

# KIC 002439144

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002439144-01	OBS	No	211.070164	340.923584	1869.2	7.089	11.7	7.3	0.68	4739	2.93	0.54

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002439144-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—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.

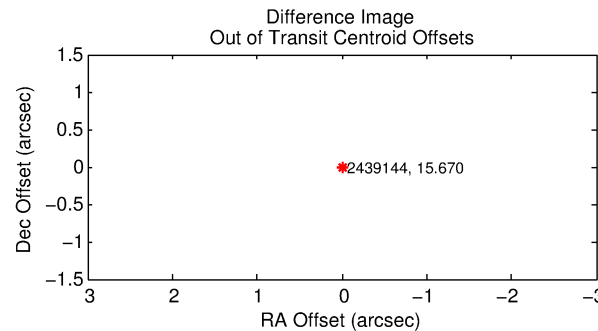
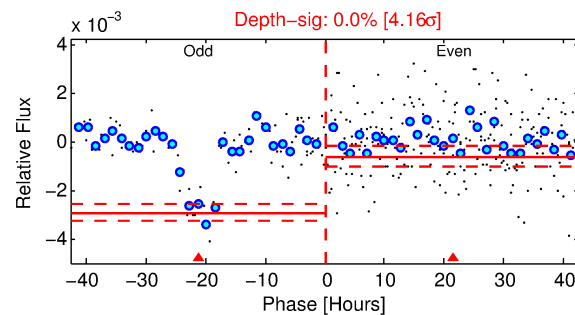
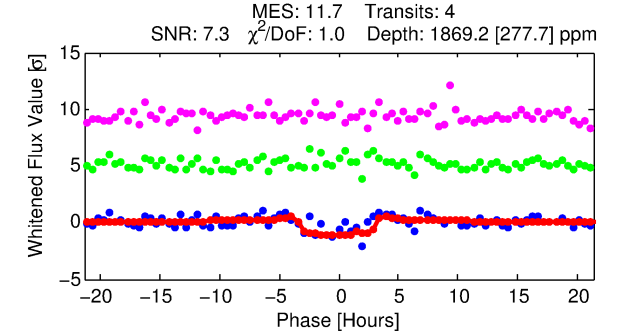
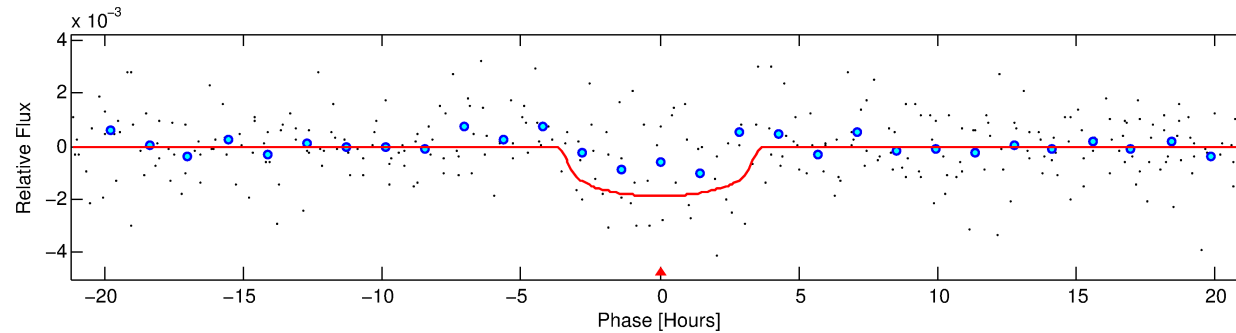
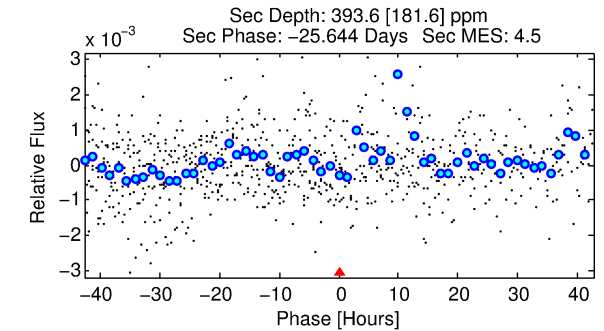
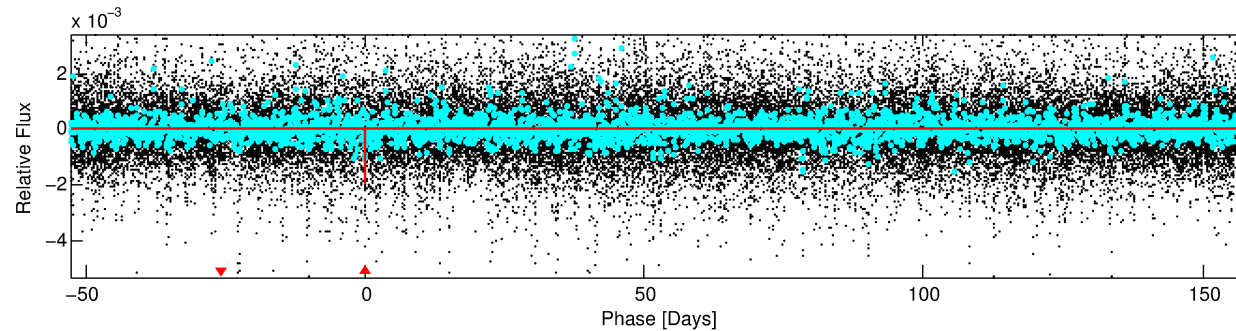
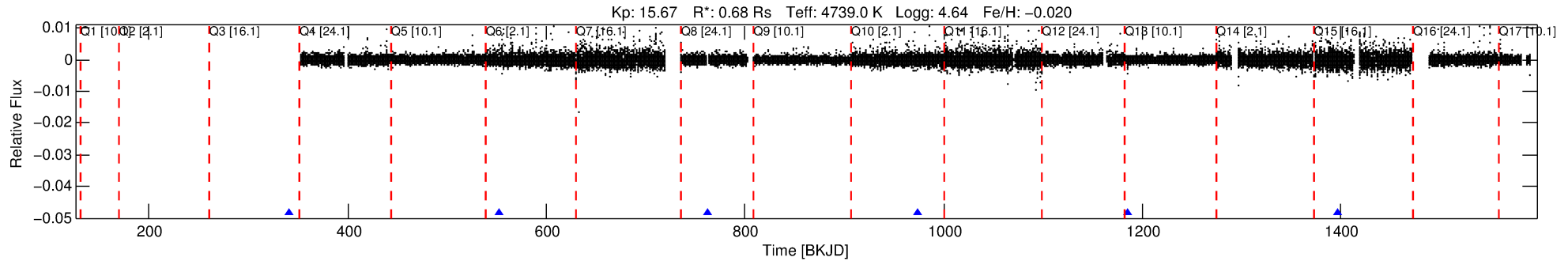
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 002439144-01

