

# KIC 004860686

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004860686-01	OBS	No	2.851982	131.737843	10.3	23.304	8.3	7.1	3.50	7677	1.17	15197.02

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004860686-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS

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

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

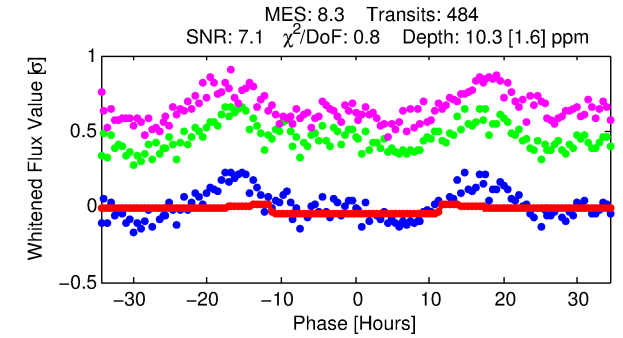
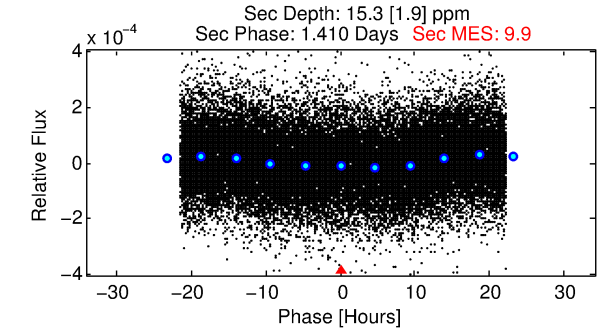
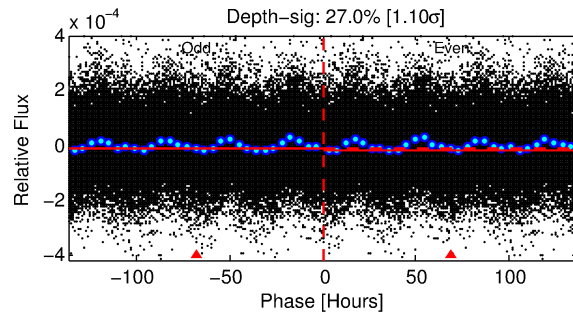
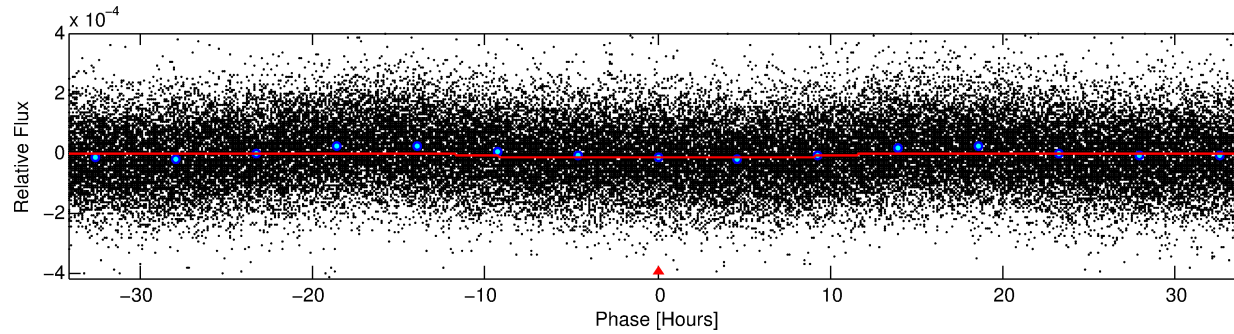
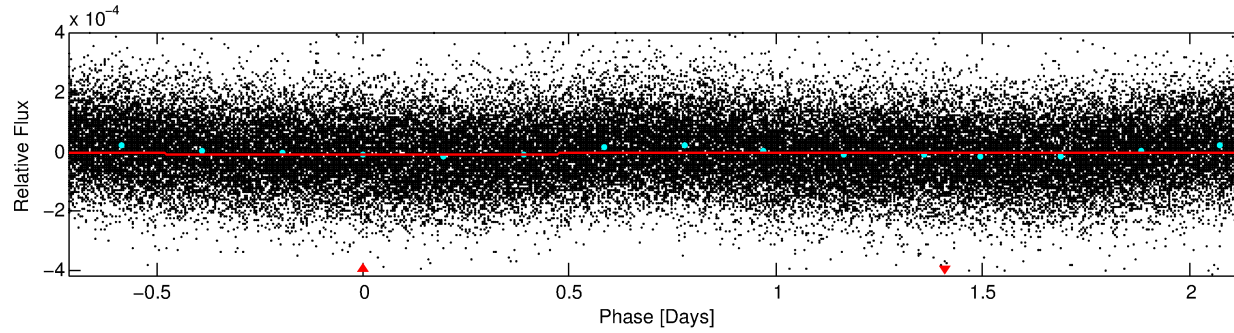
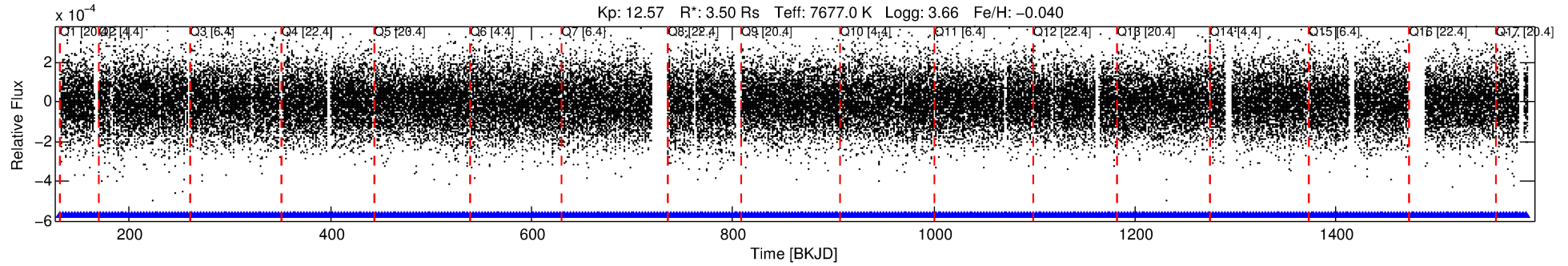
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004860686-01

No Significant Match Found

# DV One-Page Summary

KIC: 4860686 Candidate: 1 of 1 Period: 2.852 d



## DV Fit Results:

Period = 2.85198 [0.00007] d  
Epoch = 131.7378 [0.0144] BKJD  
Rp/R\* = 0.0031 [0.0022]  
a/R\* = 1.10 [0.85]  
b = 0.54 [5.63]  
Seff = 15197.02 [12075.90]  
Teff = 2831 [562] K  
Rp = 1.17 [1.02] Re  
a = 0.0501 [0.0241] AU  
Ag = 15.55 [25.64] [0.57 $\sigma$ ]  
Teffp = 8693 [3180] K [1.82 $\sigma$ ]

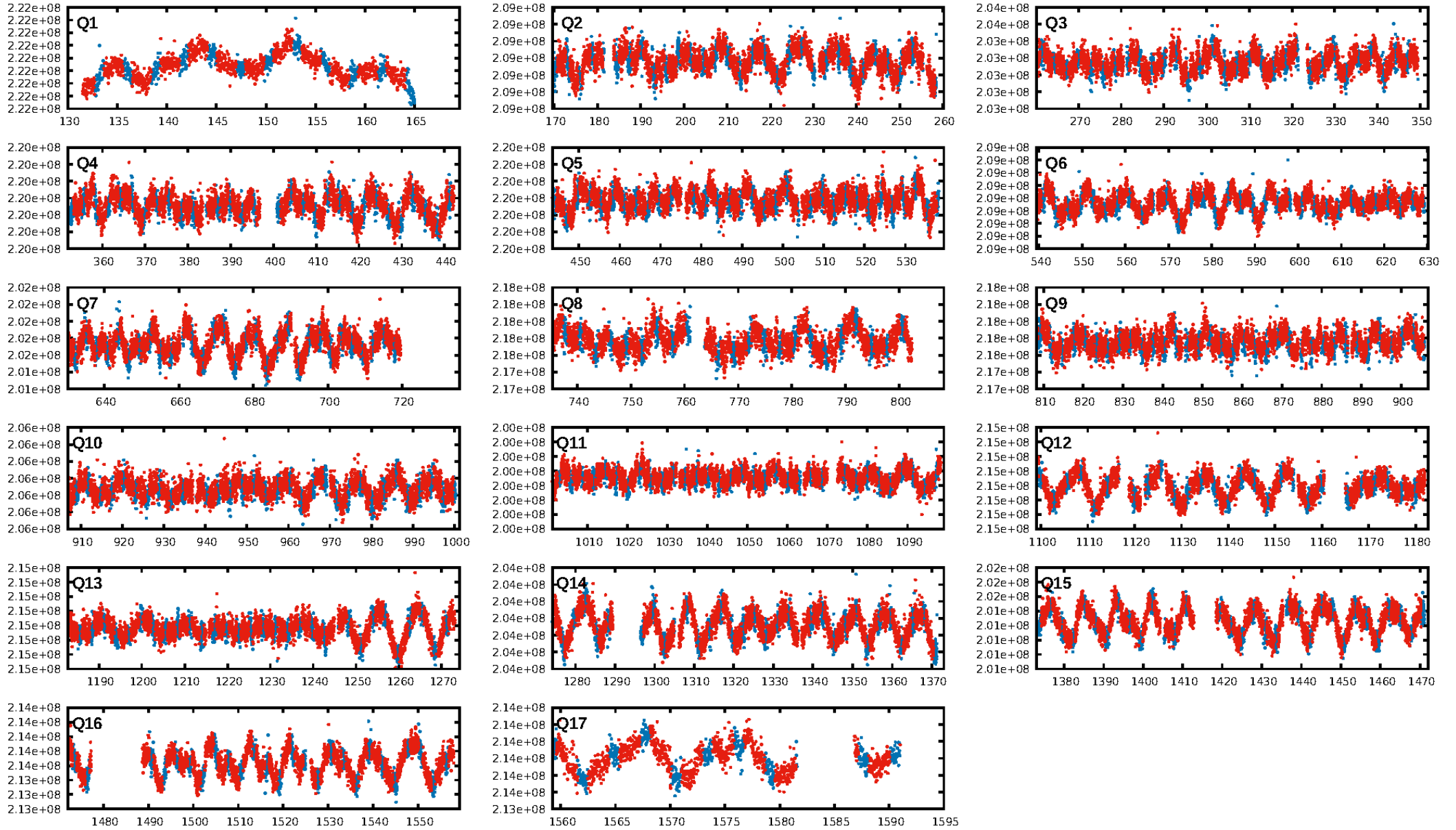
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [463/463]  
GhostDiagnostic-chr: 3.426  
Centroid-sig: 2.6%  
Centroid-so: 2.124 arcsec [1.48 $\sigma$ ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [17/17]

