

# KIC 003859363

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003859363-01	OBS	2887.01	1.568561	131.656178	191.5	2.315	17.0	18.2	1.00	6248	1.64	1945.82

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003859363-01	OBS	FP	0.00	1	0	1	0	MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET

**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 003859363-01

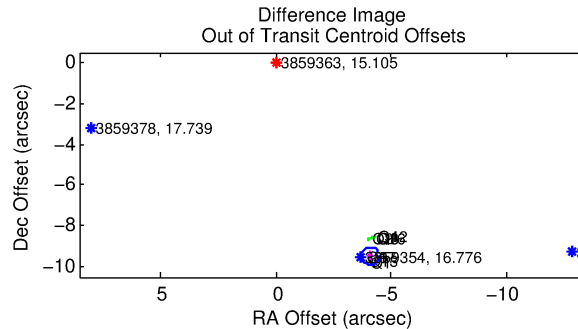
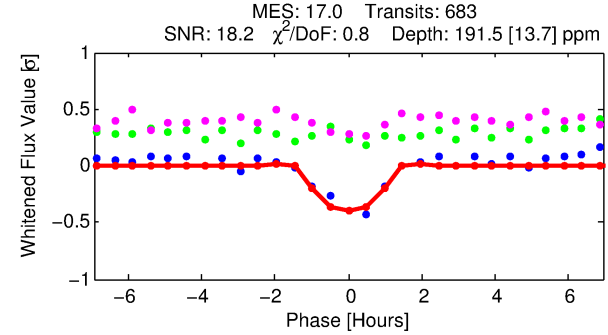
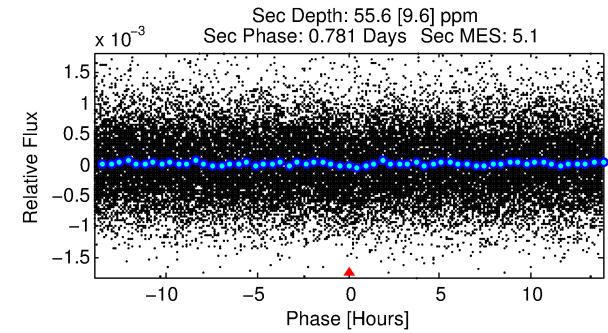
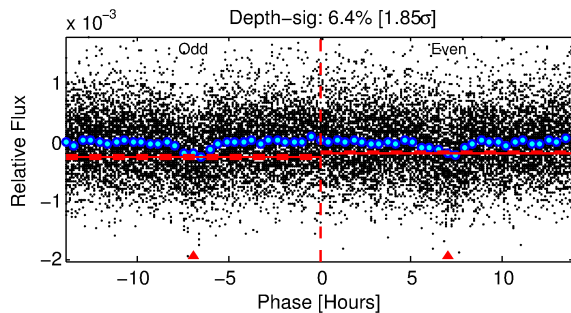
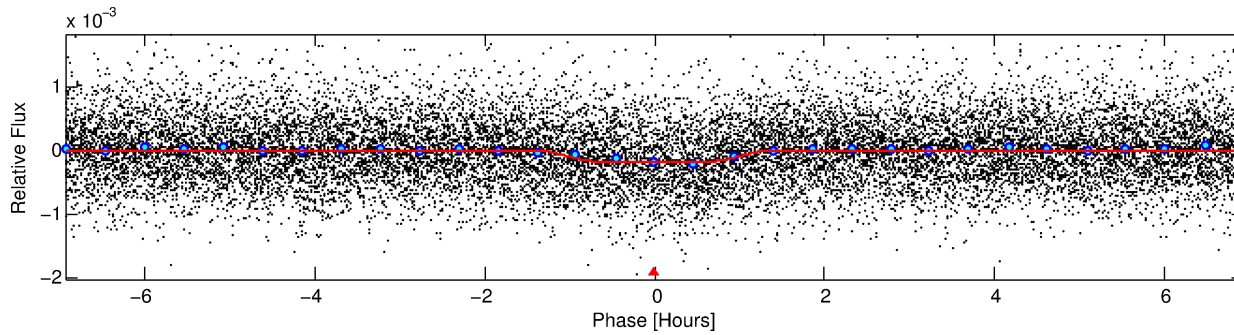
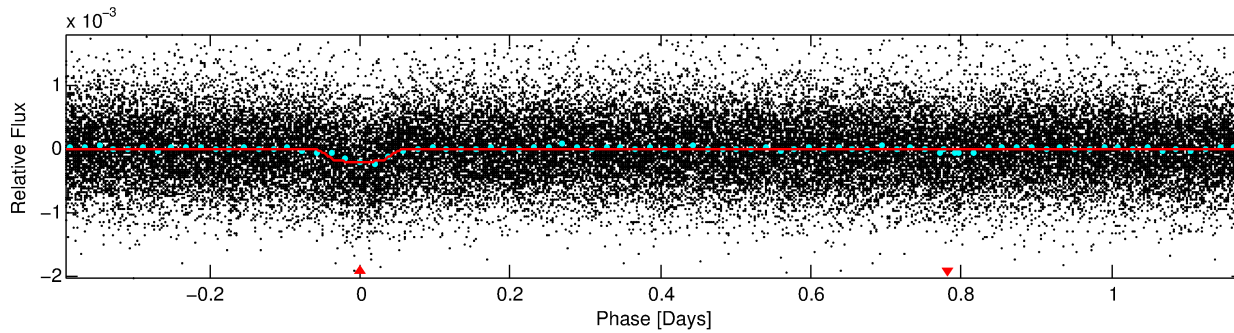
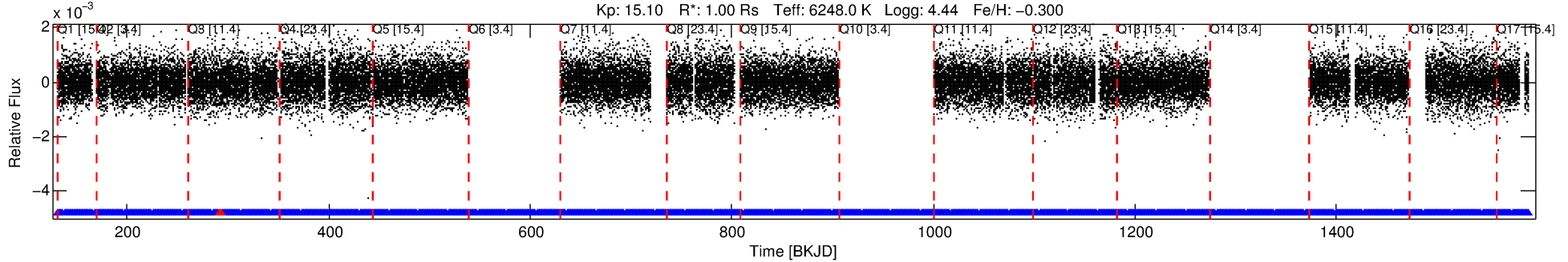
No Significant Match Found

# DV One-Page Summary

KIC: 3859363 Candidate: 1 of 1 Period: 1.569 d

KOI: K02887 Corr: No Ephemeris Match

Kp: 15.10 R\*: 1.00 Rs Teff: 6248.0 K Logg: 4.44 Fe/H: -0.300



## DV Fit Results:

Period = 1.56856 [0.00001] d  
Epoch = 131.6562 [0.0019] BKJD  
Rp/R\* = 0.0150 [0.0044]  
a/R\* = 2.53 [3.47]  
b = 0.91 [0.32]  
Seff = 1945.82 [804.20]  
Teq = 1694 [175] K  
Rp = 1.64 [0.70] Re  
a = 0.0265 [0.0070] AU  
Ag = 8.04 [5.82] [1.21σ]  
Teffp = 4409 [697] K [3.78σ]

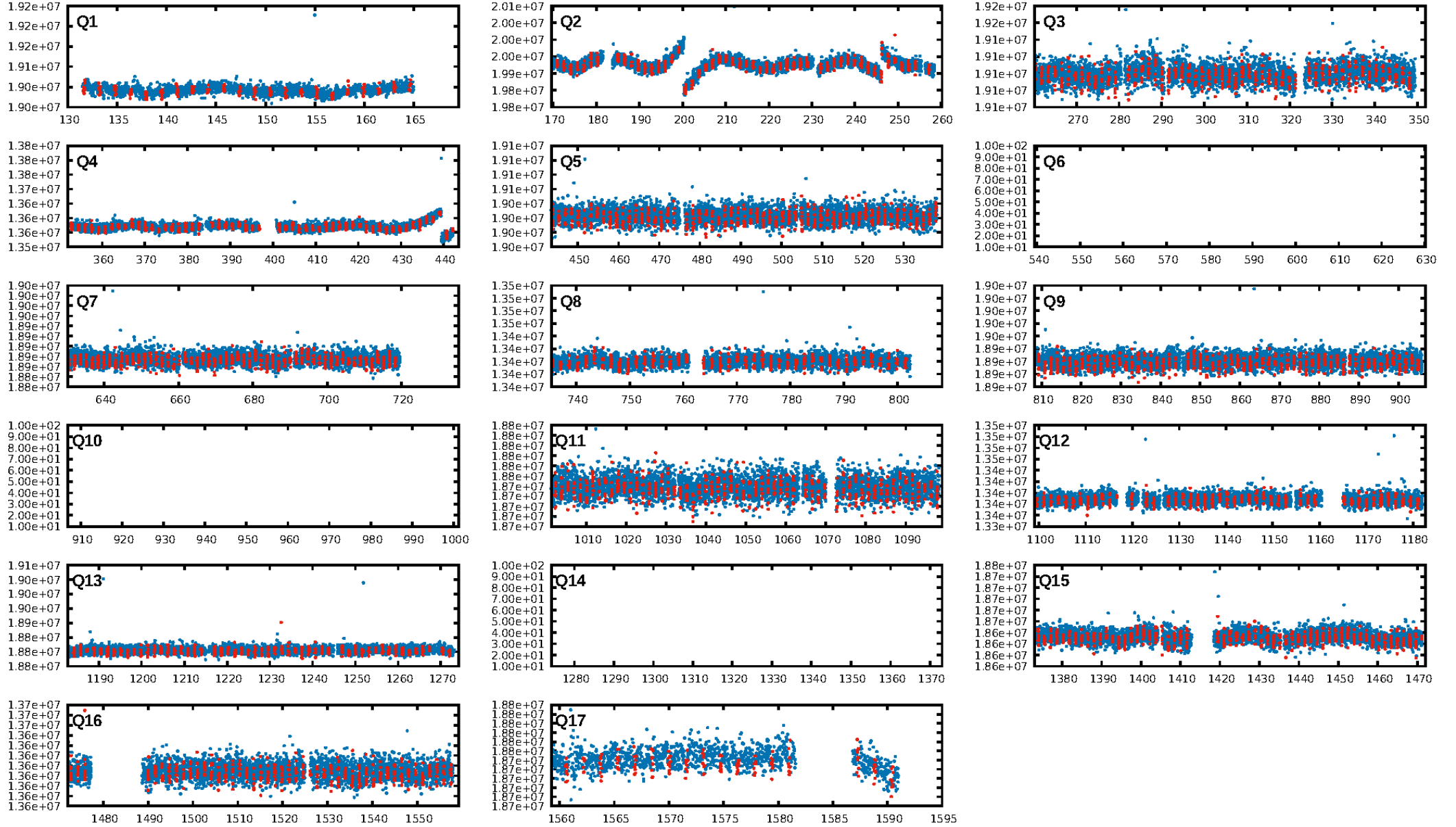
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.04e-63  
RollingBand-fgt: 1.00 [642/644]  
GhostDiagnostic-chr: -0.281  
Centroid-sig: 0.0%  
Centroid-so: 104.110 arcsec [110.06σ]  
OotOffset-rm: 10.306 arcsec [73.62σ]  
KicOffset-rm: 10.237 arcsec [58.96σ]  
OotOffset-st: 1/0/4/5 [10]  
KicOffset-st: 1/0/4/5 [10]  
DiffImageQuality-fgm: 1.00 [10/10]  
DiffImageOverlap-fno: 1.00 [14/14]

