

# KIC 005787131

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005787131-01	OBS	2927.01	24.436230	134.810435	516.7	6.615	15.5	16.0	1.03	6197	2.67	48.92

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005787131-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT

**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 005787131-01

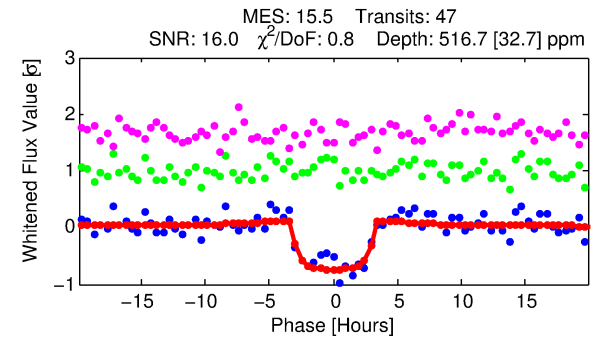
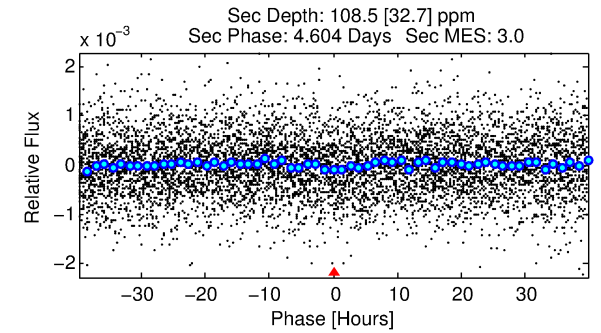
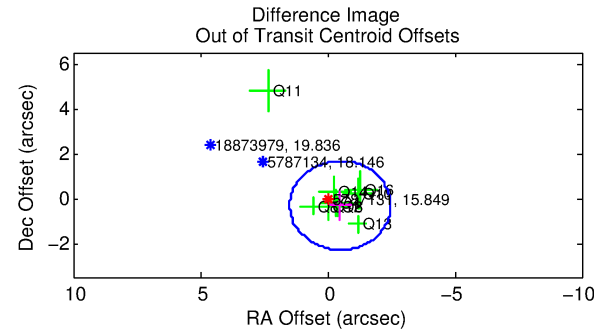
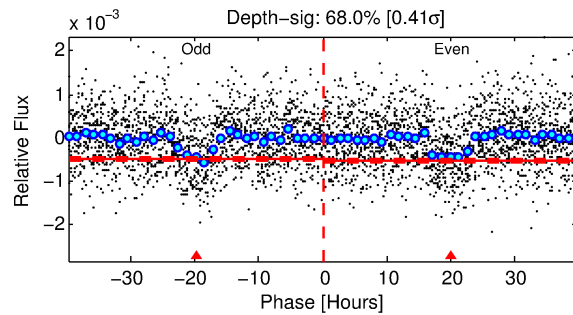
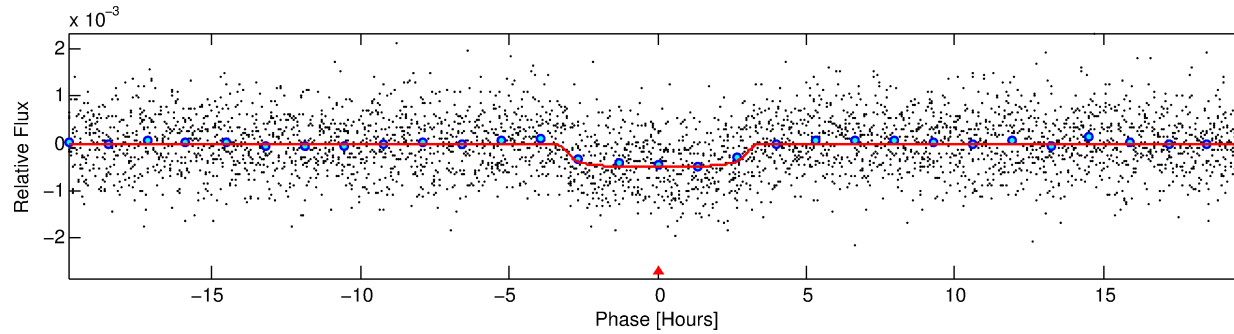
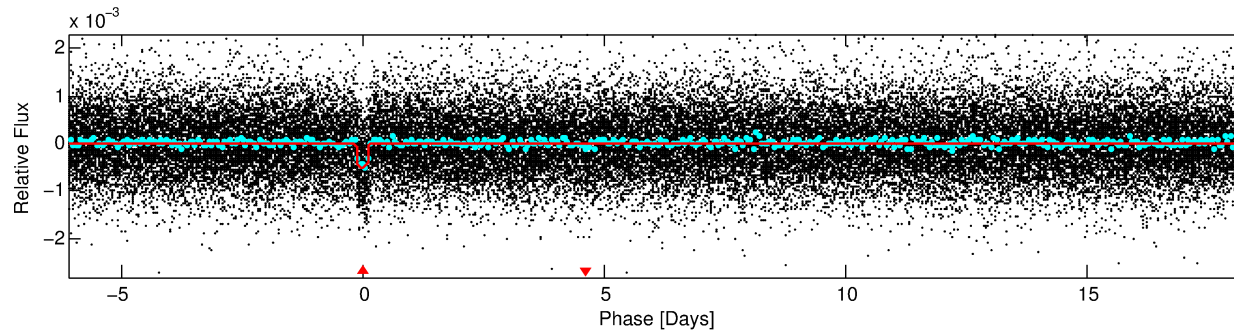
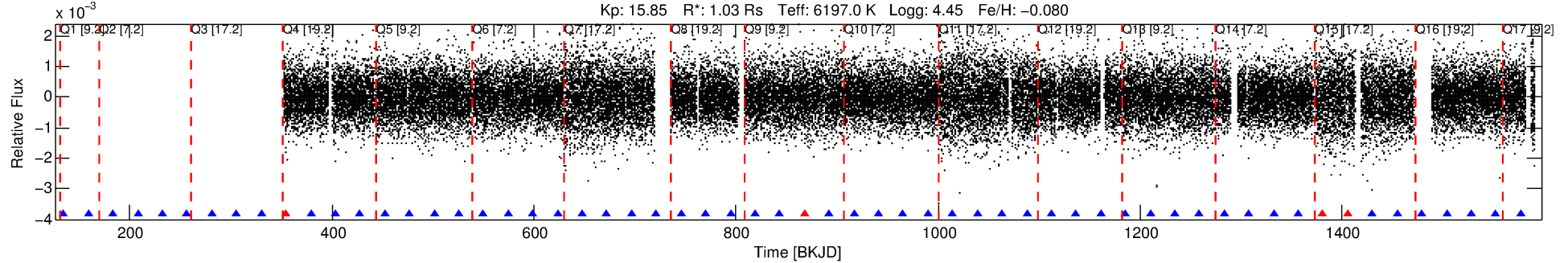
No Significant Match Found

# DV One-Page Summary

KIC: 5787131 Candidate: 1 of 1 Period: 24.436 d

KOI: K02927.01 Corr: 0.979

Kp: 15.85 R\*: 1.03 Rs Teff: 6197.0 K Logg: 4.45 Fe/H: -0.080



## DV Fit Results:

Period = 24.43623 [0.00025] d  
Epoch = 134.8104 [0.0091] BKJD  
Rp/R\* = 0.0236 [0.0034]  
a/R\* = 16.22 [11.48]  
b = 0.85 [0.24]  
Seff = 48.93 [19.48]  
Teq = 674 [67] K  
Rp = 2.67 [0.89] Re  
a = 0.1701 [0.0428] AU  
Ag = 243.03 [133.94] [1.81σ]  
Teffp = 4117 [462] K [7.38σ]

