

# KIC 005522034

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005522034-01	OBS	No	383.227485	411.417541	444.7	10.548	9.9	7.3	0.32	3472	0.69	0.03

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005522034-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_ALT—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.

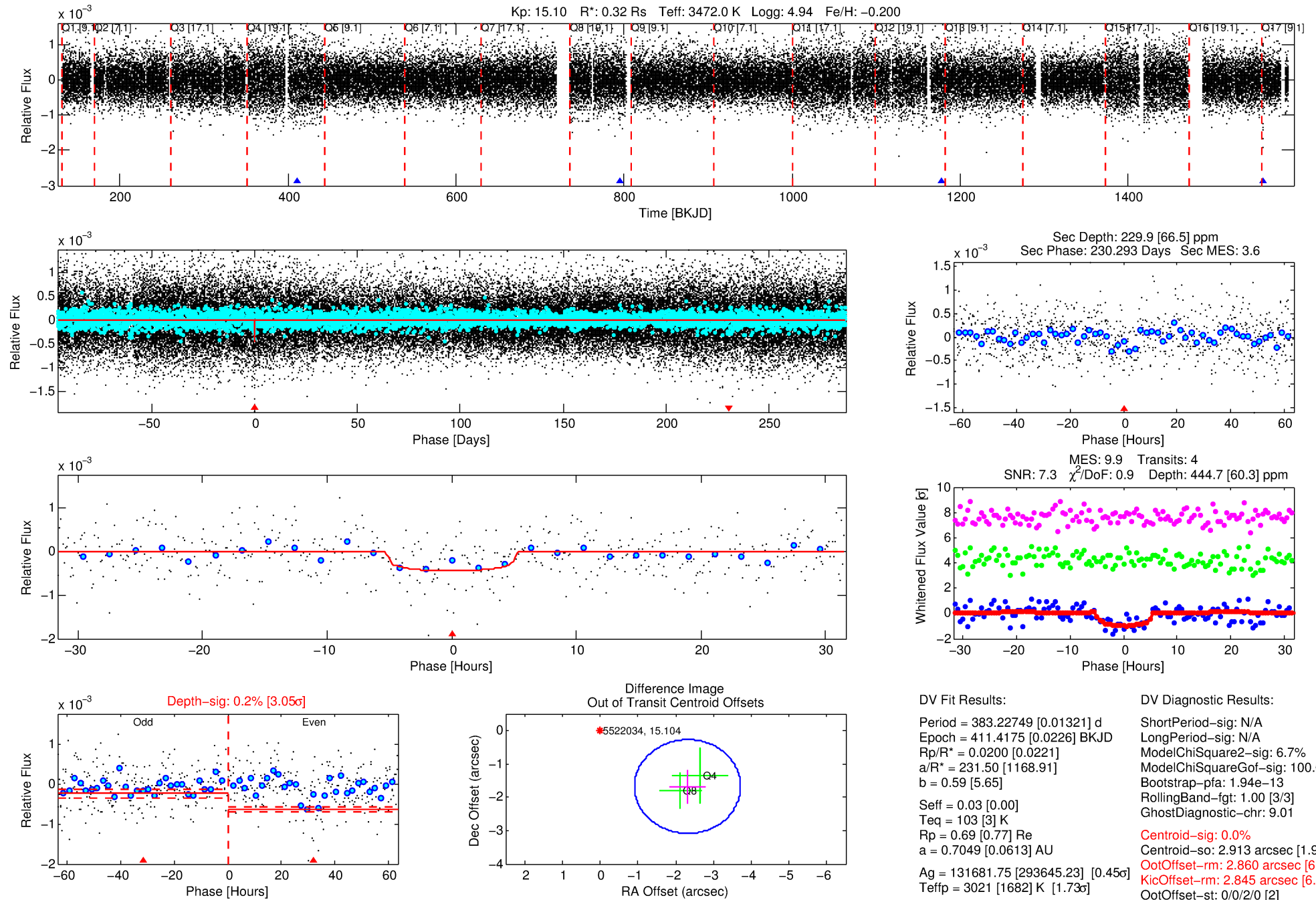
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005522034-01

No Significant Match Found

# DV One-Page Summary

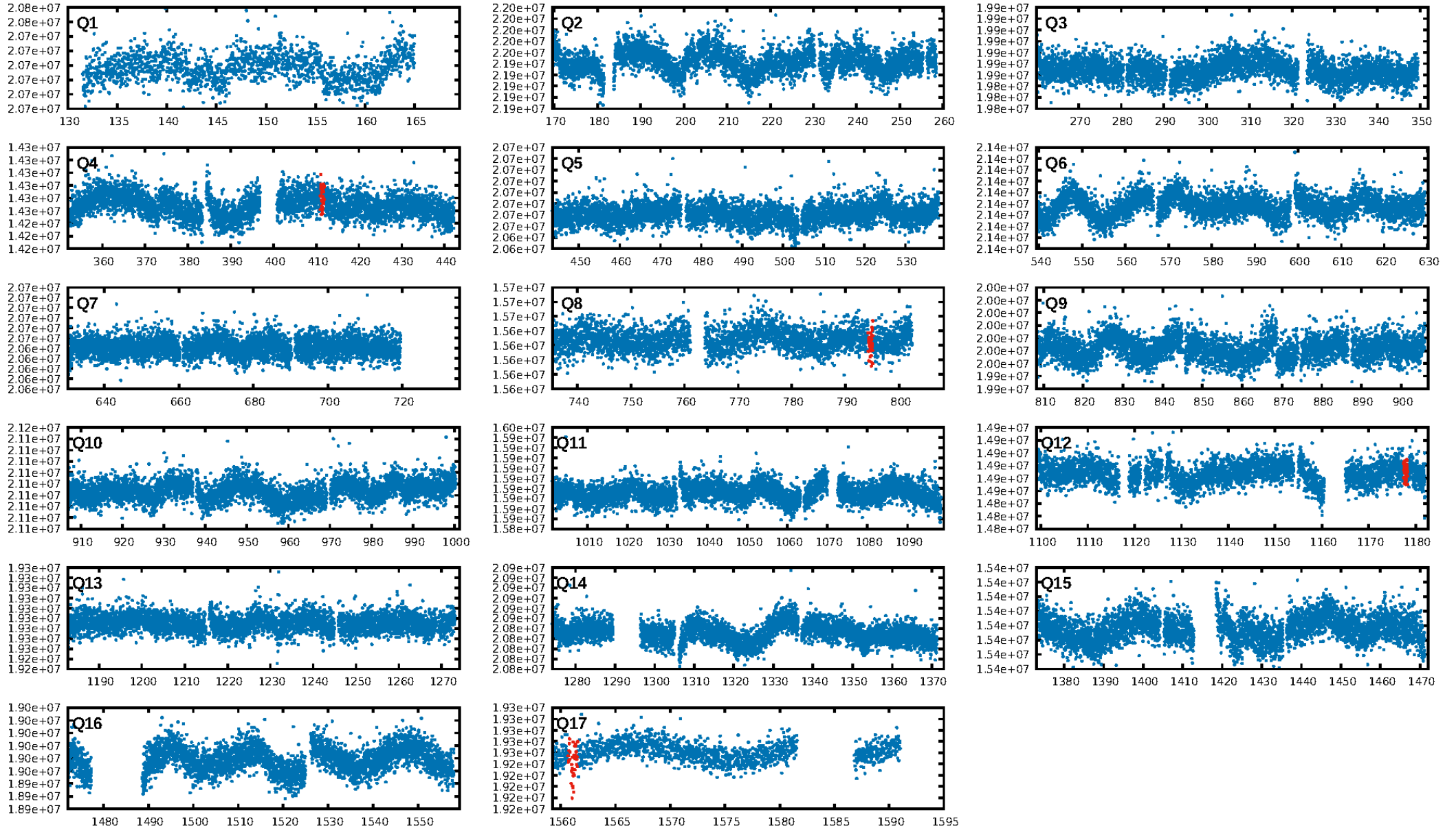
KIC: 5522034 Candidate: 1 of 1 Period: 383.227 d



