

# KIC 008039128

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008039128-01	OBS	No	367.236127	236.388850	1402.0	24.767	8.0	10.3	0.91	5925	6.06	0.91

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008039128-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—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.

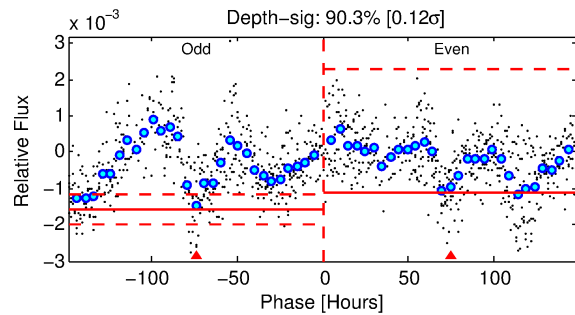
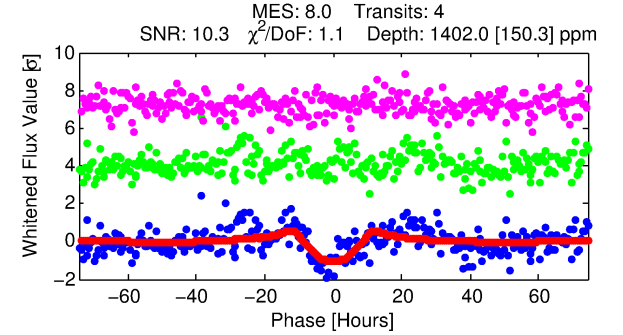
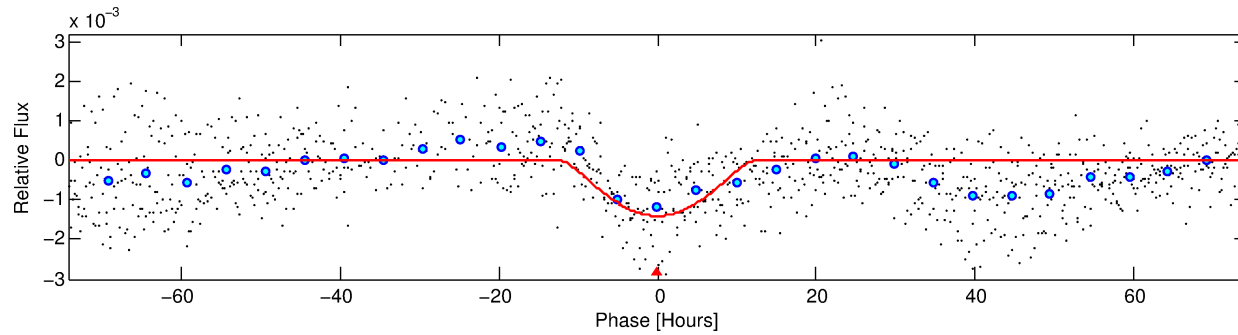
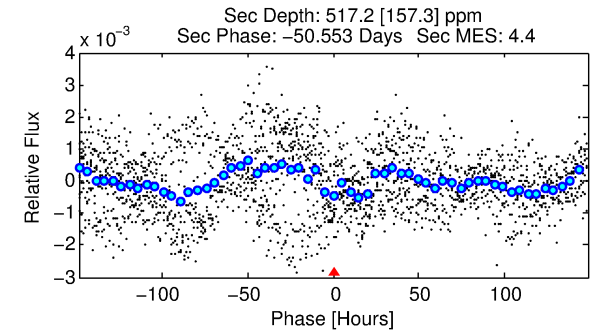
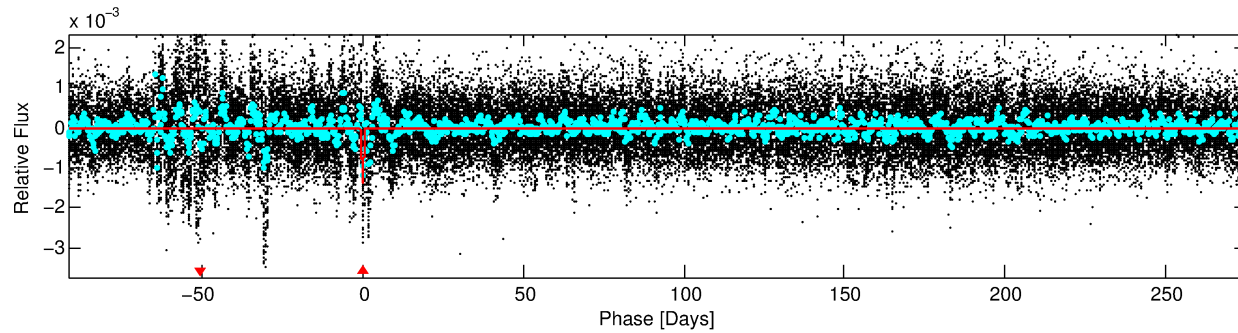
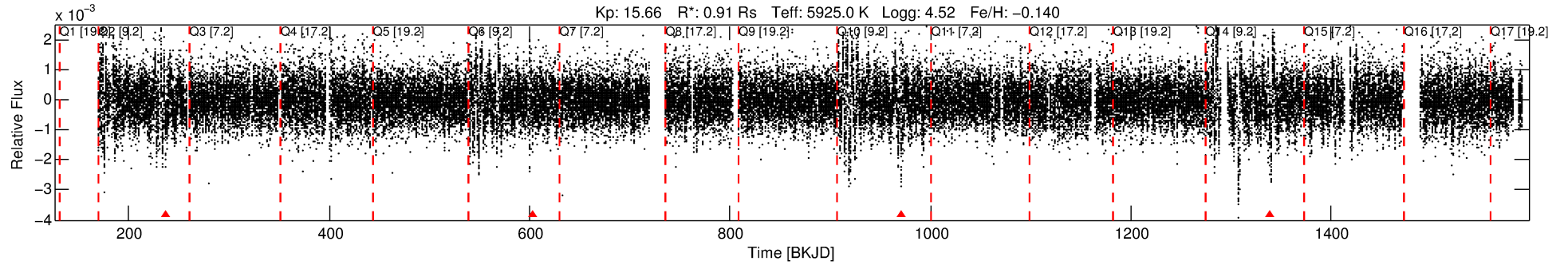
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008039128-01

No Significant Match Found

# DV One-Page Summary

KIC: 8039128 Candidate: 1 of 1 Period: 367.236 d



## DV Fit Results:

Period = 367.23613 [0.02019] d  
Epoch = 236.3889 [0.0366] BKJD  
Rp/R\* = 0.0610 [0.1008]  
a/R\* = 42.29 [17.75]  
b = 0.99 [0.16]  
Seff = 0.91 [0.36]  
Teq = 249 [25] K  
Rp = 6.06 [10.17] Re  
a = 1.0024 [0.2565] AU  
Ag = 7788.10 [25998.37] [0.30σ]  
Teffp = 3617 [3002] K [1.12σ]

