

# KIC 007296086

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007296086-01	OBS	1374.01	0.890740	131.893724	156.6	1.254	25.1	30.9	1.17	5687	1.82	3956.42

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007296086-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—EPHEM_MATCH

**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 007296086-01

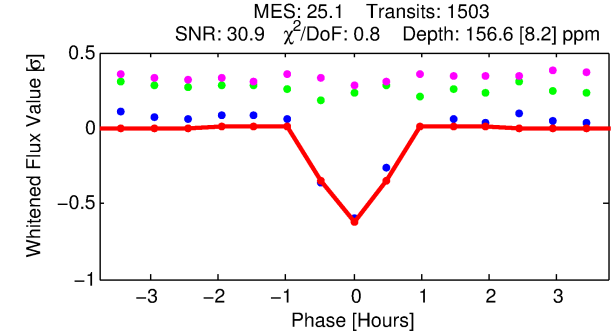
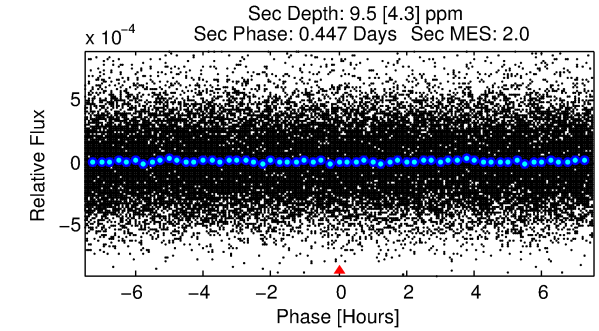
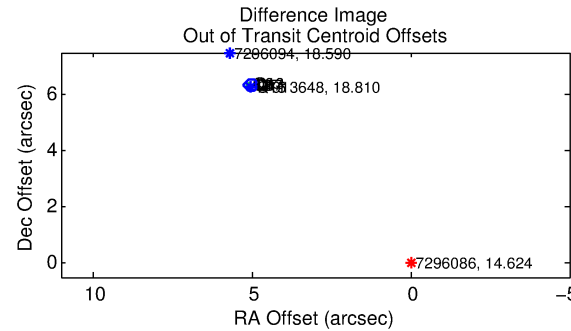
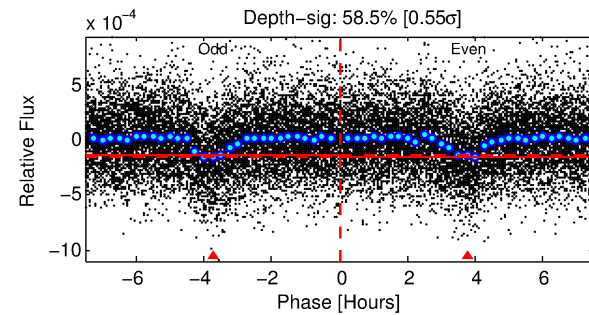
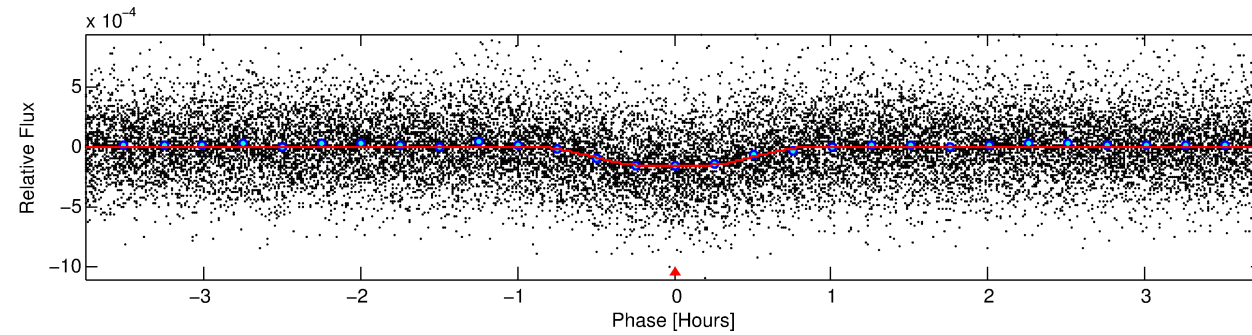
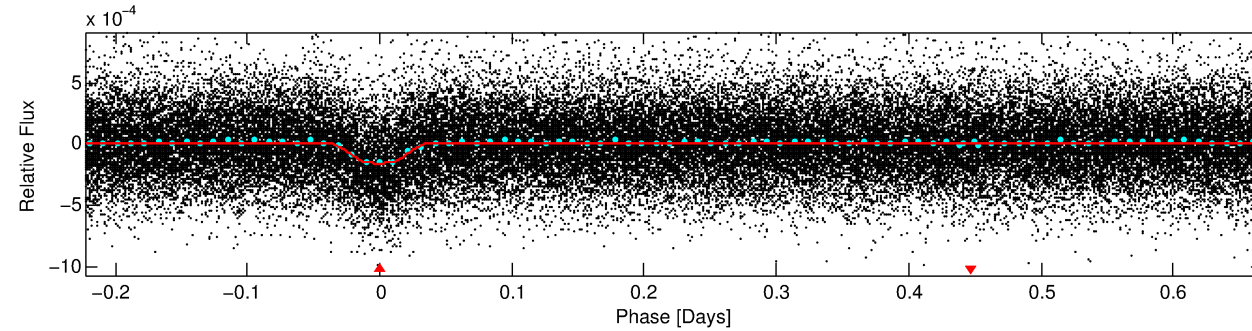
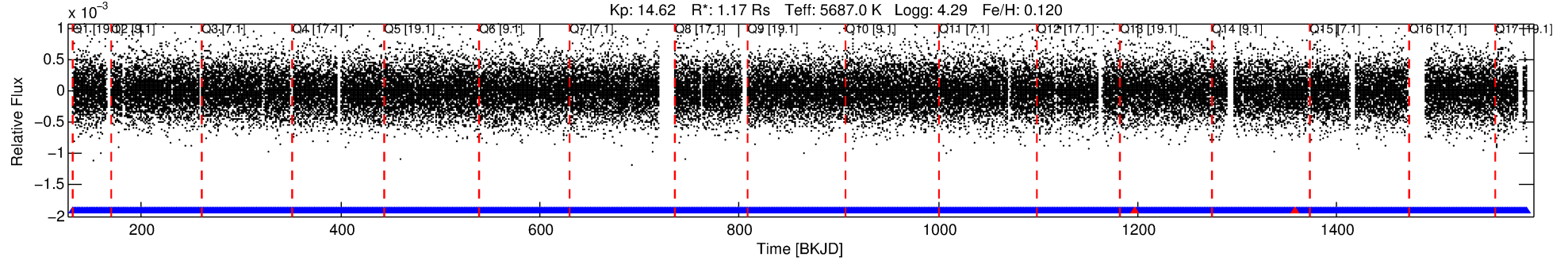
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
007296086-01	7296086	3790.01	7296094	1:1	9.4	-2	-1	18.59	14.62	930.64	Direct-PRF	0	0.56	0.70

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 7296086 Candidate: 1 of 1 Period: 0.891 d  
KOI: K01374.01 Corr: 0.972

Kp: 14.62 R\*: 1.17 Rs Teff: 5687.0 K Logg: 4.29 Fe/H: 0.120



## DV Fit Results:

Period = 0.89074 [0.00000] d  
Epoch = 131.8937 [0.0006] BKJD  
Rp/R\* = 0.0143 [0.0034]  
a/R\* = 2.38 [2.24]  
b = 0.93 [0.17]  
Seff = 3956.42 [1411.68]  
Teq = 2022 [180] K  
Rp = 1.82 [0.68] Re  
a = 0.0180 [0.0042] AU  
Ag = 0.51 [0.38] [-1.31σ]  
Teffp = 2638 [443] K [1.29σ]

