

# KIC 006072593

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006072593-01	OBS	3070.01	5.075399	133.928869	155.6	1.656	13.4	14.9	1.12	5933	1.47	419.75

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006072593-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET—HALO_GHOST

**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 006072593-01

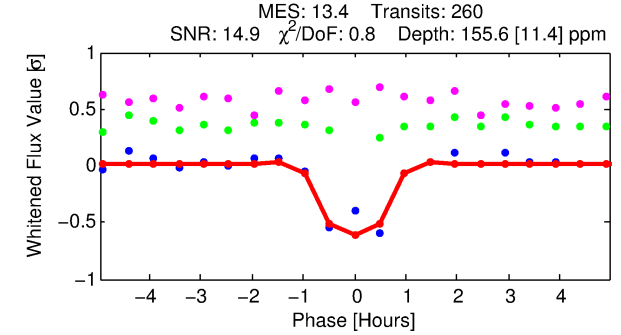
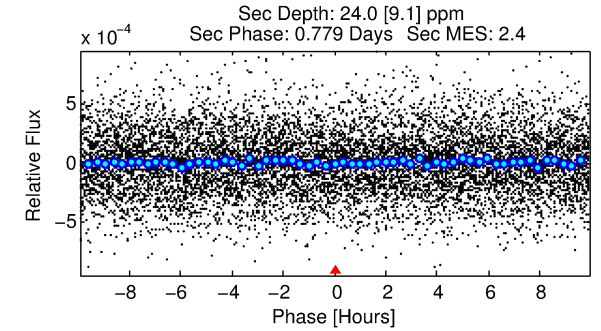
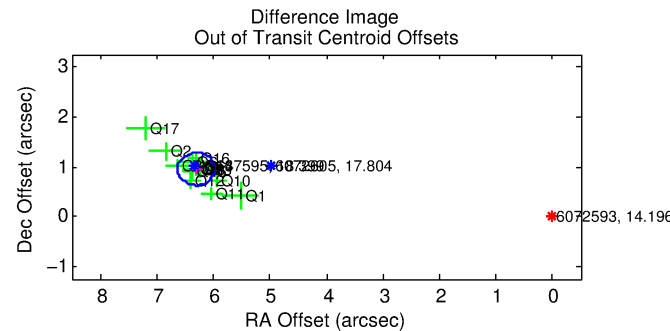
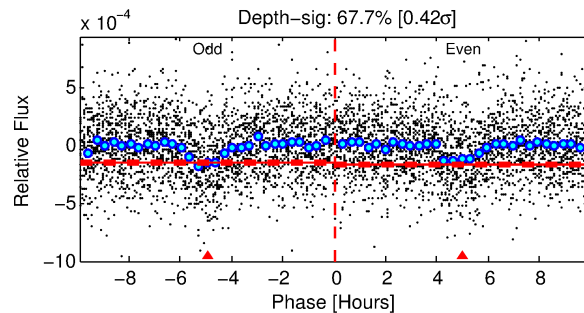
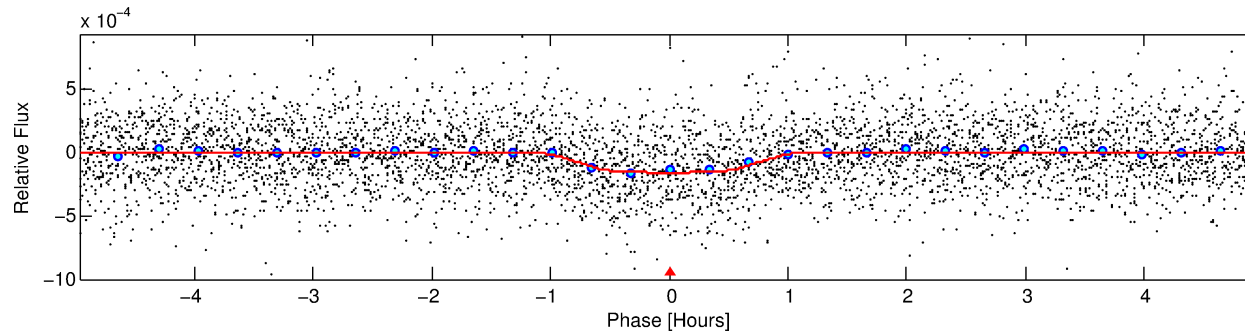
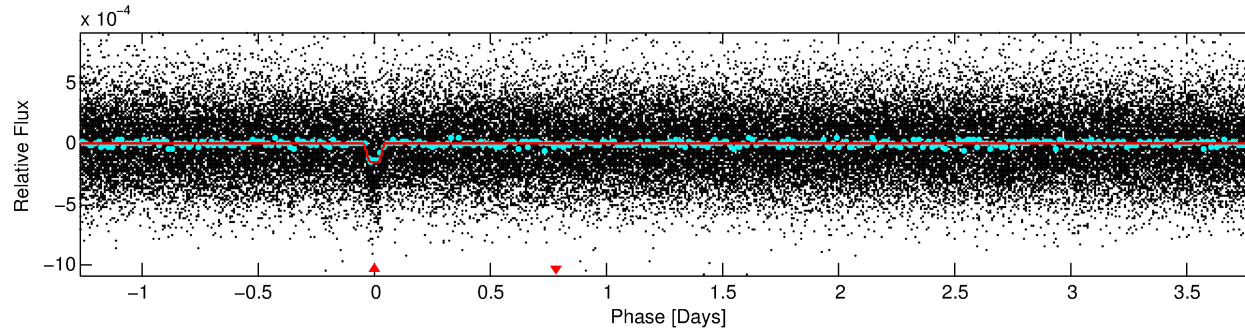
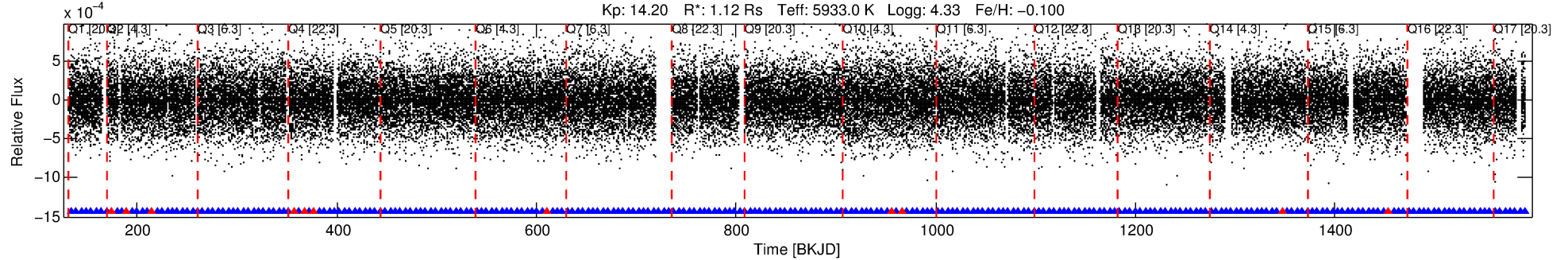
No Significant Match Found

# DV One-Page Summary

KIC: 6072593 Candidate: 1 of 1 Period: 5.075 d

KOI: K03070.01 Corr: 0.970

Kp: 14.20 R\*: 1.12 Rs Teff: 5933.0 K Logg: 4.33 Fe/H: -0.100



## DV Fit Results:

Period = 5.07540 [0.00002] d  
Epoch = 133.9289 [0.0023] BKJD  
Rp/R\* = 0.0120 [0.0045]  
a/R\* = 18.56 [32.49]  
b = 0.63 [1.70]  
Seff = 419.75 [152.42]  
Teff = 1154 [105] K  
Rp = 1.47 [0.69] Re  
a = 0.0575 [0.0136] AU  
Ag = 20.27 [18.44] [1.04σ]  
Teffp = 3786 [806] K [3.24σ]

