

# KIC 005181100

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005181100-01	OBS	No	13.599671	136.565641	86.3	28.710	7.9	9.5	1.04	6241	1.11	112.36

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005181100-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV

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

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

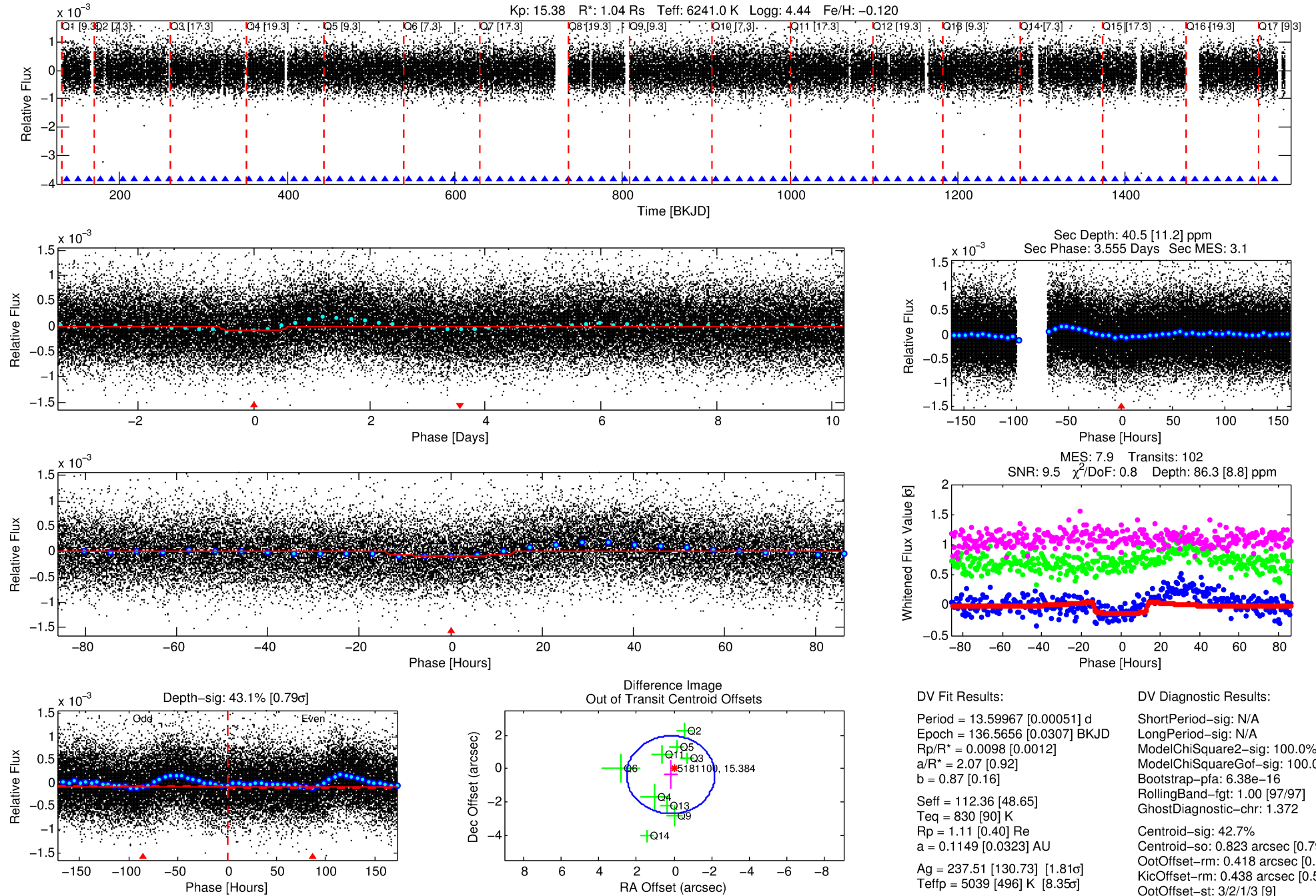
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005181100-01

No Significant Match Found

# DV One-Page Summary

KIC: 5181100 Candidate: 1 of 1 Period: 13.600 d



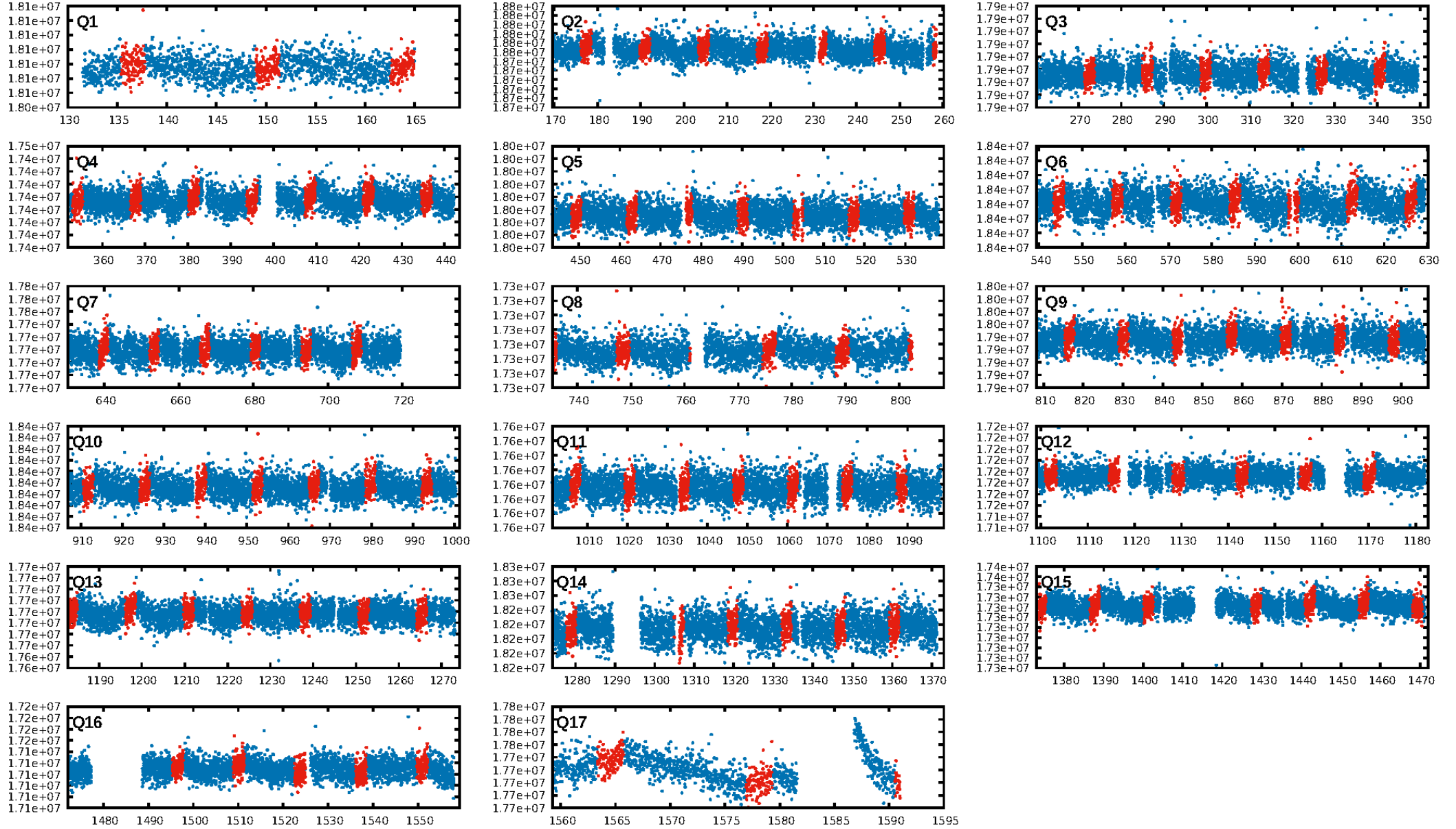
## DV Fit Results:

Period = 13.59967 [0.00051] d  
Epoch = 136.5656 [0.0307] BKJD  
Rp/R\* = 0.0098 [0.0012]  
a/R\* = 2.07 [0.92]  
b = 0.87 [0.16]  
Seff = 112.36 [48.65]  
Teff = 830 [90] K  
Rp = 1.11 [0.40] Re  
a = 0.1149 [0.0323] AU  
Ag = 237.51 [130.73] [1.81 $\sigma$ ]  
Teffp = 5039 [496] K [8.35 $\sigma$ ]

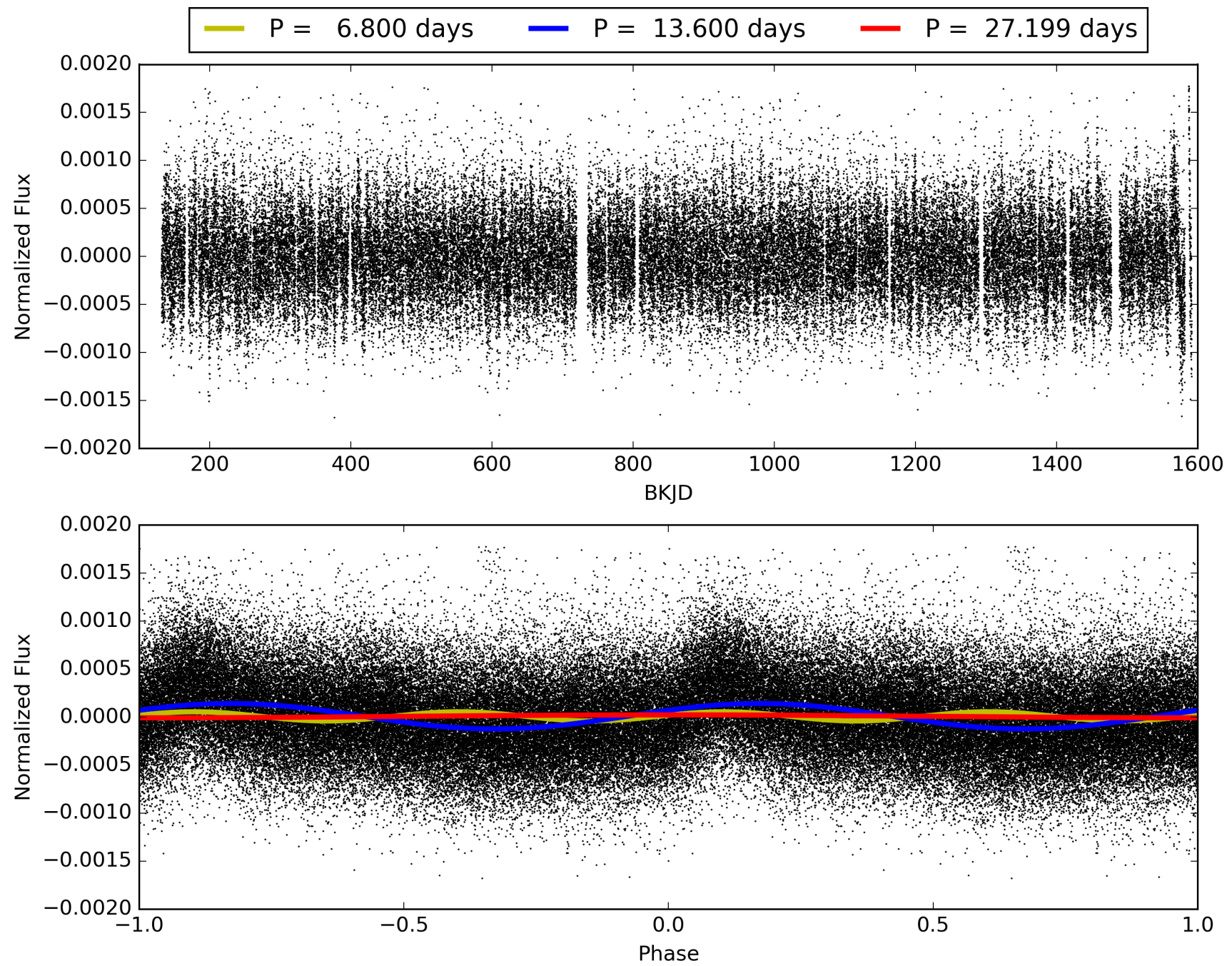
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 6.38e-16  
RollingBand-fgt: 1.00 [97/97]  
GhostDiagnostic-chr: 1.372  
Centroid-sig: 42.7%  
Centroid-so: 0.823 arcsec [0.79 $\sigma$ ]  
OotOffset-rm: 0.418 arcsec [0.54 $\sigma$ ]  
KicOffset-rm: 0.438 arcsec [0.56 $\sigma$ ]  
OotOffset-st: 3/2/1/3 [9]  
KicOffset-st: 3/2/1/3 [9]  
DiffImageQuality-fgm: 0.56 [5/9]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 005181100-01, PDC Light Curves



