

# KIC 007033233

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007033233-01	OBS	2339.01	2.032320	132.642466	280.8	1.069	19.7	23.0	0.68	4670	1.11	247.38

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007033233-01	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.

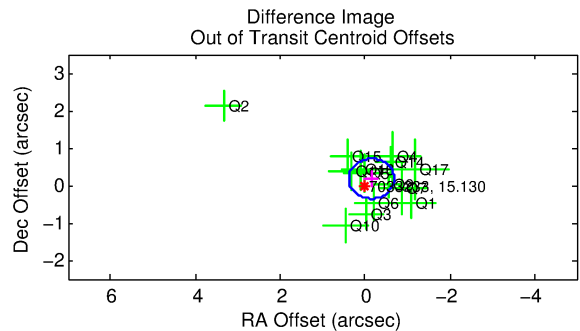
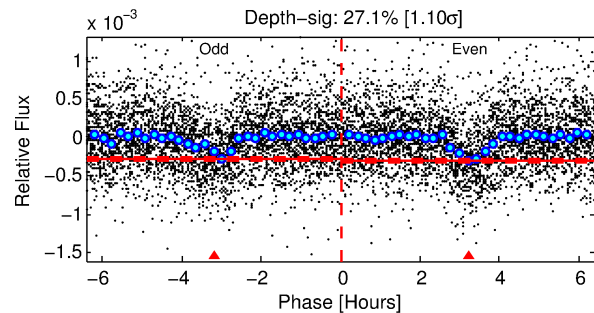
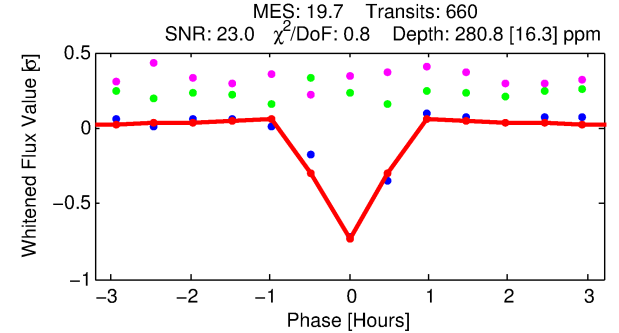
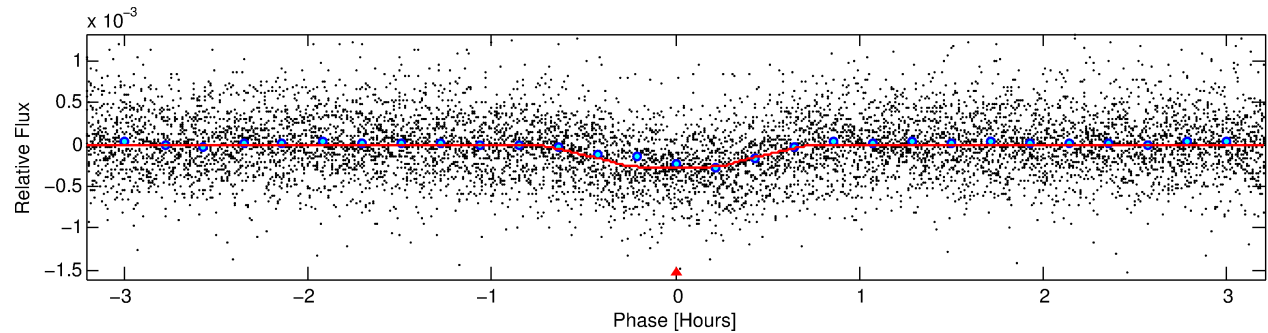
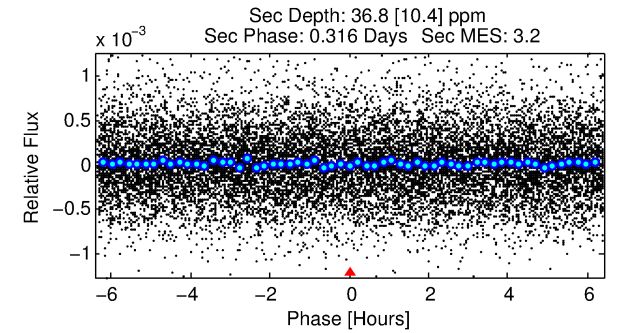
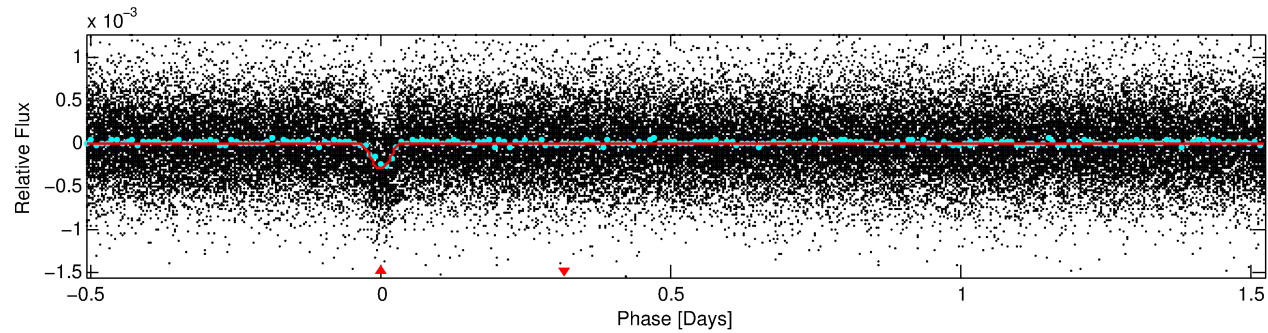
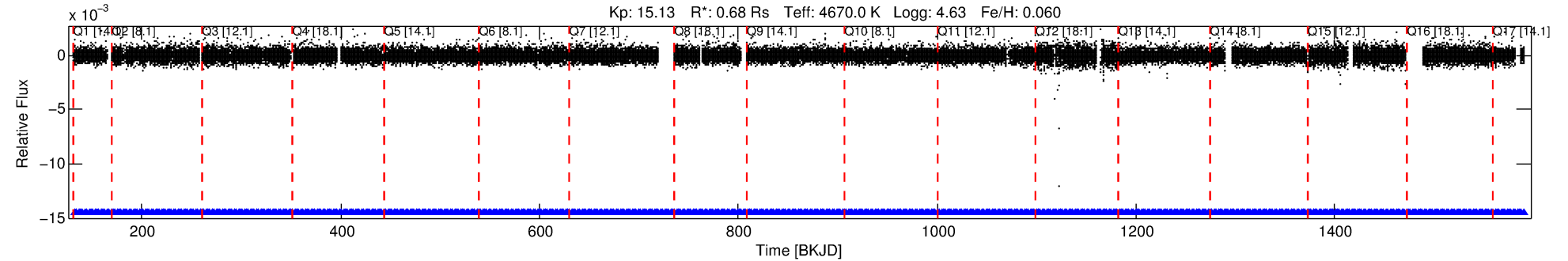
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007033233-01

No Significant Match Found

# DV One-Page Summary

KIC: 703233 Candidate: 1 of 1 Period: 2.032 d  
KOI: K02339.01 Corr: 0.976



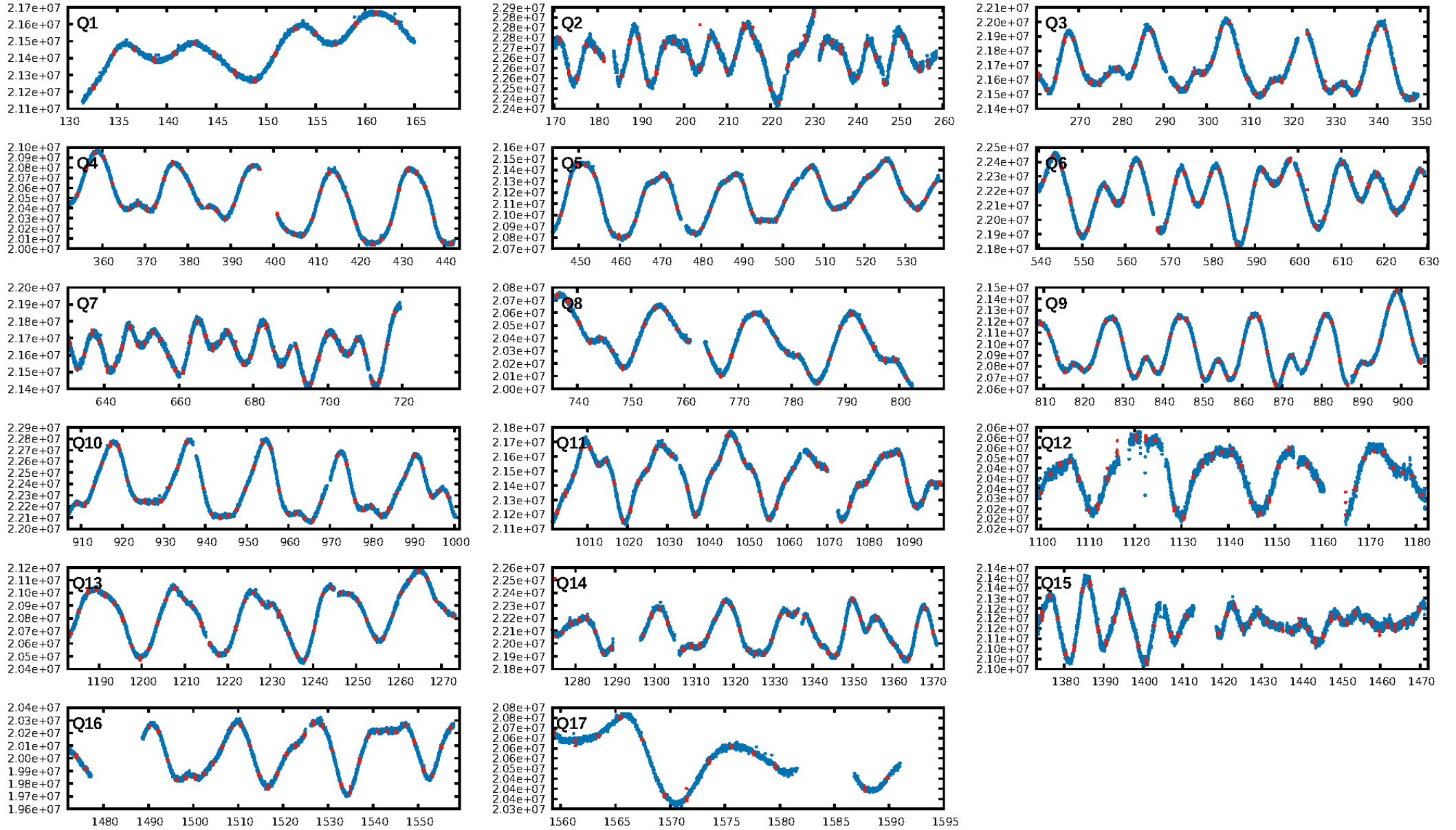
## DV Fit Results:

Period = 2.03232 [0.00000] d  
Epoch = 132.6425 [0.0008] BKJD  
Rp/R\* = 0.0149 [0.0111]  
a/R\* = 14.75 [33.29]  
b = 0.01 [200.85]  
Seff = 247.38 [29.25]  
Teff = 1011 [30] K  
Rp = 1.11 [0.83] Re  
a = 0.0283 [0.0017] AU  
Ag = 13.21 [20.01] [0.61σ]  
Teffp = 2981 [1129] K [1.74σ]

