

# KIC 011030931

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011030931-01	OBS	No	441.132985	266.520308	78.2	15.805	7.1	6.1	1.46	5930	1.47	1.82

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011030931-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

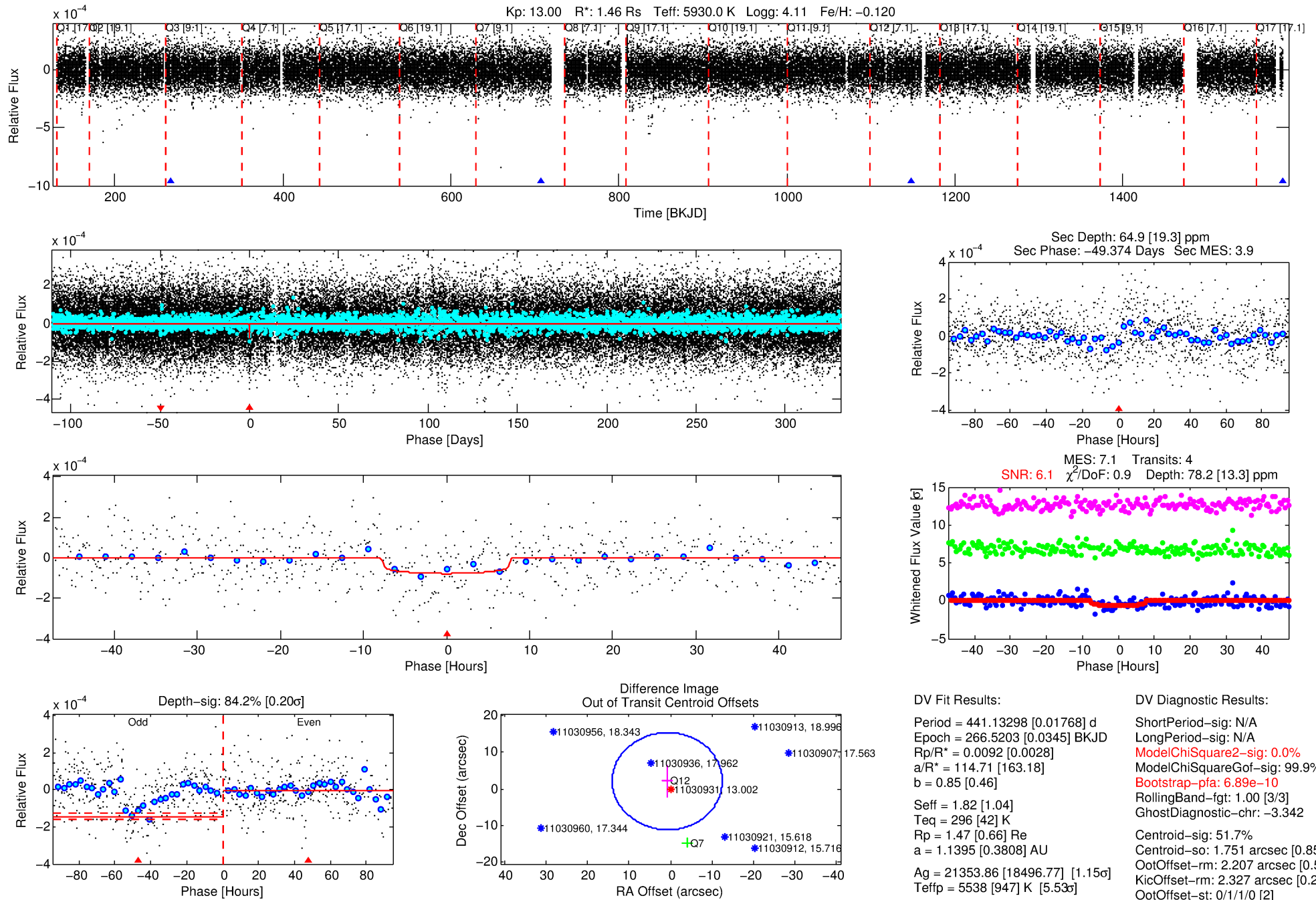
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011030931-01

No Significant Match Found

# DV One-Page Summary

KIC: 11030931 Candidate: 1 of 1 Period: 441.133 d



## DV Fit Results:

Period = 441.13298 [0.01768] d  
Epoch = 266.5203 [0.0345] BKJD  
Rp/R\* = 0.0092 [0.0028]  
a/R\* = 114.71 [163.18]  
b = 0.85 [0.46]  
Seff = 1.82 [1.04]  
Teff = 296 [42] K  
Rp = 1.47 [0.66] Re  
a = 1.1395 [0.3808] AU  
Ag = 21353.86 [18496.77] [1.15σ]  
Teffp = 5538 [947] K [5.53σ]

