

# KIC 002986833

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002986833-01	OBS	4875.01	0.912170	131.817899	137.4	1.425	9.2	10.3	0.56	3880	0.78	261.61

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002986833-01	OBS	PC	0.99	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.

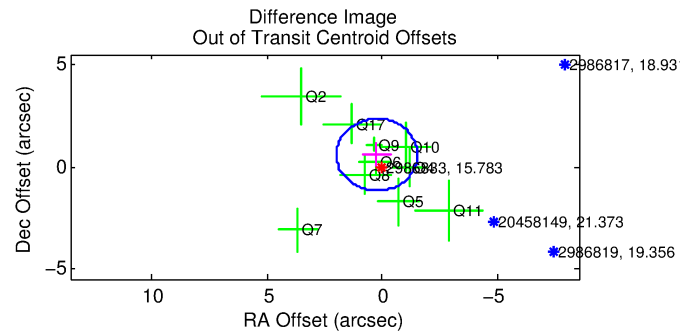
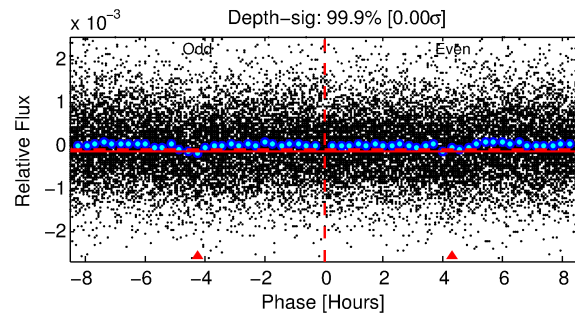
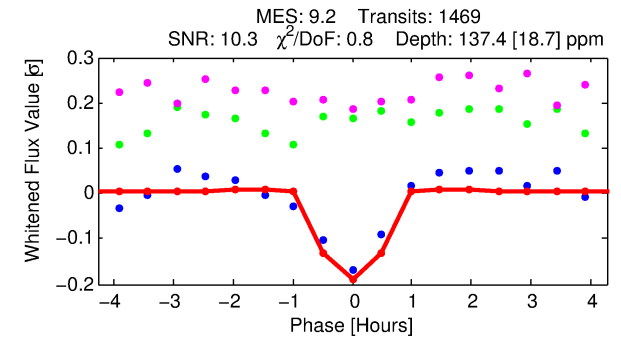
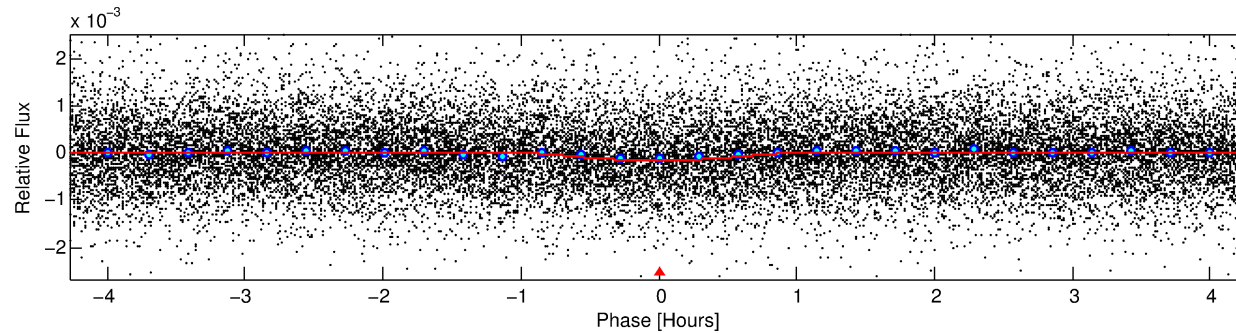
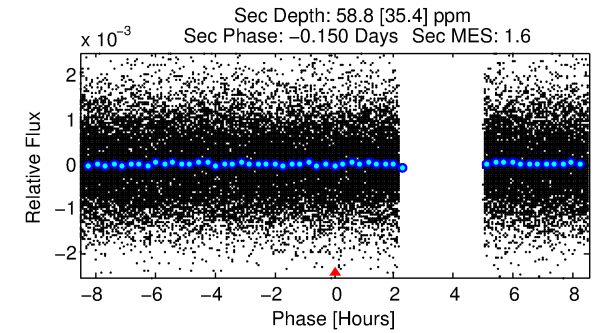
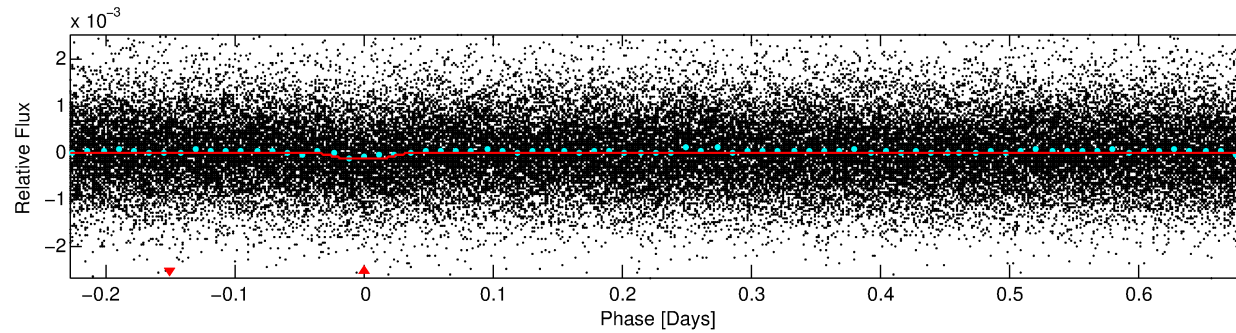
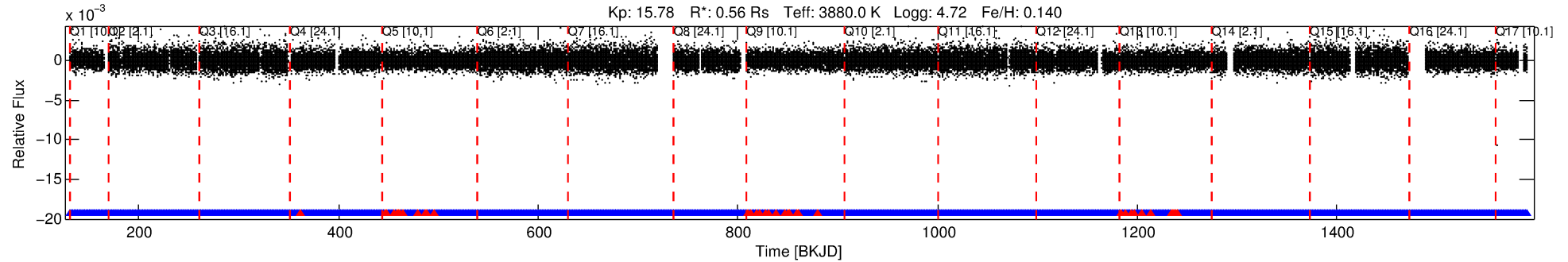
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 002986833-01

No Significant Match Found

# DV One-Page Summary

KIC: 2986833 Candidate: 1 of 1 Period: 0.912 d  
KOI: K04875.01 Corr: 0.919



## DV Fit Results:

Period = 0.91217 [0.00001] d  
Epoch = 131.8179 [0.0021] BKJD  
Rp/R\* = 0.0128 [0.0118]  
a/R\* = 2.57 [8.23]  
b = 0.89 [0.93]  
Seff = 261.61 [30.34]  
Teq = 1026 [30] K  
Rp = 0.78 [0.71] Re  
a = 0.0155 [0.0007] AU  
Ag = 12.79 [24.70] [0.48σ]  
Teffp = 2998 [1449] K [1.36σ]

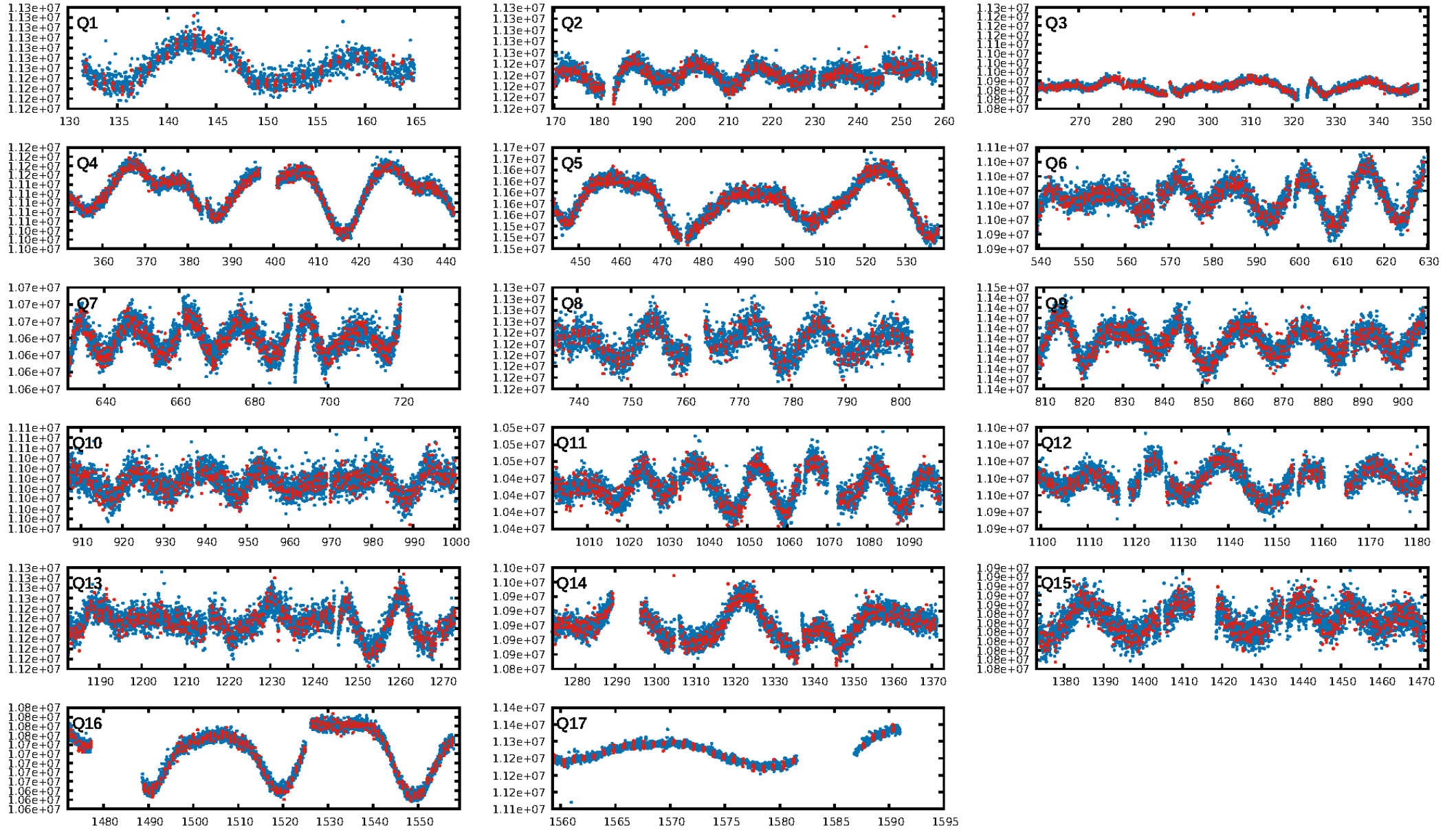
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.16e-20  
RollingBand-fgt: 0.97 [1366/1403]  
GhostDiagnostic-chr: 1.28  
Centroid-sig: 0.6%  
Centroid-so: 2.992 arcsec [2.21σ]  
OotOffset-rm: 0.633 arcsec [1.08σ]  
KicOffset-rm: 0.244 arcsec [0.33σ]  
OotOffset-st: 3/2/2/3 [10]  
KicOffset-st: 3/2/2/3 [10]  
DiffImageQuality-fgm: 0.30 [3/10]  
DiffImageOverlap-fno: 1.00 [17/17]