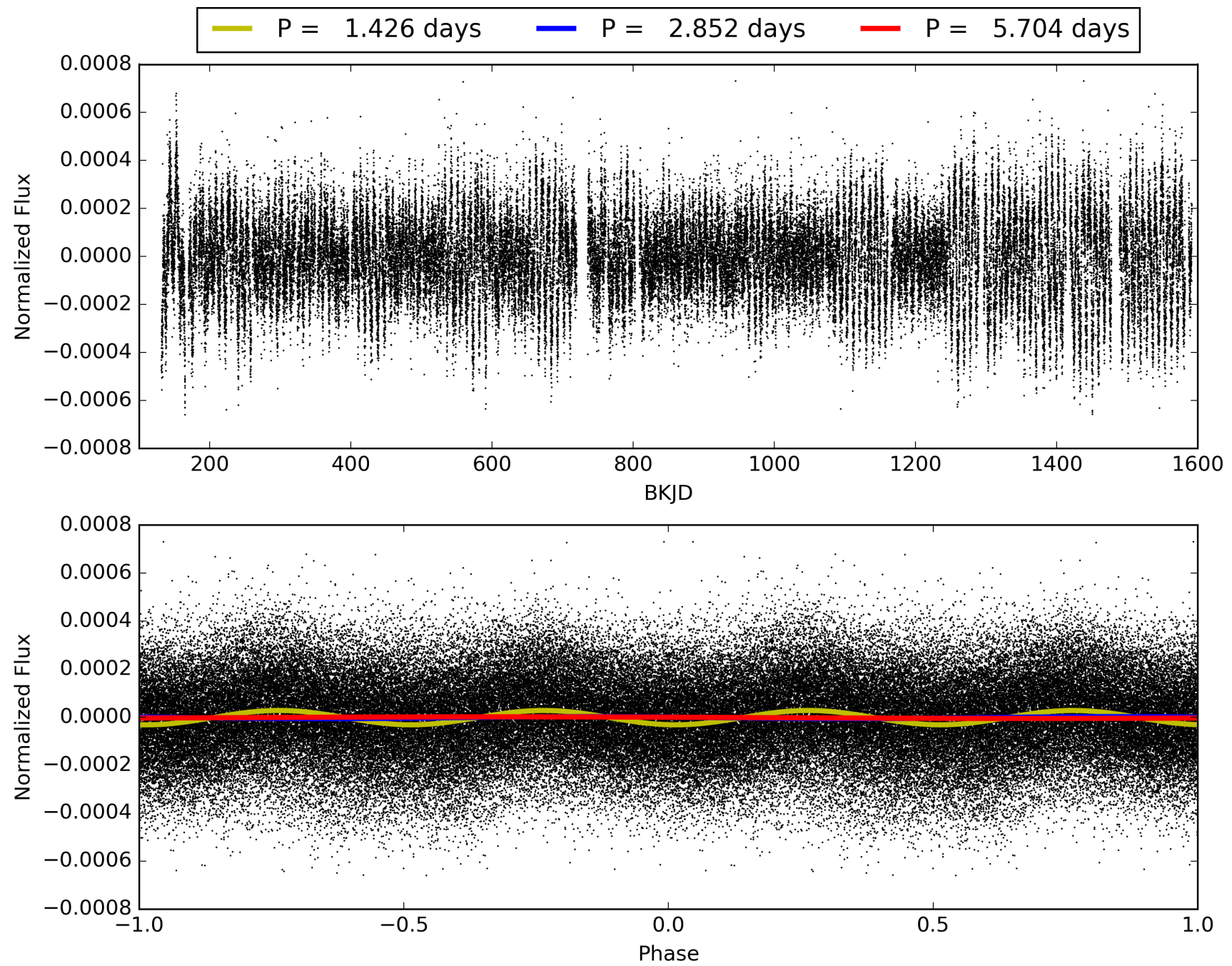
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:00:34 Z

