

# KIC 010485700

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010485700-01	OBS	No	251.691745	151.436574	425.4	5.488	8.9	9.6	0.76	5295	1.70	0.83

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010485700-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

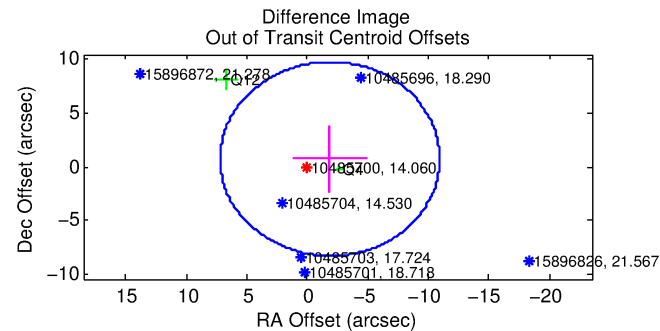
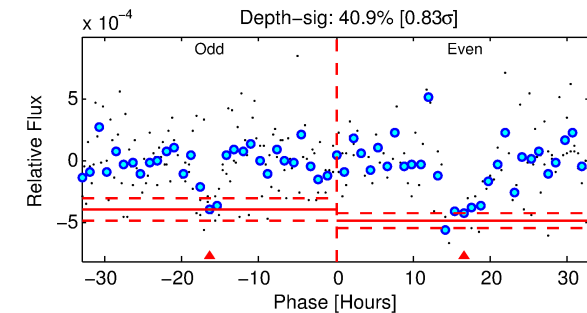
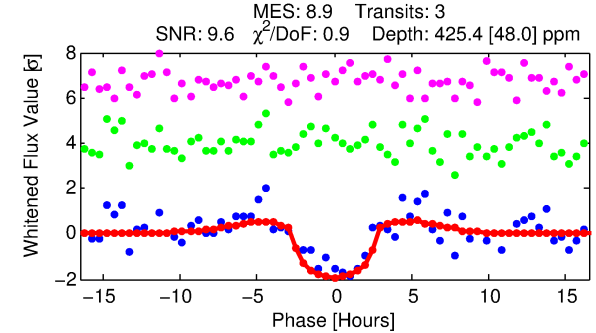
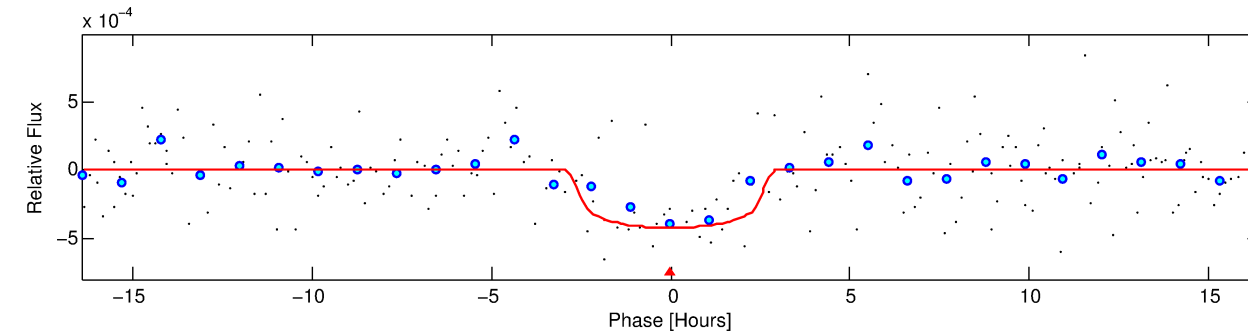
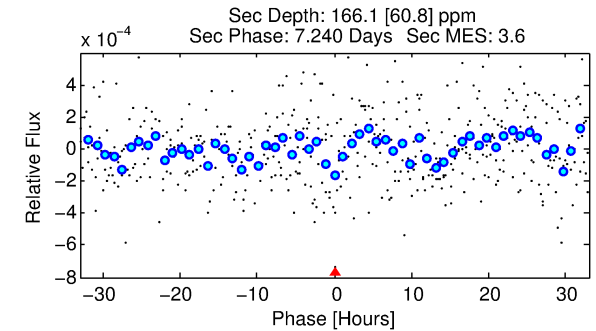
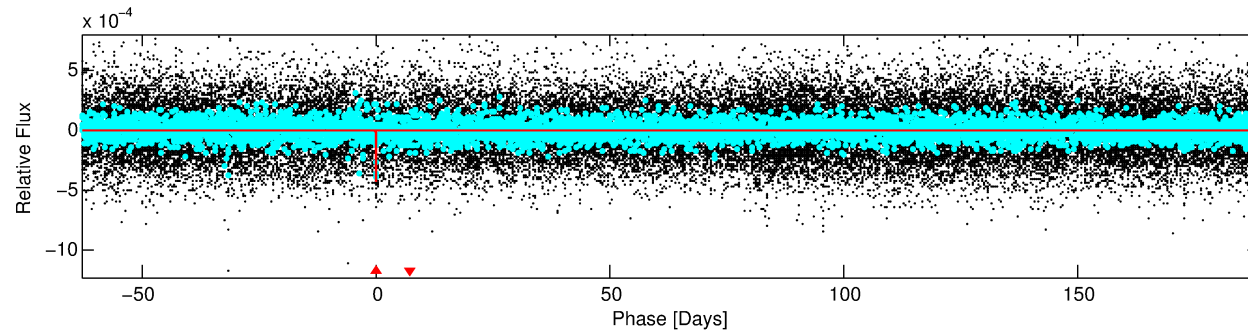
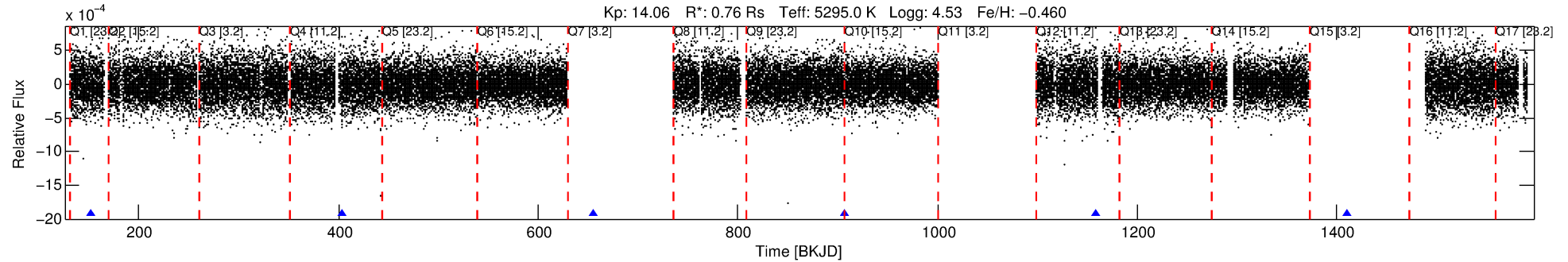
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010485700-01

No Significant Match Found

# DV One-Page Summary

KIC: 10485700 Candidate: 1 of 1 Period: 251.692 d



## DV Fit Results:

Period = 251.69175 [0.00417] d  
Epoch = 151.4366 [0.0093] BKJD  
Rp/R\* = 0.0205 [0.0227]  
a/R\* = 242.50 [1096.08]  
b = 0.75 [2.68]  
Seff = 0.83 [0.17]  
Teq = 244 [13] K  
Rp = 1.69 [1.88] Re  
a = 0.6950 [0.0757] AU  
Ag = 15368.32 [34530.79] [0.45σ]  
Teffp = 4194 [2353] K [1.68σ]

