

# KIC 011401182

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011401182-01	OBS	1428.01	0.927861	132.050091	310.3	1.253	42.1	53.3	0.70	4815	1.52	813.37

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011401182-01	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.

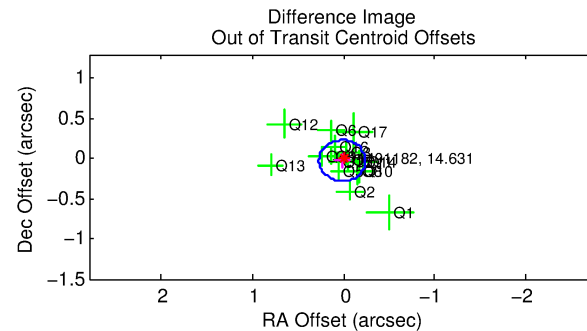
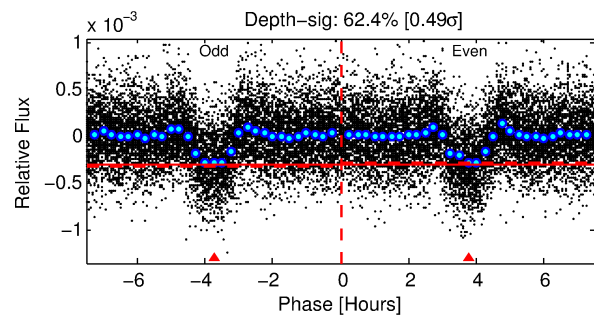
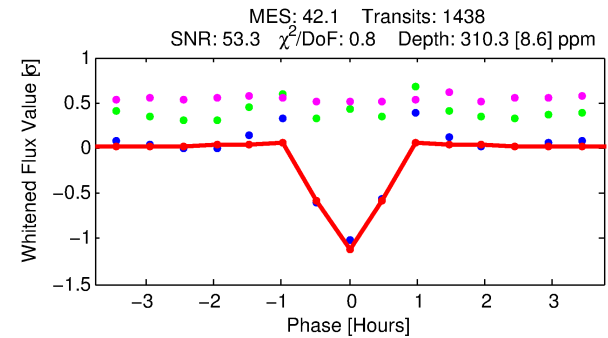
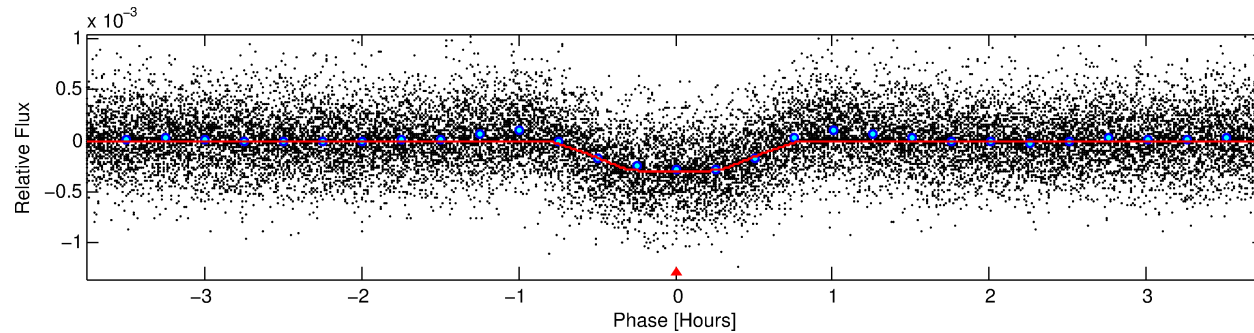
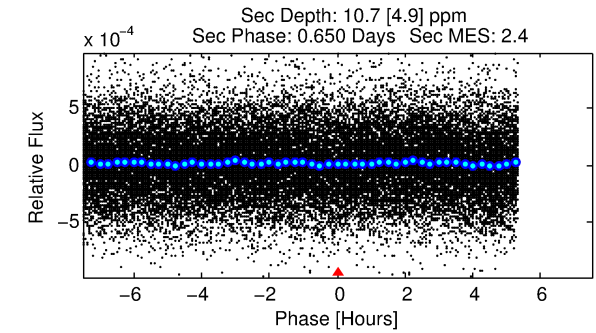
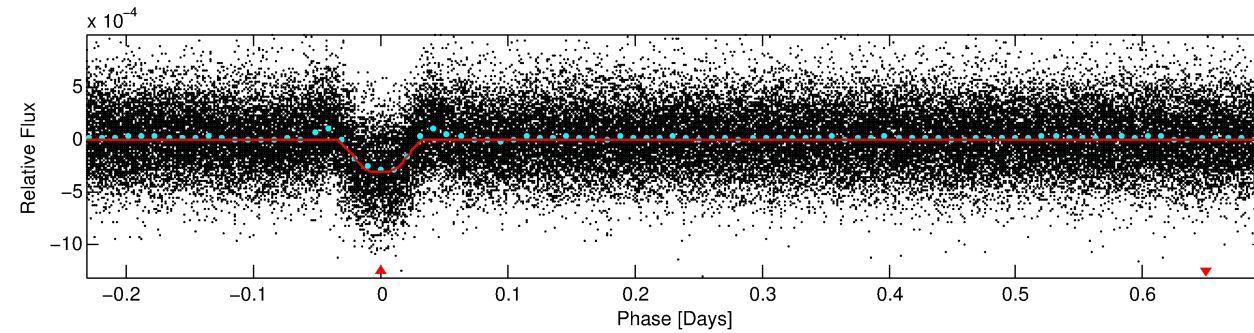
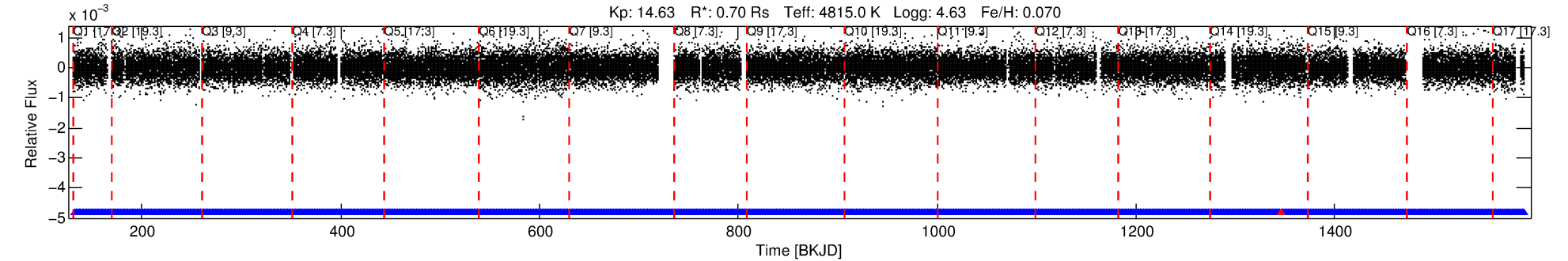
## Ephemeris Match Information For 011401182-01

No Significant Match Found

# DV One-Page Summary

KIC: 11401182 Candidate: 1 of 1 Period: 0.928 d  
KOI: K01428.01 Corr: 0.933

Kp: 14.63 R\*: 0.70 Rs Teff: 4815.0 K Logg: 4.63 Fe/H: 0.070



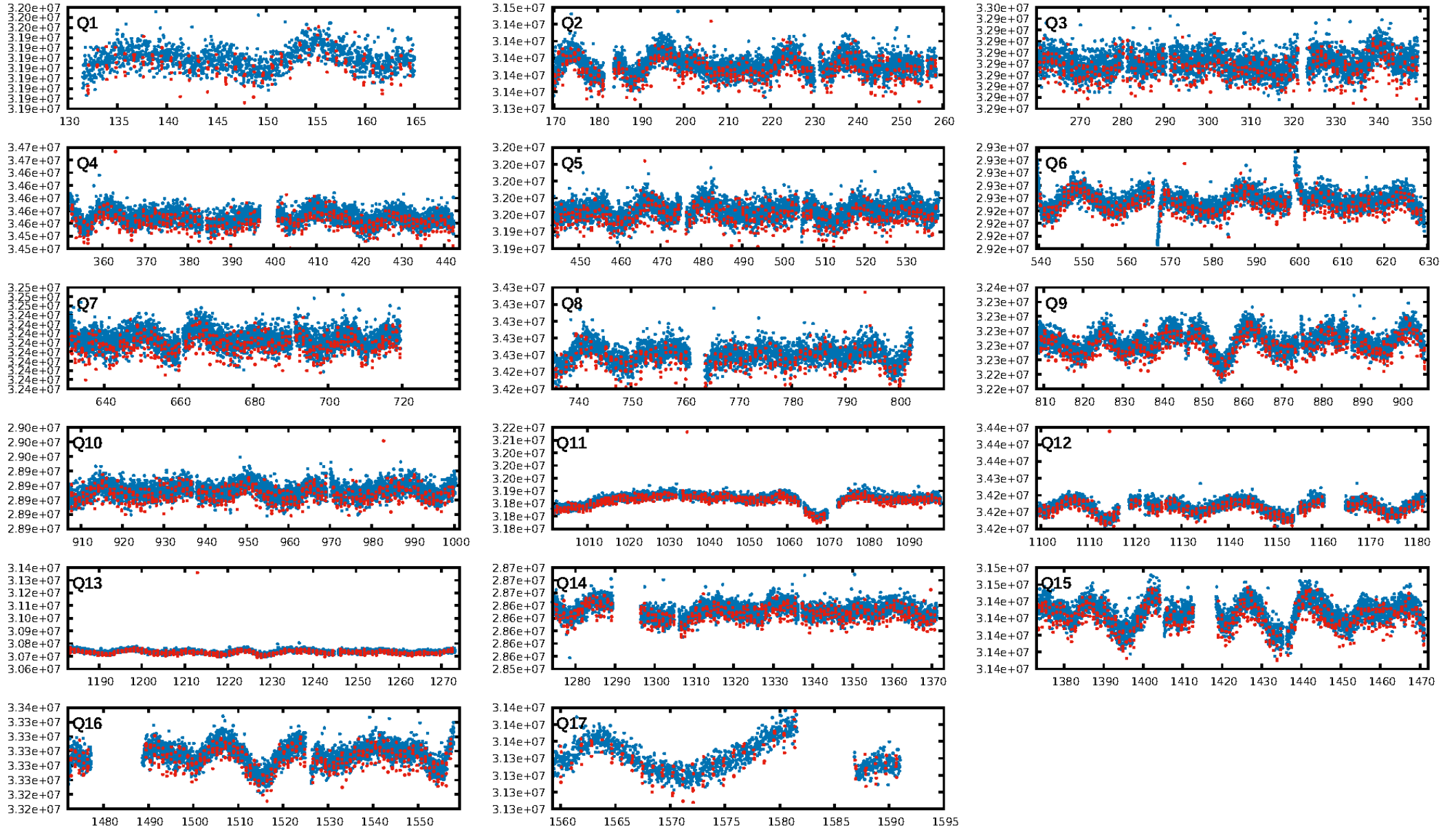
## DV Fit Results:

Period = 0.92786 [0.00000] d  
Epoch = 132.0501 [0.0004] BKJD  
Rp/R\* = 0.0199 [0.0042]  
a/R\* = 2.88 [2.01]  
b = 0.90 [0.18]  
Seff = 813.37 [107.38]  
Teff = 1362 [45] K  
Rp = 1.52 [0.35] Re  
a = 0.0170 [0.0013] AU  
Ag = 0.73 [0.46] [-0.57σ]  
Teffp = 1948 [305] K [1.90σ]

