

# KIC 009839030

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009839030-01	OBS	5719.01	27.293847	153.215569	339.8	7.108	8.0	7.7	1.09	6304	2.23	50.04

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009839030-01	OBS	FP	0.44	0	1	0	0	DEPTH_ODDEVEN_ALT—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.

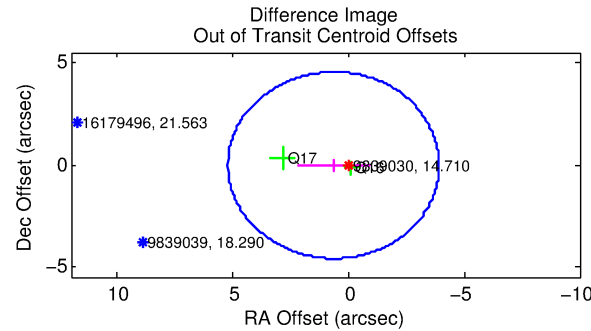
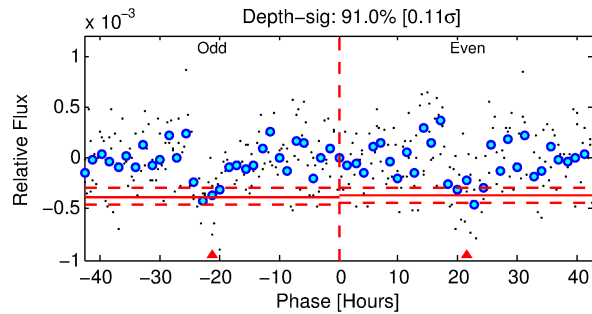
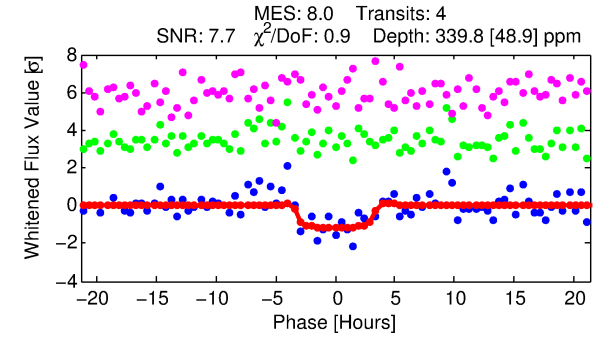
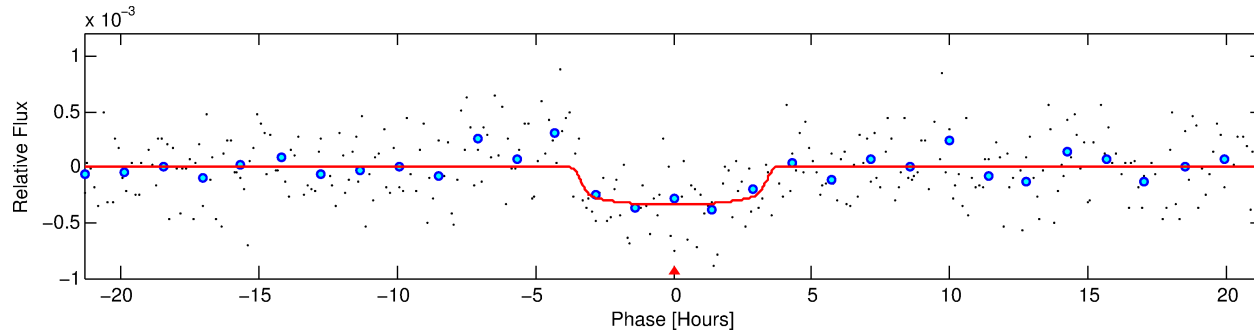
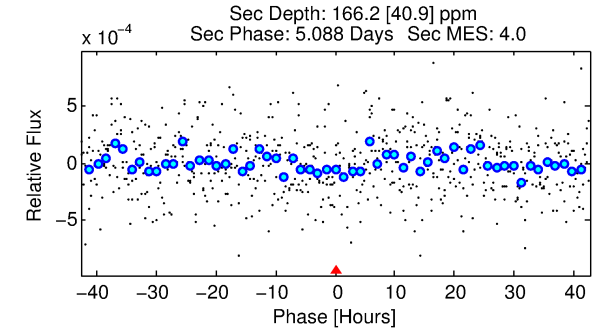
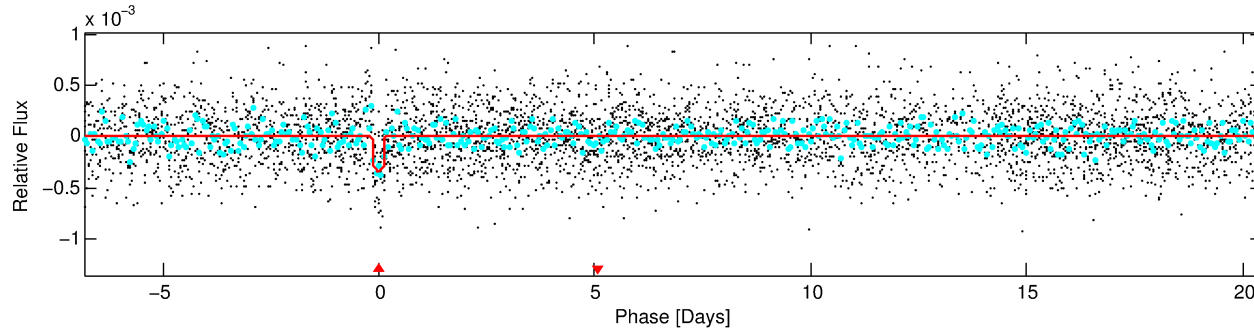
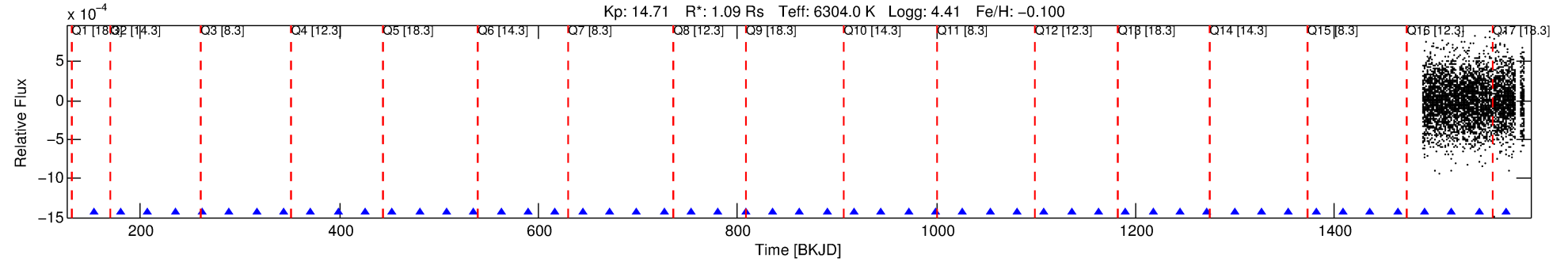
## Ephemeris Match Information For 009839030-01

