

# KIC 009306677

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009306677-01	OBS	No	2.940896	132.769996	15.1	7.294	8.3	7.3	3.37	7872	1.52	14925.86

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009306677-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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 009306677-01

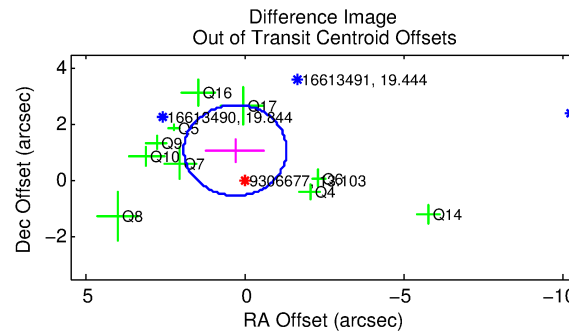
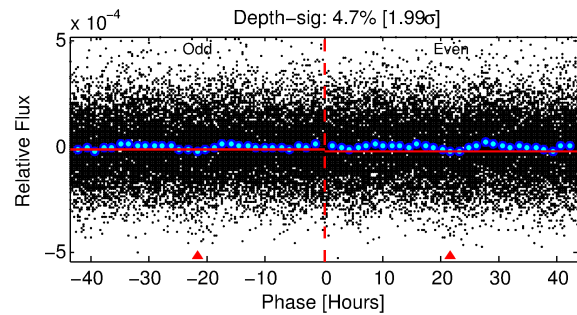
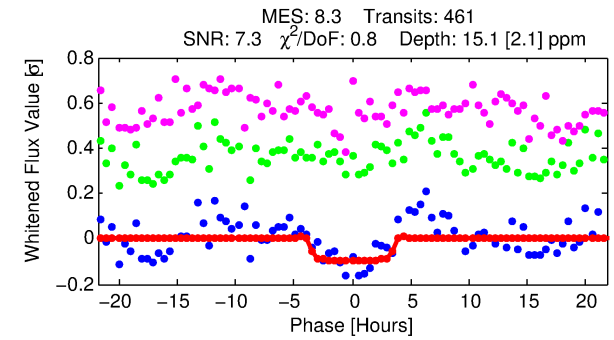
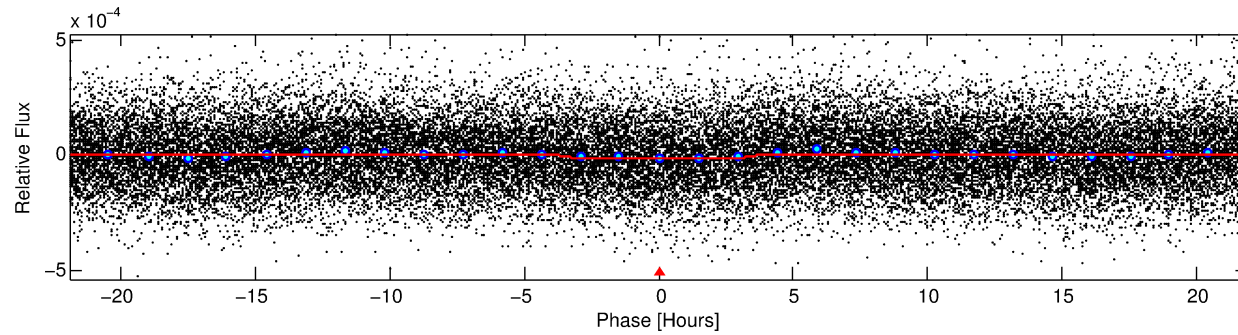
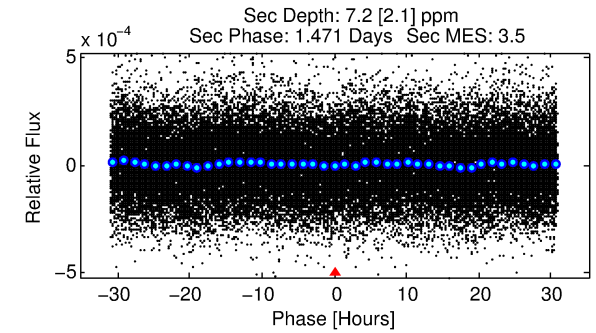
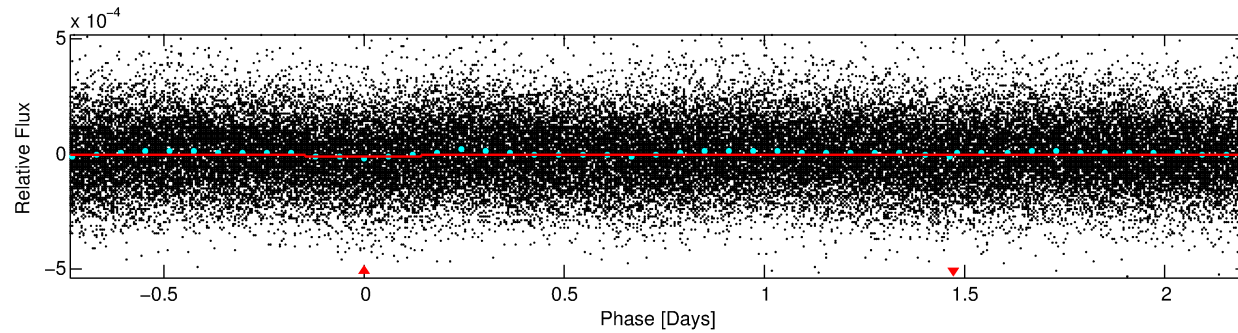
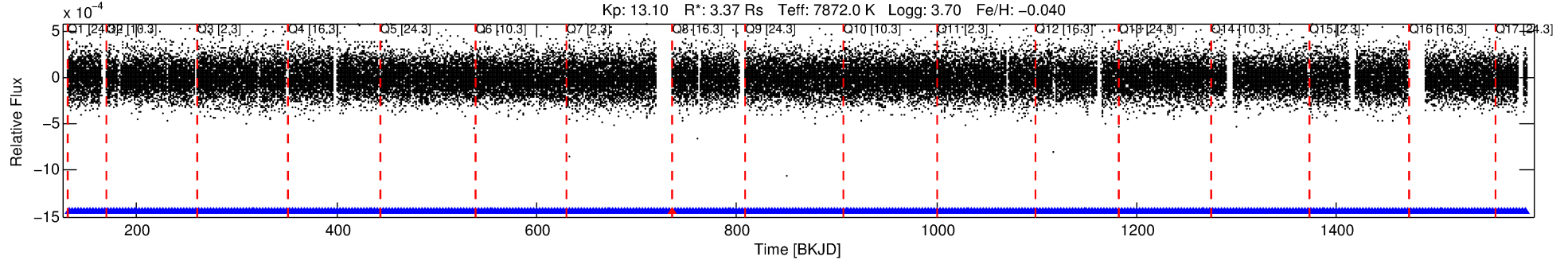
No Significant Match Found

# DV One-Page Summary

KIC: 9306677 Candidate: 1 of 1 Period: 2.941 d

KOI: K05655 Corr: No Ephemeris Match

Kp: 13.10 R\*: 3.37 Rs Teff: 7872.0 K Logg: 3.70 Fe/H: -0.040



## DV Fit Results:

Period = 2.94090 [0.00005] d  
Epoch = 132.7700 [0.0106] BKJD  
a/R\* = 1.67 [2.31]  
b = 0.90 [0.47]  
Seff = 14925.86 [11086.80]  
Teq = 2818 [523] K  
Rp = 1.52 [0.90] Re  
a = 0.0512 [0.0233] AU  
Ag = 4.46 [4.68] [0.74σ]  
Teffp = 6331 [1230] K [2.63σ]

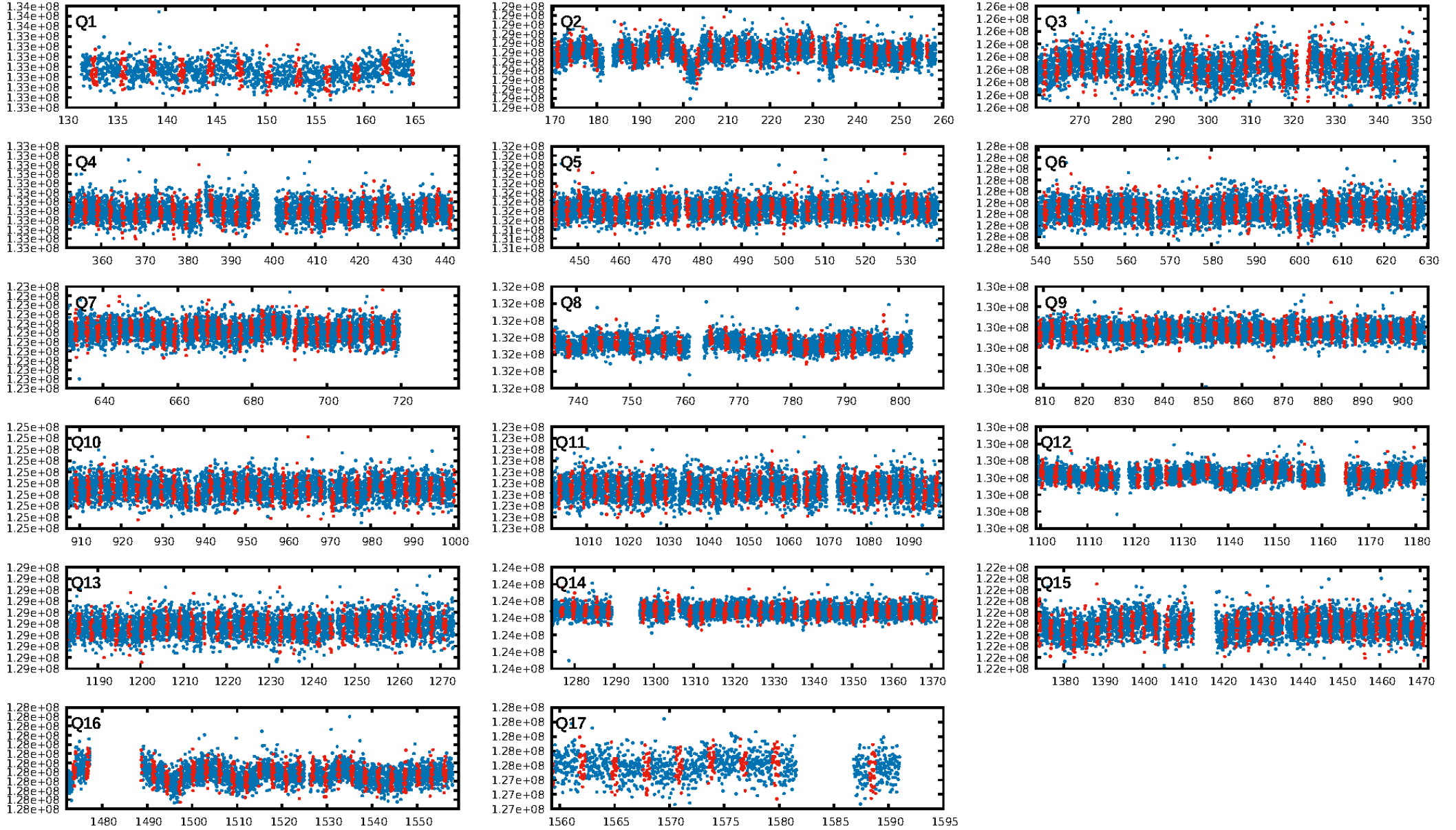
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.63e-16  
RollingBand-fgt: 1.00 [439/440]  
GhostDiagnostic-chr: -2.765  
Centroid-sig: 48.5%  
Centroid-so: 1.892 arcsec [0.86σ]  
OotOffset-rm: 1.126 arcsec [2.09σ]  
KicOffset-rm: 1.197 arcsec [1.96σ]  
OotOffset-st: 3/1/3/3 [10]  
KicOffset-st: 3/1/3/3 [10]  
DiffImageQuality-fgm: 0.40 [4/10]  
DiffImageOverlap-fno: 1.00 [17/17]