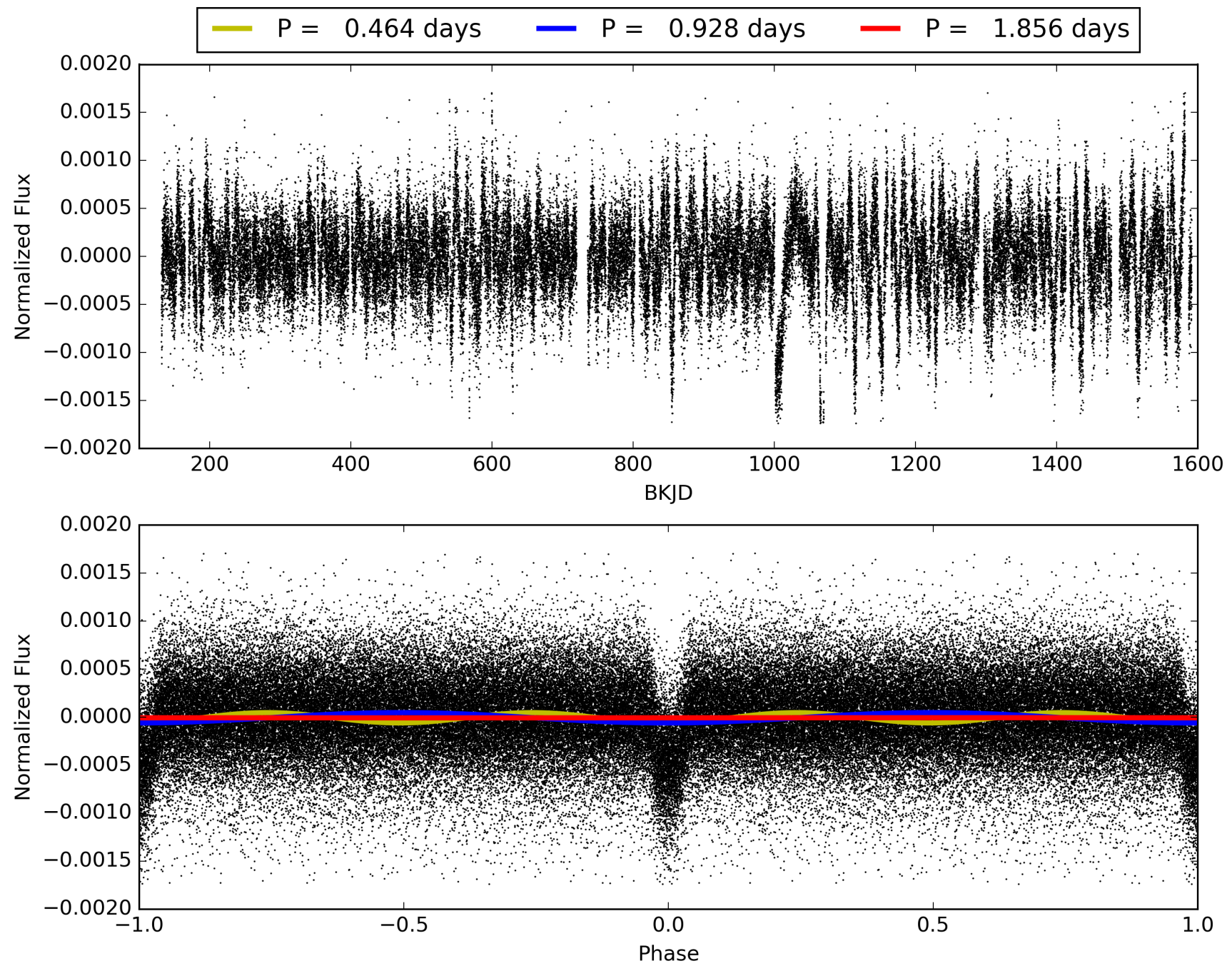
## DV Diagnostic Results:

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 [1372/1373]  
GhostDiagnostic-chr: 3.179  
Centroid-sig: 0.2%  
Centroid-so: 0.500 arcsec [2.39σ]  
OotOffset-rm: 0.029 arcsec [0.35σ]  
KicOffset-rm: 0.158 arcsec [1.78σ]  
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 011401182-01, PDC Light Curves