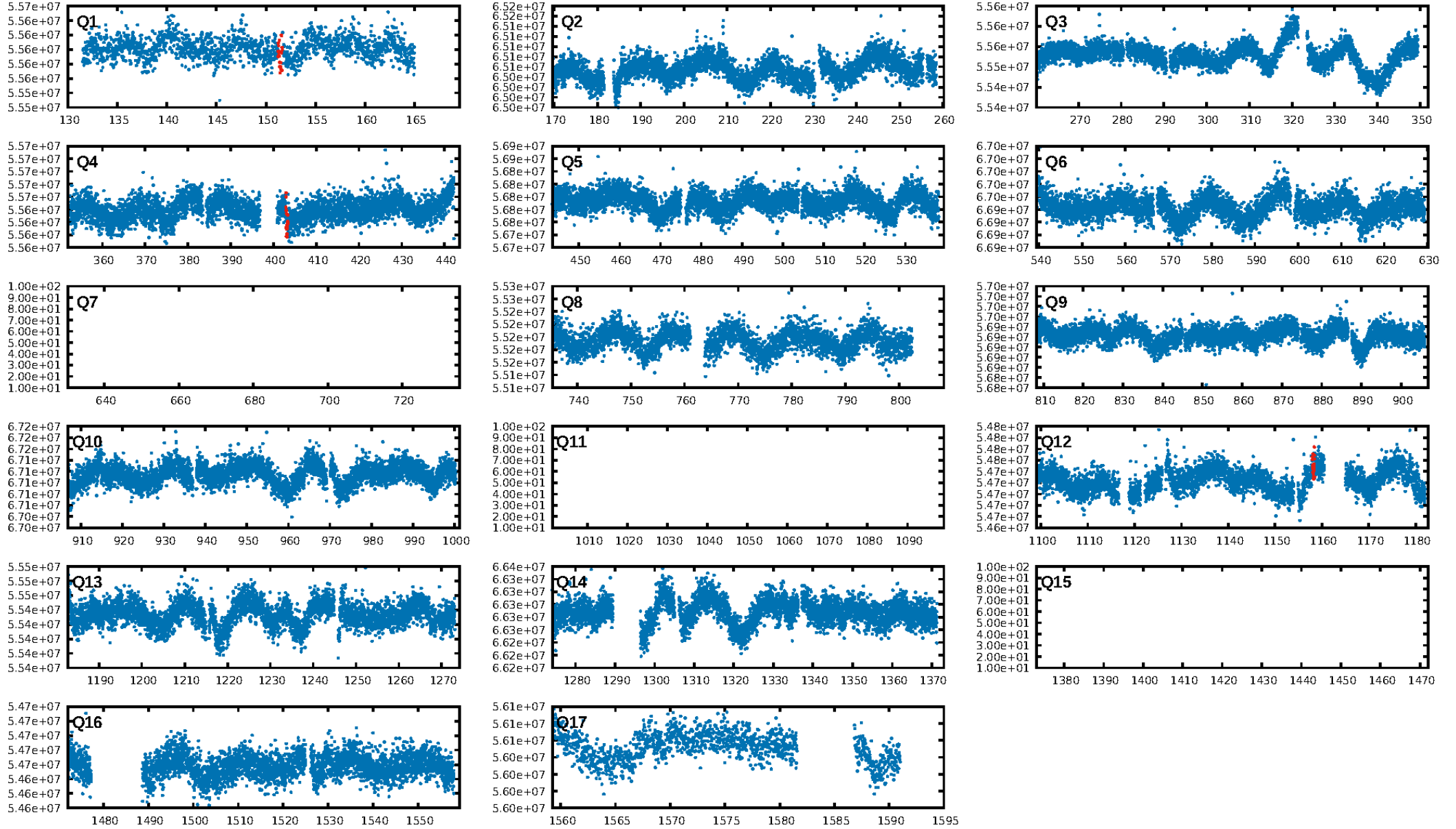
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 6.7%  
ModelChiSquareGof-sig: 99.9%  
Bootstrap-pfa: 2.12e-17  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: 2.537  
Centroid-sig: 16.2%  
Centroid-so: 1.515 arcsec [1.37σ]  
OotOffset-rm: 2.002 arcsec [0.66σ]  
OotOffset-st: 0/0/2/0 [2]  
KicOffset-rm: 1.396 arcsec [0.27σ]  
KicOffset-st: 0/0/2/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

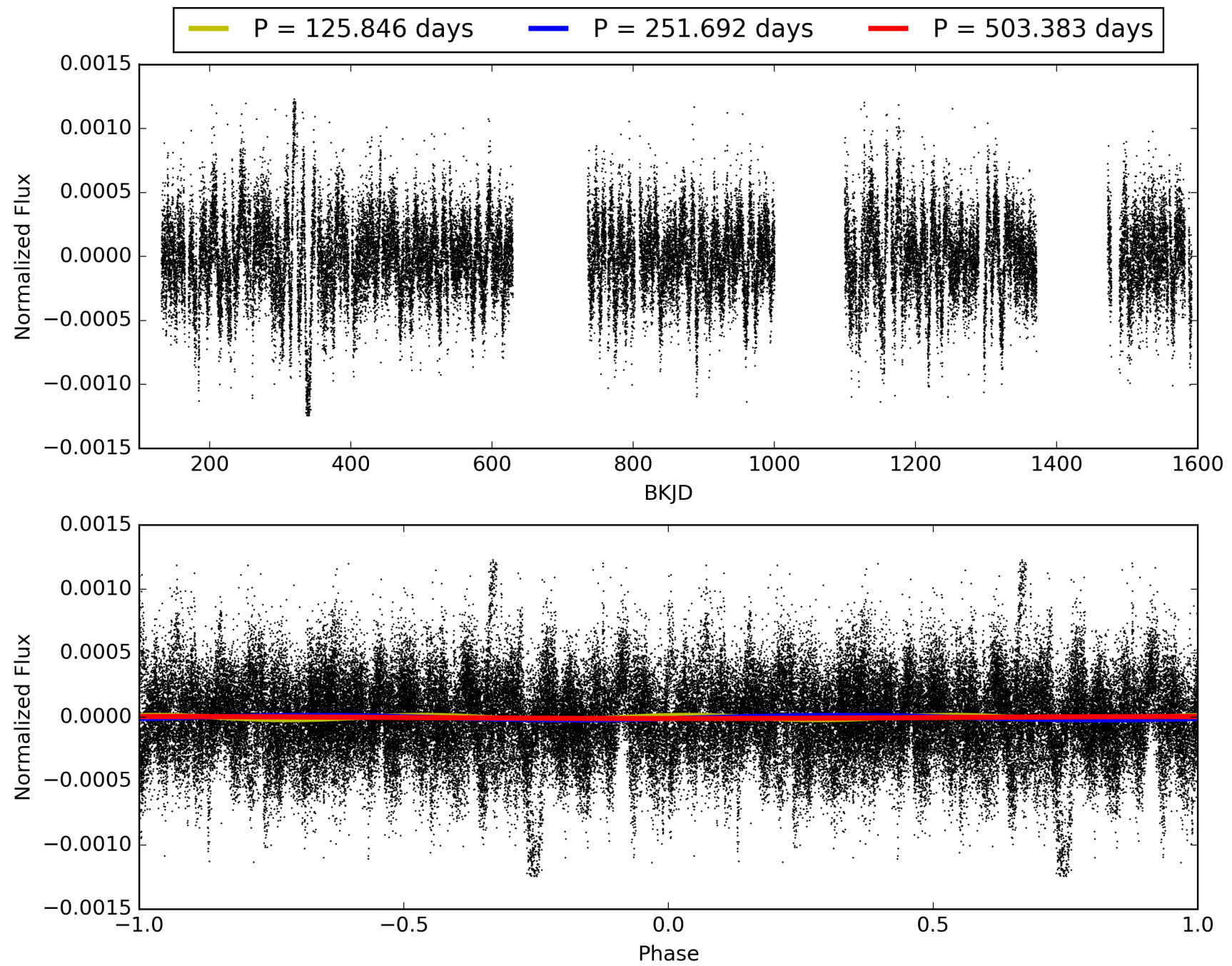
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:07:18 Z

