

# KIC 008611686

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008611686-01	OBS	No	566.413507	209.176349	398.5	15.185	10.7	10.4	0.83	5423	1.76	0.36

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008611686-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_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.

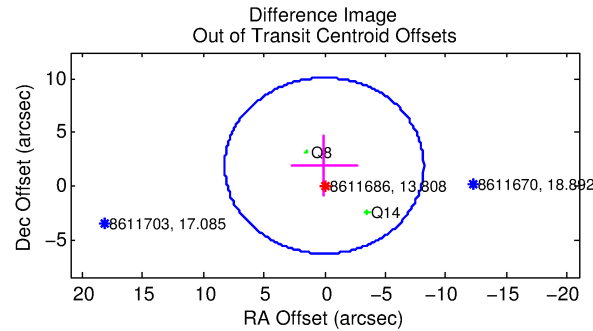
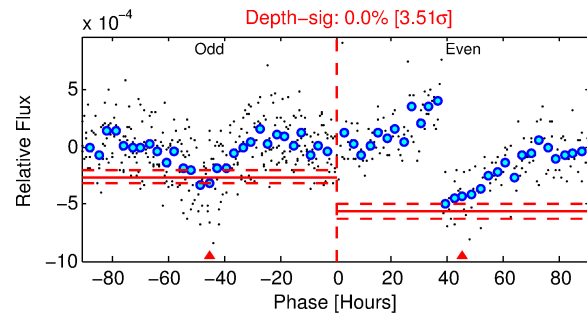
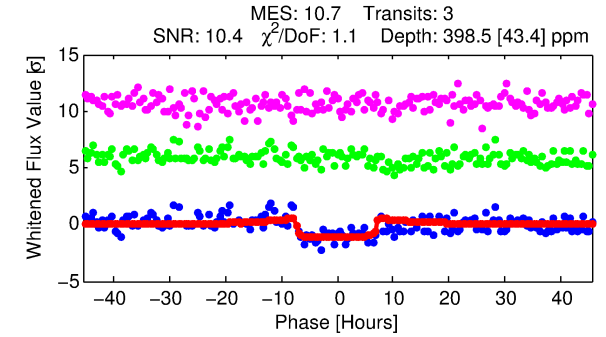
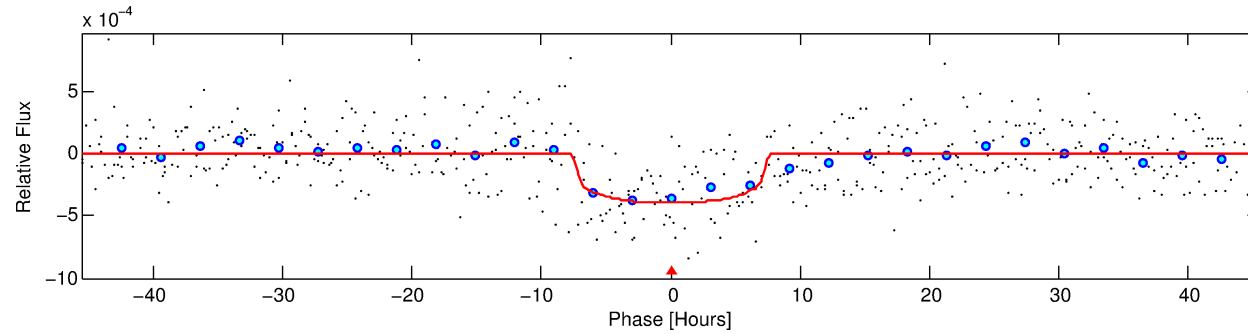
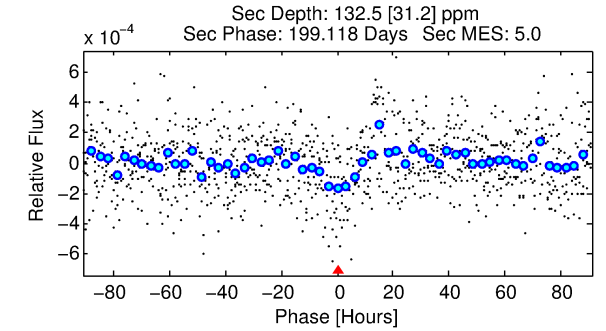
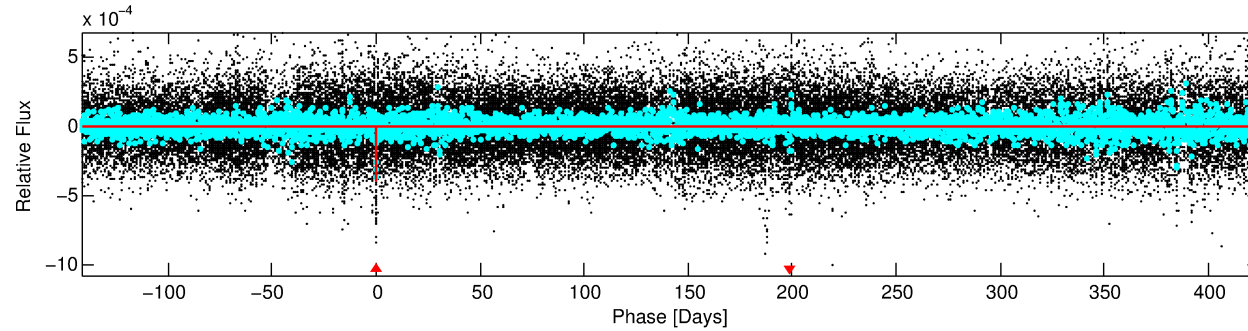
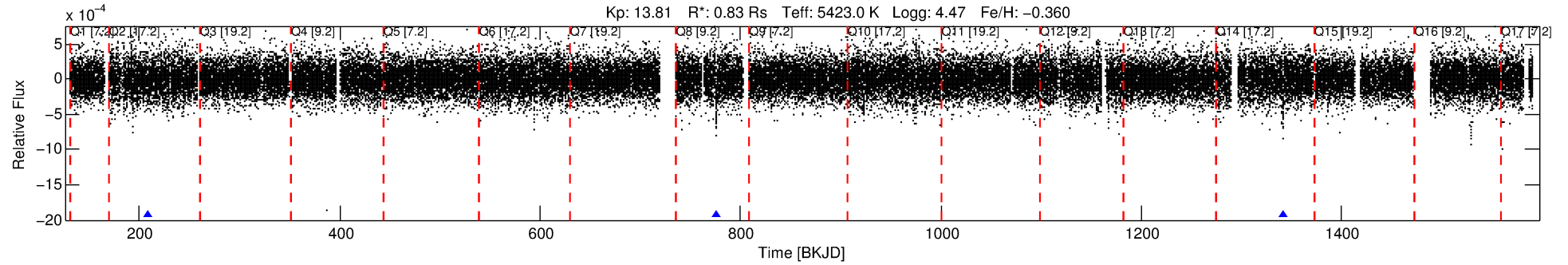
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008611686-01

No Significant Match Found

# DV One-Page Summary

KIC: 8611686 Candidate: 1 of 1 Period: 566.414 d



## DV Fit Results:

Period = 566.41351 [0.01405] d  
Epoch = 209.1763 [0.0153] BKJD  
Rp/R\* = 0.0194 [0.0067]  
a/R\* = 217.18 [309.21]  
b = 0.68 [1.15]  
Seff = 0.36 [0.12]  
Teq = 198 [17] K  
Rp = 1.76 [0.71] Re  
a = 1.2167 [0.2436] AU  
Ag = 34982.29 [27925.20] [1.25σ]  
Teffp = 4181 [775] K [5.14σ]