No Significant Match Found

# DV One-Page Summary

KIC: 9839030 Candidate: 1 of 1 Period: 27.294 d

KOI: K05719 Corr: No Ephemeris Match



## DV Fit Results:

Period = 27.29385 [0.00663] d  
Epoch = 153.2156 [0.3316] BKJD  
Rp/R\* = 0.0186 [0.0176]  
a/R\* = 18.70 [93.43]  
b = 0.80 [2.35]  
Seff = 50.04 [21.54]  
Teq = 678 [73] K  
Rp = 2.22 [2.23] Re  
a = 0.1840 [0.0517] AU  
Ag = 625.15 [1218.40] [0.51 $\sigma$ ]  
Teffp = 5243 [2507] K [1.82 $\sigma$ ]

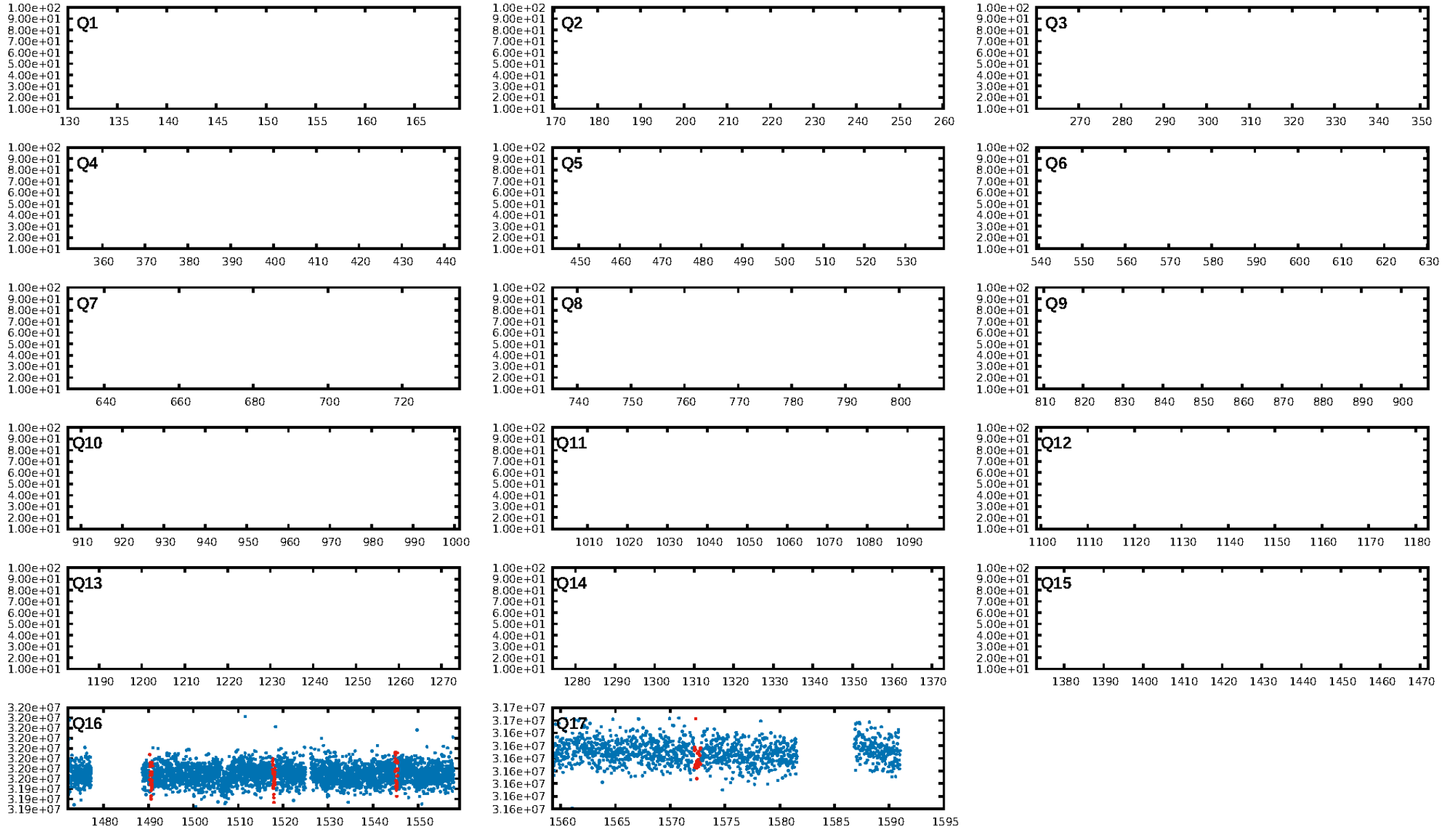
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 54.6%  
ModelChiSquareGof-sig: 99.8%  
Bootstrap-pfa: 5.69e-14  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 2.264  
Centroid-sig: 61.5%  
Centroid-so: 1.078 arcsec [0.51 $\sigma$ ]  
OotOffset-rm: 0.648 arcsec [0.43 $\sigma$ ]  
KicOffset-rm: 0.754 arcsec [0.51 $\sigma$ ]  
OotOffset-st: 0/0/1/1 [2]  
KicOffset-st: 0/0/1/1 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [2/2]

