

# KIC 008505215

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008505215-01	OBS	No	627.764608	140.062860	258.4	20.527	49.0	8.3	0.71	5095	1.21	0.18

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008505215-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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 008505215-01

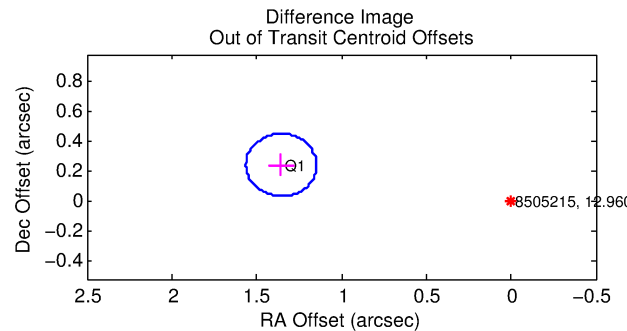
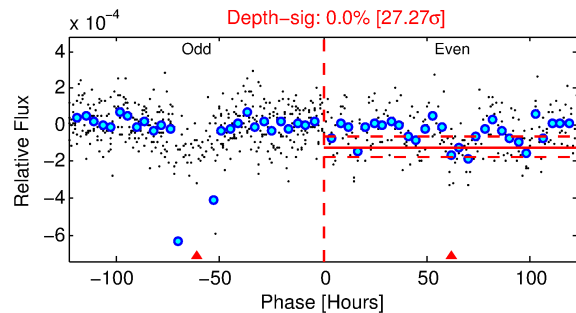
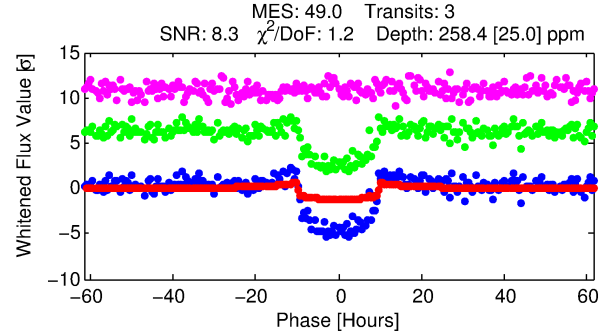
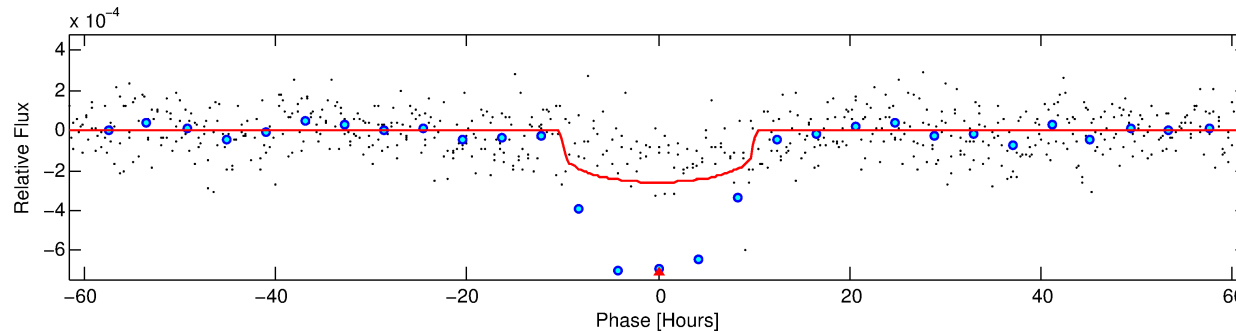
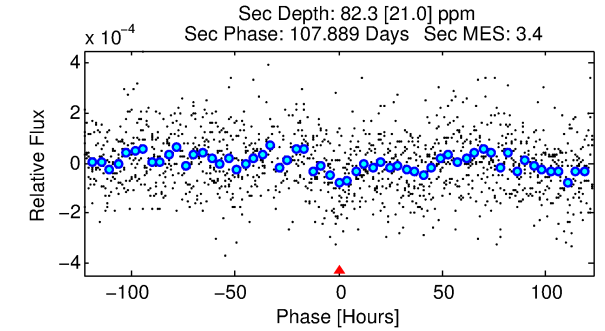
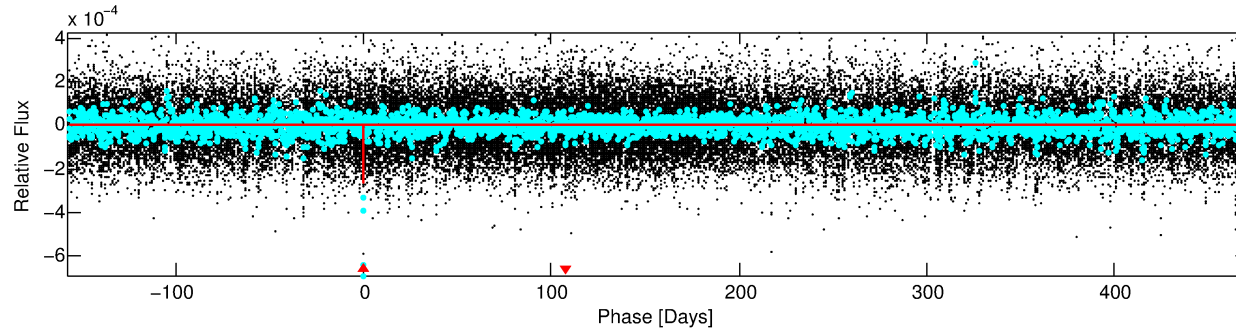
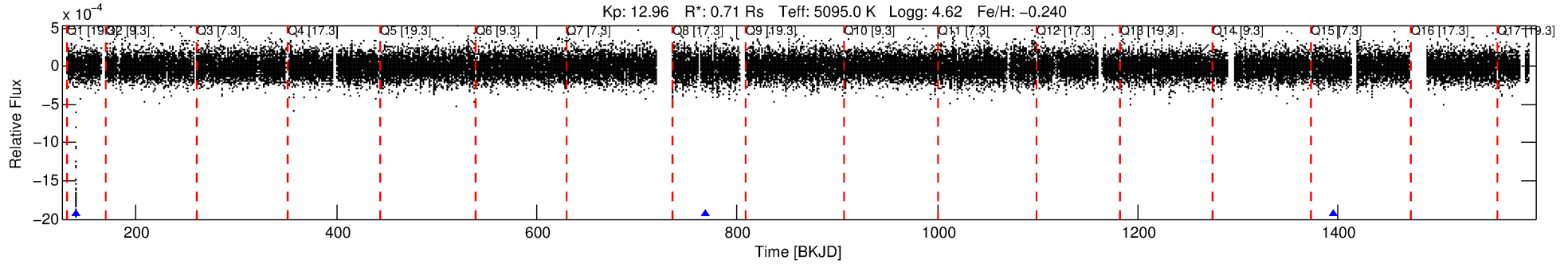
No Significant Match Found

# DV One-Page Summary

KIC: 8505215 Candidate: 1 of 1 Period: 627.765 d

KOI: K00099 Corr: No Ephemeris Match

Kp: 12.96 R\*: 0.71 Rs Teff: 5095.0 K Logg: 4.62 Fe/H: -0.240



## DV Fit Results:

Period = 627.76461 [0.01127] d  
Epoch = 140.0629 [0.0138] BKJD  
Rp/R\* = 0.0156 [0.0044]  
a/R\* = 175.63 [178.35]  
b = 0.68 [0.80]  
Seff = 0.18 [0.02]  
Teq = 165 [5] K  
Rp = 1.21 [0.35] Re  
a = 1.3199 [0.0812] AU  
Ag = 53619.14 [33377.90] [1.61σ]  
Teffp = 3884 [602] K [6.18σ]