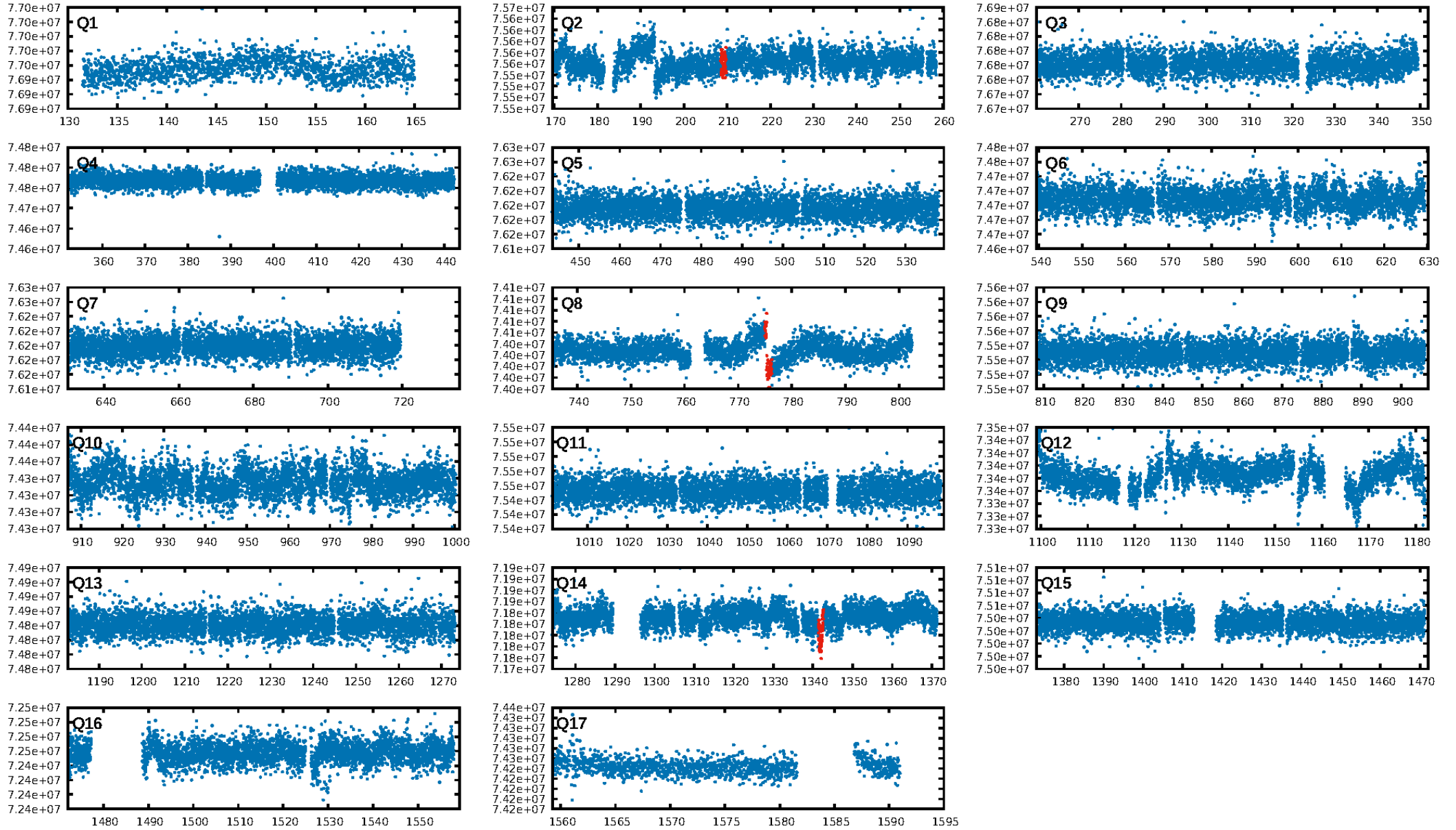
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGof-sig: 99.0%  
Bootstrap-pfa: 8.61e-12  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -8.539  
Centroid-sig: 58.0%  
Centroid-so: 1.033 arcsec [0.79σ]  
OotOffset-rm: 1.899 arcsec [0.69σ]  
OotOffset-st: 1/0/1/0 [2]  
KicOffset-rm: 1.929 arcsec [0.70σ]  
KicOffset-st: 1/0/1/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

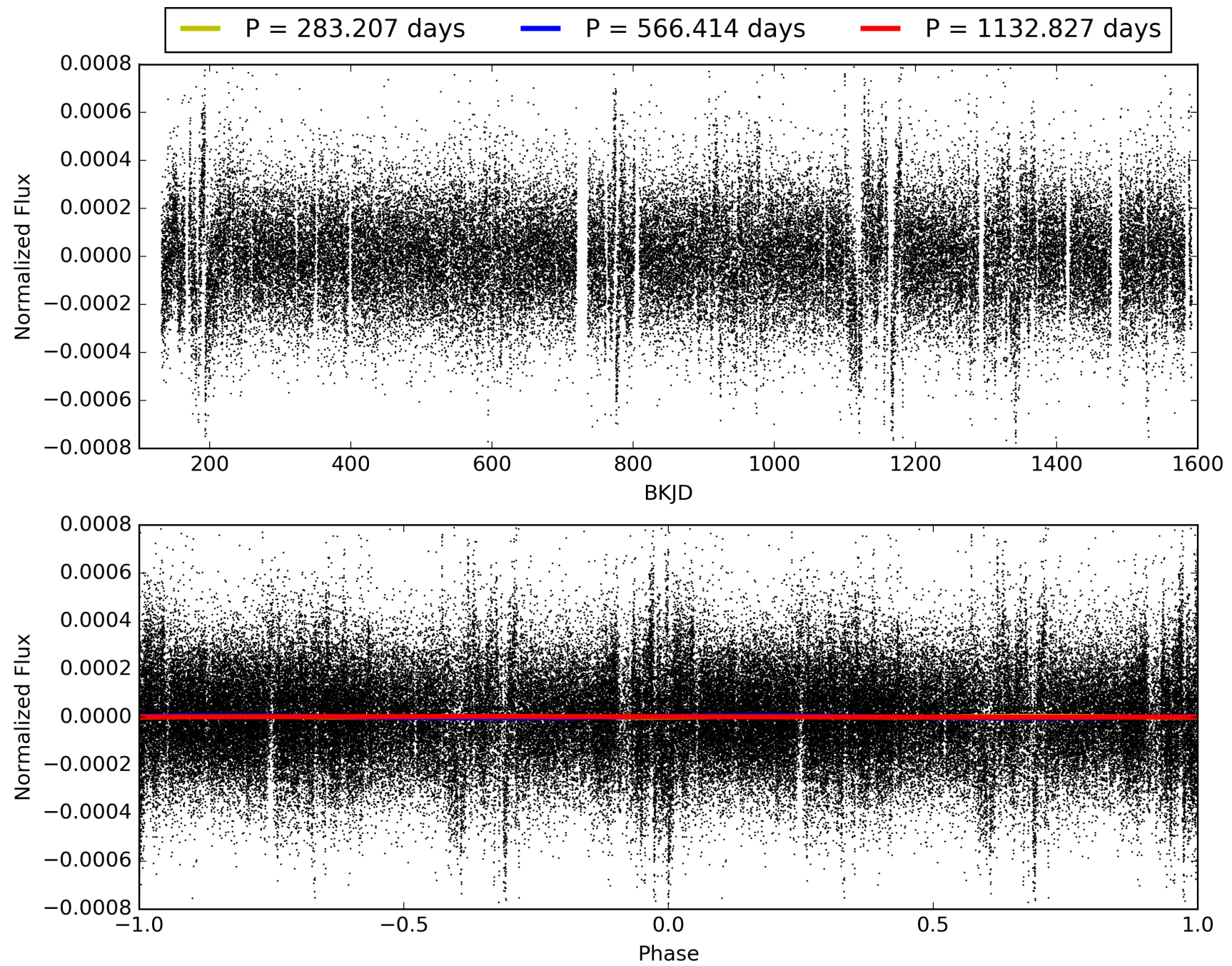
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 23:21:40 Z

