

# KIC 008022886

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008022886-01	OBS	No	445.265350	190.586807	821.5	24.267	13.9	20.1	142.20	3519	905.31	896.09

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008022886-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

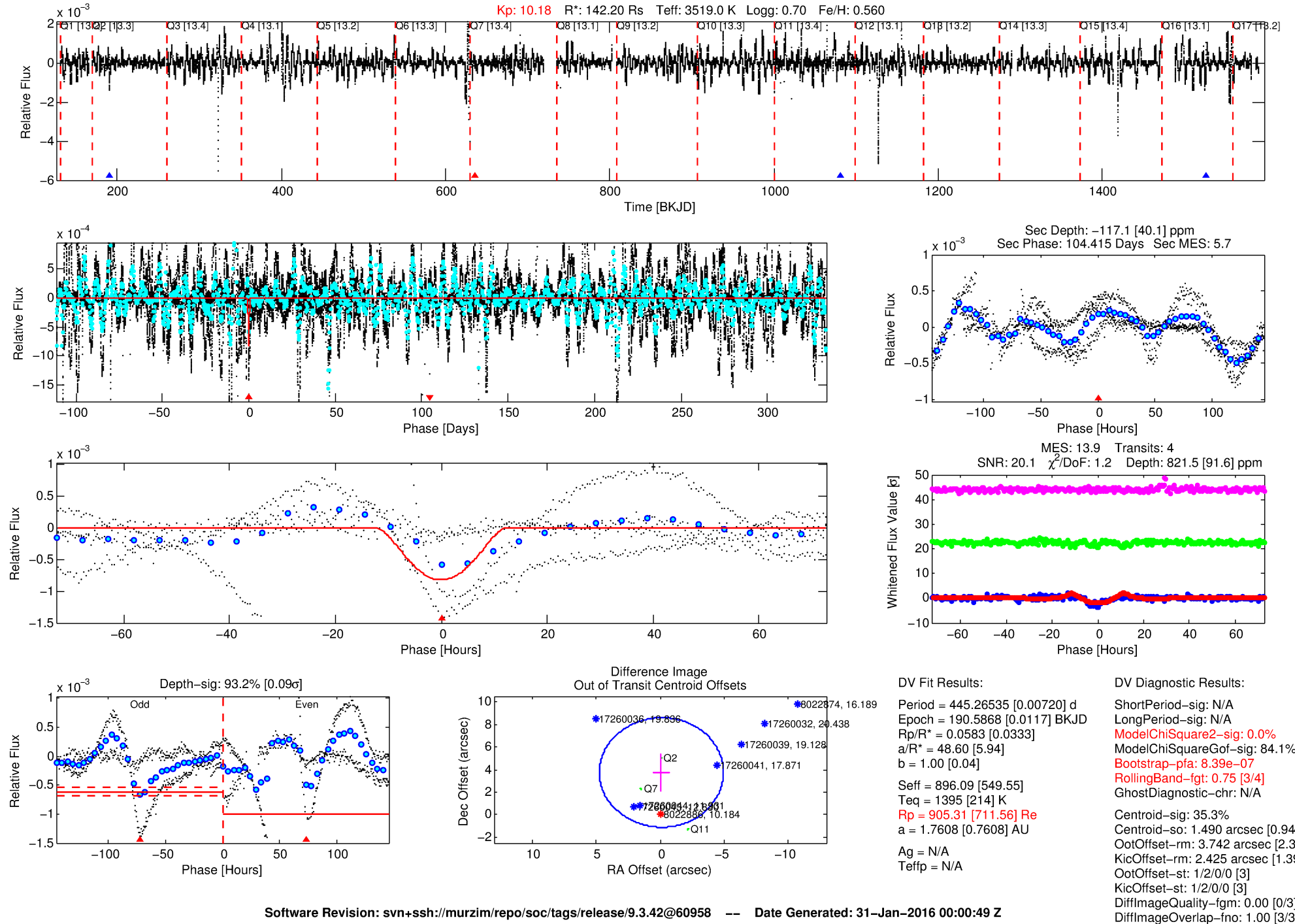
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008022886-01

