

# KIC 006291033

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006291033-01	OBS	0452.01	3.705950	132.891092	336.8	5.239	48.3	57.9	1.03	6187	2.23	638.70

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006291033-01	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.

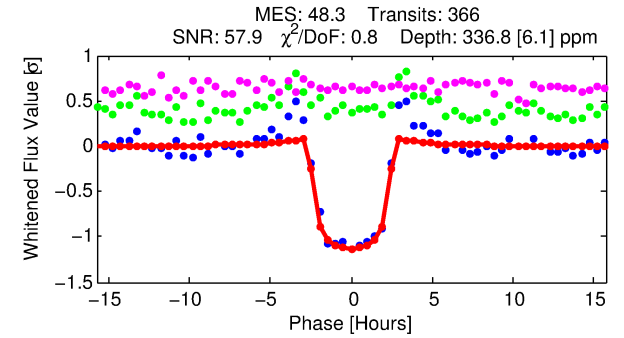
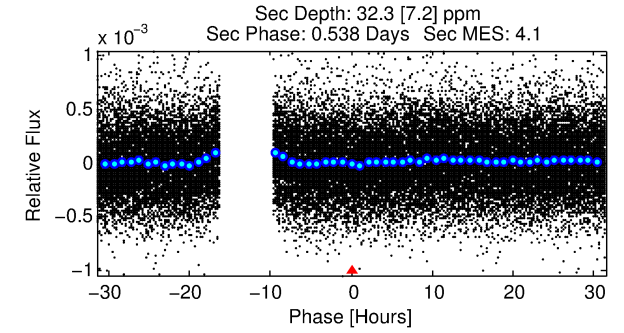
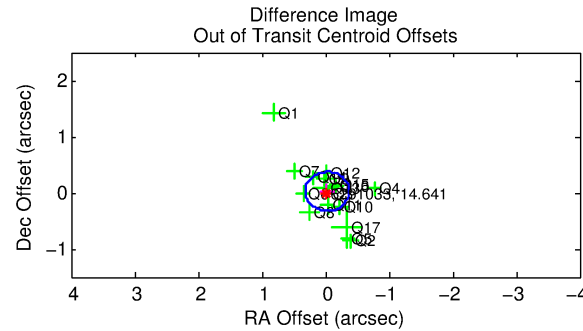
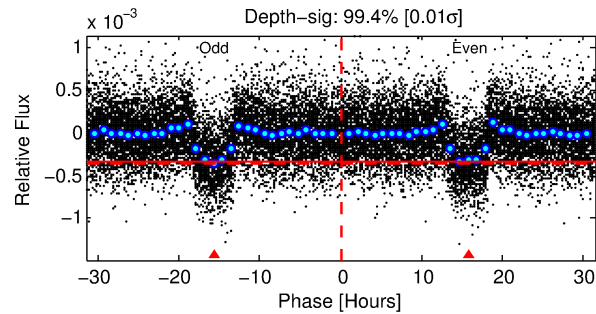
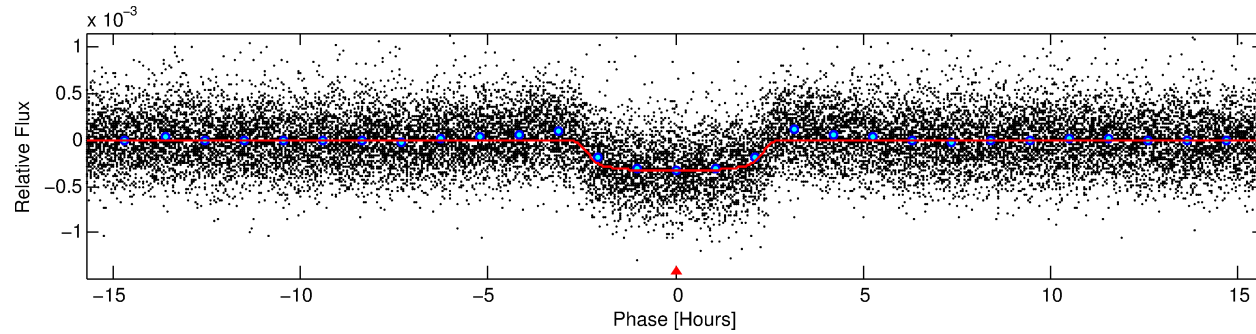
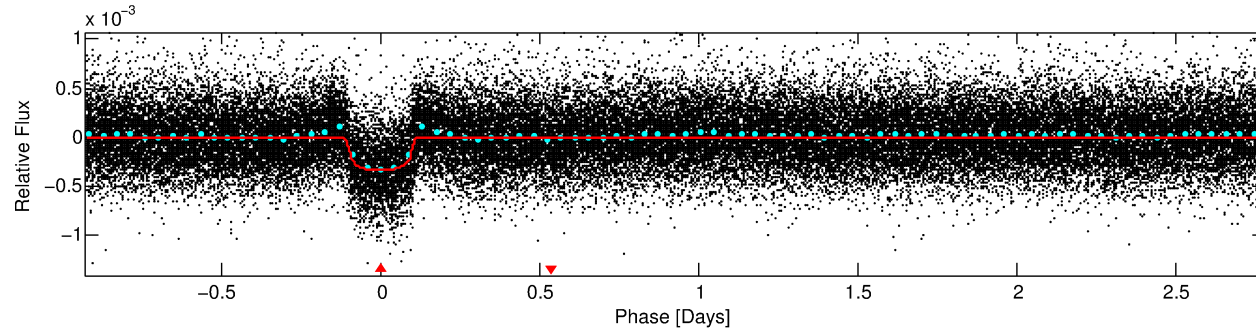
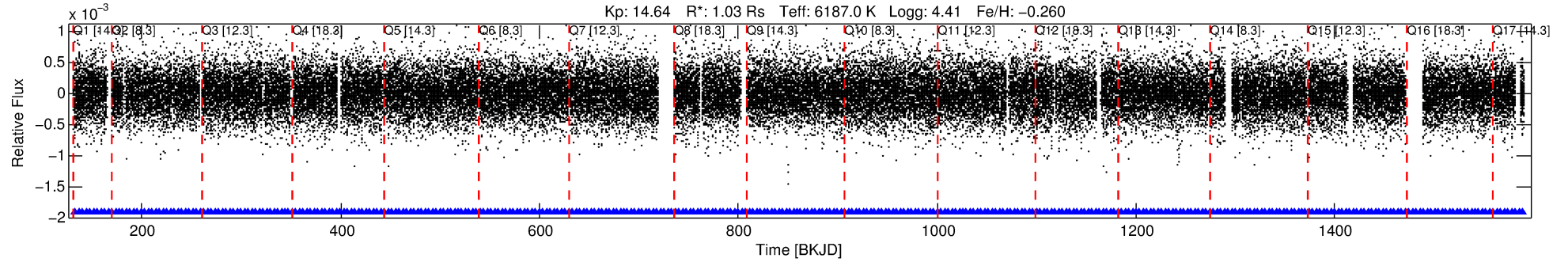
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006291033-01

No Significant Match Found

# DV One-Page Summary

KIC: 6291033 Candidate: 1 of 1 Period: 3.706 d  
KOI: K00452.01 Corr: 0.979



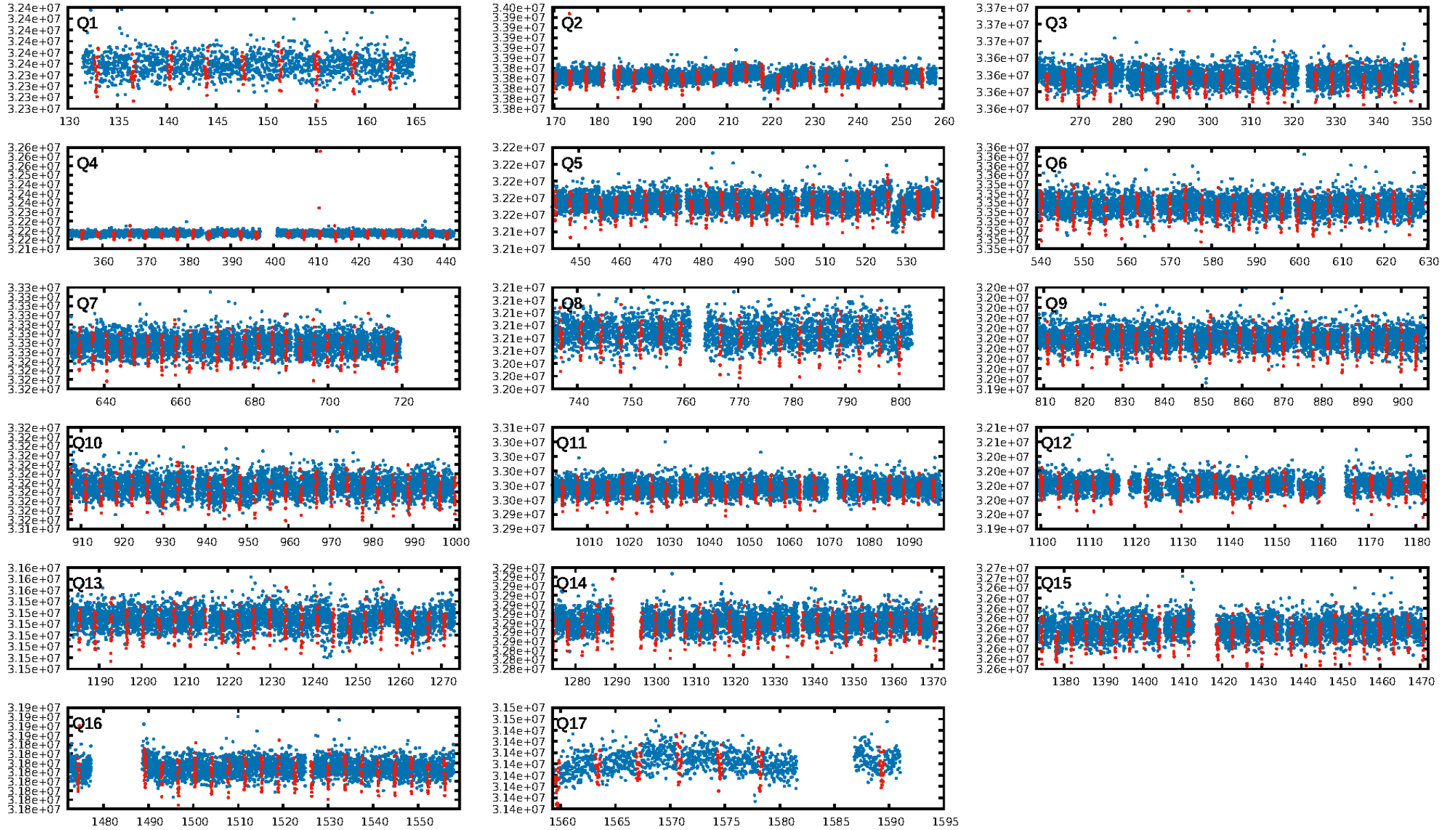
## DV Fit Results:

Period = 3.70595 [0.00001] d  
Epoch = 132.8911 [0.0013] BKJD  
Rp/R\* = 0.0197 [0.0007]  
a/R\* = 2.76 [0.44]  
b = 0.90 [0.04]  
Seff = 638.70 [259.88]  
Teff = 1282 [130] K  
Rp = 2.23 [0.71] Re  
a = 0.0469 [0.0123] AU  
Ag = 7.87 [3.48] [1.97 $\sigma$ ]  
Teffp = 3320 [232] K [7.65 $\sigma$ ]

