

# KIC 008426696

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008426696-01	OBS	No	493.783064	190.531673	198.5	26.518	7.8	7.7	1.74	5637	2.63	1.78

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008426696-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

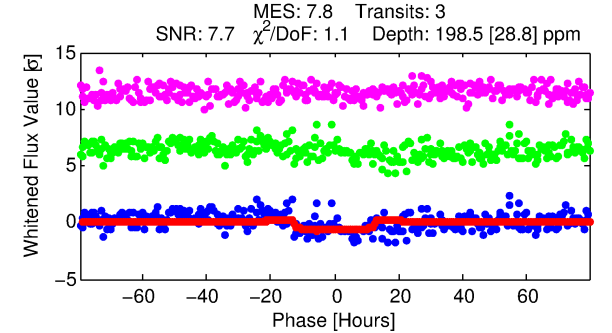
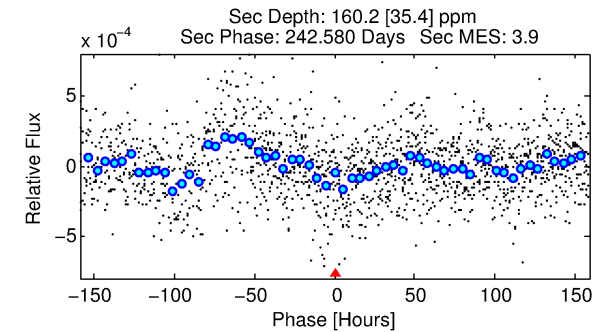
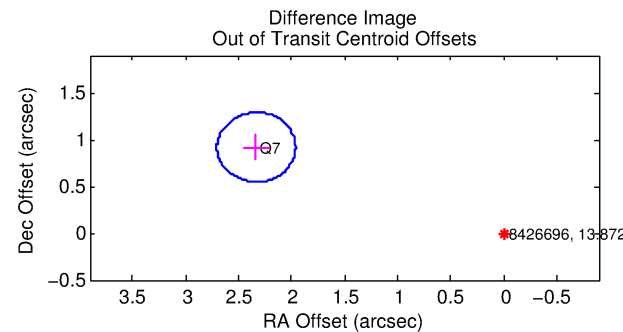
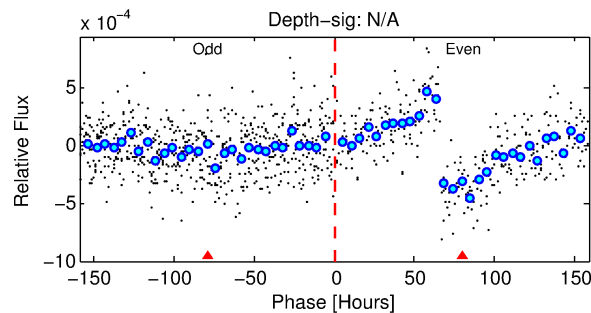
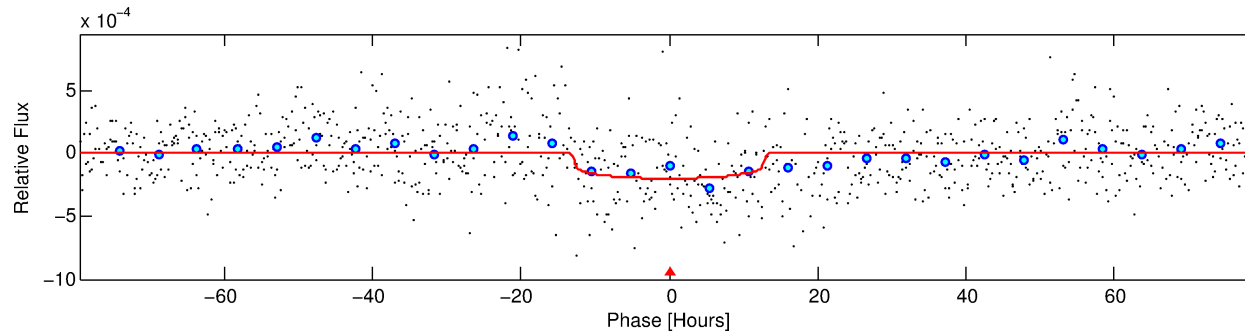
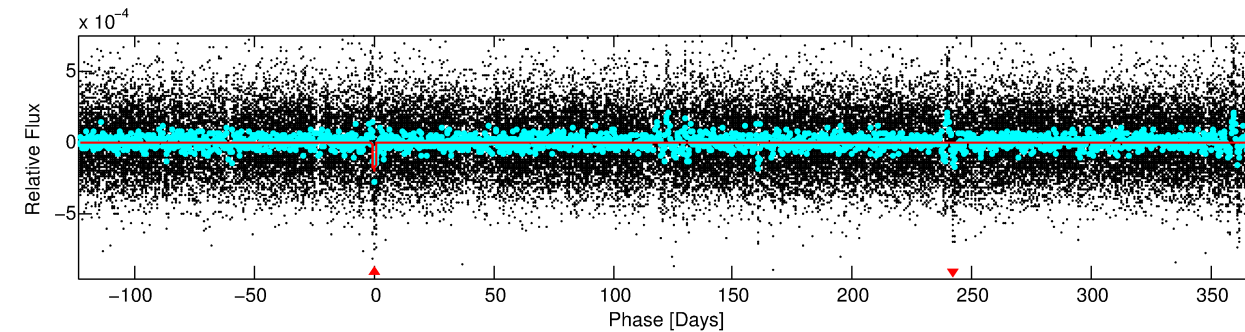
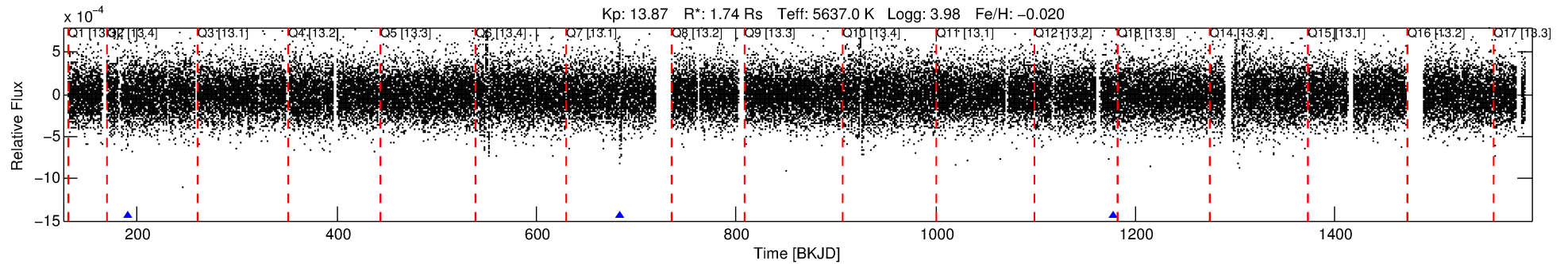
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008426696-01

