

# KIC 009818983

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009818983-01	OBS	No	0.671550	131.919989	7.1	5.764	9.6	8.1	1.45	6765	0.46	16281.98

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009818983-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED

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

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

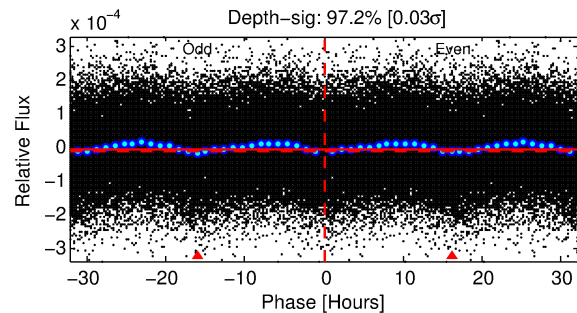
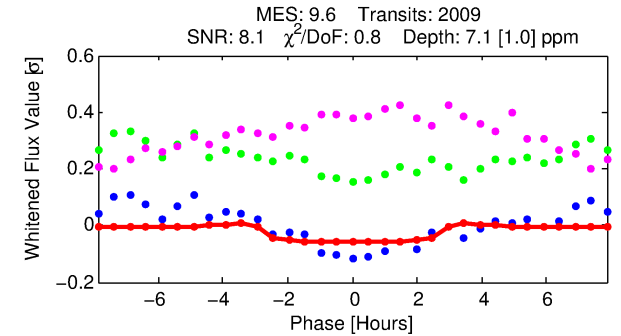
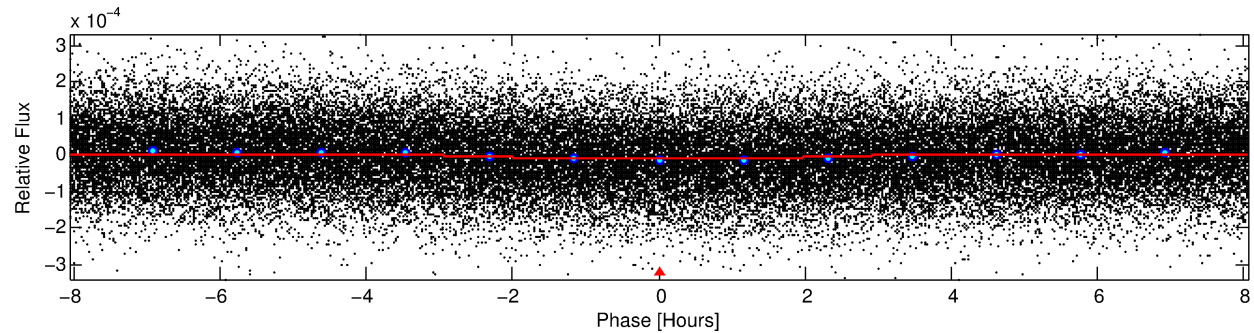
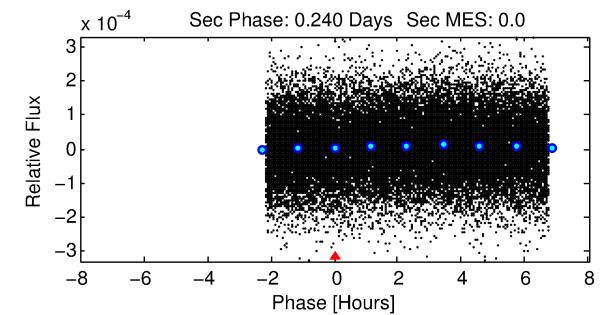
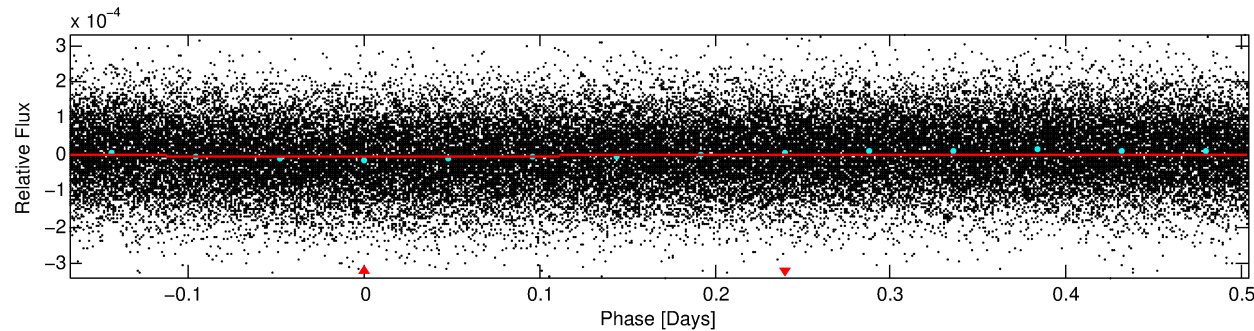
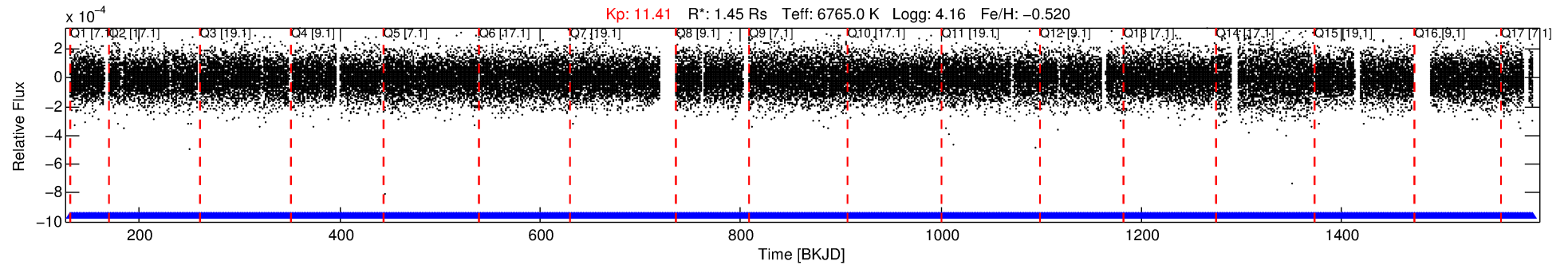
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009818983-01

No Significant Match Found

# DV One-Page Summary

KIC: 9818983 Candidate: 1 of 1 Period: 0.672 d



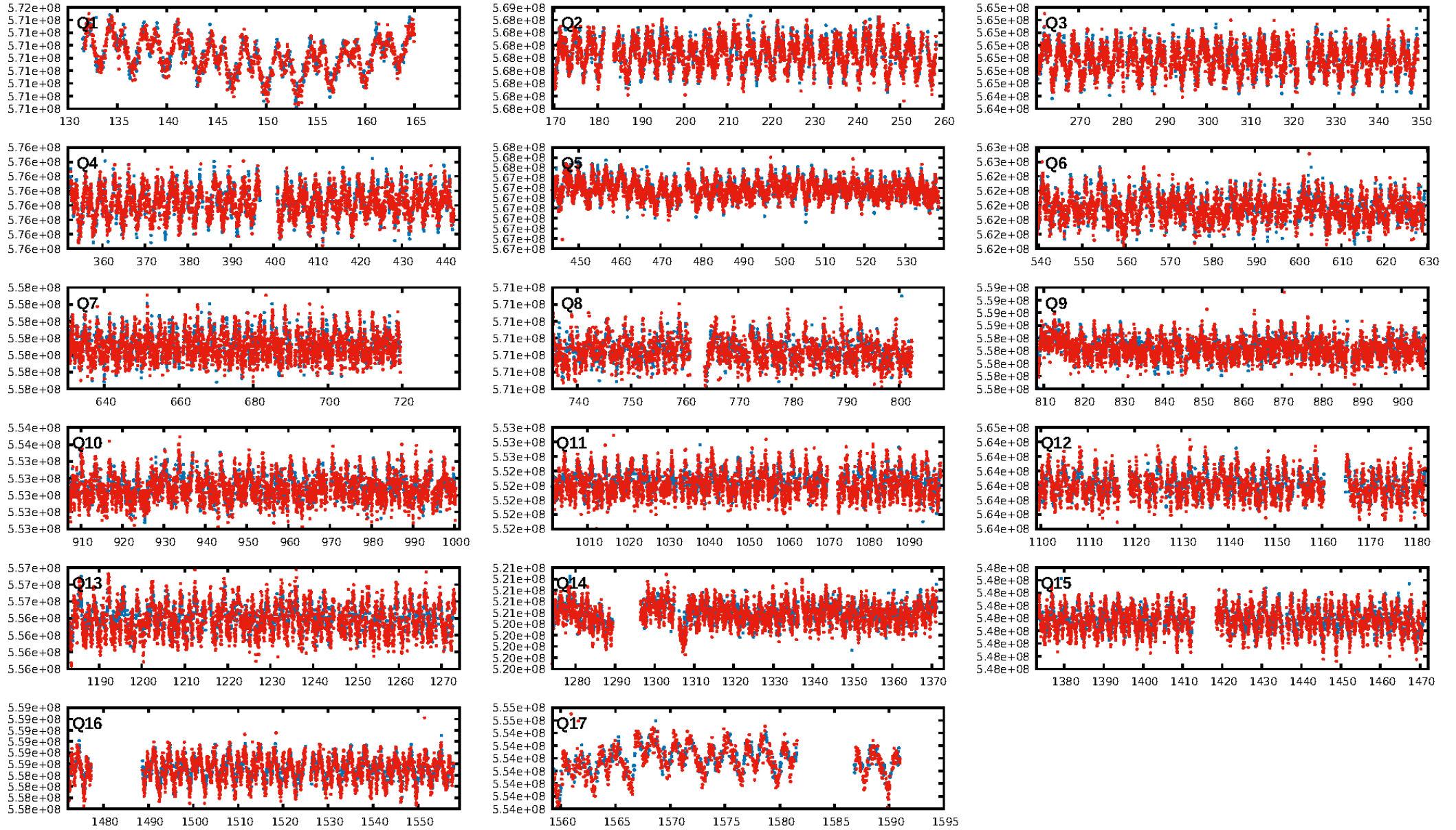
## DV Fit Results:

Period = 0.67155 [0.00002] d  
 Epoch = 131.9200 [0.0057] BKJD  
 Rp/R\* = 0.0029 [0.0019]  
 a/R\* = 1.02 [0.17]  
 b = 0.92 [0.70]  
 Seff = 16281.98 [6571.75]  
 Teq = 2880 [291] K  
 Rp = 0.46 [0.32] Re  
 a = 0.0155 [0.0037] AU  
 Ag = N/A  
 Tefp = N/A

