

# KIC 004862332

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004862332-01	OBS	6463.01	0.890365	131.512991	80.3	1.918	8.2	6.4	18.37	4981	17.54	0.00

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004862332-01	OBS	FP	0.00	0	0	1	0	PLANET_IN_STAR—CENT_RESOLVED_OFFSET—HALO_GHOST

**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.

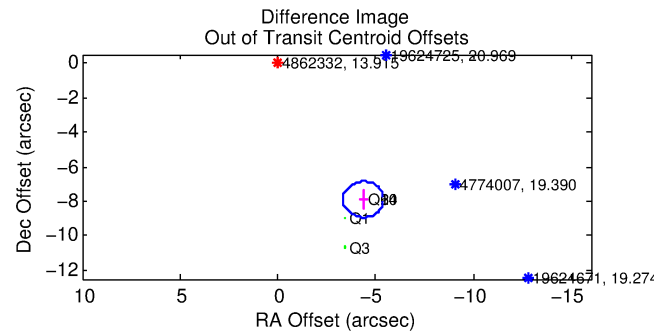
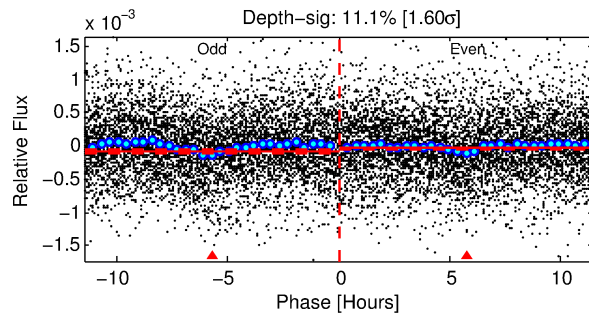
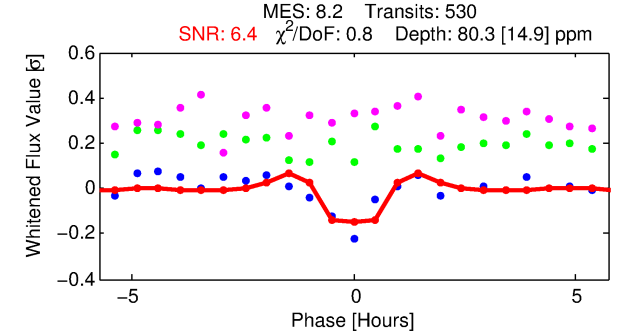
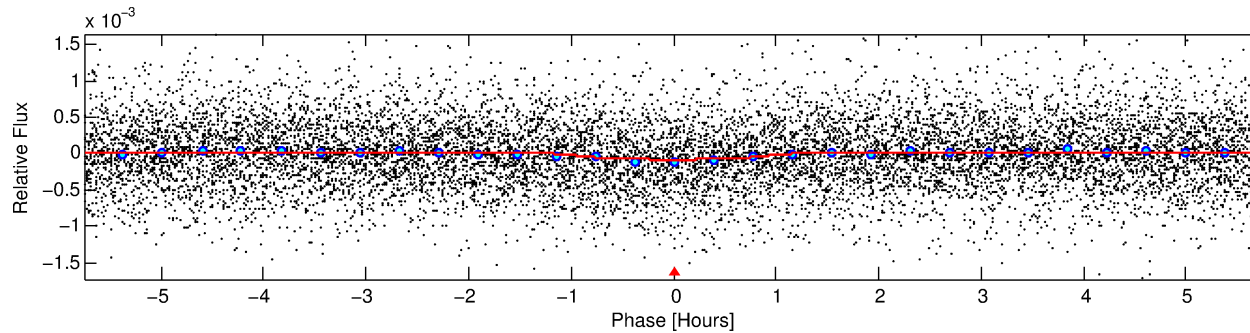
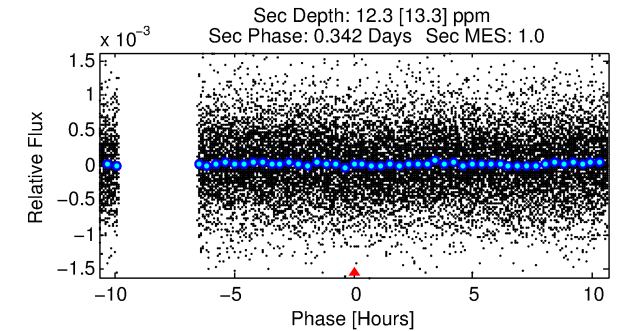
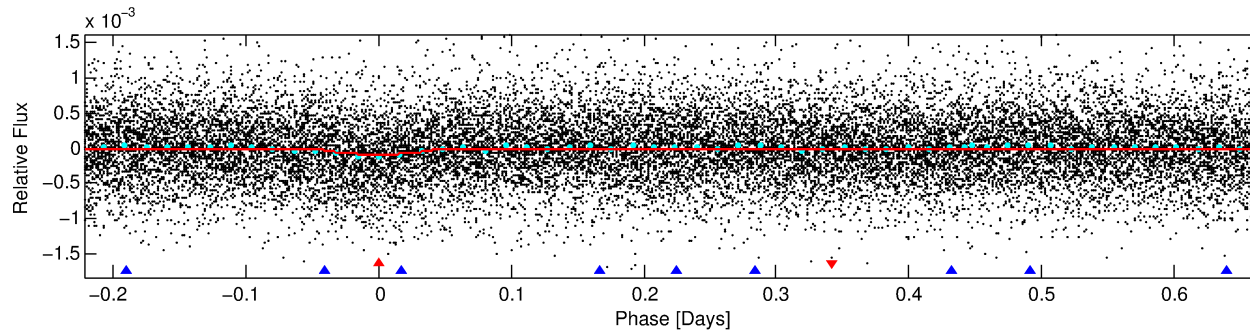
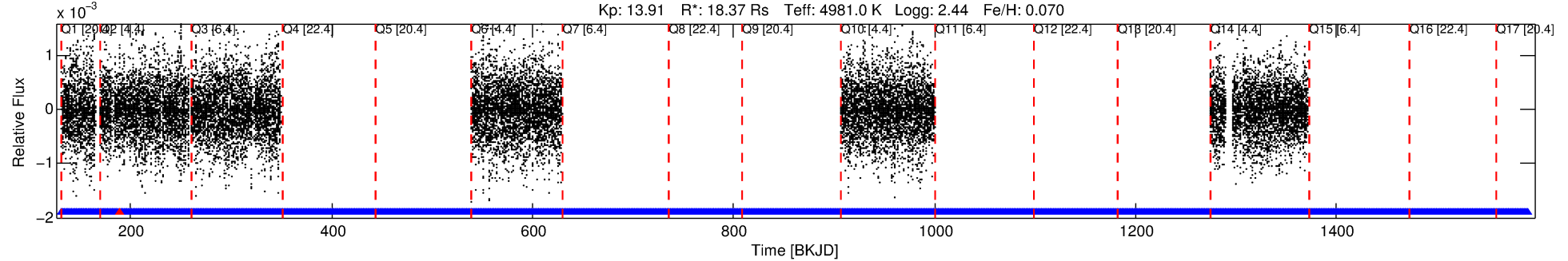
## Ephemeris Match Information For 004862332-01

No Significant Match Found

# DV One-Page Summary

KIC: 4862332 Candidate: 1 of 2 Period: 0.890 d  
KOI: K06463.01 Corr: 0.807

Kp: 13.91 R\*: 18.37 Rs Teff: 4981.0 K Logg: 2.44 Fe/H: 0.070



## DV Fit Results:

Period = 0.89037 [0.00002] d  
Epoch = 131.5130 [0.0026] BKJD  
Rp/R\* = 0.0087 [0.0046]  
a/R\* = 2.73 [4.26]  
b = 0.69 [1.40]  
Seff = N/A  
Teq = N/A  
Rp = 17.54 [11.62] Re  
a = N/A  
Ag = N/A  
Teff = N/A

