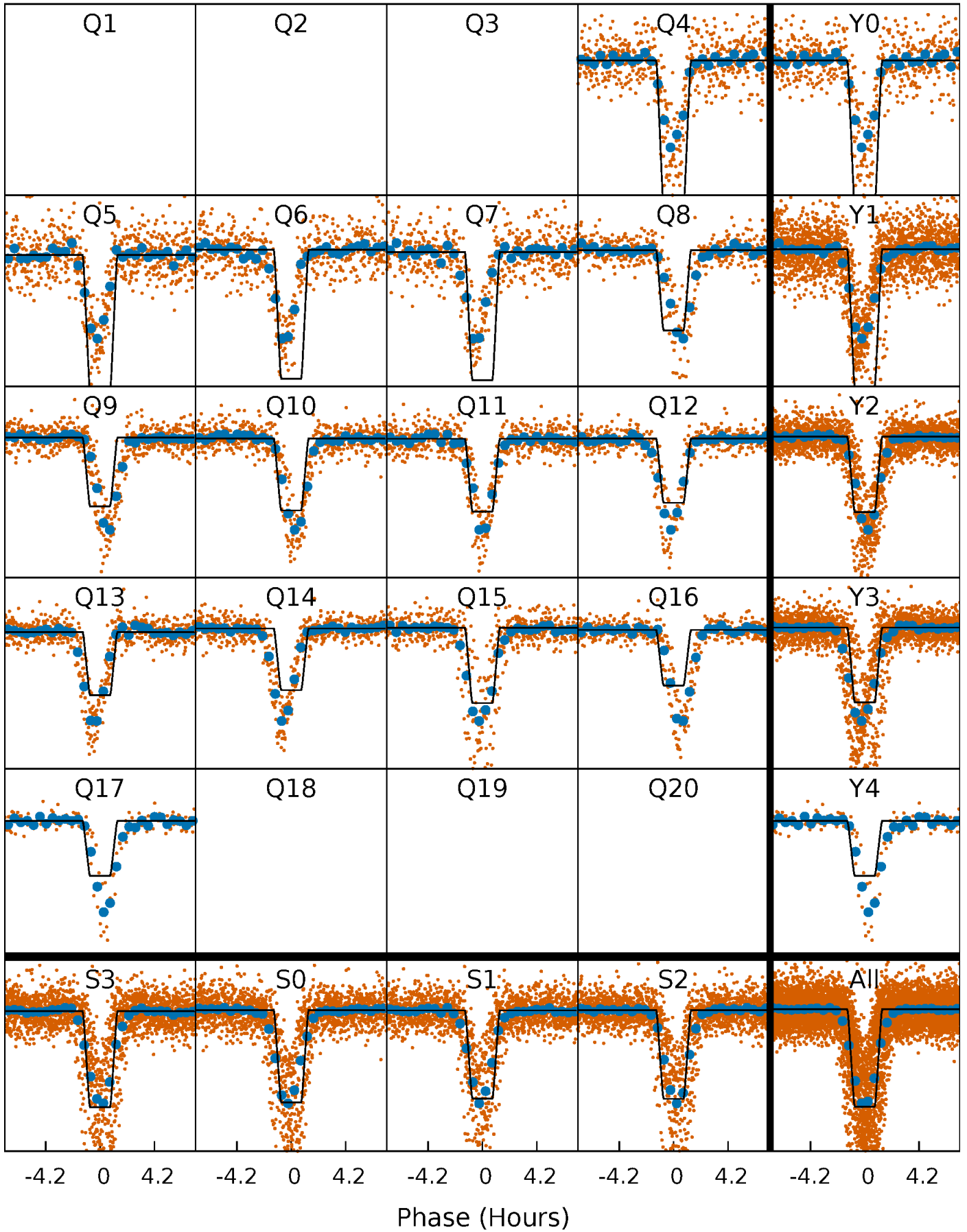
# DV Quarter-Phased Transit Curves

TCE 010843203-01 P= 4.429739 Days  $T_0=133.642254$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

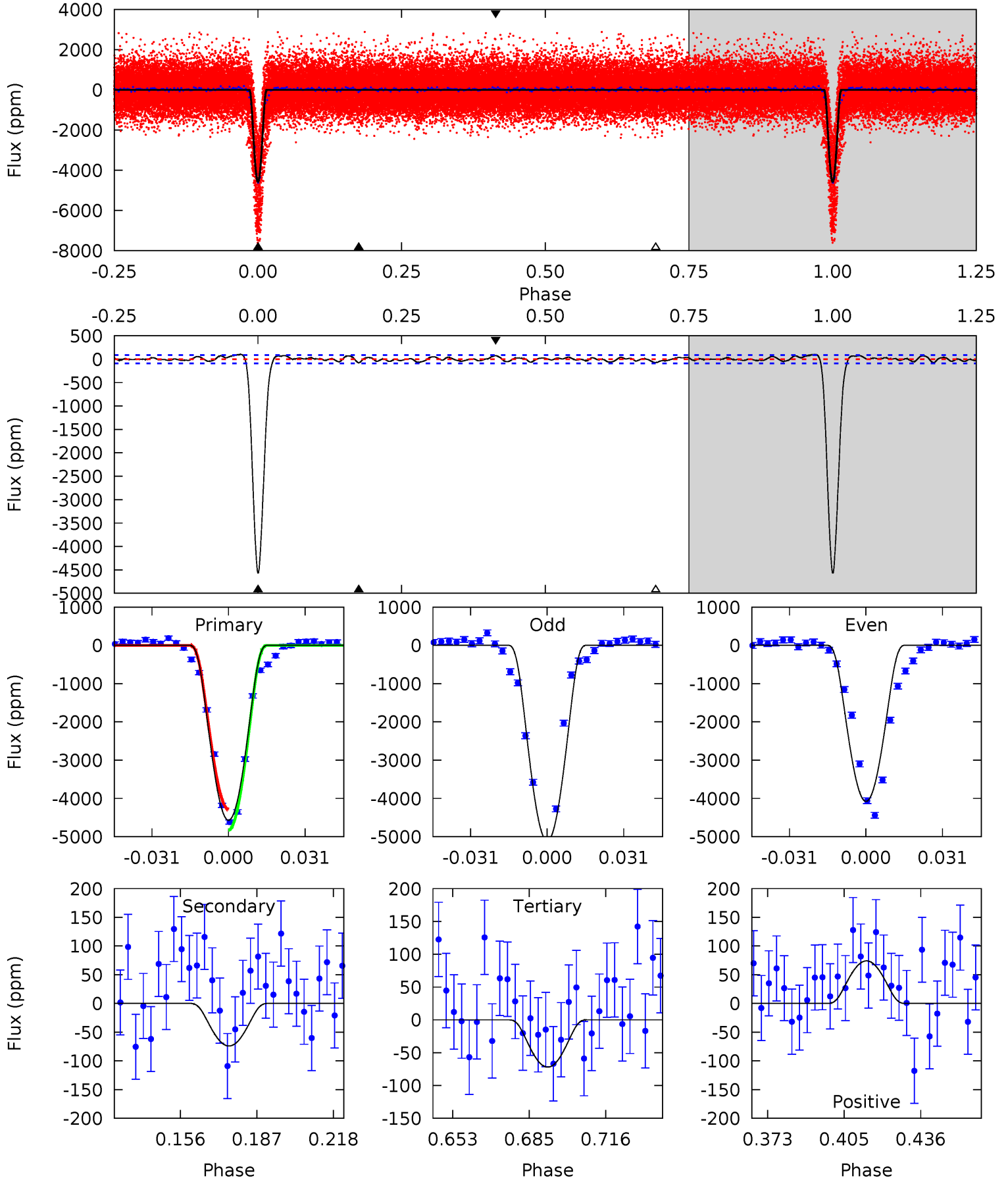
TCE 010843203-01 P= 4.429723 Days  $T_0=133.649516$  (BKJD)



