

# KIC 004345266

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004345266-01	OBS	No	422.732994	376.389568	140.8	19.100	7.3	7.9	2.33	5763	3.00	4.26

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004345266-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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.

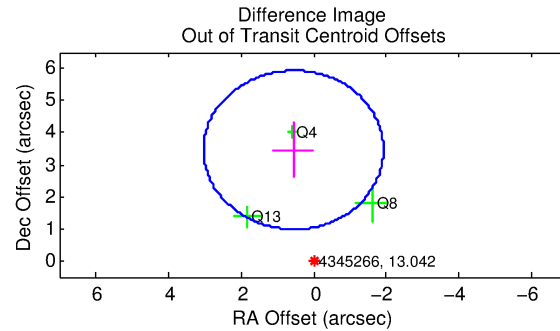
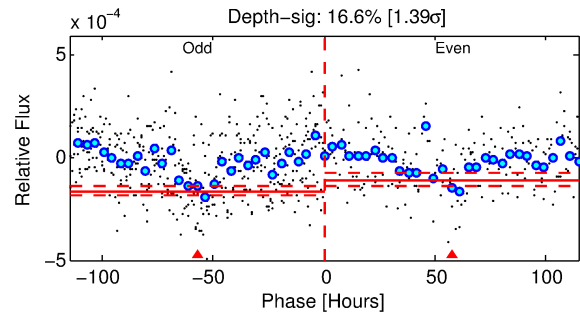
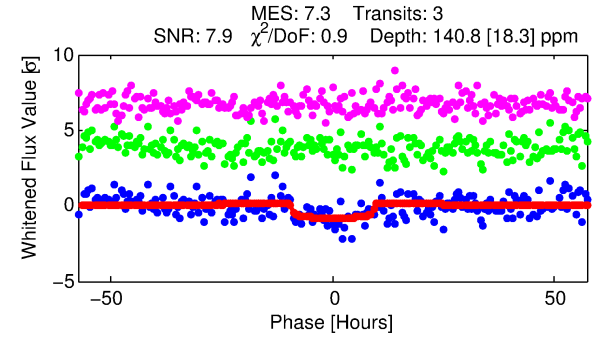
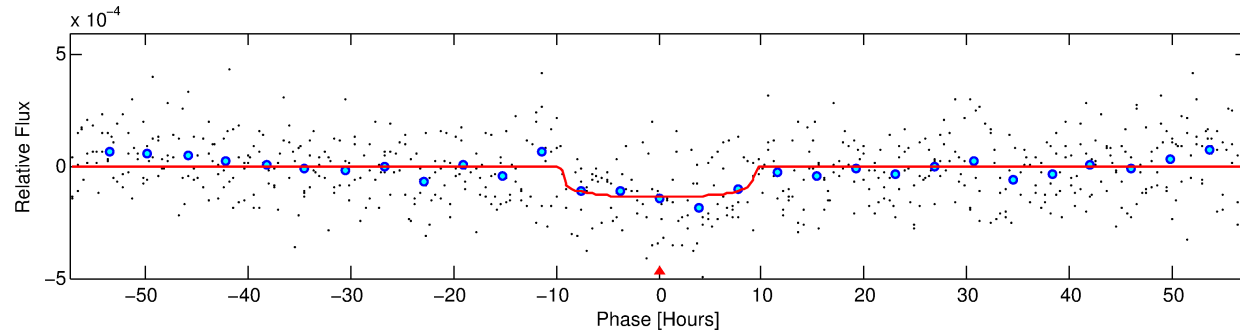
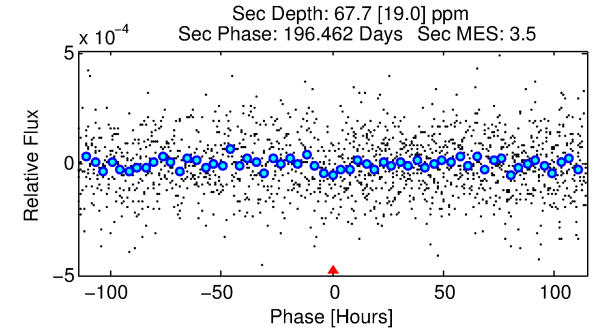
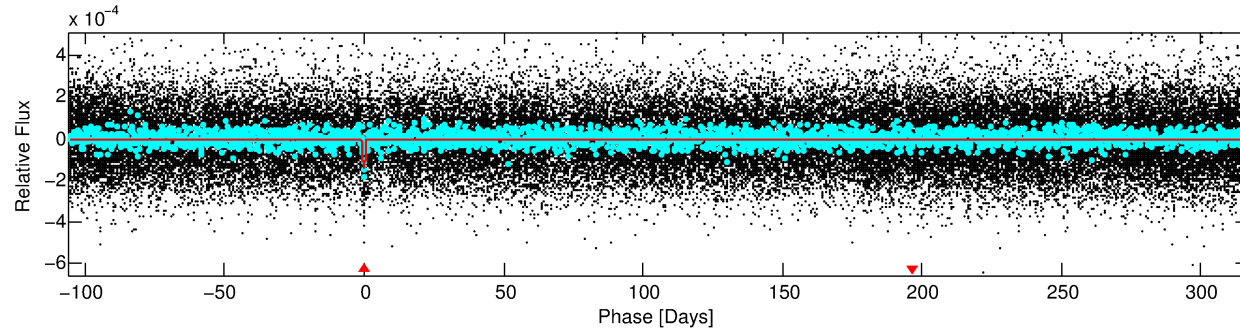
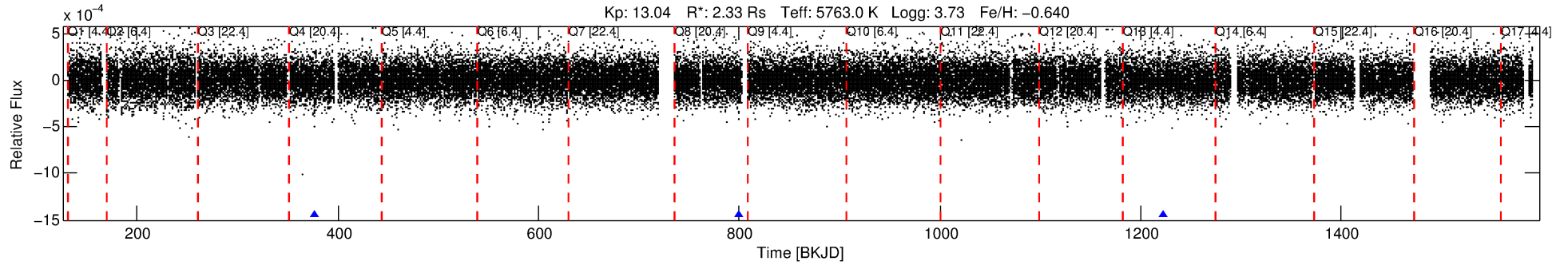
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004345266-01

No Significant Match Found

# DV One-Page Summary

KIC: 4345266 Candidate: 1 of 1 Period: 422.733 d



## DV Fit Results:

Period = 422.73299 [0.01892] d  
Epoch = 376.3896 [0.0254] BKJD  
Rp/R\* = 0.0118 [0.0041]  
a/R\* = 113.84 [197.47]  
b = 0.76 [0.98]  
Seff = 4.27 [2.05]  
Teq = 366 [44] K  
Rp = 3.00 [1.40] Re  
a = 1.1201 [0.3280] AU  
Ag = 5182.33 [4591.48] [1.13σ]  
Teffp = 4807 [917] K [4.84σ]

