

# KIC 012691865

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
012691865-01	OBS	No	579.309372	284.647808	198.7	16.232	7.4	7.6	0.99	6311	1.54	0.76

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012691865-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—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.

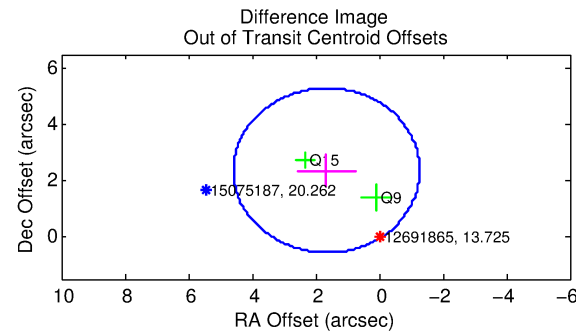
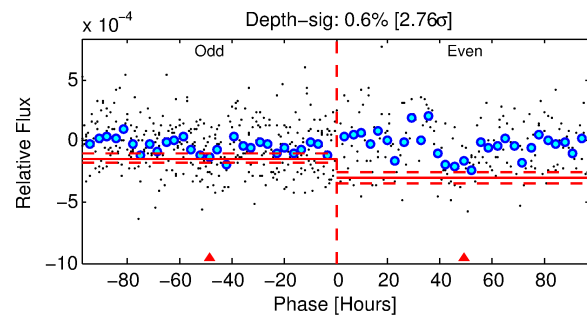
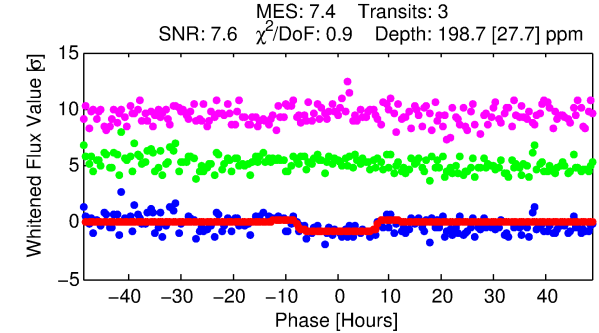
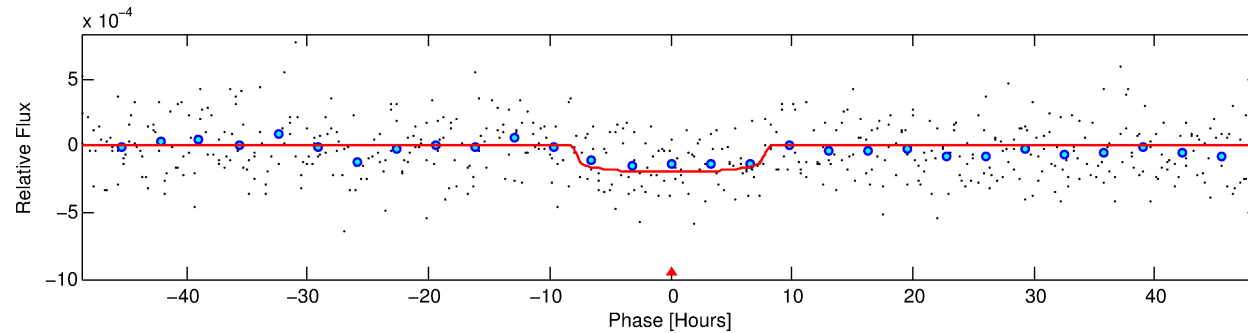
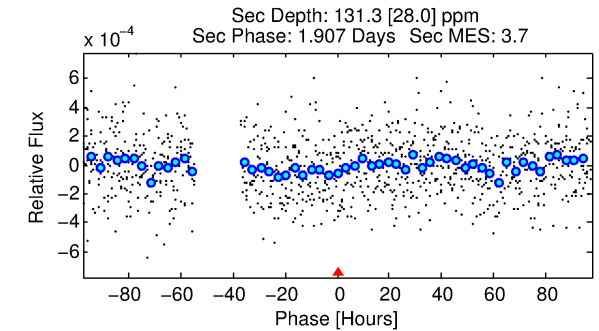
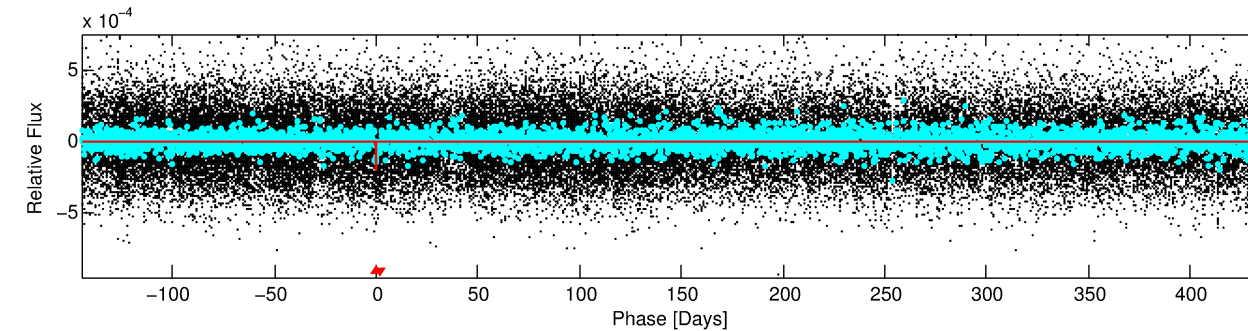
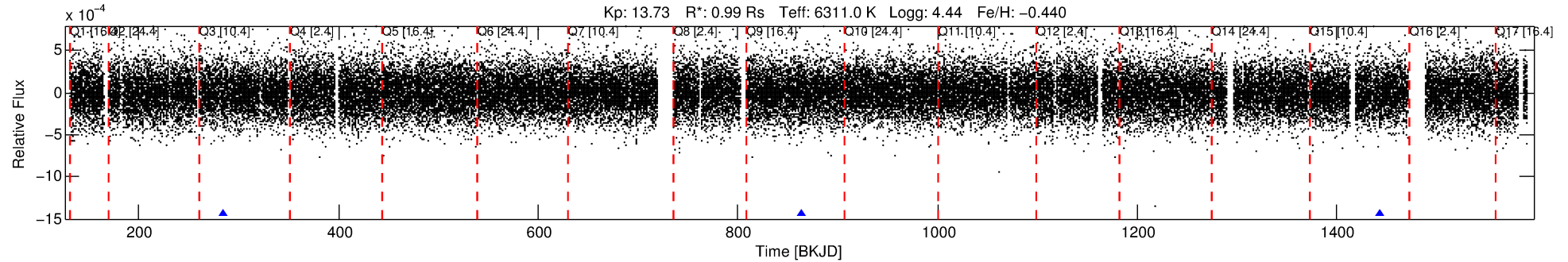
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 012691865-01

No Significant Match Found

# DV One-Page Summary

KIC: 12691865 Candidate: 1 of 1 Period: 579.309 d



## DV Fit Results:

Period = 579.30937 [0.02152] d  
Epoch = 284.6478 [0.0315] BKJD  
Rp/R\* = 0.0142 [0.0062]  
a/R\* = 172.47 [403.27]  
b = 0.79 [1.11]  
Seff = 0.76 [0.30]  
Teq = 238 [23] K  
Rp = 1.54 [0.82] Re  
a = 1.3541 [0.3466] AU  
Ag = 55819.63 [54326.32] [1.03σ]  
Teffp = 5663 [1285] K [4.22σ]

