

# KIC 010462462

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010462462-01	OBS	8013.01	0.855816	132.145254	21409.6	10.270	32.0	94.2	0.43	3683	7.29	167.57

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010462462-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_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.

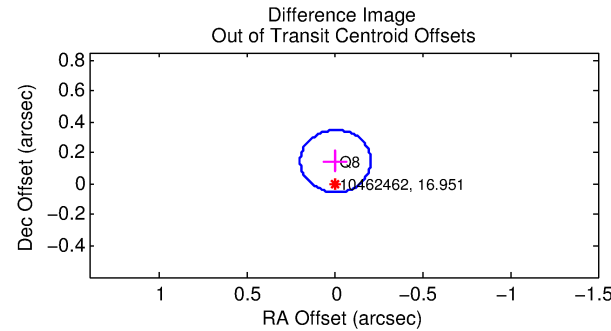
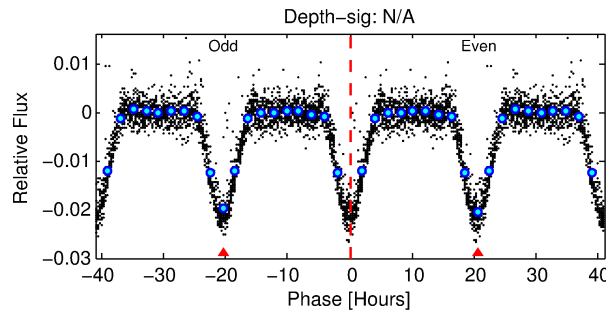
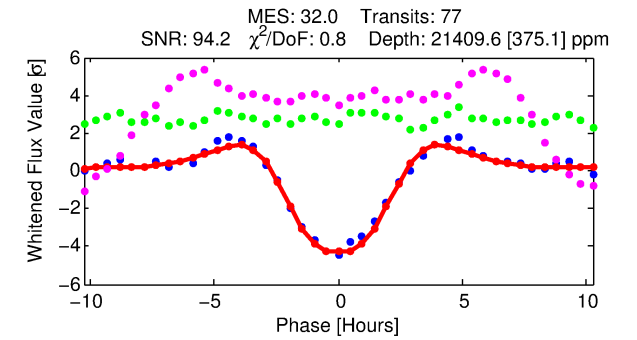
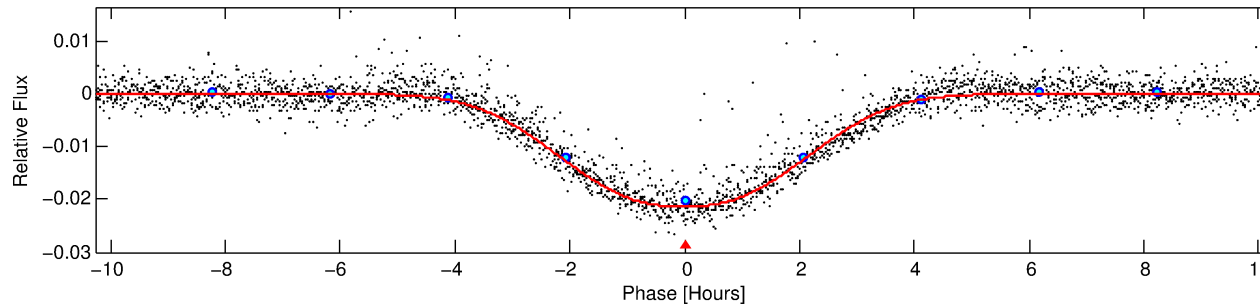
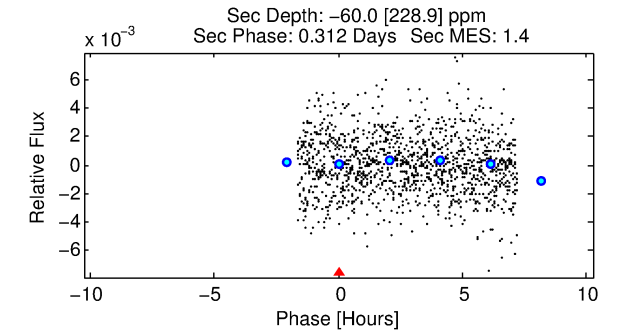
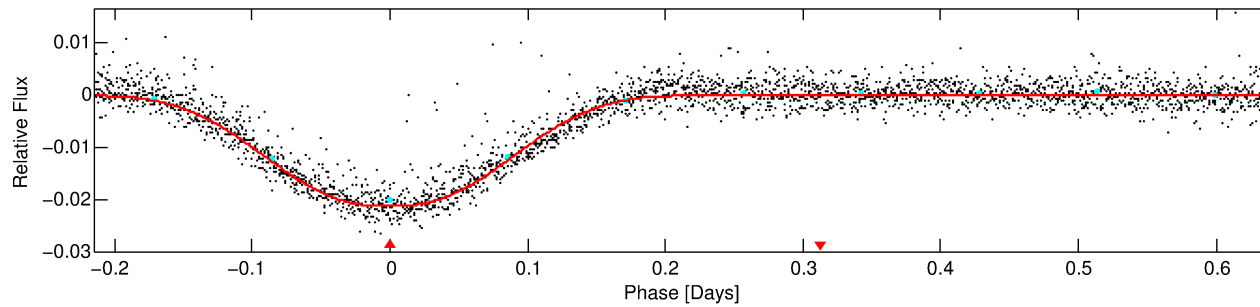
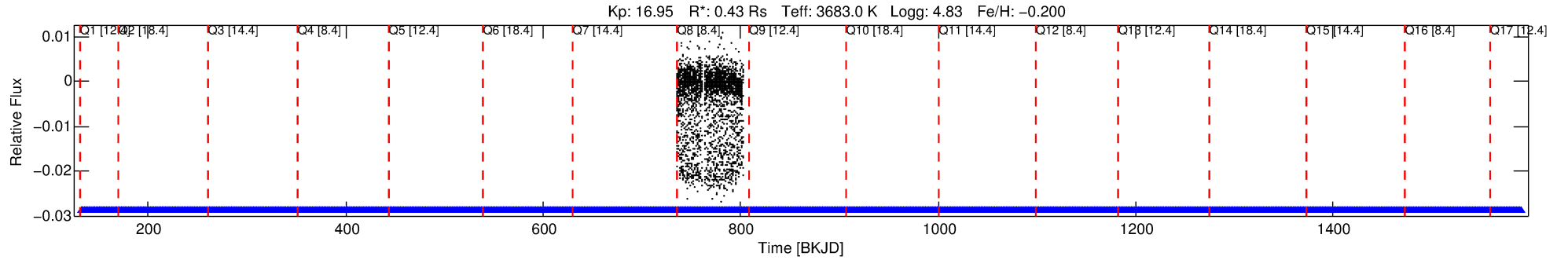
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010462462-01

