

# KIC 007584755

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007584755-01	OBS	No	0.911518	132.394502	25.4	4.879	10.1	9.9	0.87	6046	0.45	2756.93

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007584755-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

**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.

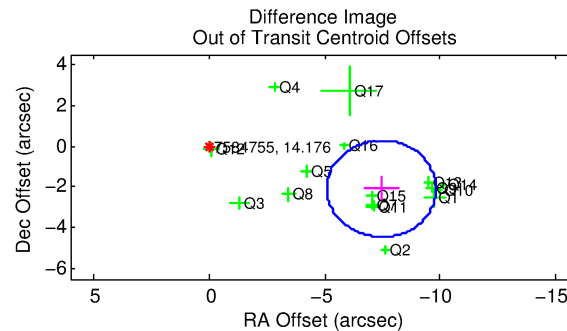
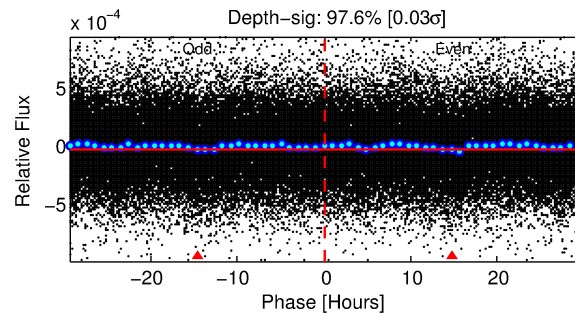
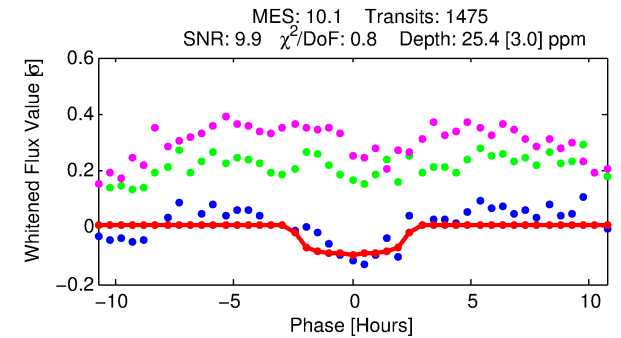
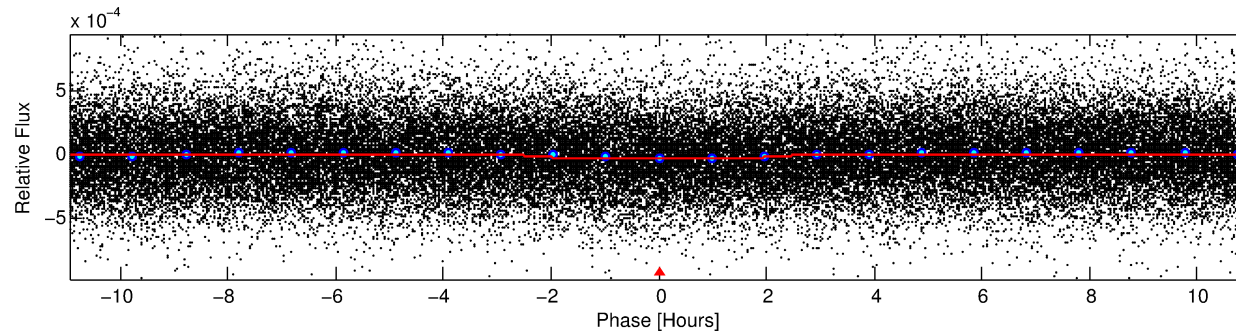
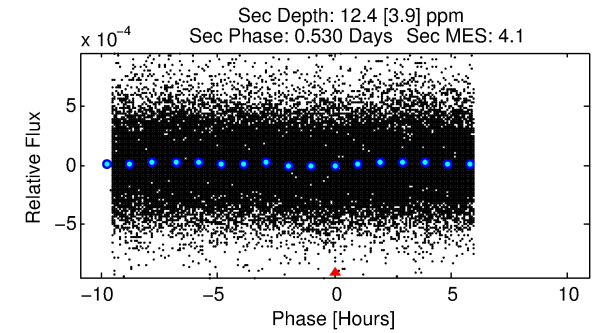
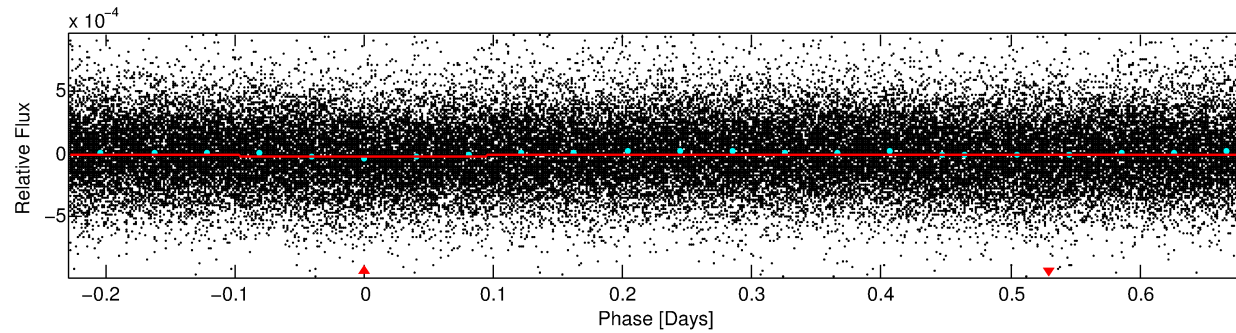
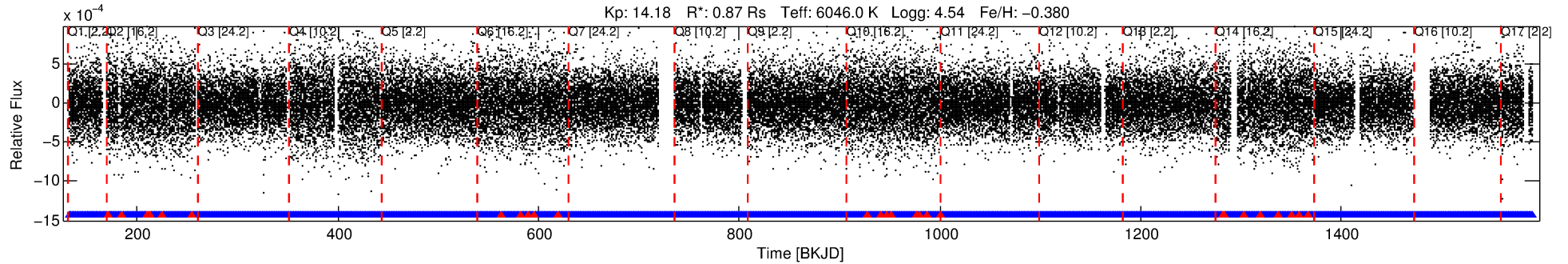
## Ephemeris Match Information For 007584755-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
007584755-01	7584755	007584739-pri	7584739	1:1	29.7	-3	-7	13.38	14.18	16660.00	Direct-PRF	0	4.17	1.87

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 7584755 Candidate: 1 of 1 Period: 0.912 d



## DV Fit Results:

Period = 0.91152 [0.00001] d  
Epoch = 132.3945 [0.0055] BKJD  
Rp/R\* = 0.0048 [0.0028]  
a/R\* = 1.43 [2.13]  
b = 0.53 [4.03]  
Seff = 2756.93 [1107.67]  
Teff = 1848 [186] K  
Rp = 0.45 [0.30] Re  
a = 0.0181 [0.0047] AU  
Ag = 10.93 [13.92] [0.71σ]  
Teffp = 5194 [1585] K [2.10σ]

