

# KIC 011607037

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011607037-01	OBS	No	458.729756	165.691981	681.5	17.207	10.1	6.9	0.90	5841	2.87	0.62

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011607037-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_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.

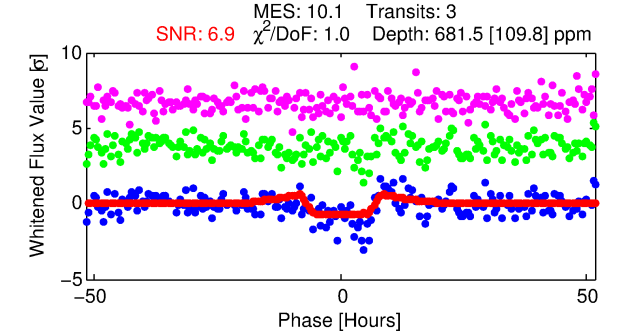
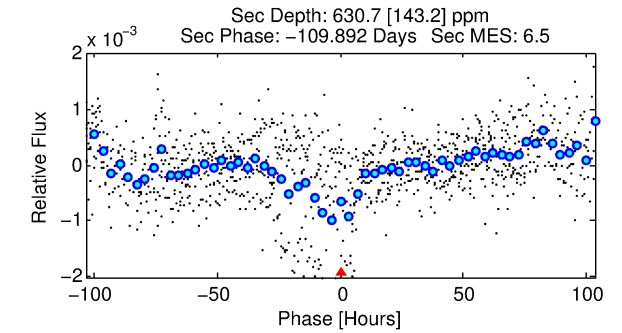
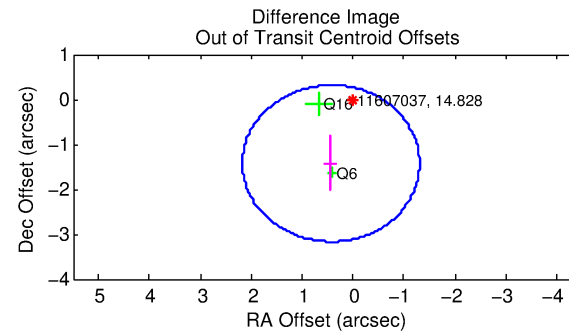
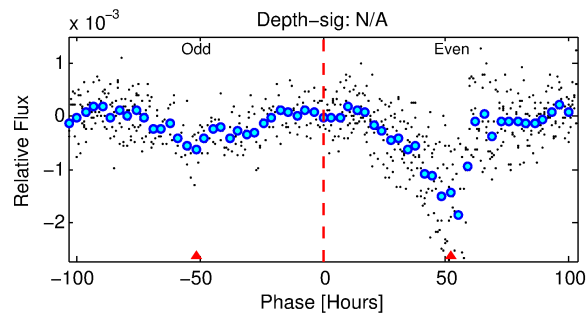
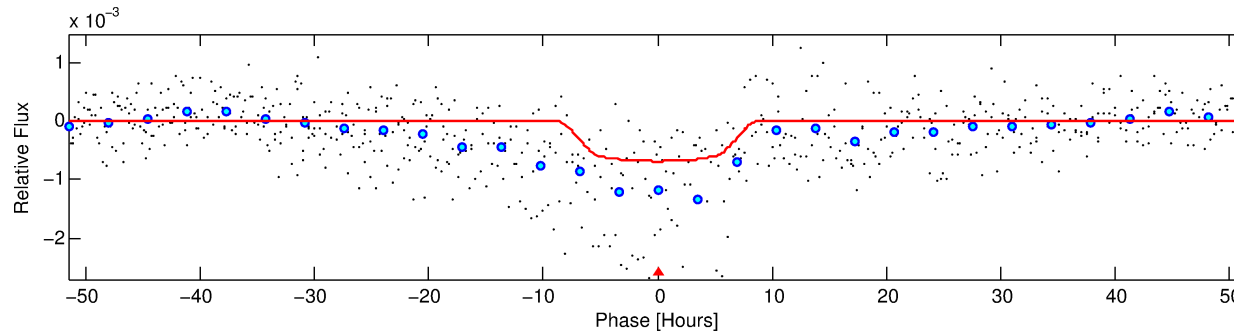
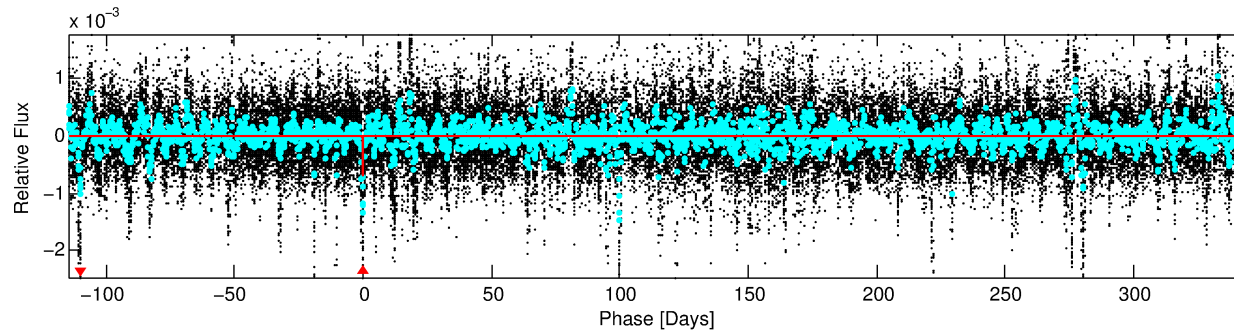
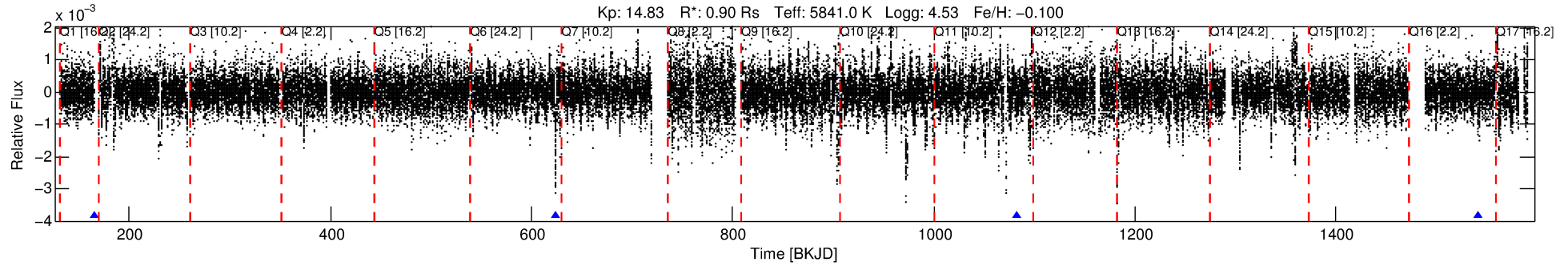
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011607037-01

No Significant Match Found

# DV One-Page Summary

KIC: 11607037 Candidate: 1 of 1 Period: 458.730 d



## DV Fit Results:

Period = 458.72976 [0.02121] d  
Epoch = 165.6920 [0.0453] BKJD  
Rp/R\* = 0.0294 [0.0032]  
a/R\* = 89.15 [25.57]  
b = 0.93 [0.04]  
Seff = 0.62 [0.24]  
Teq = 227 [22] K  
Rp = 2.87 [0.89] Re  
a = 1.1578 [0.2883] AU  
Ag = 56385.43 [27266.85] [2.07σ]  
Teffp = 5398 [453] K [11.40σ]