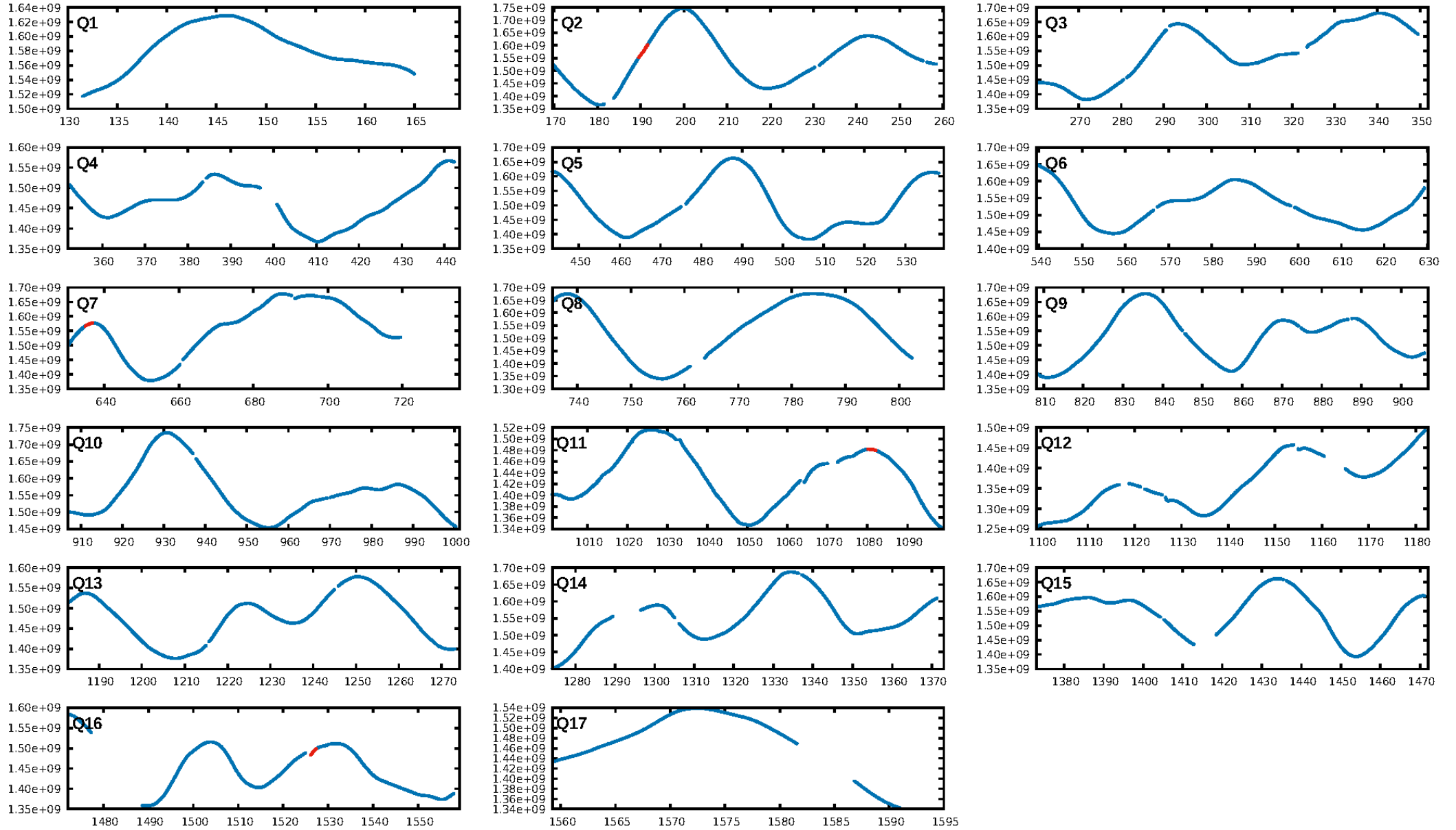
No Significant Match Found

# DV One-Page Summary

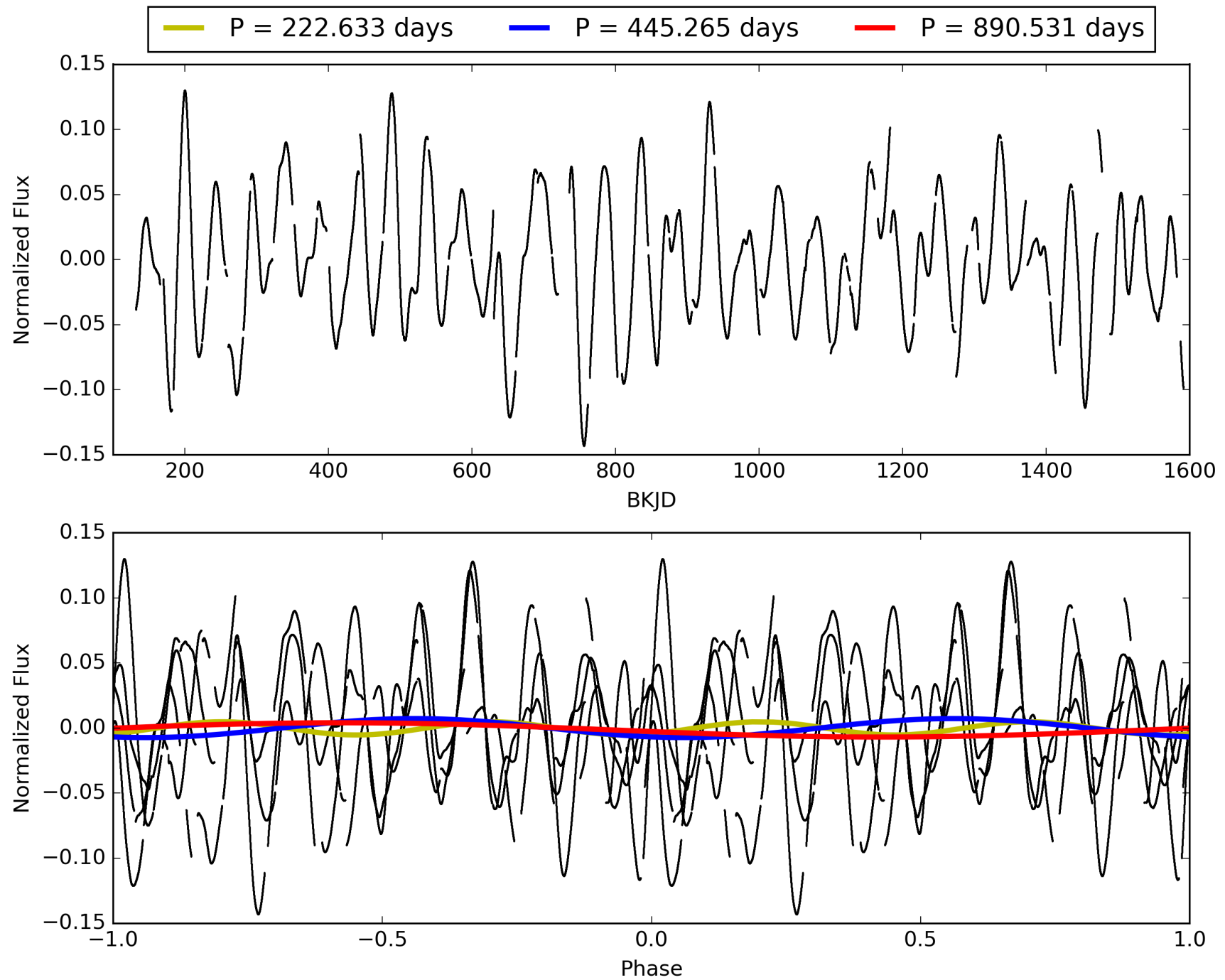
KIC: 8022886 Candidate: 1 of 1 Period: 445.265 d