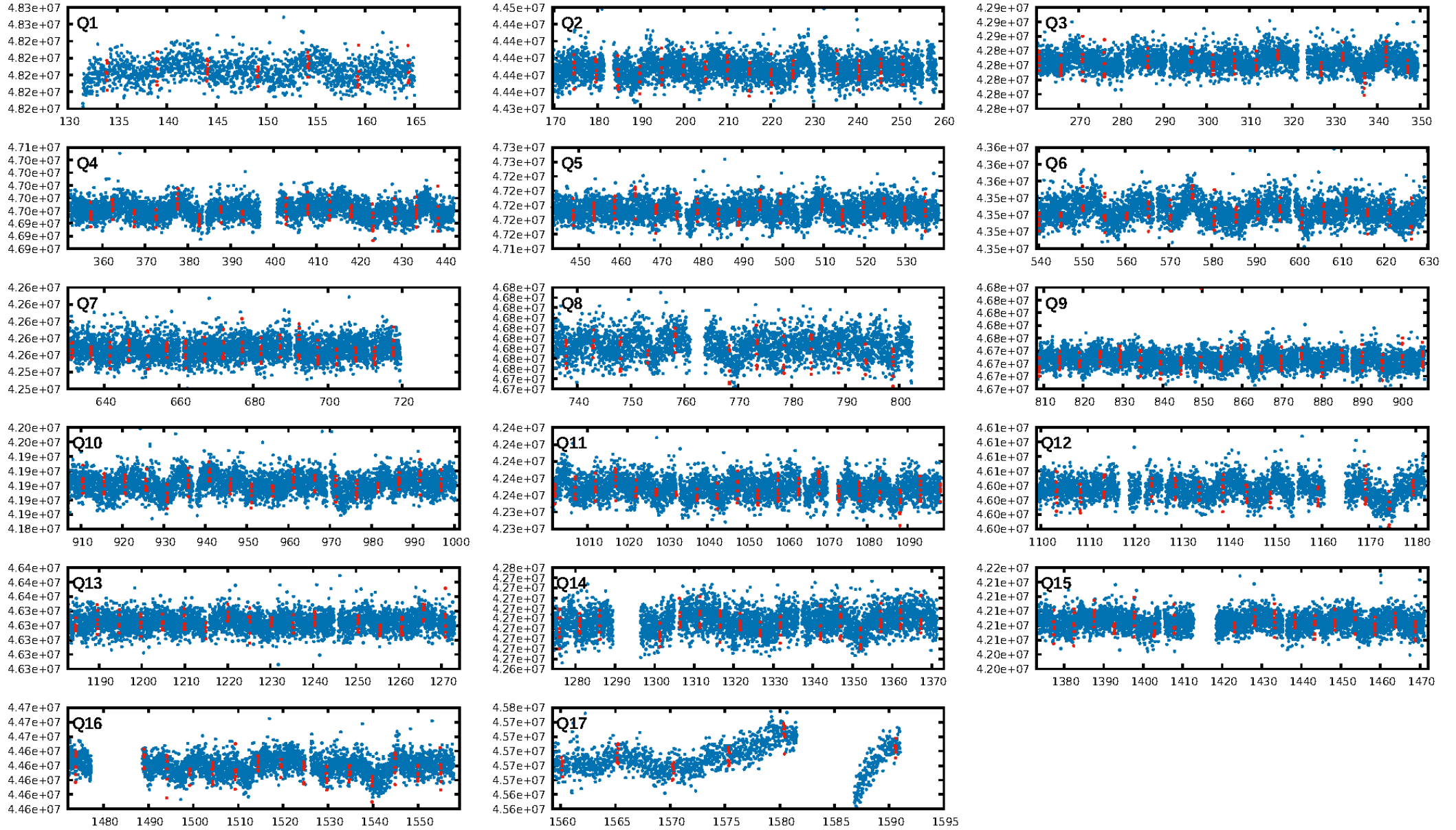
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.65e-40  
RollingBand-fgt: 0.96 [236/247]  
GhostDiagnostic-chr: -0.09569  
Centroid-sig: 0.0%  
Centroid-so: 18.976 arcsec [20.12σ]  
OotOffset-rm: 6.375 arcsec [58.61σ]  
KicOffset-rm: 6.537 arcsec [53.08σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

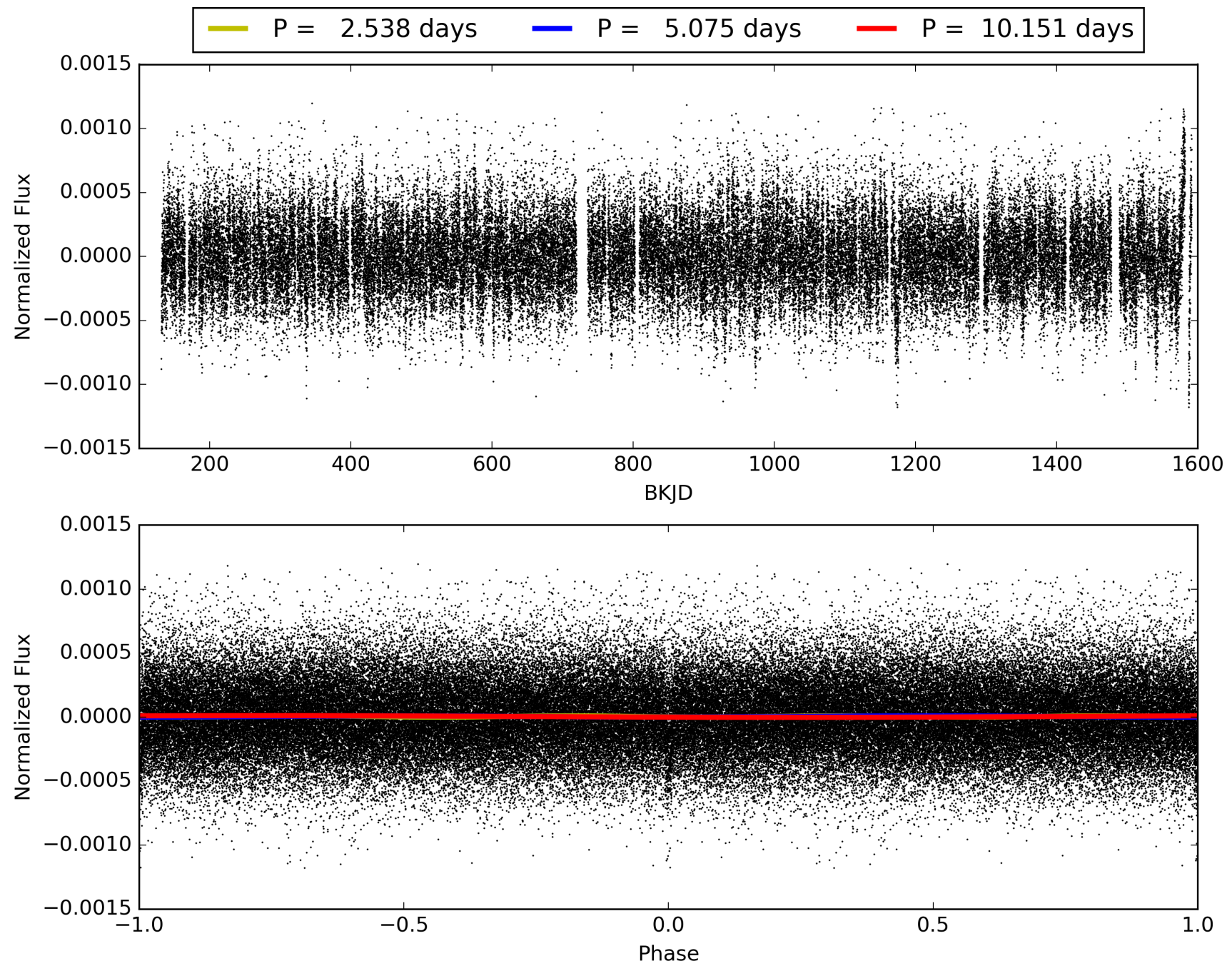
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:14:16 Z