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

# TCE 010485700-01, PDC Light Curves

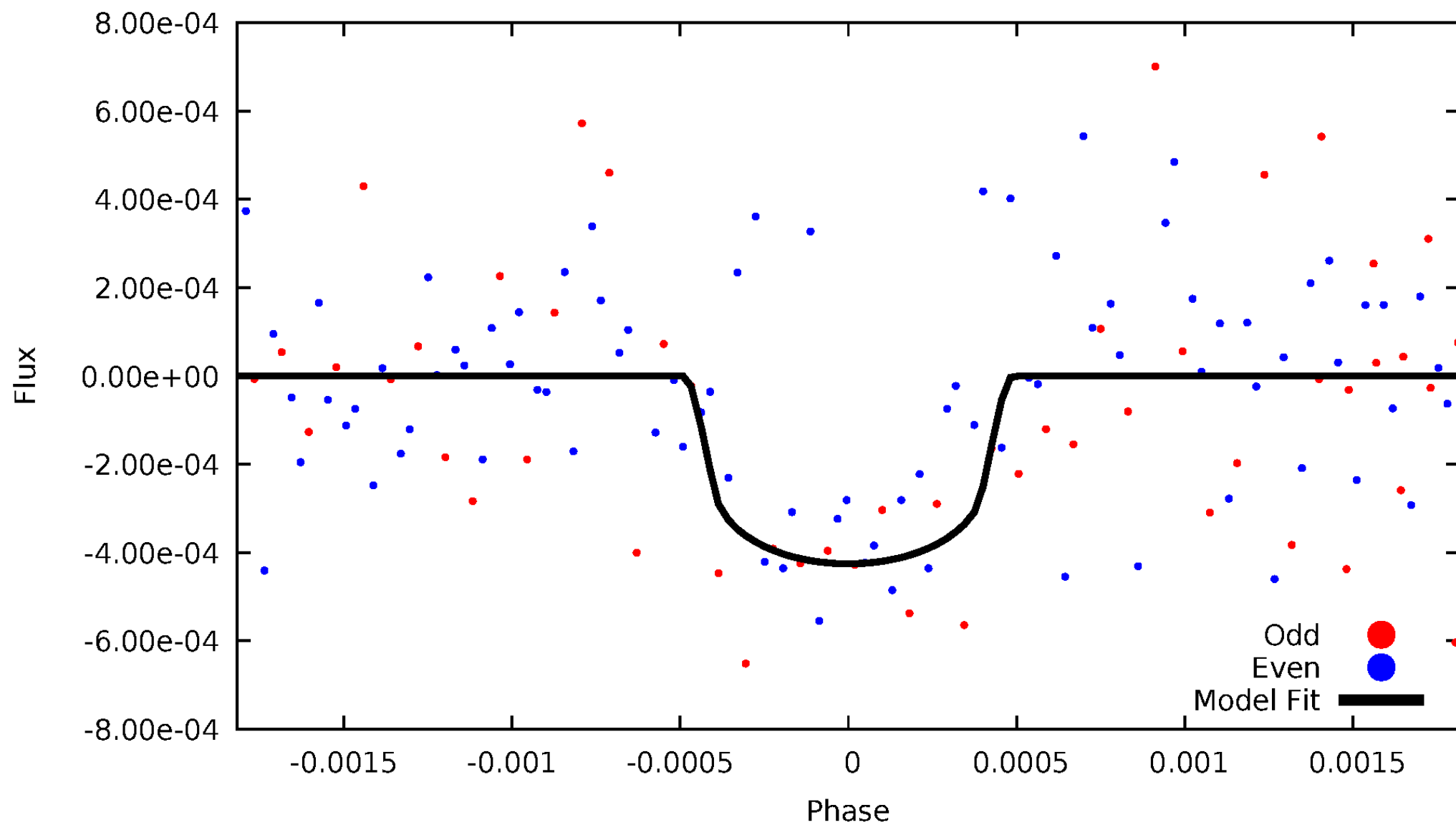


TCE 010485700-01



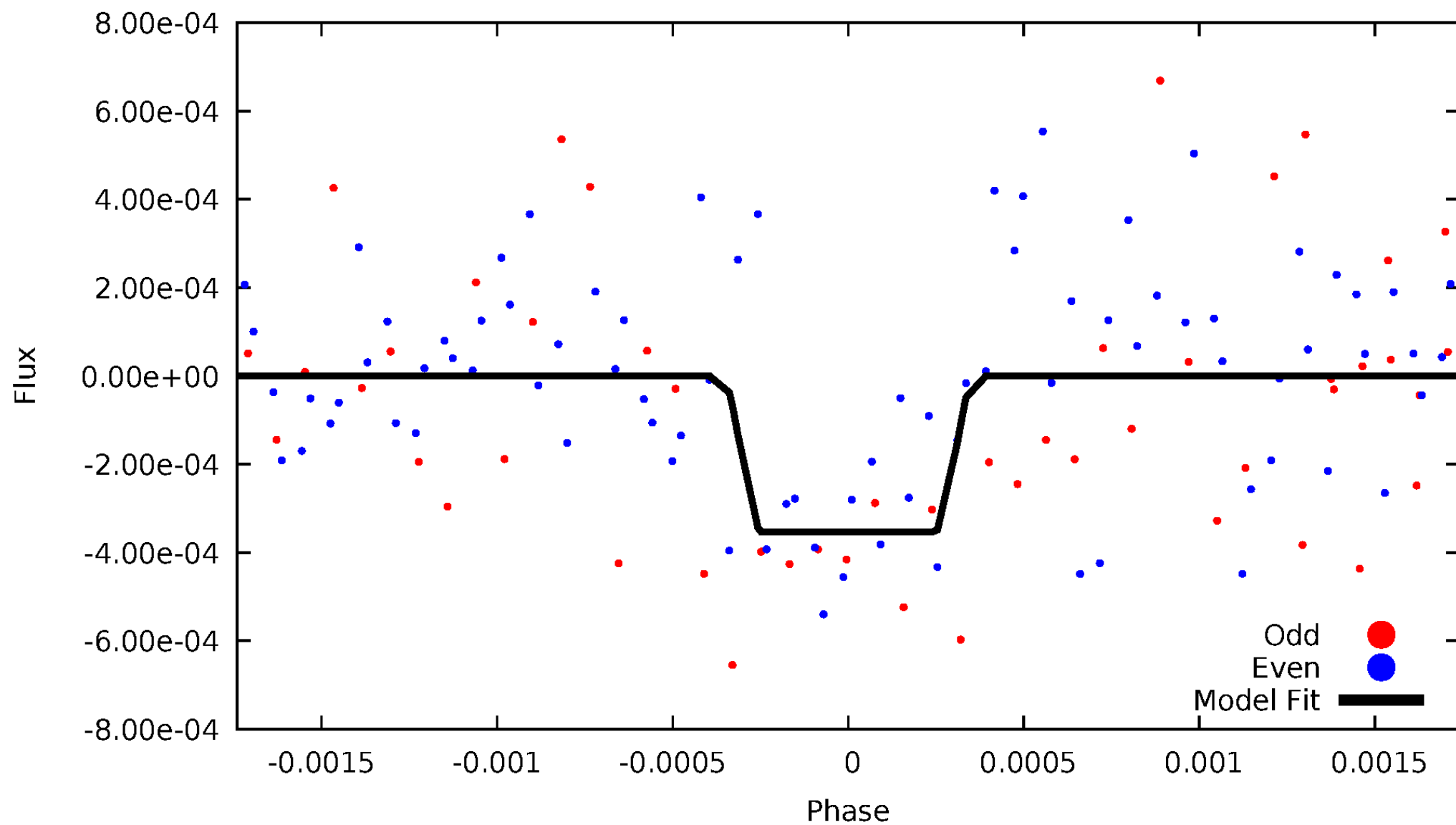
# DV Odd/Even

TCE 010485700-01



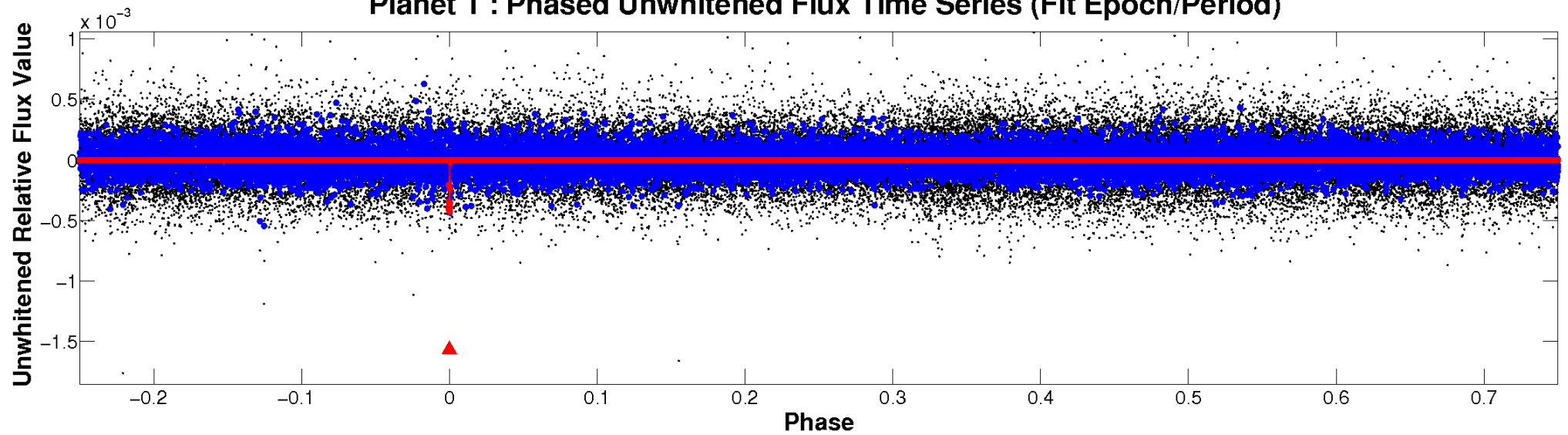