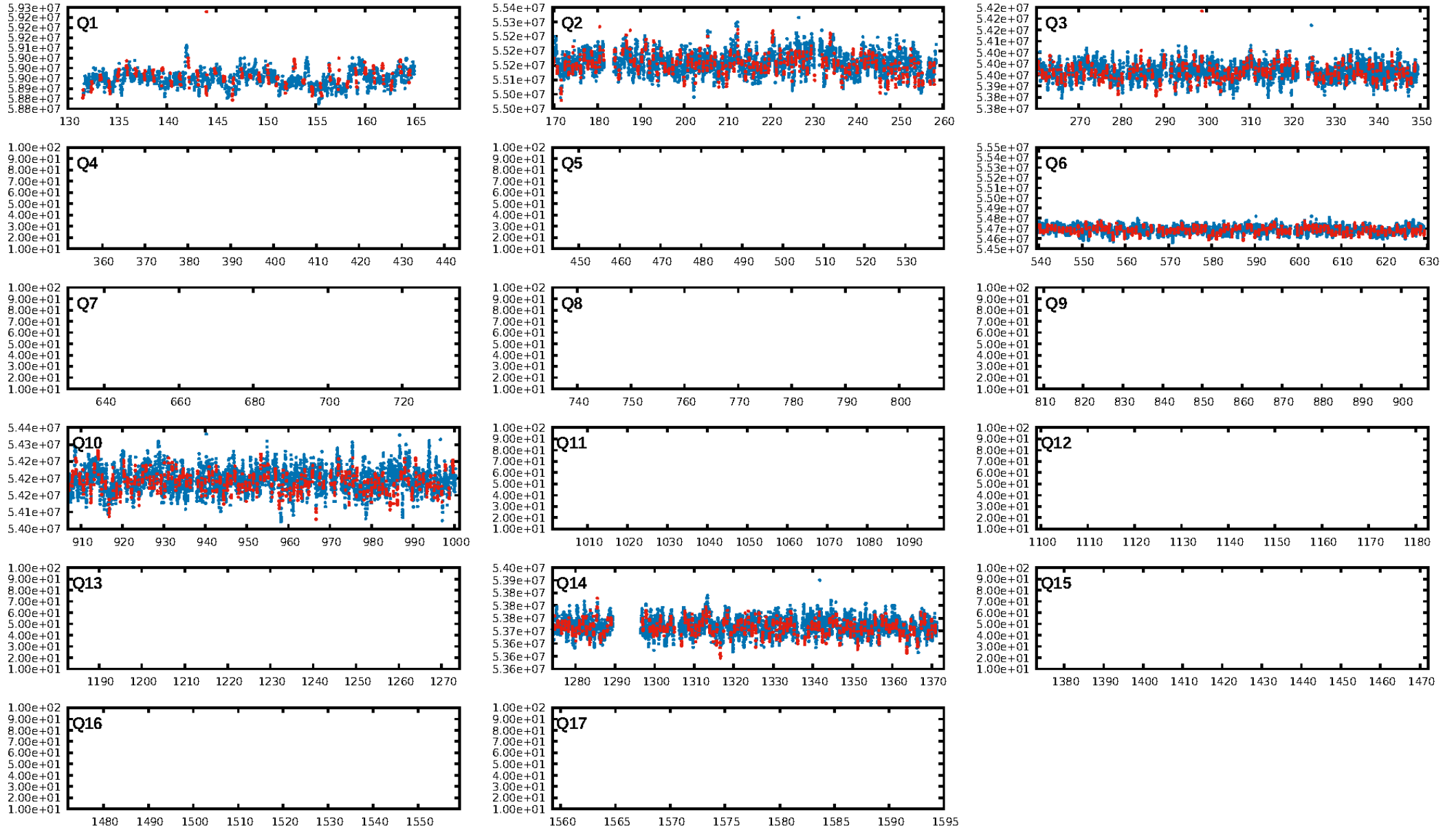
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [763.93σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.25e-16  
RollingBand-fgt: 1.00 [491/492]  
GhostDiagnostic-chr: -0.2205  
Centroid-sig: N/A  
Centroid-so: 100.169 arcsec [64.74σ]  
OotOffset-rm: 9.018 arcsec [26.09σ]  
KicOffset-rm: 8.984 arcsec [29.86σ]  
OotOffset-st: 4/1/0/1 [6]  
KicOffset-st: 4/1/0/1 [6]  
DiffImageQuality-fgm: 1.00 [6/6]  
DiffImageOverlap-fno: 1.00 [6/6]

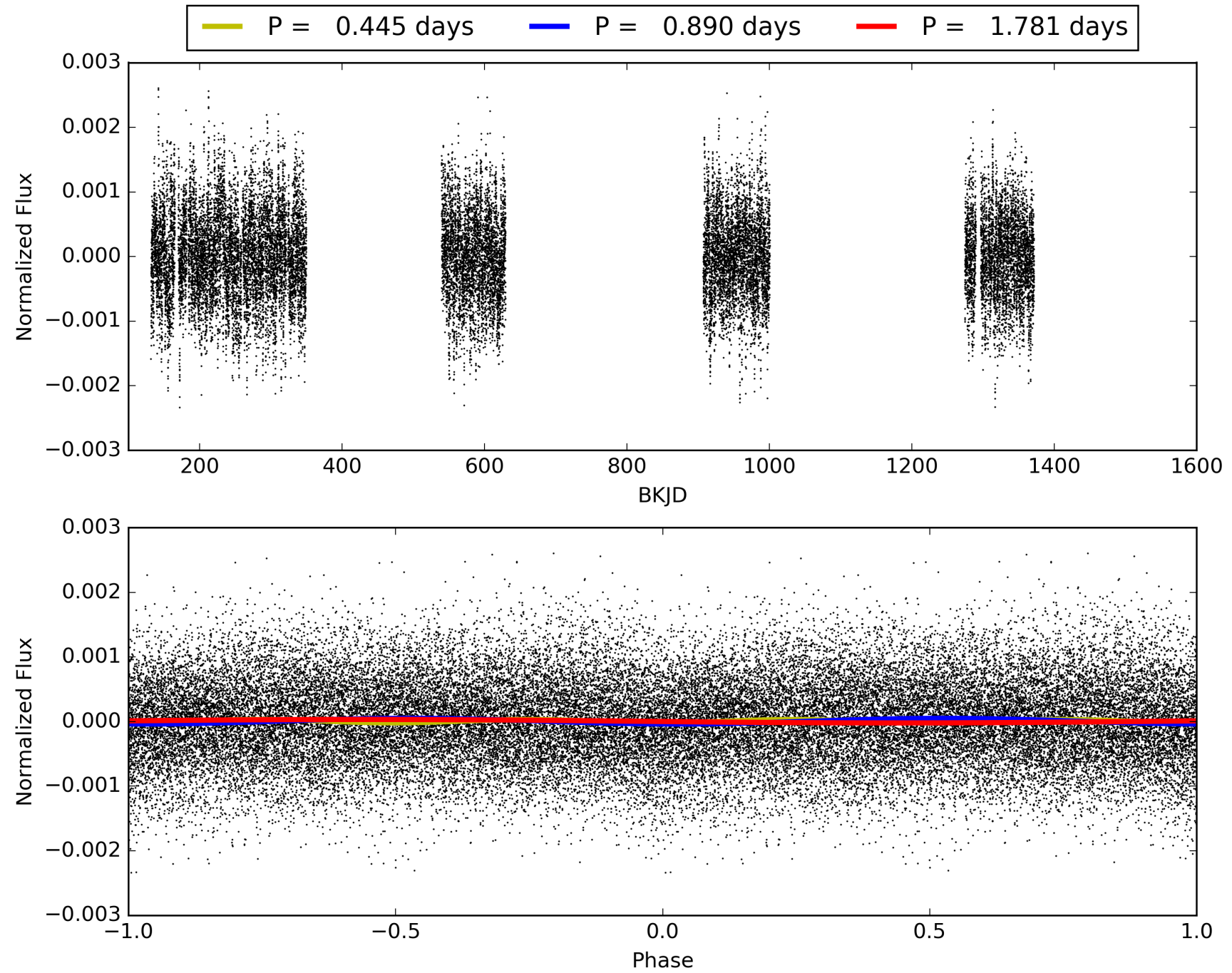
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:18:17 Z