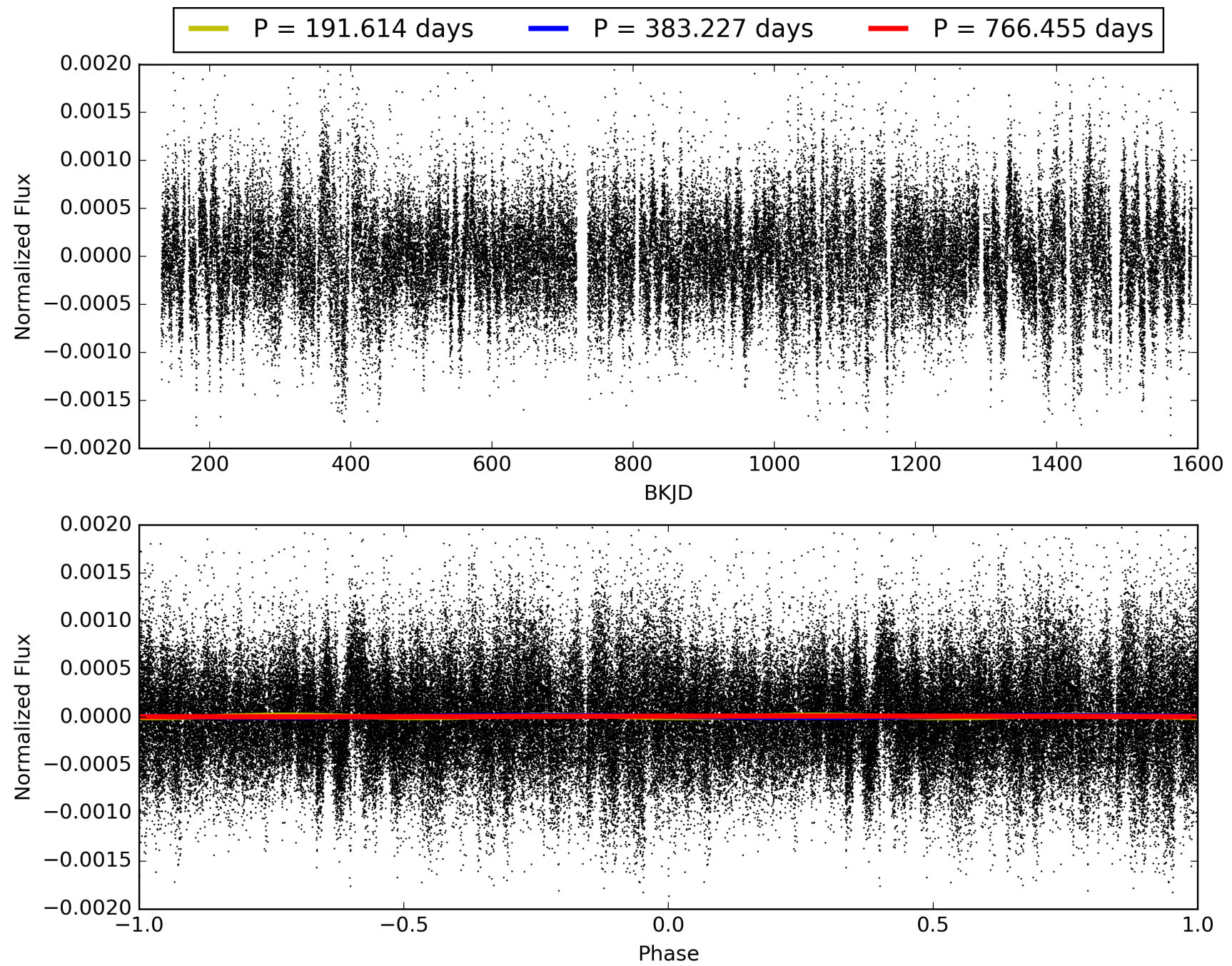
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:37:02 Z