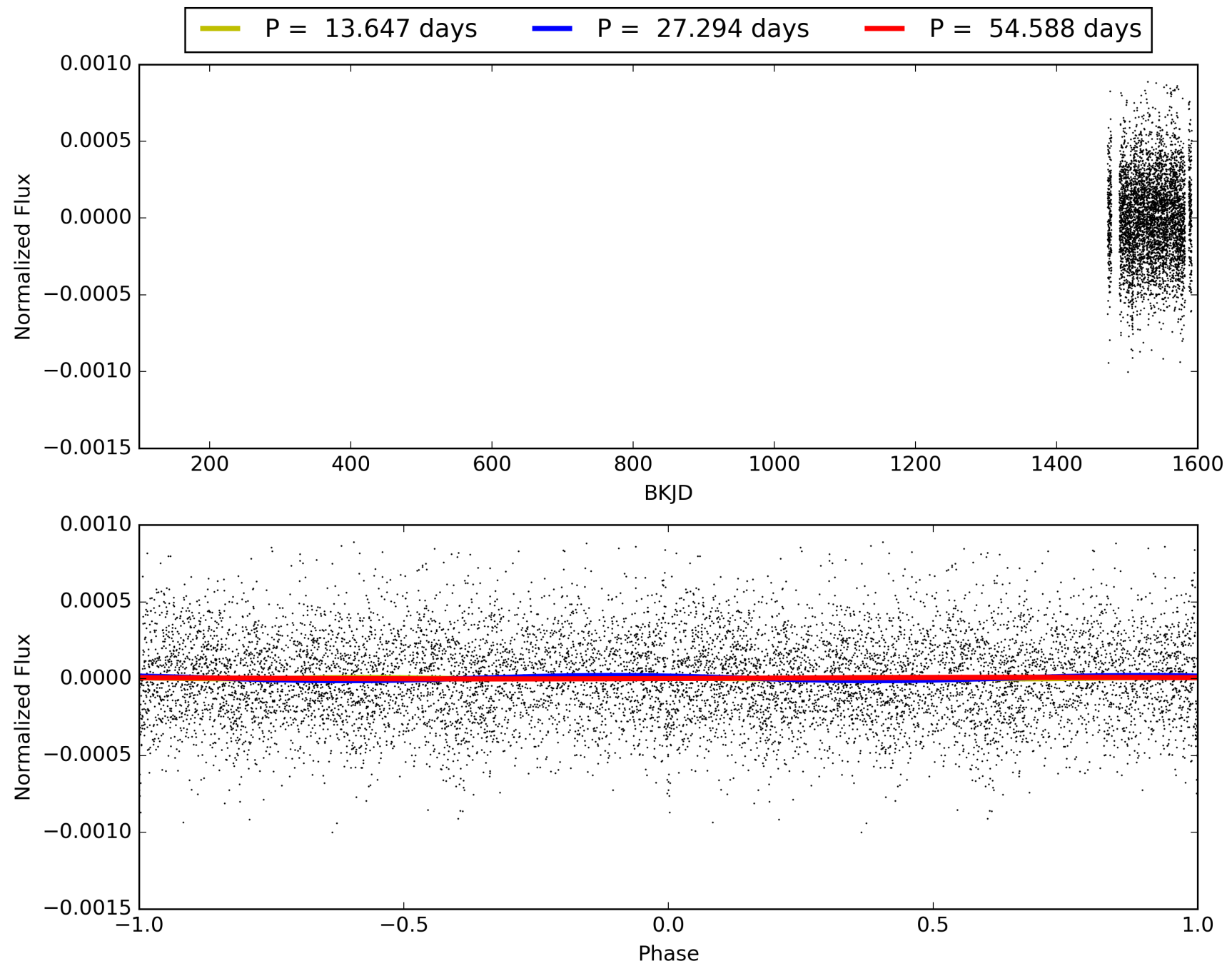
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:33:06 Z