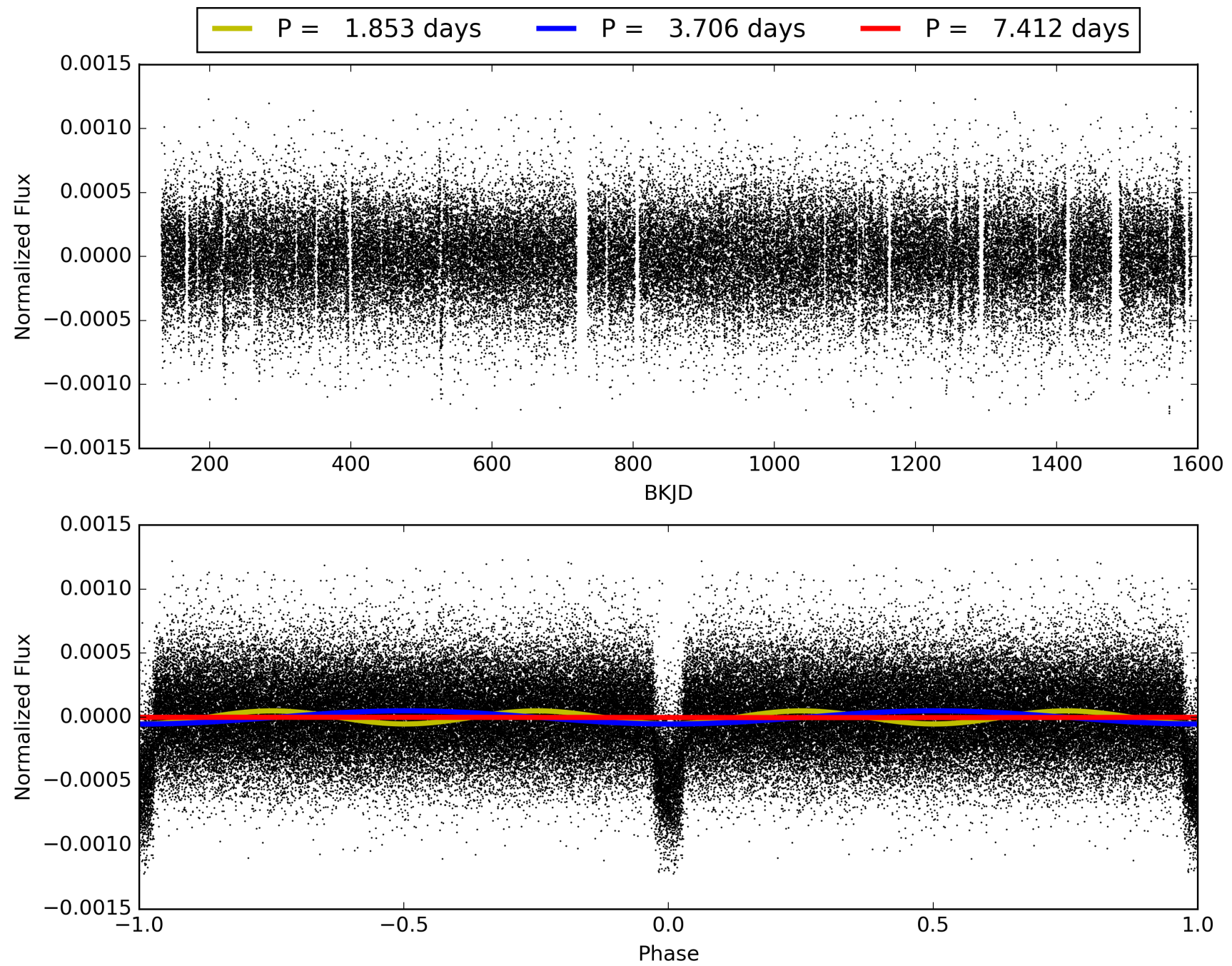
## DV Diagnostic Results:

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 [350/350]  
GhostDiagnostic-chr: 9.289  
Centroid-sig: 4.3%  
Centroid-so: 0.445 arcsec [1.75 $\sigma$ ]  
OotOffset-rm: 0.035 arcsec [0.30 $\sigma$ ]  
KicOffset-rm: 0.062 arcsec [0.50 $\sigma$ ]  
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]