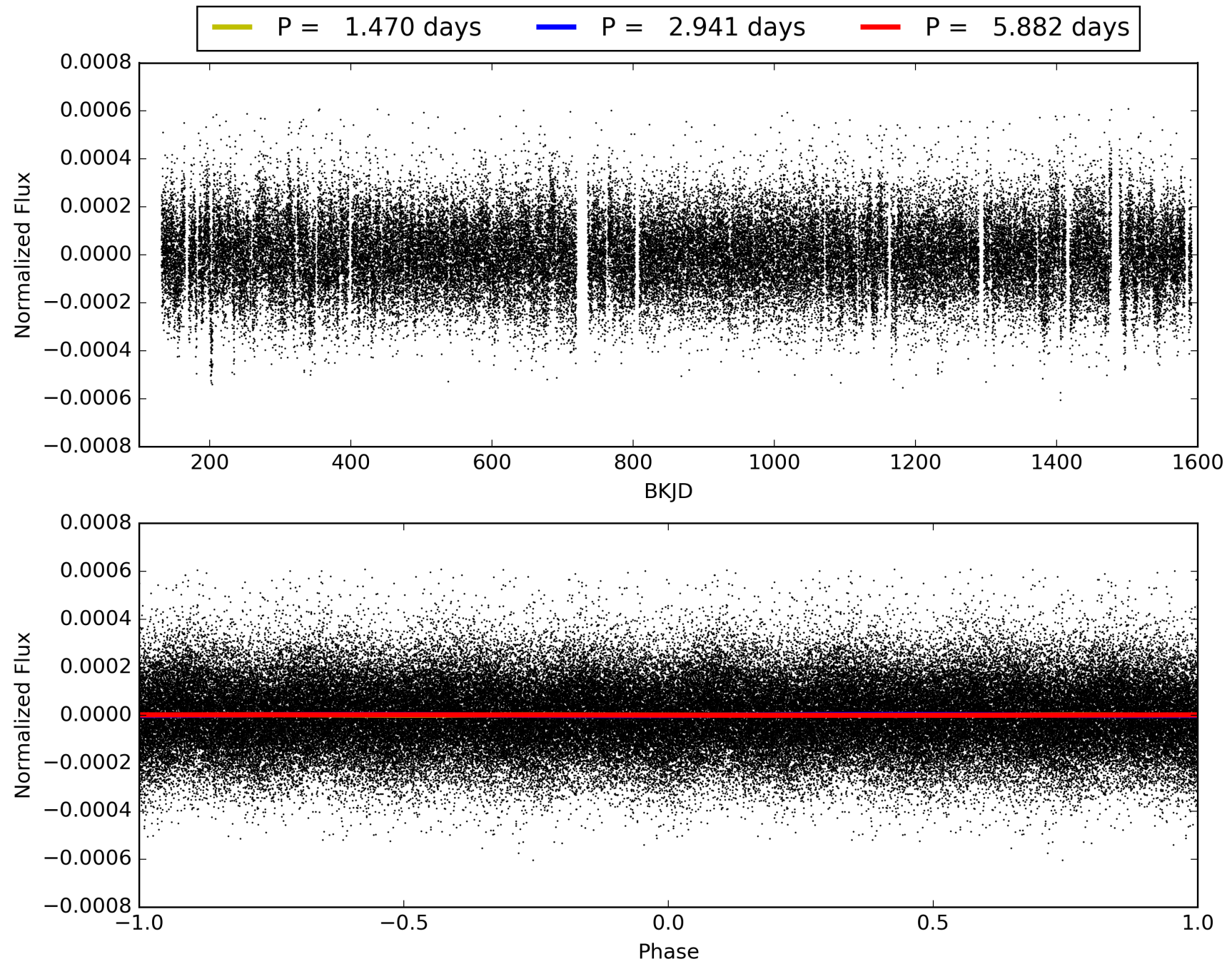
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:36:42 Z