No Significant Match Found

# DV One-Page Summary

KIC: 10462462 Candidate: 1 of 1 Period: 0.856 d



## DV Fit Results:

Period = 0.85582 [0.00000] d  
Epoch = 132.1453 [0.0021] BKJD  
Rp/R\* = 0.1539 [0.0015]  
a/R\* = 1.13 [0.01]  
b = 0.84 [0.00]  
Seff = 167.57 [19.84]  
Teq = 917 [27] K  
Rp = 7.29 [0.69] Re  
a = 0.0136 [0.0010] AU  
Ag = N/A  
Teffp = N/A

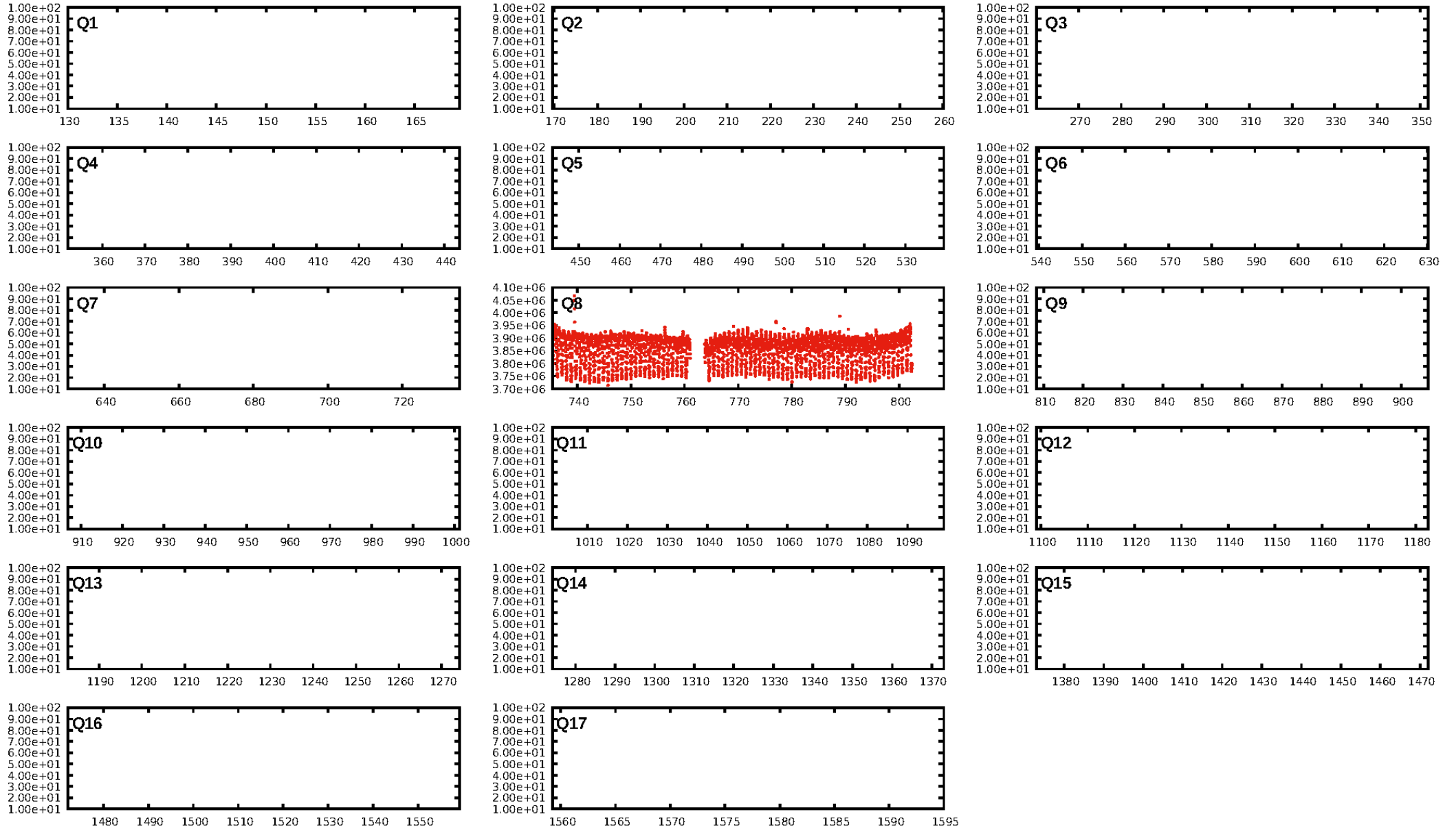
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 43.5%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [77/77]  
GhostDiagnostic-chr: 17.4  
Centroid-sig: 0.1%  
Centroid-so: 0.216 arcsec [3.22σ]  
OotOffset-rm: 0.147 arcsec [2.19σ]  
KicOffset-rm: 0.237 arcsec [3.54σ]  
OotOffset-st: 0/0/1/0 [1]  
KicOffset-st: 0/0/1/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [1/1]

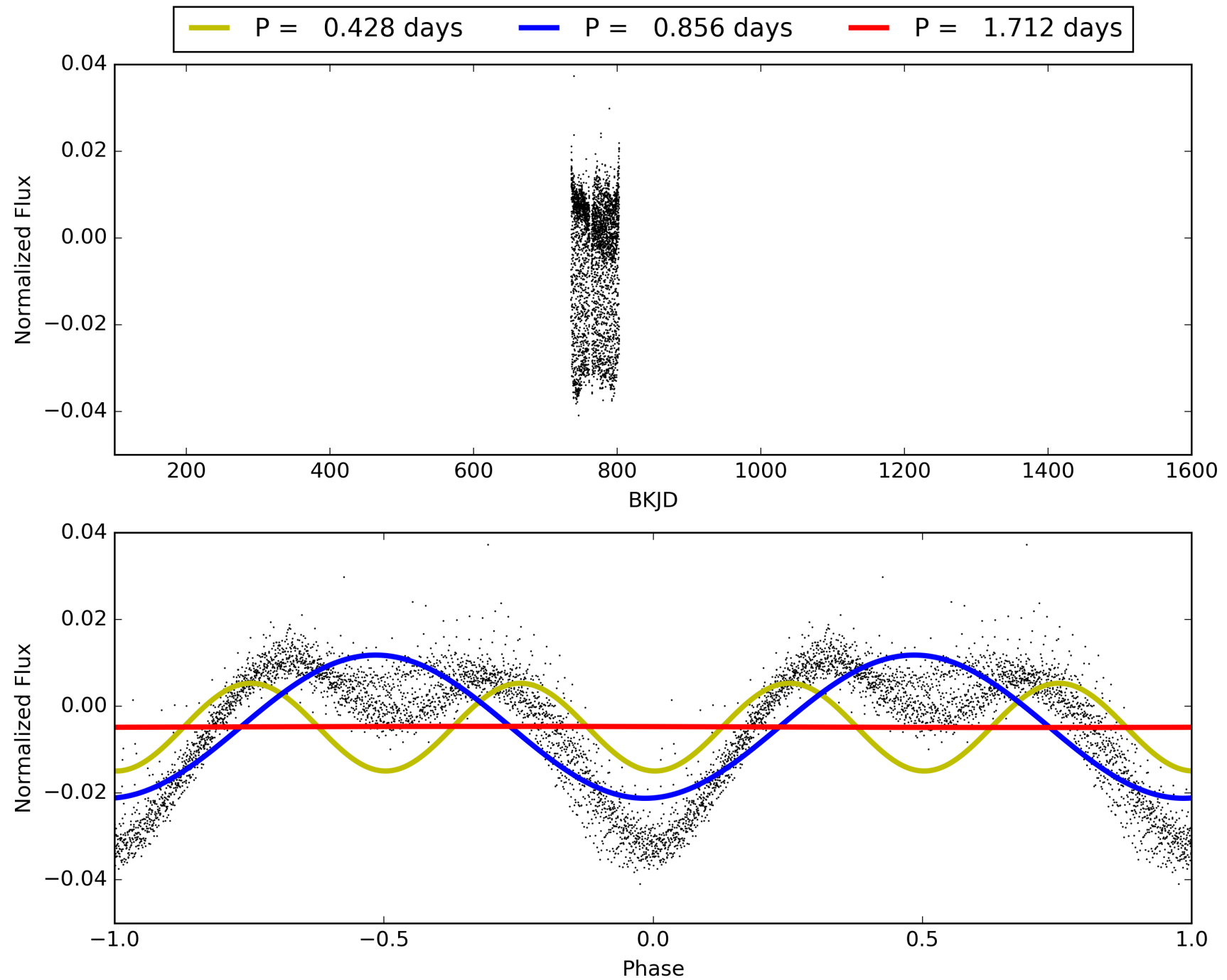
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:11:00 Z

