

# KIC 006387591

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006387591-01	OBS	No	1.134768	132.344284	32.1	12.088	12.1	10.8	3.07	5057	1.73	13528.66

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006387591-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

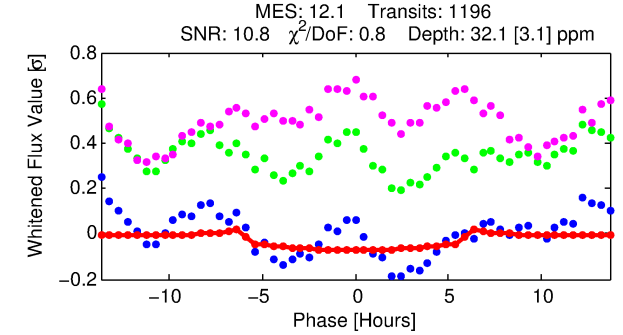
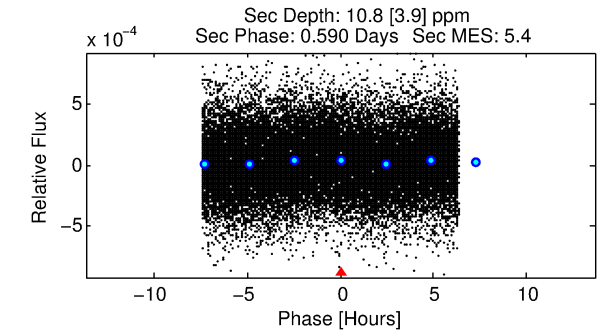
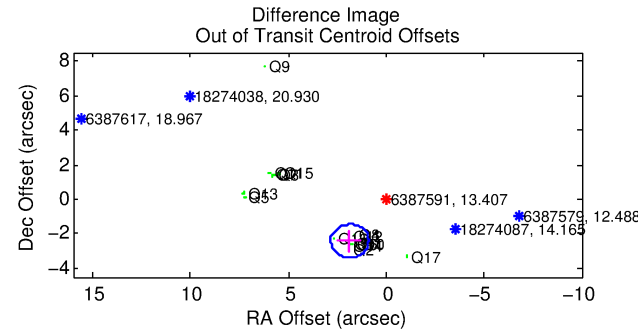
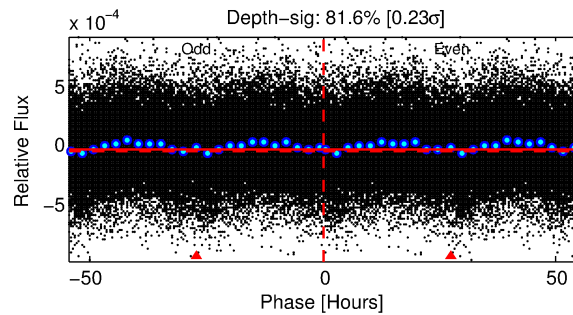
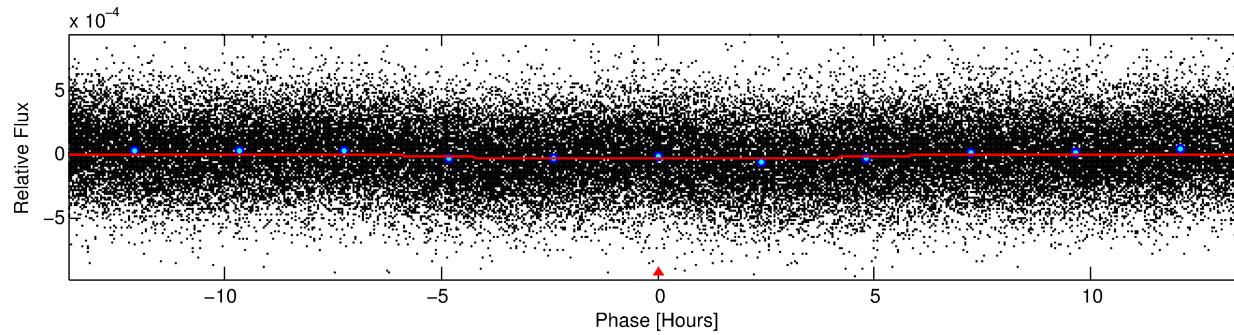
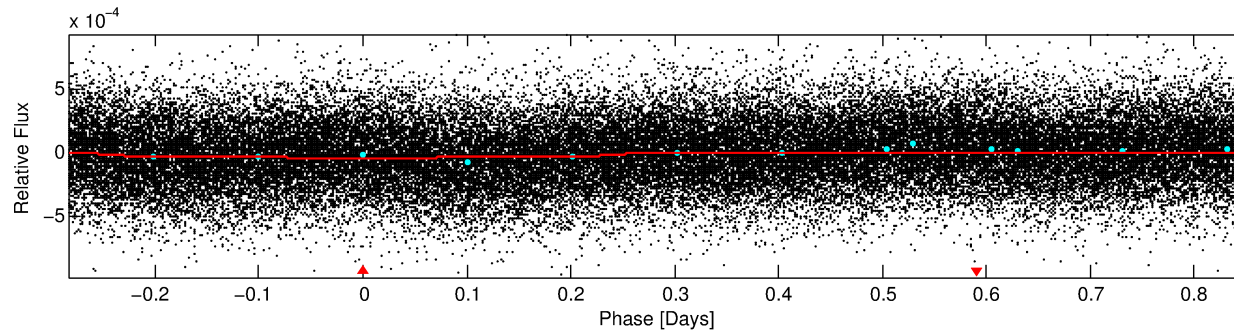
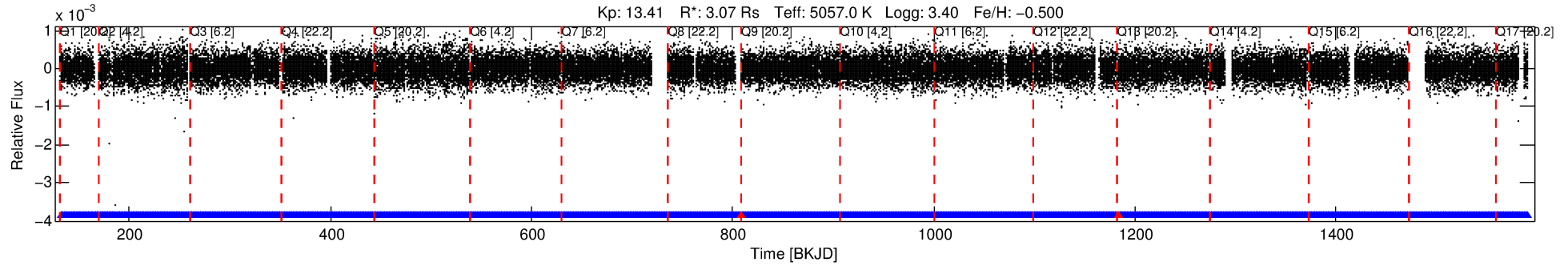
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006387591-01

No Significant Match Found

# DV One-Page Summary

KIC: 6387591 Candidate: 1 of 1 Period: 1.135 d



## DV Fit Results:

Period = 1.13477 [0.00002] d  
Epoch = 132.3443 [0.0072] BKJD  
Rp/R\* = 0.0052 [0.0027]  
a/R\* = 1.02 [0.07]  
b = 0.37 [4.85]  
Seff = 13528.66 [7861.31]  
Teq = 2750 [400] K  
Rp = 1.73 [1.29] Re  
a = 0.0202 [0.0085] AU  
Ag = 0.81 [1.01] [-0.19 $\sigma$ ]  
Teffp = 4037 [1121] K [1.08 $\sigma$ ]

