

# KIC 002997178

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002997178-01	OBS	3814.01	5.950762	135.066436	655.9	5.399	75.8	57.1	9.83	5122	29.49	7416.51

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002997178-01	OBS	FP	0.00	0	0	1	0	SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_RESOLVED_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.

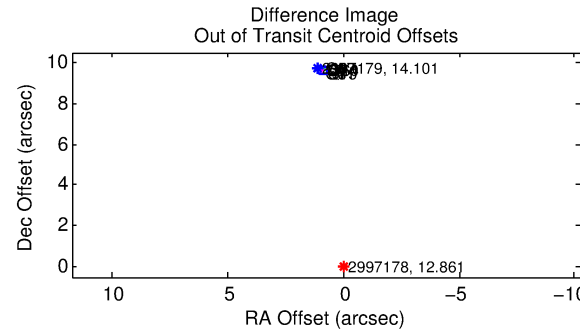
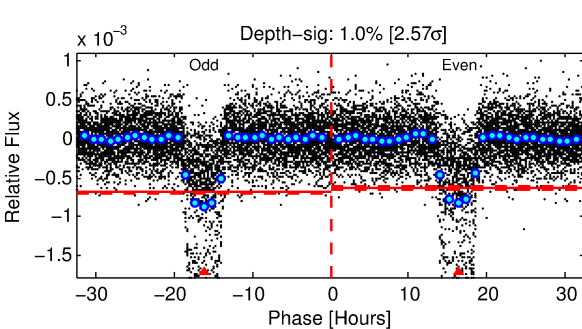
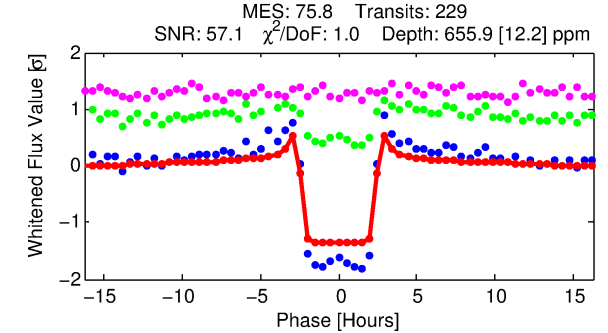
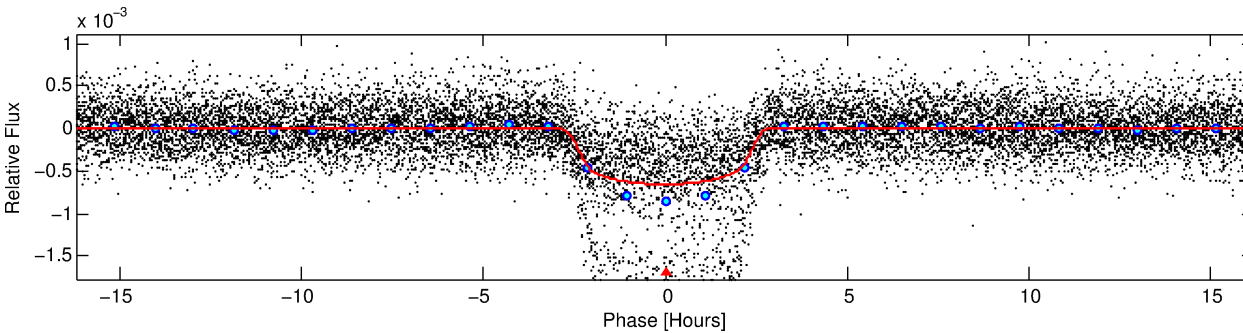
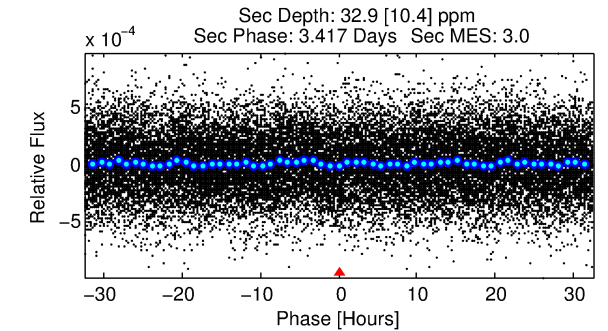
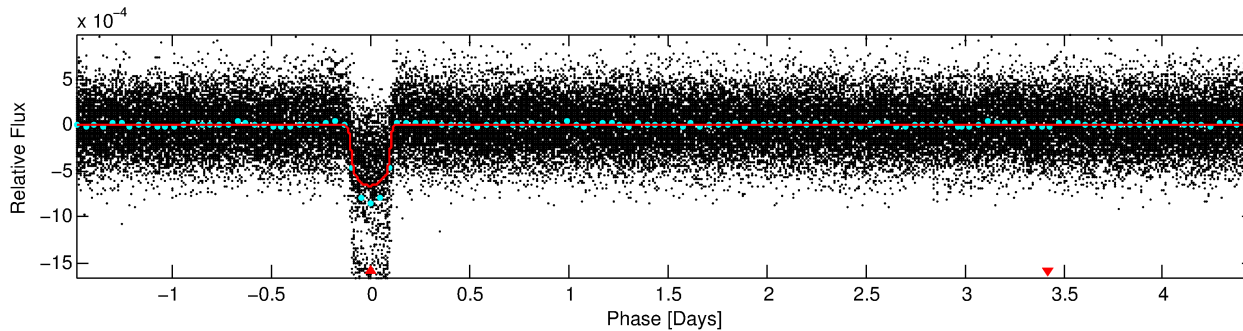
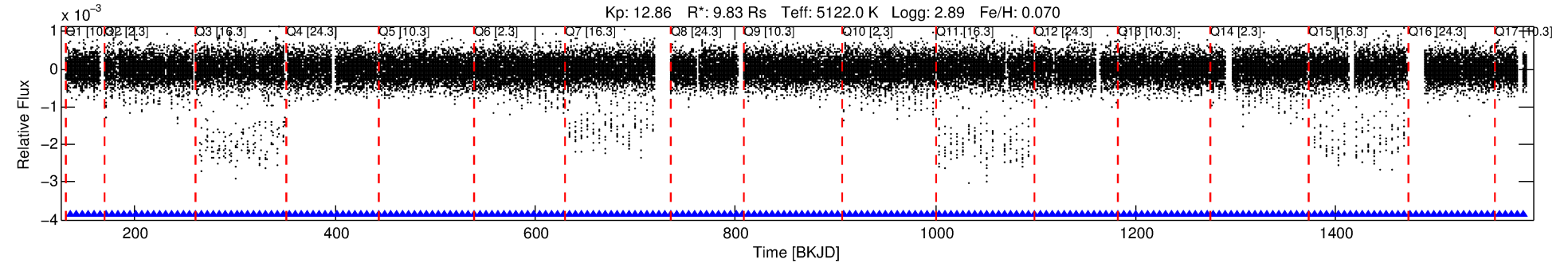
## Ephemeris Match Information For 002997178-01

No Significant Match Found

# DV One-Page Summary

KIC: 2997178 Candidate: 1 of 1 Period: 5.951 d  
KOI: K03814.01 Corr: 0.990

Kp: 12.86 R\*: 9.83 Rs Teff: 5122.0 K Logg: 2.89 Fe/H: 0.070



## DV Fit Results:

Period = 5.95076 [0.00001] d  
Epoch = 135.0664 [0.0010] BKJD  
Rp/R\* = 0.0275 [0.0008]  
a/R\* = 4.74 [0.50]  
b = 0.87 [0.03]  
Seff = 7416.50 [7583.02]  
Teq = 2366 [605] K  
Rp = 29.49 [20.36] Re  
a = 0.0896 [0.0576] AU  
Ag = 0.17 [0.18] [-4.70σ]  
Teffp = 2340 [211] K [-0.04σ]