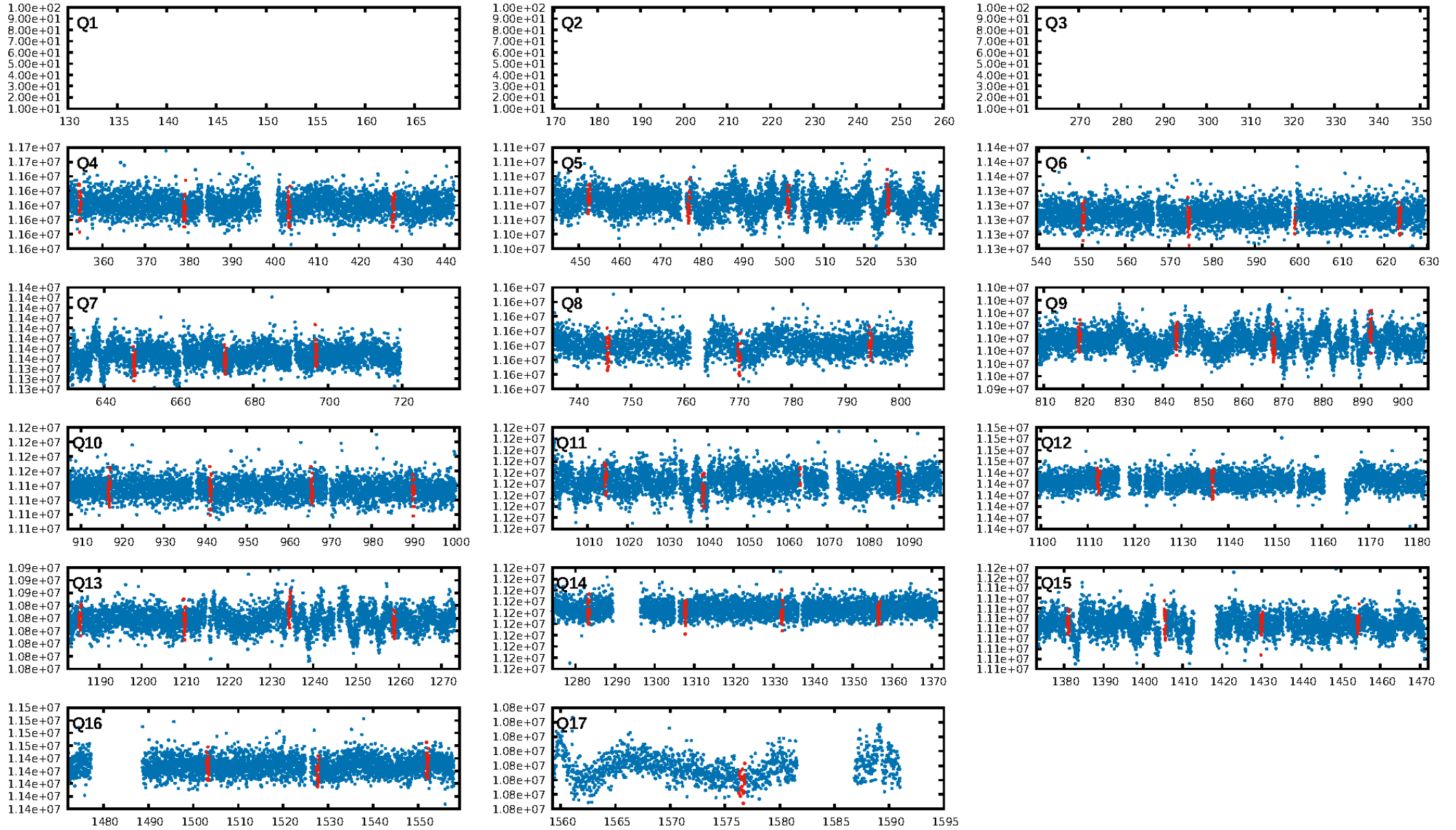
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 97.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.28e-51  
RollingBand-fgt: 0.91 [42/46]  
GhostDiagnostic-chr: 2.512  
Centroid-sig: 8.9%  
Centroid-so: 1.376 arcsec [1.70σ]  
OotOffset-rm: 0.591 arcsec [0.90σ]  
KicOffset-rm: 0.456 arcsec [0.91σ]  
OotOffset-st: 3/1/4/1 [9]  
KicOffset-st: 3/1/4/1 [9]  
DiffImageQuality-fgm: 0.89 [8/9]  
DiffImageOverlap-fno: 1.00 [14/14]

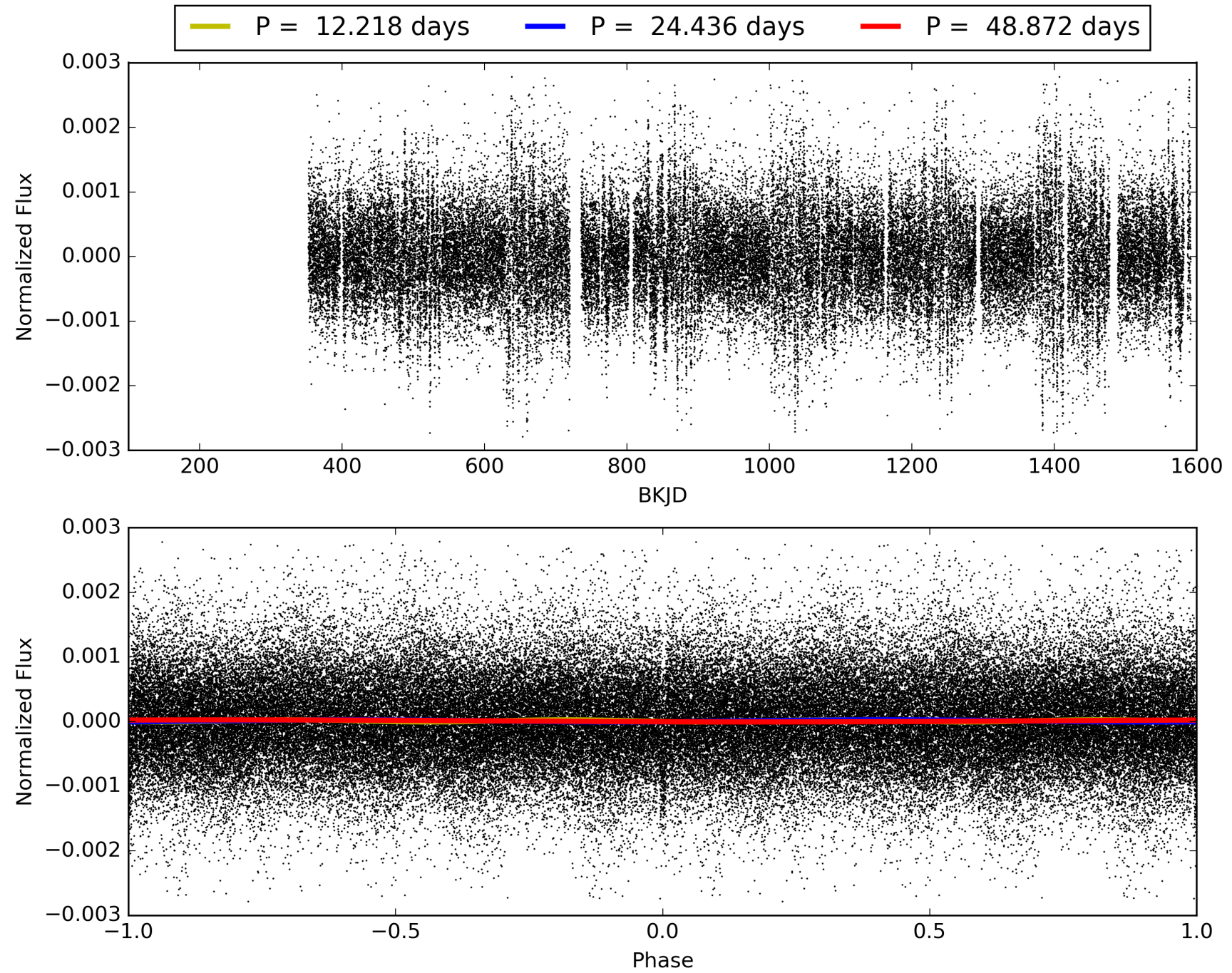
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:43:54 Z

