

# KIC 008122299

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008122299-01	OBS	No	491.672058	301.615969	965.0	6.394	7.6	7.8	0.85	5279	2.79	0.40

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008122299-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—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.

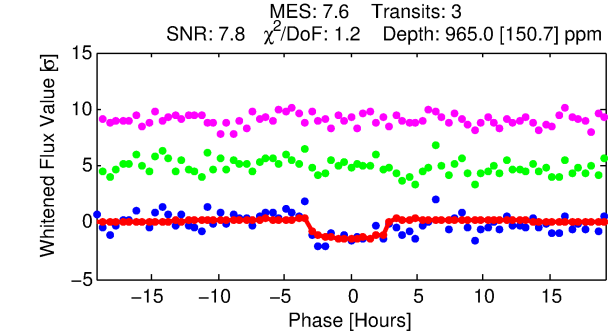
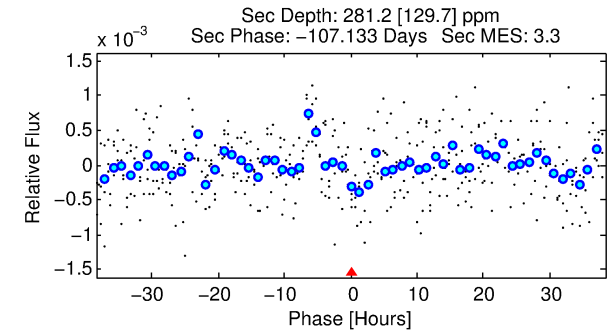
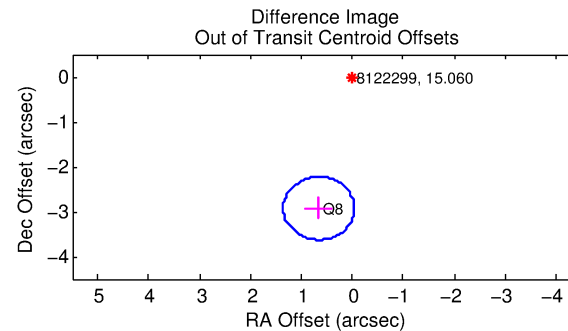
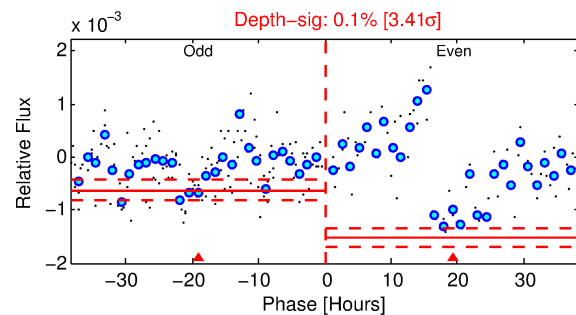
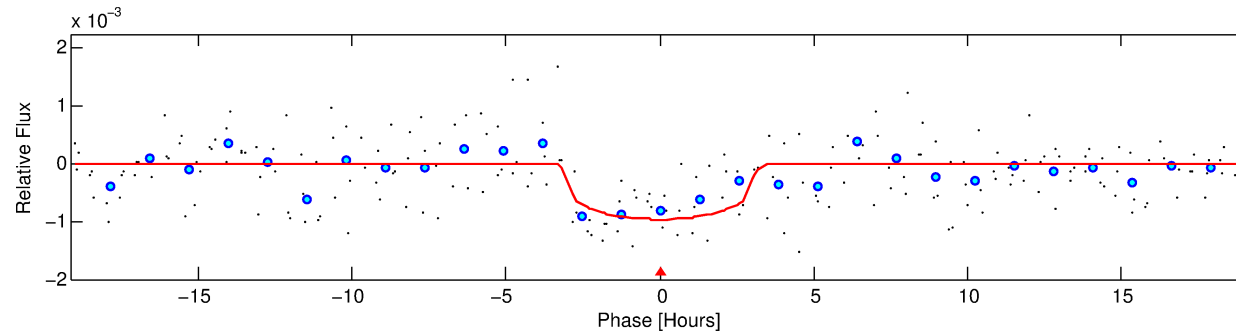
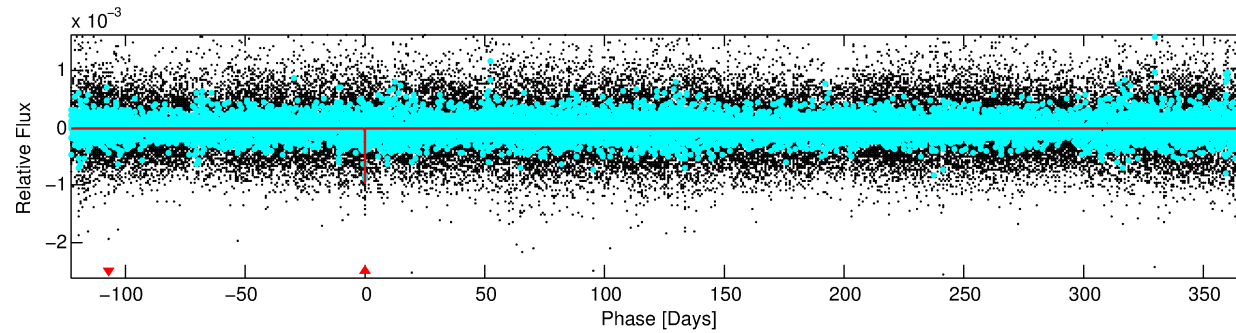
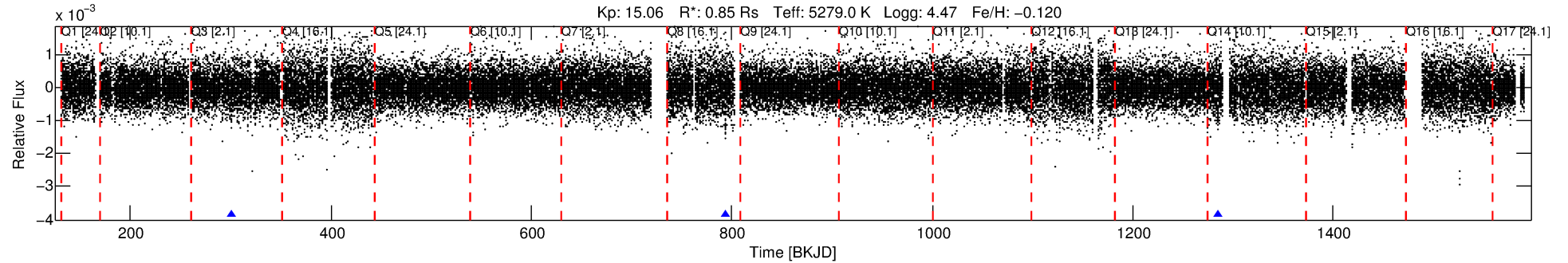
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008122299-01

No Significant Match Found

# DV One-Page Summary

KIC: 8122299 Candidate: 1 of 1 Period: 491.672 d



## DV Fit Results:

Period = 491.67206 [0.01030] d  
Epoch = 301.6160 [0.0124] BKJD  
Rp/R\* = 0.0299 [0.0265]  
a/R\* = 466.79 [1562.72]  
b = 0.66 [2.96]  
Seff = 0.40 [0.11]  
Teq = 203 [13] K  
Rp = 2.79 [2.51] Re  
a = 1.1232 [0.1655] AU  
Ag = 25094.95 [46238.96] [0.54σ]  
Teff = 3952 [1811] K [2.07σ]