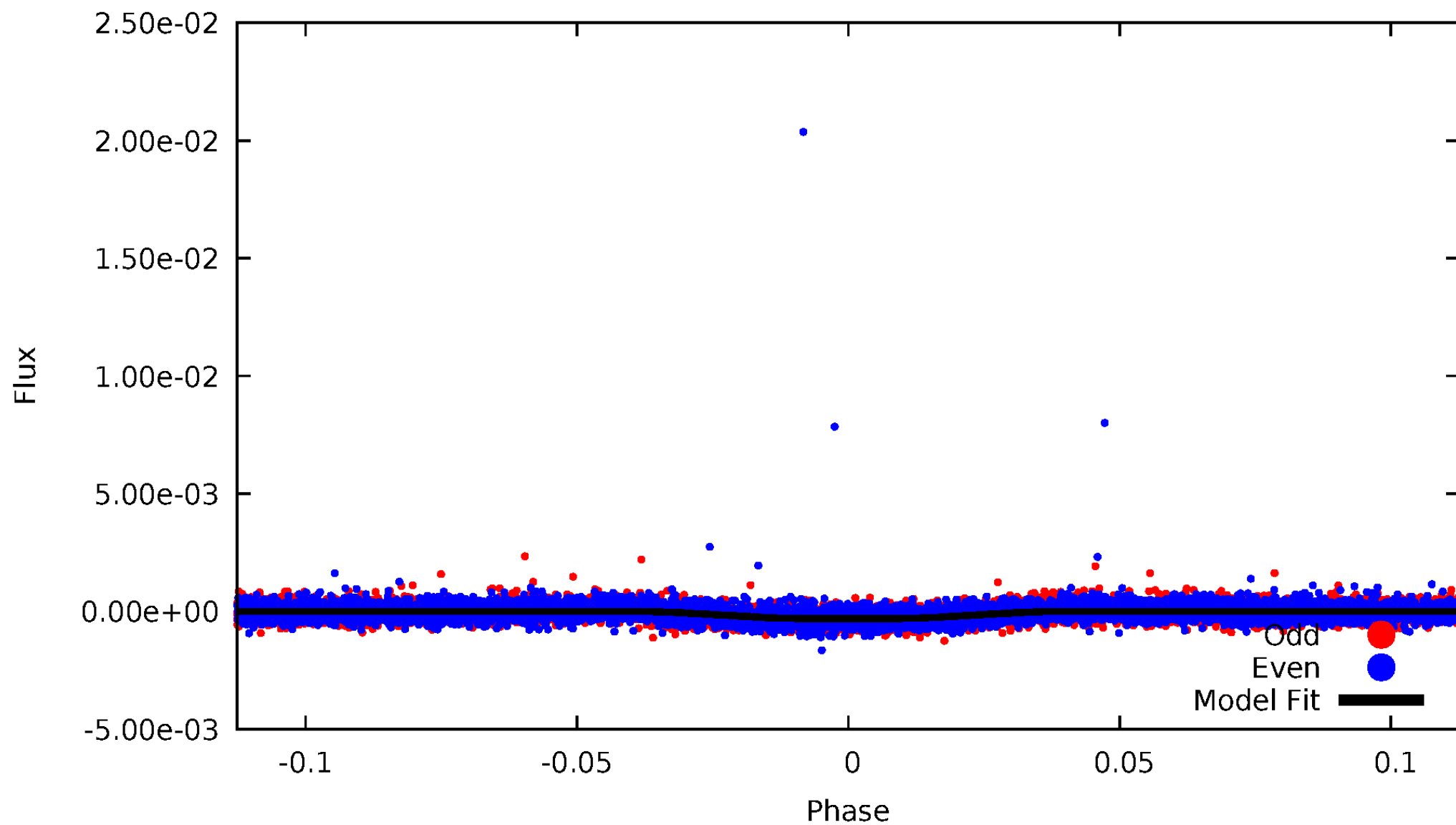


TCE 011401182-01



# DV Odd/Even

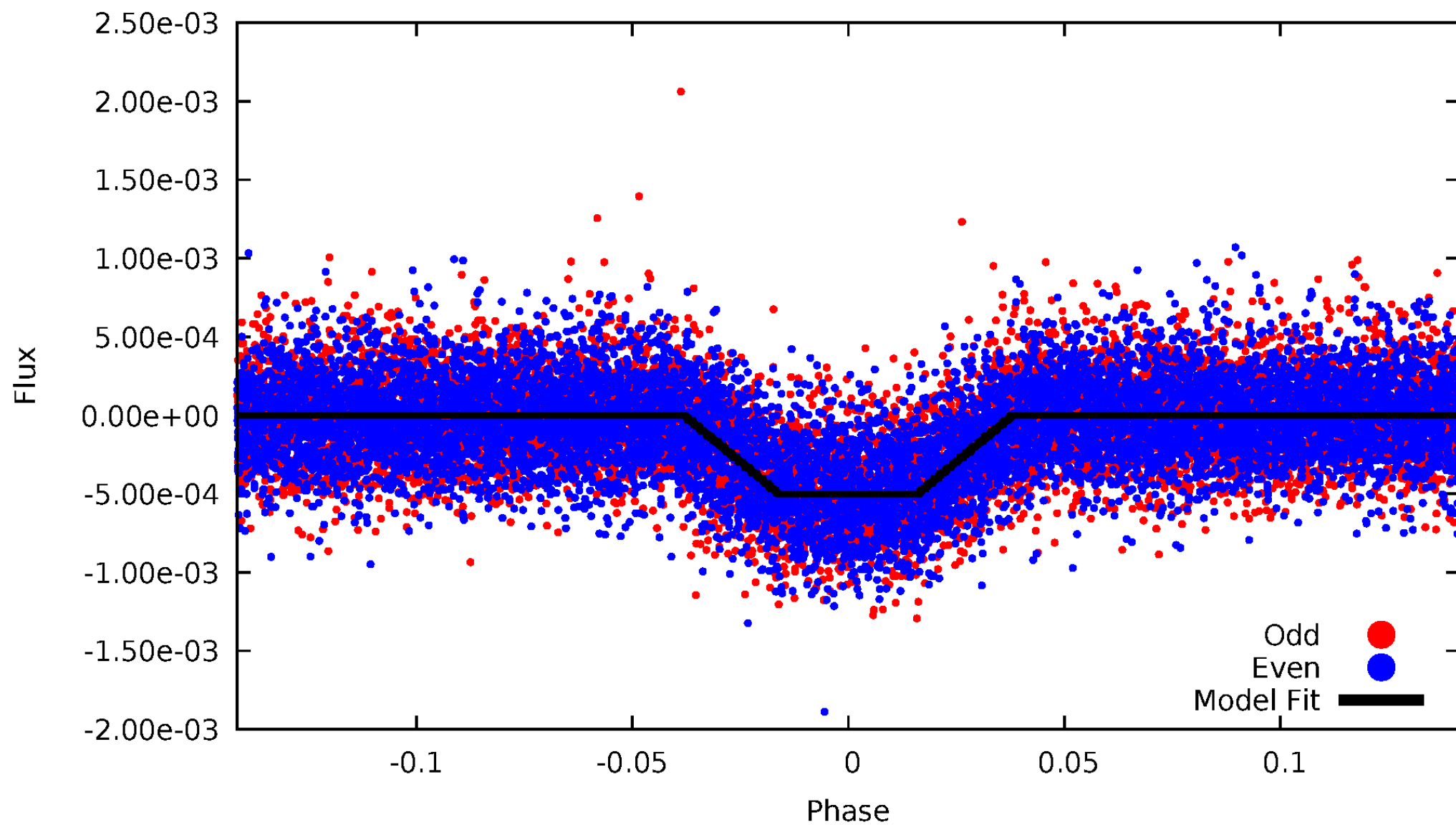
TCE 011401182-01





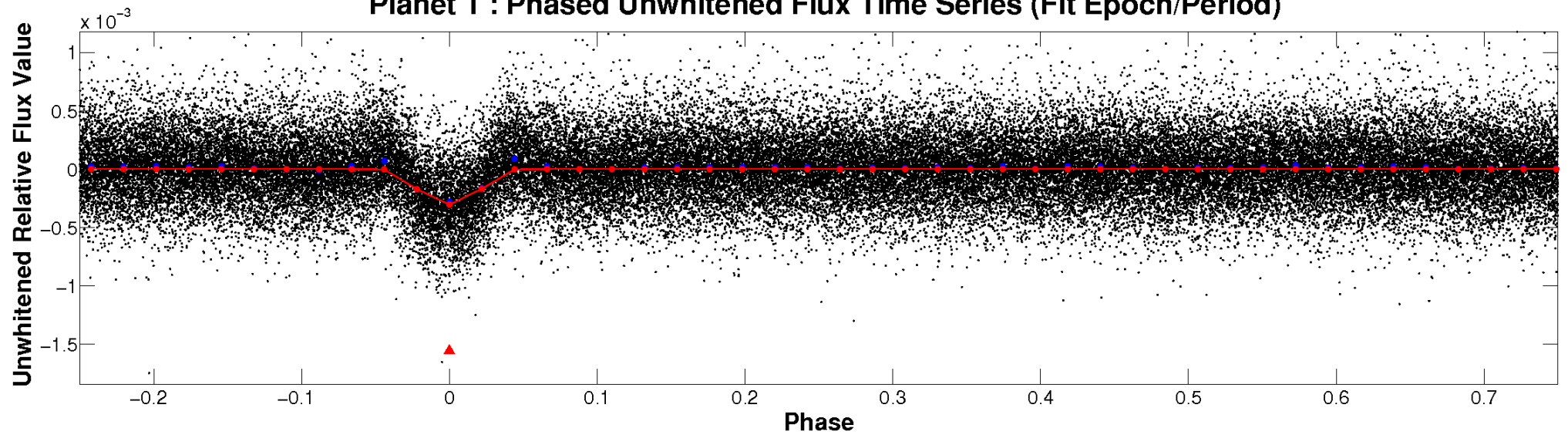
# ALT Odd/Even

TCE 011401182-01

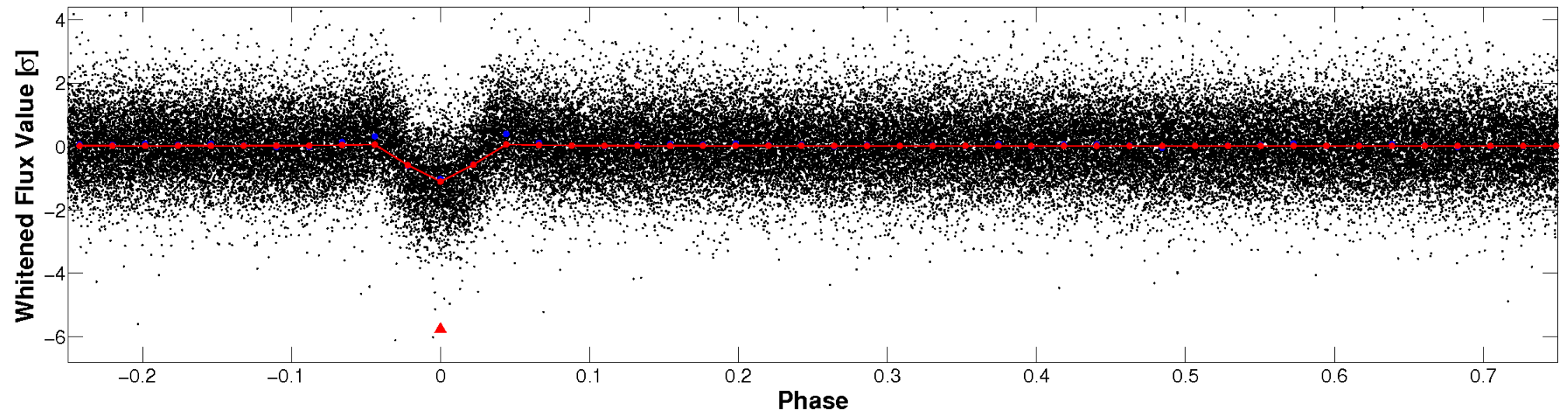


# Non-Whitened Vs. Whitened Light Curve

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

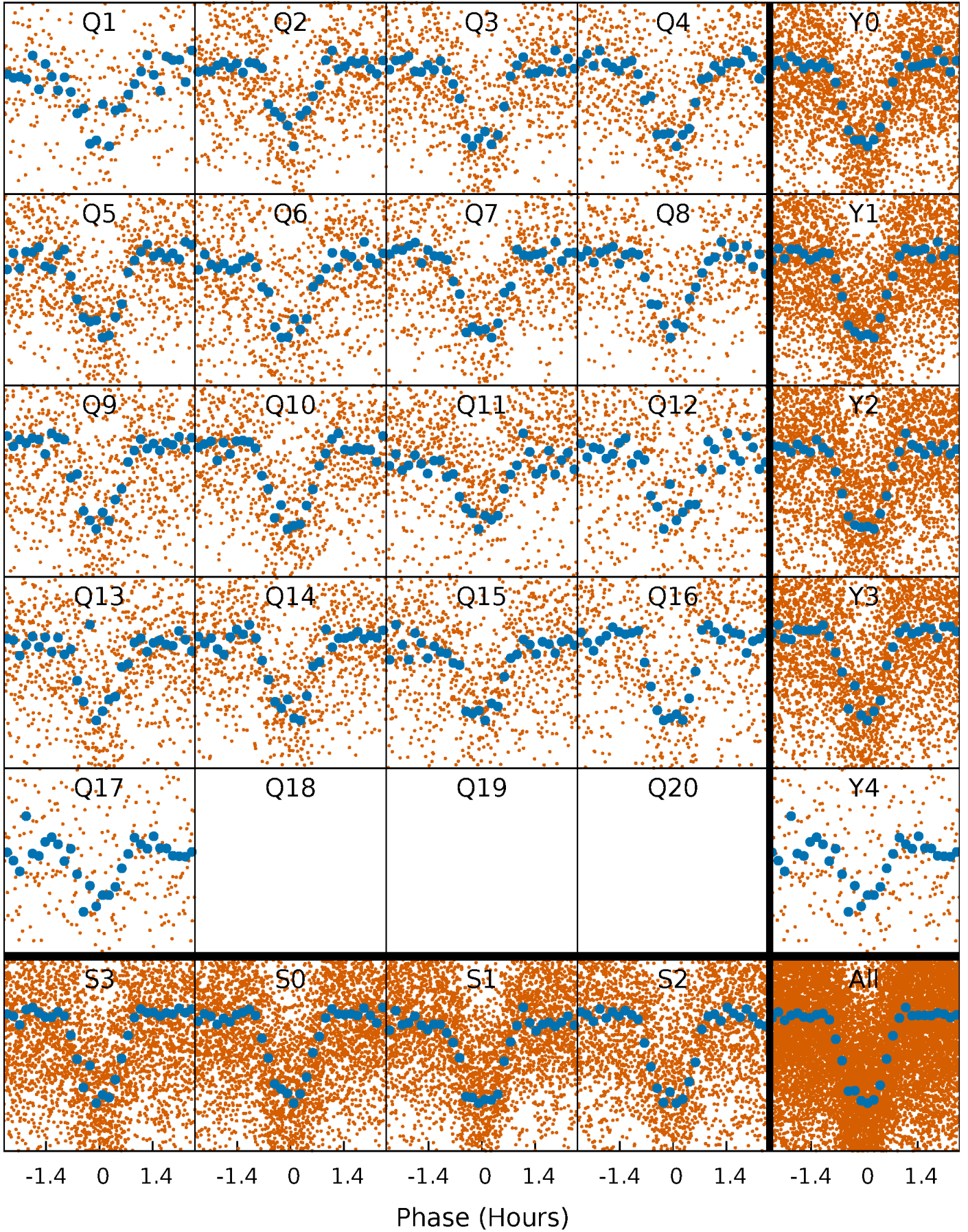


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

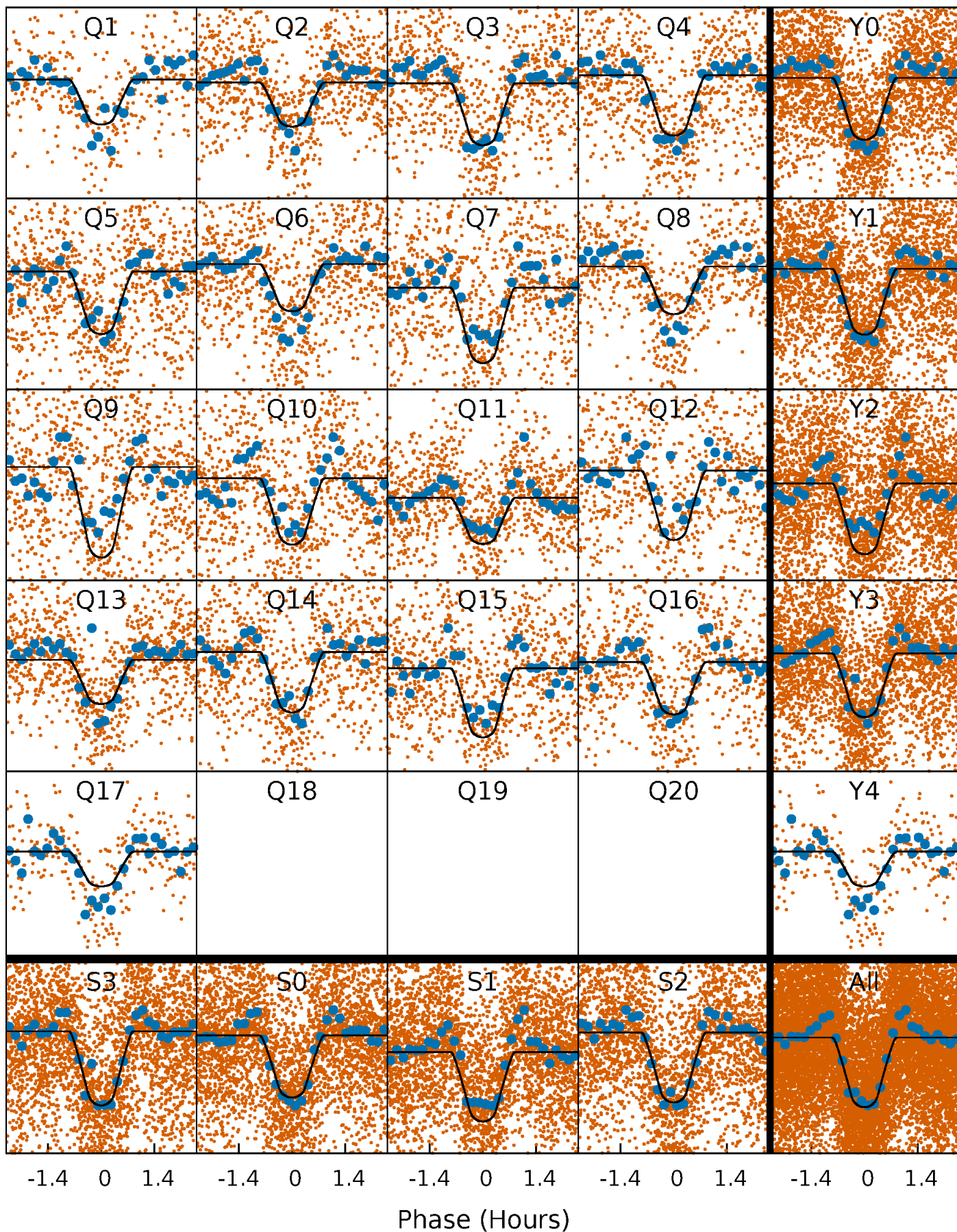
TCE 011401182-01 P= 0.927861 Days  $T_0=132.050091$  (BKJD)