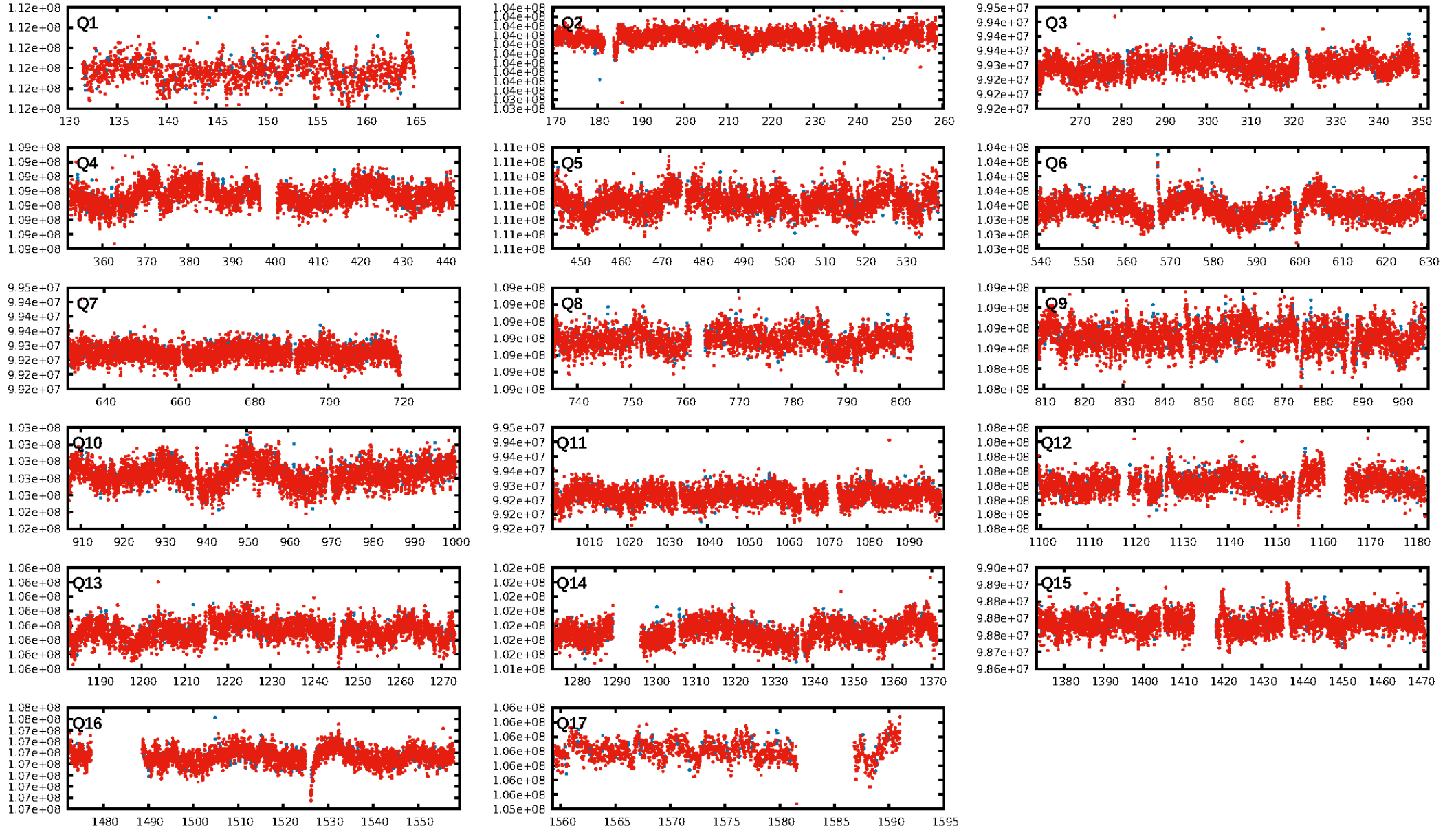
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1141/1143]  
GhostDiagnostic-chr: 4.801  
Centroid-sig: 0.0%  
Centroid-so: 0.264 arcsec [0.58 $\sigma$ ]  
OotOffset-rm: 3.057 arcsec [9.46 $\sigma$ ]  
KicOffset-rm: 3.063 arcsec [3.99 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.12 [2/17]  
DiffImageOverlap-fno: 1.00 [17/17]

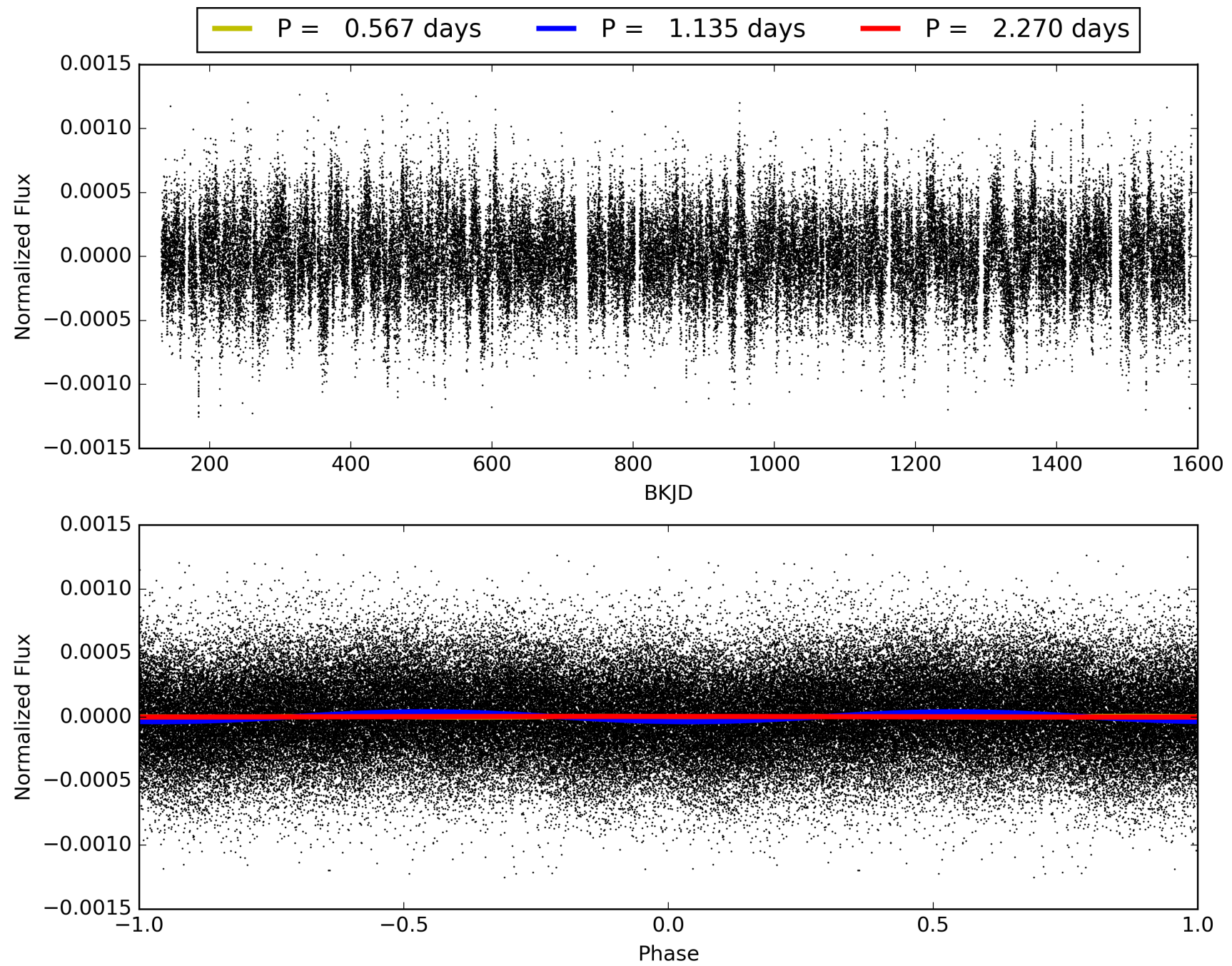
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:51:15 Z

