

# KIC 008751770

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008751770-01	OBS	No	4.493676	133.187034	28.1	24.946	8.8	9.1	3.50	6804	1.98	5628.11

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008751770-01	OBS	FP	0.00	1	0	0	0	<del>SWEET_NTL</del> — <del>LPP_DV</del> — <del>CENT_FEW_DIFFS</del>

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

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

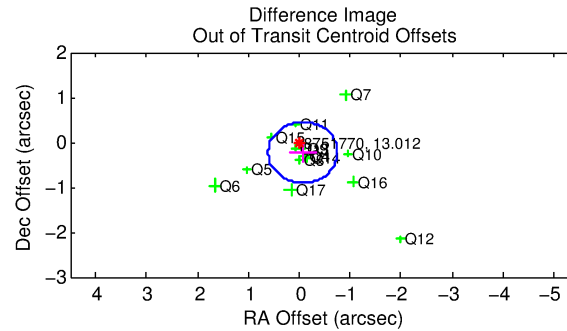
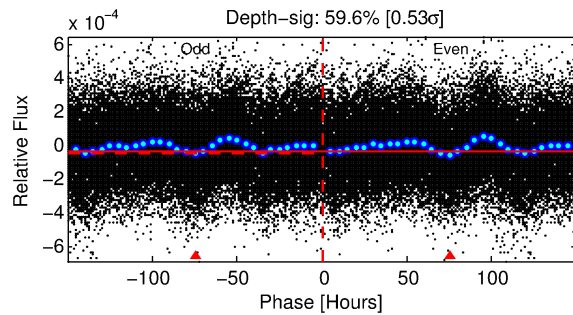
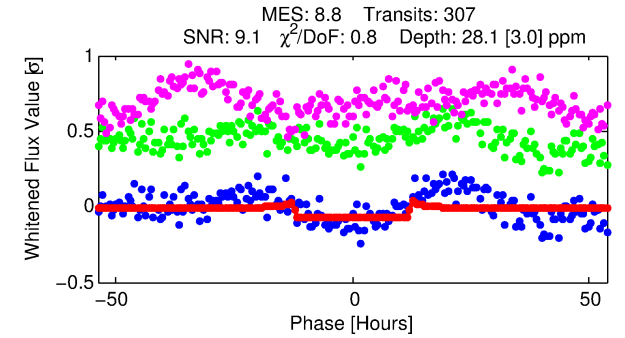
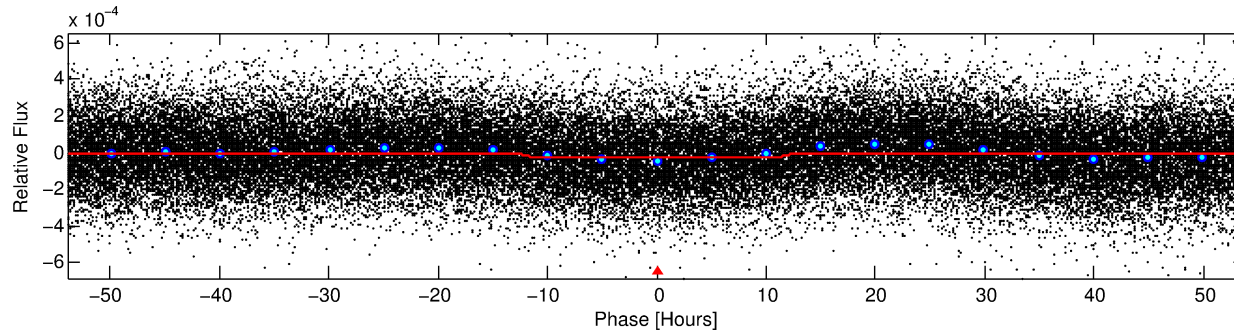
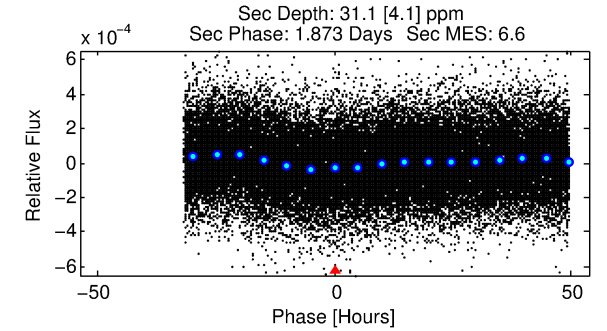
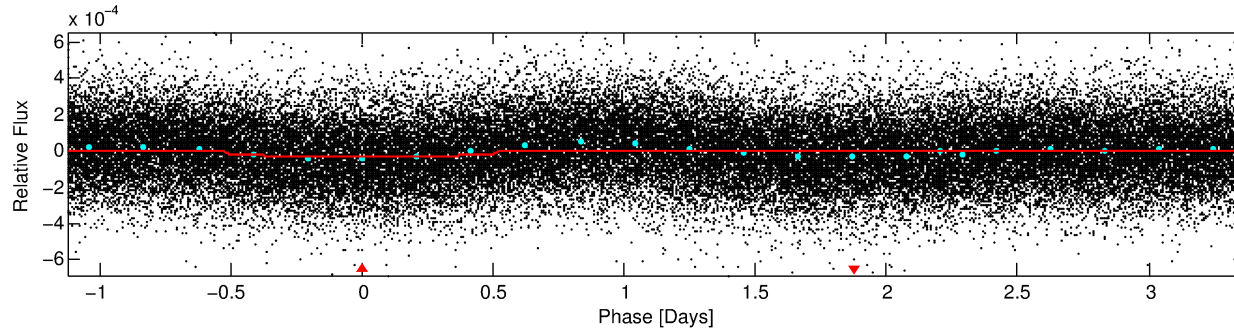
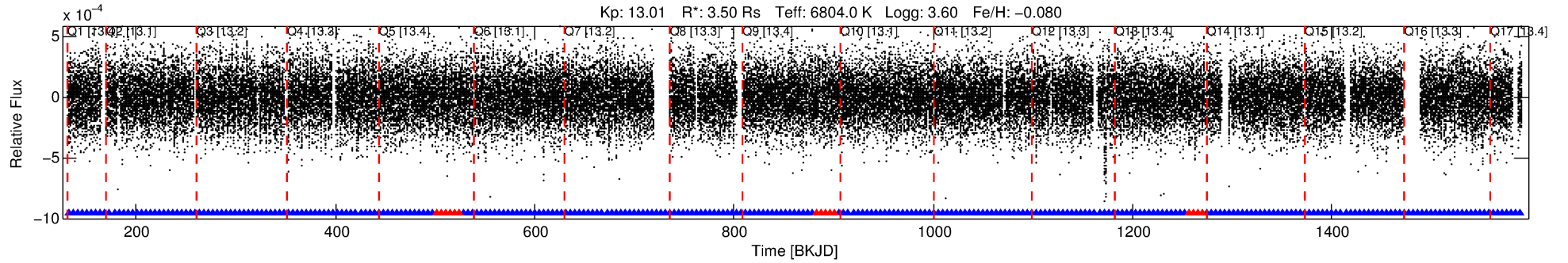
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008751770-01

No Significant Match Found

# DV One-Page Summary

KIC: 8751770 Candidate: 1 of 1 Period: 4.494 d



## DV Fit Results:

Period = 4.49368 [0.00008] d  
Epoch = 133.1870 [0.0109] BKJD  
Rp/R\* = 0.0052 [0.0012]  
a/R\* = 1.30 [0.68]  
b = 0.68 [1.00]  
Seff = 5628.11 [3038.86]  
Teff = 2209 [298] K  
Rp = 1.98 [0.82] Re  
a = 0.0646 [0.0213] AU  
Ag = 18.27 [12.80] [1.35σ]  
Teffp = 7060 [854] K [5.37σ]

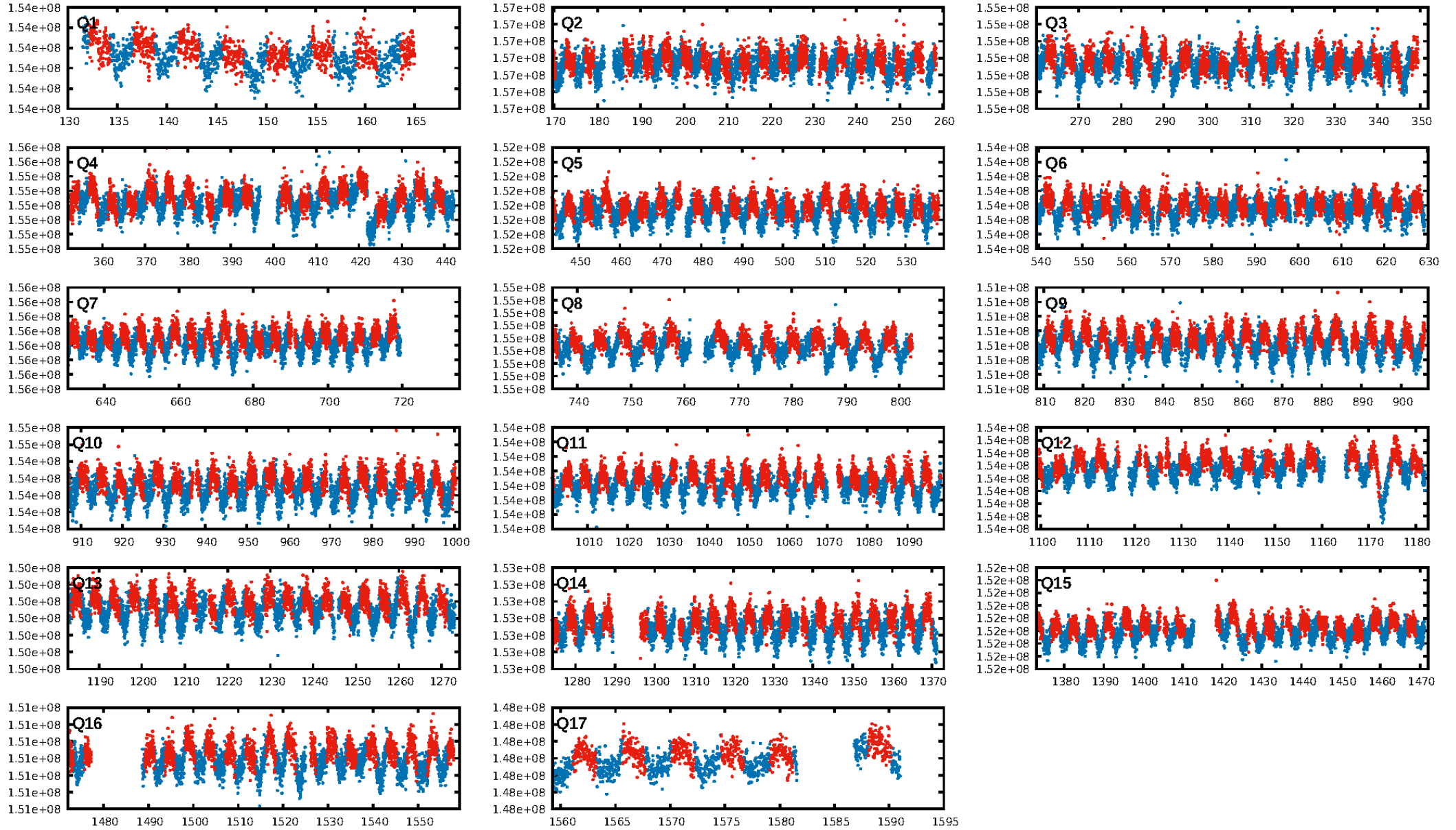
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.44e-18  
RollingBand-fgt: 0.95 [278/293]  
GhostDiagnostic-chr: -3.75  
Centroid-sig: 0.0%  
Centroid-so: 3.194 arcsec [3.04σ]  
OotOffset-rm: 0.239 arcsec [1.06σ]  
KicOffset-rm: 0.209 arcsec [0.98σ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 0.00 [0/14]  
DiffImageOverlap-fno: 1.00 [17/17]

