

# KIC 011493431

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011493431-01	OBS	1434.01	2.343248	133.202524	218.5	2.188	18.2	20.6	0.78	4798	1.44	292.09

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011493431-01	OBS	PC	1.00	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.

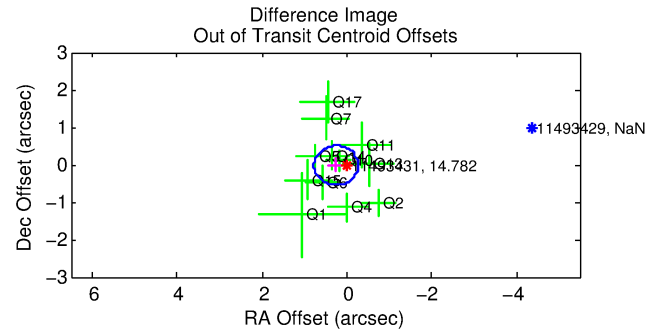
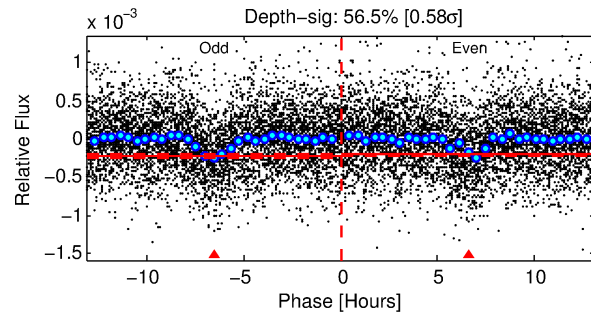
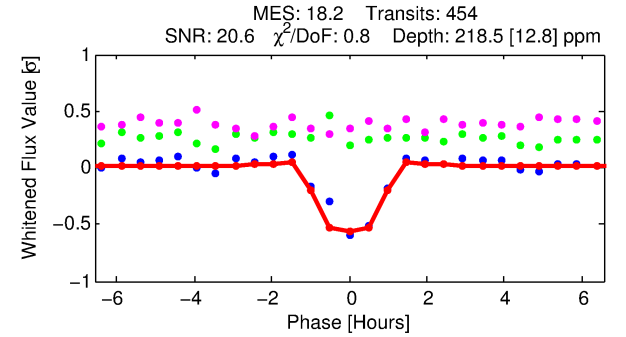
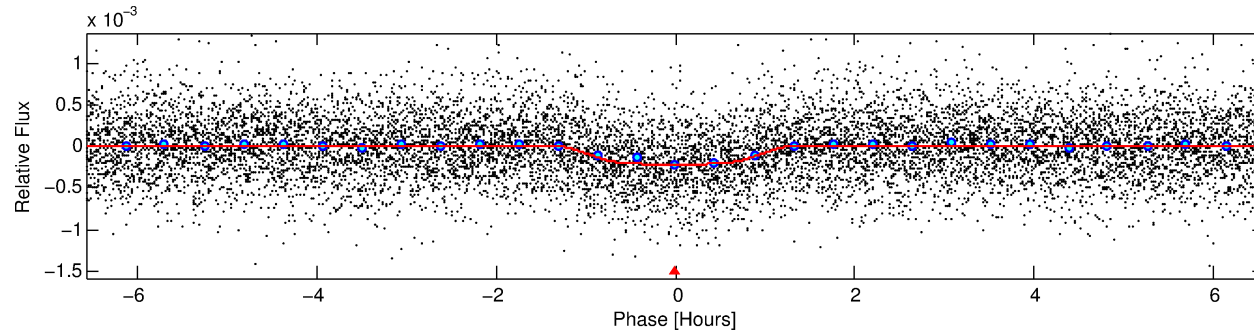
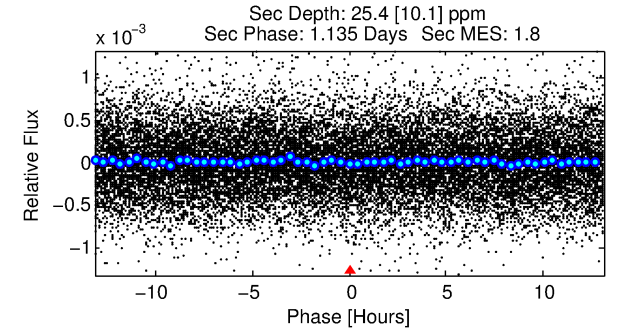
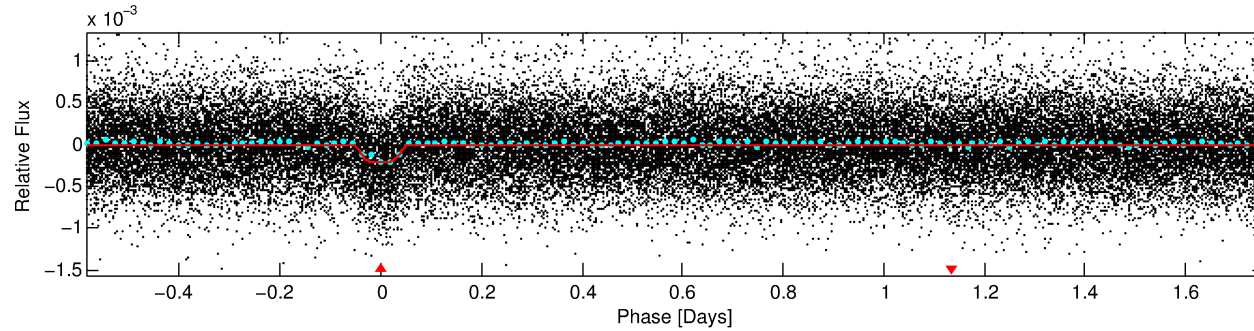
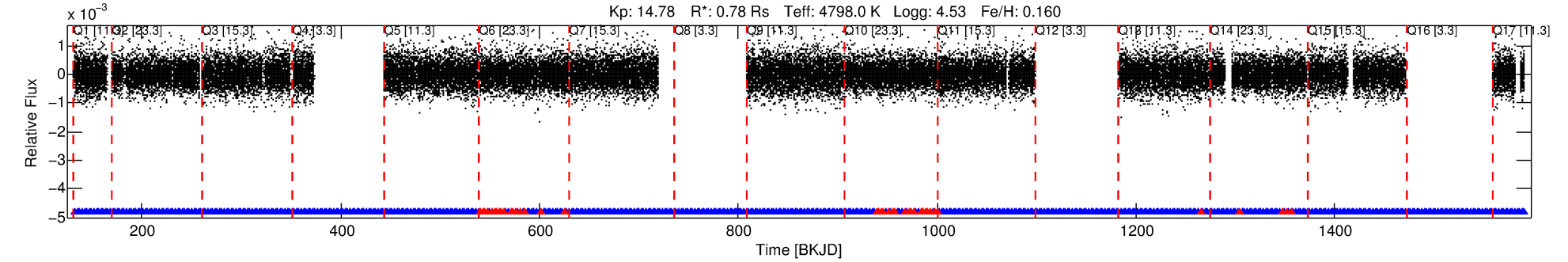
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011493431-01

No Significant Match Found

# DV One-Page Summary

KIC: 11493431 Candidate: 1 of 1 Period: 2.343 d  
KOI: K01434.01 Corr: 0.961



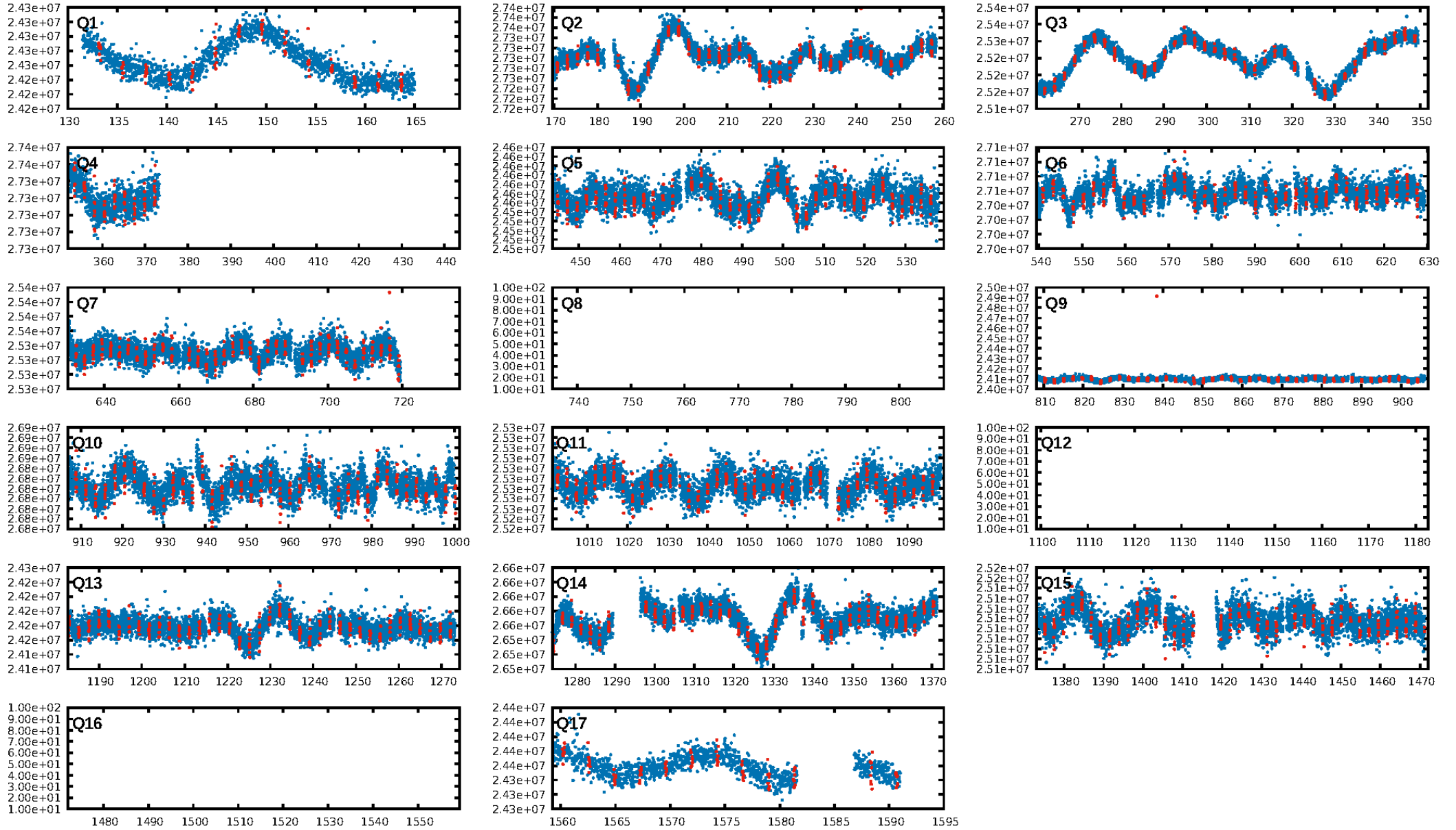
## DV Fit Results:

Period = 2.34325 [0.00001] d  
Epoch = 133.2025 [0.0016] BKJD  
Rp/R\* = 0.0168 [0.0064]  
a/R\* = 3.85 [5.25]  
b = 0.91 [0.29]  
Seff = 292.09 [36.29]  
Teq = 1054 [33] K  
Rp = 1.44 [0.55] Re  
a = 0.0315 [0.0020] AU  
Ag = 6.72 [5.78] [0.99σ]  
Teffp = 2624 [562] K [2.79σ]