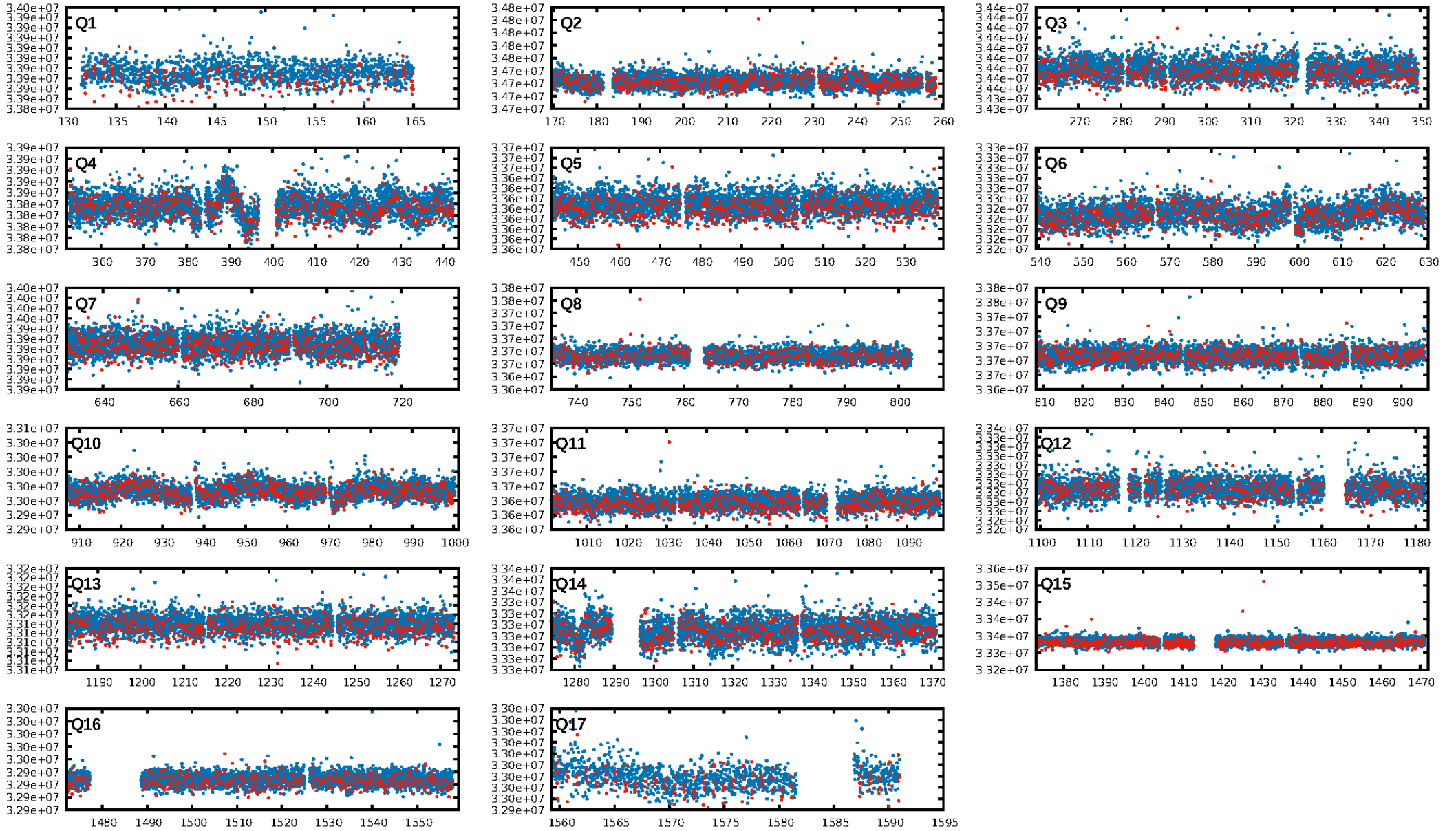
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.01e-131  
RollingBand-fgt: 1.00 [1433/1435]  
GhostDiagnostic-chr: -1.014  
Centroid-sig: 0.0%  
Centroid-so: 20.894 arcsec [43.42σ]  
OotOffset-rm: 8.103 arcsec [118.46σ]  
KicOffset-rm: 7.901 arcsec [116.66σ]  
OotOffset-st: 0/4/0/5 [9]  
KicOffset-st: 0/4/0/5 [9]  
DiffImageQuality-fgm: 1.00 [9/9]  
DiffImageOverlap-fno: 1.00 [17/17]

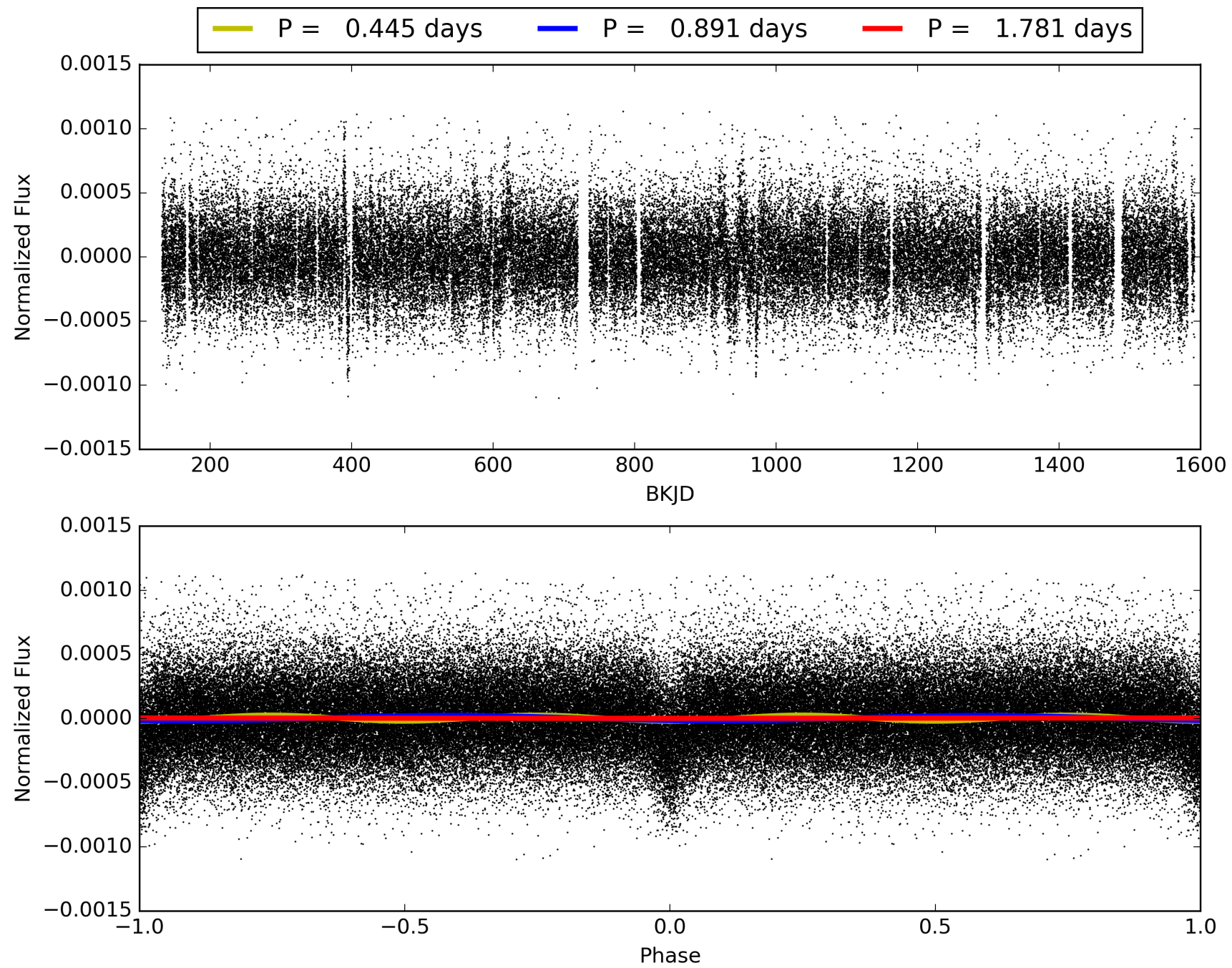
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 22:23:10 Z