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

# TCE 008611686-01, PDC Light Curves

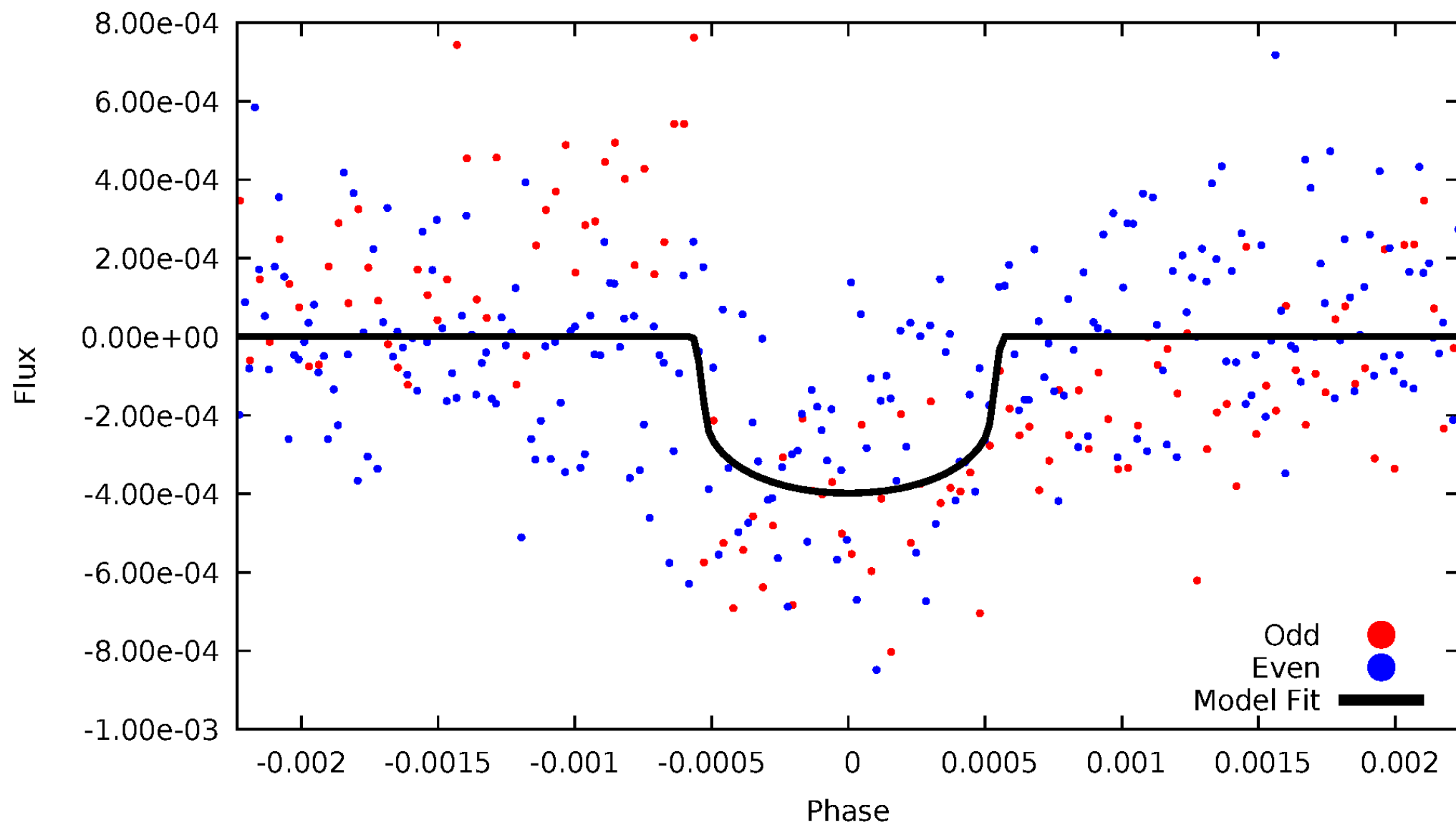


# TCE 008611686-01



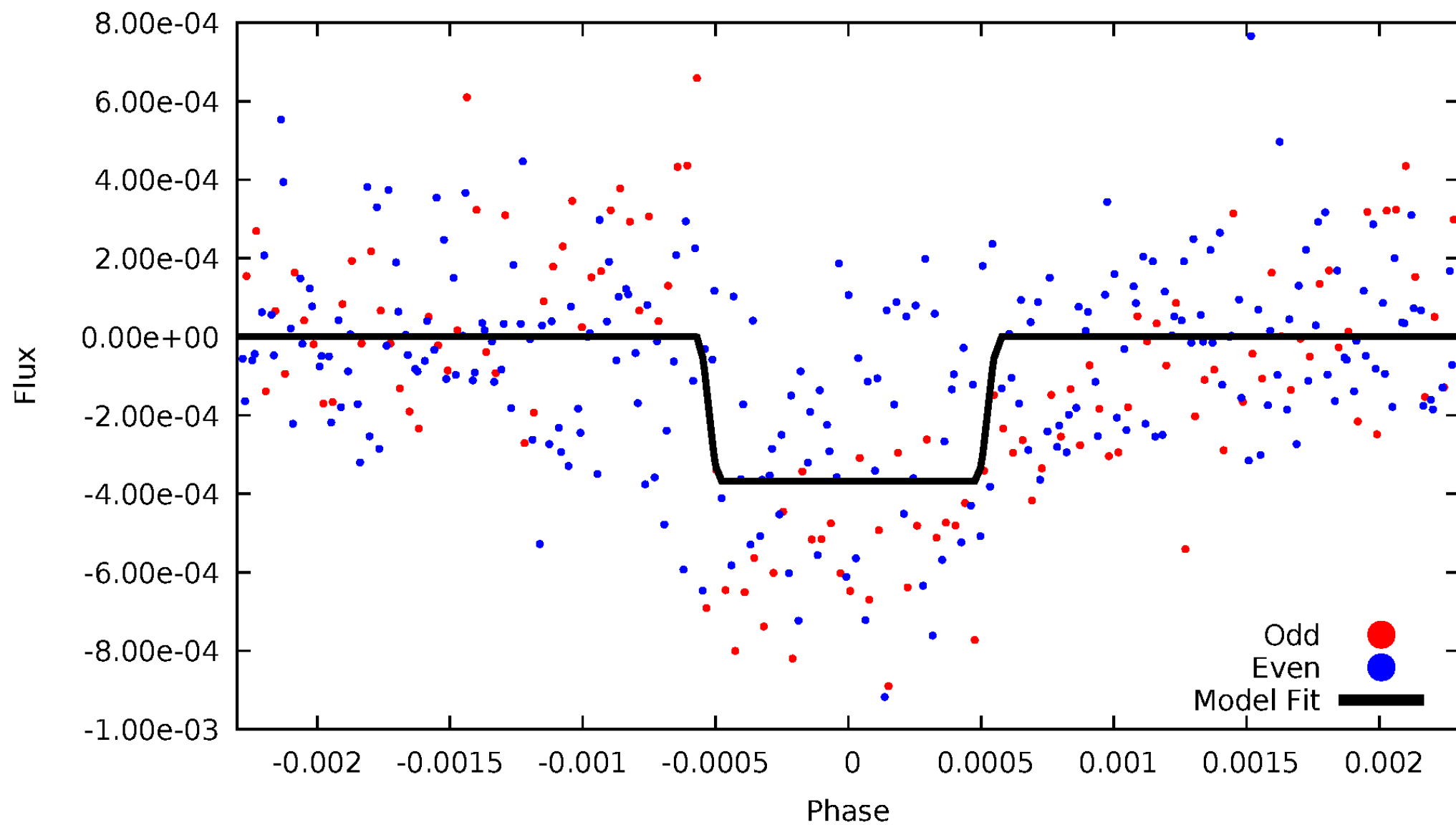
# DV Odd/Even

TCE 008611686-01



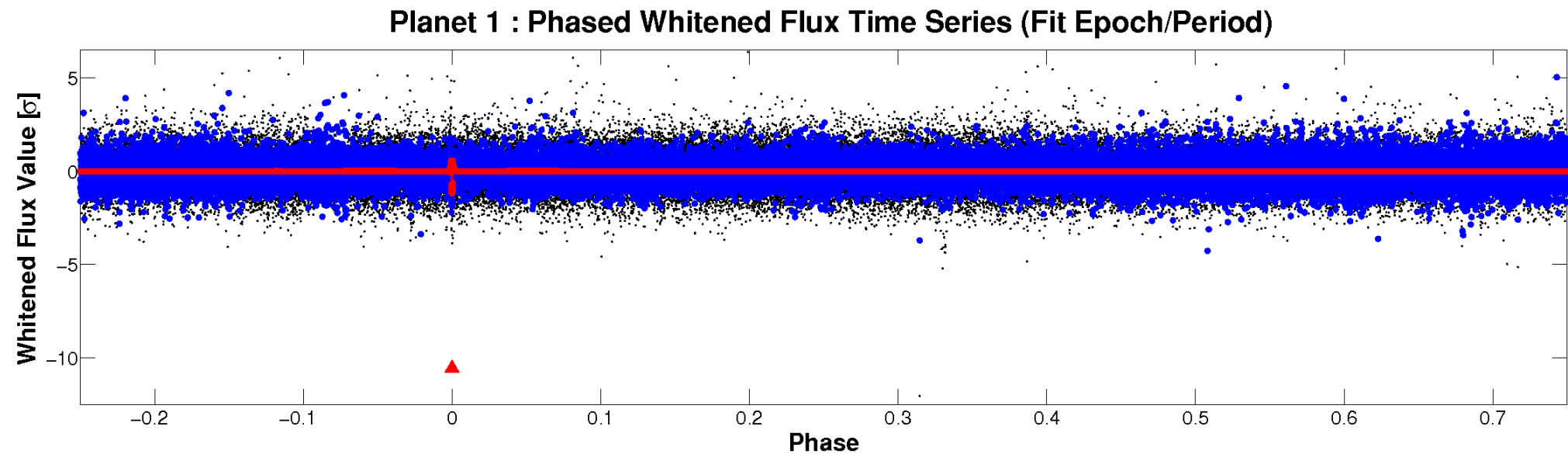
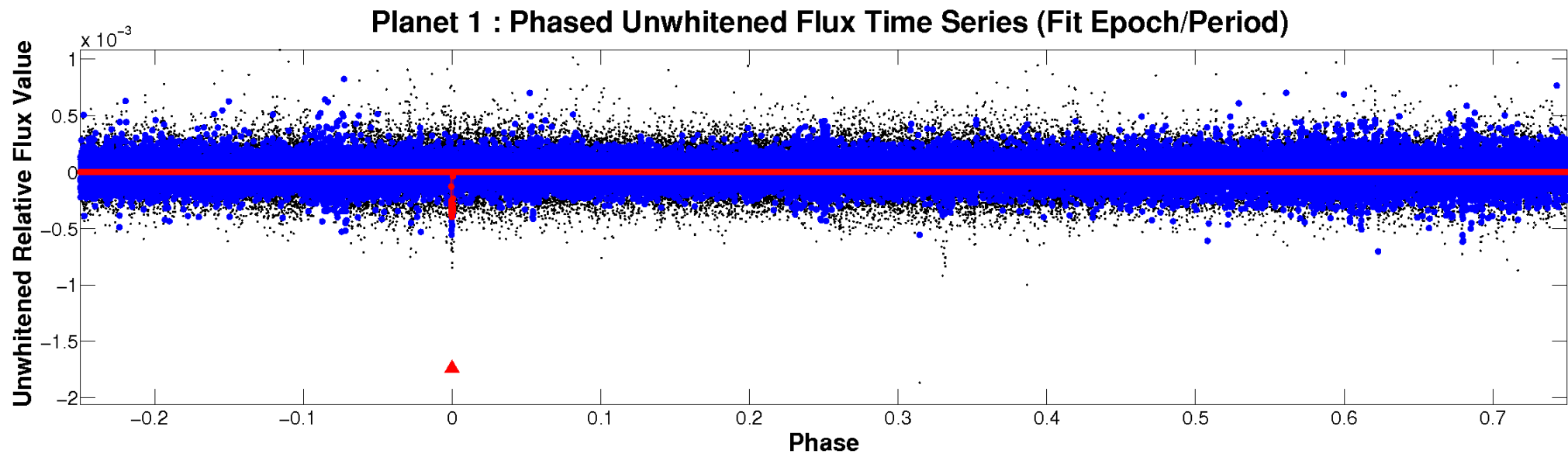
# ALT Odd/Even

