

# KIC 010470206

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010470206-01	OBS	0335.01	46.566722	149.745080	793.2	7.737	88.3	87.9	1.62	6629	5.16	59.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010470206-01	OBS	FP	0.39	0	0	1	0	CENT_UNRESOLVED_OFFSET

**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 010470206-01

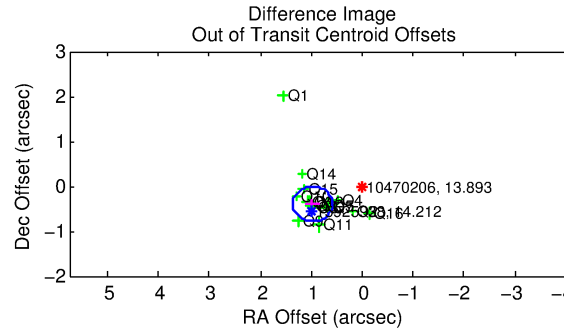
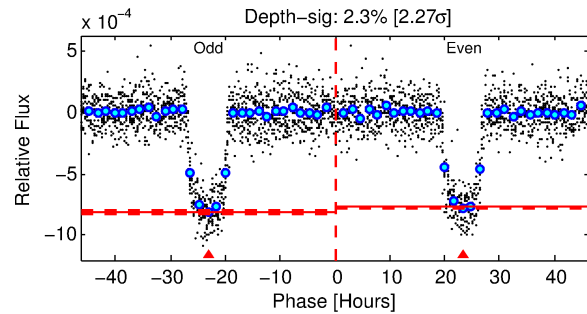
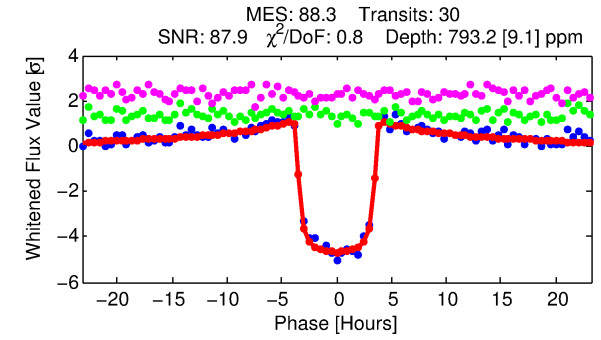
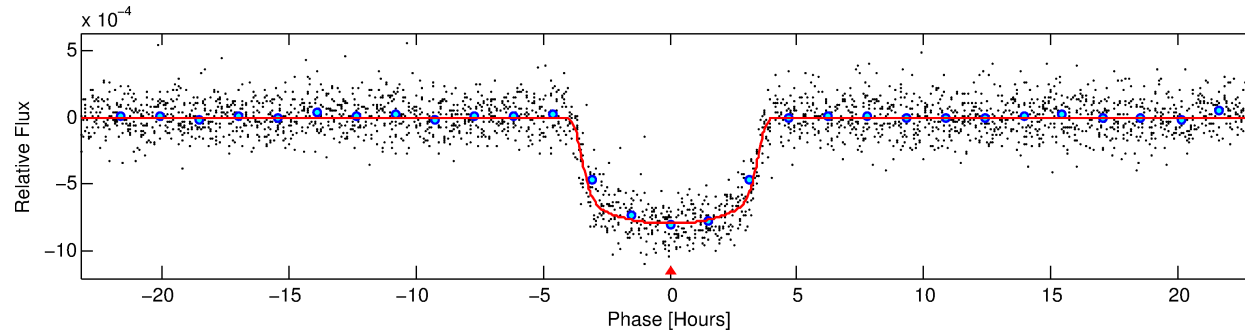
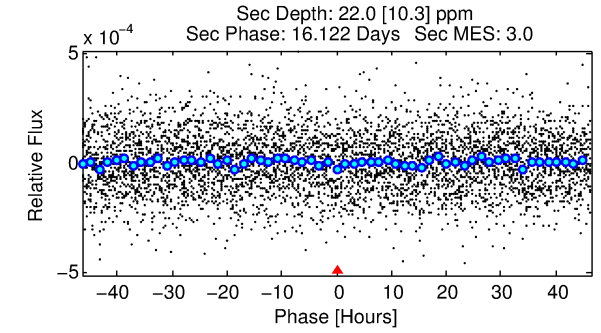
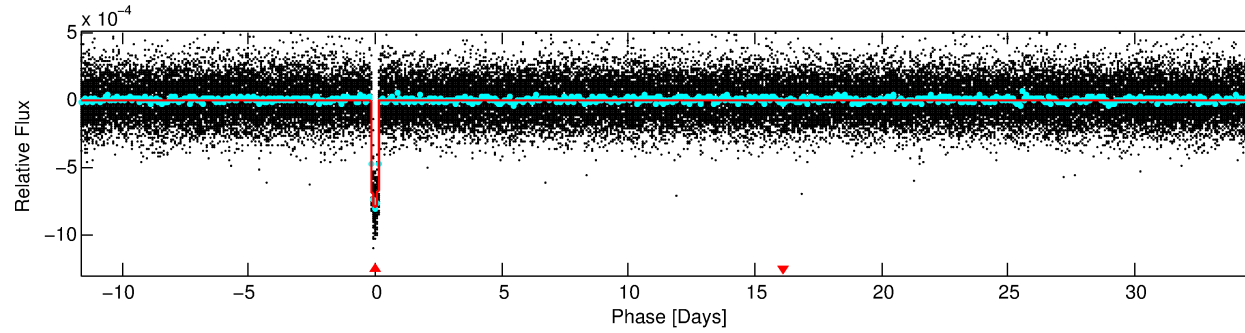
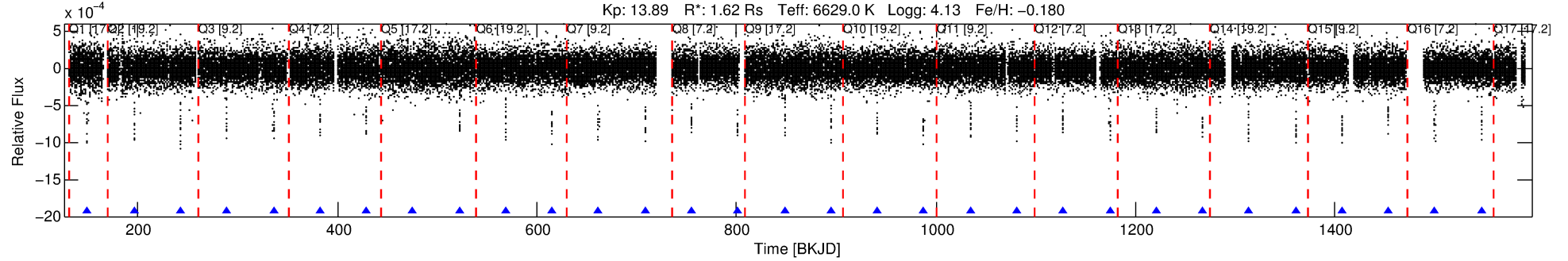
No Significant Match Found

# DV One-Page Summary

KIC: 10470206 Candidate: 1 of 1 Period: 46.567 d

KOI: K00335.01 Corr: 0.979

Kp: 13.89 R\*: 1.62 Rs Teff: 6629.0 K Logg: 4.13 Fe/H: -0.180



## DV Fit Results:

Period = 46.56672 [0.00008] d  
Epoch = 149.7451 [0.0015] BKJD  
Rp/R\* = 0.0292 [0.0004]  
a/R\* = 26.37 [1.87]  
b = 0.85 [0.02]  
Seff = 59.44 [24.17]  
Teq = 708 [72] K  
Rp = 5.16 [1.46] Re  
a = 0.2762 [0.0683] AU  
Ag = 34.59 [20.73] [1.62σ]  
Teffp = 2655 [330] K [5.76σ]