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

# TCE 005522034-01, PDC Light Curves

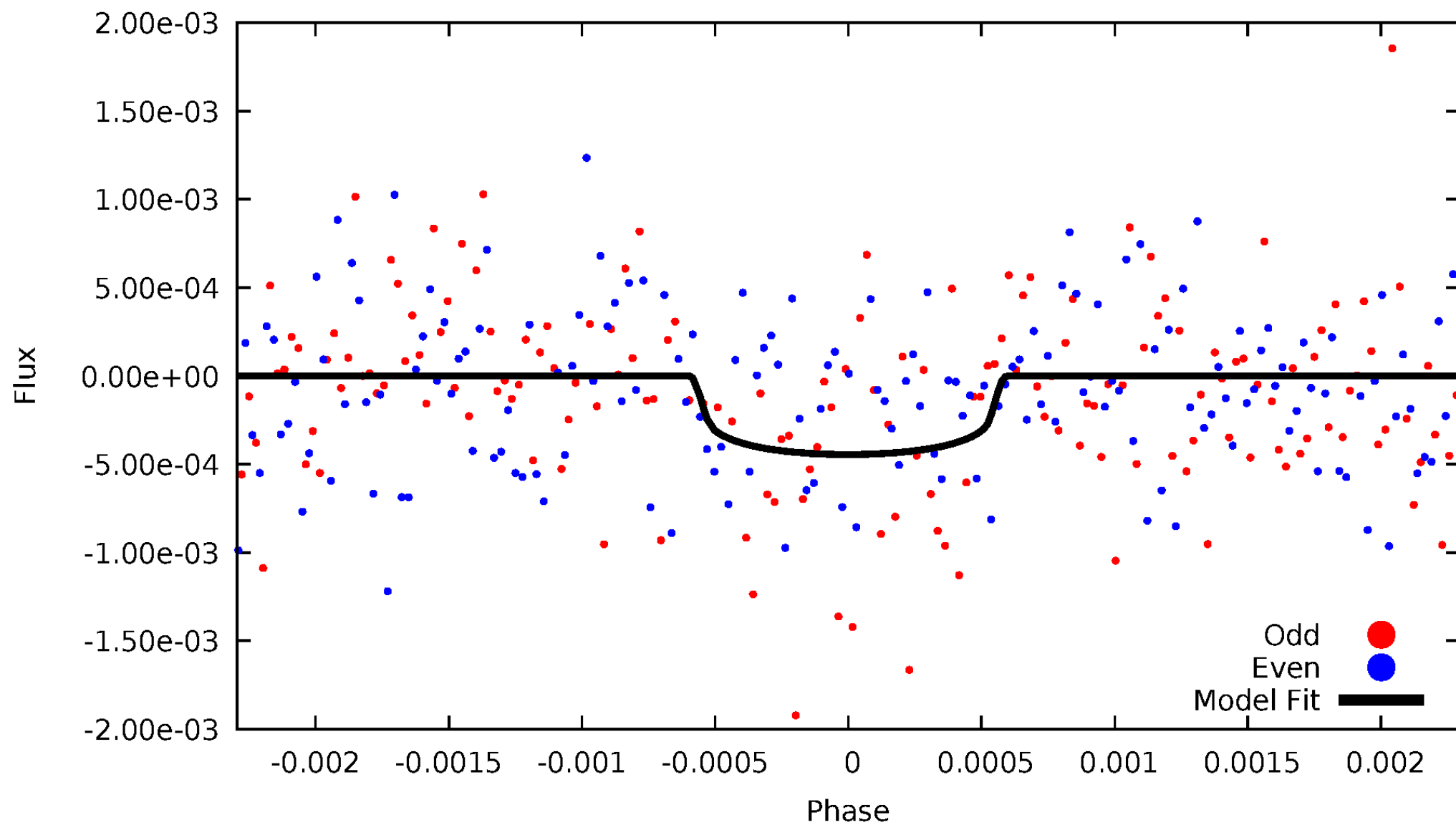


TCE 005522034-01



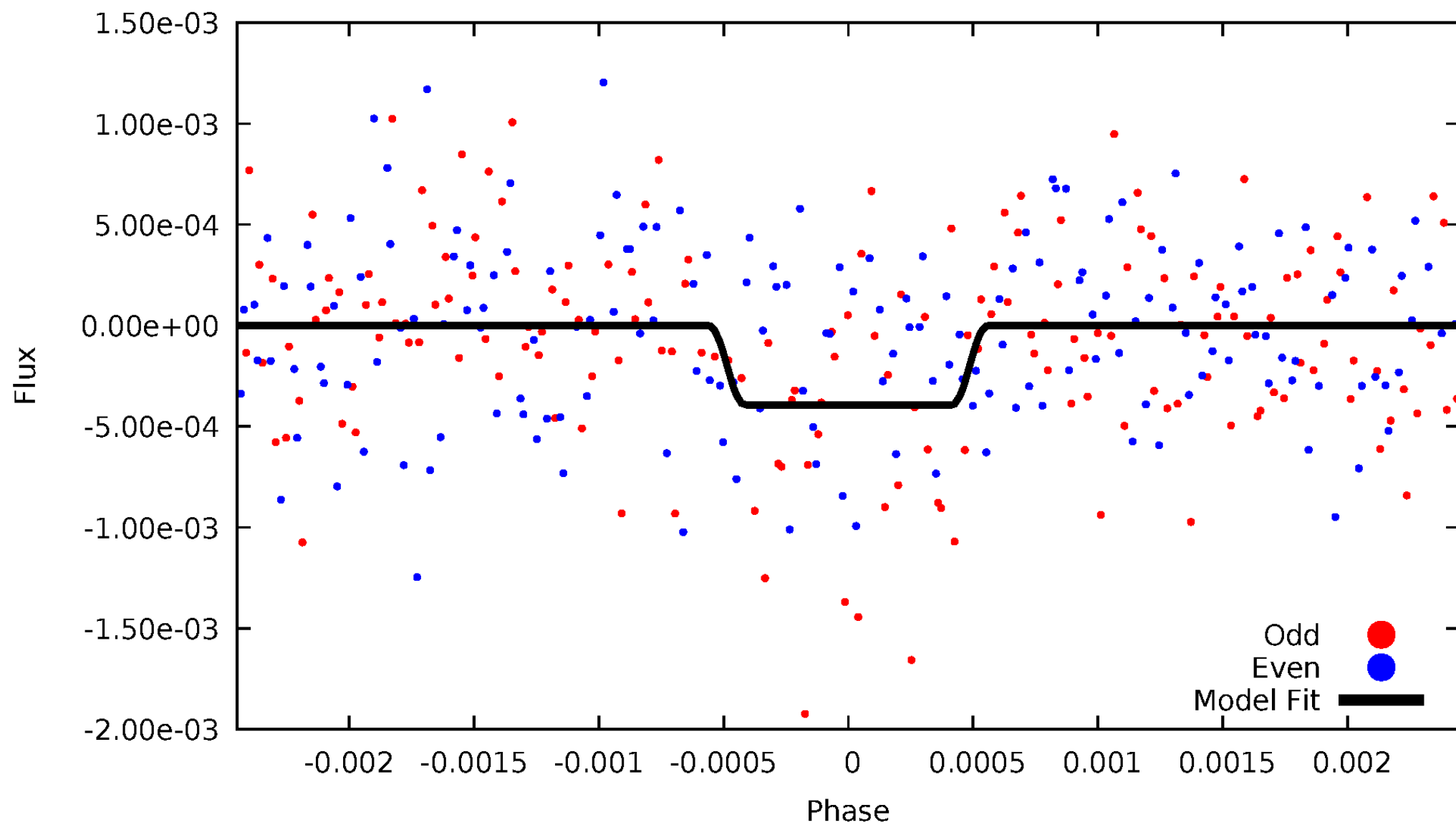
# DV Odd/Even

TCE 005522034-01



# ALT Odd/Even

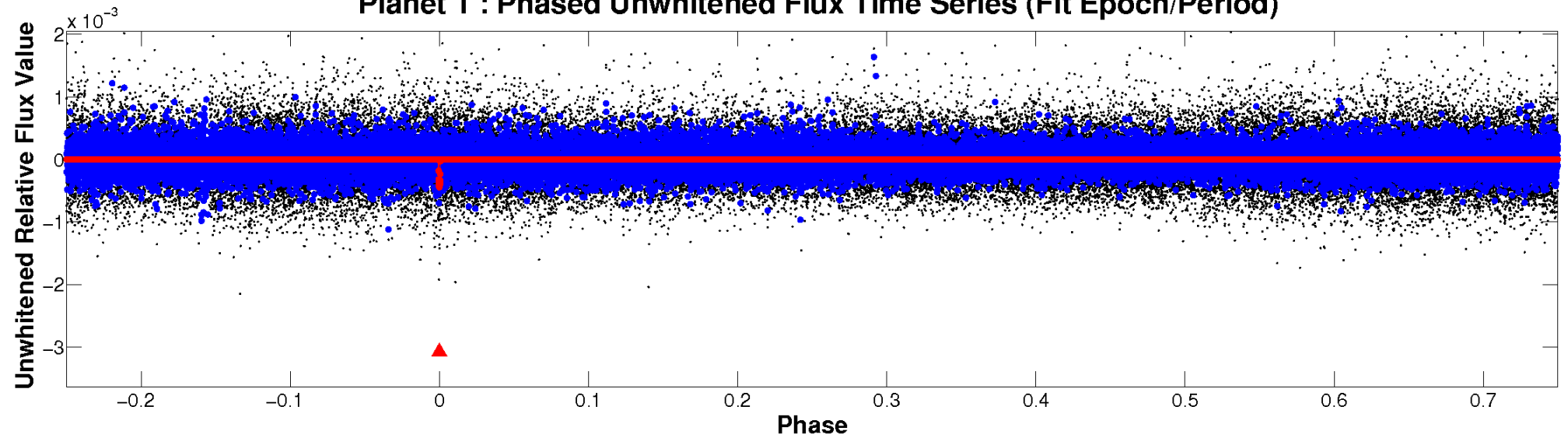
