

# KIC 012419303

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
012419303-01	OBS	8079.01	0.608074	131.668441	102.7	0.873	8.7	9.5	1.04	6309	1.25	7366.51

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012419303-01	OBS	FP	0.00	0	0	1	0	CENT_UNRESOLVED_OFFSET

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

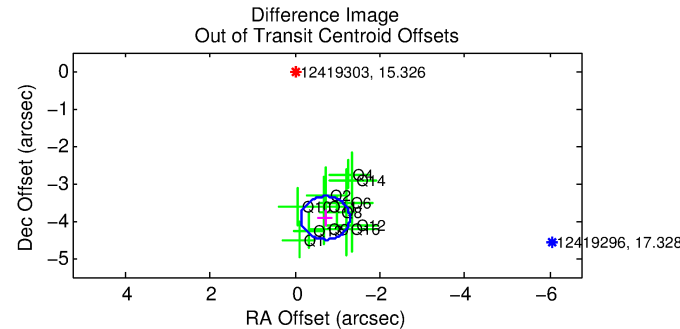
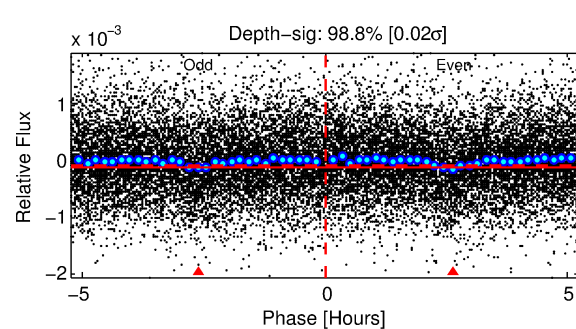
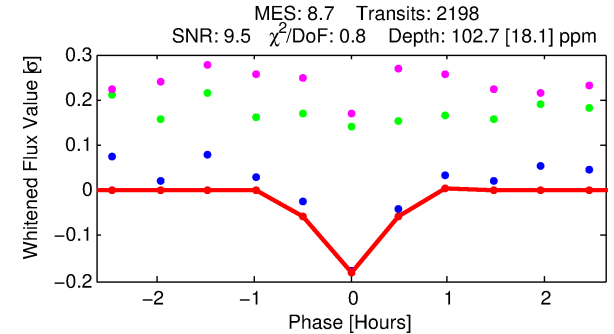
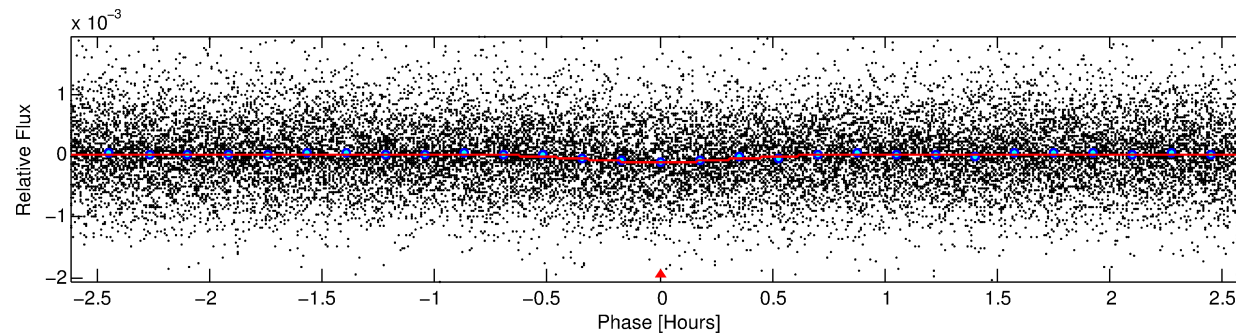
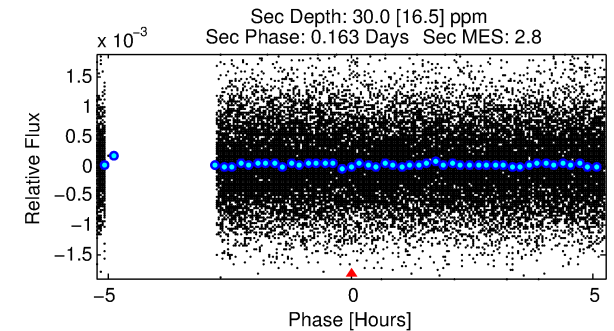
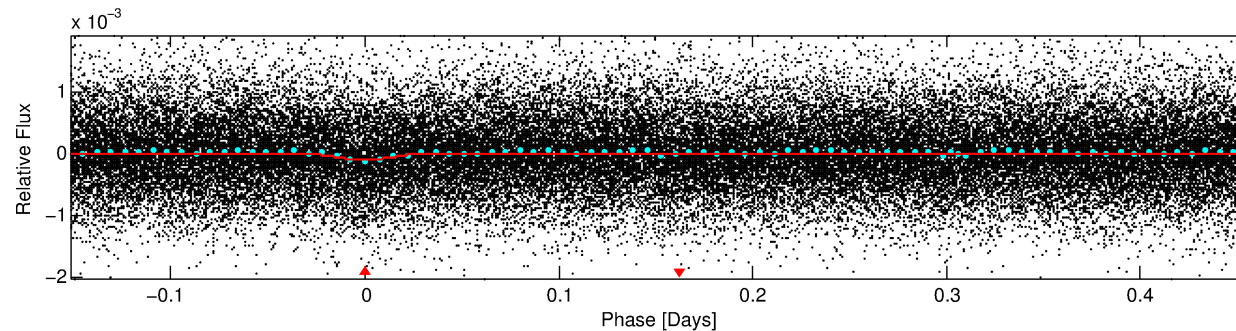
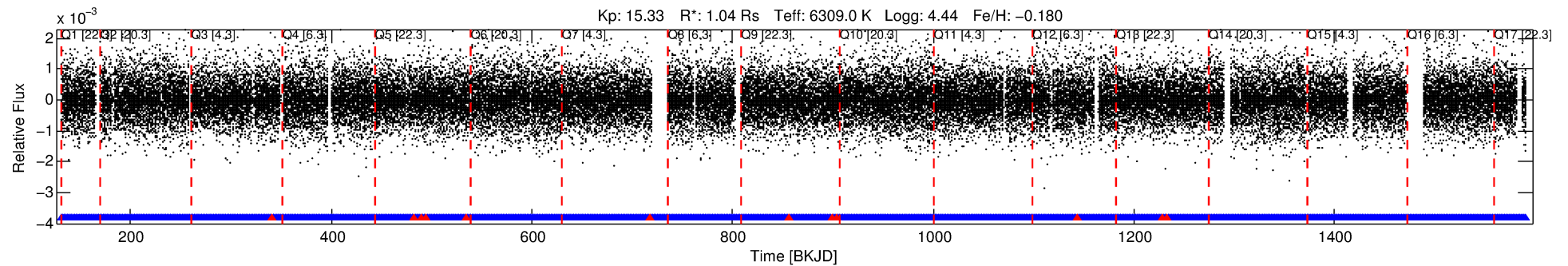
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 012419303-01

No Significant Match Found

# DV One-Page Summary

KIC: 12419303 Candidate: 1 of 1 Period: 0.608 d



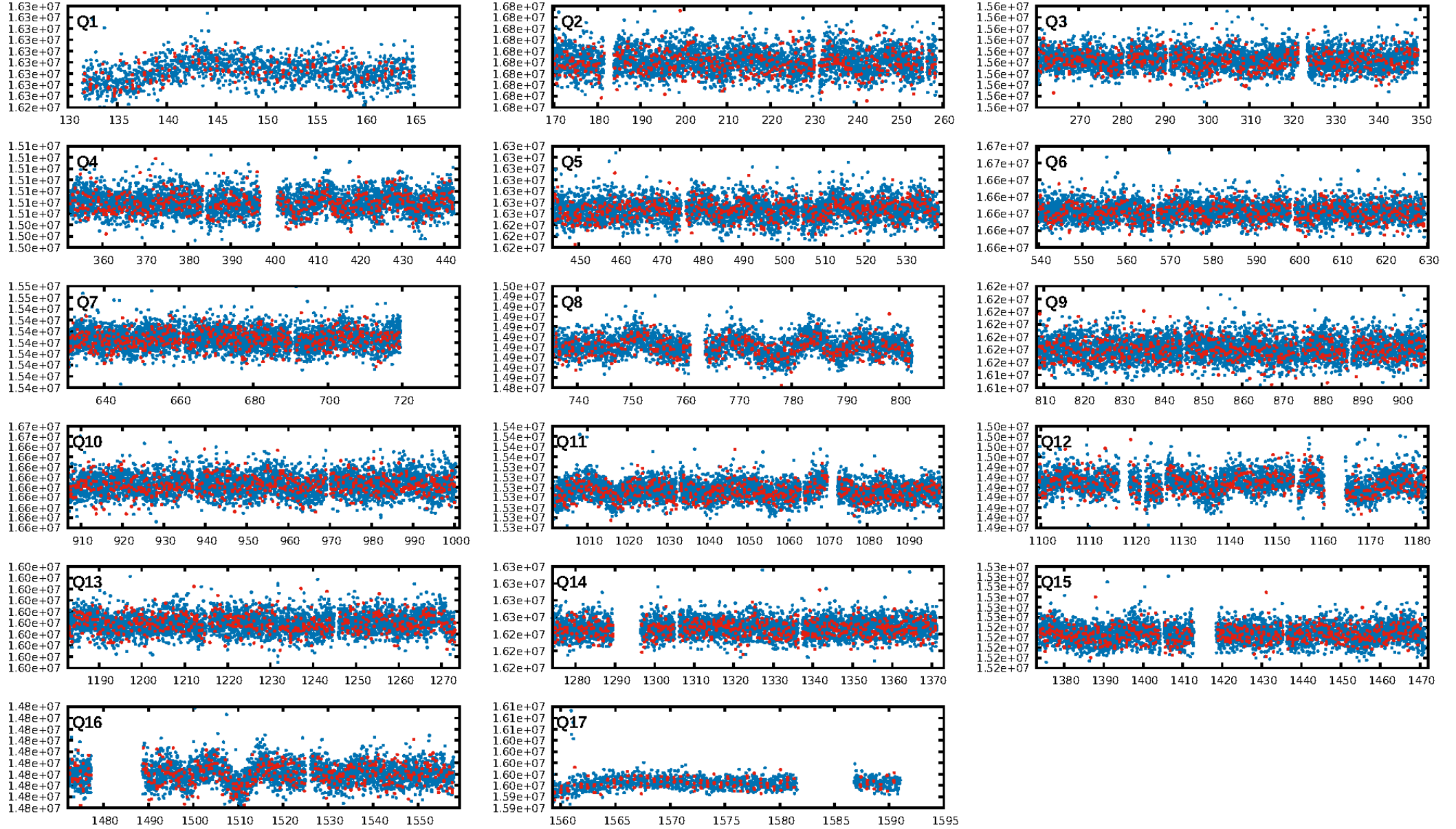
## DV Fit Results:

Period = 0.60807 [0.00001] d  
Epoch = 131.6684 [0.0017] BKJD  
Rp/R\* = 0.0110 [0.0048]  
a/R\* = 2.61 [5.30]  
b = 0.90 [0.50]  
Seff = 7366.51 [3115.66]  
Teq = 2362 [250] K  
Rp = 1.26 [0.69] Re  
a = 0.0145 [0.0040] AU  
Ag = 2.20 [2.44] [0.49σ]  
Teff = 4448 [1160] K [1.76σ]

## DV Diagnostic Results:

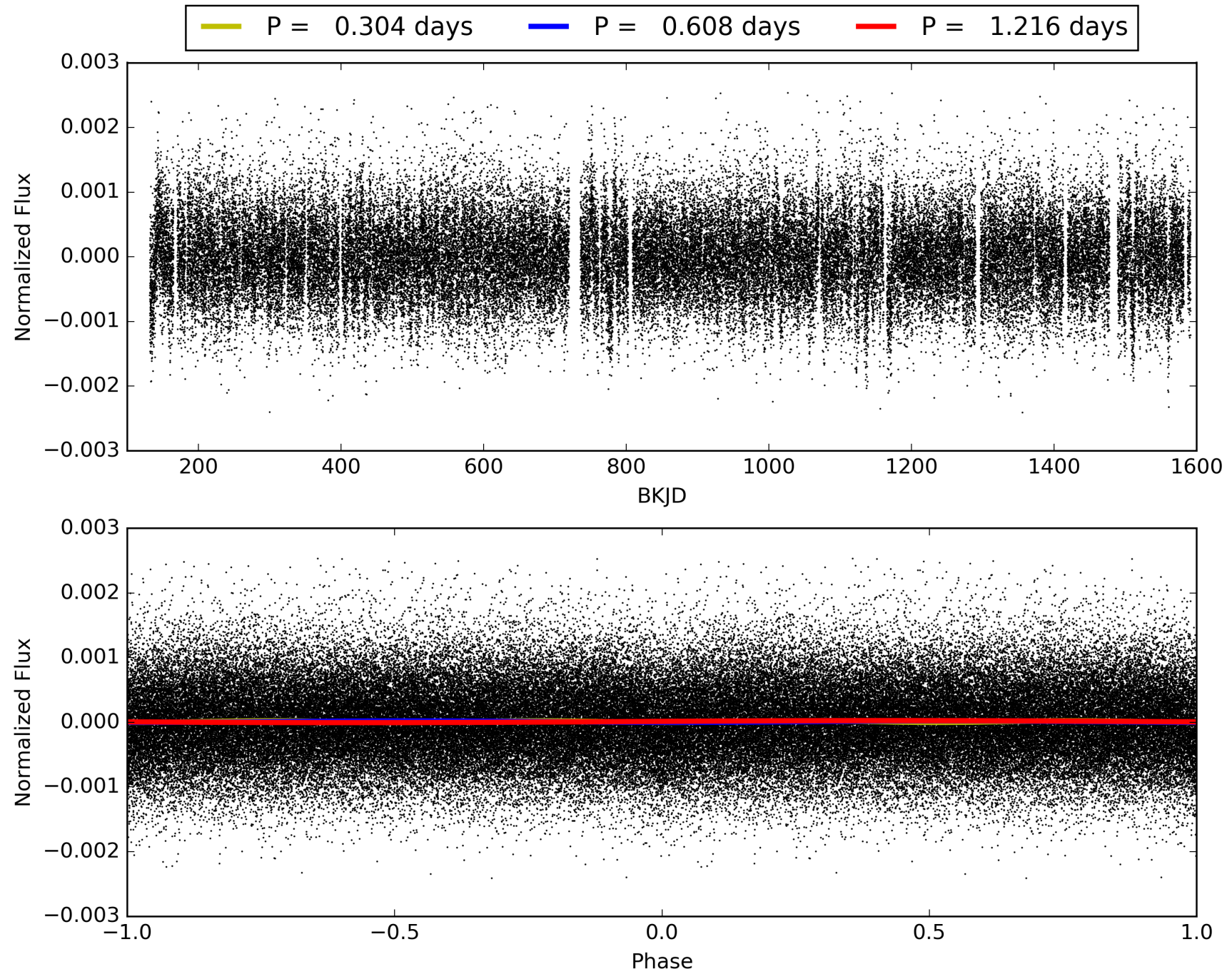
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 8.09e-18  
RollingBand-fgt: 0.99 [2088/2100]  
**GhostDiagnostic-chr: 0.7865**  
Centroid-sig: 0.0%  
Centroid-so: 3.889 arcsec [2.20σ]  
OotOffset-rm: 3.989 arcsec [20.73σ]  
KicOffset-rm: 4.049 arcsec [21.08σ]  
OotOffset-st: 4/1/4/3 [12]  
KicOffset-st: 4/1/4/3 [12]  
DiffImageQuality-fgm: 1.00 [12/12]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 012419303-01, PDC Light Curves