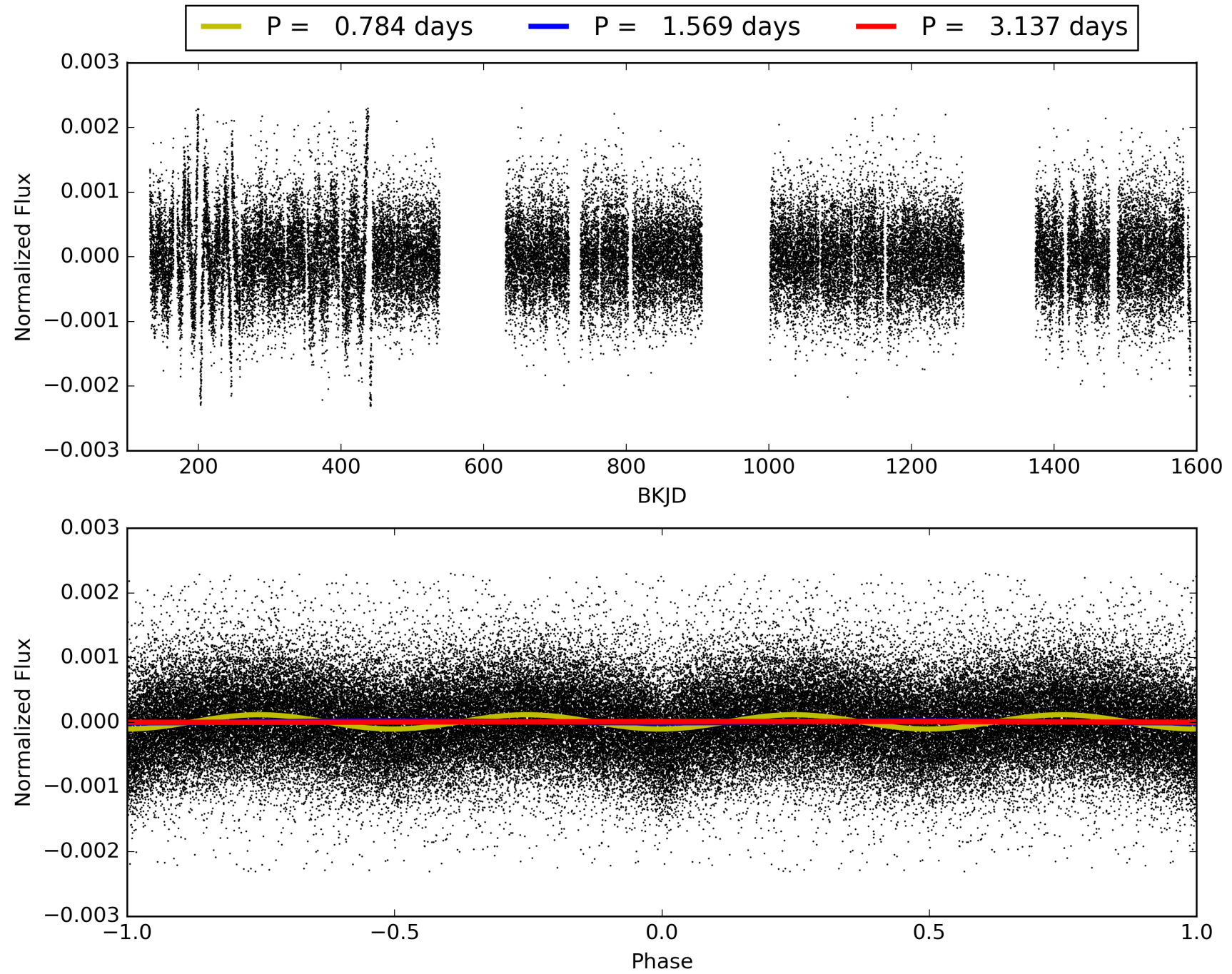
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 22:44:52 Z