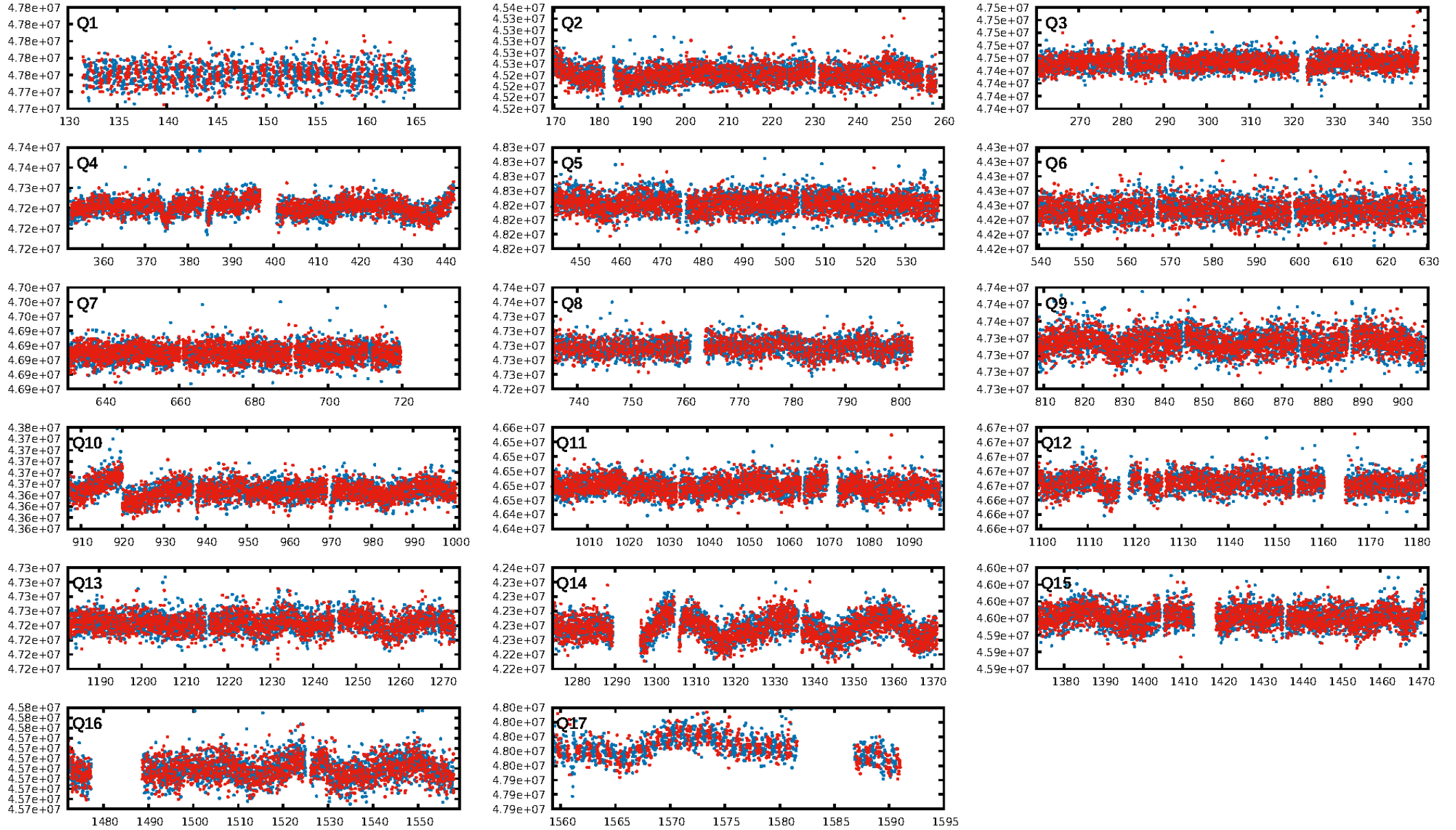
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 8.95e-16  
RollingBand-fgt: 0.98 [1381/1409]  
GhostDiagnostic-chr: -0.08276  
Centroid-sig: 0.0%  
Centroid-so: 9.450 arcsec [6.31σ]  
OotOffset-rm: 7.744 arcsec [9.83σ]  
KicOffset-rm: 7.737 arcsec [9.67σ]  
OotOffset-st: 3/4/4/5 [16]  
KicOffset-st: 3/4/4/5 [16]  
DiffImageQuality-fgm: 0.12 [2/16]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 02:54:46 Z

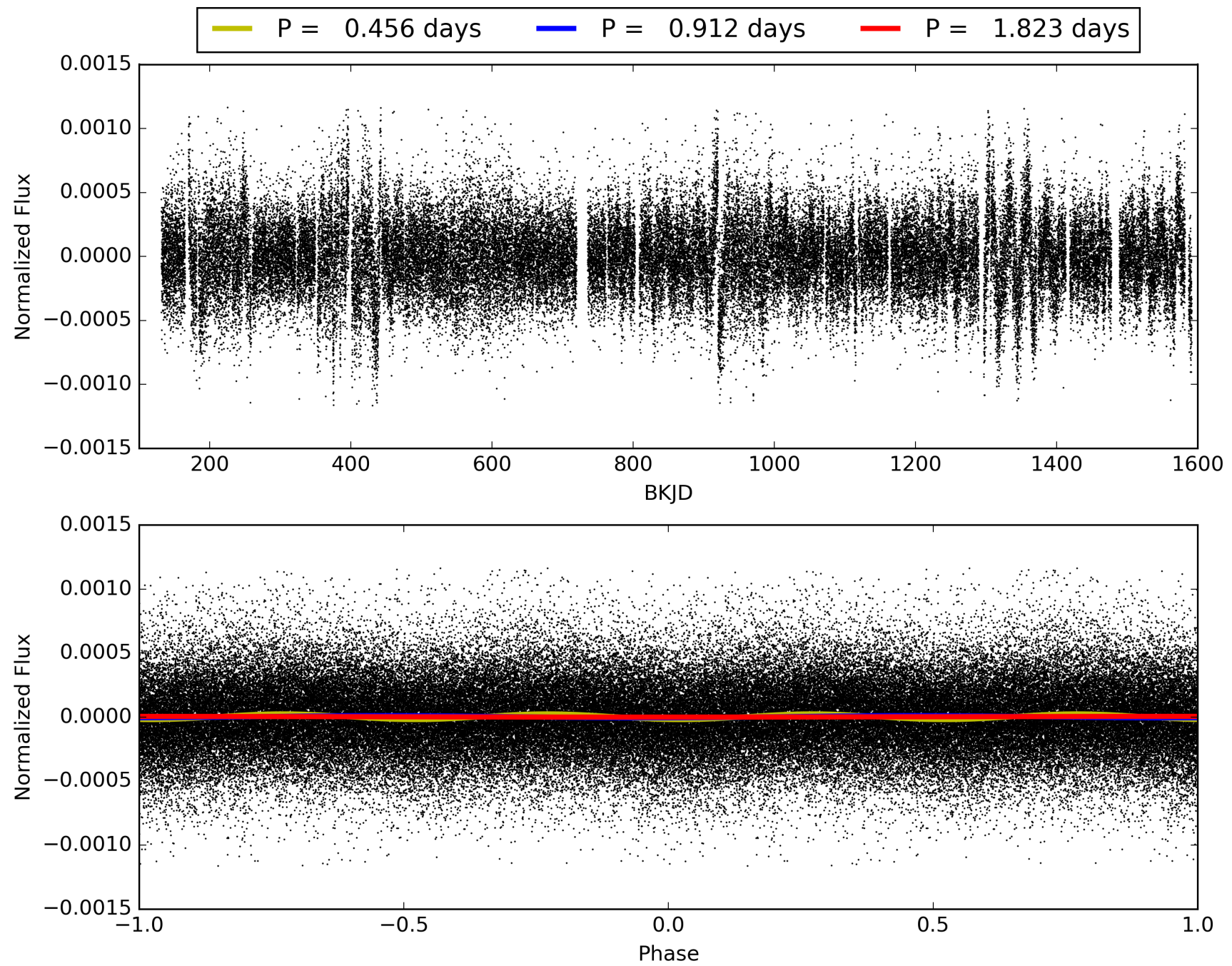
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007584755-01, PDC Light Curves