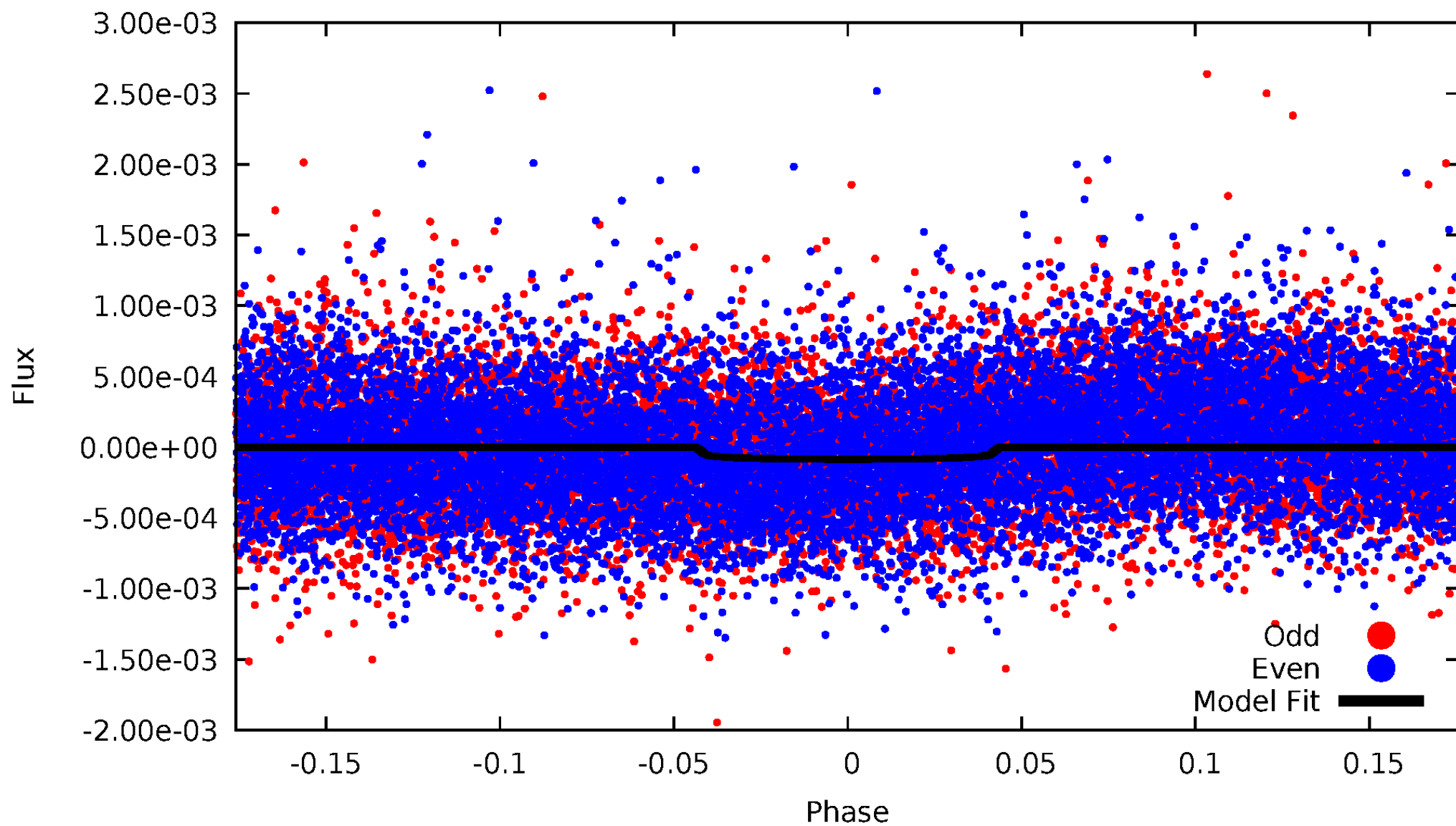
# TCE 005181100-01





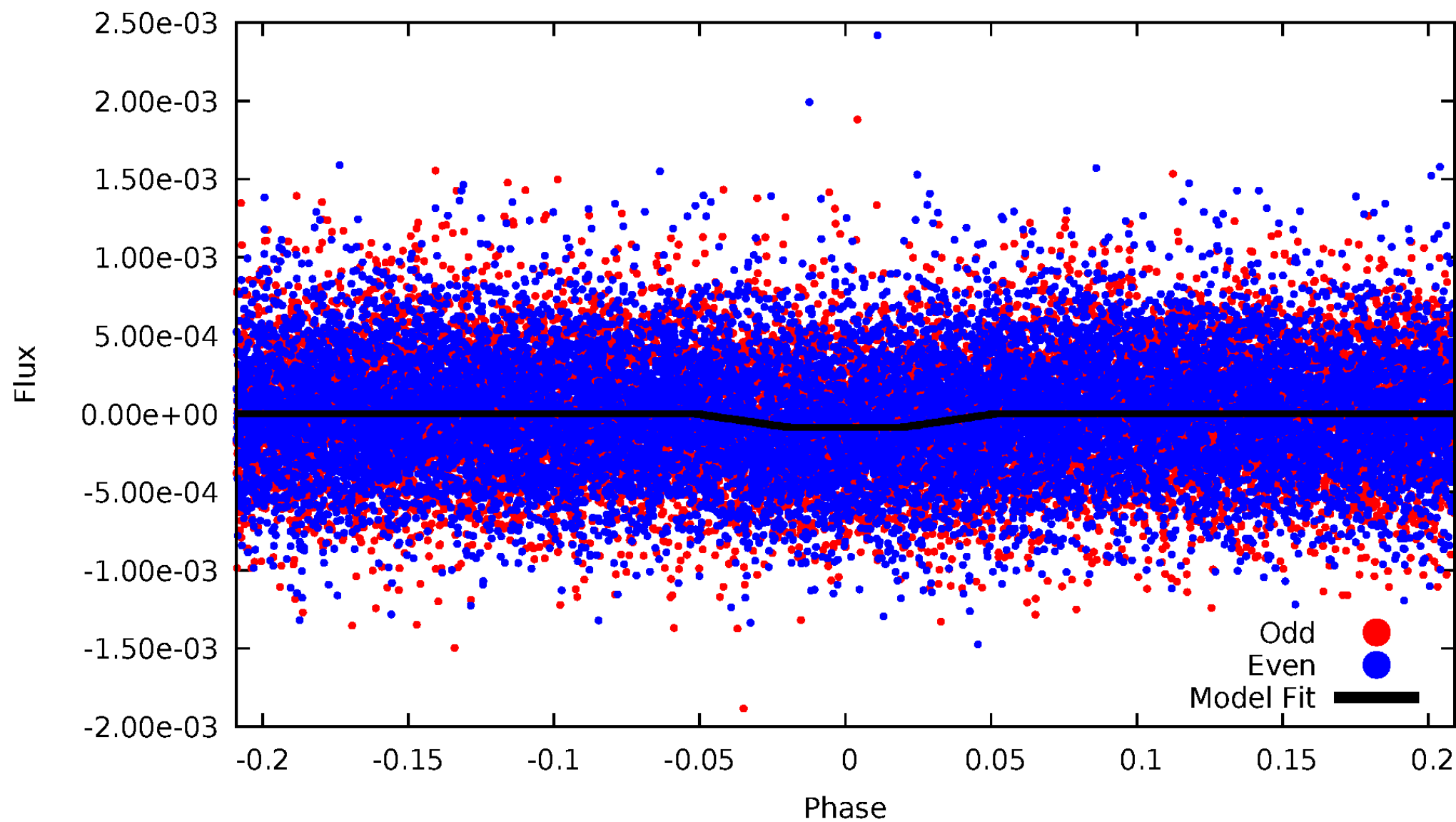
# DV Odd/Even

TCE 005181100-01

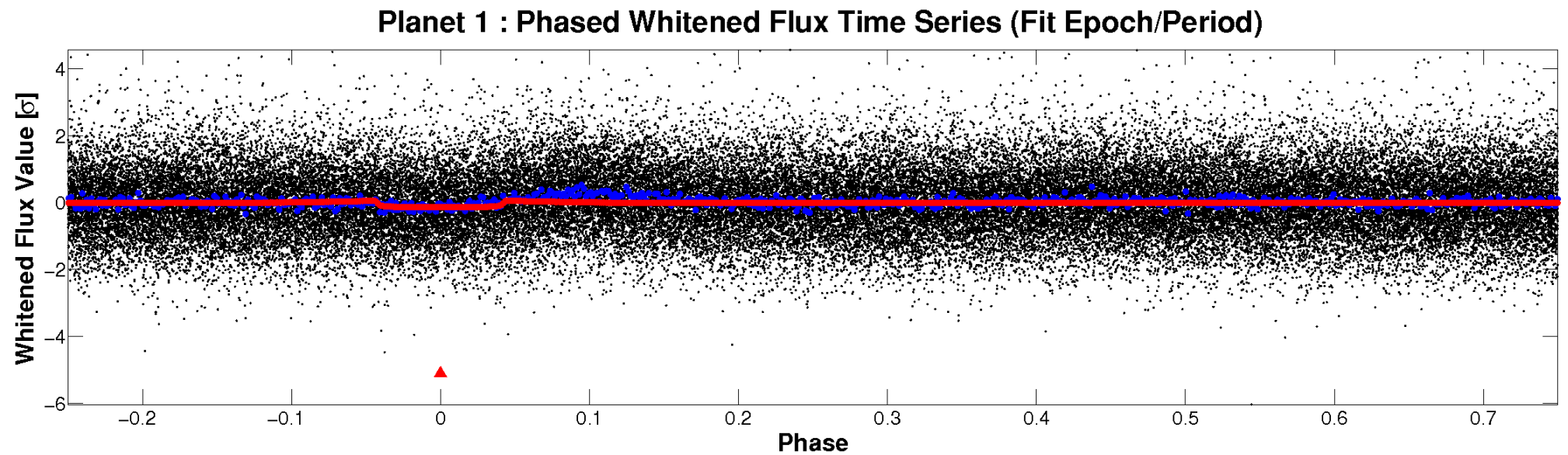
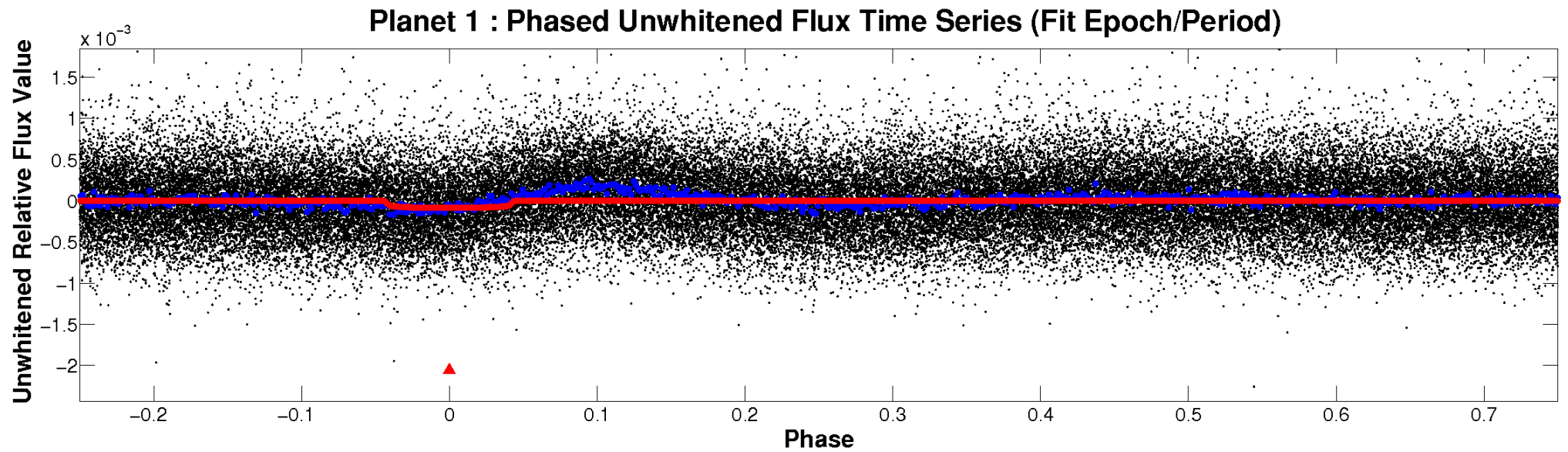


