

# KIC 007025599

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007025599-01	OBS	No	643.028441	153.380011	462.4	17.029	9.1	9.1	0.82	5941	1.86	0.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007025599-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—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.

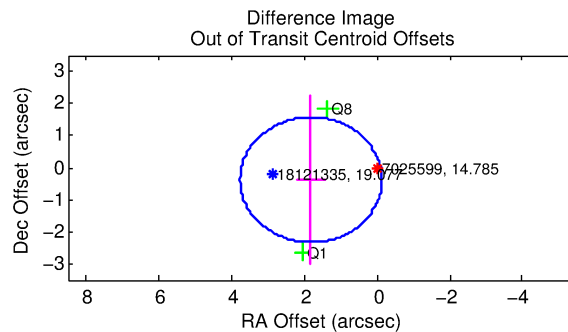
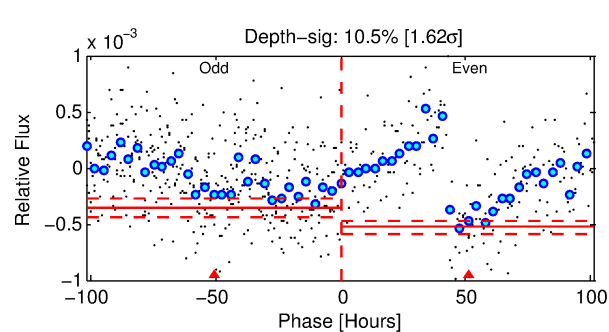
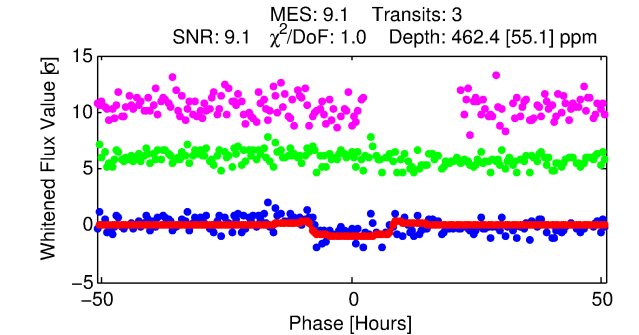
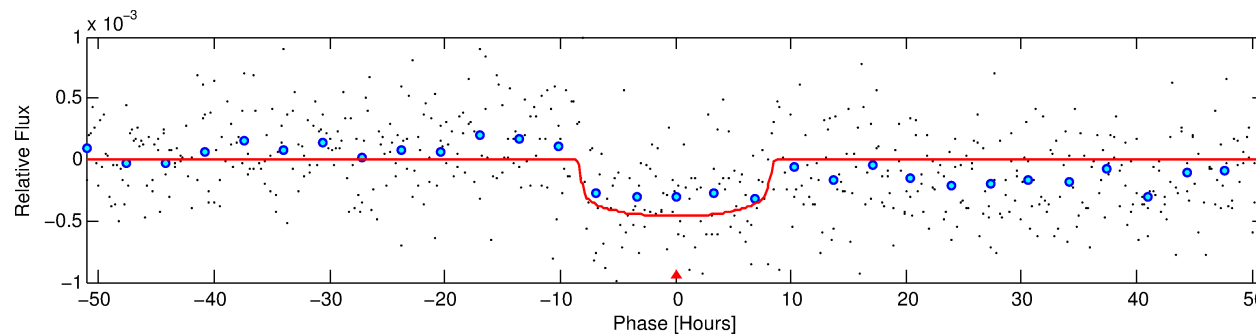
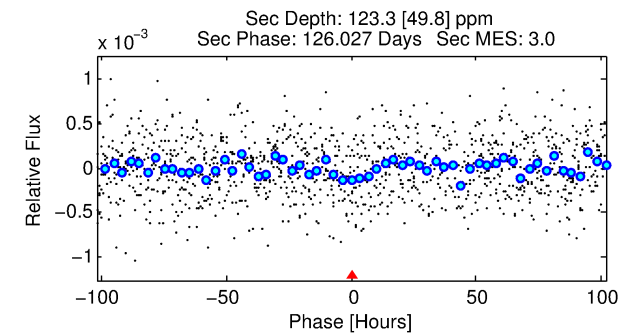
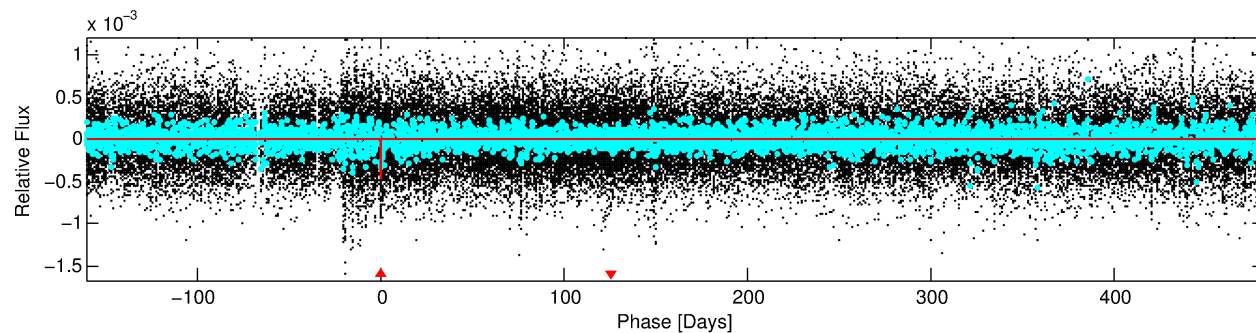
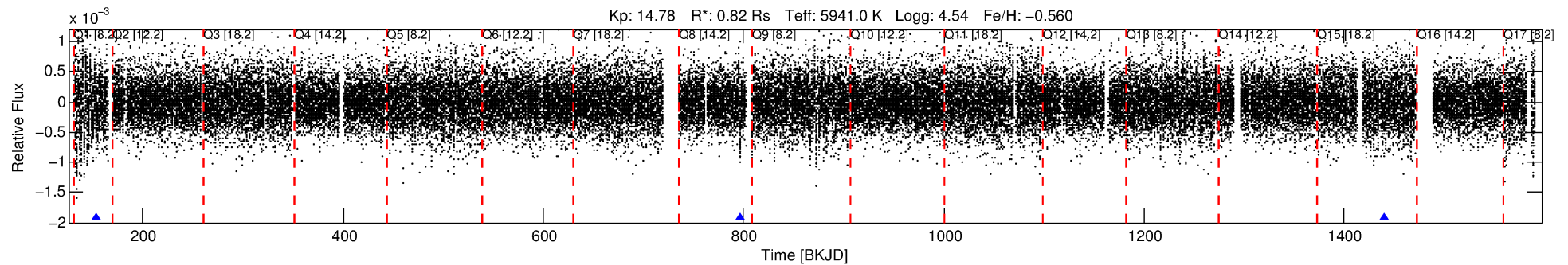
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007025599-01

No Significant Match Found

# DV One-Page Summary

KIC: 7025599 Candidate: 1 of 1 Period: 643.028 d



## DV Fit Results:

Period = 643.02844 [0.01492] d  
Epoch = 153.3800 [0.0189] BKJD  
Rp/R\* = 0.0207 [0.0067]  
a/R\* = 230.06 [368.76]  
b = 0.64 [1.50]  
Seff = 0.39 [0.13]  
Teff = 202 [17] K  
Rp = 1.86 [0.76] Re  
a = 1.3869 [0.2947] AU  
Ag = 37854.58 [31282.66] [1.21 $\sigma$ ]  
Teffp = 4346 [841] K [4.93 $\sigma$ ]

