

# KIC 010586744

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010586744-01	OBS	4892.01	21.375872	143.621761	96.2	9.714	8.5	8.9	1.05	5984	1.15	62.47

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010586744-01	OBS	PC	0.53	0	0	0	0	NO_COMMENT

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

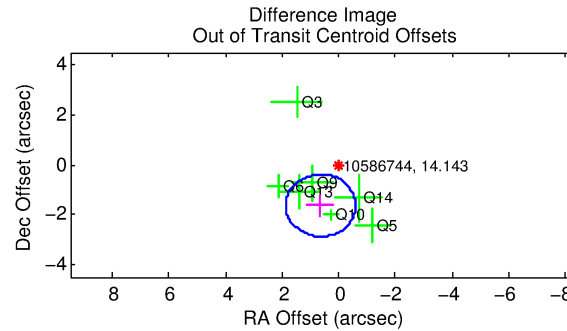
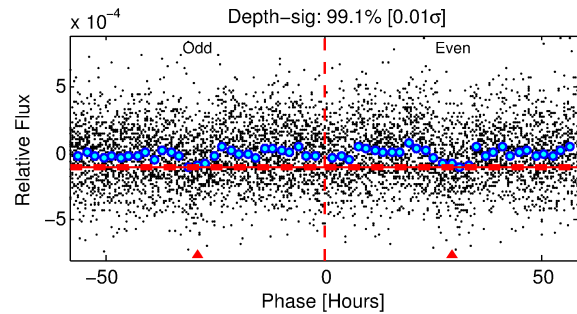
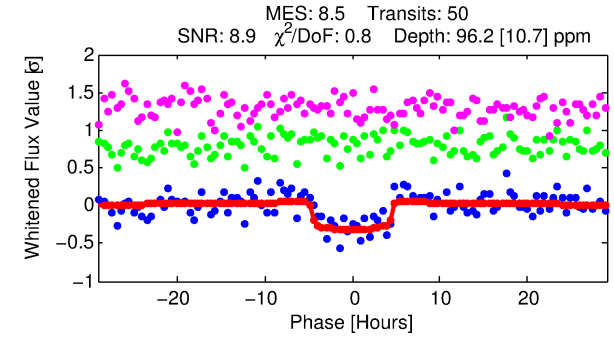
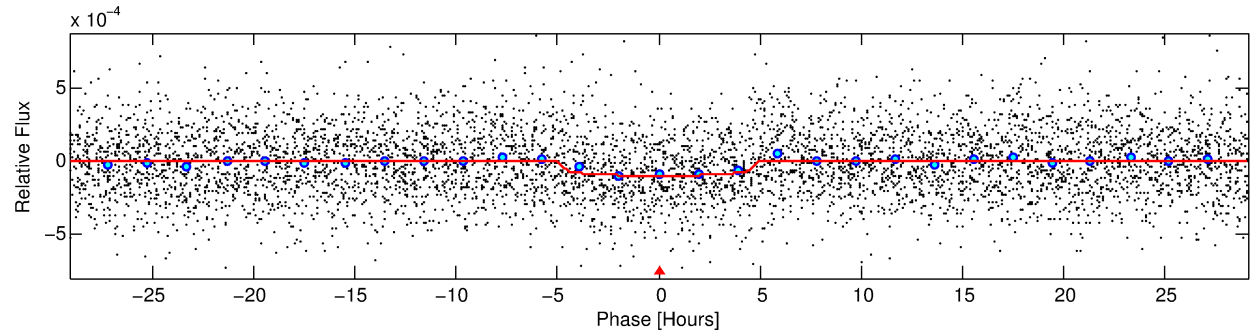
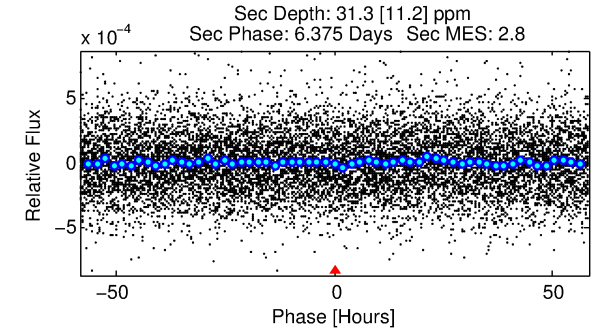
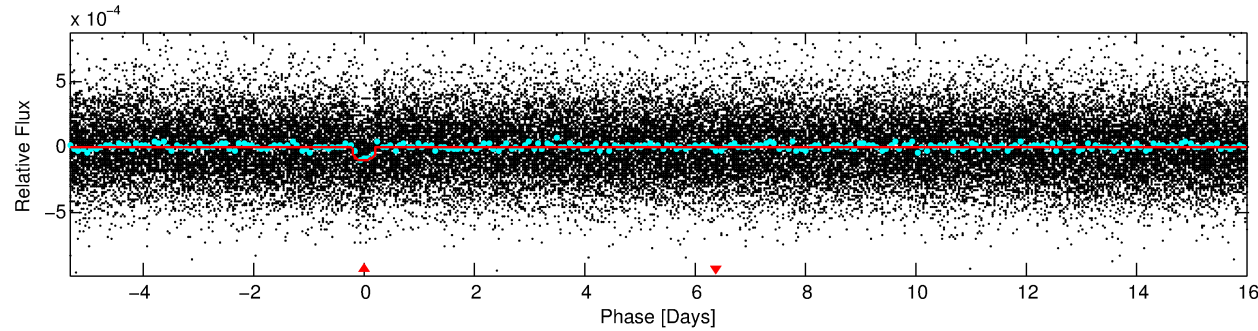
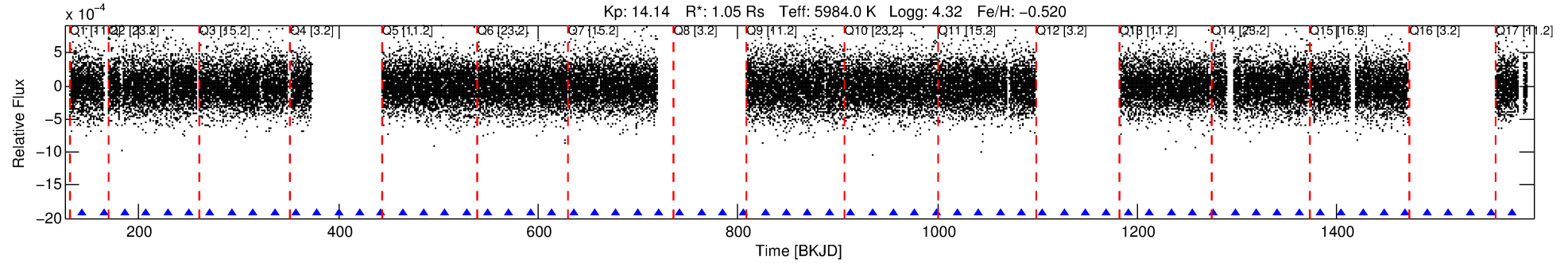
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010586744-01

No Significant Match Found

# DV One-Page Summary

KIC: 10586744 Candidate: 1 of 1 Period: 21.376 d  
KOI: K04892.01 Corr: 0.909



## DV Fit Results:

Period = 21.37587 [0.00040] d  
Epoch = 143.6218 [0.0151] BKJD  
Rp/R\* = 0.0100 [0.0042]  
a/R\* = 10.04 [21.54]  
b = 0.82 [0.89]  
Seff = 62.47 [23.25]  
Teq = 717 [67] K  
Rp = 1.15 [0.58] Re  
a = 0.1427 [0.0349] AU  
Ag = 265.48 [258.10] [1.02σ]  
Teffp = 4474 [1019] K [3.68σ]

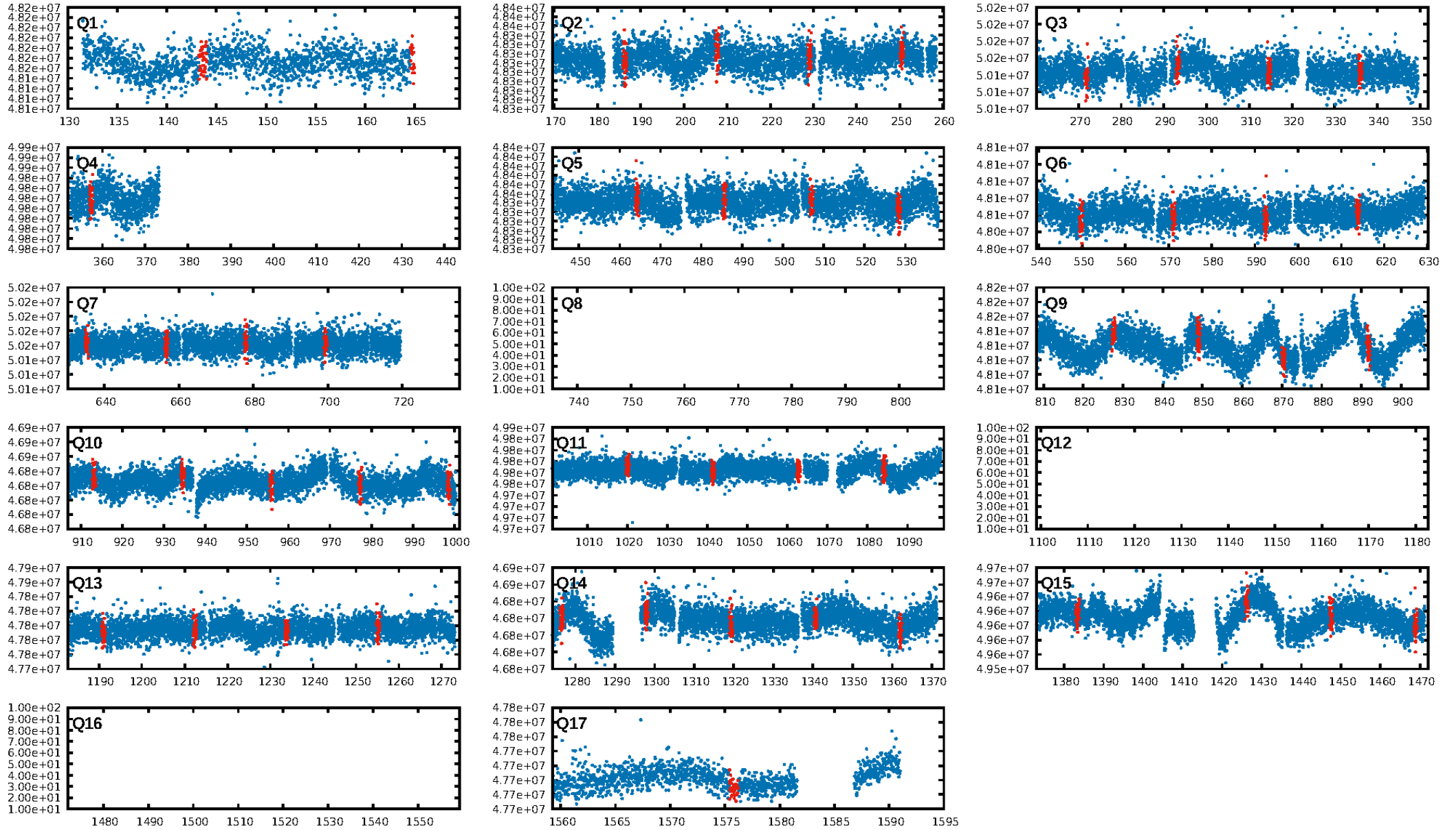
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 97.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.21e-17  
RollingBand-fgt: 1.00 [46/46]  
GhostDiagnostic-chr: -2.323  
Centroid-sig: 2.6%  
Centroid-so: 1.643 arcsec [1.35σ]  
OotOffset-rm: 1.760 arcsec [4.26σ]  
KicOffset-rm: 1.739 arcsec [3.54σ]  
OotOffset-st: 3/1/0/3 [7]  
KicOffset-st: 3/1/0/3 [7]  
DiffImageQuality-fgm: 1.00 [7/7]  
DiffImageOverlap-fno: 1.00 [14/14]

