

# KIC 007294743

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007294743-01	OBS	2516.01	2.810441	133.406028	44.1	3.860	13.5	14.9	2.08	5415	1.65	1980.73

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007294743-01	OBS	PC	0.99	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.

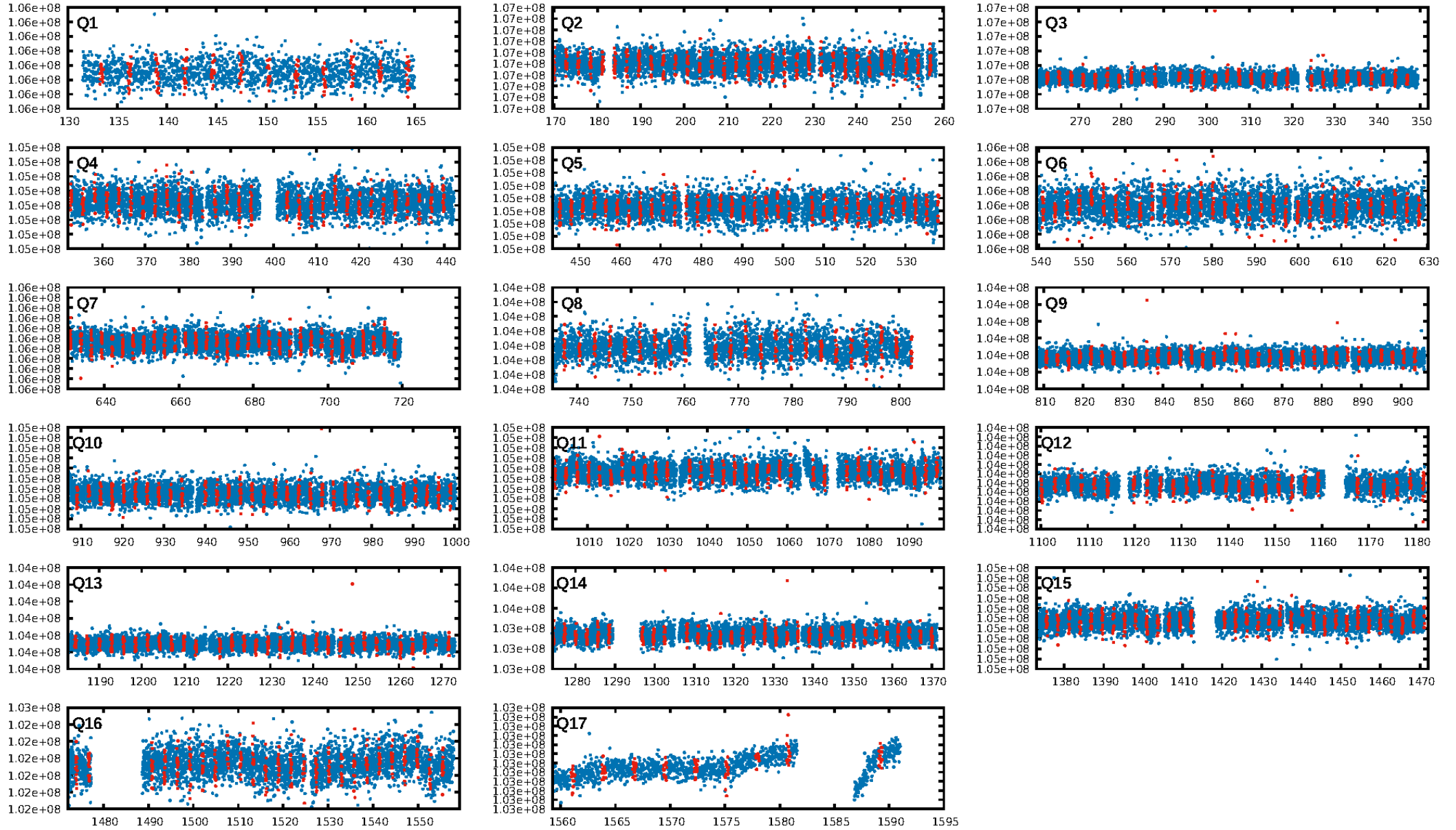
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007294743-01

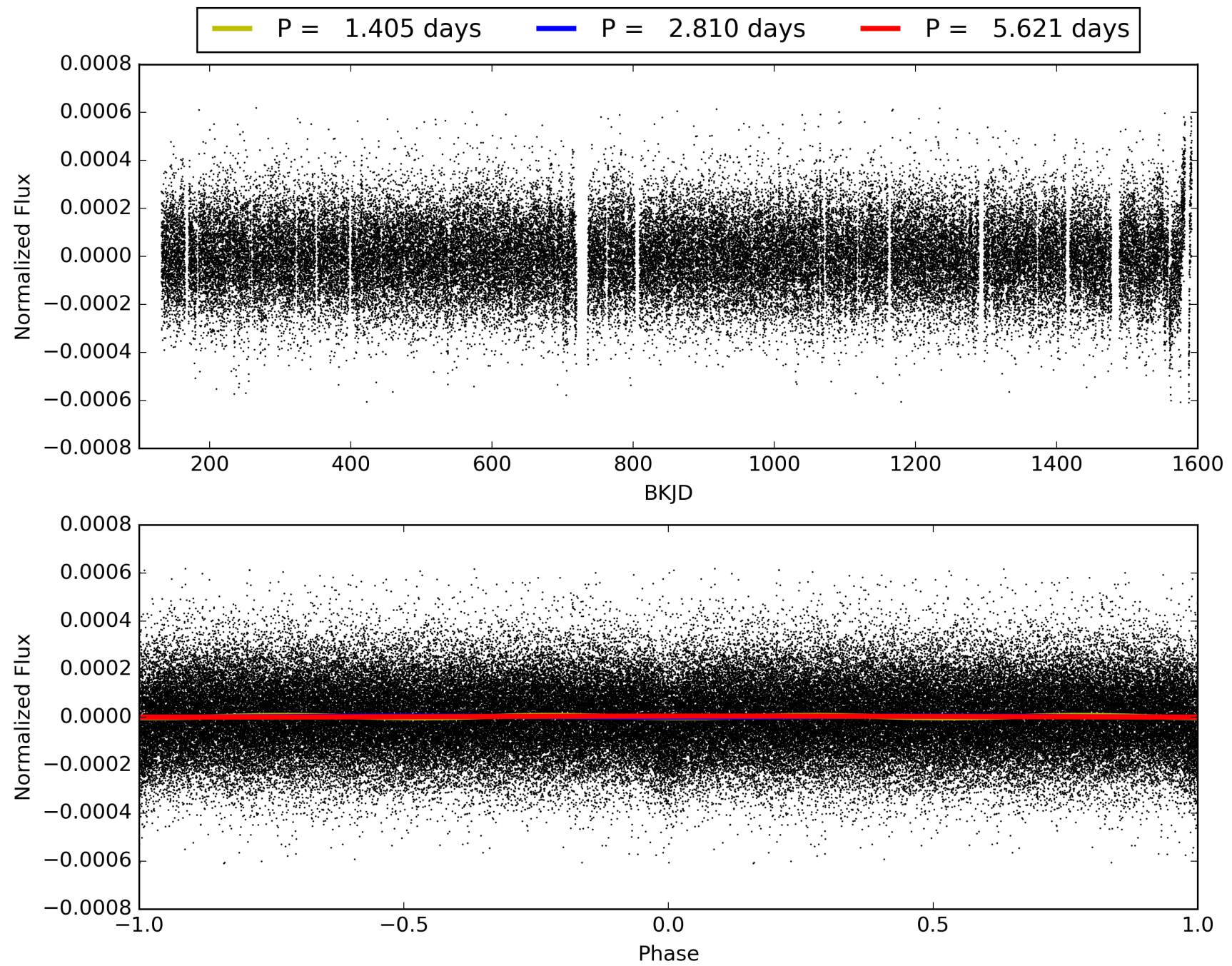
No Significant Match Found

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007294743-01, PDC Light Curves