# DV Model-Shift Uniqueness Test

010843203-01, P = 4.429739 Days, E = 133.642254 Days

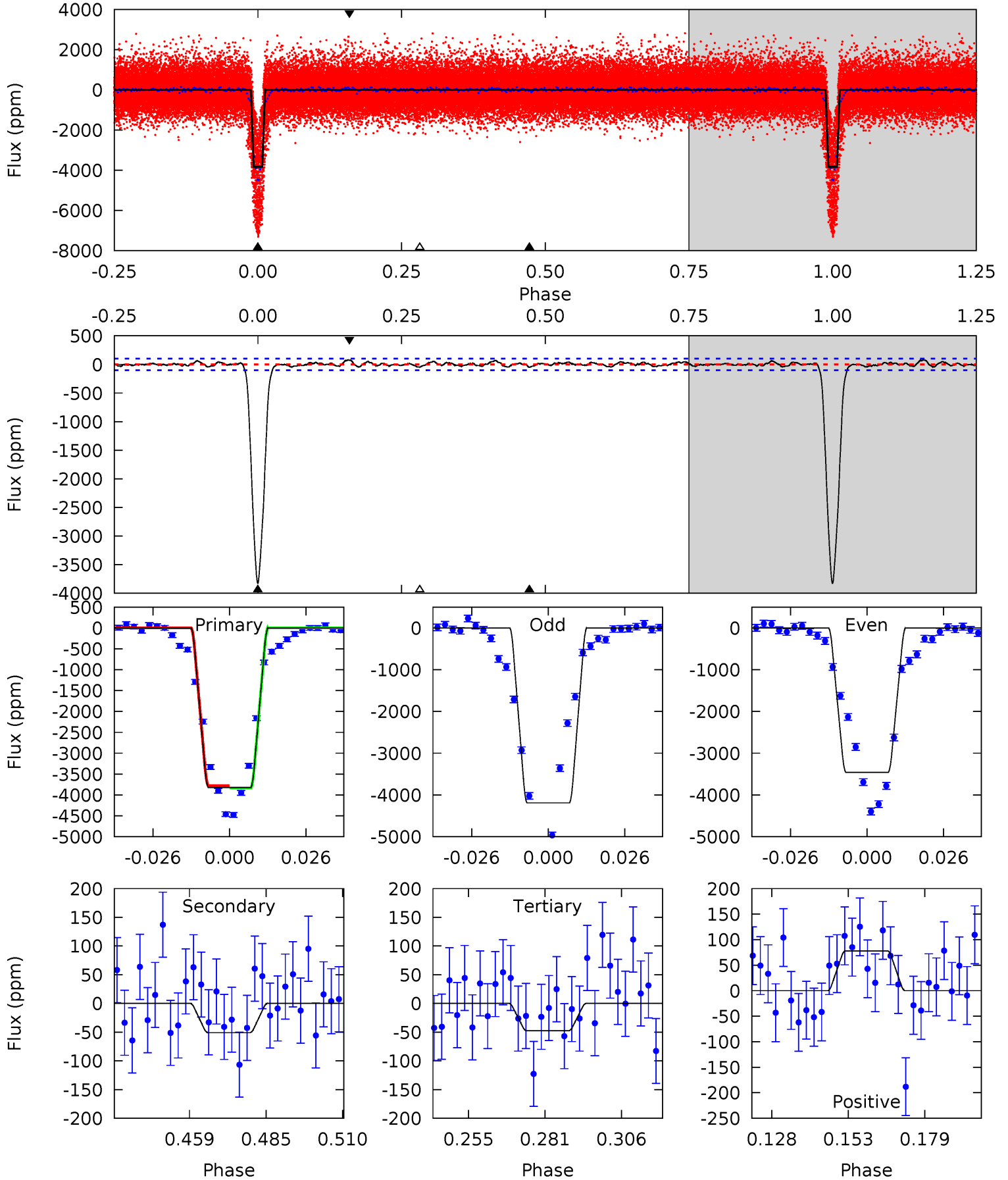
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
246.0	3.99	3.88	3.99	4.80	2.16	1.75	242.1	242.0	0.11	-0.00	28.0	1.00	0.02	14.6



# Alt Model-Shift Uniqueness Test

010843203-01, P = 4.429723 Days, E = 133.649516 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
184.0	2.45	2.29	3.75	4.84	2.23	1.19	181.7	180.3	0.16	-1.31	17.5	0.96	0.02	1.25



### Stellar Parameters For KIC 010843203

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5344^{+204}_{-185}$	$4.545^{+0.051}_{-0.111}$	$-0.100^{+0.300}_{-0.300}$	$0.809^{+0.143}_{-0.077}$	$0.837^{+0.087}_{-0.087}$	$2.226^{+0.556}_{-0.752}$
	+4%/-3%	+1%/-2%	+300%/-300%	+18%/-10%	+10%/-10%	+25%/-34%
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 010843203-01 / KOI 1287.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-74 \pm 19$	$10.16^{+4.89}_{-4.53}$	$1339^{+71}_{-56}$	$2253^{+465}_{-385}$	$0.938^{+2.225}_{-0.528}$
Alt.	$-51 \pm 21$	$7.37^{+5.45}_{-4.50}$	$1343^{+68}_{-60}$	$2348^{+696}_{-587}$	$1.207^{+6.172}_{-0.855}$