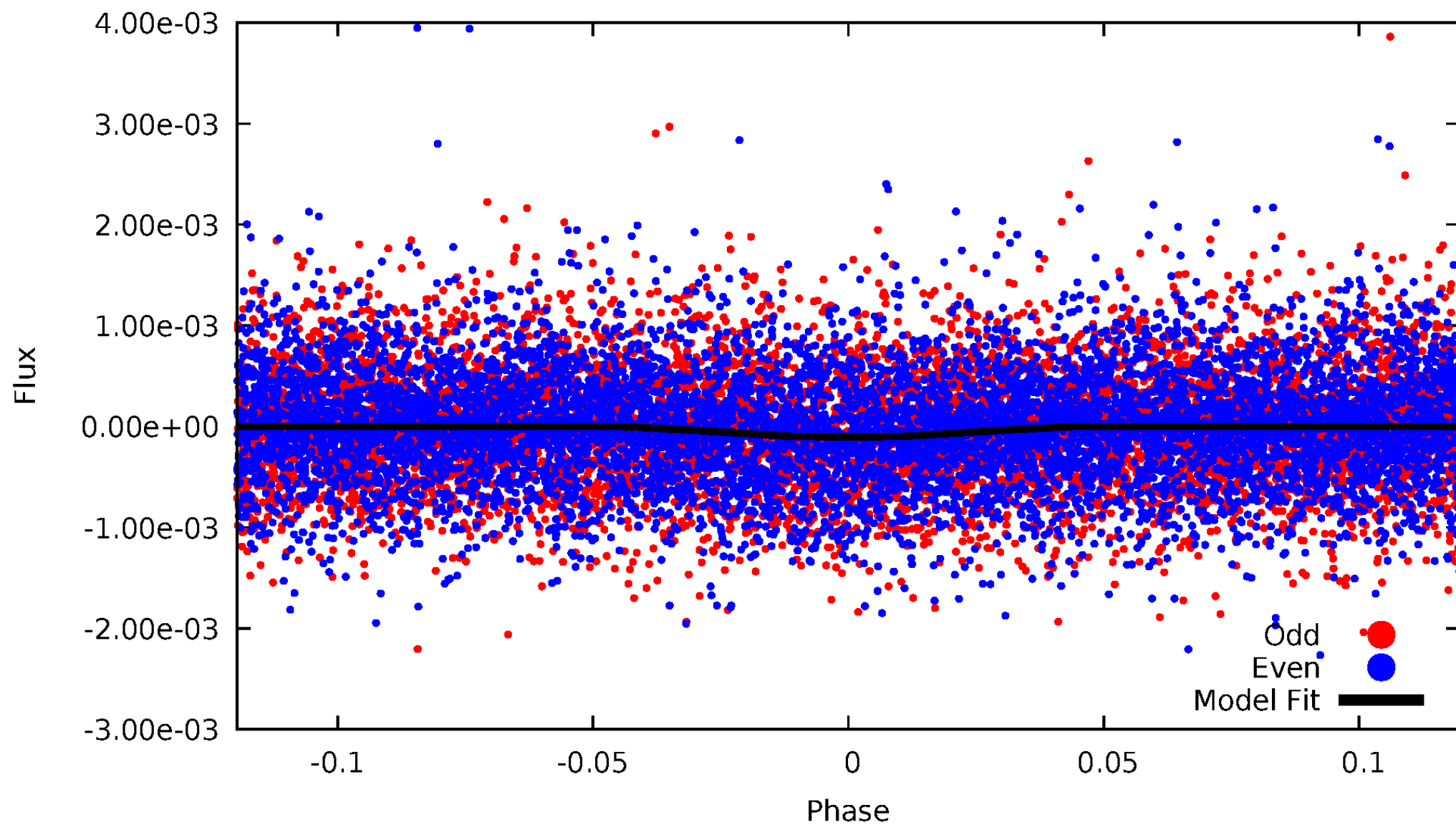


TCE 012419303-01



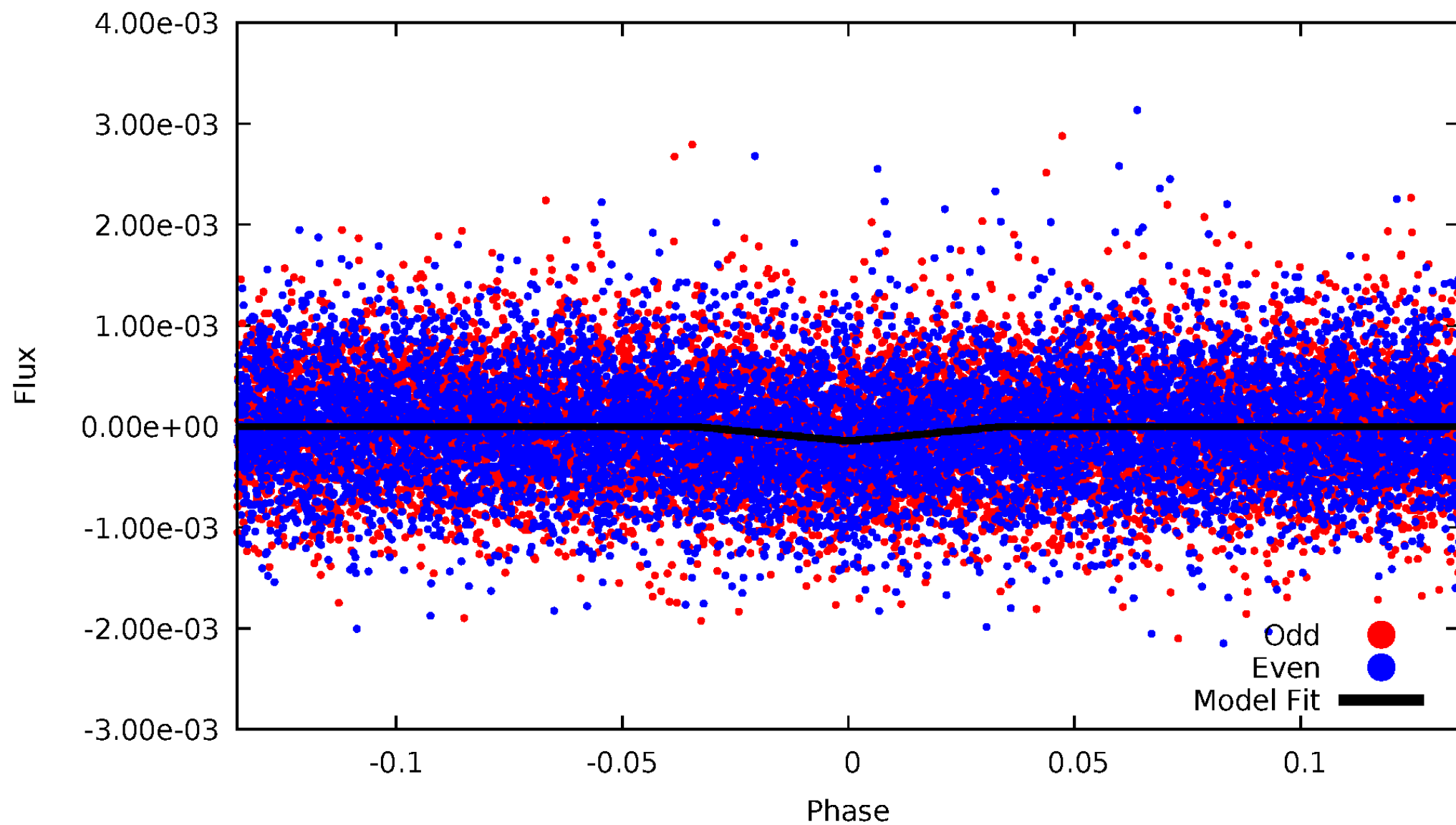
# DV Odd/Even

TCE 012419303-01

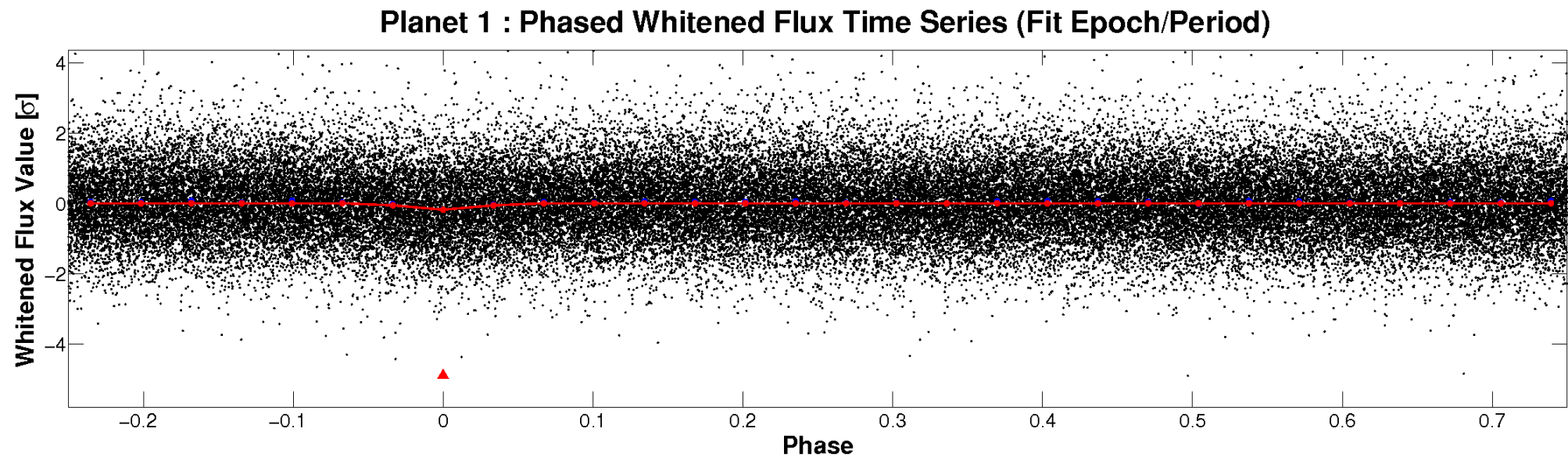
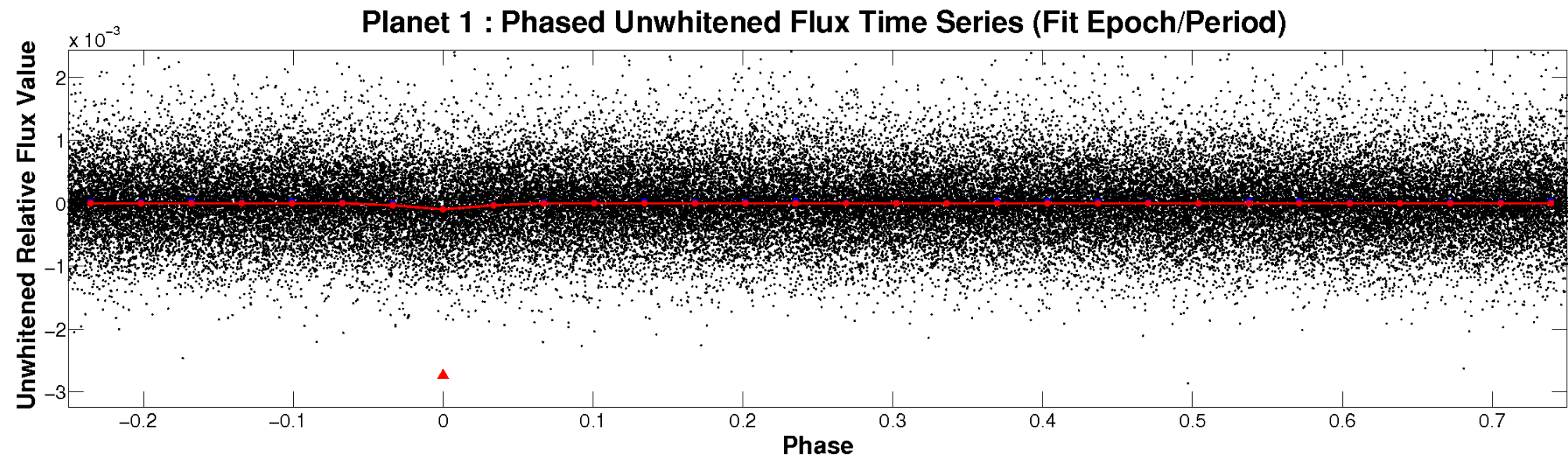


# ALT Odd/Even

TCE 012419303-01



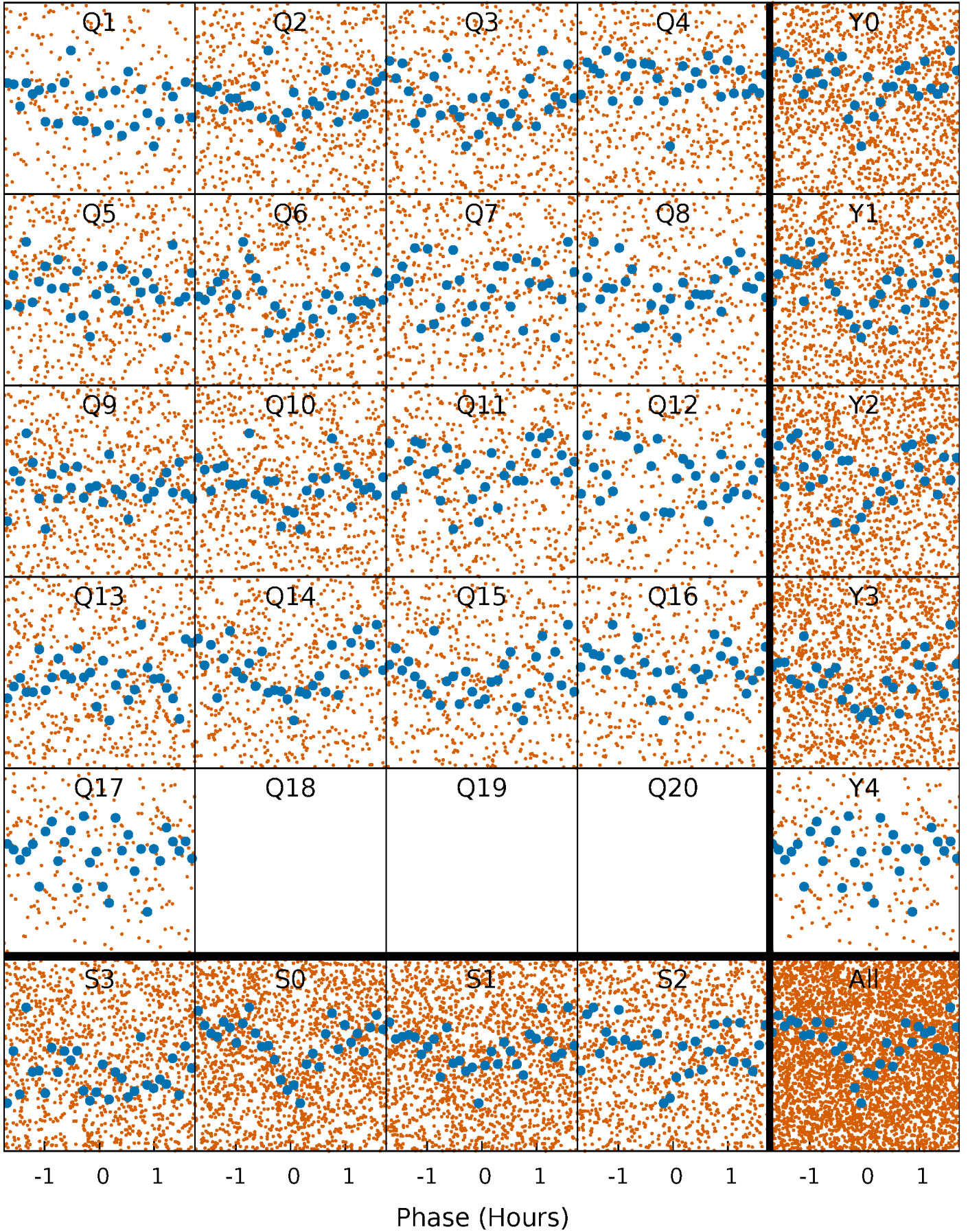
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