No Significant Match Found

# DV One-Page Summary

KIC: 8426696 Candidate: 1 of 1 Period: 493.783 d



## DV Fit Results:

Period = 493.78306 [0.02662] d  
Epoch = 190.5317 [0.0373] BKJD  
Rp/R\* = 0.0139 [0.0046]  
a/R\* = 101.55 [141.86]  
b = 0.72 [0.94]  
Seff = 1.78 [1.35]  
Teq = 294 [56] K  
Rp = 2.63 [1.46] Re  
a = 1.2376 [0.5647] AU  
Ag = 19576.44 [20062.53] [0.98σ]  
Teffp = 5385 [951] K [5.35σ]

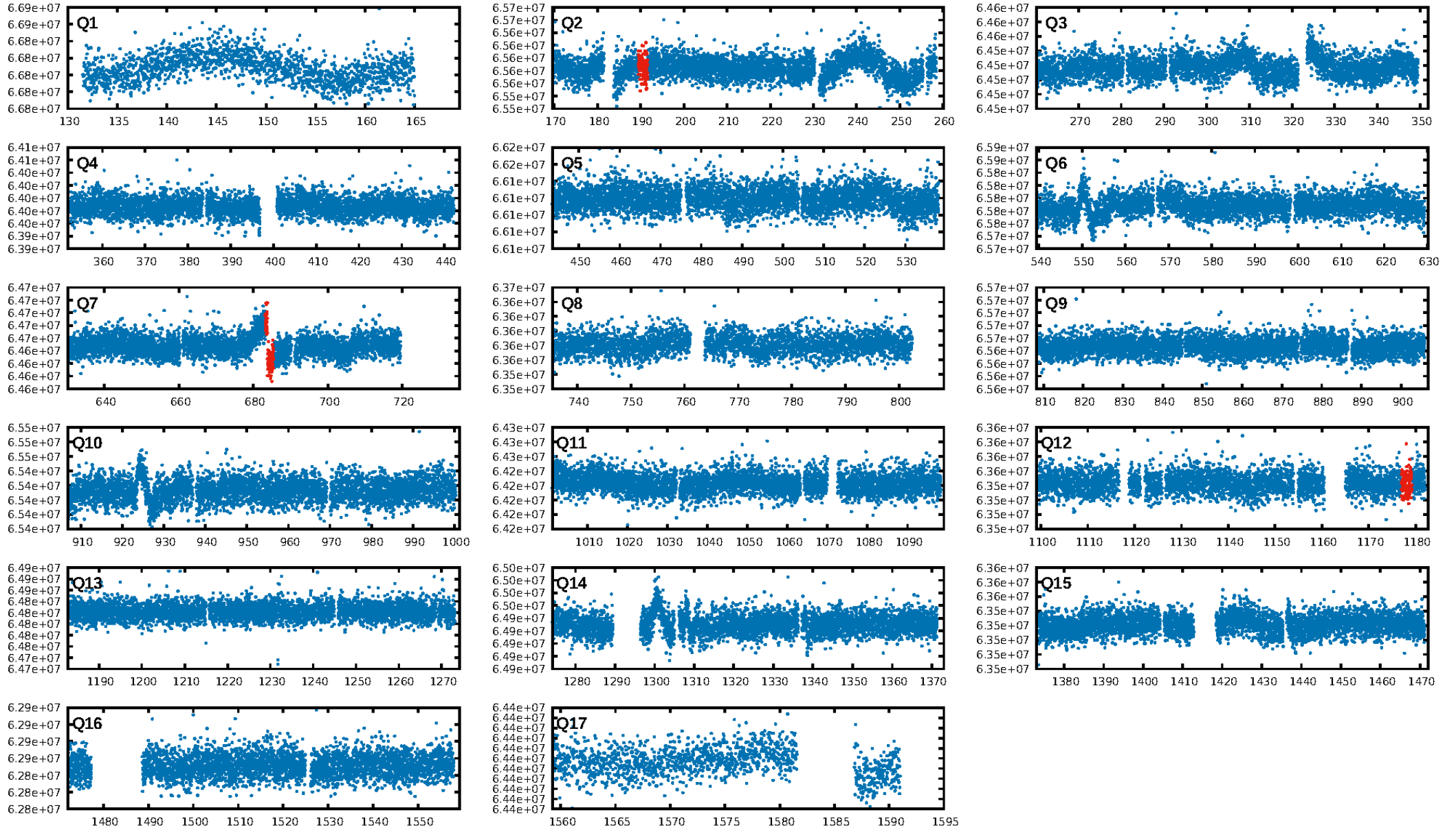
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 93.4%  
Bootstrap-pfa: 3.11e-11  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.449  
Centroid-sig: 70.4%  
Centroid-so: 1.088 arcsec [0.67σ]  
OotOffset-rm: 2.504 arcsec [20.22σ]  
KicOffset-rm: 2.519 arcsec [20.35σ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [2/2]

