

# KIC 010081256

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010081256-01	OBS	No	0.978919	131.795352	84.2	8.503	9.9	15.5	0.63	4248	0.55	425.42

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010081256-01	OBS	FP	0.00	1	0	0	0	LPP_DV

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

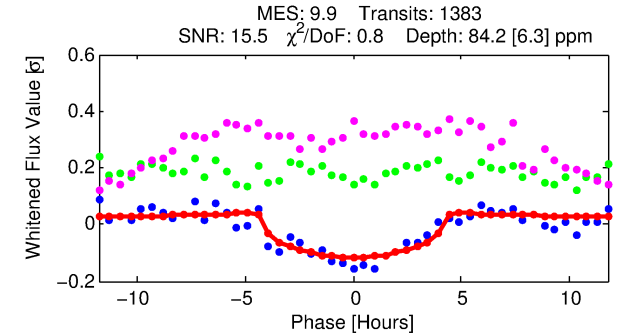
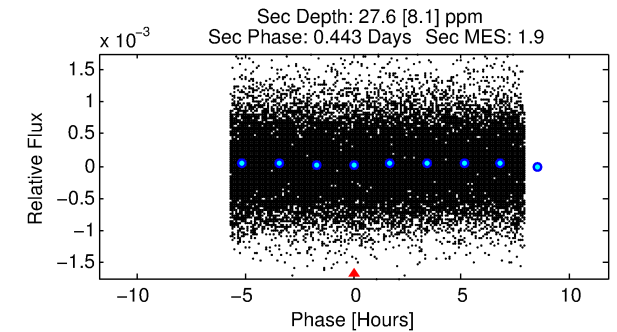
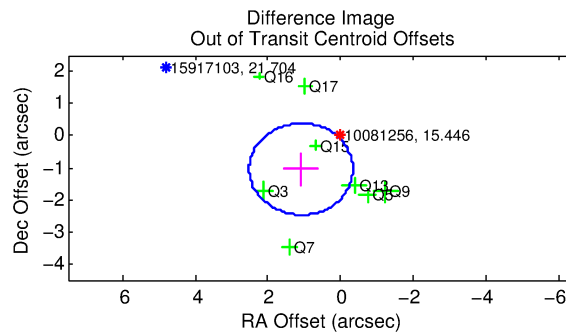
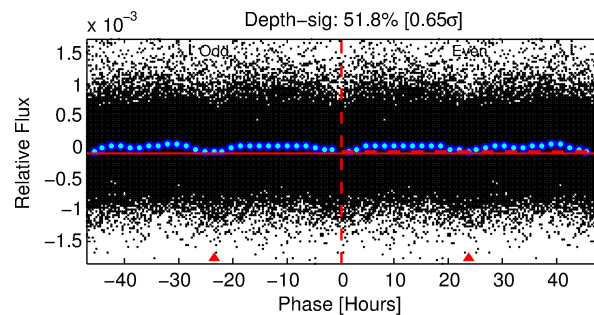
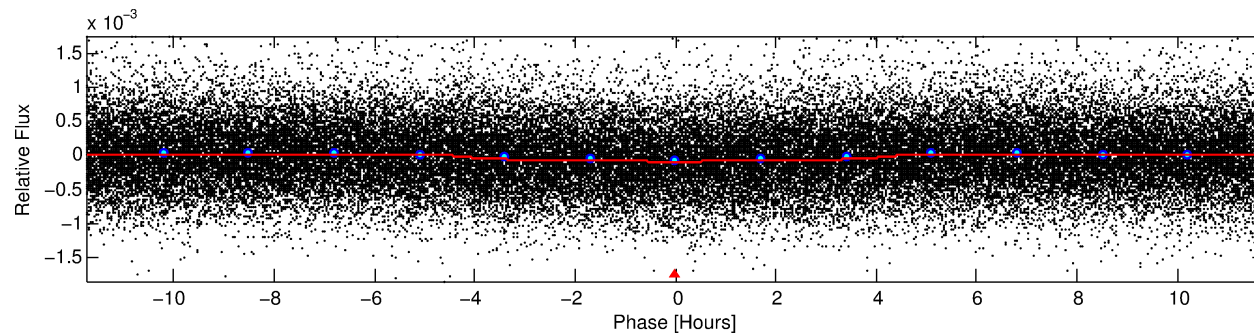
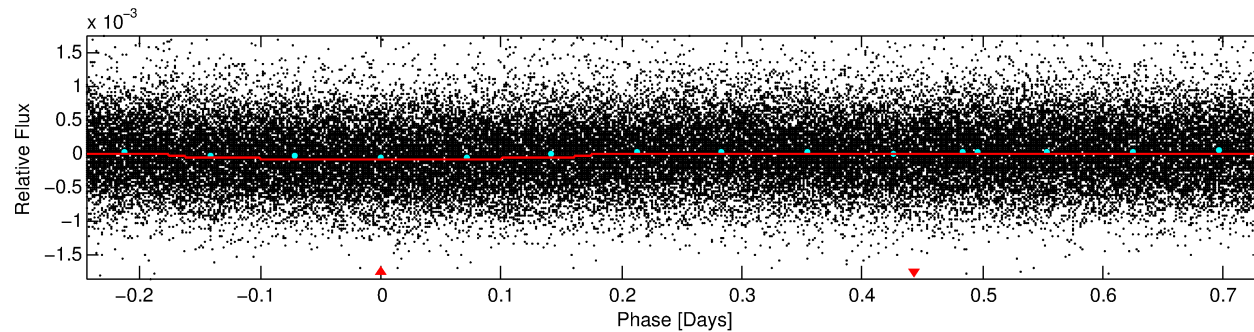
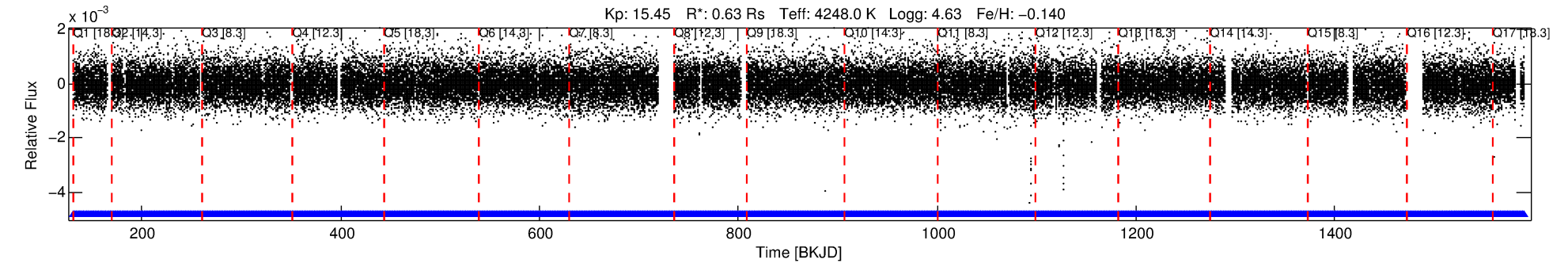
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010081256-01

No Significant Match Found

# DV One-Page Summary

KIC: 10081256 Candidate: 1 of 1 Period: 0.979 d



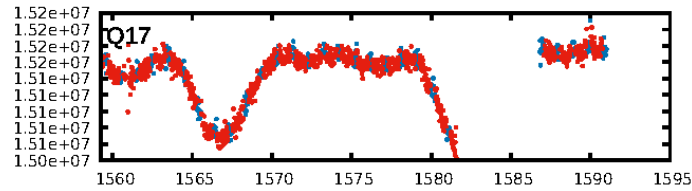
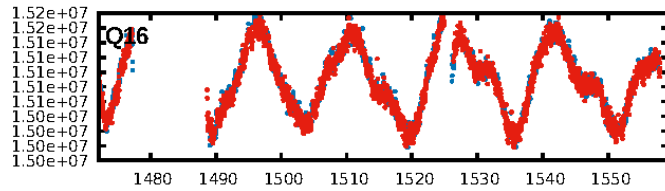
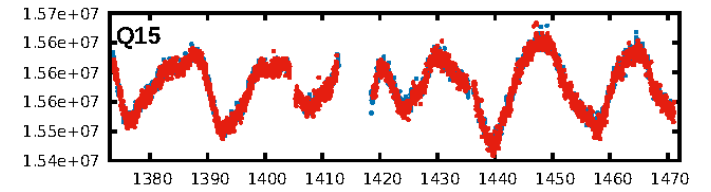
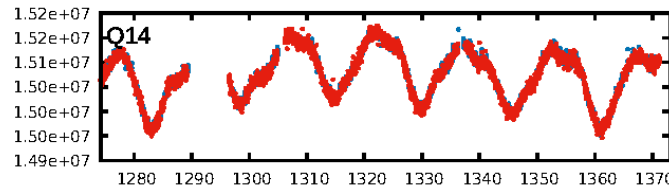
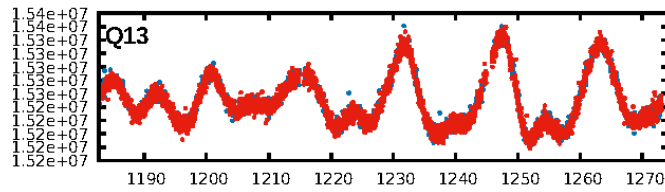
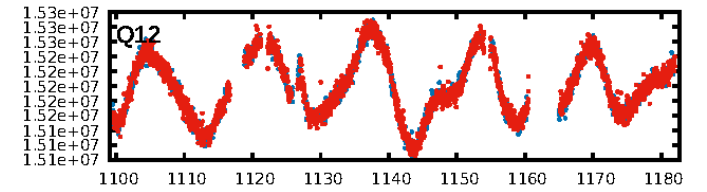
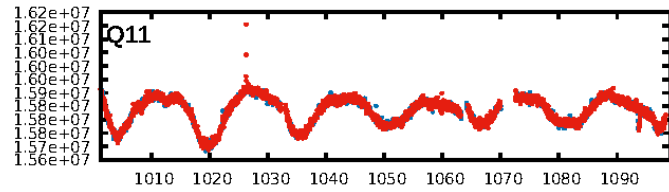
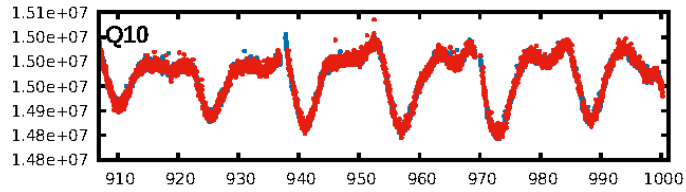
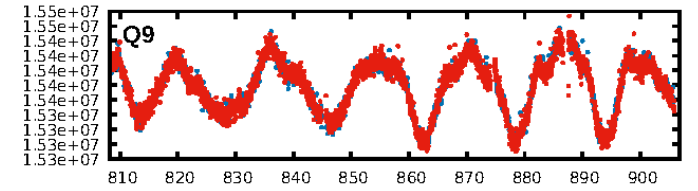
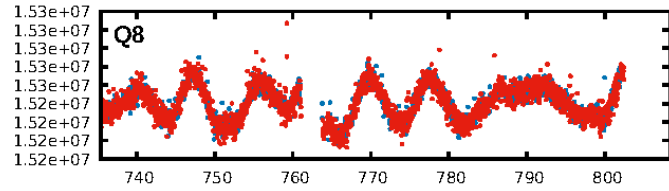
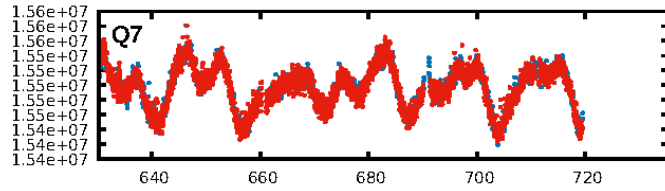
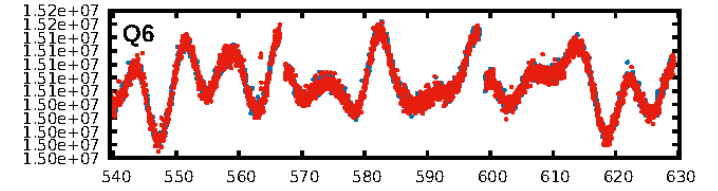
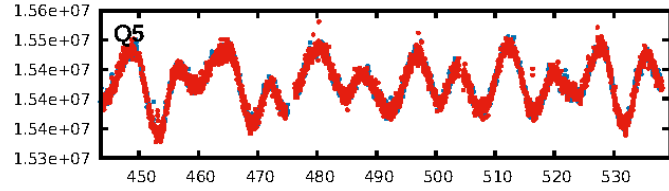
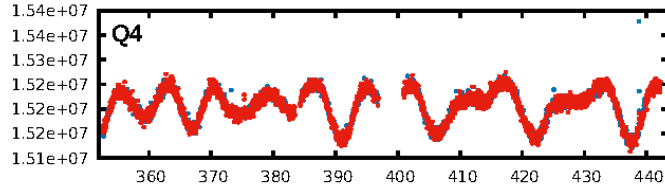
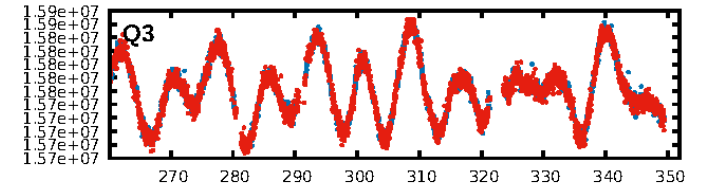
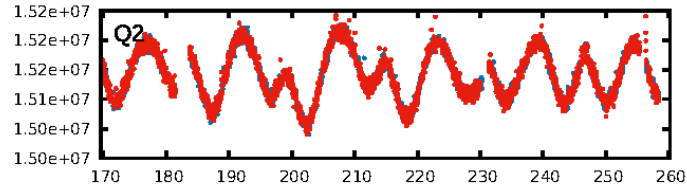
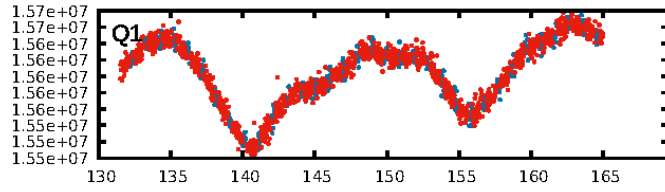
## DV Fit Results:

Period = 0.97892 [0.00001] d  
Epoch = 131.7954 [0.0048] BKJD  
Rp/R\* = 0.0081 [0.0028]  
a/R\* = 1.11 [0.21]  
b = 0.03 [32.34]  
Seff = 425.42 [69.02]  
Teff = 1158 [47] K  
Rp = 0.55 [0.20] Re  
a = 0.0164 [0.0013] AU  
Ag = 13.41 [10.09] [1.23 $\sigma$ ]  
Teffp = 3426 [646] K [3.50 $\sigma$ ]

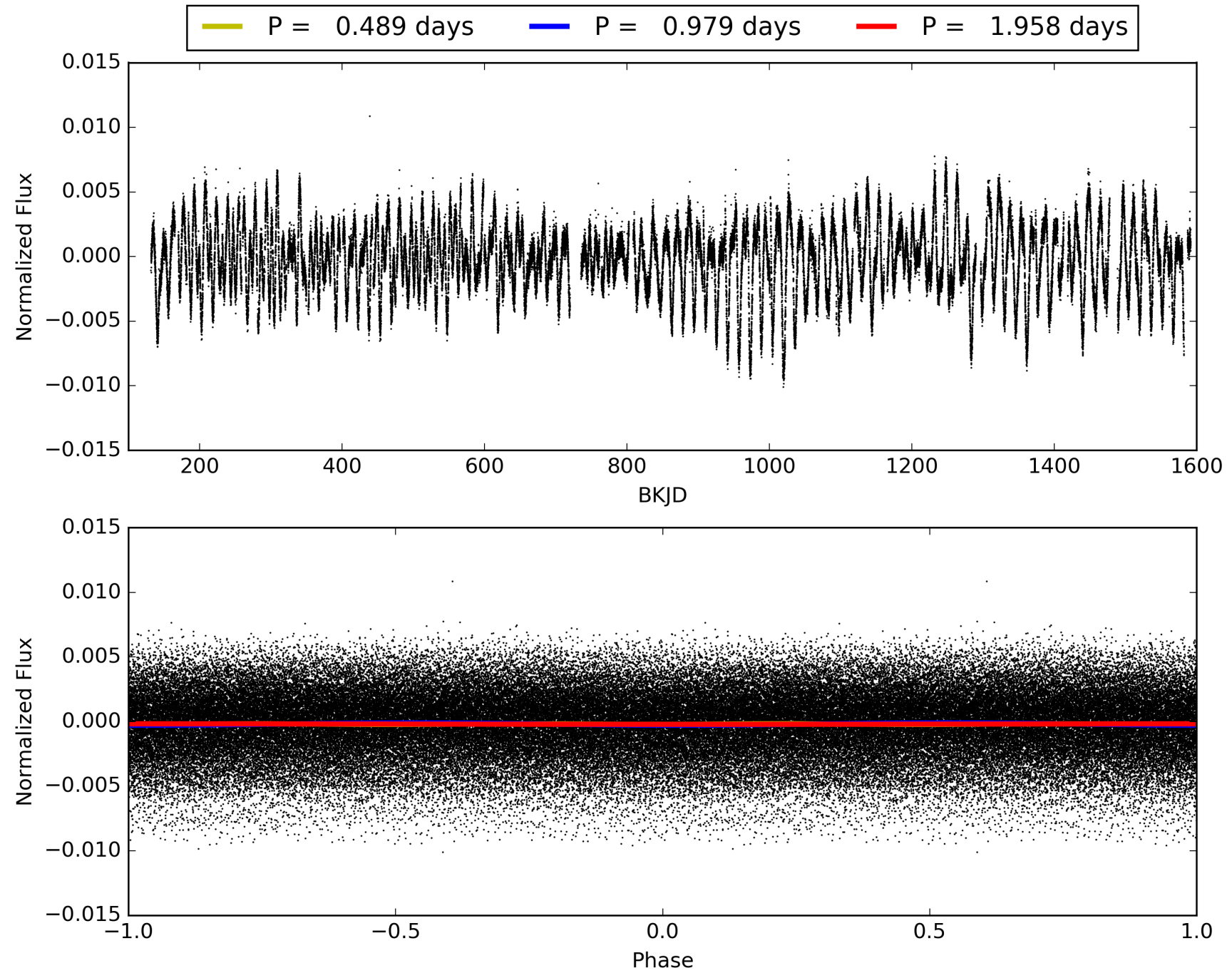
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1321/1321]  
GhostDiagnostic-chr: 1.977  
Centroid-sig: 52.3%  
Centroid-so: 0.344 arcsec [0.53 $\sigma$ ]  
OotOffset-rm: 1.508 arcsec [3.17 $\sigma$ ]  
KicOffset-rm: 1.325 arcsec [2.77 $\sigma$ ]  
OotOffset-st: 0/3/1/4 [8]  
KicOffset-st: 0/3/1/4 [8]  
DiffImageQuality-fgm: 0.62 [5/8]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 010081256-01, PDC Light Curves