No Significant Match Found

# DV One-Page Summary

KIC: 2439144 Candidate: 1 of 1 Period: 211.070 d



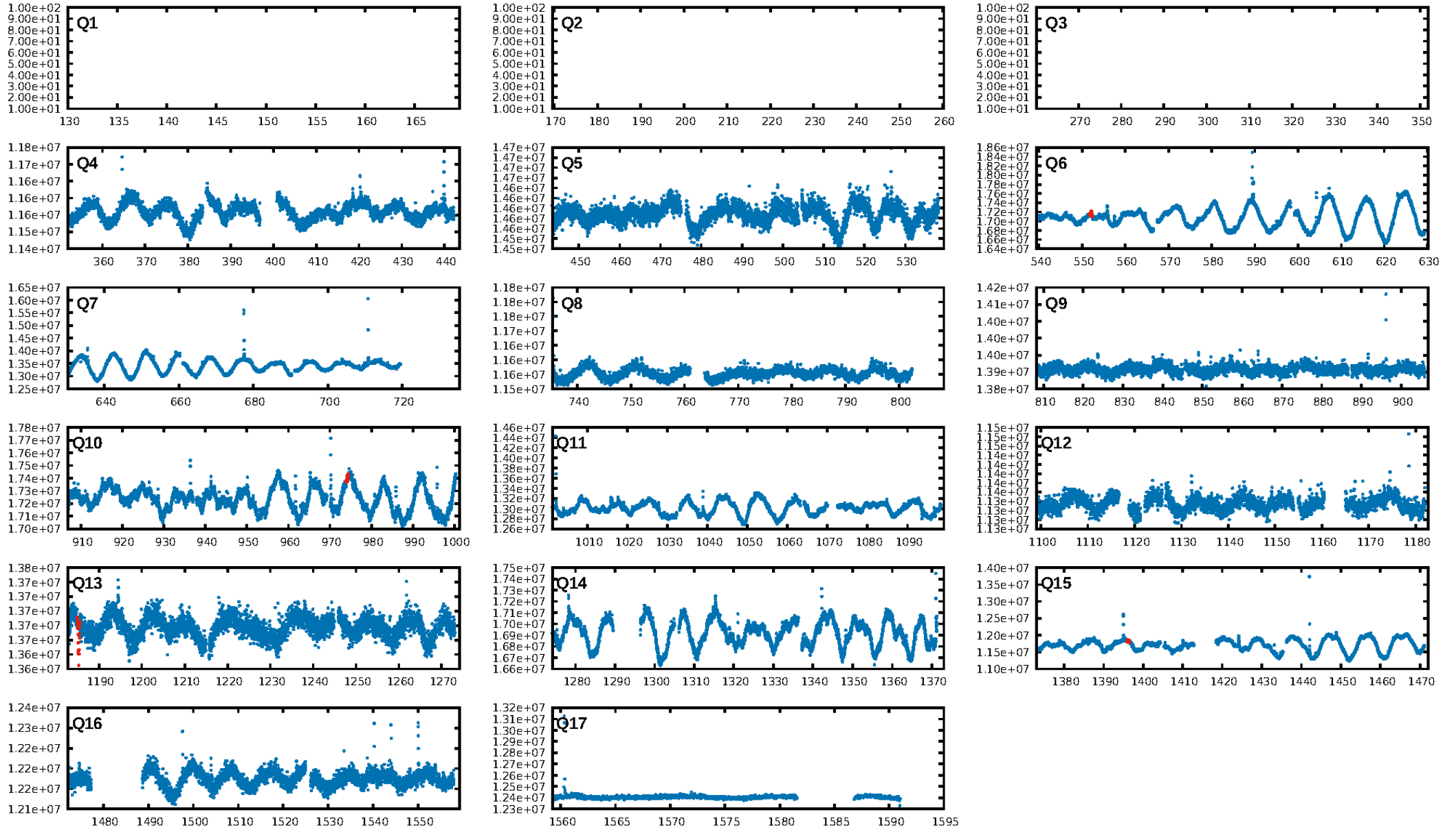
## DV Fit Results:

Period = 211.07016 [0.00508] d  
Epoch = 340.9236 [0.0177] BKJD  
Rp/R\* = 0.0393 [0.0538]  
a/R\* = 214.41 [916.10]  
b = 0.44 [8.05]  
Seff = 0.54 [0.10]  
Teq = 218 [10] K  
Rp = 2.93 [4.02] Re  
a = 0.6259 [0.0542] AU  
Ag = 9908.18 [27545.91] [0.36σ]  
Teffp = 3366 [2341] K [1.34σ]

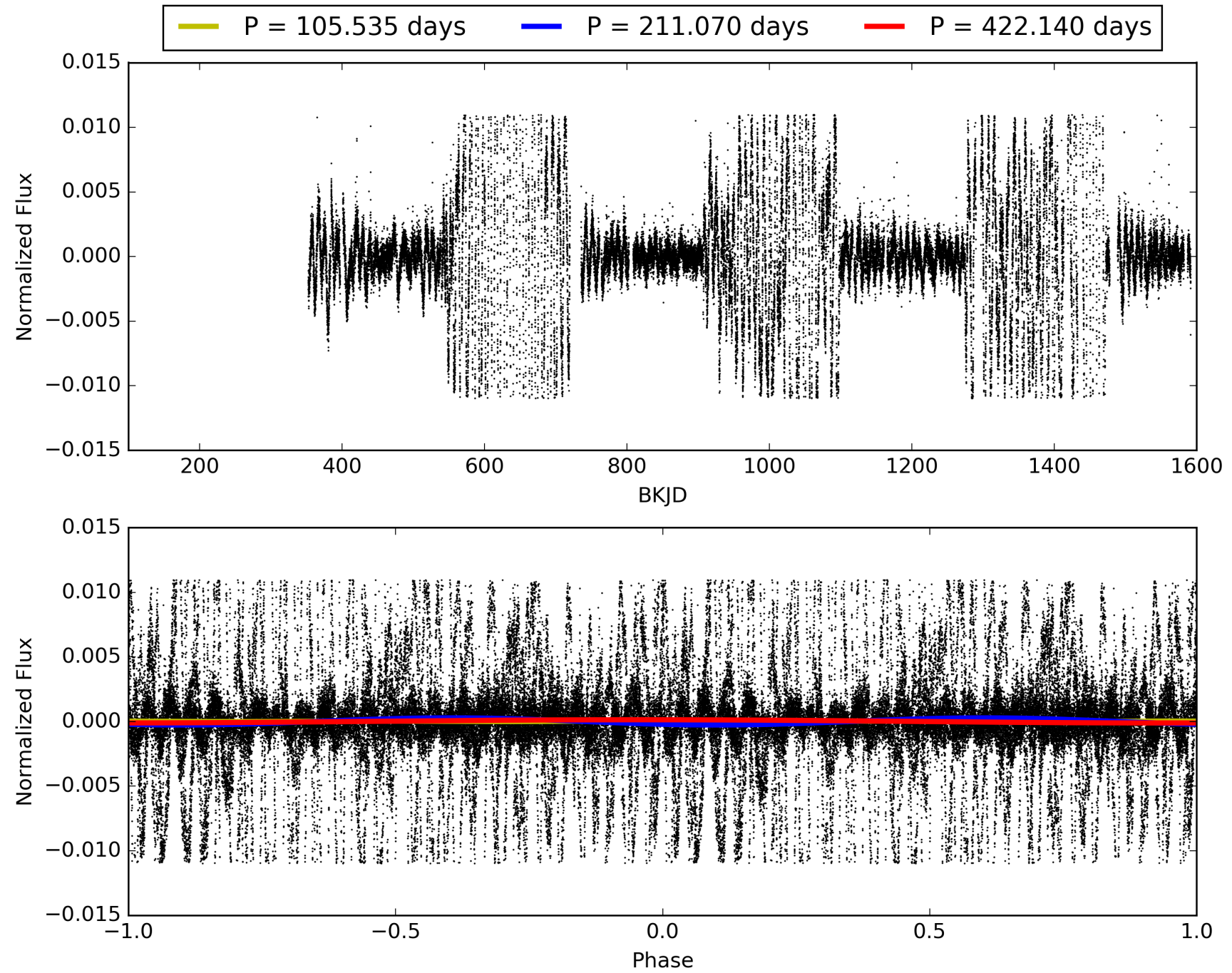
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 90.1%  
Bootstrap-pfa: 4.00e-16  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -43.45  
Centroid-sig: 1.2%  
Centroid-so: 2.749 arcsec [8.87σ]  
OotOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-rm: 2.058 arcsec [3.02σ]  
KicOffset-st: 1/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [2/2]