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

# TCE 004862332-01, PDC Light Curves

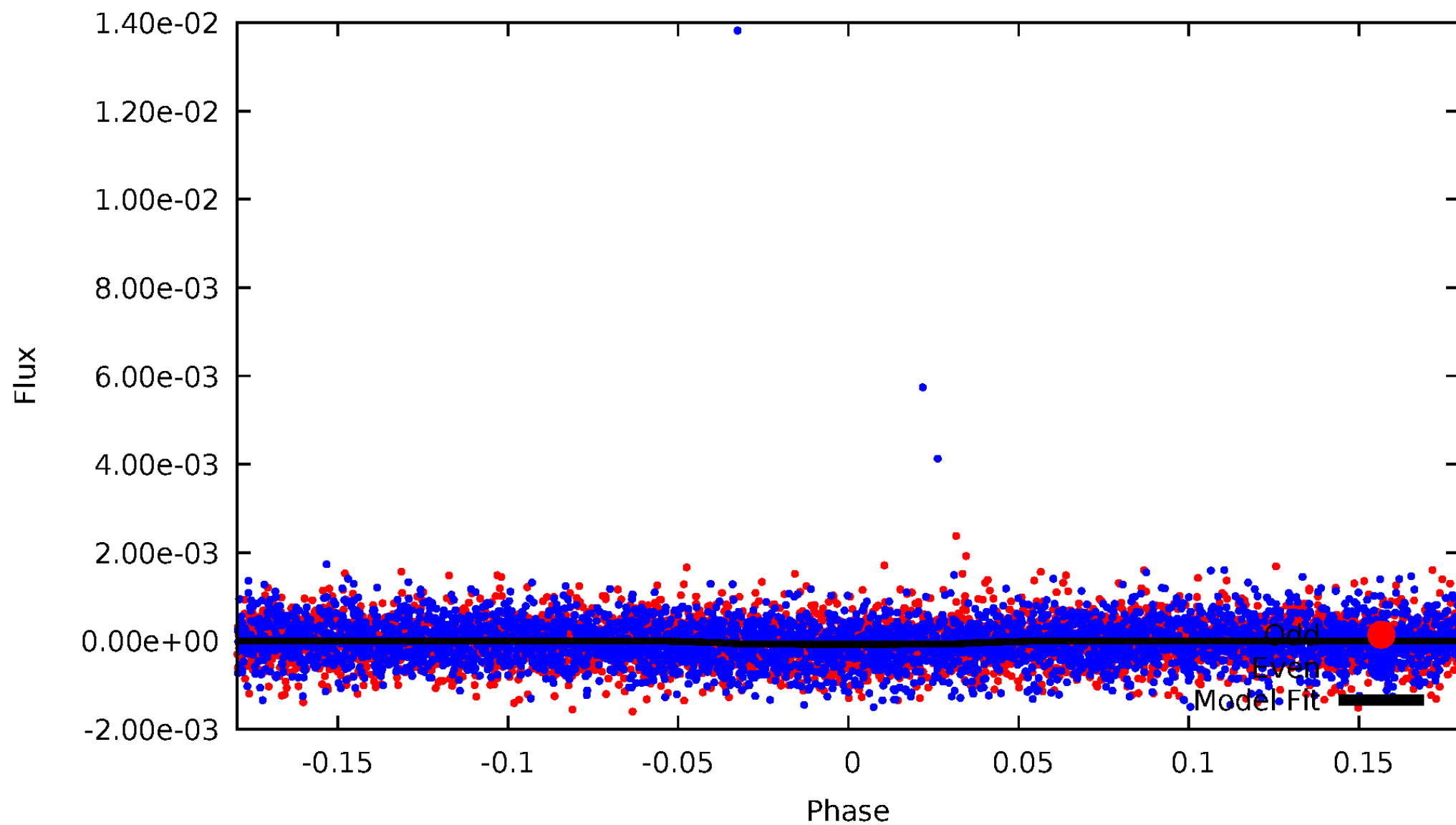


TCE 004862332-01



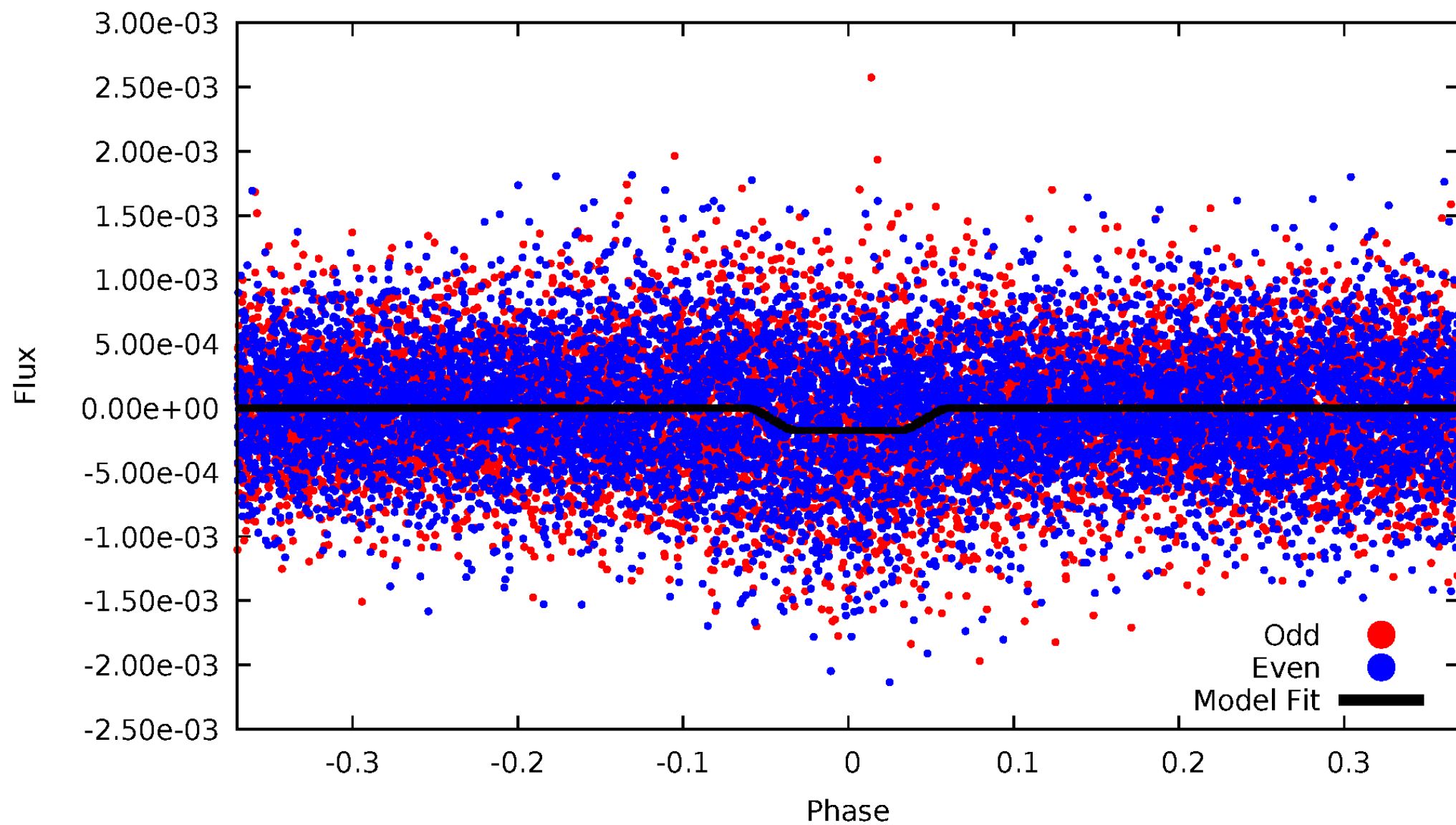
# DV Odd/Even

TCE 004862332-01



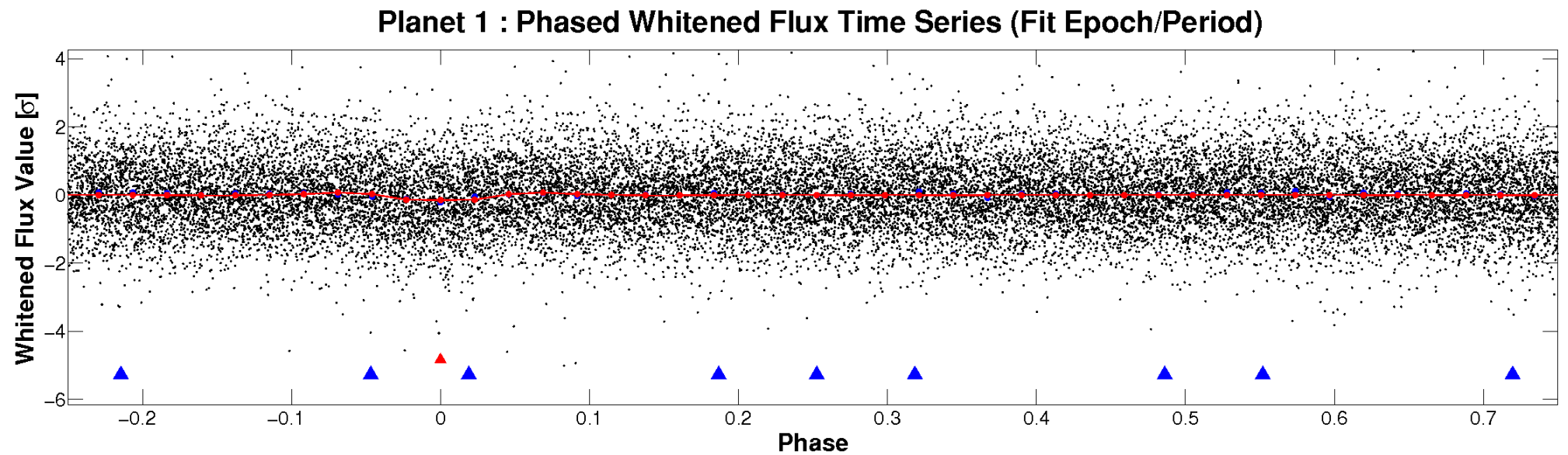
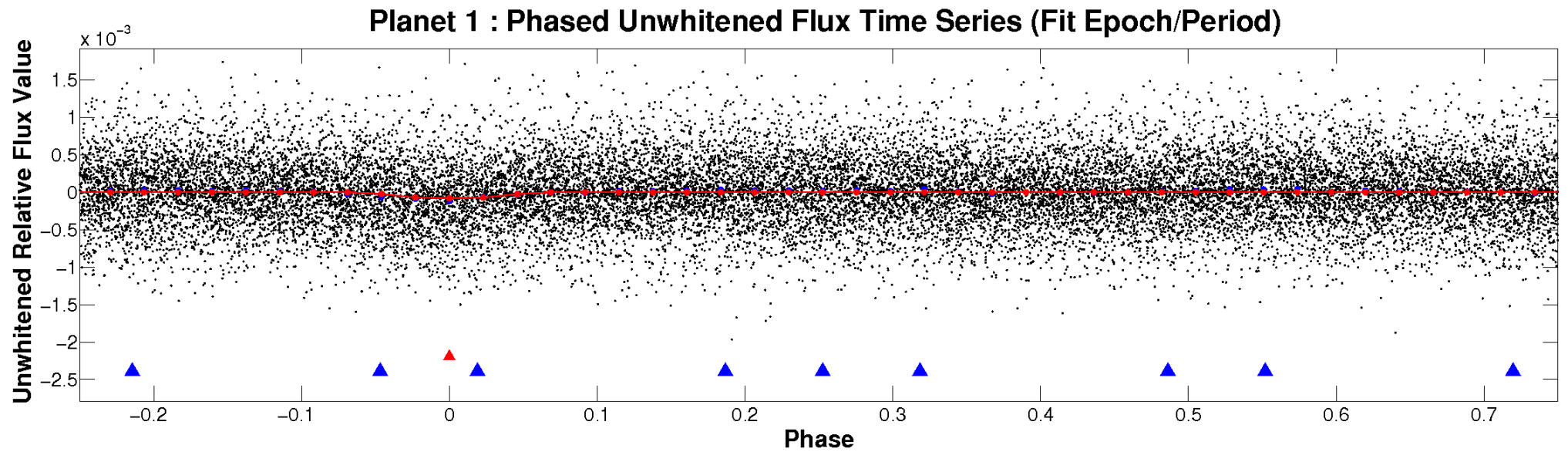
# ALT Odd/Even

