

# KIC 002718944

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002718944-01	OBS	No	0.693225	131.693058	8.1	2.379	8.1	8.2	3.03	8572	1.00	119142.85

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002718944-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

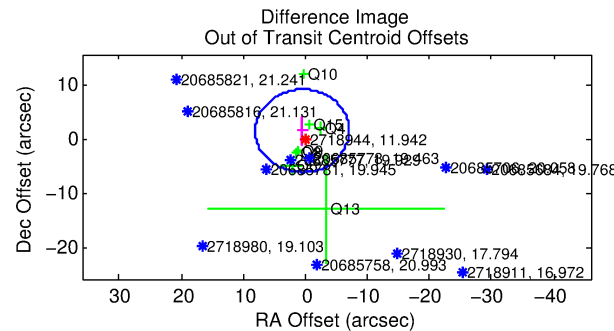
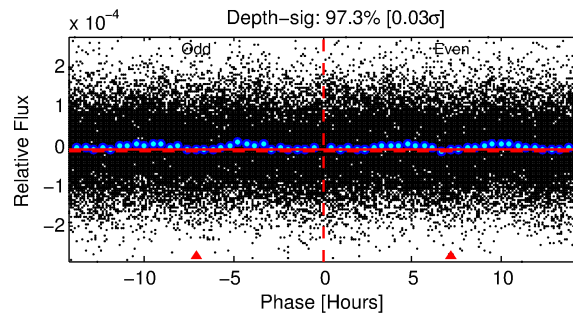
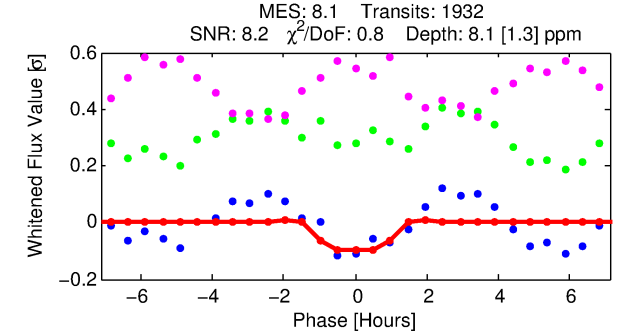
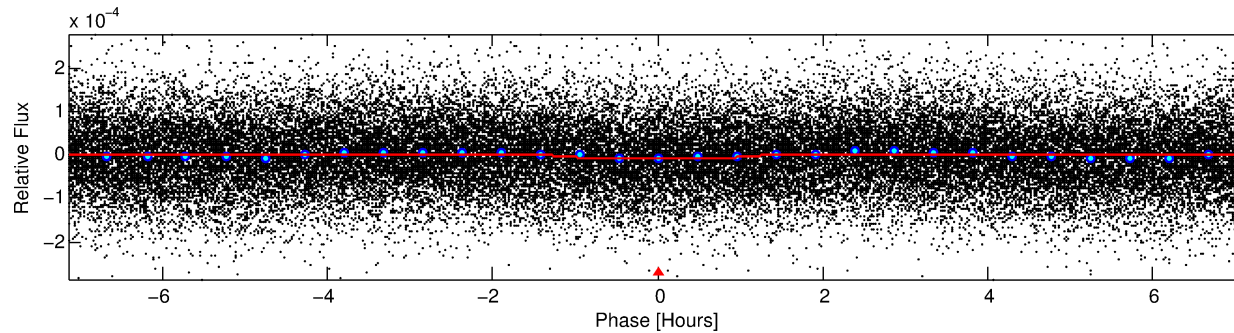
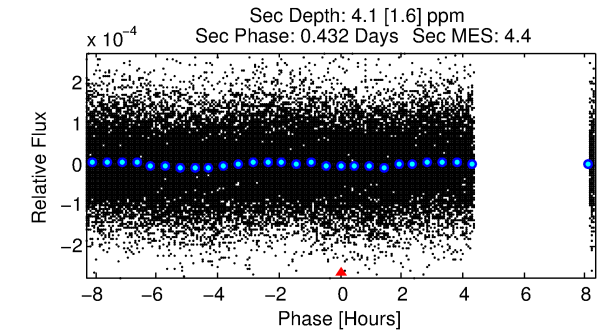
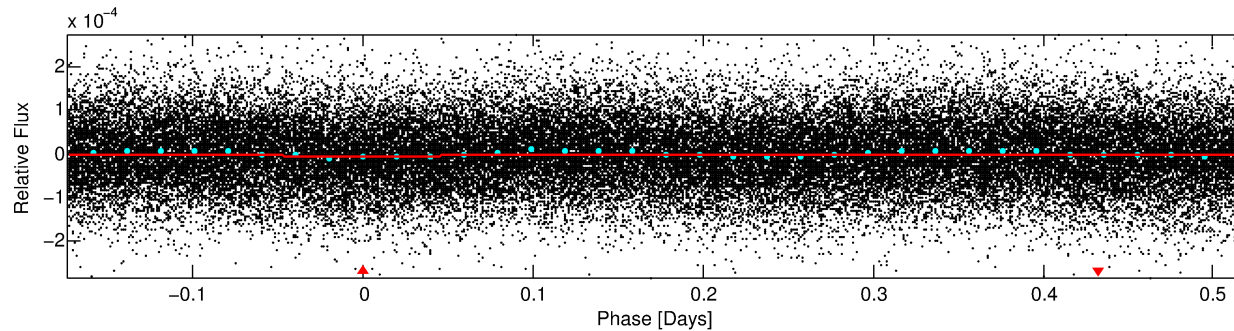
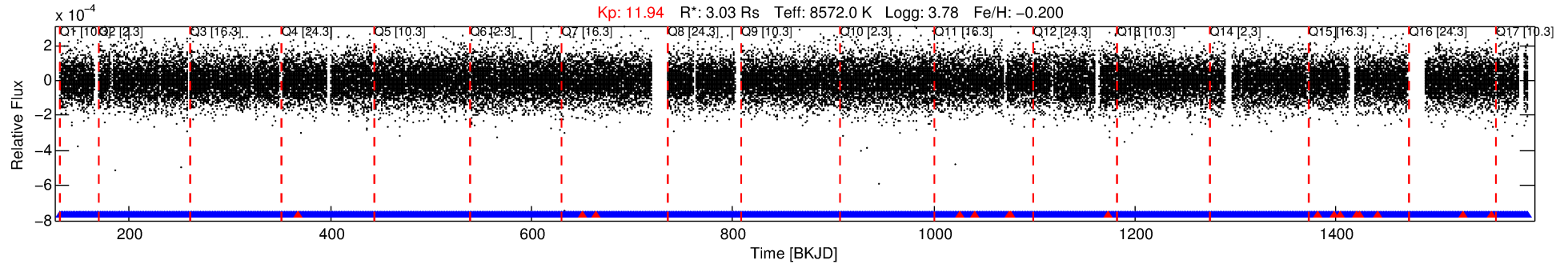
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 002718944-01

No Significant Match Found

# DV One-Page Summary

KIC: 2718944 Candidate: 1 of 1 Period: 0.693 d



## DV Fit Results:

Period = 0.69322 [0.00001] d  
Epoch = 131.6931 [0.0035] BKJD  
 $R_p/R^*$  = 0.0030 [0.0005]  
 $a/R^*$  = 1.36 [0.59]  
 $b$  = 0.90 [0.20]  
 $S_{\text{eff}}$  = 119142.85 [85102.94]  
 $T_{\text{eq}}$  = 4737 [846] K  
 $R_p$  = 1.00 [0.45]  $R_{\text{e}}$   
 $a$  = 0.0193 [0.0082] AU  
 $A_g$  = 0.85 [0.72] [-0.21 $\sigma$ ]  
 $T_{\text{eff}}$  = 7029 [921] K [1.83 $\sigma$ ]

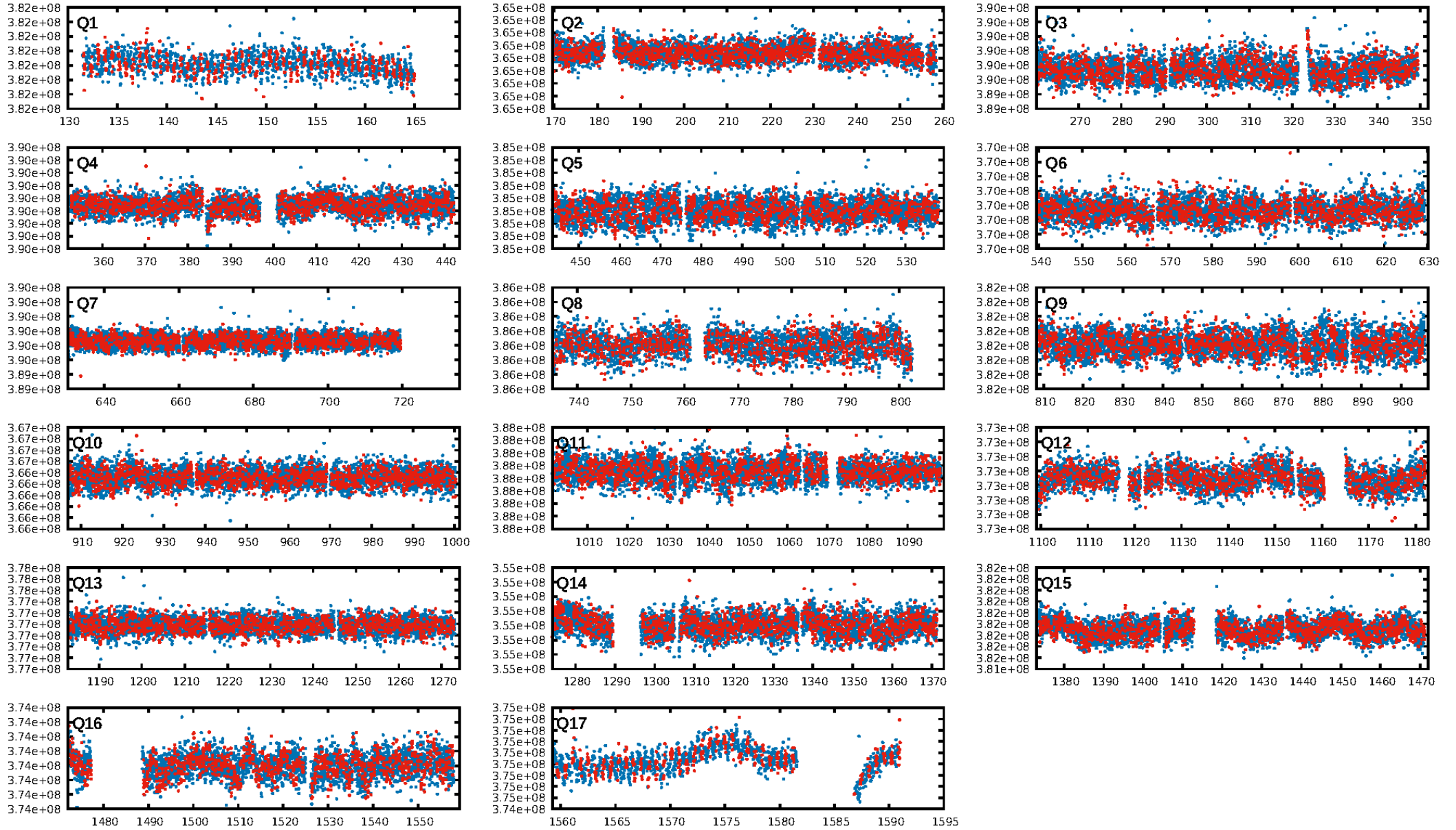
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 8.68e-13  
RollingBand-fgt: 0.99 [1829/1845]  
GhostDiagnostic-chr: 1.228  
Centroid-sig: 2.6%  
Centroid-so: 2.656 arcsec [1.70 $\sigma$ ]  
OotOffset-rm: 1.623 arcsec [0.64 $\sigma$ ]  
KicOffset-rm: 1.704 arcsec [0.64 $\sigma$ ]  
OotOffset-st: 2/1/2/2 [7]  
KicOffset-st: 2/1/2/2 [7]  
DiffImageQuality-fgm: 0.43 [3/7]  
DiffImageOverlap-fno: 1.00 [17/17]