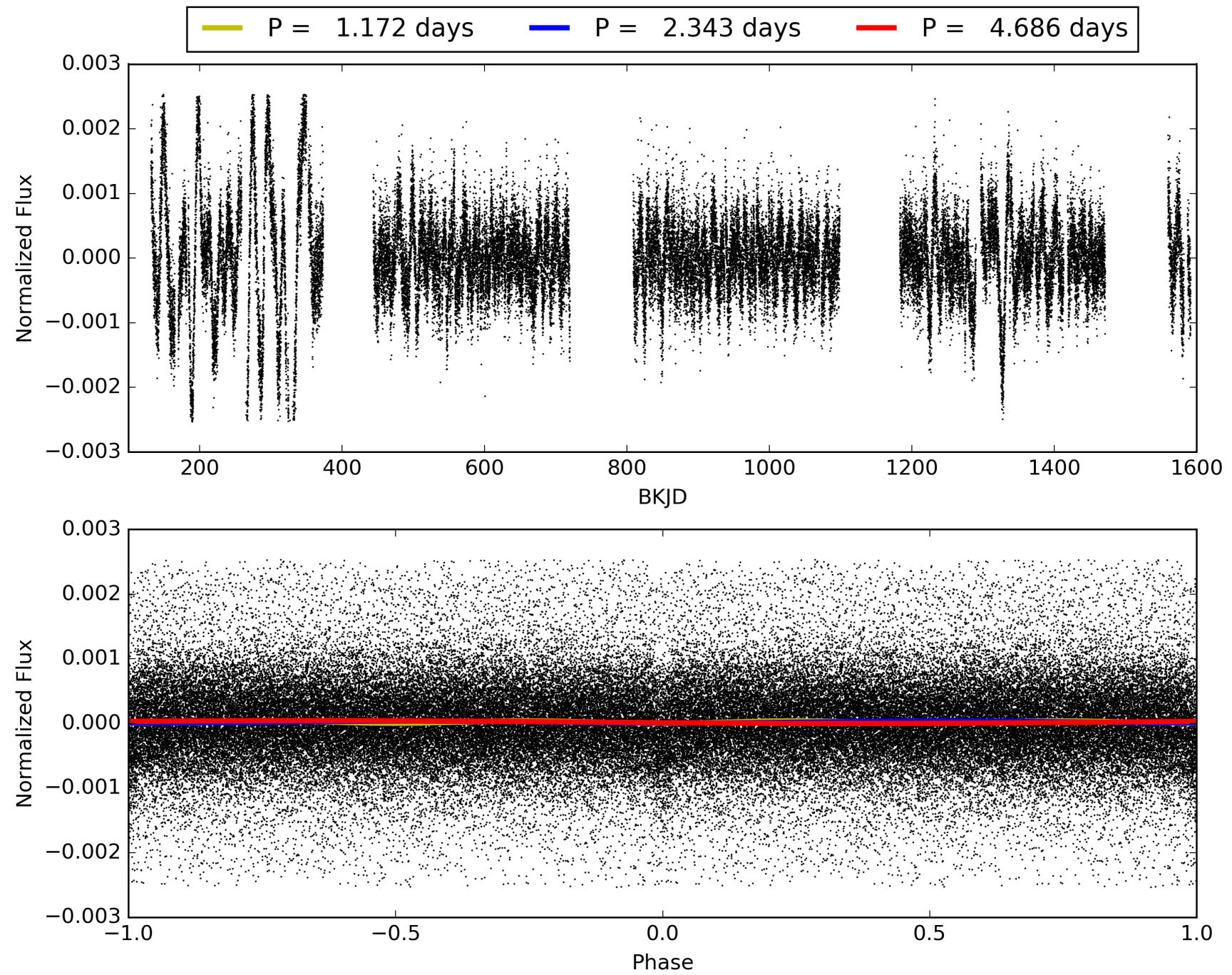
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.07e-70  
RollingBand-fgt: 0.90 [379/419]  
GhostDiagnostic-chr: 2.279  
Centroid-sig: 0.0%  
Centroid-so: 3.020 arcsec [4.61σ]  
OotOffset-rm: 0.252 arcsec [1.44σ]  
KicOffset-rm: 0.413 arcsec [1.56σ]  
OotOffset-st: 4/3/1/4 [12]  
KicOffset-st: 4/3/1/4 [12]  
DiffImageQuality-fgm: 1.00 [12/12]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 011493431-01, PDC Light Curves