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

# TCE 006072593-01, PDC Light Curves

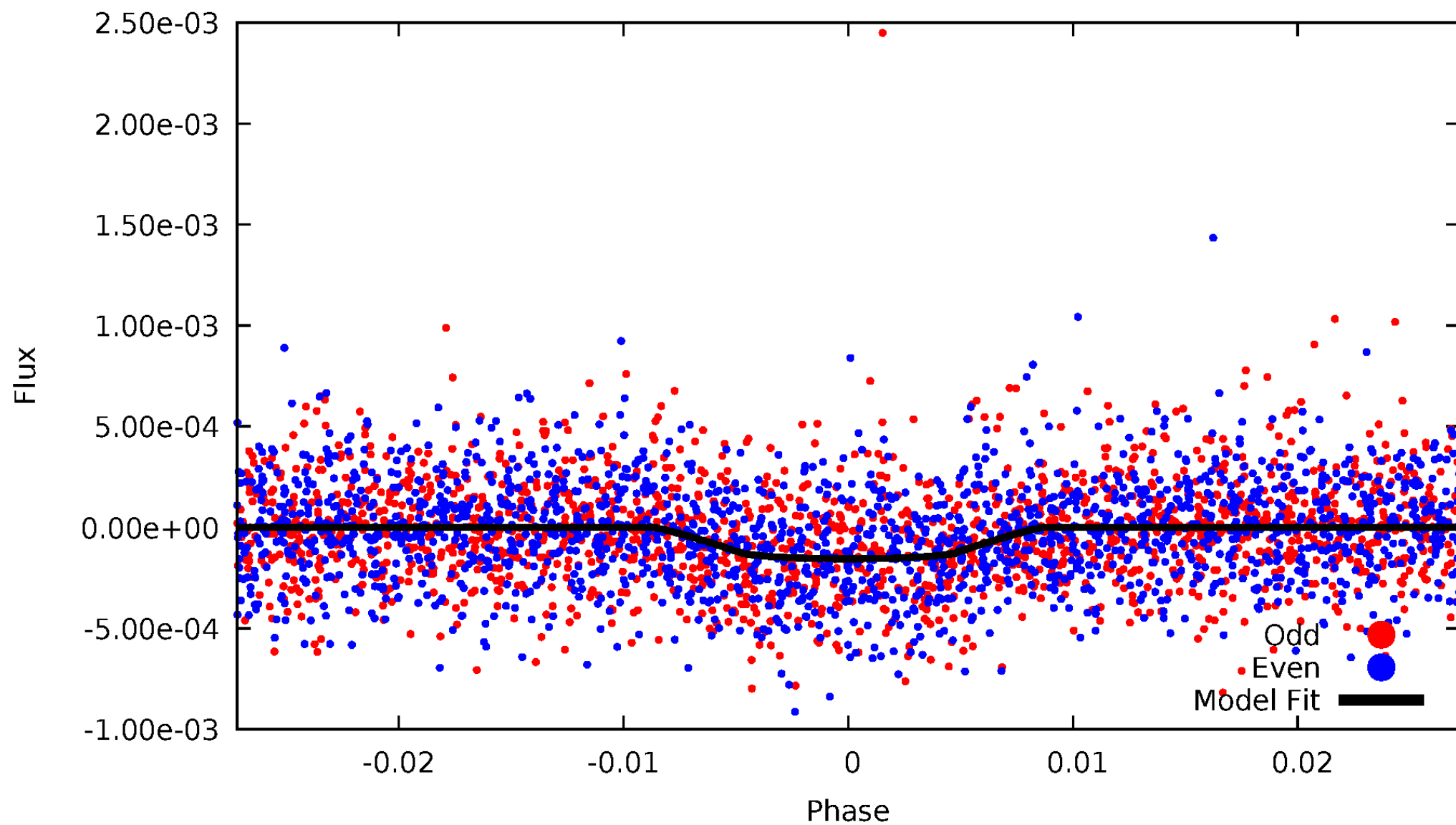


TCE 006072593-01



# DV Odd/Even

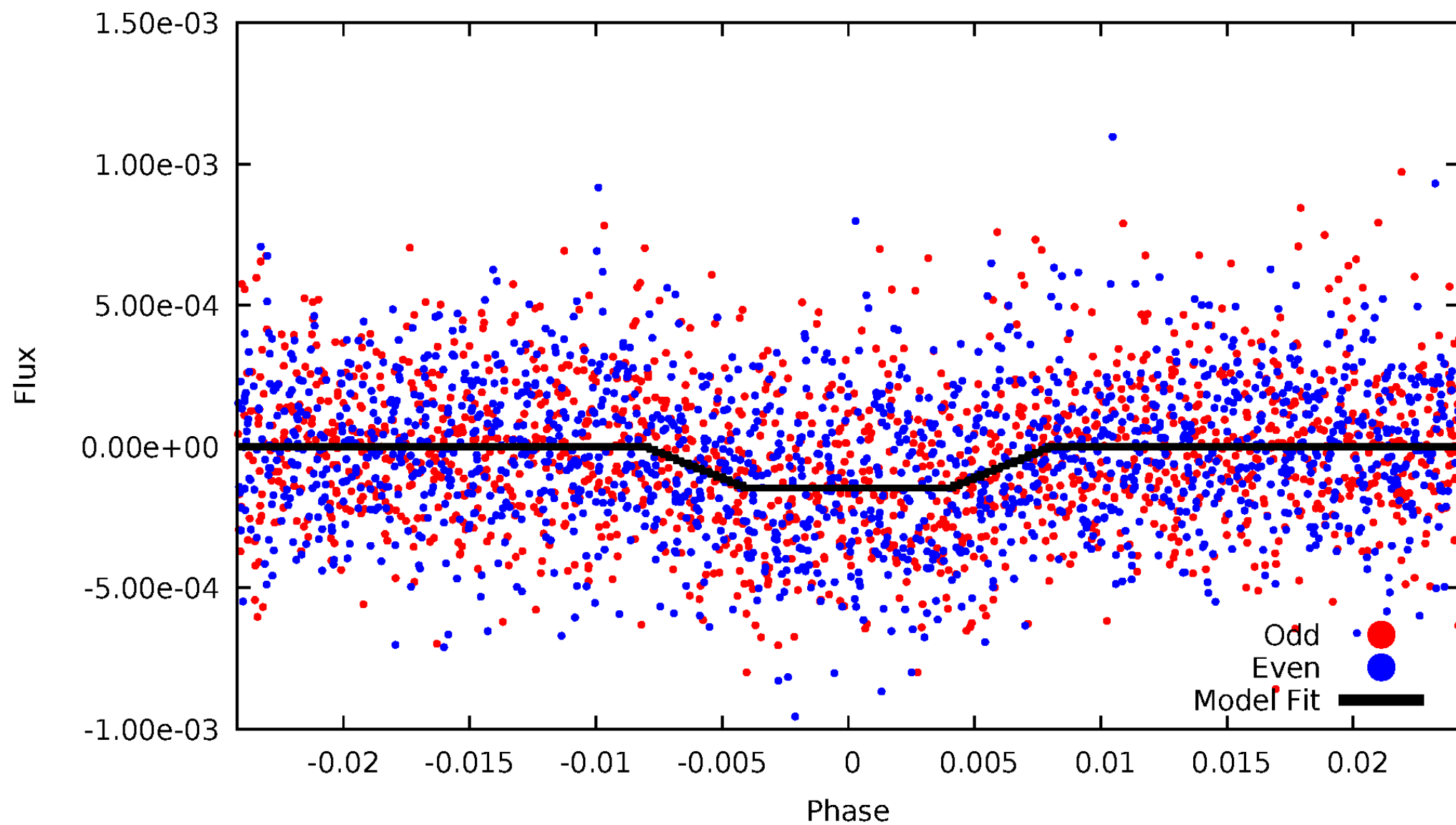
TCE 006072593-01





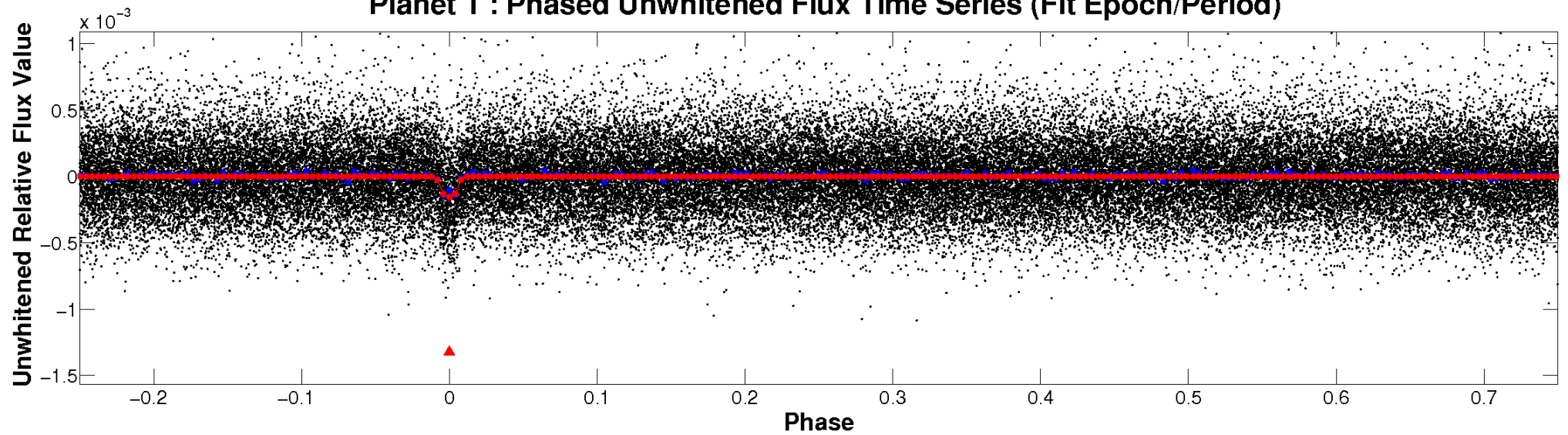
# ALT Odd/Even

TCE 006072593-01