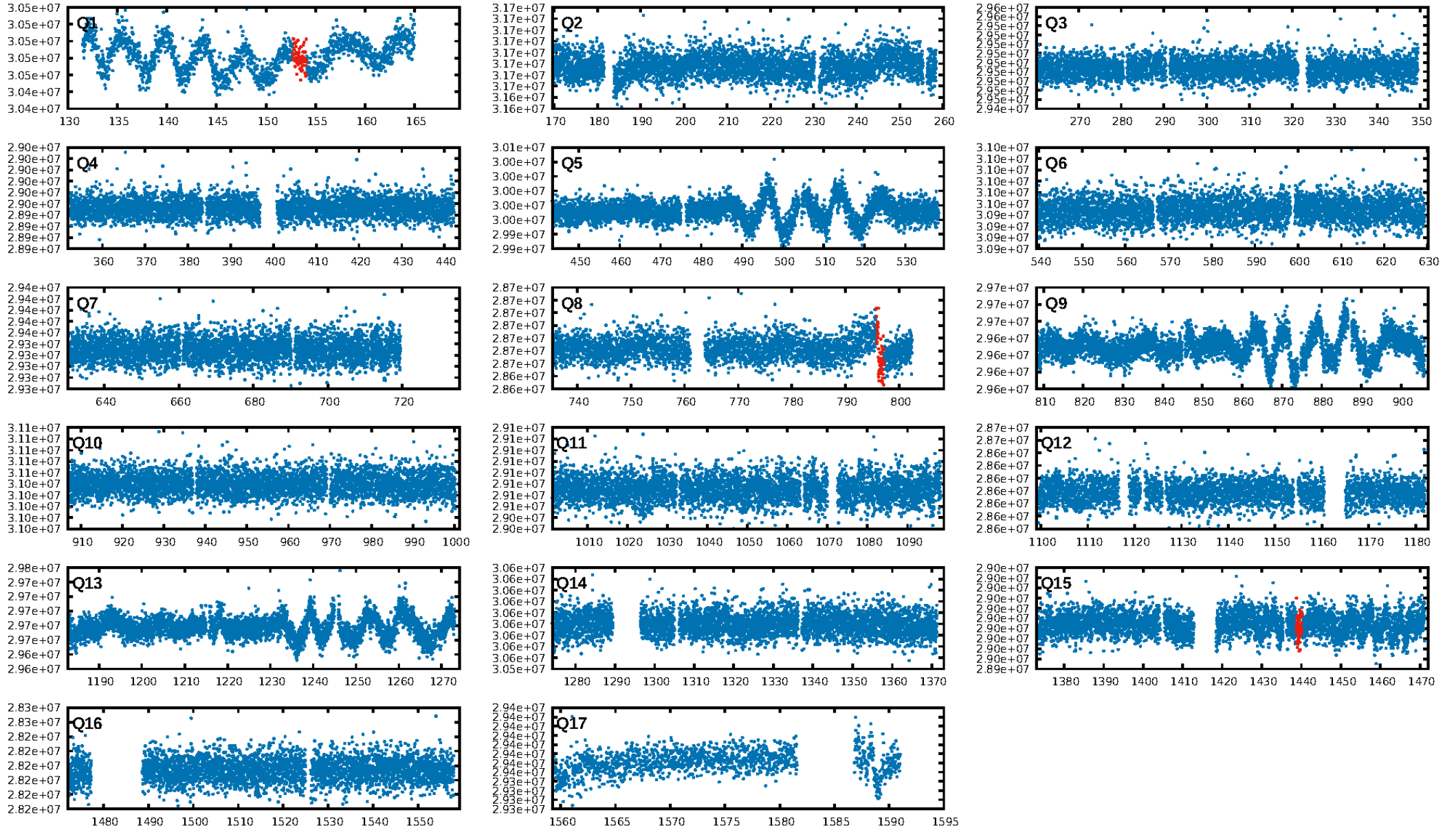
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 40.3%  
ModelChiSquareGof-sig: 99.9%  
**Bootstrap-pfa: 4.87e-10**  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: -15.34  
Centroid-sig: 56.3%  
Centroid-so: 0.920 arcsec [0.71 $\sigma$ ]  
OotOffset-rm: 1.856 arcsec [2.85 $\sigma$ ]  
KicOffset-rm: 1.925 arcsec [2.71 $\sigma$ ]  
OotOffset-st: 0/0/1/1 [2]  
KicOffset-st: 0/0/1/1 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

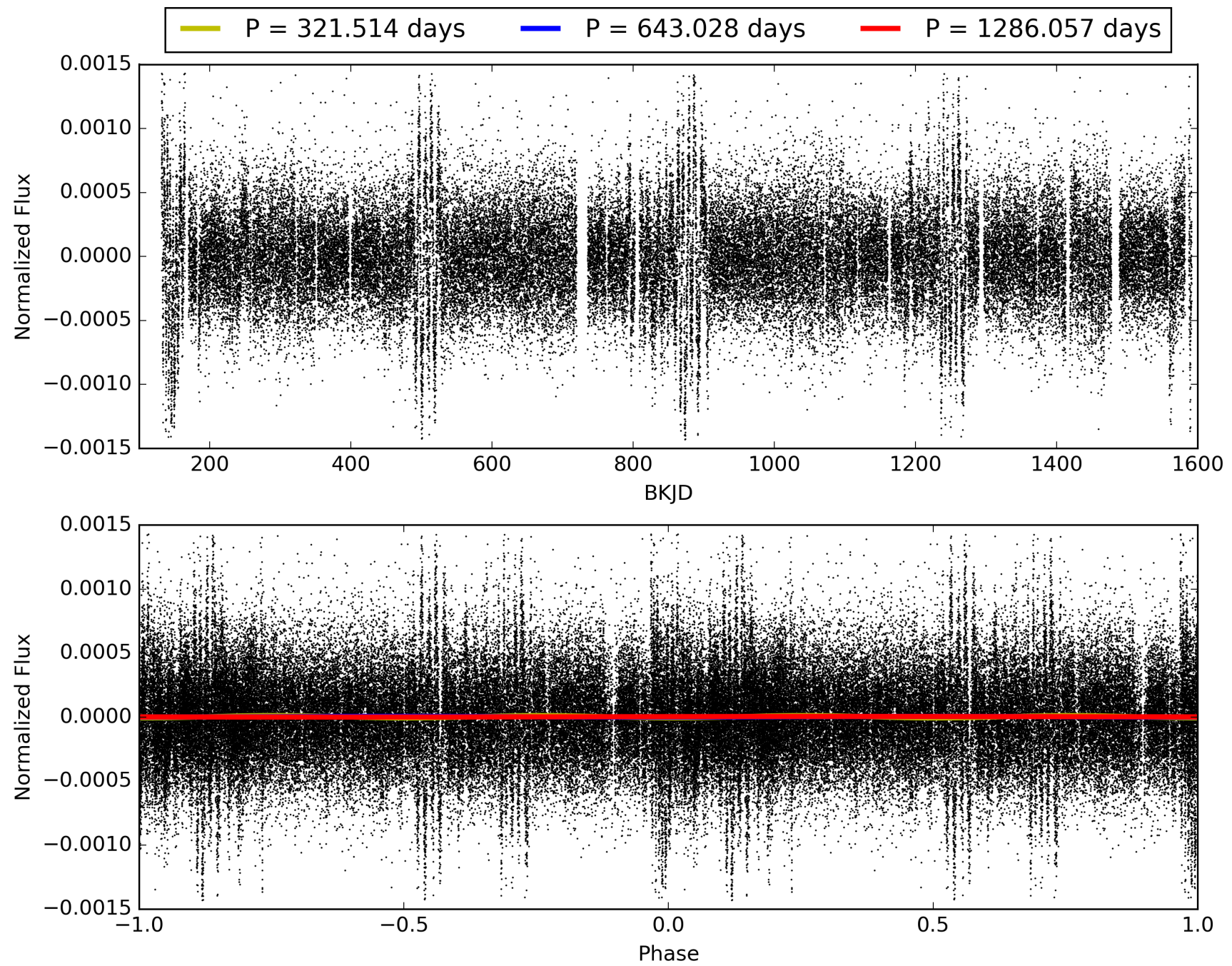
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:17:14 Z