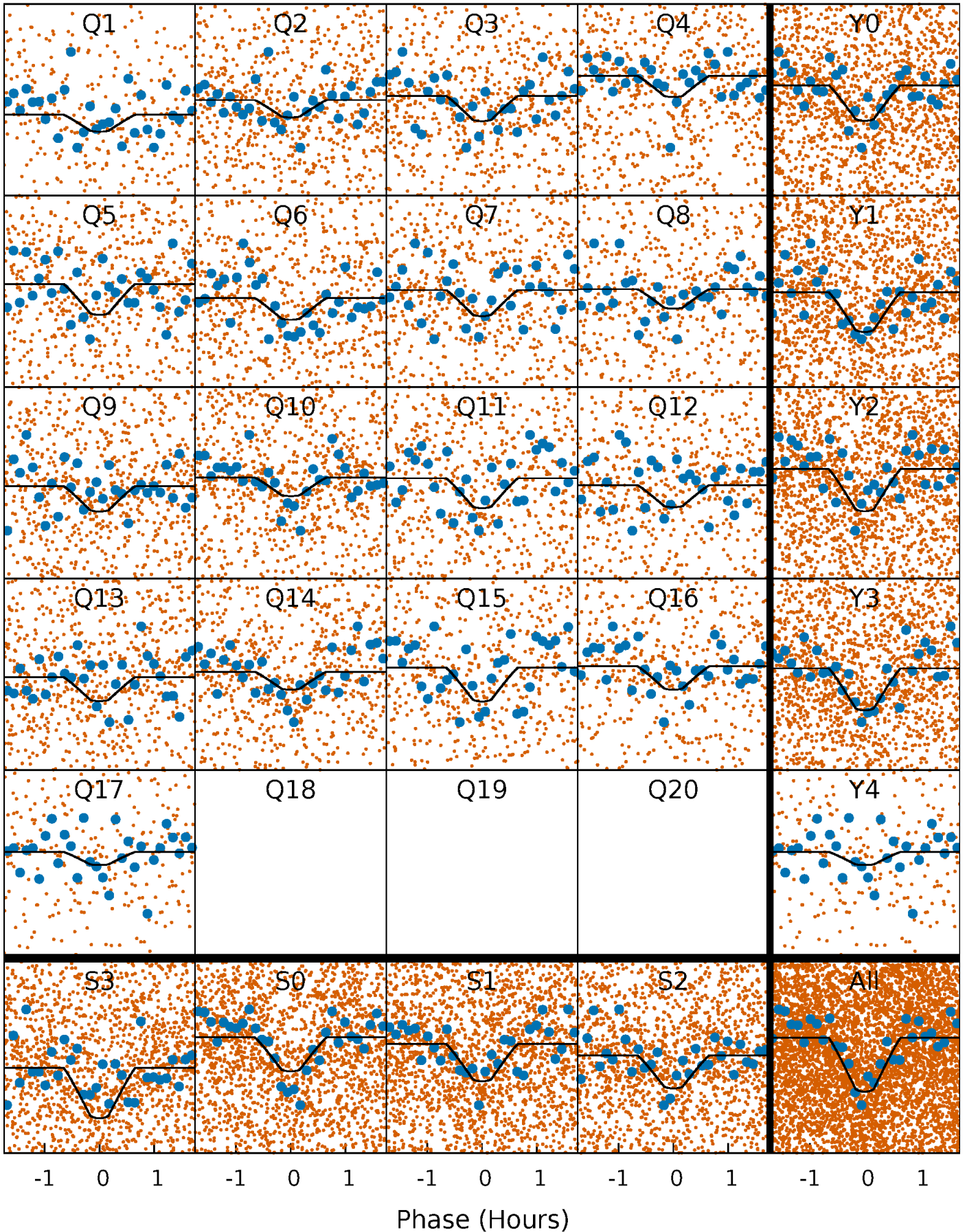
TCE 012419303-01 P= 0.608074 Days  $T_0=131.668441$  (BKJD)





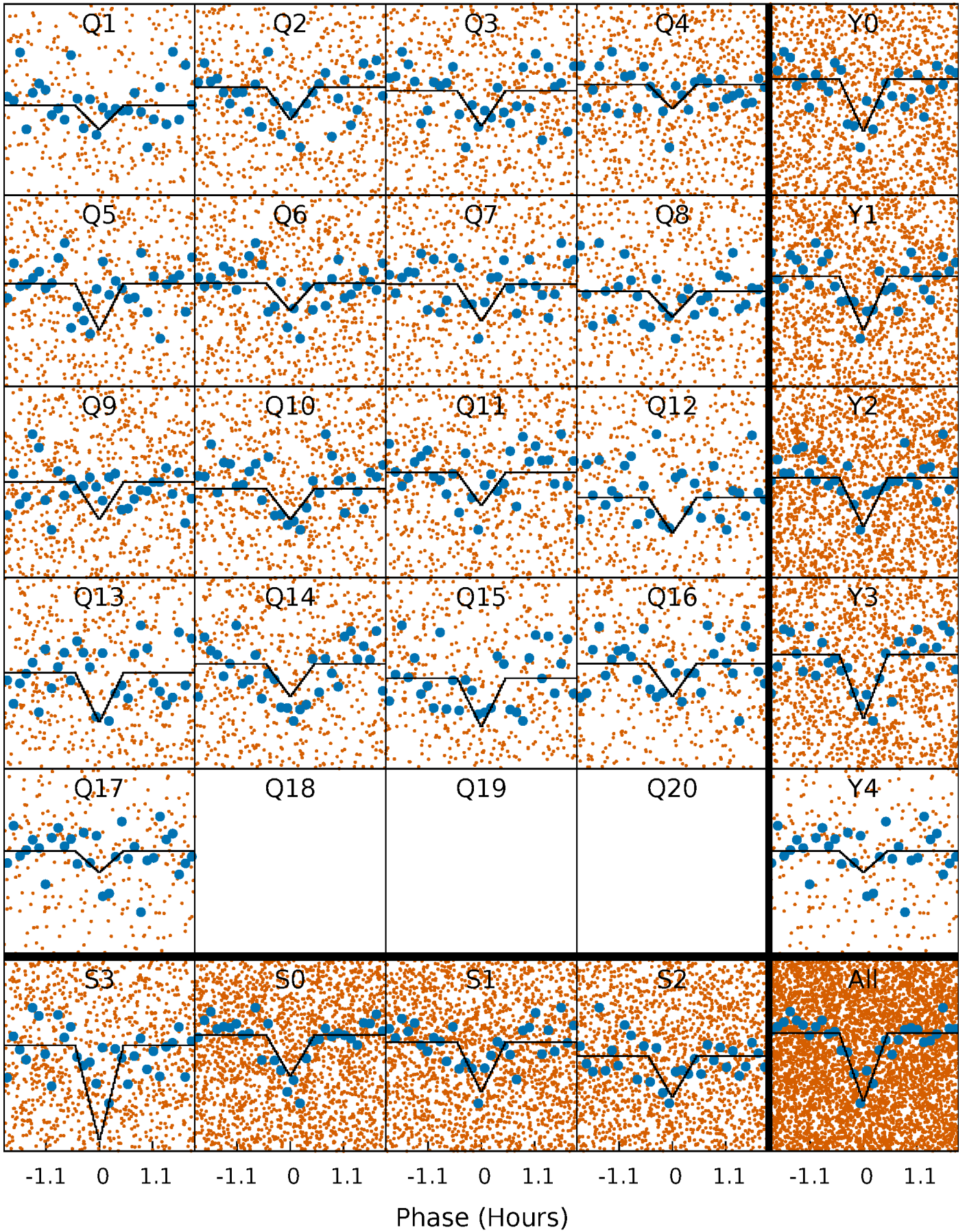
# DV Quarter-Phased Transit Curves

TCE 012419303-01 P= 0.608074 Days  $T_0=131.668441$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