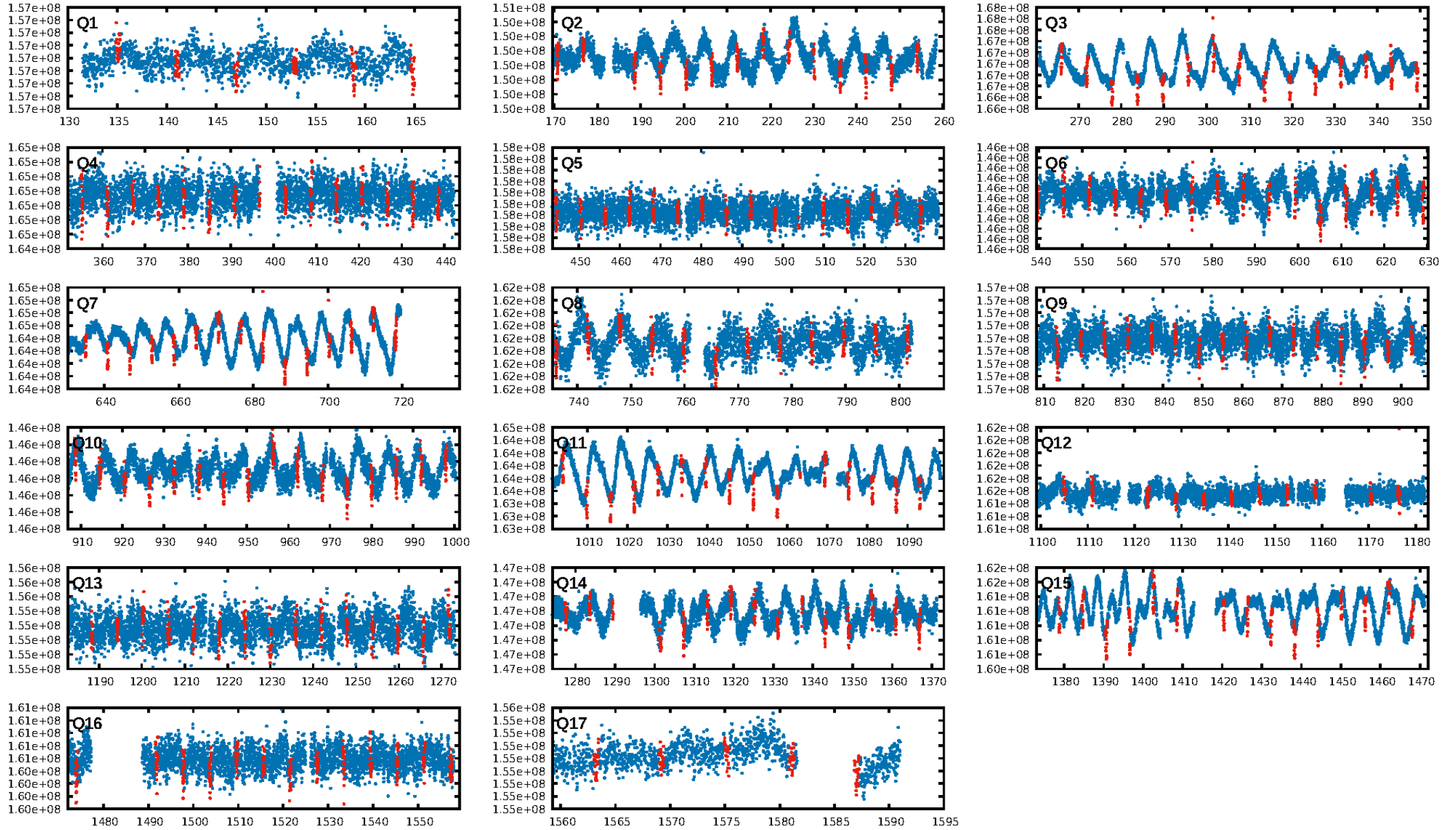
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [218/218]  
GhostDiagnostic-chr: -0.4194  
Centroid-sig: 0.0%  
Centroid-so: 33.147 arcsec [94.18σ]  
OotOffset-rm: 9.667 arcsec [131.89σ]  
KicOffset-rm: 9.694 arcsec [142.47σ]  
OotOffset-st: 4/4/0/5 [13]  
KicOffset-st: 4/4/0/5 [13]  
DiffImageQuality-fgm: 1.00 [13/13]  
DiffImageOverlap-fno: 1.00 [17/17]

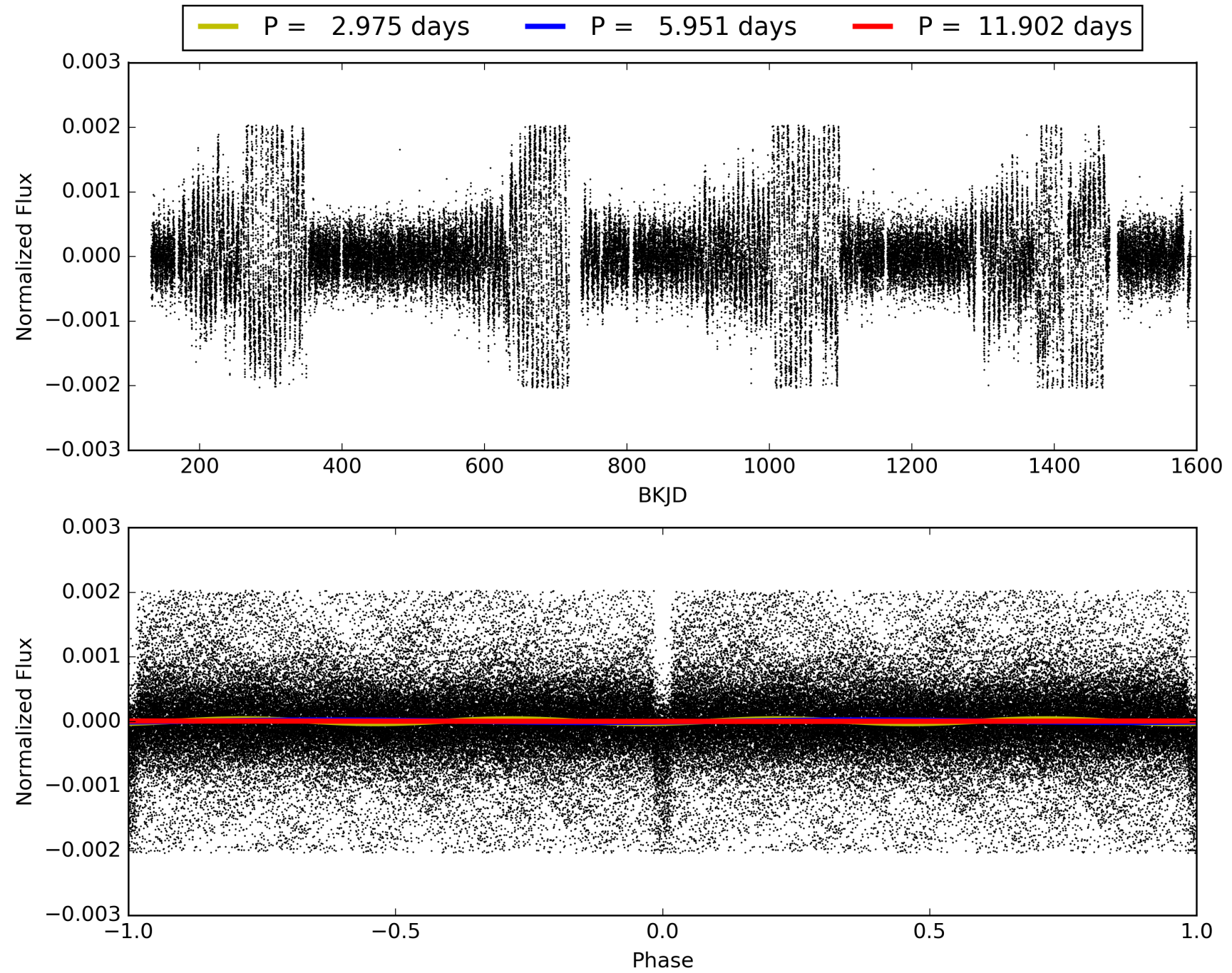
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:50:32 Z