# TCE 008022886-01, PDC Light Curves

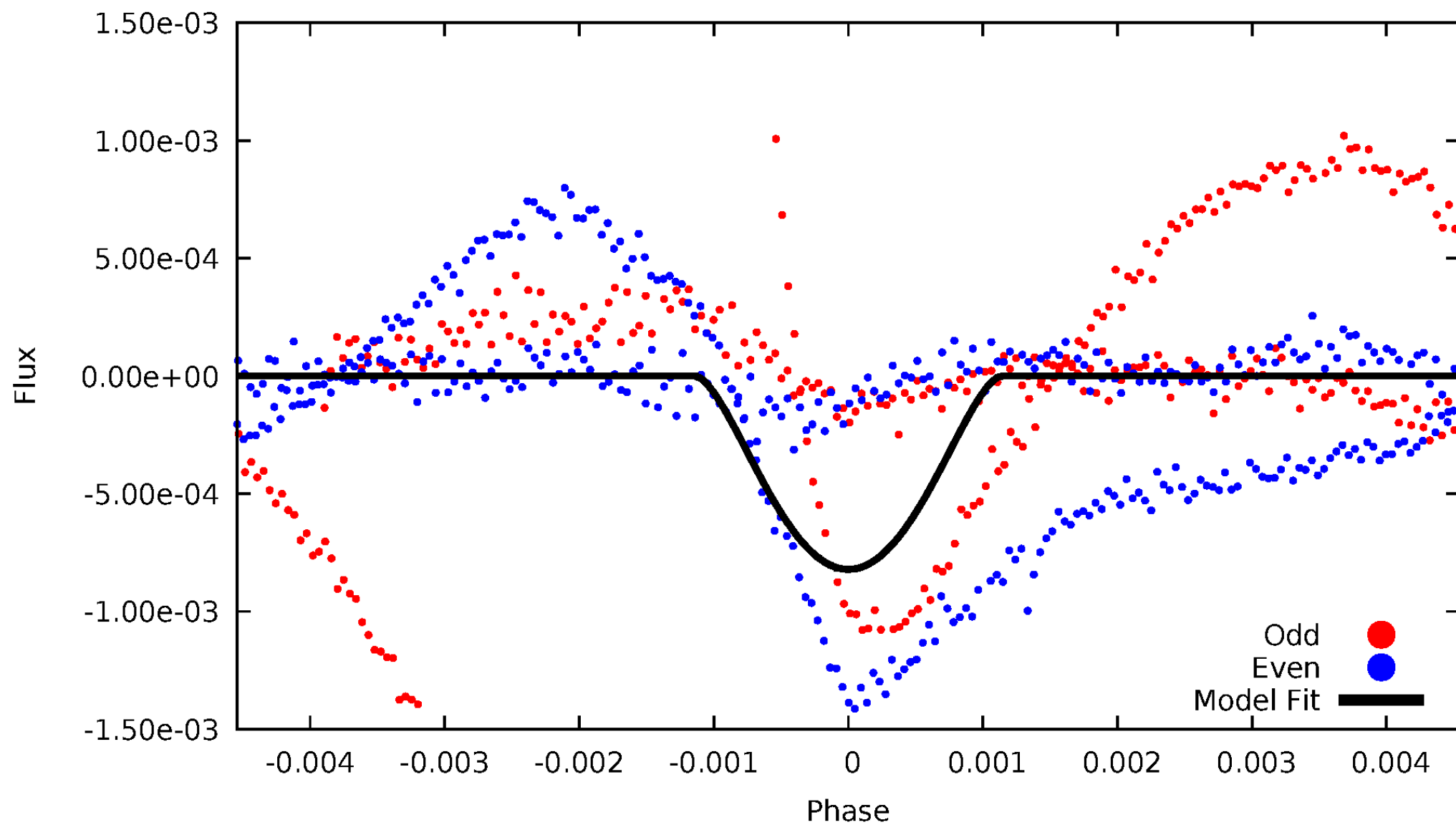


TCE 008022886-01



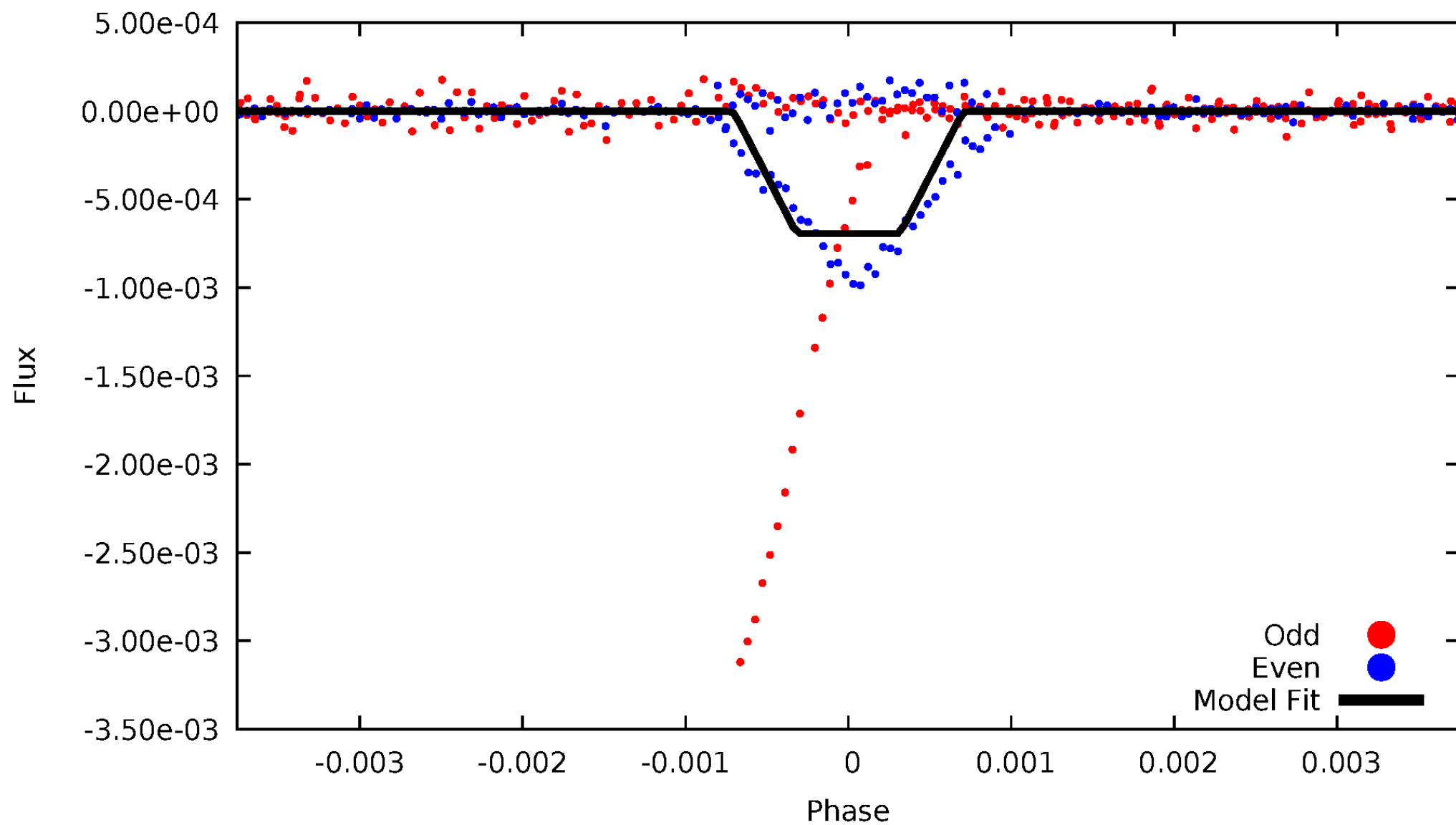
# DV Odd/Even

TCE 008022886-01



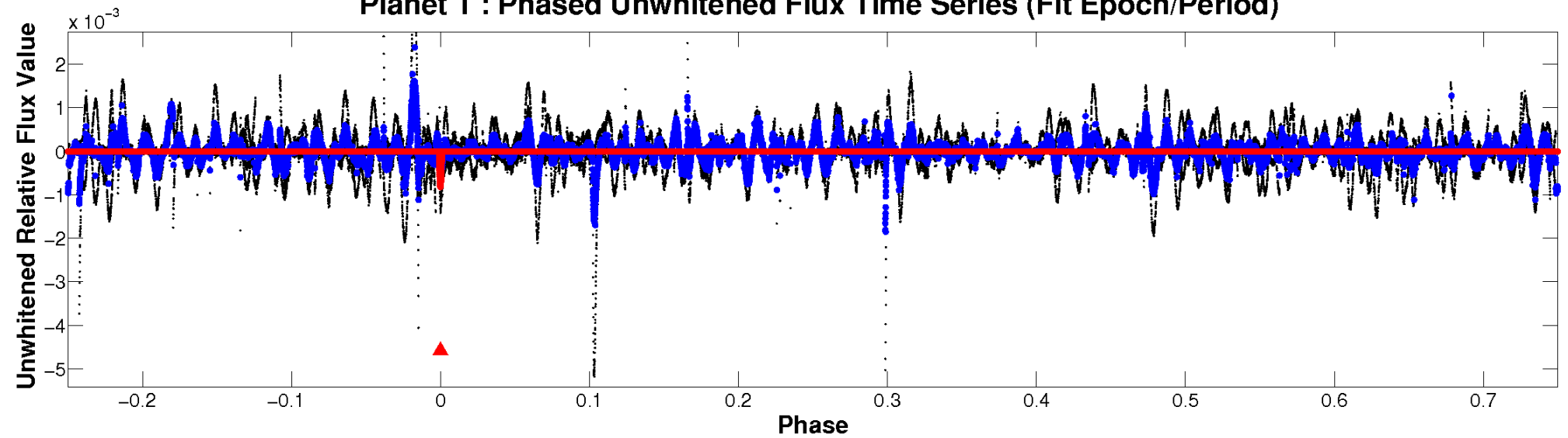
# ALT Odd/Even

TCE 008022886-01

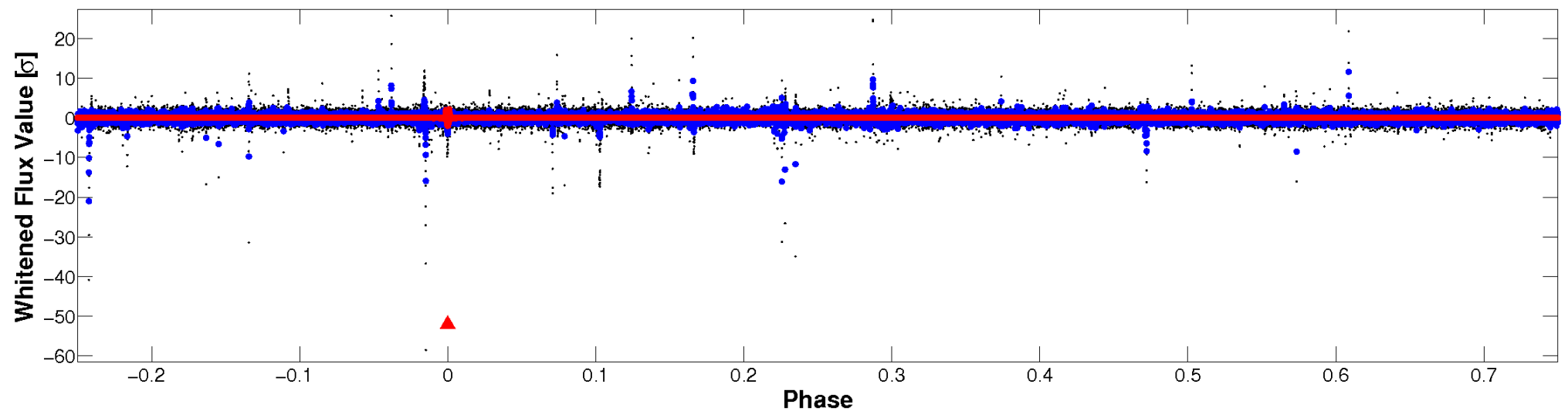


# Non-Whitened Vs. Whitened Light Curve

**Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

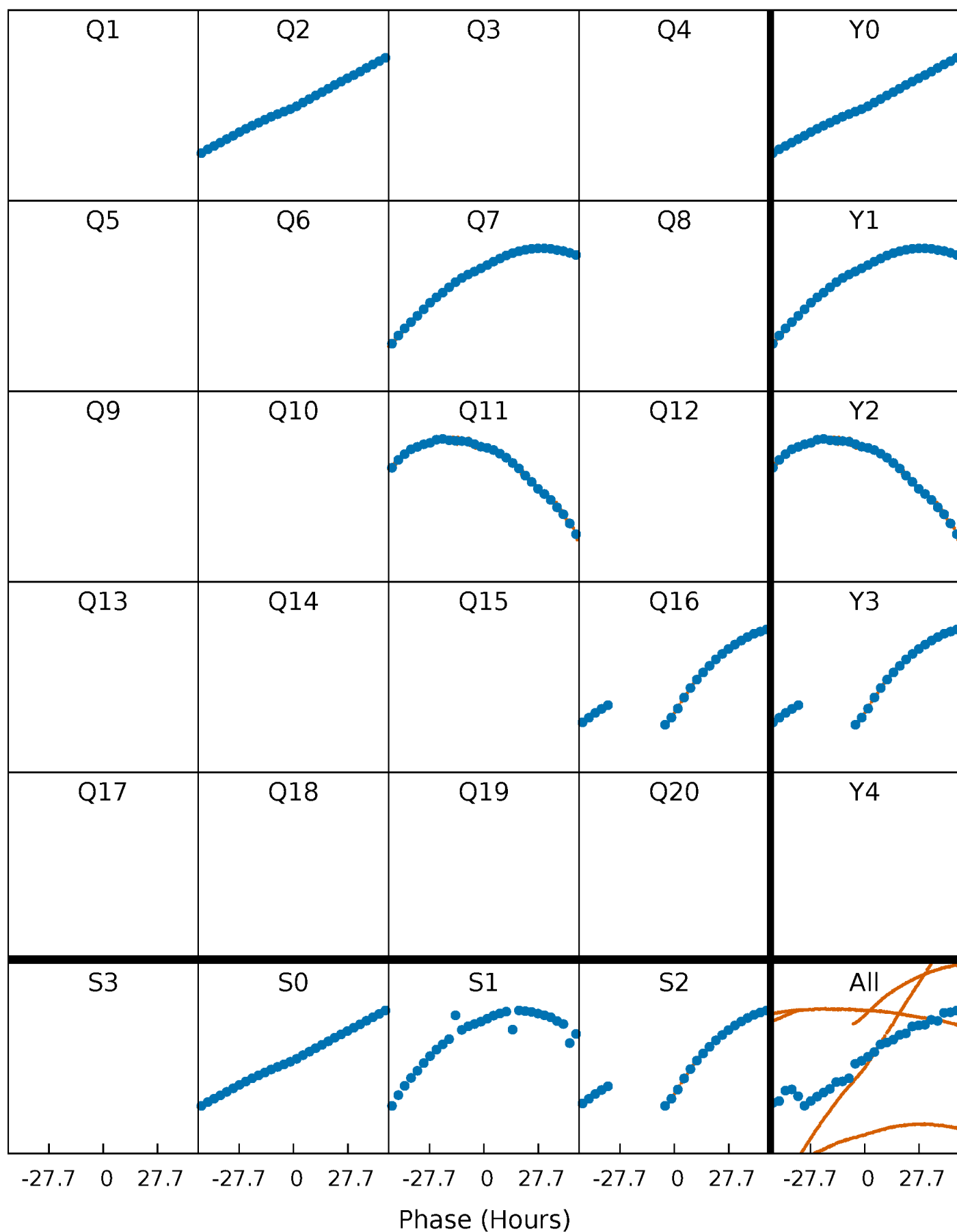