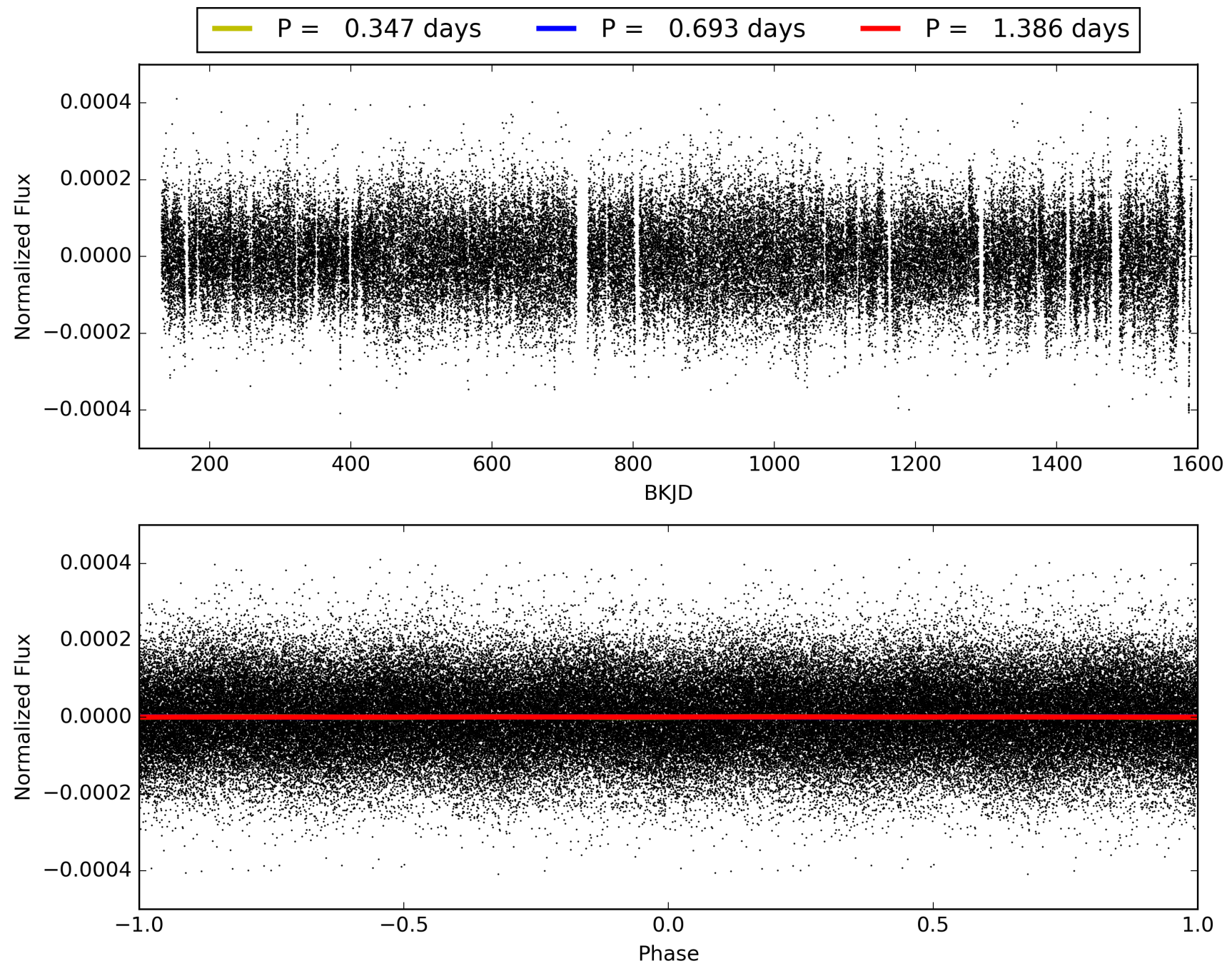
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:39:02 Z