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

# TCE 003859363-01, PDC Light Curves

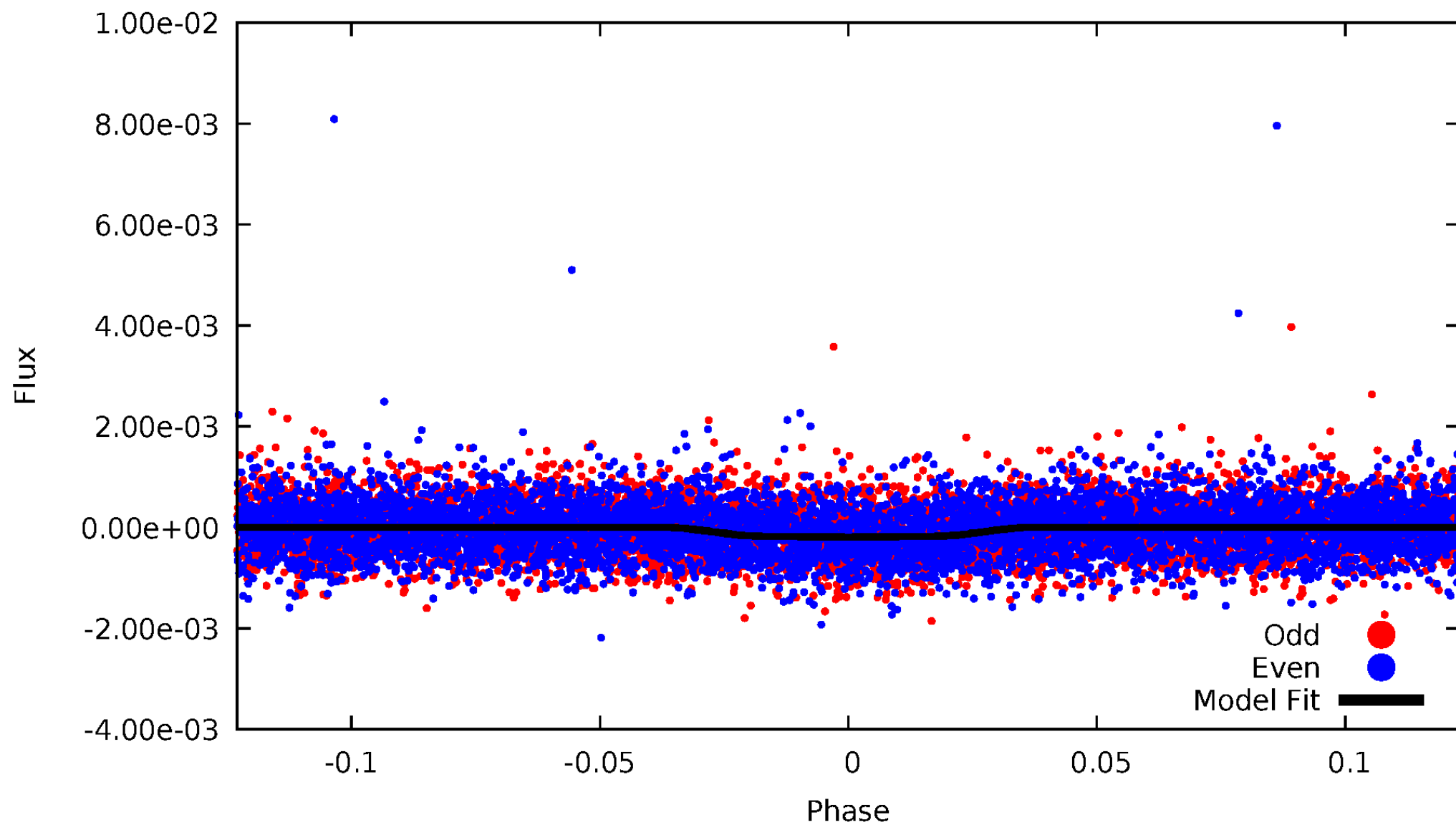


TCE 003859363-01



# DV Odd/Even

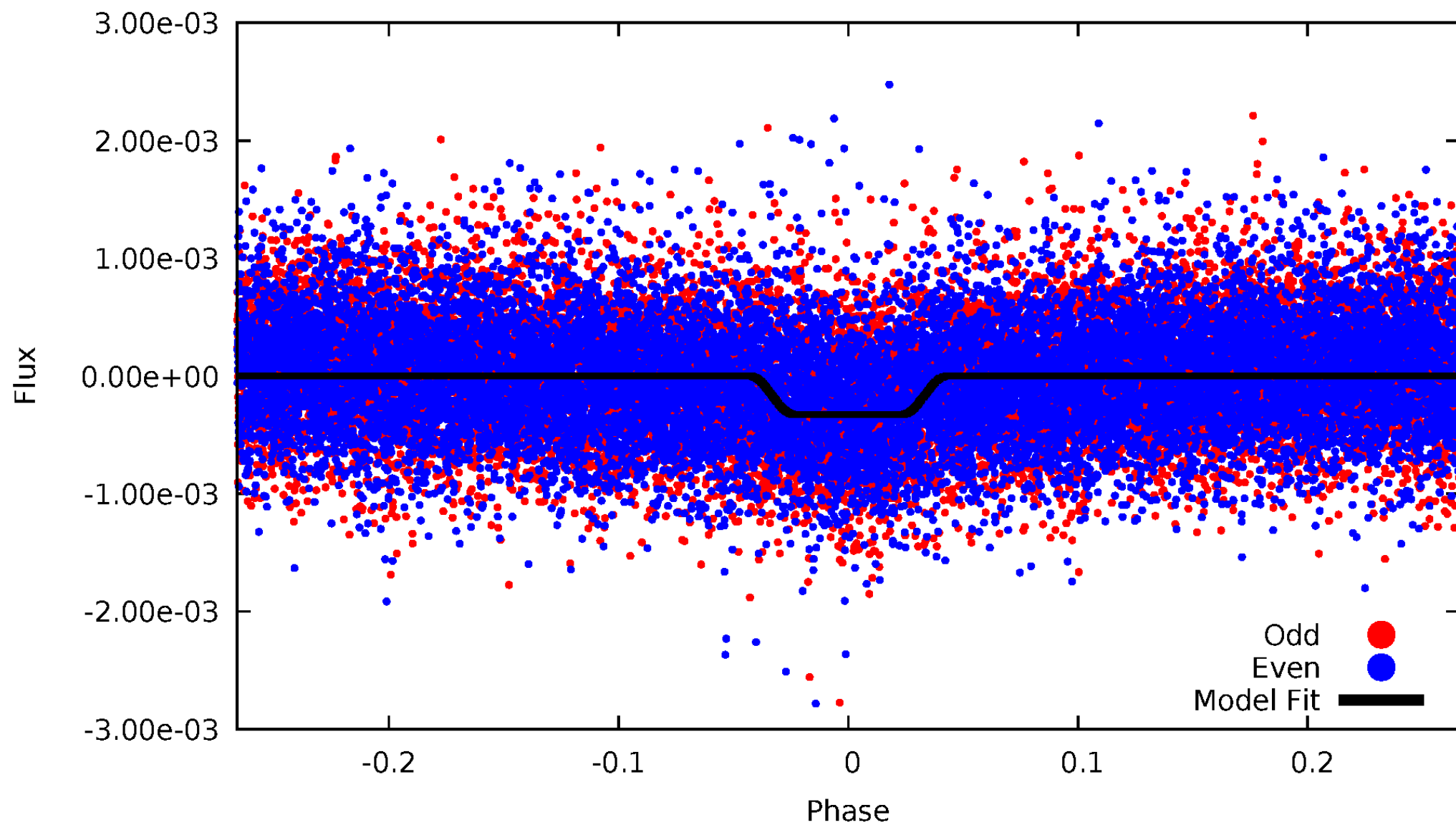
TCE 003859363-01





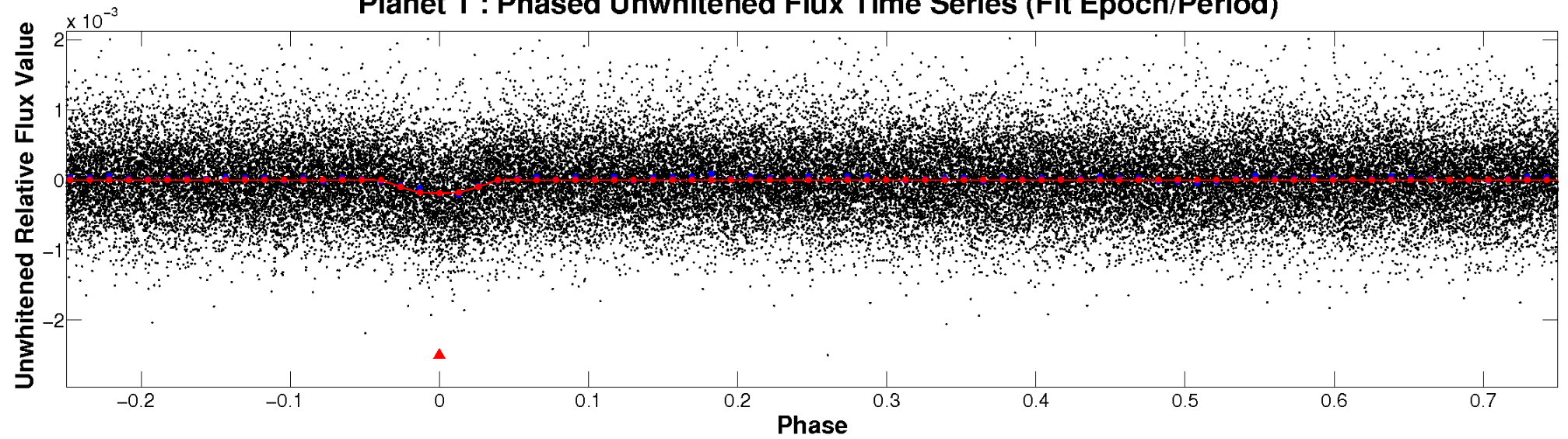
# ALT Odd/Even

TCE 003859363-01

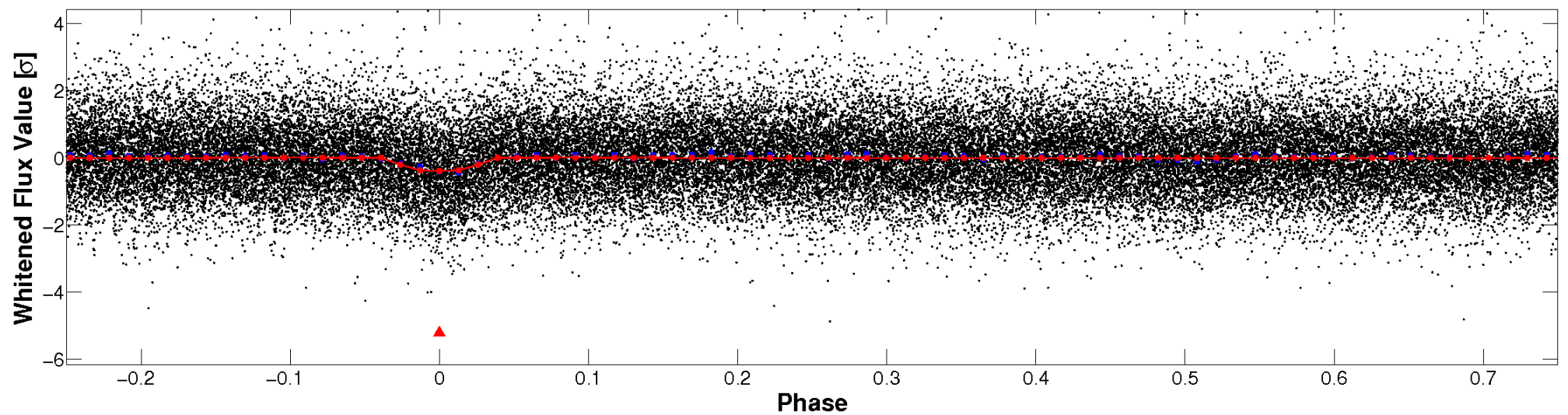


# Non-Whitened Vs. Whitened Light Curve

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

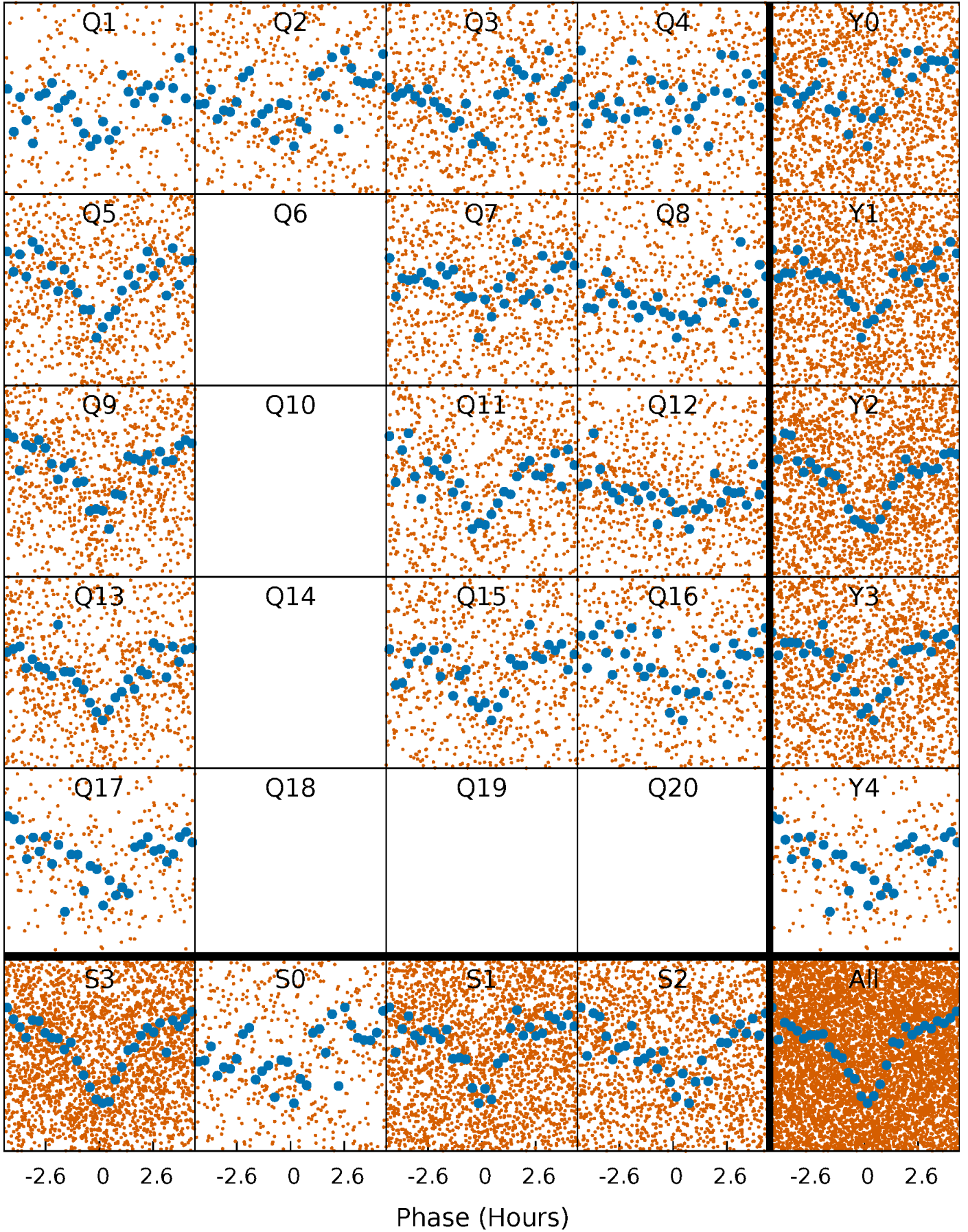