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

# TCE 009306677-01, PDC Light Curves

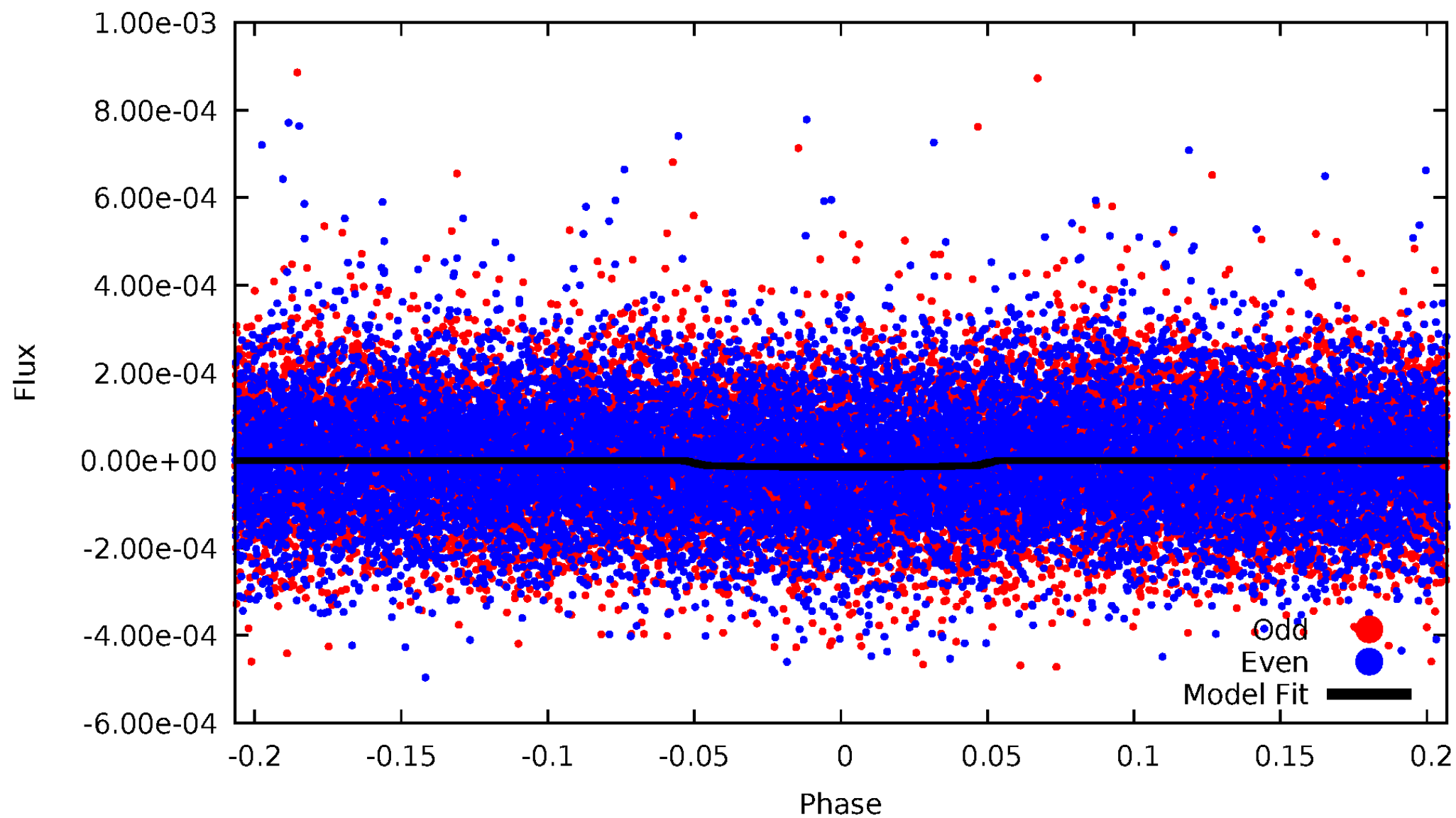


TCE 009306677-01



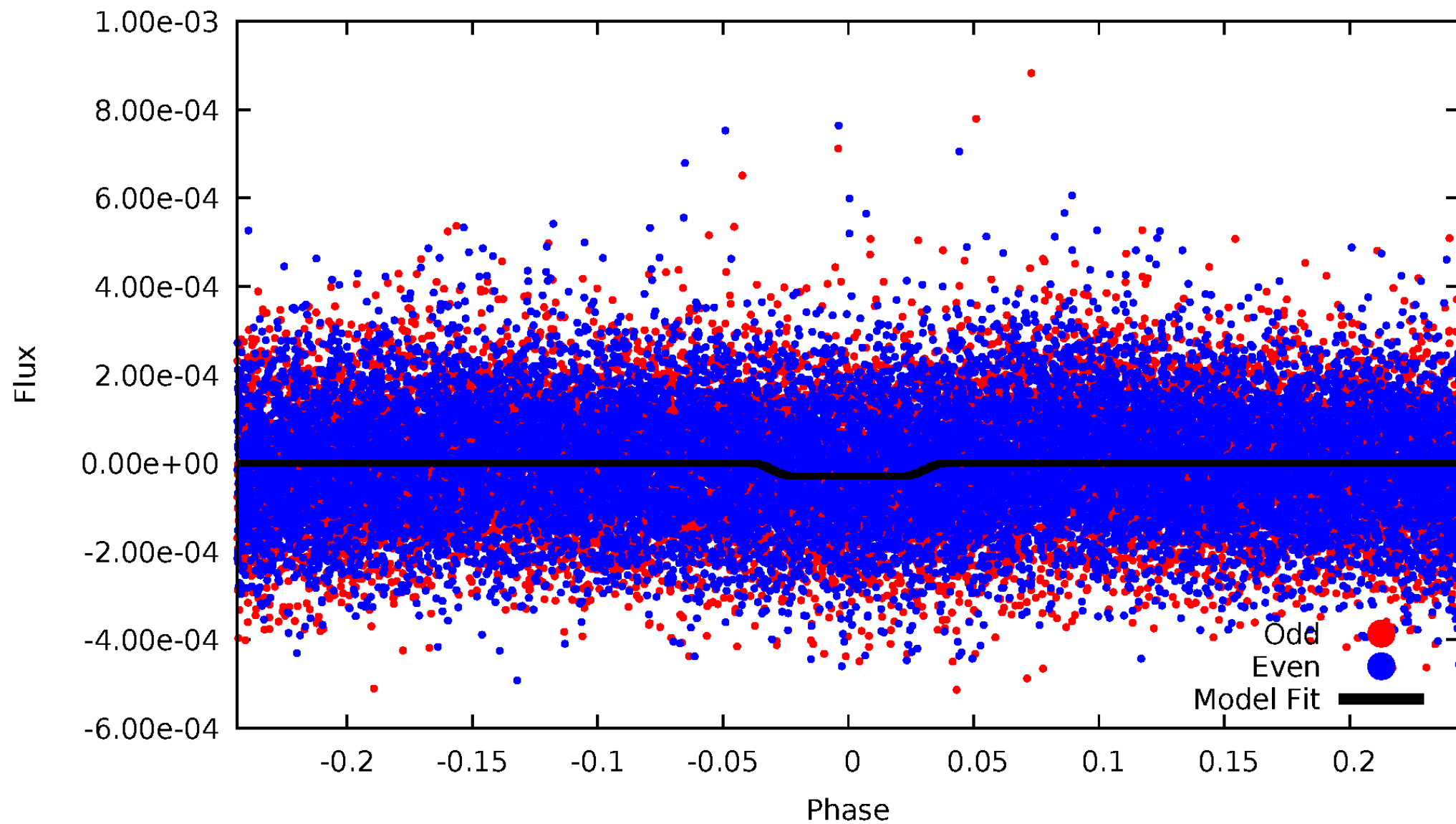
# DV Odd/Even

TCE 009306677-01

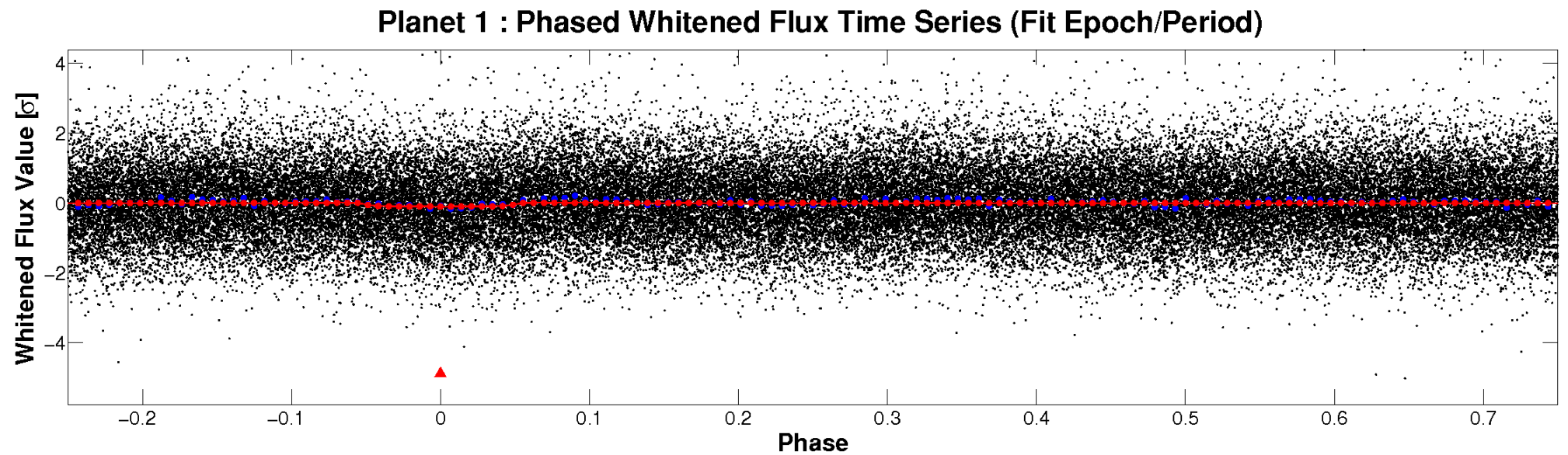
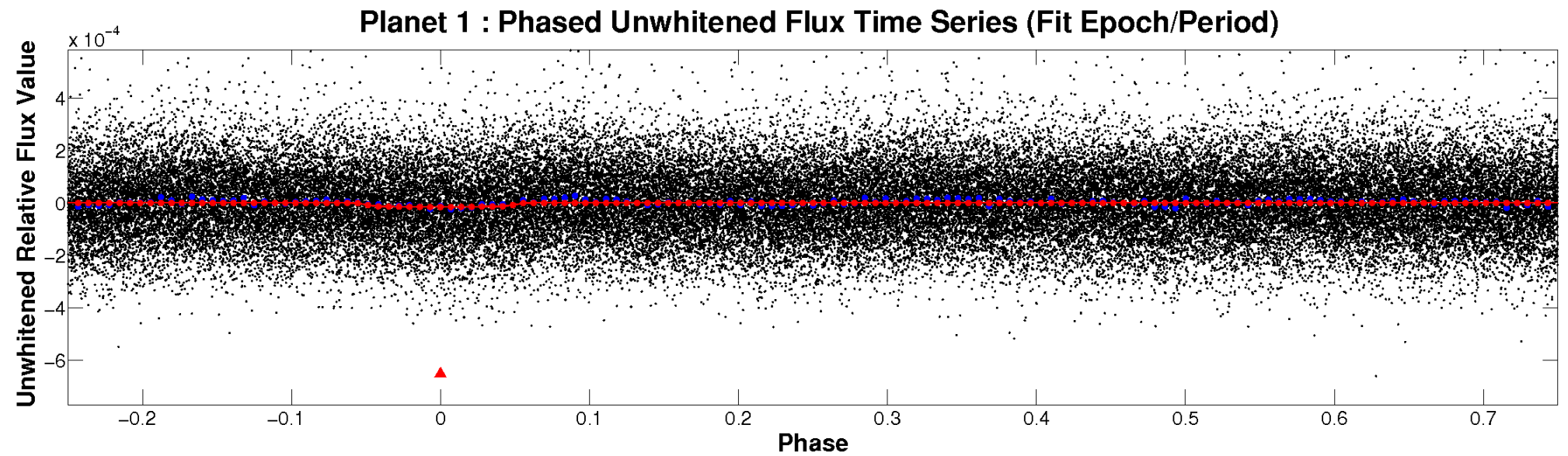