# ALT Odd/Even

TCE 010485700-01

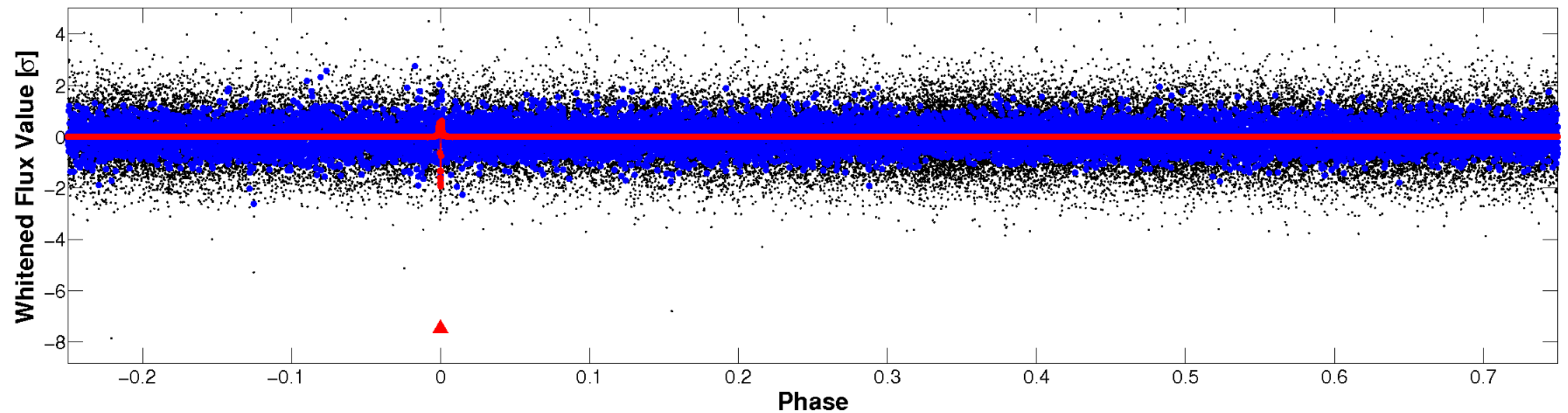


# Non-Whitened Vs. Whitened Light Curve

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

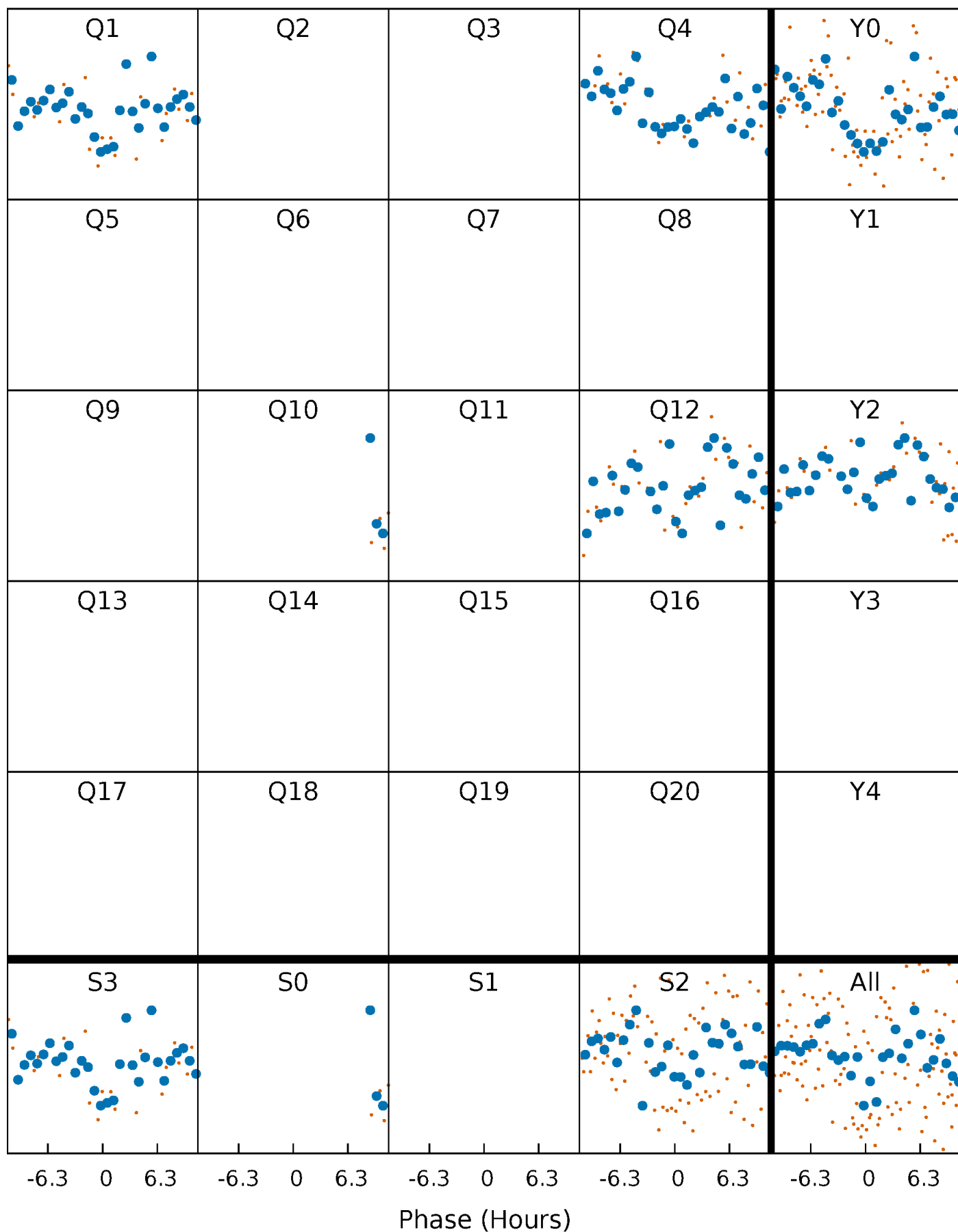


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

