

# KIC 008961823

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008961823-01	OBS	No	0.789507	131.889700	8.5	1.763	8.0	3.4	3.33	6807	1.13	57033.90

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008961823-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT

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

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

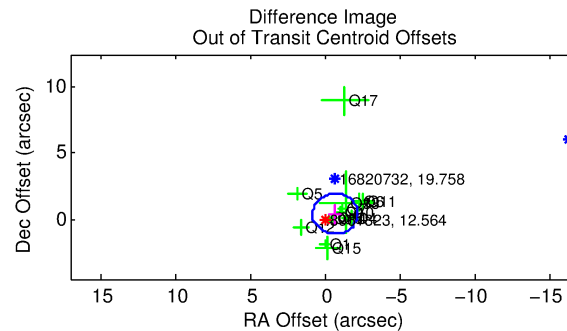
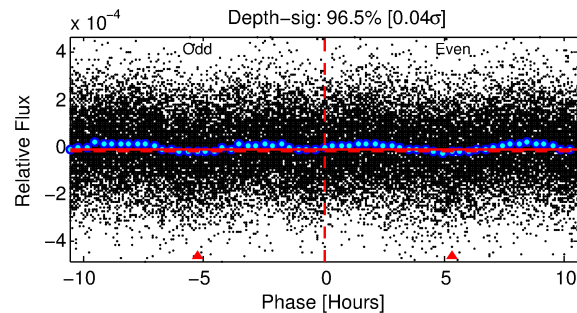
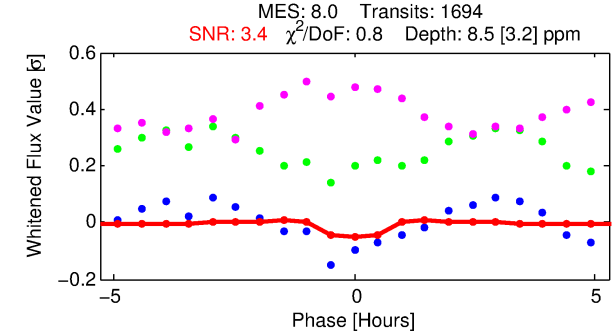
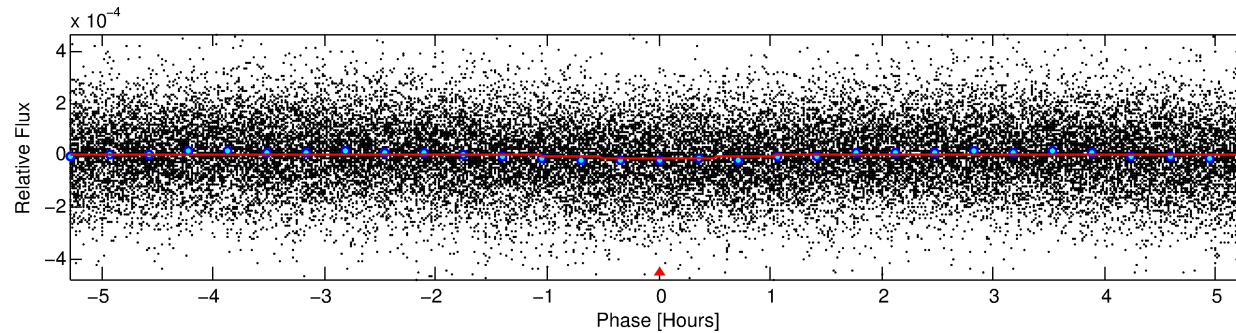
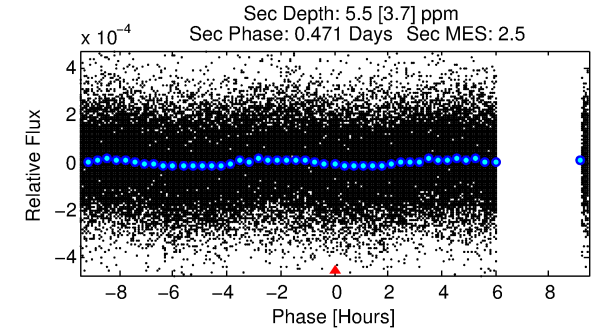
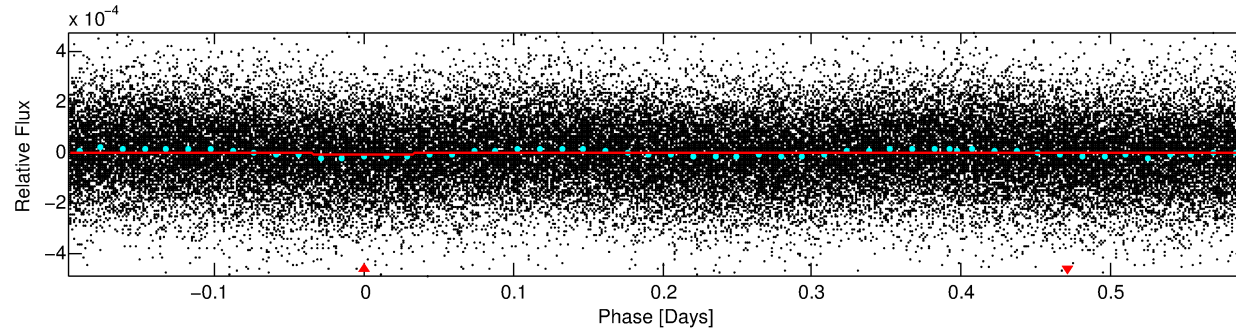
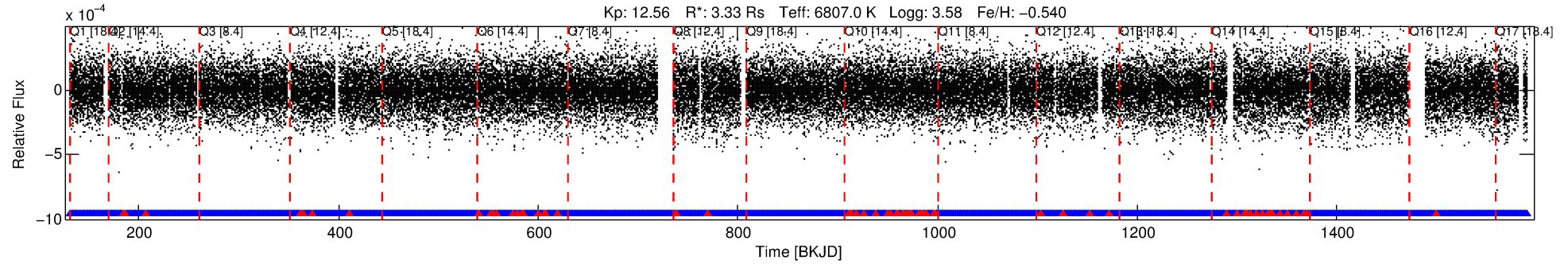
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008961823-01

No Significant Match Found

# DV One-Page Summary

KIC: 8961823 Candidate: 1 of 1 Period: 0.790 d



## DV Fit Results:

Period = 0.78951 [0.00003] d  
Epoch = 131.8897 [0.0055] BKJD  
Rp/R\* = 0.0031 [0.0010]  
b = 0.90 [0.33]  
Seff = 57033.90 [34039.29]  
Teq = 3941 [588] K  
Rp = 1.13 [0.58] Re  
a = 0.0194 [0.0073] AU  
Ag = 0.89 [0.97] [-0.11σ]  
Teffp = 5917 [1364] K [1.33σ]