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

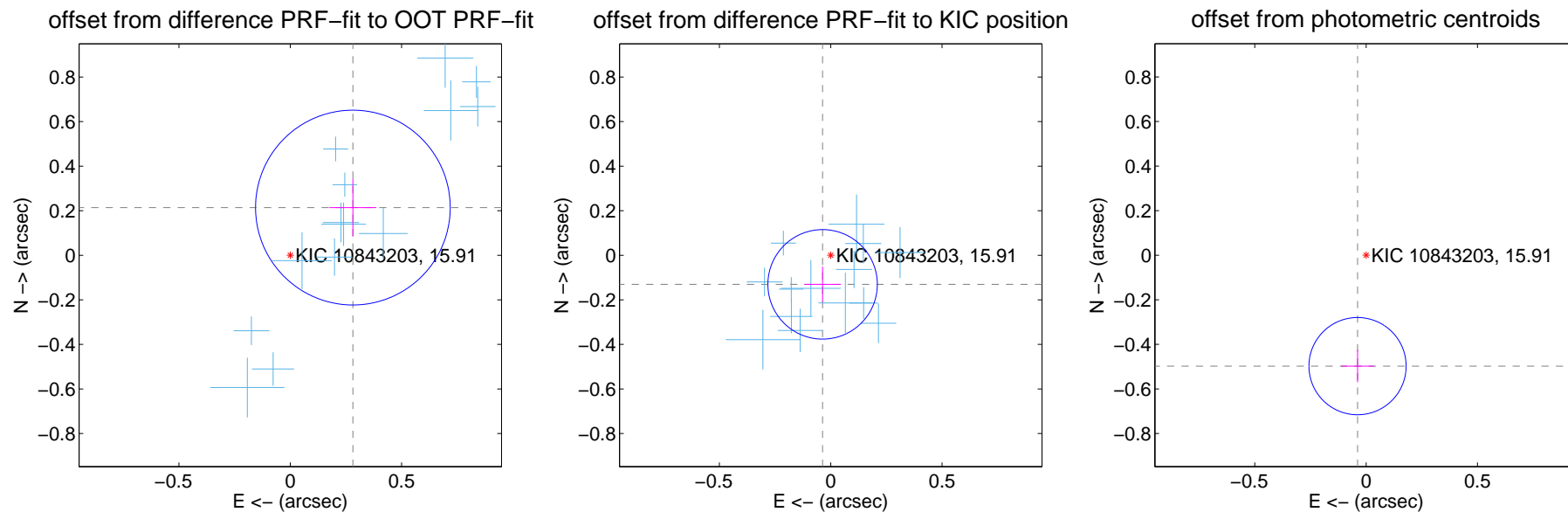
## DV Centroid Data

Supplemental centroid analysis for 010843203-01. Kepler magnitude: 15.91. Transit SNR 111.97

There are 14 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.08 arcsec

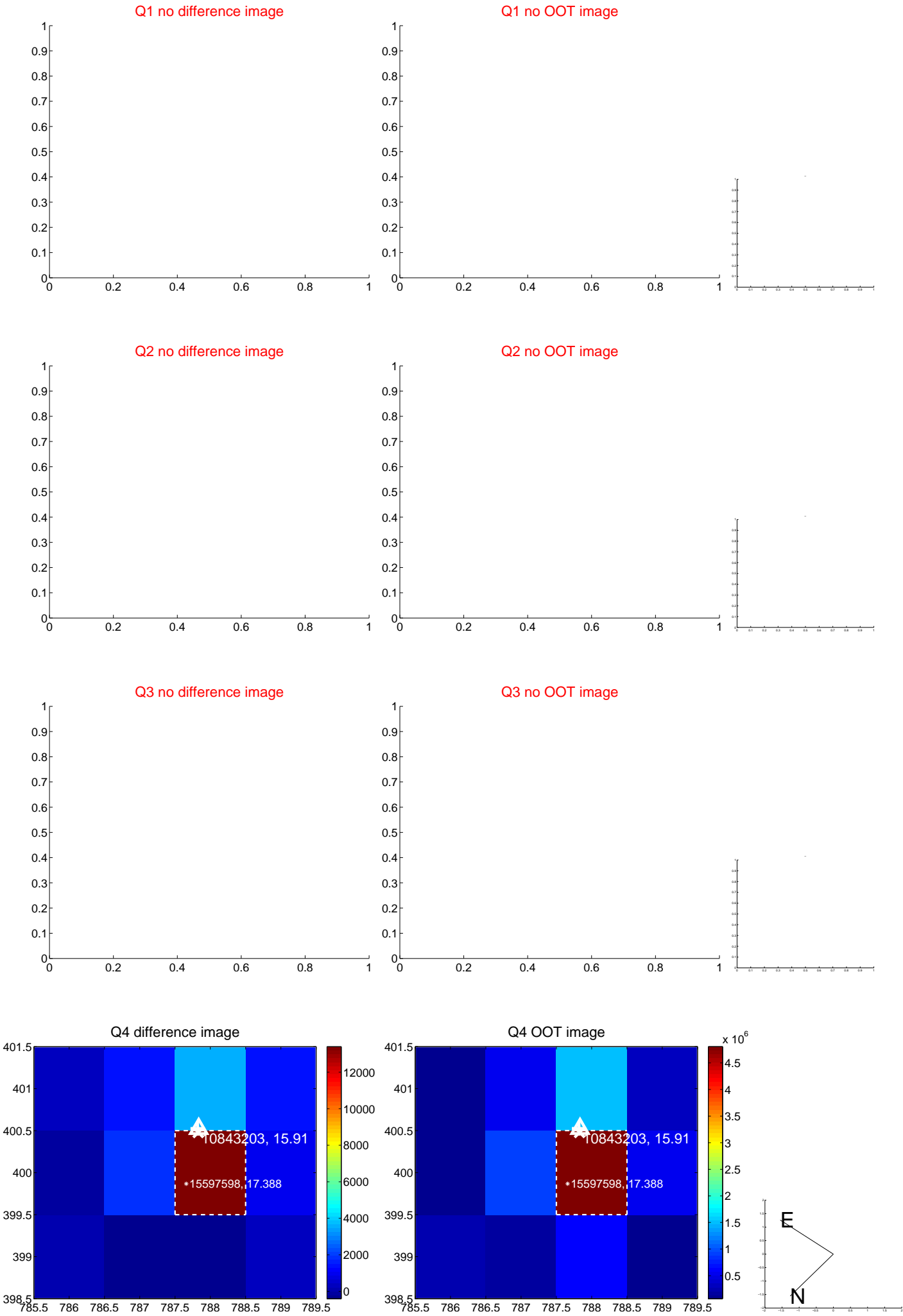
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.354 \pm 0.146$	2.43	$-0.281 \pm 0.106$	$0.214 \pm 0.130$
PRF-fit source offset from KIC position	$0.135 \pm 0.082$	1.65	$0.036 \pm 0.082$	$-0.130 \pm 0.080$
photometric centroid source offset	$0.50 \pm 0.07$	6.86	$0.04 \pm 0.07$	$-0.50 \pm 0.07$