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

# TCE 010462462-01, PDC Light Curves

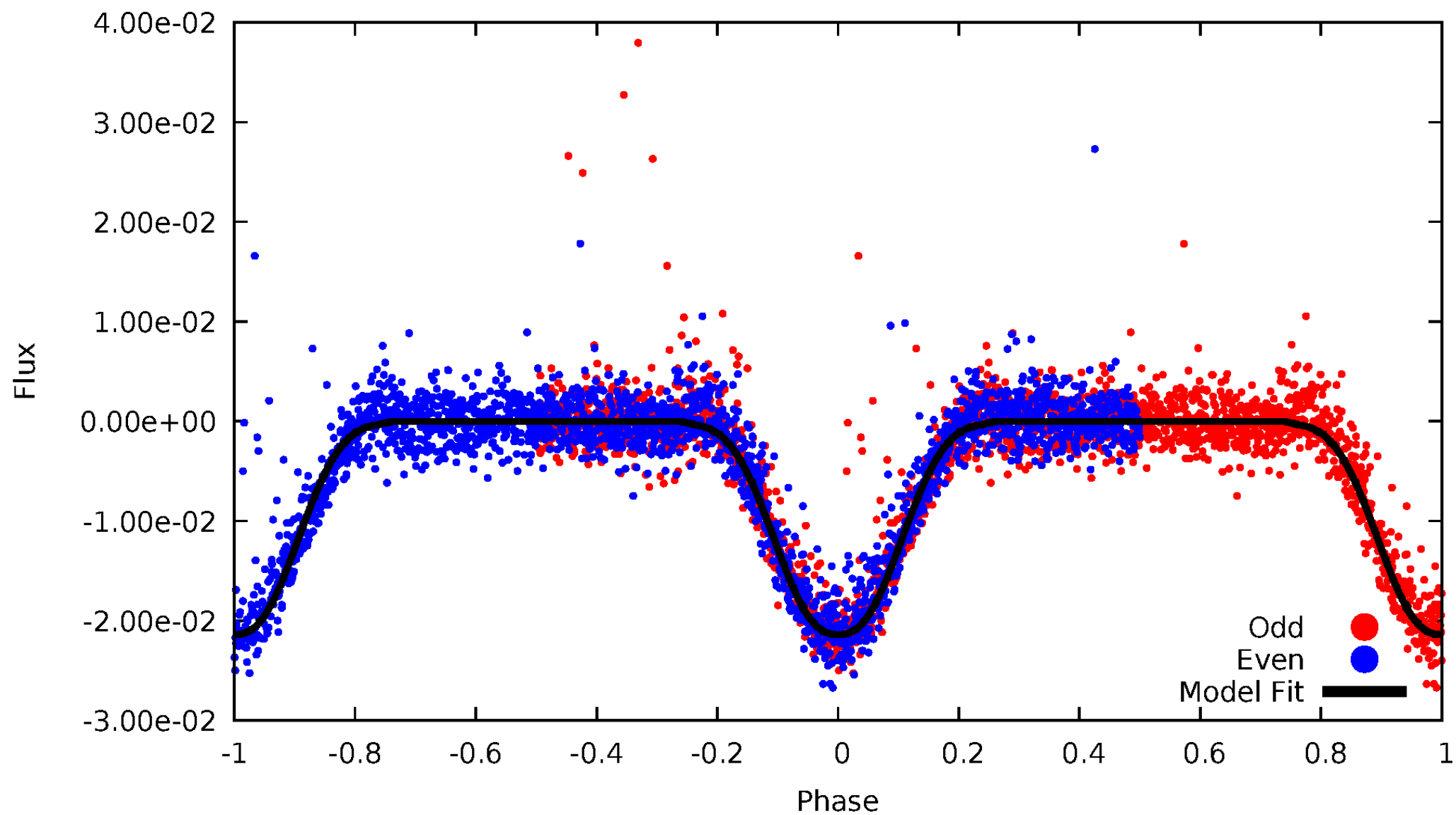


TCE 010462462-01



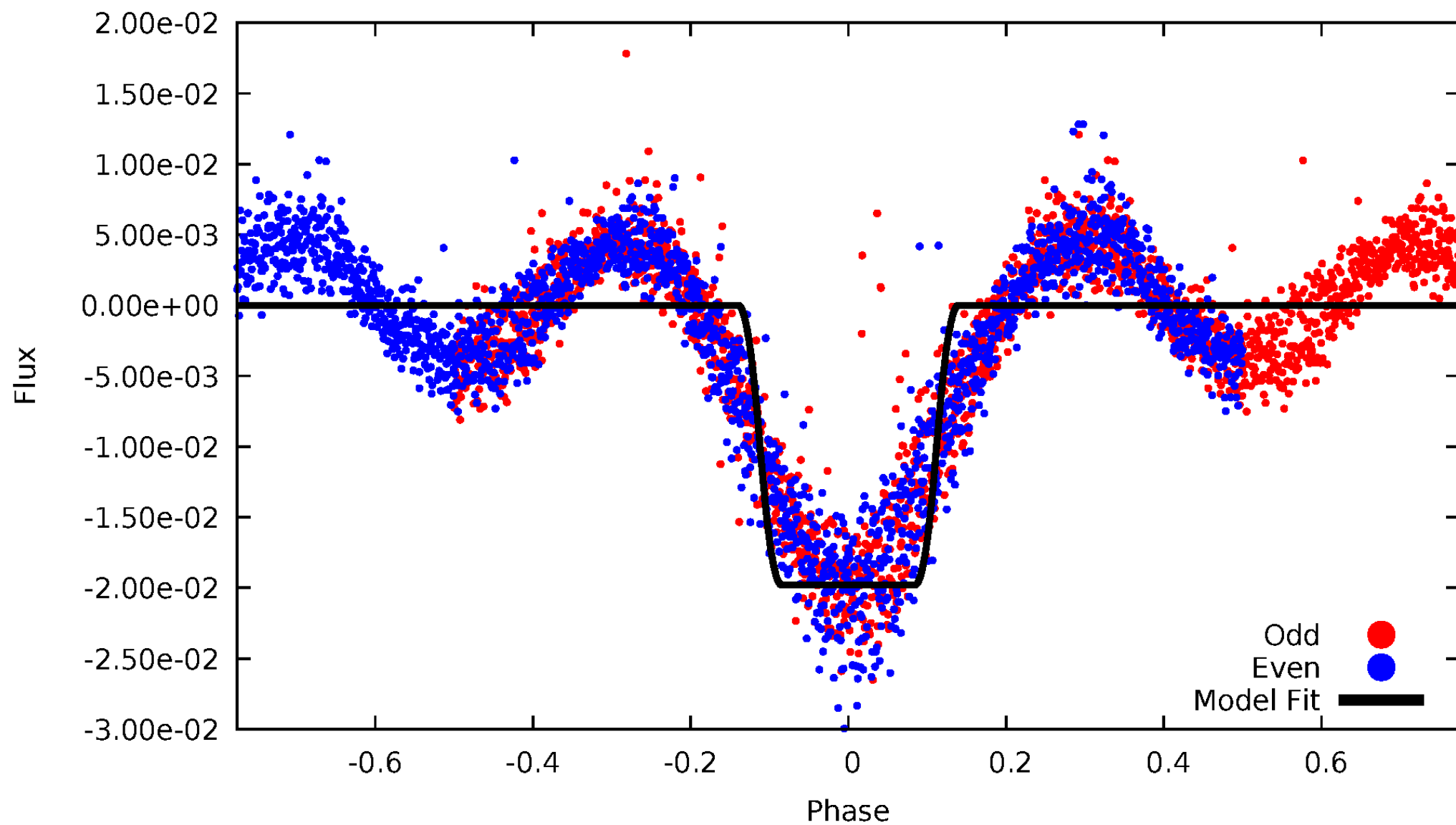
# DV Odd/Even

TCE 010462462-01



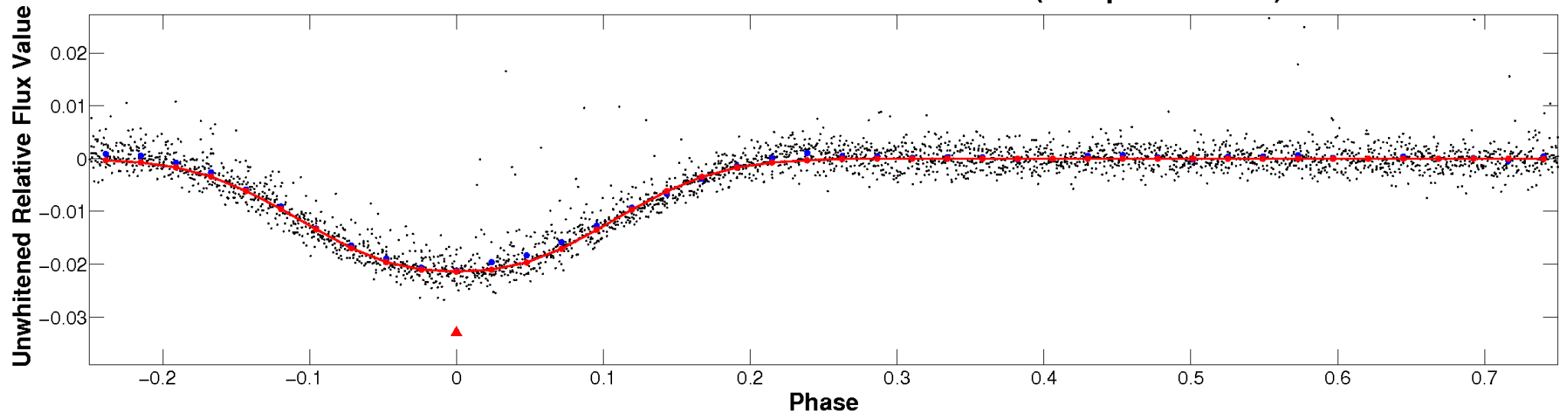