TCE 008611686-01



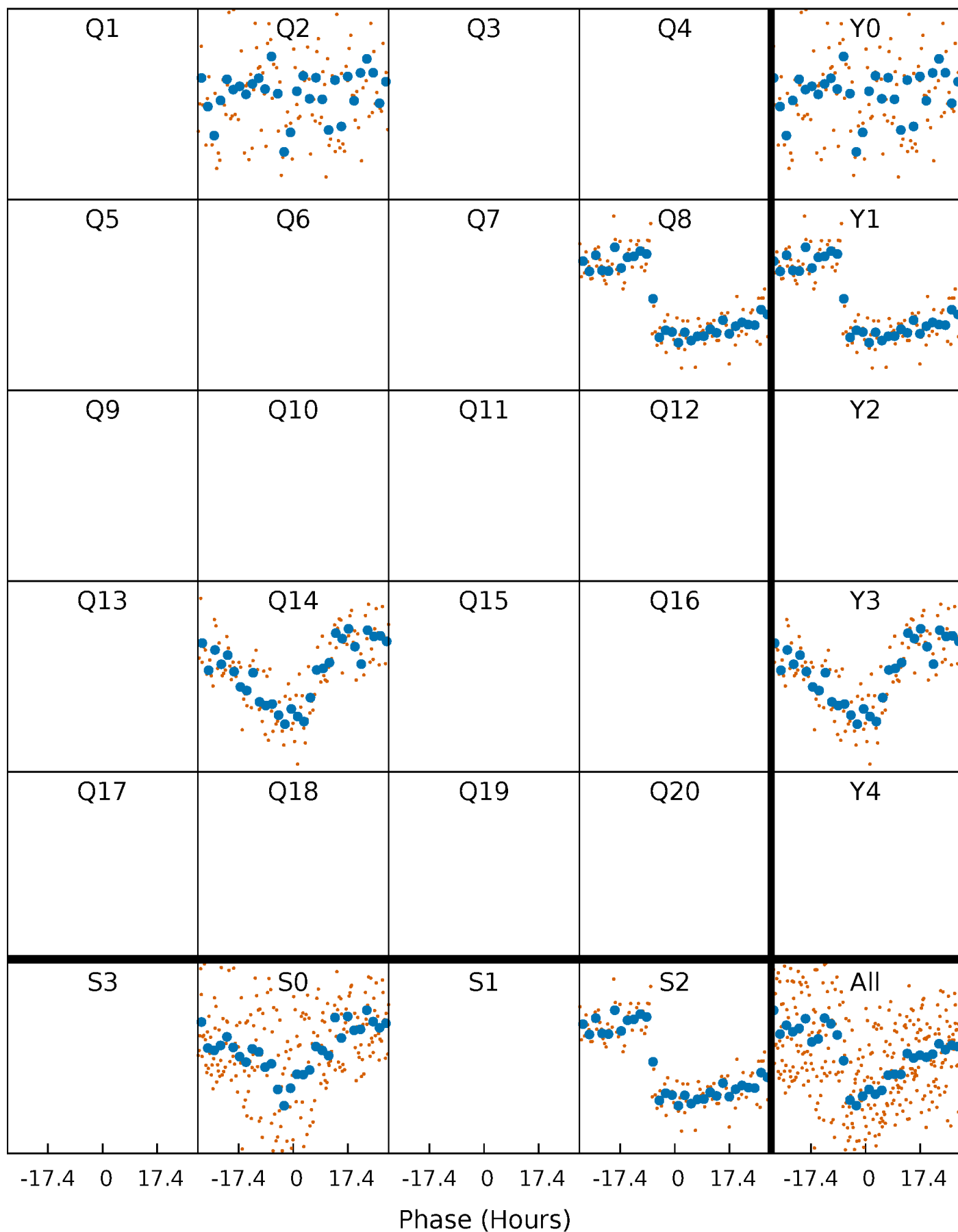


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

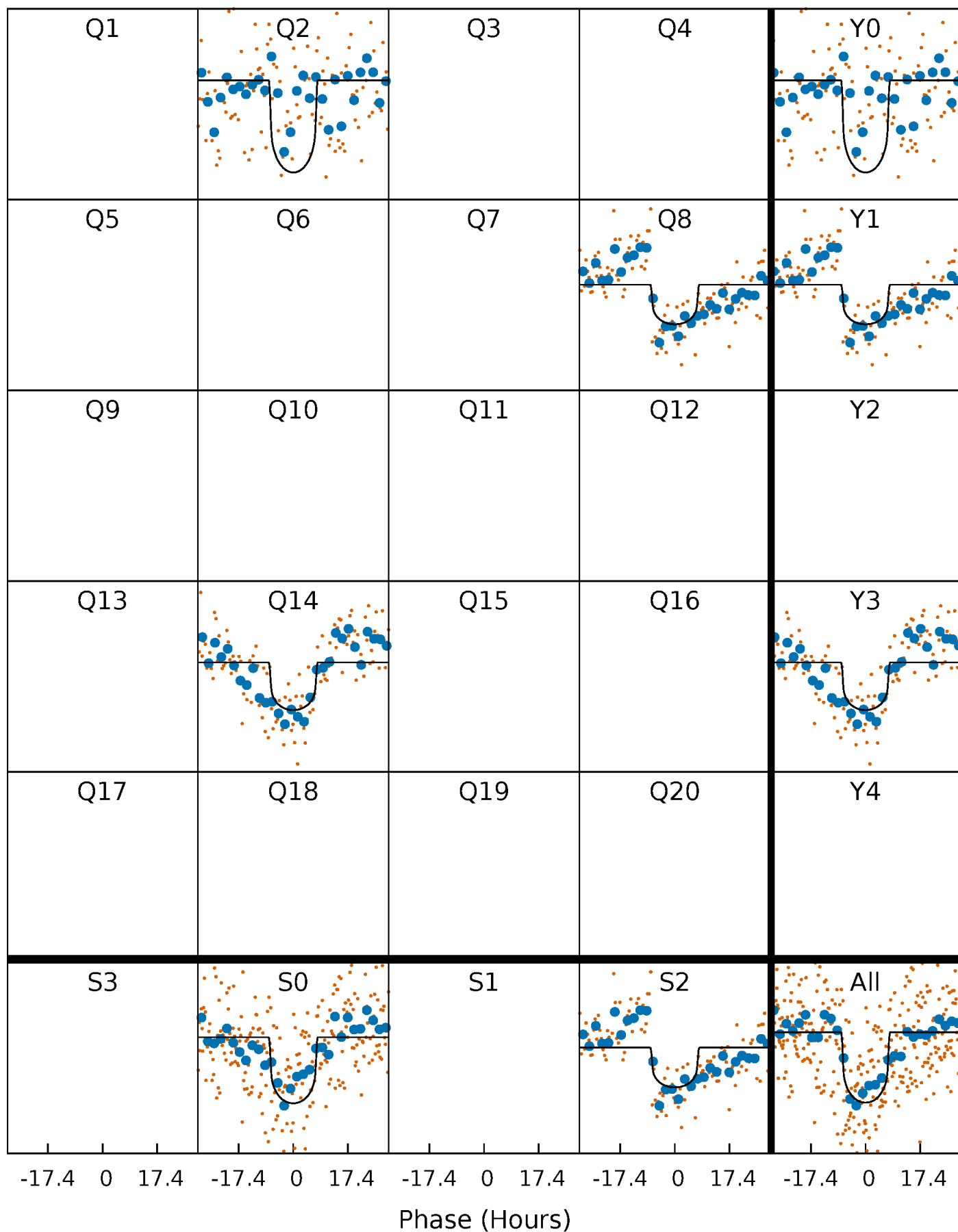
TCE 008611686-01 P=566.413507 Days  $T_0=209.176349$  (BKJD)