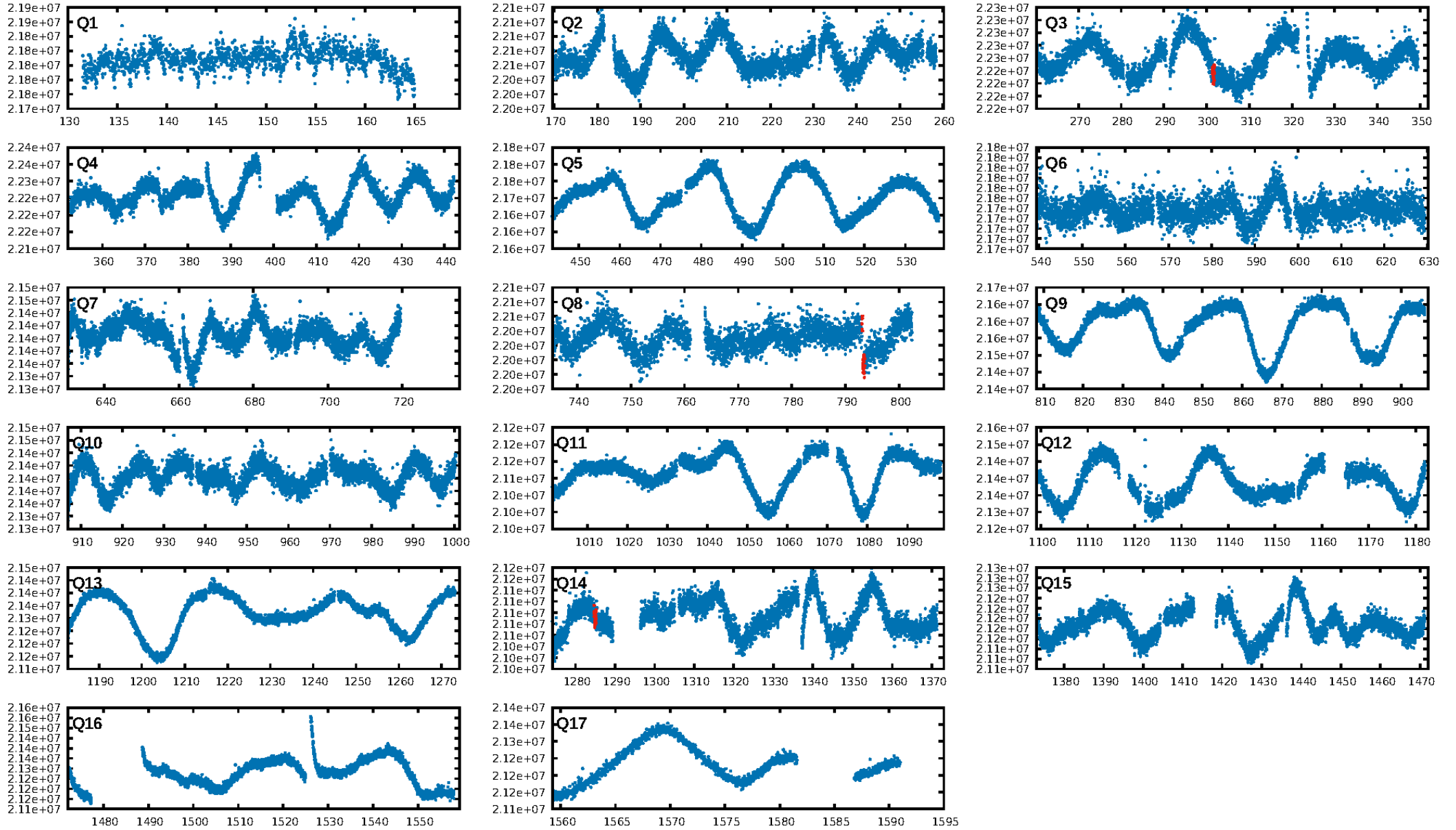
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 3.8%  
ModelChiSquareGof-sig: 98.0%  
**Bootstrap-pfa: 1.87e-09**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.2868  
Centroid-sig: 31.7%  
Centroid-so: 0.634 arcsec [0.53σ]  
**OotOffset-rm: 3.002 arcsec [12.85σ]**  
**KicOffset-rm: 2.926 arcsec [12.47σ]**  
OotOffset-st: 0/0/1/0 [1]  
KicOffset-st: 0/0/1/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [3/3]

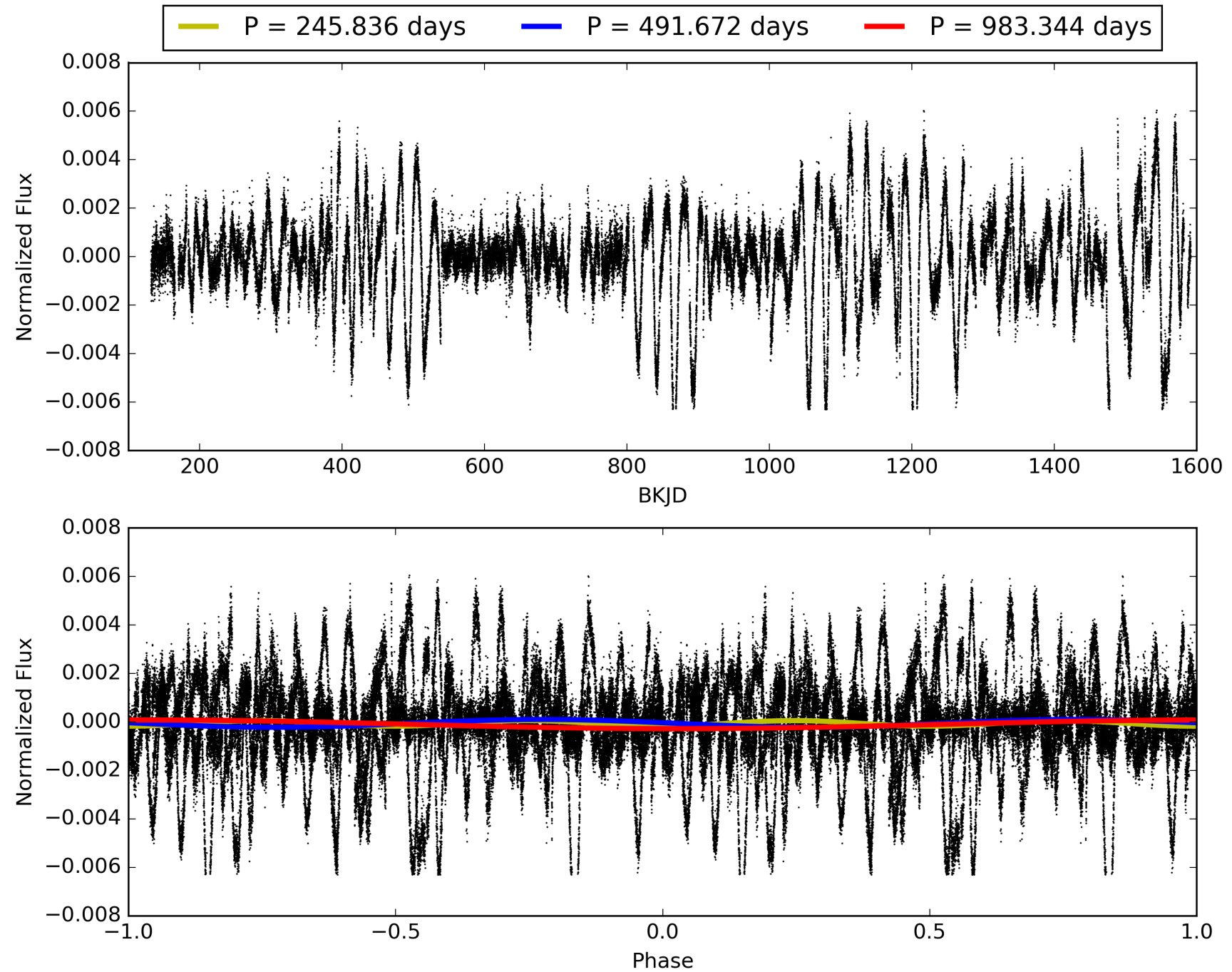
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:54:17 Z