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

# TCE 004860686-01, PDC Light Curves



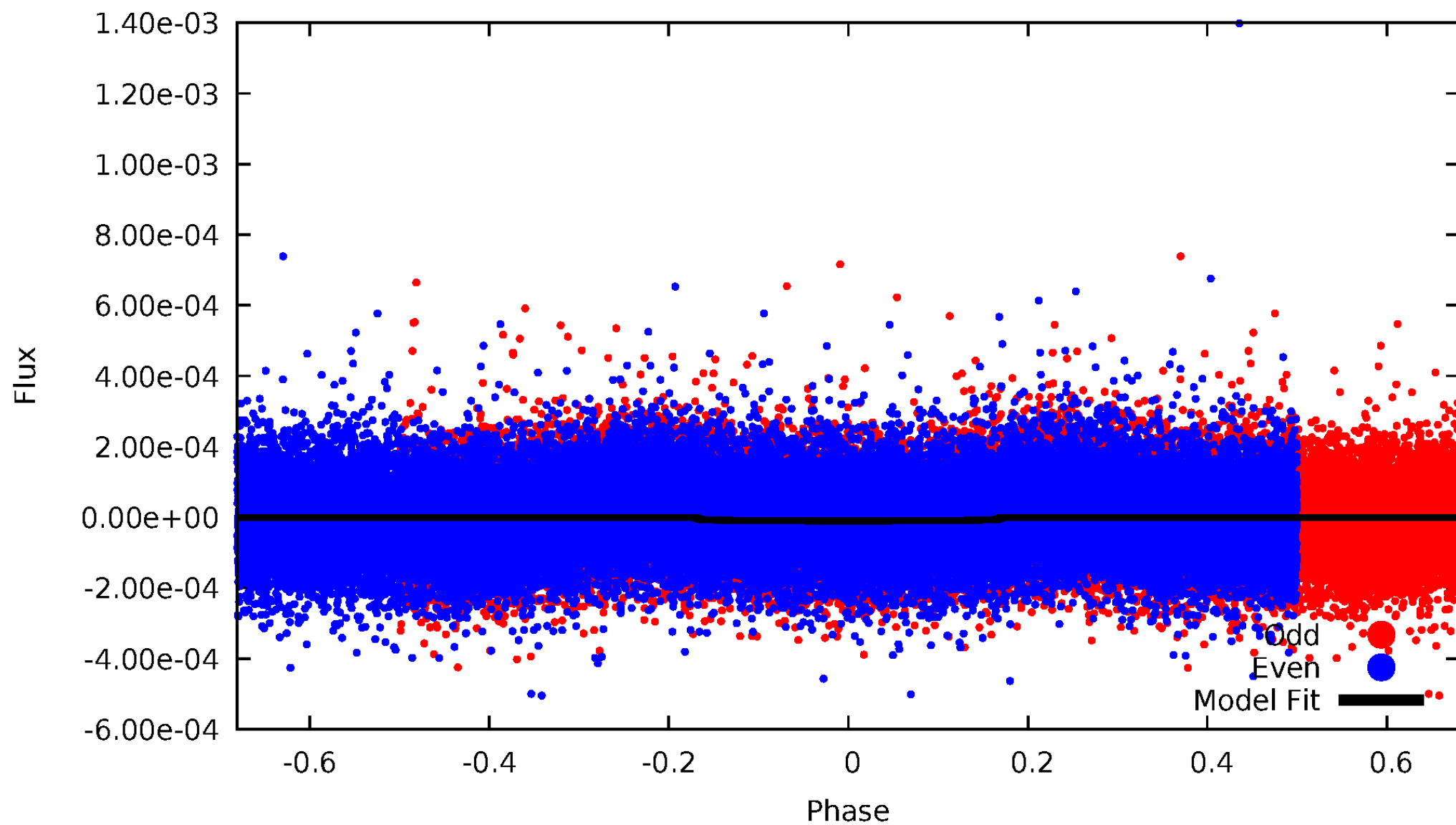
TCE 004860686-01





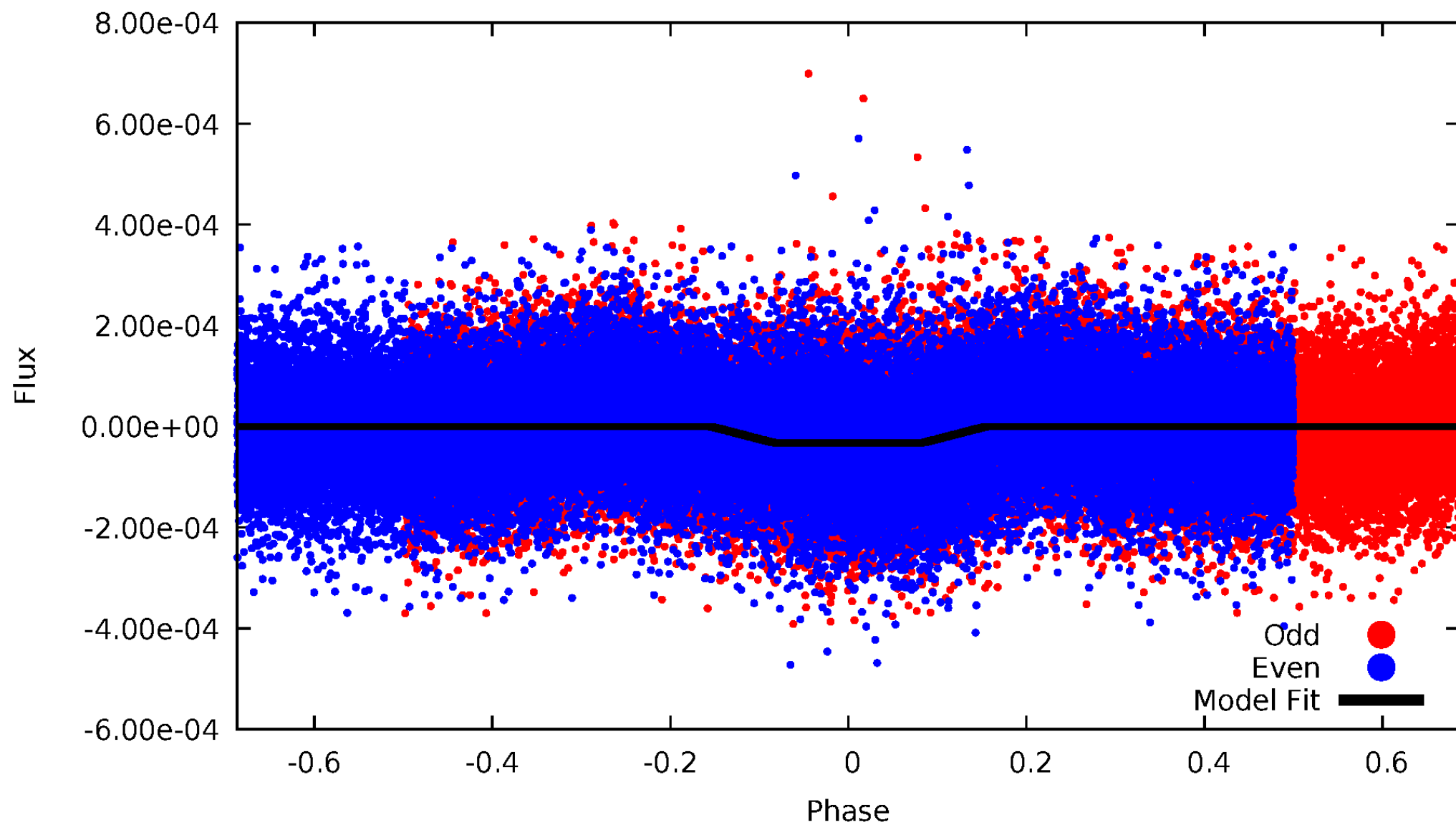
# DV Odd/Even

TCE 004860686-01



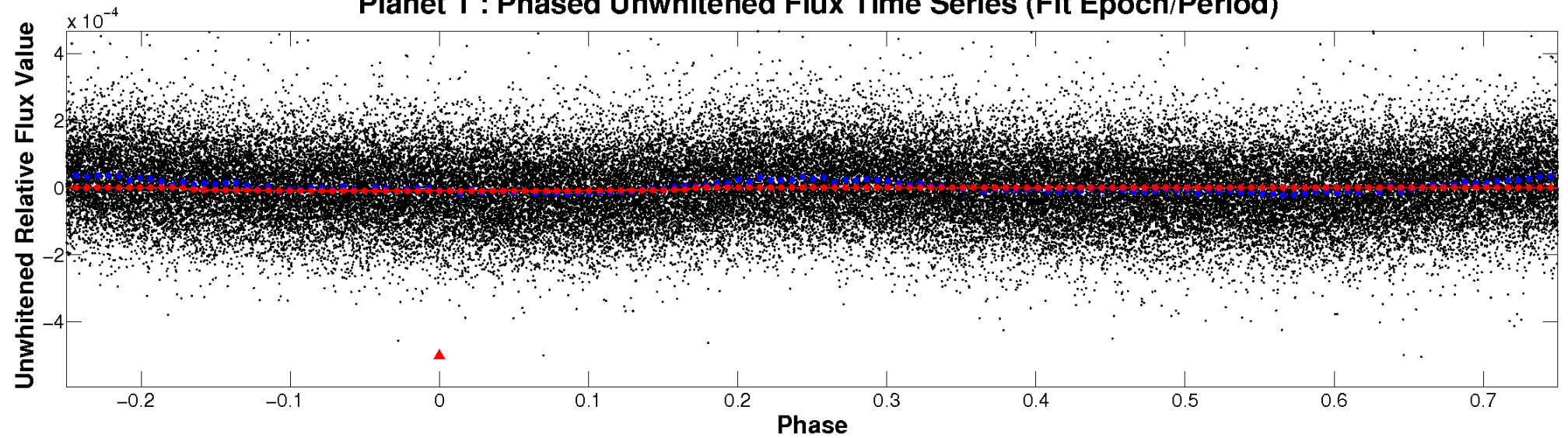
# ALT Odd/Even

TCE 004860686-01