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

# TCE 007025599-01, PDC Light Curves

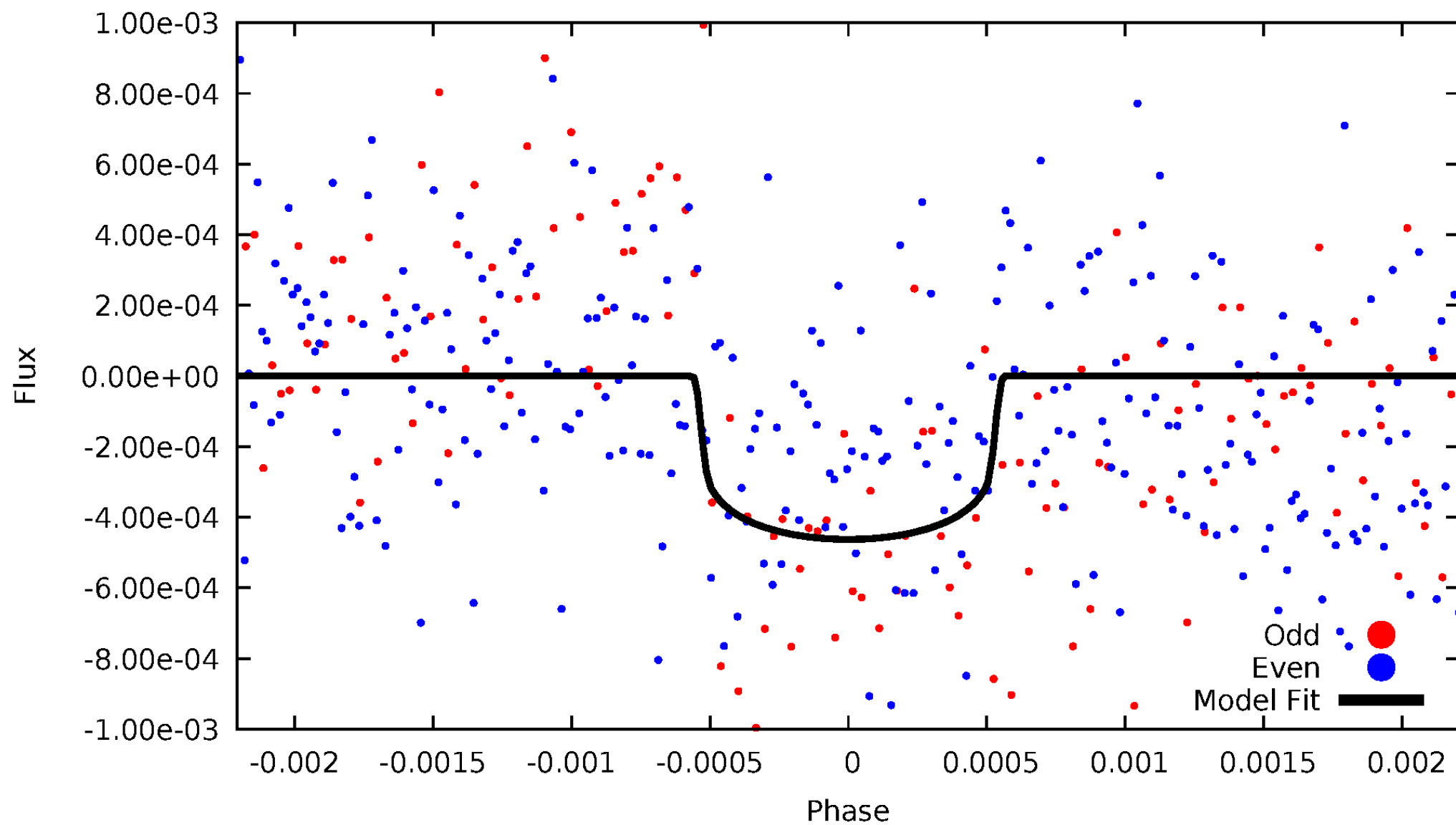


TCE 007025599-01



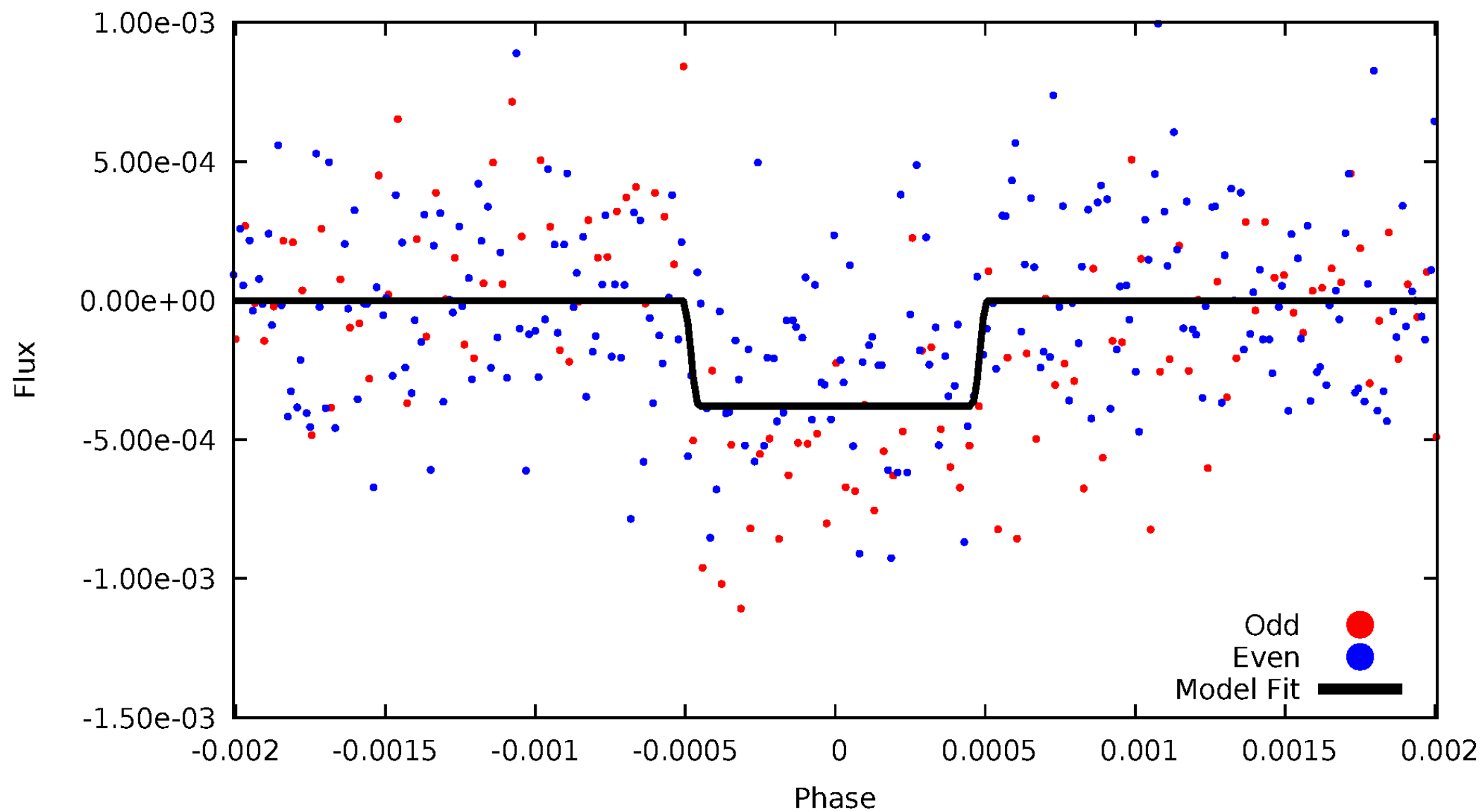
# DV Odd/Even

TCE 007025599-01



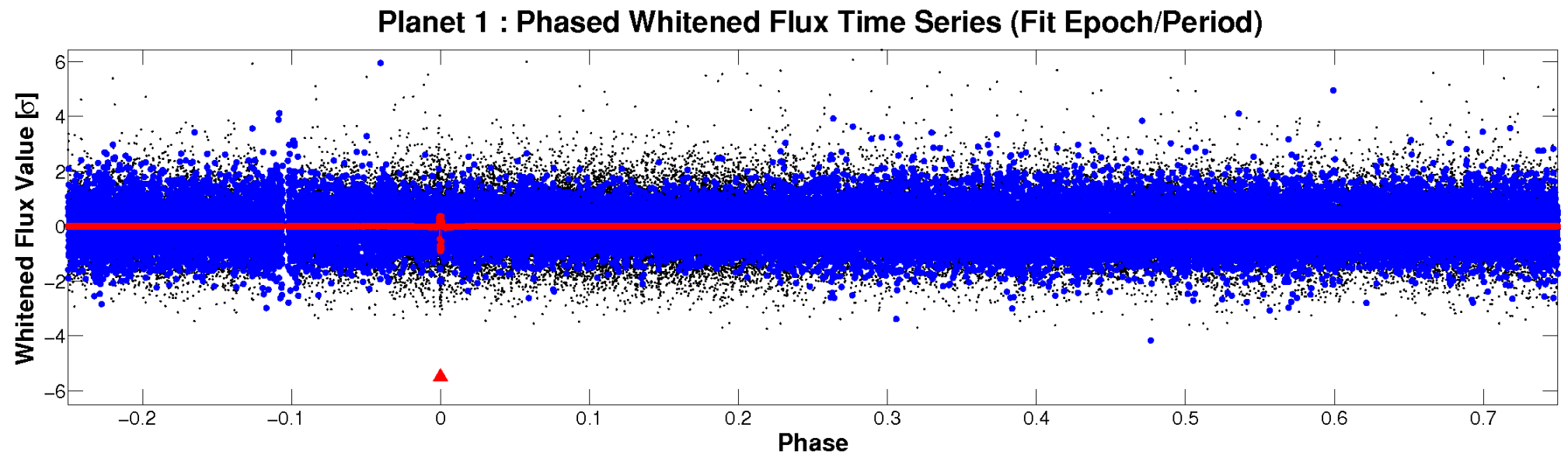