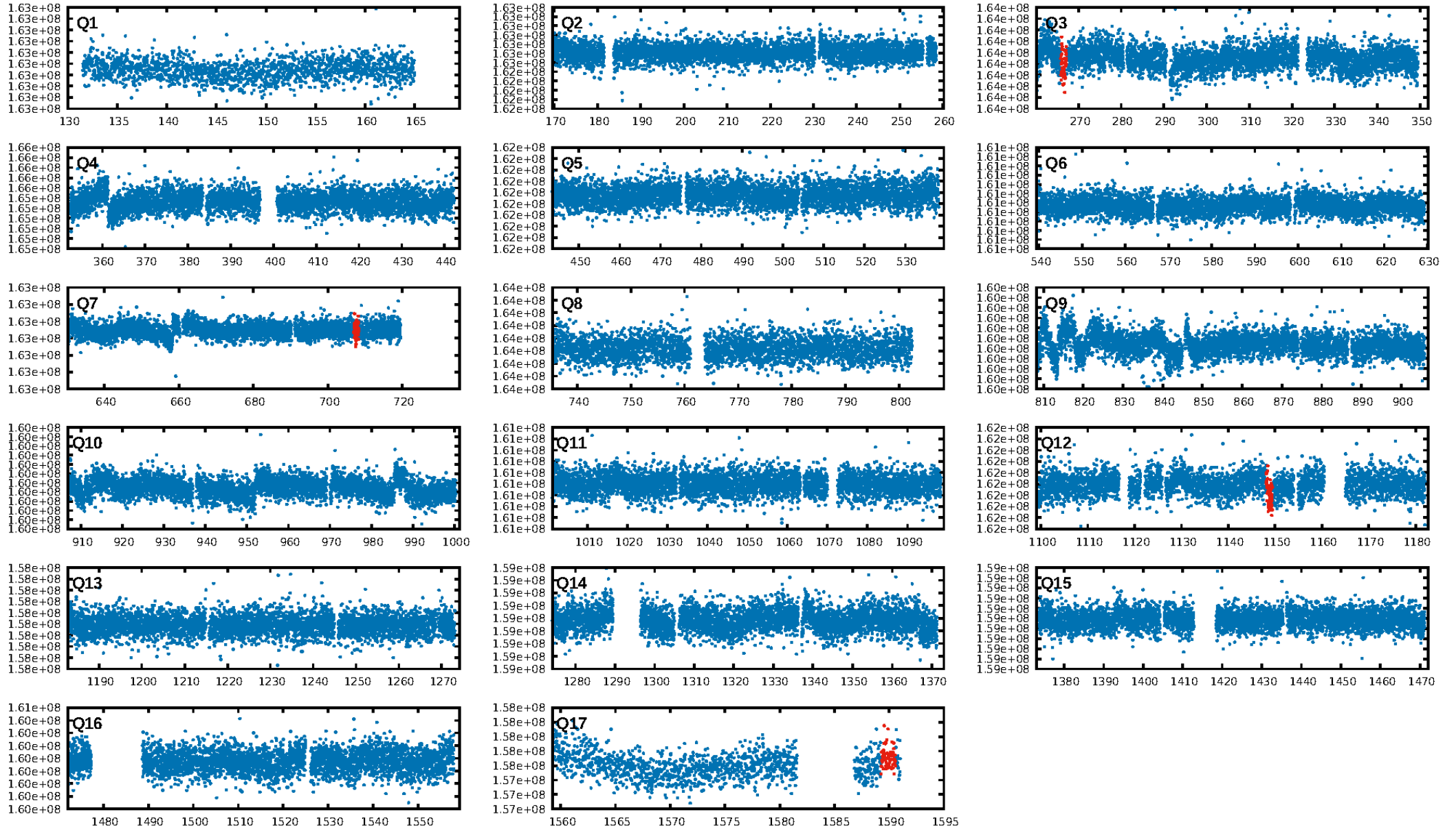
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 99.9%  
Bootstrap-pfa: 6.89e-10  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -3.342  
Centroid-sig: 51.7%  
Centroid-so: 1.751 arcsec [0.85σ]  
OotOffset-rm: 2.207 arcsec [0.50σ]  
KicOffset-rm: 2.327 arcsec [0.28σ]  
OotOffset-st: 0/1/1/0 [2]  
KicOffset-st: 0/1/1/0 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 1.00 [3/3]

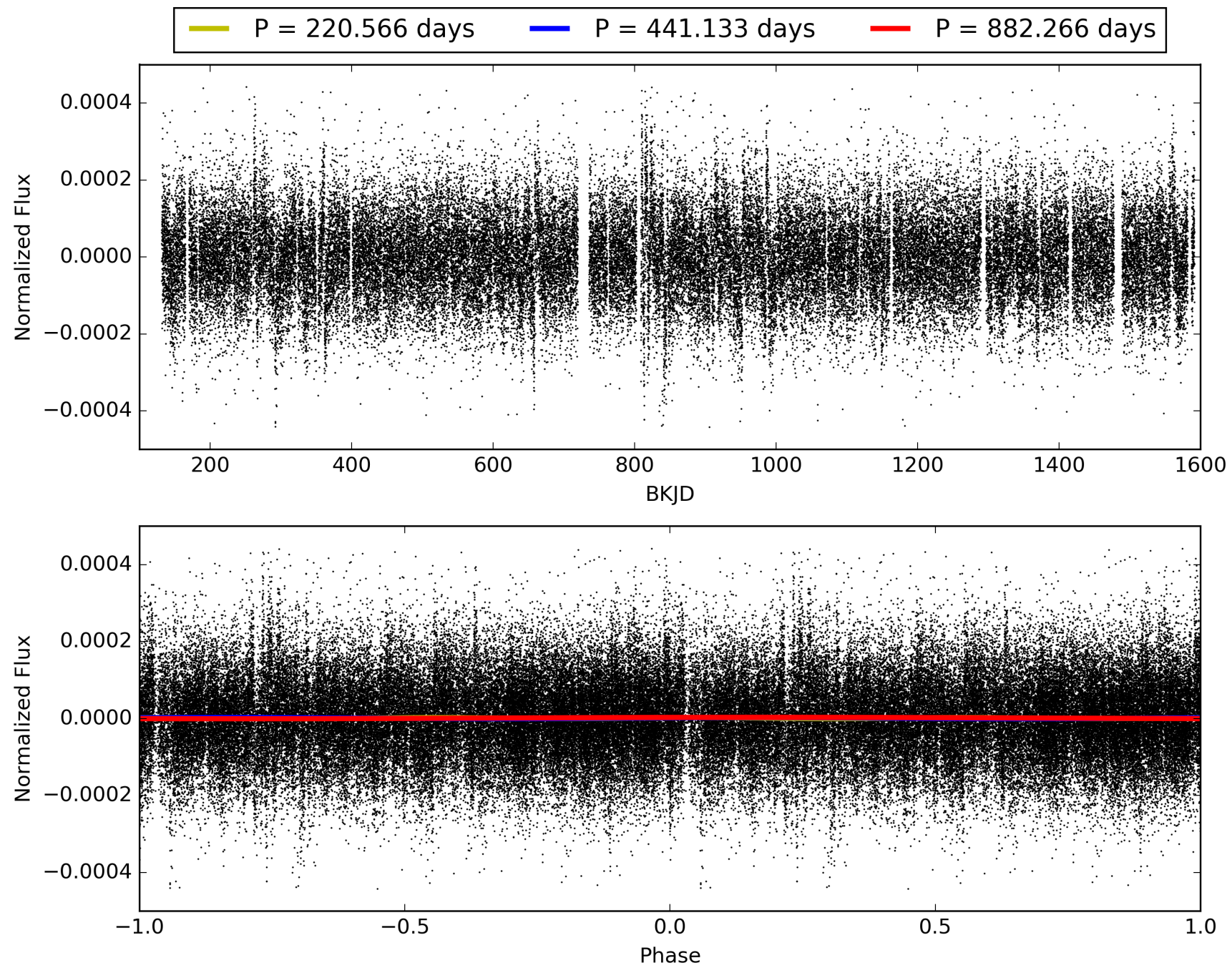
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:55:05 Z