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

# TCE 007296086-01, PDC Light Curves



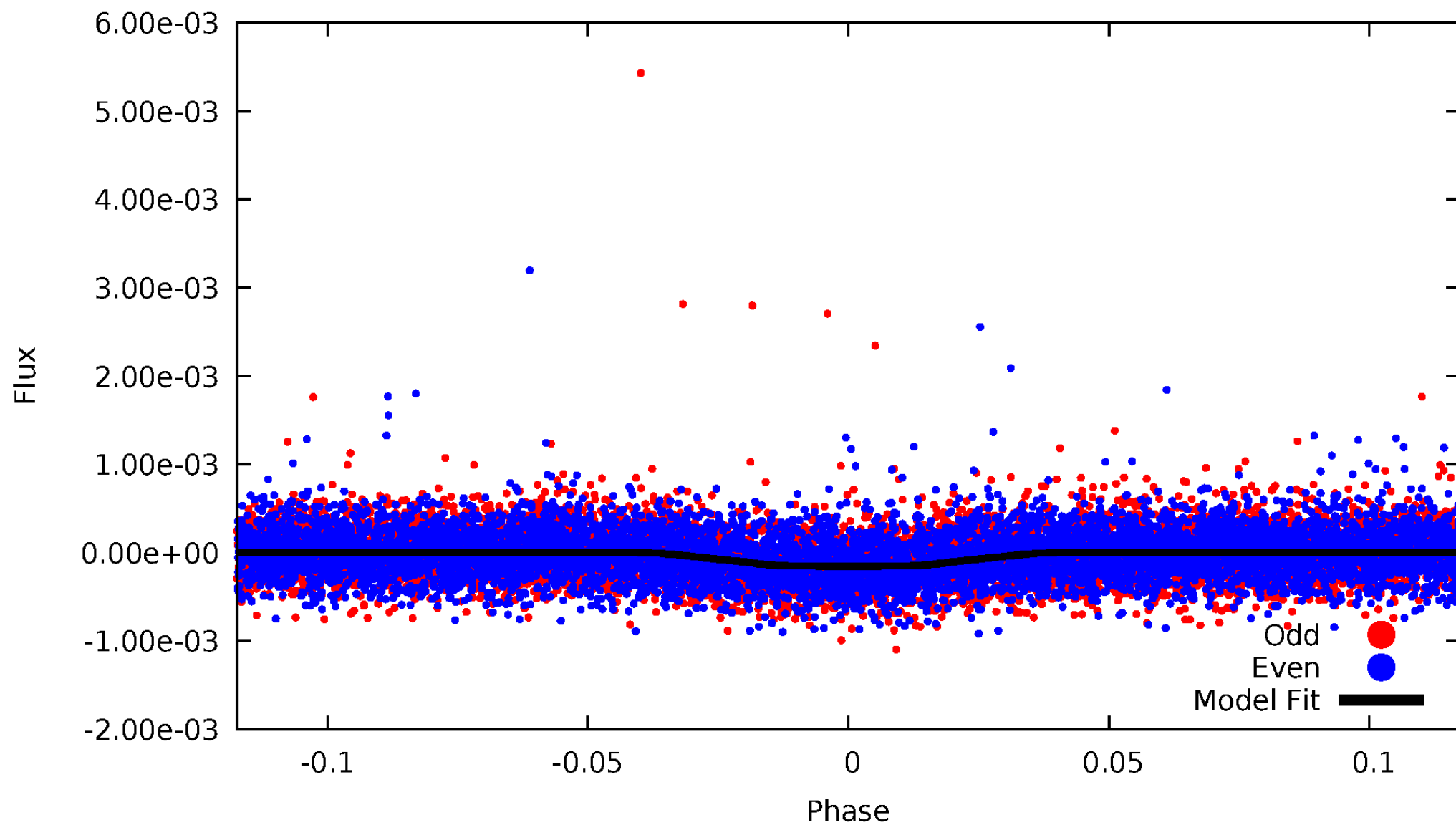
TCE 007296086-01





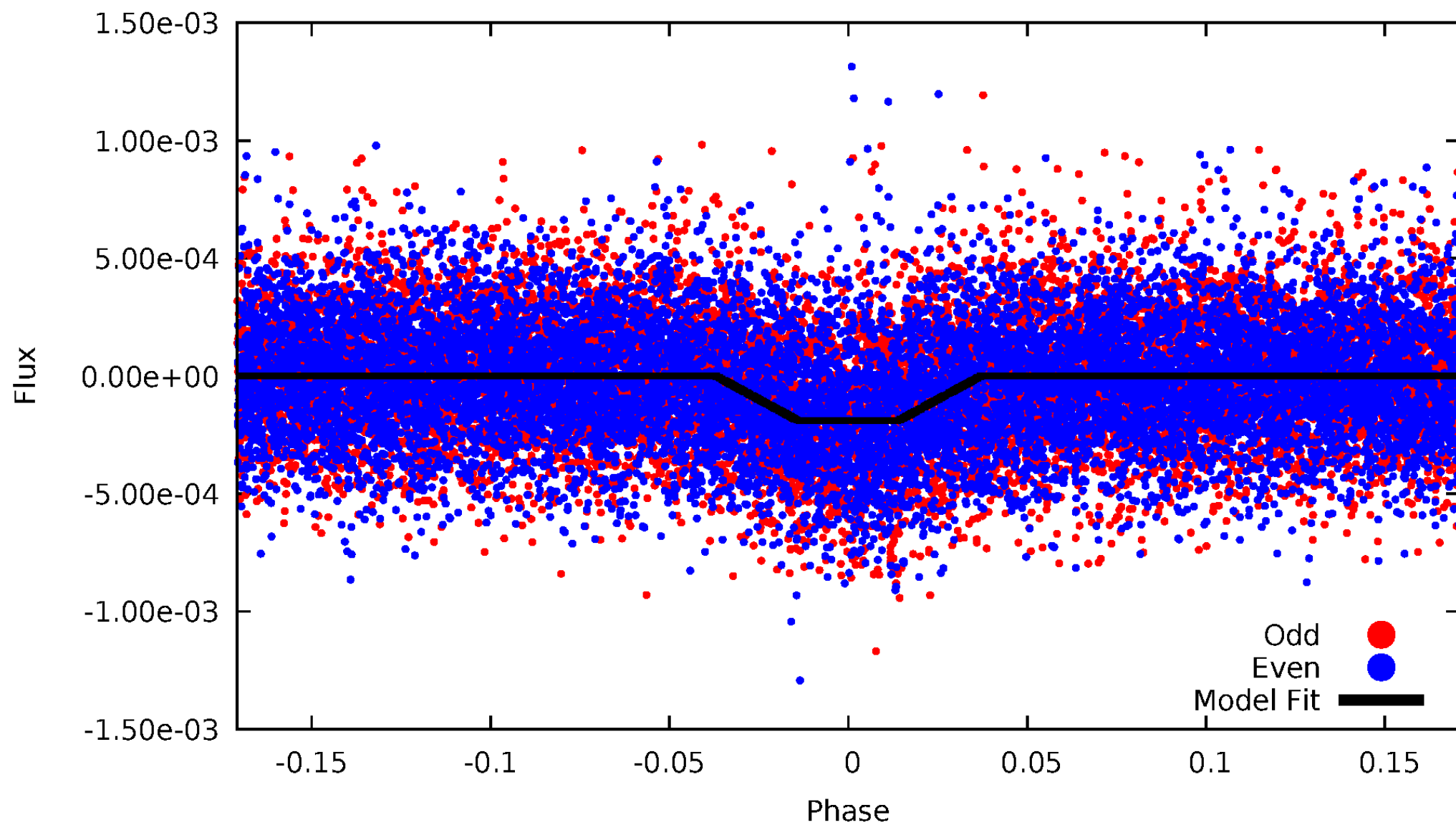
# DV Odd/Even

TCE 007296086-01



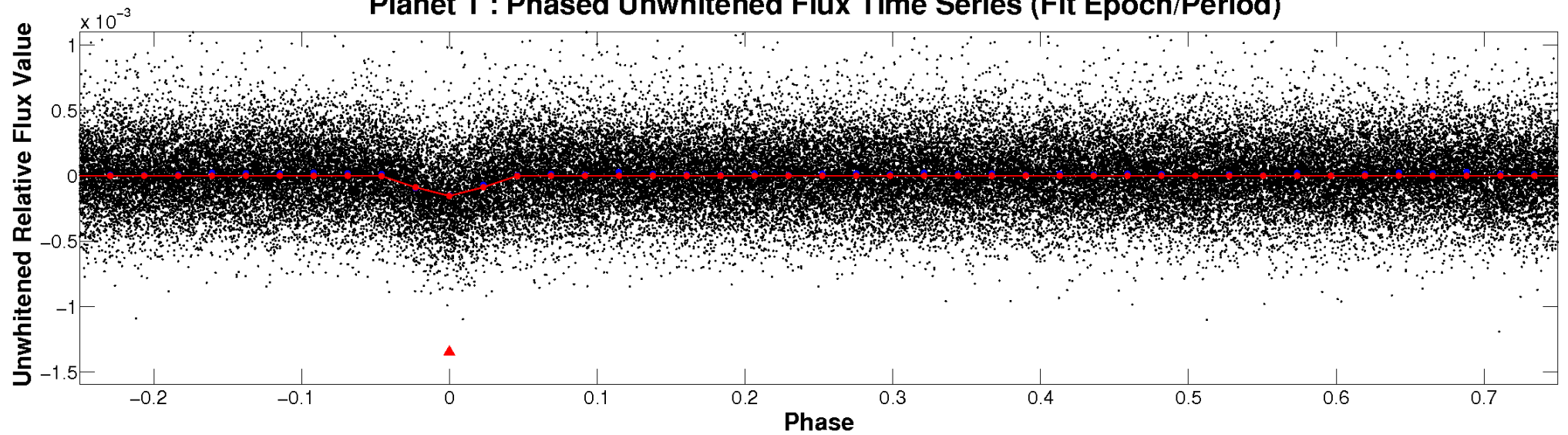
# ALT Odd/Even

TCE 007296086-01