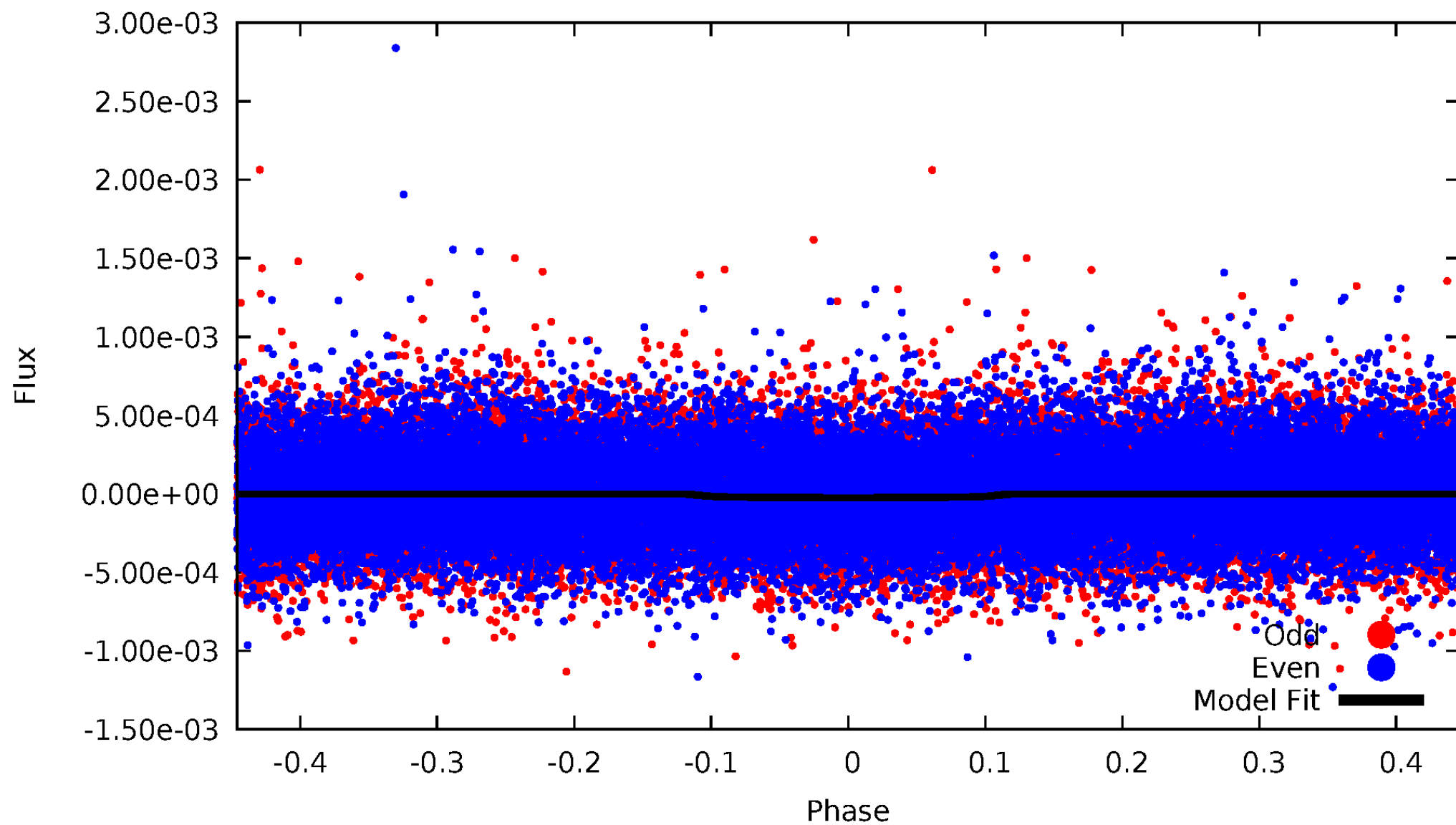


TCE 007584755-01



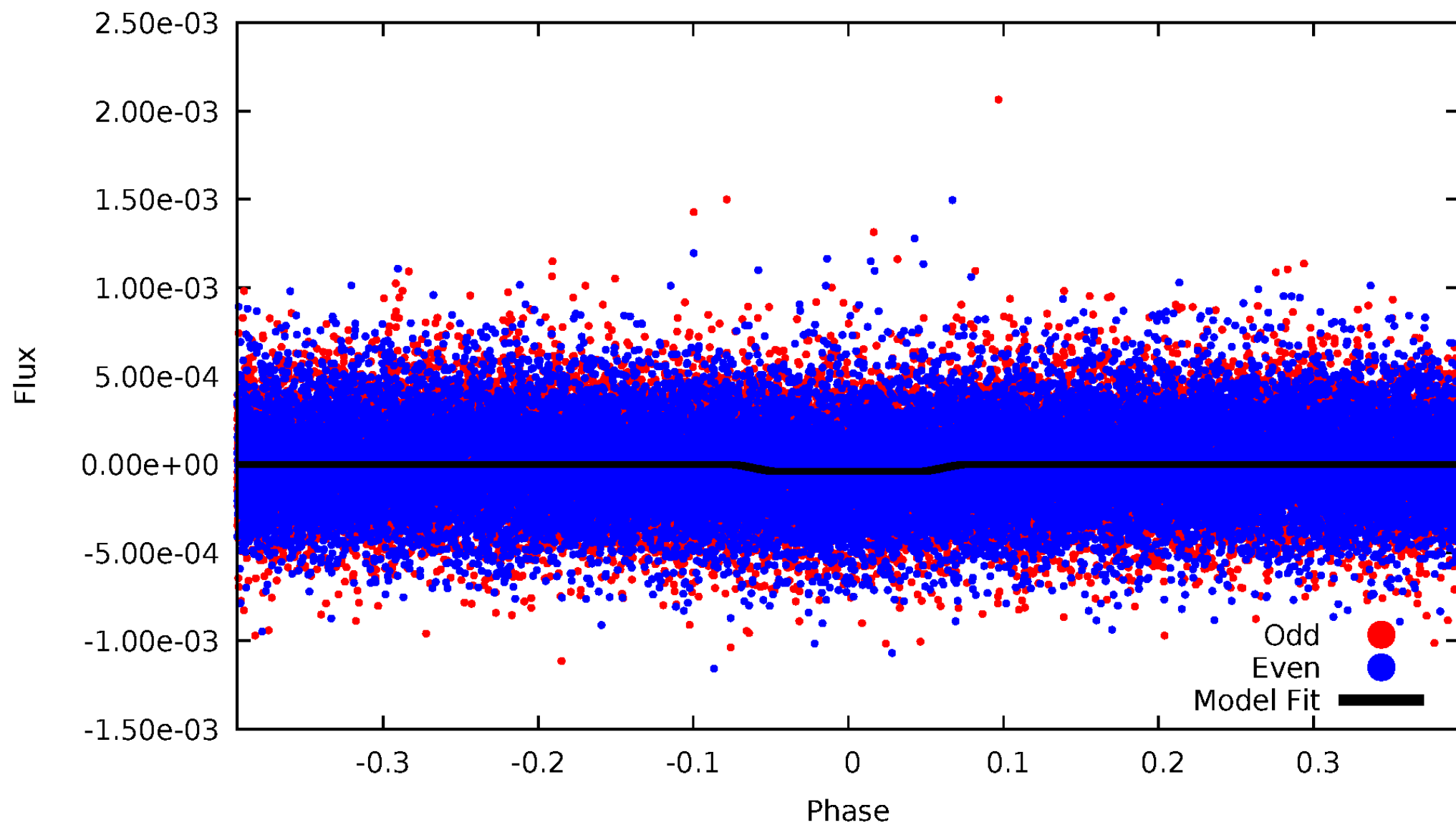
# DV Odd/Even

TCE 007584755-01



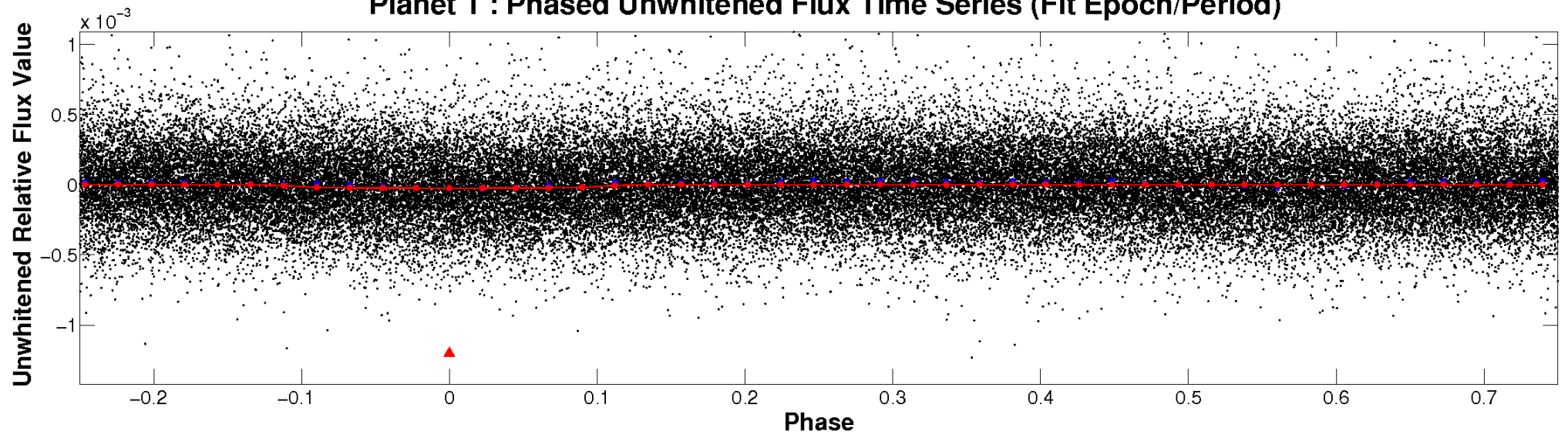
# ALT Odd/Even

TCE 007584755-01

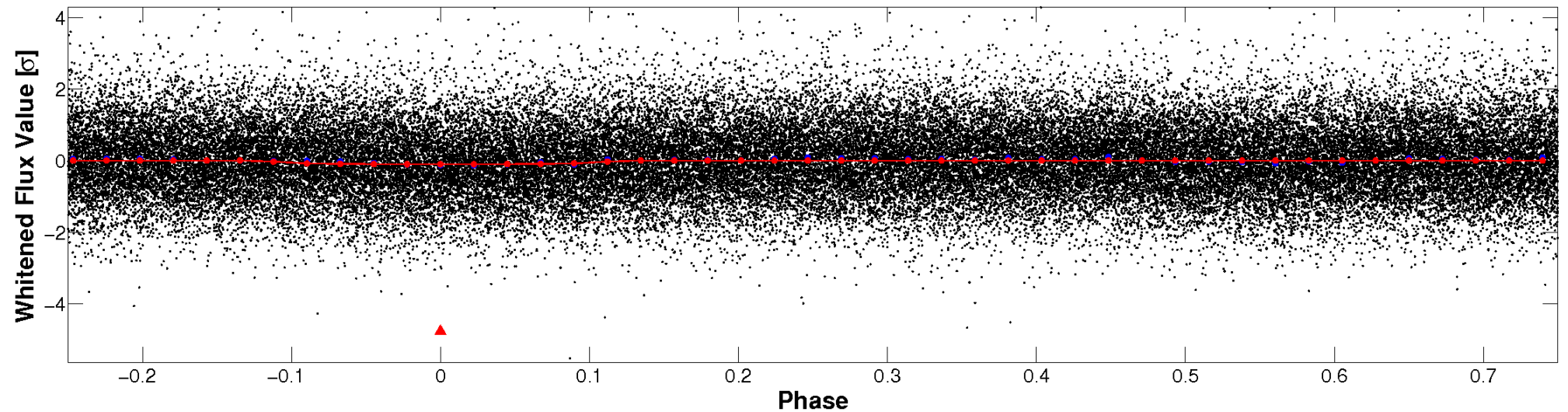