# ALT Odd/Even

TCE 009306677-01

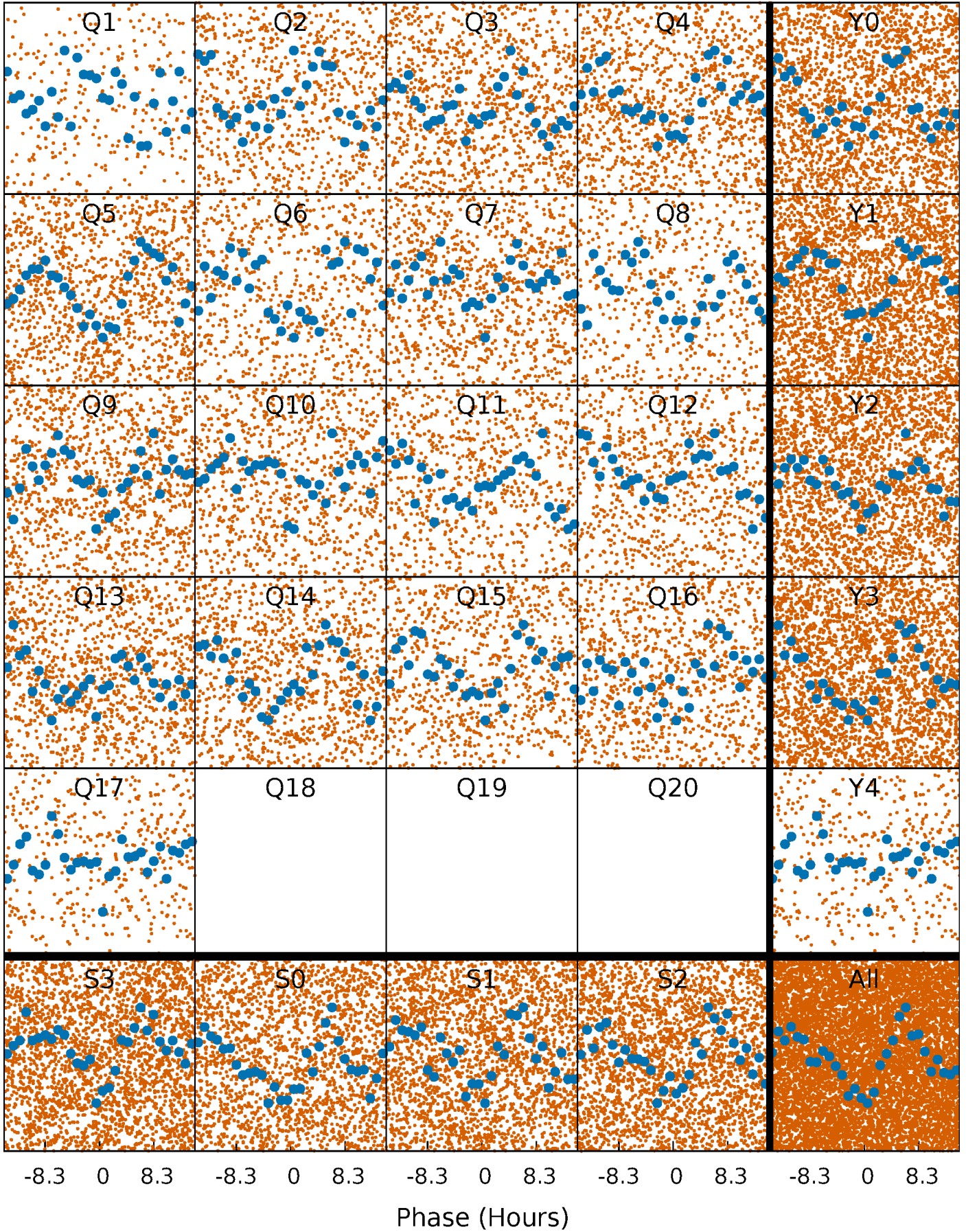


# Non-Whitened Vs. Whitened Light Curve



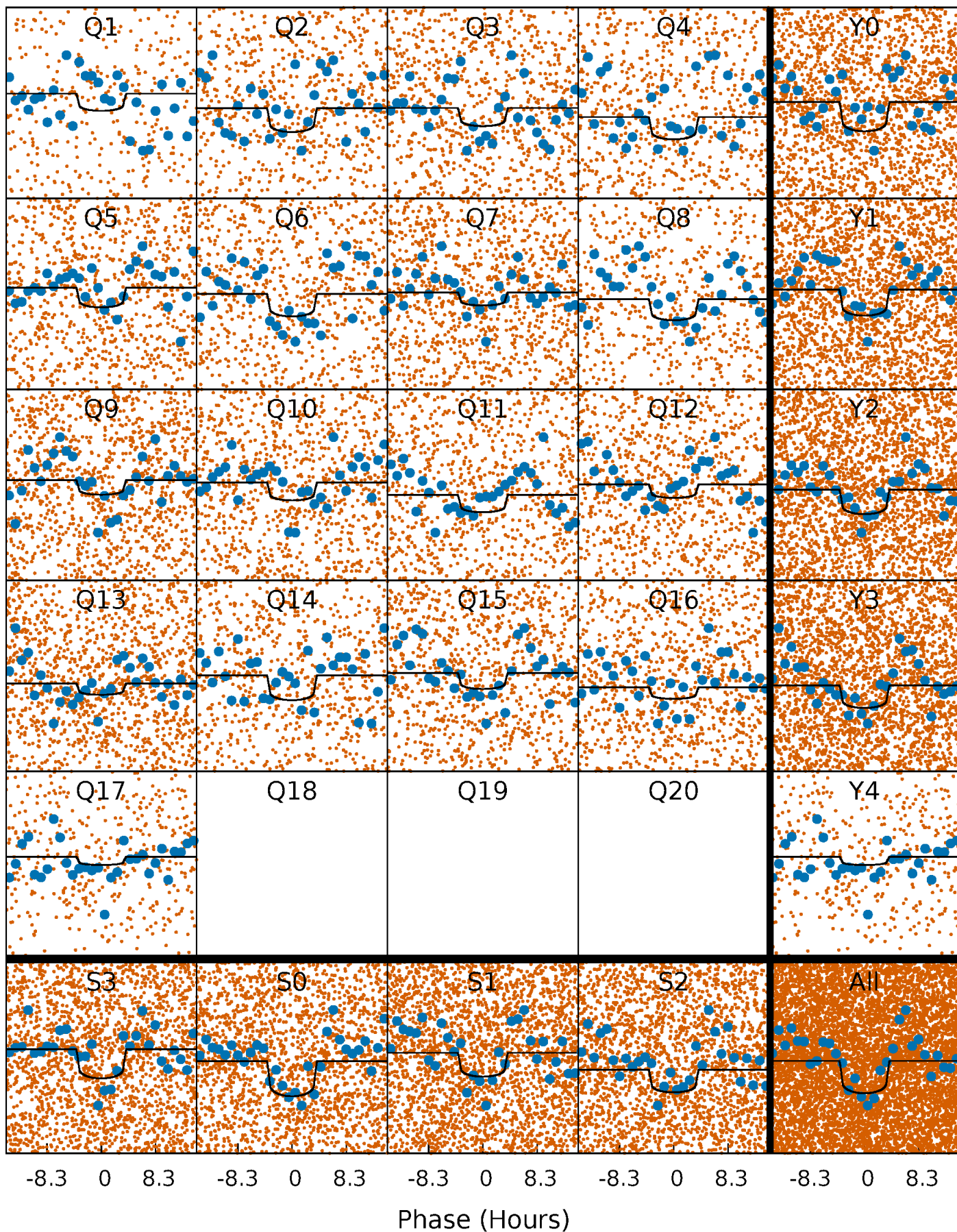
# PDC Quarter-Phased Transit Curves

TCE 009306677-01 P= 2.940896 Days  $T_0=132.769996$  (BKJD)



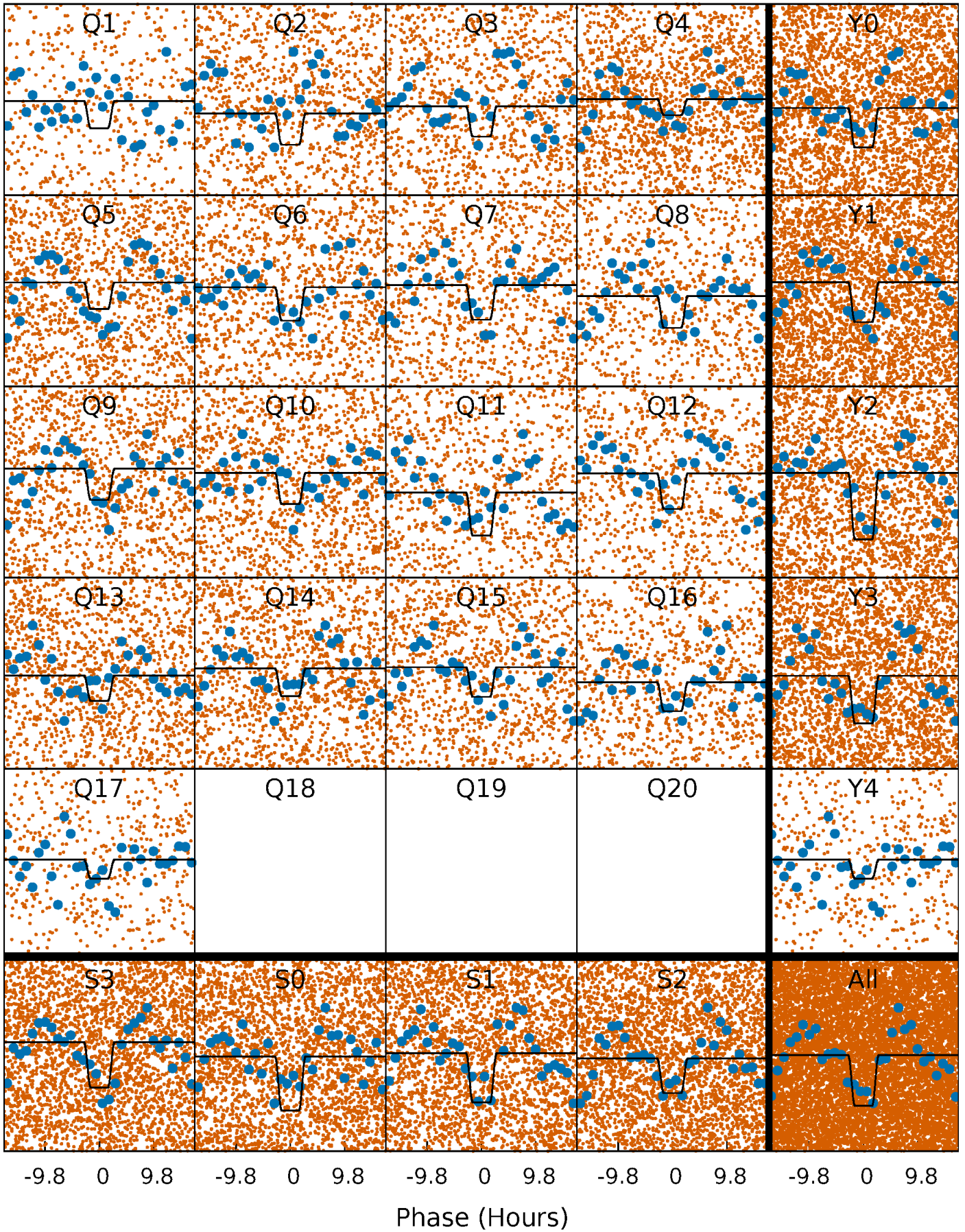
# DV Quarter-Phased Transit Curves

TCE 009306677-01 P= 2.940896 Days  $T_0=132.769996$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

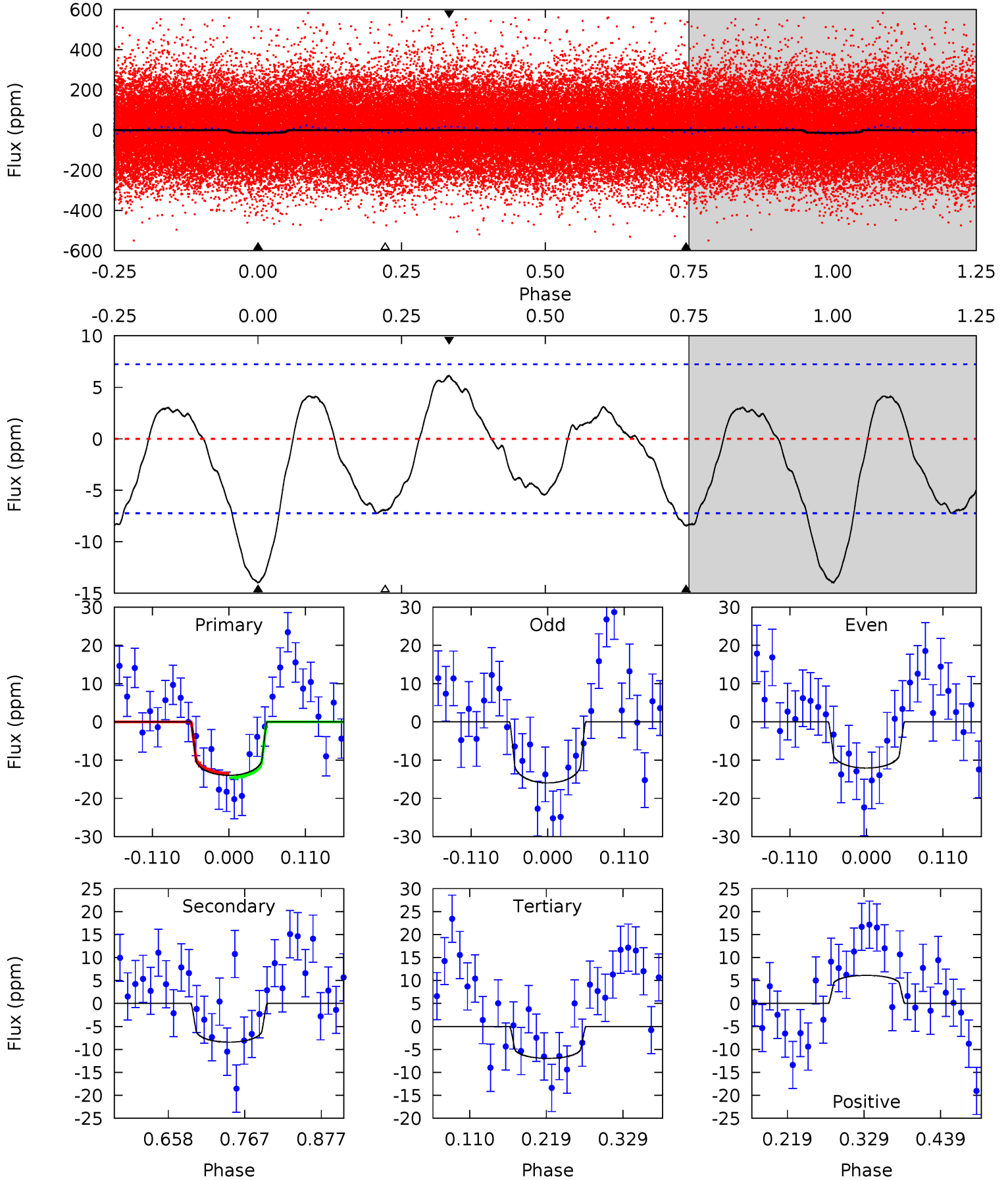
TCE 009306677-01 P= 2.940803 Days  $T_0=132.765407$  (BKJD)