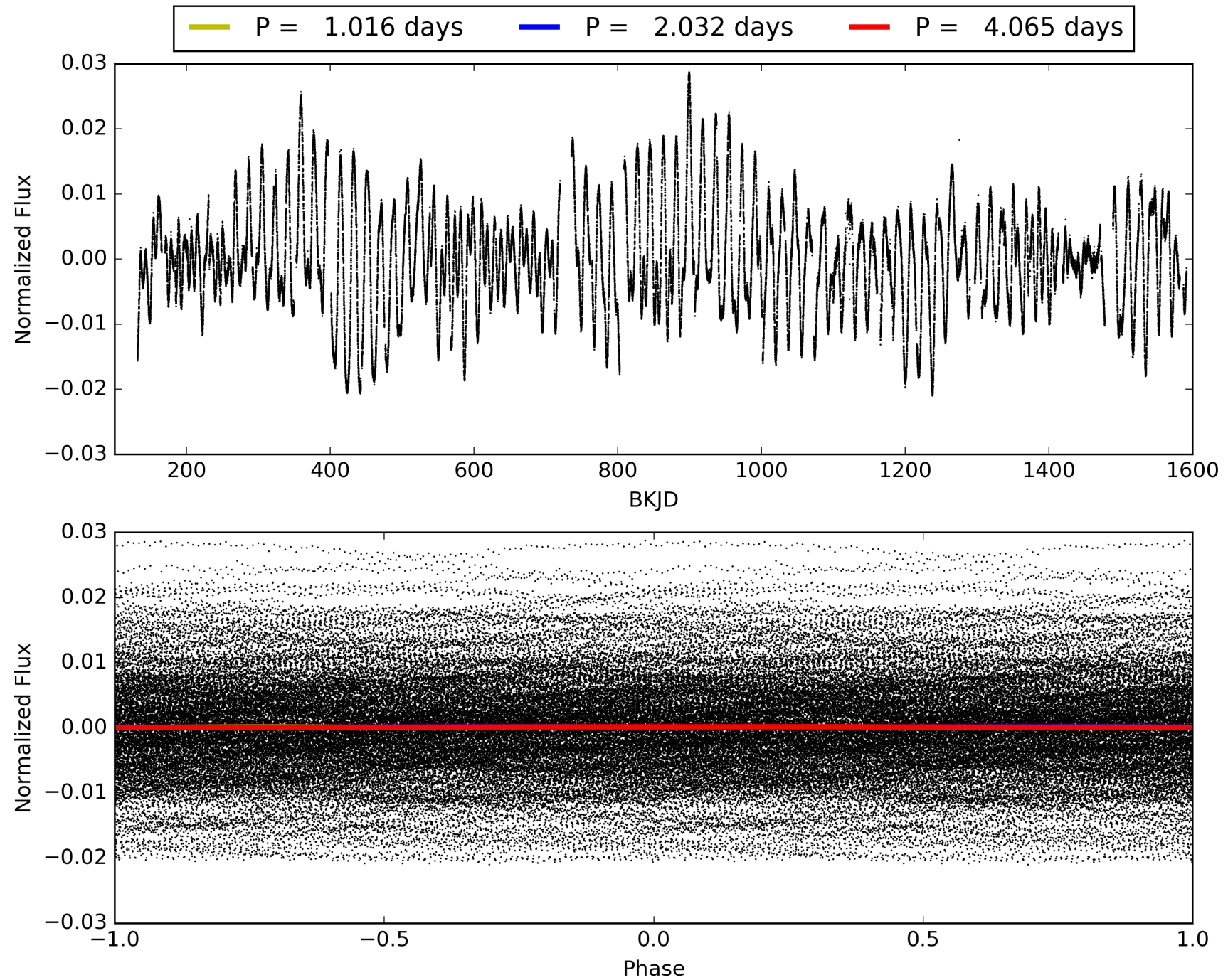
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.73e-81  
RollingBand-fgt: 1.00 [631/631]  
GhostDiagnostic-chr: 4.096  
Centroid-sig: 48.1%  
Centroid-so: 0.514 arcsec [0.96σ]  
OotOffset-rm: 0.235 arcsec [1.32σ]  
KicOffset-rm: 0.283 arcsec [1.50σ]  
OotOffset-st: 4/4/2/5 [15]  
KicOffset-st: 4/4/2/5 [15]  
DiffImageQuality-fgm: 0.87 [13/15]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 007033233-01, PDC Light Curves