# TCE 006291033-01, PDC Light Curves

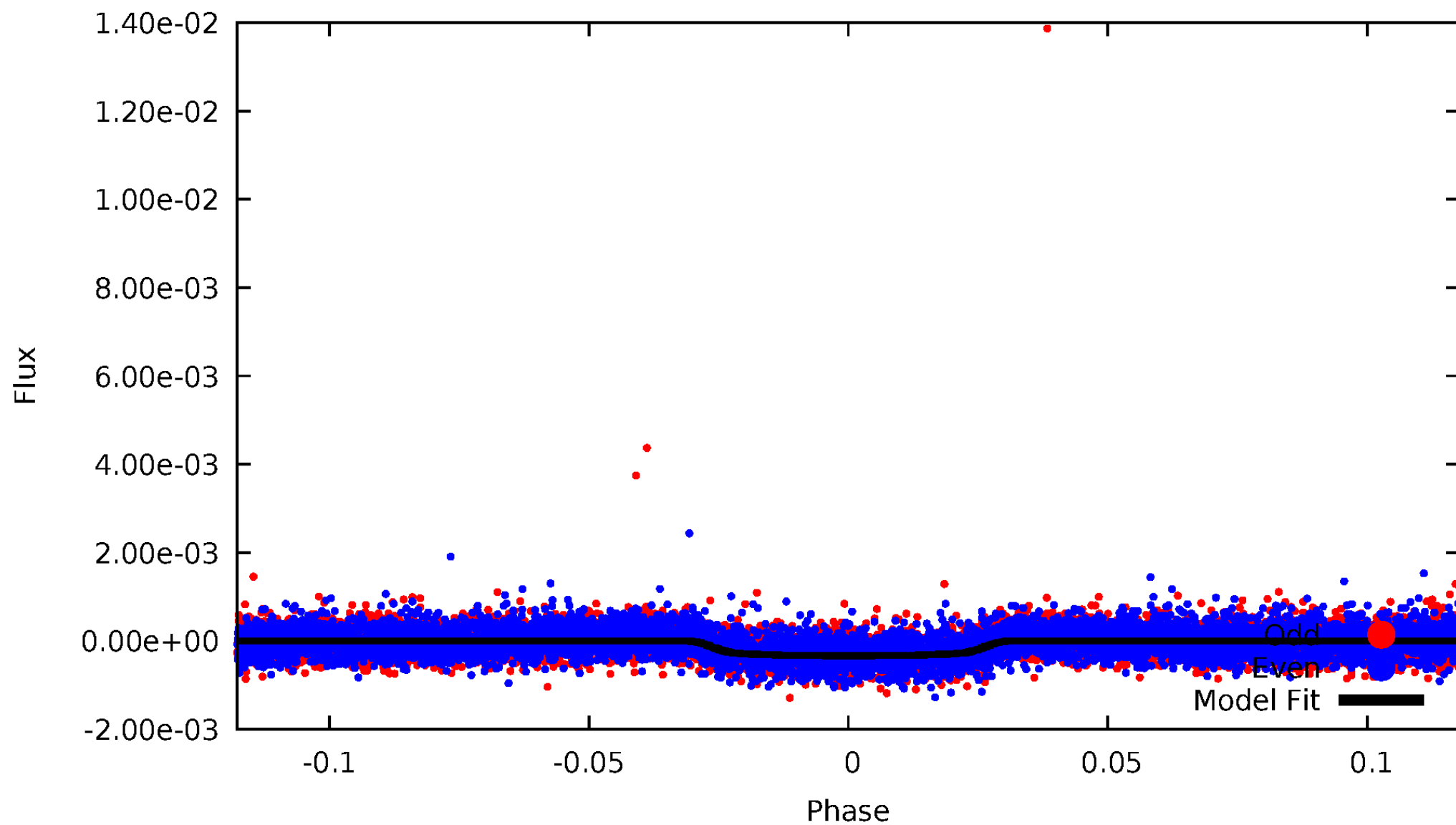


TCE 006291033-01



# DV Odd/Even

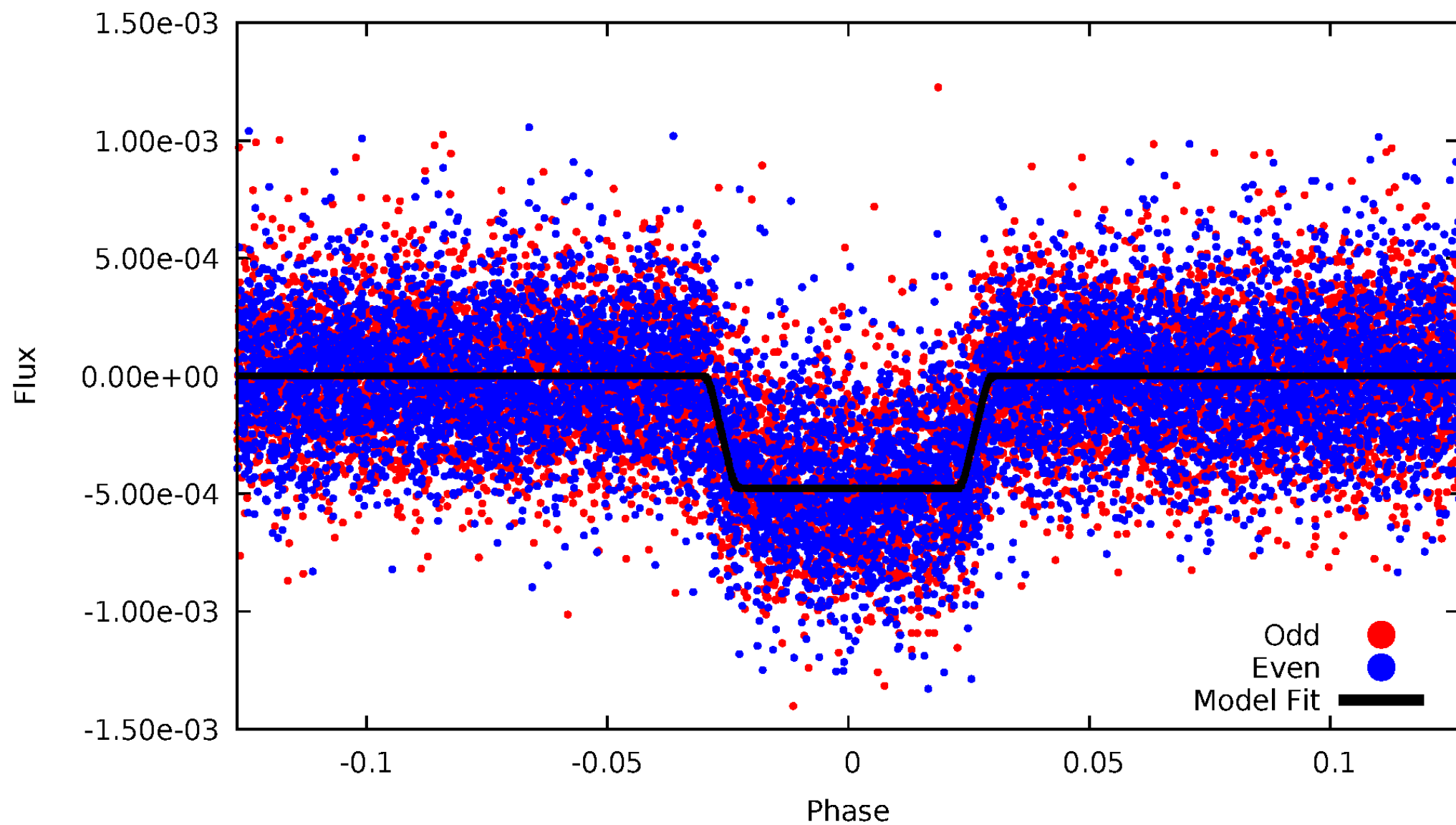
TCE 006291033-01



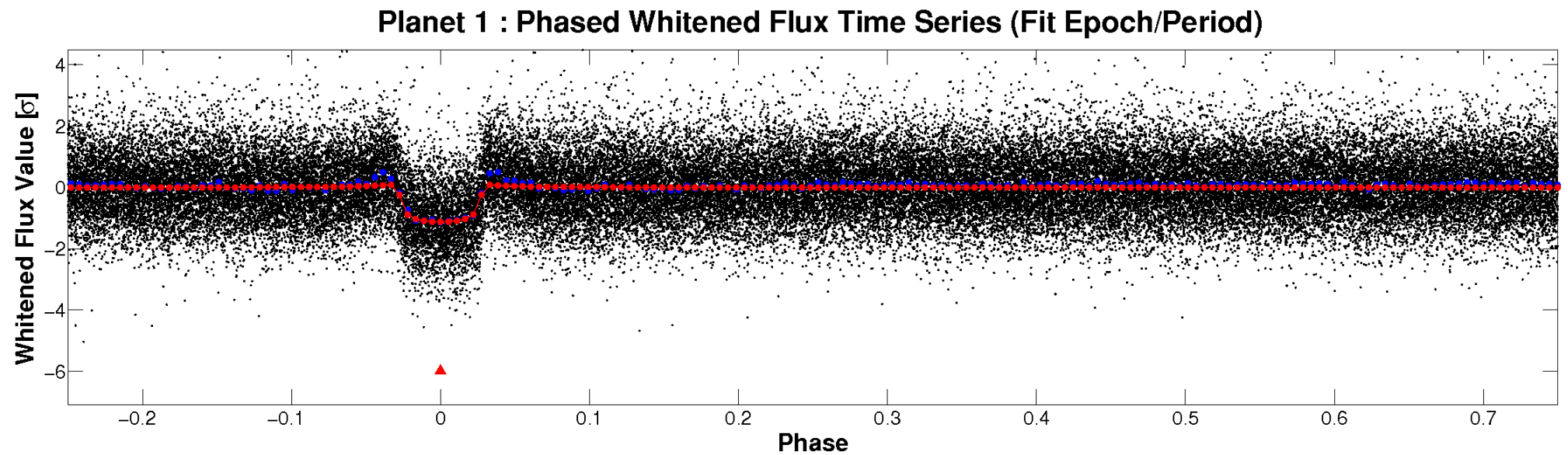
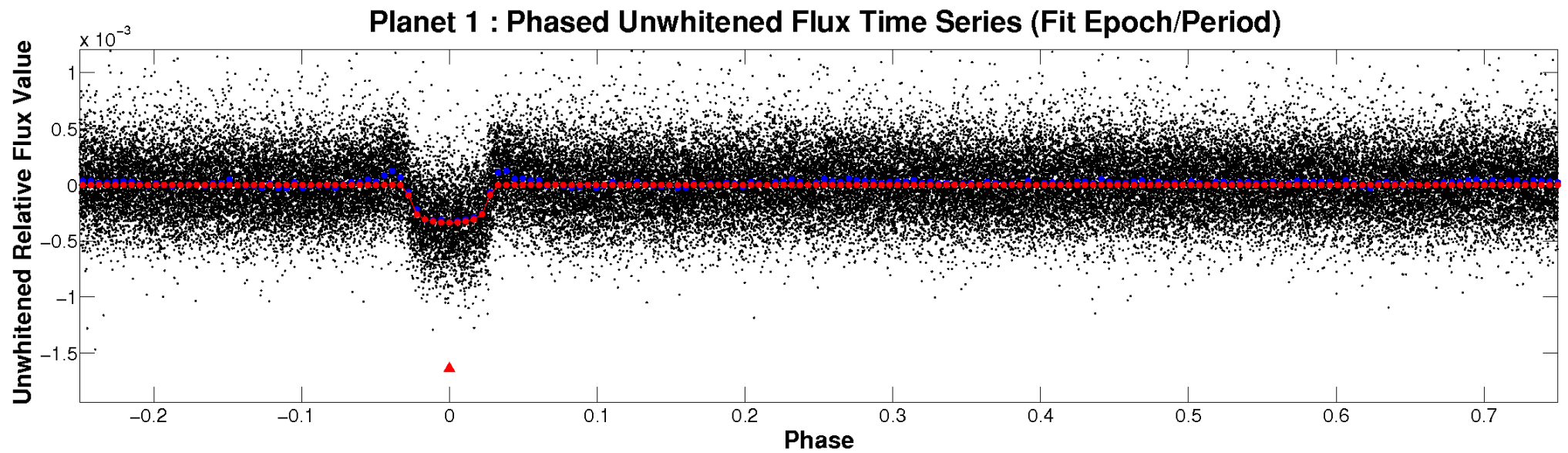


# ALT Odd/Even

TCE 006291033-01

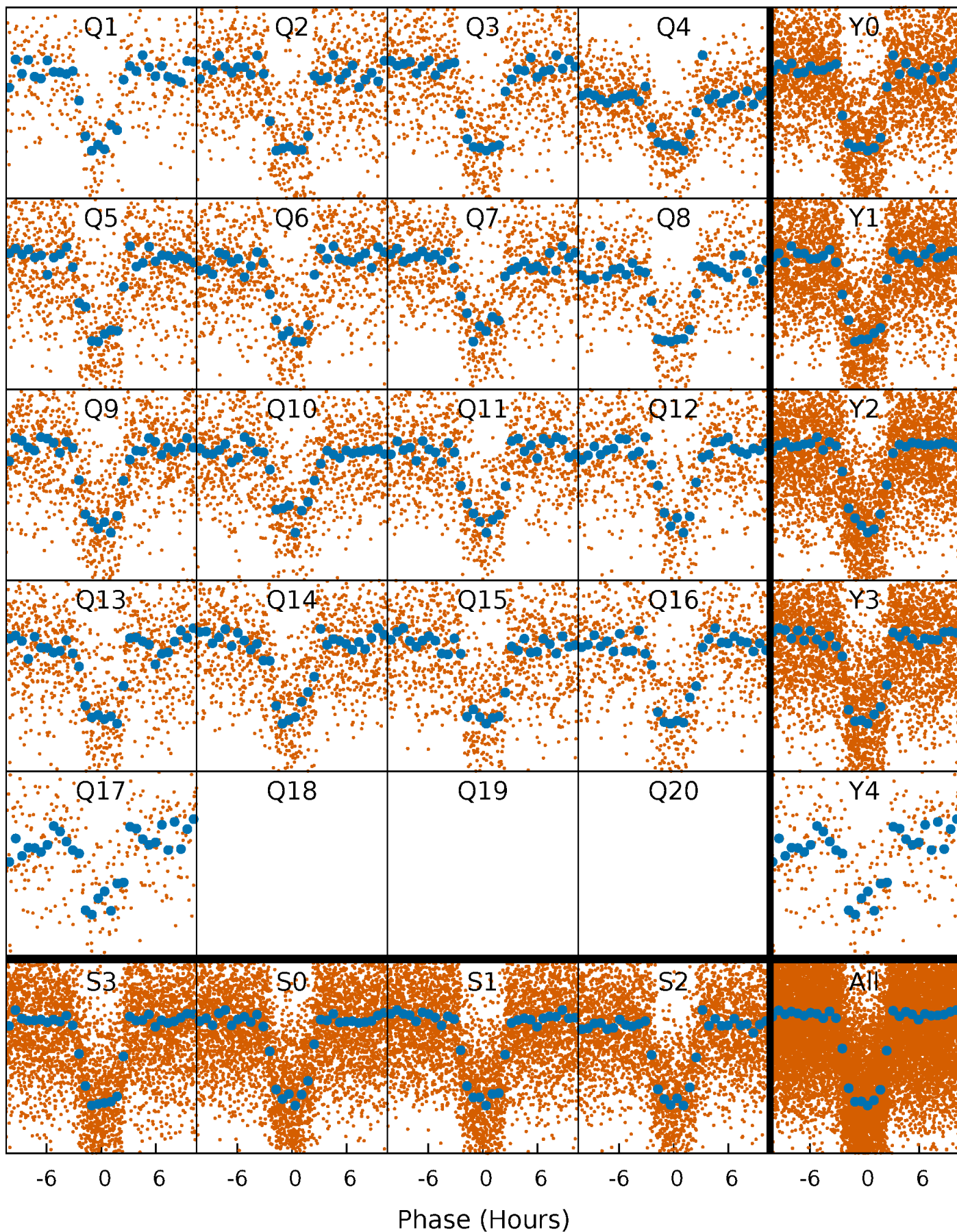


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

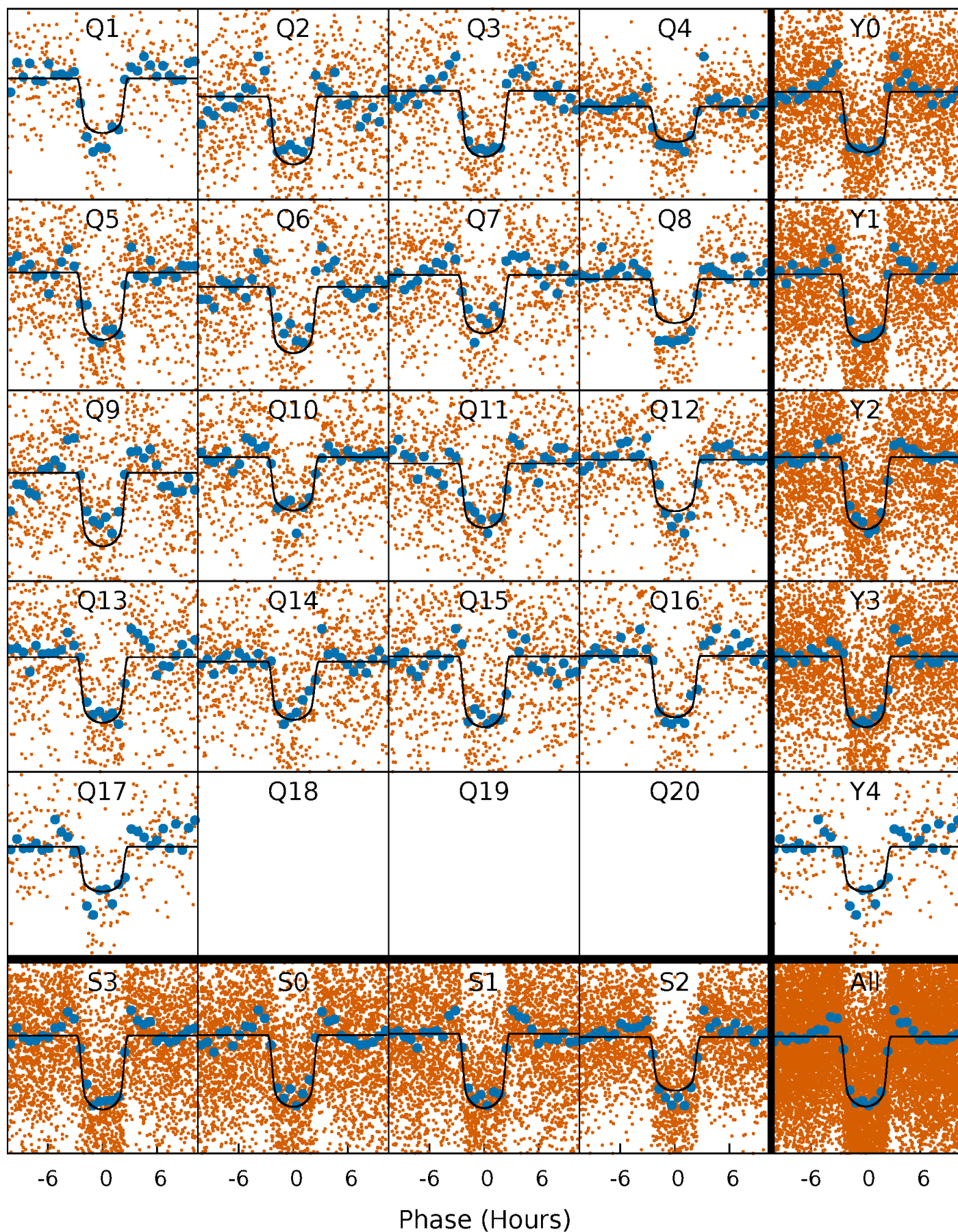
TCE 006291033-01 P= 3.705950 Days  $T_0=132.891092$  (BKJD)