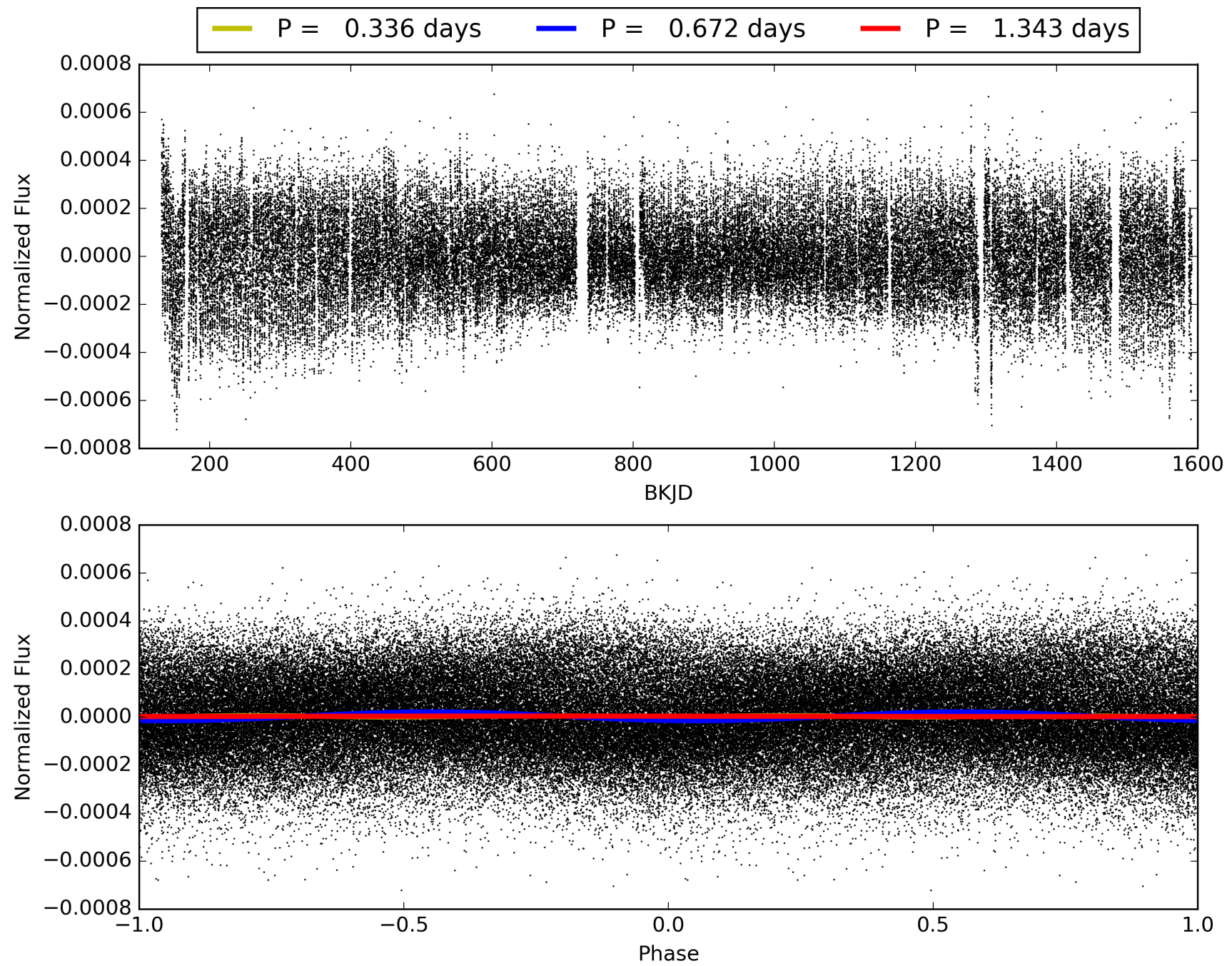
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
 LongPeriod-sig: N/A  
 ModelChiSquare2-sig: N/A  
 ModelChiSquareGoF-sig: N/A  
 Bootstrap-pfa: N/A  
 RollingBand-fgt: 1.00 [1920/1920]  
 GhostDiagnostic-chr: 3.594  
 Centroid-sig: 20.5%  
 Centroid-so: 0.712 arcsec [1.04σ]  
 OotOffset-rm: N/A  
 KicOffset-rm: N/A  
 OotOffset-st: 0/0/0 [0]  
 KicOffset-st: 0/0/0 [0]  
 DiffImageQuality-fgm: N/A  
 DiffImageOverlap-fno: 1.00 [17/17]