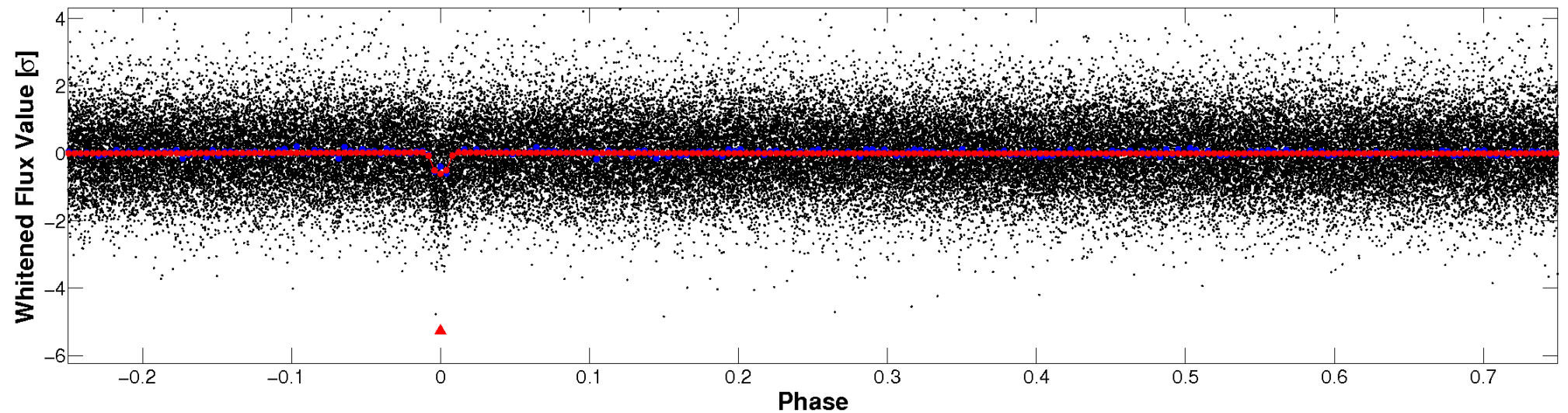


# Non-Whitened Vs. Whitened Light Curve

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

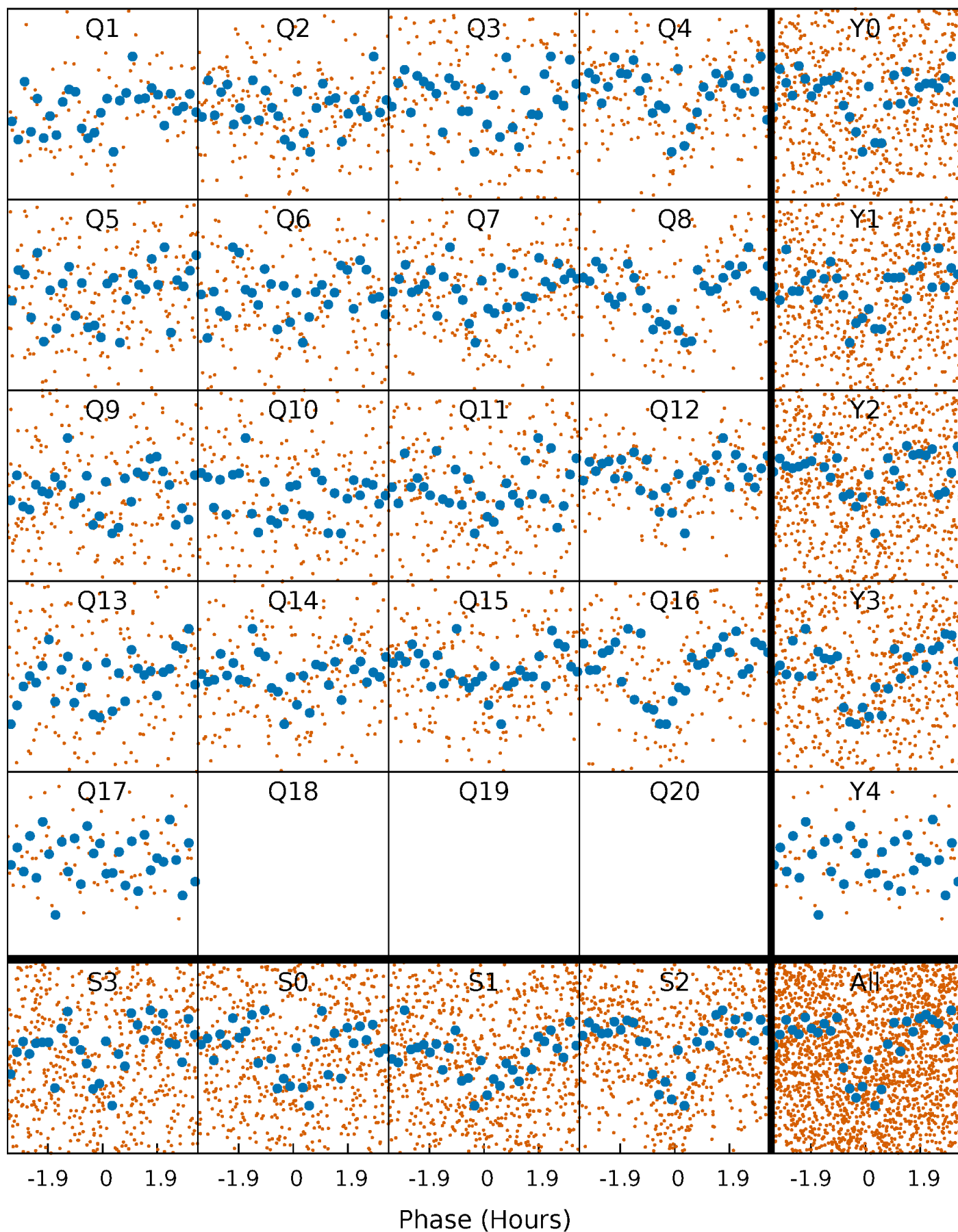


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

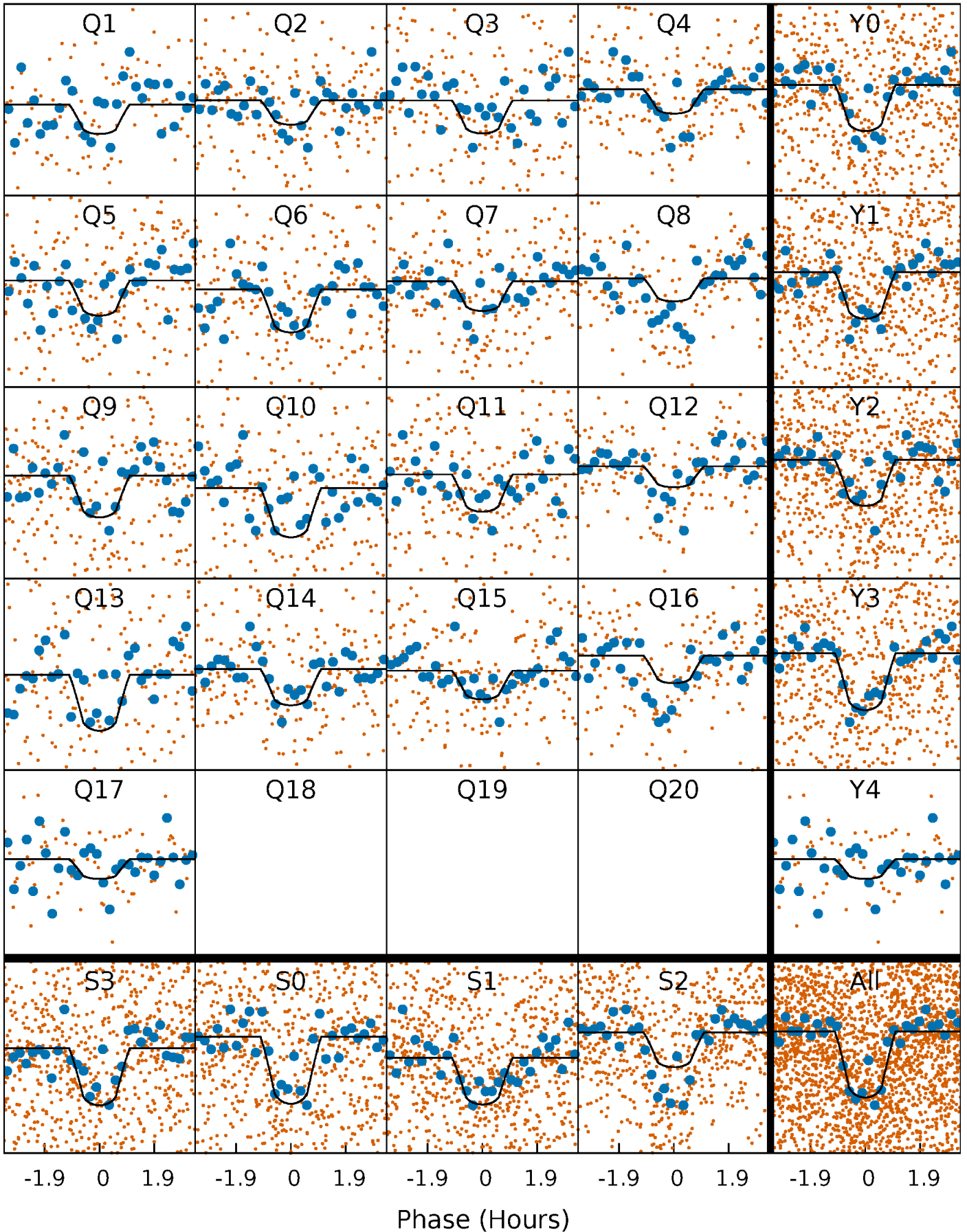
TCE 006072593-01 P= 5.075399 Days  $T_0=133.928869$  (BKJD)