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

# TCE 002997178-01, PDC Light Curves

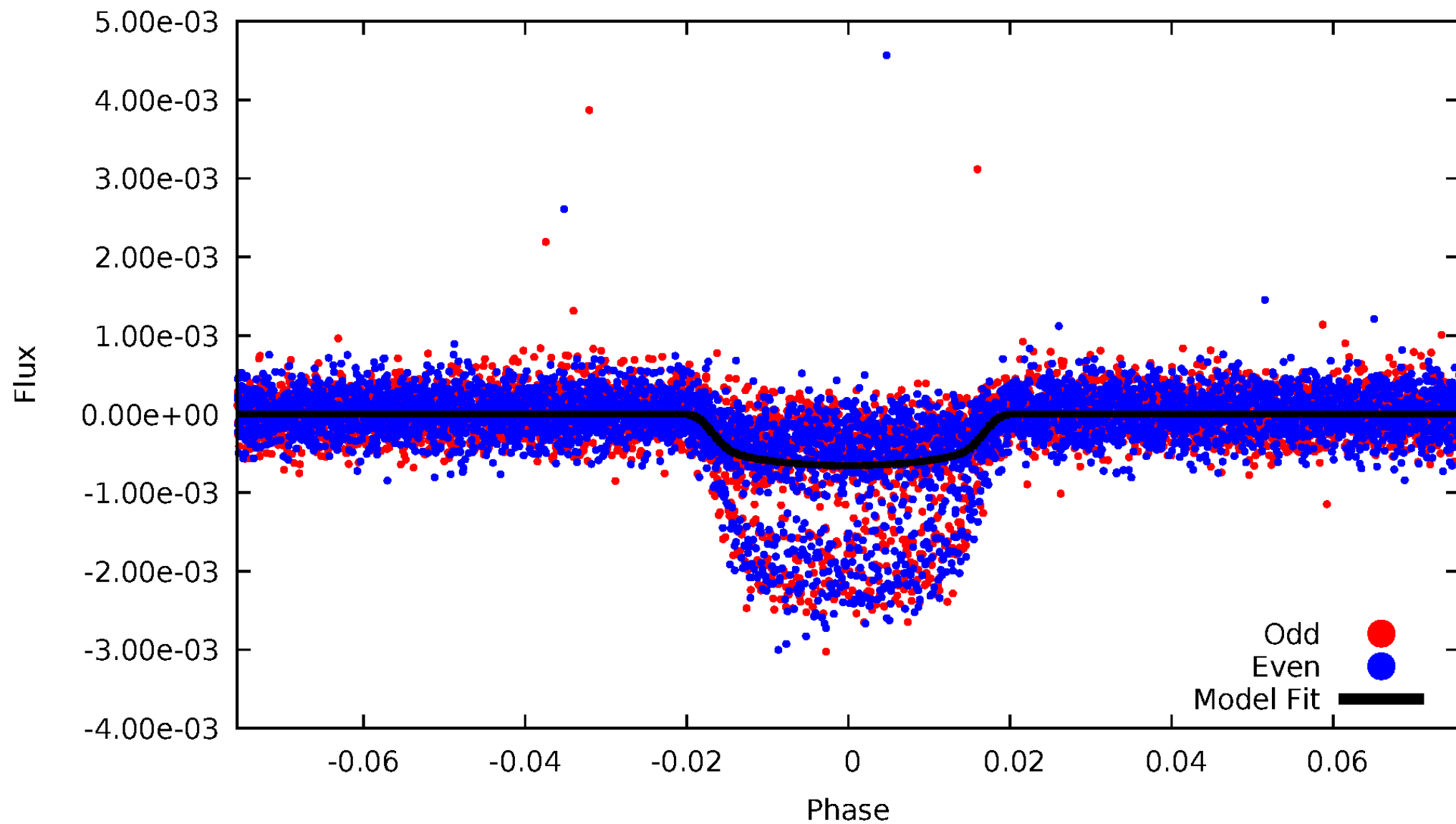


TCE 002997178-01



# DV Odd/Even

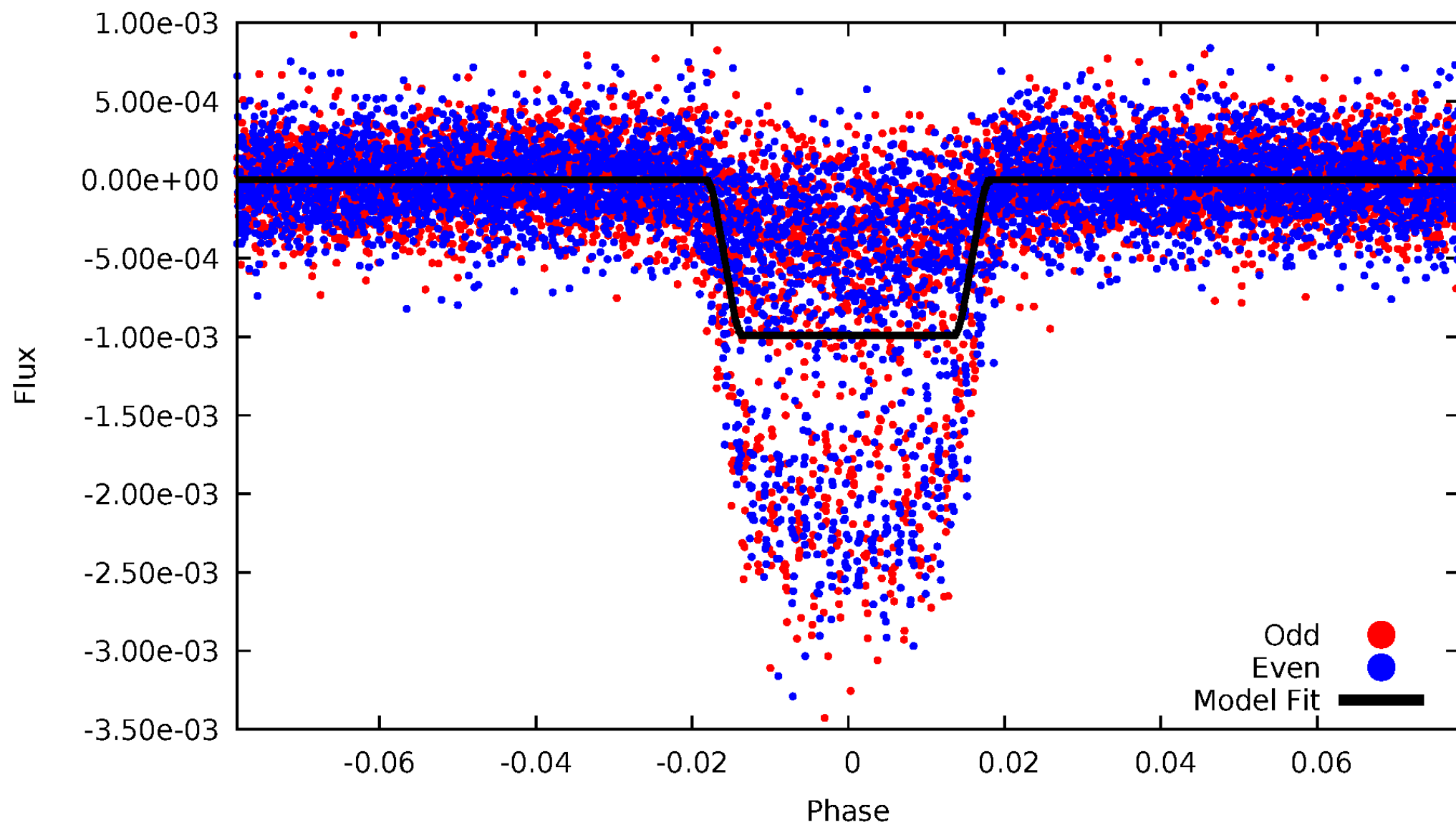
TCE 002997178-01



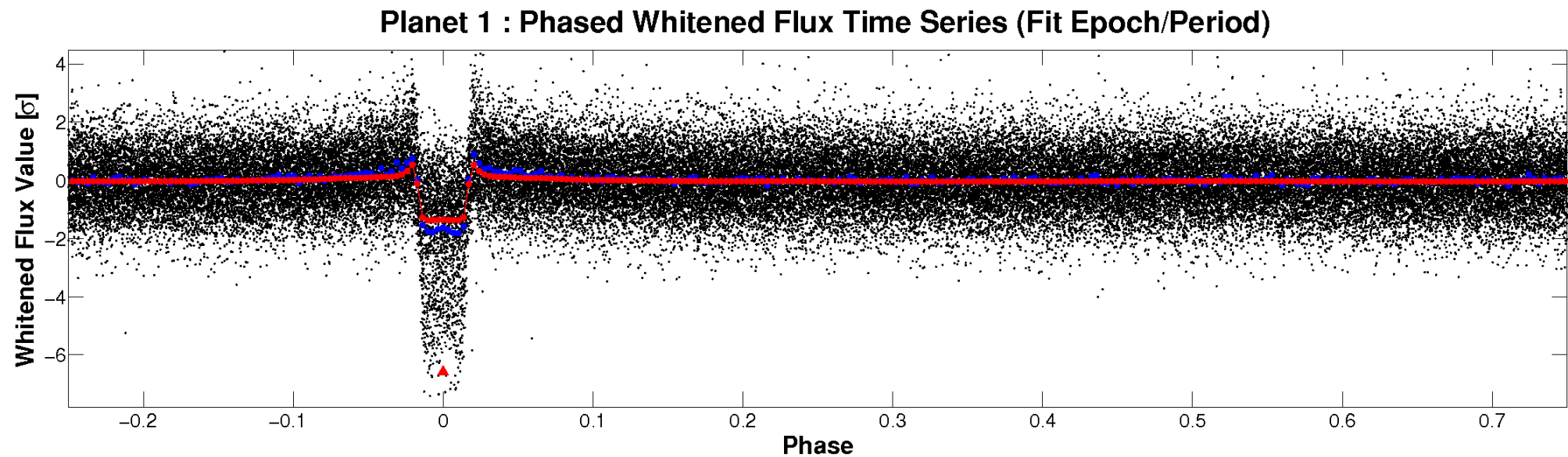
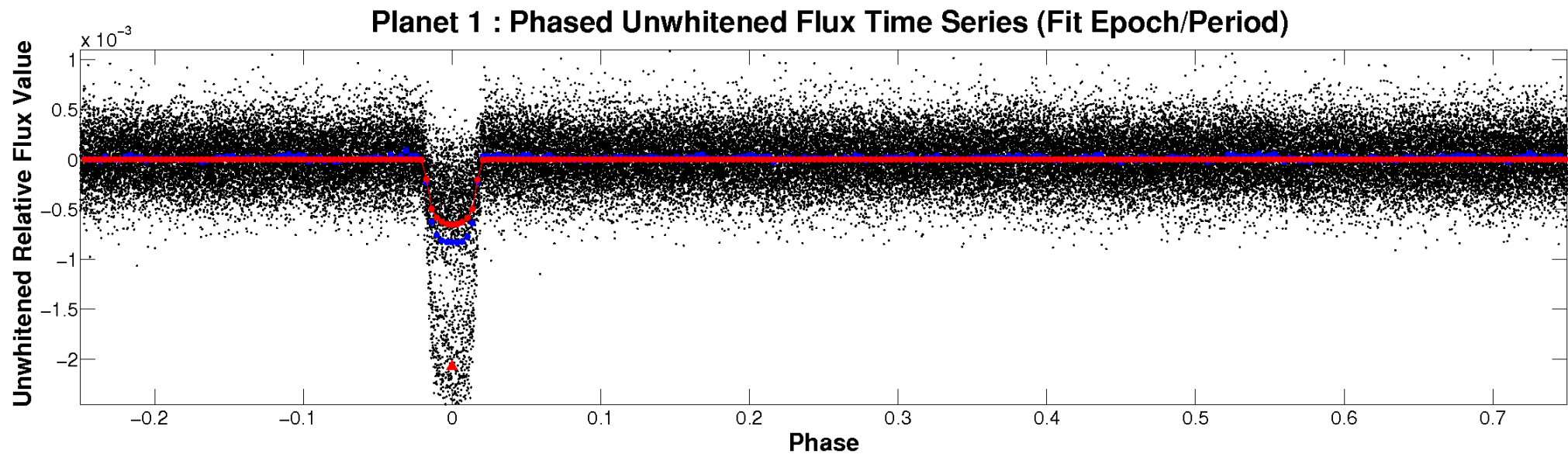