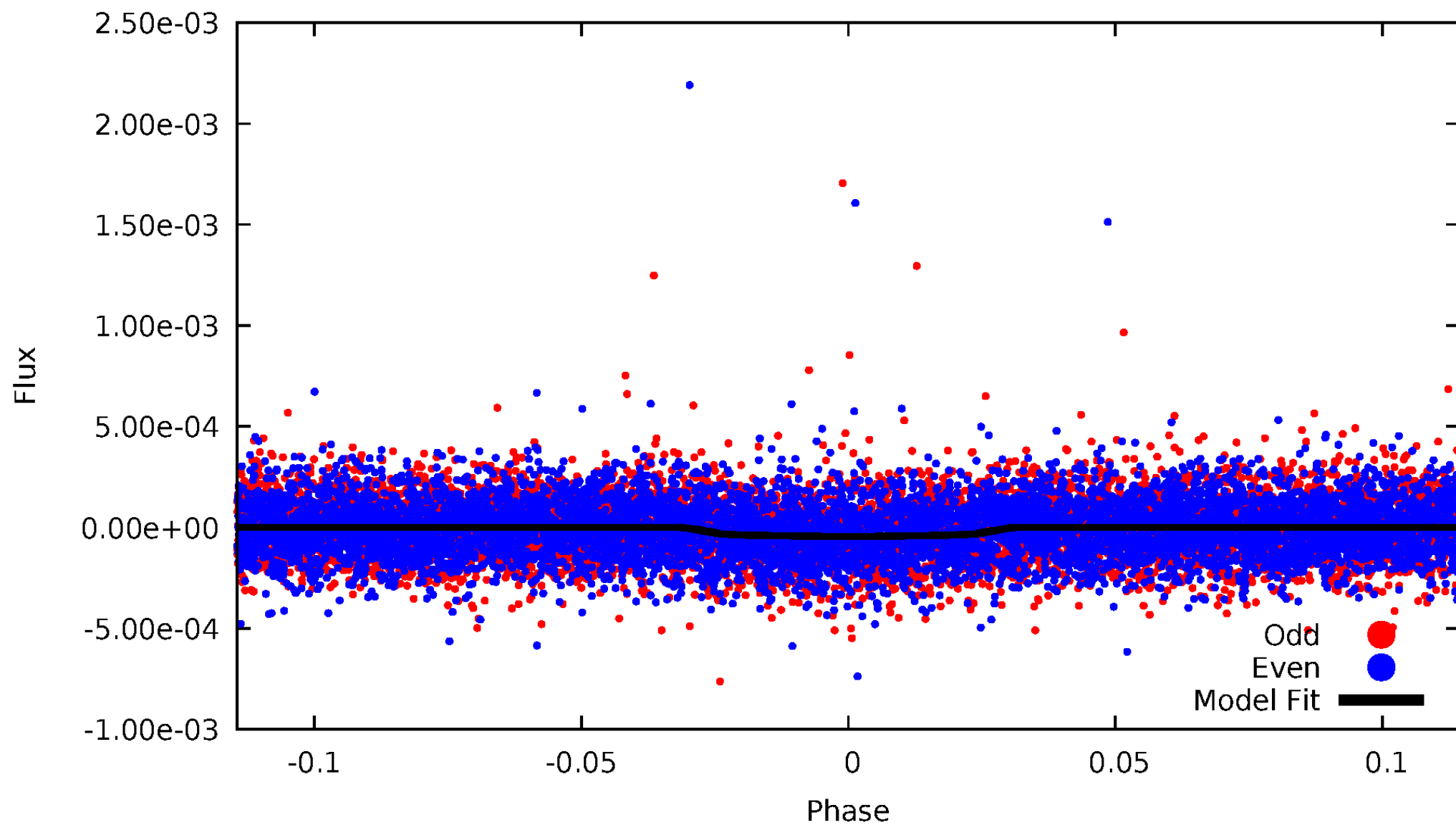


TCE 007294743-01



# DV Odd/Even

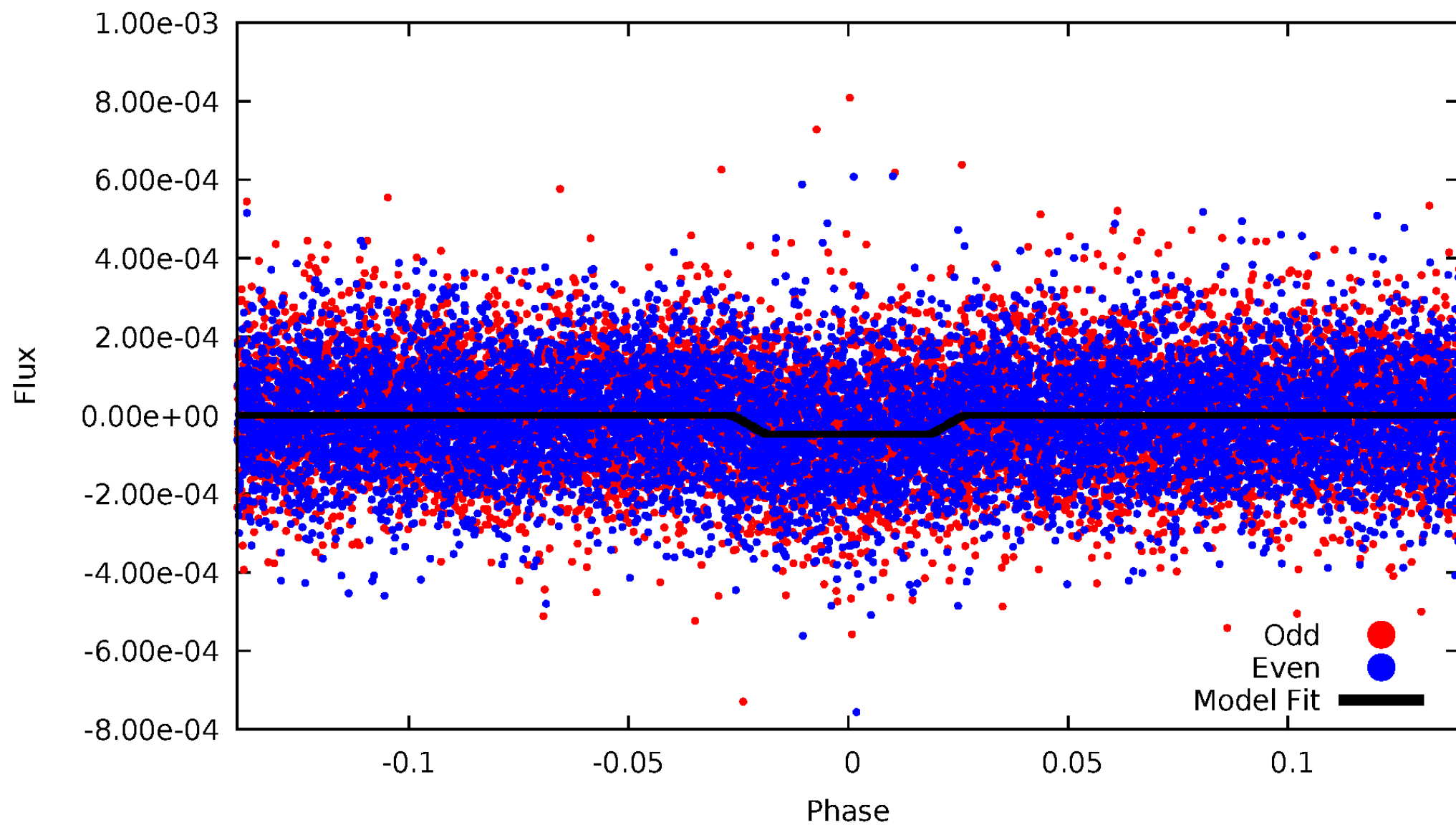
TCE 007294743-01





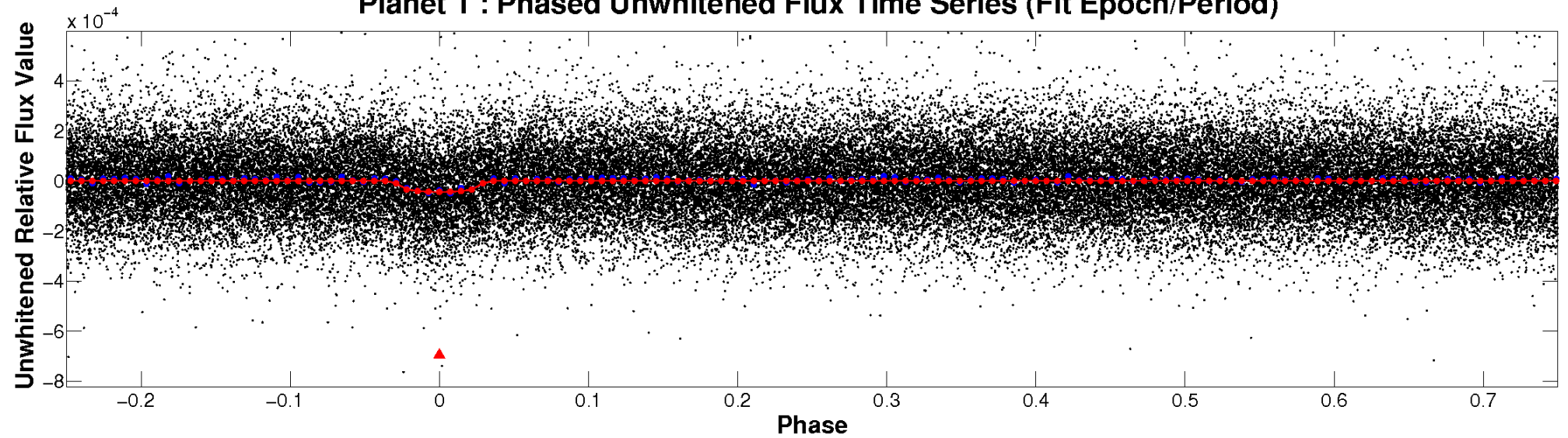
# ALT Odd/Even

TCE 007294743-01

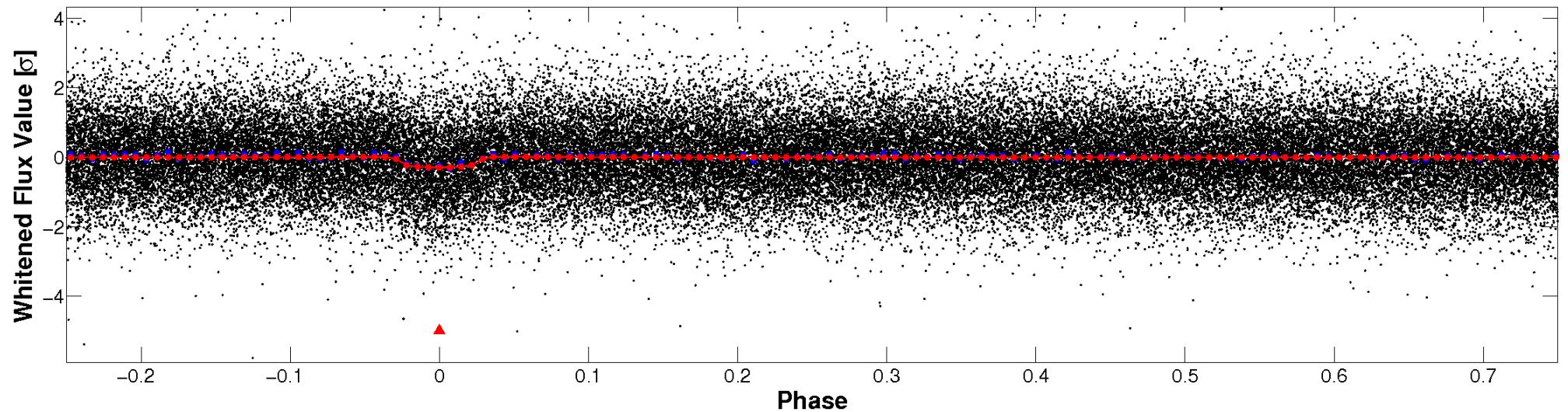