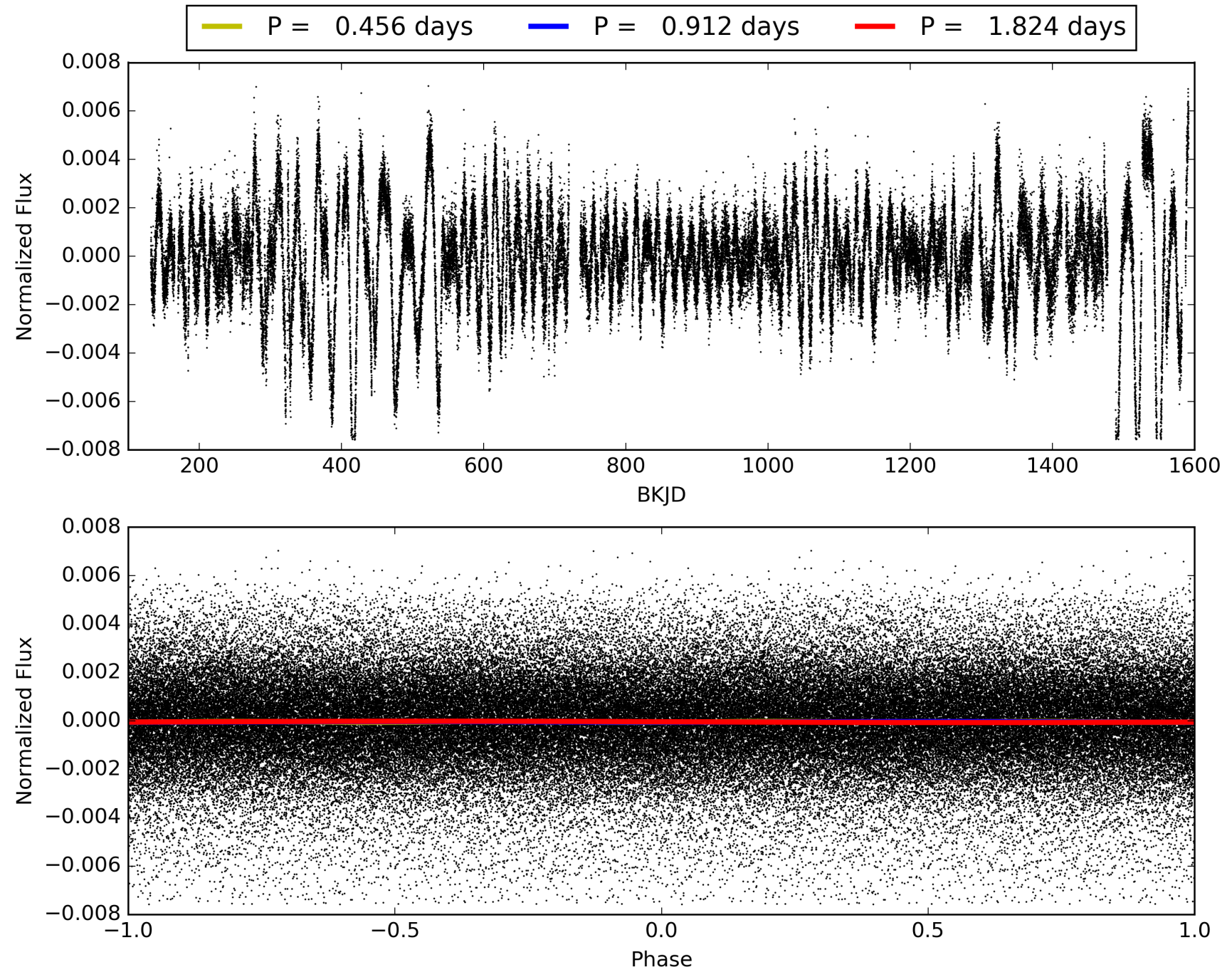
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:08:39 Z

