

# KIC 010324412

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
010324412-01	OBS	No	0.865758	132.374787	4.0	8.850	24.6	9.5	5.20	10153	1.09	357200.77

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010324412-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_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.

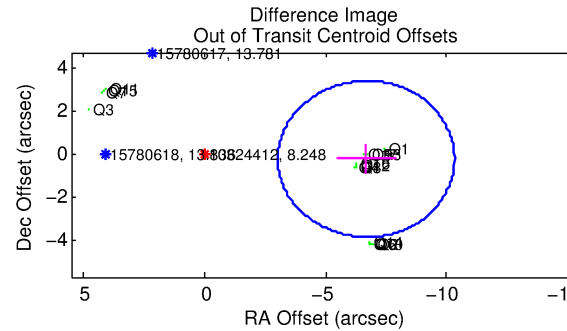
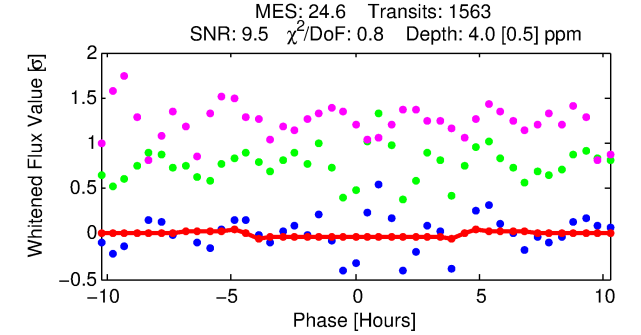
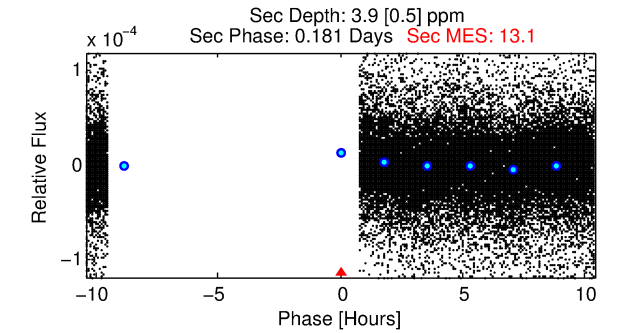
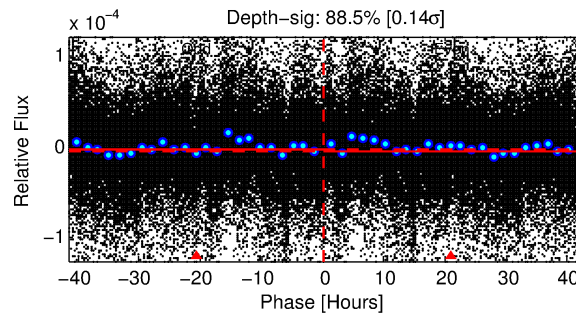
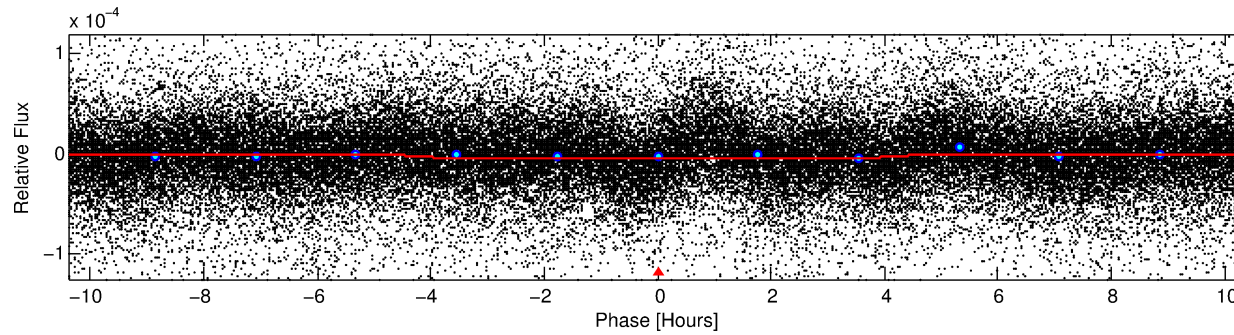
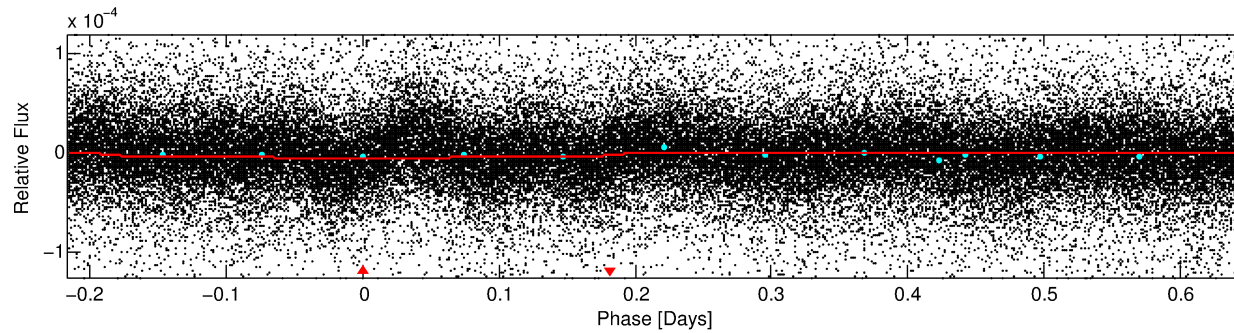
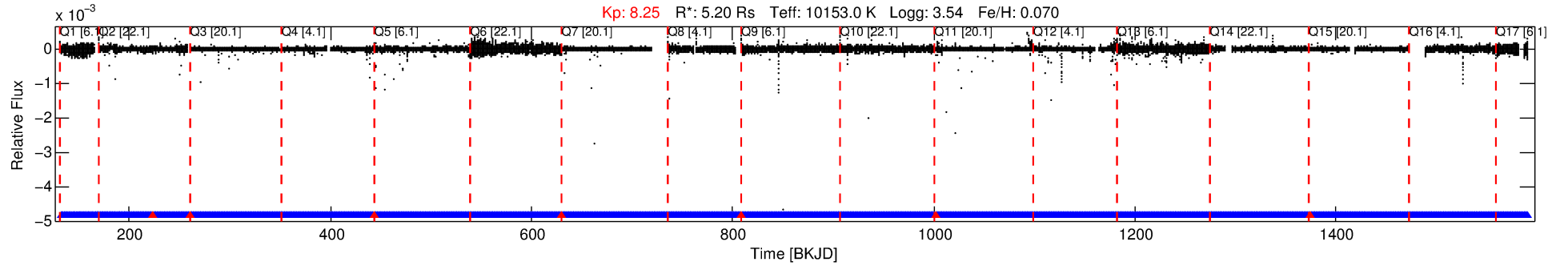
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010324412-01

No Significant Match Found

# DV One-Page Summary

KIC: 10324412 Candidate: 1 of 1 Period: 0.866 d



## DV Fit Results:

Period = 0.86576 [0.00001] d  
Epoch = 132.3748 [0.0030] BKJD  
 $R_p/R^* = 0.0019$  [0.0006]  
 $a/R^* = 1.02$  [0.11]  
 $b = 0.45$  [4.33]  
 $\text{Seff} = 357200.77$  [323507.73]  
 $T_{\text{eq}} = 6234$  [1411] K  
 $R_p = 1.09$  [0.68]  $R_e$   
 $a = 0.0269$  [0.0145] AU  
 $A_g = 1.31$  [1.46] [0.21 $\sigma$ ]  
 $T_{\text{eff}} = 10307$  [1793] K [1.7 $\sigma$ ]