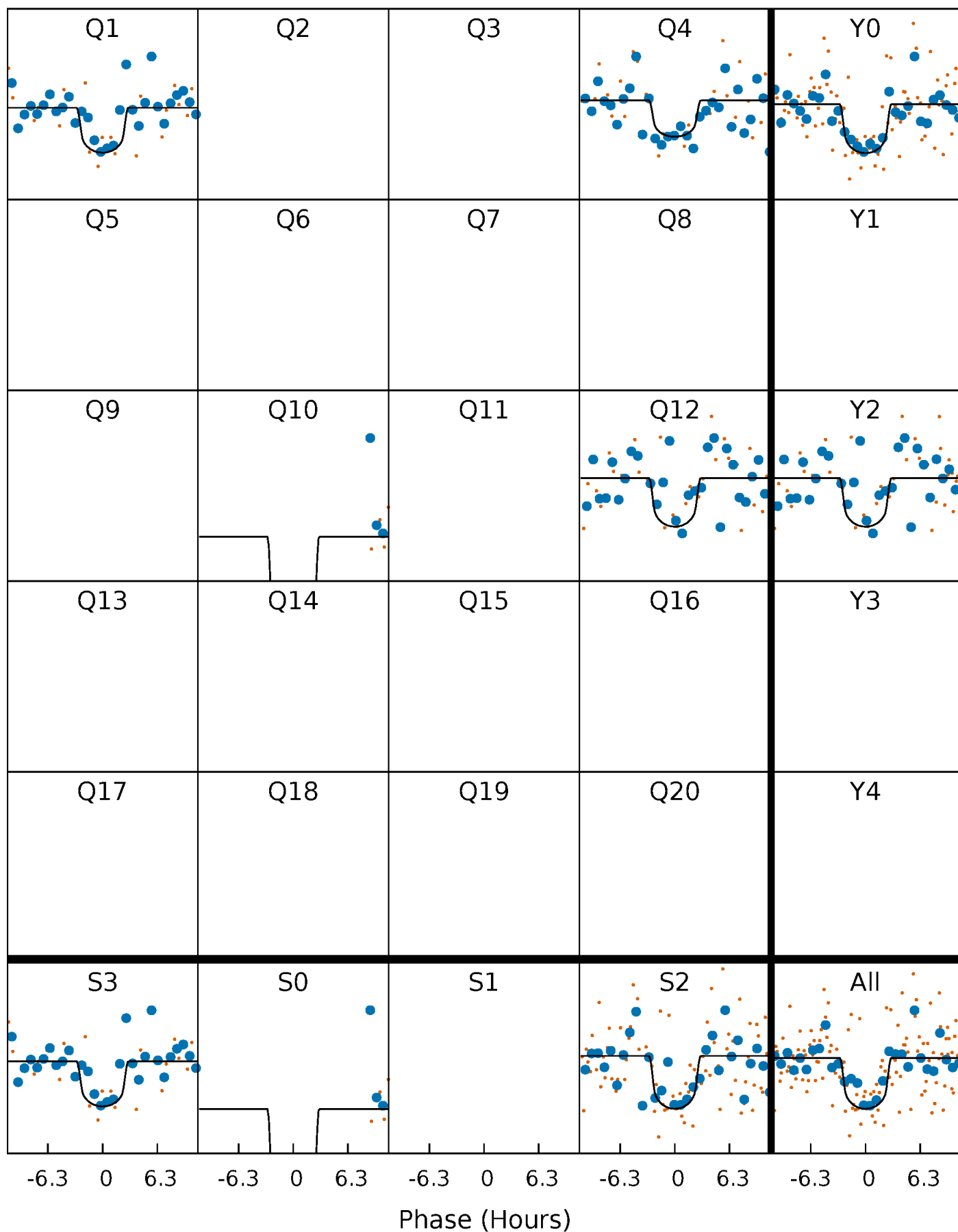
TCE 010485700-01 P=251.691745 Days  $T_0=151.436575$  (BKJD)





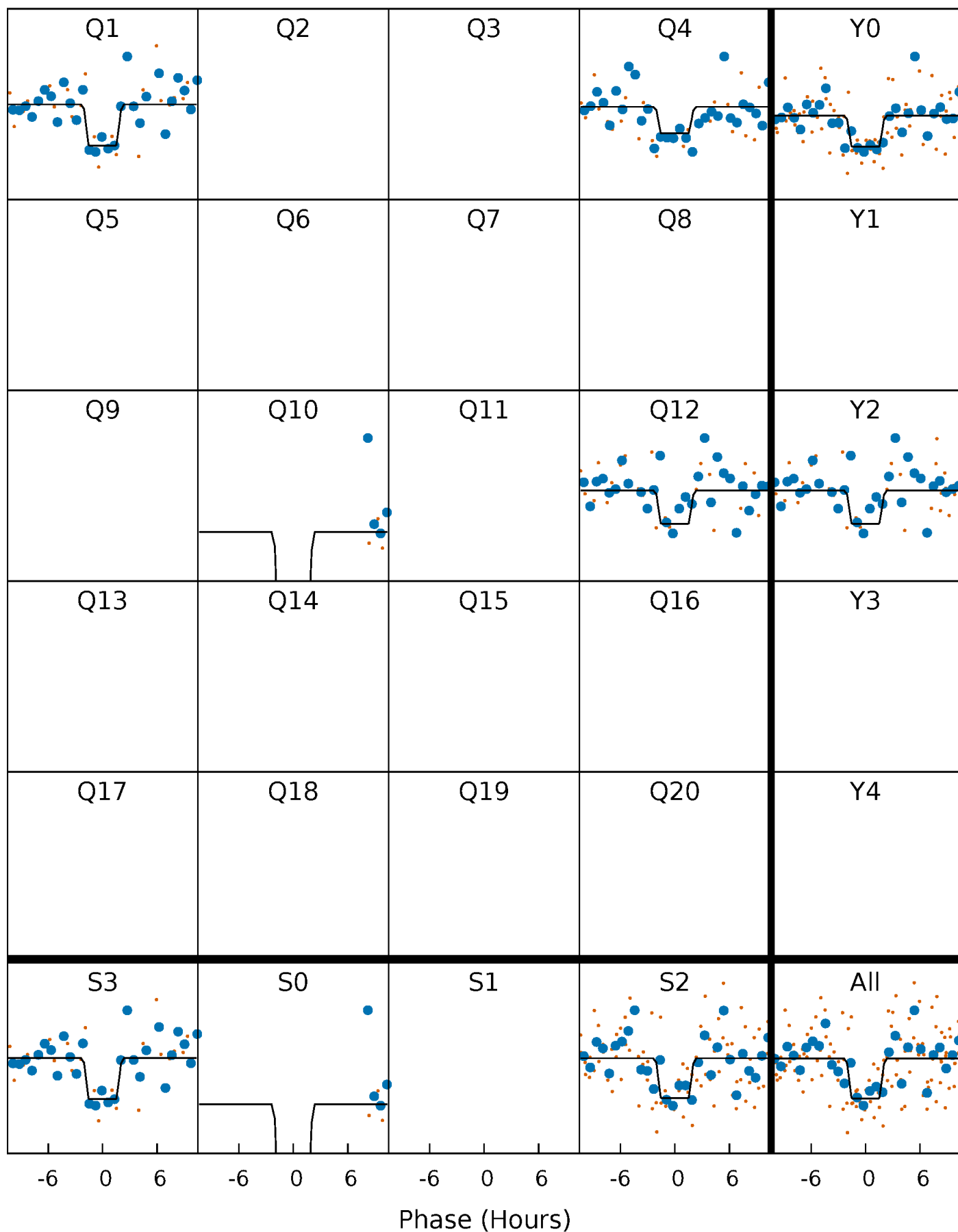
# DV Quarter-Phased Transit Curves

TCE 010485700-01     $P=251.691745$  Days     $T_0=151.436575$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