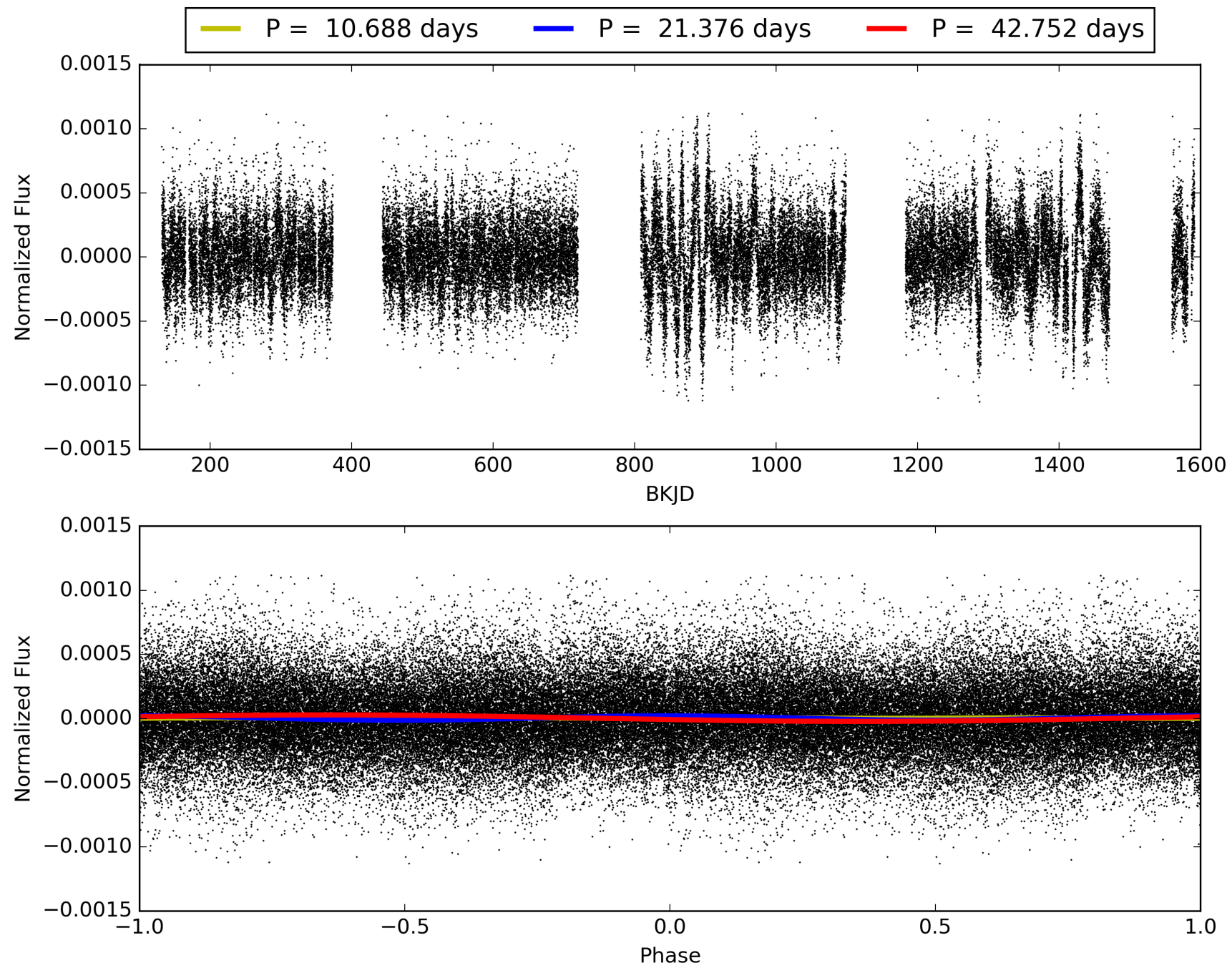
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:43:43 Z

