

# KIC 008322177

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008322177-01	OBS	No	2.942051	131.828541	28.6	14.870	10.8	11.5	0.53	4987	0.28	142.72

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008322177-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV

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

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

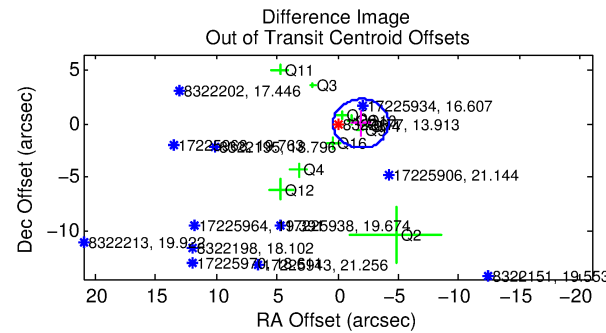
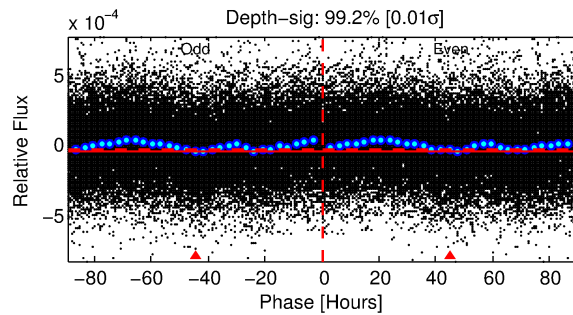
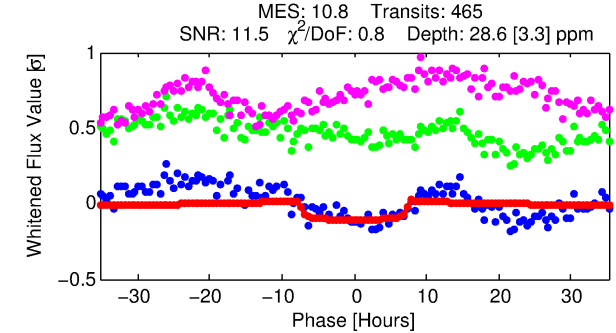
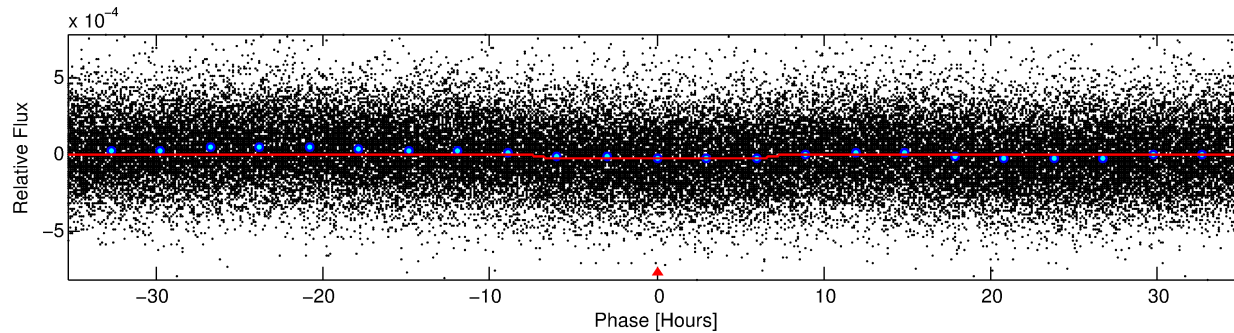
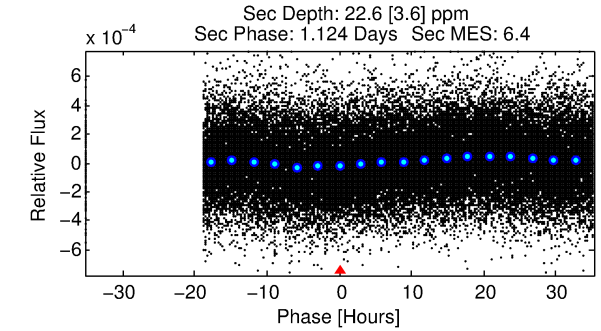
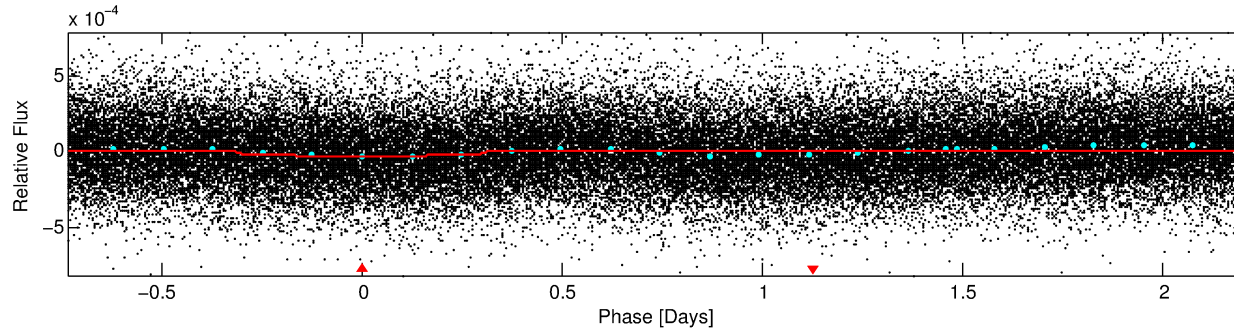
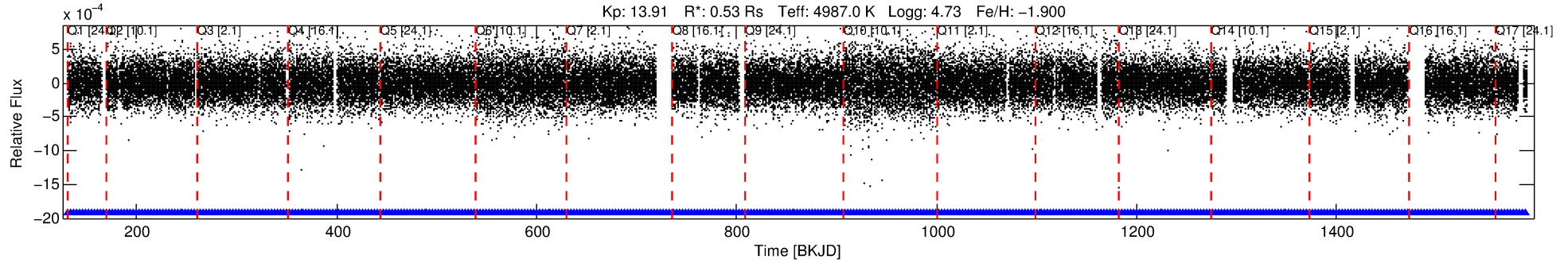
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008322177-01

No Significant Match Found

# DV One-Page Summary

KIC: 8322177 Candidate: 1 of 1 Period: 2.942 d



## DV Fit Results:

Period = 2.94205 [0.00005] d  
Epoch = 131.8285 [0.0104] BKJD  
Rp/R\* = 0.0049 [0.0068]  
a/R\* = 1.62 [7.31]  
b = 0.16 [43.07]  
Seff = 142.72 [20.68]  
Teq = 881 [32] K  
Rp = 0.28 [0.39] Re  
a = 0.0329 [0.0013] AU  
Ag = 167.08 [463.40] [0.36σ]  
Teff = 4899 [3400] K [1.18σ]

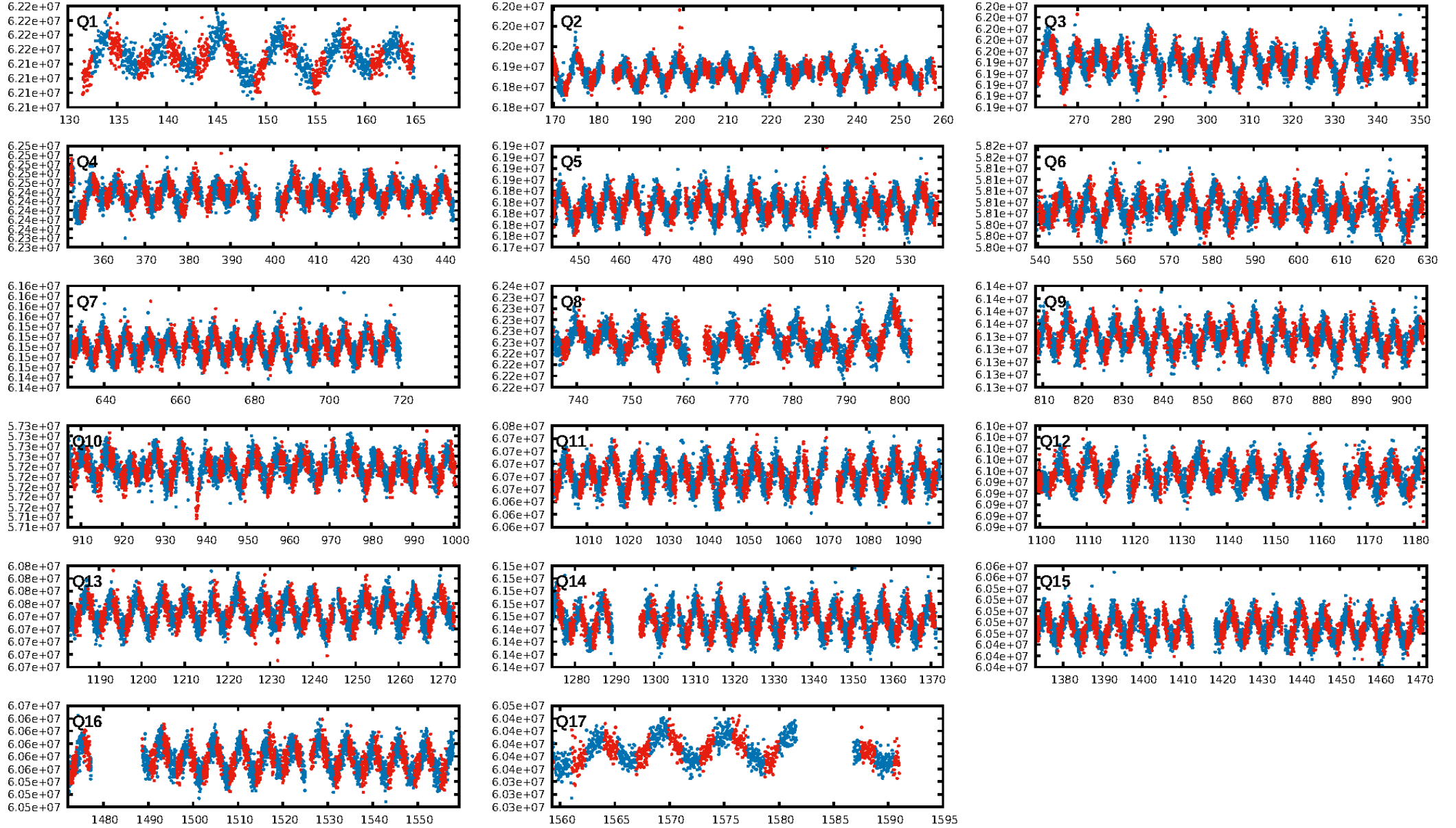
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.50e-19  
RollingBand-fgt: 1.00 [444/444]  
GhostDiagnostic-chr: 7.768  
Centroid-sig: 6.0%  
Centroid-so: 1.509 arcsec [1.40σ]  
OotOffset-rm: 1.911 arcsec [2.51σ]  
KicOffset-rm: 1.919 arcsec [2.21σ]  
OotOffset-st: 4/2/4/2 [12]  
KicOffset-st: 4/2/4/2 [12]  
DiffImageQuality-fgm: 0.50 [6/12]  
DiffImageOverlap-fno: 1.00 [17/17]