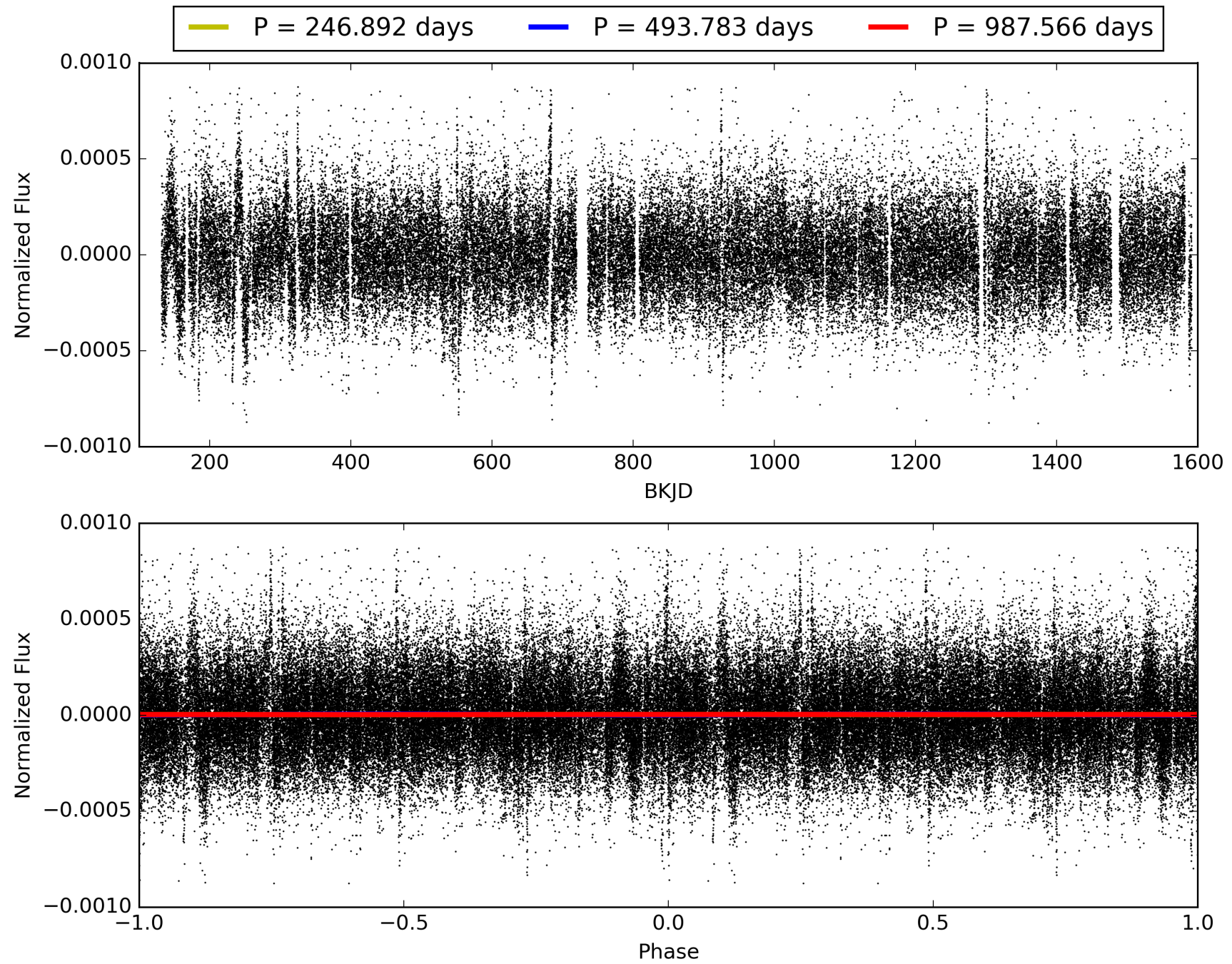
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:06:37 Z