# TCE 009818983-01, PDC Light Curves



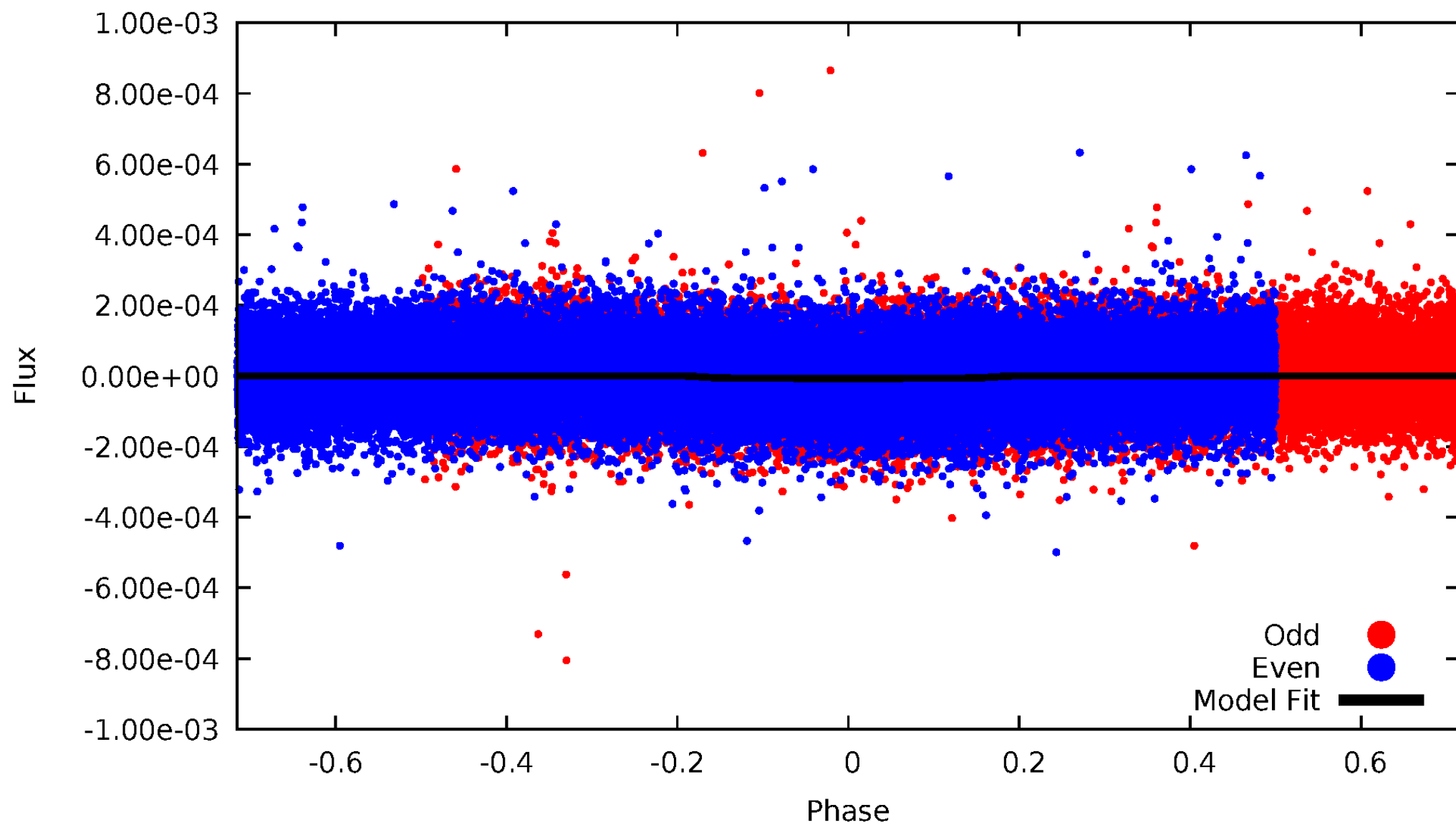
TCE 009818983-01





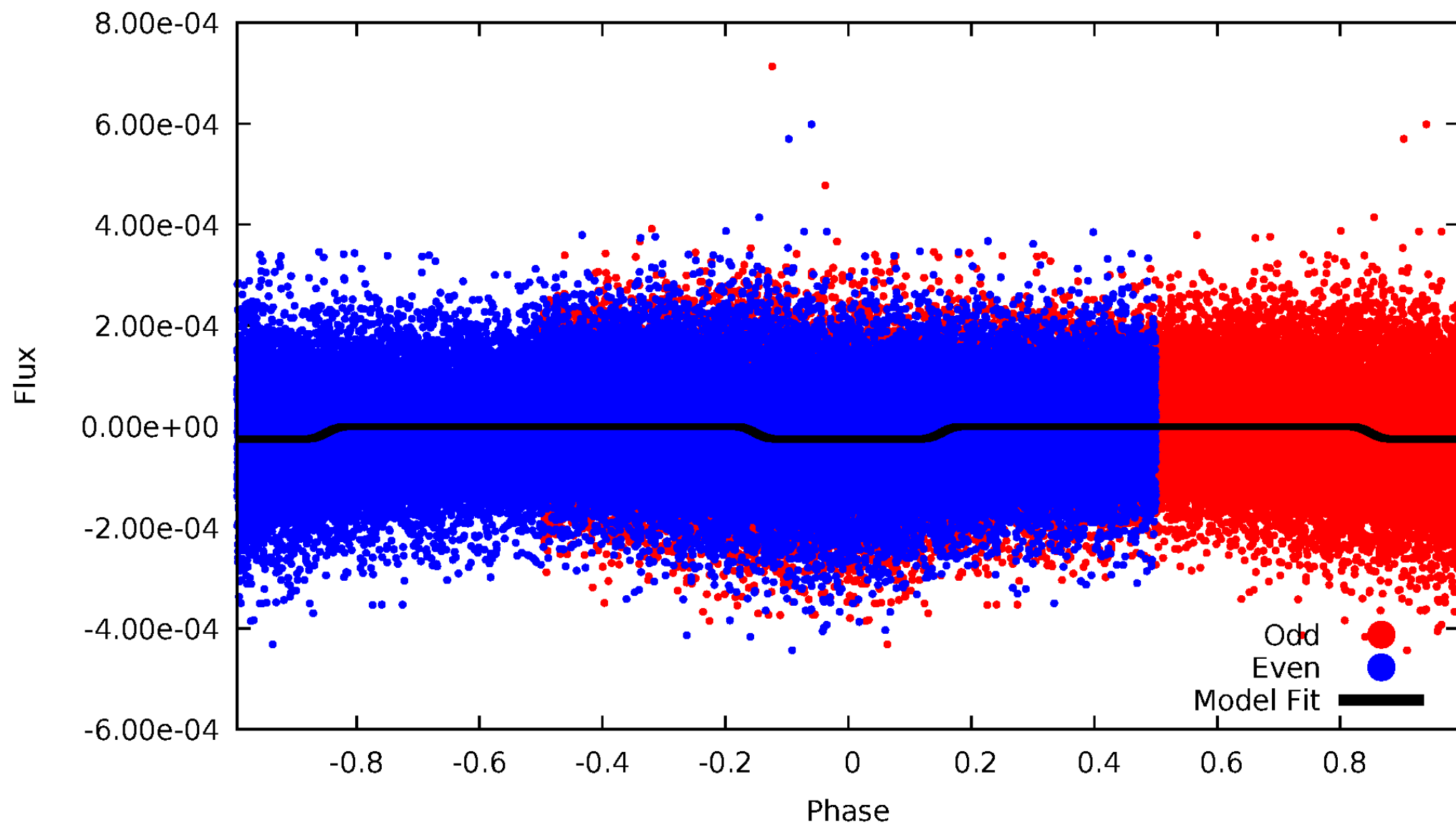
# DV Odd/Even

TCE 009818983-01



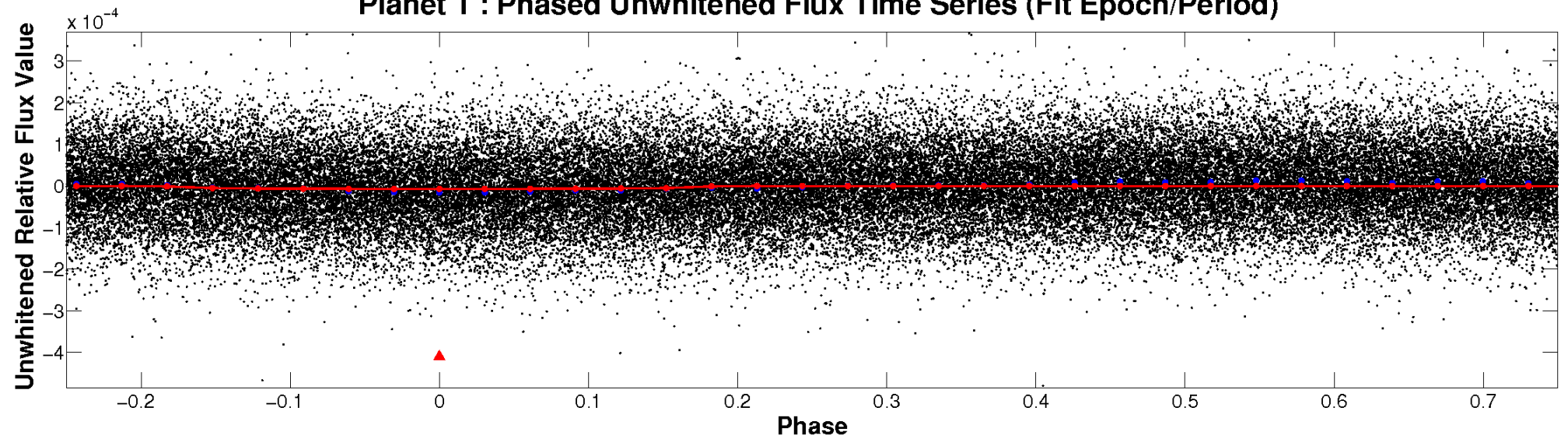
# ALT Odd/Even

TCE 009818983-01

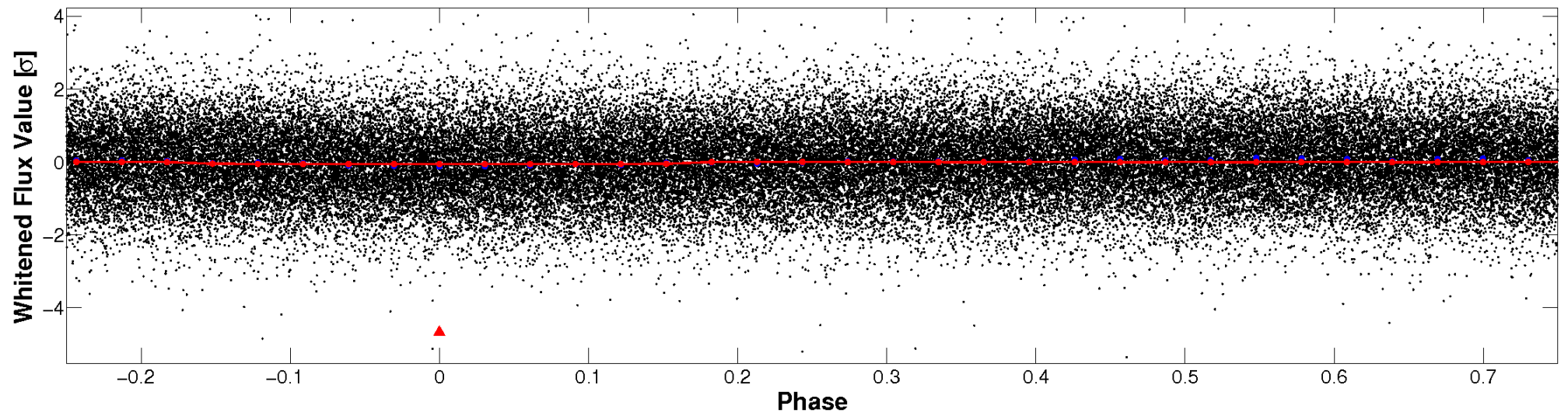


# Non-Whitened Vs. Whitened Light Curve

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

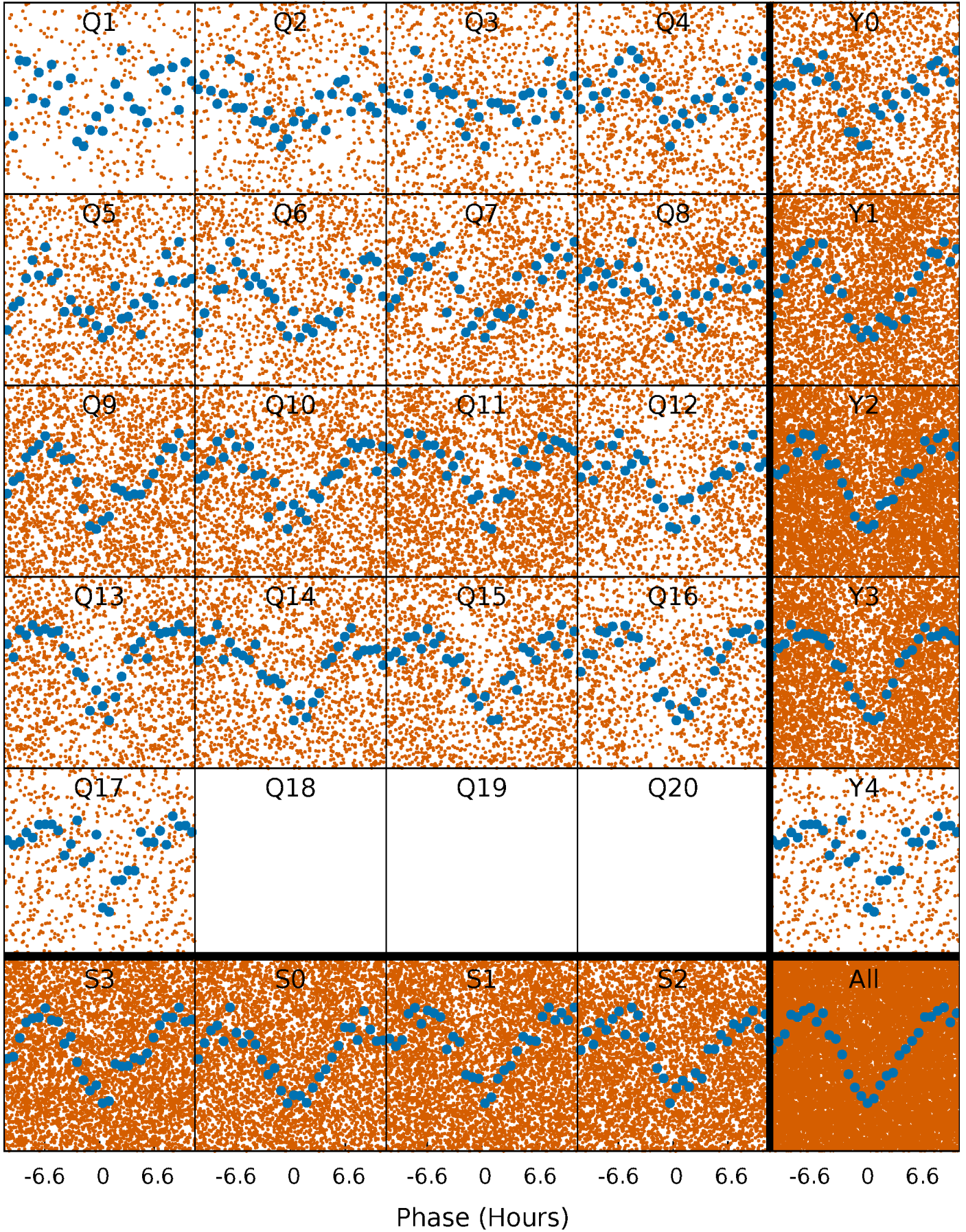