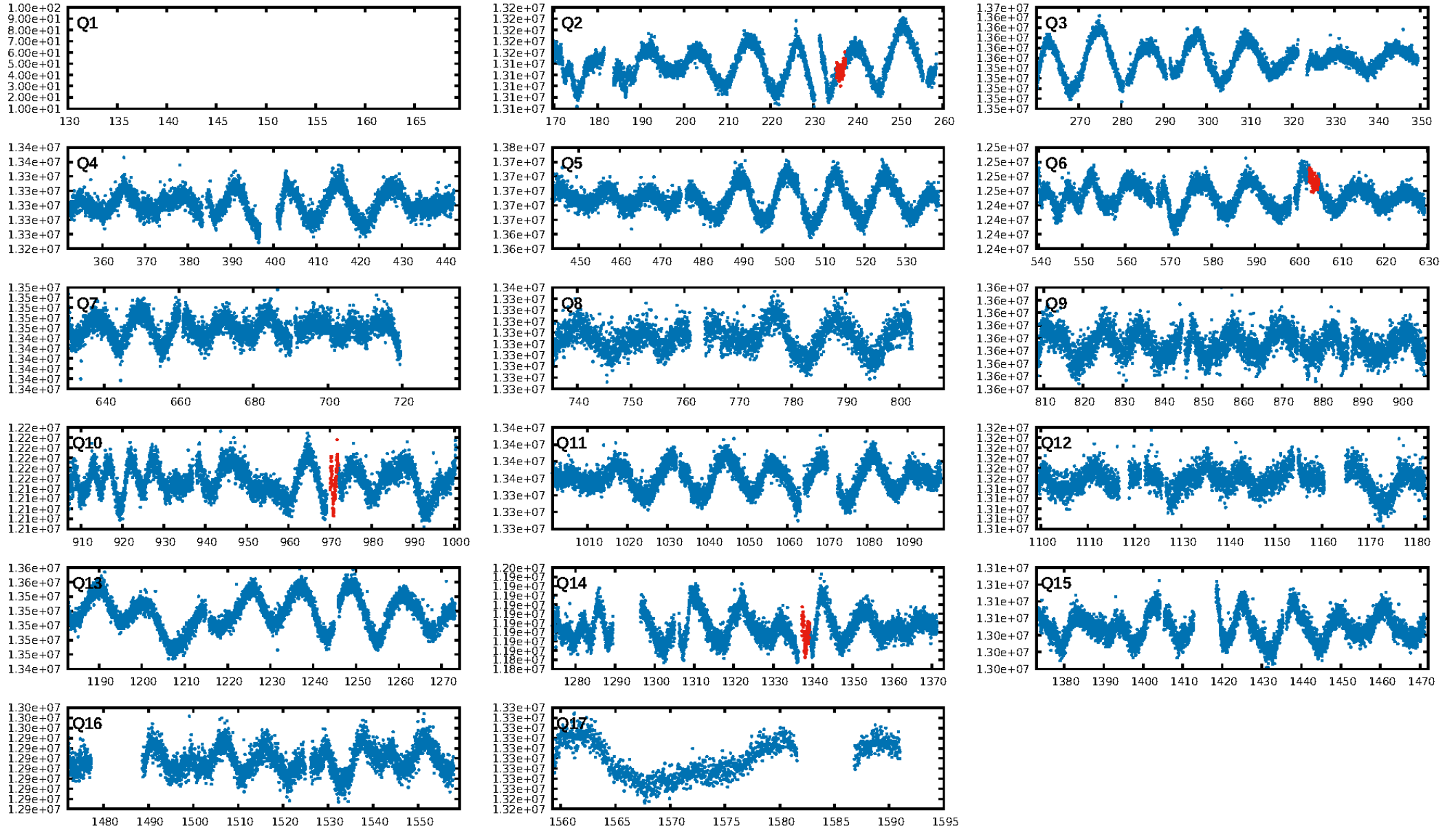
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 99.9%  
Bootstrap-pfa: 1.27e-09  
RollingBand-fgt: 0.00 [0/4]  
GhostDiagnostic-chr: 0.3785  
Centroid-sig: 0.0%  
Centroid-so: 4.886 arcsec [3.31σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [2/2]

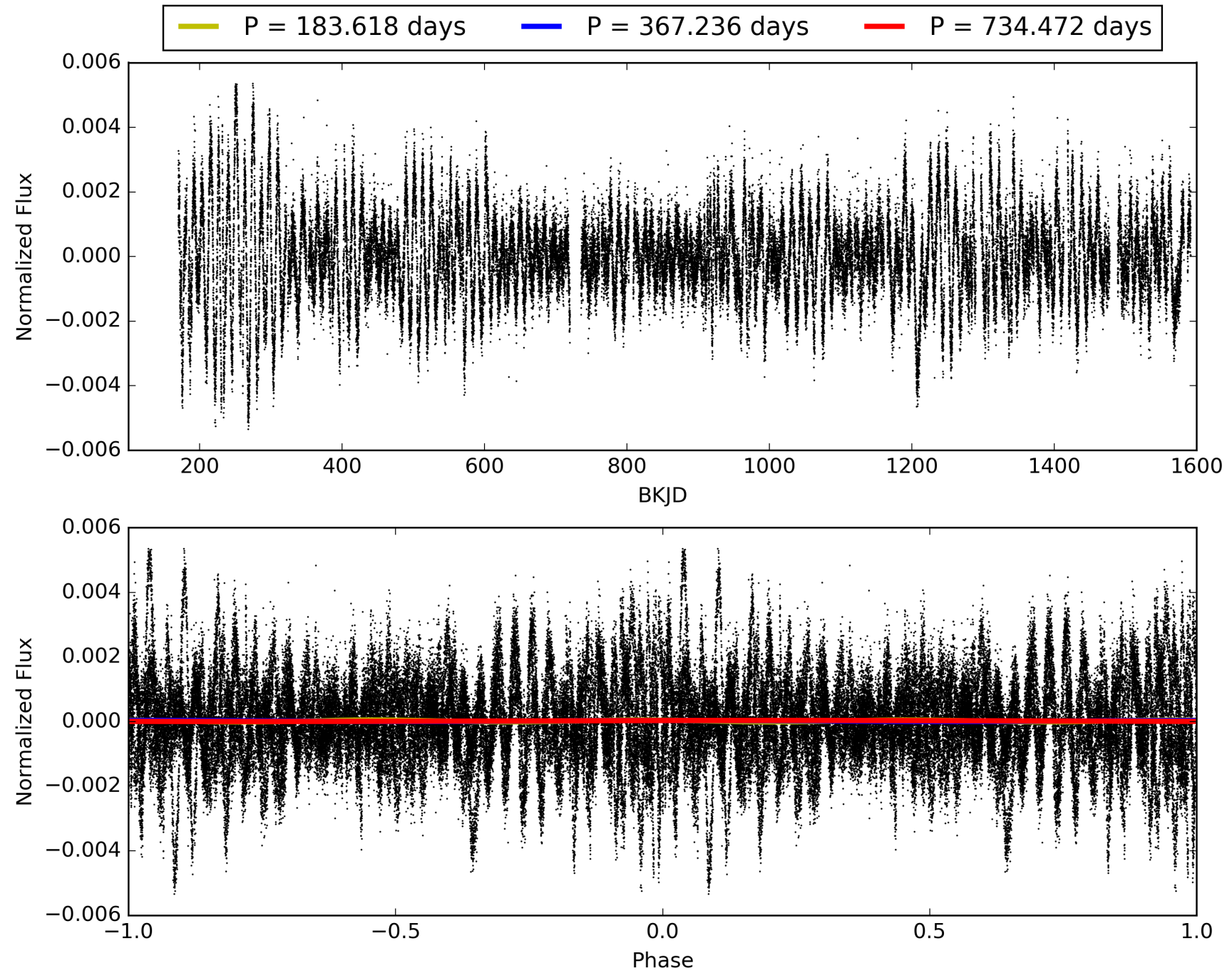
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:17:40 Z