TCE 005522034-01



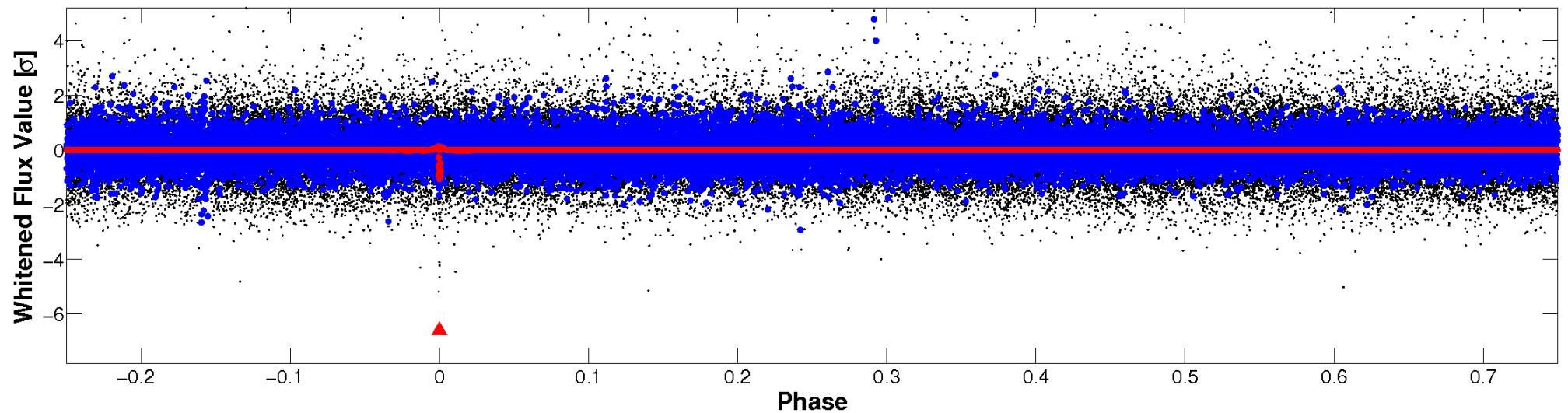


# Non-Whitened Vs. Whitened Light Curve

**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

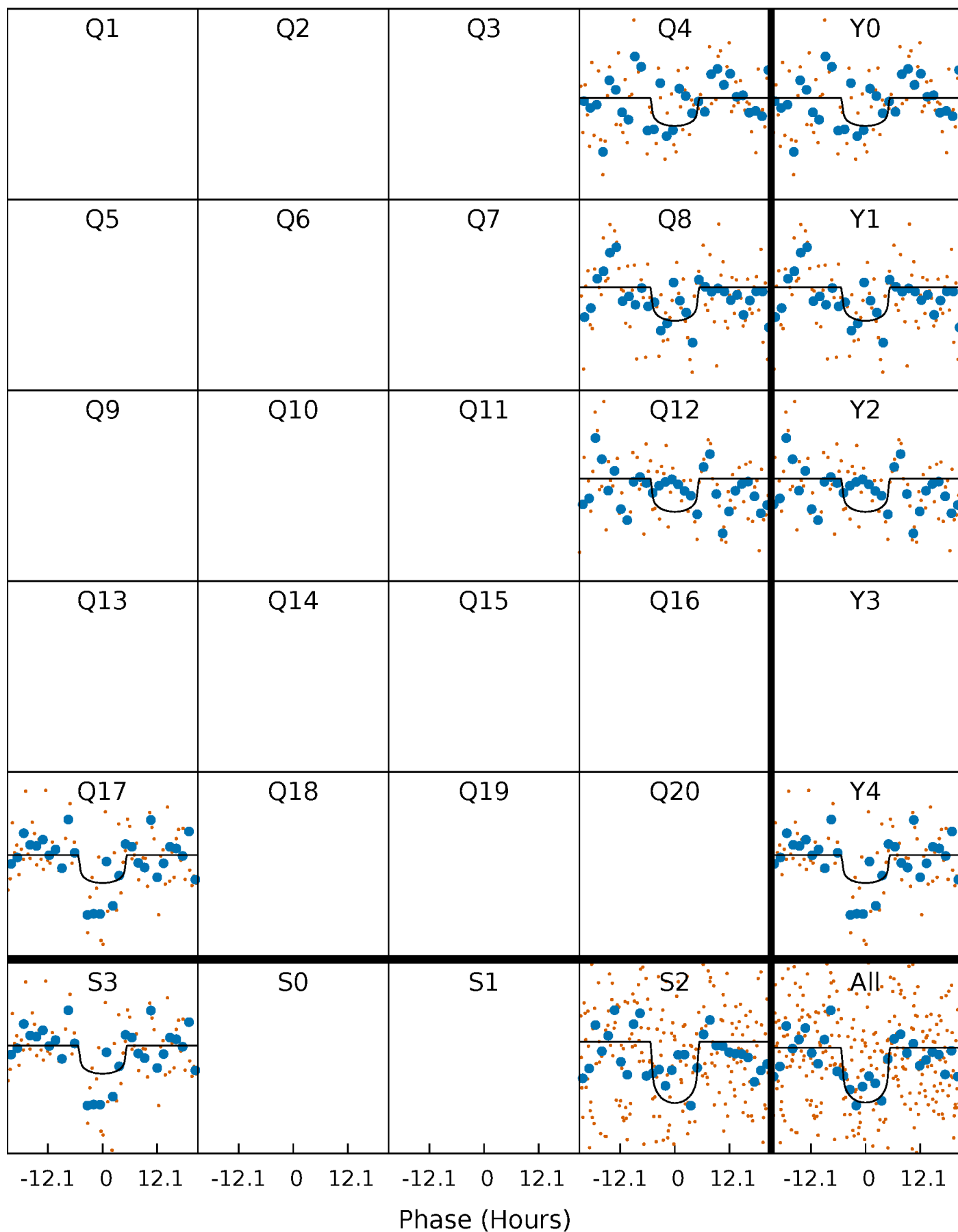
TCE 005522034-01 P=383.227485 Days  $T_0=411.417541$  (BKJD)





