

# KIC 008806497

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008806497-01	OBS	No	499.581444	388.254089	487.7	19.073	7.8	7.5	0.72	5411	2.04	0.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008806497-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

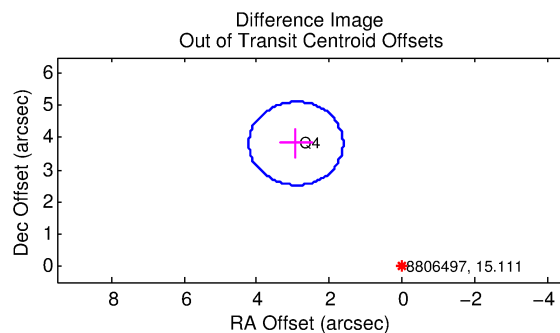
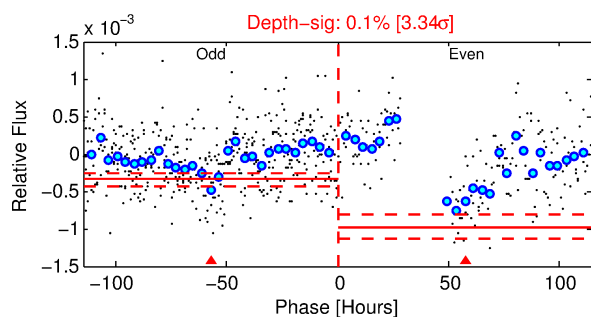
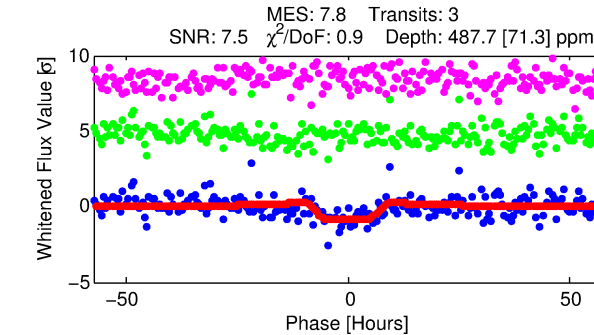
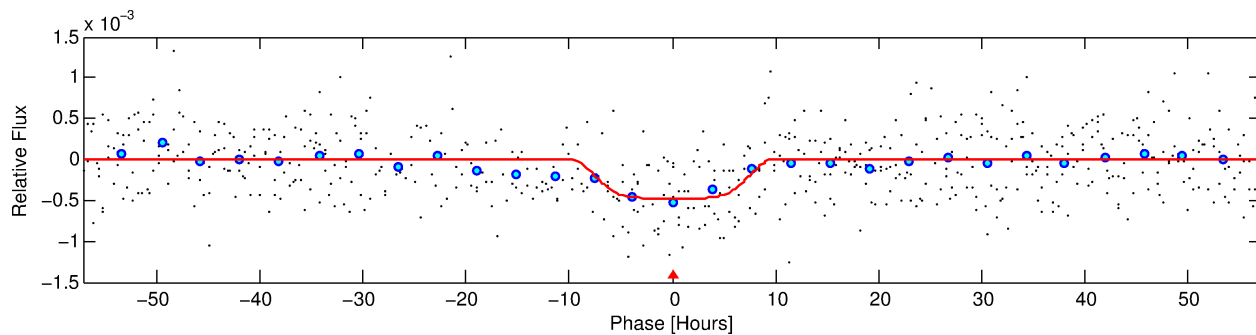
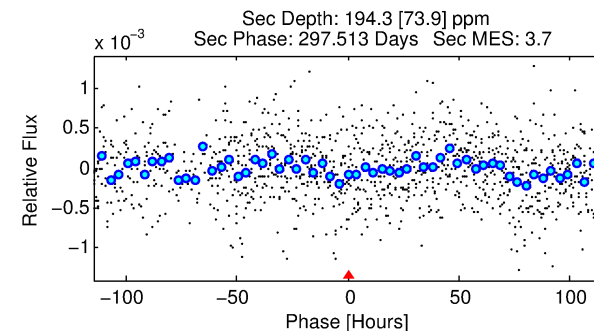
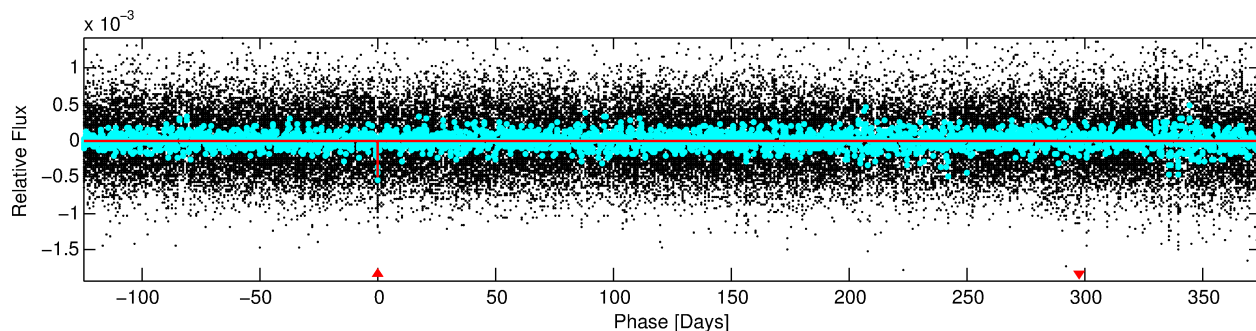
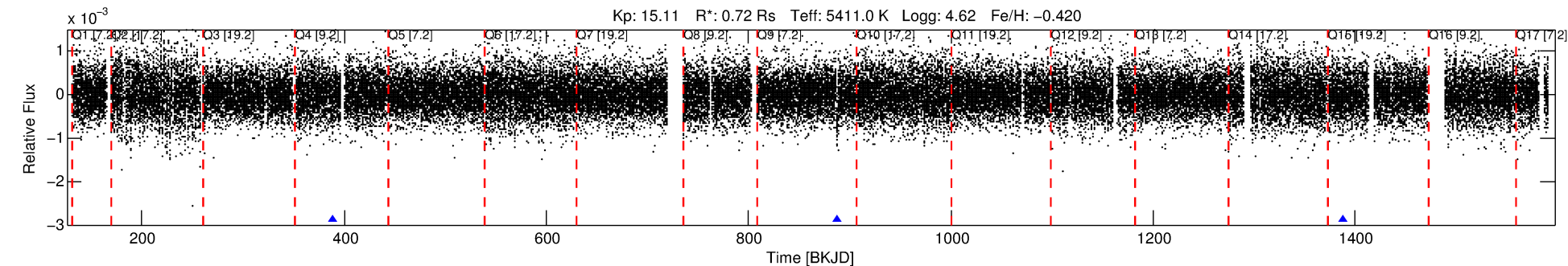
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008806497-01

No Significant Match Found

# DV One-Page Summary

KIC: 8806497 Candidate: 1 of 1 Period: 499.581 d



## DV Fit Results:

Period = 499.58144 [0.03270] d  
Epoch = 388.2541 [0.0387] BKJD  
Rp/R\* = 0.0261 [0.0029]  
a/R\* = 76.32 [25.42]  
b = 0.95 [0.03]  
Seff = 0.31 [0.07]  
Teq = 190 [10] K  
Rp = 2.04 [0.40] Re  
a = 1.1390 [0.1474] AU  
Ag = 33268.48 [15896.08] [2.09σ]  
Teffp = 3958 [452] K [8.33σ]