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

# TCE 008039128-01, PDC Light Curves

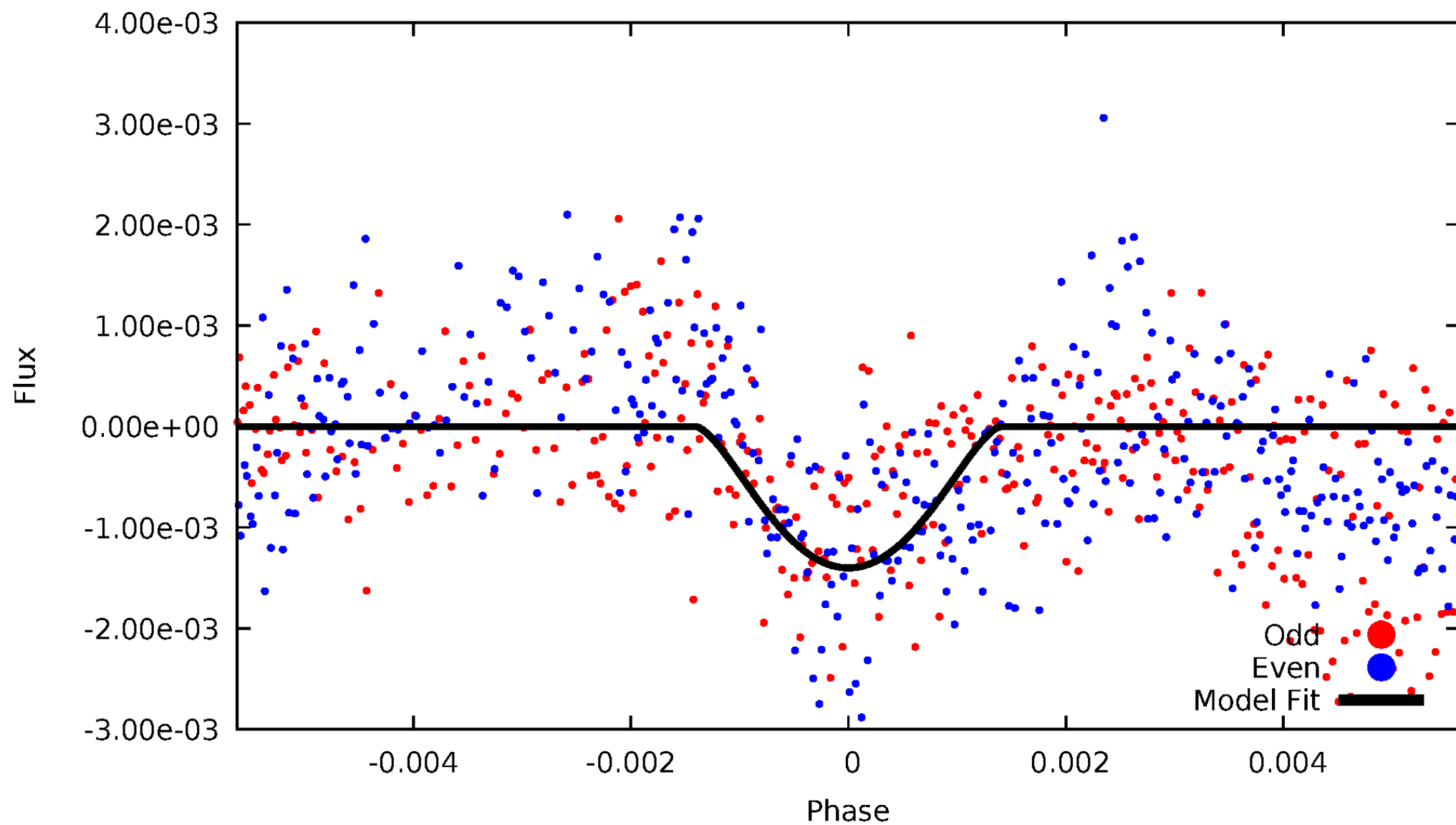


TCE 008039128-01



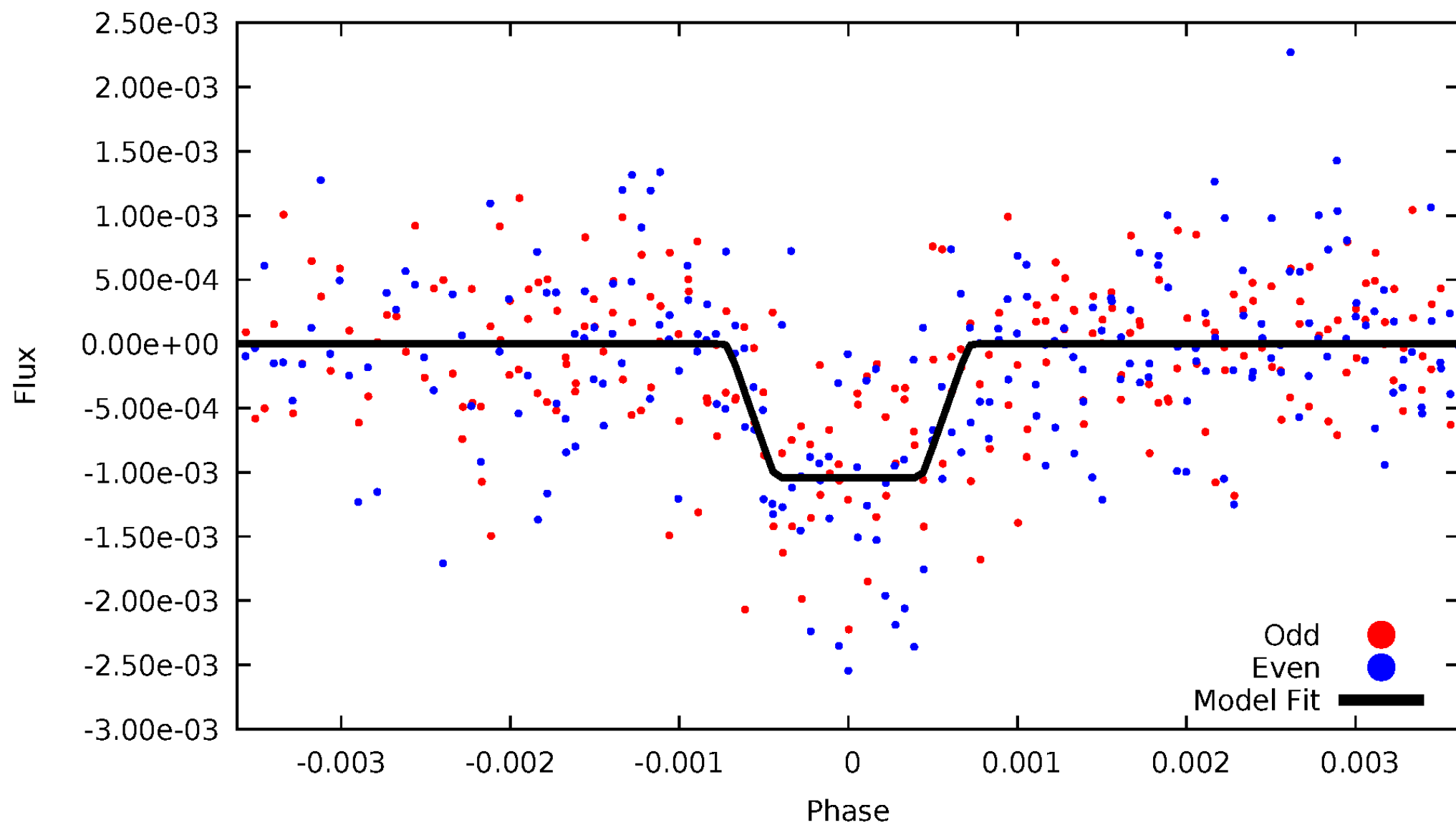
# DV Odd/Even

TCE 008039128-01



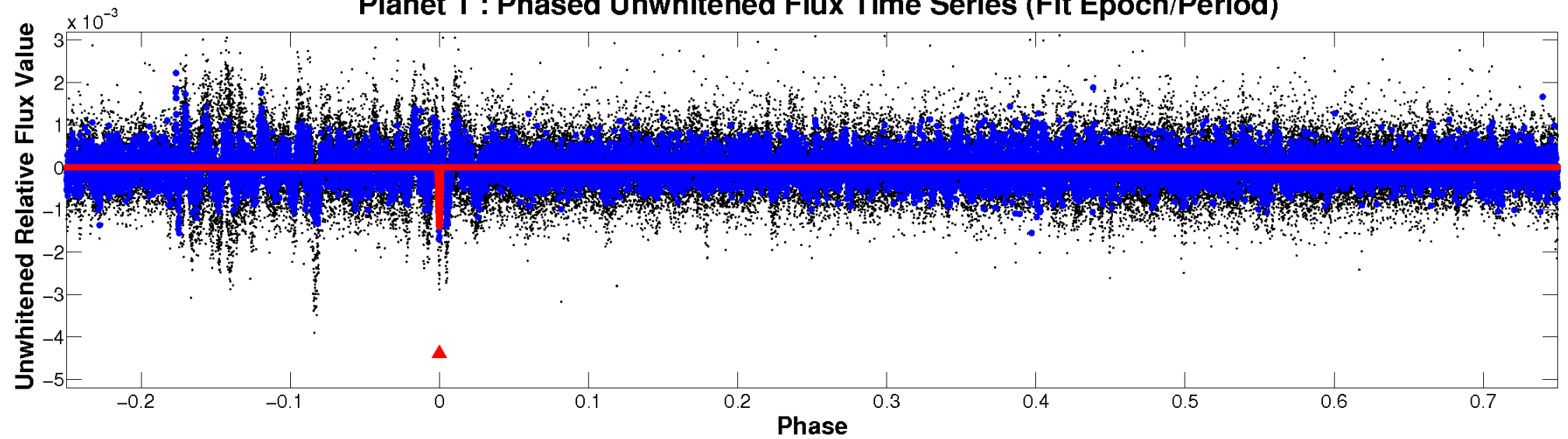
# ALT Odd/Even

TCE 008039128-01