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

# TCE 002986833-01, PDC Light Curves

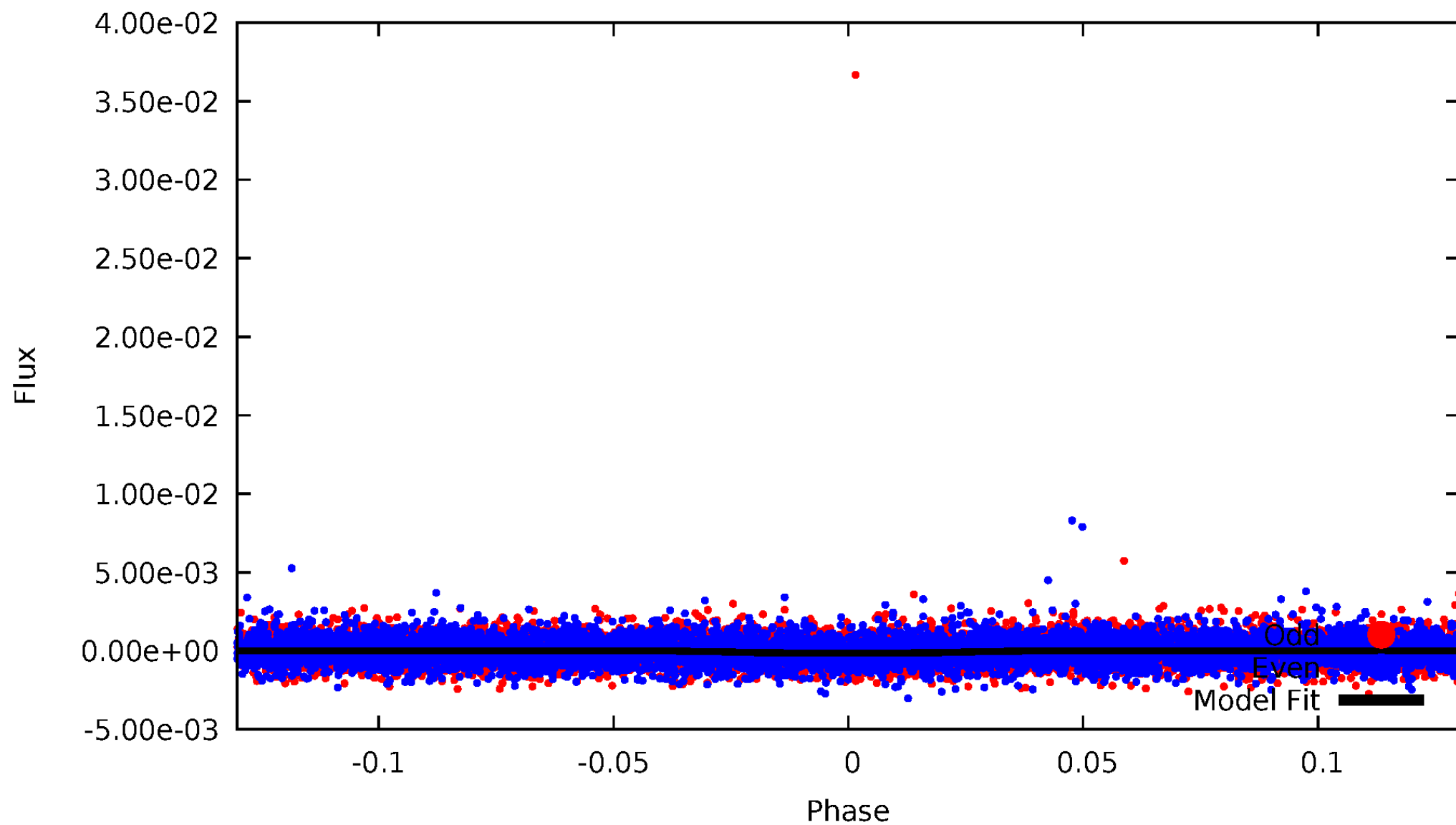


# TCE 002986833-01



# DV Odd/Even

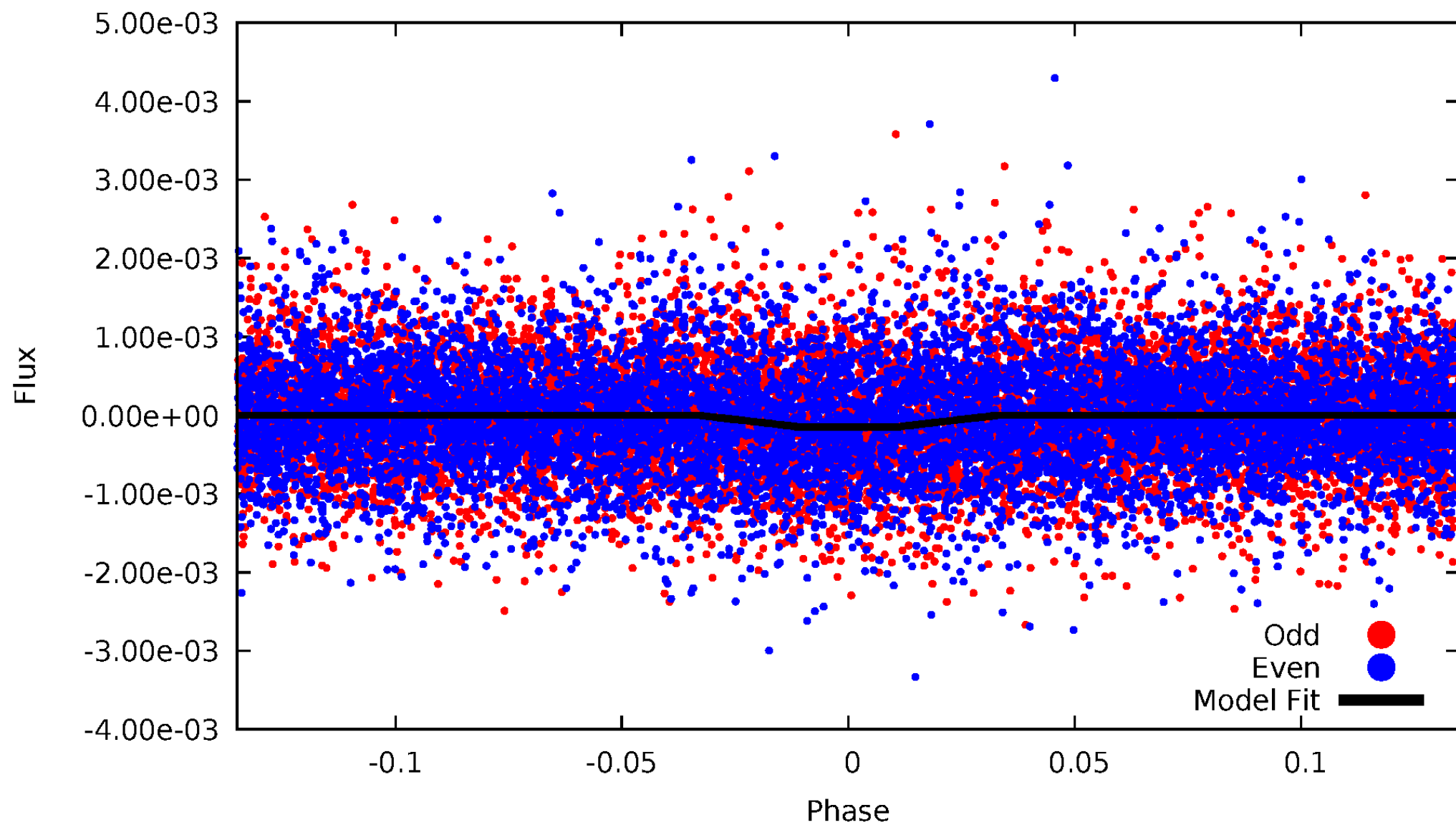
TCE 002986833-01





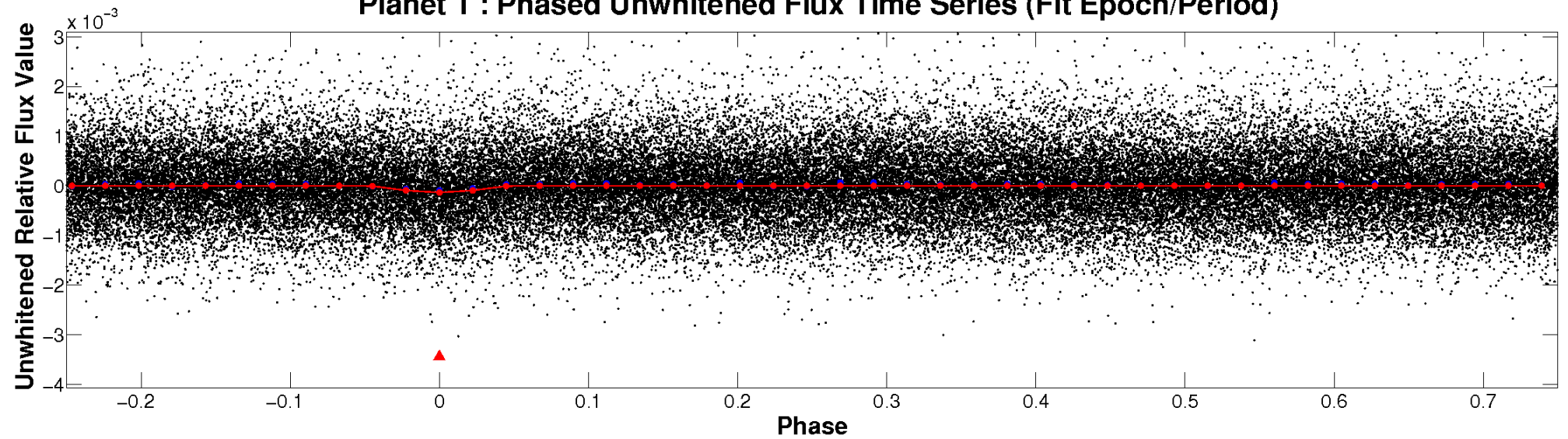
# ALT Odd/Even

TCE 002986833-01

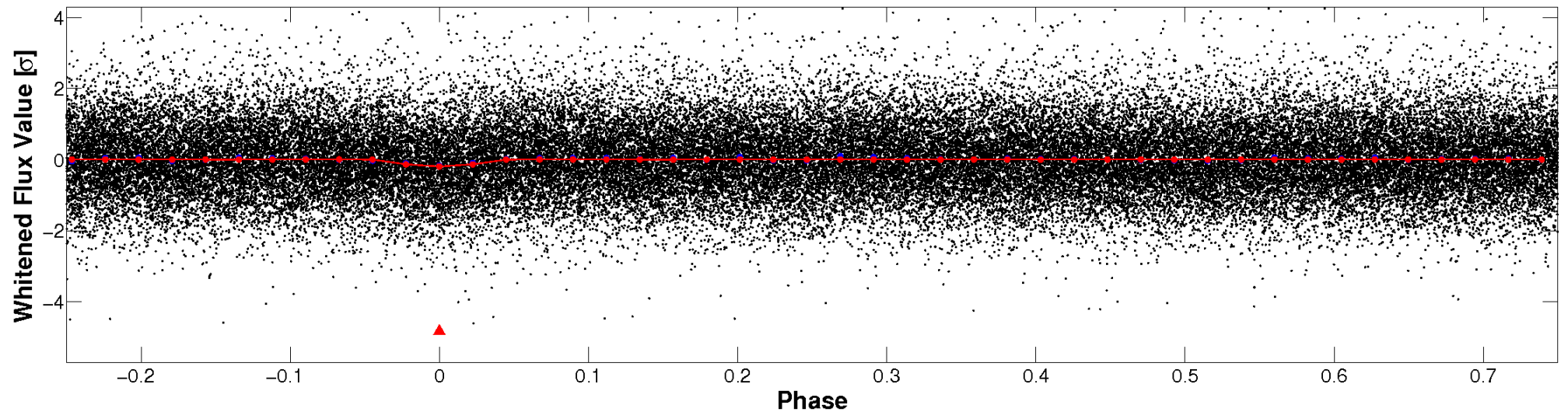


# Non-Whitened Vs. Whitened Light Curve

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

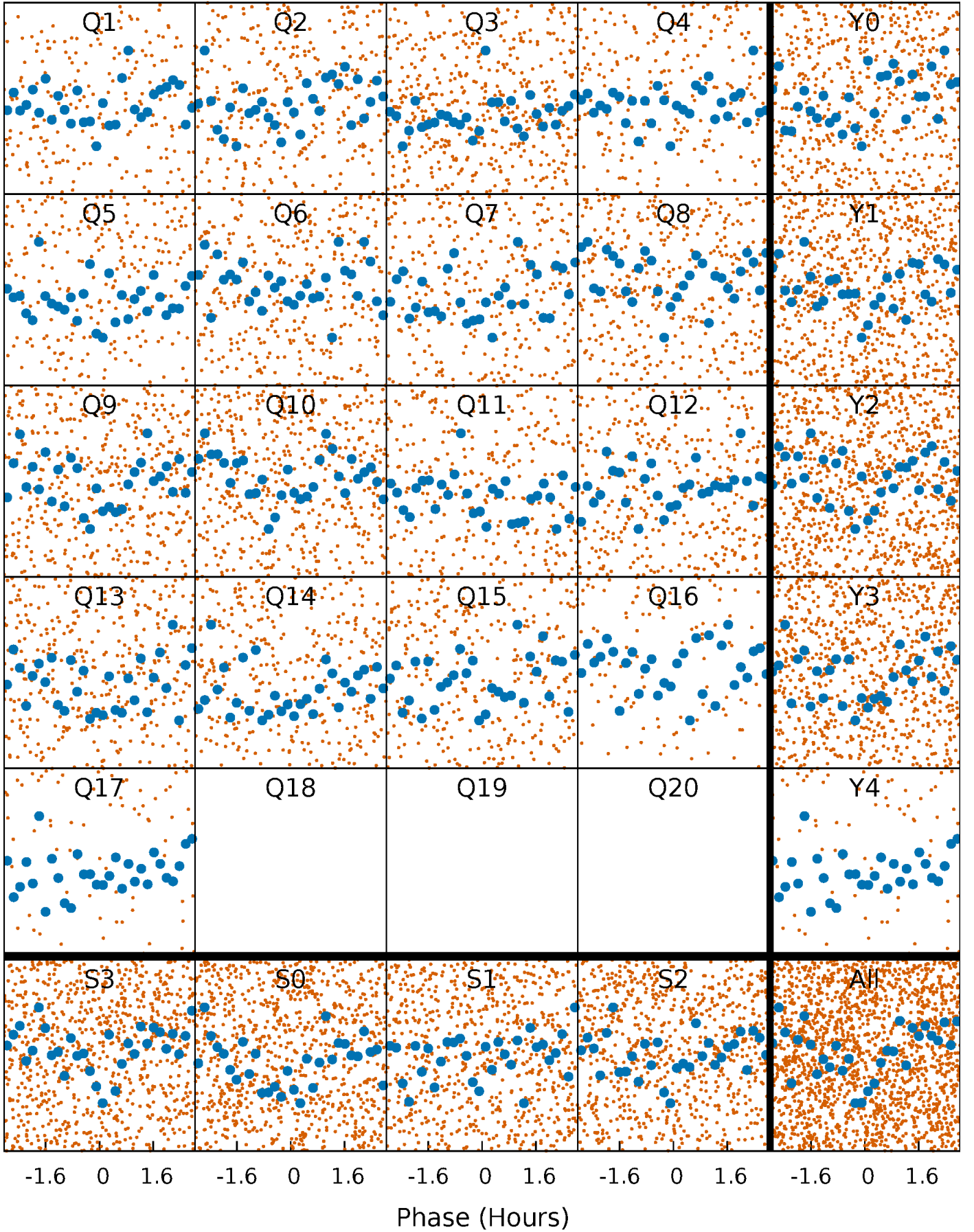


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

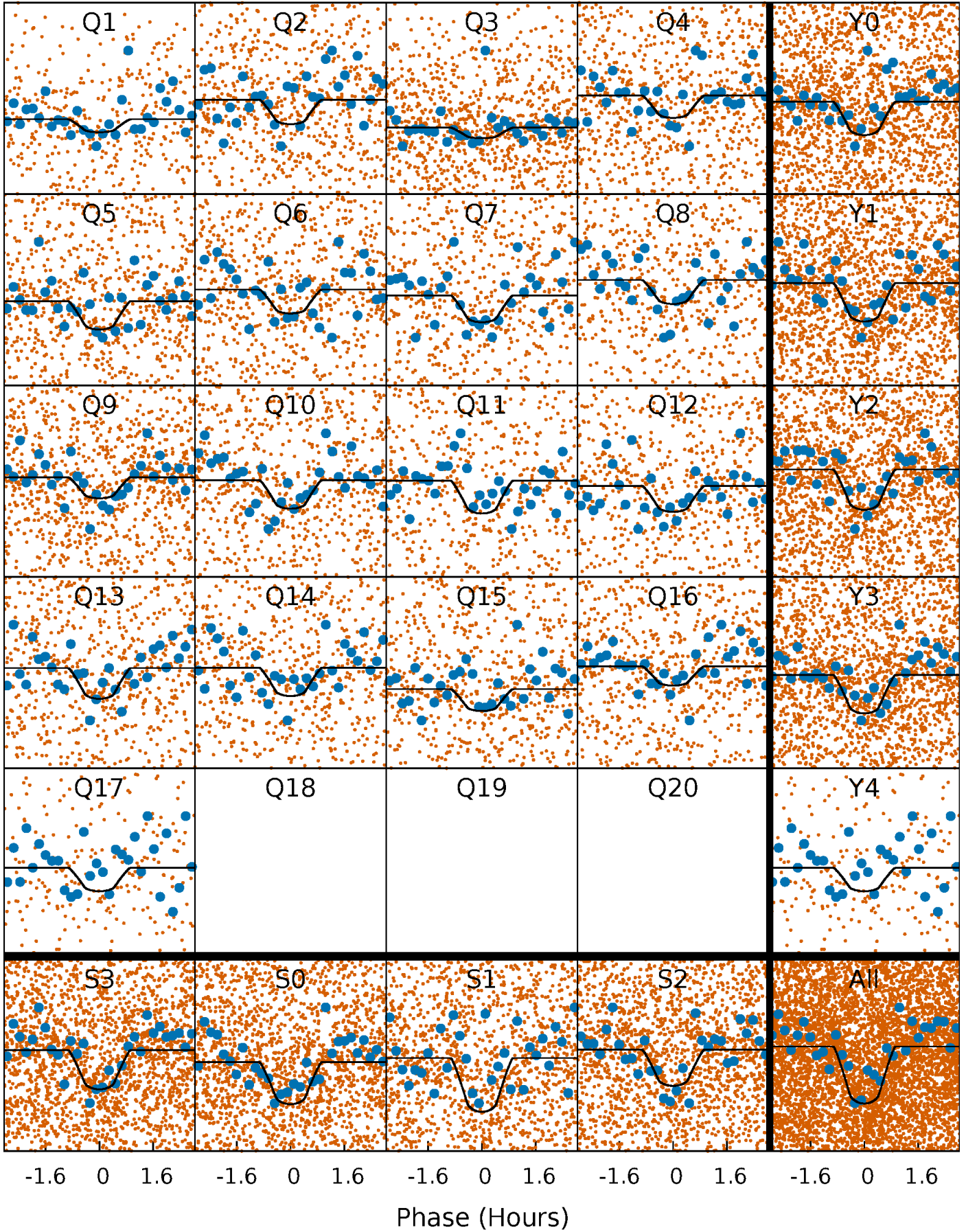
TCE 002986833-01 P= 0.912170 Days  $T_0=131.817899$  (BKJD)





