

# KIC 008324518

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008324518-01	OBS	4393.01	1.628887	132.334773	118.8	1.837	11.4	12.0	0.81	5398	0.94	734.49

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008324518-01	OBS	PC	0.94	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.

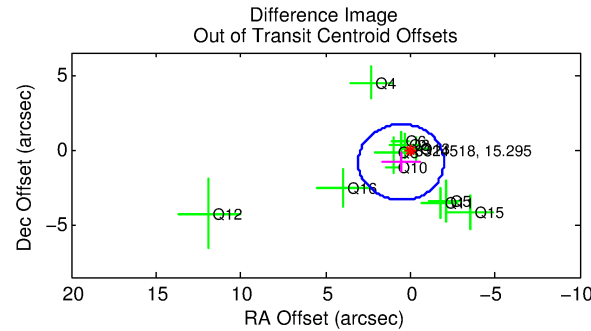
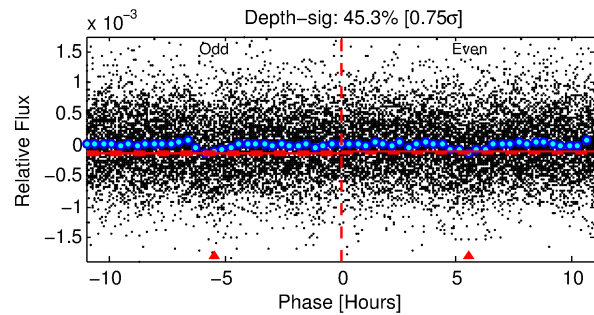
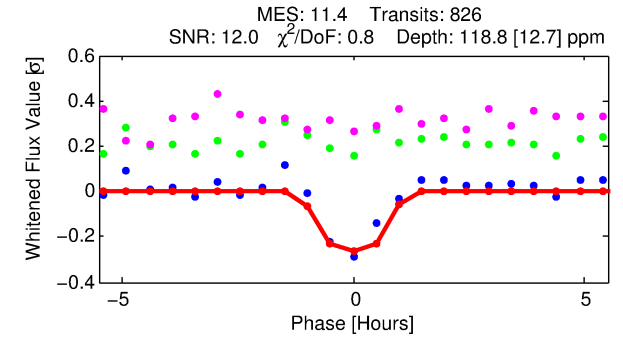
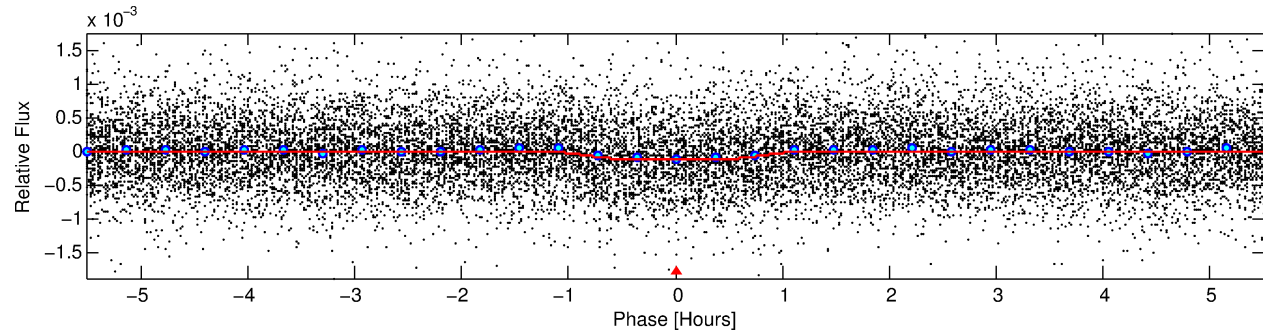
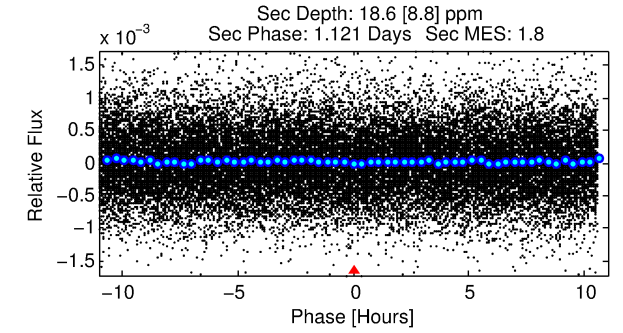
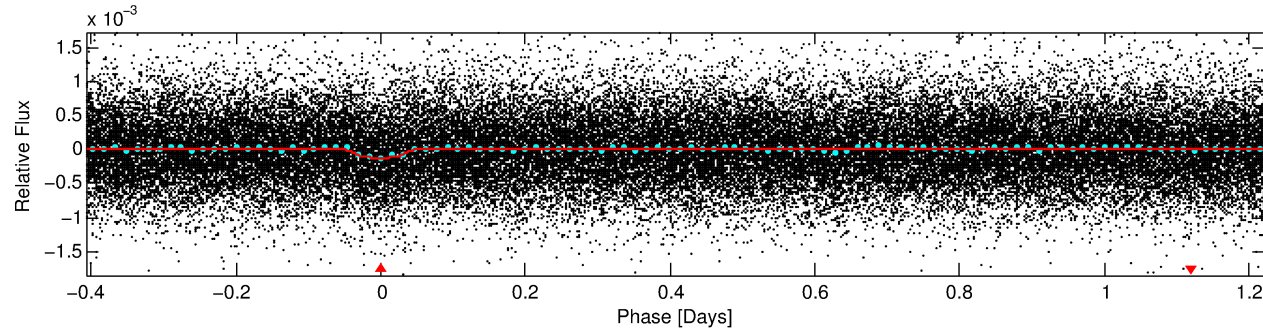
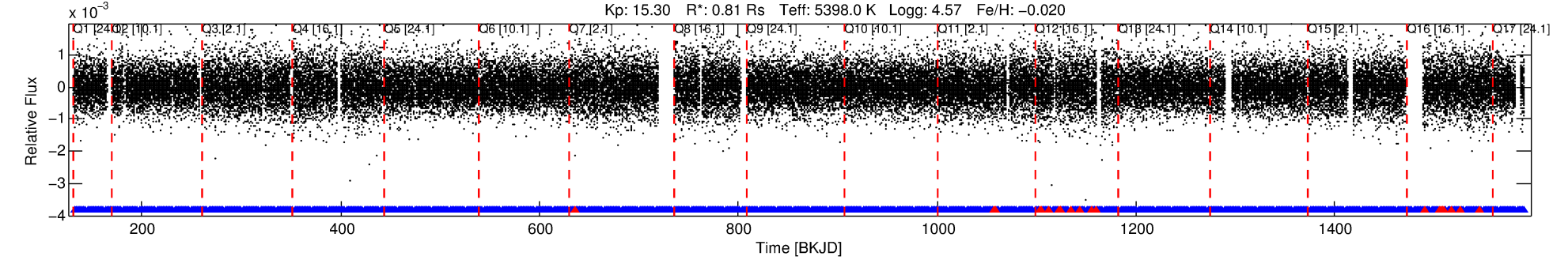
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008324518-01

No Significant Match Found

# DV One-Page Summary

KIC: 8324518 Candidate: 1 of 1 Period: 1.629 d  
KOI: K04393.01 Corr: 0.956



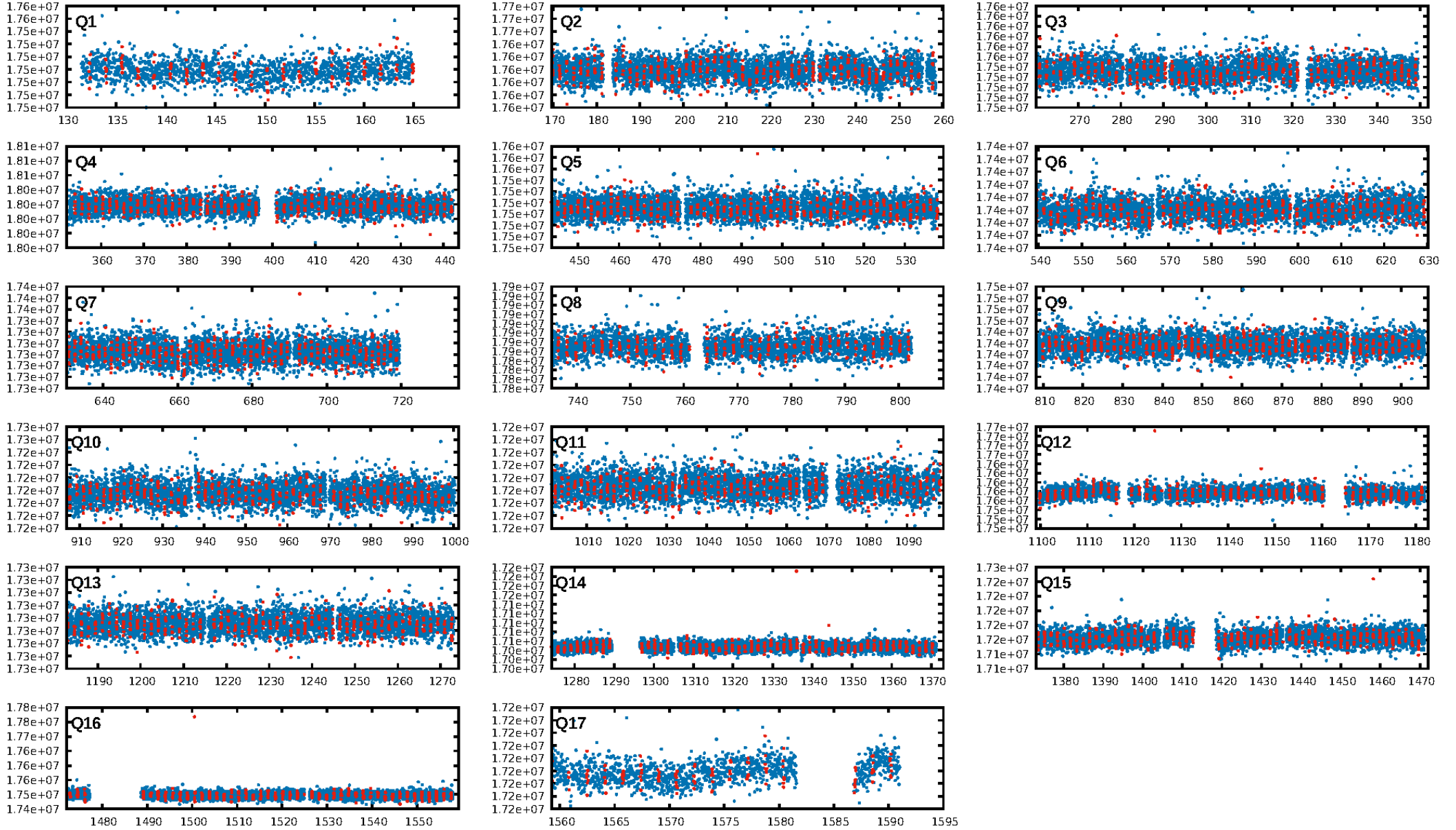
## DV Fit Results:

Period = 1.62889 [0.00001] d  
Epoch = 132.3348 [0.0025] BKJD  
Rp/R\* = 0.0106 [0.0061]  
a/R\* = 5.16 [11.14]  
b = 0.67 [1.85]  
Seff = 734.49 [207.86]  
Teff = 1327 [94] K  
Rp = 0.94 [0.57] Re  
a = 0.0261 [0.0045] AU  
Ag = 7.94 [10.07] [0.69σ]  
Teffp = 3445 [1077] K [1.96σ]