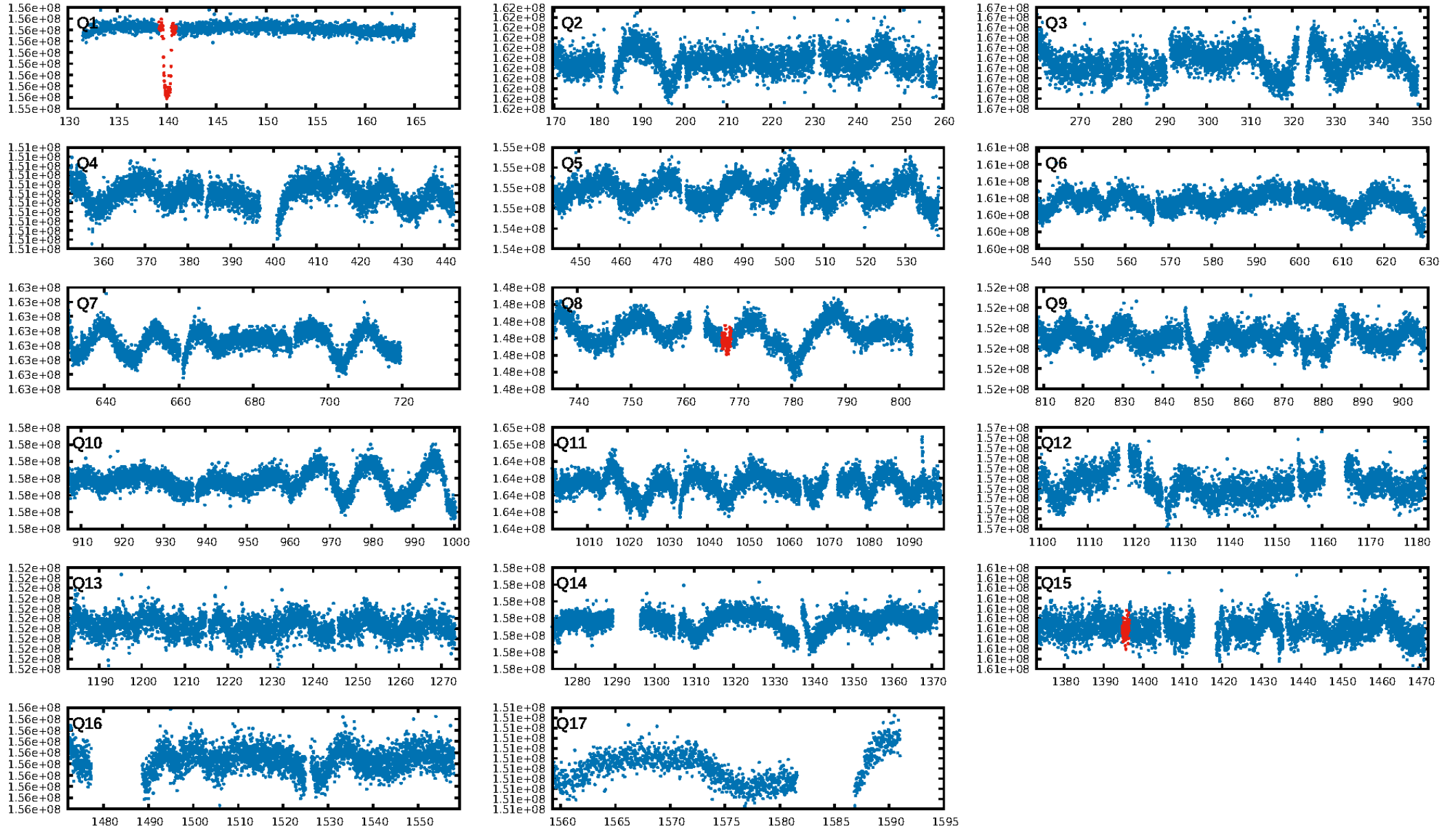
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.5%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 7.85e-192  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: -114.4  
Centroid-sig: 23.0%  
Centroid-so: 1.745 arcsec [2.70σ]  
OotOffset-rm: 1.375 arcsec [19.80σ]  
KicOffset-rm: 1.724 arcsec [24.84σ]  
OotOffset-st: 0/0/0/1 [1]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [2/2]

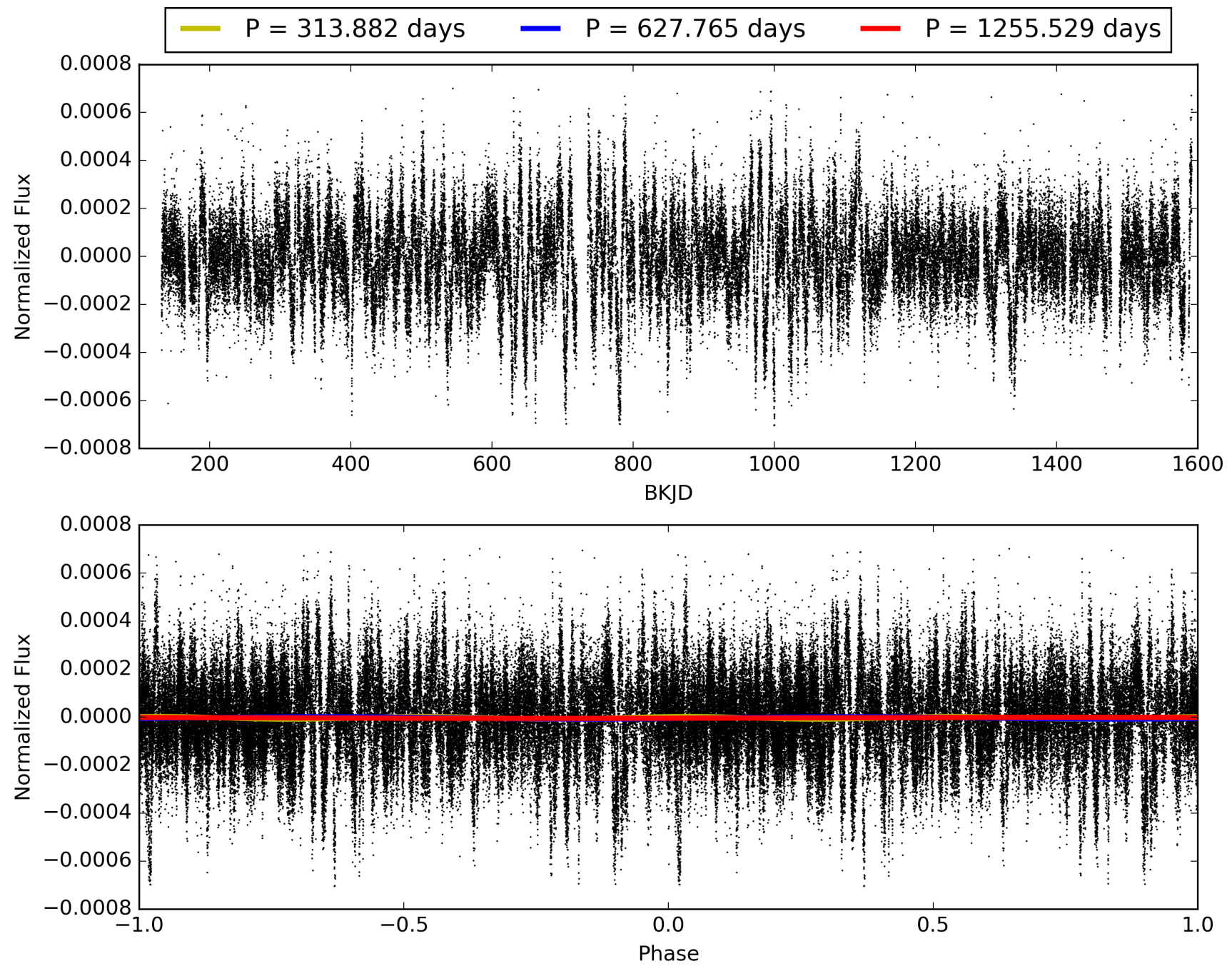
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:26:19 Z