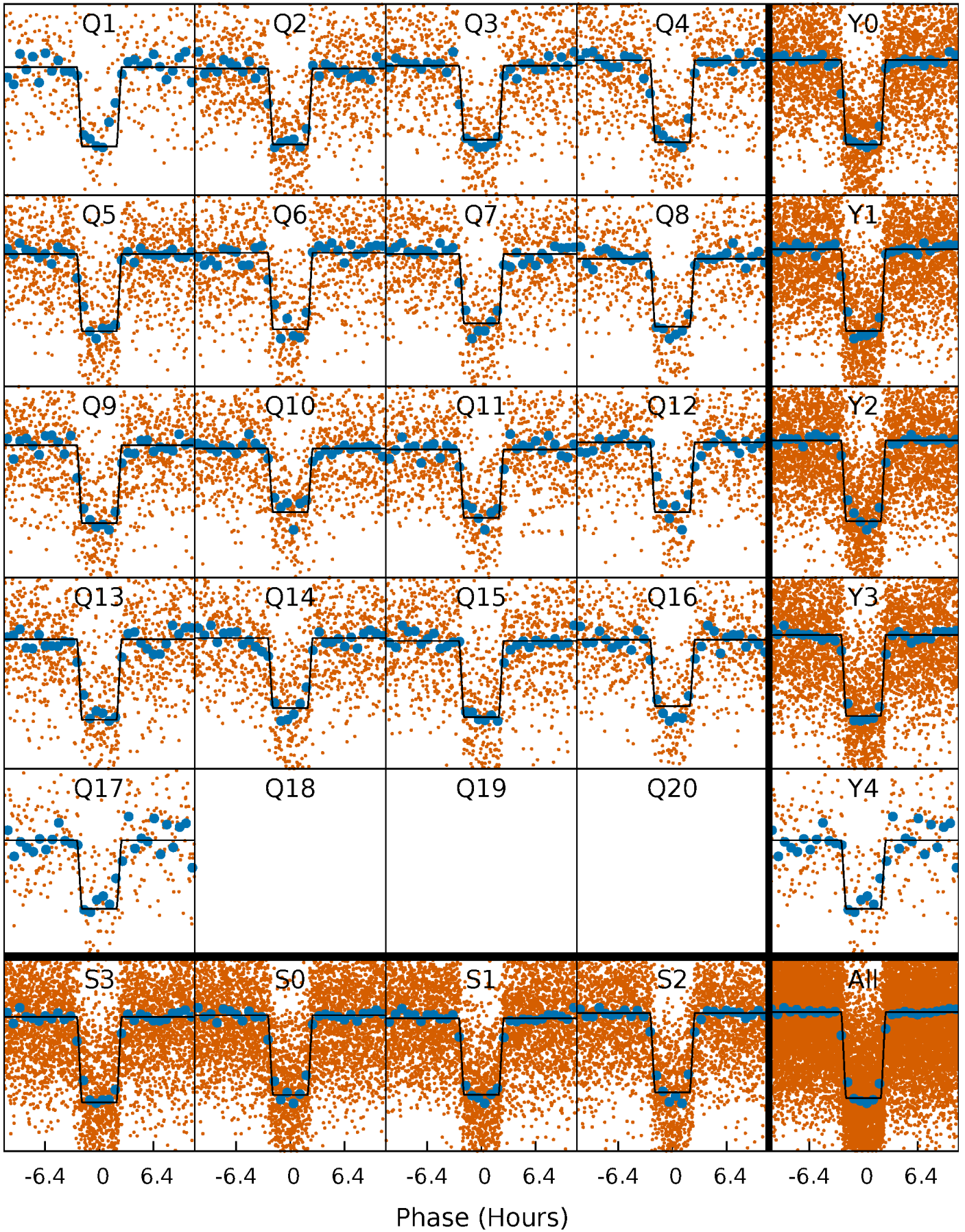
# DV Quarter-Phased Transit Curves

TCE 006291033-01 P= 3.705950 Days  $T_0=132.891092$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

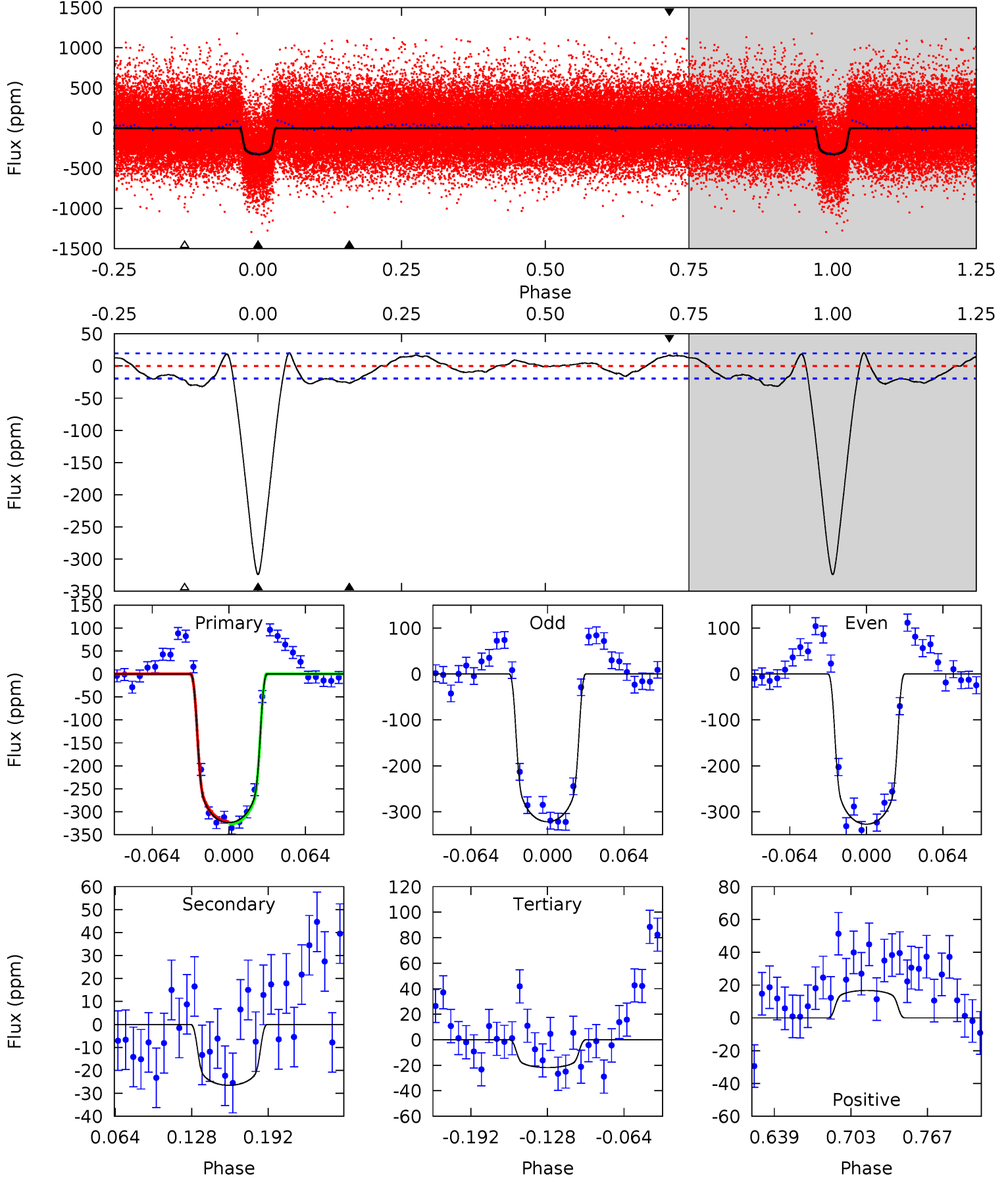
TCE 006291033-01   P= 3.705955 Days    $T_0=132.890222$  (BKJD)



# DV Model-Shift Uniqueness Test

006291033-01, P = 3.705950 Days, E = 129.185142 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
77.3	6.33	5.22	3.99	4.66	1.85	2.99	72.1	73.4	1.12	2.34	0.64	0.99	0.06	0.65