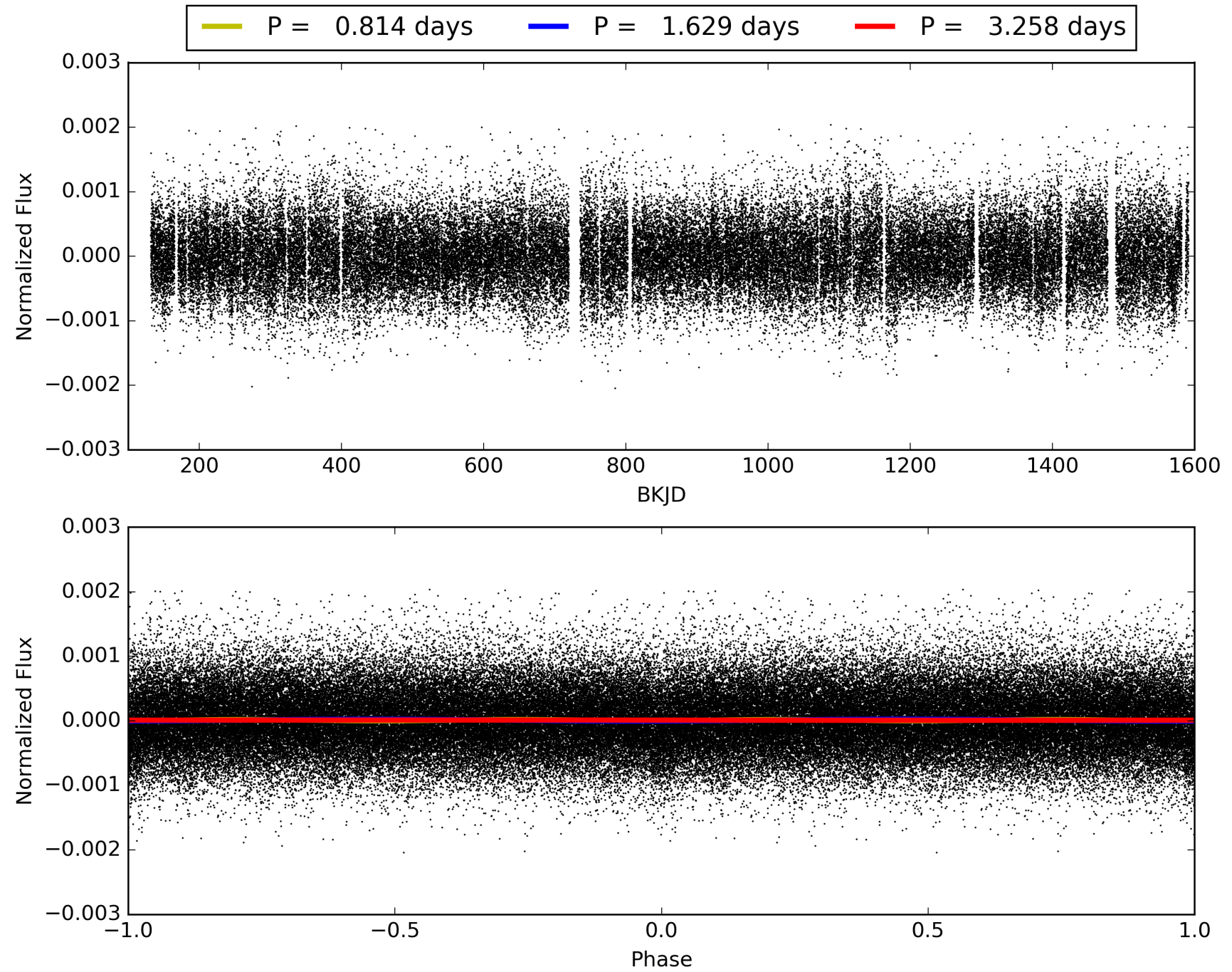
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 6.35e-30  
RollingBand-fgt: 0.97 [768/788]  
GhostDiagnostic-chr: 1.759  
Centroid-sig: 2.6%  
Centroid-so: 1.736 arcsec [1.23σ]  
OotOffset-rm: 0.995 arcsec [1.18σ]  
KicOffset-rm: 1.050 arcsec [1.18σ]  
OotOffset-st: 2/3/4/2 [11]  
KicOffset-st: 2/3/4/2 [11]  
DiffImageQuality-fgm: 0.27 [3/11]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 008324518-01, PDC Light Curves