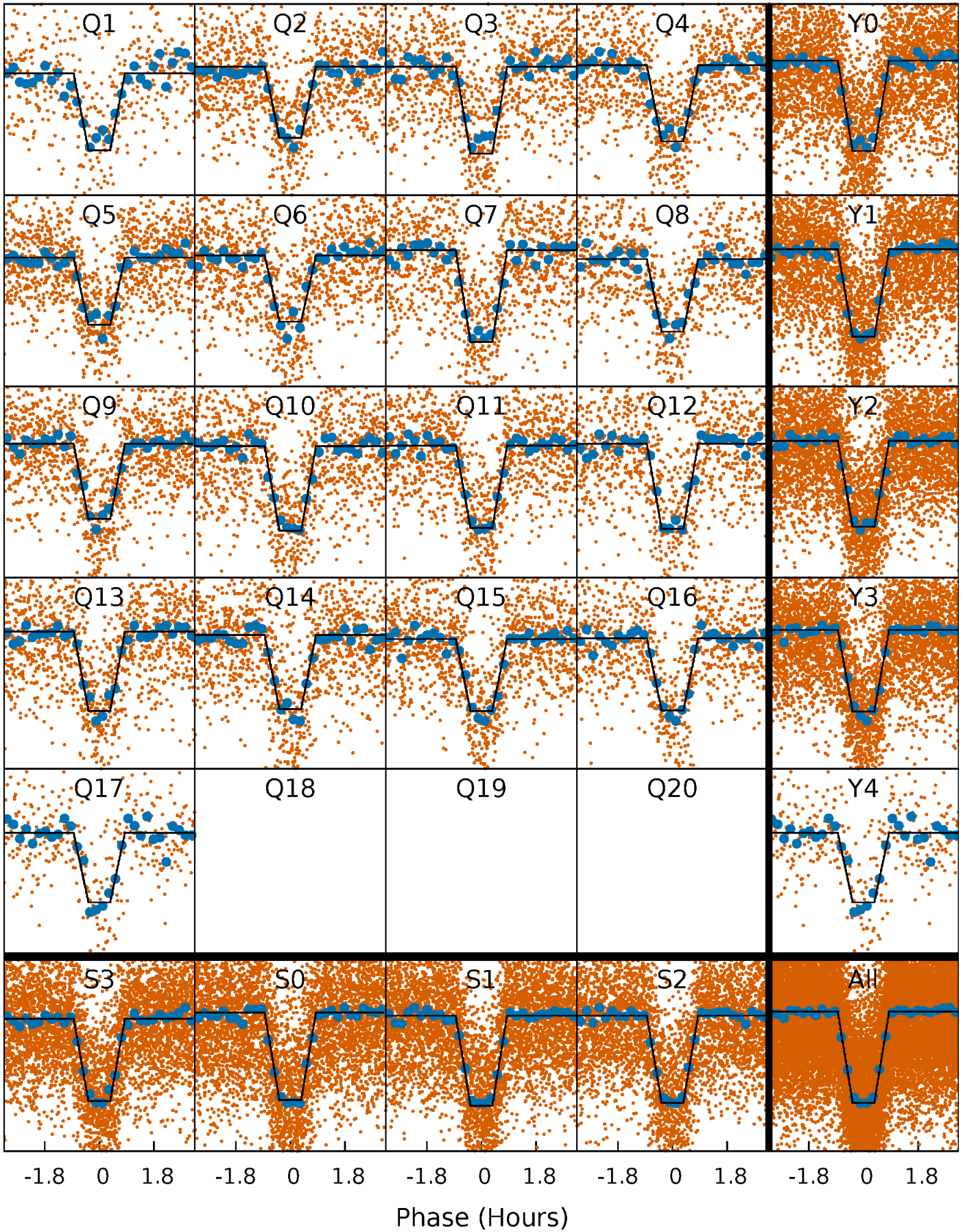
# DV Quarter-Phased Transit Curves

TCE 011401182-01 P= 0.927861 Days  $T_0=132.050091$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

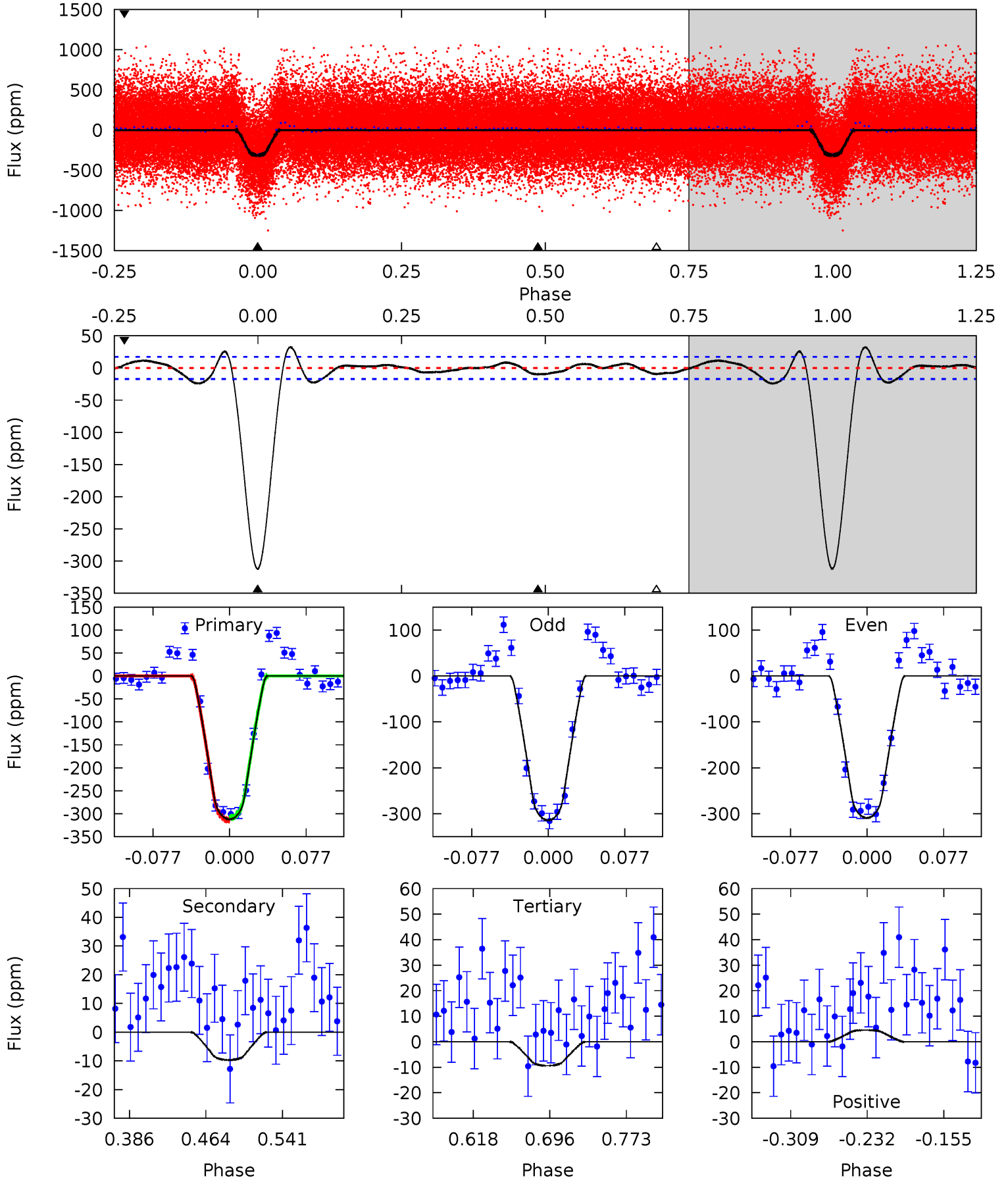
TCE 011401182-01 P= 0.927857 Days  $T_0=132.052212$  (BKJD)



# DV Model-Shift Uniqueness Test

011401182-01, P = 0.927861 Days, E = 131.122230 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
83.6	2.60	2.52	1.23	4.62	1.77	2.21	81.1	82.4	0.08	1.38	0.68	0.98	0.09	0.74