# ALT Odd/Even

TCE 010462462-01

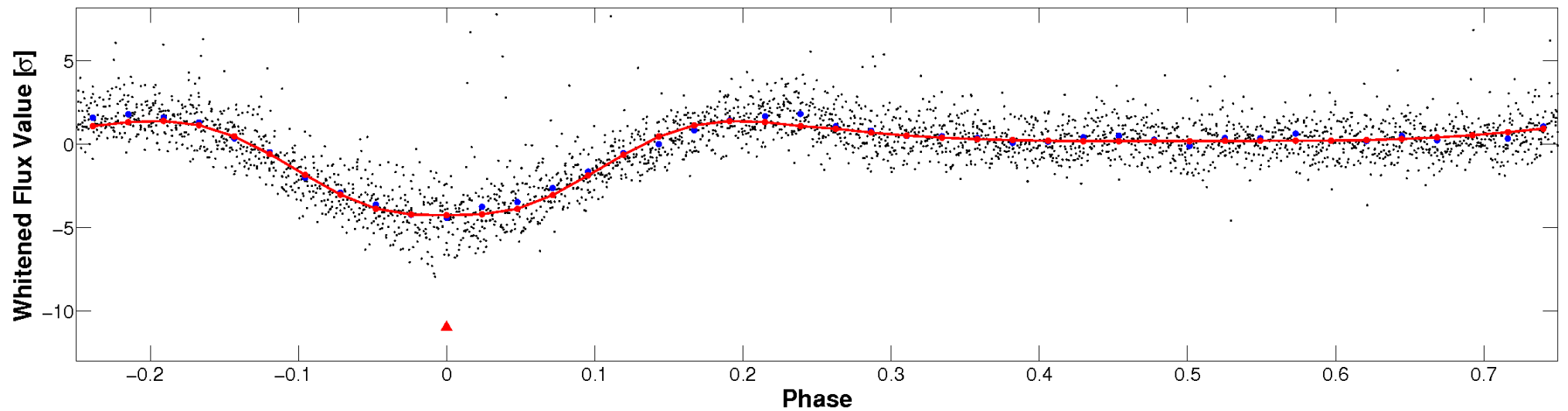


# Non-Whitened Vs. Whitened Light Curve

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

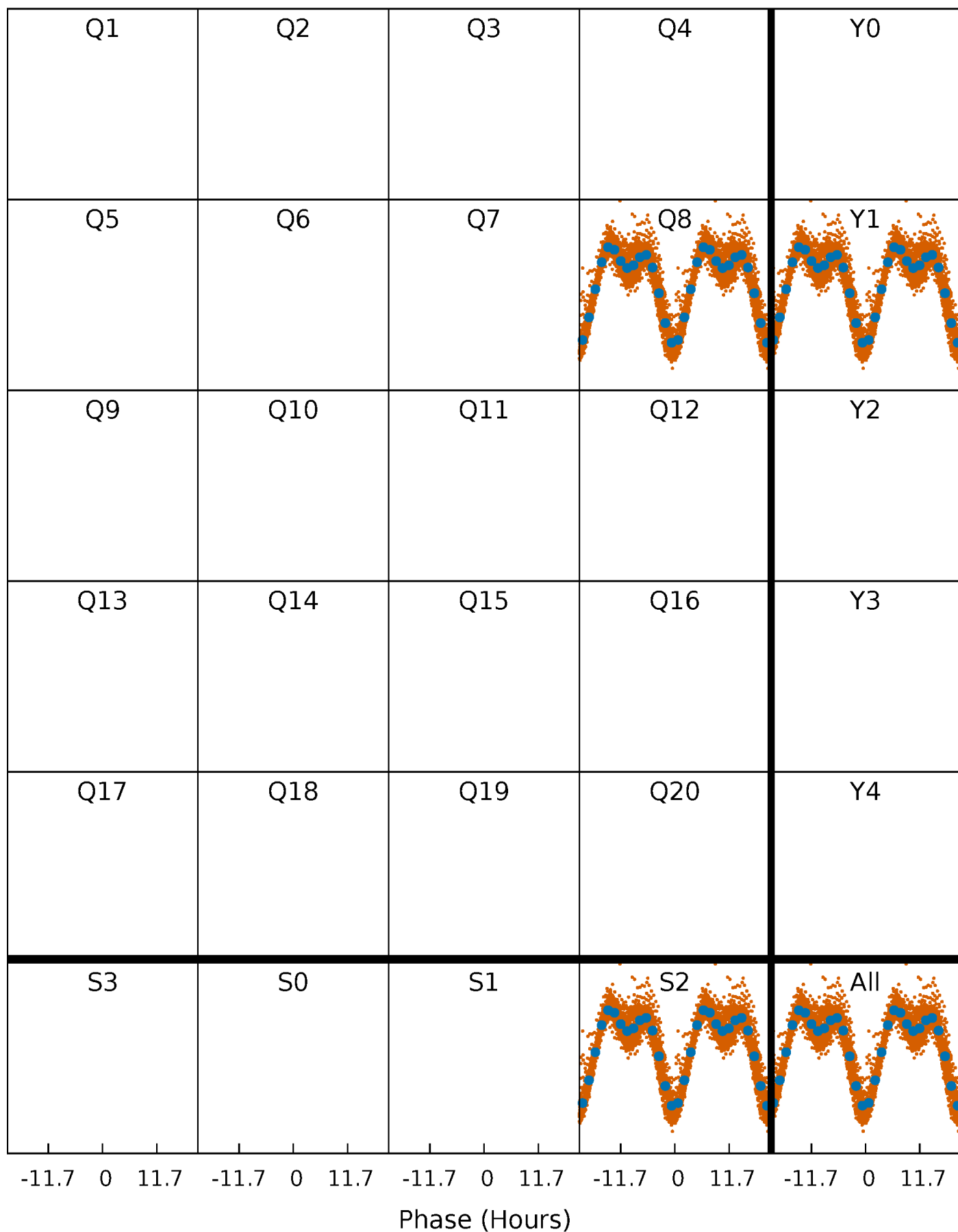


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