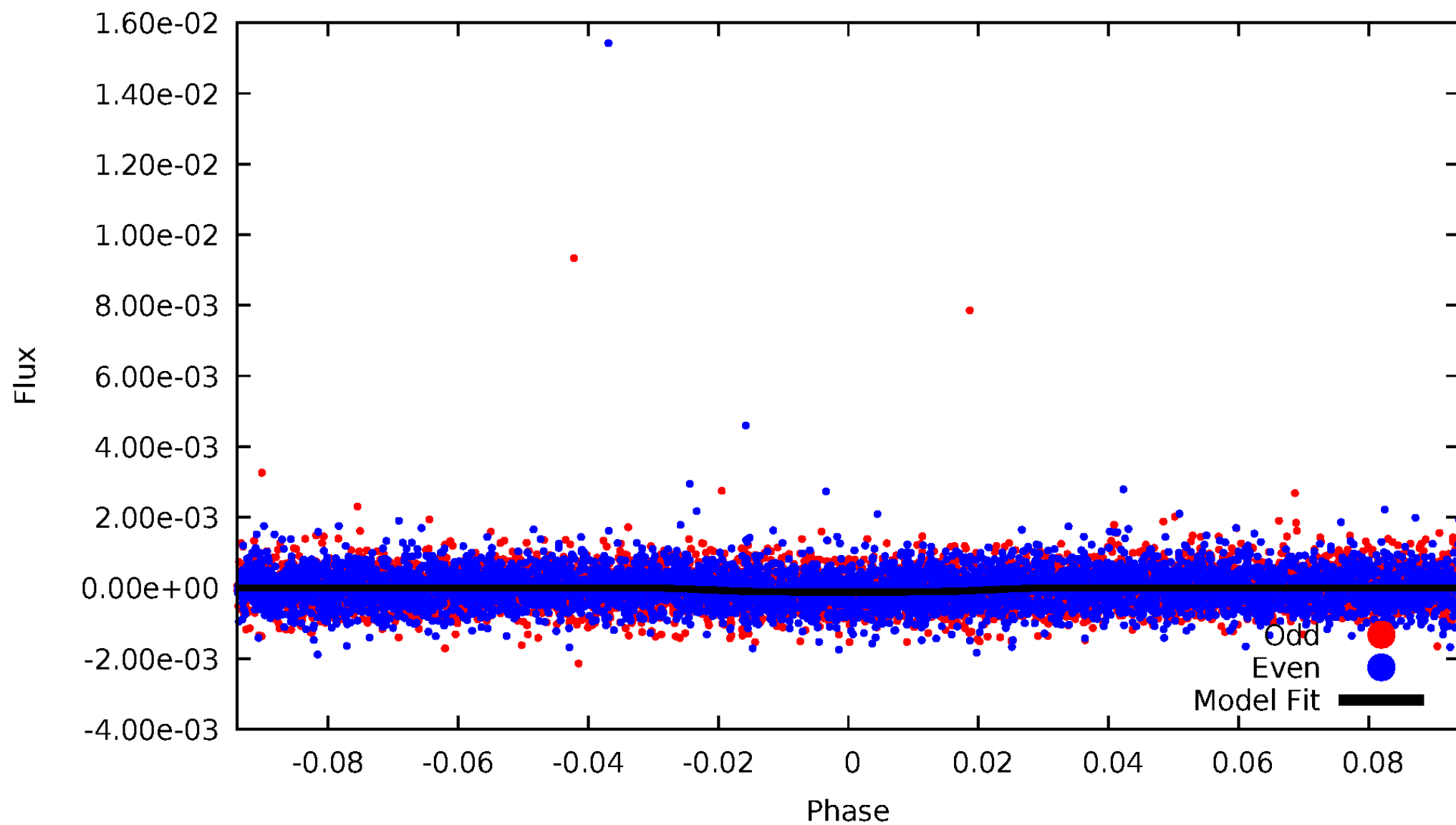


# TCE 008324518-01



# DV Odd/Even

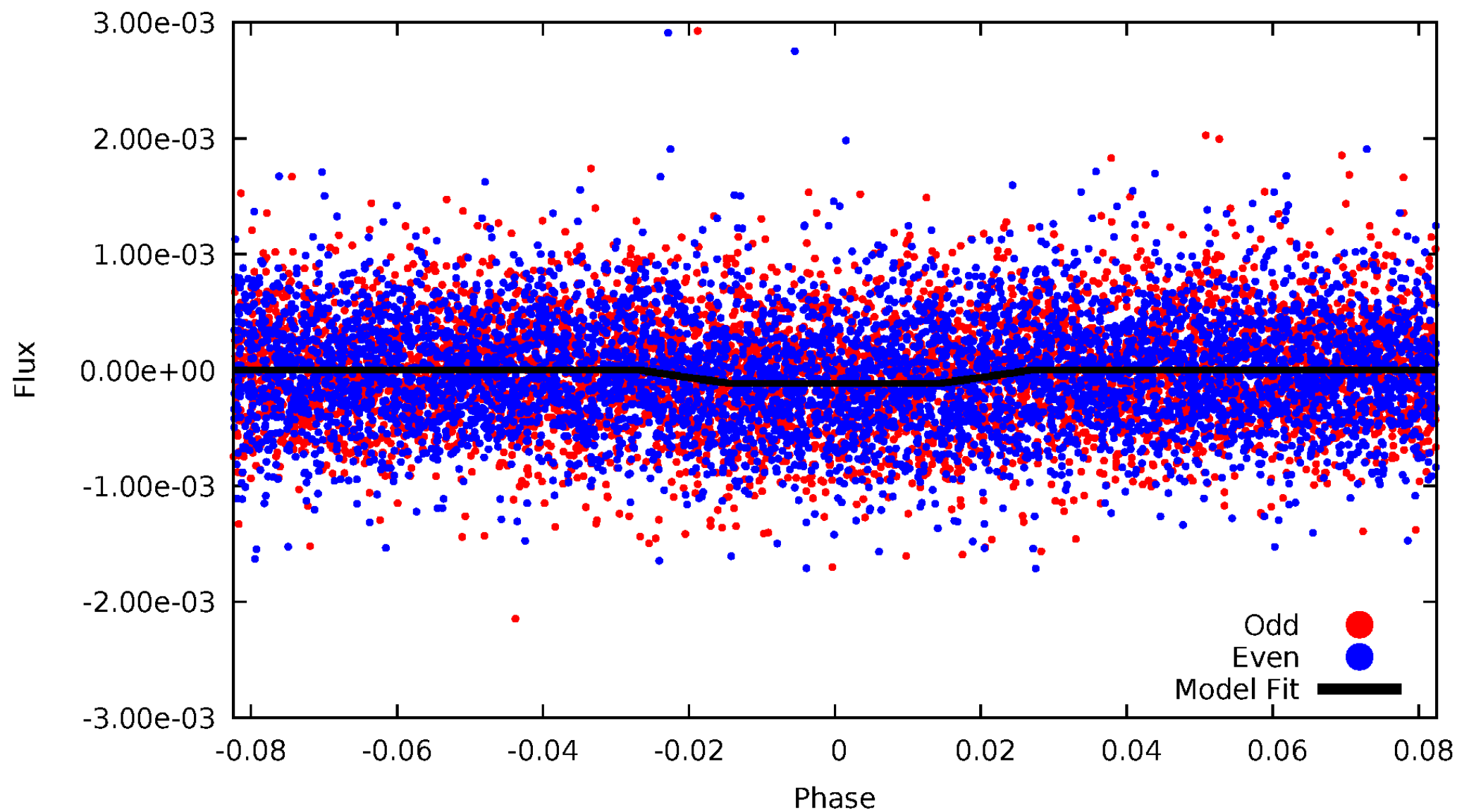
TCE 008324518-01





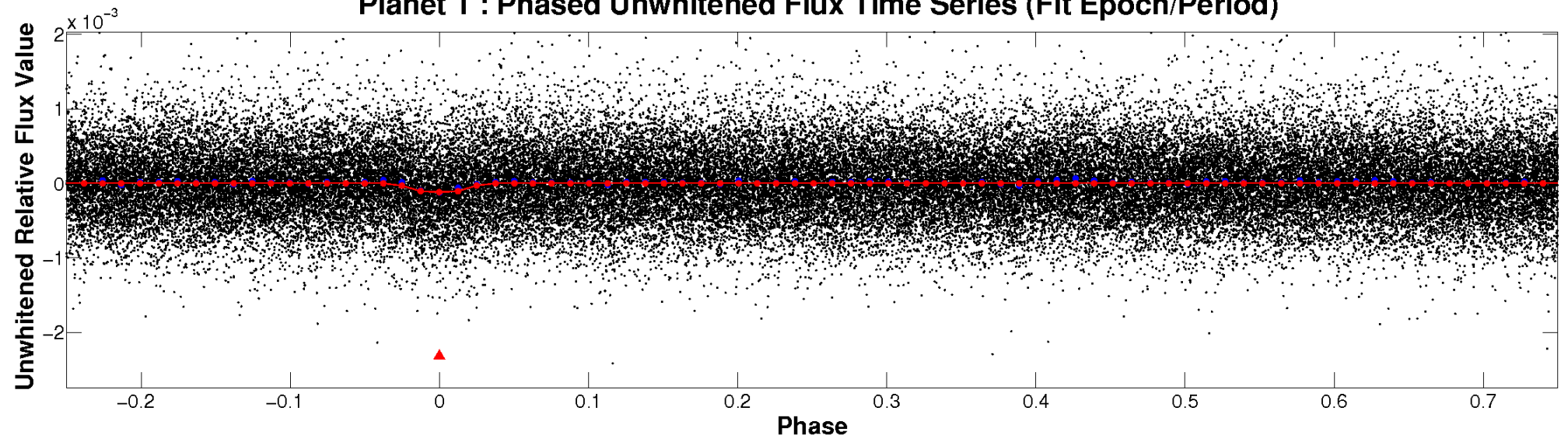
# ALT Odd/Even

TCE 008324518-01

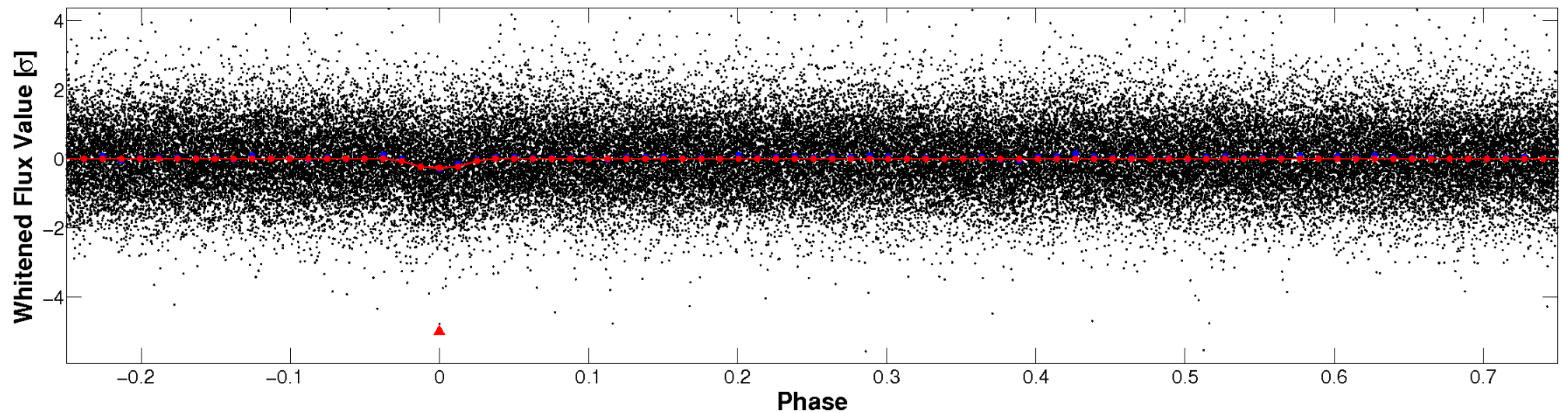


# Non-Whitened Vs. Whitened Light Curve

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

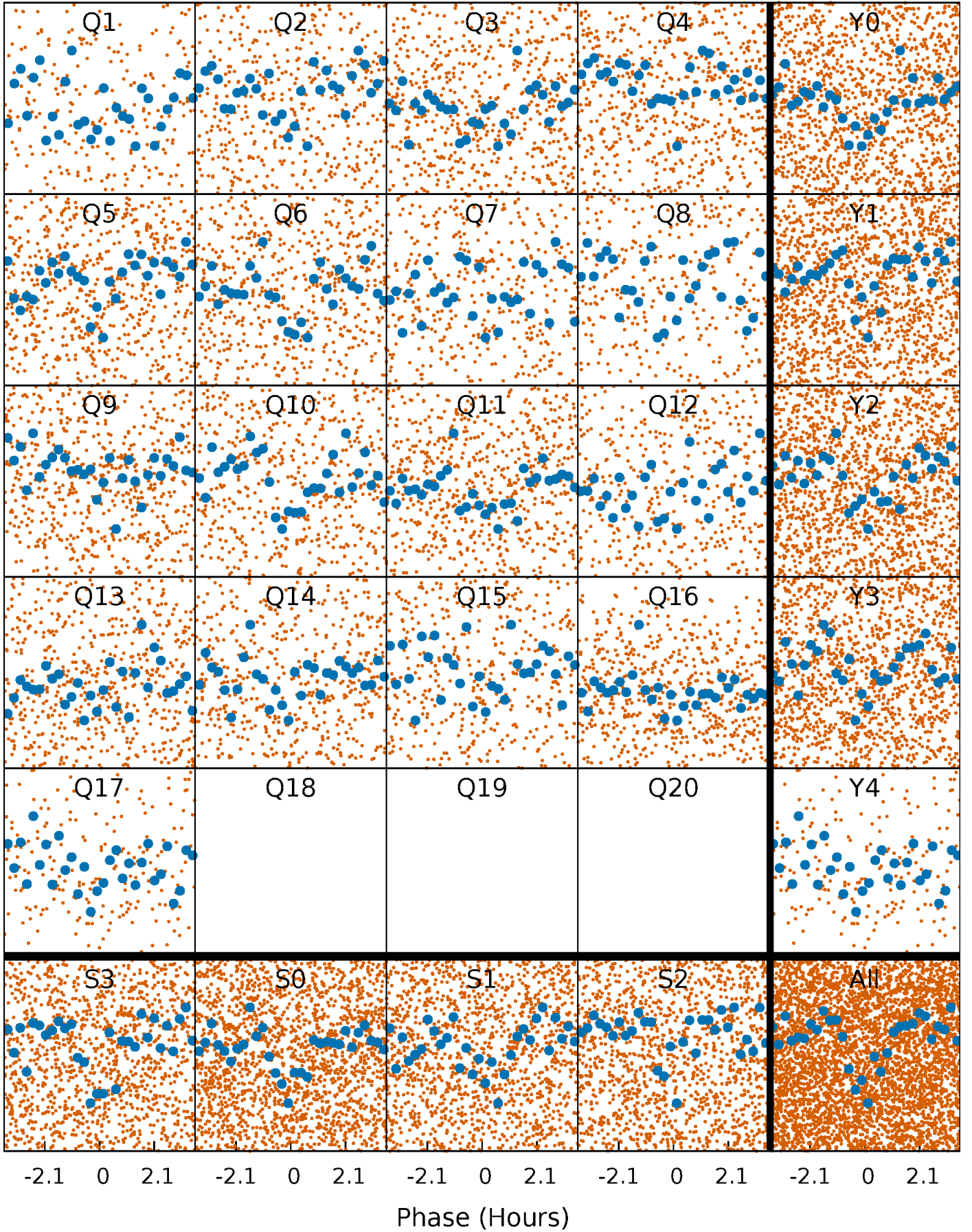


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

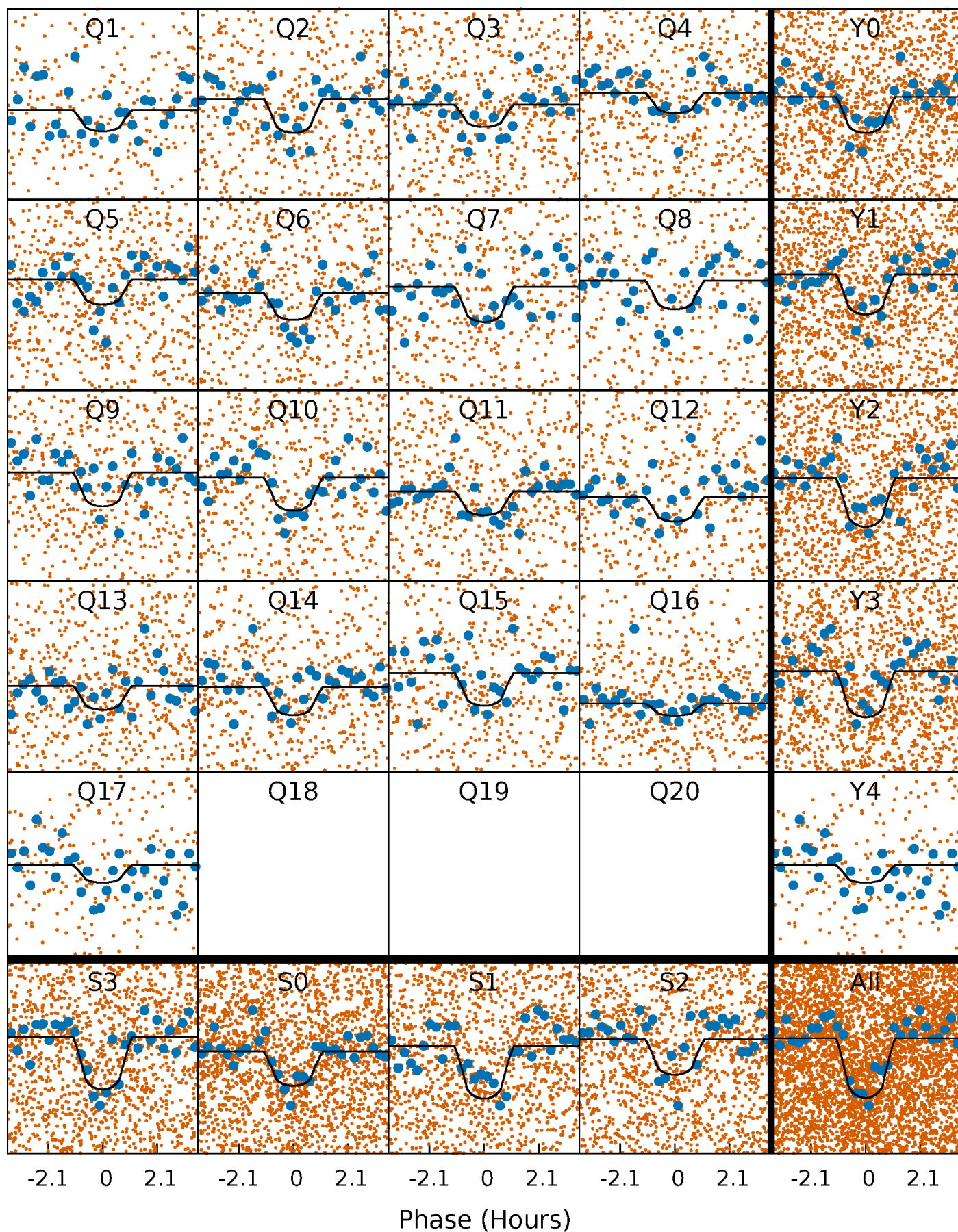
TCE 008324518-01   P= 1.628887 Days    $T_0=132.334773$  (BKJD)





