

# KIC 003339780

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003339780-01	OBS	No	353.012466	220.779098	1048.6	29.108	40.5	12.9	0.96	6215	5.88	1.26

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003339780-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_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.

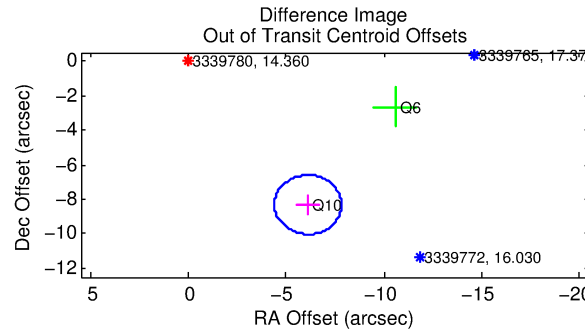
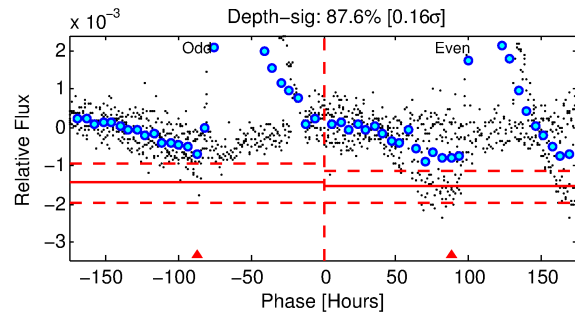
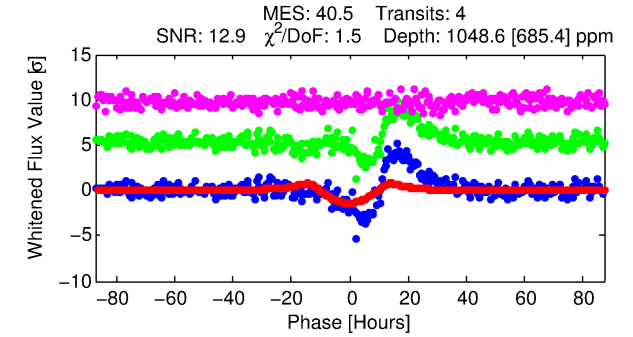
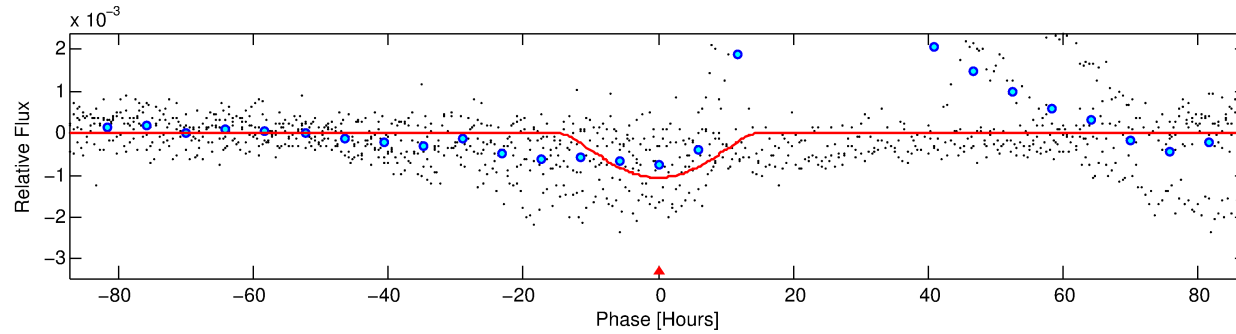
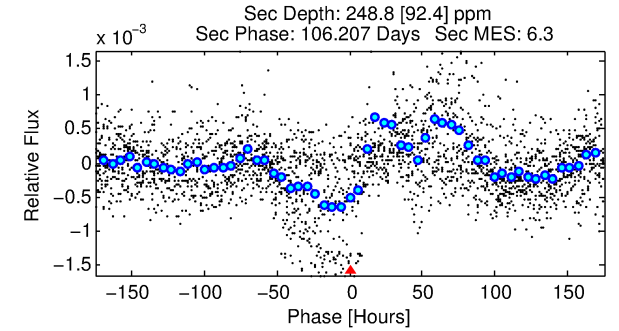
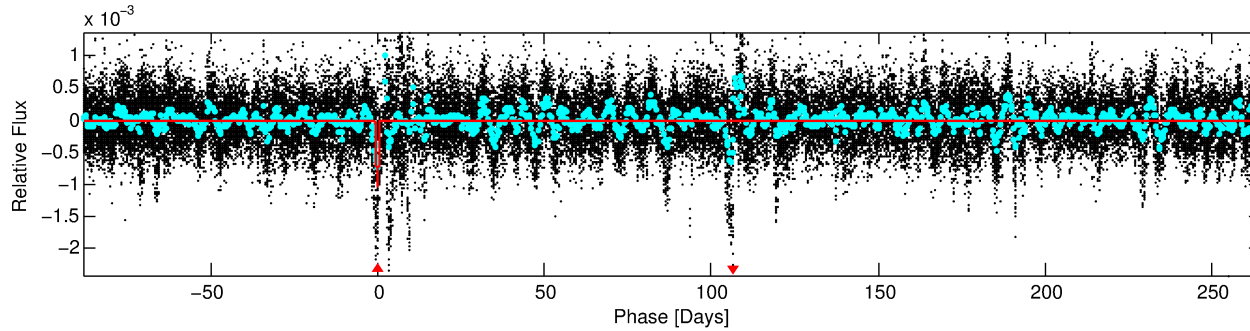
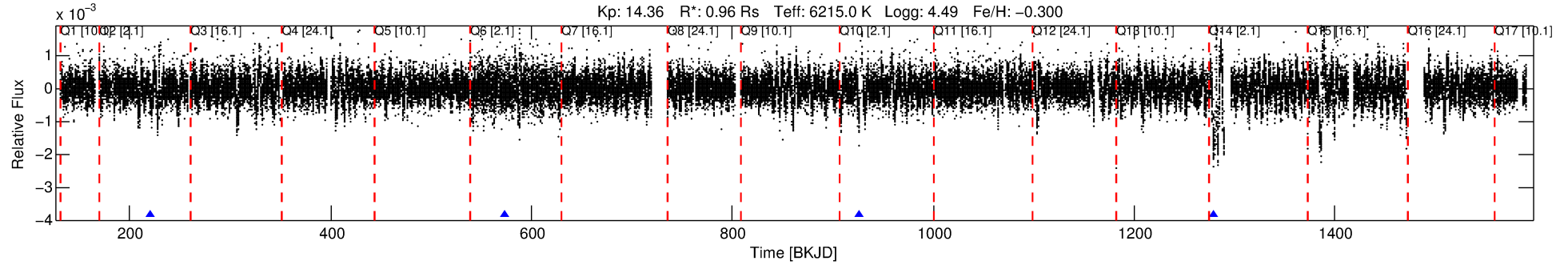
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003339780-01

No Significant Match Found

# DV One-Page Summary

KIC: 3339780 Candidate: 1 of 1 Period: 353.012 d



## DV Fit Results:

Period = 353.01247 [0.01815] d  
Epoch = 220.7791 [0.0331] BKJD  
Rp/R\* = 0.0563 [0.0991]  
a/R\* = 31.54 [13.19]  
b = 1.00 [0.17]  
Seff = 1.26 [0.50]  
Teq = 270 [27] K  
Rp = 5.88 [10.50] Re  
a = 0.9867 [0.2546] AU  
Ag = 3857.26 [13731.62] [0.28σ]  
Teffp = 3290 [2914] K [1.04σ]