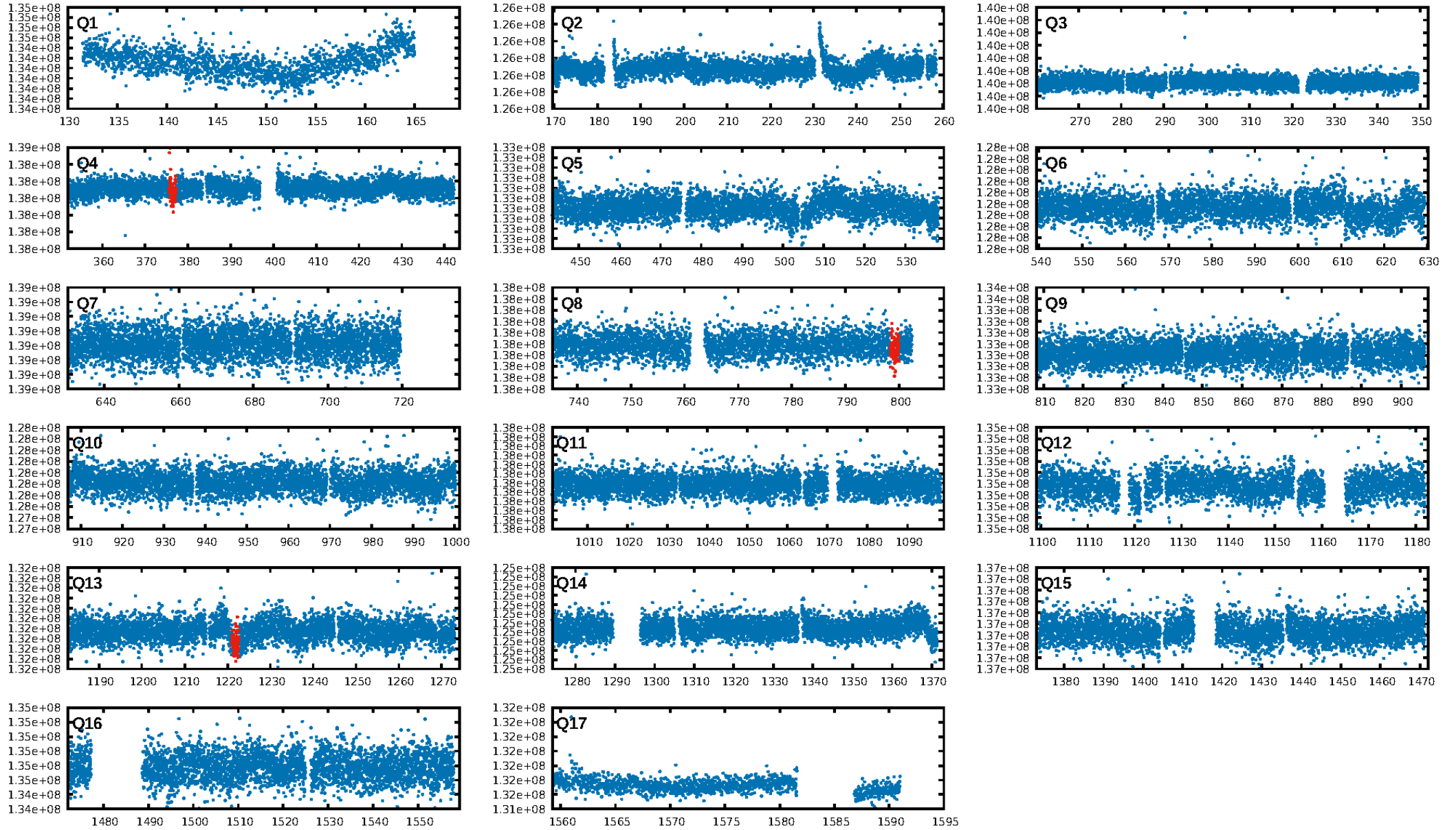
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 6.6%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 3.90e-08**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 2.568  
**Centroid-sig: 0.0%**  
Centroid-so: 4.100 arcsec [2.08σ]  
**OotOffset-rm: 3.501 arcsec [4.25σ]**  
**KicOffset-rm: 3.603 arcsec [4.34σ]**  
OotOffset-st: 0/0/2/1 [3]  
KicOffset-st: 0/0/2/1 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

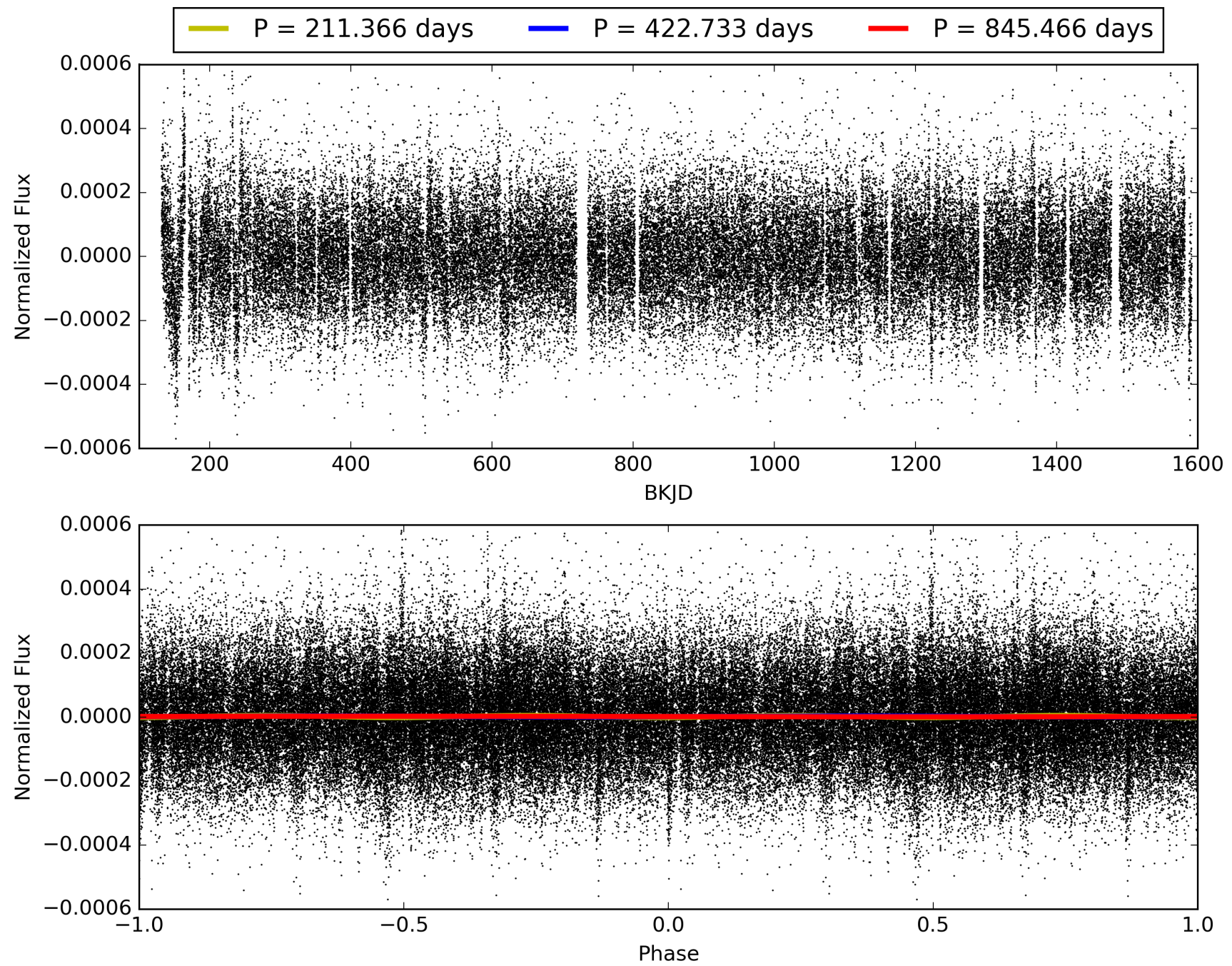
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:57:39 Z