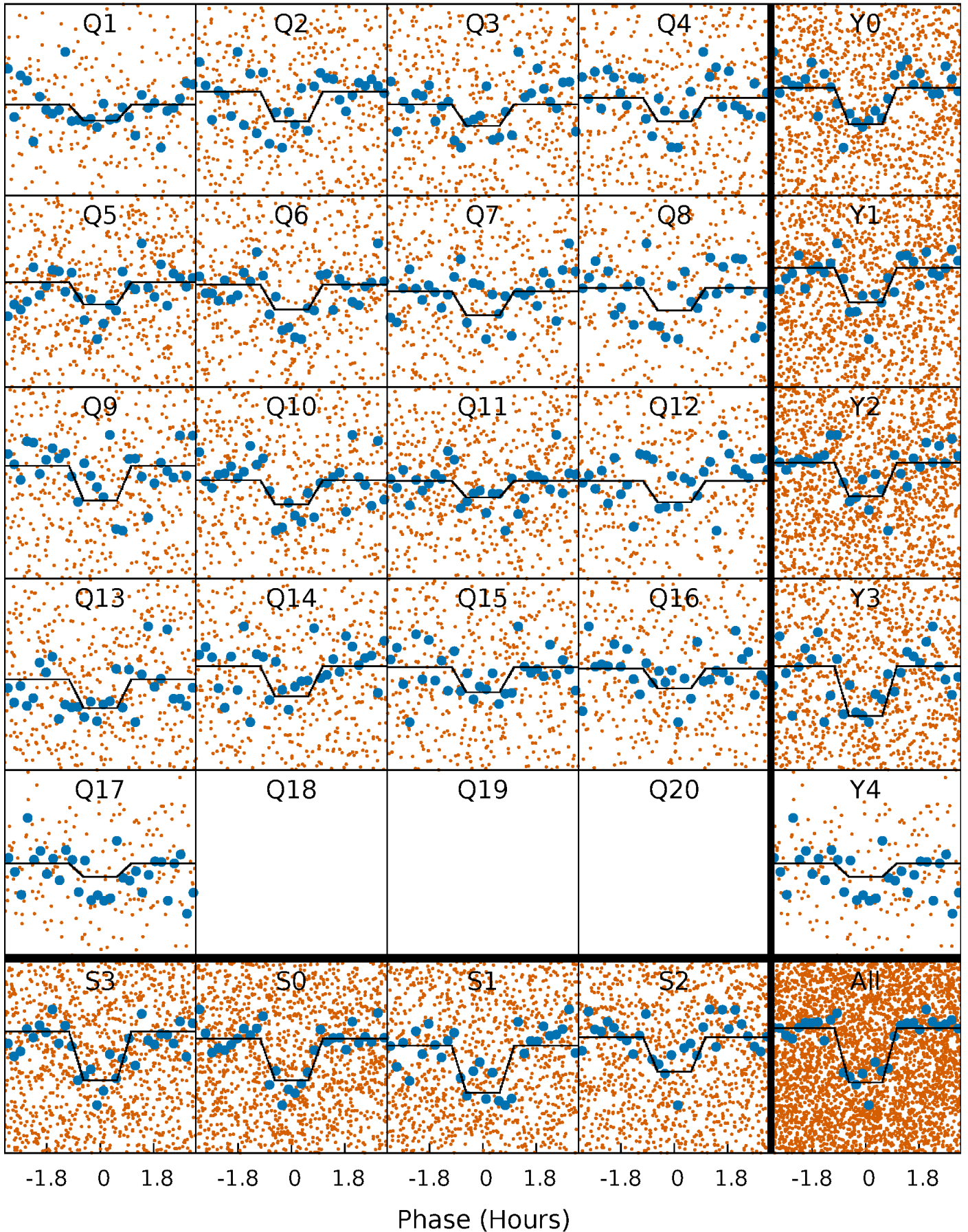
# DV Quarter-Phased Transit Curves

TCE 008324518-01 P= 1.628887 Days  $T_0=132.334773$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

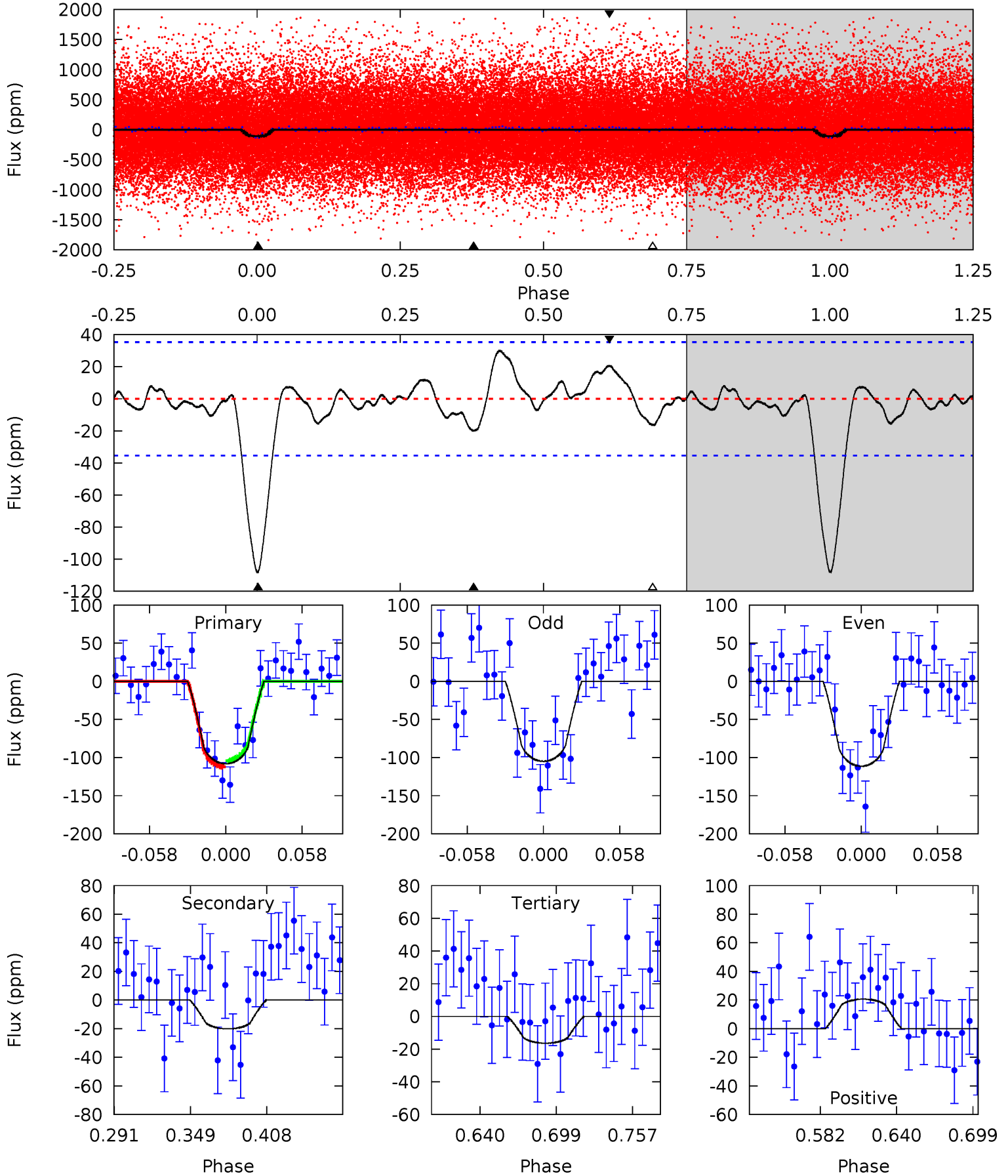
TCE 008324518-01 P= 1.628876 Days  $T_0=132.340582$  (BKJD)



# DV Model-Shift Uniqueness Test

008324518-01, P = 1.628887 Days, E = 130.705886 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
14.3	2.66	2.16	2.73	4.68	1.89	1.08	12.1	11.6	0.49	-0.07	0.42	0.81	0.22	0.53

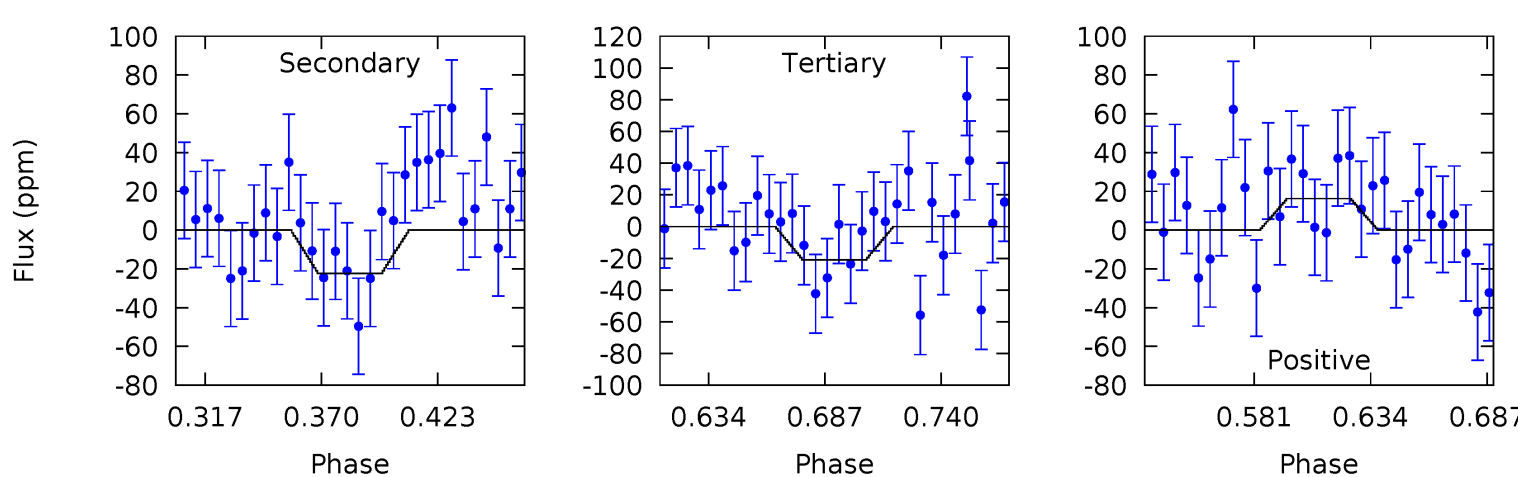
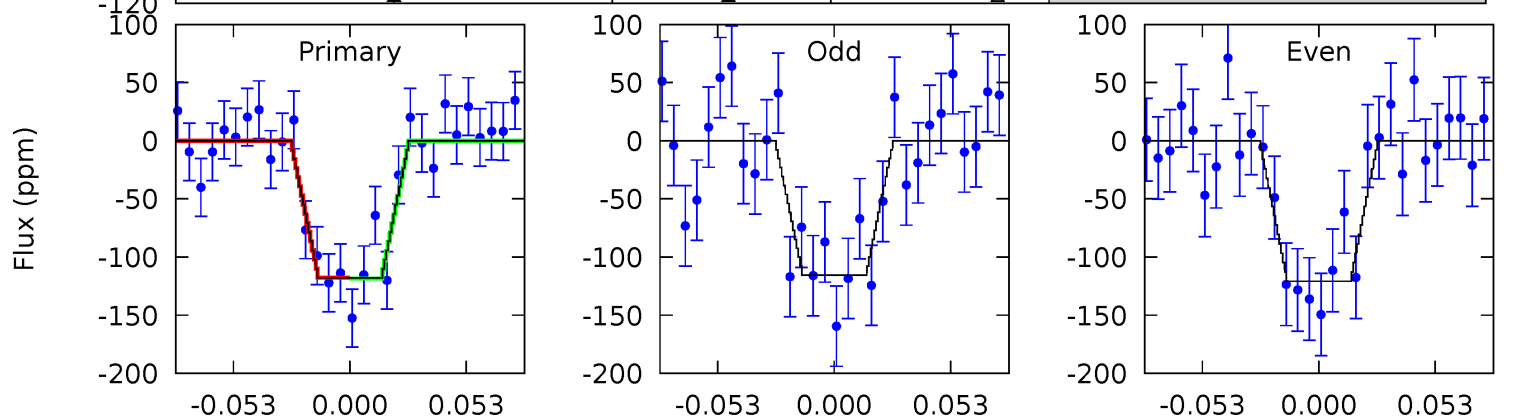
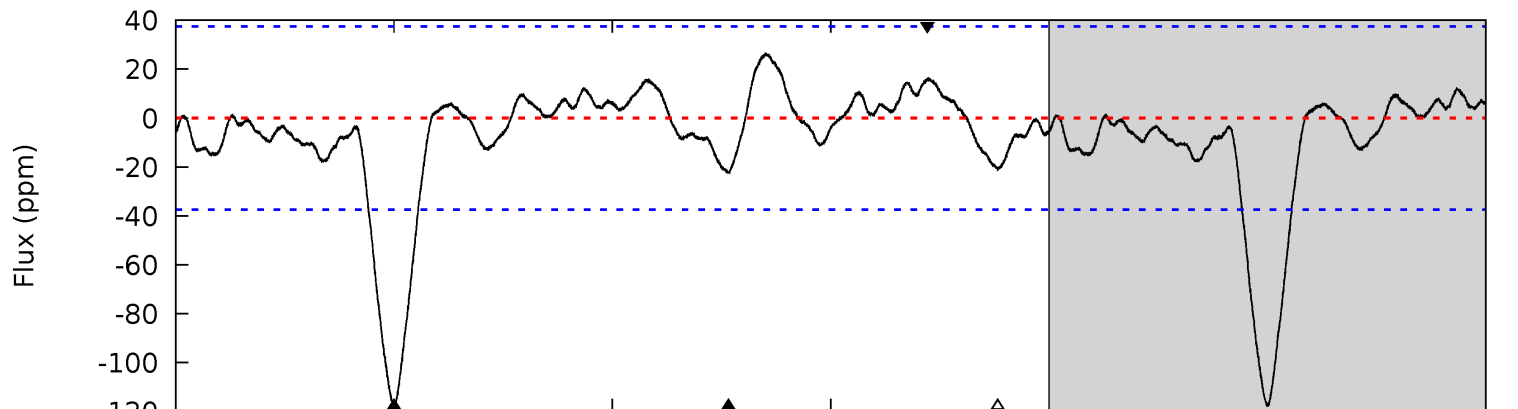
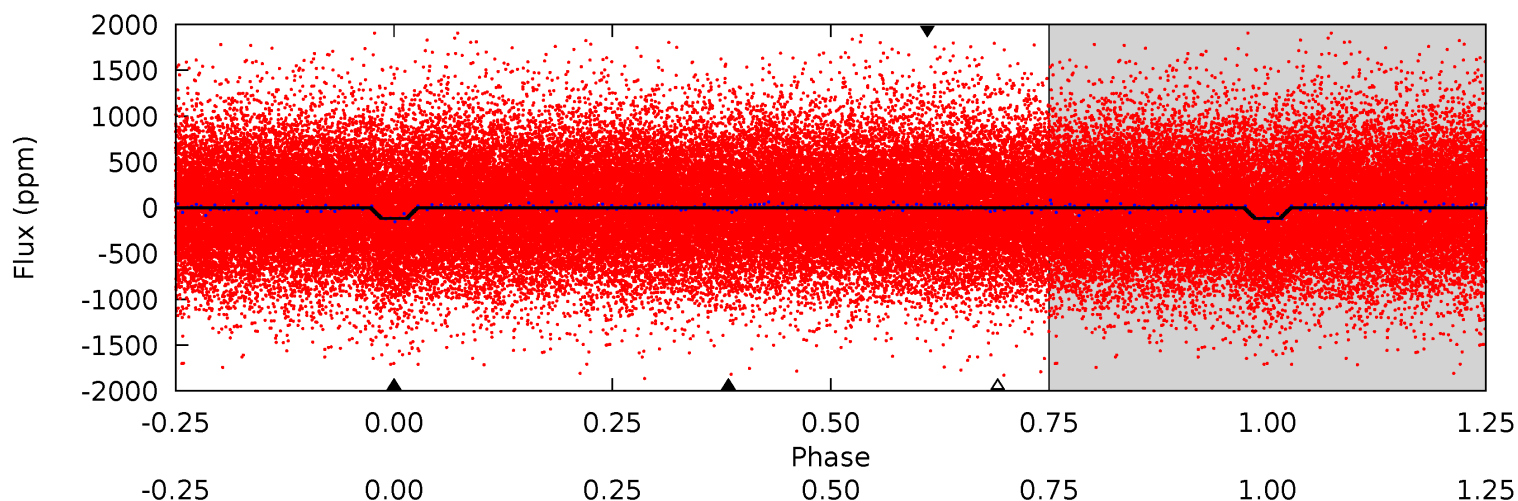