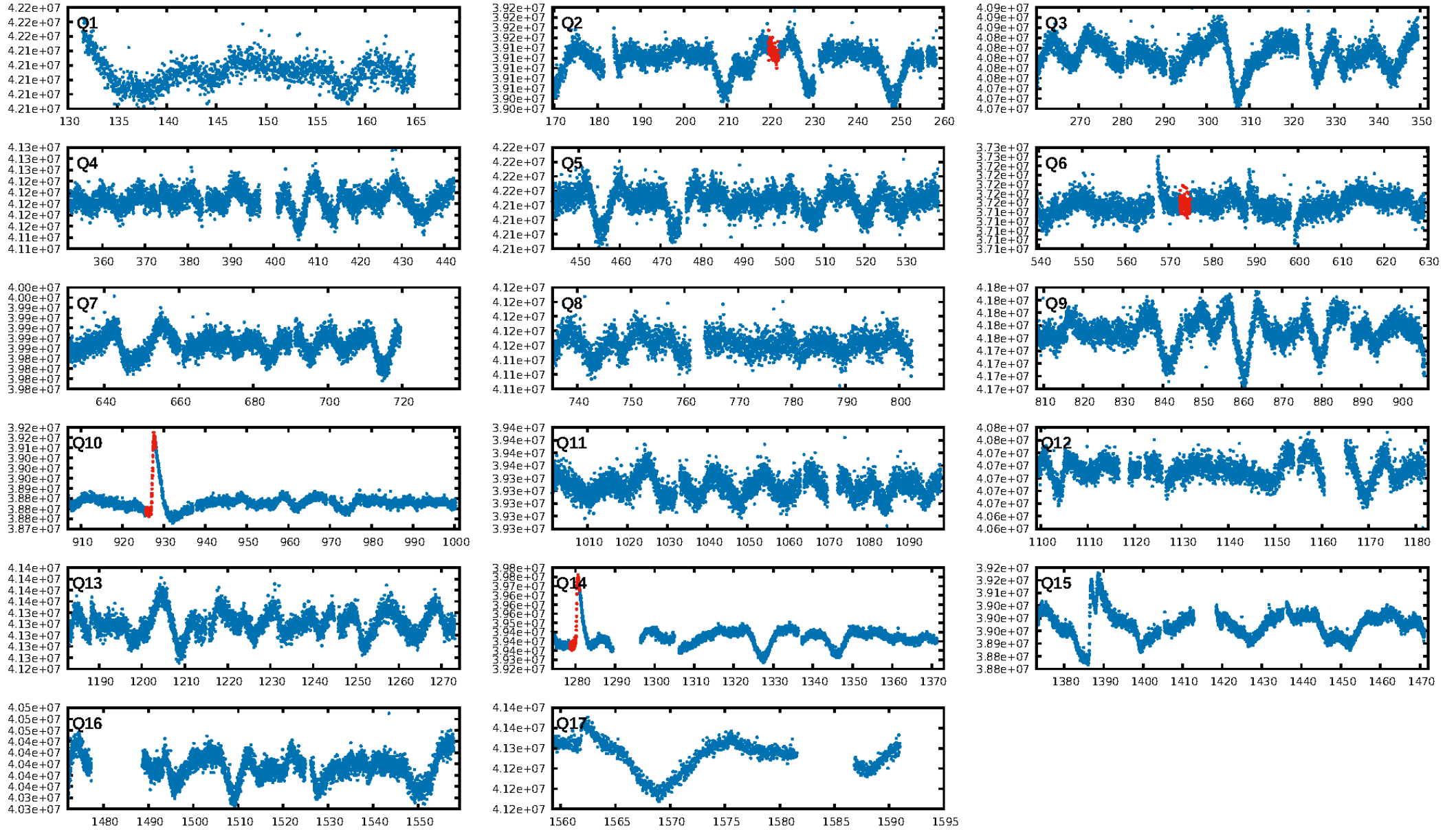
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 3.4%  
Bootstrap-pfa: 4.81e-156  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -1.44  
Centroid-sig: 99.0%  
Centroid-so: 0.192 arcsec [0.25σ]  
OotOffset-rm: 10.317 arcsec [18.04σ]  
KicOffset-rm: 10.614 arcsec [11.25σ]  
OotOffset-st: 2/0/0/0 [2]  
KicOffset-st: 2/0/0/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

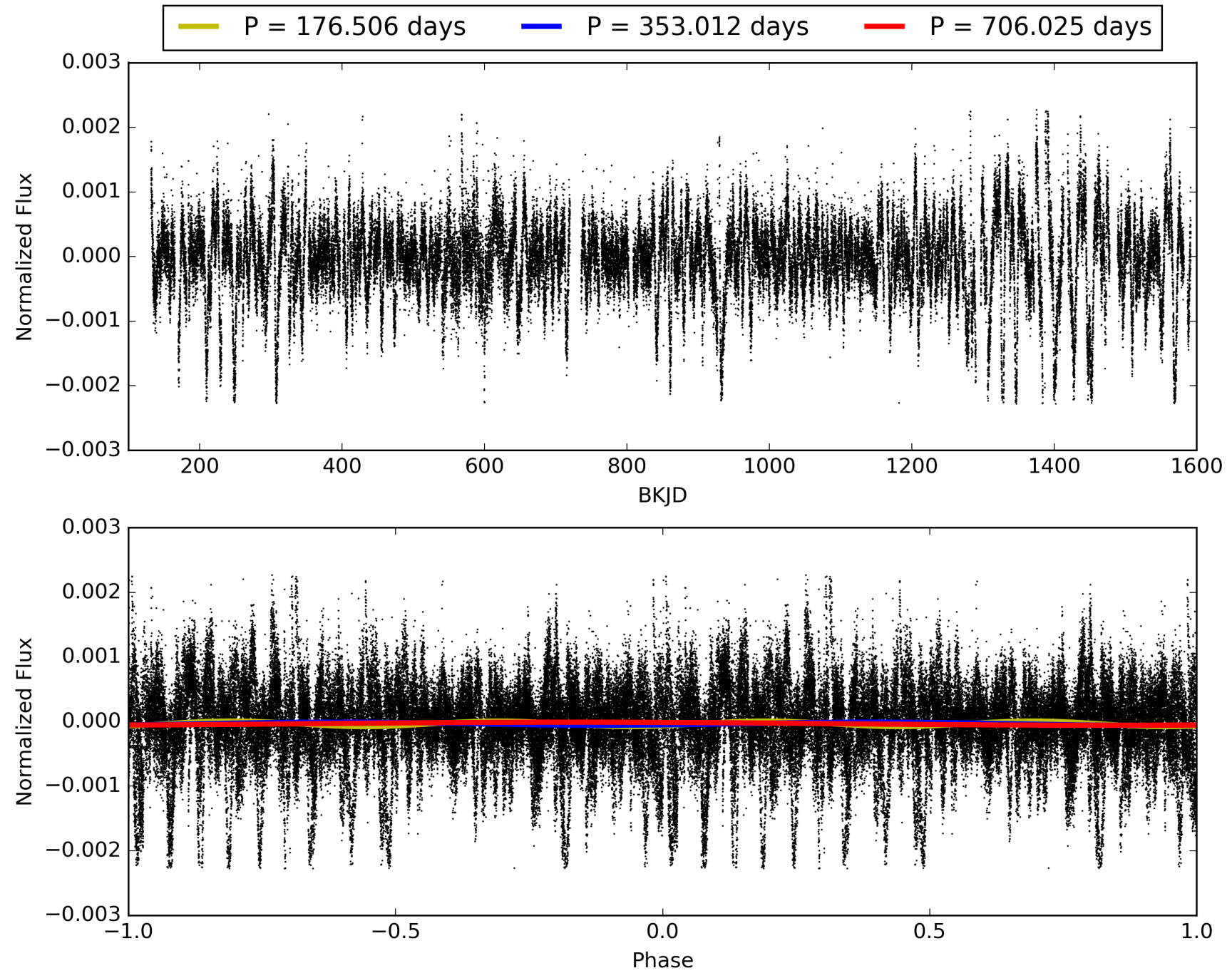
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:24:16 Z