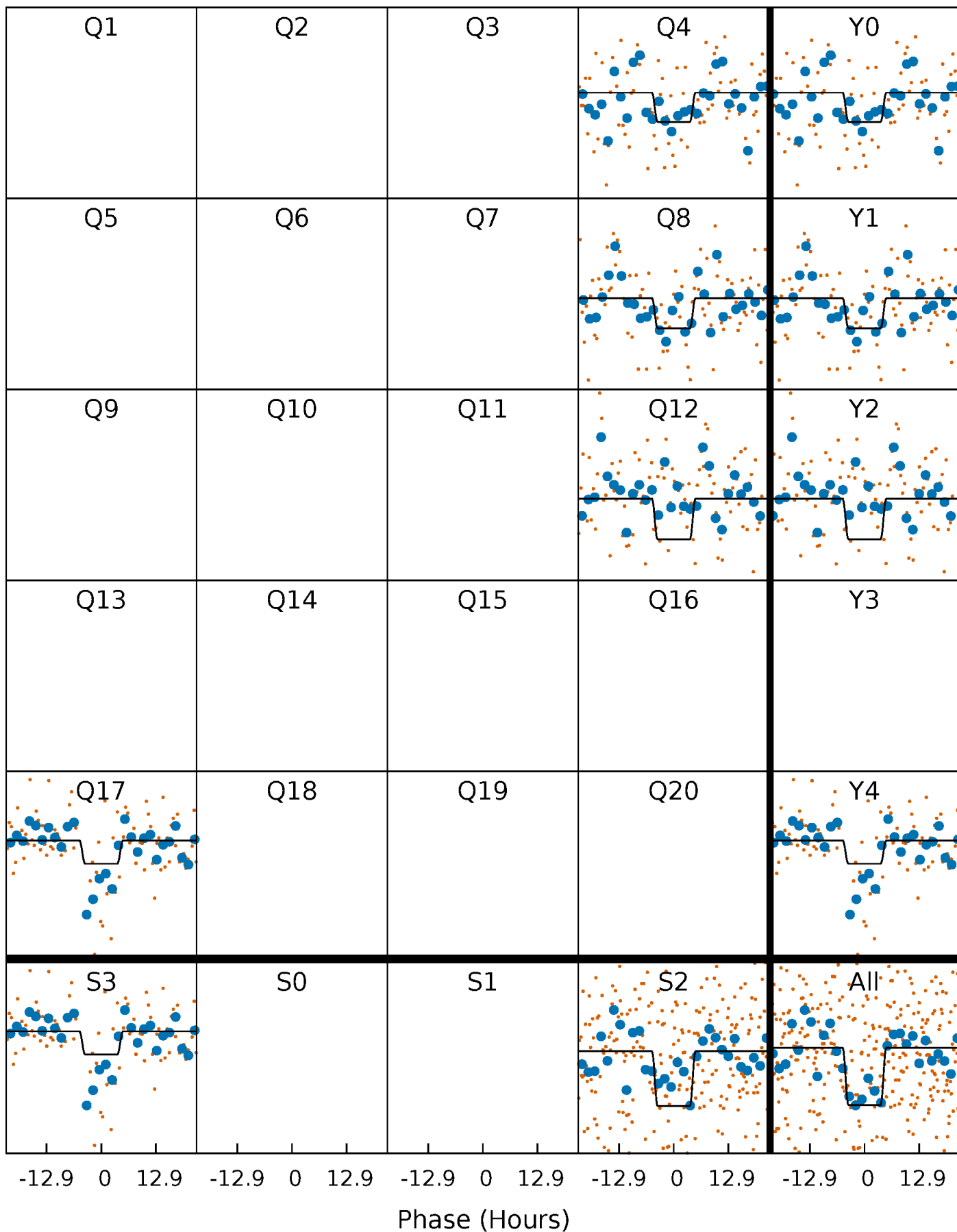
# DV Quarter-Phased Transit Curves

TCE 005522034-01     $P=383.227485$  Days     $T_0=411.417541$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

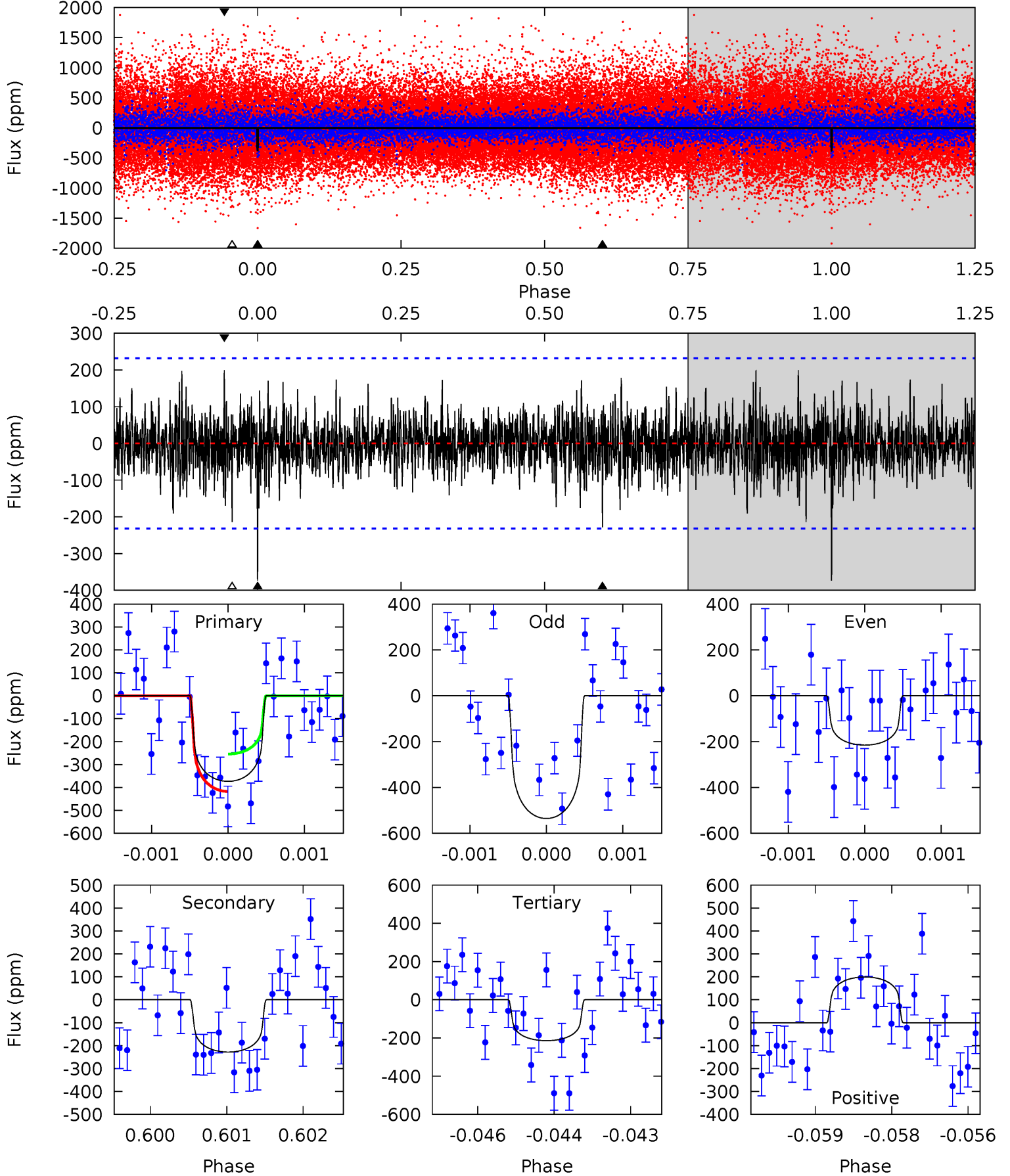
TCE 005522034-01 P=383.224607 Days  $T_0=411.417015$  (BKJD)