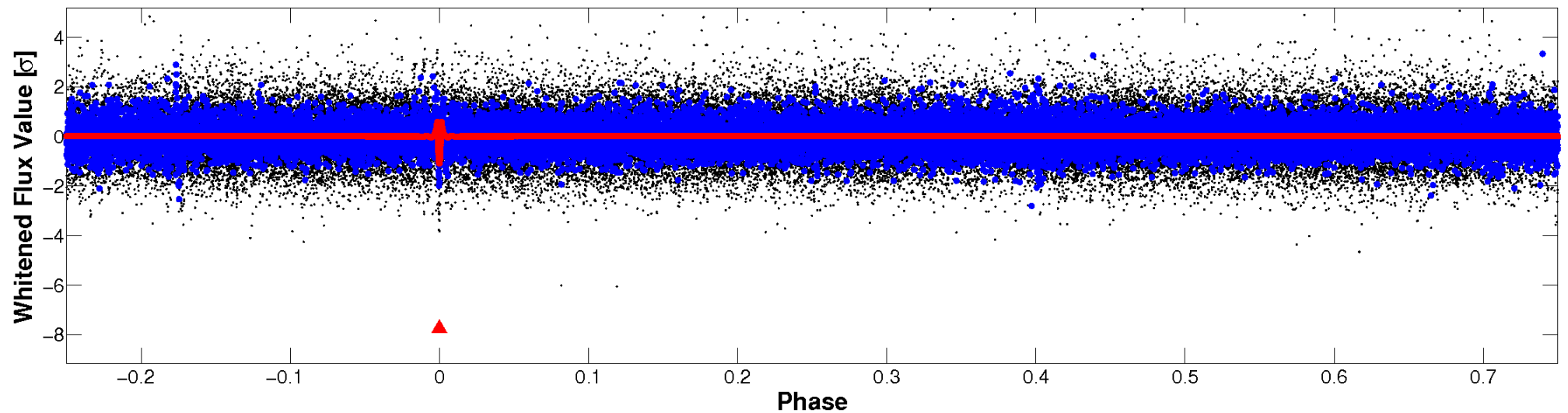


# Non-Whitened Vs. Whitened Light Curve

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



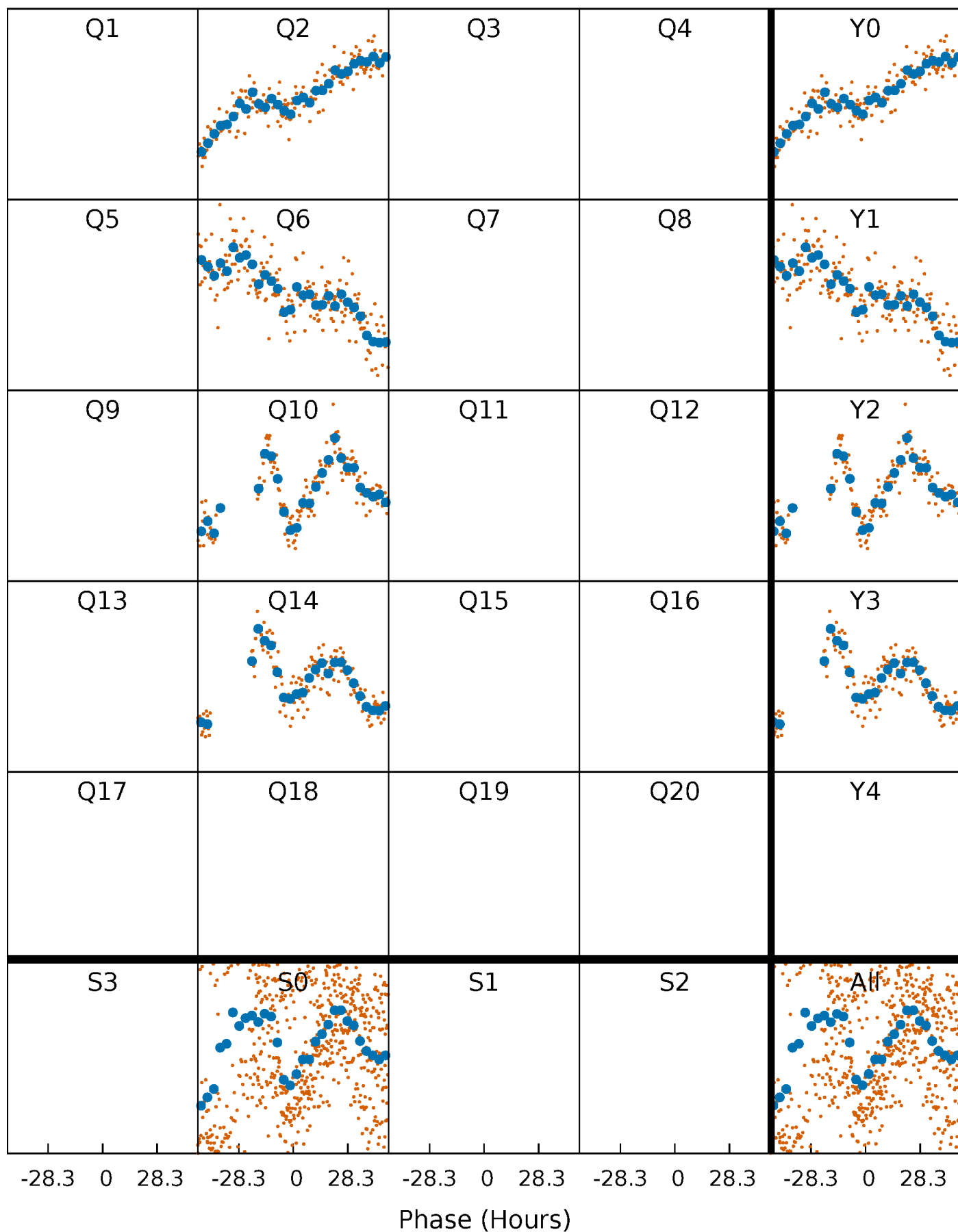
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

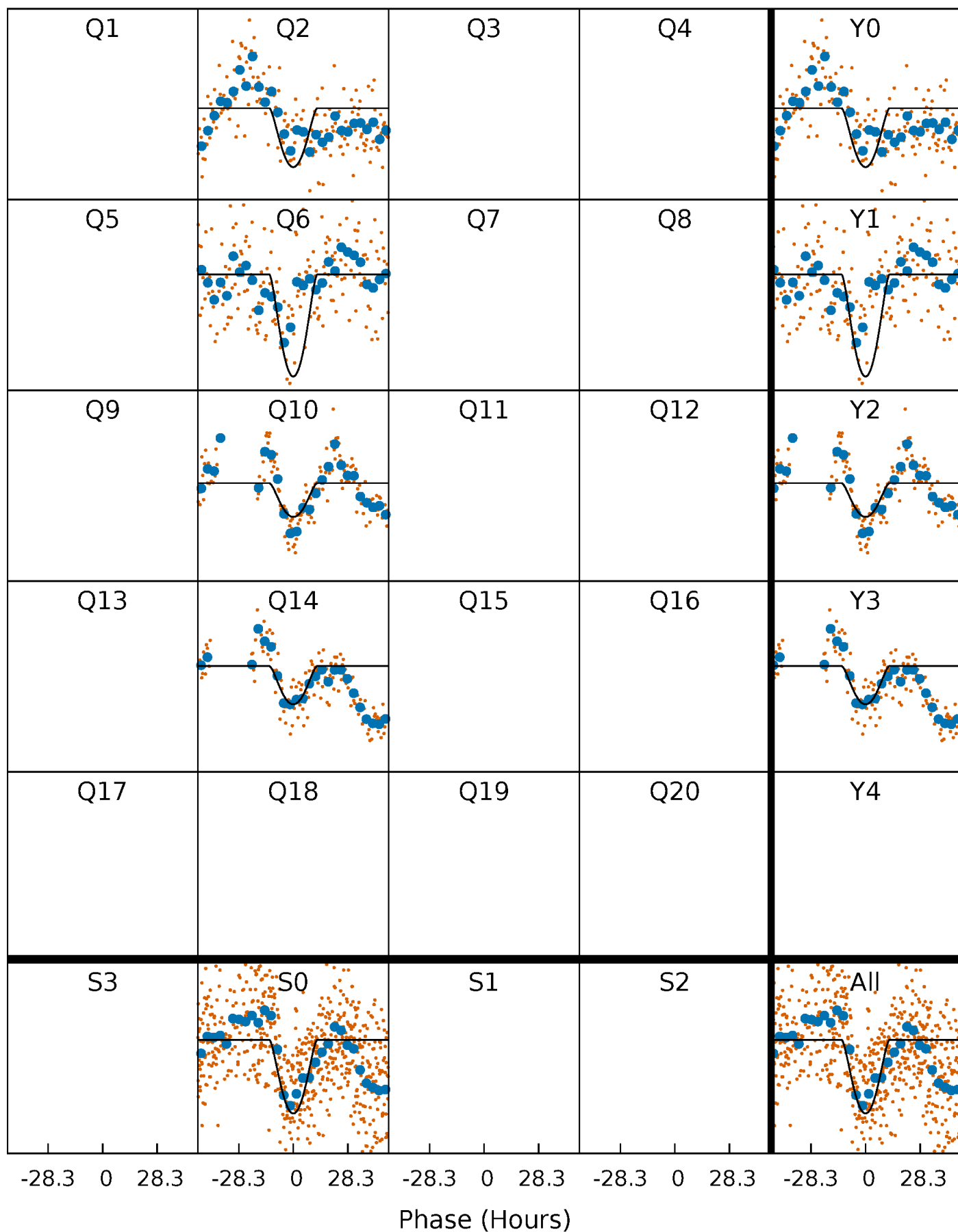
TCE 008039128-01 P=367.236127 Days  $T_0=236.388850$  (BKJD)