# Non-Whitened Vs. Whitened Light Curve

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

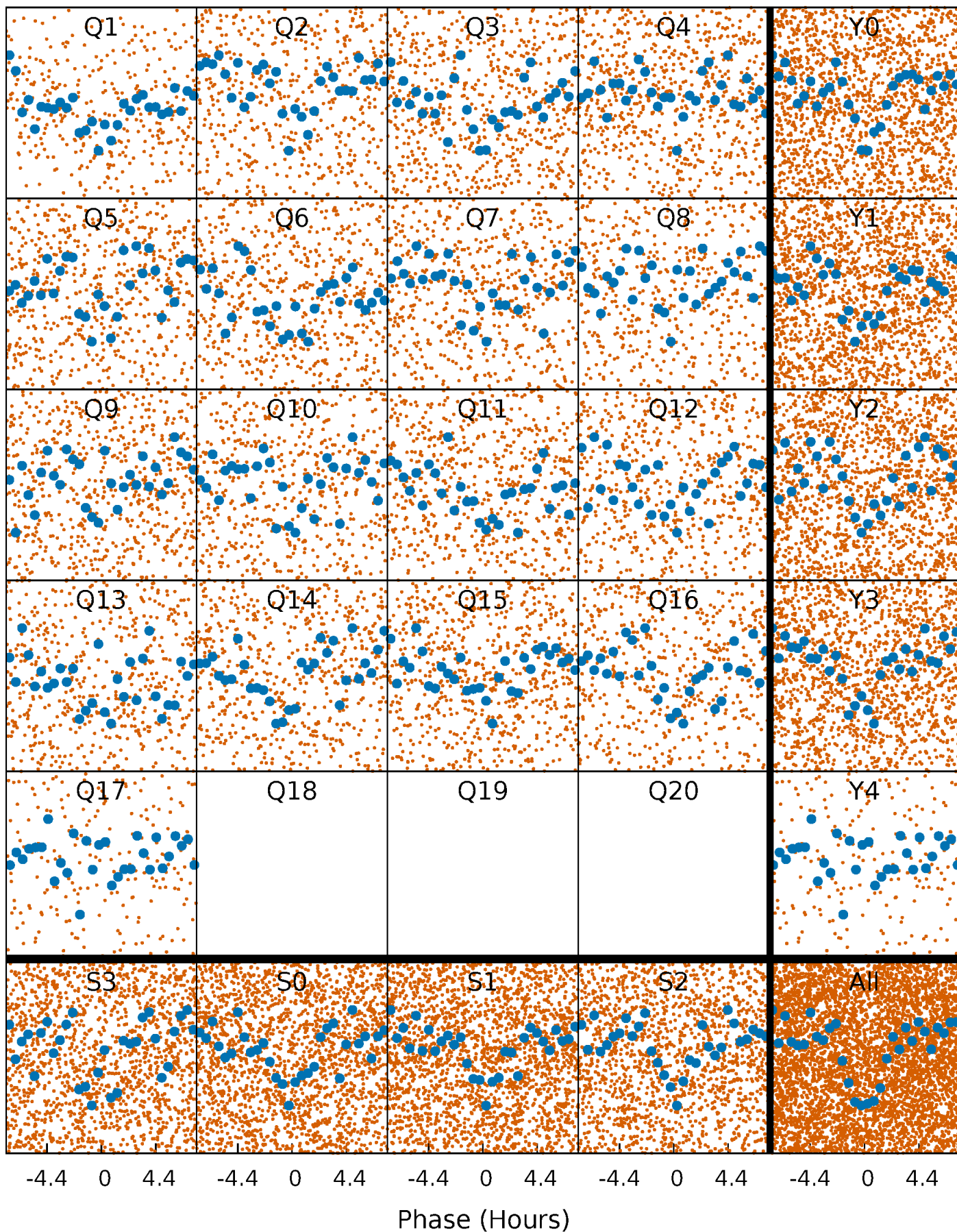


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

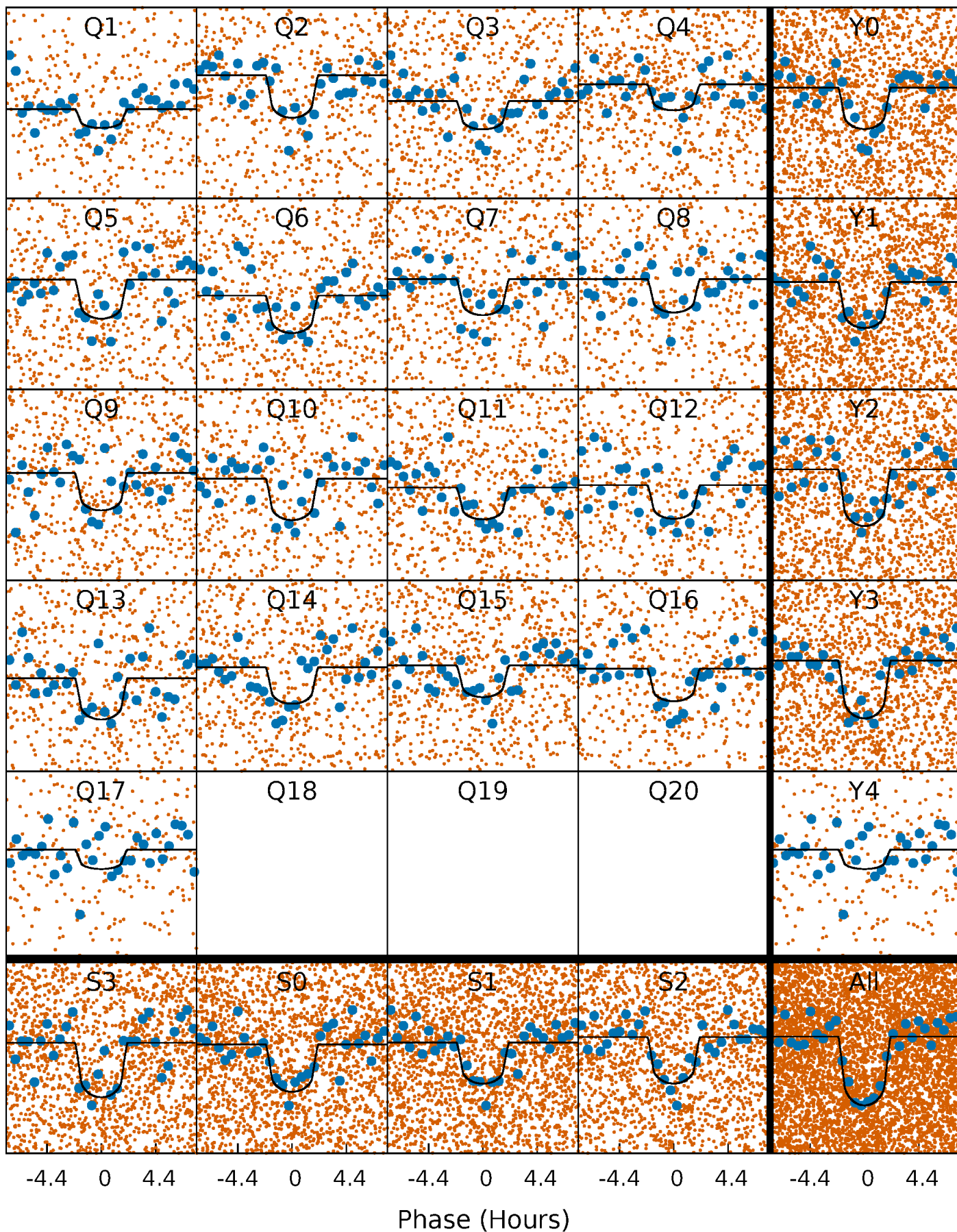
TCE 007294743-01 P= 2.810441 Days  $T_0=133.406028$  (BKJD)