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

# TCE 010586744-01, PDC Light Curves

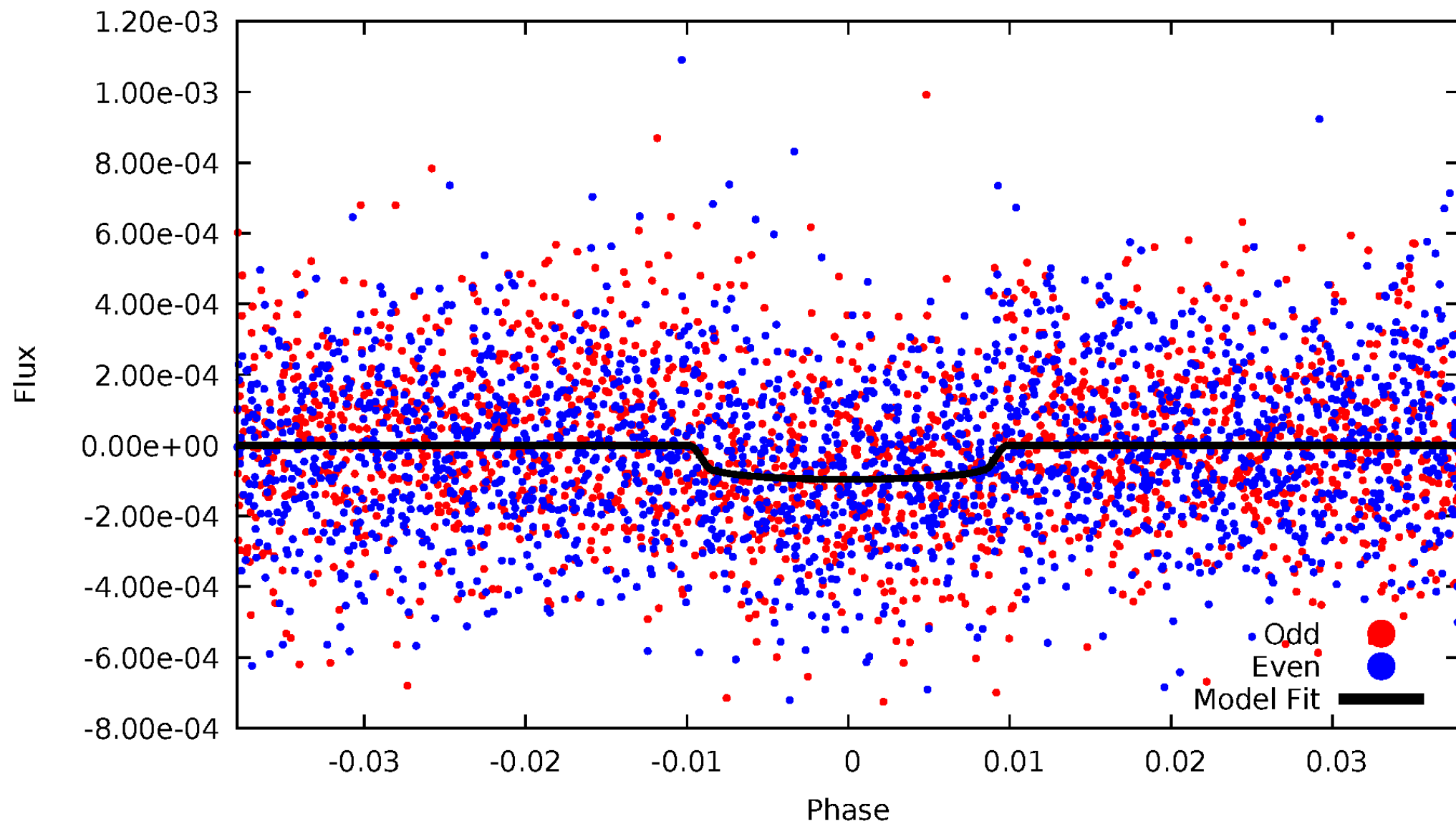


# TCE 010586744-01



# DV Odd/Even

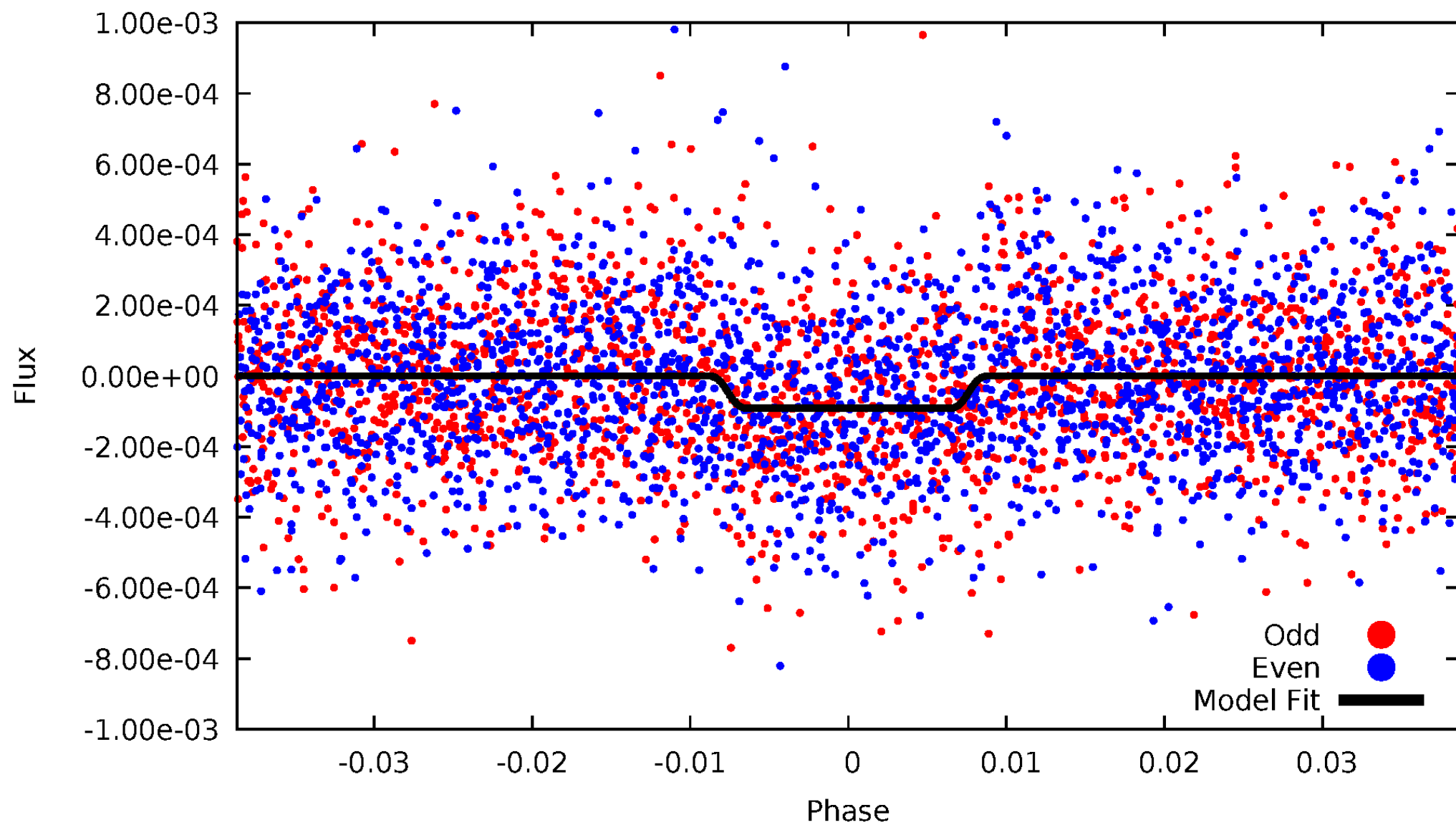
TCE 010586744-01





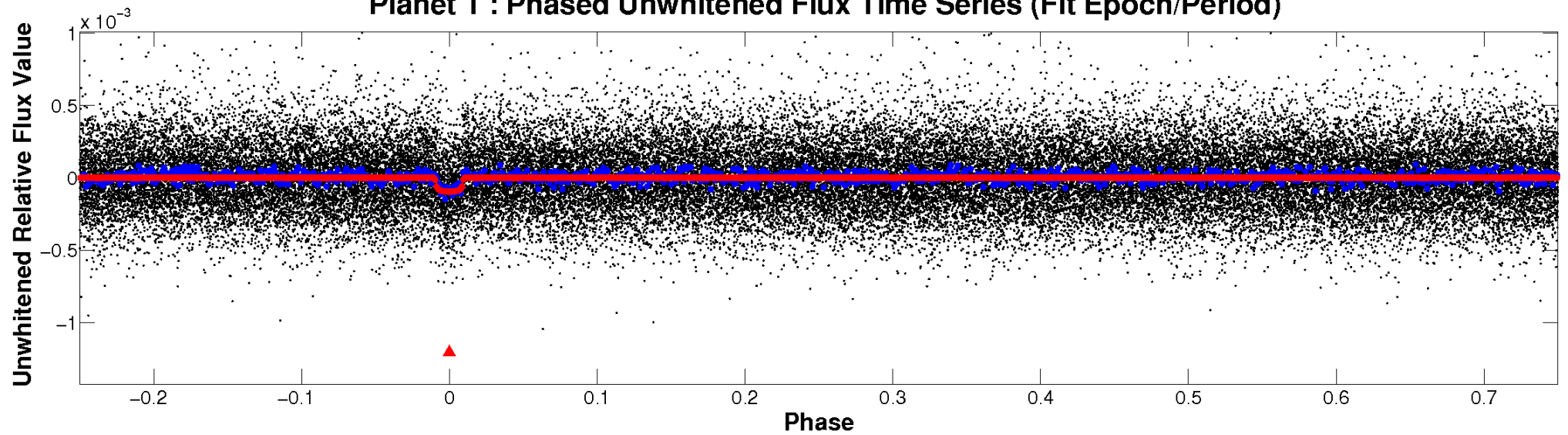
# ALT Odd/Even

TCE 010586744-01

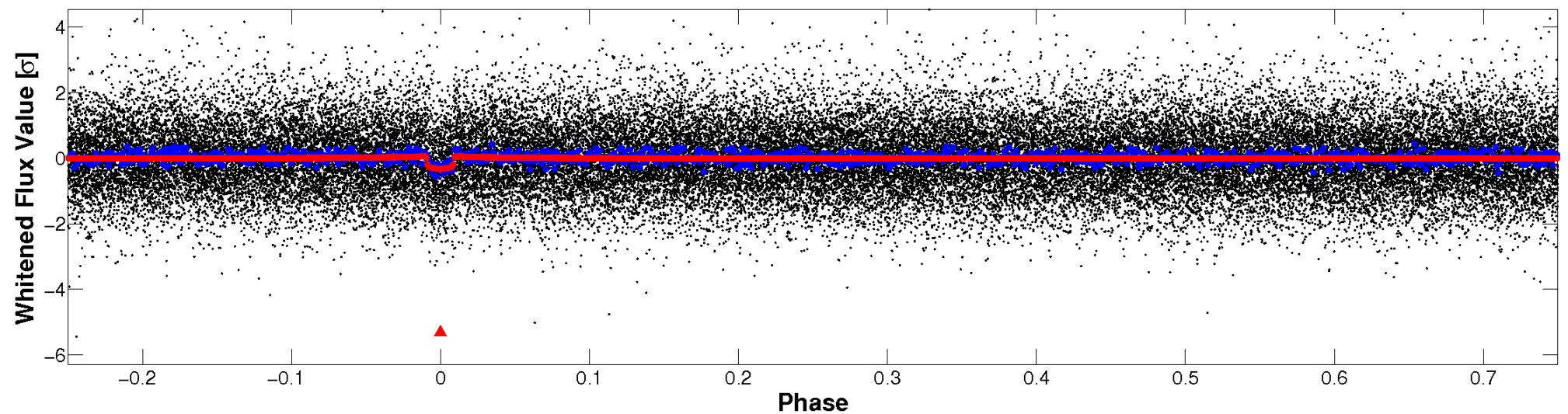


# Non-Whitened Vs. Whitened Light Curve

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

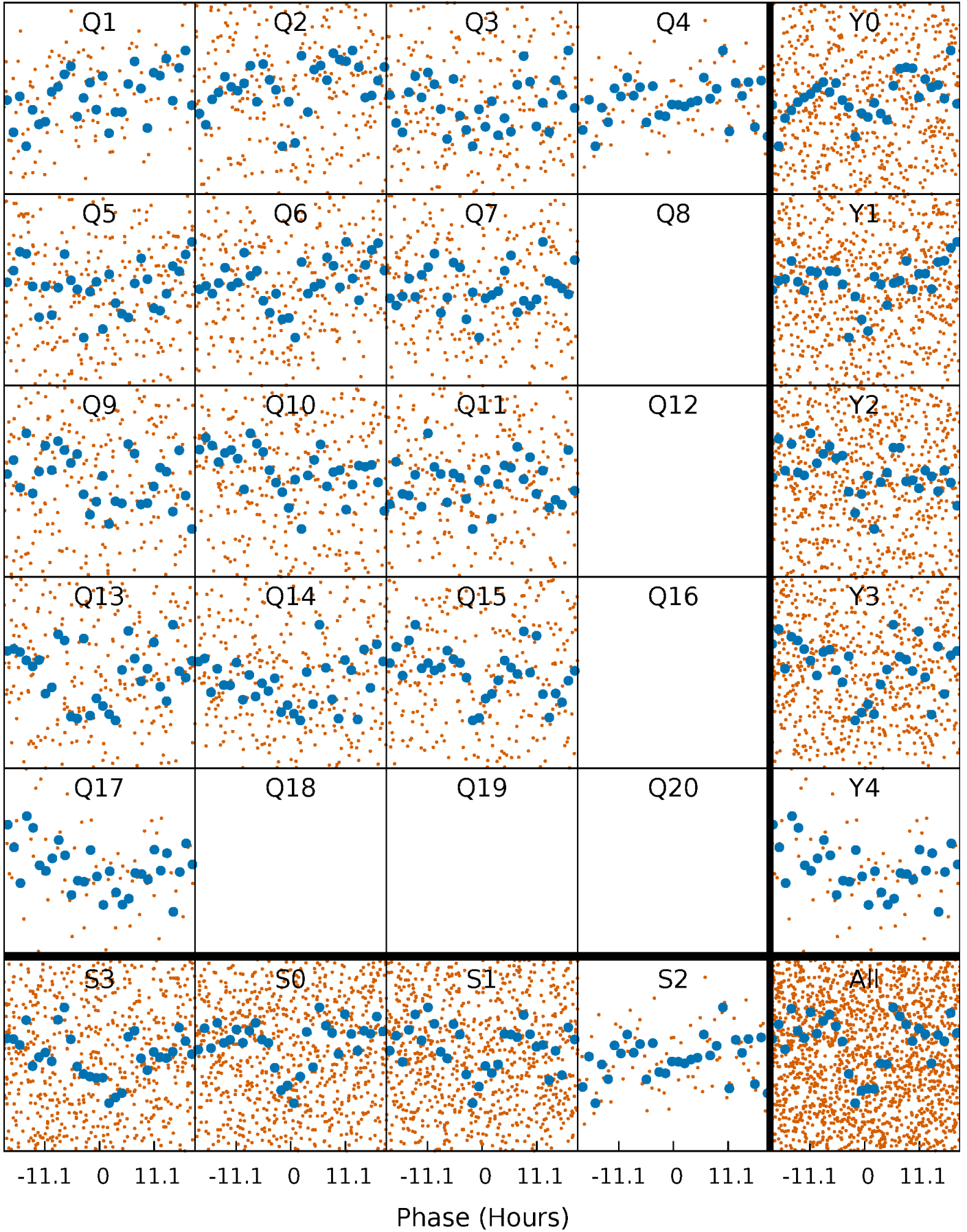