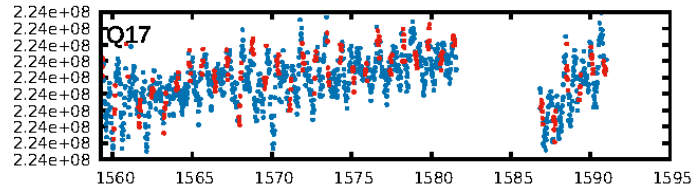
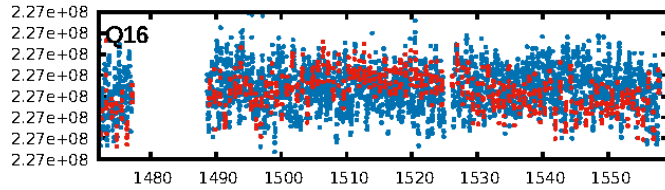
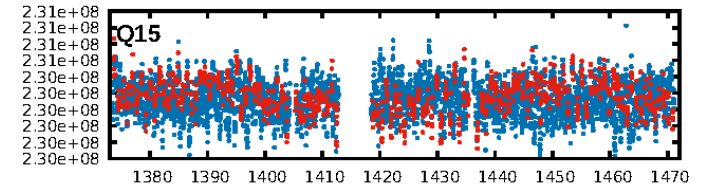
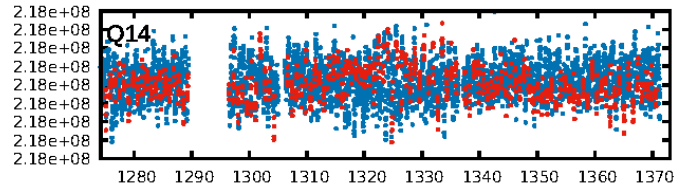
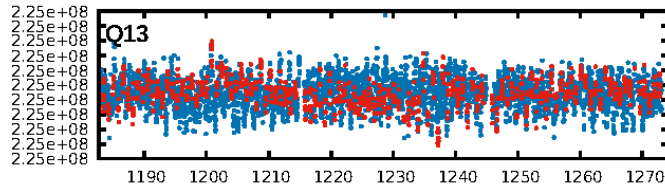
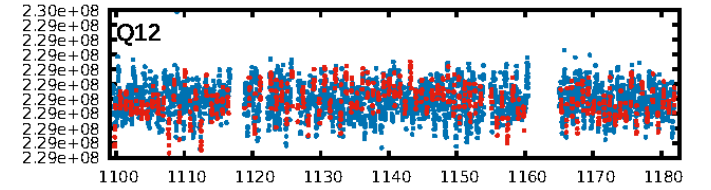
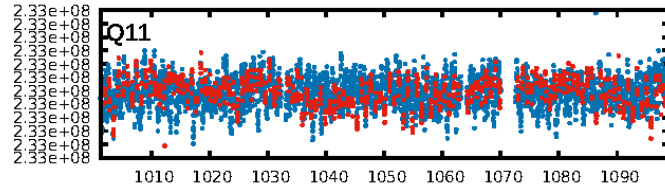
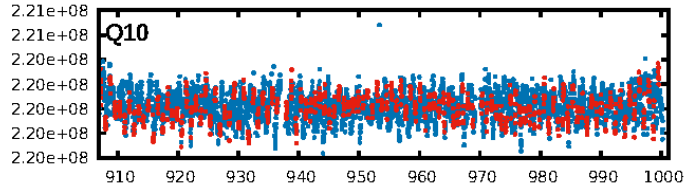
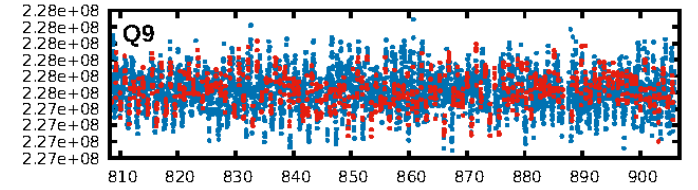
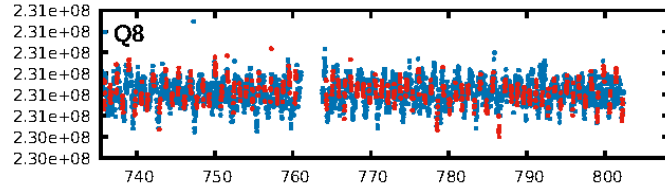
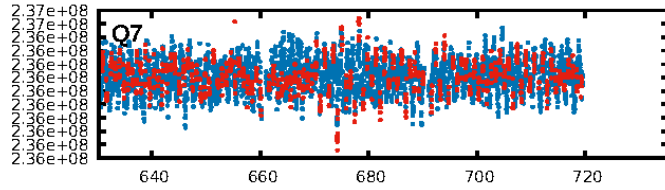
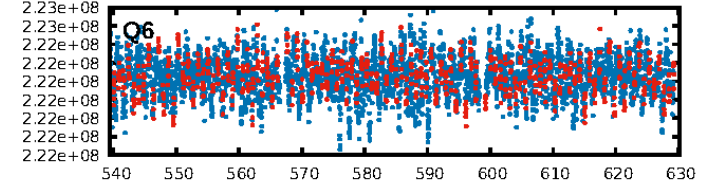
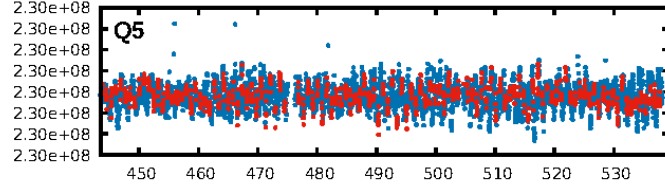
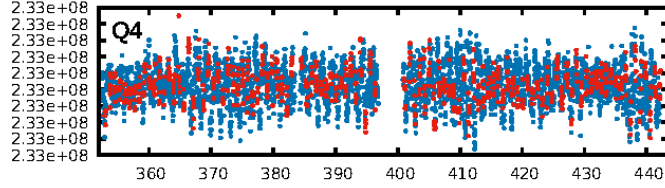
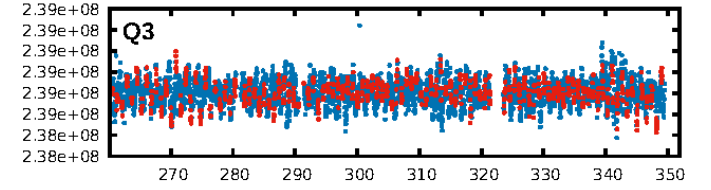
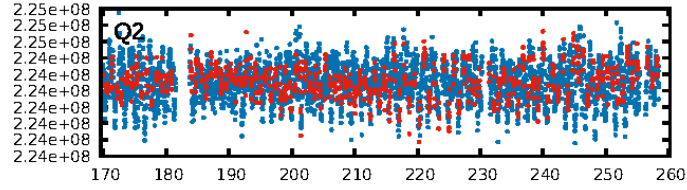
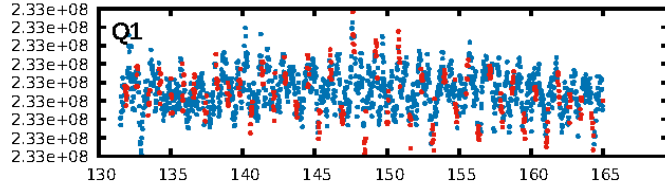
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 6.41e-14  
RollingBand-fgt: 0.96 [1551/1618]  
GhostDiagnostic-chr: 4.983  
Centroid-sig: 16.1%  
Centroid-so: 2.383 arcsec [1.21σ]  
OotOffset-rm: 0.827 arcsec [1.63σ]  
KicOffset-rm: 0.686 arcsec [1.53σ]  
OotOffset-st: 3/4/3/4 [14]  
KicOffset-st: 3/4/3/4 [14]  
DiffImageQuality-fgm: 0.93 [13/14]  
DiffImageOverlap-fno: 1.00 [17/17]

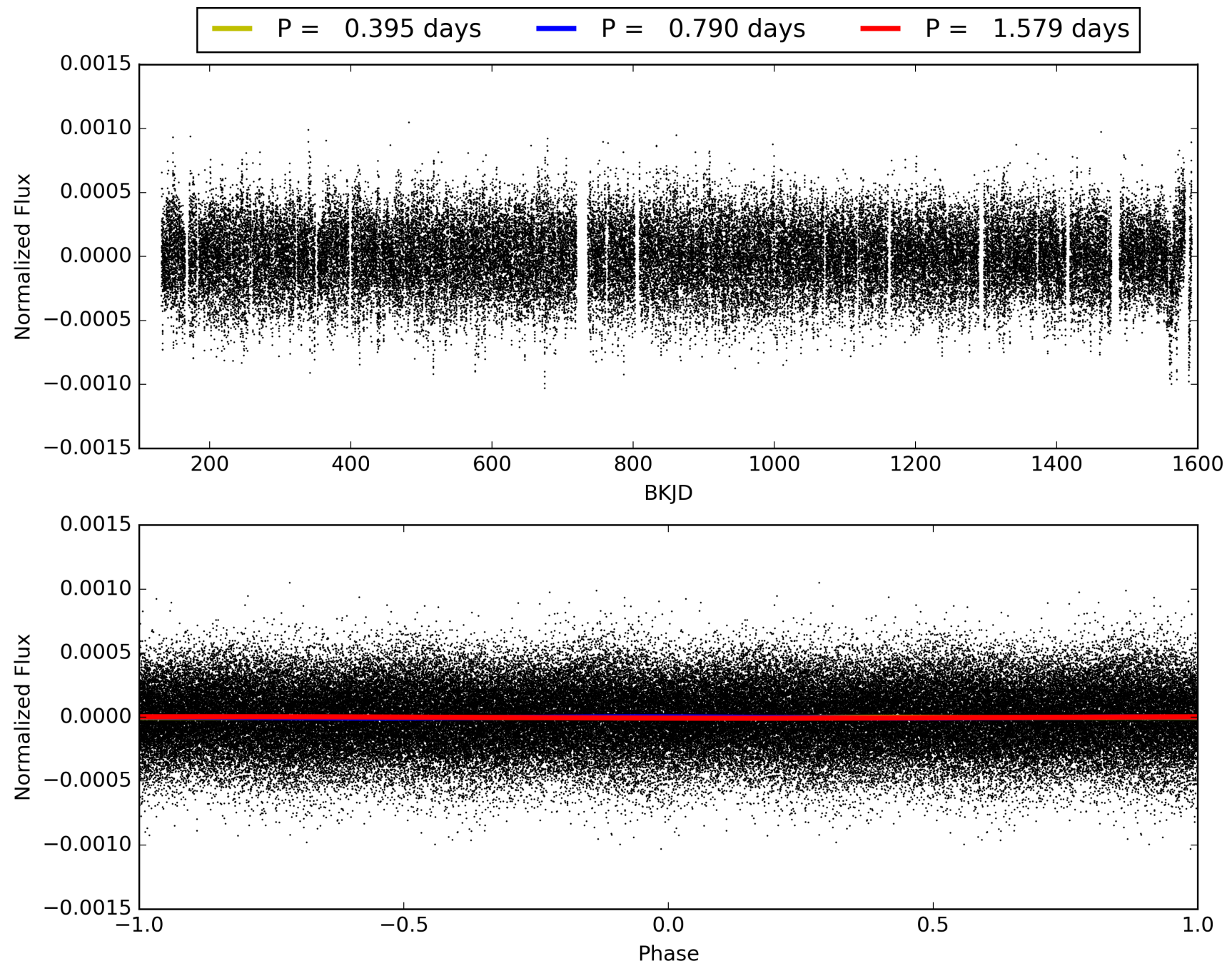
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:57:41 Z