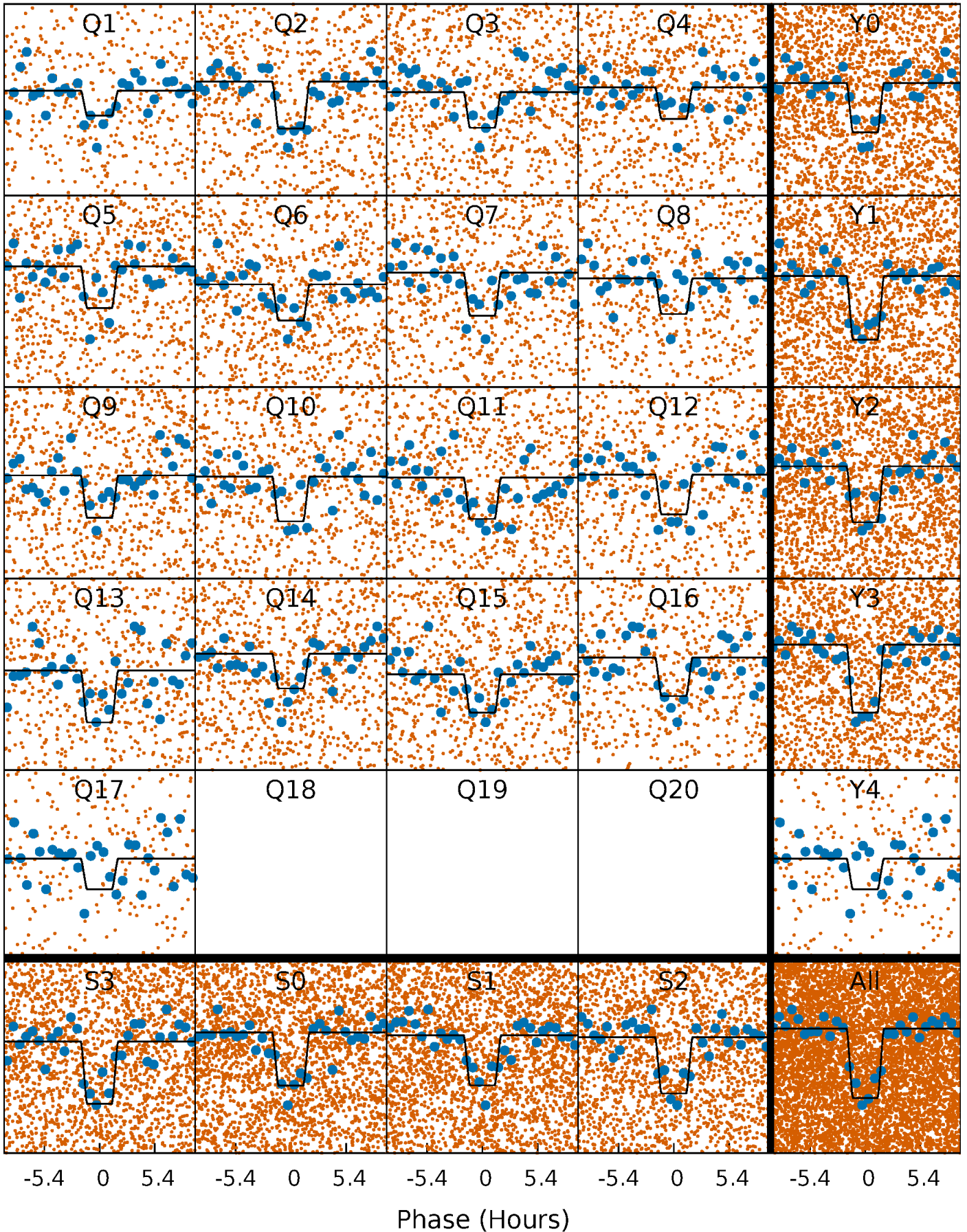
# DV Quarter-Phased Transit Curves

TCE 007294743-01 P= 2.810441 Days  $T_0=133.406028$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

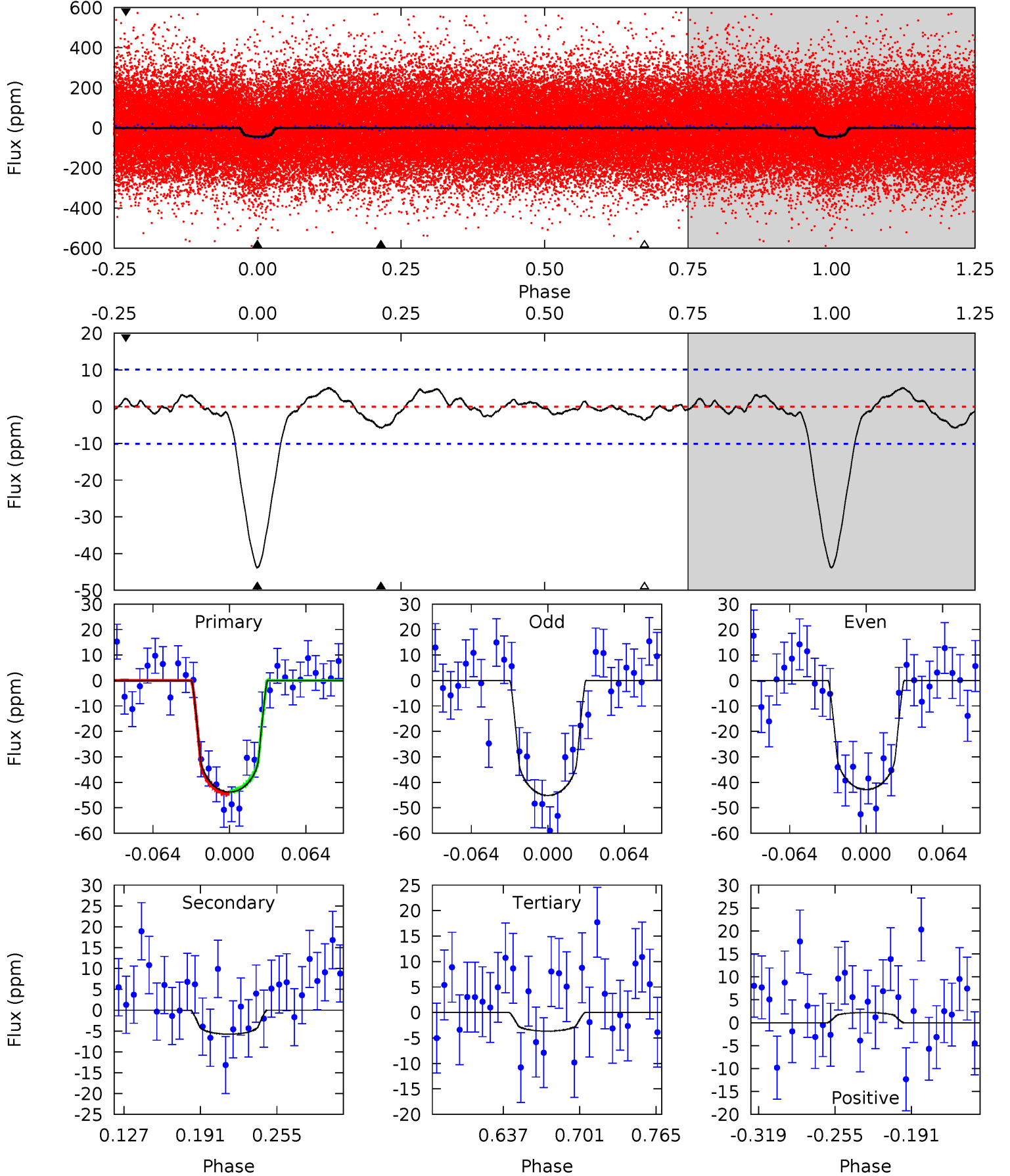
TCE 007294743-01 P= 2.810441 Days  $T_0=133.405647$  (BKJD)



# DV Model-Shift Uniqueness Test

007294743-01, P = 2.810441 Days, E = 130.595587 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
20.2	2.65	1.69	1.02	4.66	1.85	0.91	18.5	19.2	0.97	1.63	0.53	0.97	0.10	0.26