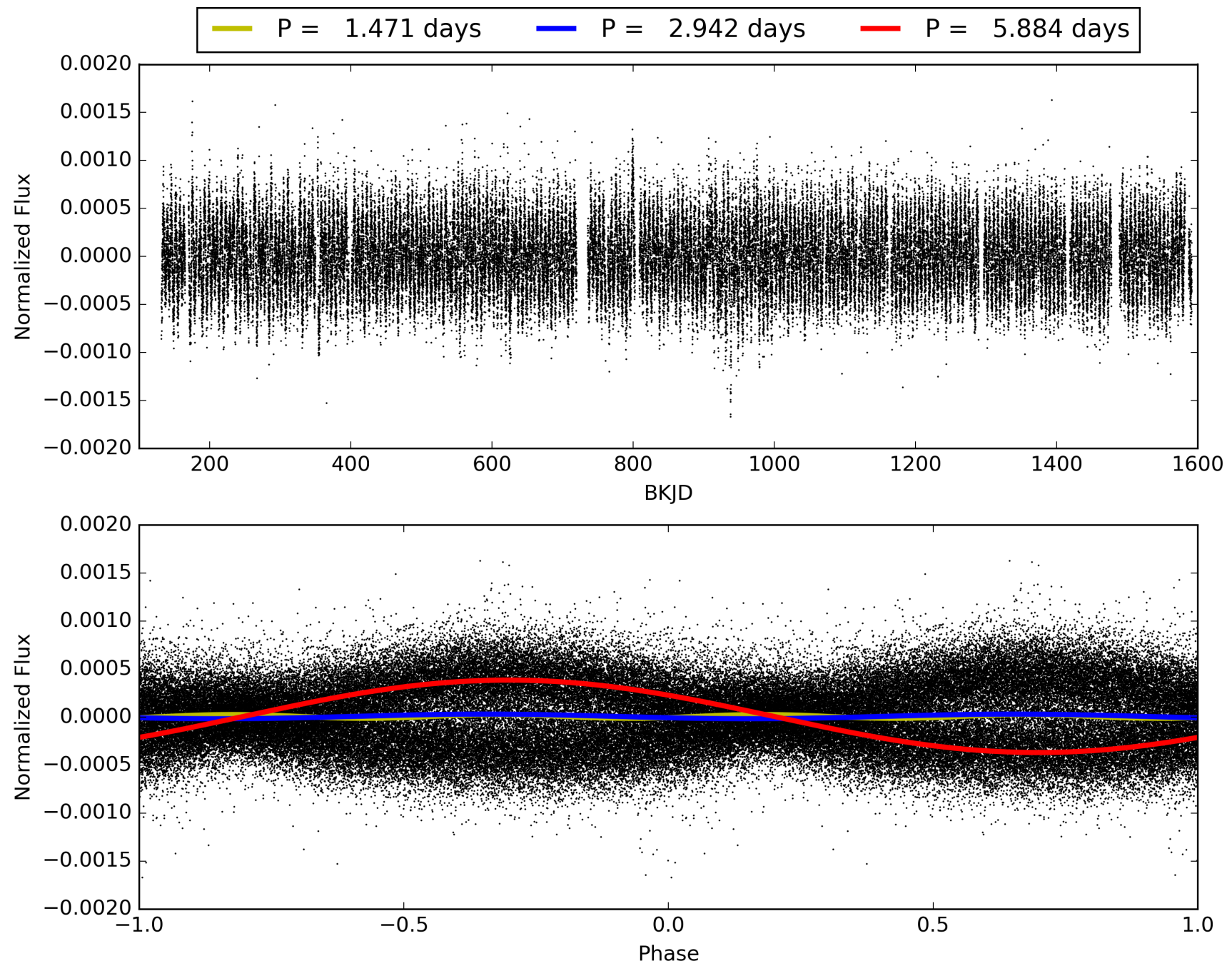
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 21:02:57 Z