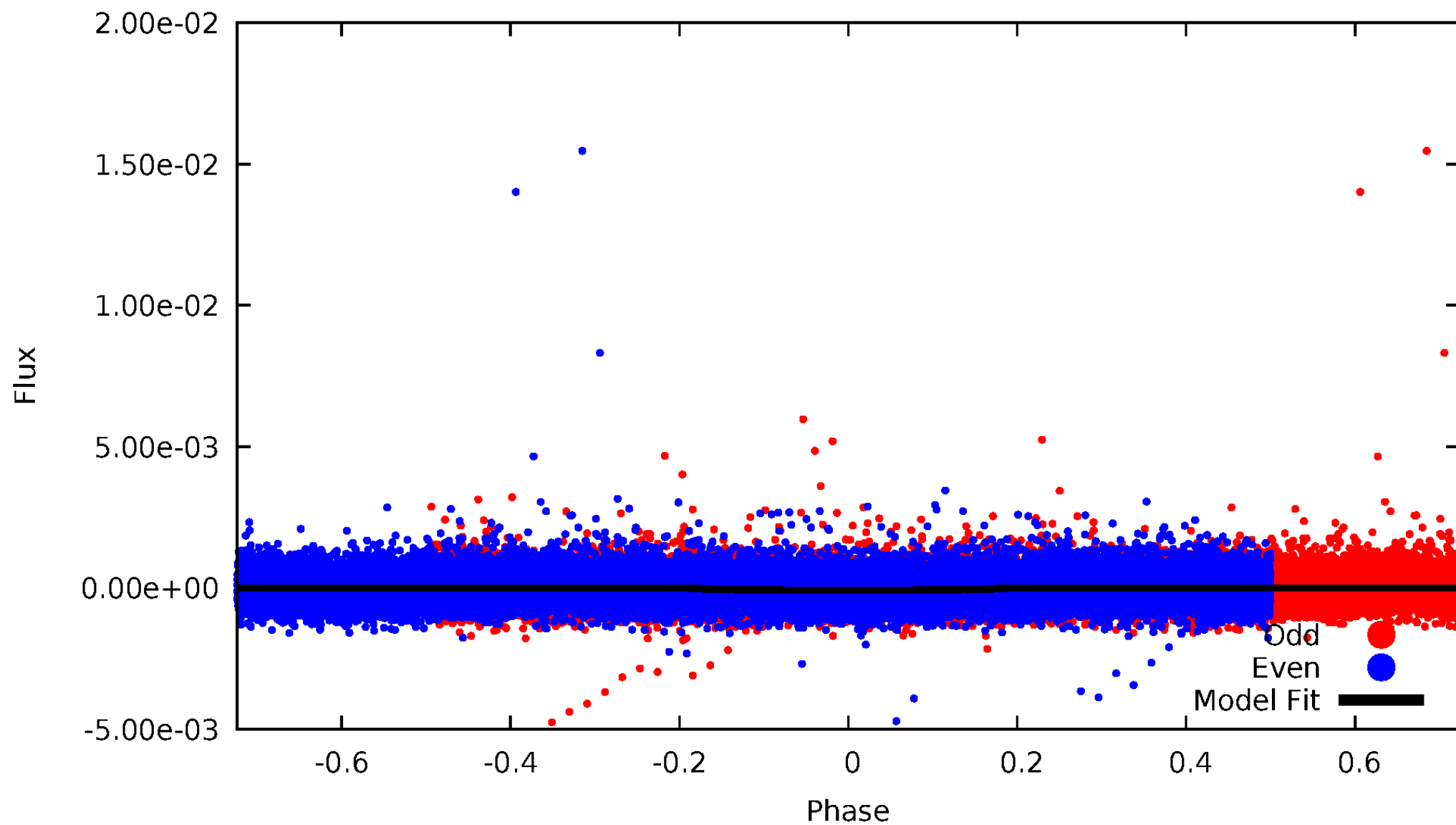


# TCE 010081256-01



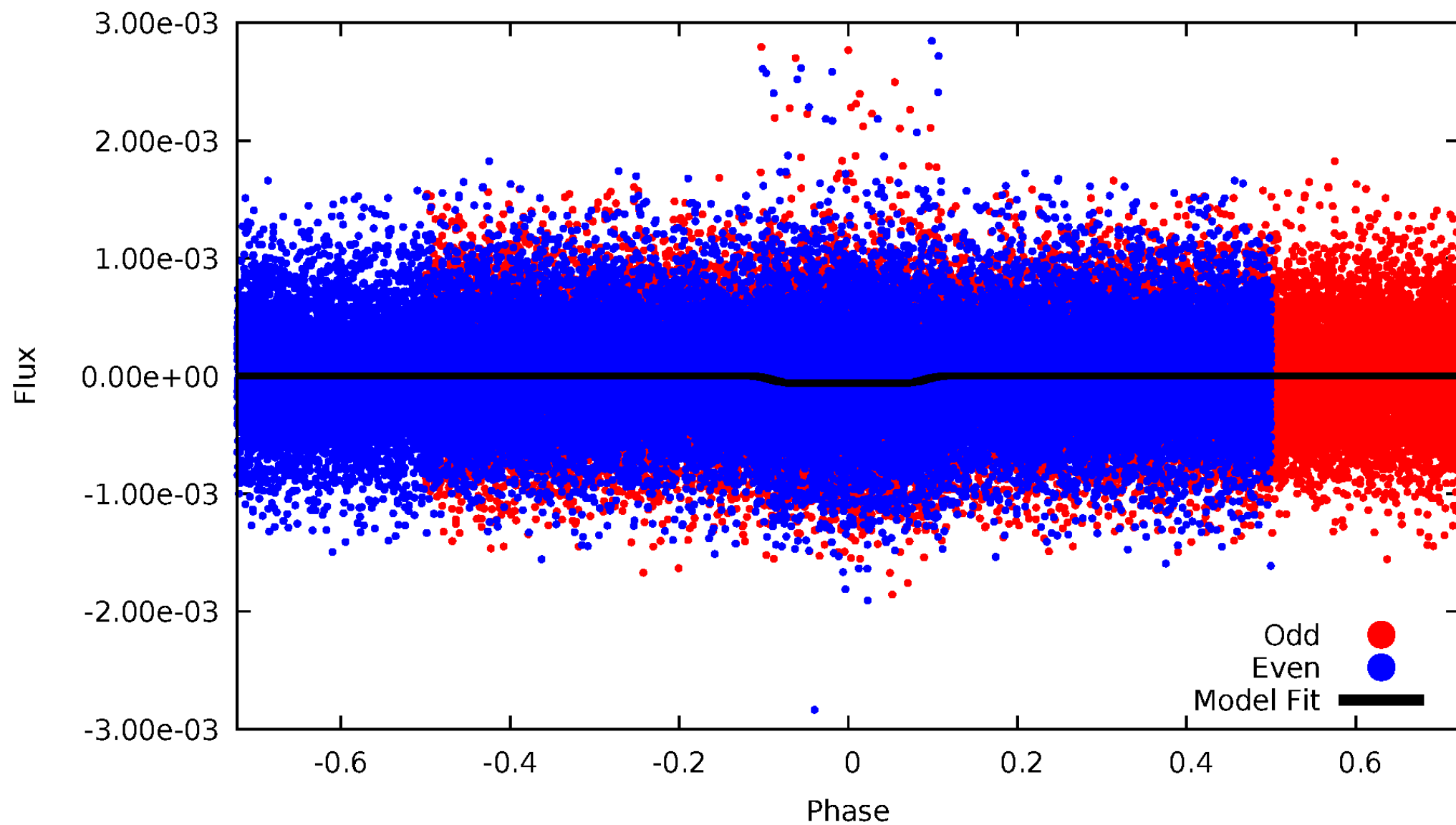
# DV Odd/Even

TCE 010081256-01



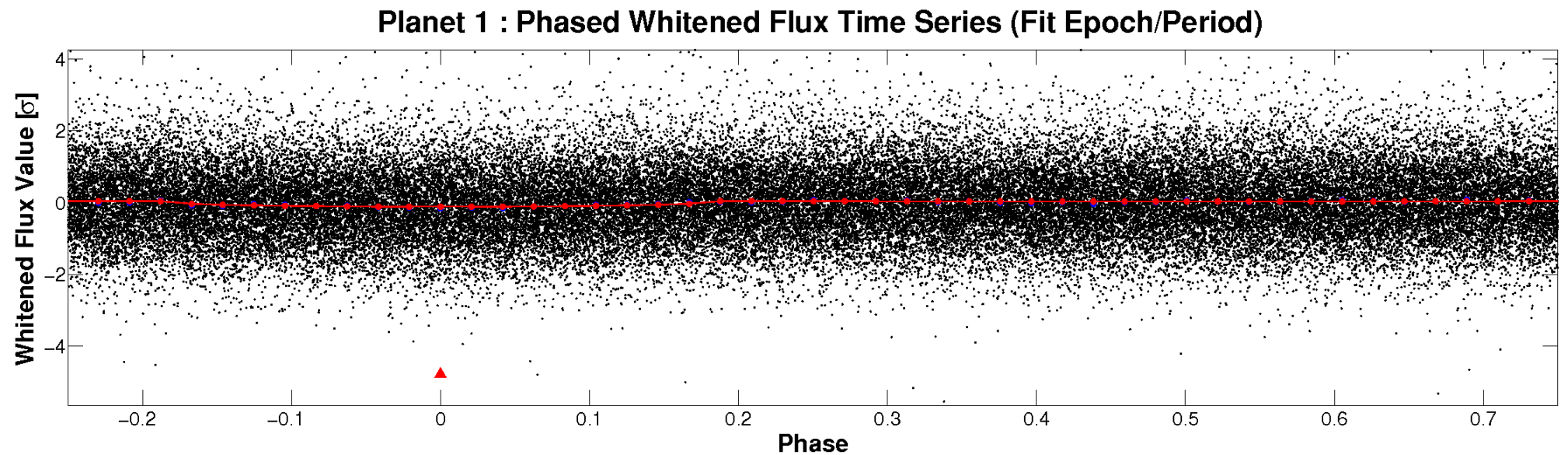
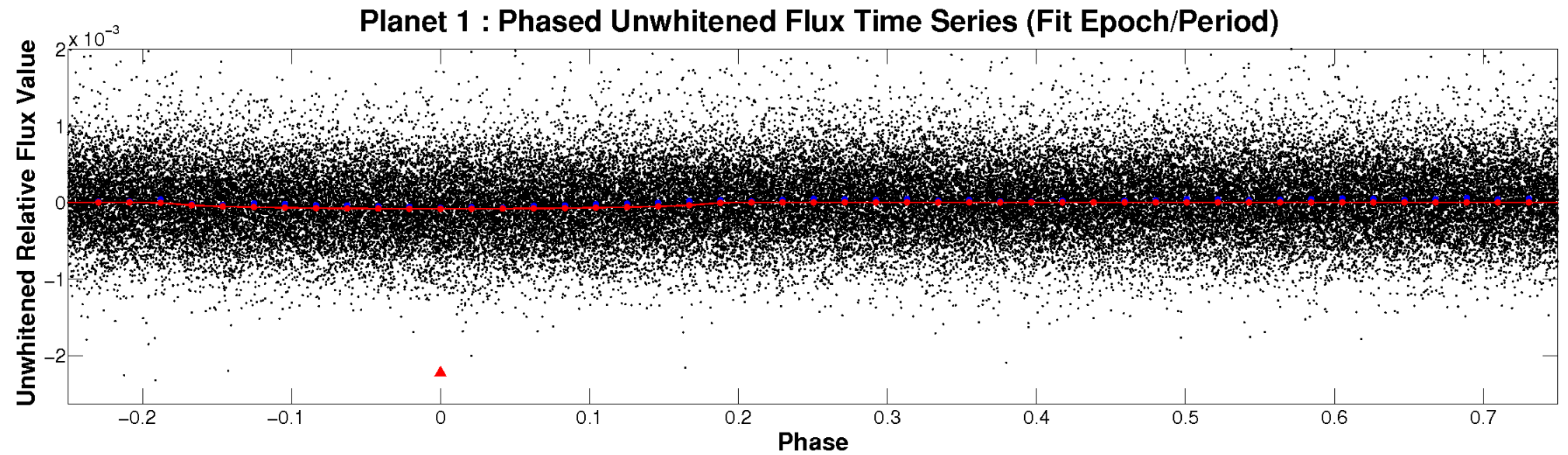
# ALT Odd/Even