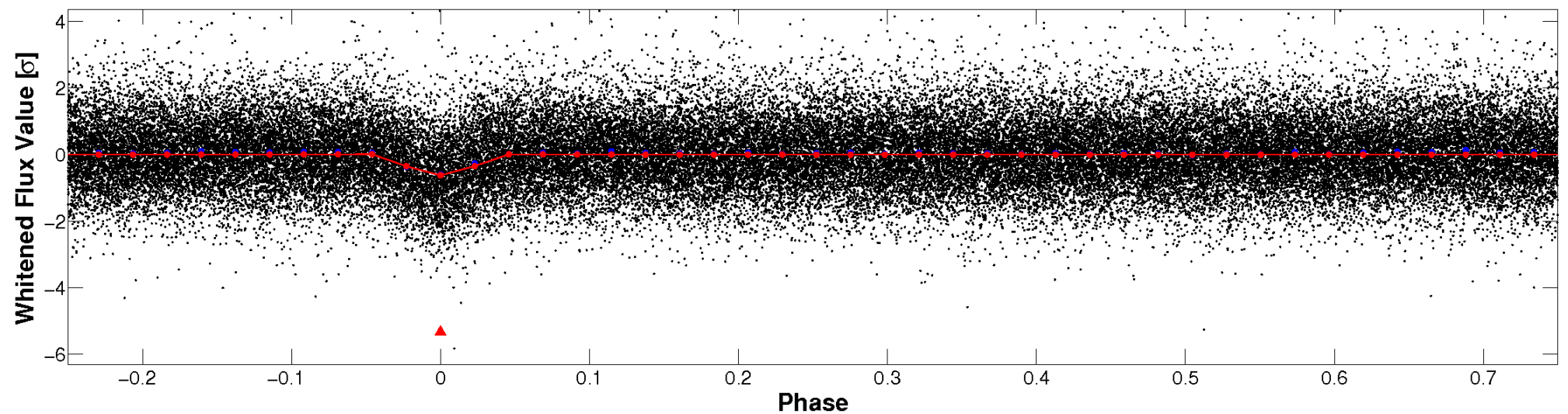


# Non-Whitened Vs. Whitened Light Curve

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

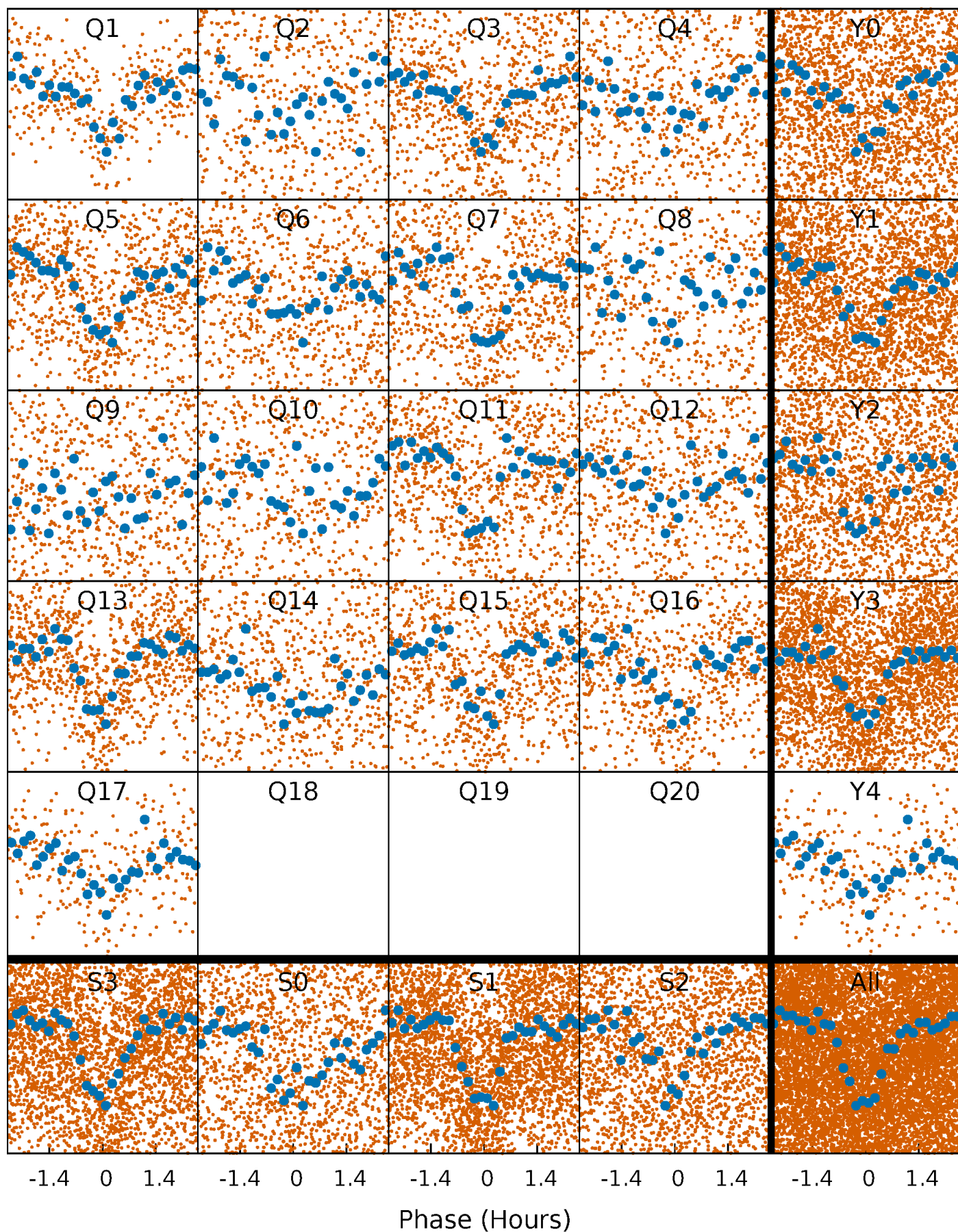


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

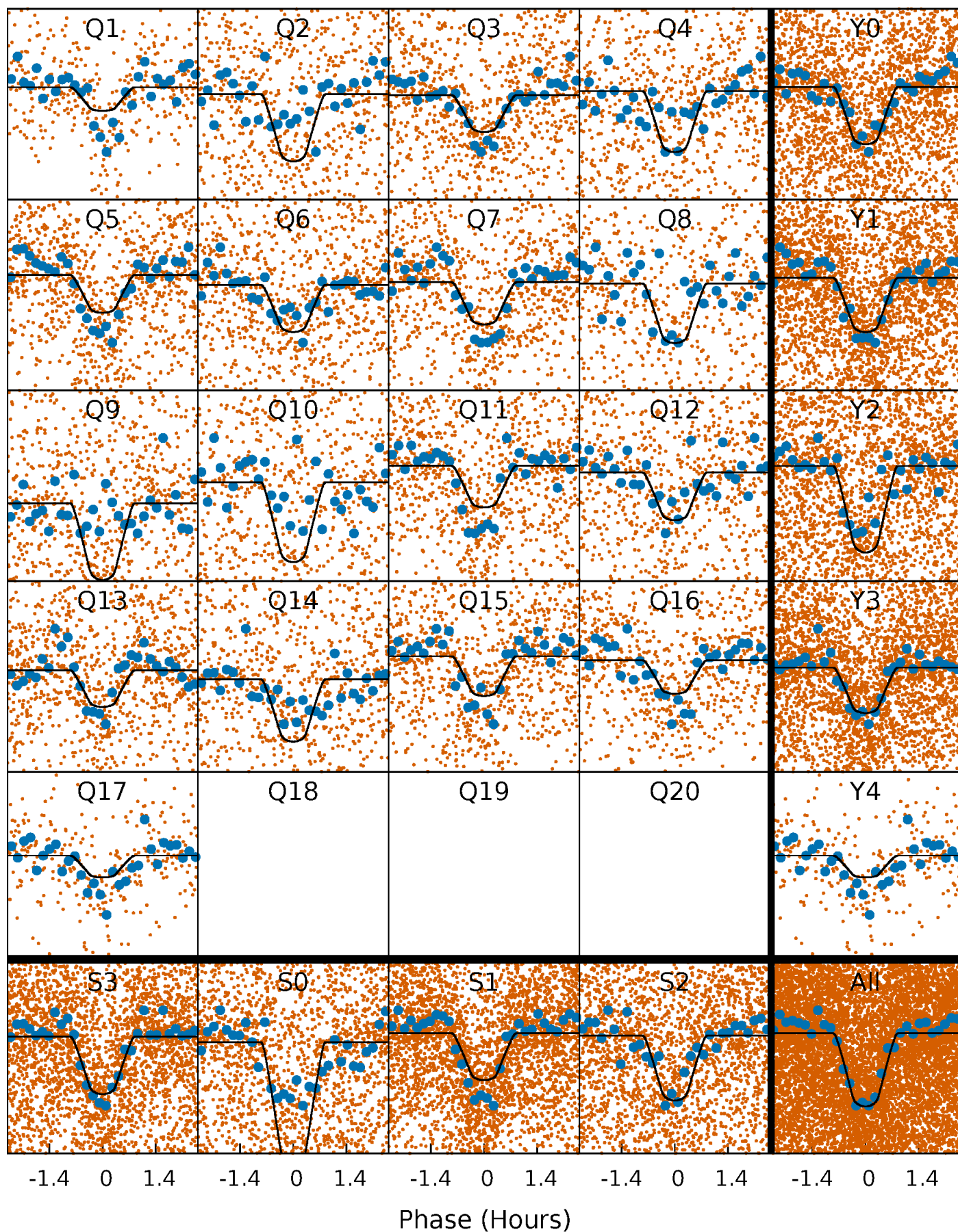
TCE 007296086-01 P= 0.890740 Days  $T_0=131.893724$  (BKJD)