TCE 010462462-01 P= 0.855816 Days  $T_0=132.145254$  (BKJD)





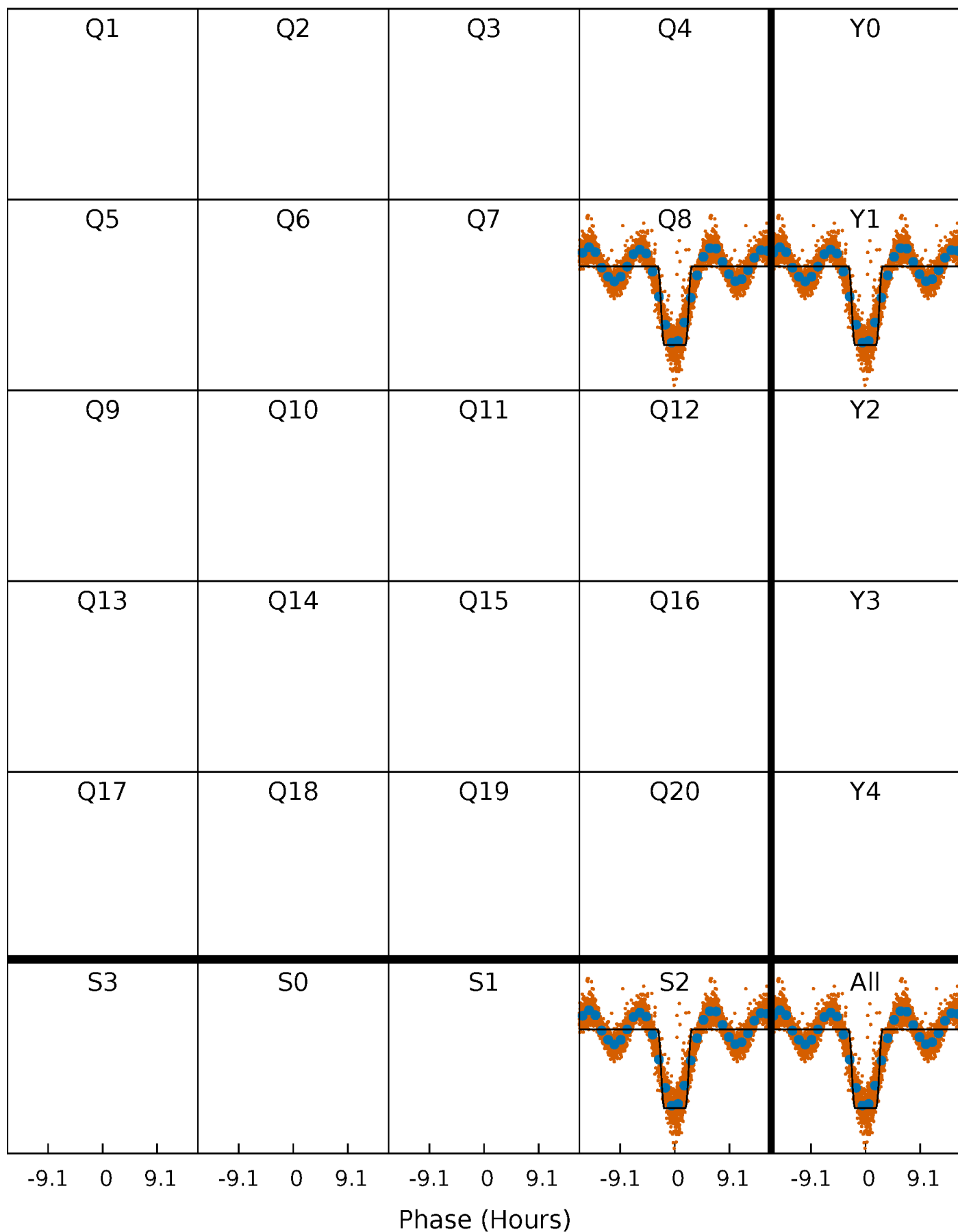
# DV Quarter-Phased Transit Curves

TCE 010462462-01     $P = 0.855816$  Days     $T_0 = 132.145254$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