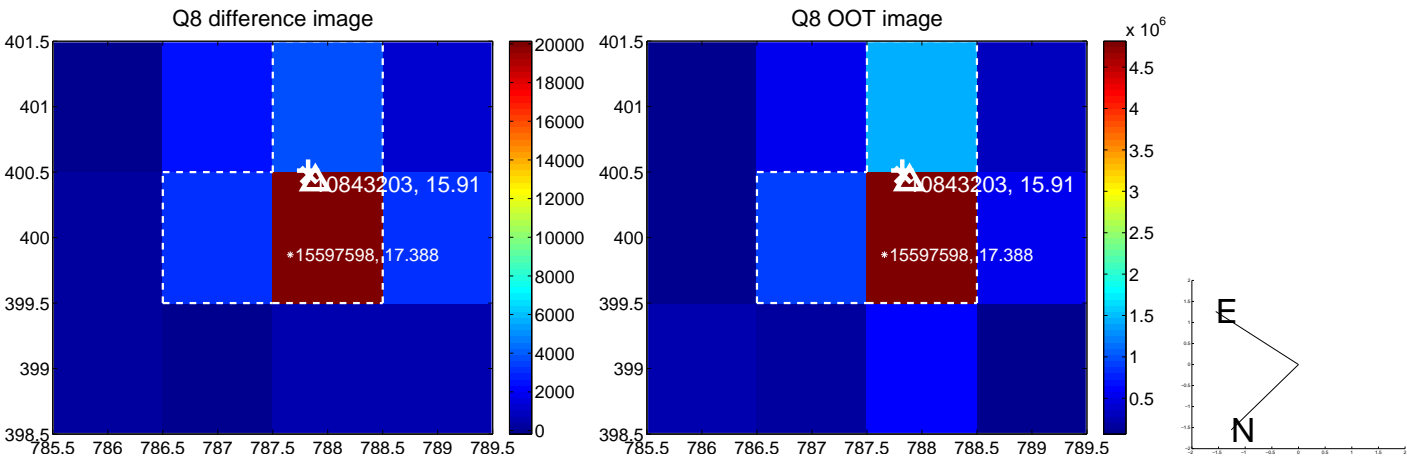
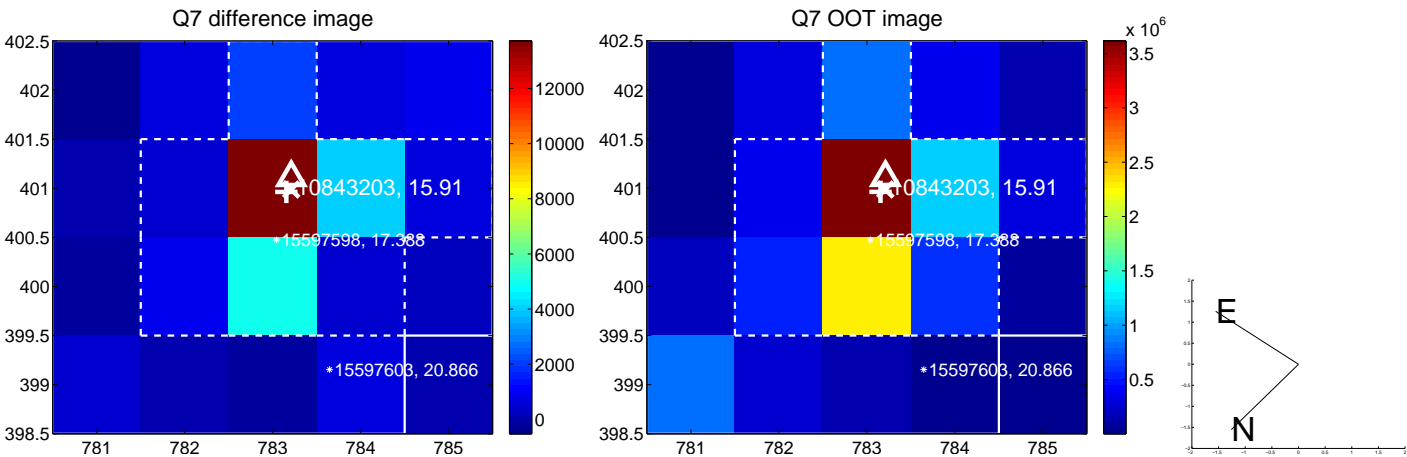
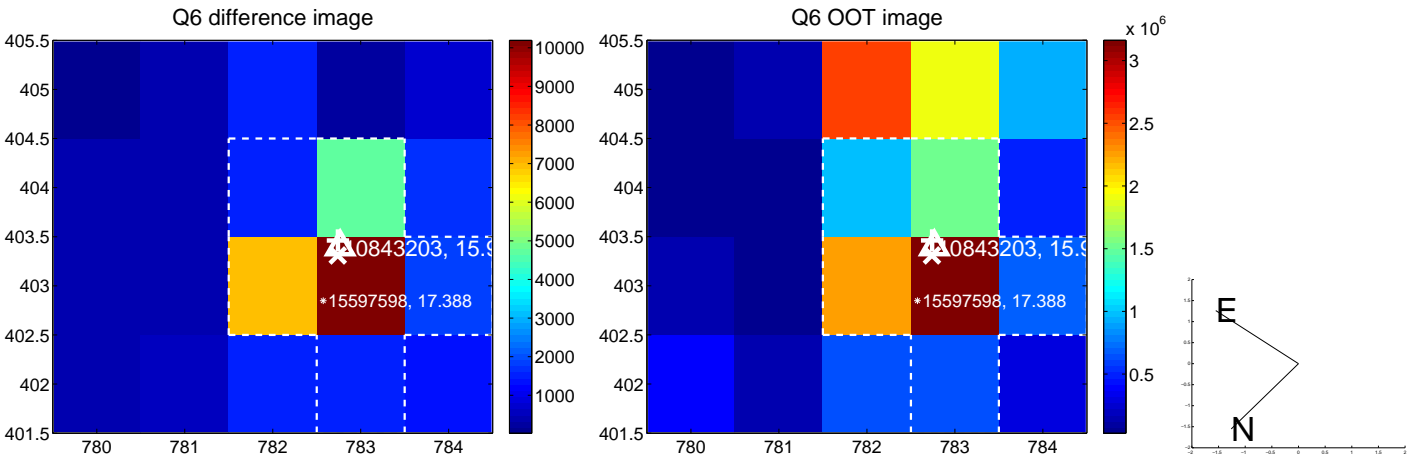