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

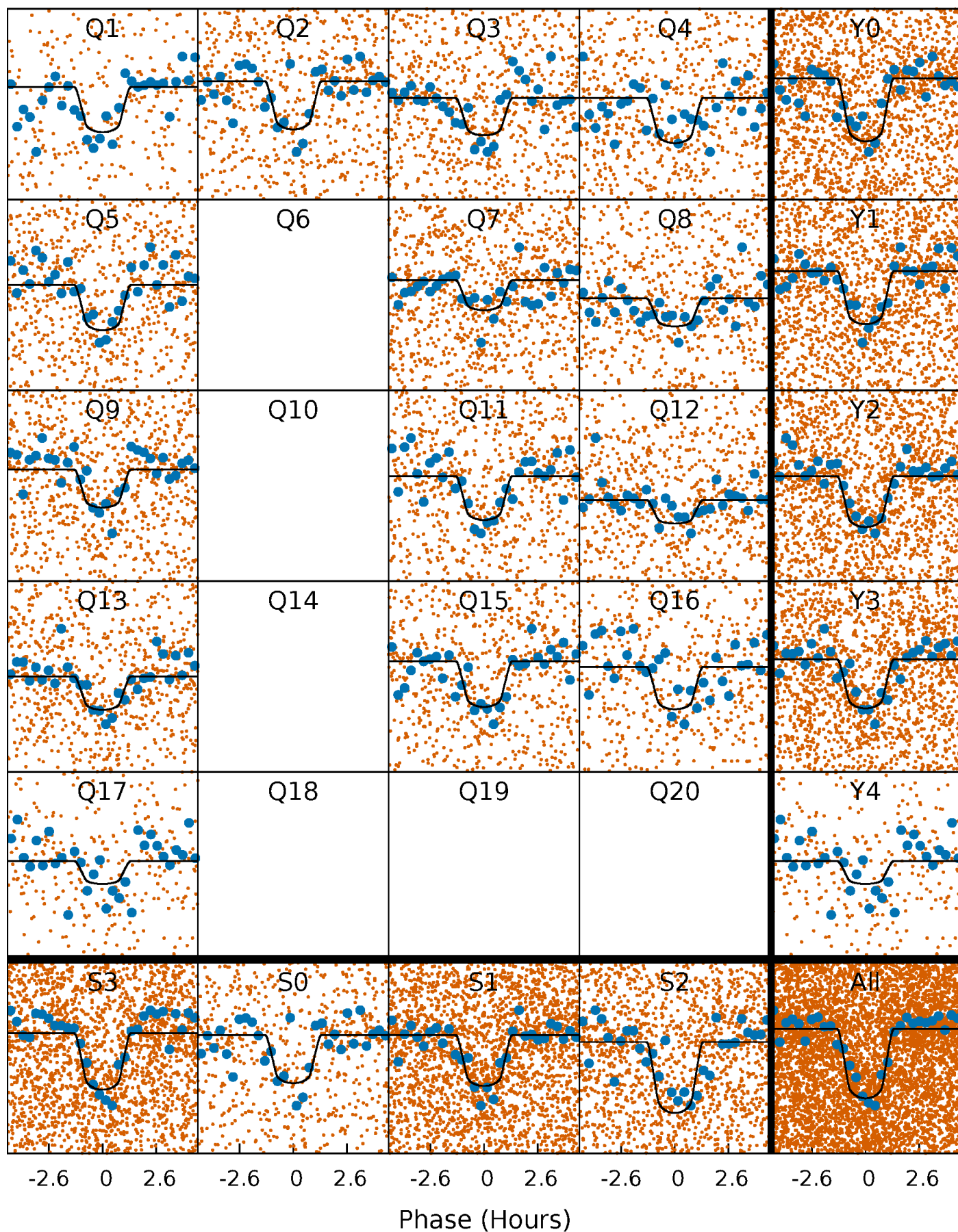
TCE 003859363-01   P= 1.568561 Days    $T_0=131.656178$  (BKJD)





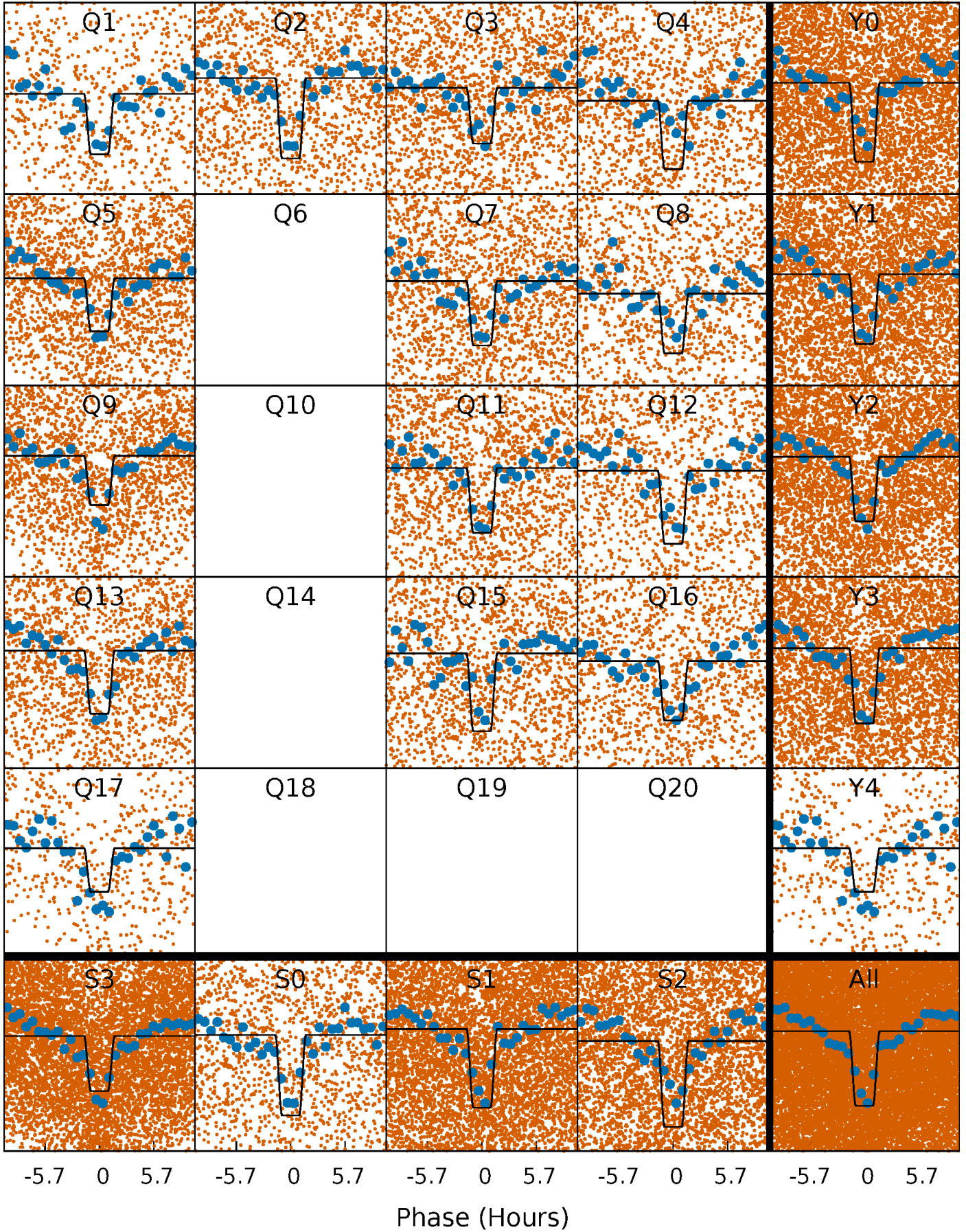
# DV Quarter-Phased Transit Curves

TCE 003859363-01 P= 1.568561 Days  $T_0=131.656178$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

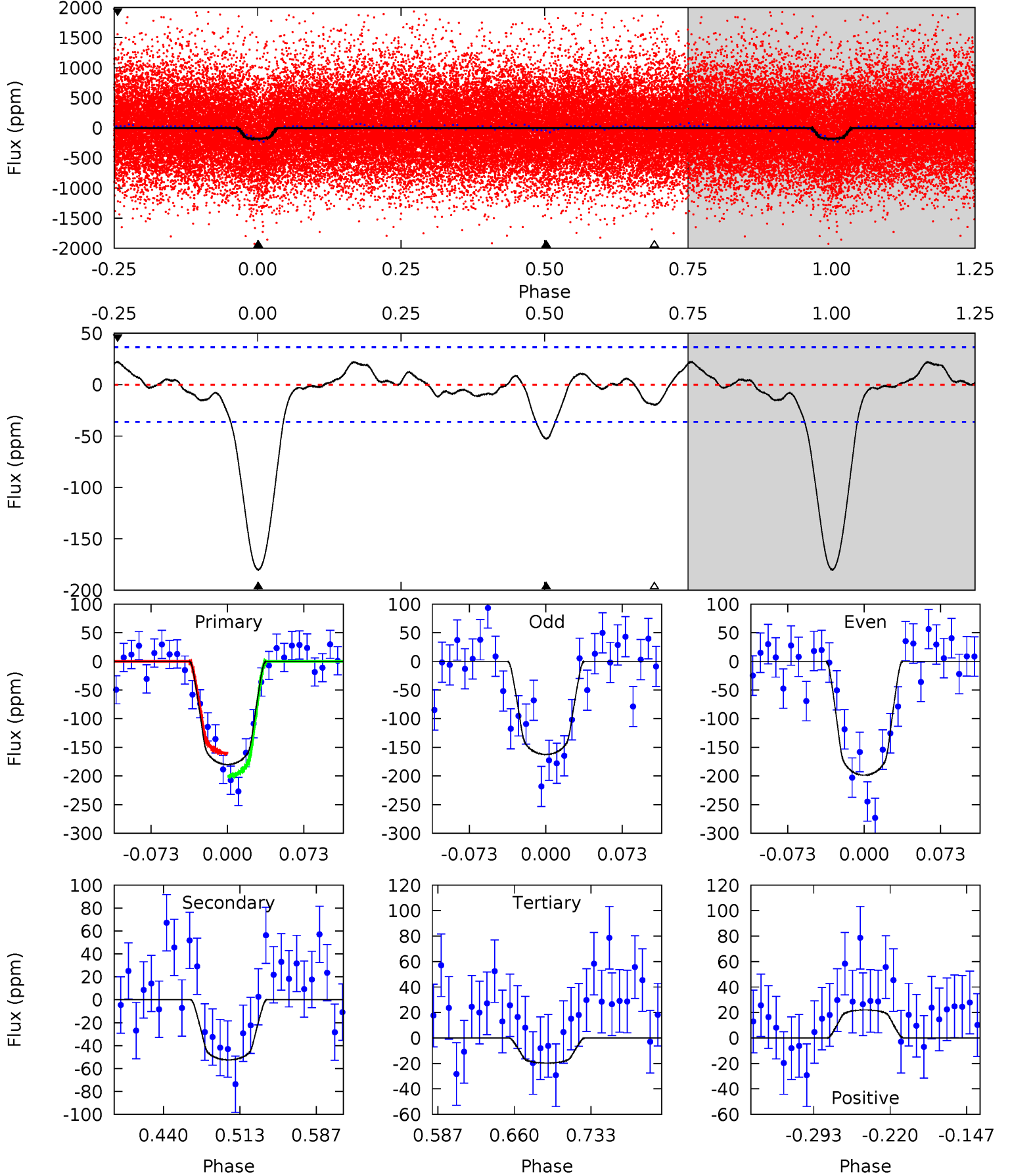
TCE 003859363-01 P= 1.568587 Days  $T_0=131.645918$  (BKJD)