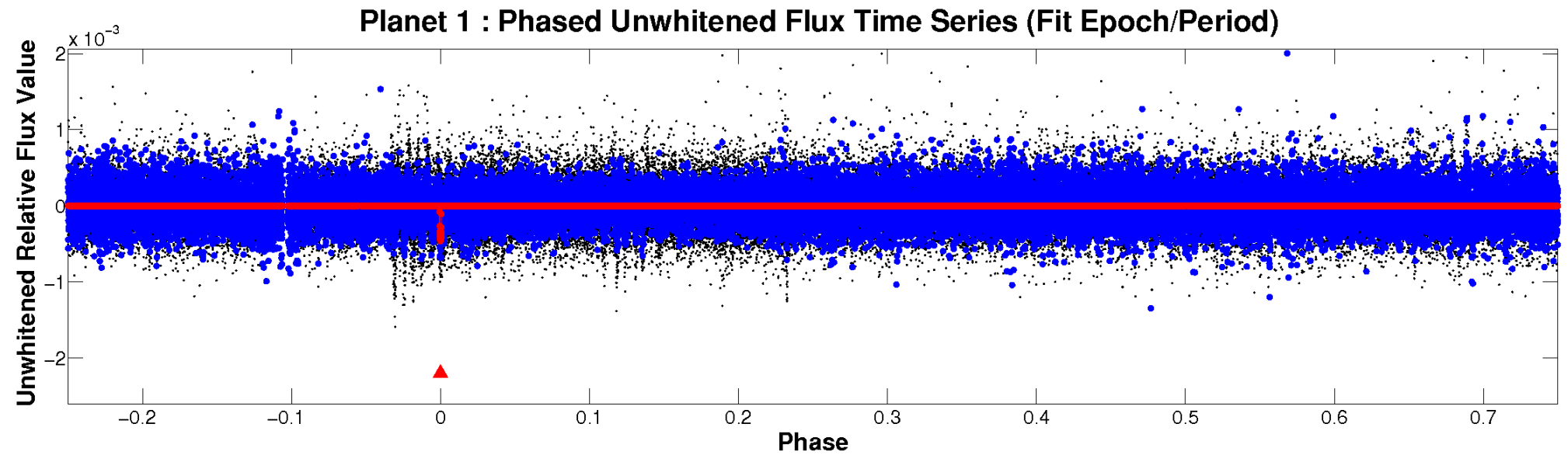
# ALT Odd/Even

TCE 007025599-01



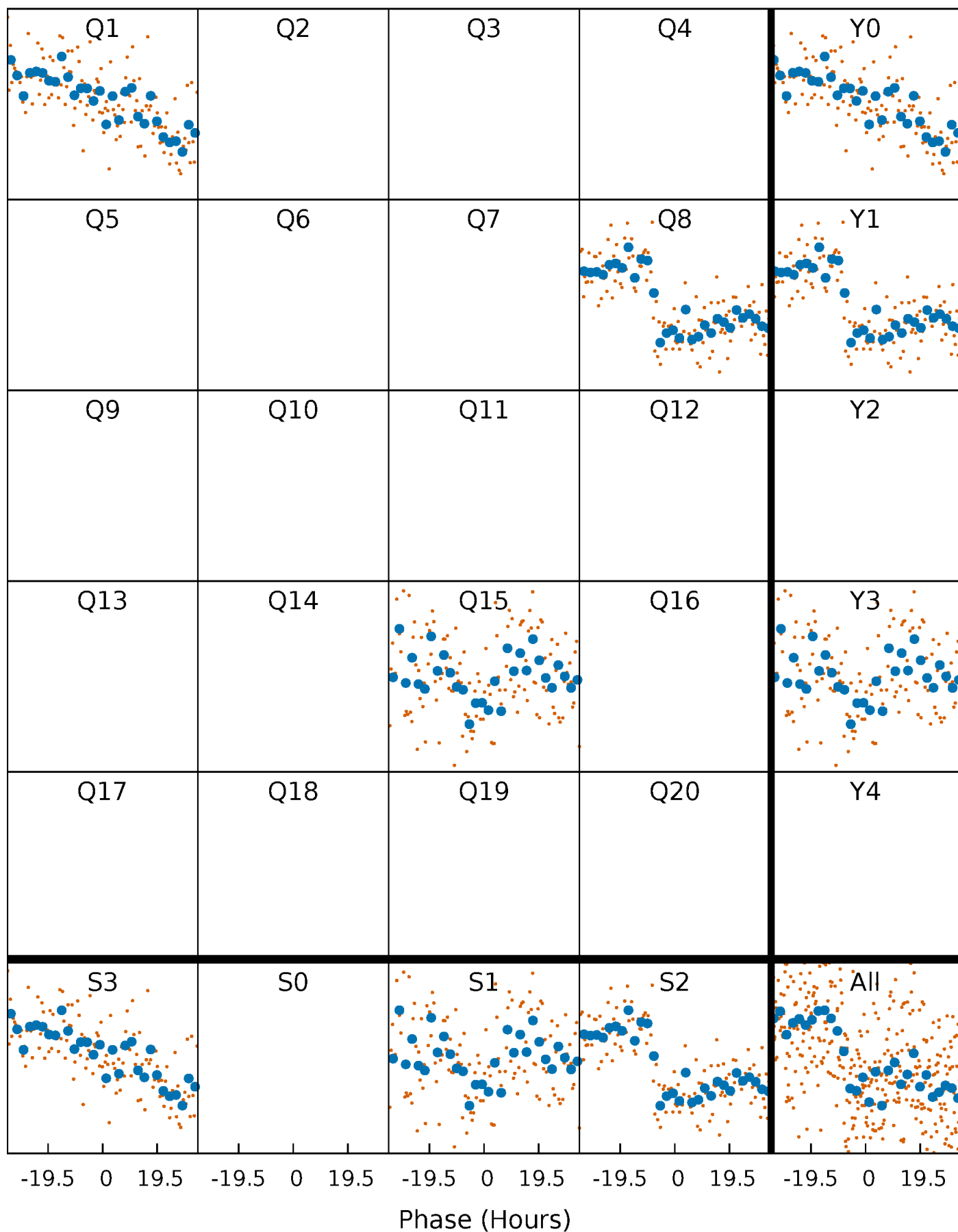


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

TCE 007025599-01 P=643.028441 Days  $T_0=153.380011$  (BKJD)