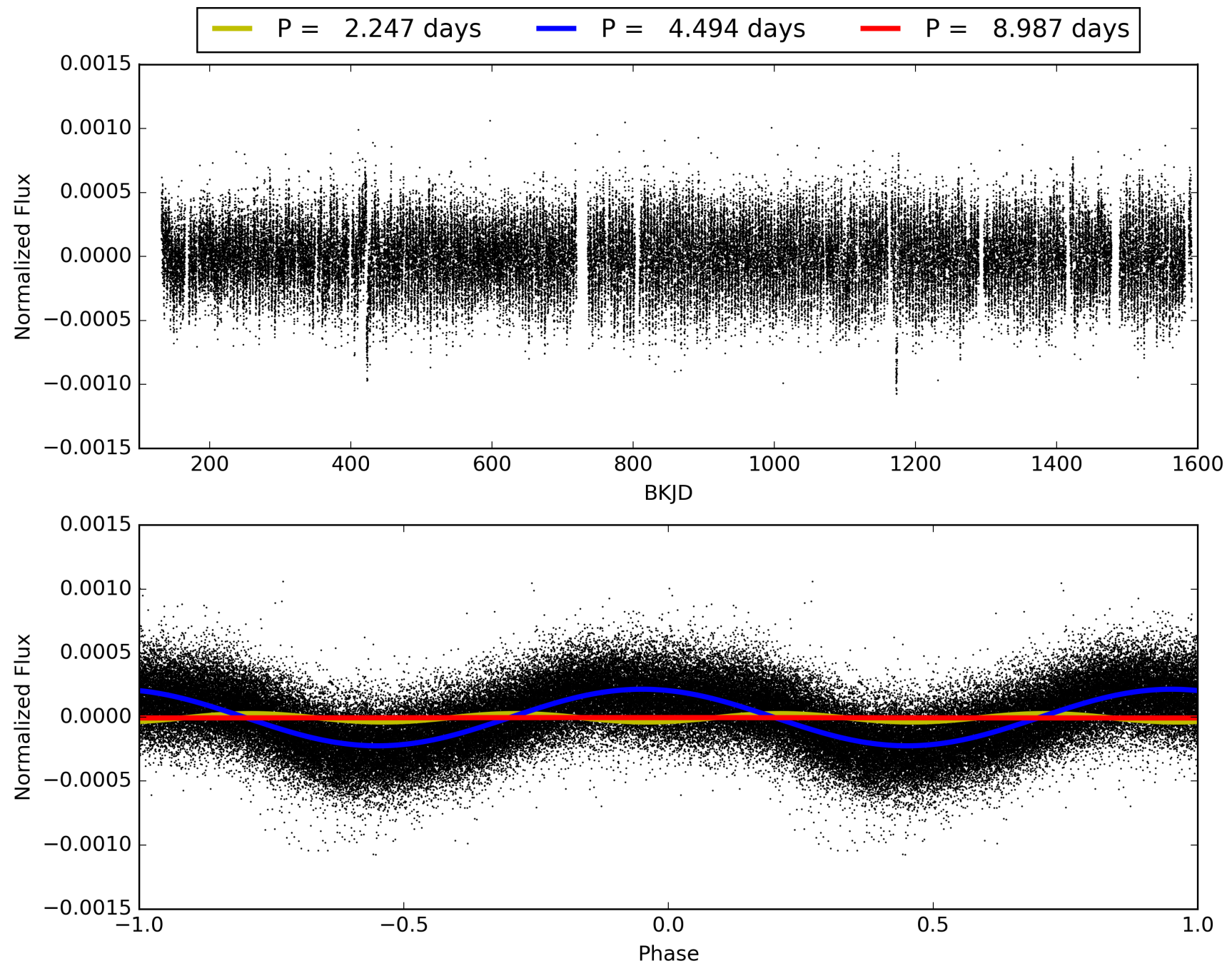
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:03:33 Z