# TCE 002439144-01, PDC Light Curves

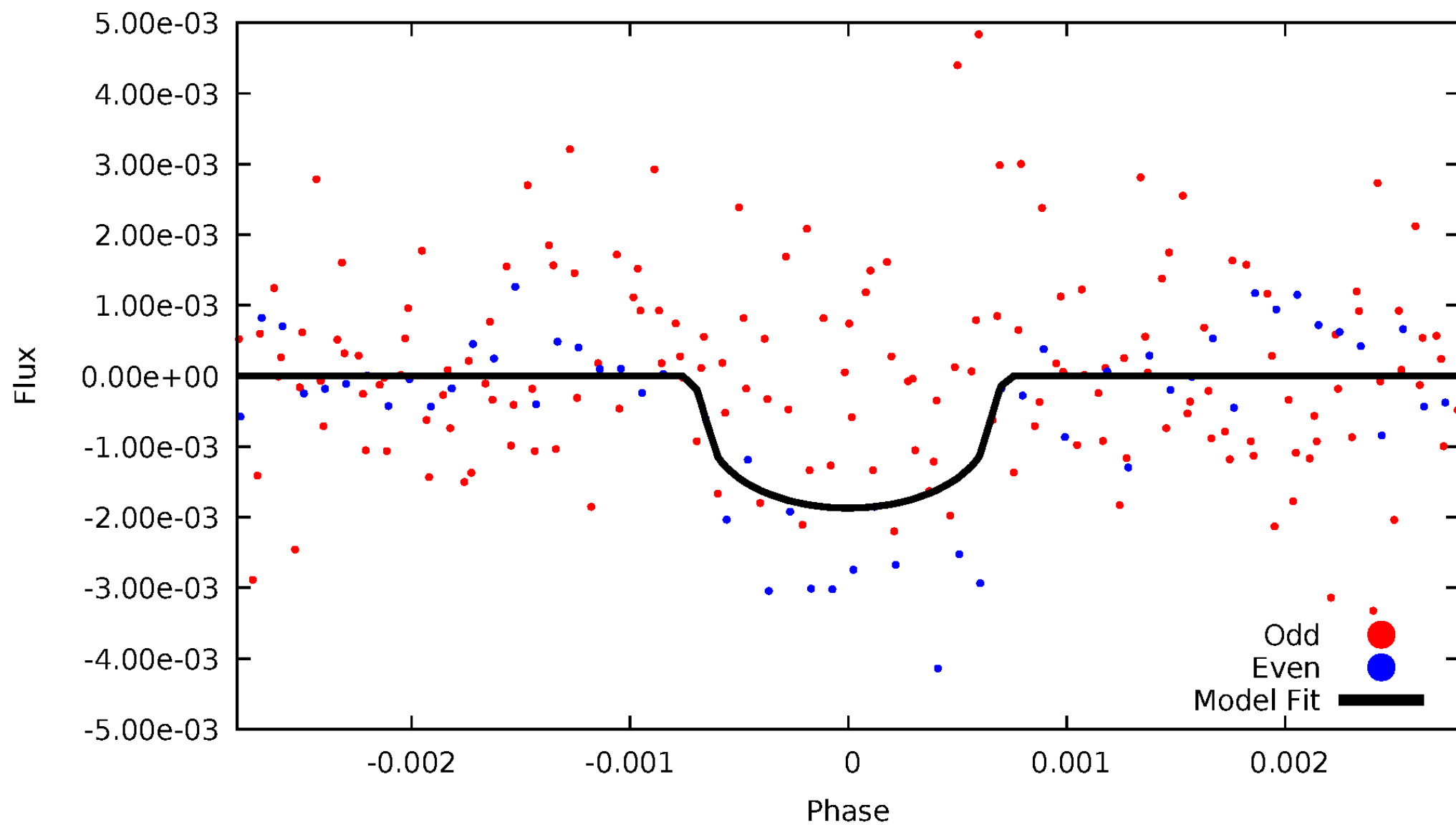


TCE 002439144-01



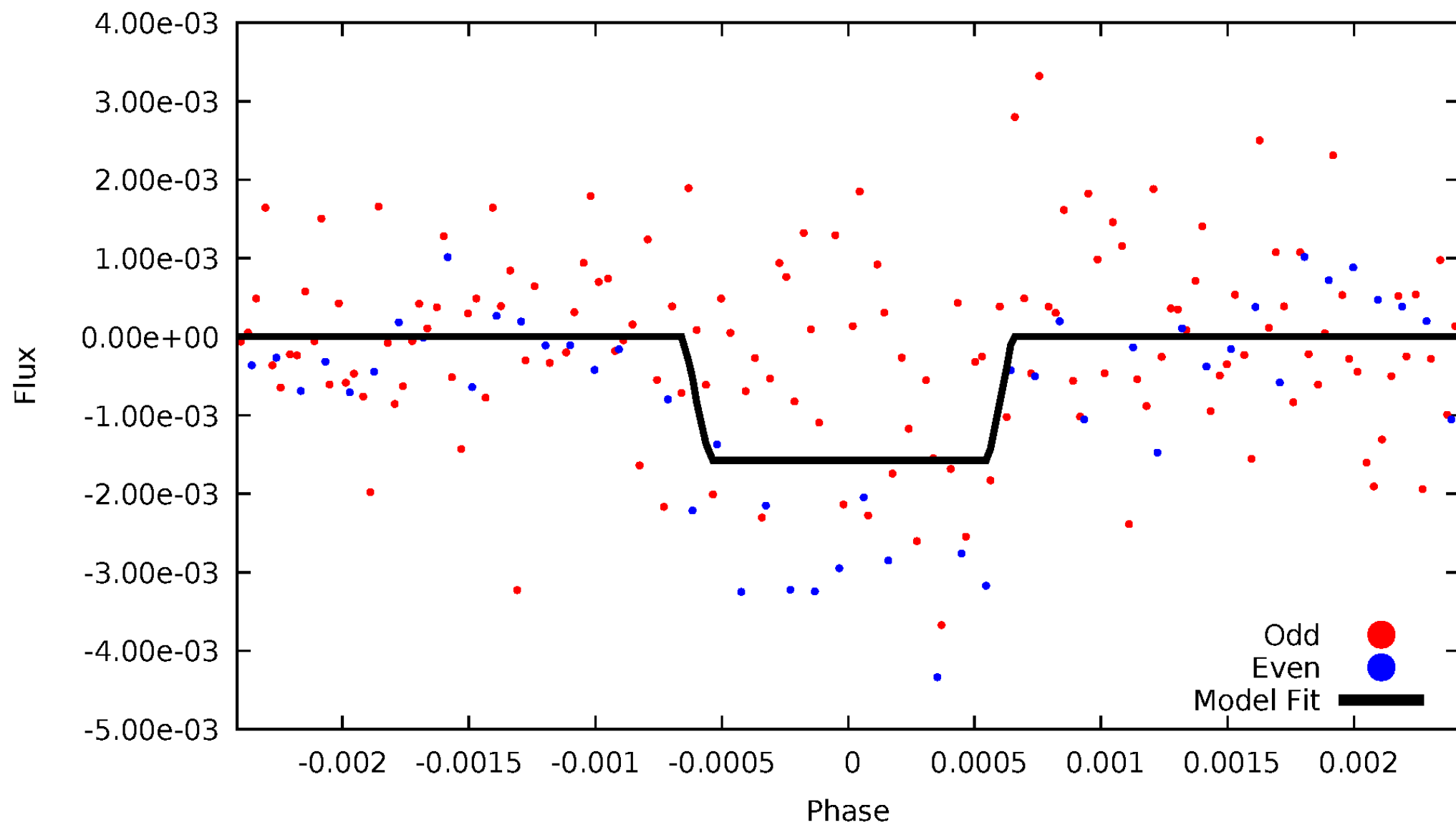
# DV Odd/Even

TCE 002439144-01



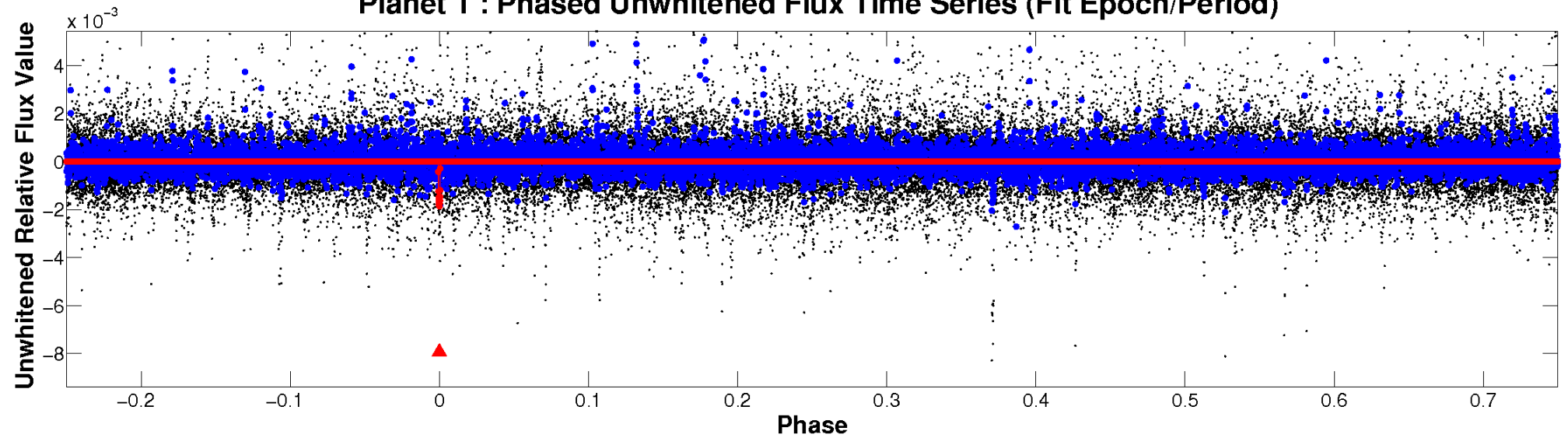
# ALT Odd/Even

TCE 002439144-01