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

# TCE 008961823-01, PDC Light Curves



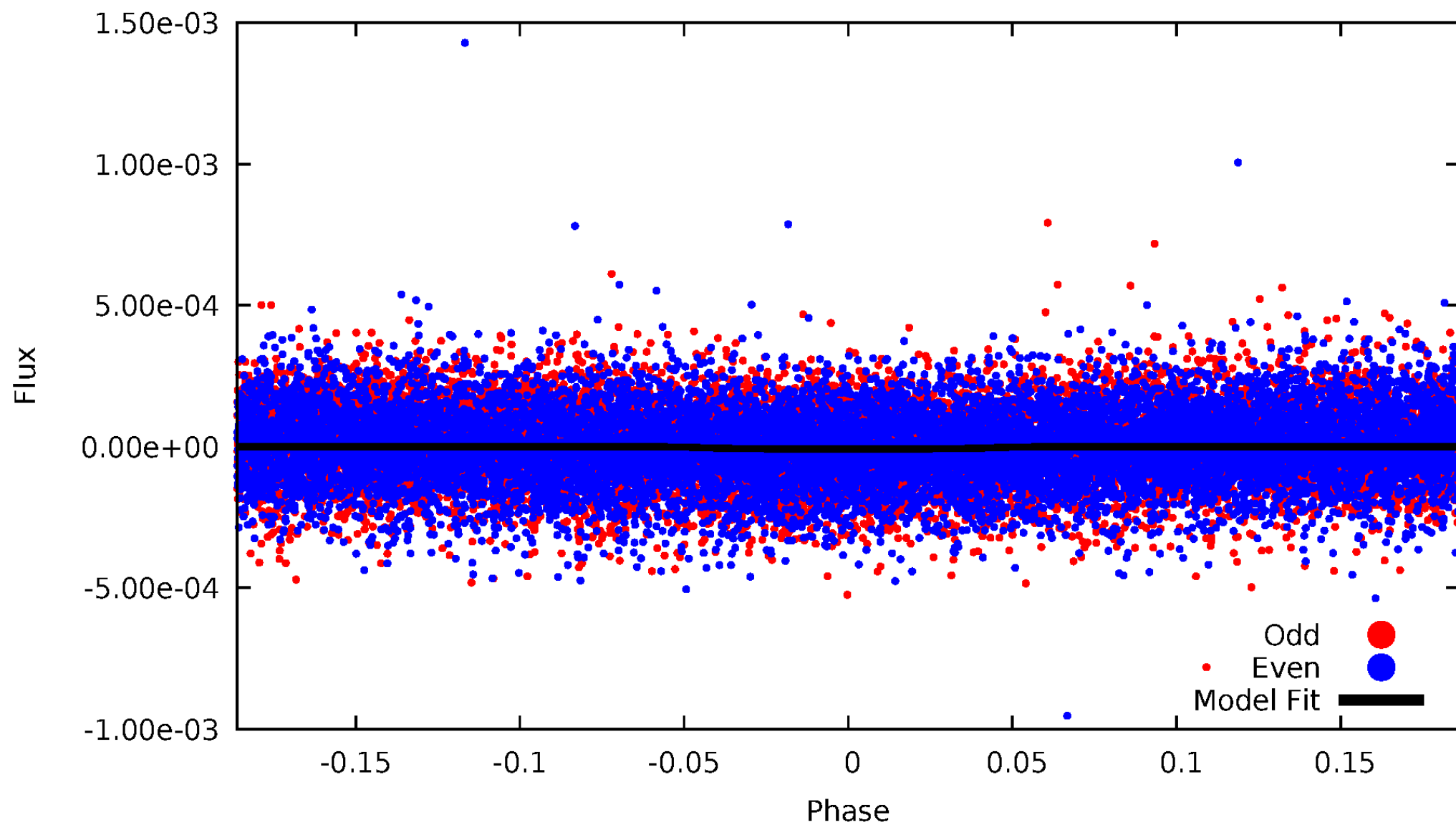
TCE 008961823-01





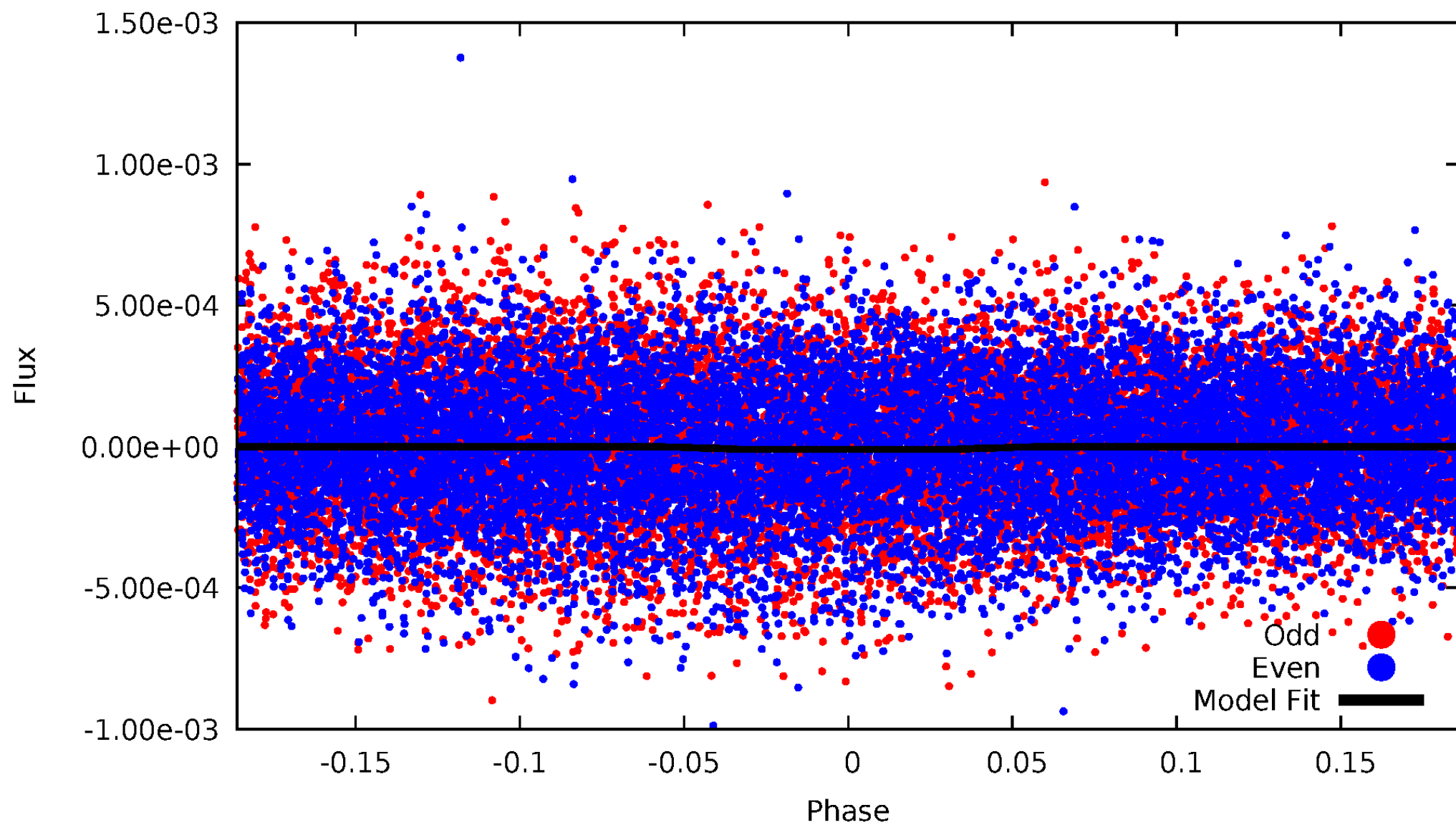
# DV Odd/Even

TCE 008961823-01

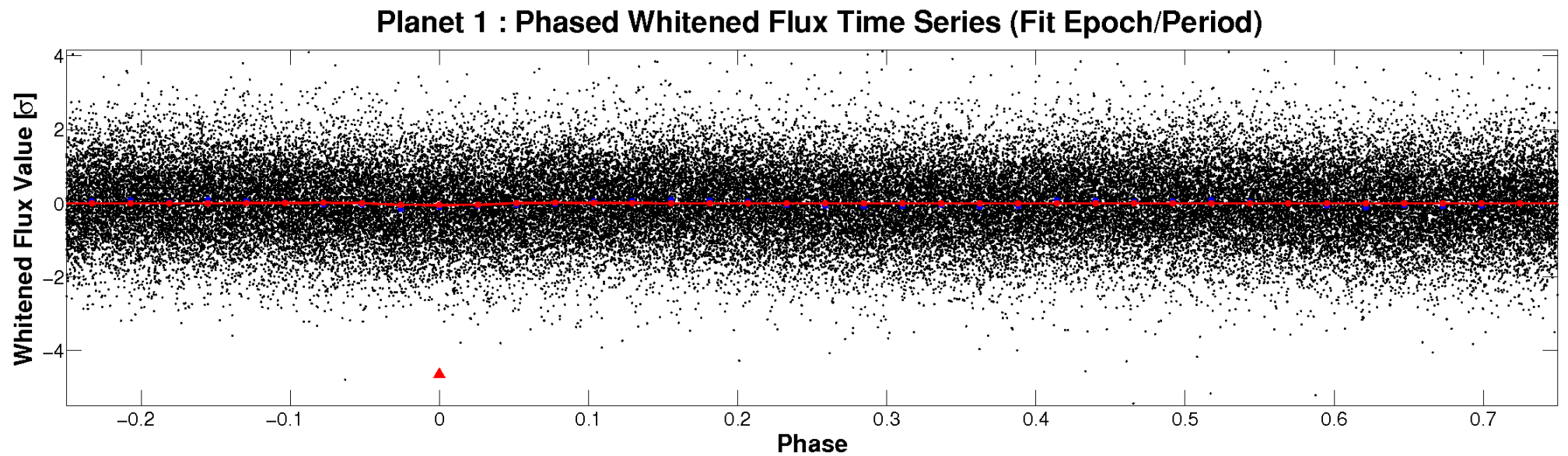