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

# TCE 008322177-01, PDC Light Curves

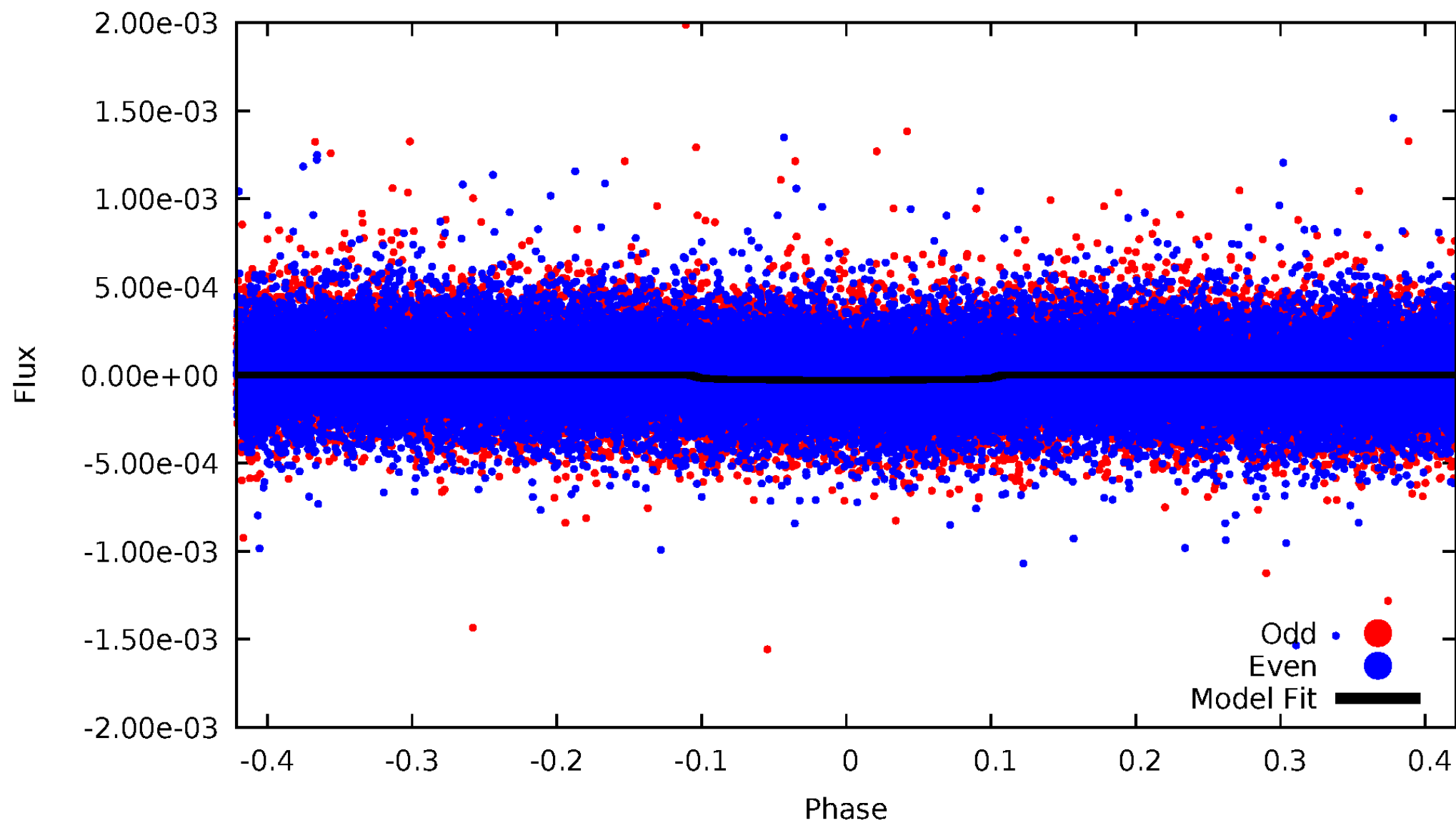


TCE 008322177-01



# DV Odd/Even

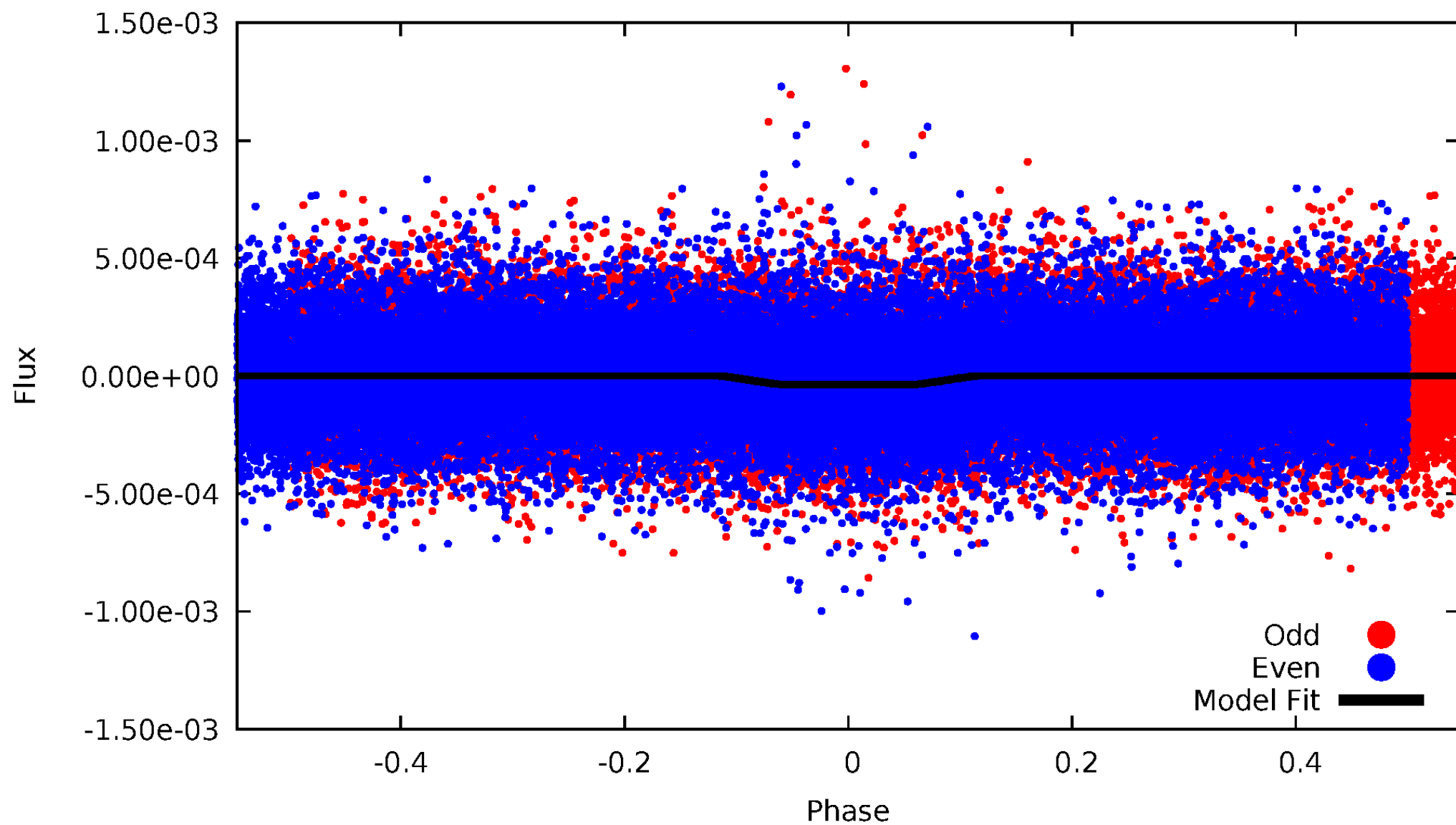
TCE 008322177-01



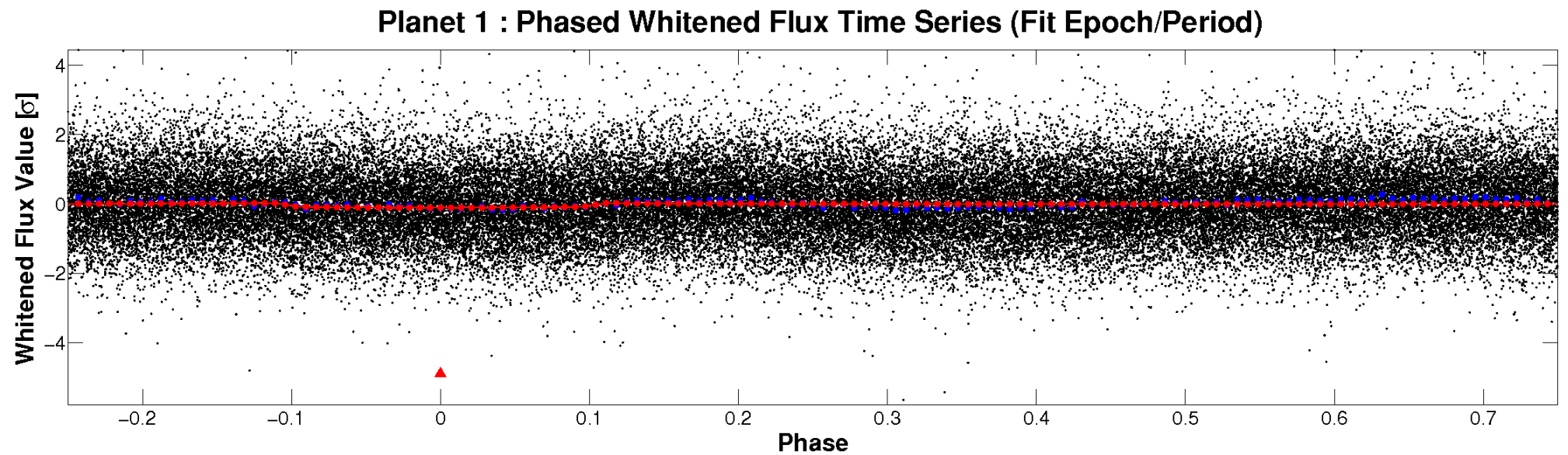
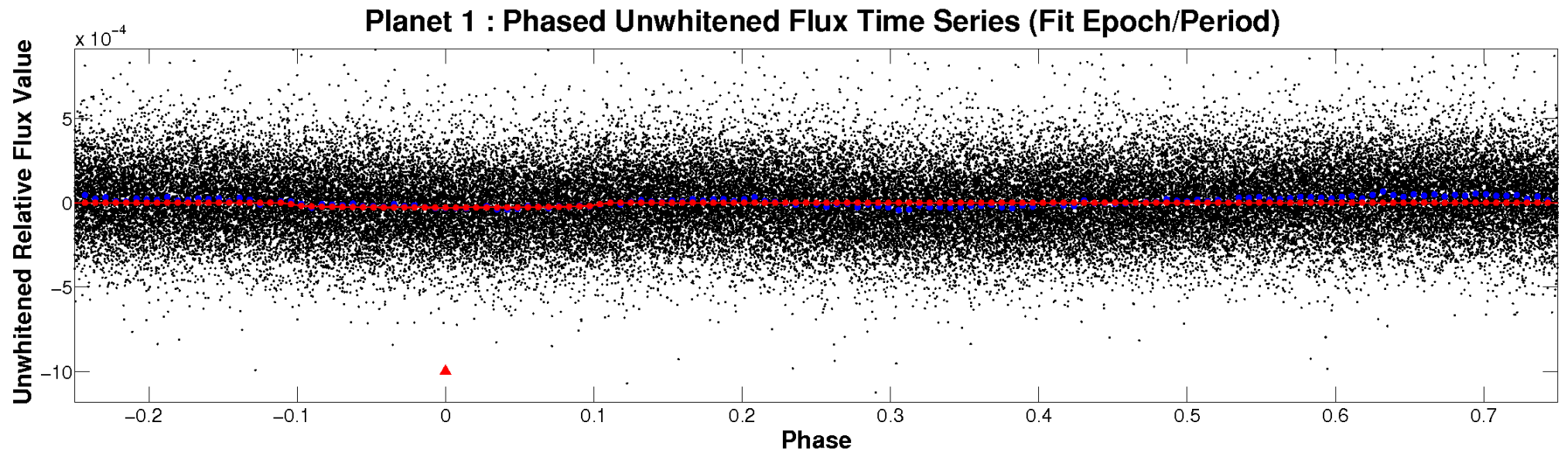


# ALT Odd/Even

TCE 008322177-01

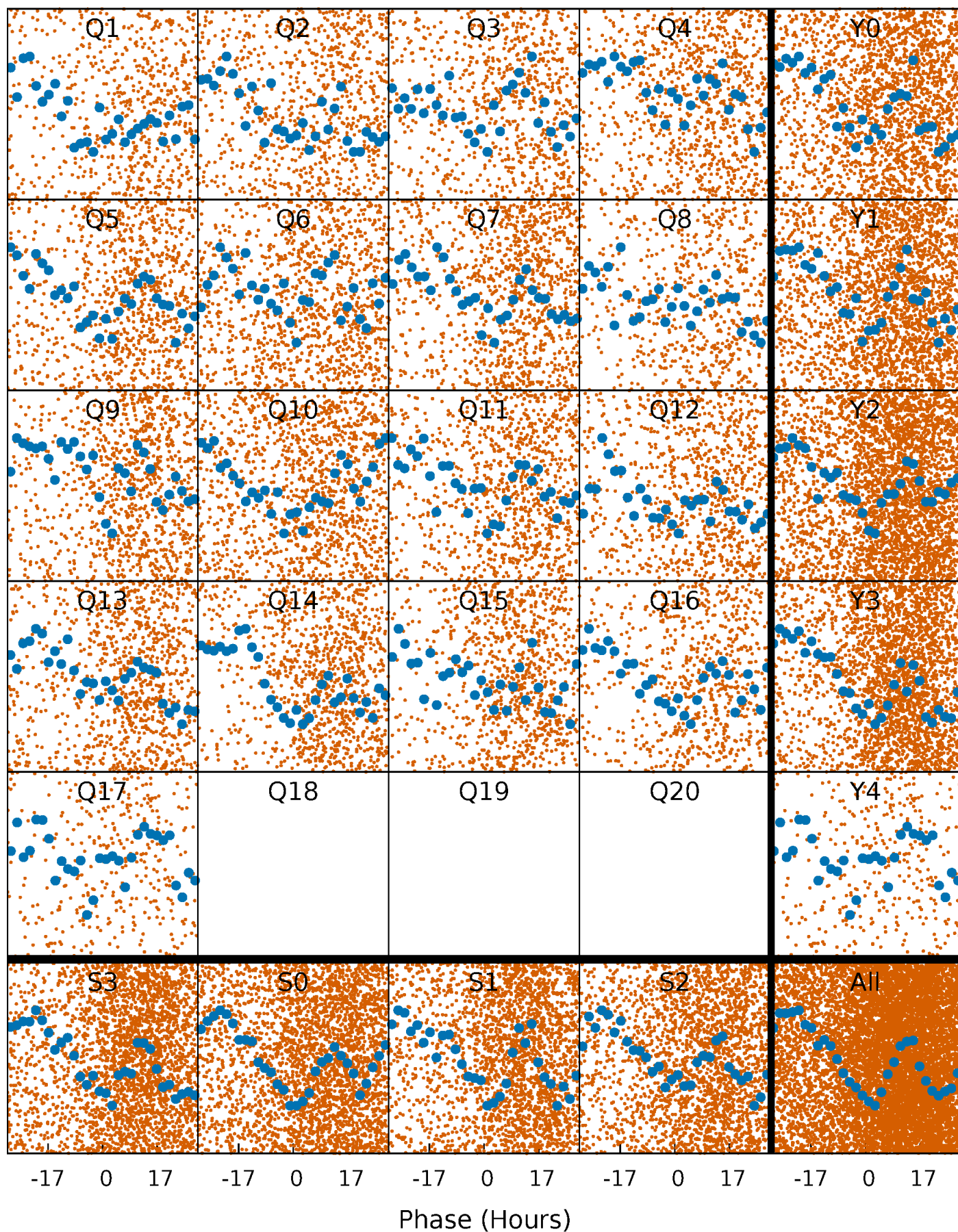


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

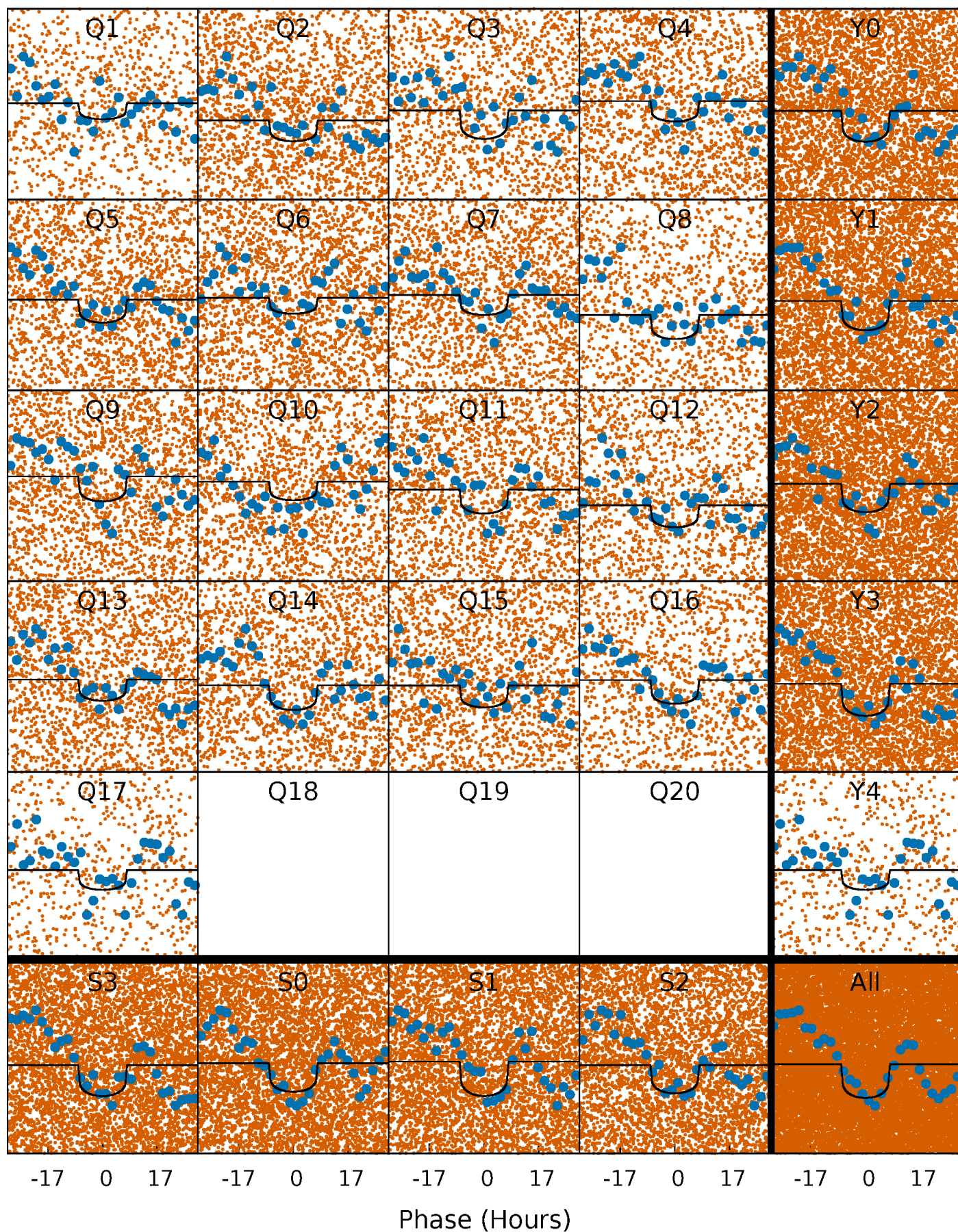
TCE 008322177-01 P= 2.942051 Days  $T_0=131.828542$  (BKJD)