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

# TCE 002718944-01, PDC Light Curves



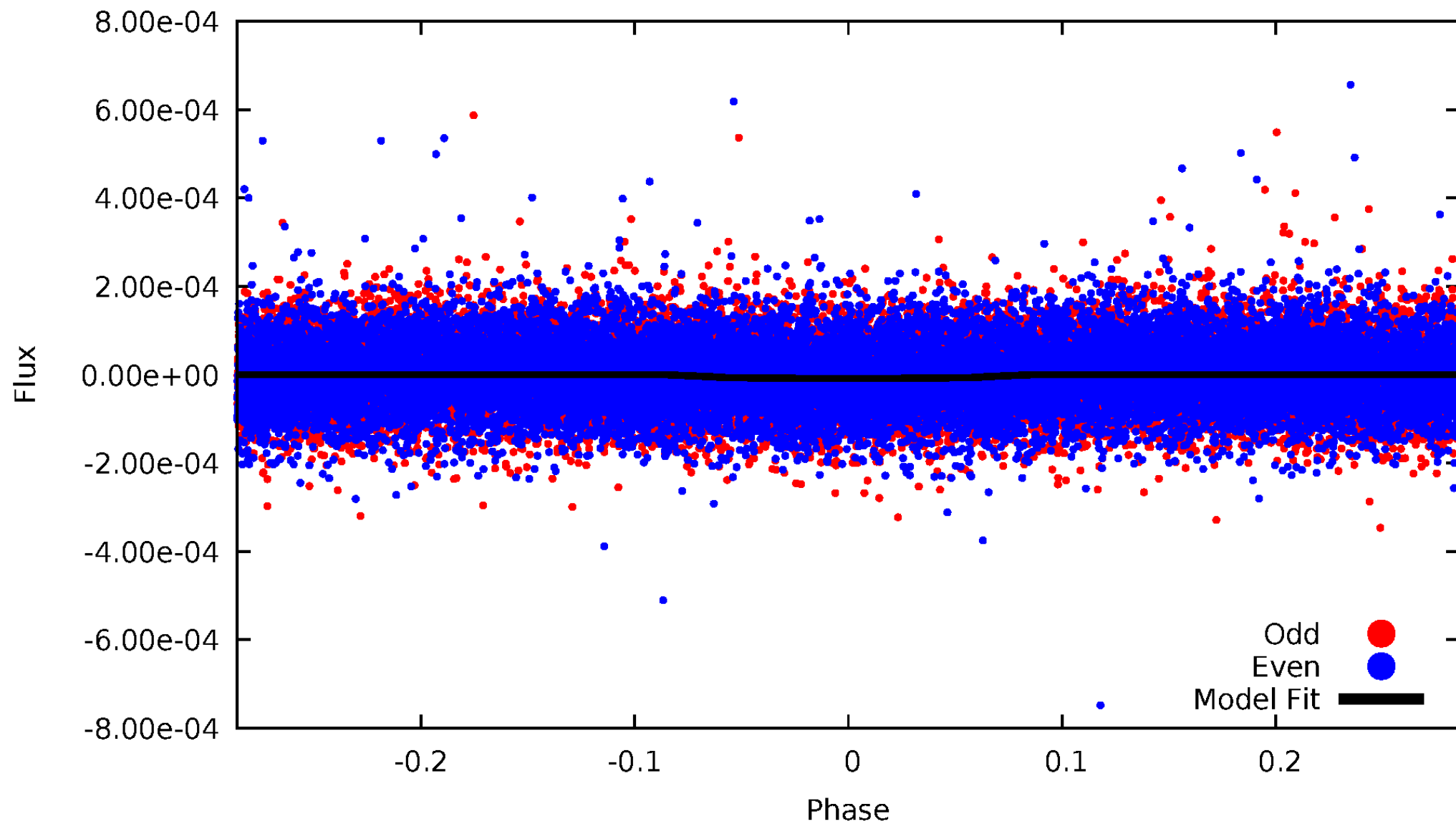
TCE 002718944-01





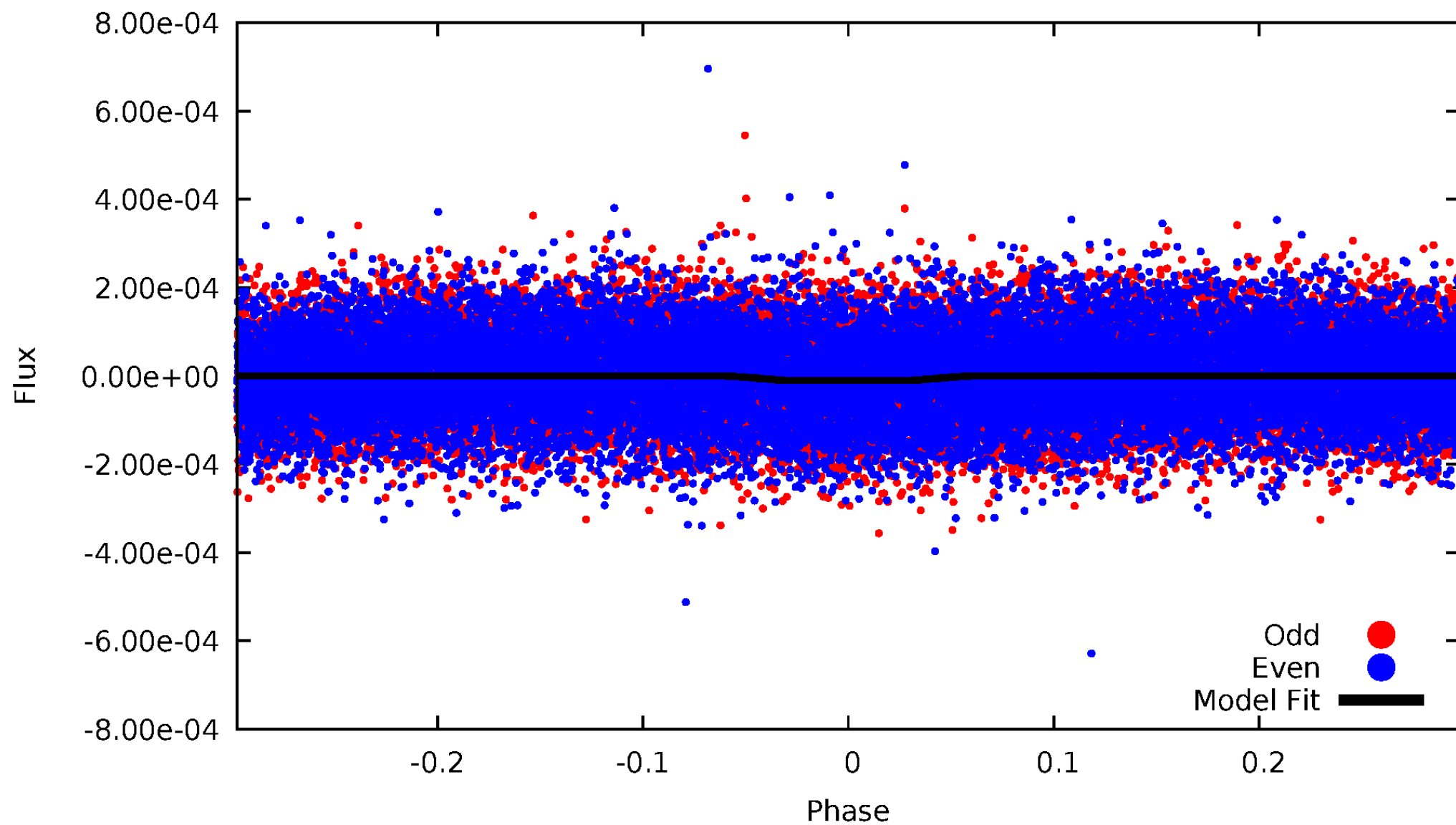
# DV Odd/Even

TCE 002718944-01



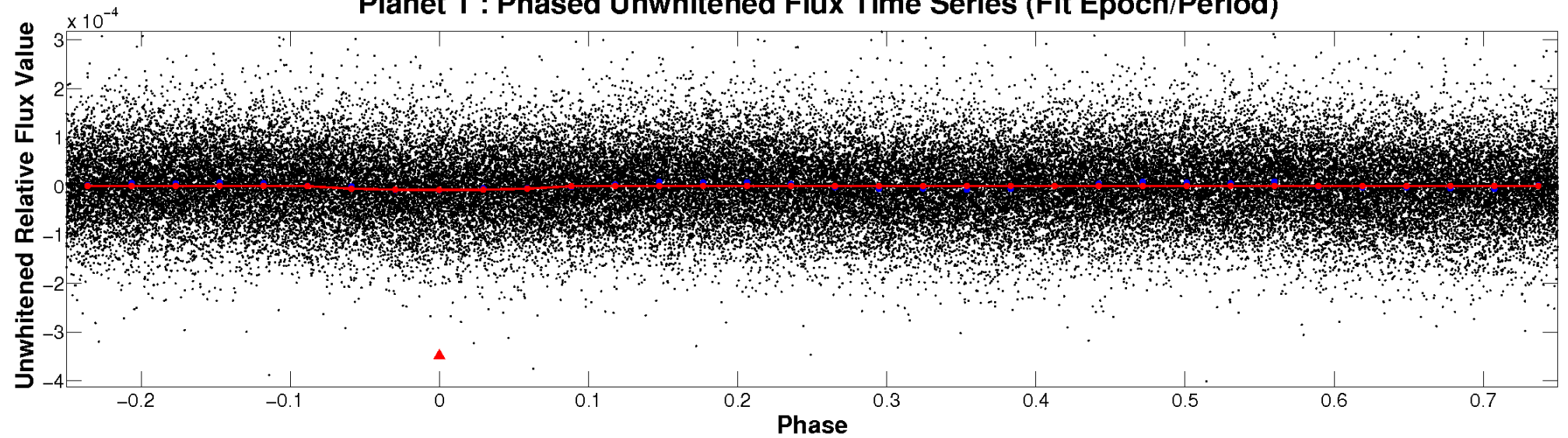
# ALT Odd/Even

TCE 002718944-01

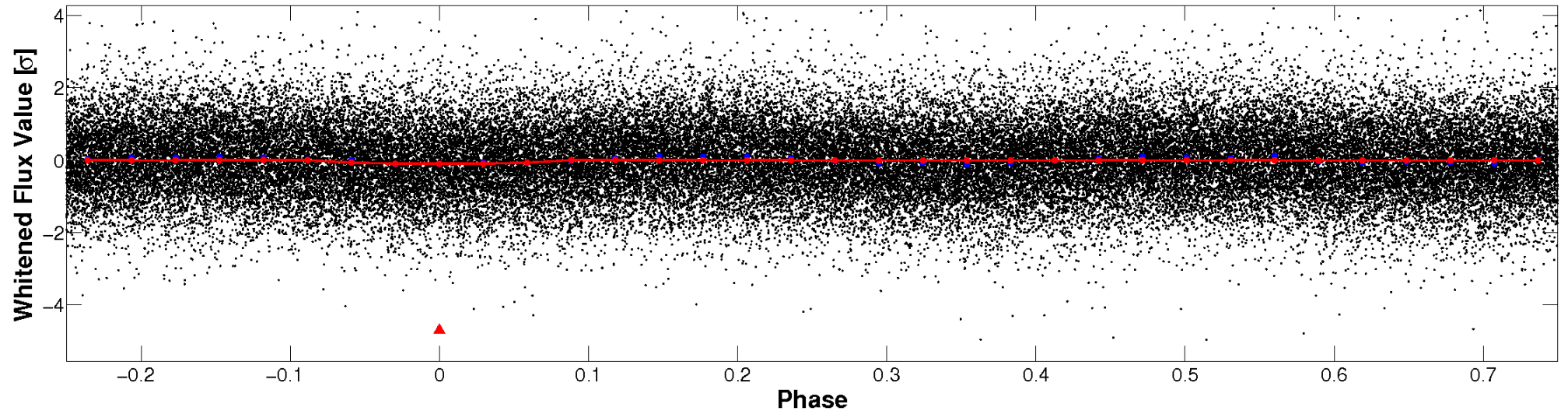


# Non-Whitened Vs. Whitened Light Curve

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

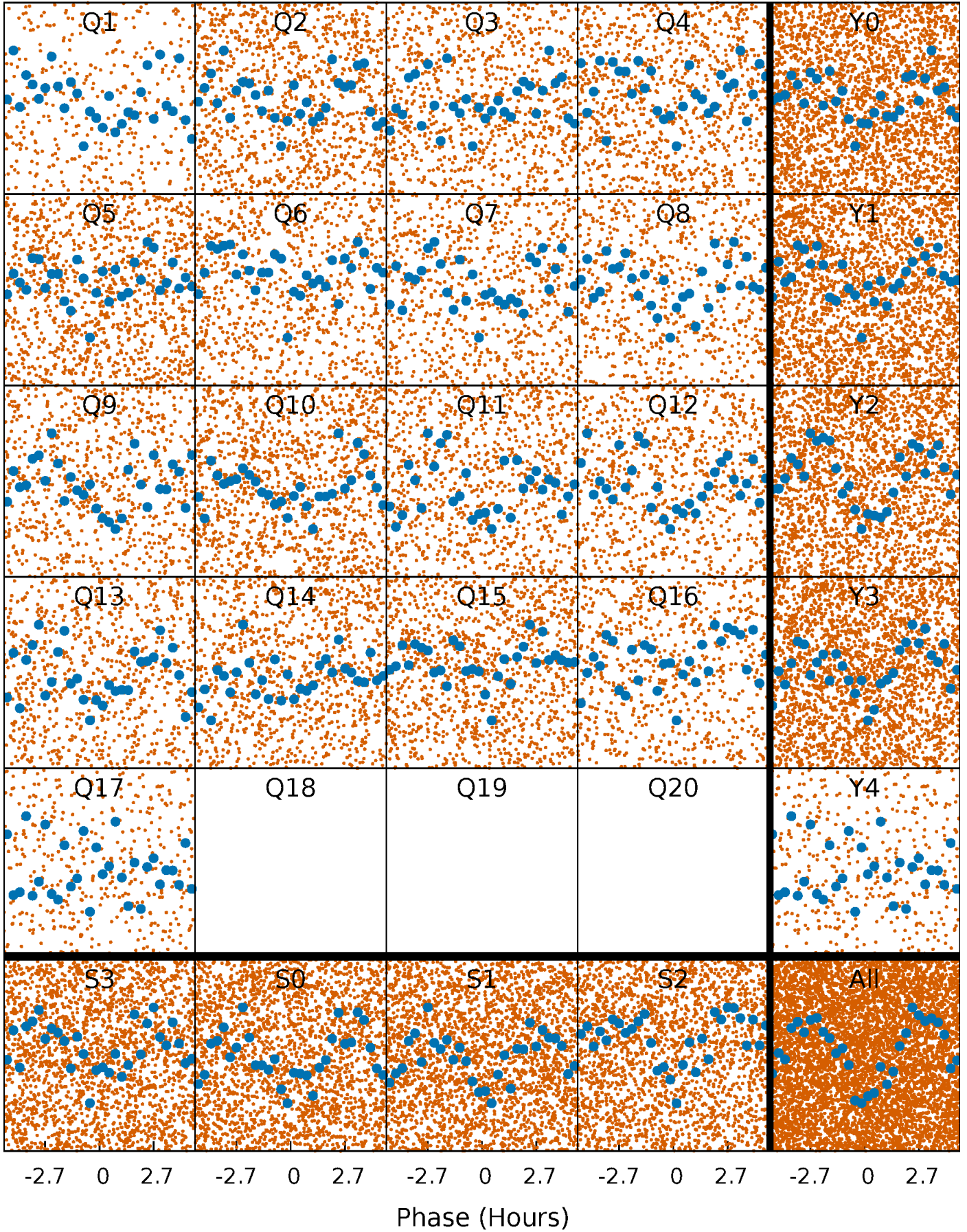


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

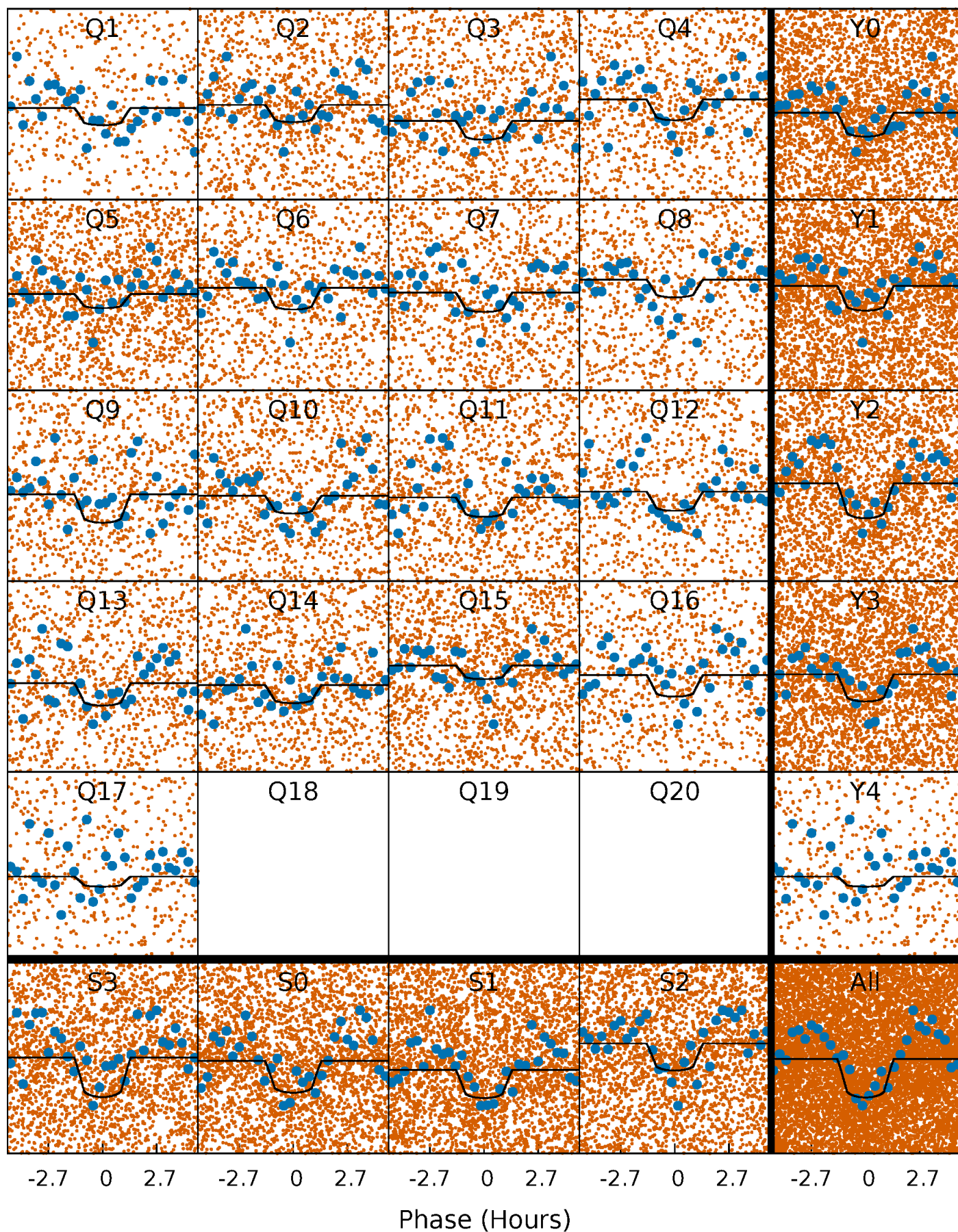
TCE 002718944-01 P= 0.693225 Days  $T_0=131.693058$  (BKJD)