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

# TCE 004345266-01, PDC Light Curves

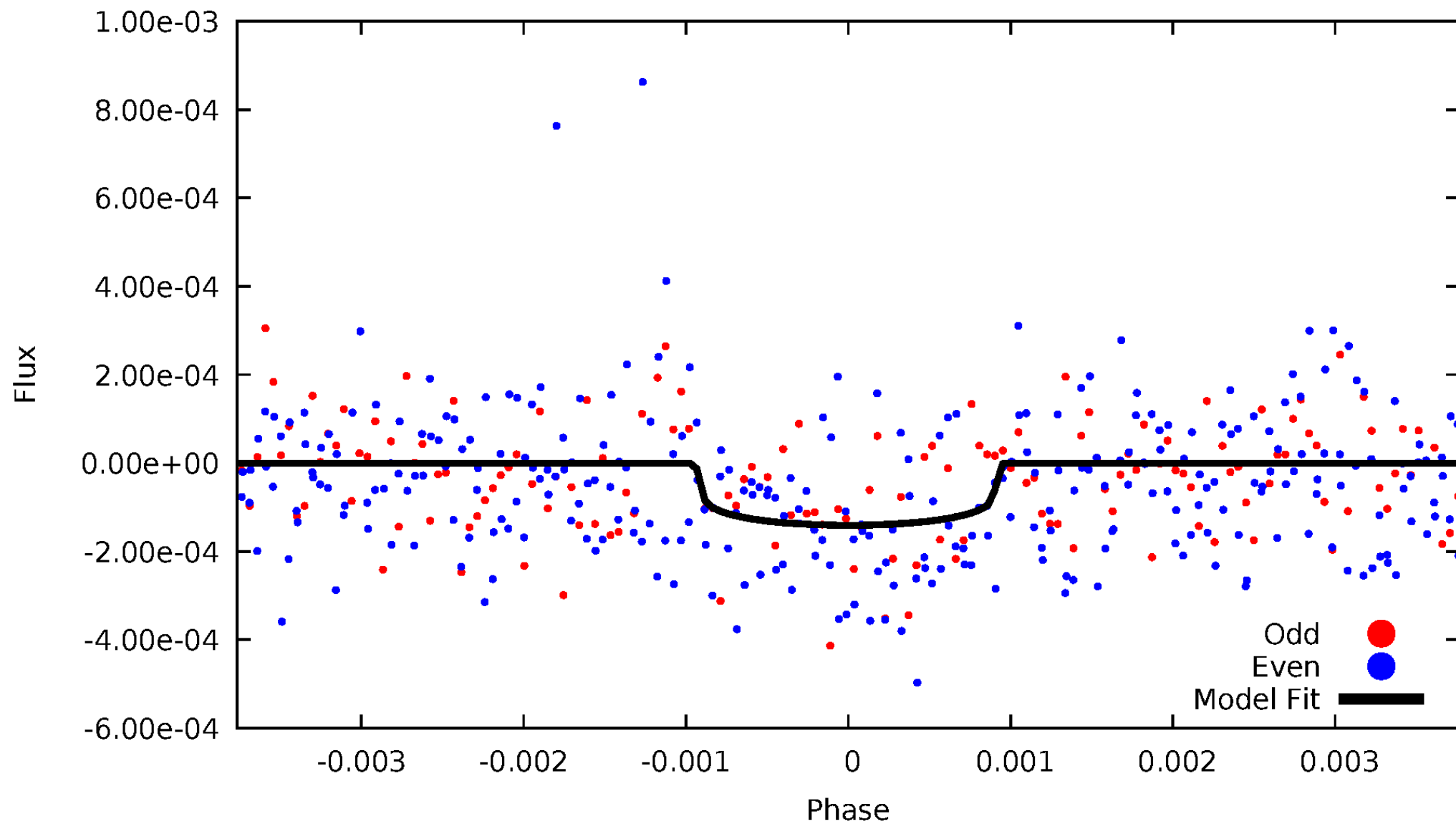


TCE 004345266-01



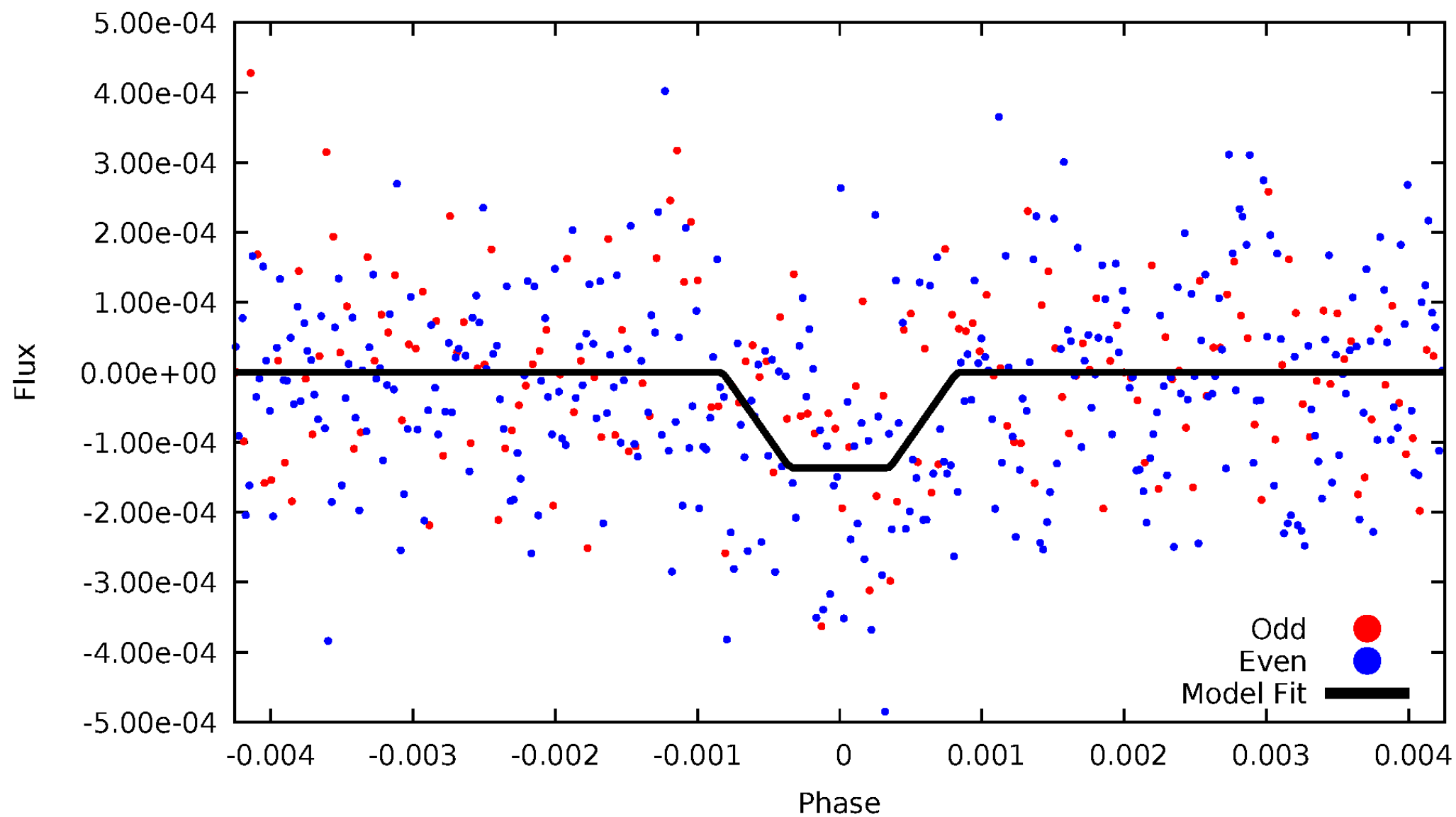
# DV Odd/Even

TCE 004345266-01



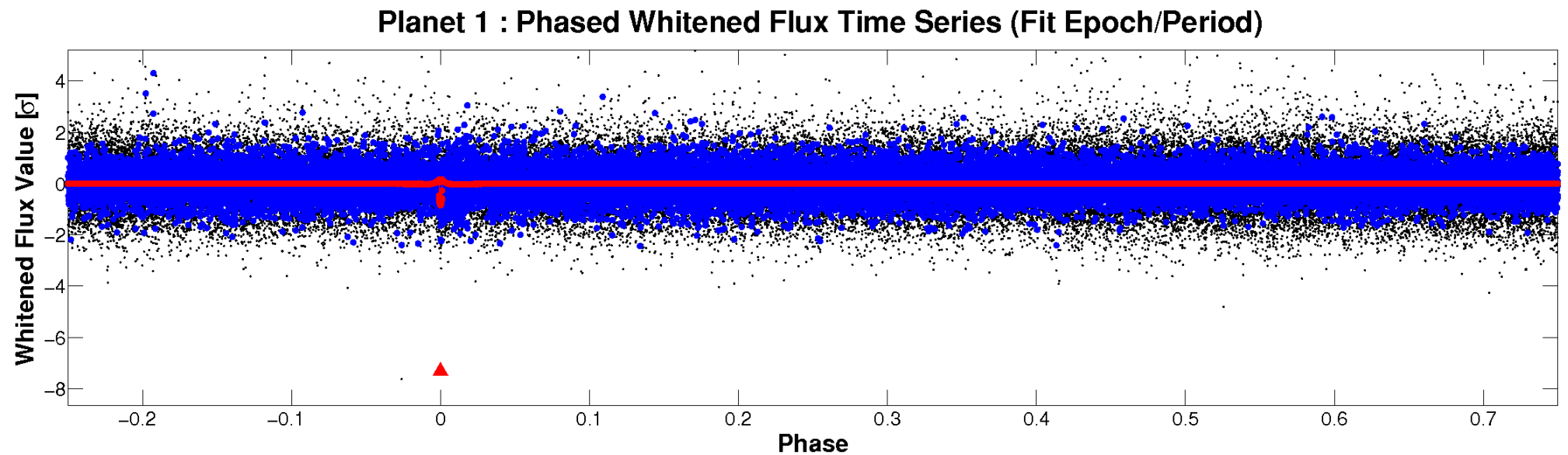
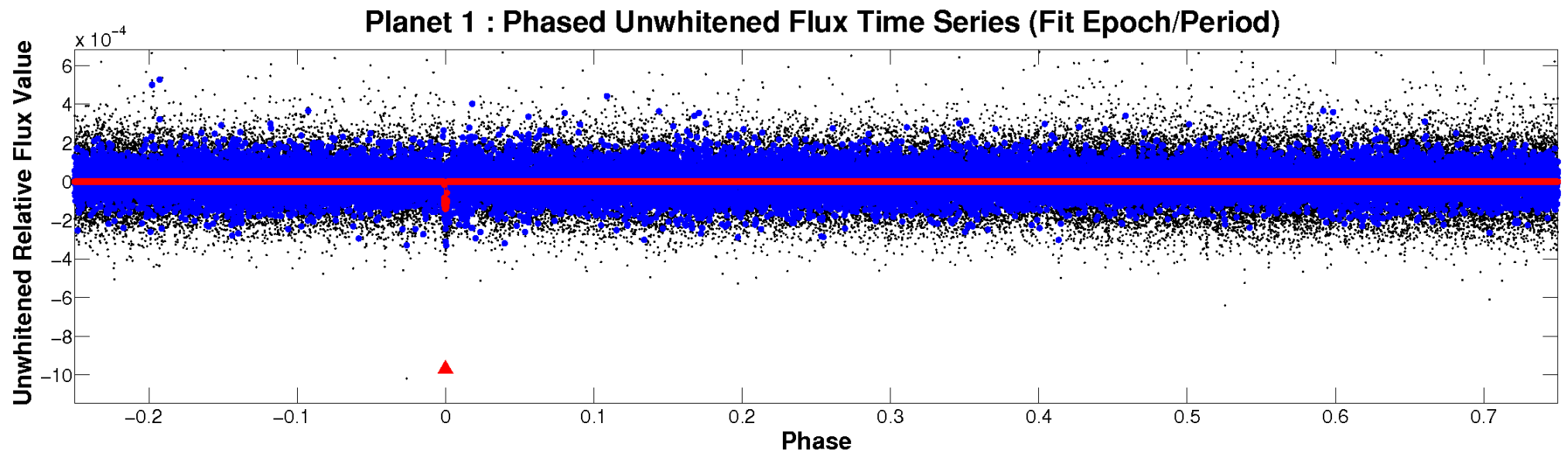
# ALT Odd/Even

