

# KIC 009874181

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009874181-01	OBS	No	0.555663	131.827779	34.7	0.771	10.0	12.6	1.99	7396	1.38	41808.57

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009874181-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

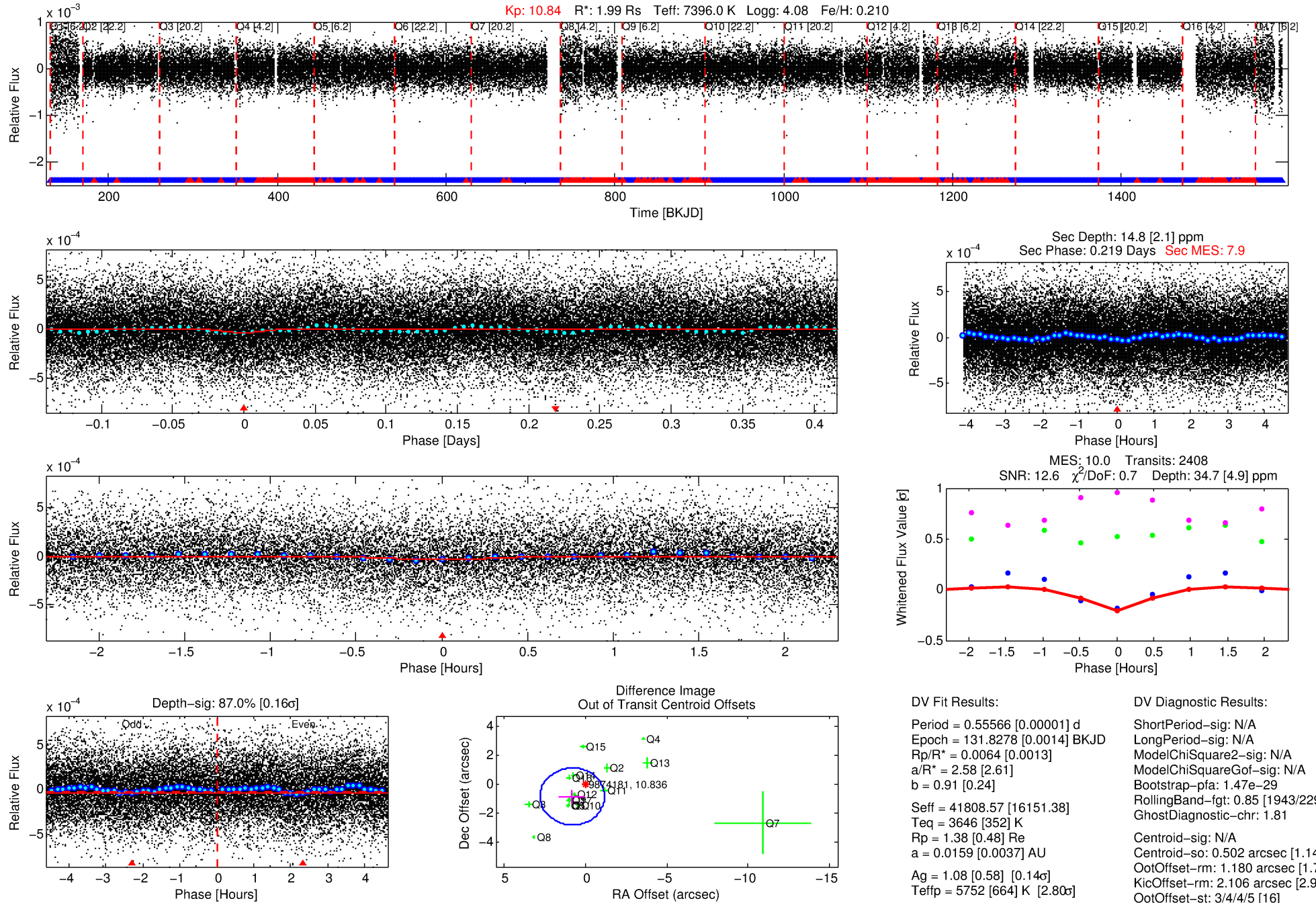
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009874181-01

No Significant Match Found

# DV One-Page Summary

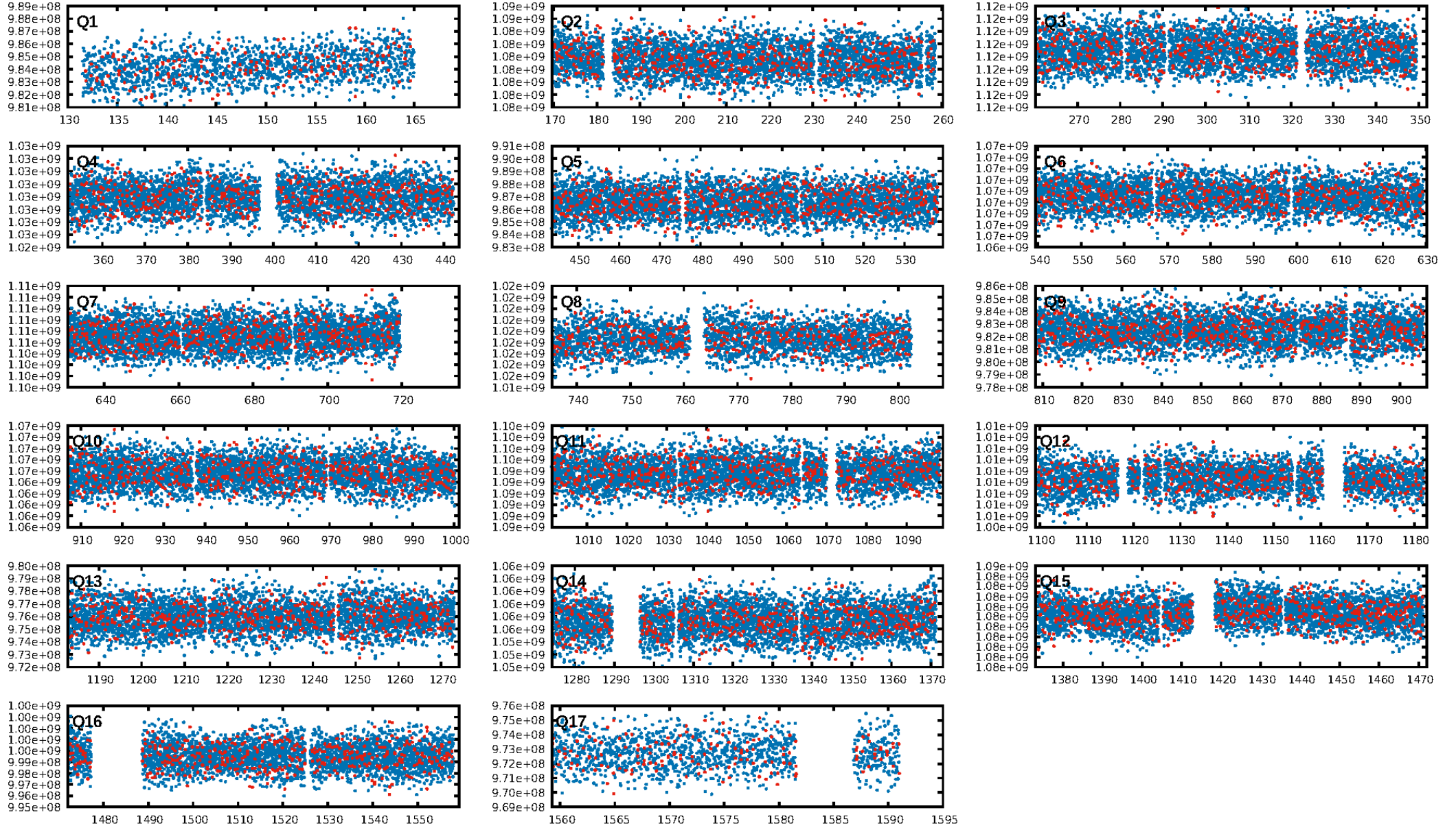
KIC: 9874181 Candidate: 1 of 1 Period: 0.556 d



Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:07:46 Z

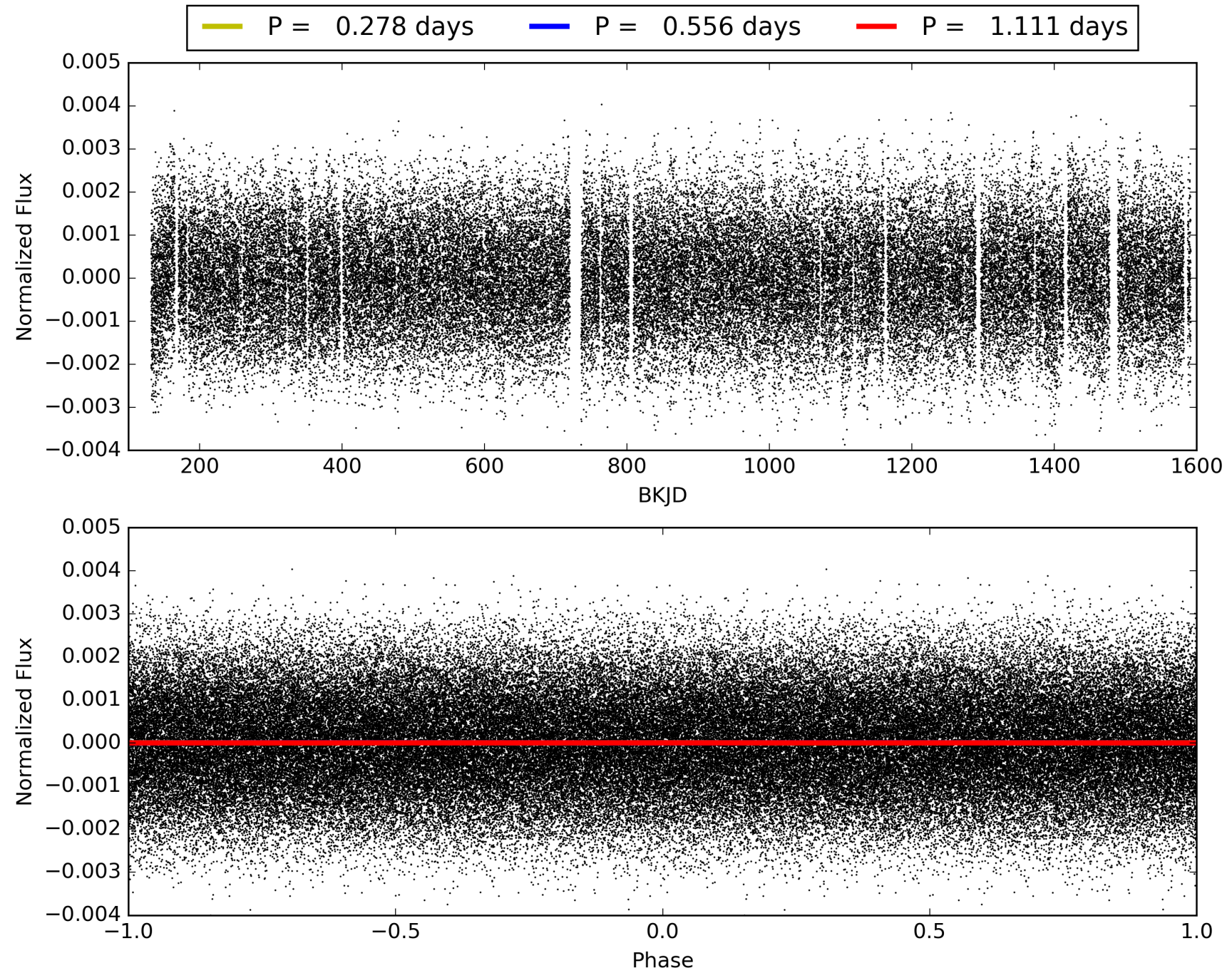
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 009874181-01, PDC Light Curves