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

# TCE 008122299-01, PDC Light Curves

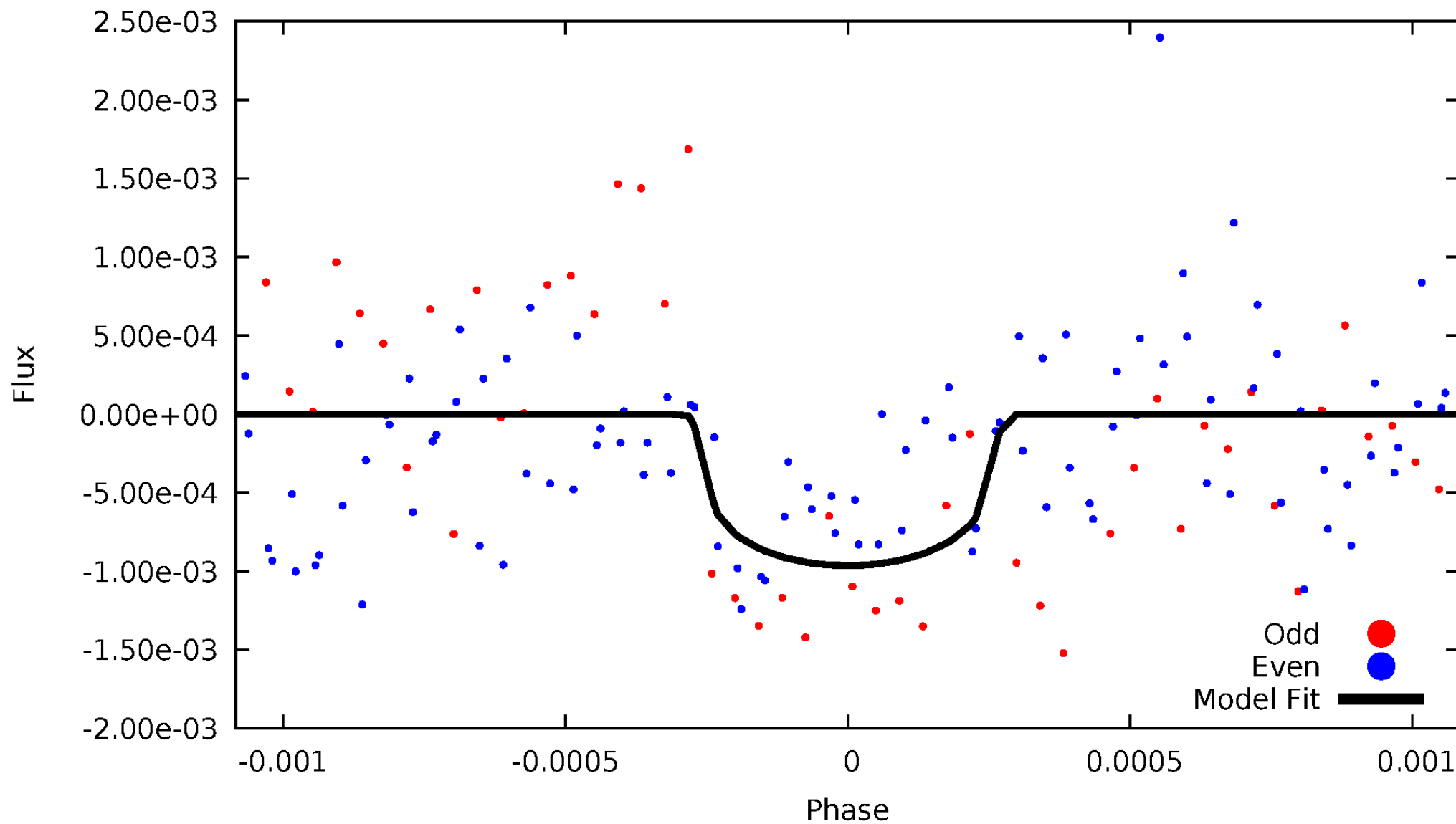


TCE 008122299-01



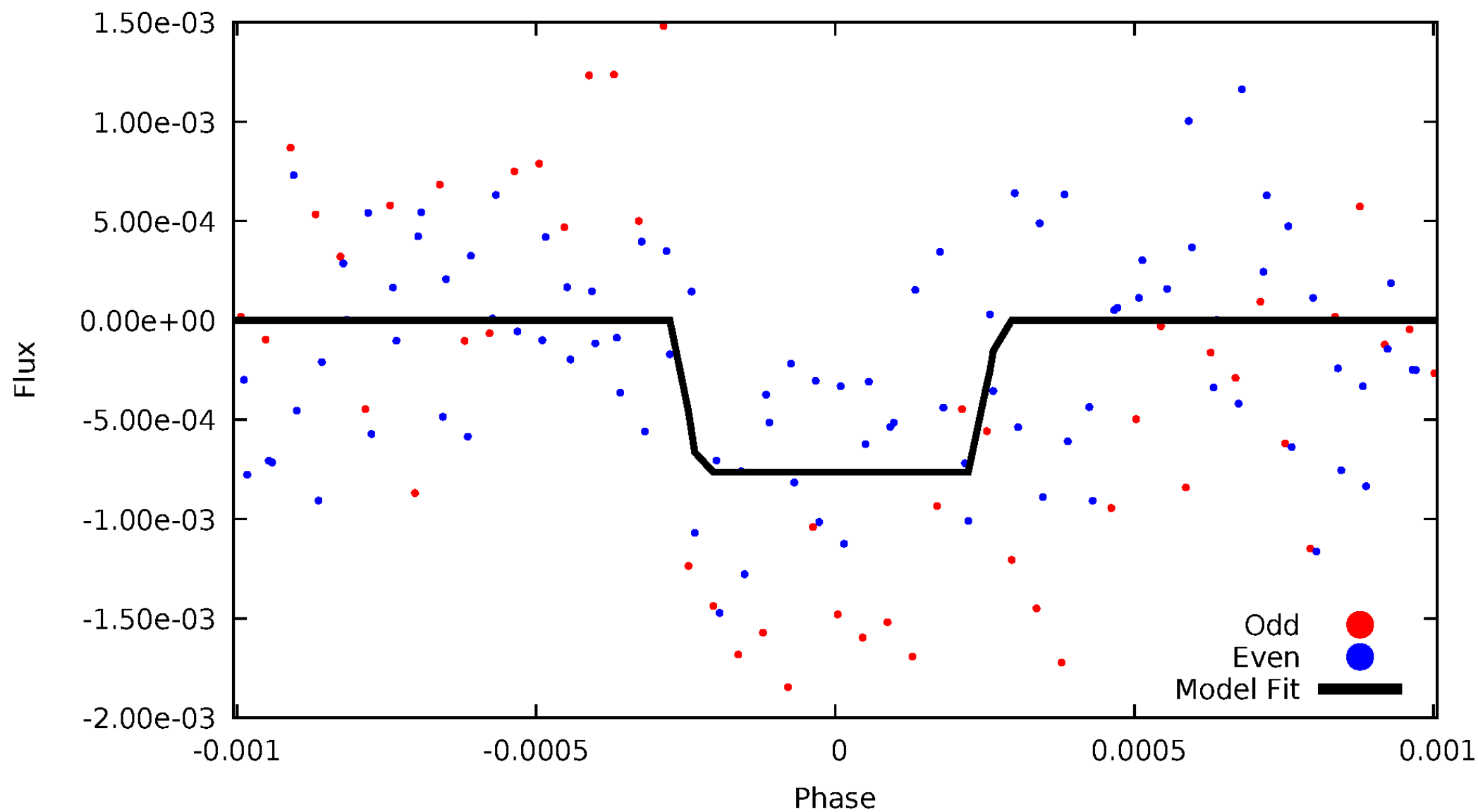
# DV Odd/Even

TCE 008122299-01



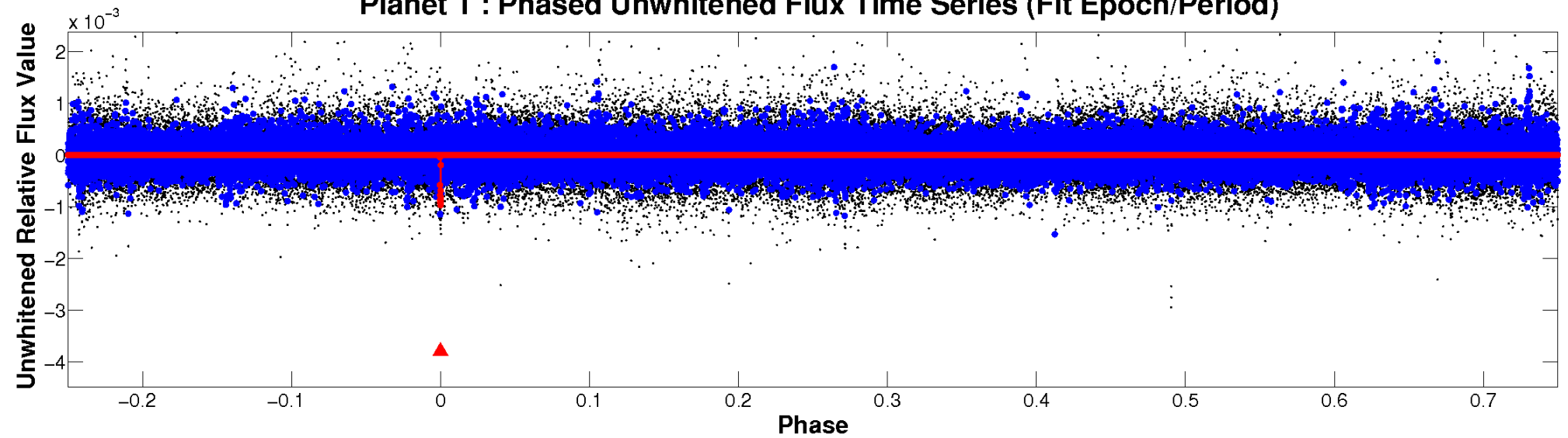
# ALT Odd/Even

TCE 008122299-01

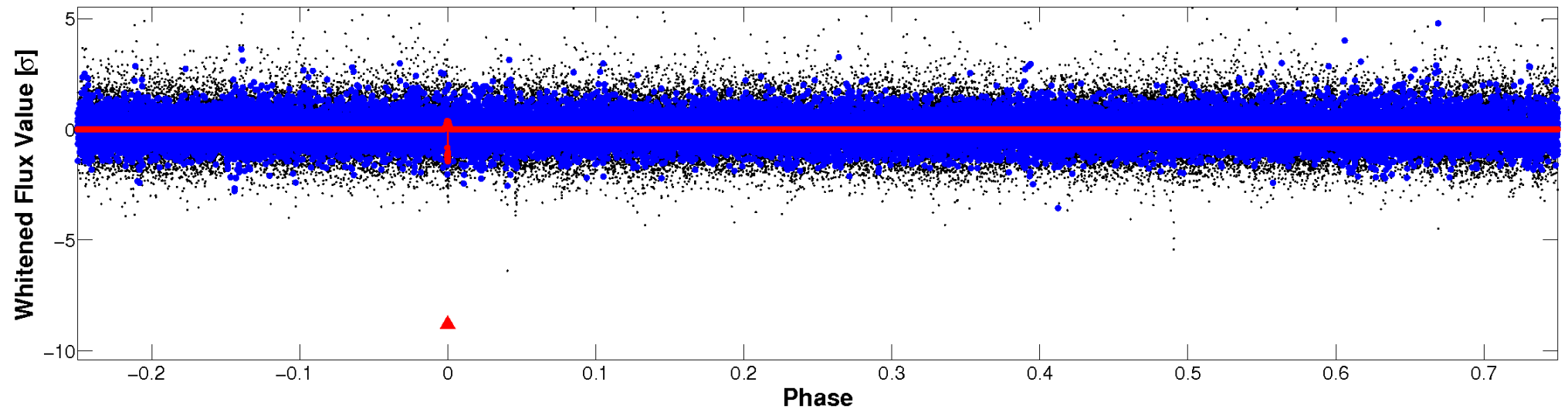


# Non-Whitened Vs. Whitened Light Curve

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