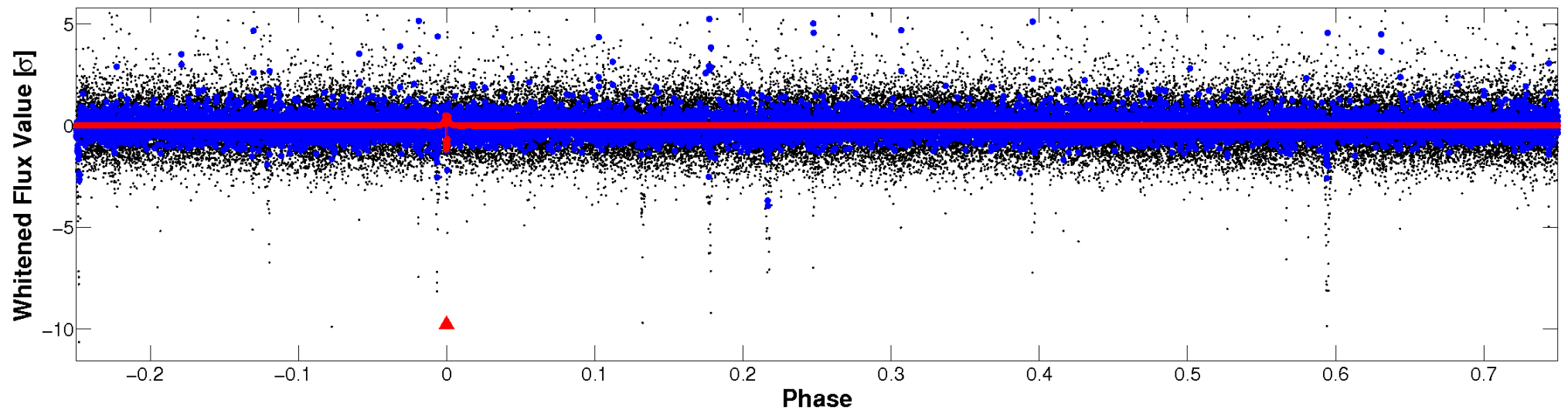


# Non-Whitened Vs. Whitened Light Curve

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

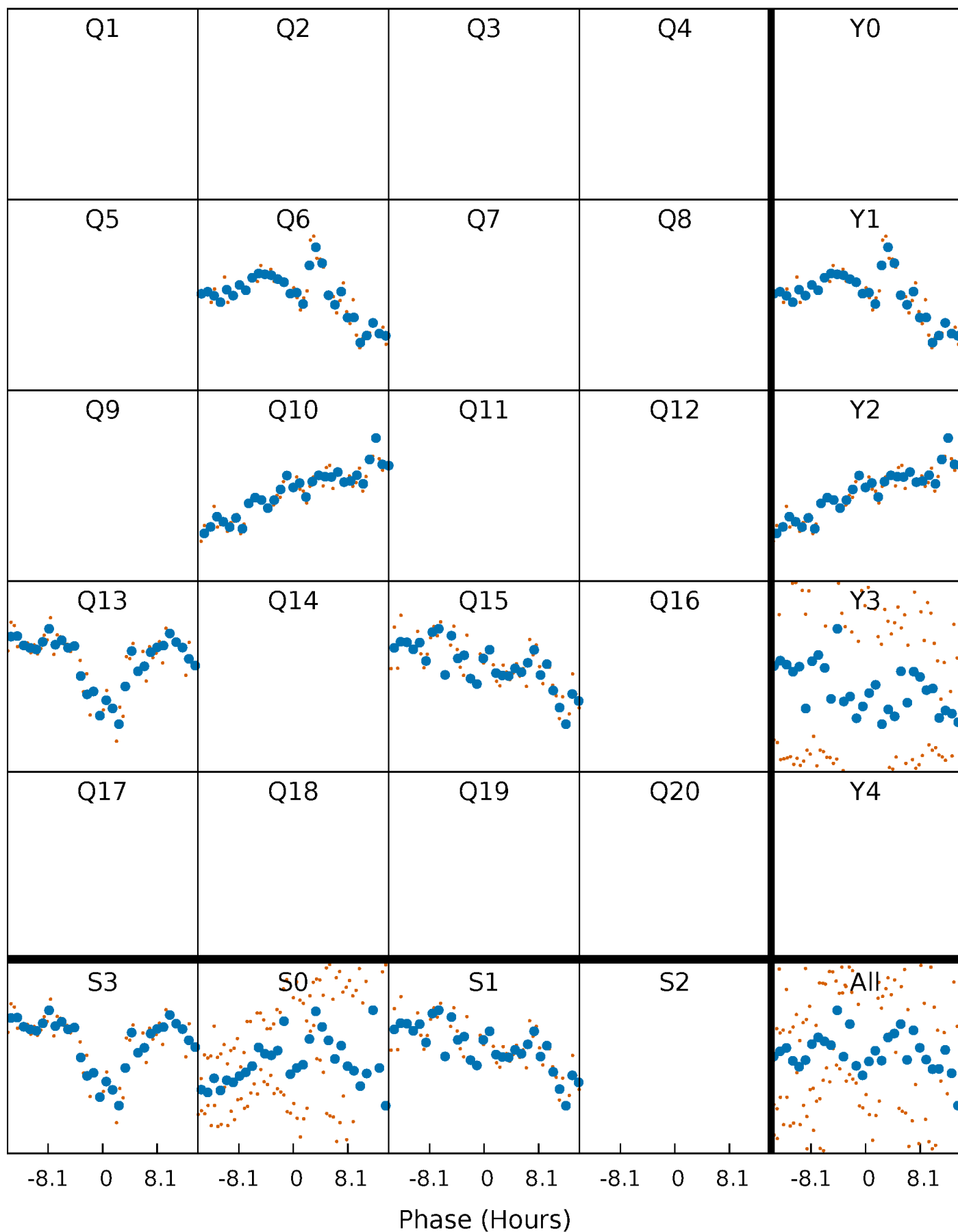


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

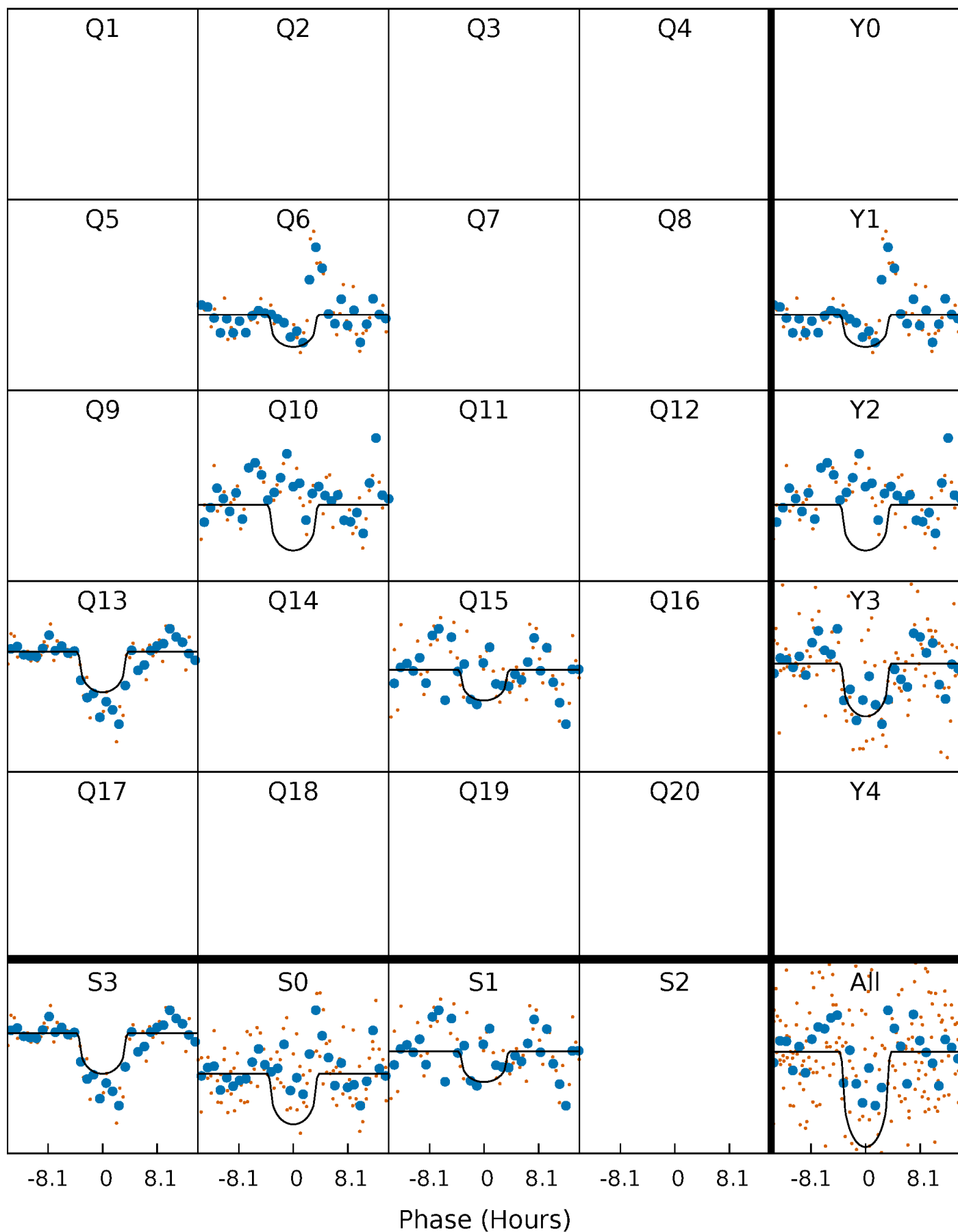