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

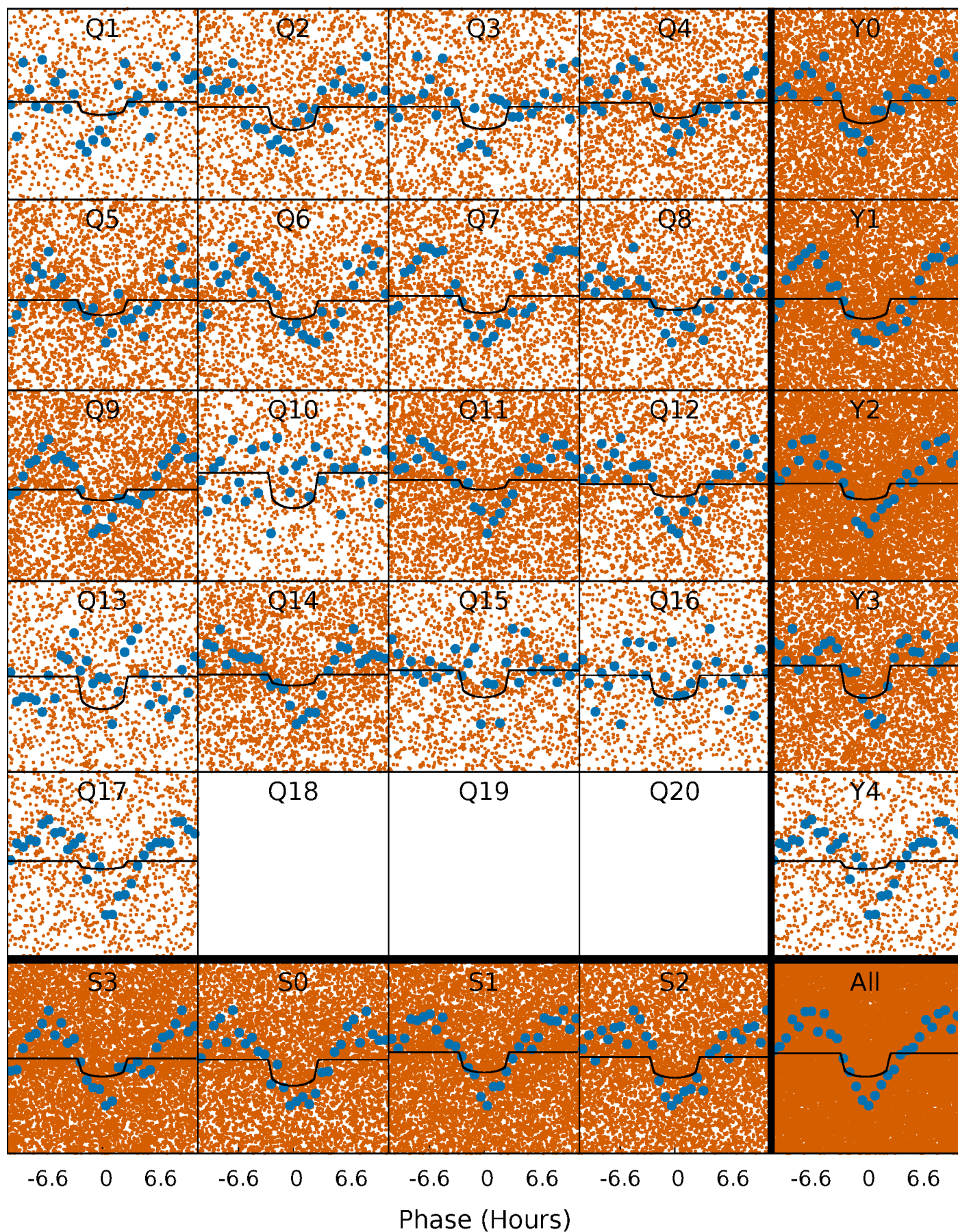
TCE 009818983-01   P= 0.671550 Days    $T_0=131.919989$  (BKJD)





# DV Quarter-Phased Transit Curves

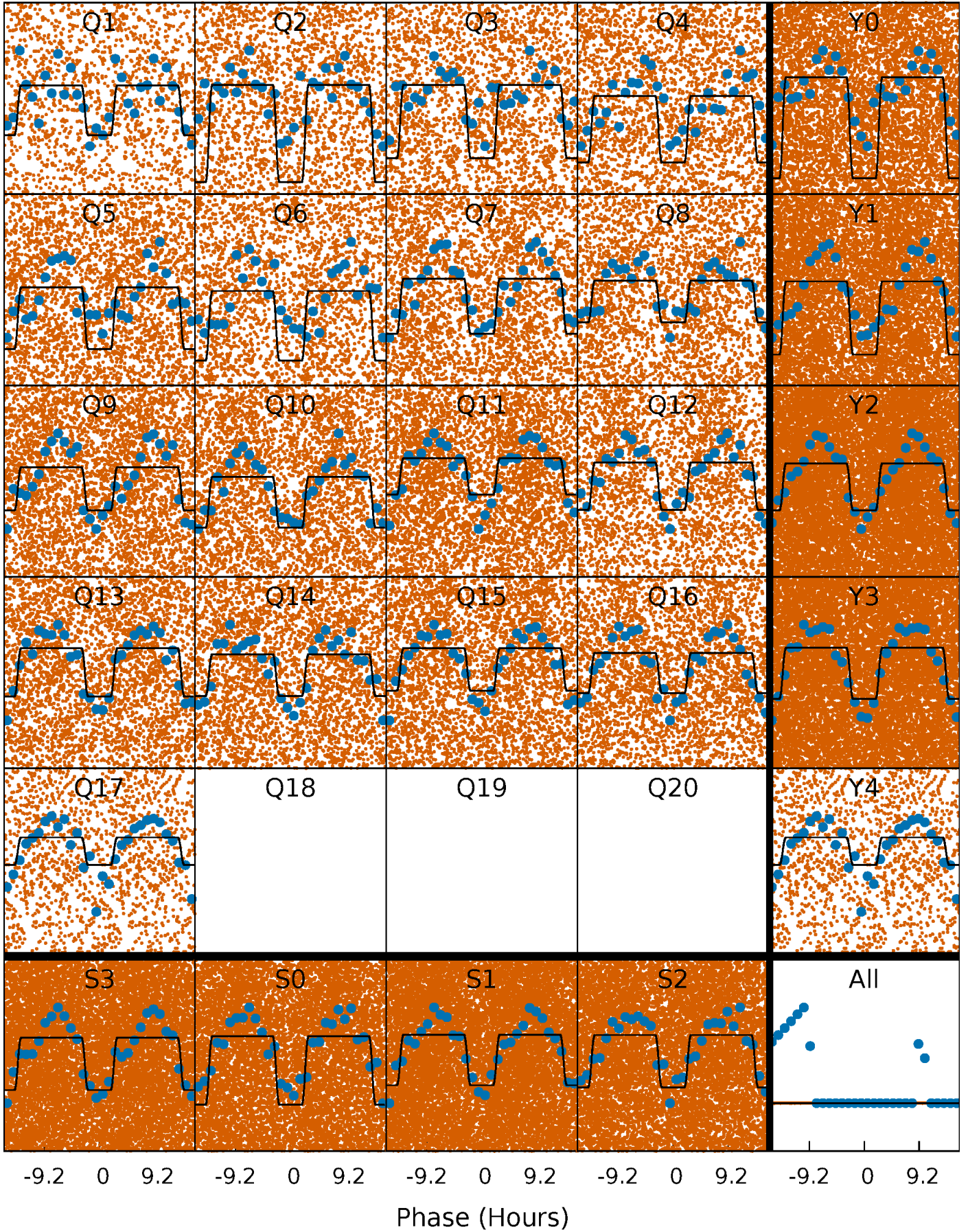
TCE 009818983-01 P= 0.671550 Days  $T_0=131.919989$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

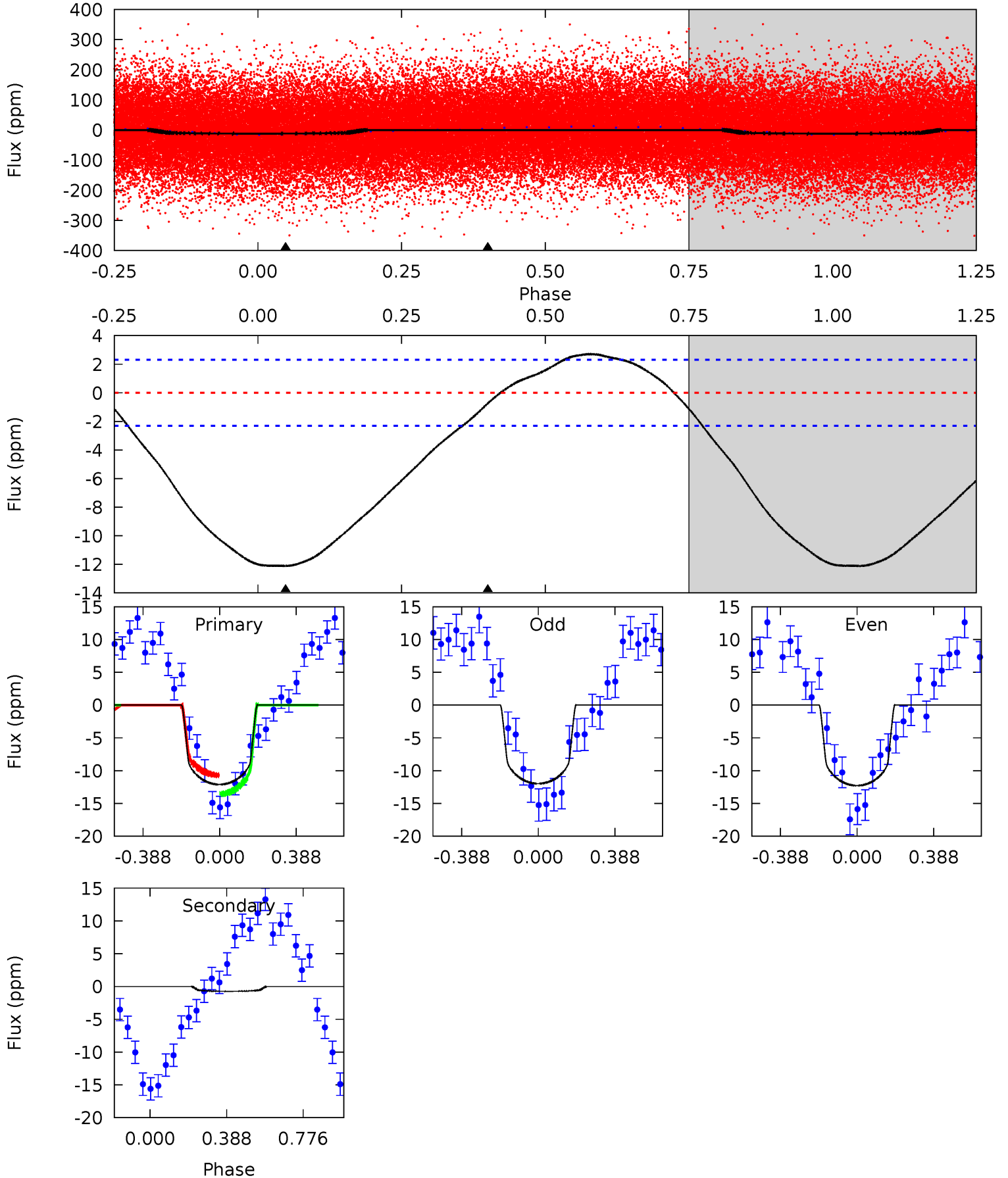
TCE 009818983-01 P= 0.671586 Days  $T_0=131.893821$  (BKJD)