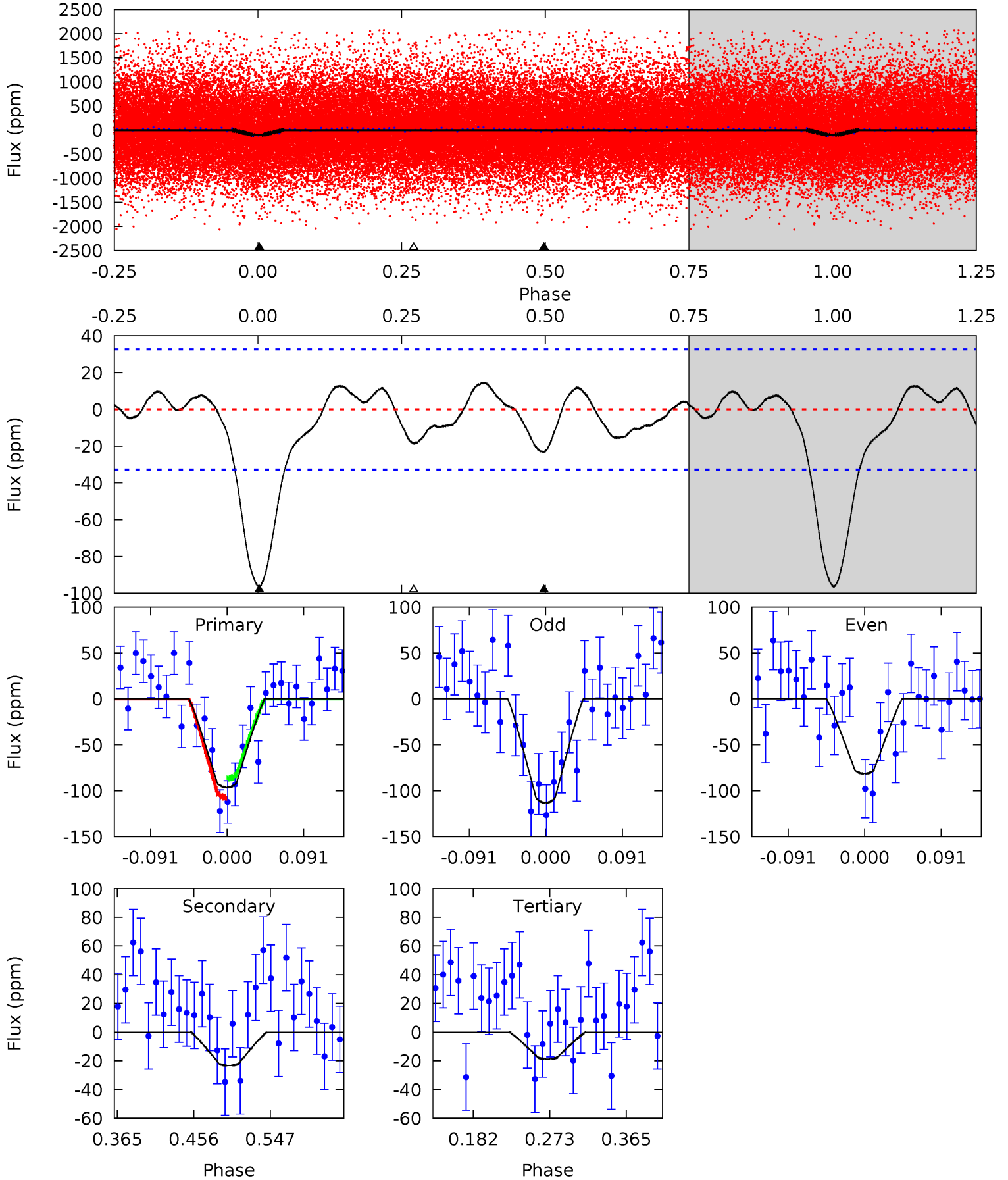
TCE 012419303-01 P= 0.608073 Days  $T_0=131.669096$  (BKJD)



# DV Model-Shift Uniqueness Test

012419303-01, P = 0.608074 Days, E = 131.060367 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
13.5	3.26	2.61	0	4.58	1.69	1.24	10.9	13.5	0.65	3.26	2.24	0.89	0.13	1.46

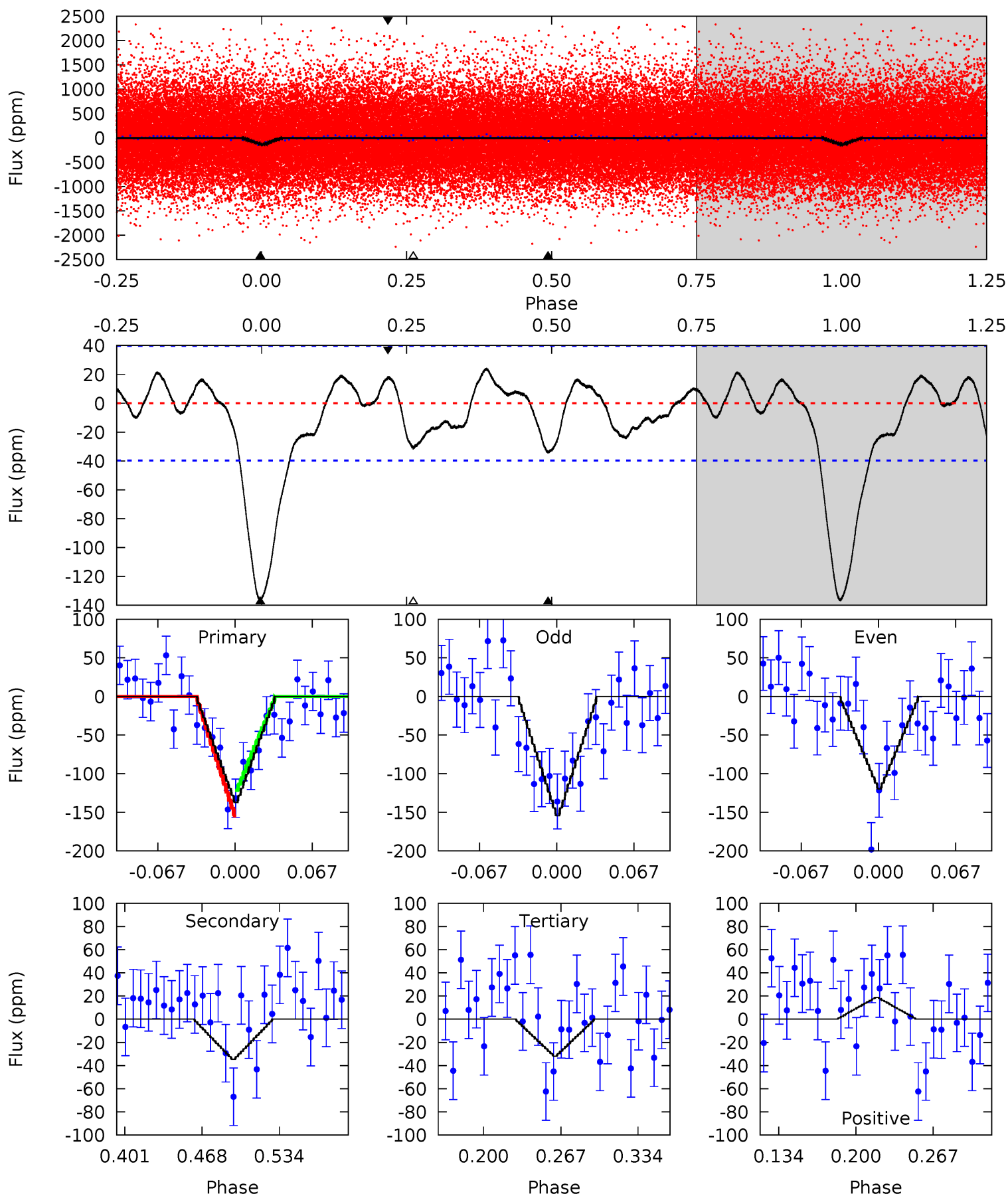




# Alt Model-Shift Uniqueness Test

012419303-01, P = 0.608073 Days, E = 131.061023 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
16.0	4.05	3.73	2.20	4.65	1.83	1.61	12.3	13.8	0.31	1.85	2.03	0.91	0.15	1.94





### Stellar Parameters For KIC 012419303

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6309^{+175}_{-219}$	$4.441^{+0.054}_{-0.216}$	$-0.180^{+0.250}_{-0.300}$	$1.044^{+0.349}_{-0.116}$	$1.096^{+0.154}_{-0.139}$	$1.355^{+0.398}_{-0.727}$
	+3%/-3%	+1%/-5%	+139%/-167%	+33%/-11%	+14%/-13%	+29%/-54%
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 012419303-01 / KOI 8079.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-23 \pm 7$	$1.30^{+0.65}_{-0.52}$	$3378^{+240}_{-186}$	$4196^{+1171}_{-780}$	$1.517^{+2.827}_{-0.866}$
Alt.	$-35 \pm 9$	$1.41^{+0.69}_{-0.58}$	$3376^{+254}_{-164}$	$4387^{+1258}_{-707}$	$1.800^{+3.606}_{-0.954}$

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

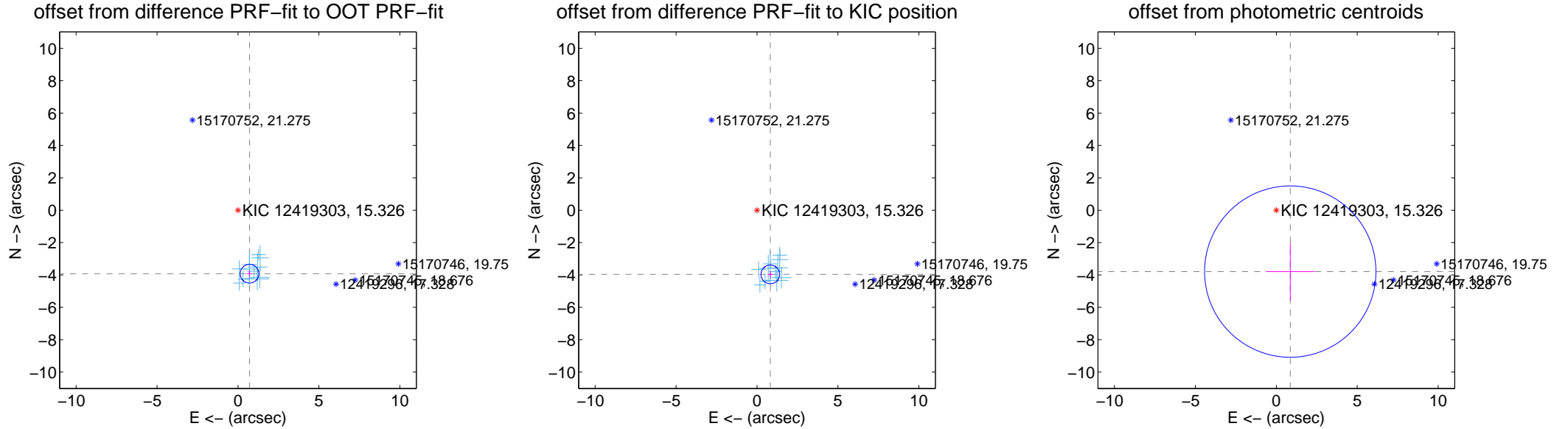
## DV Centroid Data

Supplemental centroid analysis for 012419303-01. Kepler magnitude: 15.33. Transit SNR 9.50