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

# TCE 008426696-01, PDC Light Curves

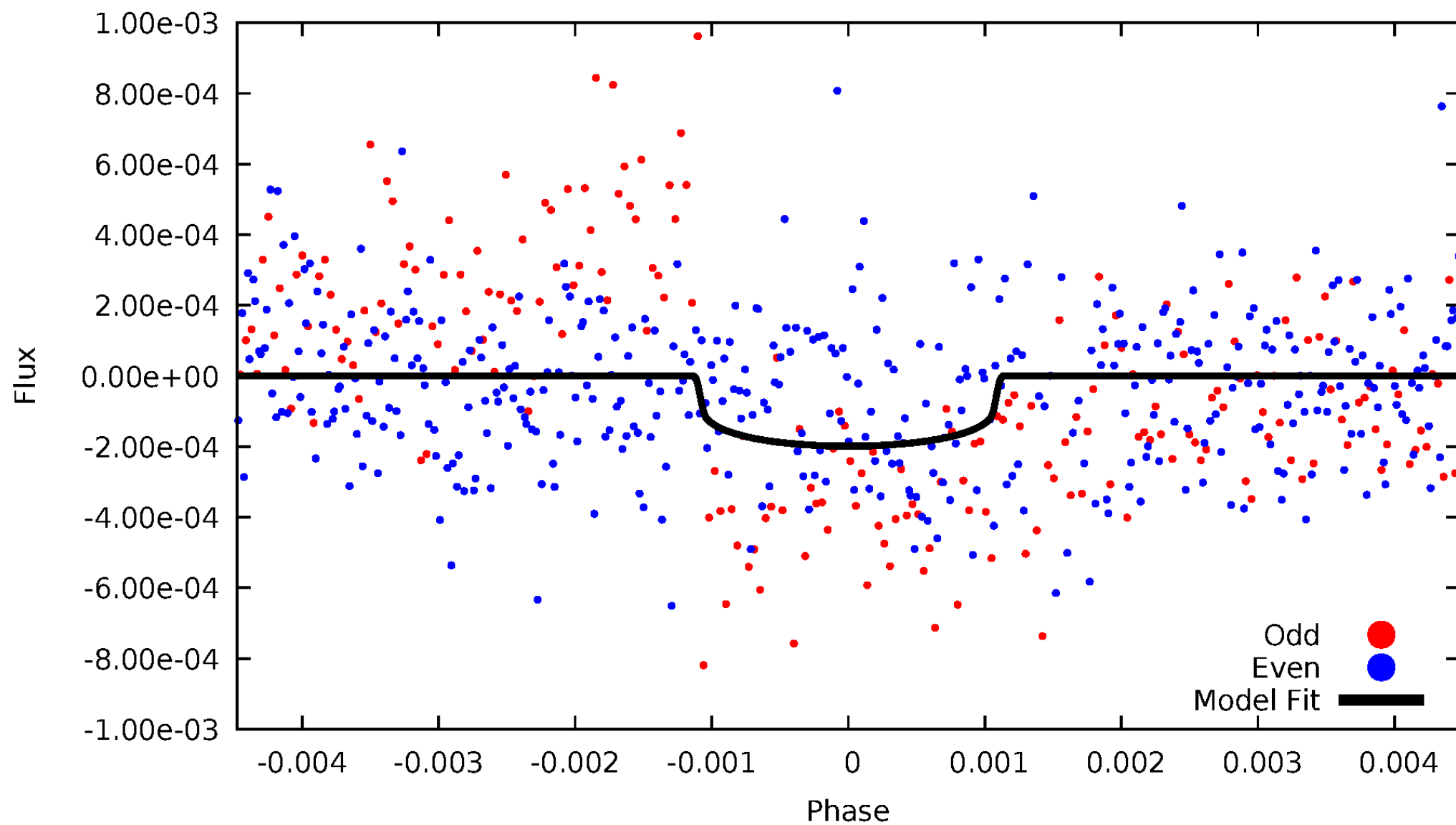


TCE 008426696-01