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

# TCE 009839030-01, PDC Light Curves

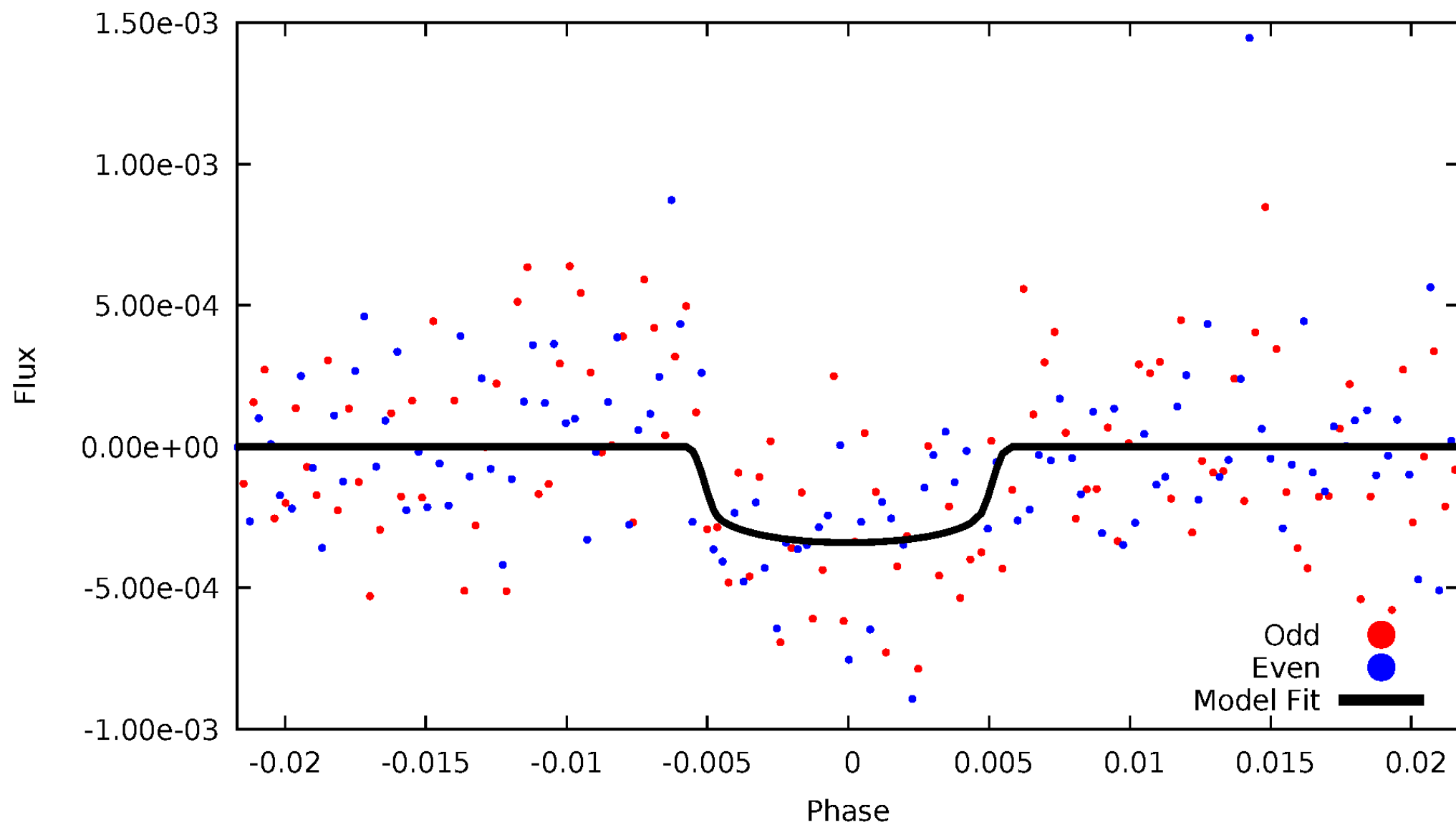


TCE 009839030-01



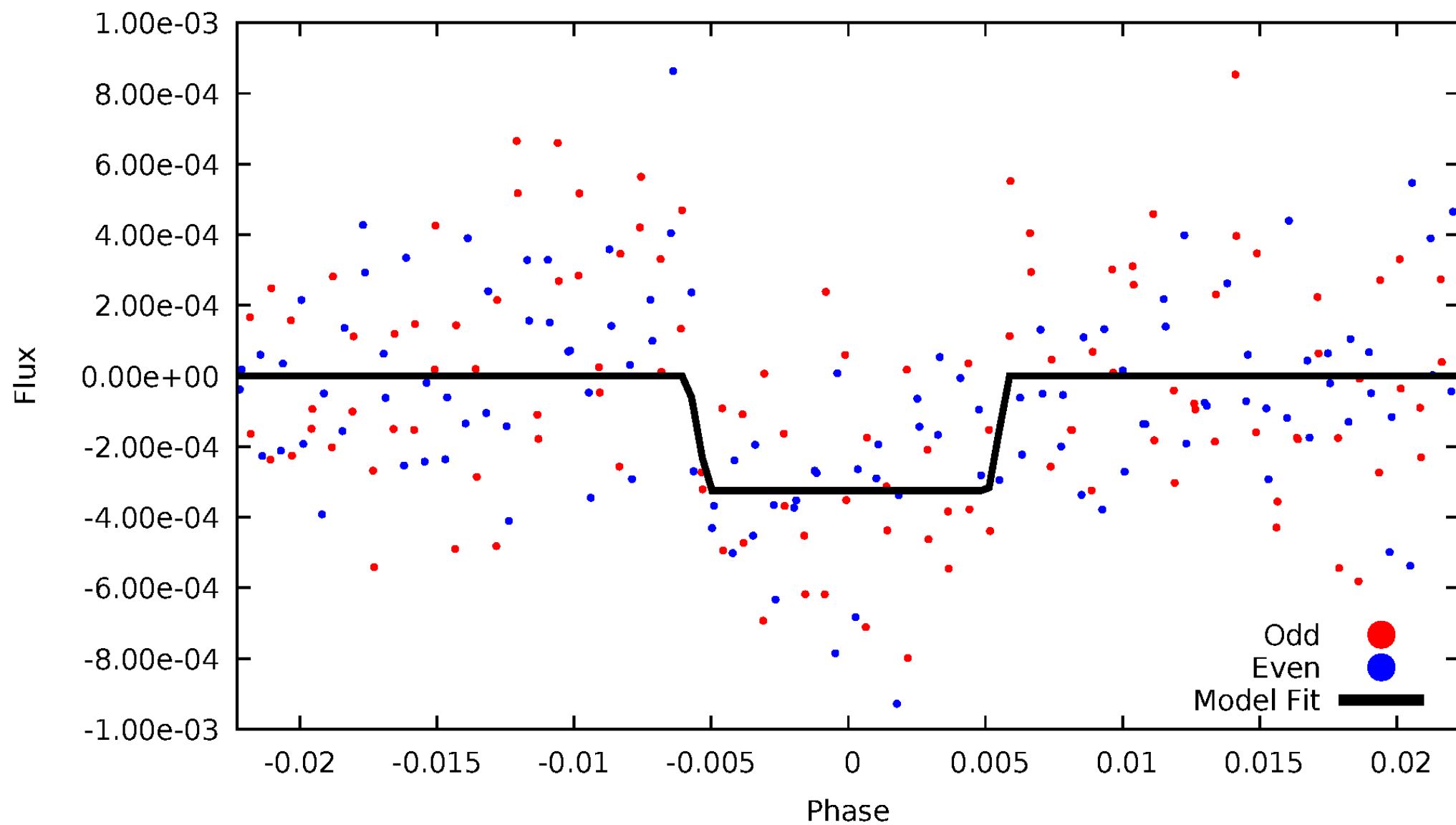
# DV Odd/Even

TCE 009839030-01



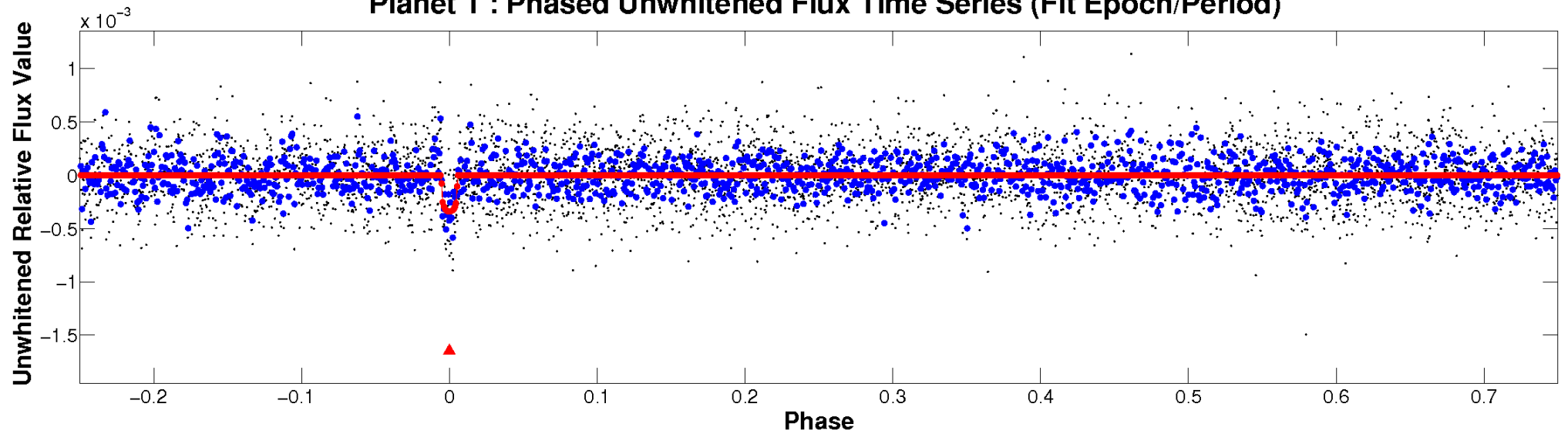
# ALT Odd/Even

TCE 009839030-01

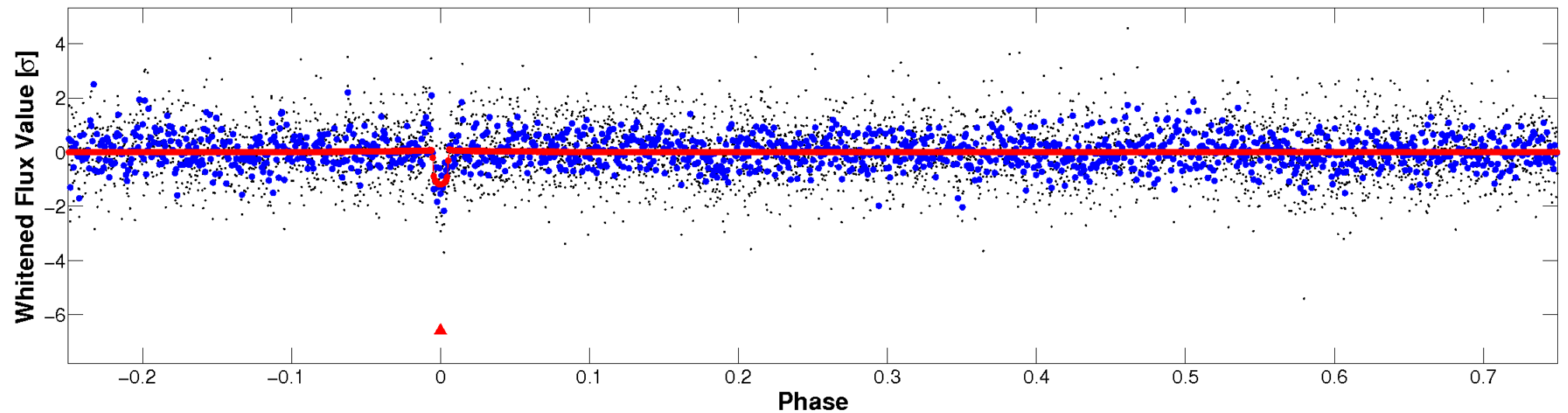