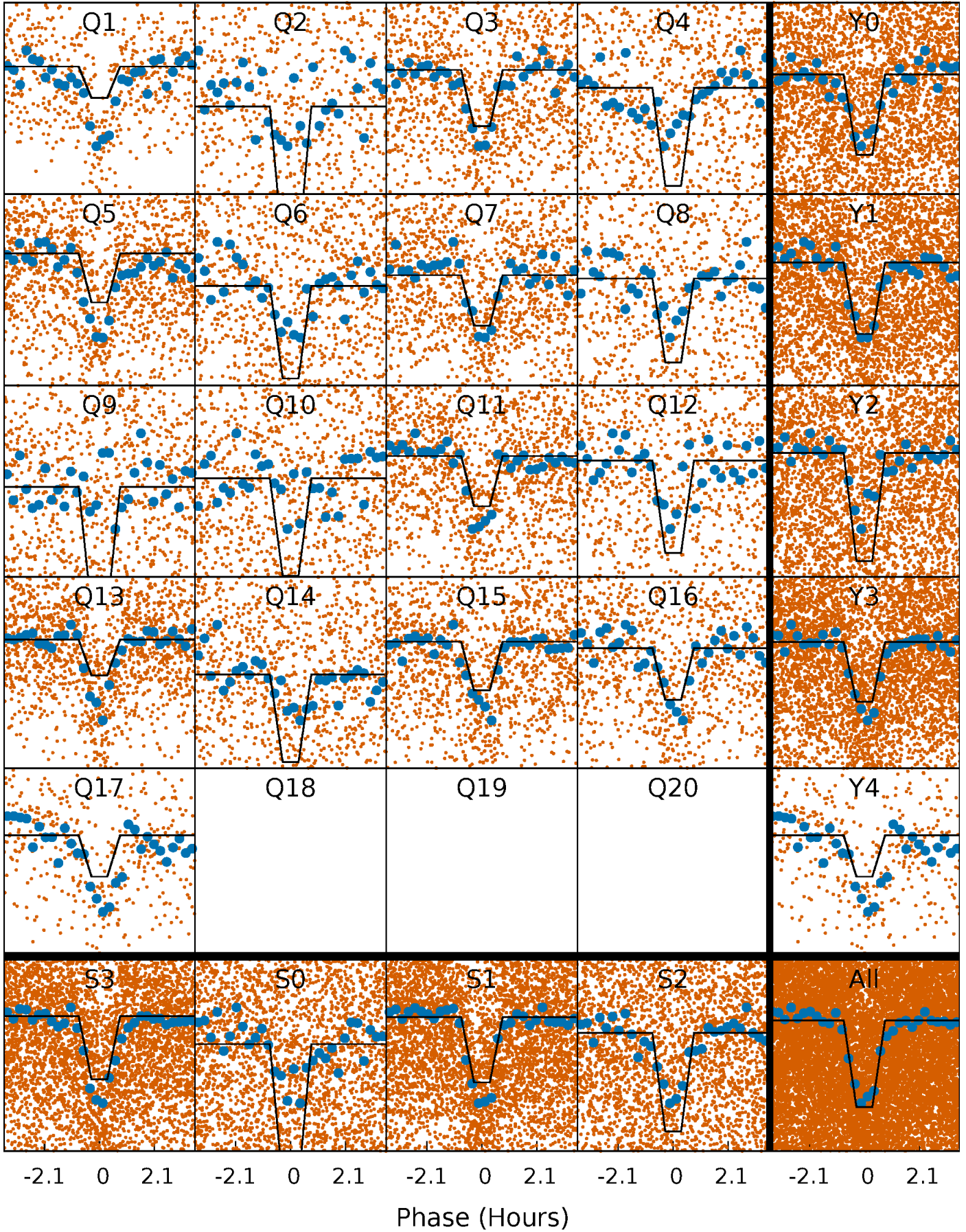
# DV Quarter-Phased Transit Curves

TCE 007296086-01 P= 0.890740 Days  $T_0=131.893724$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007296086-01 P= 0.890735 Days  $T_0=131.896979$  (BKJD)