TCE 004345266-01



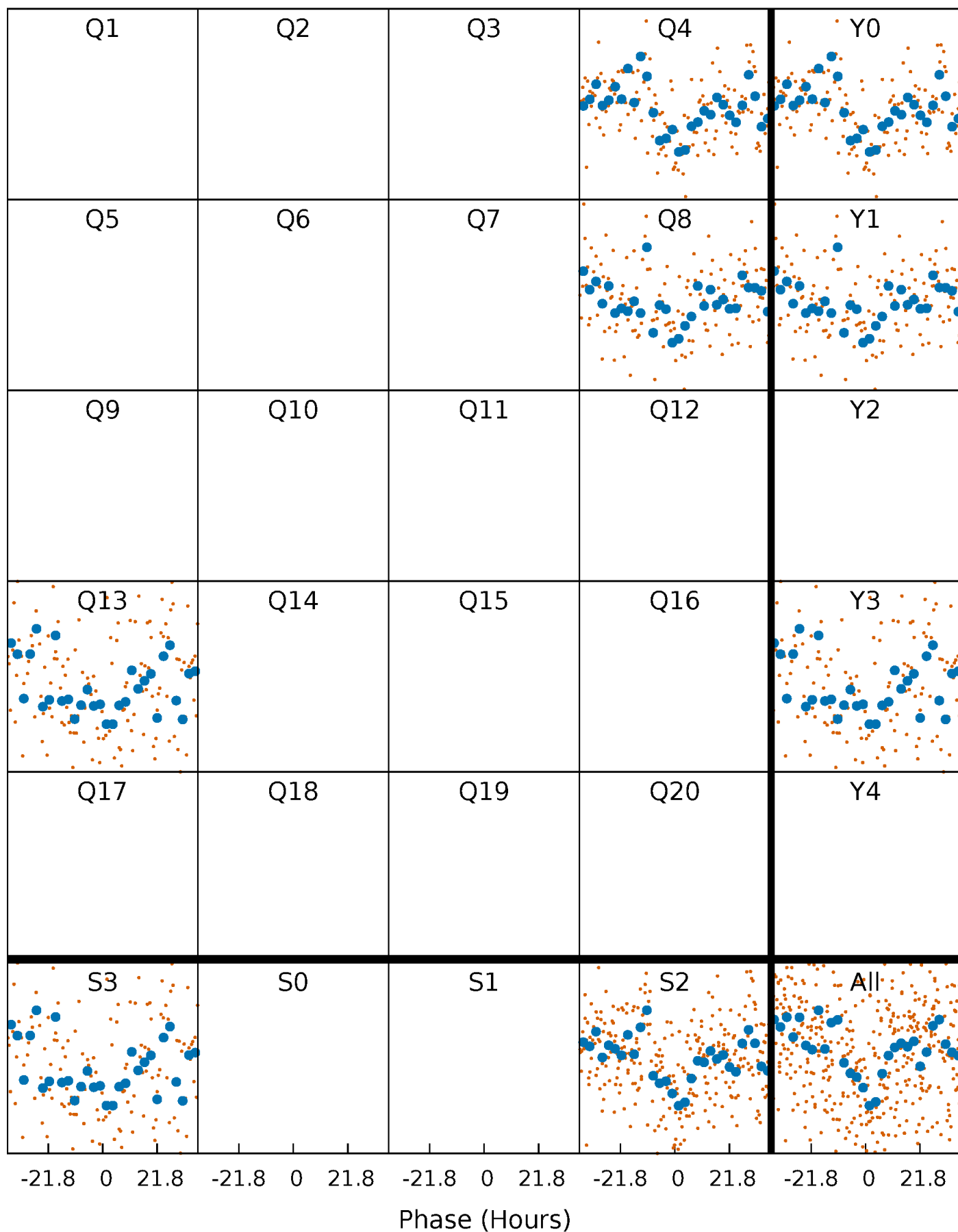


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

TCE 004345266-01 P=422.732994 Days  $T_0=376.389568$  (BKJD)





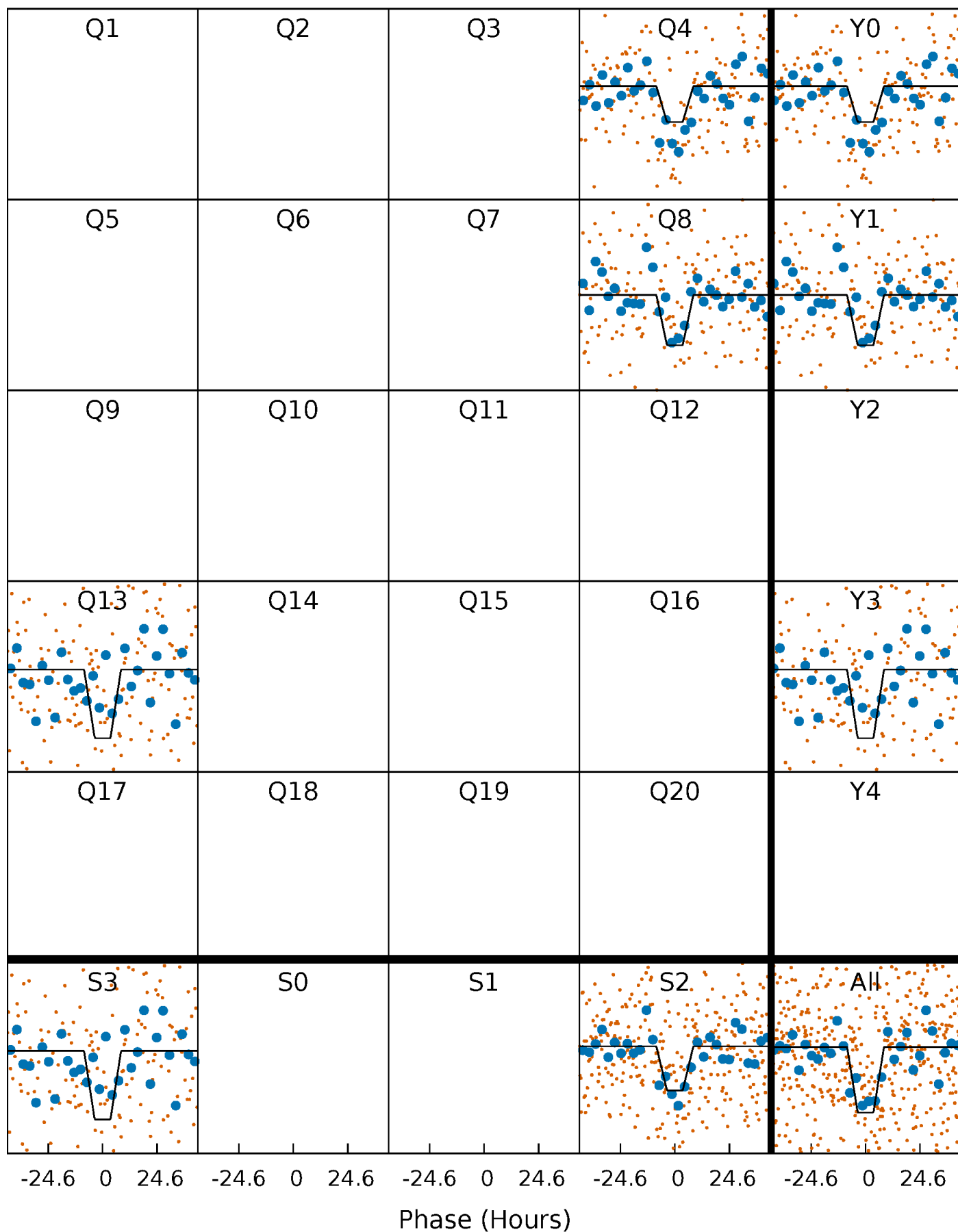
# DV Quarter-Phased Transit Curves

TCE 004345266-01 P=422.732994 Days  $T_0=376.389568$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