# Non-Whitened Vs. Whitened Light Curve

**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 009839030-01 P= 27.293847 Days  $T_0=153.215569$  (BKJD)





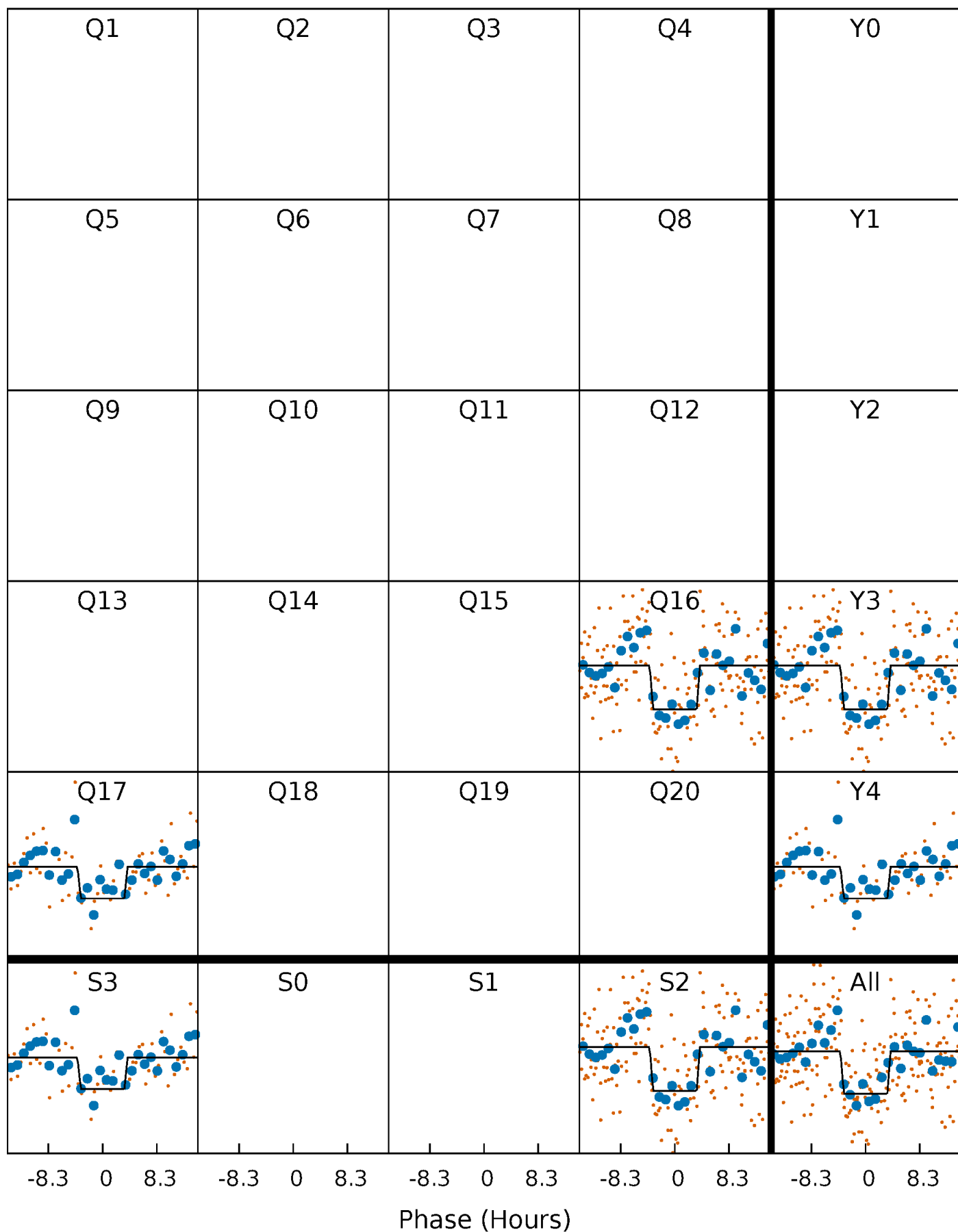
# DV Quarter-Phased Transit Curves

TCE 009839030-01 P= 27.293847 Days  $T_0=153.215569$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