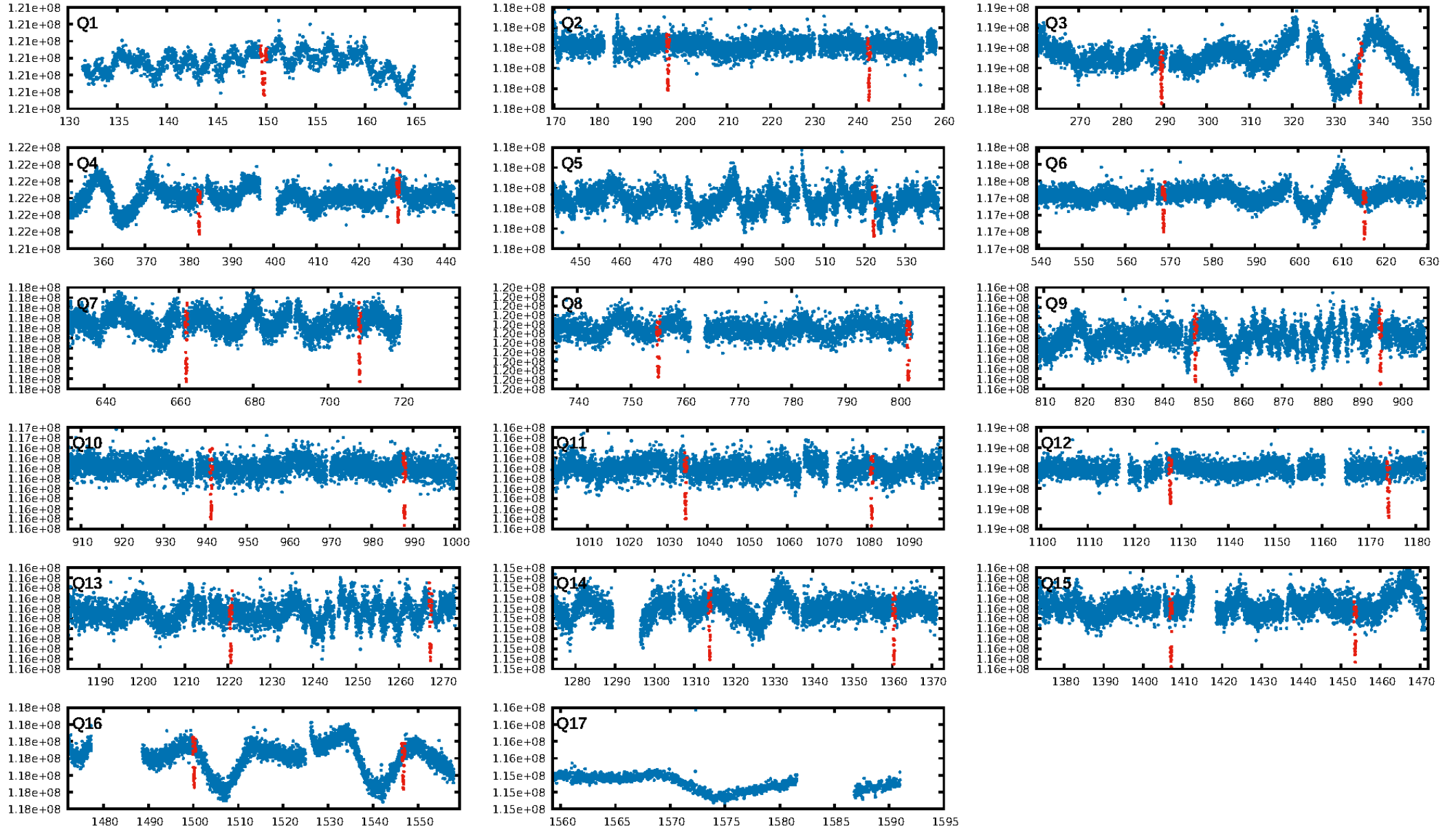
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 89.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [29/29]  
GhostDiagnostic-chr: 7.924  
Centroid-sig: 0.0%  
Centroid-so: 1.083 arcsec [8.59σ]  
OotOffset-rm: 1.050 arcsec [8.17σ]  
KicOffset-rm: 1.152 arcsec [10.20σ]  
OotOffset-st: 4/4/4/3 [15]  
KicOffset-st: 4/4/4/3 [15]  
DiffImageQuality-fgm: 1.00 [15/15]  
DiffImageOverlap-fno: 1.00 [15/15]

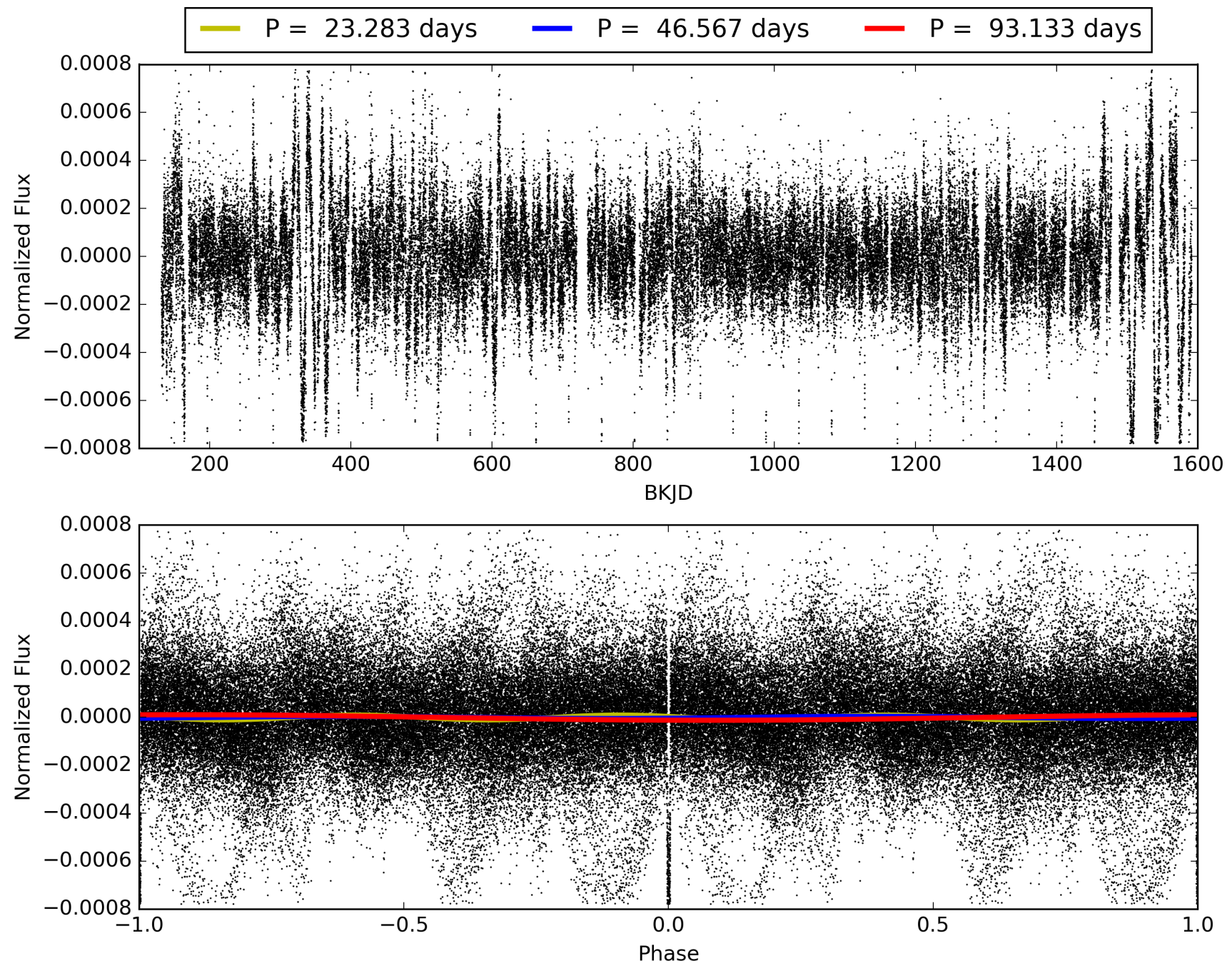
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:57:28 Z