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

# TCE 003339780-01, PDC Light Curves

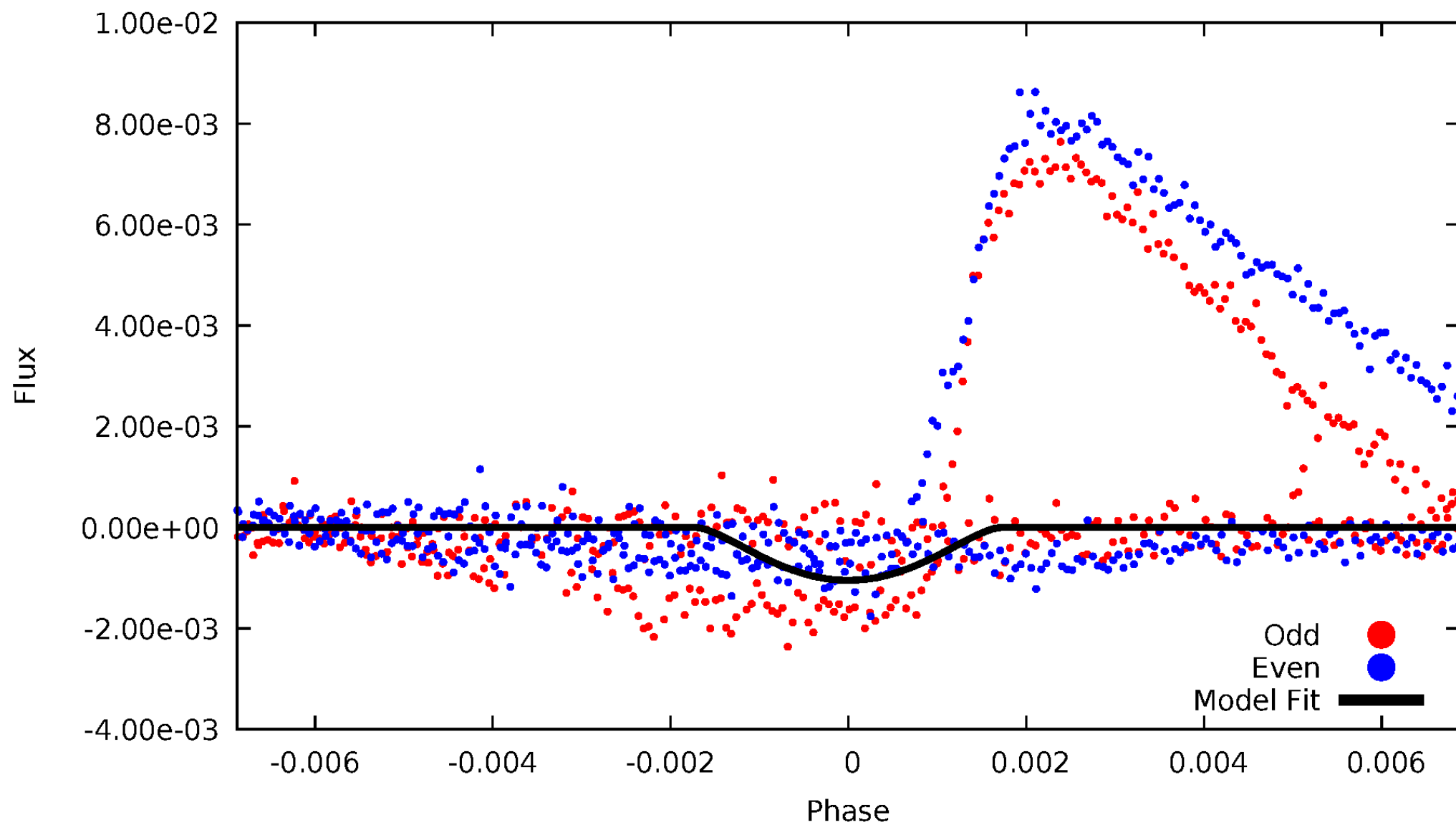


TCE 003339780-01



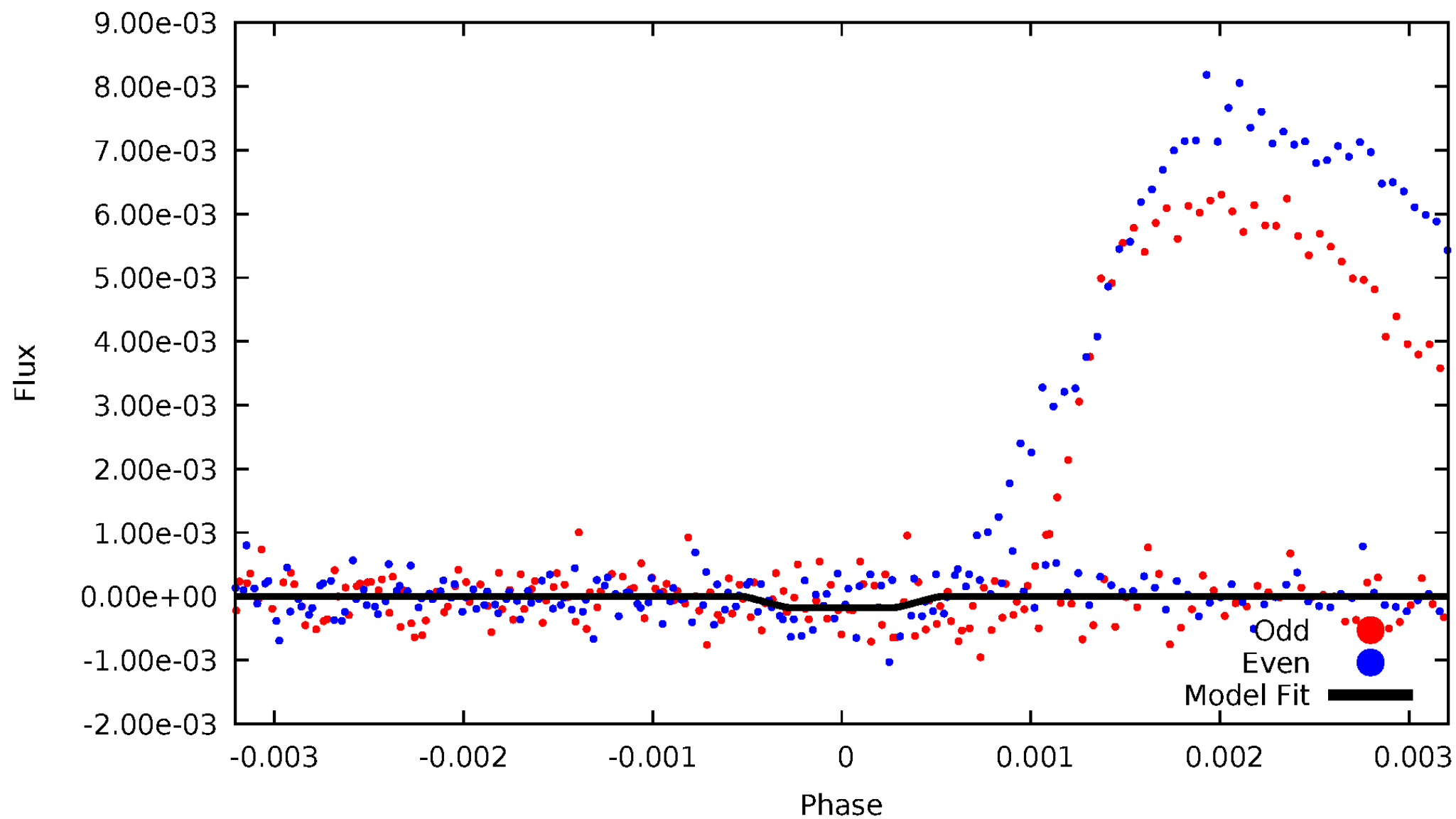
# DV Odd/Even

TCE 003339780-01



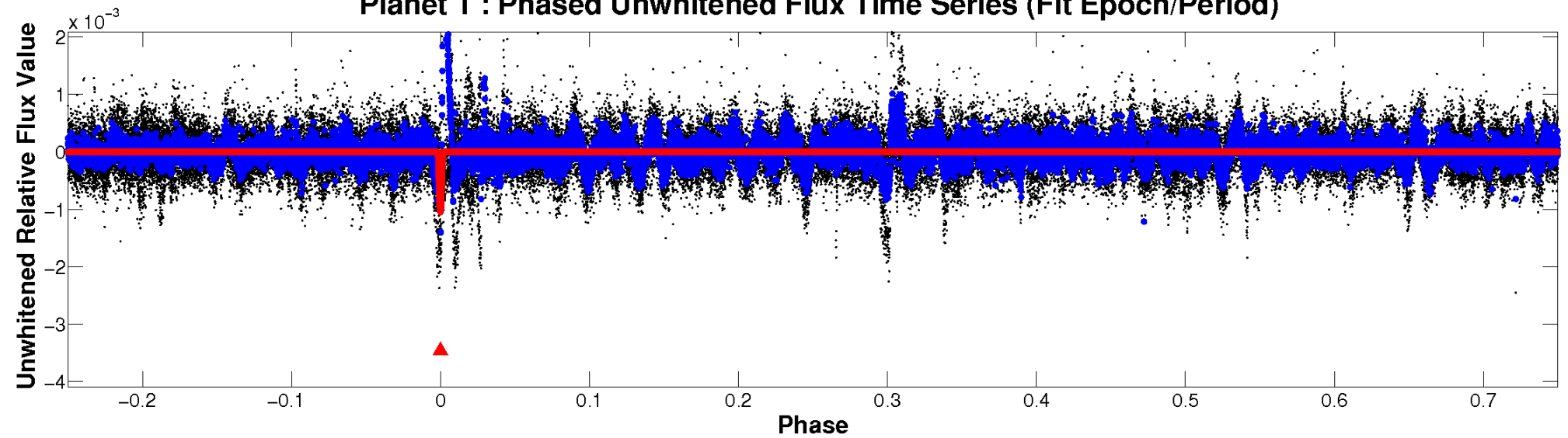
# ALT Odd/Even

TCE 003339780-01

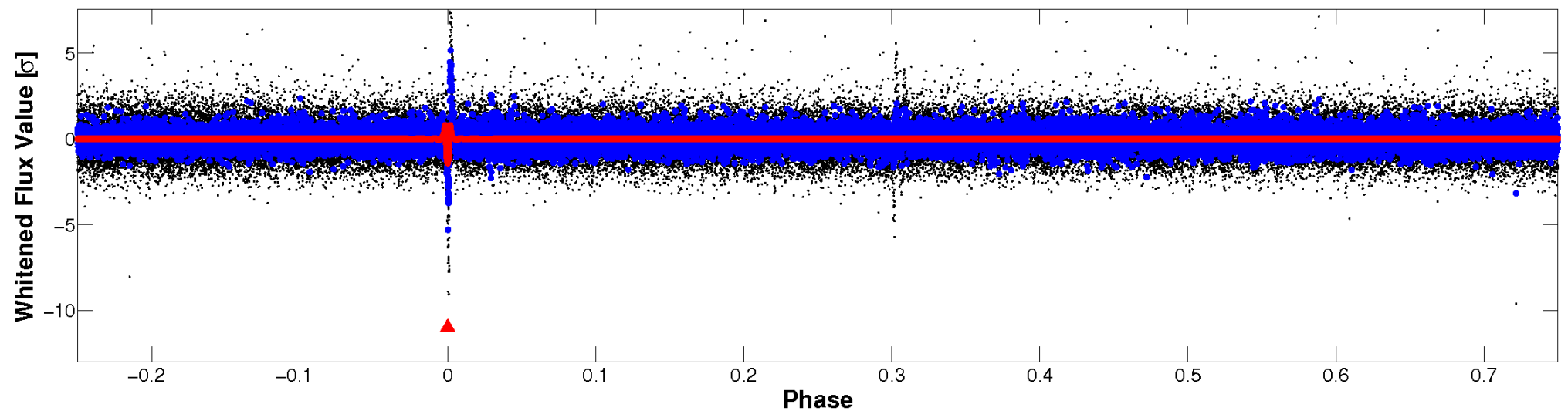


# Non-Whitened Vs. Whitened Light Curve

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