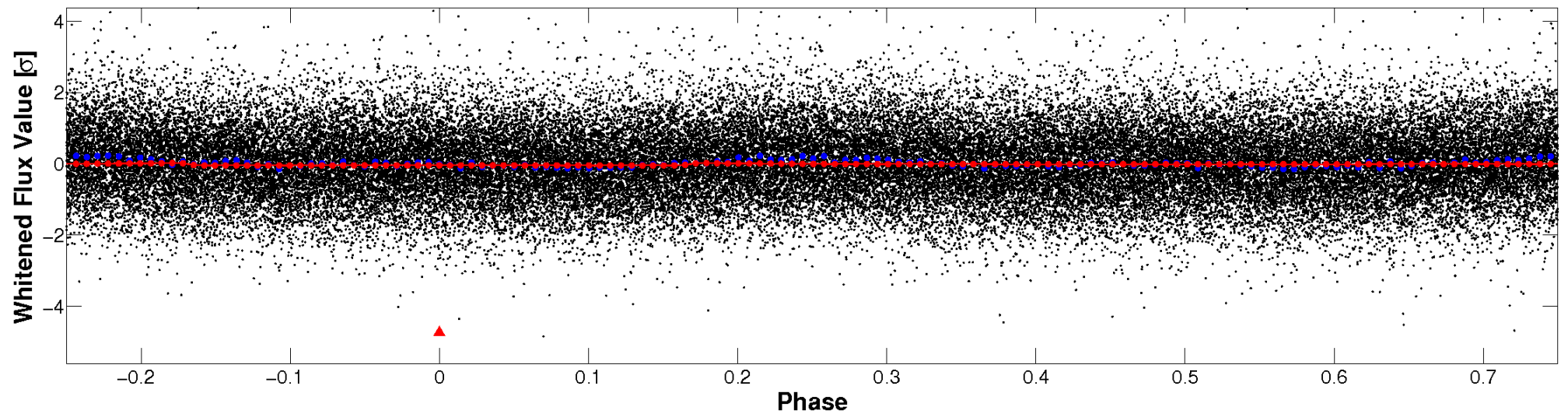


# Non-Whitened Vs. Whitened Light Curve

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

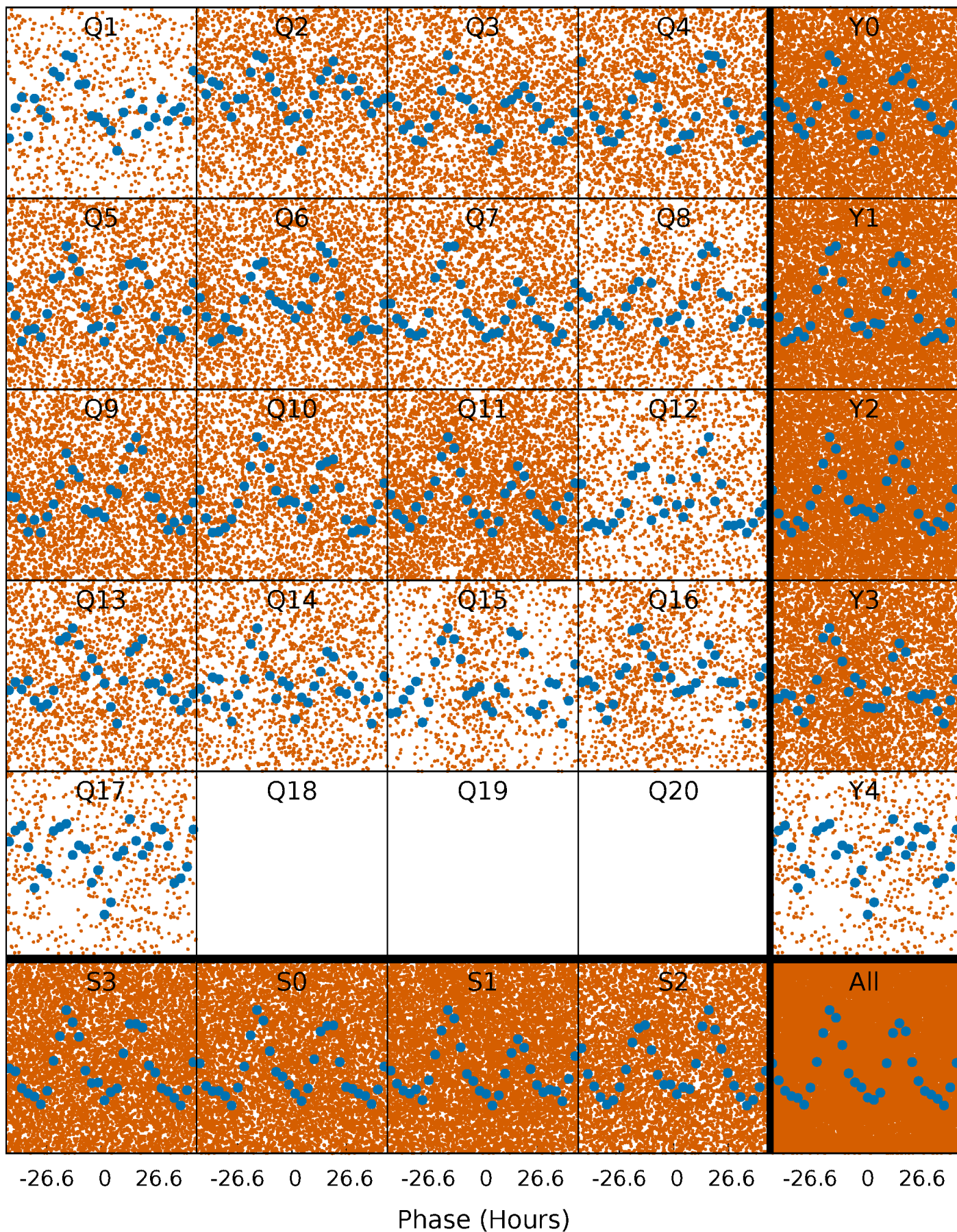


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

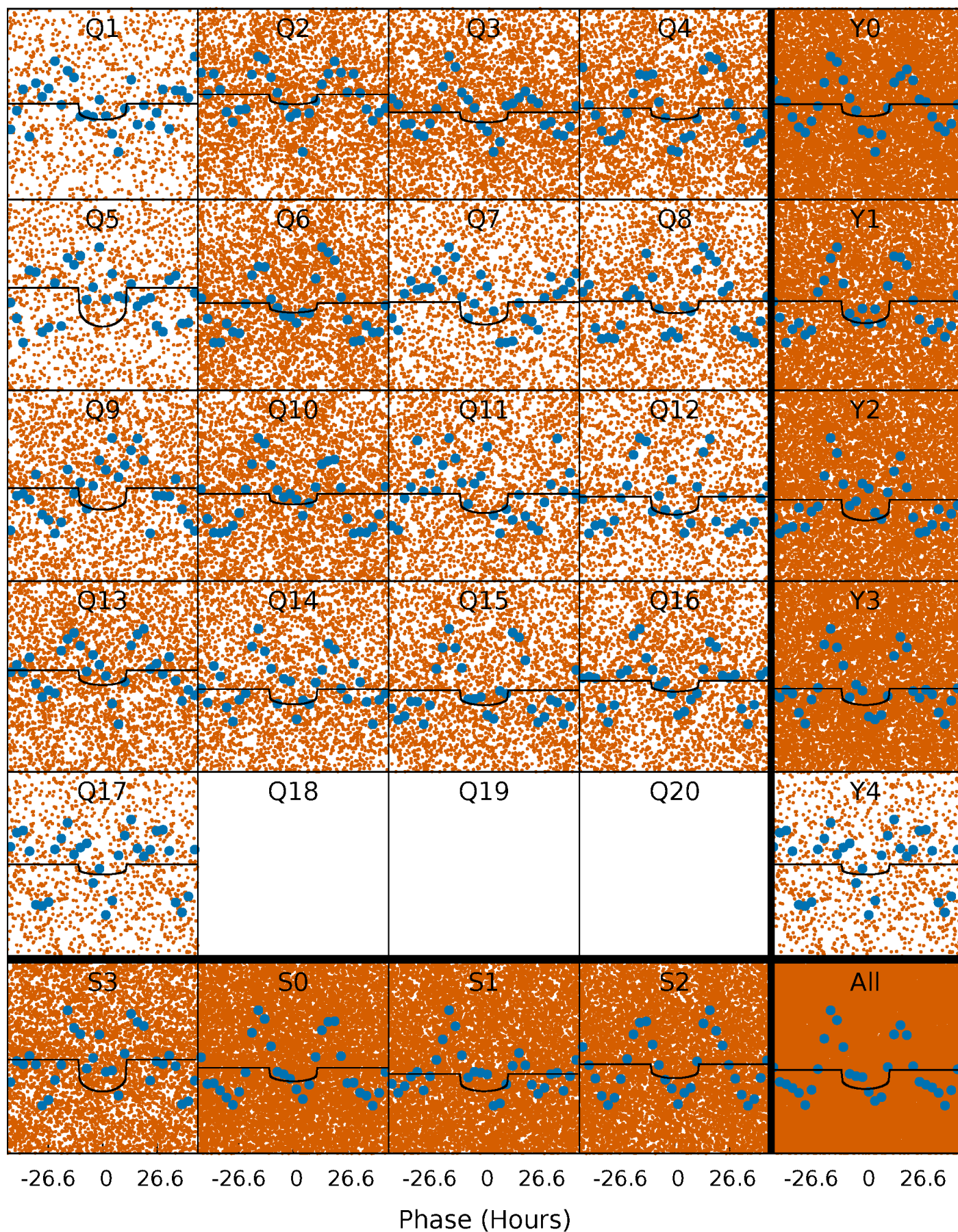
TCE 004860686-01 P= 2.851982 Days  $T_0=131.737843$  (BKJD)