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

# TCE 008505215-01, PDC Light Curves

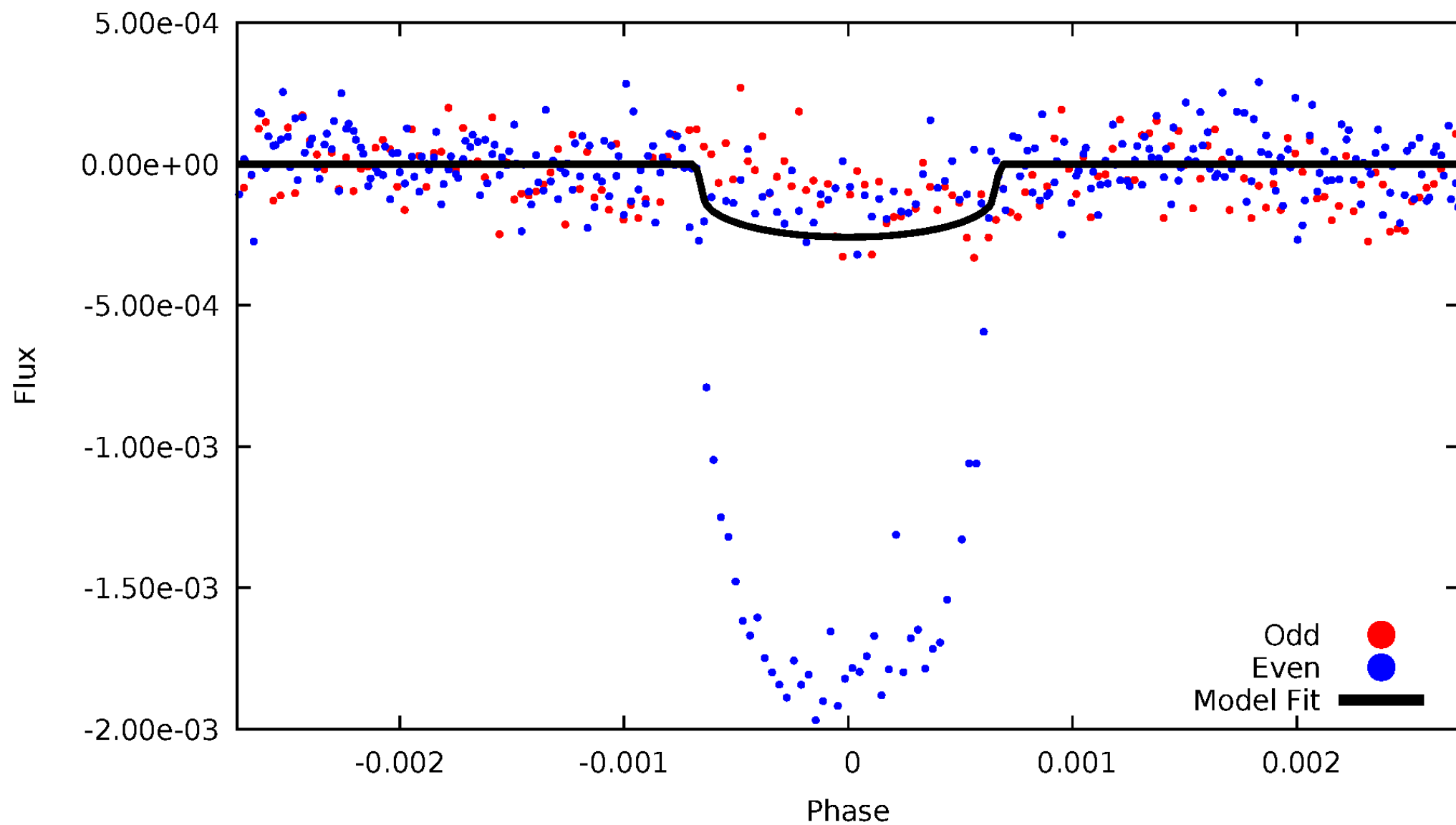


TCE 008505215-01



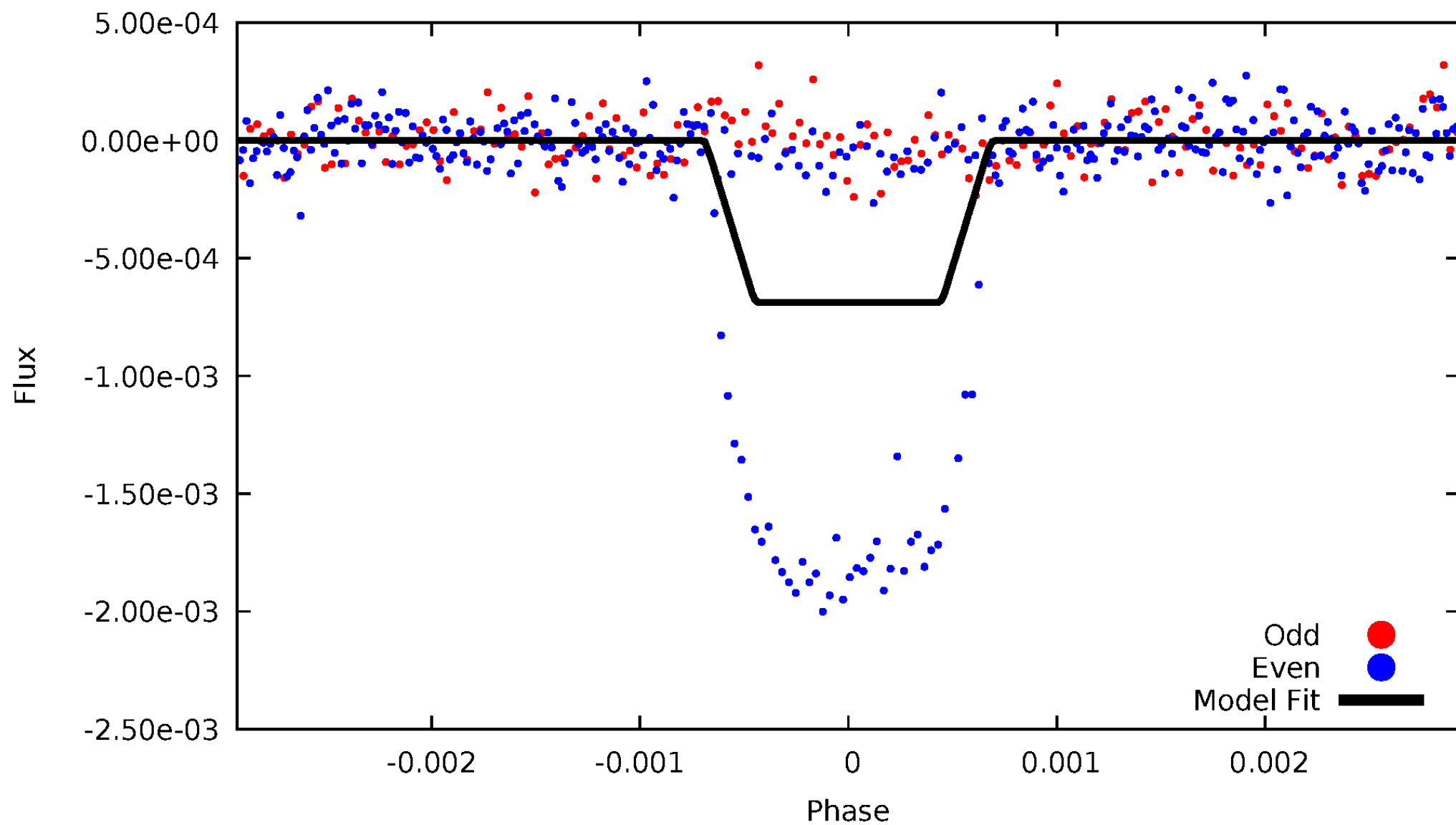
# DV Odd/Even

TCE 008505215-01



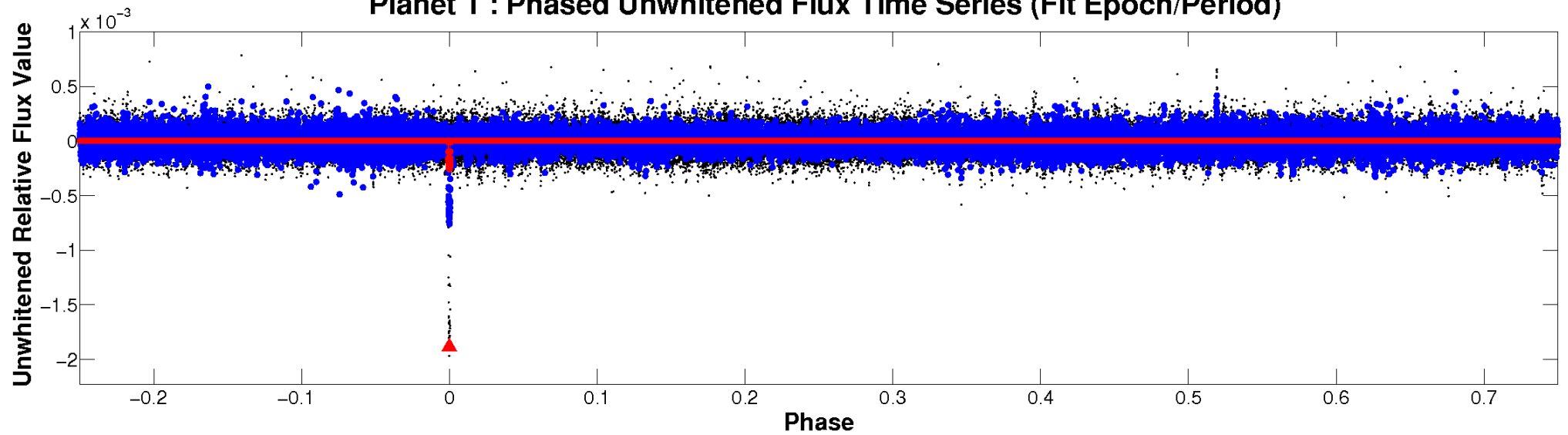