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



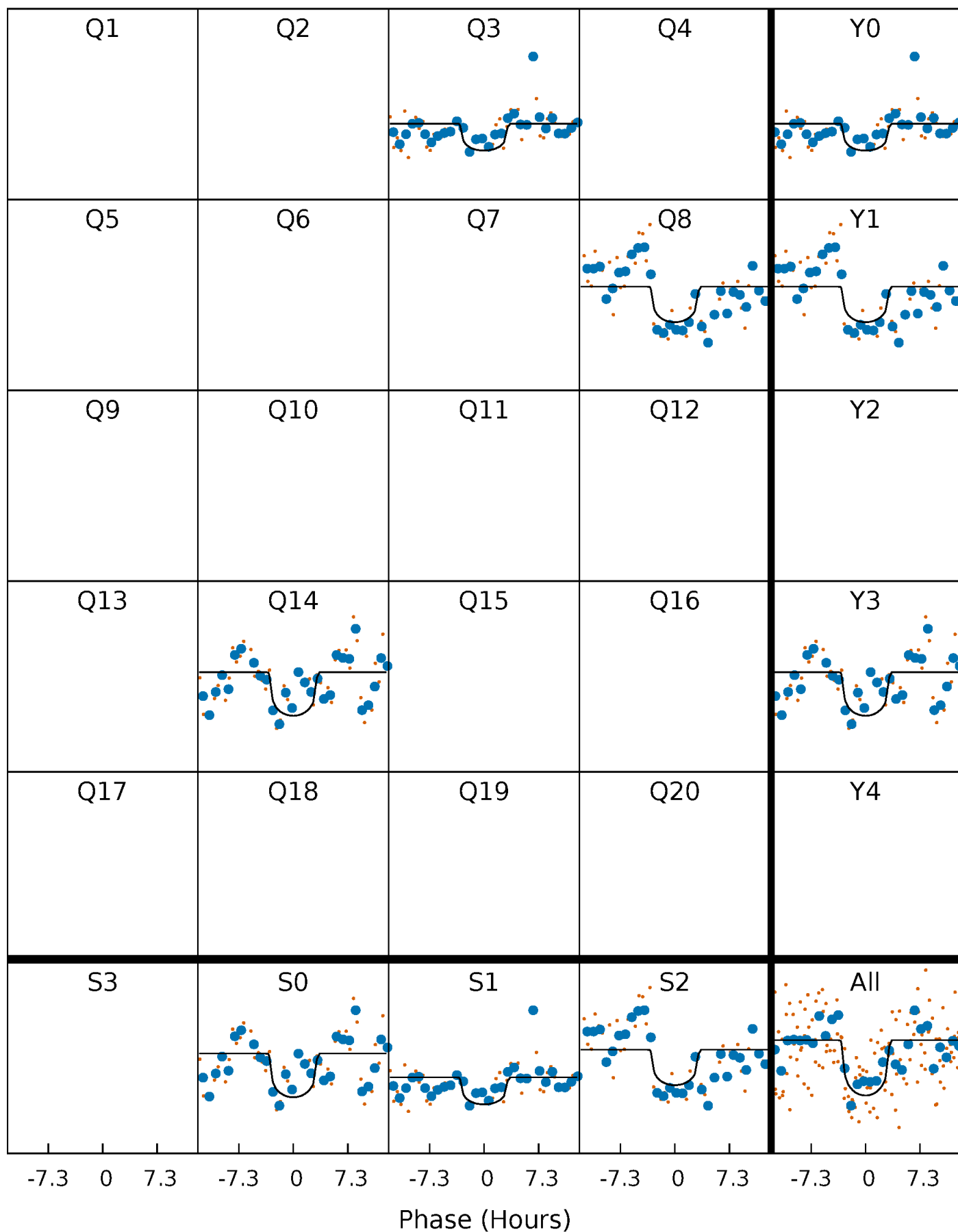
# PDC Quarter-Phased Transit Curves

TCE 008122299-01     $P=491.672058$  Days     $T_0=301.615969$  (BKJD)



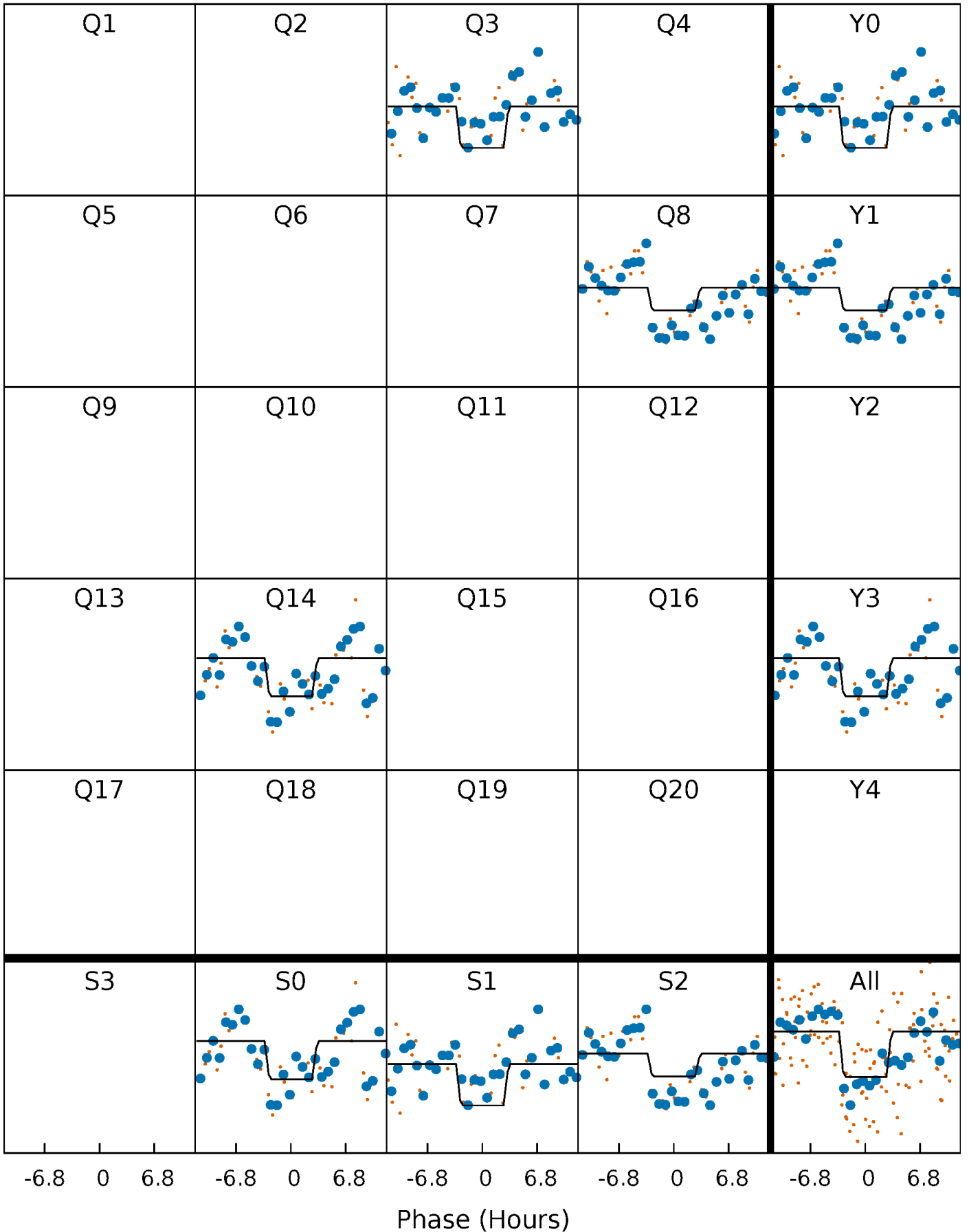
# DV Quarter-Phased Transit Curves

TCE 008122299-01 P=491.672058 Days  $T_0=301.615969$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