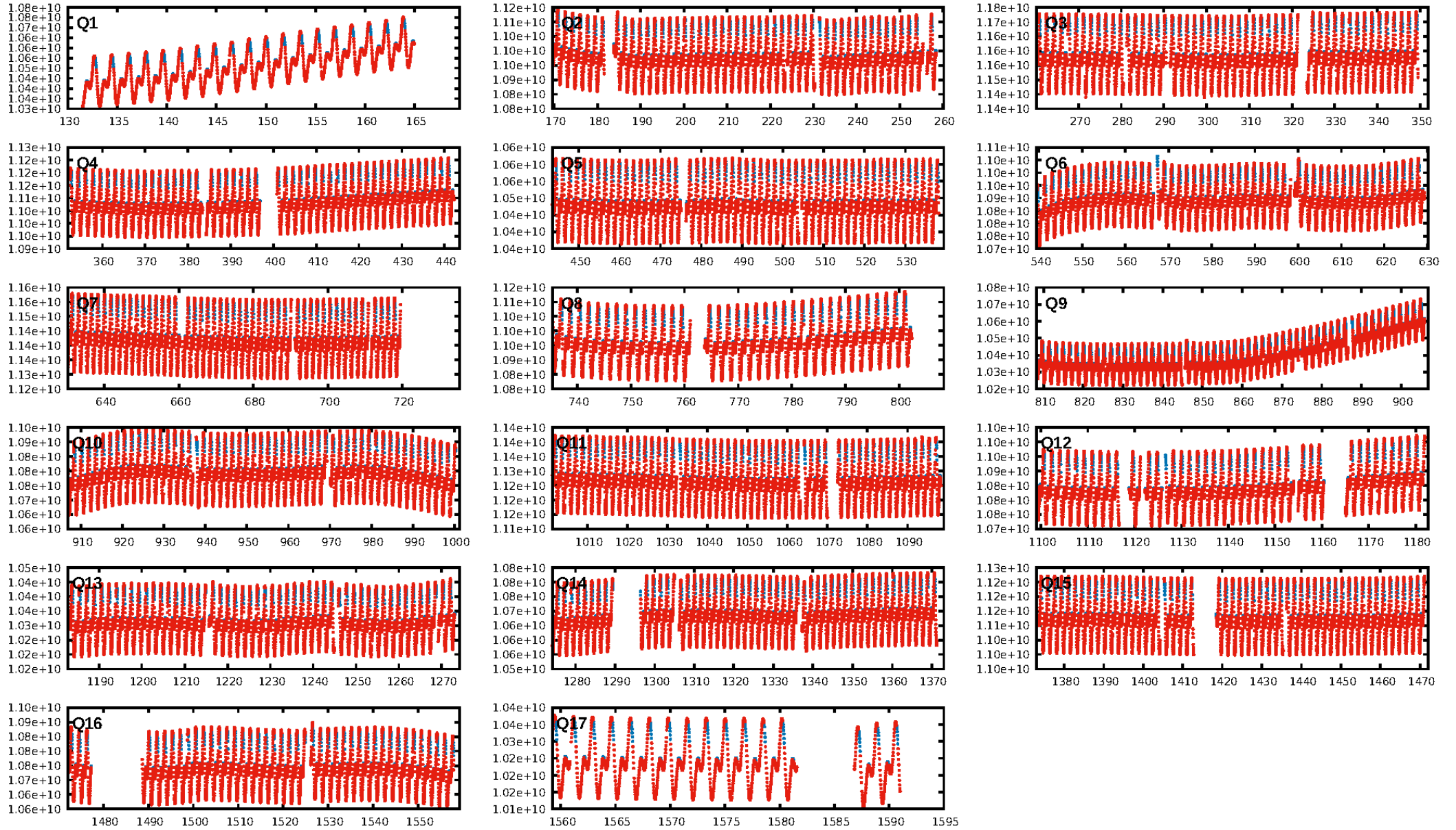
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1484/1491]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
**OotOffset-rm: 6.688 arcsec [5.50 $\sigma$ ]**  
**KicOffset-rm: 6.341 arcsec [5.20 $\sigma$ ]**  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 1.00 [17/17]

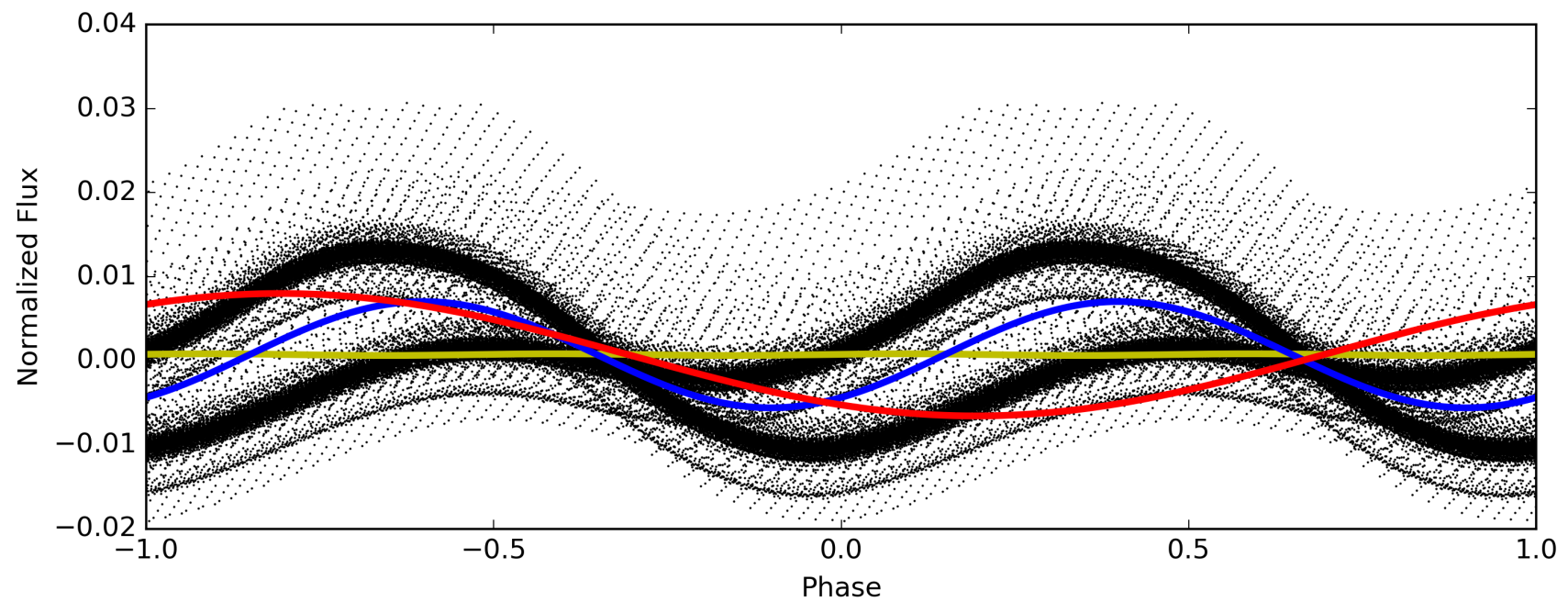
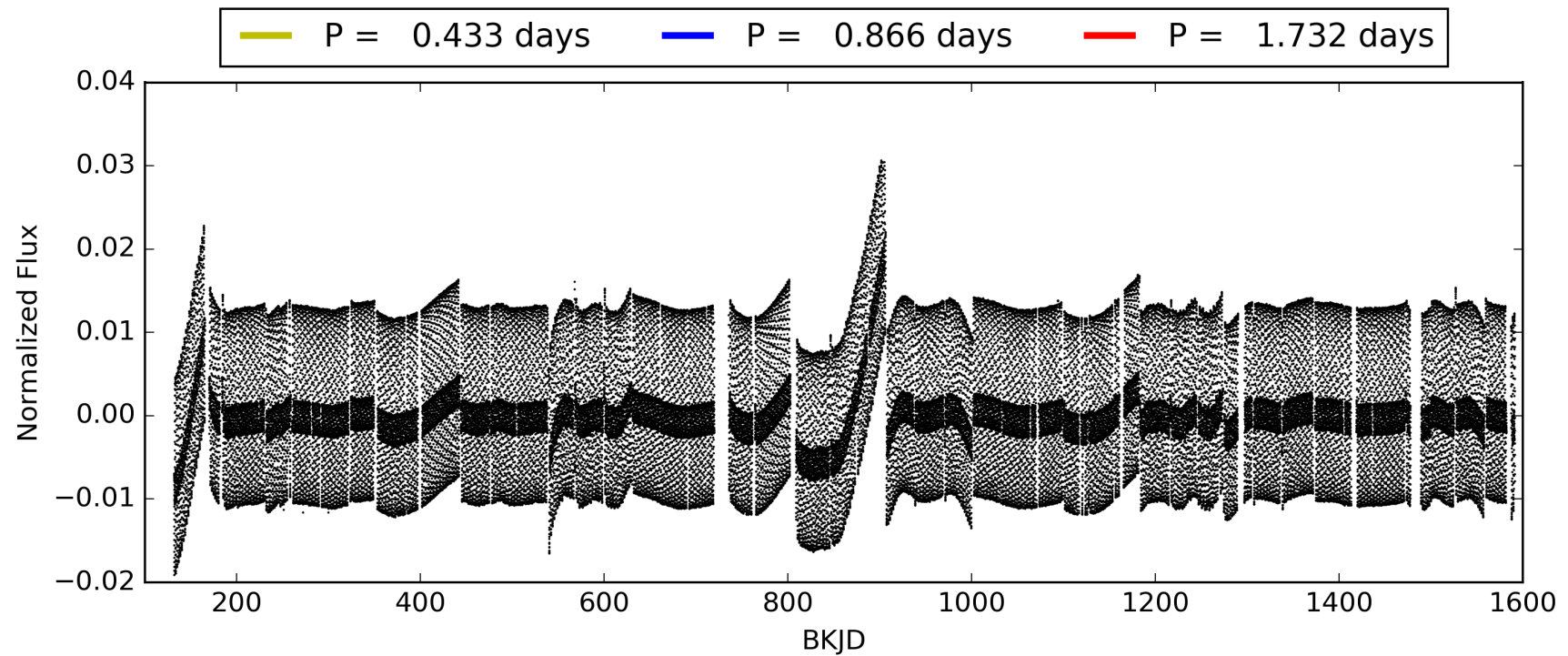
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:06:48 Z