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

# TCE 011030931-01, PDC Light Curves

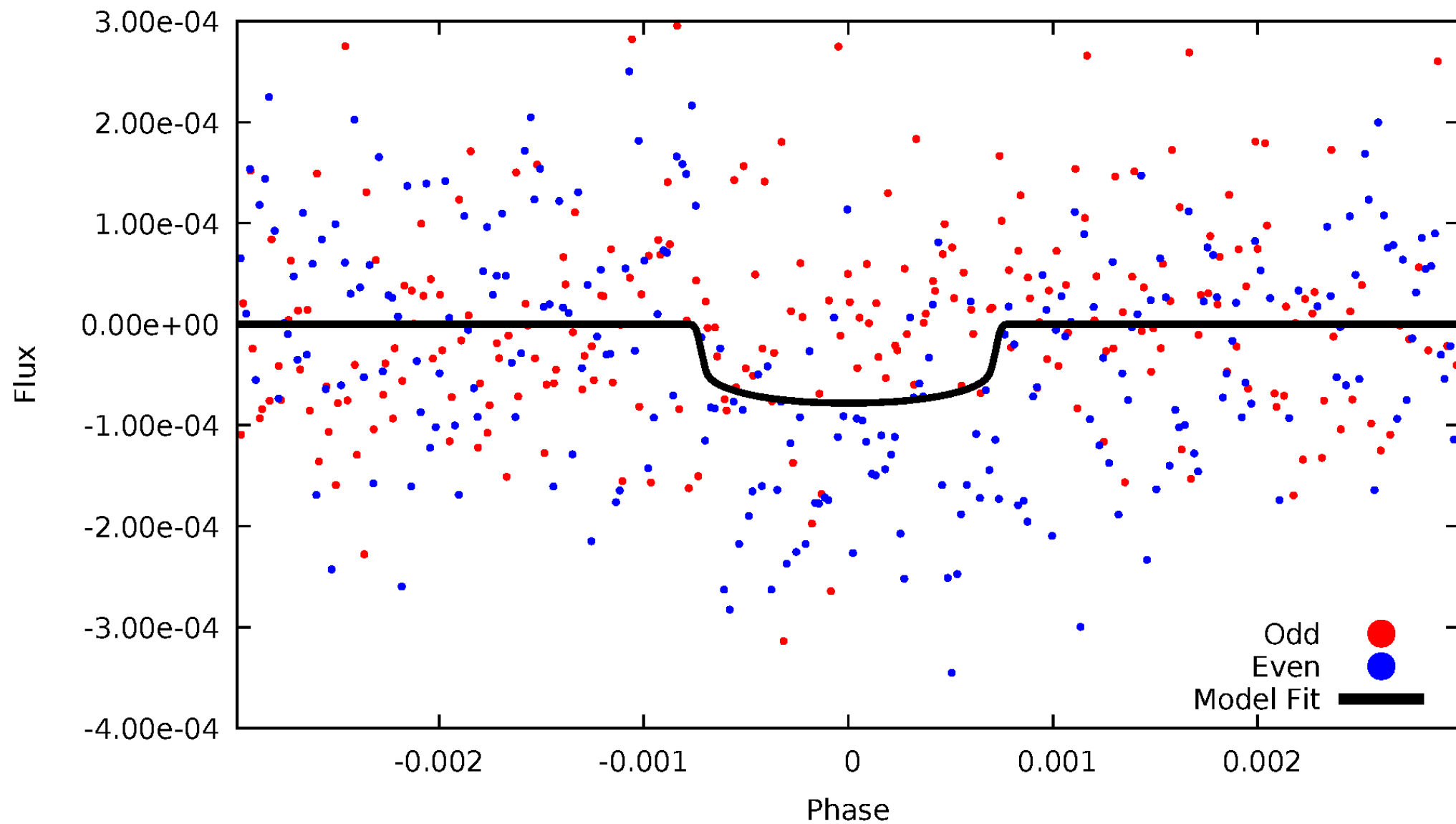


# TCE 011030931-01



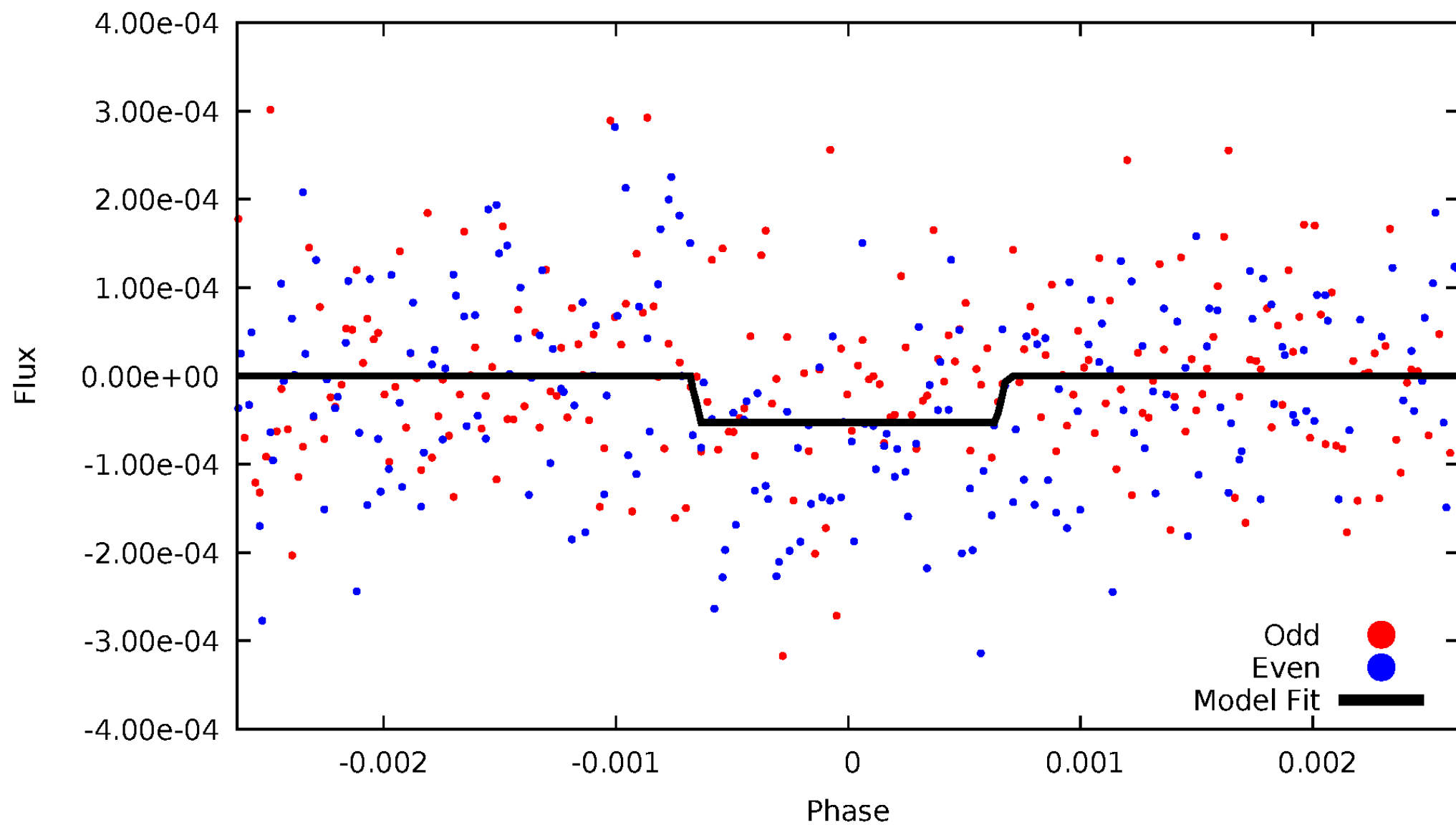
# DV Odd/Even

TCE 011030931-01



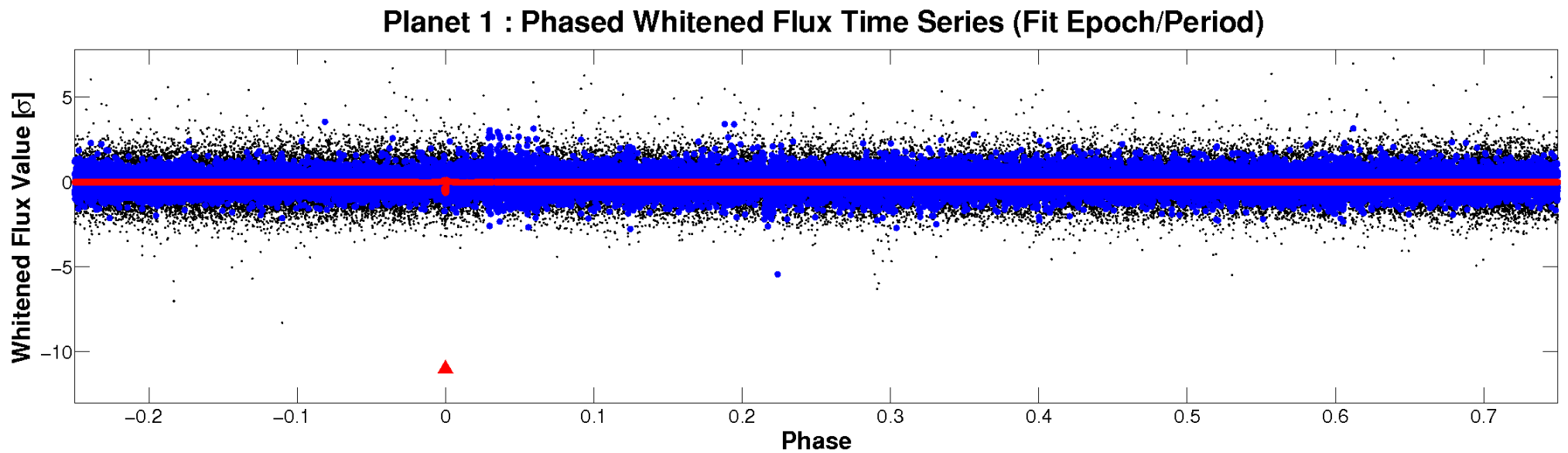
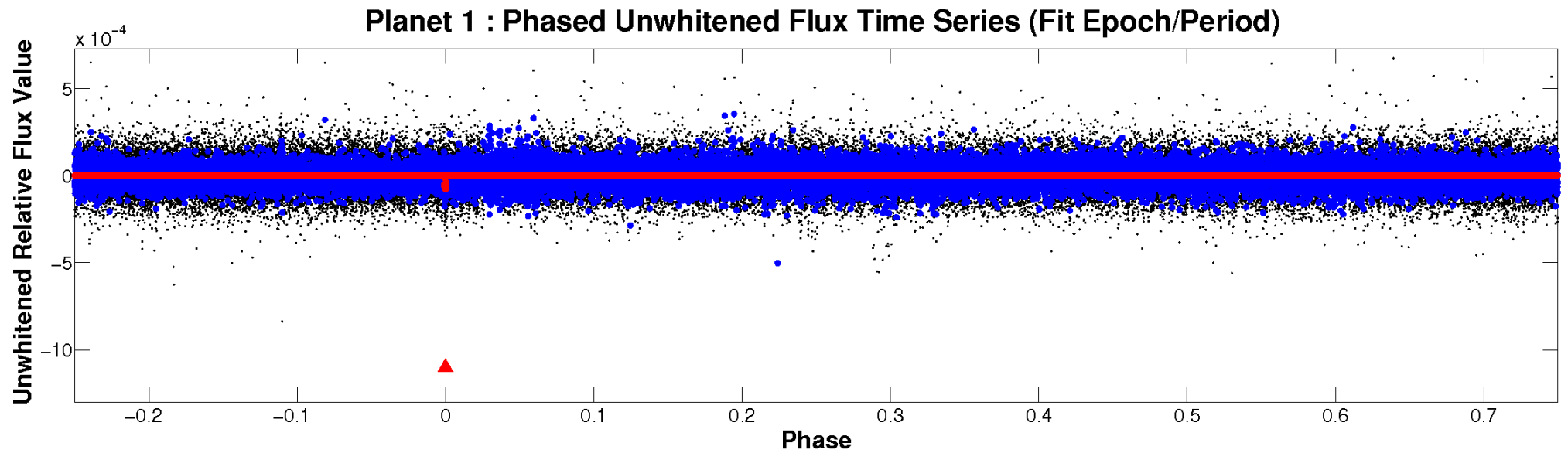
# ALT Odd/Even

TCE 011030931-01





# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

TCE 011030931-01 P=441.132985 Days  $T_0=266.520308$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 011030931-01 P=441.132985 Days  $T_0=266.520308$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