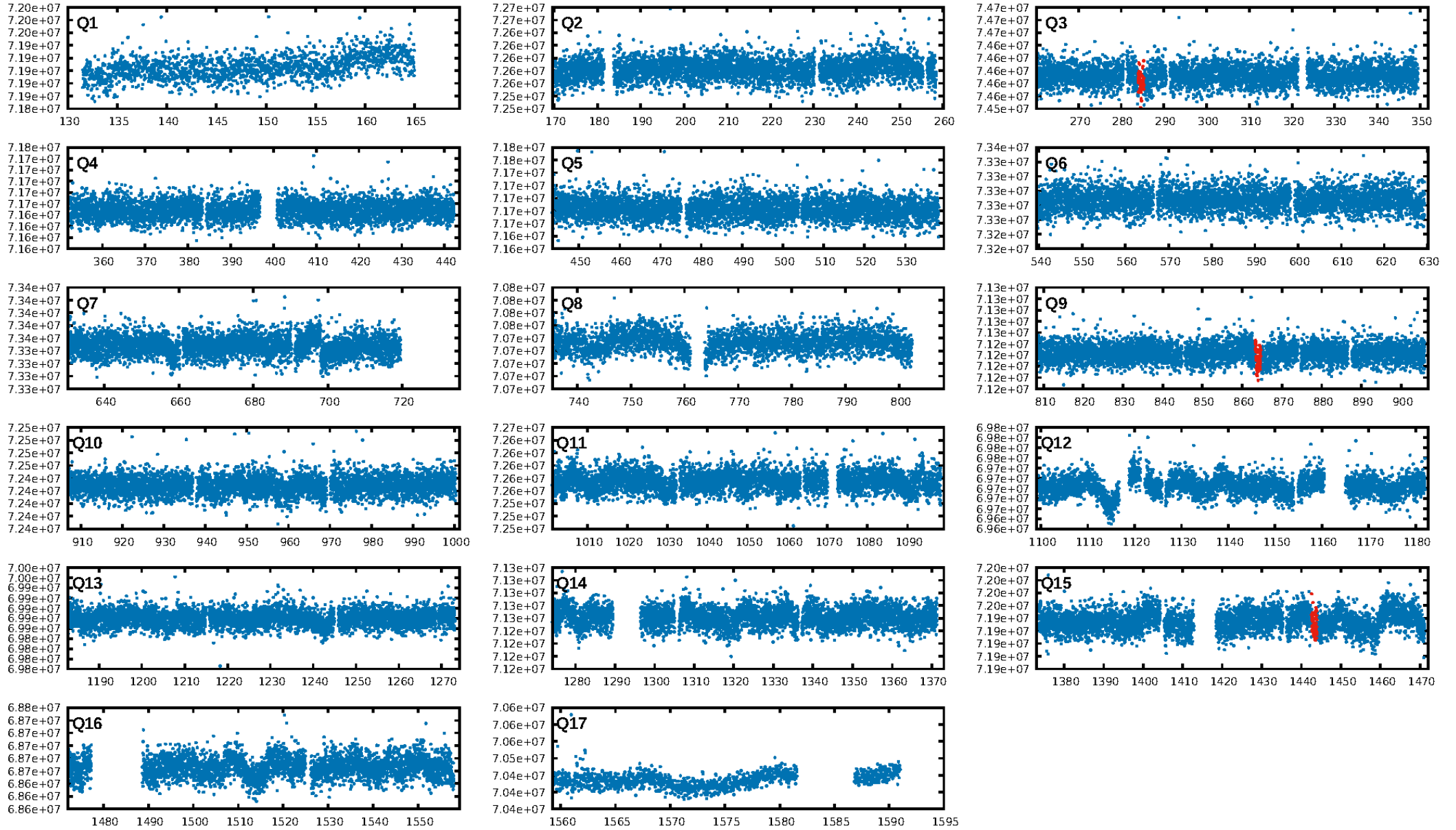
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 7.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.80e-14  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.213  
Centroid-sig: 29.5%  
Centroid-so: 2.116 arcsec [1.21σ]  
OotOffset-rm: 2.887 arcsec [2.96σ]  
OotOffset-st: 0/1/0/1 [2]  
KicOffset-rm: 3.035 arcsec [3.42σ]  
KicOffset-st: 0/1/0/1 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

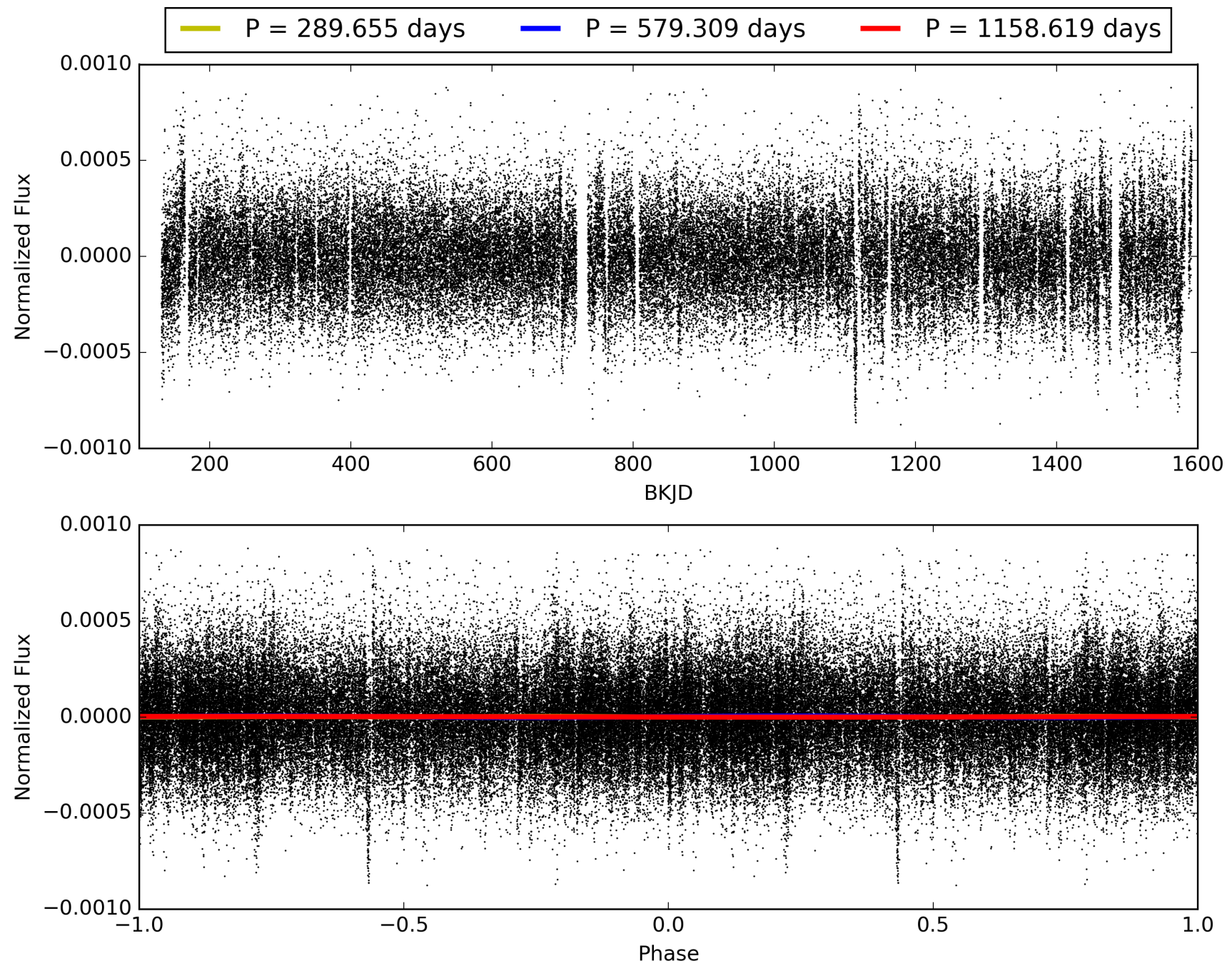
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:48:49 Z