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

# TCE 010324412-01, PDC Light Curves

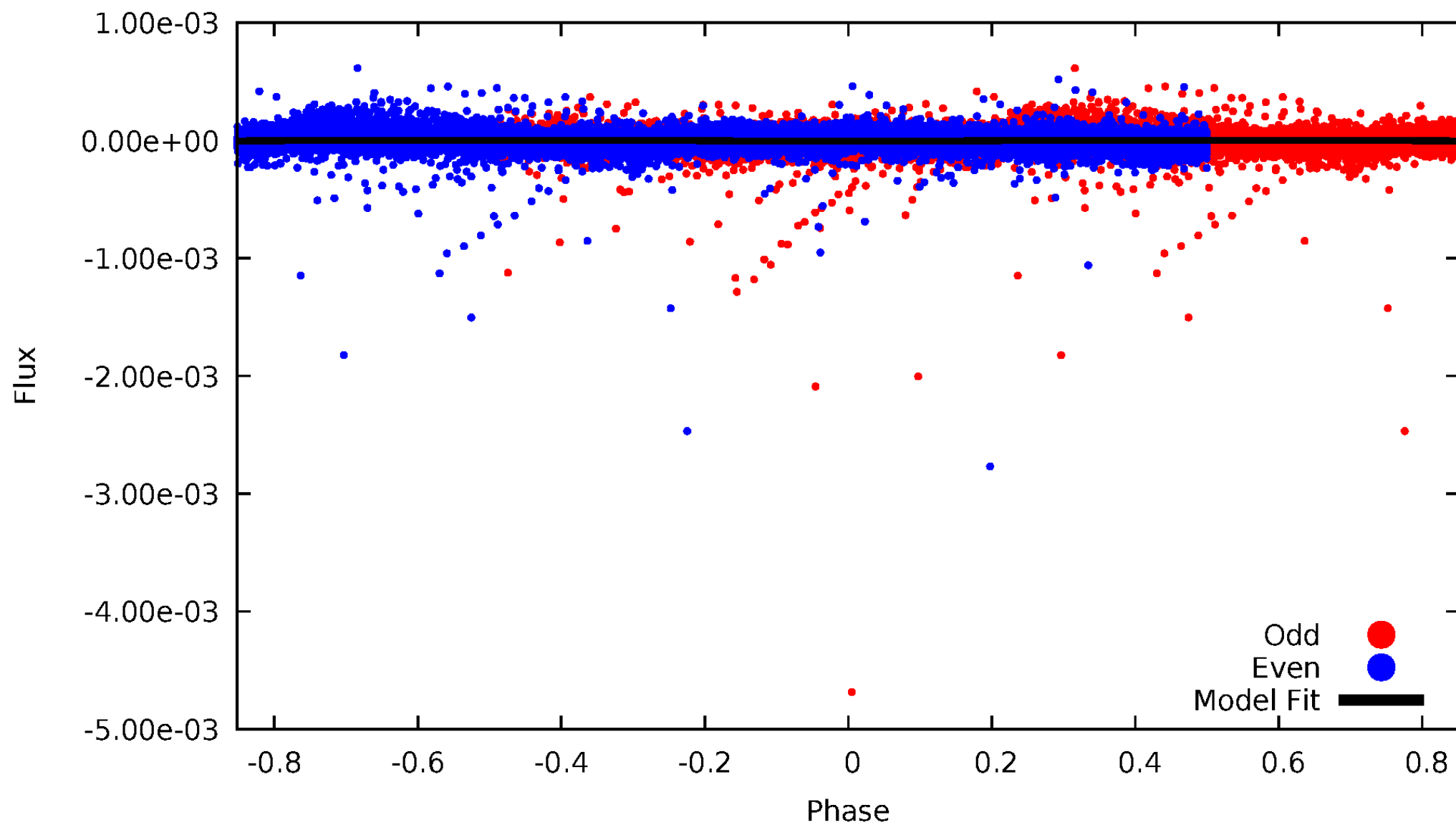


TCE 010324412-01



# DV Odd/Even

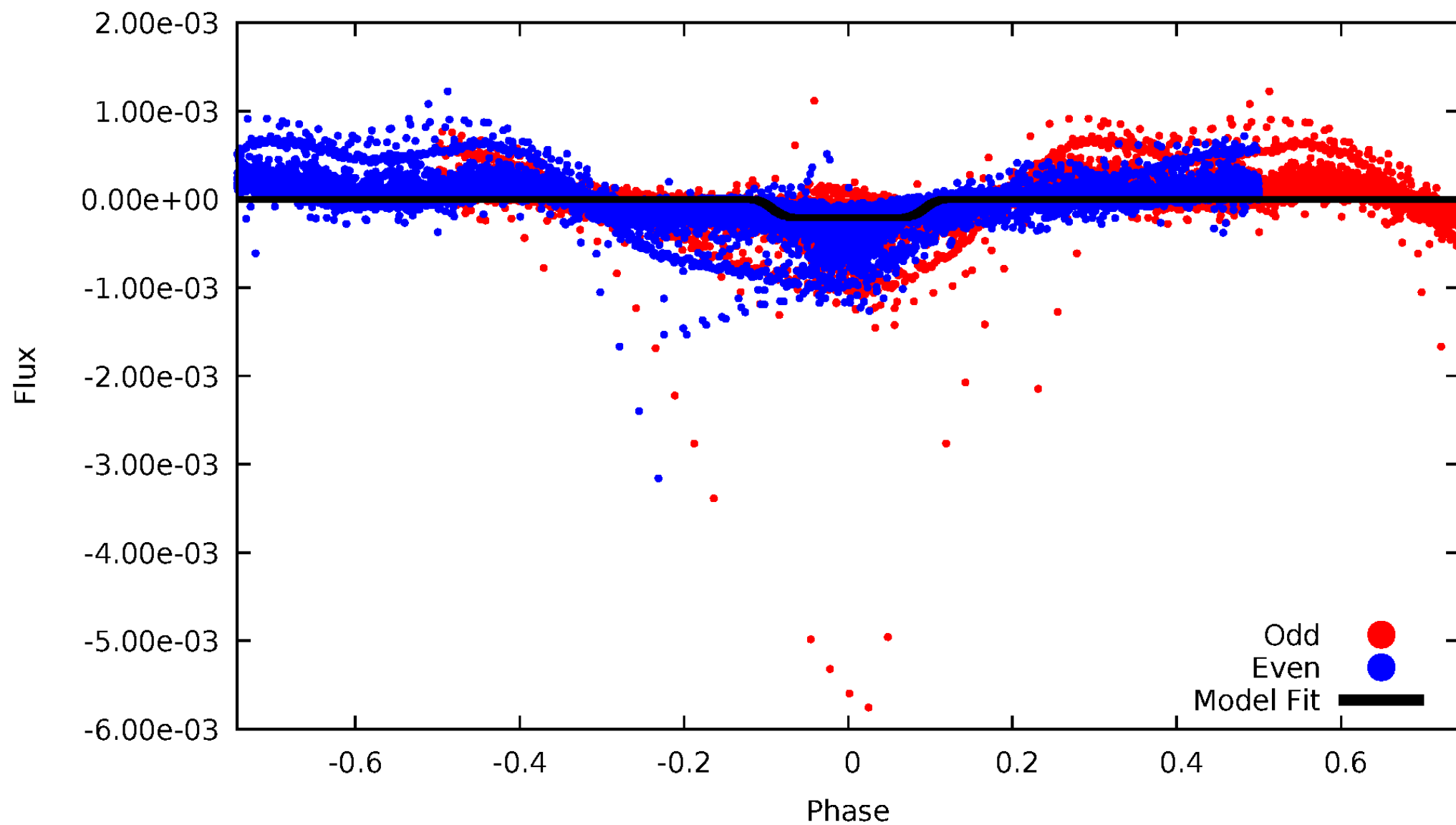
TCE 010324412-01





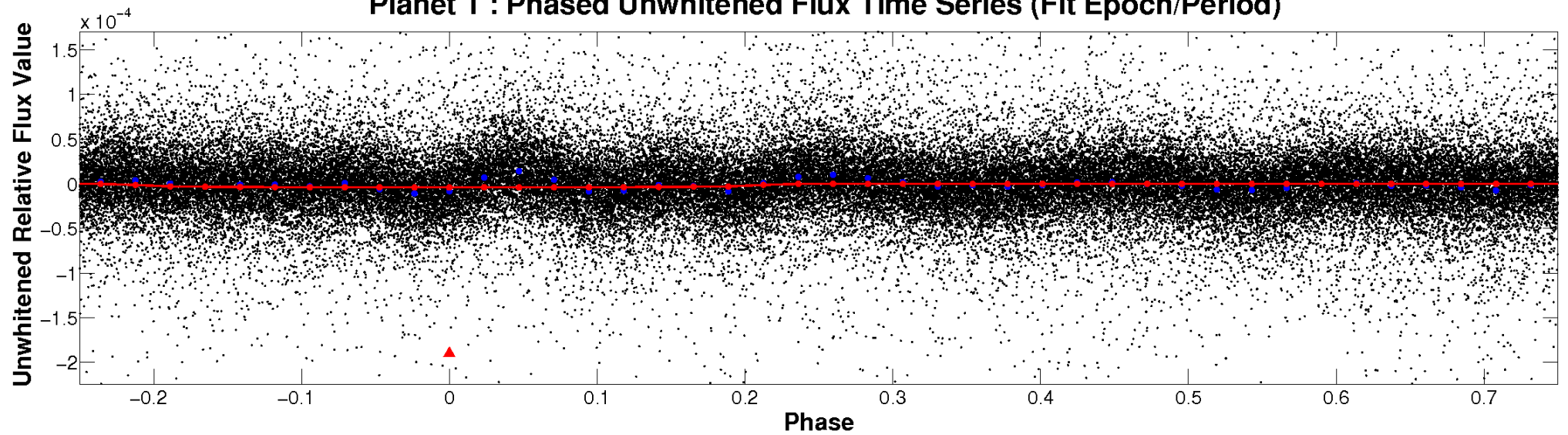
# ALT Odd/Even

TCE 010324412-01