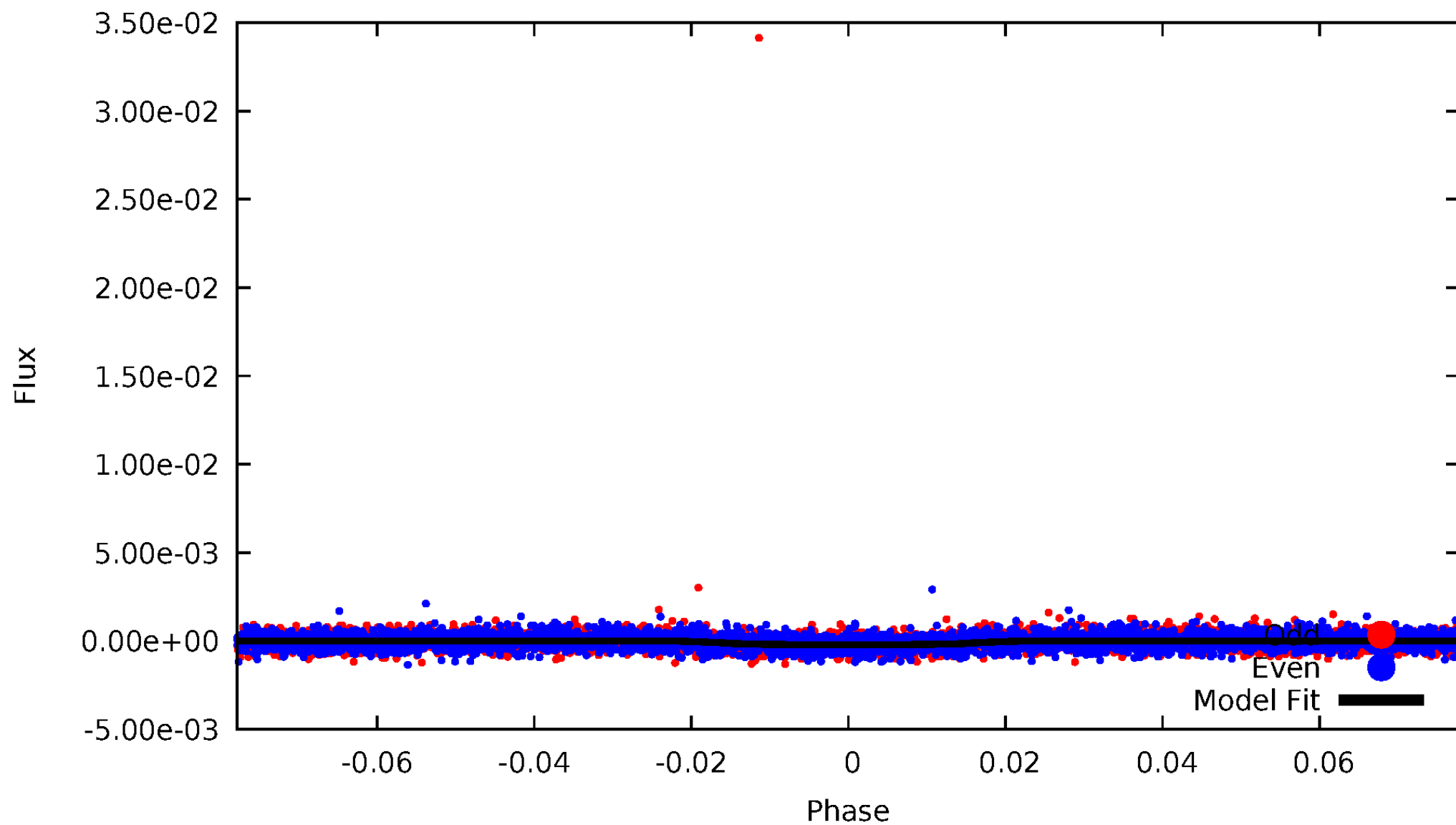


TCE 011493431-01



# DV Odd/Even

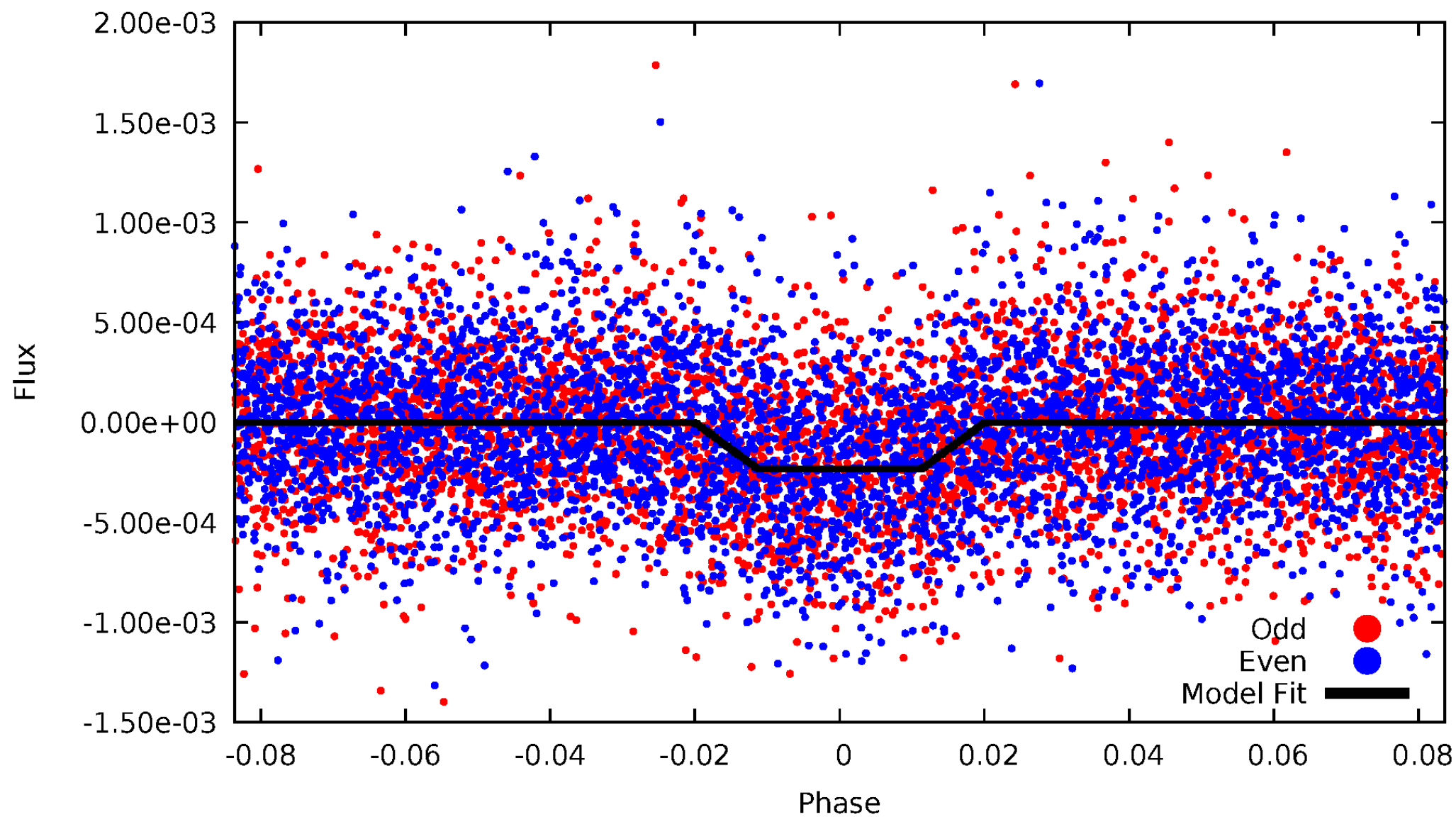
TCE 011493431-01





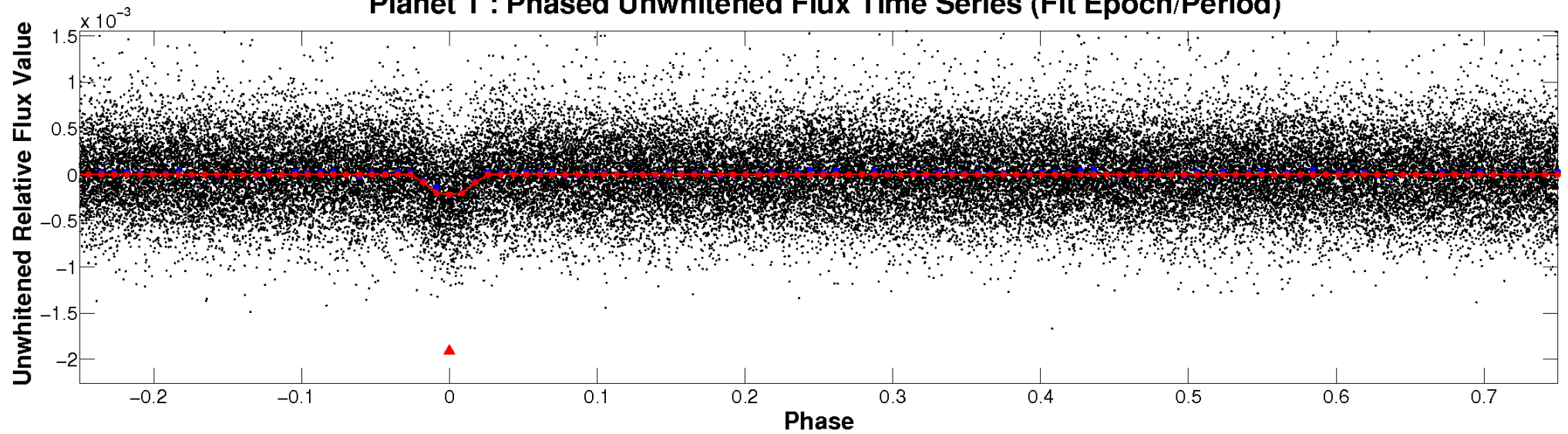
# ALT Odd/Even

TCE 011493431-01

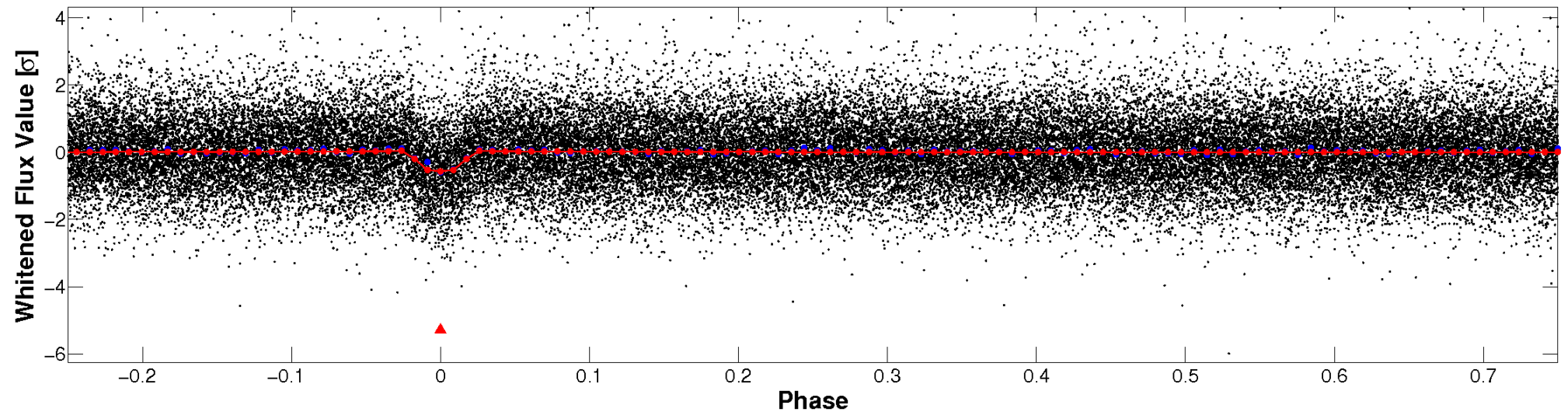


# Non-Whitened Vs. Whitened Light Curve

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

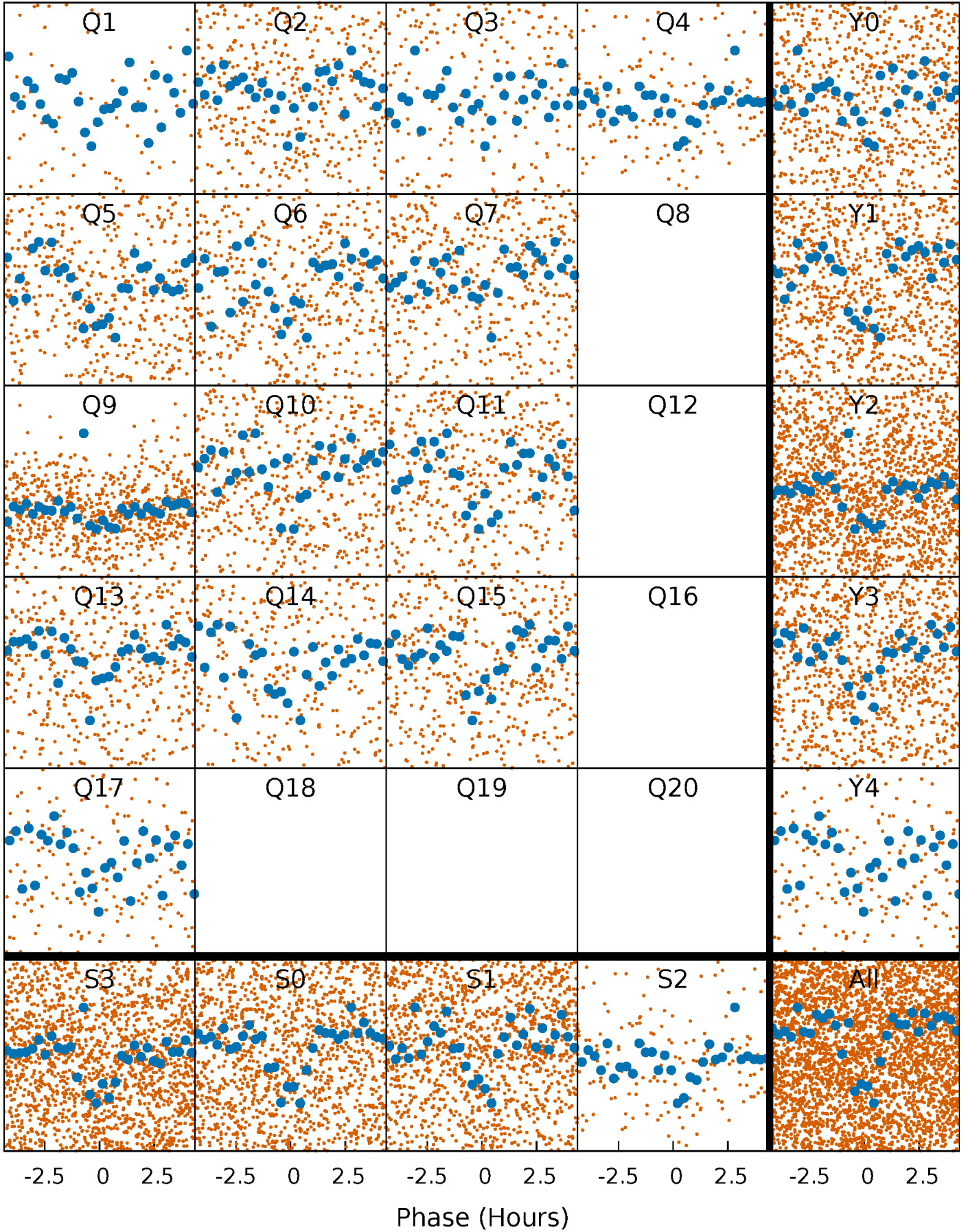


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

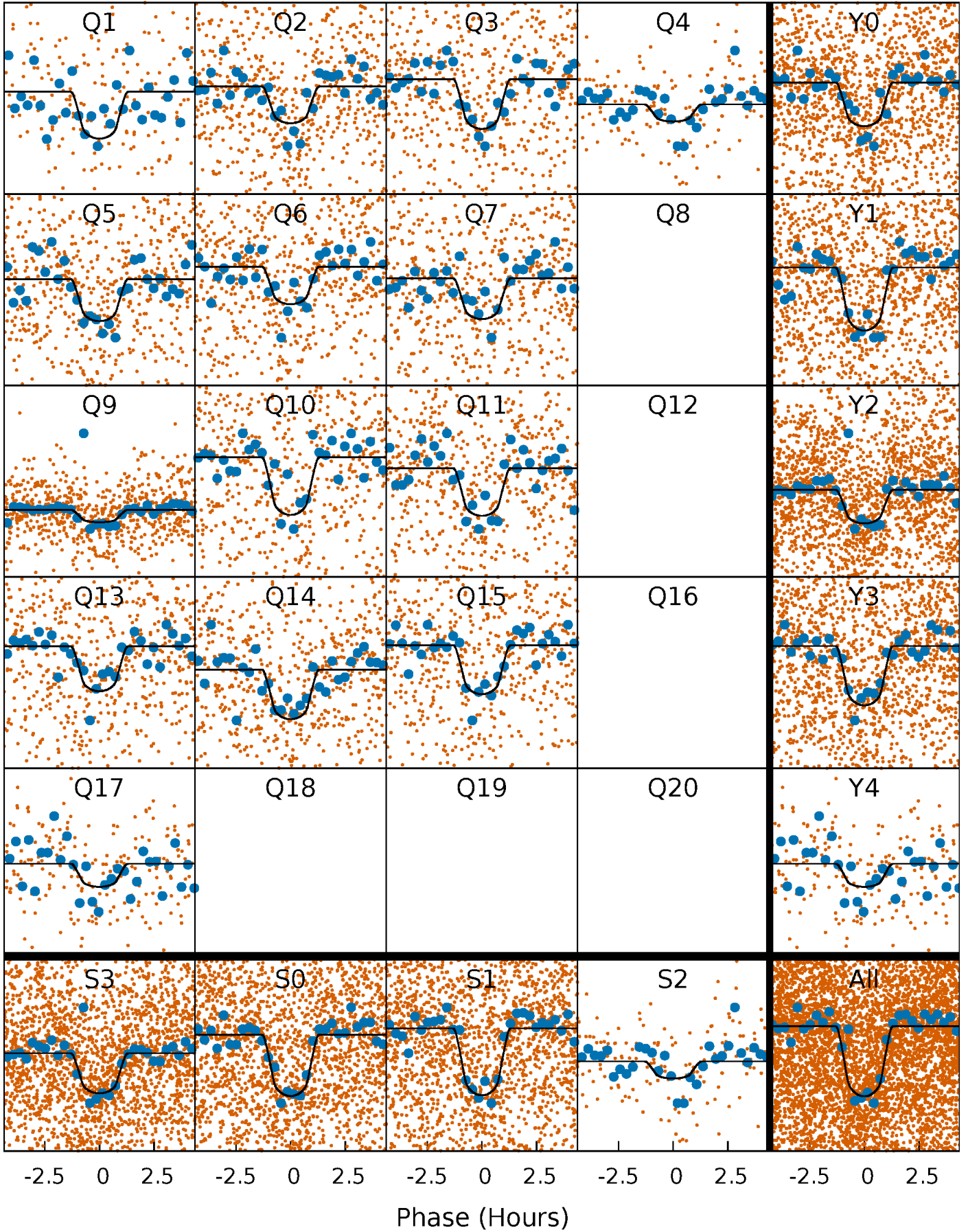
TCE 011493431-01 P= 2.343248 Days  $T_0=133.202524$  (BKJD)





