

# KIC 009426650

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009426650-01	OBS	No	485.633802	560.754830	1067.1	5.455	7.6	7.9	0.84	5495	2.88	0.43

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009426650-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—MOD_NONUNIQ_ALT—MOD_POS_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.

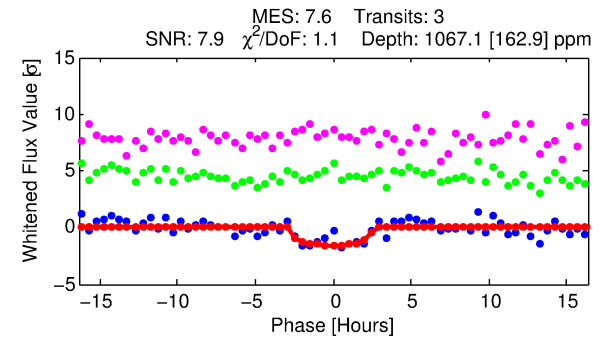
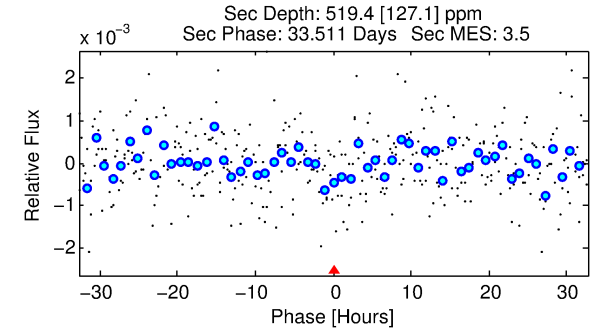
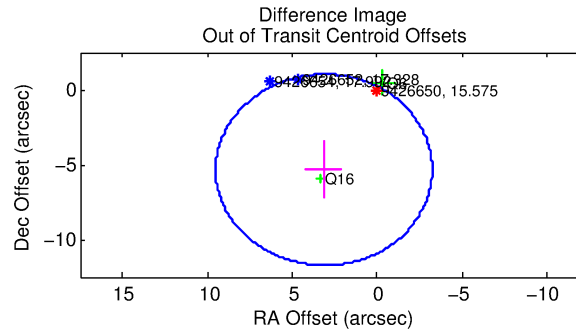
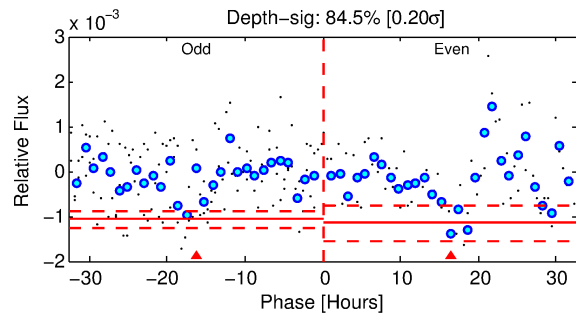
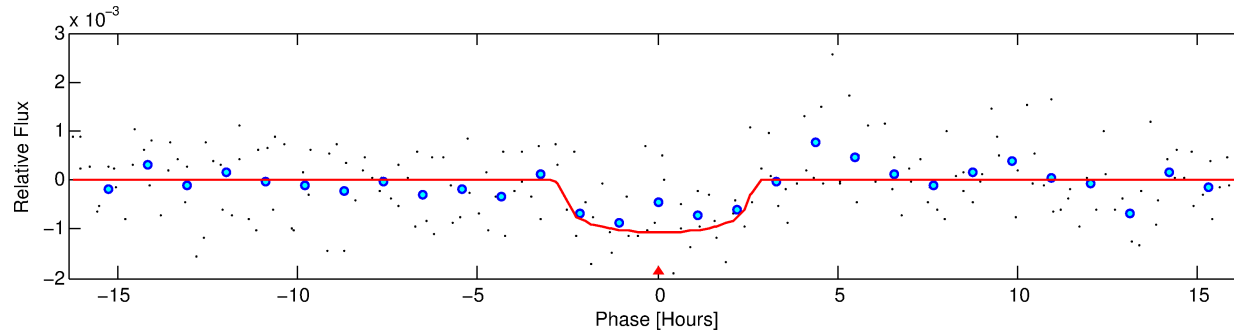
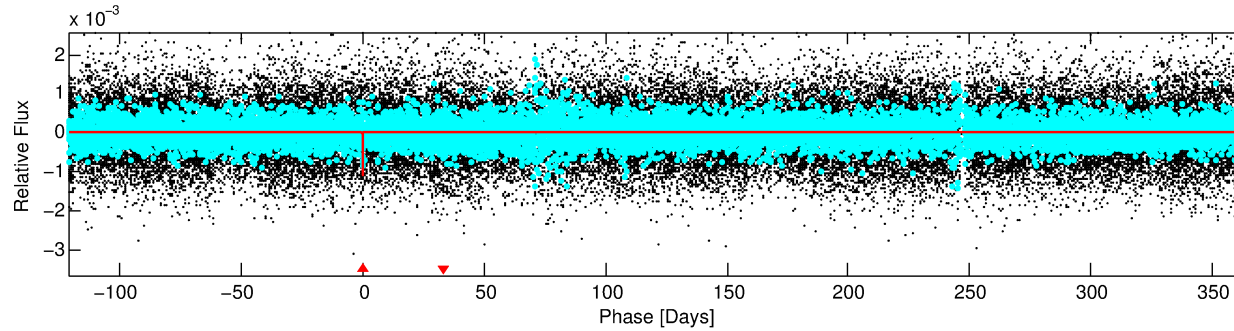
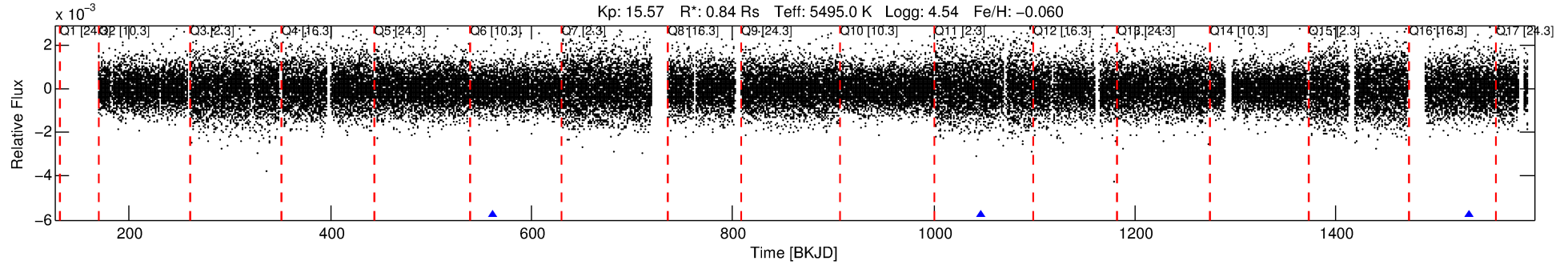
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009426650-01