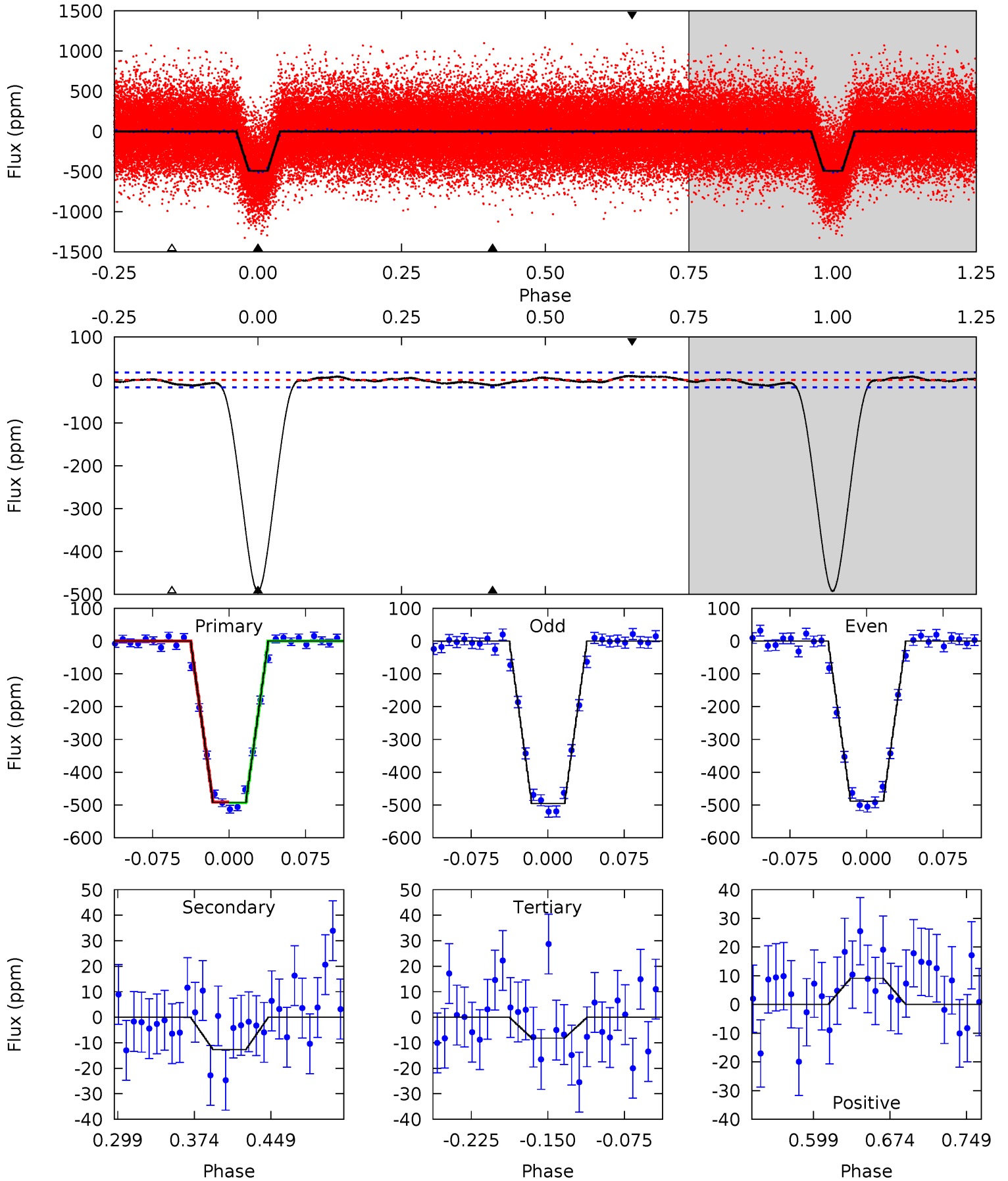




# Alt Model-Shift Uniqueness Test

011401182-01, P = 0.927857 Days, E = 131.124355 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
129.3	3.34	2.15	2.39	4.63	1.78	1.43	127.1	126.9	1.20	0.95	0.97	0.99	0.02	0.29





### Stellar Parameters For KIC 011401182

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4815^{+76}_{-86}$	$4.631^{+0.007}_{-0.060}$	$0.070^{+0.150}_{-0.150}$	$0.699^{+0.065}_{-0.018}$	$0.799^{+0.028}_{-0.048}$	$3.300^{+0.108}_{-0.749}$
	+2%/-2%	+0%/-1%	+214%/-214%	+9%/-3%	+4%/-6%	+3%/-23%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 011401182-01 / KOI 1428.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-10 \pm 4$	$1.57^{+0.35}_{-0.33}$	$1930^{+44}_{-41}$	$2438^{+331}_{-463}$	$0.622^{+0.520}_{-0.276}$
Alt.	$-13 \pm 4$	$1.77^{+0.37}_{-0.35}$	$1931^{+42}_{-43}$	$2473^{+260}_{-361}$	$0.656^{+0.446}_{-0.268}$

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

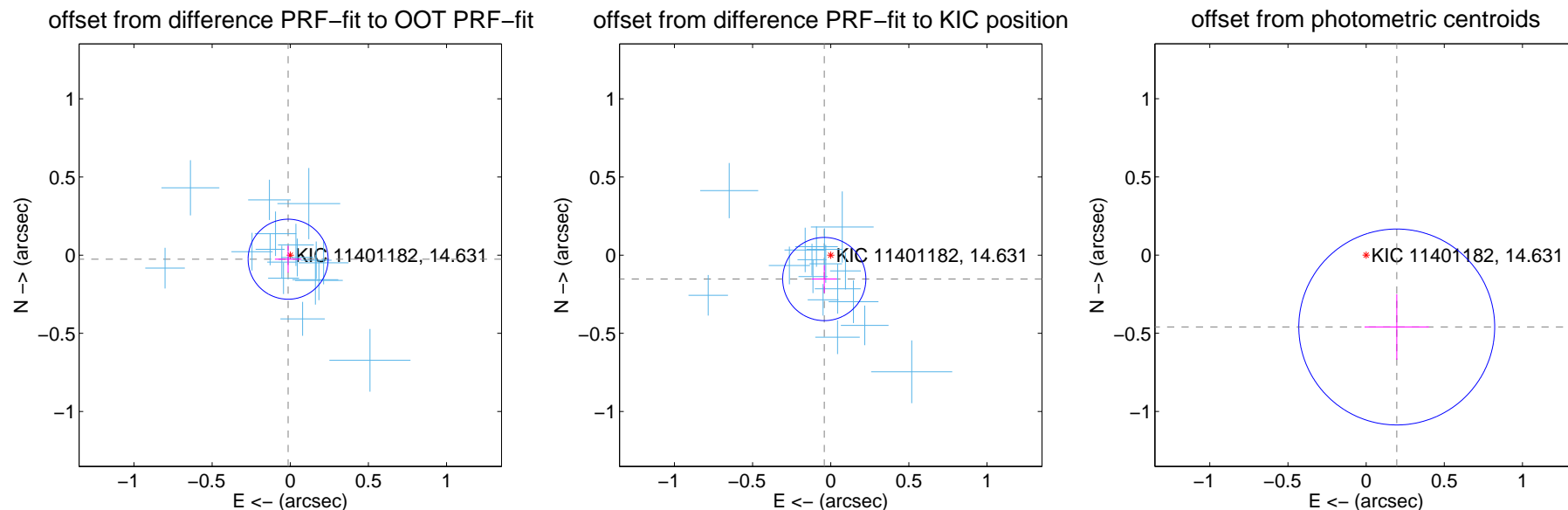
## DV Centroid Data

Supplemental centroid analysis for 011401182-01. Kepler magnitude: 14.63. Transit SNR 53.30

There are 17 quarters with good PRF difference image offsets

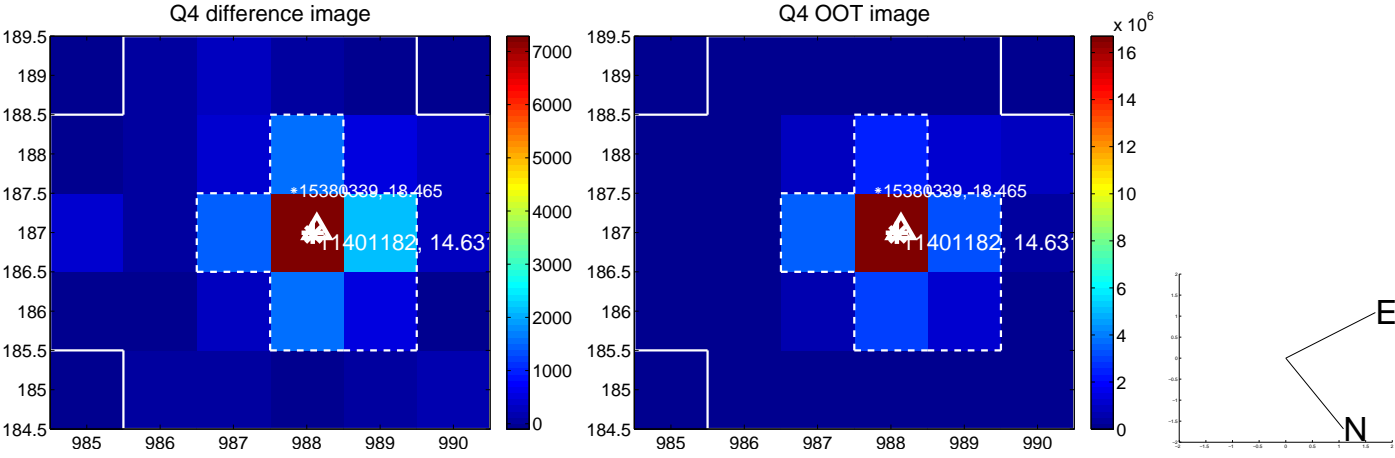
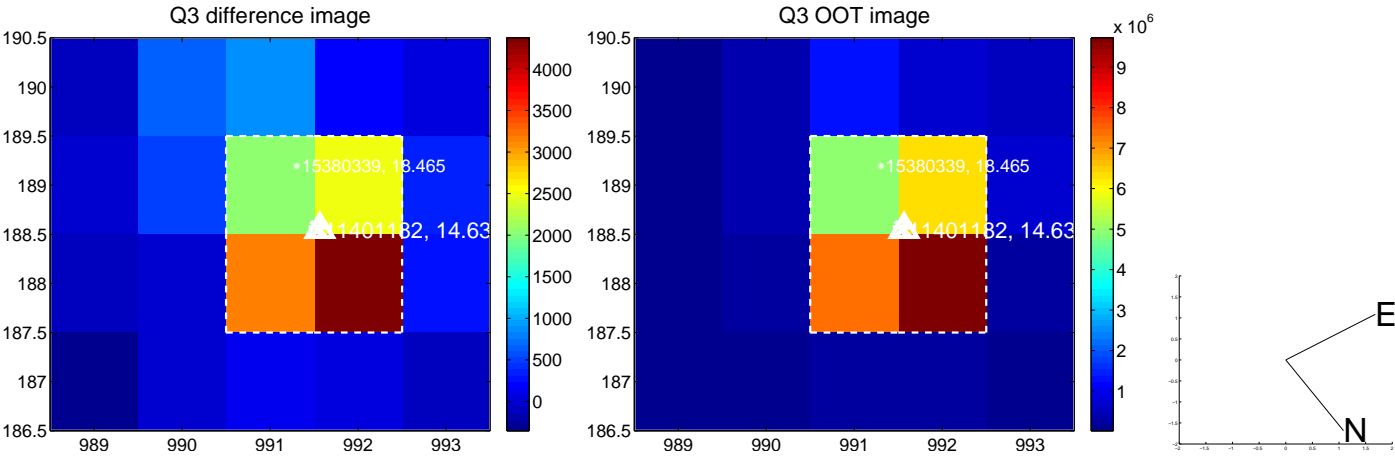
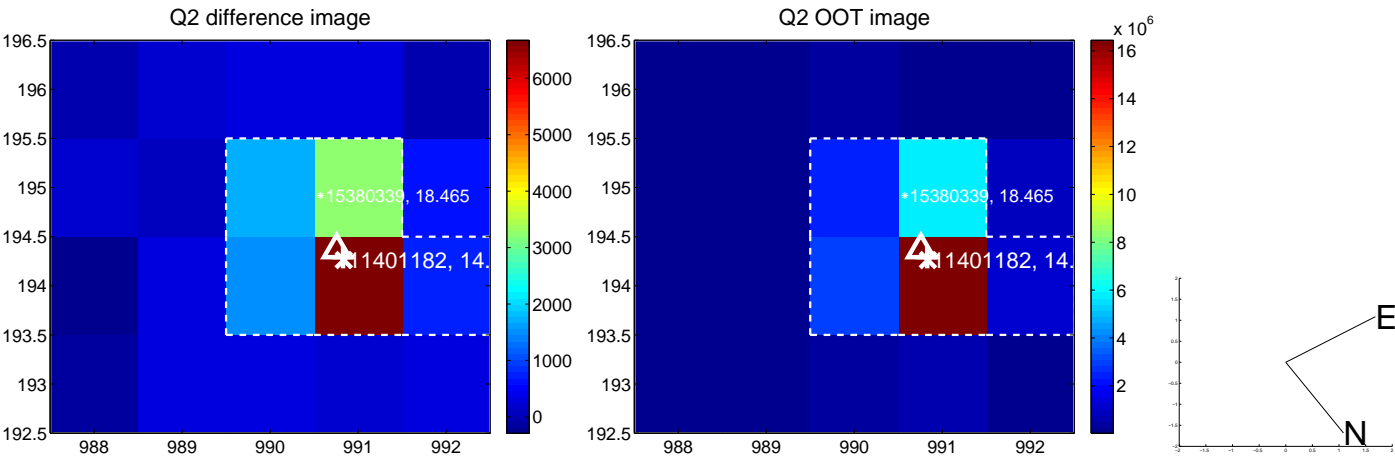
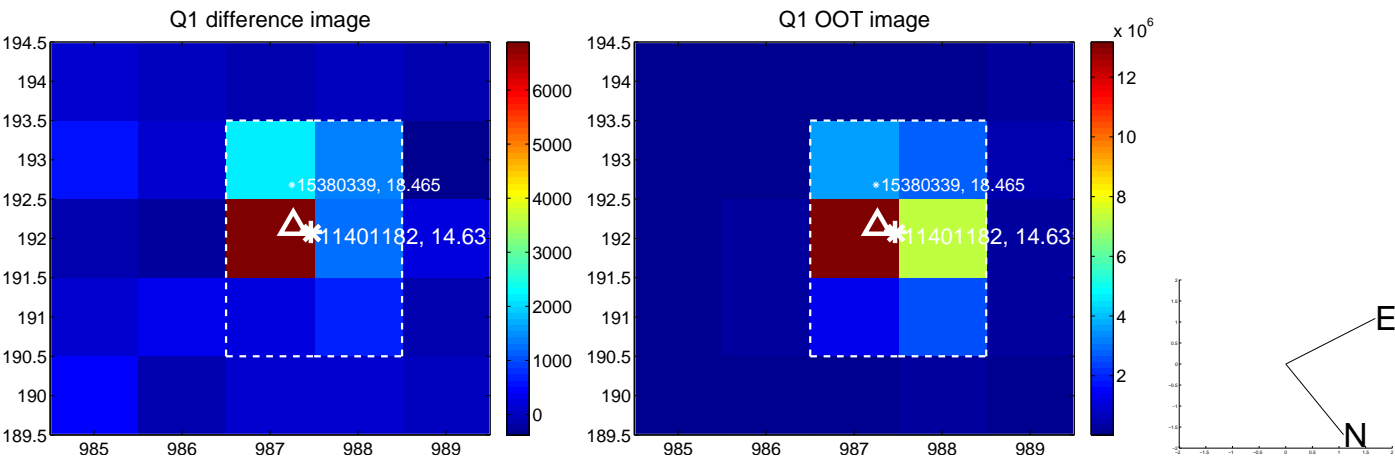
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.029 \pm 0.085$	0.35	$0.014 \pm 0.084$	$-0.026 \pm 0.086$
PRF-fit source offset from KIC position	$0.158 \pm 0.089$	1.78	$0.041 \pm 0.080$	$-0.153 \pm 0.089$
photometric centroid source offset	$0.50 \pm 0.21$	2.39	$-0.20 \pm 0.21$	$-0.46 \pm 0.21$