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

# TCE 010470206-01, PDC Light Curves

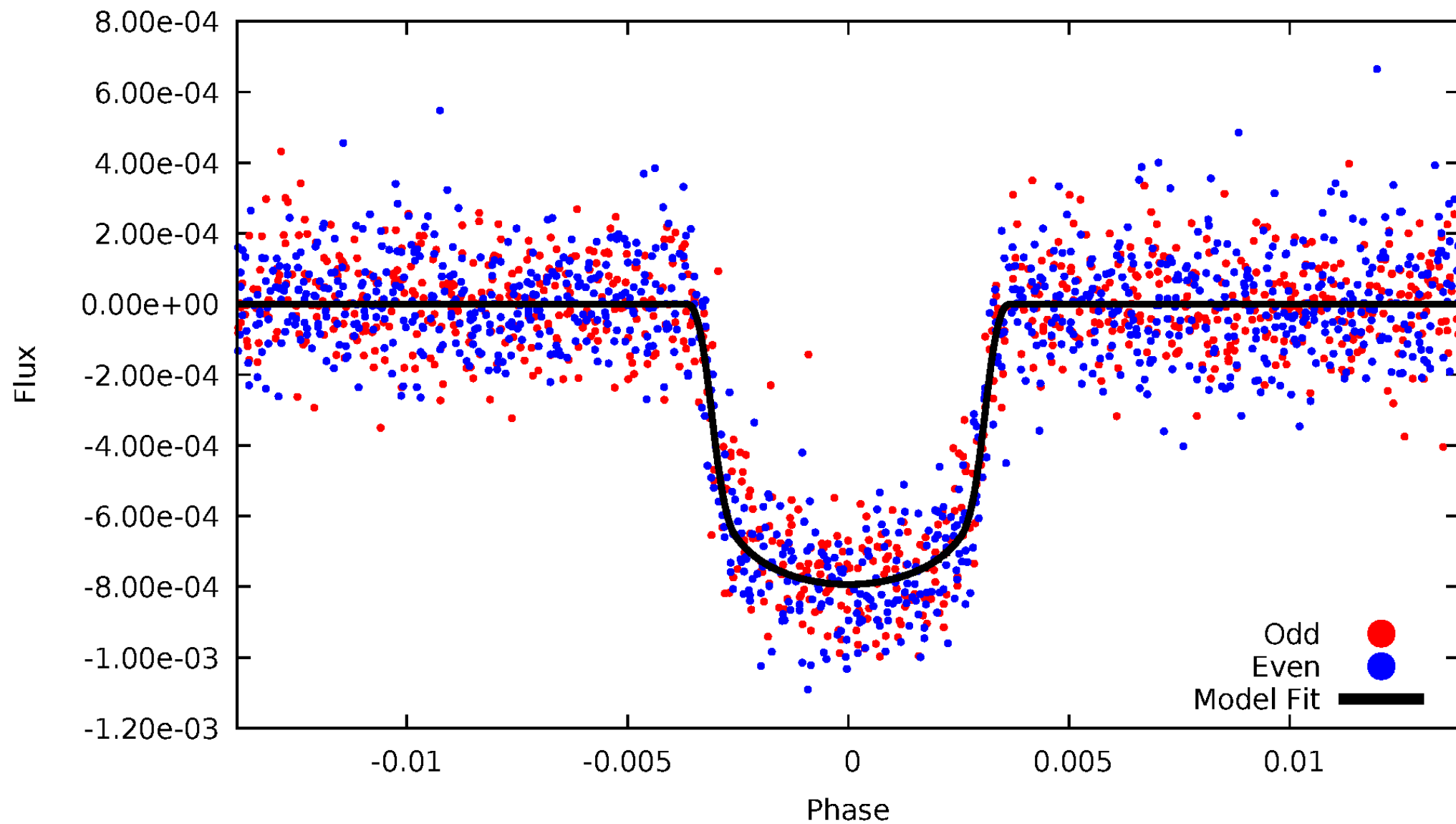


TCE 010470206-01



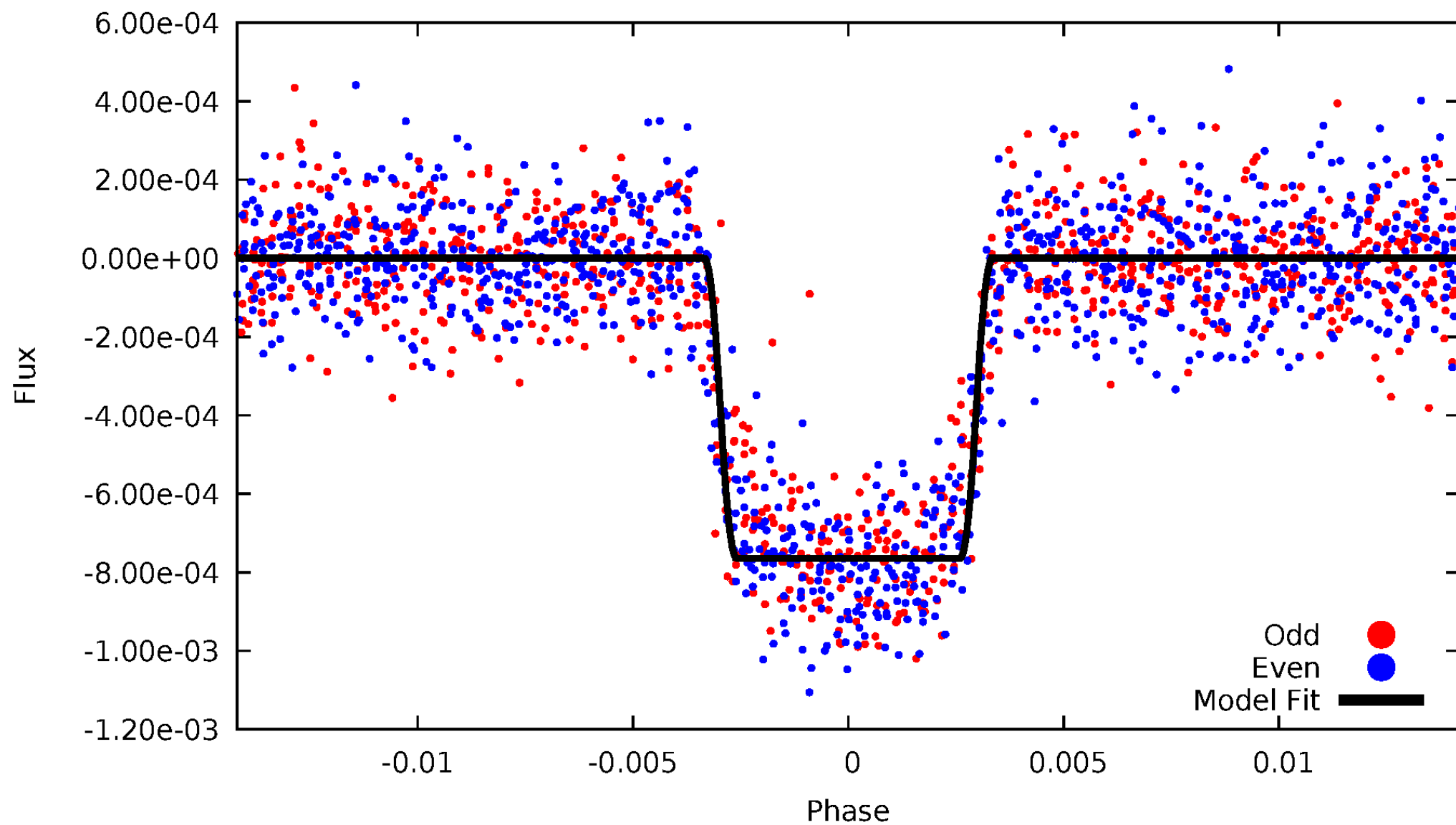
# DV Odd/Even

TCE 010470206-01



# ALT Odd/Even

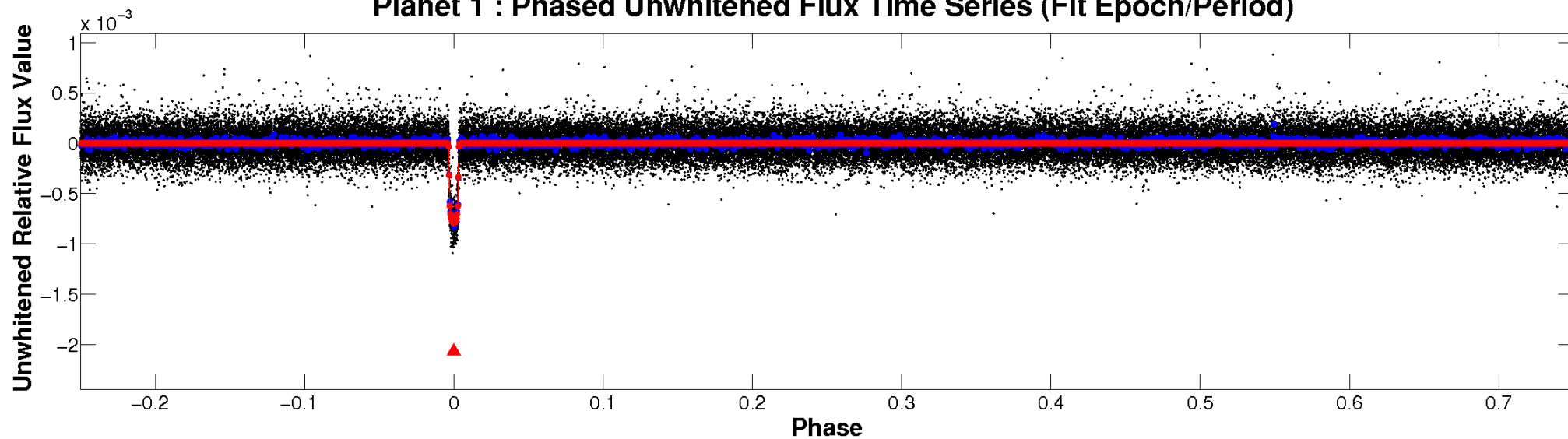
TCE 010470206-01