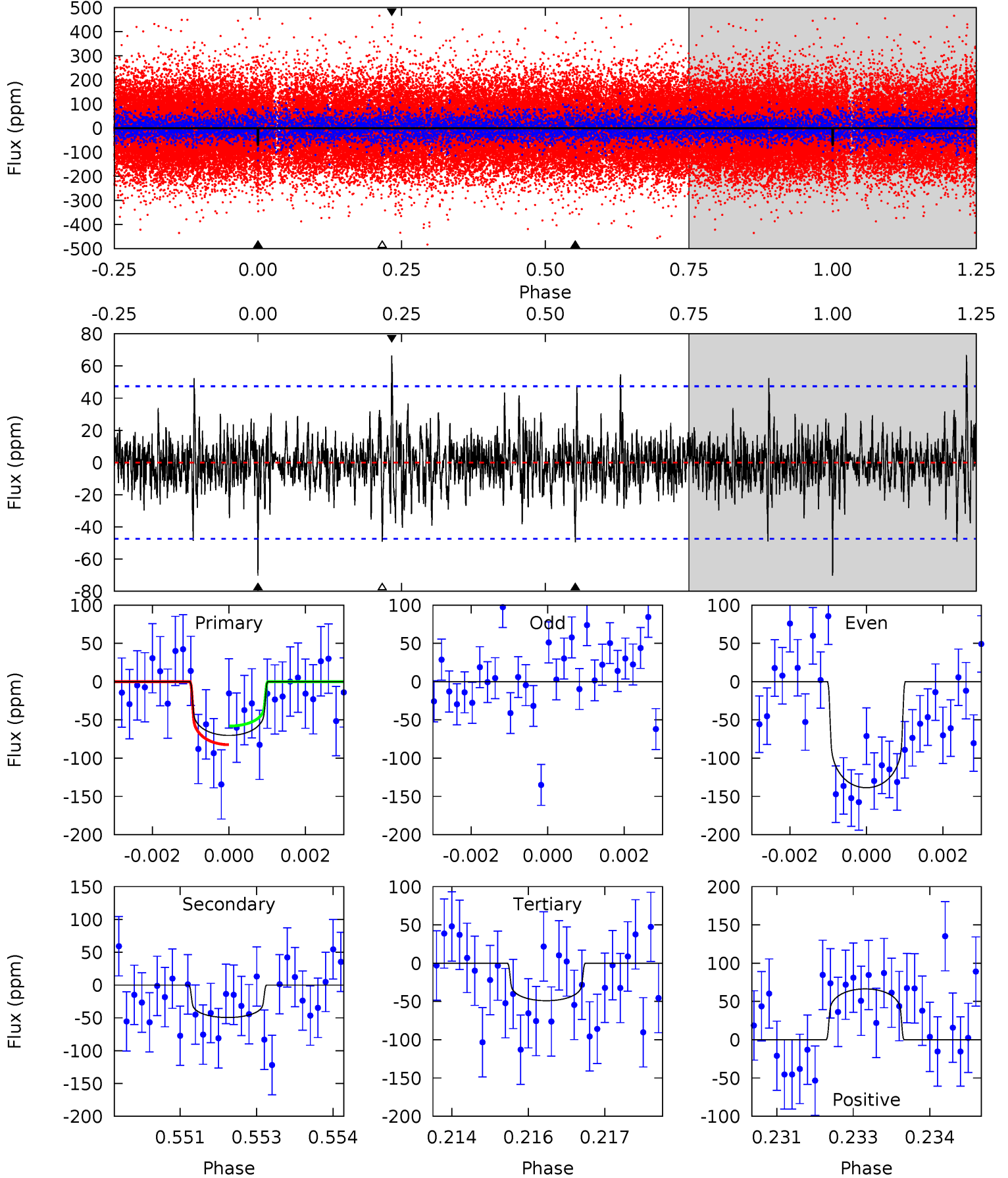
TCE 011030931-01     $P=441.146938$  Days     $T_0=266.491212$  (BKJD)



# DV Model-Shift Uniqueness Test

011030931-01, P = 441.132985 Days, E = 266.520308 Days

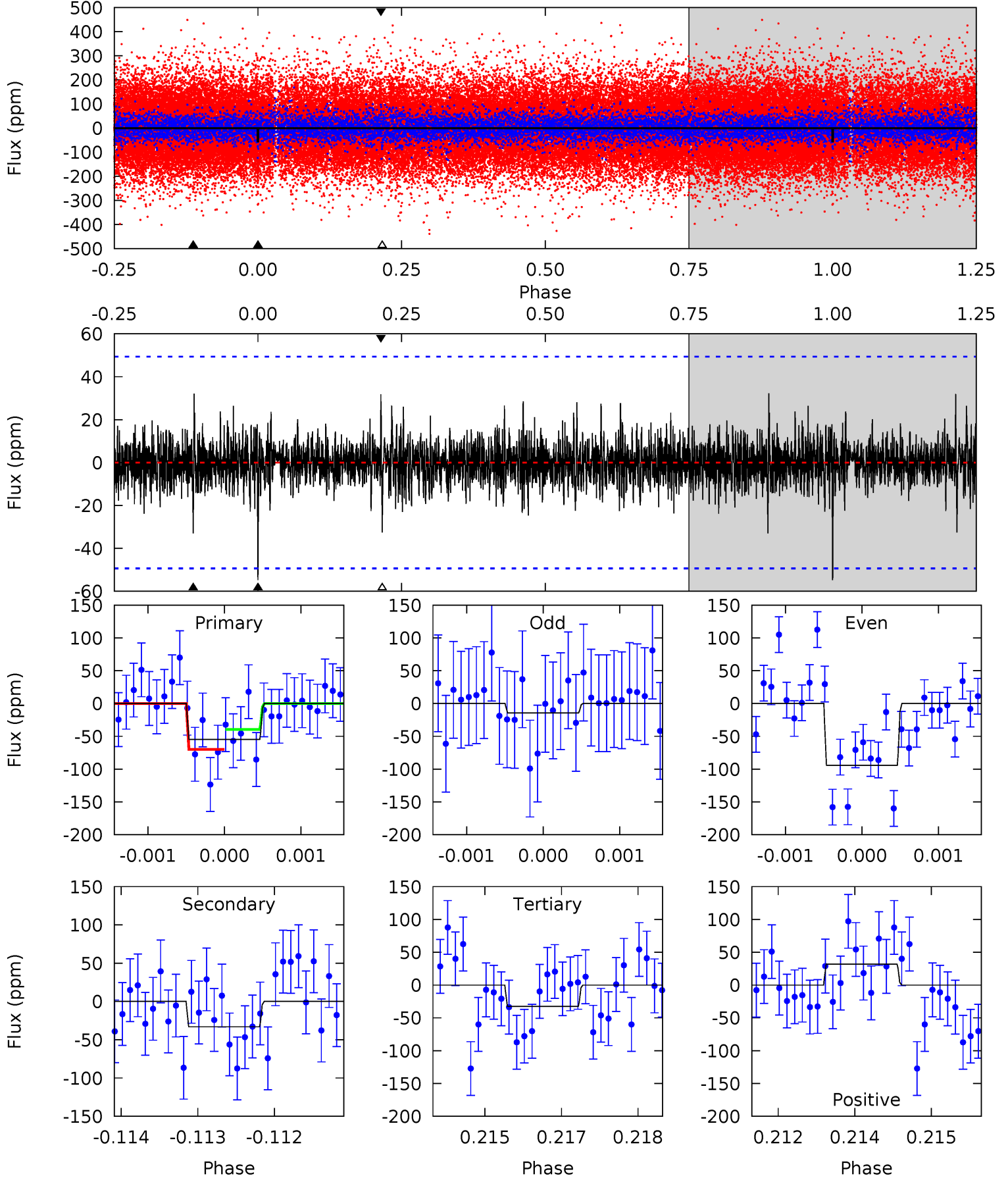
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.97	5.61	5.56	7.53	5.38	3.17	1.37	2.41	0.44	0.05	-1.92	7.89	0.86	0.49	1.38