# DV Quarter-Phased Transit Curves

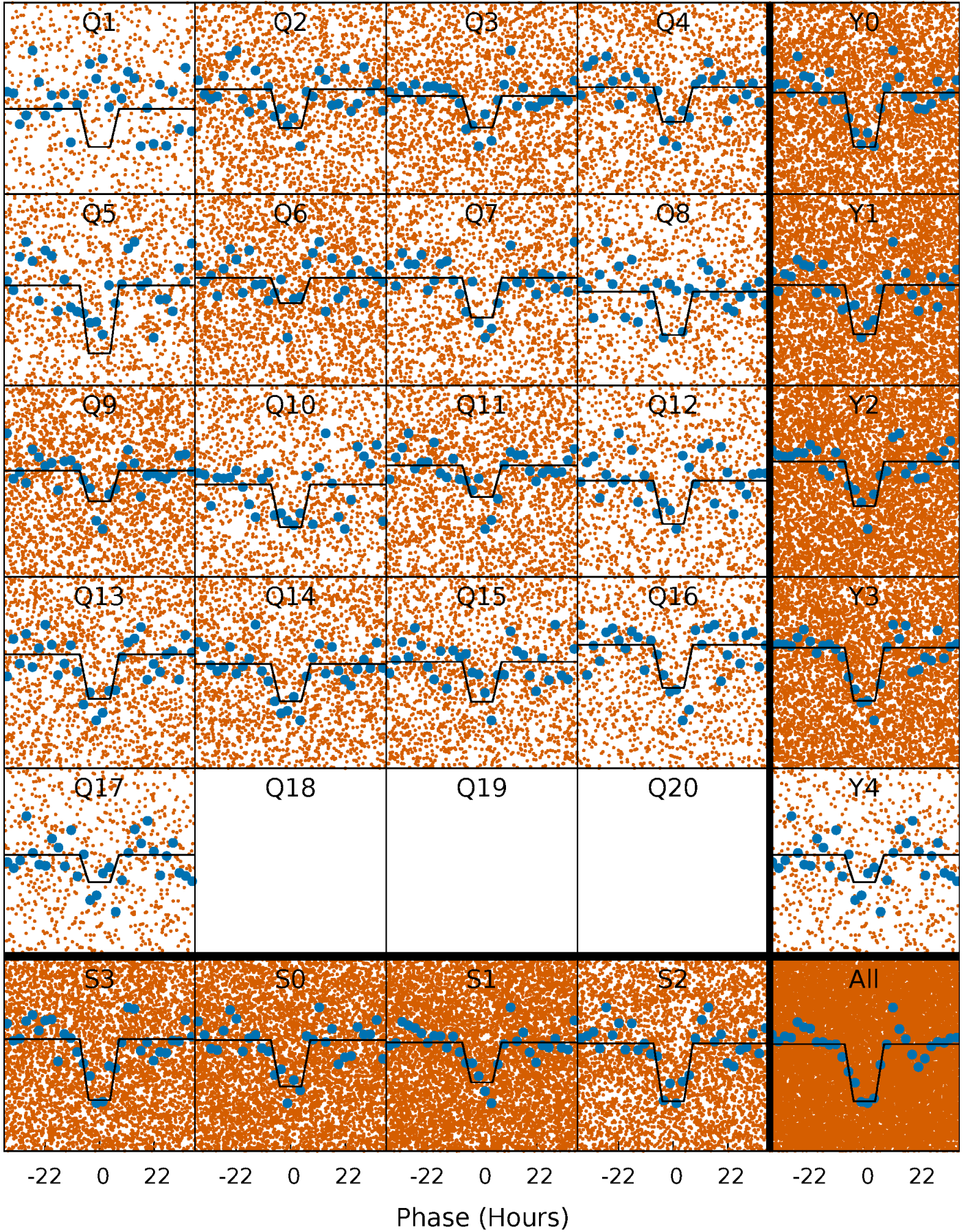
TCE 008322177-01 P= 2.942051 Days  $T_0=131.828542$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

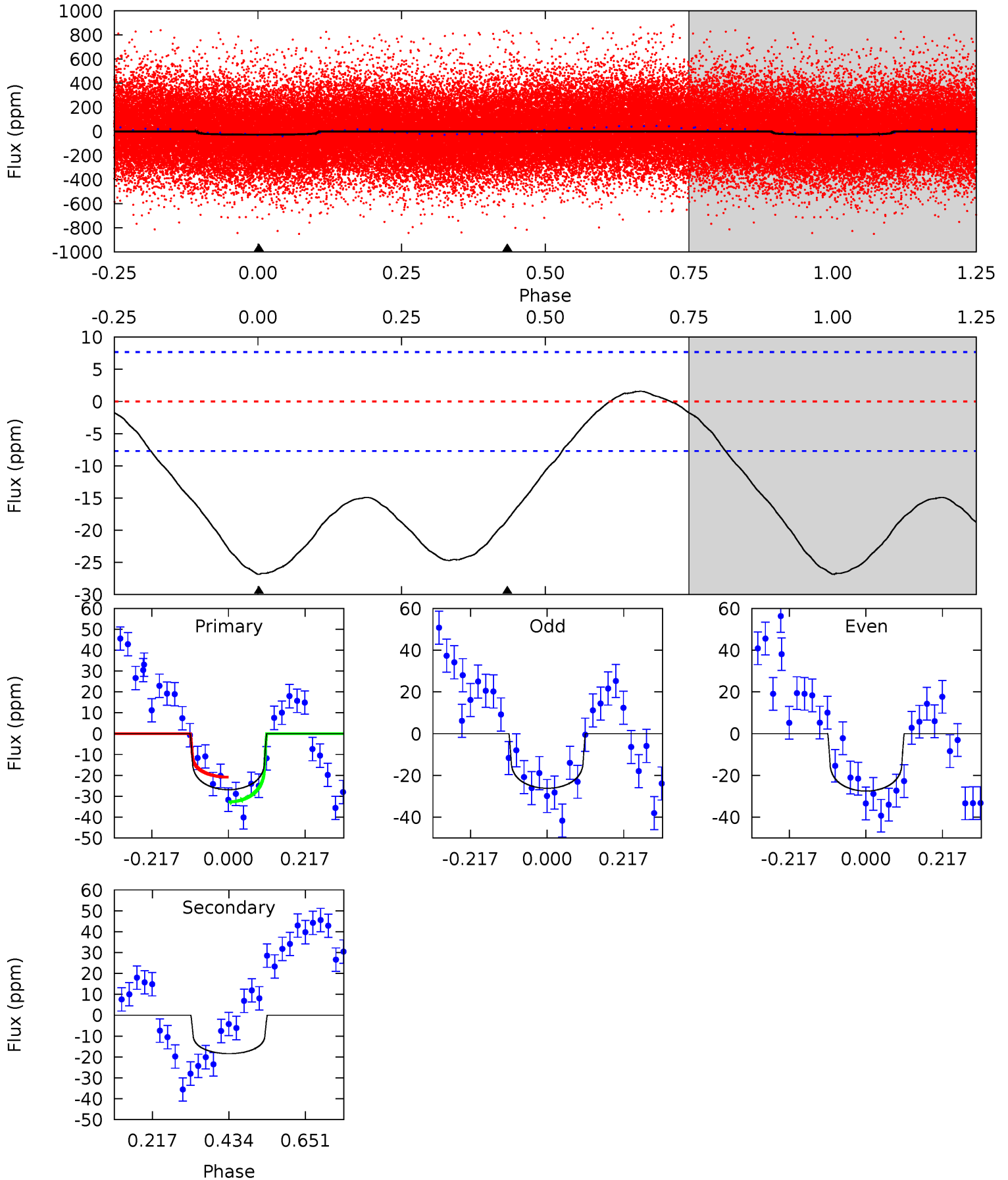
TCE 008322177-01 P= 2.941826 Days  $T_0=131.916220$  (BKJD)



# DV Model-Shift Uniqueness Test

008322177-01, P = 2.942051 Days, E = 128.886491 Days

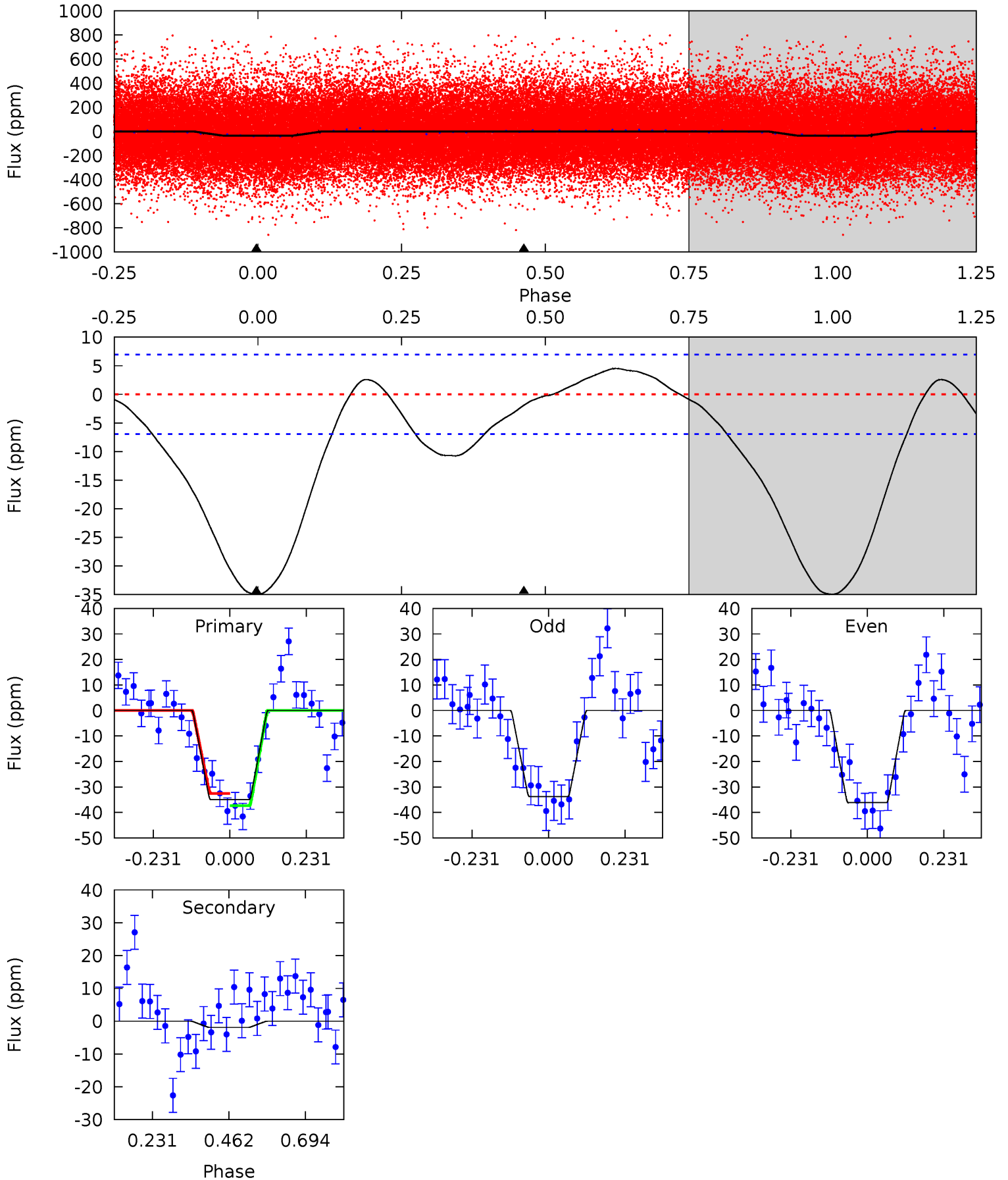
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.4	10.5	0	0	4.40	1.23	1.00	15.4	15.4	10.5	10.5	0.38	1.00	0.06	3.43