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

# TCE 012691865-01, PDC Light Curves

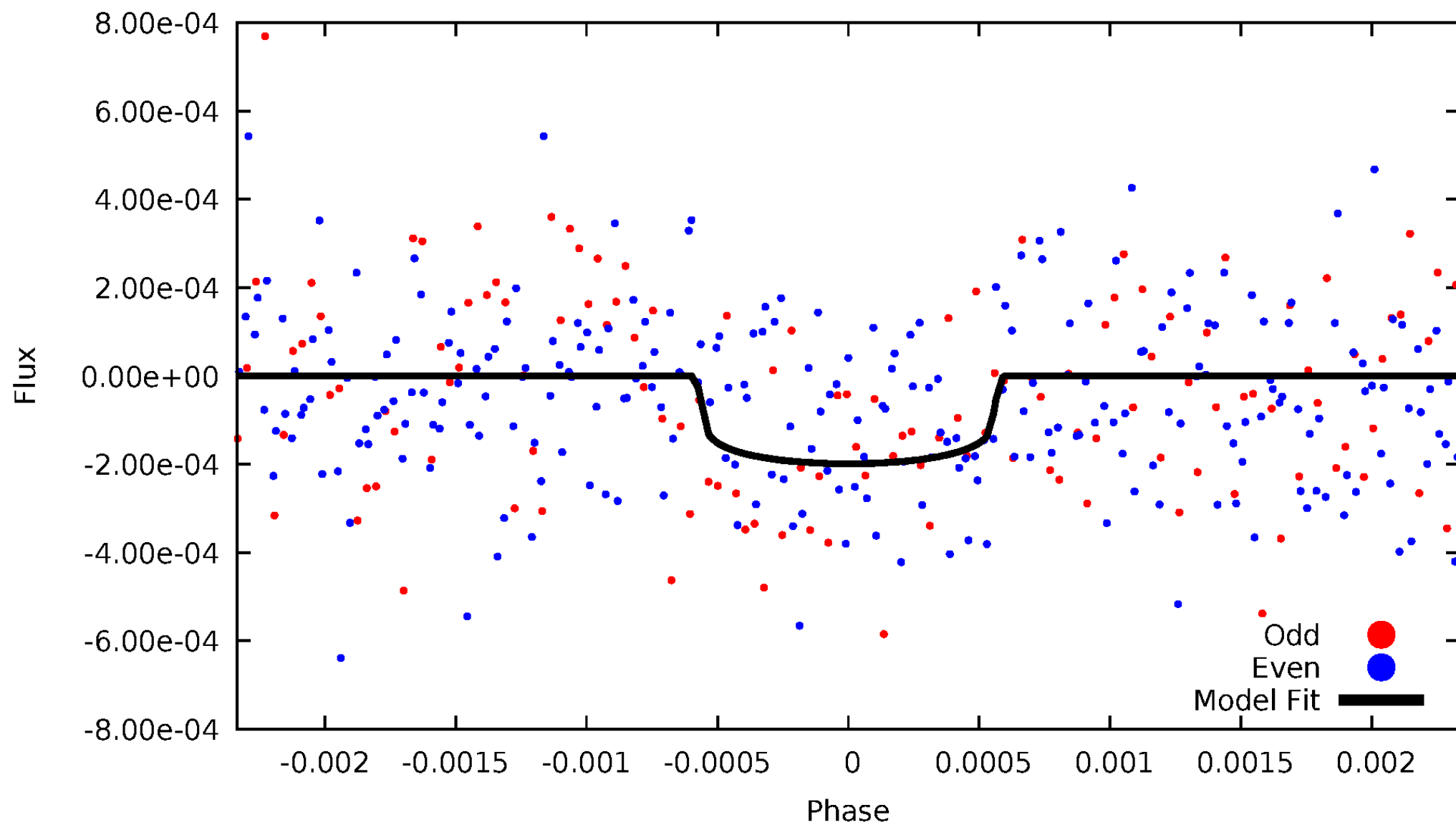


# TCE 012691865-01