TCE 010081256-01



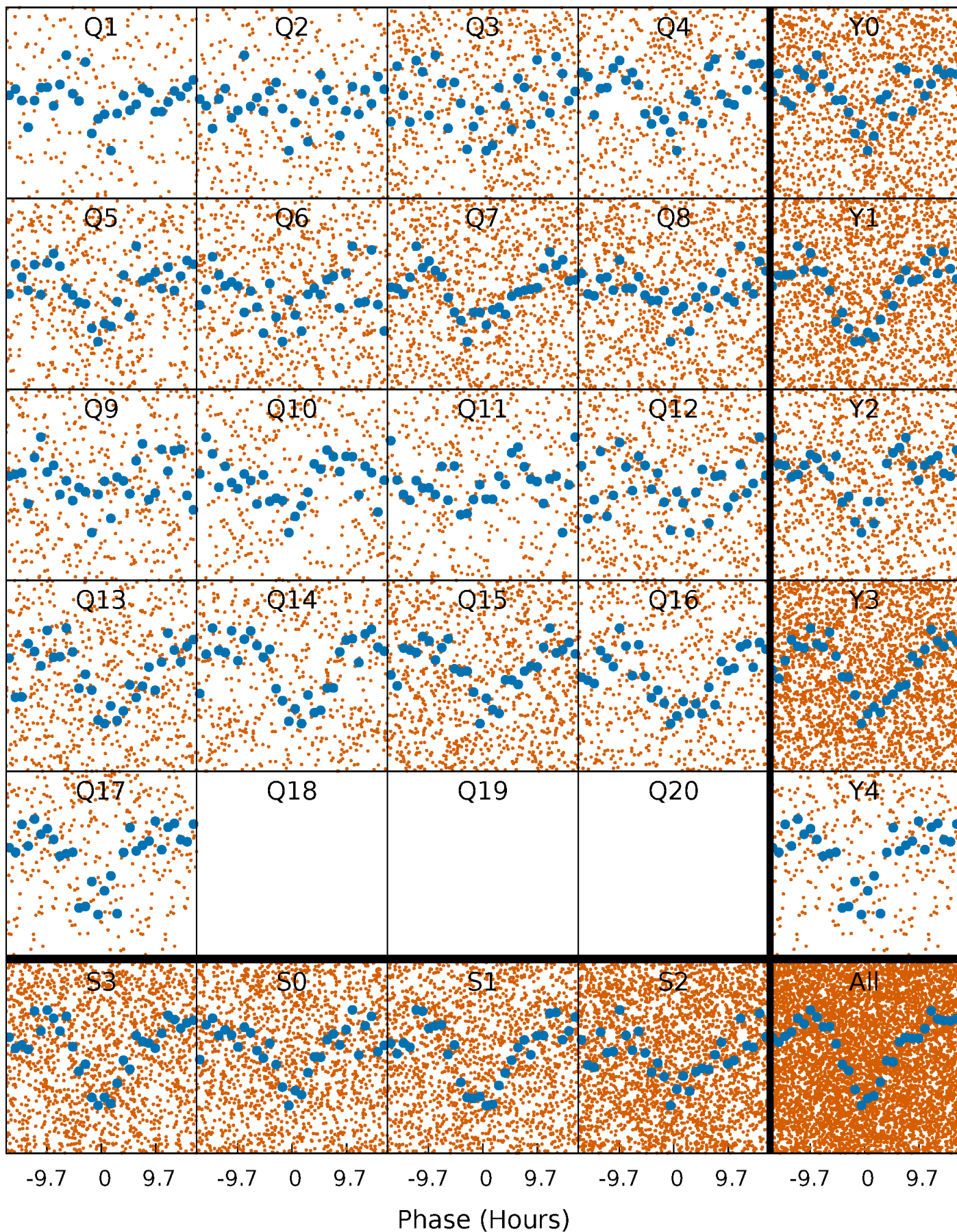


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

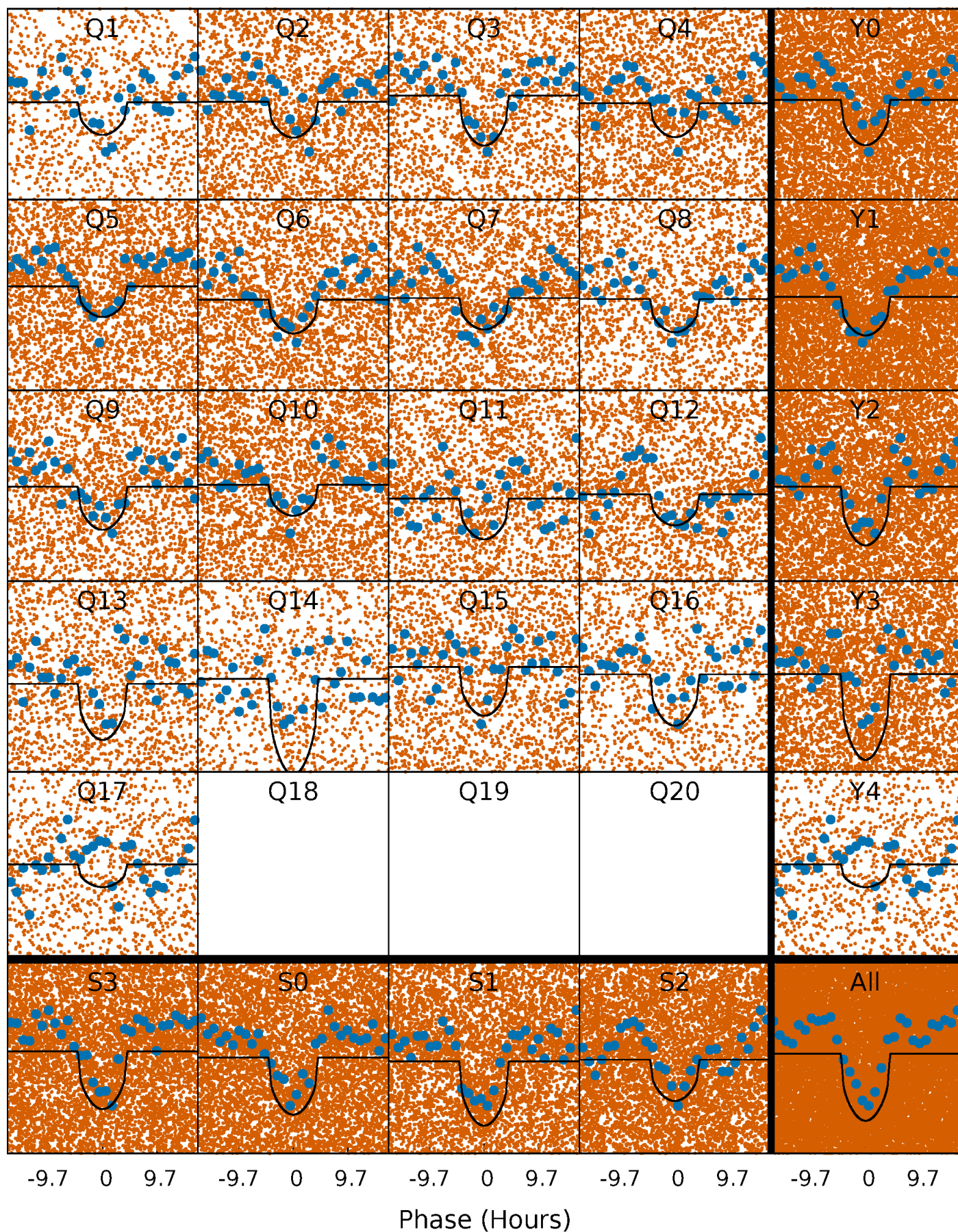
TCE 010081256-01 P= 0.978919 Days  $T_0=131.795352$  (BKJD)





# DV Quarter-Phased Transit Curves

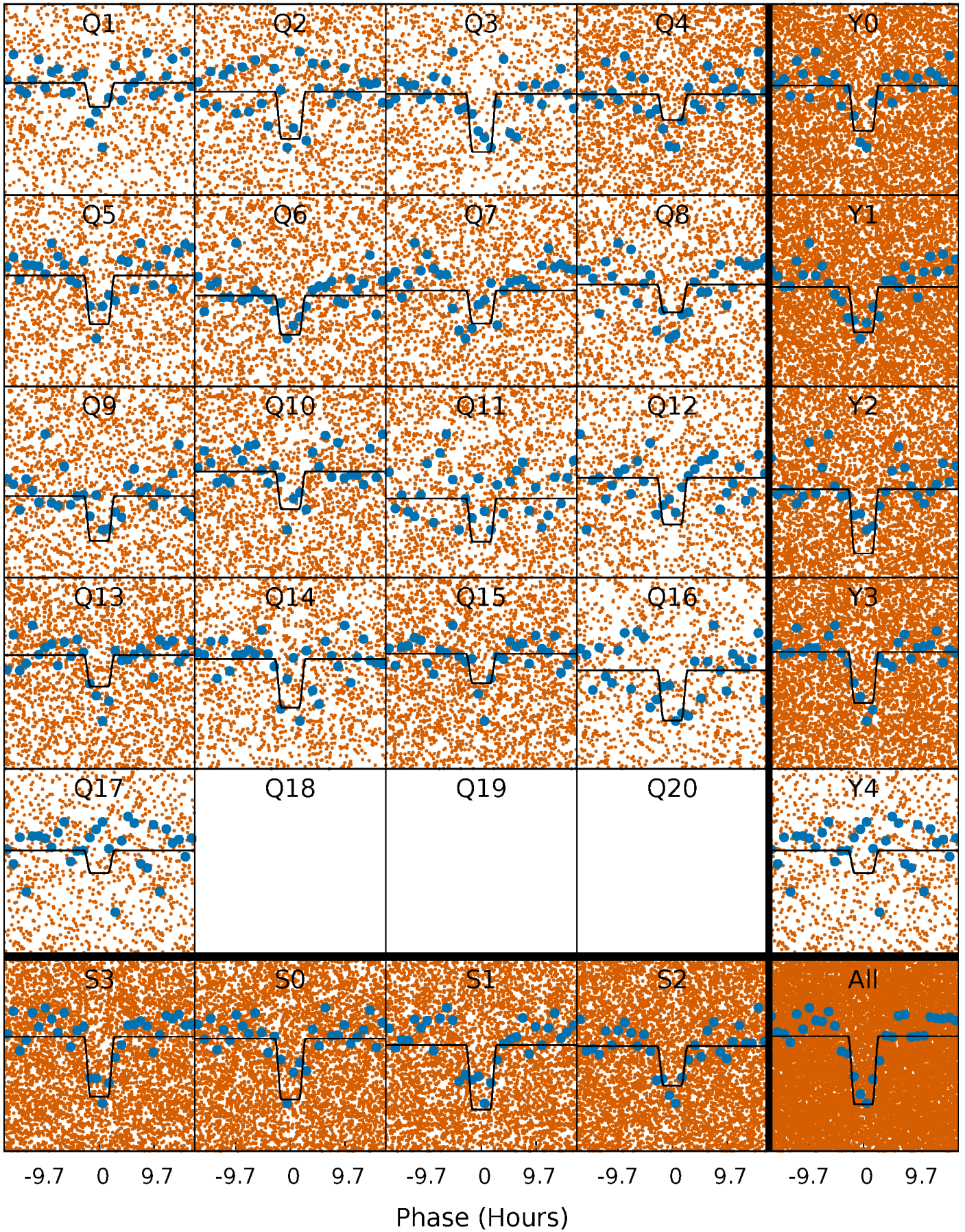
TCE 010081256-01   P= 0.978919 Days    $T_0=131.795352$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

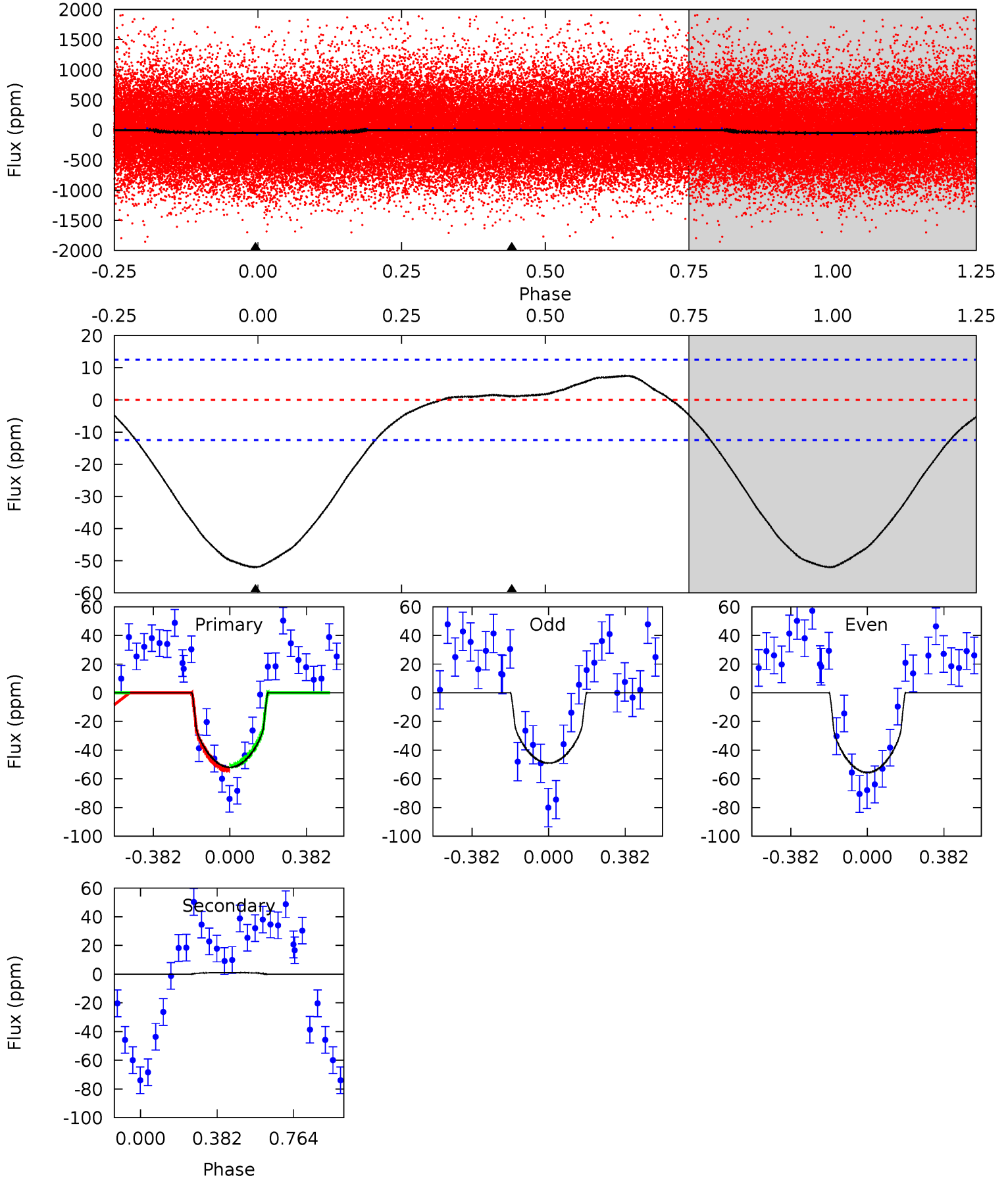
TCE 010081256-01 P= 0.978895 Days  $T_0=131.815128$  (BKJD)