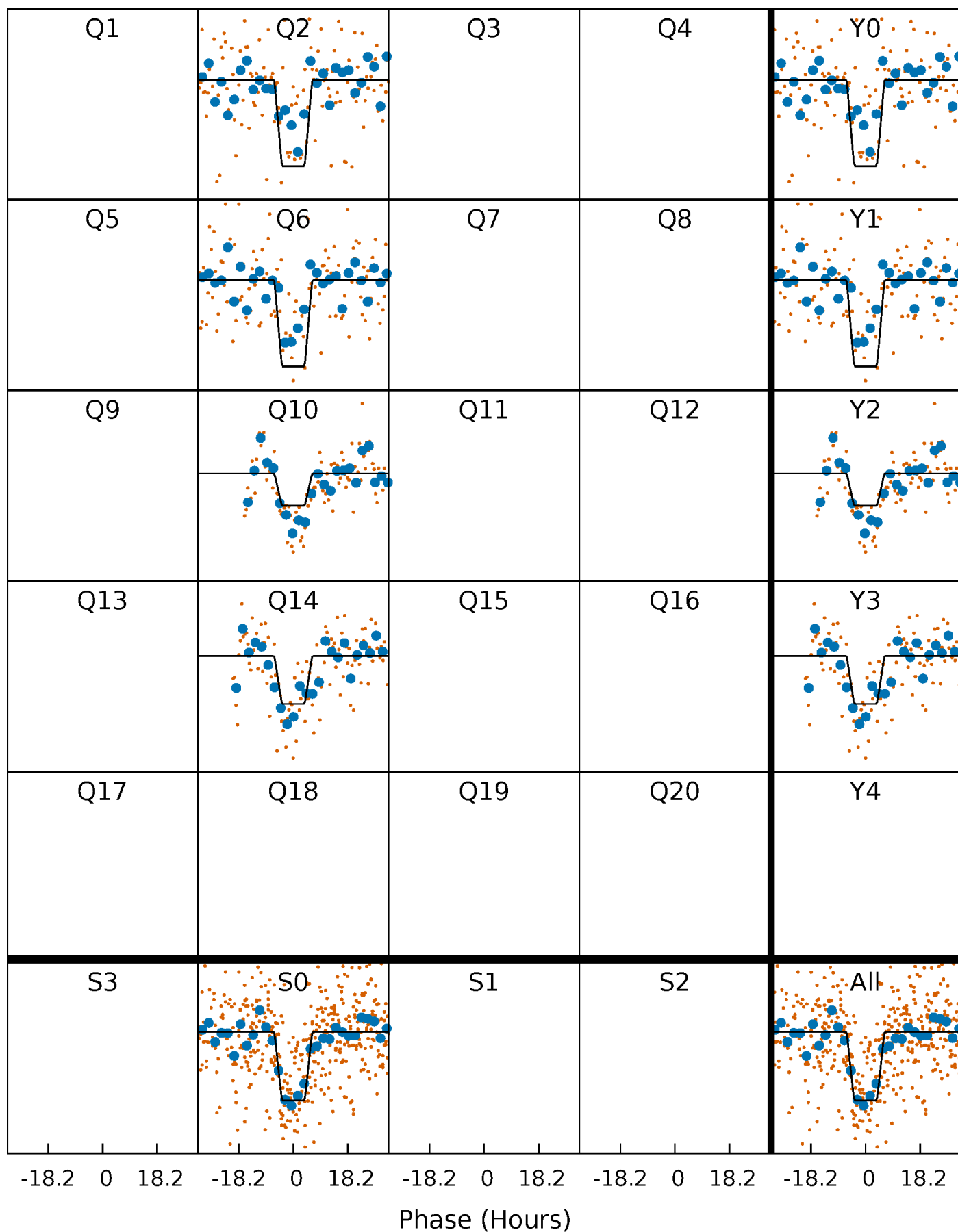
# DV Quarter-Phased Transit Curves

TCE 008039128-01 P=367.236127 Days  $T_0=236.388850$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

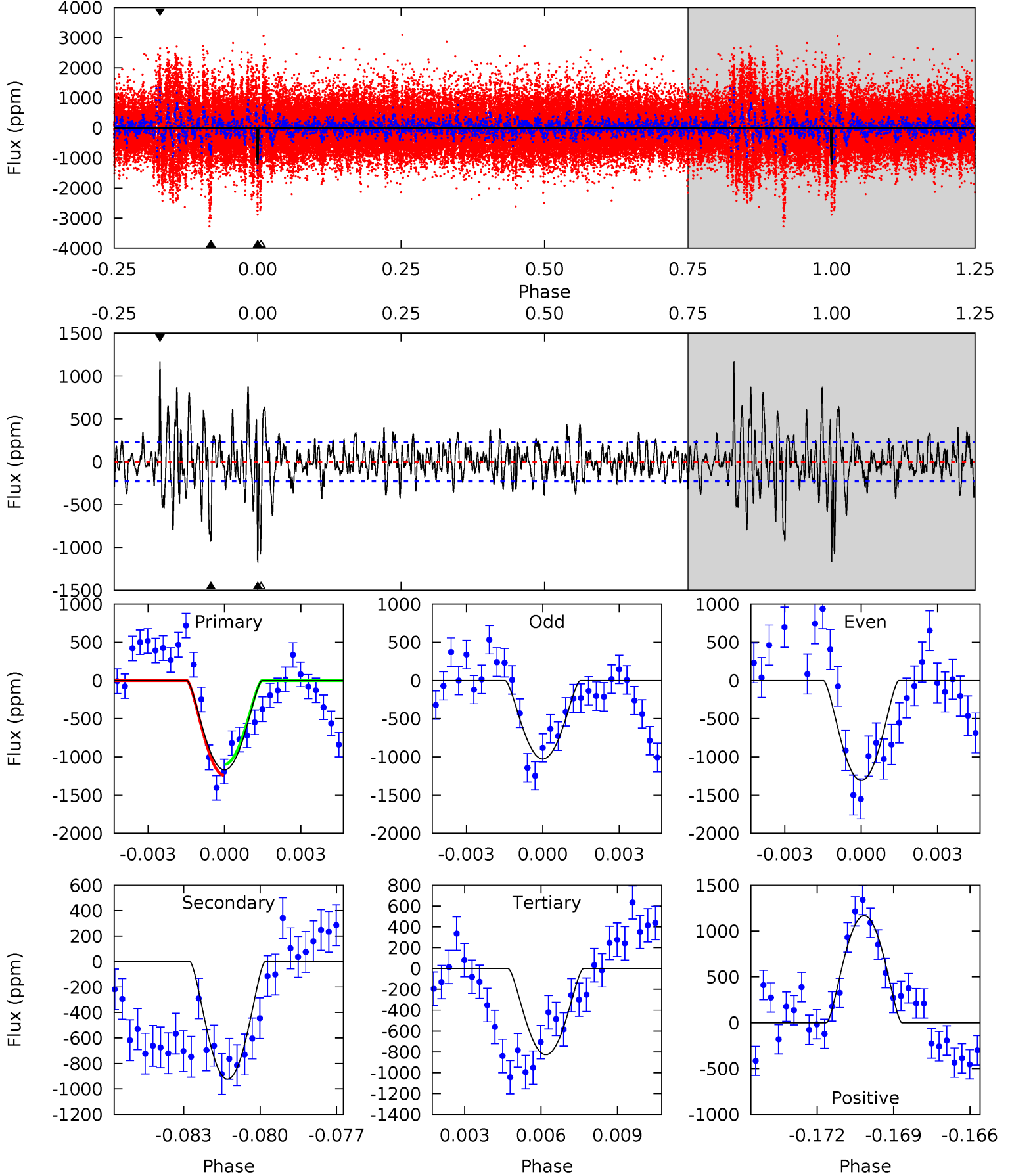
TCE 008039128-01 P=367.272807 Days  $T_0=236.217575$  (BKJD)