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

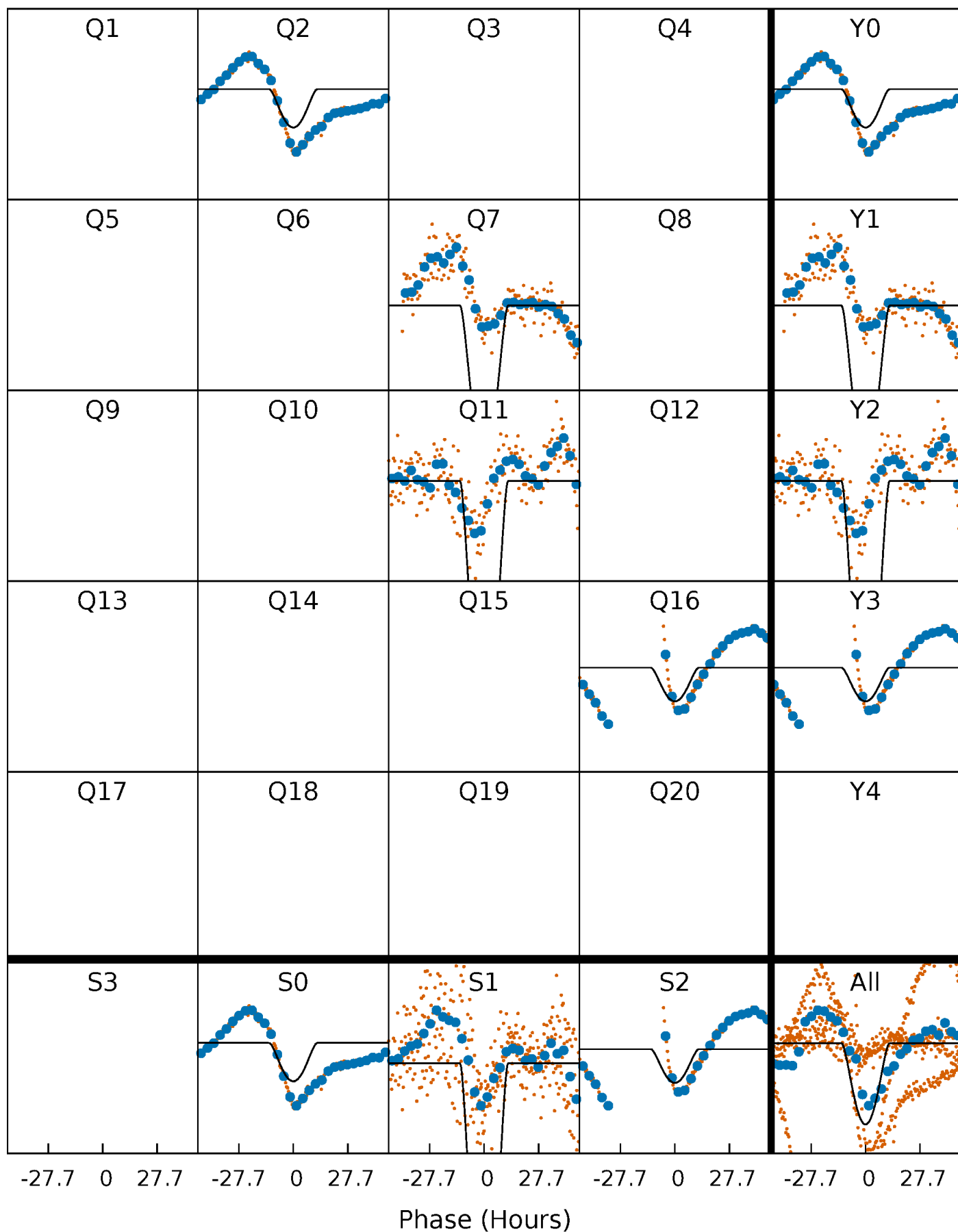
TCE 008022886-01 P=445.265350 Days  $T_0=190.586807$  (BKJD)





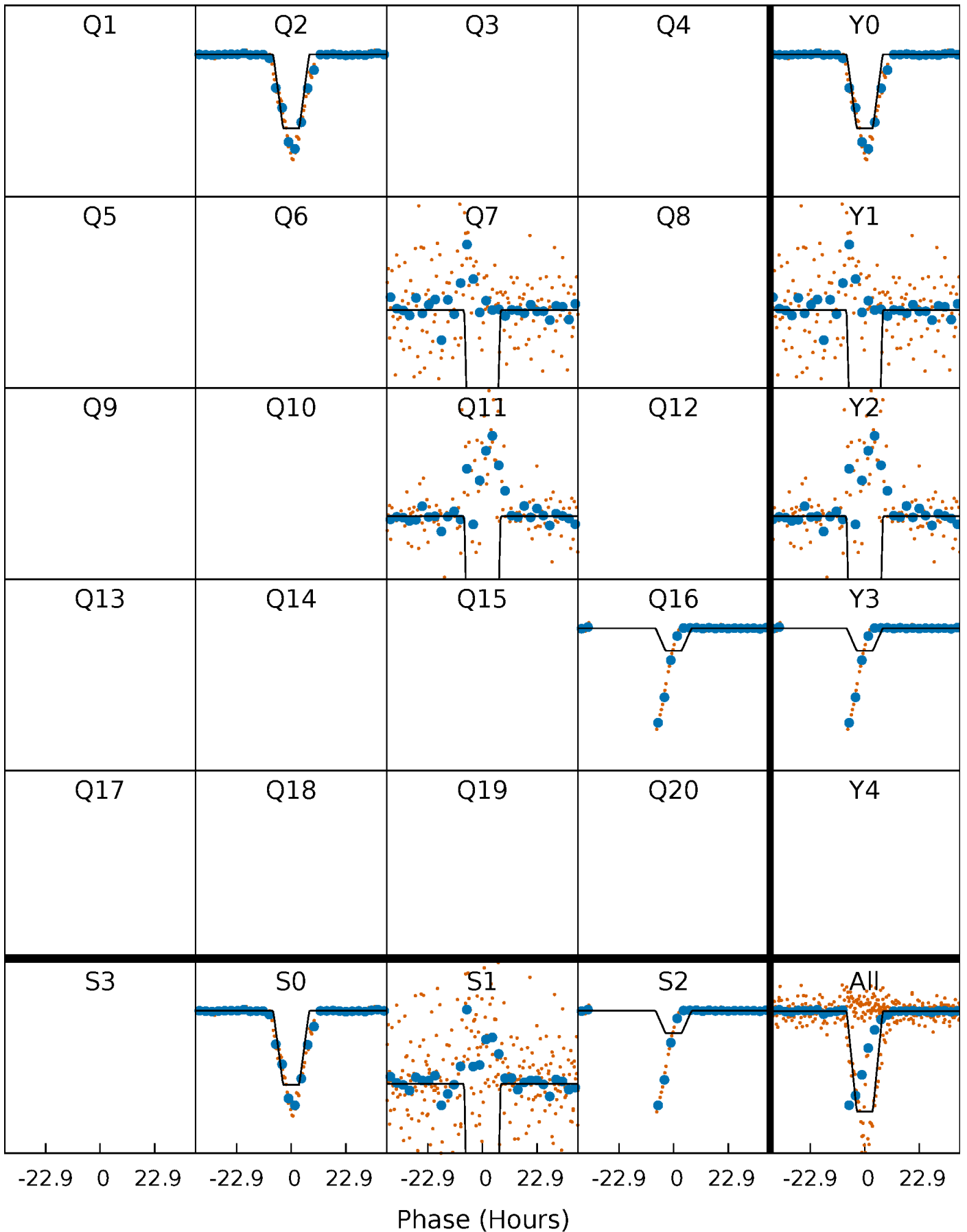
# DV Quarter-Phased Transit Curves

TCE 008022886-01 P=445.265350 Days  $T_0=190.586807$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