# DV Model-Shift Uniqueness Test

010081256-01,  $P = 0.978919$  Days,  $E = 130.816433$  Days

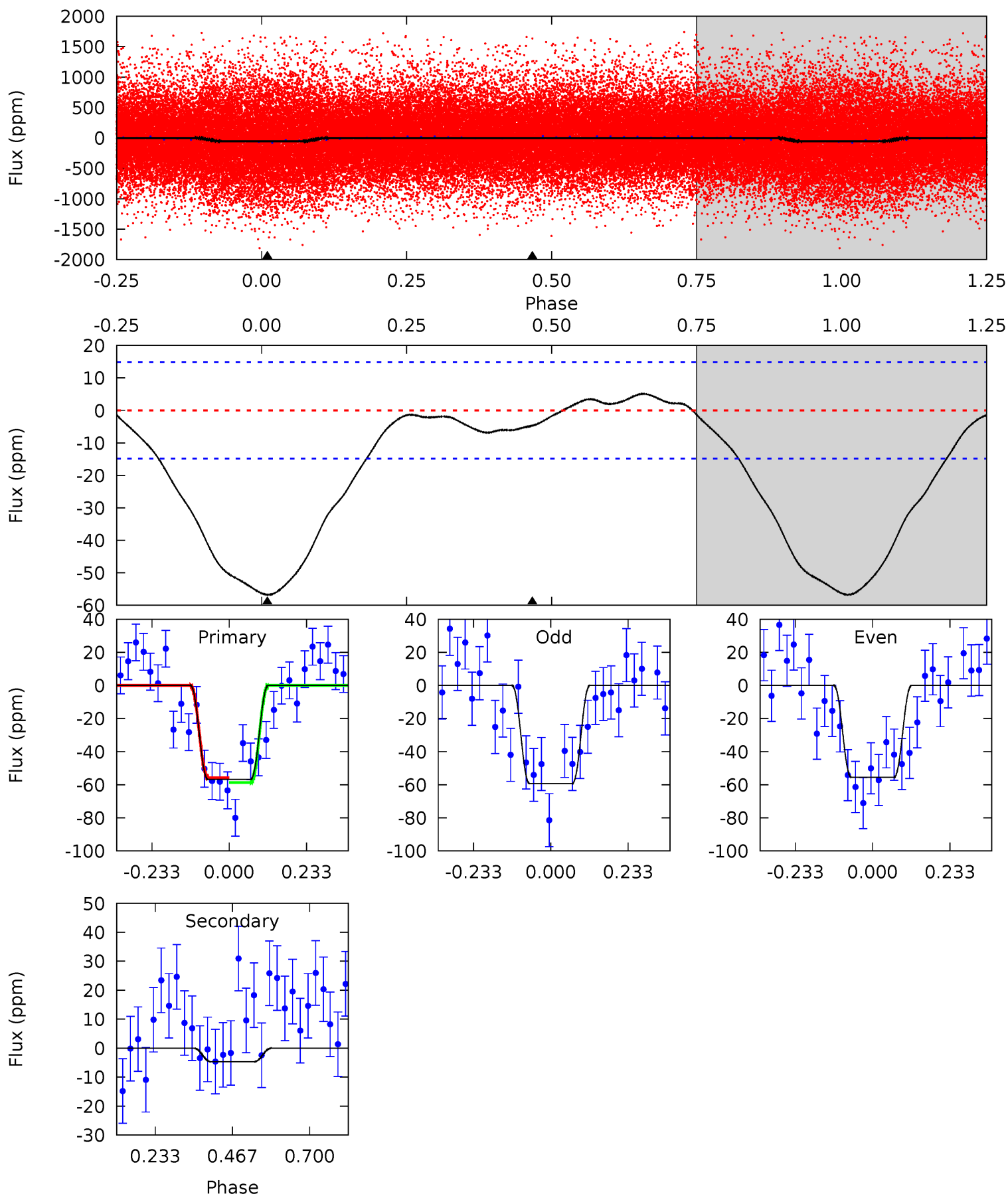
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	-0.38	0	0	4.28	0.87	1.40	17.8	17.8	-0.38	-0.38	1.13	0.98	0.13	0.48



# Alt Model-Shift Uniqueness Test

010081256-01, P = 0.978895 Days, E = 130.836233 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
16.8	1.39	0	0	4.38	1.19	0.93	16.8	16.8	1.39	1.39	0.56	0.71	0.08	0.43



### Stellar Parameters For KIC 010081256

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4248^{+127}_{-127}$	$4.633^{+0.056}_{-0.021}$	$-0.140^{+0.300}_{-0.300}$	$0.627^{+0.039}_{-0.064}$	$0.615^{+0.061}_{-0.055}$	$3.519^{+0.883}_{-0.345}$
	+3%/-3%	+1%/-0%	+214%/-214%	+6%/-10%	+10%/-9%	+25%/-10%
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 010081256-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$1 \pm 3$	$0.54^{+0.18}_{-0.18}$	$1606^{+55}_{-56}$	$-2461^{+4899}_{-413}$	$-0.547^{+1.632}_{-1.831}$
Alt.	$-5 \pm 3$	$0.53^{+0.19}_{-0.18}$	$1605^{+50}_{-56}$	$2759^{+474}_{-601}$	$2.450^{+4.266}_{-1.905}$

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



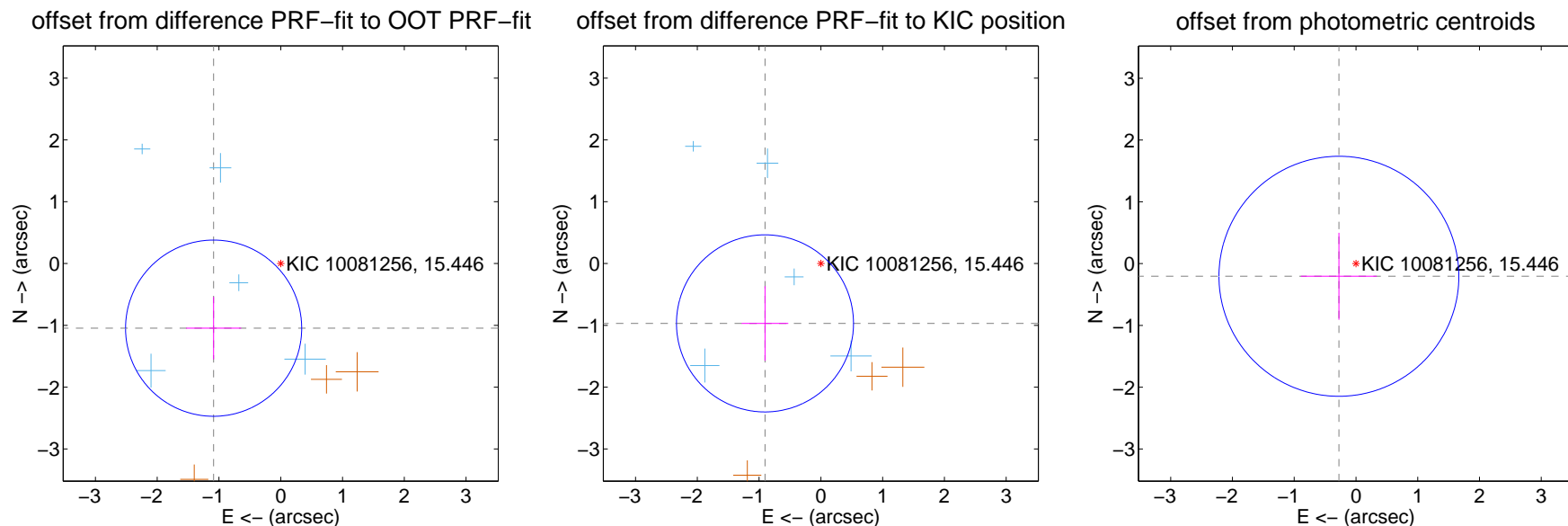
## DV Centroid Data

Supplemental centroid analysis for 010081256-01. Kepler magnitude: 15.45. Transit SNR 15.54

There are 5 quarters with good PRF difference image offsets

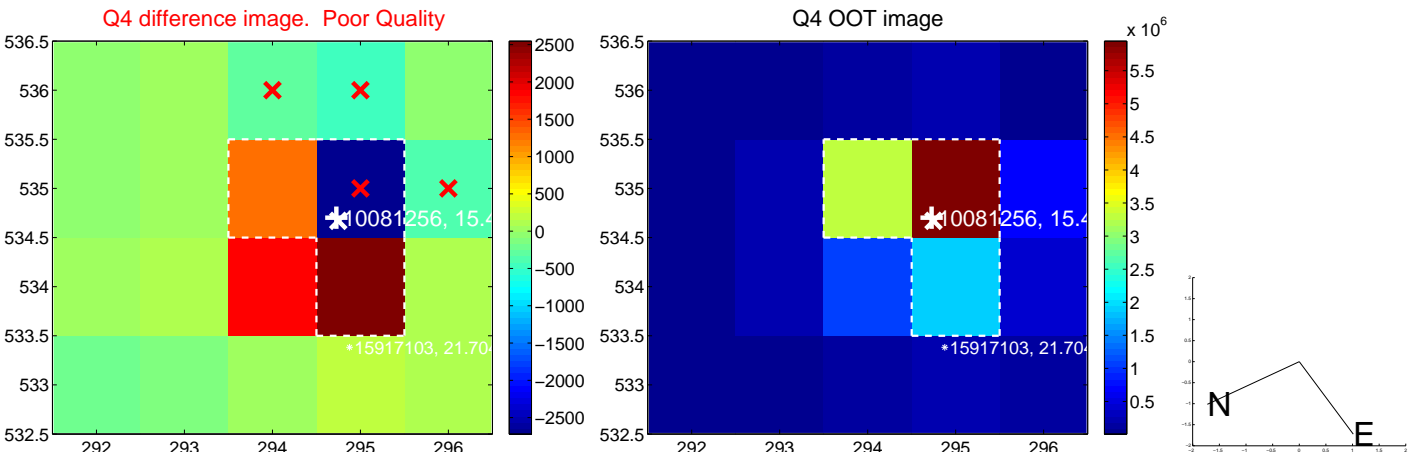
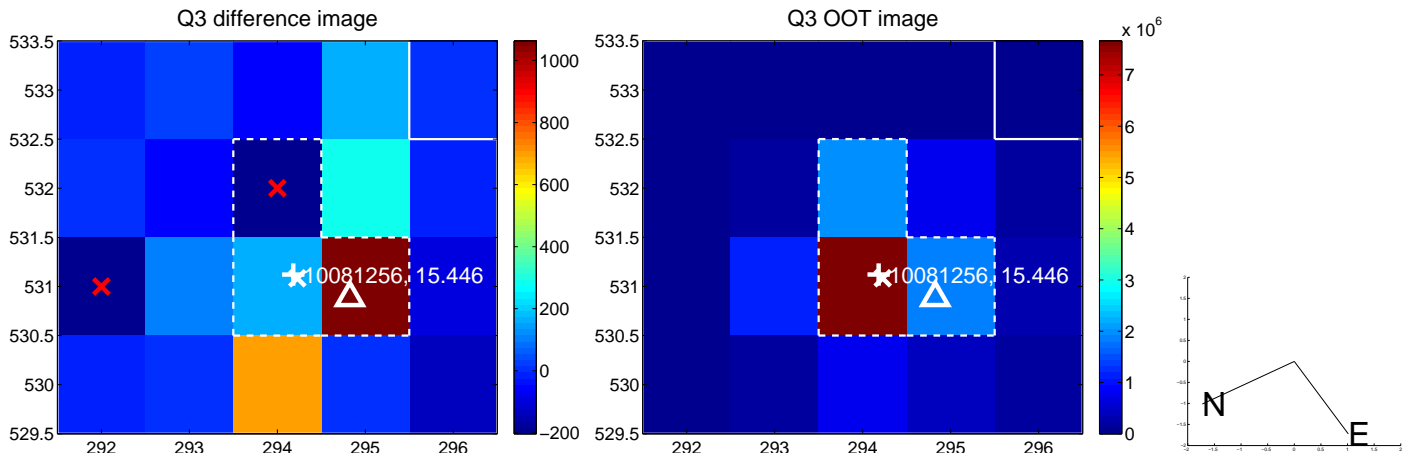
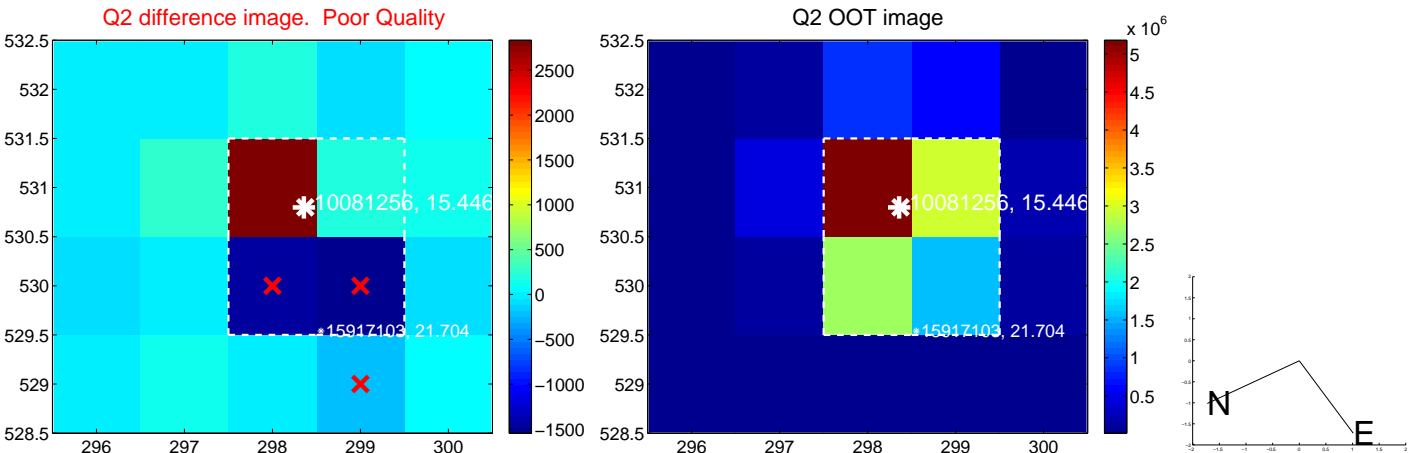
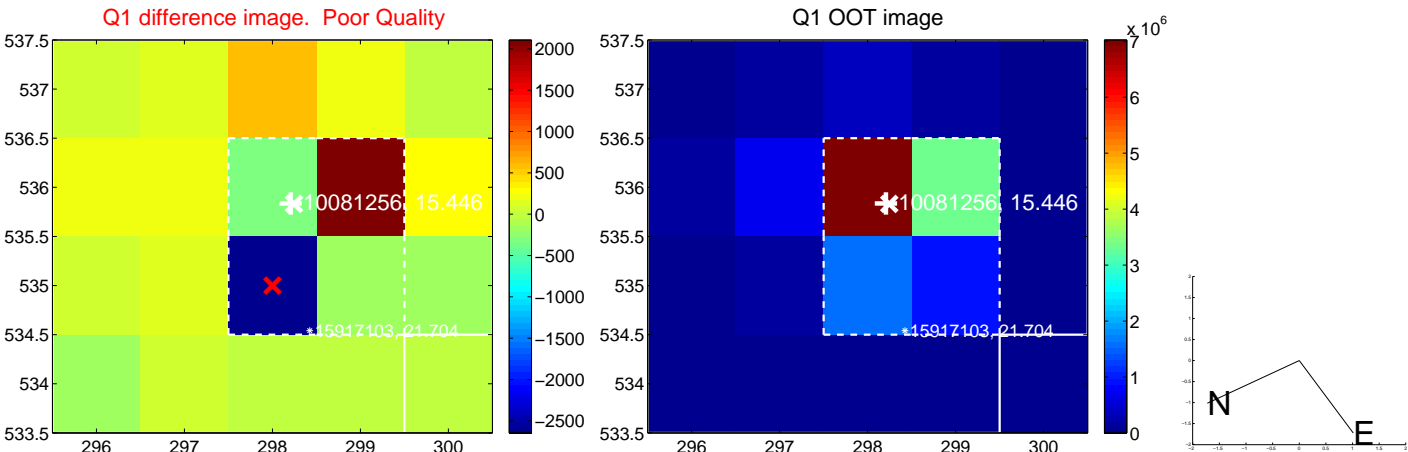
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.508 \pm 0.475$	<b>3.17</b>	$1.087 \pm 0.446$	$-1.046 \pm 0.505$
PRF-fit source offset from KIC position	$1.325 \pm 0.478$	2.77	$0.904 \pm 0.377$	$-0.968 \pm 0.603$
photometric centroid source offset	$0.34 \pm 0.65$	0.53	$0.28 \pm 0.61$	$-0.20 \pm 0.70$