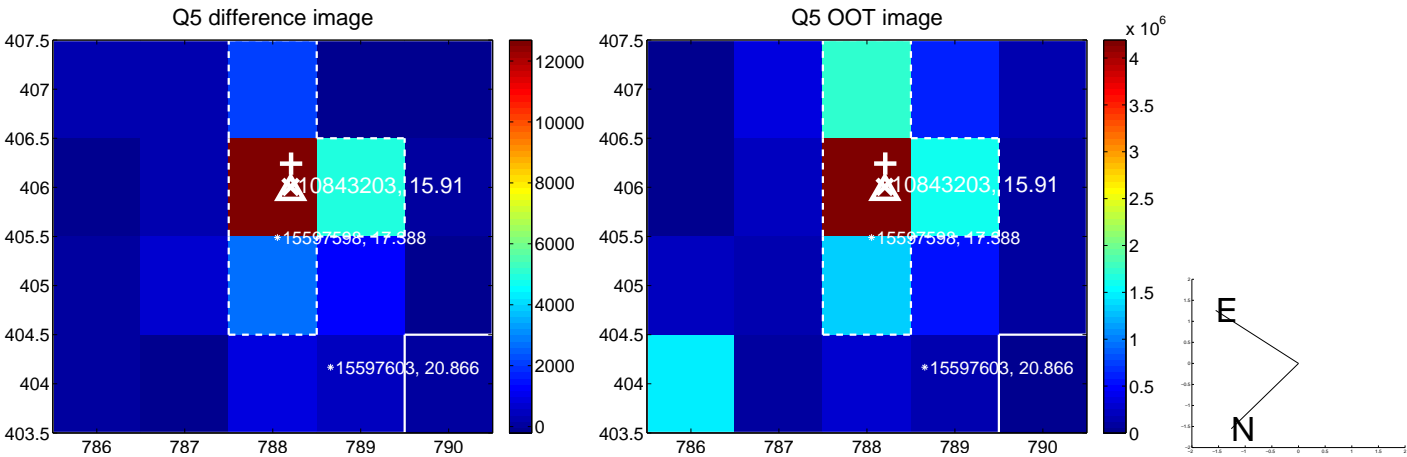
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