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

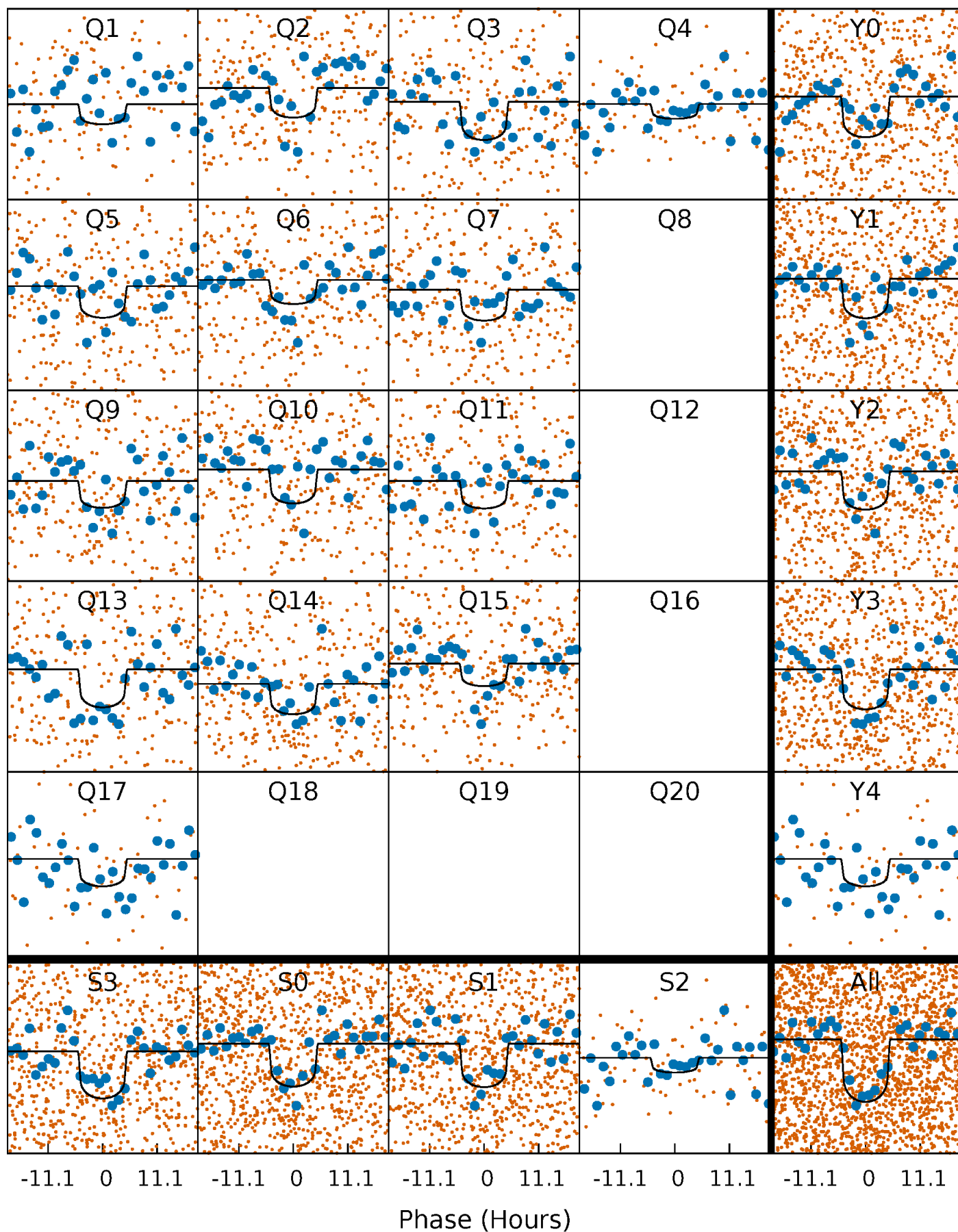
TCE 010586744-01 P= 21.375872 Days  $T_0=143.621761$  (BKJD)





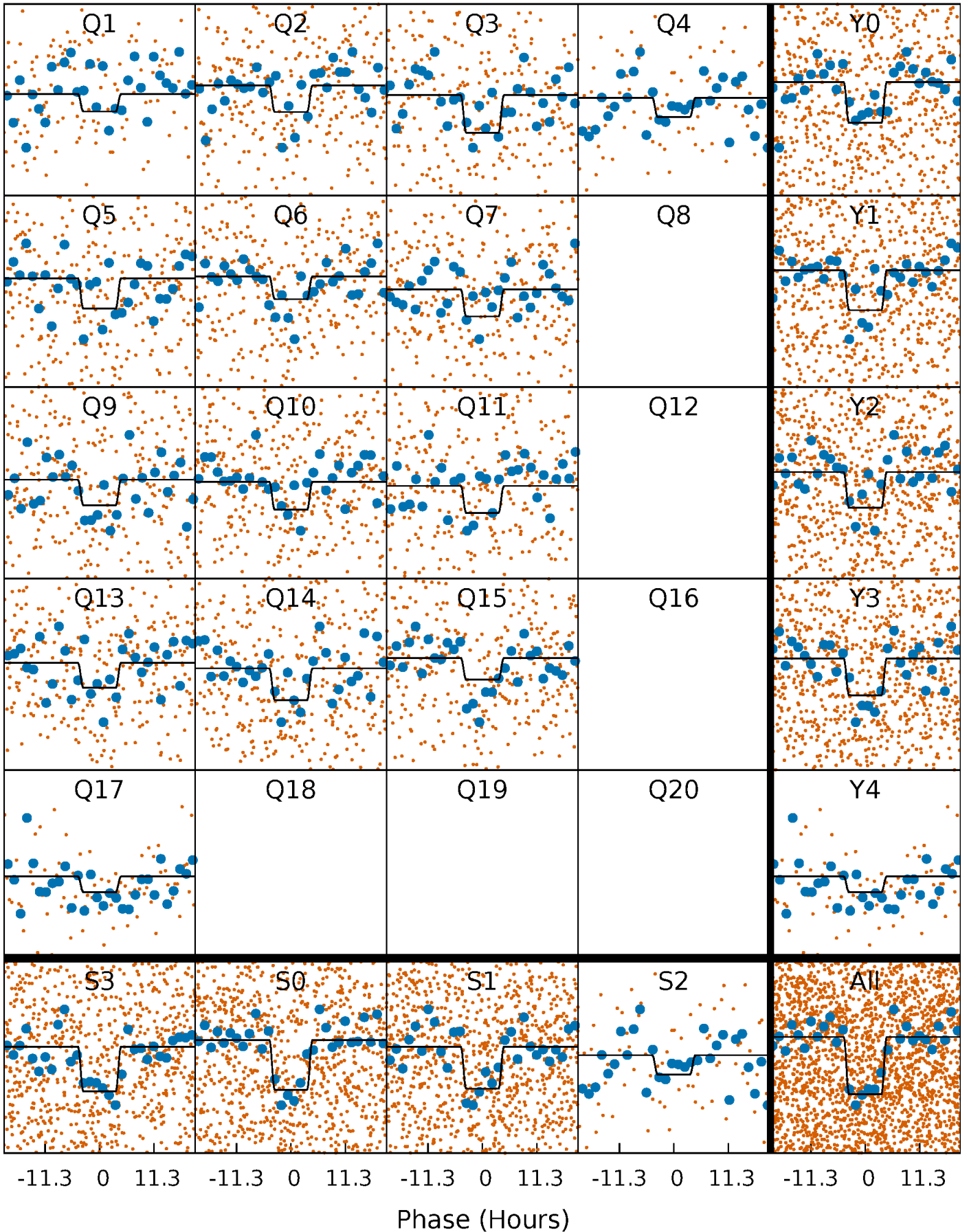
# DV Quarter-Phased Transit Curves

TCE 010586744-01 P= 21.375872 Days  $T_0=143.621761$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

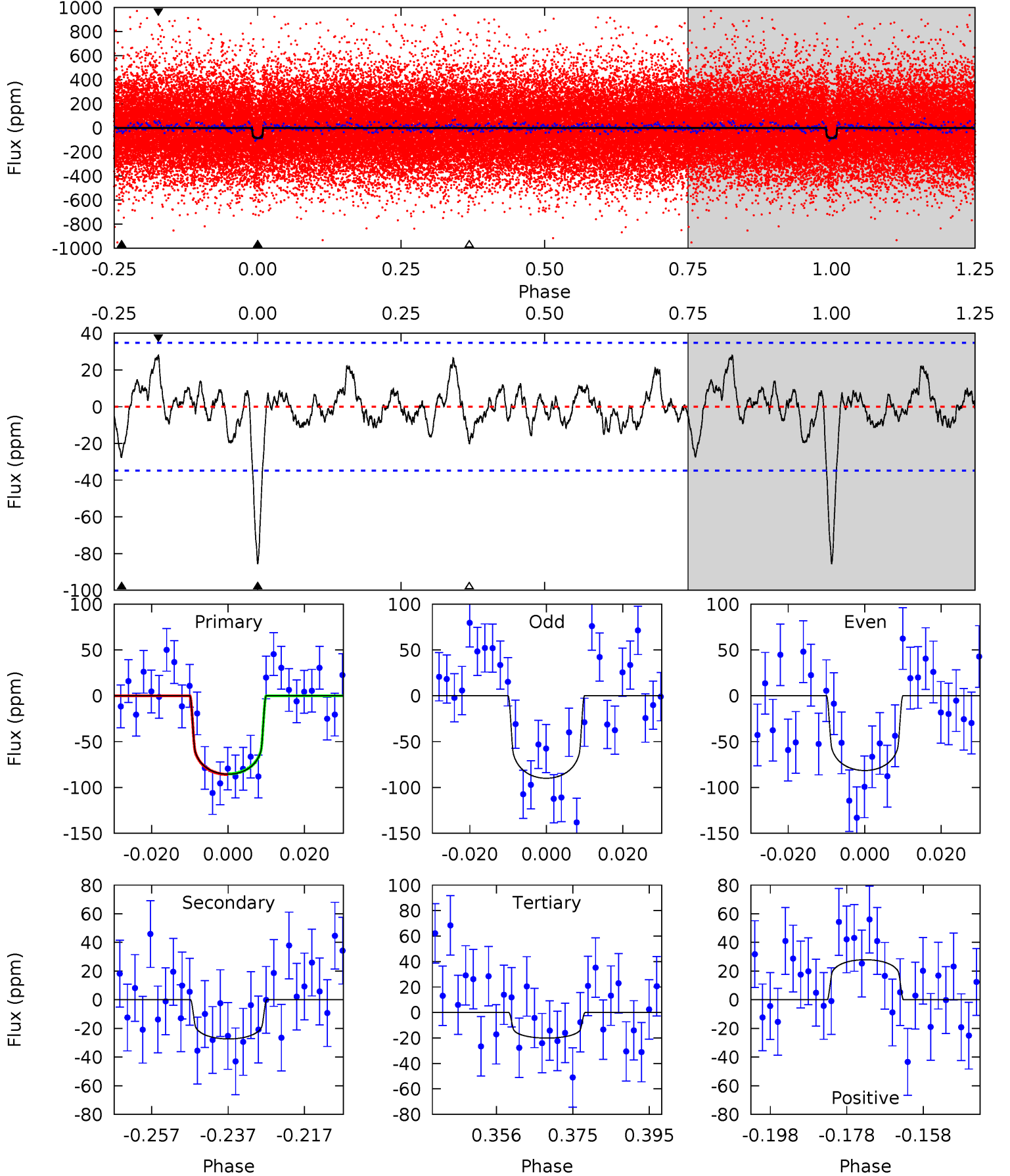
TCE 010586744-01 P= 21.376160 Days  $T_0=143.618431$  (BKJD)