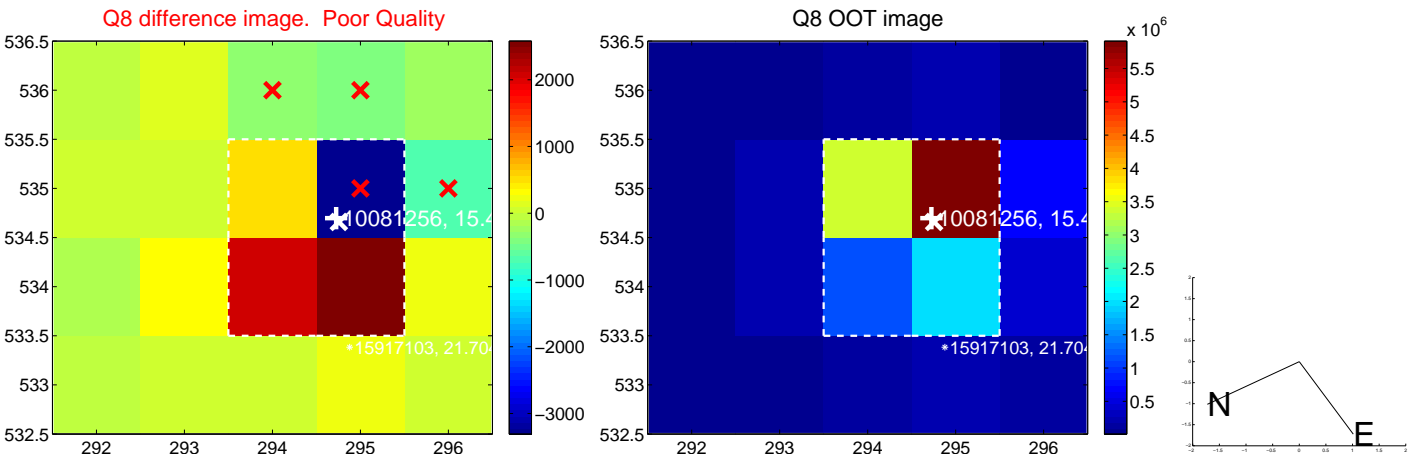
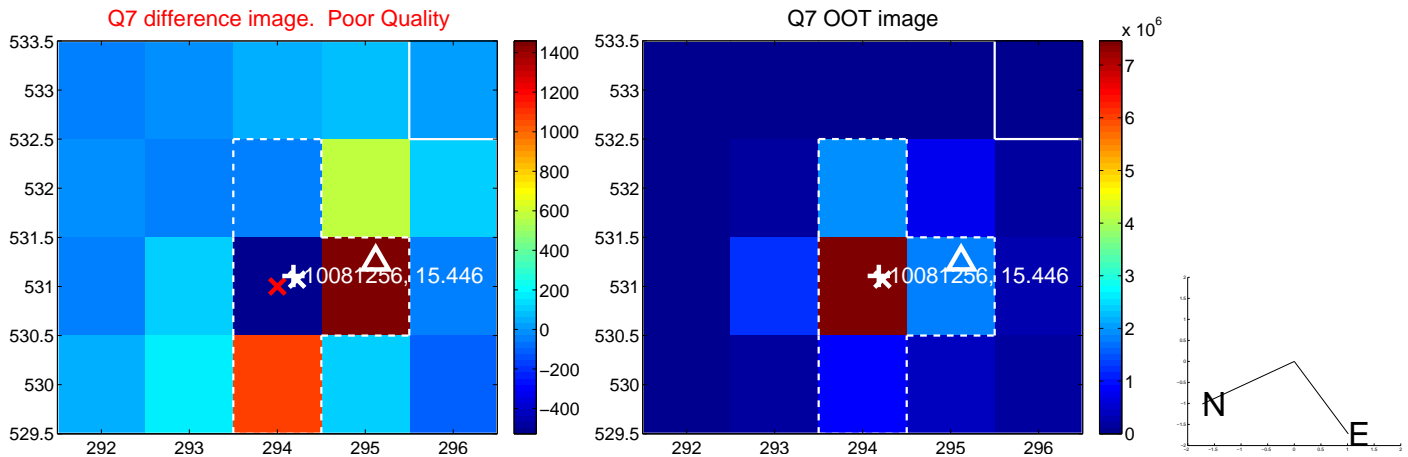
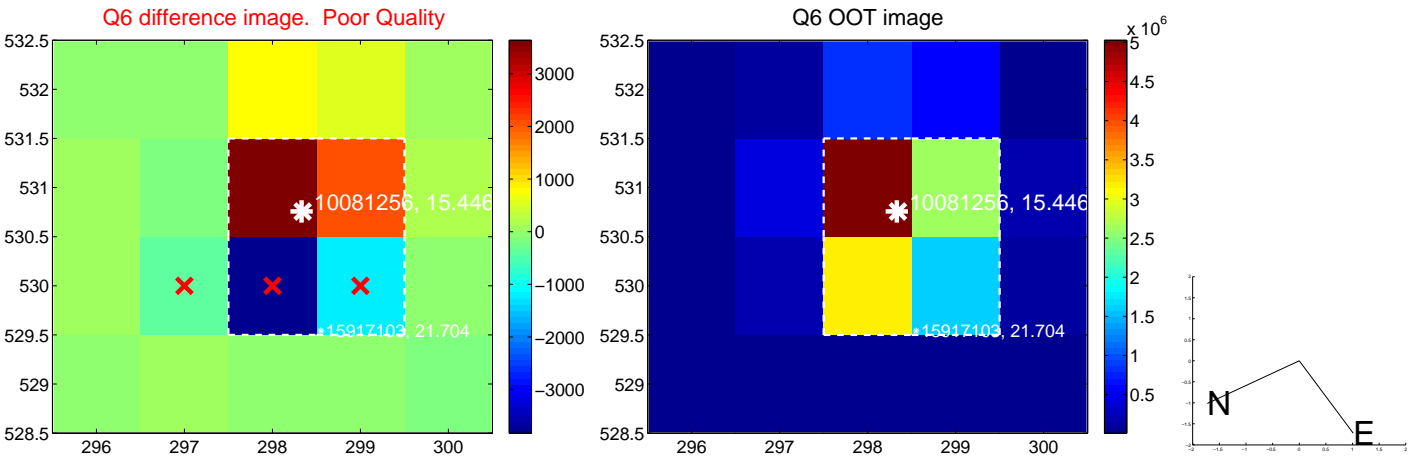
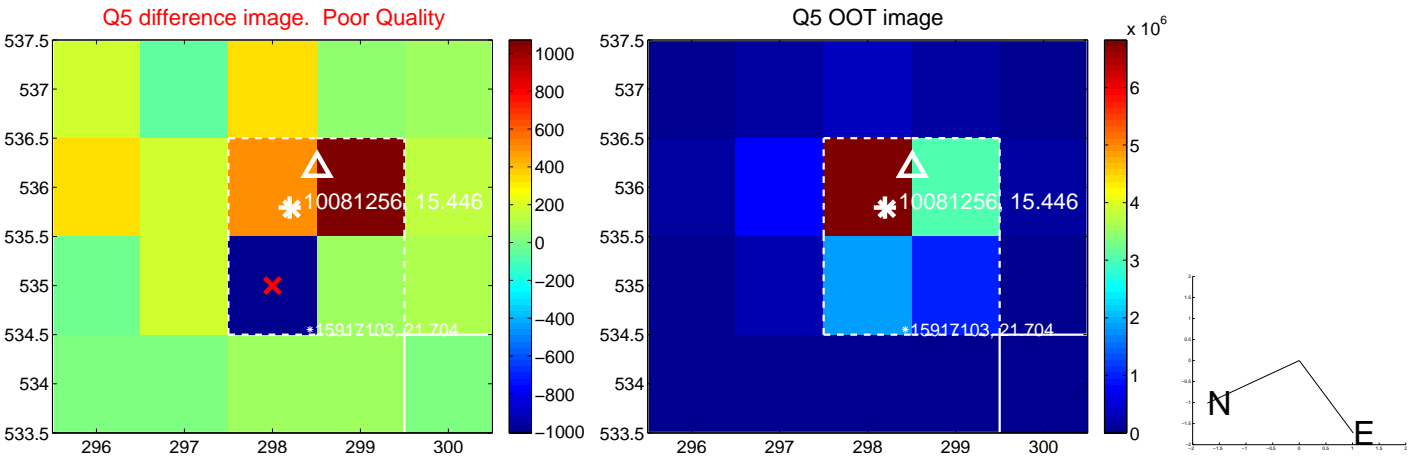