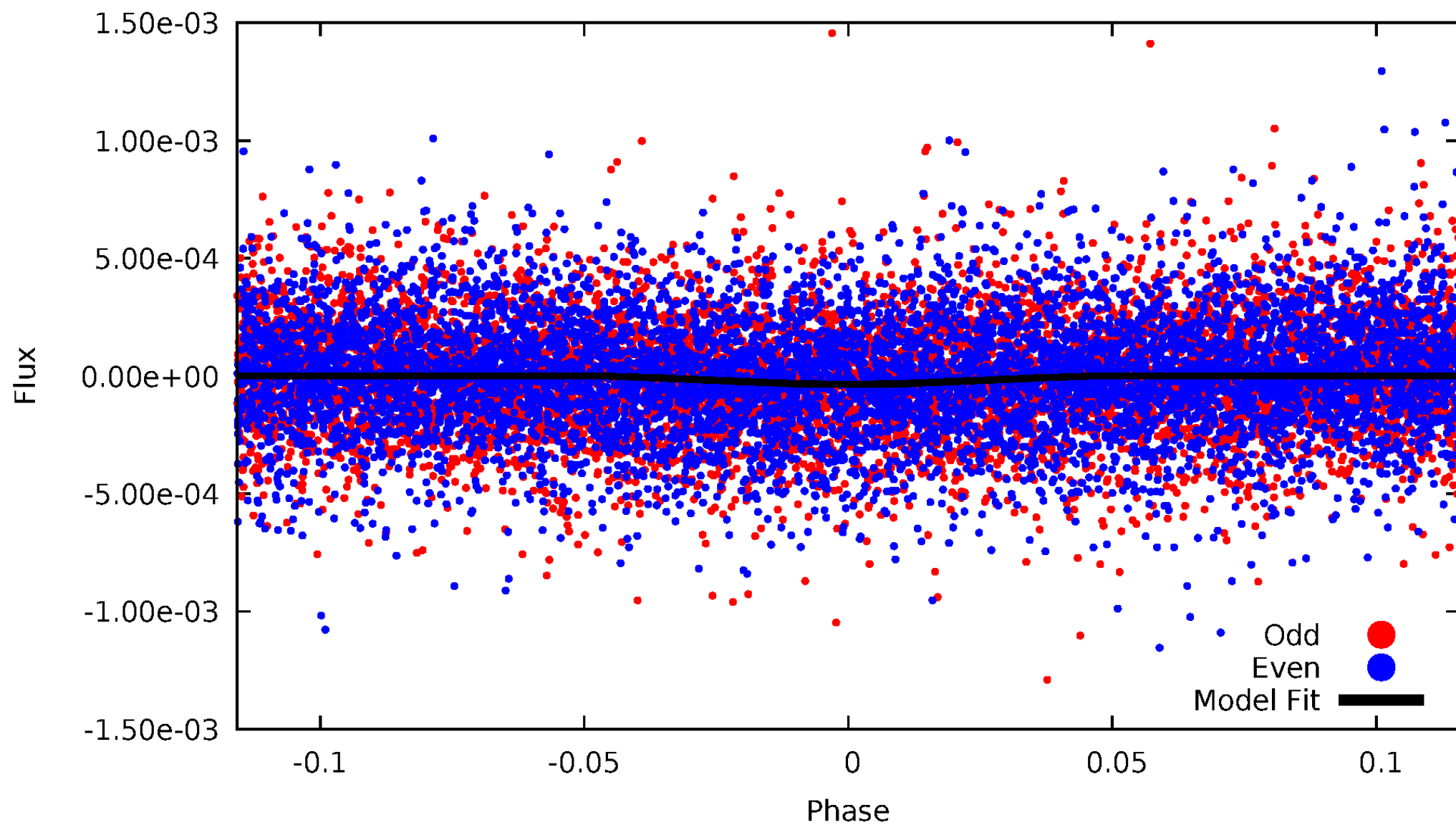


TCE 009874181-01



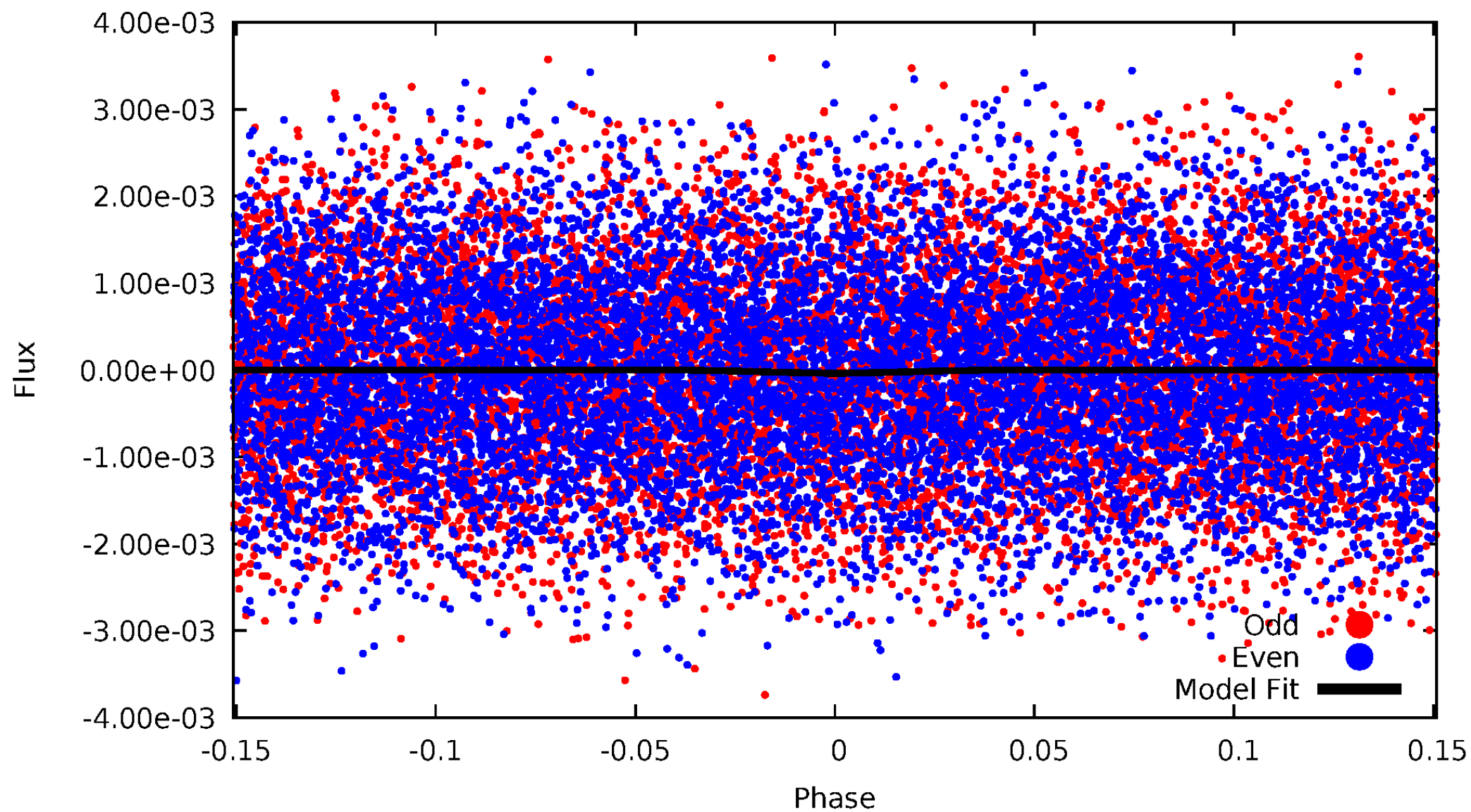
# DV Odd/Even

TCE 009874181-01



# ALT Odd/Even

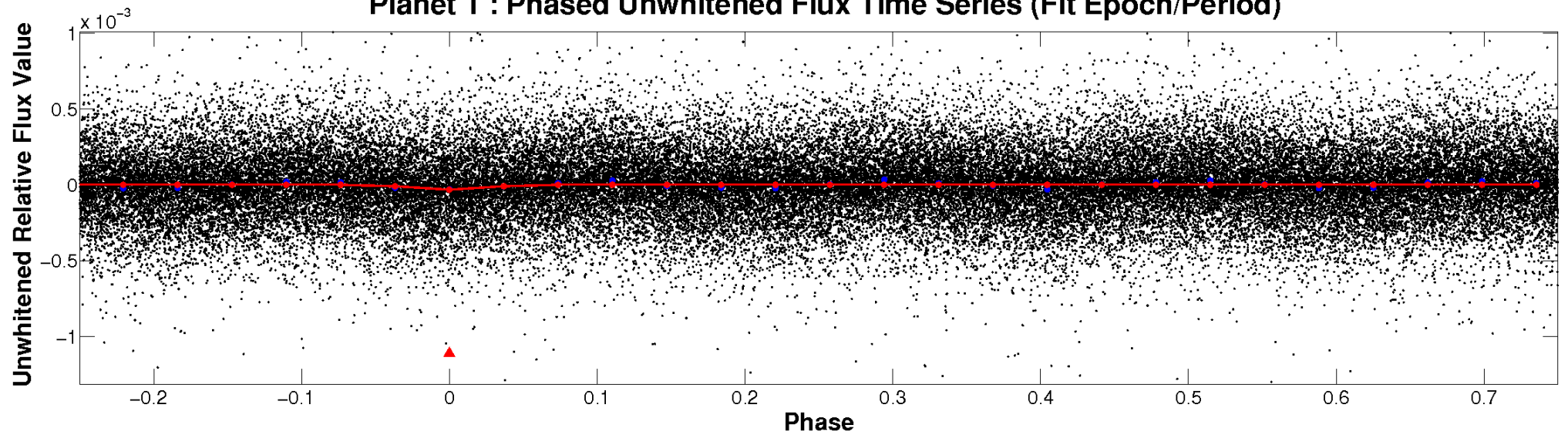
TCE 009874181-01



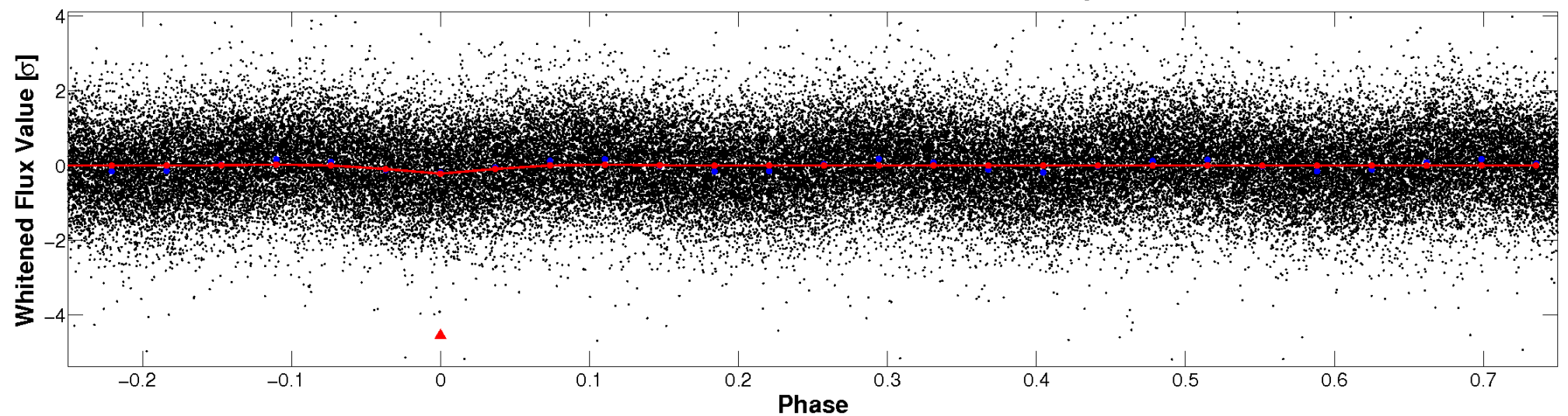


# Non-Whitened Vs. Whitened Light Curve

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