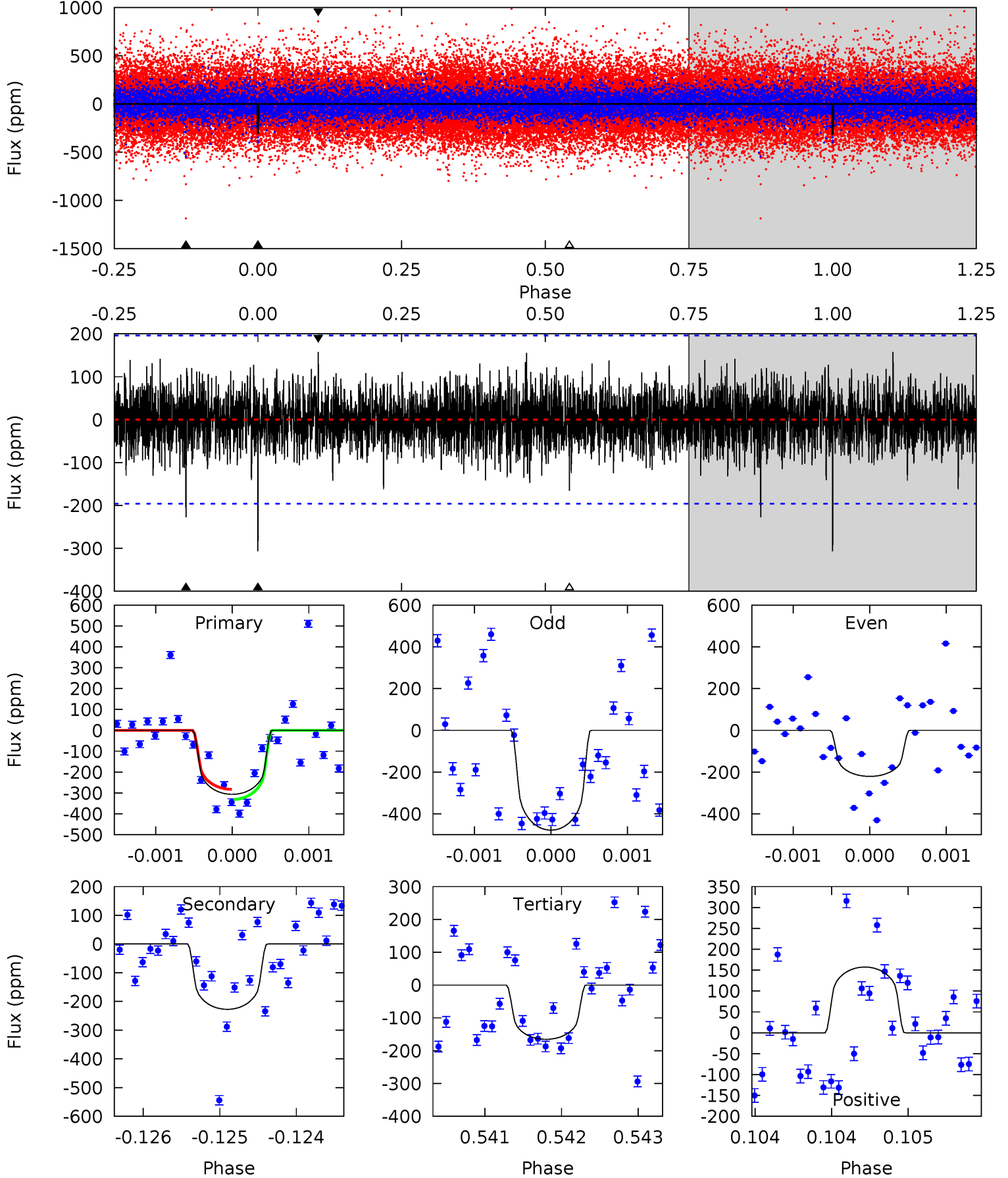
TCE 010485700-01 P=251.701831 Days  $T_0=151.432699$  (BKJD)



# DV Model-Shift Uniqueness Test

010485700-01, P = 251.691745 Days, E = 151.436575 Days

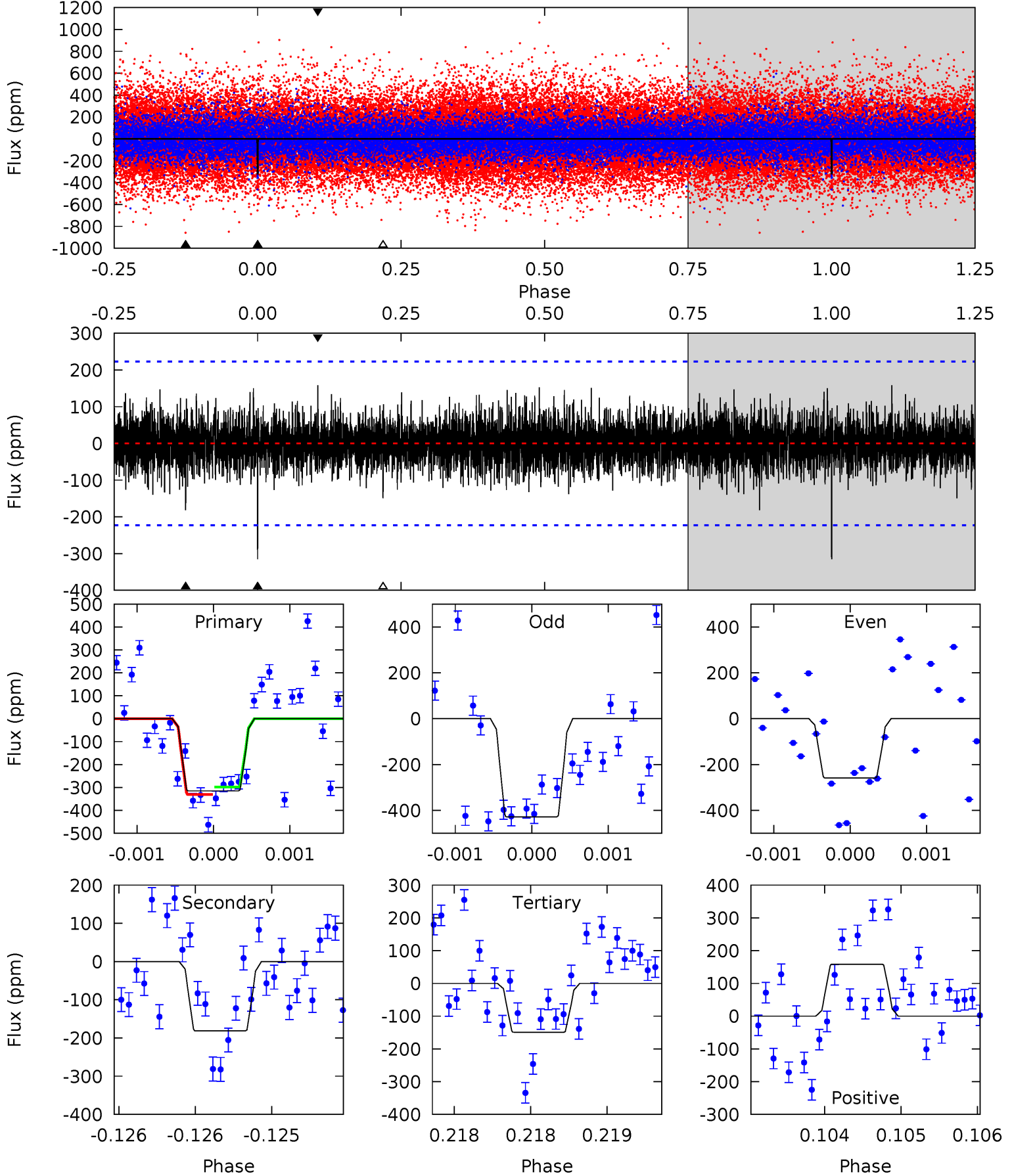
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.54	6.34	4.61	4.39	5.46	3.31	1.21	3.93	4.16	1.73	1.95	3.36	1.20	0.34	0.68