# Alt Model-Shift Uniqueness Test

008322177-01, P = 2.941826 Days, E = 128.974394 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
22.0	1.20	0	0	4.39	1.20	0.91	22.0	22.0	1.20	1.20	0.74	1.07	0.11	1.51





### Stellar Parameters For KIC 008322177

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4987^{+163}_{-148}$	$4.732^{+0.036}_{-0.021}$	$-1.900^{+0.300}_{-0.050}$	$0.528^{+0.023}_{-0.023}$	$0.548^{+0.039}_{-0.017}$	$5.247^{+0.696}_{-0.468}$
	+3%/-3%	+1%/-0%	+16%/-3%	+4%/-4%	+7%/-3%	+13%/-9%
Source	PHO1	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 008322177-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-18 \pm 2$	$0.39^{+0.33}_{-0.25}$	$1230^{+42}_{-39}$	$4149^{+2327}_{-791}$	$71^{+448}_{-50}$
Alt.	$-2 \pm 2$	$0.44^{+0.38}_{-0.26}$	$1228^{+42}_{-43}$	$2681^{+1030}_{-769}$	$4.314^{+33.973}_{-3.807}$

$T_{\text{max}}$  = 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

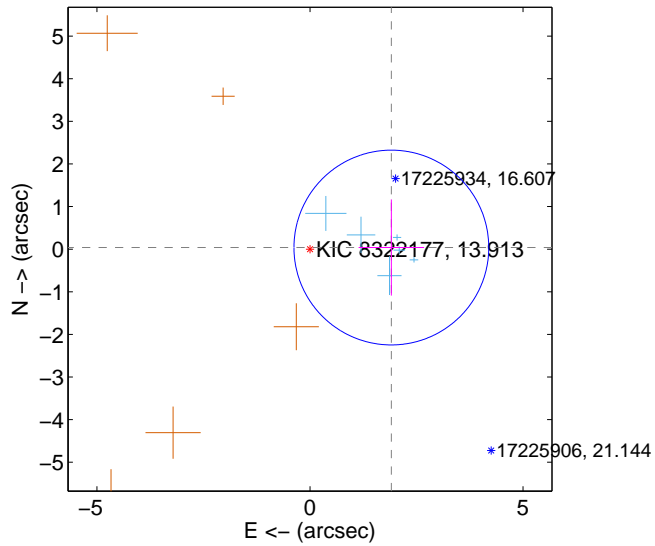
Supplemental centroid analysis for 008322177-01. Kepler magnitude: 13.91. Transit SNR 11.47

There are 6 quarters with good PRF difference image offsets

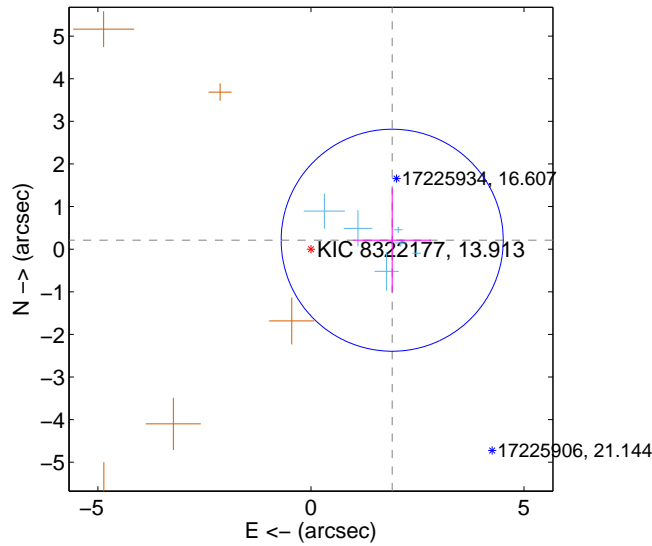
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.911 \pm 0.762$	2.51	$-1.910 \pm 0.769$	$0.038 \pm 1.129$
PRF-fit source offset from KIC position	$1.919 \pm 0.869$	2.21	$-1.908 \pm 0.911$	$0.210 \pm 1.218$
photometric centroid source offset	$1.51 \pm 1.07$	1.40	$1.22 \pm 1.14$	$-0.89 \pm 0.94$

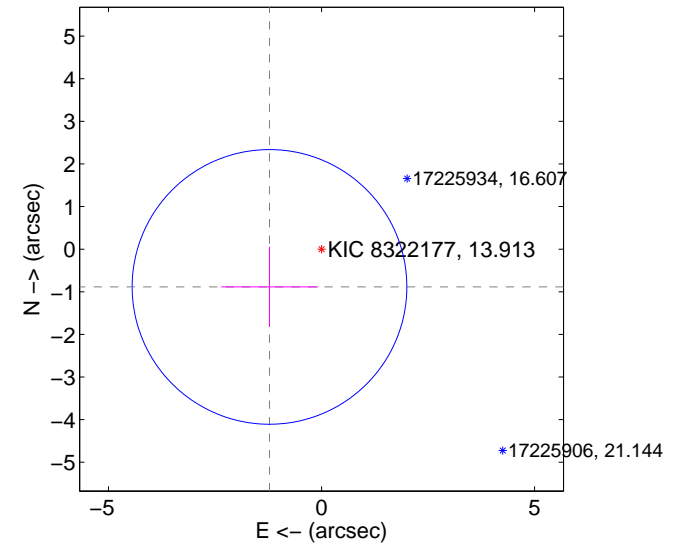
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

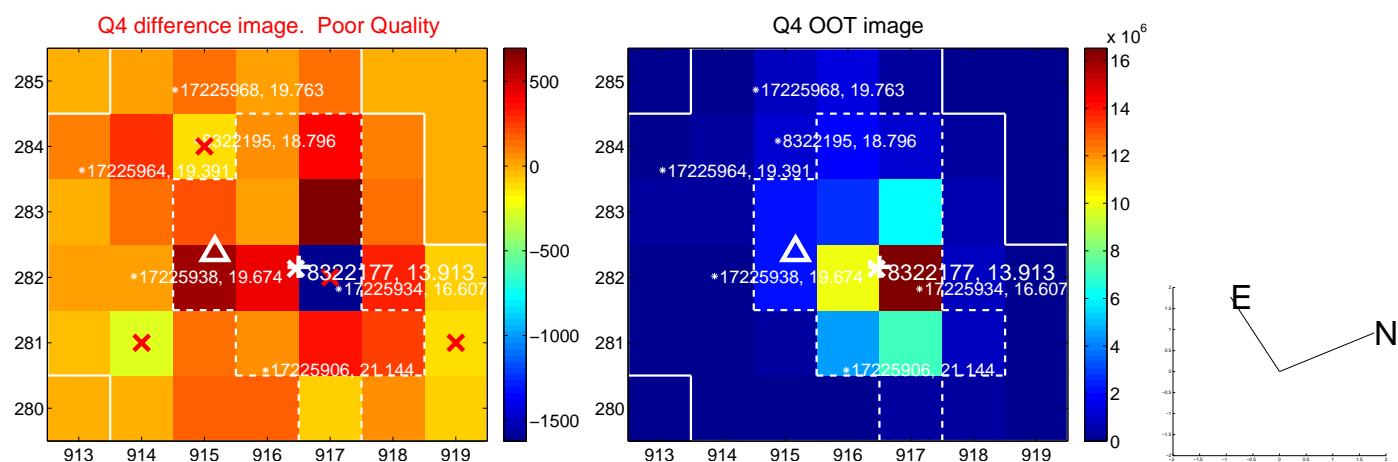
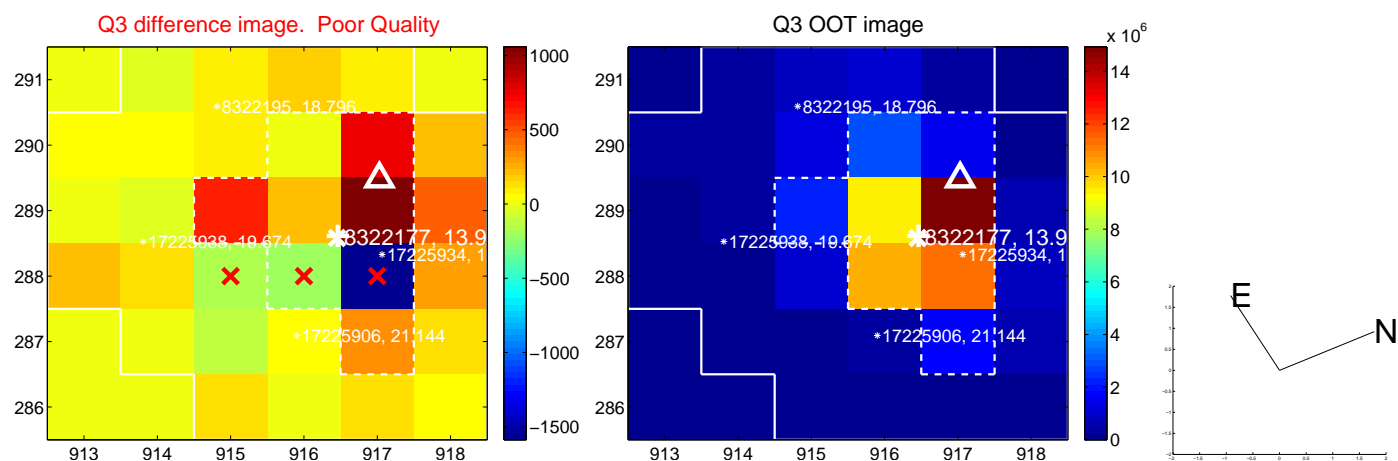
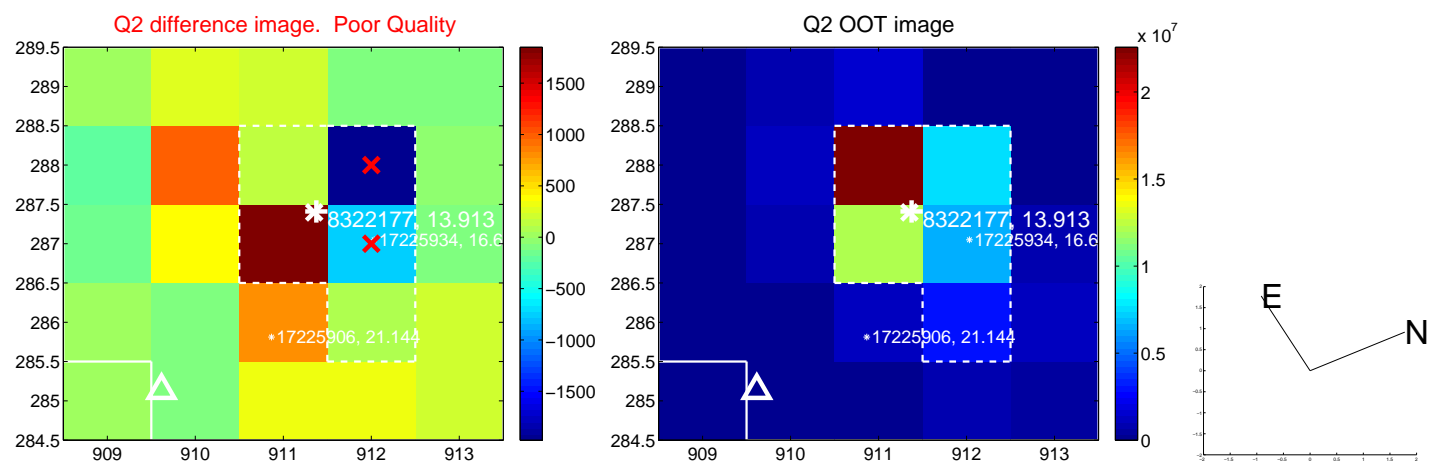
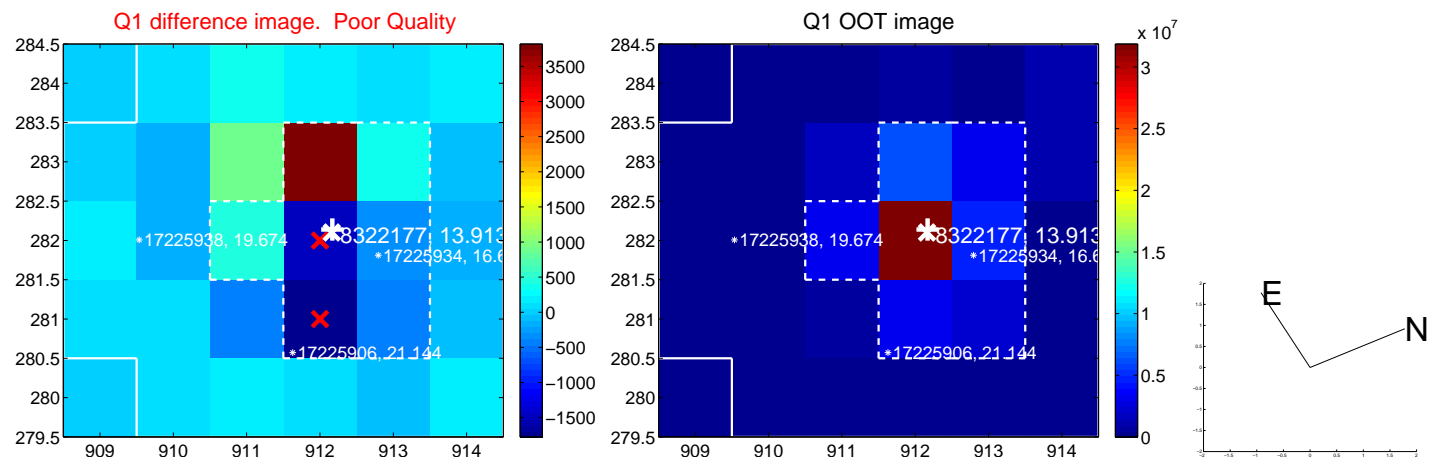