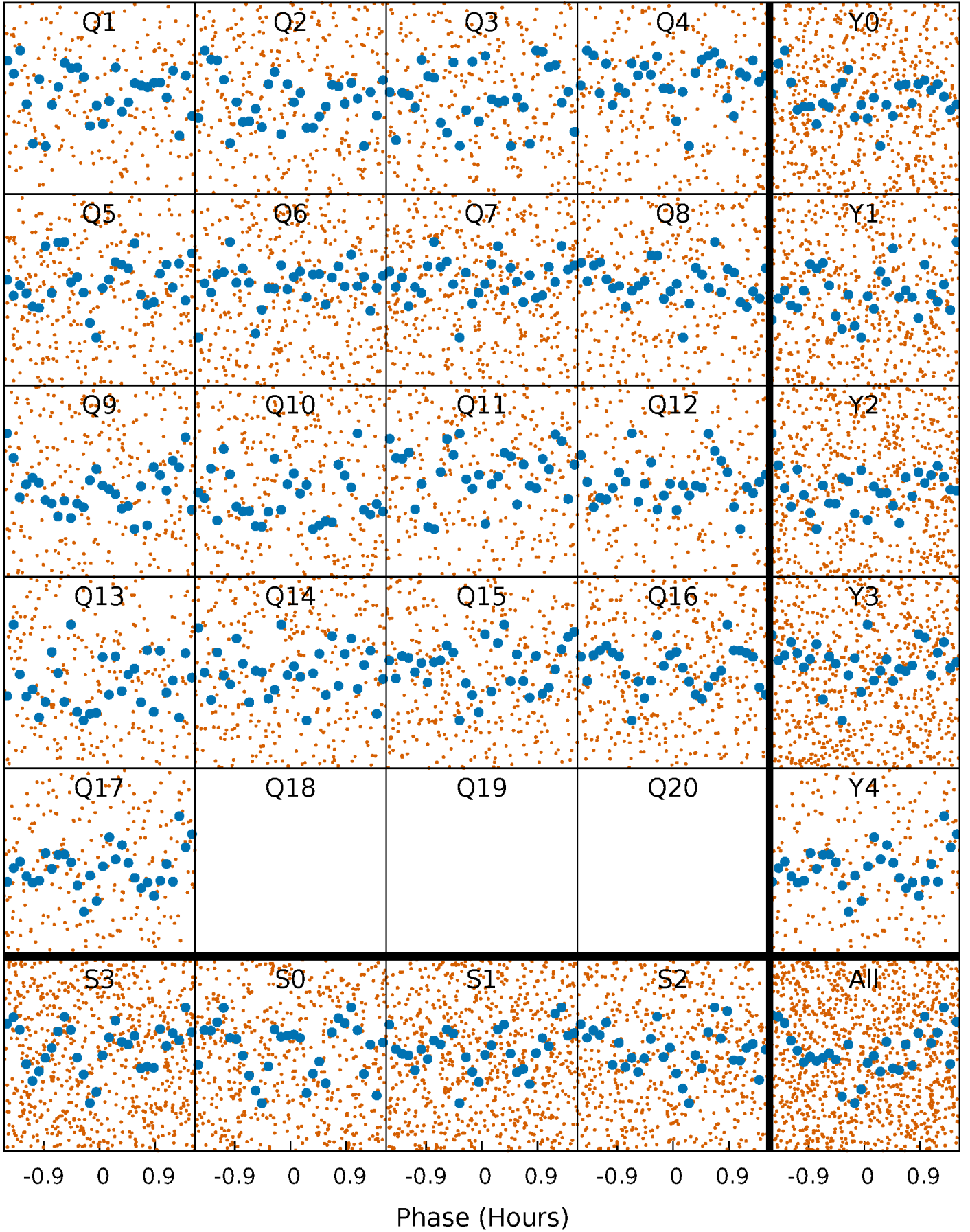


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

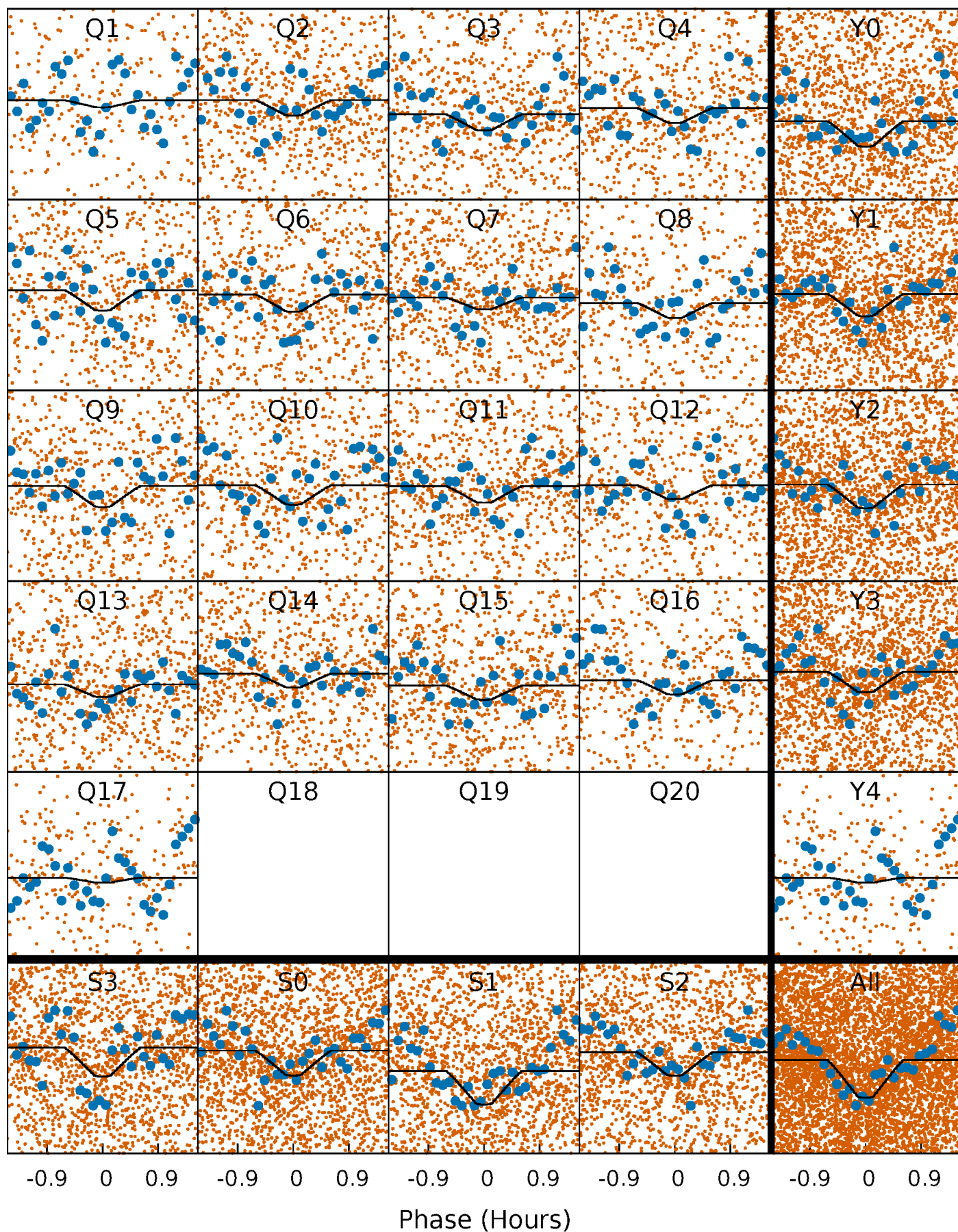
TCE 009874181-01   P= 0.555663 Days    $T_0=131.827779$  (BKJD)





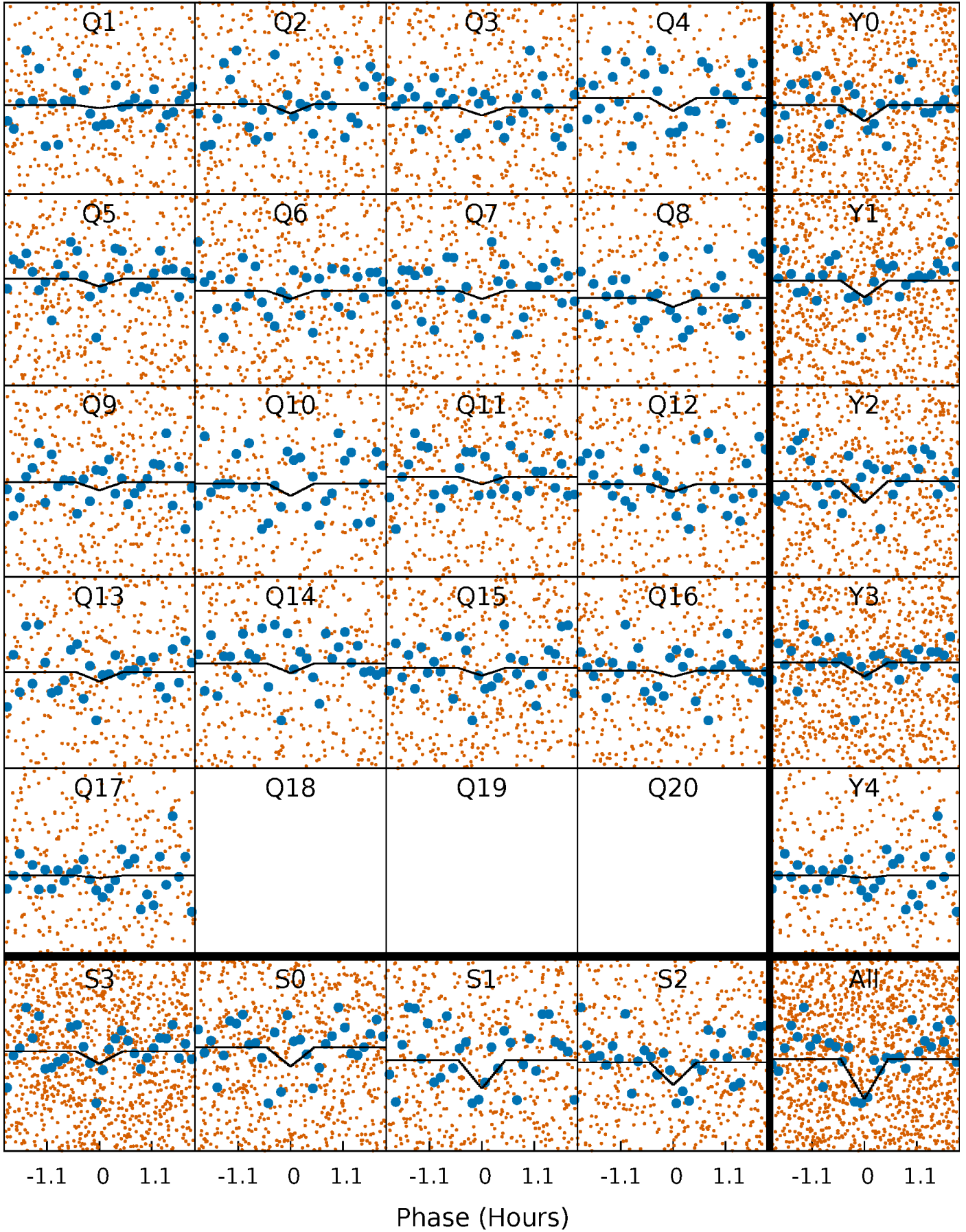
# DV Quarter-Phased Transit Curves

TCE 009874181-01 P= 0.555663 Days  $T_0=131.827779$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