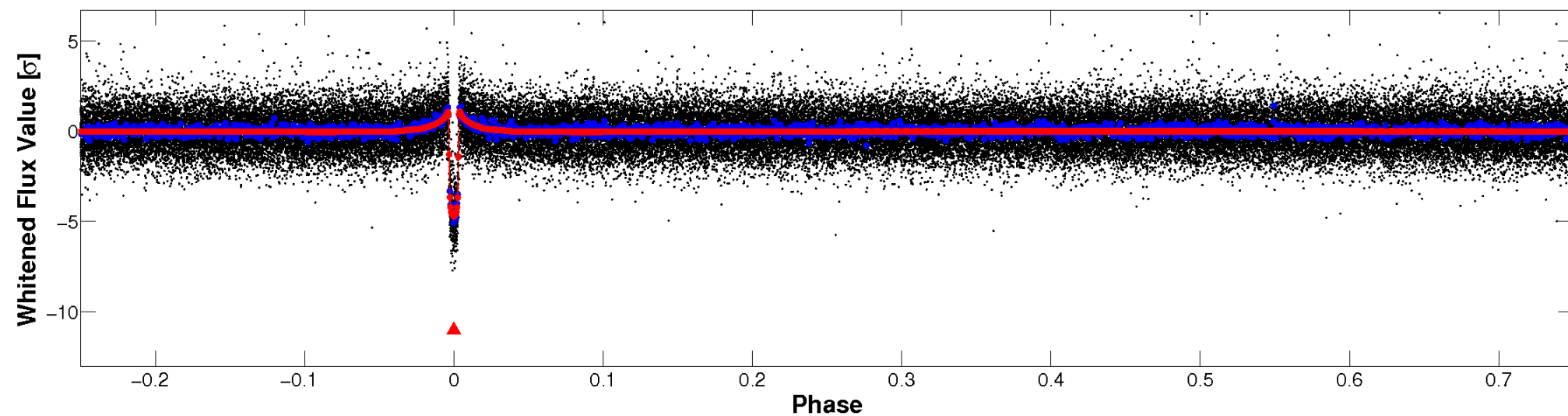


# Non-Whitened Vs. Whitened Light Curve

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

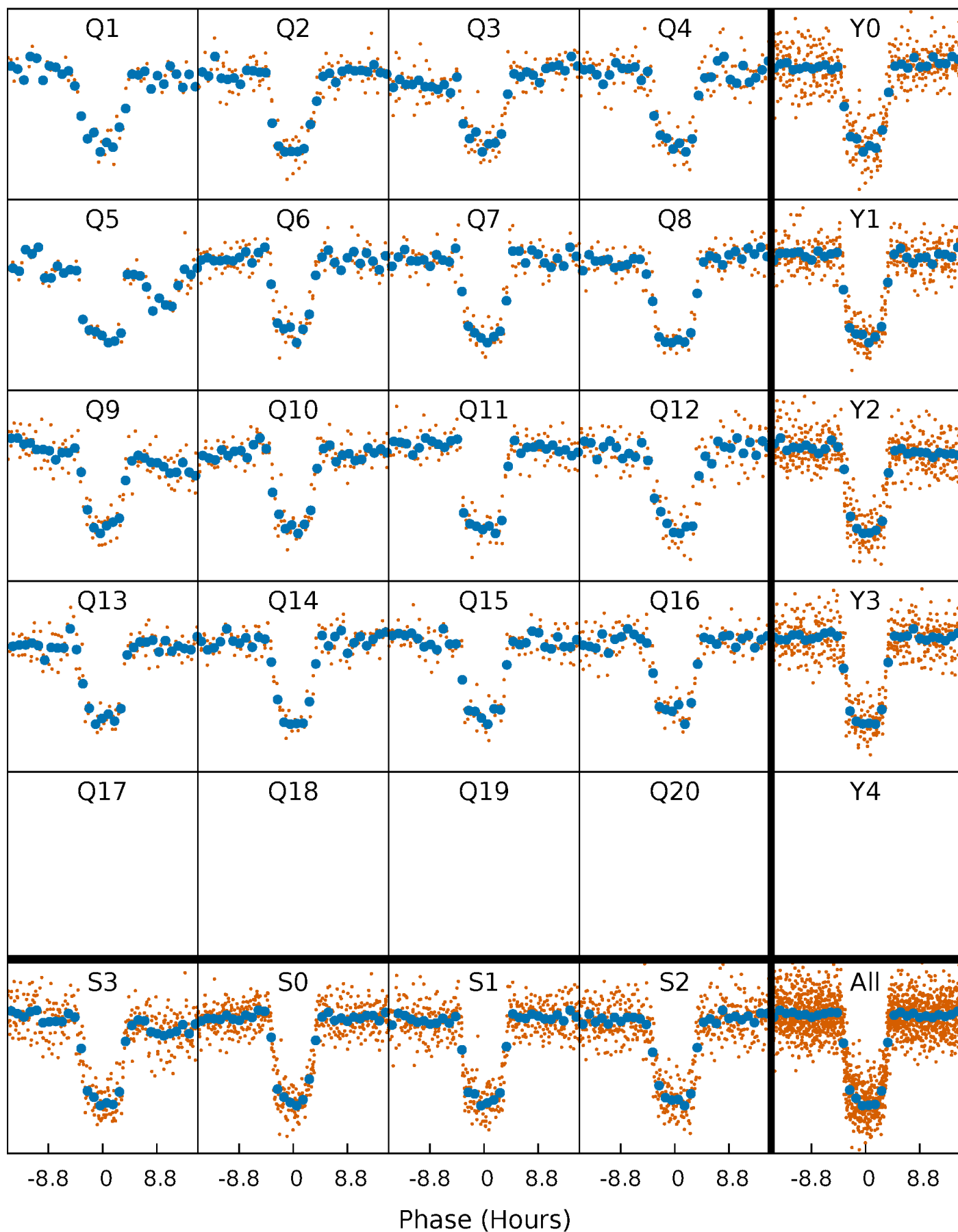


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

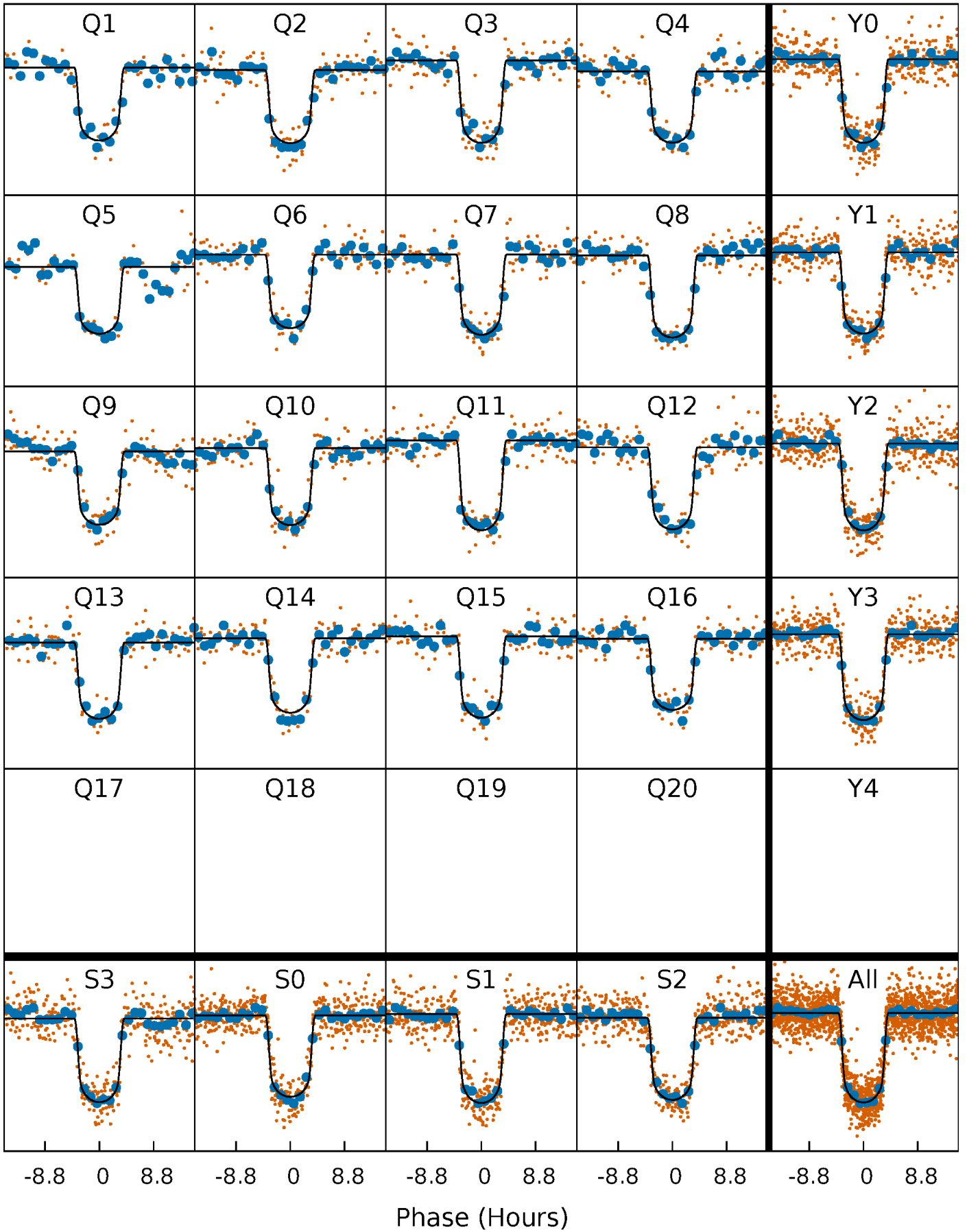
TCE 010470206-01 P= 46.566722 Days  $T_0=149.745080$  (BKJD)