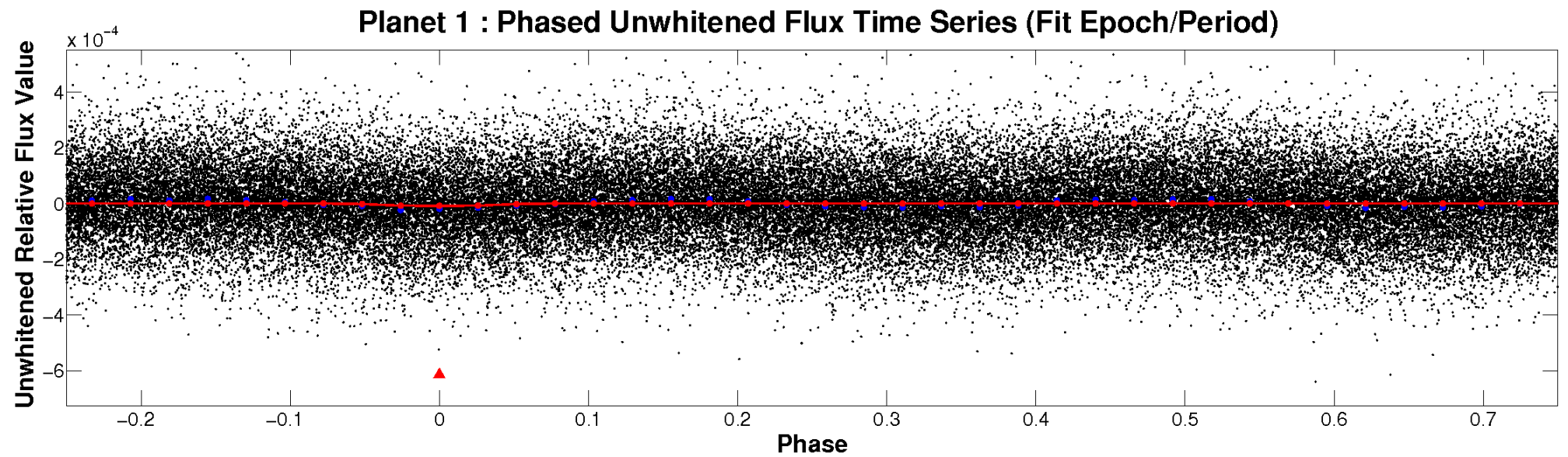


# ALT Odd/Even

TCE 008961823-01

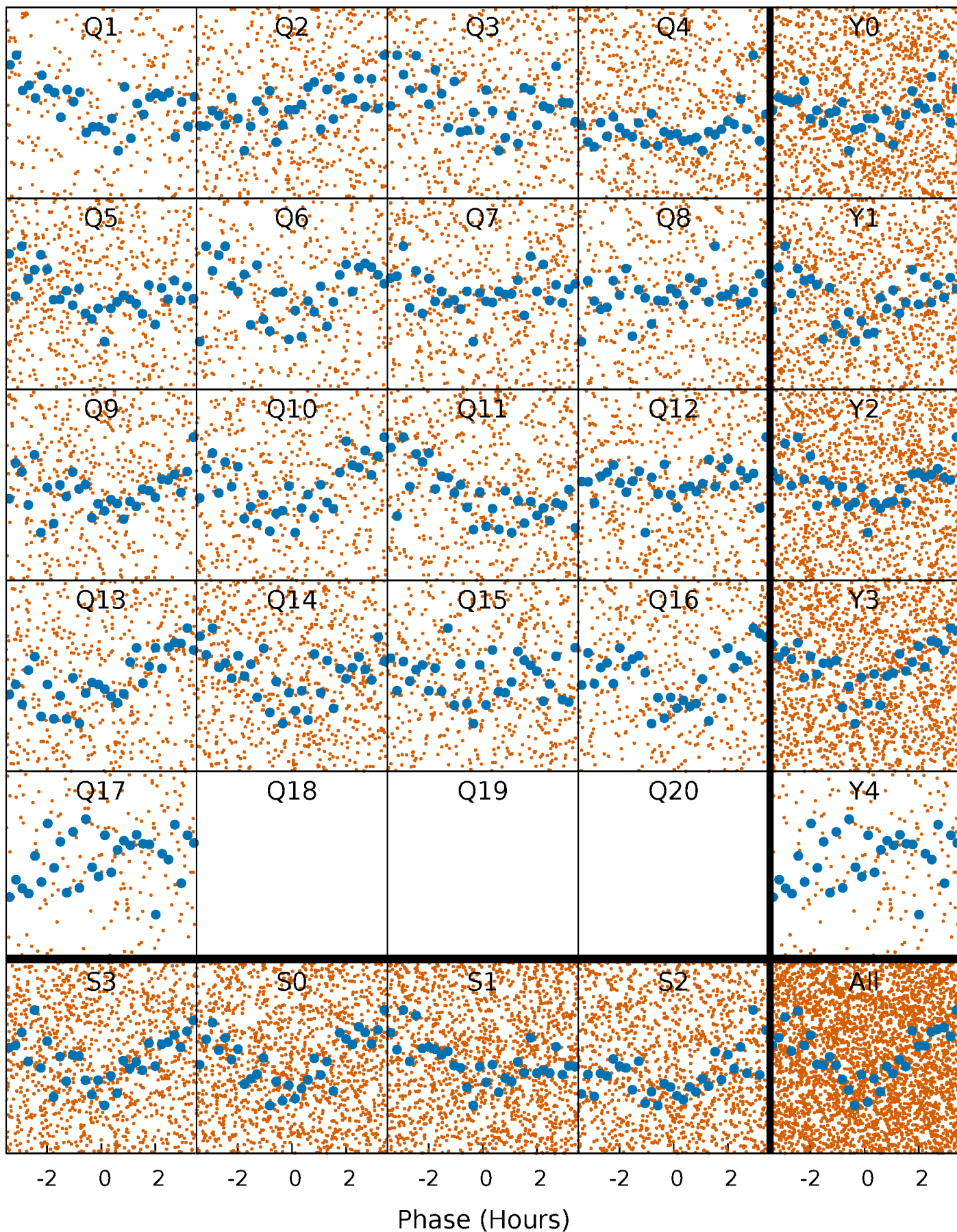


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

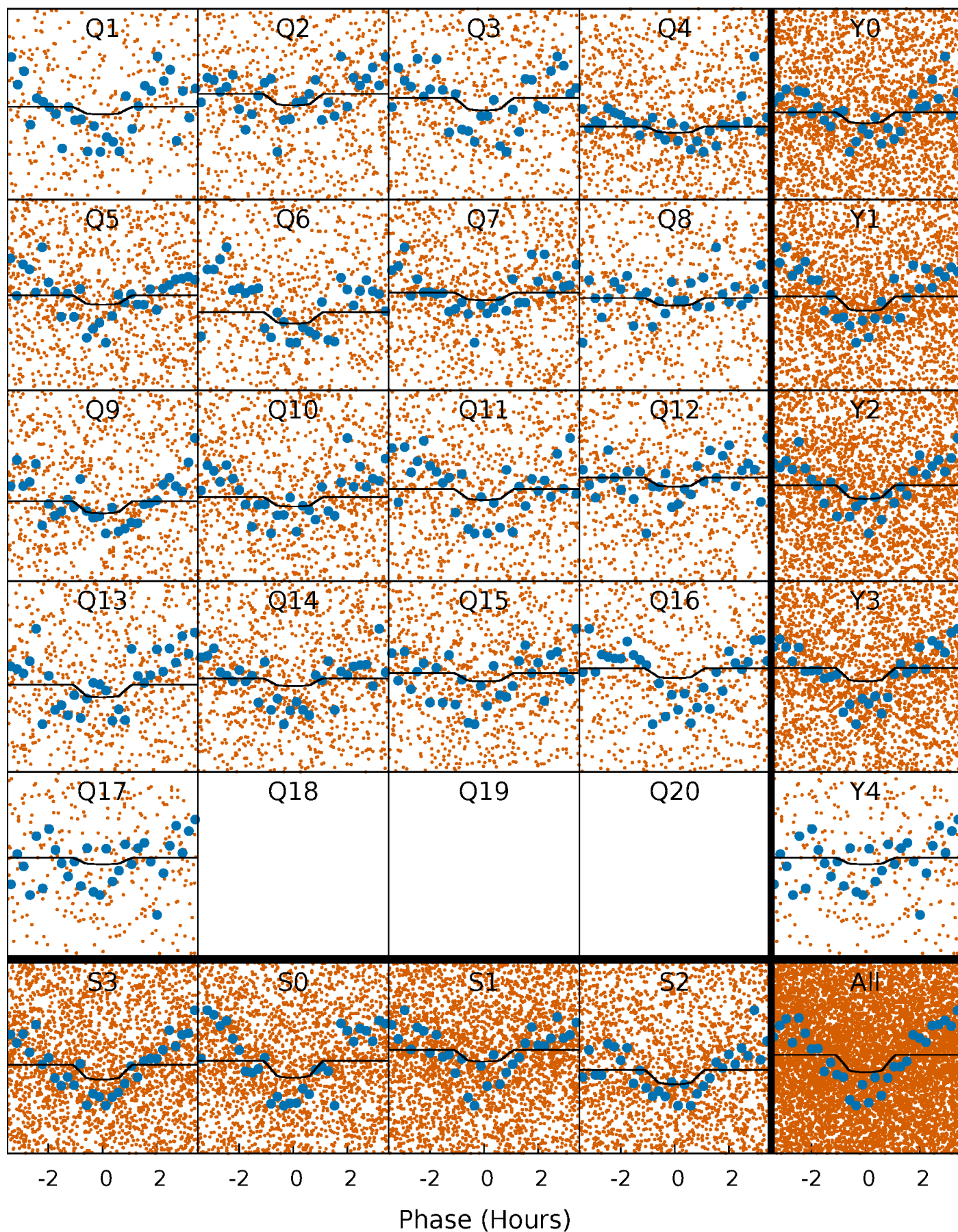
TCE 008961823-01 P= 0.789507 Days  $T_0=131.889700$  (BKJD)