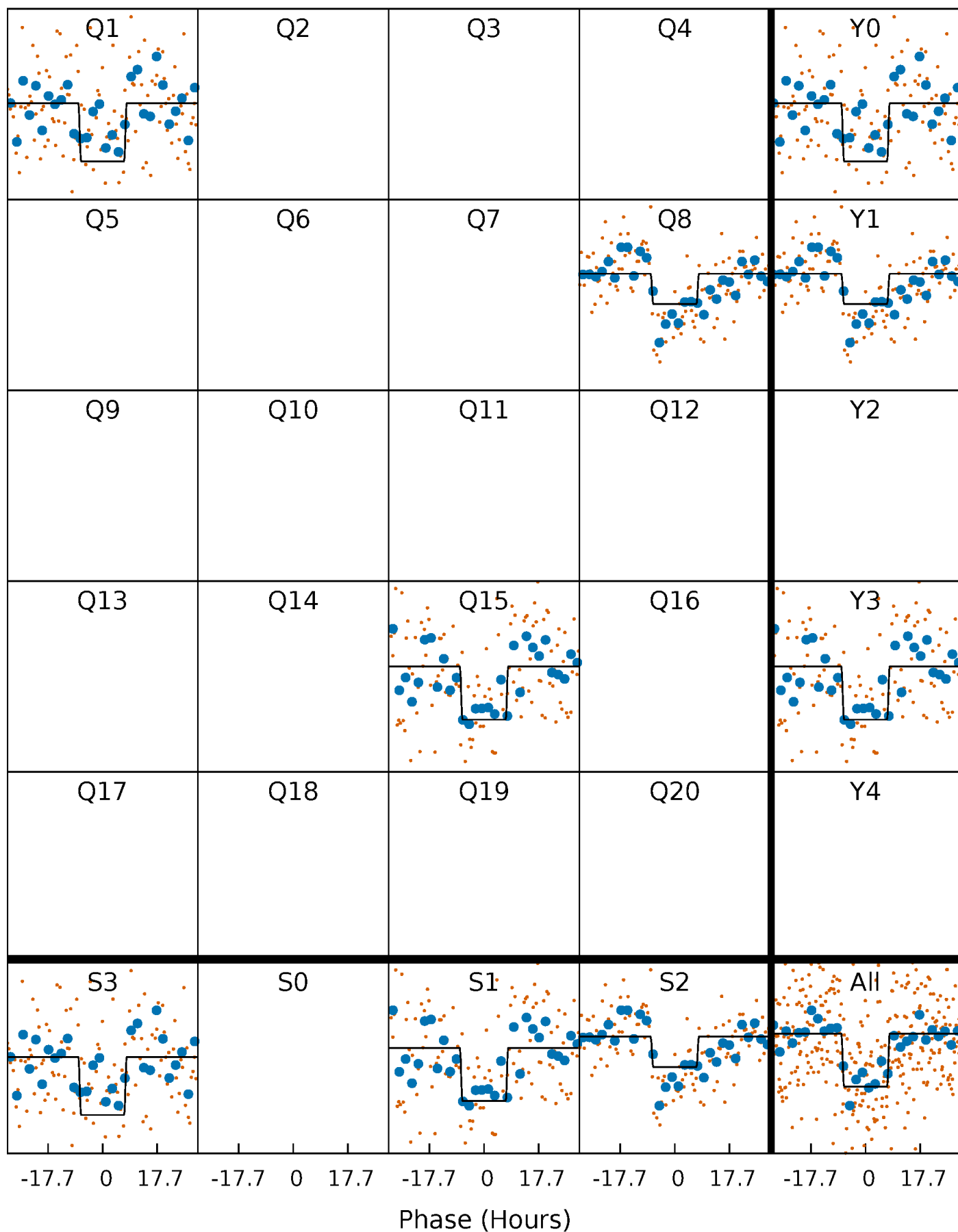
# DV Quarter-Phased Transit Curves

TCE 007025599-01 P=643.028441 Days  $T_0=153.380011$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

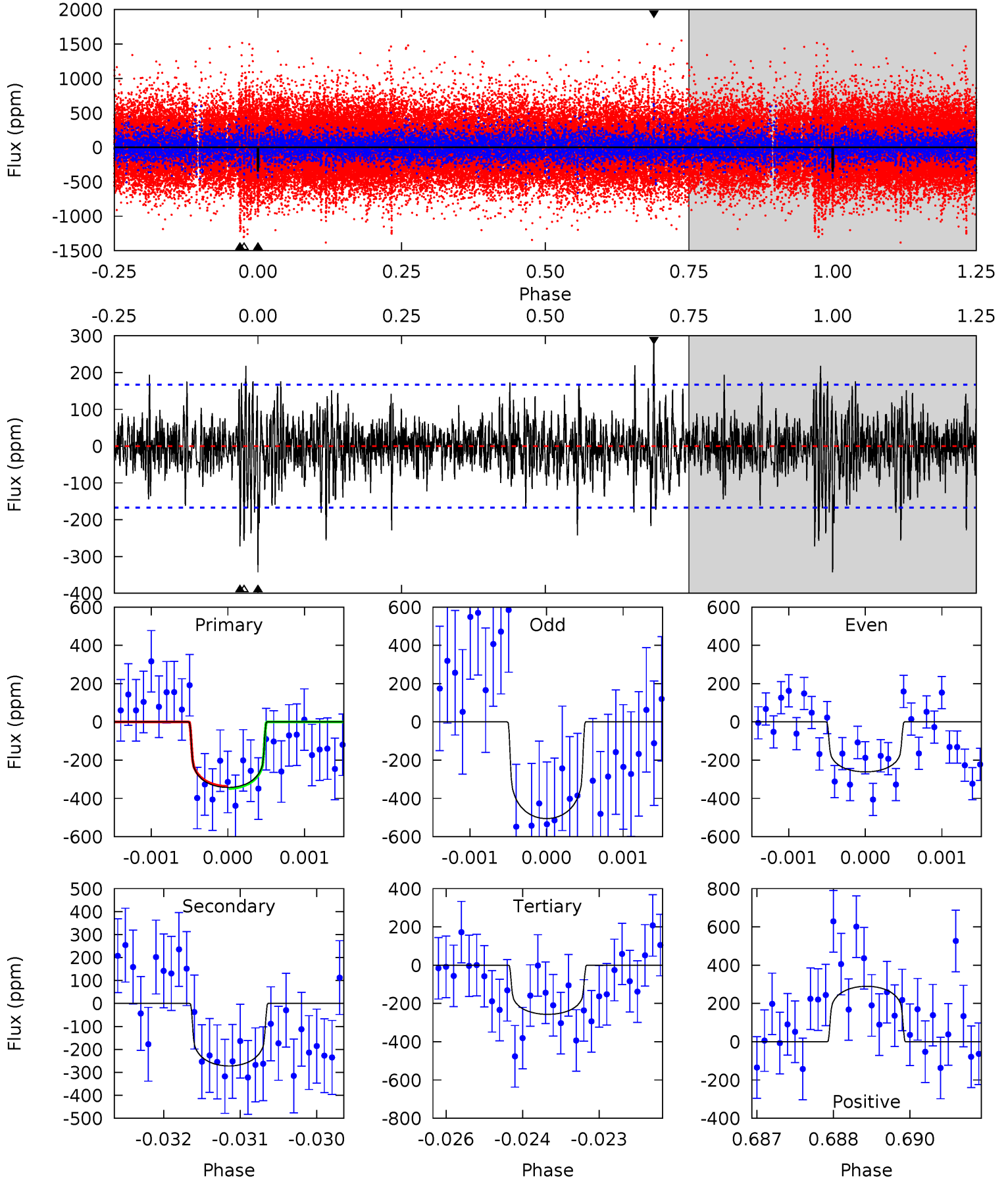
TCE 007025599-01 P=643.037322 Days  $T_0=153.359479$  (BKJD)