offset from photometric centroids

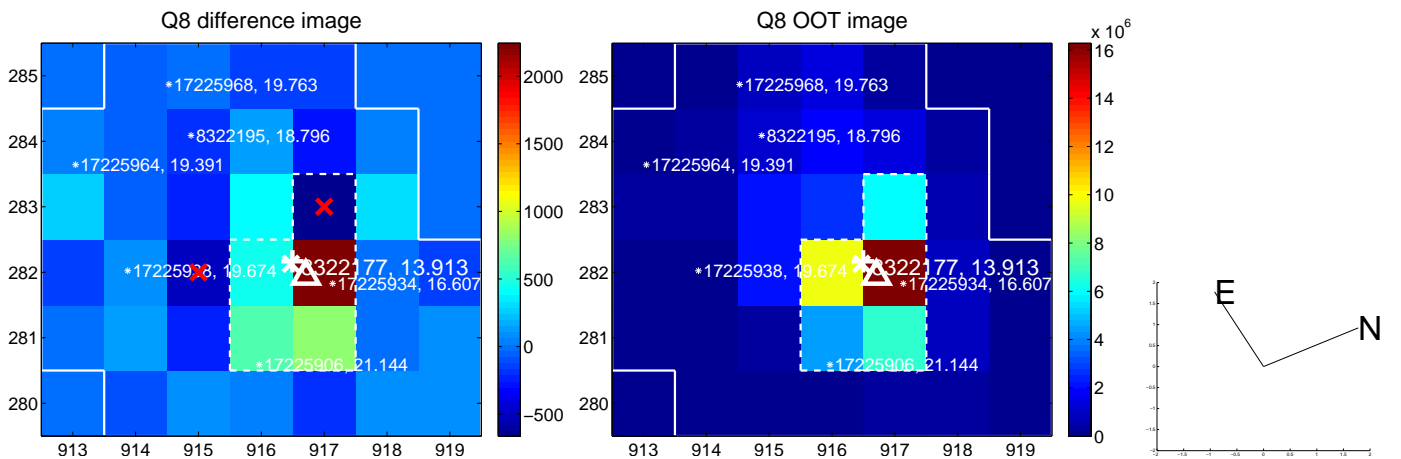
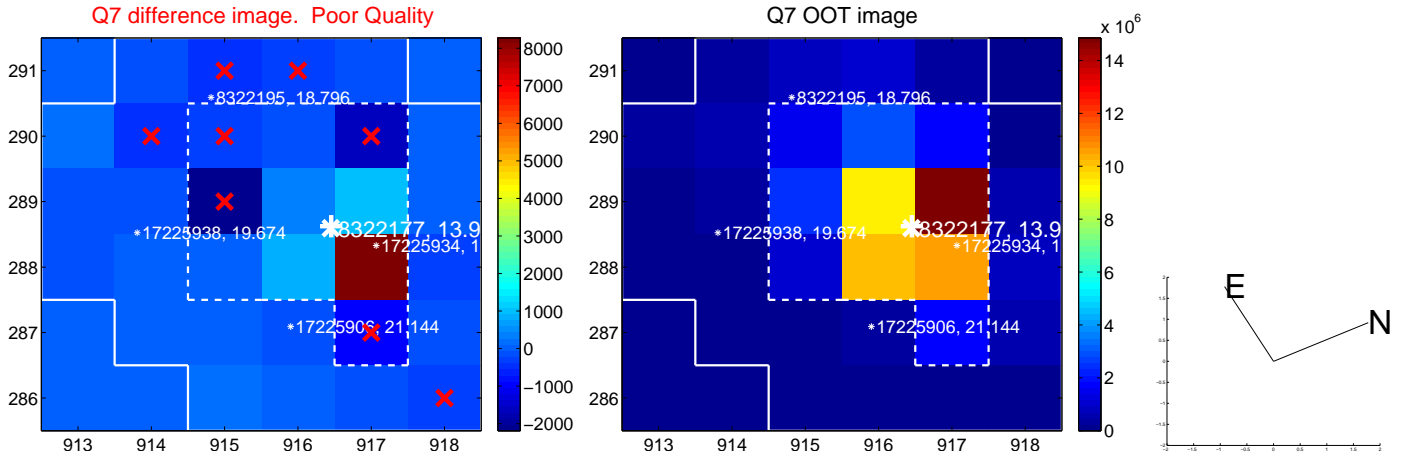
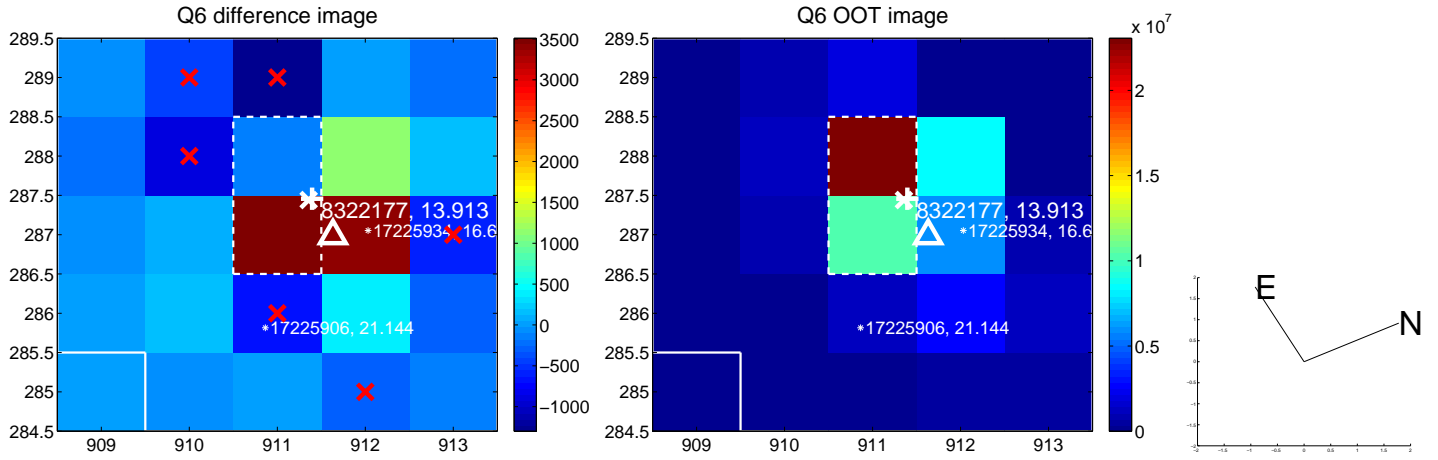
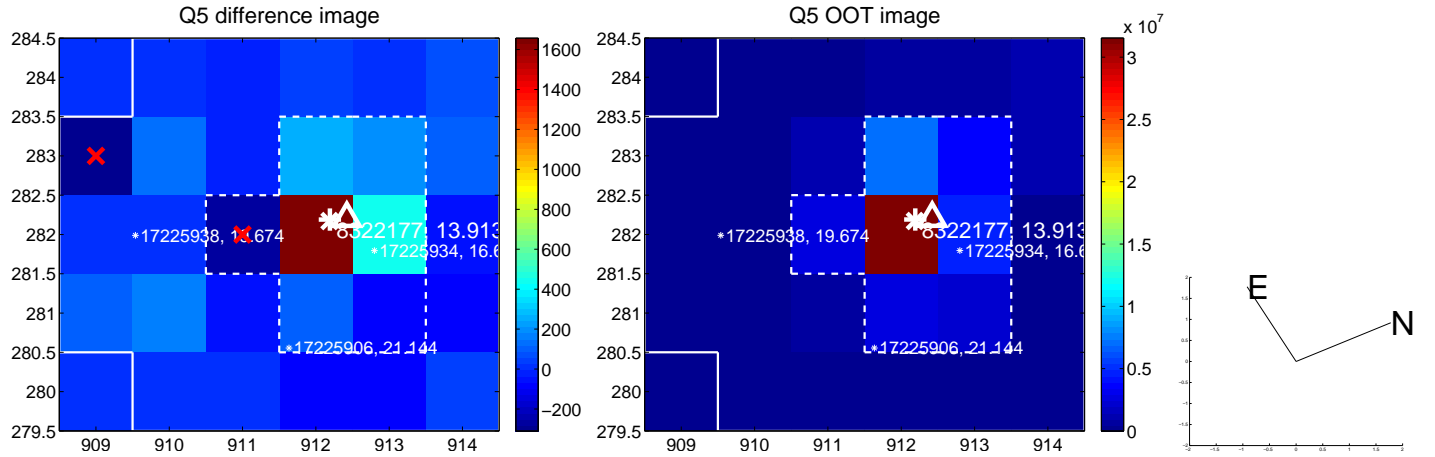