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

# TCE 006387591-01, PDC Light Curves

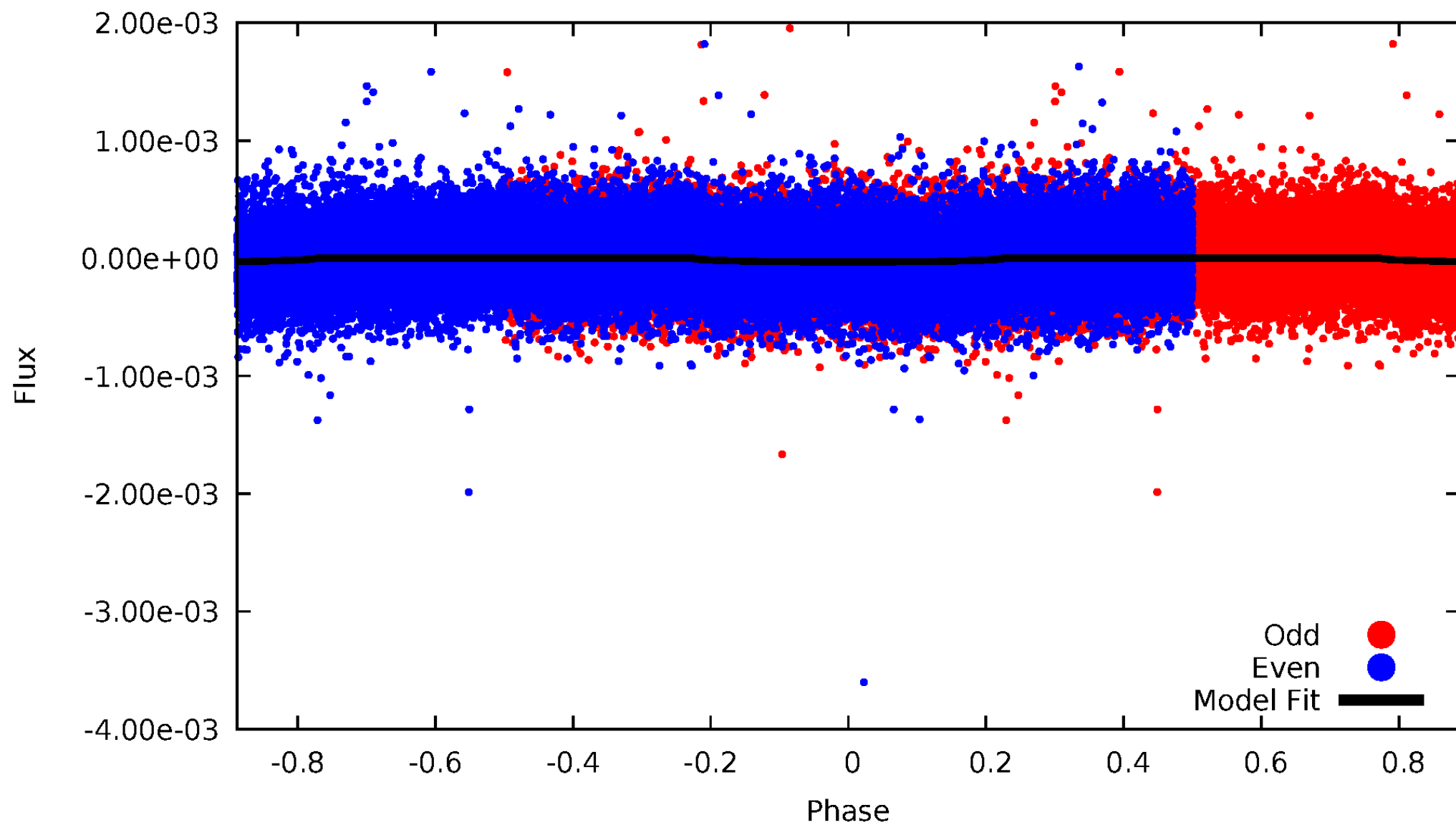


TCE 006387591-01



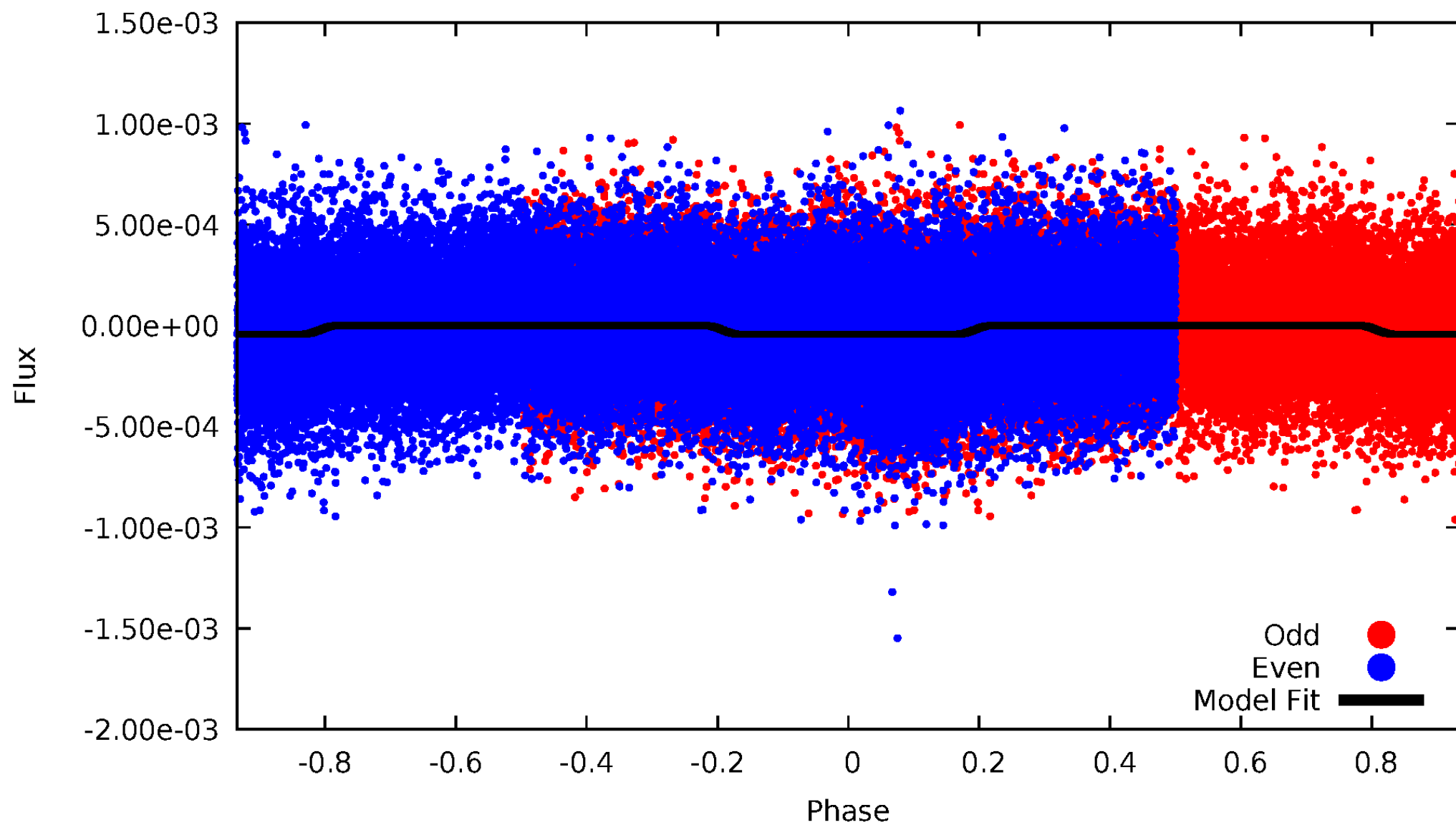
# DV Odd/Even

TCE 006387591-01



# ALT Odd/Even

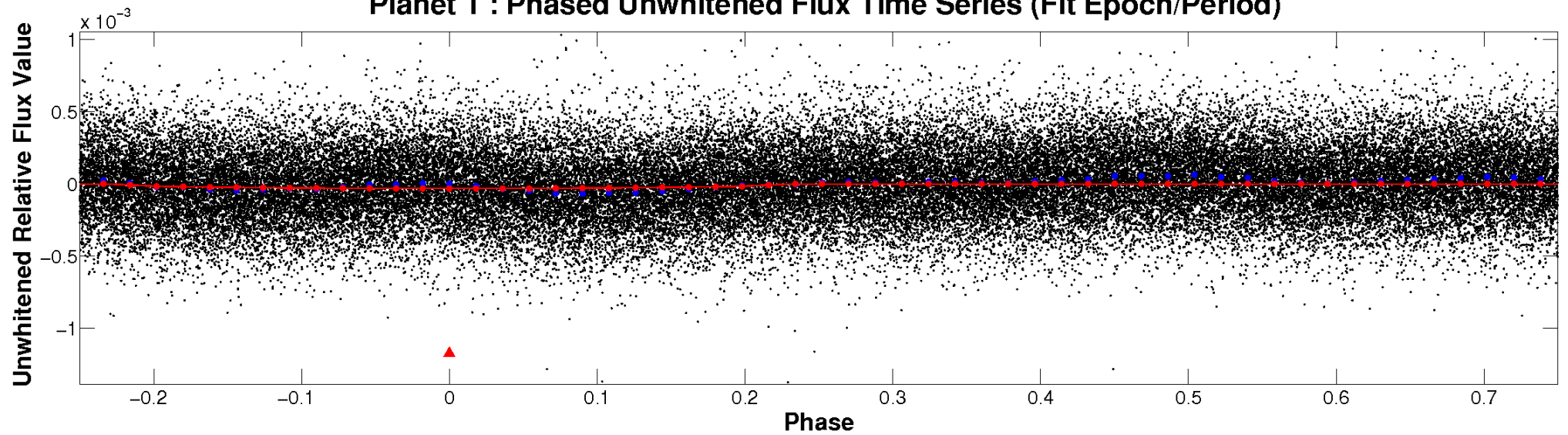
TCE 006387591-01