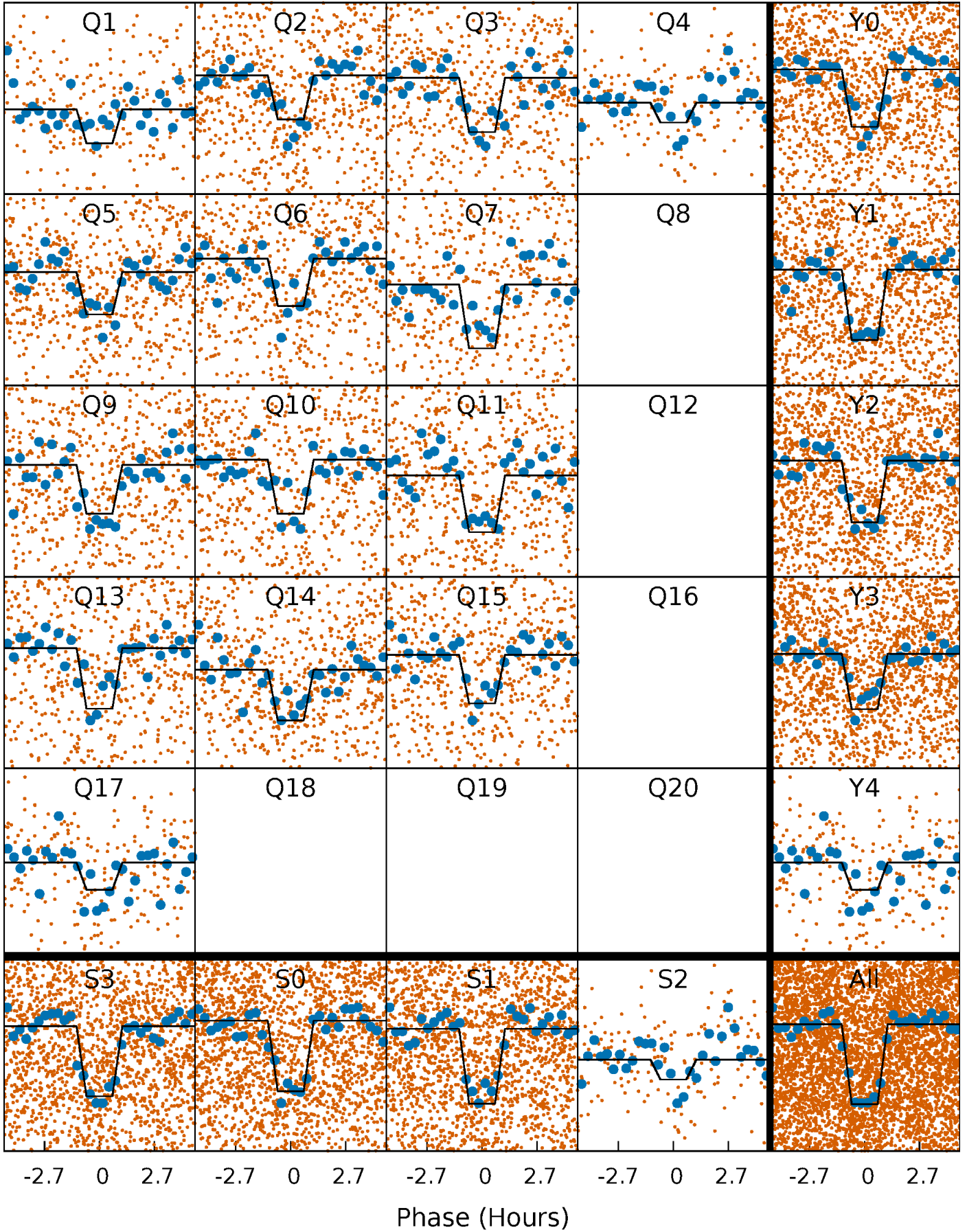
# DV Quarter-Phased Transit Curves

TCE 011493431-01   P= 2.343248 Days    $T_0=133.202524$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

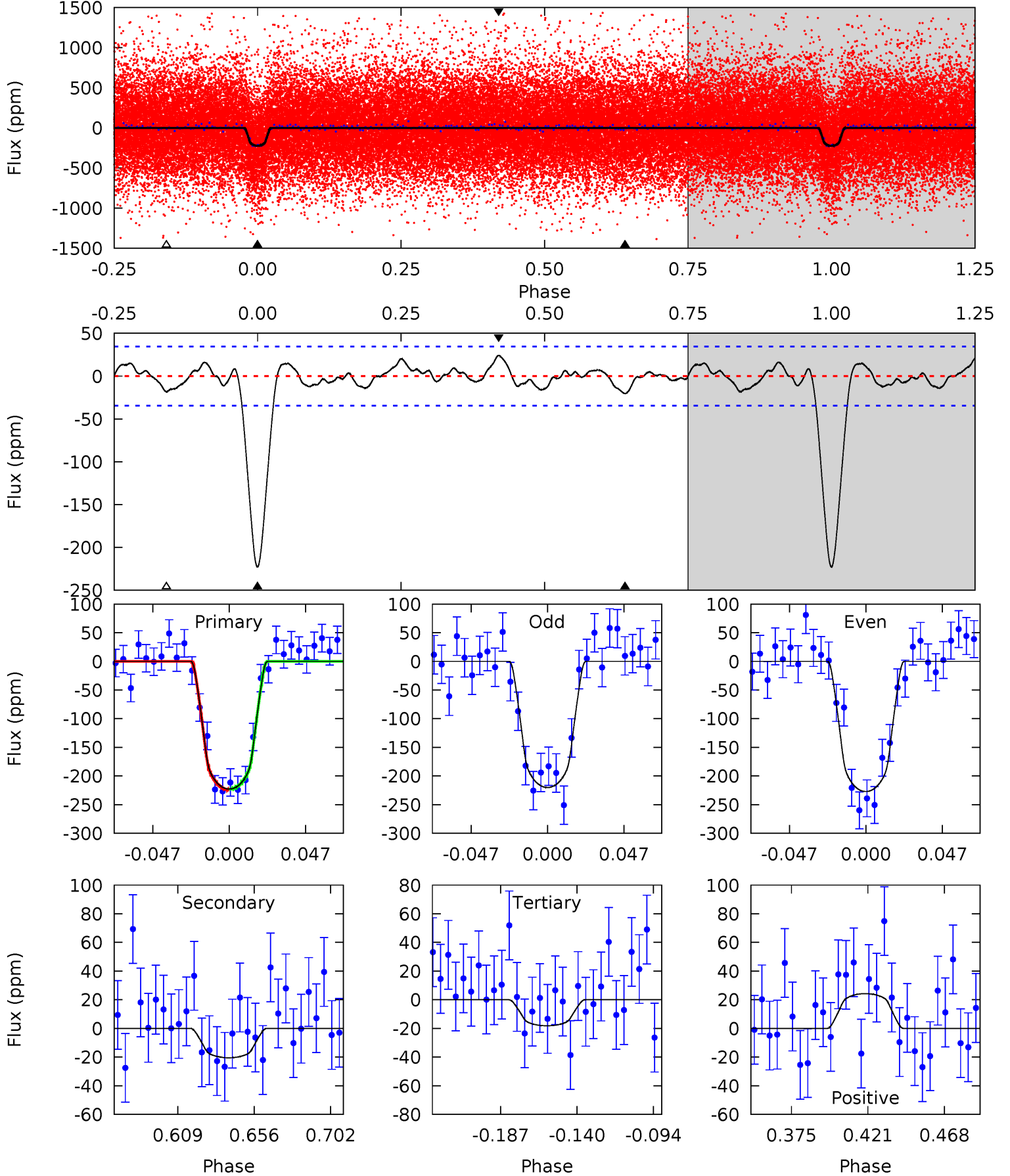
TCE 011493431-01 P= 2.343237 Days  $T_0=133.205572$  (BKJD)