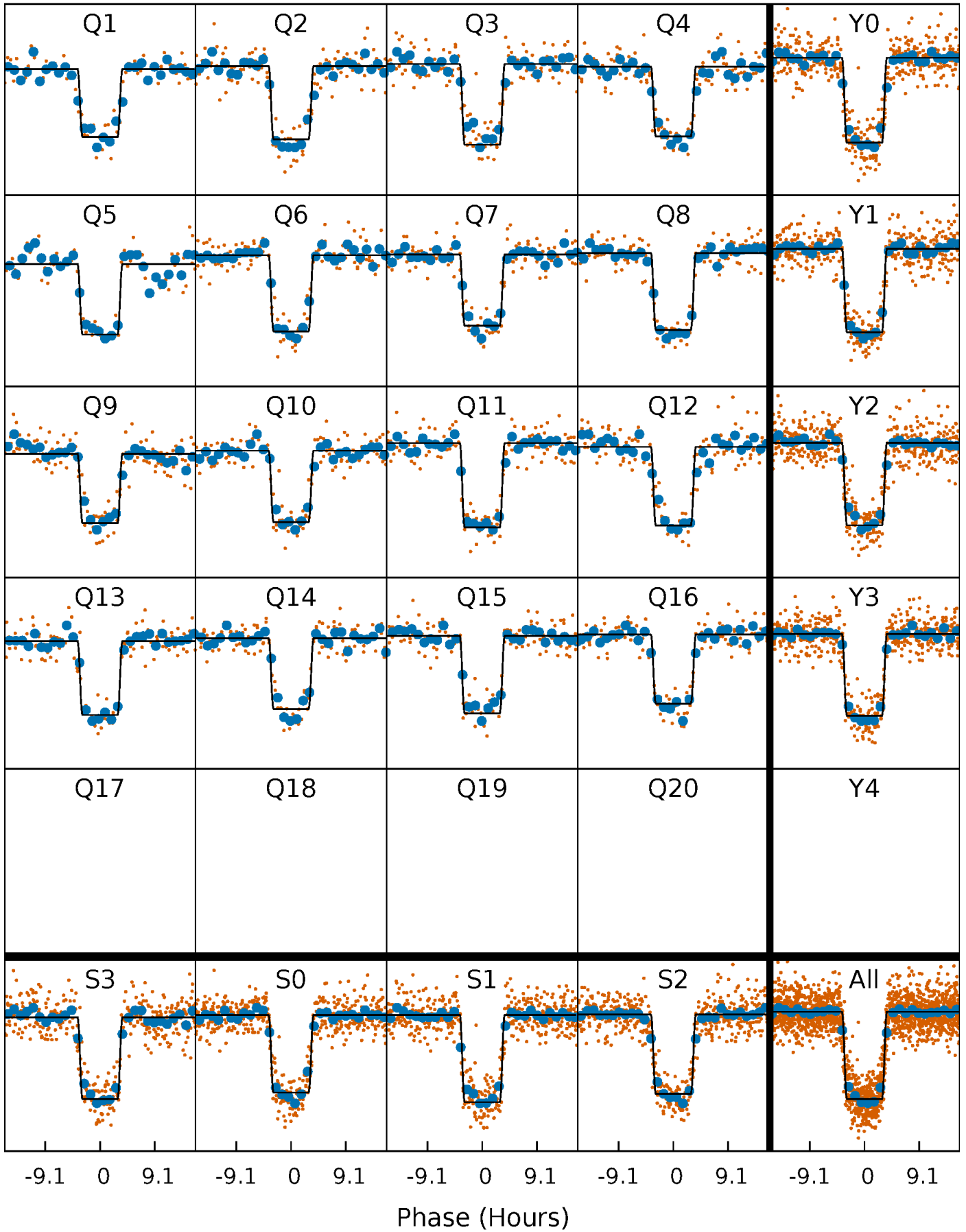
# DV Quarter-Phased Transit Curves

TCE 010470206-01 P= 46.566722 Days  $T_0=149.745080$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

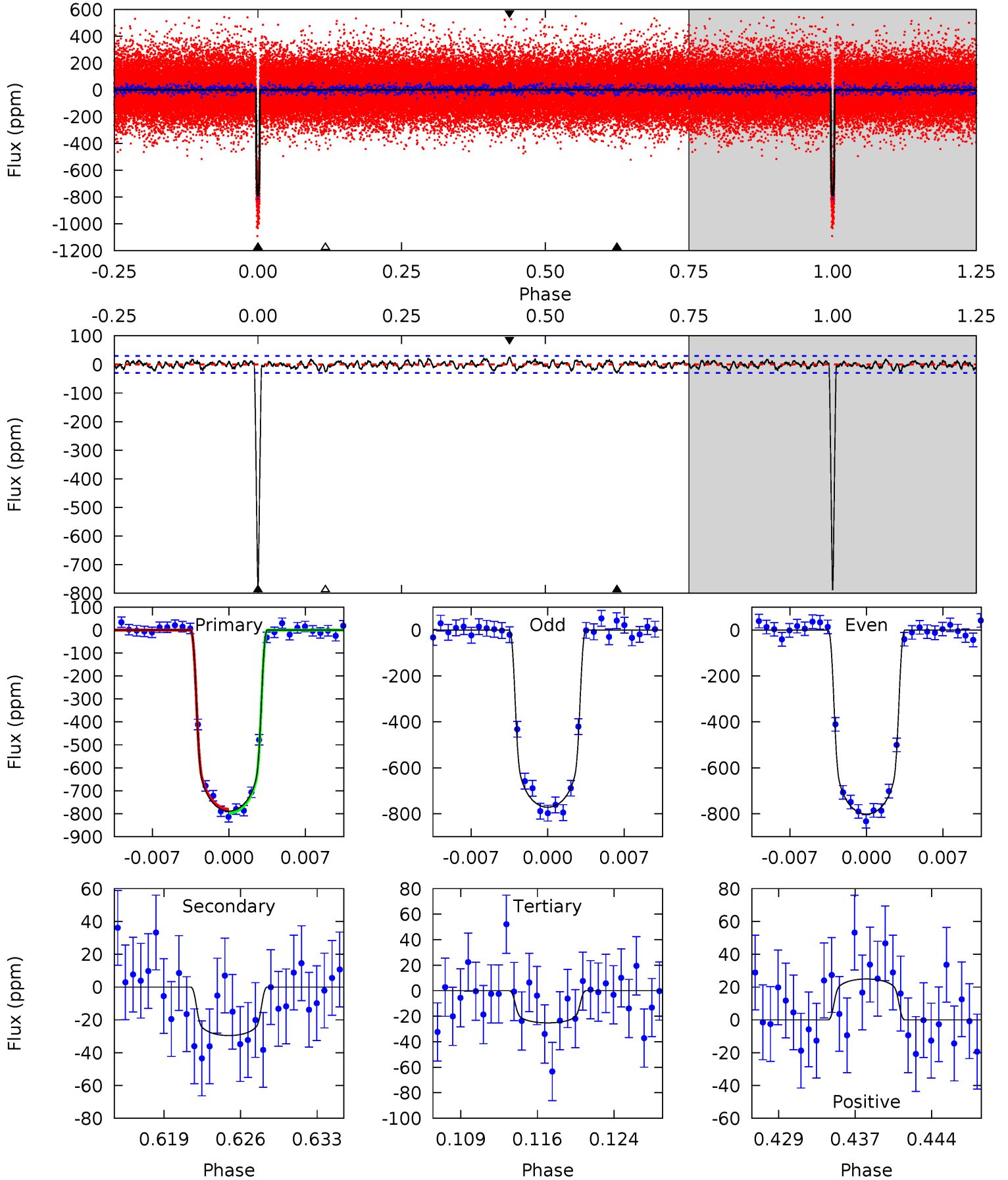
TCE 010470206-01 P= 46.566771 Days  $T_0=149.744420$  (BKJD)