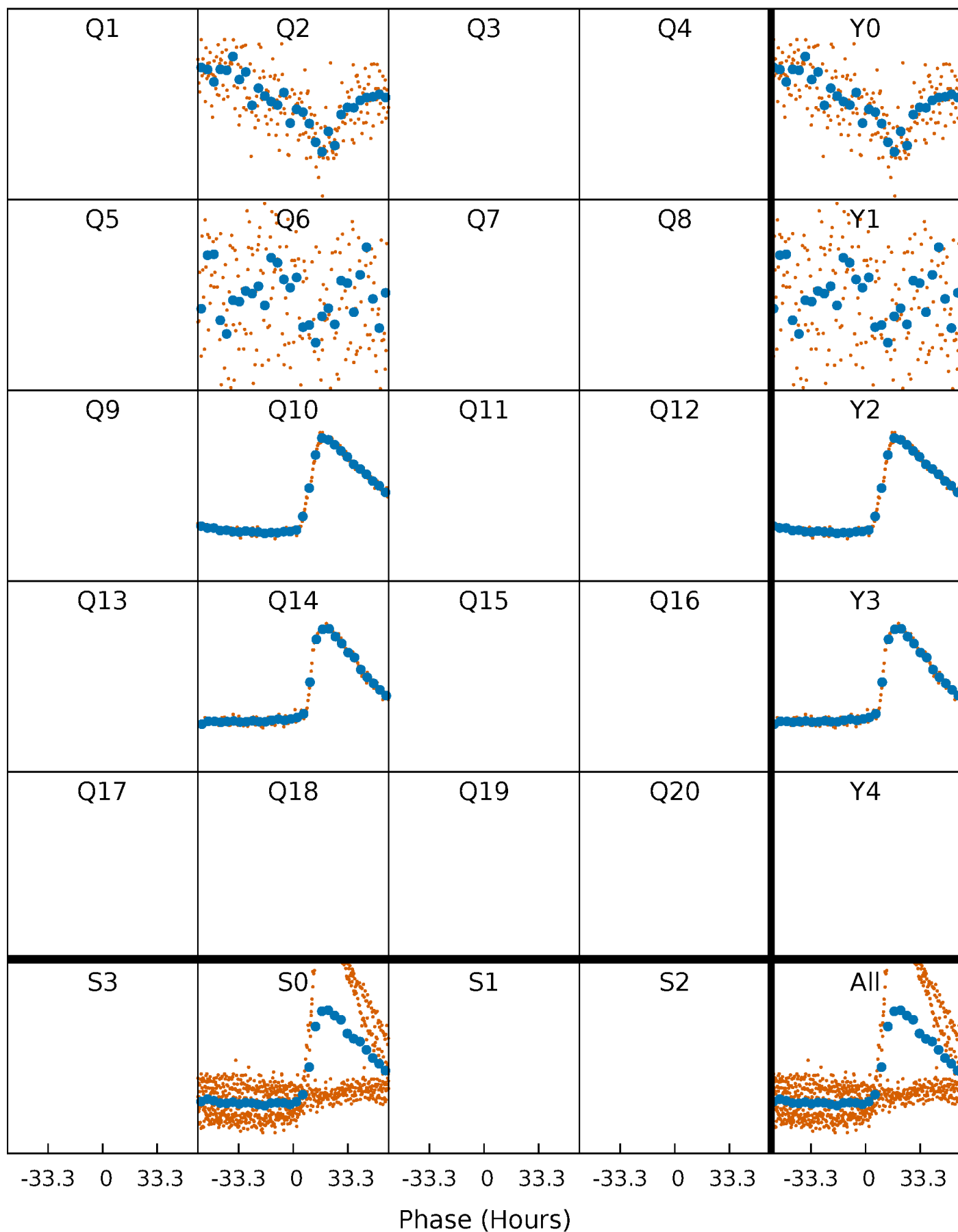
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

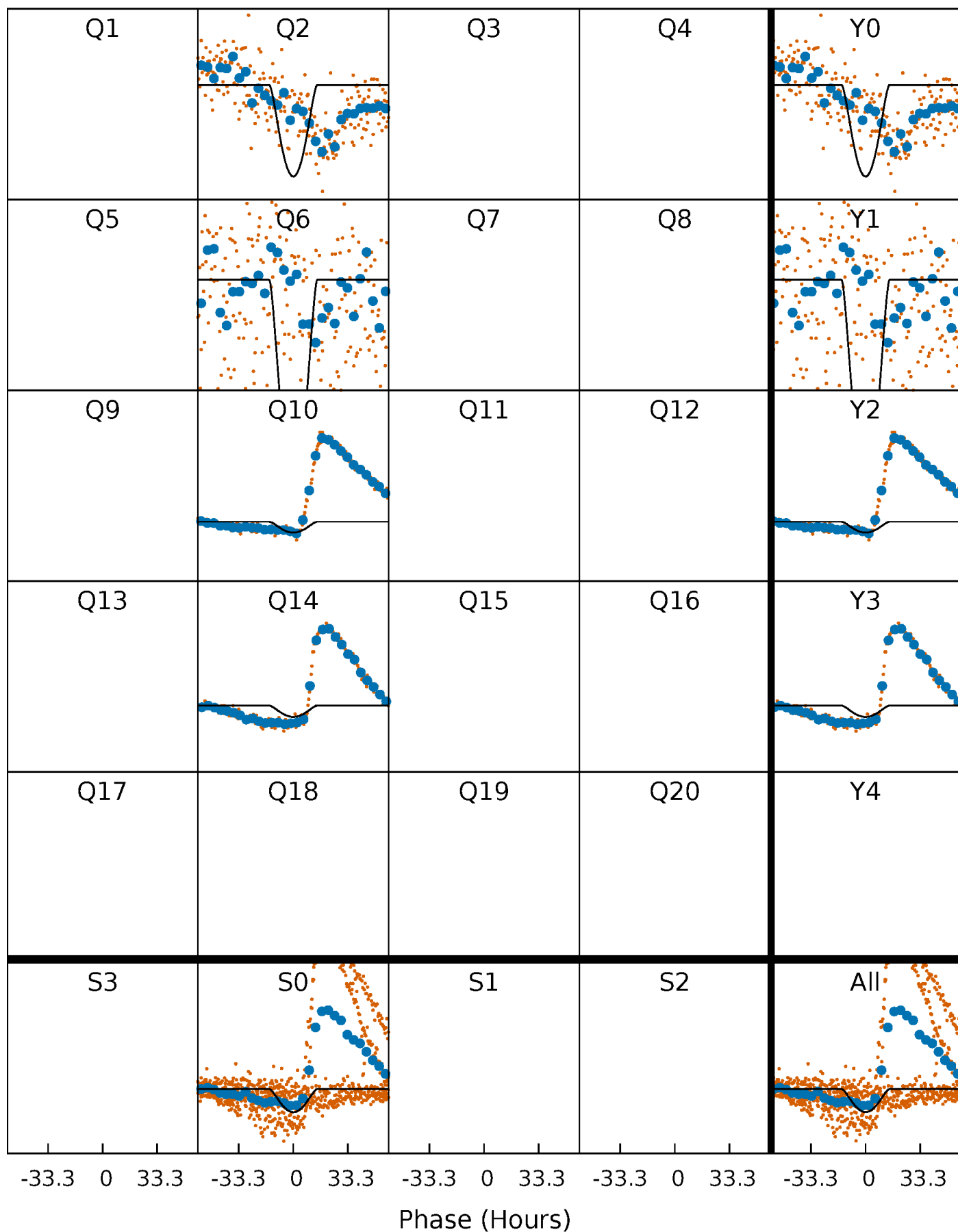
TCE 003339780-01 P=353.012466 Days  $T_0=220.779098$  (BKJD)





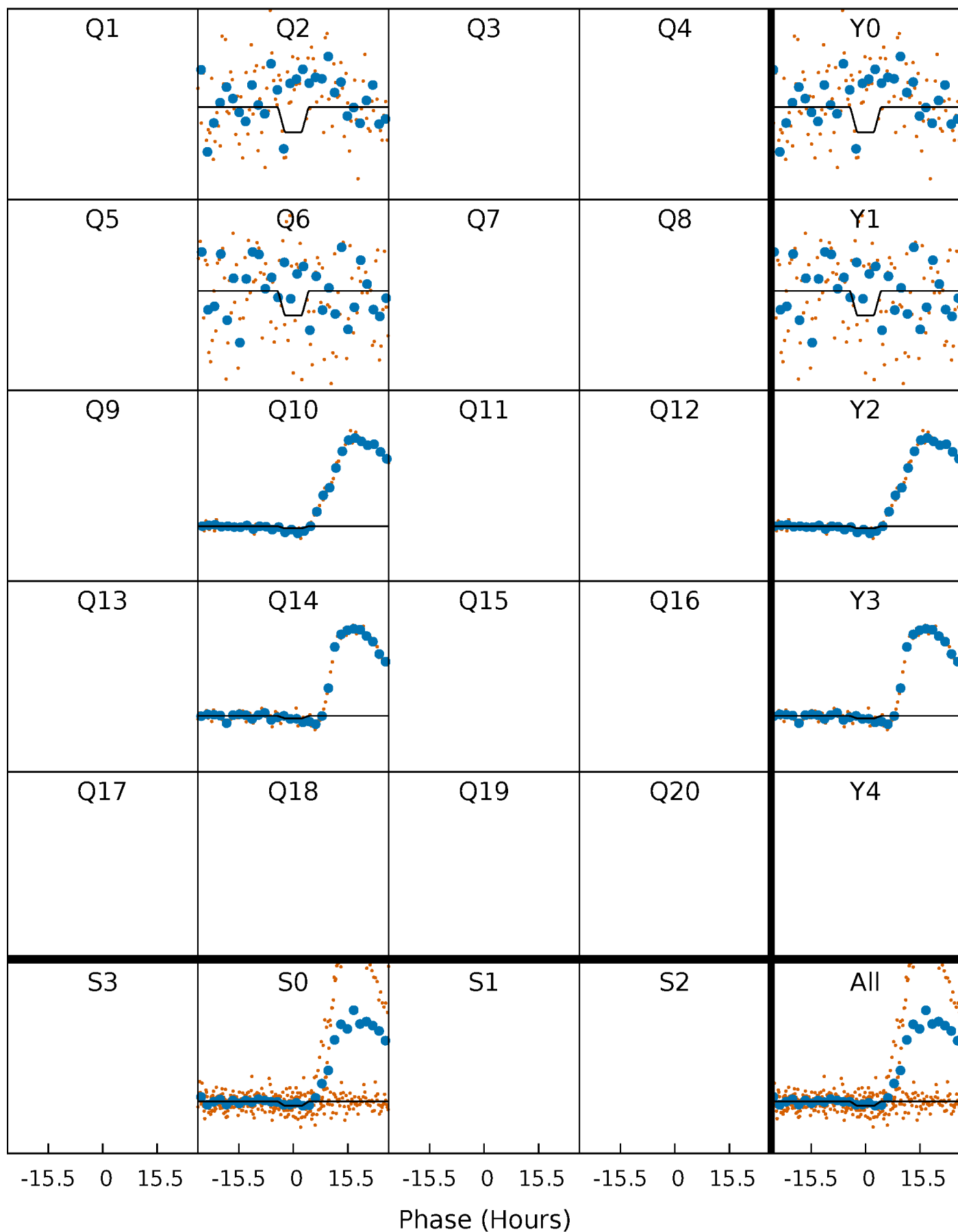
# DV Quarter-Phased Transit Curves

TCE 003339780-01 P=353.012466 Days  $T_0=220.779098$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