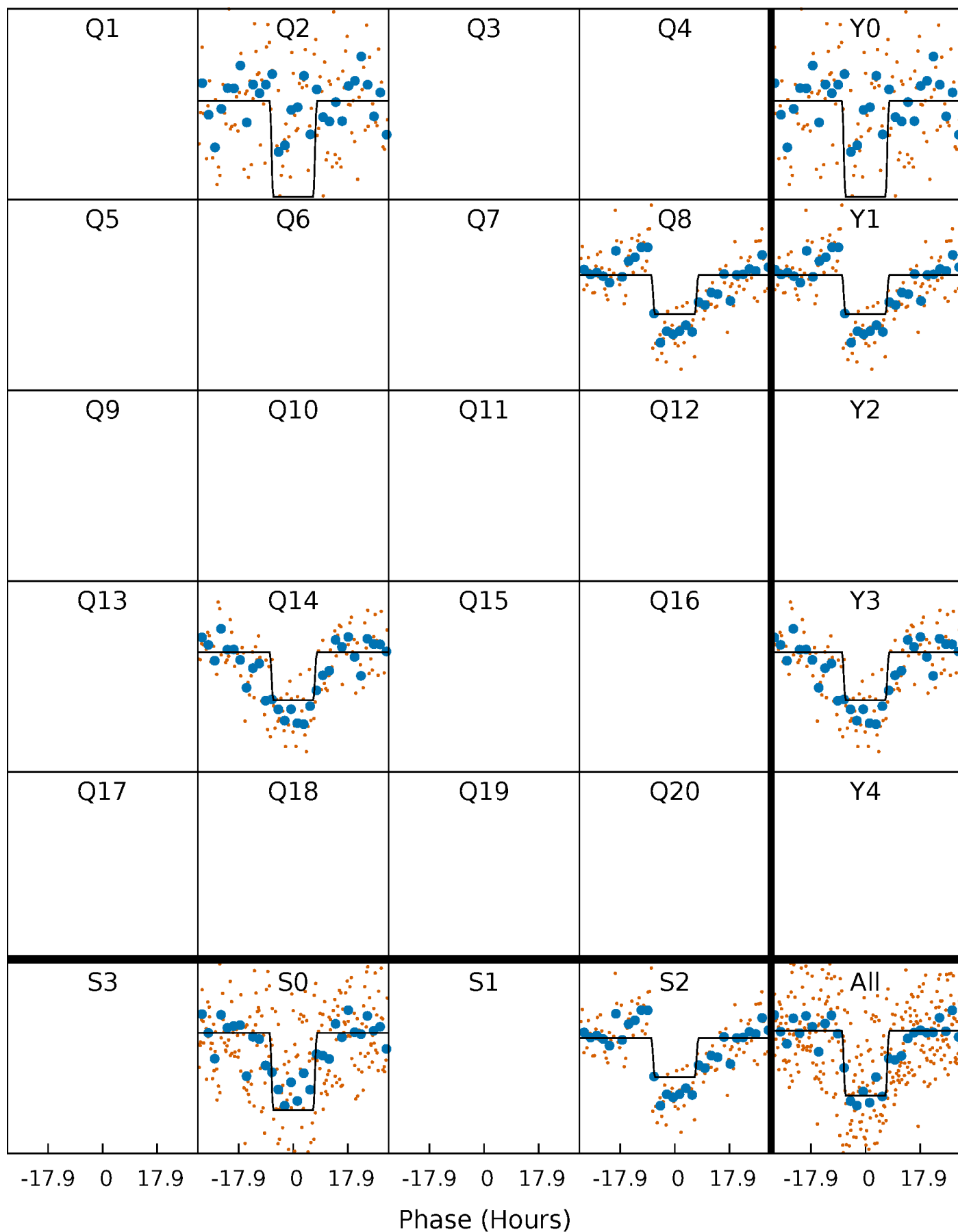
# DV Quarter-Phased Transit Curves

TCE 008611686-01 P=566.413507 Days  $T_0=209.176349$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

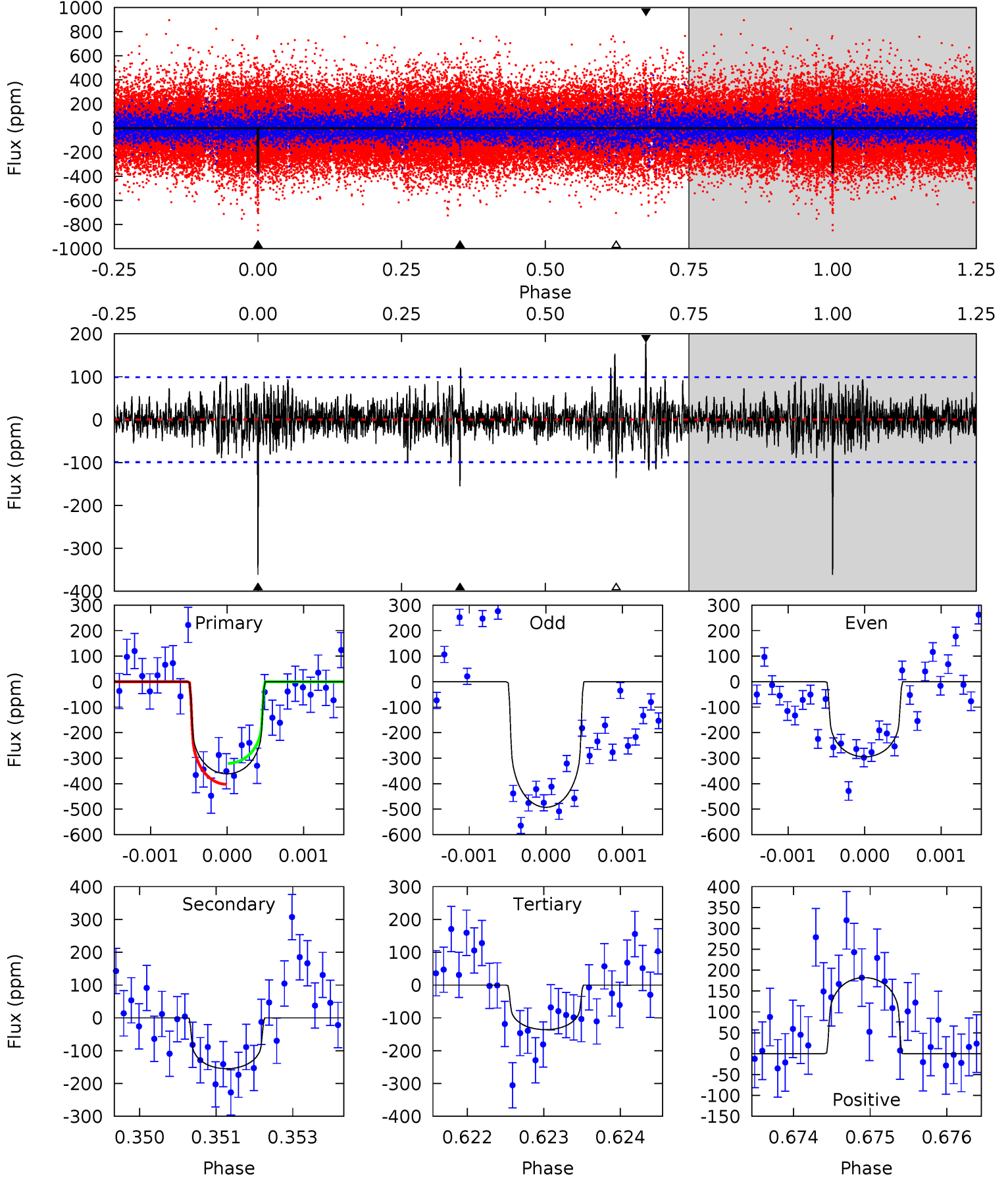
TCE 008611686-01 P=566.391038 Days  $T_0=209.202137$  (BKJD)