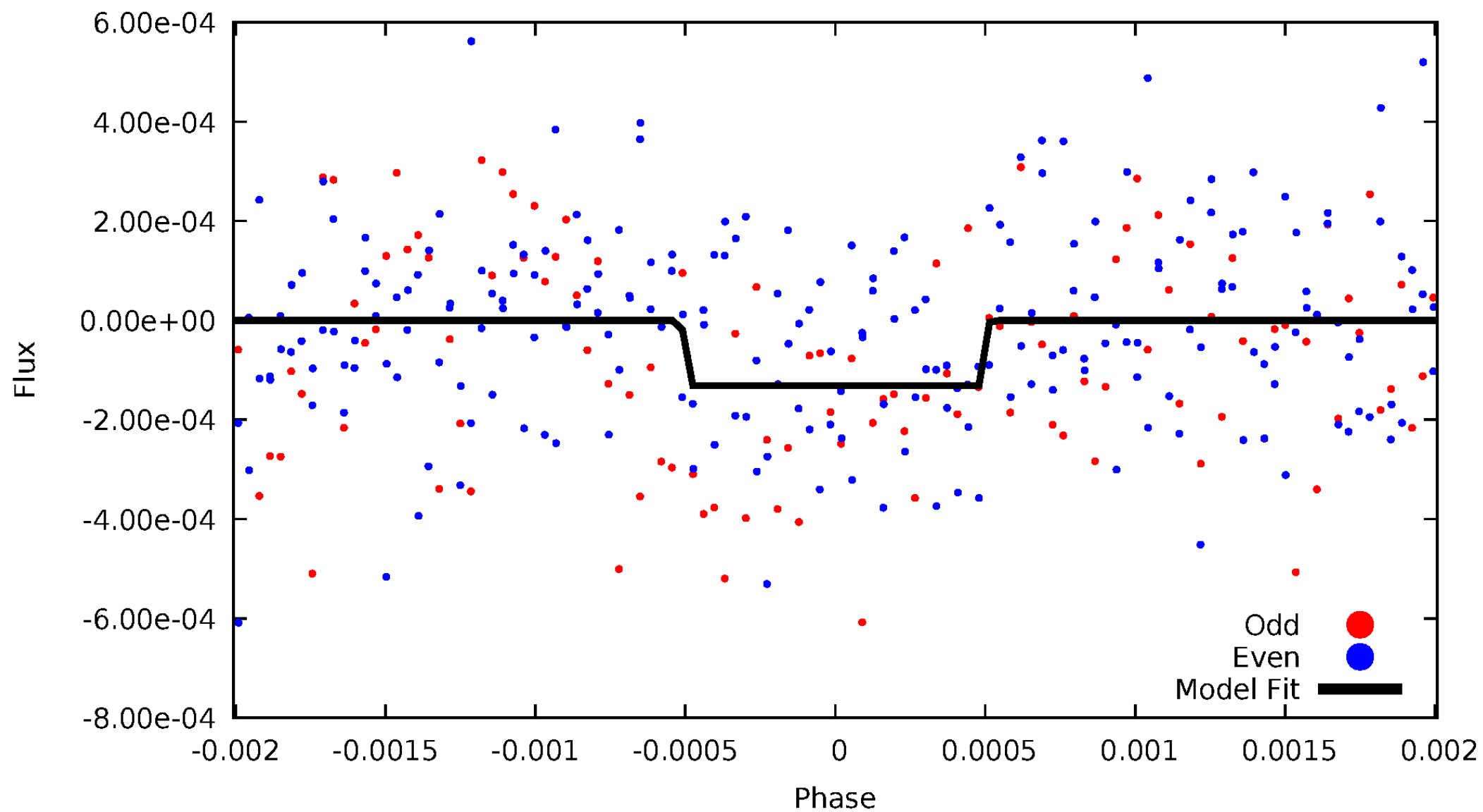
# DV Odd/Even

TCE 012691865-01



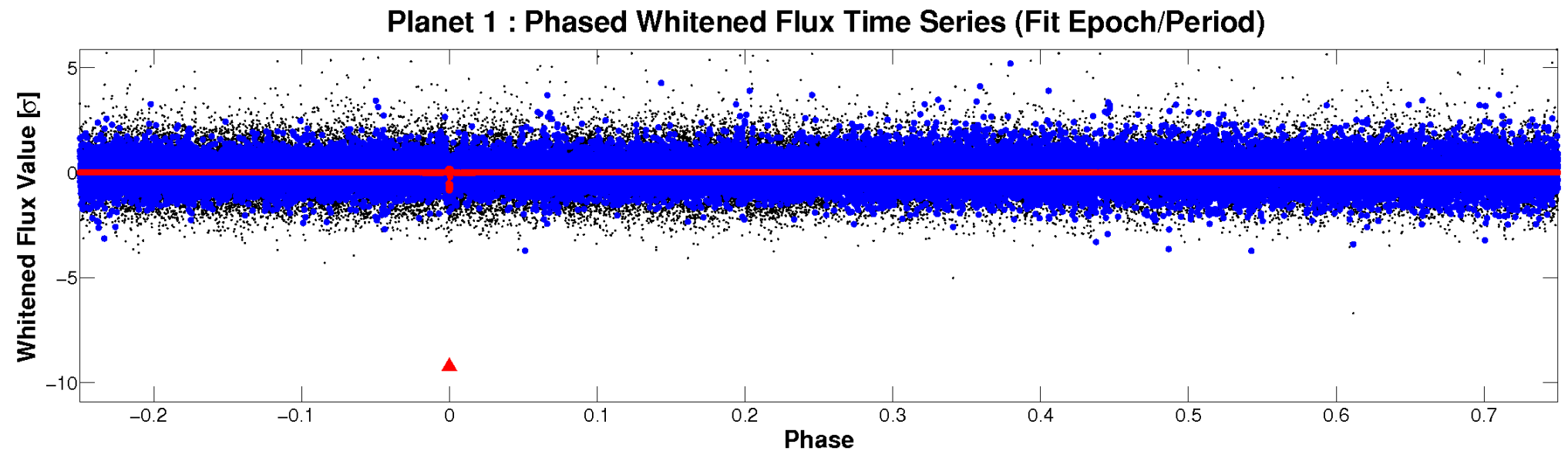
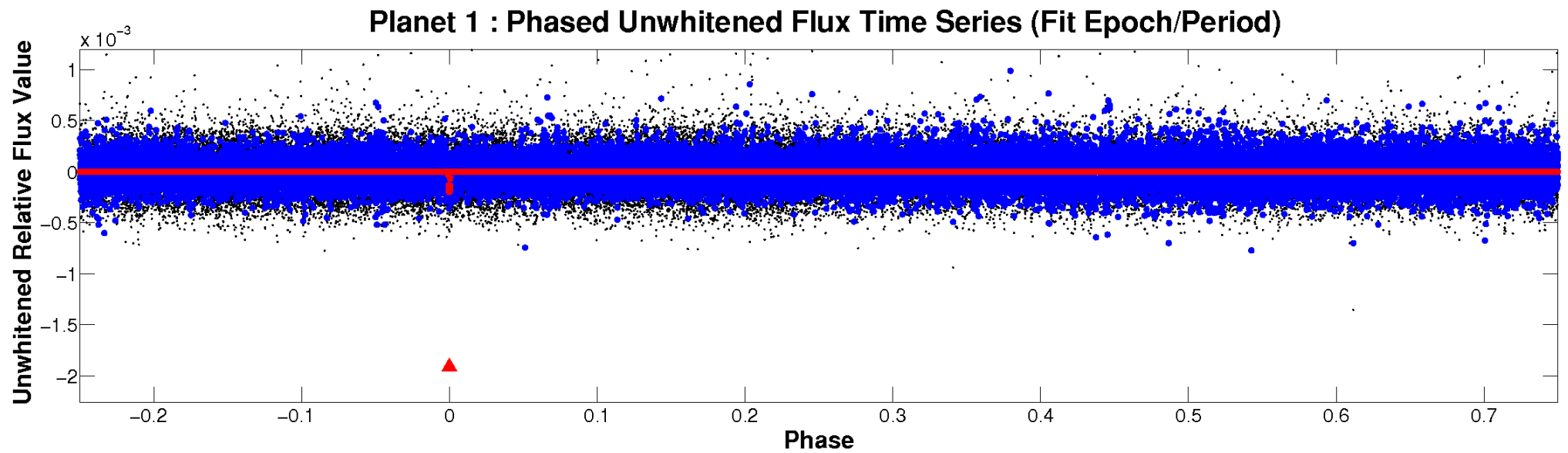
# ALT Odd/Even