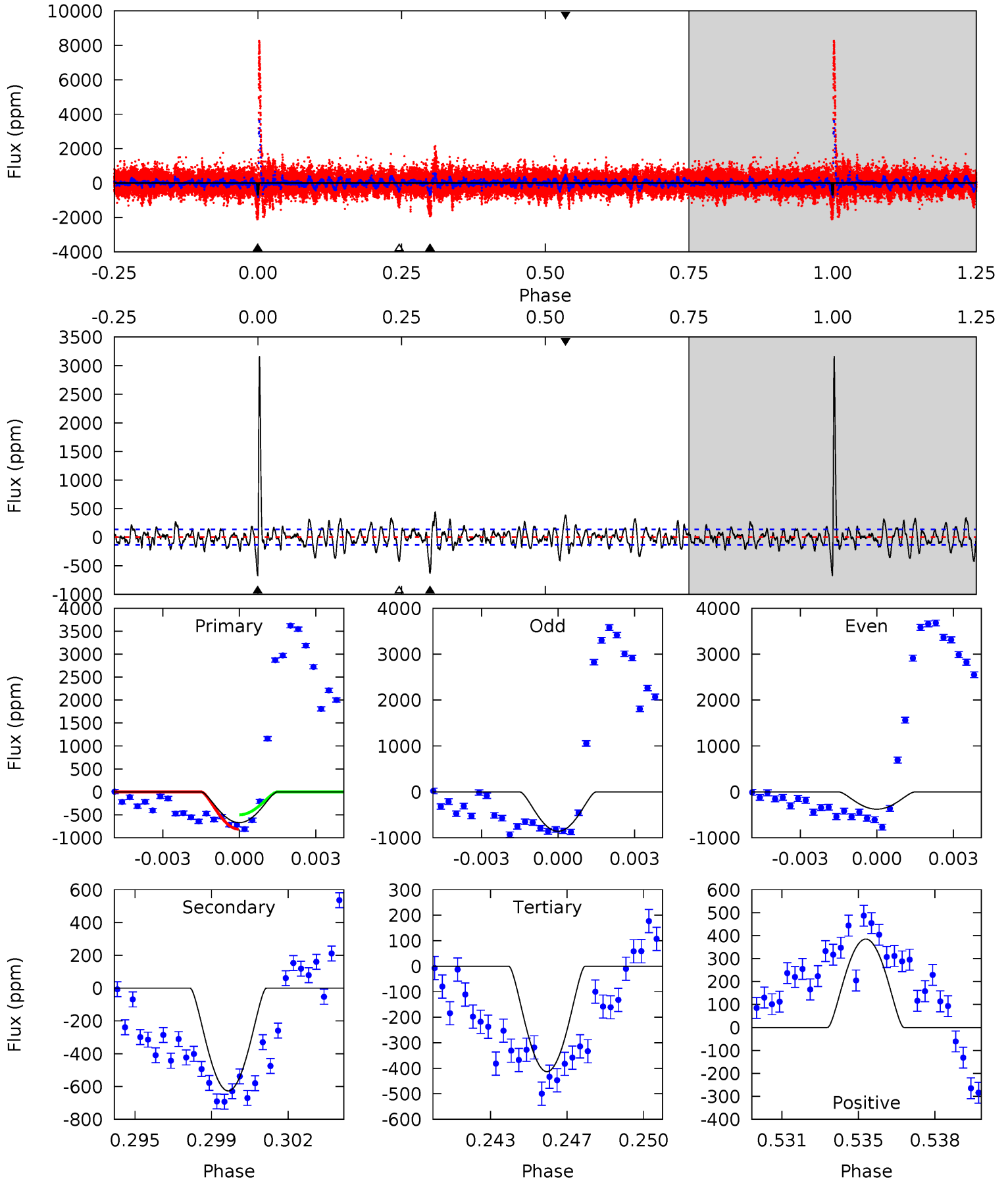
TCE 003339780-01 P=353.023805 Days  $T_0=220.756041$  (BKJD)



# DV Model-Shift Uniqueness Test

003339780-01, P = 353.012466 Days, E = 220.779098 Days

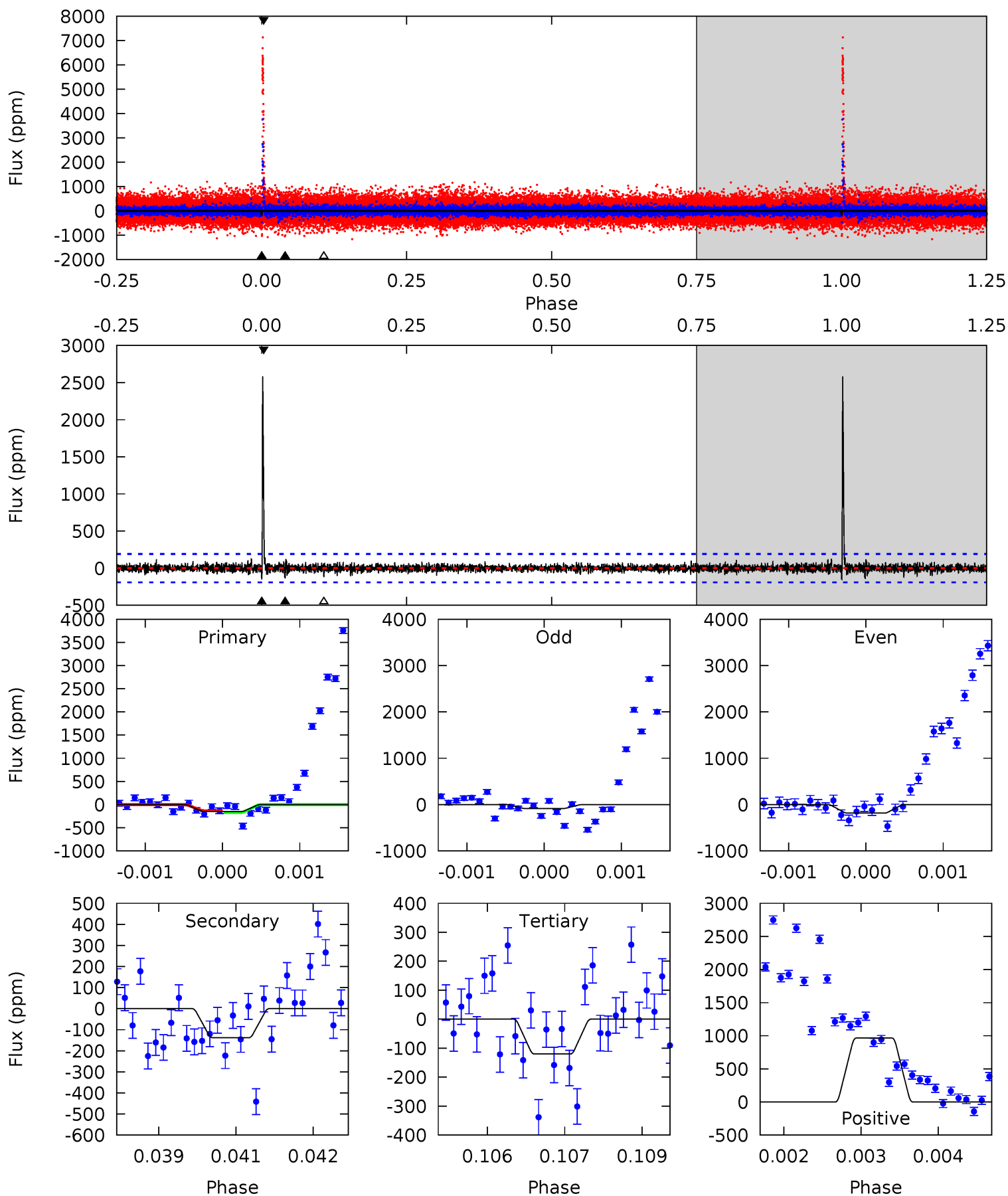
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.7	24.0	15.8	14.7	5.23	2.92	6.14	9.86	10.9	8.18	9.26	8.63	1.60	0.83	6.22



# Alt Model-Shift Uniqueness Test

003339780-01, P = 353.023805 Days, E = 220.756041 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
4.25	3.91	3.40	27.3	5.43	3.26	2.62	0.85	-23.1	0.51	-23.4	1.25	1.60	0.95	0.54