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

# TCE 005787131-01, PDC Light Curves

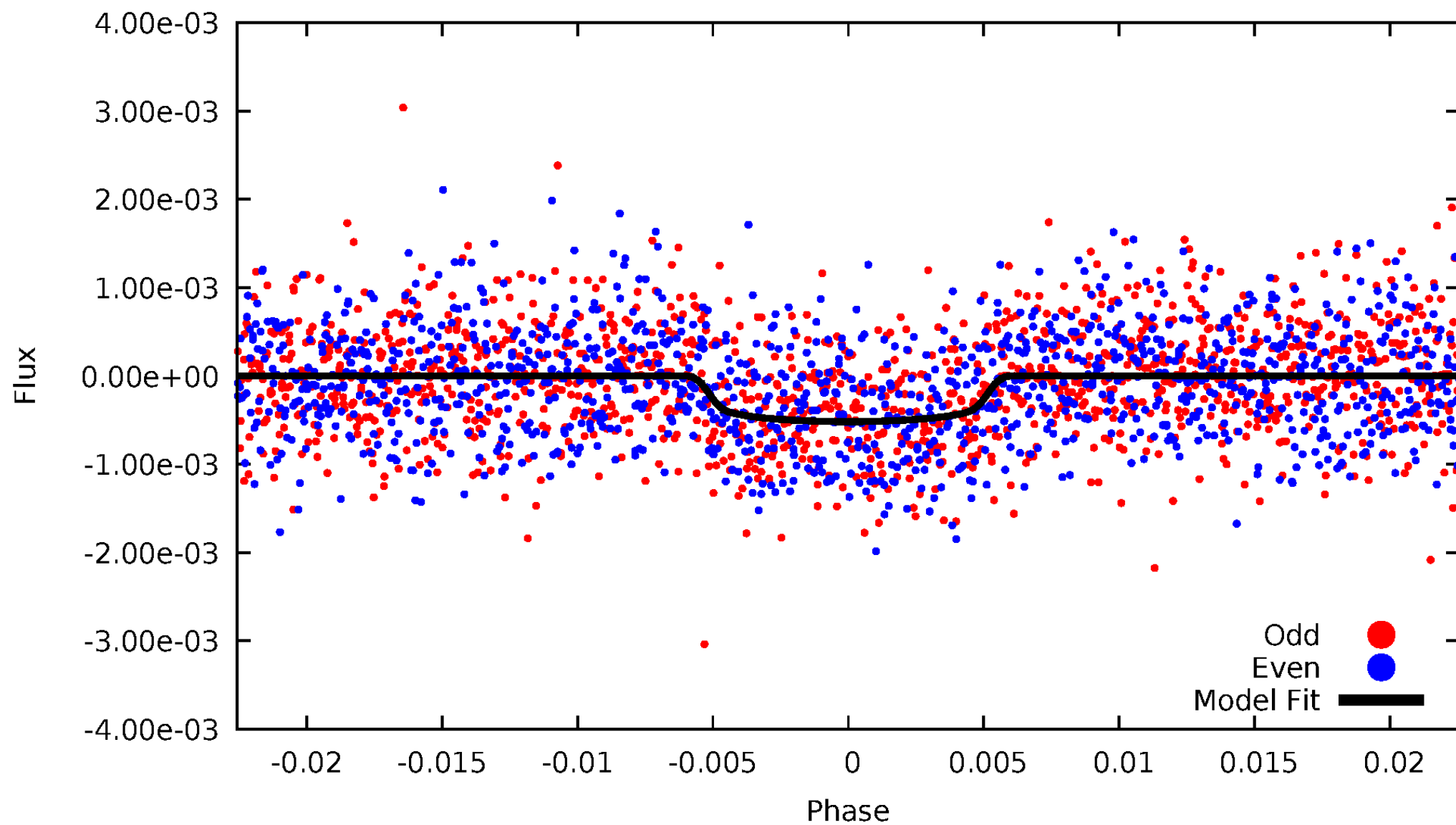


TCE 005787131-01



# DV Odd/Even

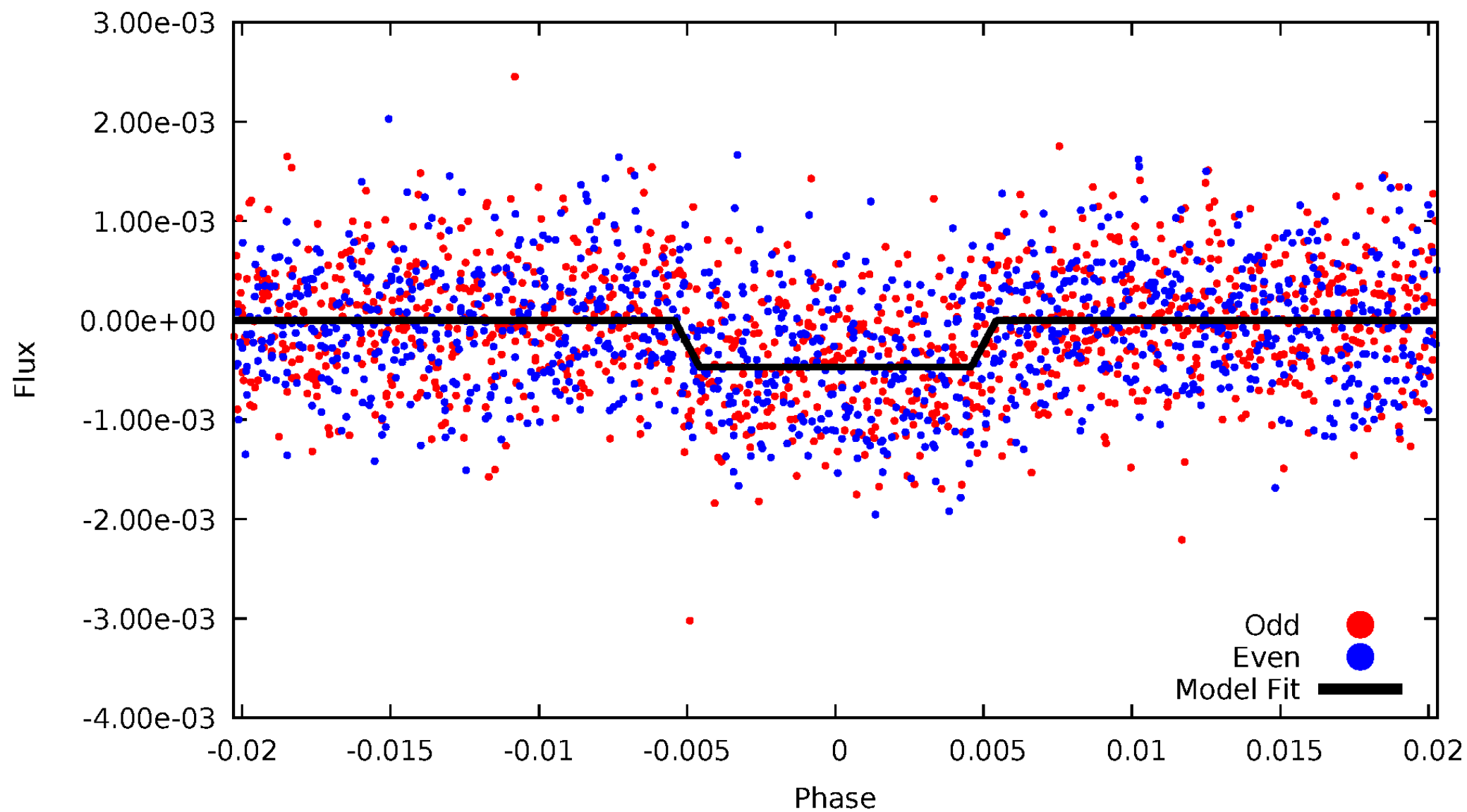
TCE 005787131-01





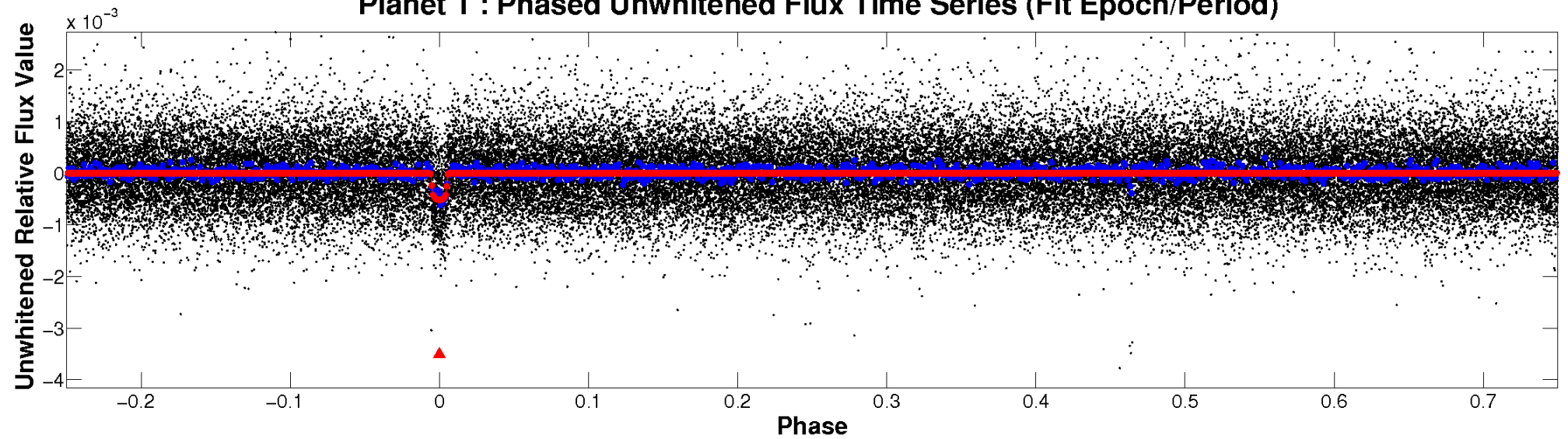
# ALT Odd/Even

TCE 005787131-01

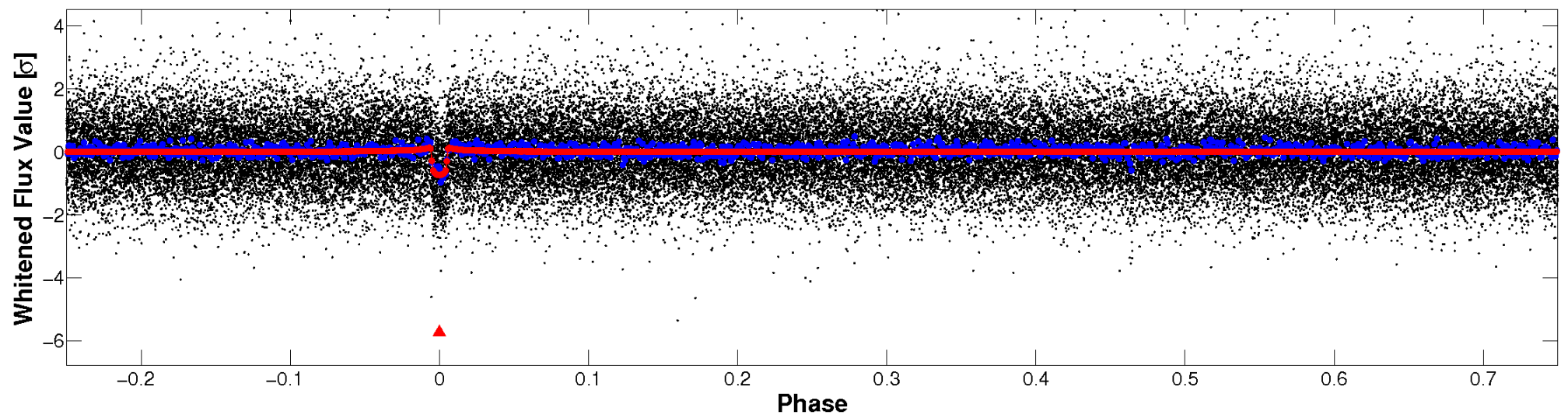


# Non-Whitened Vs. Whitened Light Curve

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