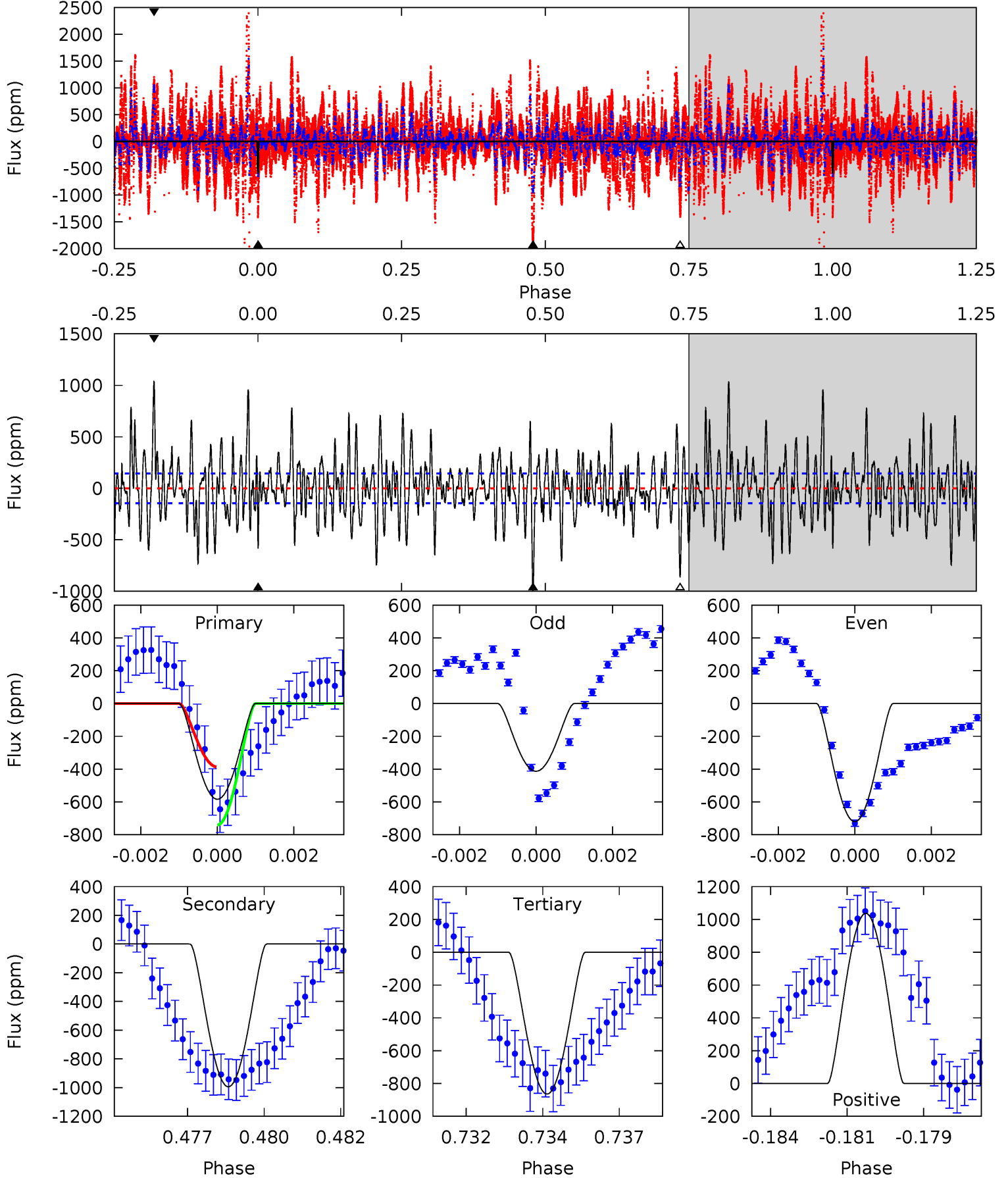
TCE 008022886-01 P=445.288139 Days  $T_0=190.574632$  (BKJD)



# DV Model-Shift Uniqueness Test

008022886-01, P = 445.265350 Days, E = 190.586807 Days

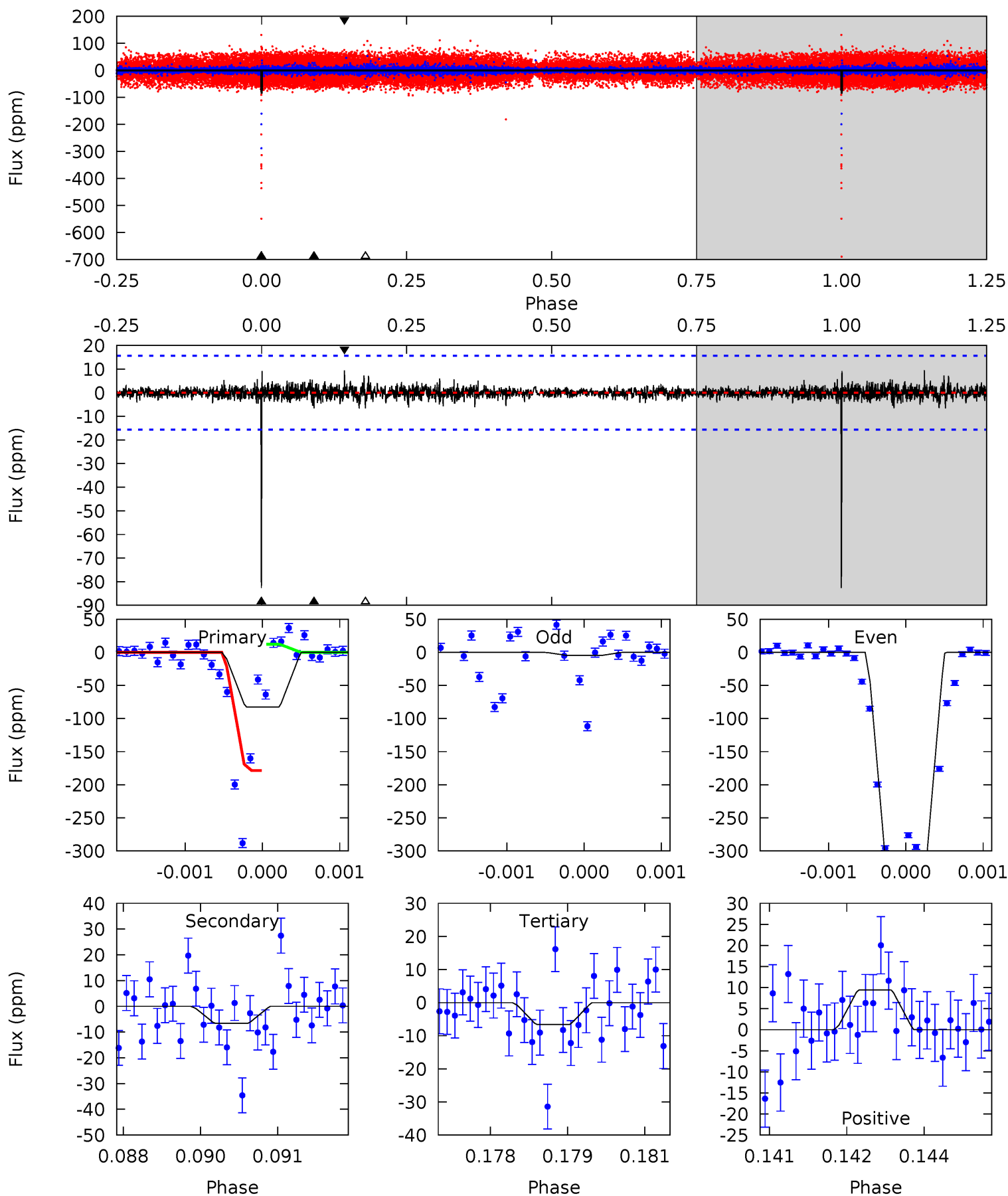
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.5	36.6	31.8	38.2	5.30	3.05	9.19	-10.3	-16.7	4.79	-1.58	4.99	1.25	0.51	6.49



# Alt Model-Shift Uniqueness Test

008022886-01, P = 445.288139 Days, E = 190.574632 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
28.5	2.28	2.27	3.24	5.39	3.19	0.50	26.2	25.2	0.00	-0.97	72.4	1.11	0.10	28.6



### Stellar Parameters For KIC 008022886

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3519^{+116}_{-106}$	$0.697^{+0.312}_{-0.168}$	$0.560^{+0.050}_{-0.250}$	$142.202^{+19.178}_{-76.713}$	$3.667^{+0.073}_{-2.523}$	$0.000^{+0.000}_{-0.000}$
	+3%/-3%	+45%/-24%	+9%/-45%	+13%/-54%	+2%/-69%	+316%/-37%
Source	KIC0	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 008022886-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	-994±27	$842.75^{+560.33}_{-452.25}$	$1956^{+127}_{-188}$	$2868^{+810}_{-406}$	$2.275^{+8.042}_{-1.467}$
Alt.	-7±3	$492.08^{+489.01}_{-319.07}$	$1958^{+132}_{-184}$	$-2234^{+3995}_{-116}$	$0.041^{+0.288}_{-0.031}$

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

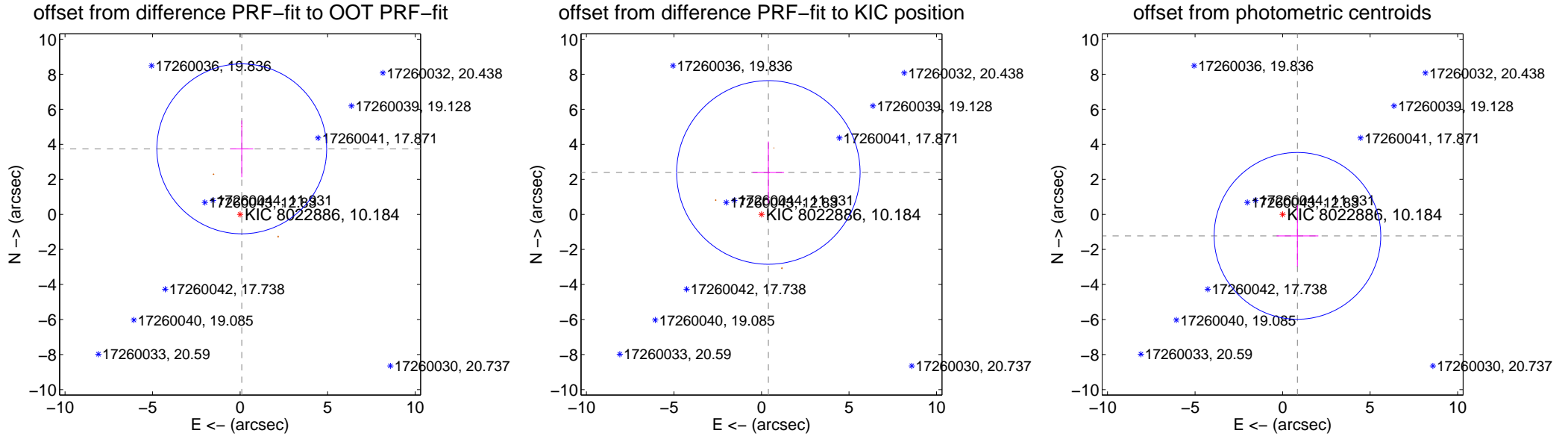
## DV Centroid Data

Supplemental centroid analysis for 008022886-01. **Kepler magnitude: 10.18.** Transit SNR 20.09