No Significant Match Found

# DV One-Page Summary

KIC: 9426650 Candidate: 1 of 1 Period: 485.634 d



## DV Fit Results:

Period = 485.63380 [0.01067] d  
Epoch = 560.7548 [0.0127] BKJD  
Rp/R\* = 0.0314 [0.0406]  
a/R\* = 546.76 [2829.18]  
b = 0.65 [4.74]  
Seff = 0.43 [0.13]  
Teq = 206 [16] K  
Rp = 2.88 [3.79] Re  
a = 1.1635 [0.2265] AU  
Ag = 46498.66 [121381.20] [0.38 $\sigma$ ]  
Teffp = 4679 [3041] K [1.47 $\sigma$ ]

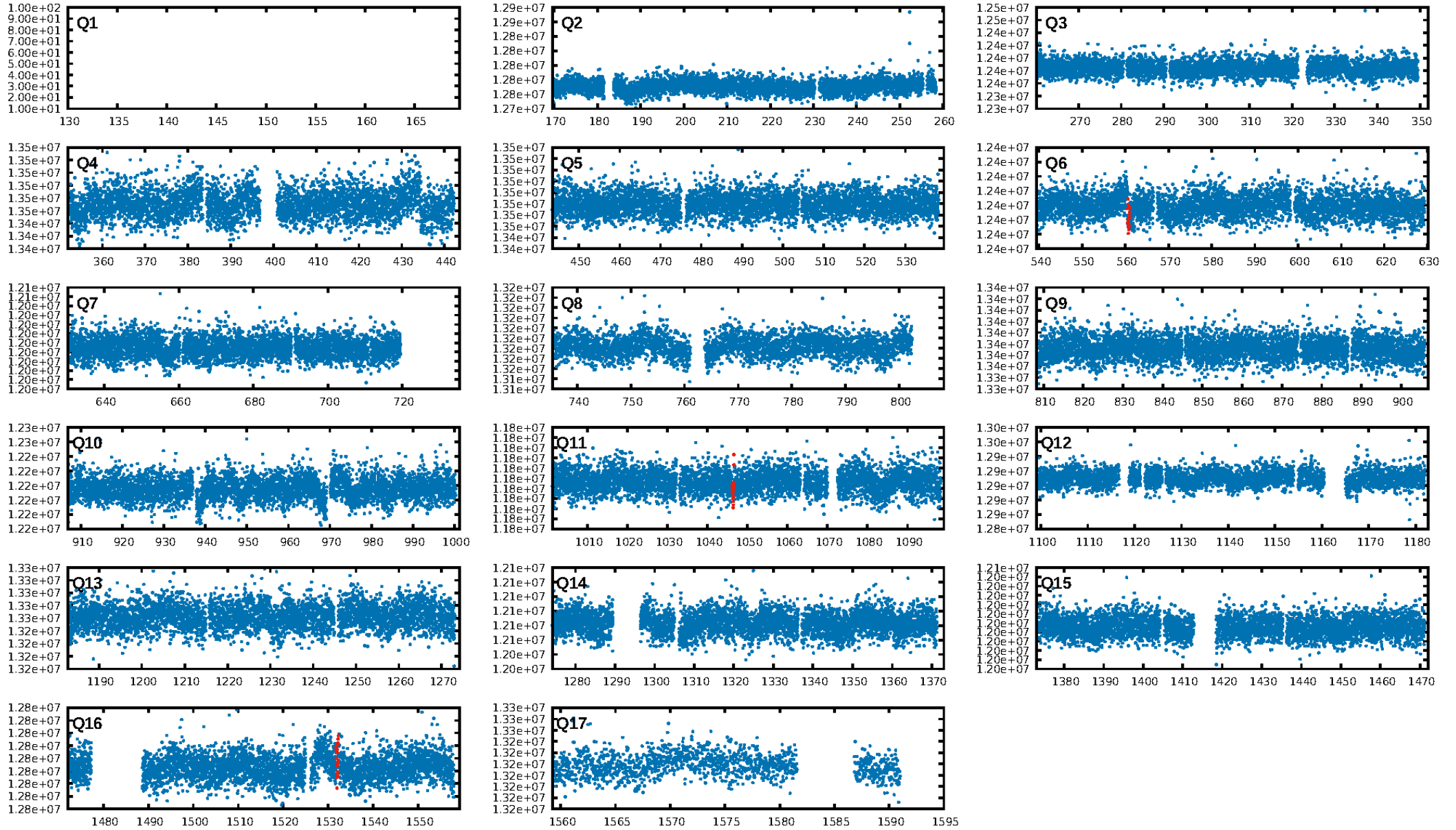
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 18.9%  
ModelChiSquareGof-sig: 95.7%  
Bootstrap-pfa: 4.91e-17  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -7.703  
Centroid-sig: 12.9%  
Centroid-so: 1.219 arcsec [0.80 $\sigma$ ]  
OotOffset-rm: 6.189 arcsec [2.91 $\sigma$ ]  
KicOffset-rm: 6.235 arcsec [1.79 $\sigma$ ]  
OotOffset-st: 1/0/1/0 [2]  
KicOffset-st: 1/0/1/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