# DV Model-Shift Uniqueness Test

005522034-01,  $P = 383.227485$  Days,  $E = 28.190056$  Days

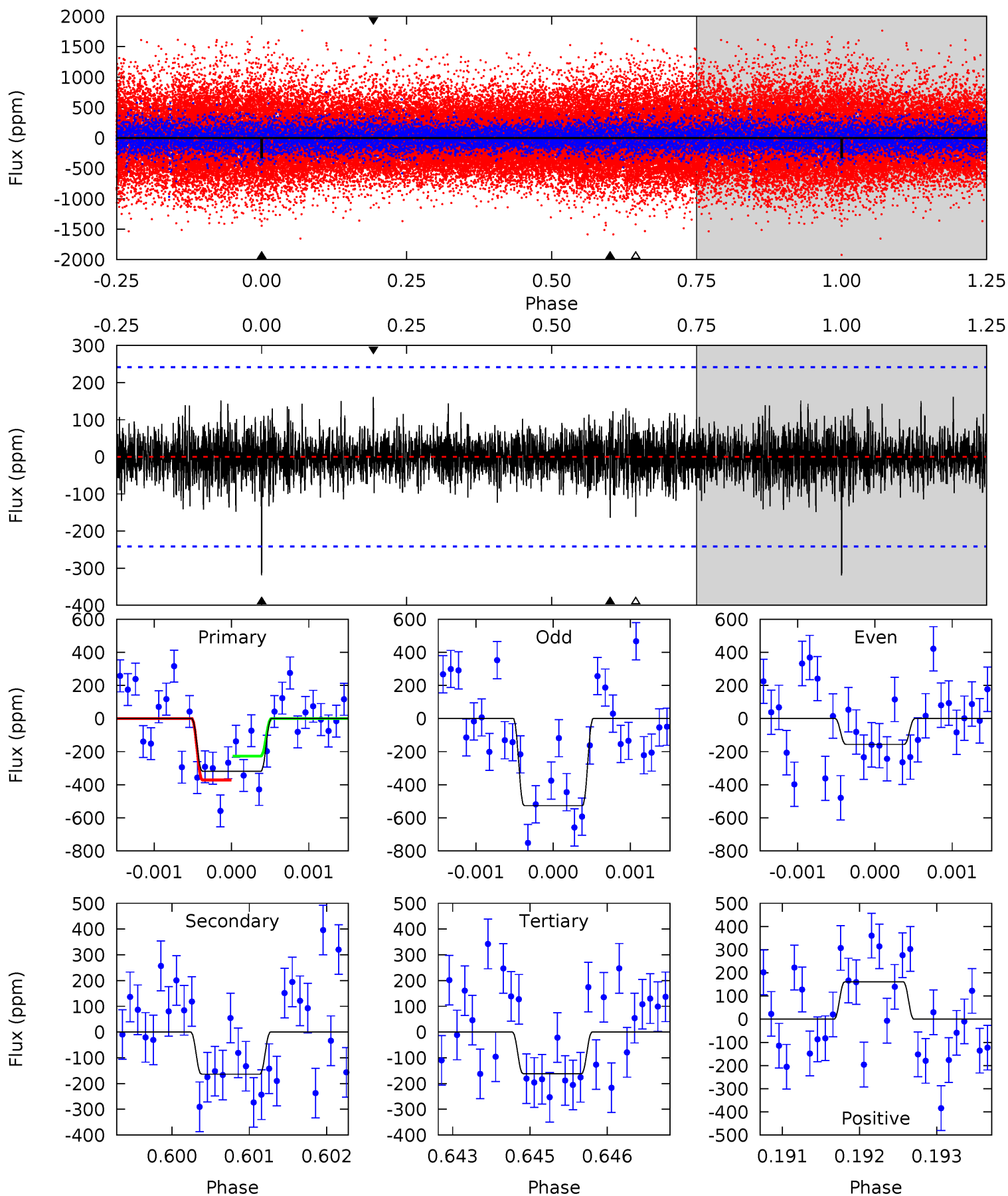
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.74	5.33	5.01	4.66	5.42	3.24	1.24	3.73	4.08	0.33	0.67	3.75	1.23	0.35	1.89



# Alt Model-Shift Uniqueness Test

005522034-01, P = 383.224607 Days, E = 28.192408 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
7.17	3.68	3.64	3.63	5.44	3.27	0.93	3.54	3.54	0.04	0.05	4.21	1.01	0.34	1.62



### Stellar Parameters For KIC 005522034

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3472^{+46}_{-46}$	$4.941^{+0.050}_{-0.036}$	$-0.200^{+0.100}_{-0.100}$	$0.316^{+0.034}_{-0.037}$	$0.318^{+0.043}_{-0.043}$	$14.190^{+3.622}_{-2.407}$
	+1%/-1%	+1%/-1%	+50%/-50%	+11%/-12%	+14%/-14%	+26%/-17%
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 005522034-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-228 \pm 43$	$0.87^{+0.69}_{-0.54}$	$143^{+4}_{-4}$	$2975^{+1103}_{-435}$	$84400^{+493904}_{-58598}$
Alt.	$-164 \pm 44$	$0.84^{+0.66}_{-0.54}$	$143^{+3}_{-3}$	$2867^{+995}_{-409}$	$61262^{+393933}_{-42317}$

$T_{max}$  = 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

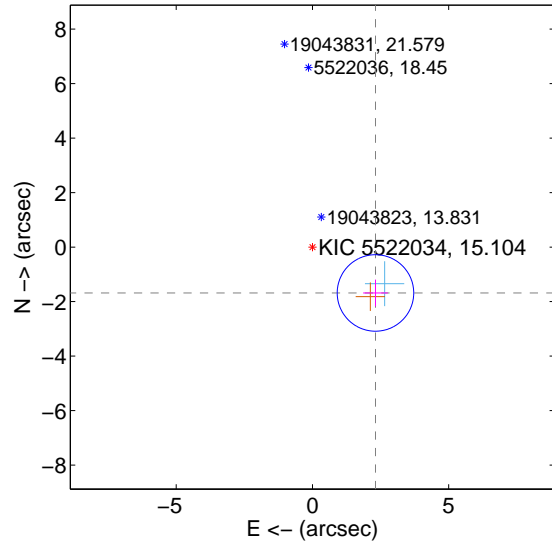
Supplemental centroid analysis for 005522034-01. Kepler magnitude: 15.10. Transit SNR 7.30