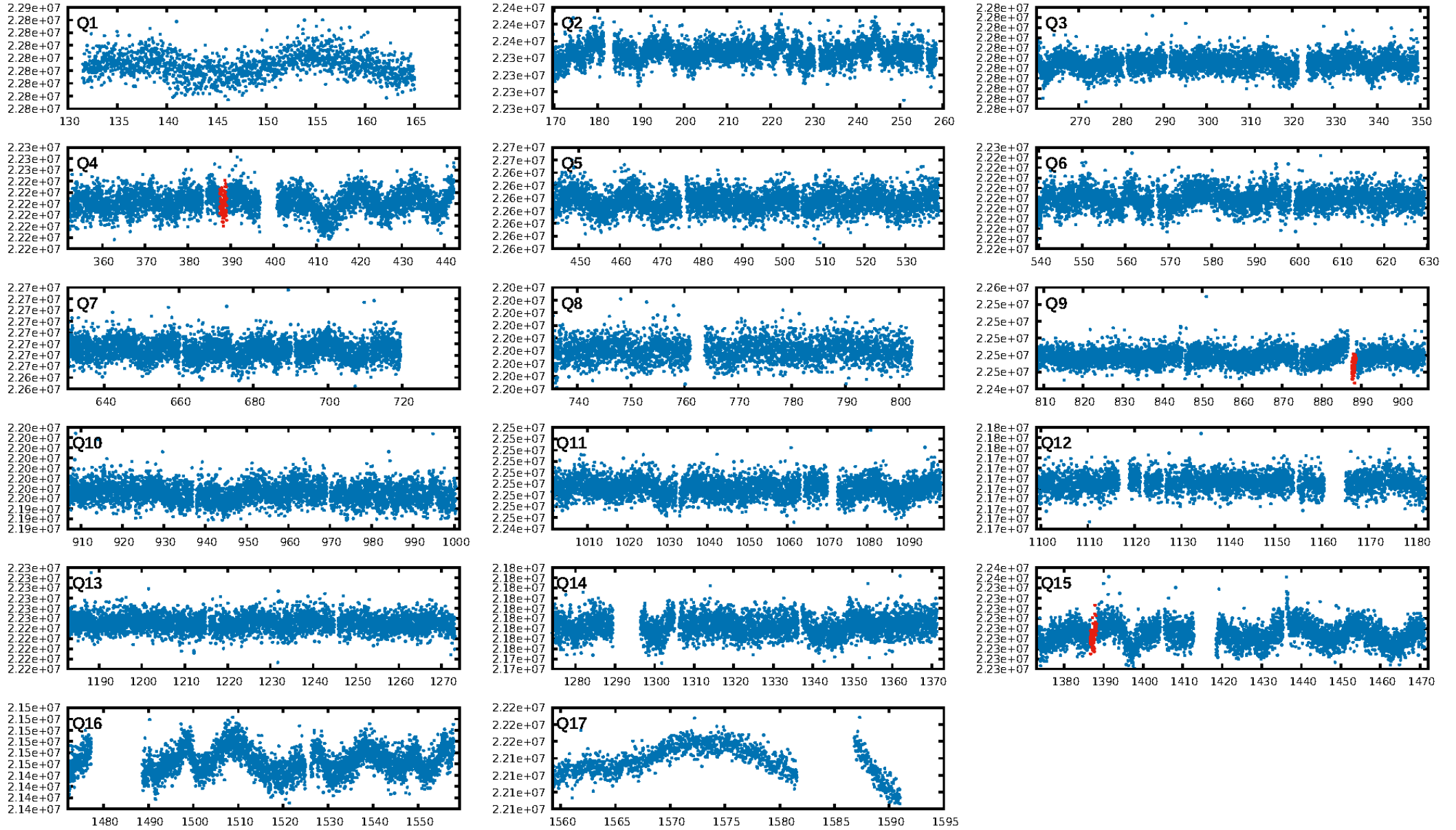
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 9.3%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.00e-13  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.4089  
Centroid-sig: 0.0%  
Centroid-so: 4.313 arcsec [2.66σ]  
OotOffset-rm: 4.805 arcsec [11.12σ]  
KicOffset-rm: 4.730 arcsec [10.94σ]  
OotOffset-st: 0/0/1/0 [1]  
KicOffset-st: 0/0/1/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [1/1]

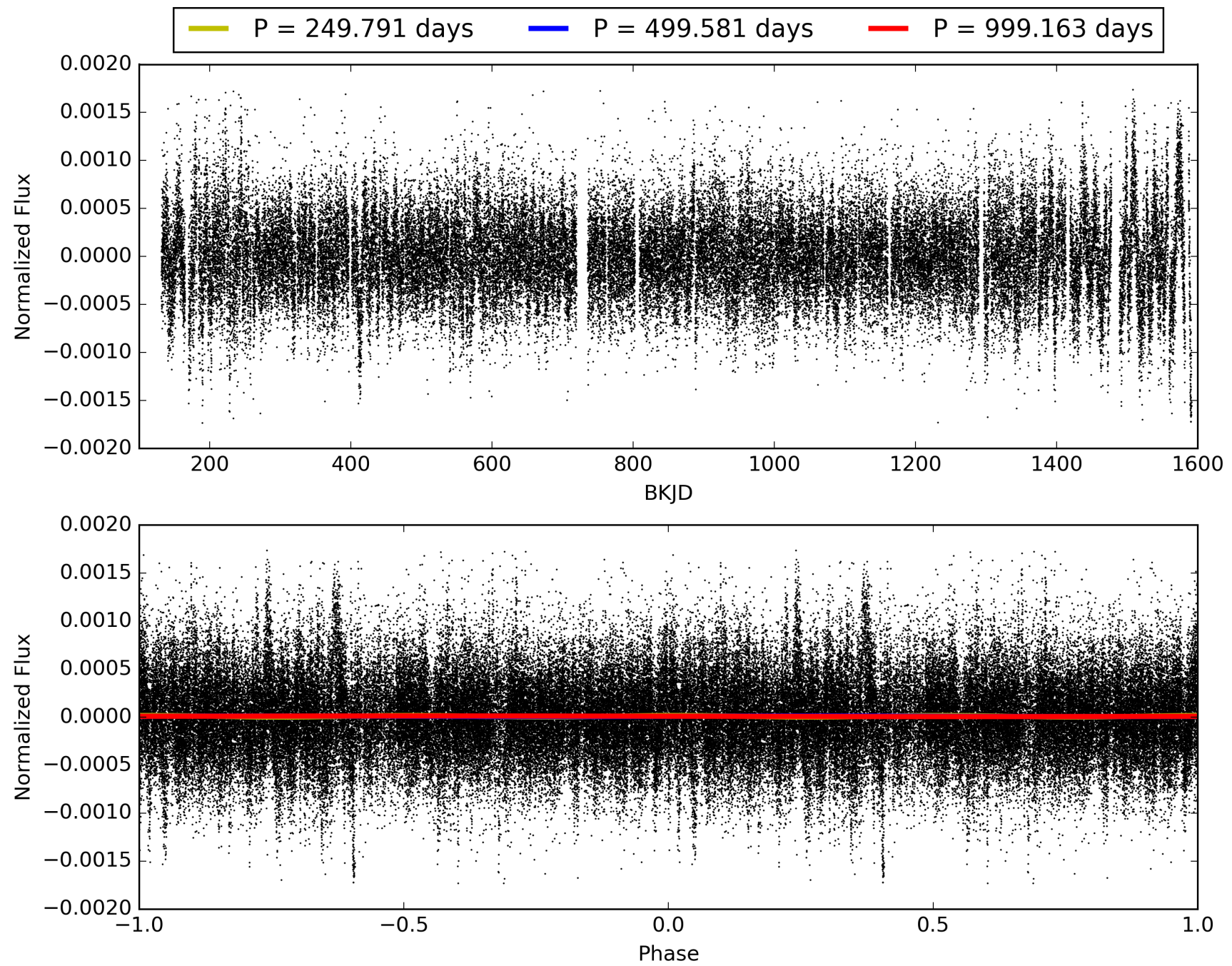
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:49:29 Z