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

# TCE 008751770-01, PDC Light Curves

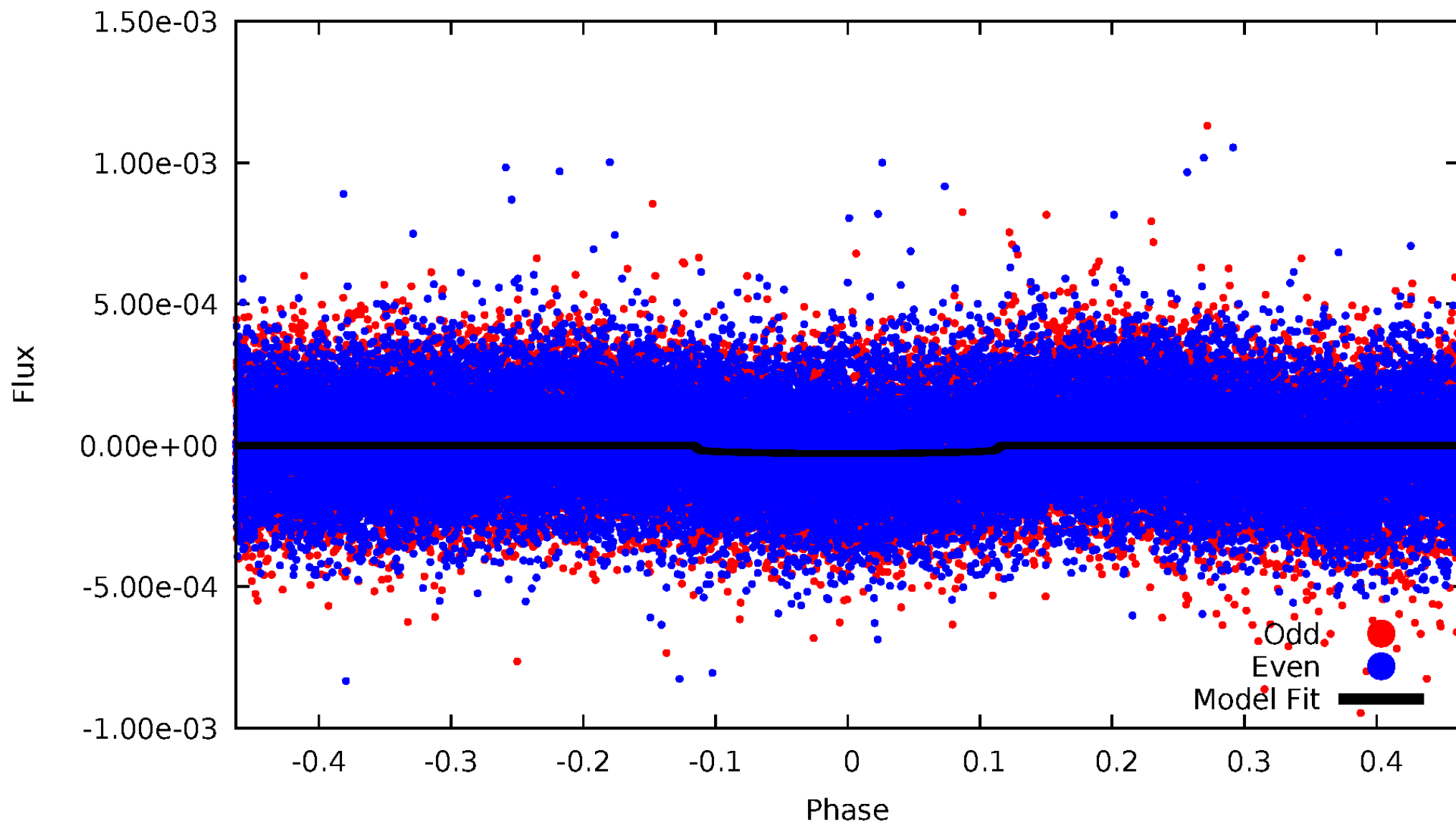


# TCE 008751770-01



# DV Odd/Even

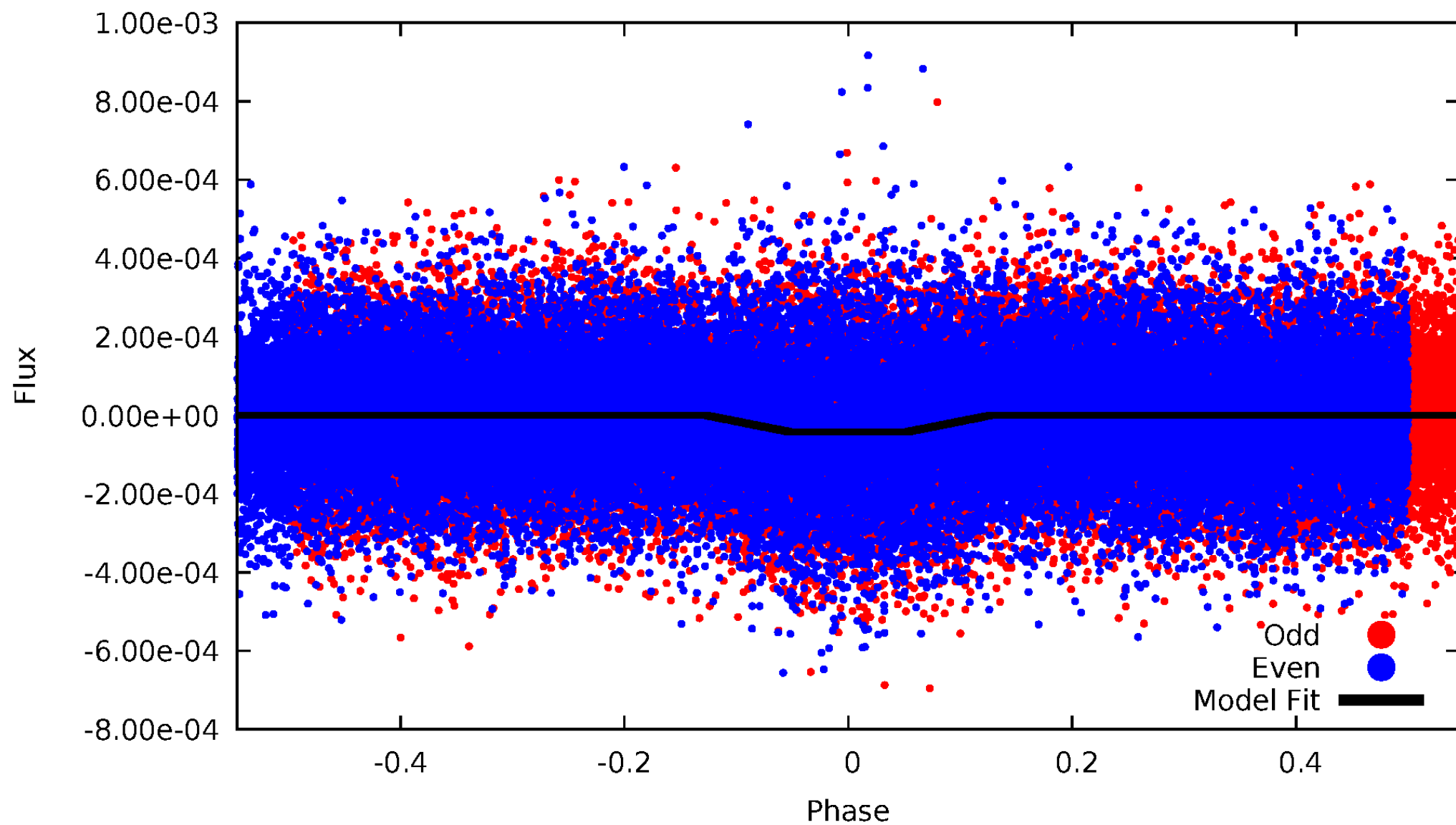
TCE 008751770-01





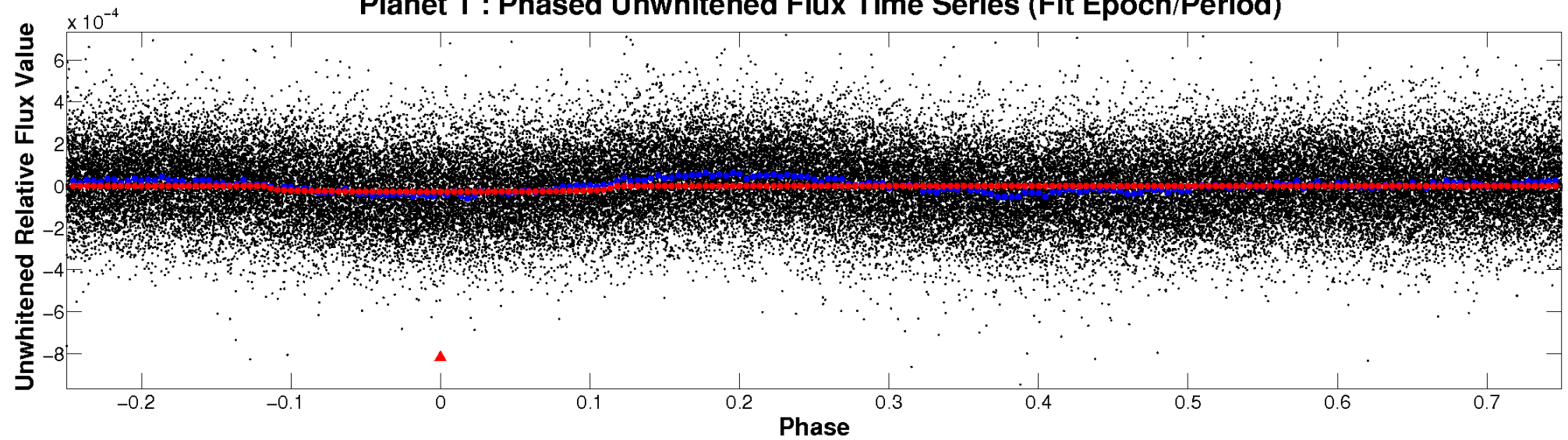
# ALT Odd/Even

TCE 008751770-01

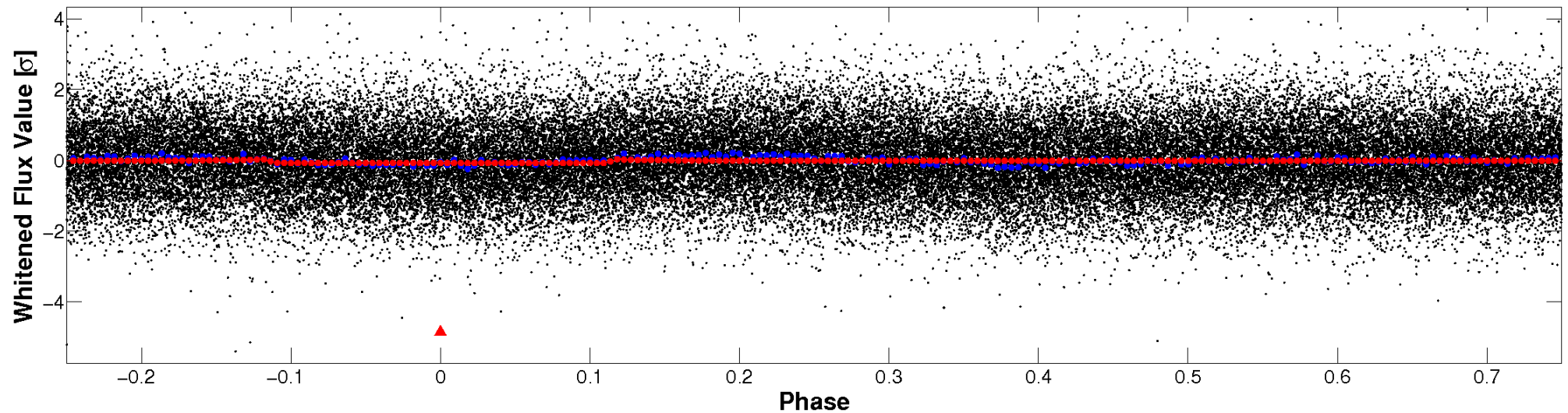


# Non-Whitened Vs. Whitened Light Curve

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