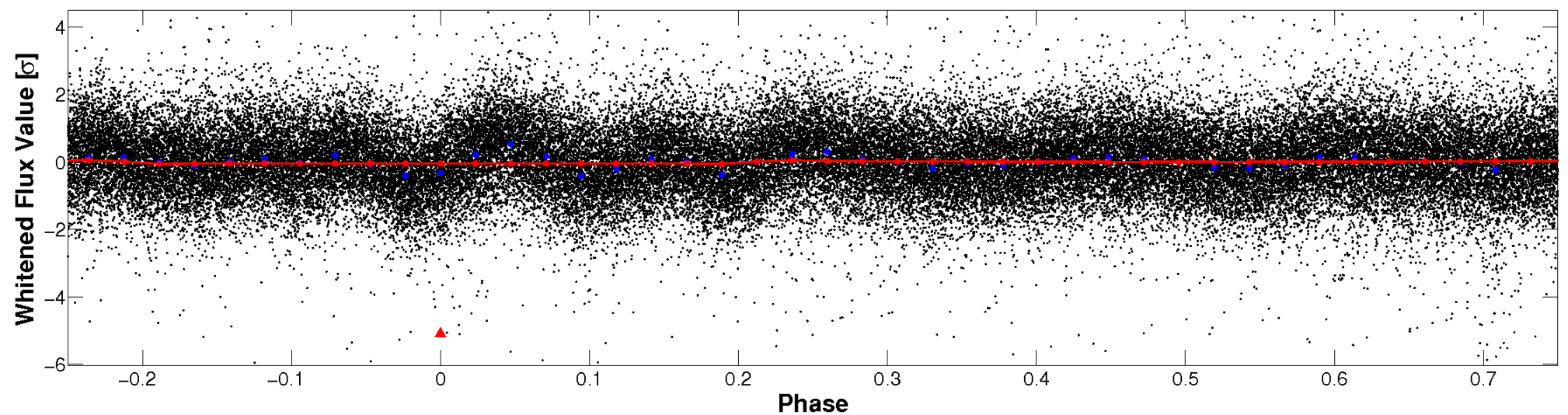


# Non-Whitened Vs. Whitened Light Curve

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

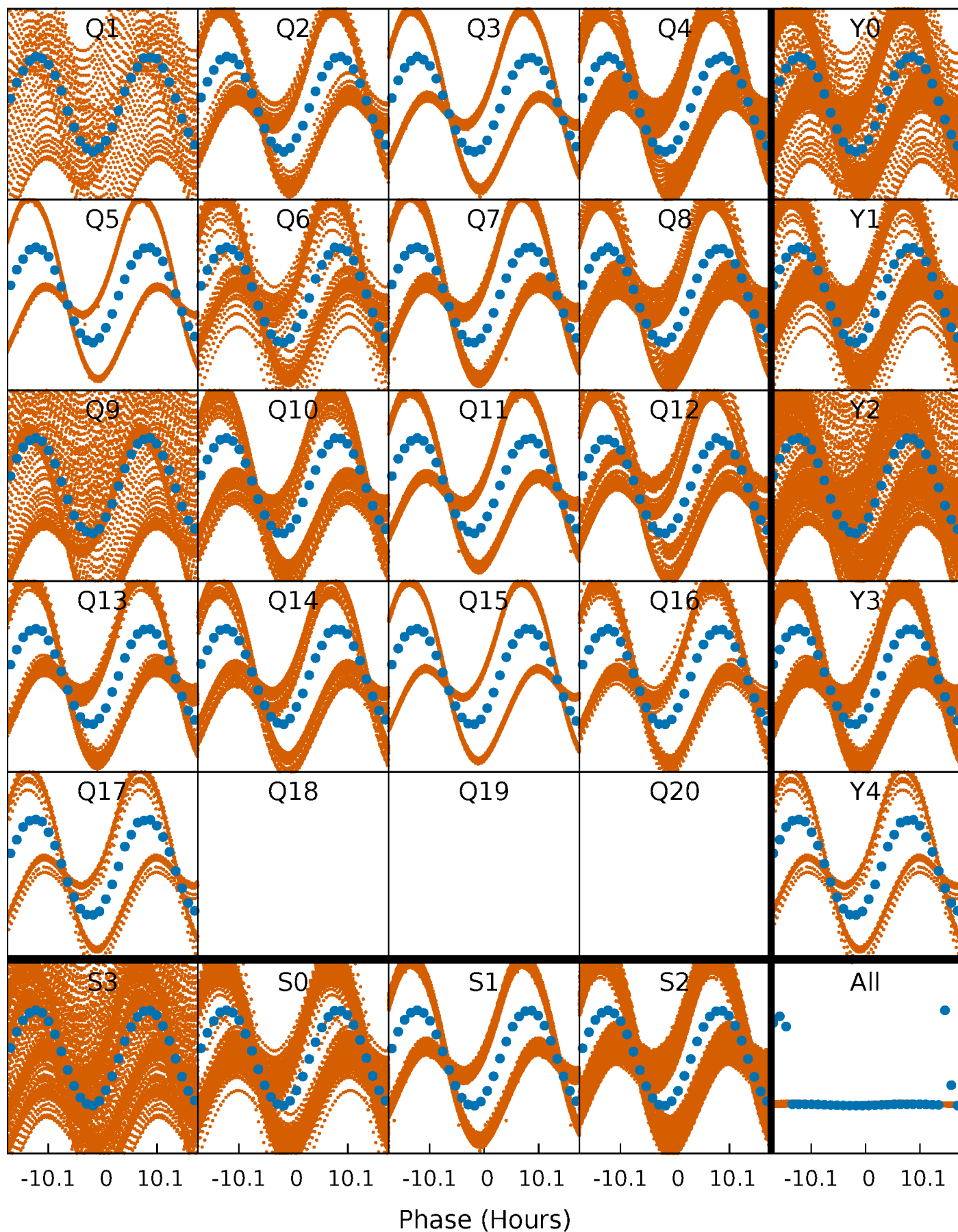


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

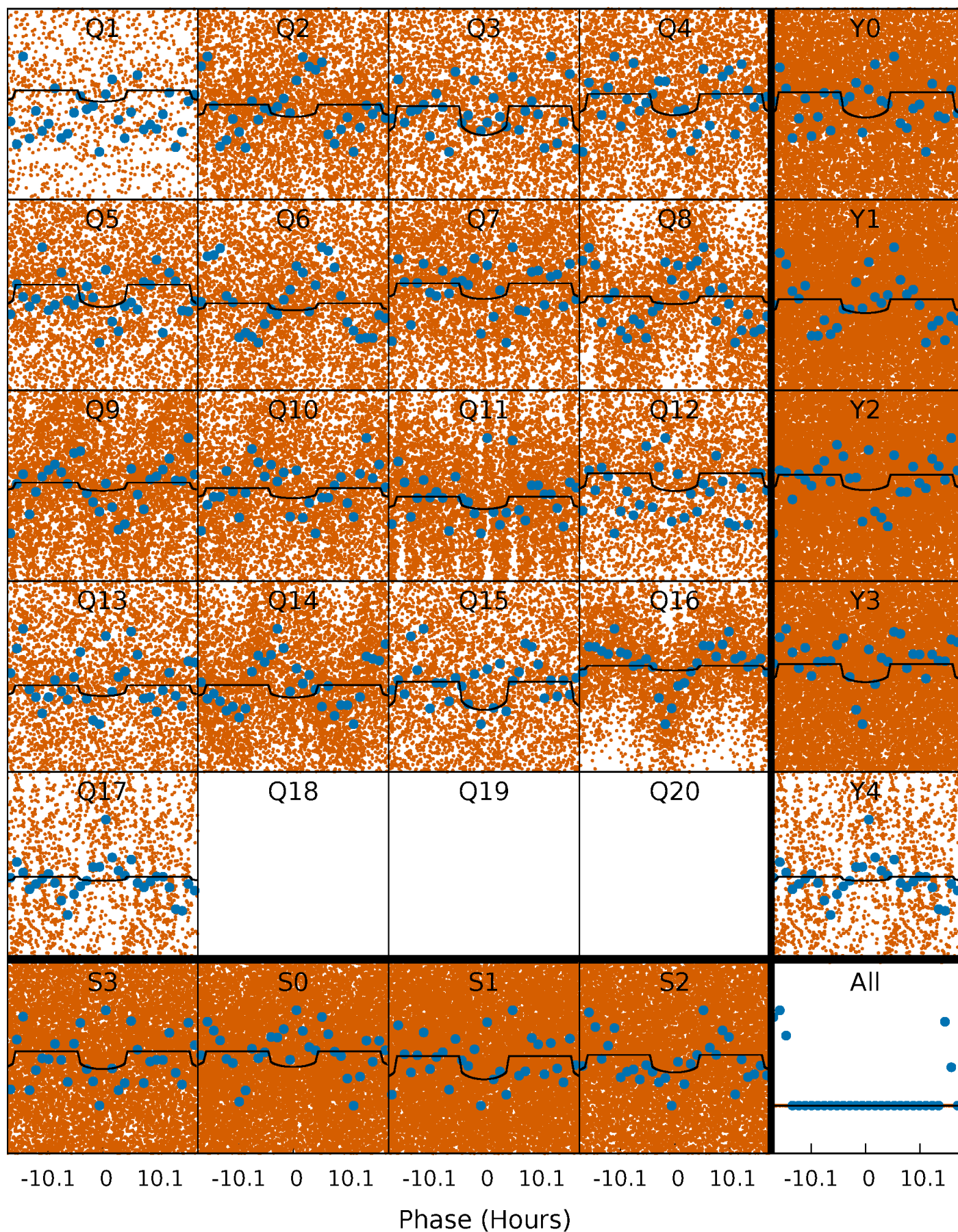
TCE 010324412-01   P= 0.865758 Days    $T_0=132.374787$  (BKJD)