### Stellar Parameters For KIC 003339780

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6215^{+169}_{-206}$	$4.488^{+0.052}_{-0.208}$	$-0.300^{+0.250}_{-0.350}$	$0.957^{+0.291}_{-0.097}$	$1.027^{+0.134}_{-0.134}$	$1.652^{+0.441}_{-0.832}$
	+3%/-3%	+1%/-5%	+83%/-117%	+30%/-10%	+13%/-13%	+27%/-50%
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 003339780-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-627 \pm 26$	$9.96^{+9.03}_{-6.55}$	$385^{+26}_{-18}$	$3697^{+1862}_{-675}$	$3372^{+25529}_{-2485}$
Alt.	$-138 \pm 35$	$7.53^{+8.13}_{-5.12}$	$385^{+27}_{-19}$	$3174^{+1388}_{-614}$	$1283^{+10332}_{-1014}$

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

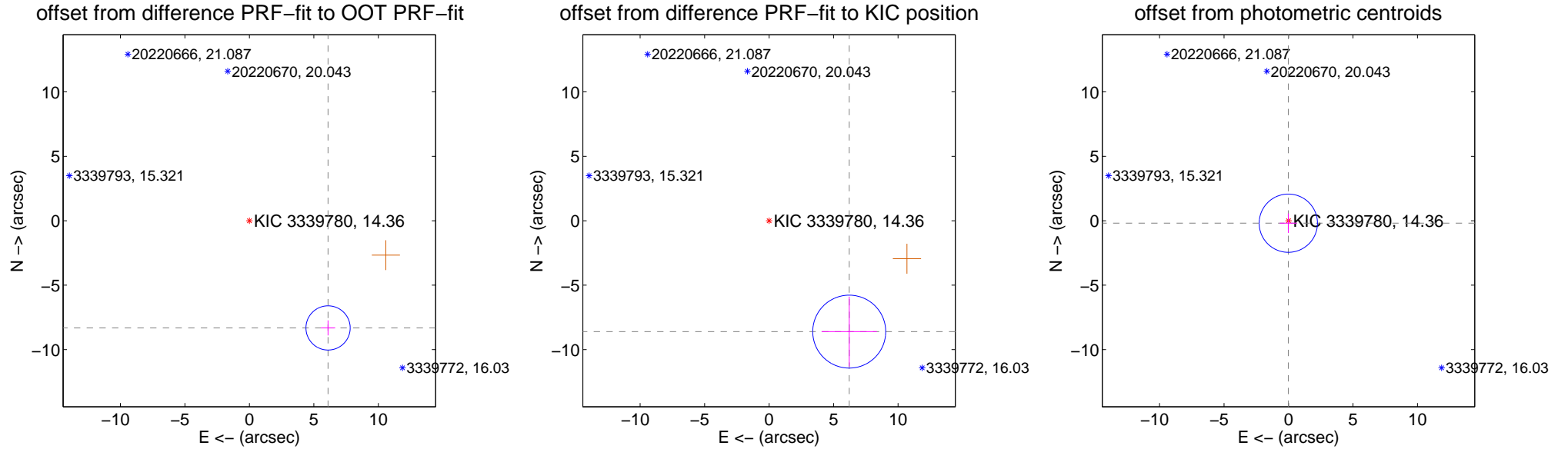
## DV Centroid Data

Supplemental centroid analysis for 003339780-01. Kepler magnitude: 14.36. Transit SNR 12.87

There are 1 quarters with good PRF difference image offsets

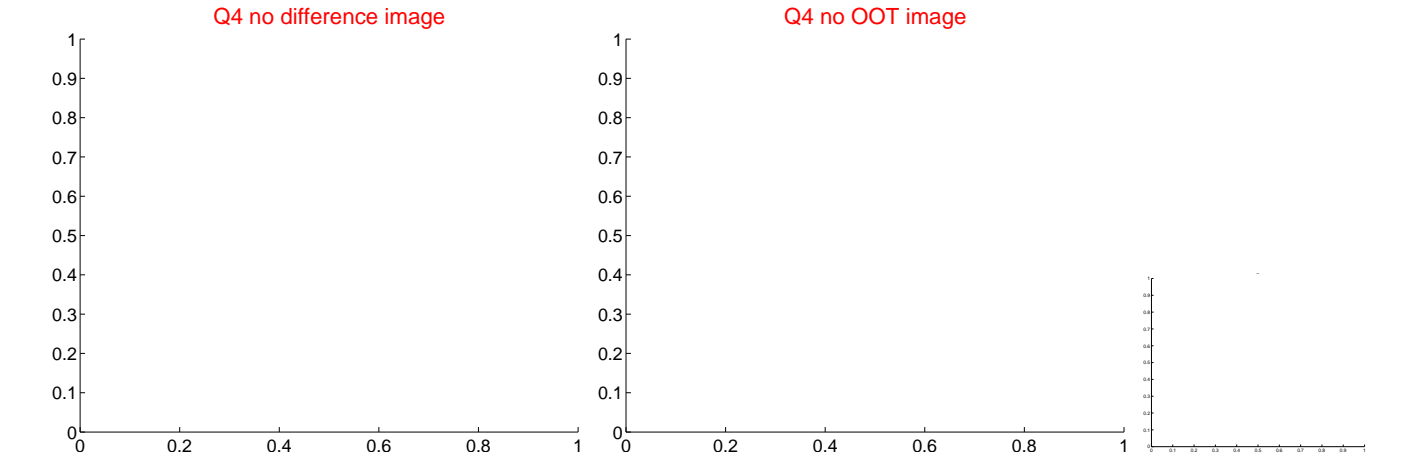
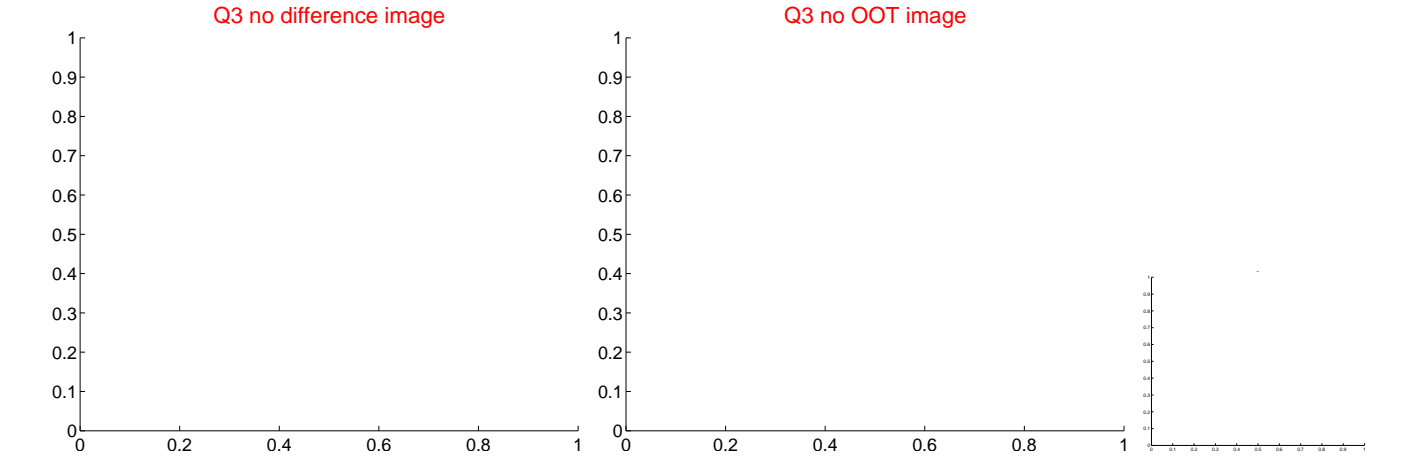
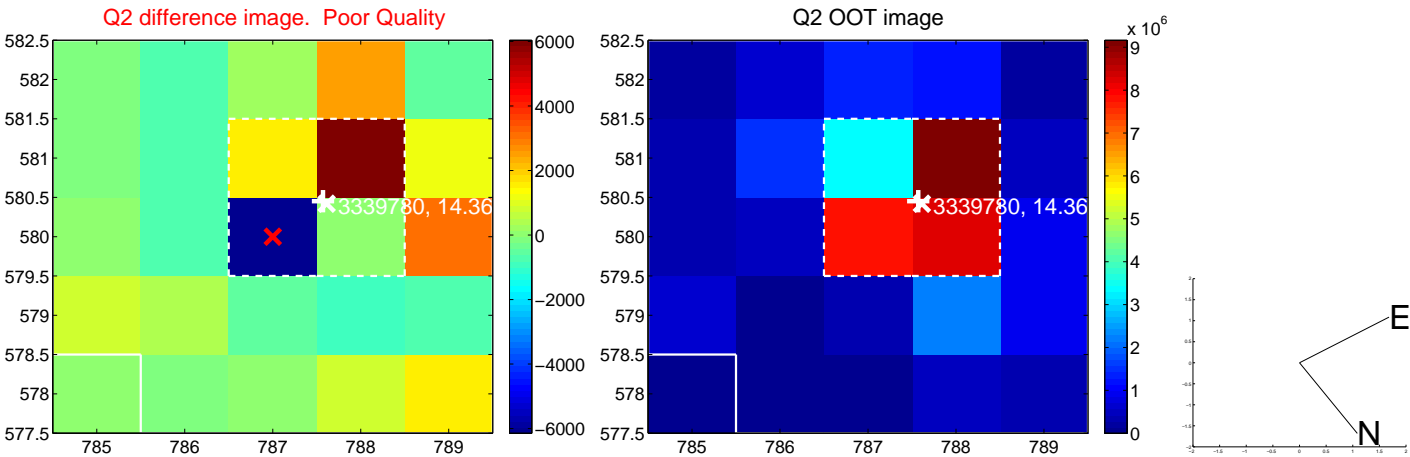
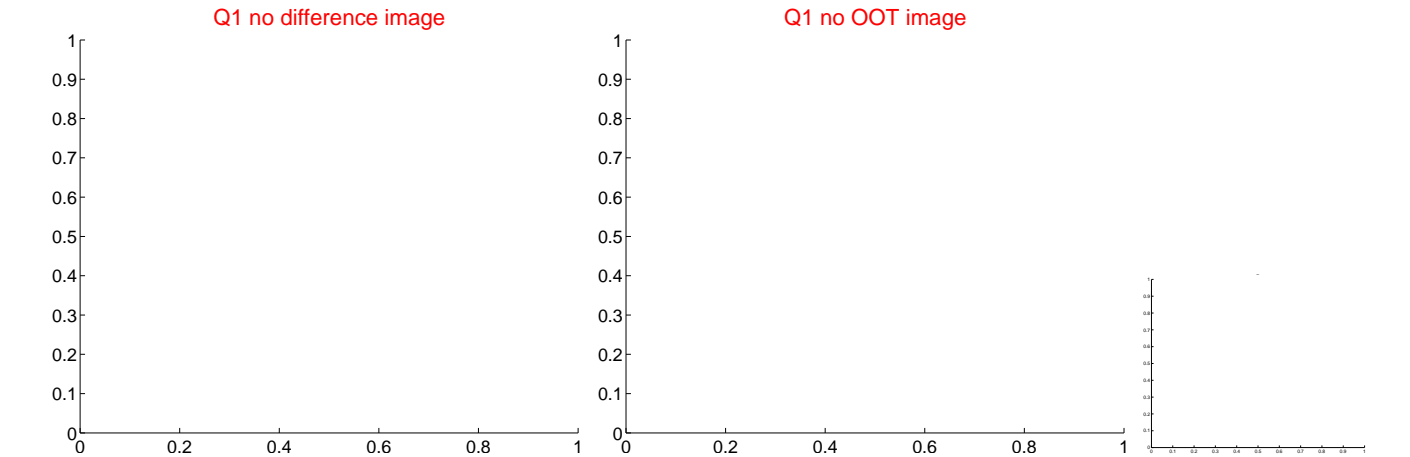
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$10.317 \pm 0.572$	18.04	$-6.102 \pm 0.550$	$-8.319 \pm 0.583$
PRF-fit source offset from KIC position	$10.614 \pm 0.943$	11.25	$-6.214 \pm 2.145$	$-8.605 \pm 2.709$
photometric centroid source offset	$0.19 \pm 0.75$	0.25	$0.02 \pm 0.66$	$-0.19 \pm 0.75$