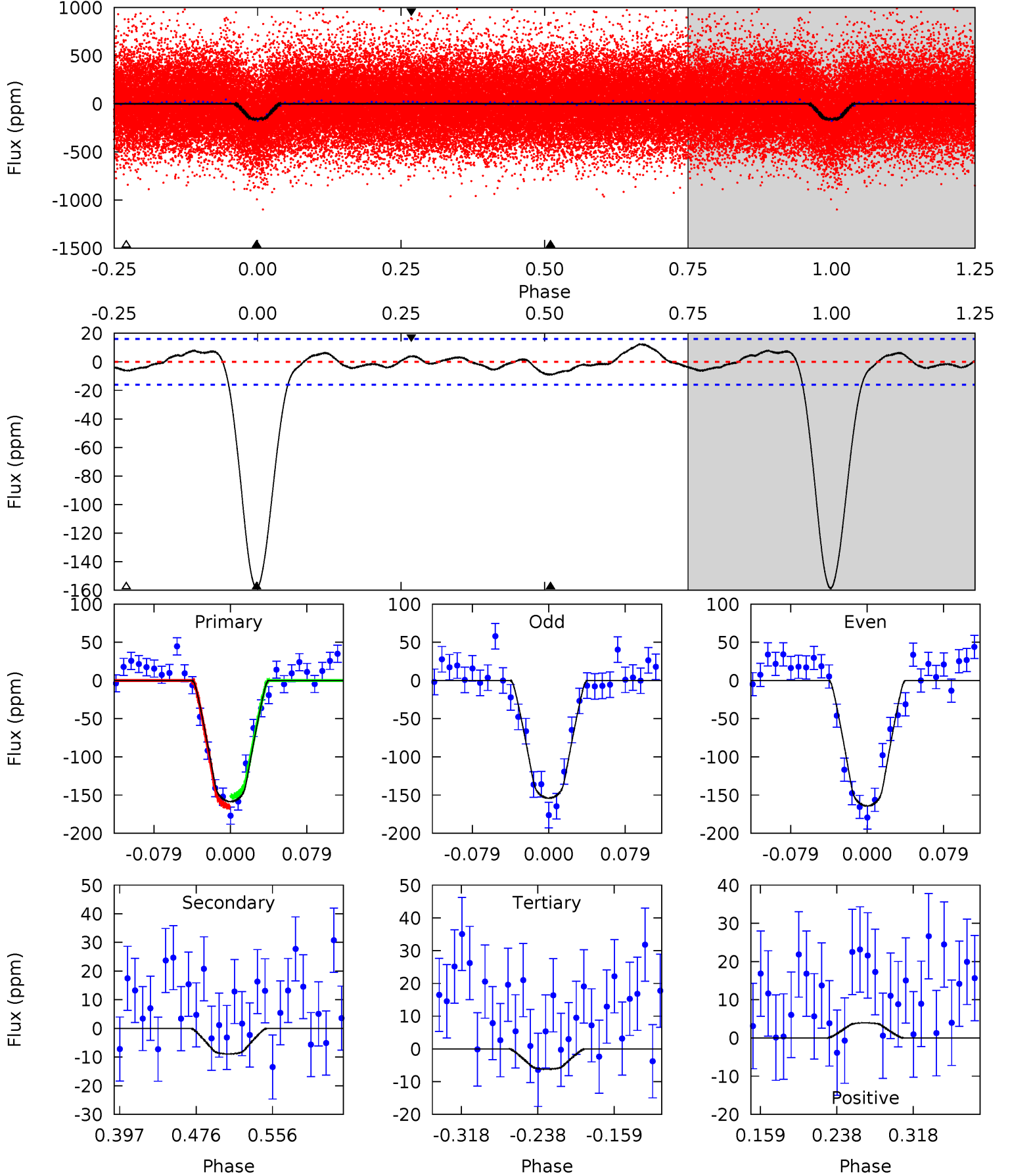




# DV Model-Shift Uniqueness Test

007296086-01, P = 0.890740 Days, E = 131.002984 Days

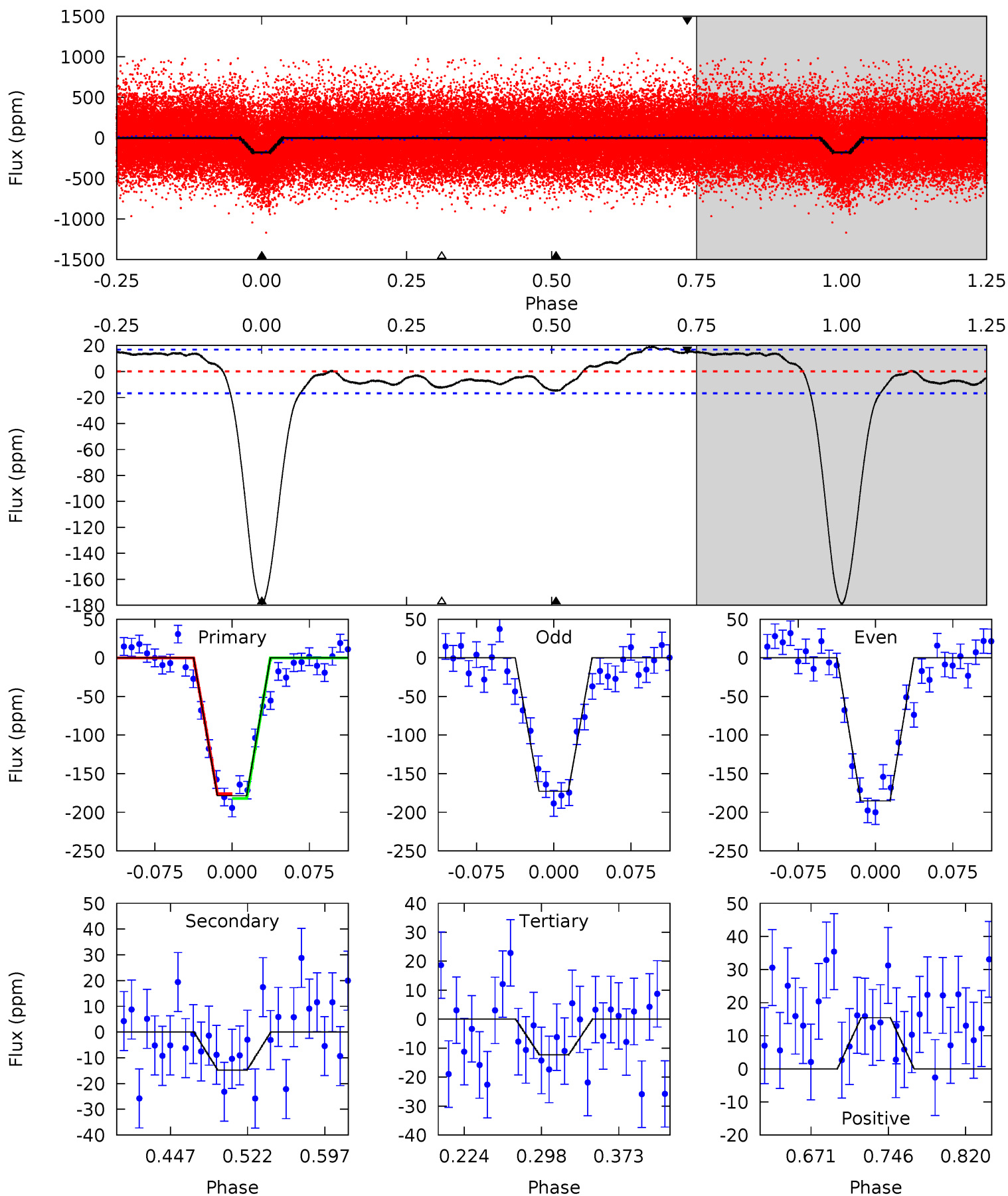
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.7	2.57	1.79	1.14	4.61	1.75	1.29	43.9	44.5	0.78	1.43	1.48	0.94	0.07	1.88



# Alt Model-Shift Uniqueness Test

007296086-01, P = 0.890735 Days, E = 131.006244 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
49.2	4.07	3.39	4.25	4.63	1.78	2.90	45.8	44.9	0.68	-0.19	1.71	0.97	0.10	0.84





### Stellar Parameters For KIC 007296086

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5687^{+154}_{-171}$	$4.293^{+0.180}_{-0.180}$	$0.120^{+0.250}_{-0.300}$	$1.169^{+0.335}_{-0.251}$	$0.979^{+0.122}_{-0.100}$	$0.862^{+0.809}_{-0.420}$
	+3%/-3%	+4%/-4%	+208%/-250%	+29%/-21%	+12%/-10%	+94%/-49%
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 007296086-01 / KOI 1374.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-9 \pm 3$	$1.86^{+0.54}_{-0.51}$	$2836^{+211}_{-186}$	$2679^{+603}_{-5184}$	$0.440^{+0.483}_{-0.215}$
Alt.	$-15 \pm 4$	$1.77^{+0.56}_{-0.49}$	$2829^{+219}_{-197}$	$3231^{+462}_{-469}$	$0.813^{+0.815}_{-0.354}$

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

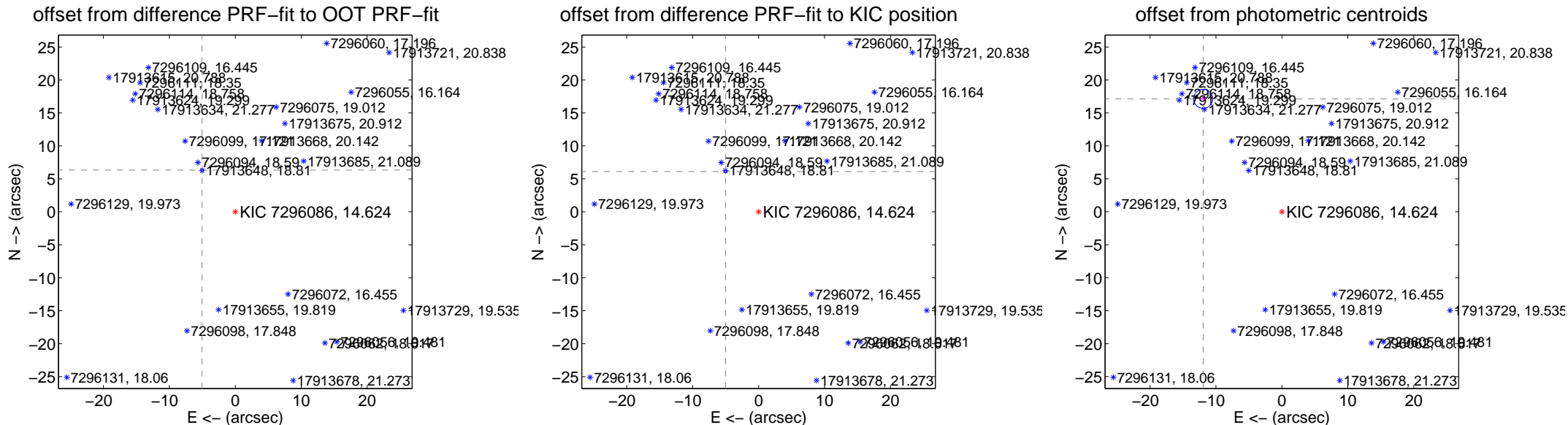
## DV Centroid Data

Supplemental centroid analysis for 007296086-01. Kepler magnitude: 14.62. Transit SNR 30.89

There are 9 quarters with good PRF difference image offsets

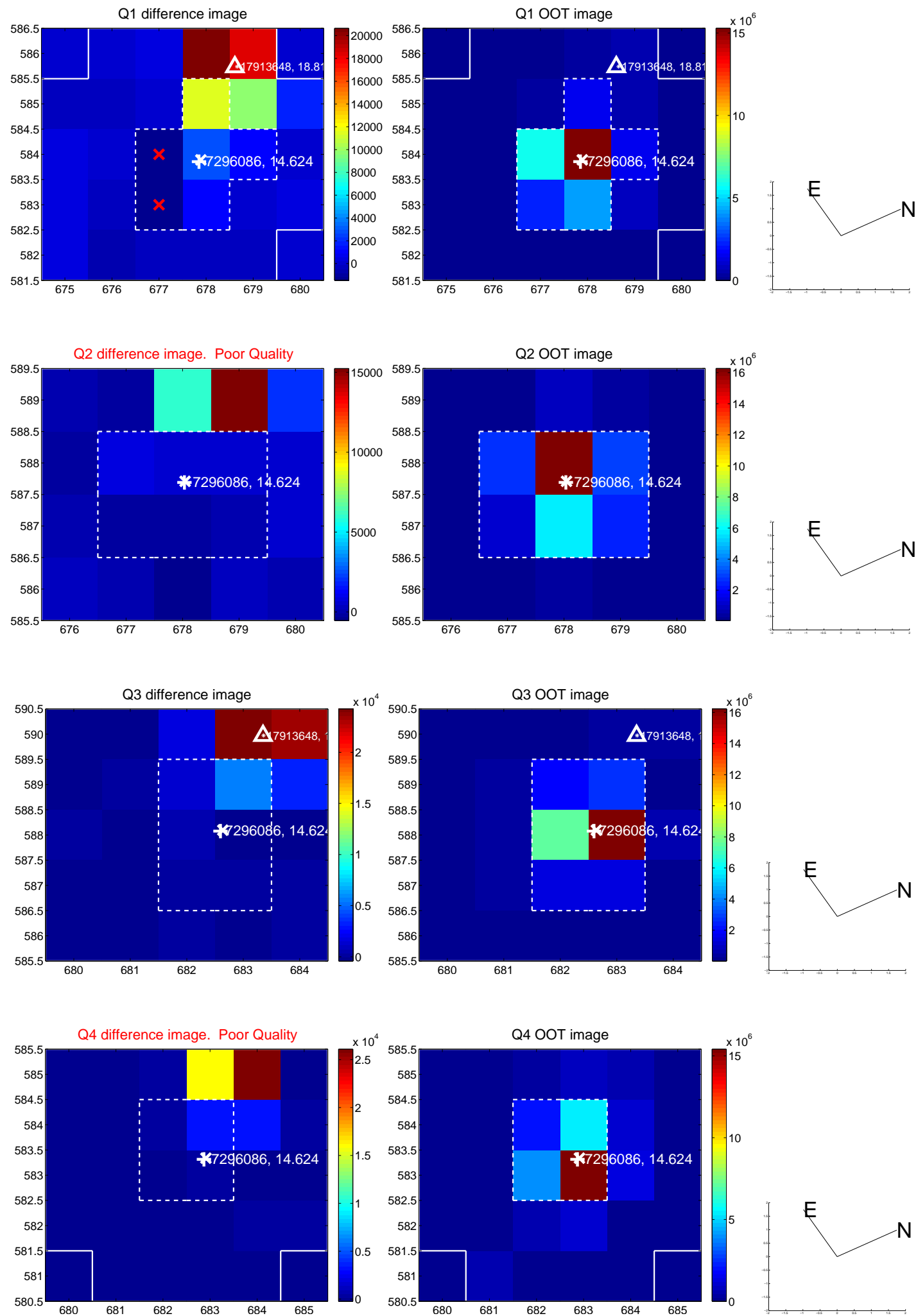
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>8.103 <math>\pm</math> 0.068</b>	<b>118.46</b>	5.045 $\pm$ 0.068	6.341 $\pm$ 0.067
PRF-fit source offset from KIC position	<b>7.901 <math>\pm</math> 0.068</b>	<b>116.66</b>	5.007 $\pm$ 0.068	6.113 $\pm$ 0.067
photometric centroid source offset	<b>20.89 <math>\pm</math> 0.48</b>	<b>43.42</b>	11.94 $\pm$ 0.44	17.14 $\pm$ 0.50