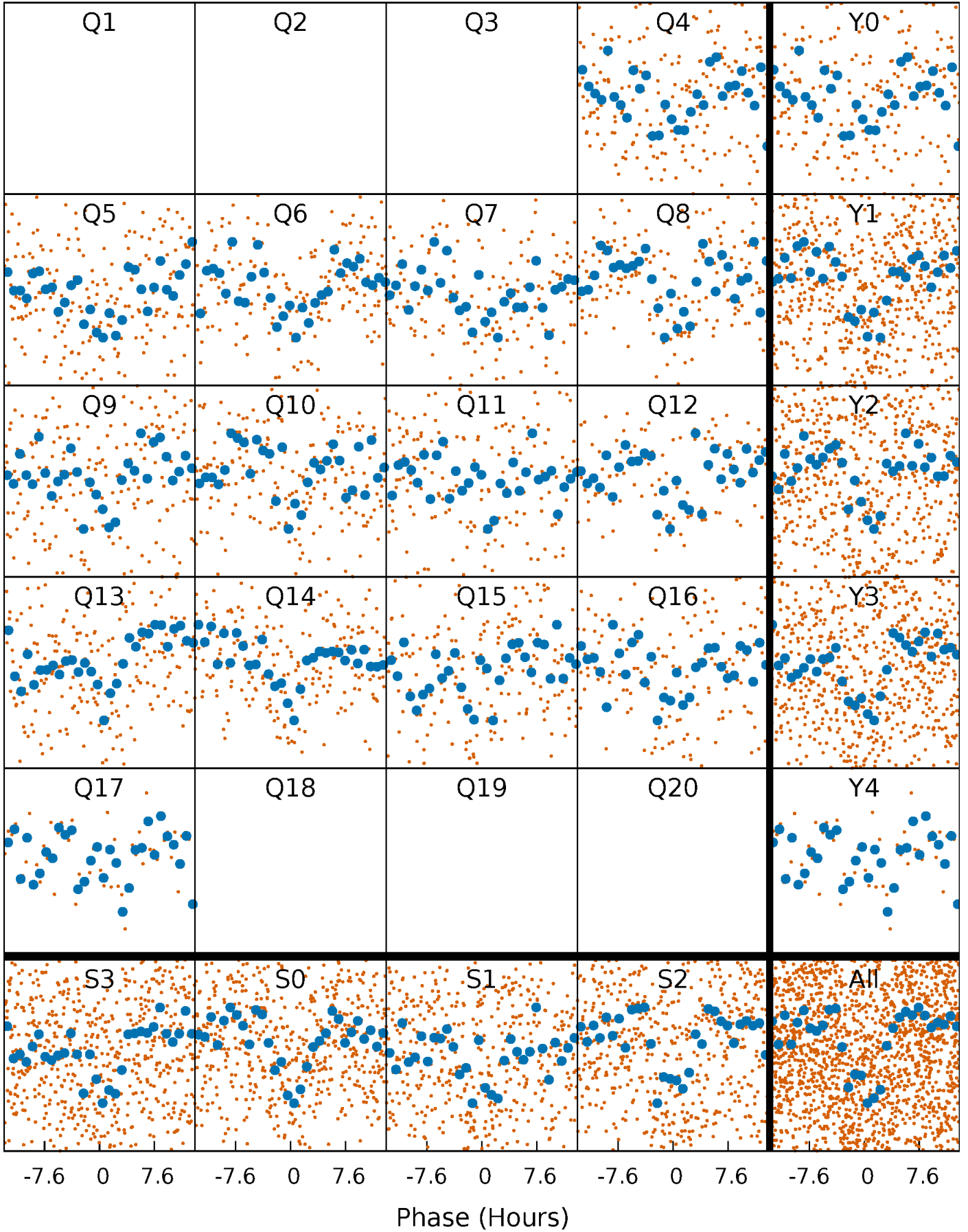


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

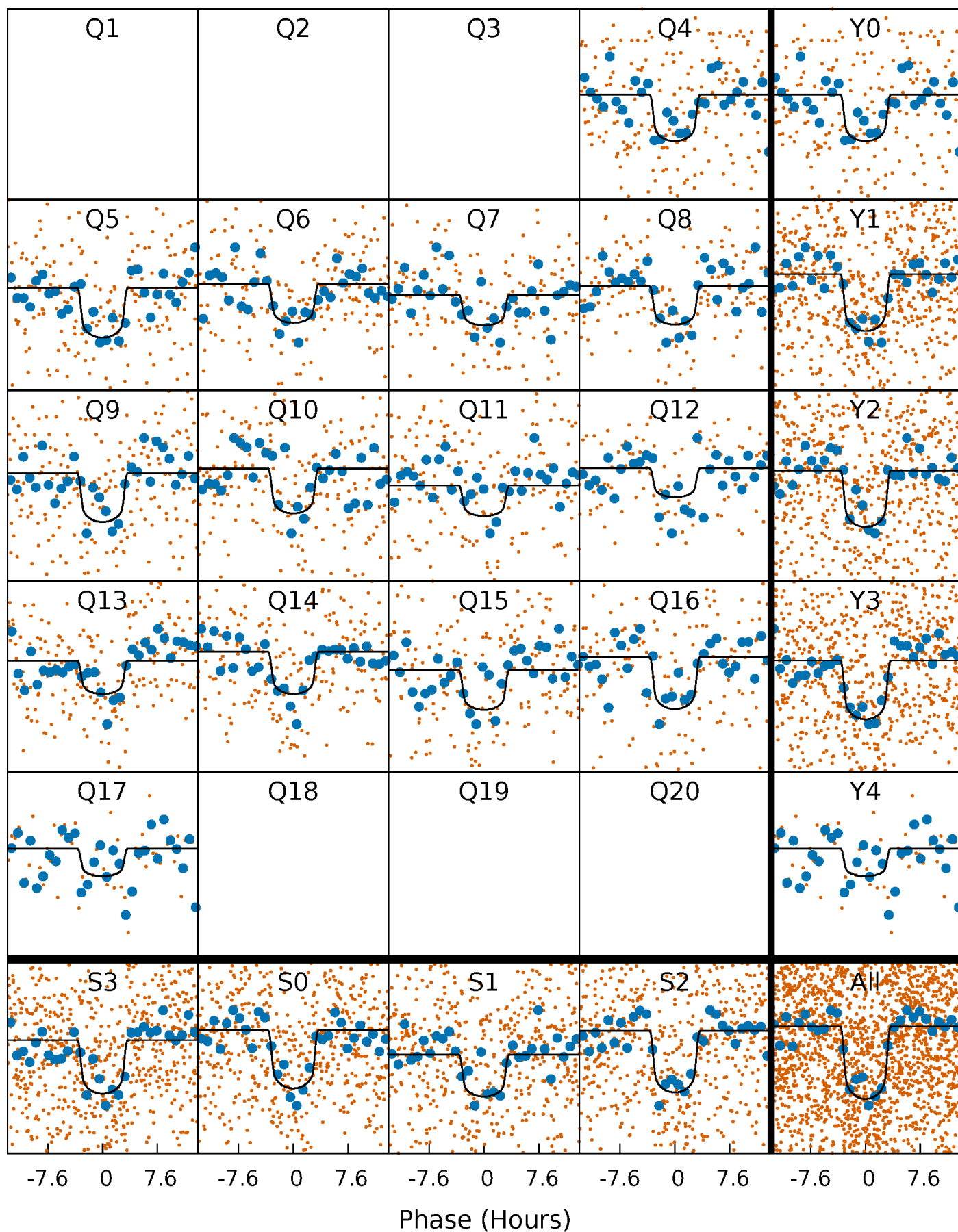
TCE 005787131-01   P= 24.436230 Days    $T_0=134.810435$  (BKJD)





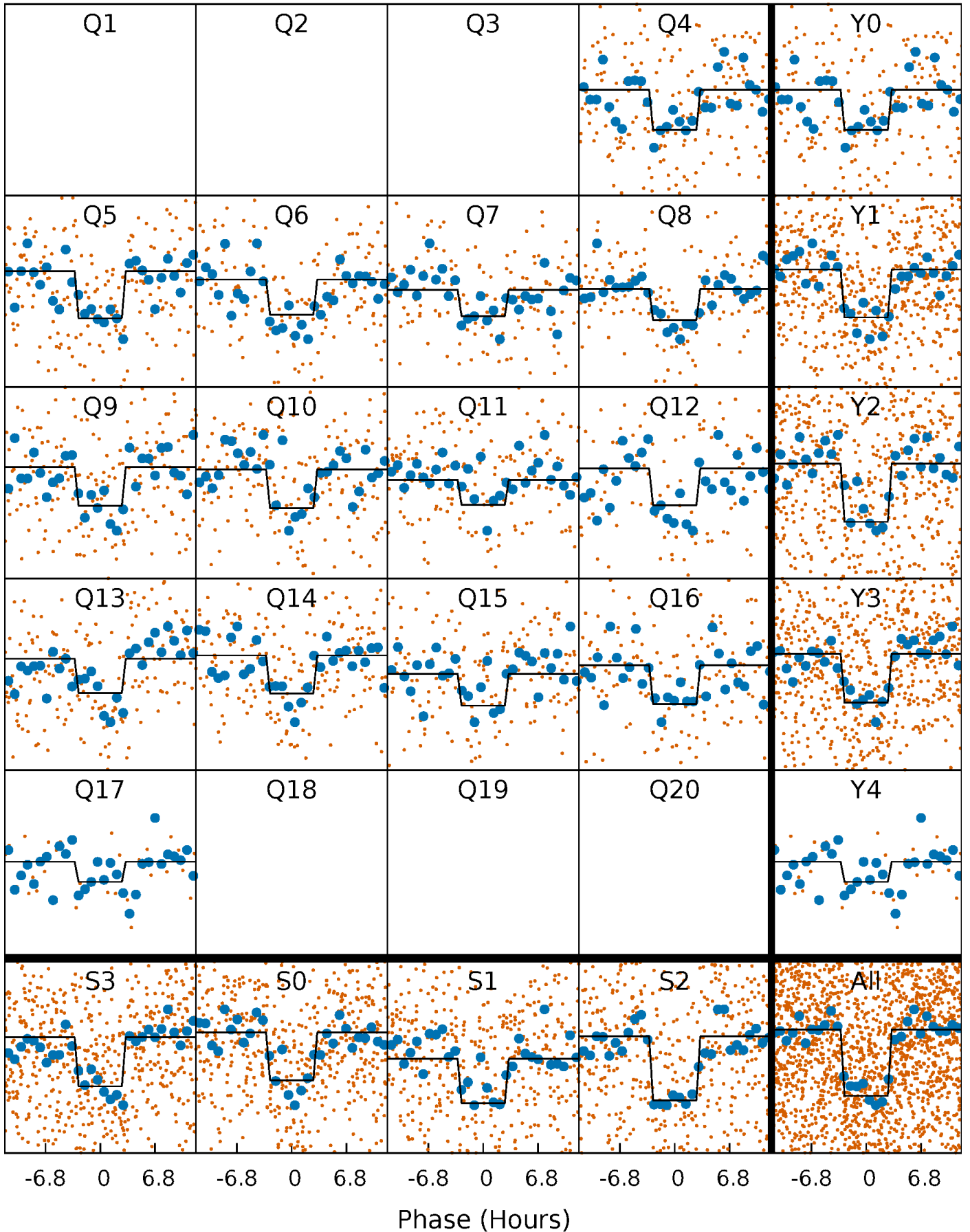
# DV Quarter-Phased Transit Curves

TCE 005787131-01 P= 24.436230 Days  $T_0=134.810435$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