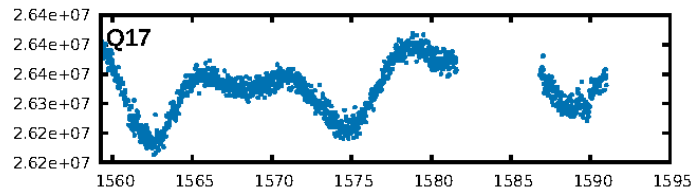
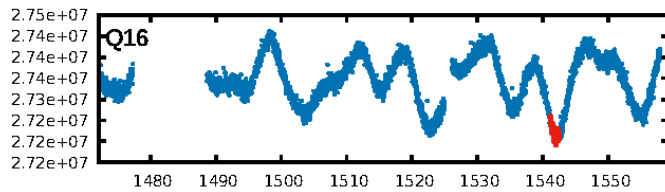
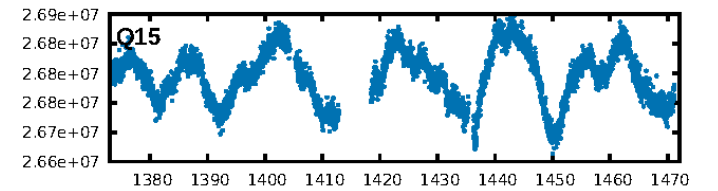
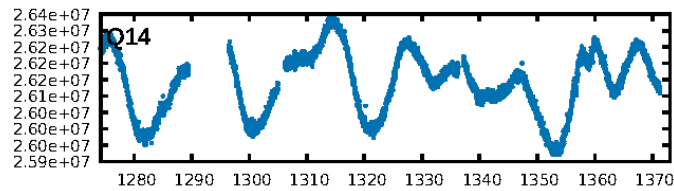
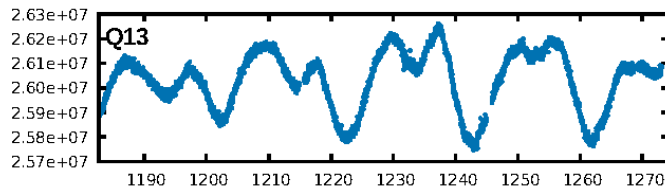
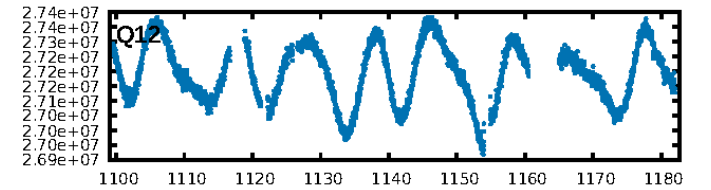
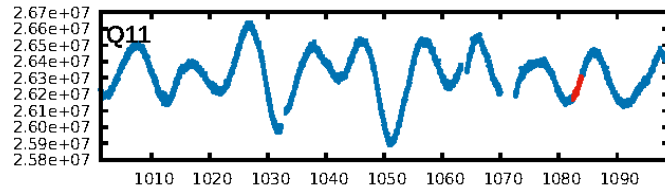
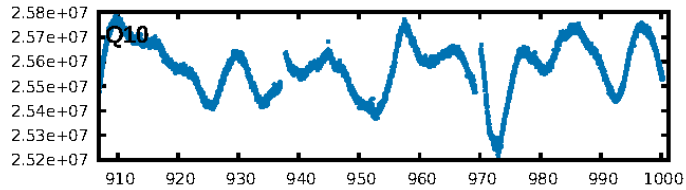
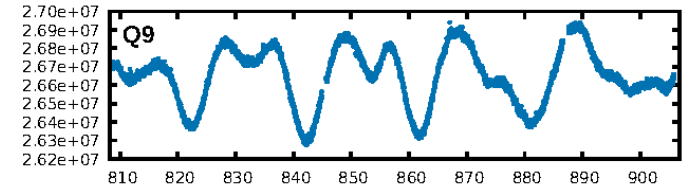
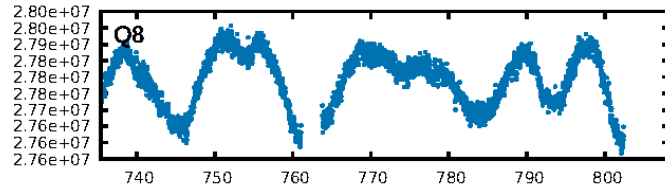
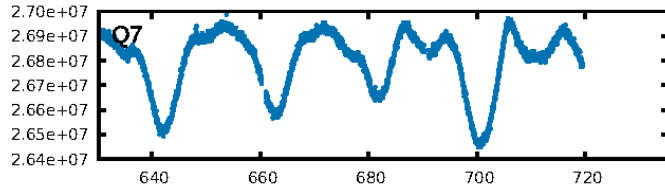
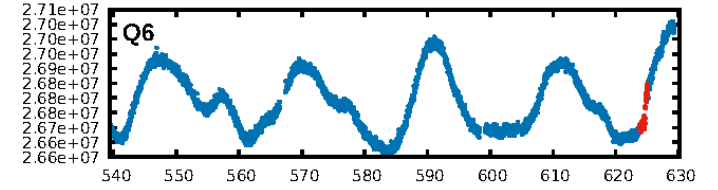
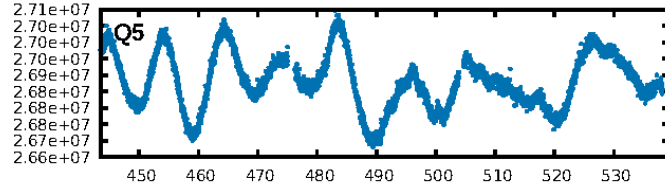
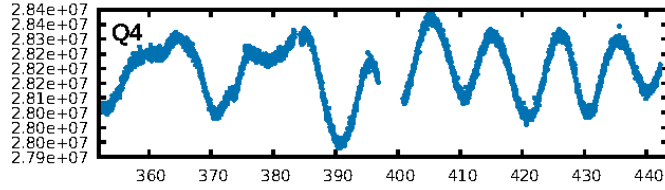
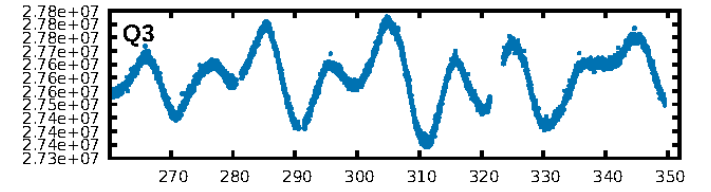
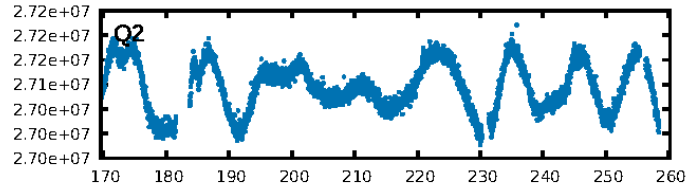
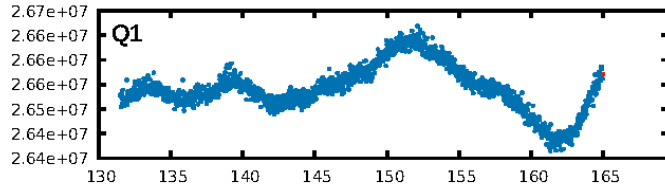
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 94.9%  
Bootstrap-pfa: 9.65e-10  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -0.7667  
Centroid-sig: 3.5%  
Centroid-so: 2.004 arcsec [1.59σ]  
OotOffset-rm: 1.492 arcsec [2.57σ]  
OotOffset-st: 1/0/1/0 [2]  
KicOffset-rm: 1.483 arcsec [2.70σ]  
KicOffset-st: 1/0/1/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [2/2]

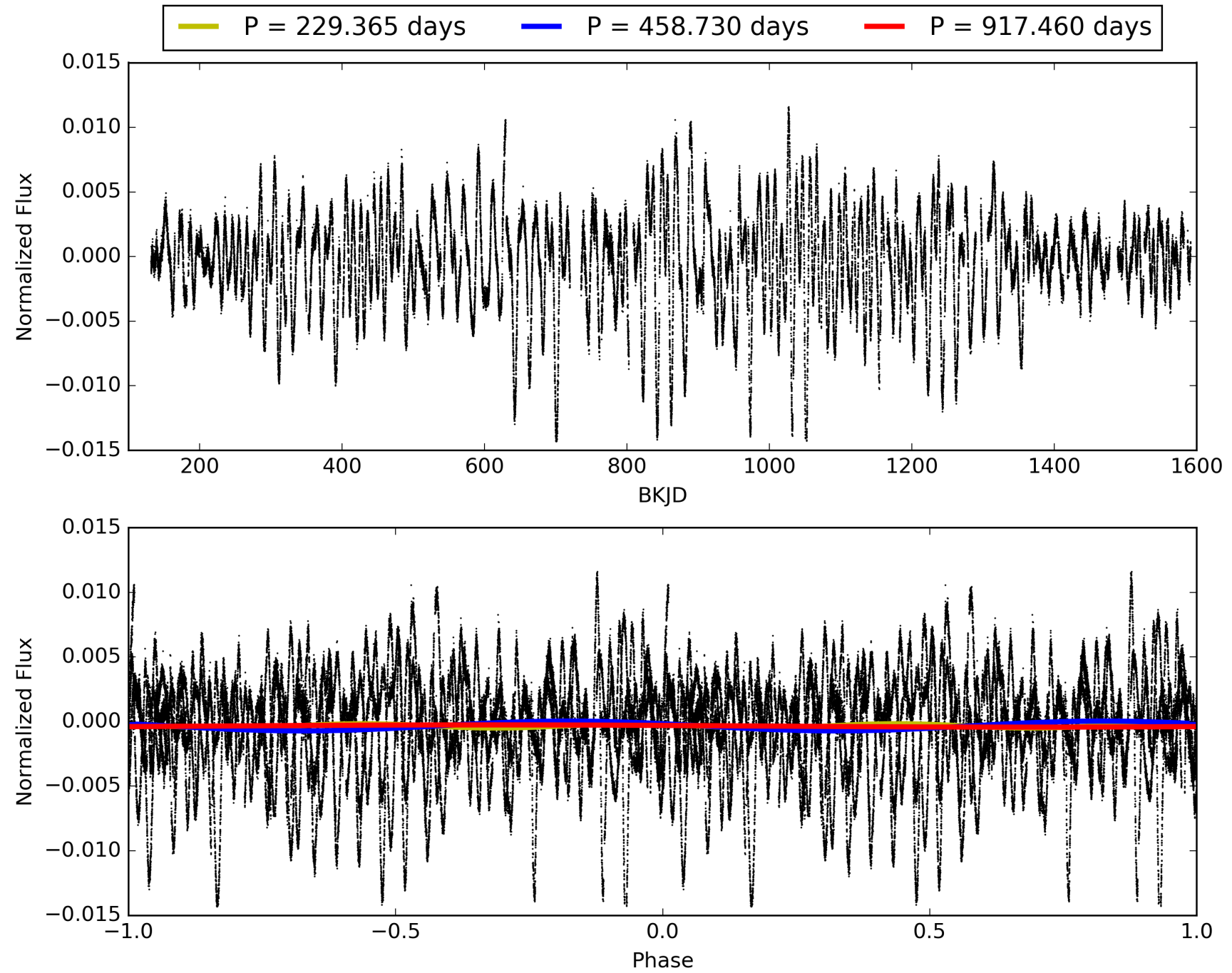
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:03:32 Z