There are 12 quarters with good PRF difference image offsets

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

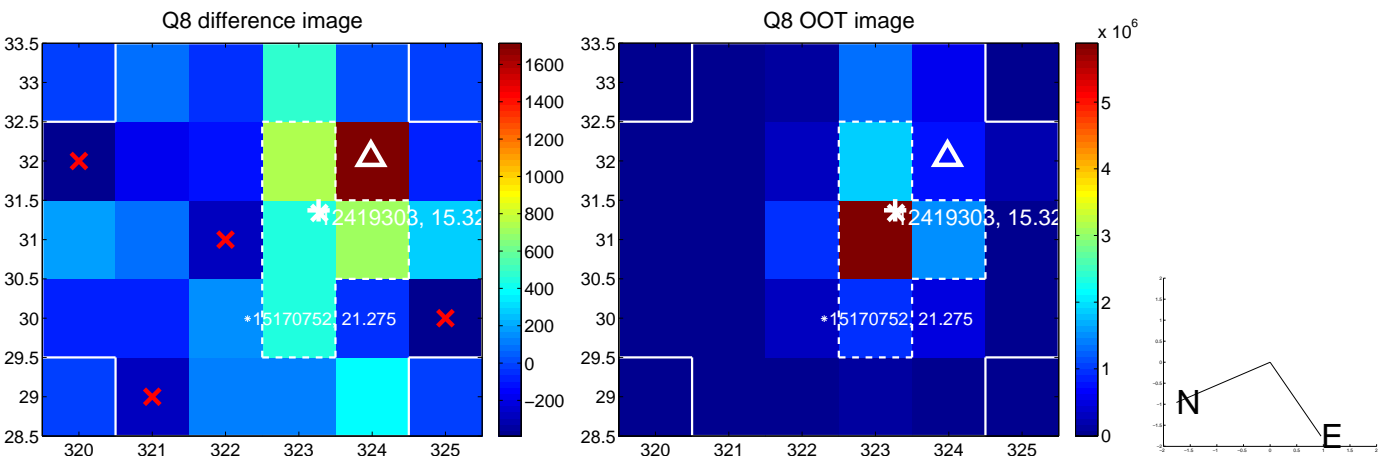
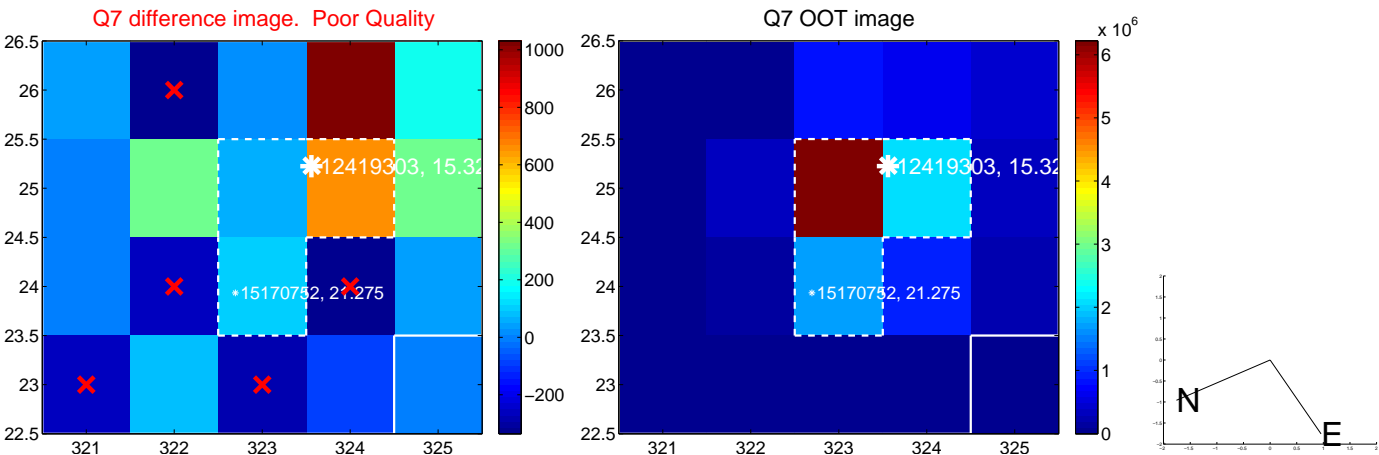
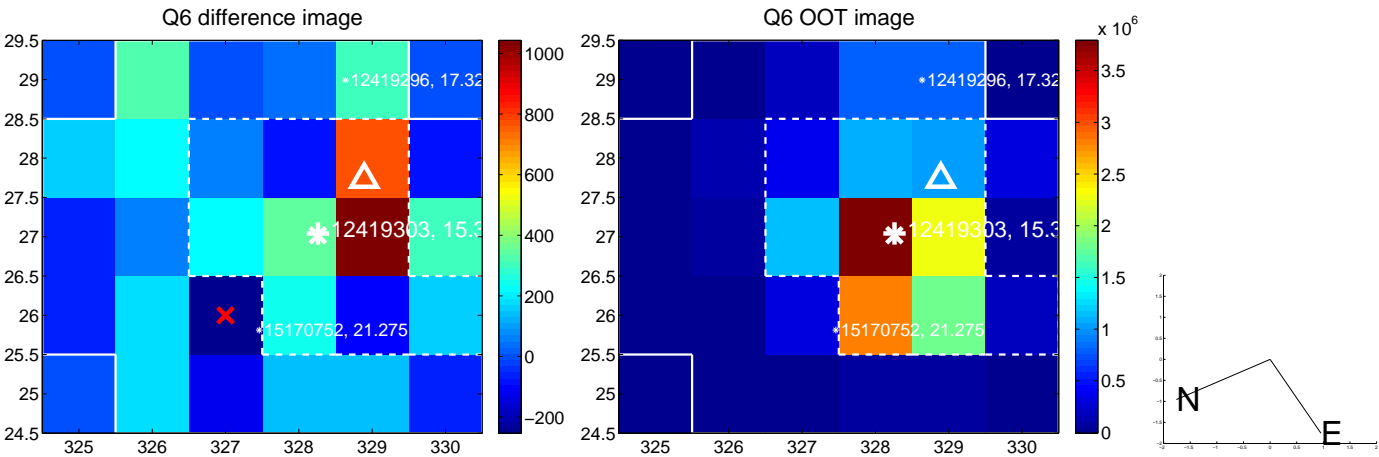
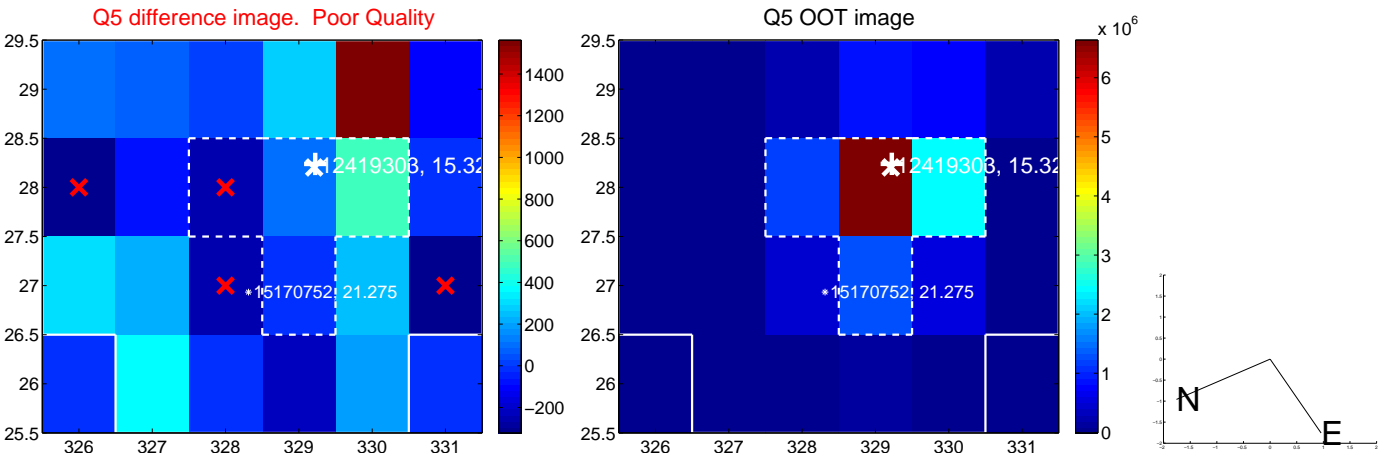
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.989 \pm 0.192$	20.73	$-0.715 \pm 0.160$	$-3.925 \pm 0.193$
PRF-fit source offset from KIC position	$4.049 \pm 0.192$	21.08	$-0.822 \pm 0.160$	$-3.965 \pm 0.193$
photometric centroid source offset	$3.89 \pm 1.76$	2.20	$-0.86 \pm 1.50$	$-3.79 \pm 1.78$



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 are from the UKIRT catalog.