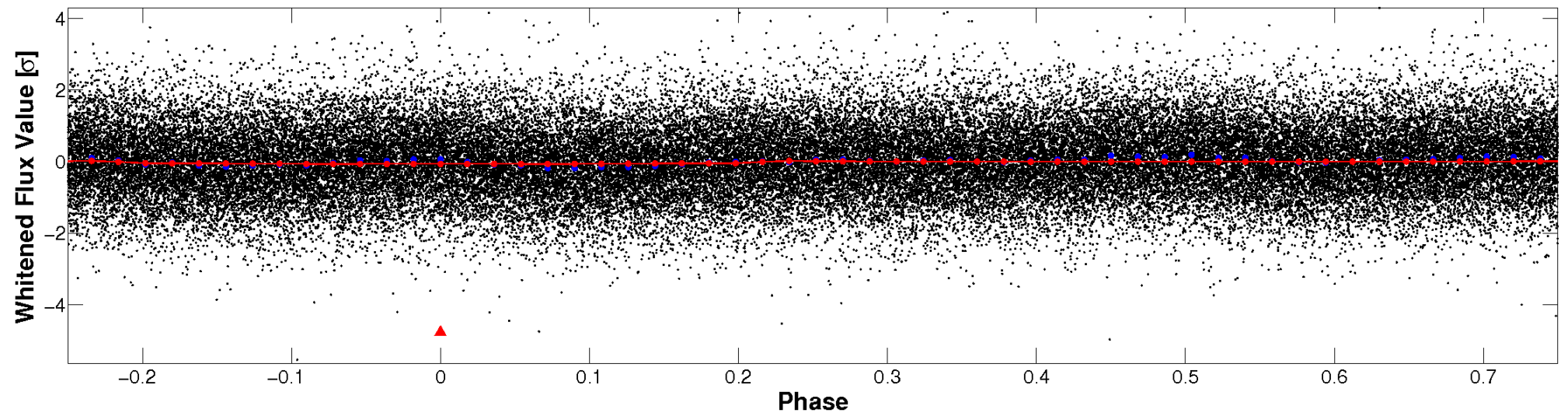


# Non-Whitened Vs. Whitened Light Curve

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

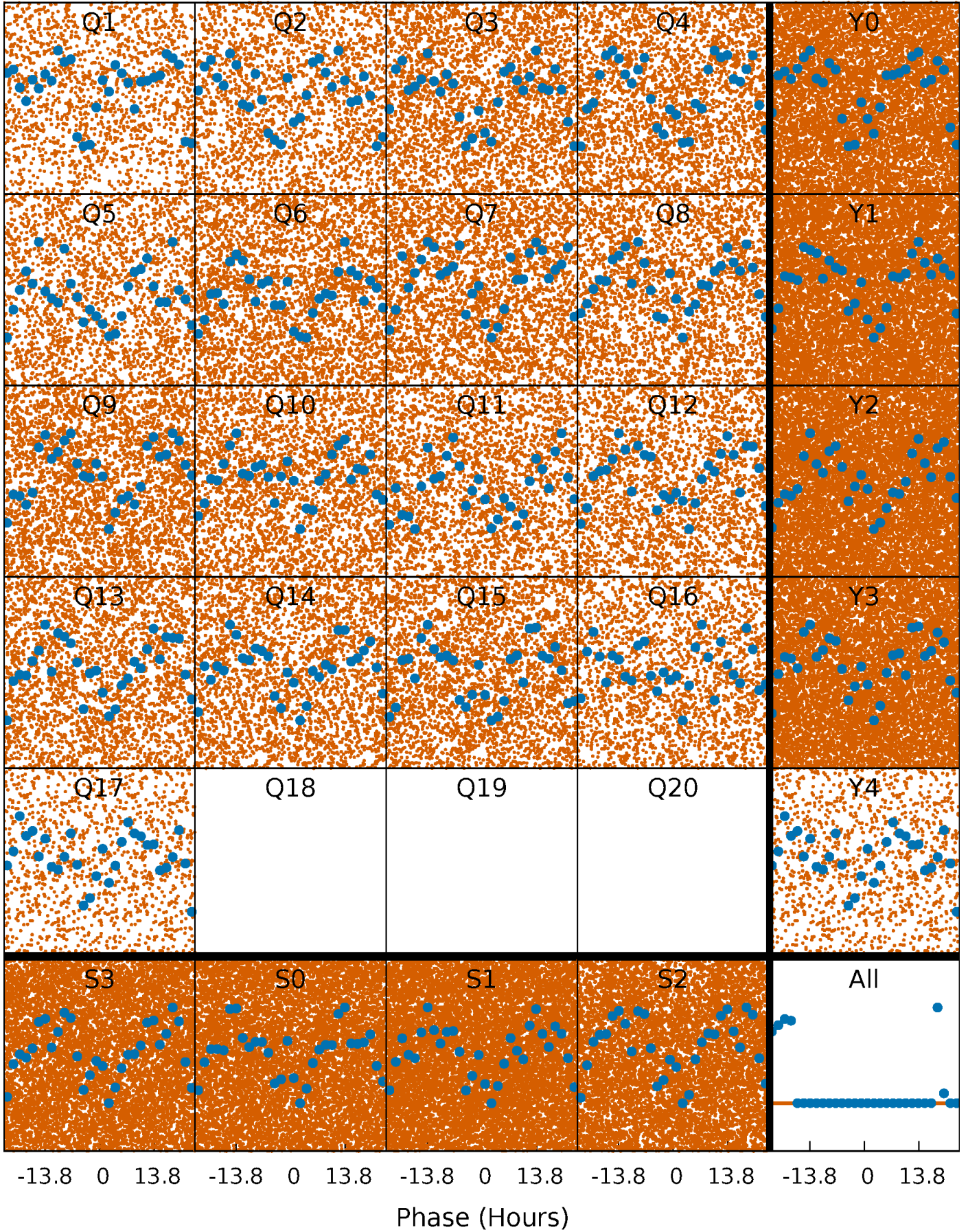


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

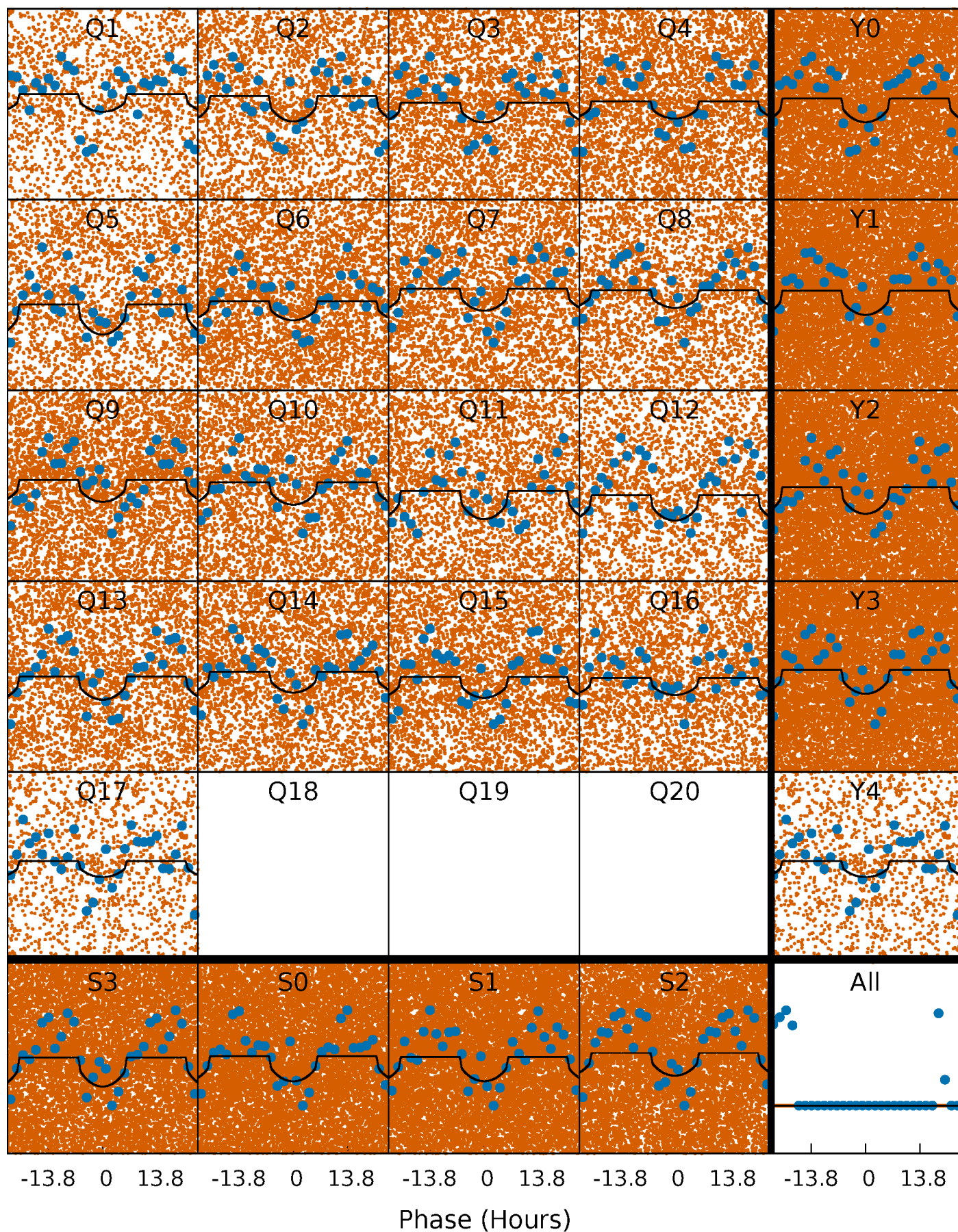
TCE 006387591-01 P= 1.134768 Days  $T_0=132.344284$  (BKJD)