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

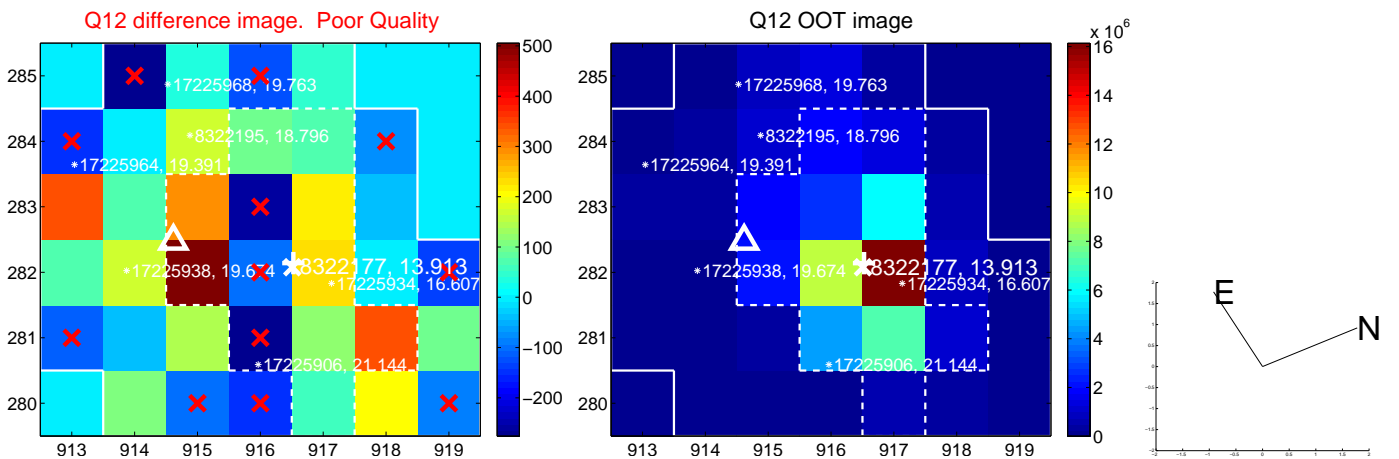
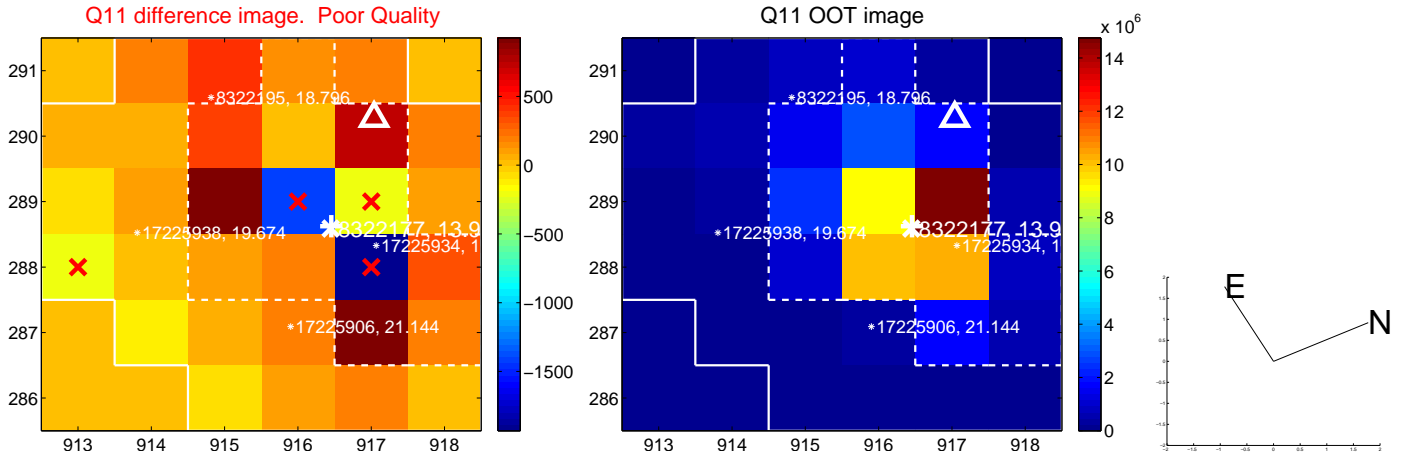
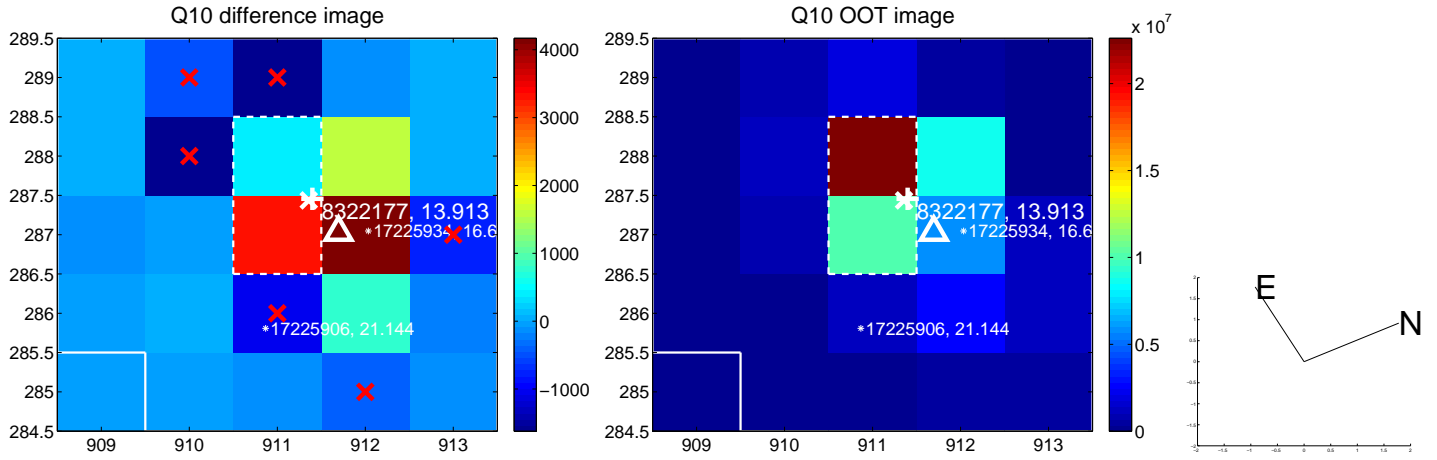
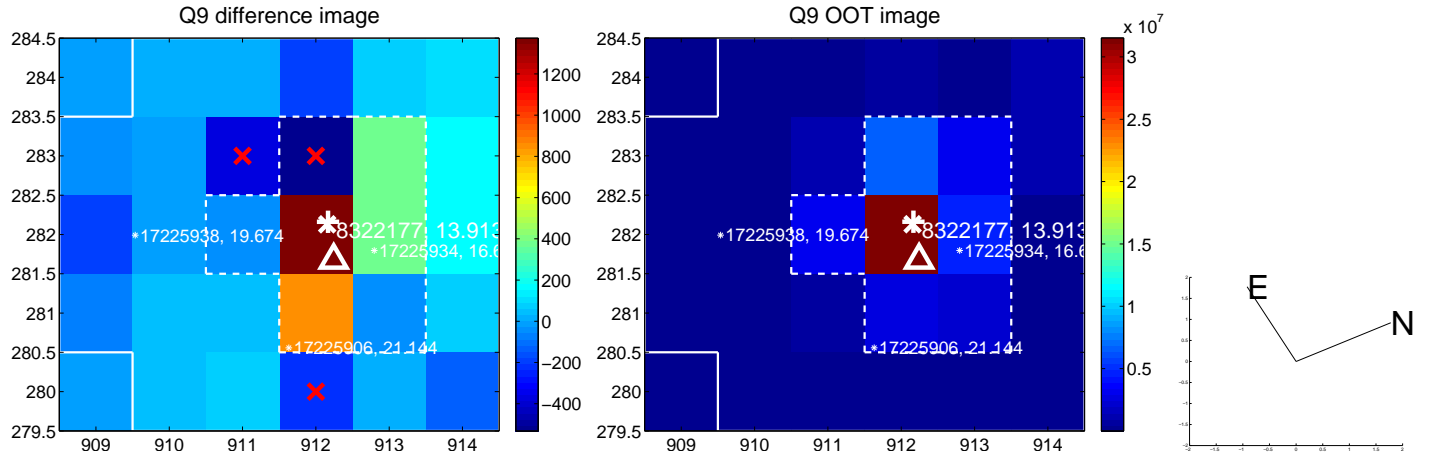