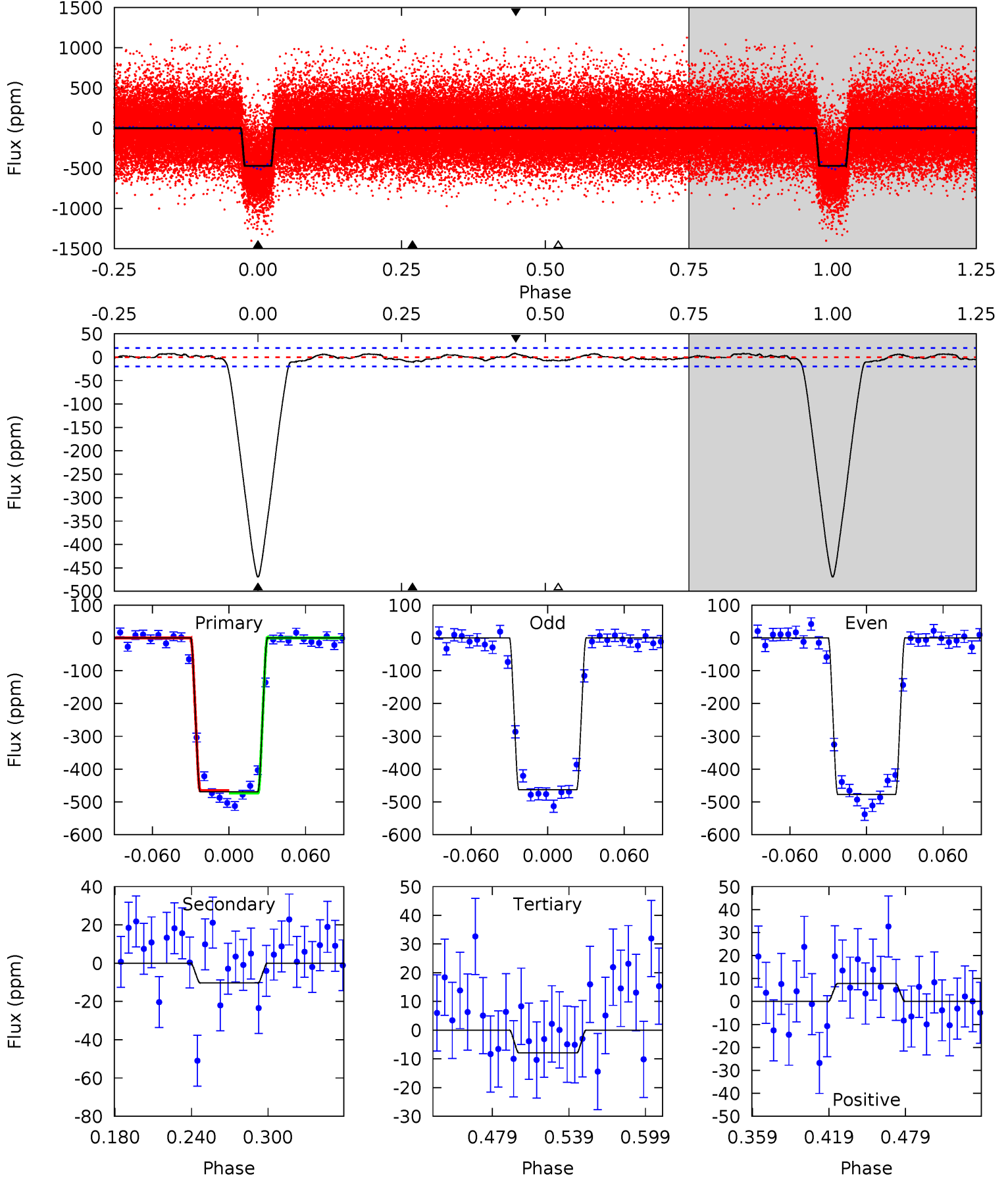




# Alt Model-Shift Uniqueness Test

006291033-01, P = 3.705955 Days, E = 129.184267 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
110.5	2.43	1.87	1.84	4.67	1.88	1.01	108.6	108.6	0.56	0.59	1.71	0.99	0.02	0.89





### Stellar Parameters For KIC 006291033

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6187^{+197}_{-241}$	$4.409^{+0.087}_{-0.203}$	$-0.260^{+0.300}_{-0.300}$	$1.034^{+0.326}_{-0.140}$	$0.997^{+0.158}_{-0.115}$	$1.272^{+0.498}_{-0.690}$
	+3%/-4%	+2%/-5%	+115%/-115%	+32%/-14%	+16%/-12%	+39%/-54%
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 006291033-01 / KOI 0452.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-27 \pm 4$	$2.28^{+0.39}_{-0.23}$	$1812^{+132}_{-102}$	$3568^{+120}_{-131}$	$5.993^{+1.746}_{-1.616}$
Alt.	$-10 \pm 4$	$2.51^{+0.42}_{-0.24}$	$1817^{+130}_{-102}$	$2953^{+201}_{-258}$	$1.896^{+0.983}_{-0.846}$

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

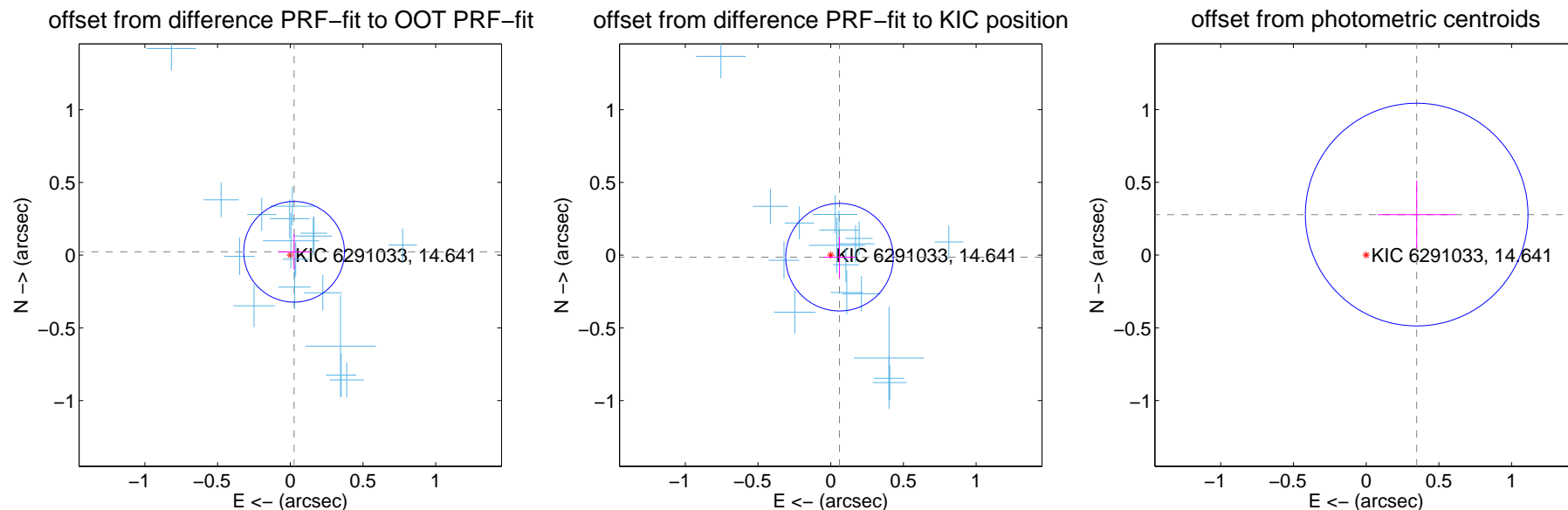
## DV Centroid Data

Supplemental centroid analysis for 006291033-01. Kepler magnitude: 14.64. Transit SNR 57.90

There are 17 quarters with good PRF difference image offsets

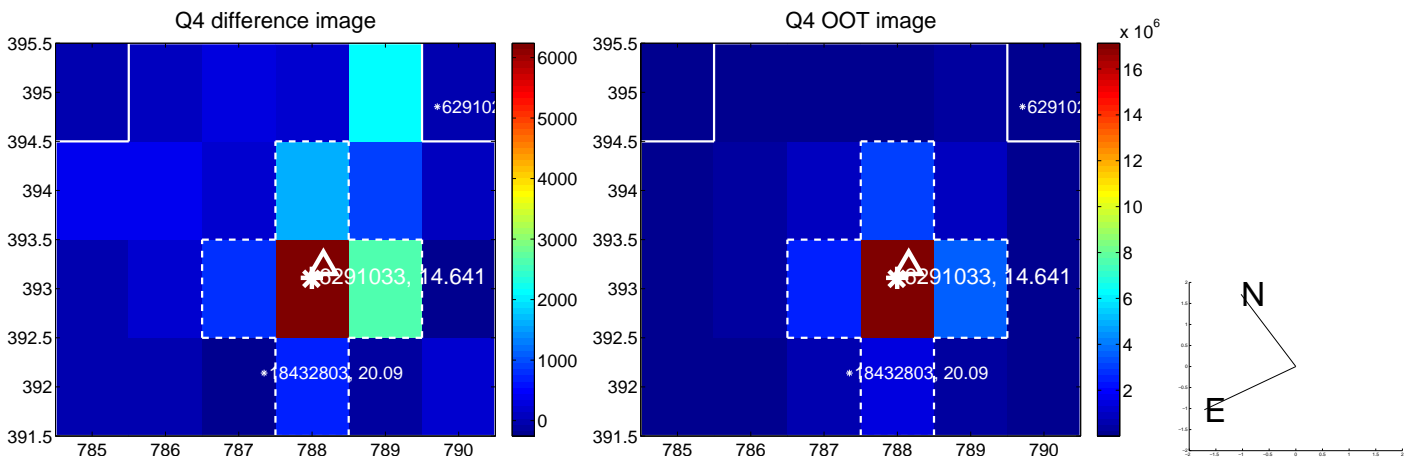
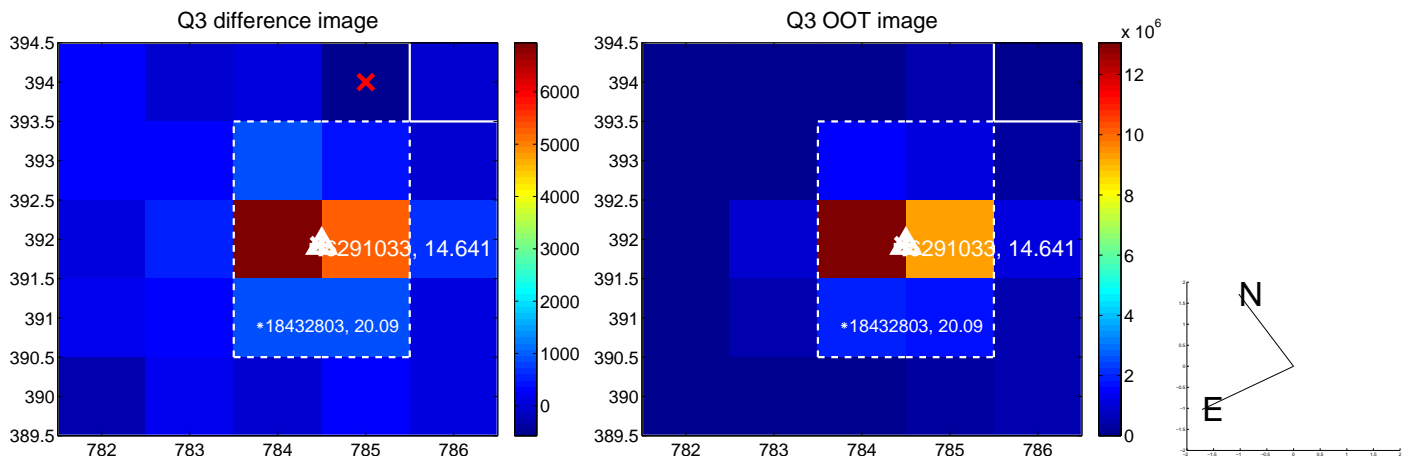
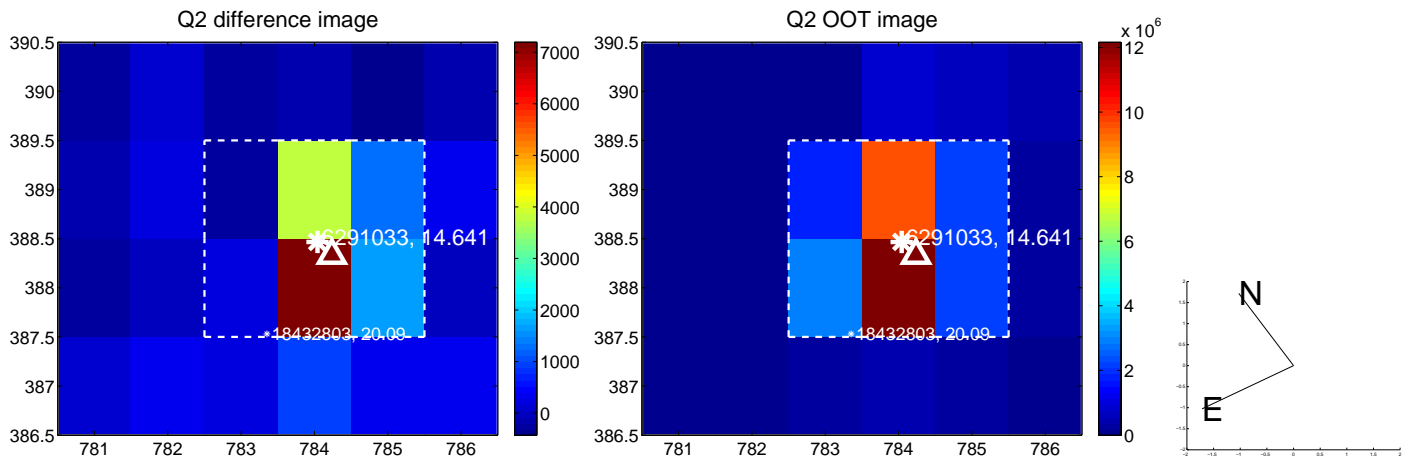
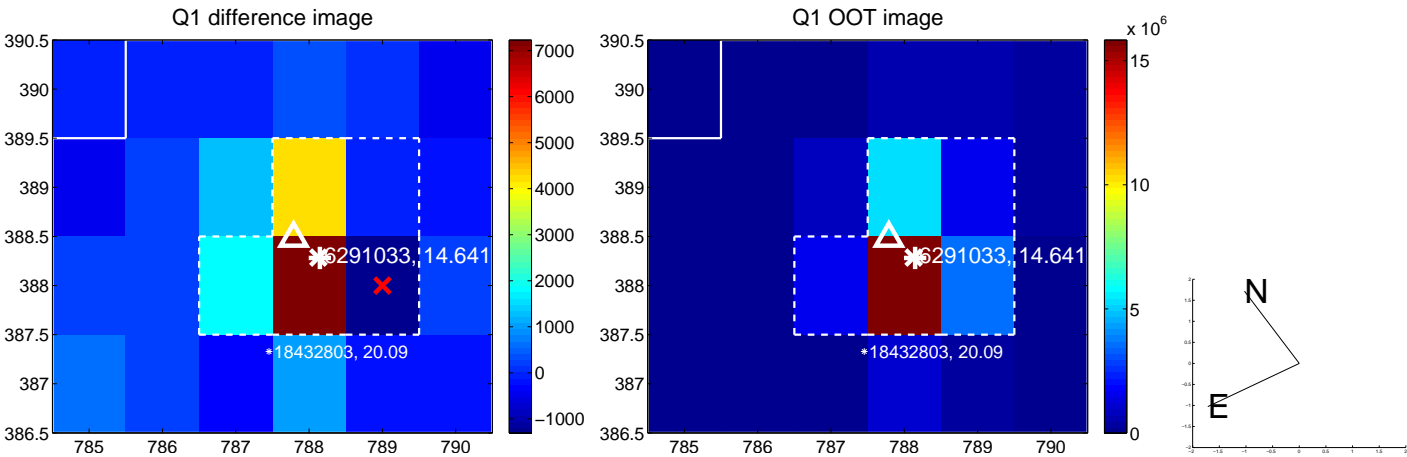
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.035 \pm 0.115$	0.30	$-0.026 \pm 0.110$	$0.023 \pm 0.122$
PRF-fit source offset from KIC position	$0.062 \pm 0.123$	0.50	$-0.060 \pm 0.108$	$-0.014 \pm 0.141$
photometric centroid source offset	$0.45 \pm 0.26$	1.75	$-0.35 \pm 0.27$	$0.28 \pm 0.23$