# DV Quarter-Phased Transit Curves

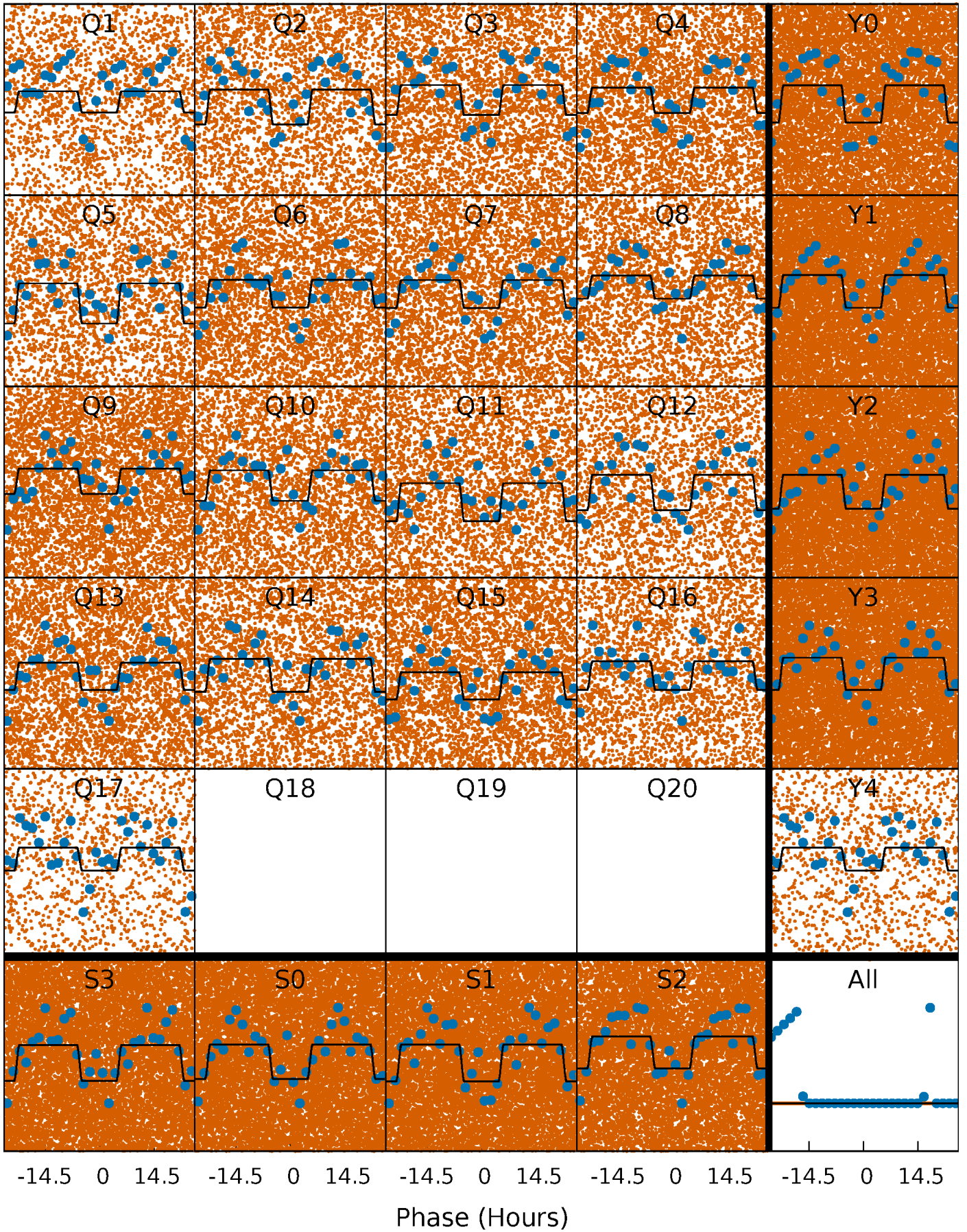
TCE 006387591-01 P= 1.134768 Days  $T_0=132.344284$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

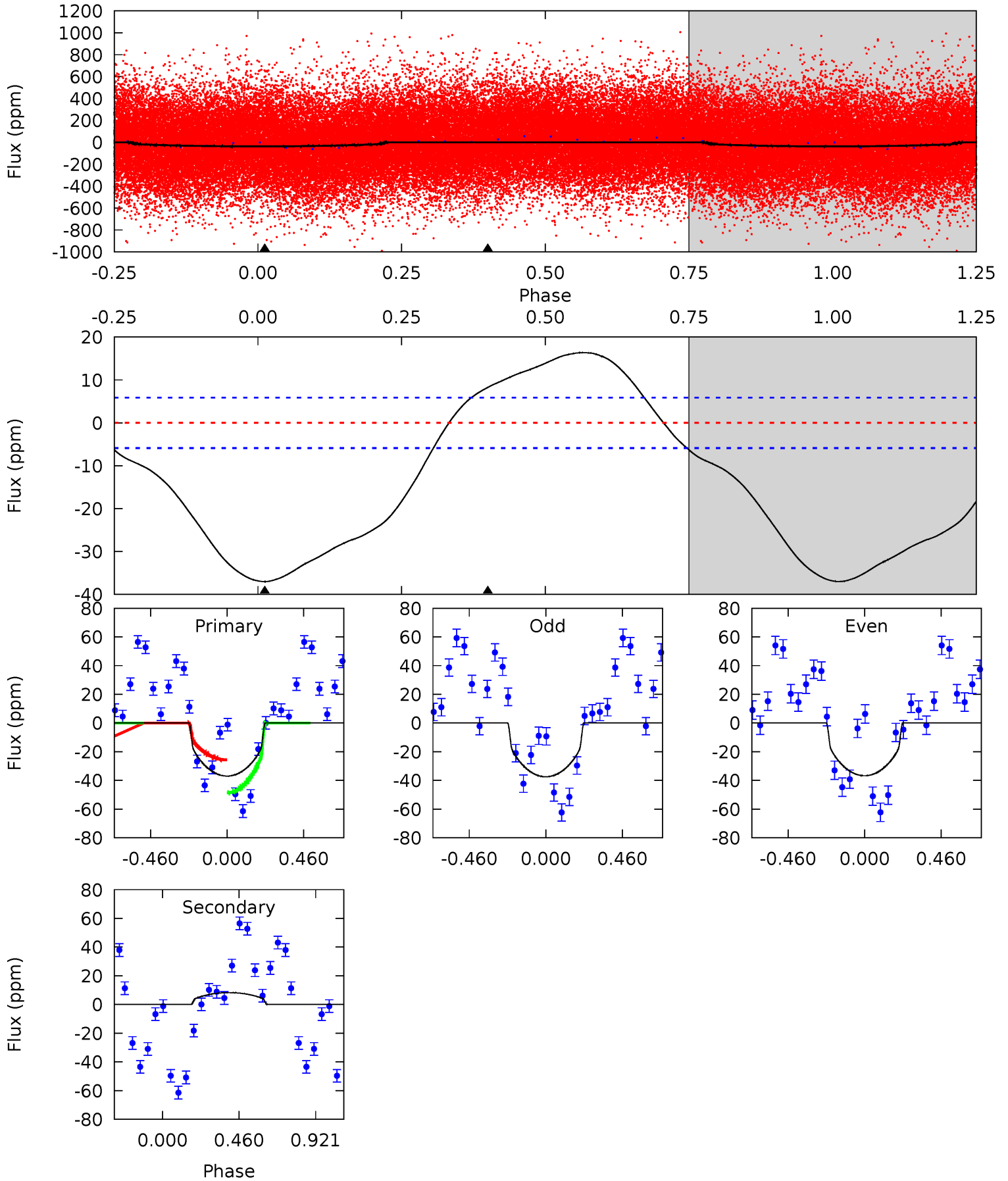
TCE 006387591-01 P= 1.134799 Days  $T_0=132.336740$  (BKJD)



# DV Model-Shift Uniqueness Test

006387591-01, P = 1.134768 Days, E = 131.209516 Days

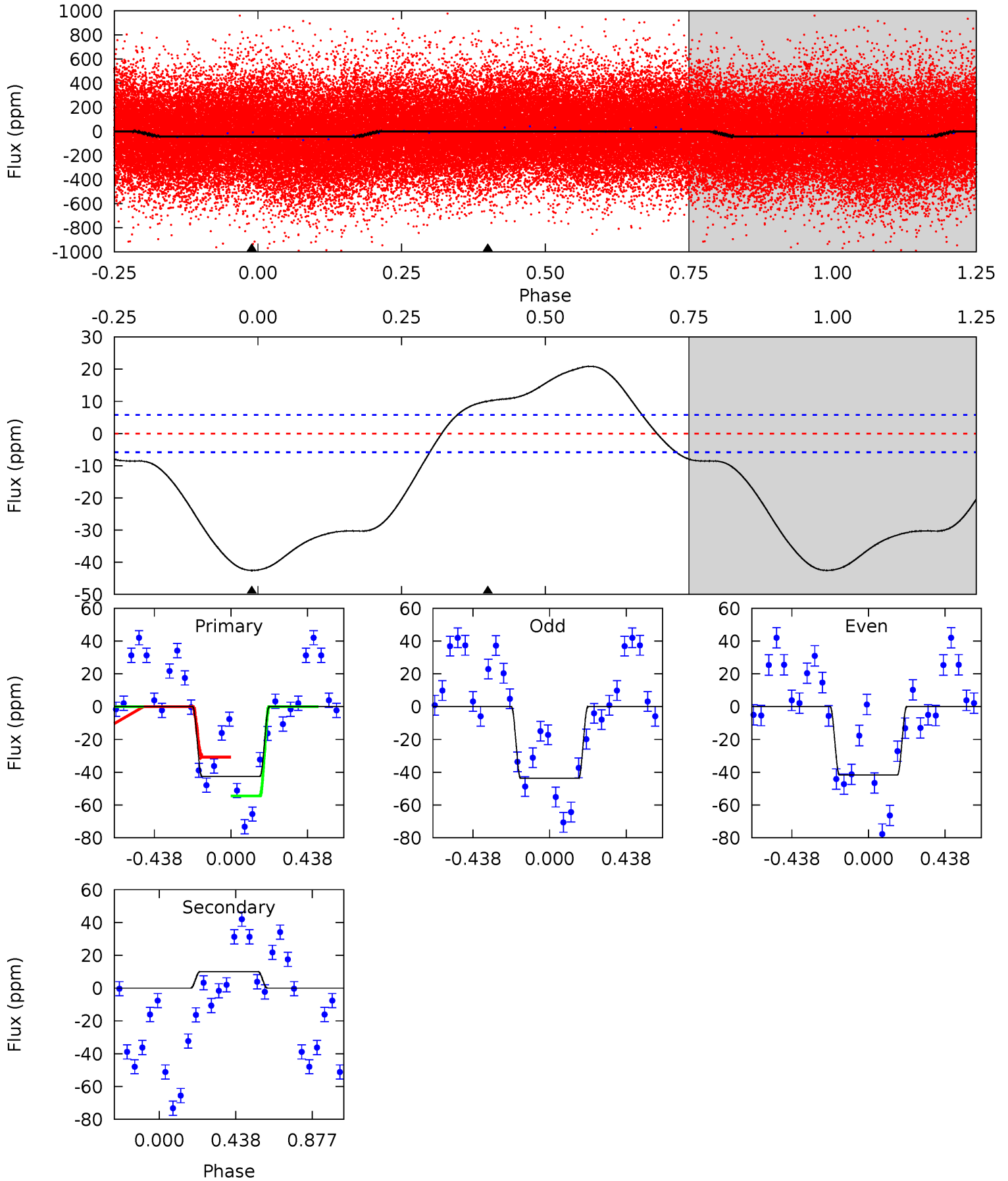
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.7	-5.96	0	0	4.23	0.74	3.39	26.7	26.7	-5.96	-5.96	0.26	1.03	0.31	8.27