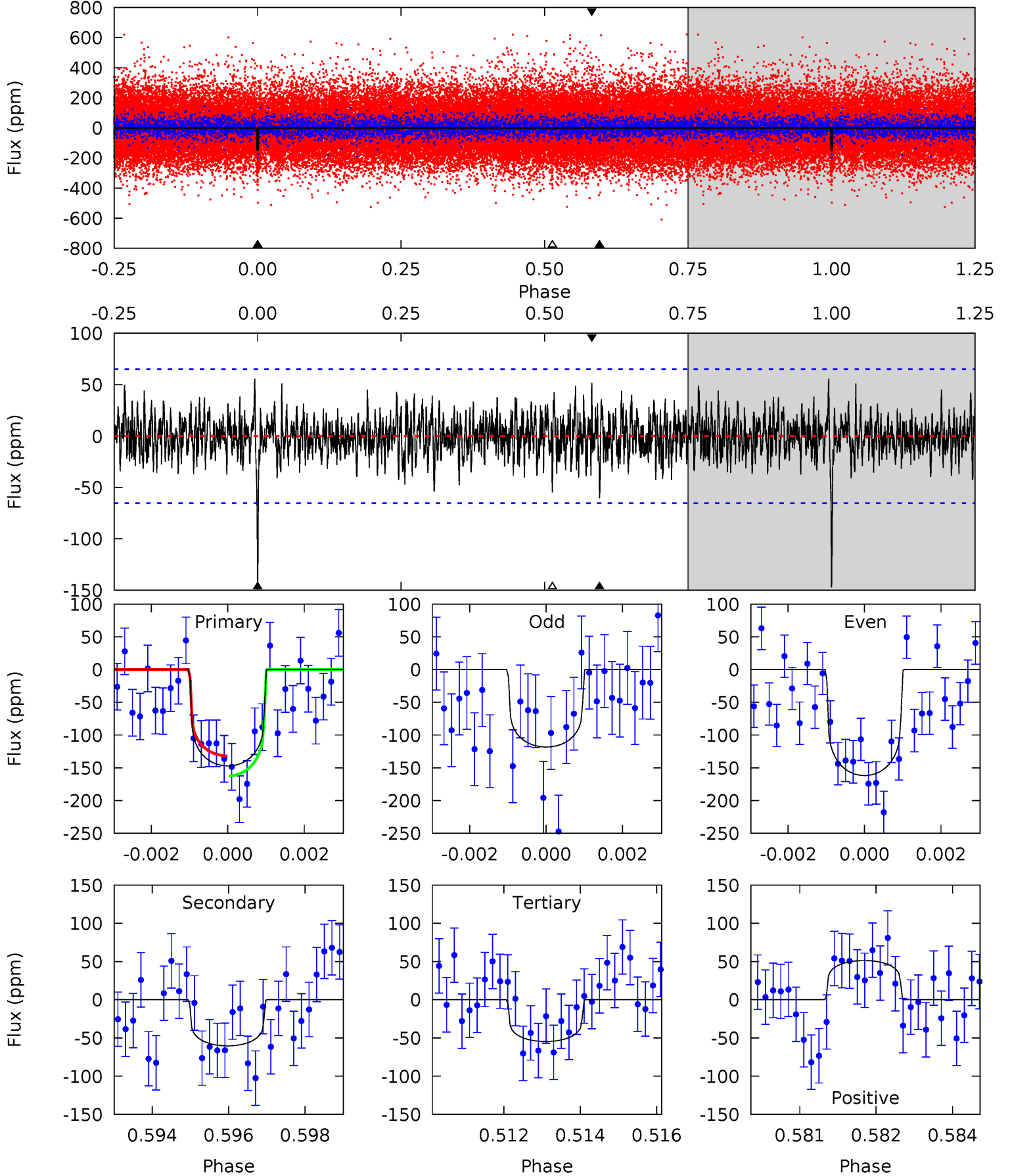
TCE 004345266-01 P=422.695433 Days  $T_0=376.434098$  (BKJD)



# DV Model-Shift Uniqueness Test

004345266-01, P = 422.732994 Days, E = 376.389568 Days

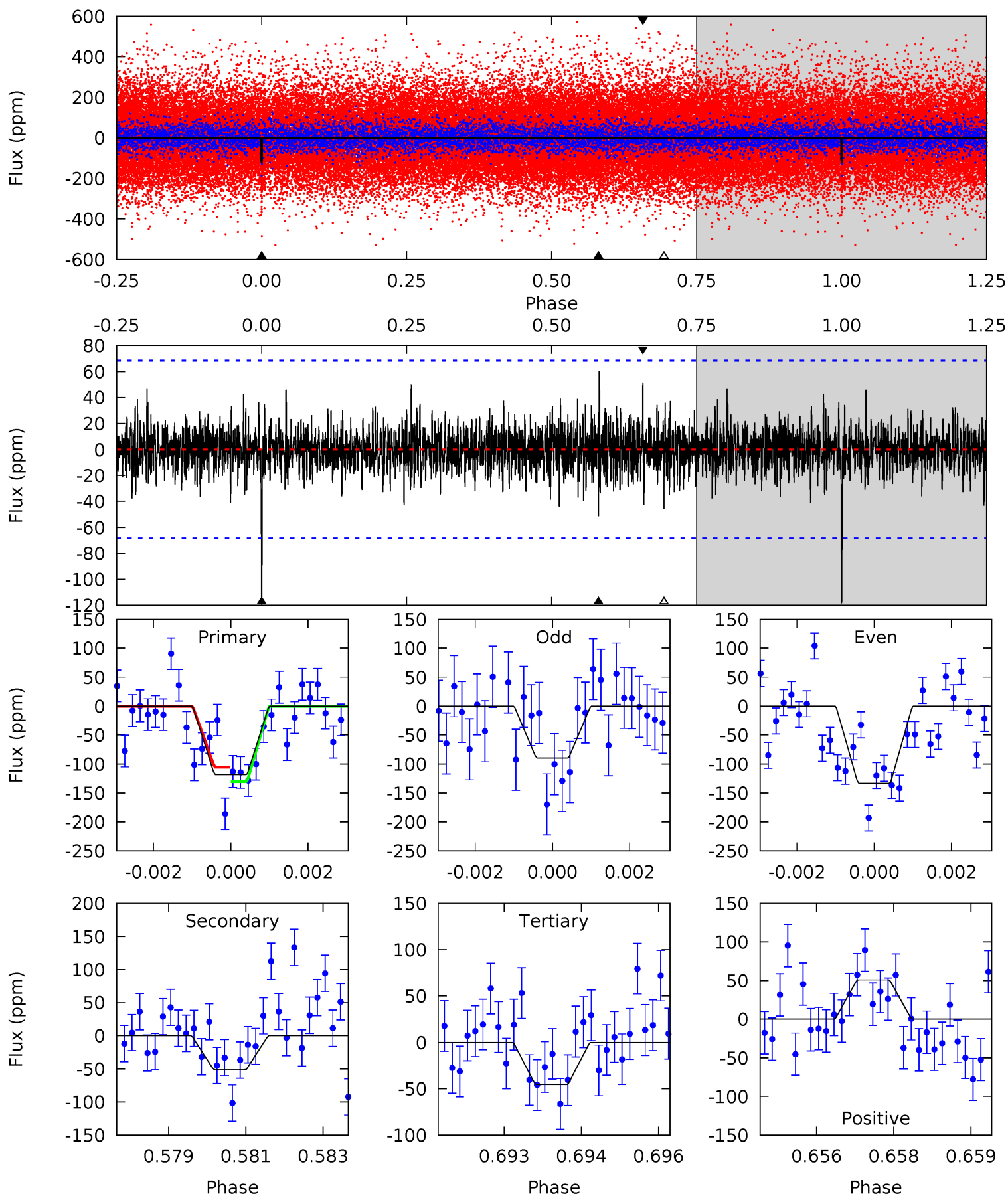
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	4.94	4.47	4.20	5.34	3.11	1.29	7.57	7.85	0.47	0.74	1.69	1.25	0.27	1.26