# ALT Odd/Even

TCE 005181100-01

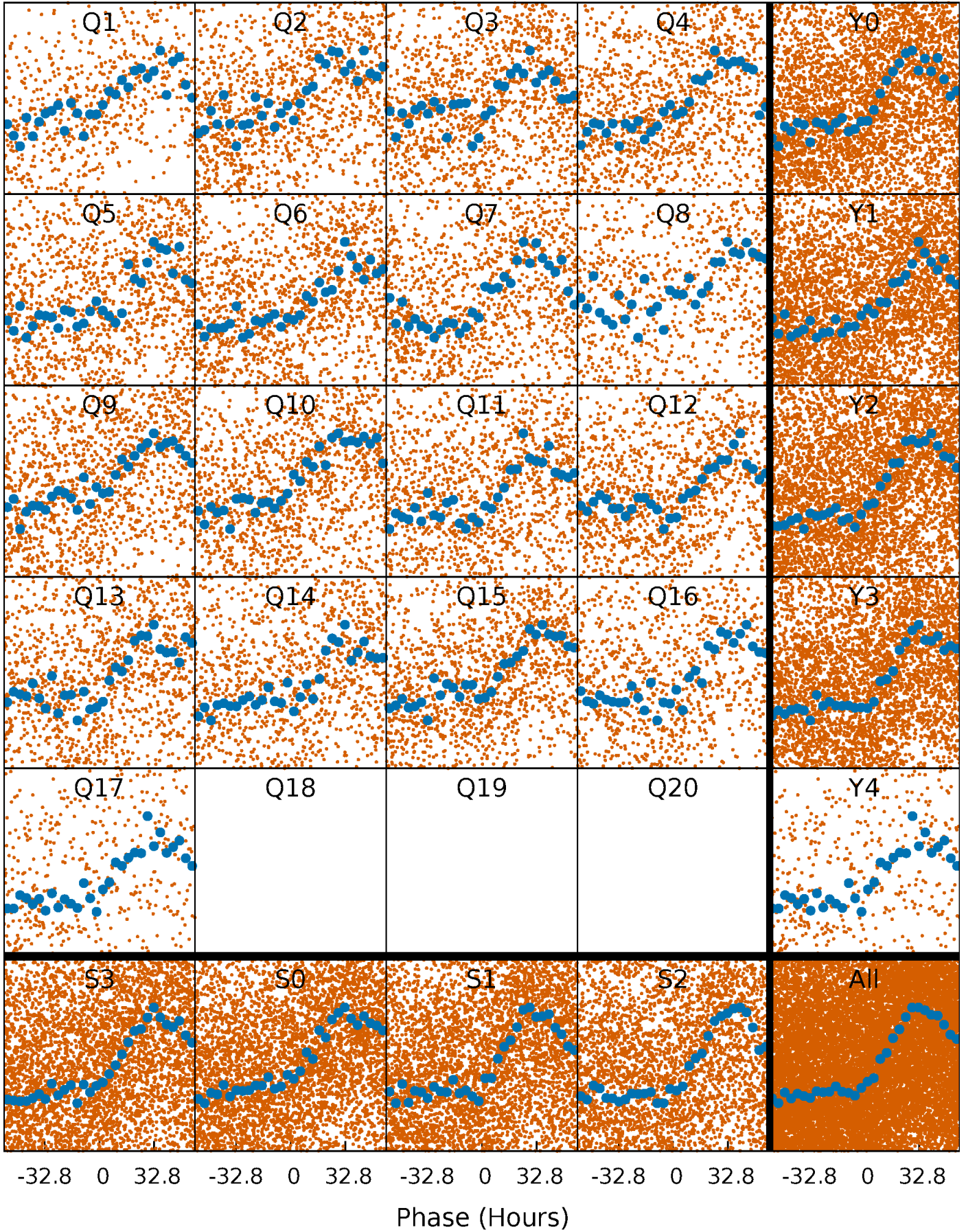


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

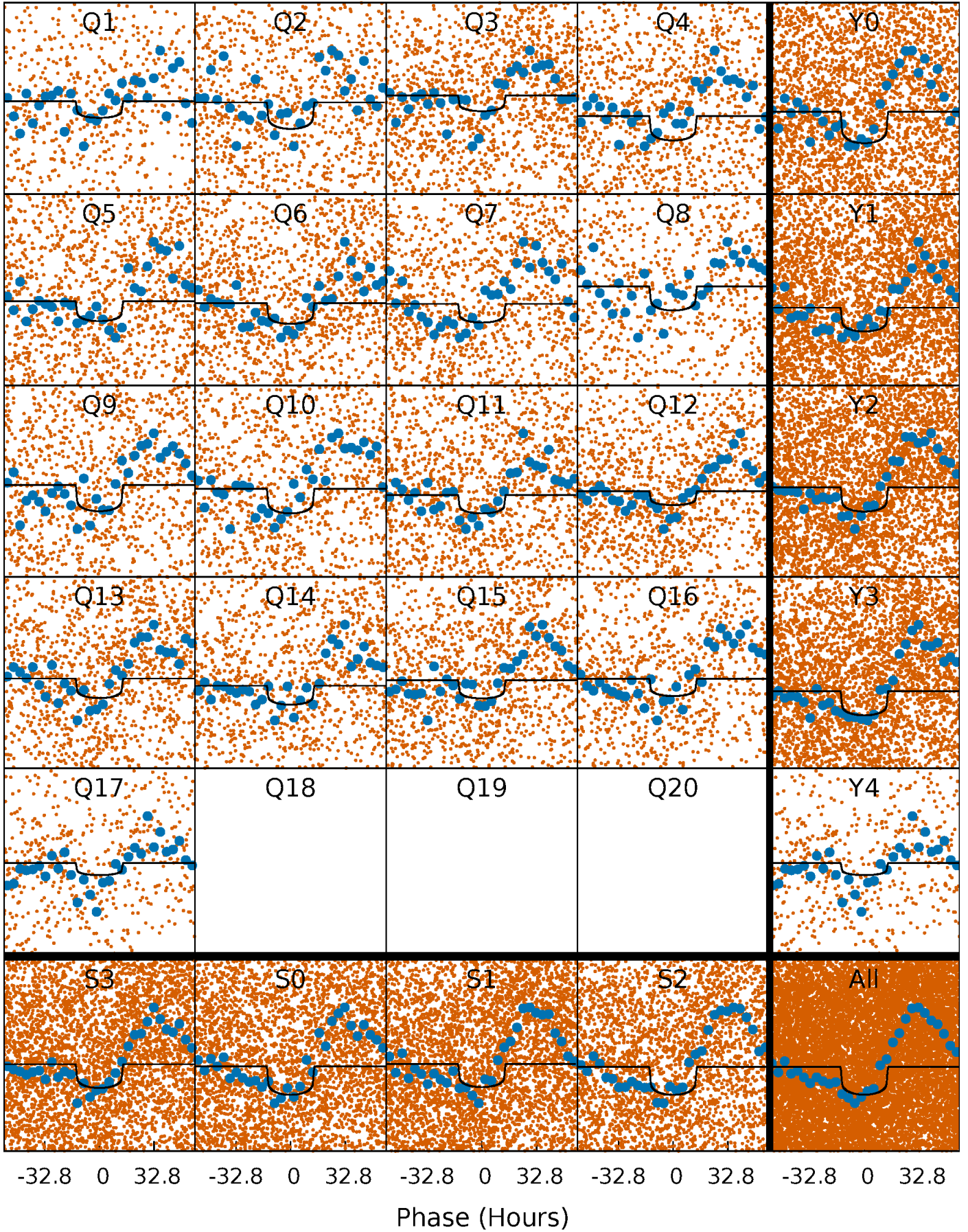
TCE 005181100-01 P= 13.599671 Days  $T_0=136.565641$  (BKJD)