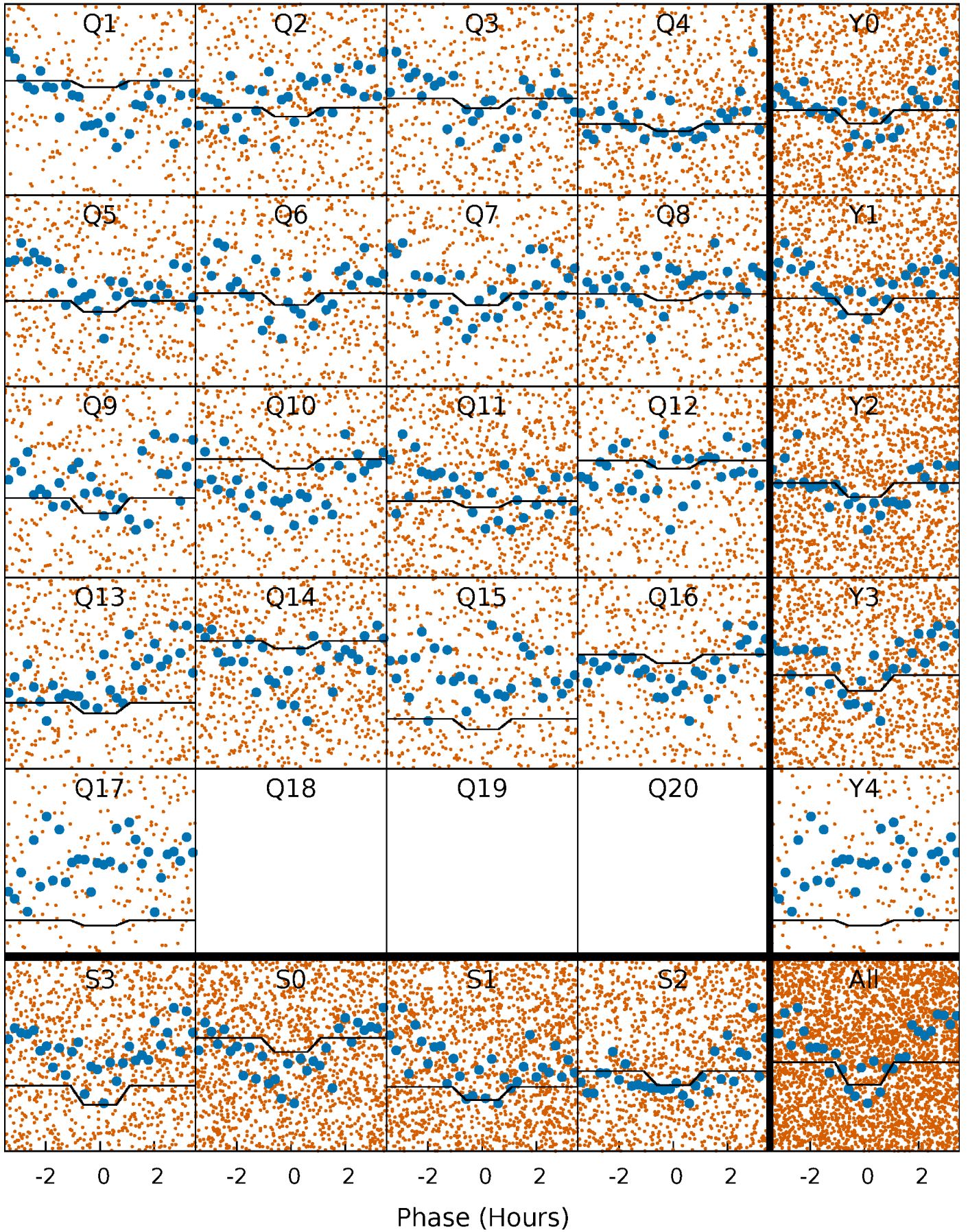
# DV Quarter-Phased Transit Curves

TCE 008961823-01 P= 0.789507 Days  $T_0=131.889700$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

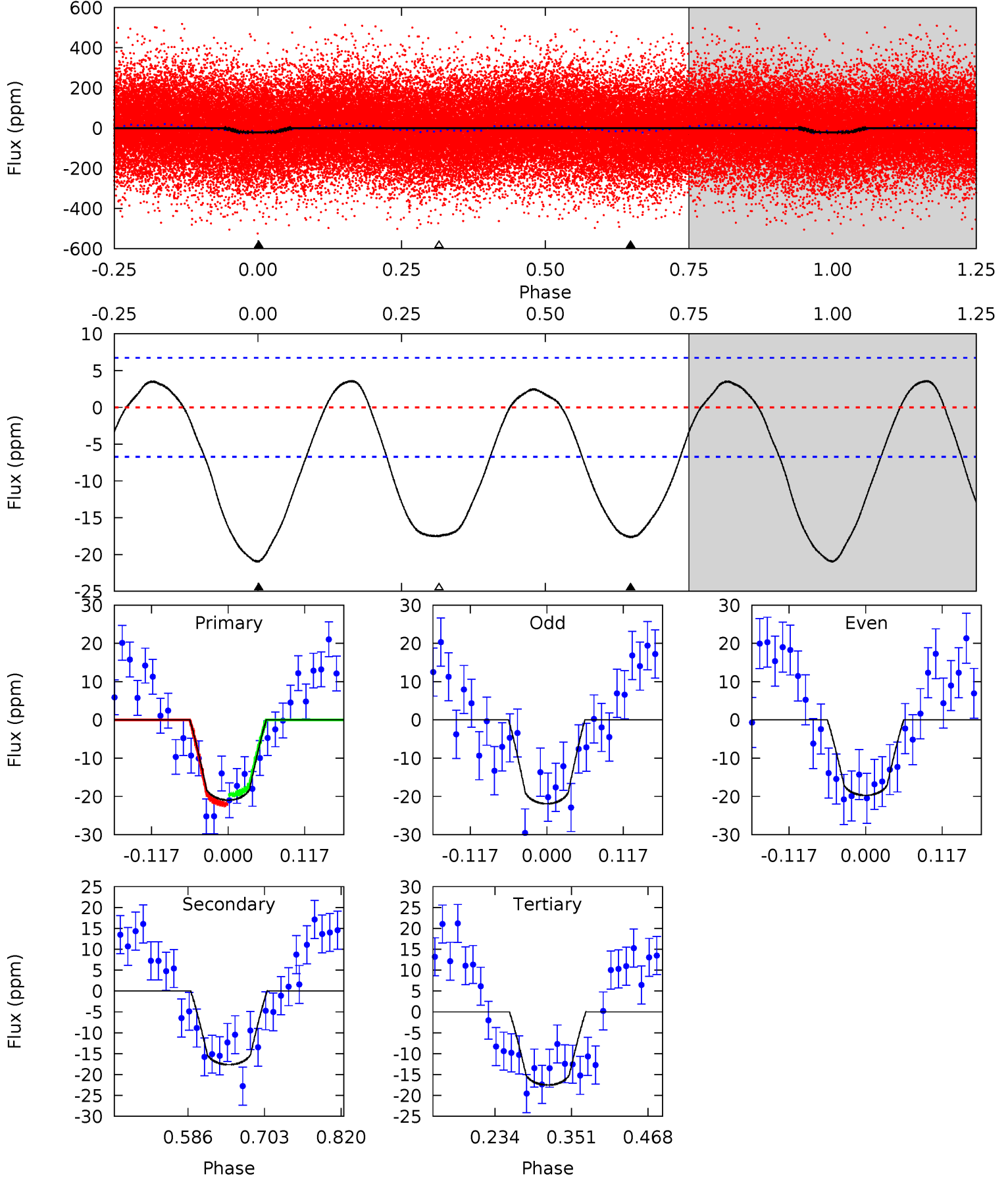
TCE 008961823-01 P= 0.789508 Days  $T_0=131.889713$  (BKJD)



# DV Model-Shift Uniqueness Test

008961823-01, P = 0.789507 Days, E = 131.100193 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
14.1	11.9	11.8	0	4.53	1.57	5.19	2.31	14.1	0.08	11.9	0.74	1.11	0.15	0.85