# Alt Model-Shift Uniqueness Test

008324518-01, P = 1.628876 Days, E = 130.711706 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
14.8	2.81	2.63	2.04	4.70	1.94	1.12	12.2	12.8	0.18	0.77	0.34	0.92	0.18	0.04





### Stellar Parameters For KIC 008324518

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5398^{+177}_{-160}$	$4.571^{+0.034}_{-0.136}$	$-0.020^{+0.250}_{-0.300}$	$0.811^{+0.169}_{-0.068}$	$0.896^{+0.073}_{-0.097}$	$2.366^{+0.413}_{-0.906}$
	+3%/-3%	+1%/-3%	+1250%/-1500%	+21%/-8%	+8%/-11%	+17%/-38%
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 008324518-01 / KOI 4393.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-20 \pm 8$	$1.04^{+0.55}_{-0.55}$	$1892^{+97}_{-85}$	$3727^{+1234}_{-554}$	$6.636^{+22.930}_{-4.175}$
Alt.	$-22 \pm 8$	$1.02^{+0.57}_{-0.51}$	$1888^{+97}_{-81}$	$3761^{+1237}_{-508}$	$7.357^{+23.037}_{-4.249}$

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

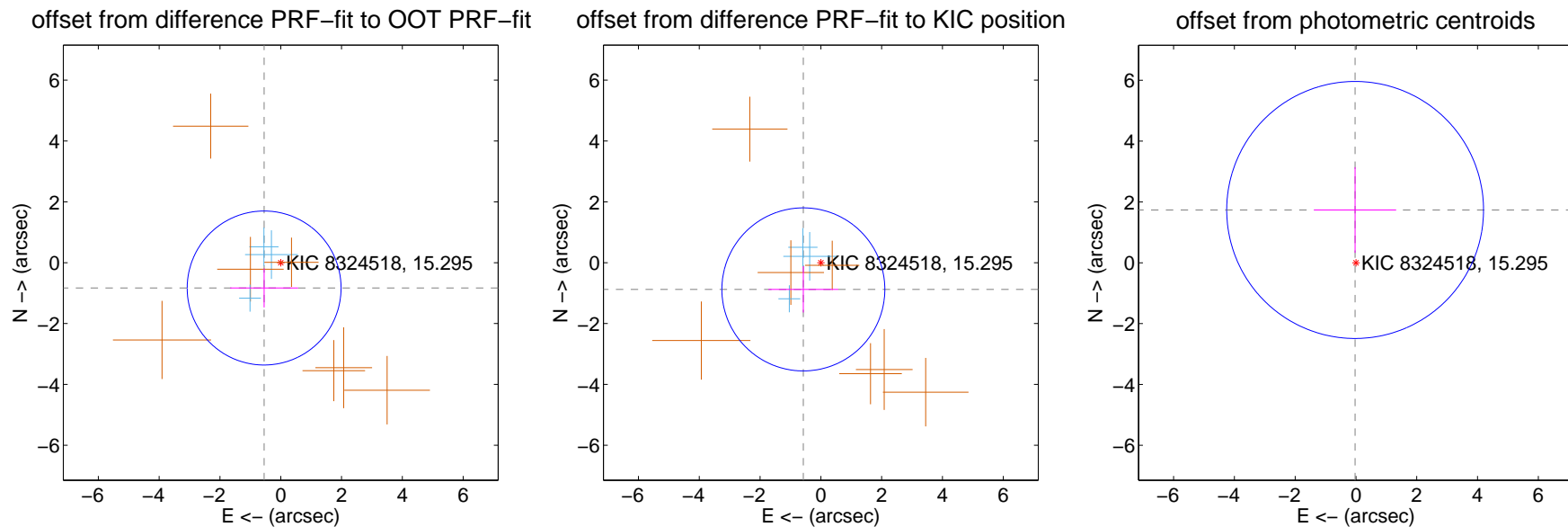
## DV Centroid Data

Supplemental centroid analysis for 008324518-01. Kepler magnitude: 15.29. Transit SNR 12.00