TCE 012691865-01



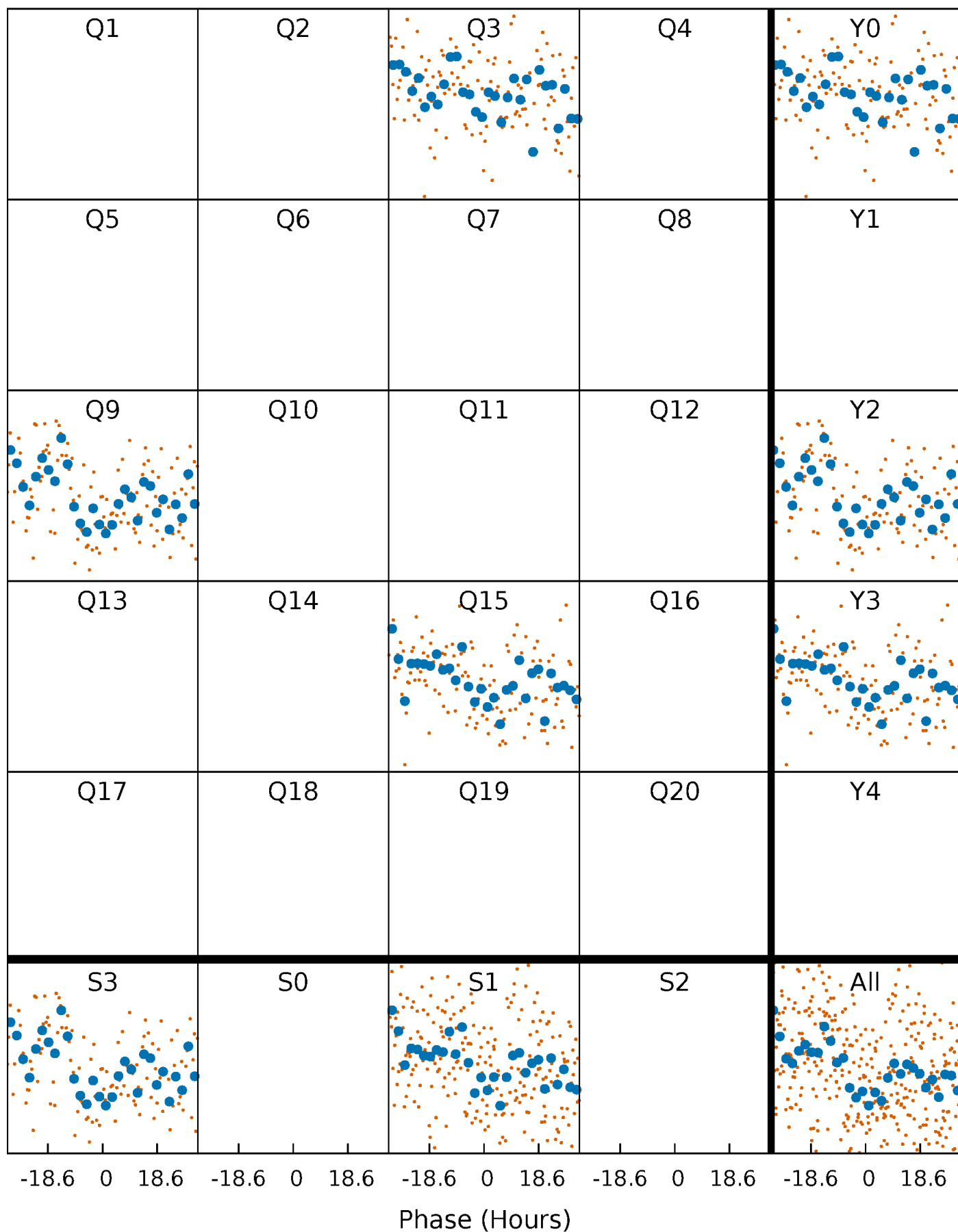


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

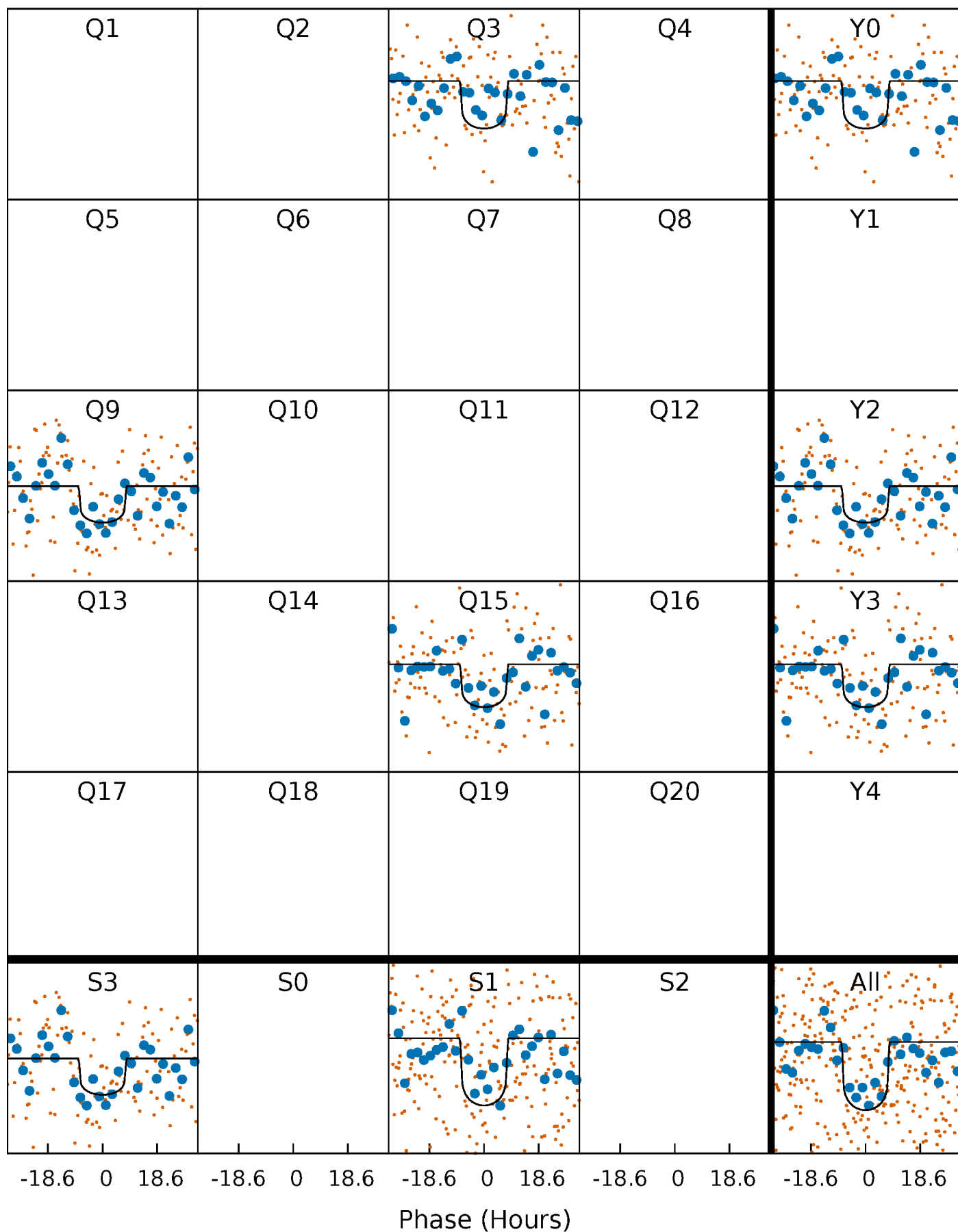
TCE 012691865-01 P=579.309372 Days  $T_0=284.647808$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 012691865-01 P=579.309372 Days  $T_0=284.647808$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

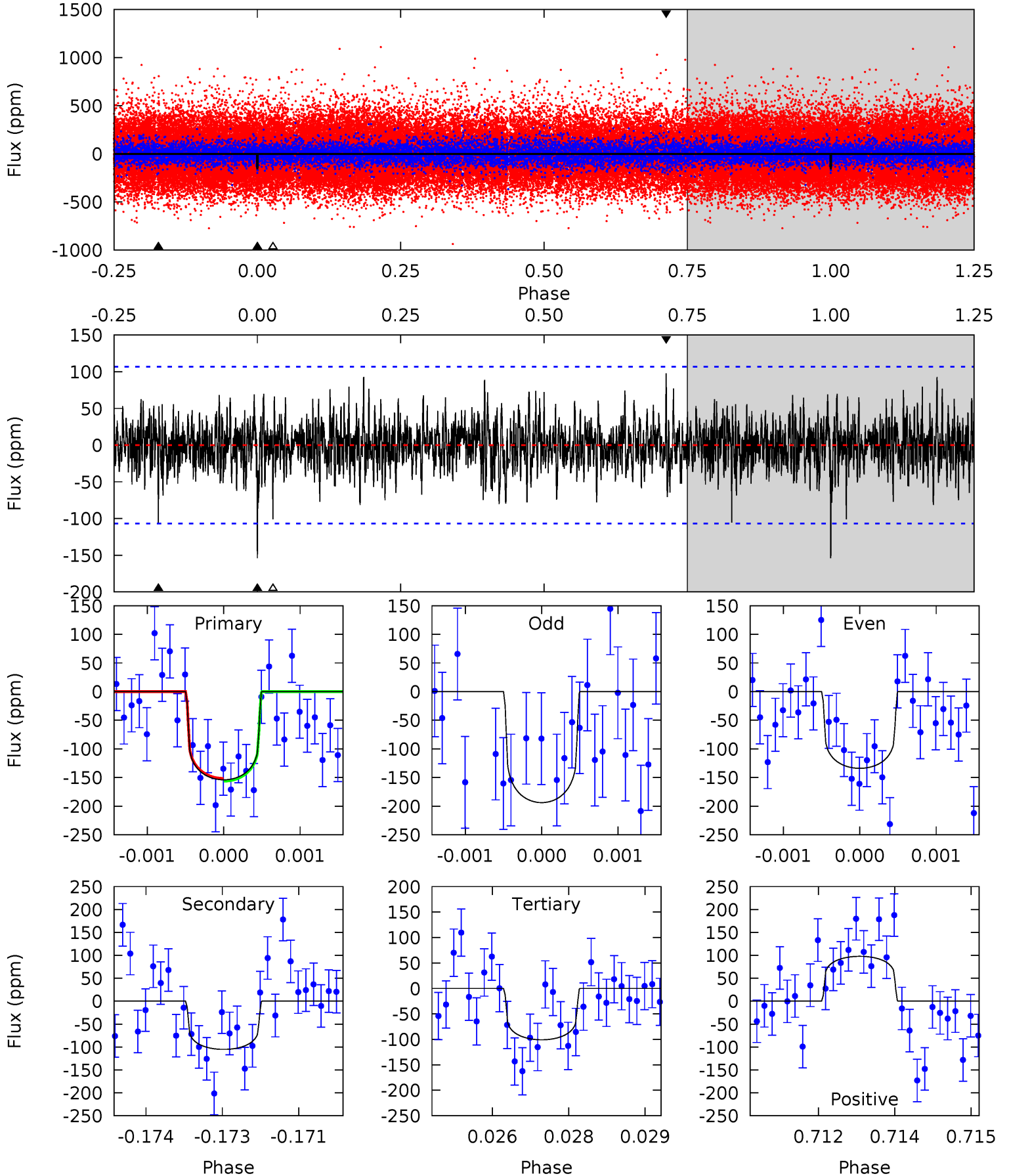
TCE 012691865-01 P=579.311859 Days  $T_0=284.671875$  (BKJD)