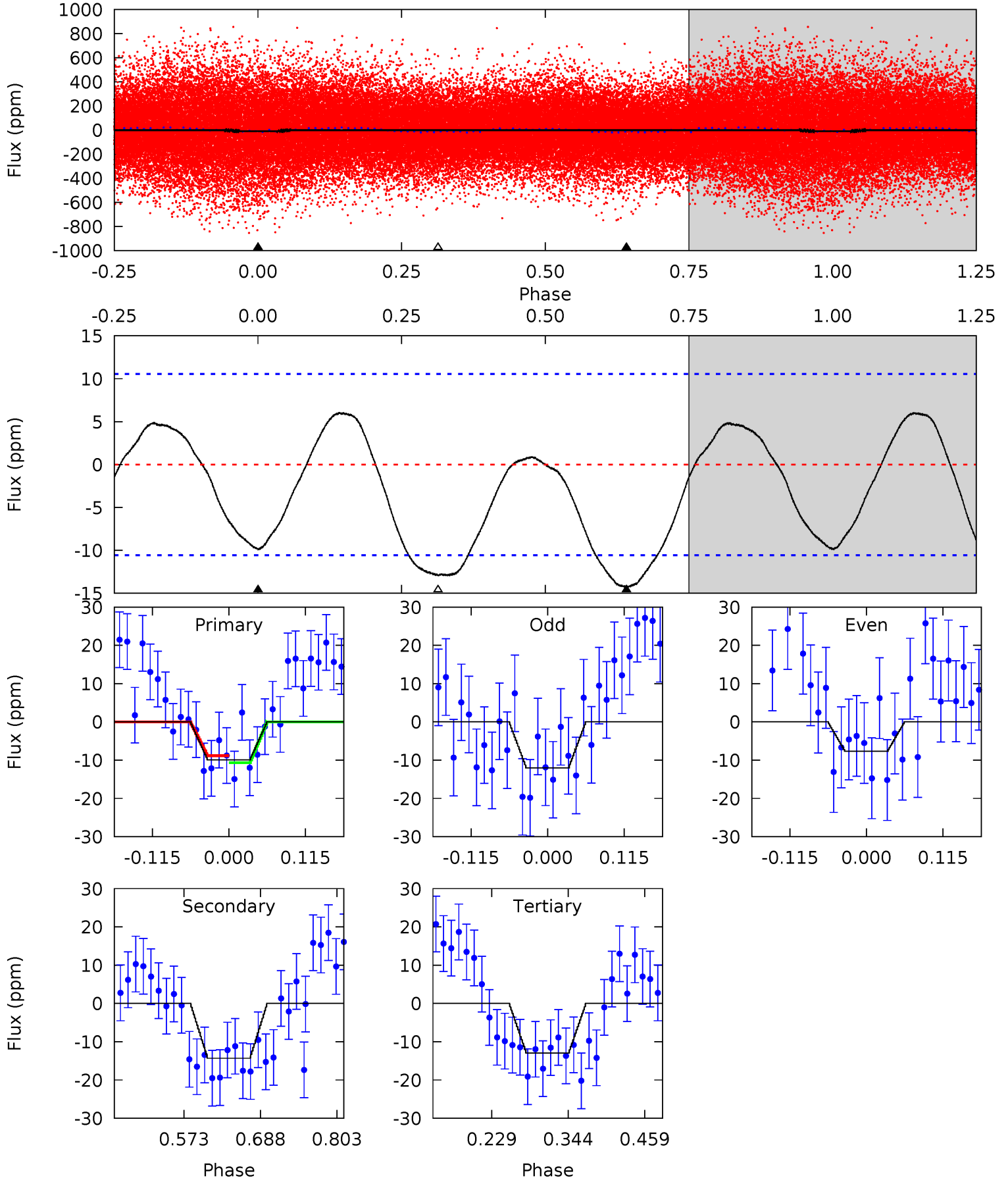




# Alt Model-Shift Uniqueness Test

008961823-01, P = 0.789508 Days, E = 131.100205 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
4.26	6.15	5.57	0	4.54	1.58	2.75	-1.31	4.26	0.59	6.15	0.87	3.37	0.30	0.38





### Stellar Parameters For KIC 008961823

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6807^{+163}_{-204}$	$3.583^{+0.337}_{-0.090}$	$-0.540^{+0.350}_{-0.300}$	$3.333^{+0.454}_{-1.362}$	$1.551^{+0.208}_{-0.357}$	$0.059^{+0.161}_{-0.016}$
	+2%/-3%	+9%/-3%	+65%/-56%	+14%/-41%	+13%/-23%	+272%/-27%
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 008961823-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-18 \pm 1$	$1.06^{+0.41}_{-0.36}$	$5422^{+299}_{-514}$	$7811^{+2397}_{-1206}$	$3.274^{+3.802}_{-1.531}$
Alt.	$-14 \pm 2$	$1.05^{+0.40}_{-0.38}$	$5393^{+307}_{-517}$	$7370^{+2201}_{-1343}$	$2.691^{+3.632}_{-1.324}$

$T_{max}$  = 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

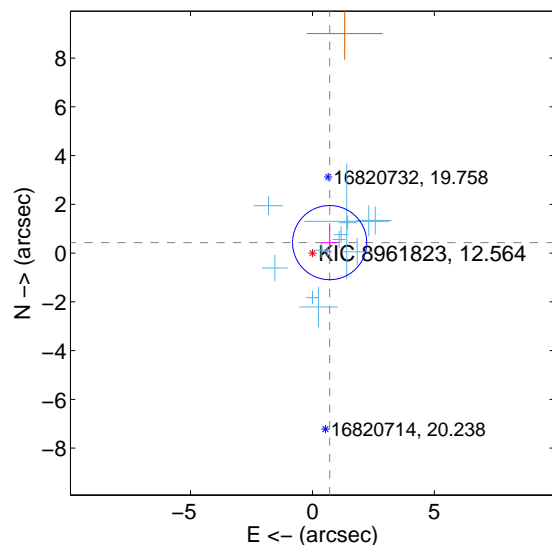
Supplemental centroid analysis for 008961823-01. Kepler magnitude: 12.56. Transit SNR 3.40

There are 13 quarters with good PRF difference image offsets

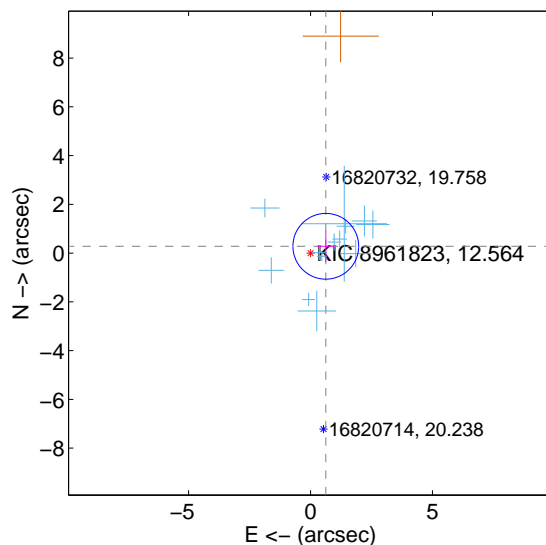
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.827 \pm 0.507$	1.63	$-0.706 \pm 0.344$	$0.430 \pm 0.681$
PRF-fit source offset from KIC position	$0.686 \pm 0.449$	1.53	$-0.626 \pm 0.358$	$0.279 \pm 0.643$
photometric centroid source offset	$2.38 \pm 1.96$	1.21	$-1.58 \pm 1.83$	$-1.79 \pm 2.06$

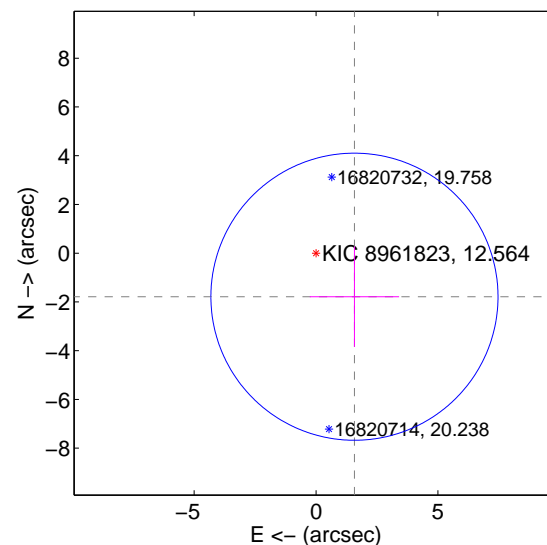
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