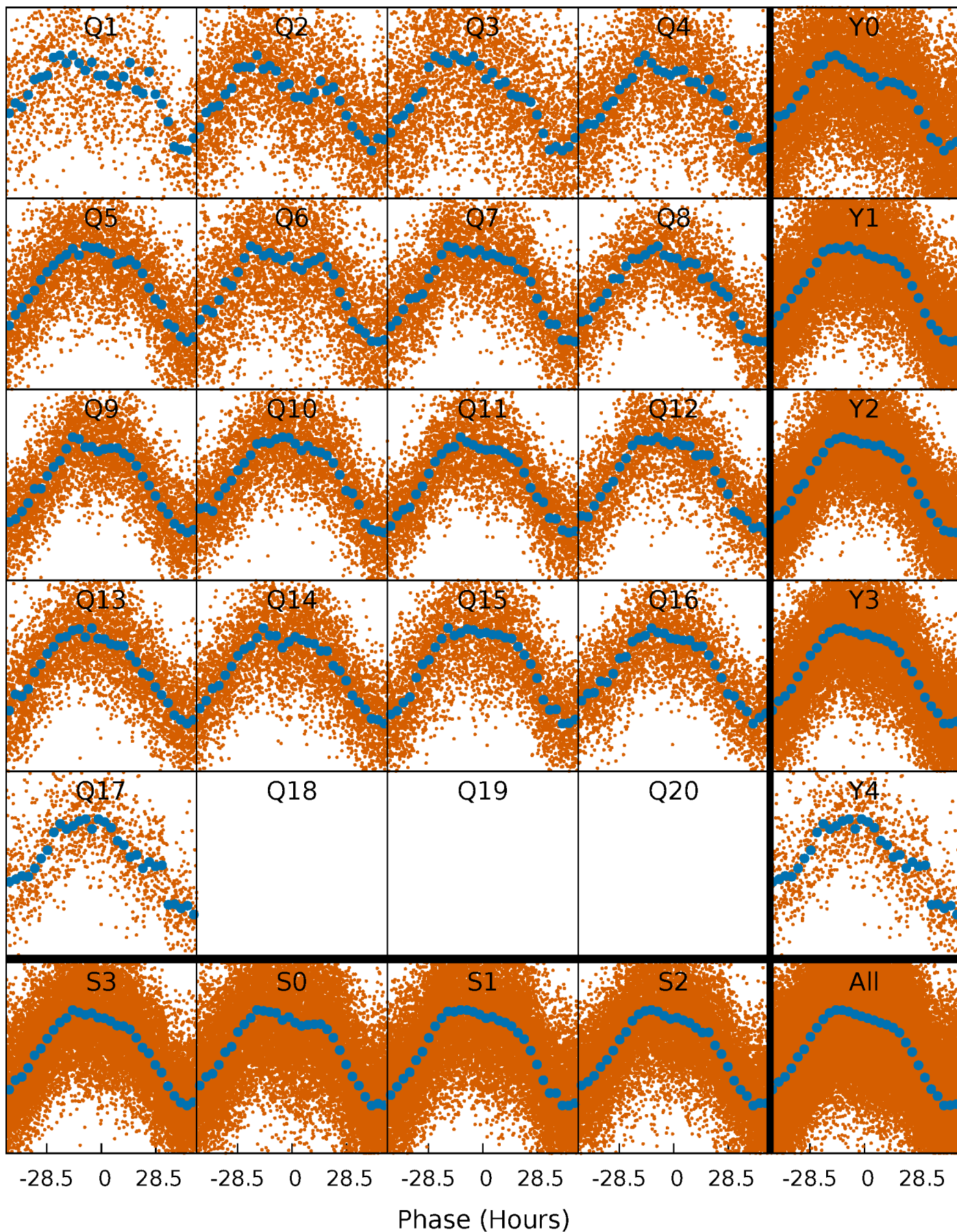


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

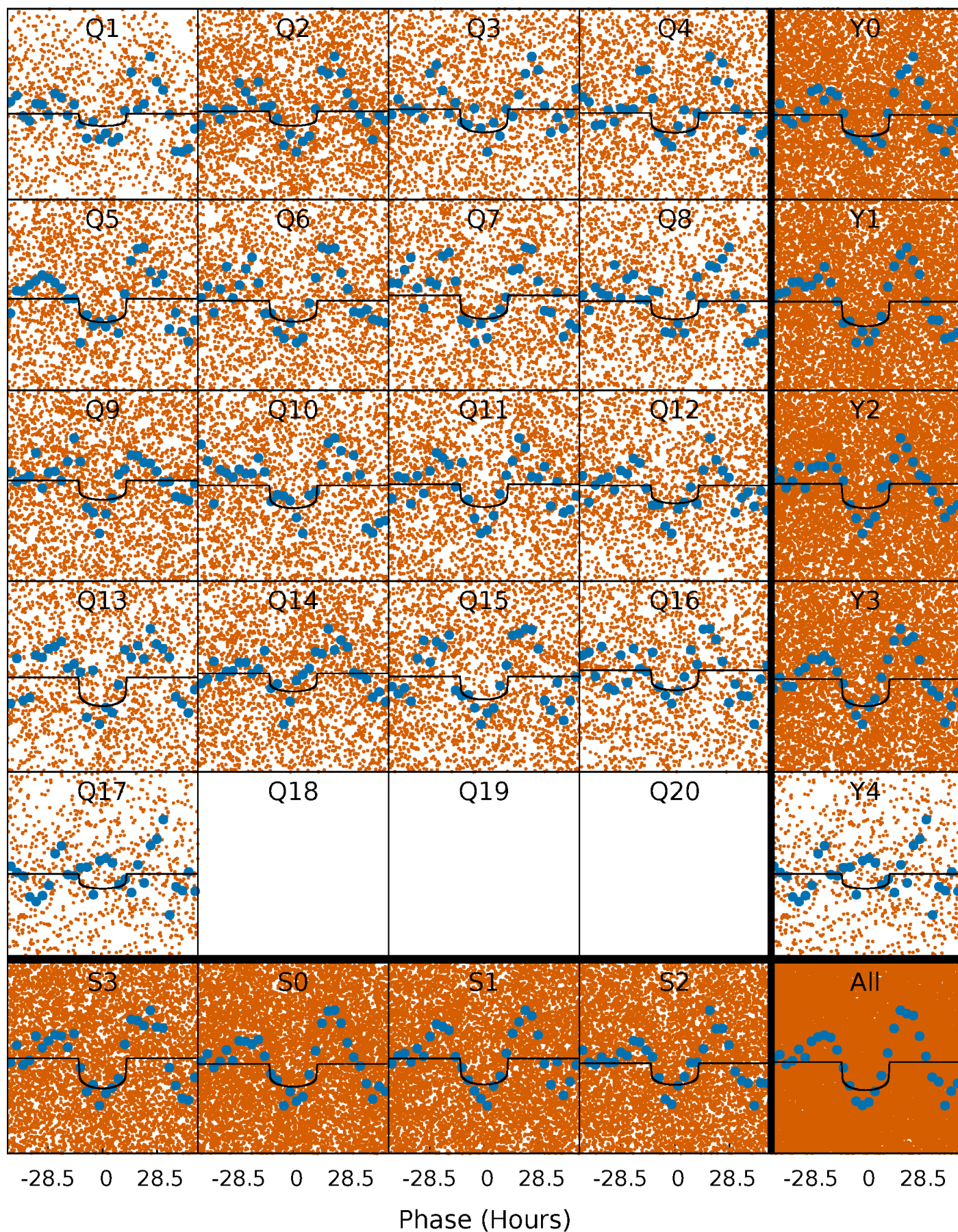
TCE 008751770-01 P= 4.493676 Days  $T_0=133.187034$  (BKJD)





# DV Quarter-Phased Transit Curves

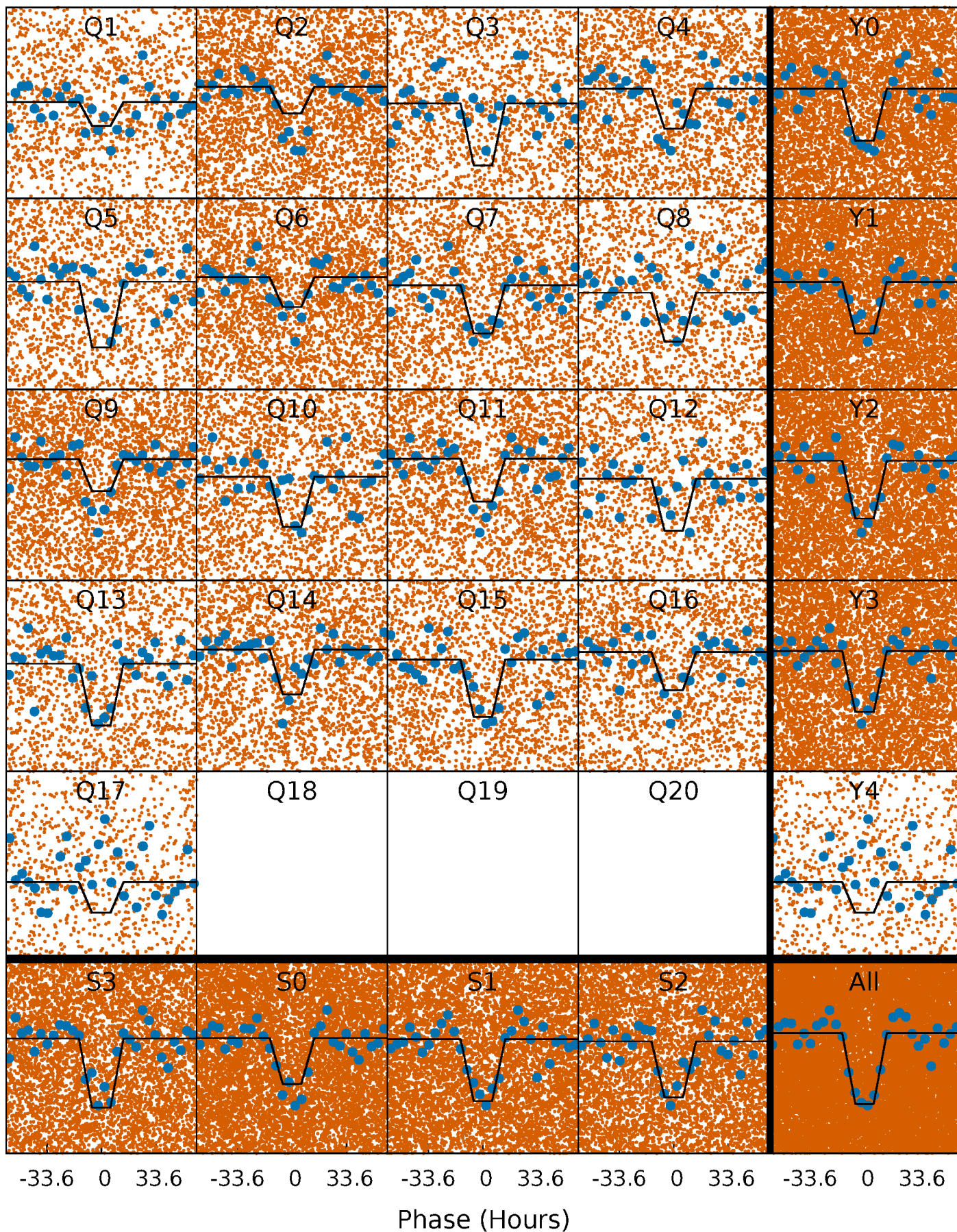
TCE 008751770-01 P= 4.493676 Days  $T_0=133.187034$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