# Non-Whitened Vs. Whitened Light Curve

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



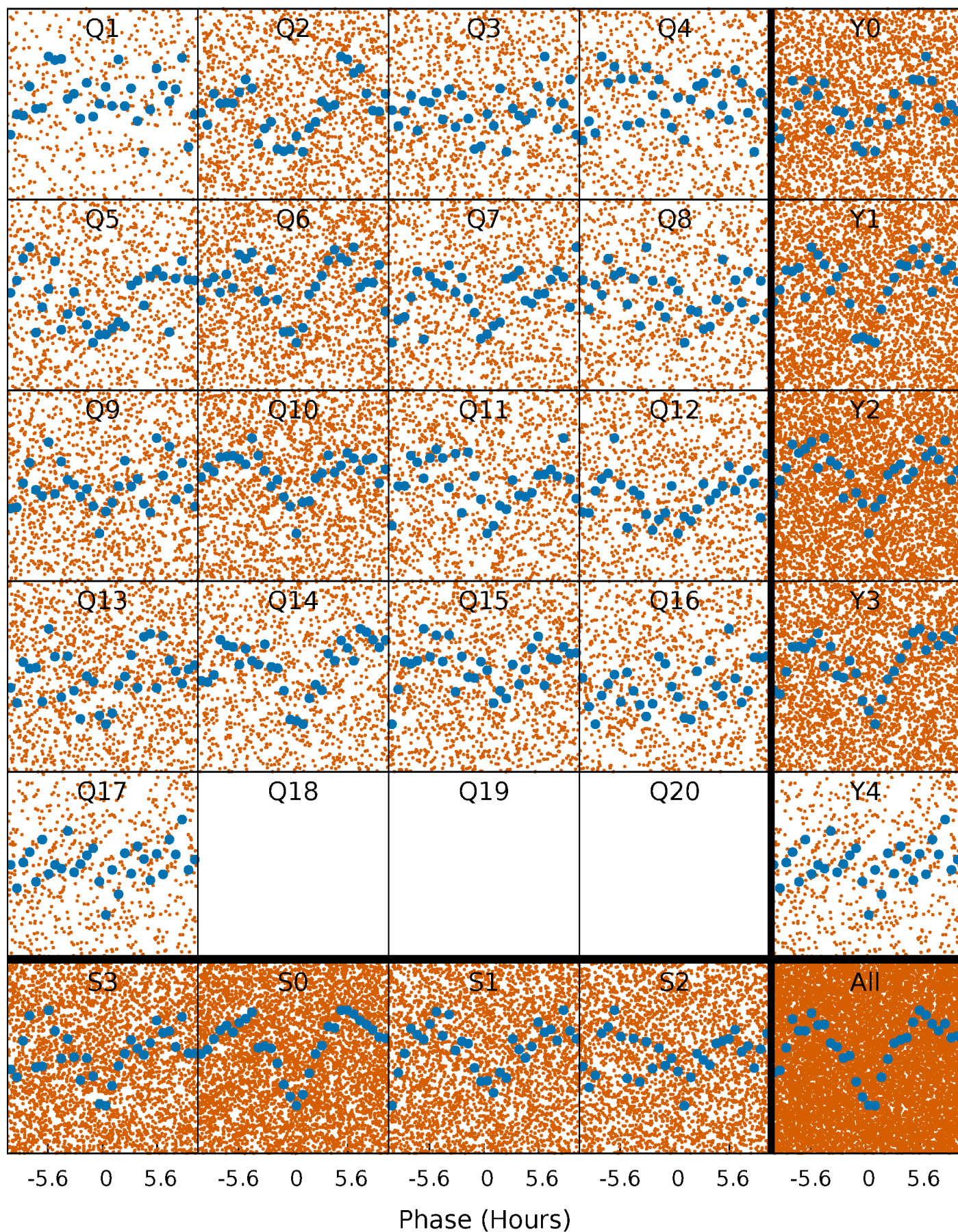
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

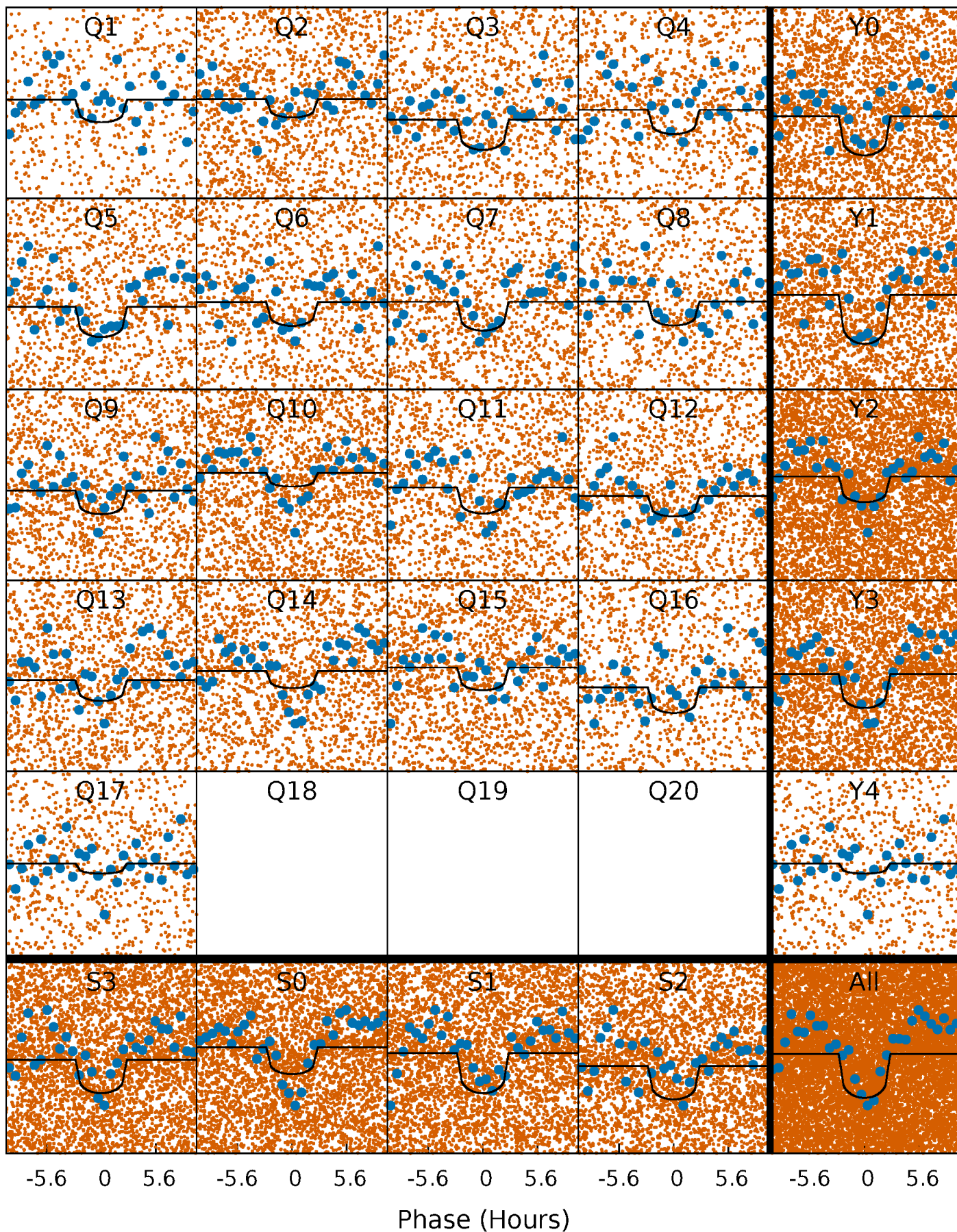
TCE 007584755-01 P= 0.911518 Days  $T_0=132.394502$  (BKJD)