# DV Model-Shift Uniqueness Test

012691865-01, P = 579.309372 Days, E = 284.647808 Days

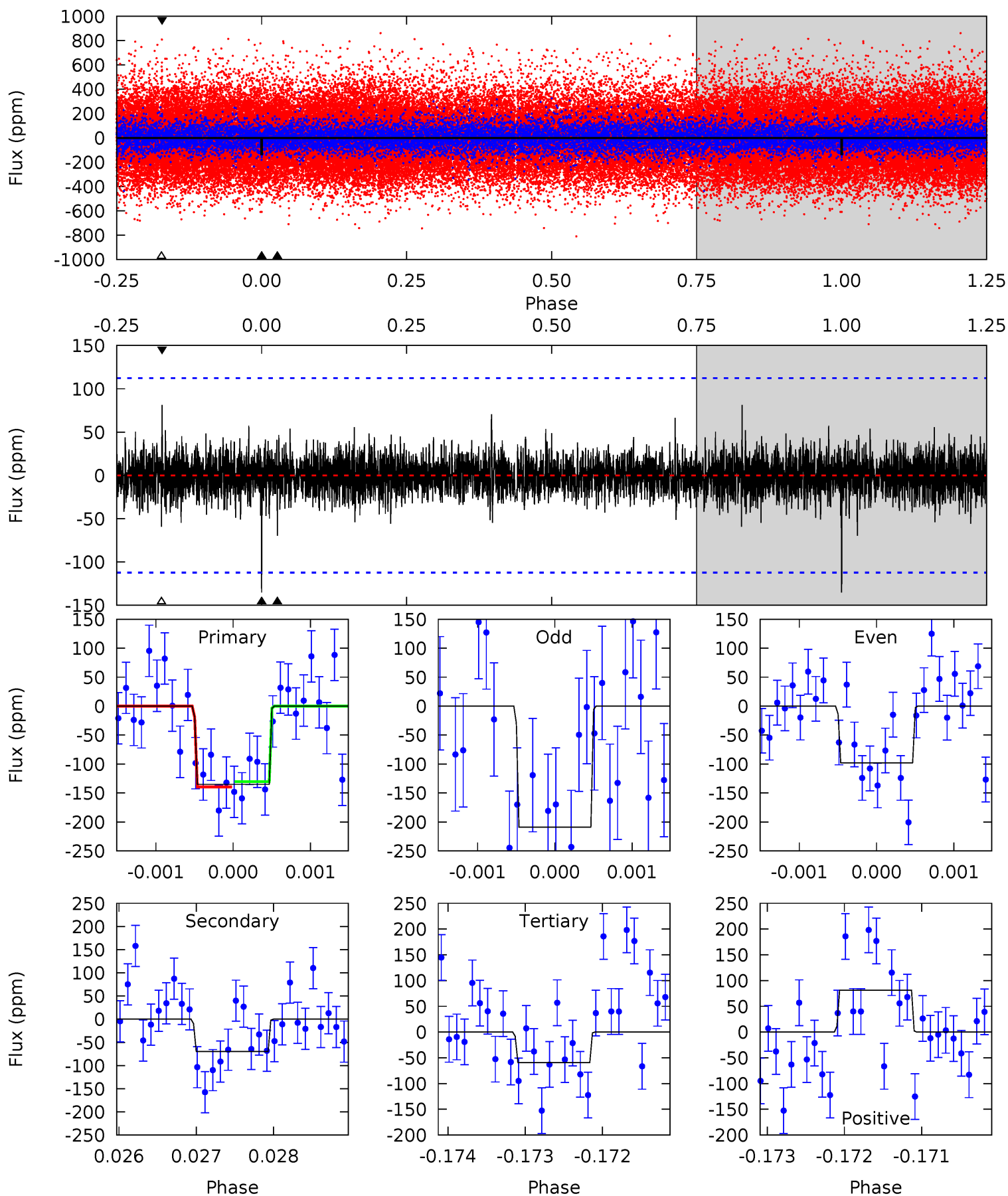
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.81	5.34	5.12	4.97	5.42	3.24	1.29	2.70	2.85	0.22	0.37	1.46	0.92	0.39	0.12



# Alt Model-Shift Uniqueness Test

012691865-01,  $P = 579.311859$  Days,  $E = 284.671875$  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
6.55	3.38	2.87	3.94	5.45	3.28	0.76	3.68	2.61	0.51	-0.56	2.60	0.95	0.38	0.22



### Stellar Parameters For KIC 012691865

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6311^{+171}_{-190}$	$4.439^{+0.081}_{-0.202}$	$-0.440^{+0.300}_{-0.300}$	$0.992^{+0.303}_{-0.121}$	$0.985^{+0.134}_{-0.110}$	$1.420^{+0.499}_{-0.713}$
	+3%/-3%	+2%/-5%	+68%/-68%	+31%/-12%	+14%/-11%	+35%/-50%
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 012691865-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-105 \pm 20$	$1.62^{+0.74}_{-0.71}$	$338^{+25}_{-17}$	$5365^{+1779}_{-793}$	$40910^{+86675}_{-22672}$
Alt.	$-70 \pm 21$	$1.34^{+0.73}_{-0.67}$	$339^{+26}_{-17}$	$5315^{+2164}_{-917}$	$37868^{+114532}_{-22777}$

$T_{max}$  = 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

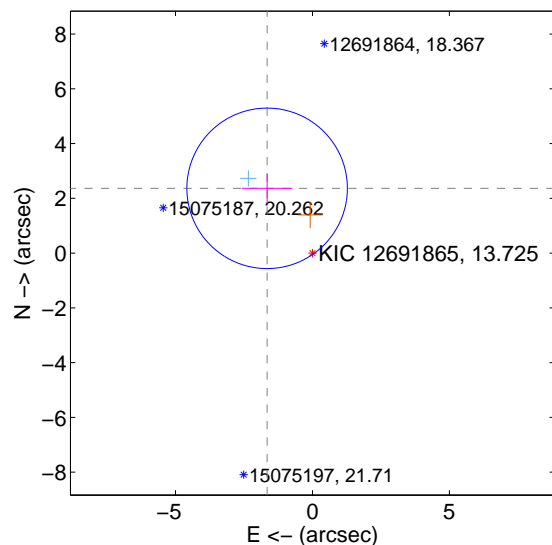
Supplemental centroid analysis for 012691865-01. Kepler magnitude: 13.72. Transit SNR 7.55