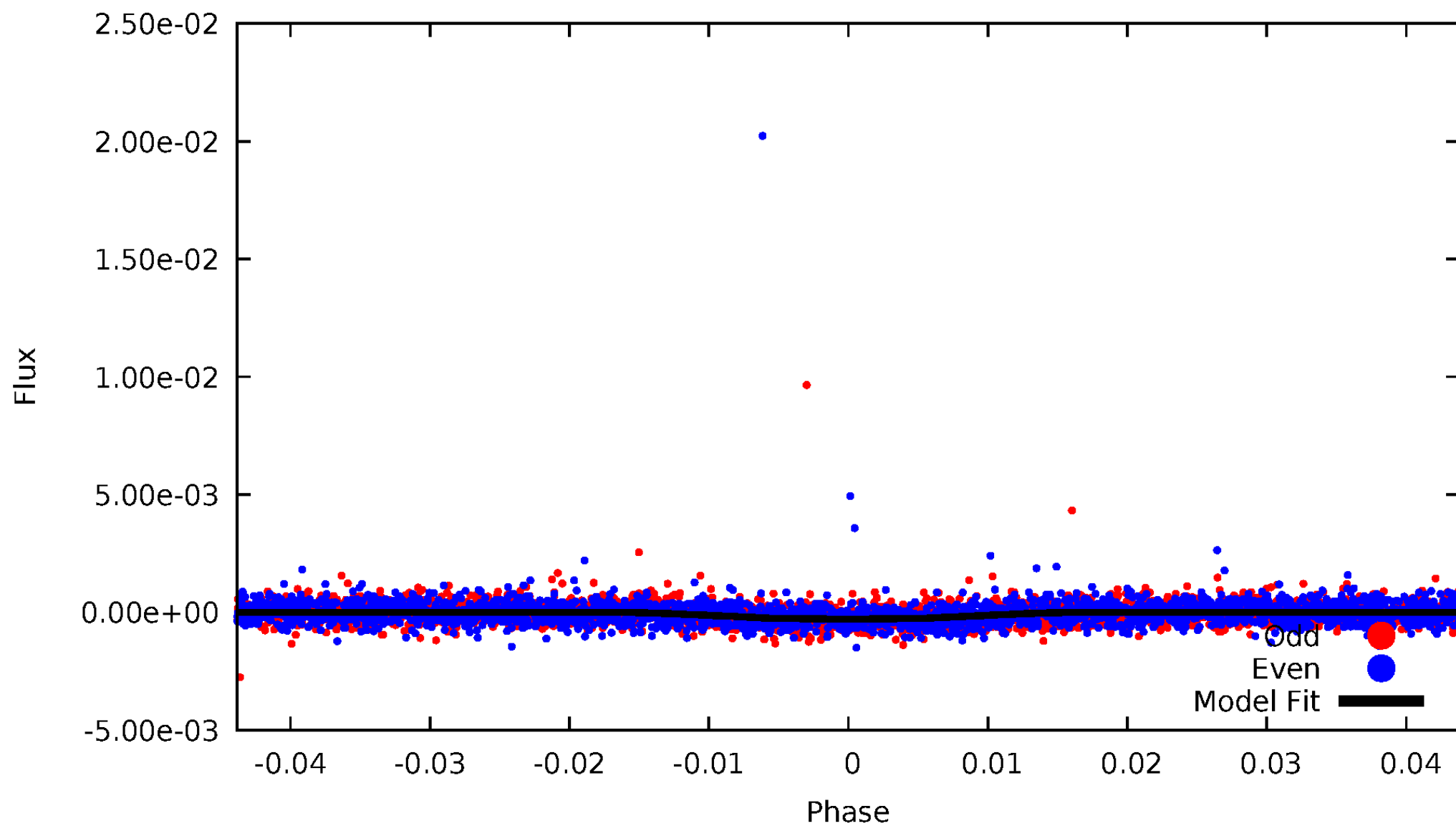


TCE 007033233-01



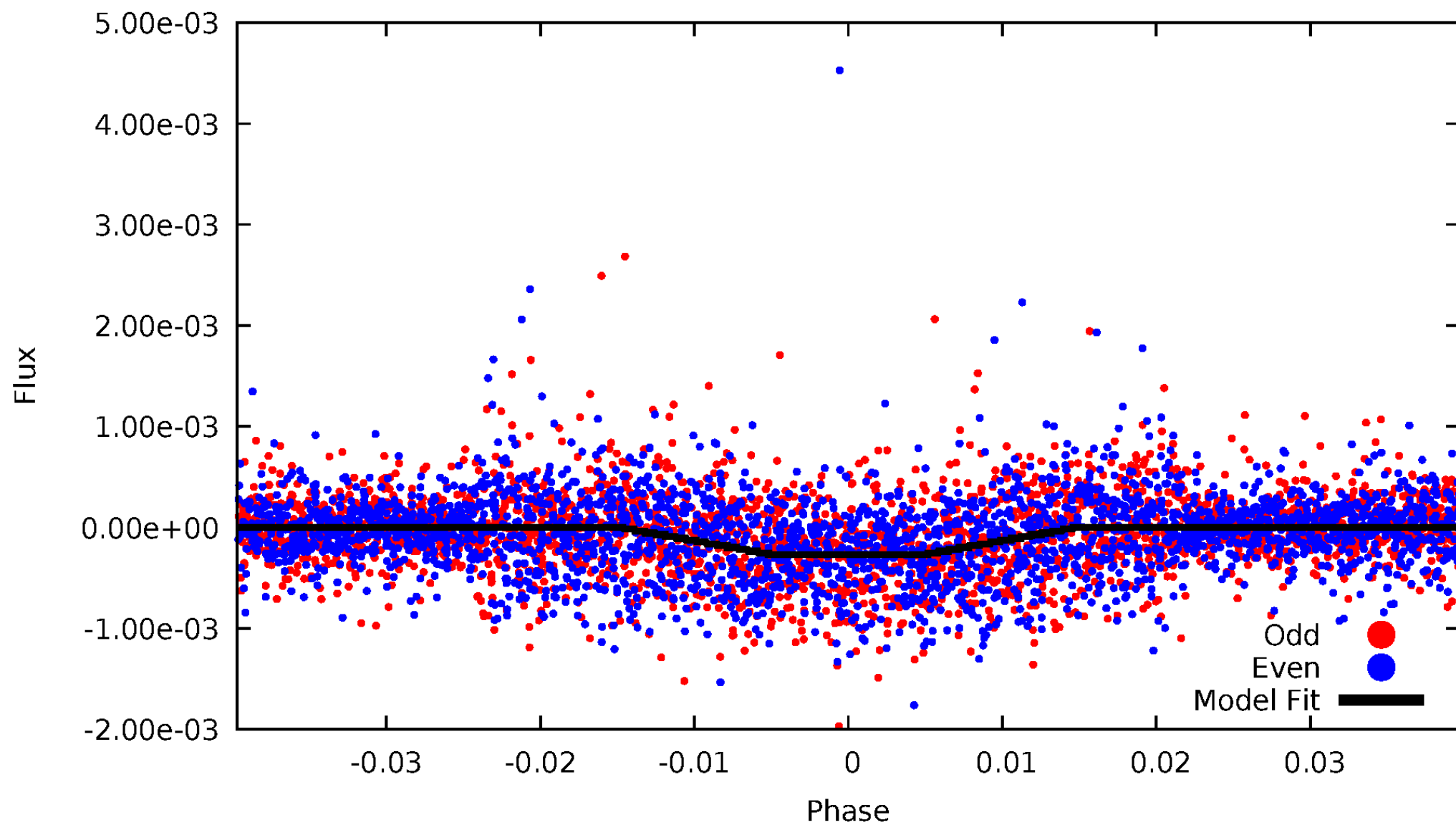
# DV Odd/Even

TCE 007033233-01



# ALT Odd/Even

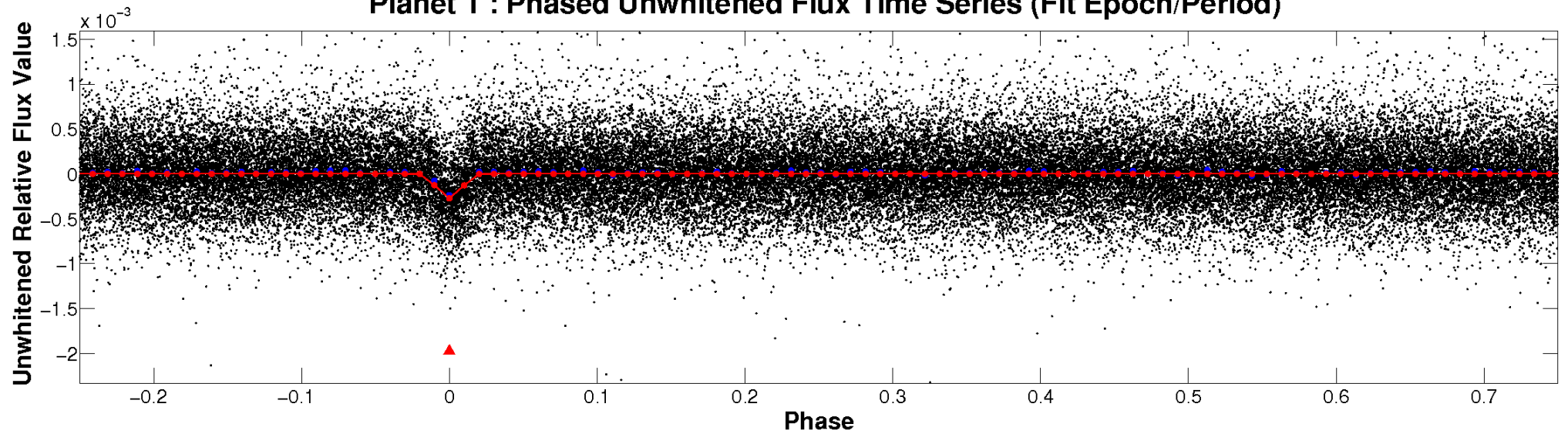
TCE 007033233-01



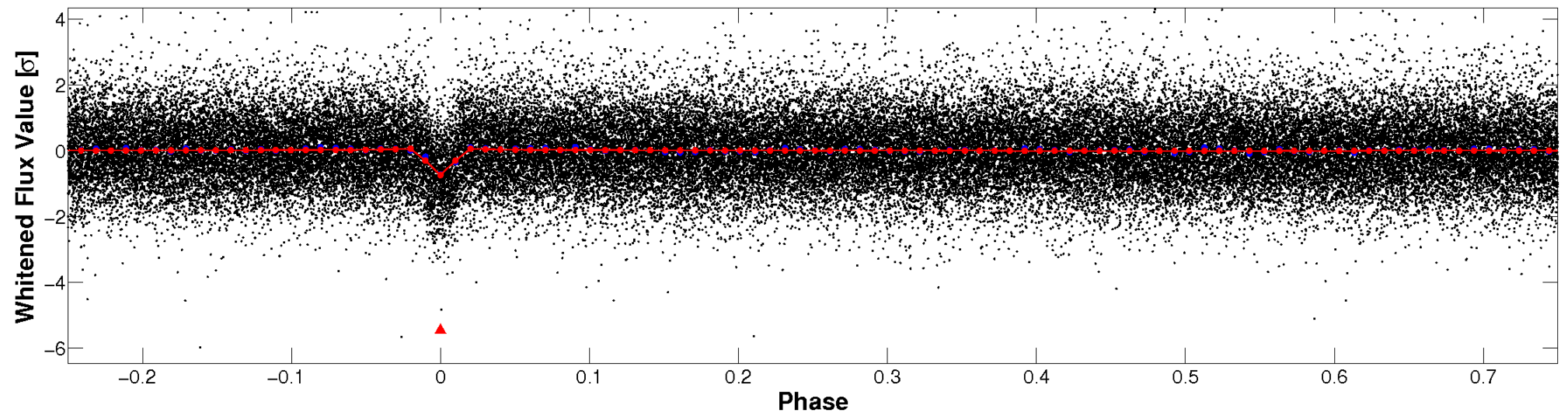


# Non-Whitened Vs. Whitened Light Curve

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

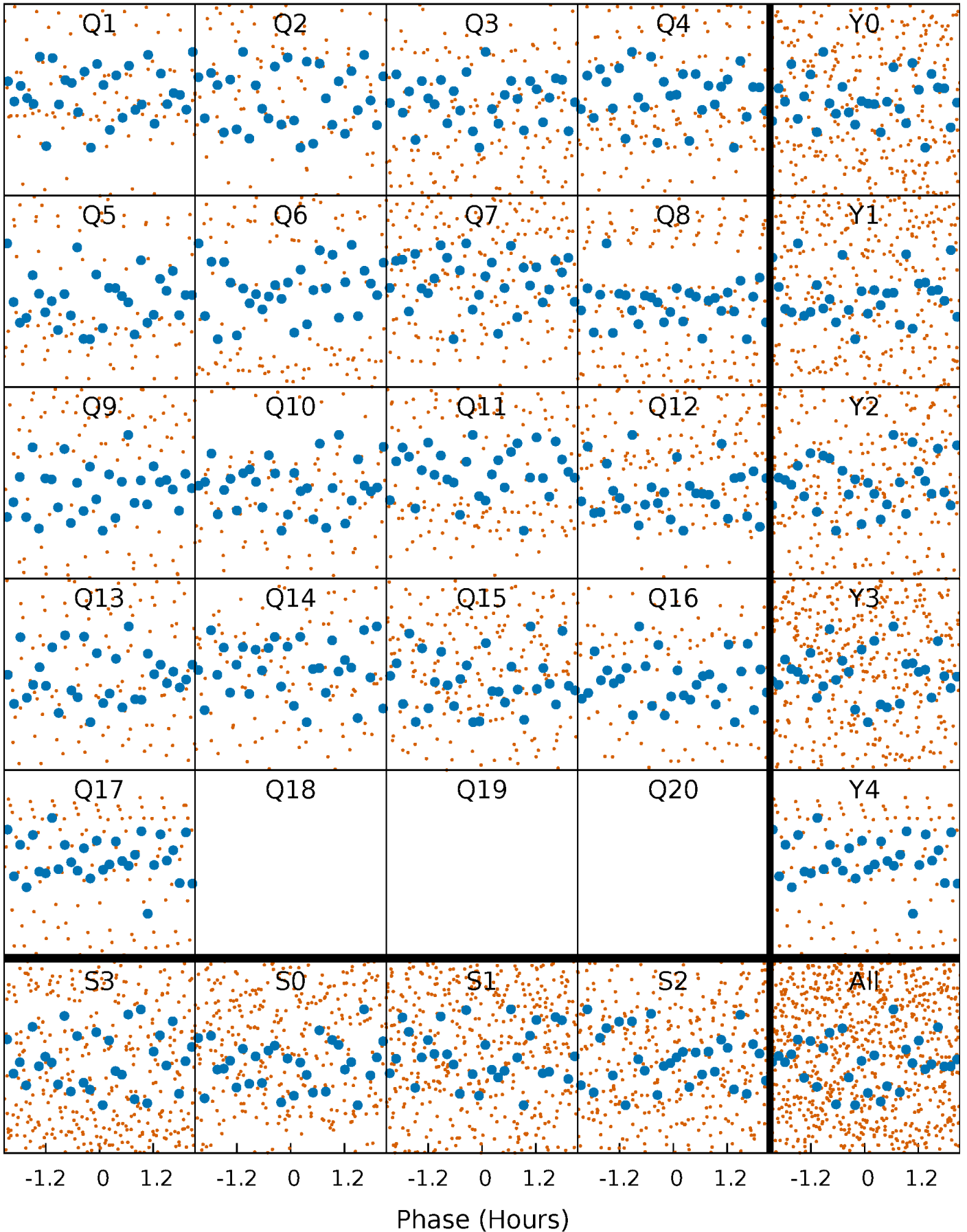


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

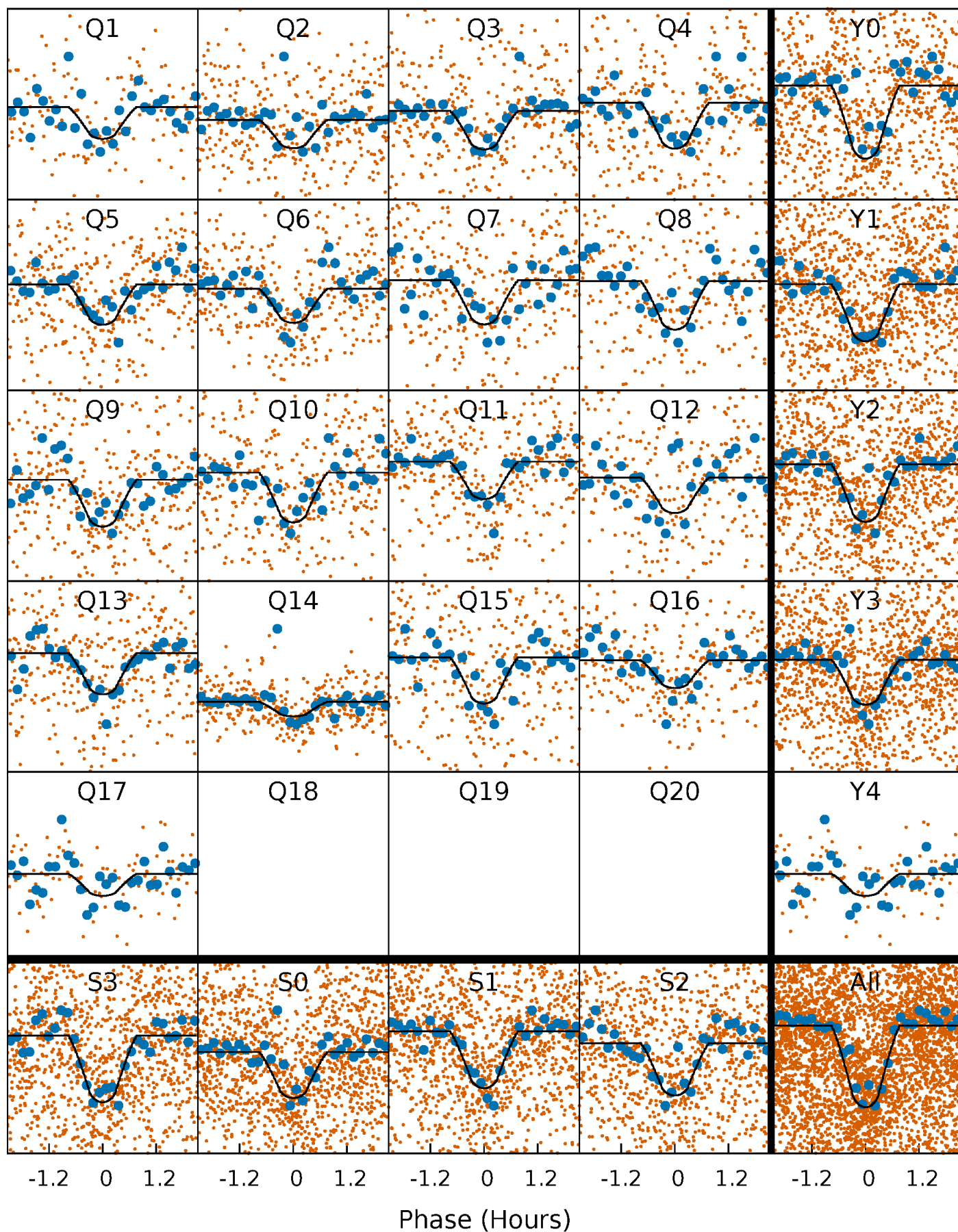
TCE 007033233-01 P= 2.032320 Days  $T_0=132.642466$  (BKJD)