There are 0 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 2.06 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

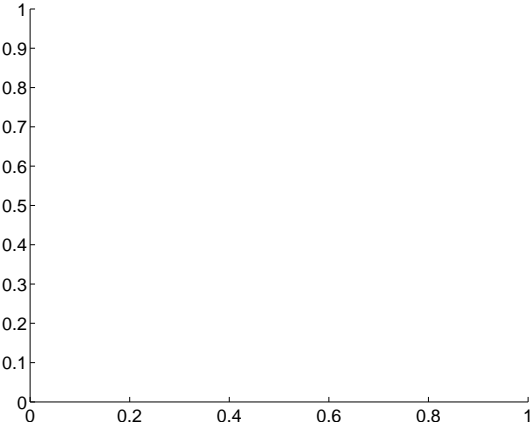
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.742 \pm 1.616$	2.32	$-0.094 \pm 0.652$	$3.741 \pm 1.617$
PRF-fit source offset from KIC position	$2.425 \pm 1.746$	1.39	$-0.393 \pm 0.897$	$2.393 \pm 1.764$
photometric centroid source offset	$1.49 \pm 1.59$	0.94	$-0.85 \pm 1.19$	$-1.23 \pm 1.74$



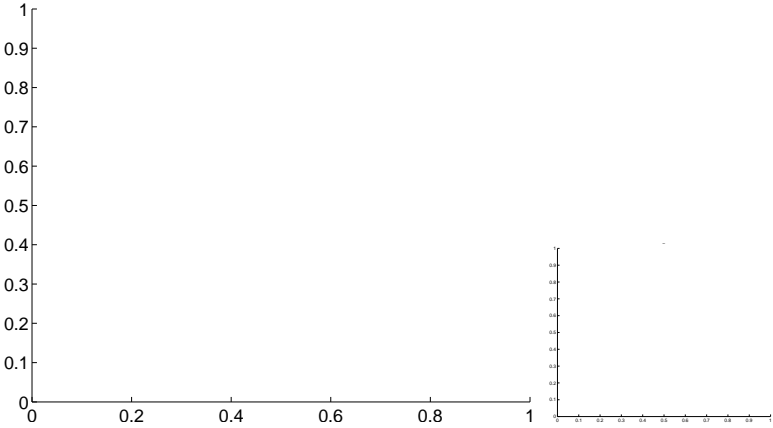
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