TCE 004862332-01



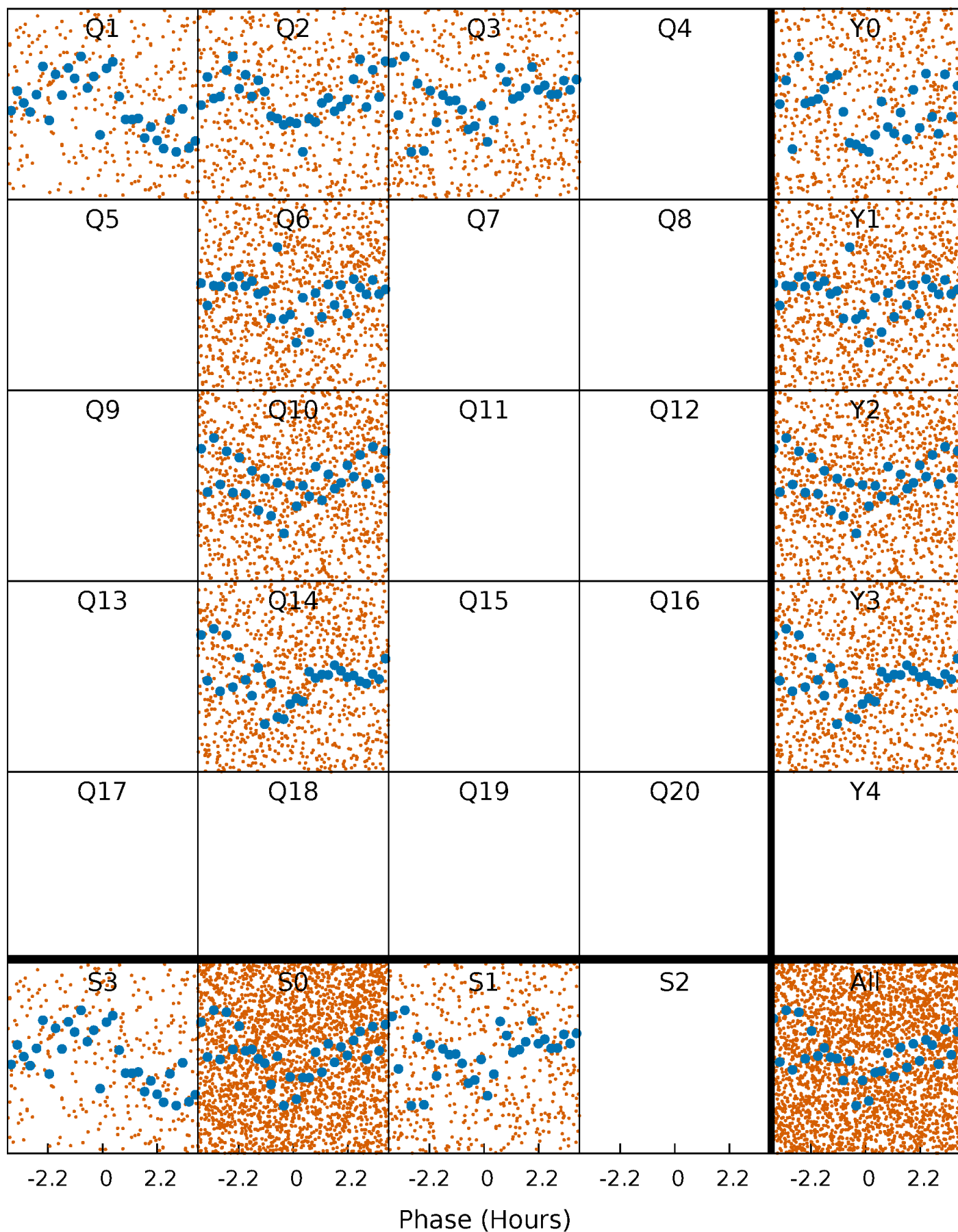


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

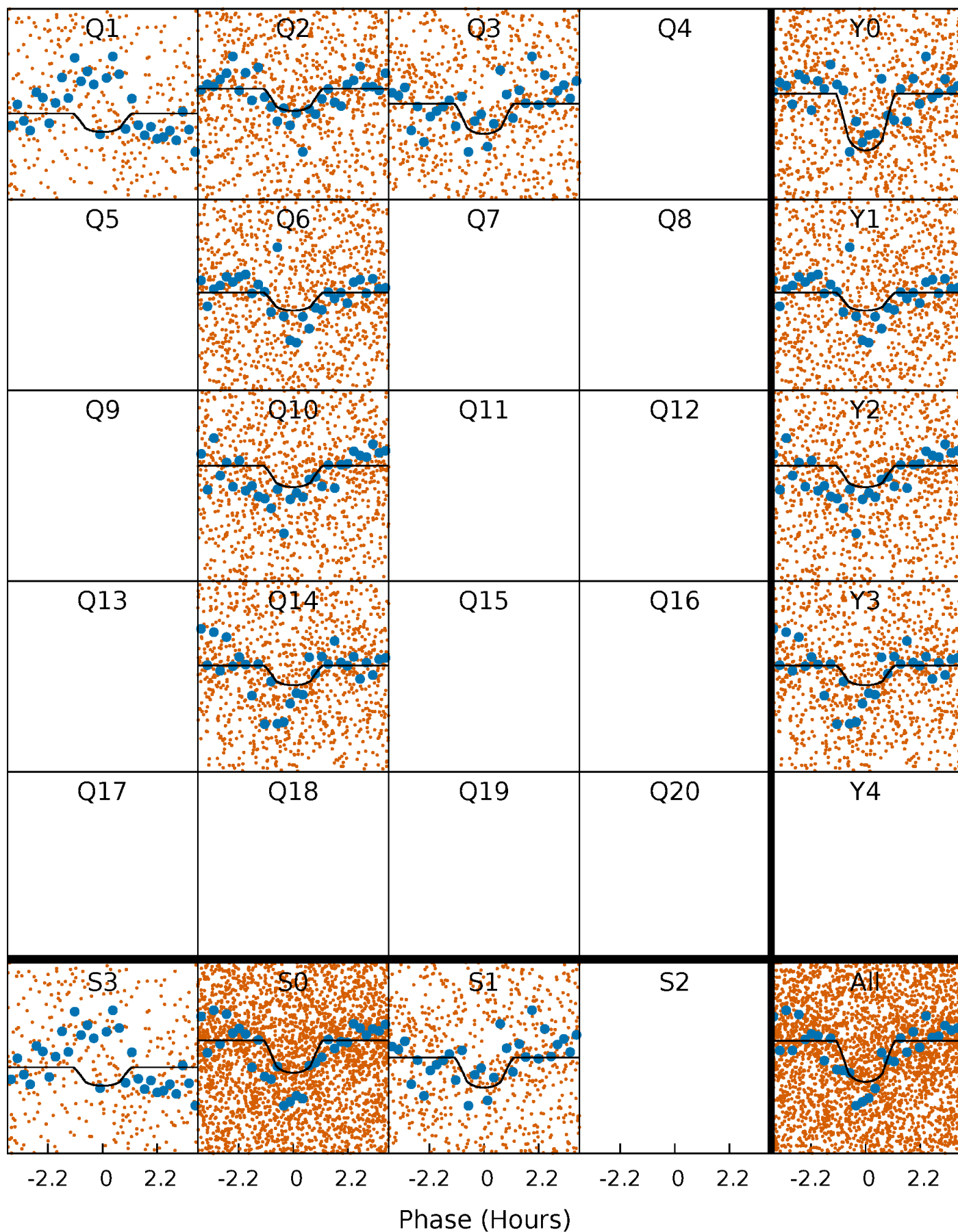
TCE 004862332-01 P= 0.890365 Days  $T_0=131.512991$  (BKJD)