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

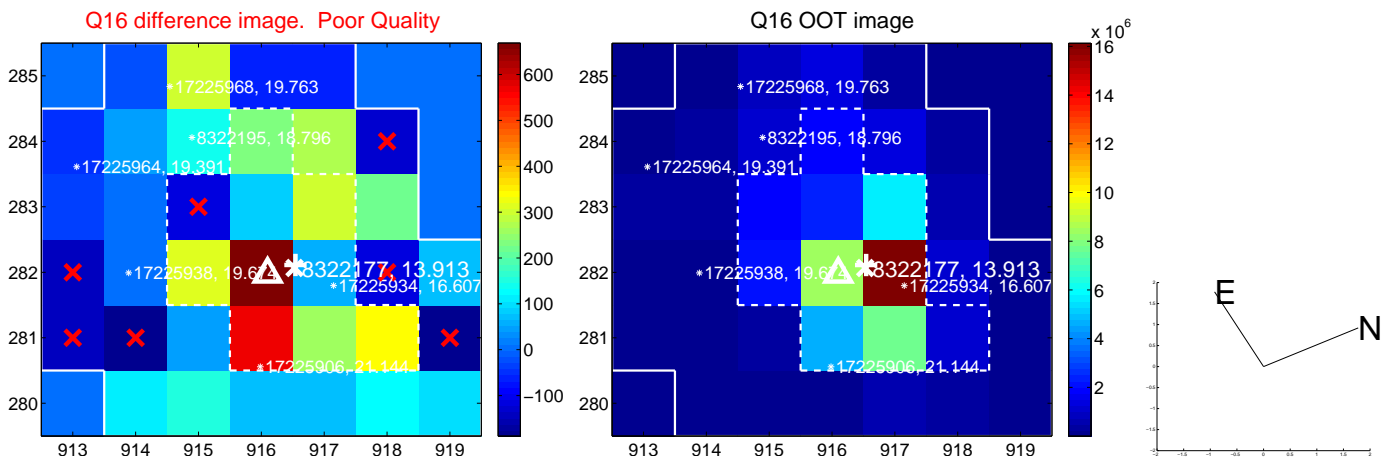
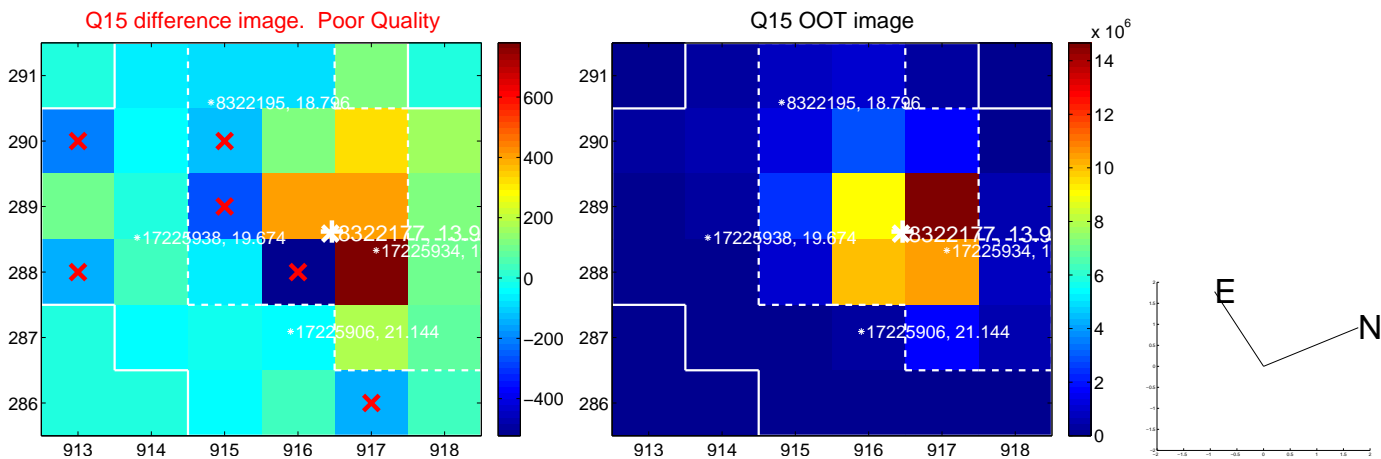
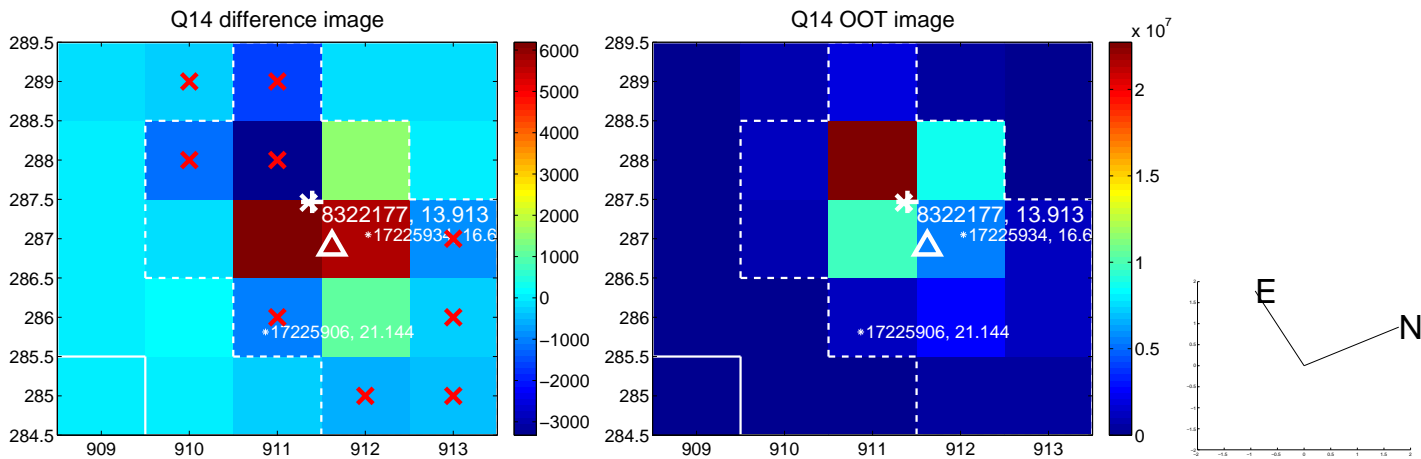
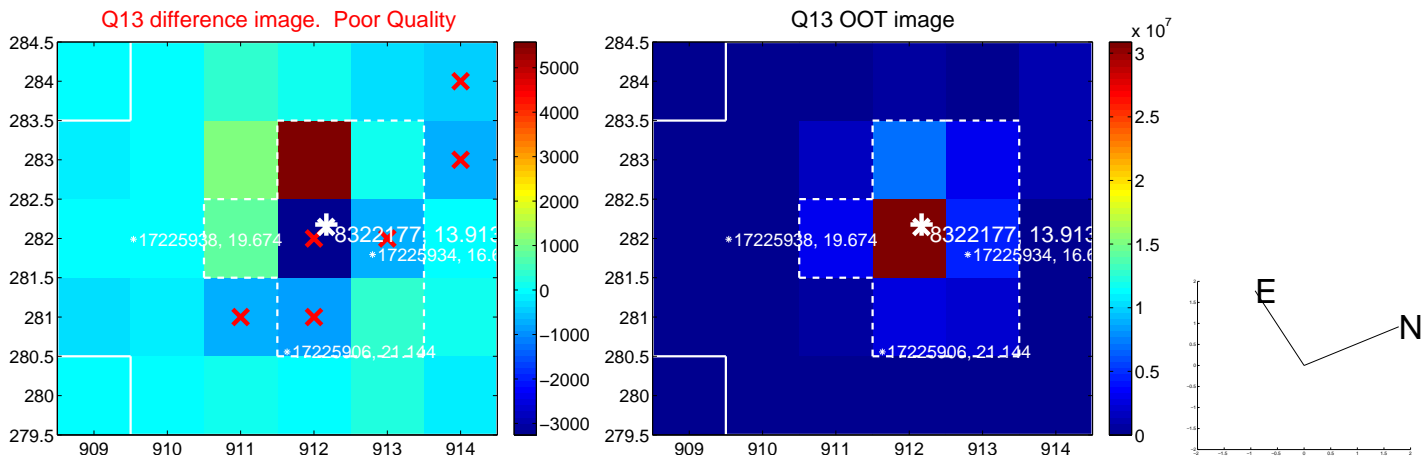




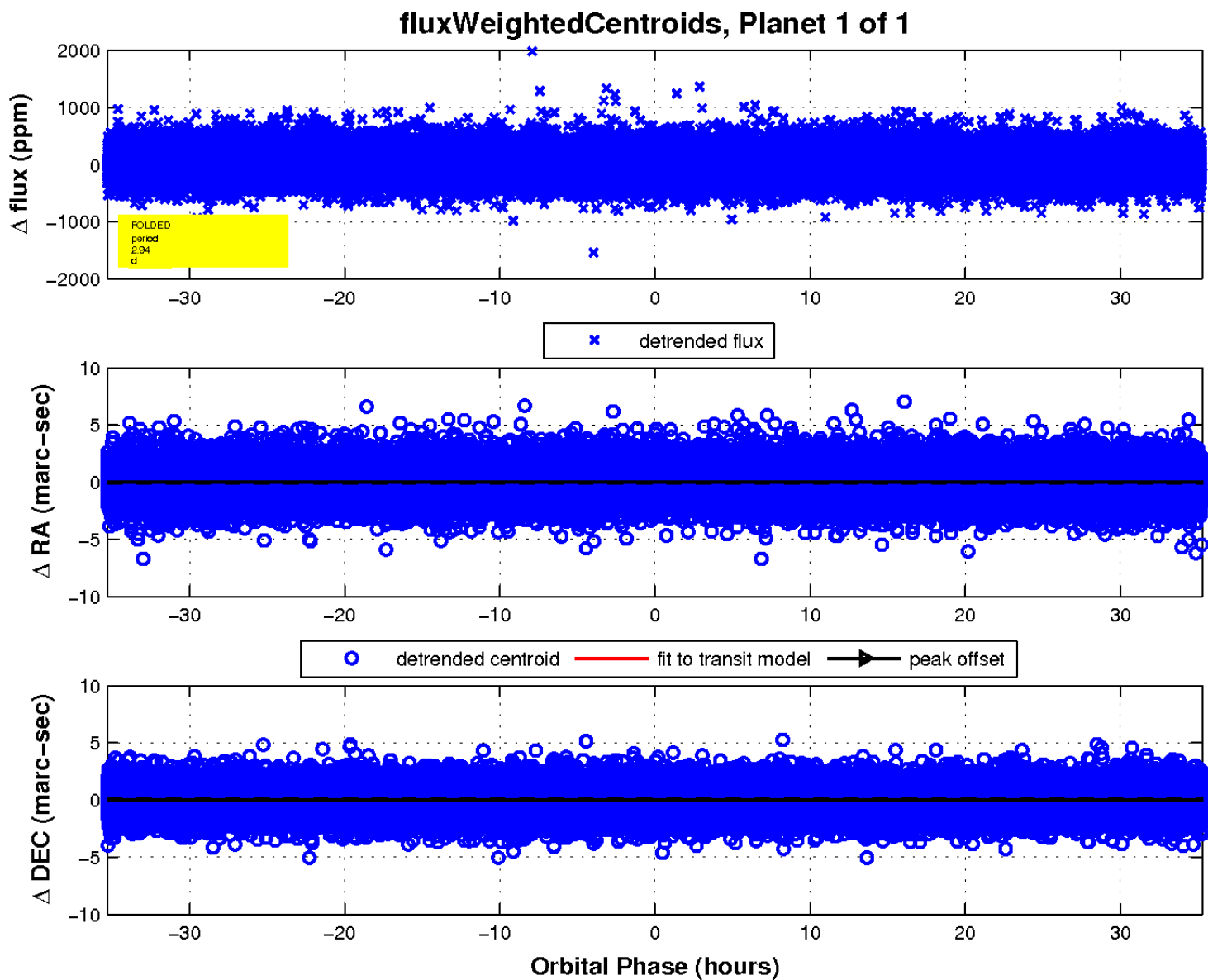
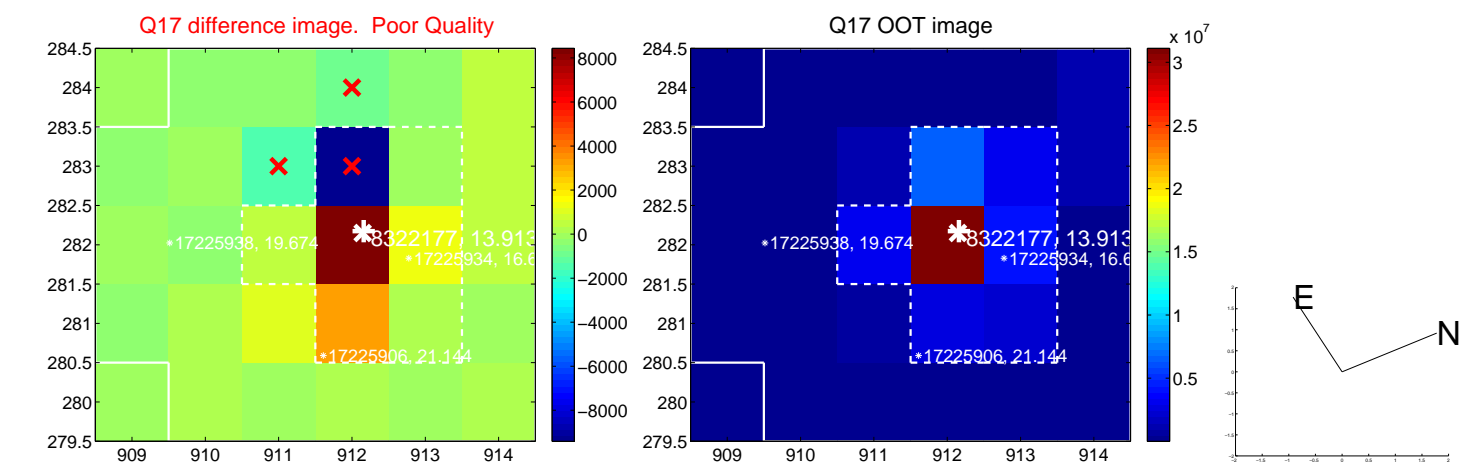
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