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

# TCE 008806497-01, PDC Light Curves

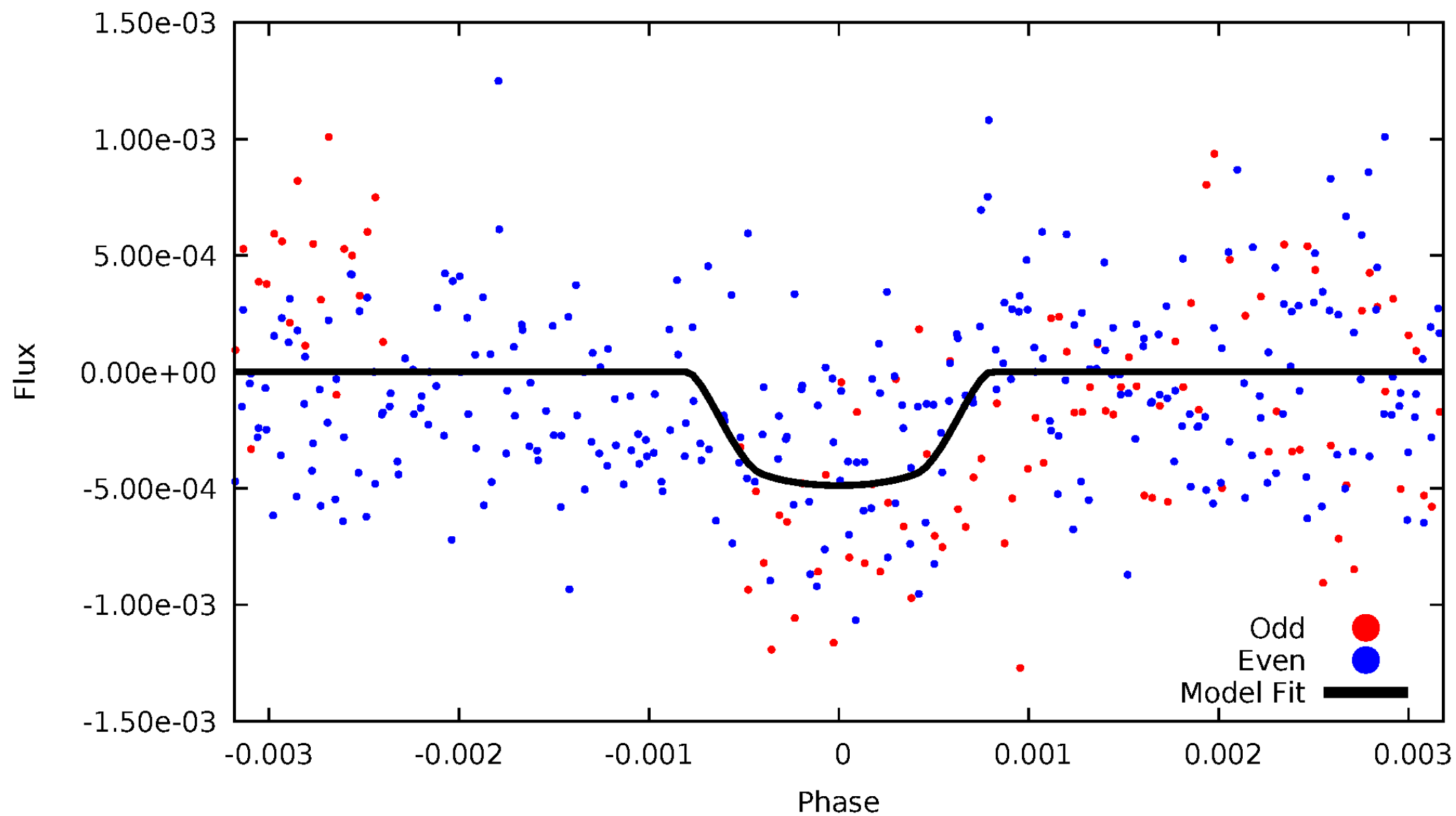


TCE 008806497-01