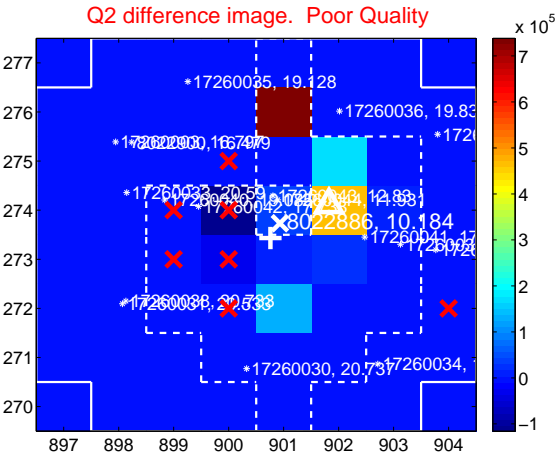
Q1 no difference image



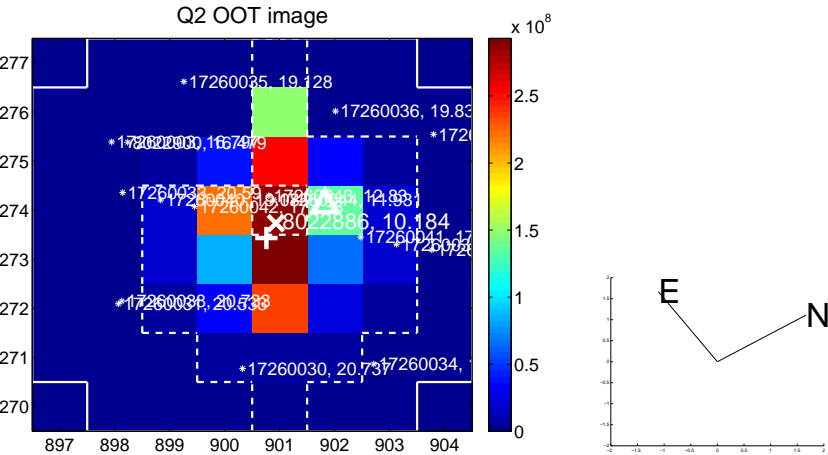
Q1 no OOT image



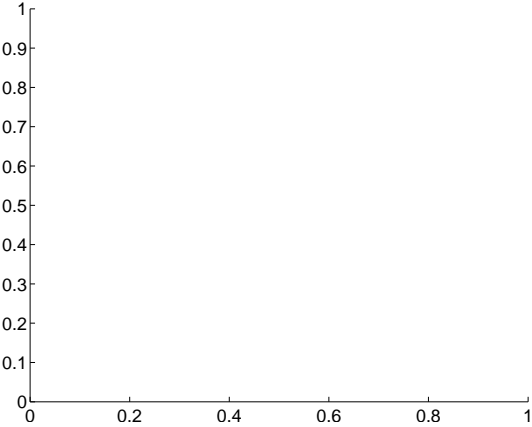
Q2 difference image. Poor Quality



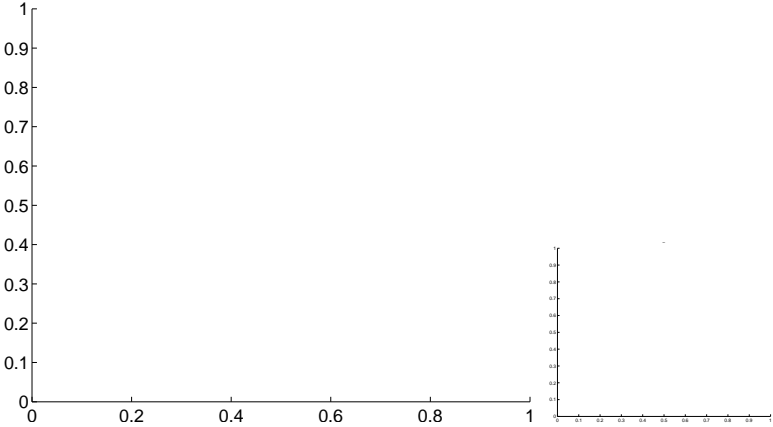
Q2 OOT image



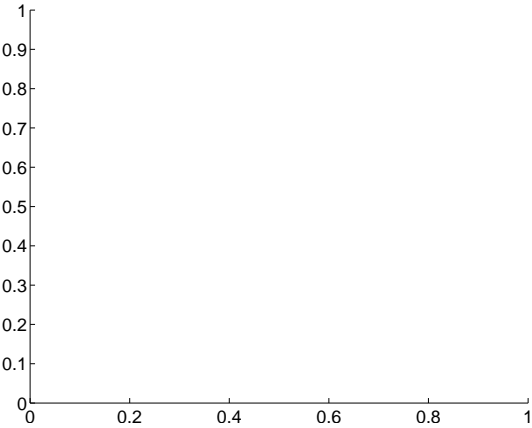
Q3 no difference image



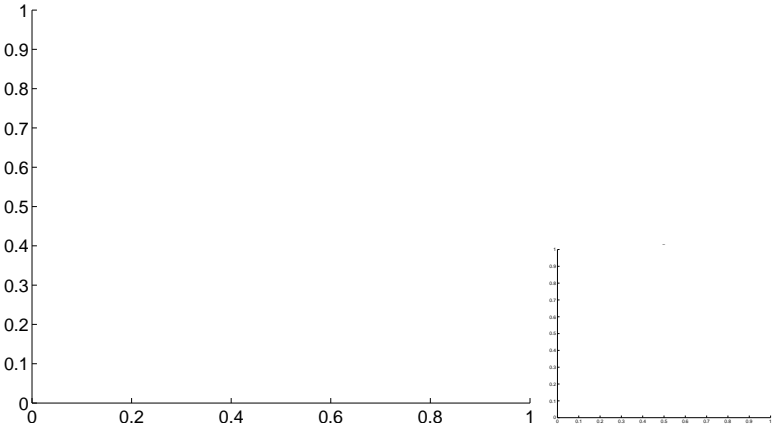
Q3 no OOT image



Q4 no difference image

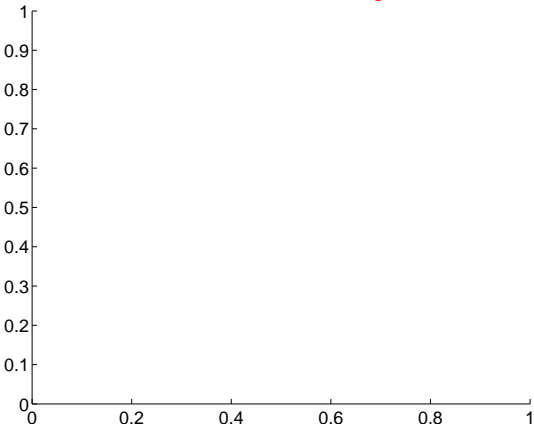


Q4 no OOT image

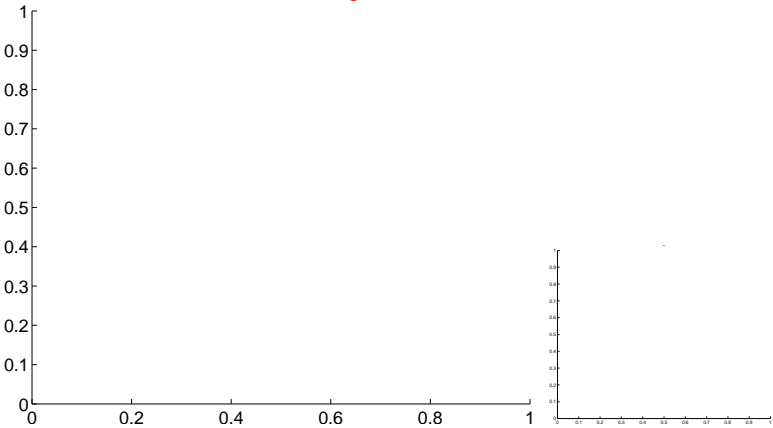


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

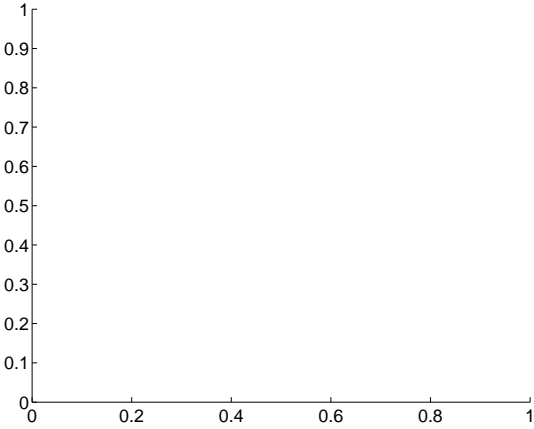
Q5 no difference image



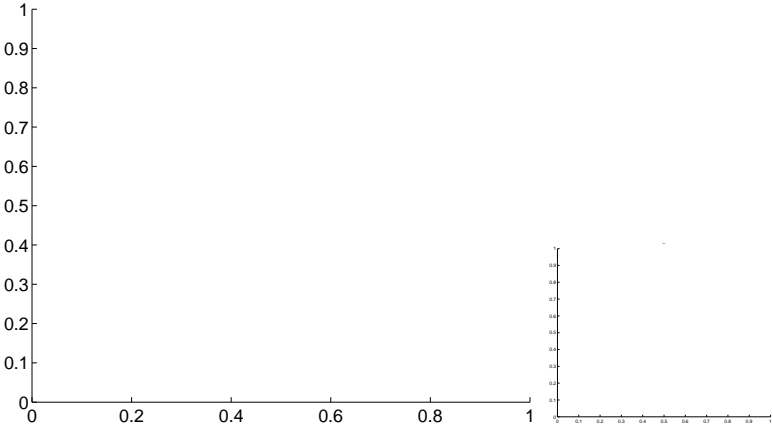
Q5 no OOT image



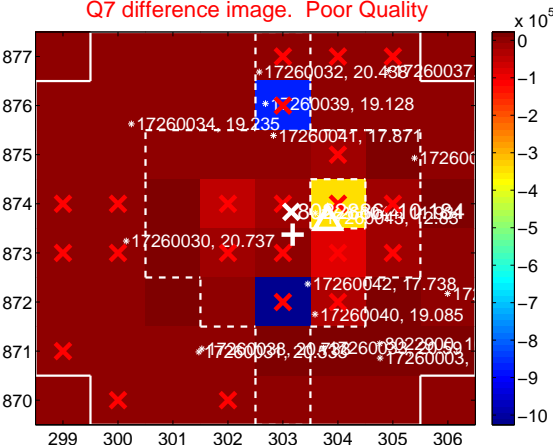
Q6 no difference image



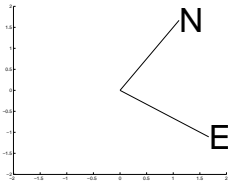
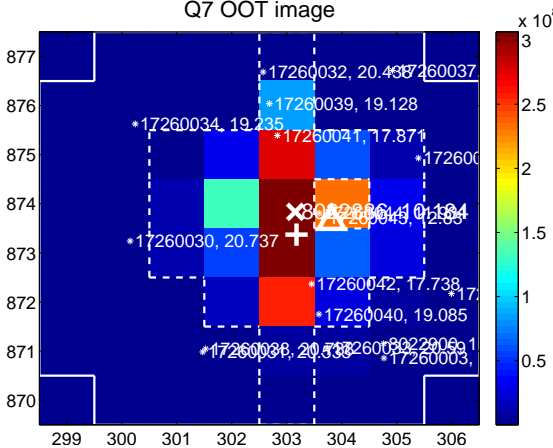
Q6 no OOT image