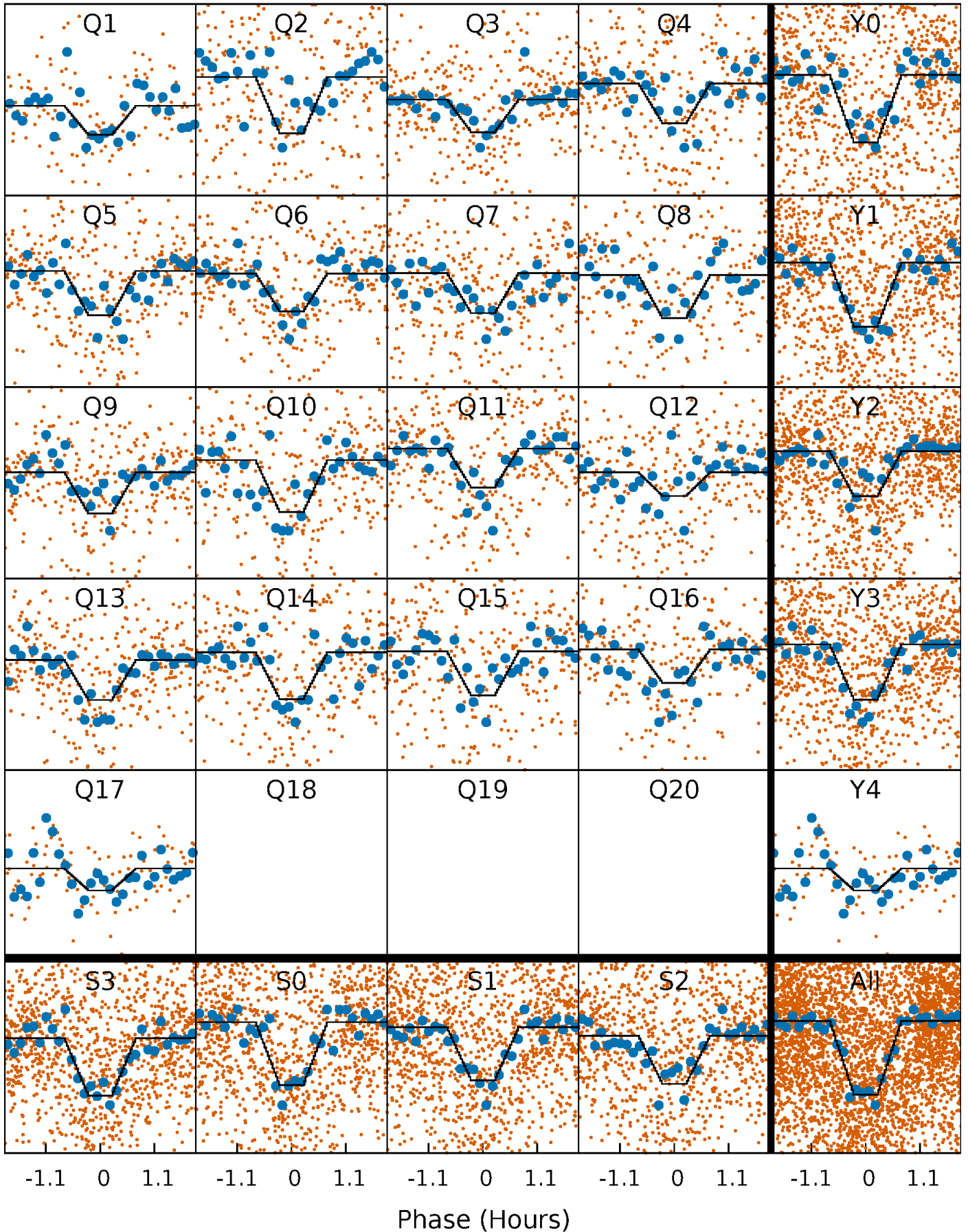
# DV Quarter-Phased Transit Curves

TCE 007033233-01 P= 2.032320 Days  $T_0=132.642466$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

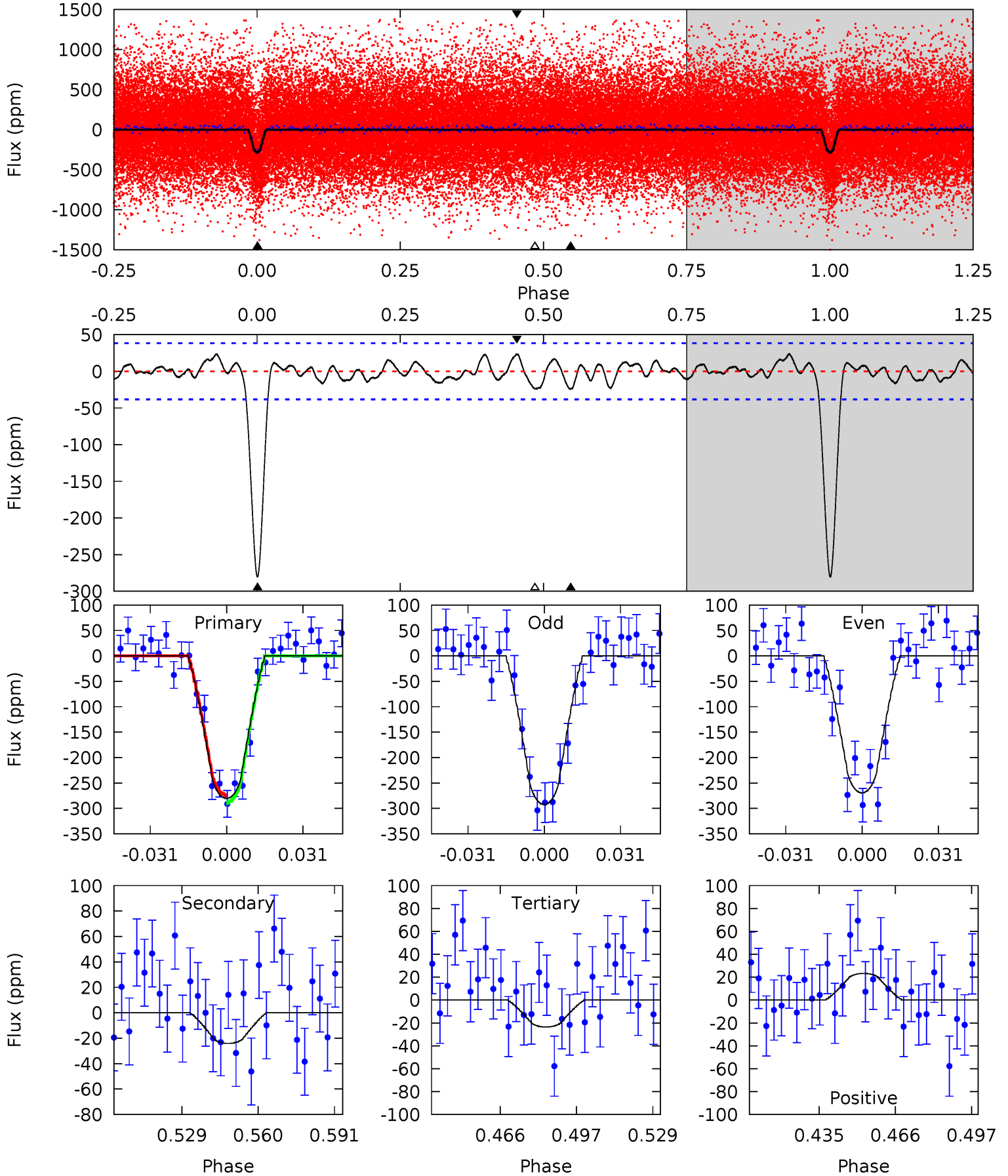
TCE 007033233-01 P= 2.032332 Days  $T_0=132.638889$  (BKJD)



# DV Model-Shift Uniqueness Test

007033233-01, P = 2.032320 Days, E = 130.610146 Days

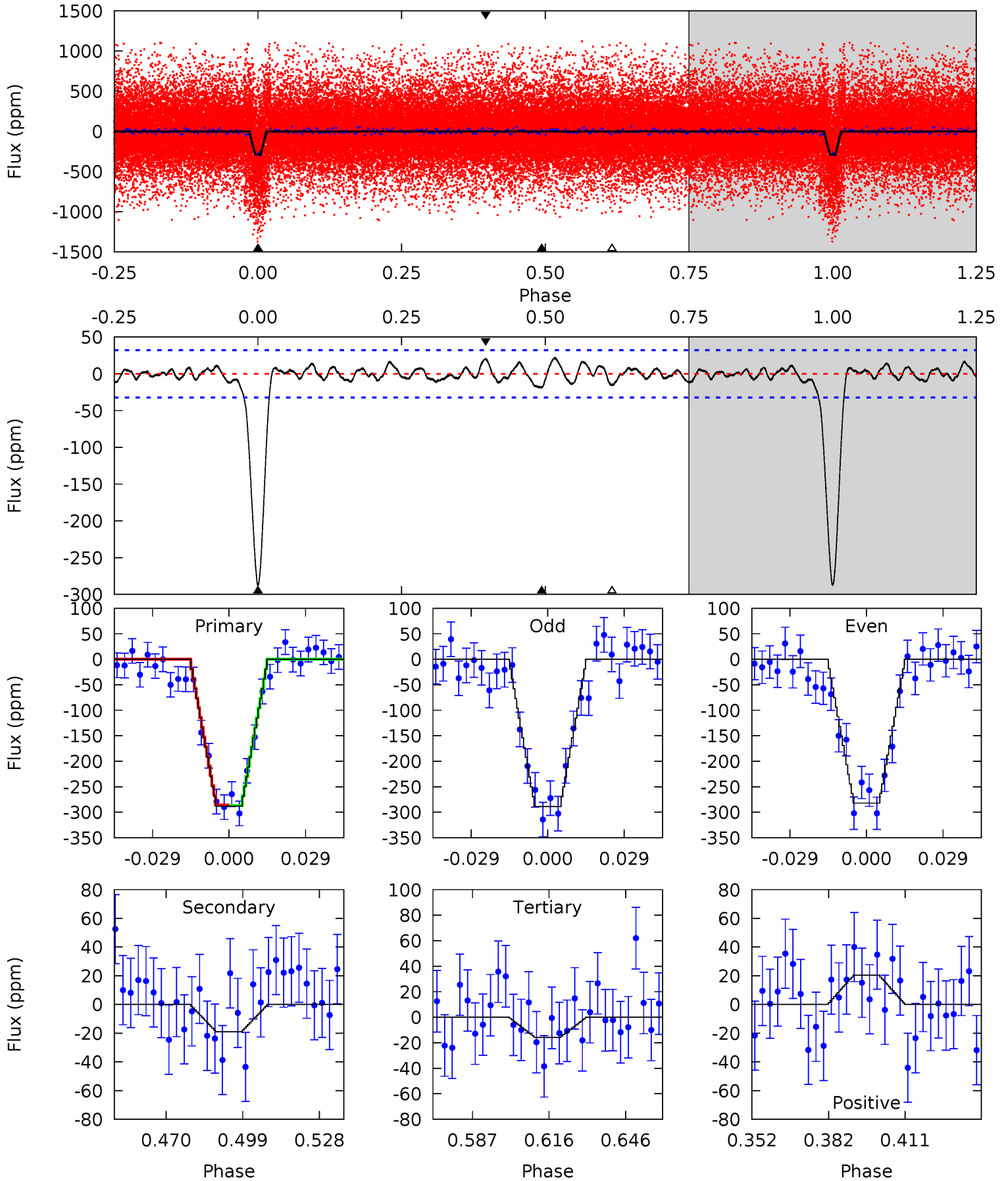
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.2	3.03	2.96	2.92	4.80	2.16	1.22	32.2	32.3	0.07	0.10	1.44	0.88	0.08	0.95