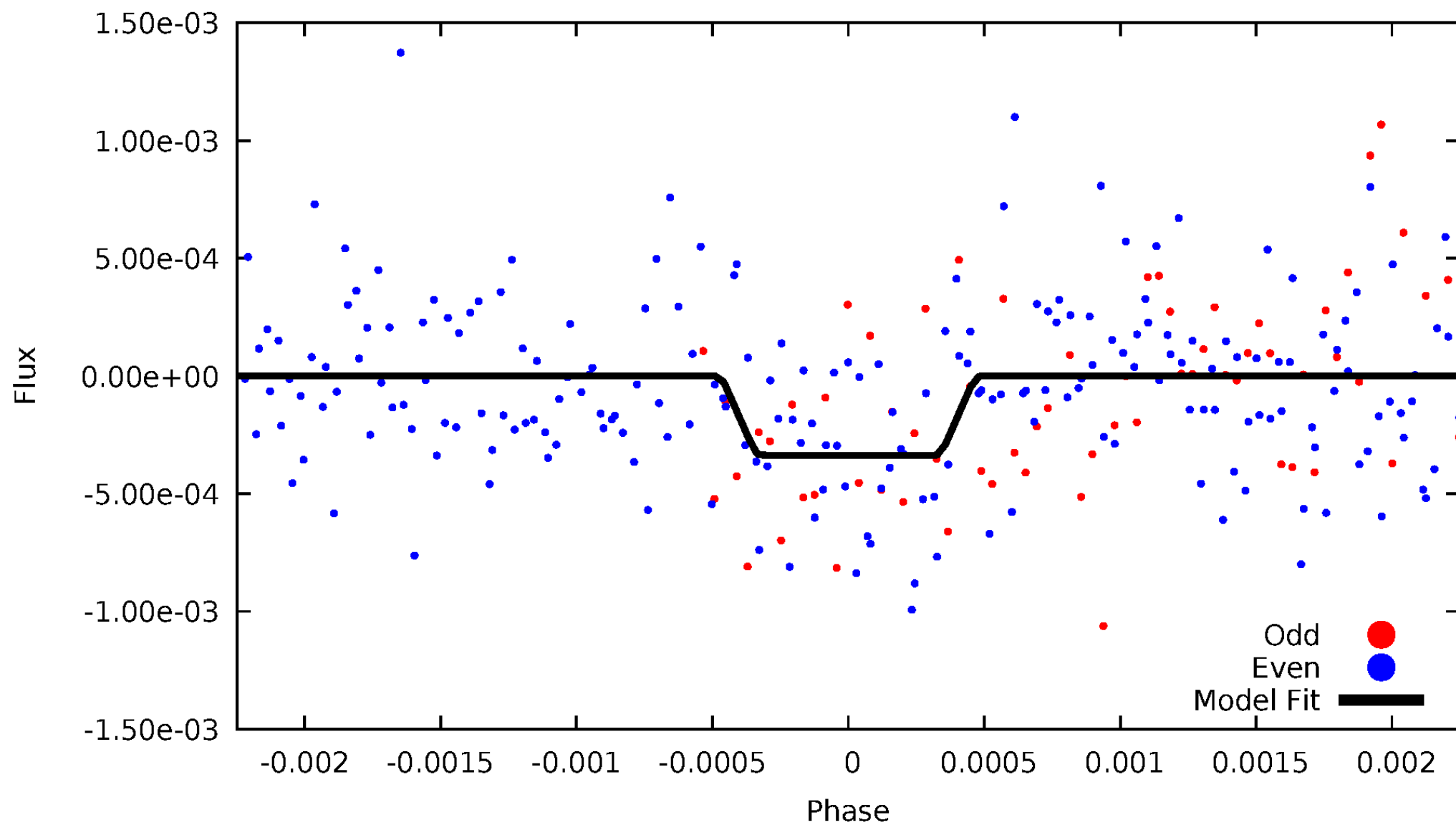
# DV Odd/Even

TCE 008806497-01



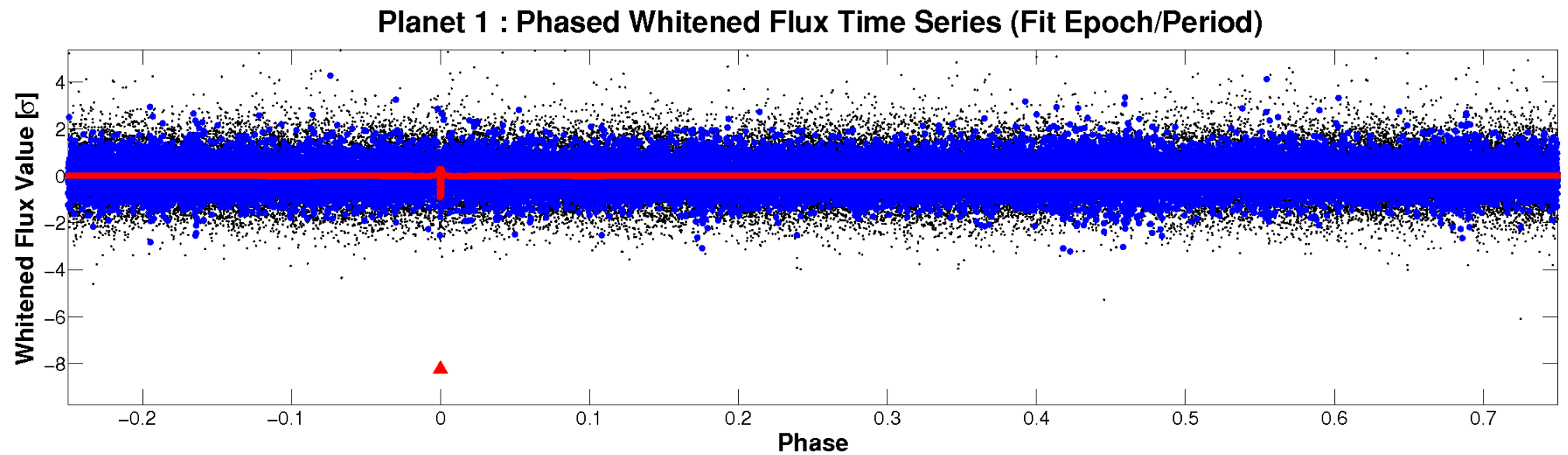
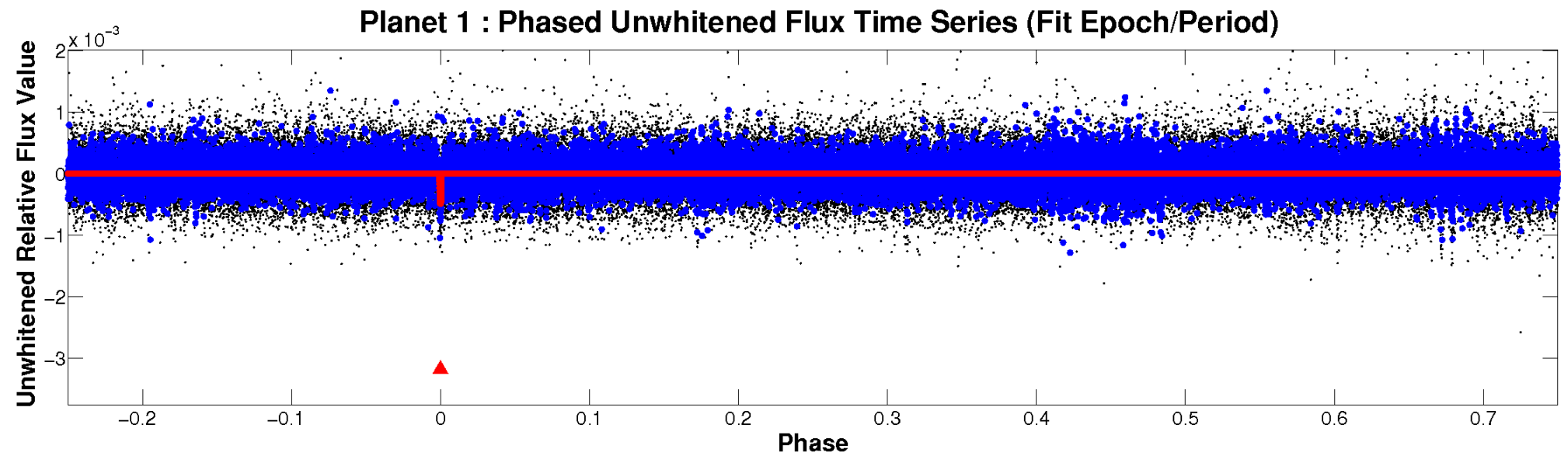
# ALT Odd/Even