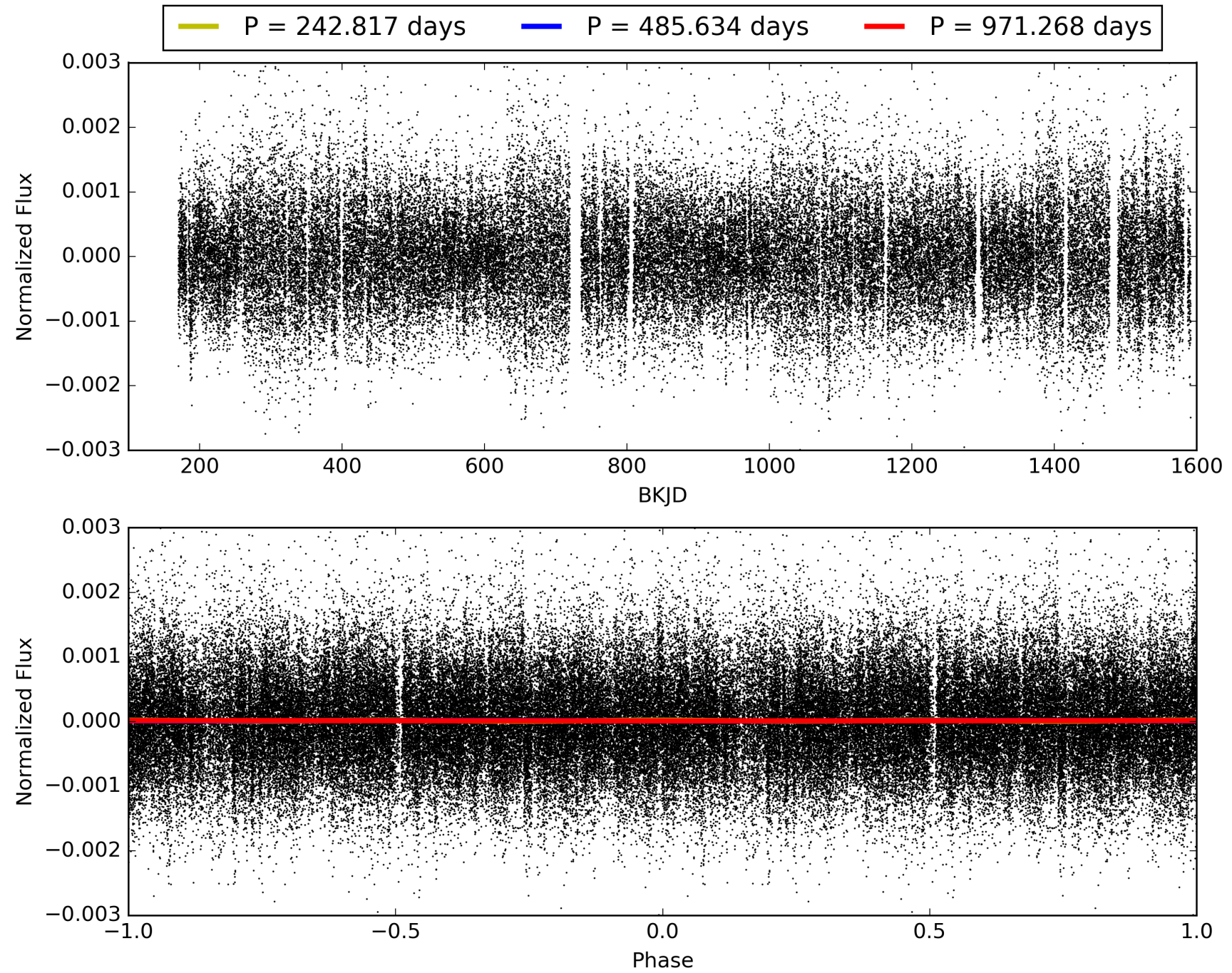
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:57:14 Z