# DV Quarter-Phased Transit Curves

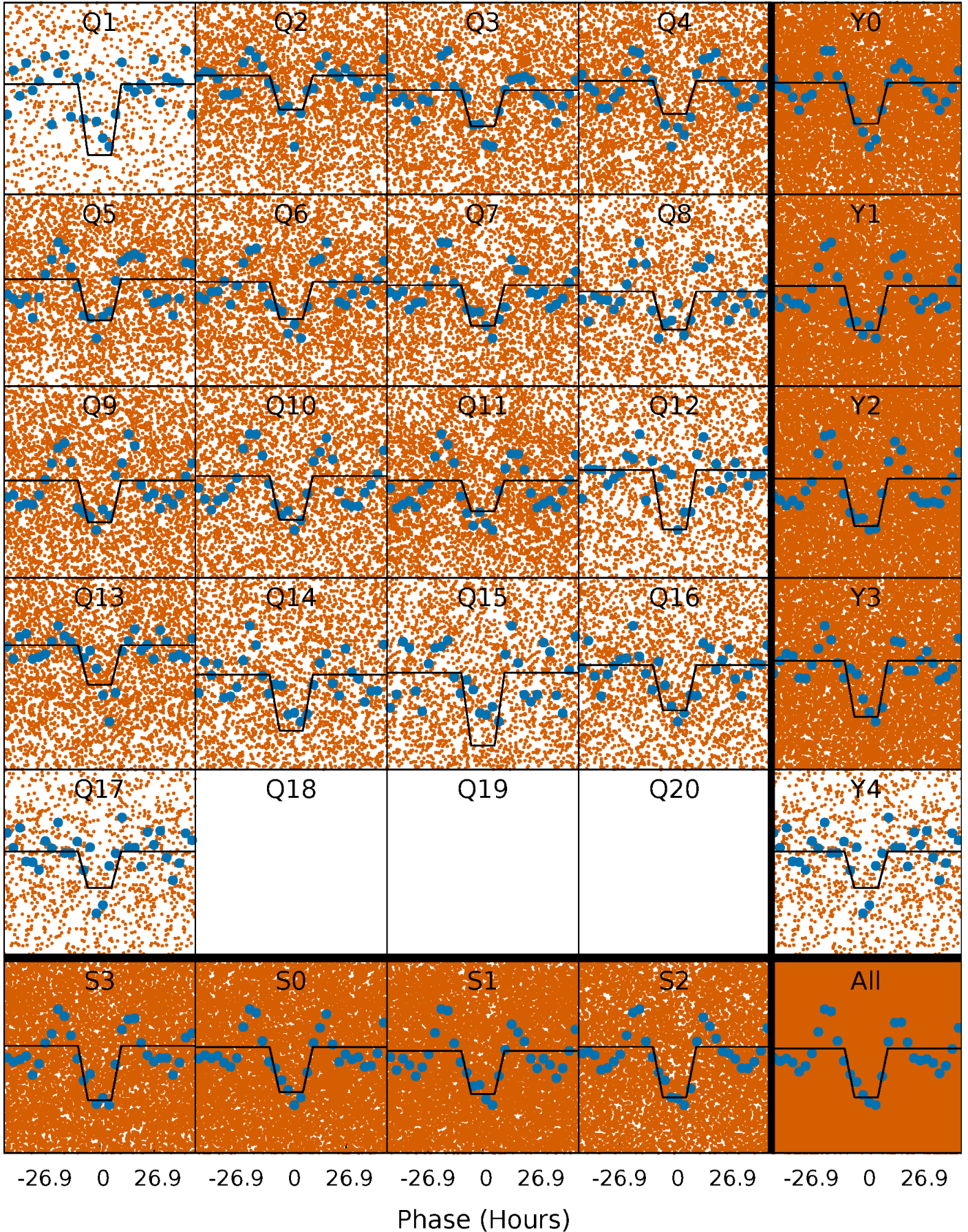
TCE 004860686-01 P= 2.851982 Days  $T_0=131.737843$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

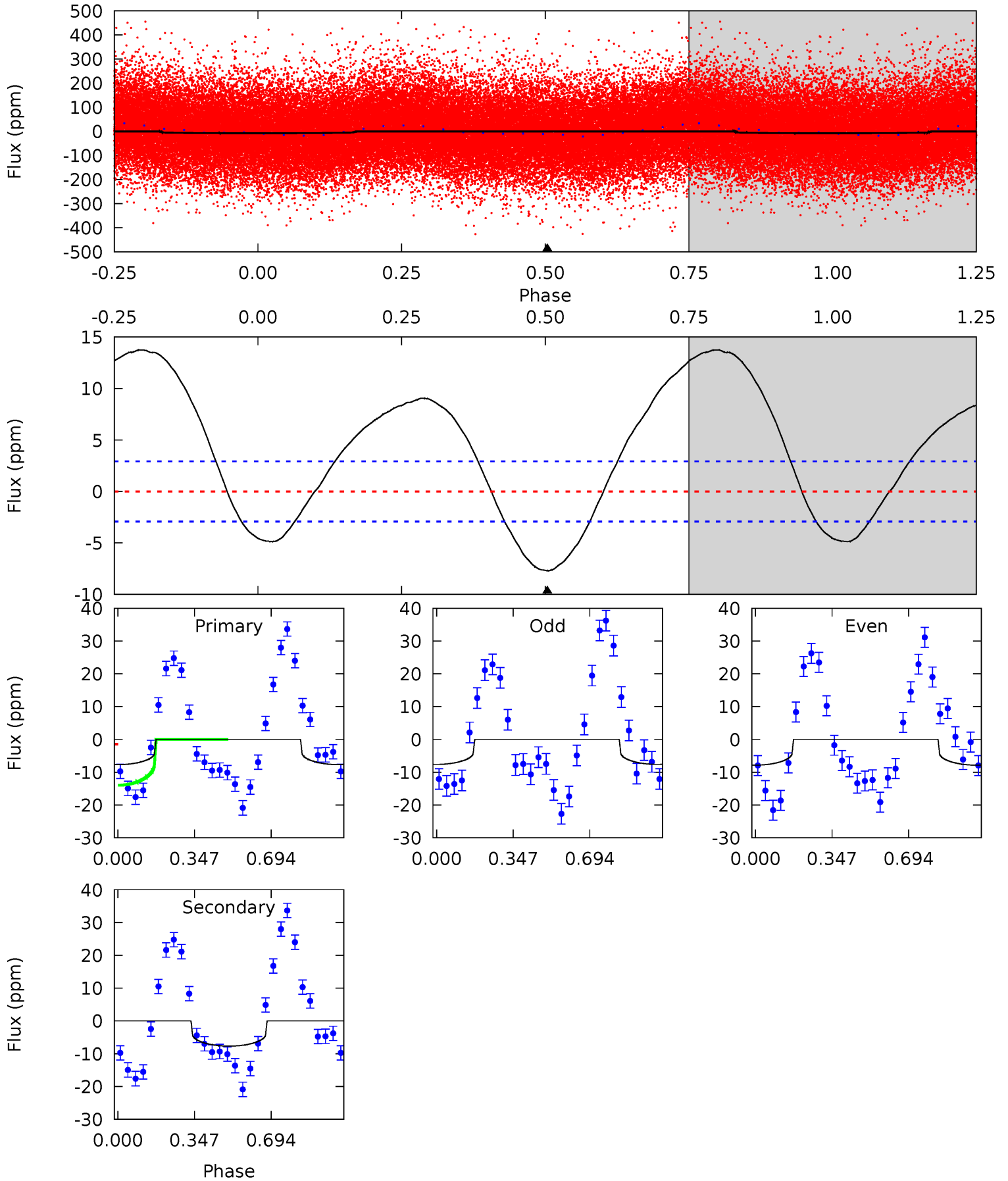
TCE 004860686-01 P= 2.851962 Days  $T_0=131.845030$  (BKJD)



# DV Model-Shift Uniqueness Test

004860686-01, P = 2.851982 Days, E = 128.885861 Days

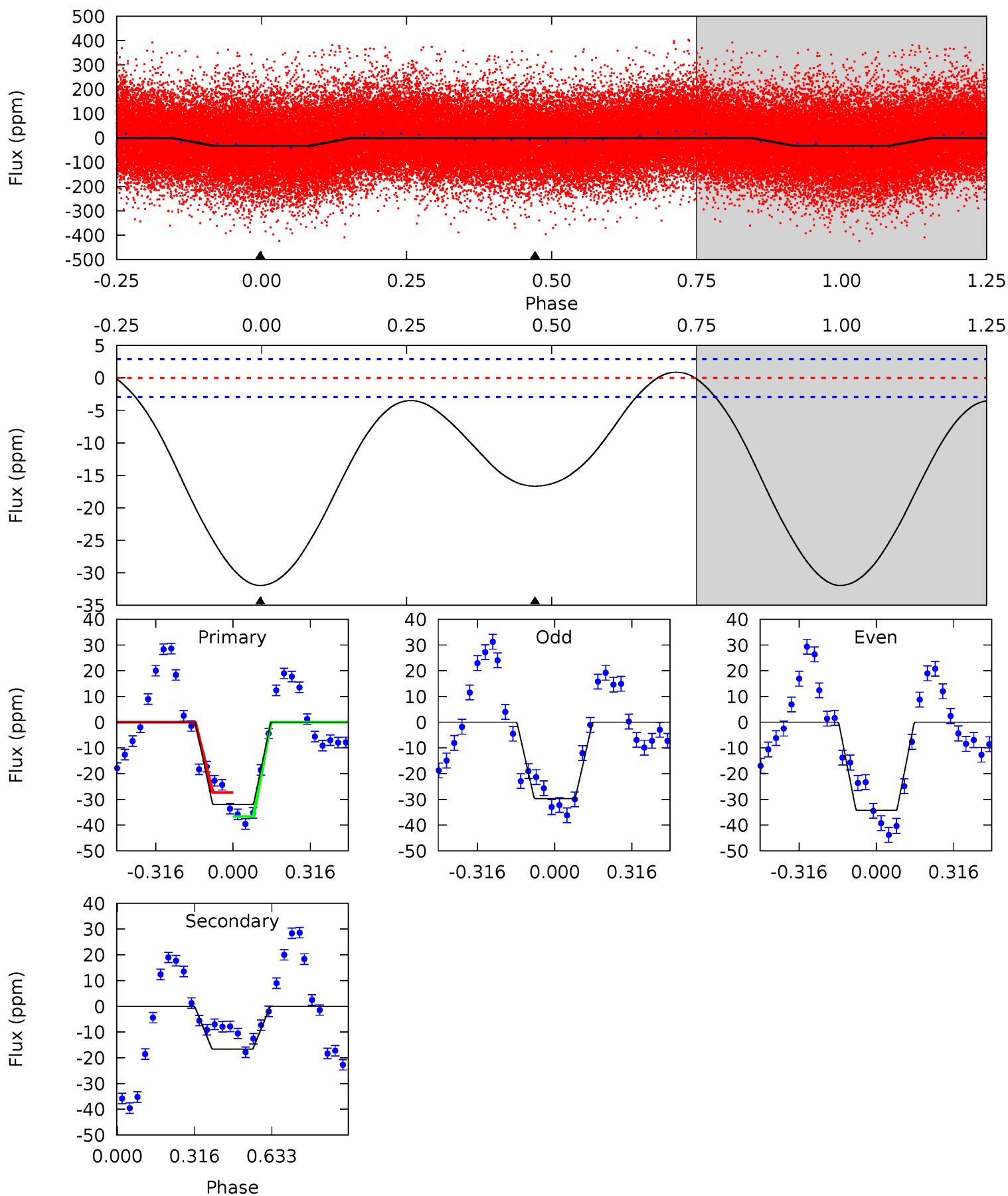
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	11.3	0	0	4.30	0.94	7.25	11.3	11.3	11.3	11.3	0.16	0.97	0.64	9.09