There are 1 quarters with good PRF difference image offsets

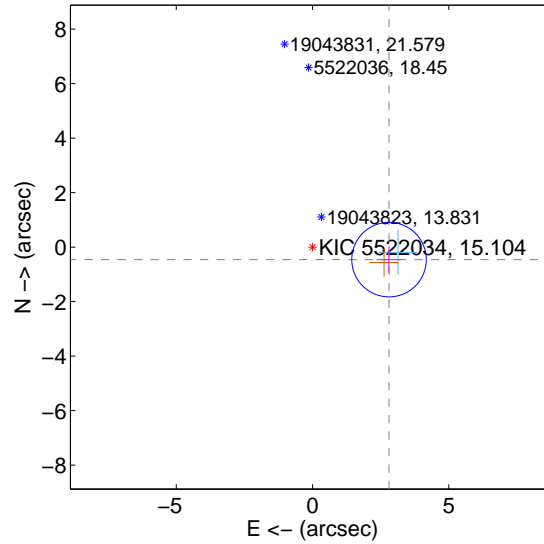
The direct PRF centroid is offset from the target star catalog position by about 1.35 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.860 \pm 0.468$	6.11	$-2.313 \pm 0.455$	$-1.683 \pm 0.492$
PRF-fit source offset from KIC position	$2.845 \pm 0.456$	6.24	$-2.807 \pm 0.455$	$-0.459 \pm 0.492$
photometric centroid source offset	$2.91 \pm 1.50$	1.95	$-2.51 \pm 1.54$	$-1.47 \pm 1.37$

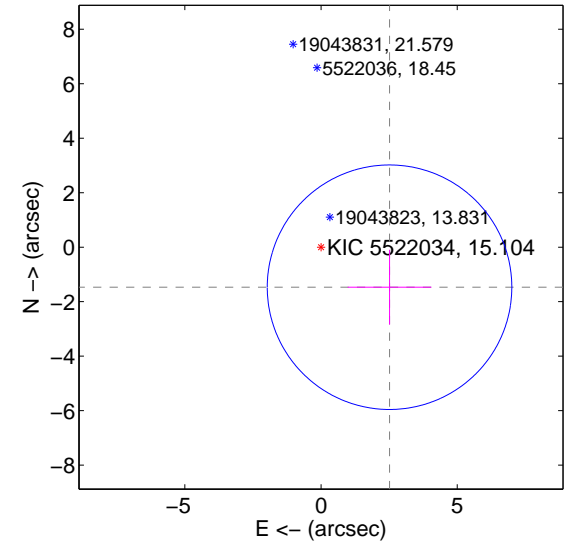
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



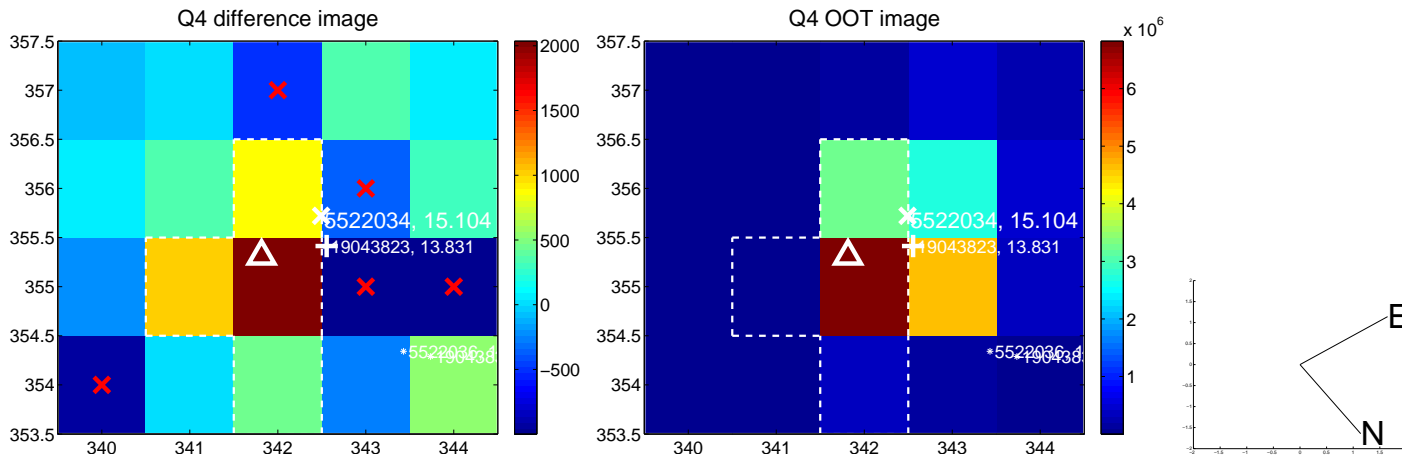
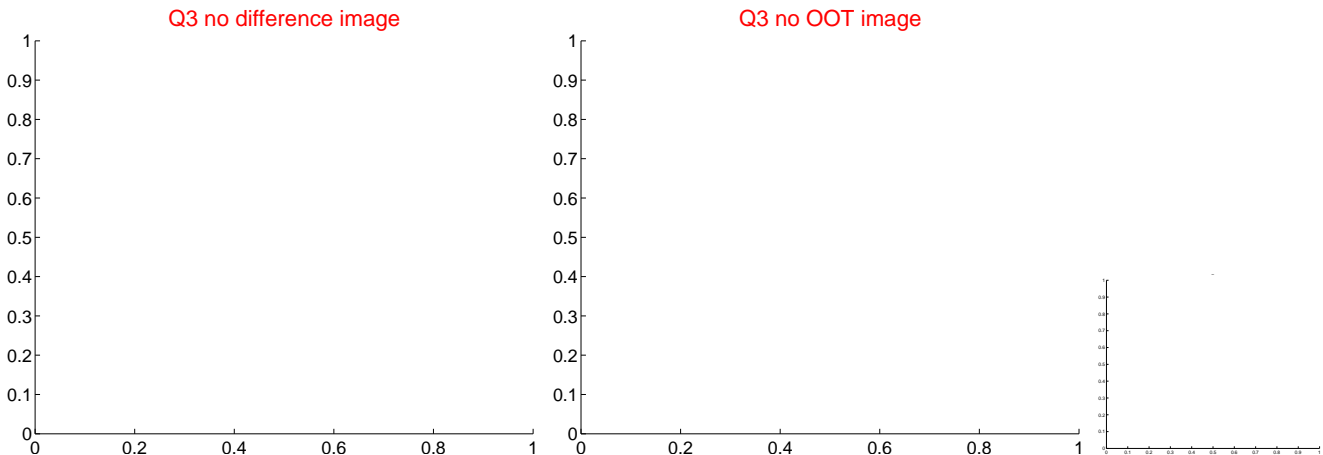
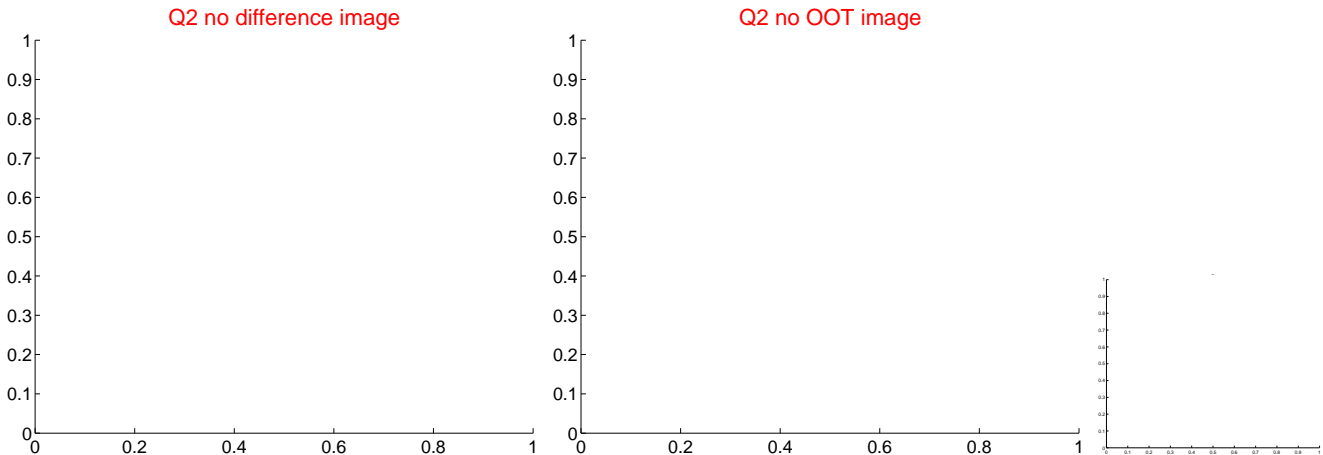
offset from photometric centroids