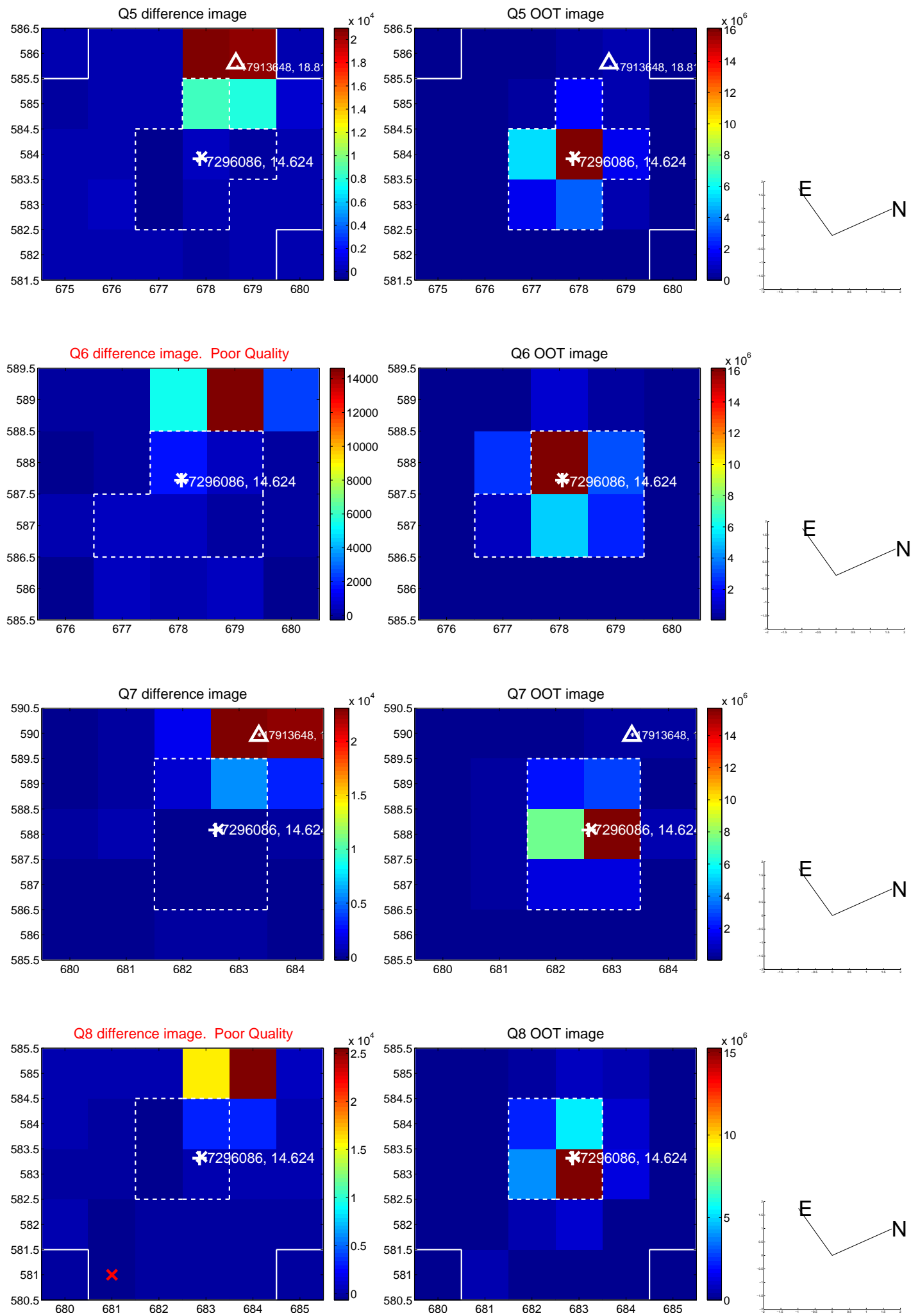


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

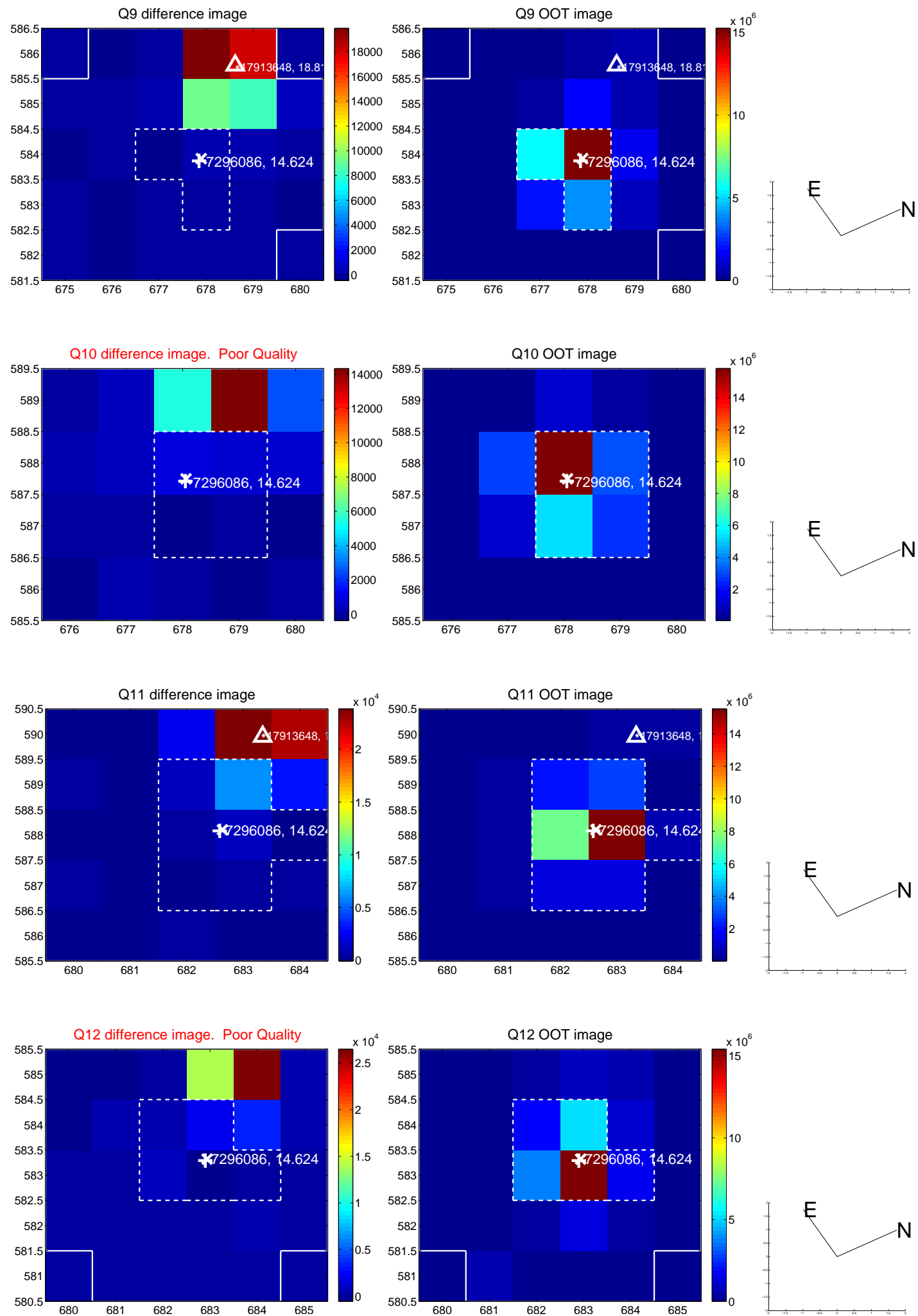


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