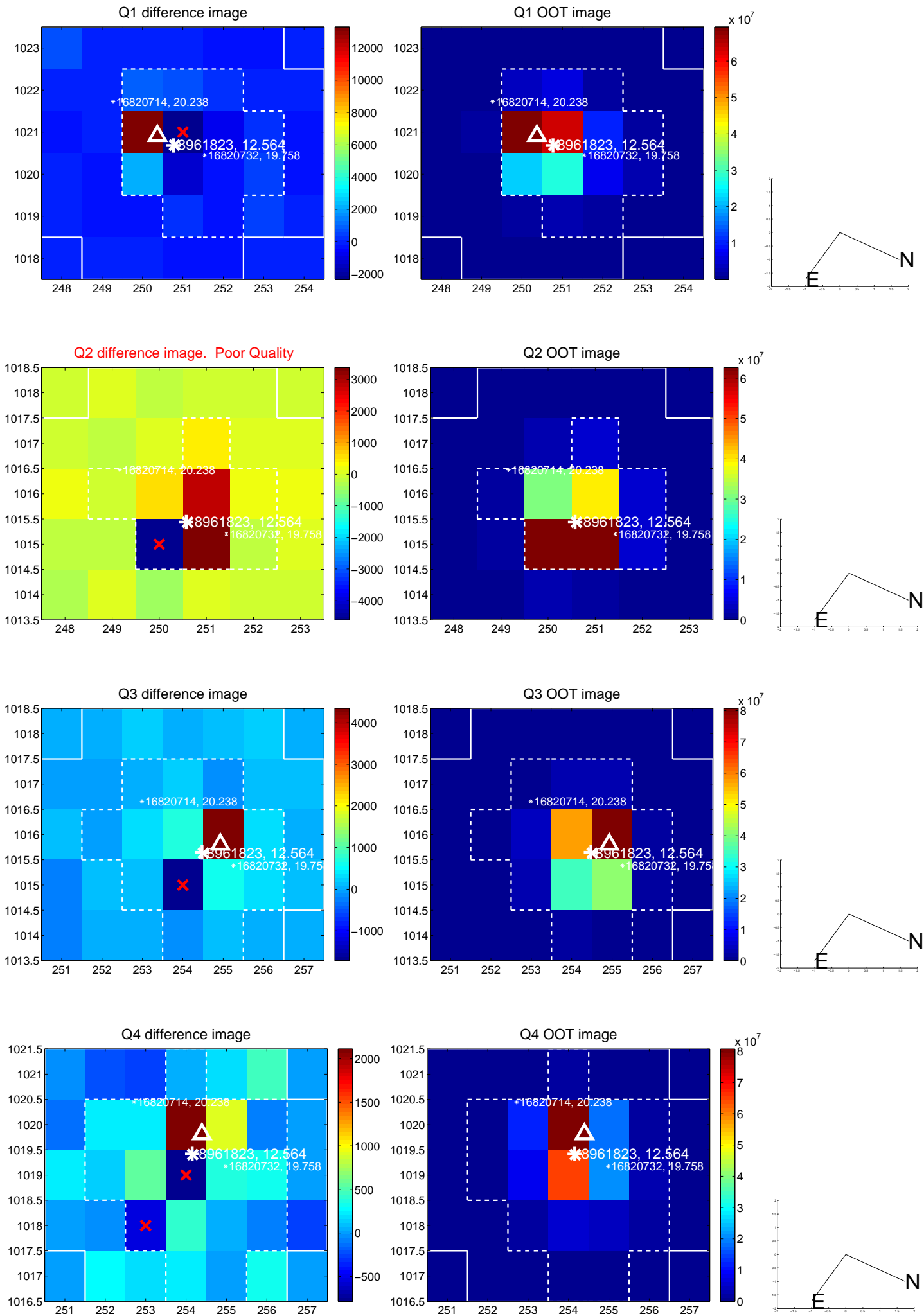


offset from photometric centroids

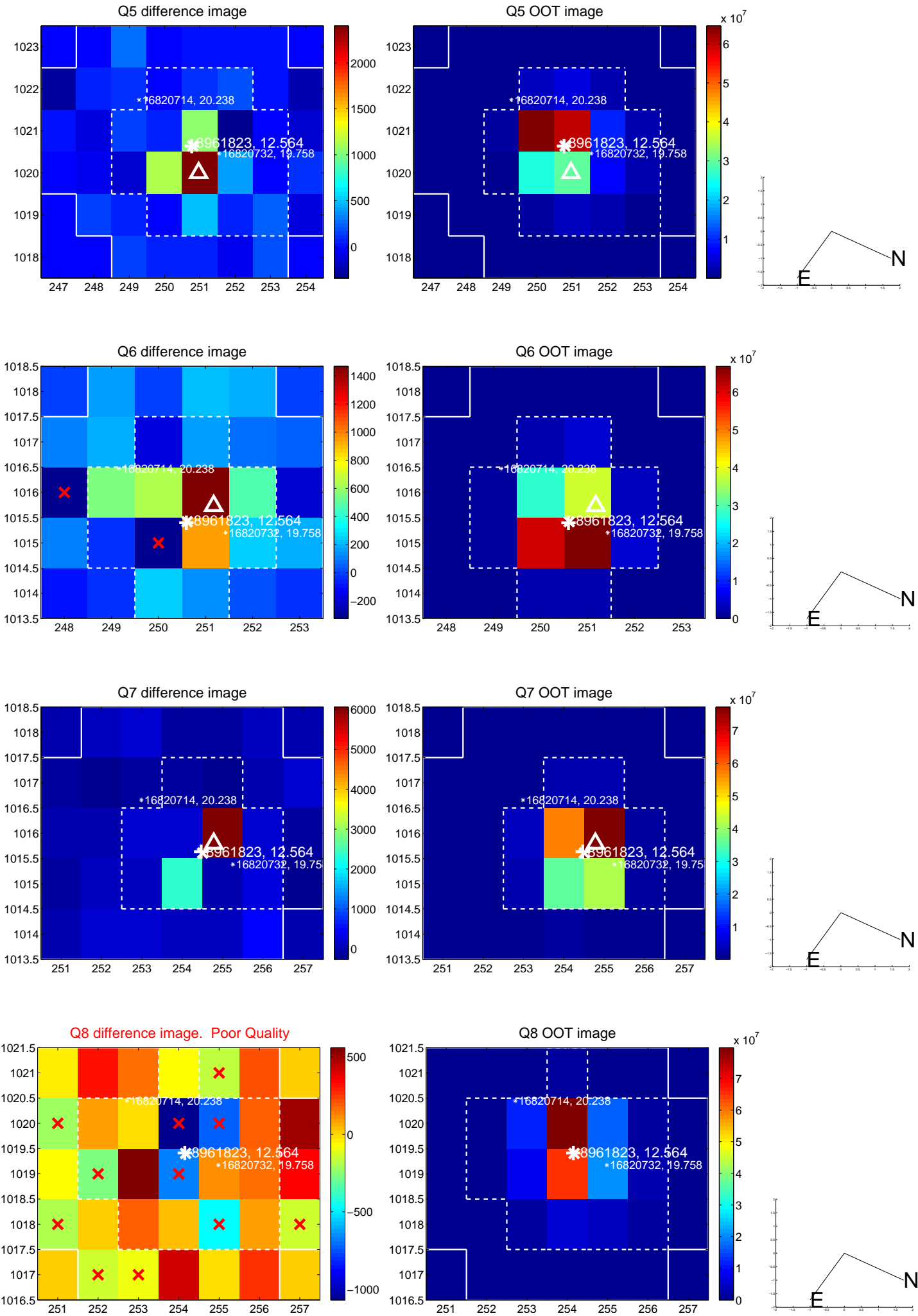


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

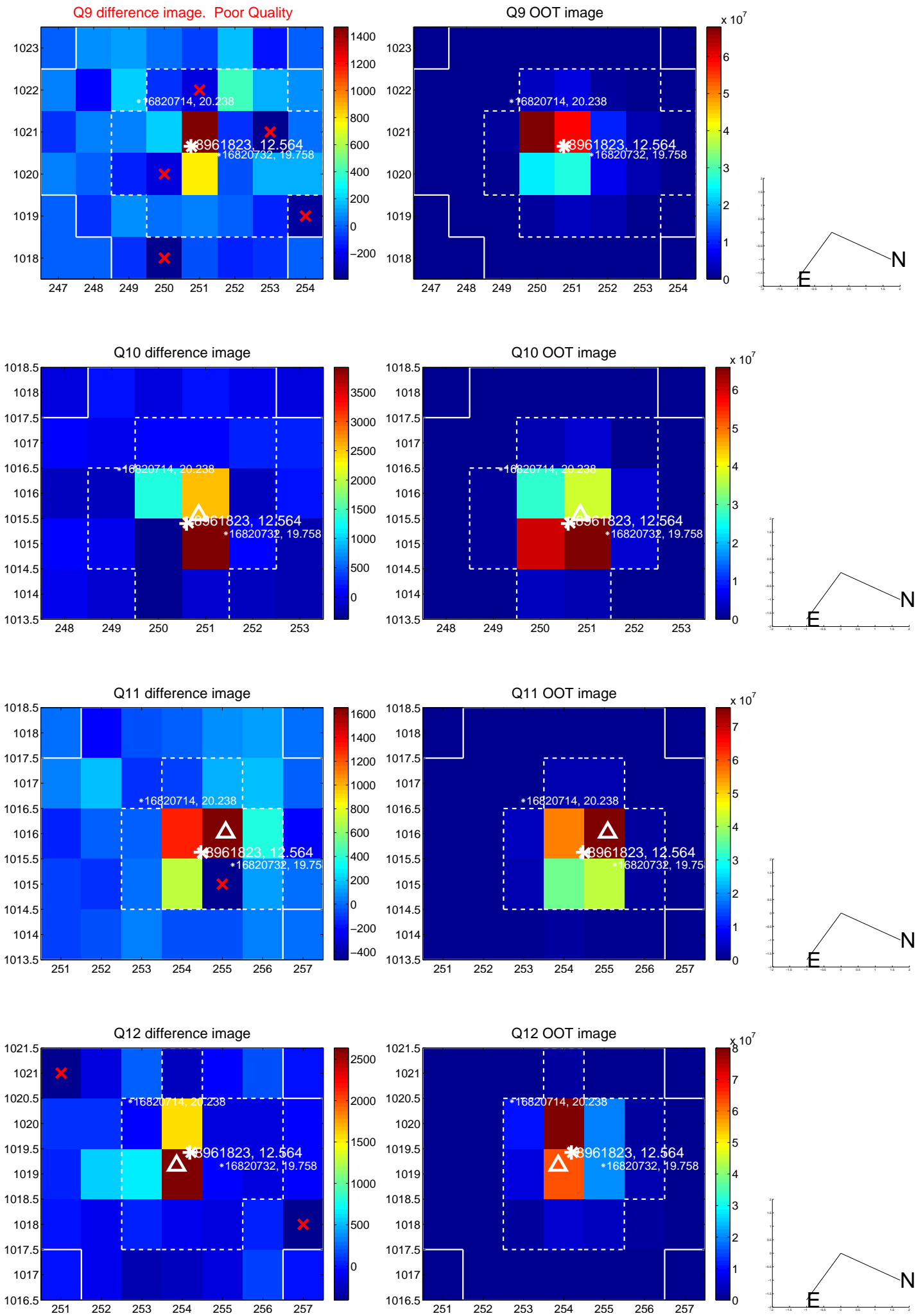


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