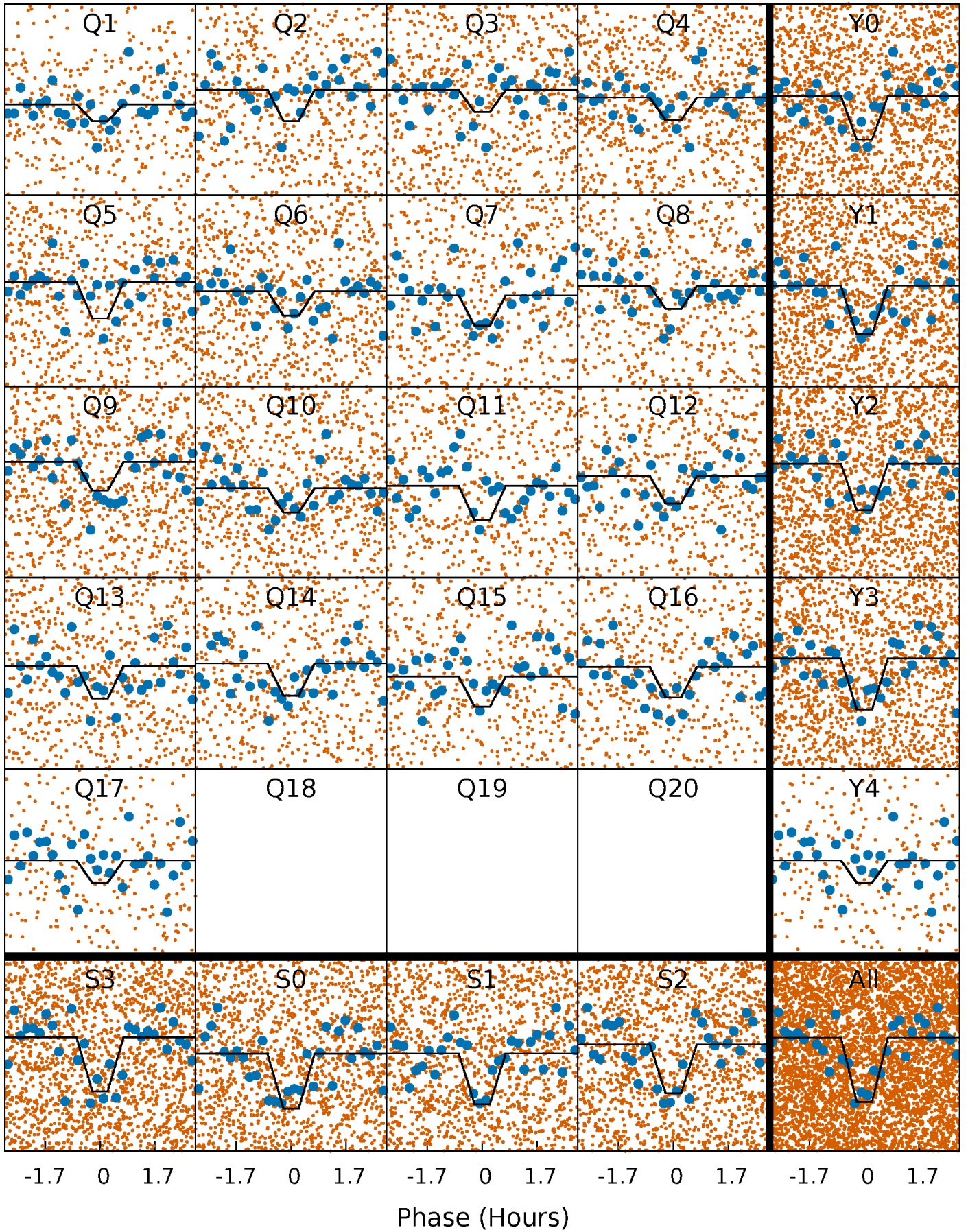
# DV Quarter-Phased Transit Curves

TCE 002986833-01 P= 0.912170 Days  $T_0=131.817899$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

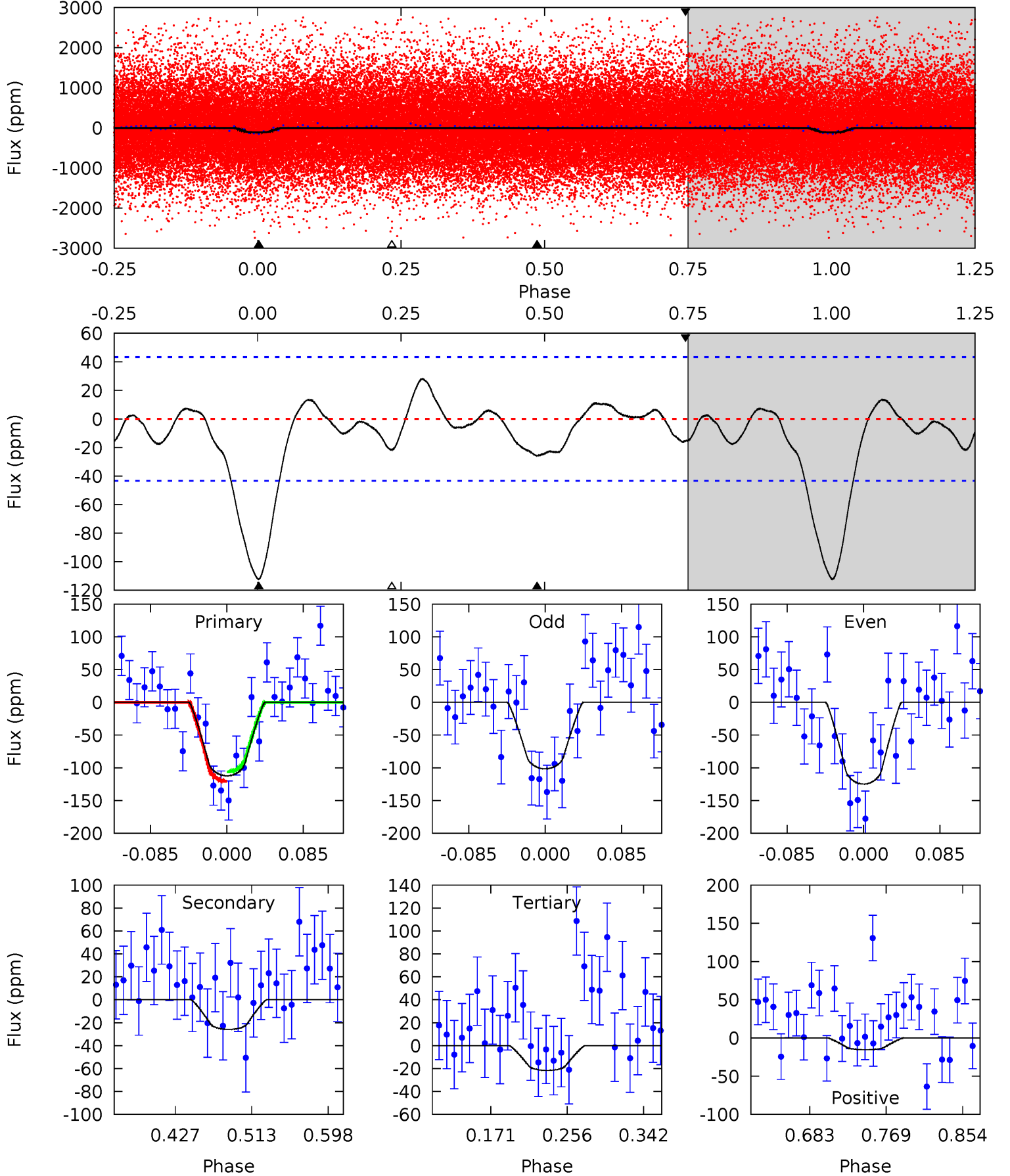
TCE 002986833-01 P= 0.912175 Days  $T_0=131.814949$  (BKJD)



# DV Model-Shift Uniqueness Test

002986833-01, P = 0.912170 Days, E = 130.905729 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
11.9	2.74	2.30	-1.63	4.60	1.72	1.07	9.61	13.5	0.44	4.37	1.24	0.83	0.20	0.77