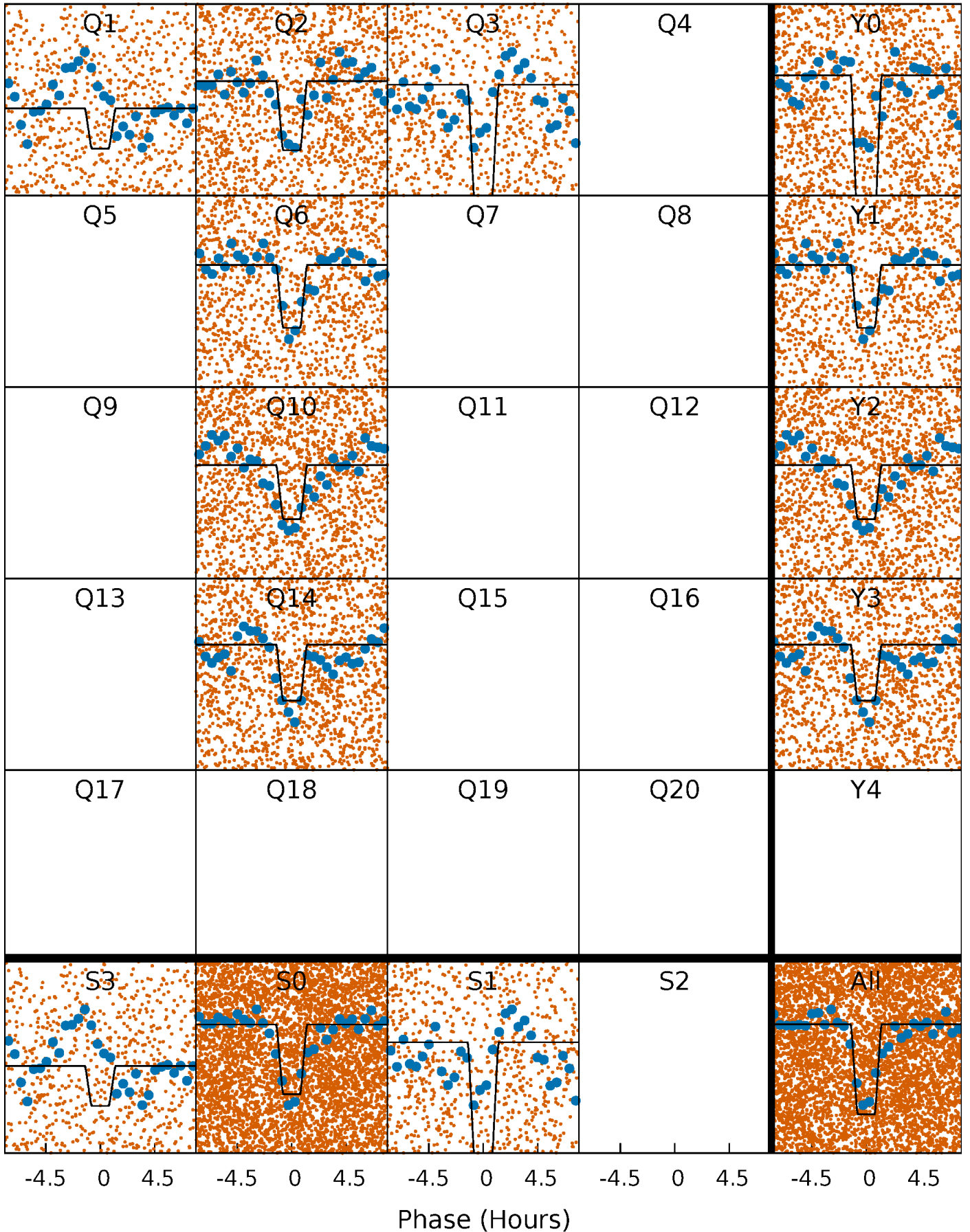
# DV Quarter-Phased Transit Curves

TCE 004862332-01 P= 0.890365 Days  $T_0=131.512991$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

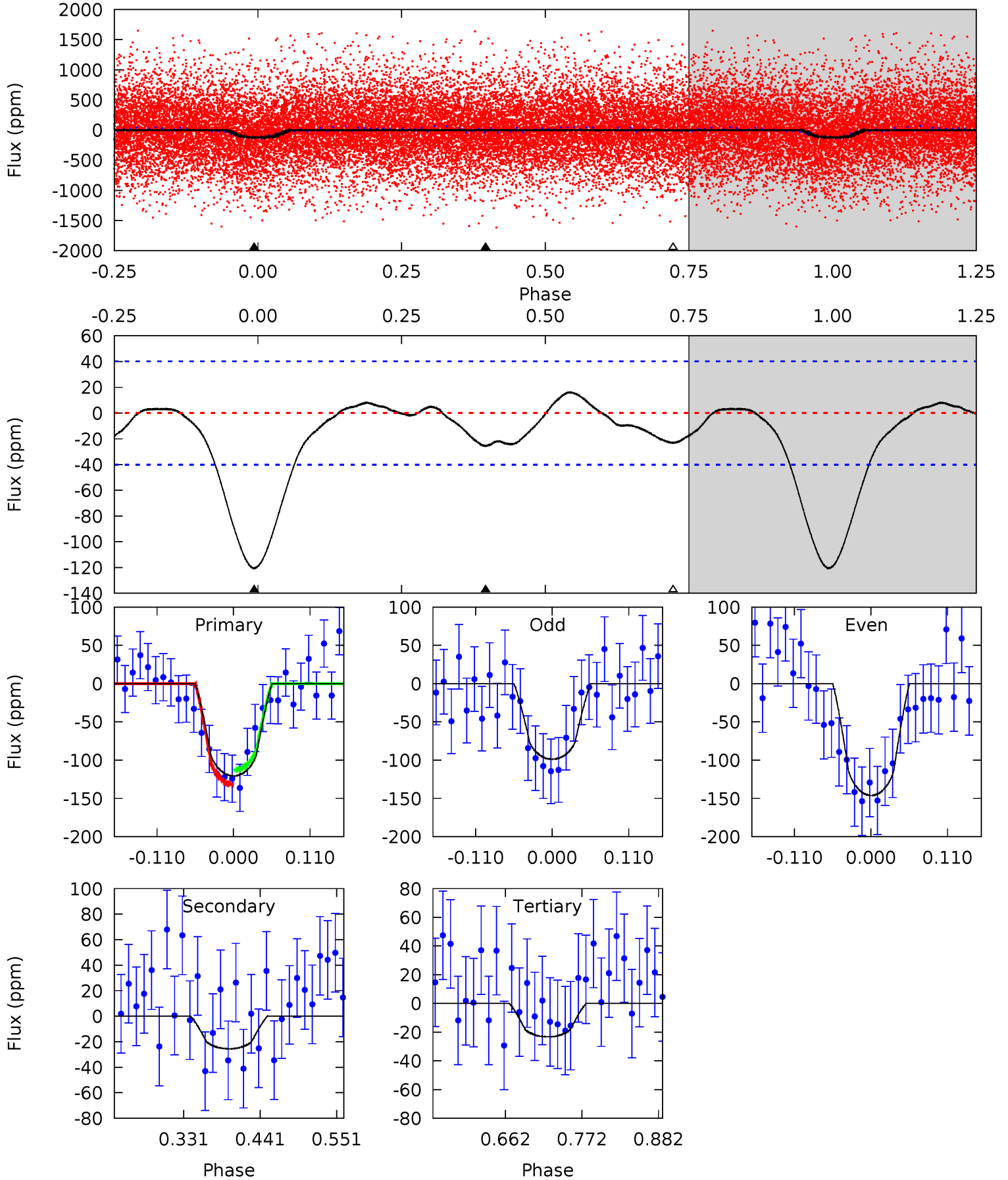
TCE 004862332-01   P= 0.890337 Days    $T_0=131.529695$  (BKJD)



# DV Model-Shift Uniqueness Test

004862332-01, P = 0.890365 Days, E = 130.622626 Days

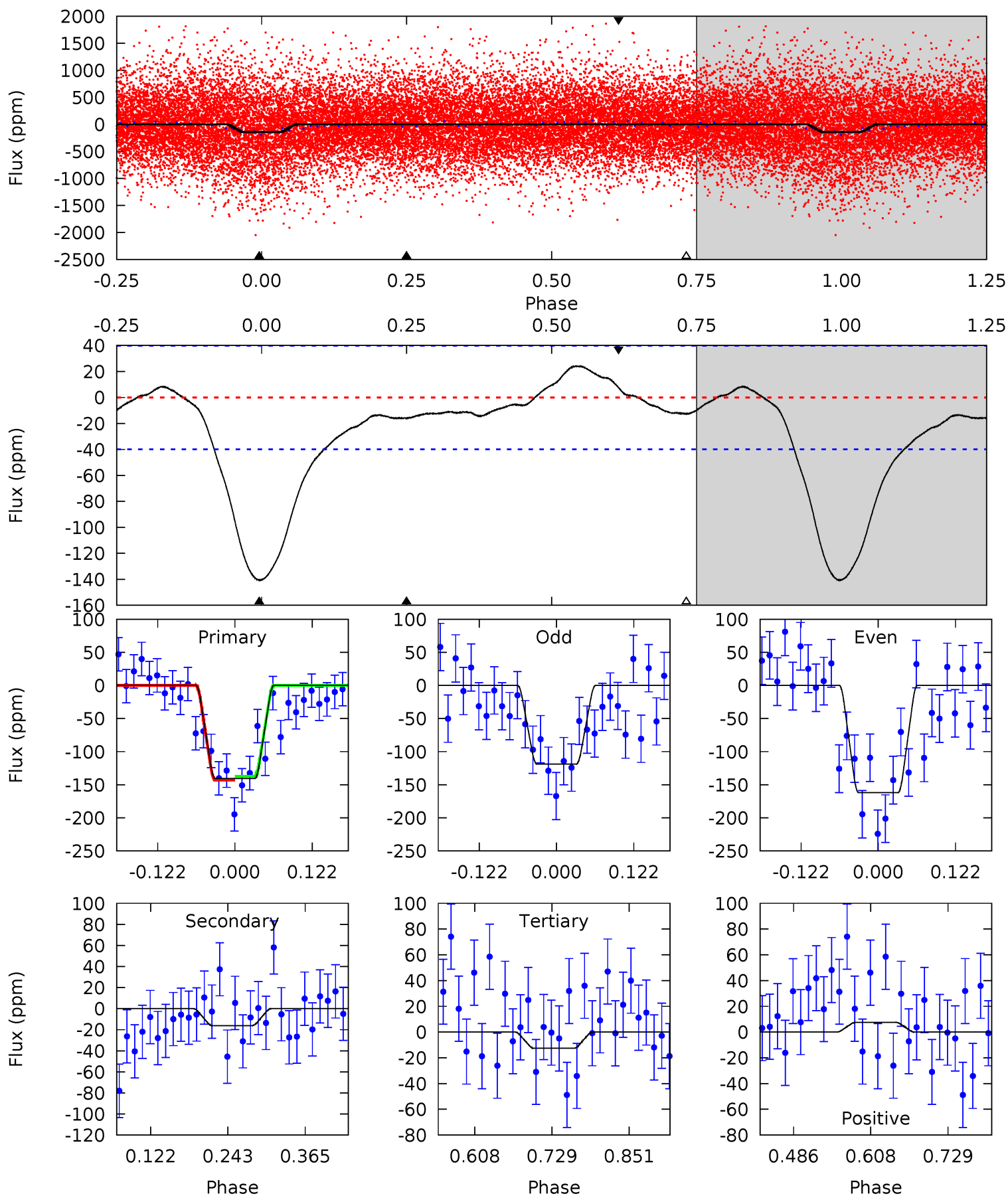
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	2.89	2.63	0	4.54	1.60	1.12	11.0	13.6	0.26	2.89	2.66	0.85	0.12	1.09