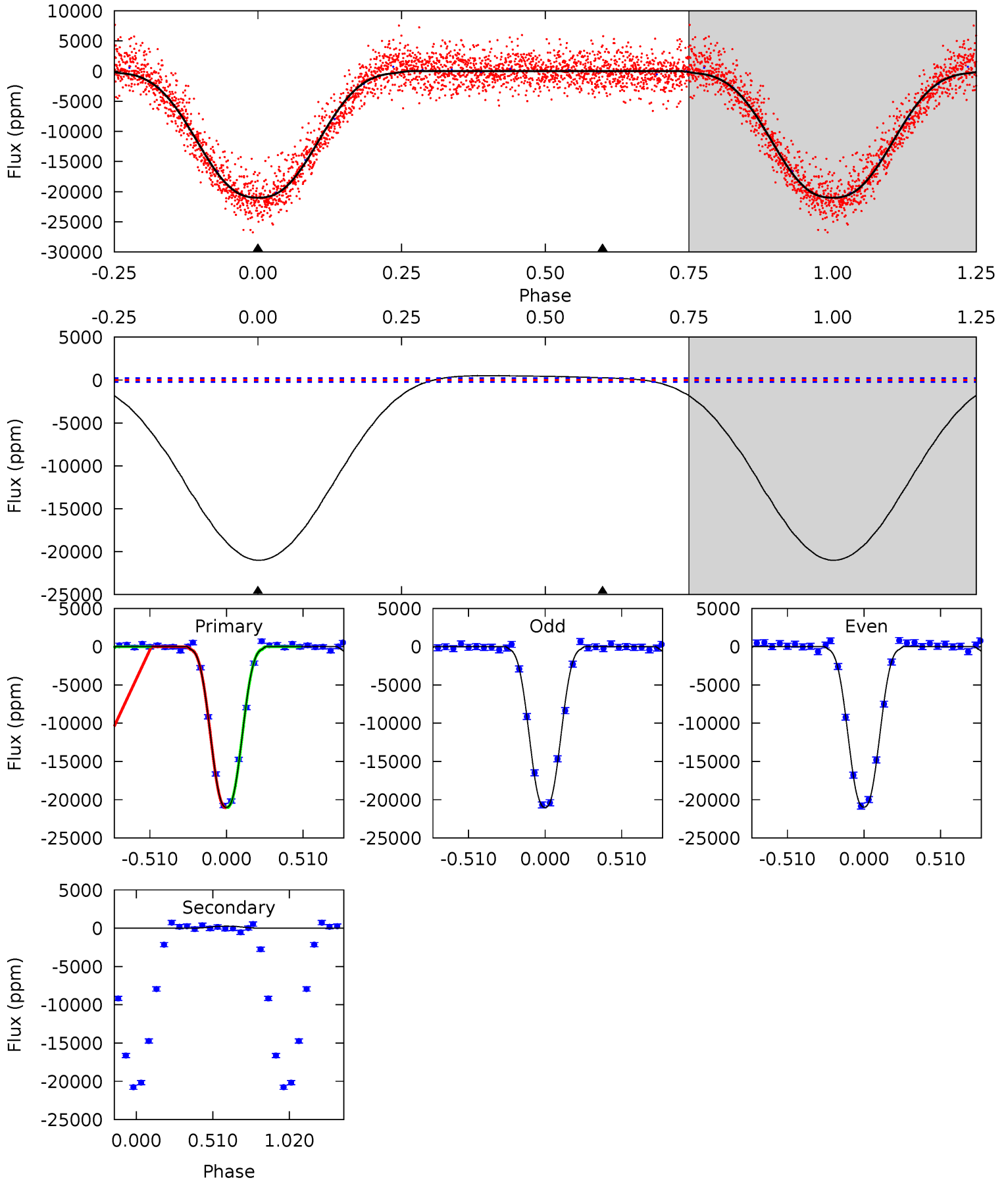
TCE 010462462-01   P= 0.855779 Days    $T_0=132.169609$  (BKJD)



# DV Model-Shift Uniqueness Test

010462462-01, P = 0.855816 Days, E = 132.145254 Days

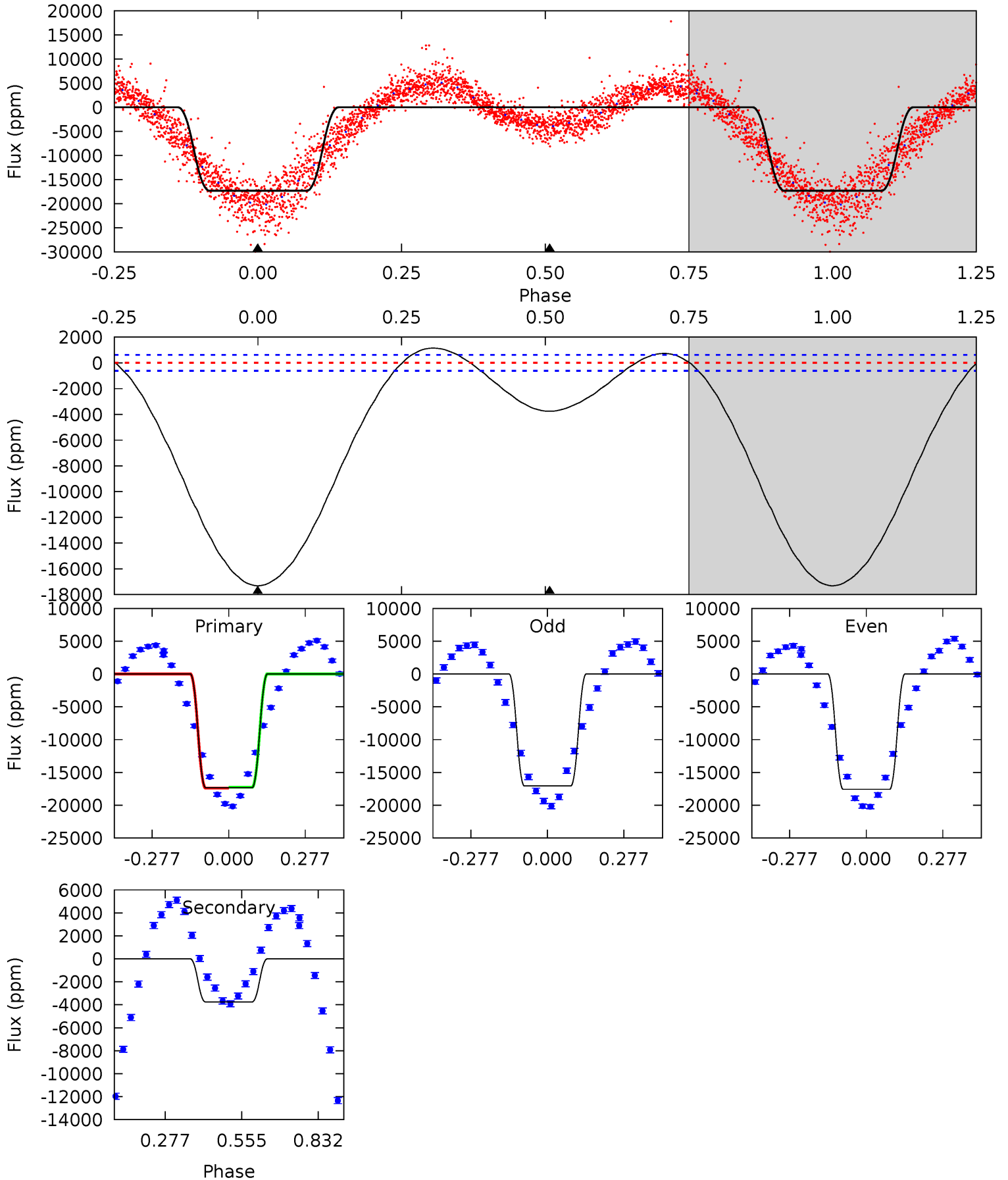
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
379.8	-4.81	0	0	4.21	0.66	9.95	379.8	379.8	-4.81	-4.81	0.48	0.96	0.02	0.12