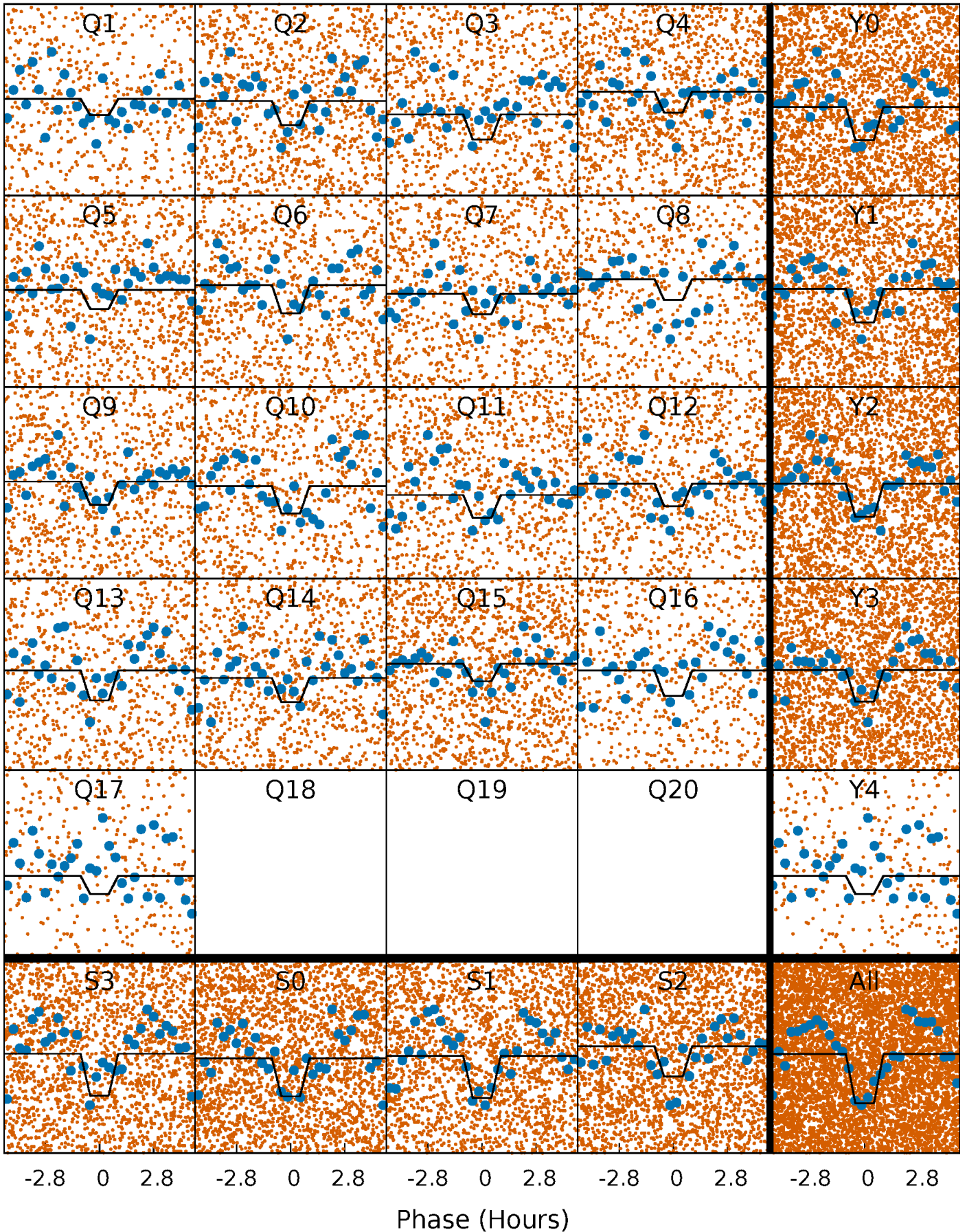
# DV Quarter-Phased Transit Curves

TCE 002718944-01 P= 0.693225 Days  $T_0=131.693058$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 002718944-01 P= 0.693232 Days  $T_0=131.687220$  (BKJD)

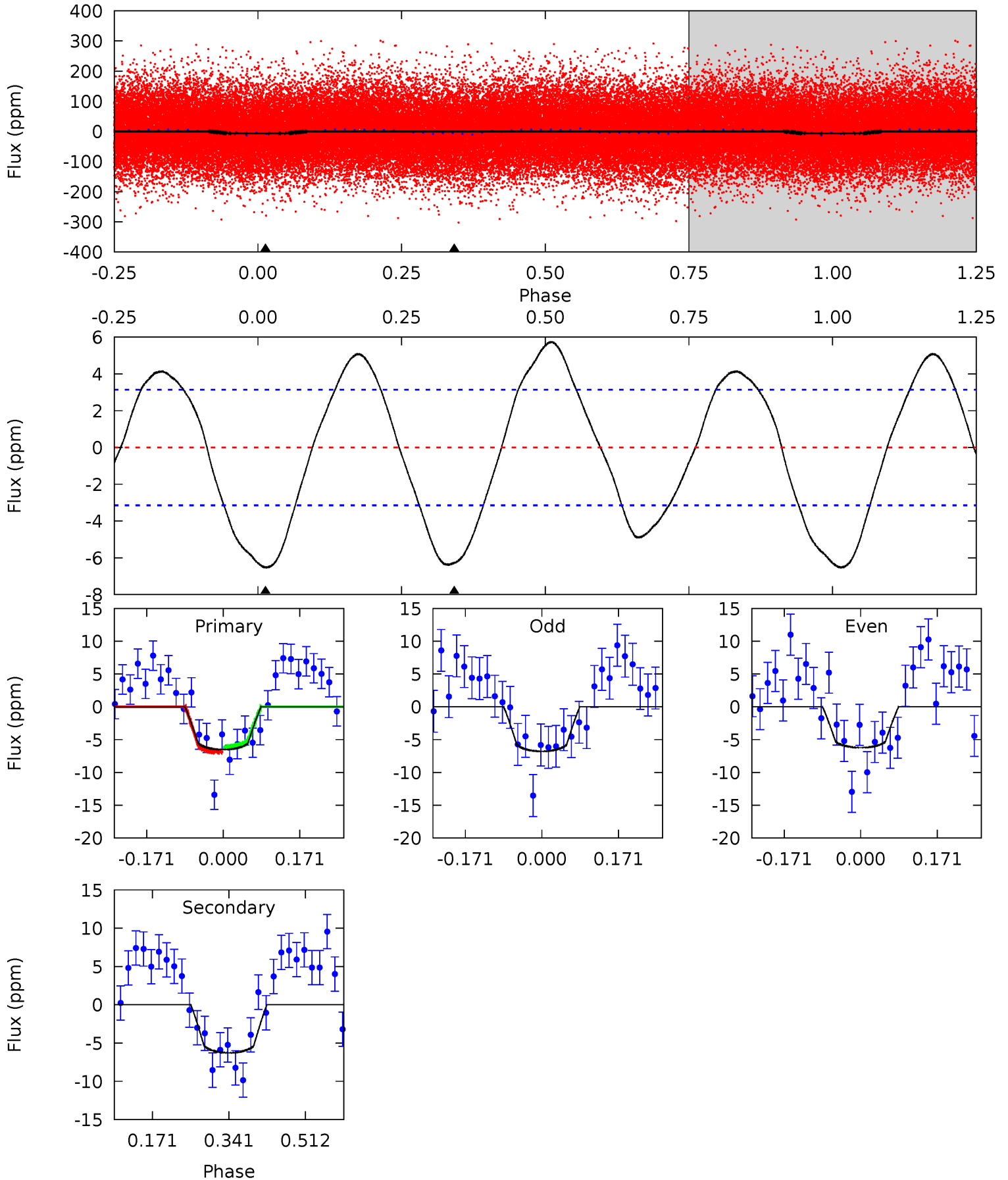




# DV Model-Shift Uniqueness Test

002718944-01, P = 0.693225 Days, E = 130.999833 Days

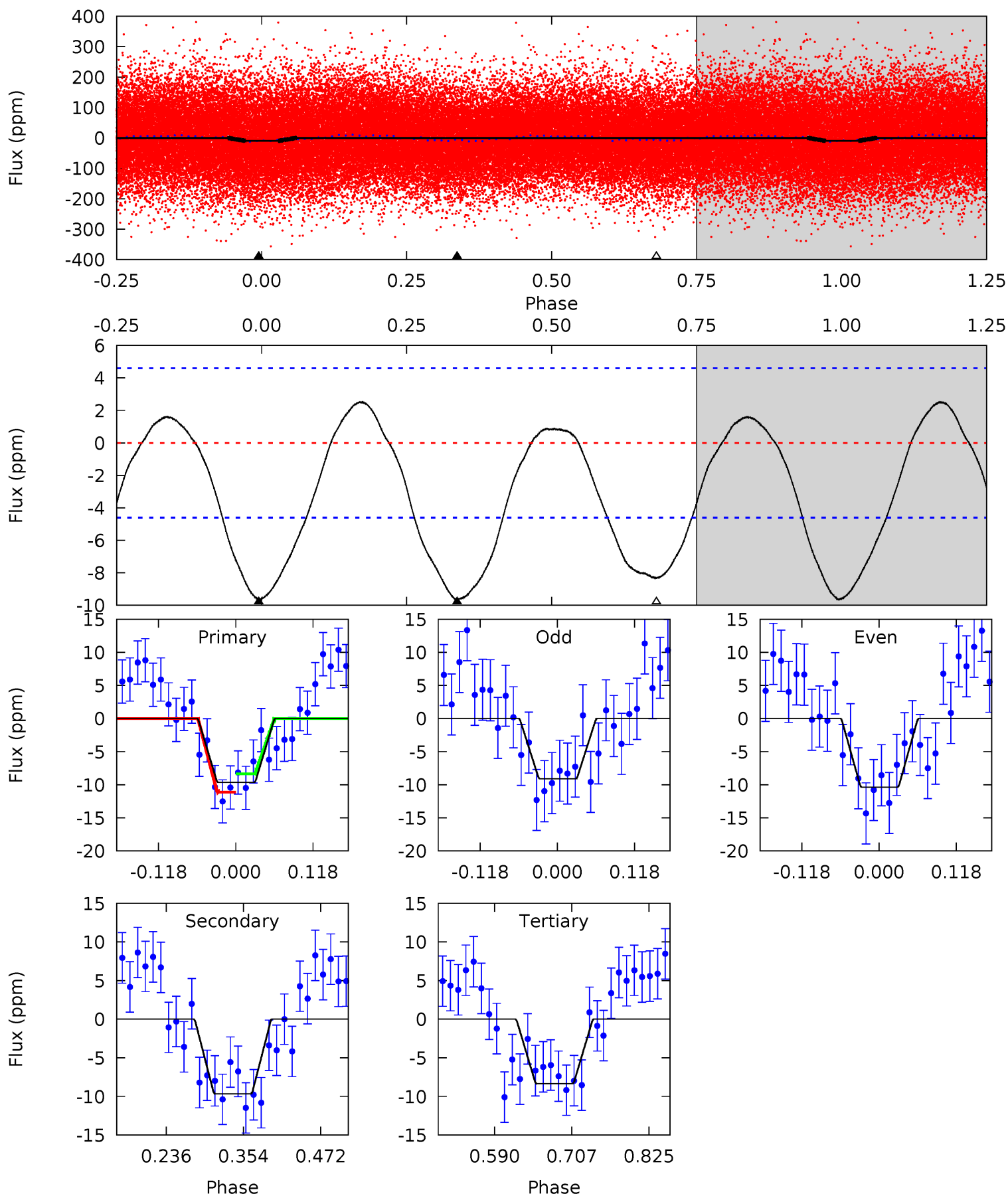
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.25	8.89	0	0	4.45	1.37	4.70	9.25	9.25	8.89	8.89	0.40	0.89	0.47	0.49