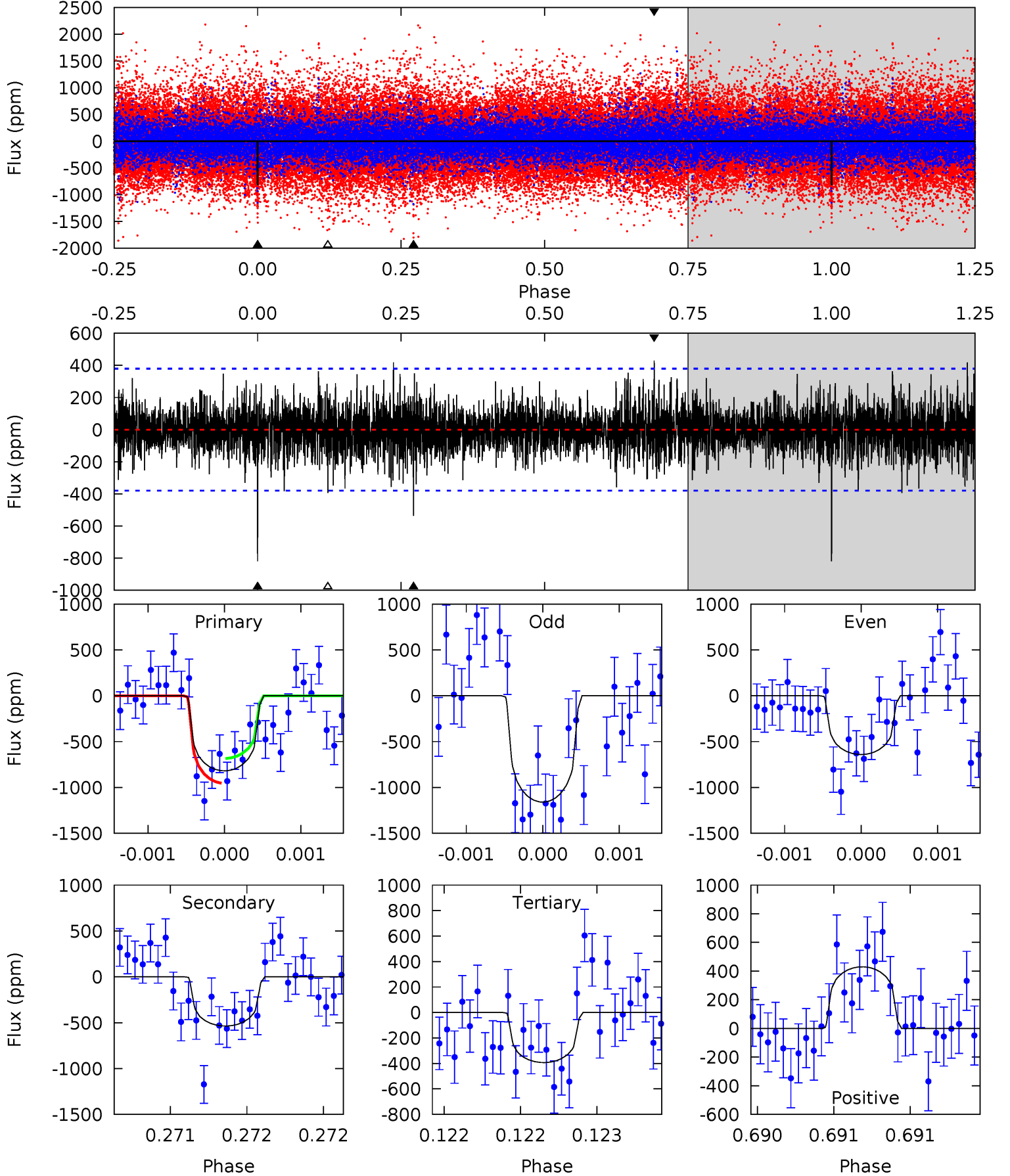
TCE 008122299-01 P=491.672321 Days  $T_0=301.617817$  (BKJD)



# DV Model-Shift Uniqueness Test

008122299-01, P = 491.672058 Days, E = 301.615969 Days

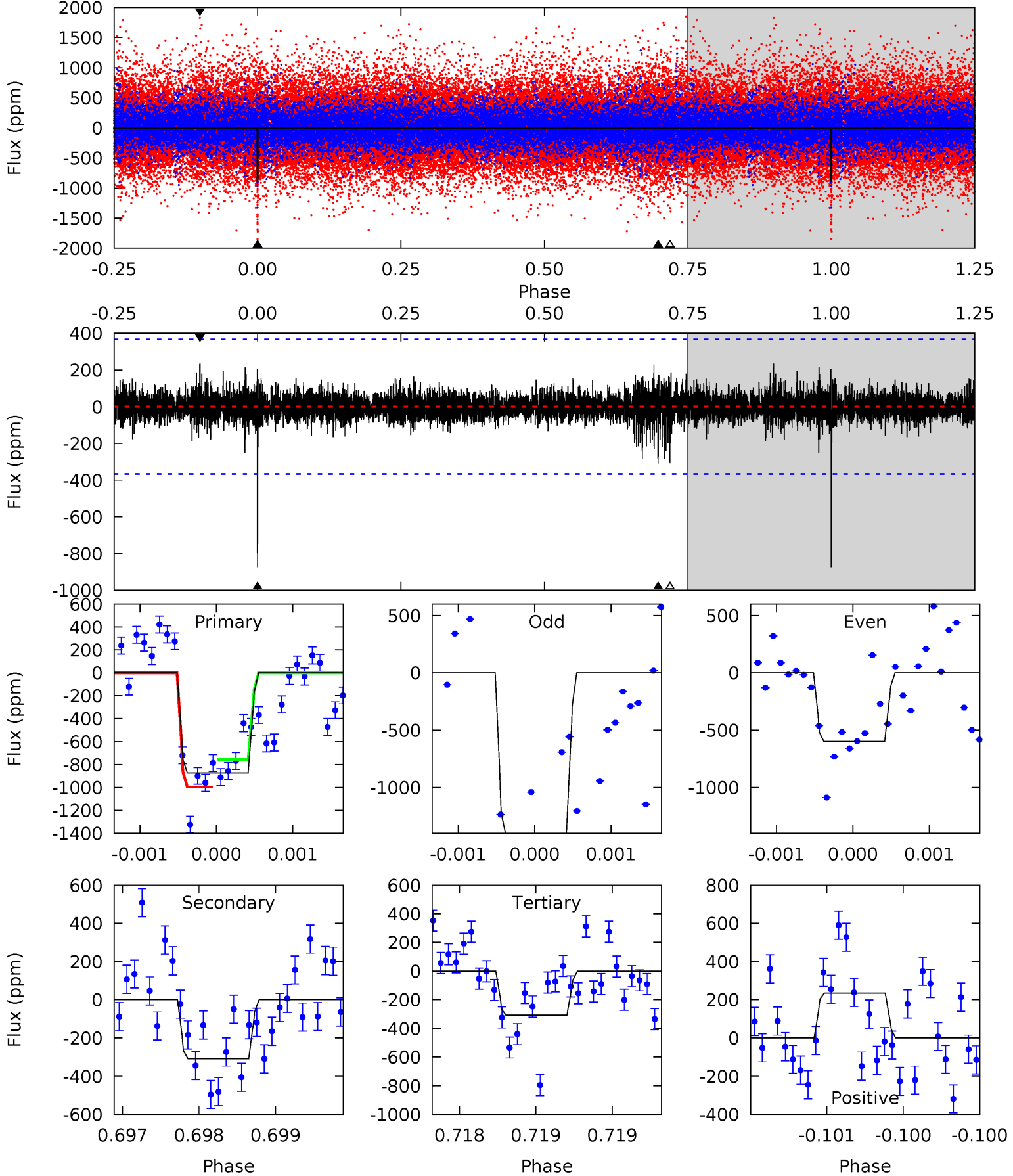
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	7.83	5.74	6.28	5.55	3.44	1.44	6.22	5.68	2.10	1.55	3.62	1.23	0.34	1.97



# Alt Model-Shift Uniqueness Test

008122299-01, P = 491.672321 Days, E = 301.617817 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
13.2	4.68	4.67	3.57	5.56	3.46	0.74	8.58	9.67	0.01	1.11	5.79	1.00	0.21	1.83



### Stellar Parameters For KIC 008122299

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5279^{+174}_{-158}$	$4.468^{+0.108}_{-0.132}$	$-0.120^{+0.300}_{-0.300}$	$0.854^{+0.137}_{-0.112}$	$0.782^{+0.112}_{-0.060}$	$1.765^{+0.890}_{-0.635}$
	+3%/-3%	+2%/-3%	+250%/-250%	+16%/-13%	+14%/-8%	+50%/-36%
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 008122299-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-536 \pm 68$	$3.31^{+2.27}_{-1.96}$	$285^{+16}_{-14}$	$4484^{+2311}_{-804}$	$34843^{+189983}_{-22979}$
Alt.	$-308 \pm 66$	$3.22^{+2.39}_{-2.00}$	$284^{+17}_{-13}$	$4064^{+1986}_{-688}$	$20704^{+124557}_{-13861}$