# ALT Odd/Even

TCE 008505215-01

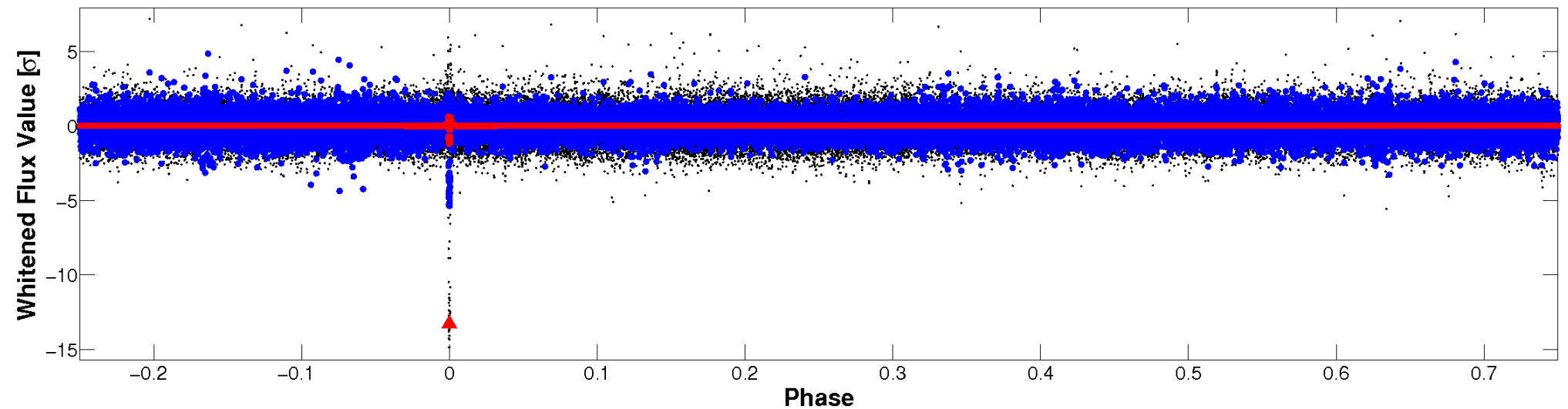


# Non-Whitened Vs. Whitened Light Curve

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

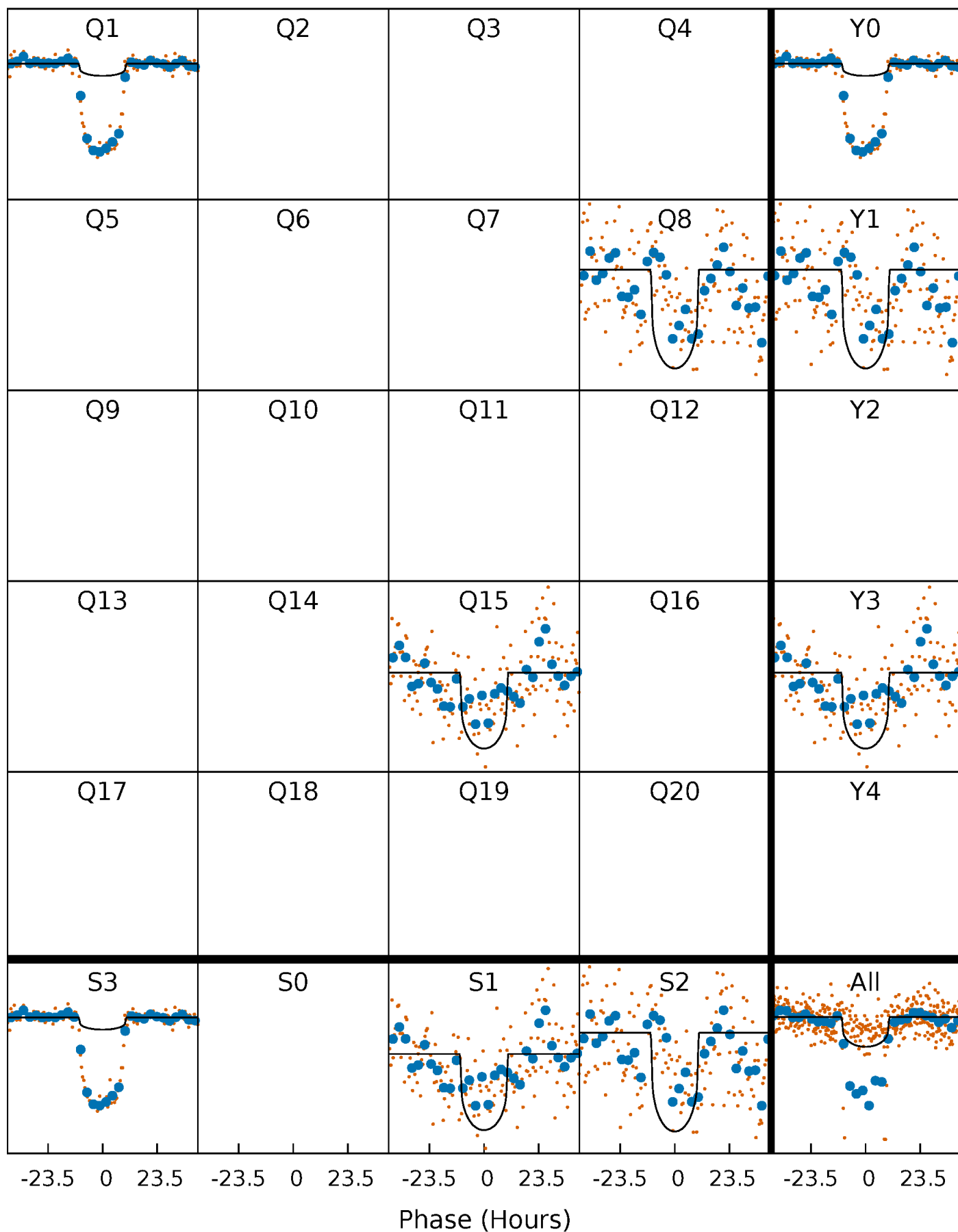
TCE 008505215-01 P=627.764608 Days  $T_0=140.062860$  (BKJD)