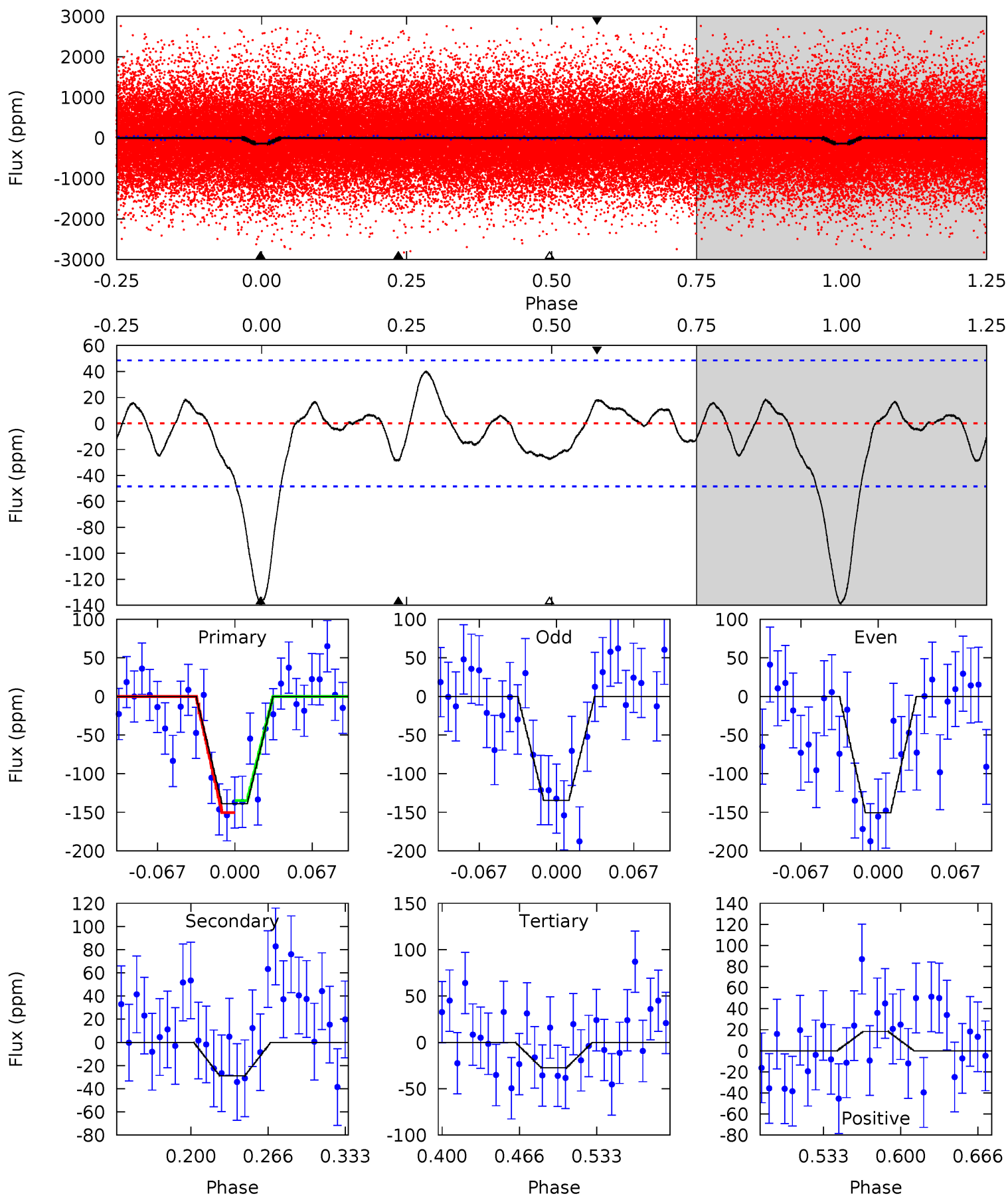




# Alt Model-Shift Uniqueness Test

002986833-01, P = 0.912175 Days, E = 130.902774 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
13.3	2.77	2.63	1.75	4.65	1.83	1.21	10.7	11.6	0.13	1.02	0.77	0.92	0.22	0.74





### Stellar Parameters For KIC 002986833

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3880^{+69}_{-92}$	$4.722^{+0.023}_{-0.035}$	$0.140^{+0.150}_{-0.150}$	$0.555^{+0.033}_{-0.033}$	$0.591^{+0.024}_{-0.042}$	$4.883^{+0.589}_{-0.635}$
	+2%/-2%	+0%/-1%	+107%/-107%	+6%/-6%	+4%/-7%	+12%/-13%
Source	SPE70	PHO2	SPE70	DSEP		

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

### Secondary Eclipse Parameters for KIC 002986833-01 / KOI 4875.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-26 \pm 9$	$0.89^{+0.64}_{-0.55}$	$1434^{+34}_{-37}$	$2756^{+968}_{-414}$	$3.880^{+24.217}_{-2.624}$
Alt.	$-29 \pm 10$	$0.90^{+0.70}_{-0.56}$	$1434^{+35}_{-35}$	$2794^{+1015}_{-446}$	$4.408^{+27.746}_{-3.058}$

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

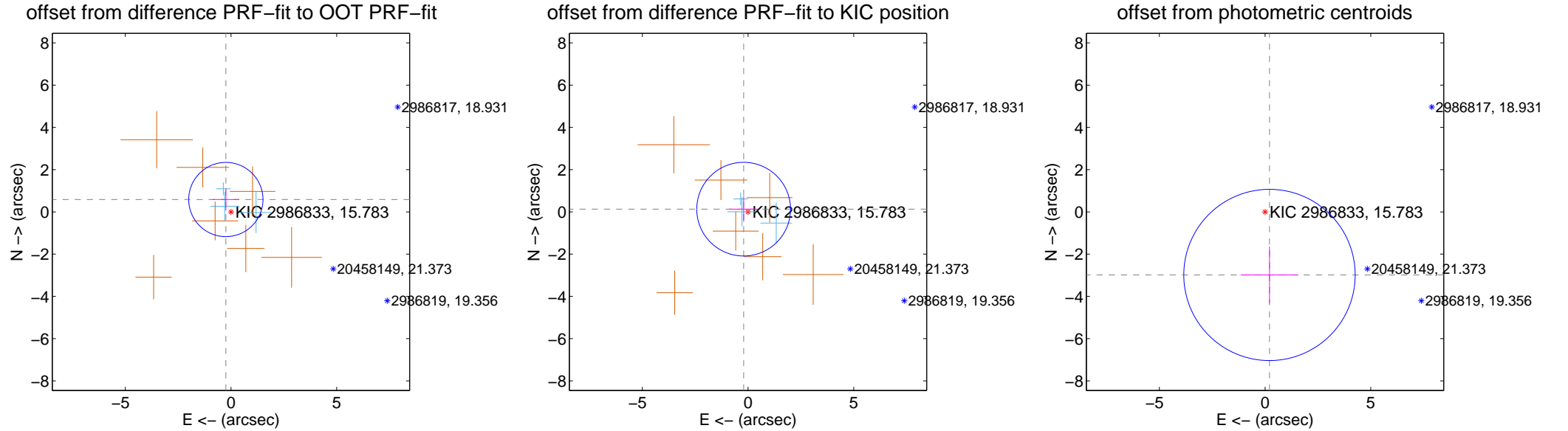
## DV Centroid Data

Supplemental centroid analysis for 002986833-01. Kepler magnitude: 15.78. Transit SNR 10.31

There are 3 quarters with good PRF difference image offsets

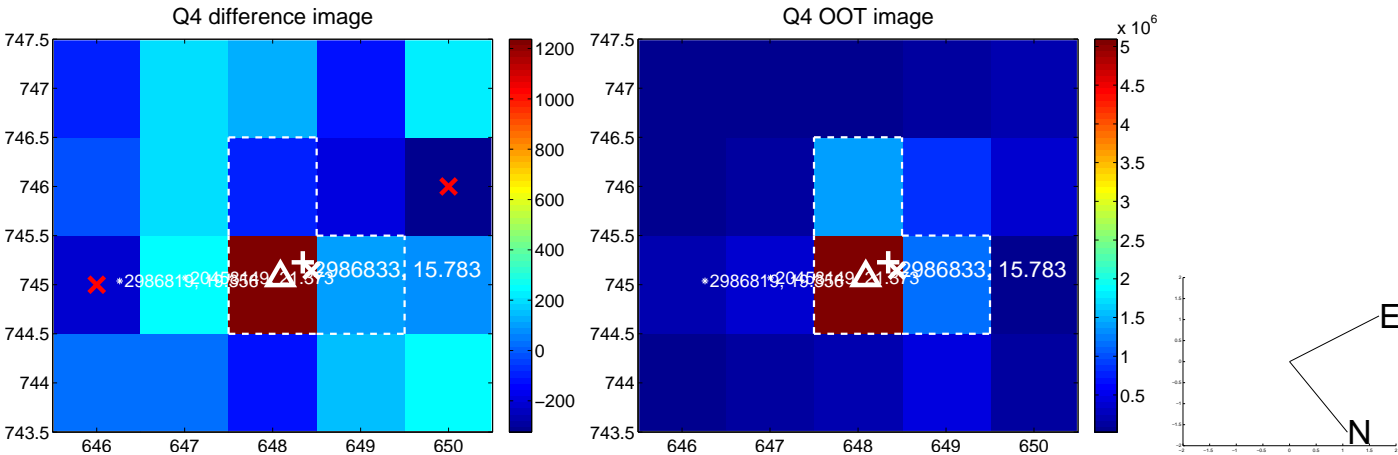
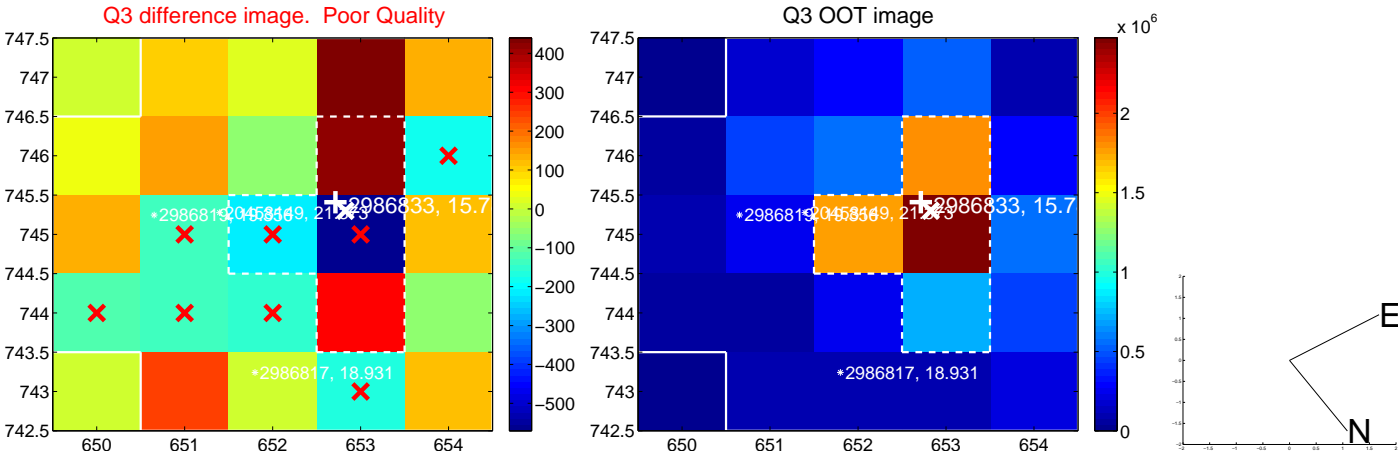
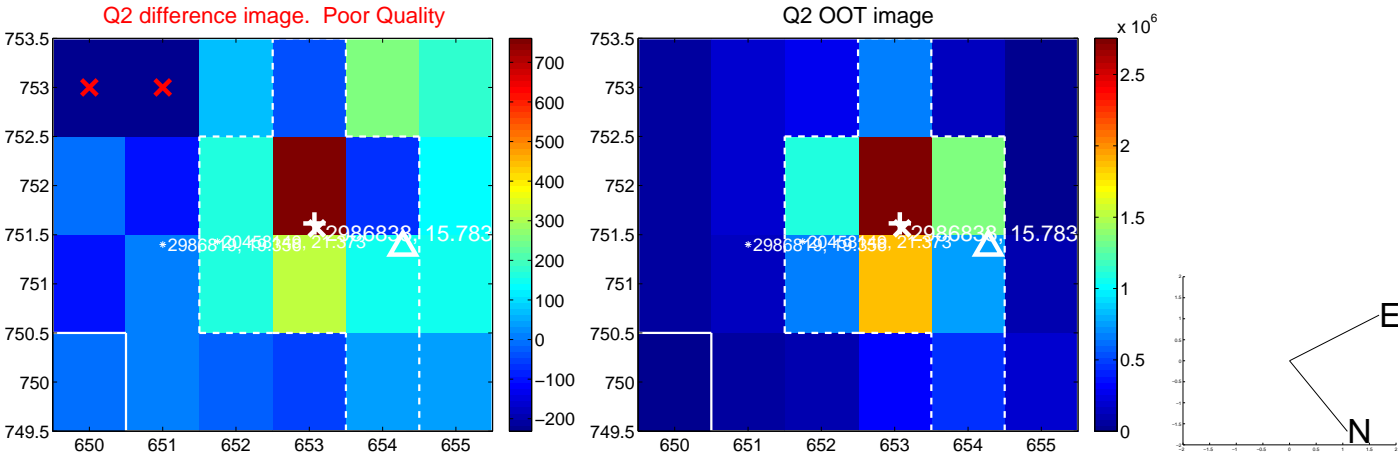
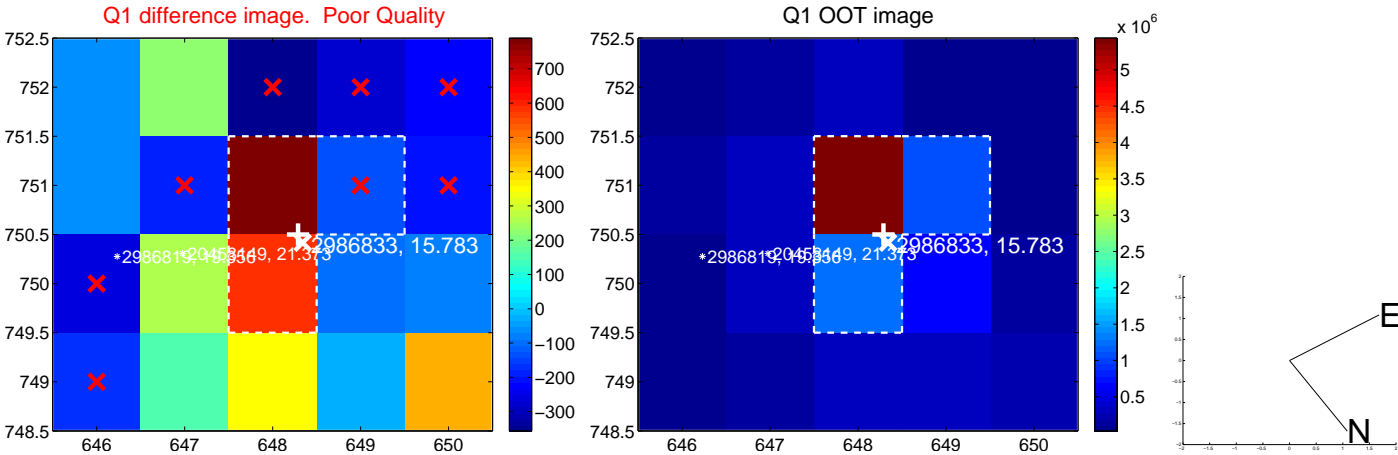
The direct PRF centroid is offset from the target star catalog position by about 0.61 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.633 \pm 0.585$	1.08	$0.243 \pm 0.635$	$0.585 \pm 0.526$
PRF-fit source offset from KIC position	$0.244 \pm 0.739$	0.33	$0.207 \pm 0.692$	$0.129 \pm 0.600$
photometric centroid source offset	$2.99 \pm 1.35$	2.21	$-0.21 \pm 1.37$	$-2.98 \pm 1.35$