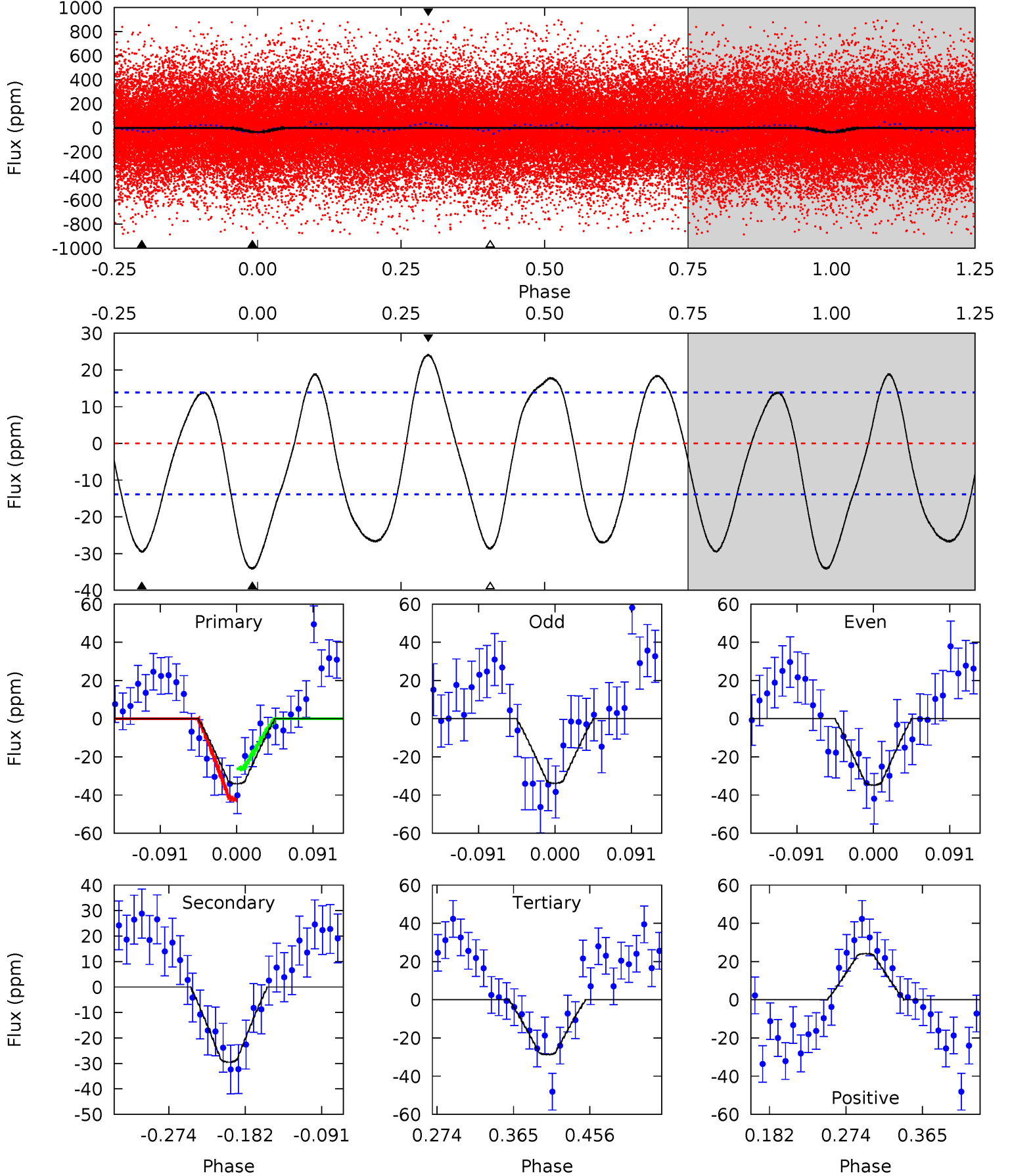
TCE 009874181-01 P= 0.555659 Days  $T_0=131.828244$  (BKJD)



# DV Model-Shift Uniqueness Test

009874181-01, P = 0.555663 Days, E = 131.272116 Days

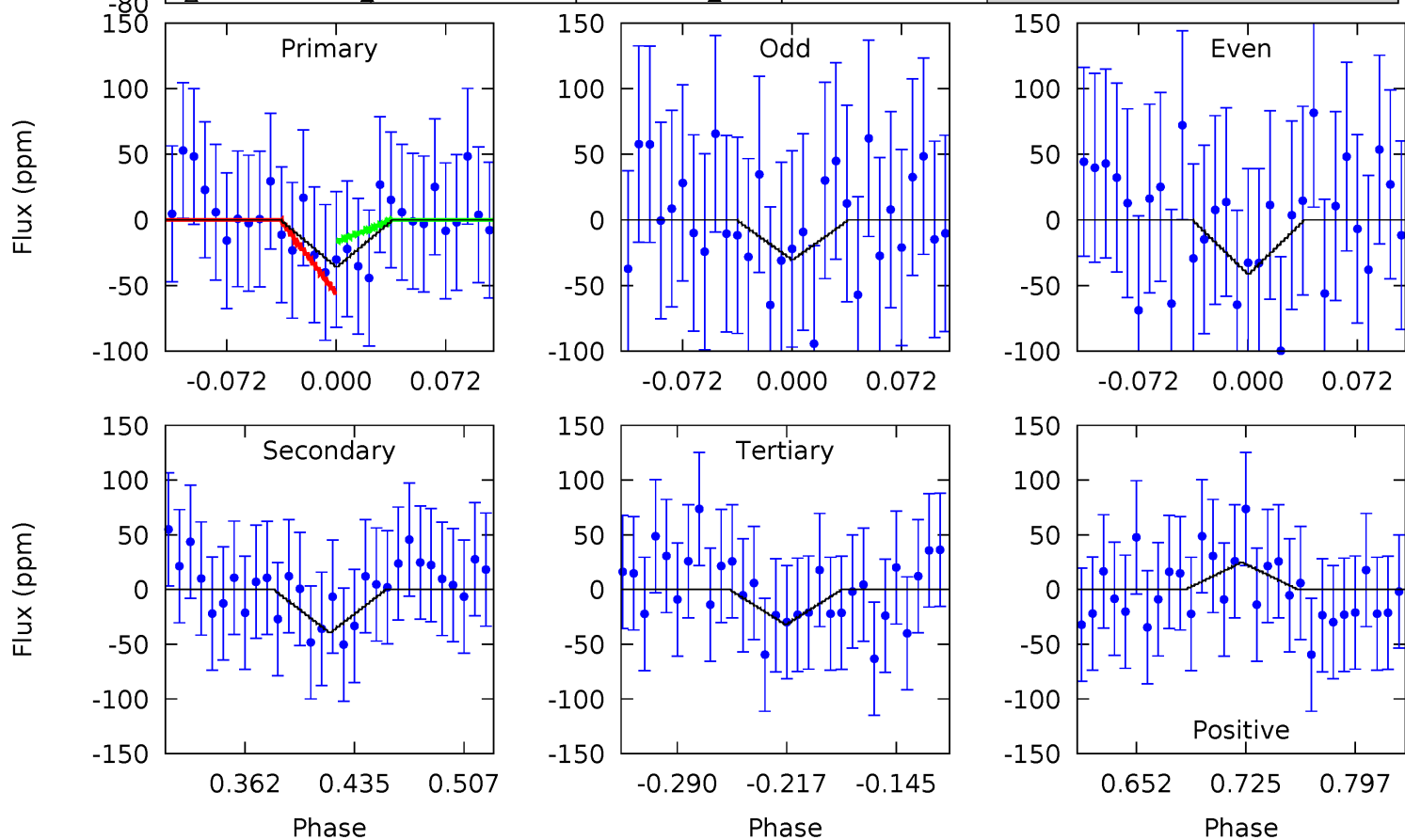
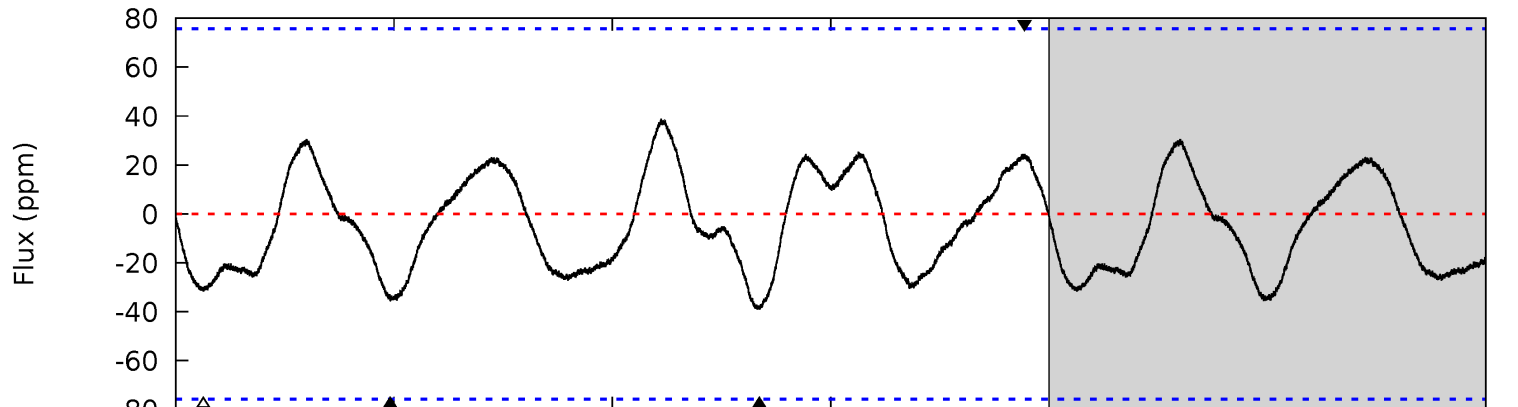
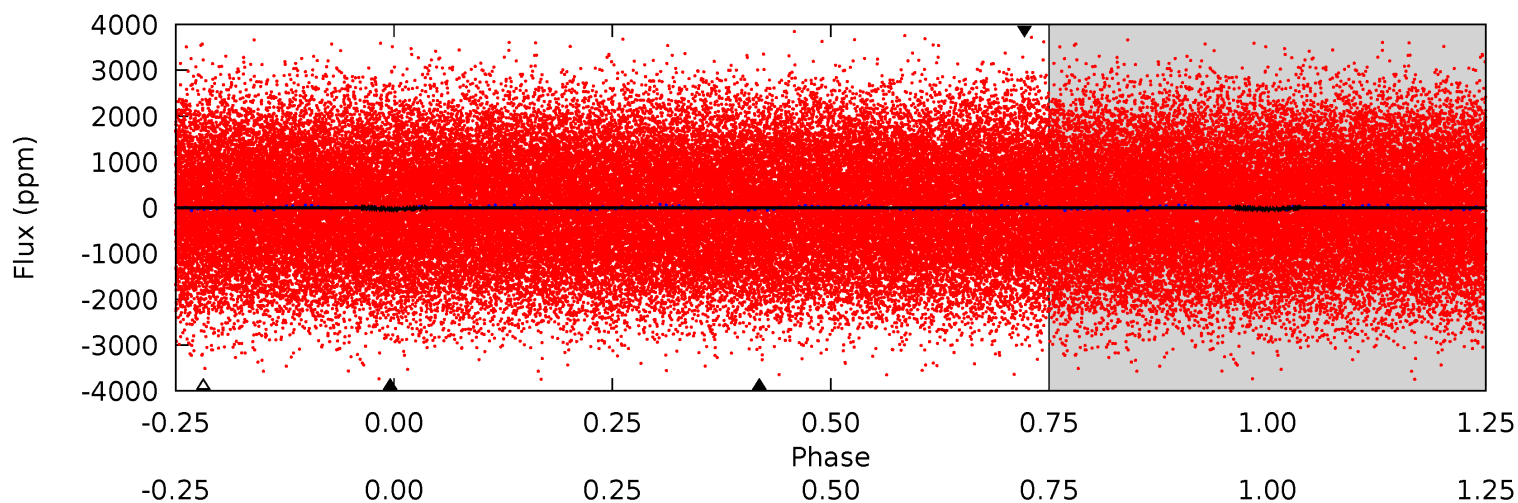
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	9.74	9.48	7.97	4.58	1.69	5.56	1.77	3.29	0.26	1.77	0.16	1.05	0.41	2.66