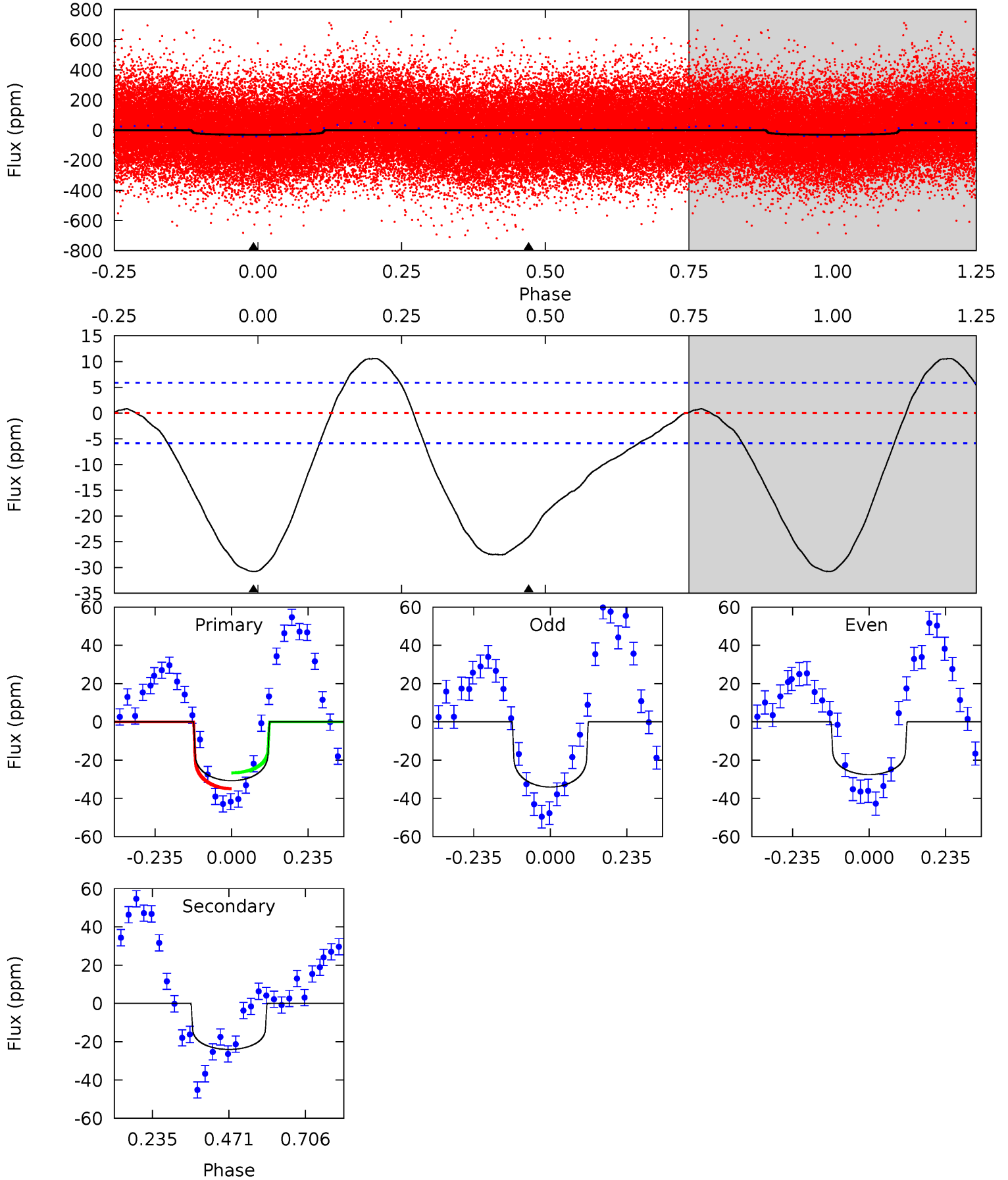
TCE 008751770-01 P= 4.493612 Days  $T_0=133.230116$  (BKJD)



# DV Model-Shift Uniqueness Test

008751770-01, P = 4.493676 Days, E = 128.693358 Days

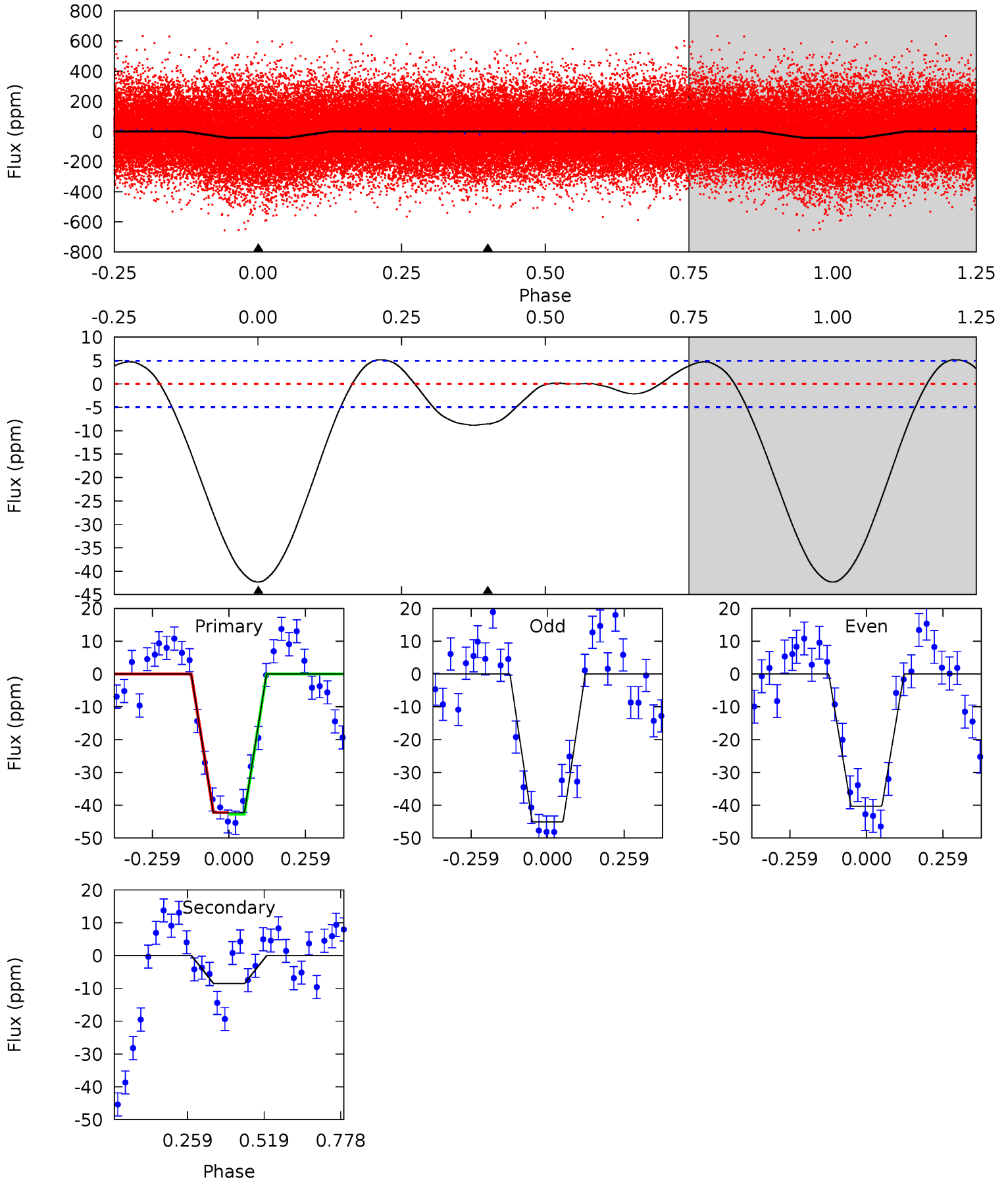
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.9	17.9	0	0	4.38	1.19	3.26	22.9	22.9	17.9	17.9	2.42	1.02	0.26	3.10



# Alt Model-Shift Uniqueness Test

008751770-01, P = 4.493612 Days, E = 128.736504 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
37.3	7.53	0	0	4.36	1.13	1.75	37.3	37.3	7.53	7.53	2.08	0.88	0.11	0.21





### Stellar Parameters For KIC 008751770

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6804^{+183}_{-223}$	$3.601^{+0.306}_{-0.054}$	$-0.080^{+0.300}_{-0.250}$	$3.498^{+0.405}_{-1.216}$	$1.781^{+0.159}_{-0.344}$	$0.059^{+0.123}_{-0.010}$
	+3%/-3%	+8%/-1%	+375%/-312%	+12%/-35%	+9%/-19%	+211%/-18%
Source	PHO1	FLK73	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 008751770-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-24 \pm 1$	$1.81^{+0.51}_{-0.54}$	$2998^{+160}_{-290}$	$6570^{+1131}_{-678}$	$17^{+17}_{-6}$
Alt.	$-9 \pm 1$	$2.33^{+0.52}_{-0.52}$	$3018^{+151}_{-264}$	$4591^{+408}_{-356}$	$3.658^{+2.177}_{-1.326}$

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

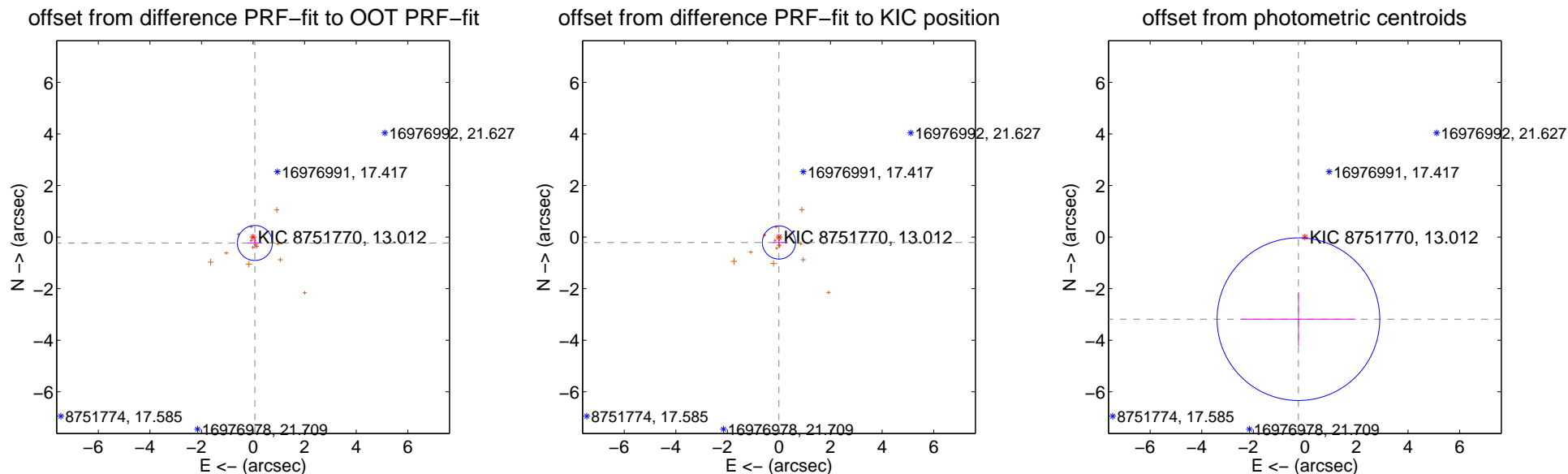
## DV Centroid Data

Supplemental centroid analysis for 008751770-01. Kepler magnitude: 13.01. Transit SNR 9.08