# Alt Model-Shift Uniqueness Test

011030931-01, P = 441.146938 Days, E = 266.491212 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
5.99	3.61	3.56	3.48	5.40	3.20	0.80	2.43	2.51	0.05	0.12	4.39	0.88	0.37	1.66



### Stellar Parameters For KIC 011030931

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$\rho_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5930^{+193}_{-211}$	$4.114^{+0.329}_{-0.165}$	$-0.120^{+0.300}_{-0.300}$	$1.462^{+0.392}_{-0.480}$	$1.013^{+0.152}_{-0.138}$	$0.457^{+0.920}_{-0.201}$
	+3%/-4%	+8%/-4%	+250%/-250%	+27%/-33%	+15%/-14%	+202%/-44%
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 011030931-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-49 \pm 9$	$1.40^{+0.55}_{-0.46}$	$410^{+36}_{-40}$	$5248^{+987}_{-641}$	$18269^{+22578}_{-9227}$
Alt.	$-33 \pm 9$	$1.10^{+0.49}_{-0.44}$	$407^{+34}_{-39}$	$5235^{+1292}_{-711}$	$18577^{+30997}_{-9936}$

$T_{\text{max}}$  = 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

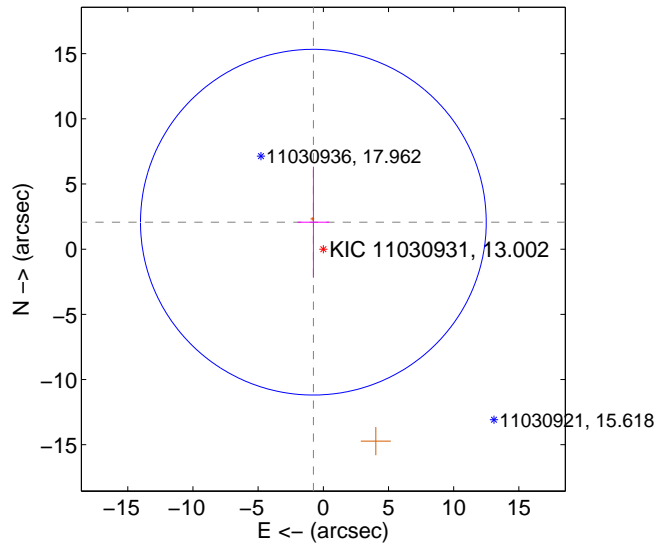
Supplemental centroid analysis for 011030931-01. Kepler magnitude: 13.00. Transit SNR 6.11

There are 0 quarters with good PRF difference image offsets

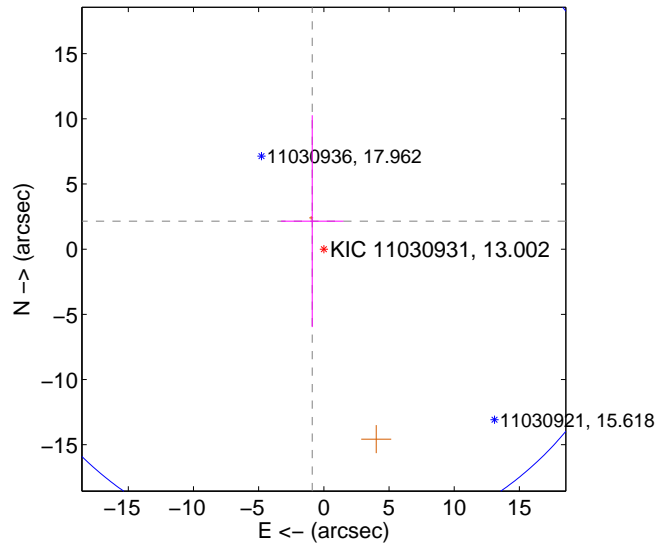
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.207 \pm 4.420$	0.50	$0.763 \pm 1.219$	$2.070 \pm 4.262$
PRF-fit source offset from KIC position	$2.327 \pm 8.420$	0.28	$0.890 \pm 2.389$	$2.150 \pm 8.125$
photometric centroid source offset	$1.75 \pm 2.05$	0.85	$1.73 \pm 2.06$	$-0.29 \pm 1.87$

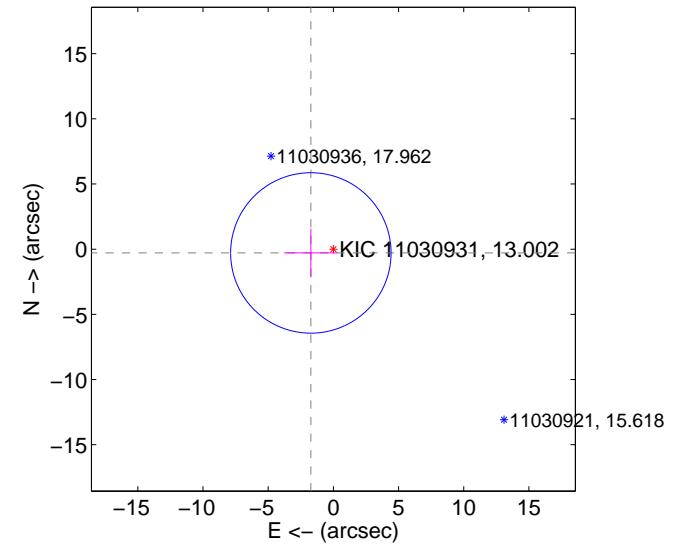
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