TCE 008806497-01



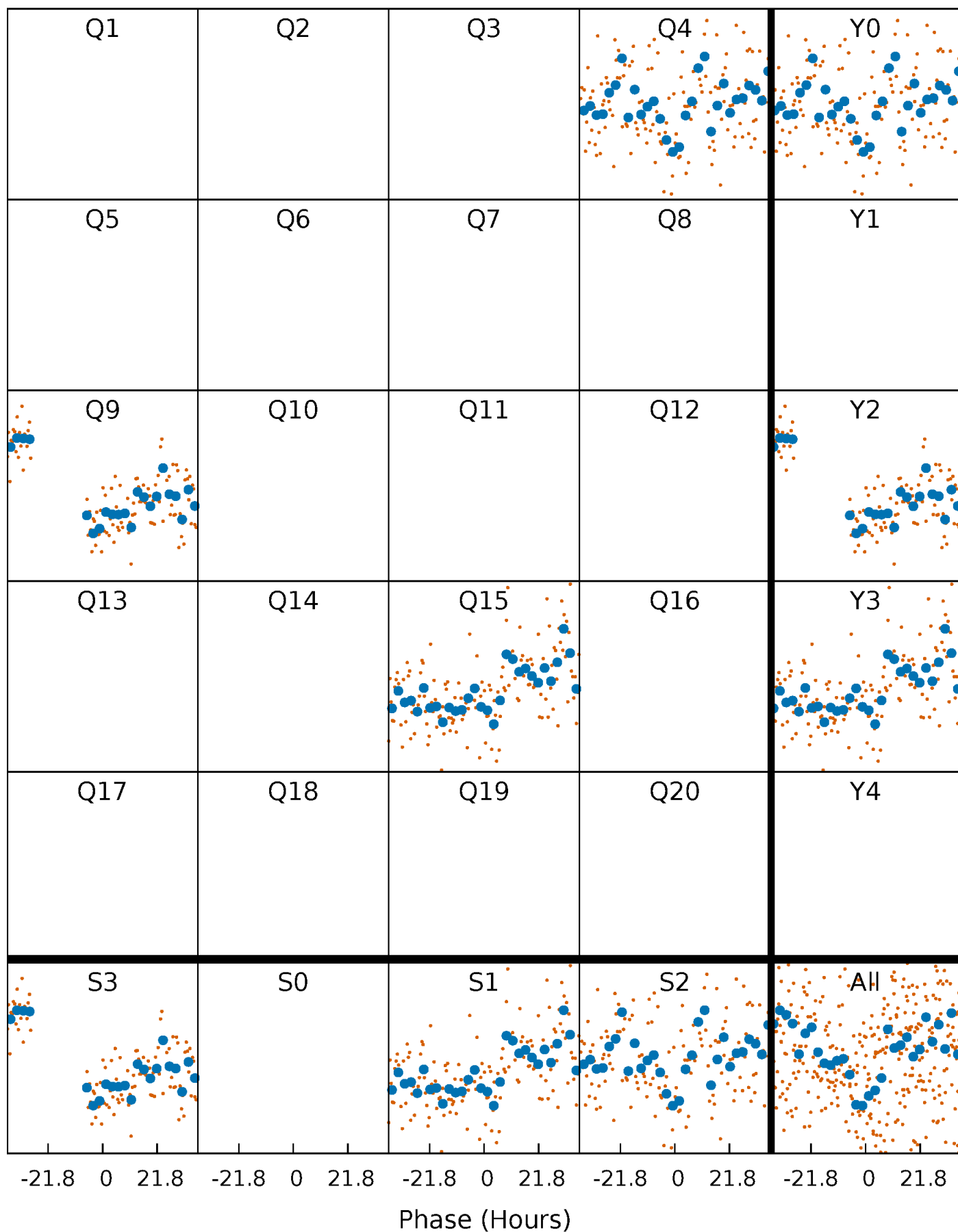


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

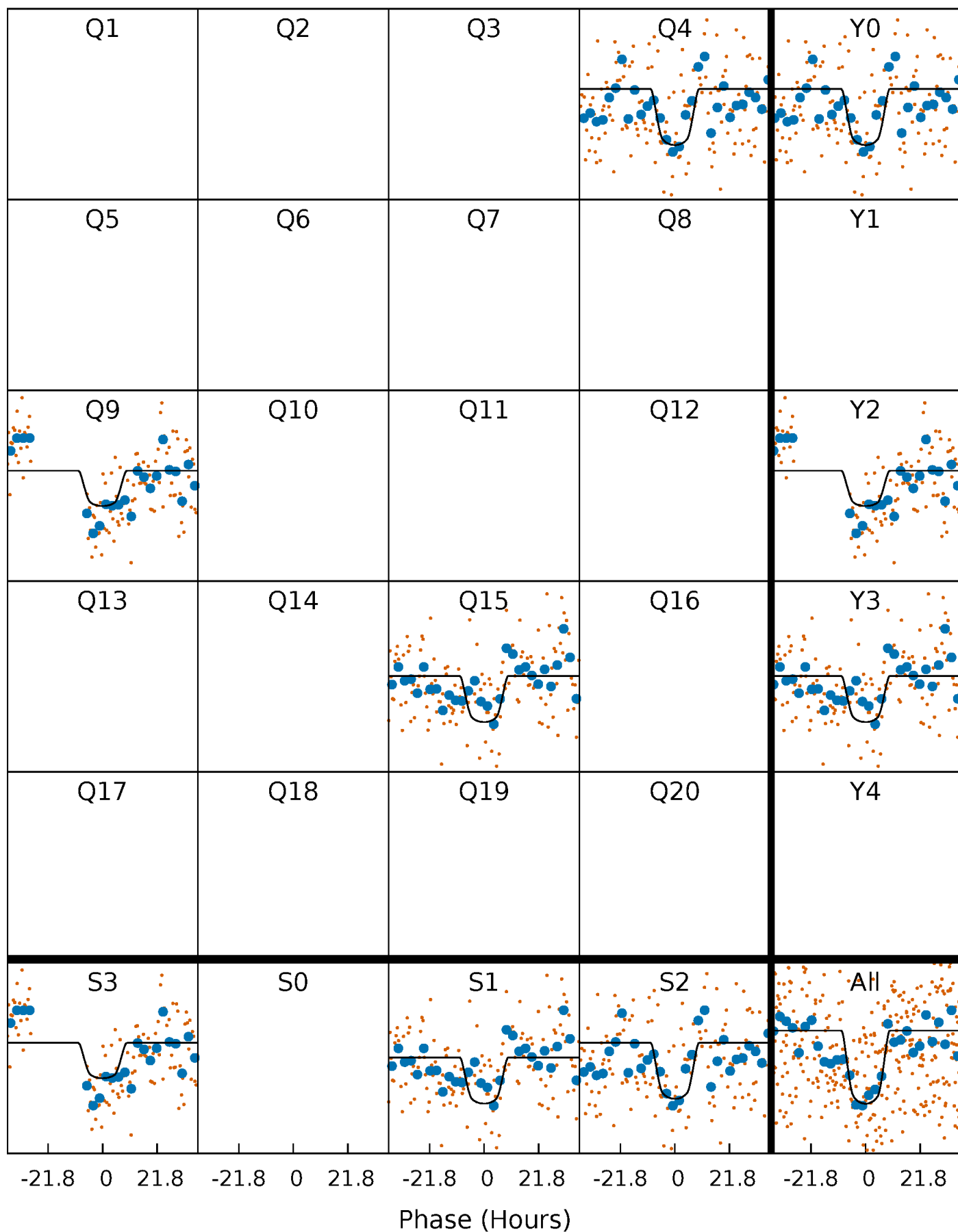
TCE 008806497-01 P=499.581444 Days  $T_0=388.254089$  (BKJD)