# Alt Model-Shift Uniqueness Test

002718944-01, P = 0.693232 Days, E = 130.993988 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
9.52	9.52	8.22	0	4.53	1.56	3.57	1.29	9.52	1.30	9.52	0.61	1.19	0.21	1.34





### Stellar Parameters For KIC 002718944

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$8572^{+236}_{-372}$	$3.776^{+0.412}_{-0.137}$	$-0.200^{+0.400}_{-0.350}$	$3.034^{+0.751}_{-1.288}$	$2.009^{+0.330}_{-0.495}$	$0.101^{+0.399}_{-0.043}$
	+3%/-4%	+11%/-4%	+200%/-175%	+25%/-42%	+16%/-25%	+394%/-42%
Source	KIC0	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 002718944-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-6 \pm 1$	$0.95^{+0.24}_{-0.25}$	$6443^{+527}_{-768}$	$7046^{+984}_{-794}$	$1.424^{+1.080}_{-0.525}$
Alt.	$-10 \pm 1$	$1.01^{+0.25}_{-0.24}$	$6440^{+530}_{-755}$	$7886^{+1120}_{-880}$	$1.958^{+1.337}_{-0.686}$

$T_{max}$  = 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

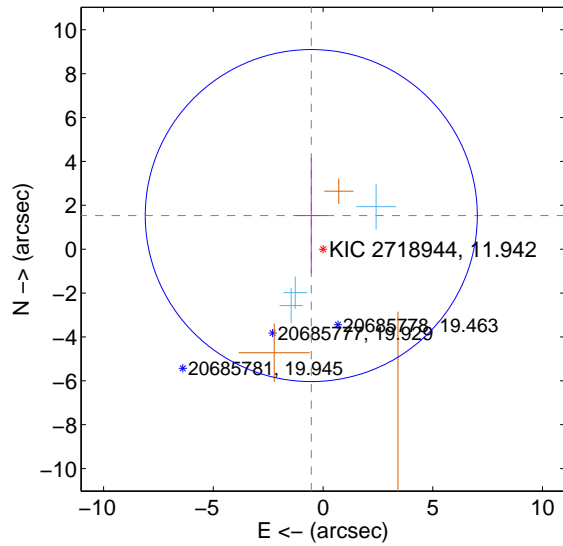
Supplemental centroid analysis for 002718944-01. **Kepler magnitude: 11.94.** Transit SNR 8.20

**There are 3 quarters with good PRF difference image offsets**

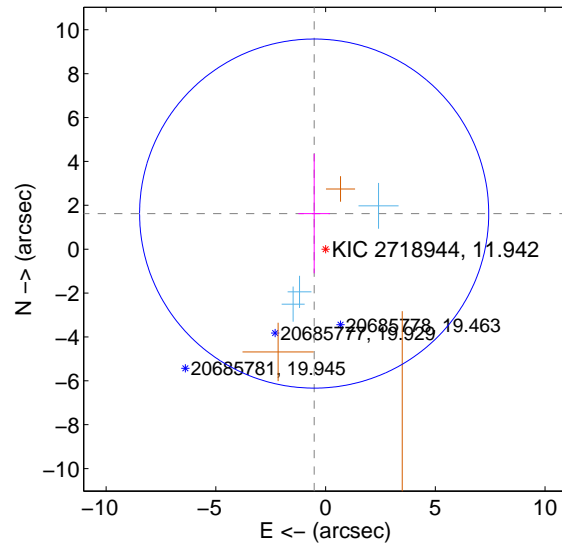
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.623 \pm 2.522$	0.64	$0.536 \pm 0.715$	$1.532 \pm 2.625$
PRF-fit source offset from KIC position	$1.704 \pm 2.652$	0.64	$0.520 \pm 0.719$	$1.623 \pm 2.720$
photometric centroid source offset	$2.66 \pm 1.56$	1.70	$-2.25 \pm 1.42$	$-1.41 \pm 1.87$

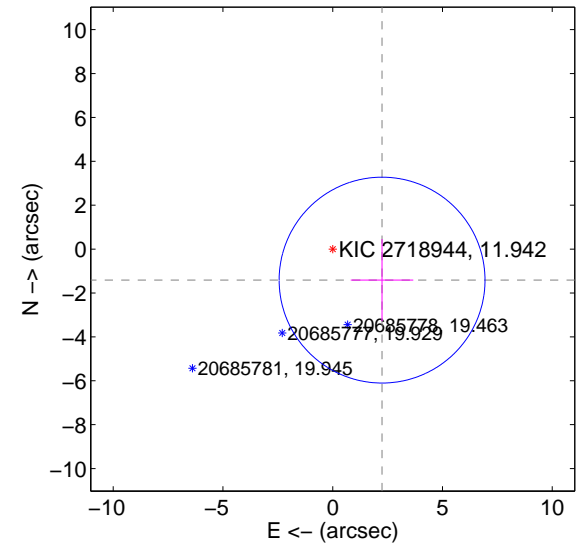
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

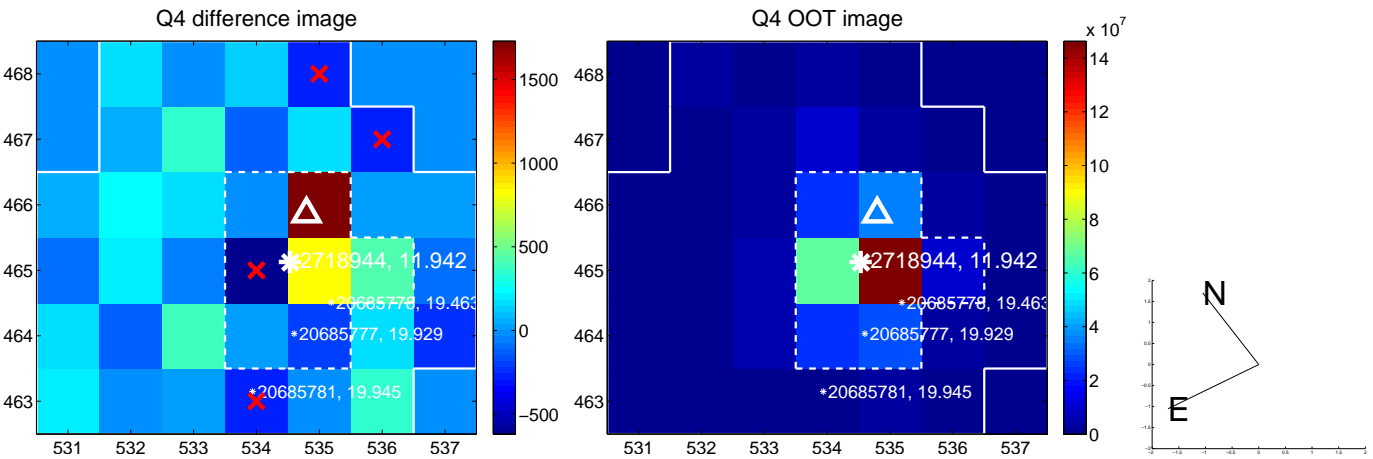
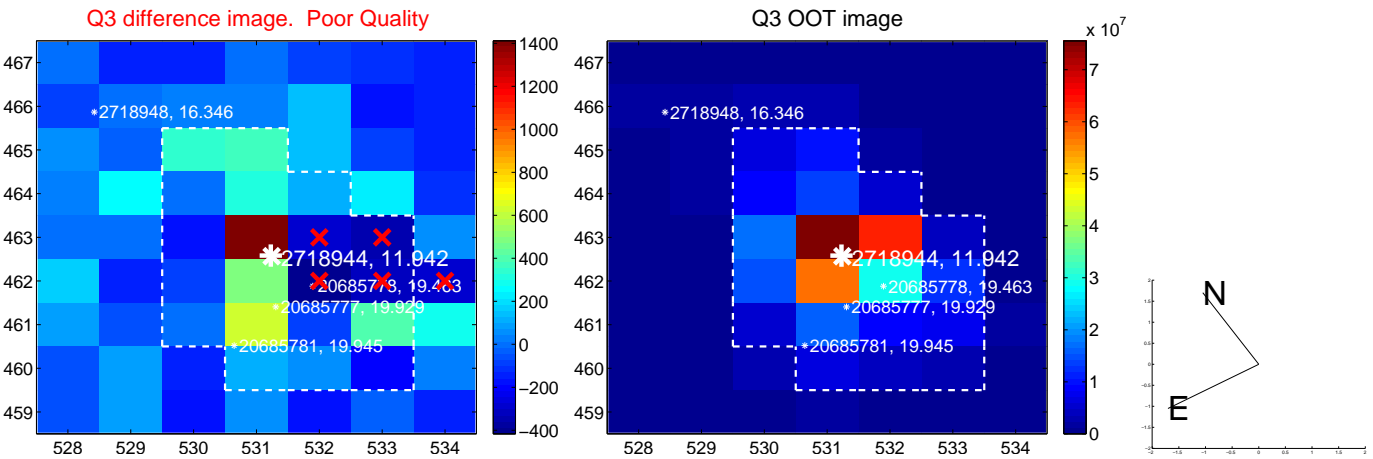
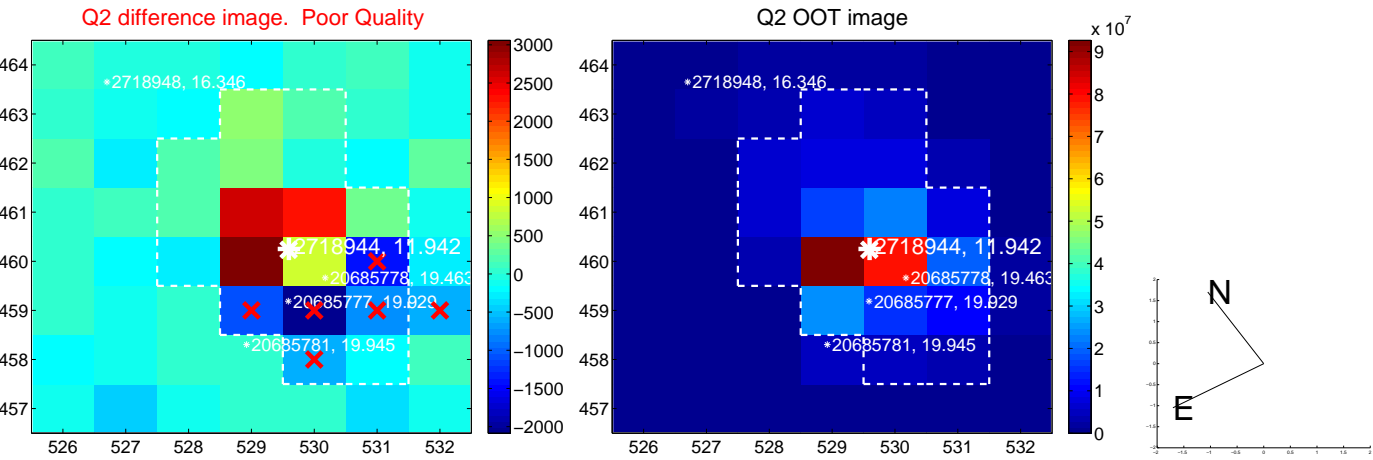
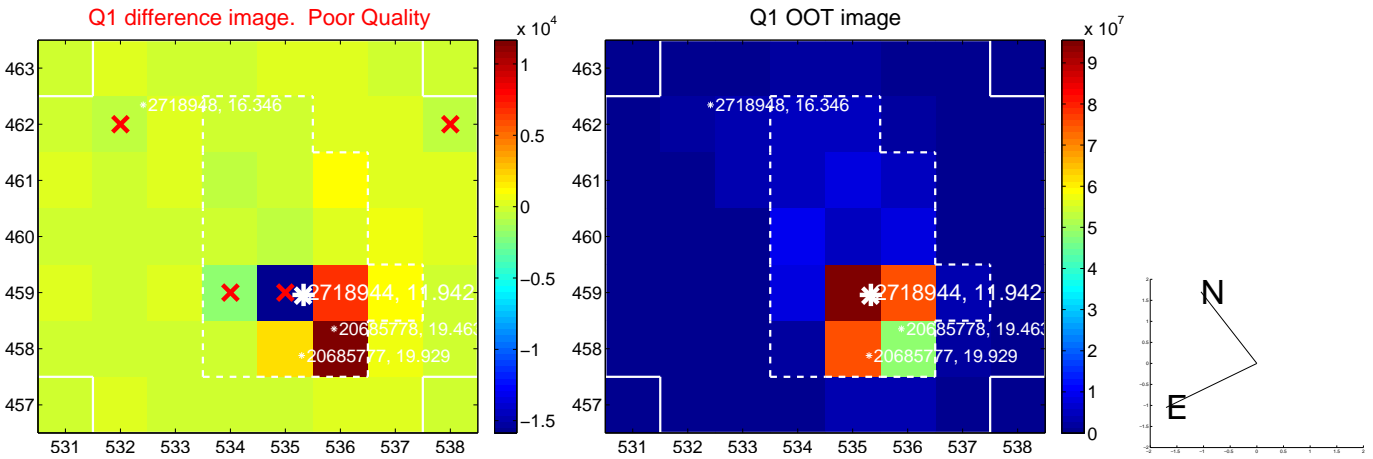