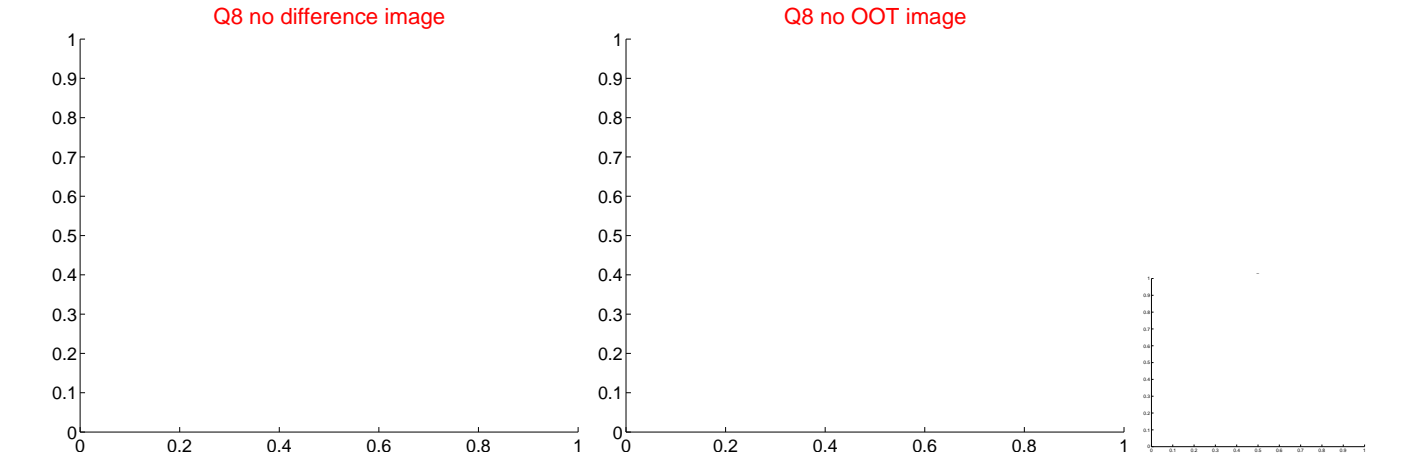
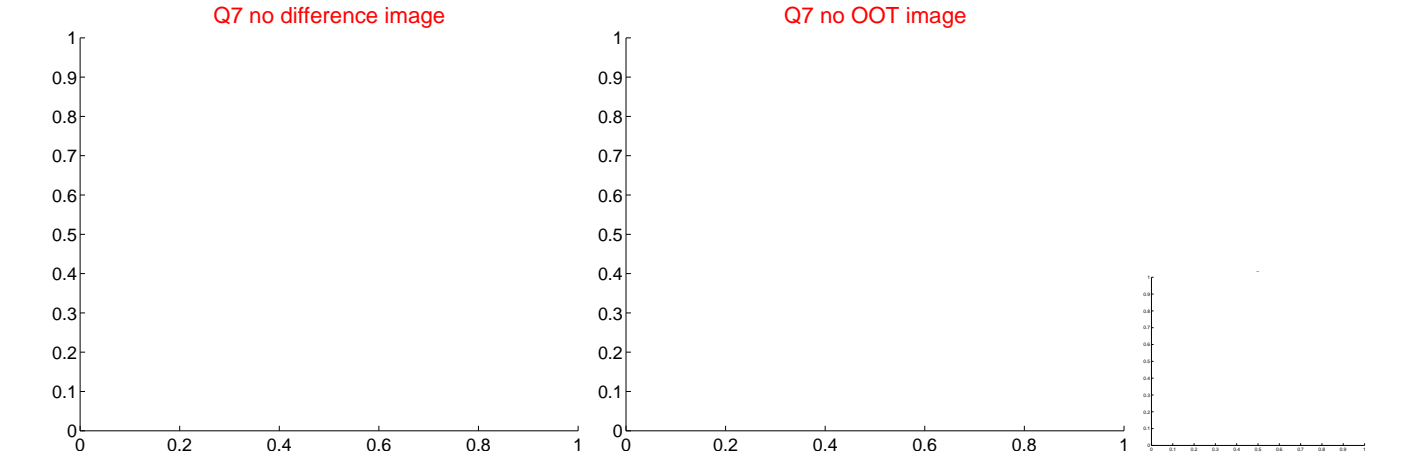
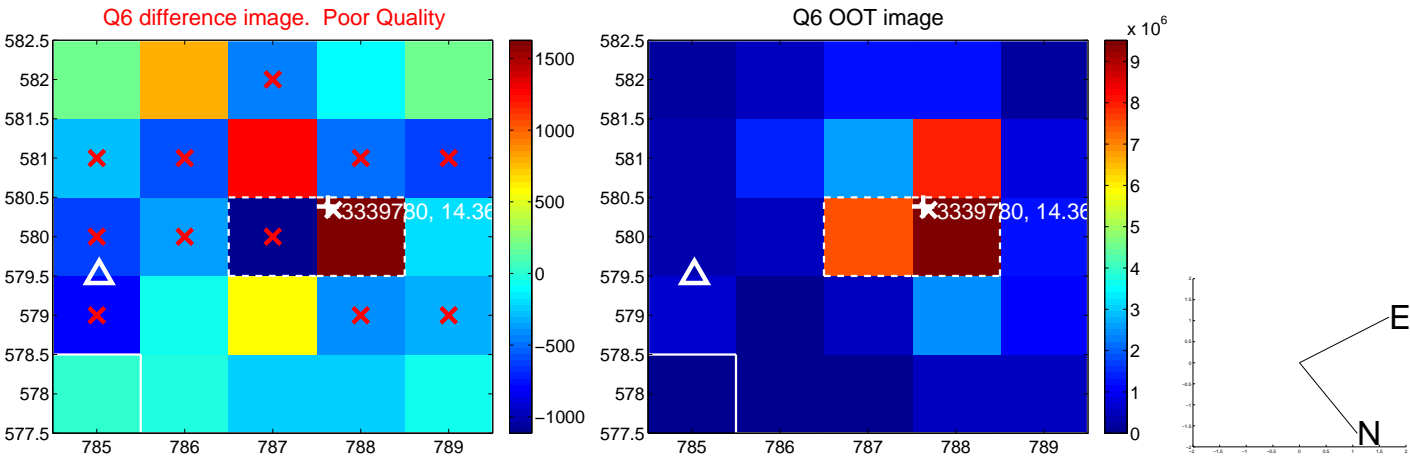
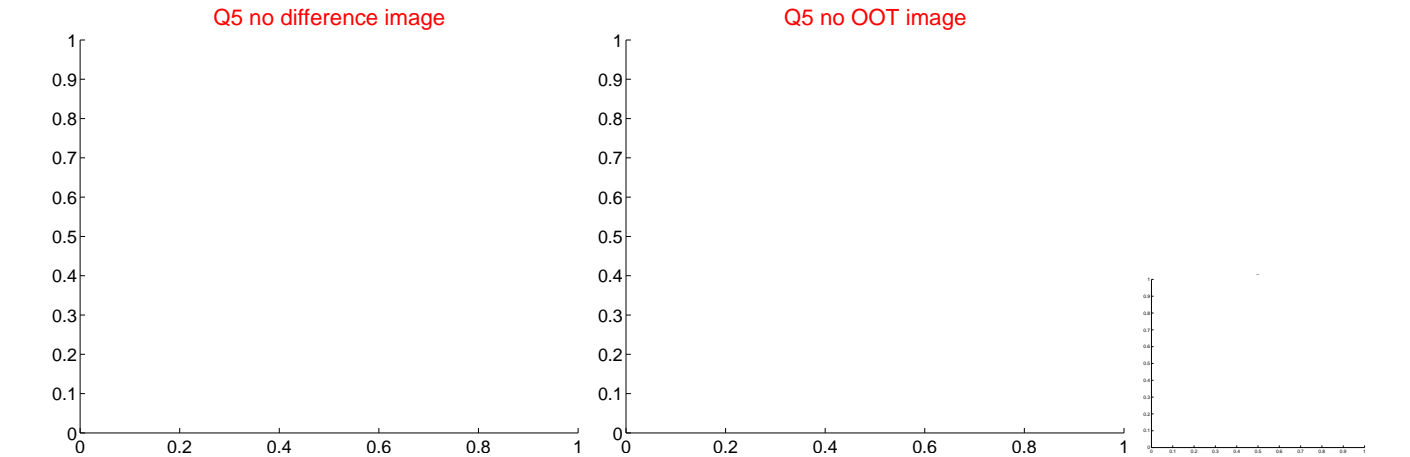
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