# DV Model-Shift Uniqueness Test

010586744-01,  $P = 21.375872$  Days,  $E = 122.245889$  Days

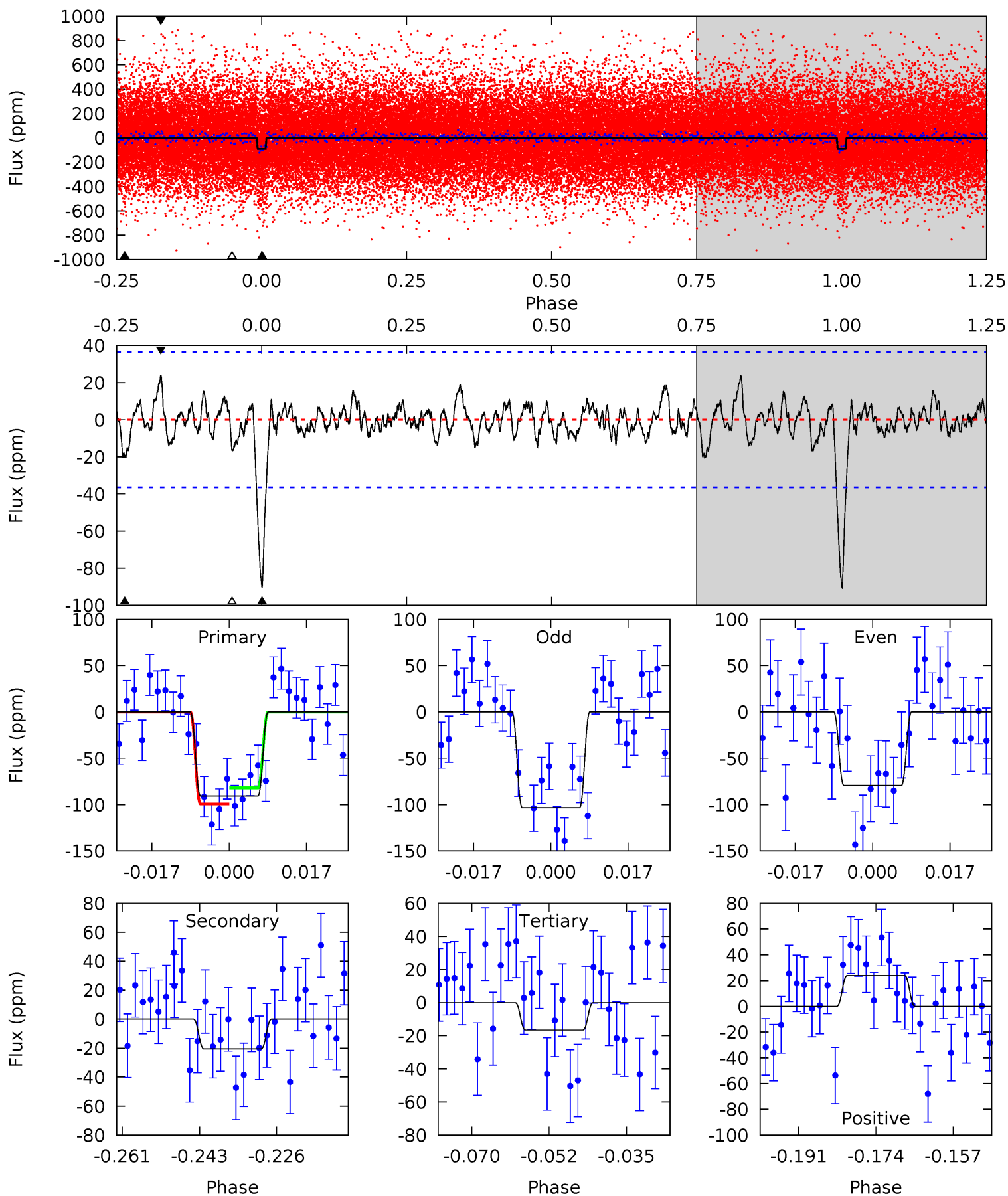
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	3.85	2.82	3.93	4.89	2.33	1.23	9.21	8.11	1.02	-0.09	0.60	1.02	0.25	0.04



# Alt Model-Shift Uniqueness Test

010586744-01,  $P = 21.376160$  Days,  $E = 122.242271$  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
12.2	2.75	2.23	3.23	4.92	2.38	0.91	9.99	8.99	0.51	-0.49	1.61	1.11	0.21	1.17



### Stellar Parameters For KIC 010586744

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5984^{+161}_{-161}$	$4.322^{+0.195}_{-0.195}$	$-0.520^{+0.300}_{-0.300}$	$1.052^{+0.305}_{-0.229}$	$0.846^{+0.118}_{-0.069}$	$1.024^{+0.980}_{-0.497}$
	+3%/-3%	+5%/-5%	+58%/-58%	+29%/-22%	+14%/-8%	+96%/-49%
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 010586744-01 / KOI 4892.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-27 \pm 7$	$1.16^{+0.53}_{-0.50}$	$1000^{+76}_{-67}$	$4501^{+1166}_{-590}$	$231^{+480}_{-125}$
Alt.	$-20 \pm 7$	$1.08^{+0.53}_{-0.47}$	$1002^{+77}_{-71}$	$4333^{+1244}_{-623}$	$189^{+470}_{-114}$

$T_{max}$  = 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

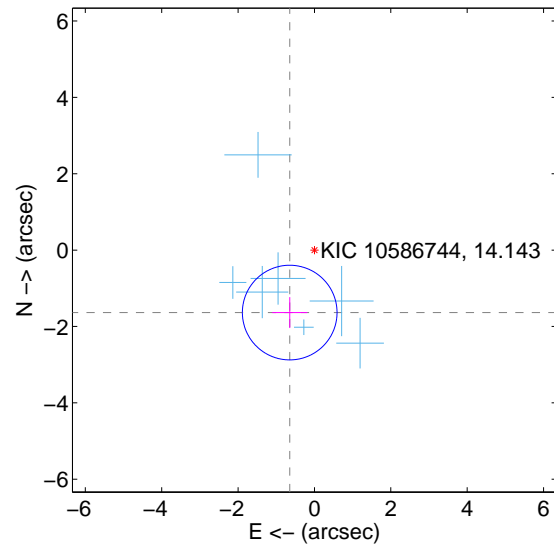
Supplemental centroid analysis for 010586744-01. Kepler magnitude: 14.14. Transit SNR 8.86

There are 7 quarters with good PRF difference image offsets

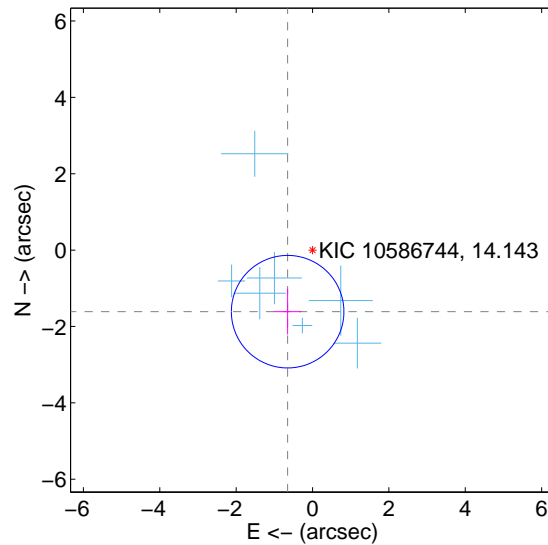
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.760 \pm 0.413$	4.26	$0.648 \pm 0.459$	$-1.636 \pm 0.405$
PRF-fit source offset from KIC position	$1.739 \pm 0.491$	3.54	$0.652 \pm 0.359$	$-1.613 \pm 0.597$
photometric centroid source offset	$1.64 \pm 1.21$	1.35	$-0.26 \pm 1.34$	$1.62 \pm 1.21$

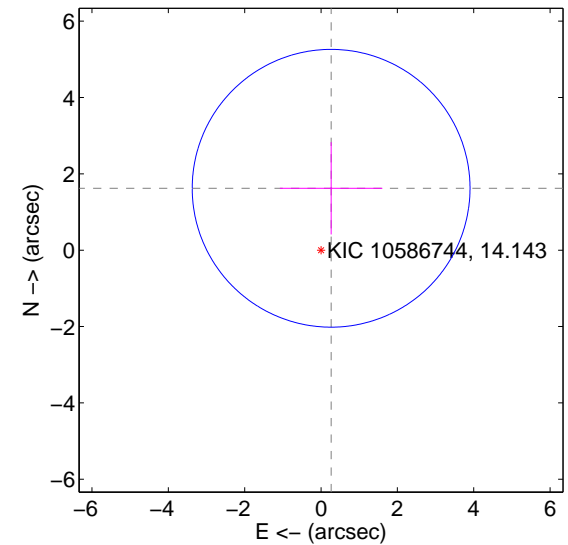
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