# Alt Model-Shift Uniqueness Test

004862332-01, P = 0.890337 Days, E = 130.639358 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
15.9	1.82	1.43	0.86	4.52	1.55	1.34	14.5	15.1	0.39	0.96	2.45	1.13	0.15	0.33



### Stellar Parameters For KIC 004862332

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4981^{+121}_{-228}$	$2.437^{+0.033}_{-0.033}$	$0.070^{+0.150}_{-0.650}$	$18.374^{+0.836}_{-7.526}$	$3.369^{+0.111}_{-2.115}$	$0.001^{+0.001}_{-0.000}$
	+2%/-5%	+1%/-1%	+214%/-929%	+5%/-41%	+3%/-63%	+73%/-9%
Source	PHO1	AST9	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 004862332-01 / KOI 6463.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-26 \pm 9$	$17.95^{+9.40}_{-8.39}$	$7996^{+248}_{-408}$	$-6142^{+644}_{-347}$	$0.030^{+0.081}_{-0.019}$
Alt.	$-16 \pm 9$	$26.09^{+9.04}_{-10.12}$	$7986^{+255}_{-394}$	$-6326^{+399}_{-272}$	$0.009^{+0.016}_{-0.006}$

$T_{max}$  = 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  $A_{obs} \gg 1.0$



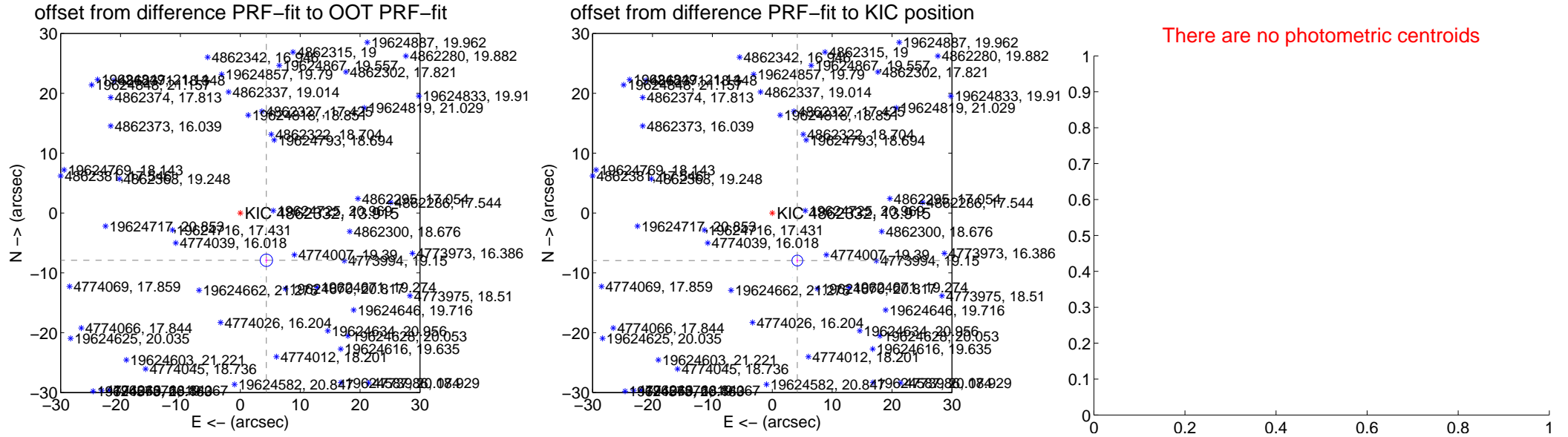
## DV Centroid Data

Supplemental centroid analysis for 004862332-01. Kepler magnitude: 13.91. Transit SNR 6.43

There are 6 quarters with good PRF difference image offsets

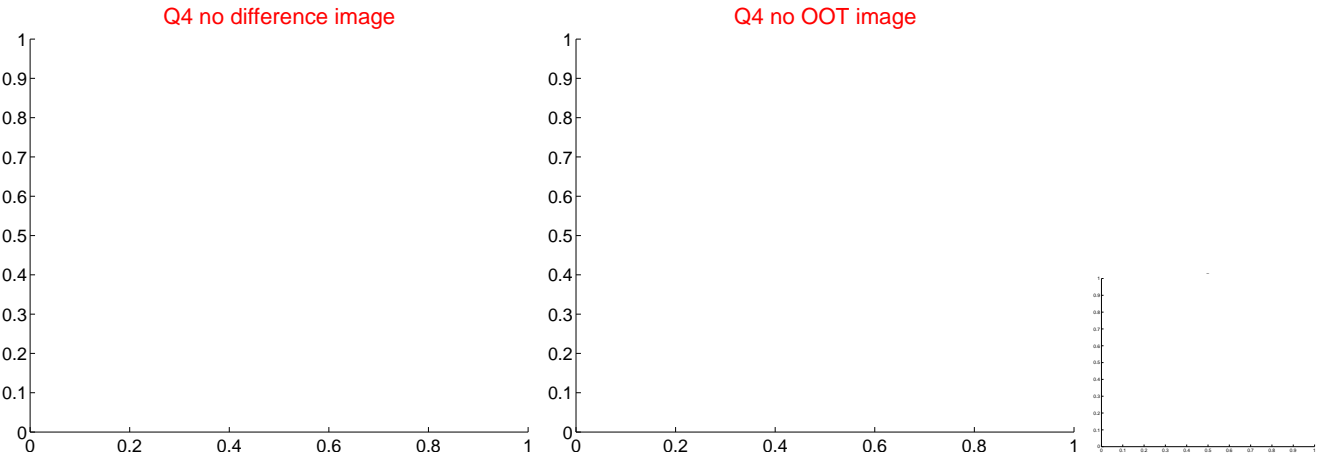
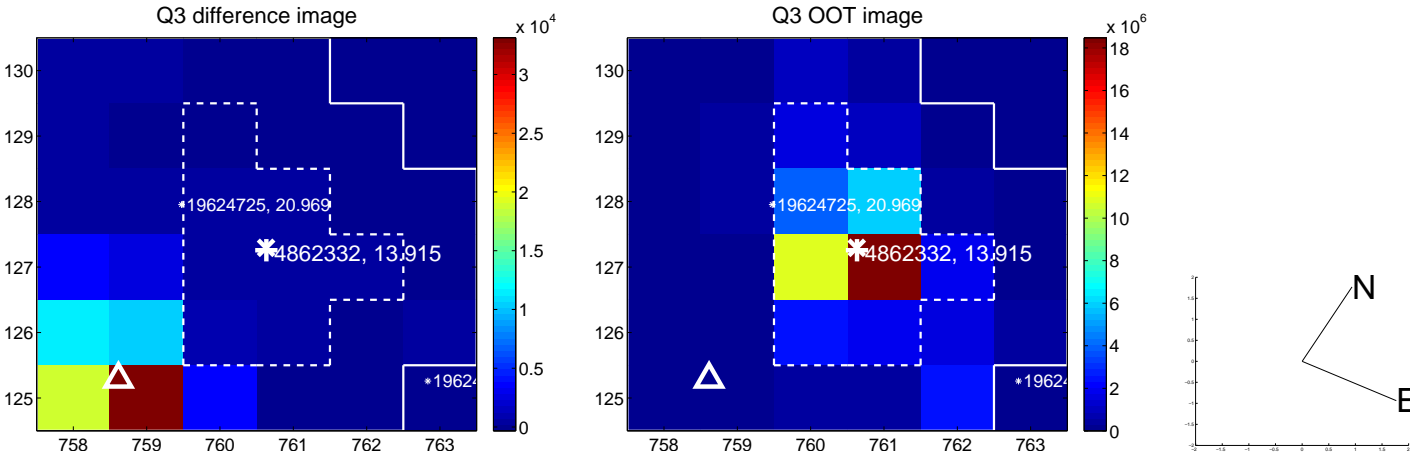
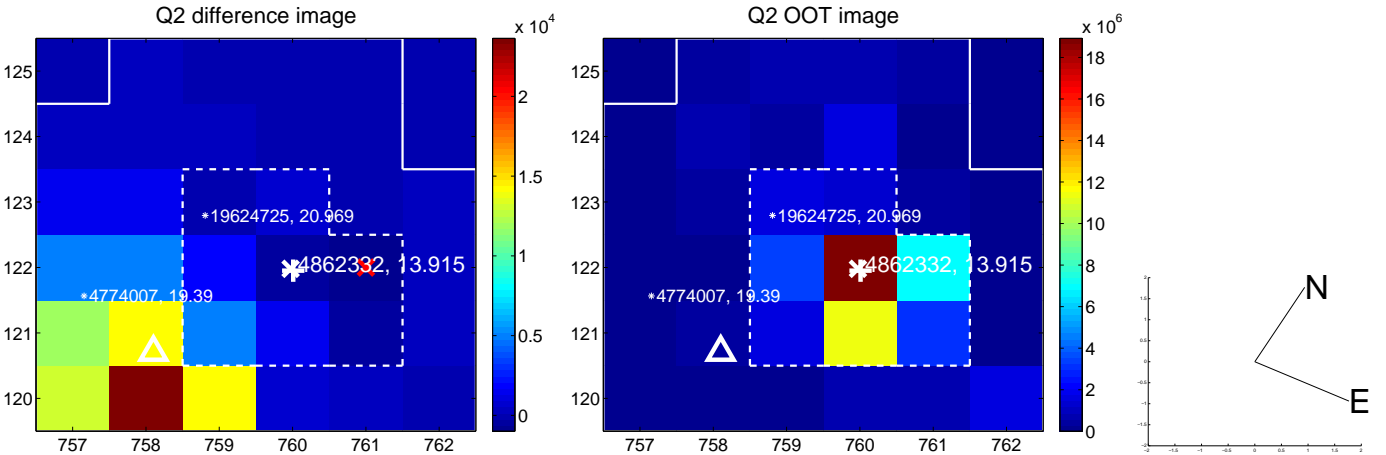
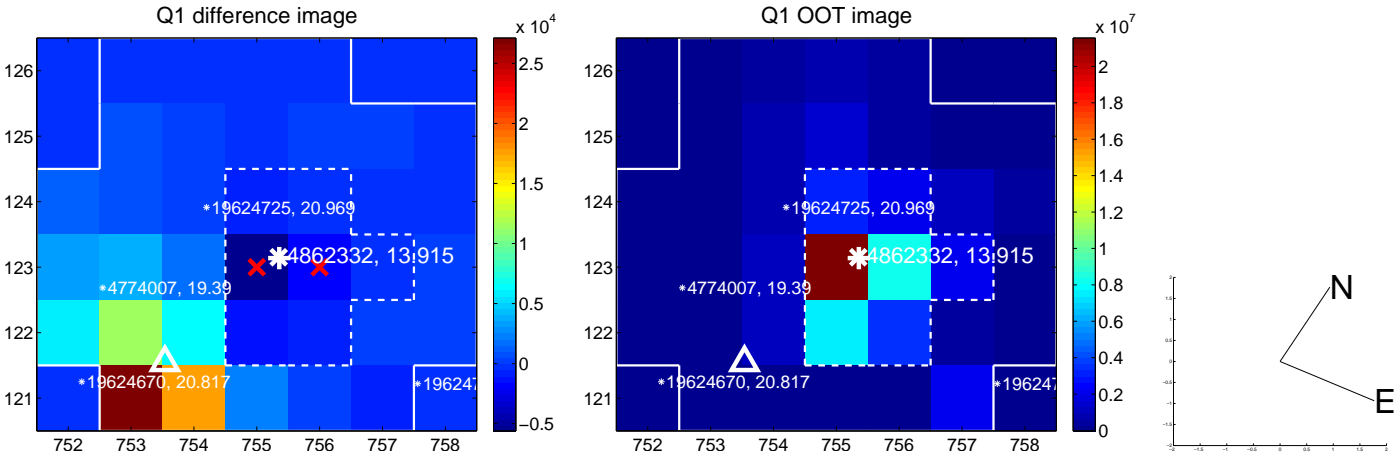
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>9.018 \pm 0.346</math></b>	<b>26.09</b>	$-4.357 \pm 0.209$	$-7.896 \pm 0.495$
PRF-fit source offset from KIC position	<b><math>8.984 \pm 0.301</math></b>	<b>29.86</b>	$-4.188 \pm 0.171$	$-7.948 \pm 0.411$
photometric centroid source offset	—	—	—	—