# Alt Model-Shift Uniqueness Test

007033233-01, P = 2.032332 Days, E = 130.606557 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
43.2	2.86	2.35	3.06	4.82	2.18	1.06	40.8	40.1	0.50	-0.21	0.50	0.95	0.07	0.09



### Stellar Parameters For KIC 007033233

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4670^{+93}_{-93}$	$4.635^{+0.012}_{-0.048}$	$0.060^{+0.150}_{-0.150}$	$0.682^{+0.048}_{-0.021}$	$0.761^{+0.027}_{-0.046}$	$3.381^{+0.176}_{-0.657}$
	+2%/-2%	+0%/-1%	+250%/-250%	+7%/-3%	+4%/-6%	+5%/-19%
Source	SPE58	SPE58	SPE58	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 007033233-01 / KOI 2339.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-24 \pm 8$	$1.22^{+0.86}_{-0.68}$	$1429^{+37}_{-35}$	$3080^{+1020}_{-450}$	$6.961^{+31.139}_{-4.680}$
Alt.	$-19 \pm 7$	$1.33^{+0.84}_{-0.70}$	$1427^{+33}_{-33}$	$2910^{+839}_{-424}$	$4.547^{+18.330}_{-2.987}$

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

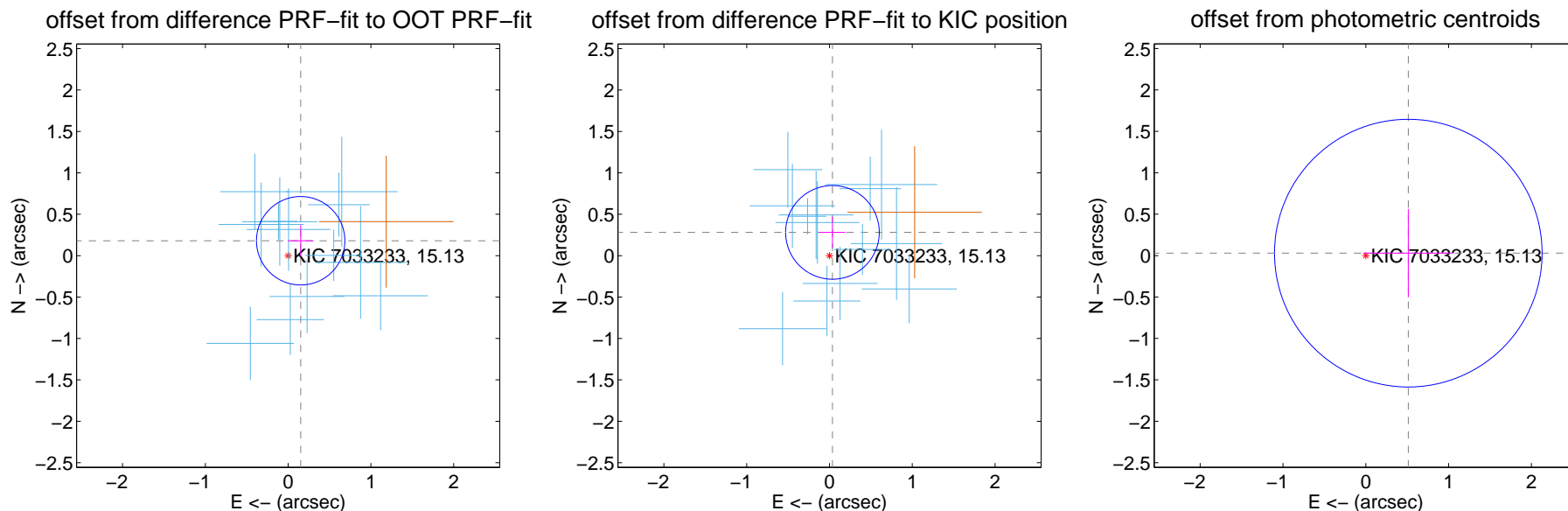
## DV Centroid Data

Supplemental centroid analysis for 007033233-01. Kepler magnitude: 15.13. Transit SNR 22.98

There are 13 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

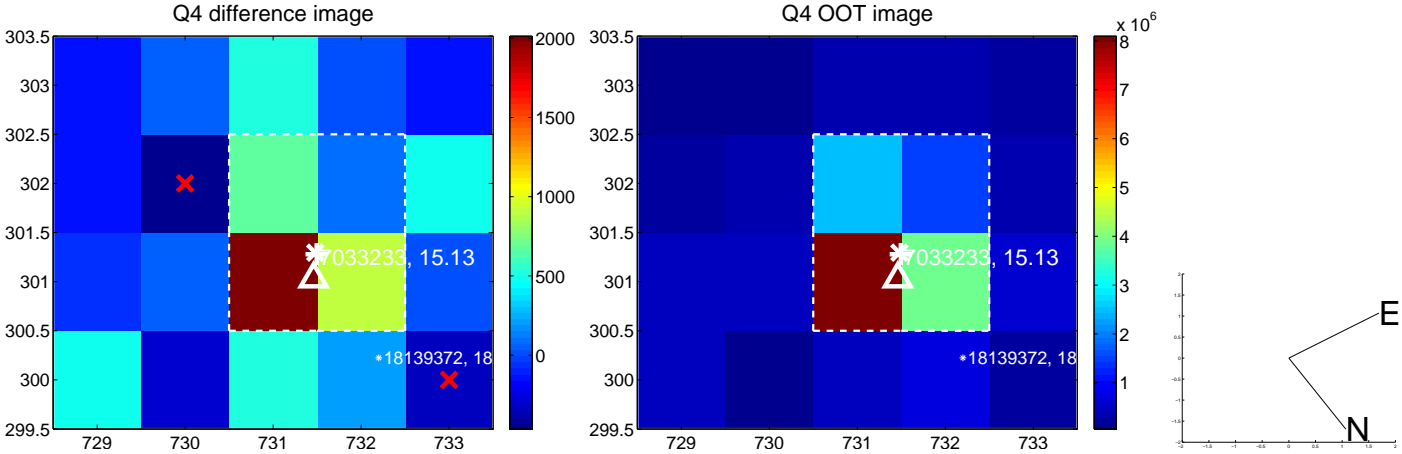
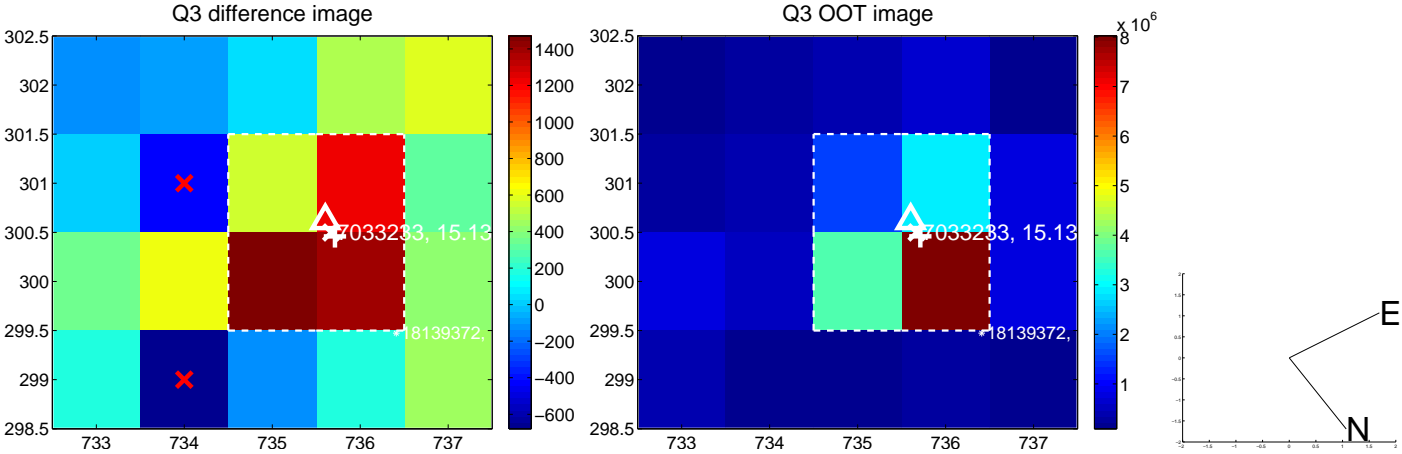
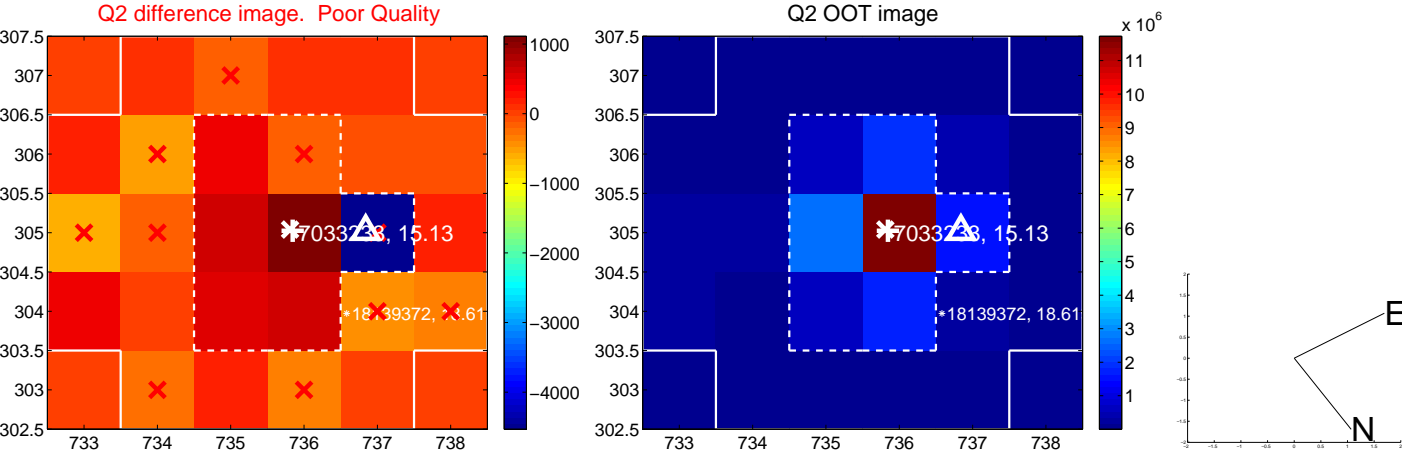
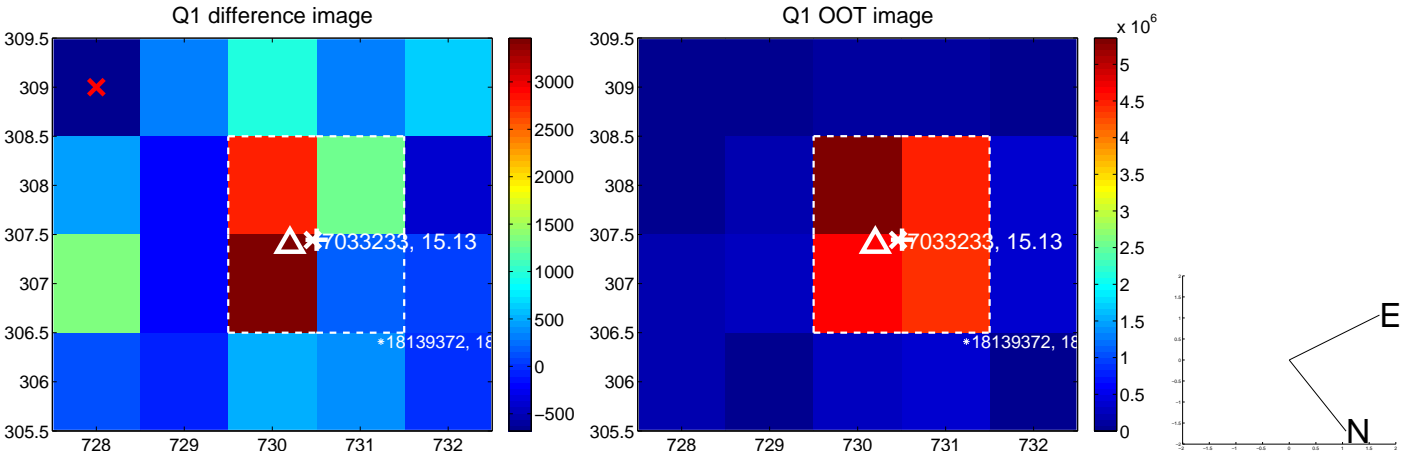
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.235 \pm 0.178$	1.32	$-0.152 \pm 0.158$	$0.180 \pm 0.191$
PRF-fit source offset from KIC position	$0.283 \pm 0.189$	1.50	$-0.036 \pm 0.158$	$0.281 \pm 0.189$
photometric centroid source offset	$0.51 \pm 0.54$	0.96	$-0.51 \pm 0.54$	$0.03 \pm 0.53$