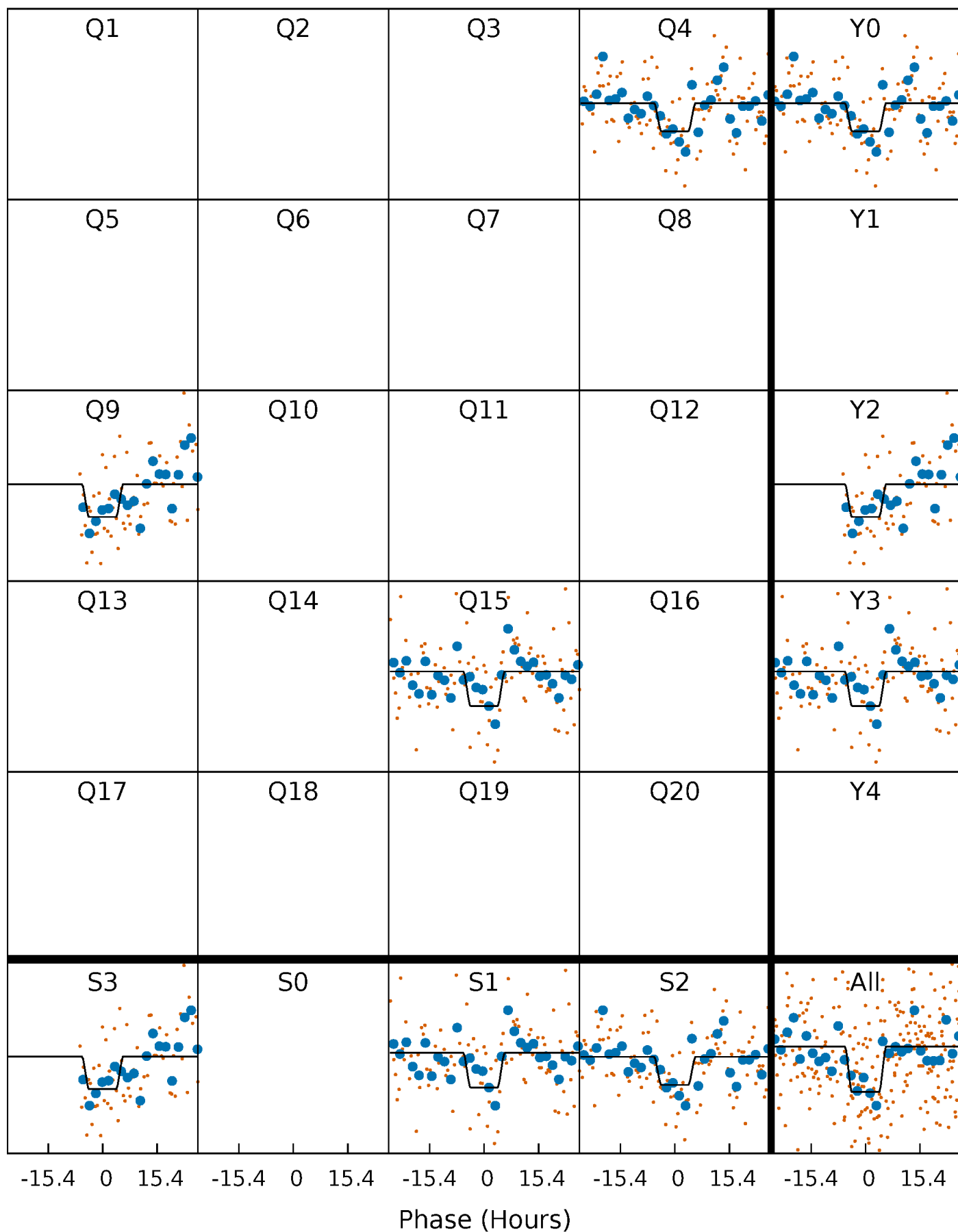
# DV Quarter-Phased Transit Curves

TCE 008806497-01 P=499.581444 Days  $T_0=388.254089$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

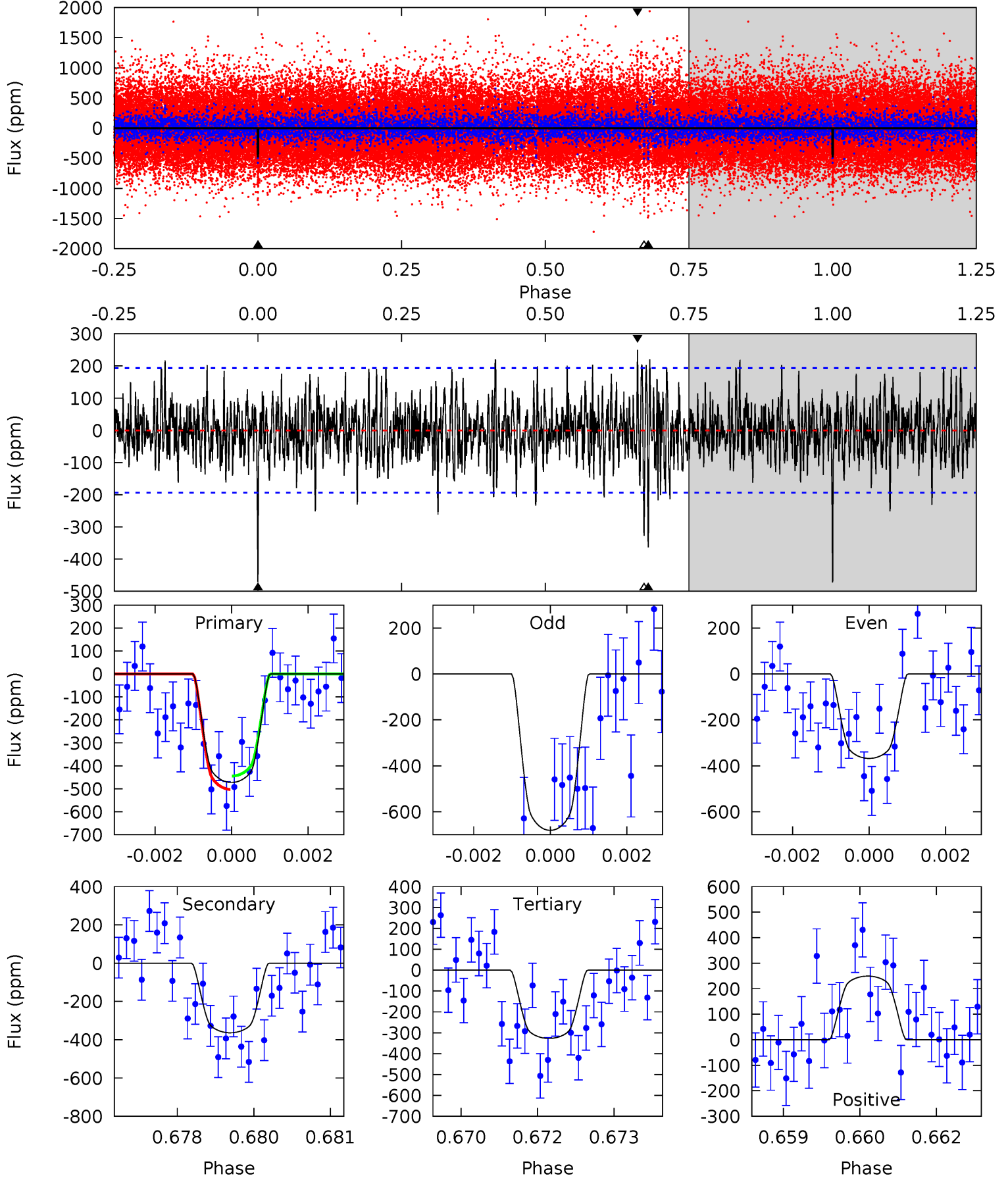
TCE 008806497-01 P=499.661843 Days  $T_0=388.181565$  (BKJD)