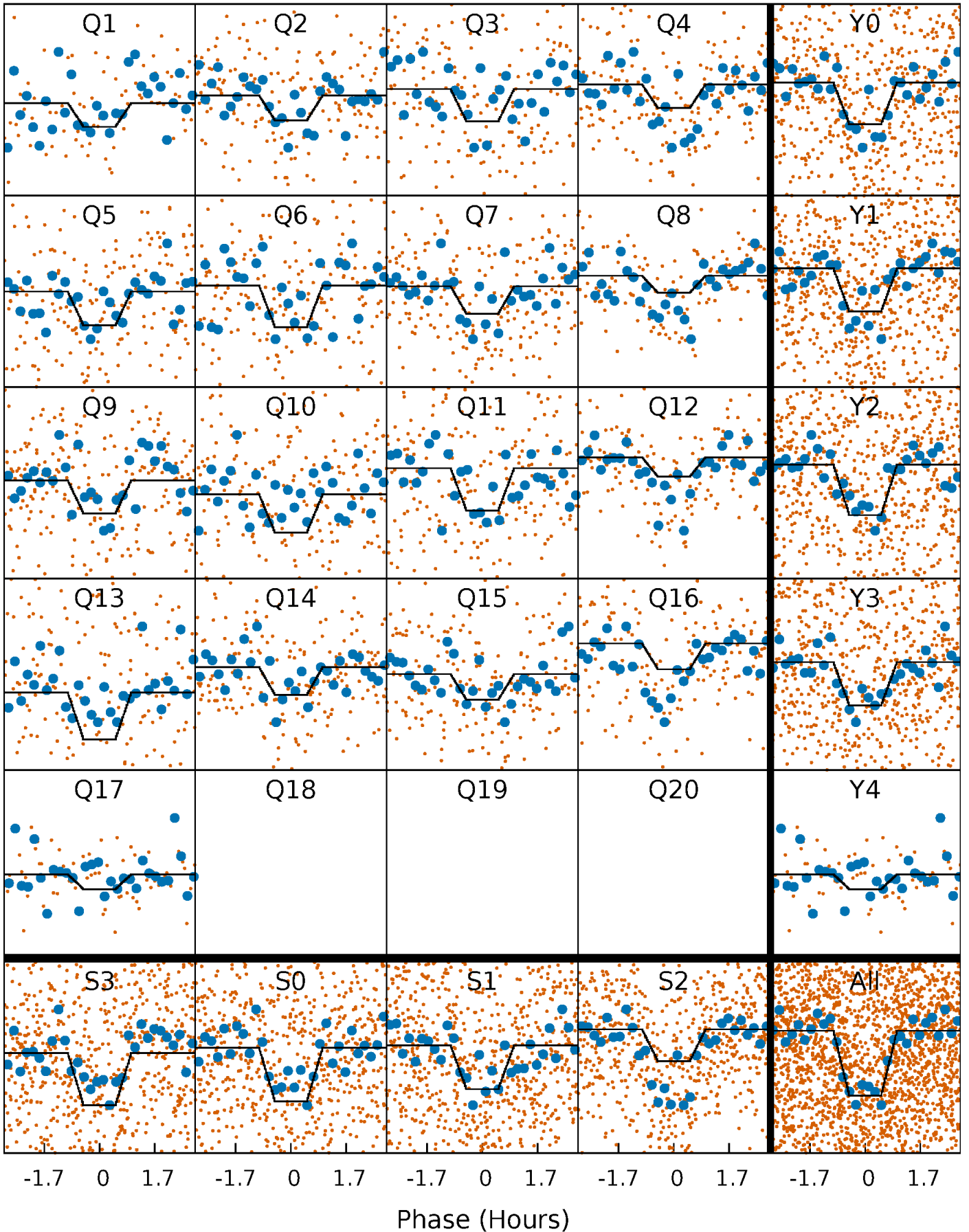
# DV Quarter-Phased Transit Curves

TCE 006072593-01 P= 5.075399 Days  $T_0=133.928869$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

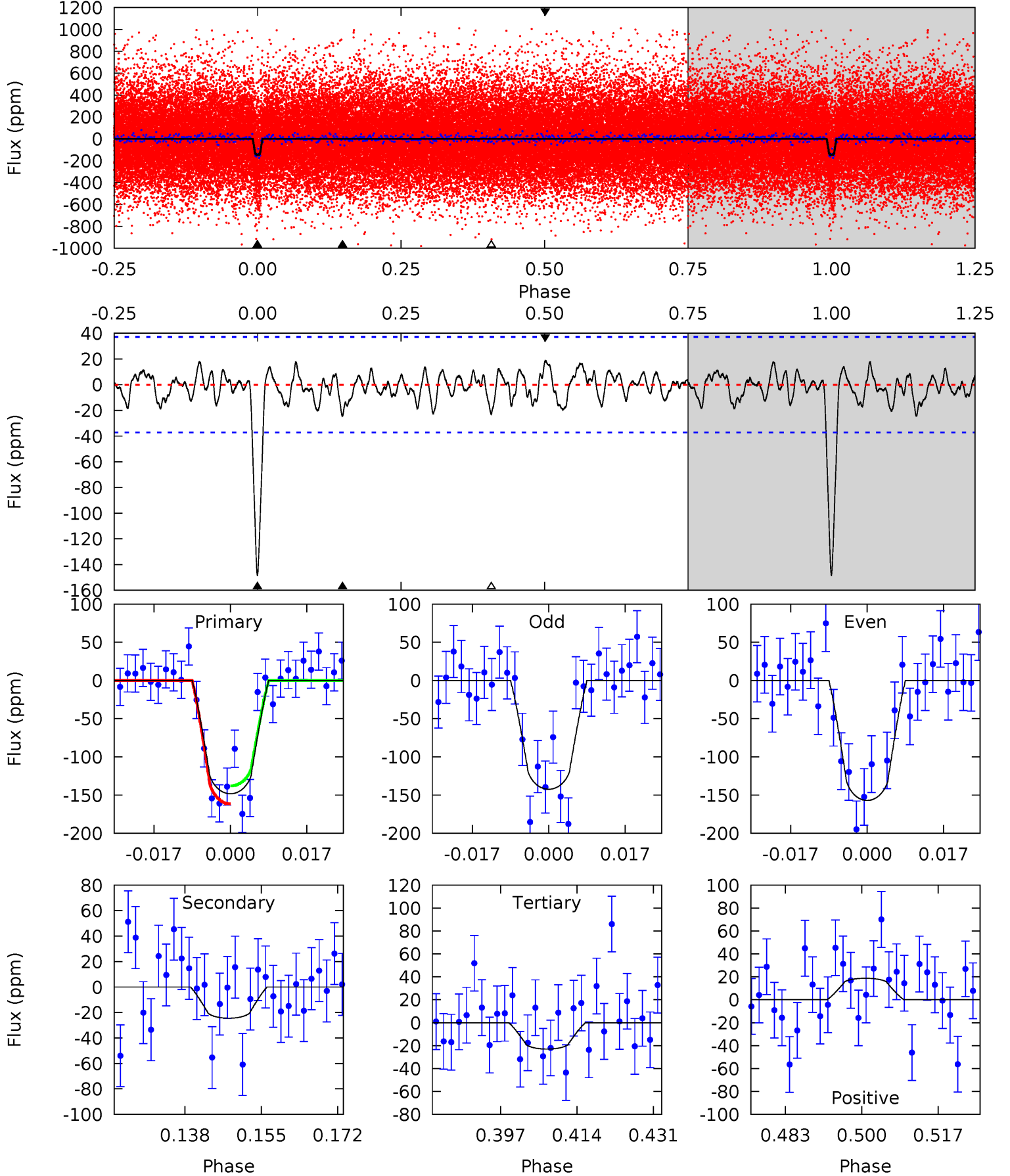
TCE 006072593-01 P= 5.075397 Days  $T_0=133.927912$  (BKJD)