# DV Quarter-Phased Transit Curves

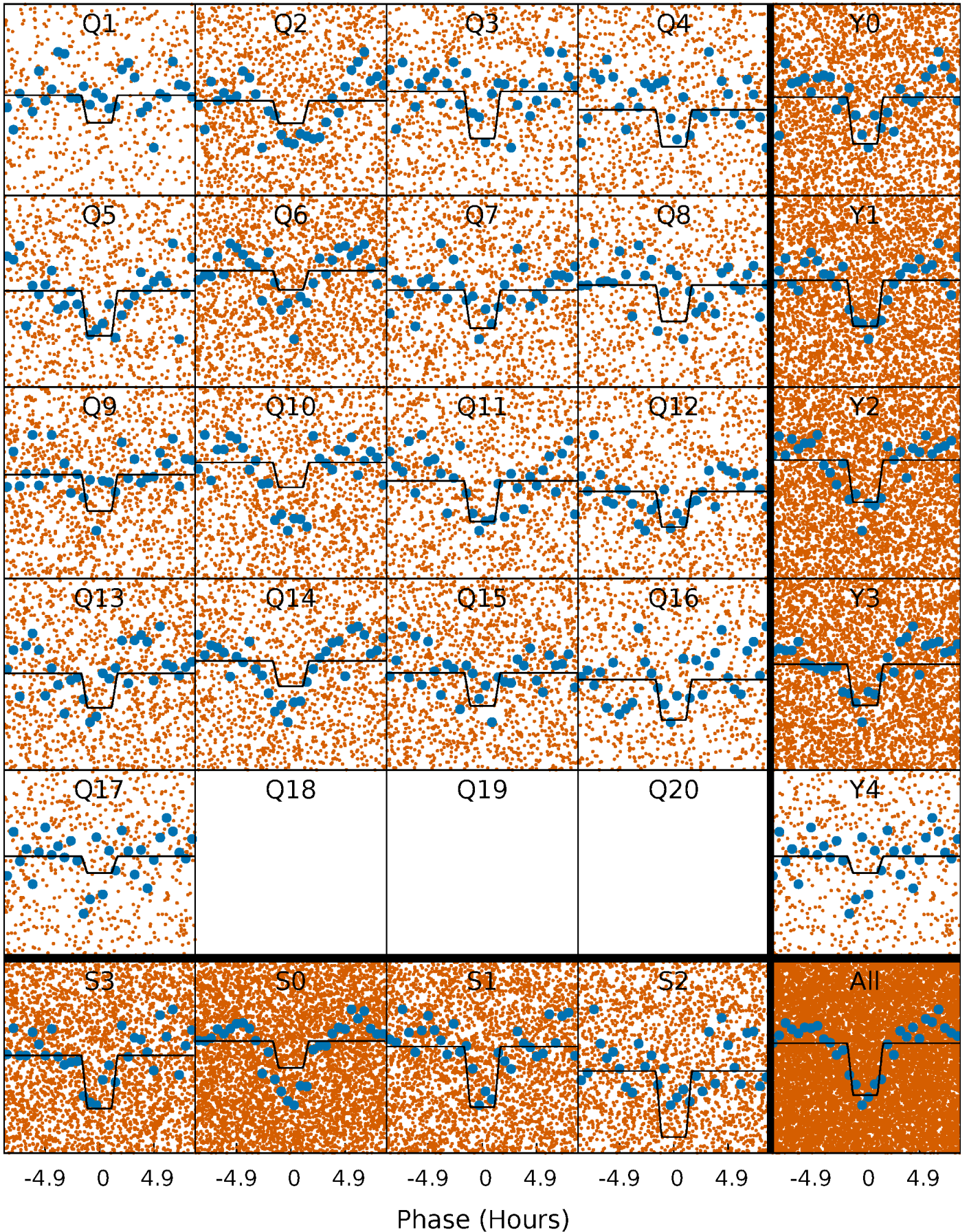
TCE 007584755-01 P= 0.911518 Days  $T_0=132.394502$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

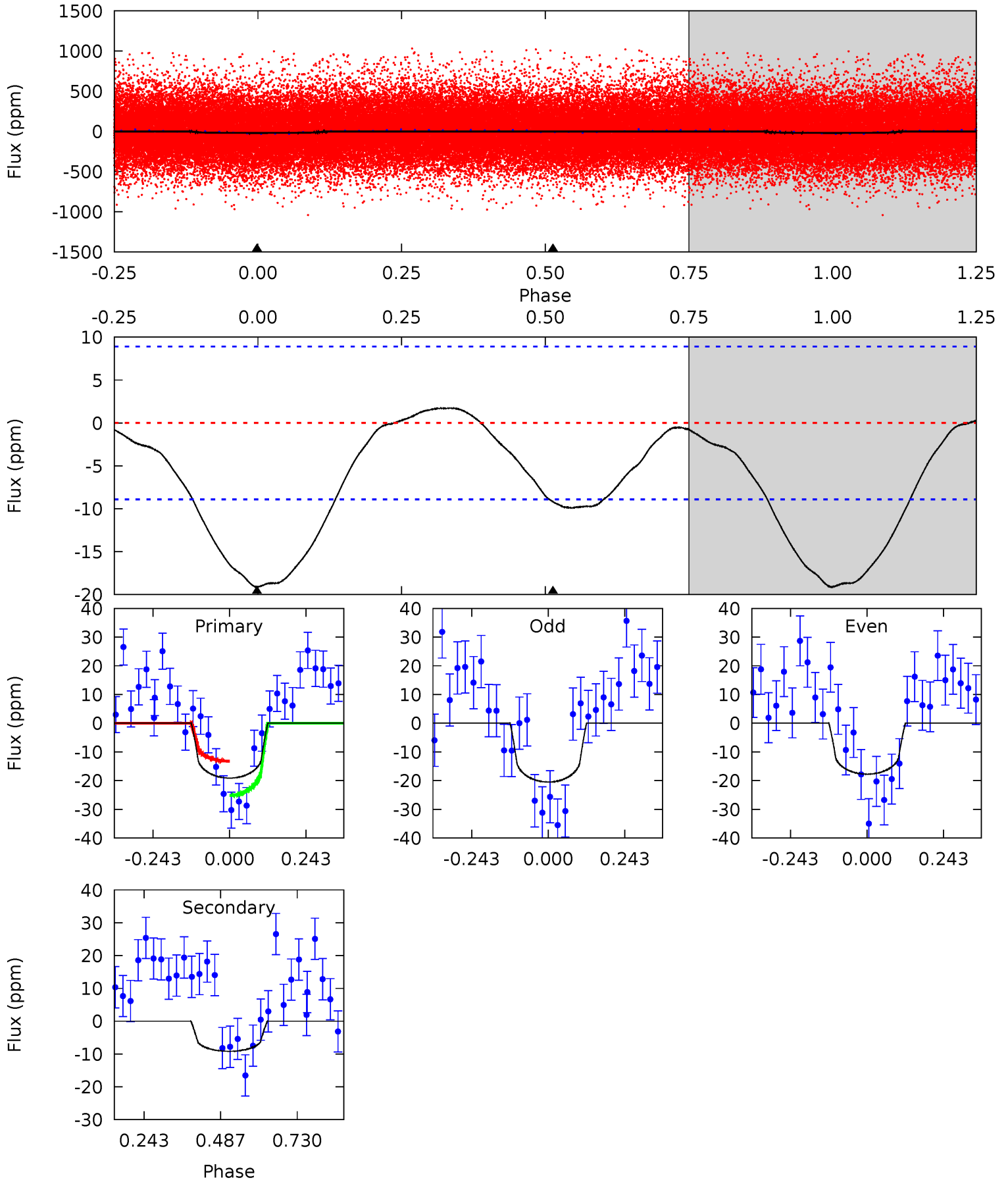
TCE 007584755-01 P= 0.911586 Days  $T_0=132.353289$  (BKJD)



# DV Model-Shift Uniqueness Test

007584755-01, P = 0.911518 Days, E = 131.482984 Days

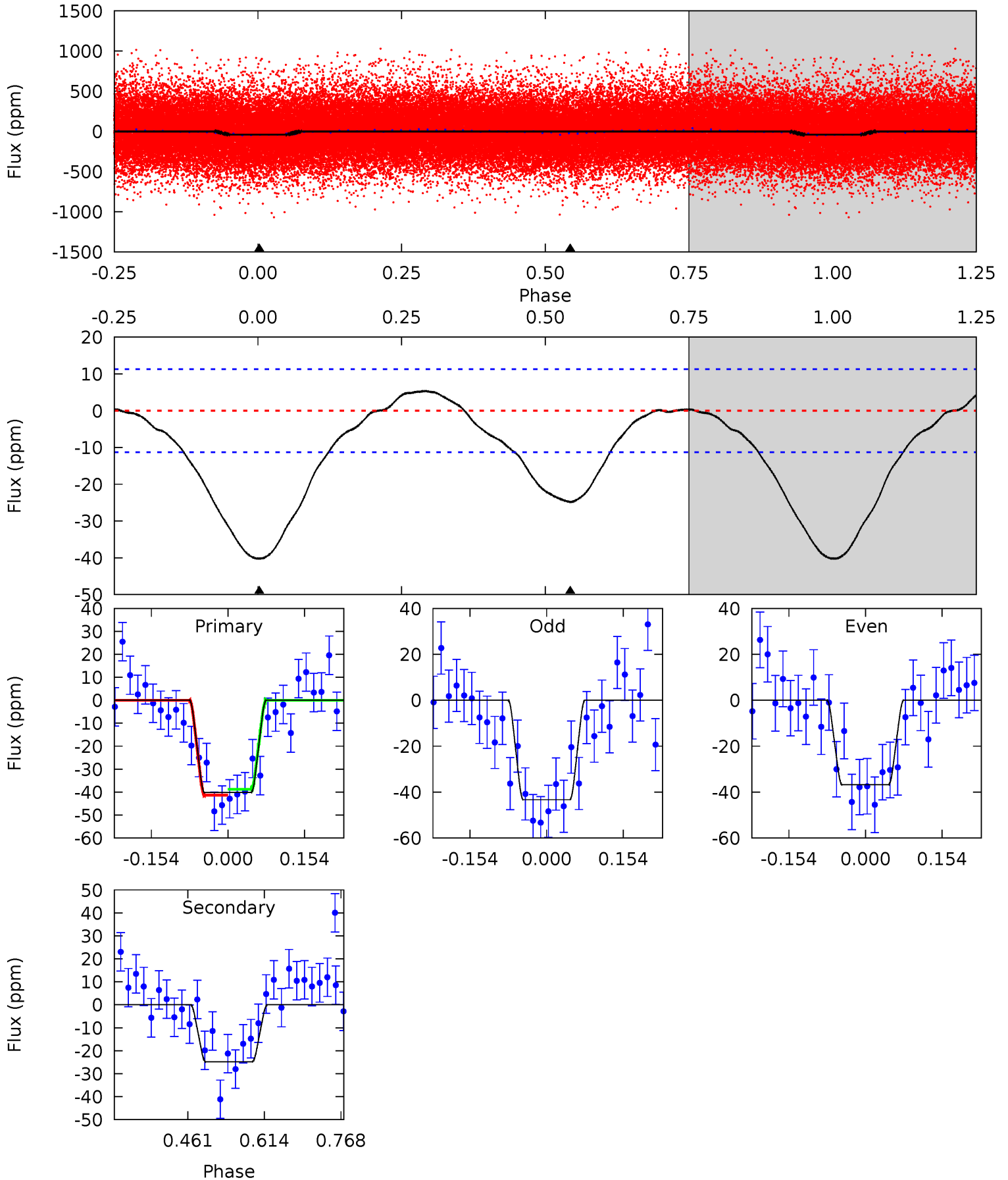
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.40	4.51	0	0	4.37	1.17	0.43	9.40	9.40	4.51	4.51	0.67	0.97	0.08	2.97