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

# TCE 009426650-01, PDC Light Curves

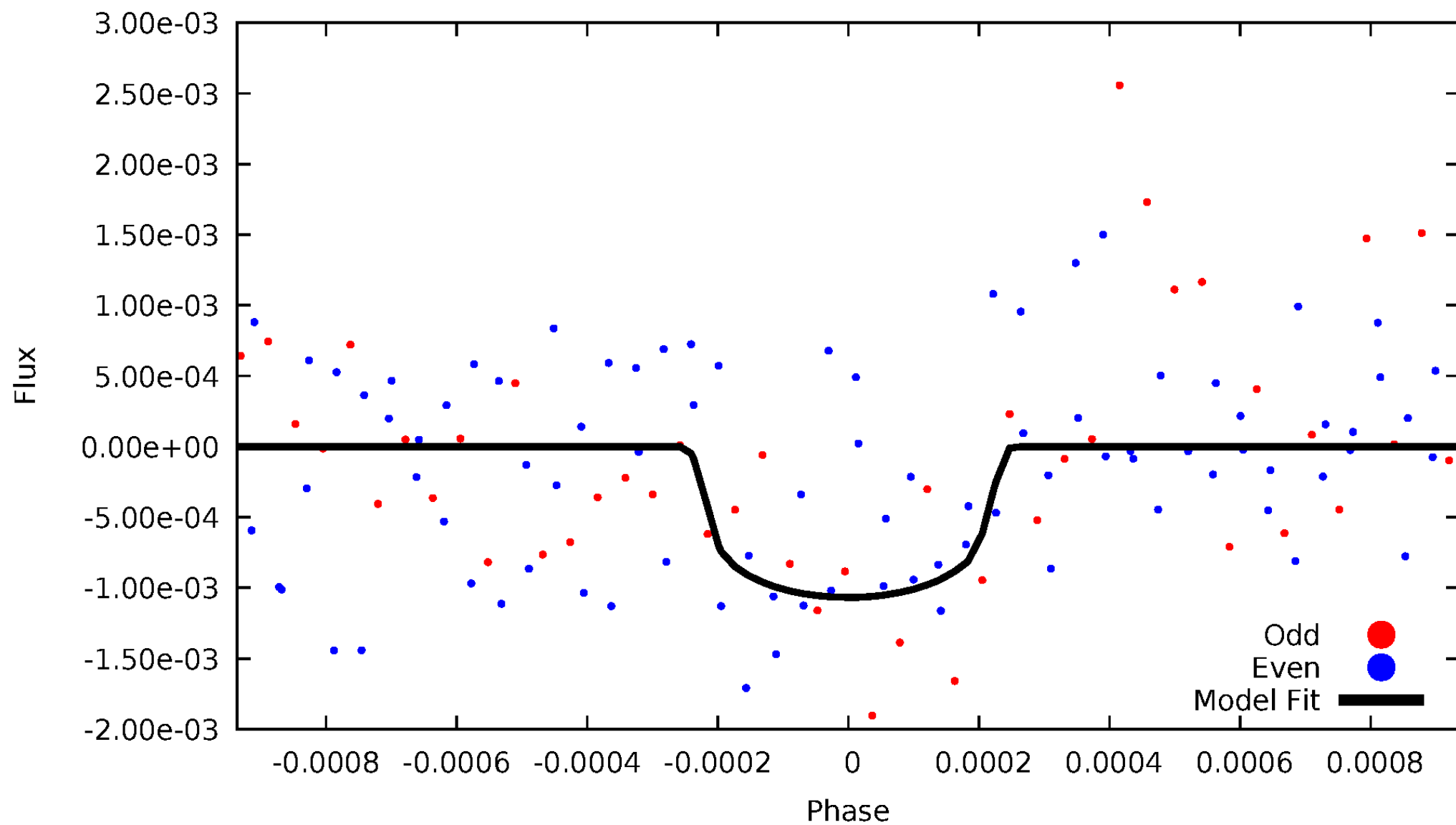


TCE 009426650-01