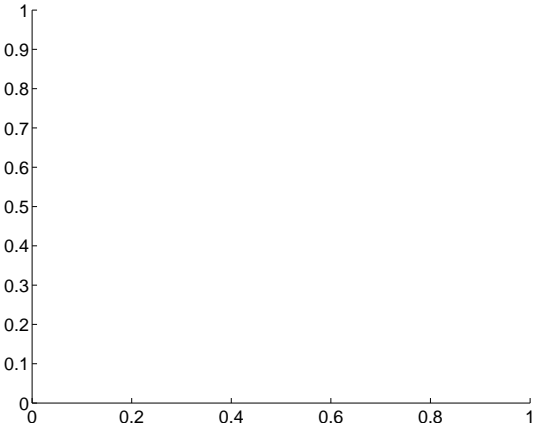
Q7 difference image. Poor Quality



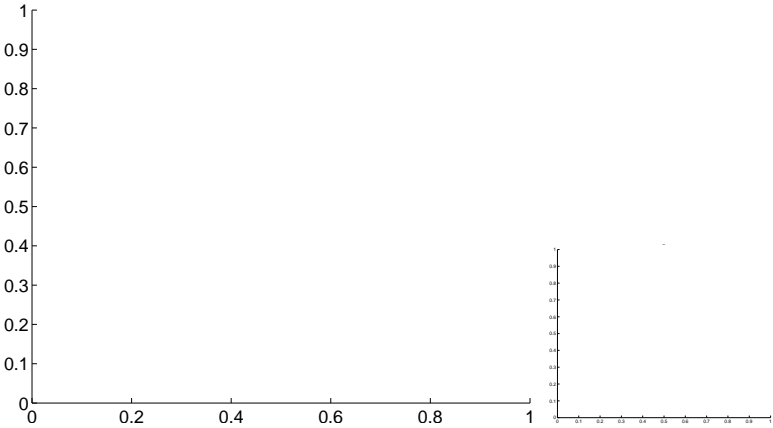
Q7 OOT image



Q8 no difference image

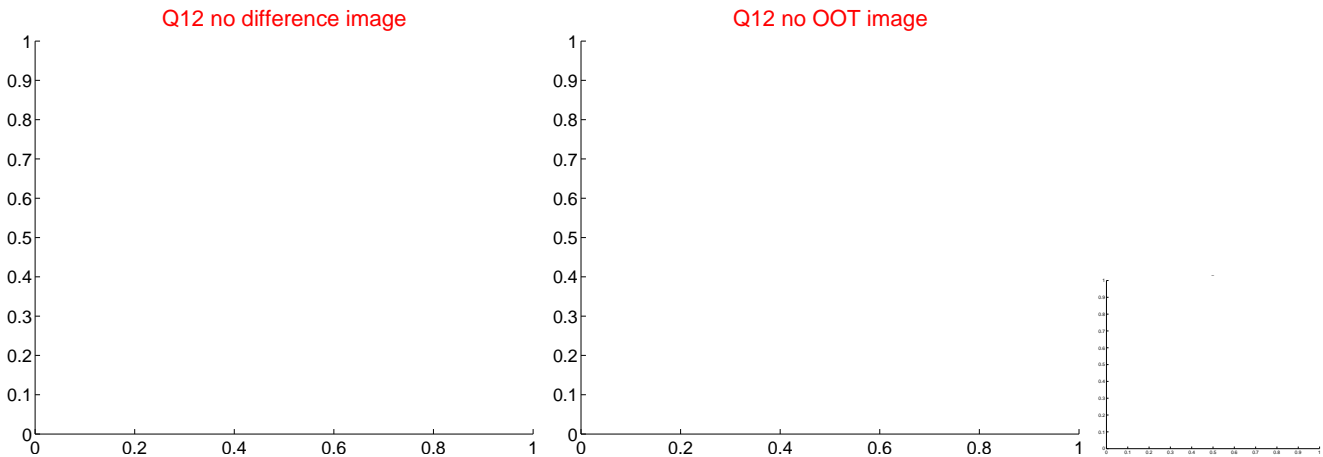
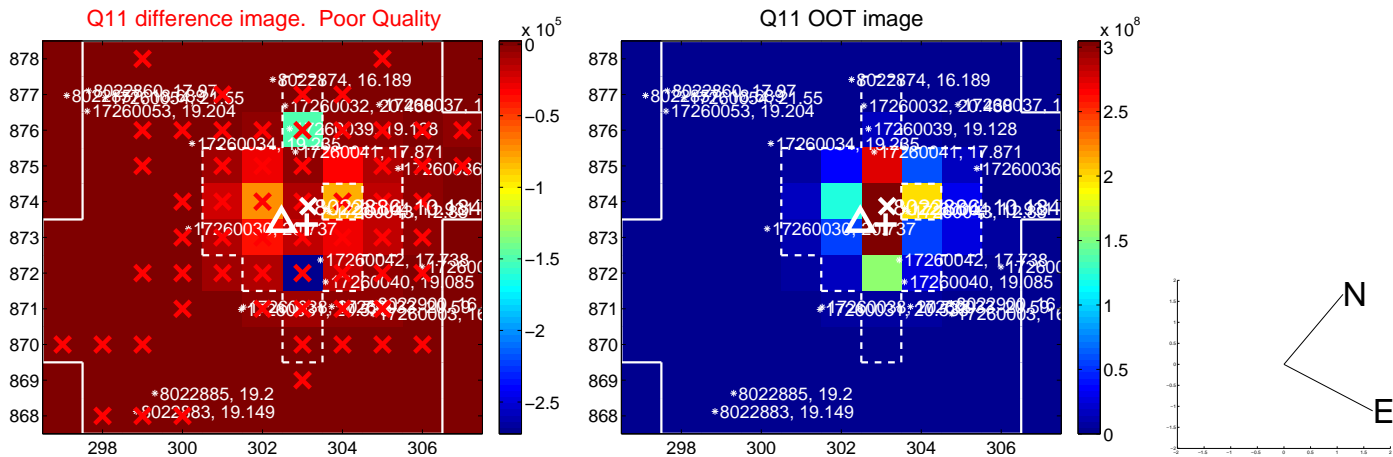
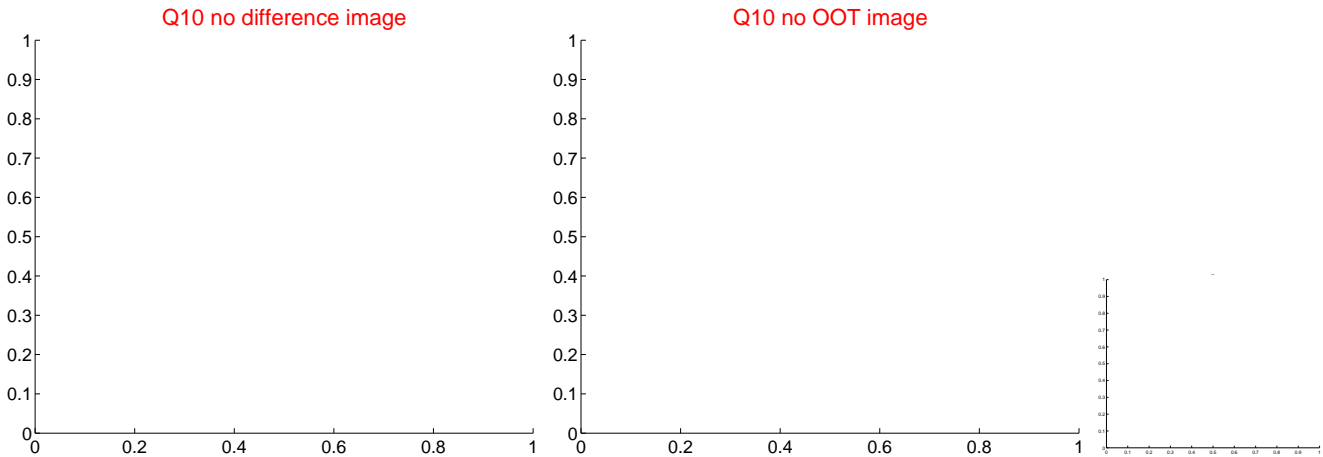
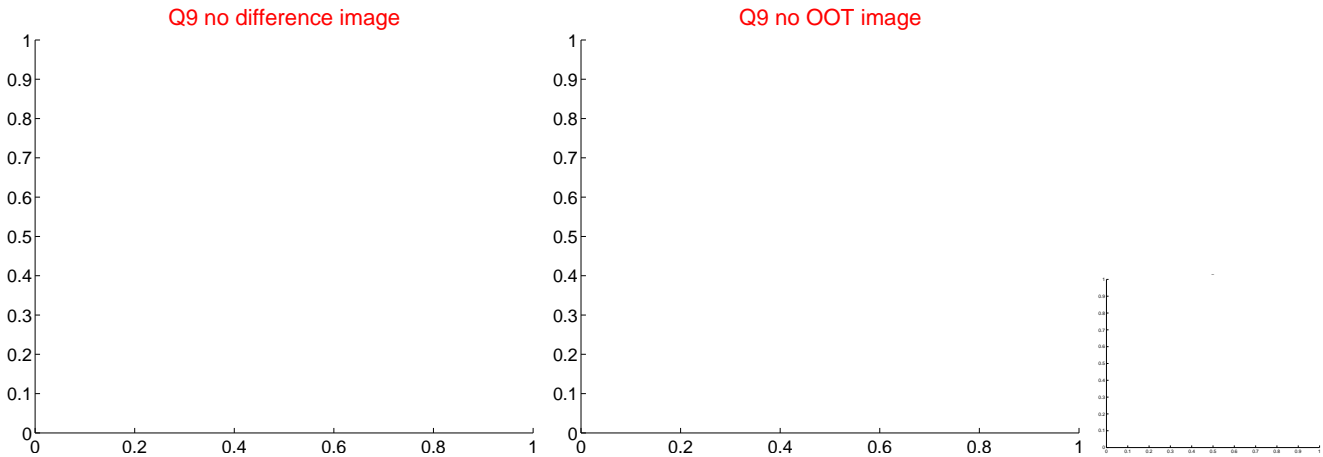


Q8 no OOT image





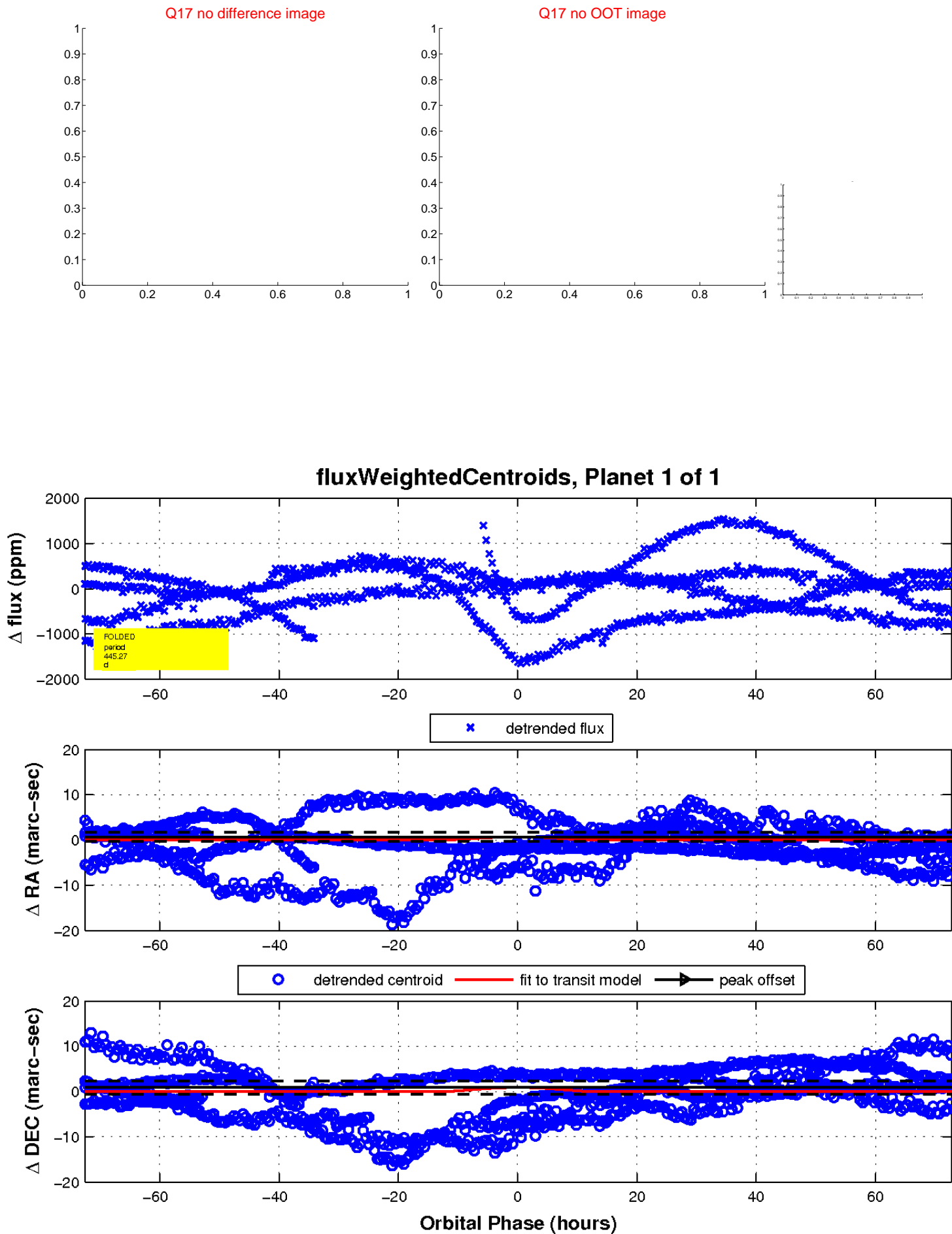
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

Declination