offset from photometric centroids

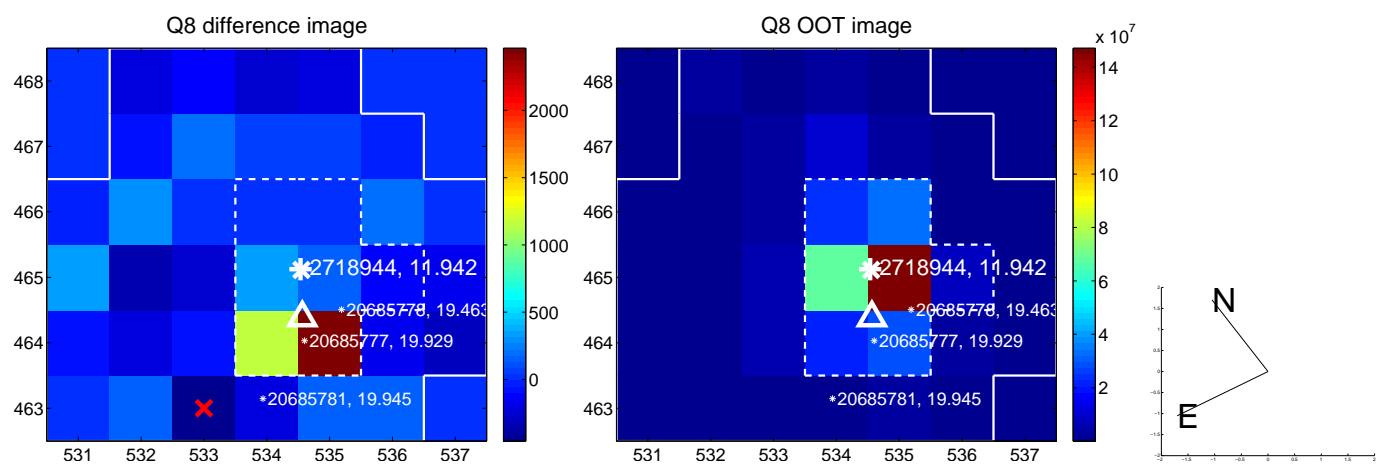
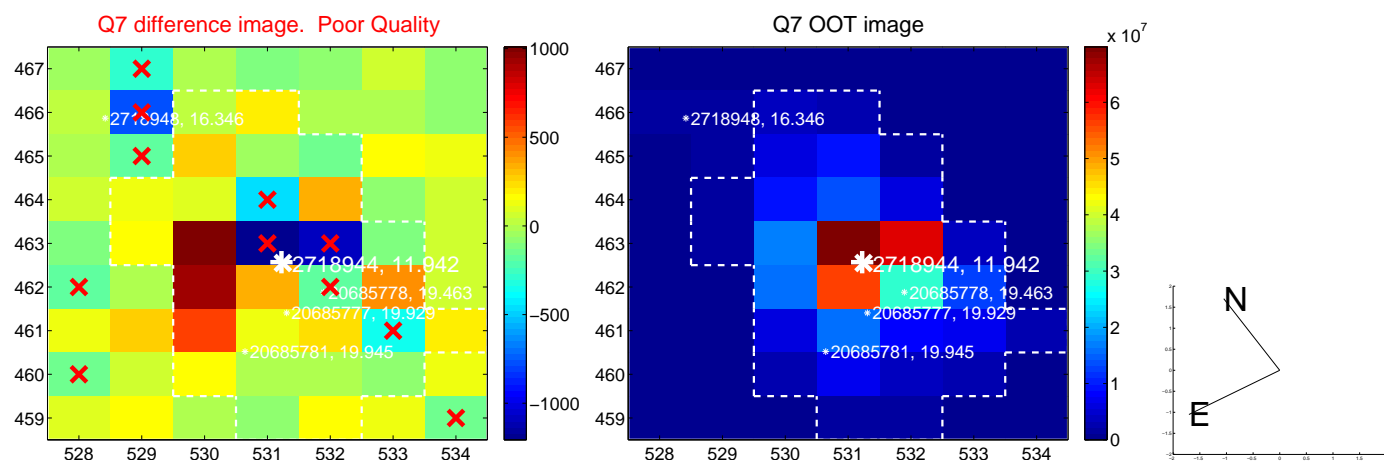
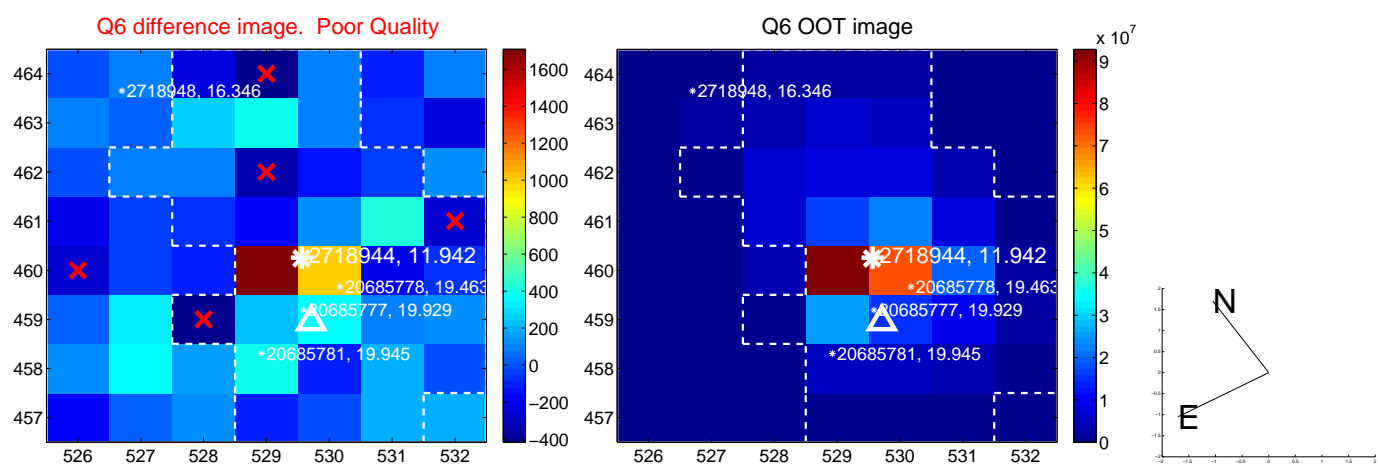
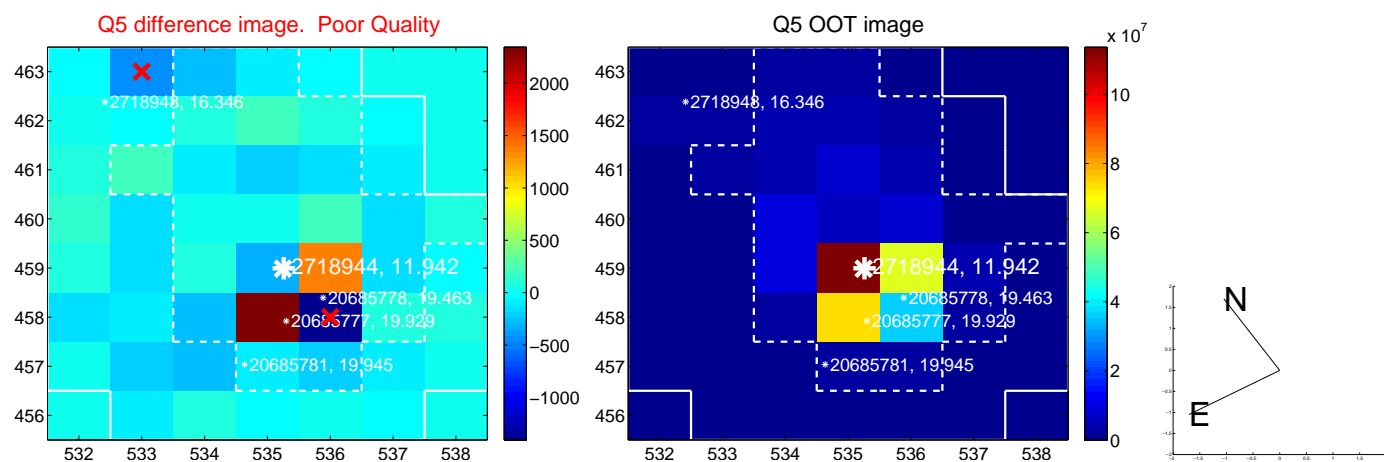