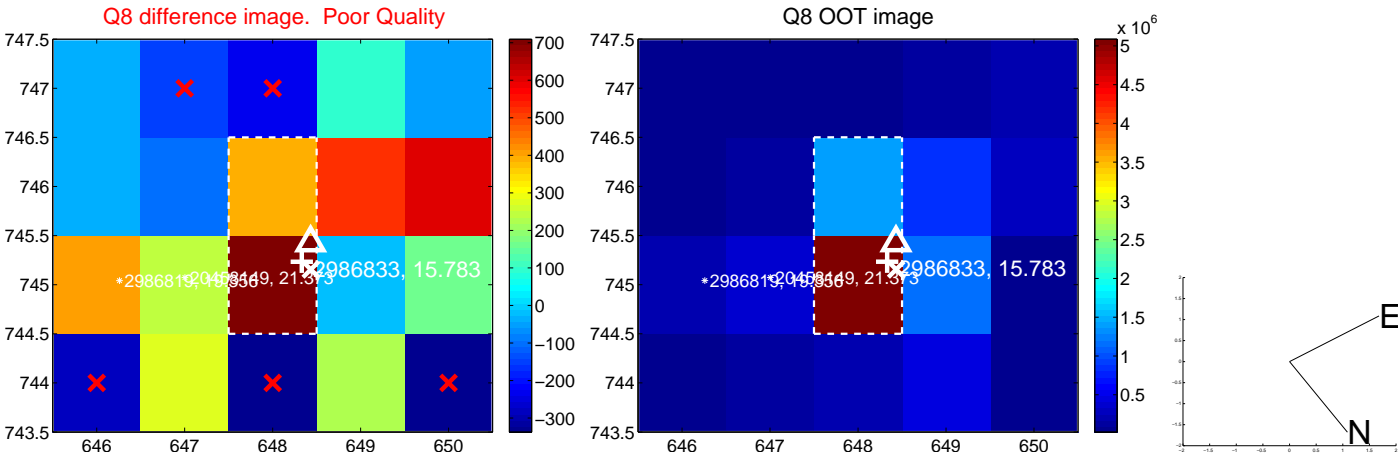
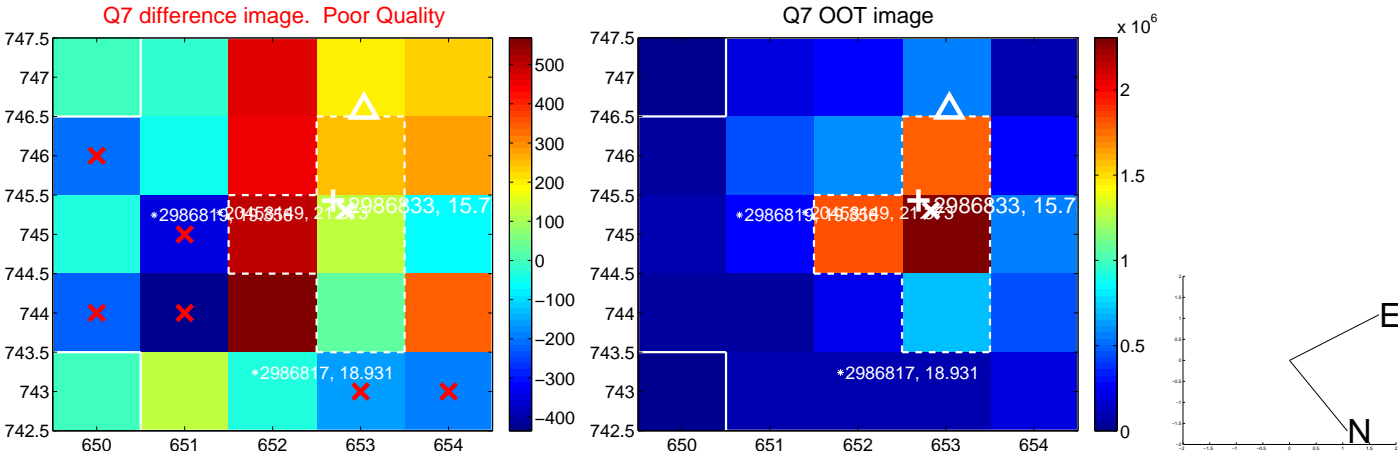
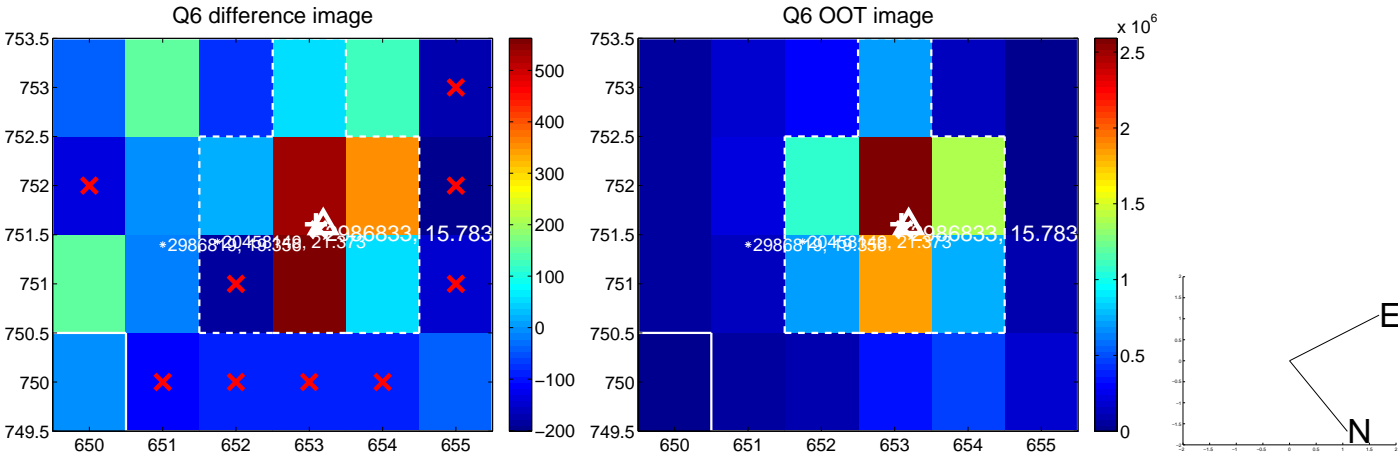
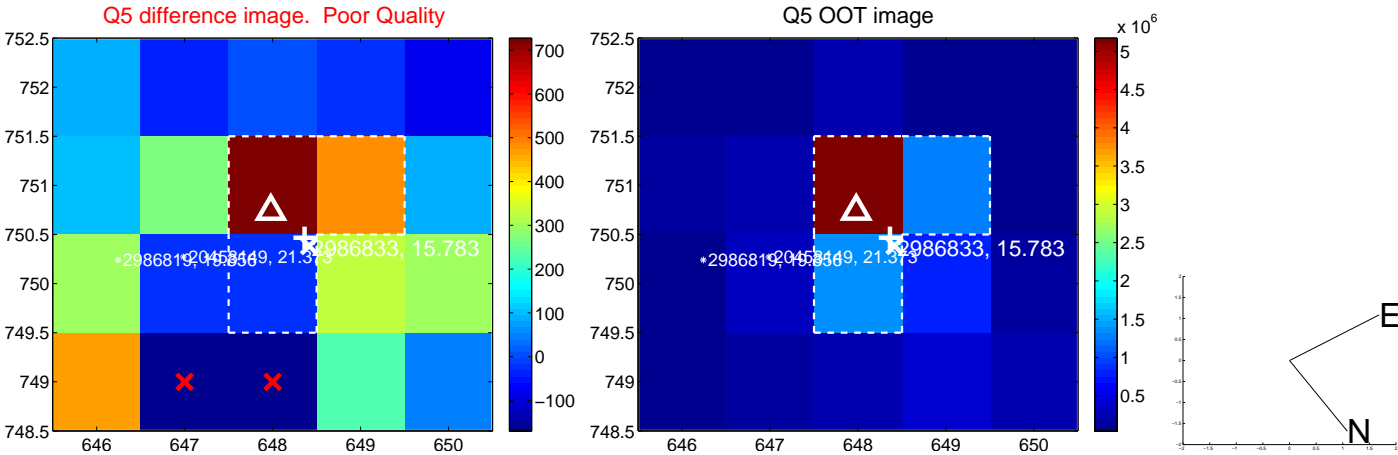