# DV Model-Shift Uniqueness Test

009818983-01, P = 0.671550 Days, E = 131.248439 Days

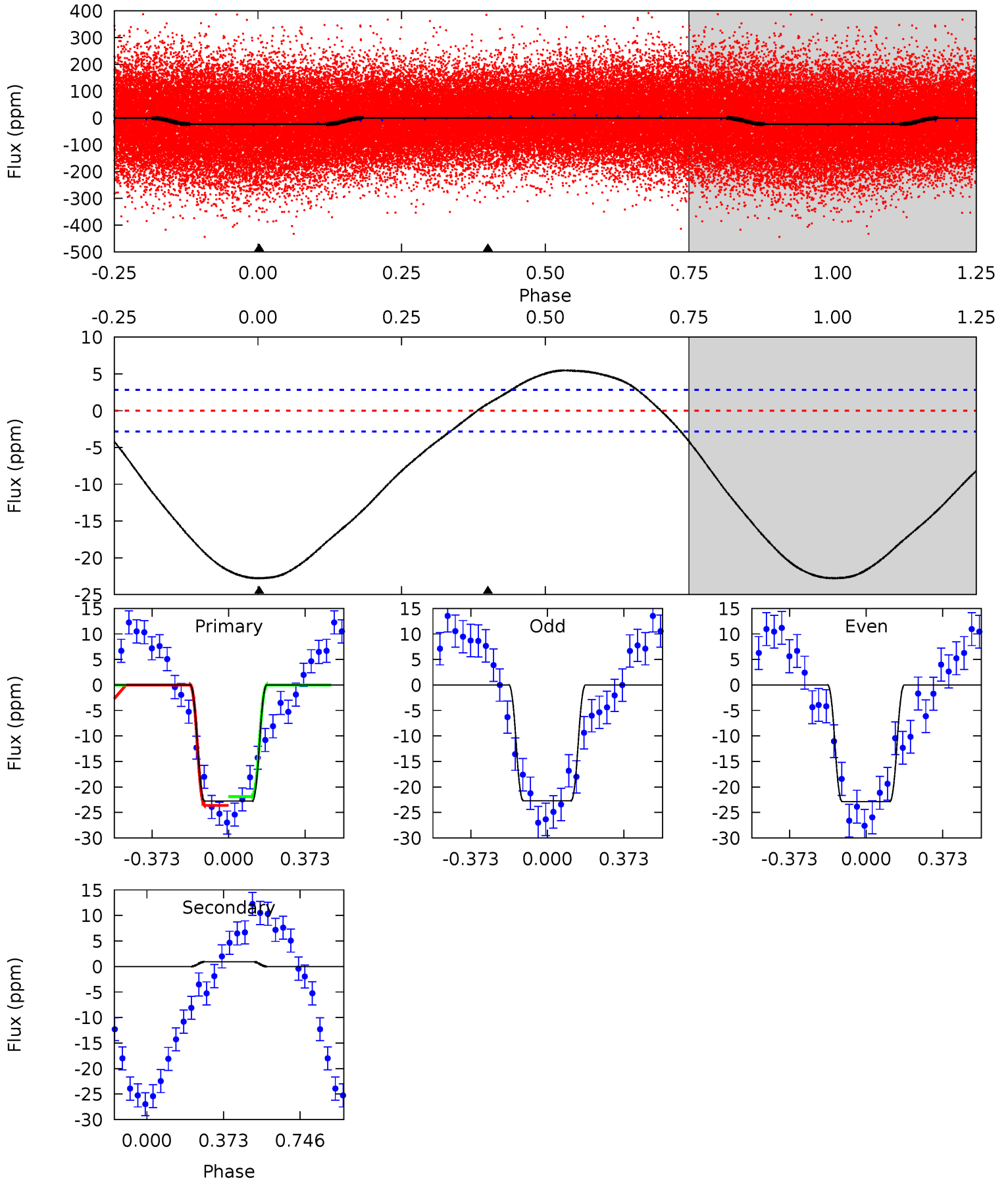
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.4	1.38	0	0	4.27	0.86	2.15	22.4	22.4	1.38	1.38	0.27	1.05	0.18	2.69



# Alt Model-Shift Uniqueness Test

009818983-01, P = 0.671586 Days, E = 131.222235 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
34.4	-1.40	0	0	4.28	0.89	3.41	34.4	34.4	-1.40	-1.40	0.13	0.96	0.19	1.36





### Stellar Parameters For KIC 009818983

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6765^{+214}_{-285}$	$4.162^{+0.209}_{-0.171}$	$-0.520^{+0.250}_{-0.300}$	$1.448^{+0.386}_{-0.386}$	$1.111^{+0.178}_{-0.134}$	$0.516^{+0.603}_{-0.242}$
	+3%/-4%	+5%/-4%	+48%/-58%	+27%/-27%	+16%/-12%	+117%/-47%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 009818983-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-1\pm 1$	$0.48^{+0.30}_{-0.27}$	$4011^{+304}_{-297}$	$3040^{+2177}_{-6579}$	$0.397^{+1.770}_{-0.315}$
Alt.	$1\pm 1$	$0.78^{+0.34}_{-0.30}$	$4002^{+298}_{-298}$	$-4046^{+312}_{-446}$	$-0.186^{+0.133}_{-0.425}$

$T_{max}$  = 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

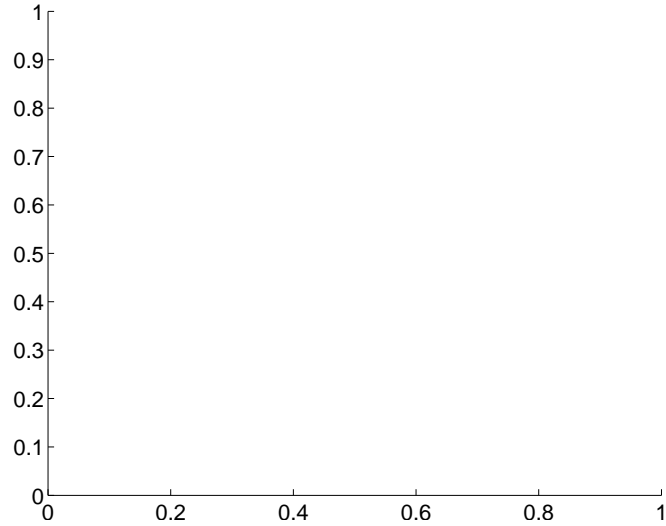
Supplemental centroid analysis for 009818983-01. **Kepler magnitude: 11.41.** Transit SNR 8.13

**There are 0 quarters with good PRF difference image offsets**

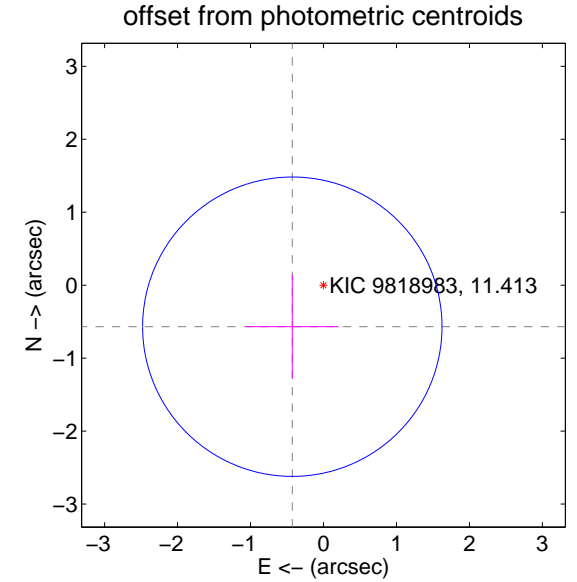
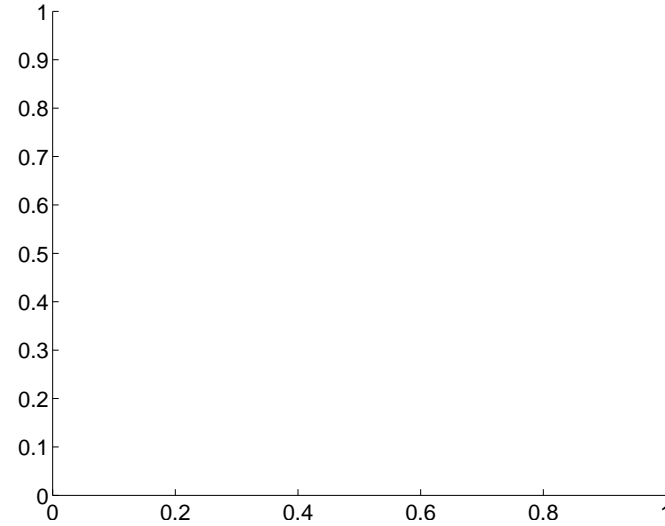
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$0.71 \pm 0.68$	1.04	$0.43 \pm 0.63$	$-0.57 \pm 0.71$