# DV Model-Shift Uniqueness Test

008806497-01, P = 499.581444 Days, E = 388.254089 Days

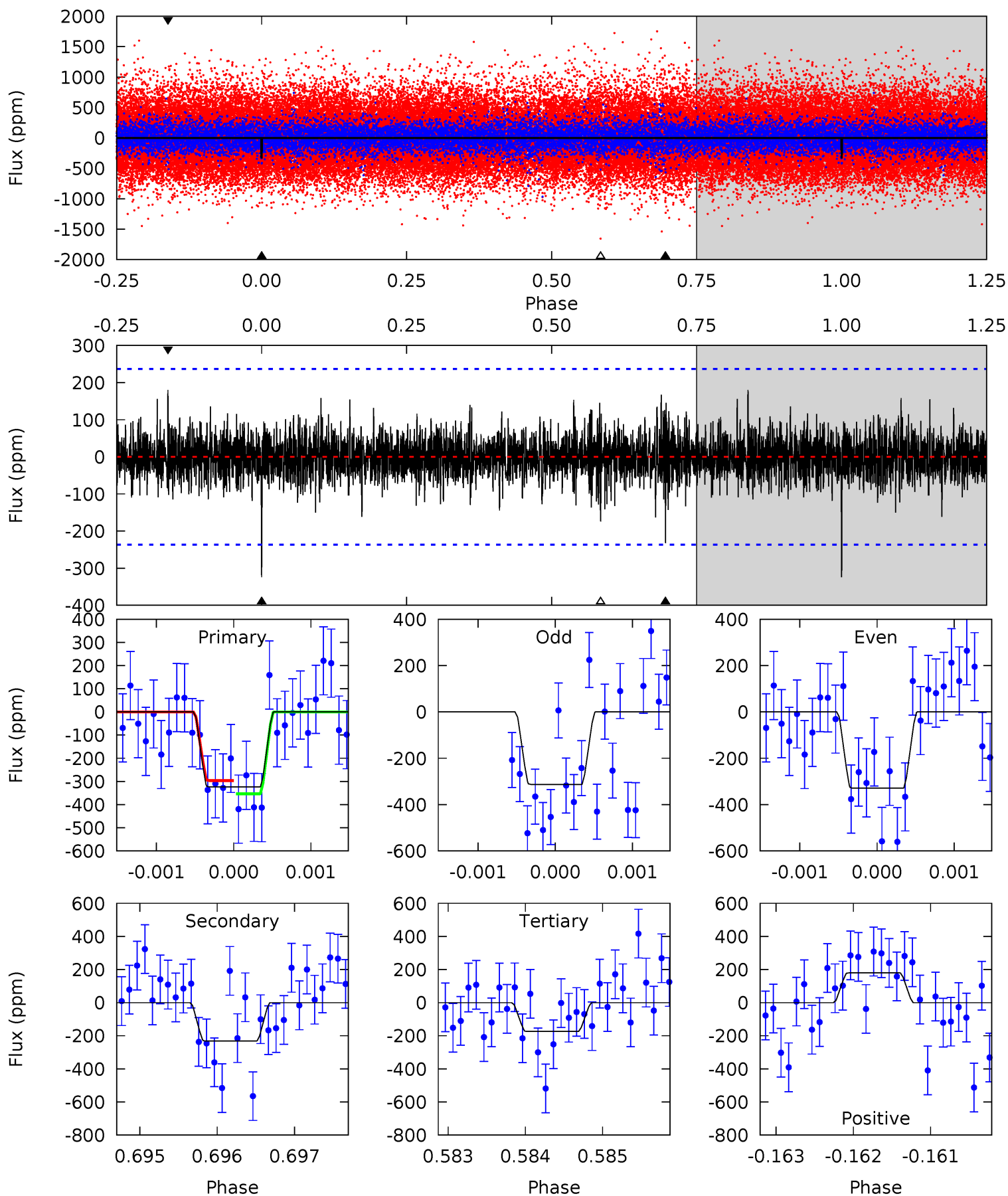
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	10.1	9.08	6.92	5.37	3.16	1.99	4.03	6.19	1.02	3.17	4.07	1.14	0.35	0.81



# Alt Model-Shift Uniqueness Test

008806497-01, P = 499.661843 Days, E = 388.181565 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
7.47	5.35	4.01	4.15	5.46	3.31	1.00	3.46	3.33	1.34	1.21	0.18	1.03	0.36	0.66



### Stellar Parameters For KIC 008806497

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5411^{+160}_{-144}$	$4.623^{+0.032}_{-0.097}$	$-0.420^{+0.300}_{-0.300}$	$0.718^{+0.114}_{-0.052}$	$0.803^{+0.076}_{-0.084}$	$3.051^{+0.502}_{-0.967}$
	+3%/-3%	+1%/-2%	+71%/-71%	+16%/-7%	+9%/-10%	+16%/-32%
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 008806497-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-364 \pm 36$	$2.10^{+0.29}_{-0.27}$	$269^{+11}_{-9}$	$4748^{+274}_{-240}$	$58552^{+17705}_{-12741}$
Alt.	$-232 \pm 43$	$1.48^{+0.27}_{-0.23}$	$269^{+11}_{-9}$	$4978^{+457}_{-342}$	$74657^{+35120}_{-23684}$

$T_{max}$  = 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

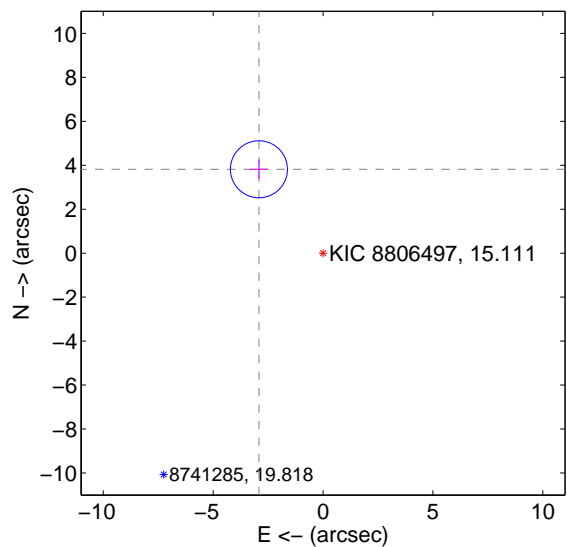
Supplemental centroid analysis for 008806497-01. Kepler magnitude: 15.11. Transit SNR 7.54

There are 1 quarters with good PRF difference image offsets

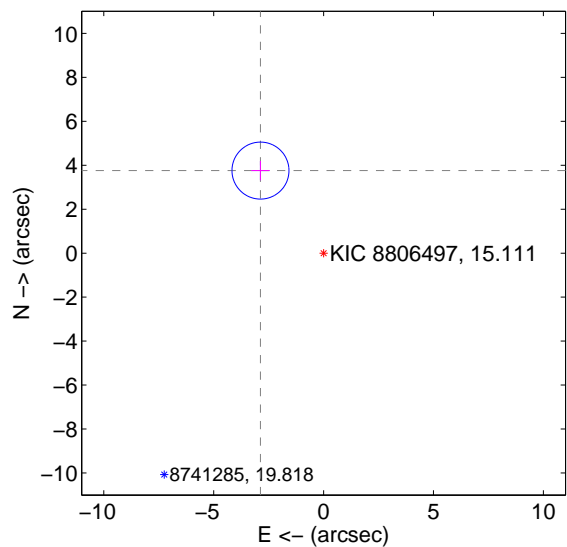
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.805 \pm 0.432$	11.12	$2.917 \pm 0.420$	$3.818 \pm 0.439$
PRF-fit source offset from KIC position	$4.730 \pm 0.432$	10.94	$2.872 \pm 0.420$	$3.758 \pm 0.439$
photometric centroid source offset	$4.31 \pm 1.62$	2.66	$3.07 \pm 1.44$	$-3.03 \pm 1.79$