# ALT Odd/Even

TCE 002997178-01

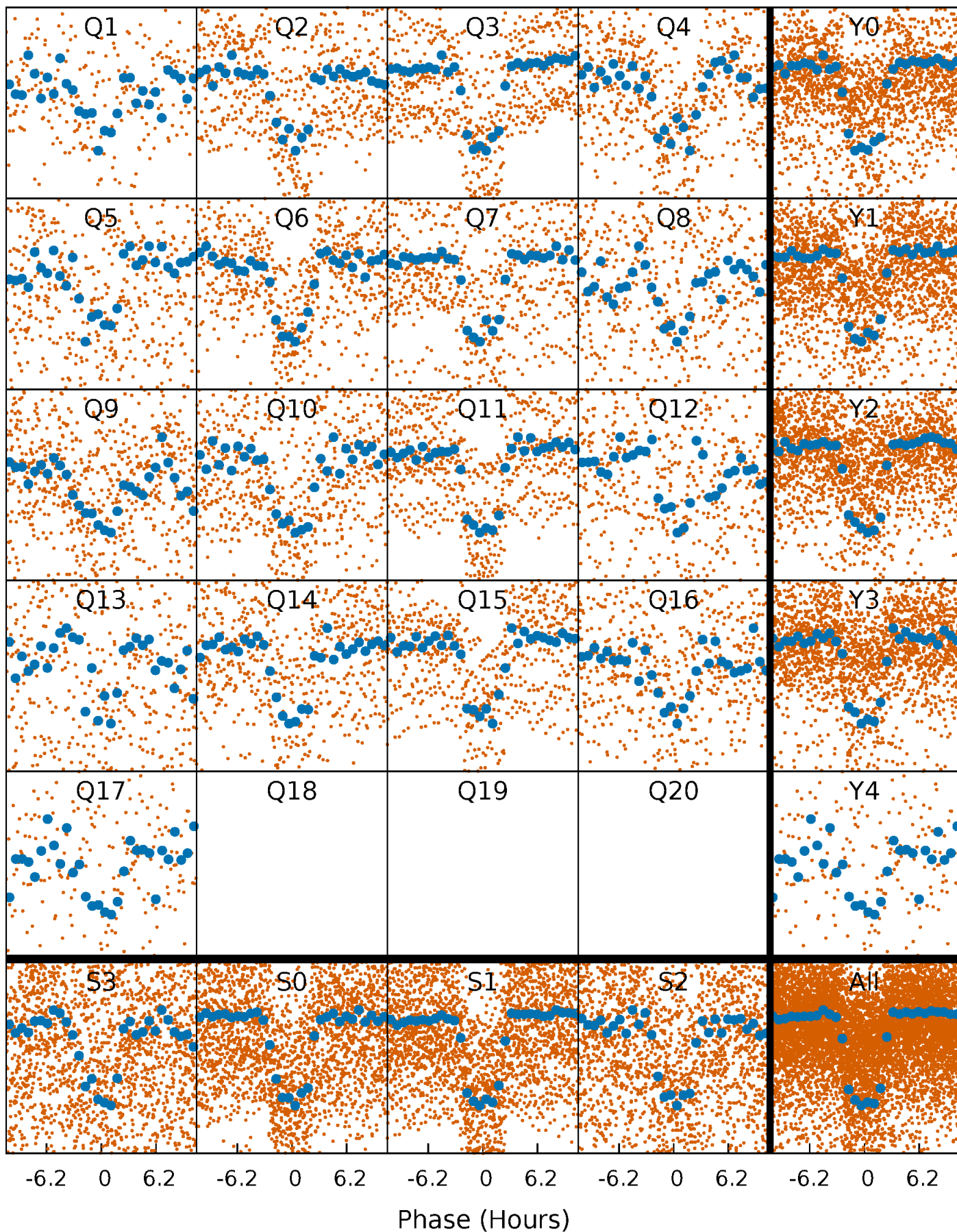


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

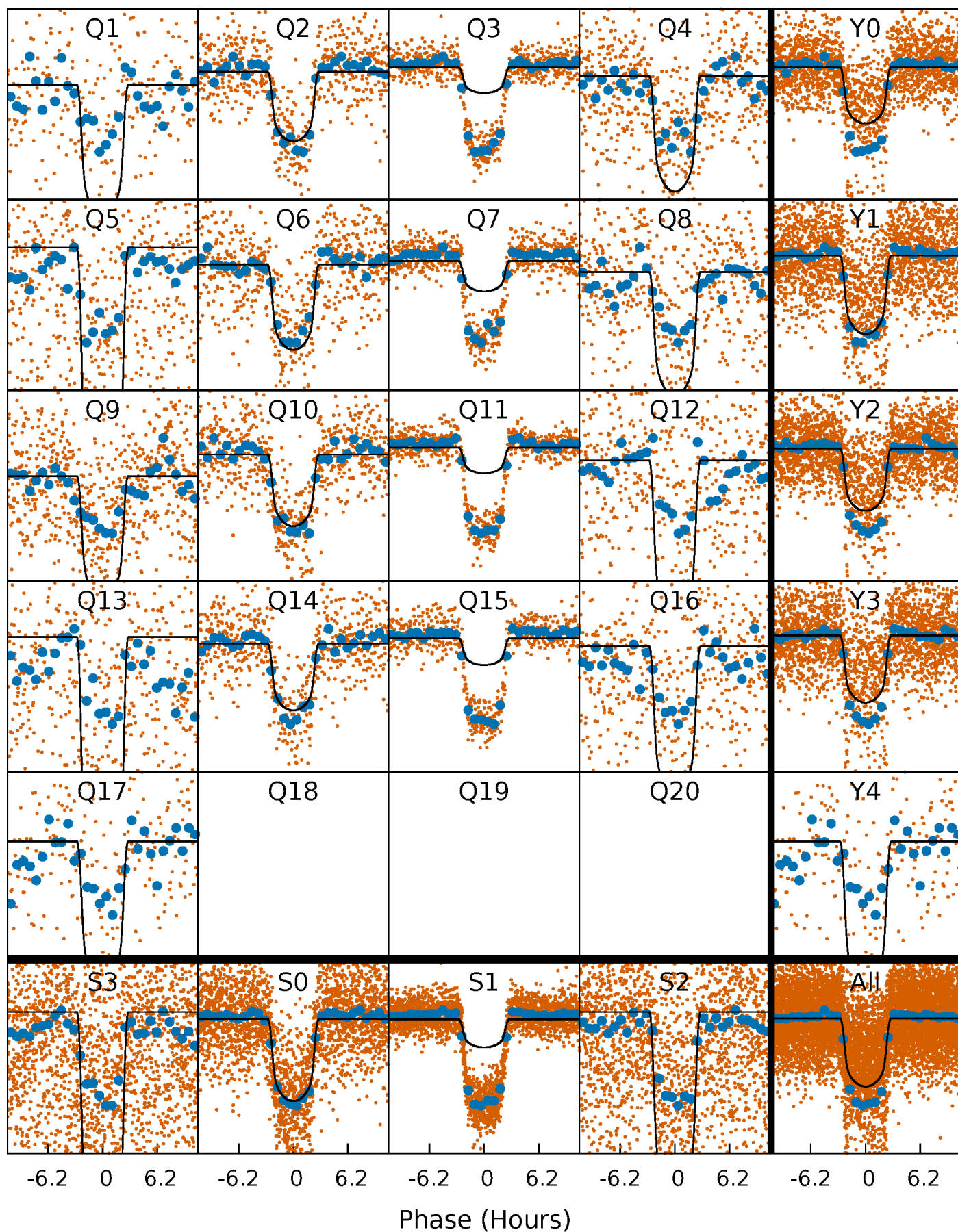
TCE 002997178-01 P= 5.950762 Days  $T_0=135.066436$  (BKJD)