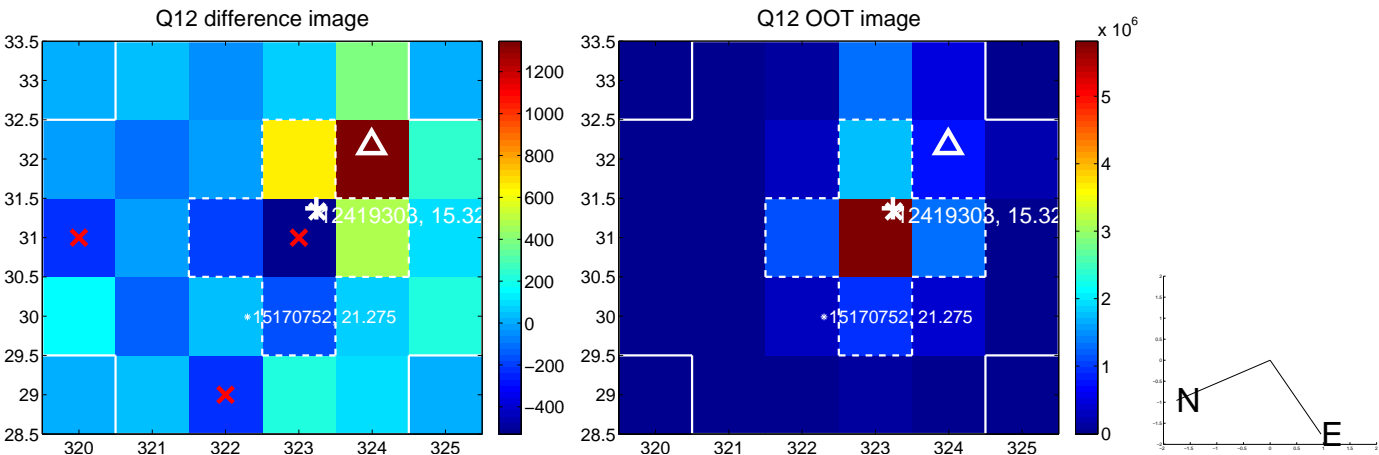
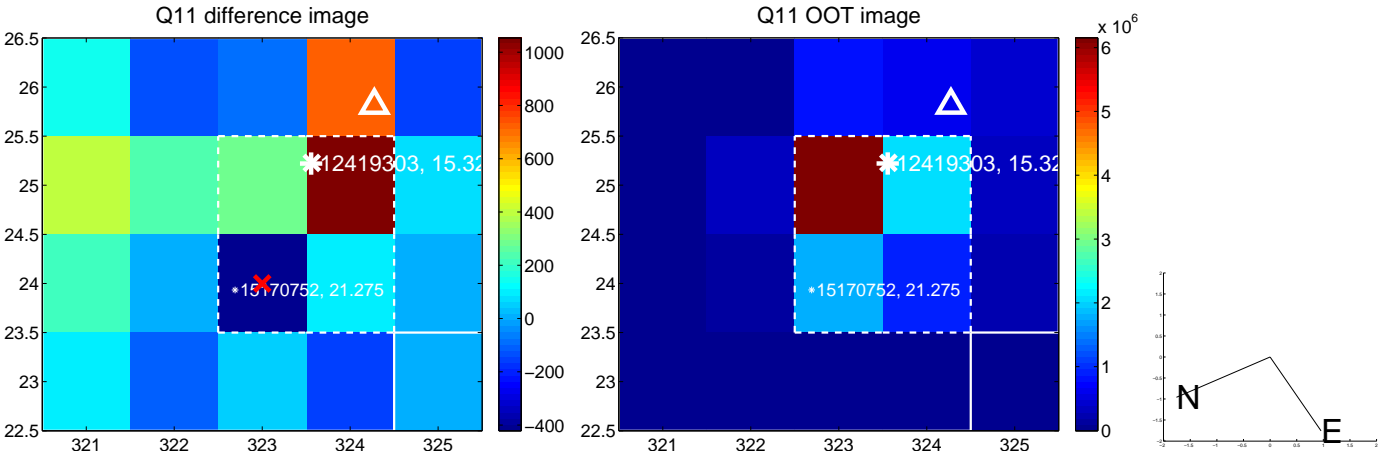
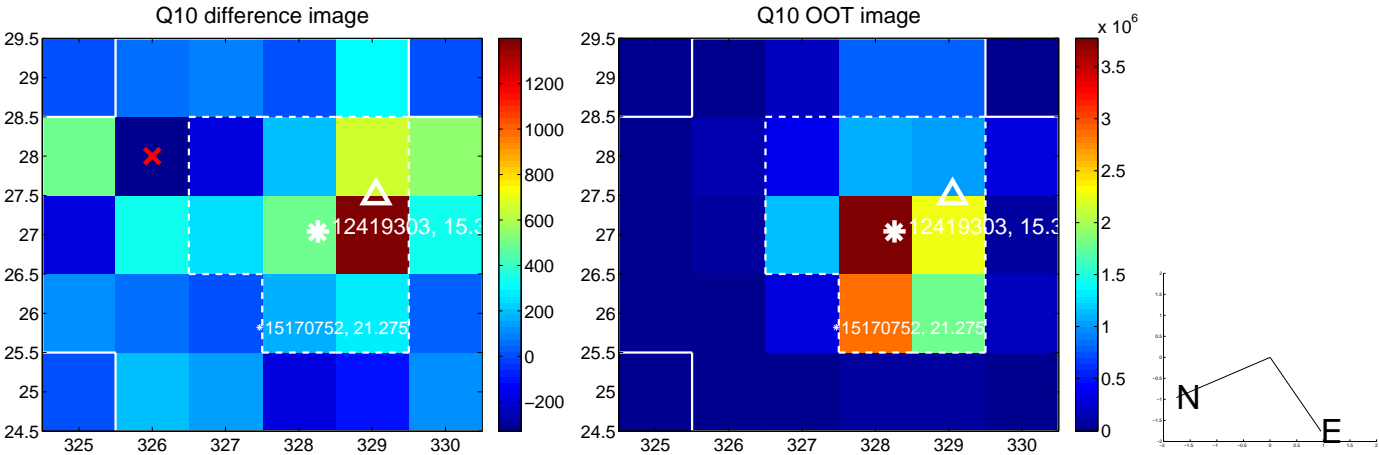
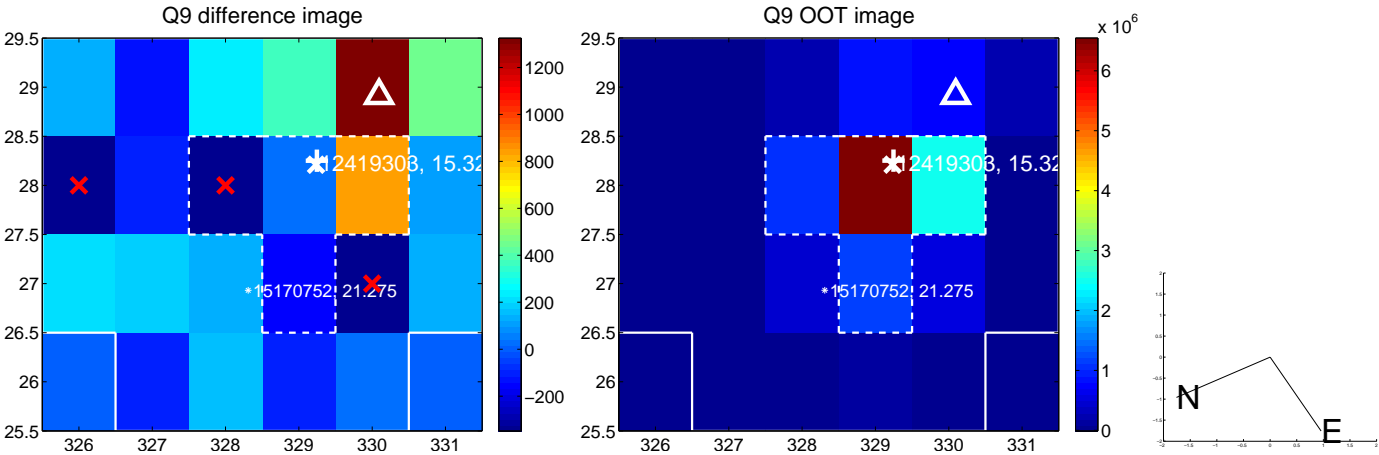