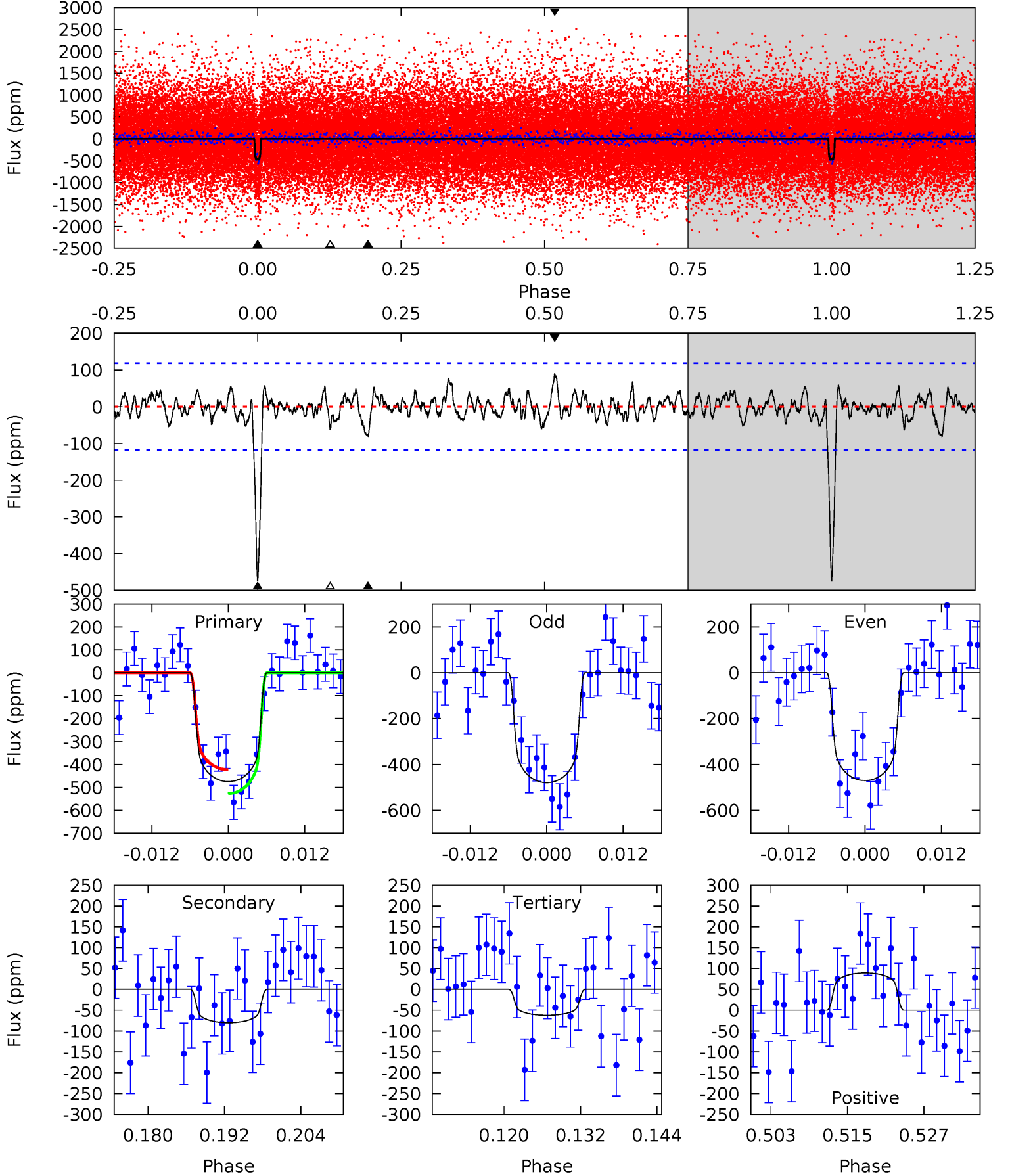
TCE 005787131-01 P= 24.435838 Days  $T_0=134.821350$  (BKJD)



# DV Model-Shift Uniqueness Test

005787131-01,  $P = 24.436230$  Days,  $E = 134.810435$  Days

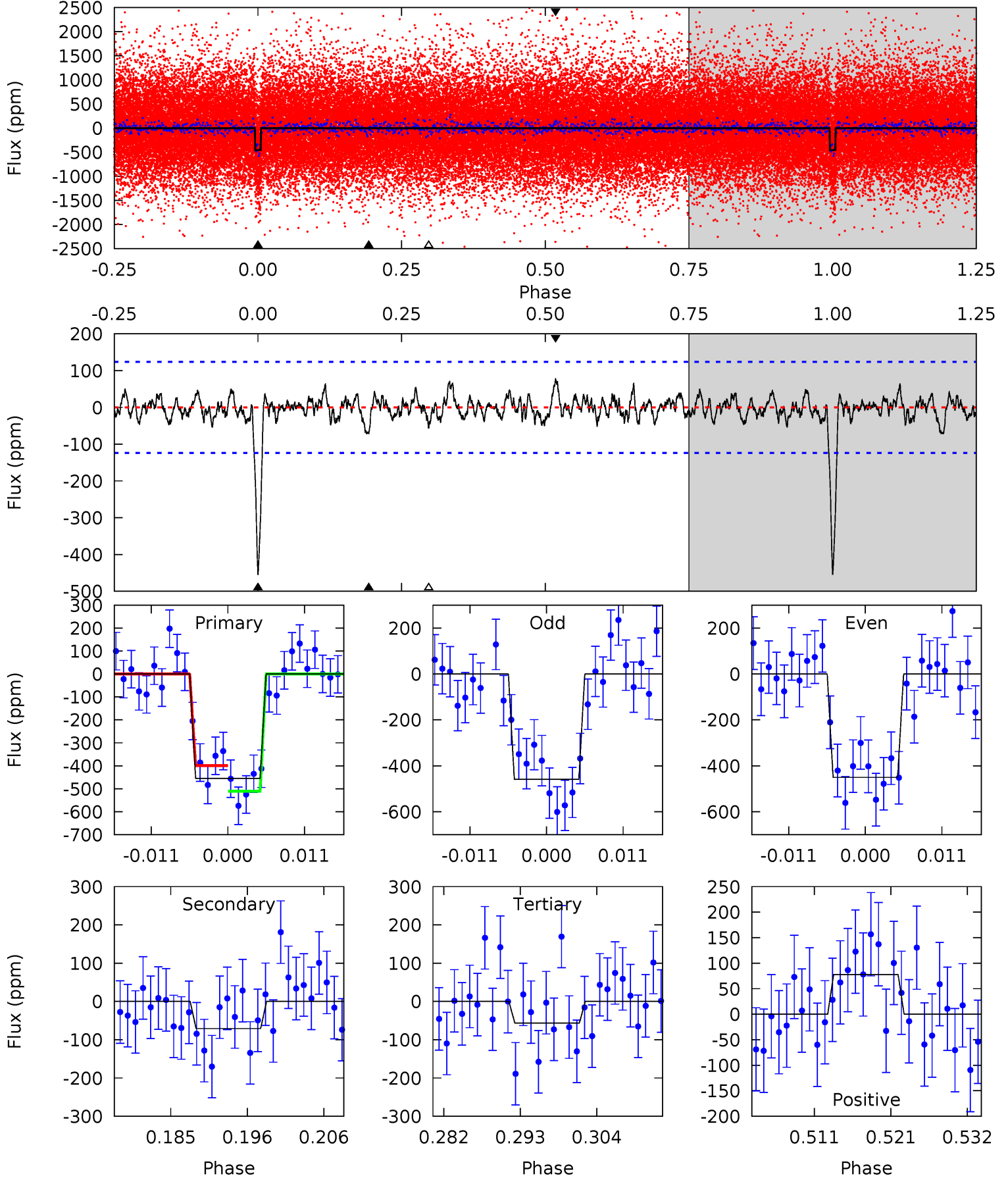
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.0	3.38	2.63	3.77	4.99	2.51	1.04	17.4	16.2	0.75	-0.39	0.19	1.02	0.16	2.20



# Alt Model-Shift Uniqueness Test

005787131-01, P = 24.435838 Days, E = 134.821350 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
18.4	2.87	2.28	3.14	5.01	2.55	0.92	16.1	15.2	0.59	-0.27	0.18	1.01	0.15	2.26



### Stellar Parameters For KIC 005787131

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6197^{+194}_{-259}$	$4.449^{+0.065}_{-0.195}$	$-0.080^{+0.250}_{-0.300}$	$1.035^{+0.314}_{-0.126}$	$1.096^{+0.141}_{-0.155}$	$1.394^{+0.459}_{-0.671}$
	+3%/-4%	+1%/-4%	+312%/-375%	+30%/-12%	+13%/-14%	+33%/-48%
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 005787131-01 / KOI 2927.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-80 \pm 24$	$2.76^{+0.57}_{-0.48}$	$957^{+70}_{-53}$	$4095^{+362}_{-307}$	$165^{+94}_{-66}$
Alt.	$-71 \pm 25$	$2.52^{+0.54}_{-0.45}$	$957^{+69}_{-51}$	$4104^{+391}_{-339}$	$169^{+102}_{-74}$