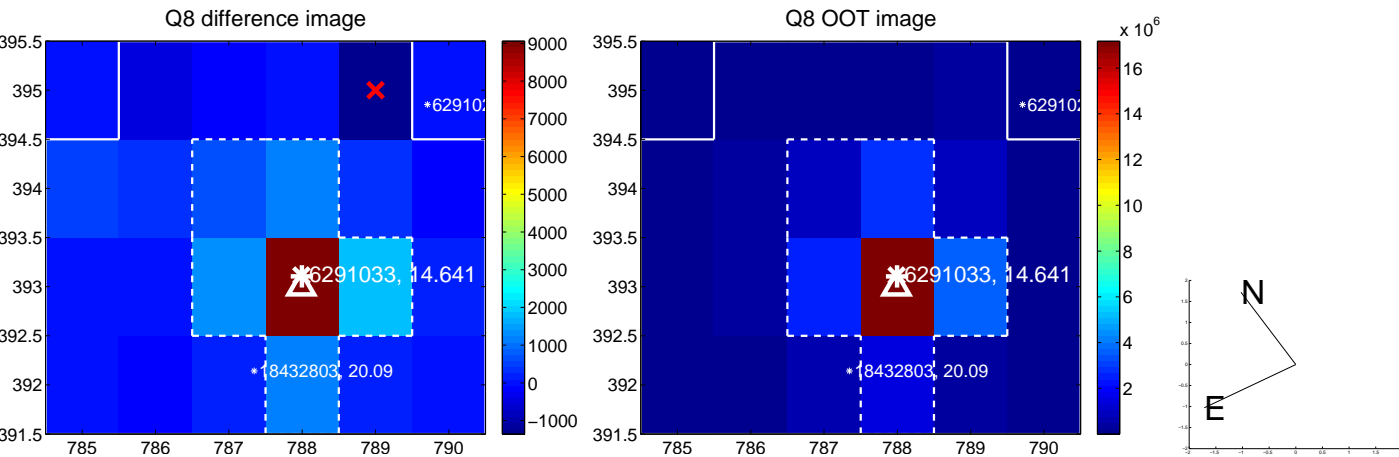
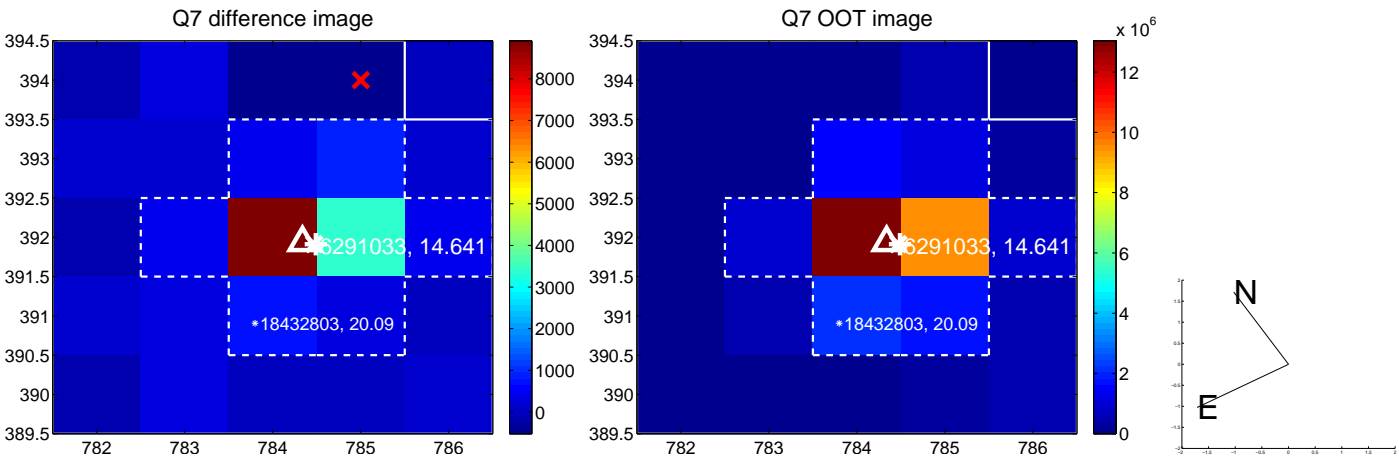
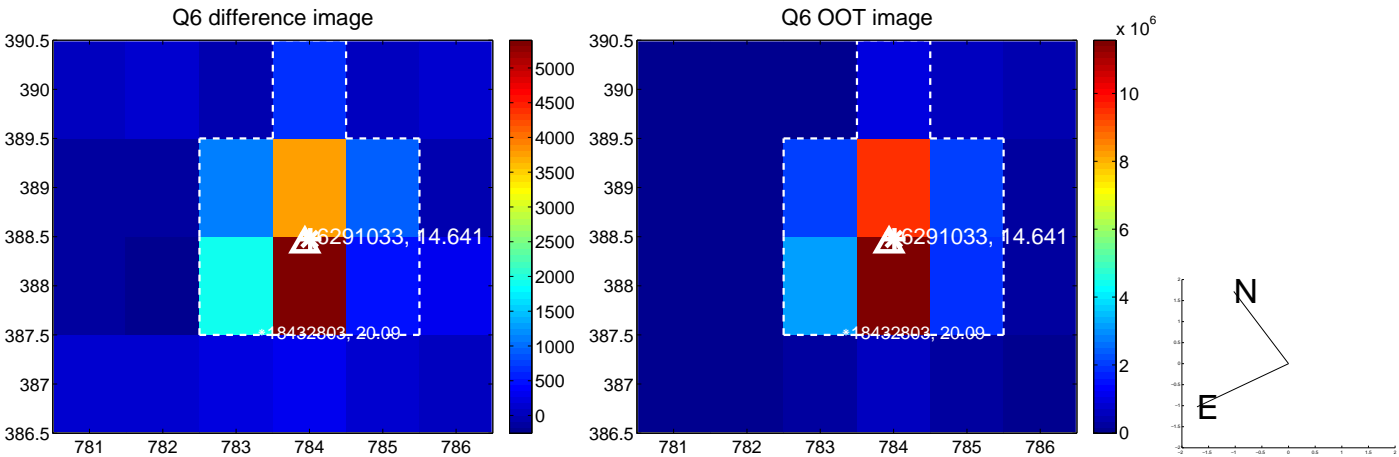
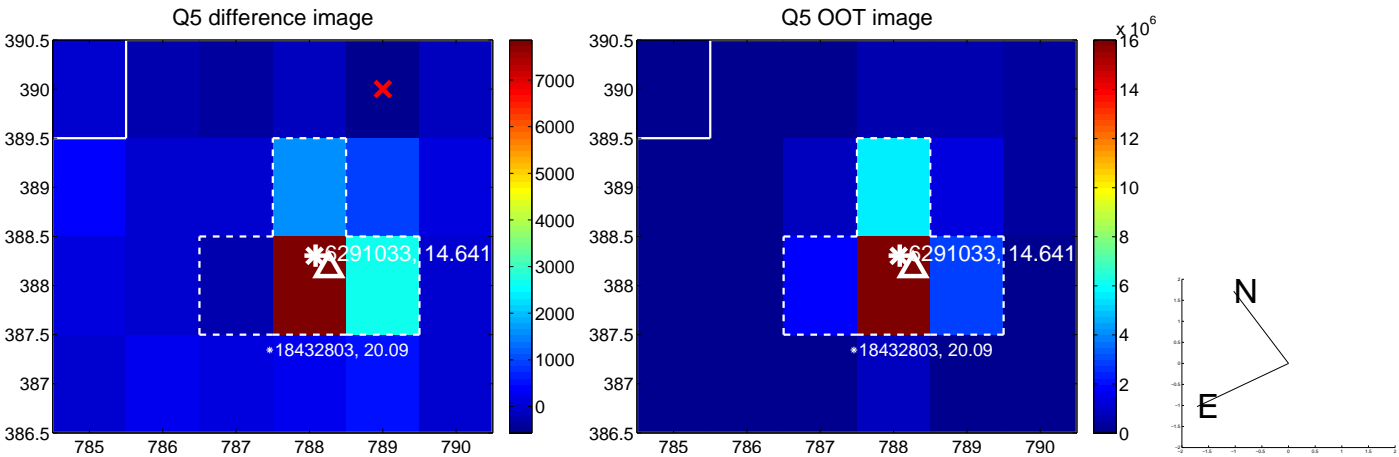