# DV Model-Shift Uniqueness Test

007025599-01, P = 643.028441 Days, E = 153.380011 Days

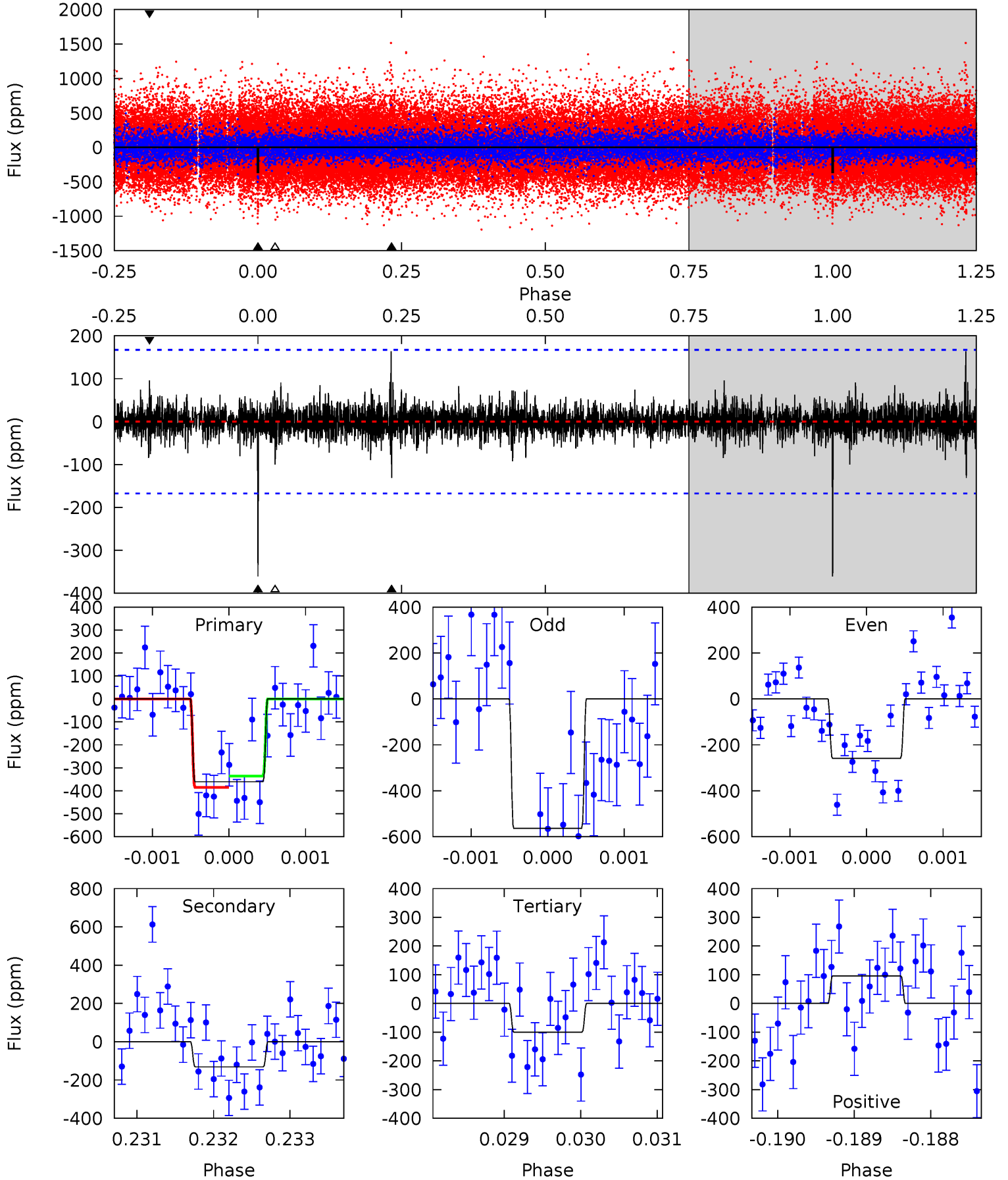
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	8.85	8.35	9.42	5.43	3.26	1.96	2.79	1.72	0.49	-0.57	3.72	1.01	0.46	0.17



# Alt Model-Shift Uniqueness Test

007025599-01,  $P = 643.037322$  Days,  $E = 153.359479$  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
11.7	4.27	3.25	3.12	5.45	3.29	0.74	8.48	8.61	1.02	1.15	4.64	1.13	0.31	0.80



### Stellar Parameters For KIC 007025599

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$5941^{+159}_{-177}$	$4.545^{+0.046}_{-0.173}$	$-0.560^{+0.300}_{-0.300}$	$0.820^{+0.204}_{-0.073}$	$0.859^{+0.088}_{-0.079}$	$2.199^{+0.504}_{-1.014}$
	+3%/-3%	+1%/-4%	+54%/-54%	+25%/-9%	+10%/-9%	+23%/-46%
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 007025599-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-272 \pm 31$	$1.94^{+0.67}_{-0.61}$	$285^{+17}_{-12}$	$5307^{+1113}_{-614}$	$76547^{+89884}_{-33956}$
Alt.	$-131 \pm 31$	$1.80^{+0.70}_{-0.62}$	$286^{+18}_{-12}$	$4698^{+963}_{-556}$	$42019^{+55627}_{-20953}$

$T_{max}$  = 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

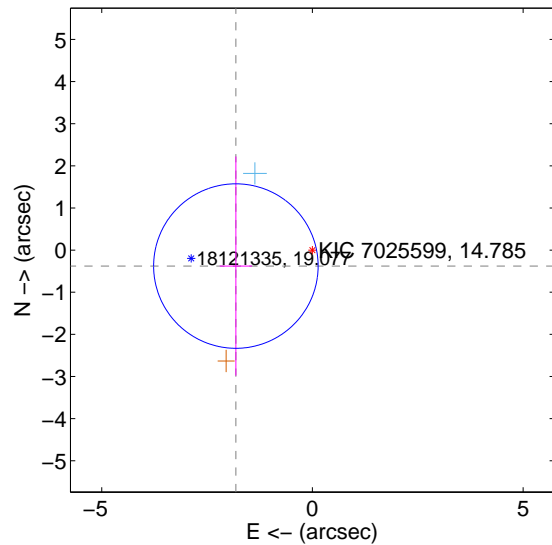
Supplemental centroid analysis for 007025599-01. Kepler magnitude: 14.79. Transit SNR 9.10