# Alt Model-Shift Uniqueness Test

010485700-01, P = 251.701831 Days, E = 151.432699 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
7.79	4.48	3.69	3.92	5.51	3.38	1.04	4.10	3.87	0.79	0.57	2.02	0.91	0.33	0.41



### Stellar Parameters For KIC 010485700

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5295^{+158}_{-158}$	$4.530^{+0.096}_{-0.072}$	$-0.460^{+0.300}_{-0.300}$	$0.756^{+0.091}_{-0.091}$	$0.707^{+0.095}_{-0.044}$	$2.299^{+0.929}_{-0.556}$
	+3%/-3%	+2%/-2%	+65%/-65%	+12%/-12%	+13%/-6%	+40%/-24%
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 010485700-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-227 \pm 36$	$2.19^{+1.75}_{-1.33}$	$340^{+15}_{-14}$	$4185^{+2264}_{-728}$	$12405^{+75289}_{-8564}$
Alt.	$-181 \pm 40$	$1.95^{+1.68}_{-1.27}$	$339^{+14}_{-15}$	$4218^{+2388}_{-838}$	$12861^{+86865}_{-9342}$

$T_{max}$  = 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

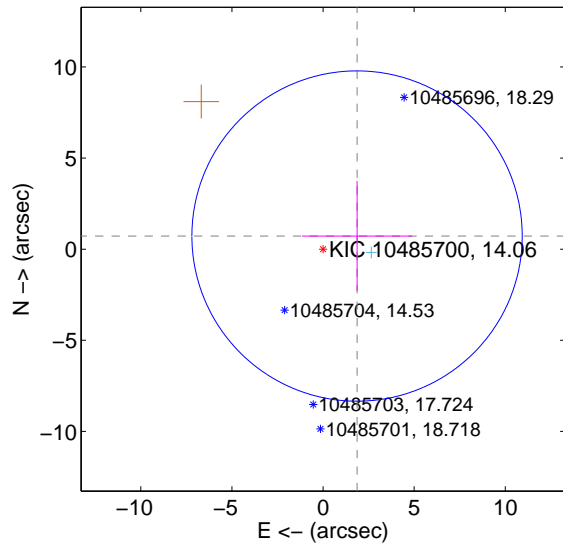
Supplemental centroid analysis for 010485700-01. Kepler magnitude: 14.06. Transit SNR 9.61

There are 1 quarters with good PRF difference image offsets

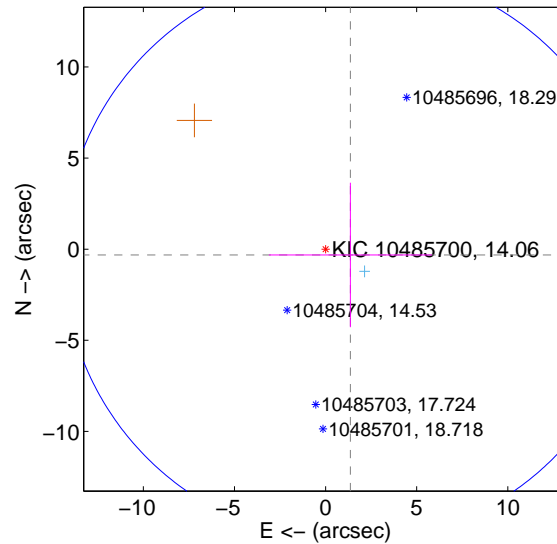
The direct PRF centroid is offset from the target star catalog position by about 1.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.002 \pm 3.022$	0.66	$-1.867 \pm 3.023$	$0.721 \pm 3.014$
PRF-fit source offset from KIC position	$1.396 \pm 5.256$	0.27	$-1.360 \pm 4.474$	$-0.317 \pm 3.966$
photometric centroid source offset	$1.52 \pm 1.11$	1.37	$-1.31 \pm 1.12$	$-0.76 \pm 1.06$

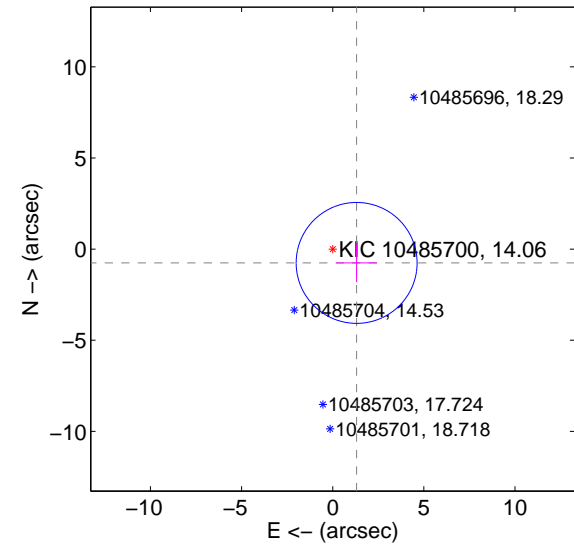
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