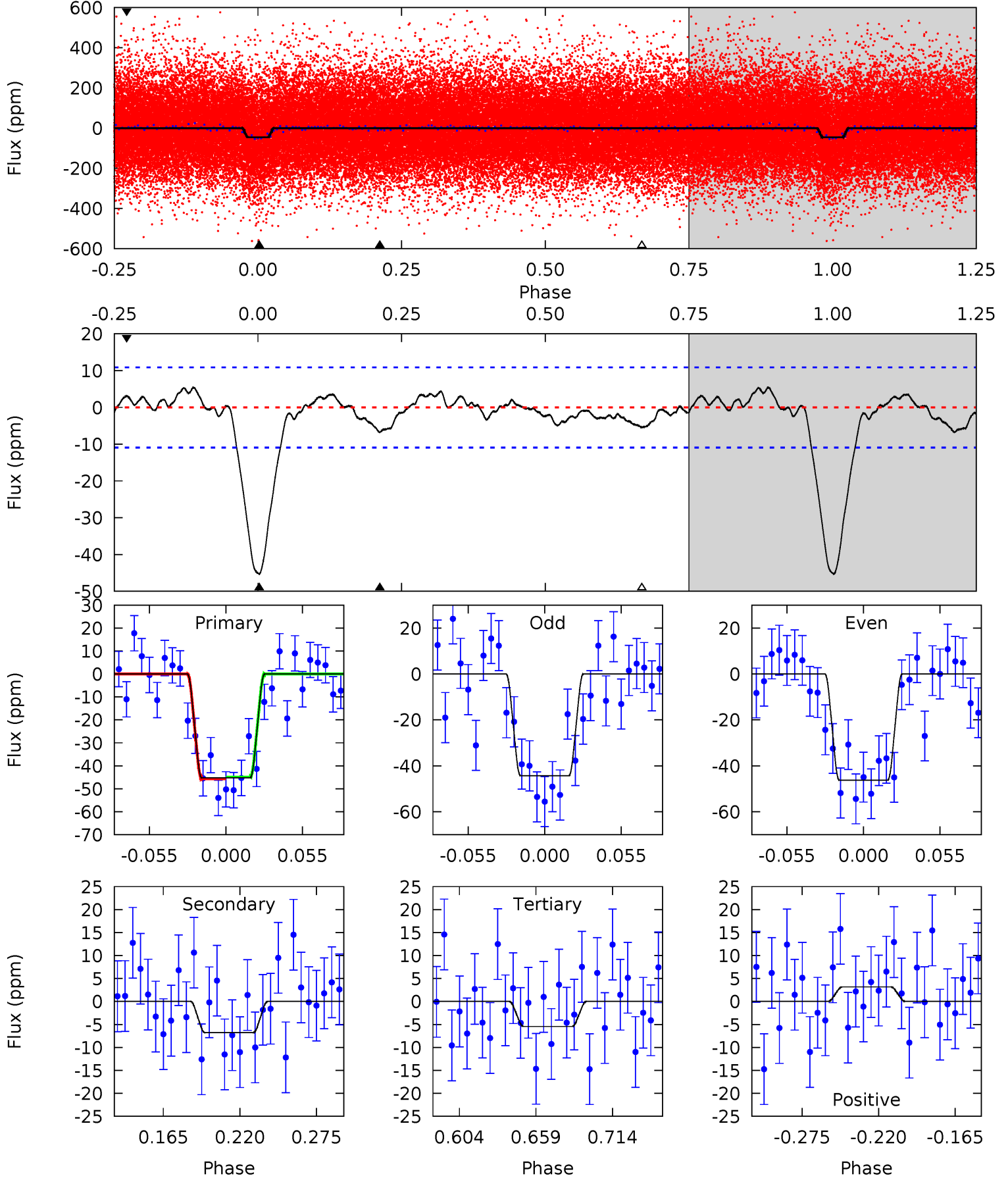




# Alt Model-Shift Uniqueness Test

007294743-01, P = 2.810441 Days, E = 130.595206 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
19.5	2.91	2.35	1.36	4.69	1.92	1.06	17.1	18.1	0.56	1.55	0.43	0.97	0.11	0.18





### Stellar Parameters For KIC 007294743

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5415^{+81}_{-72}$	$3.868^{+0.196}_{-0.084}$	$0.120^{+0.150}_{-0.150}$	$2.079^{+0.349}_{-0.567}$	$1.164^{+0.121}_{-0.197}$	$0.182^{+0.203}_{-0.050}$
	+1%/-1%	+5%/-2%	+125%/-125%	+17%/-27%	+10%/-17%	+111%/-27%
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 007294743-01 / KOI 2516.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-6 \pm 2$	$1.60^{+0.67}_{-0.61}$	$2351^{+110}_{-145}$	$3448^{+680}_{-462}$	$2.109^{+3.384}_{-1.171}$
Alt.	$-7 \pm 2$	$1.51^{+0.61}_{-0.58}$	$2347^{+112}_{-139}$	$3605^{+708}_{-466}$	$2.591^{+4.702}_{-1.381}$

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

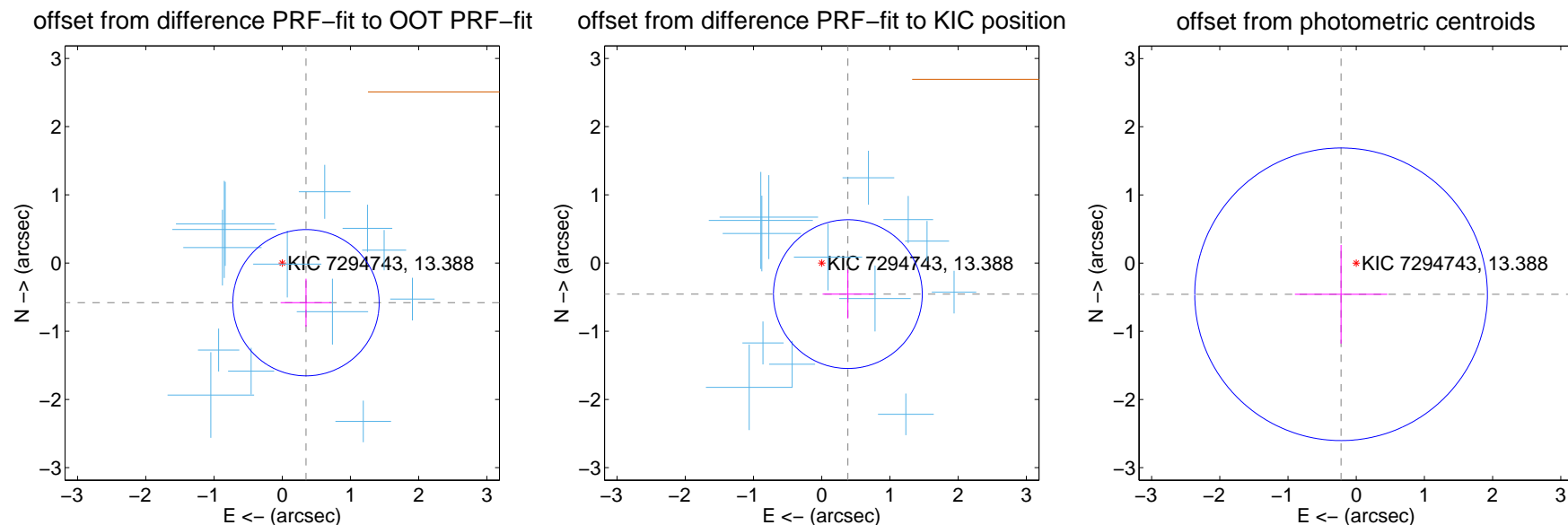
## DV Centroid Data

Supplemental centroid analysis for 007294743-01. Kepler magnitude: 13.39. Transit SNR 14.93