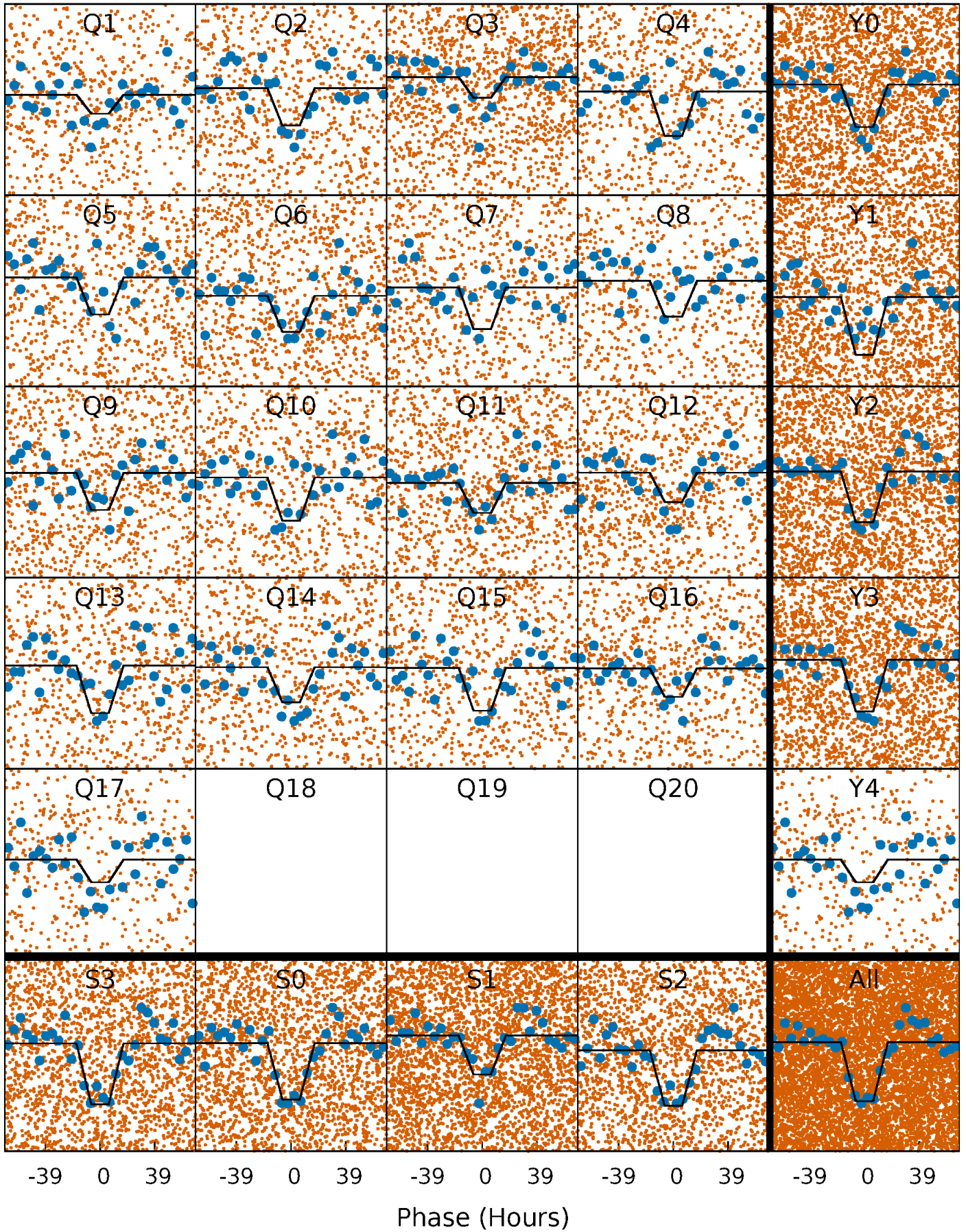
# DV Quarter-Phased Transit Curves

TCE 005181100-01 P= 13.599671 Days  $T_0=136.565641$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005181100-01 P= 13.599820 Days  $T_0=136.520642$  (BKJD)

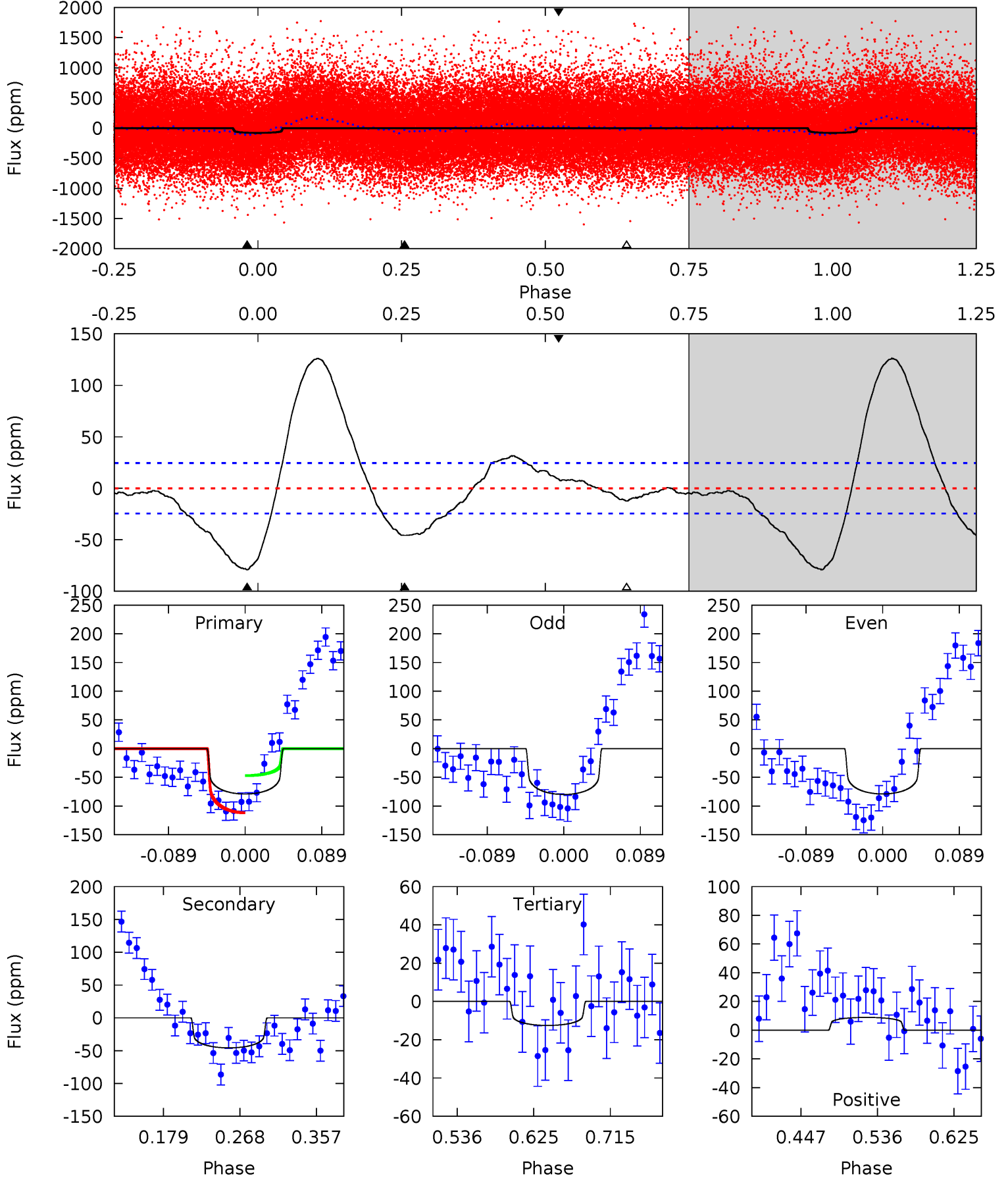




# DV Model-Shift Uniqueness Test

005181100-01, P = 13.599671 Days, E = 122.965970 Days

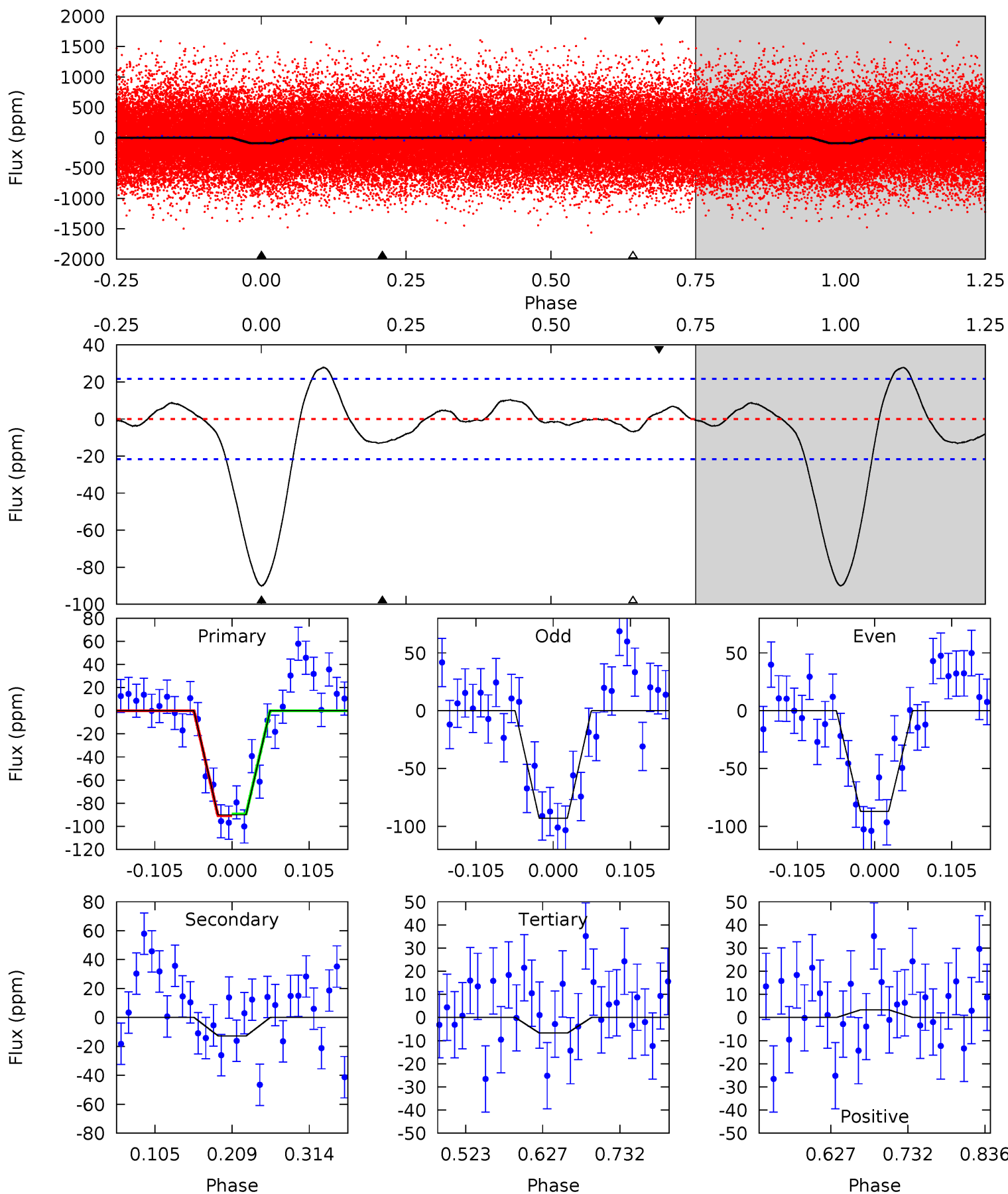
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.8	8.58	2.35	1.67	4.59	1.70	7.21	12.5	13.2	6.23	6.91	0.09	1.02	0.61	6.08