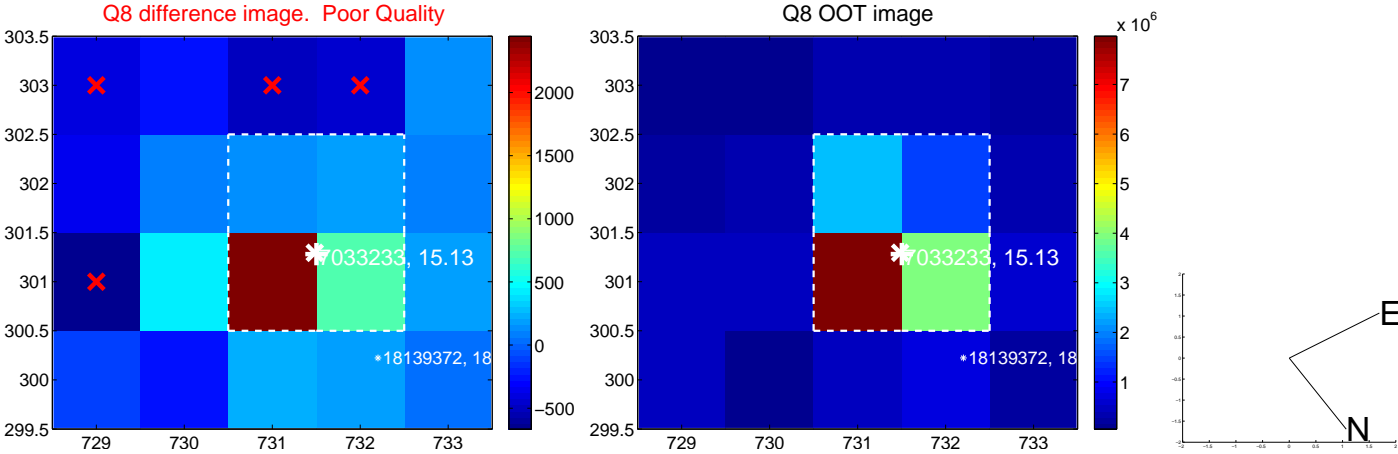
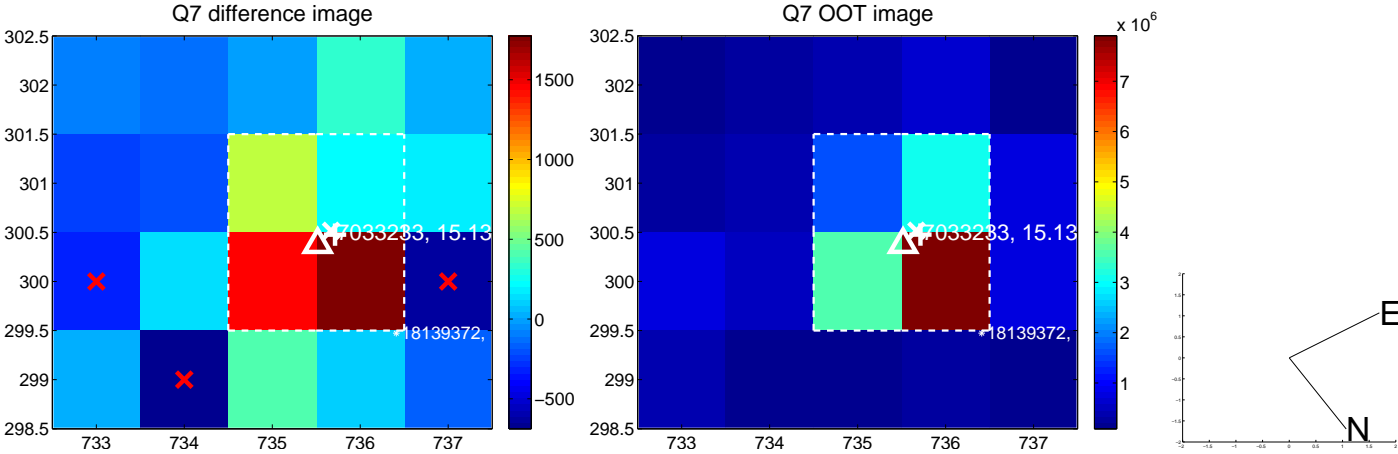
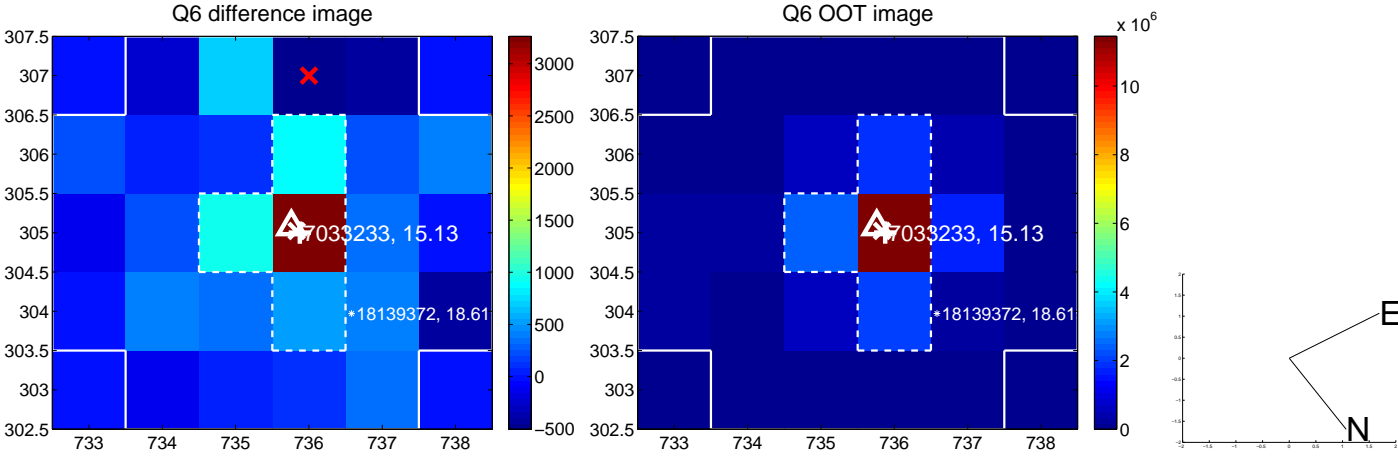
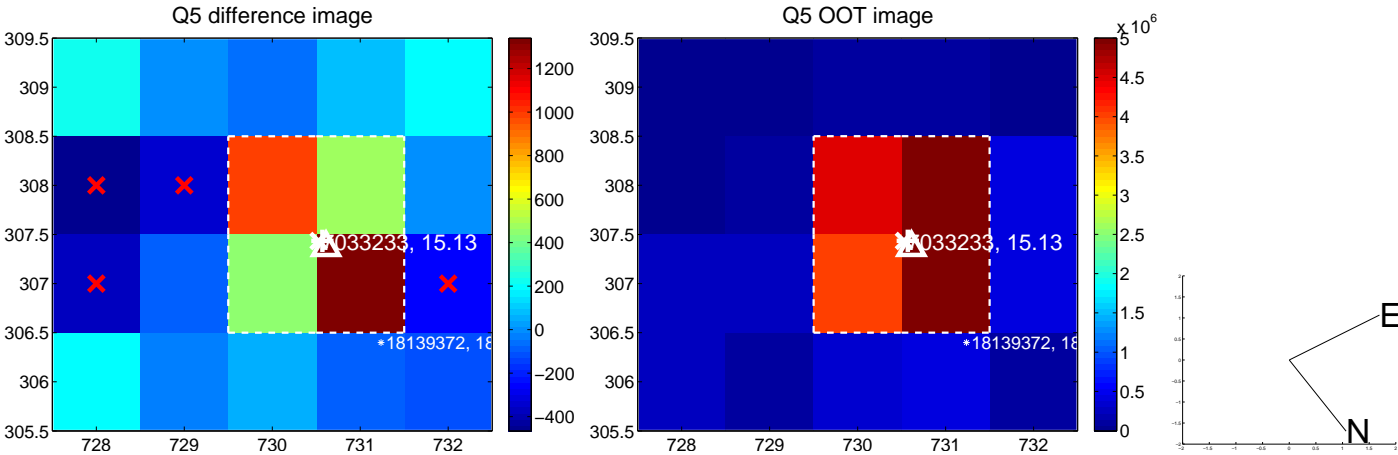
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