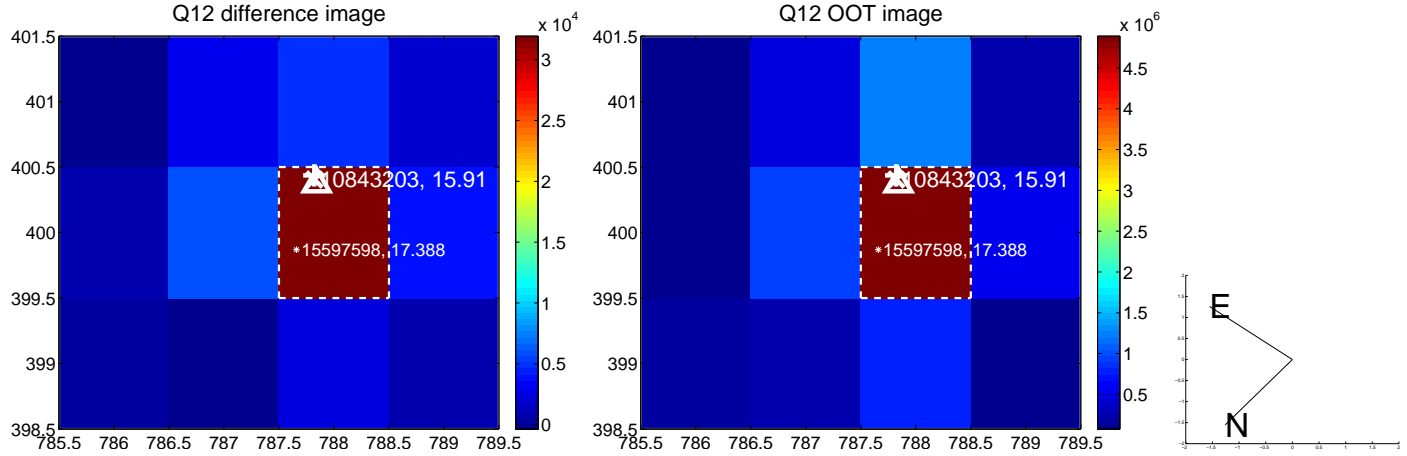
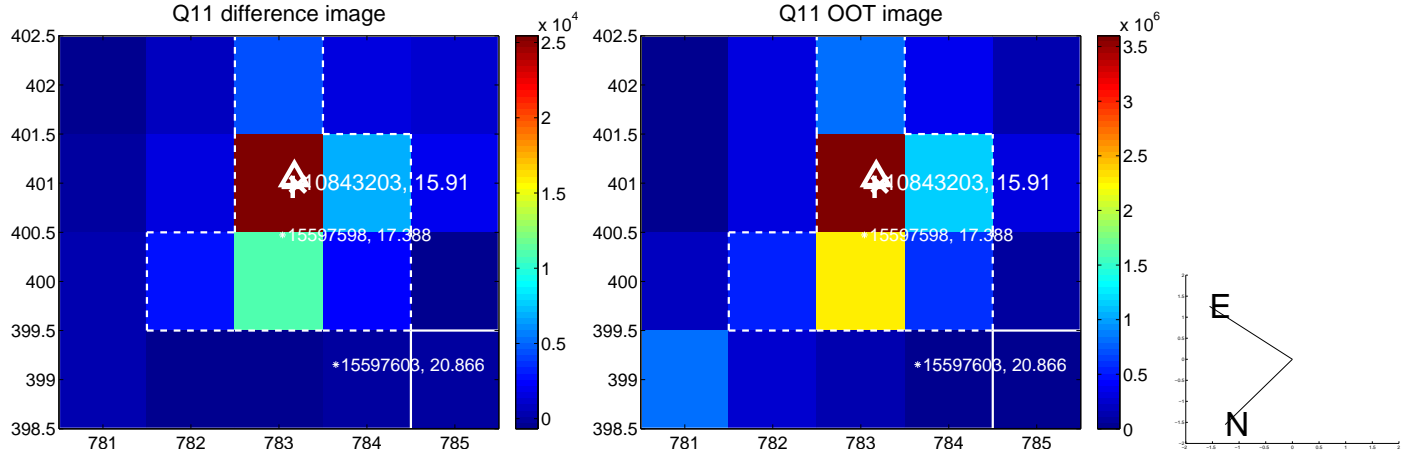
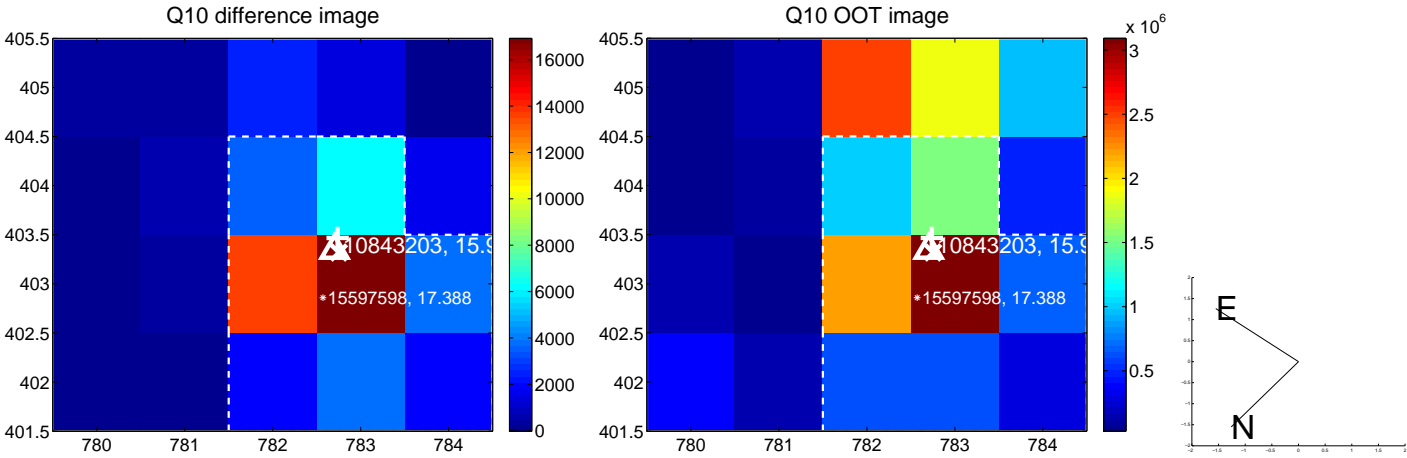
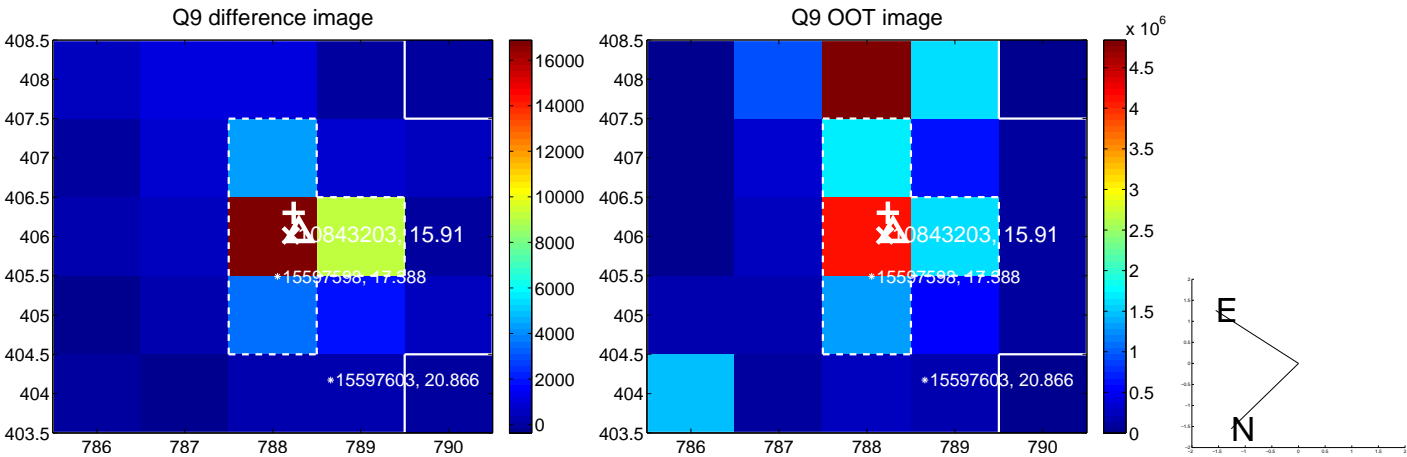
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