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.

Q5 no difference image



Q5 no OOT image



Q6 no difference image



Q6 no OOT image



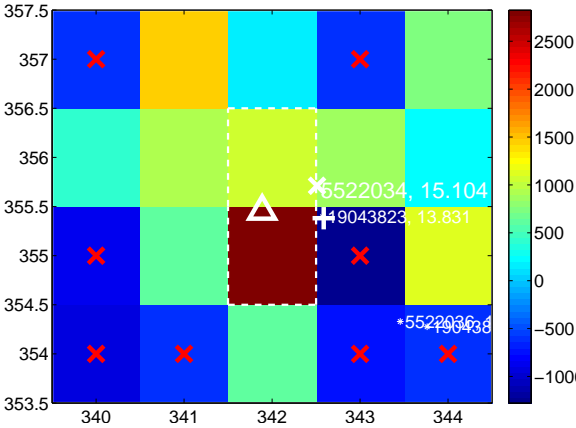
Q7 no difference image



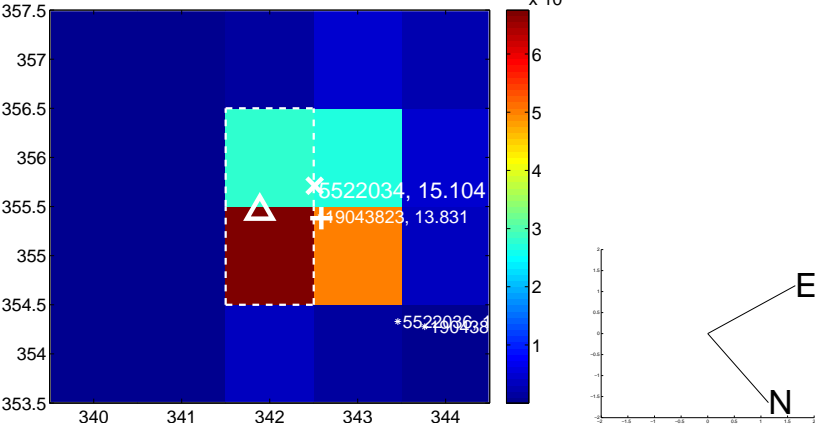
Q7 no OOT image



Q8 difference image. Poor Quality



Q8 OOT image



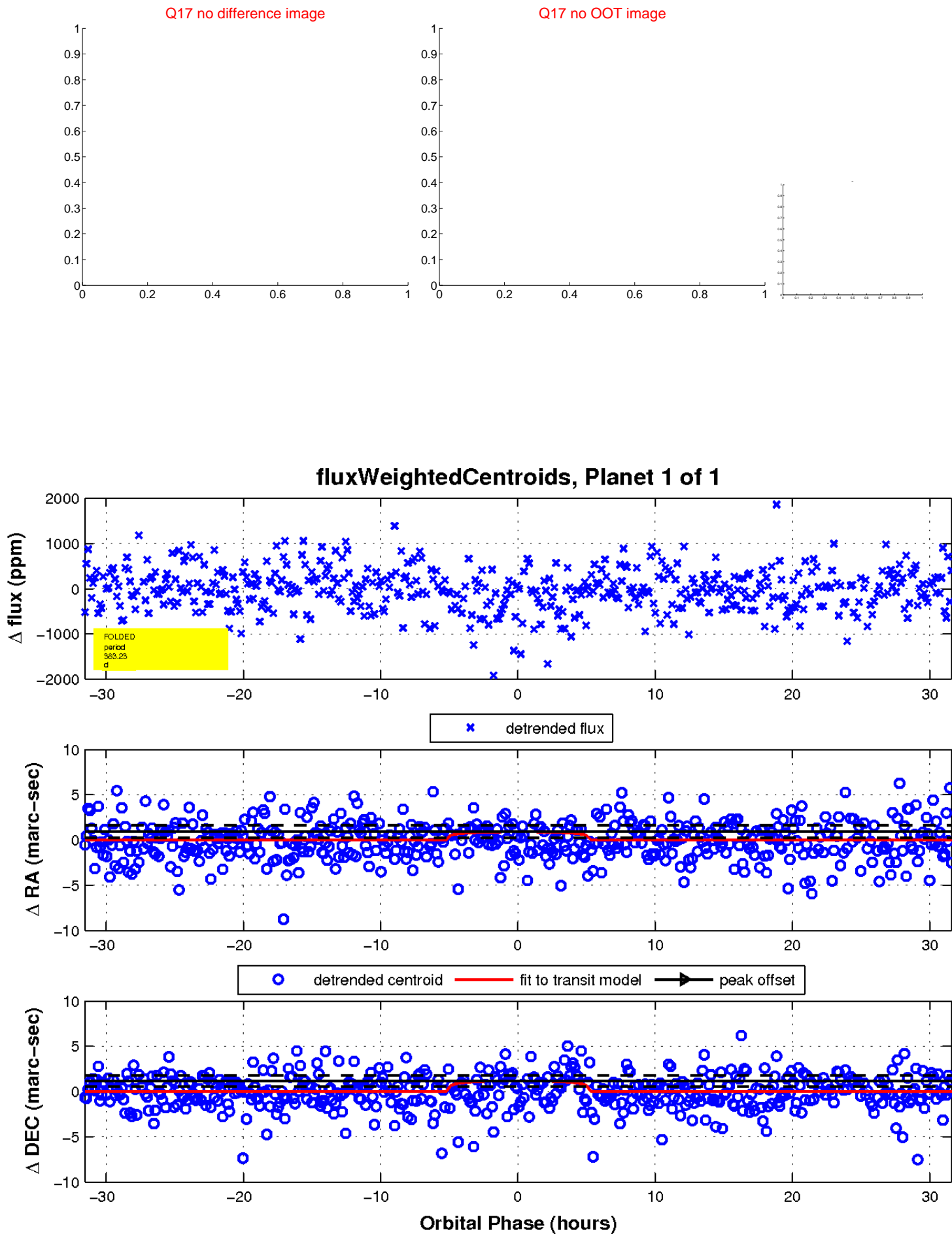
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