# DV Model-Shift Uniqueness Test

008039128-01, P = 367.236127 Days, E = 236.388850 Days

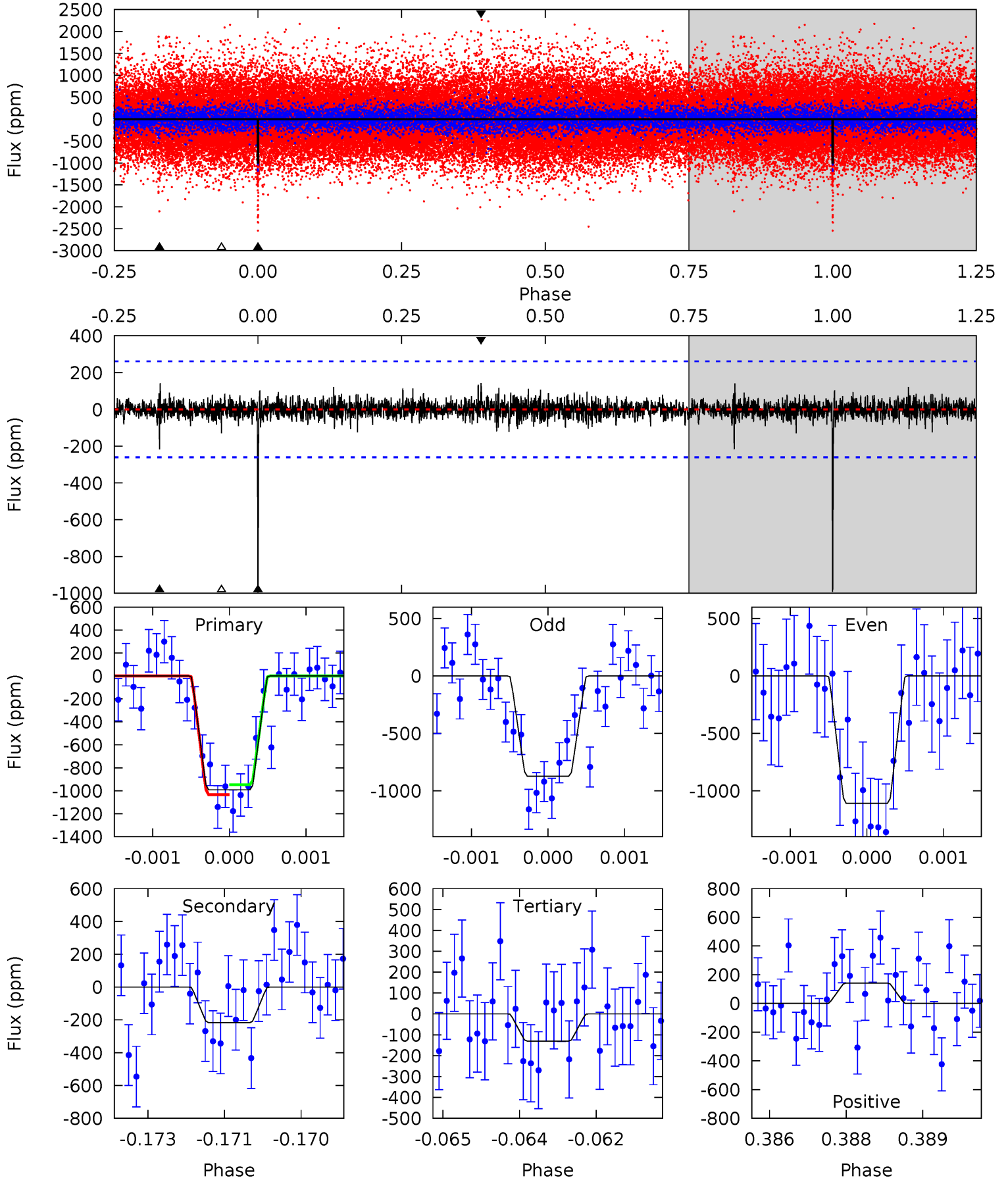
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.9	21.3	19.1	26.9	5.26	2.98	4.88	7.87	0.05	2.20	-5.61	3.27	1.01	0.50	1.65



# Alt Model-Shift Uniqueness Test

008039128-01, P = 367.272807 Days, E = 236.217575 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
20.5	4.48	2.69	2.93	5.38	3.18	0.66	17.8	17.5	1.79	1.55	2.43	1.10	0.13	0.90



### Stellar Parameters For KIC 008039128

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5925^{+159}_{-195}$	$4.518^{+0.052}_{-0.208}$	$-0.140^{+0.300}_{-0.300}$	$0.910^{+0.273}_{-0.091}$	$0.995^{+0.119}_{-0.131}$	$1.858^{+0.494}_{-0.983}$
	+3%/-3%	+1%/-5%	+214%/-214%	+30%/-10%	+12%/-13%	+27%/-53%
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 008039128-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-923 \pm 43$	$9.47^{+9.89}_{-6.35}$	$354^{+23}_{-17}$	$3766^{+2109}_{-737}$	$5530^{+45262}_{-4179}$
Alt.	$-217 \pm 48$	$8.82^{+8.30}_{-5.91}$	$355^{+27}_{-17}$	$3088^{+1428}_{-505}$	$1455^{+12396}_{-1077}$

$T_{max}$  = 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

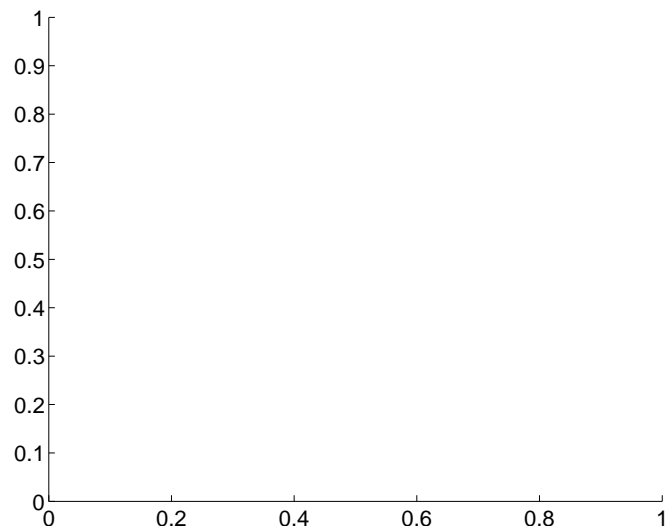
Supplemental centroid analysis for 008039128-01. Kepler magnitude: 15.66. Transit SNR 10.33

There are 0 quarters with good PRF difference image offsets

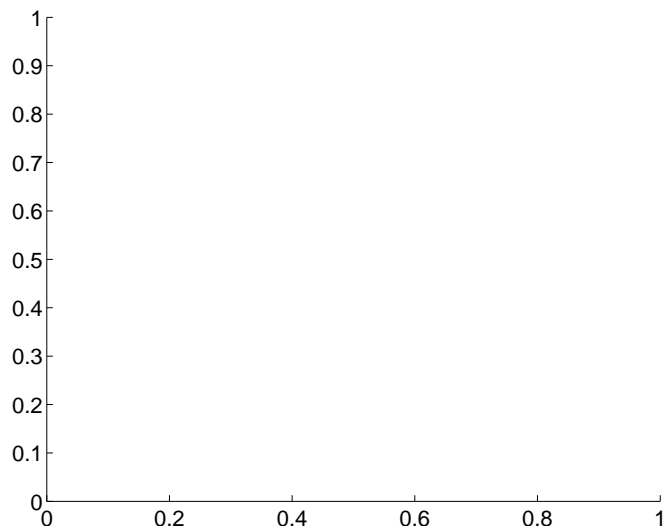
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$4.89 \pm 1.48$	3.31	$-4.85 \pm 1.48$	$0.56 \pm 1.06$