# Alt Model-Shift Uniqueness Test

009874181-01, P = 0.555659 Days, E = 131.272585 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
2.18	2.40	1.94	1.50	4.63	1.80	1.19	0.23	0.68	0.45	0.90	0.33	0.60	0.50	1.20





### Stellar Parameters For KIC 009874181

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7396^{+206}_{-353}$	$4.082^{+0.120}_{-0.180}$	$0.210^{+0.150}_{-0.350}$	$1.987^{+0.569}_{-0.332}$	$1.739^{+0.193}_{-0.257}$	$0.312^{+0.201}_{-0.141}$
	+3%/-5%	+3%/-4%	+71%/-167%	+29%/-17%	+11%/-15%	+64%/-45%
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 009874181-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-30 \pm 3$	$1.41^{+0.32}_{-0.31}$	$5124^{+370}_{-330}$	$6435^{+938}_{-739}$	$2.038^{+1.305}_{-0.727}$
Alt.	$-39 \pm 16$	$1.36^{+0.35}_{-0.29}$	$5120^{+336}_{-338}$	$7077^{+1413}_{-1320}$	$2.735^{+2.273}_{-1.370}$

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

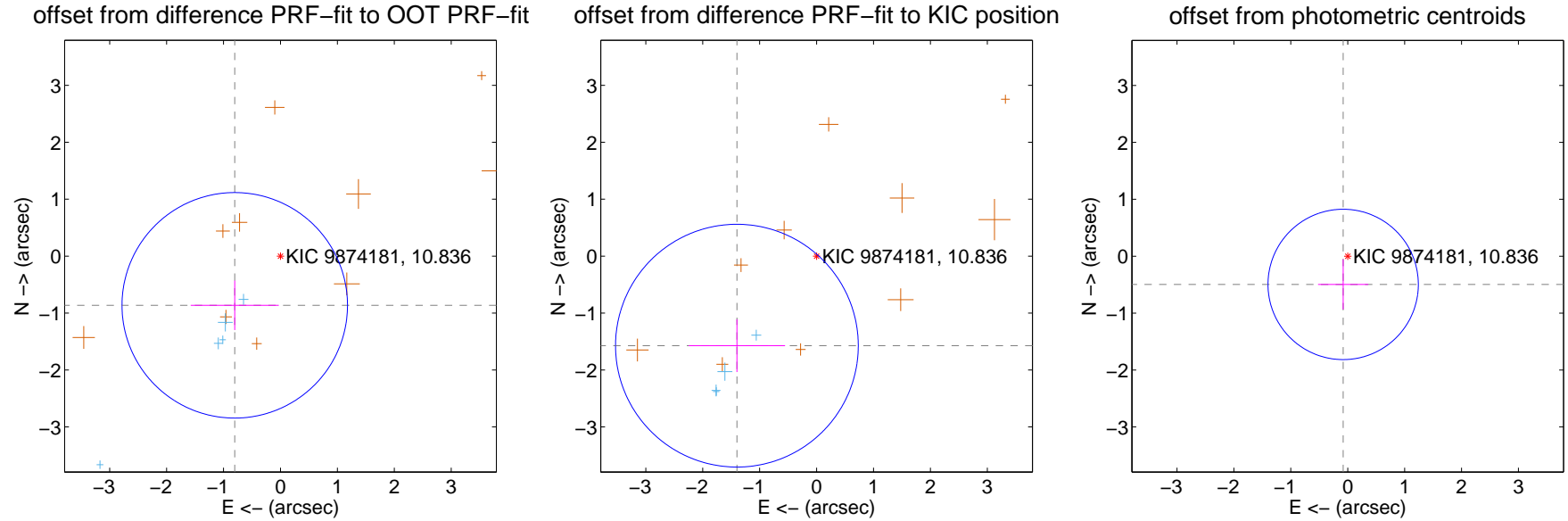
## DV Centroid Data

Supplemental centroid analysis for 009874181-01. **Kepler magnitude: 10.84.** Transit SNR 12.58

There are 5 quarters with good PRF difference image offsets

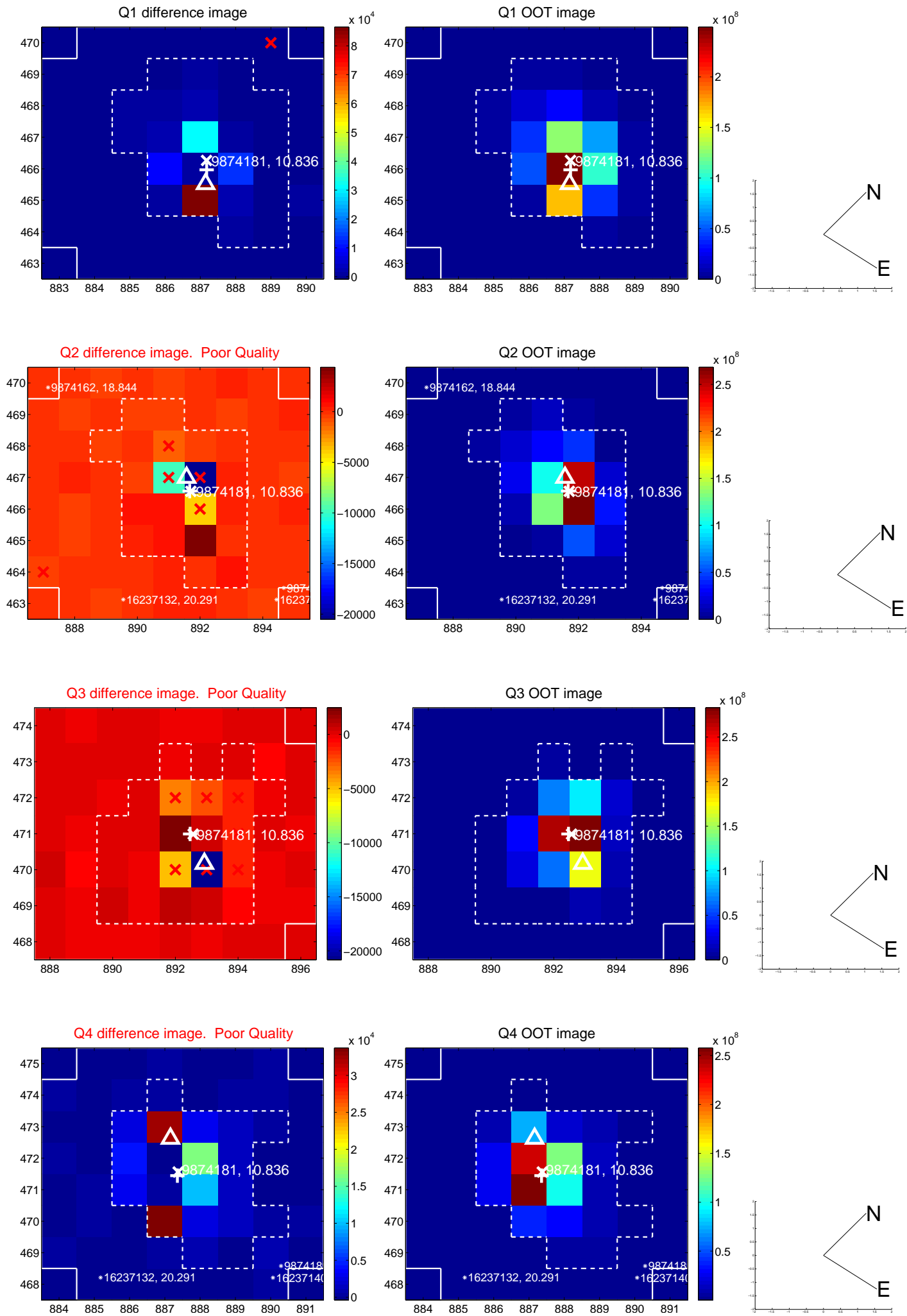
The direct PRF centroid is offset from the target star catalog position by about 1.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.180 \pm 0.660$	1.79	$0.803 \pm 0.774$	$-0.864 \pm 0.435$
PRF-fit source offset from KIC position	$2.106 \pm 0.711$	2.96	$1.400 \pm 0.846$	$-1.573 \pm 0.462$
photometric centroid source offset	$0.50 \pm 0.44$	1.14	$0.08 \pm 0.44$	$-0.50 \pm 0.44$