# Alt Model-Shift Uniqueness Test

004860686-01, P = 2.851962 Days, E = 128.993068 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
47.2	24.6	0	0	4.32	1.00	2.83	47.2	47.2	24.6	24.6	3.32	1.09	0.03	6.61





### Stellar Parameters For KIC 004860686

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7677^{+212}_{-318}$	$3.664^{+0.459}_{-0.081}$	$-0.040^{+0.200}_{-0.350}$	$3.503^{+0.574}_{-1.723}$	$2.066^{+0.280}_{-0.559}$	$0.068^{+0.305}_{-0.017}$
	+3%/-4%	+13%/-2%	+500%/-875%	+16%/-49%	+14%/-27%	+451%/-25%
Source	KIC0	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 004860686-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-8 \pm 1$	$1.07^{+0.83}_{-0.67}$	$3789^{+282}_{-441}$	$6867^{+6845}_{-1621}$	$9.427^{+51.644}_{-6.475}$
Alt.	$-17 \pm 1$	$1.89^{+0.91}_{-0.76}$	$3808^{+285}_{-454}$	$6296^{+1969}_{-985}$	$6.338^{+10.543}_{-3.358}$

$T_{\text{max}}$  = 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

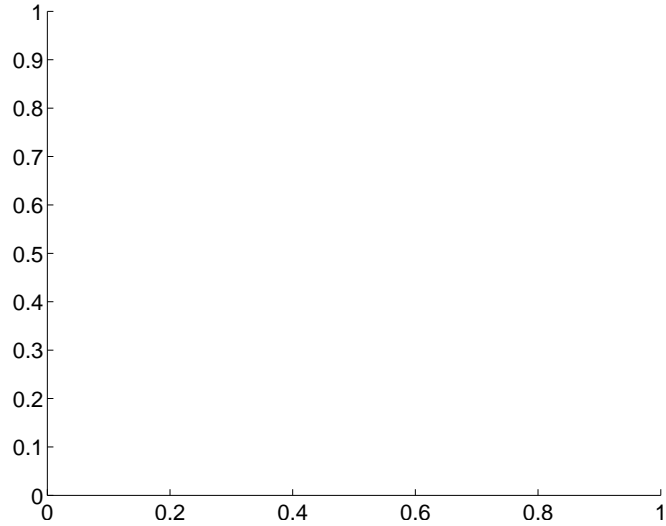
Supplemental centroid analysis for 004860686-01. Kepler magnitude: 12.57. Transit SNR 7.10

There are 0 quarters with good PRF difference image offsets

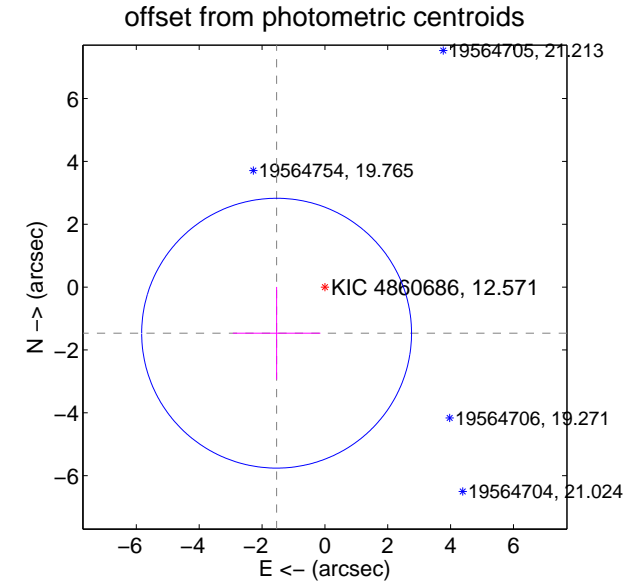
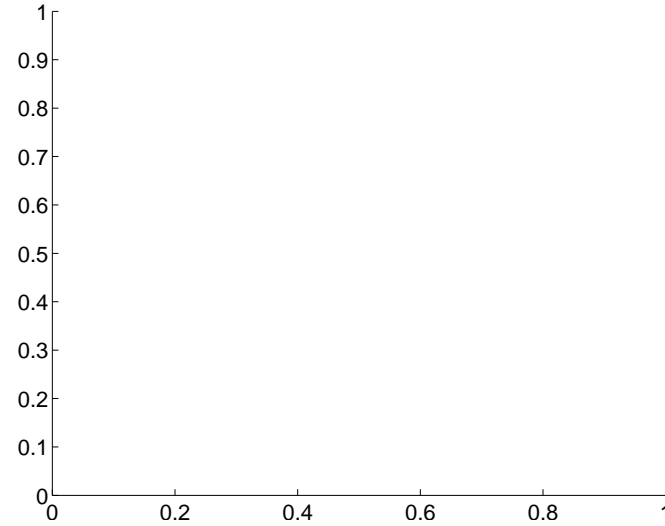
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$2.12 \pm 1.43$	1.48	$1.54 \pm 1.39$	$-1.47 \pm 1.47$