# DV Model-Shift Uniqueness Test

010470206-01, P = 46.566722 Days, E = 103.178358 Days

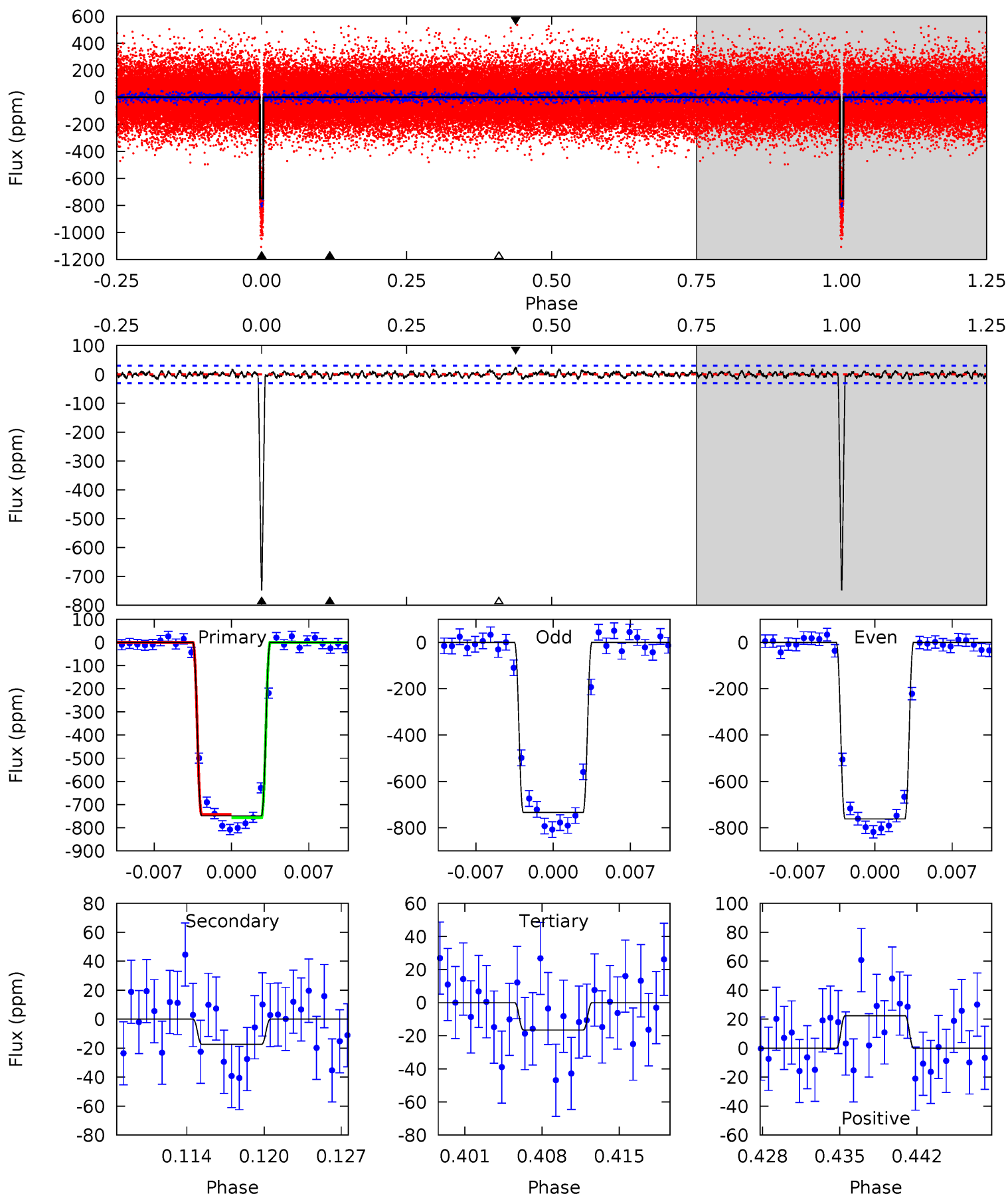
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
134.7	5.05	4.31	4.26	5.09	2.68	1.46	130.4	130.5	0.74	0.80	2.56	0.99	0.03	1.44



# Alt Model-Shift Uniqueness Test

010470206-01, P = 46.566771 Days, E = 103.177649 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
126.5	2.93	2.80	3.79	5.10	2.71	1.08	123.7	122.7	0.13	-0.86	2.38	0.99	0.03	1.10



### Stellar Parameters For KIC 010470206

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6629^{+181}_{-272}$	$4.132^{+0.209}_{-0.171}$	$-0.180^{+0.250}_{-0.300}$	$1.619^{+0.457}_{-0.457}$	$1.302^{+0.172}_{-0.236}$	$0.432^{+0.544}_{-0.214}$
	+3%/-4%	+5%/-4%	+139%/-167%	+28%/-28%	+13%/-18%	+126%/-49%
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 010470206-01 / KOI 0335.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-30 \pm 6$	$5.12^{+0.82}_{-0.77}$	$981^{+80}_{-73}$	$3378^{+123}_{-148}$	$47^{+19}_{-15}$
Alt.	$-17 \pm 6$	$4.88^{+0.70}_{-0.70}$	$986^{+73}_{-79}$	$3174^{+155}_{-205}$	$31^{+15}_{-12}$

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

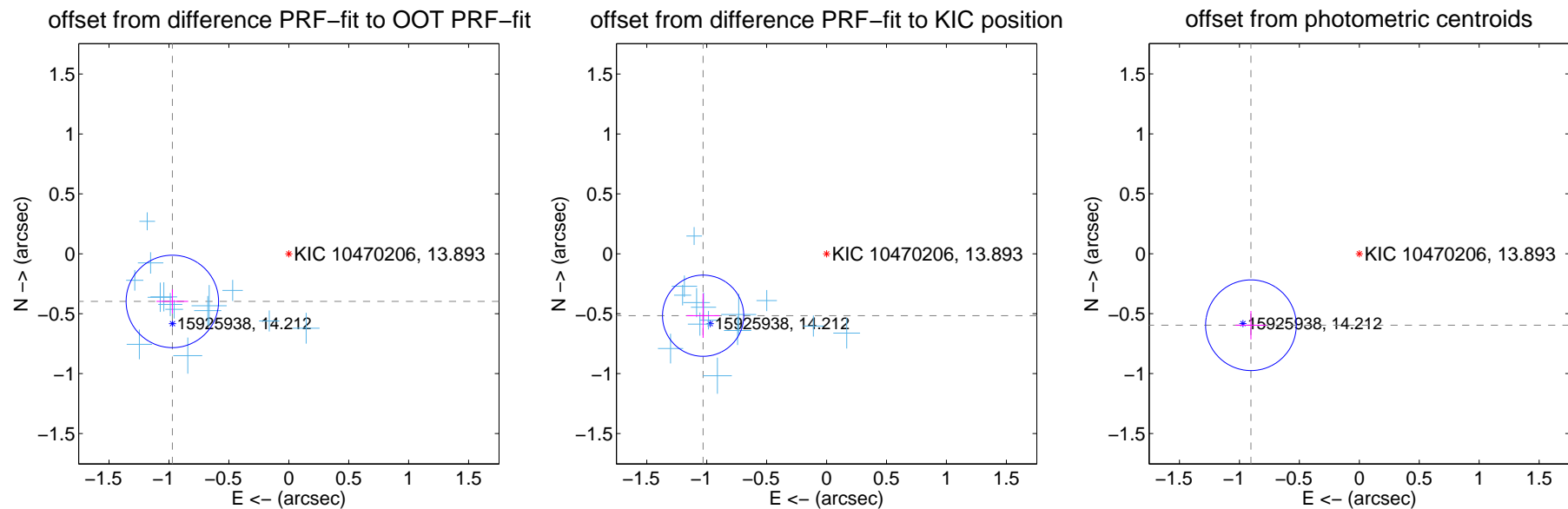
## DV Centroid Data

Supplemental centroid analysis for 010470206-01. Kepler magnitude: 13.89. Transit SNR 87.87