There are 13 quarters with good PRF difference image offsets

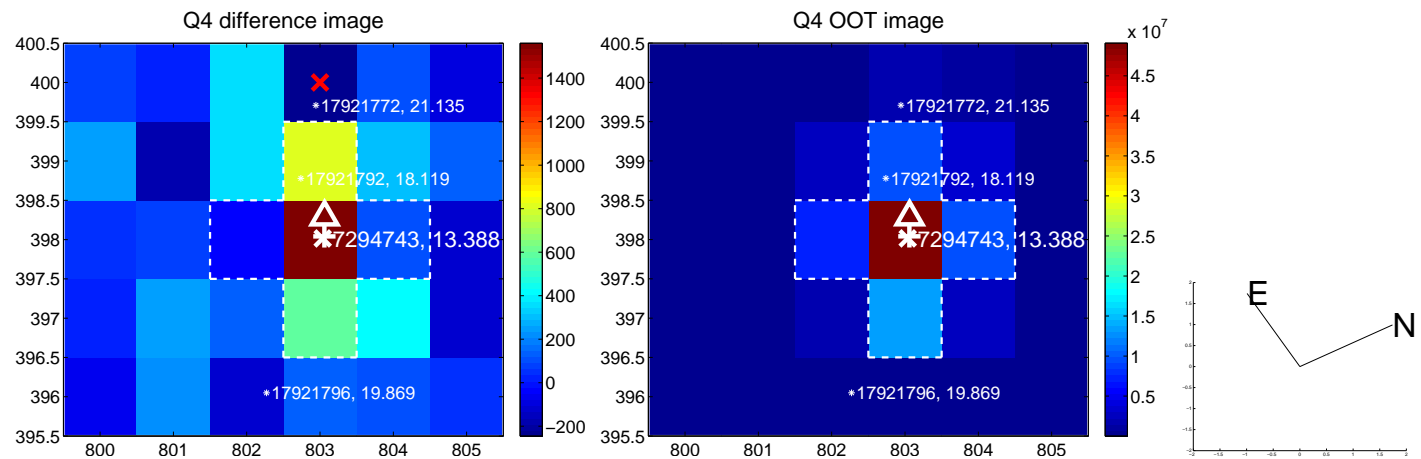
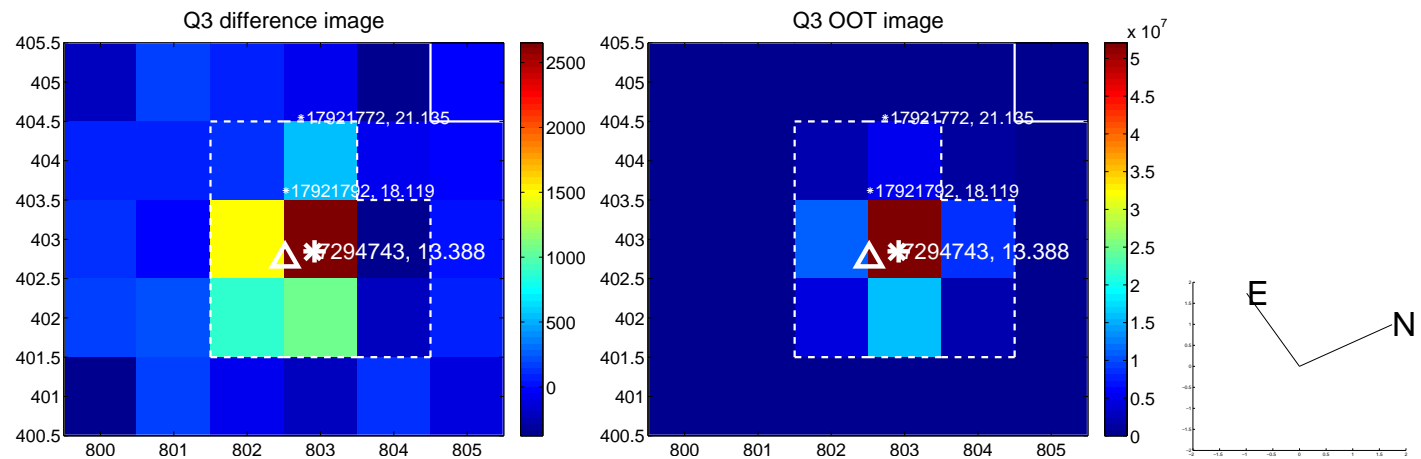
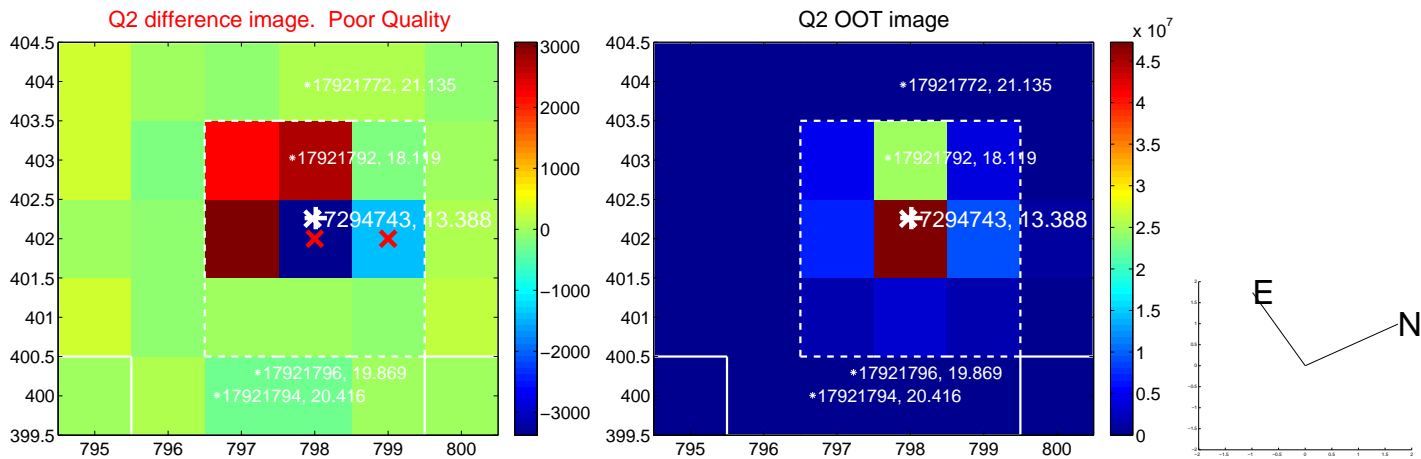
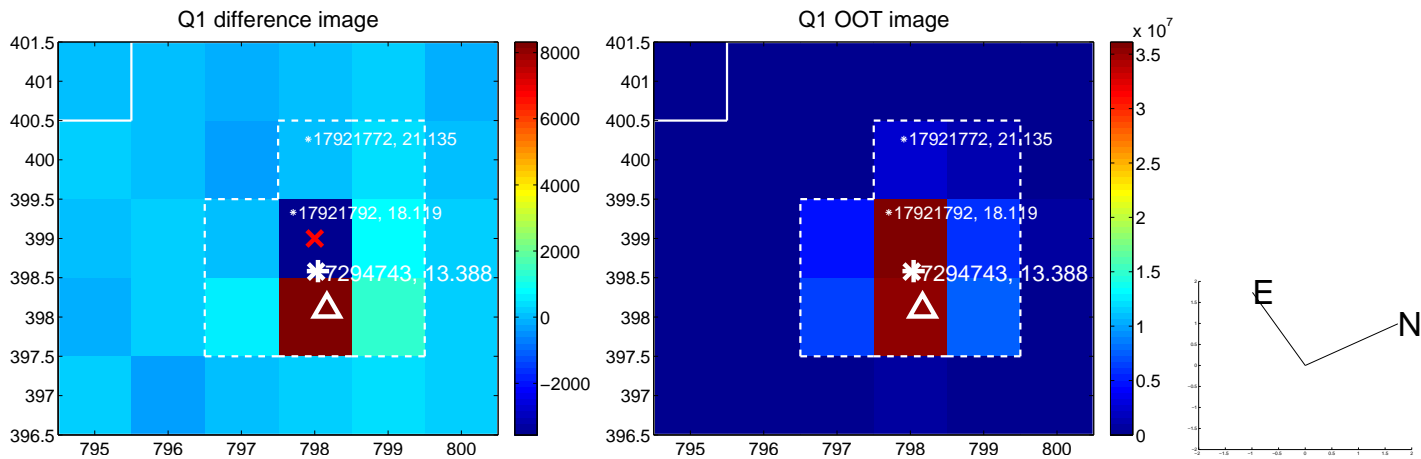
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.678 \pm 0.357$	1.90	$-0.349 \pm 0.371$	$-0.581 \pm 0.352$
PRF-fit source offset from KIC position	$0.595 \pm 0.363$	1.64	$-0.383 \pm 0.371$	$-0.455 \pm 0.358$
photometric centroid source offset	$0.51 \pm 0.72$	0.71	$0.22 \pm 0.68$	$-0.46 \pm 0.72$