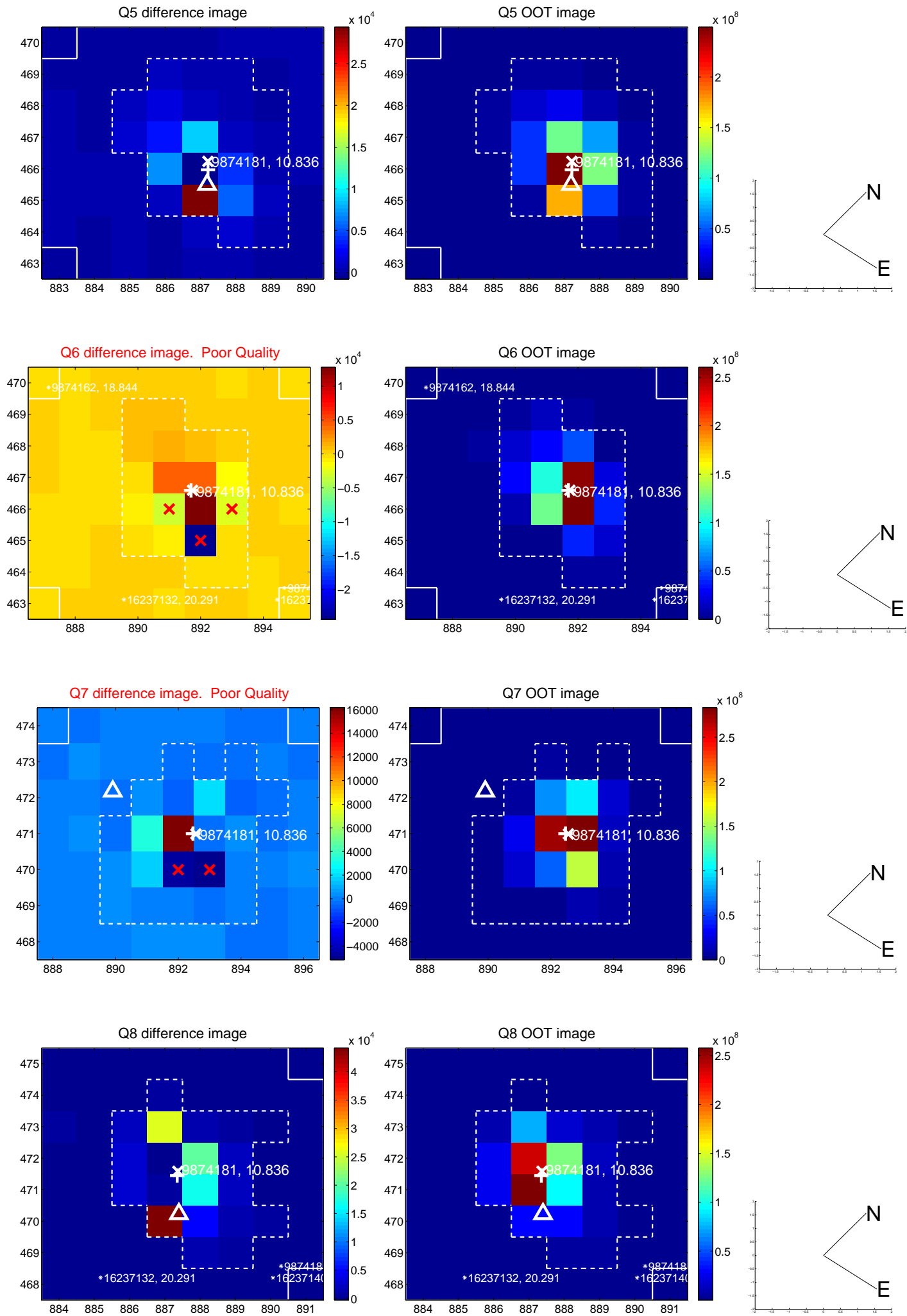


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

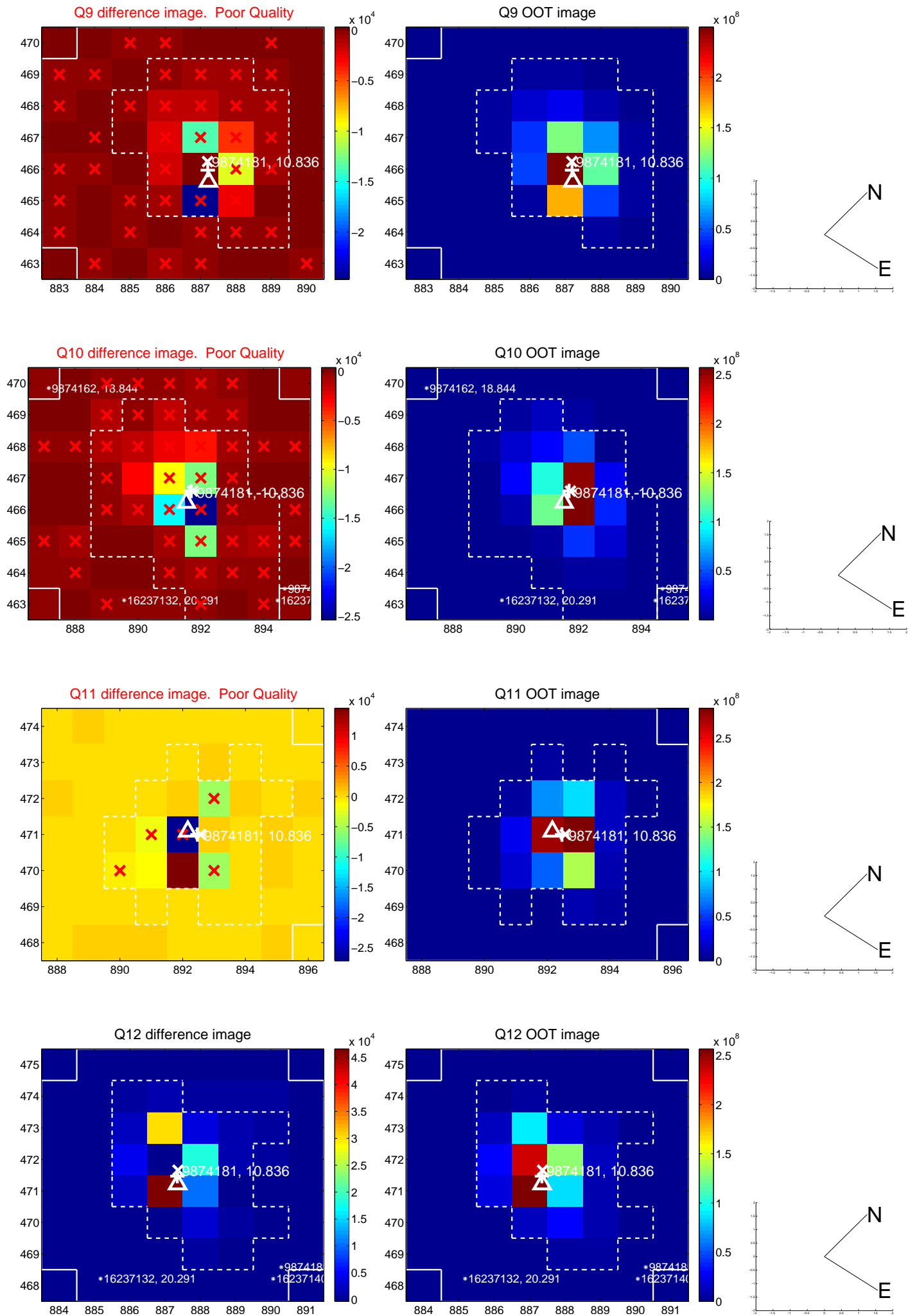


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