# Alt Model-Shift Uniqueness Test

007584755-01, P = 0.911586 Days, E = 131.441703 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
15.9	9.83	0	0	4.47	1.43	1.32	15.9	15.9	9.83	9.83	1.29	1.06	0.12	0.49





### Stellar Parameters For KIC 007584755

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6046^{+164}_{-182}$	$4.539^{+0.038}_{-0.212}$	$-0.380^{+0.300}_{-0.300}$	$0.869^{+0.264}_{-0.066}$	$0.953^{+0.107}_{-0.119}$	$2.043^{+0.423}_{-1.080}$
	+3%/-3%	+1%/-5%	+79%/-79%	+30%/-8%	+11%/-12%	+21%/-53%
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 007584755-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-9 \pm 2$	$0.49^{+0.29}_{-0.26}$	$2636^{+205}_{-110}$	$4773^{+2234}_{-802}$	$6.459^{+24.976}_{-4.014}$
Alt.	$-25 \pm 3$	$0.63^{+0.31}_{-0.29}$	$2643^{+197}_{-123}$	$5385^{+1924}_{-858}$	$11^{+26}_{-6}$

$T_{\text{max}}$  = 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

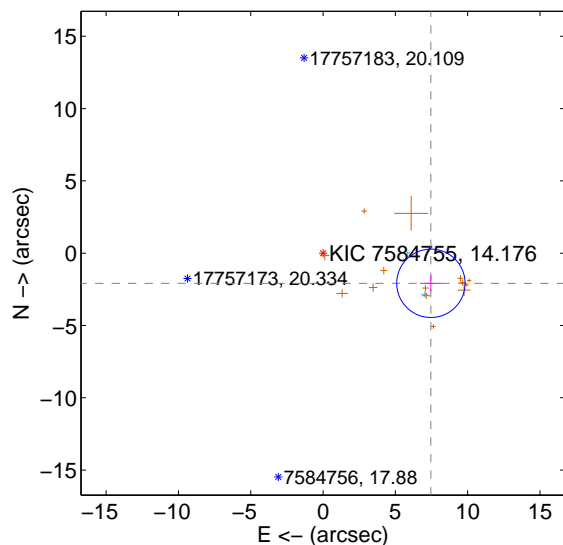
Supplemental centroid analysis for 007584755-01. Kepler magnitude: 14.18. Transit SNR 9.93

There are 2 quarters with good PRF difference image offsets

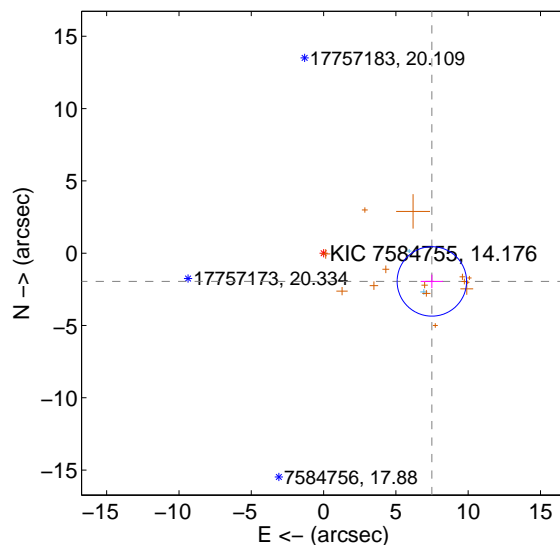
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$7.744 \pm 0.788$	9.83	$-7.458 \pm 0.752$	$-2.083 \pm 0.548$
PRF-fit source offset from KIC position	$7.737 \pm 0.800$	9.67	$-7.487 \pm 0.776$	$-1.953 \pm 0.465$
photometric centroid source offset	$9.45 \pm 1.50$	6.31	$-9.34 \pm 1.50$	$-1.44 \pm 1.25$

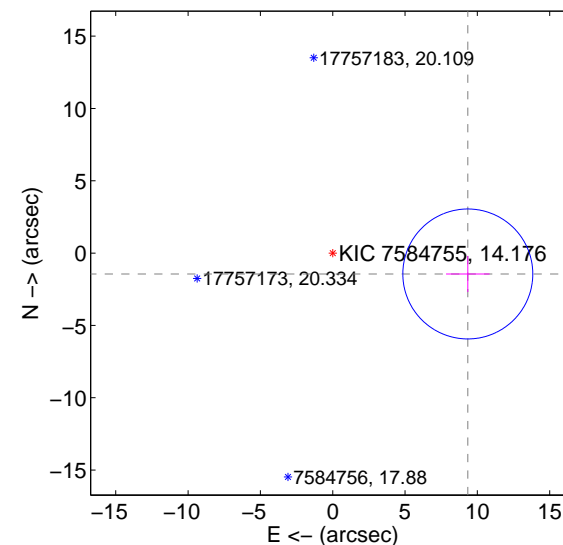
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