There is no PRF-fit offset from OOT-fit

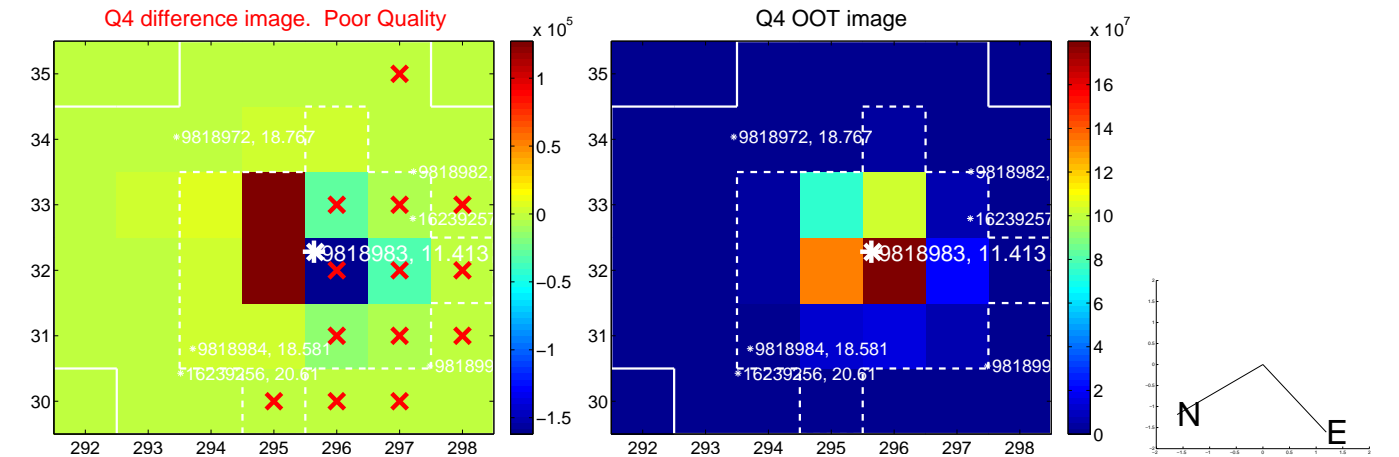
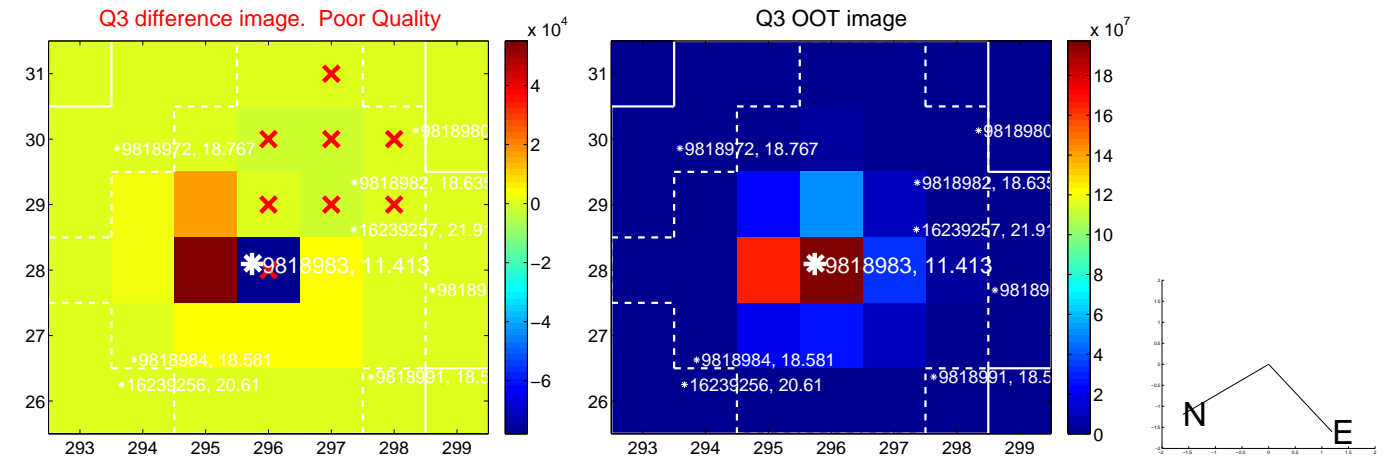
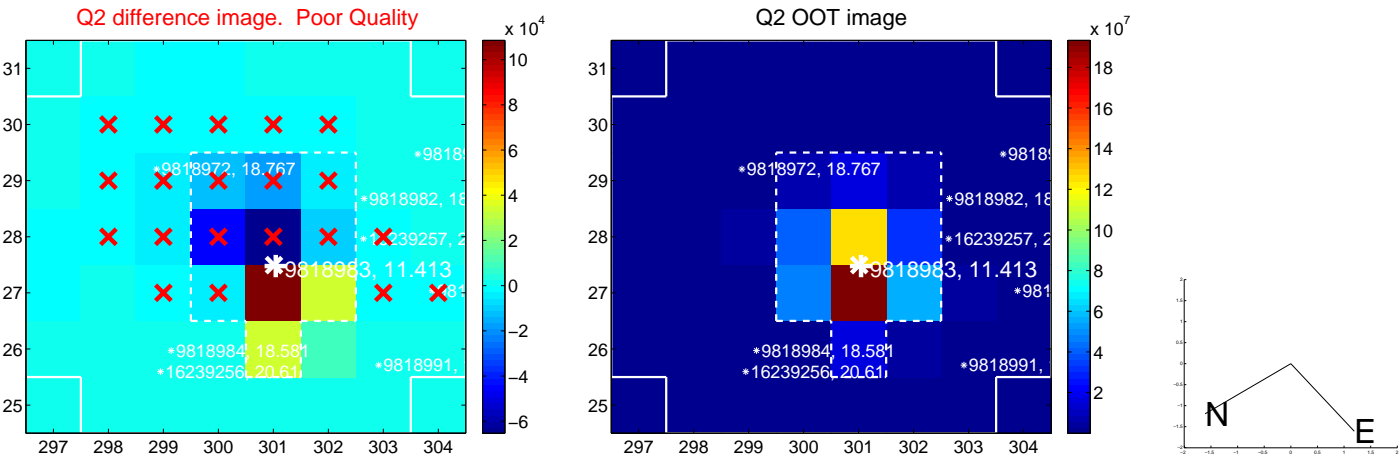
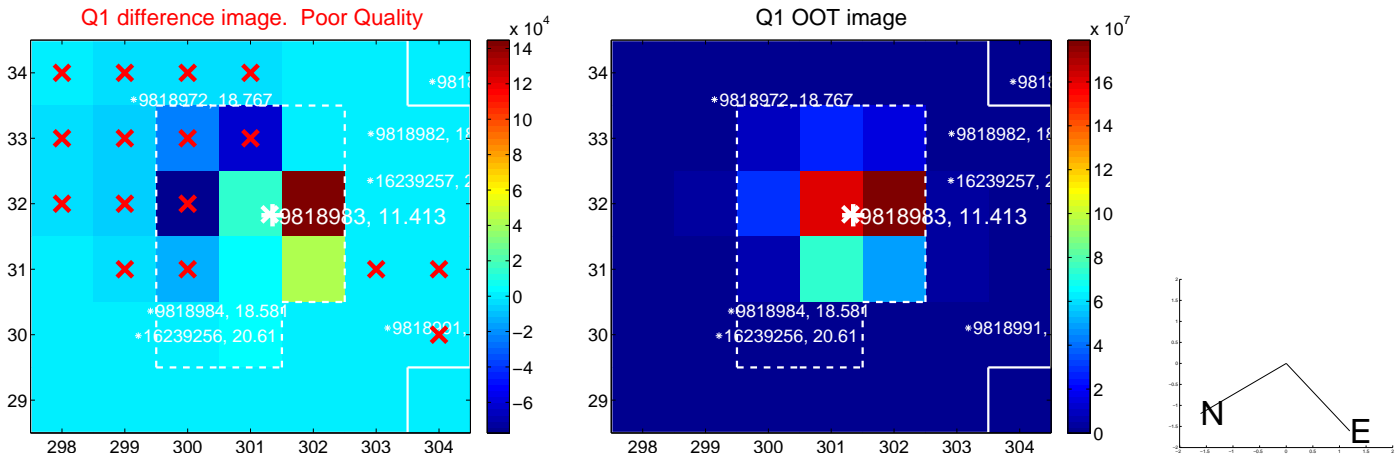