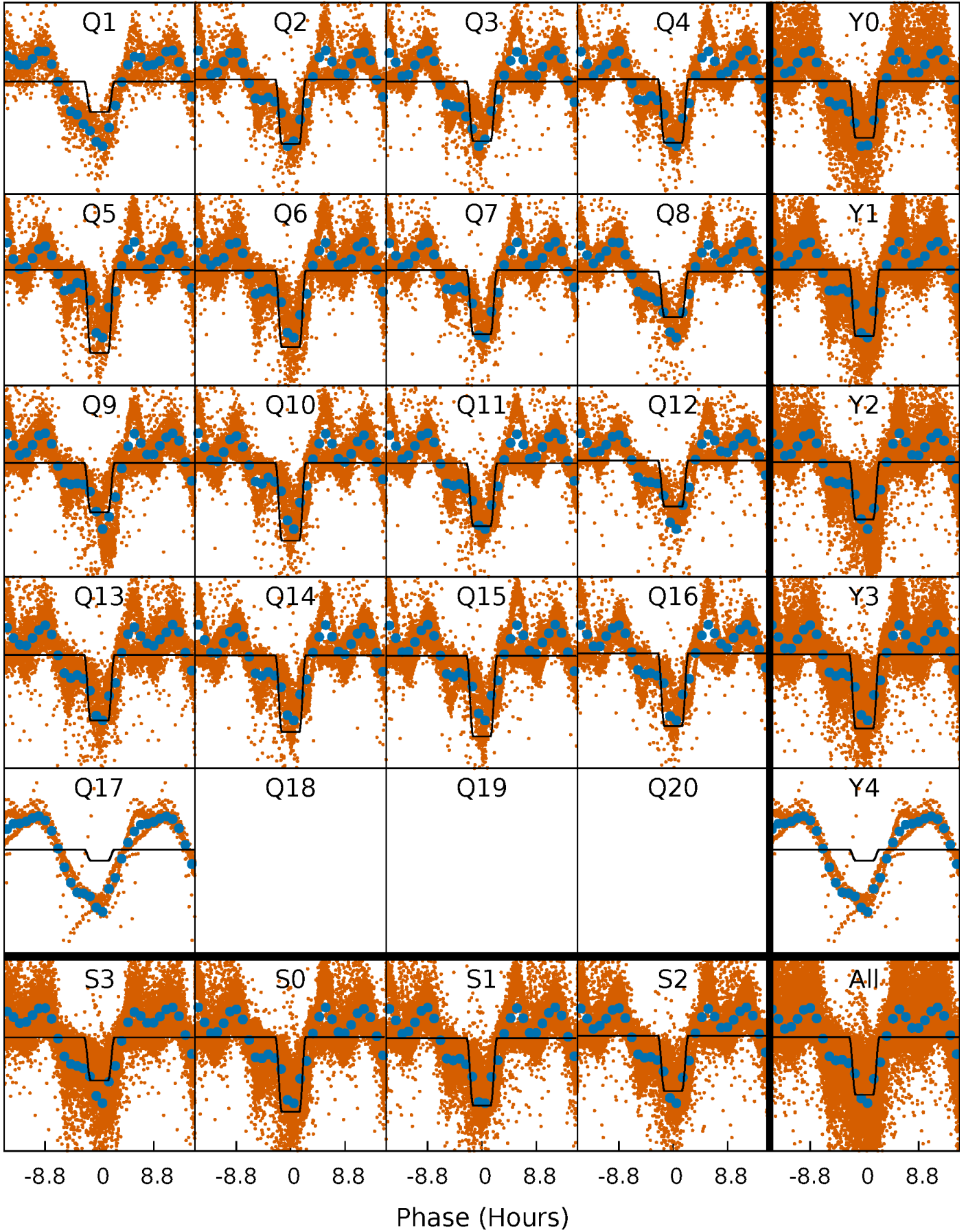
# DV Quarter-Phased Transit Curves

TCE 010324412-01   P= 0.865758 Days    $T_0=132.374787$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

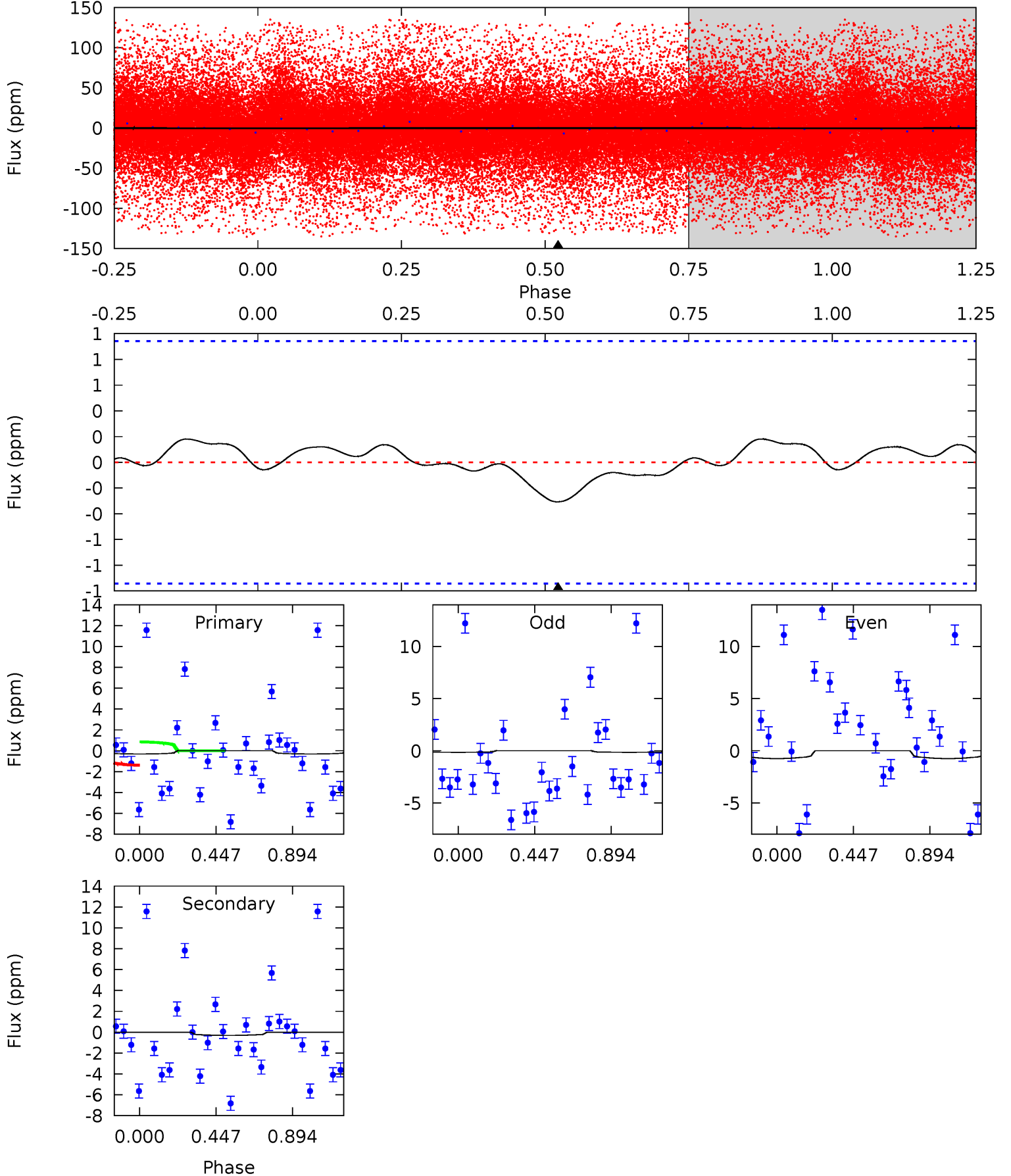
TCE 010324412-01   P= 0.865742 Days    $T_0=132.365429$  (BKJD)