# Alt Model-Shift Uniqueness Test

006387591-01, P = 1.134799 Days, E = 131.201941 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
31.1	-7.36	0	0	4.24	0.78	4.30	31.1	31.1	-7.36	-7.36	0.76	1.12	0.33	8.54





### Stellar Parameters For KIC 006387591

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5057^{+140}_{-102}$	$3.395^{+0.290}_{-0.290}$	$-0.500^{+0.300}_{-0.200}$	$3.069^{+1.642}_{-0.884}$	$0.852^{+0.321}_{-0.128}$	$0.042^{+0.065}_{-0.029}$
	+3%/-2%	+9%/-9%	+60%/-40%	+54%/-29%	+38%/-15%	+157%/-69%
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 006387591-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$8\pm 1$	$1.74^{+1.13}_{-0.86}$	$3844^{+489}_{-356}$	$-4396^{+438}_{-976}$	$-0.616^{+0.373}_{-1.930}$
Alt.	$10\pm 1$	$2.20^{+1.16}_{-0.89}$	$3858^{+475}_{-355}$	$-4254^{+344}_{-685}$	$-0.481^{+0.271}_{-0.947}$

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

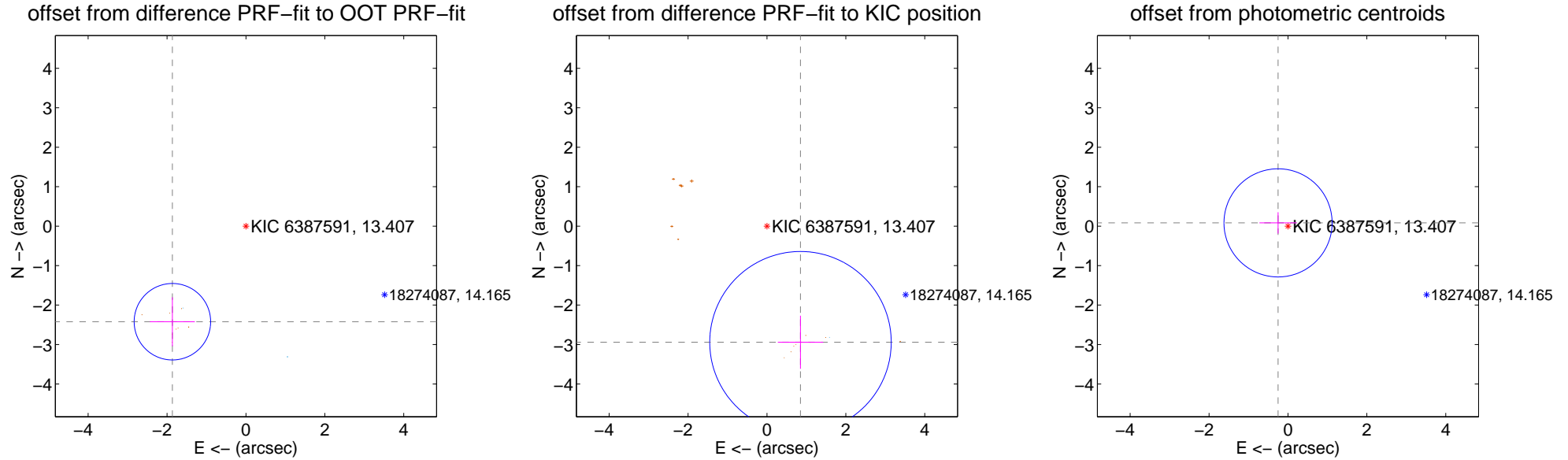
## DV Centroid Data

Supplemental centroid analysis for 006387591-01. Kepler magnitude: 13.41. Transit SNR 10.84

There are 2 quarters with good PRF difference image offsets

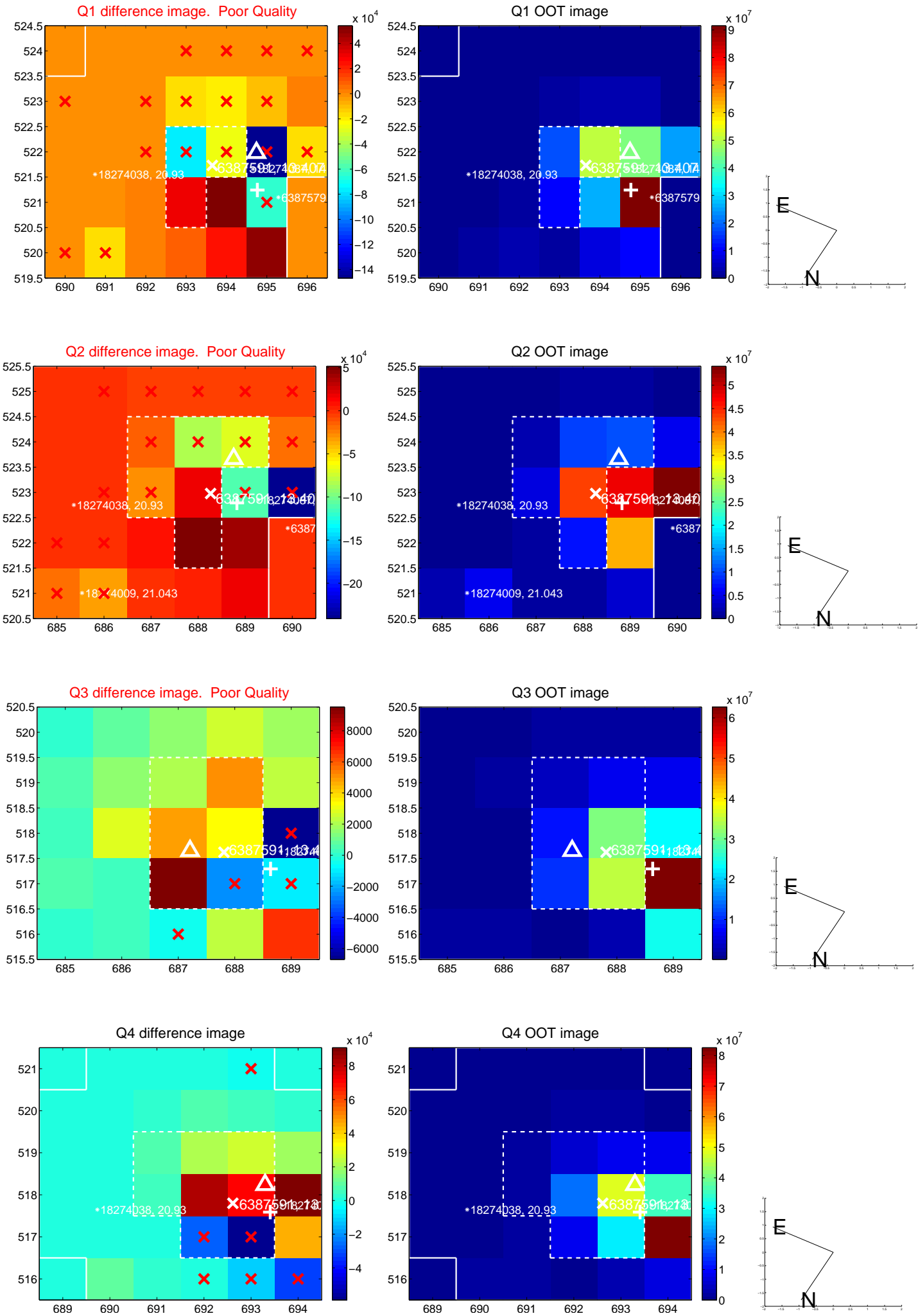
The OOT PRF centroid is offset from the target star catalog position by about 4.77 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.057 \pm 0.323$	9.46	$1.864 \pm 0.569$	$-2.422 \pm 0.619$
PRF-fit source offset from KIC position	$3.063 \pm 0.767$	3.99	$-0.850 \pm 0.575$	$-2.942 \pm 0.673$
photometric centroid source offset	$0.26 \pm 0.46$	0.58	$0.25 \pm 0.47$	$0.08 \pm 0.27$