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

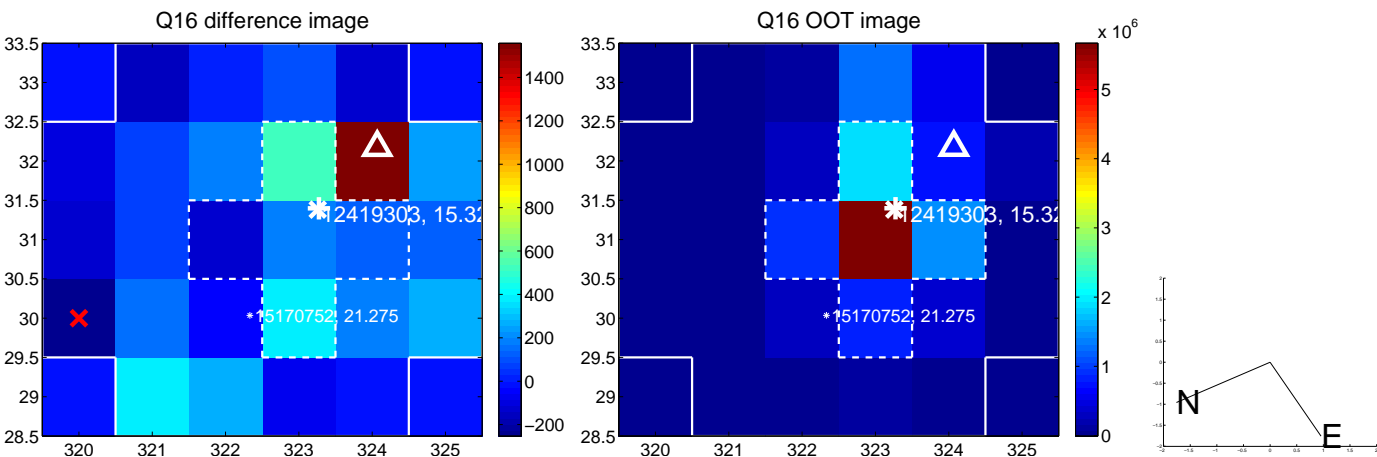
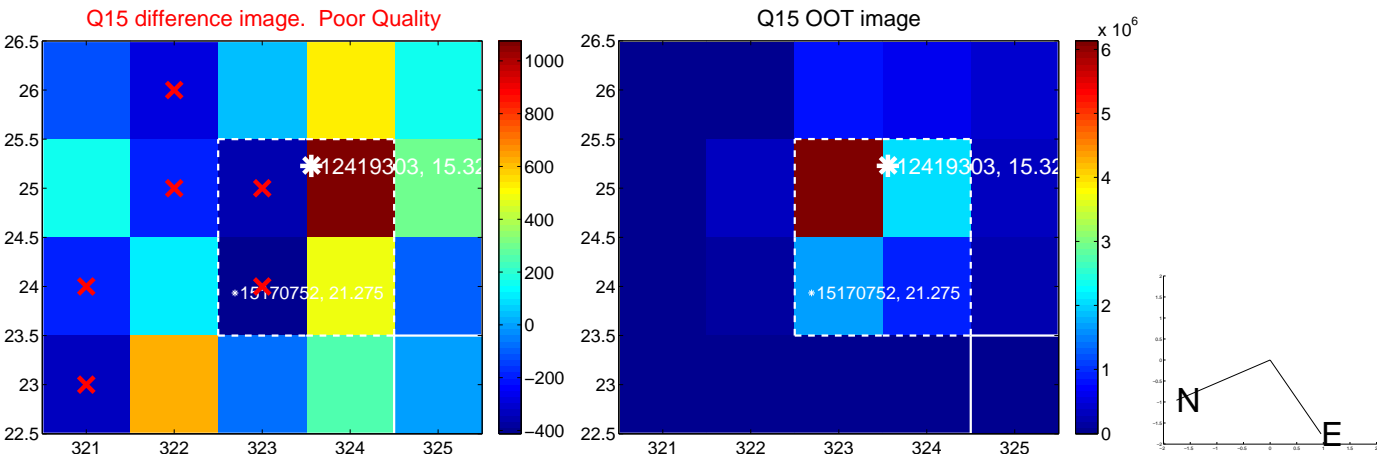
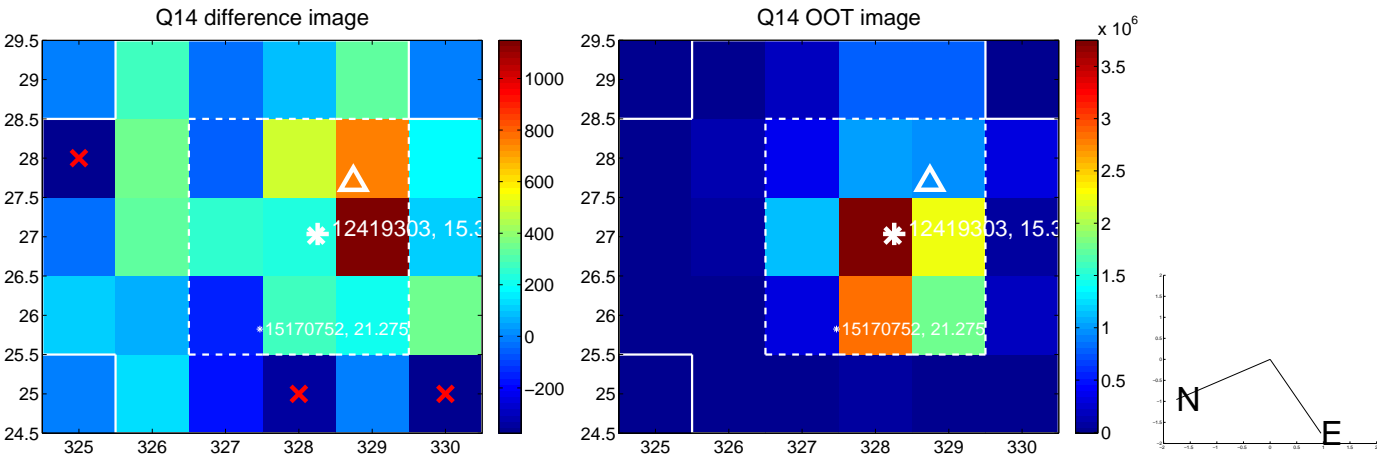
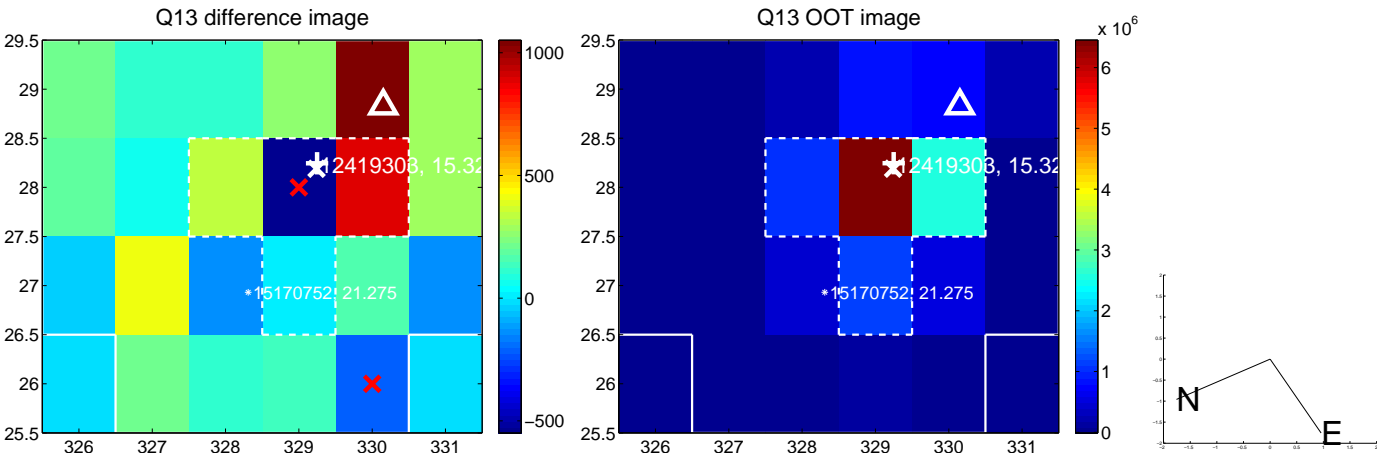




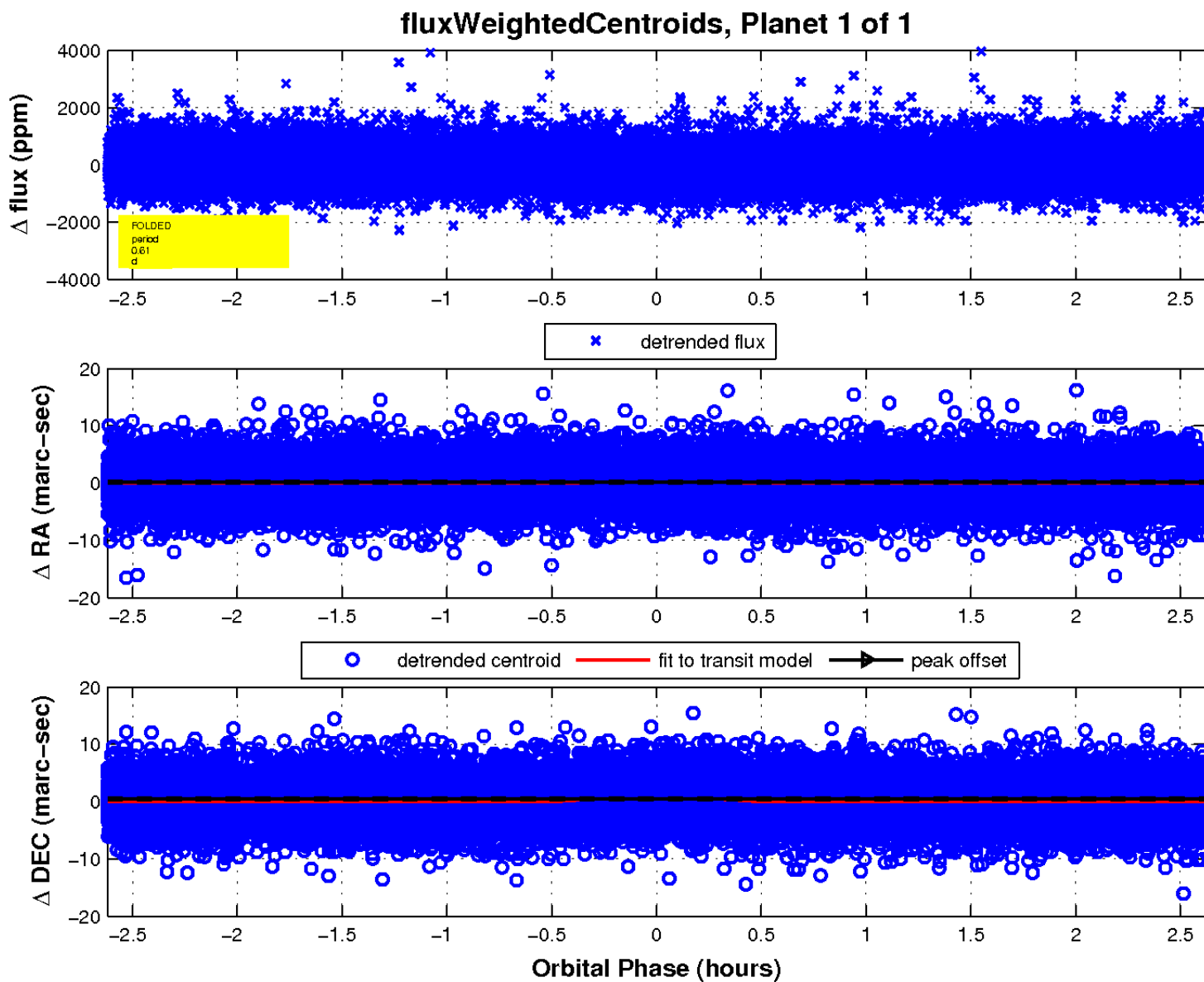
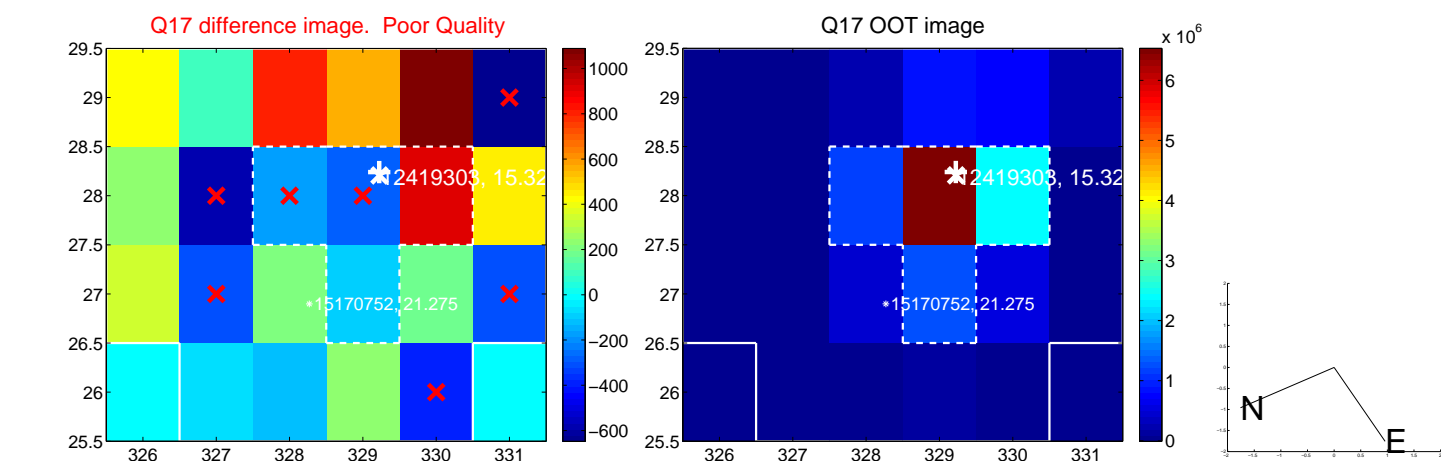
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



# UKIRT Image

Declination