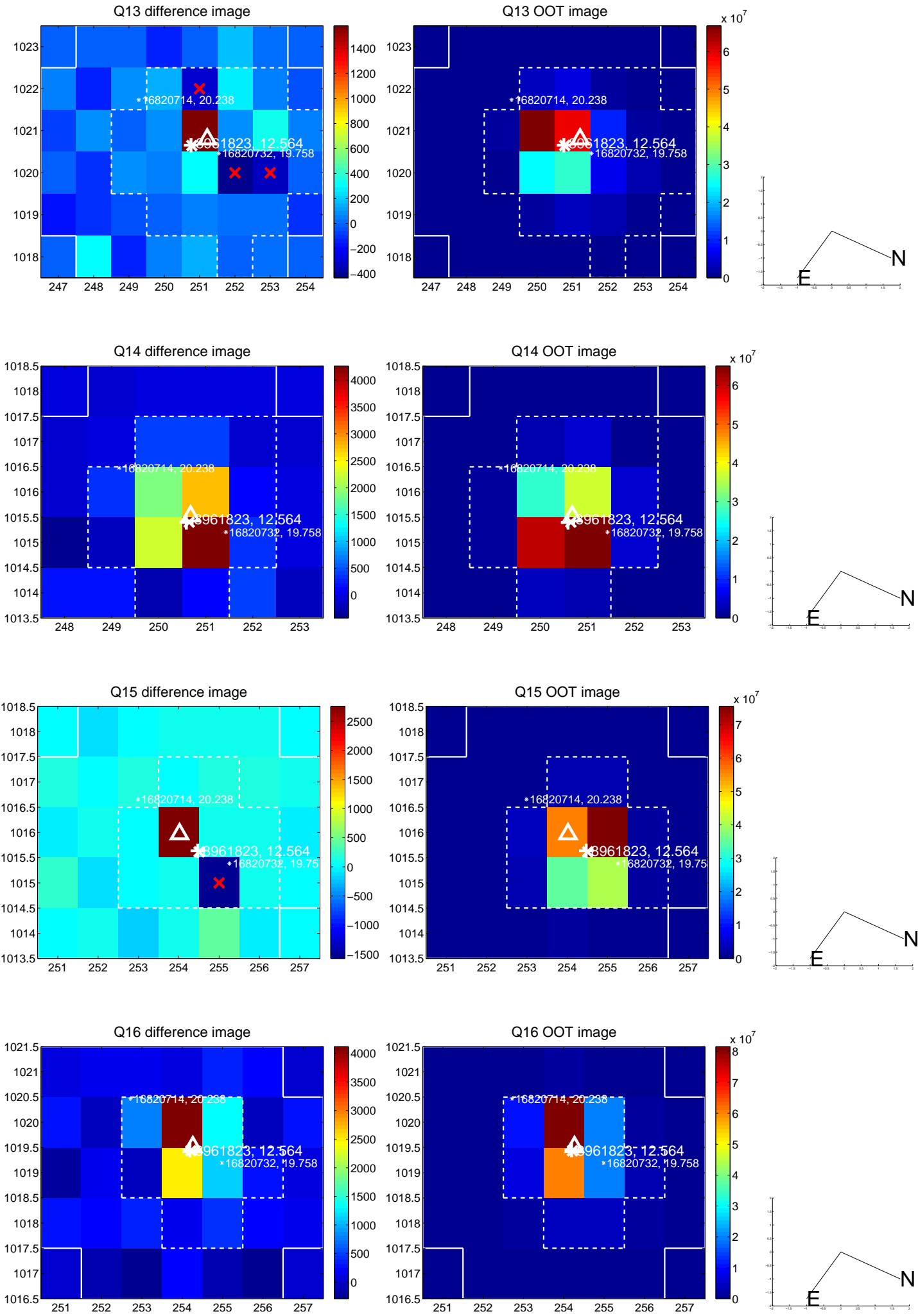




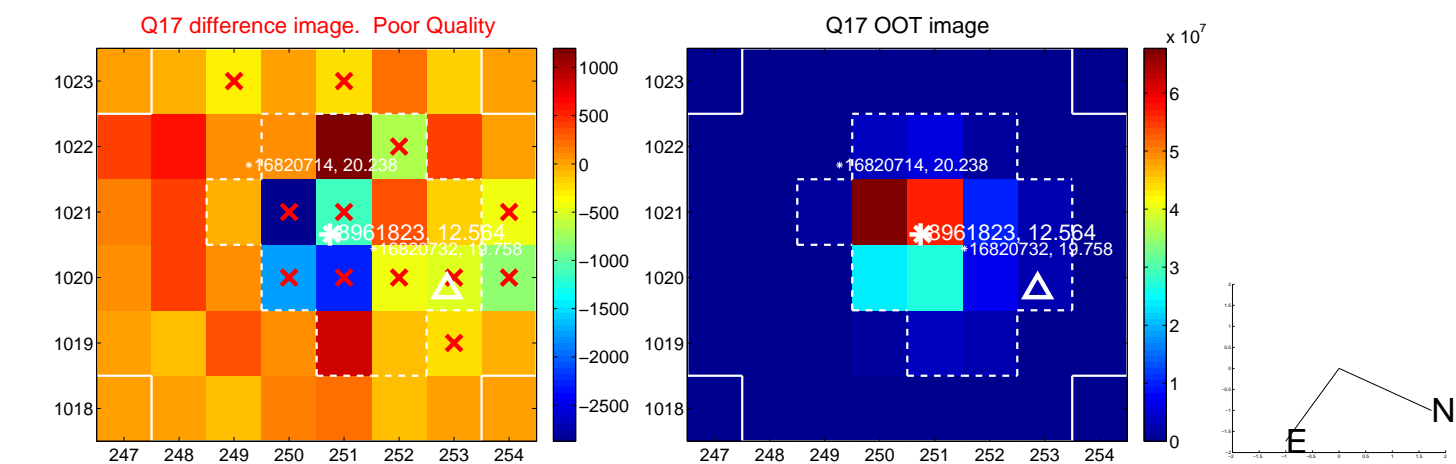
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



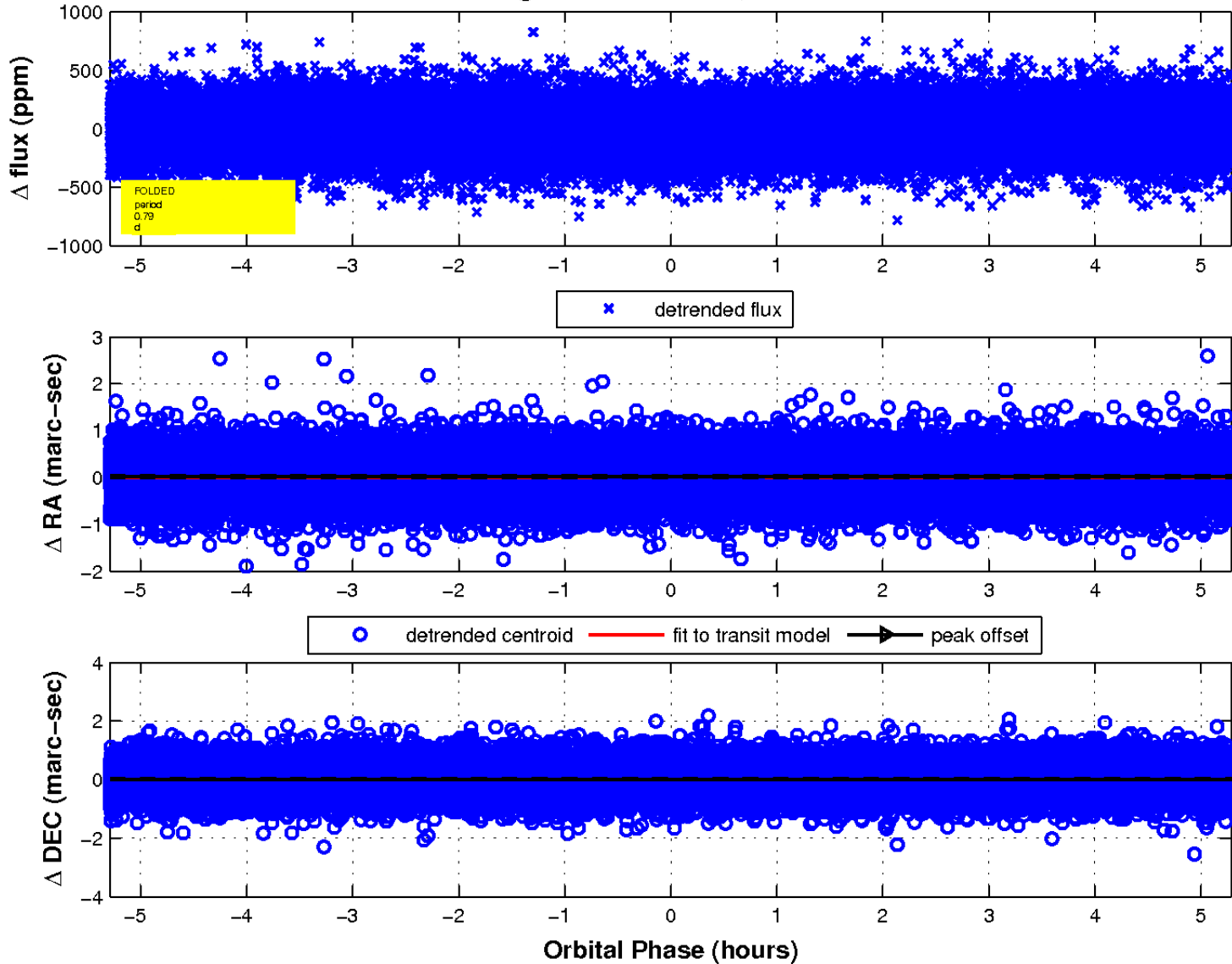
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