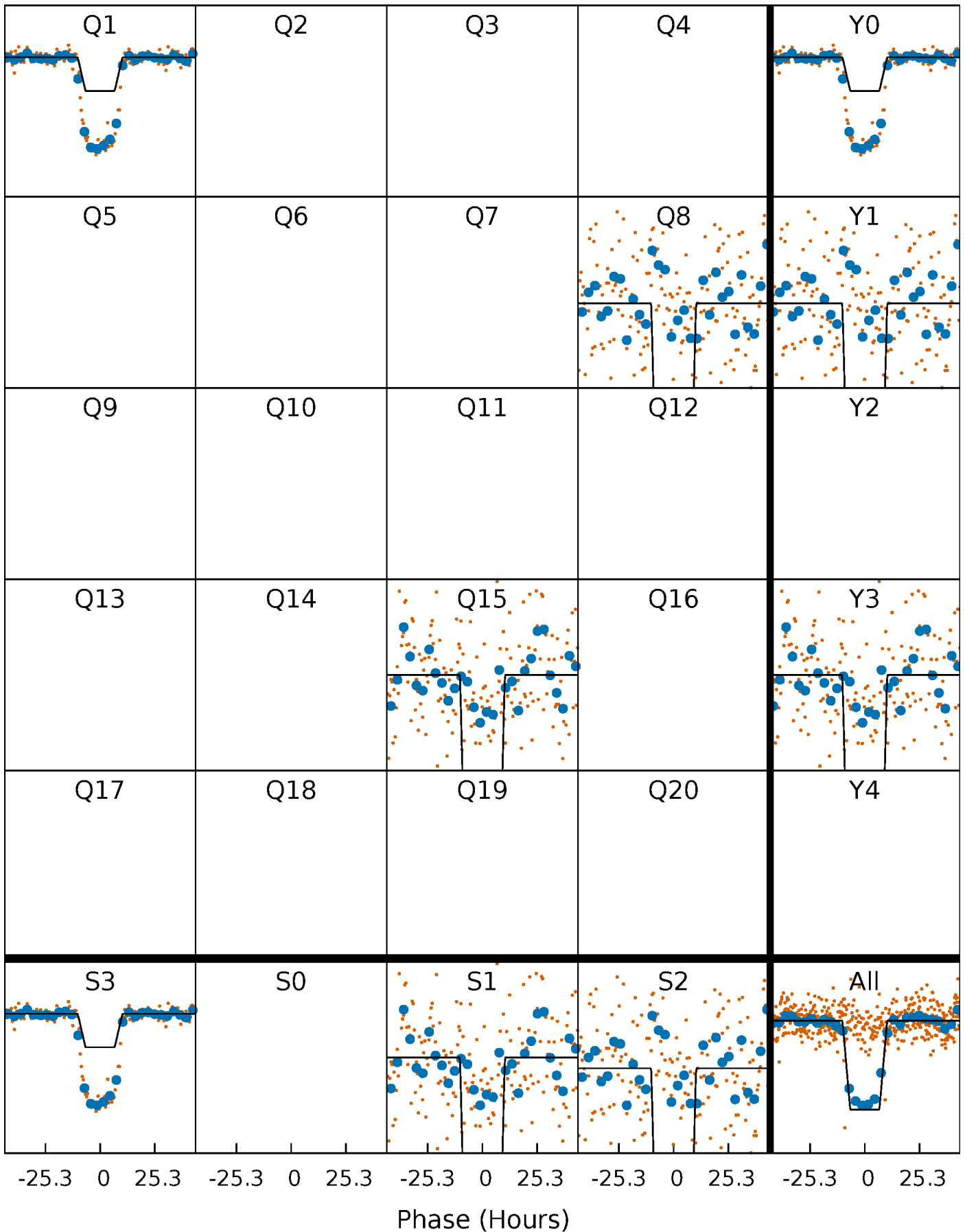
# DV Quarter-Phased Transit Curves

TCE 008505215-01 P=627.764608 Days  $T_0=140.062860$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

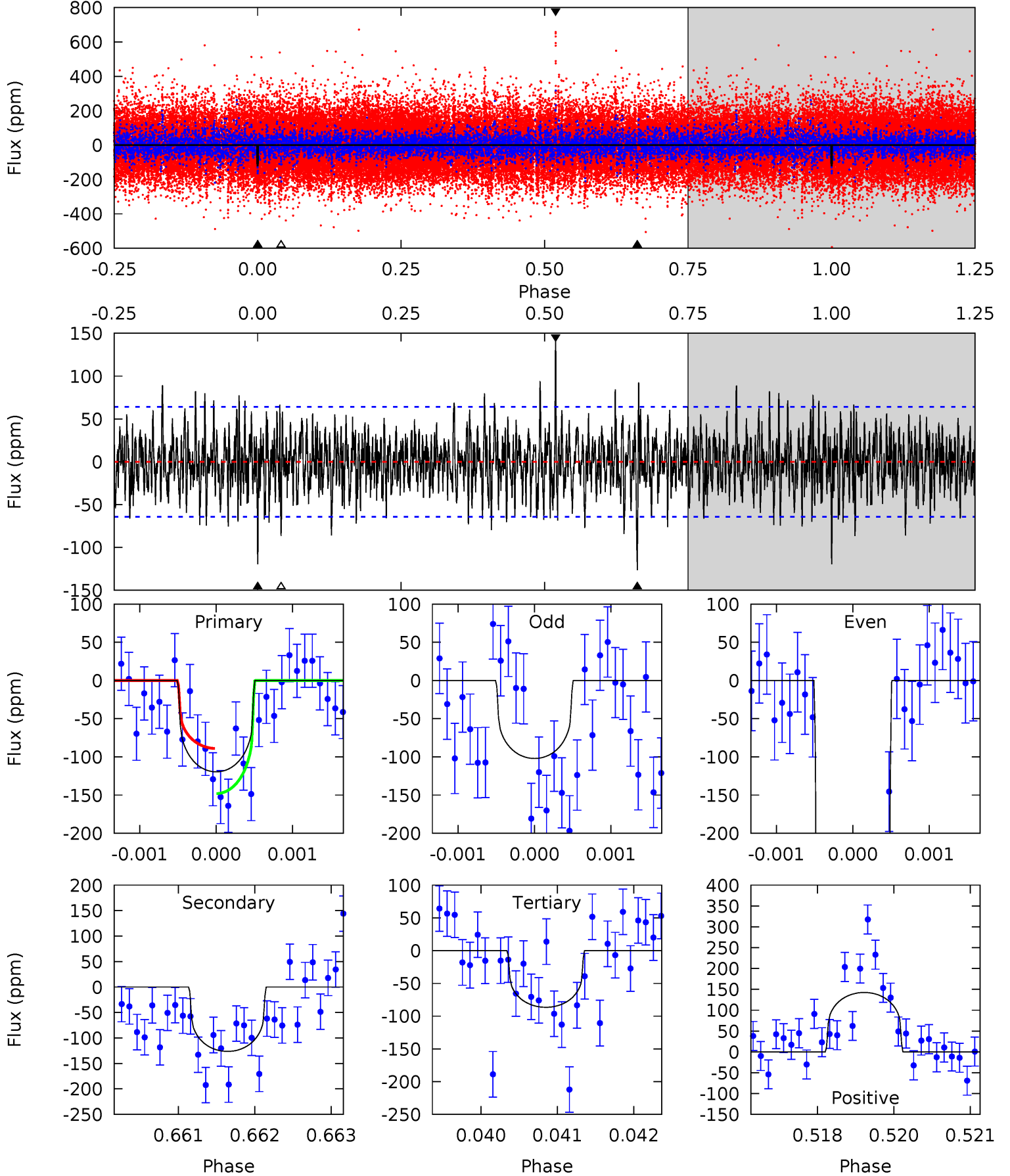
TCE 008505215-01 P=627.746208 Days  $T_0=140.048873$  (BKJD)