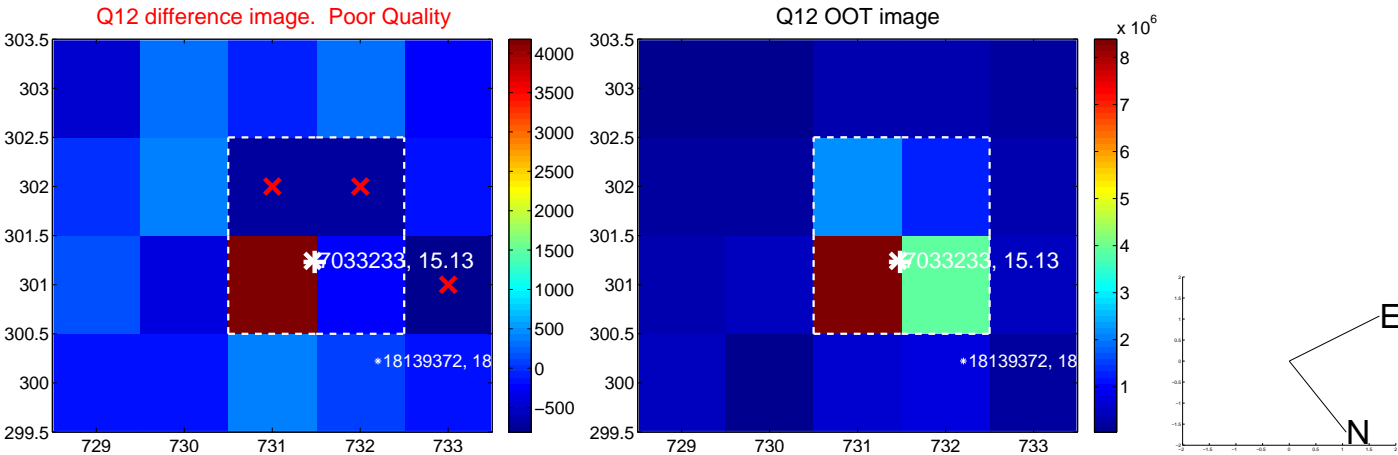
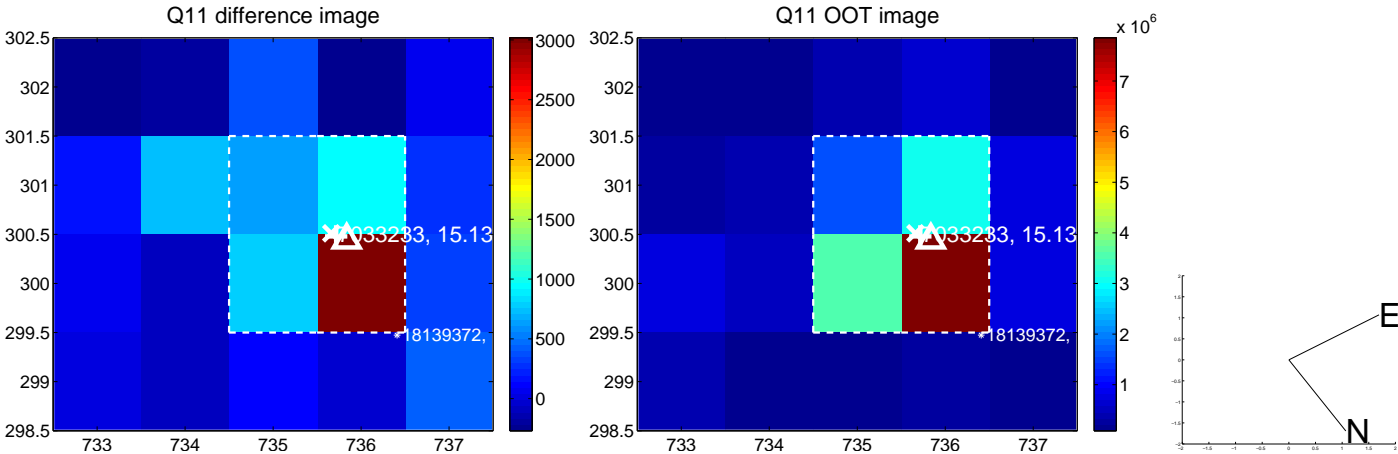
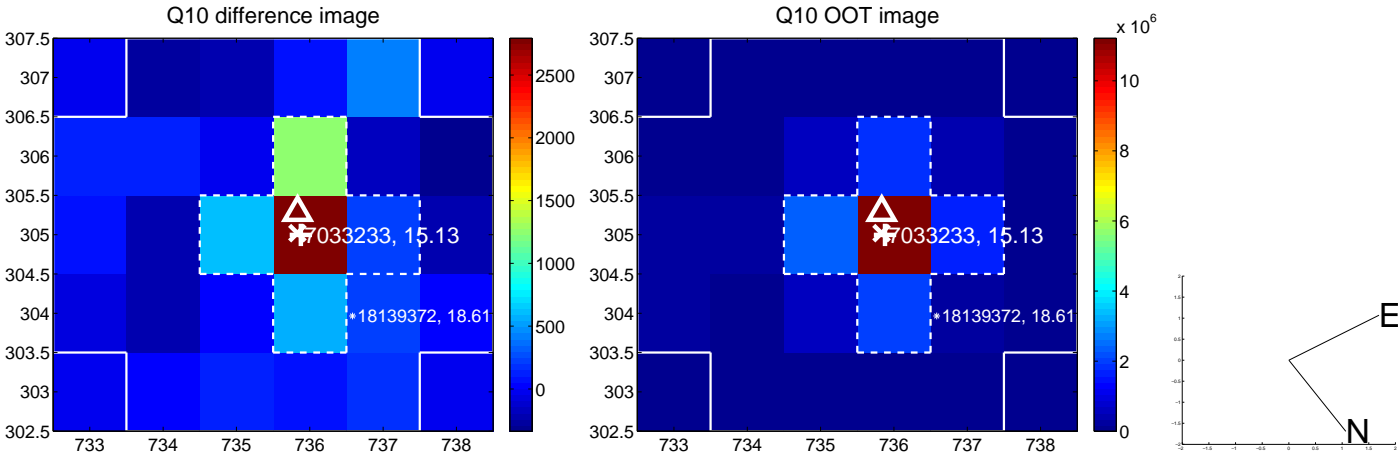
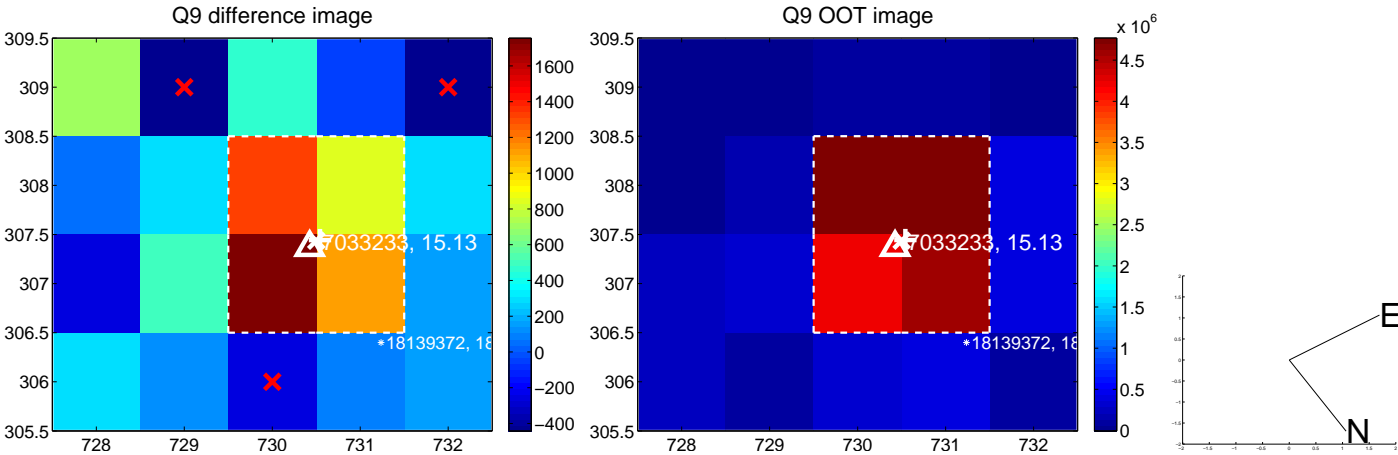
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