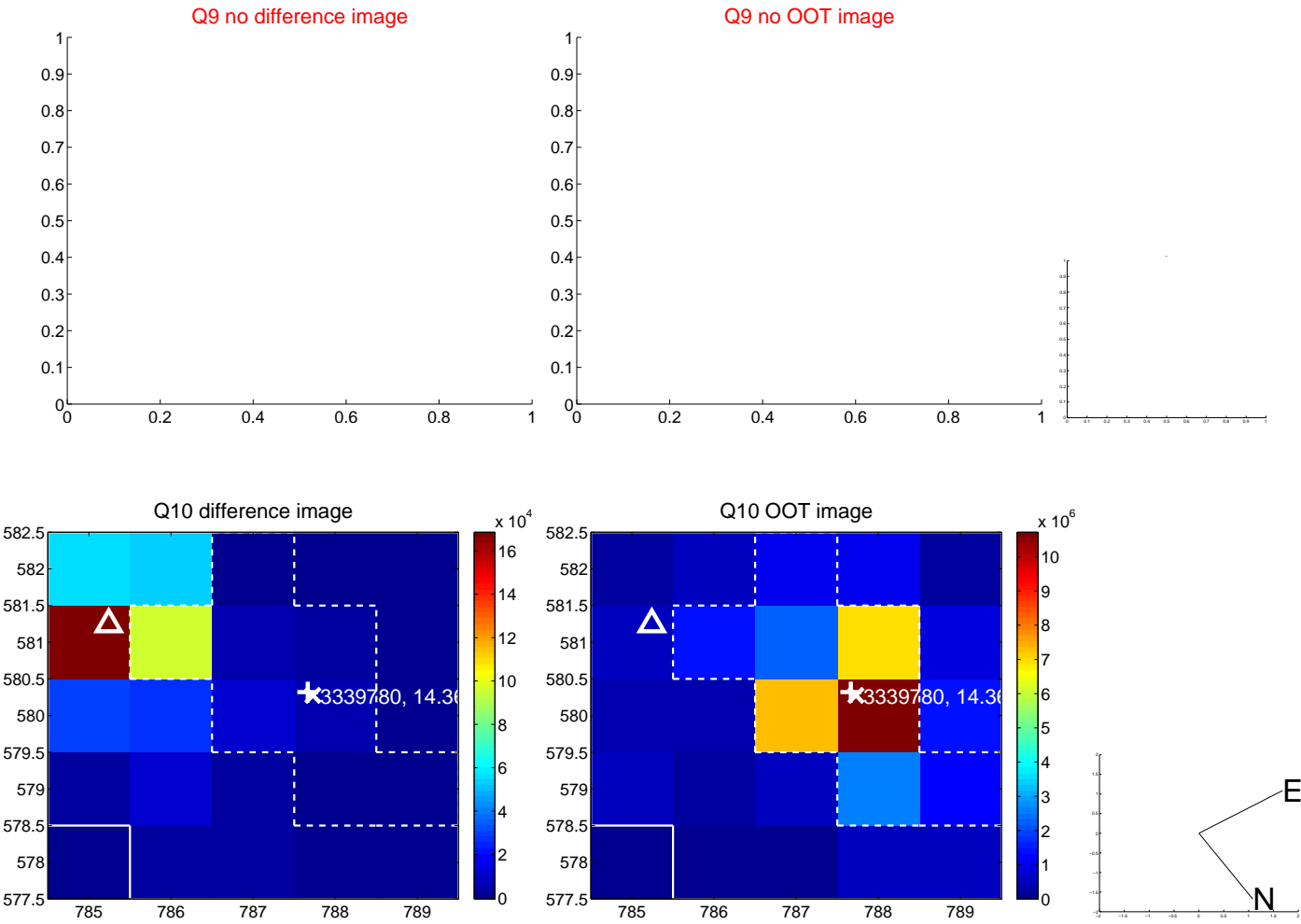




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



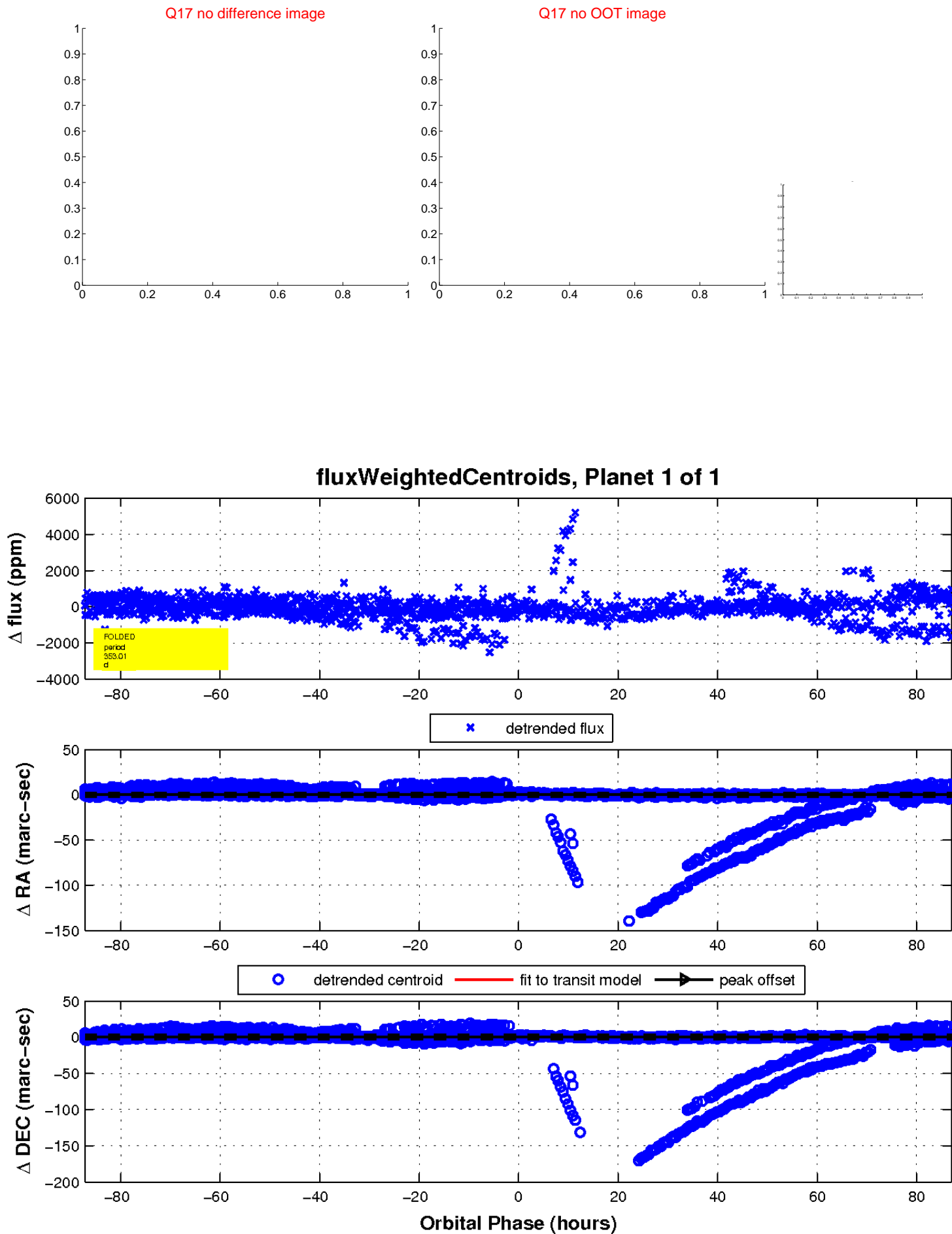
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.



UKIRT Image