# DV Model-Shift Uniqueness Test

008505215-01, P = 627.764608 Days, E = 140.062860 Days

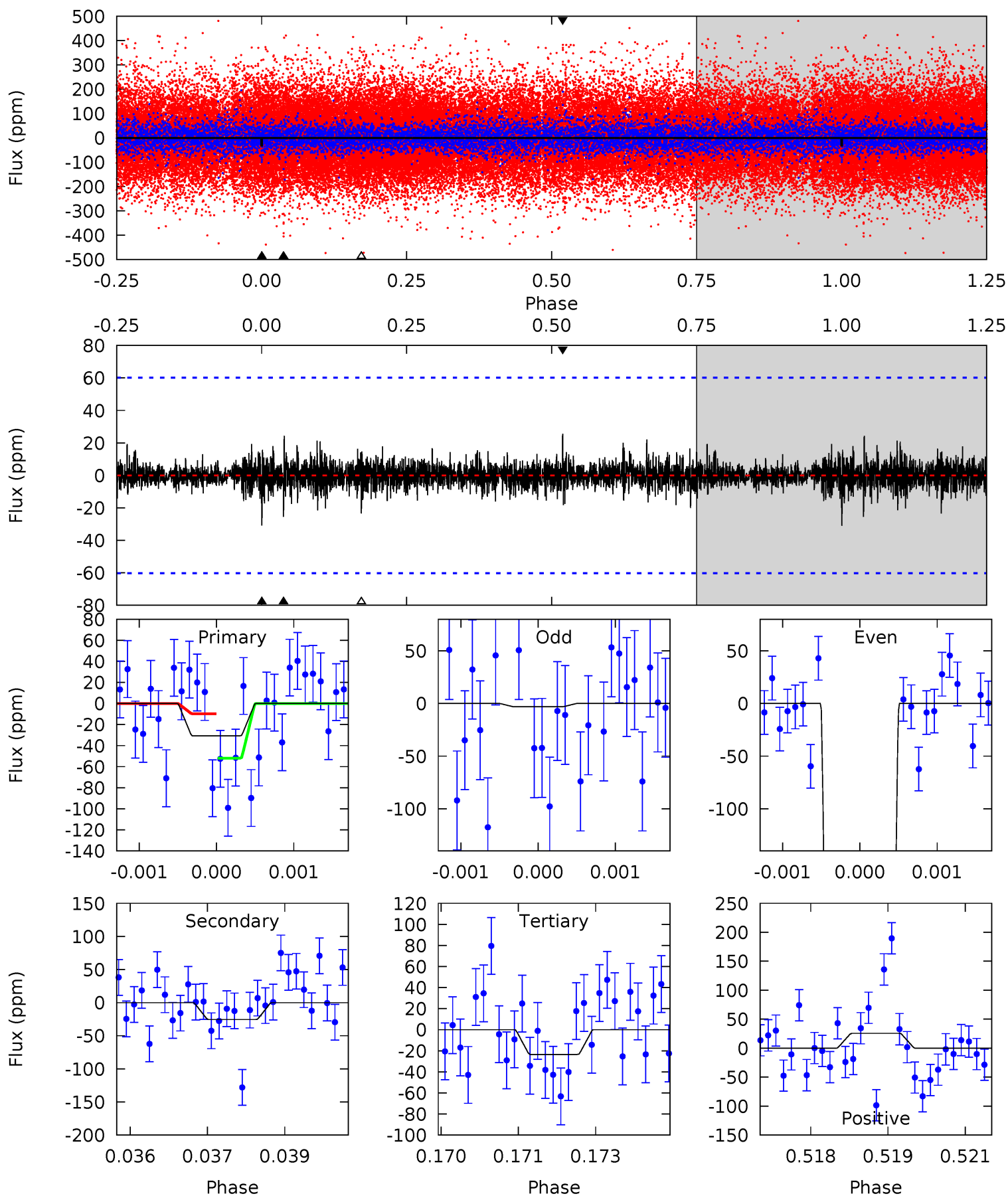
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	10.6	7.27	12.0	5.40	3.20	2.24	2.78	-1.92	3.35	-1.35	37.8	5.28	0.53	0



# Alt Model-Shift Uniqueness Test

008505215-01, P = 627.746208 Days, E = 140.048873 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
2.76	2.28	2.10	2.29	5.39	3.20	0.48	0.66	0.47	0.18	-0.01	45.5	9.78	0.45	1.90



### Stellar Parameters For KIC 008505215

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5095^{+100}_{-100}$	$4.624^{+0.017}_{-0.056}$	$-0.240^{+0.150}_{-0.150}$	$0.712^{+0.047}_{-0.032}$	$0.791^{+0.033}_{-0.066}$	$3.083^{+0.268}_{-0.546}$
	+2%/-2%	+0%/-1%	+62%/-62%	+7%/-4%	+4%/-8%	+9%/-18%
Source	SPE59	SPE59	SPE59	DSEP		

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

### Secondary Eclipse Parameters for KIC 008505215-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-126 \pm 12$	$1.22^{+0.35}_{-0.34}$	$233^{+6}_{-5}$	$4476^{+668}_{-421}$	$80104^{+75677}_{-31744}$
Alt.	$-25 \pm 11$	$2.07^{+0.35}_{-0.36}$	$233^{+5}_{-5}$	$2901^{+232}_{-251}$	$5629^{+4242}_{-2805}$

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

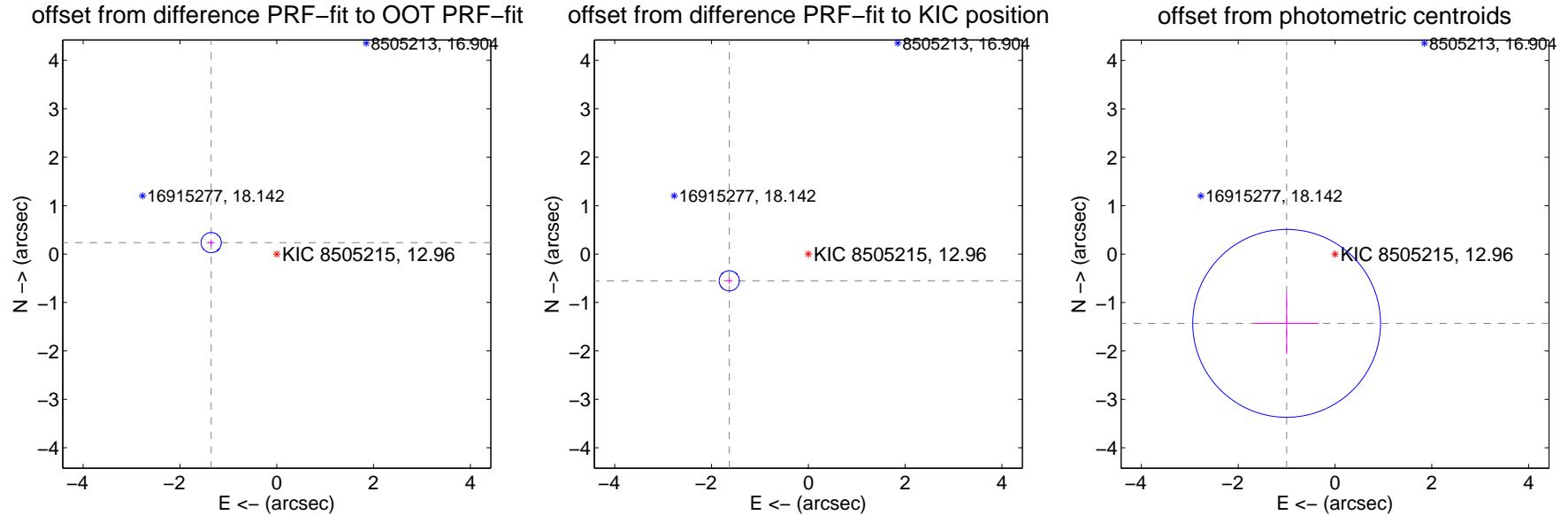
## DV Centroid Data

Supplemental centroid analysis for 008505215-01. Kepler magnitude: 12.96. Transit SNR 8.26