TCE 002439144-01 P=211.070164 Days  $T_0=340.923584$  (BKJD)





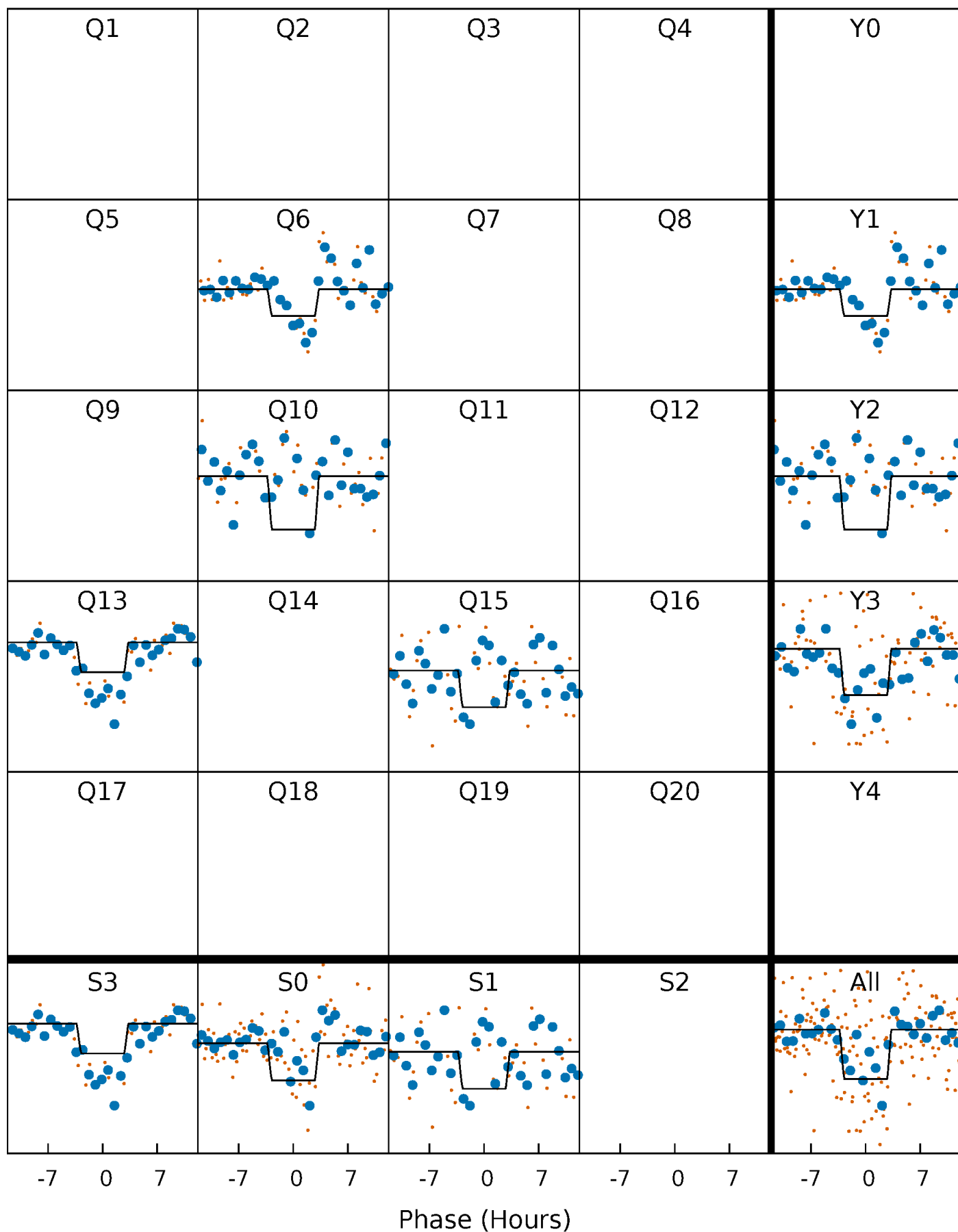
# DV Quarter-Phased Transit Curves

TCE 002439144-01 P=211.070164 Days  $T_0=340.923584$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