# DV Model-Shift Uniqueness Test

011493431-01, P = 2.343248 Days, E = 130.859276 Days

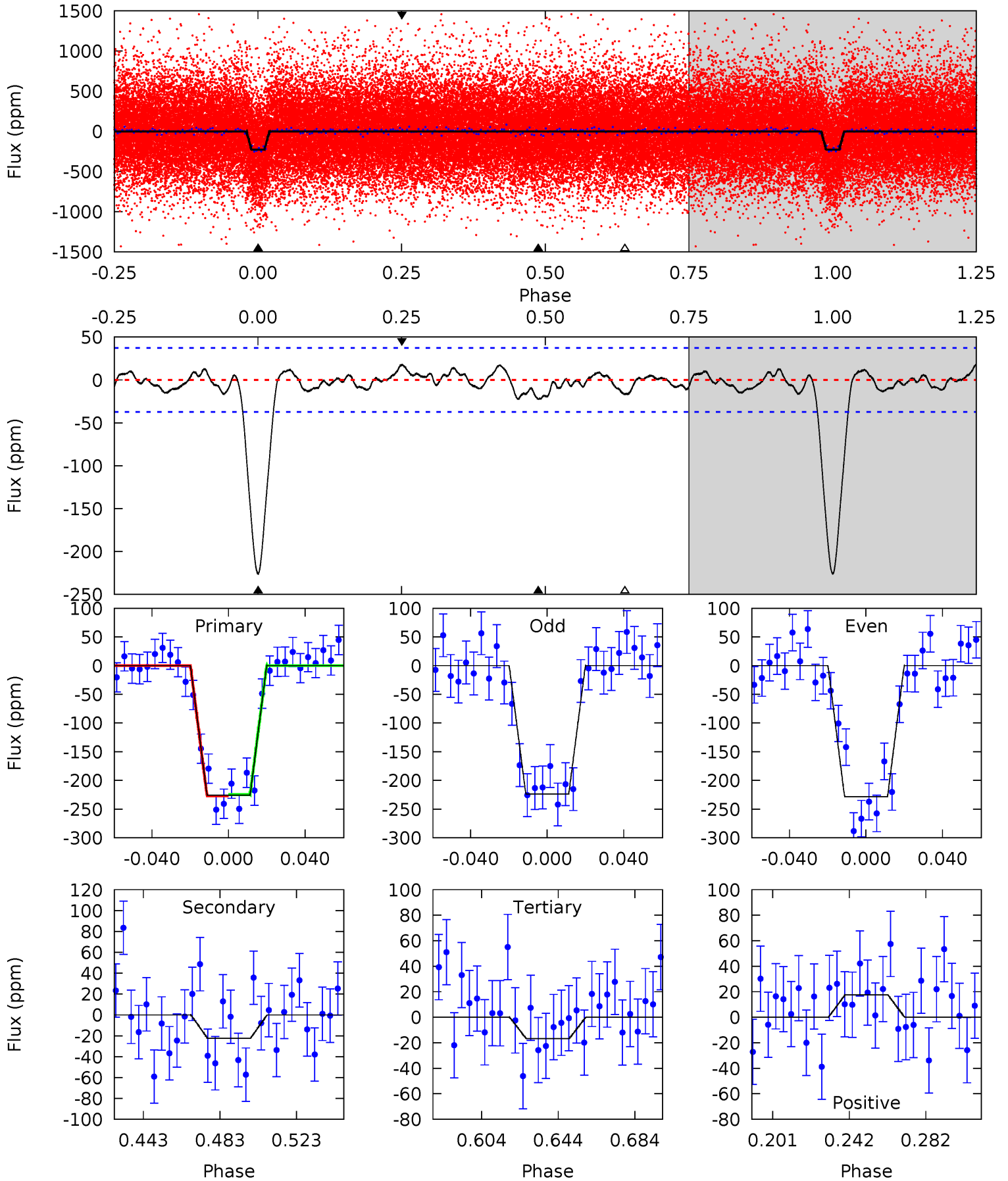
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.5	2.81	2.49	3.33	4.72	1.99	1.21	28.0	27.2	0.32	-0.52	0.48	0.94	0.10	0.08



# Alt Model-Shift Uniqueness Test

011493431-01, P = 2.343237 Days, E = 130.862335 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
28.8	2.85	2.14	2.23	4.75	2.05	0.98	26.6	26.6	0.72	0.62	0.32	1.04	0.07	0.14



### Stellar Parameters For KIC 011493431

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4798^{+76}_{-86}$	$4.533^{+0.060}_{-0.016}$	$0.160^{+0.150}_{-0.150}$	$0.782^{+0.027}_{-0.050}$	$0.761^{+0.047}_{-0.027}$	$2.242^{+0.517}_{-0.150}$
	+2%/-2%	+1%/-0%	+94%/-94%	+3%/-6%	+6%/-4%	+23%/-7%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 011493431-01 / KOI 1434.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-20 \pm 7$	$1.42^{+0.55}_{-0.54}$	$1465^{+29}_{-34}$	$3047^{+509}_{-350}$	$5.464^{+9.396}_{-3.010}$
Alt.	$-22 \pm 8$	$1.28^{+0.55}_{-0.53}$	$1462^{+31}_{-34}$	$3165^{+590}_{-359}$	$7.264^{+13.269}_{-4.092}$

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



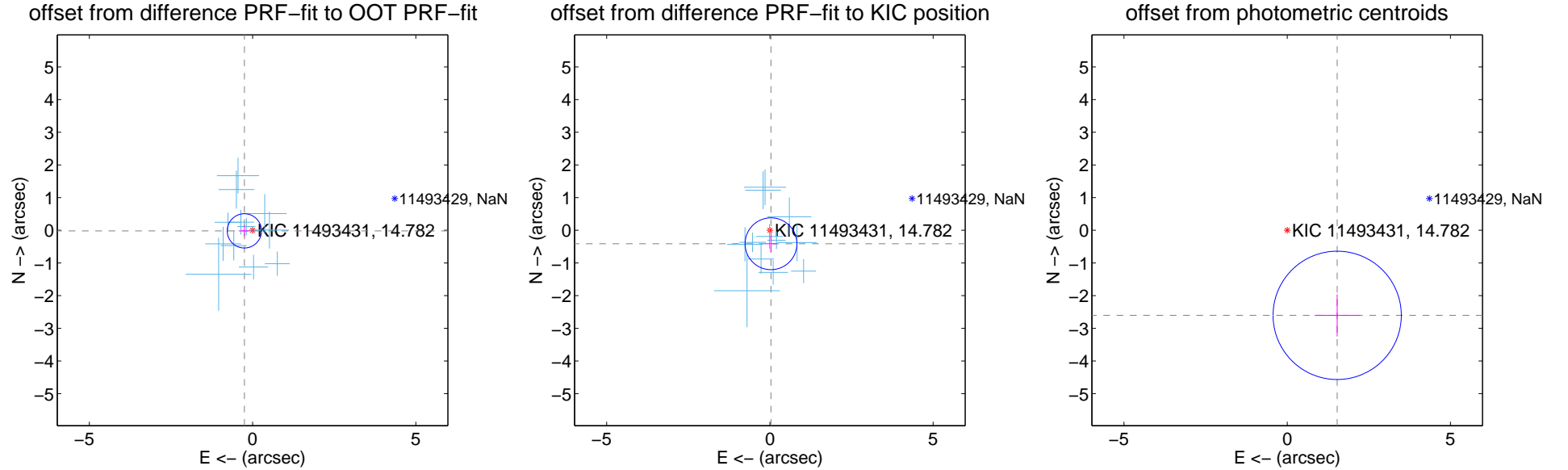
## DV Centroid Data

Supplemental centroid analysis for 011493431-01. Kepler magnitude: 14.78. Transit SNR 20.62

There are 12 quarters with good PRF difference image offsets

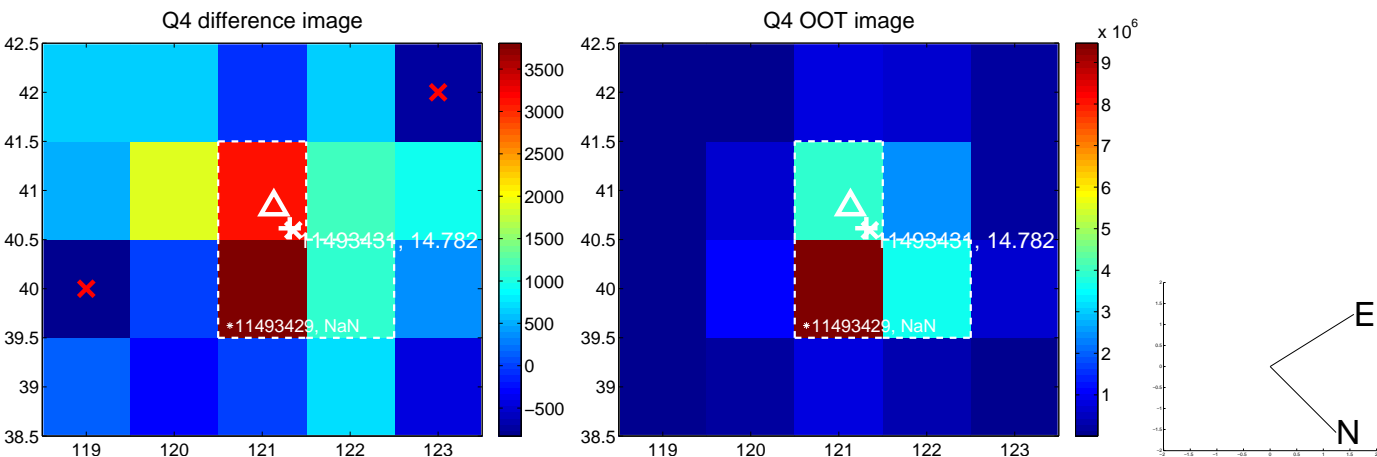
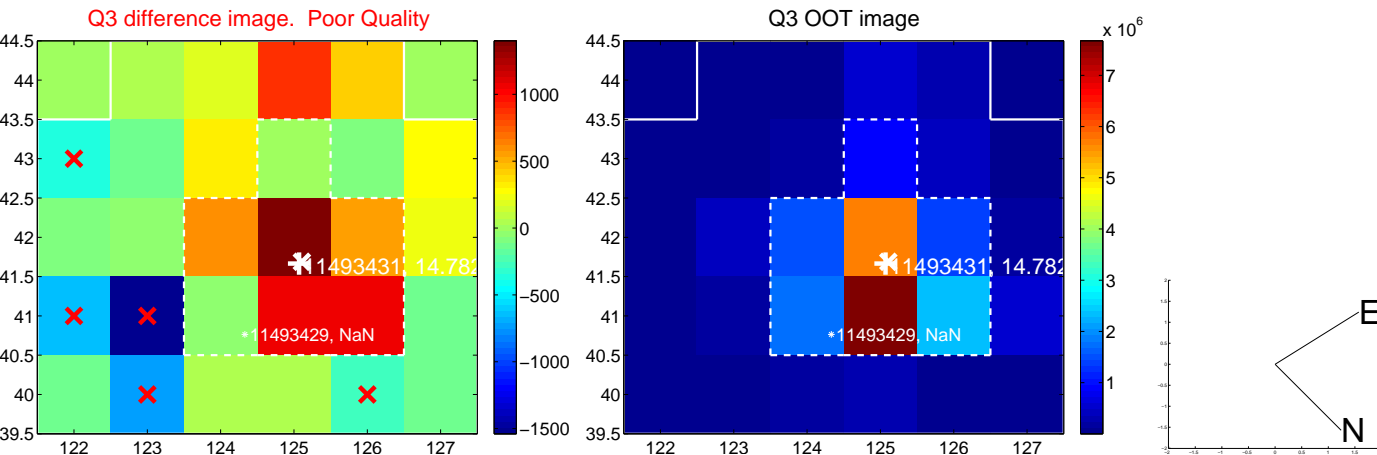
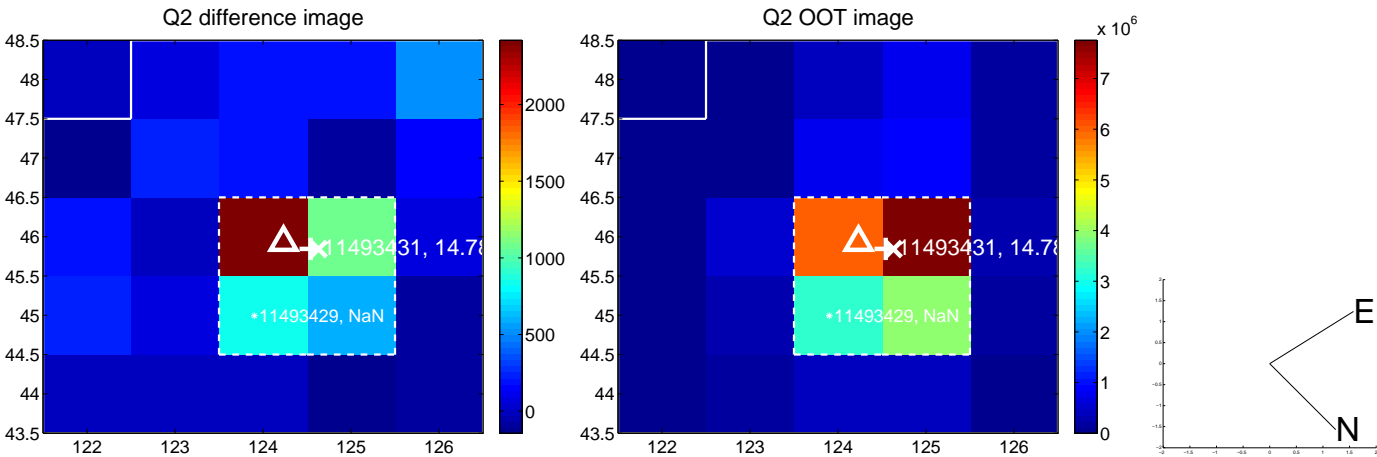
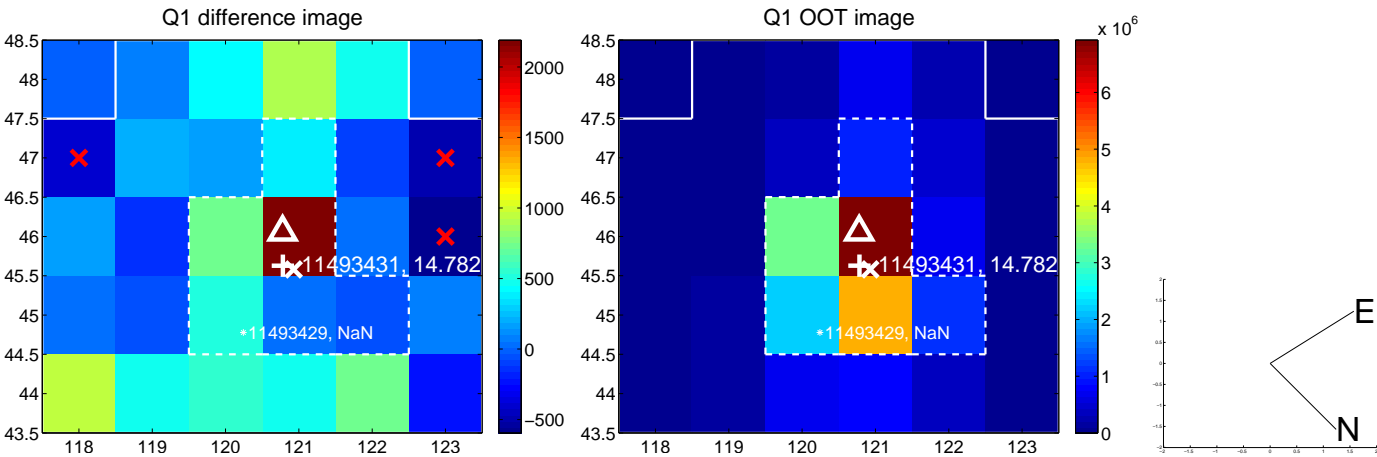
The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.252 \pm 0.175$	1.44	$0.252 \pm 0.175$	$-0.018 \pm 0.172$
PRF-fit source offset from KIC position	$0.413 \pm 0.264$	1.56	$-0.033 \pm 0.174$	$-0.412 \pm 0.265$
photometric centroid source offset	$3.02 \pm 0.65$	4.61	$-1.53 \pm 0.69$	$-2.60 \pm 0.64$