There are 1 quarters with good PRF difference image offsets

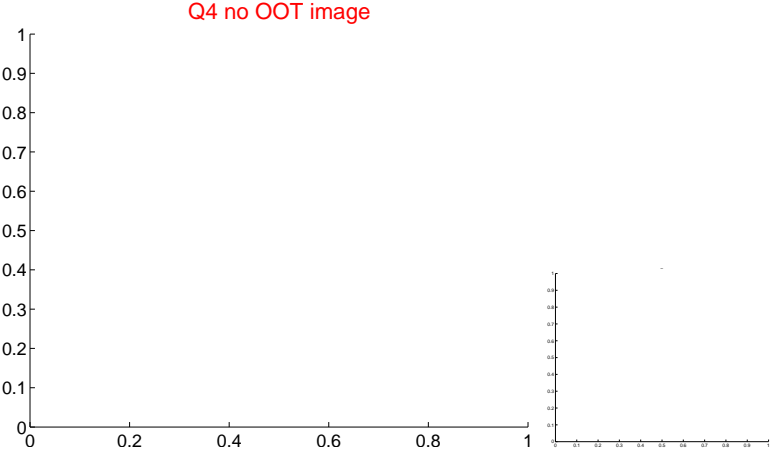
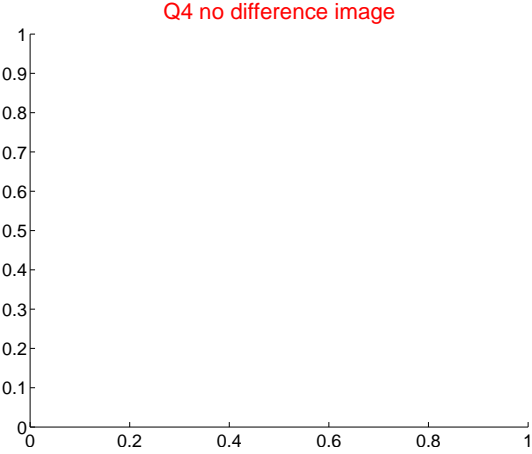
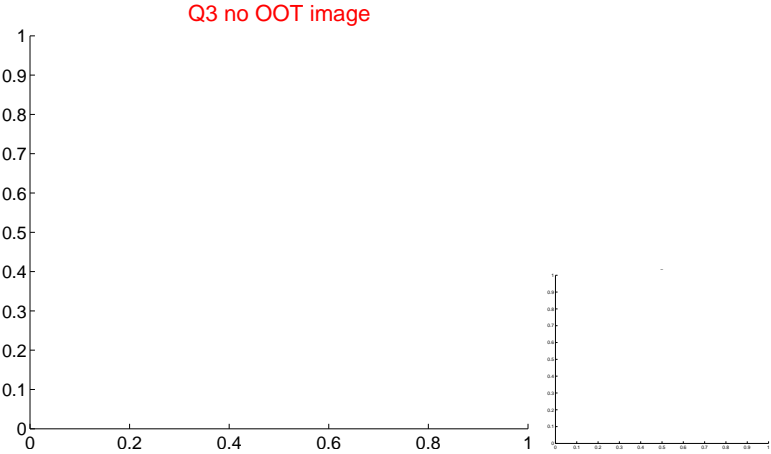
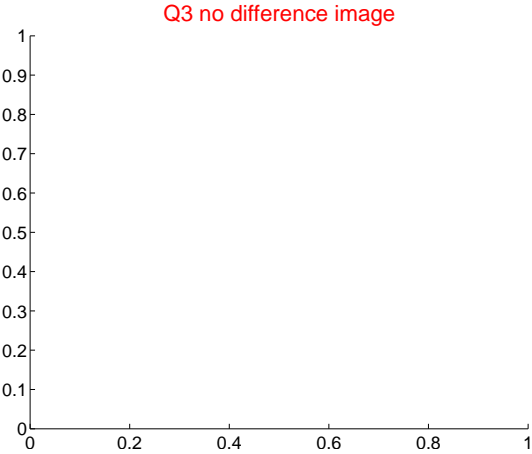
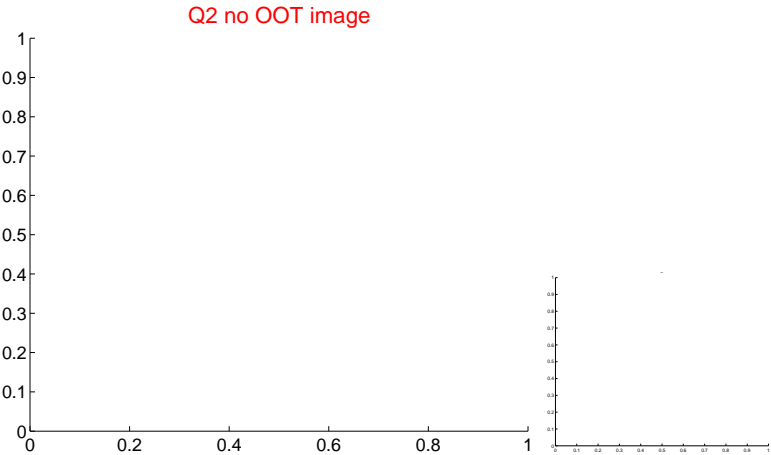
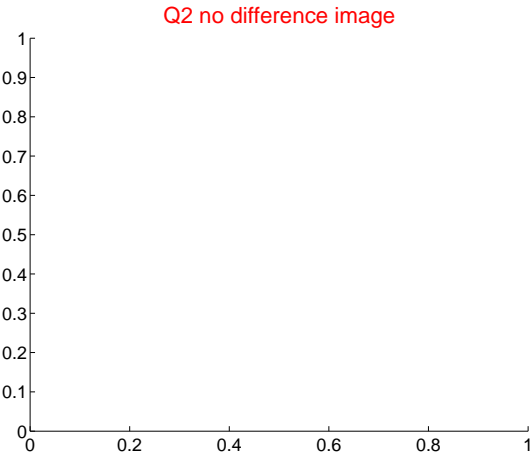
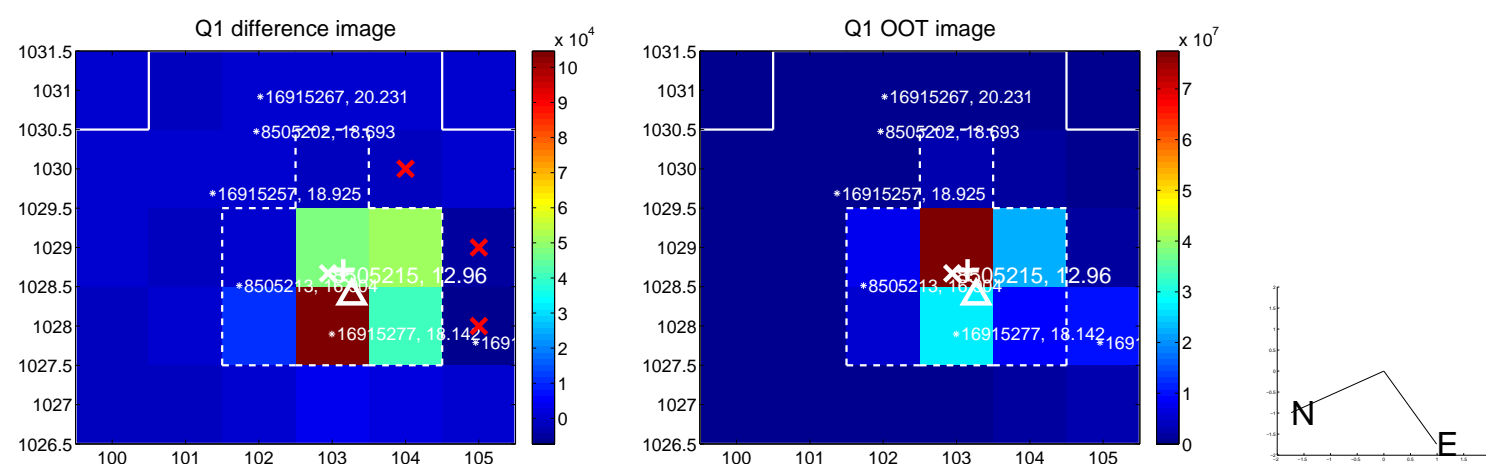
The direct PRF centroid is offset from the target star catalog position by about 0.84 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.375 \pm 0.069$	19.80	$1.355 \pm 0.069$	$0.236 \pm 0.069$
PRF-fit source offset from KIC position	$1.724 \pm 0.069$	24.84	$1.633 \pm 0.069$	$-0.553 \pm 0.069$
photometric centroid source offset	$1.74 \pm 0.65$	2.70	$1.00 \pm 0.67$	$-1.43 \pm 0.64$



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.