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



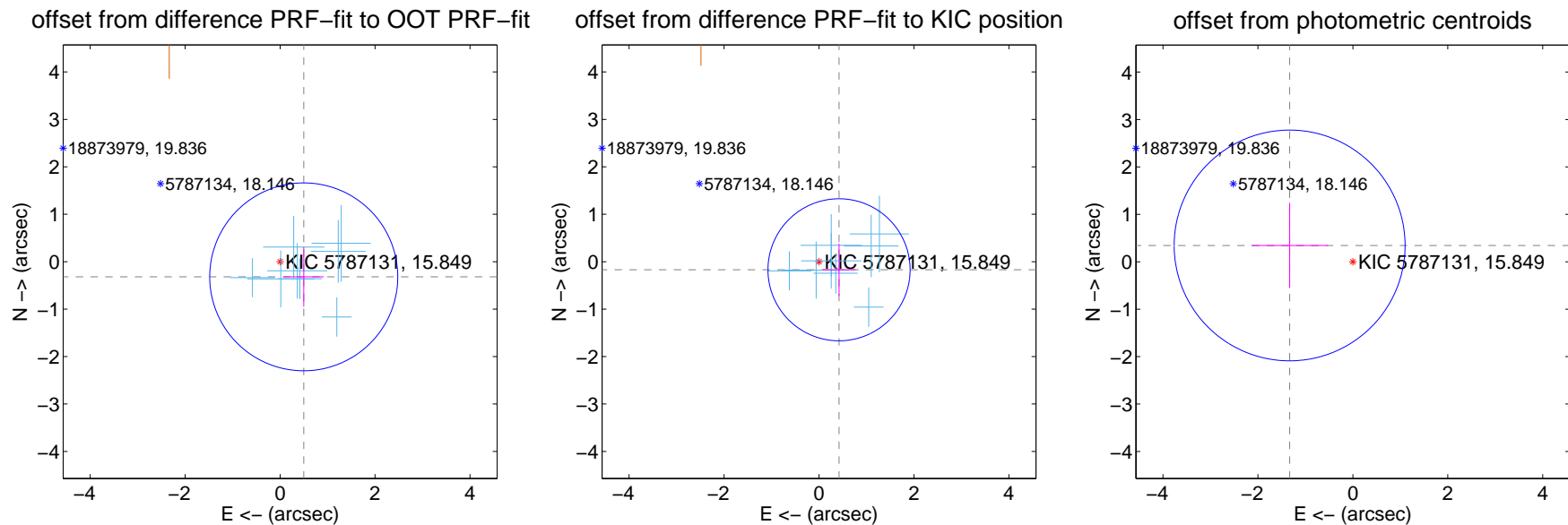
## DV Centroid Data

Supplemental centroid analysis for 005787131-01. Kepler magnitude: 15.85. Transit SNR 15.97

There are 8 quarters with good PRF difference image offsets

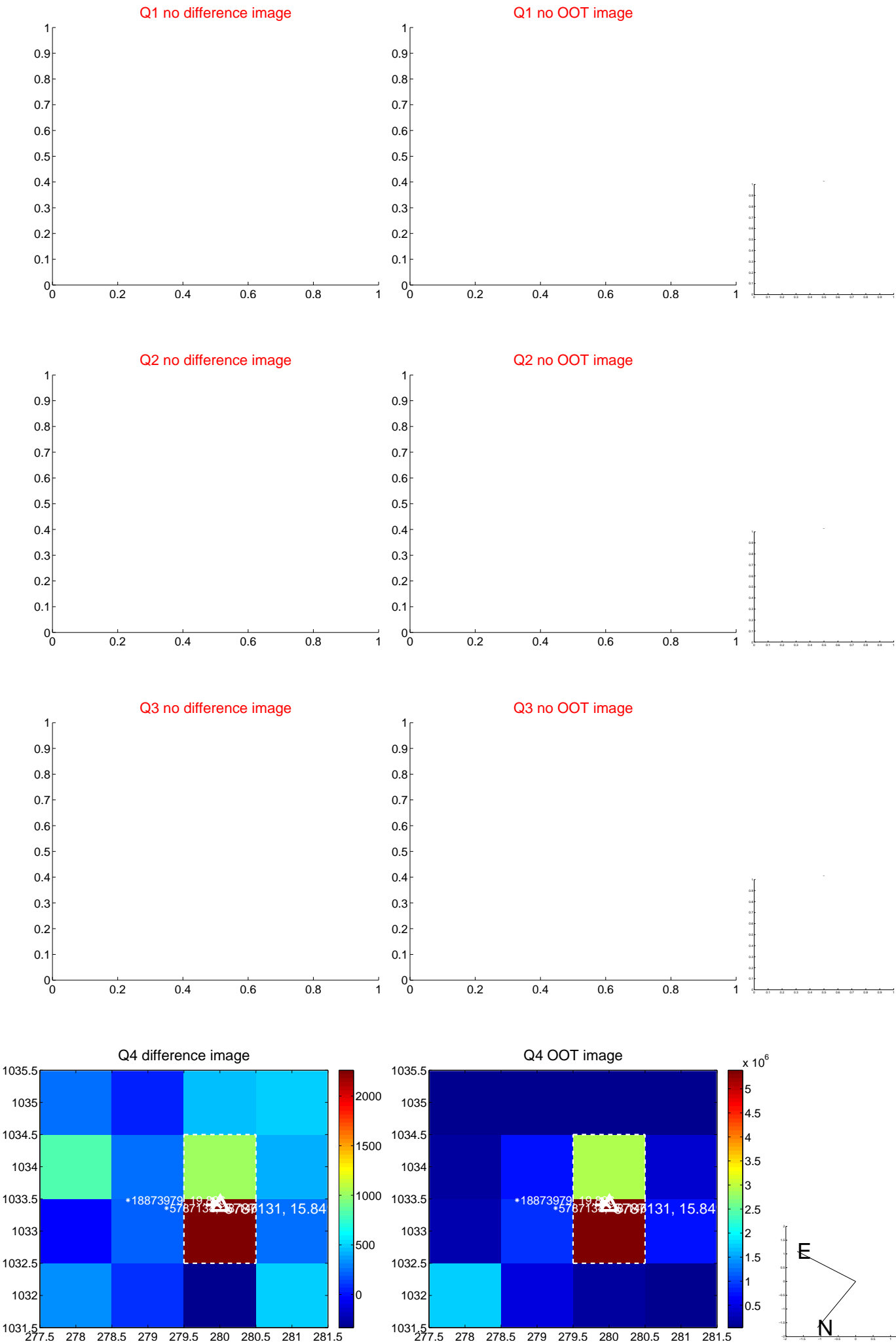
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.591 \pm 0.660$	0.90	$-0.498 \pm 0.424$	$-0.319 \pm 0.630$
PRF-fit source offset from KIC position	$0.456 \pm 0.499$	0.91	$-0.422 \pm 0.346$	$-0.171 \pm 0.552$
photometric centroid source offset	$1.38 \pm 0.81$	1.70	$1.33 \pm 0.80$	$0.34 \pm 0.90$