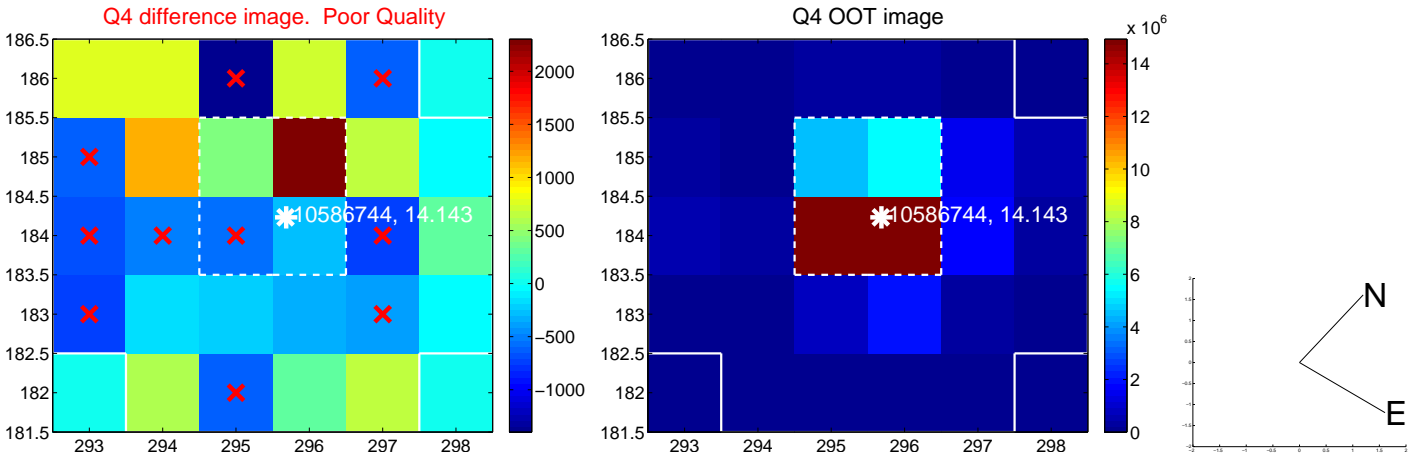
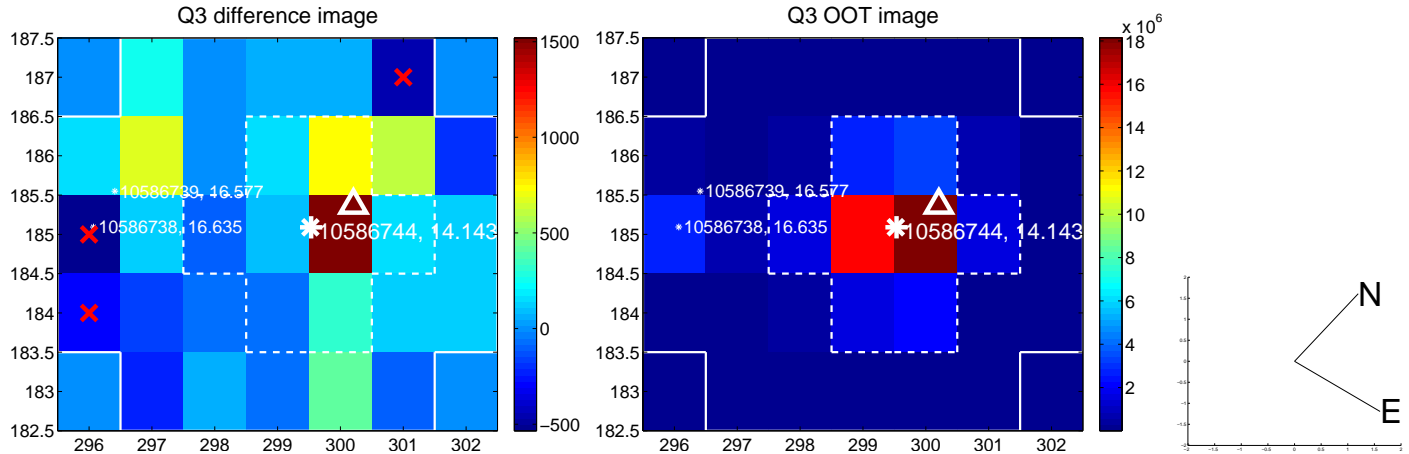
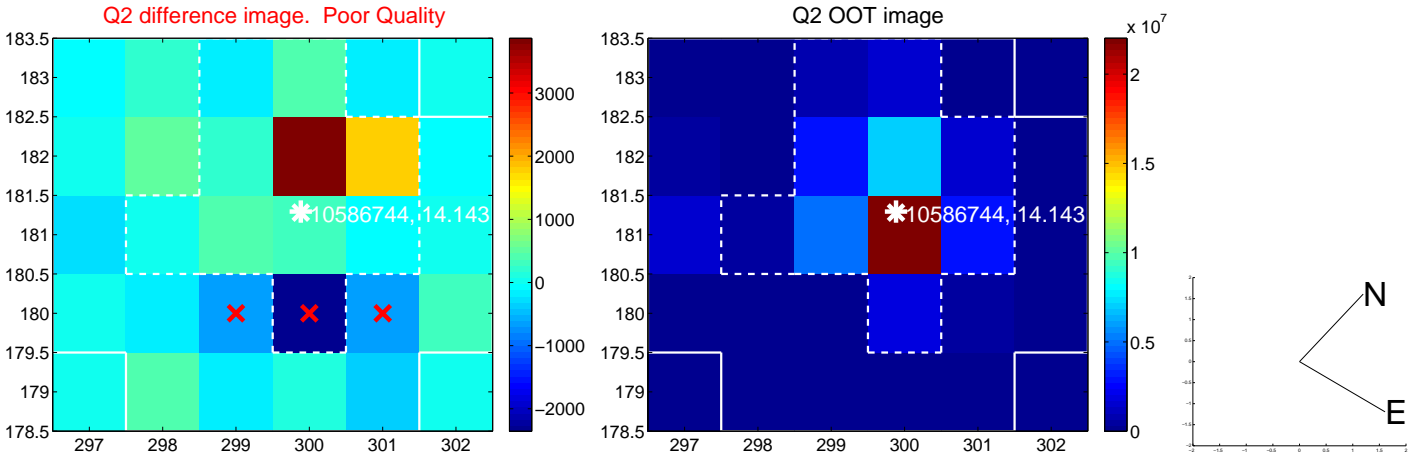
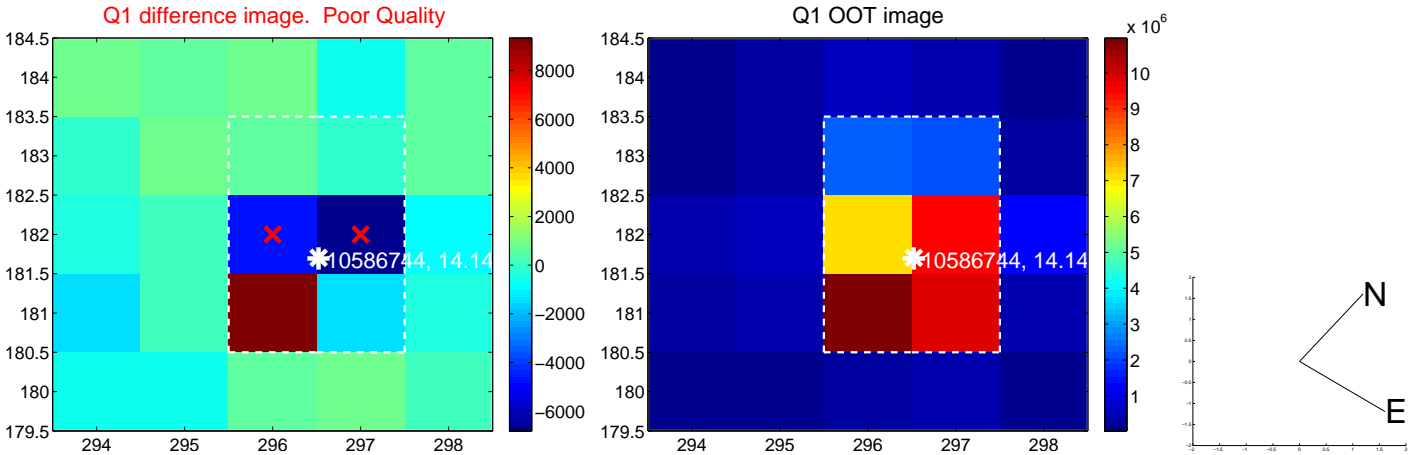


offset from photometric centroids

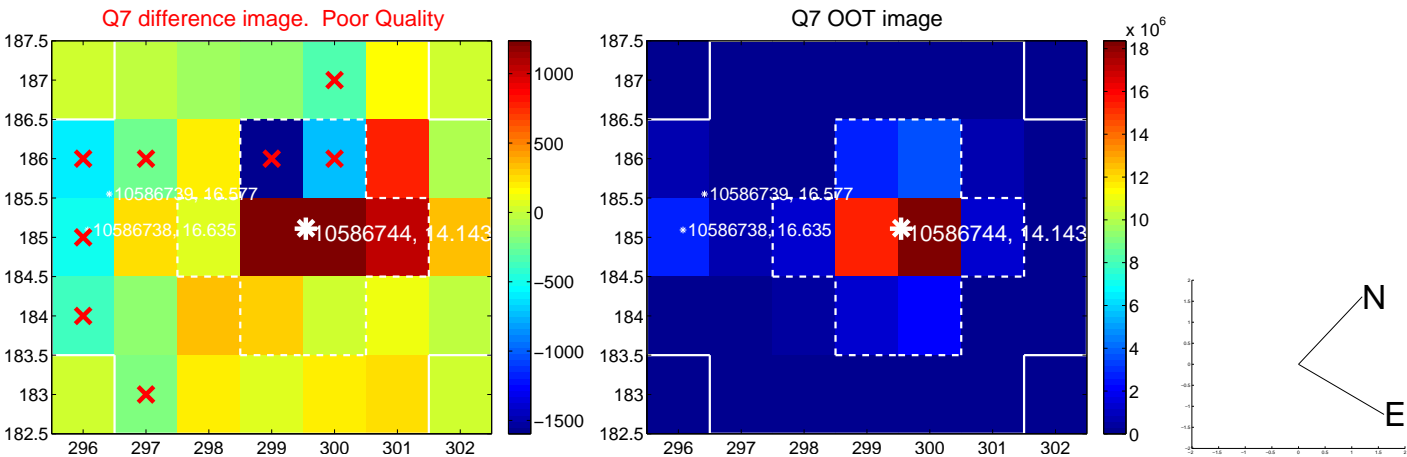
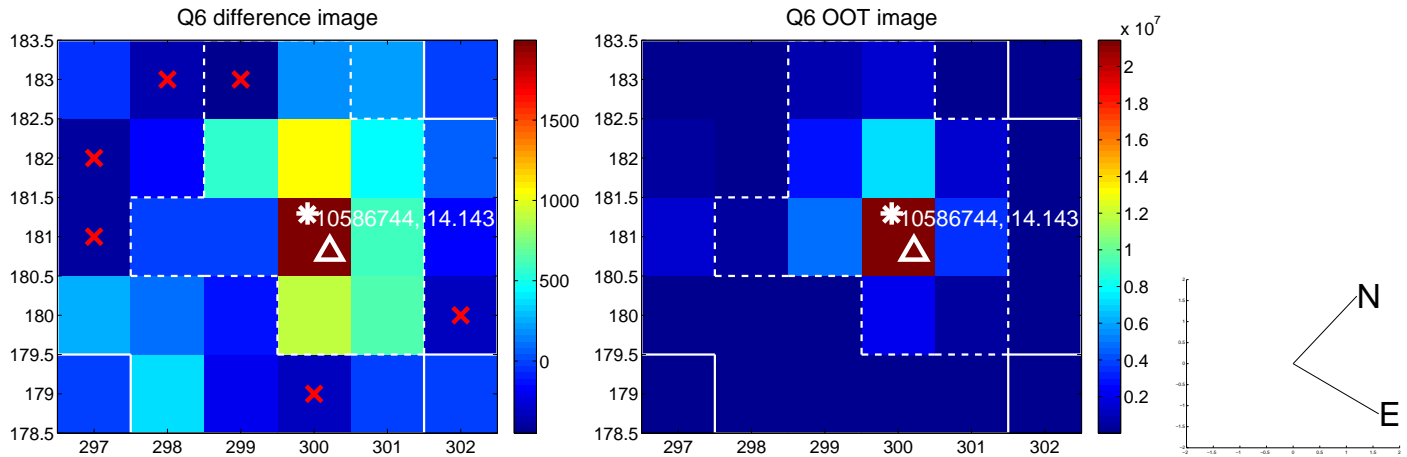
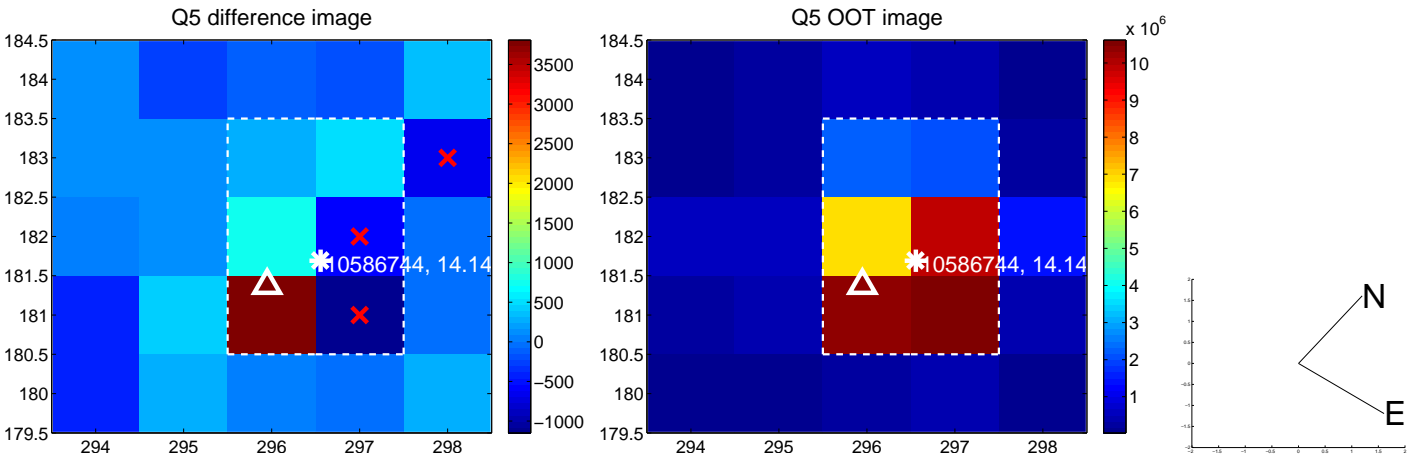