There is no PRF-fit offset from OOT-fit

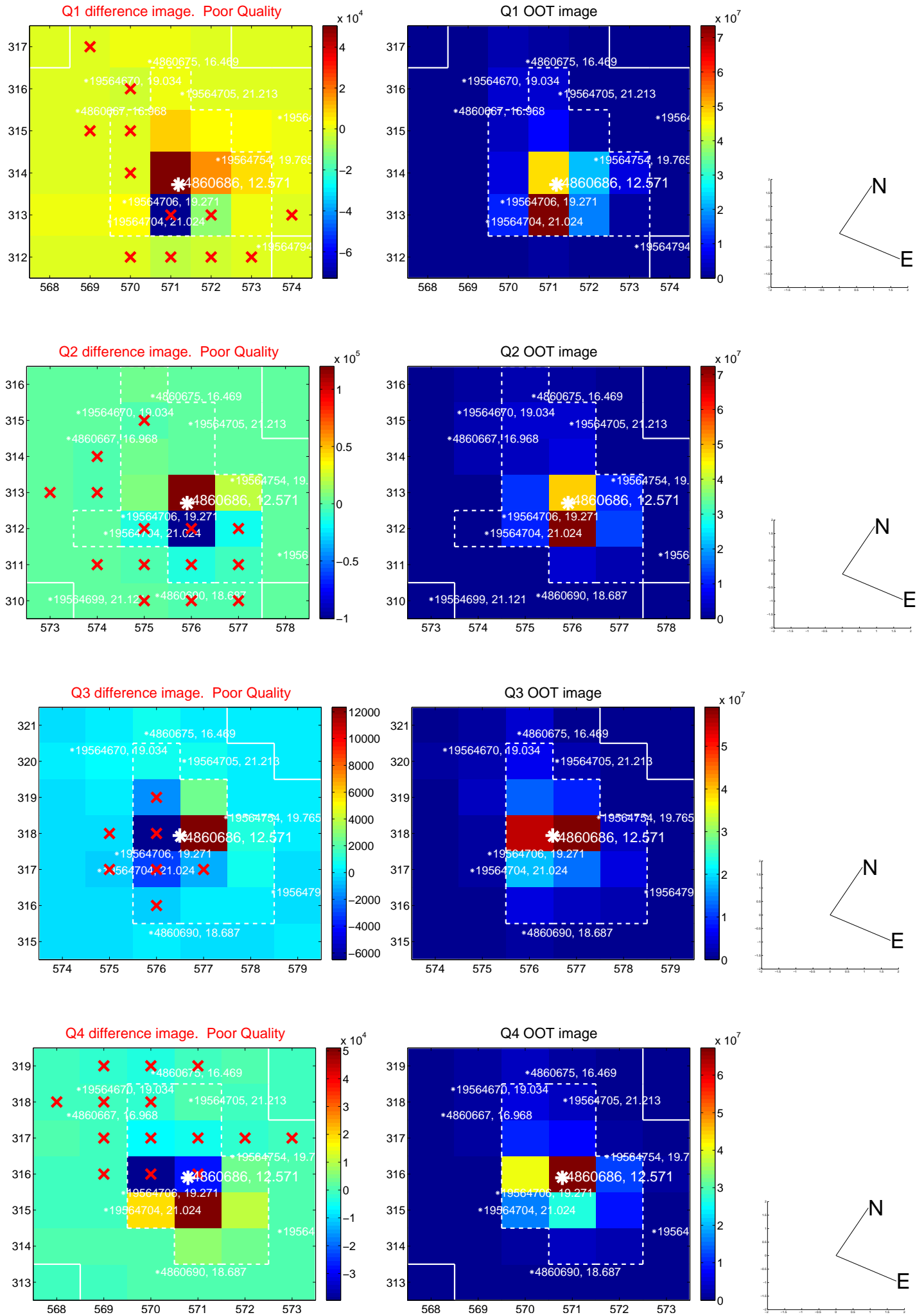


There is no PRF-fit offset from KIC

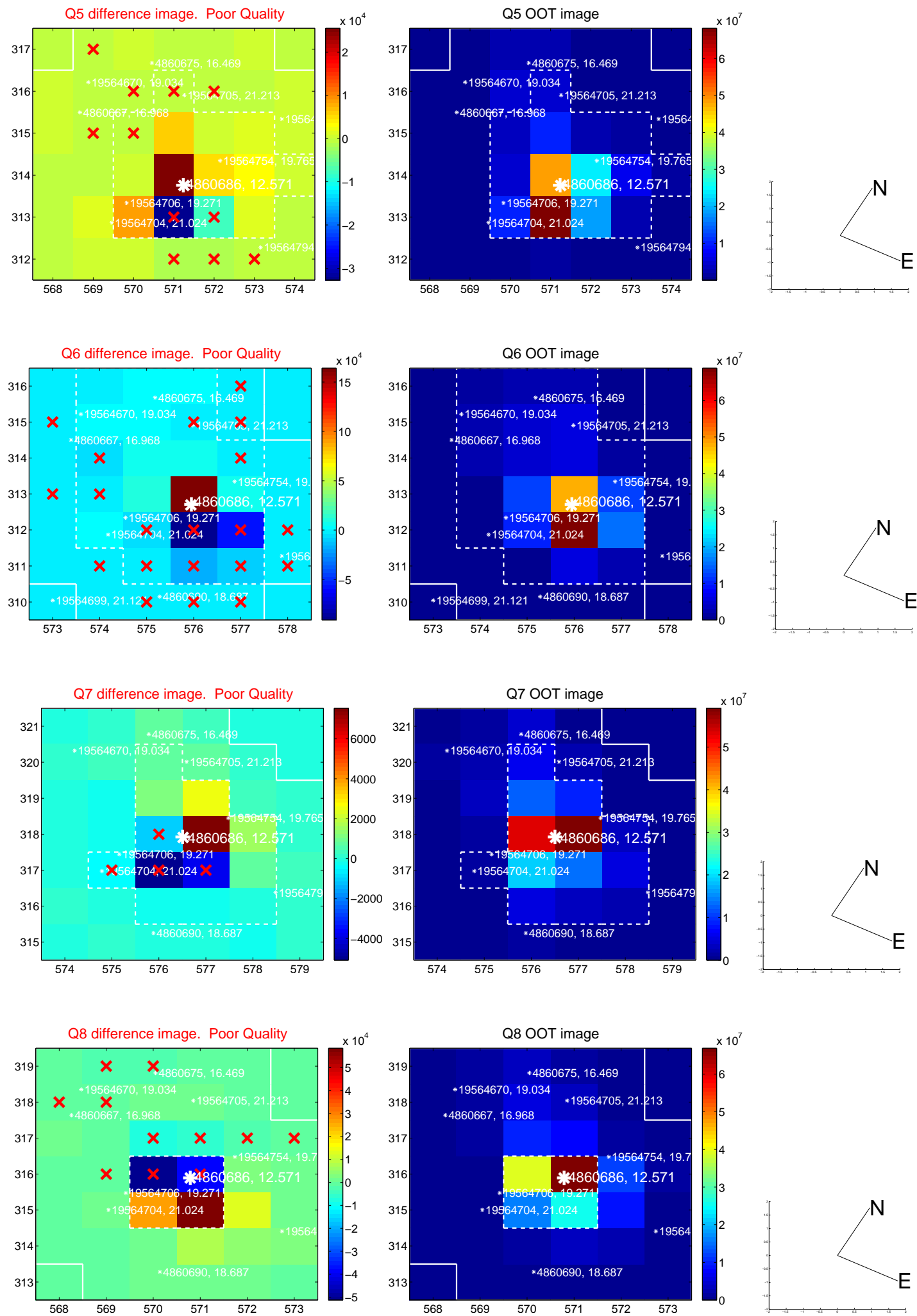


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

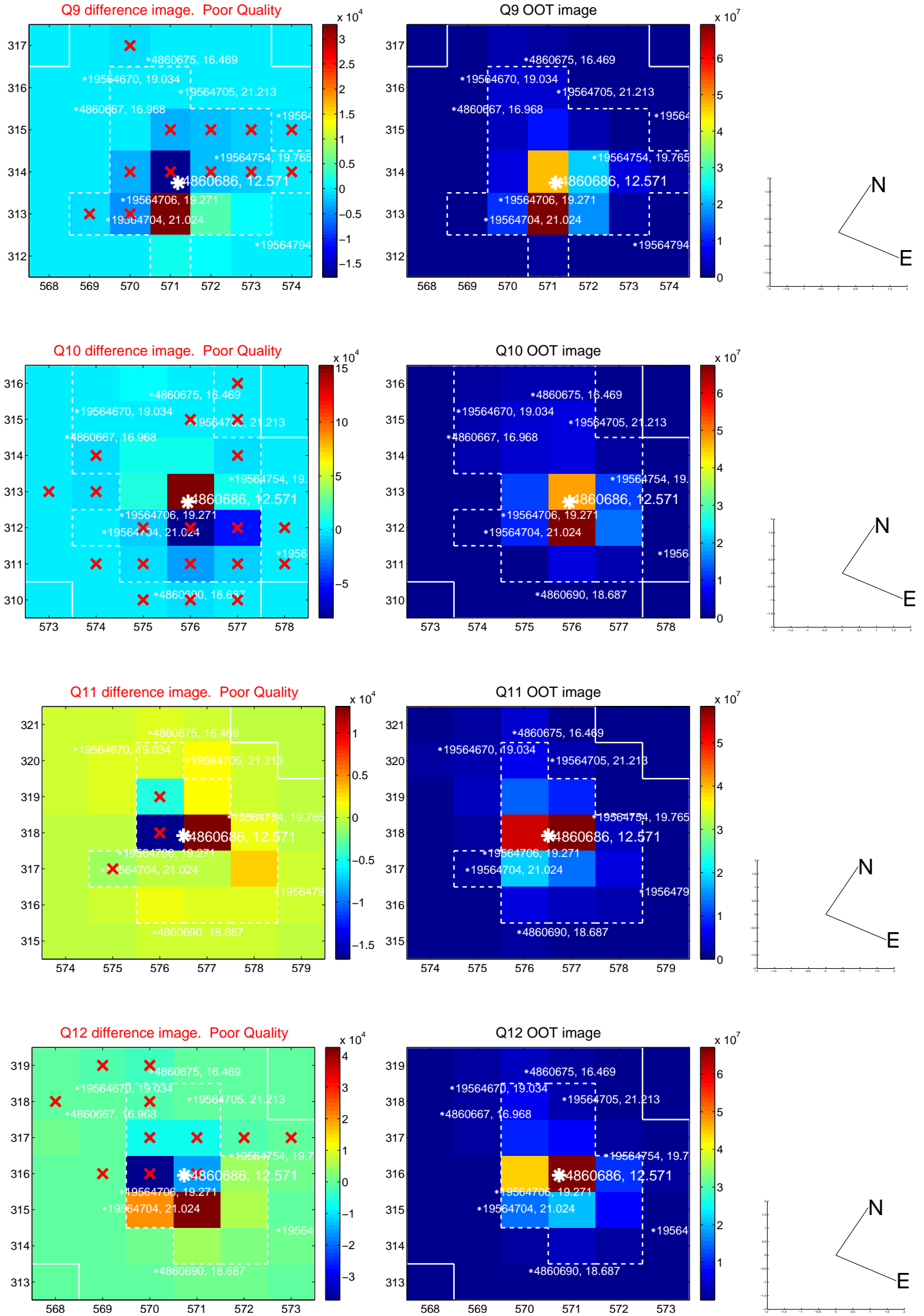