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

# TCE 011607037-01, PDC Light Curves

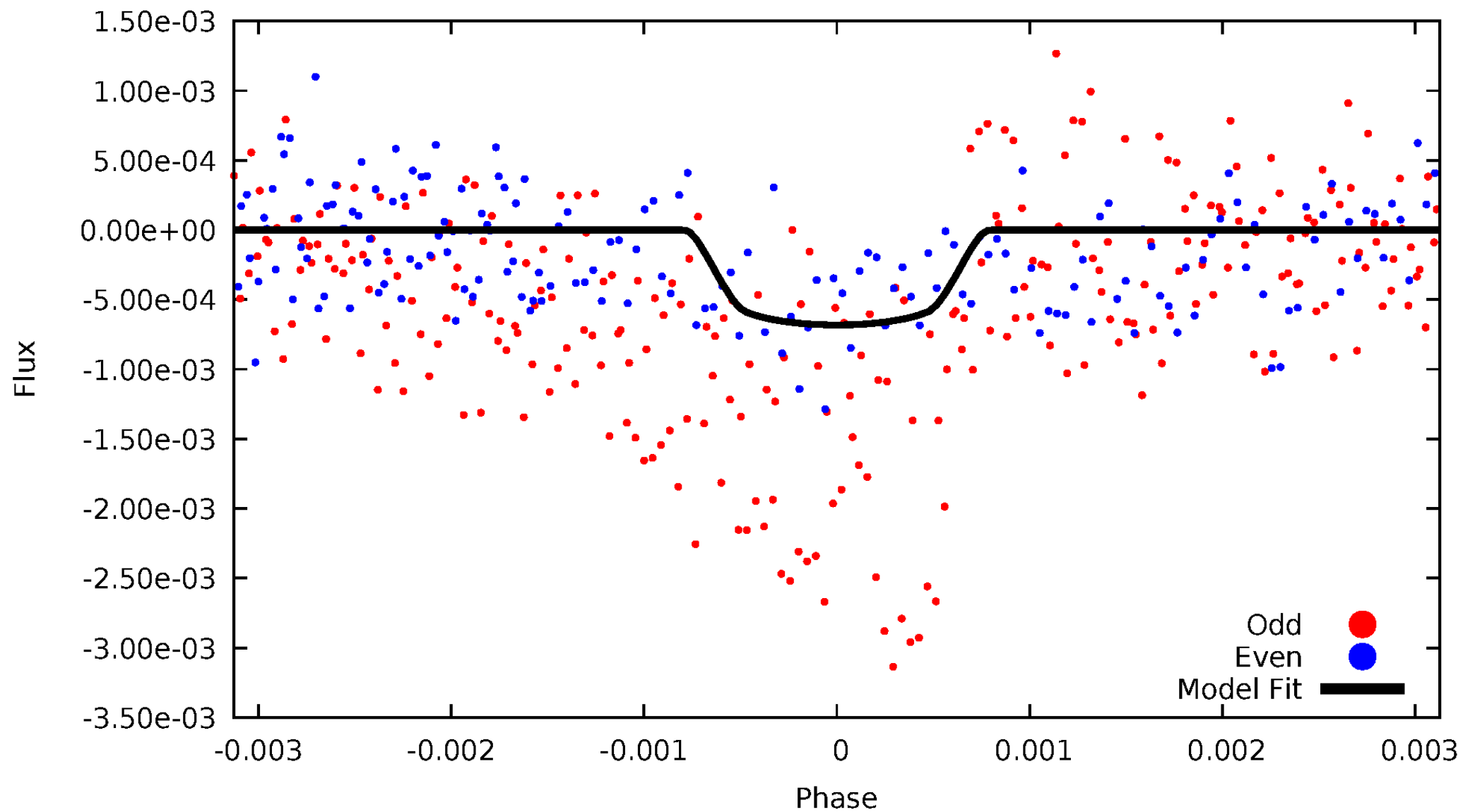


# TCE 011607037-01



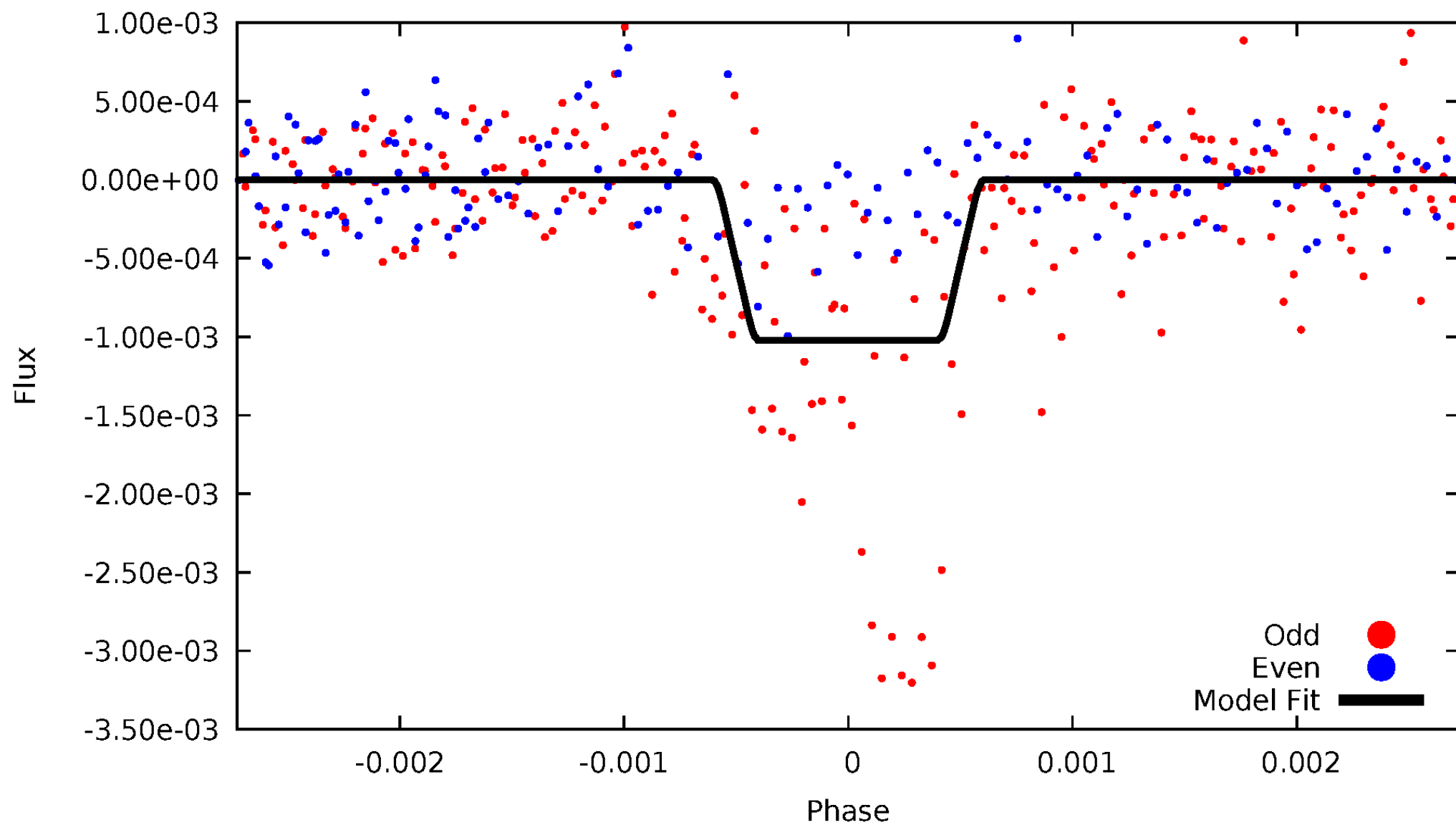
# DV Odd/Even

TCE 011607037-01



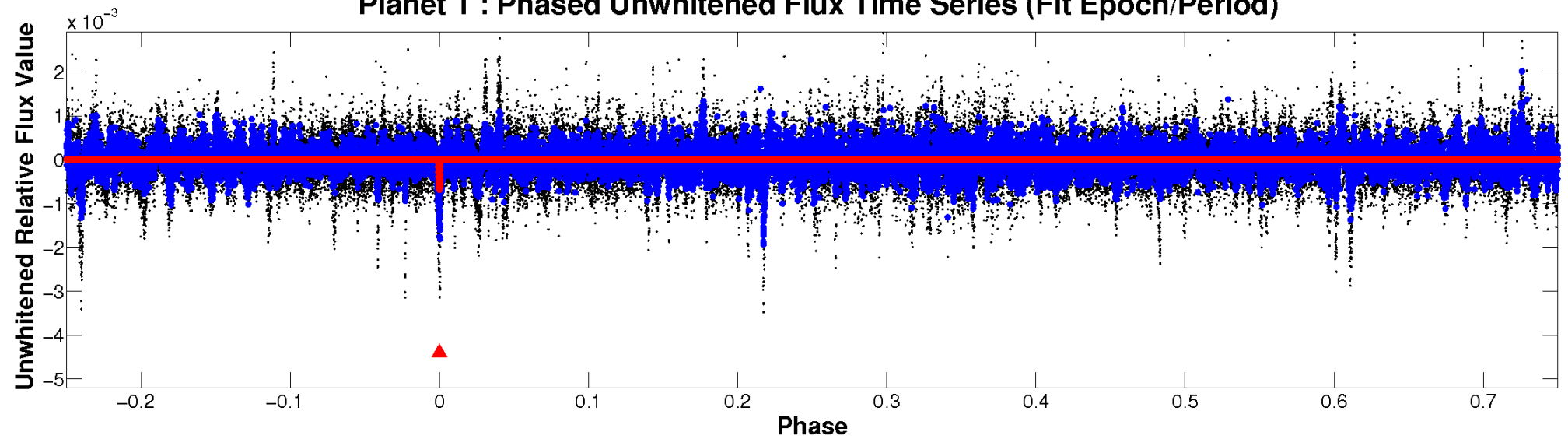