$T_{max}$  = 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

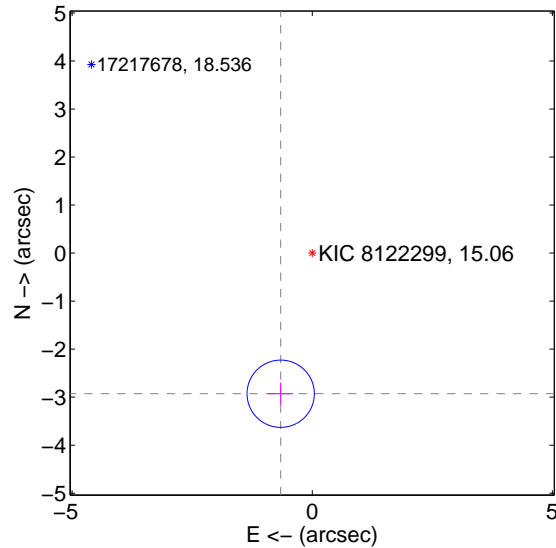
Supplemental centroid analysis for 008122299-01. Kepler magnitude: 15.06. Transit SNR 7.76

There are 1 quarters with good PRF difference image offsets

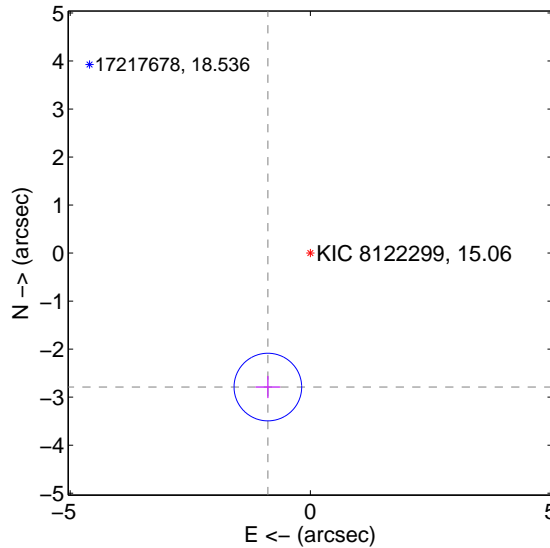
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.002 \pm 0.234$	12.85	$0.657 \pm 0.257$	$-2.929 \pm 0.232$
PRF-fit source offset from KIC position	$2.926 \pm 0.235$	12.47	$0.884 \pm 0.257$	$-2.790 \pm 0.232$
photometric centroid source offset	$0.63 \pm 1.19$	0.53	$0.31 \pm 1.34$	$-0.55 \pm 1.14$

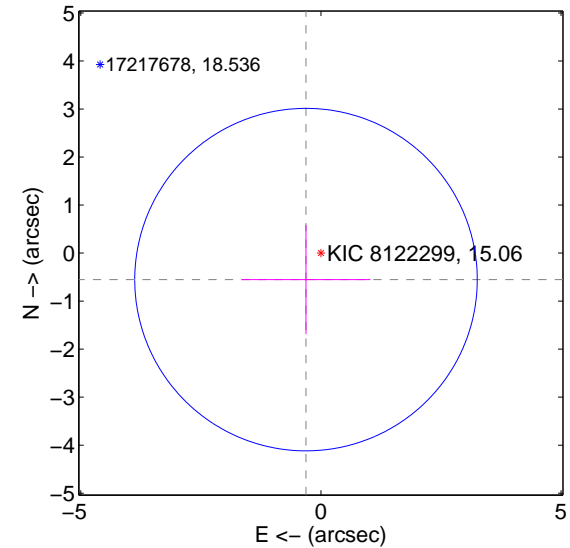
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

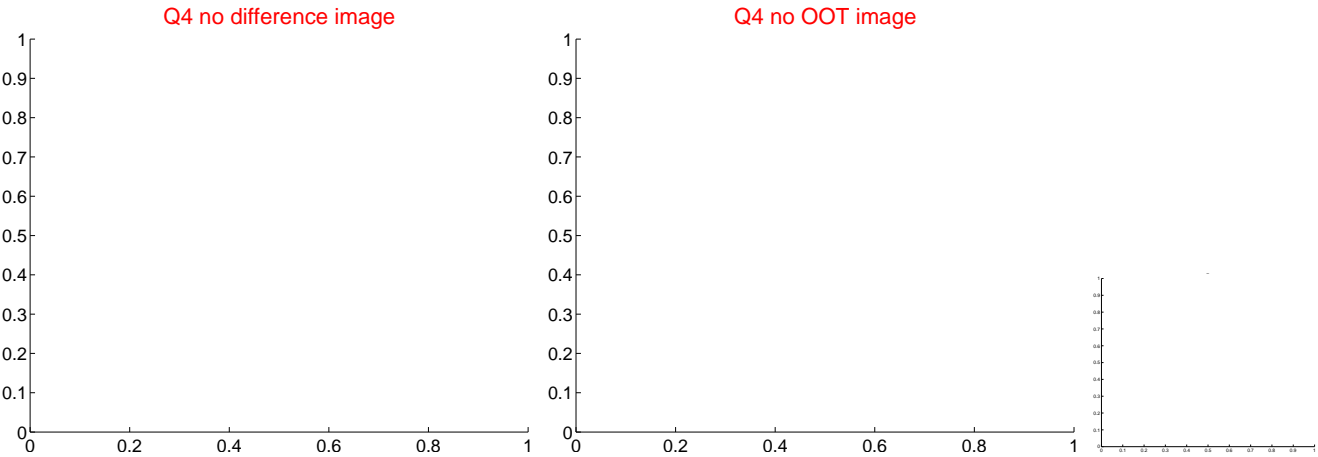
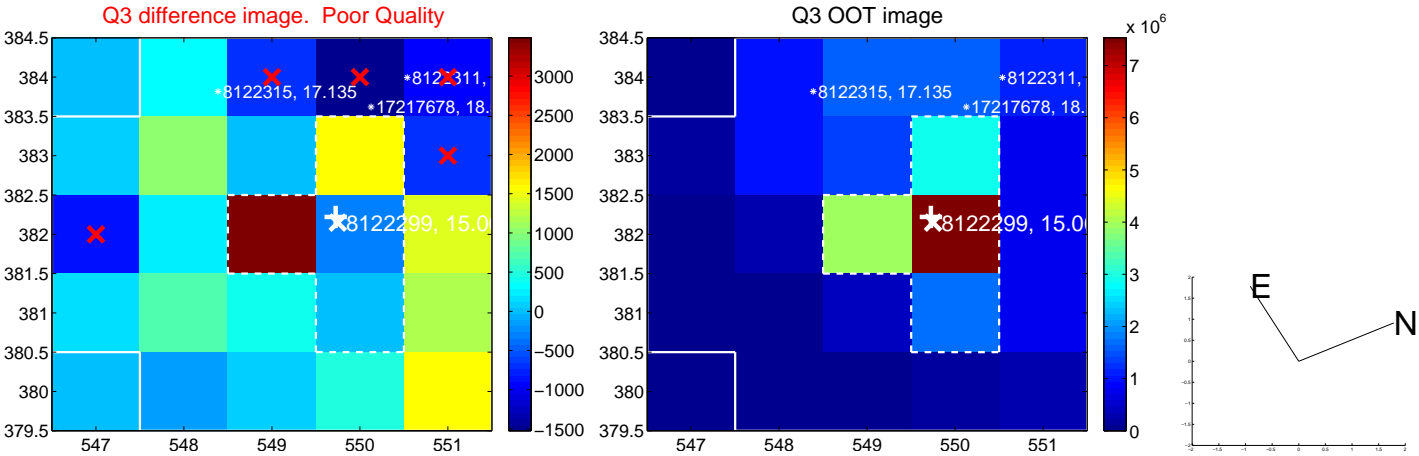