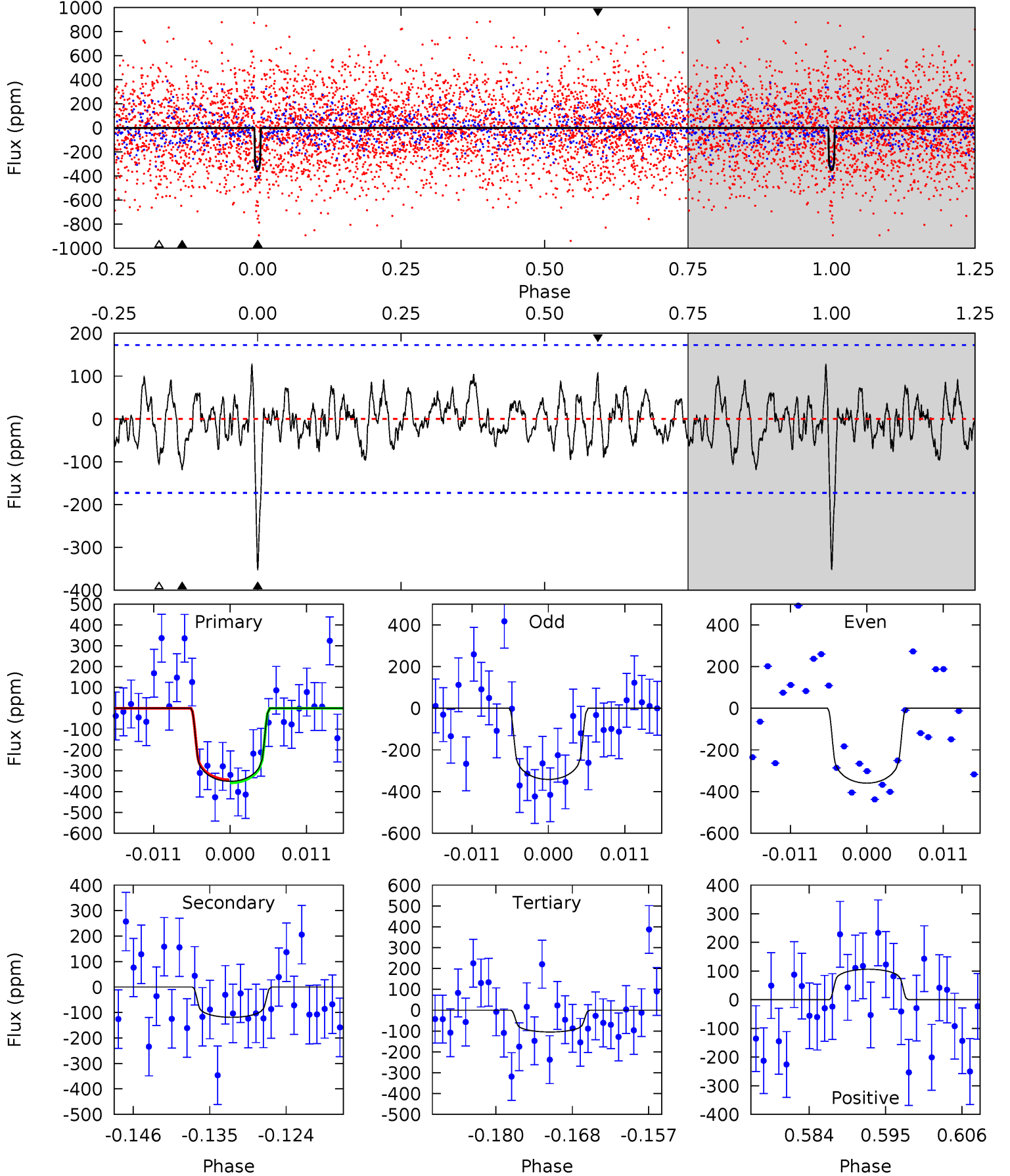
TCE 009839030-01 P= 27.288527 Days  $T_0=153.495299$  (BKJD)



# DV Model-Shift Uniqueness Test

009839030-01,  $P = 27.293847$  Days,  $E = 153.215569$  Days

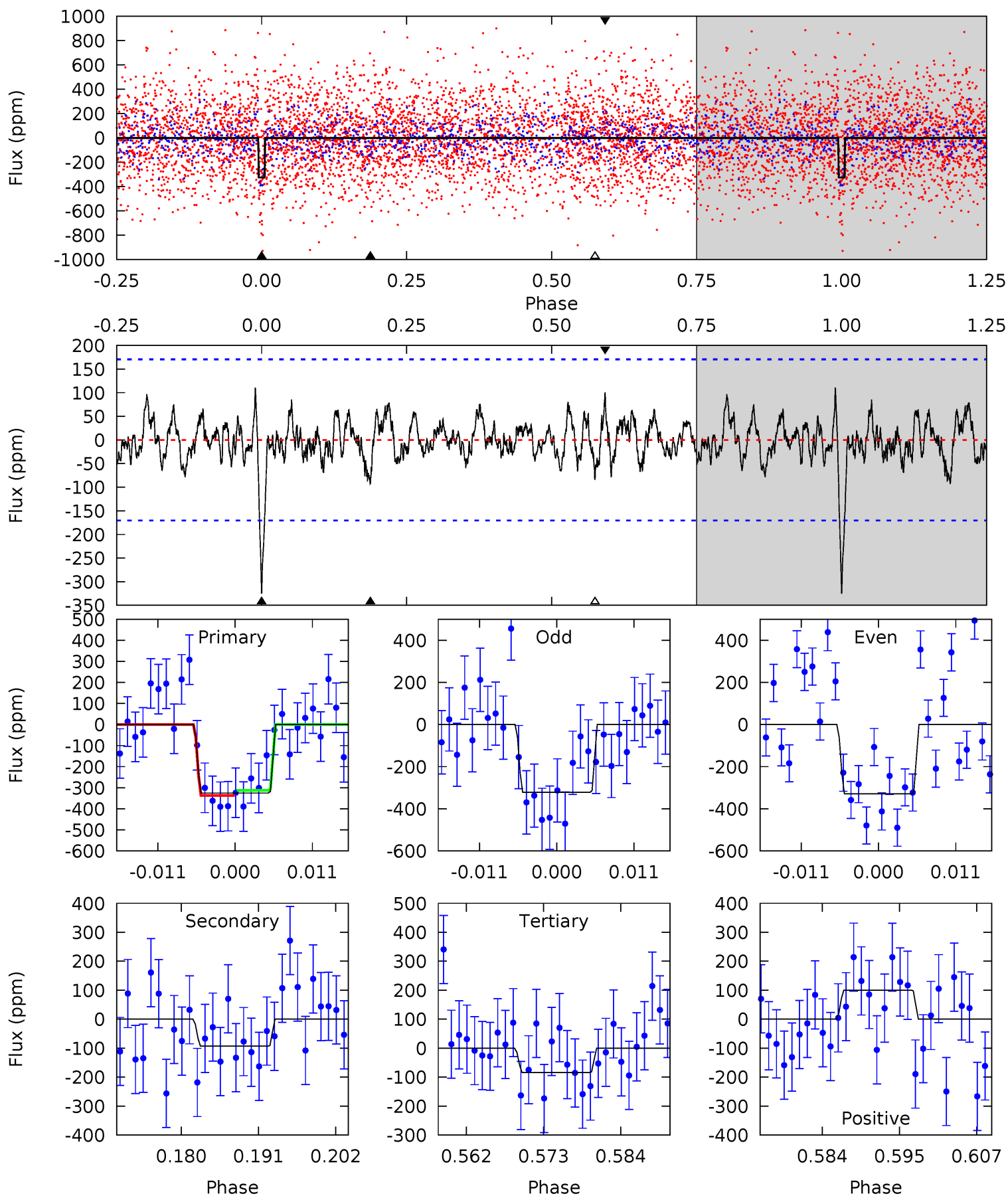
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	3.45	3.03	3.09	5.00	2.54	1.17	7.14	7.09	0.42	0.36	0.26	0.98	0.26	0.21



# Alt Model-Shift Uniqueness Test

009839030-01, P = 27.288527 Days, E = 153.495299 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
9.55	2.73	2.46	2.95	5.00	2.54	0.96	7.09	6.60	0.27	-0.21	0.10	0.99	0.25	0.36