# ALT Odd/Even

TCE 011607037-01

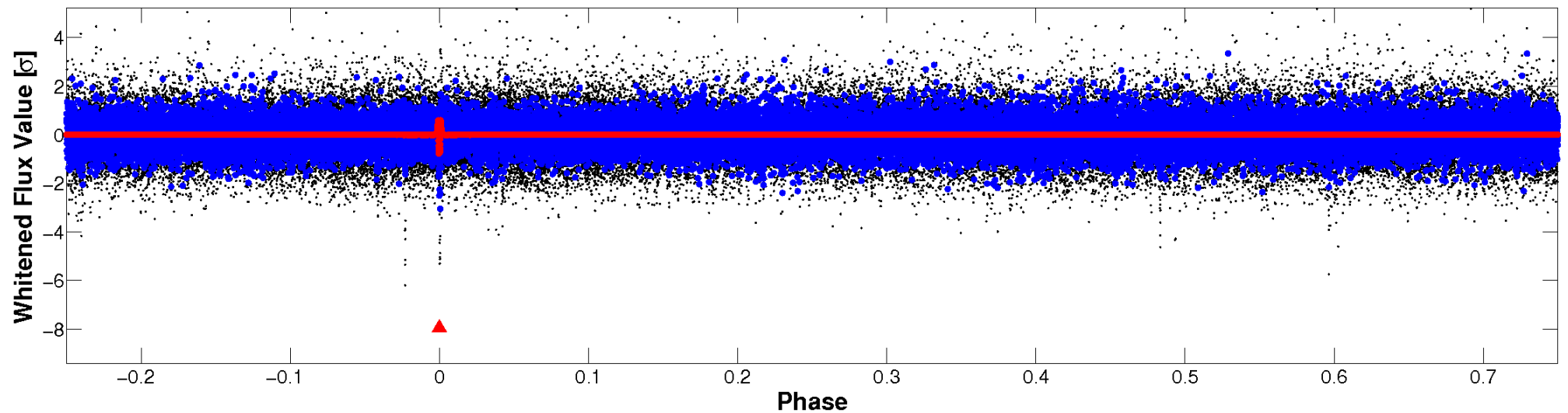


# Non-Whitened Vs. Whitened Light Curve

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

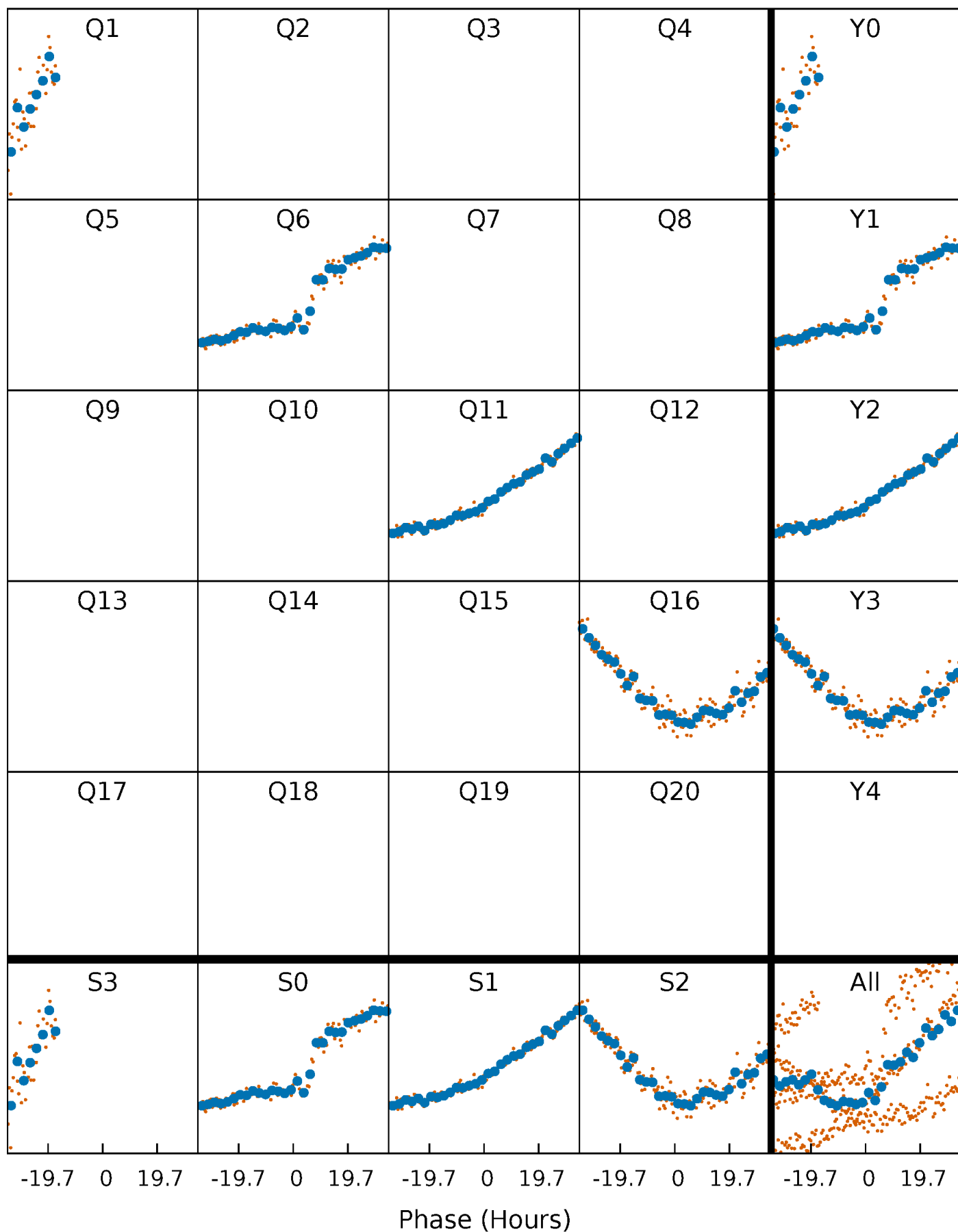


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