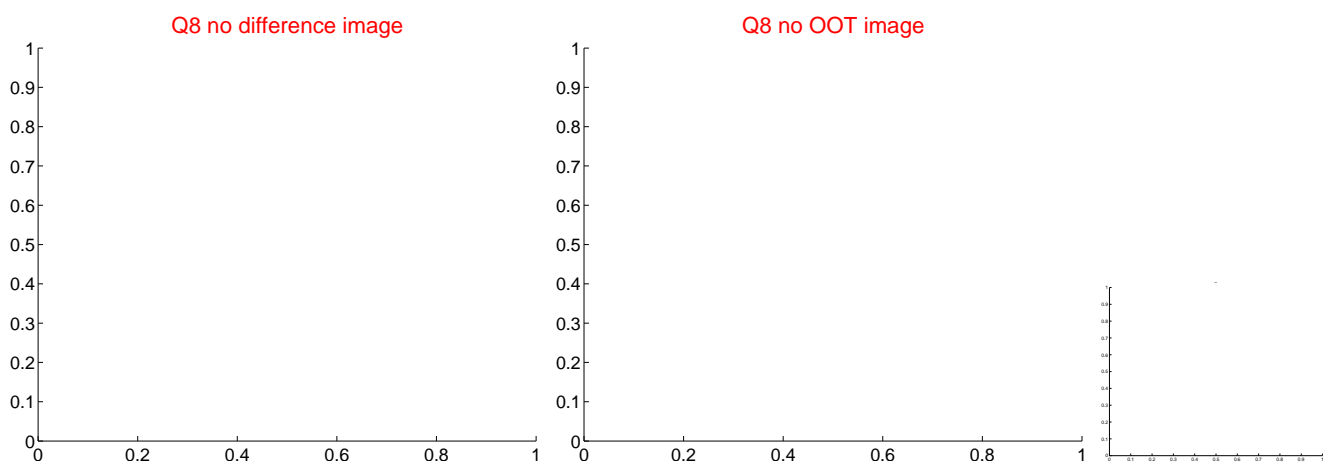
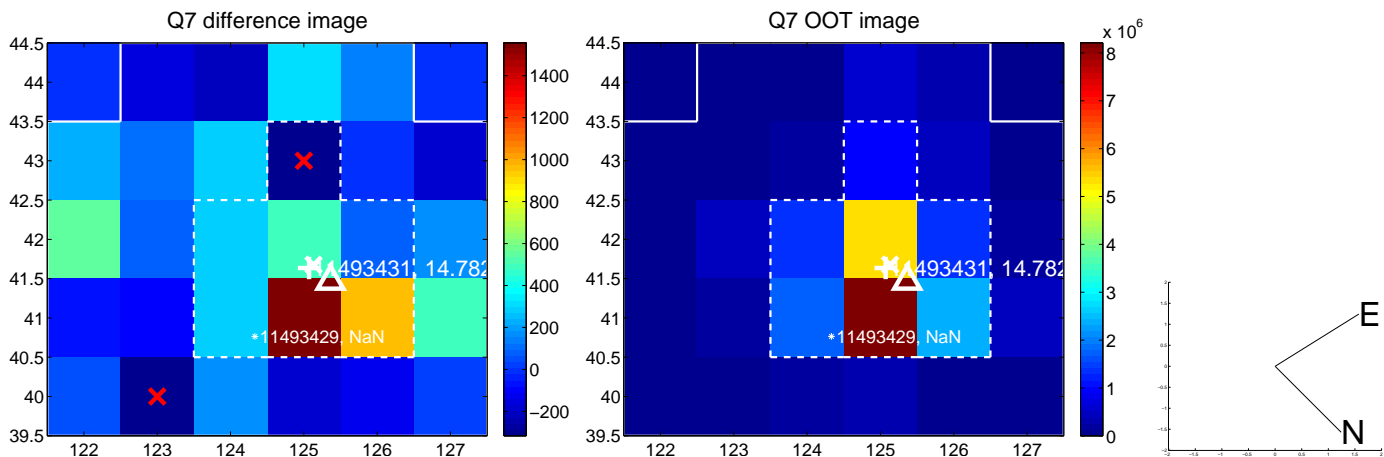
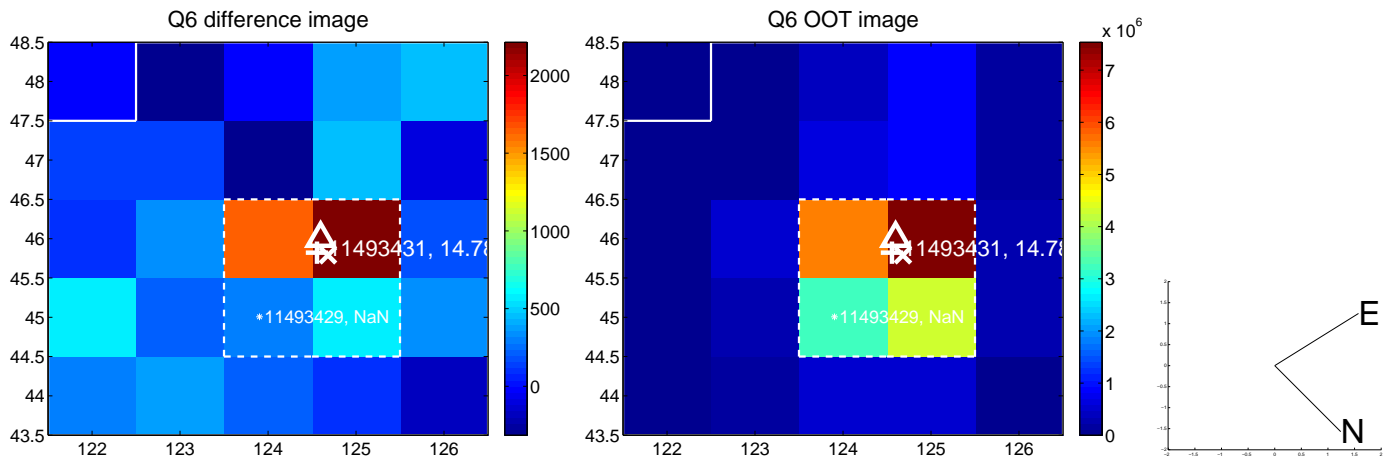
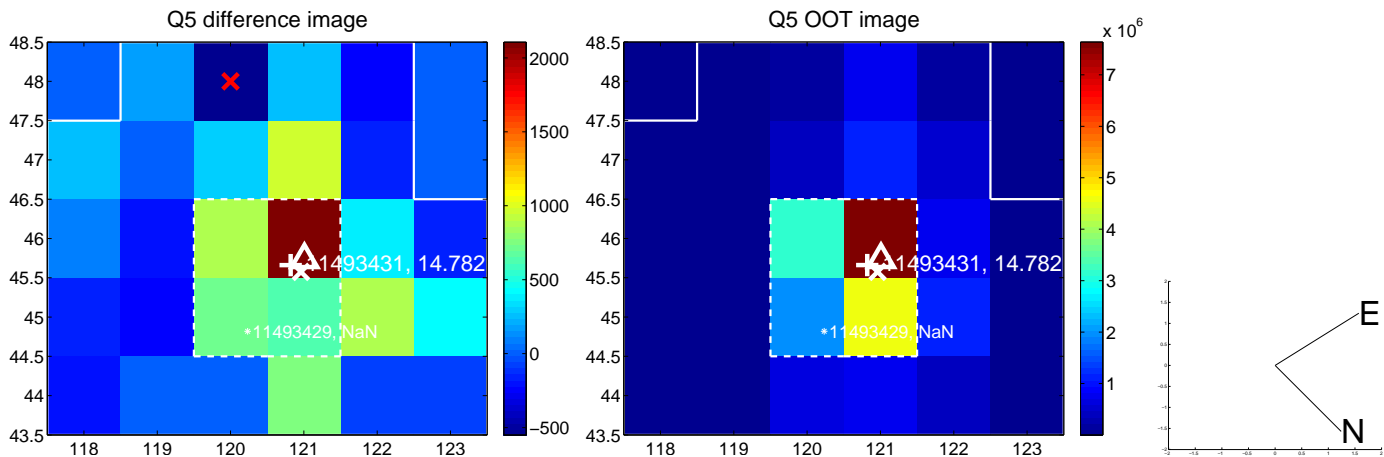