# DV Model-Shift Uniqueness Test

003859363-01, P = 1.568561 Days, E = 130.087617 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
22.9	6.67	2.51	2.80	4.63	1.79	1.24	20.4	20.1	4.17	3.87	2.31	0.90	0.11	2.55

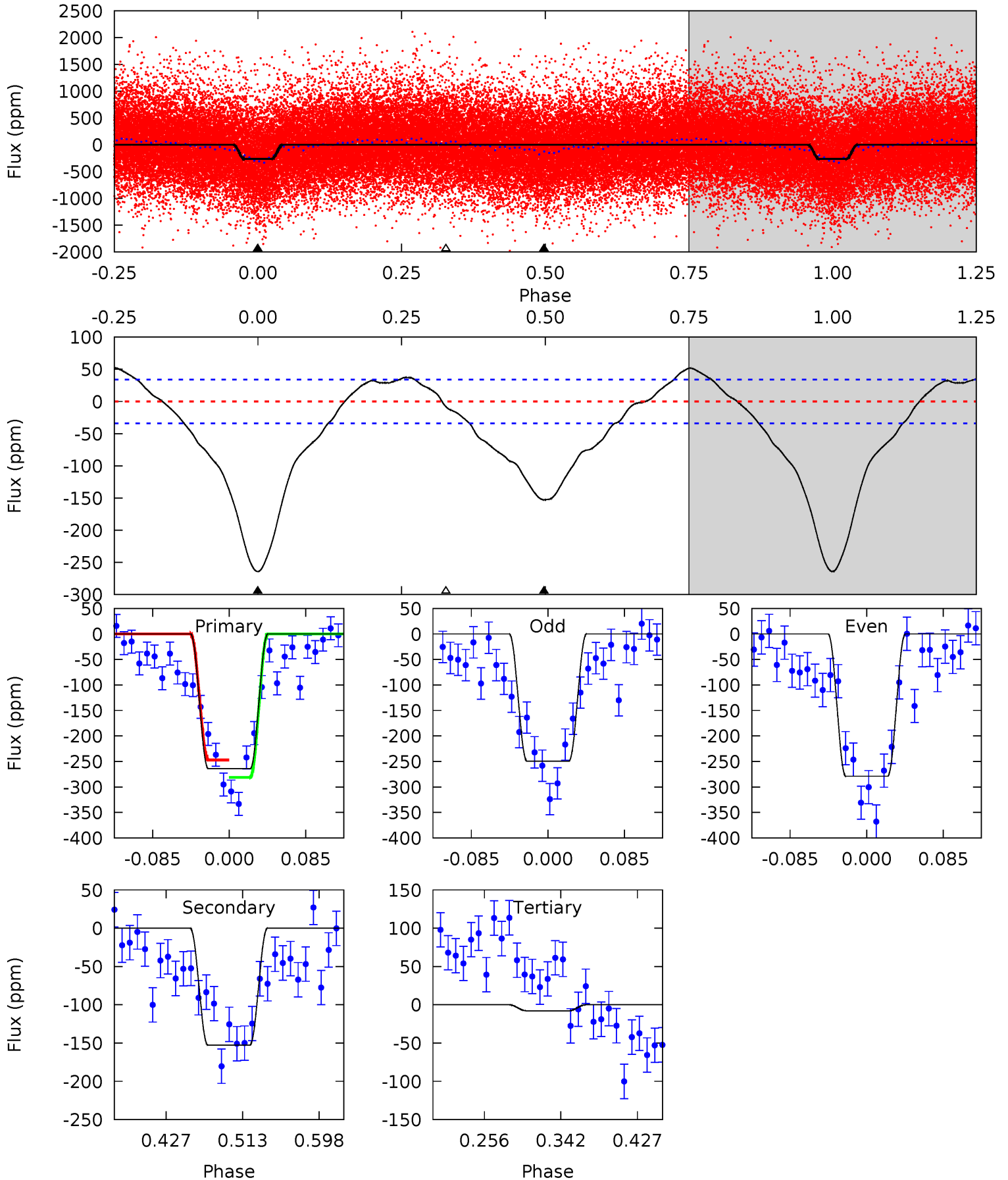




# Alt Model-Shift Uniqueness Test

003859363-01, P = 1.568587 Days, E = 130.077331 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
35.7	20.7	1.07	0	4.60	1.72	4.93	34.6	35.7	19.6	20.7	2.00	0.95	0.16	2.31





### Stellar Parameters For KIC 003859363

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6248^{+175}_{-241}$	$4.442^{+0.070}_{-0.210}$	$-0.300^{+0.250}_{-0.300}$	$1.002^{+0.312}_{-0.112}$	$1.008^{+0.147}_{-0.120}$	$1.412^{+0.515}_{-0.764}$
	+3%/-4%	+2%/-5%	+83%/-100%	+31%/-11%	+15%/-12%	+37%/-54%
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 003859363-01 / KOI 2887.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-52 \pm 8$	$1.69^{+0.56}_{-0.51}$	$2401^{+194}_{-132}$	$4469^{+731}_{-463}$	$6.923^{+7.013}_{-3.089}$
Alt.	$-153 \pm 7$	$2.04^{+0.57}_{-0.51}$	$2402^{+172}_{-137}$	$5196^{+675}_{-473}$	$14^{+10}_{-5}$

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

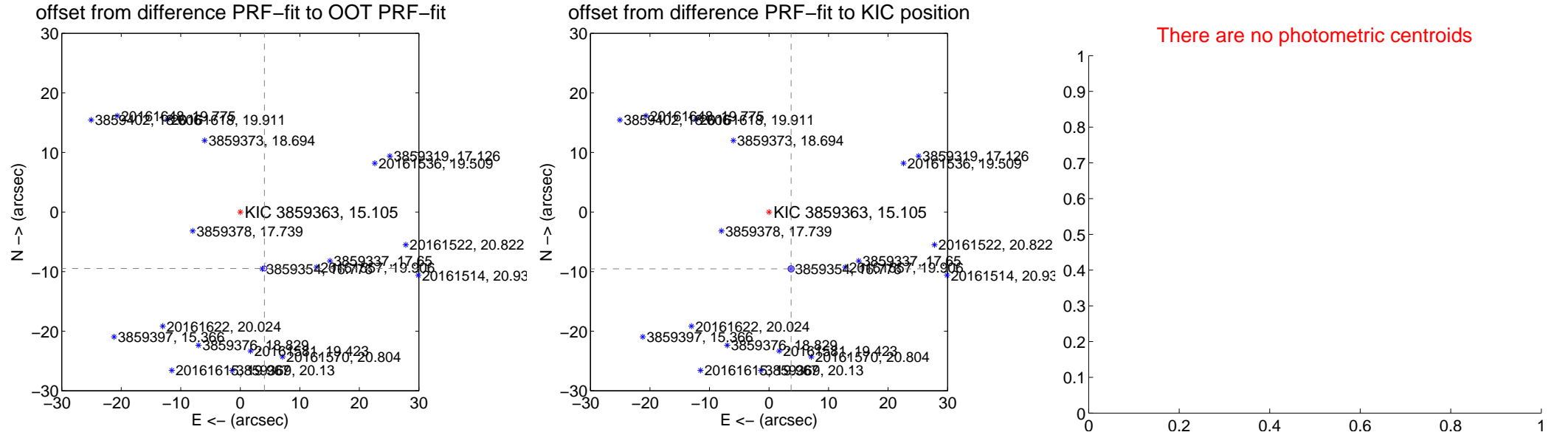
## DV Centroid Data

Supplemental centroid analysis for 003859363-01. Kepler magnitude: 15.11. Transit SNR 18.20