# Alt Model-Shift Uniqueness Test

005181100-01, P = 13.599820 Days, E = 122.920822 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
18.9	2.68	1.42	0.70	4.56	1.62	0.91	17.5	18.2	1.26	1.98	0.64	1.03	0.24	0.16





### Stellar Parameters For KIC 005181100

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6241^{+175}_{-219}$	$4.439^{+0.056}_{-0.224}$	$-0.120^{+0.250}_{-0.350}$	$1.045^{+0.349}_{-0.116}$	$1.093^{+0.154}_{-0.139}$	$1.348^{+0.394}_{-0.720}$
	+3%/-4%	+1%/-5%	+208%/-292%	+33%/-11%	+14%/-13%	+29%/-53%
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 005181100-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-46 \pm 5$	$1.16^{+0.23}_{-0.17}$	$1187^{+94}_{-62}$	$5229^{+329}_{-313}$	$240^{+90}_{-75}$
Alt.	$-13 \pm 5$	$1.11^{+0.23}_{-0.16}$	$1181^{+89}_{-60}$	$4106^{+359}_{-357}$	$71^{+43}_{-30}$

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

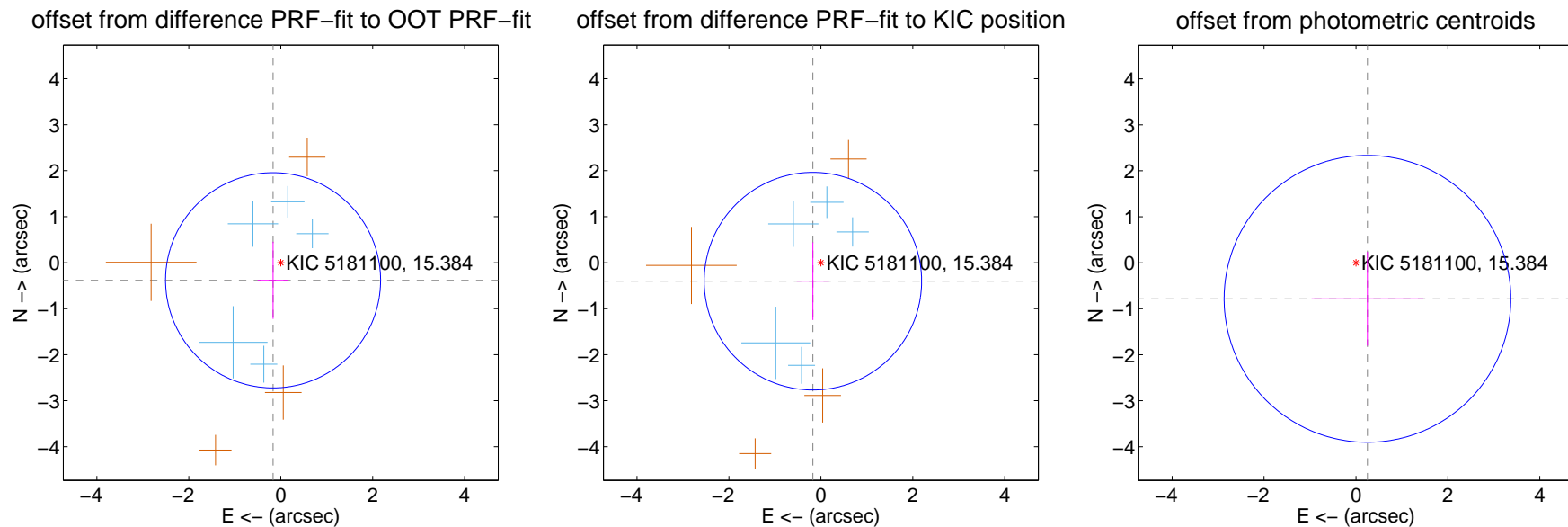
## DV Centroid Data

Supplemental centroid analysis for 005181100-01. Kepler magnitude: 15.38. Transit SNR 9.52

There are 5 quarters with good PRF difference image offsets

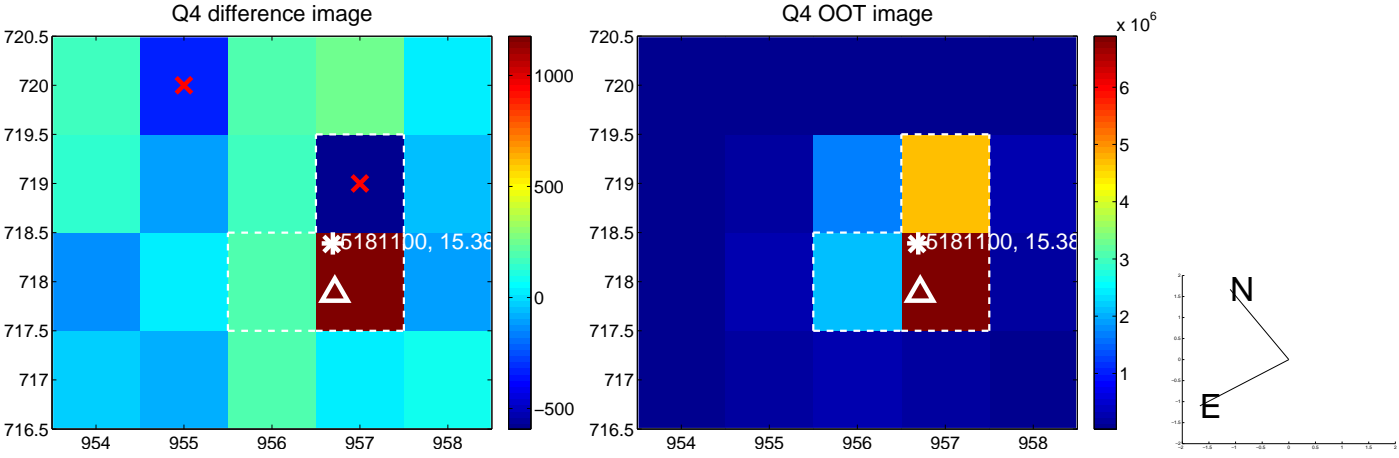
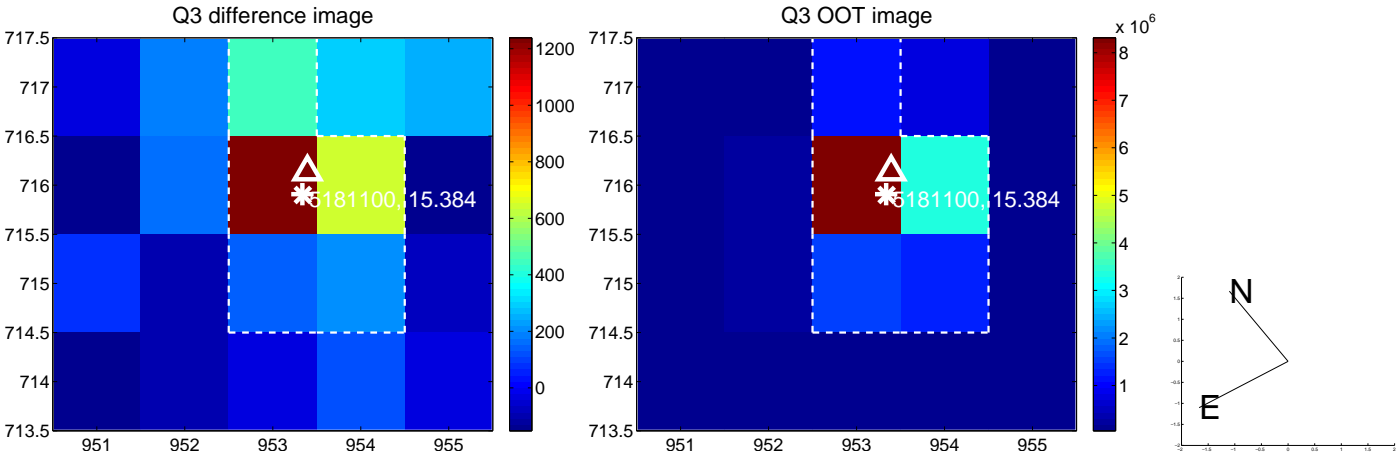
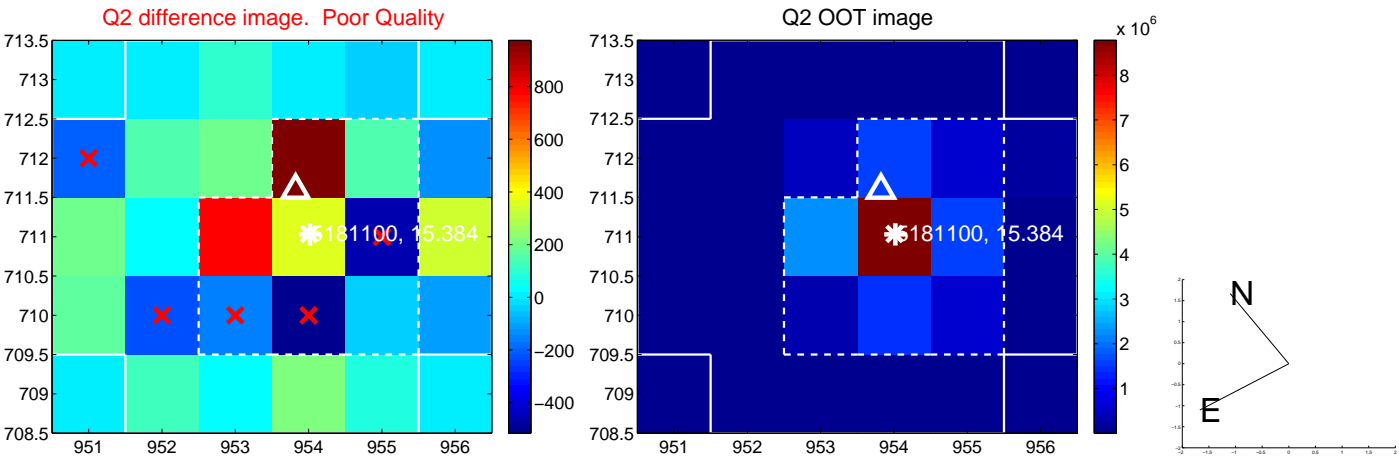
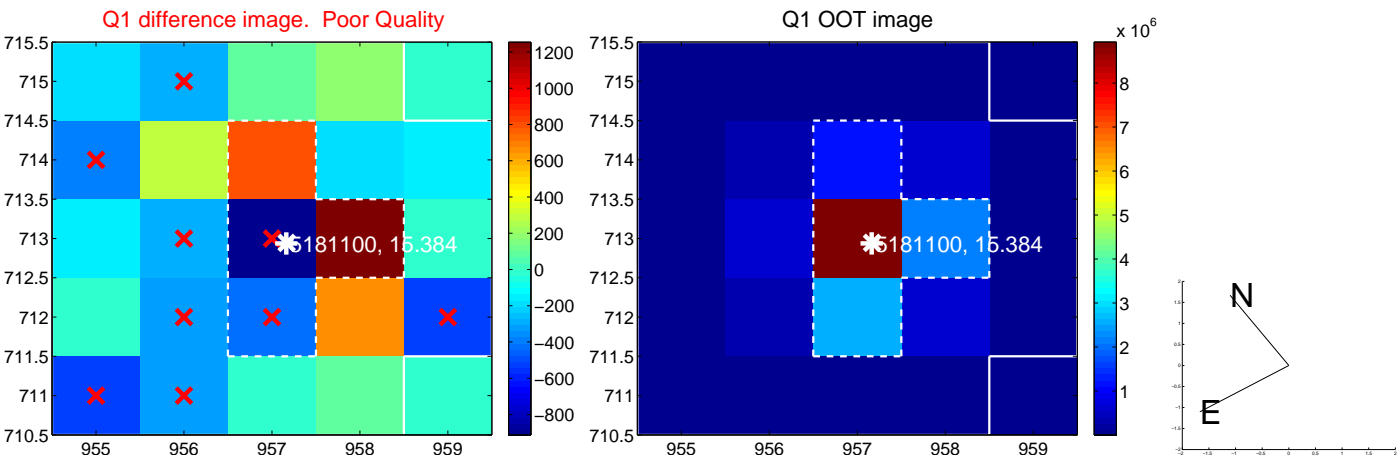
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.418 \pm 0.780$	0.54	$0.167 \pm 0.336$	$-0.383 \pm 0.838$
PRF-fit source offset from KIC position	$0.438 \pm 0.788$	0.56	$0.173 \pm 0.351$	$-0.402 \pm 0.845$
photometric centroid source offset	$0.82 \pm 1.04$	0.79	$-0.25 \pm 1.22$	$-0.78 \pm 1.02$