There are 3 quarters with good PRF difference image offsets

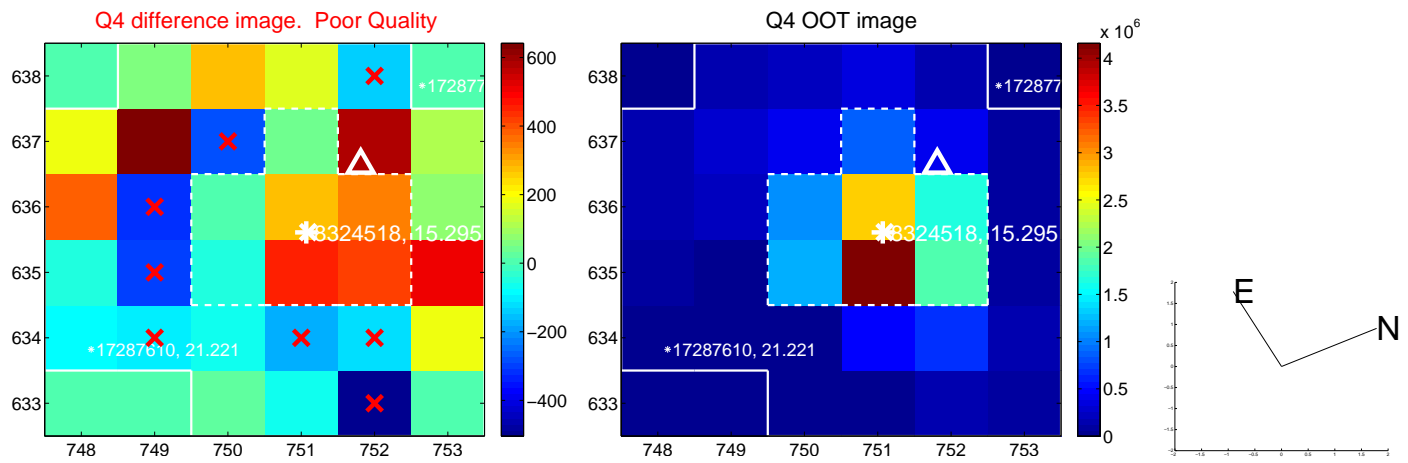
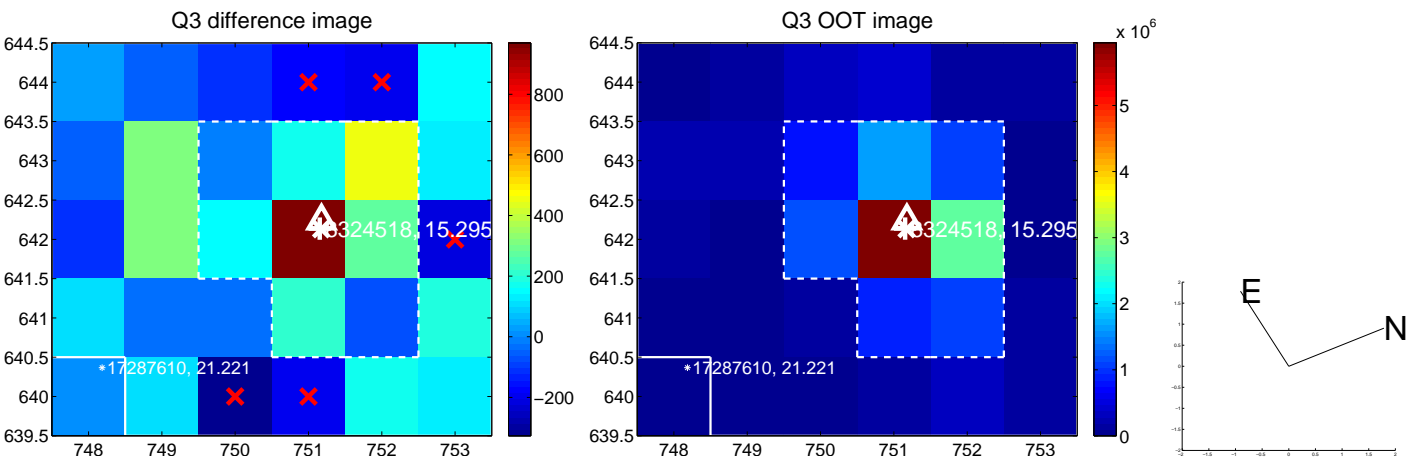
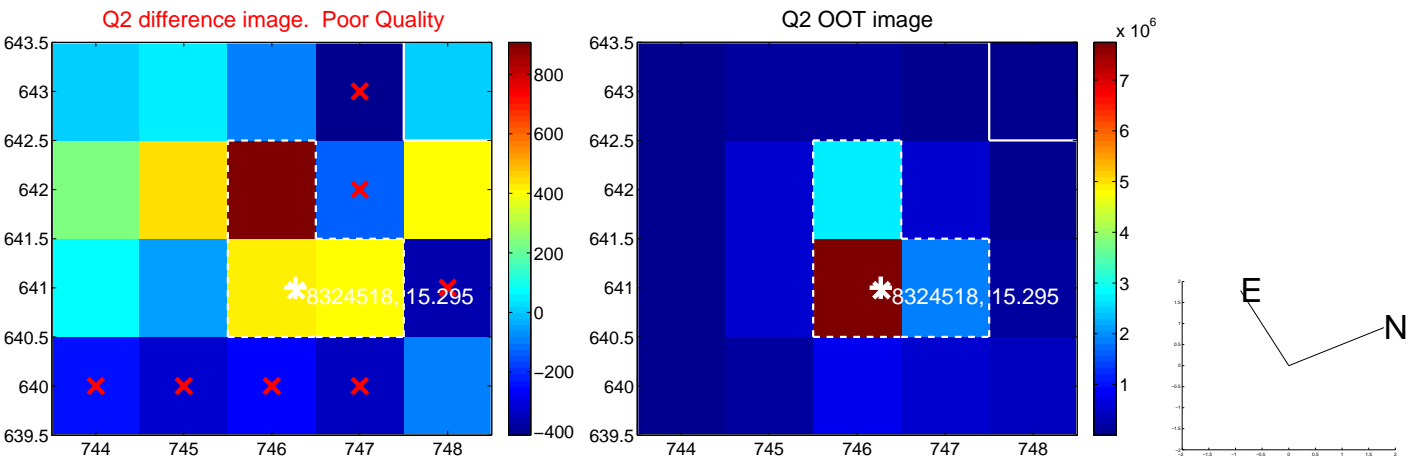
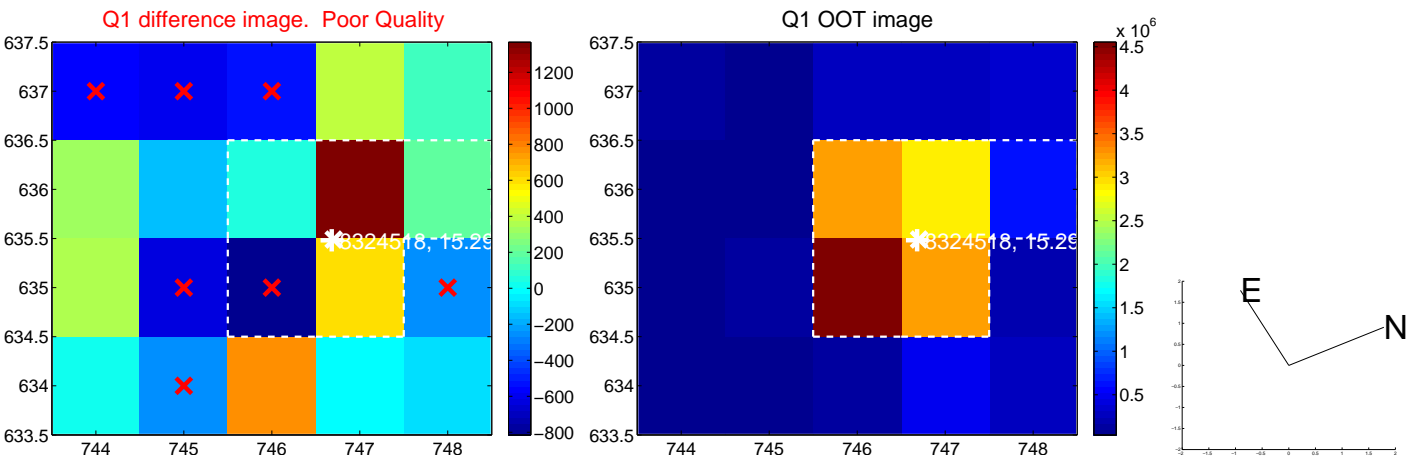
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.995 \pm 0.843$	1.18	$0.546 \pm 1.118$	$-0.832 \pm 0.639$
PRF-fit source offset from KIC position	$1.050 \pm 0.893$	1.18	$0.576 \pm 1.149$	$-0.877 \pm 0.760$
photometric centroid source offset	$1.74 \pm 1.41$	1.23	$0.03 \pm 1.35$	$1.74 \pm 1.41$

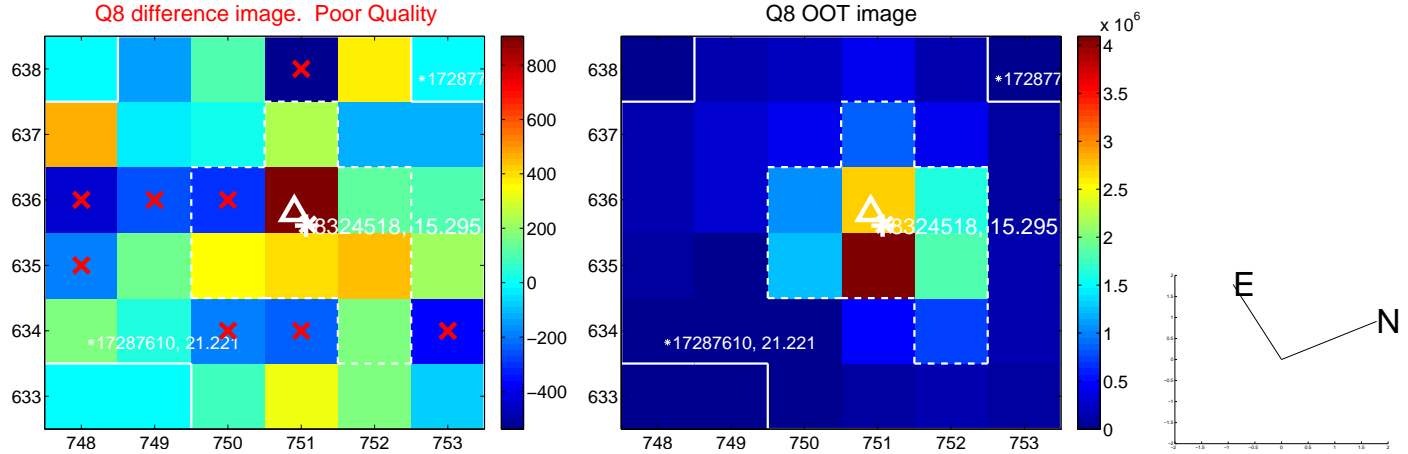
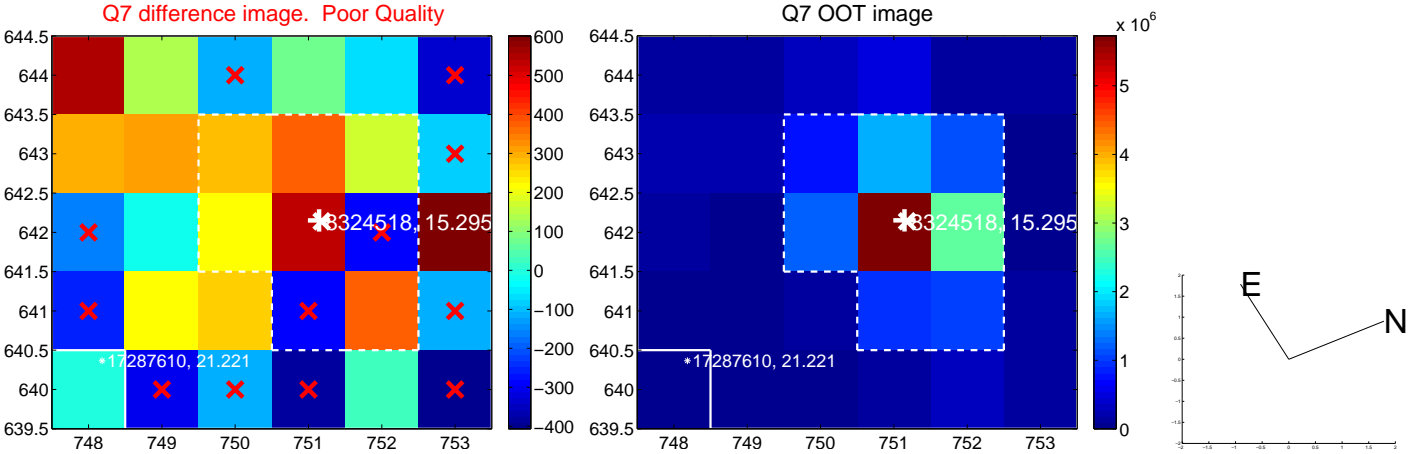
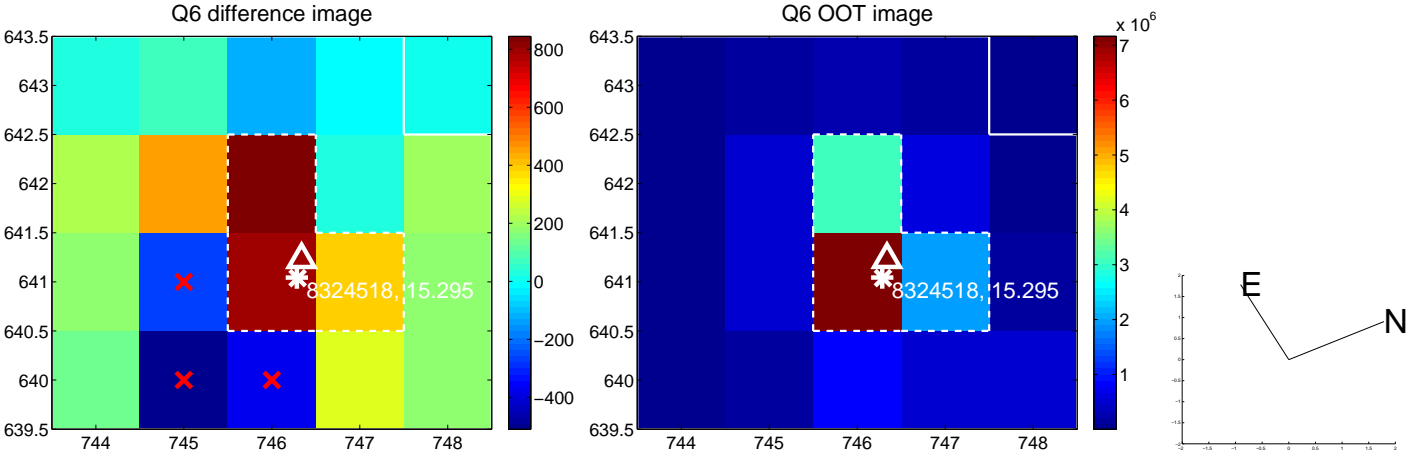
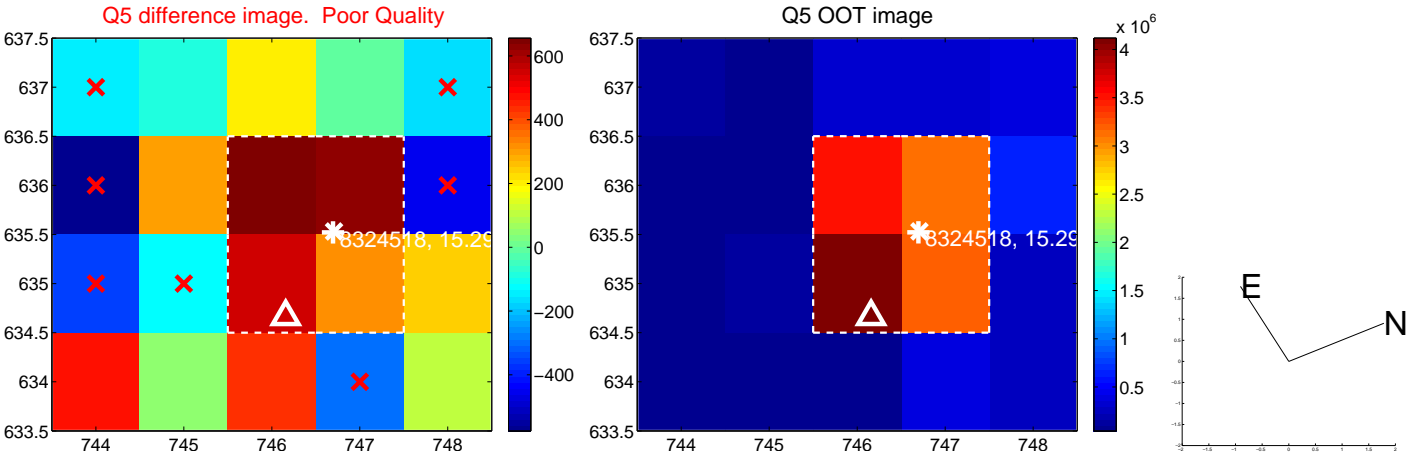