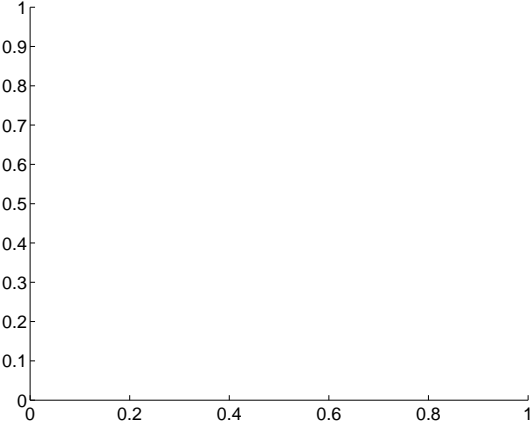
Q5 no difference image



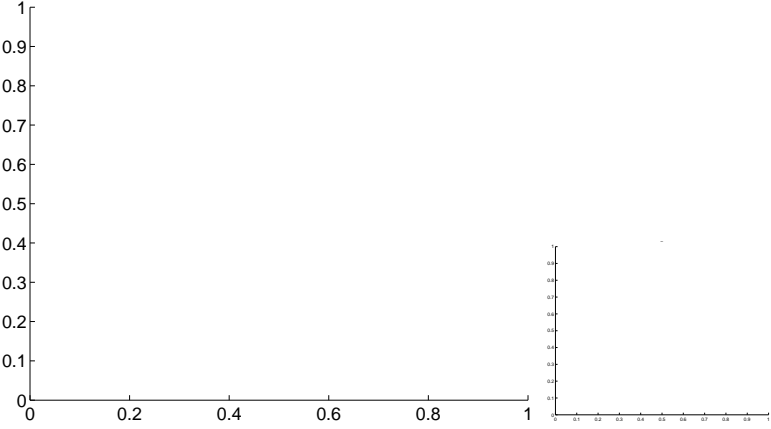
Q5 no OOT image



Q6 no difference image



Q6 no OOT image



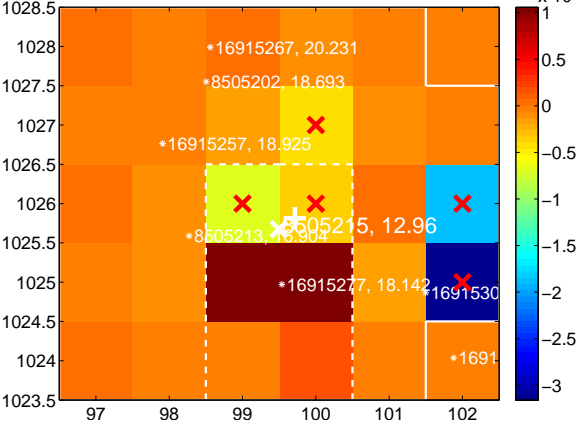
Q7 no difference image



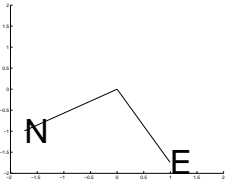
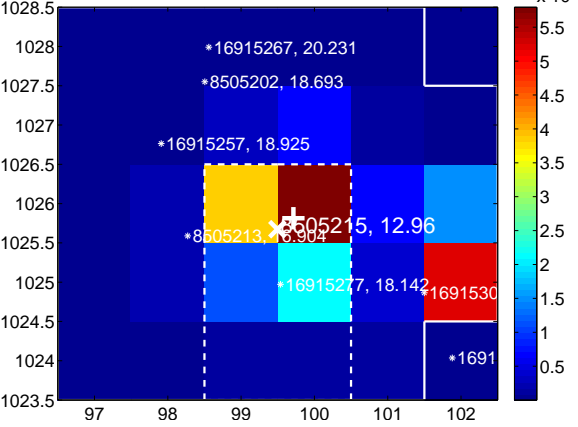
Q7 no OOT image



Q8 difference image. Poor Quality



Q8 OOT image





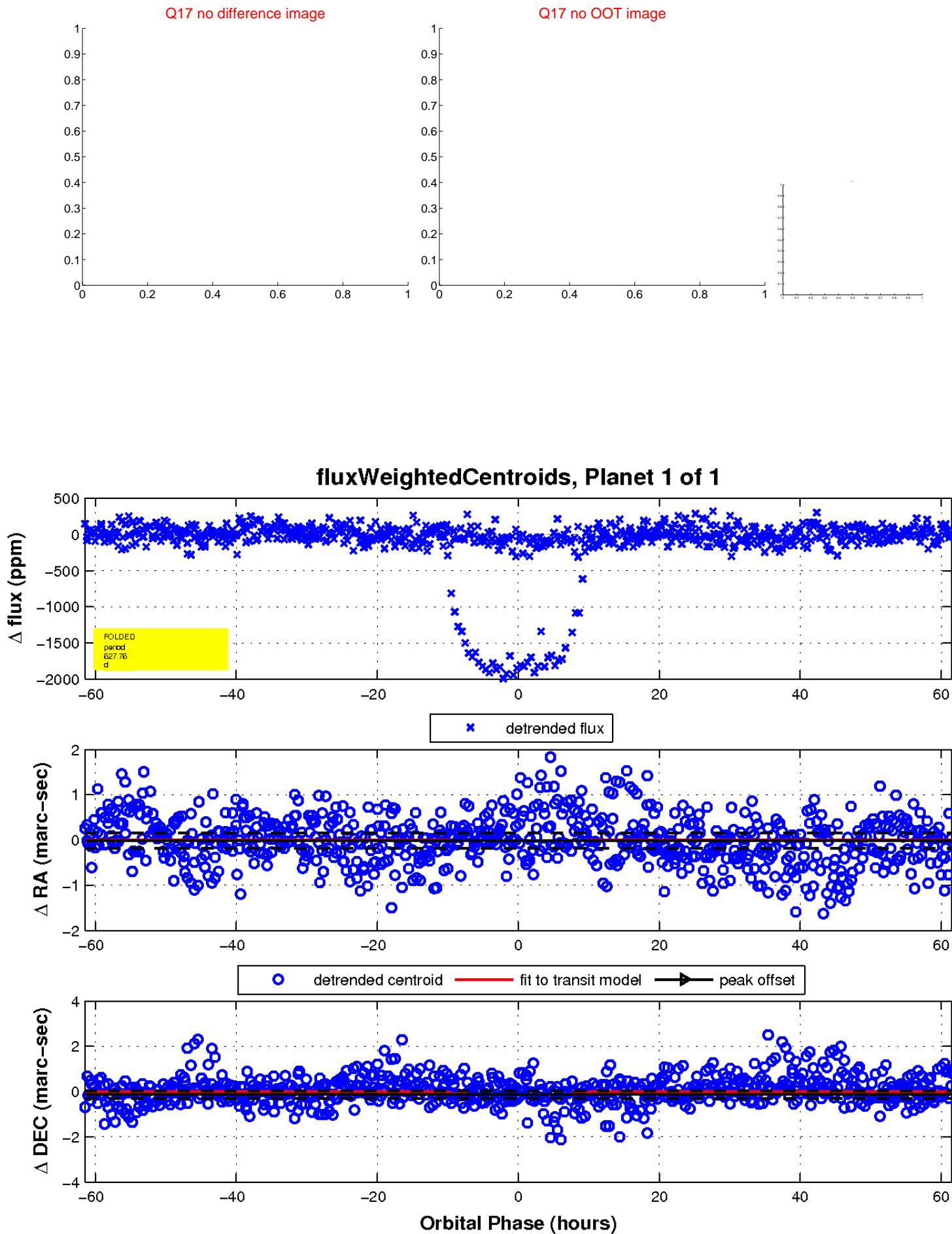
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