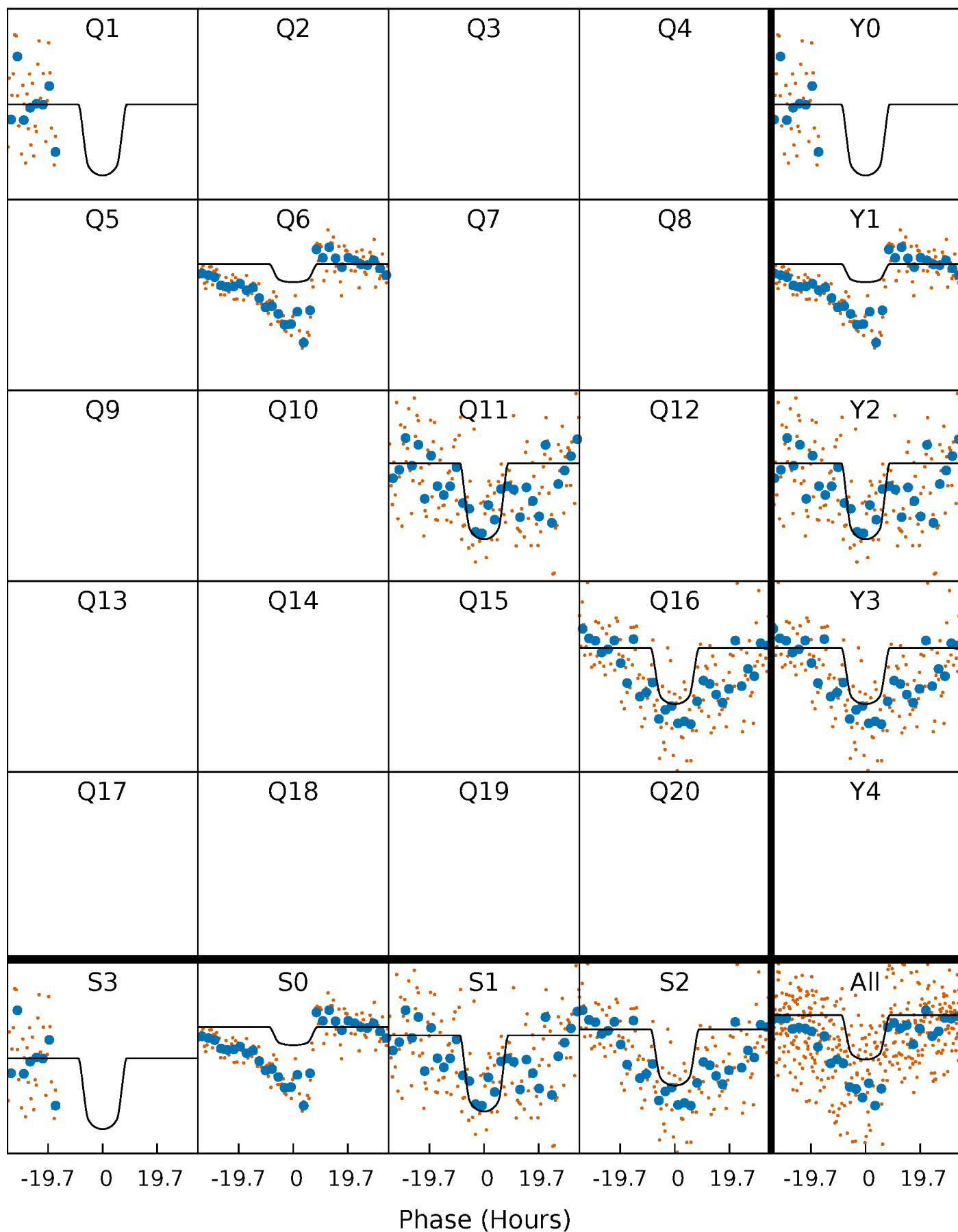
TCE 011607037-01 P=458.729756 Days  $T_0=165.691980$  (BKJD)





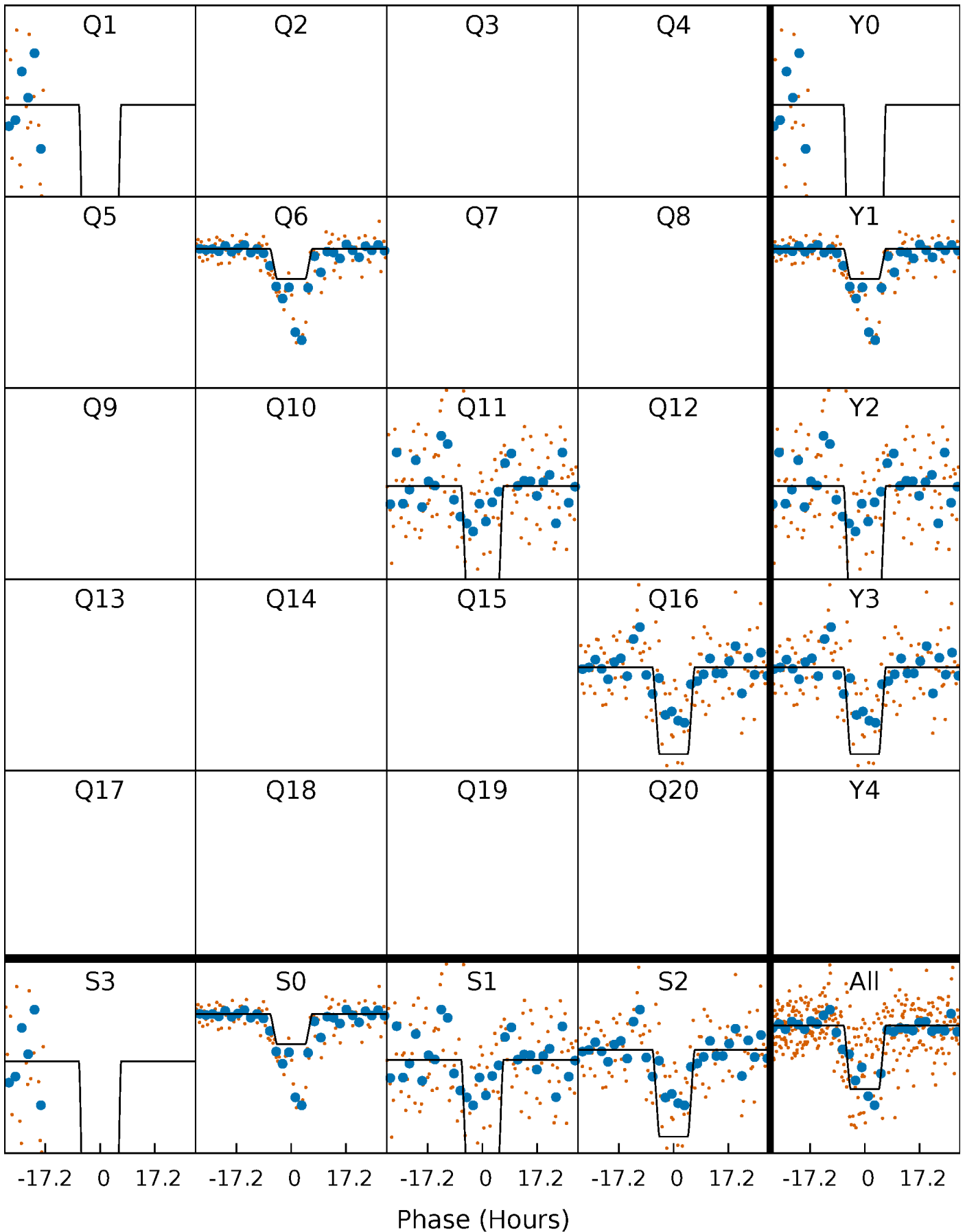
# DV Quarter-Phased Transit Curves

TCE 011607037-01 P=458.729756 Days  $T_0=165.691980$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