# DV Model-Shift Uniqueness Test

010324412-01, P = 0.865758 Days, E = 131.509029 Days

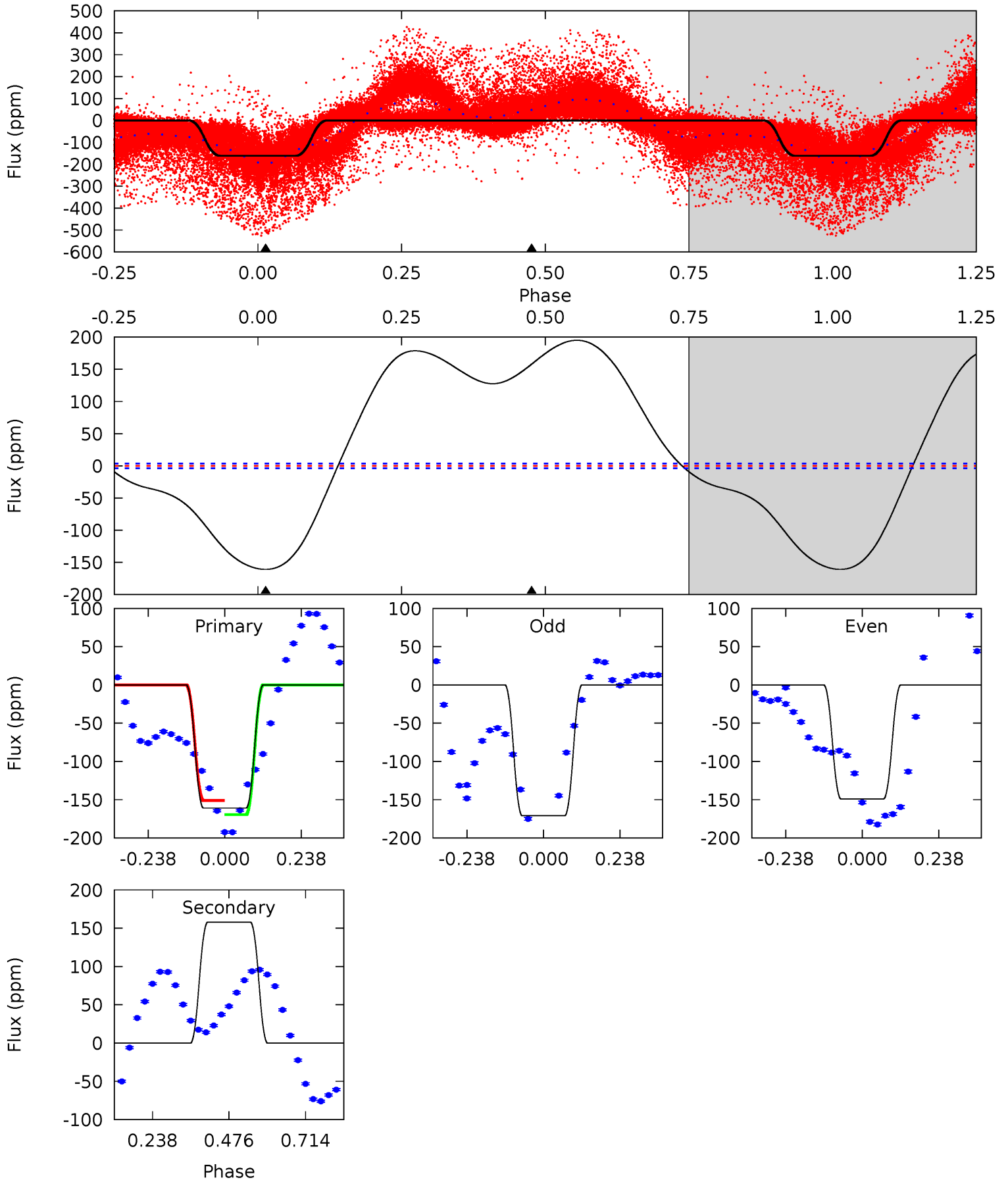
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.39	1.39	0	0	4.24	0.76	0.22	1.39	1.39	1.39	1.39	1.36	1.19	0.37	1.24



# Alt Model-Shift Uniqueness Test

010324412-01, P = 0.865742 Days, E = 131.499687 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
190.8	-187.3	0	0	4.38	1.18	71.2	190.8	190.8	-187.3	-187.3	15.6	1.36	0.55	9.47





### Stellar Parameters For KIC 010324412

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$10153^{+318}_{-424}$	$3.543^{+0.532}_{-0.028}$	$0.070^{+0.150}_{-0.550}$	$5.203^{+0.307}_{-2.764}$	$3.451^{+0.069}_{-1.104}$	$0.035^{+0.220}_{-0.003}$
	+3%/-4%	+15%/-1%	+214%/-786%	+6%/-53%	+2%/-32%	+637%/-10%
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 010324412-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-0 \pm 0$	$0.90^{+0.43}_{-0.35}$	$8288^{+561}_{-1099}$	$-5248^{+9858}_{-948}$	$0.132^{+0.290}_{-0.099}$
Alt.	$158 \pm 1$	$7.31^{+1.12}_{-1.93}$	$8248^{+596}_{-1034}$	$-9968^{+545}_{-508}$	$-1.134^{+0.244}_{-0.796}$

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



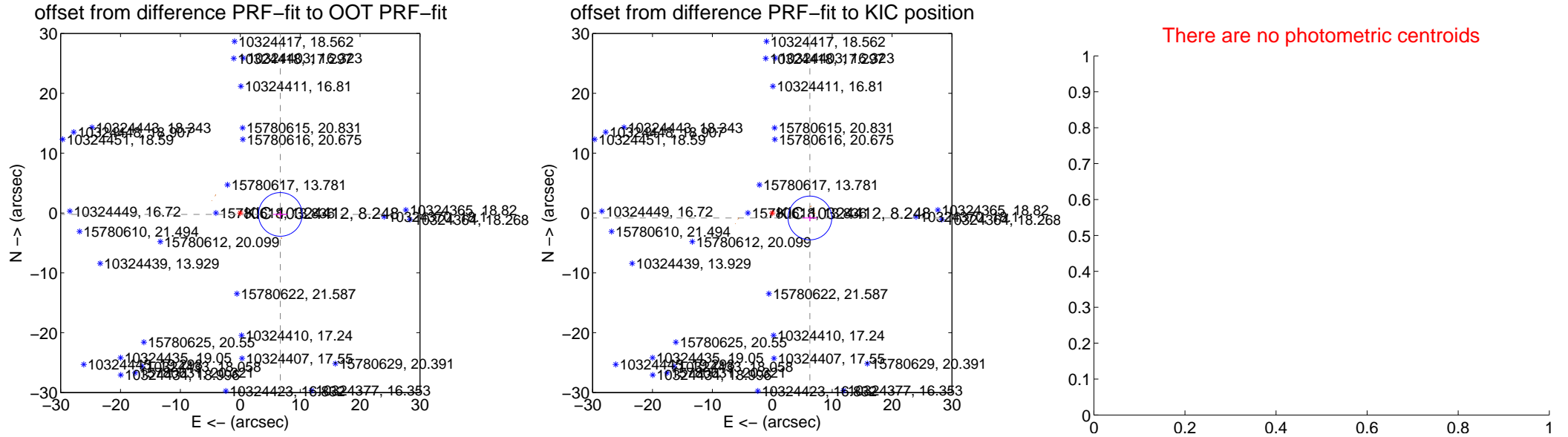
# DV Centroid Data

Supplemental centroid analysis for 010324412-01. **Kepler magnitude: 8.25.** Transit SNR 9.46