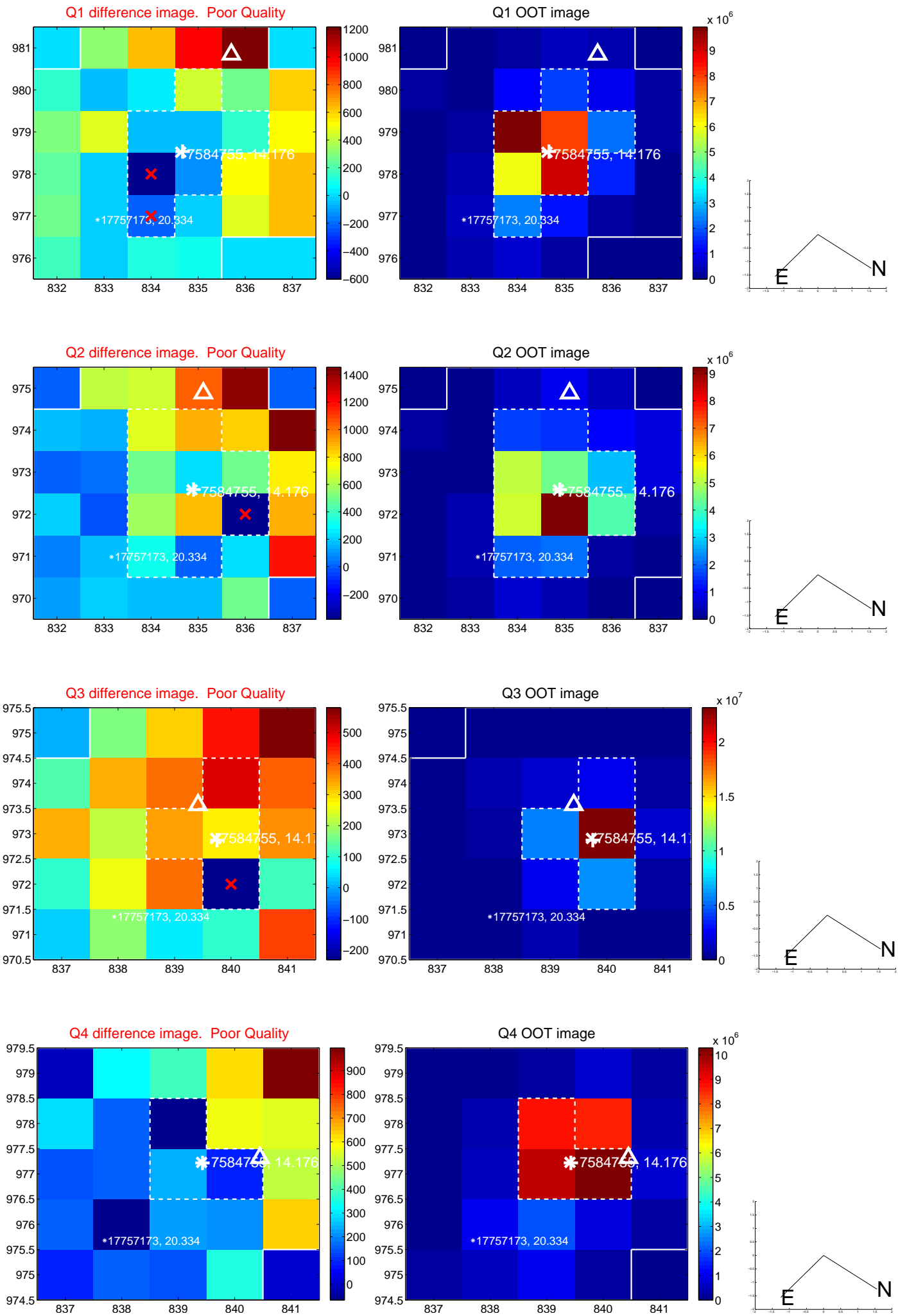


offset from photometric centroids

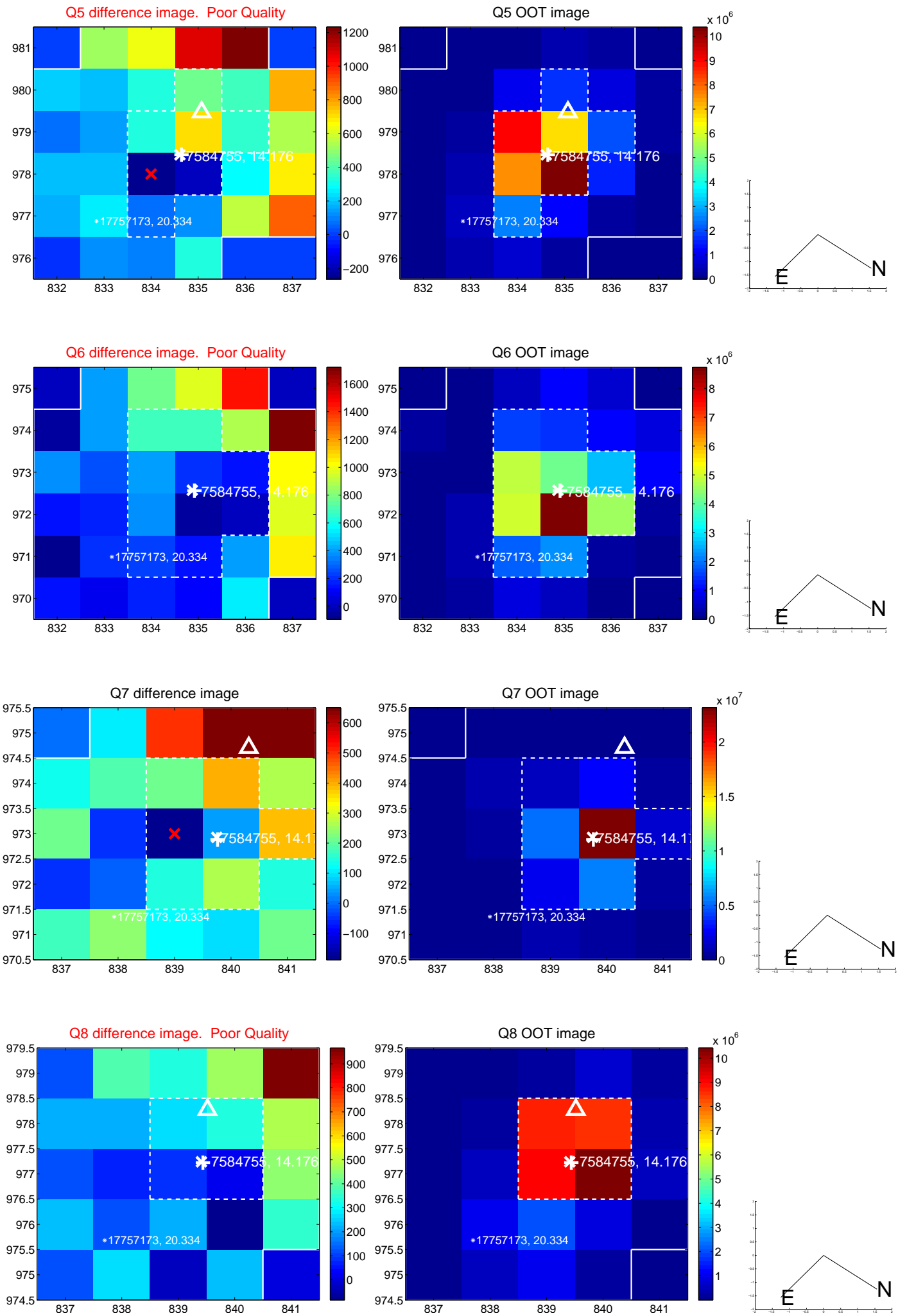


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

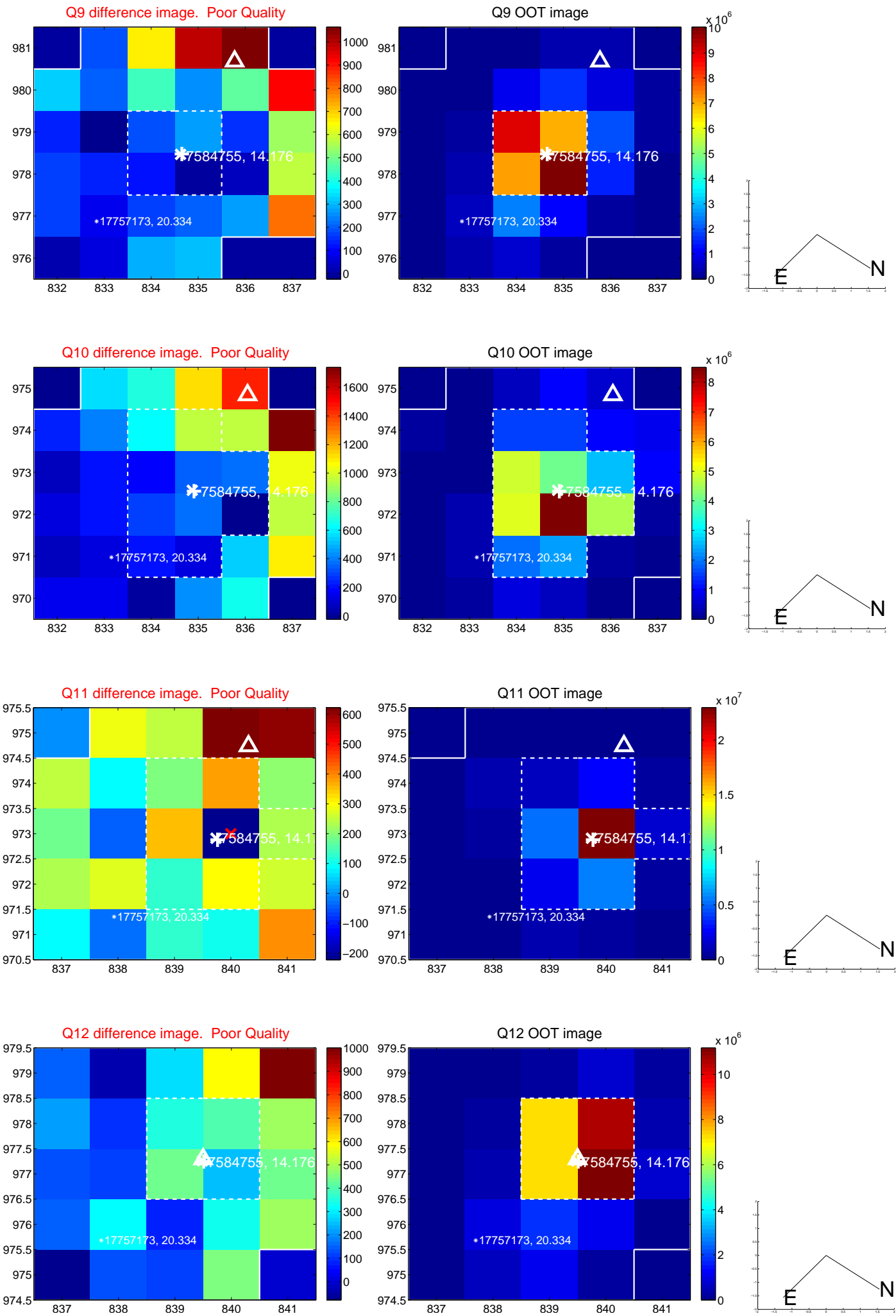


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