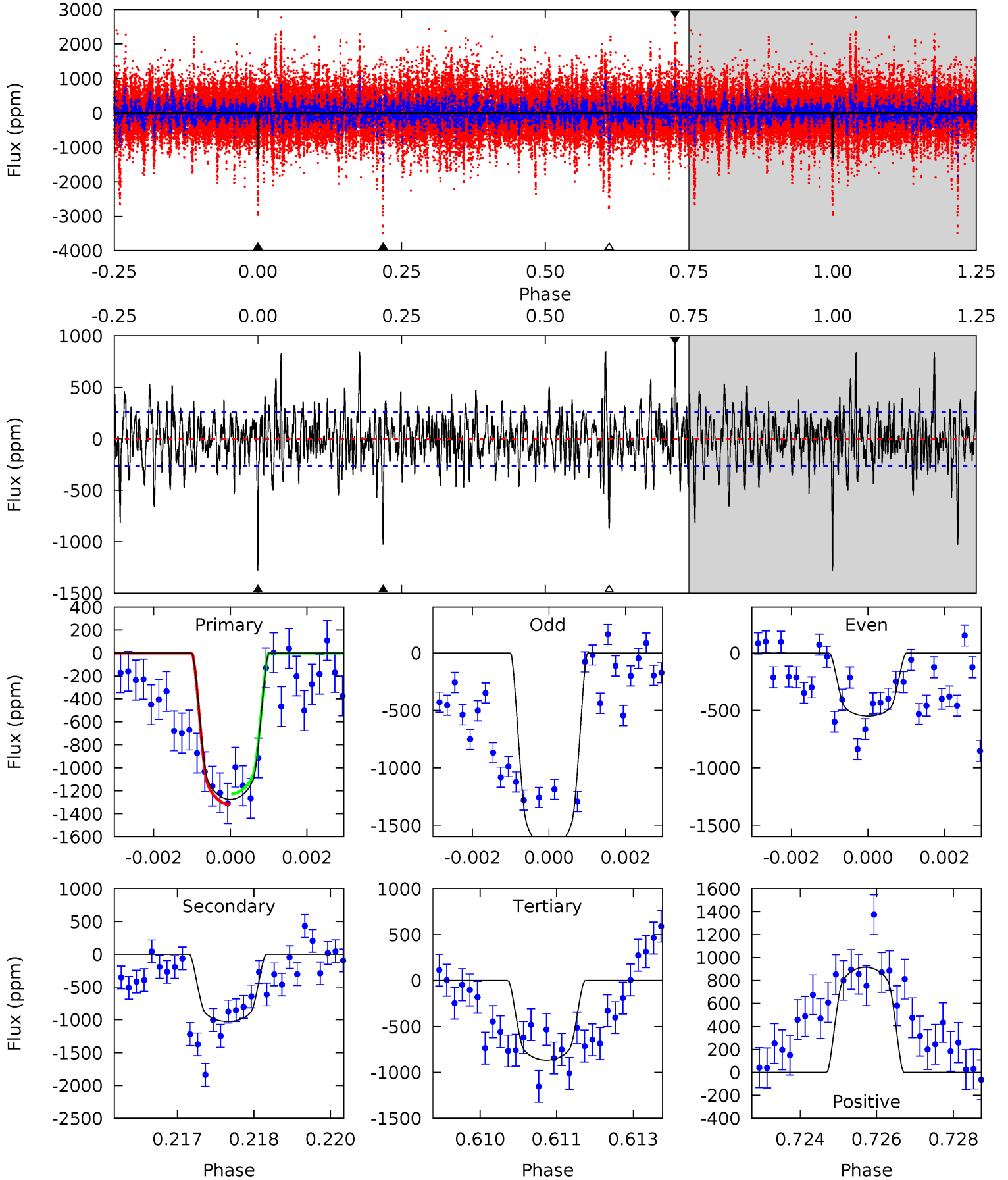
TCE 011607037-01 P=458.760667 Days  $T_0=165.726450$  (BKJD)



# DV Model-Shift Uniqueness Test

011607037-01, P = 458.729756 Days, E = 165.691980 Days

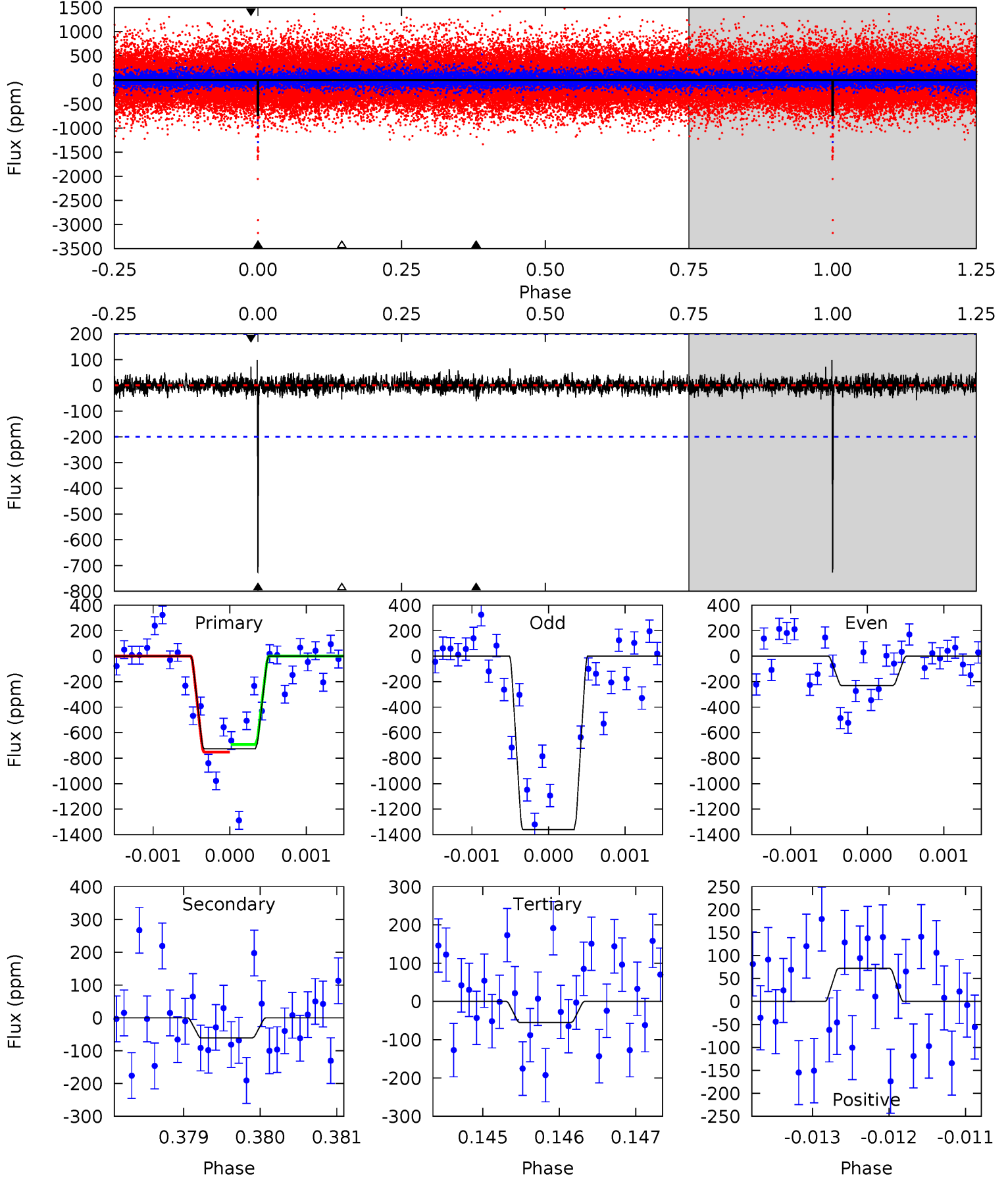
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.1	21.0	17.7	18.7	5.37	3.16	4.22	8.35	7.37	3.26	2.28	11.1	1.40	0.42	0.93



# Alt Model-Shift Uniqueness Test

011607037-01, P = 458.760667 Days, E = 165.726450 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
19.8	1.66	1.50	1.96	5.42	3.24	0.43	18.3	17.8	0.17	-0.29	15.2	1.83	0.12	0.80



### Stellar Parameters For KIC 011607037

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5841^{+140}_{-175}$	$4.527^{+0.048}_{-0.204}$	$-0.100^{+0.300}_{-0.300}$	$0.895^{+0.260}_{-0.087}$	$0.984^{+0.116}_{-0.127}$	$1.932^{+0.389}_{-0.958}$
	+2%/-3%	+1%/-5%	+300%/-300%	+29%/-10%	+12%/-13%	+20%/-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 011607037-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1027 \pm 49$	$3.00^{+0.54}_{-0.43}$	$324^{+23}_{-15}$	$6074^{+437}_{-349}$	$81913^{+27922}_{-21327}$
Alt.	$-61 \pm 37$	$3.22^{+0.60}_{-0.40}$	$323^{+21}_{-15}$	$3382^{+320}_{-443}$	$3901^{+3147}_{-2414}$

$T_{max}$  = 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

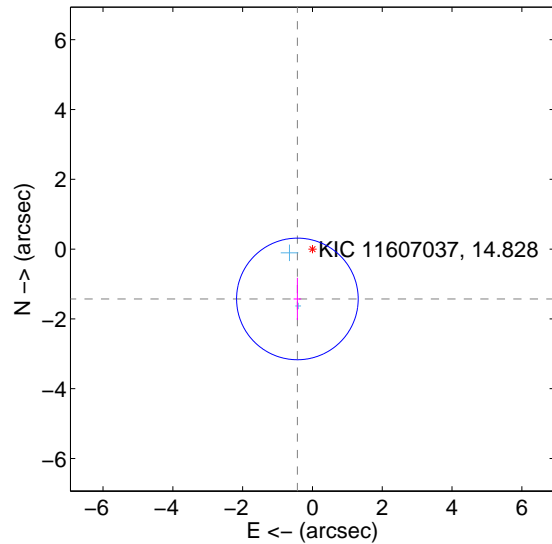
Supplemental centroid analysis for 011607037-01. Kepler magnitude: 14.83. Transit SNR 6.93