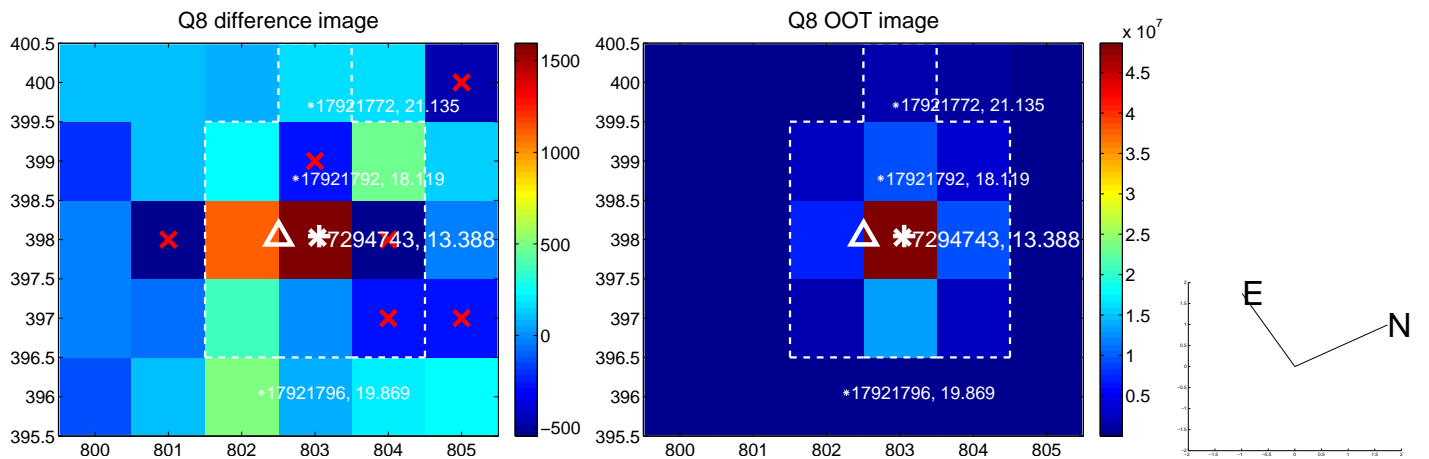
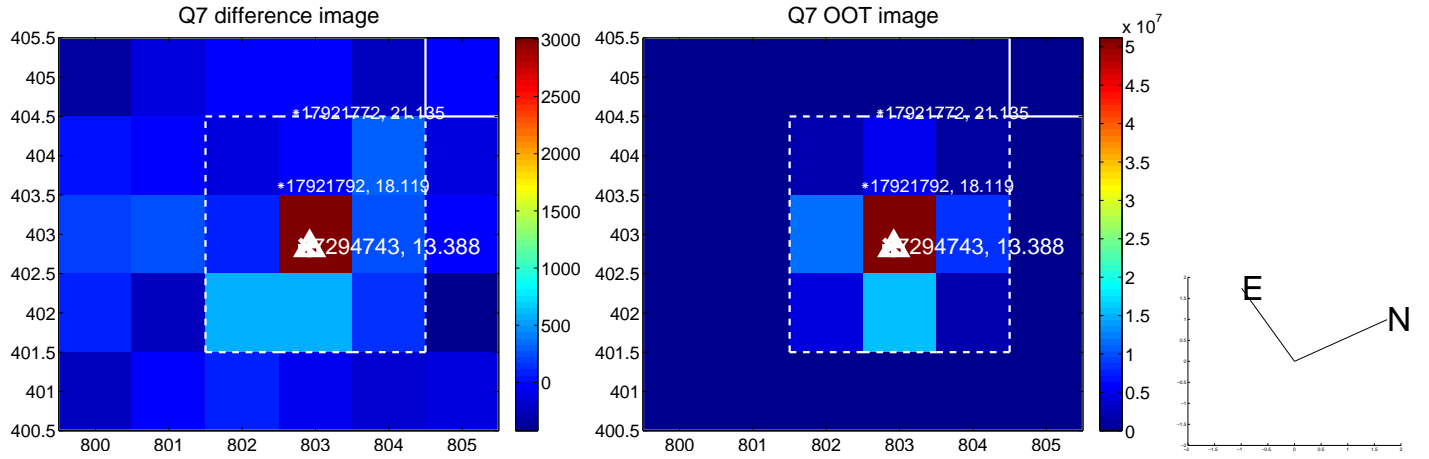
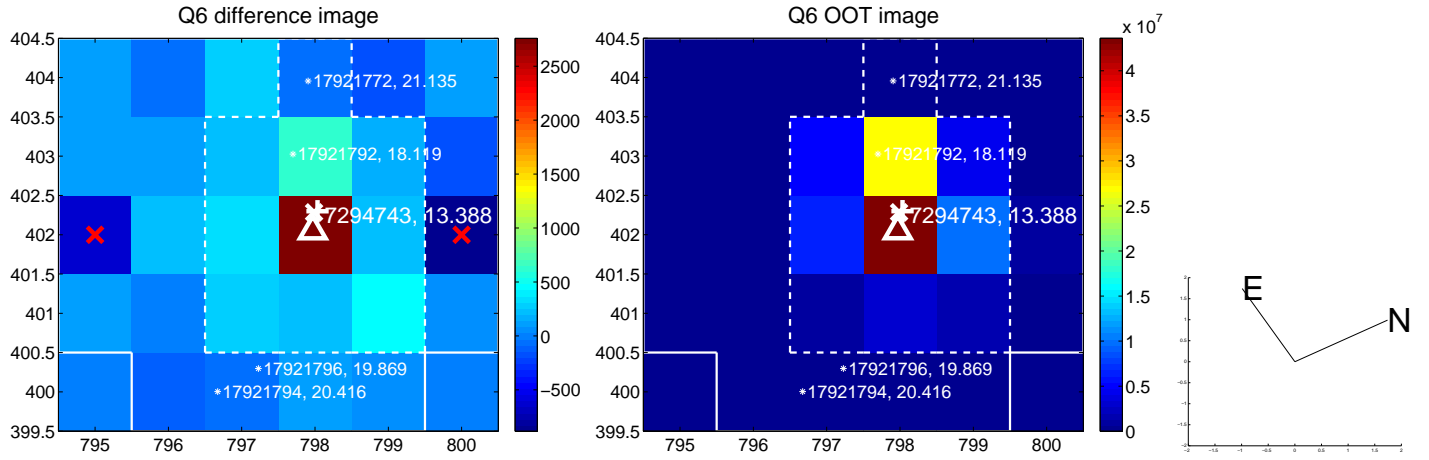
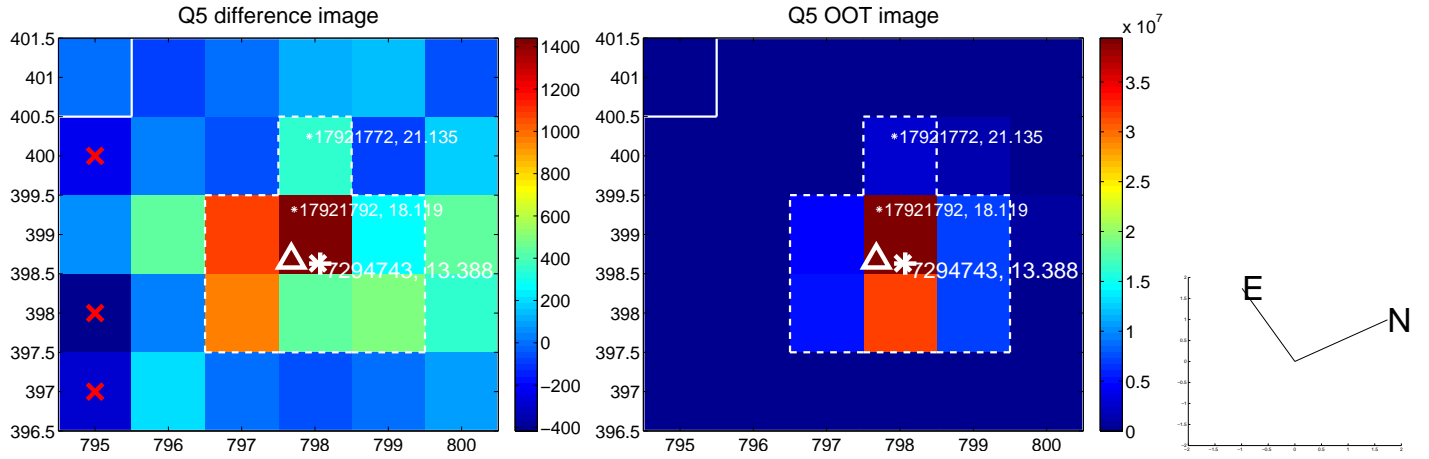


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

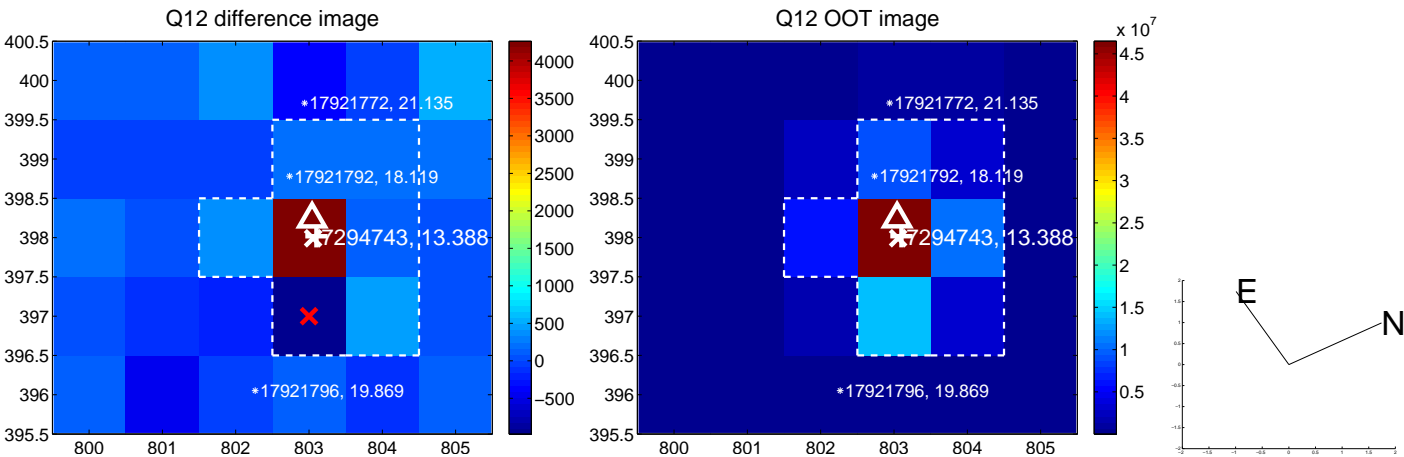
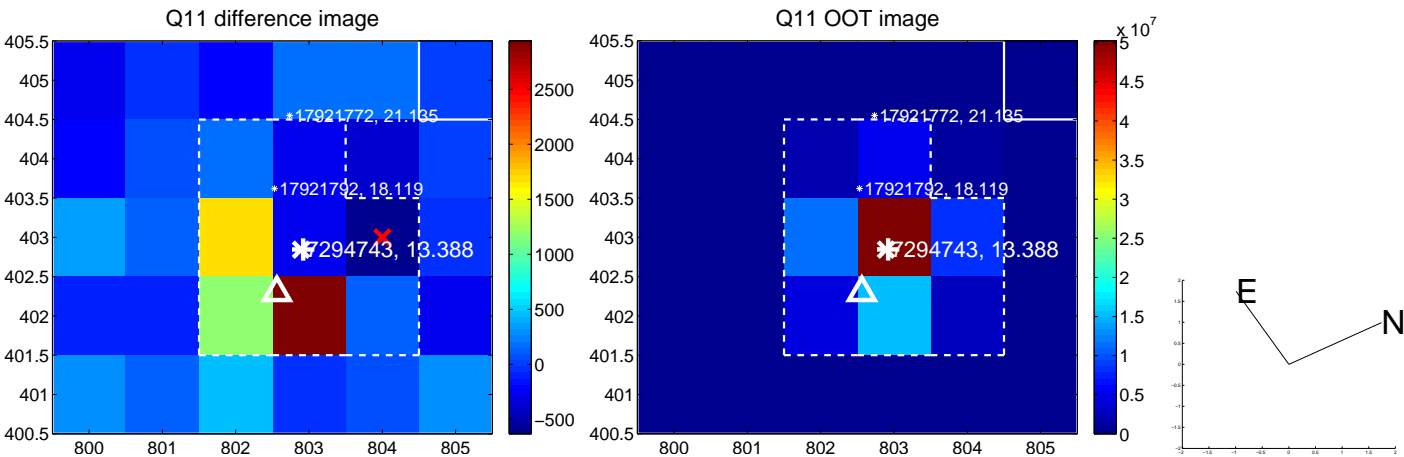
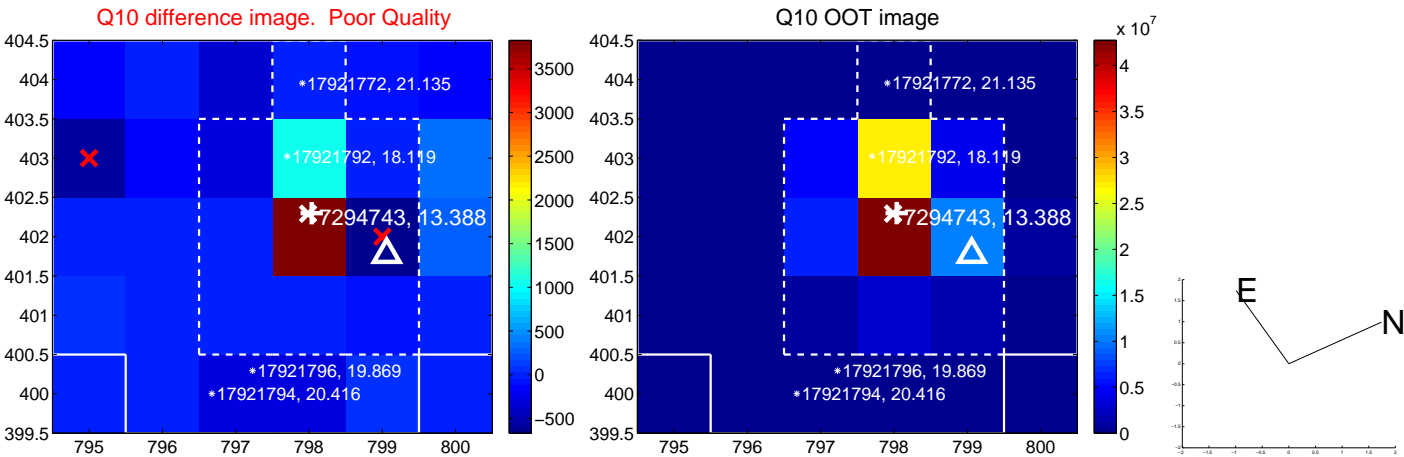
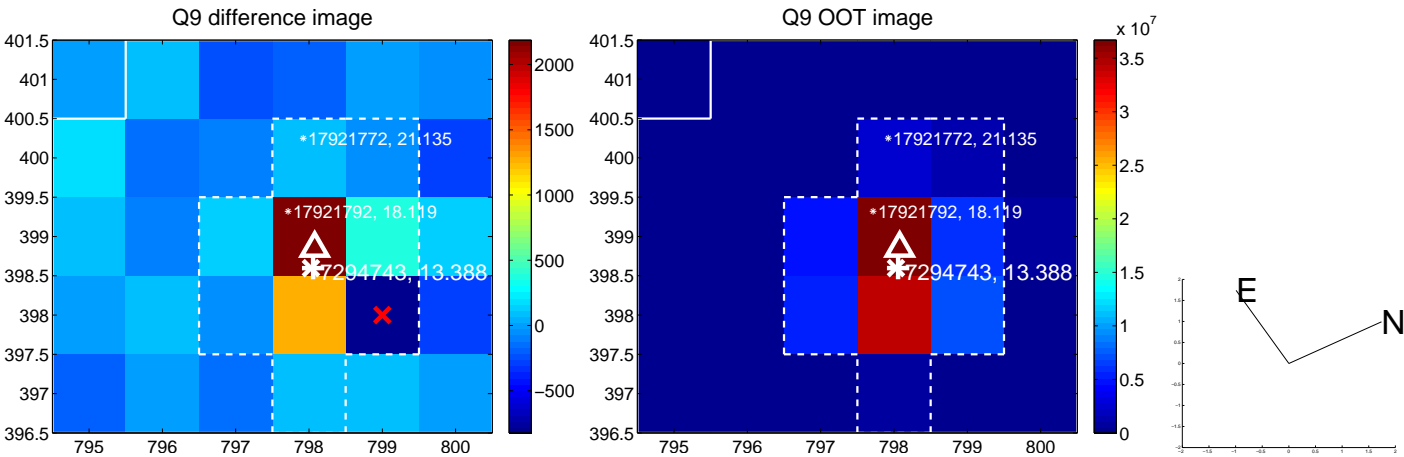