There are 15 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

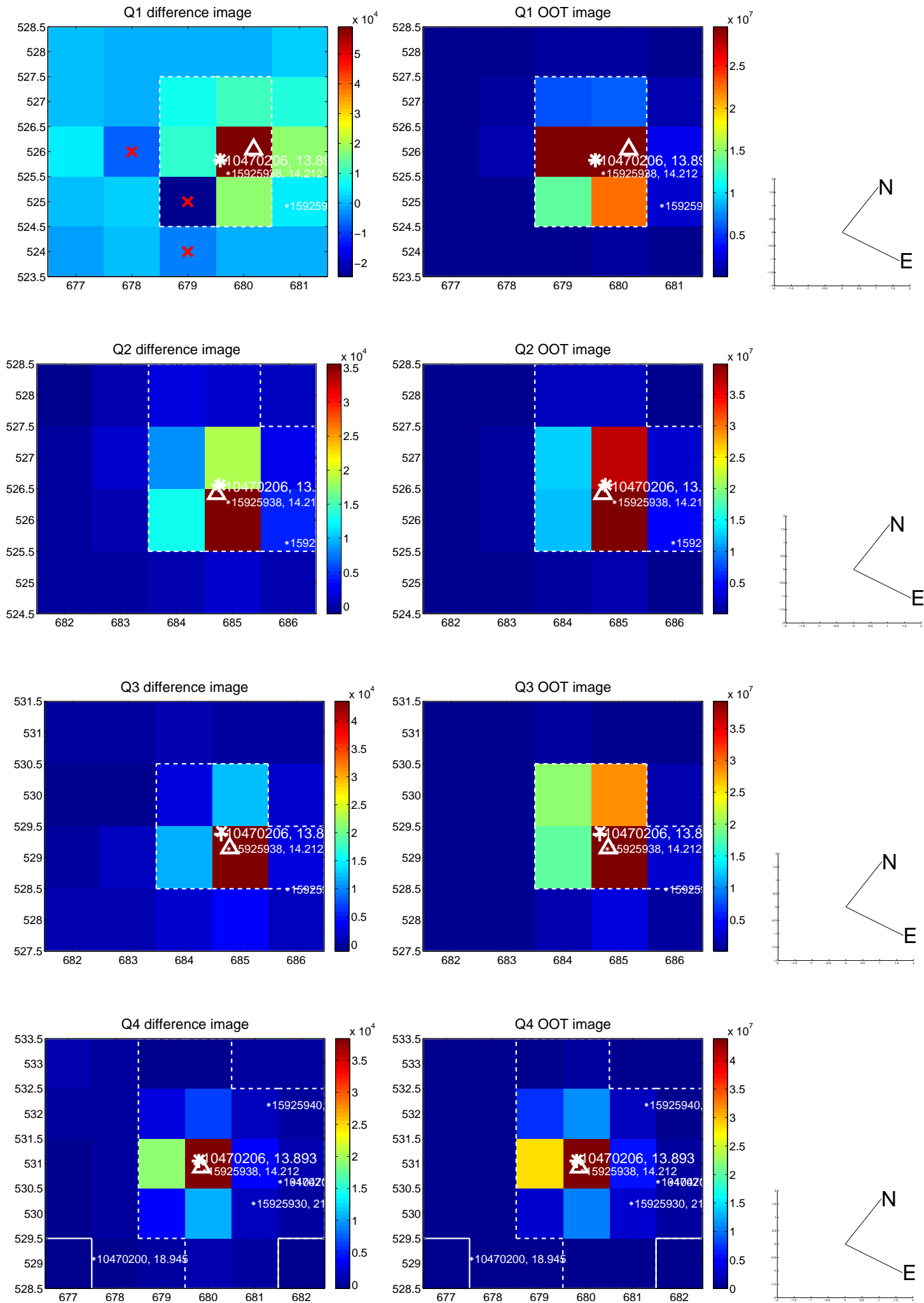
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.050 \pm 0.129$	8.17	$0.972 \pm 0.133$	$-0.398 \pm 0.101$
PRF-fit source offset from KIC position	$1.152 \pm 0.113$	10.20	$1.030 \pm 0.137$	$-0.517 \pm 0.185$
photometric centroid source offset	$1.08 \pm 0.13$	8.59	$0.90 \pm 0.13$	$-0.60 \pm 0.12$



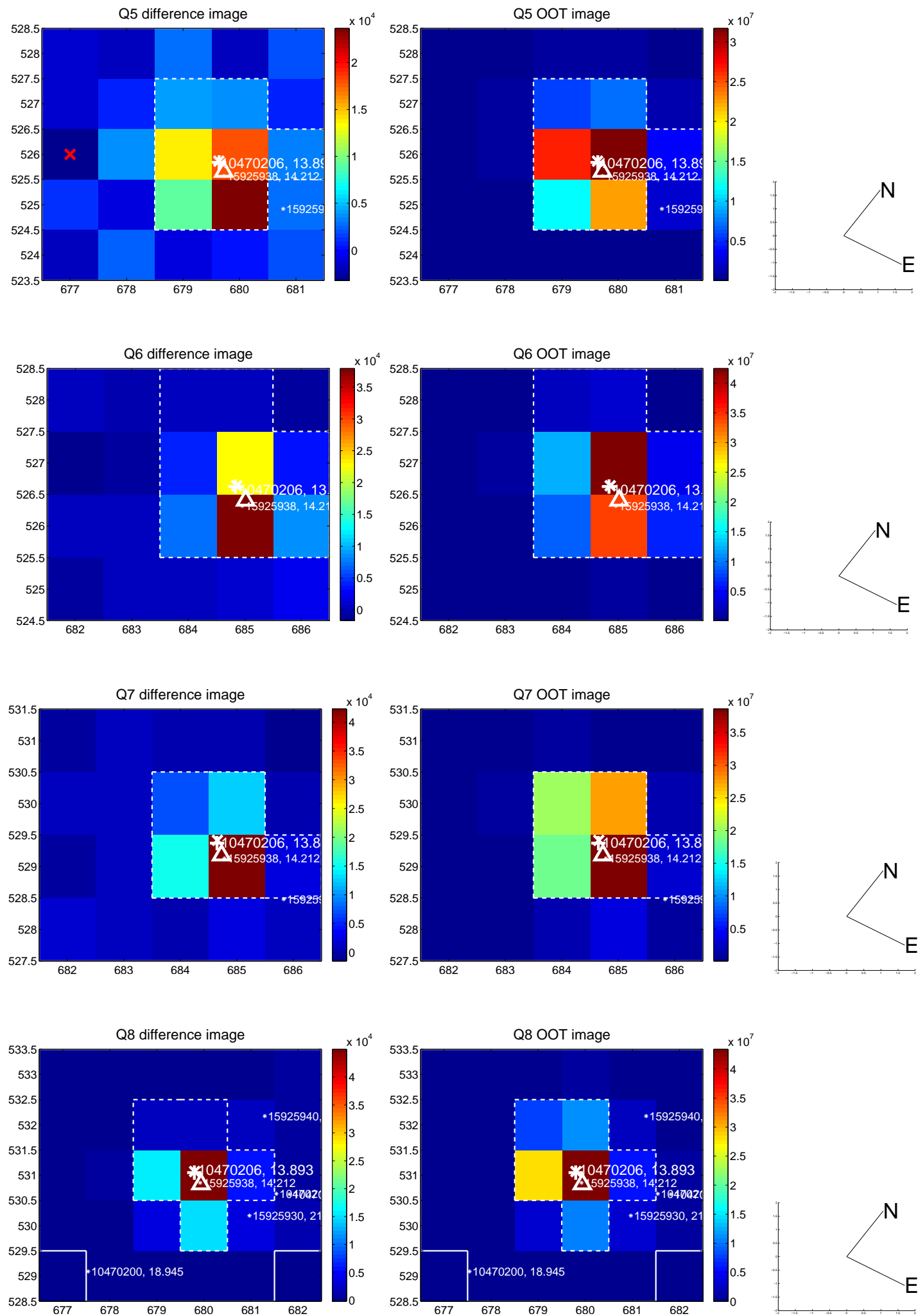
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



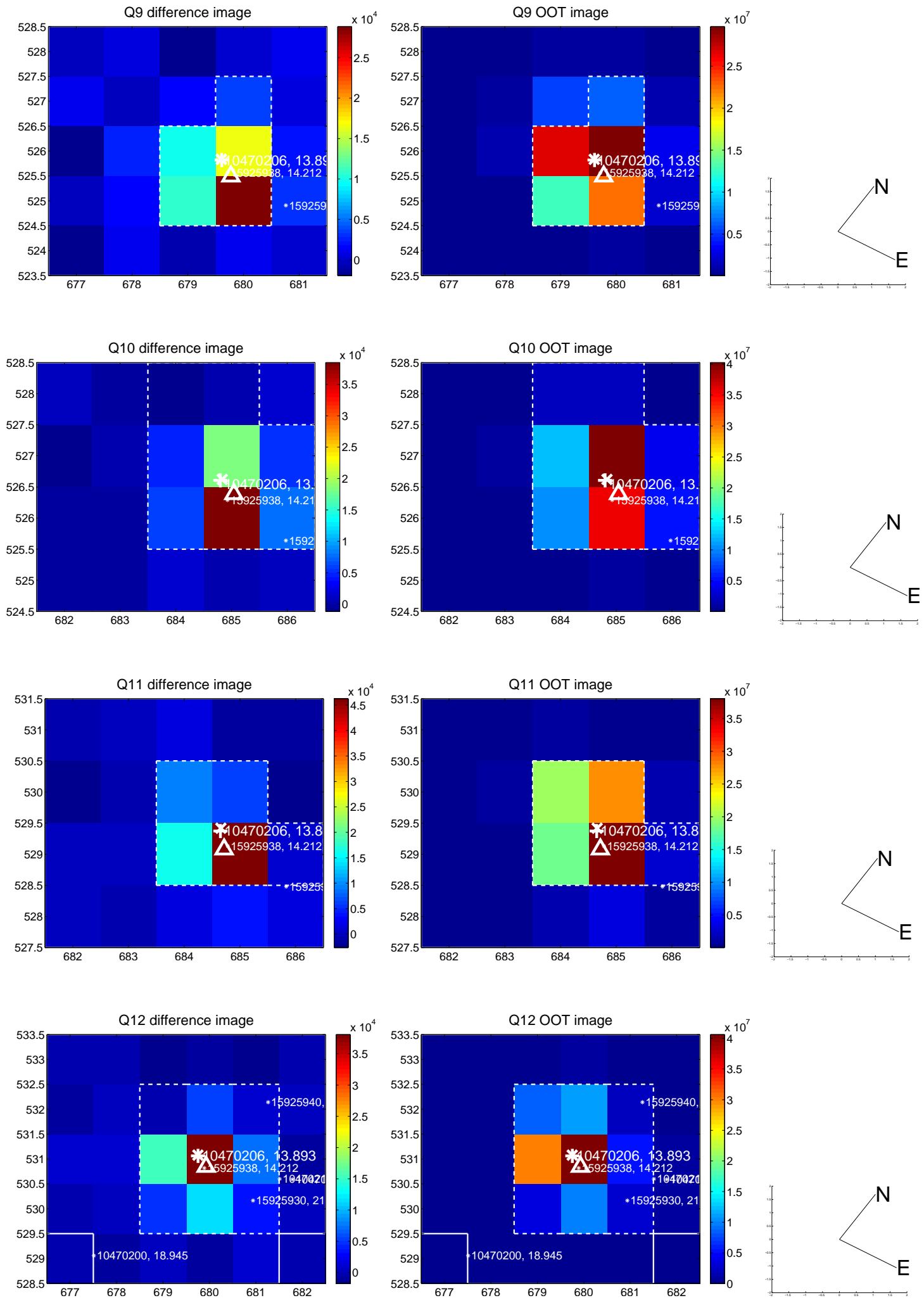
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