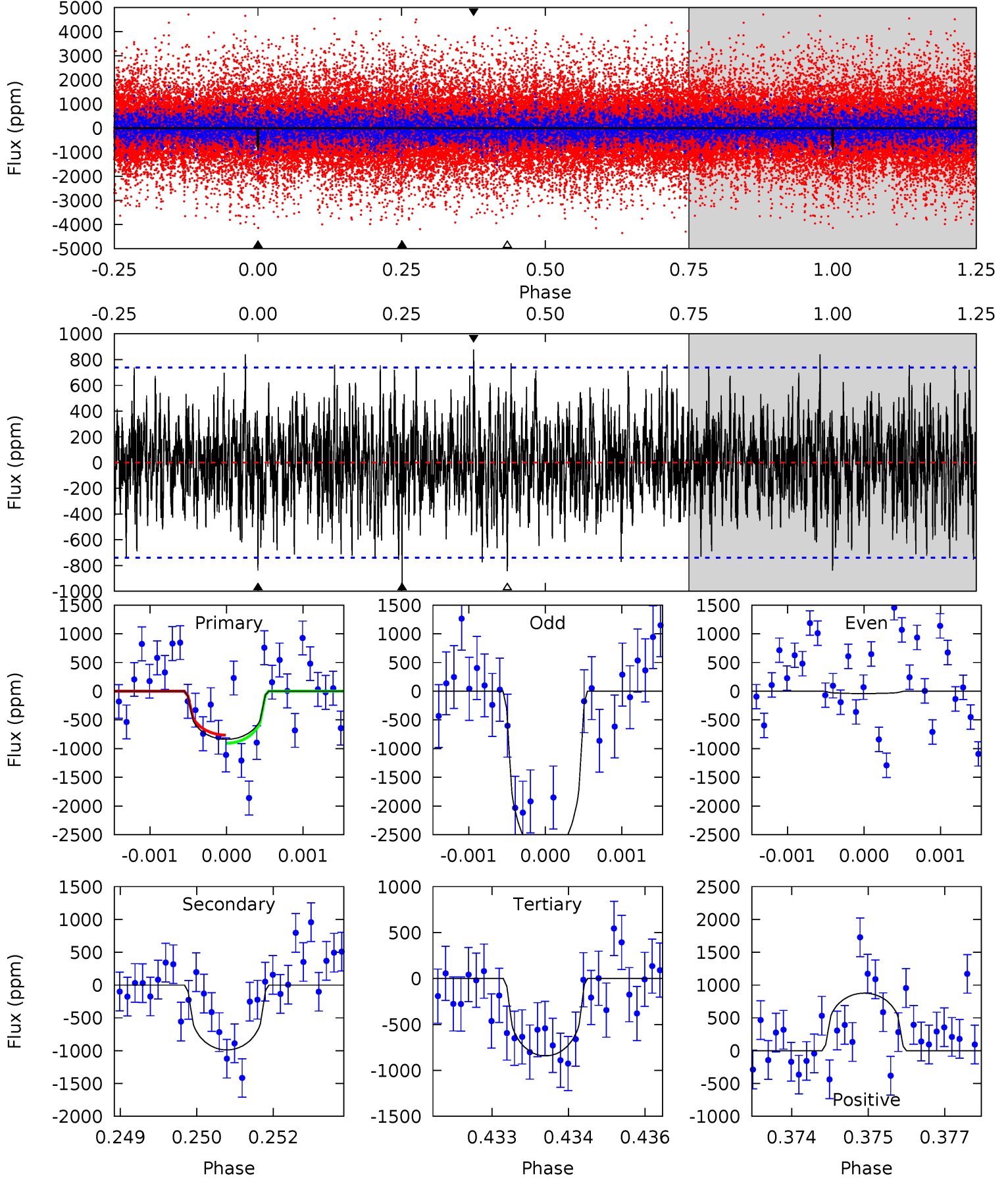
TCE 002439144-01 P=211.085486 Days  $T_0=340.874789$  (BKJD)



# DV Model-Shift Uniqueness Test

002439144-01, P = 211.070164 Days, E = 340.923584 Days

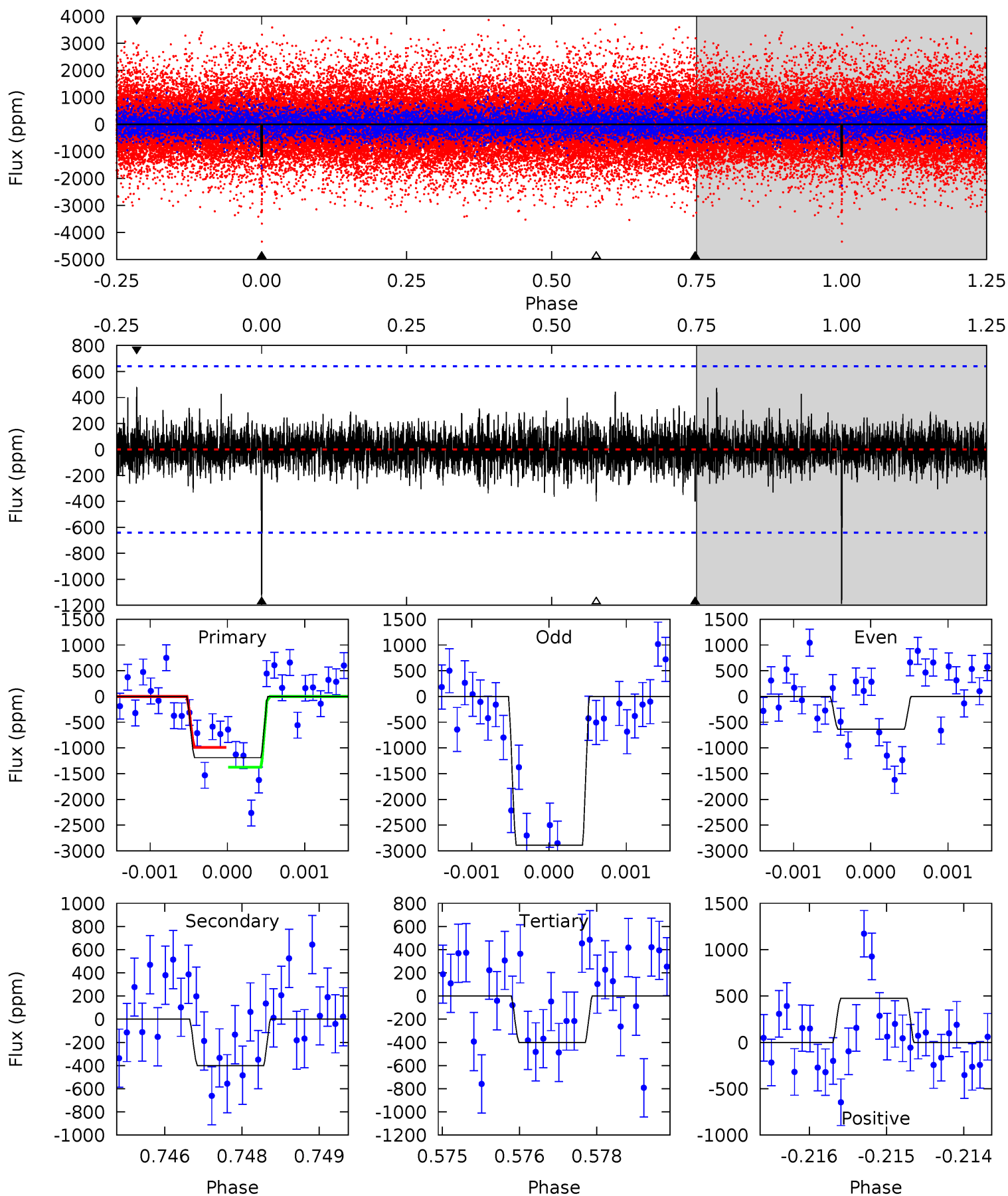
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.13	7.22	6.15	6.40	5.39	3.20	1.82	-0.03	-0.28	1.06	0.81	9.57	2.72	0.47	0.52