There is no PRF-fit offset from KIC

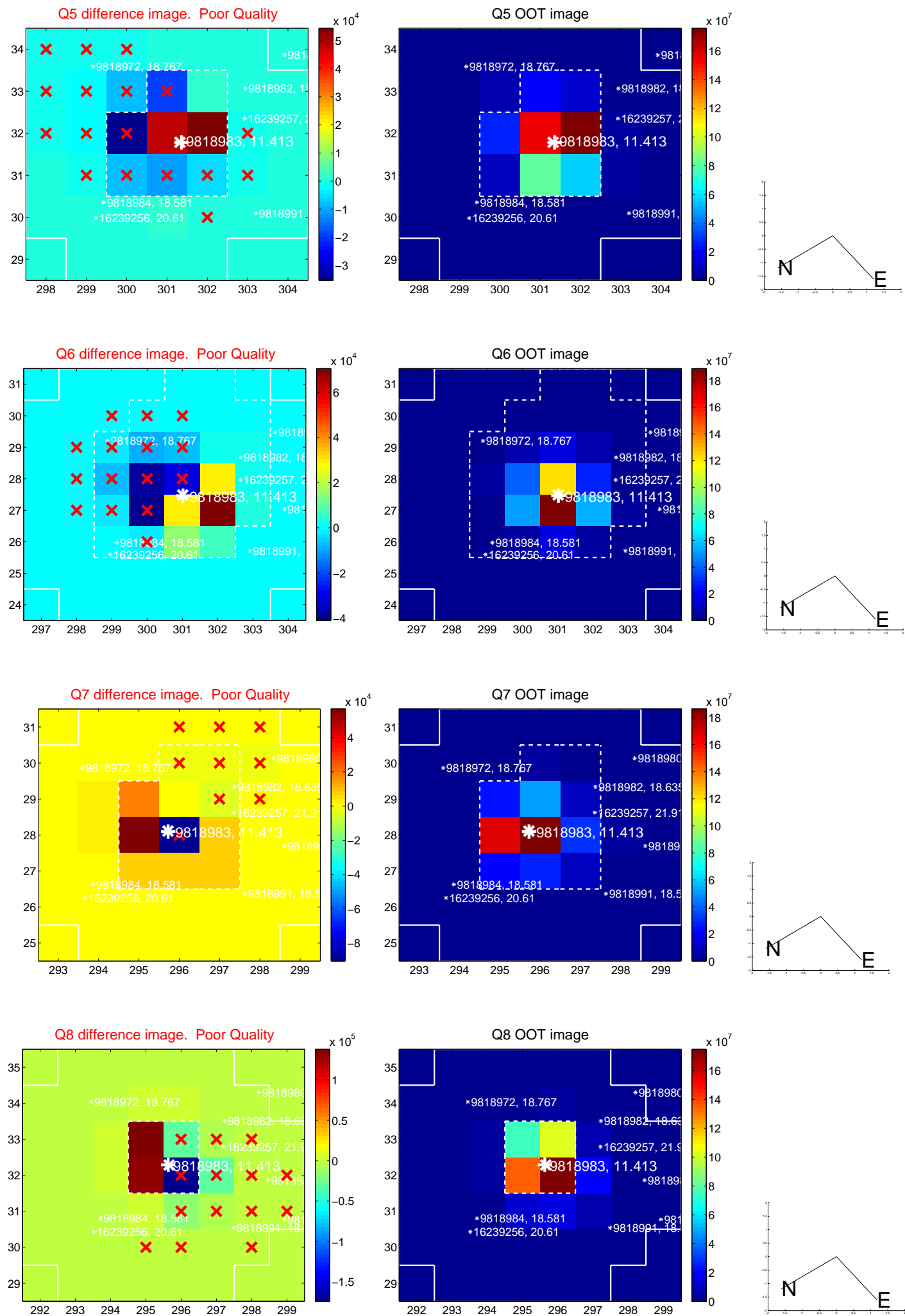


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

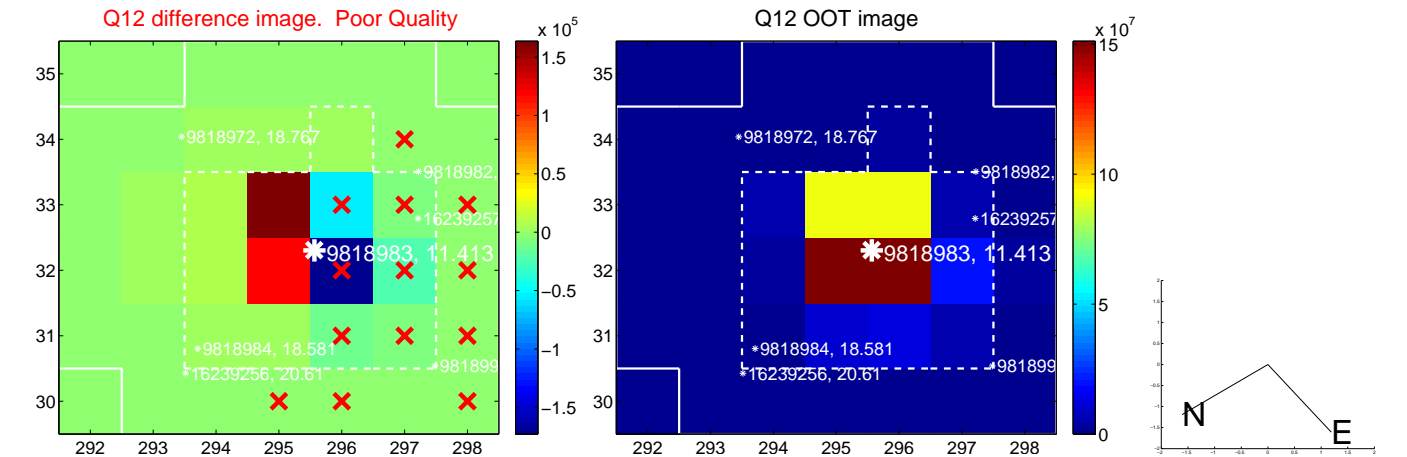
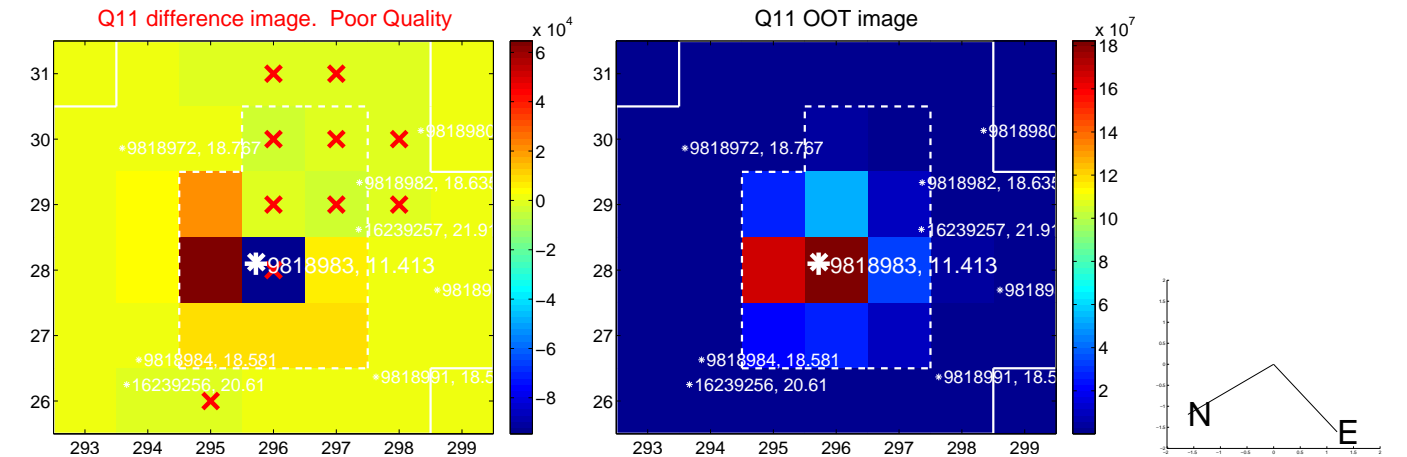
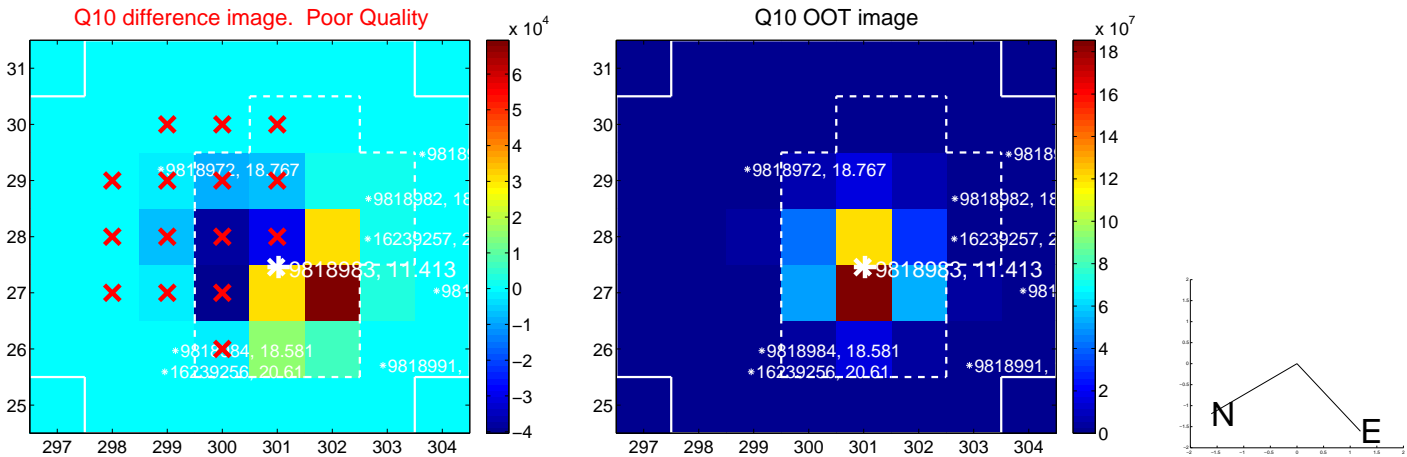
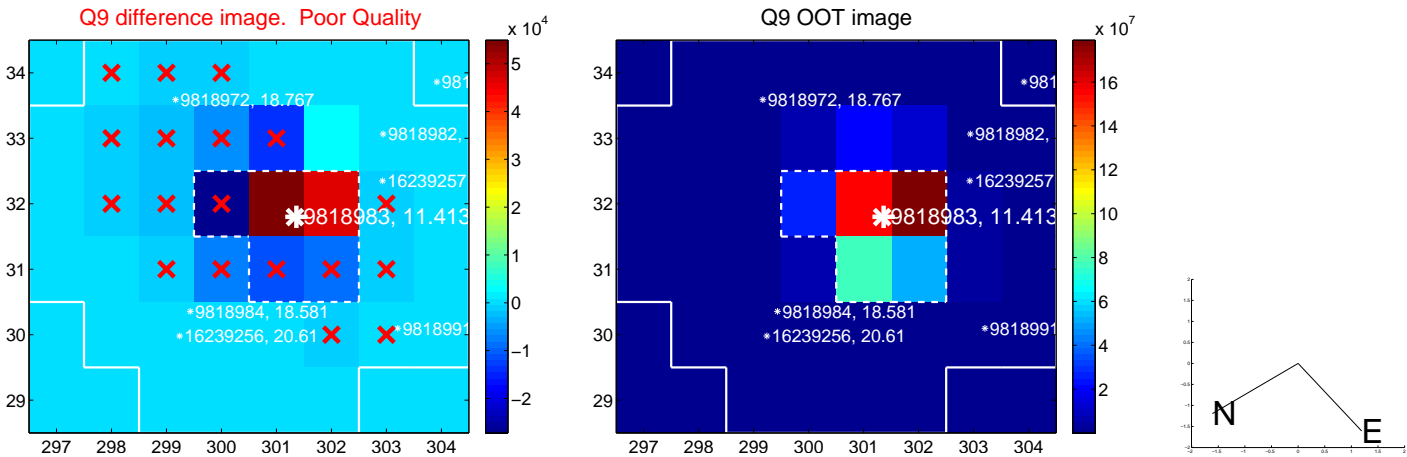