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

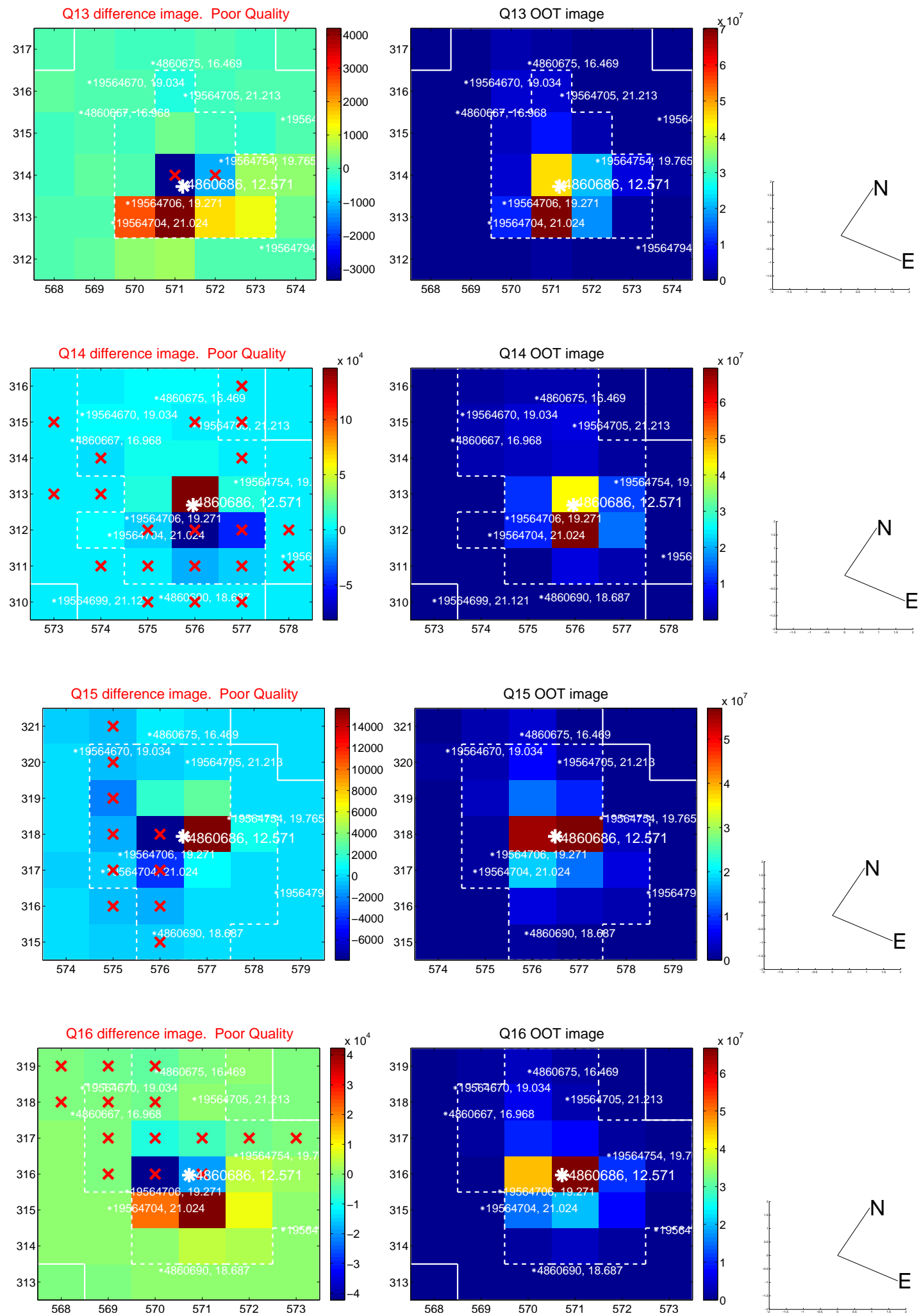




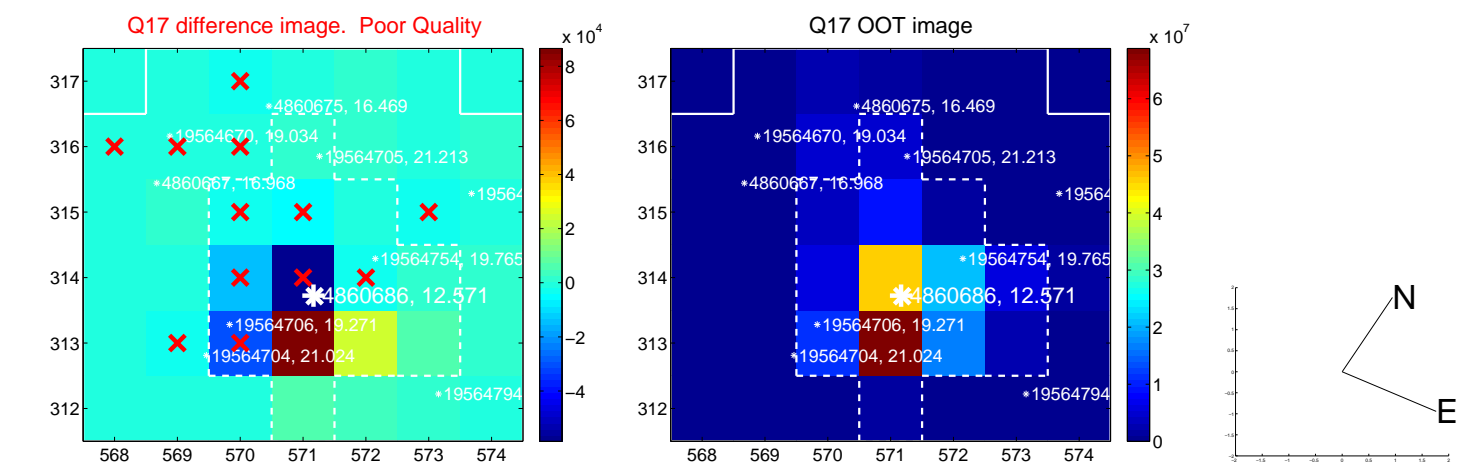
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



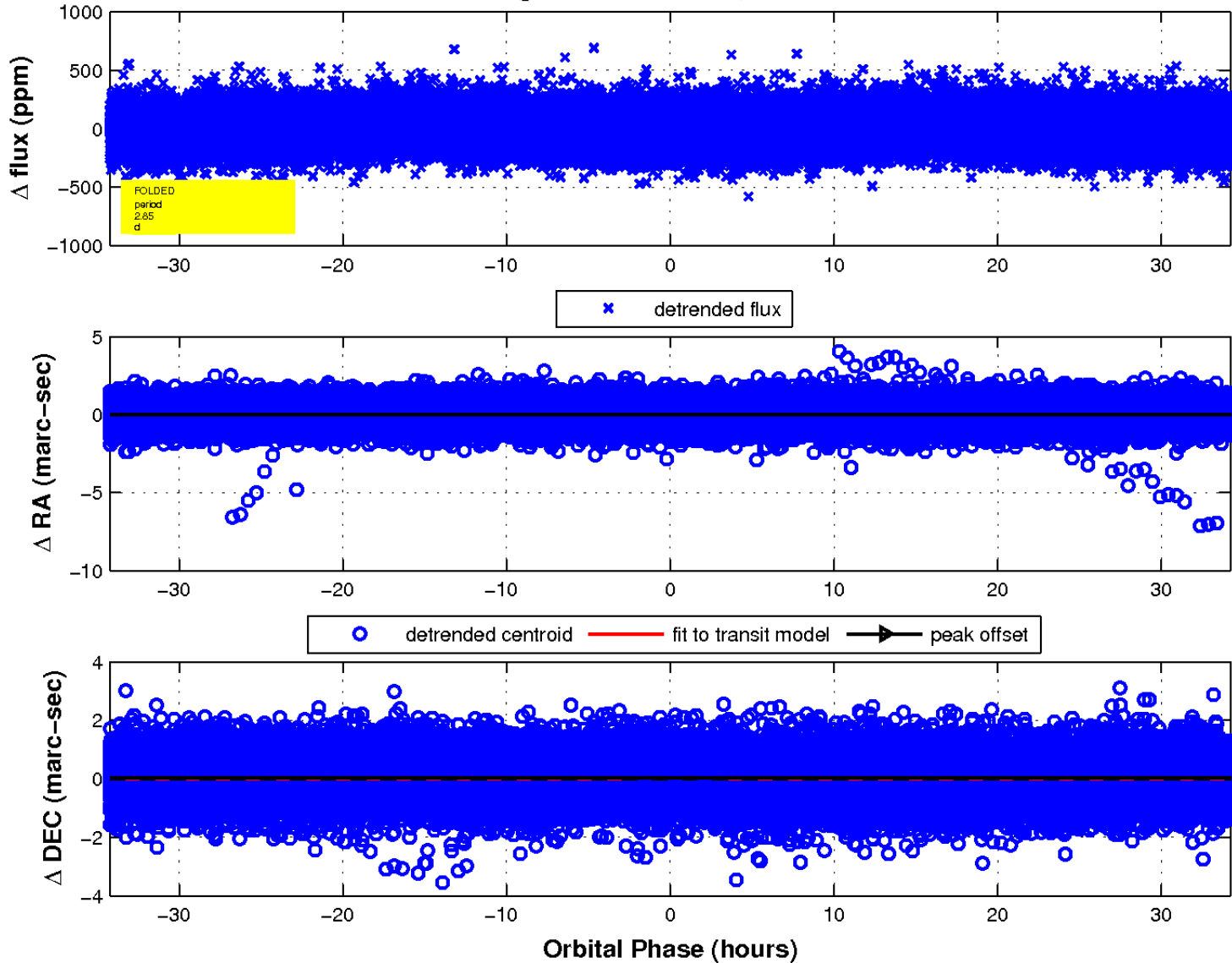
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