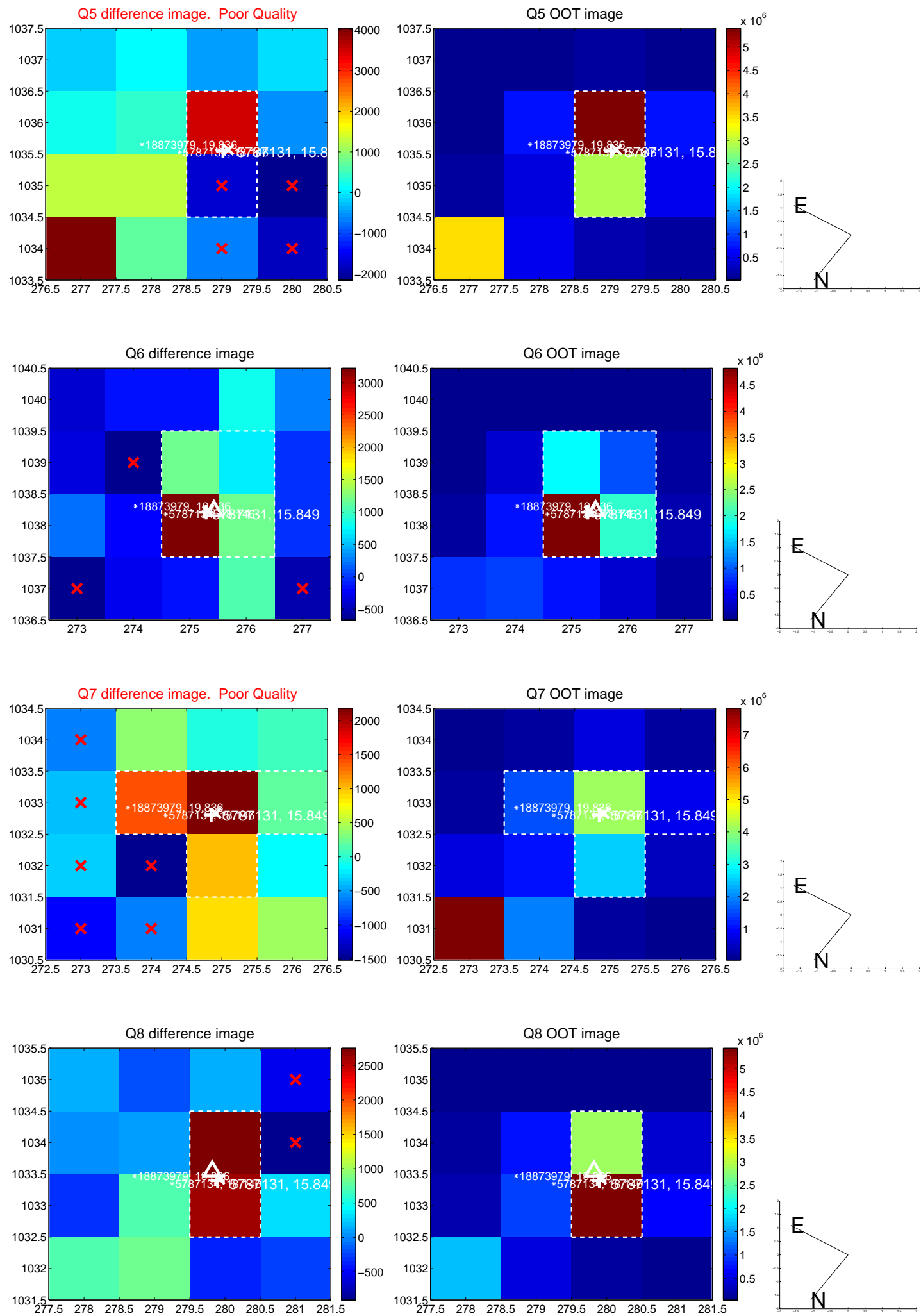


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

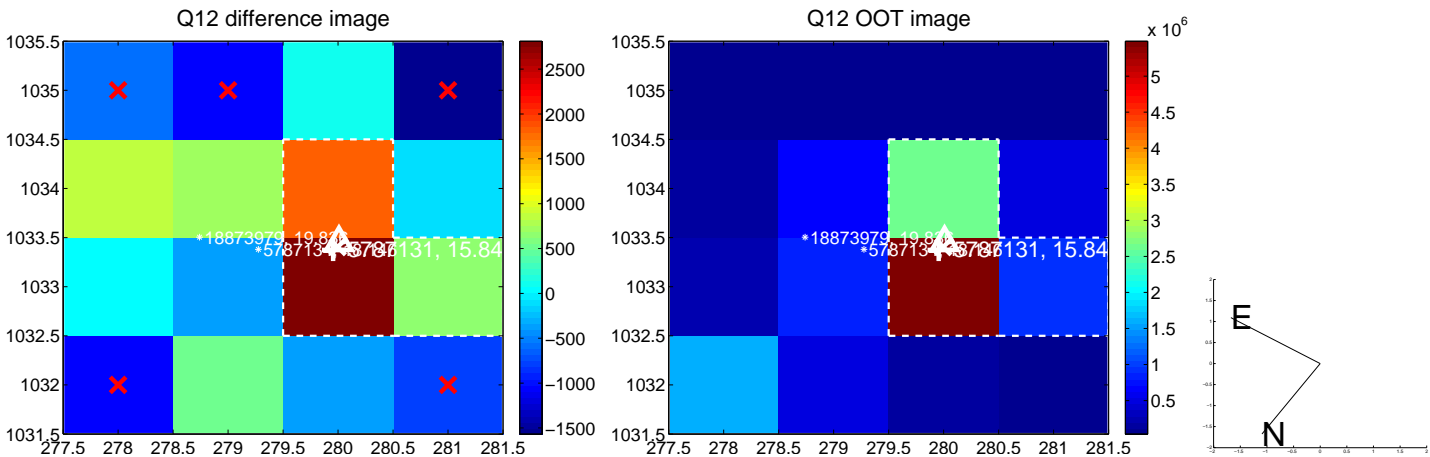
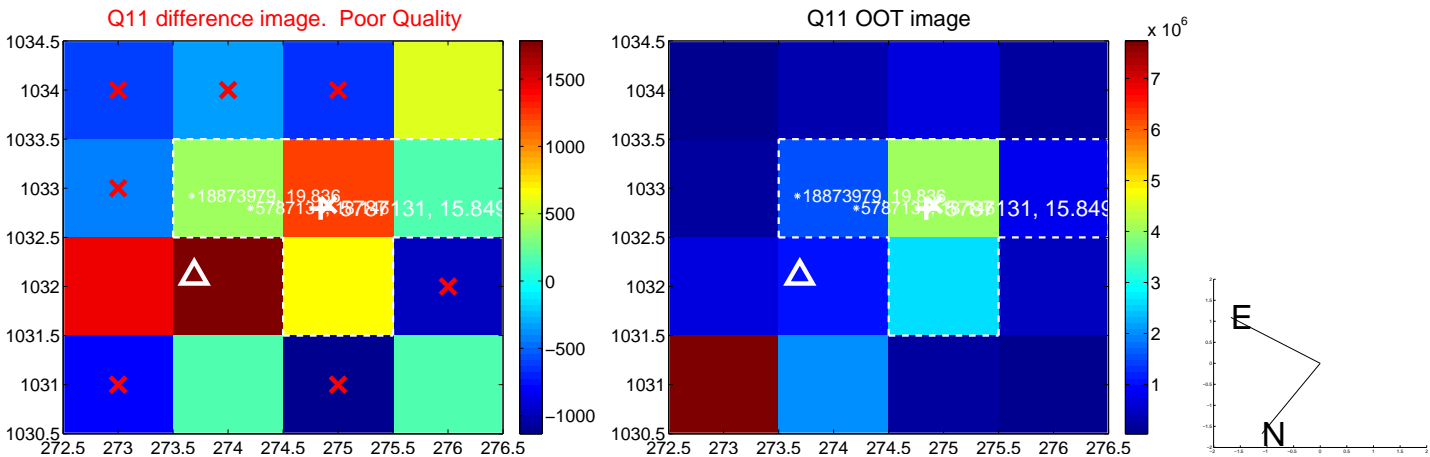
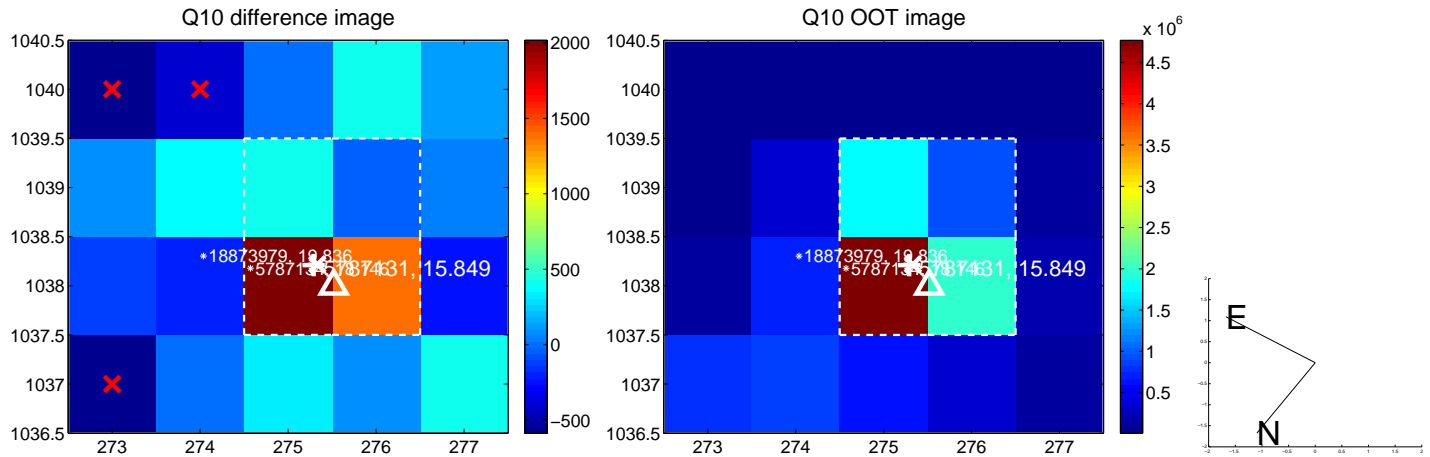
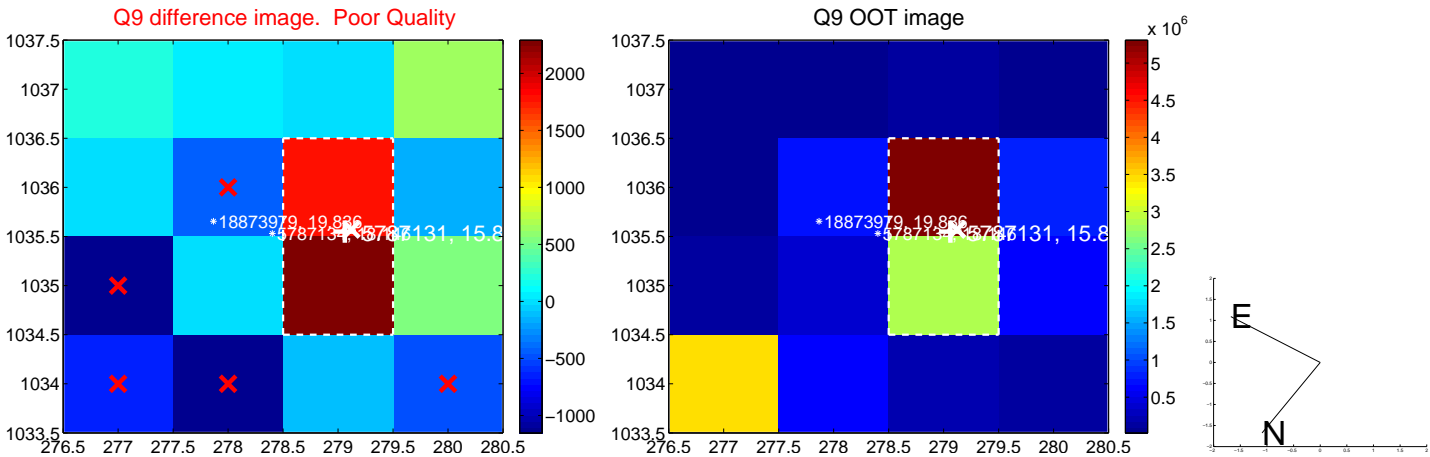
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