# DV Model-Shift Uniqueness Test

008611686-01, P = 566.413507 Days, E = 209.176349 Days

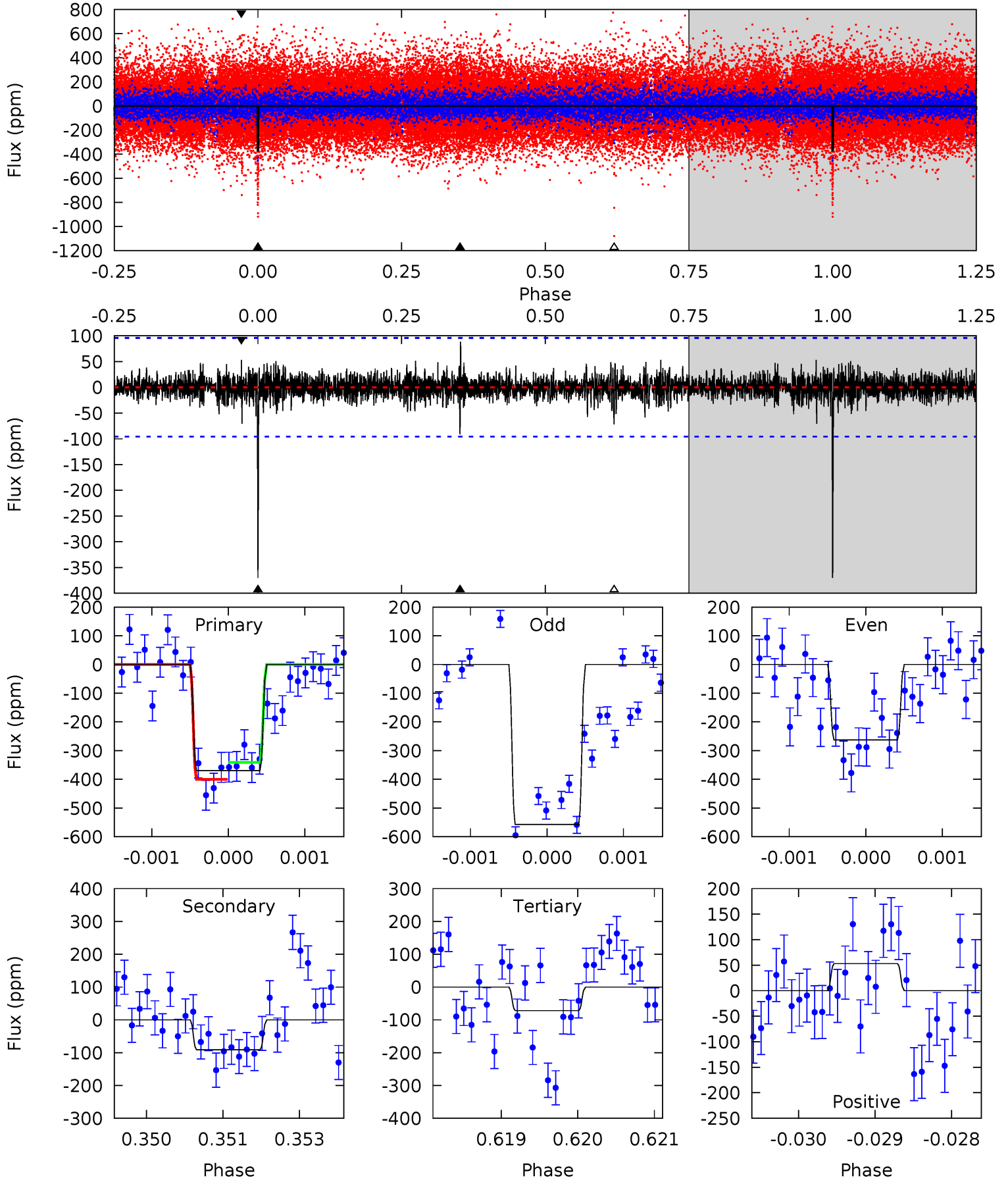
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.8	8.49	7.46	9.99	5.43	3.25	1.63	12.4	9.83	1.04	-1.49	5.14	0.76	0.34	2.24



# Alt Model-Shift Uniqueness Test

008611686-01, P = 566.391038 Days, E = 209.202137 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
20.9	5.17	4.07	3.00	5.43	3.25	0.84	16.9	17.9	1.10	2.16	7.88	0.75	0.19	1.67



### Stellar Parameters For KIC 008611686

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5423^{+160}_{-160}$	$4.473^{+0.124}_{-0.186}$	$-0.360^{+0.350}_{-0.250}$	$0.831^{+0.175}_{-0.116}$	$0.749^{+0.118}_{-0.050}$	$1.840^{+1.036}_{-0.817}$
	+3%/-3%	+3%/-4%	+97%/-69%	+21%/-14%	+16%/-7%	+56%/-44%
Source	PHO1	KIC0	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 008611686-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-155 \pm 18$	$1.84^{+0.66}_{-0.64}$	$277^{+19}_{-14}$	$4491^{+815}_{-512}$	$38349^{+51467}_{-17880}$
Alt.	$-91 \pm 18$	$1.77^{+0.70}_{-0.60}$	$279^{+18}_{-15}$	$4101^{+765}_{-440}$	$24033^{+32530}_{-12006}$

$T_{\text{max}}$  = 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

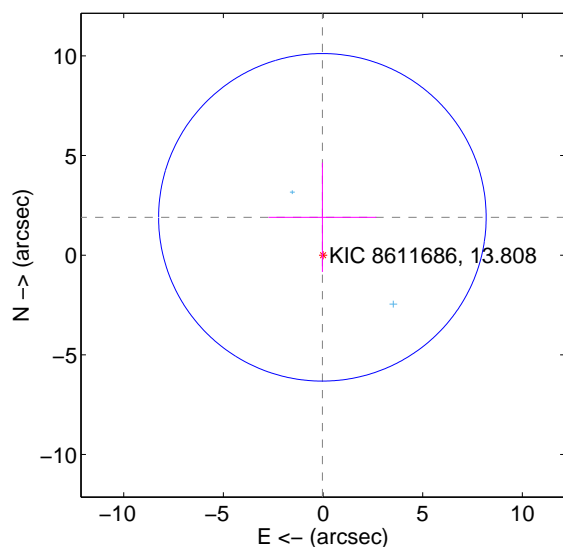
Supplemental centroid analysis for 008611686-01. Kepler magnitude: 13.81. Transit SNR 10.44

There are 2 quarters with good PRF difference image offsets

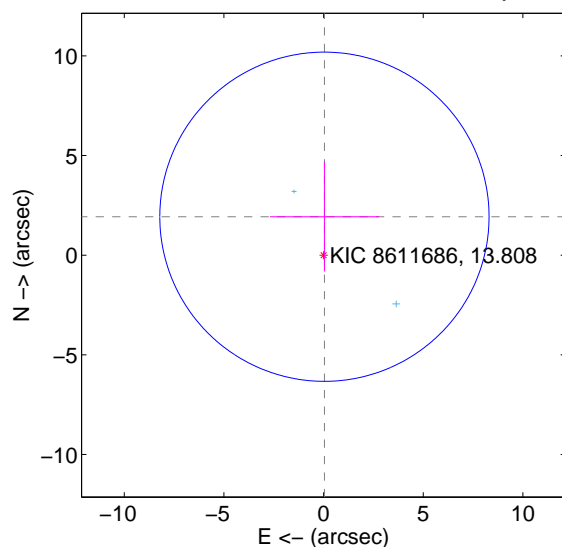
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.899 \pm 2.739$	0.69	$0.033 \pm 2.707$	$1.899 \pm 2.739$
PRF-fit source offset from KIC position	$1.929 \pm 2.753$	0.70	$-0.042 \pm 2.739$	$1.929 \pm 2.753$
photometric centroid source offset	$1.03 \pm 1.31$	0.79	$-0.81 \pm 1.16$	$-0.64 \pm 1.54$

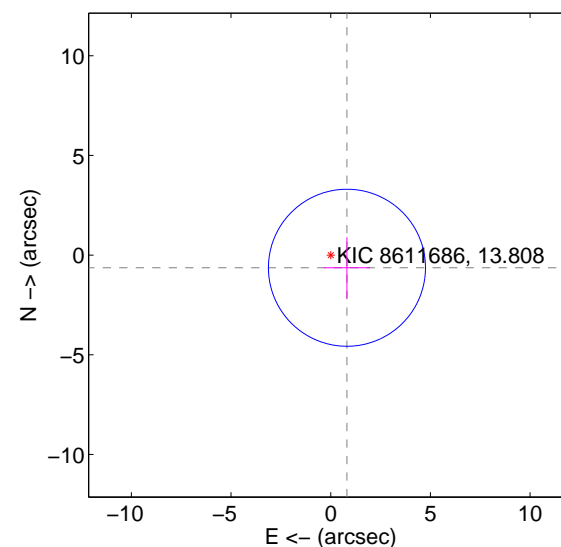
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