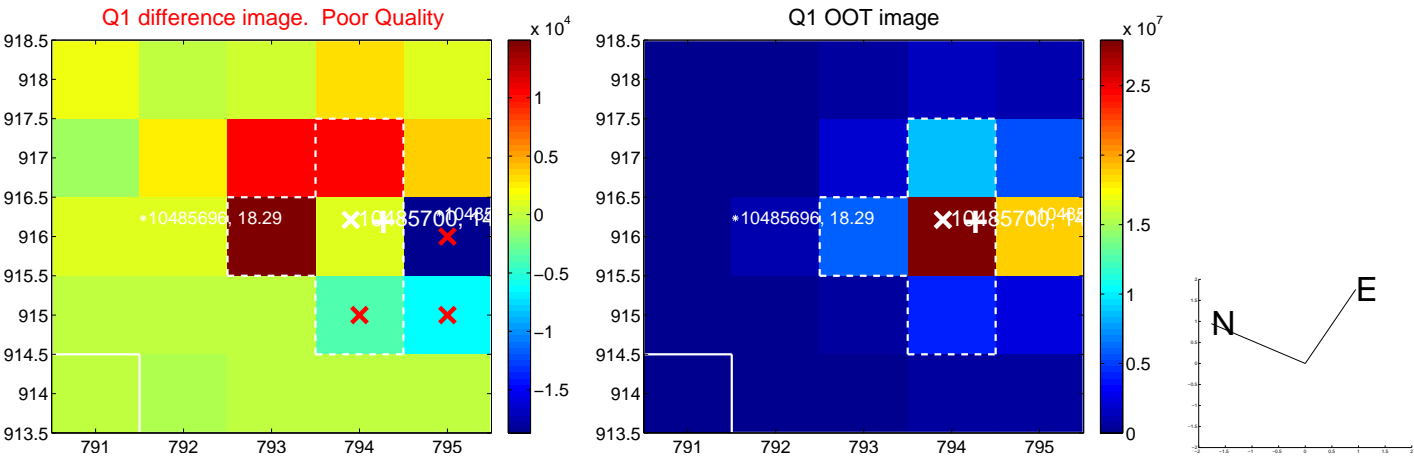


offset from photometric centroids



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

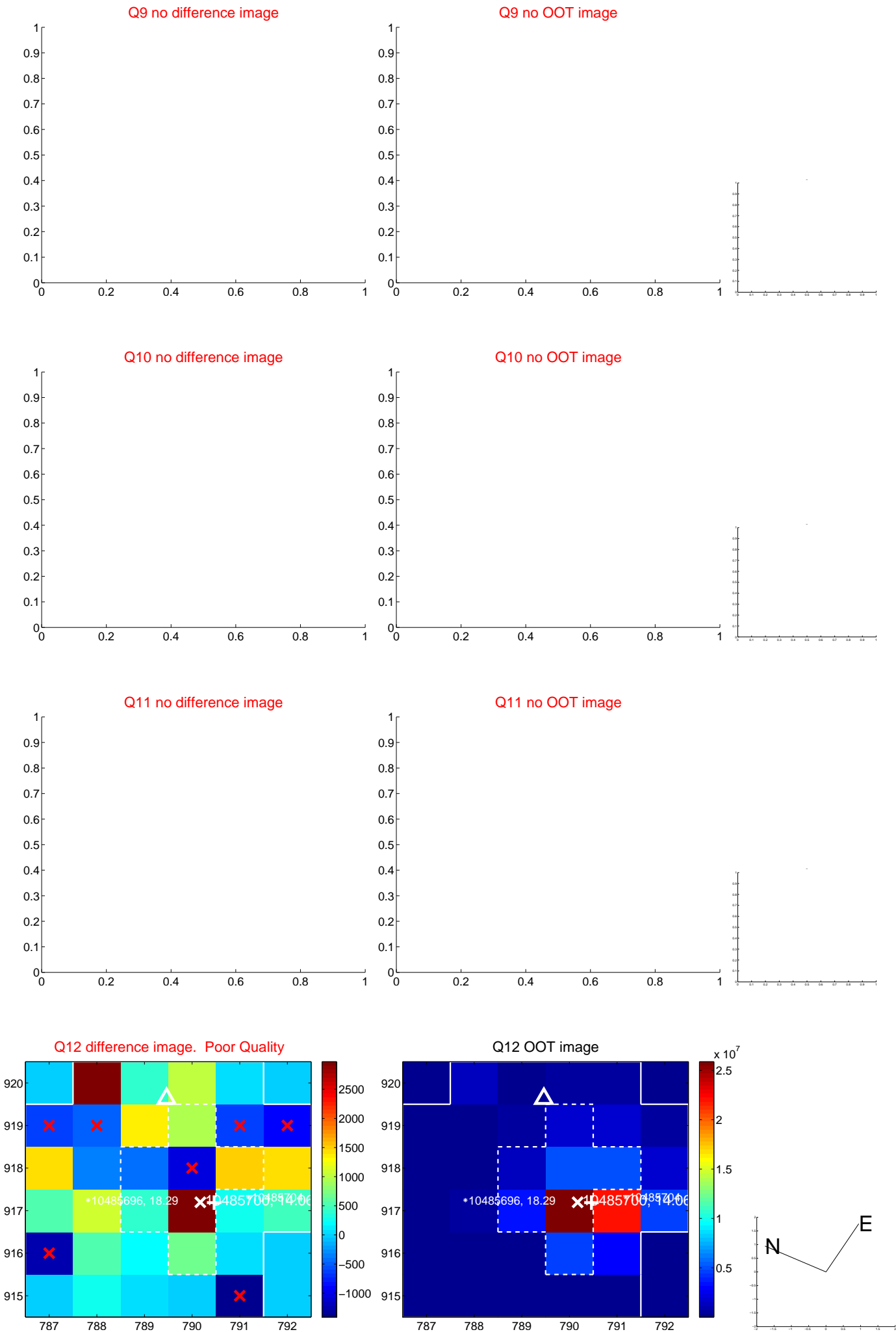


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





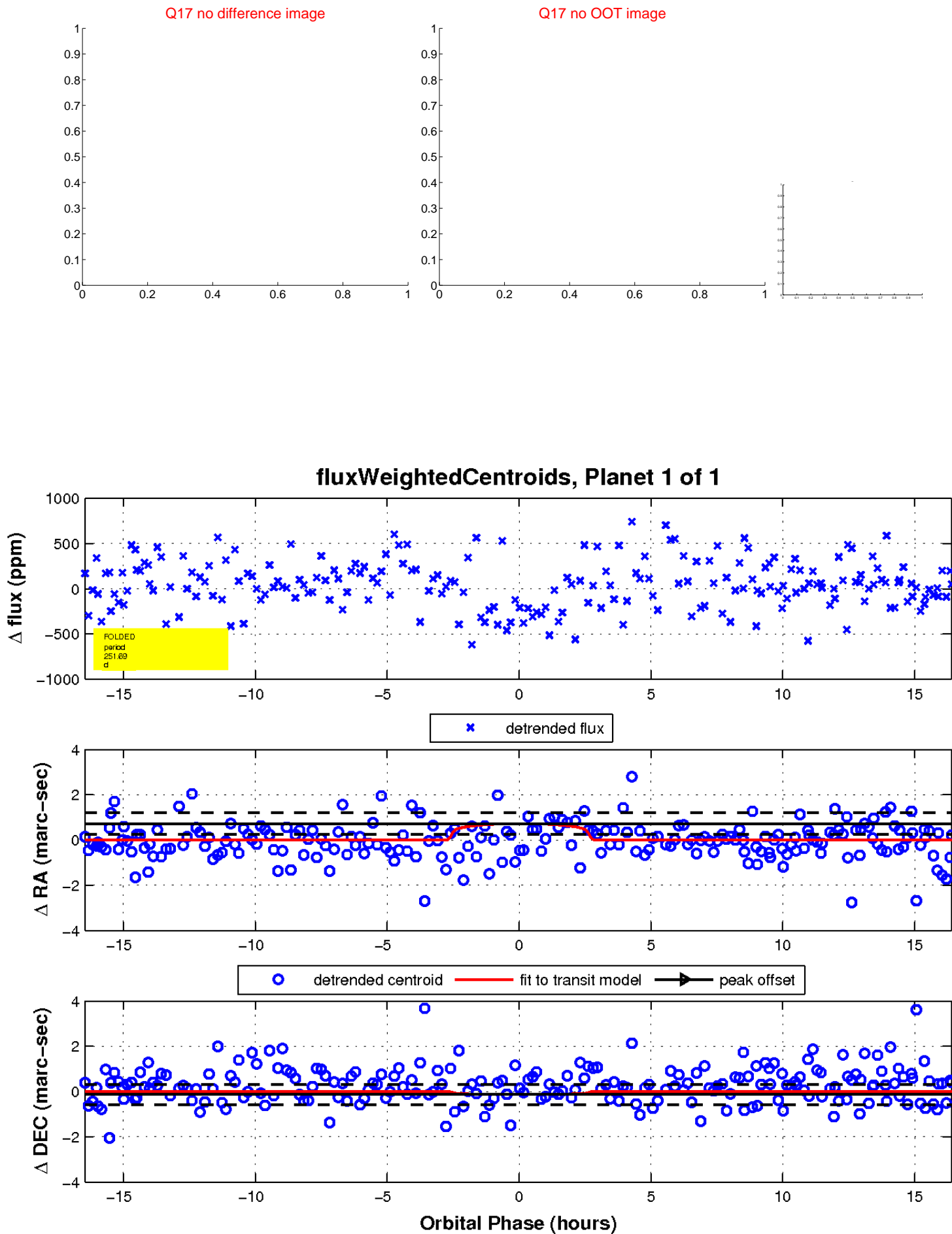
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