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

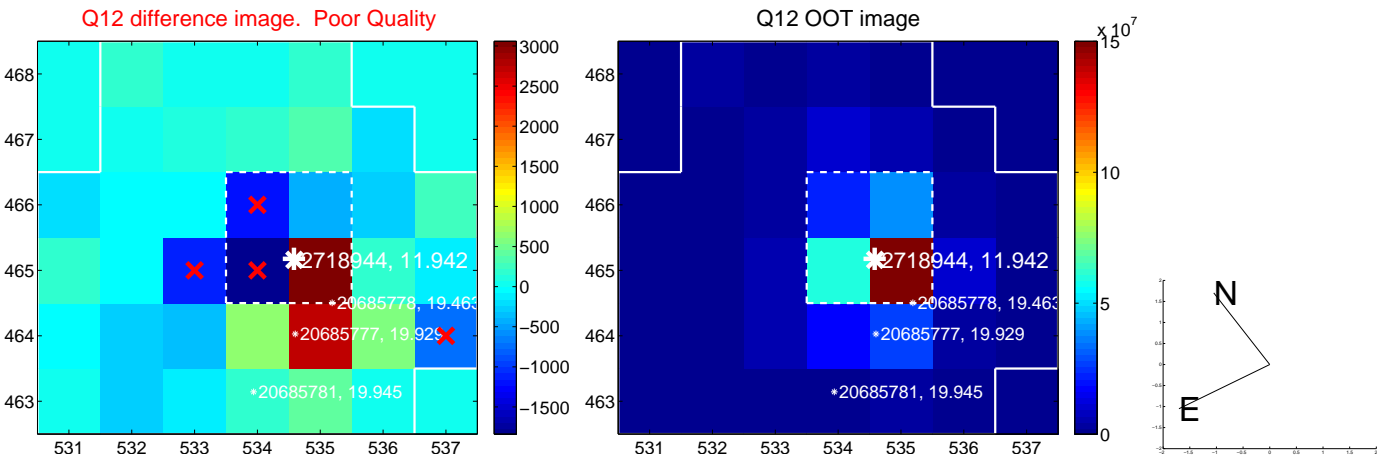
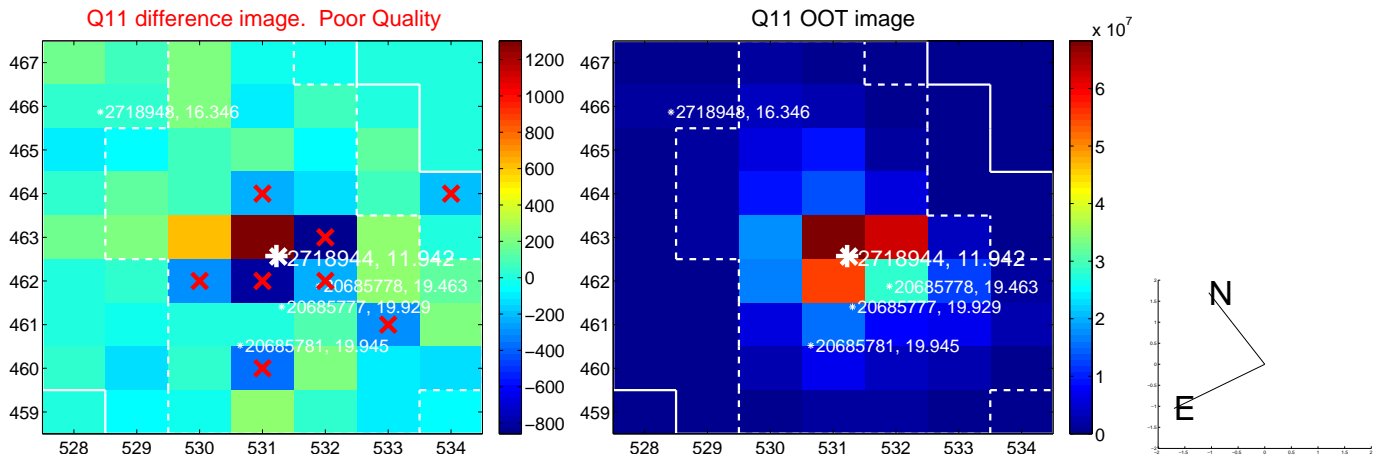
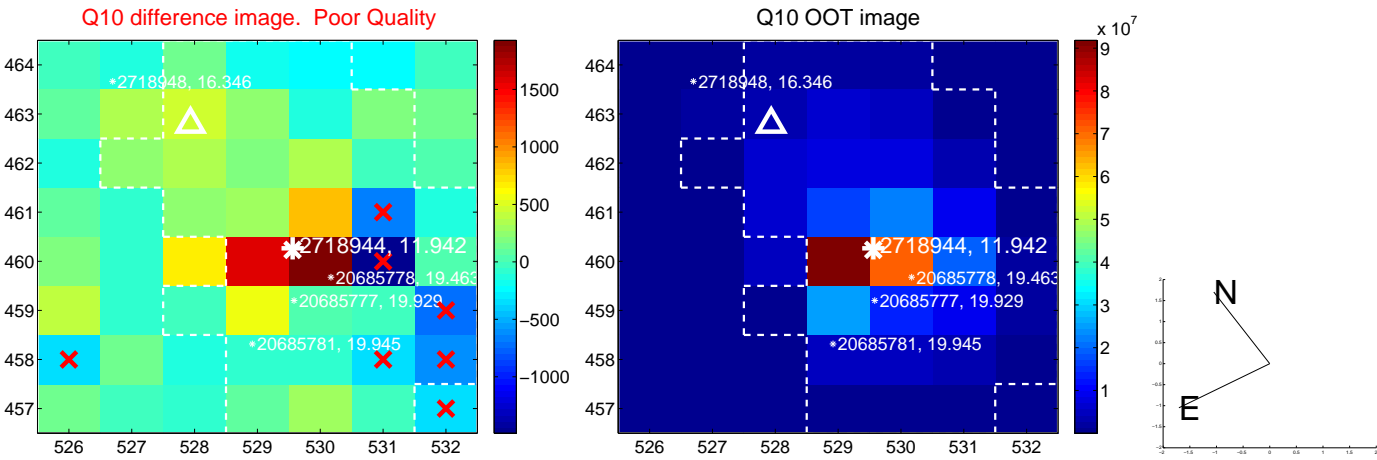
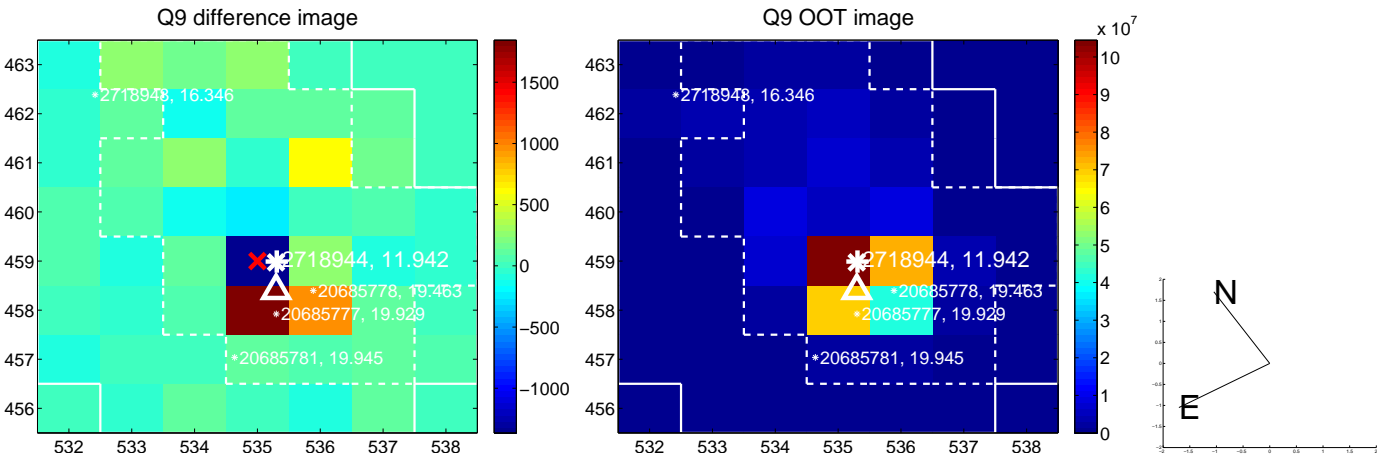