There are 10 quarters with good PRF difference image offsets

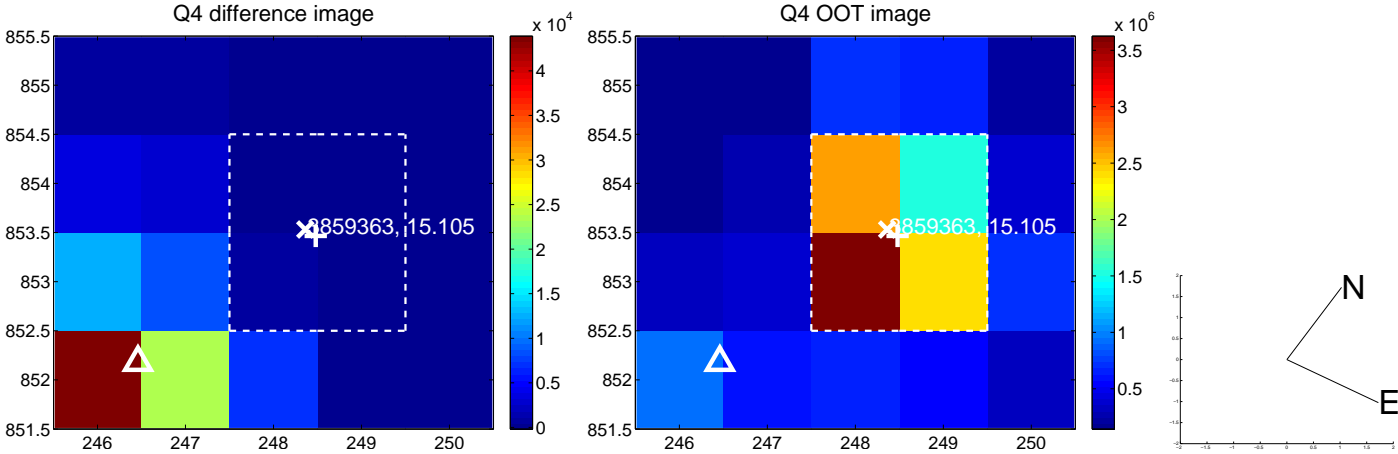
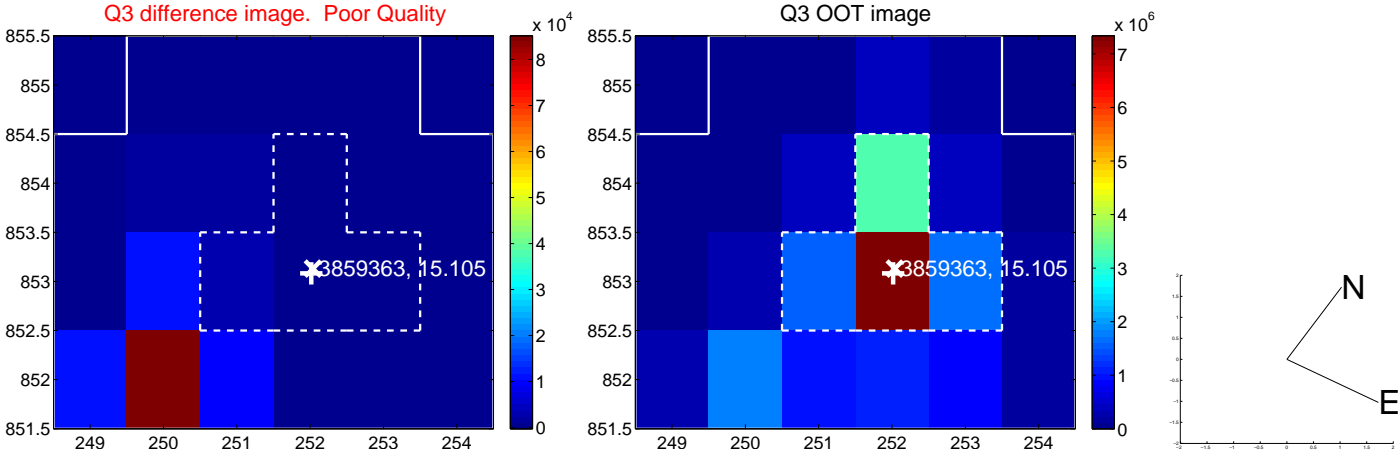
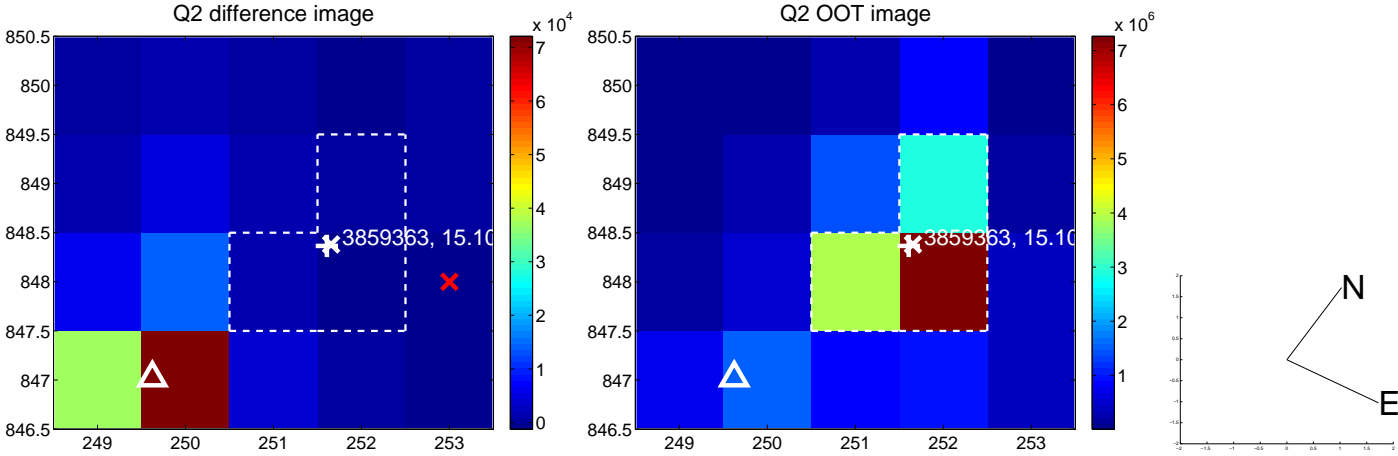
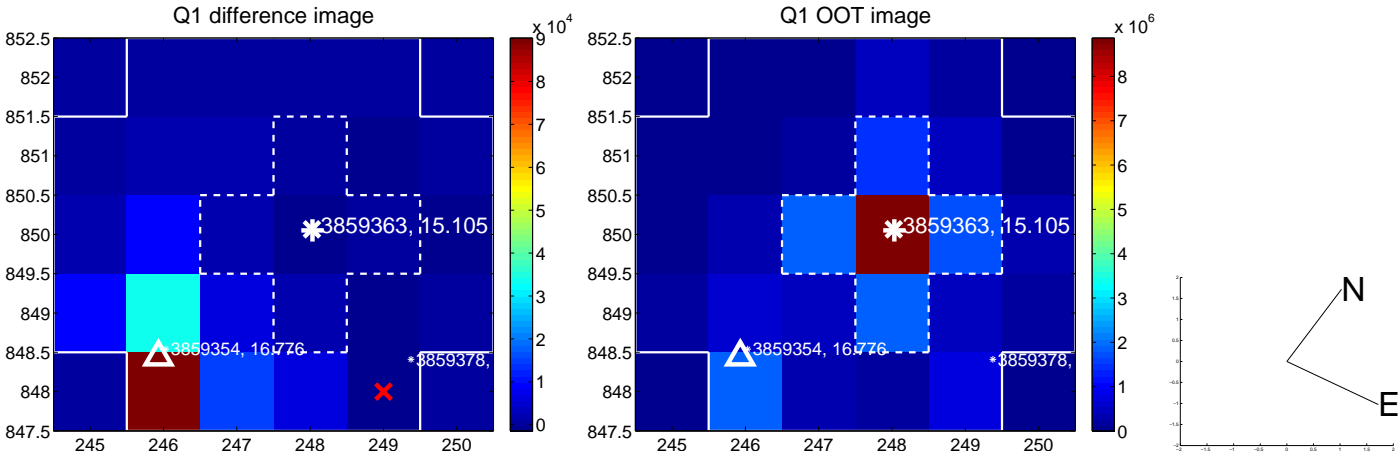
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>10.306 <math>\pm</math> 0.140</b>	<b>73.62</b>	-4.052 $\pm$ 0.091	-9.476 $\pm$ 0.171
PRF-fit source offset from KIC position	<b>10.237 <math>\pm</math> 0.174</b>	<b>58.96</b>	-3.715 $\pm$ 0.086	-9.540 $\pm$ 0.181
photometric centroid source offset	—	—	—	—

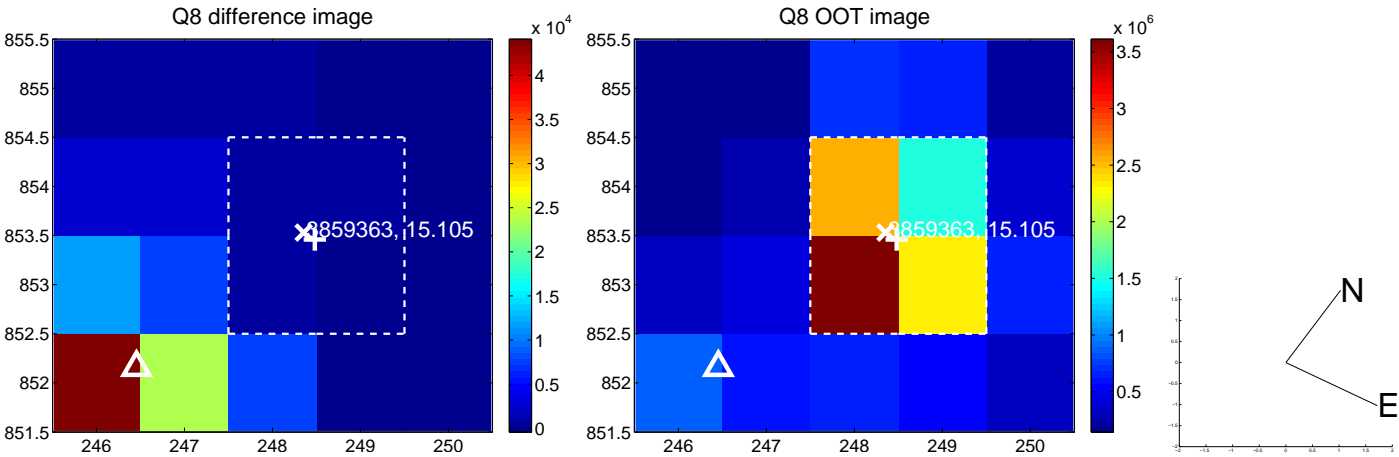
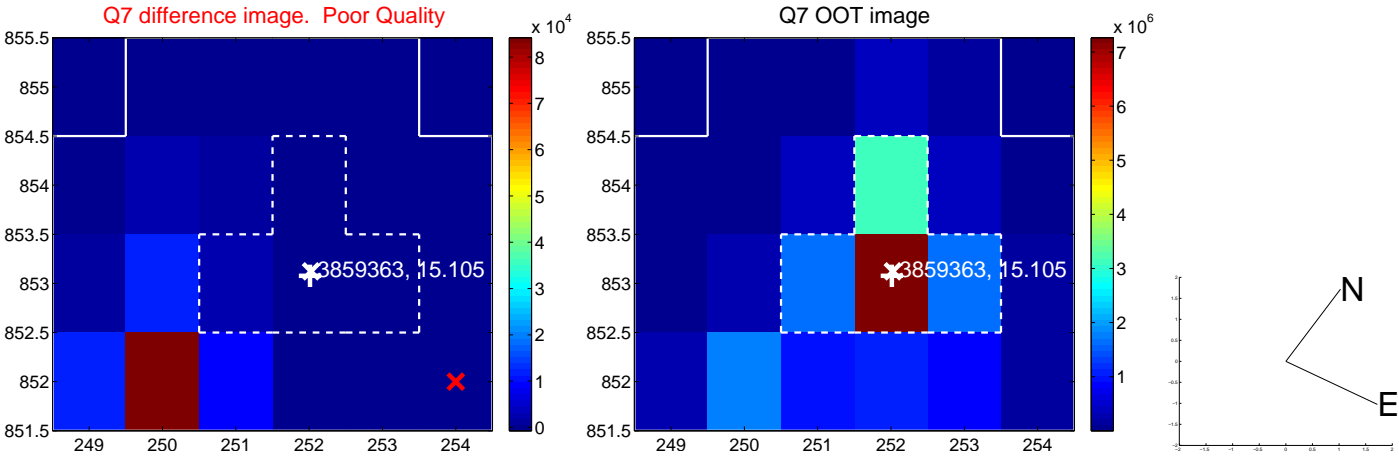
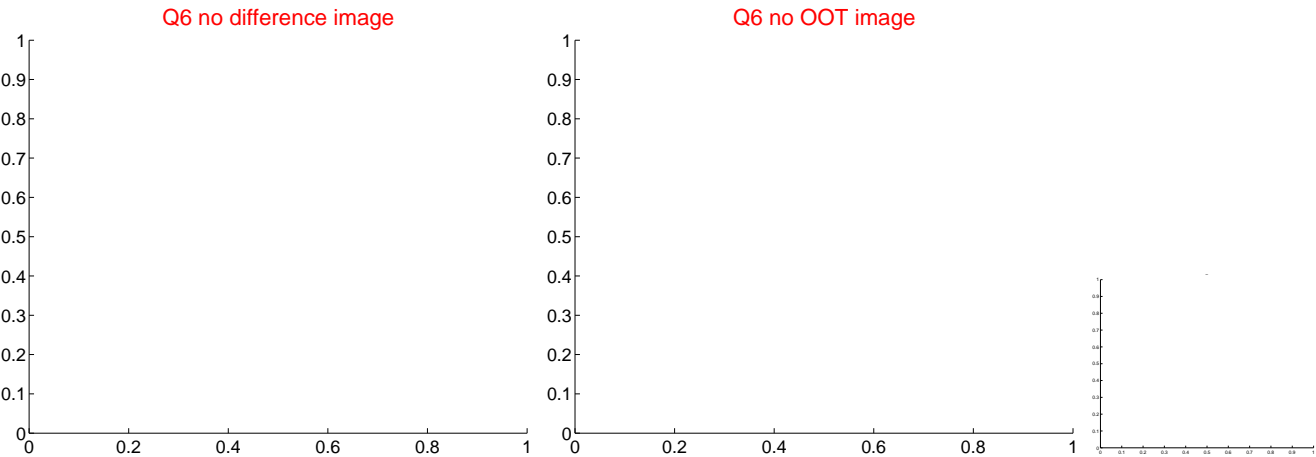
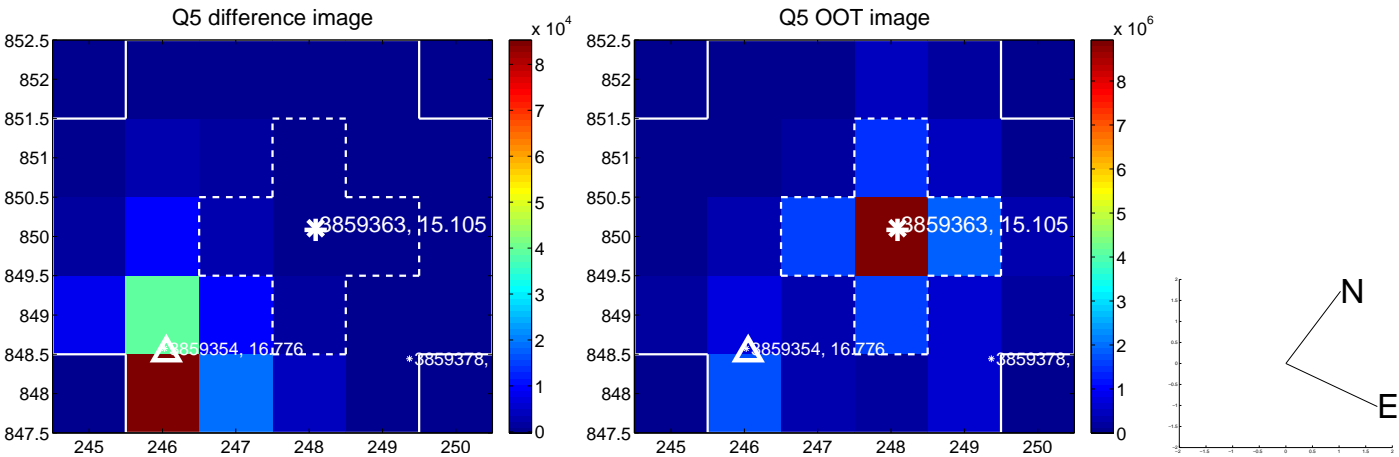