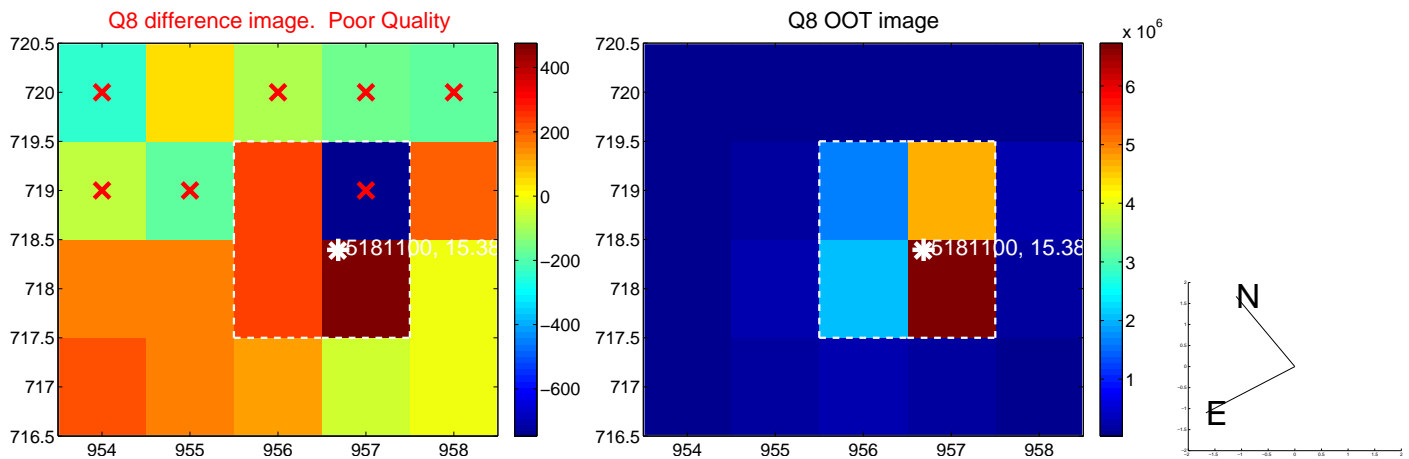
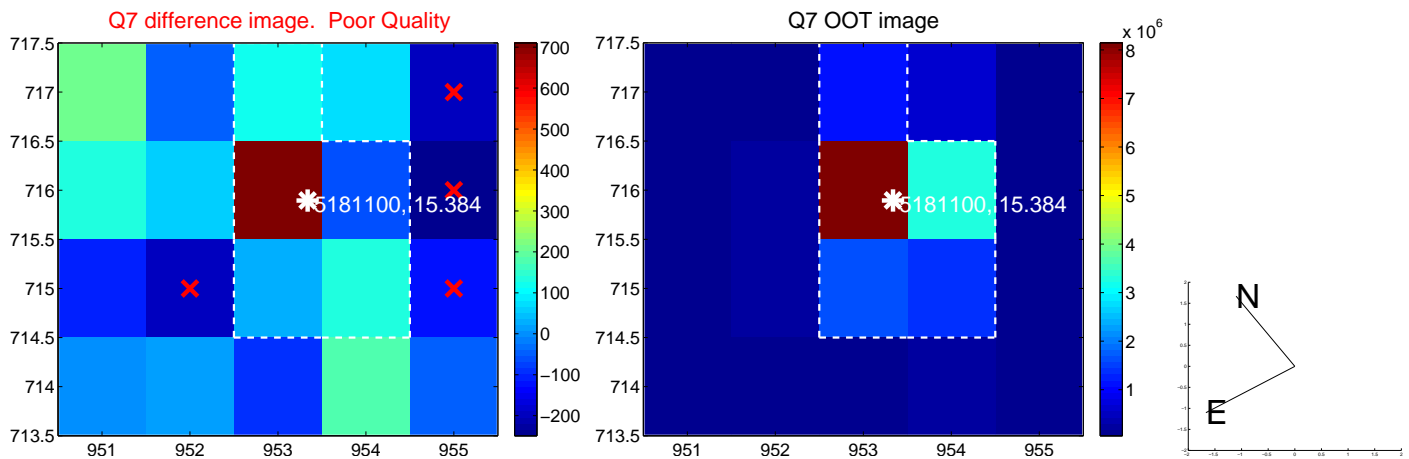
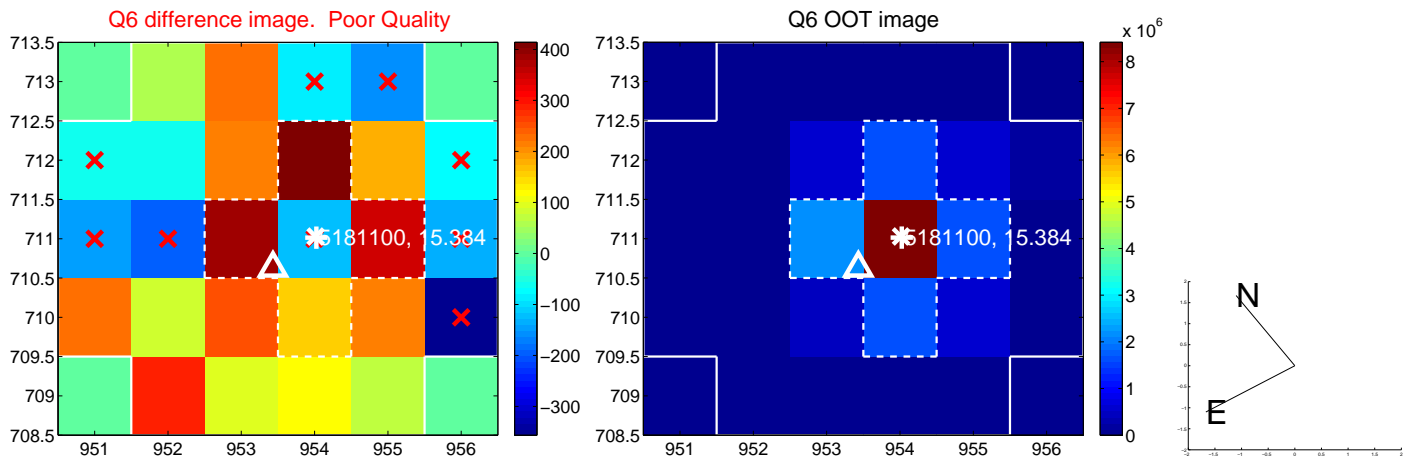
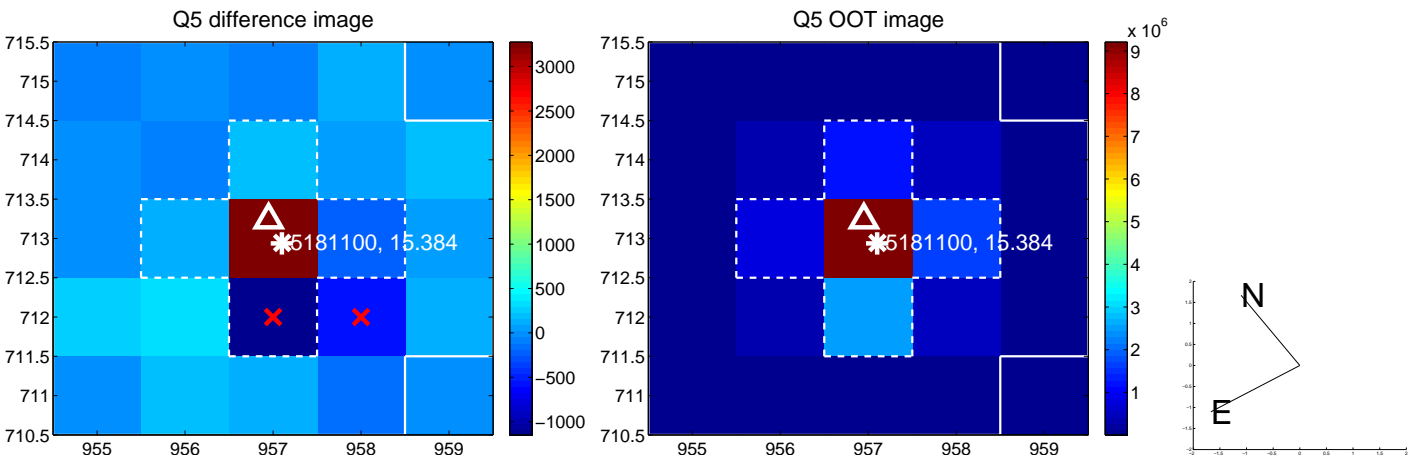