There are 1 quarters with good PRF difference image offsets

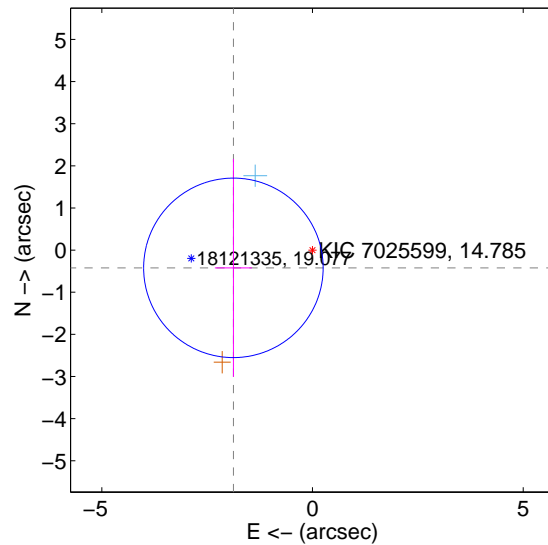
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.856 \pm 0.651$	2.85	$1.817 \pm 0.384$	$-0.379 \pm 2.602$
PRF-fit source offset from KIC position	$1.925 \pm 0.710$	2.71	$1.878 \pm 0.439$	$-0.421 \pm 2.587$
photometric centroid source offset	$0.92 \pm 1.29$	0.71	$0.68 \pm 1.24$	$-0.62 \pm 1.35$

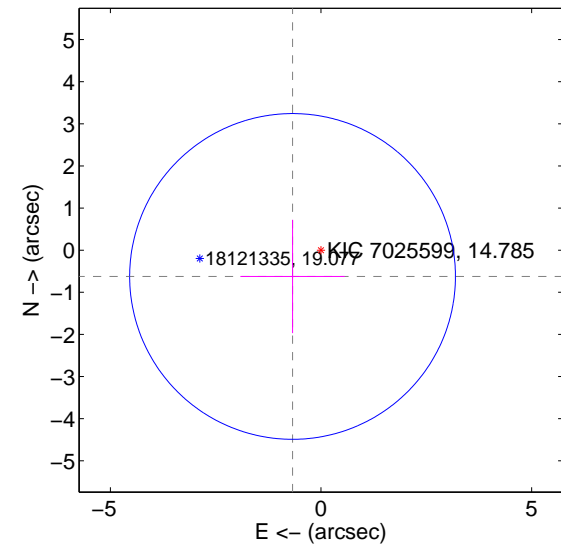
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



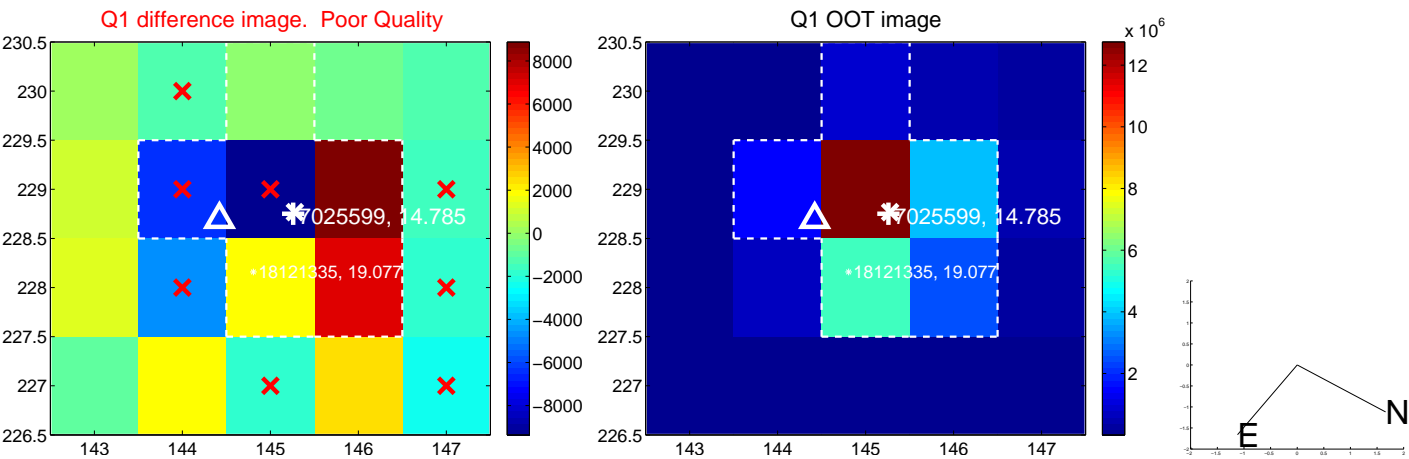
offset from photometric centroids



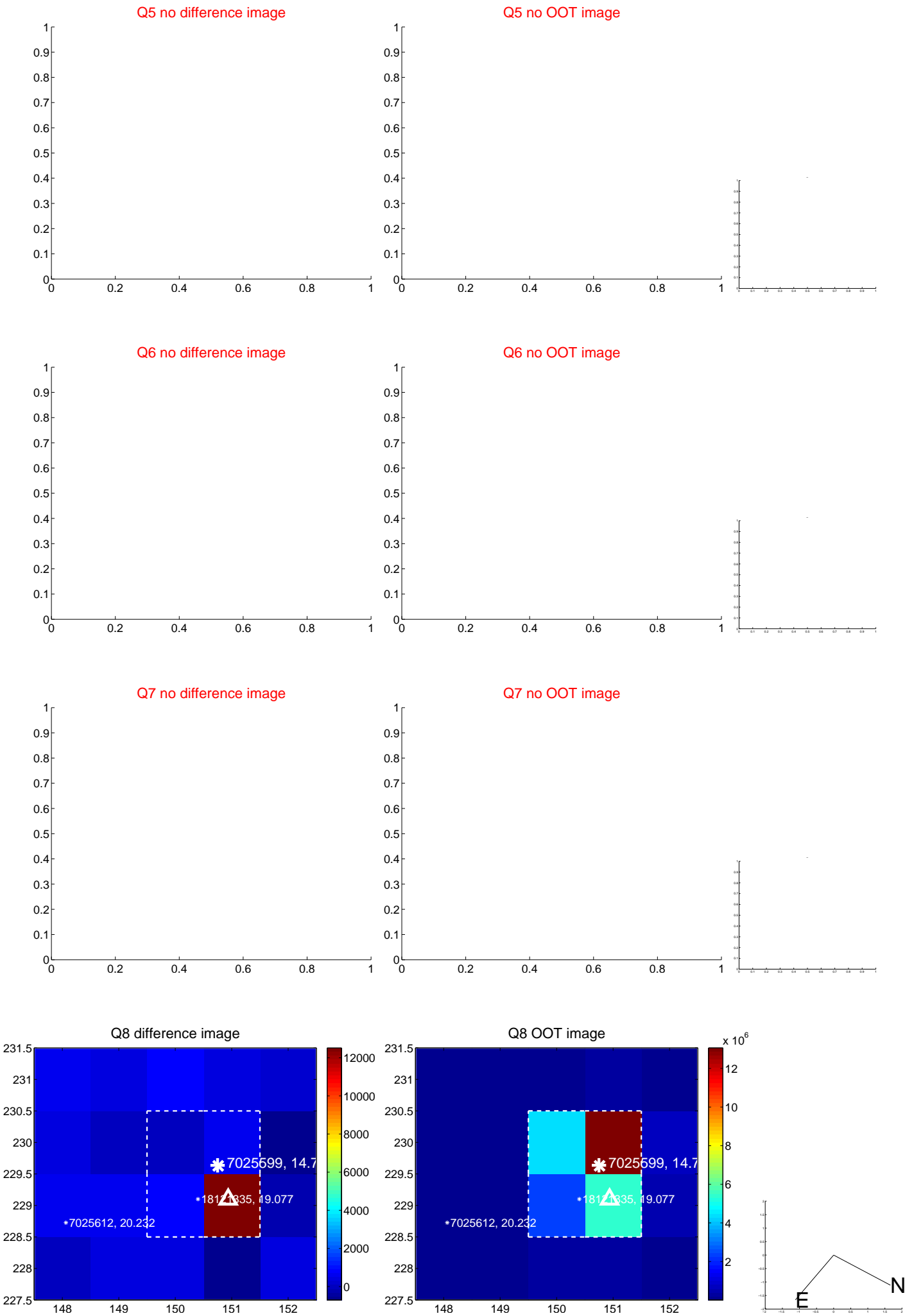
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