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

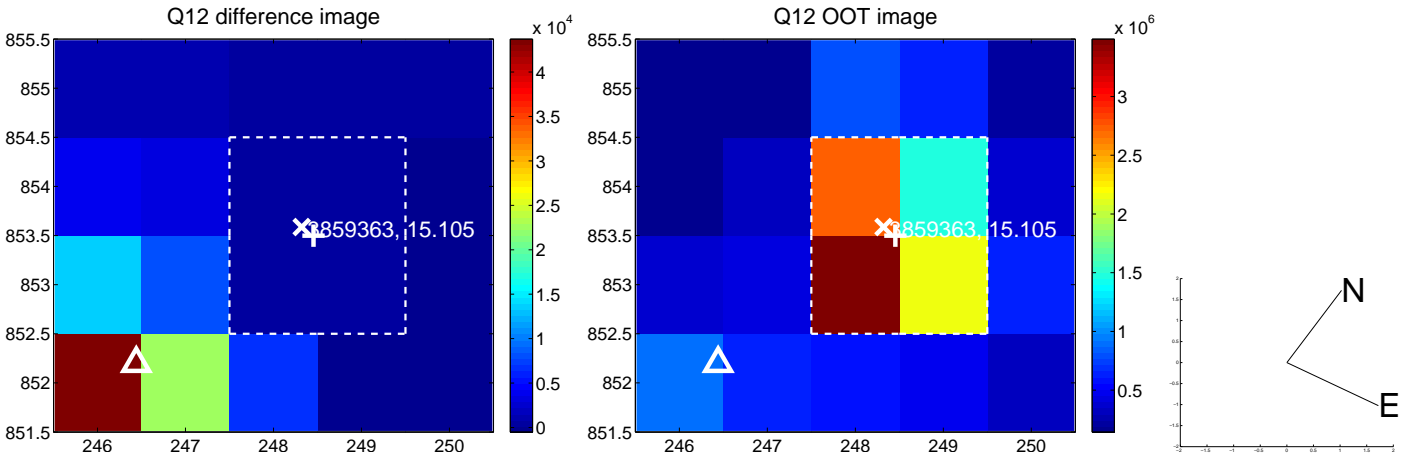
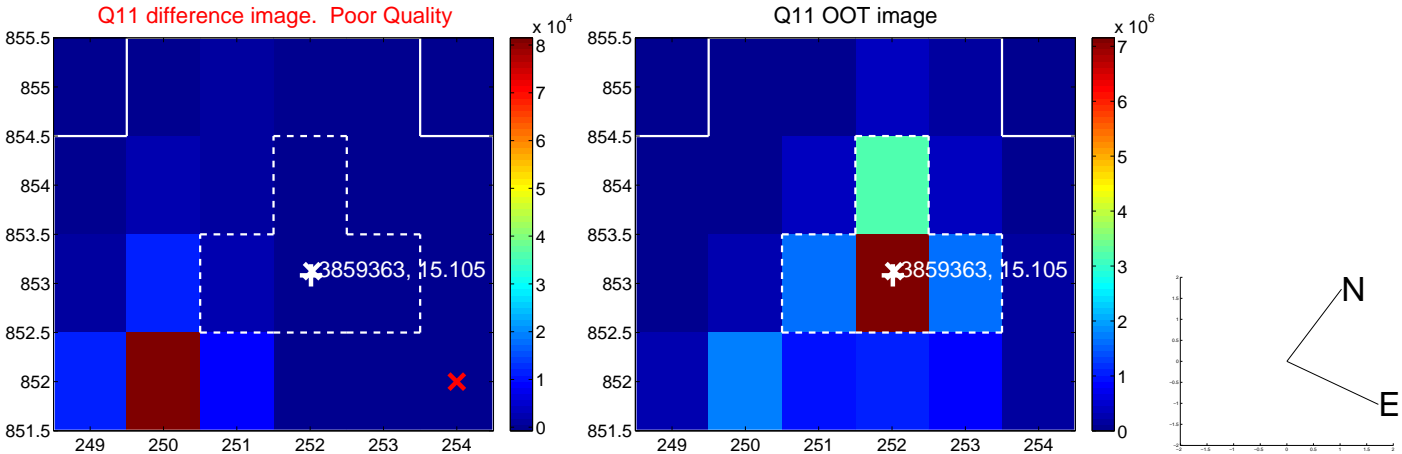
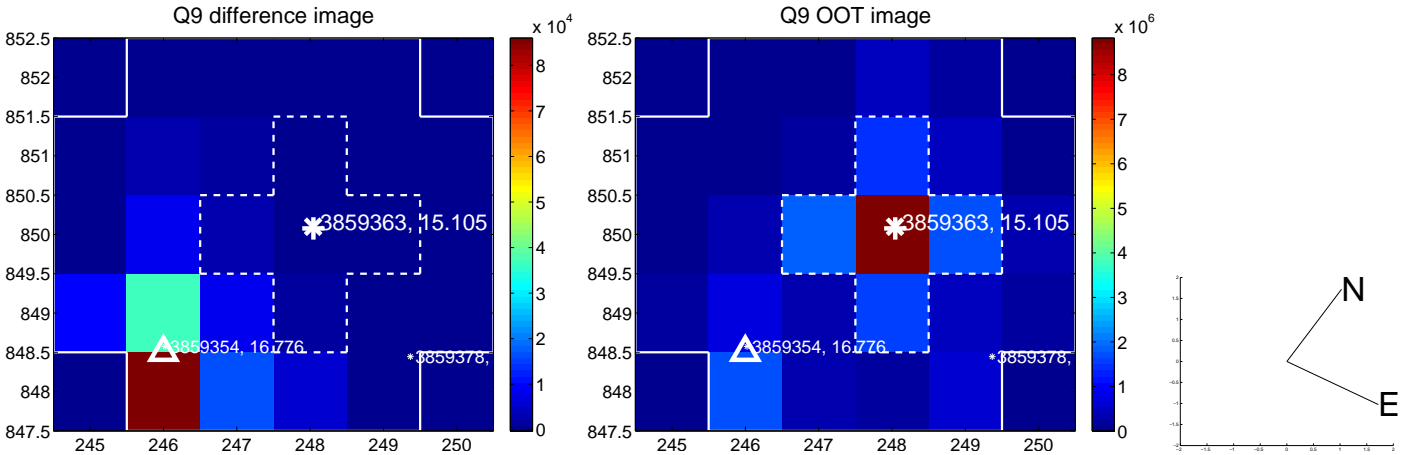