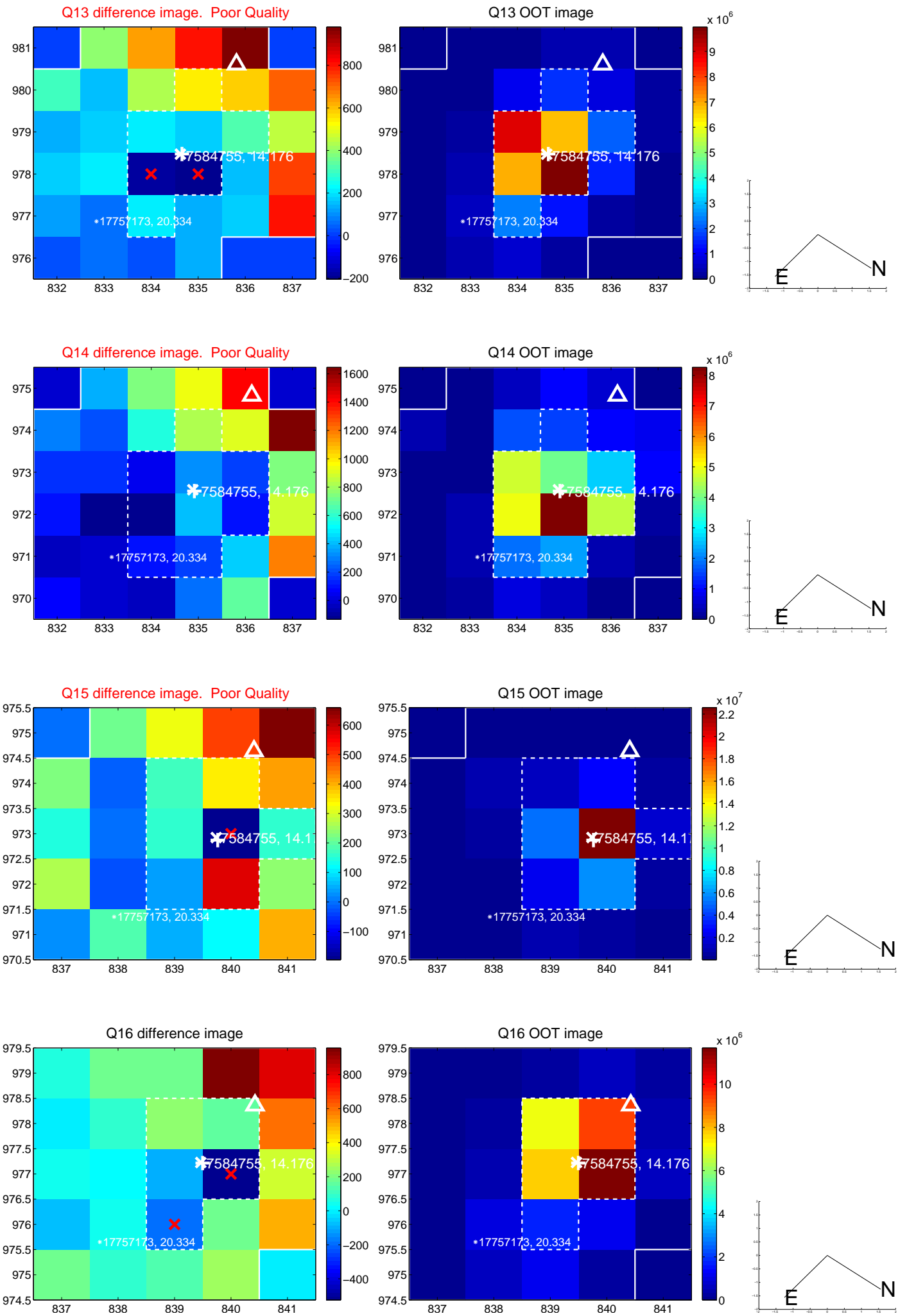




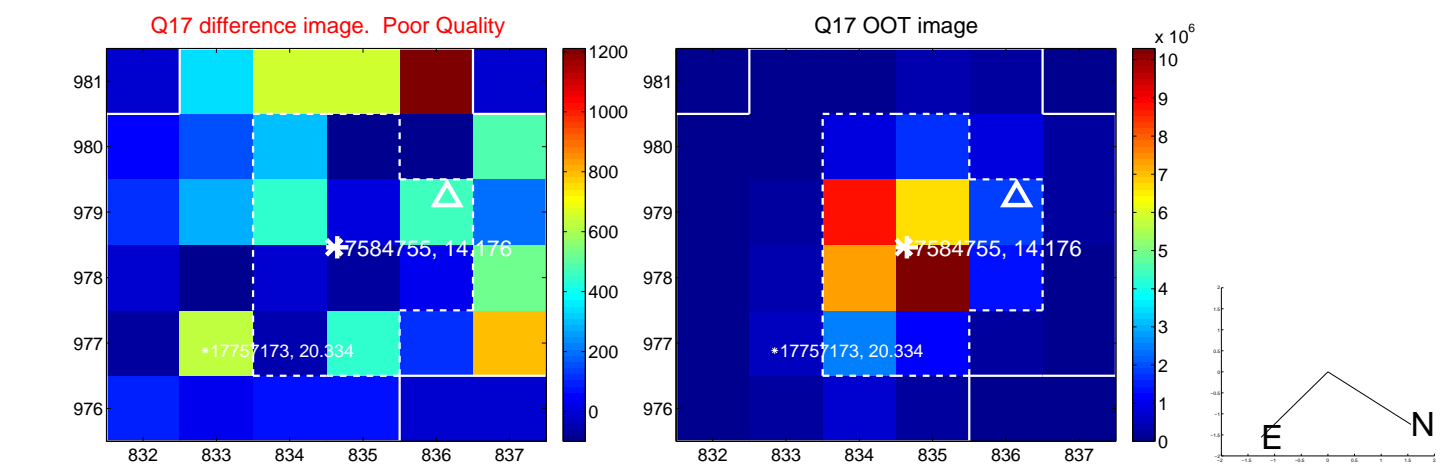
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



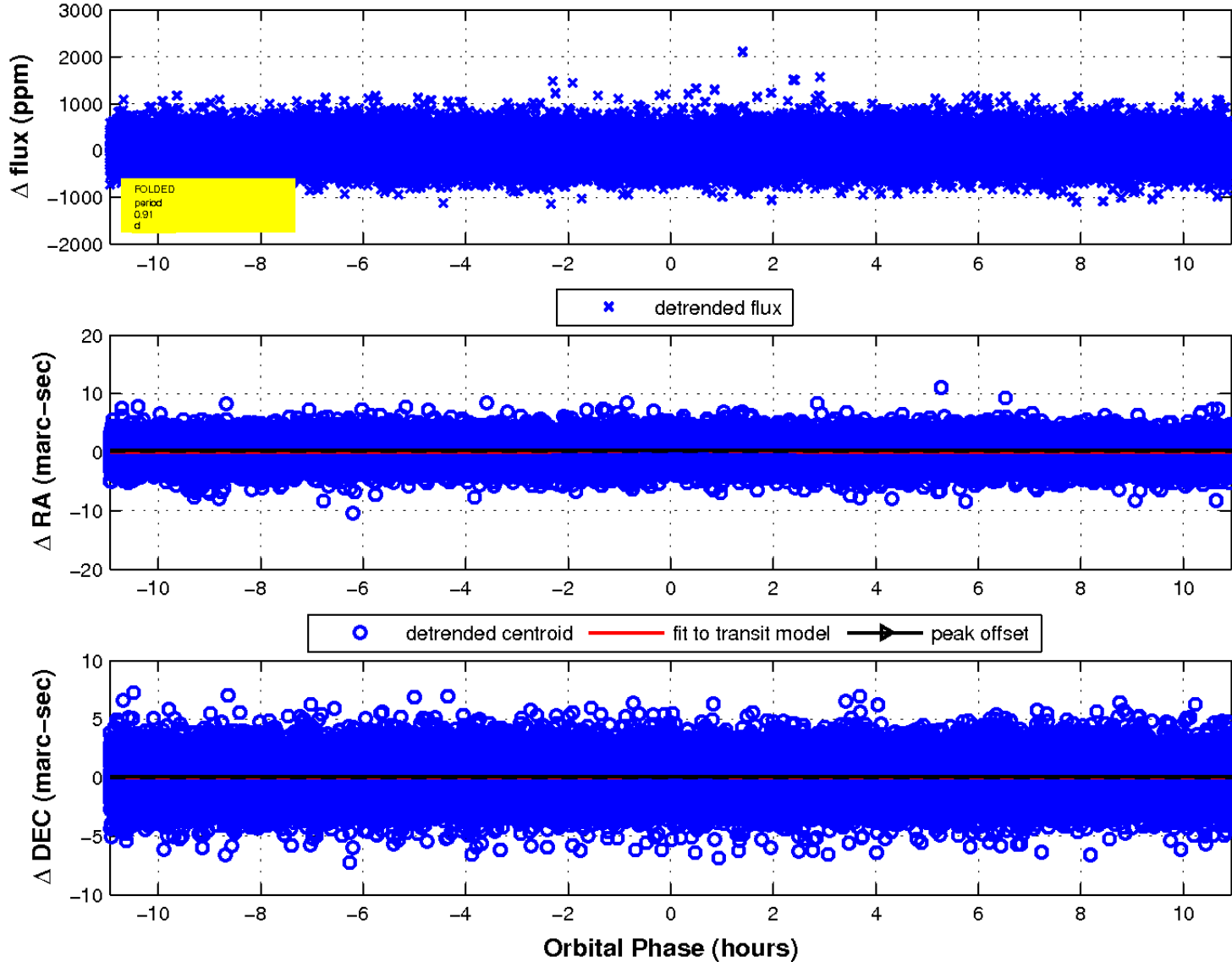
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