# DV Model-Shift Uniqueness Test

009306677-01, P = 2.940896 Days, E = 129.829100 Days

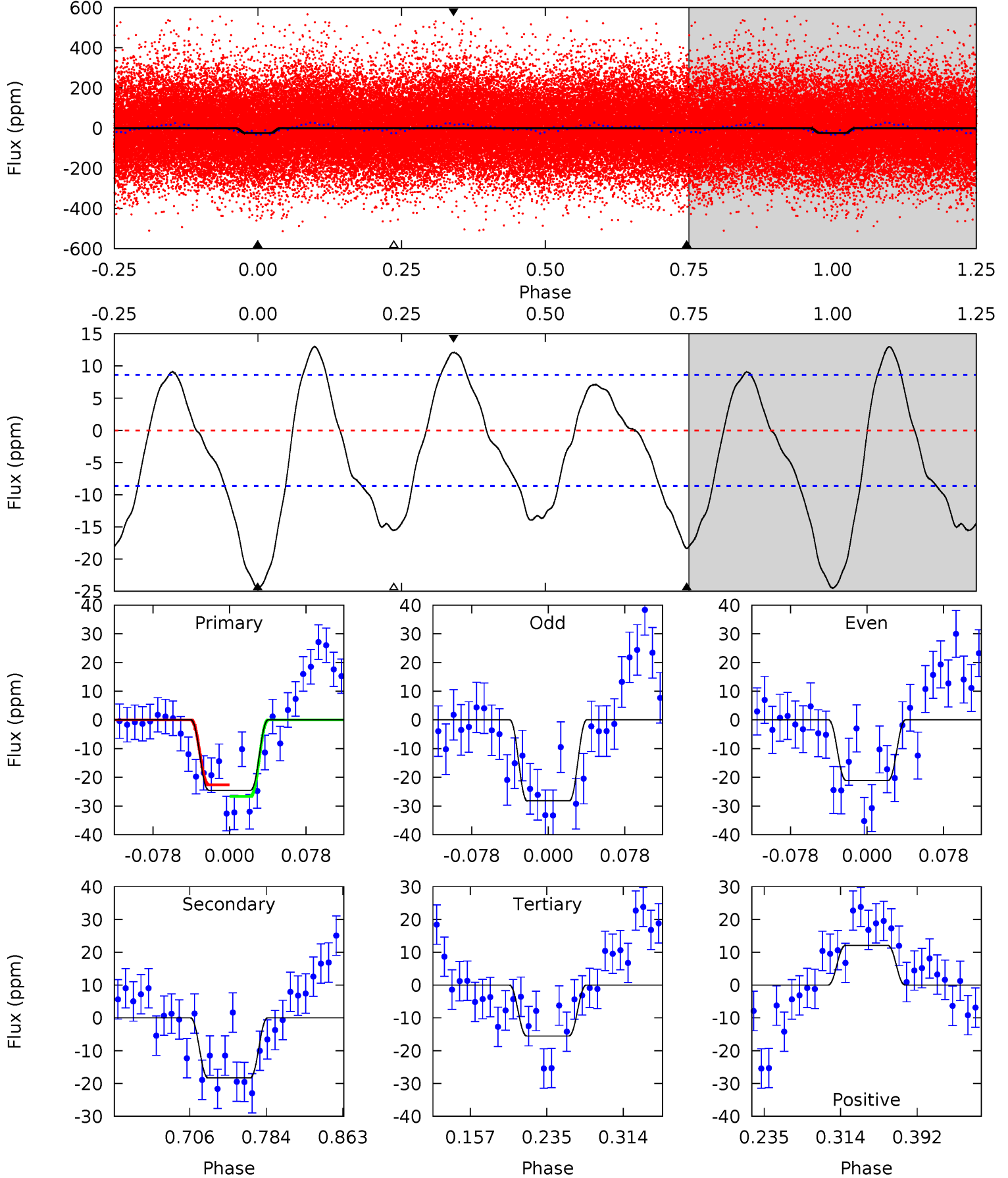
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.78	5.30	4.37	3.84	4.55	1.60	2.43	4.41	4.94	0.93	1.46	1.23	1.04	0.30	0.36



# Alt Model-Shift Uniqueness Test

009306677-01, P = 2.940803 Days, E = 129.824604 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
13.1	9.79	8.30	6.47	4.62	1.76	4.46	4.78	6.61	1.49	3.32	1.90	1.06	0.35	1.08



### Stellar Parameters For KIC 009306677

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7872^{+218}_{-327}$	$3.698^{+0.424}_{-0.079}$	$-0.040^{+0.200}_{-0.350}$	$3.373^{+0.688}_{-1.604}$	$2.068^{+0.299}_{-0.555}$	$0.076^{+0.329}_{-0.027}$
	+3%/-4%	+11%/-2%	+500%/-875%	+20%/-48%	+14%/-27%	+433%/-35%
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 009306677-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-8 \pm 2$	$1.32^{+0.56}_{-0.53}$	$3778^{+263}_{-444}$	$6412^{+2077}_{-1050}$	$6.968^{+12.154}_{-3.763}$
Alt.	$-18 \pm 2$	$1.75^{+0.60}_{-0.54}$	$3749^{+300}_{-411}$	$6839^{+1364}_{-873}$	$8.719^{+9.633}_{-3.860}$

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

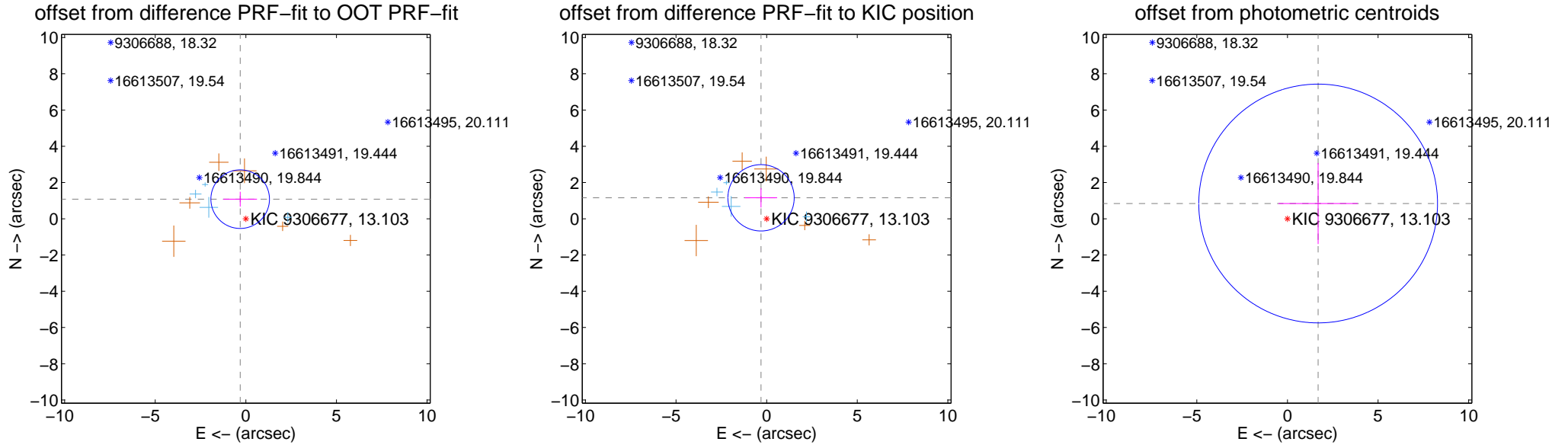
## DV Centroid Data

Supplemental centroid analysis for 009306677-01. Kepler magnitude: 13.10. Transit SNR 7.26

There are 4 quarters with good PRF difference image offsets

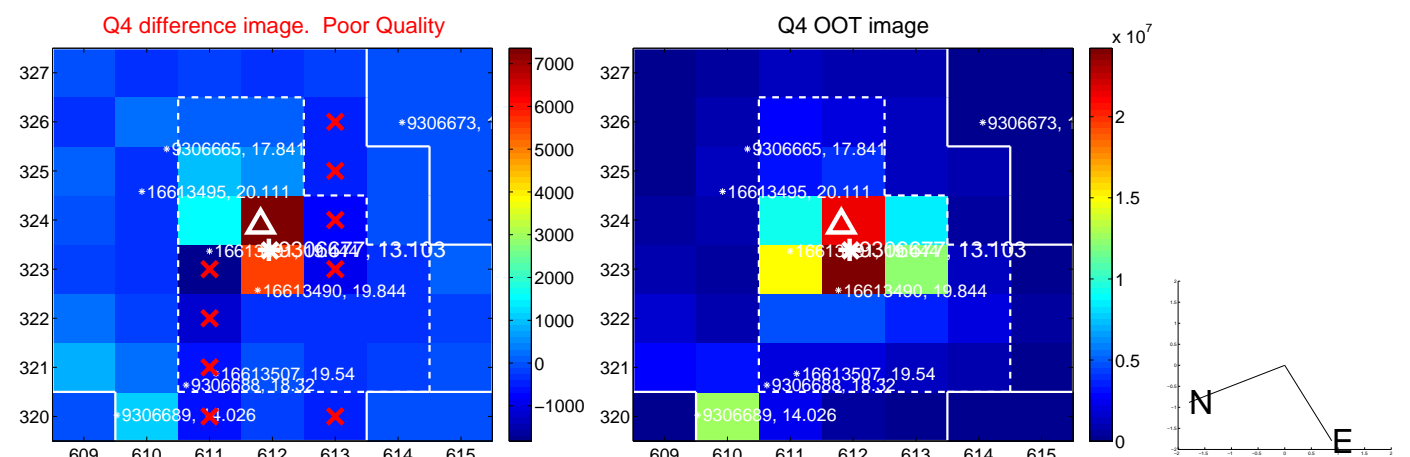
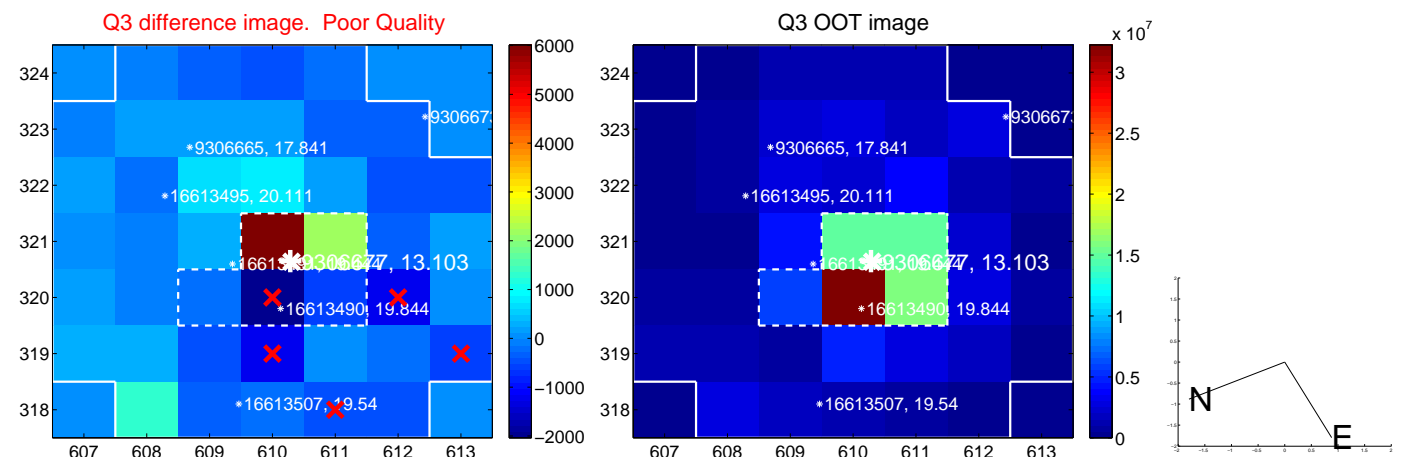
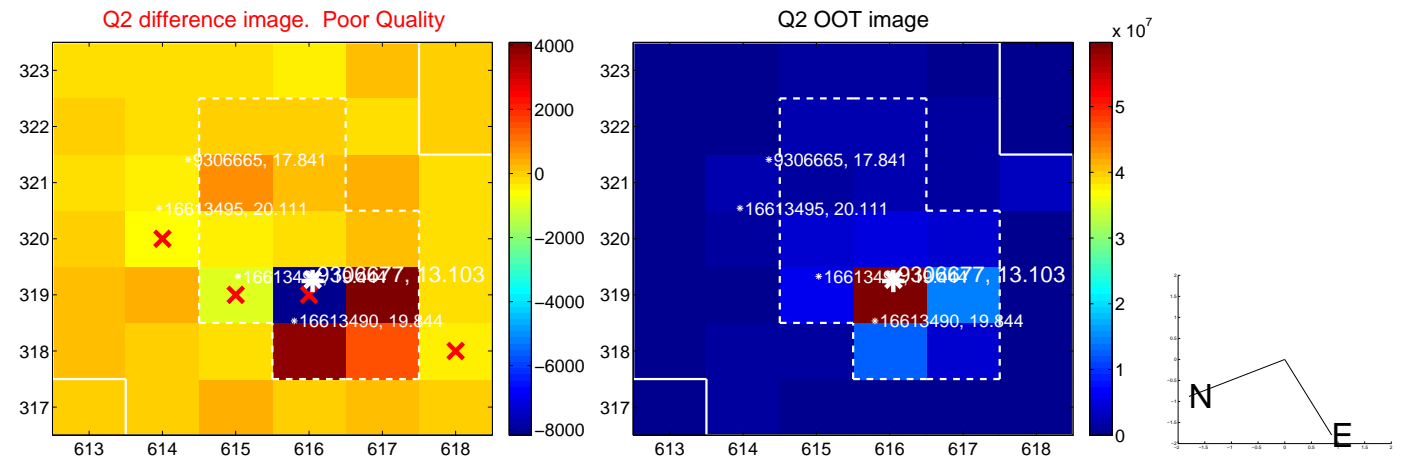
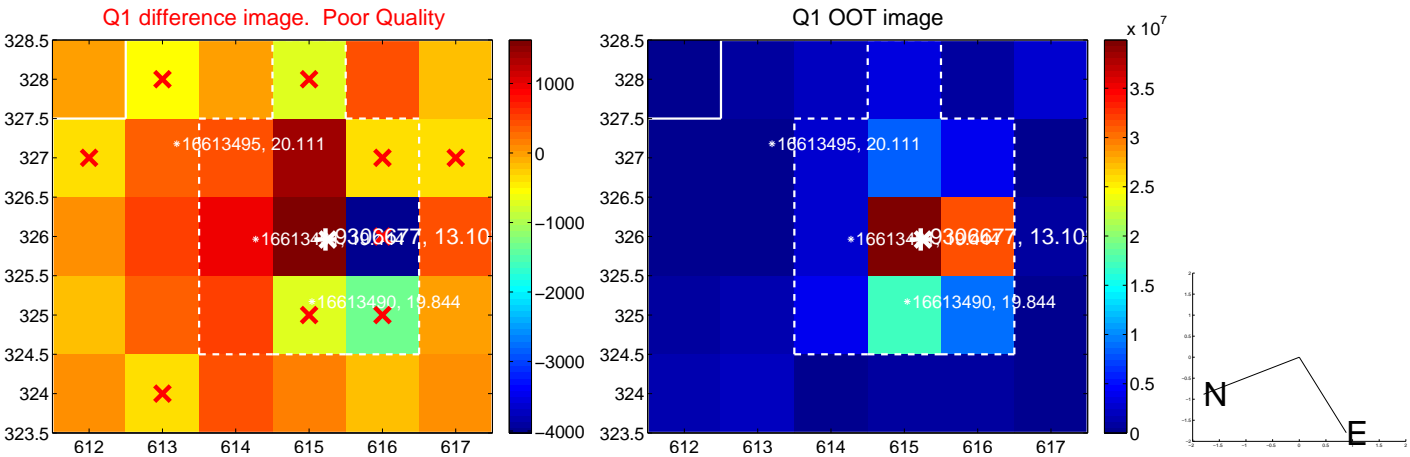
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.126 \pm 0.539$	2.09	$0.313 \pm 0.928$	$1.082 \pm 0.411$
PRF-fit source offset from KIC position	$1.197 \pm 0.610$	1.96	$0.309 \pm 0.890$	$1.157 \pm 0.531$
photometric centroid source offset	$1.89 \pm 2.20$	0.86	$-1.69 \pm 2.19$	$0.84 \pm 2.24$