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

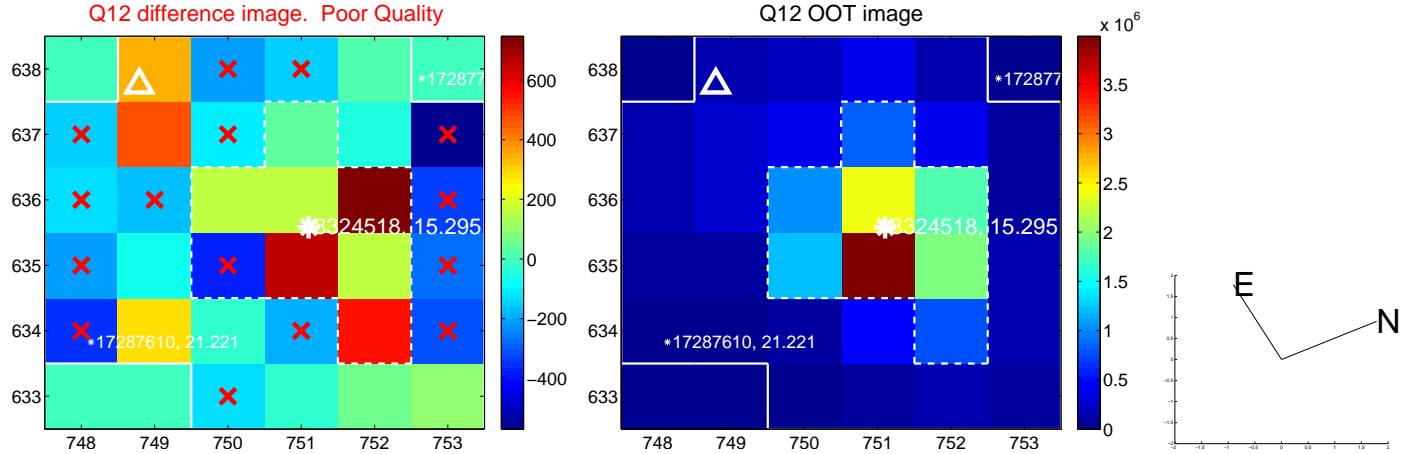
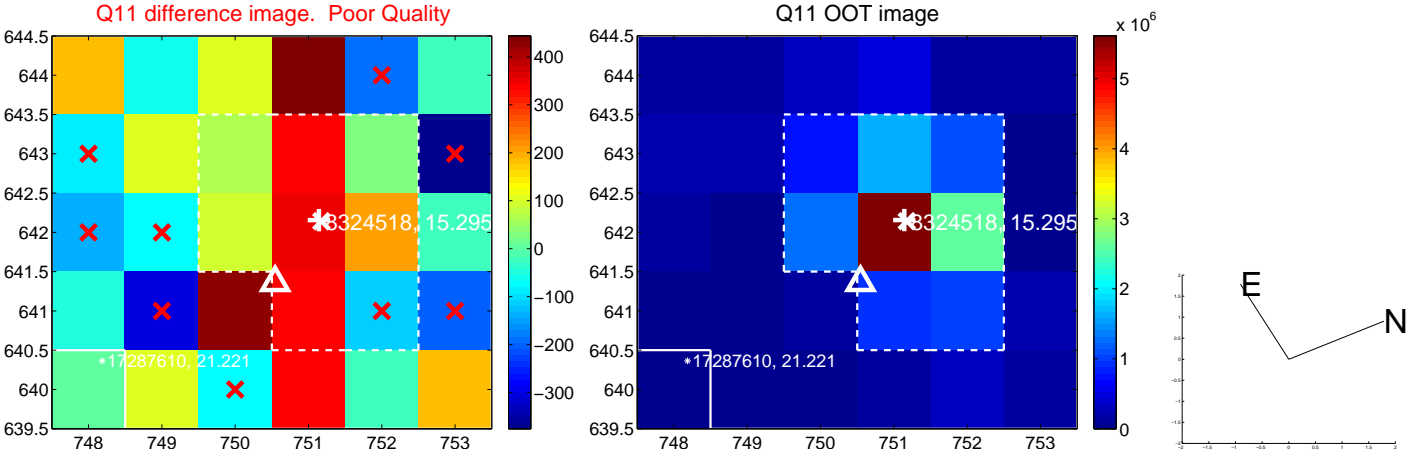
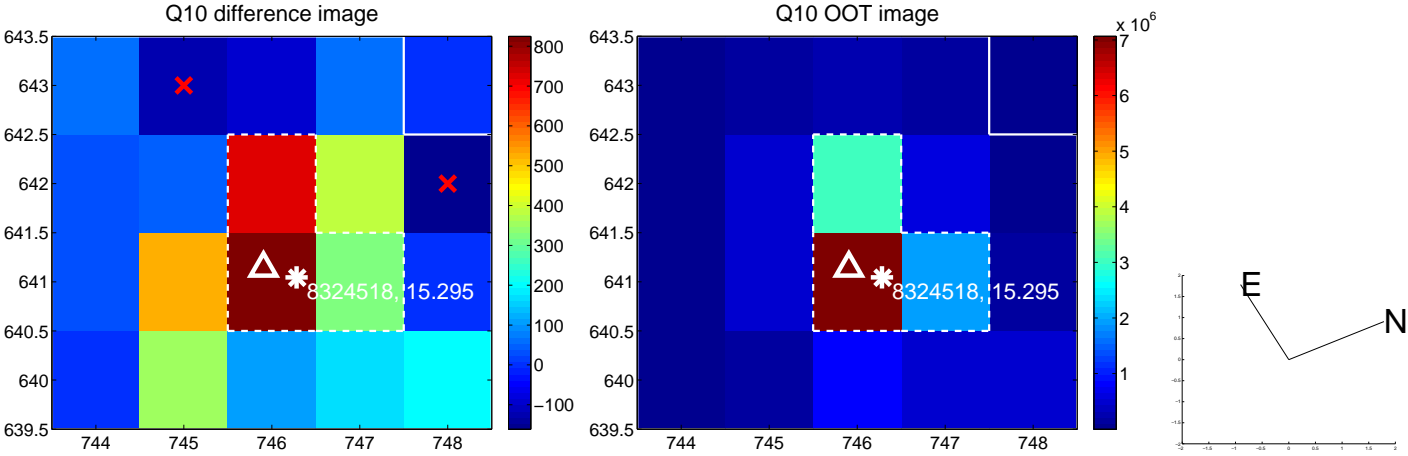
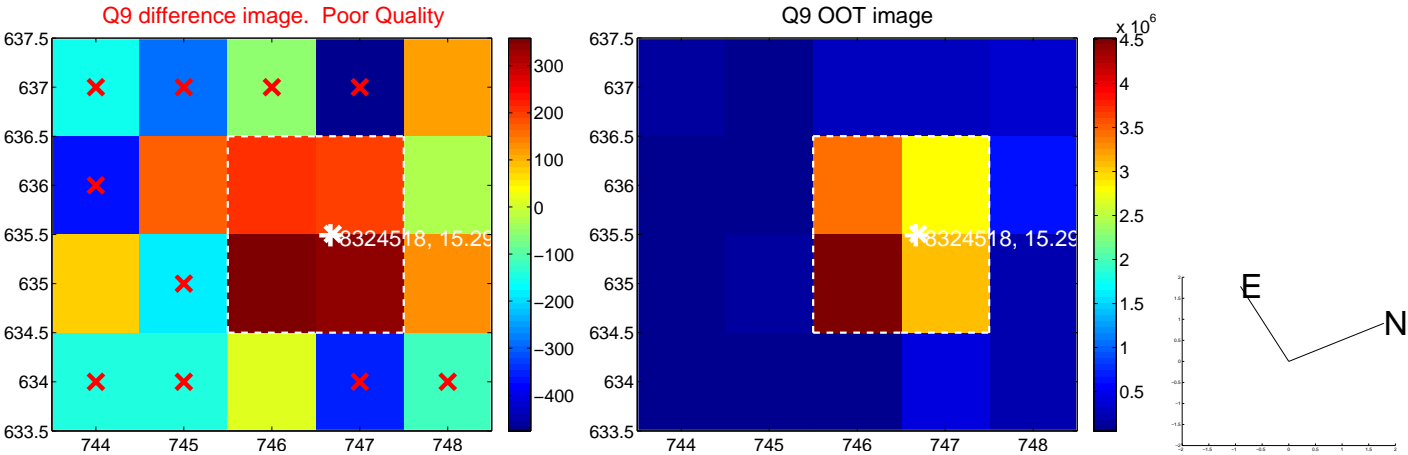