There are 2 quarters with good PRF difference image offsets

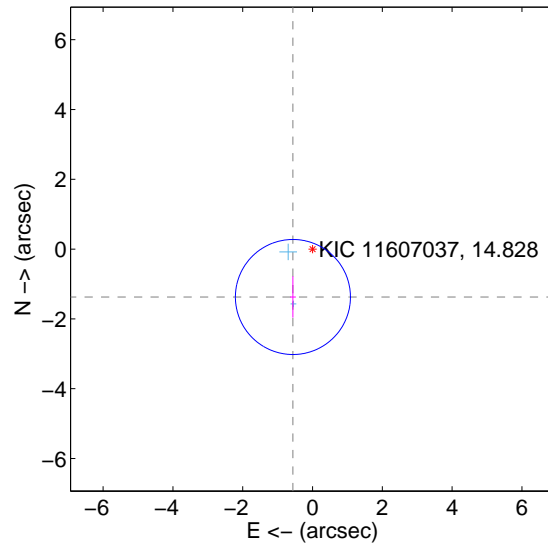
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.492 \pm 0.581$	2.57	$0.431 \pm 0.109$	$-1.428 \pm 0.606$
PRF-fit source offset from KIC position	$1.483 \pm 0.549$	2.70	$0.562 \pm 0.084$	$-1.373 \pm 0.593$
photometric centroid source offset	$2.00 \pm 1.26$	1.59	$0.92 \pm 1.30$	$-1.78 \pm 1.25$

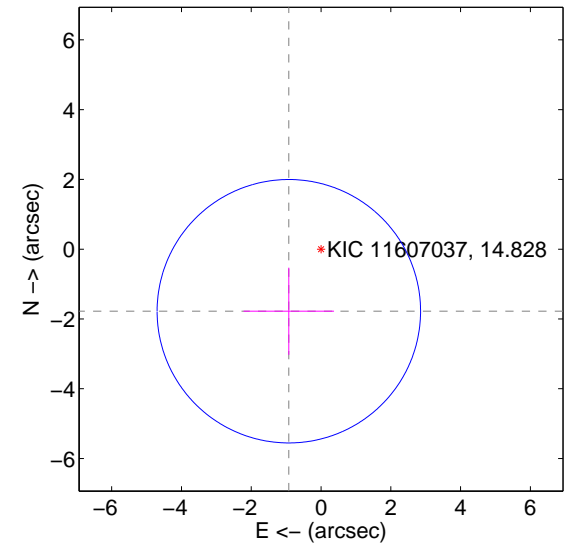
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

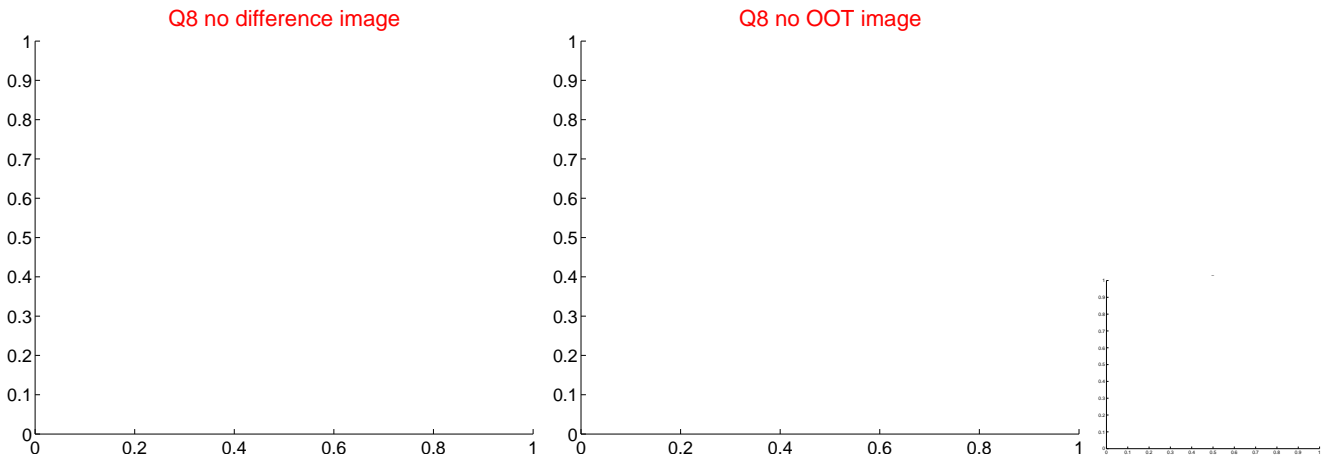
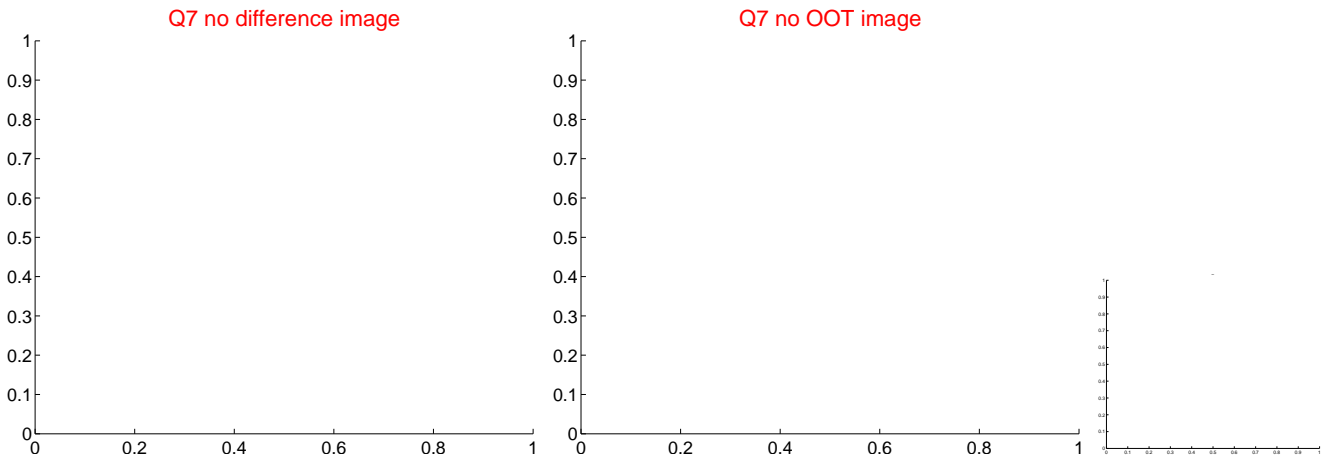
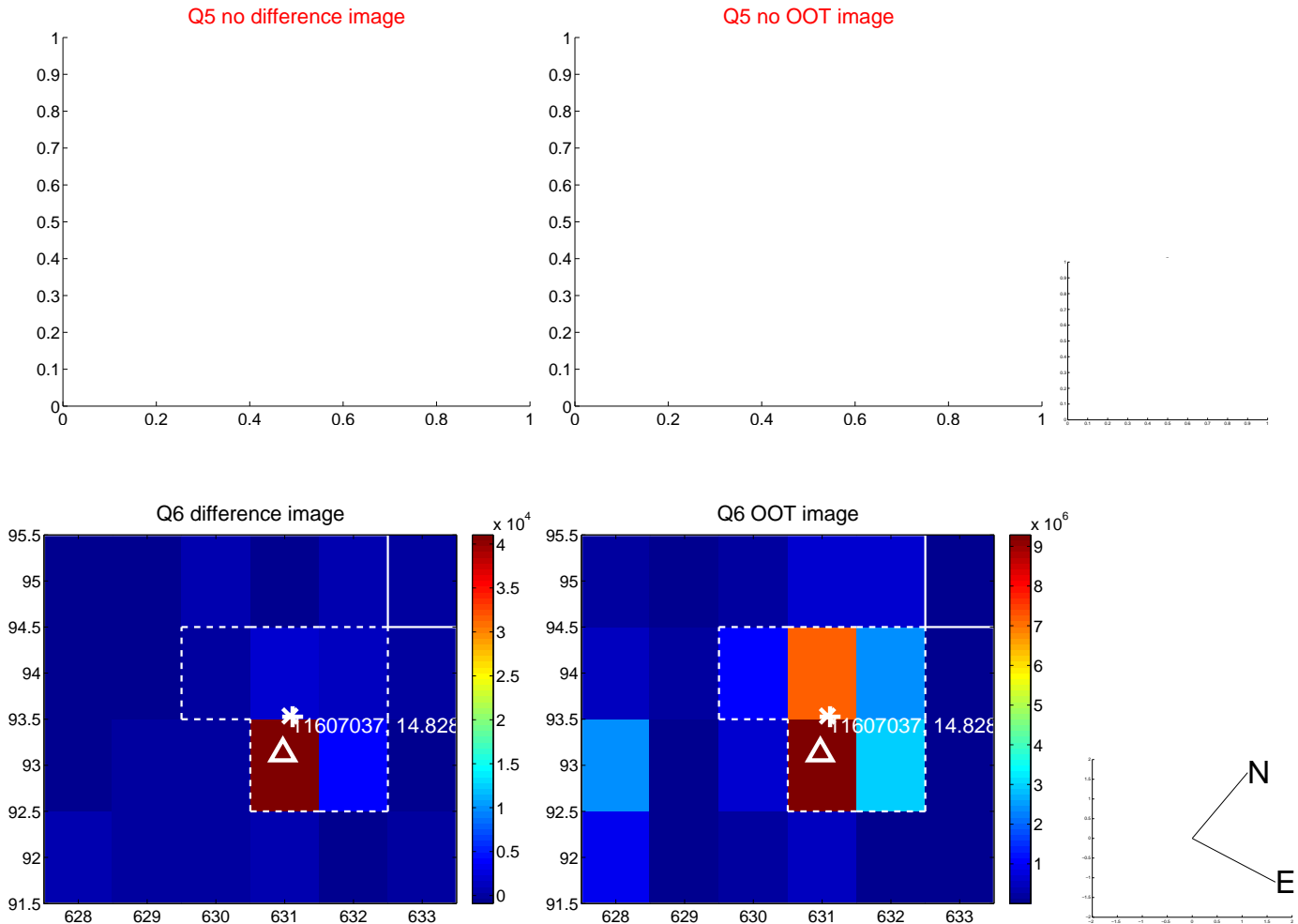