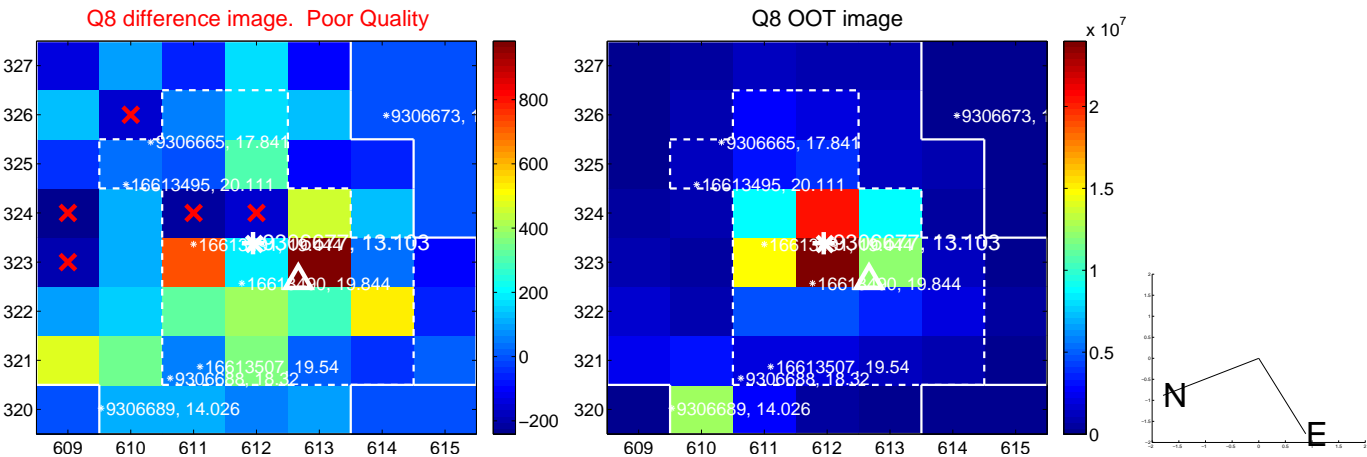
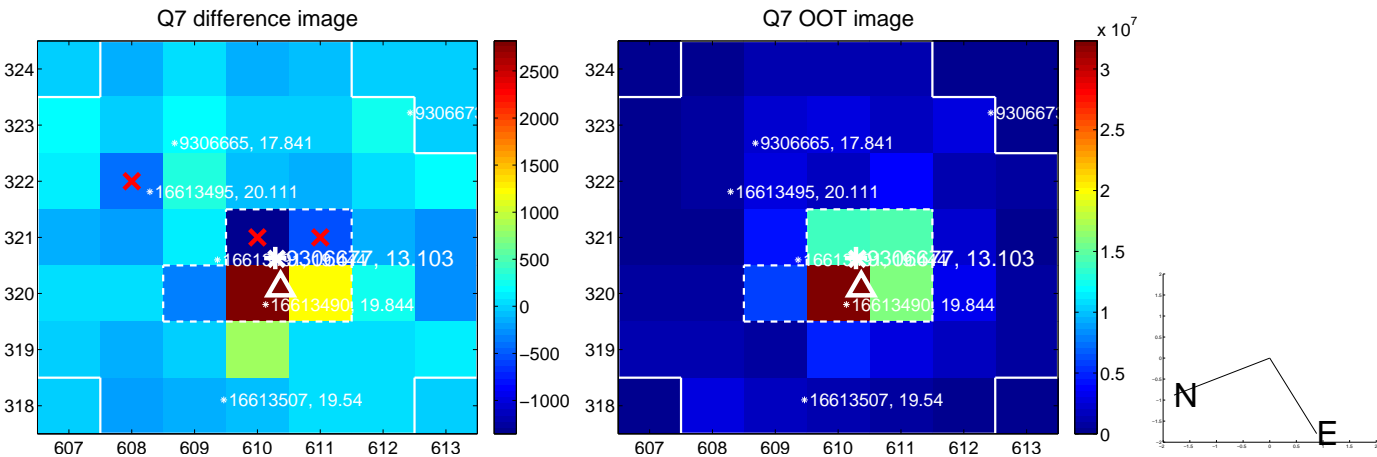
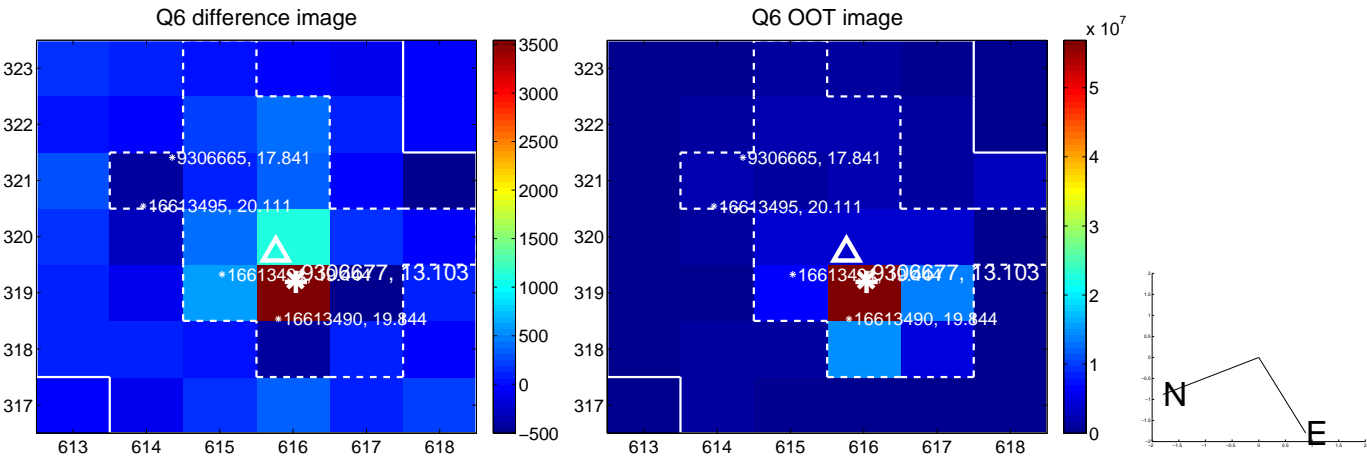
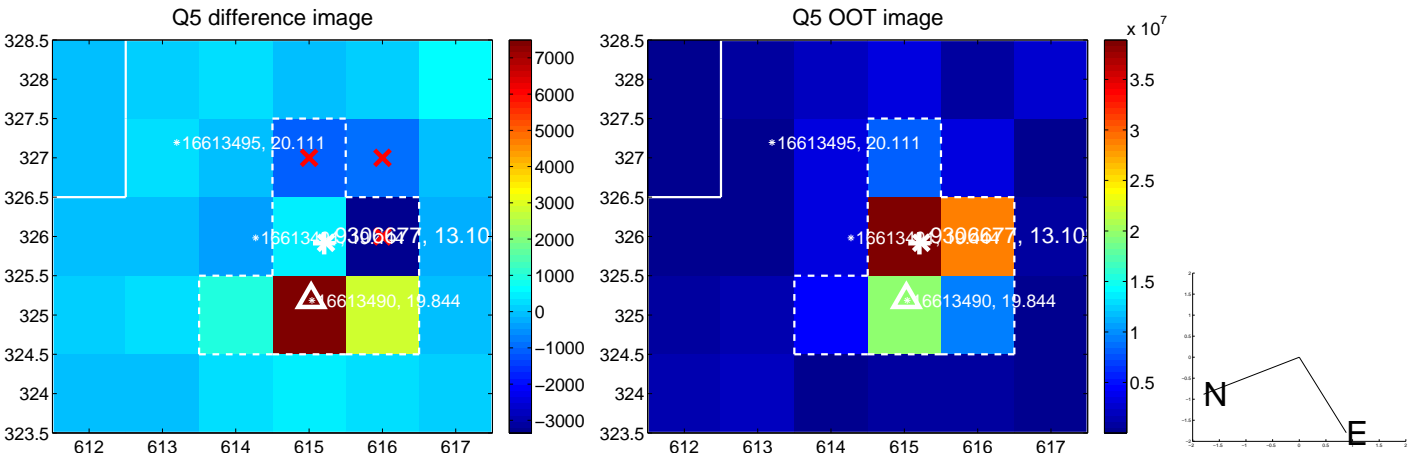