### Stellar Parameters For KIC 009839030

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6304^{+196}_{-240}$	$4.407^{+0.072}_{-0.217}$	$-0.100^{+0.250}_{-0.300}$	$1.094^{+0.371}_{-0.132}$	$1.110^{+0.171}_{-0.140}$	$1.194^{+0.447}_{-0.619}$
	+3%/-4%	+2%/-5%	+250%/-300%	+34%/-12%	+15%/-13%	+37%/-52%
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 009839030-01 / KOI 5719.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-119 \pm 34$	$2.71^{+1.96}_{-1.60}$	$968^{+79}_{-54}$	$4560^{+2447}_{-843}$	$289^{+1433}_{-199}$
Alt.	$-93 \pm 34$	$2.69^{+2.08}_{-1.69}$	$963^{+73}_{-52}$	$4402^{+2605}_{-833}$	$233^{+1572}_{-165}$

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

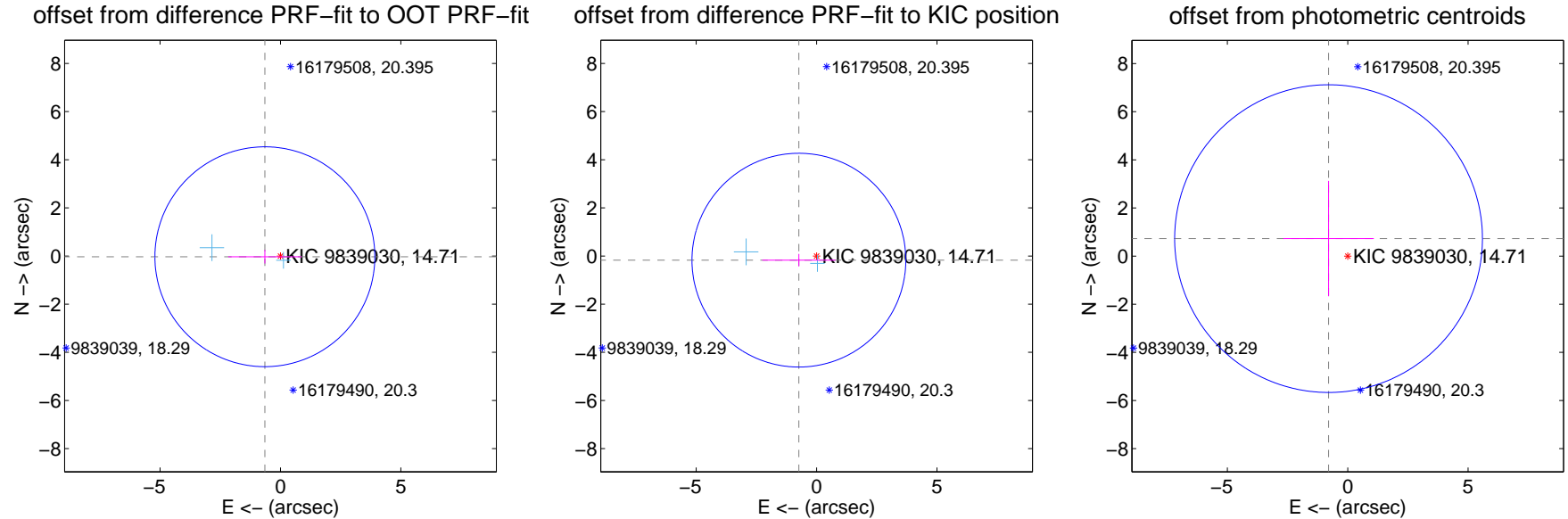
## DV Centroid Data

Supplemental centroid analysis for 009839030-01. Kepler magnitude: 14.71. Transit SNR 7.67

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.648 \pm 1.522$	0.43	$0.647 \pm 1.524$	$-0.030 \pm 0.283$
PRF-fit source offset from KIC position	$0.754 \pm 1.480$	0.51	$0.735 \pm 1.519$	$-0.172 \pm 0.260$
photometric centroid source offset	$1.08 \pm 2.13$	0.51	$0.80 \pm 1.88$	$0.73 \pm 2.40$



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.



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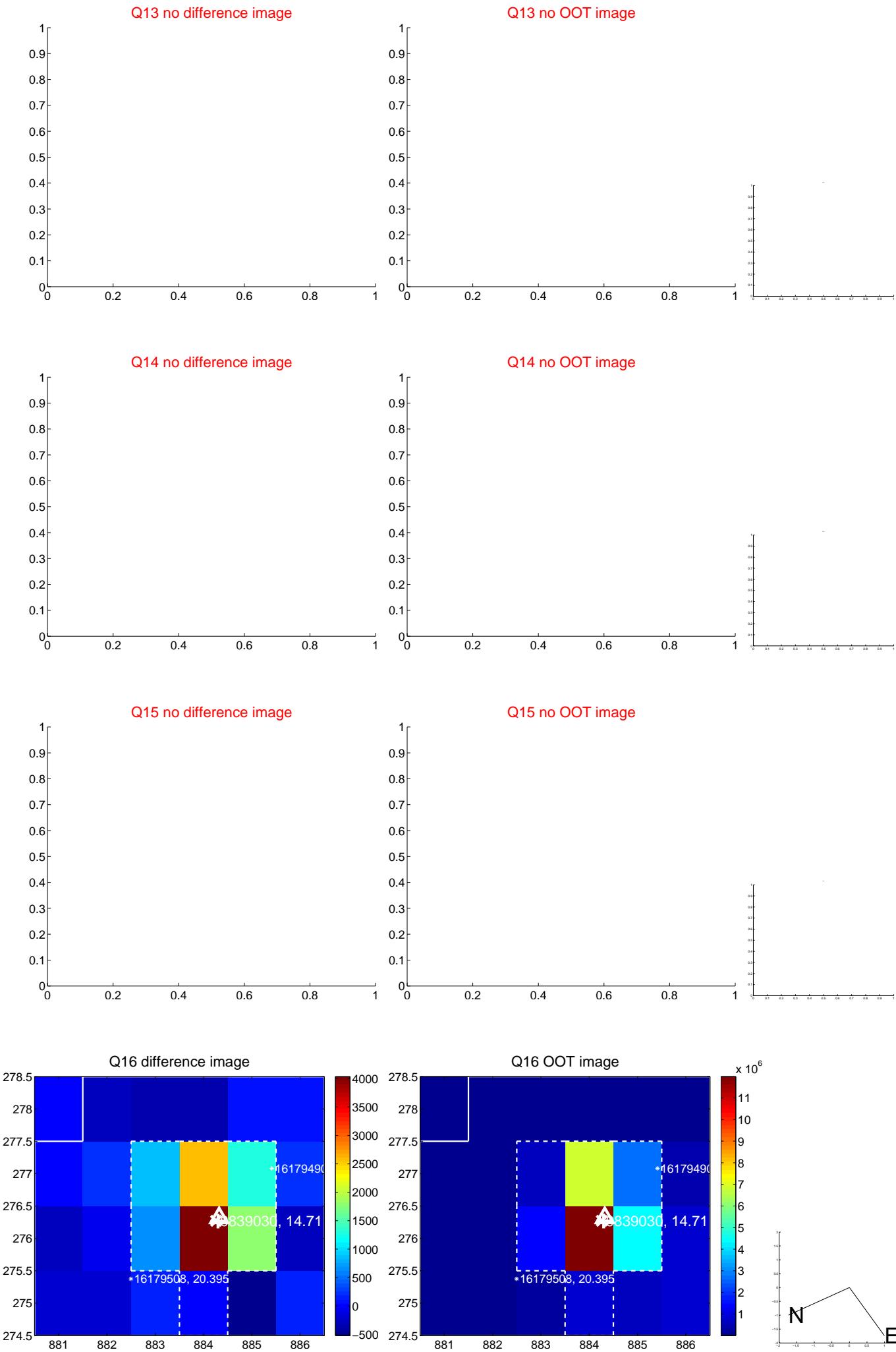