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

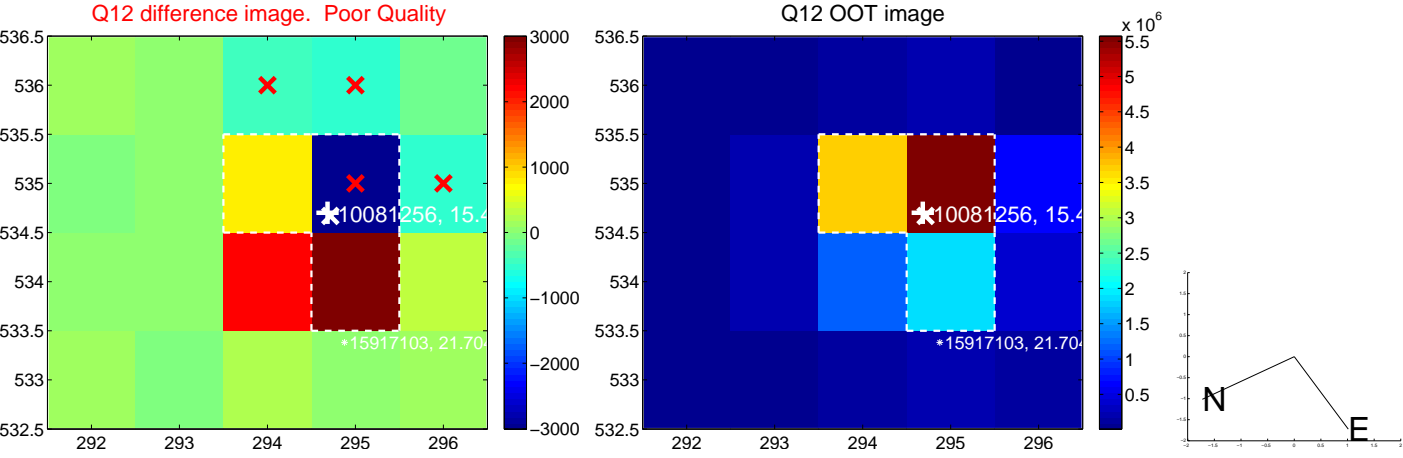
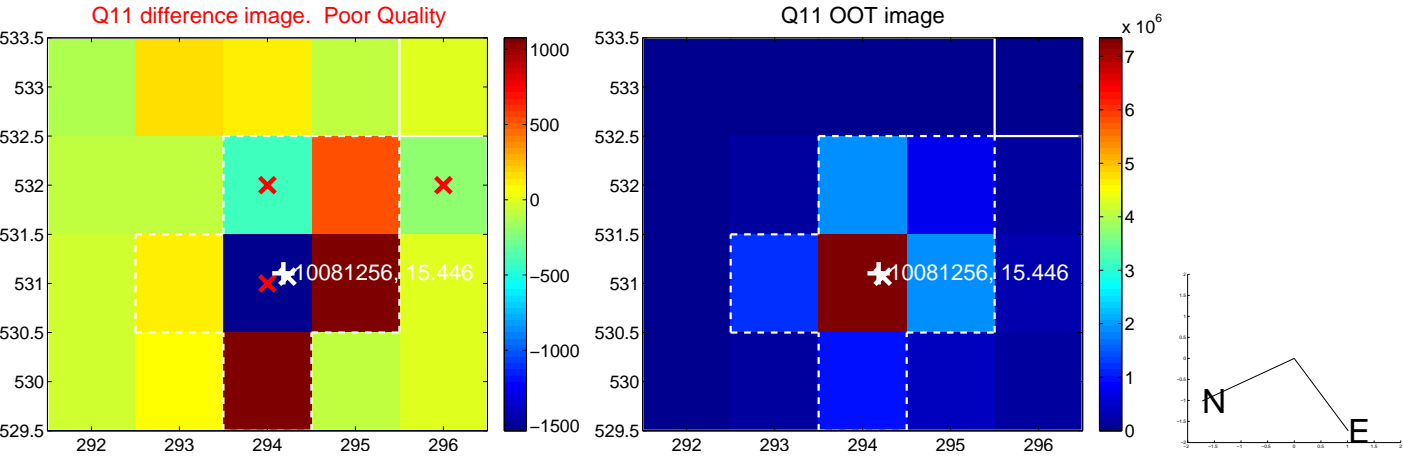
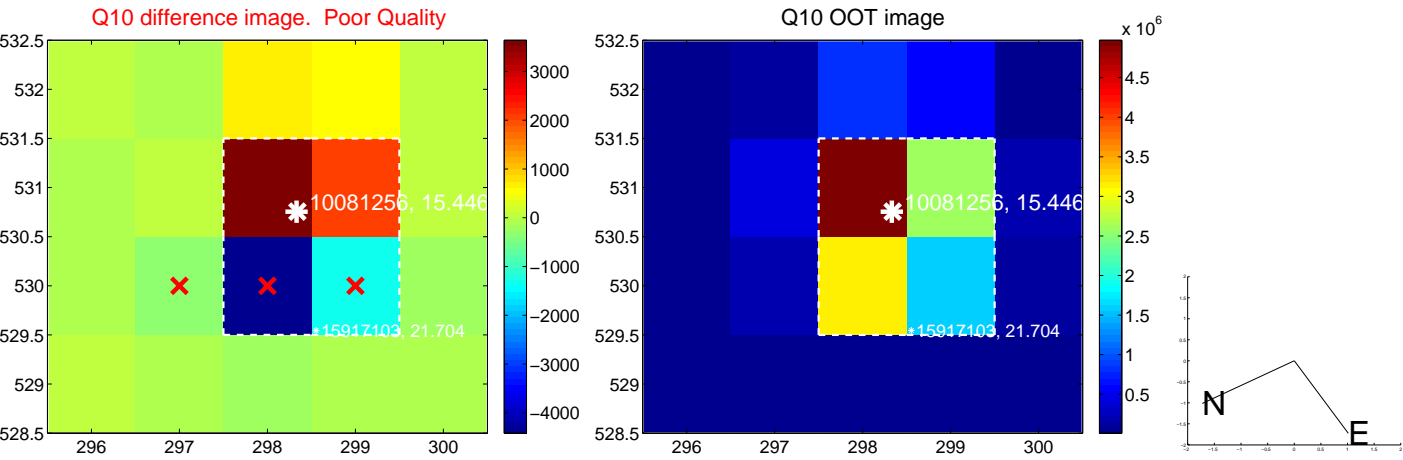
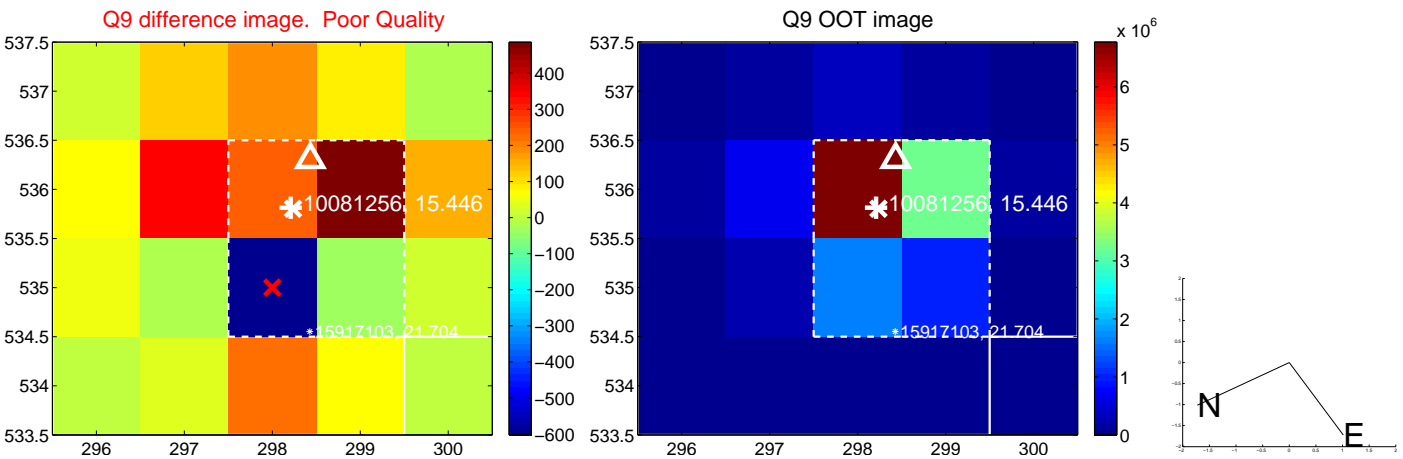
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