There are 0 quarters with good PRF difference image offsets

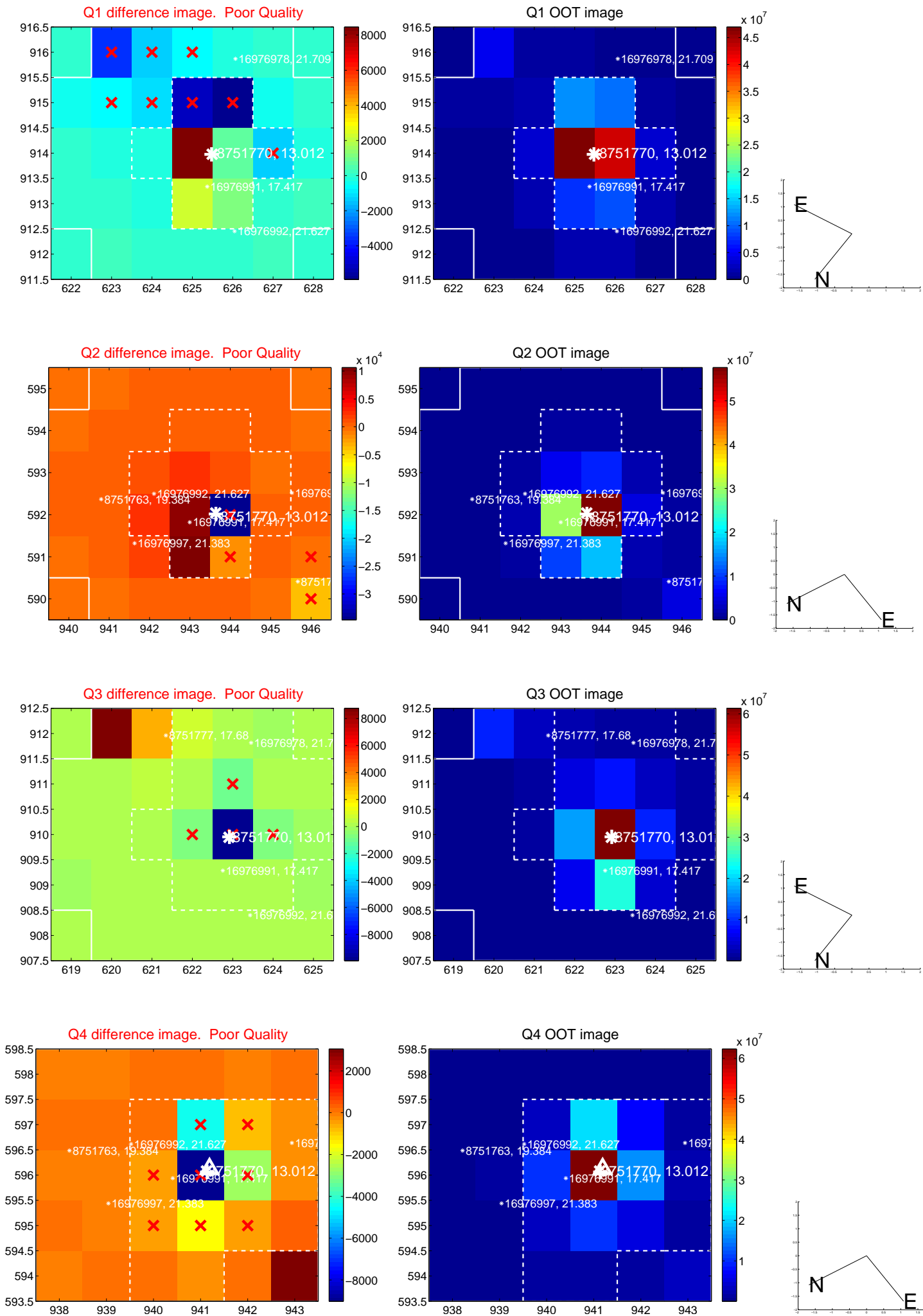
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.239 \pm 0.226$	1.06	$-0.070 \pm 0.263$	$-0.229 \pm 0.216$
PRF-fit source offset from KIC position	$0.209 \pm 0.214$	0.98	$0.002 \pm 0.247$	$-0.209 \pm 0.215$
photometric centroid source offset	$3.19 \pm 1.05$	3.04	$0.25 \pm 2.22$	$-3.18 \pm 1.04$

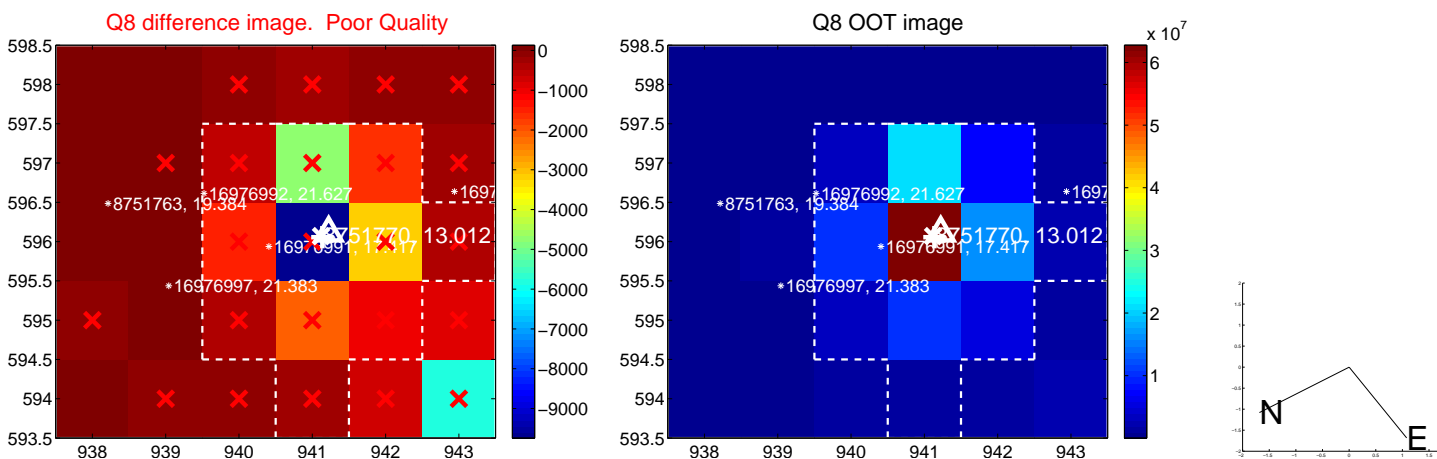
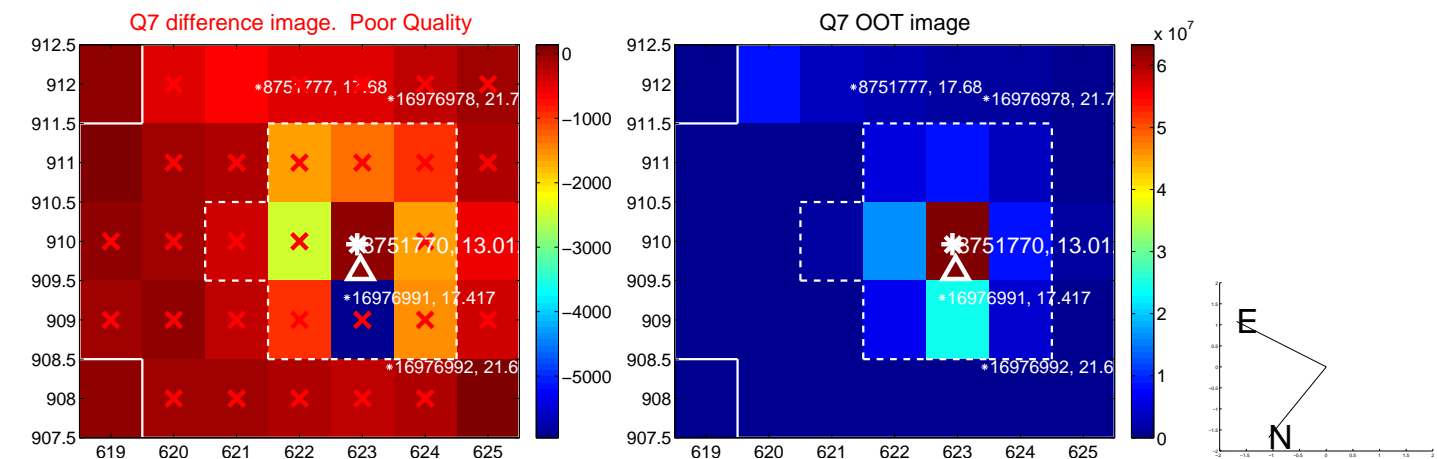
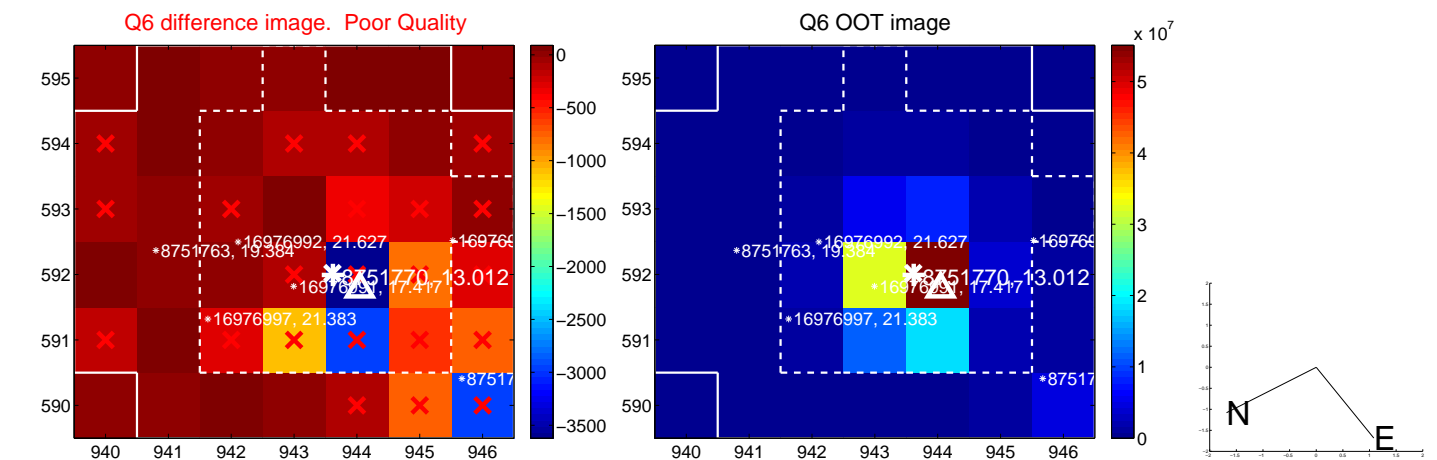
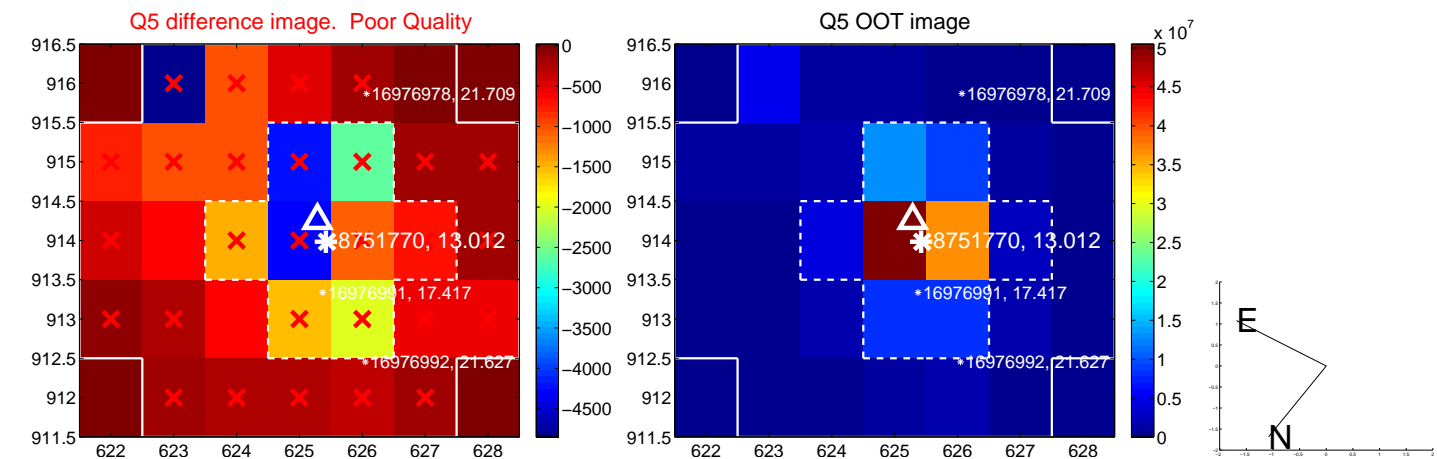