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

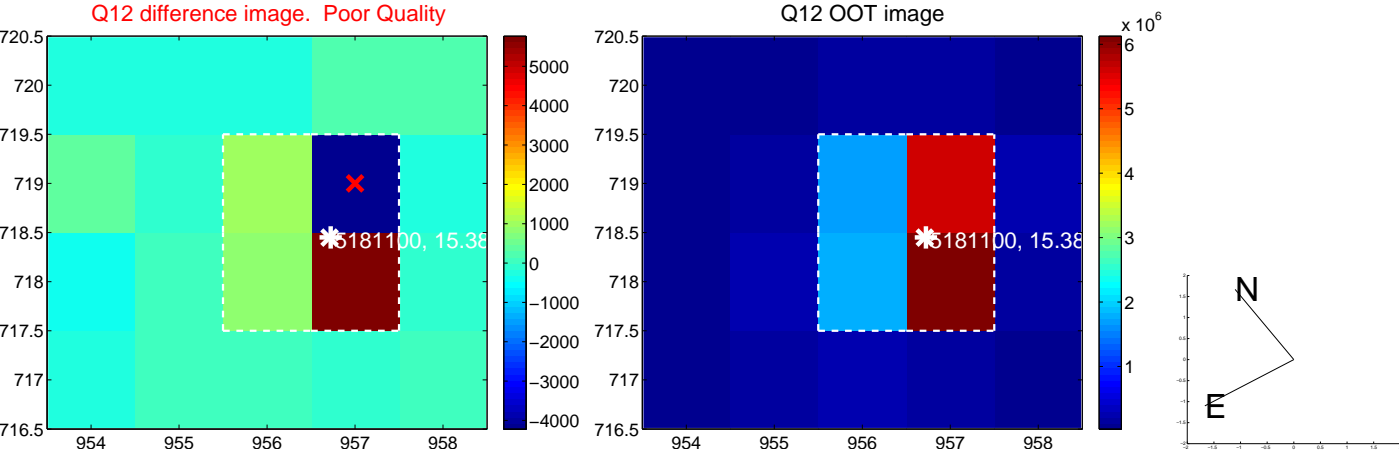
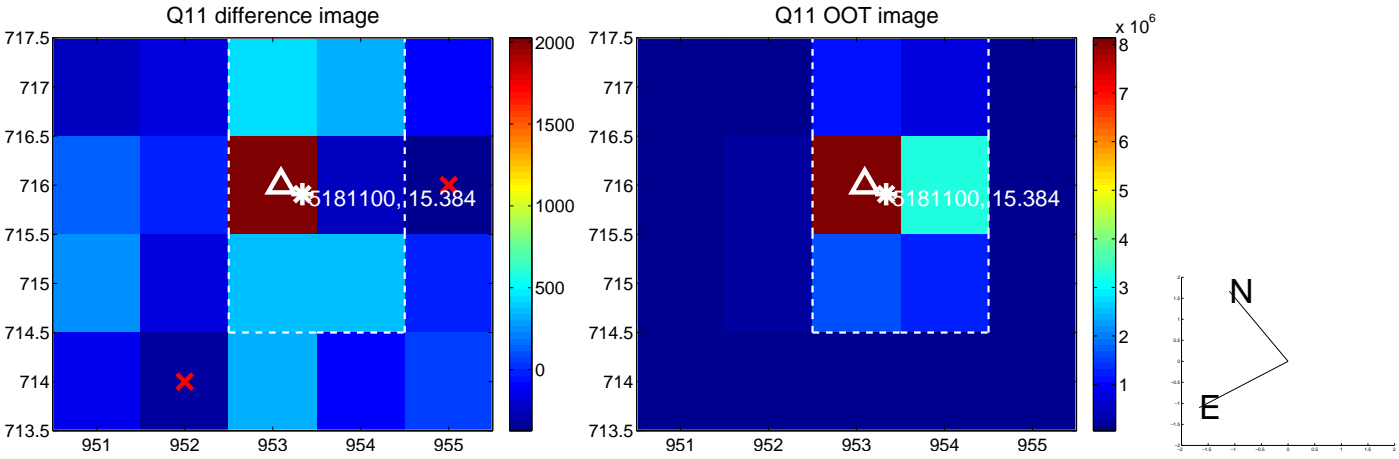
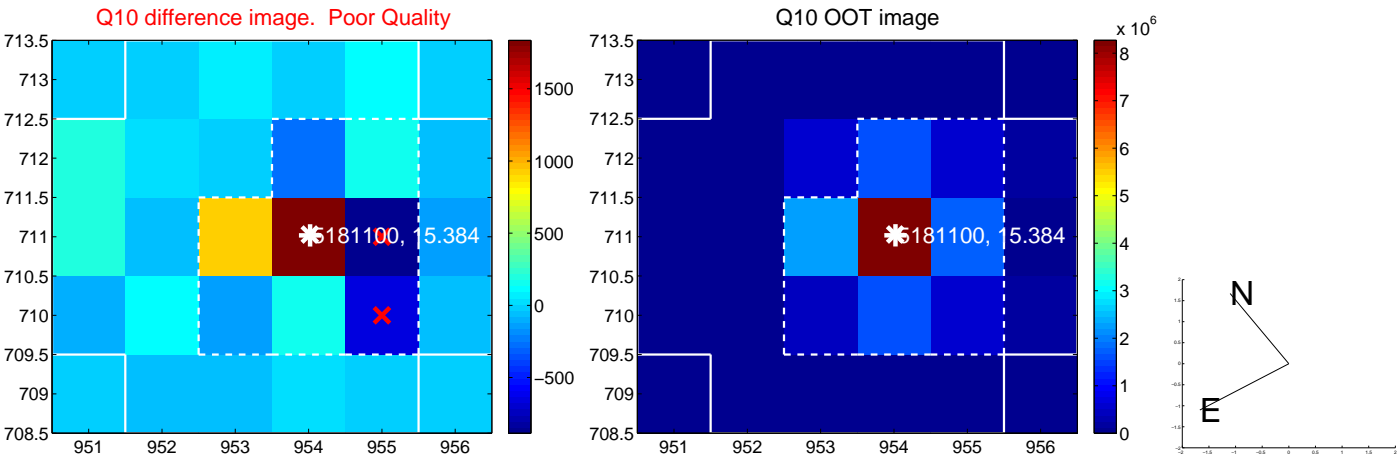
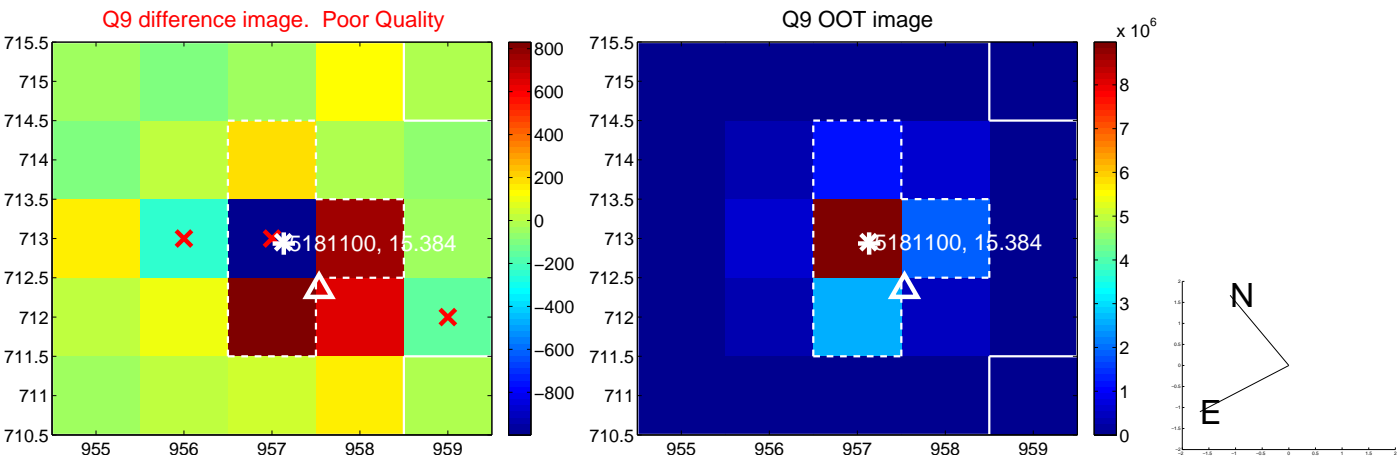