offset from photometric centroids

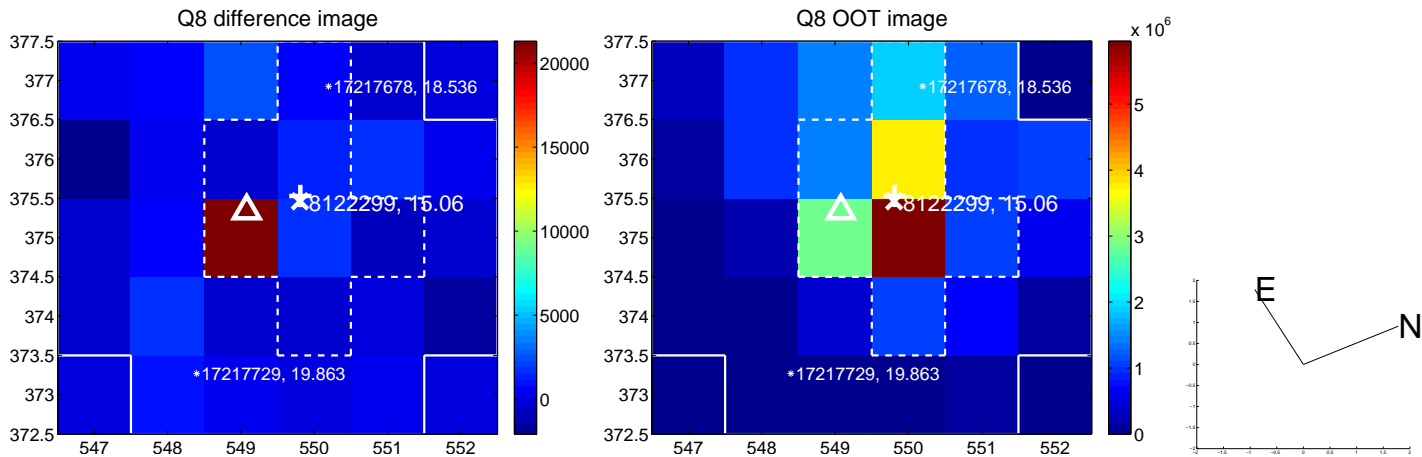
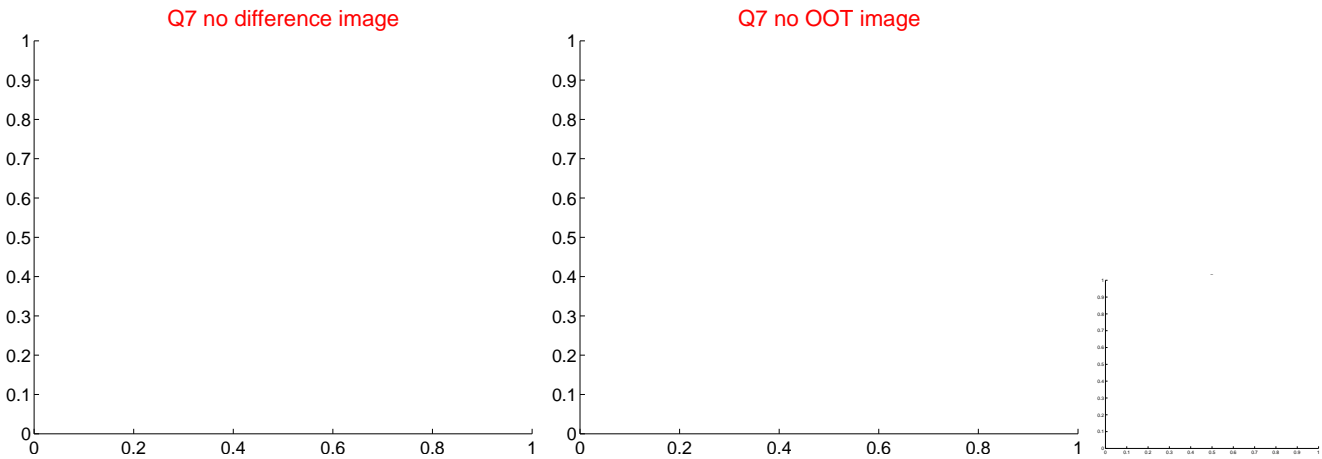
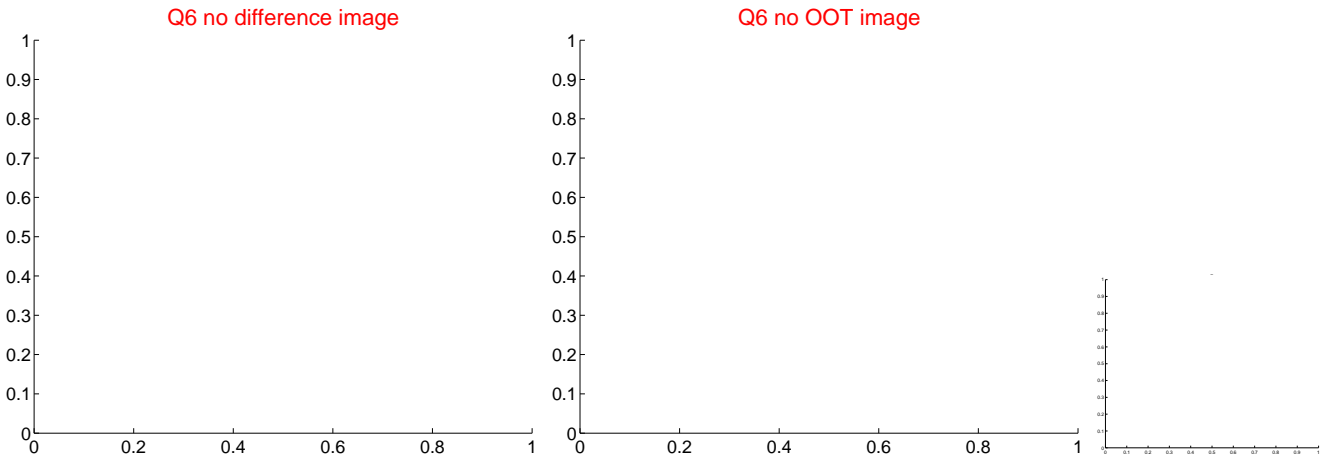
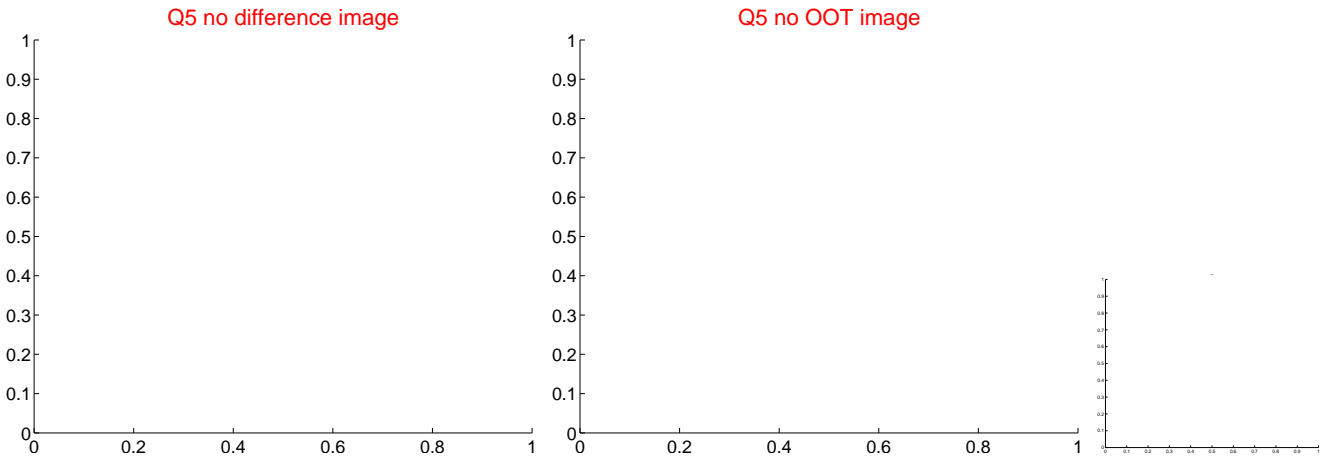


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

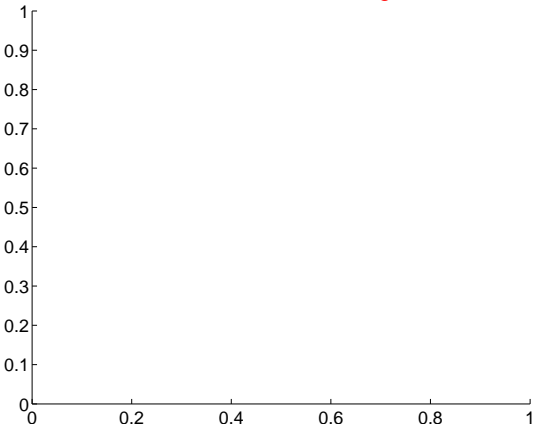


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

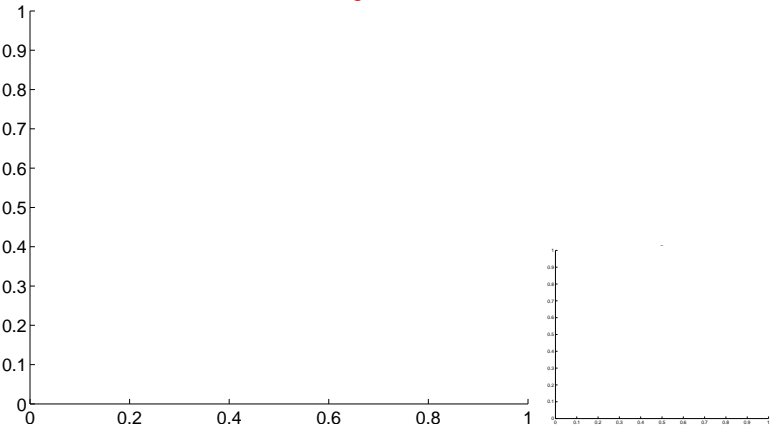


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

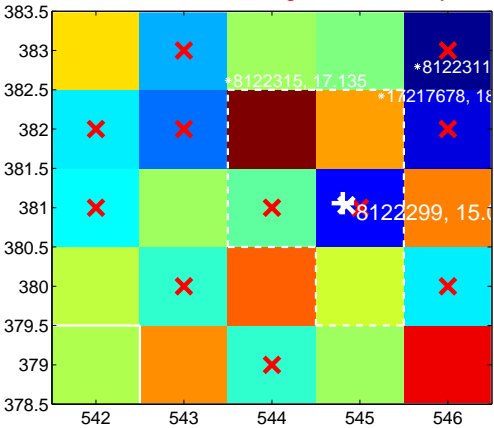
Q13 no difference image



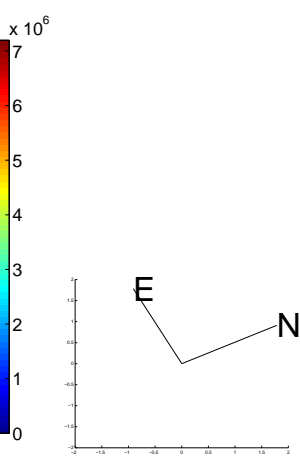
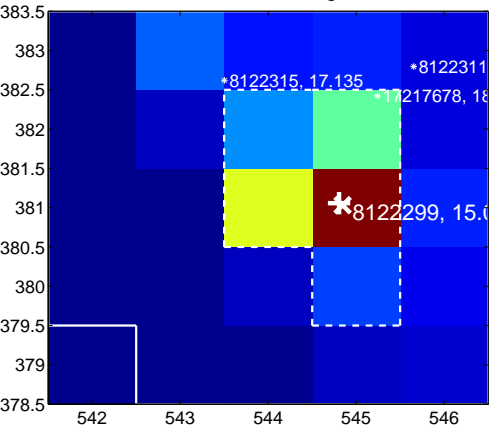
Q13 no OOT image