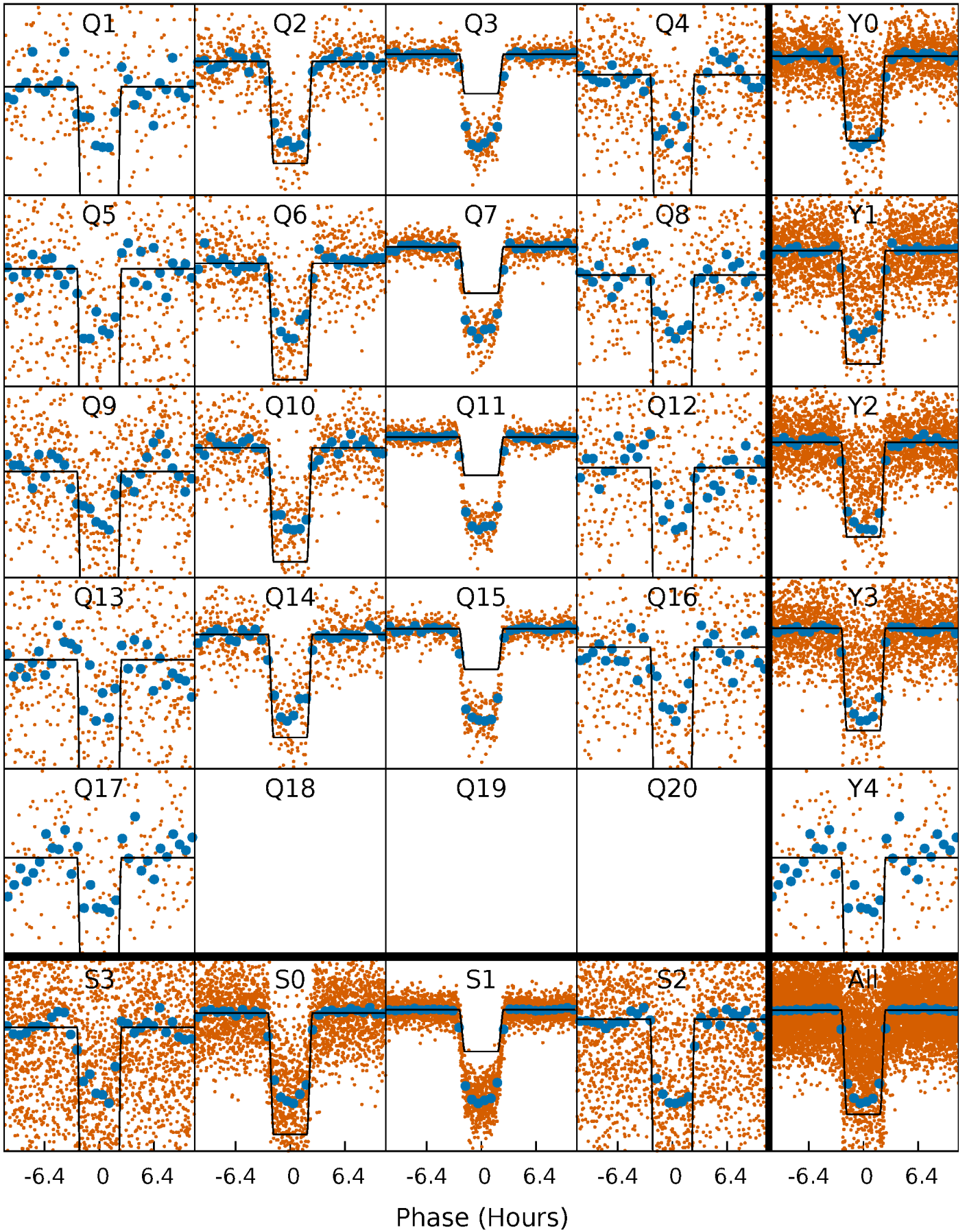
# DV Quarter-Phased Transit Curves

TCE 002997178-01 P= 5.950762 Days  $T_0=135.066436$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

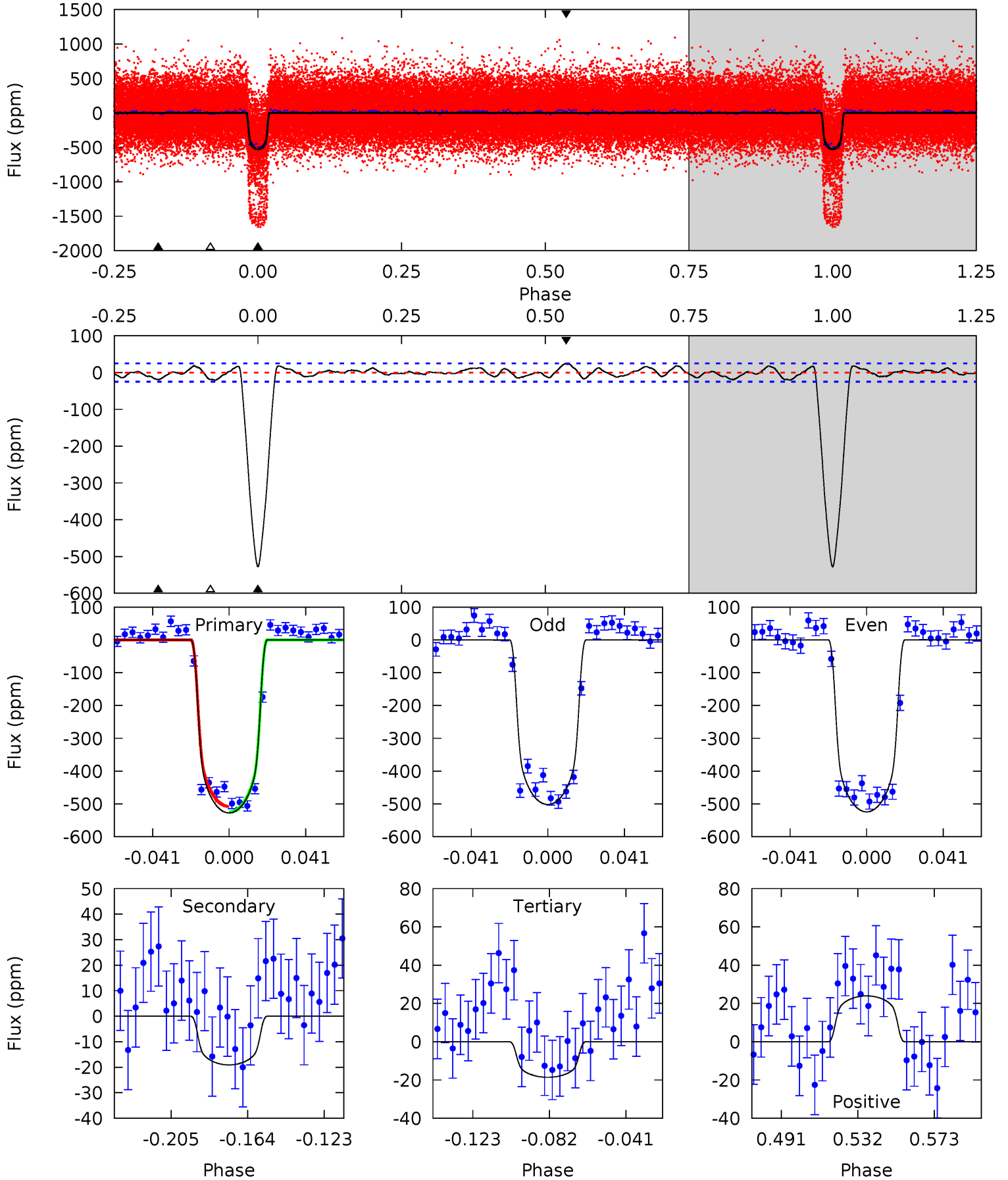
TCE 002997178-01 P= 5.950803 Days  $T_0=135.061891$  (BKJD)