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

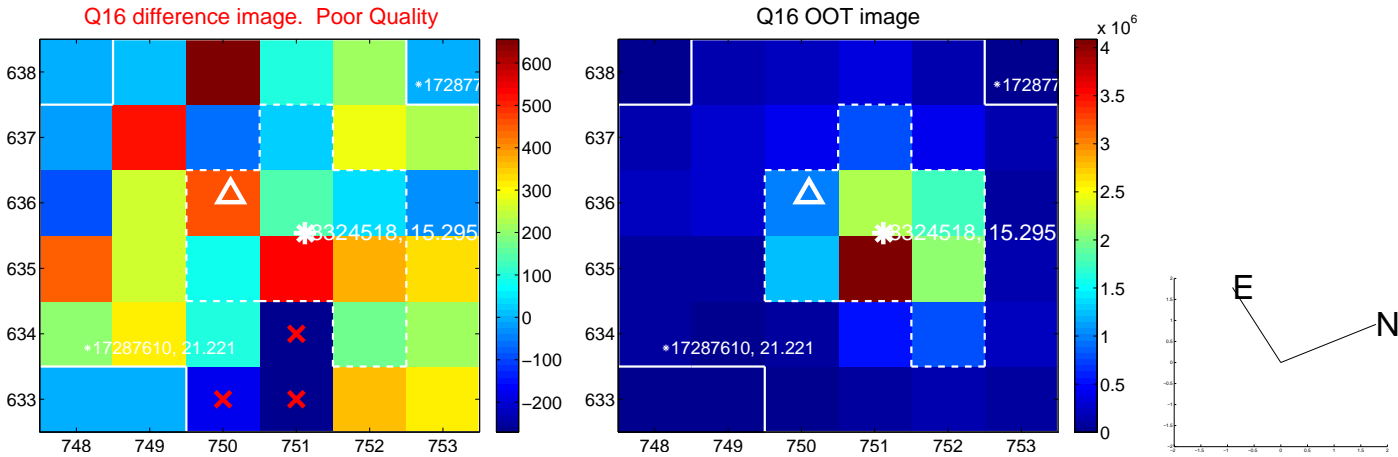
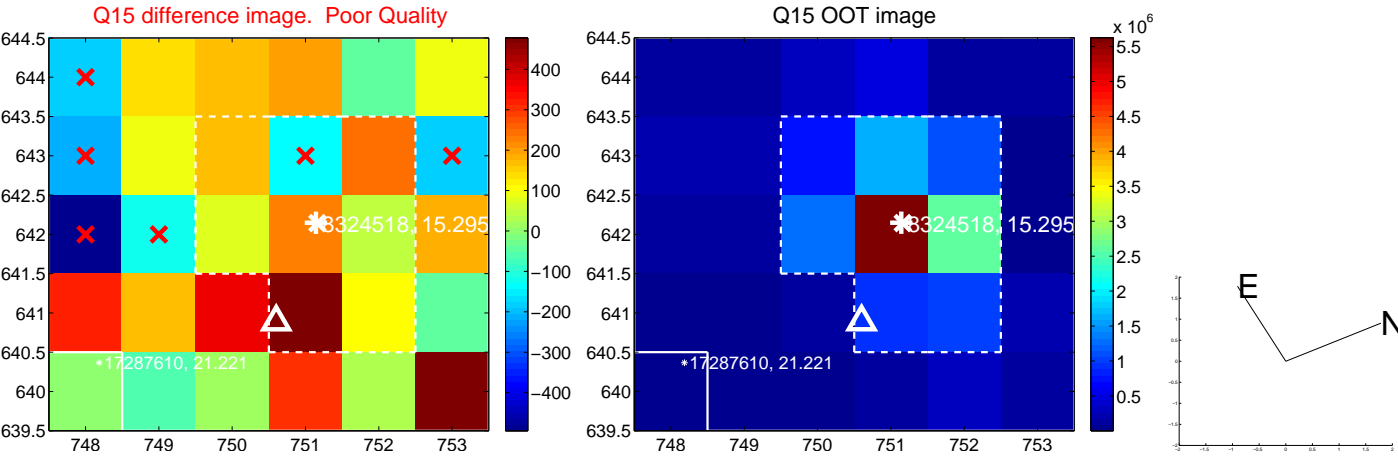
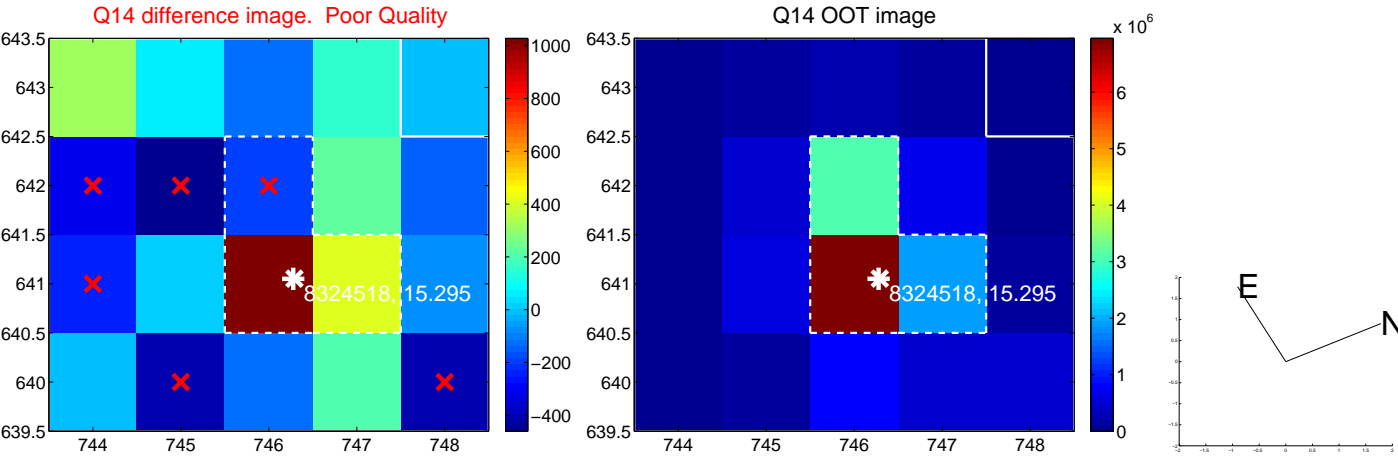
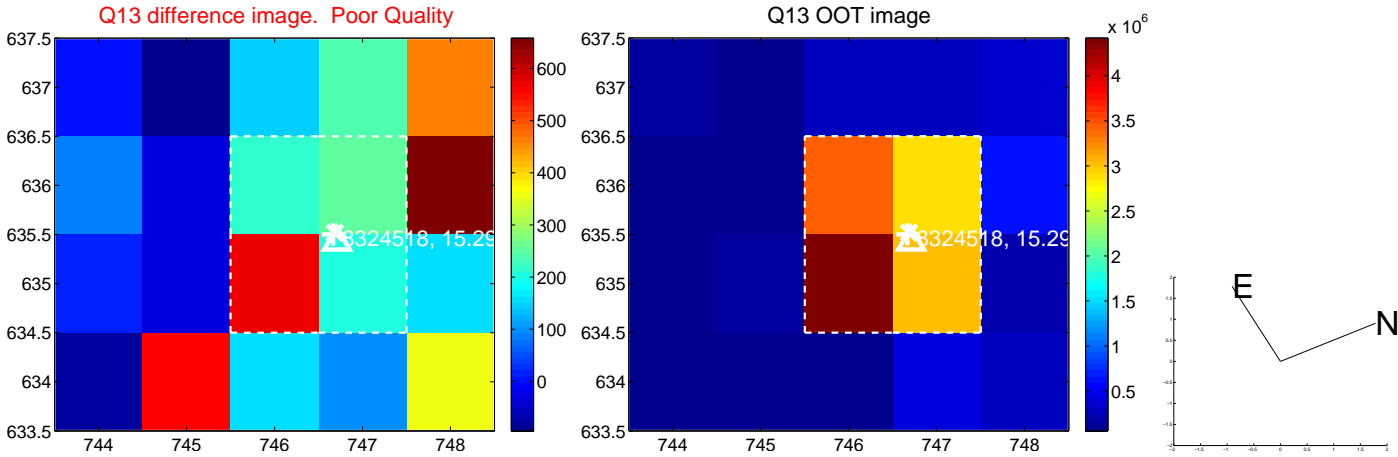




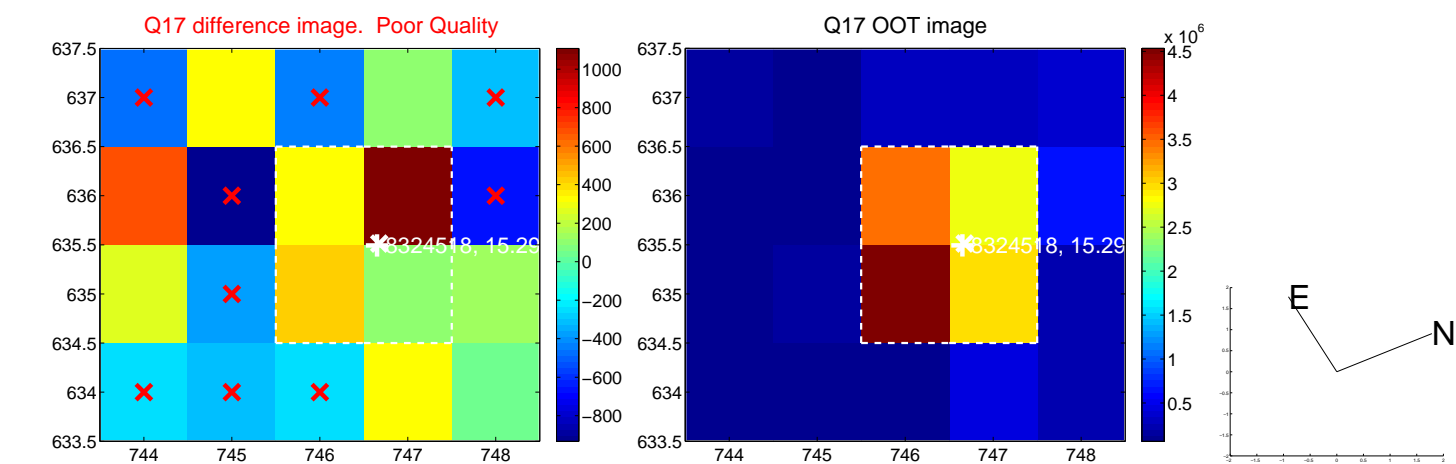
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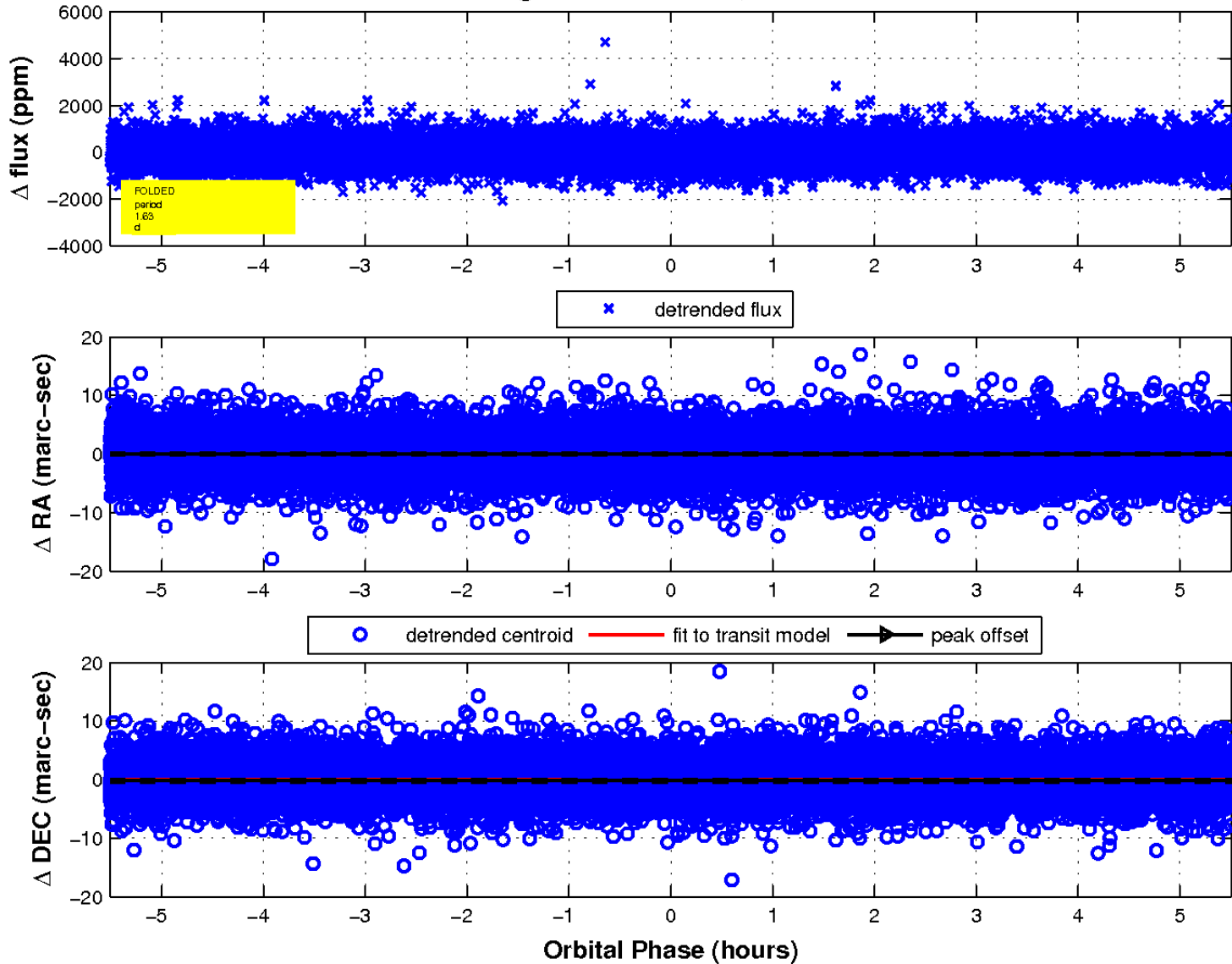
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