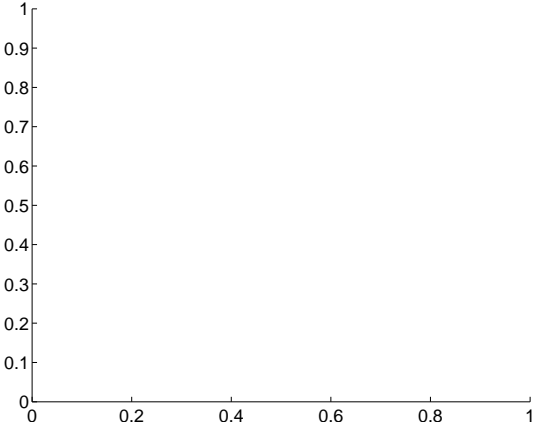
Q14 difference image. Poor Quality



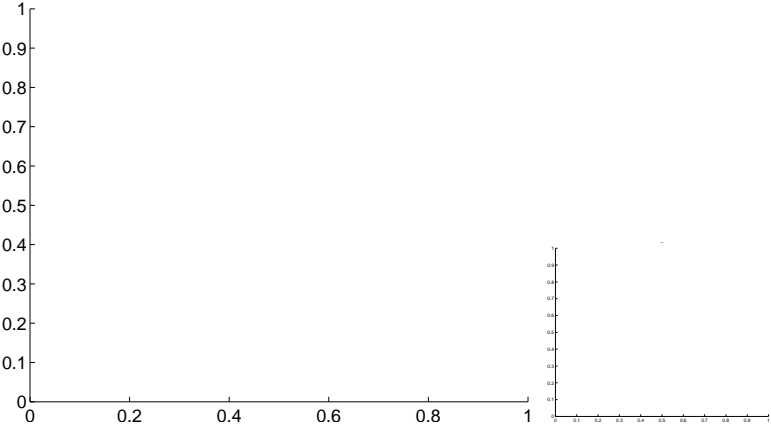
Q14 OOT image



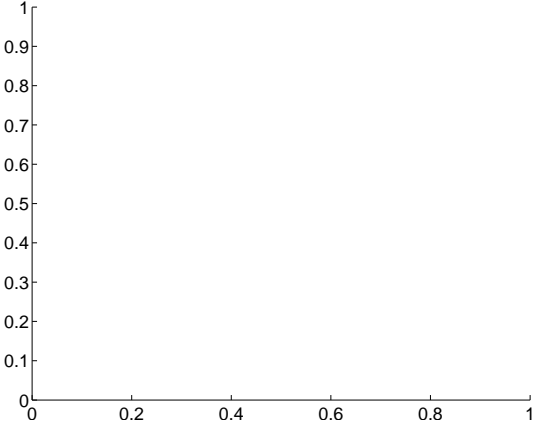
Q15 no difference image



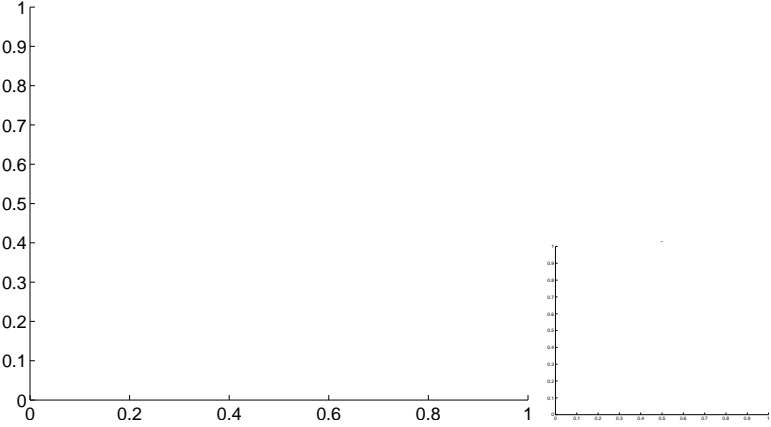
Q15 no OOT image



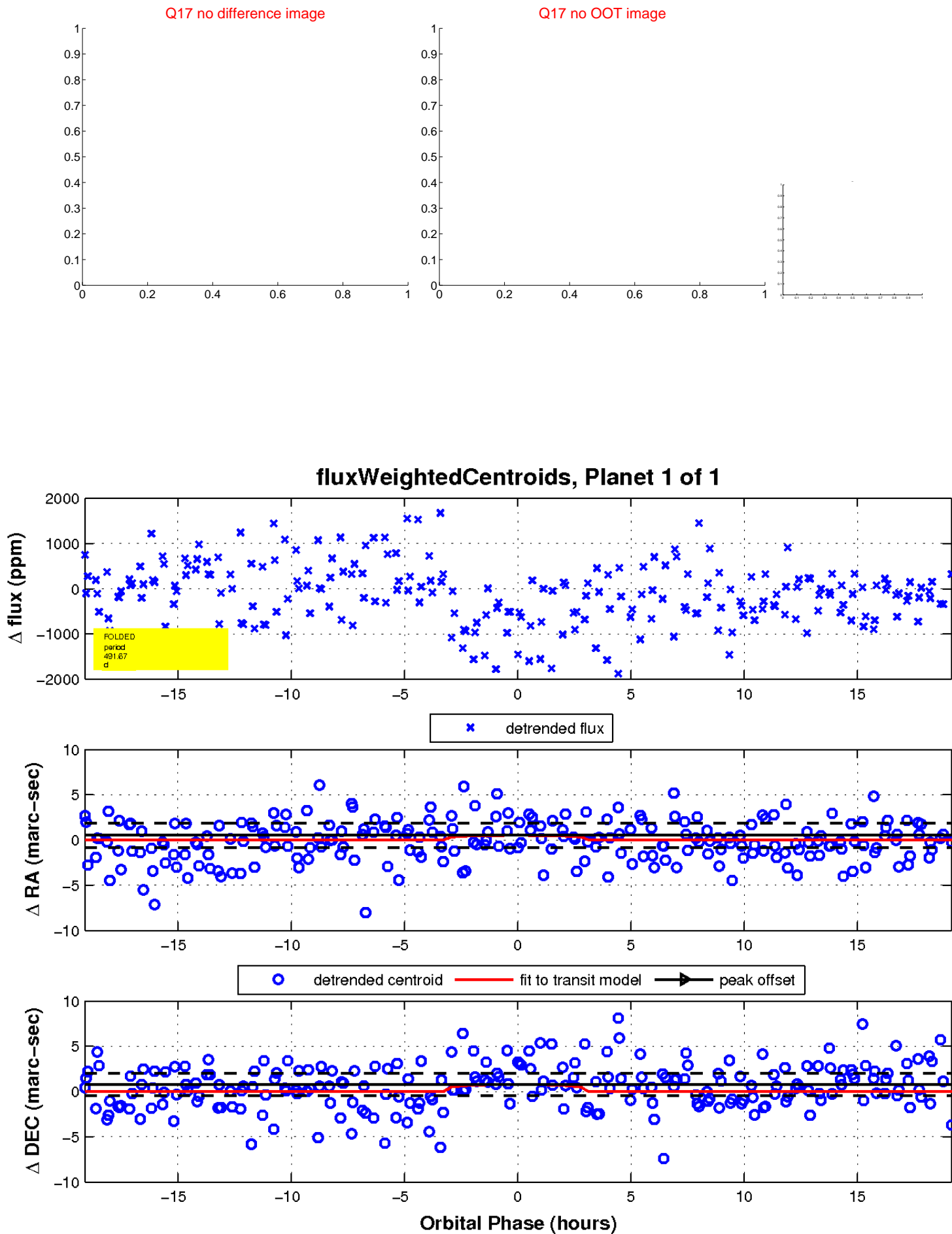
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