# Alt Model-Shift Uniqueness Test

010462462-01, P = 0.855779 Days, E = 132.169609 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
122.1	26.5	0	0	4.35	1.09	4.34	122.1	122.1	26.5	26.5	1.86	1.00	0.06	0.50



### Stellar Parameters For KIC 010462462

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3683^{+65}_{-73}$	$4.825^{+0.040}_{-0.040}$	$-0.200^{+0.100}_{-0.100}$	$0.434^{+0.034}_{-0.041}$	$0.459^{+0.032}_{-0.046}$	$7.912^{+1.777}_{-1.208}$
	+2%/-2%	+1%/-1%	+50%/-50%	+8%/-9%	+7%/-10%	+22%/-15%
Source	PHO2	PHO2	PHO2	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 010462462-01 / KOI 8013.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$266 \pm 55$	$7.32^{+0.32}_{-0.38}$	$1283^{+31}_{-33}$	$-2153^{+42}_{-42}$	$-0.502^{+0.109}_{-0.110}$
Alt.	$-3756 \pm 142$	$6.68^{+0.28}_{-0.35}$	$1281^{+32}_{-34}$	$2857^{+48}_{-50}$	$8.626^{+0.747}_{-0.604}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$

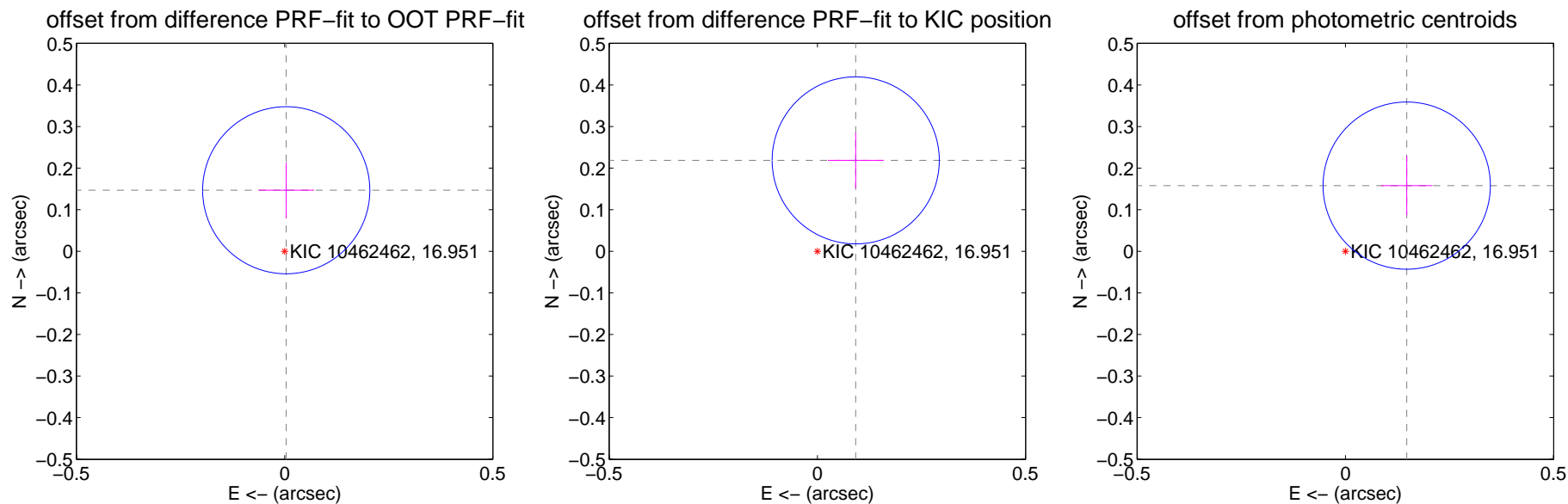
## DV Centroid Data

Supplemental centroid analysis for 010462462-01. Kepler magnitude: 16.95. Transit SNR 94.16

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.147 \pm 0.067$	2.19	$-0.004 \pm 0.067$	$0.147 \pm 0.067$
PRF-fit source offset from KIC position	$0.237 \pm 0.067$	3.54	$-0.092 \pm 0.067$	$0.219 \pm 0.067$
photometric centroid source offset	$0.22 \pm 0.07$	3.22	$-0.15 \pm 0.06$	$0.16 \pm 0.07$