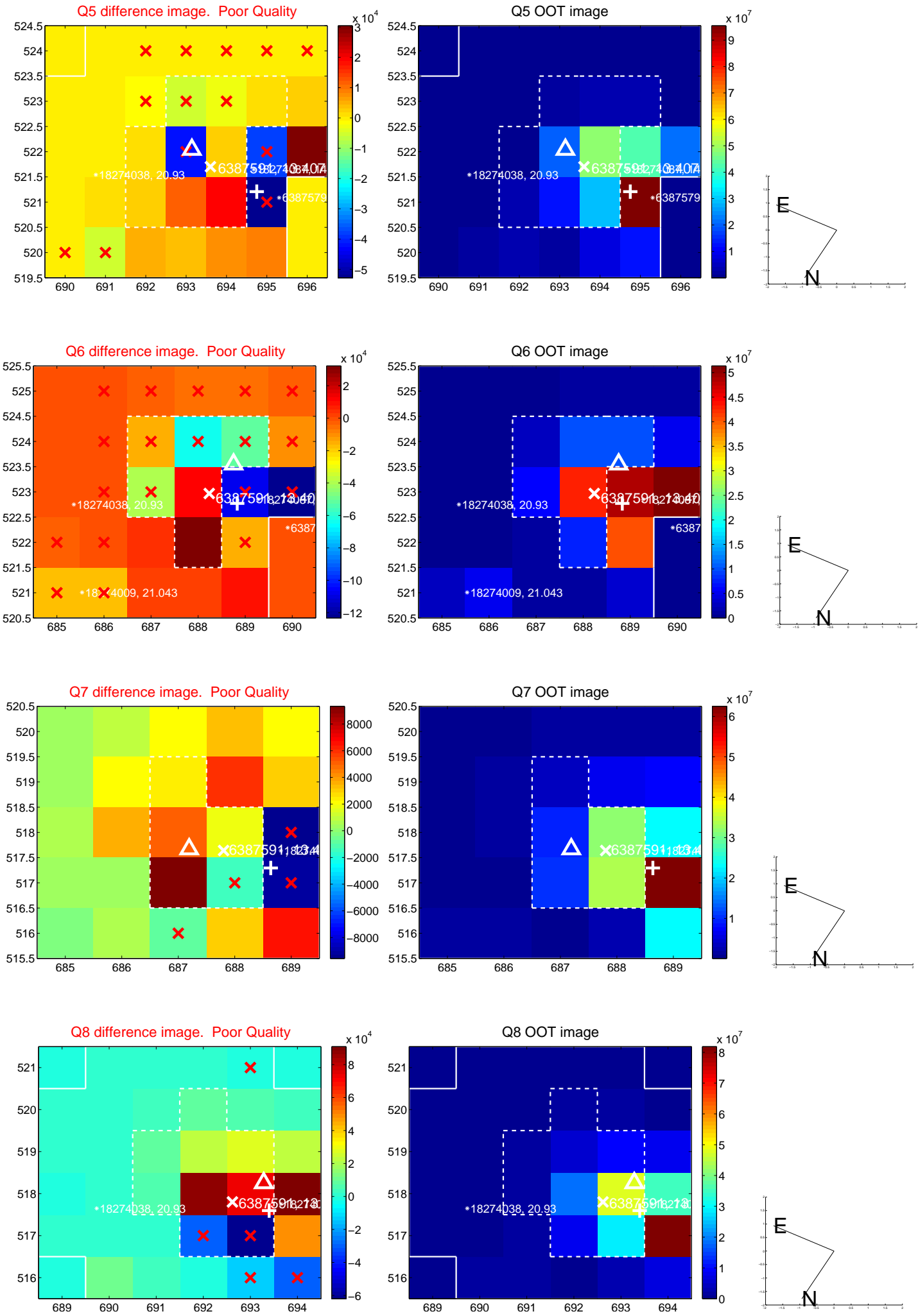


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

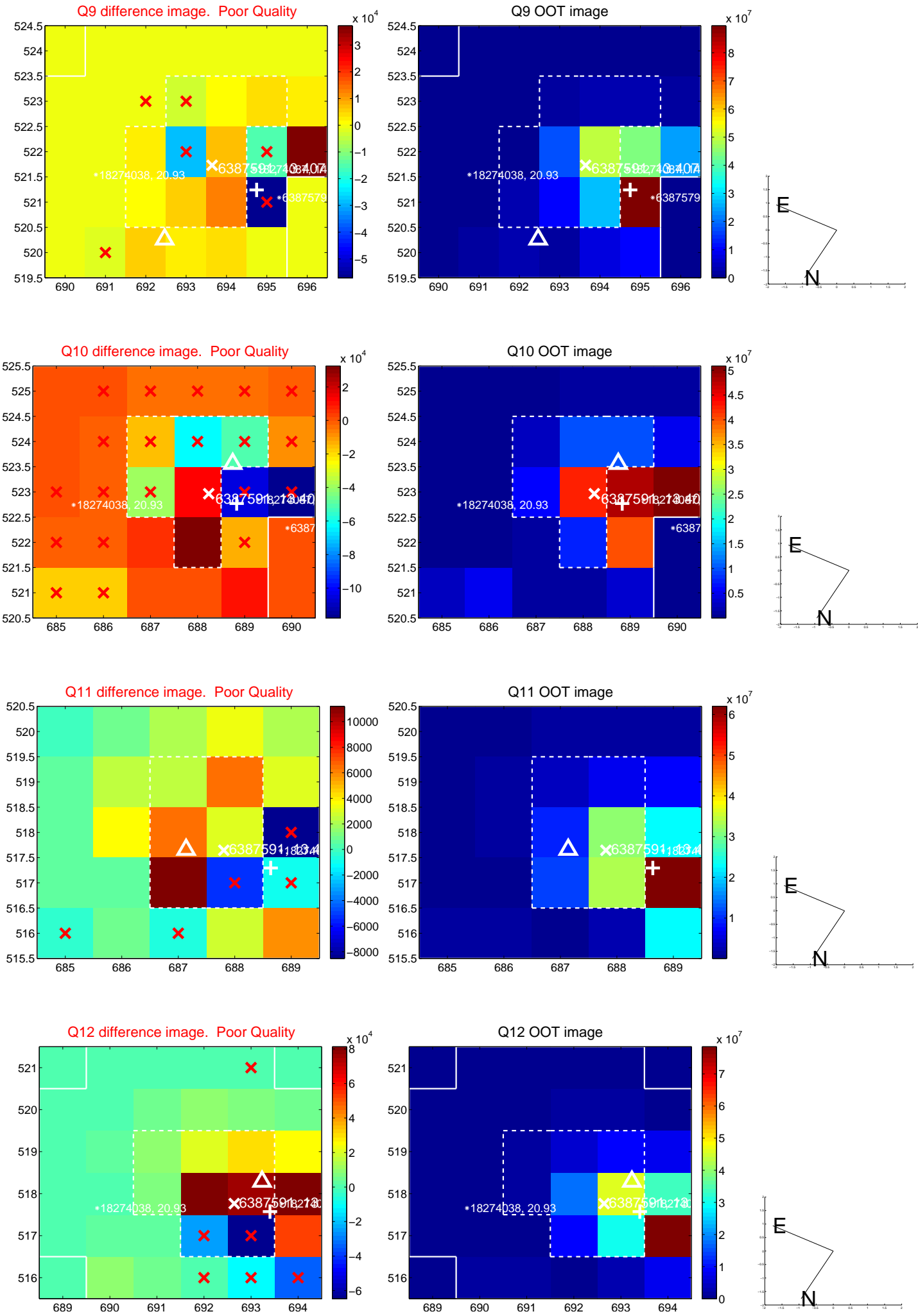


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