# Alt Model-Shift Uniqueness Test

002439144-01, P = 211.085486 Days, E = 340.874789 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
10.0	3.39	3.39	4.01	5.41	3.23	0.83	6.65	6.02	0.00	-0.62	8.37	1.30	0.29	1.64



### Stellar Parameters For KIC 002439144

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4739^{+167}_{-167}$	$4.636^{+0.024}_{-0.060}$	$-0.020^{+0.300}_{-0.300}$	$0.682^{+0.075}_{-0.046}$	$0.763^{+0.051}_{-0.077}$	$3.390^{+0.418}_{-0.754}$
	+4%/-4%	+1%/-1%	+1500%/-1500%	+11%/-7%	+7%/-10%	+12%/-22%
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 002439144-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-988 \pm 137$	$4.35^{+3.81}_{-2.93}$	$309^{+12}_{-13}$	$3823^{+2205}_{-705}$	$11670^{+95549}_{-8563}$
Alt.	$-401 \pm 118$	$4.52^{+3.40}_{-2.95}$	$308^{+12}_{-12}$	$3272^{+1368}_{-546}$	$4354^{+28359}_{-3063}$

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

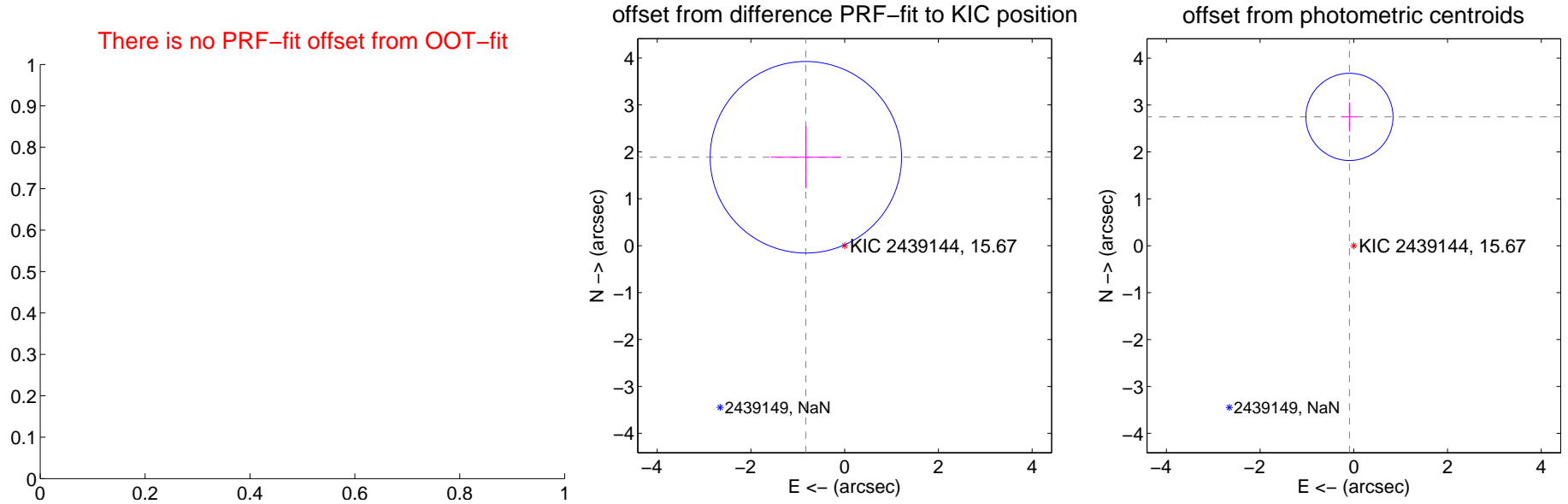
## DV Centroid Data

Supplemental centroid analysis for 002439144-01. Kepler magnitude: 15.67. Transit SNR 7.31

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	$2.058 \pm 0.680$	3.02	$0.828 \pm 0.752$	$1.884 \pm 0.666$
photometric centroid source offset	$2.75 \pm 0.31$	8.87	$0.09 \pm 0.18$	$2.75 \pm 0.31$