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

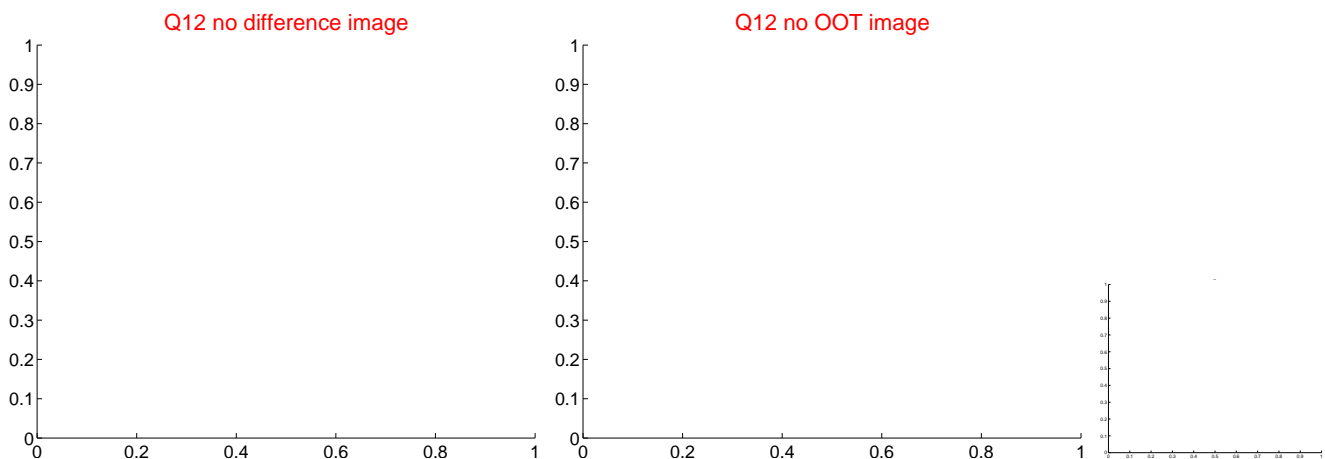
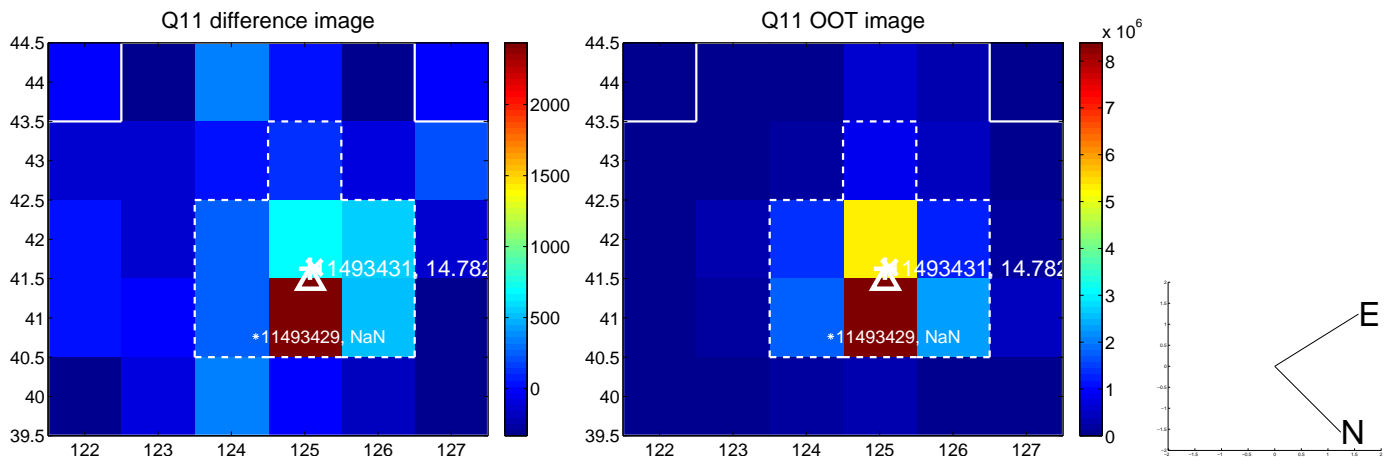
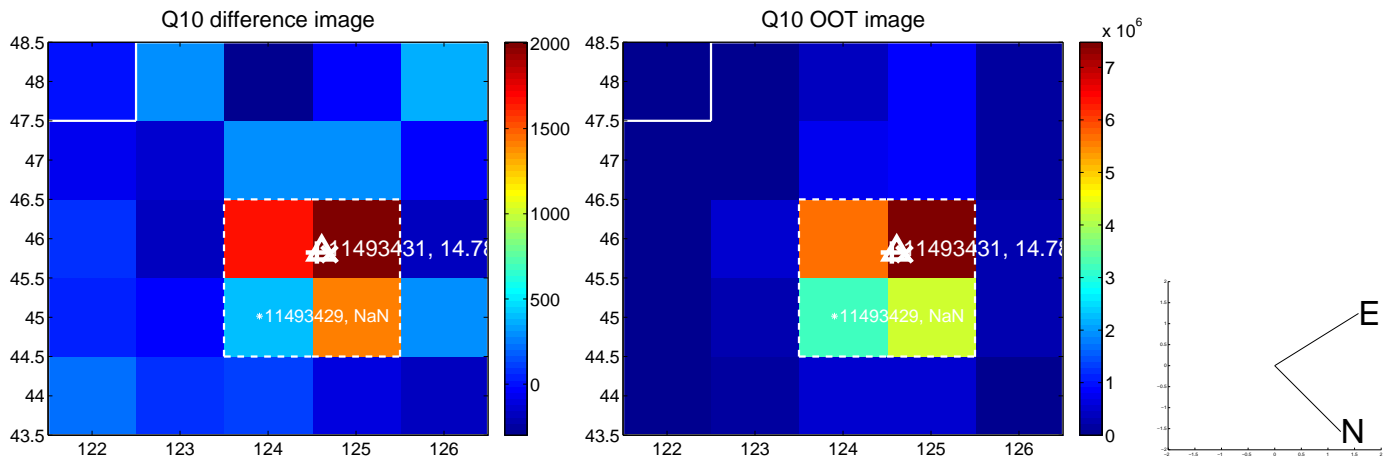
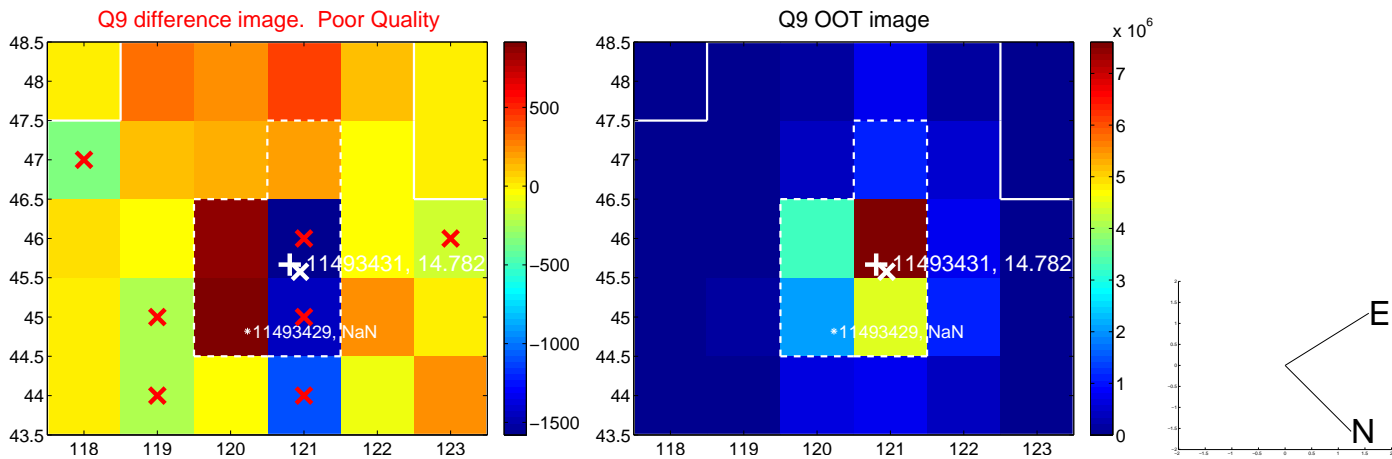
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