**There are 0 quarters with good PRF difference image offsets**

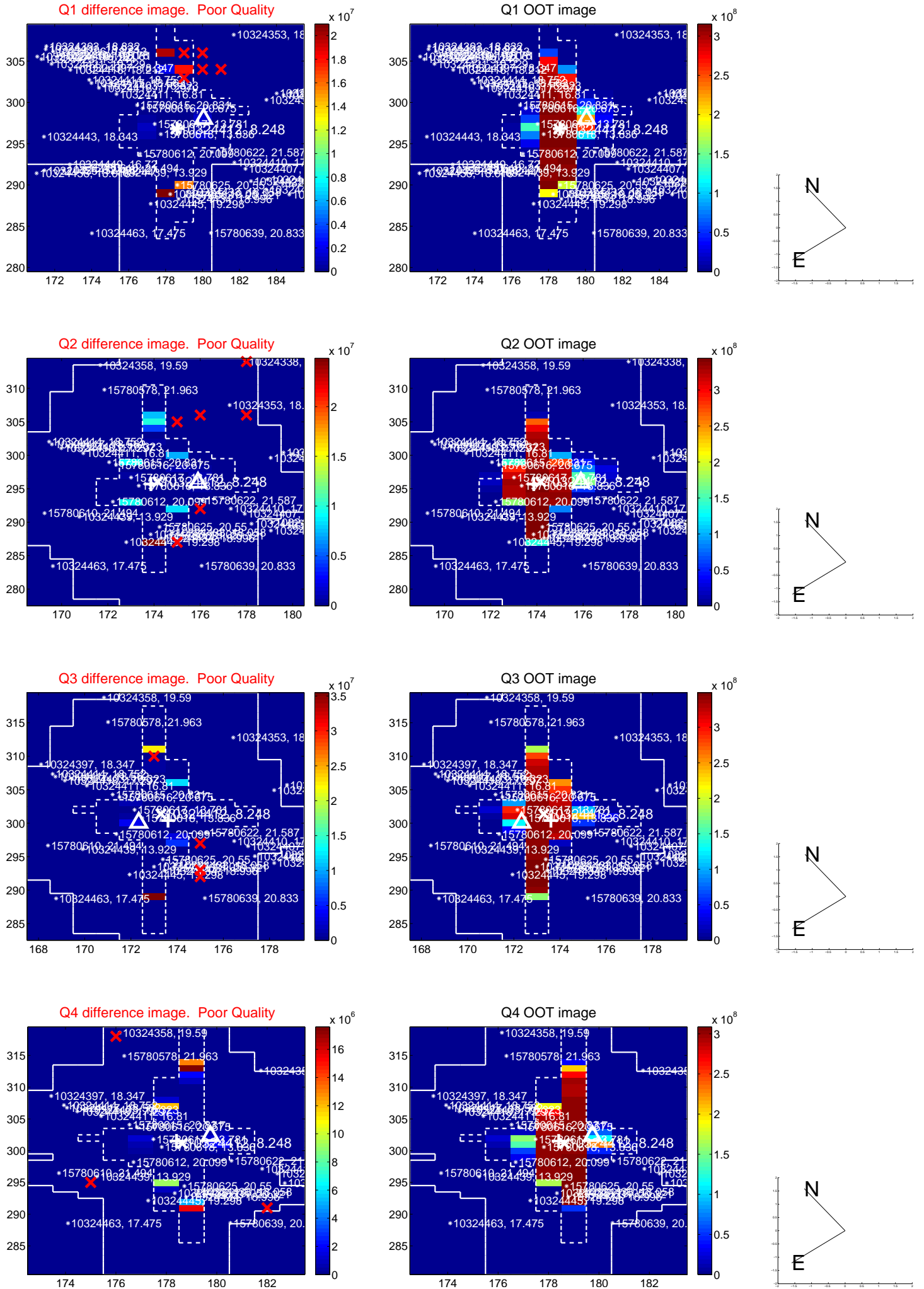
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>6.688 \pm 1.216</math></b>	<b>5.50</b>	$-6.684 \pm 1.200$	$-0.235 \pm 0.620$
PRF-fit source offset from KIC position	<b><math>6.341 \pm 1.218</math></b>	<b>5.20</b>	$-6.287 \pm 1.230$	$-0.827 \pm 0.524$
photometric centroid source offset	—	—	—	—