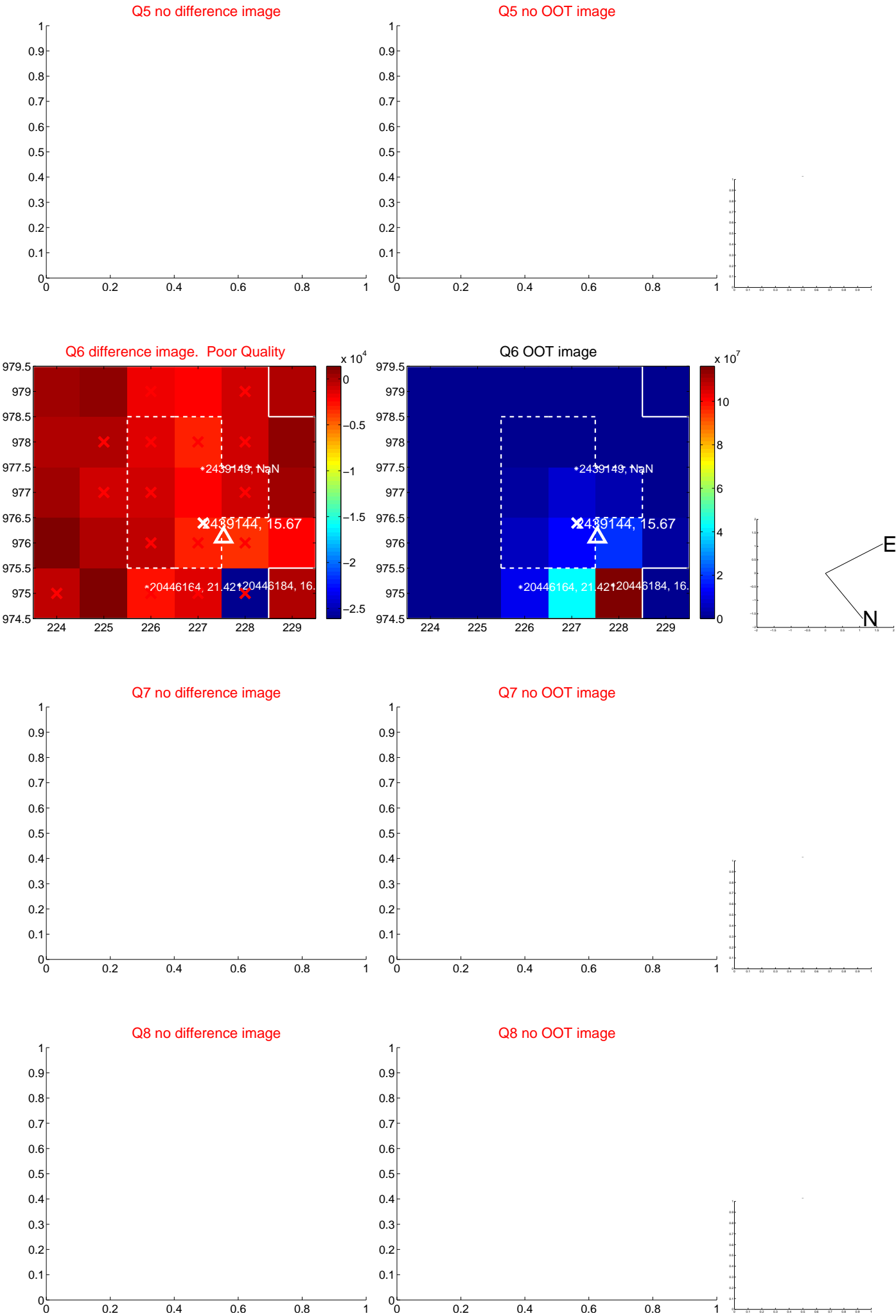


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

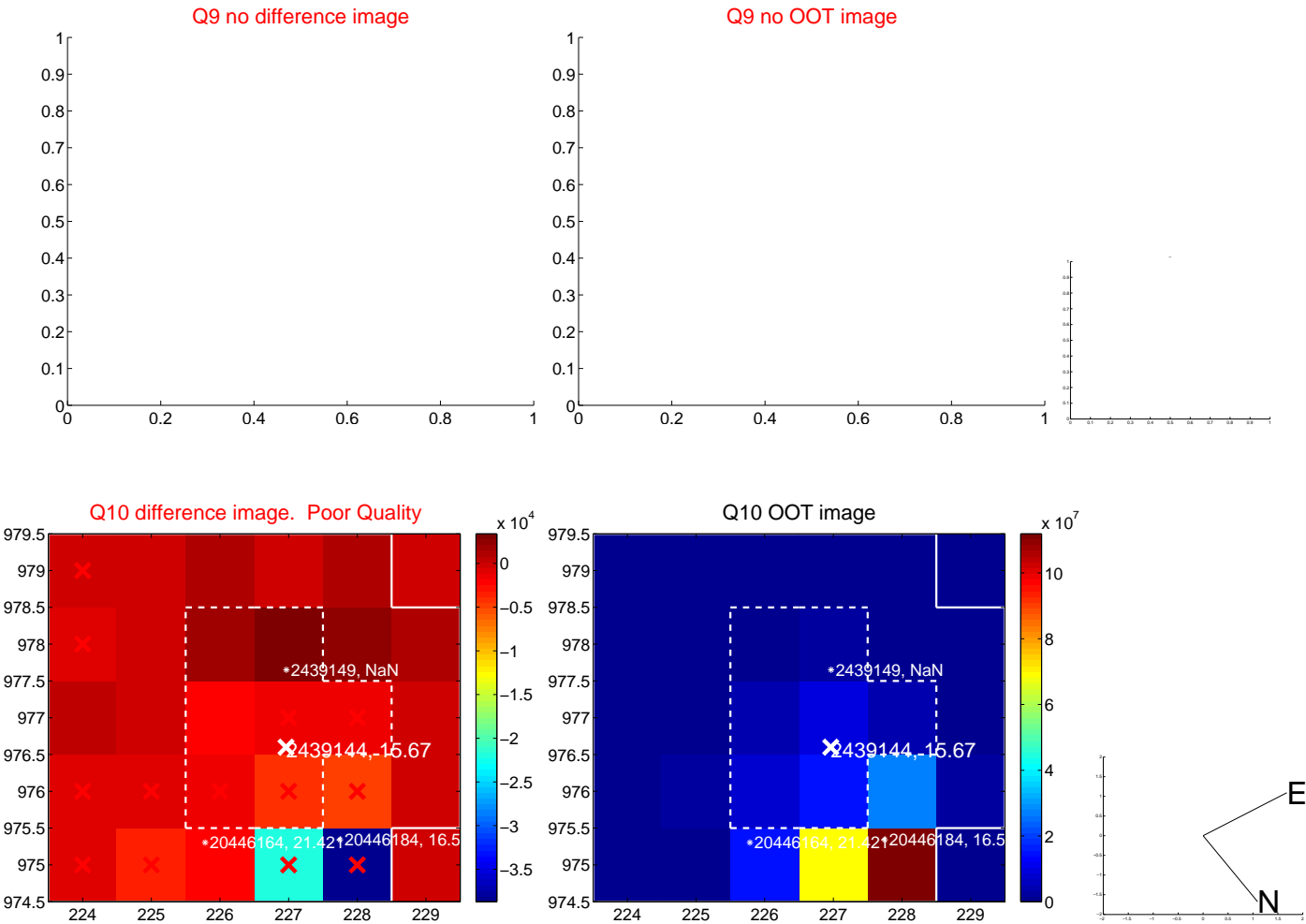


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





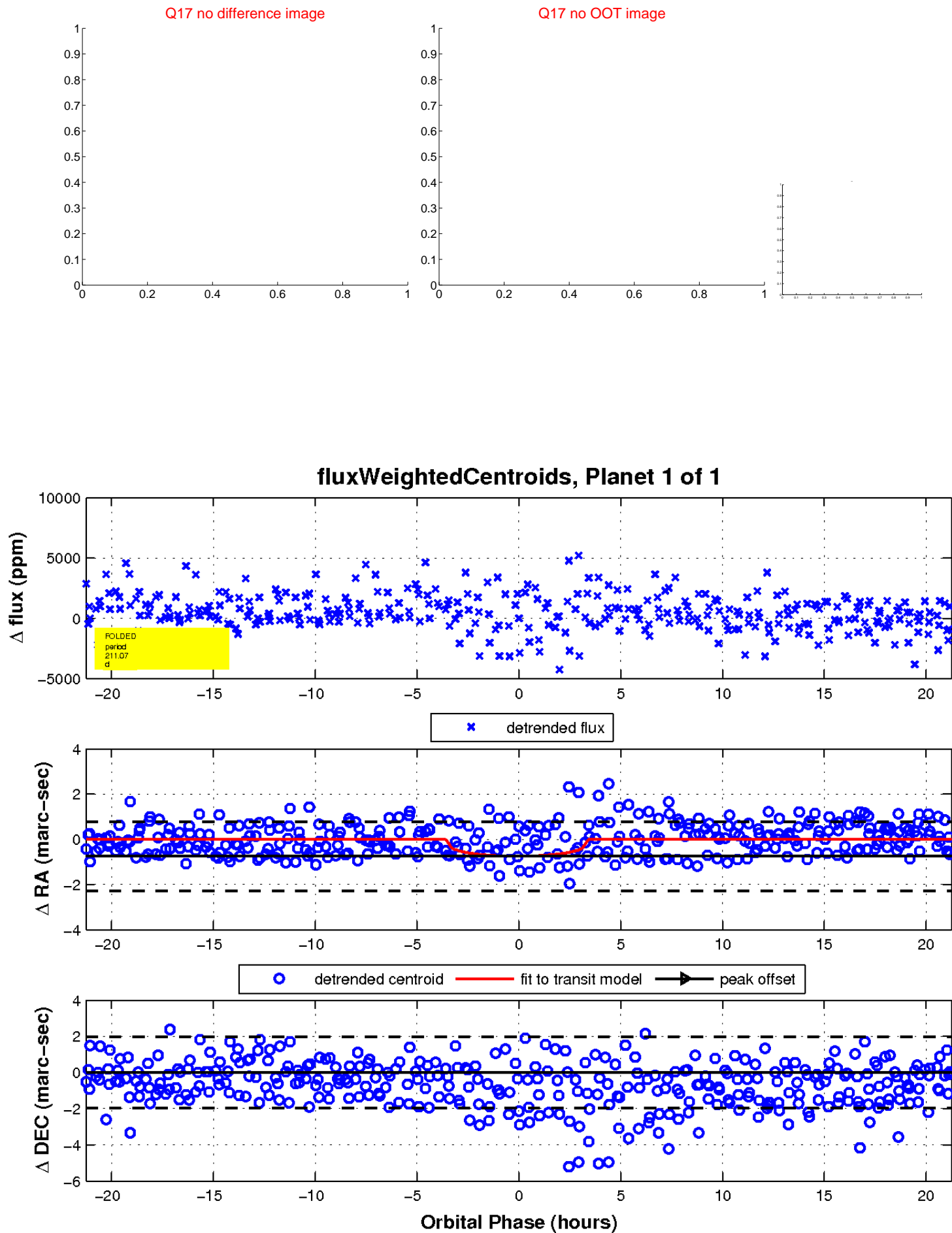
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