# DV Model-Shift Uniqueness Test

006072593-01, P = 5.075399 Days, E = 128.853470 Days

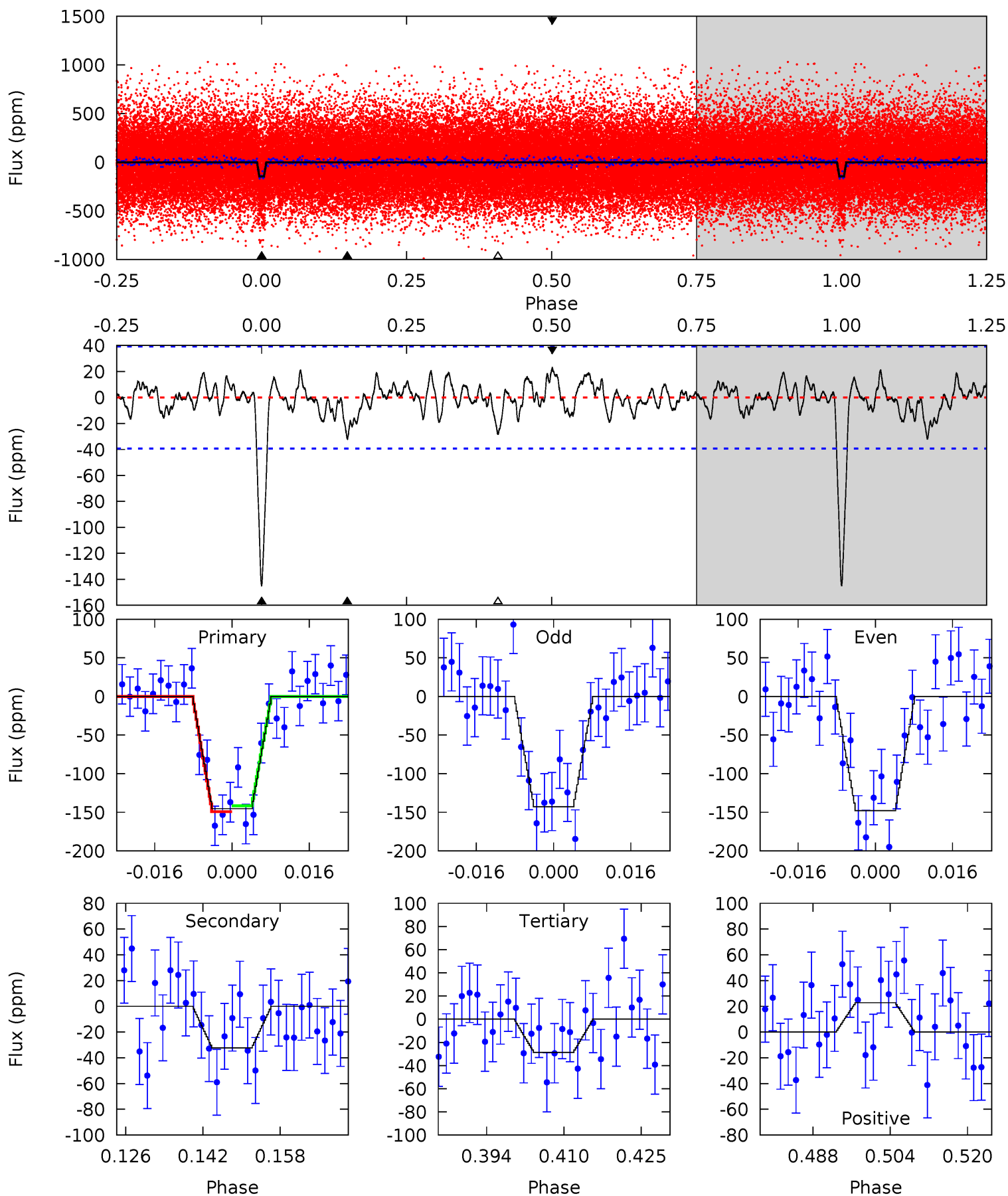
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.6	3.25	3.05	2.48	4.92	2.38	1.13	16.6	17.2	0.19	0.76	0.97	0.89	0.11	1.56



# Alt Model-Shift Uniqueness Test

006072593-01, P = 5.075397 Days, E = 128.852515 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
18.3	4.06	3.59	2.87	4.94	2.41	1.13	14.7	15.4	0.47	1.19	0.33	0.96	0.14	0.48



### Stellar Parameters For KIC 006072593

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5933^{+160}_{-178}$	$4.334^{+0.136}_{-0.187}$	$-0.100^{+0.300}_{-0.300}$	$1.118^{+0.314}_{-0.210}$	$0.983^{+0.146}_{-0.119}$	$0.991^{+0.695}_{-0.470}$
	+3%/-3%	+3%/-4%	+300%/-300%	+28%/-19%	+15%/-12%	+70%/-47%
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 006072593-01 / KOI 3070.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-25 \pm 8$	$1.47^{+0.63}_{-0.59}$	$1627^{+123}_{-100}$	$4118^{+844}_{-517}$	$20^{+36}_{-11}$
Alt.	$-32 \pm 8$	$1.48^{+0.61}_{-0.55}$	$1617^{+118}_{-101}$	$4282^{+876}_{-536}$	$26^{+42}_{-14}$

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



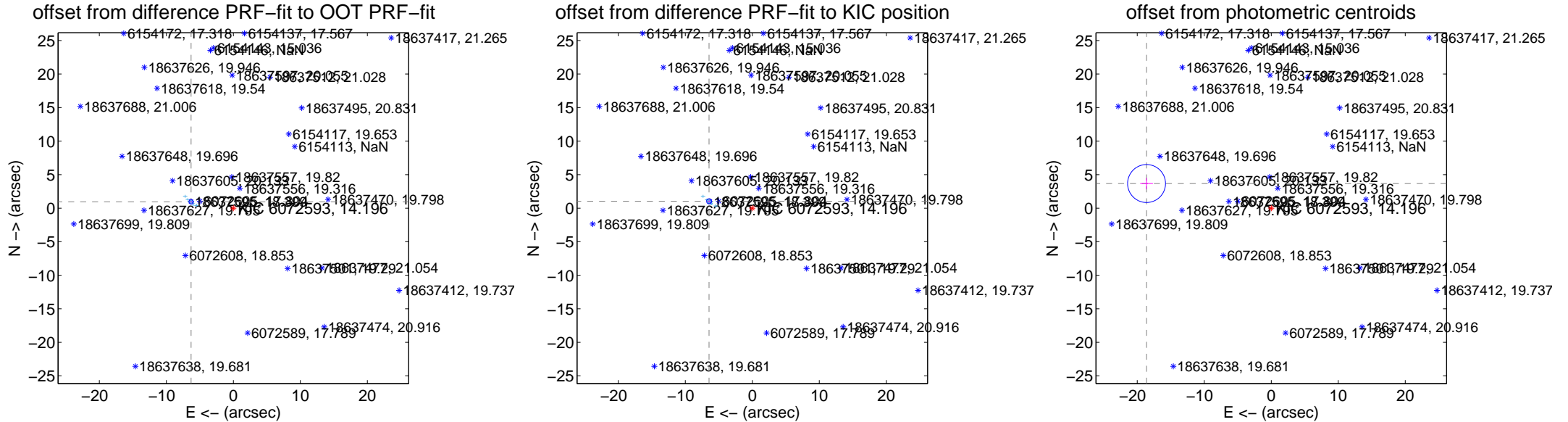
## DV Centroid Data

Supplemental centroid analysis for 006072593-01. Kepler magnitude: 14.20. Transit SNR 14.86

There are 17 quarters with good PRF difference image offsets

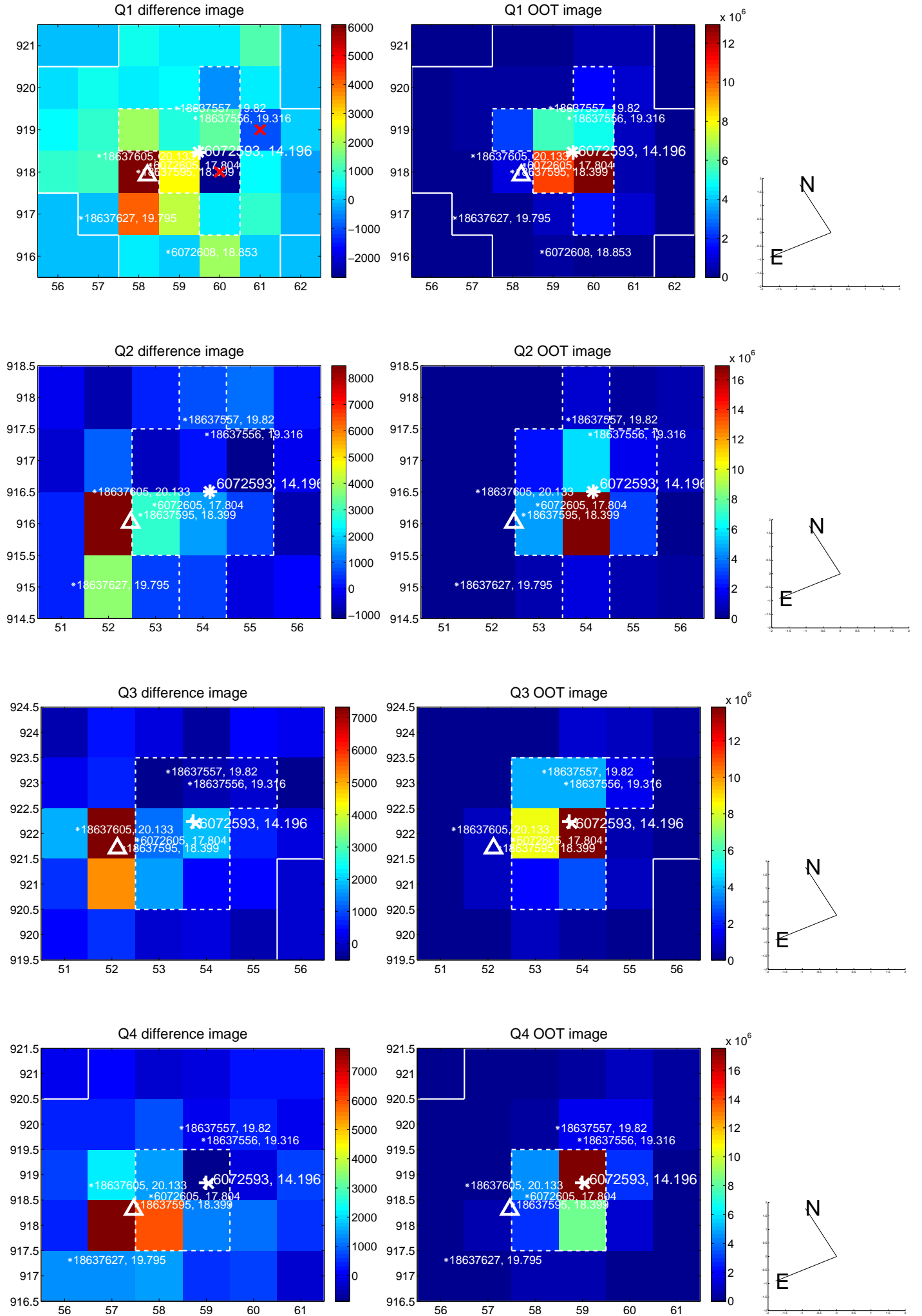
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	6.375 $\pm$ 0.109	58.61	6.304 $\pm$ 0.103	0.950 $\pm$ 0.095
PRF-fit source offset from KIC position	6.537 $\pm$ 0.123	53.08	6.455 $\pm$ 0.115	1.033 $\pm$ 0.102
photometric centroid source offset	18.98 $\pm$ 0.94	20.12	18.62 $\pm$ 0.95	3.68 $\pm$ 0.83