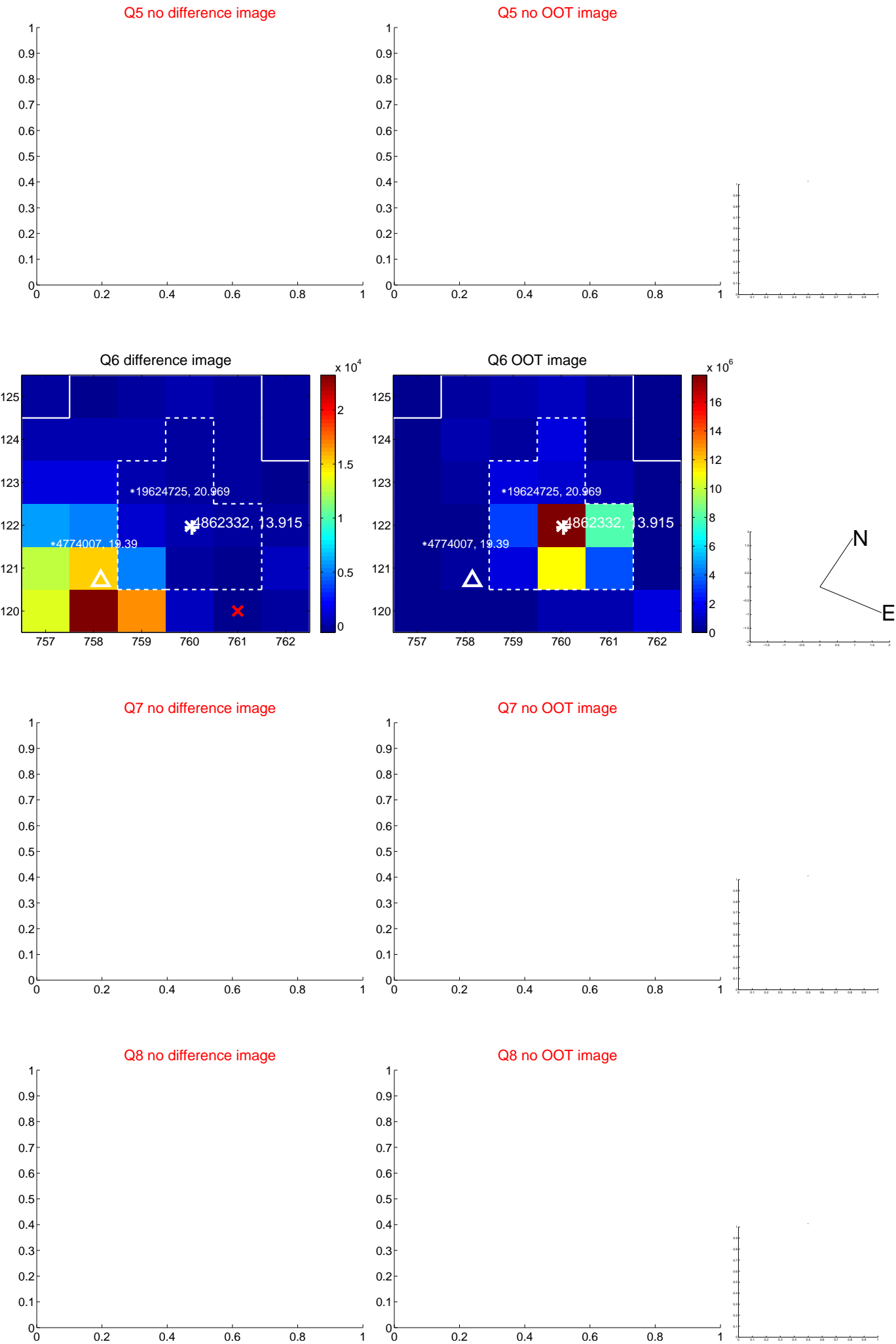


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

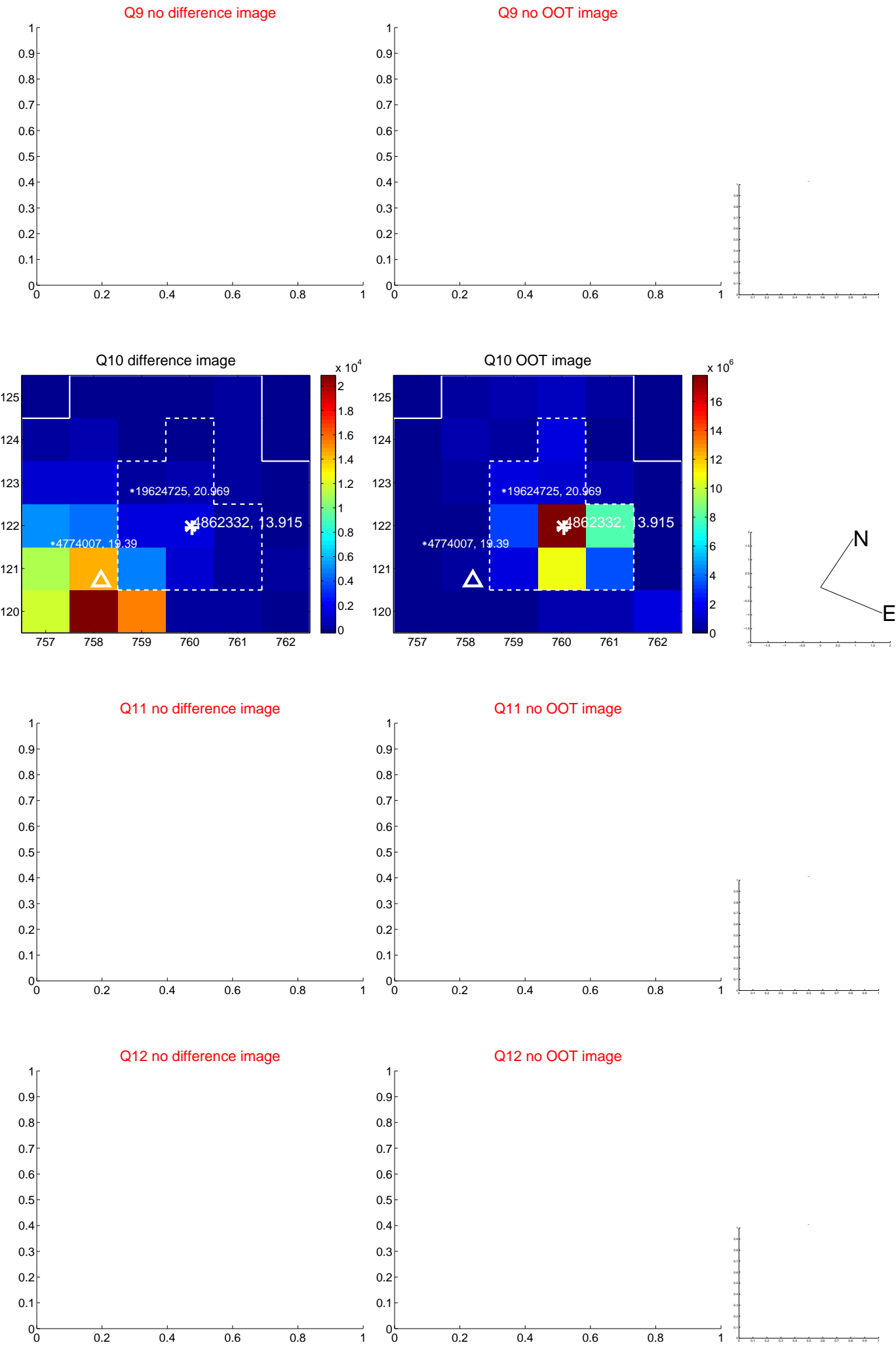
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