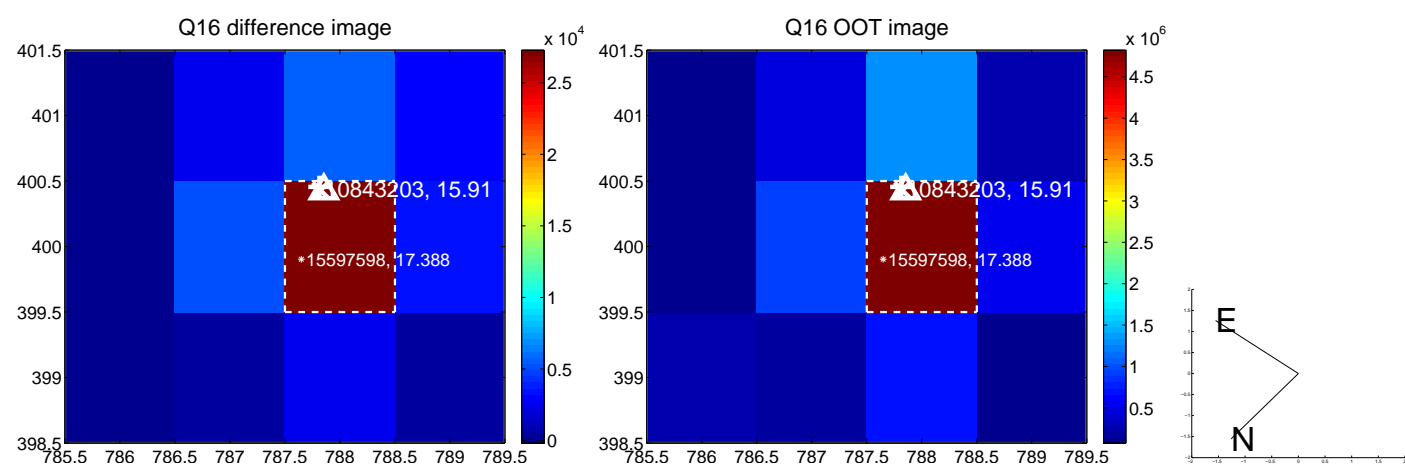
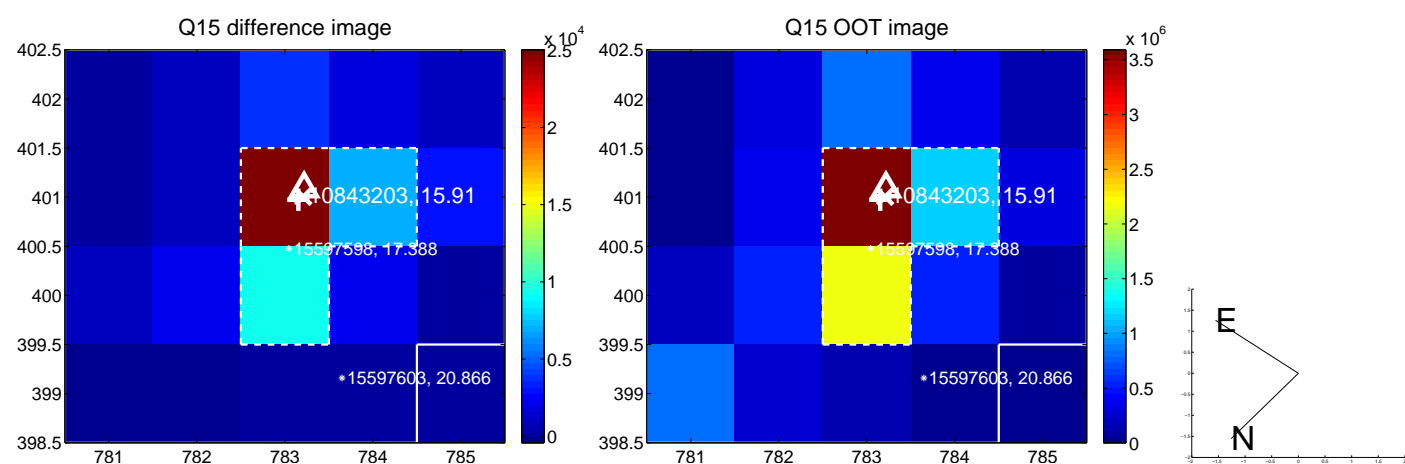
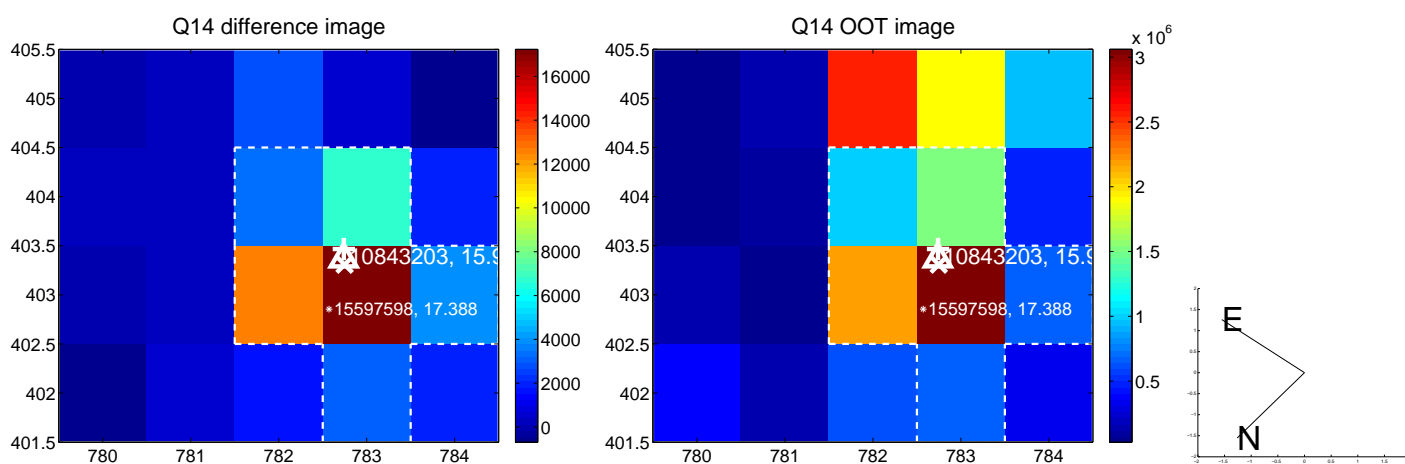
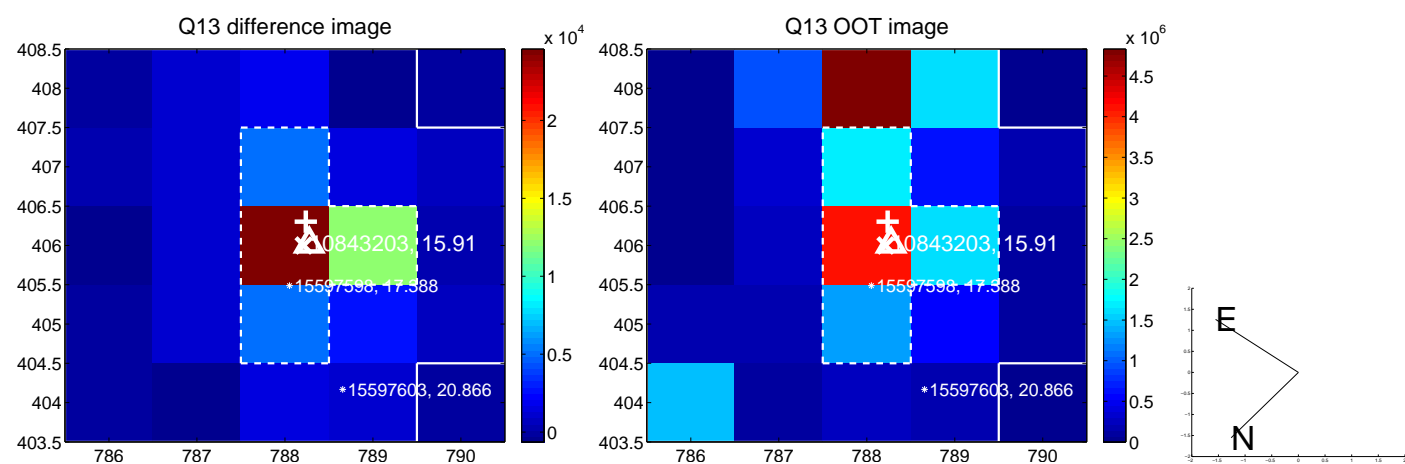
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