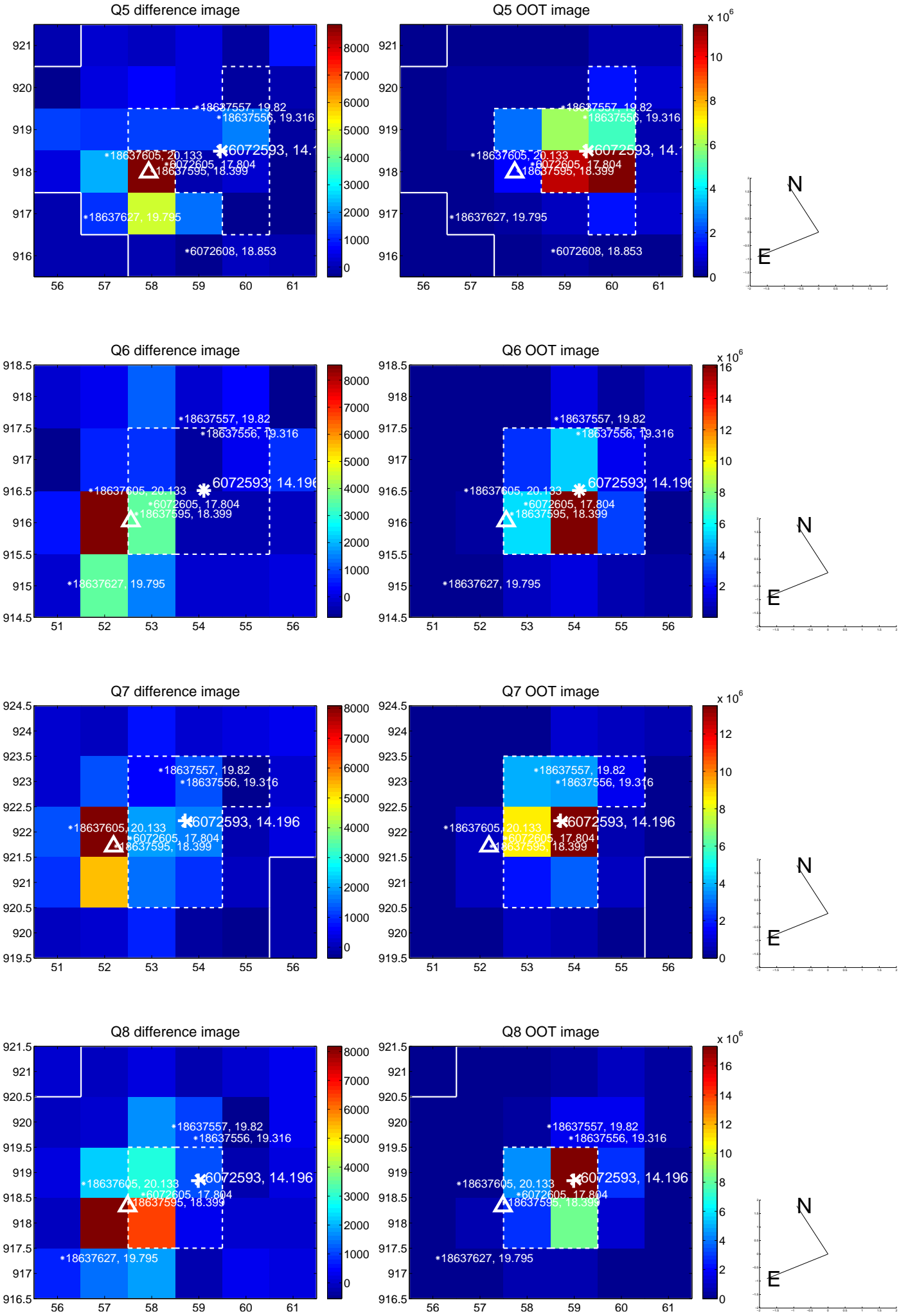


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

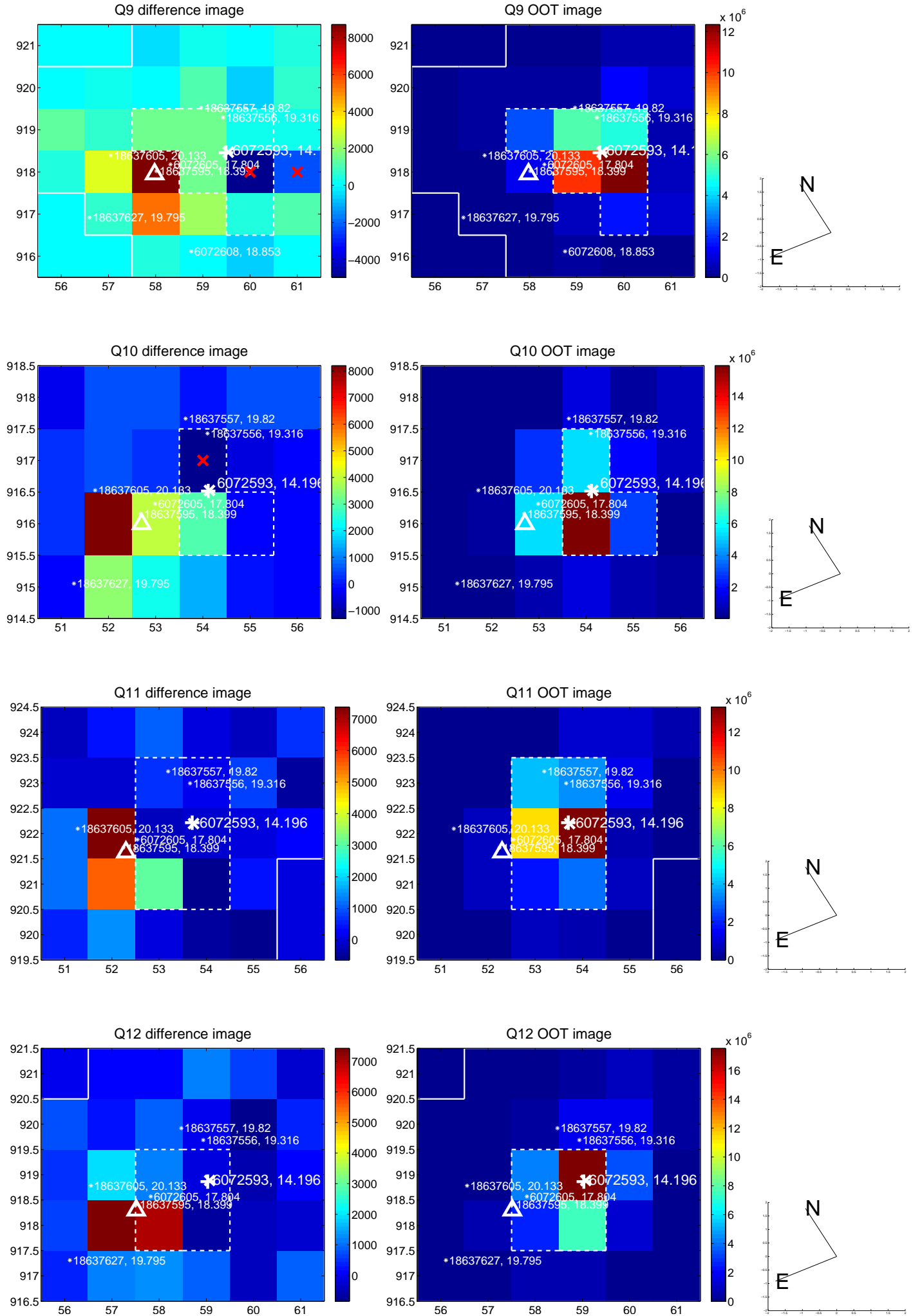
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