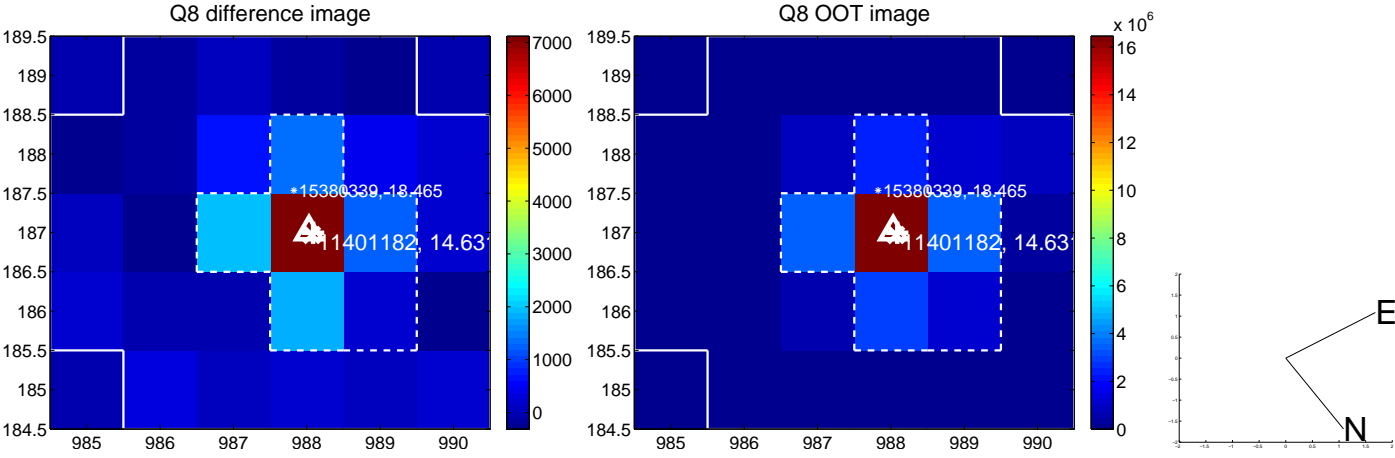
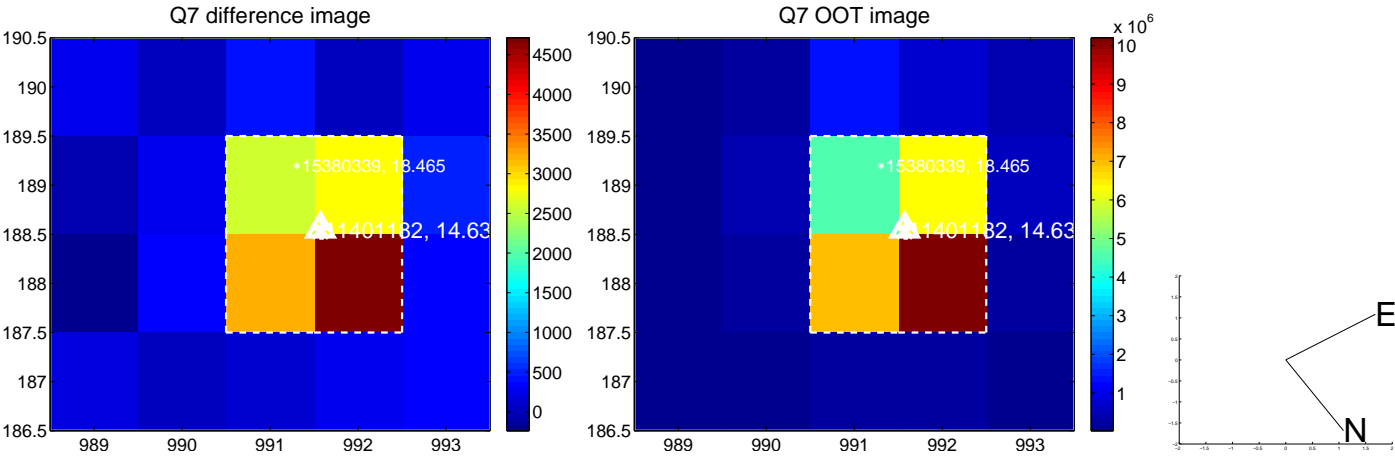
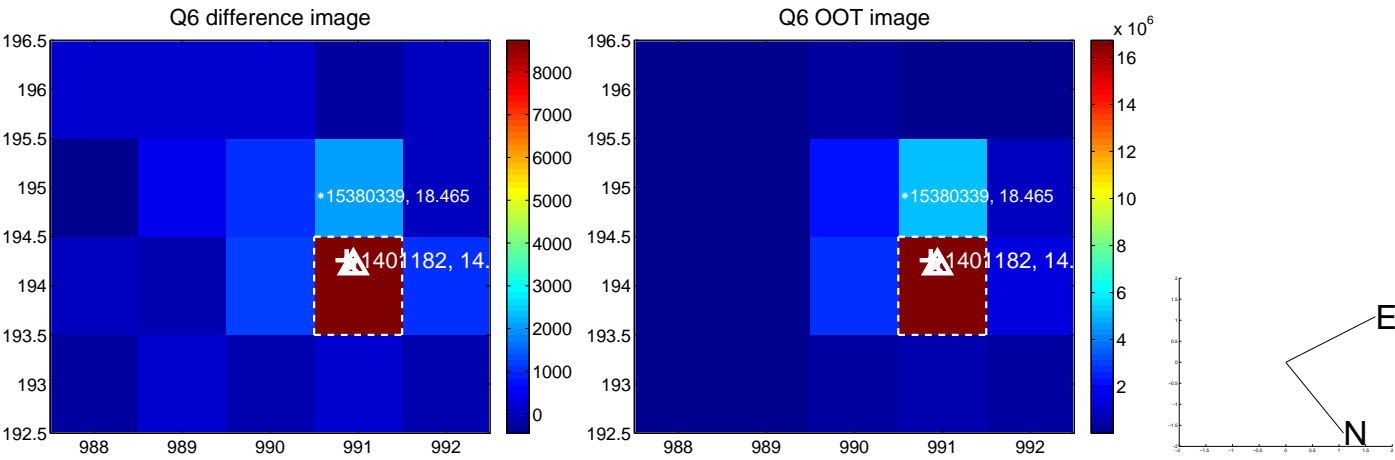
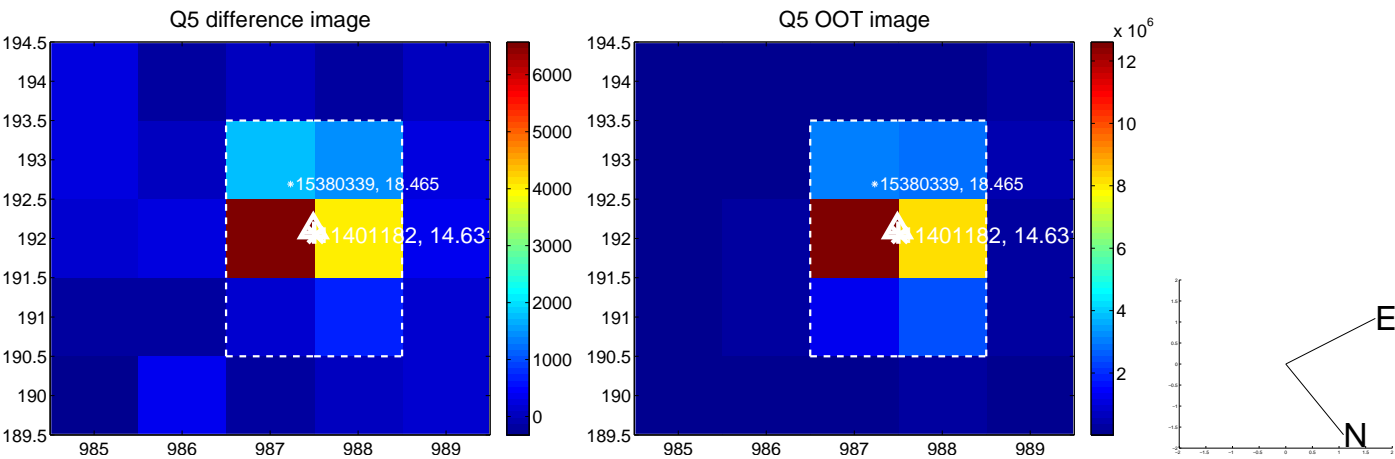