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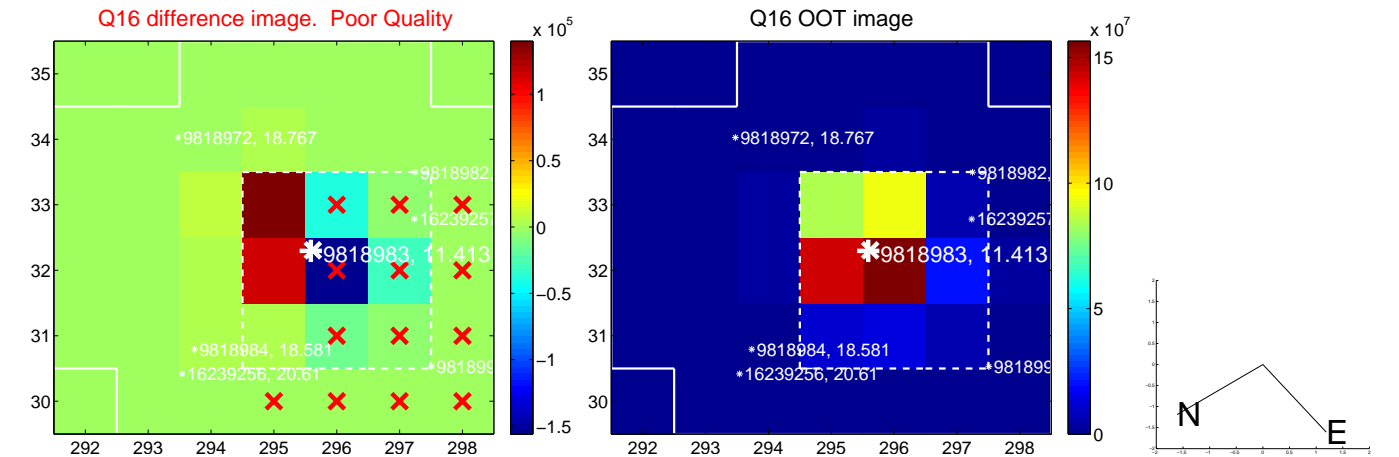
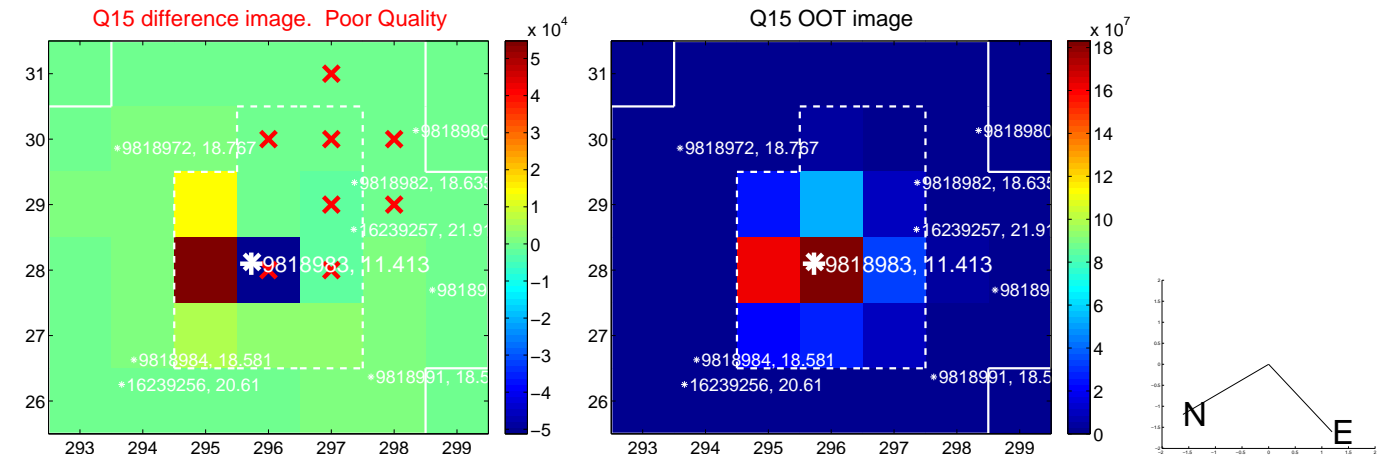
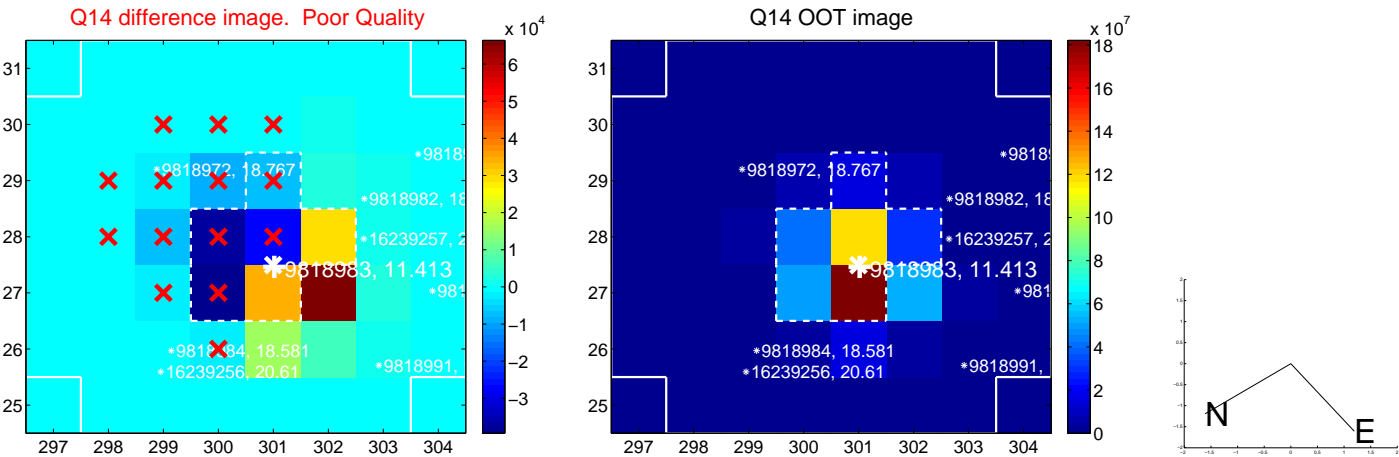
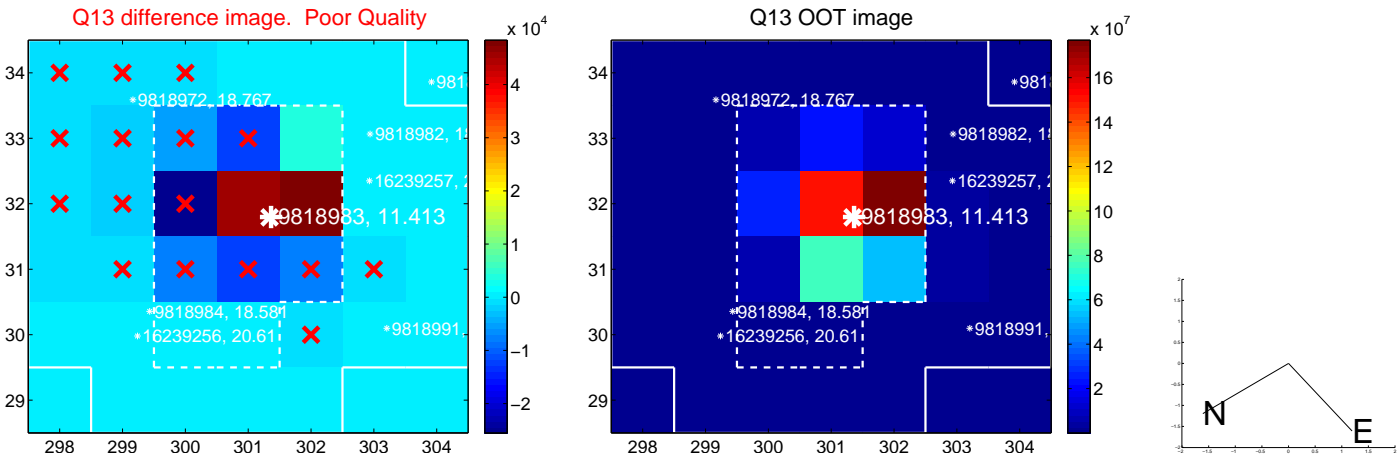




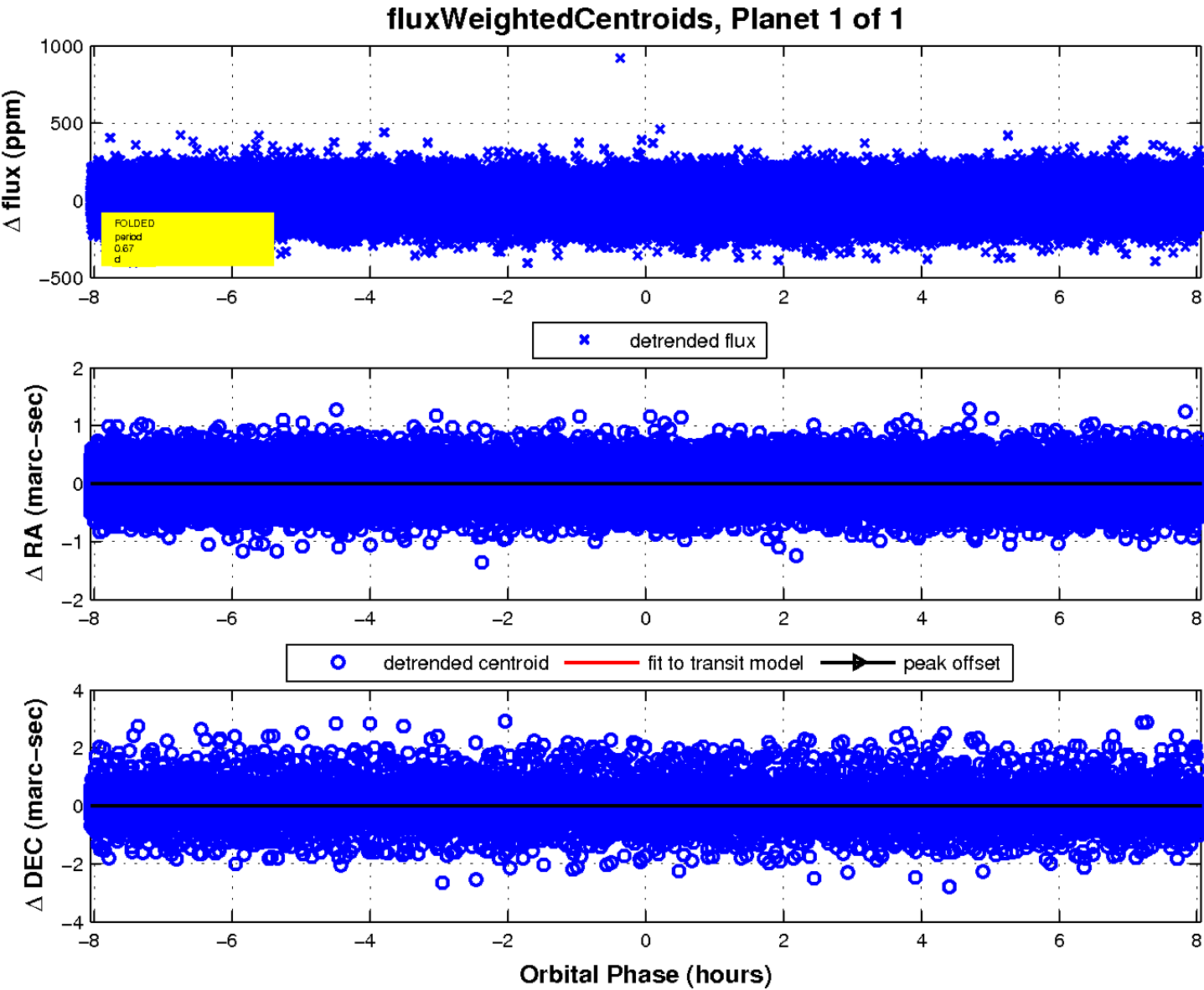
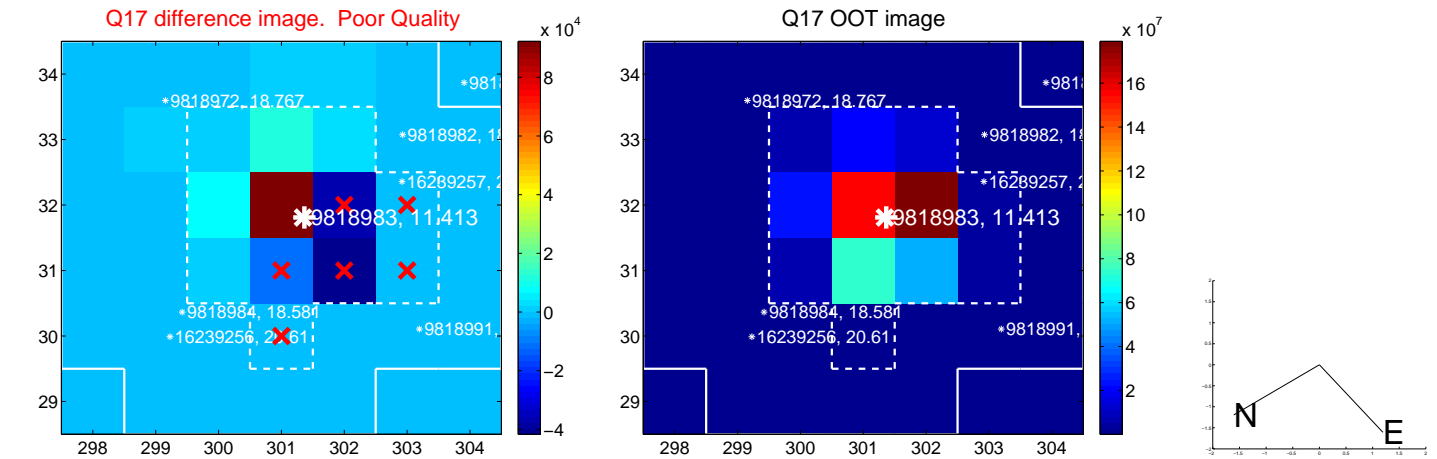
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