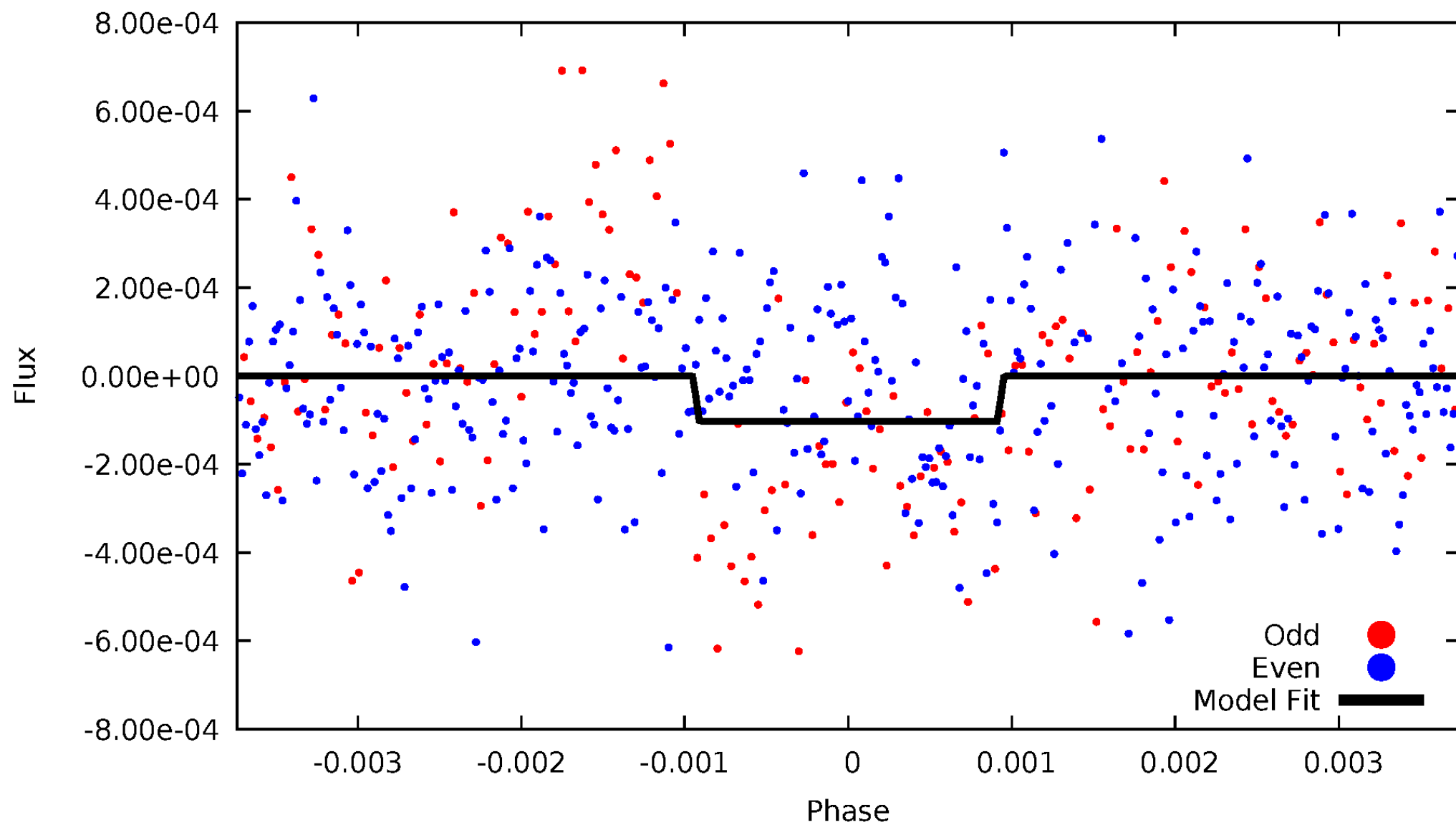
# DV Odd/Even

TCE 008426696-01



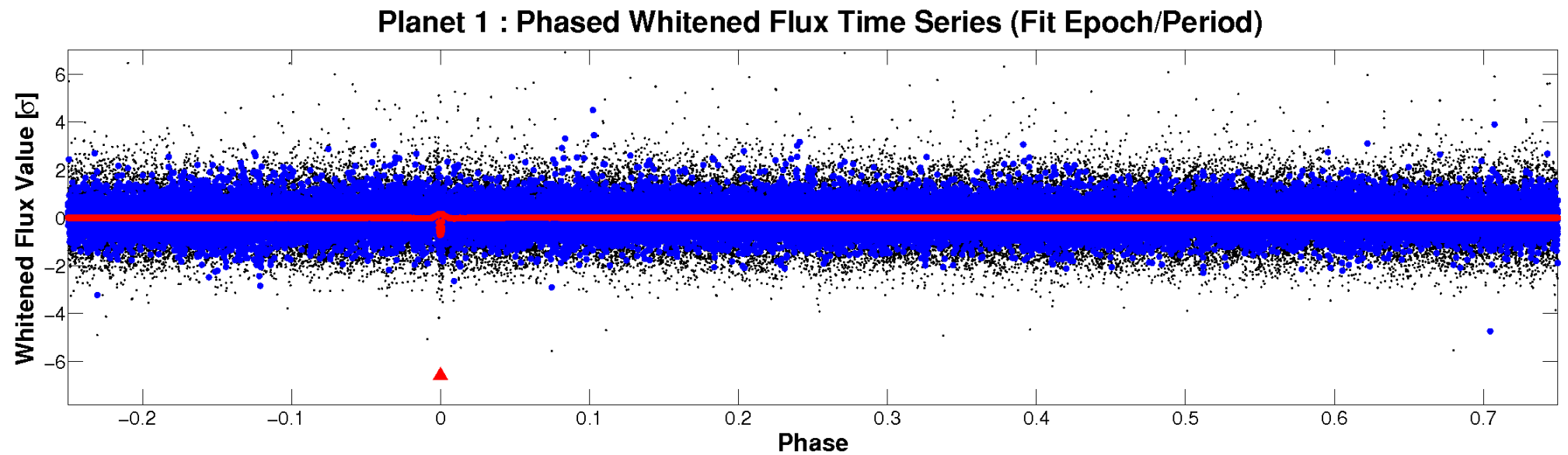
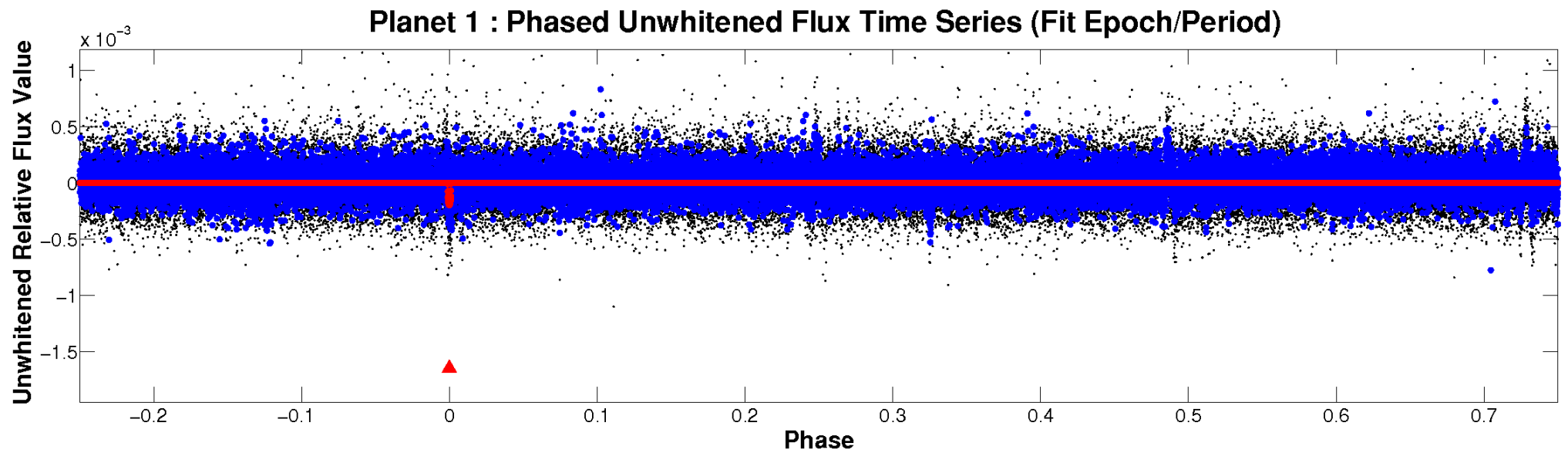
# ALT Odd/Even