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

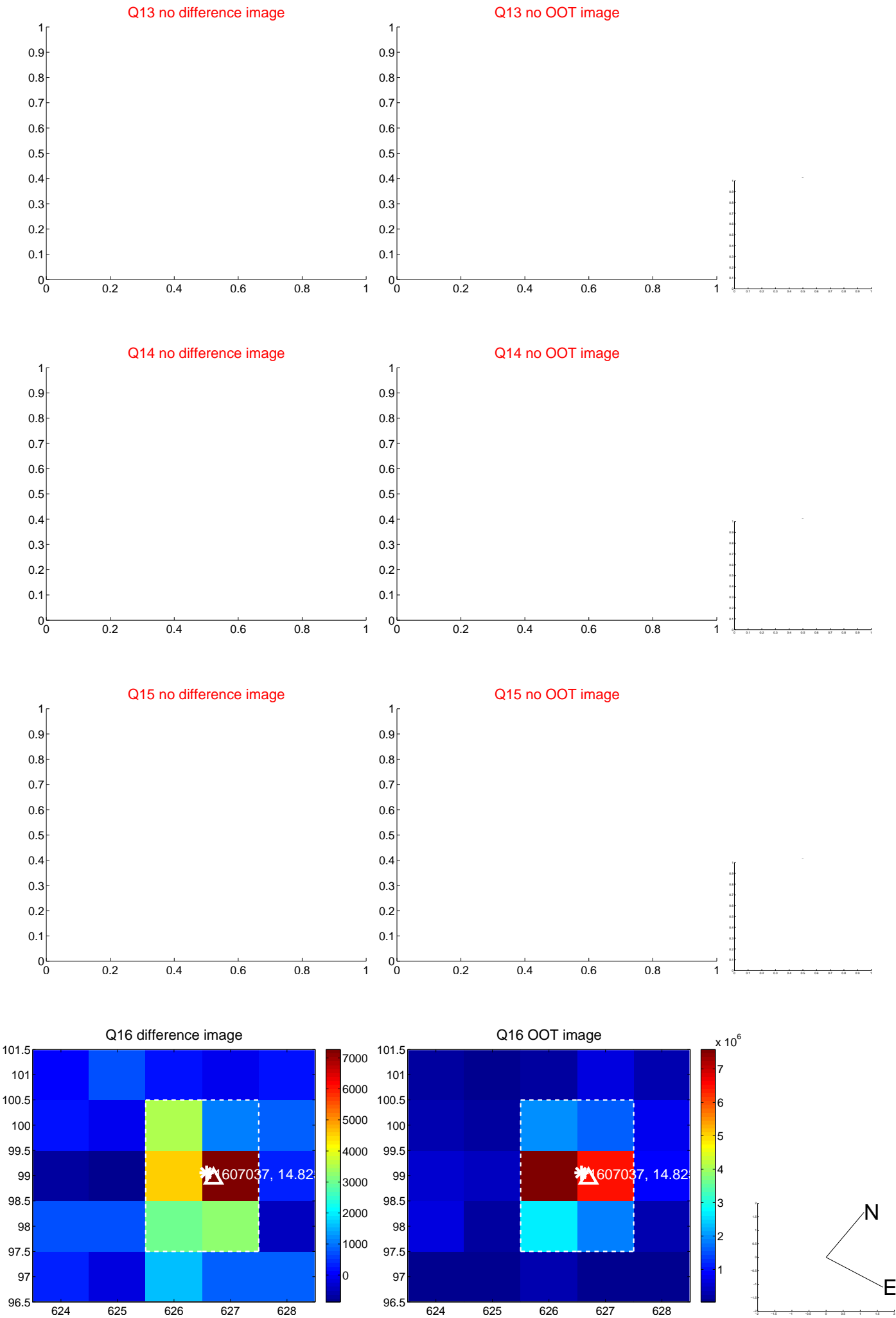




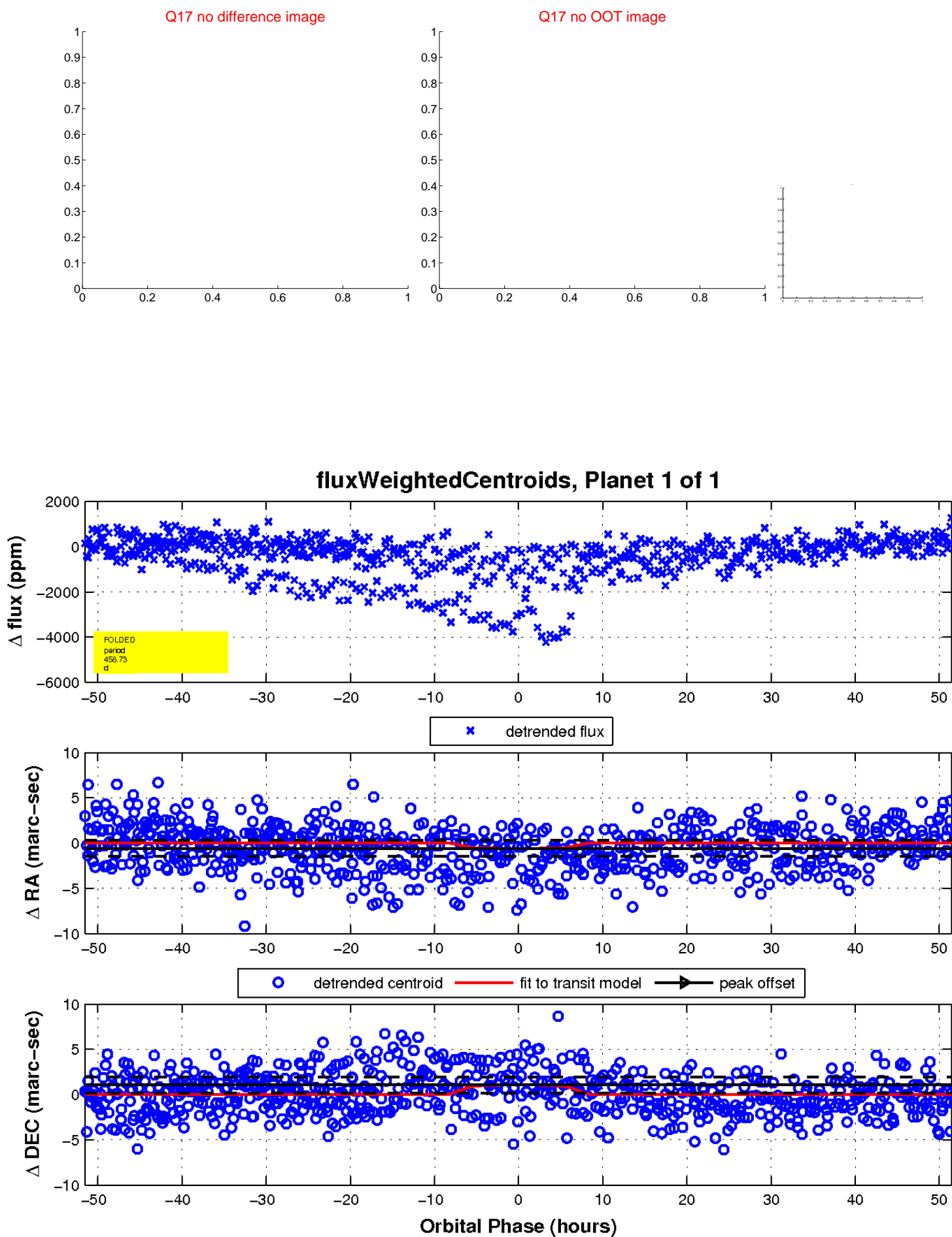
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: 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.



# UKIRT Image

Declination