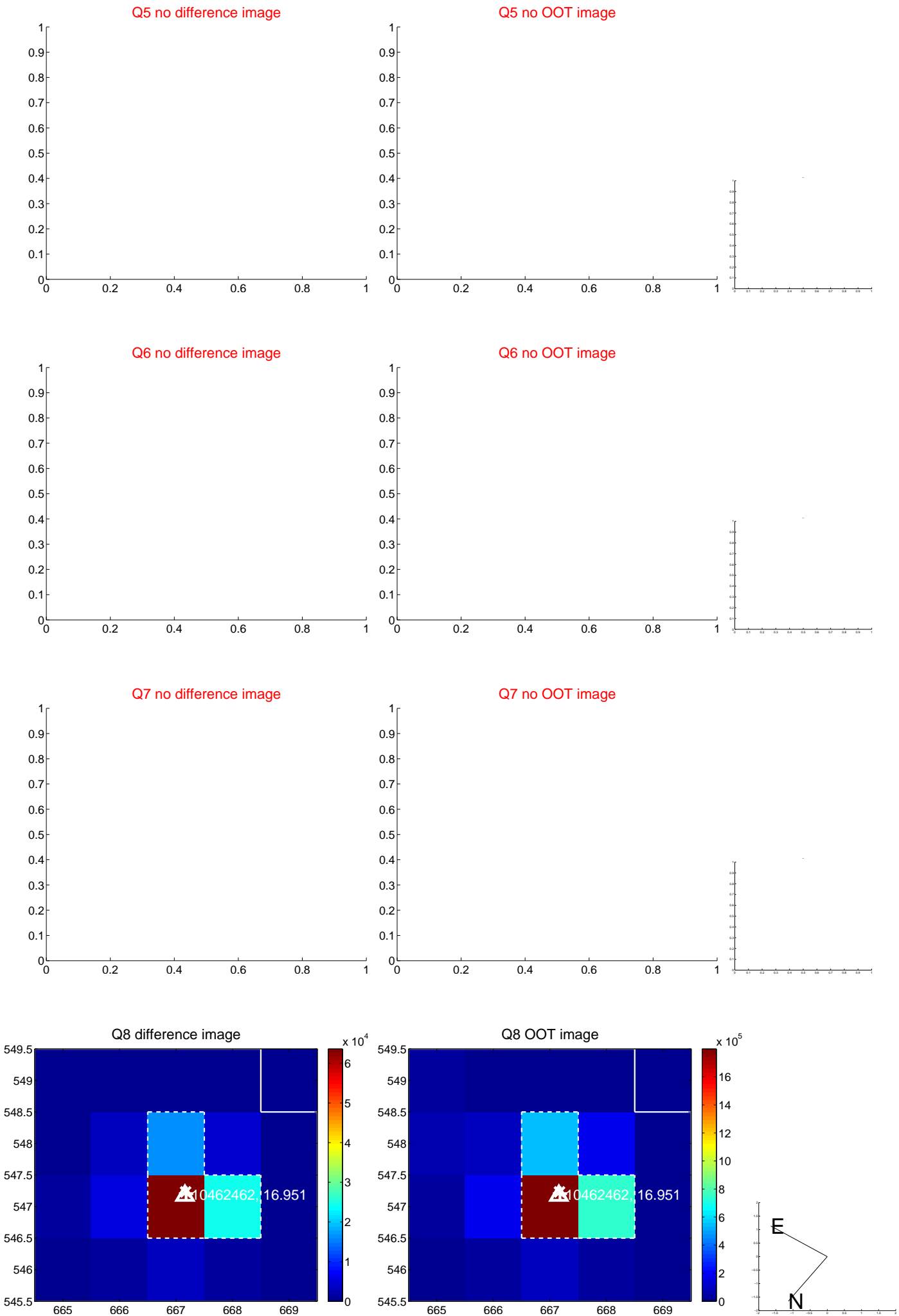


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



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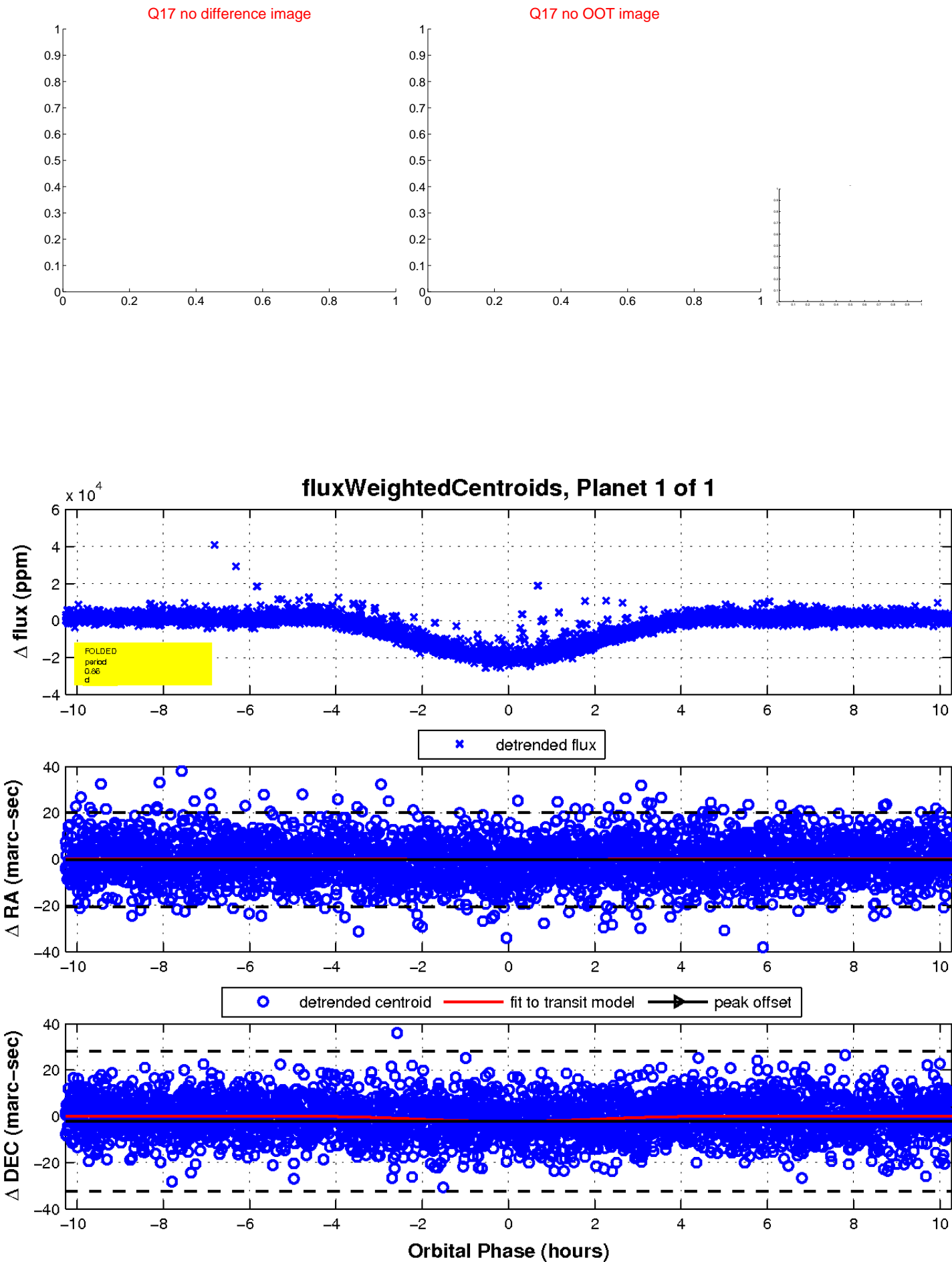
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



# UKIRT Image

Declination