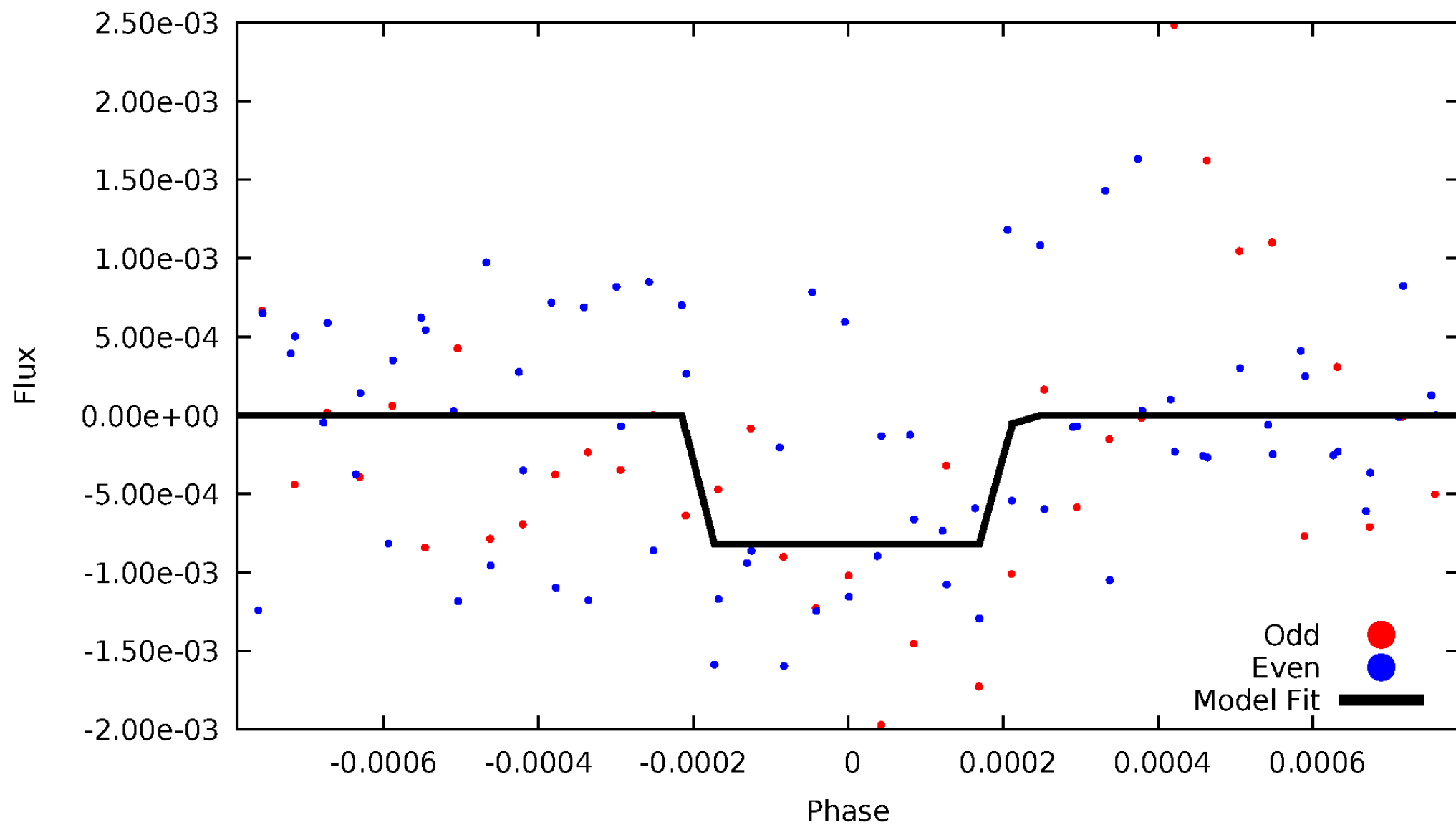
# DV Odd/Even

TCE 009426650-01



# ALT Odd/Even

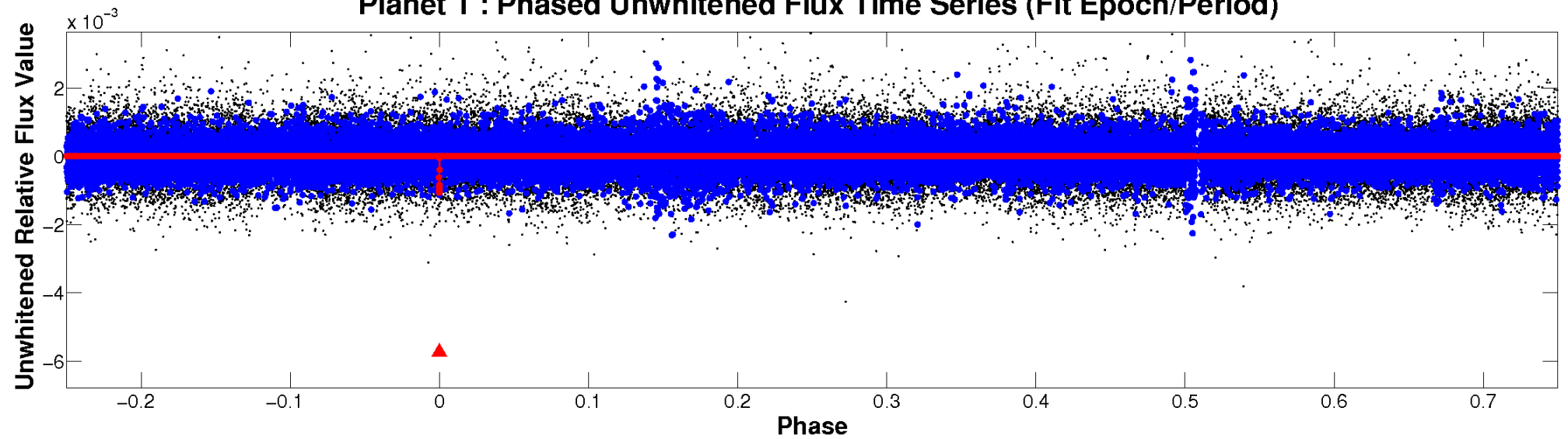
TCE 009426650-01