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

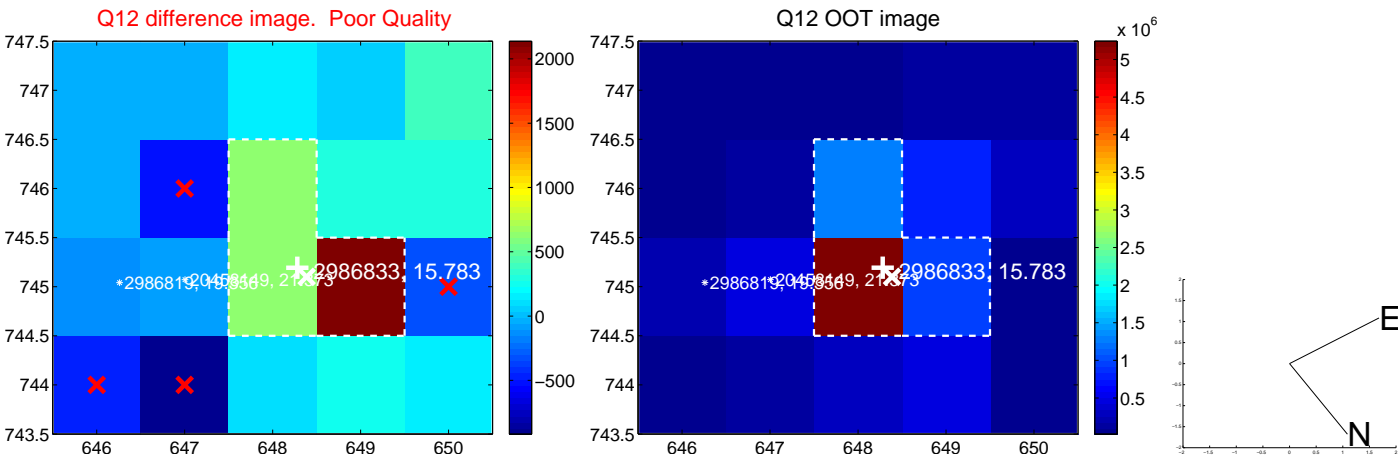
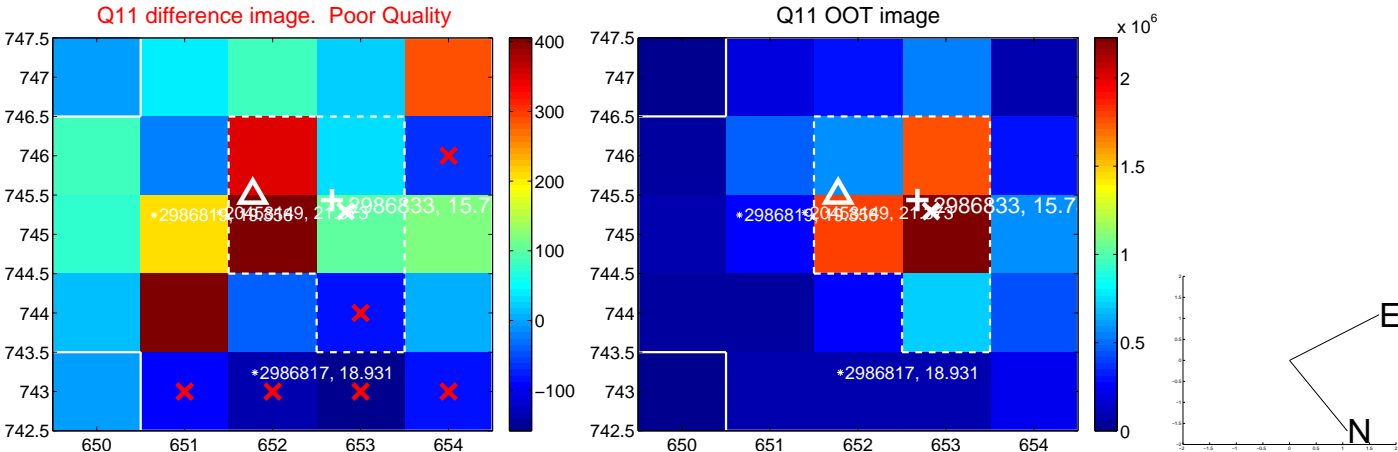
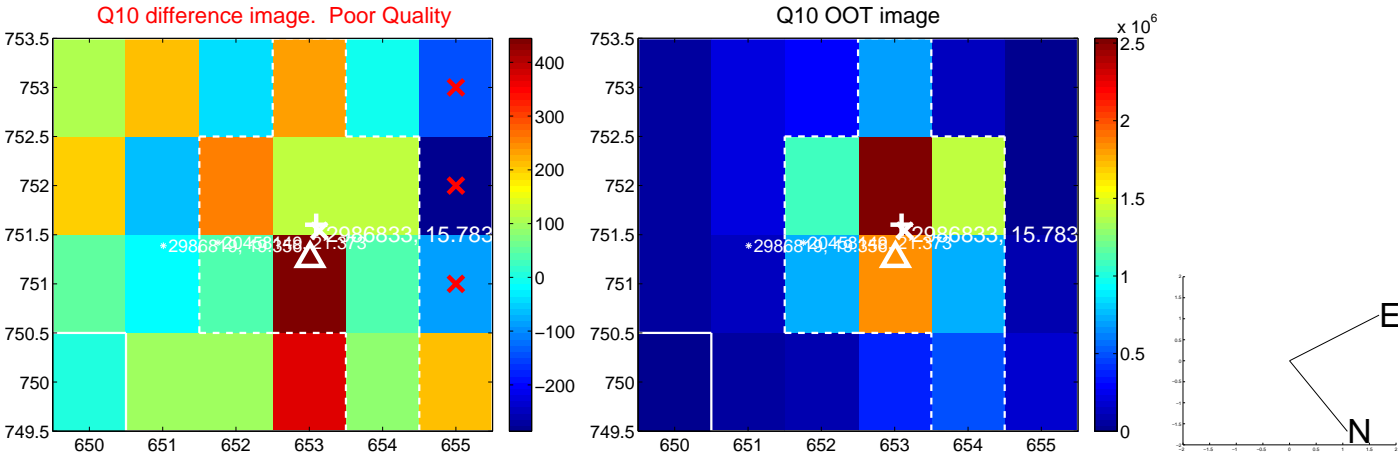
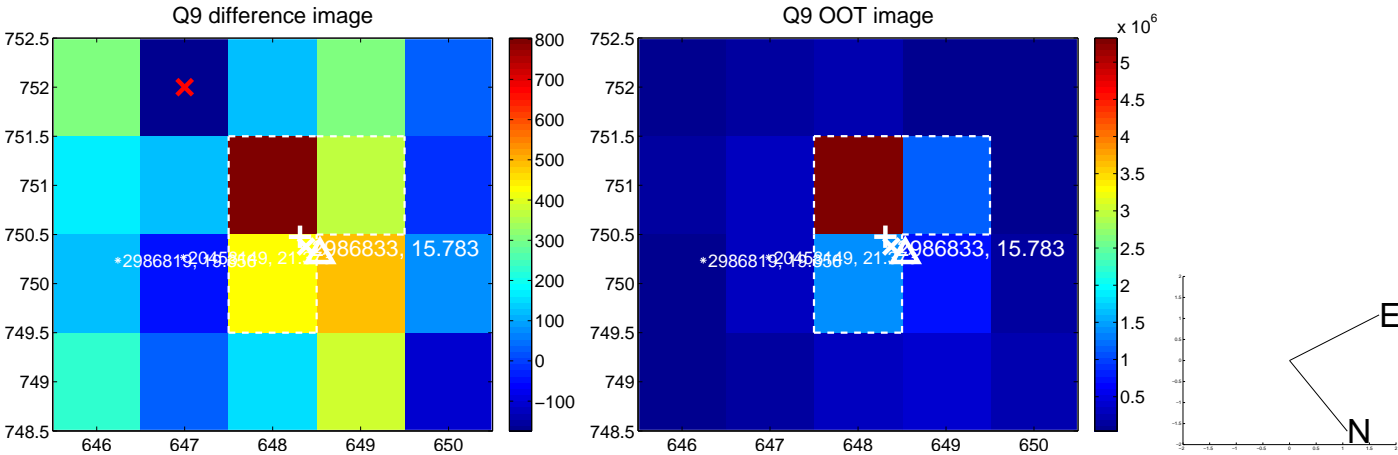