TCE 008426696-01





# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

TCE 008426696-01     $P=493.783064$  Days     $T_0=190.531673$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 008426696-01 P=493.783064 Days  $T_0=190.531673$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

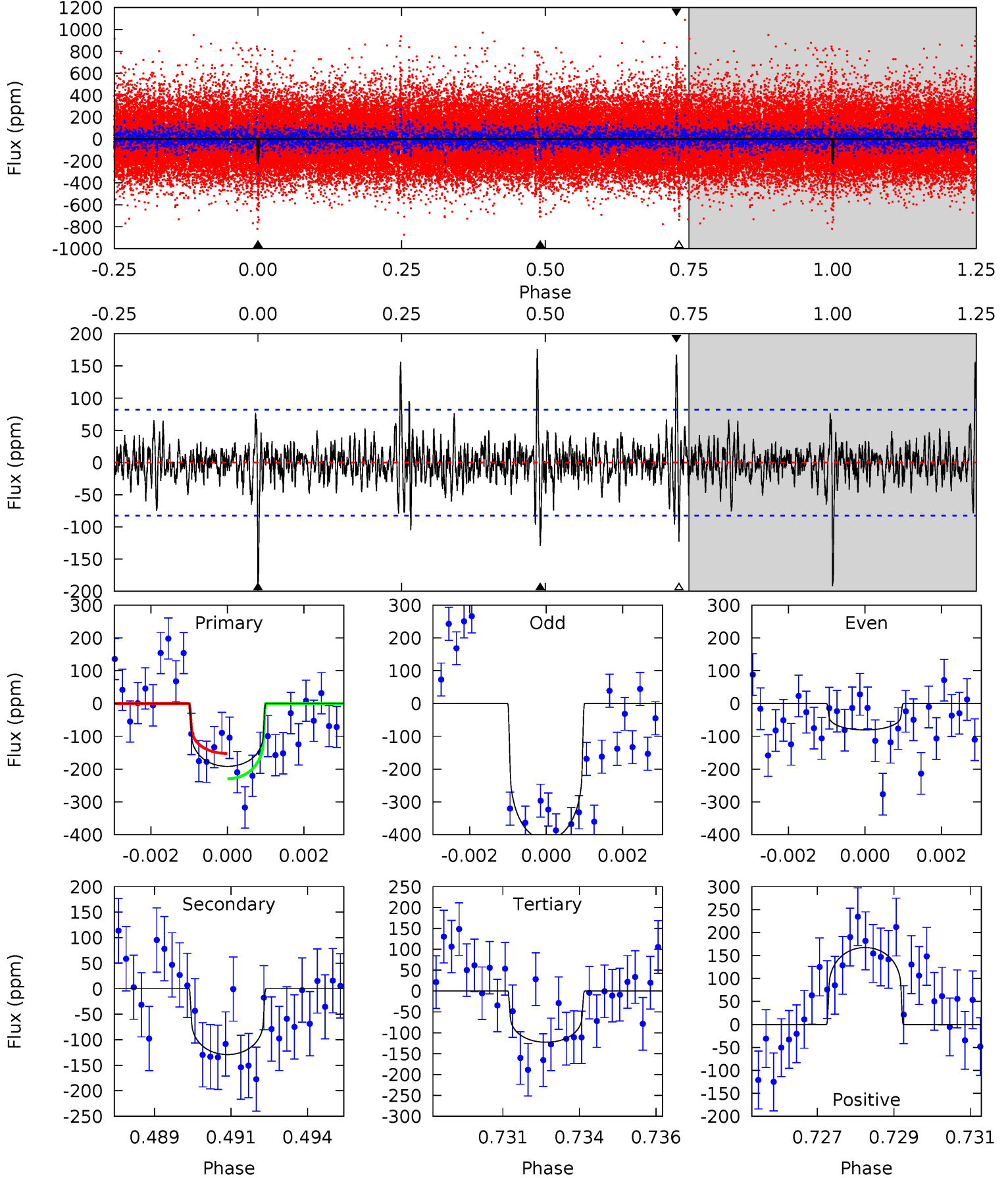
TCE 008426696-01 P=493.831467 Days  $T_0=190.435887$  (BKJD)