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

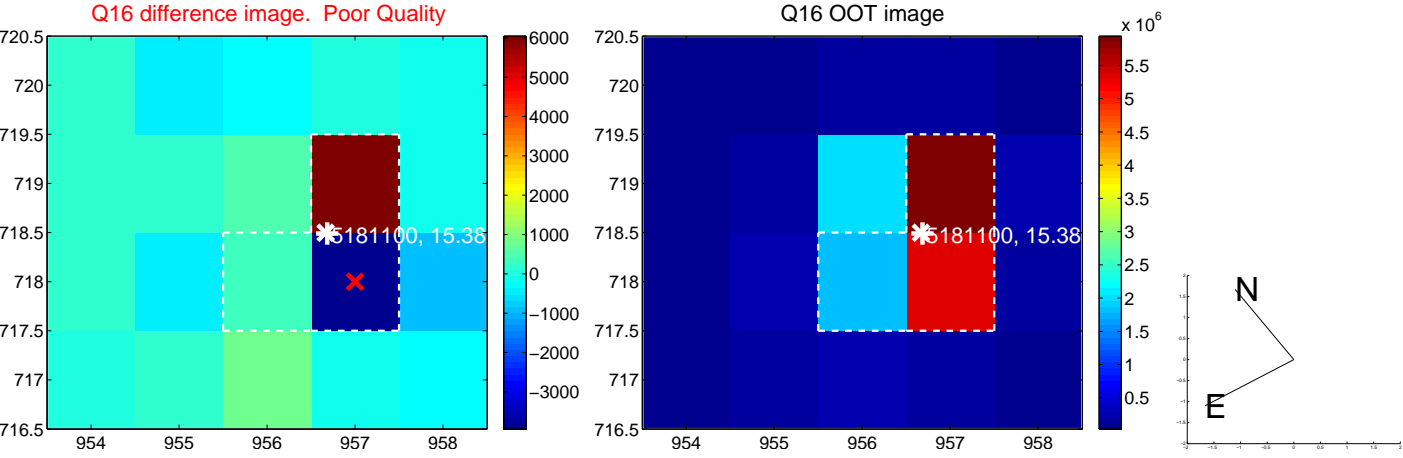
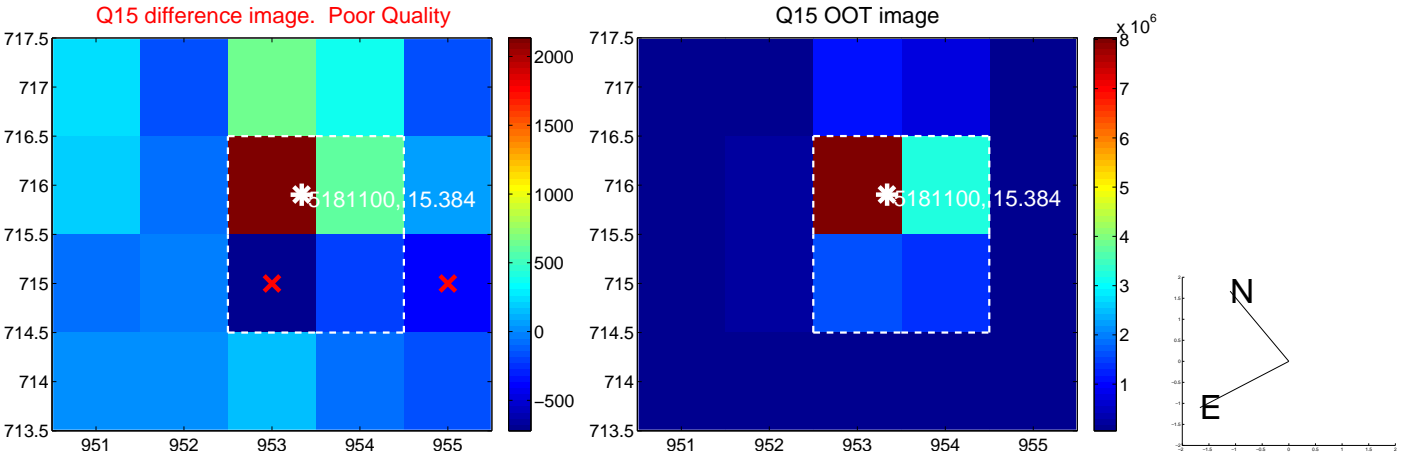
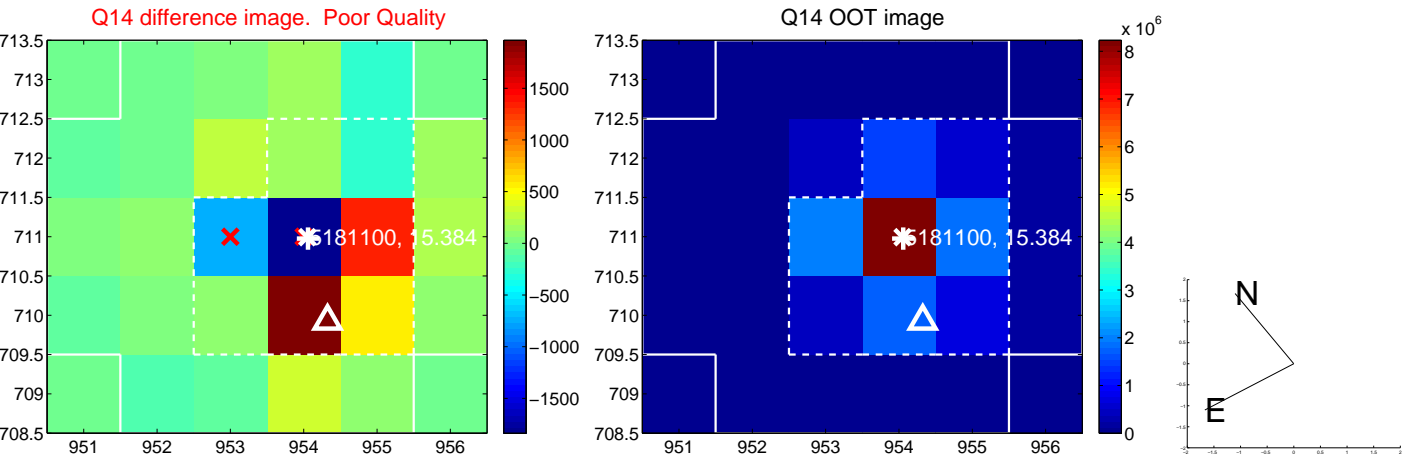
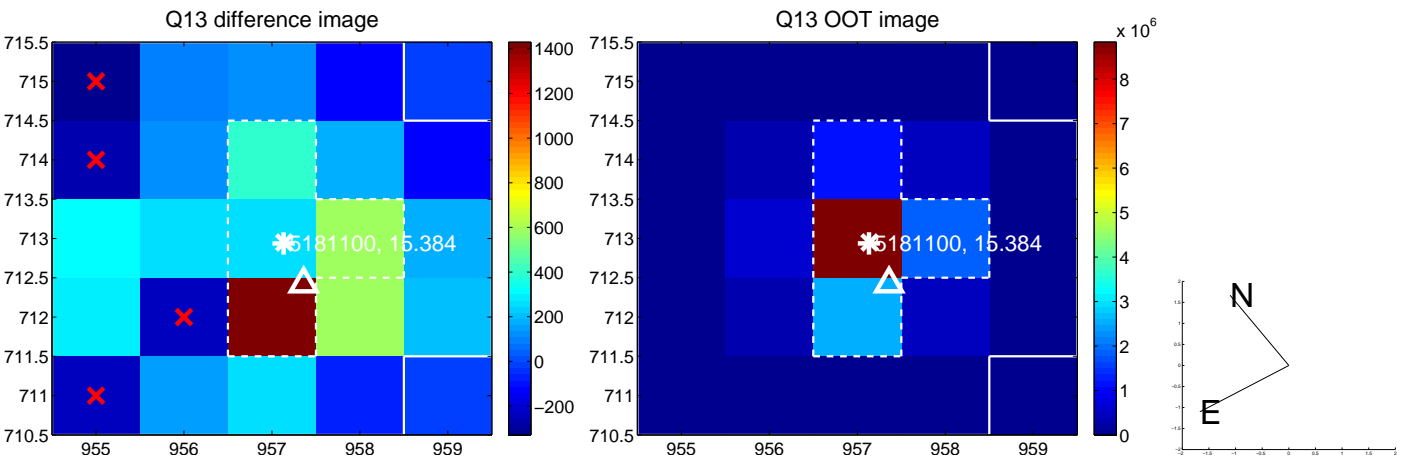




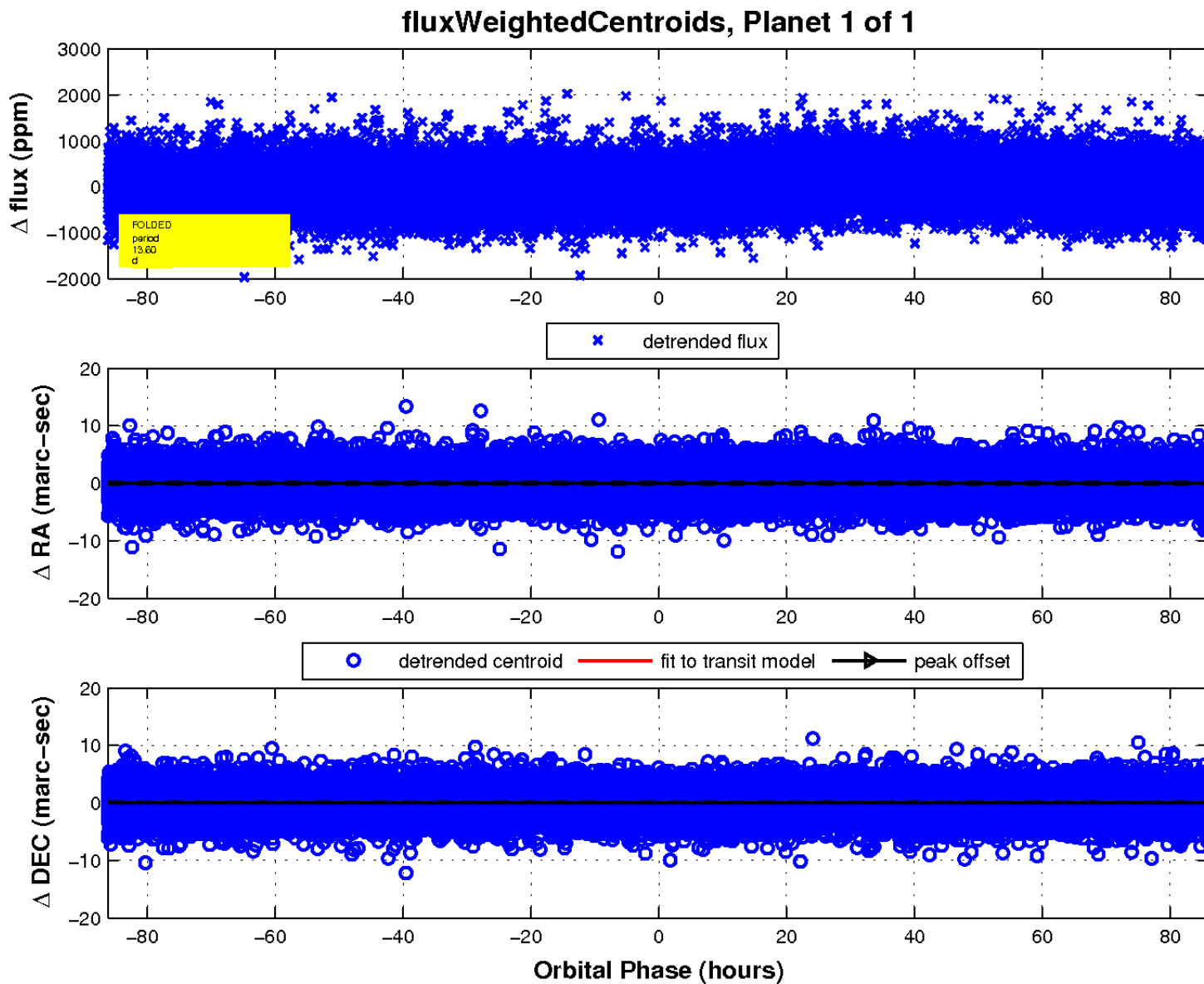
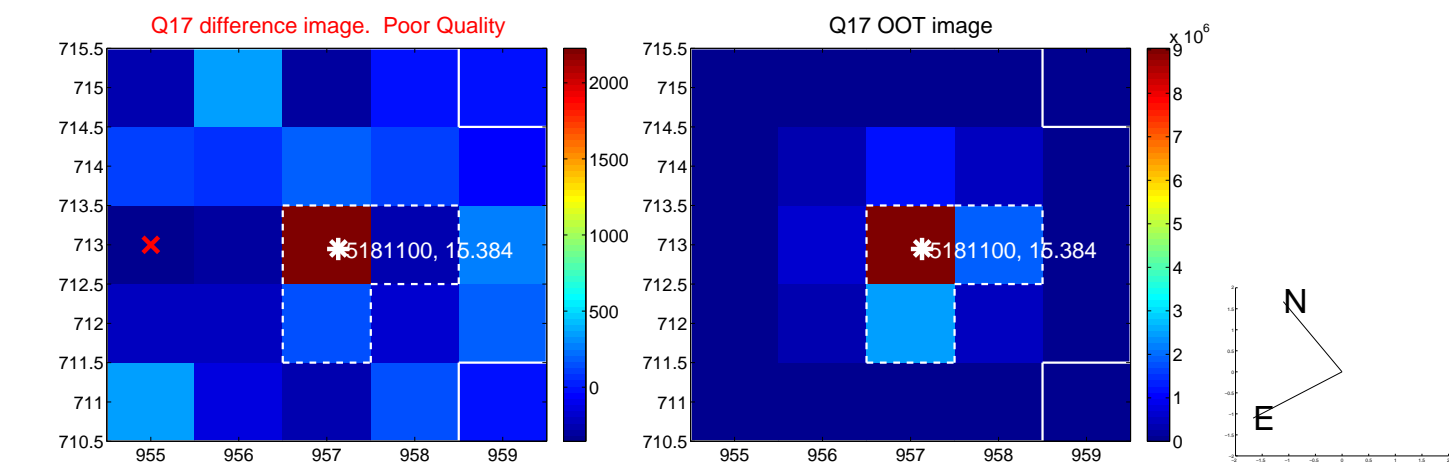
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