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

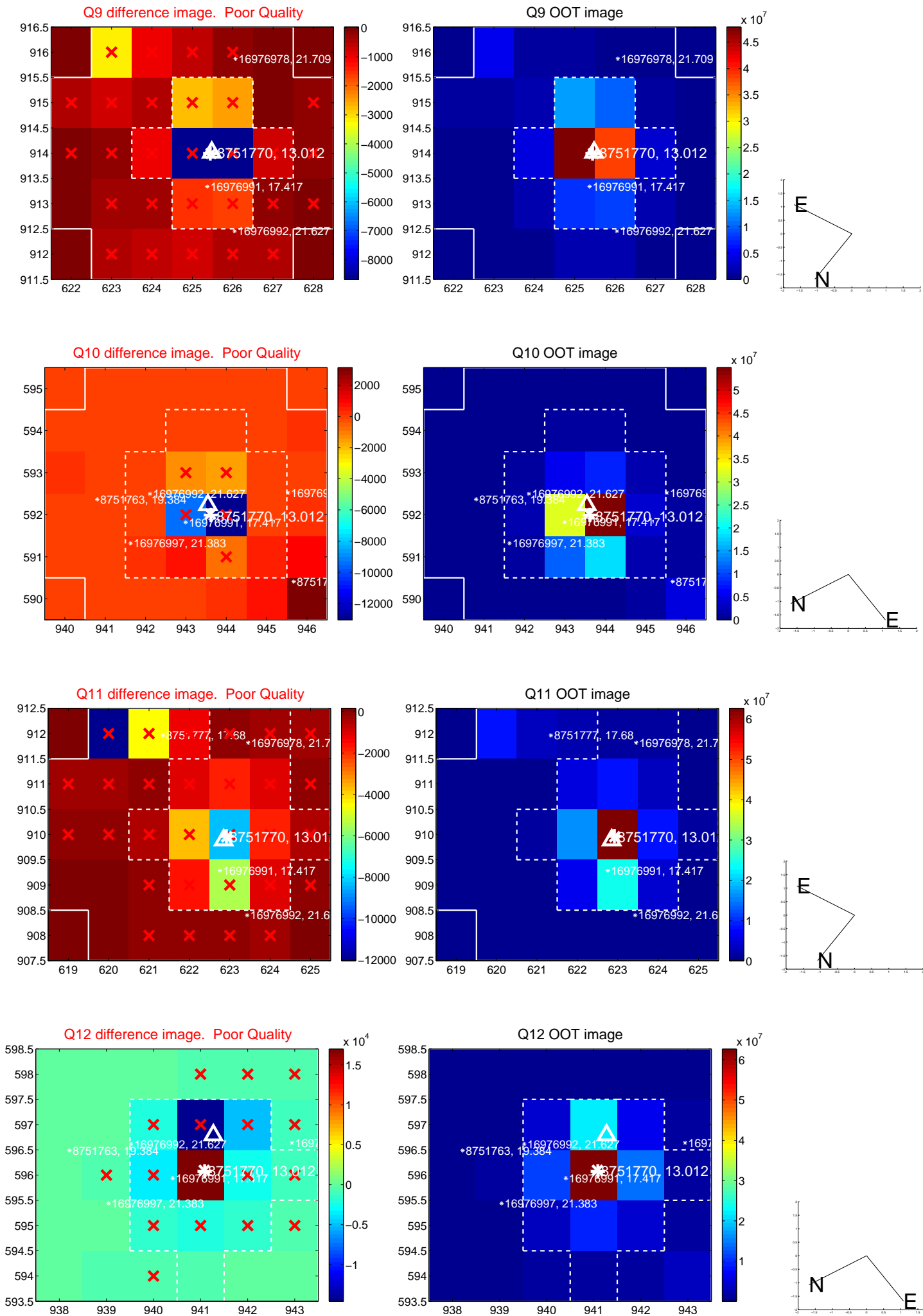


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

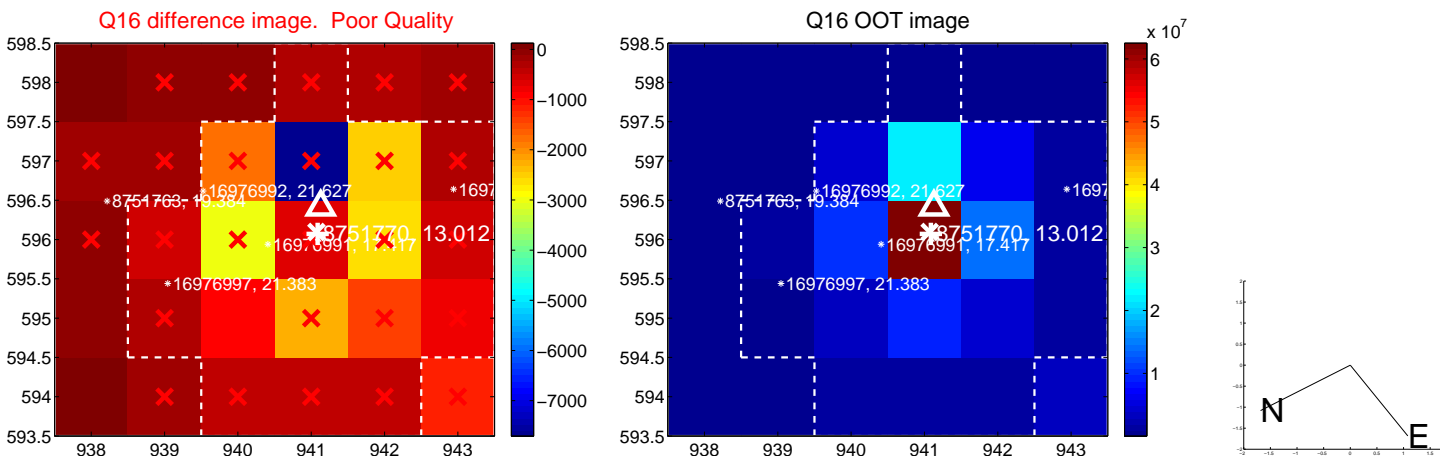
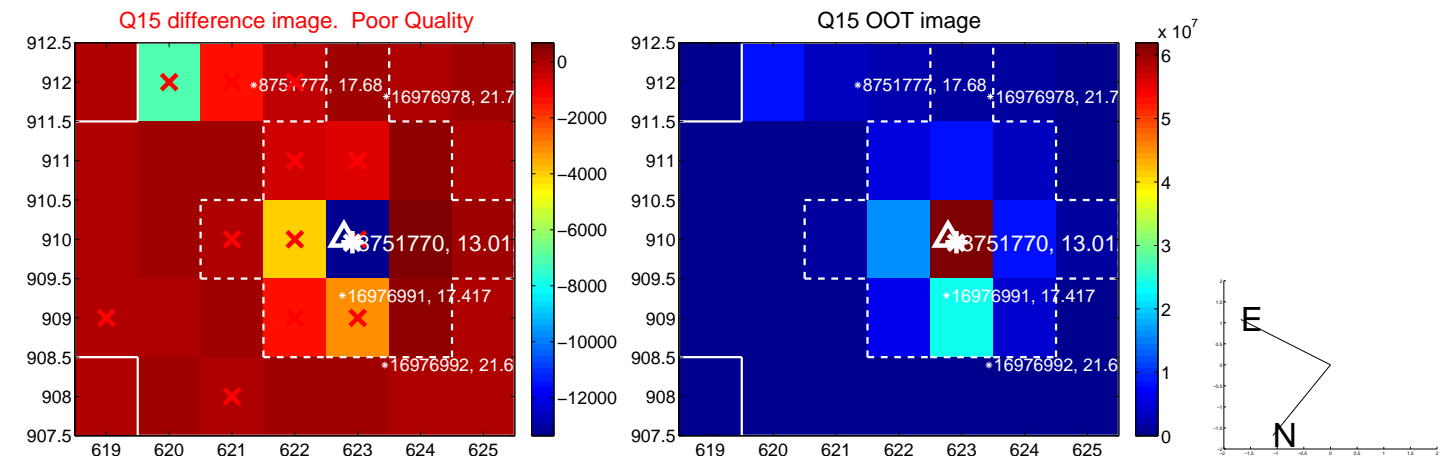
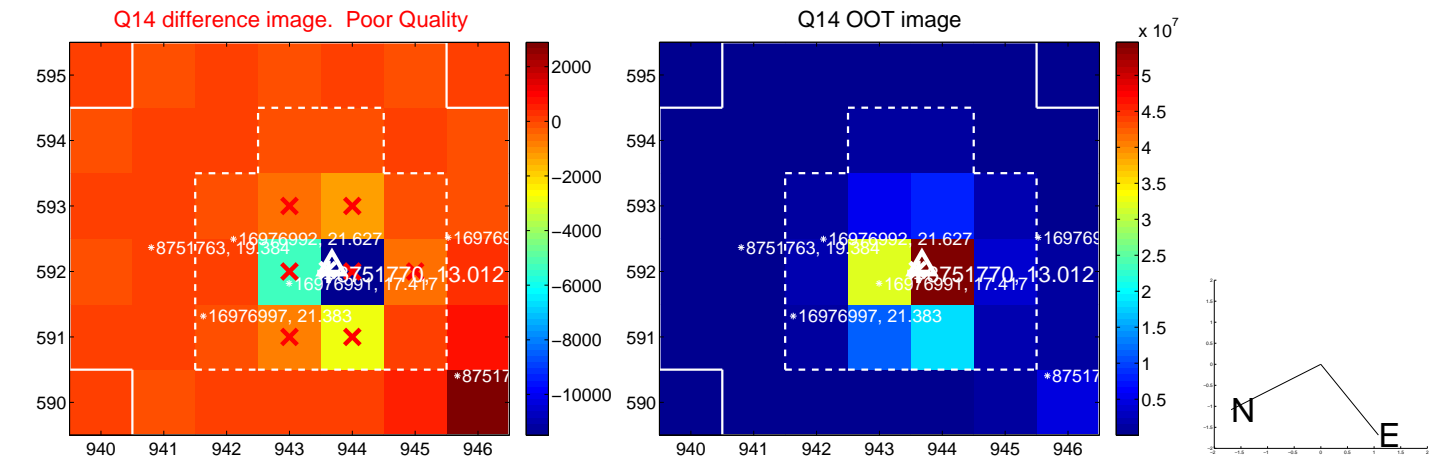
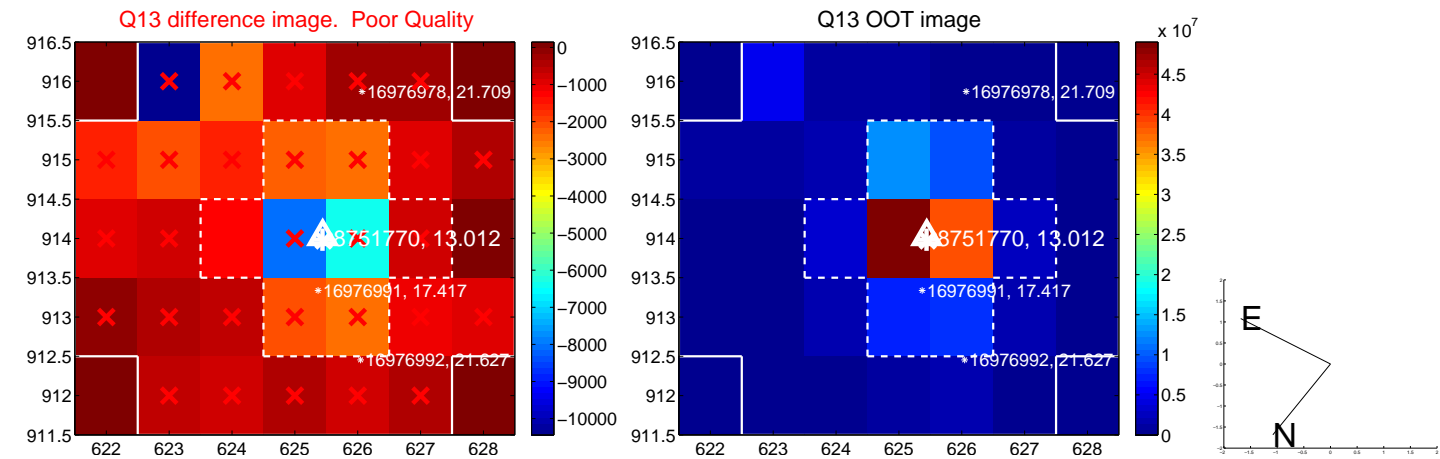