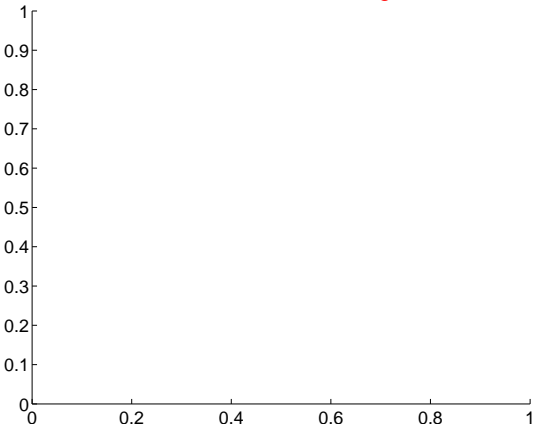


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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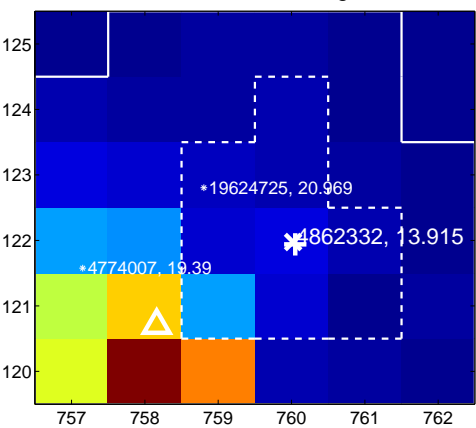
Q13 no difference image



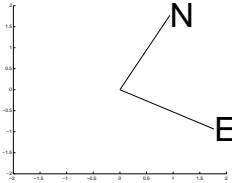
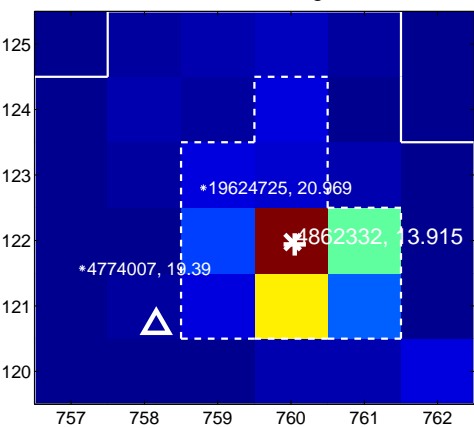
Q13 no OOT image



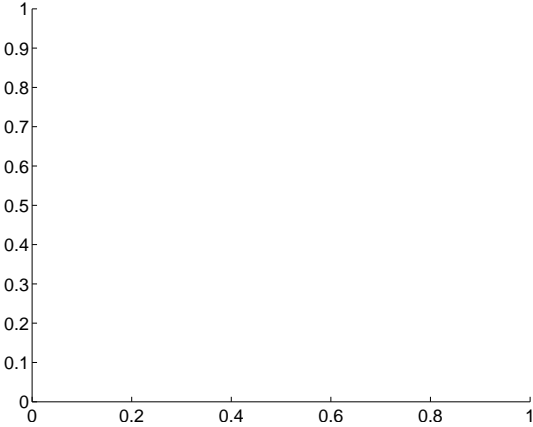
Q14 difference image



Q14 OOT image



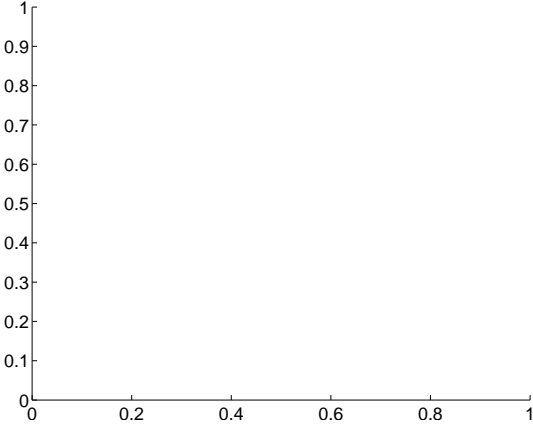
Q15 no difference image



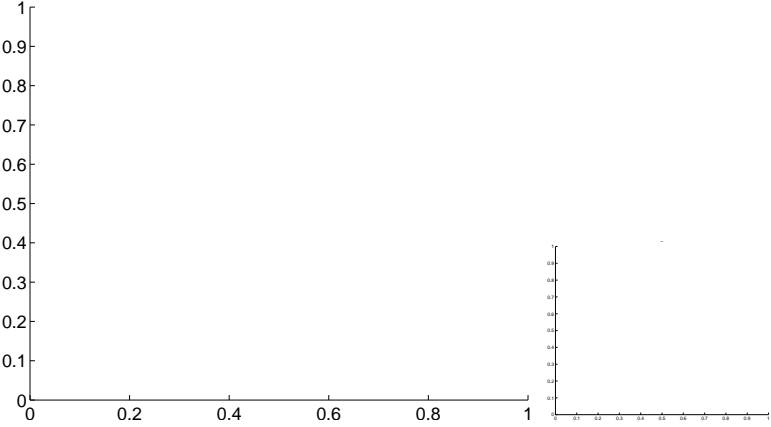
Q15 no OOT image



Q16 no difference image

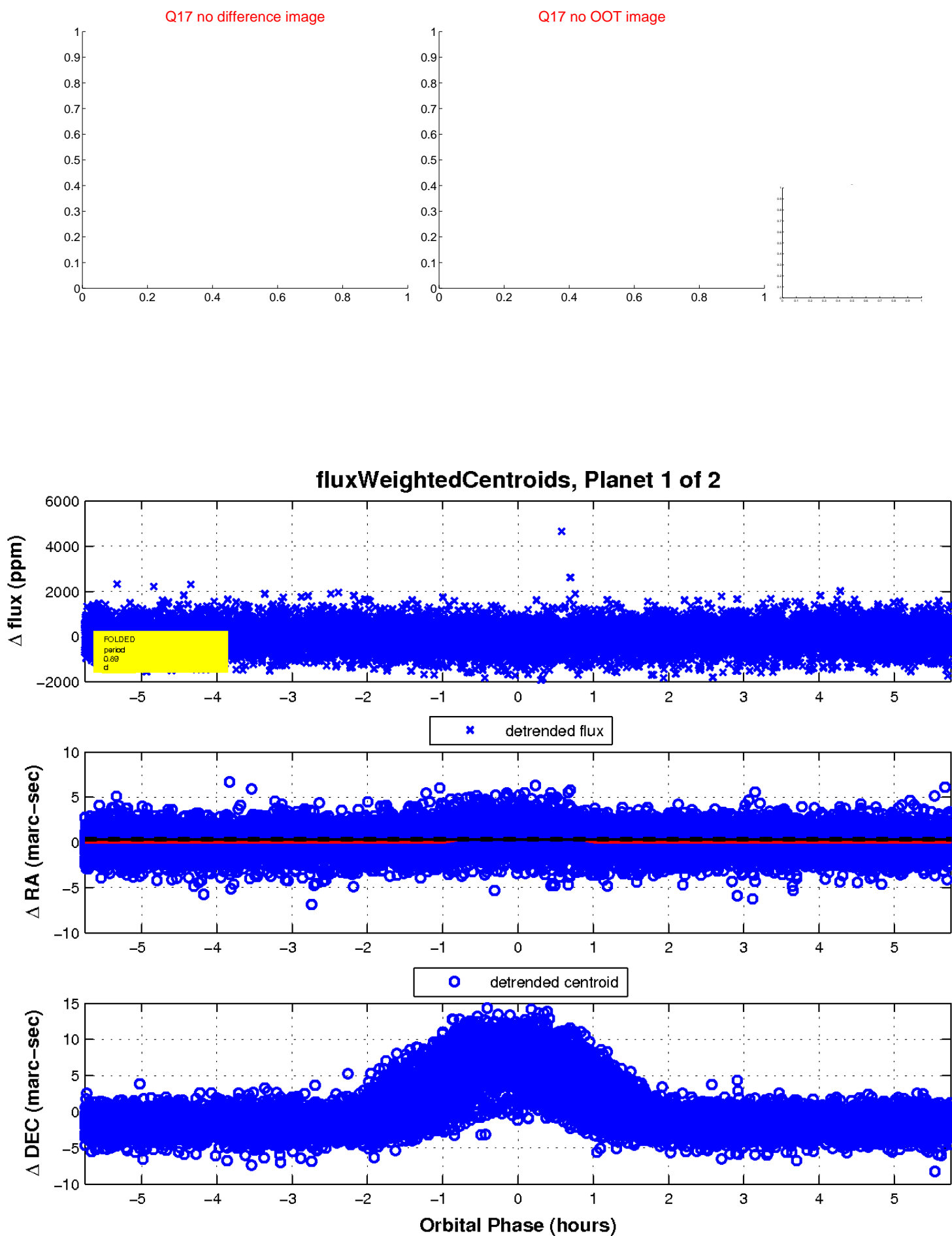


Q16 no OOT image





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



UKIRT Image

Declination