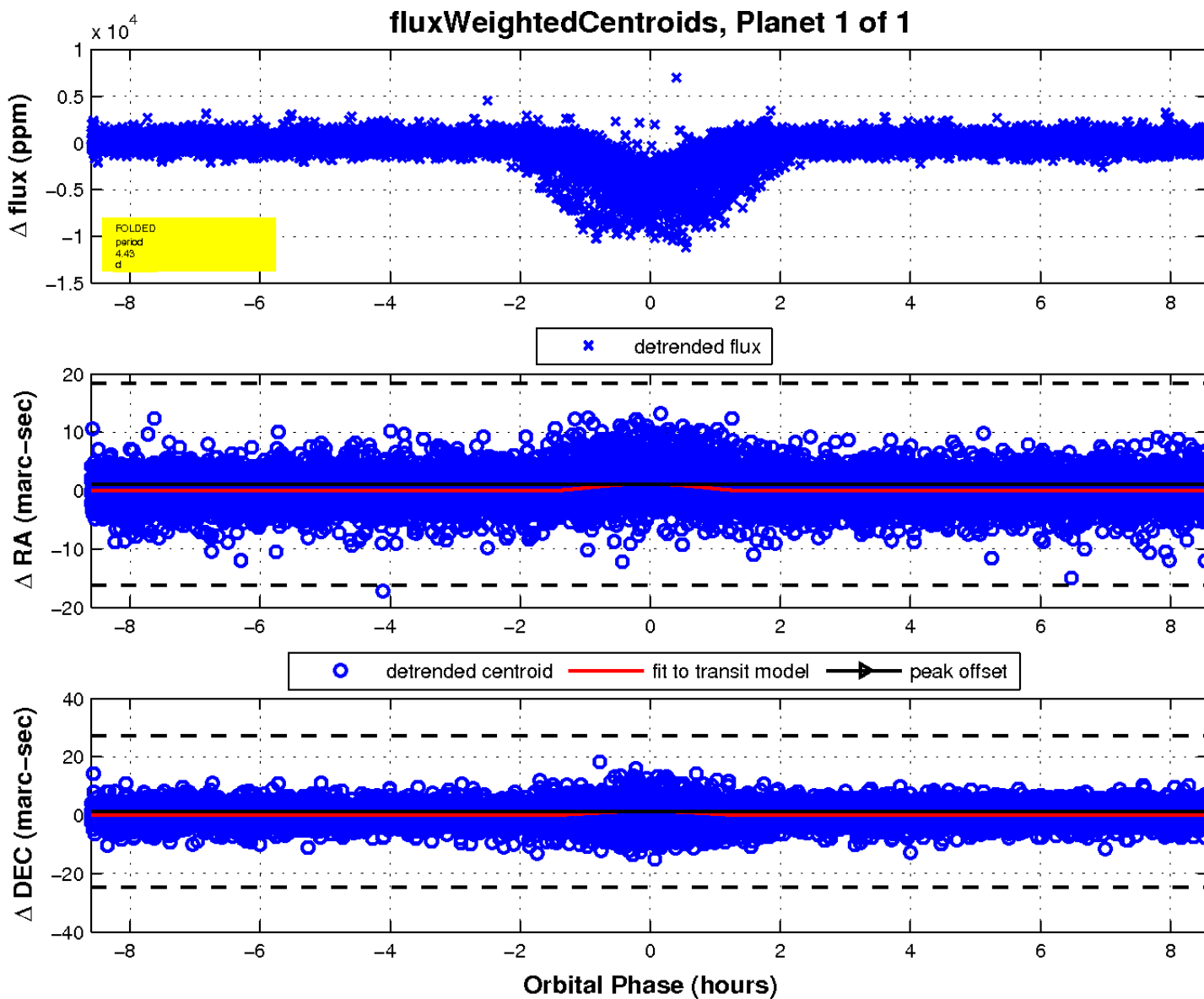
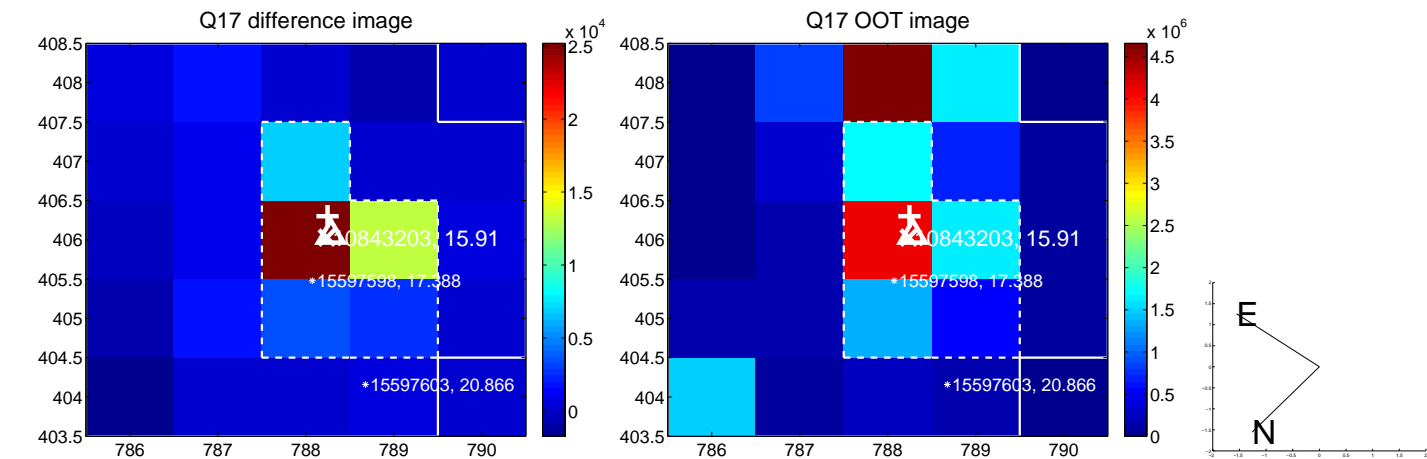
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