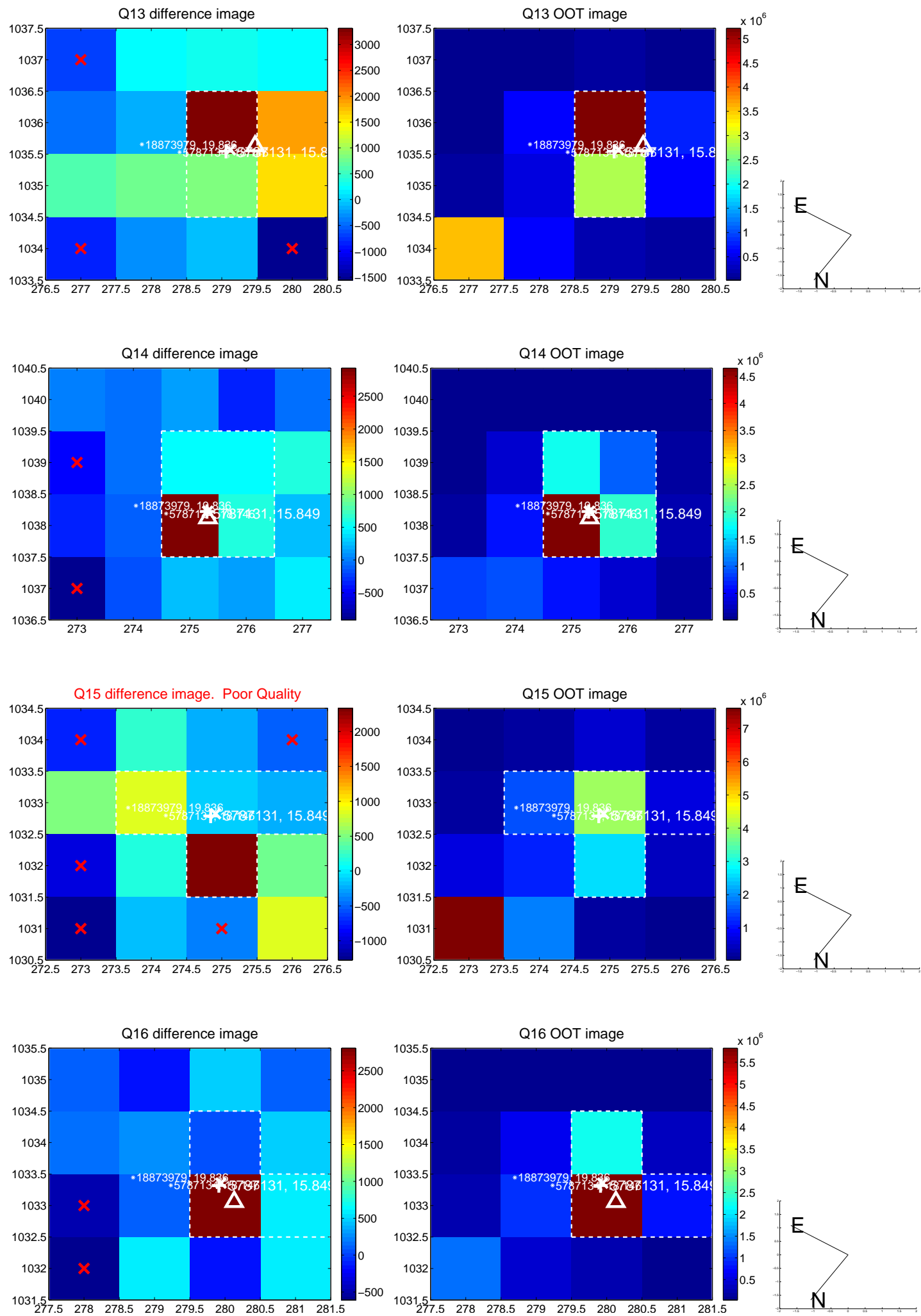
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

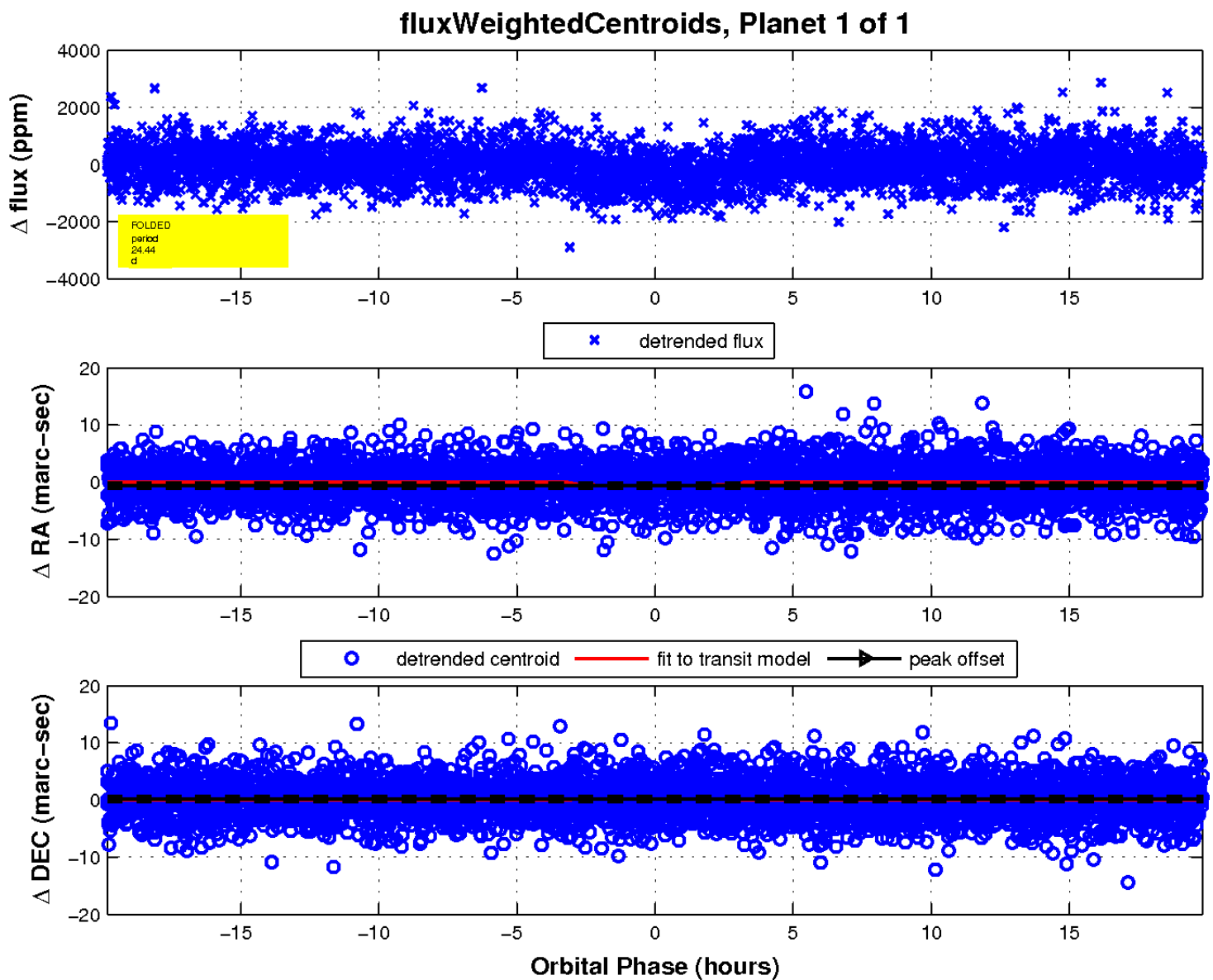
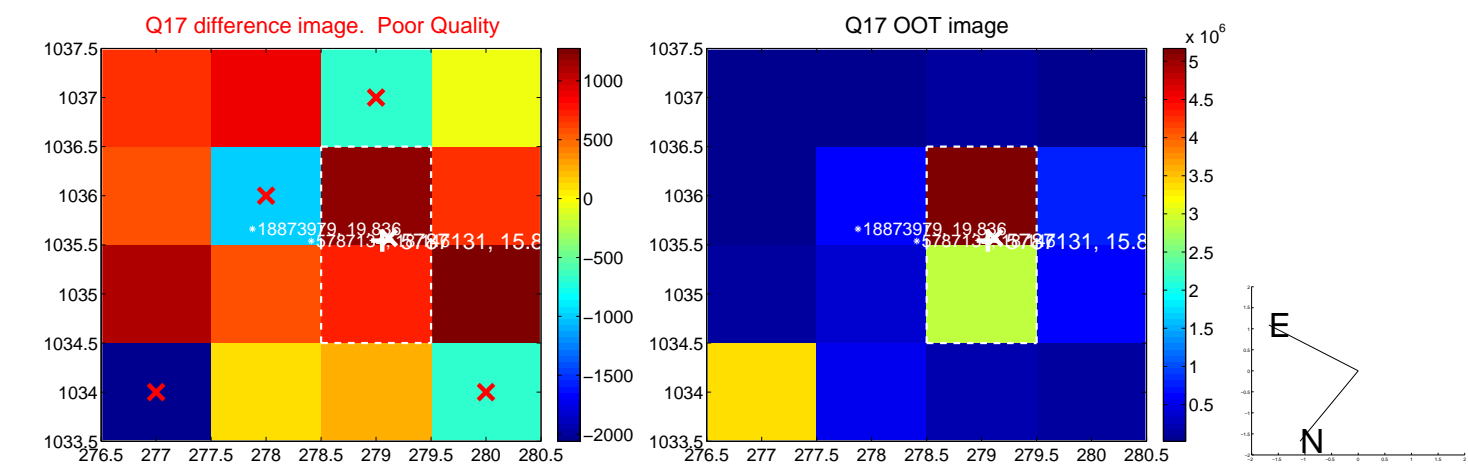


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