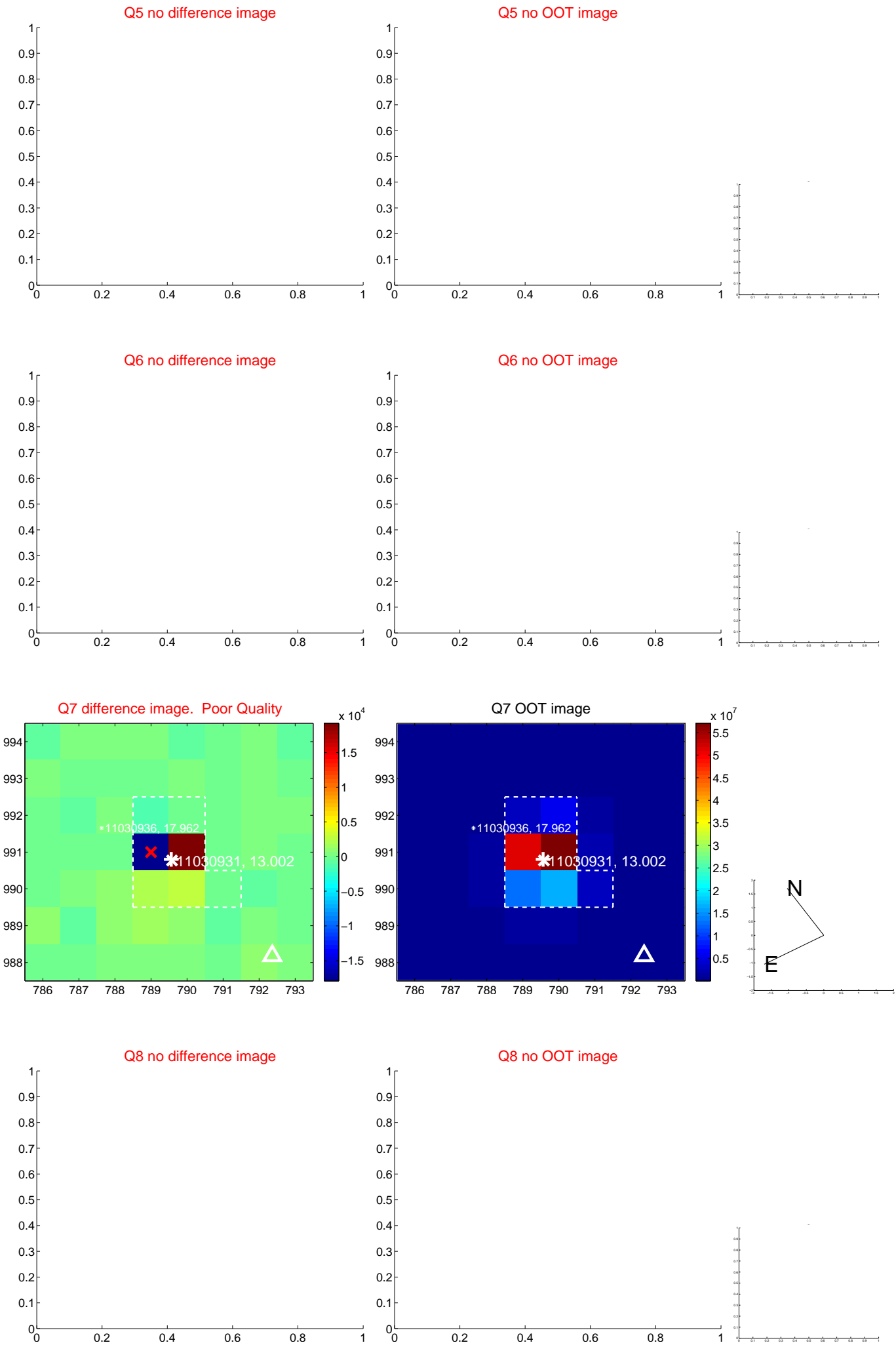
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