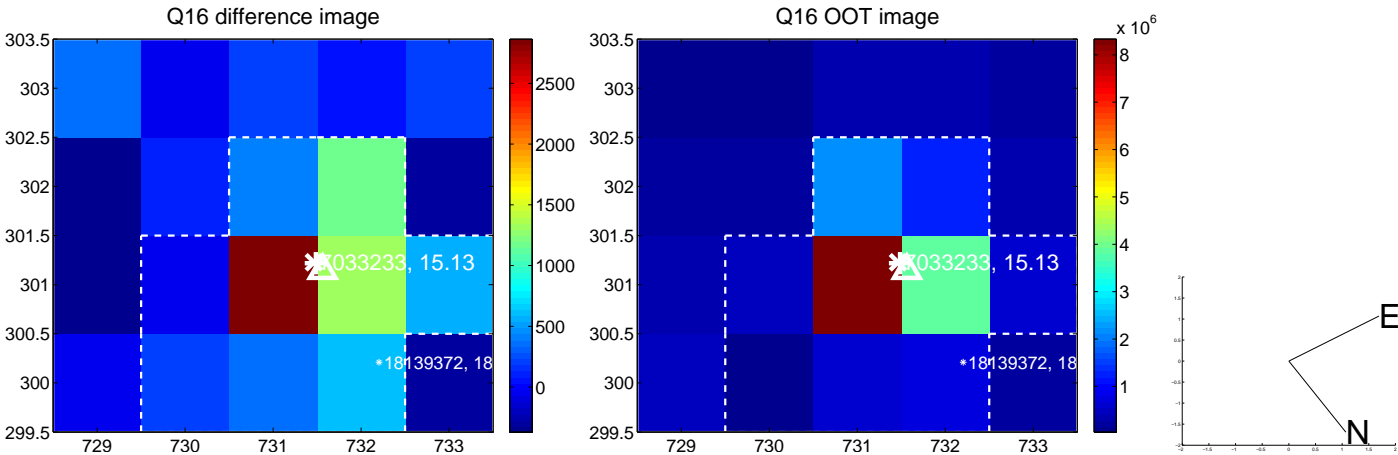
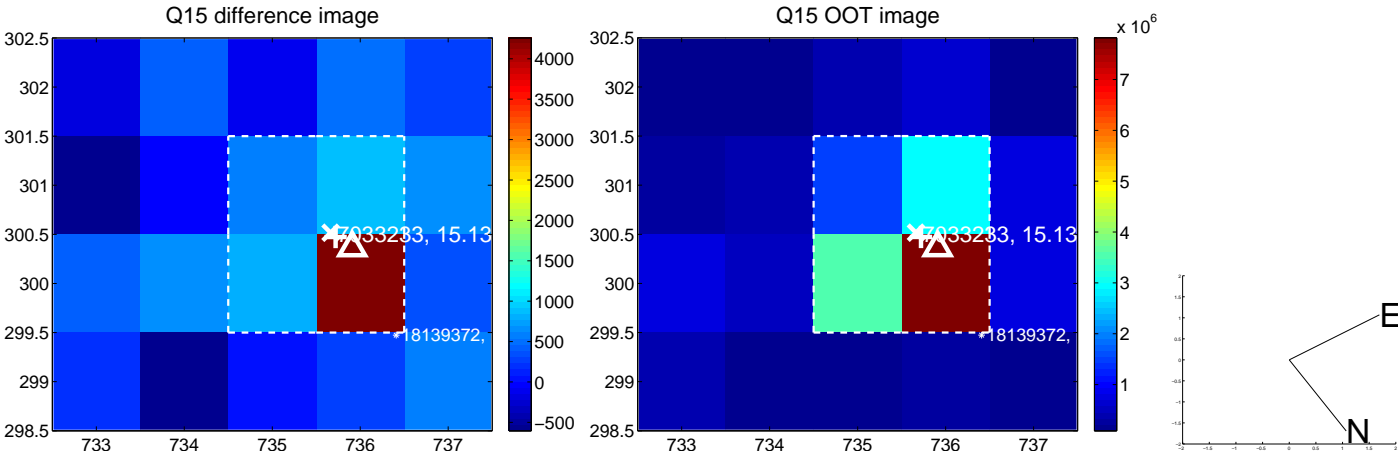
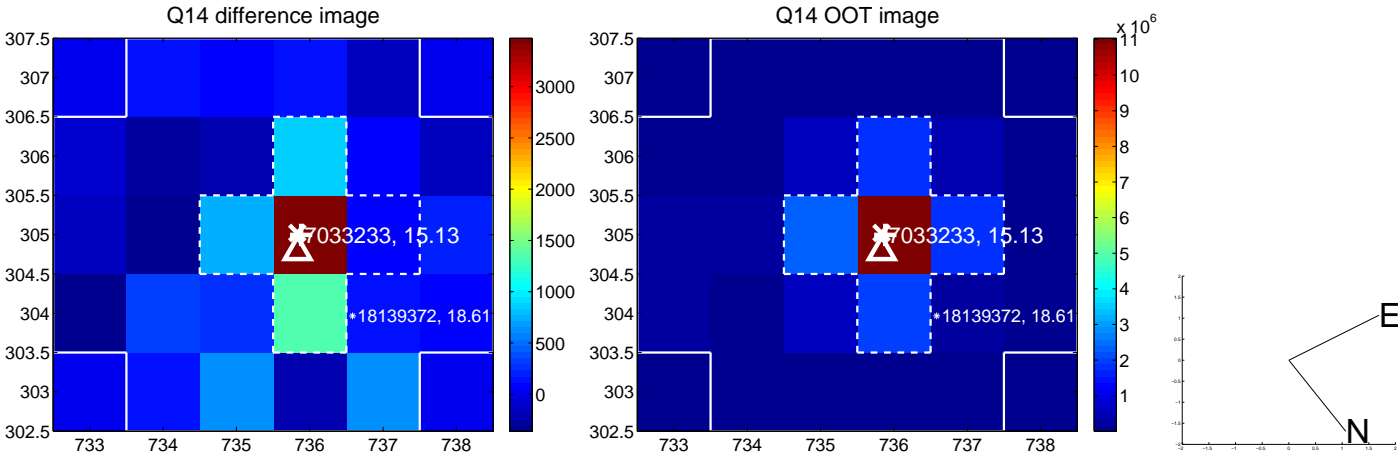
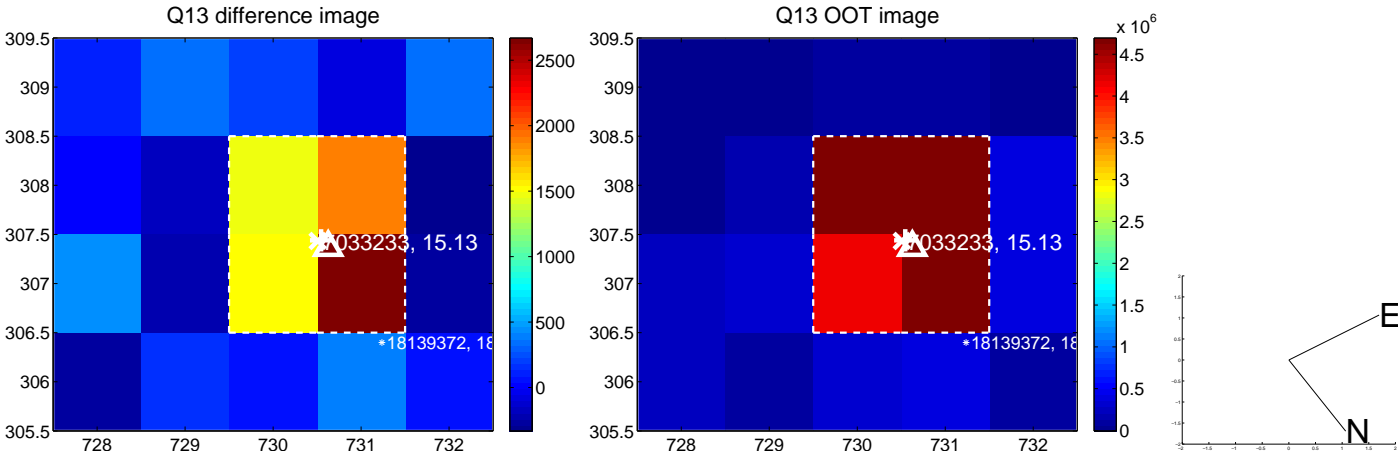
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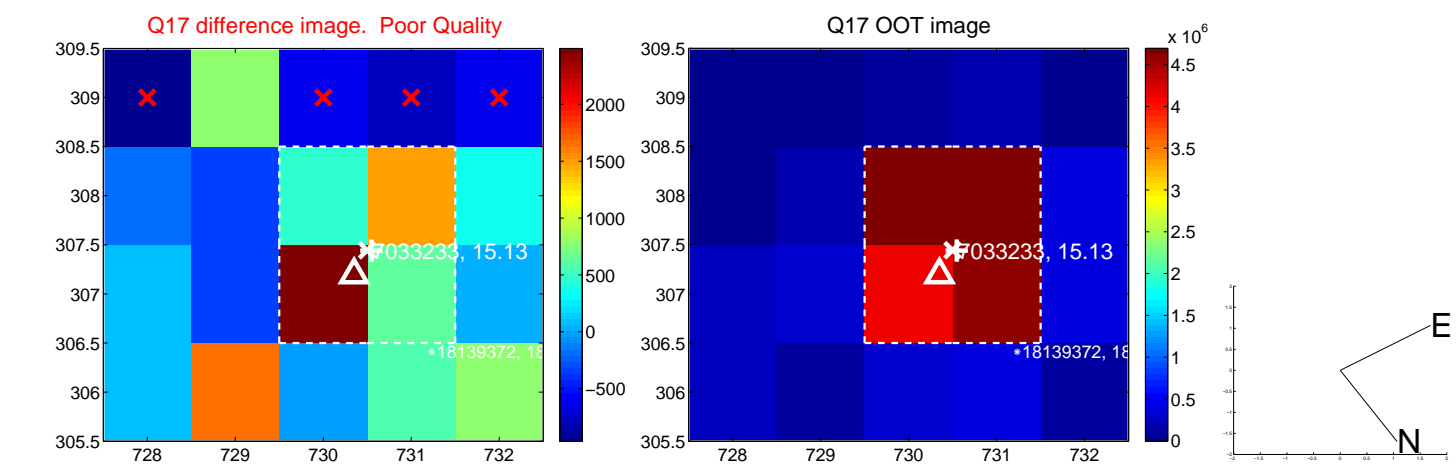
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



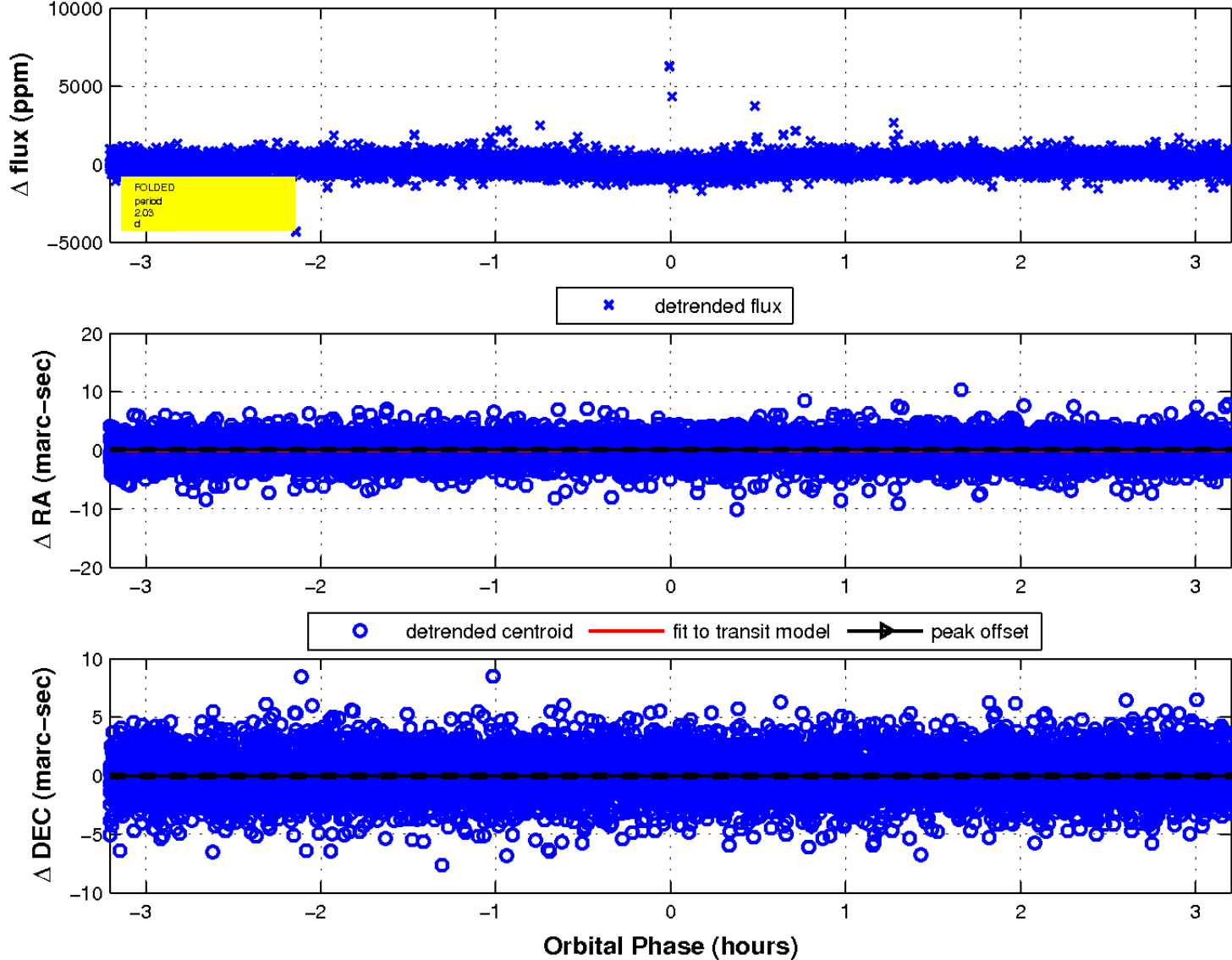
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