# DV Model-Shift Uniqueness Test

002997178-01, P = 5.950762 Days, E = 129.115674 Days

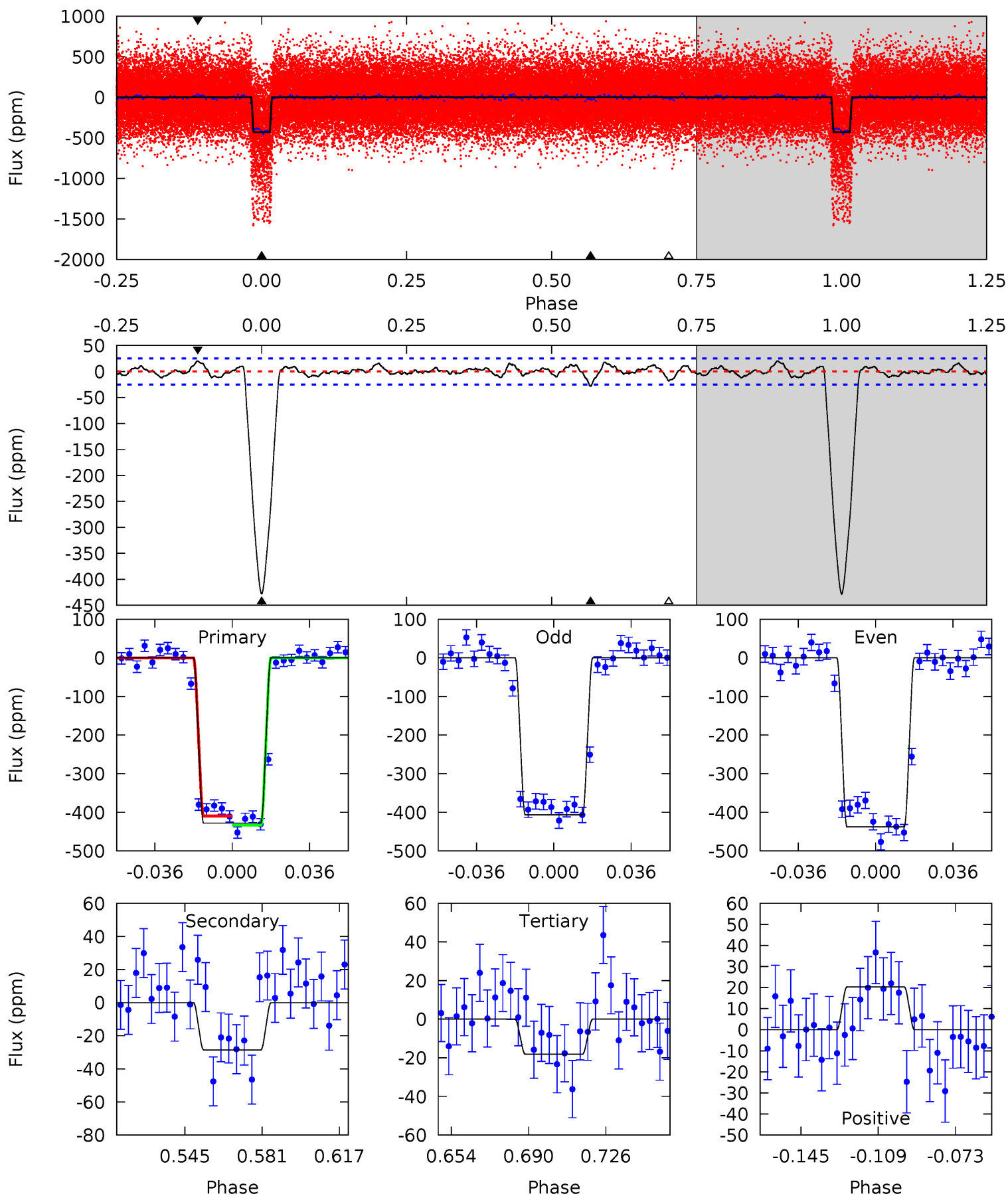
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
100.9	3.65	3.55	4.58	4.75	2.04	1.69	97.4	96.3	0.10	-0.93	2.14	1.52	0.04	1.67



# Alt Model-Shift Uniqueness Test

002997178-01, P = 5.950803 Days, E = 129.111088 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
81.1	5.41	3.43	3.85	4.77	2.09	1.25	77.7	77.3	1.98	1.56	2.97	1.62	0.05	2.25



### Stellar Parameters For KIC 002997178

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5122^{+106}_{-212}$	$2.886^{+0.585}_{-0.195}$	$0.070^{+0.200}_{-0.400}$	$9.828^{+3.390}_{-6.781}$	$2.707^{+0.389}_{-1.555}$	$0.004^{+0.041}_{-0.002}$
	+2%/-4%	+20%/-7%	+286%/-571%	+34%/-69%	+14%/-57%	+1021%/-50%
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 002997178-01 / KOI 3814.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-19 \pm 5$	$28.97^{+5.79}_{-9.56}$	$3243^{+302}_{-488}$	$-3015^{+469}_{-251}$	$0.103^{+0.098}_{-0.042}$
Alt.	$-29 \pm 5$	$33.22^{+6.82}_{-11.00}$	$3223^{+339}_{-475}$	$-2975^{+565}_{-261}$	$0.117^{+0.115}_{-0.039}$

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



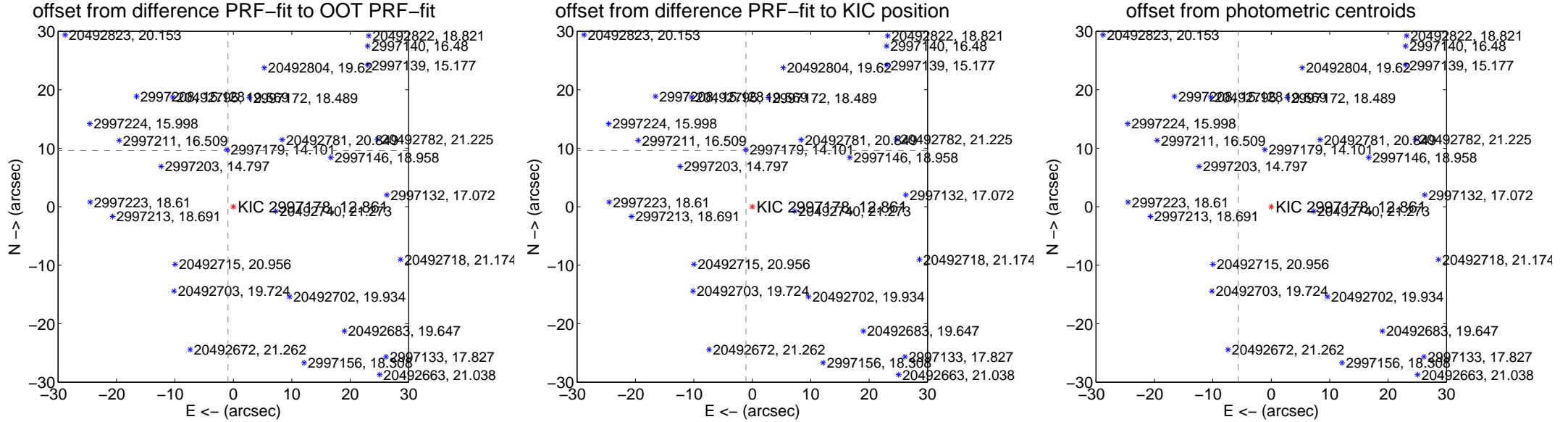
## DV Centroid Data

Supplemental centroid analysis for 002997178-01. Kepler magnitude: 12.86. Transit SNR 57.06