# Alt Model-Shift Uniqueness Test

004345266-01, P = 422.695433 Days, E = 376.434098 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
9.28	4.02	3.58	3.99	5.36	3.14	1.04	5.70	5.30	0.44	0.03	1.63	1.34	0.34	0.98



### Stellar Parameters For KIC 004345266

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5763^{+173}_{-156}$	$3.725^{+0.273}_{-0.136}$	$-0.640^{+0.350}_{-0.250}$	$2.327^{+0.584}_{-0.714}$	$1.047^{+0.181}_{-0.181}$	$0.117^{+0.187}_{-0.047}$
	+3%/-3%	+7%/-4%	+55%/-39%	+25%/-31%	+17%/-17%	+160%/-40%
Source	PHO1	FLK73	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 004345266-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-60 \pm 12$	$2.76^{+1.24}_{-1.00}$	$504^{+35}_{-46}$	$4807^{+1027}_{-583}$	$5309^{+8137}_{-2906}$
Alt.	$-51 \pm 13$	$2.82^{+1.13}_{-1.06}$	$504^{+34}_{-37}$	$4644^{+1028}_{-546}$	$4519^{+6684}_{-2419}$

$T_{max}$  = 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

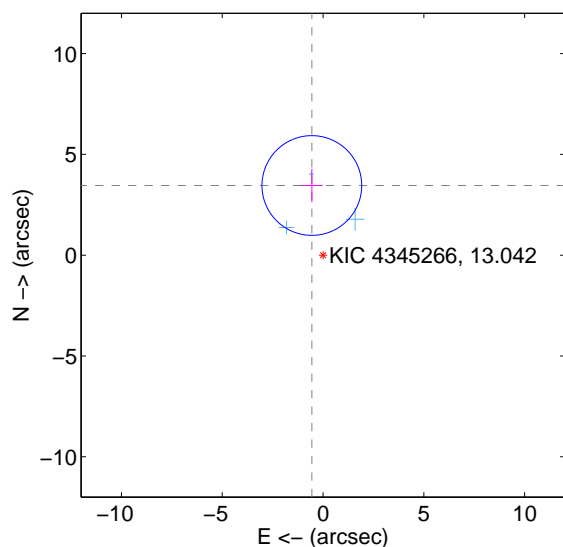
Supplemental centroid analysis for 004345266-01. Kepler magnitude: 13.04. Transit SNR 7.88

There are 3 quarters with good PRF difference image offsets

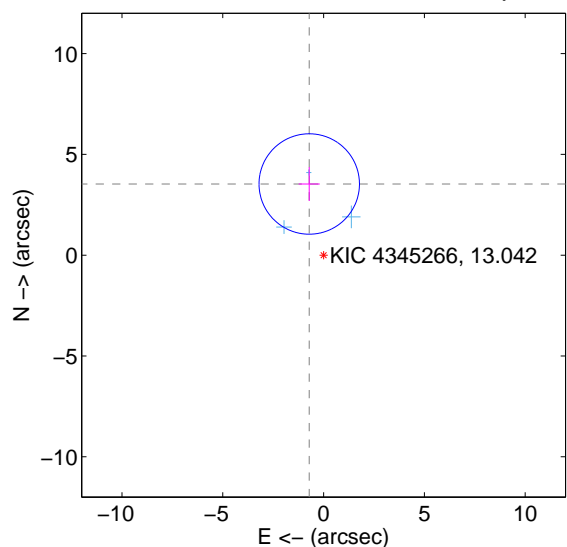
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.501 \pm 0.825$	4.25	$0.555 \pm 0.535$	$3.457 \pm 0.831$
PRF-fit source offset from KIC position	$3.603 \pm 0.830$	4.34	$0.712 \pm 0.522$	$3.532 \pm 0.840$
photometric centroid source offset	$4.10 \pm 1.97$	2.08	$0.63 \pm 1.59$	$4.05 \pm 1.98$

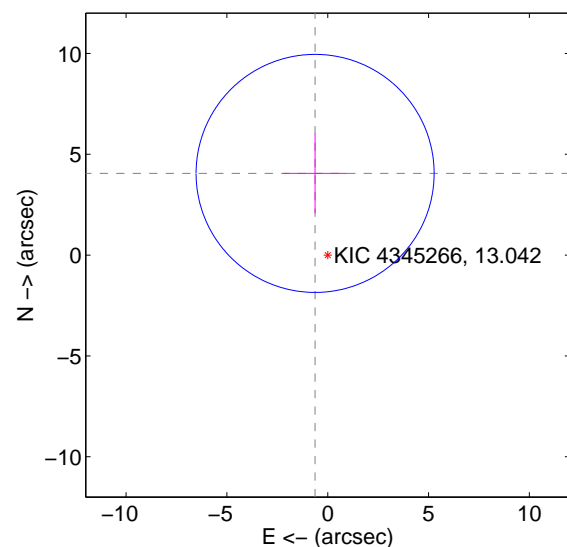
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