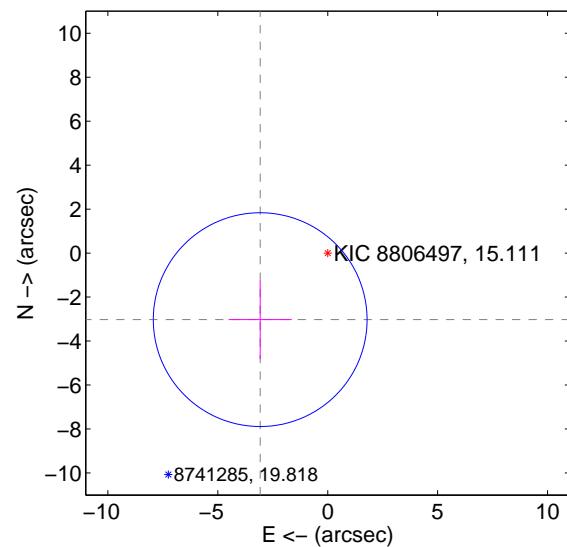
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



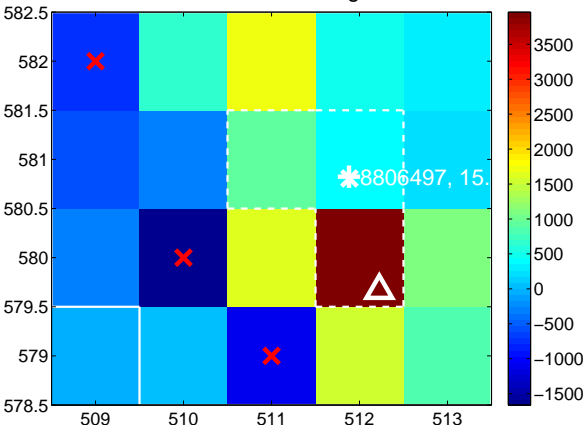
Q3 no difference image



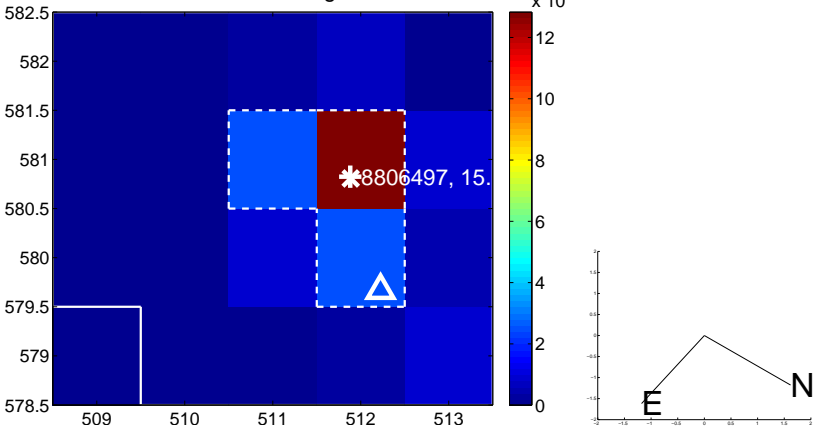
Q3 no OOT image



Q4 difference image



Q4 OOT image





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



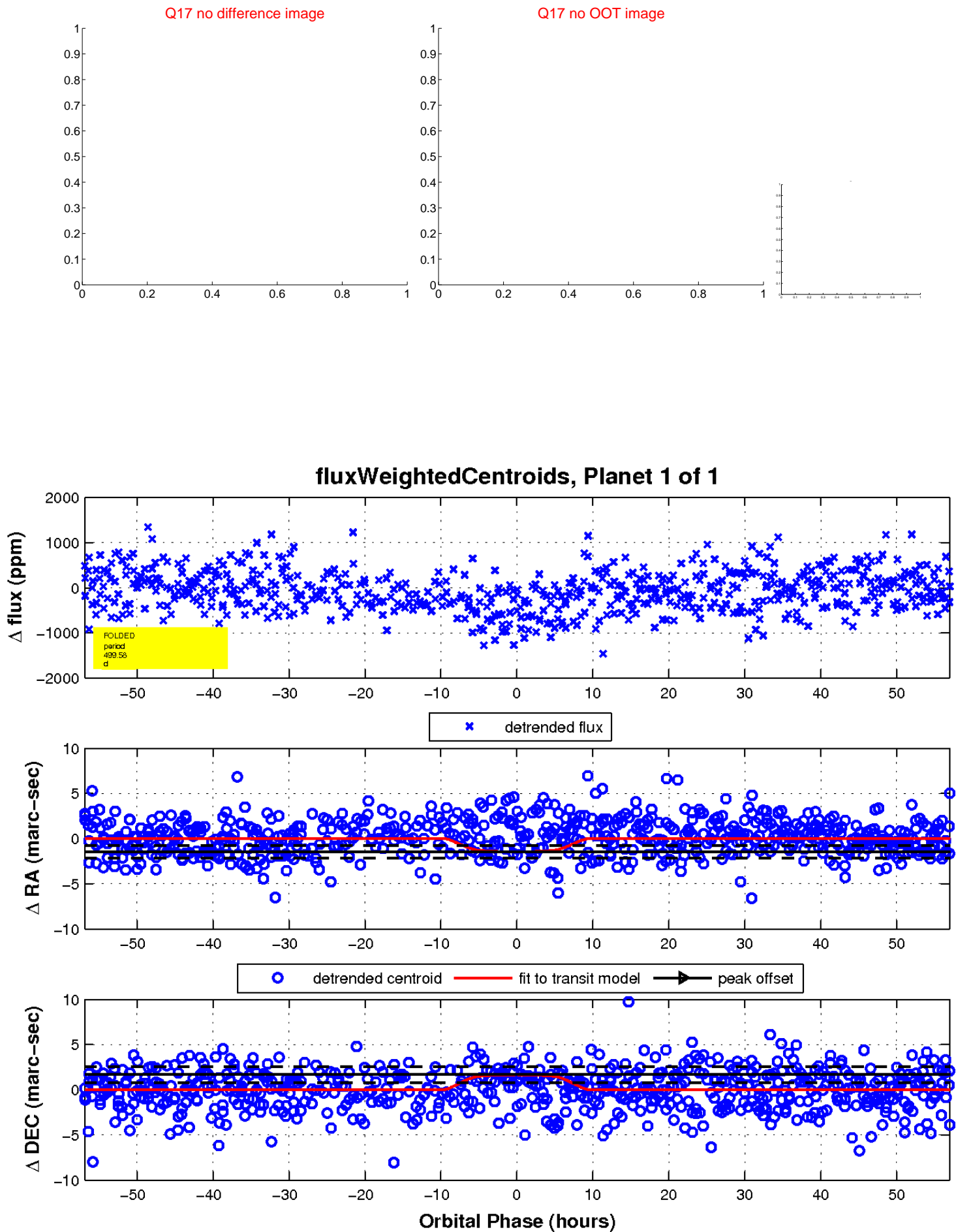
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