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

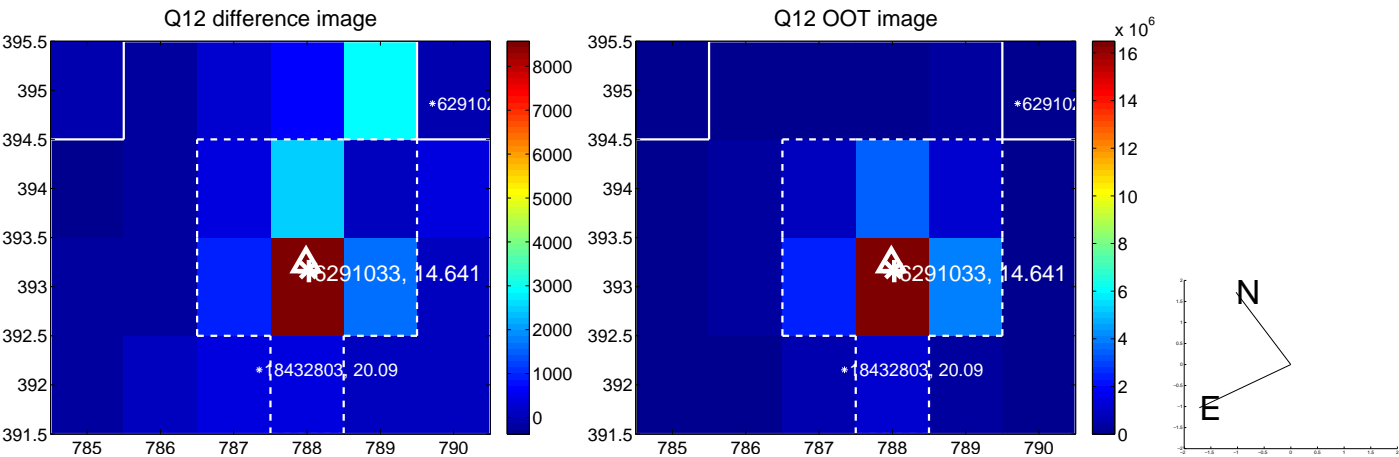
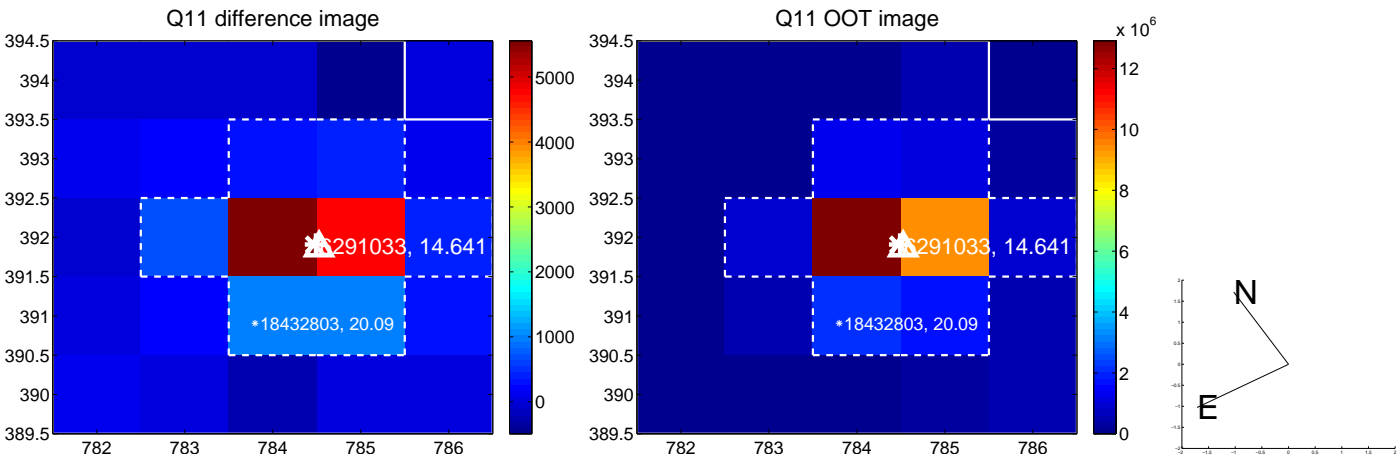
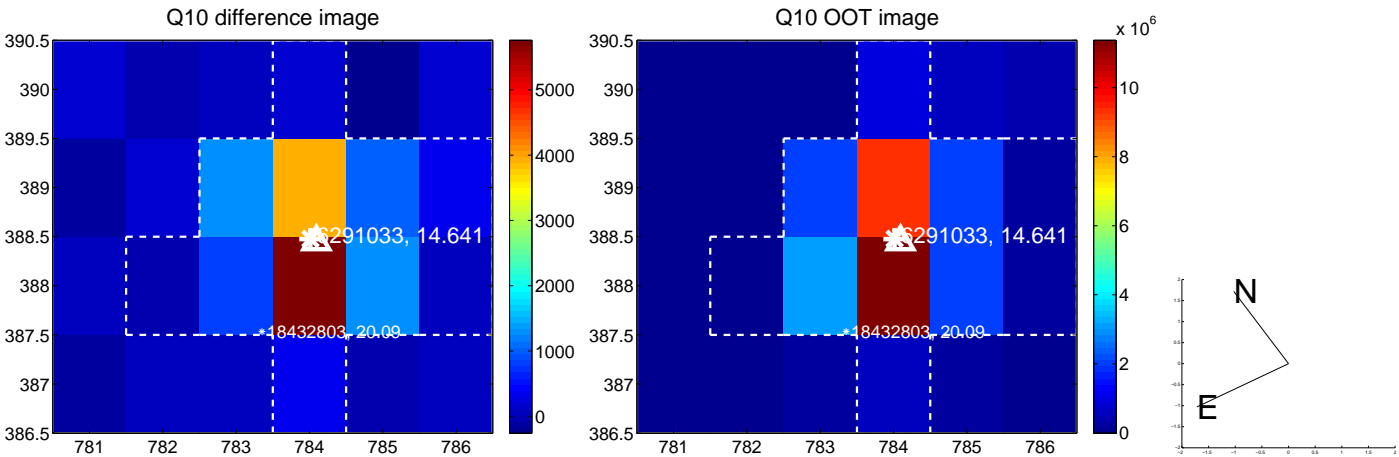
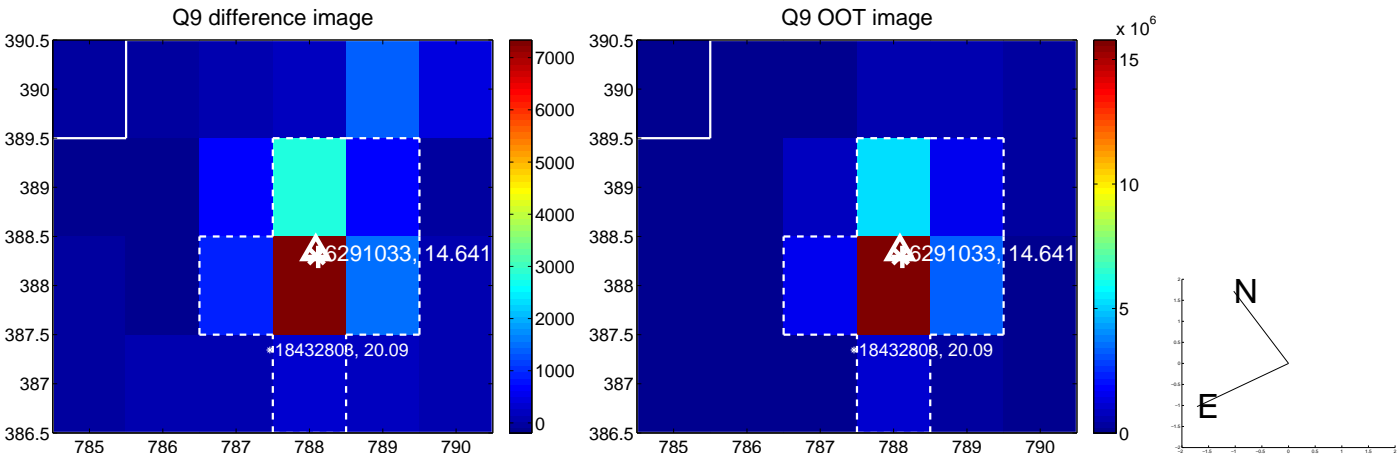