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

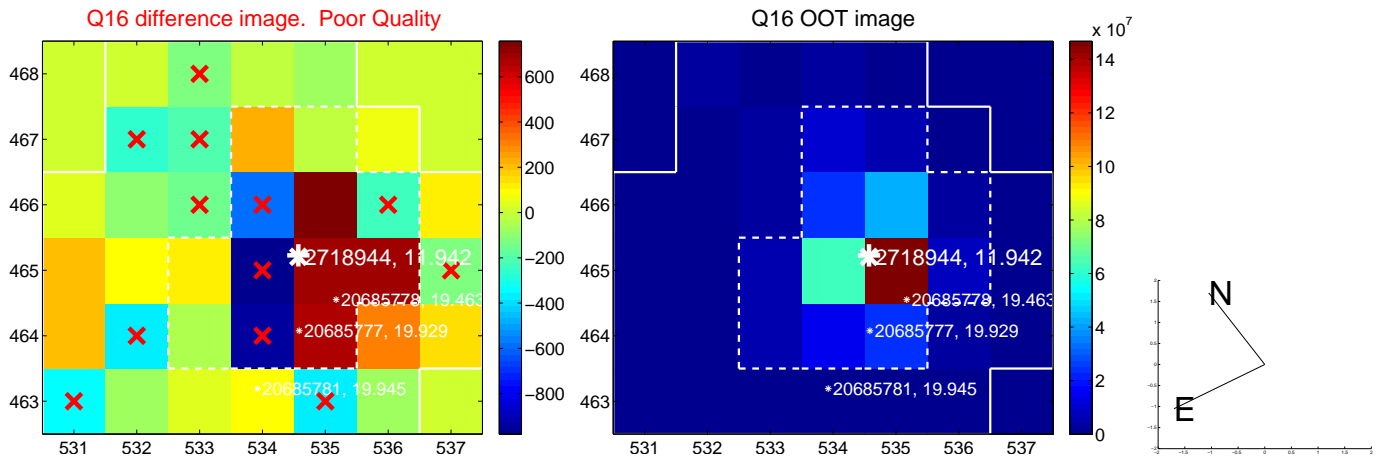
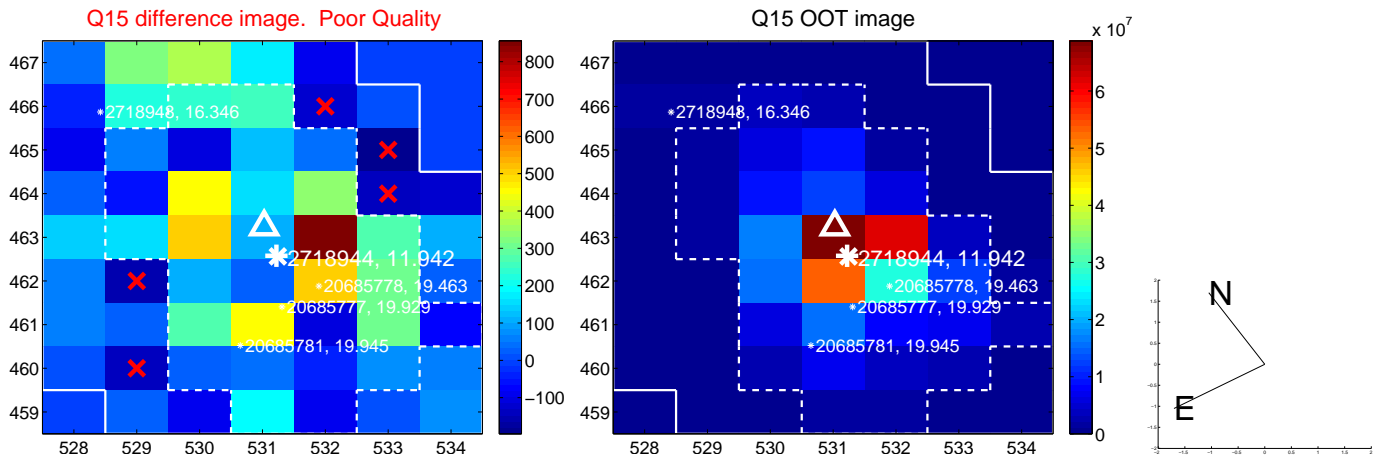
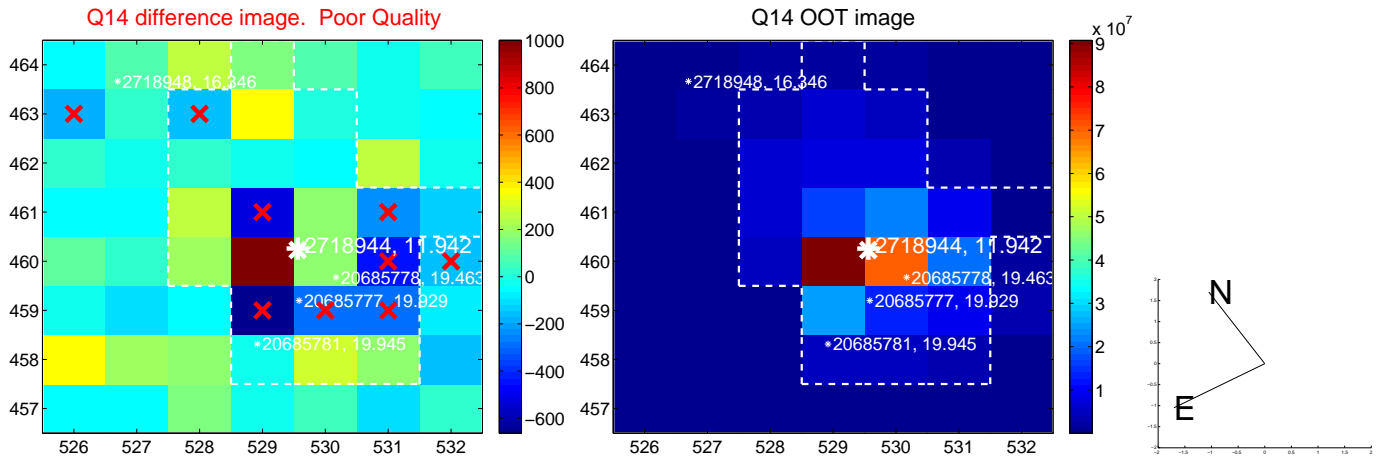
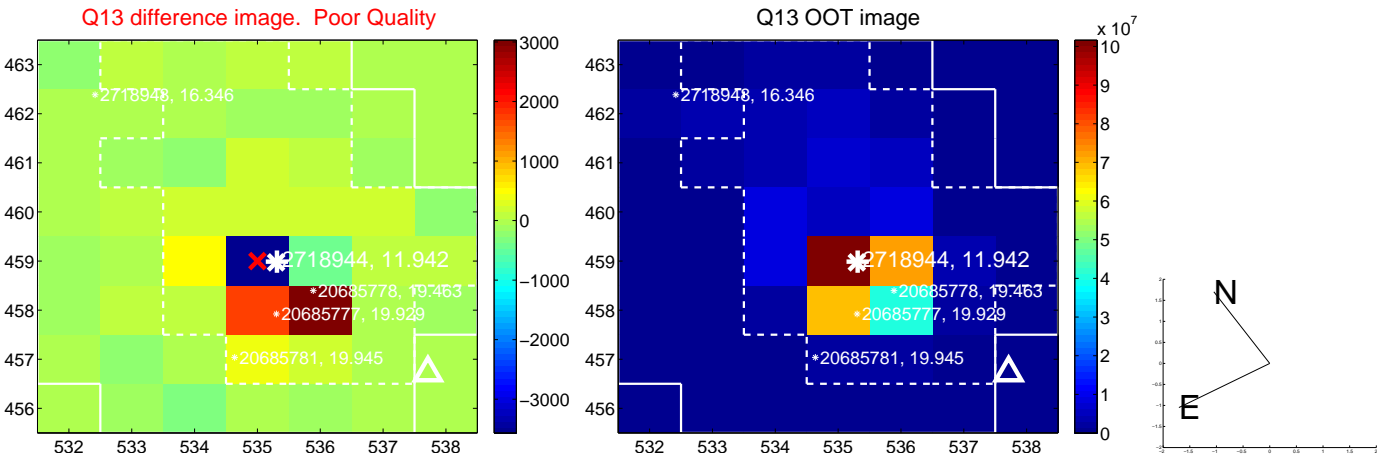




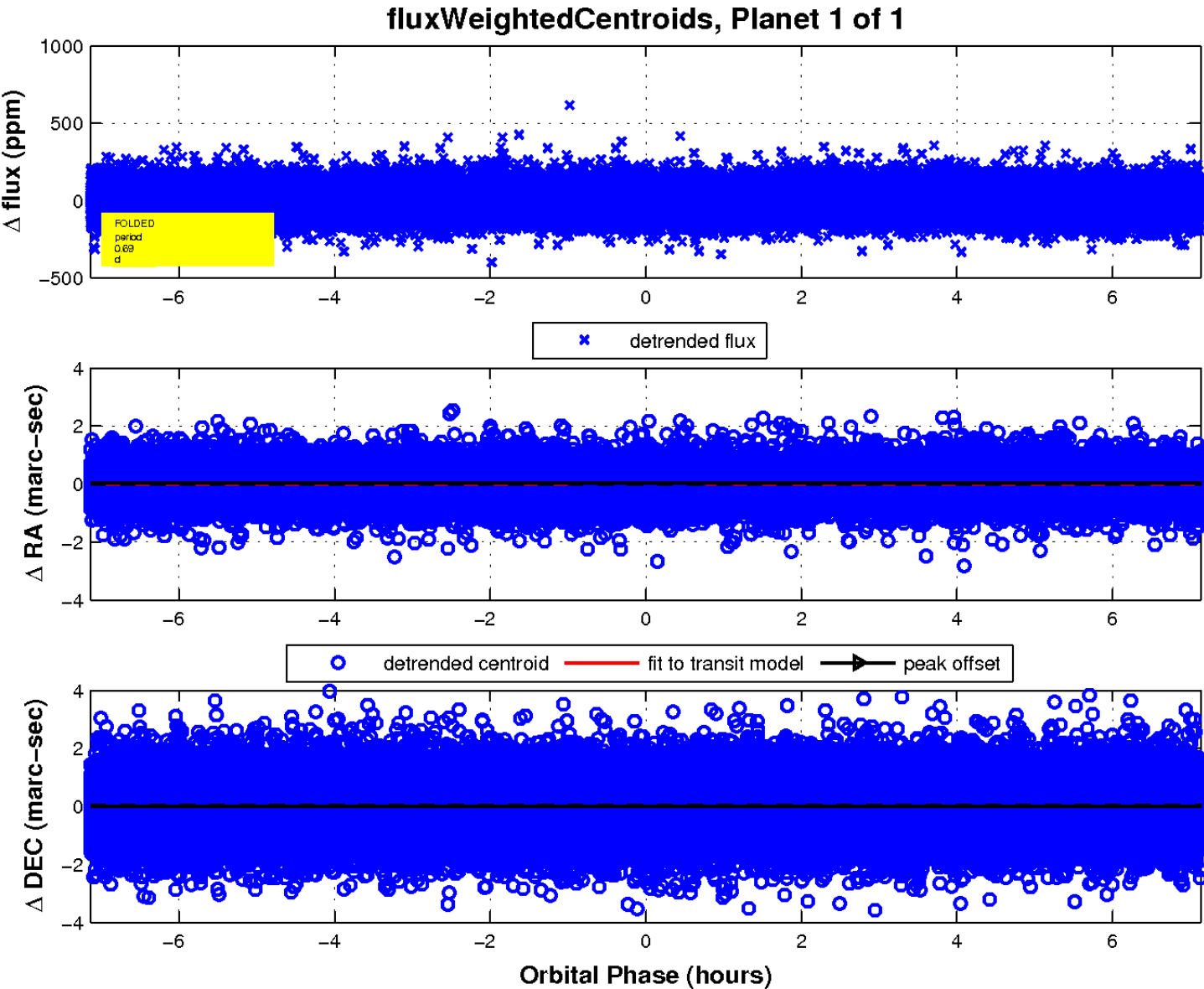
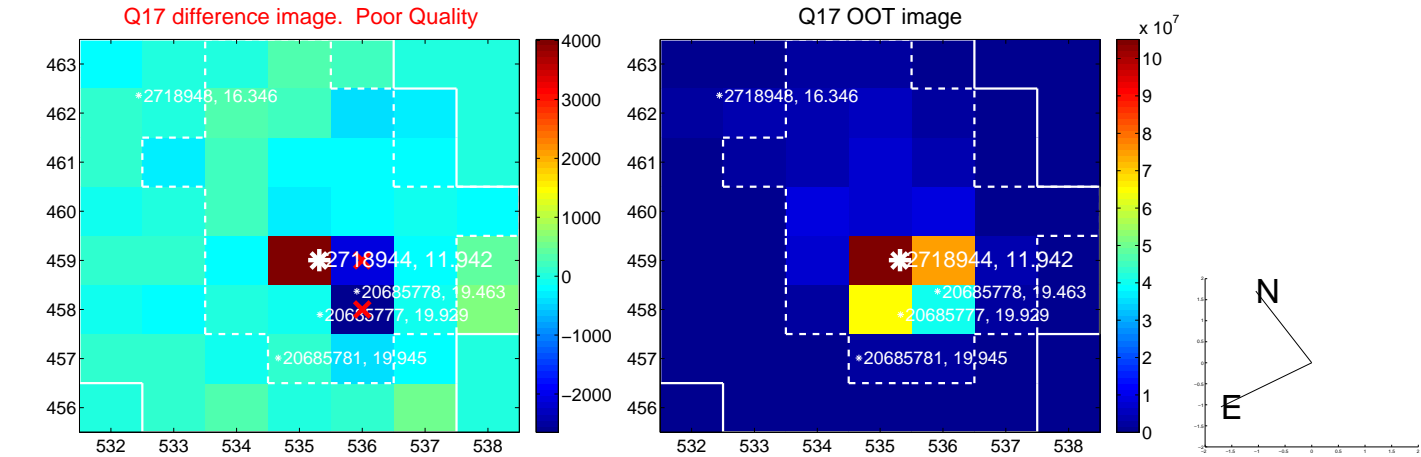
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