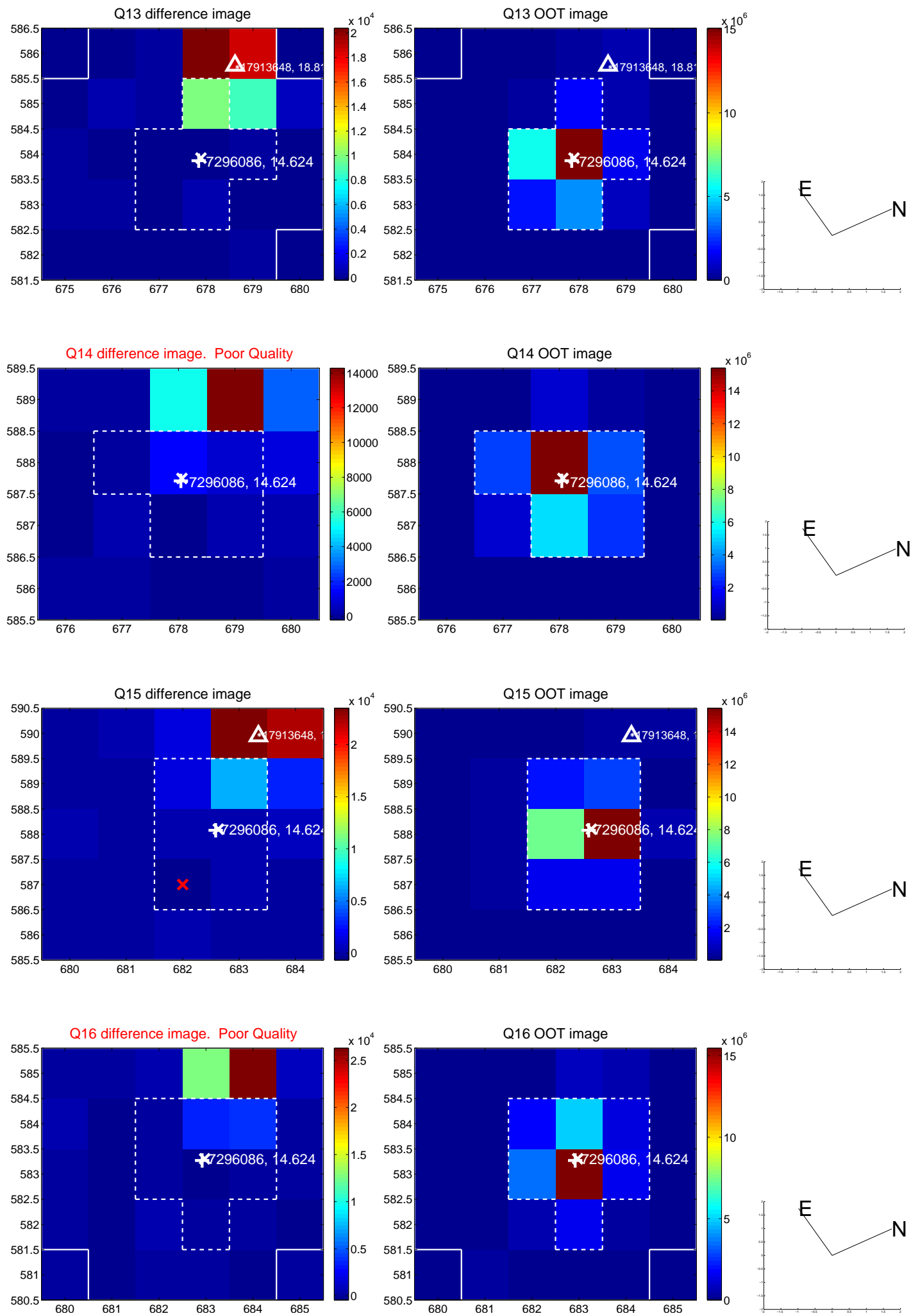




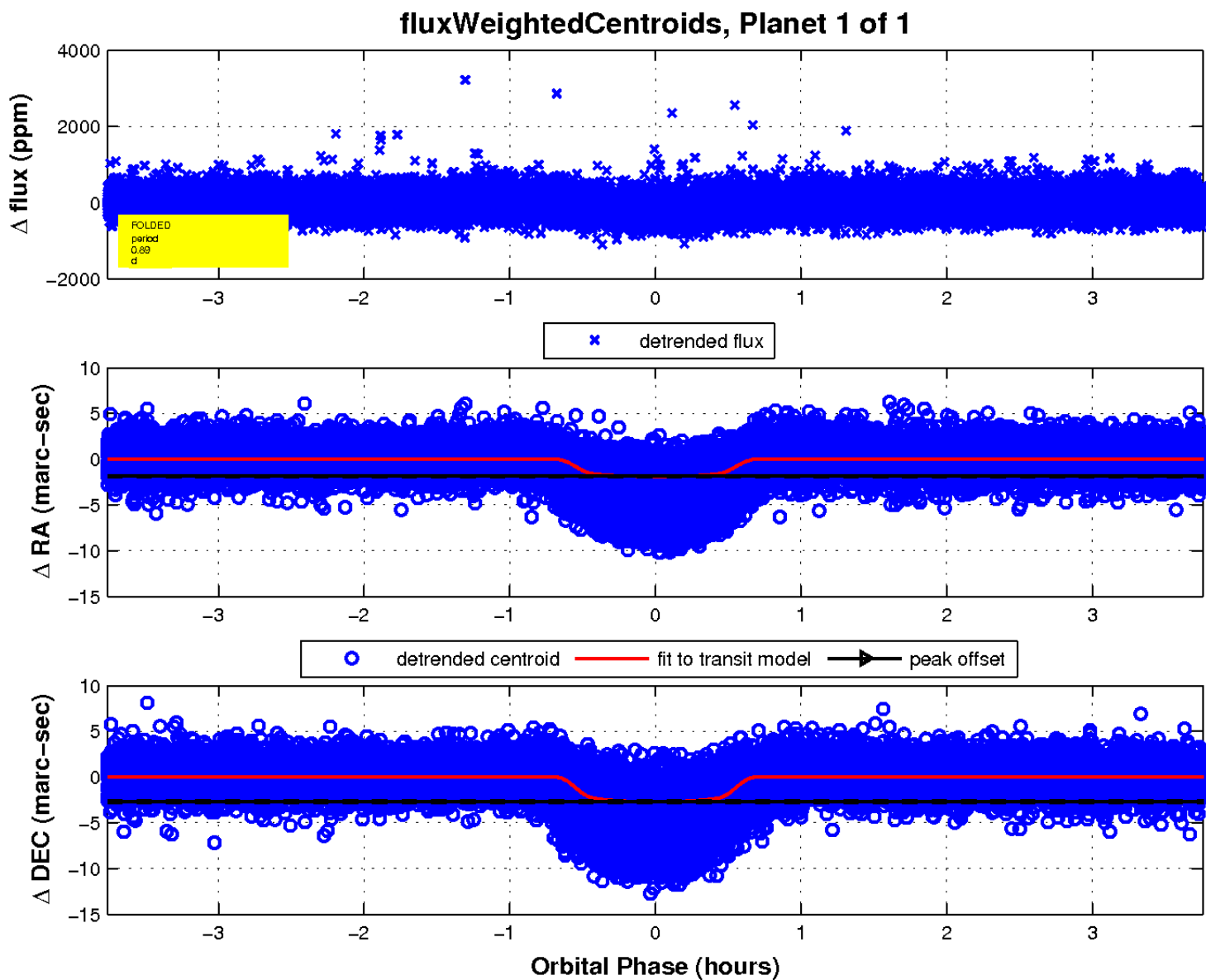
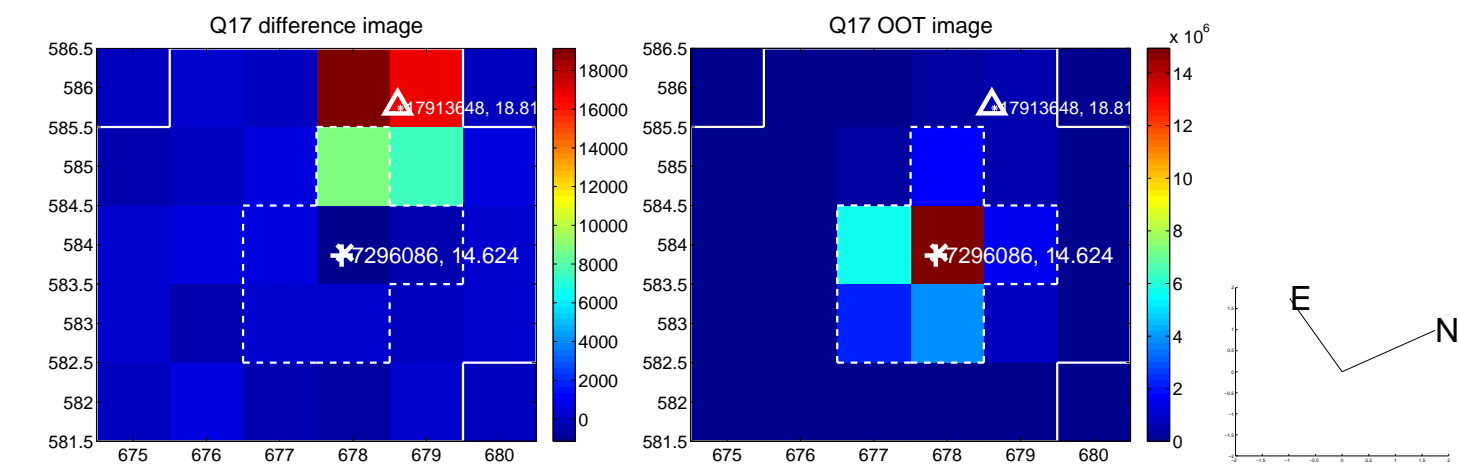
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