There are 1 quarters with good PRF difference image offsets

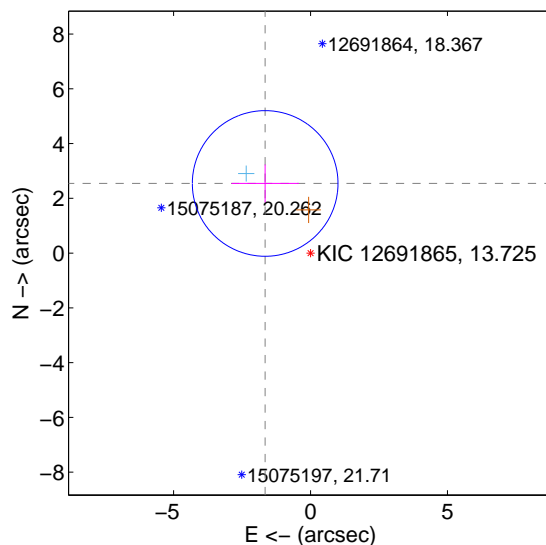
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.887 \pm 0.977$	2.96	$1.655 \pm 0.926$	$2.365 \pm 0.548$
PRF-fit source offset from KIC position	<b><math>3.035 \pm 0.887</math></b>	<b>3.42</b>	$1.657 \pm 1.227$	$2.543 \pm 0.693$
photometric centroid source offset	$2.12 \pm 1.75$	1.21	$-2.10 \pm 1.75$	$0.29 \pm 1.90$

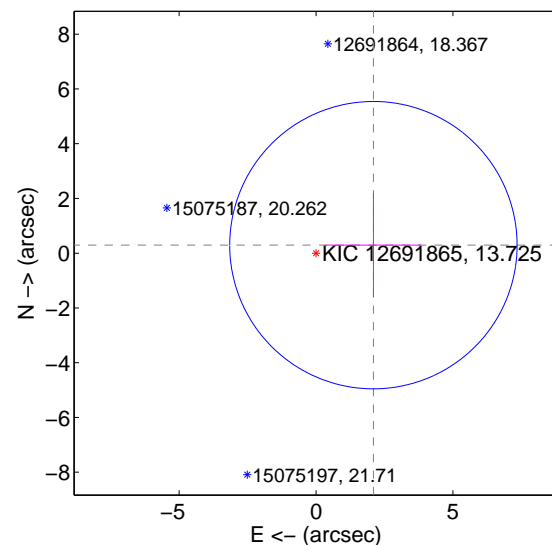
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

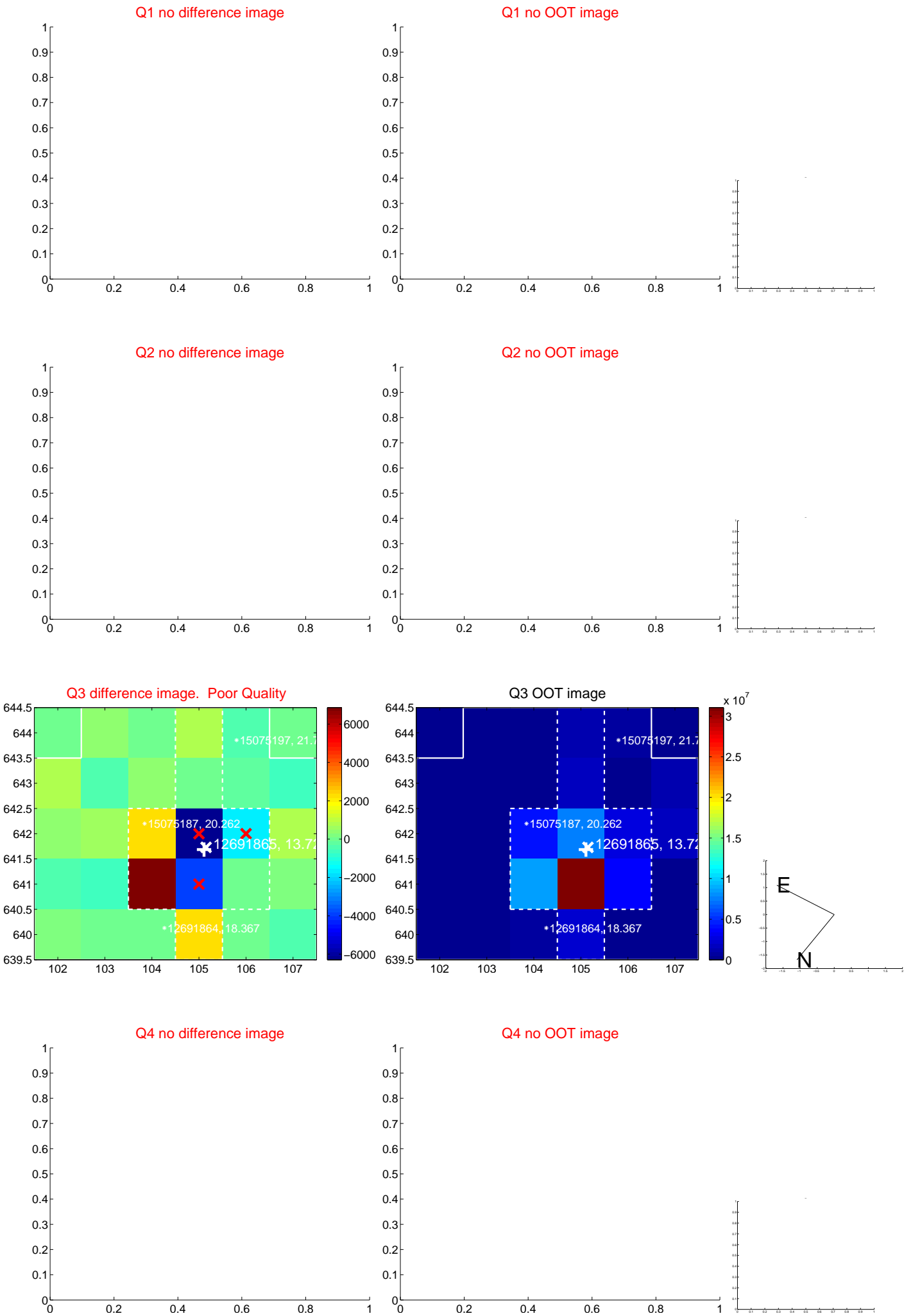


offset from photometric centroids



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.