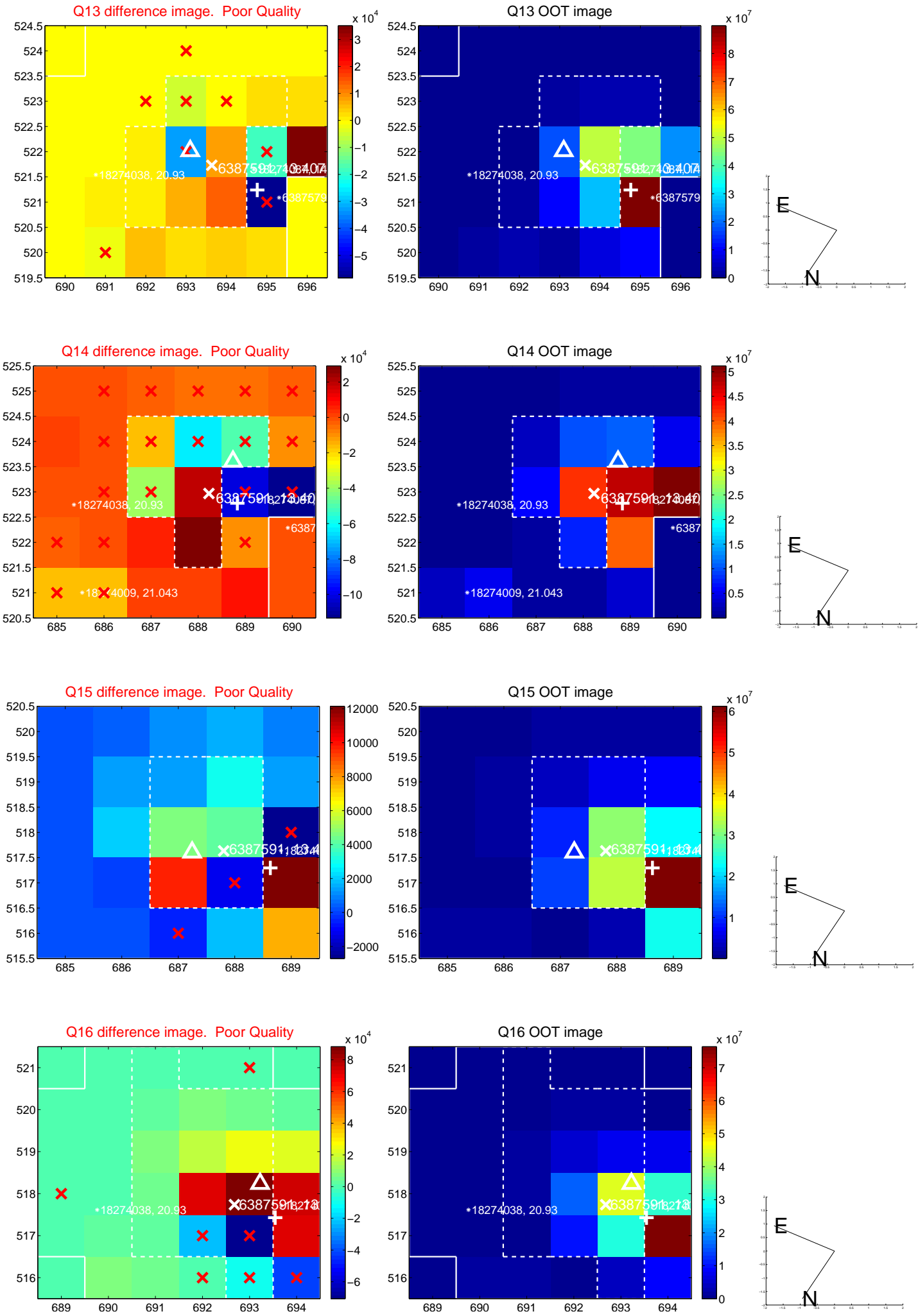




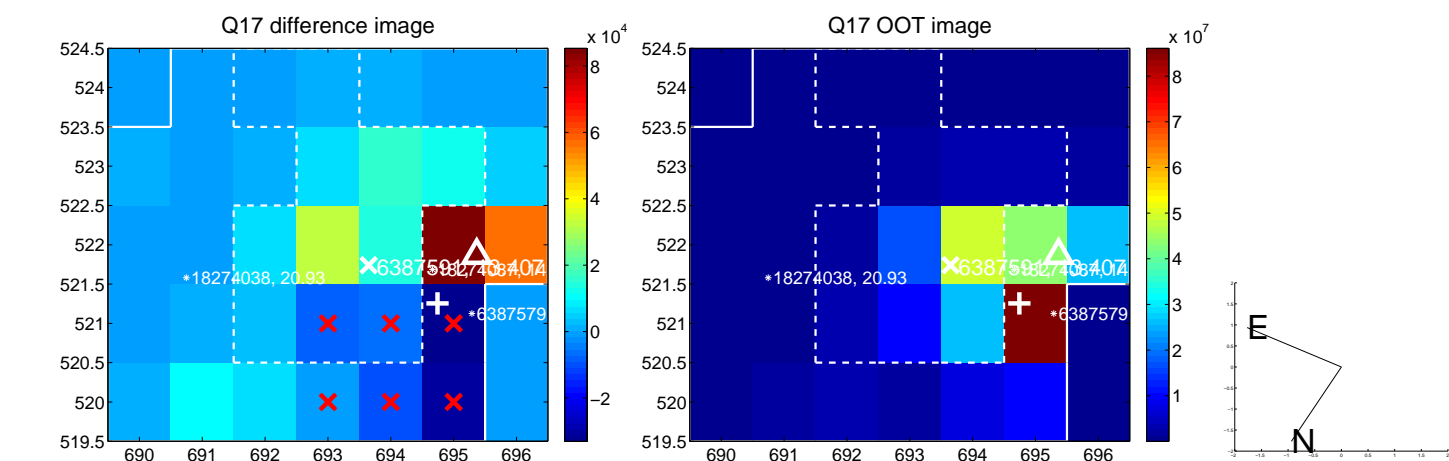
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



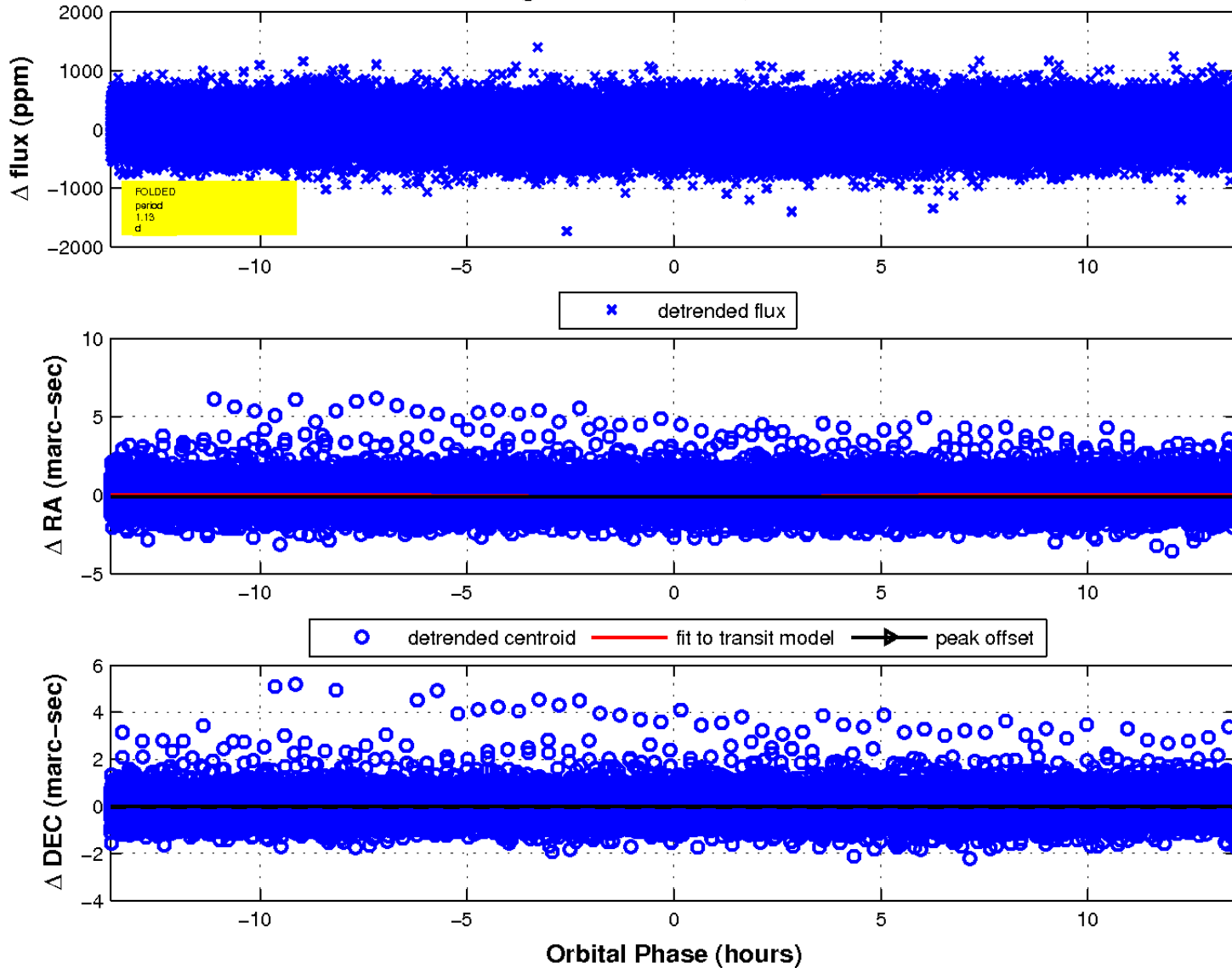
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