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

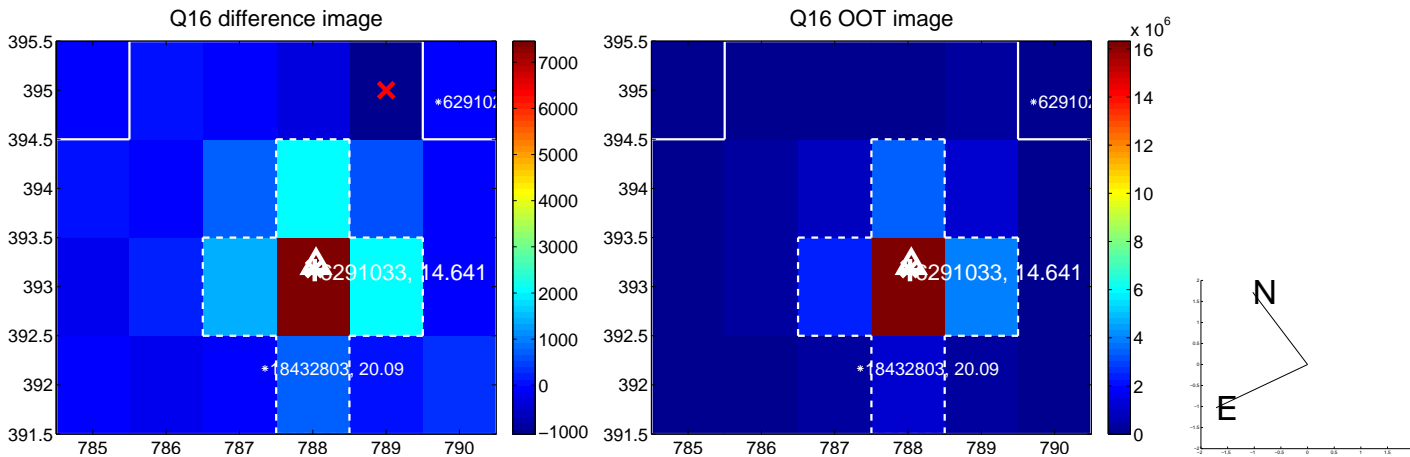
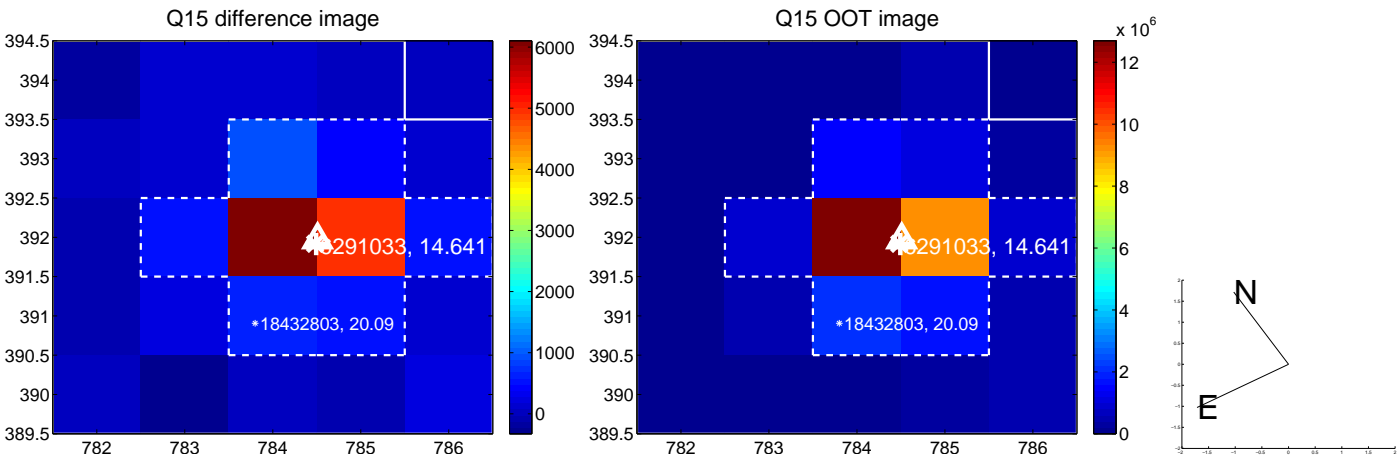
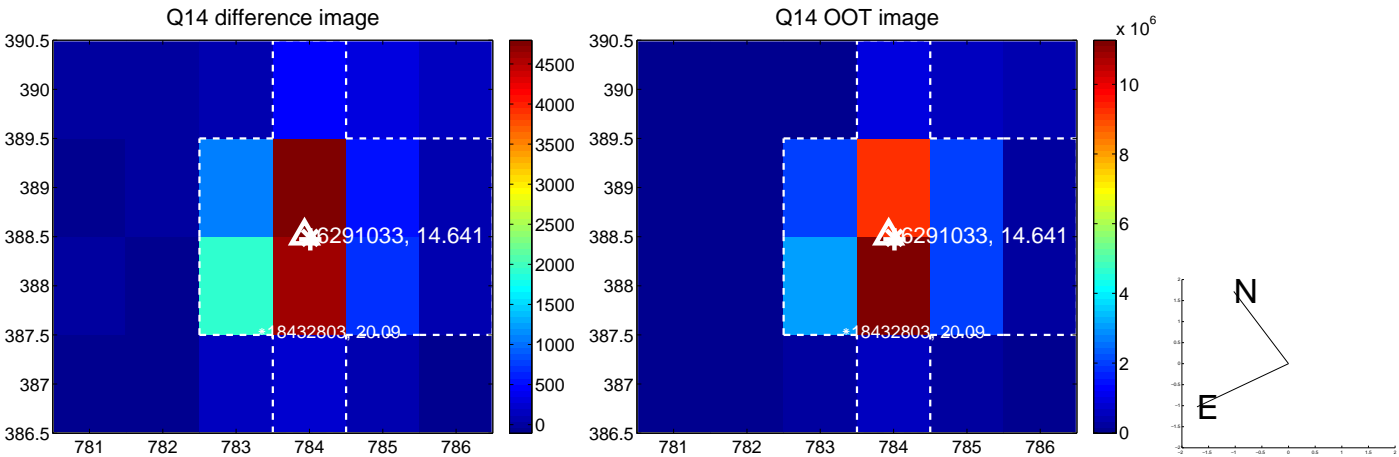
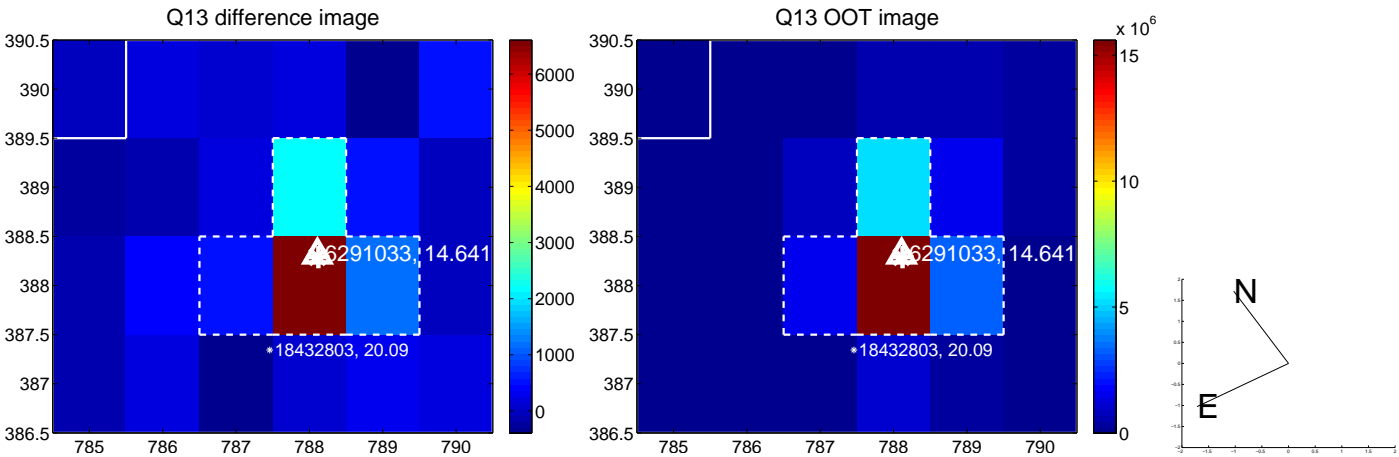




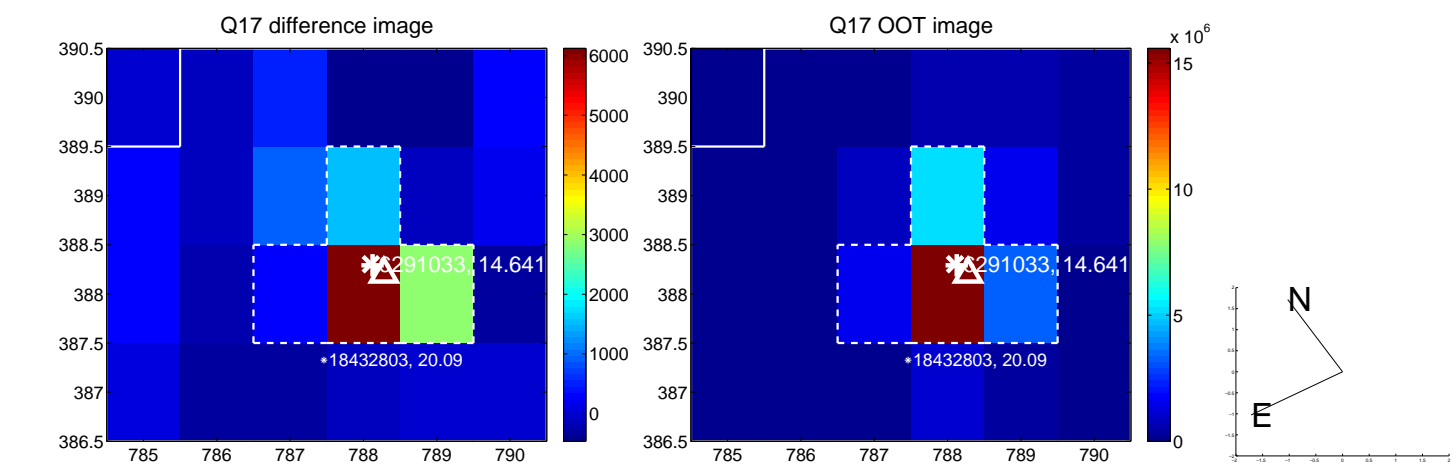
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



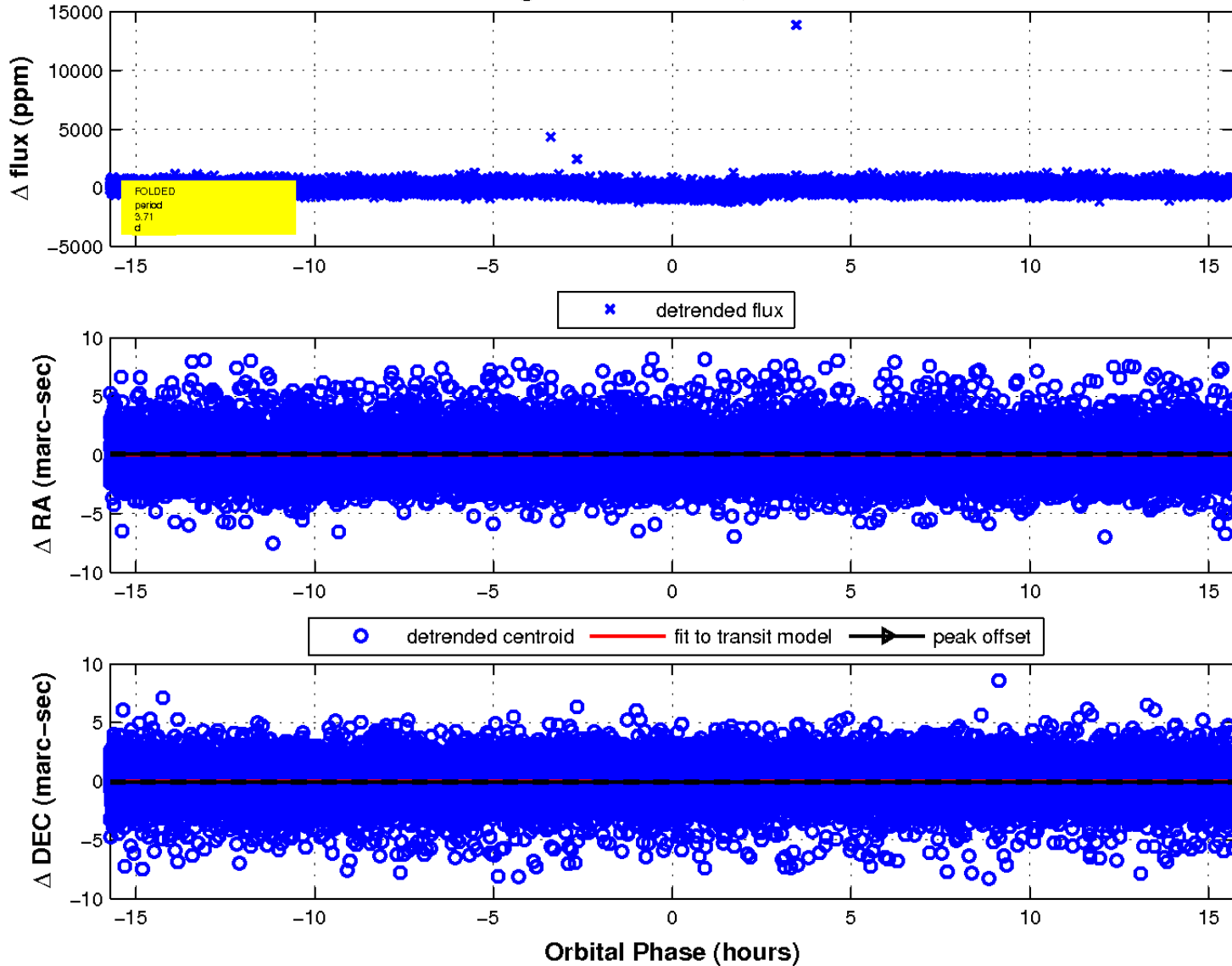
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