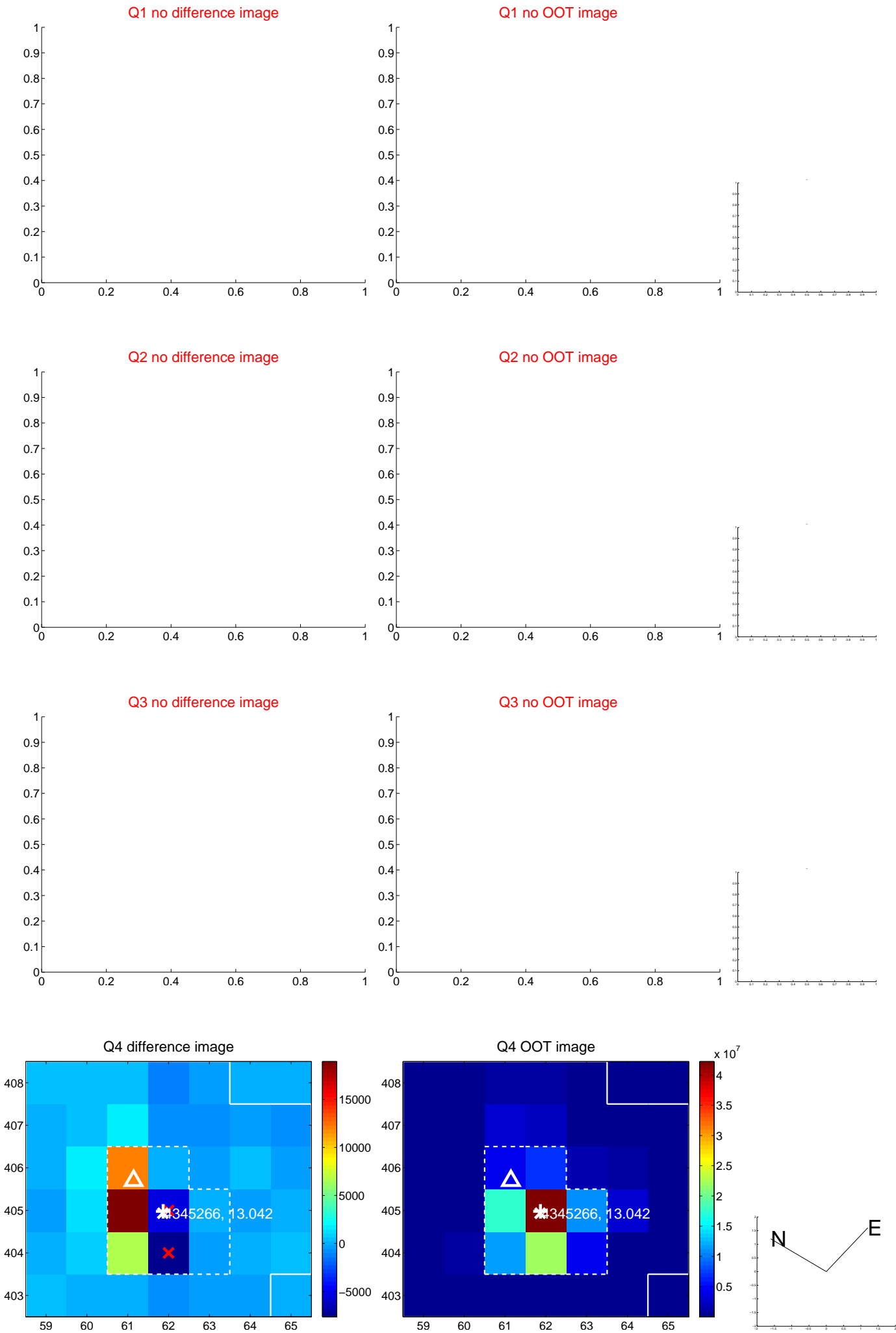
offset from photometric centroids



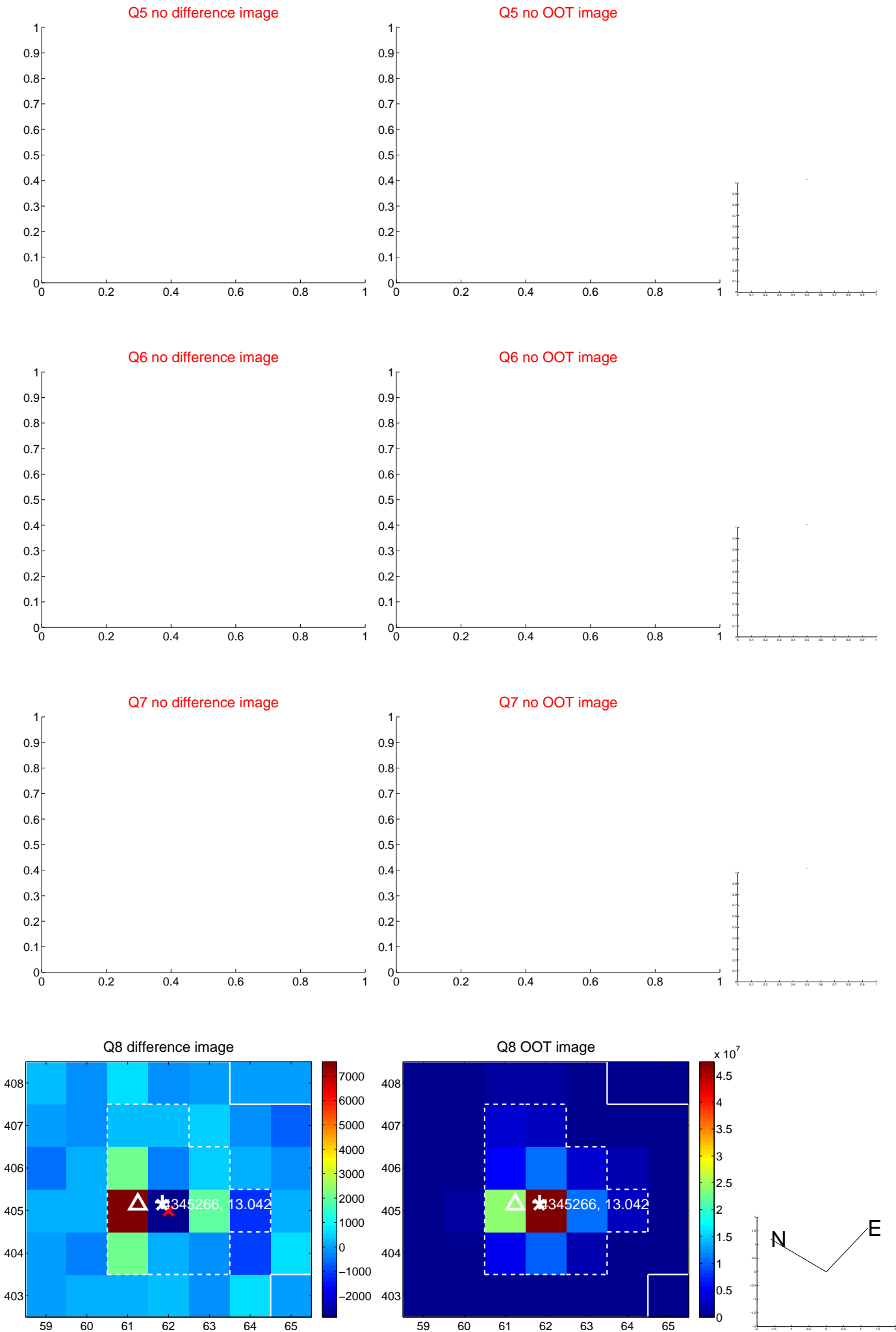
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



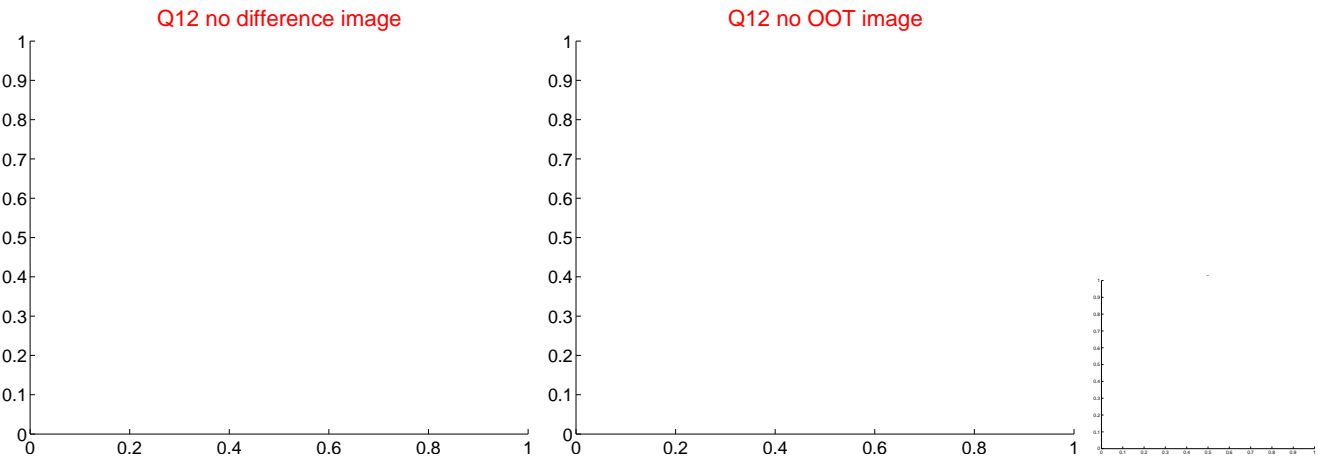
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