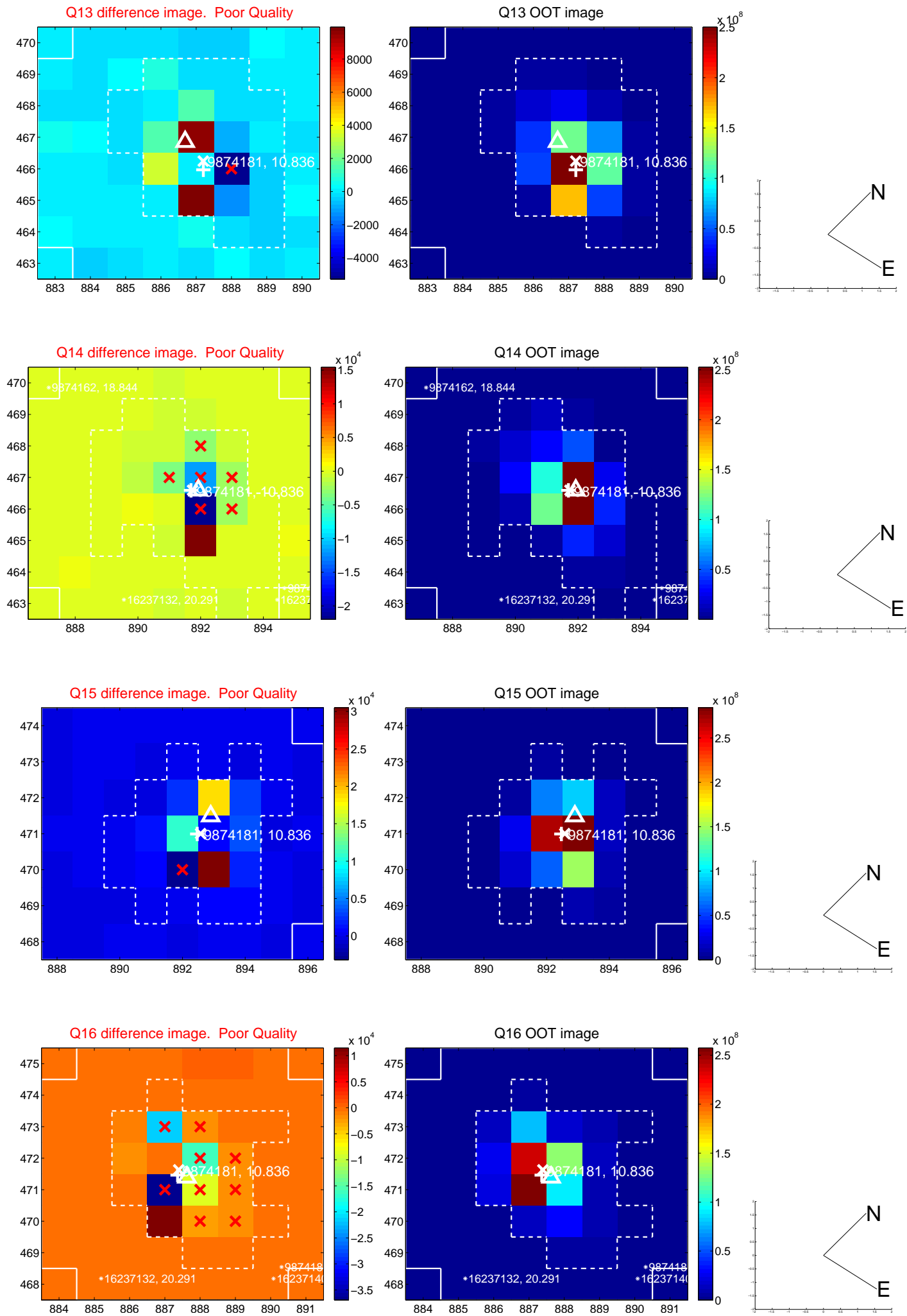




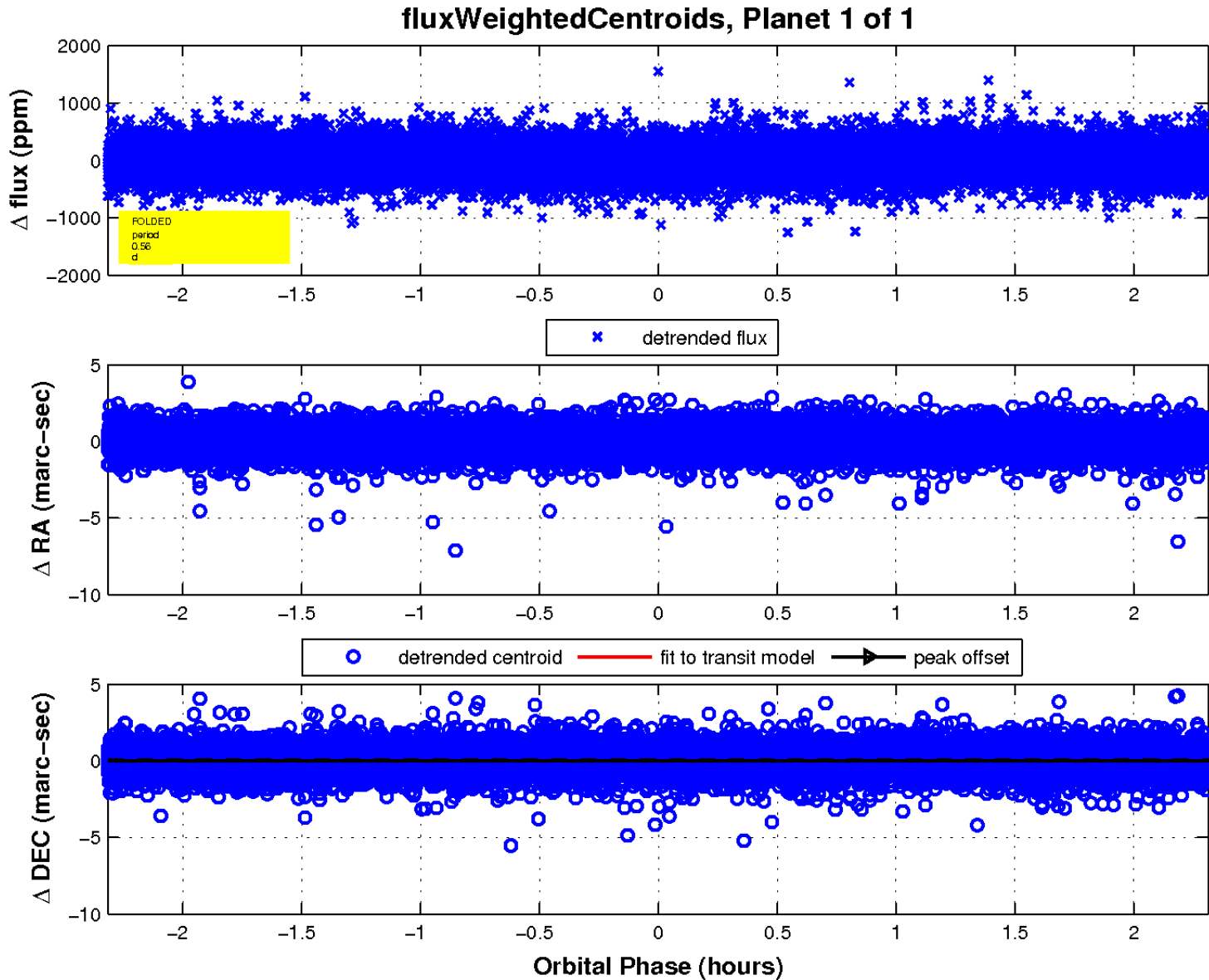
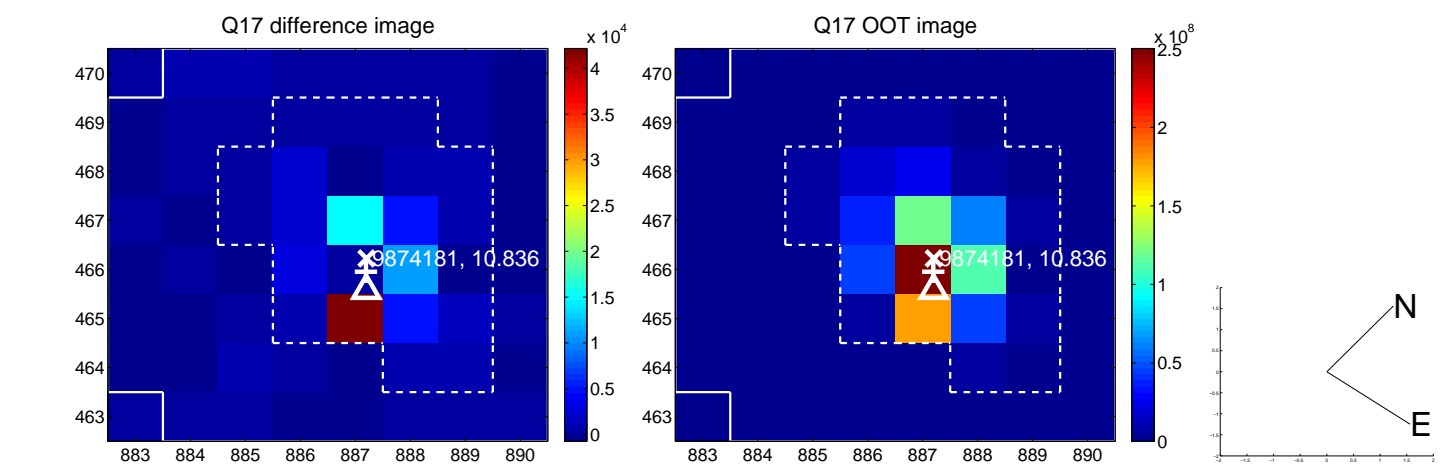
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