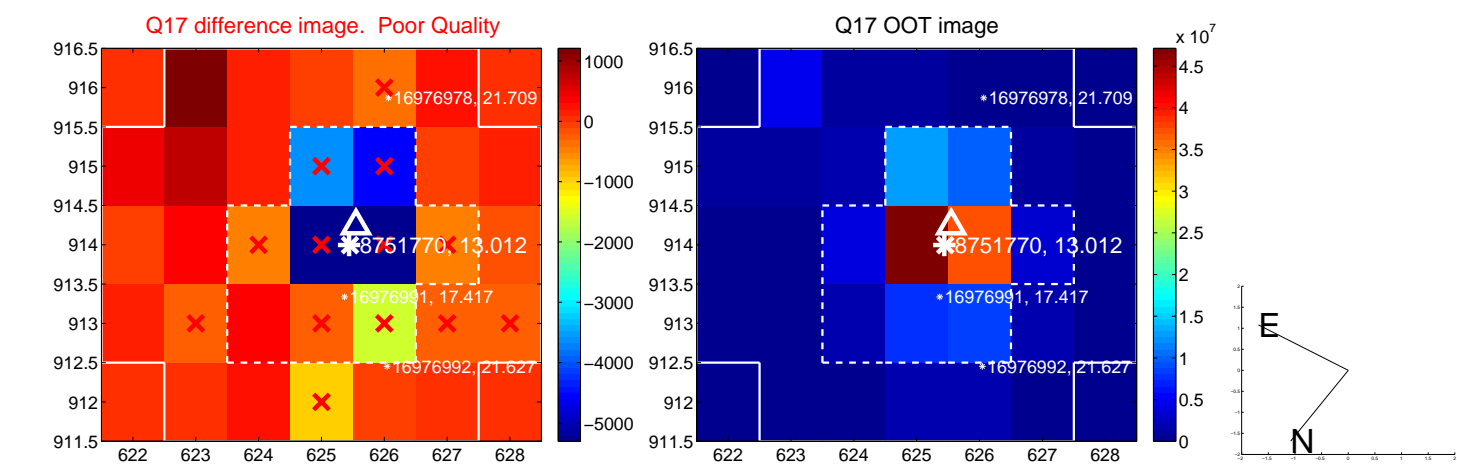
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



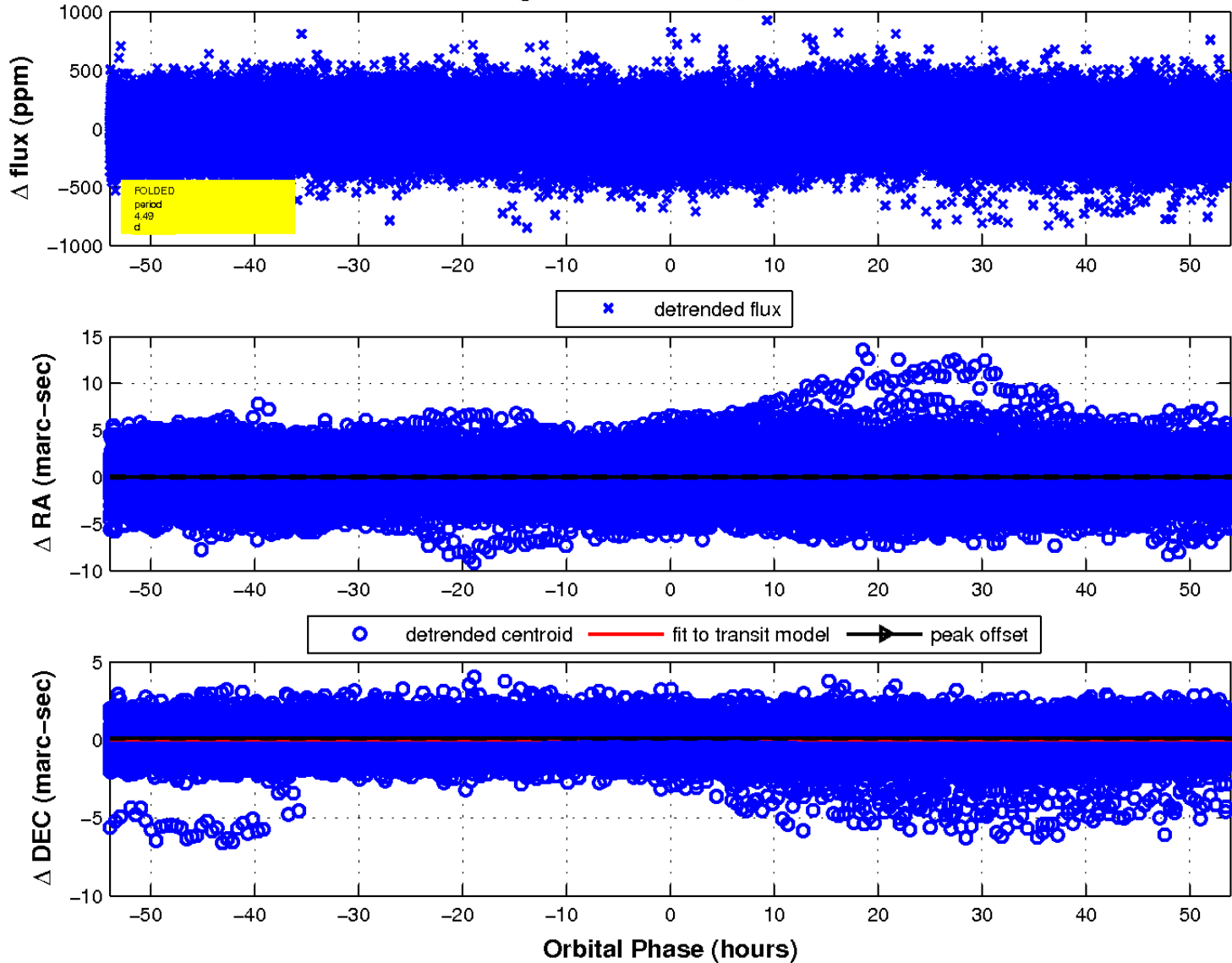
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