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

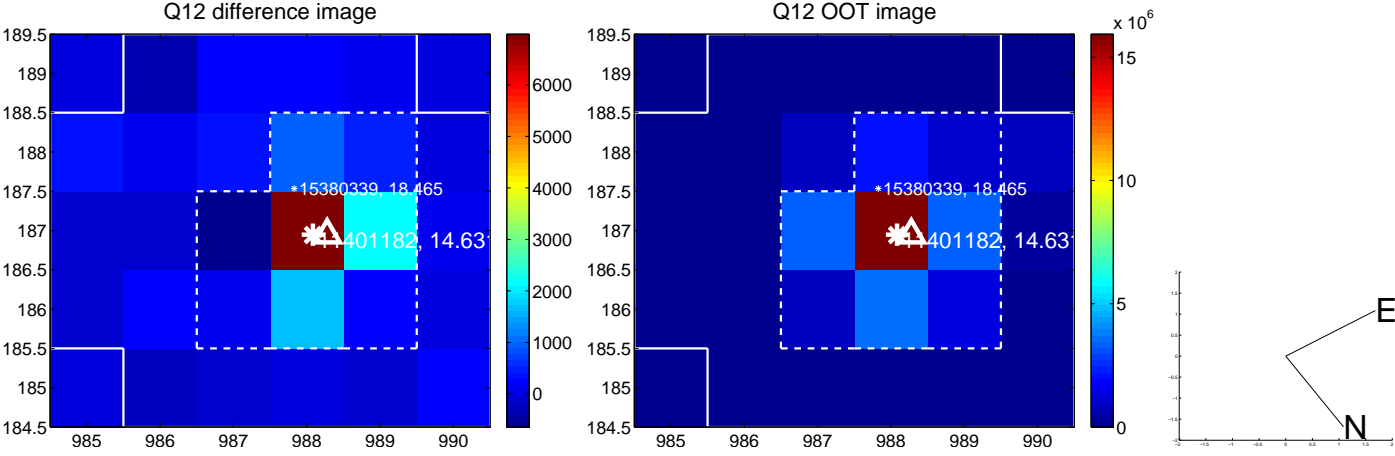
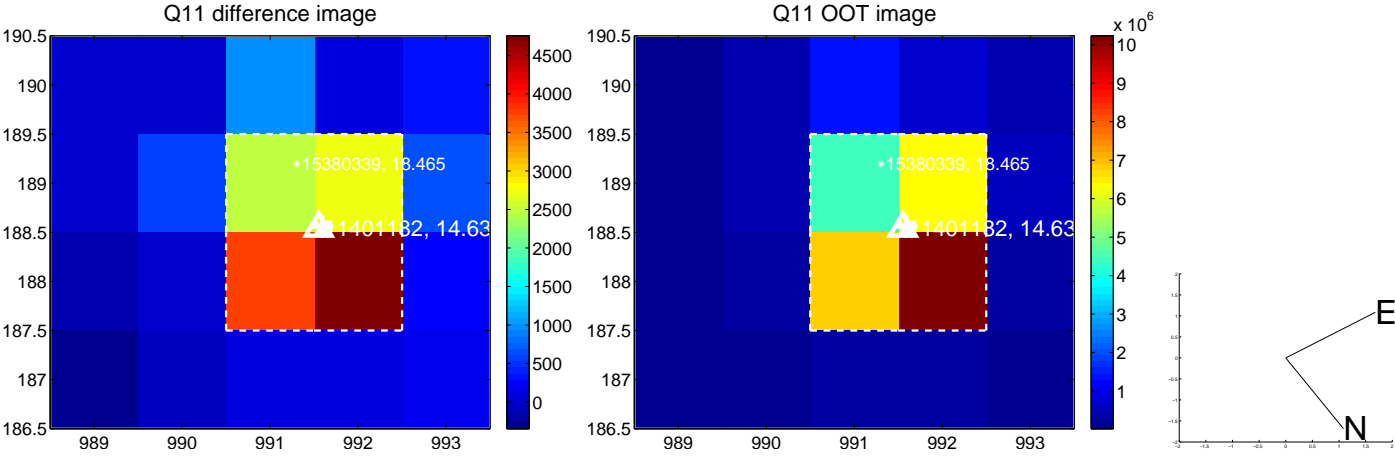
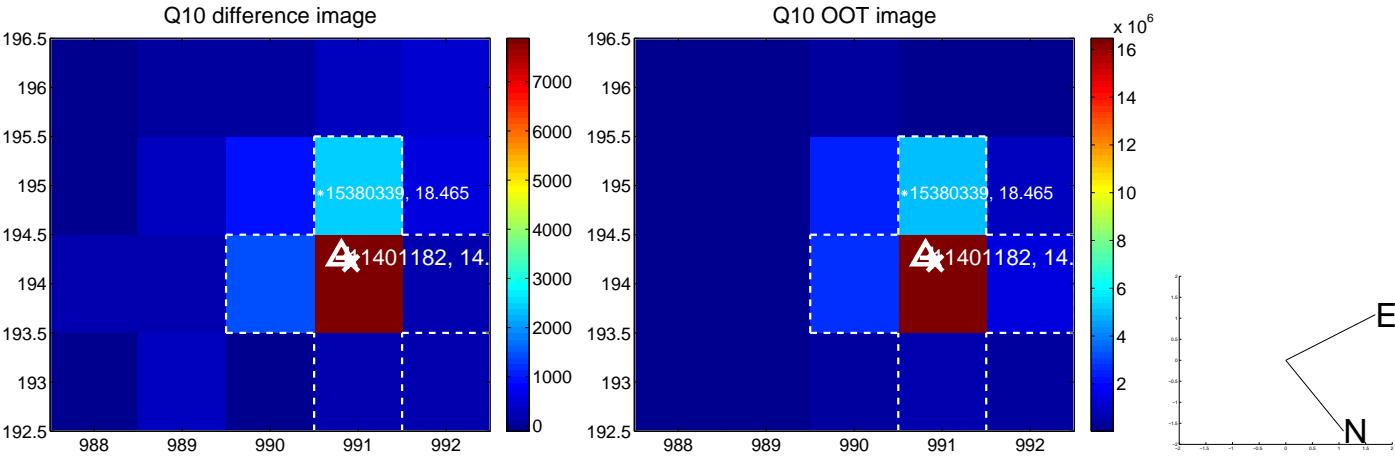
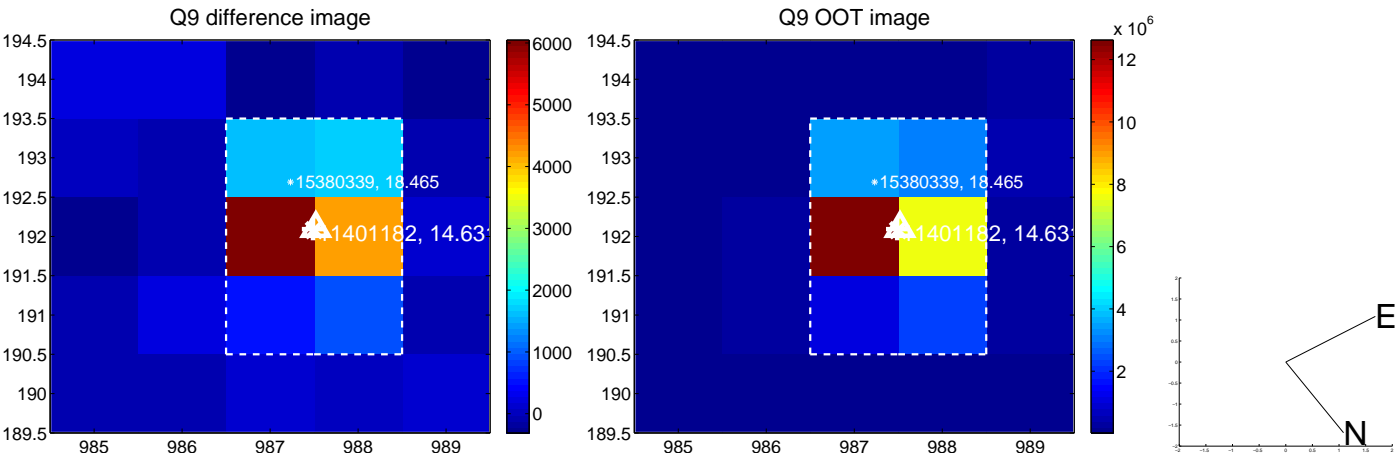