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

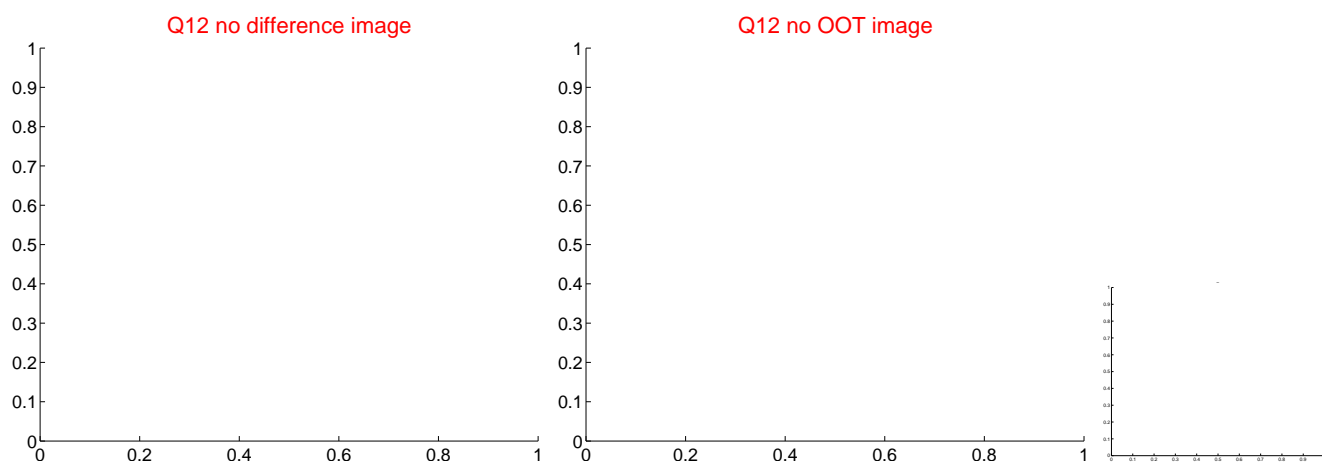
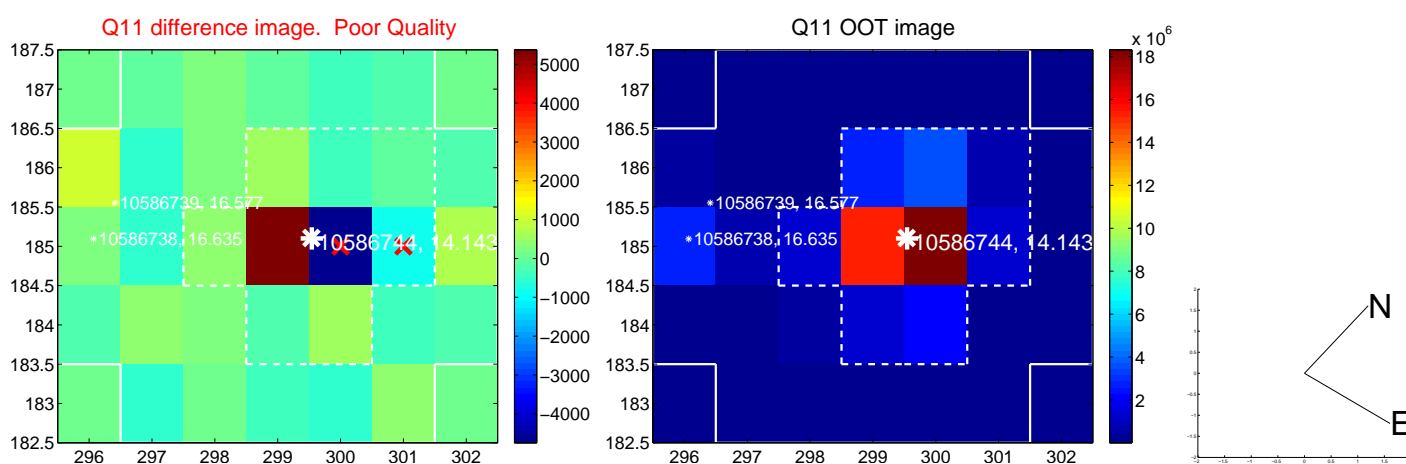
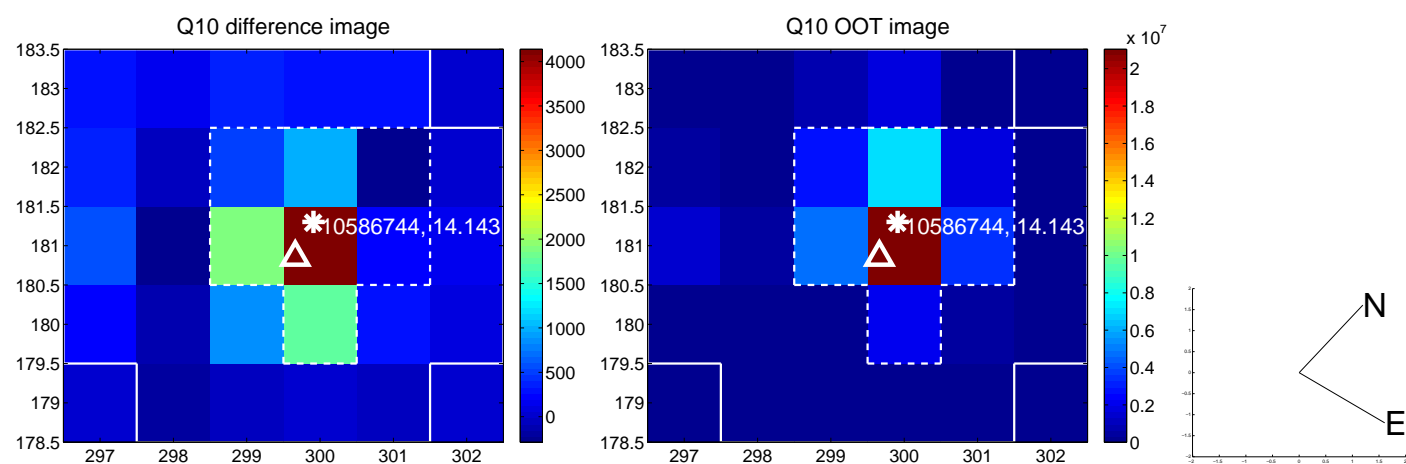
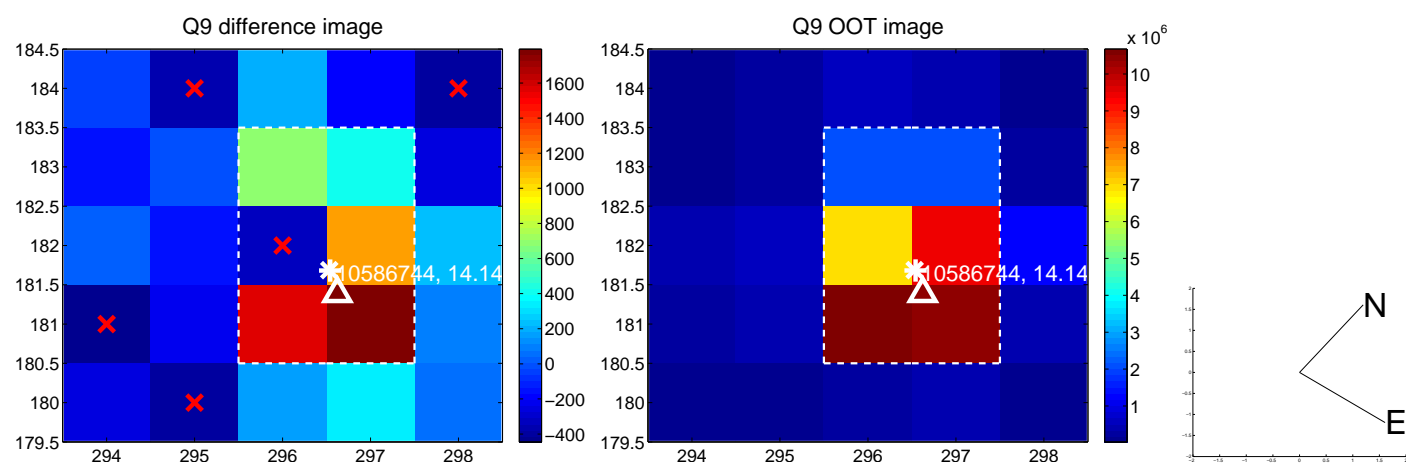
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