# DV Model-Shift Uniqueness Test

008426696-01, P = 493.783064 Days, E = 190.531673 Days

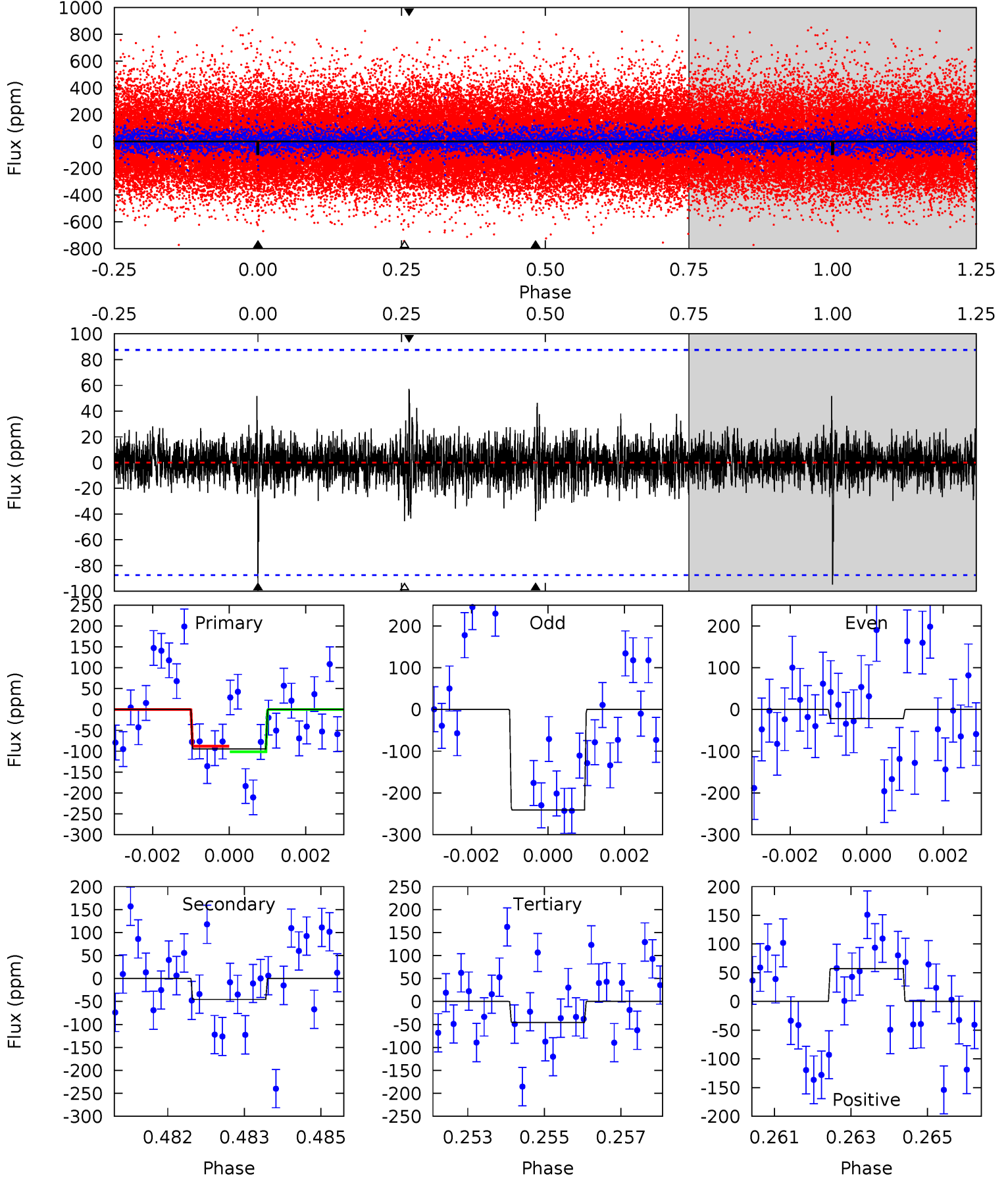
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	8.31	7.90	10.8	5.30	3.05	1.69	4.44	1.57	0.41	-2.47	10.2	2.09	0.48	2.49



# Alt Model-Shift Uniqueness Test

008426696-01,  $P = 493.831467$  Days,  $E = 190.435887$  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
5.78	2.78	2.77	3.49	5.34	3.10	0.64	3.01	2.29	0.01	-0.71	6.36	1.64	0.38	0.39



### Stellar Parameters For KIC 008426696

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5637^{+169}_{-152}$	$3.975^{+0.450}_{-0.150}$	$-0.020^{+0.300}_{-0.250}$	$1.735^{+0.418}_{-0.776}$	$1.038^{+0.126}_{-0.151}$	$0.280^{+1.118}_{-0.113}$
	+3%/-3%	+11%/-4%	+1500%/-1250%	+24%/-45%	+12%/-15%	+399%/-40%
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 008426696-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-129 \pm 16$	$2.56^{+0.97}_{-0.97}$	$408^{+28}_{-52}$	$5077^{+1051}_{-539}$	$16874^{+27181}_{-8079}$
Alt.	$-46 \pm 16$	$1.79^{+0.99}_{-0.84}$	$405^{+31}_{-49}$	$4674^{+1481}_{-727}$	$11789^{+28833}_{-7521}$

$T_{max}$  = 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

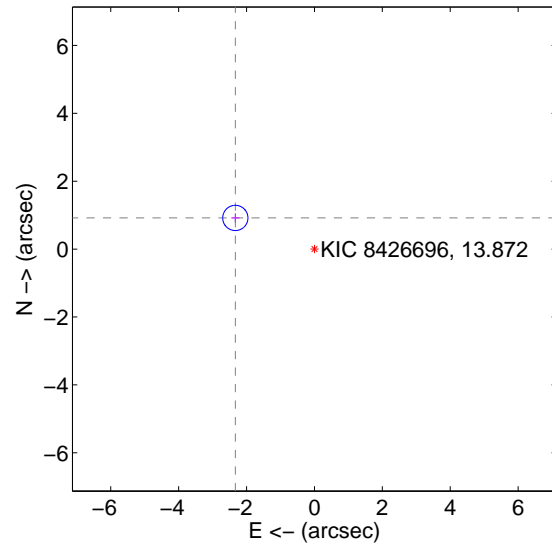
Supplemental centroid analysis for 008426696-01. Kepler magnitude: 13.87. Transit SNR 7.67

There are 1 quarters with good PRF difference image offsets

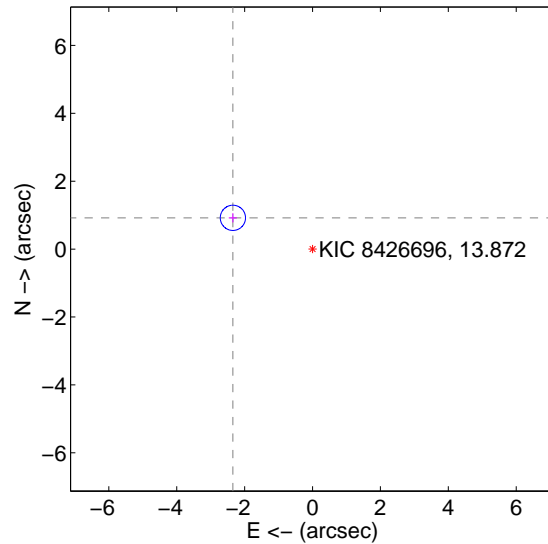
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.504 \pm 0.124$	20.22	$2.330 \pm 0.122$	$0.918 \pm 0.137$
PRF-fit source offset from KIC position	$2.519 \pm 0.124$	20.35	$2.345 \pm 0.122$	$0.921 \pm 0.137$
photometric centroid source offset	$1.09 \pm 1.62$	0.67	$1.08 \pm 1.62$	$-0.11 \pm 1.56$