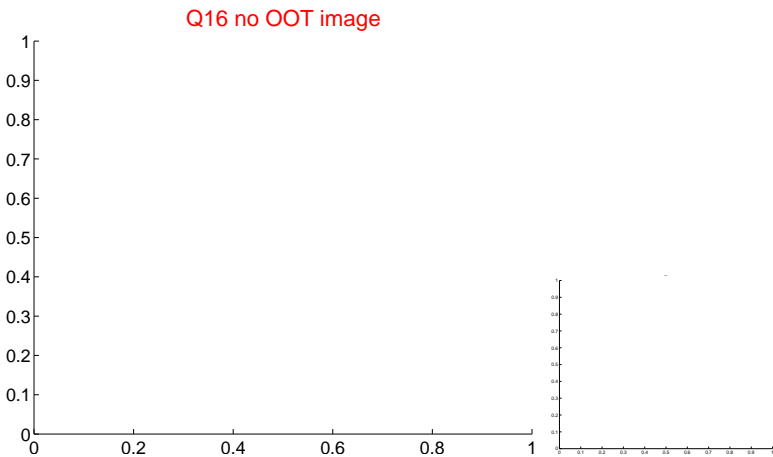
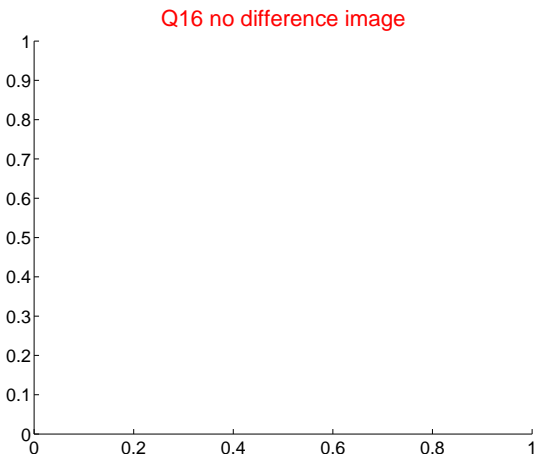
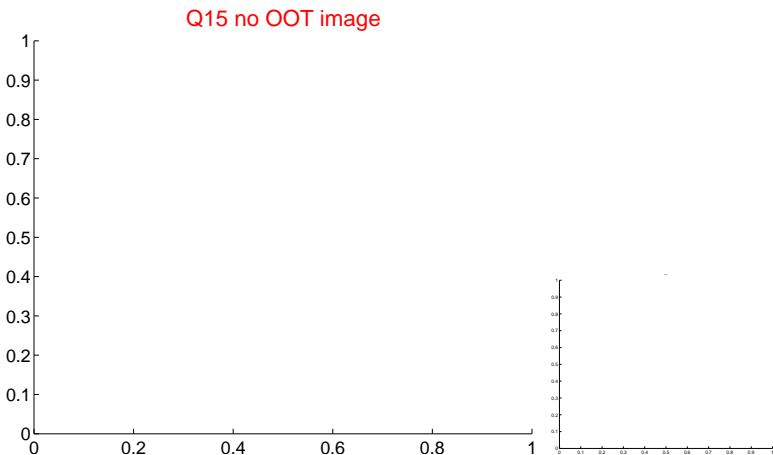
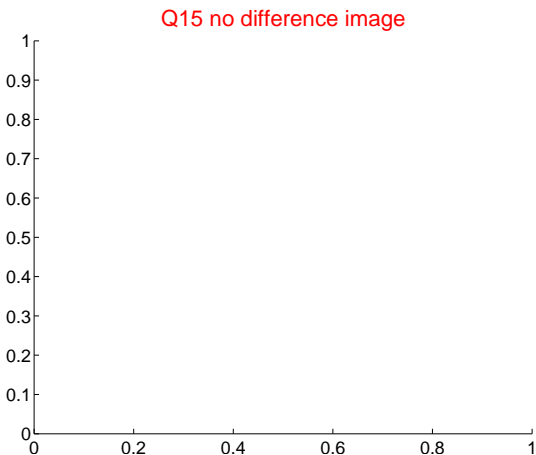
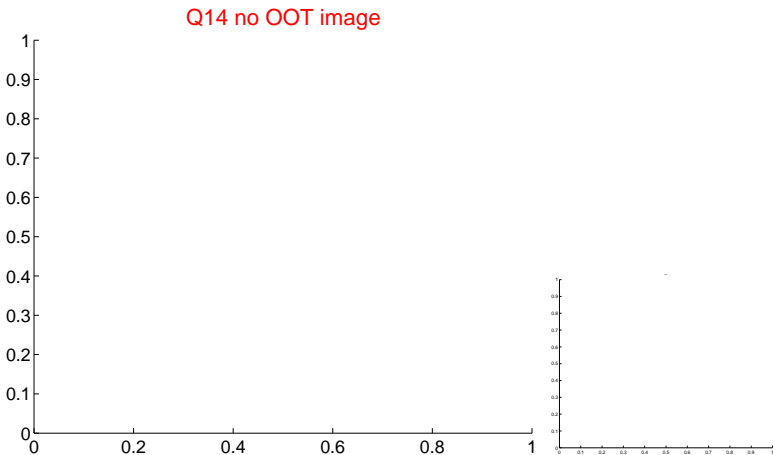
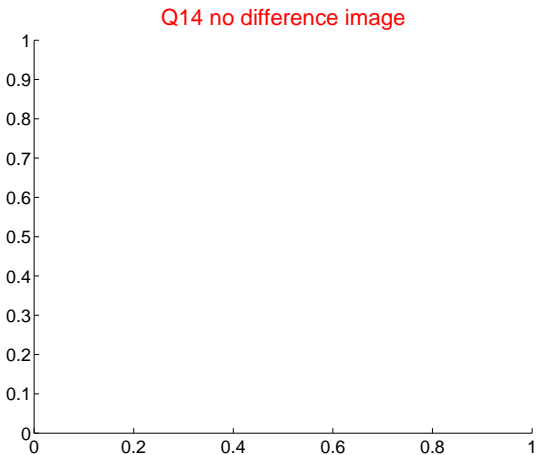
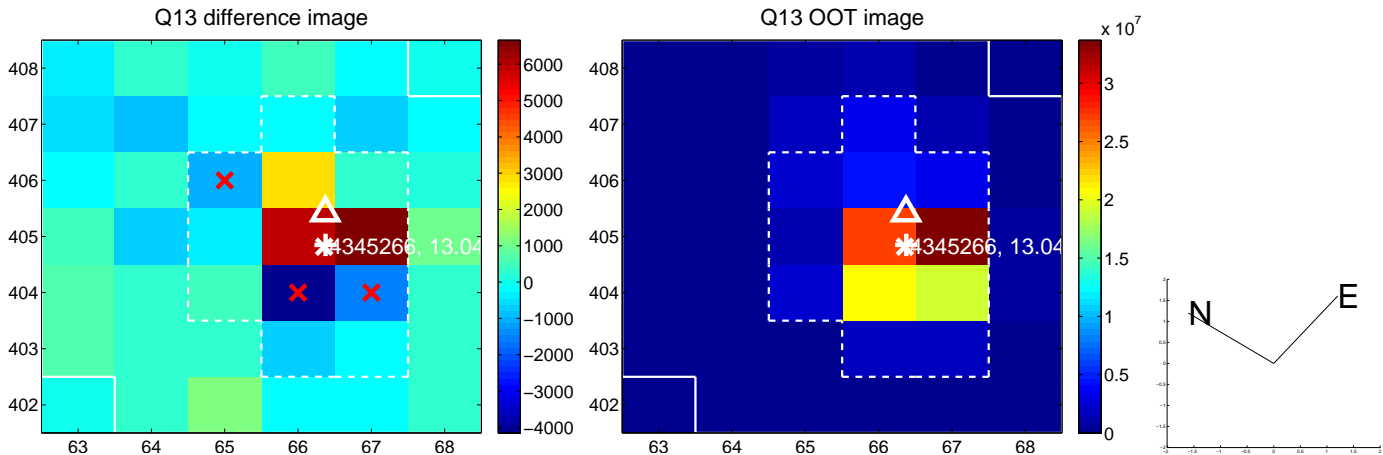
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



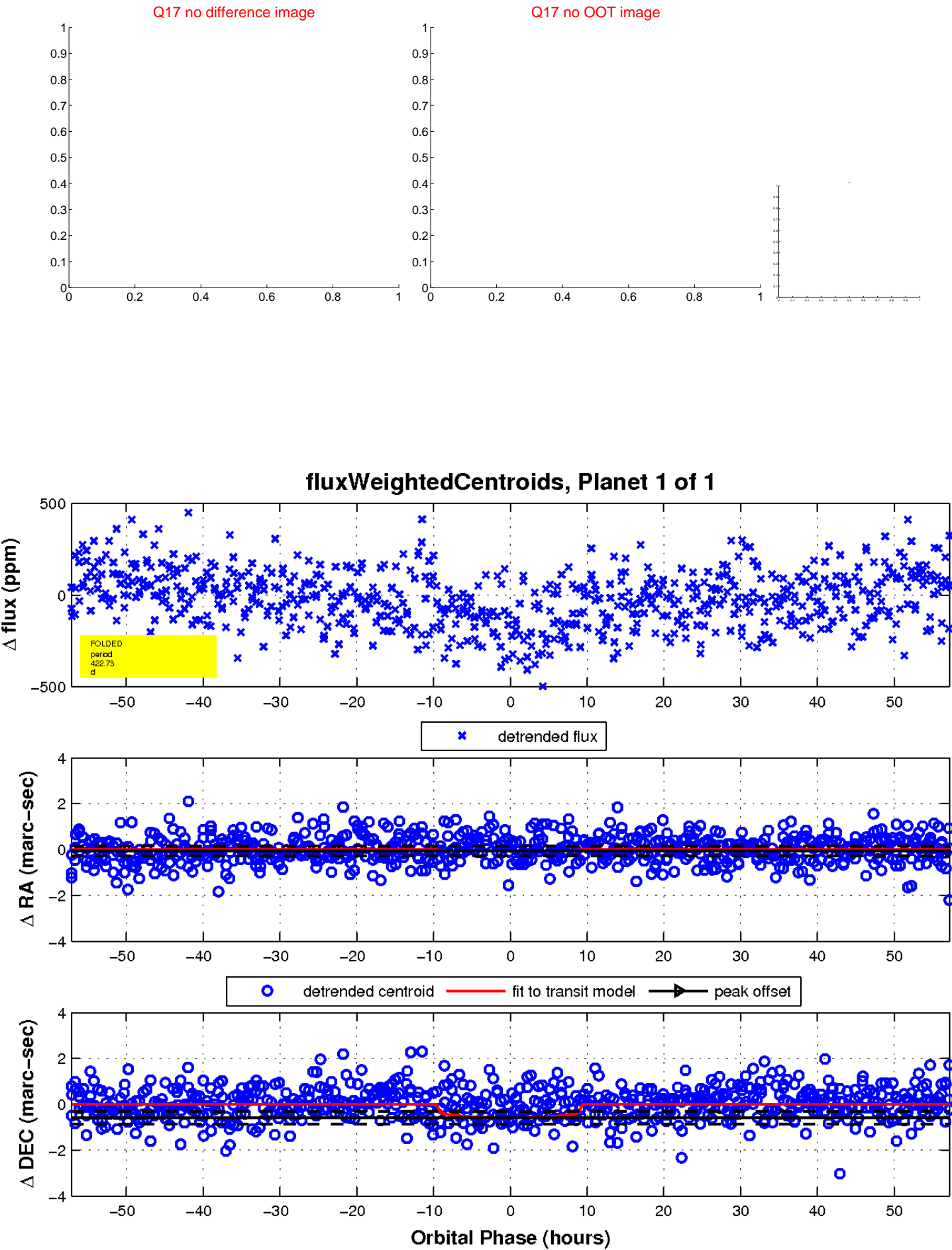
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