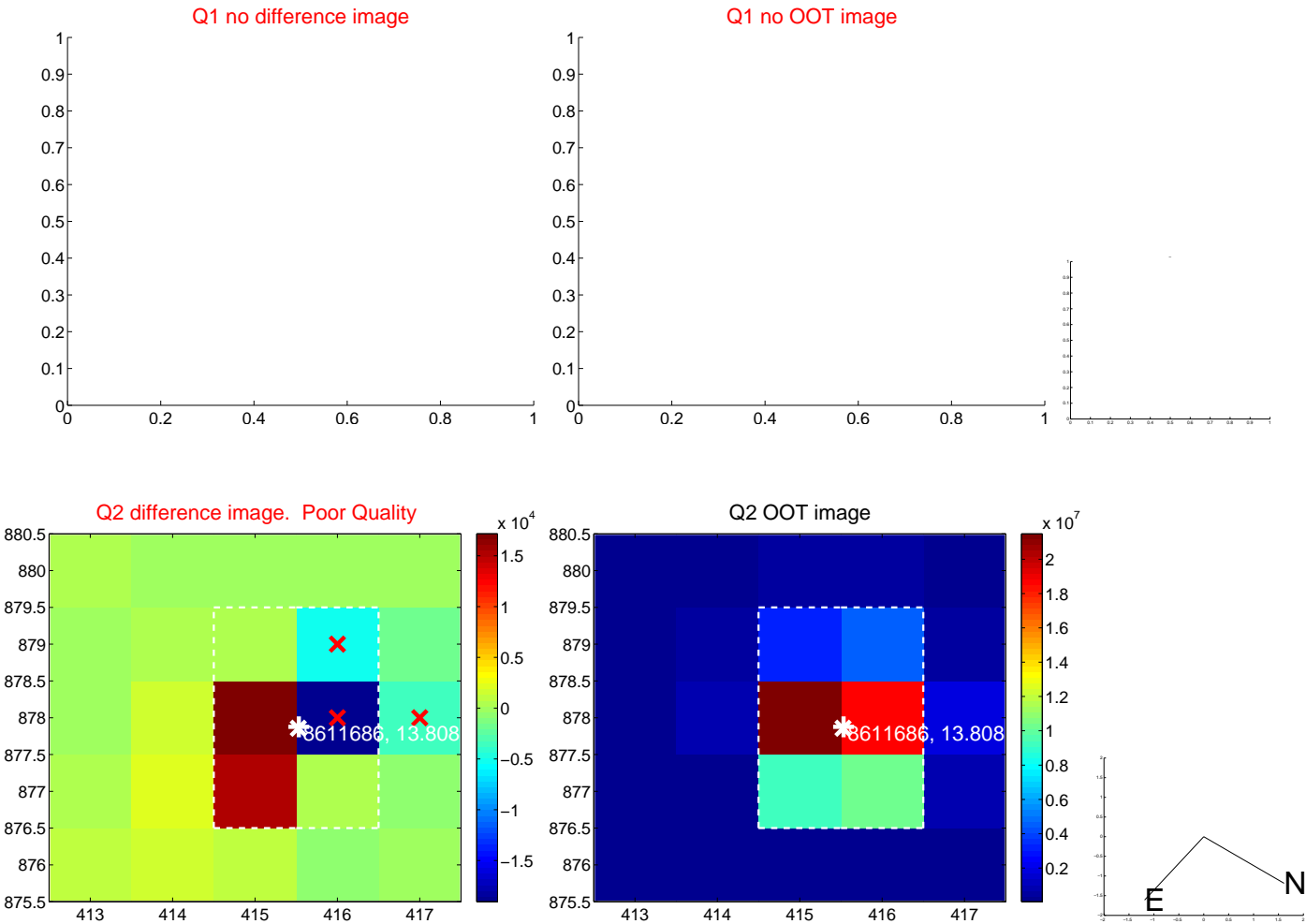


offset from photometric centroids



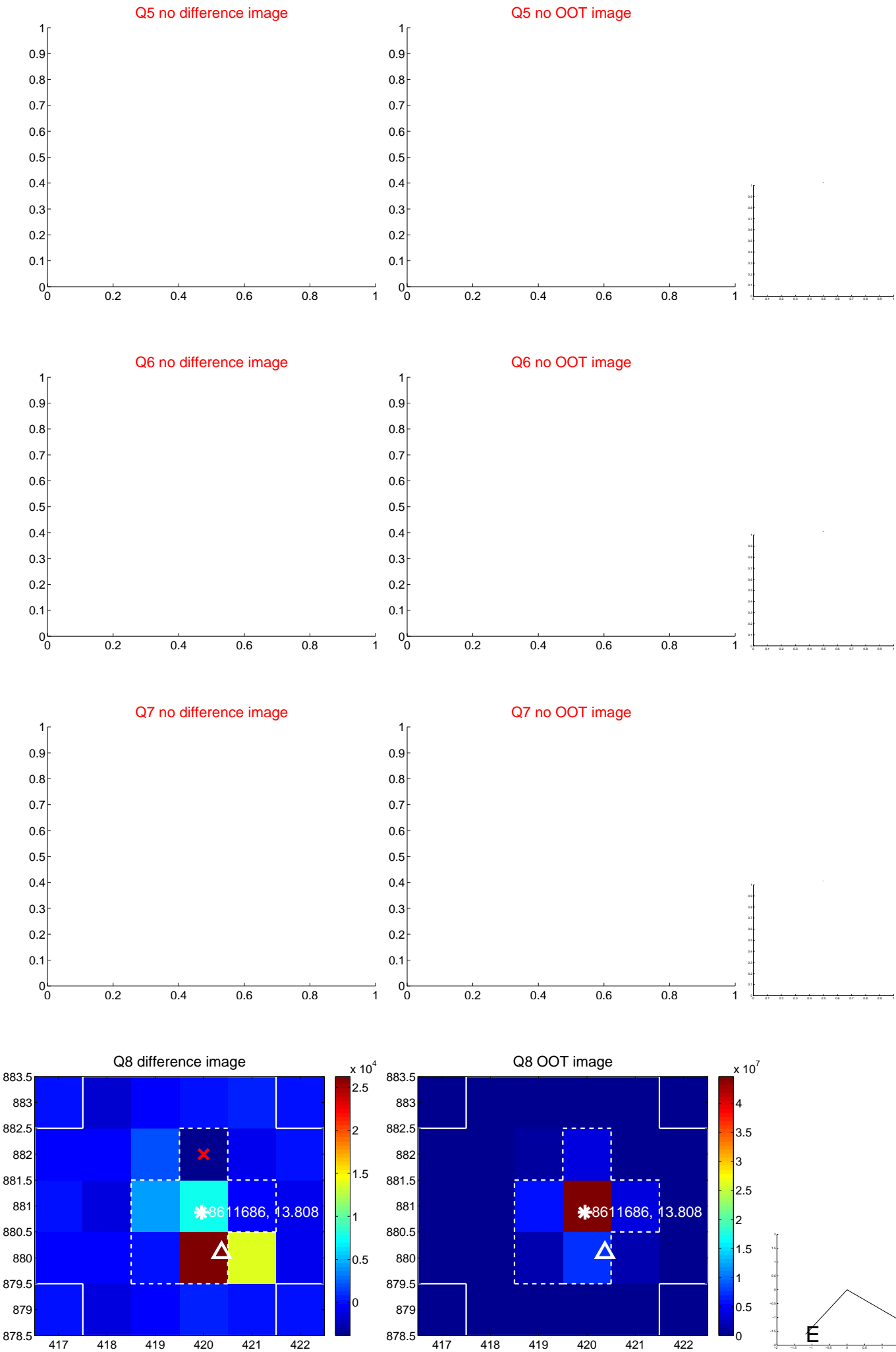
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.