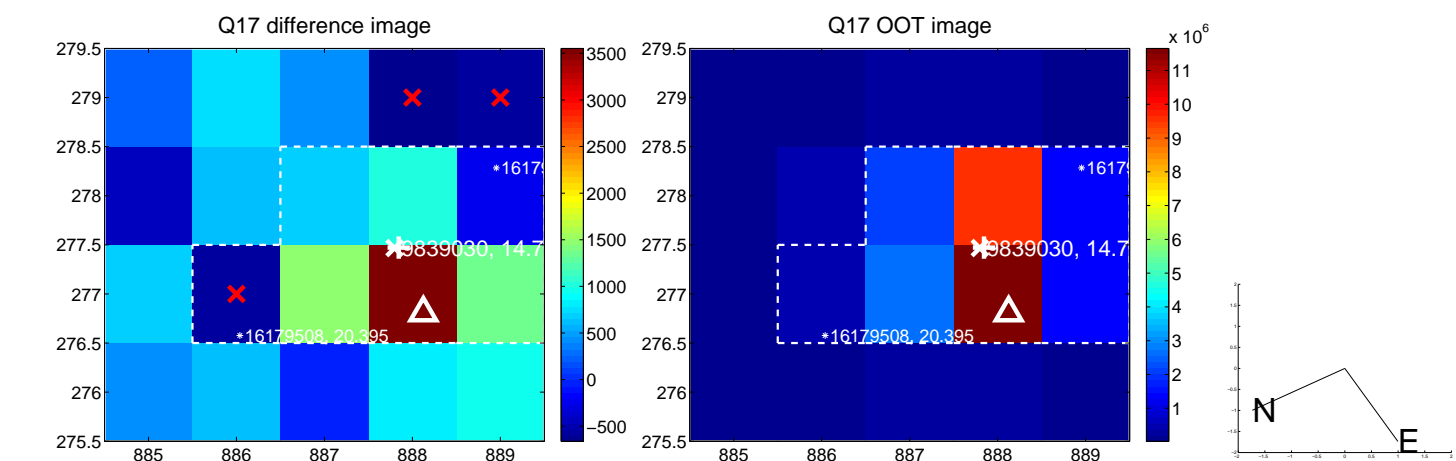
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



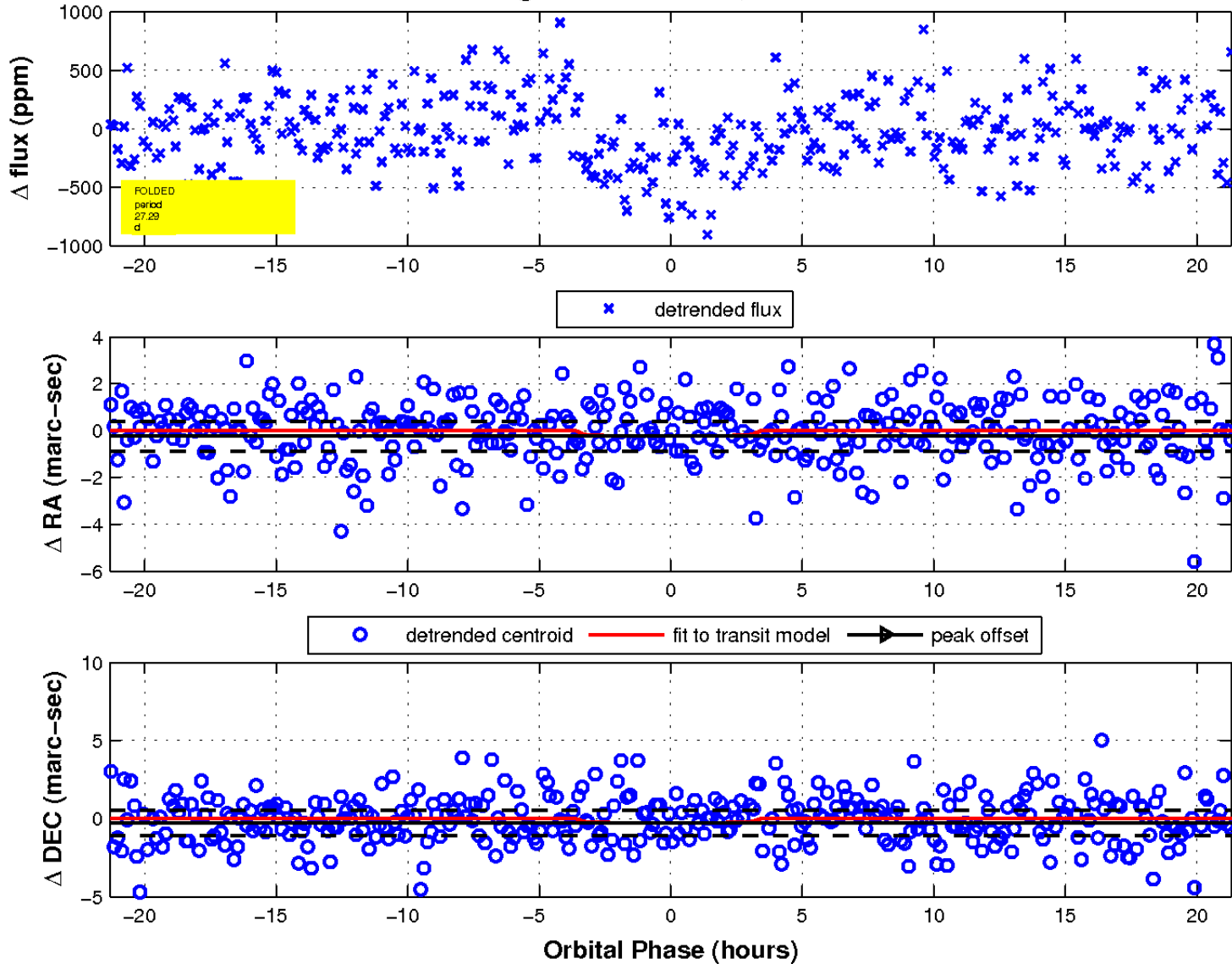
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