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

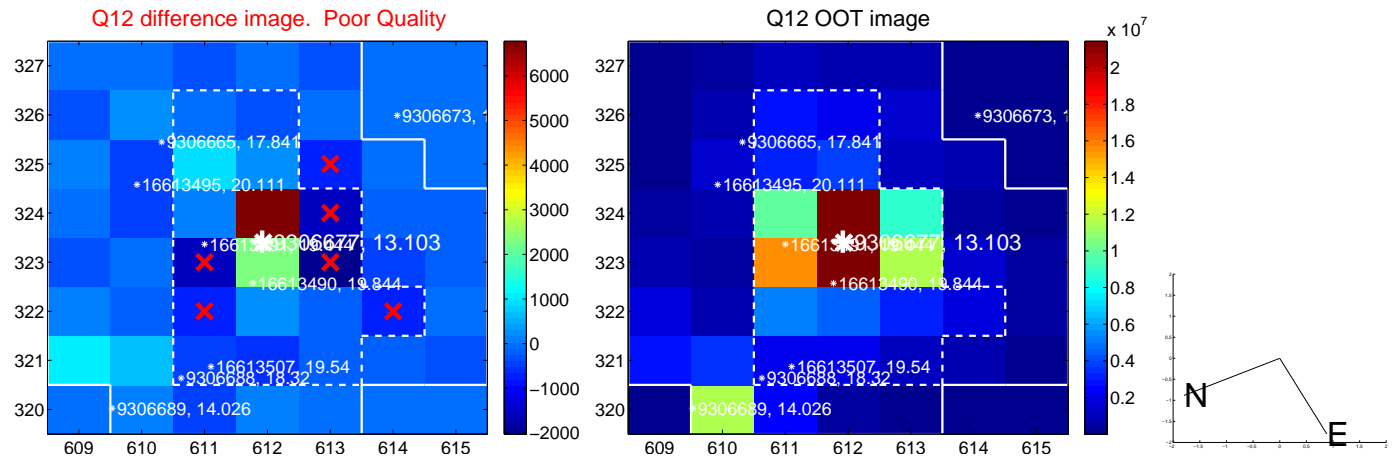
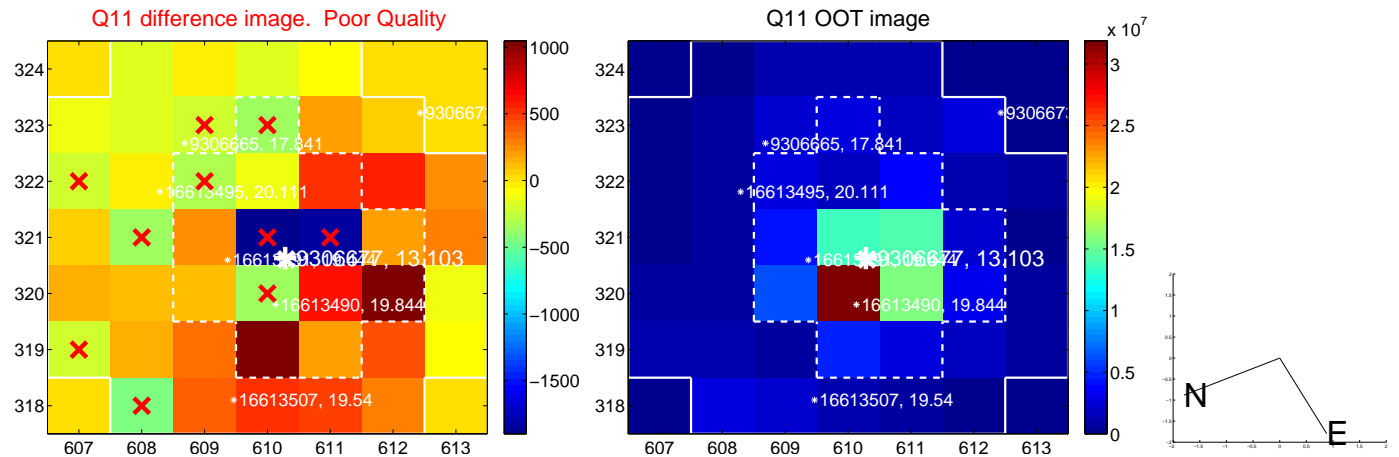
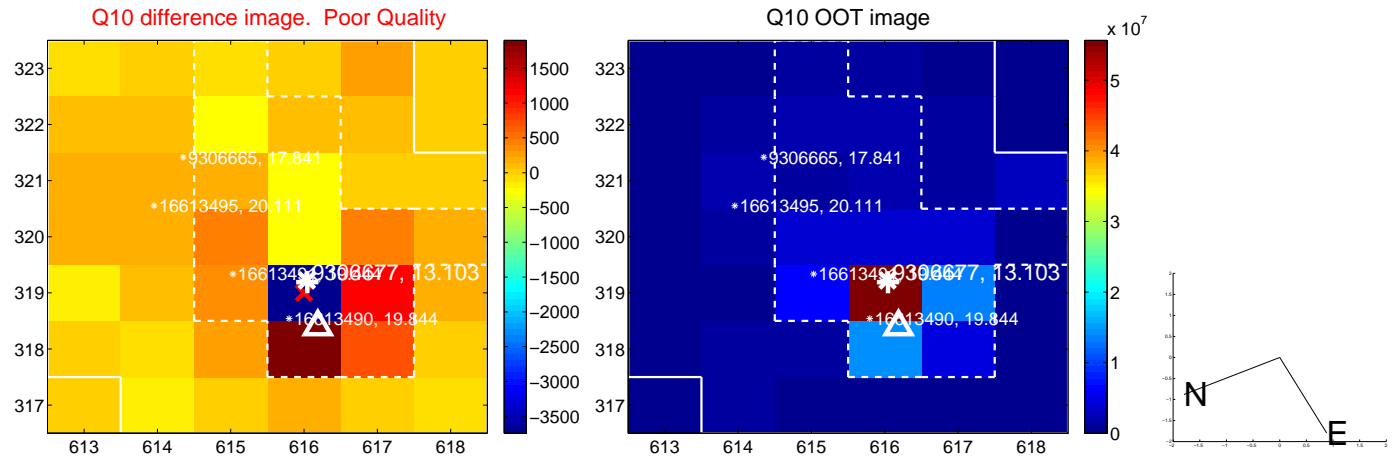
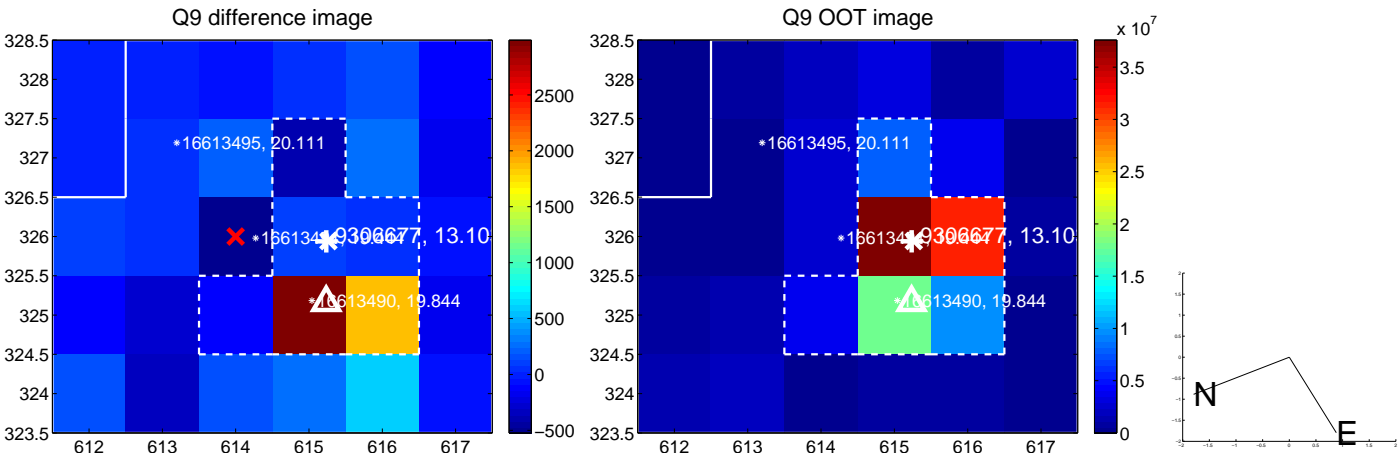
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