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

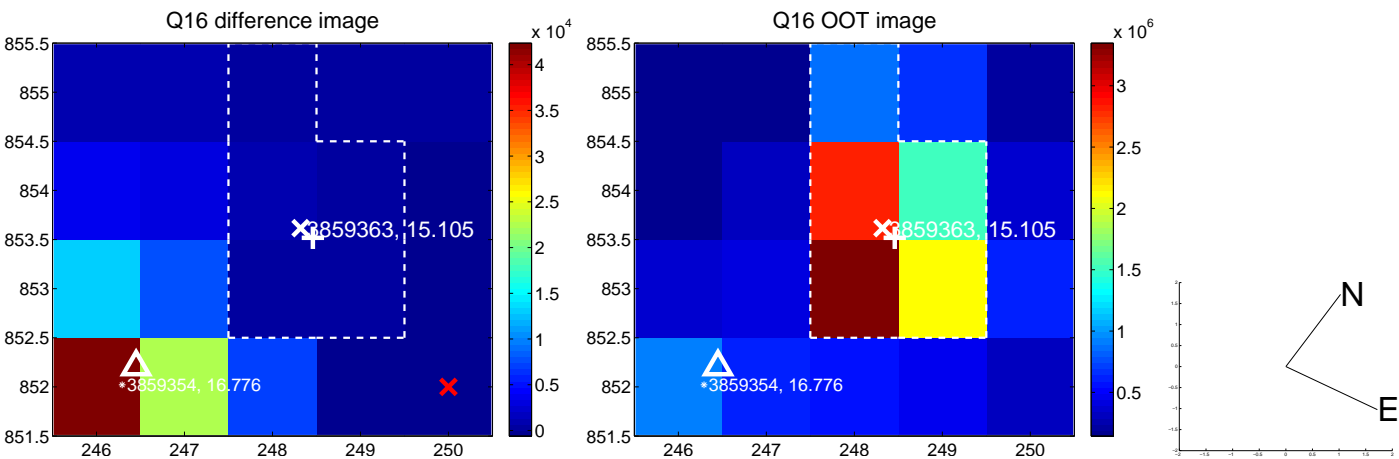
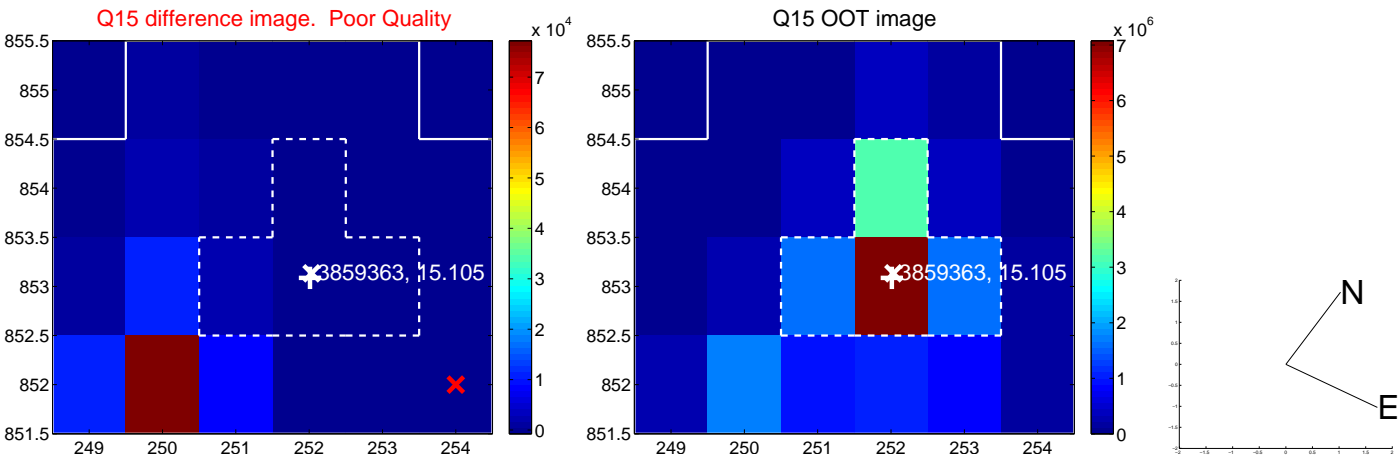
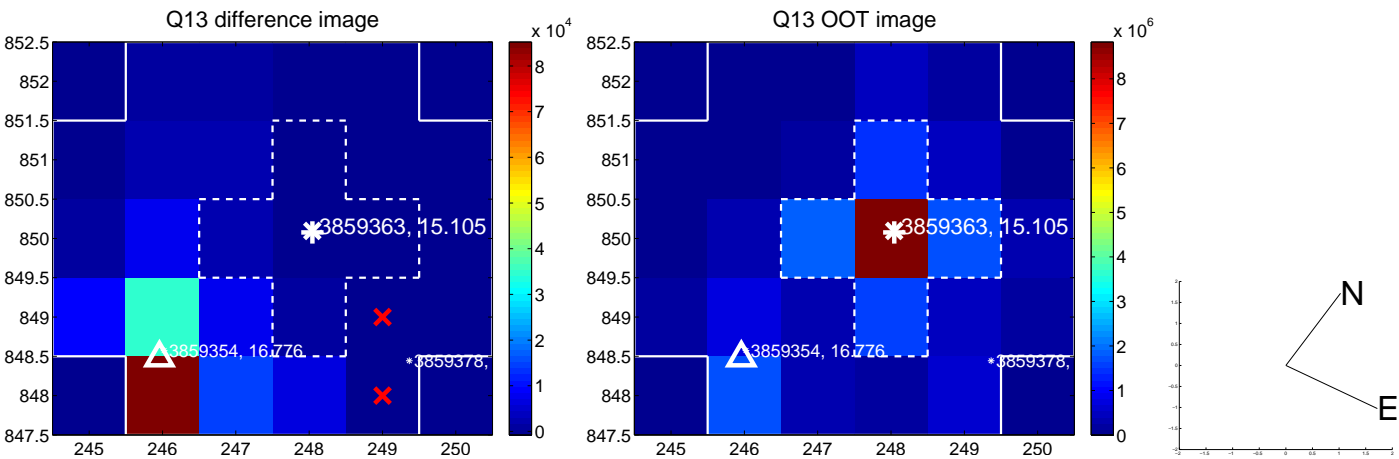




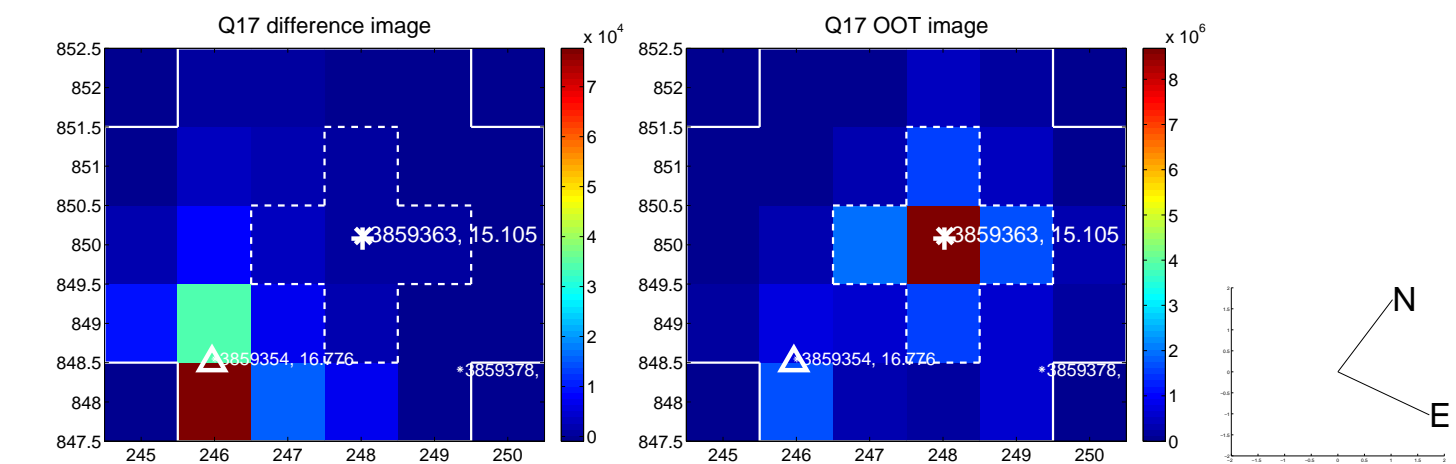
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



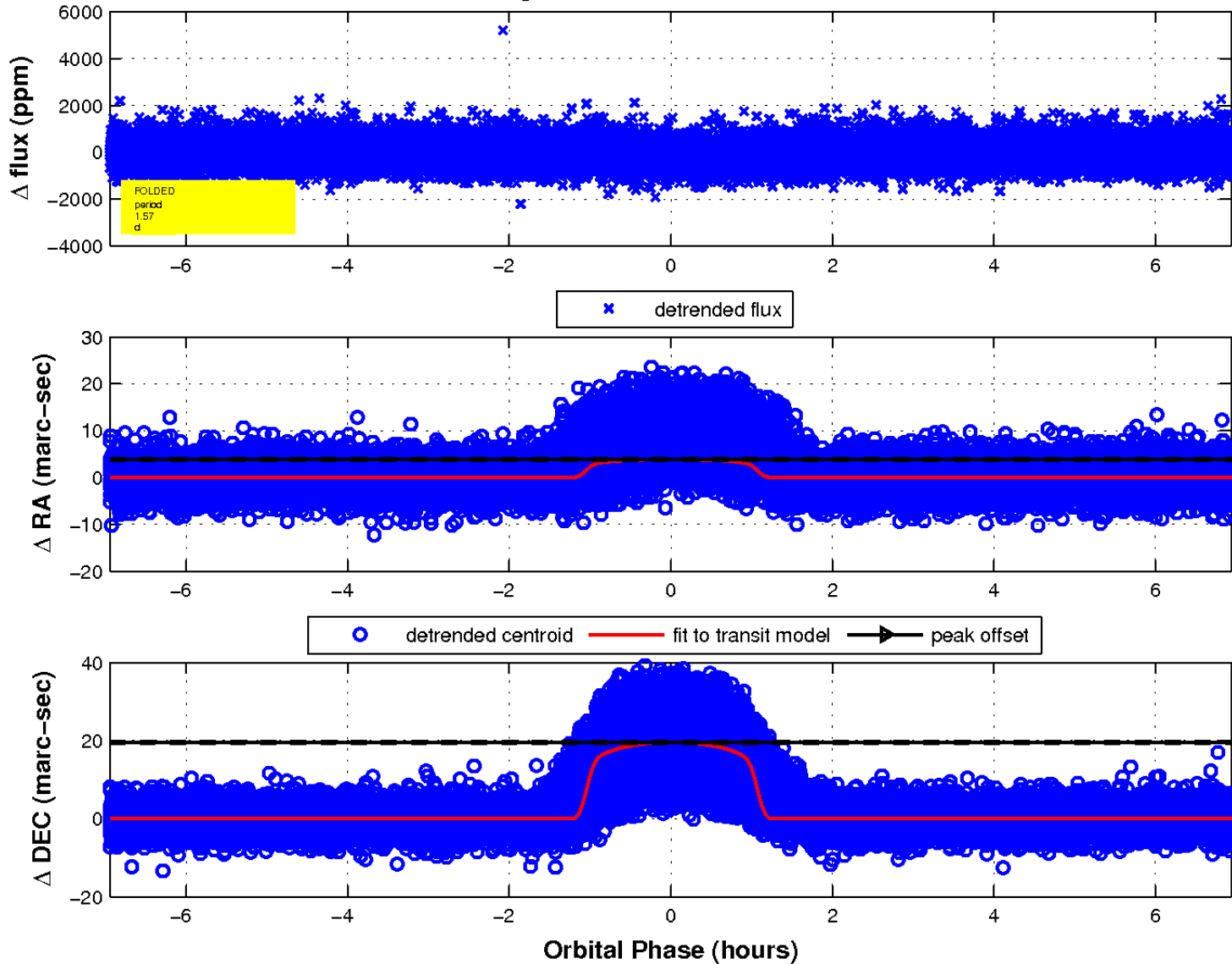
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