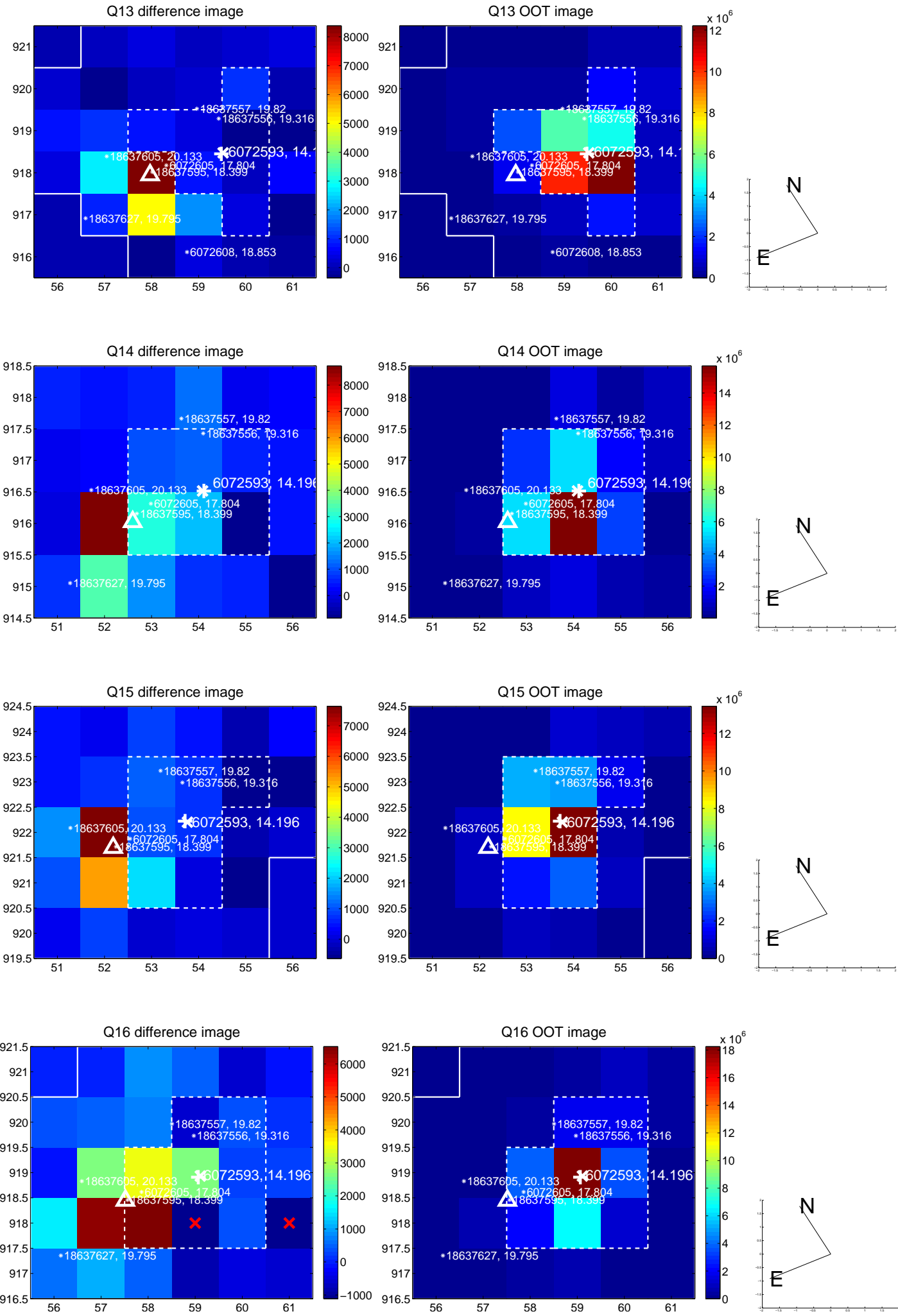
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

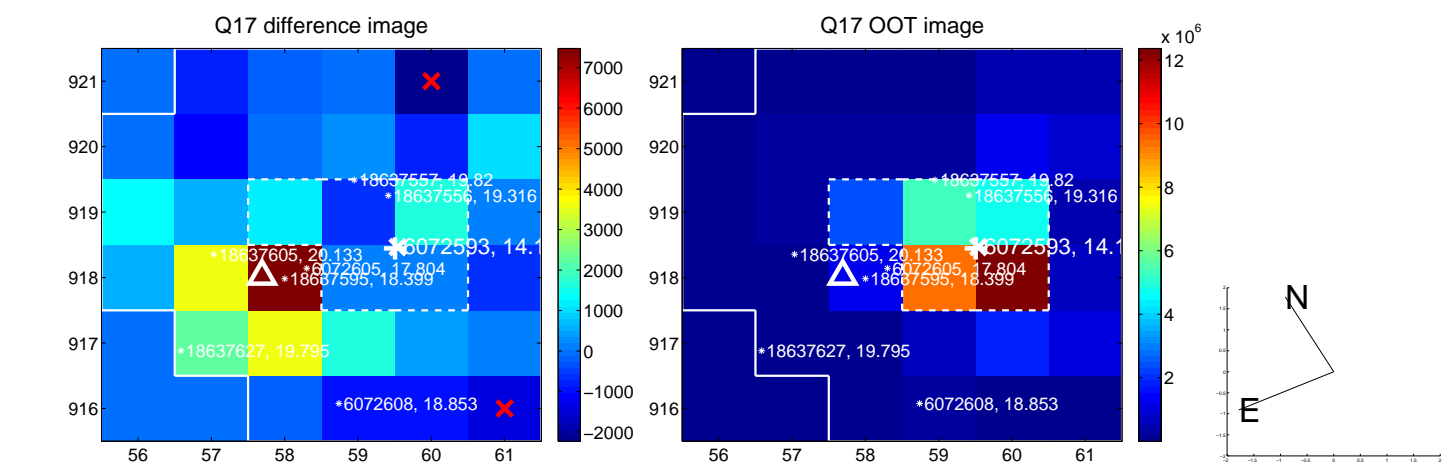


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

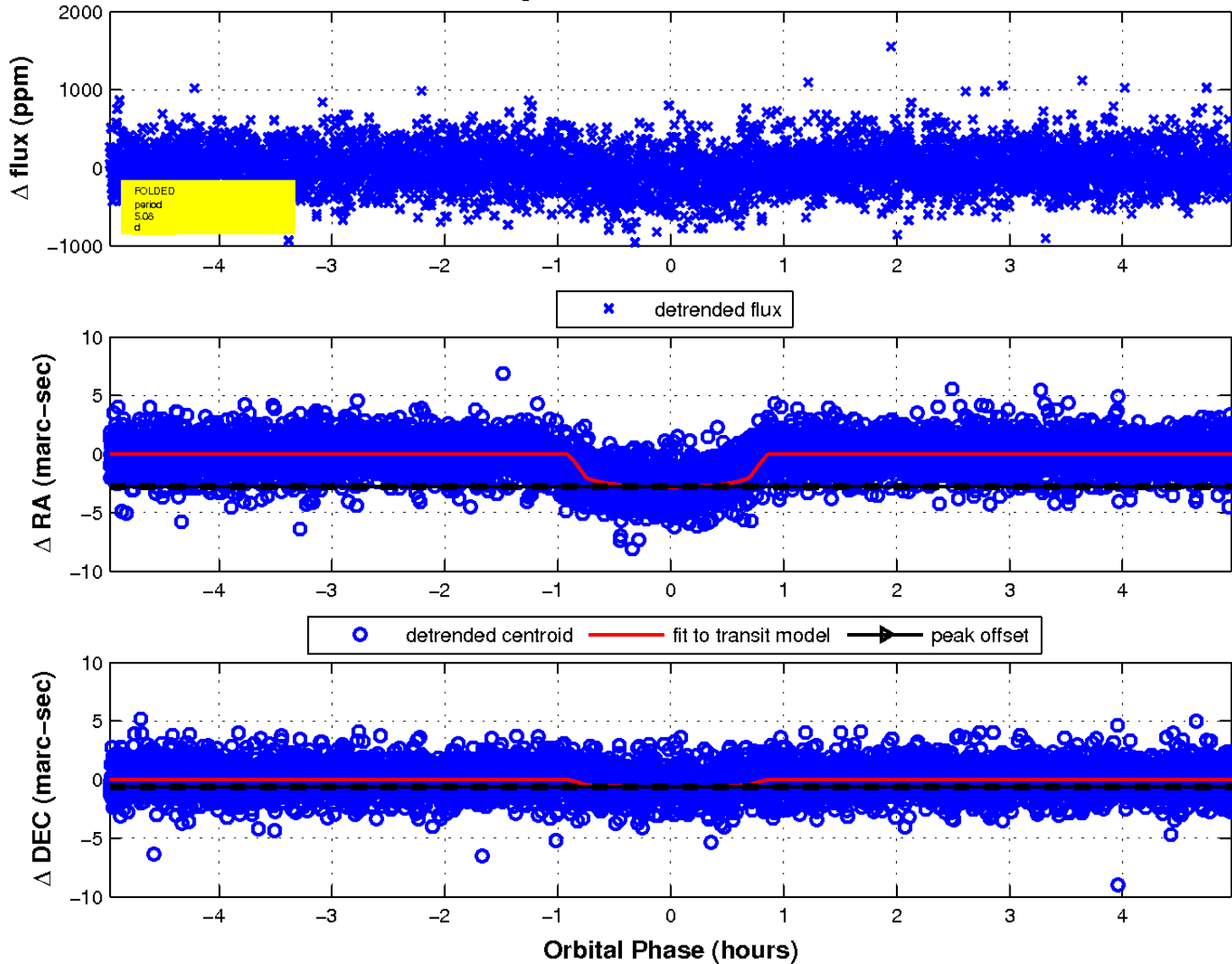




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\Delta$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