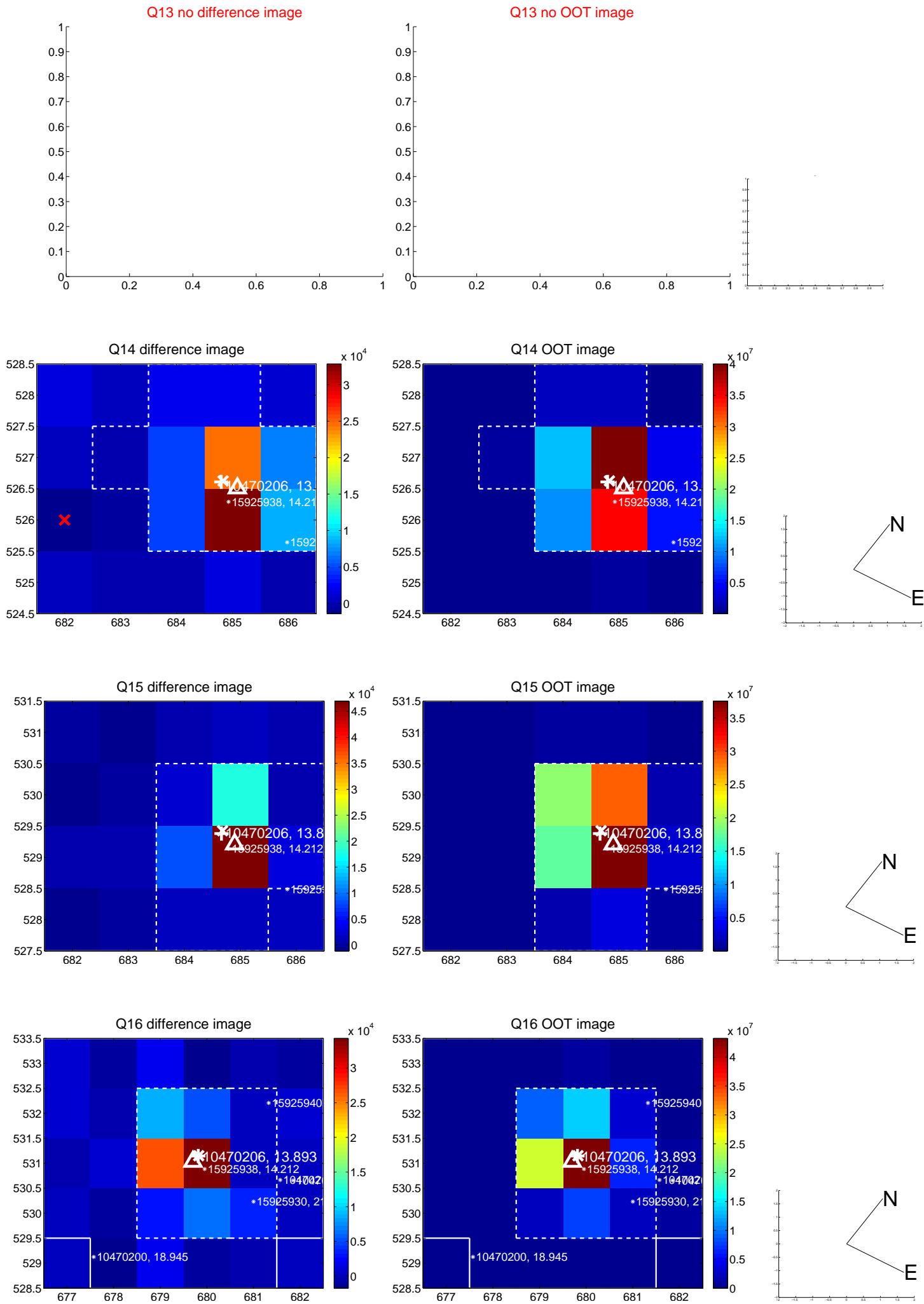
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



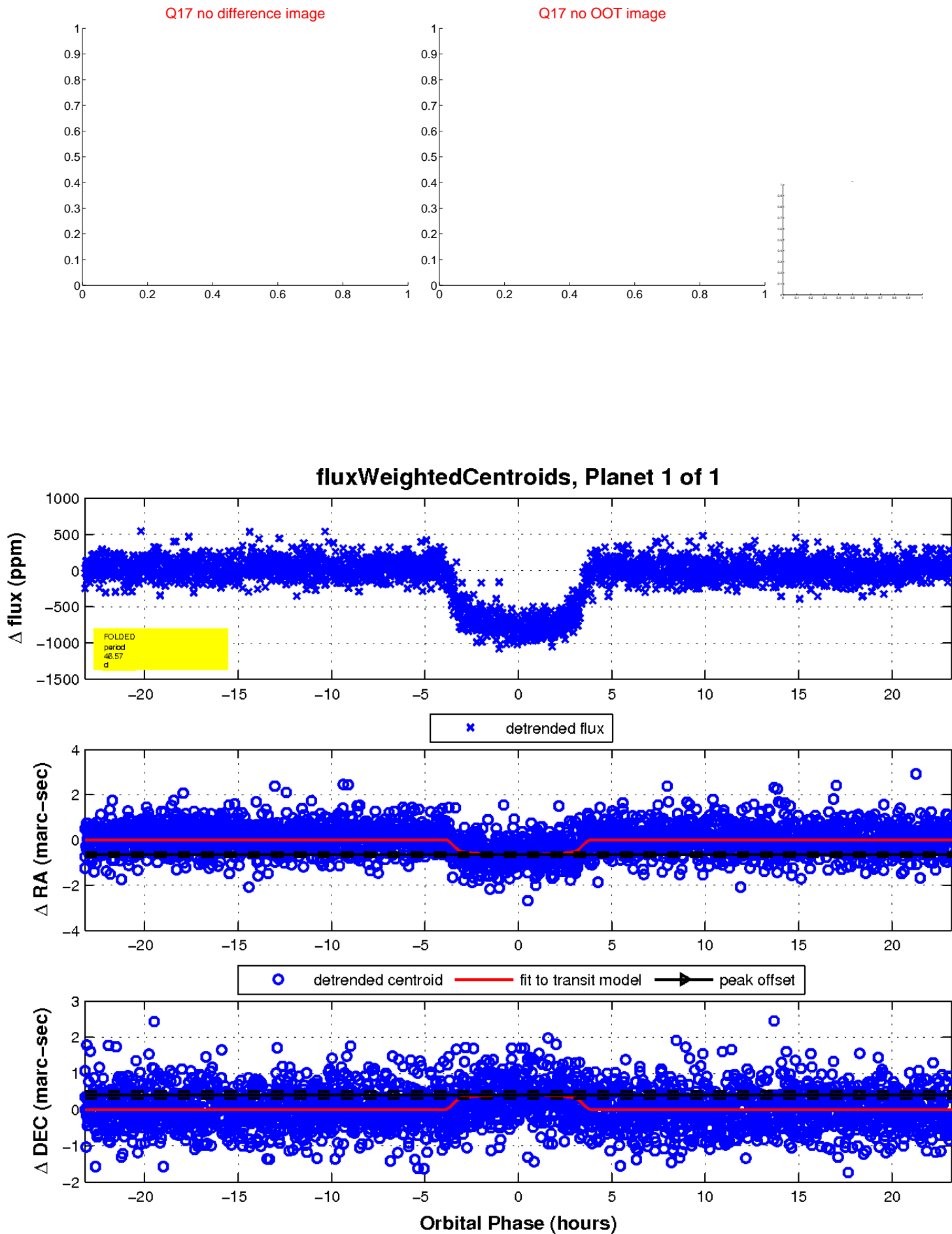
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