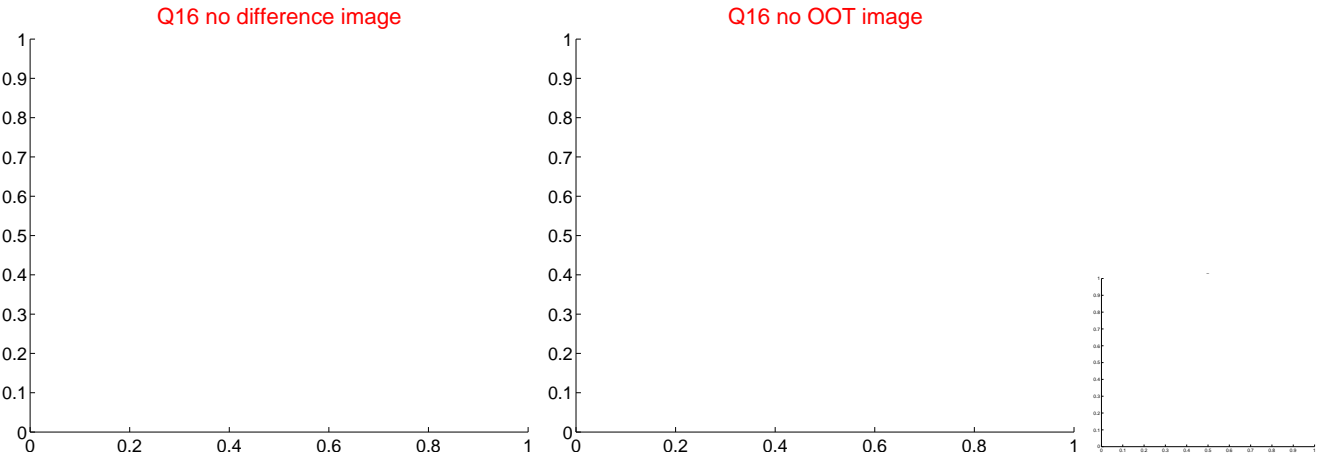
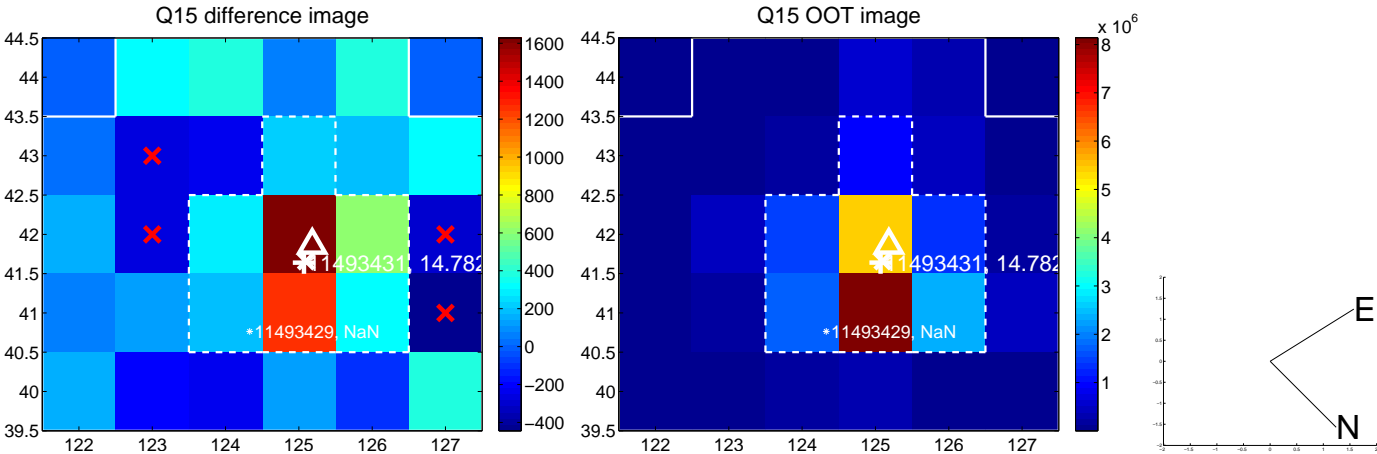
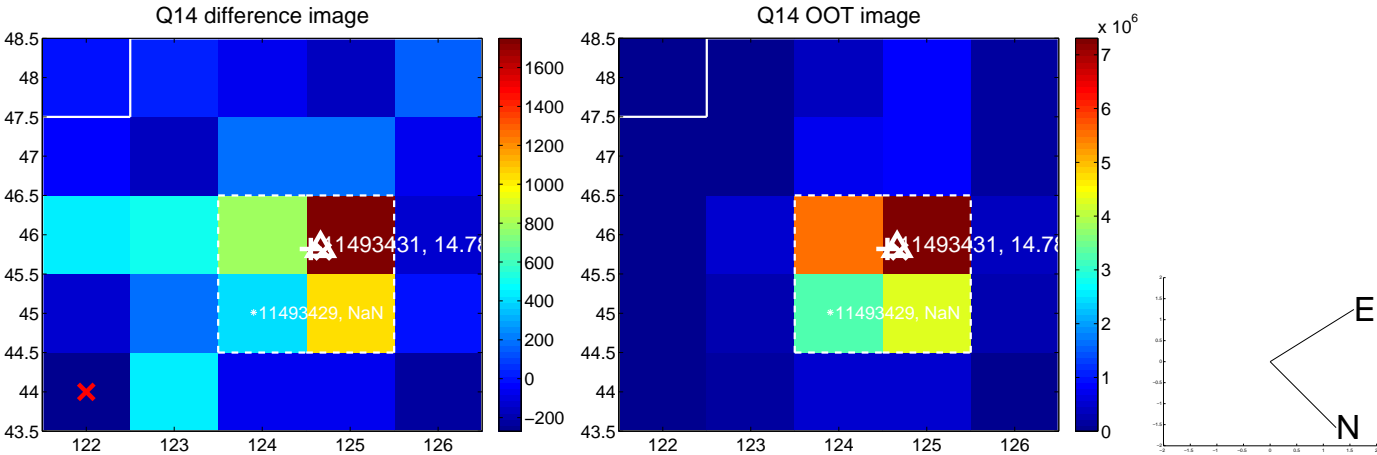
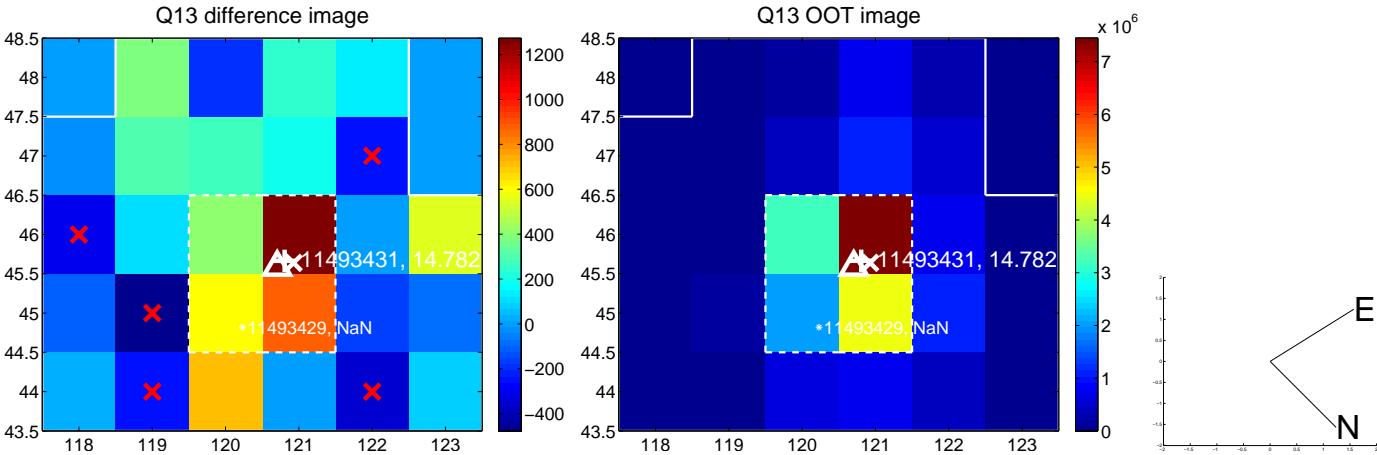
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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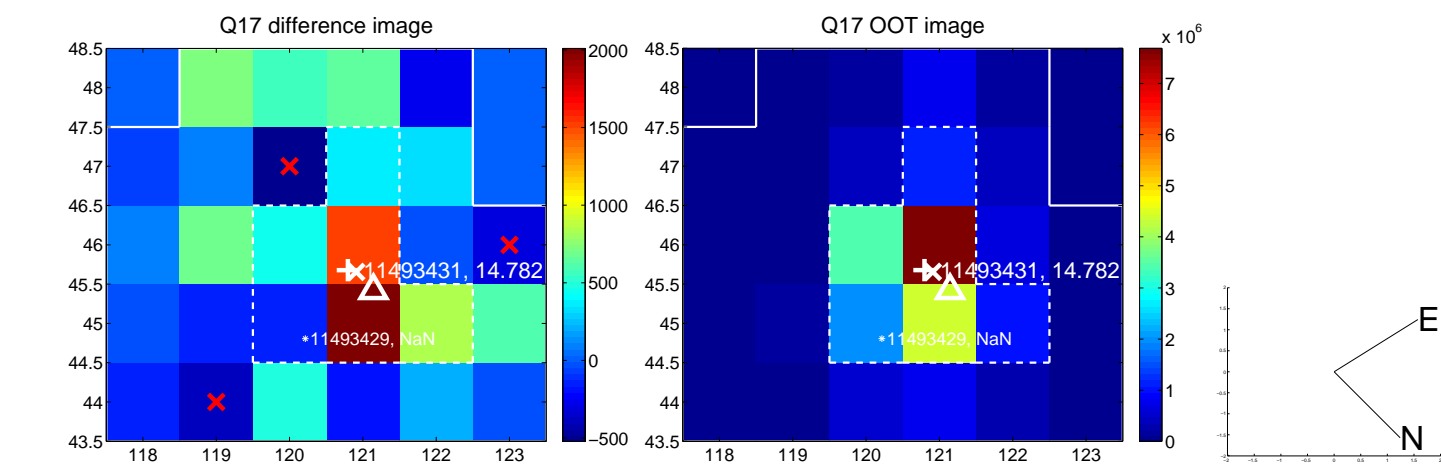


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

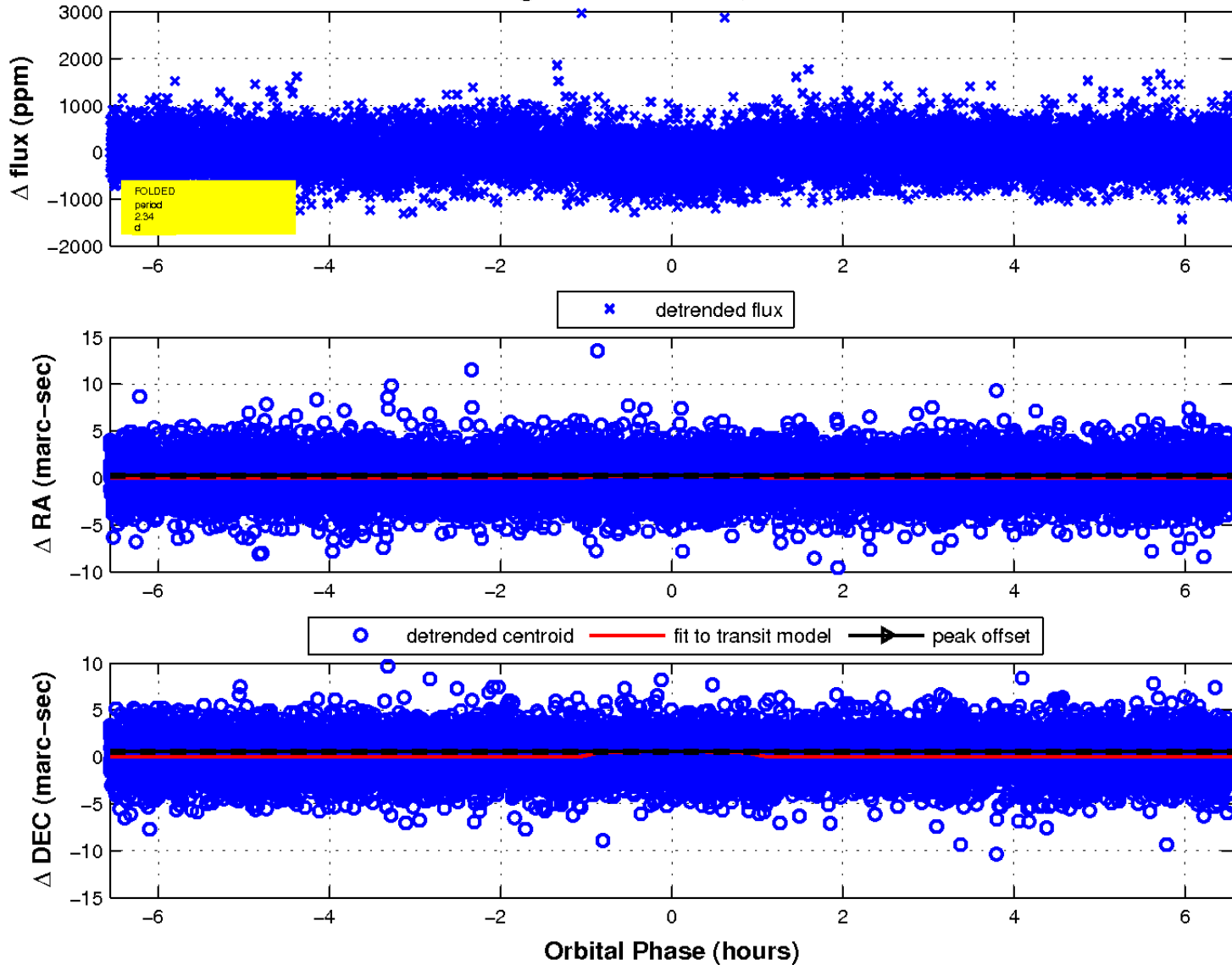




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