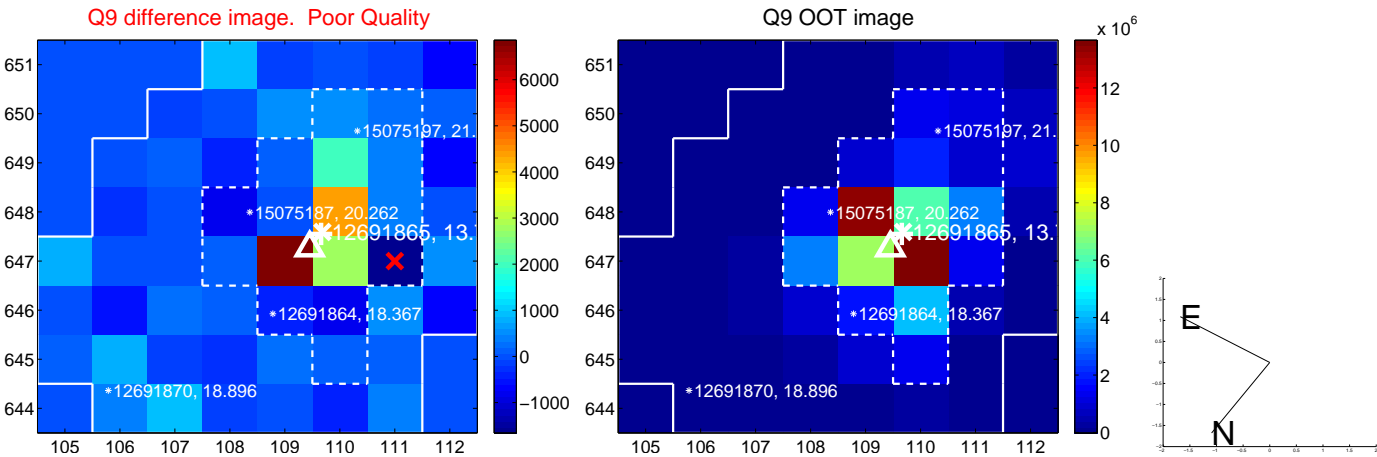




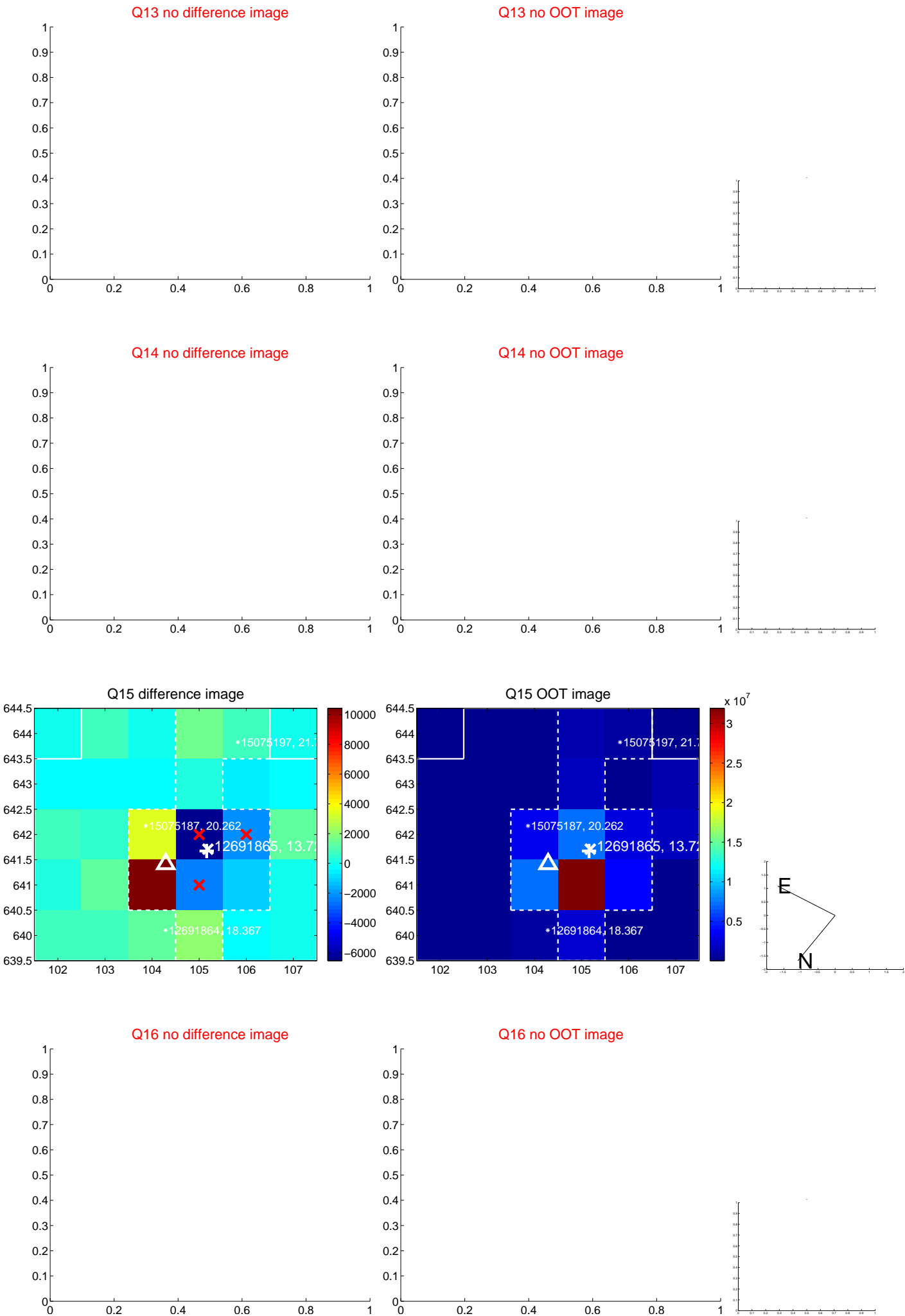
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



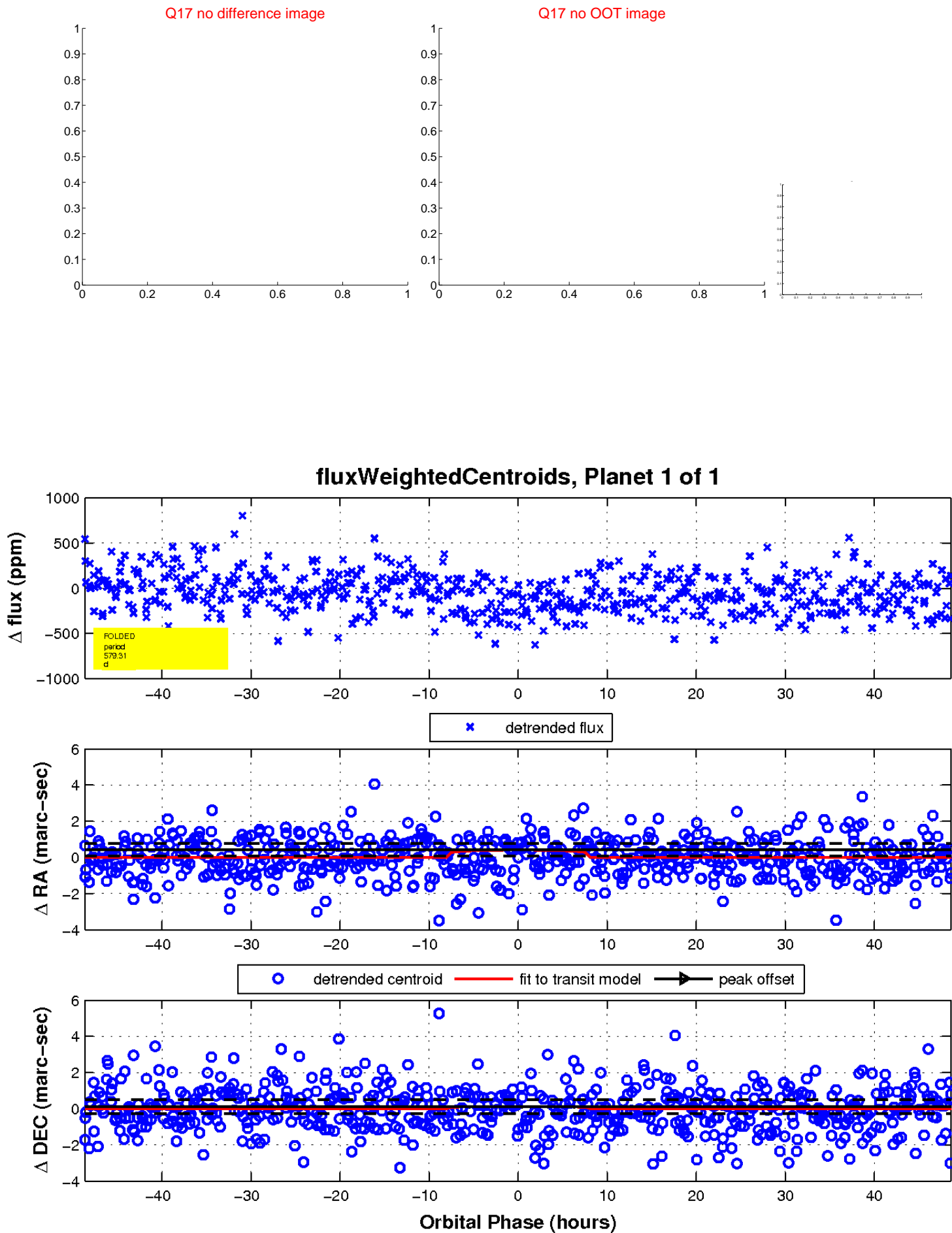
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