There are 13 quarters with good PRF difference image offsets

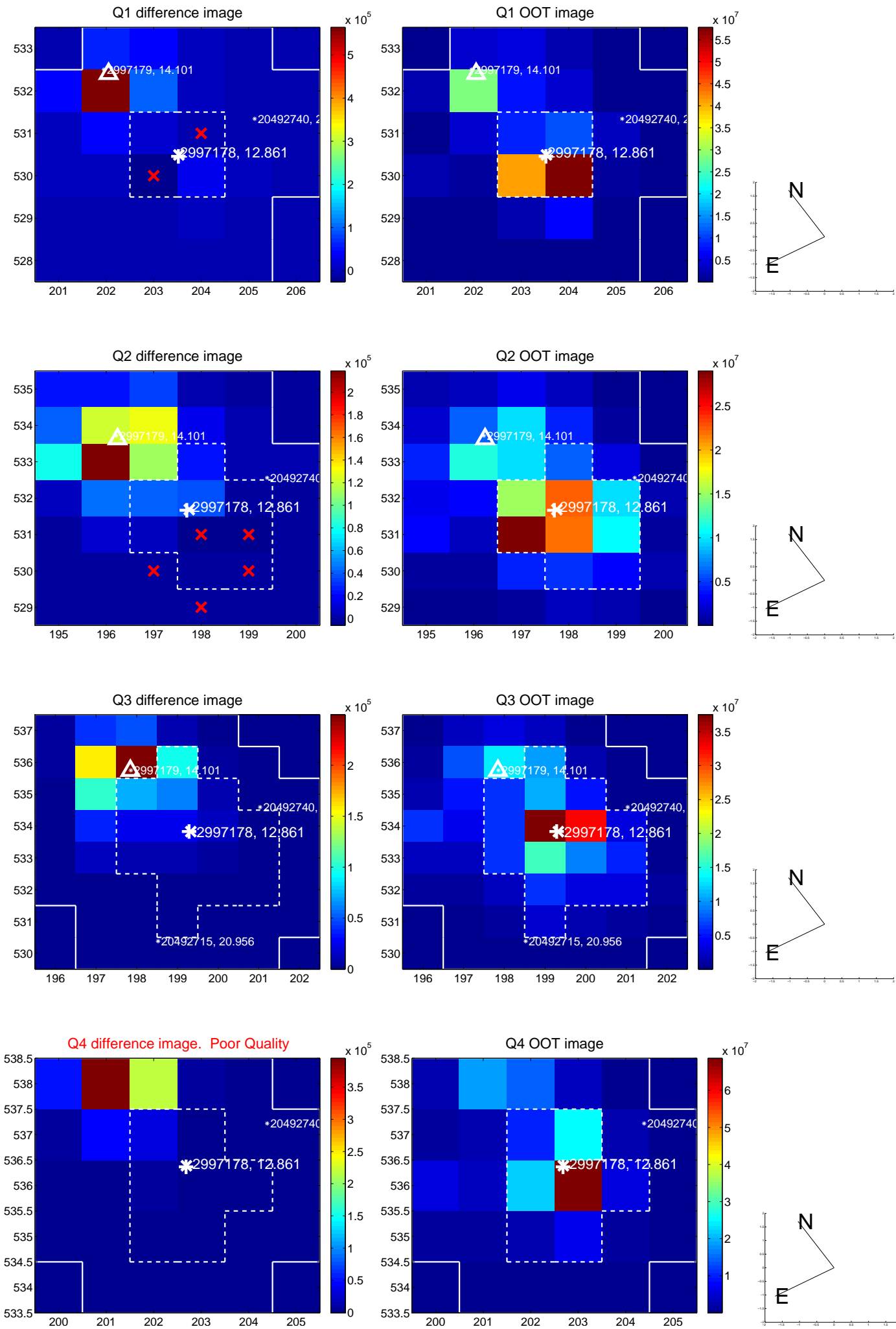
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>9.667 <math>\pm</math> 0.073</b>	<b>131.89</b>	0.921 $\pm$ 0.071	9.623 $\pm$ 0.073
PRF-fit source offset from KIC position	<b>9.694 <math>\pm</math> 0.068</b>	<b>142.47</b>	1.081 $\pm$ 0.067	9.634 $\pm$ 0.068
photometric centroid source offset	<b>33.15 <math>\pm</math> 0.35</b>	<b>94.18</b>	5.65 $\pm$ 0.10	32.66 $\pm$ 0.36

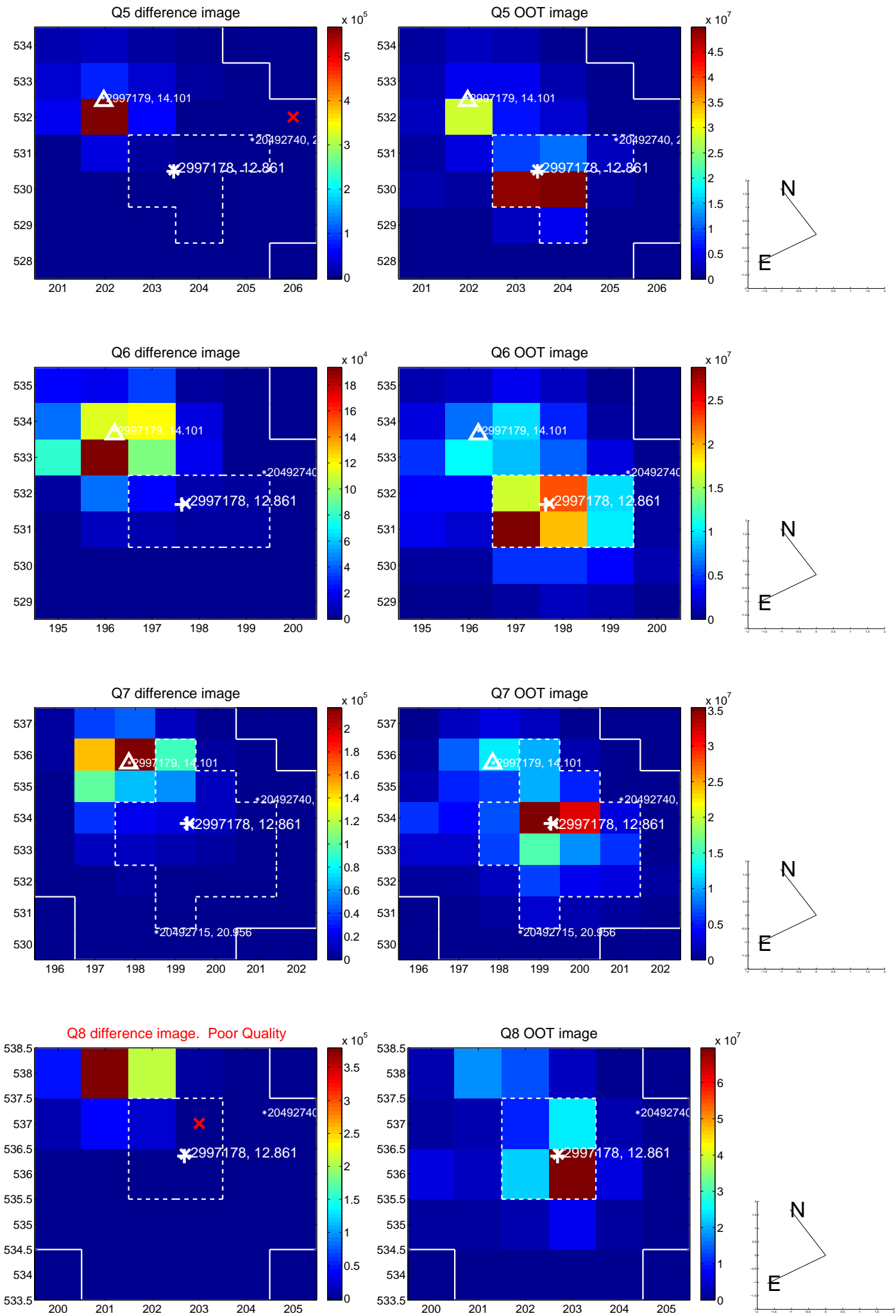


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

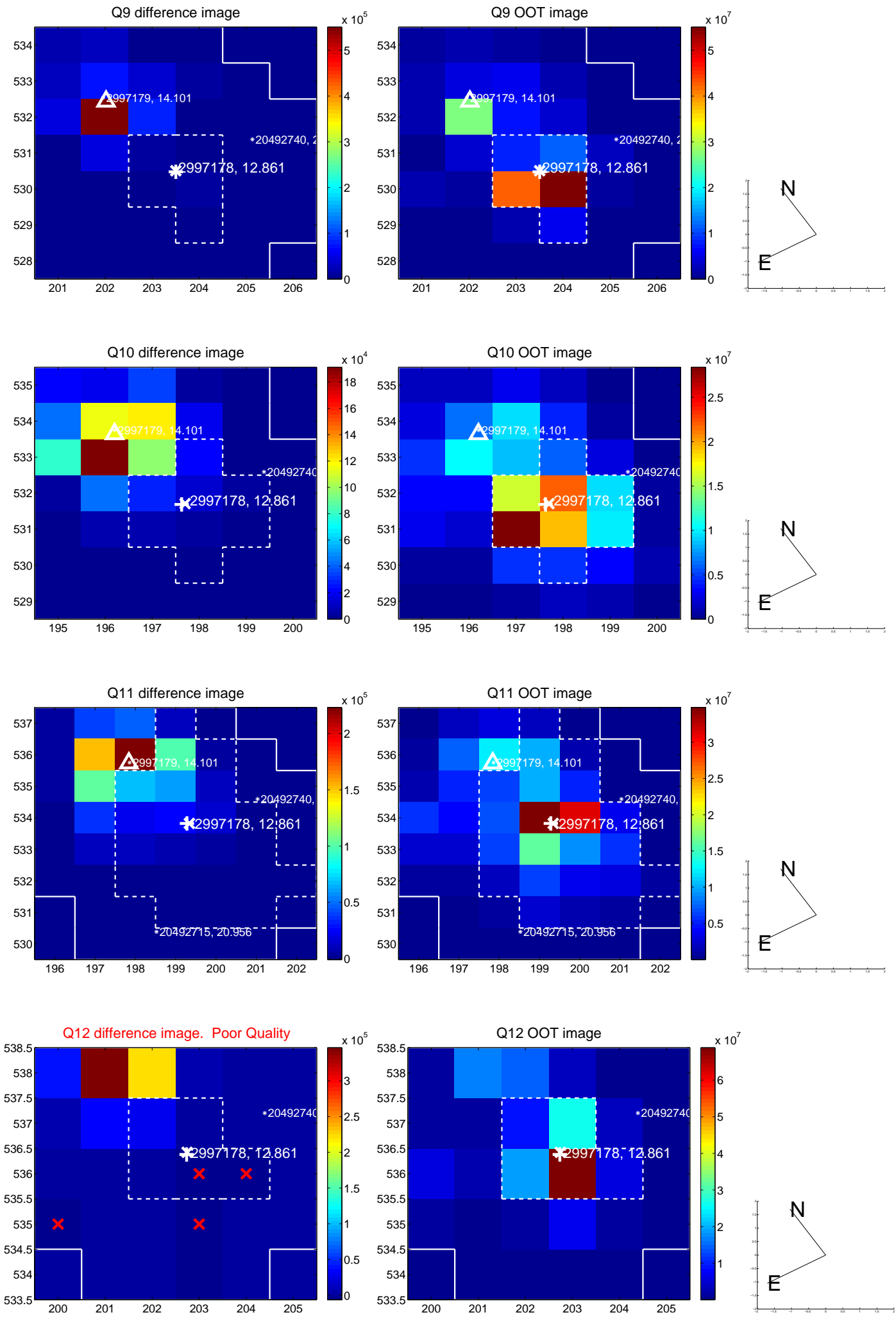
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