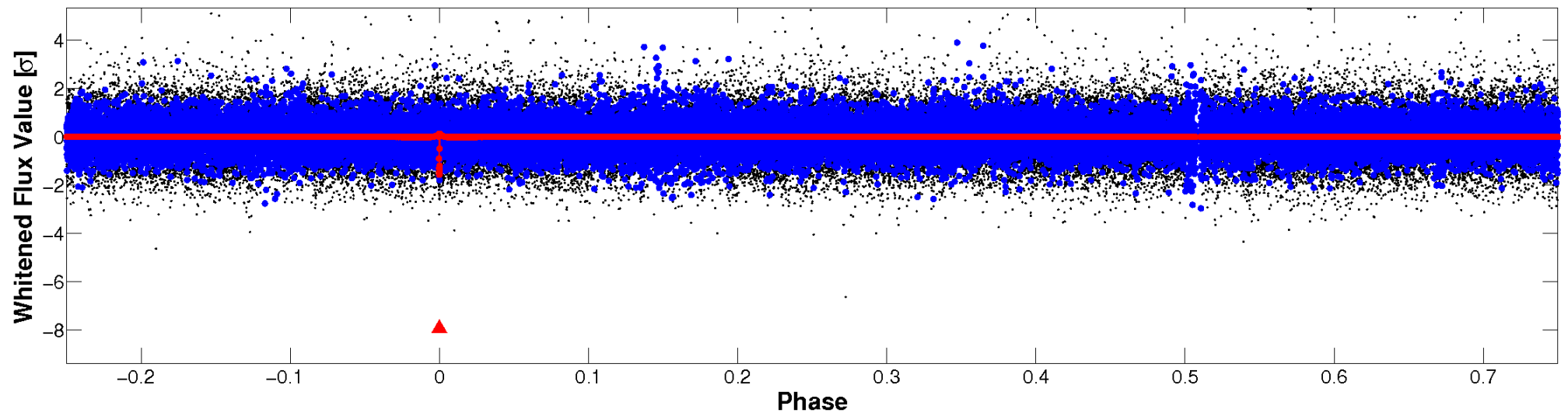


# Non-Whitened Vs. Whitened Light Curve

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

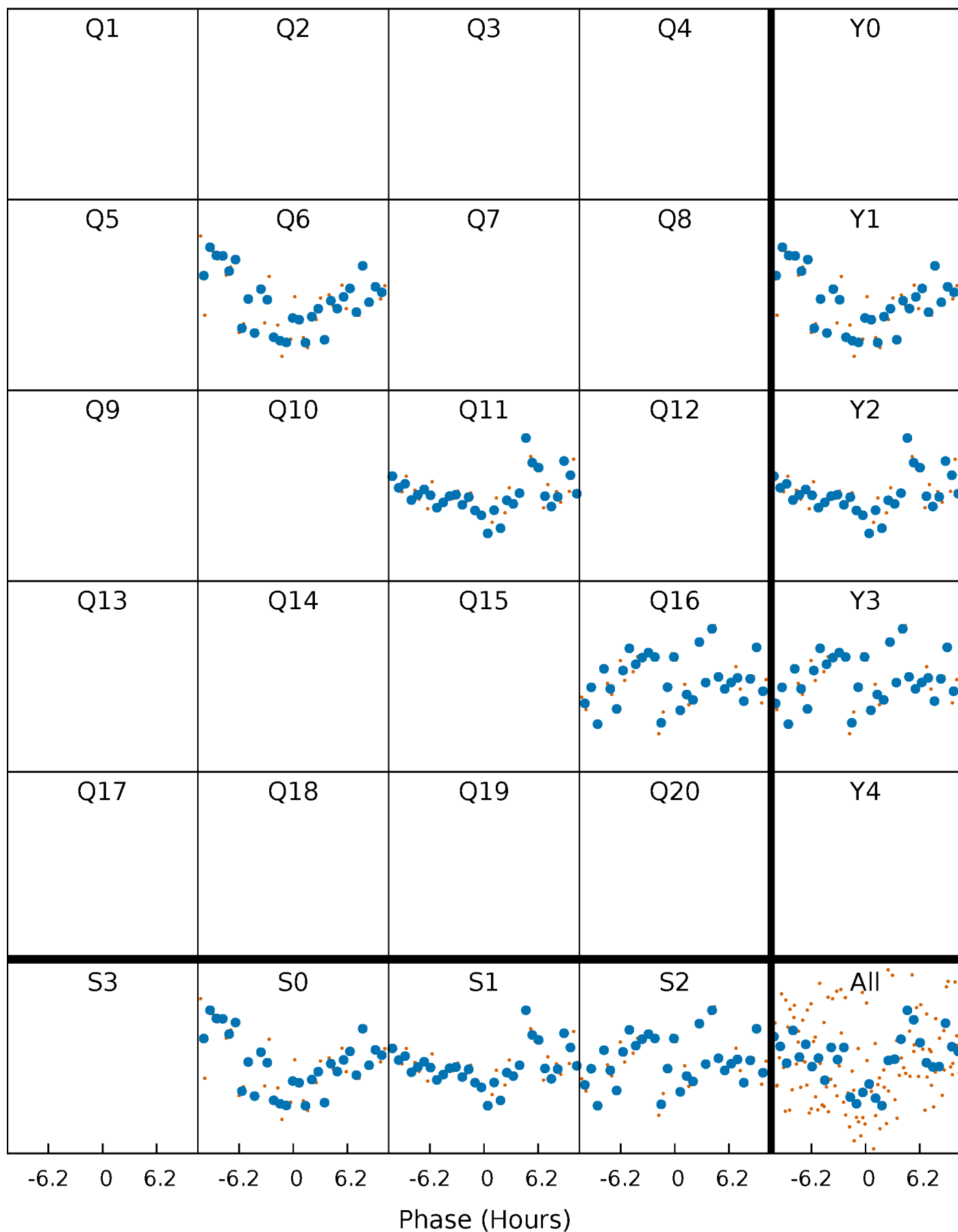