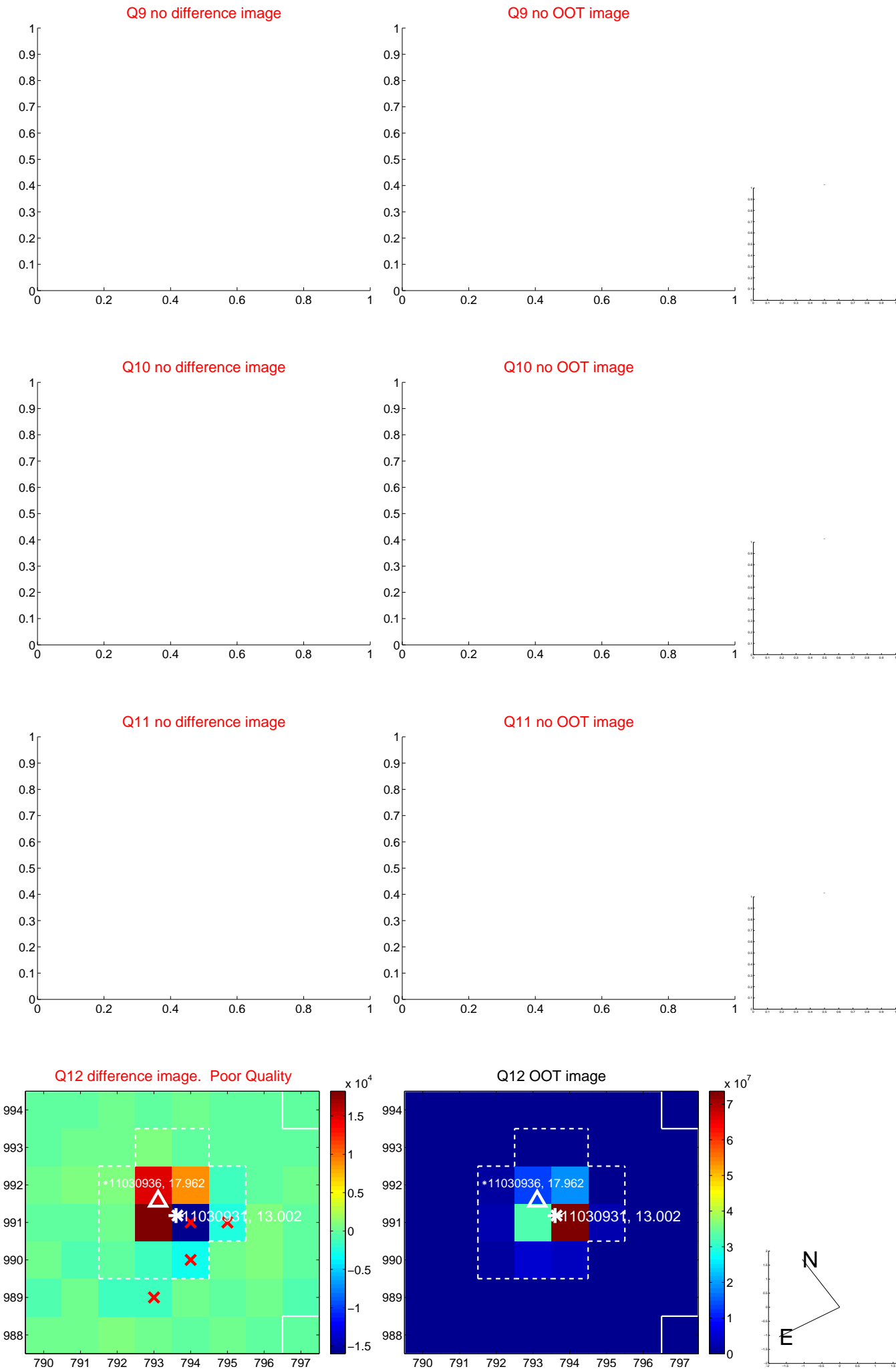




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



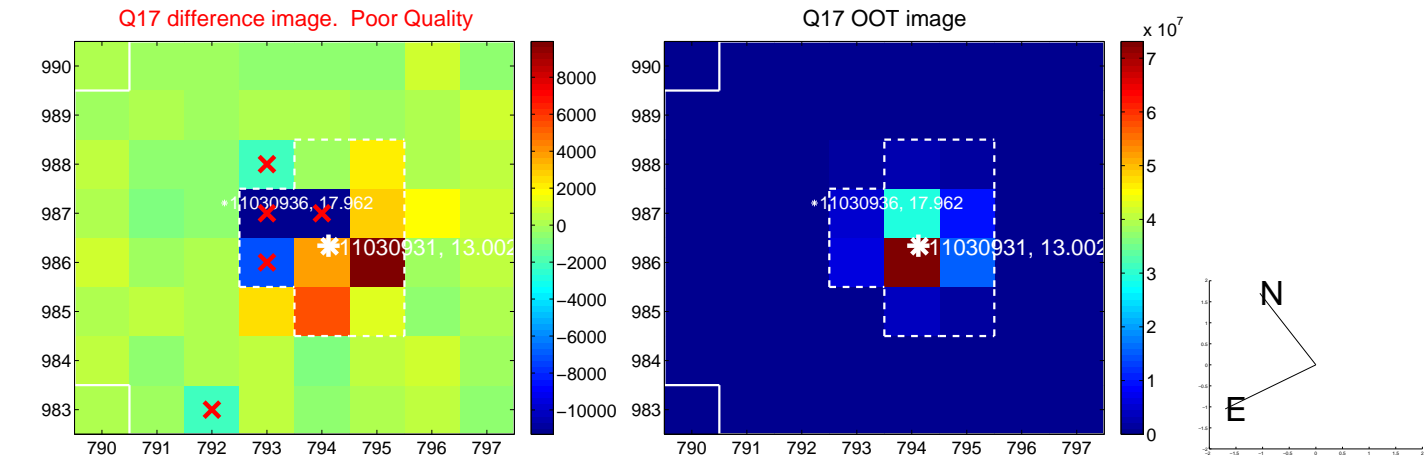
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



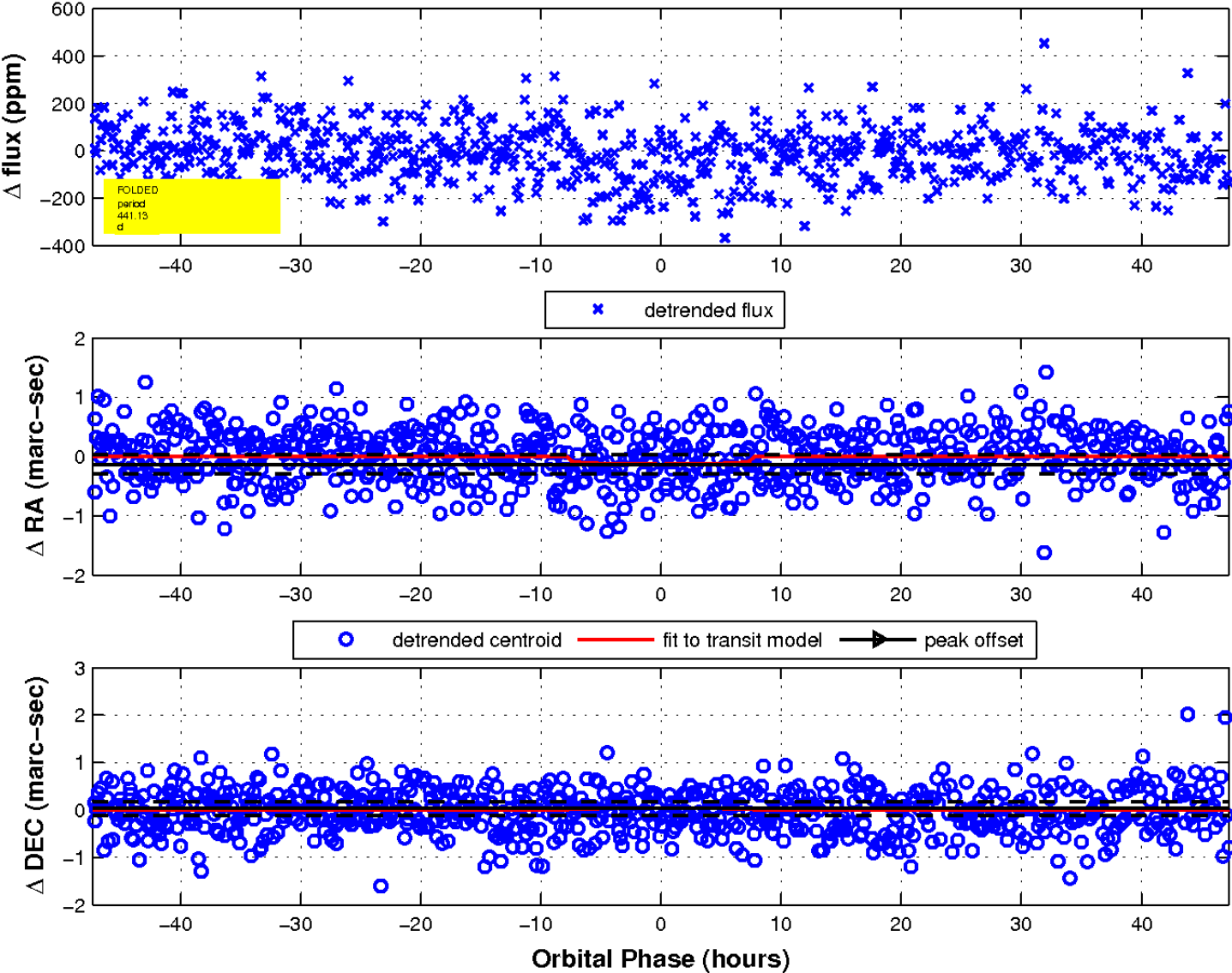
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