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



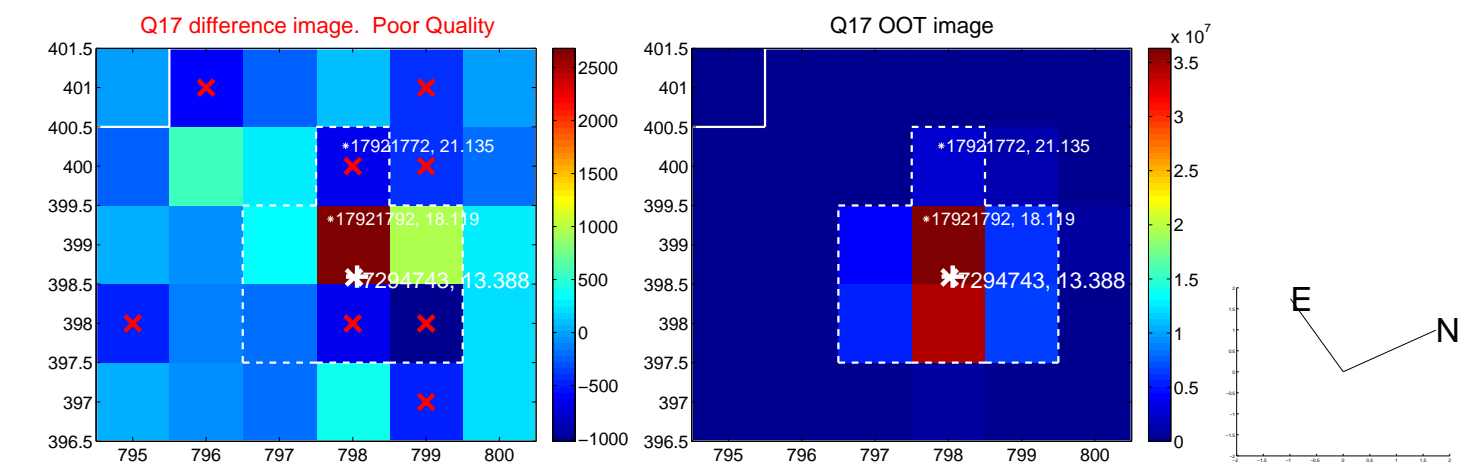


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

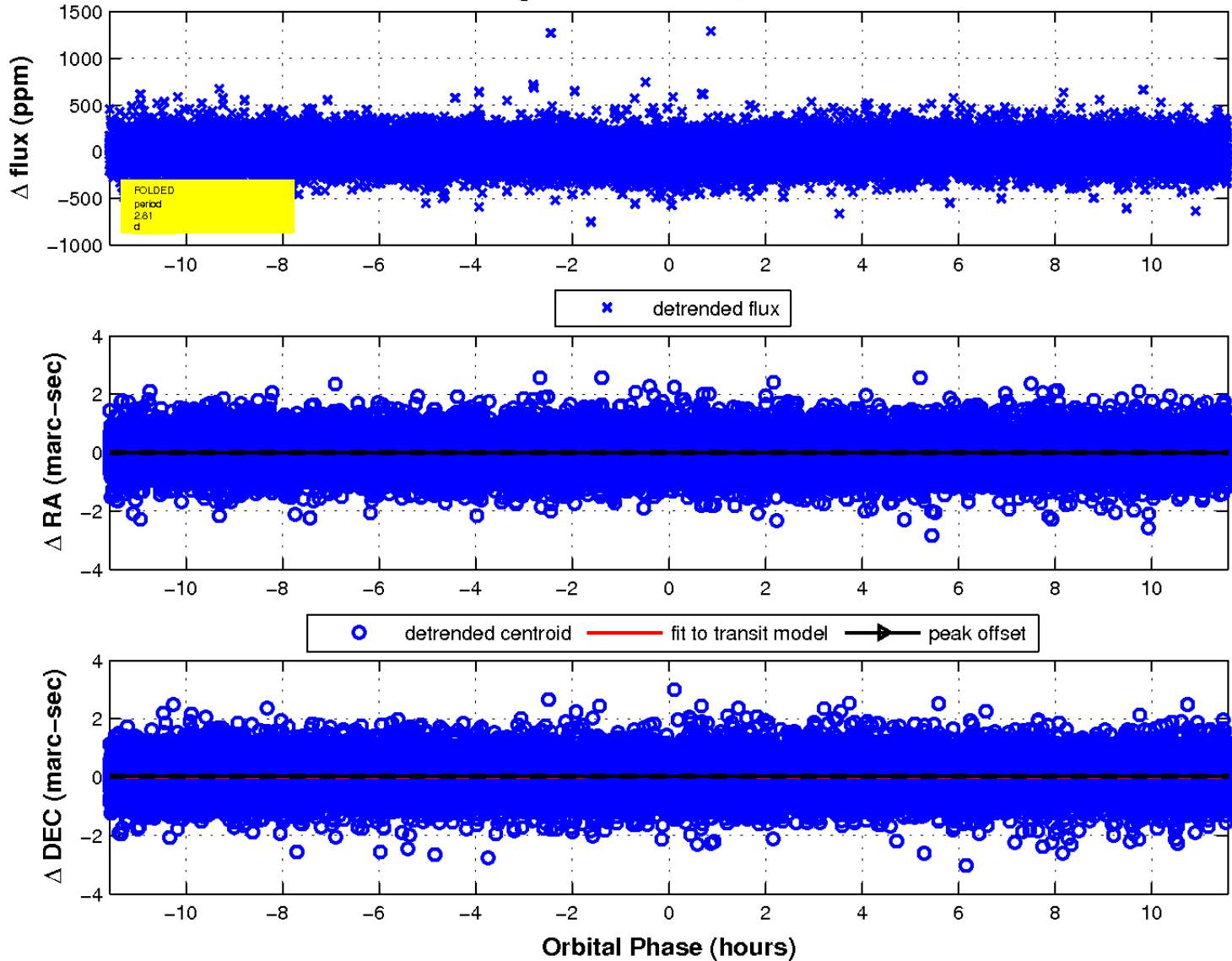




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