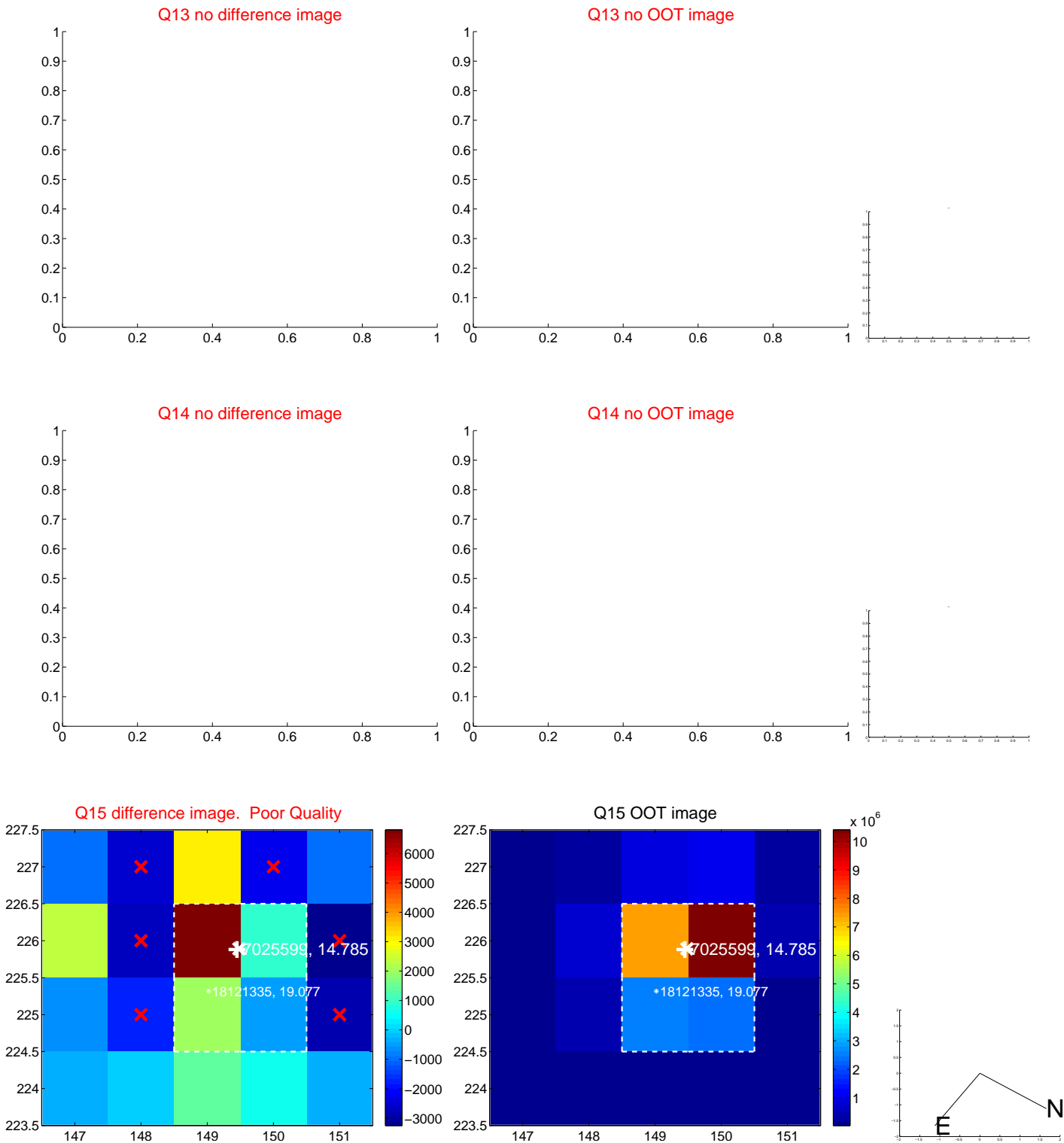
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



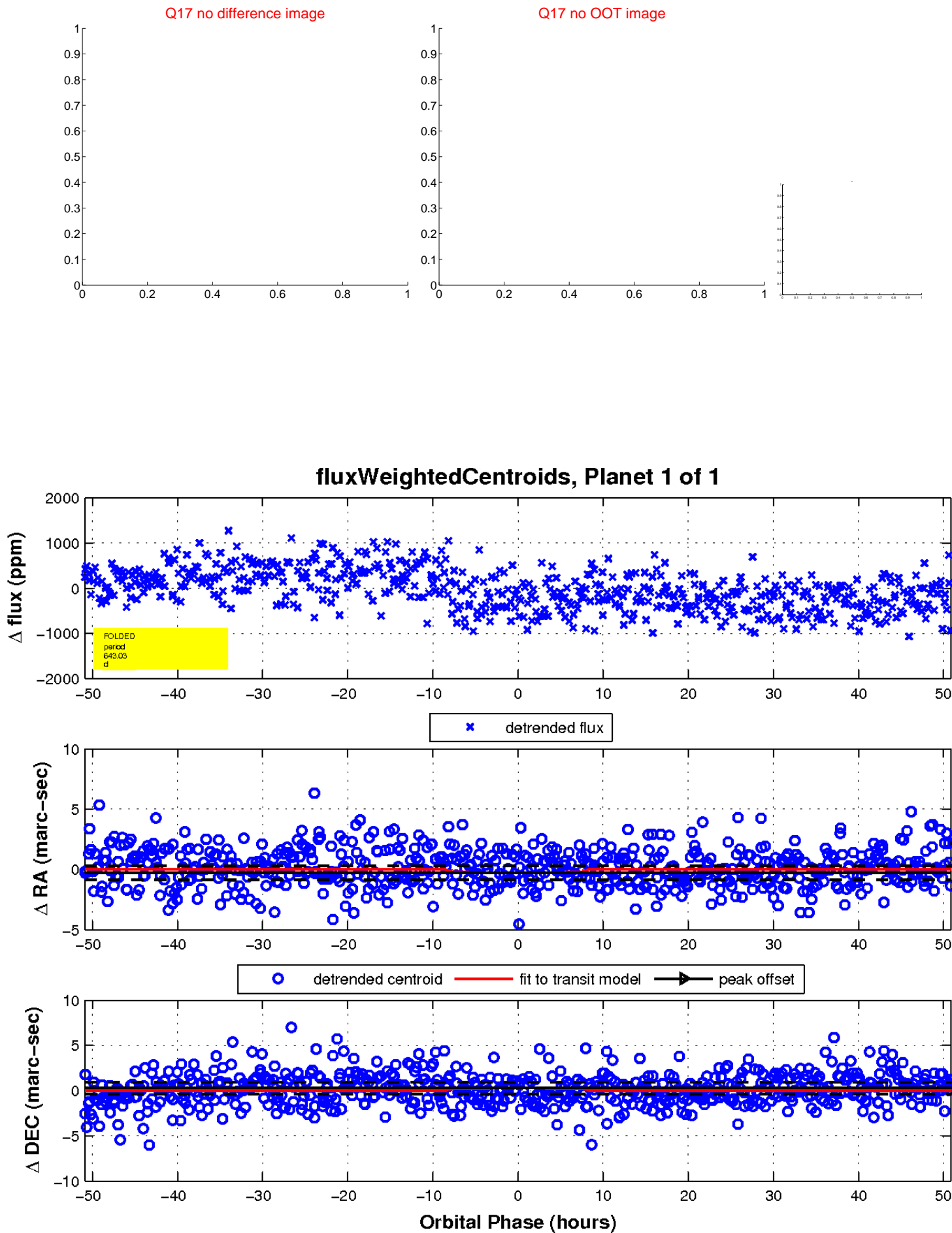
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