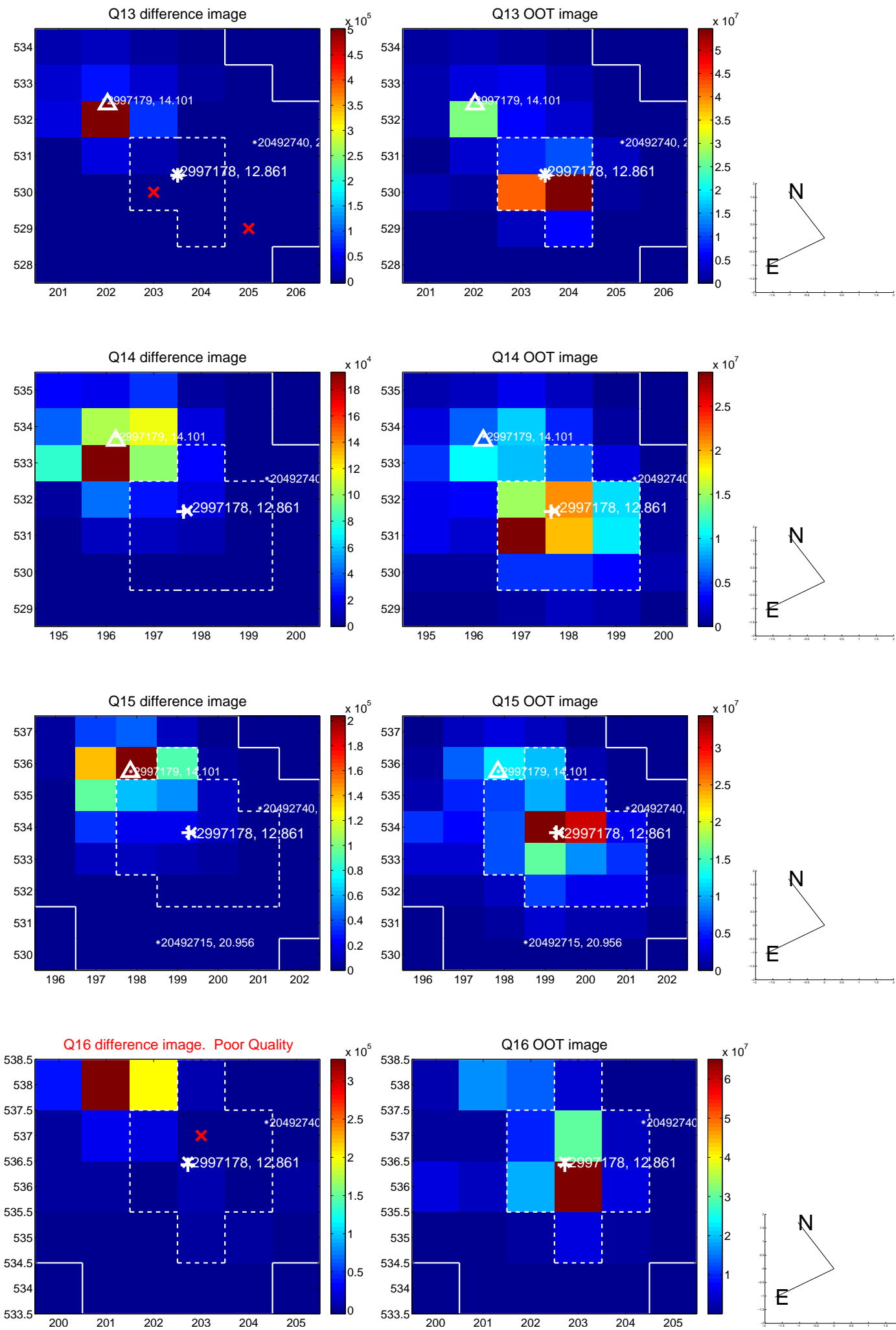
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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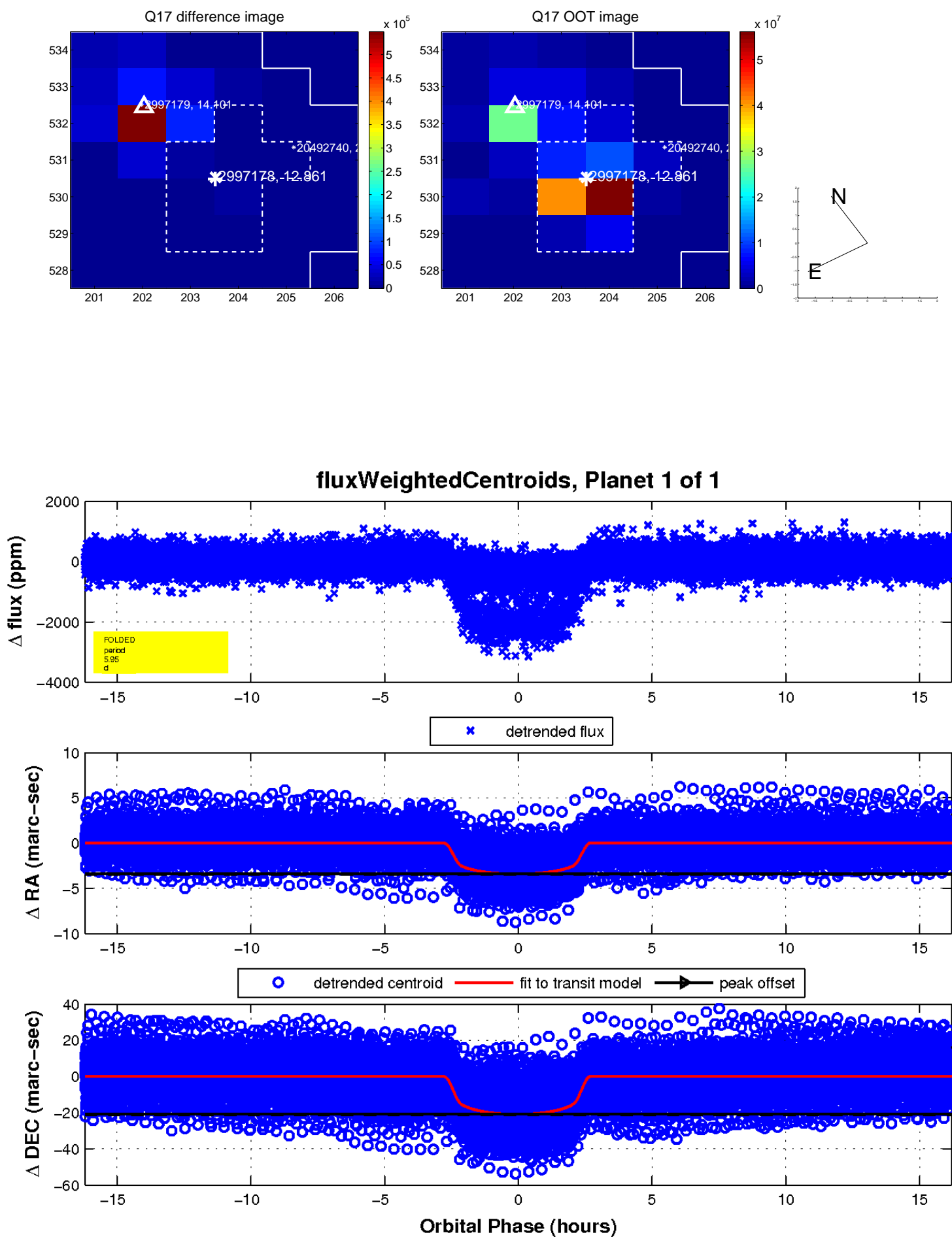


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