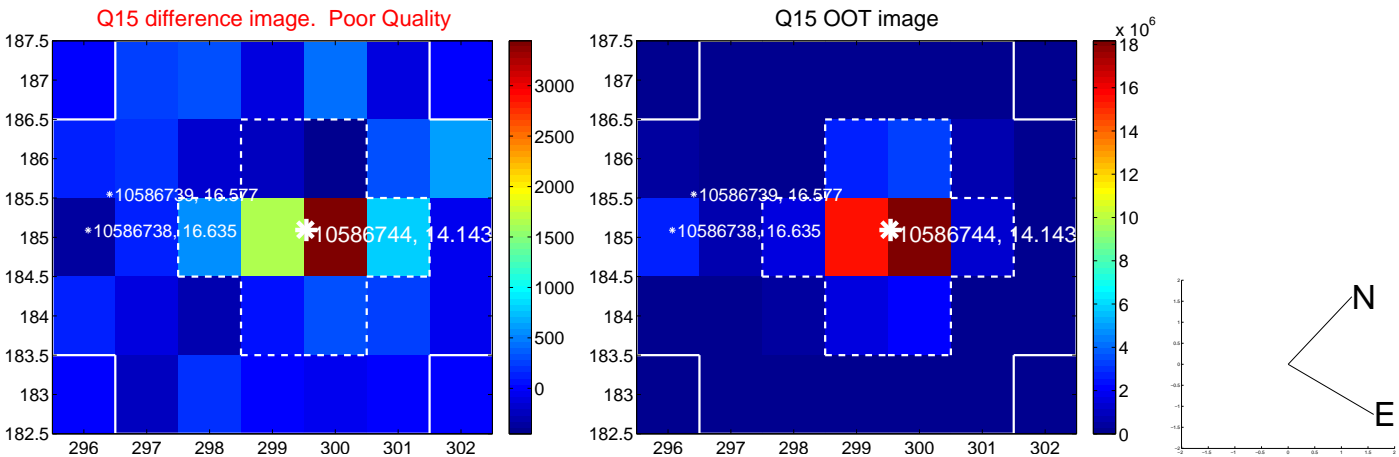
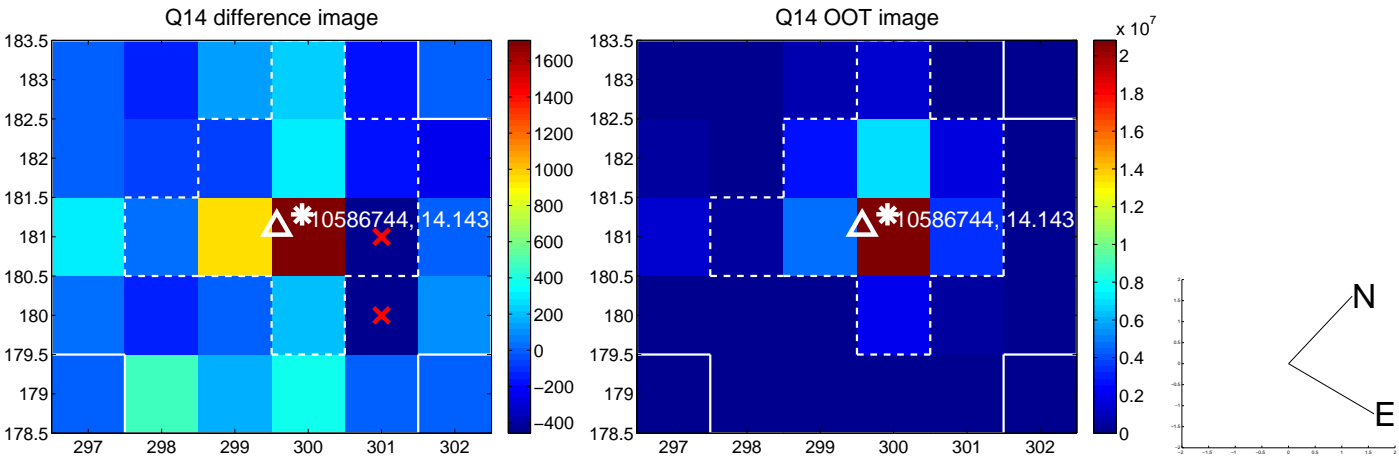
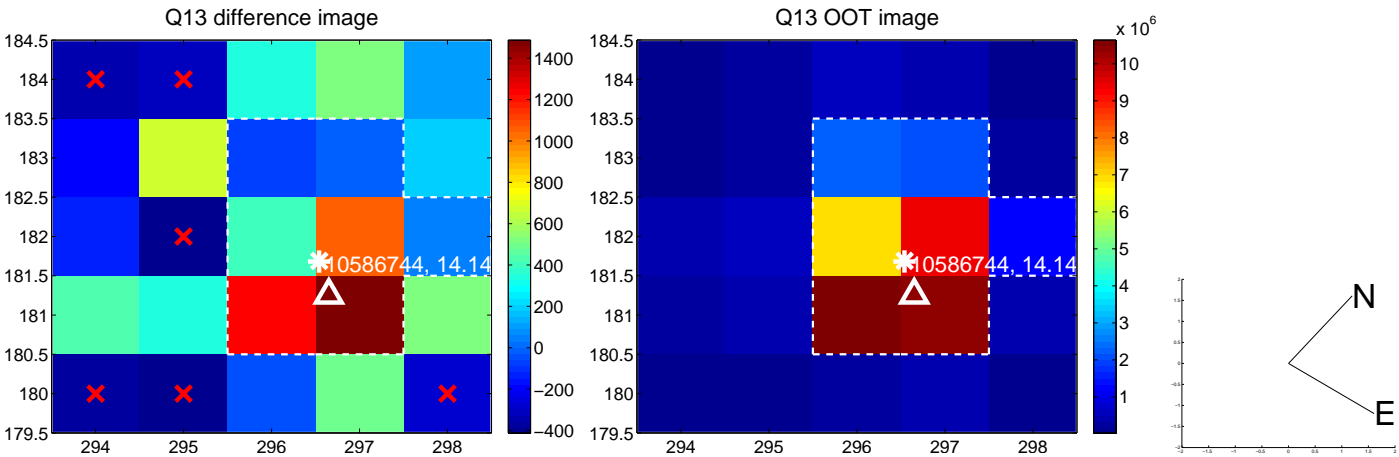
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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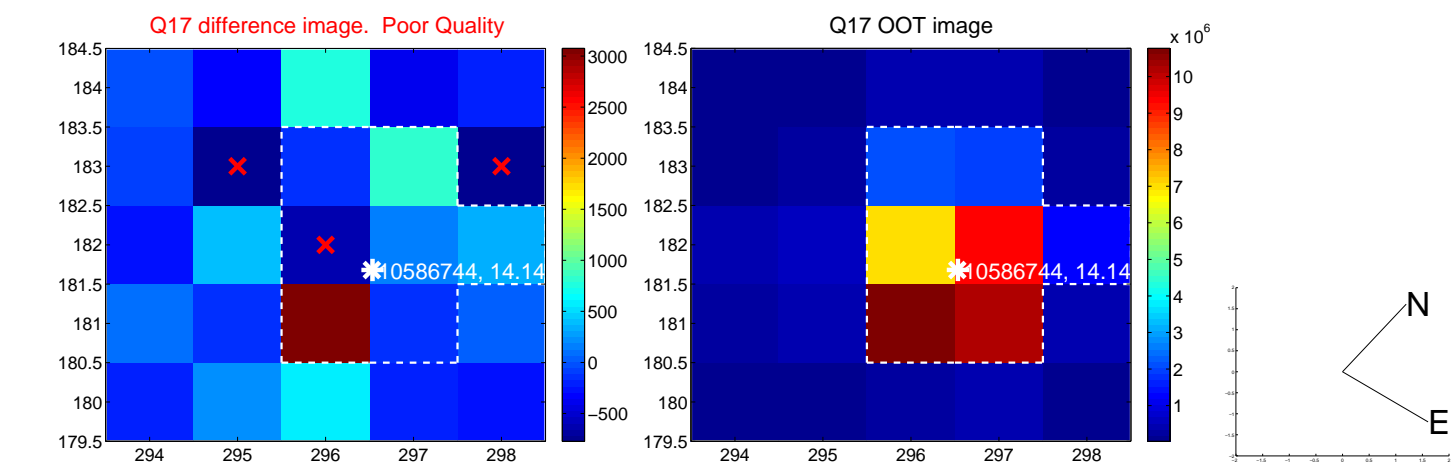


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

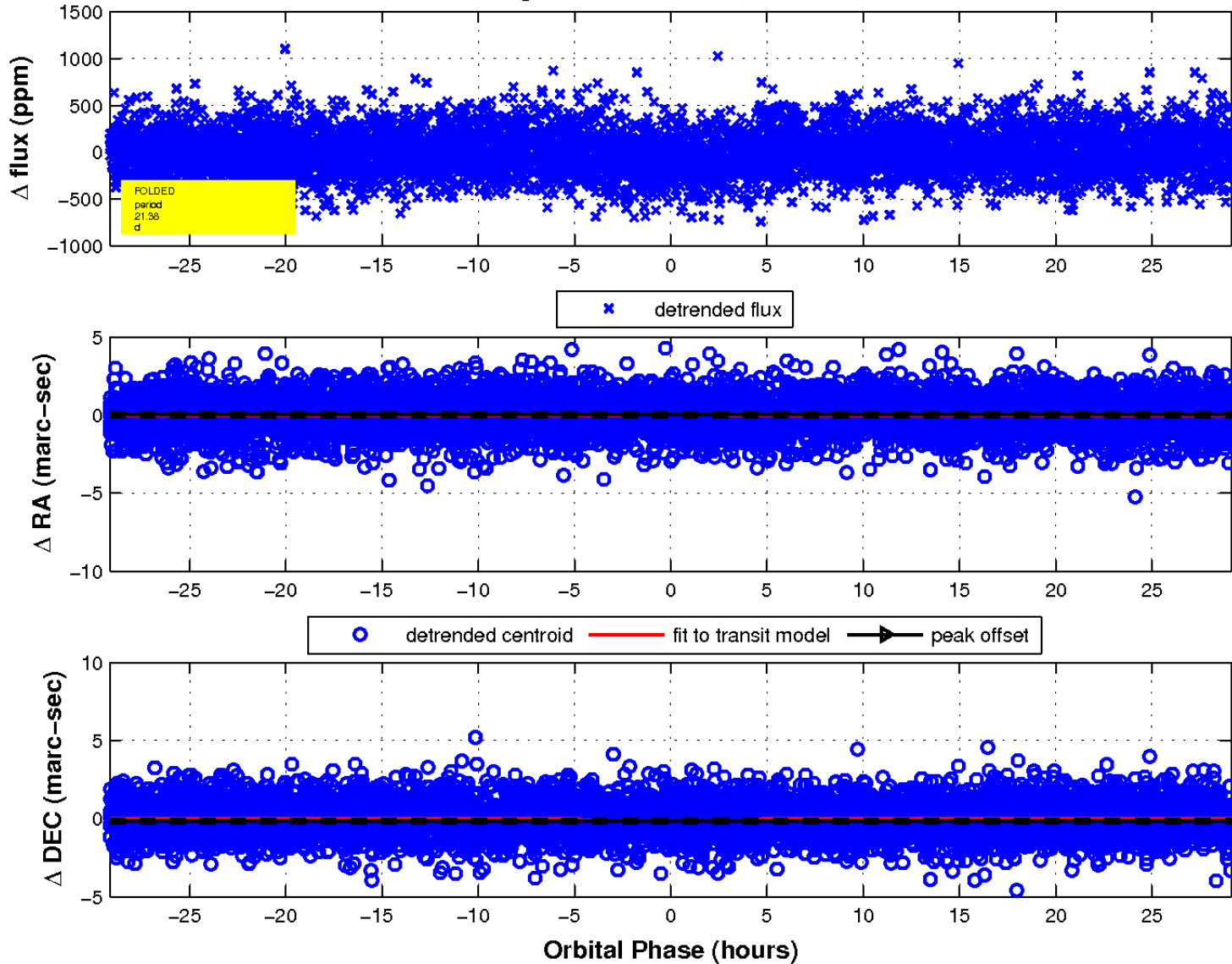




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



This plot does not exist for this TCE.