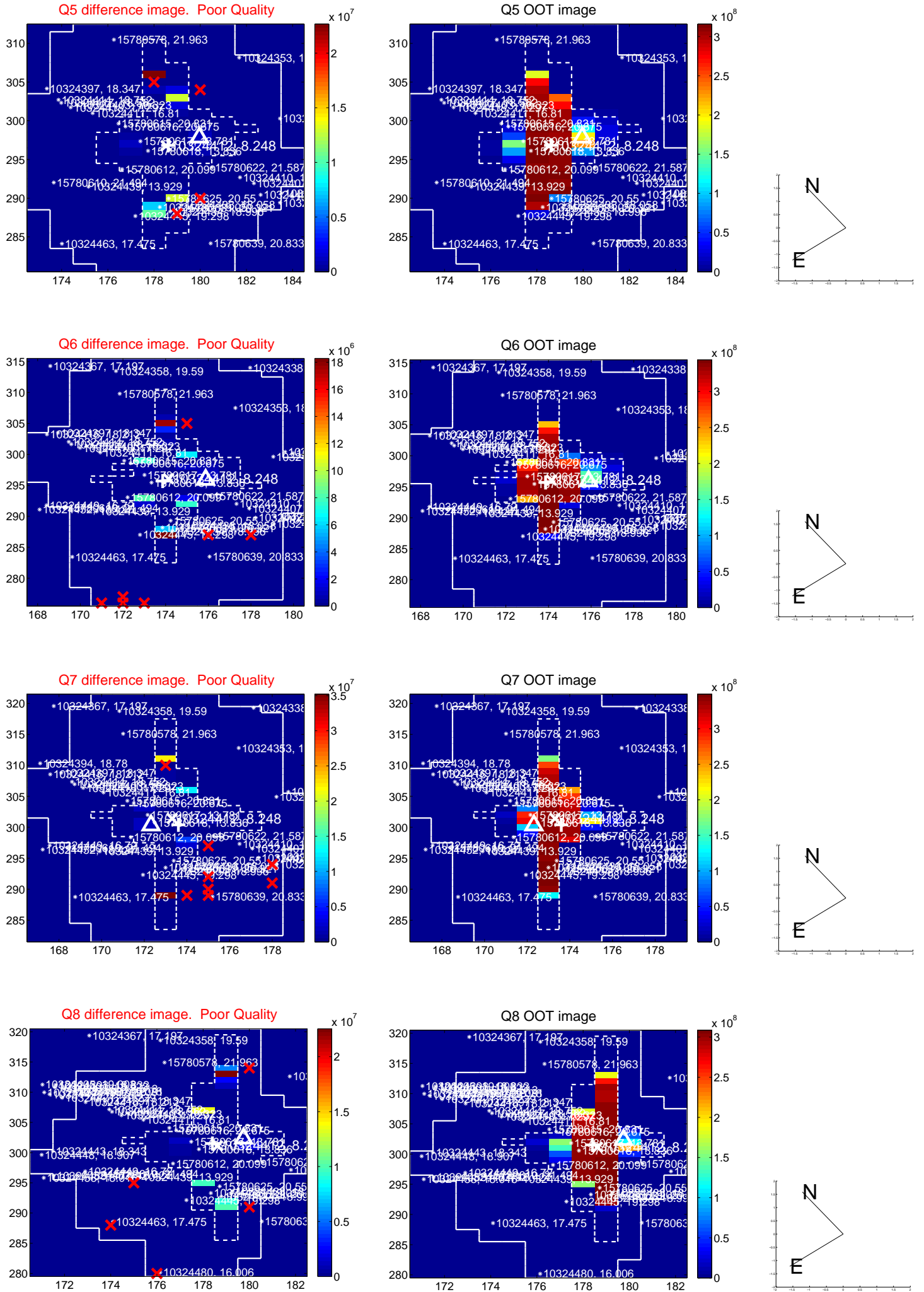


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

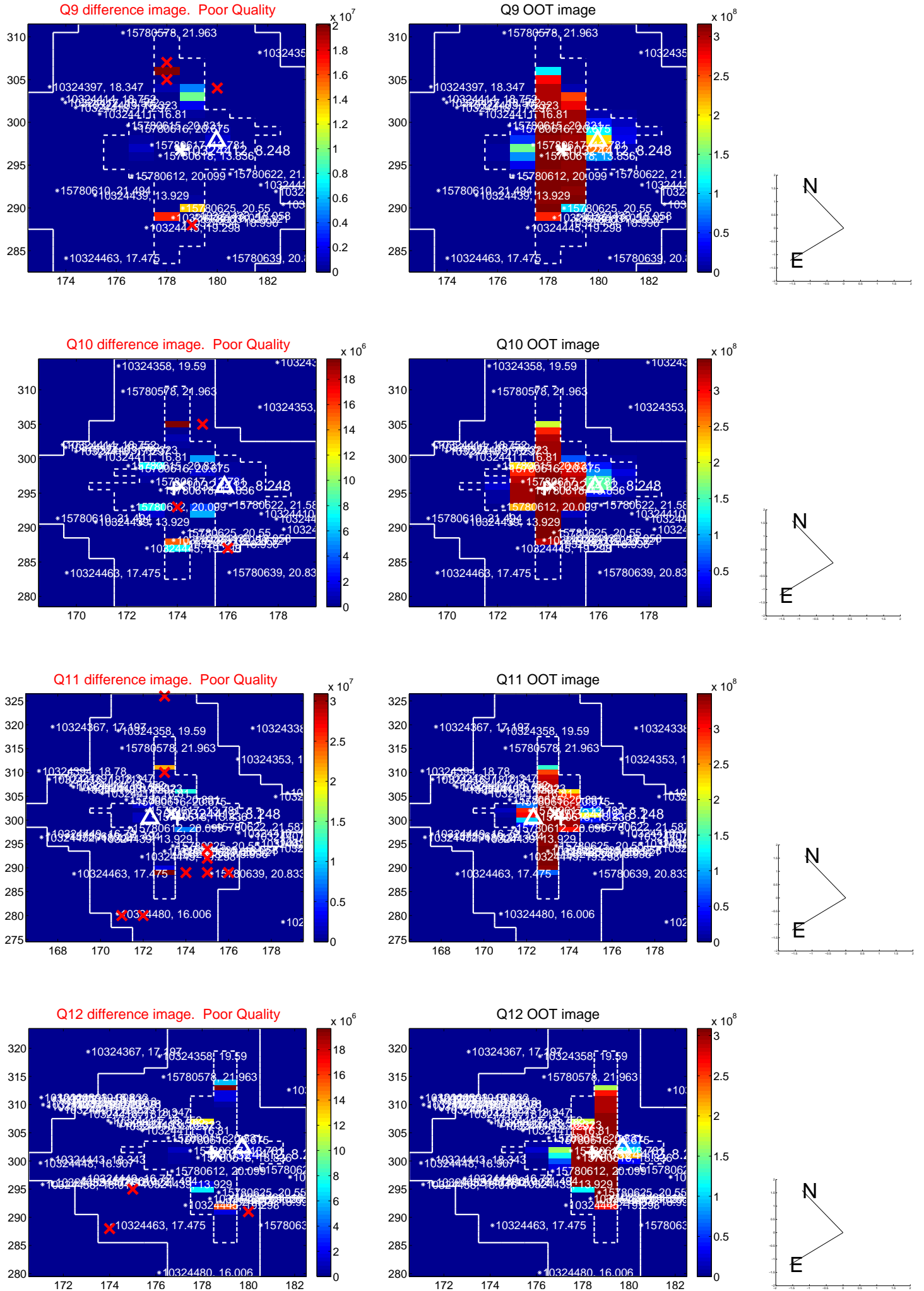
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

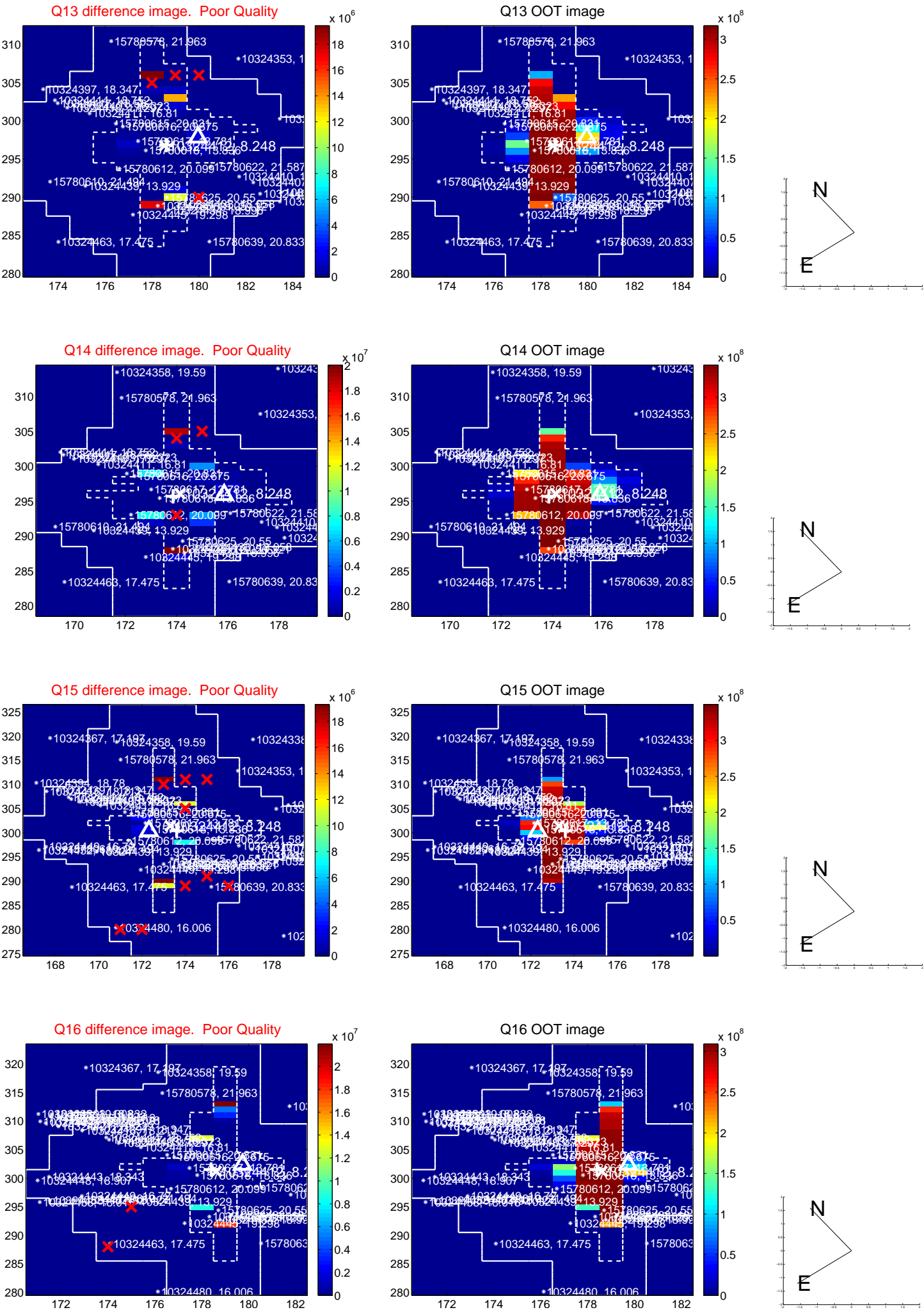


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



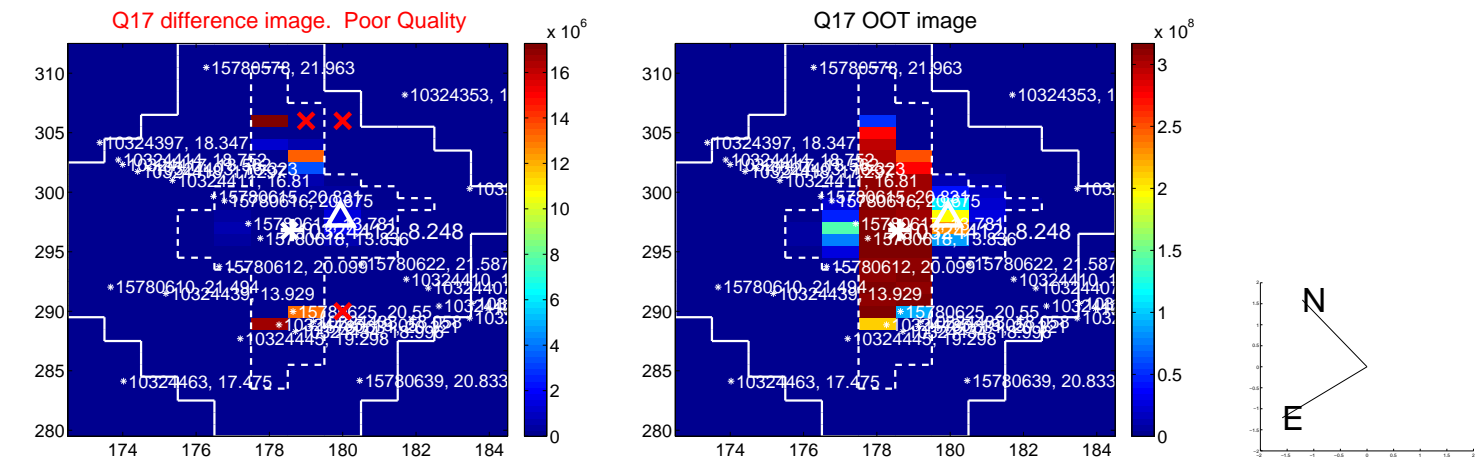


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



folded centroid time series figure for this object.

UKIRT Image