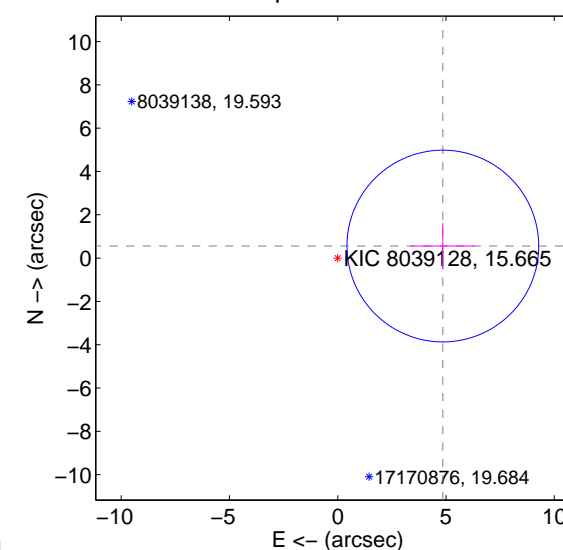
There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC

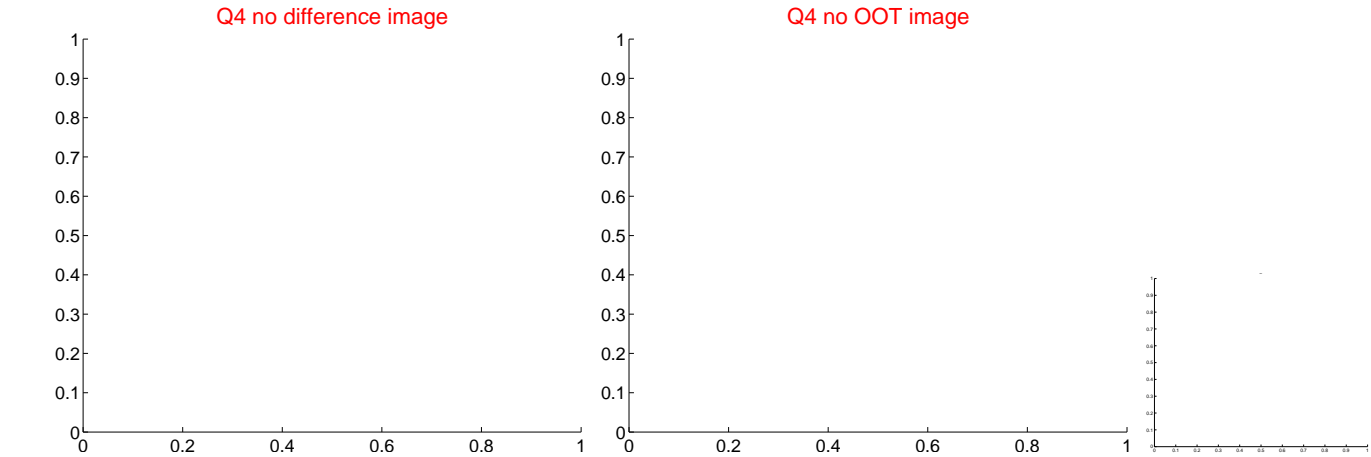
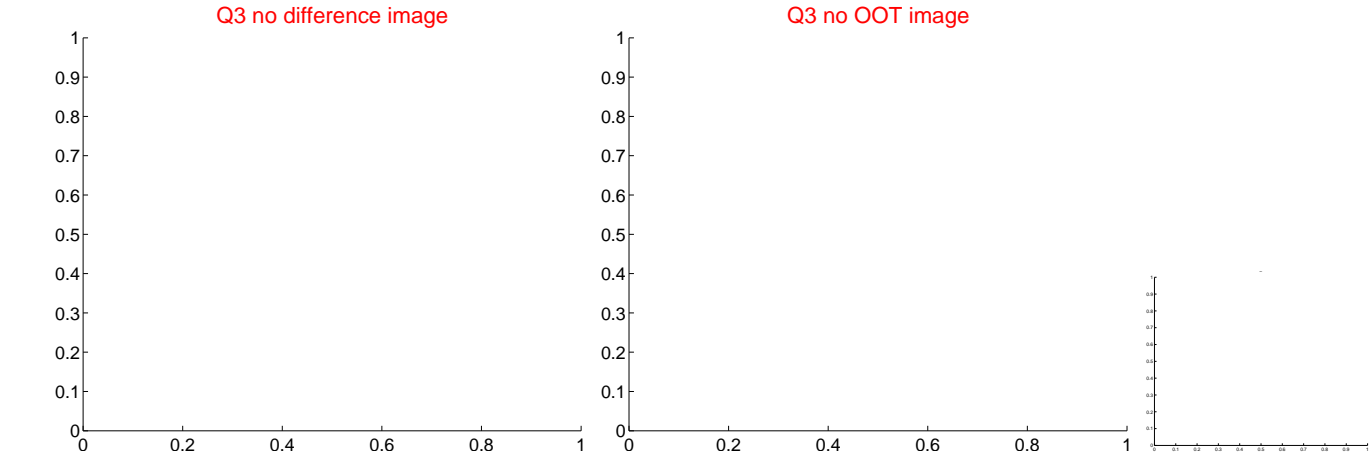
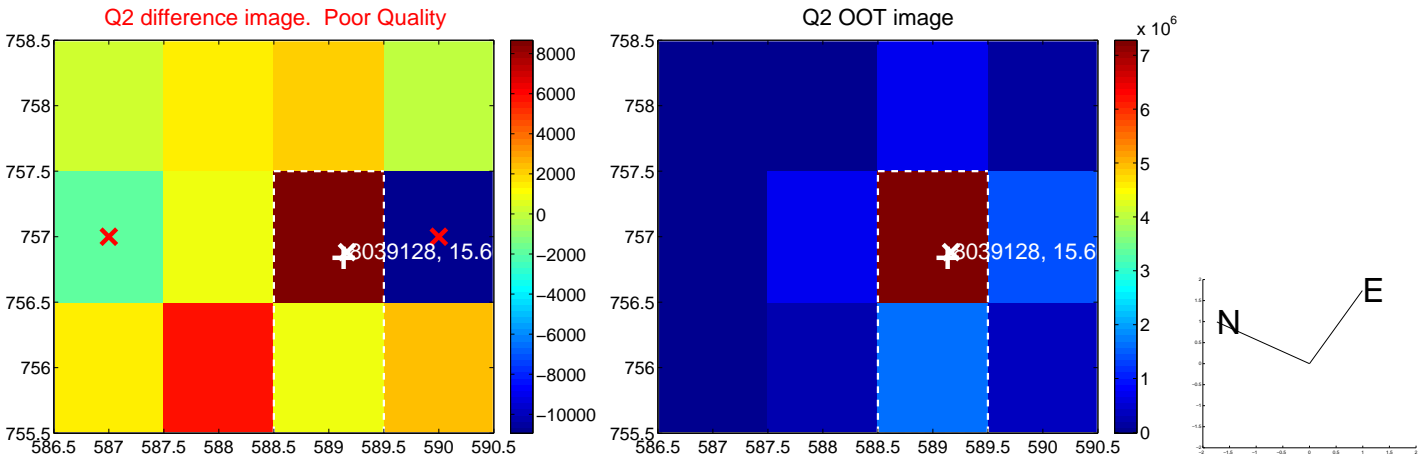
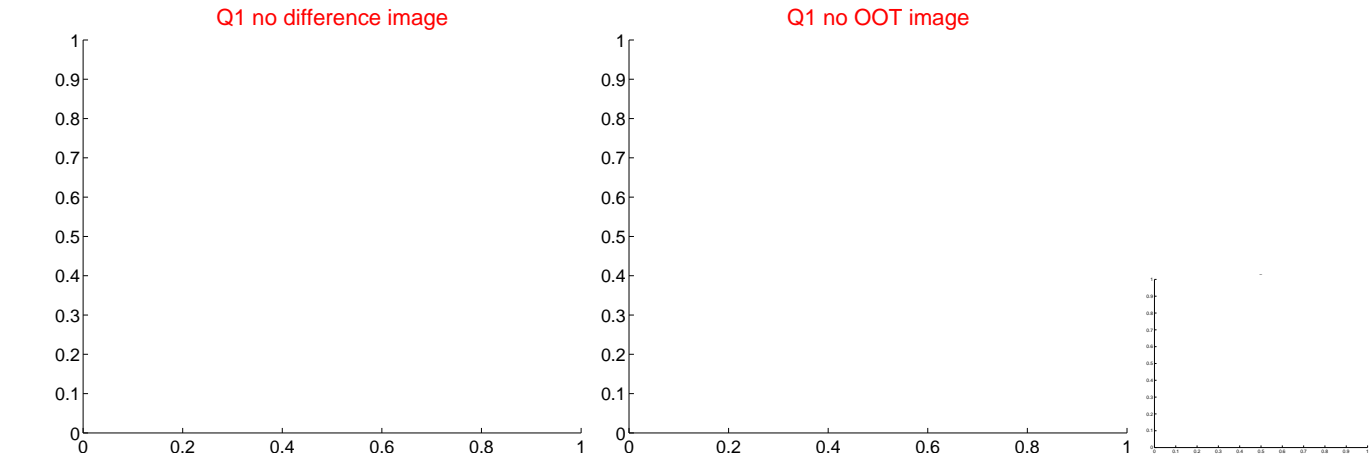