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

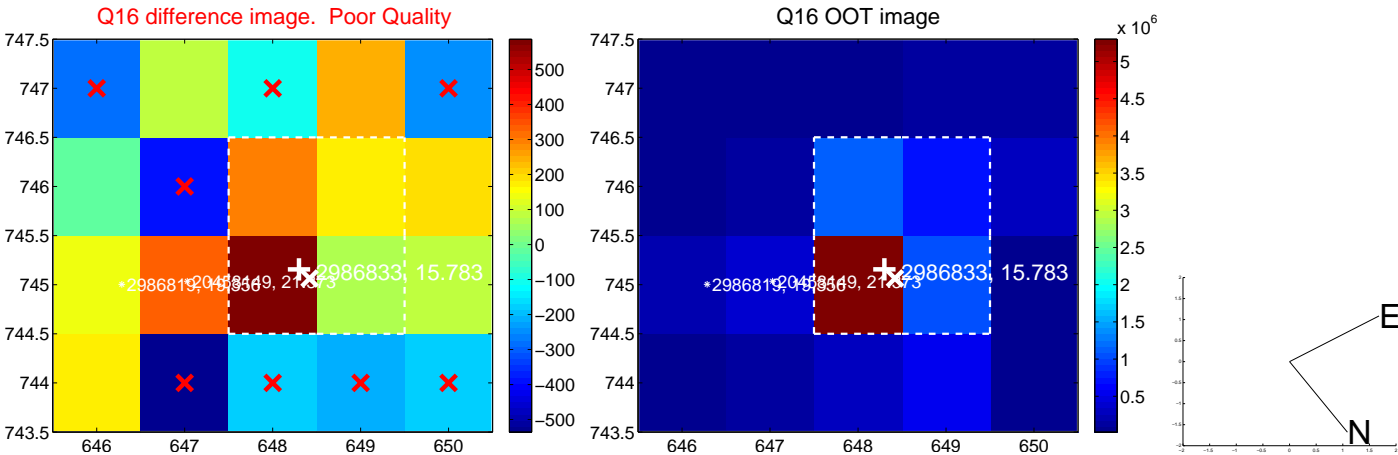
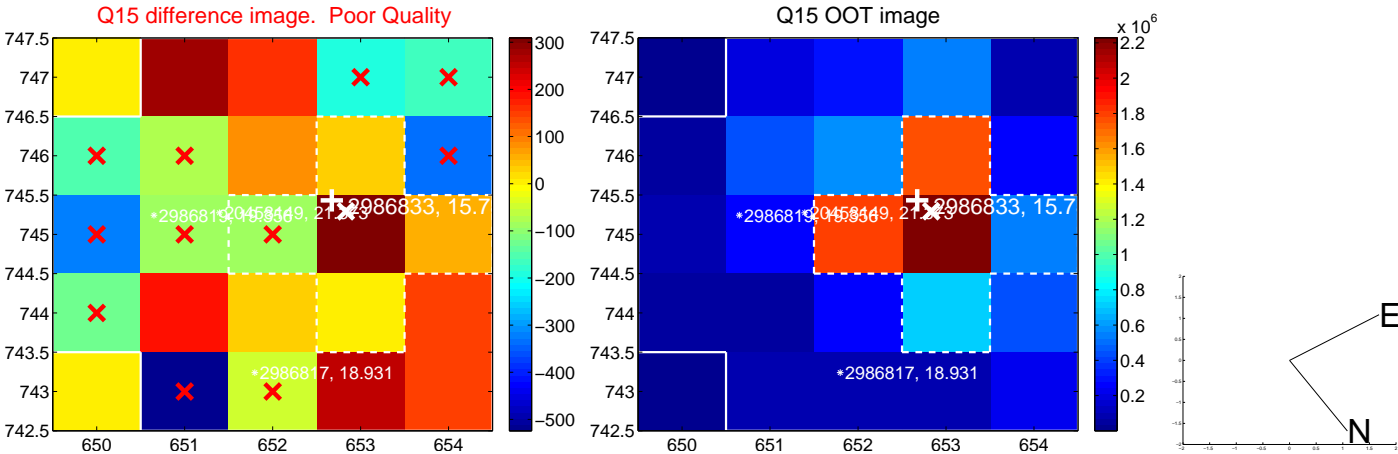
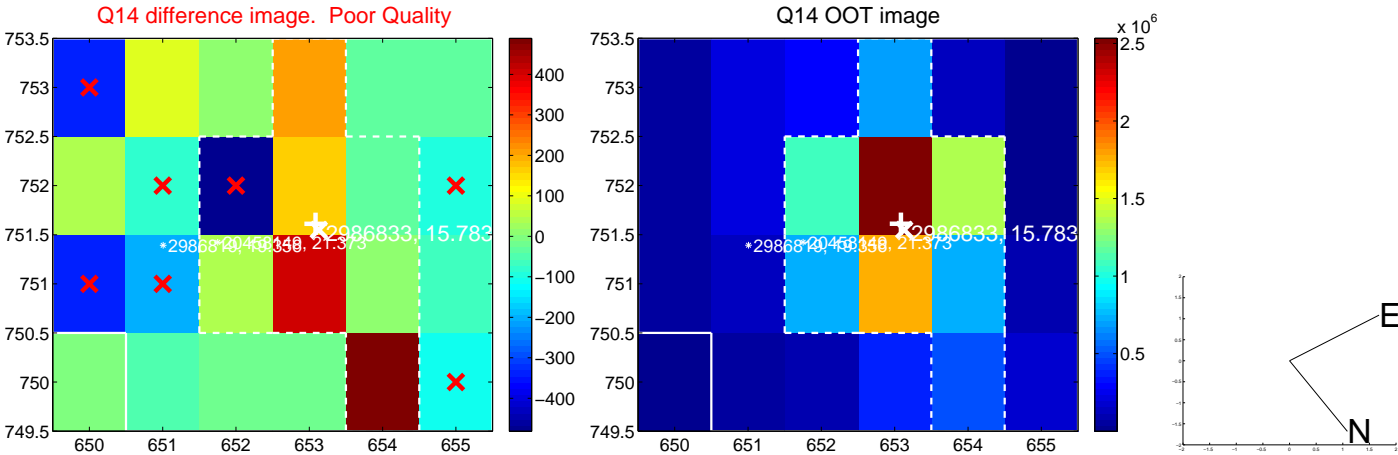
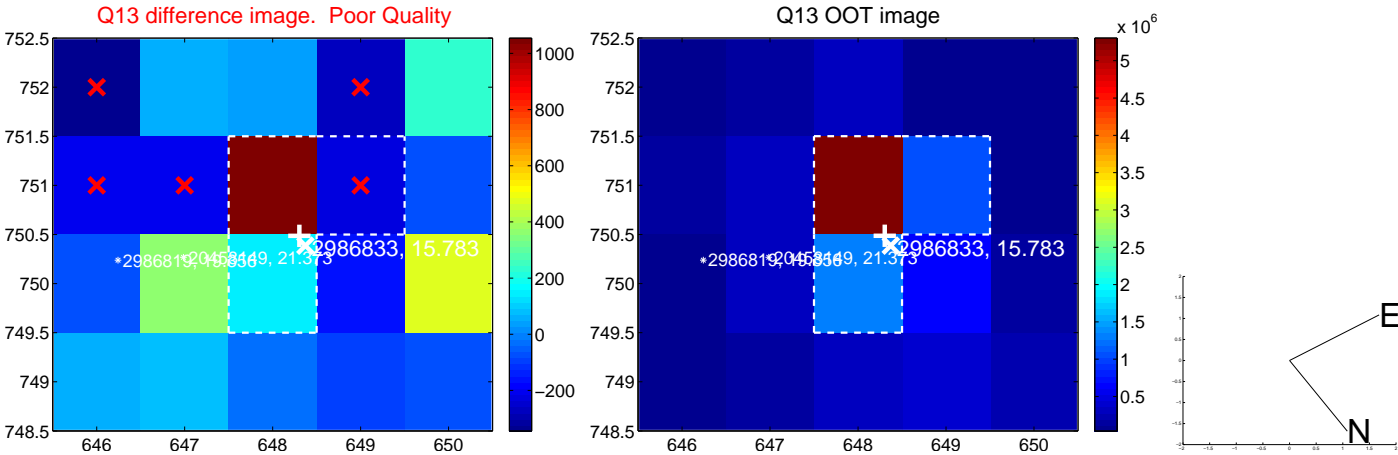




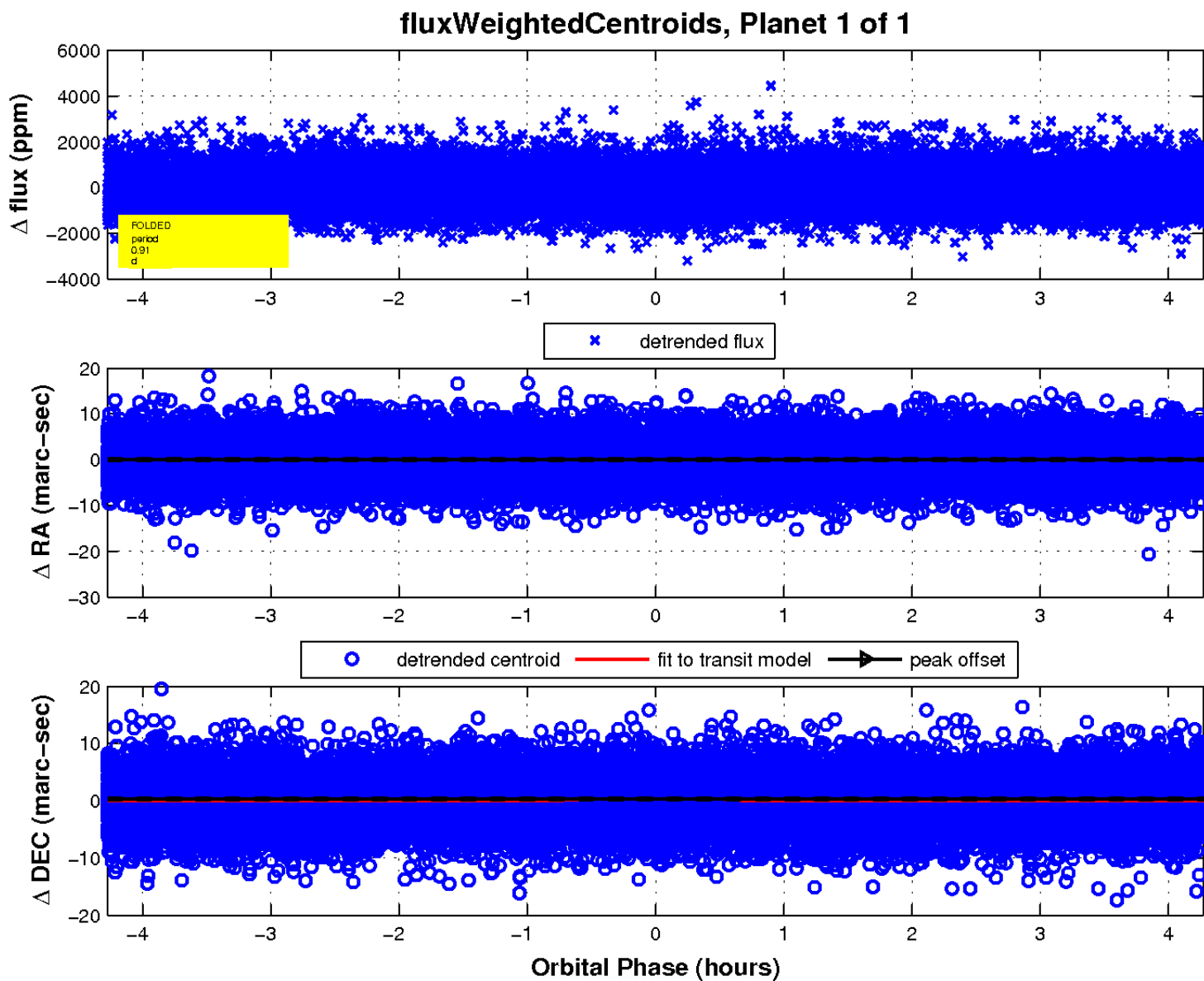
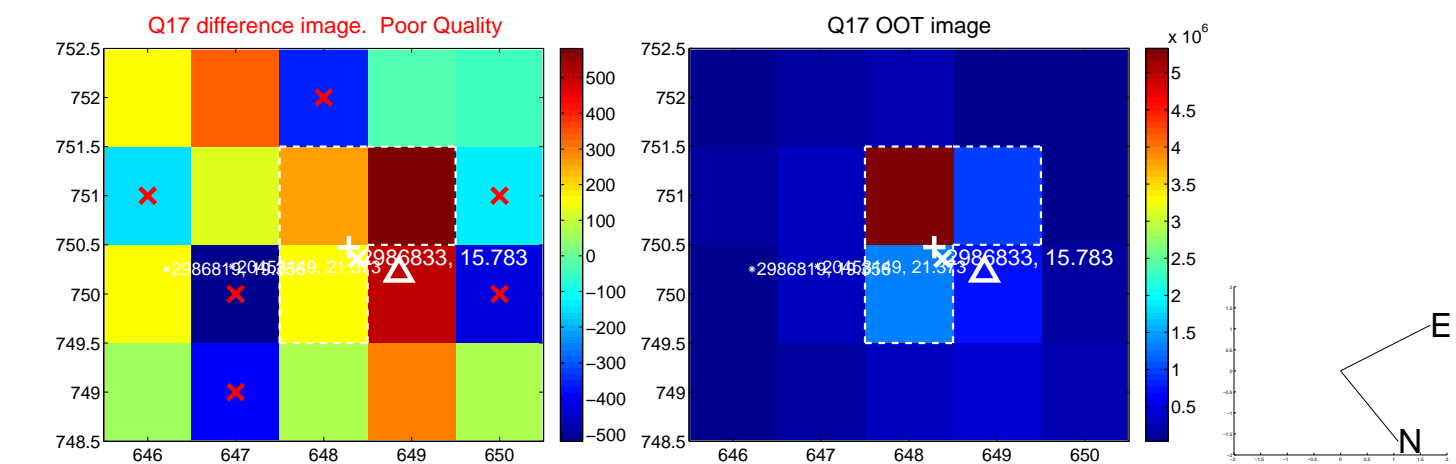
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