white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

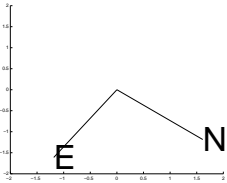
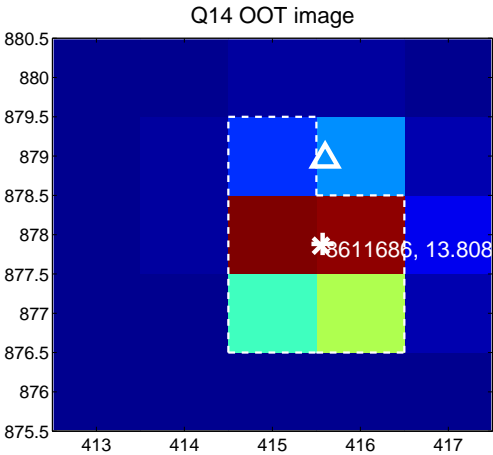
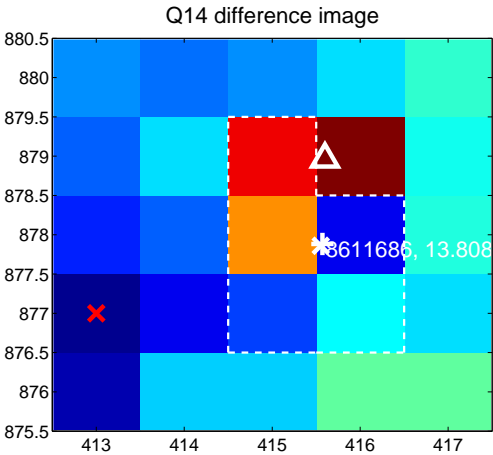


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

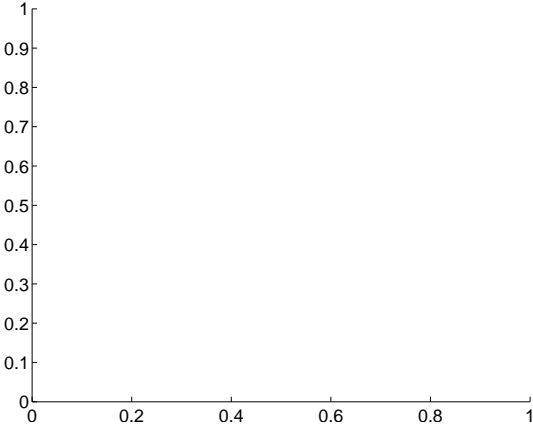
Q13 no difference image



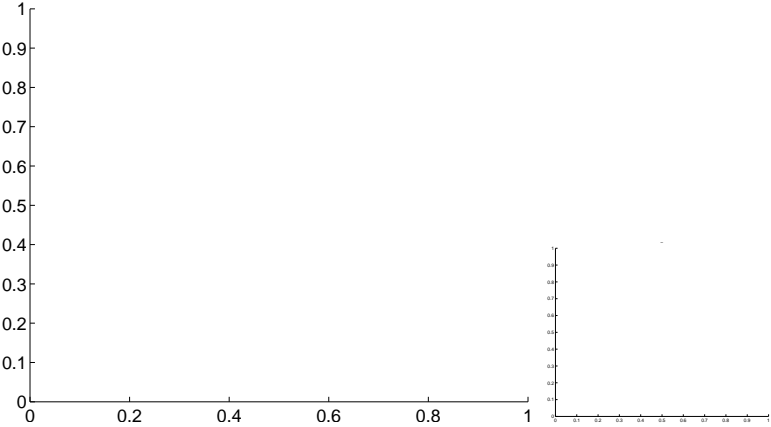
Q13 no OOT image



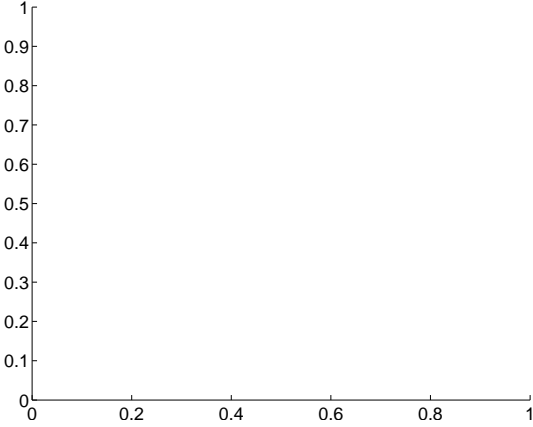
Q15 no difference image



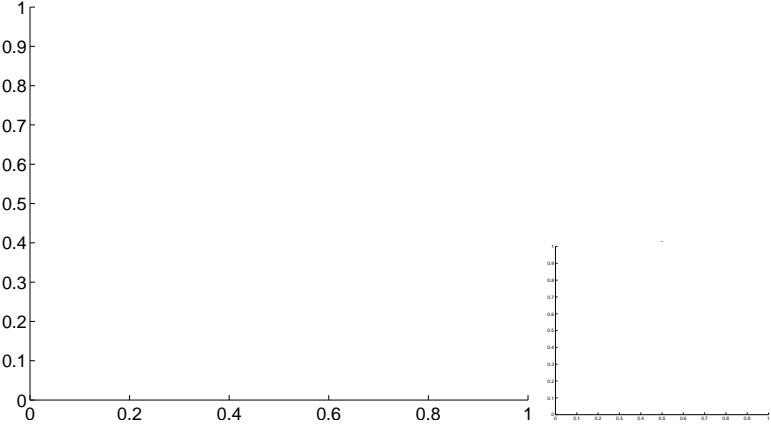
Q15 no OOT image



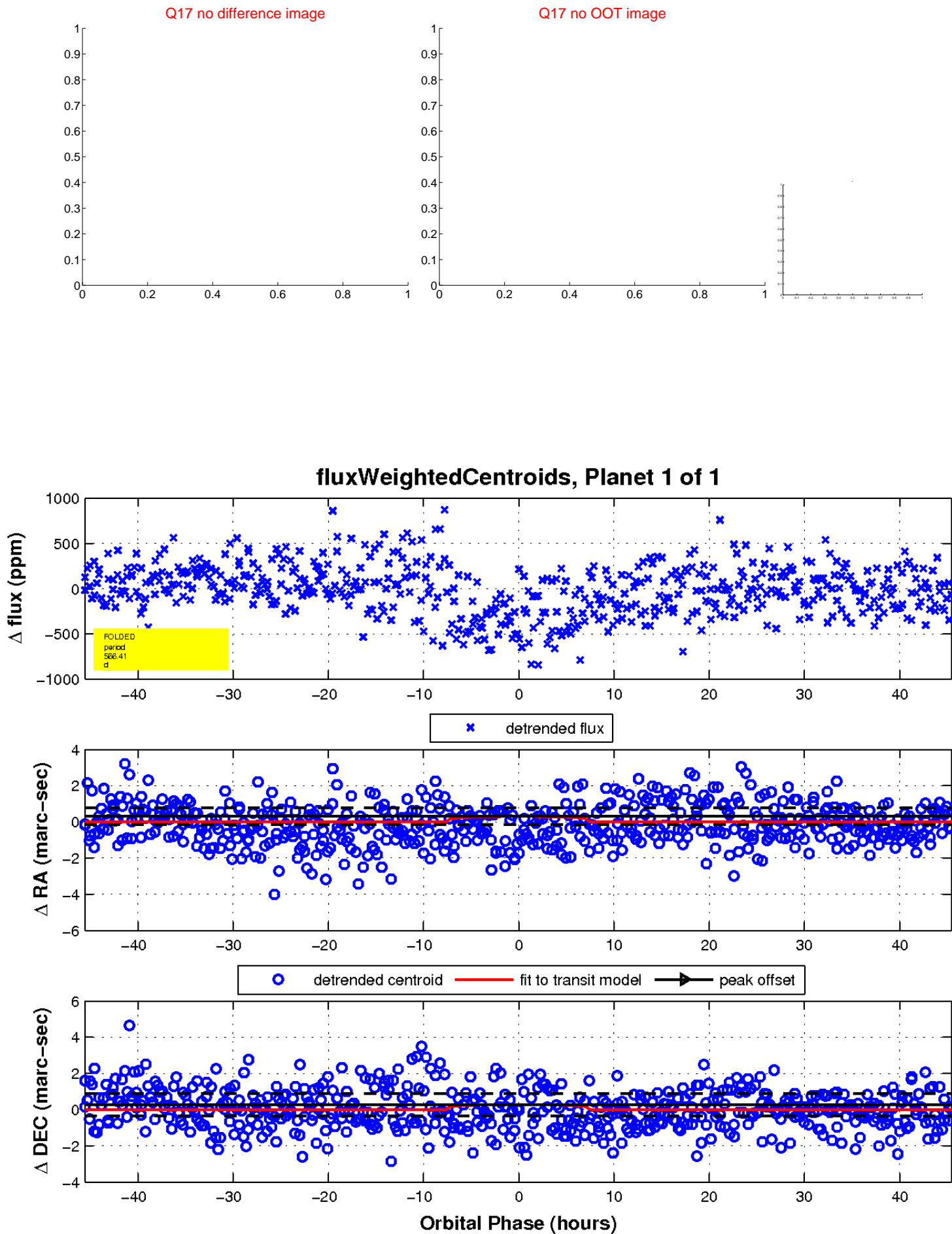
Q16 no difference image



Q16 no OOT image



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



# UKIRT Image

Declination