offset from photometric centroids



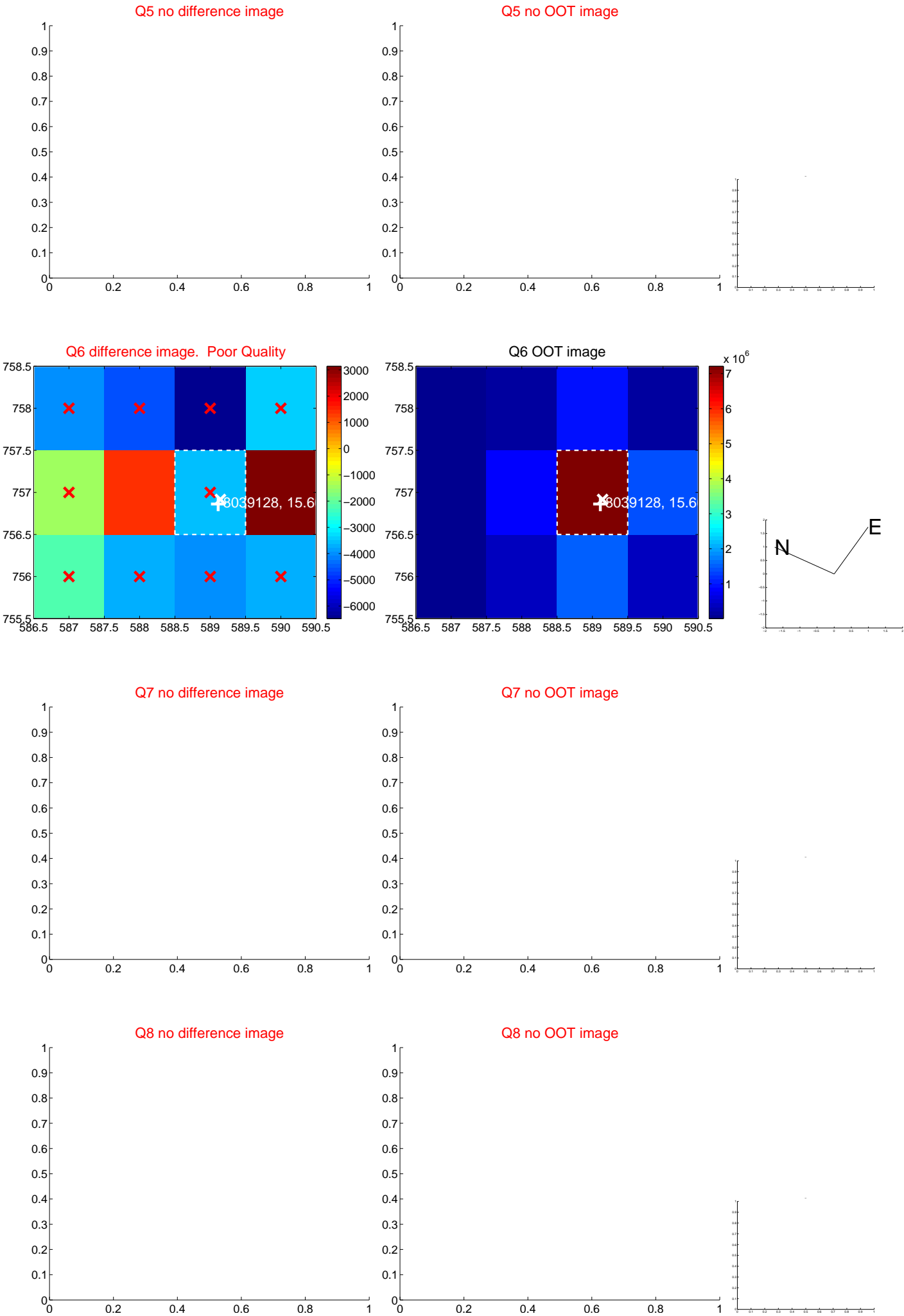
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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





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



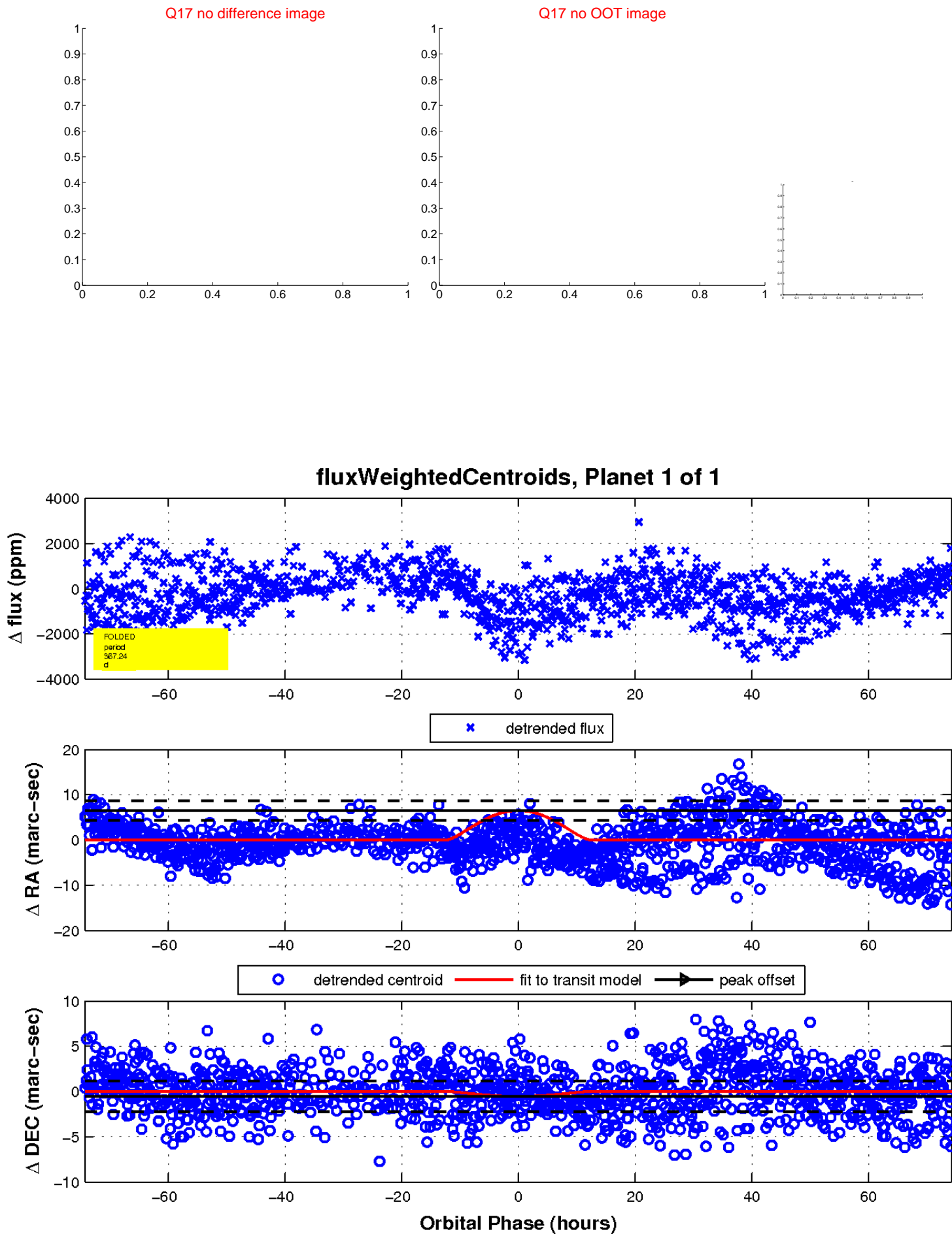
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



# UKIRT Image

Declination