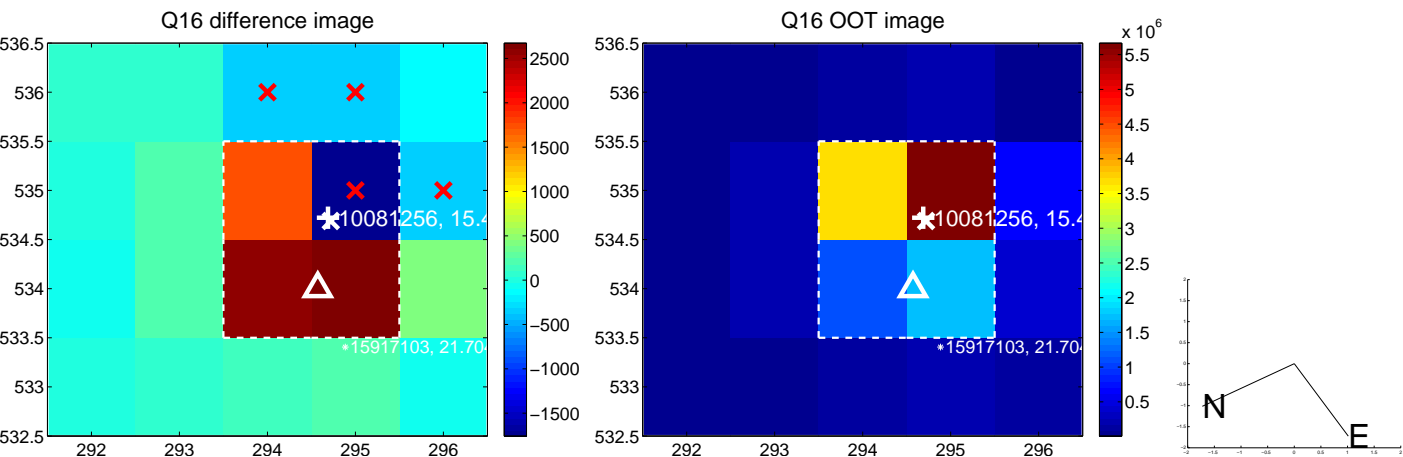
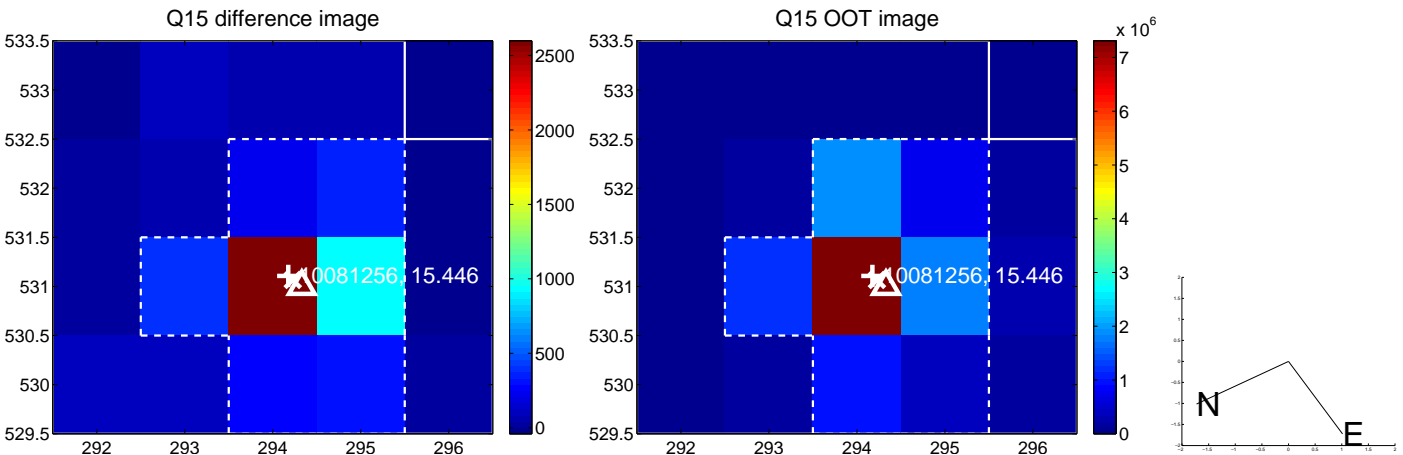
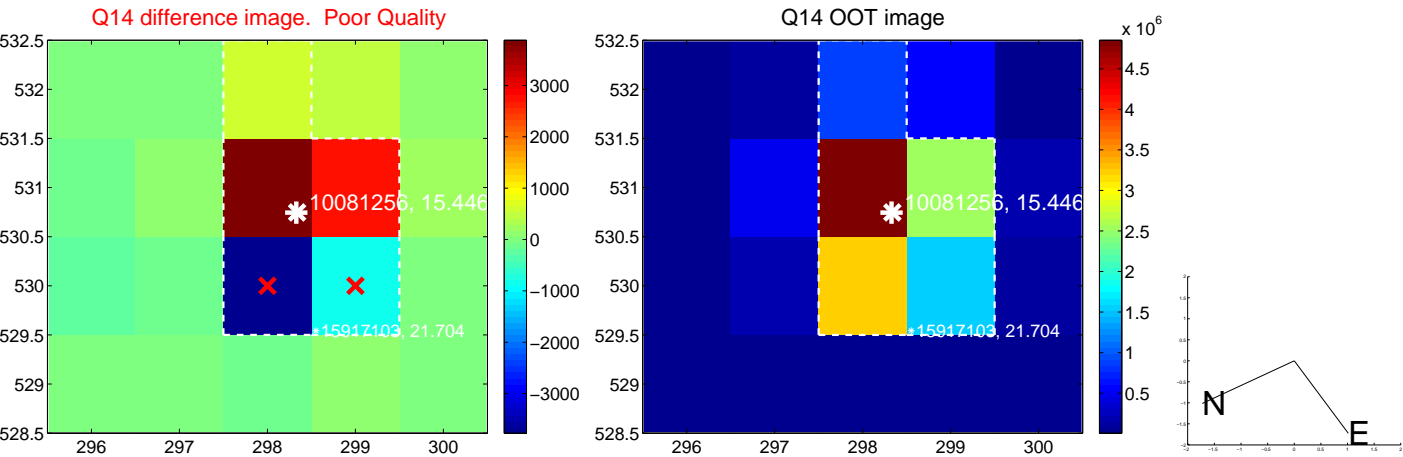
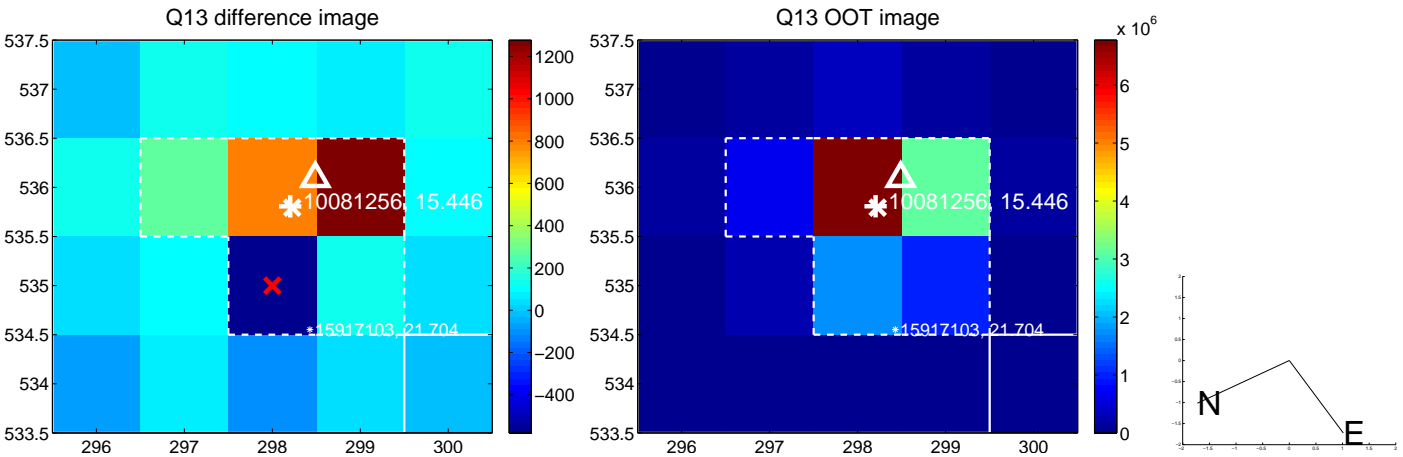
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white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

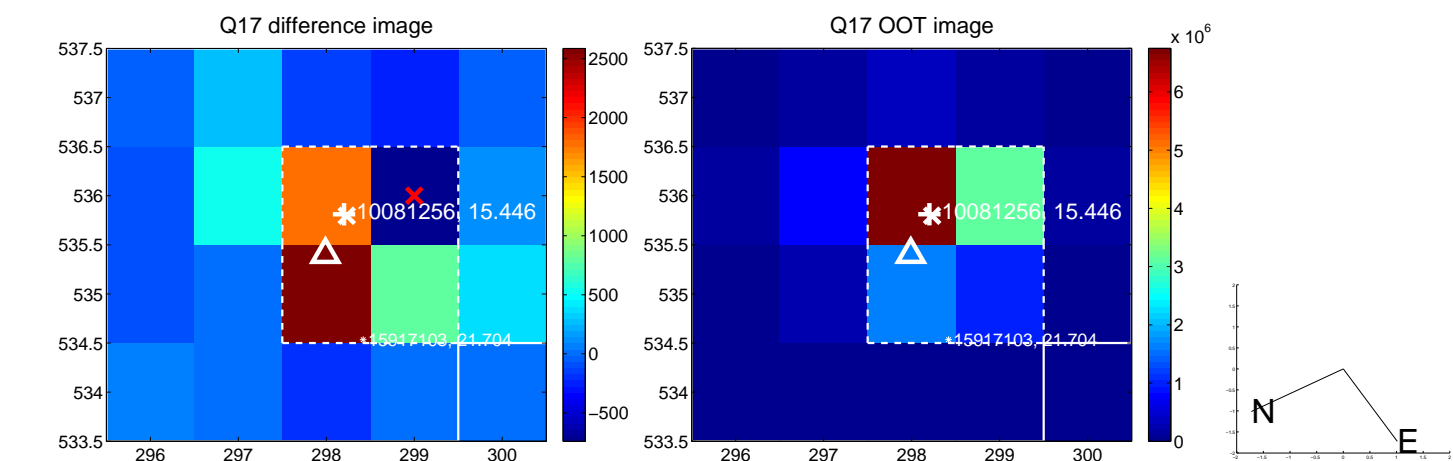


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

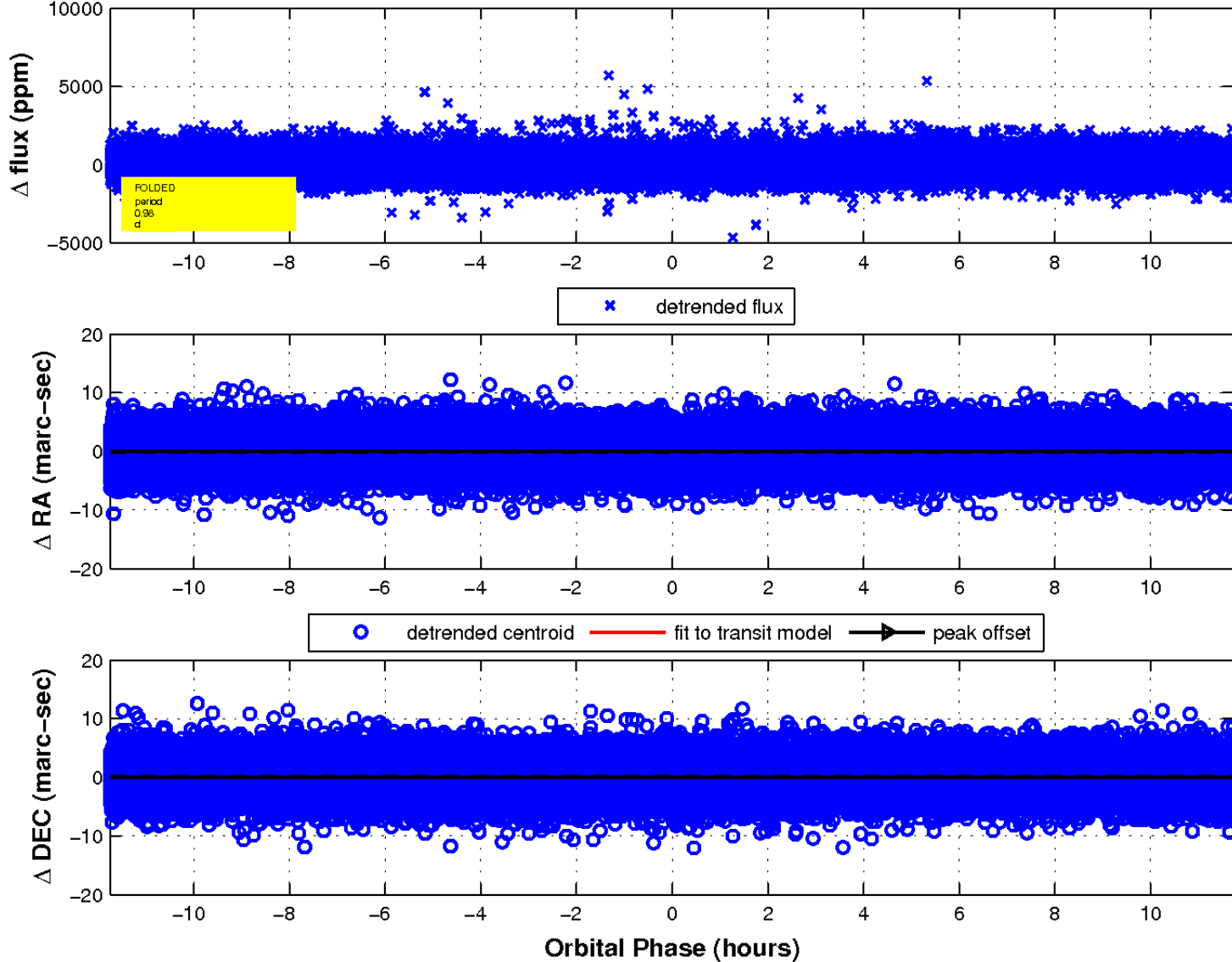




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