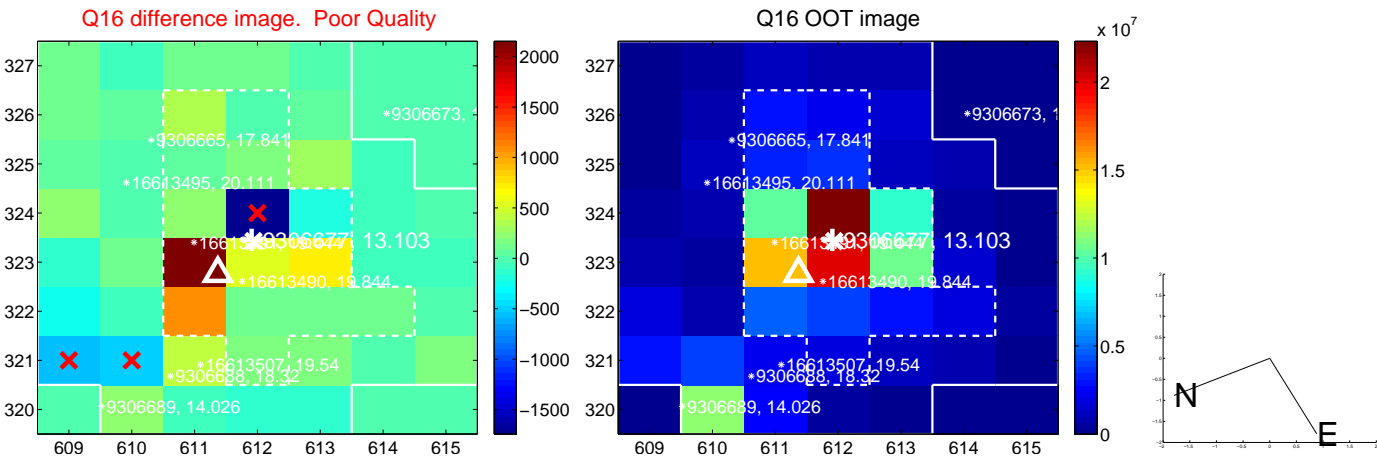
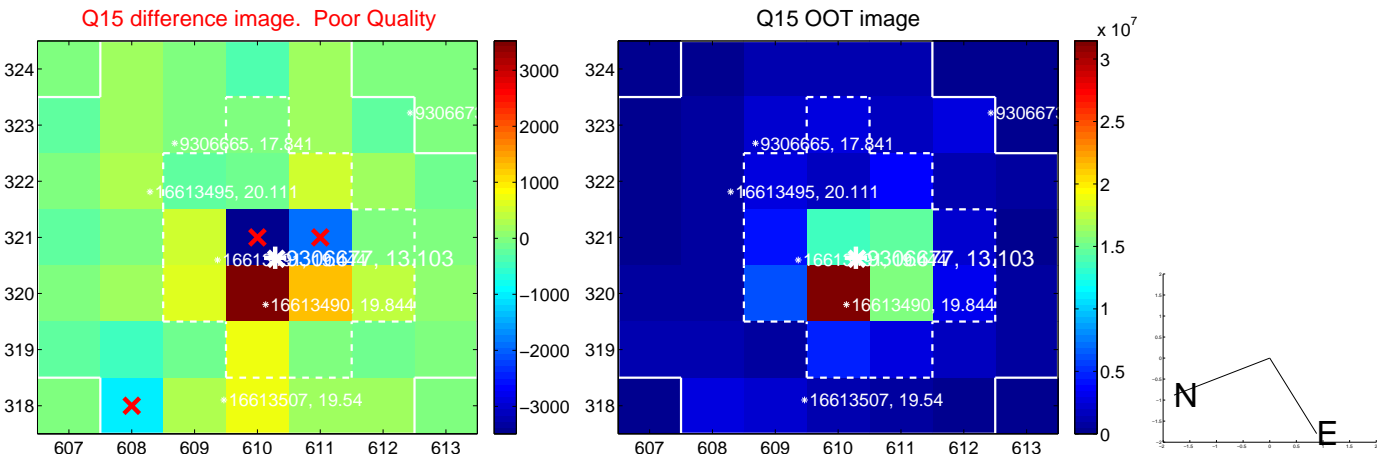
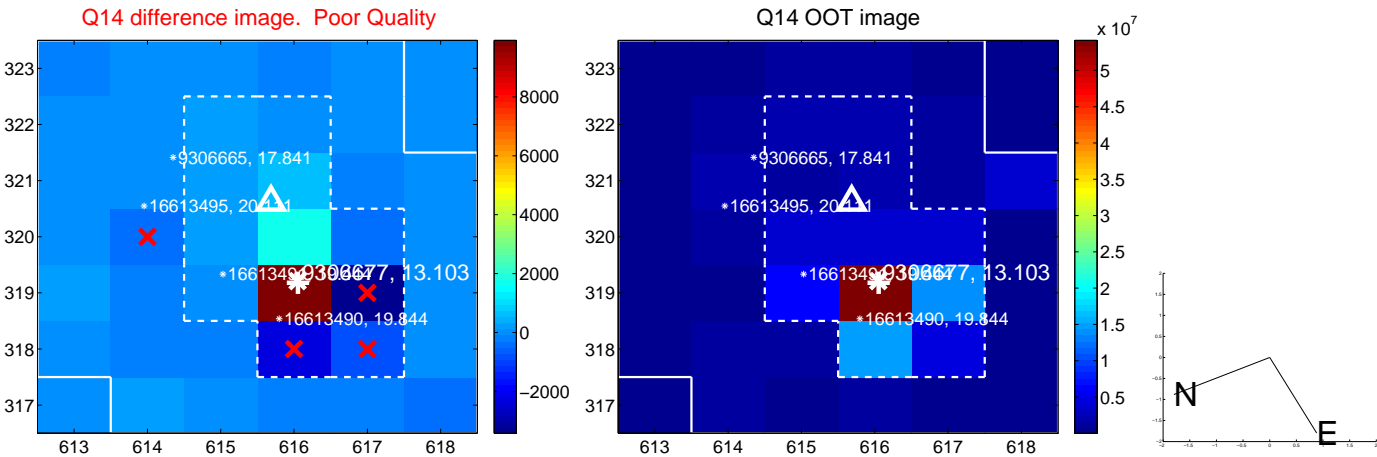
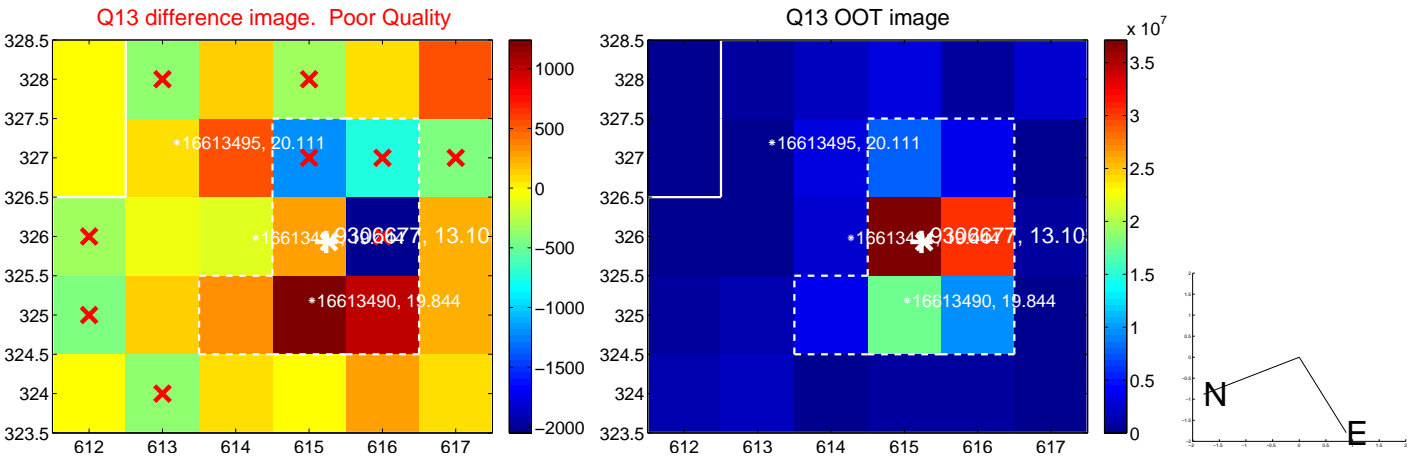
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



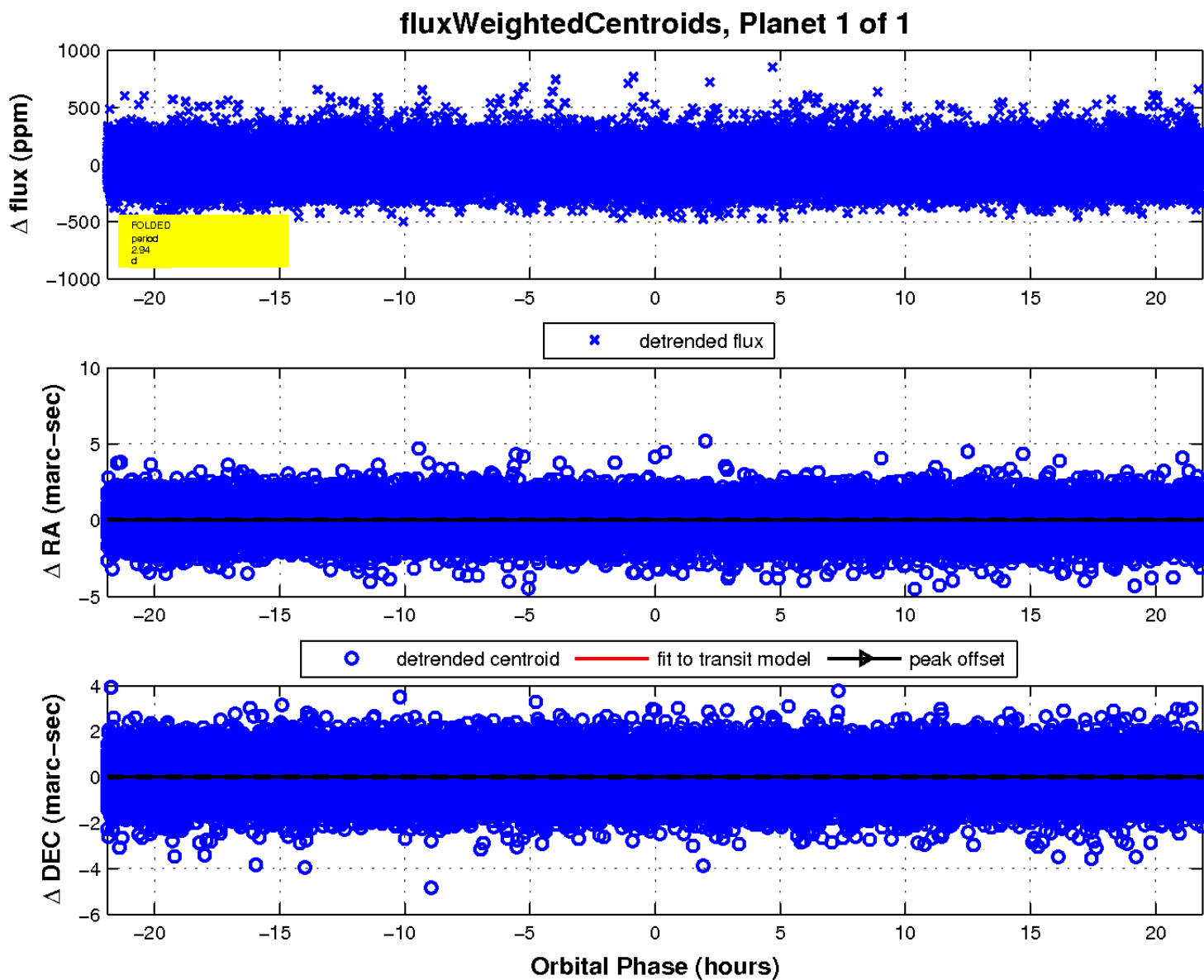
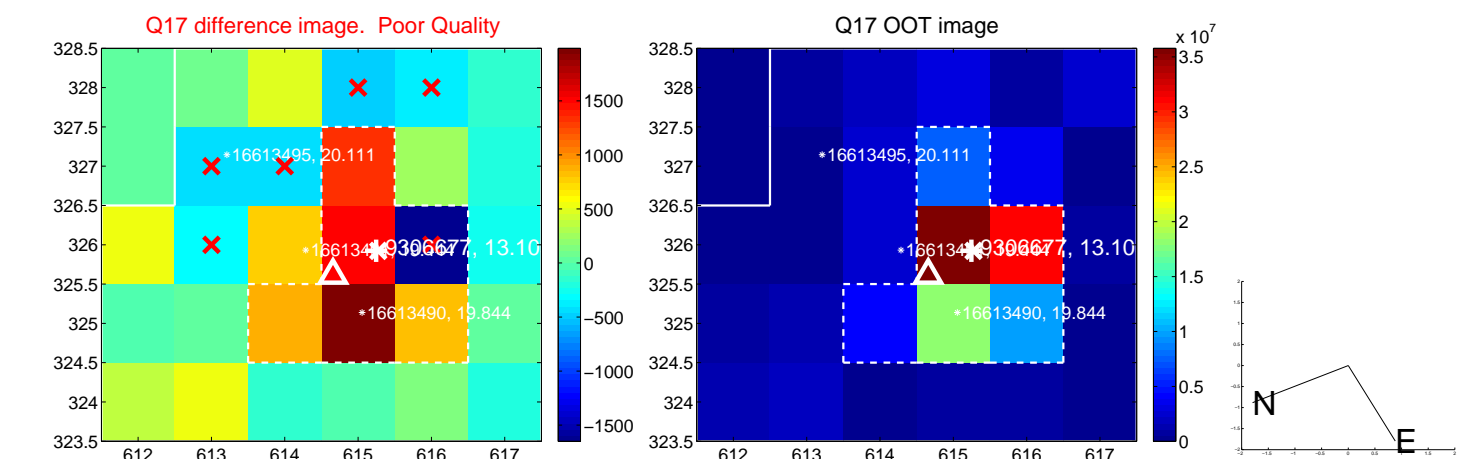
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