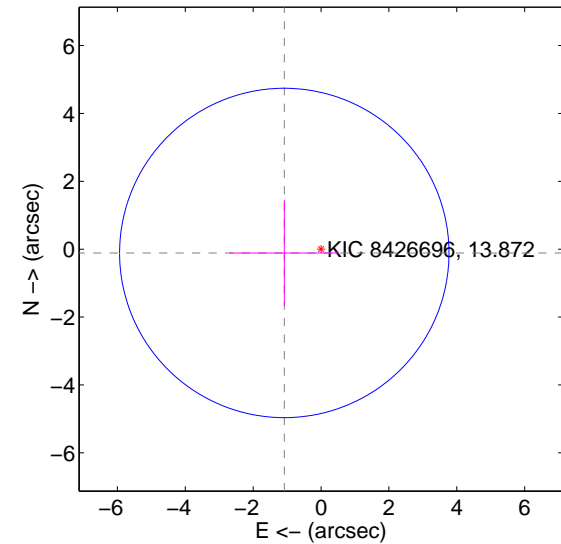
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



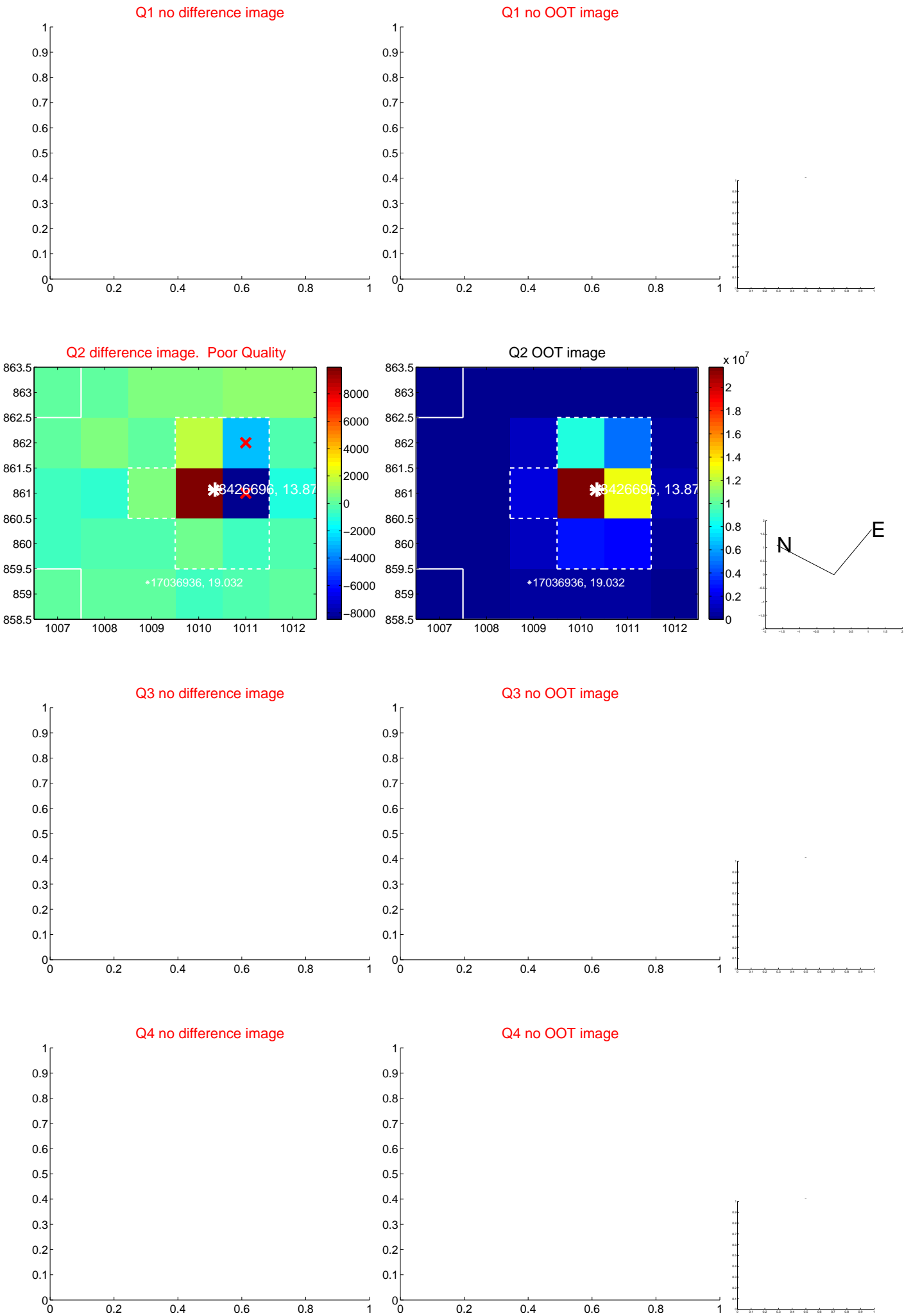
offset from photometric centroids



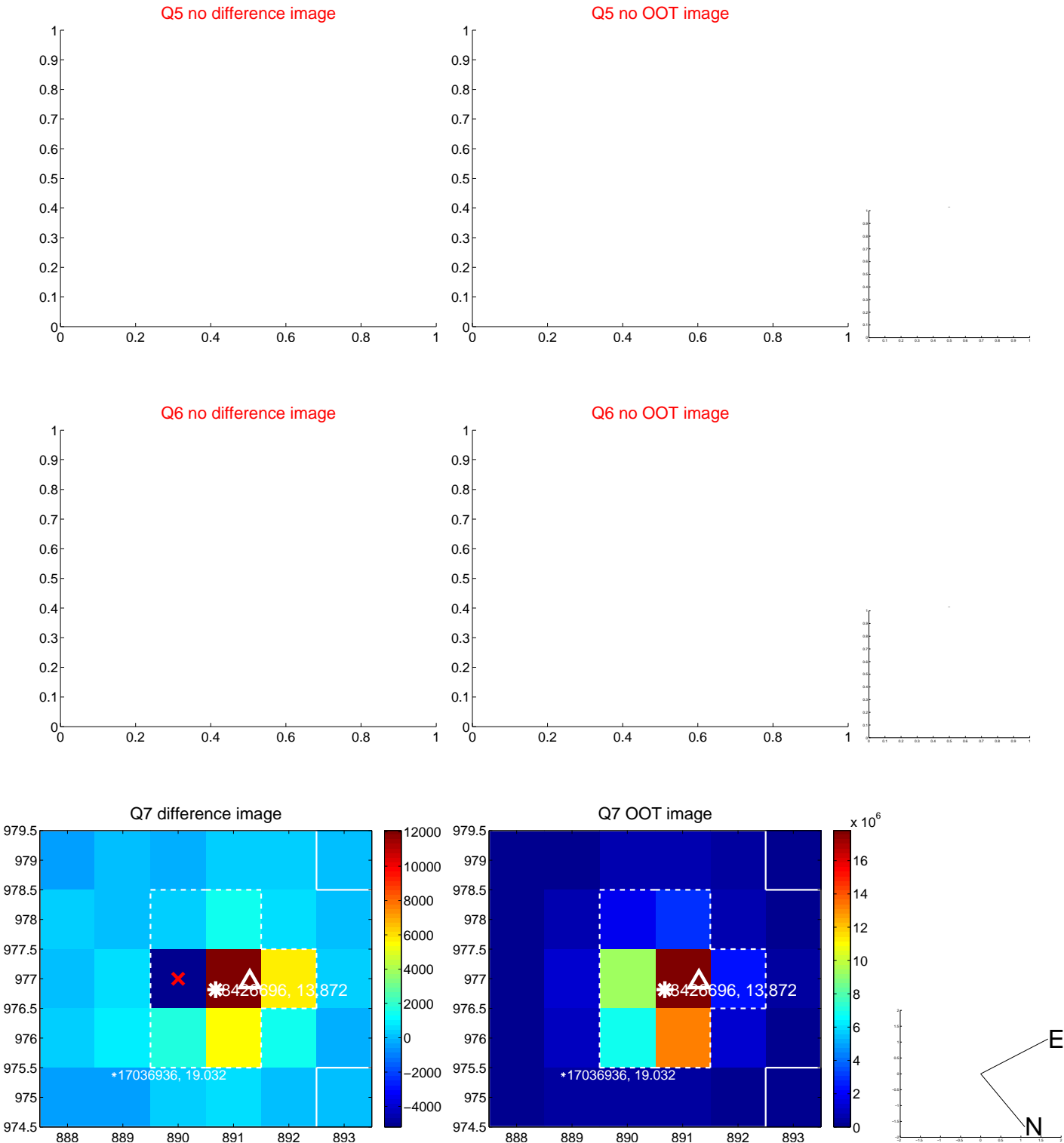
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



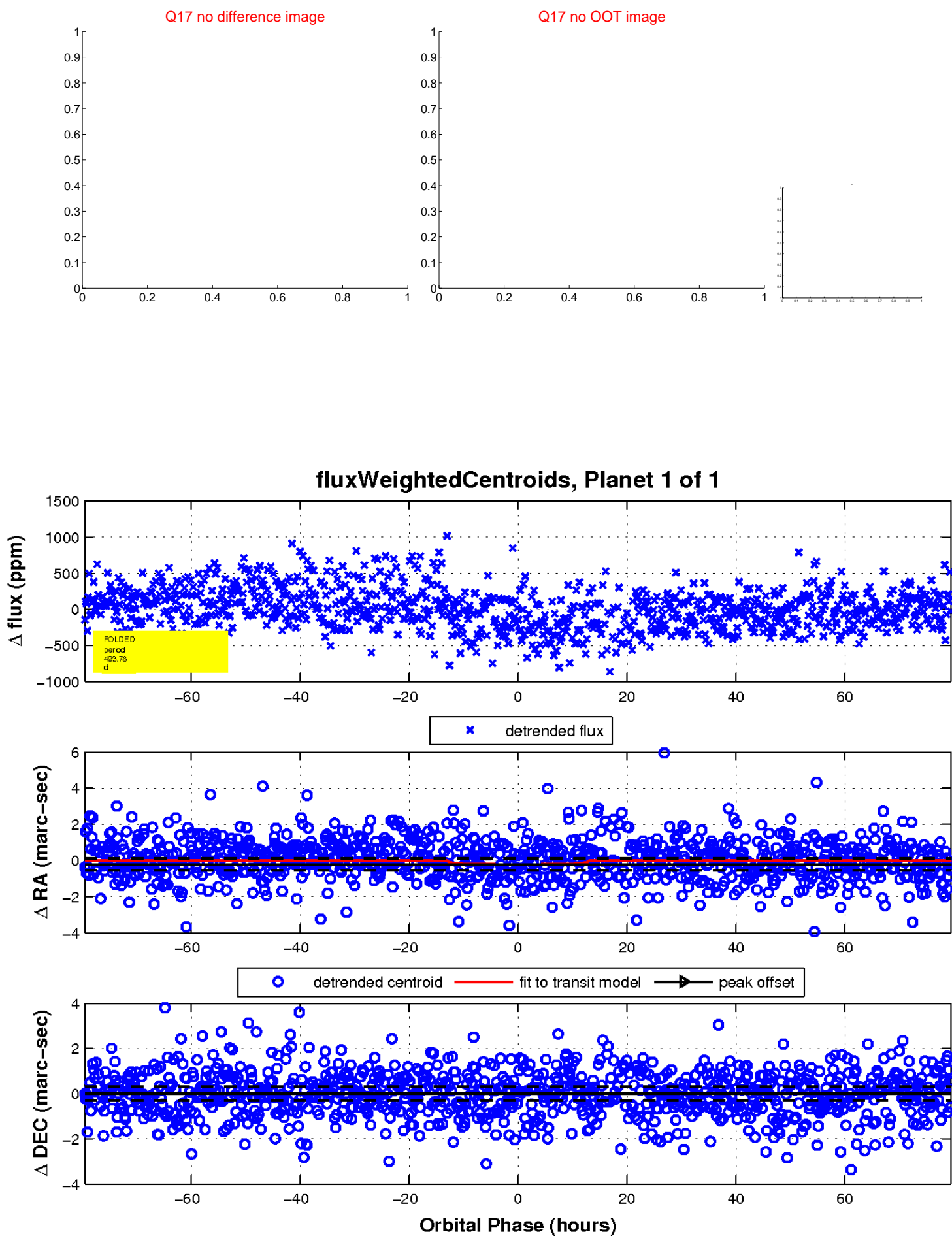
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