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

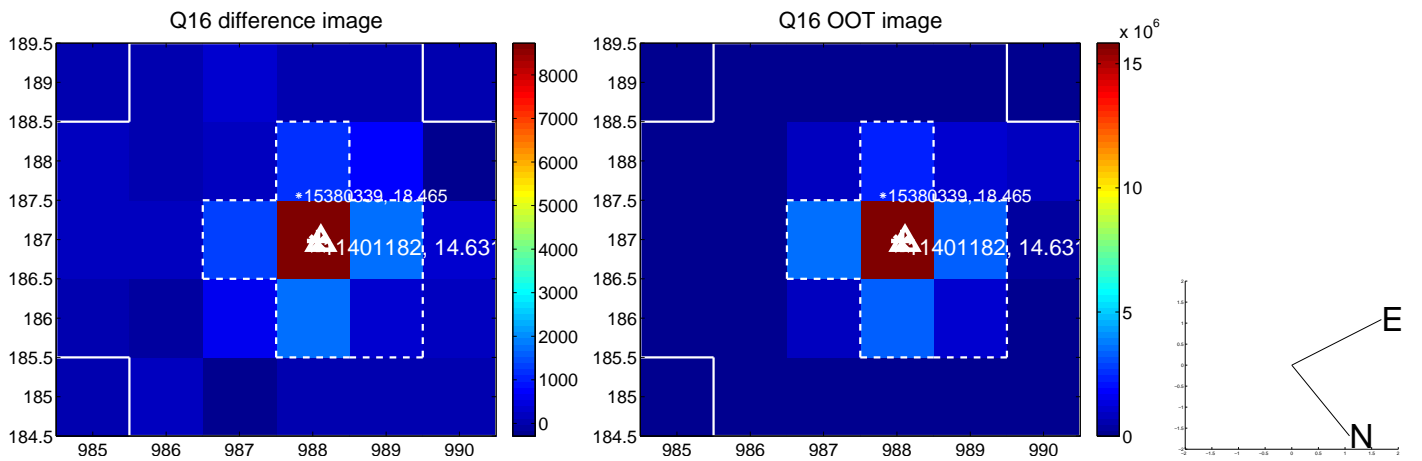
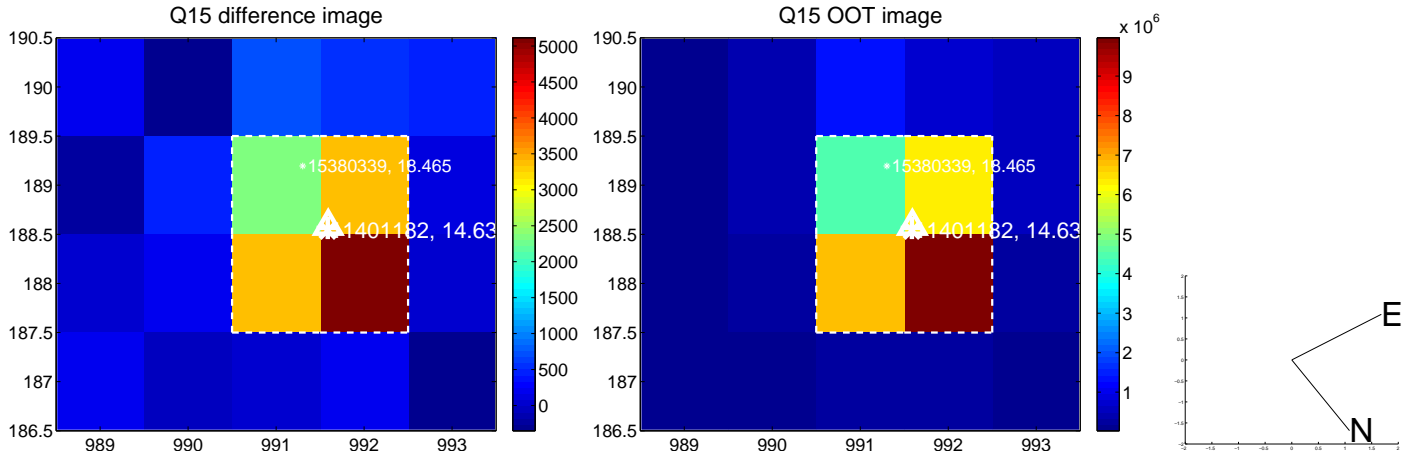
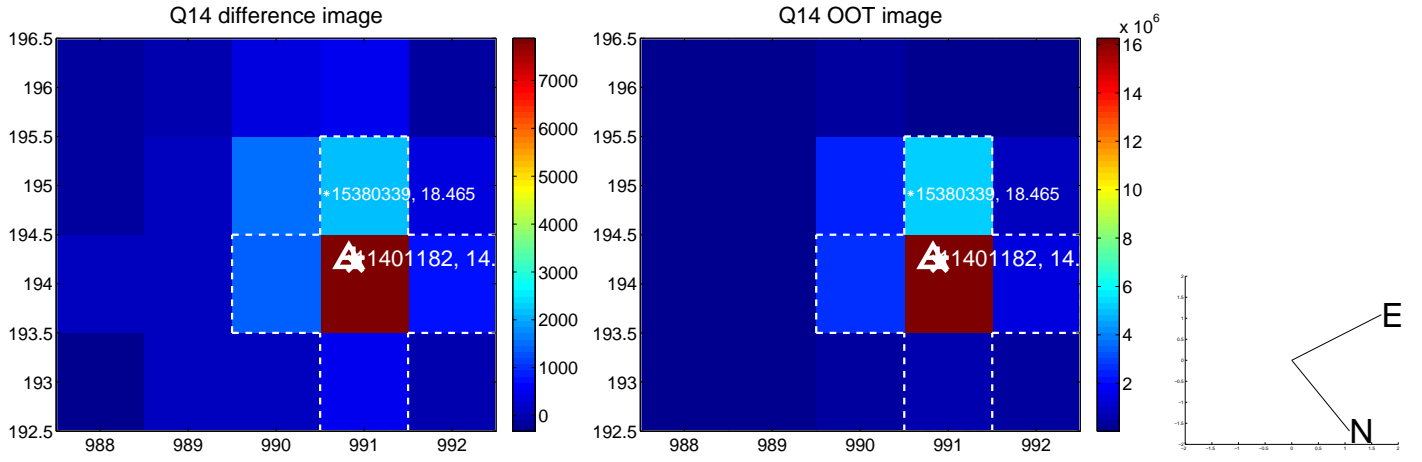
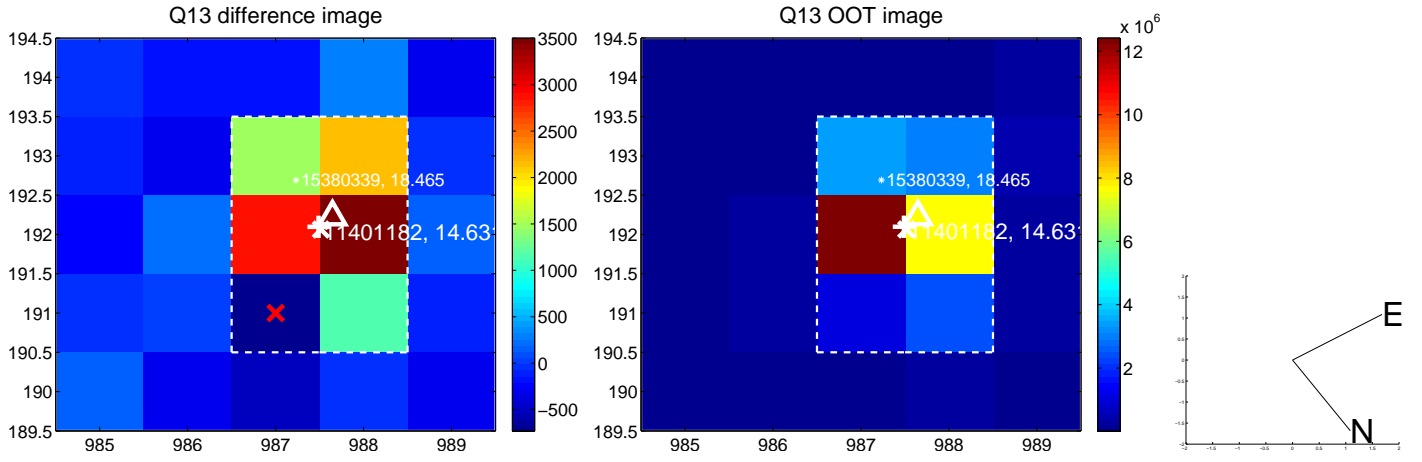




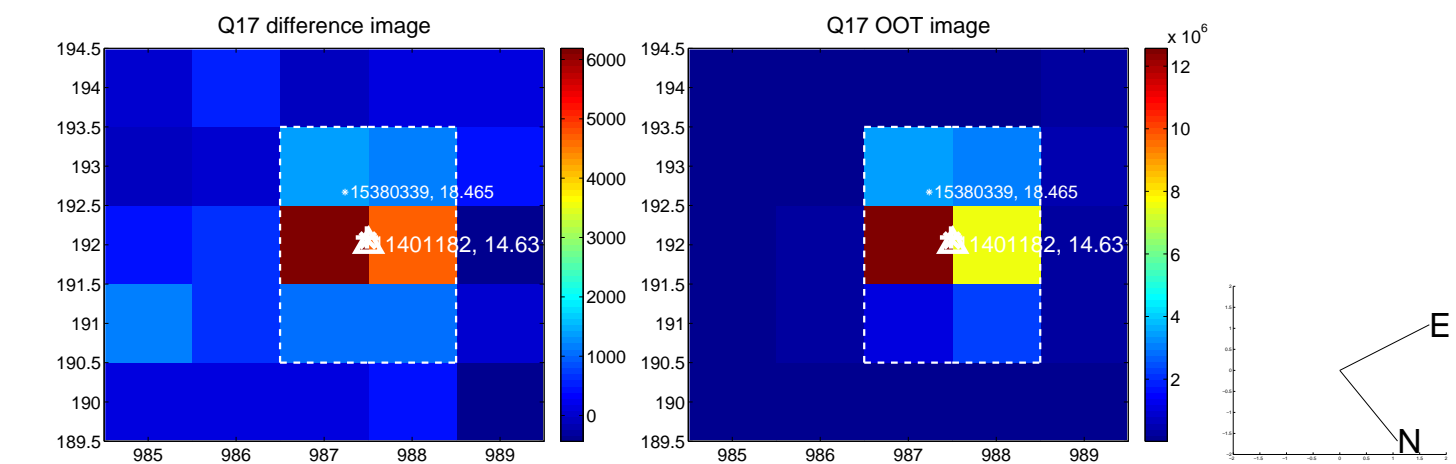
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



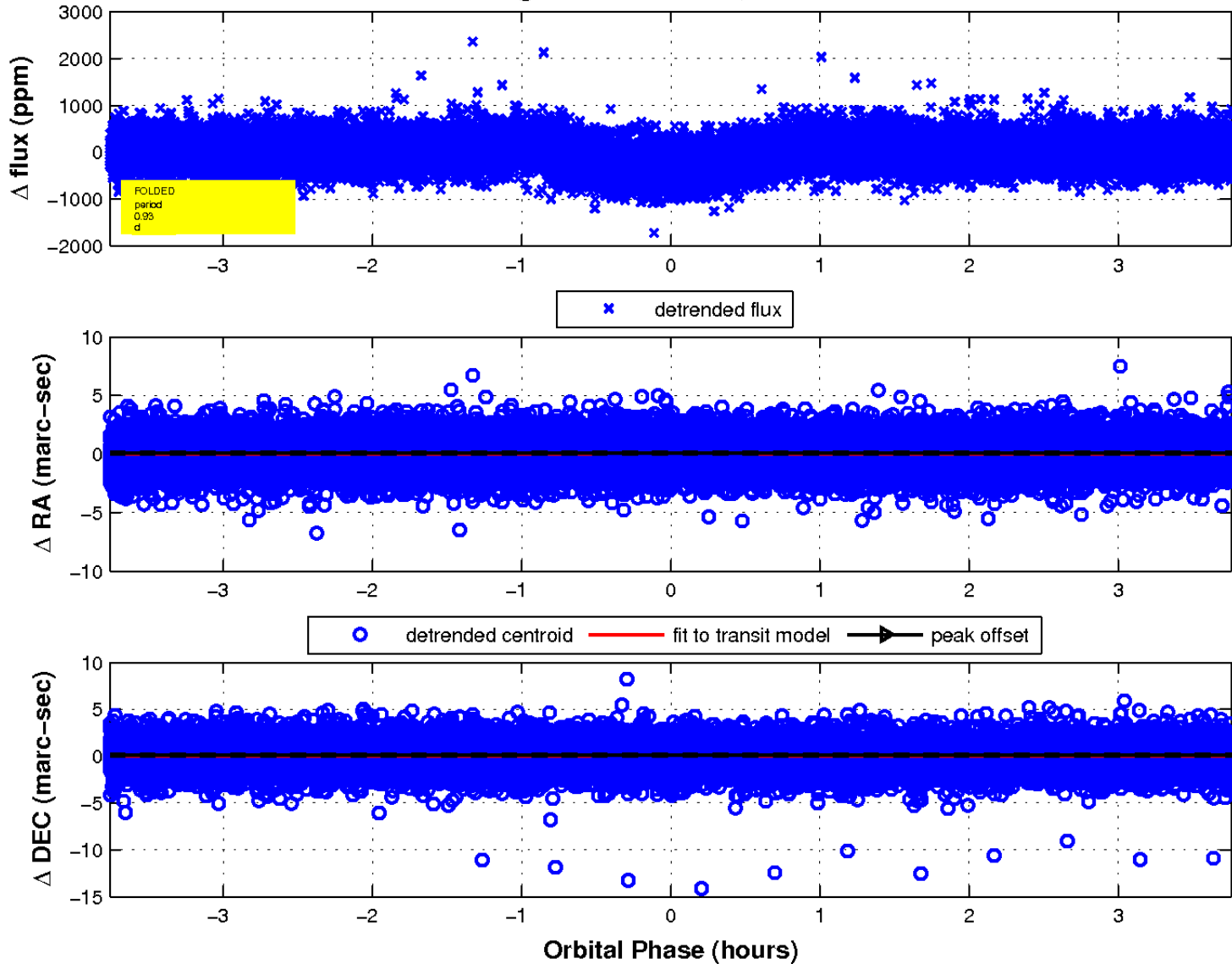
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