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

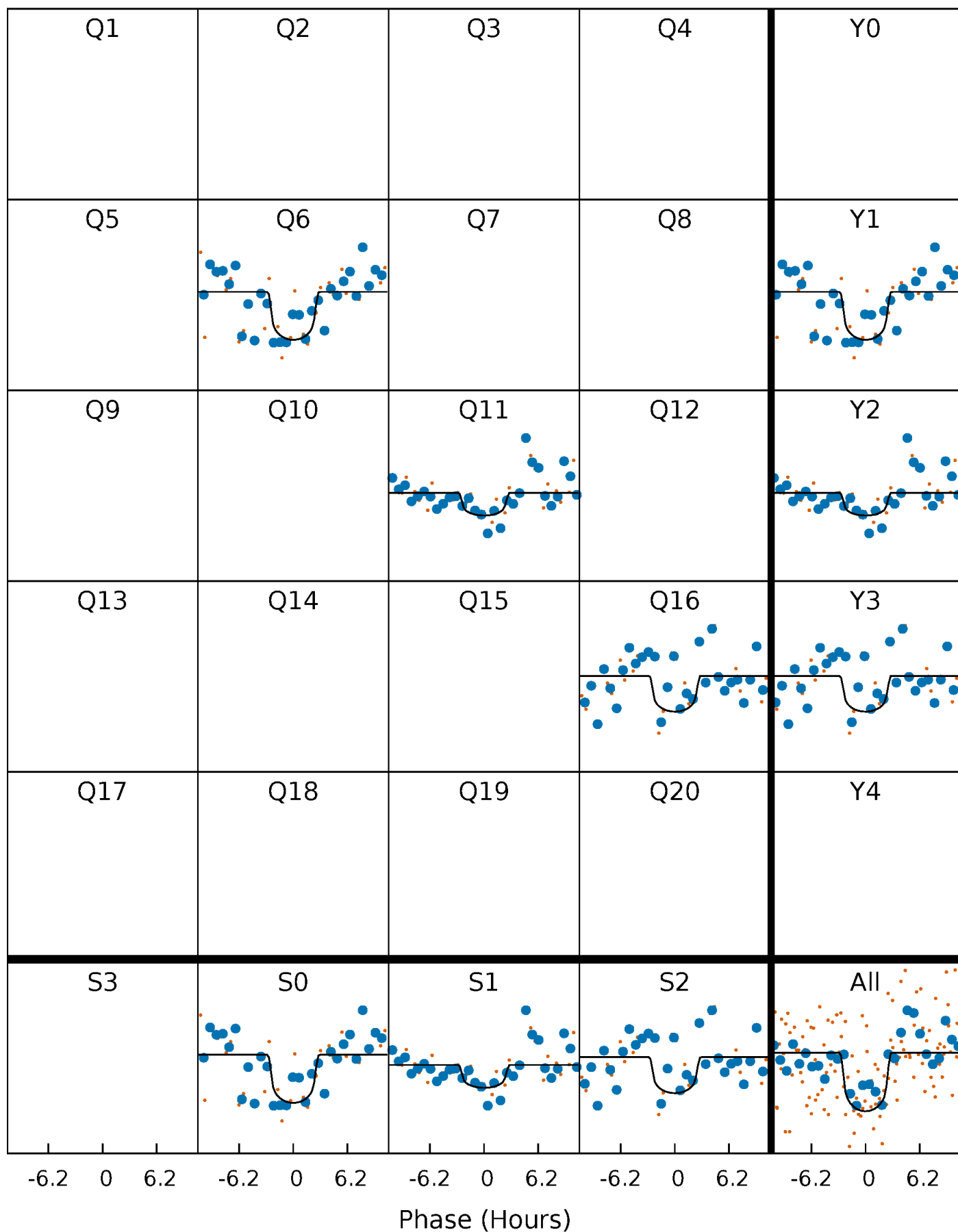
TCE 009426650-01 P=485.633802 Days  $T_0=560.754830$  (BKJD)





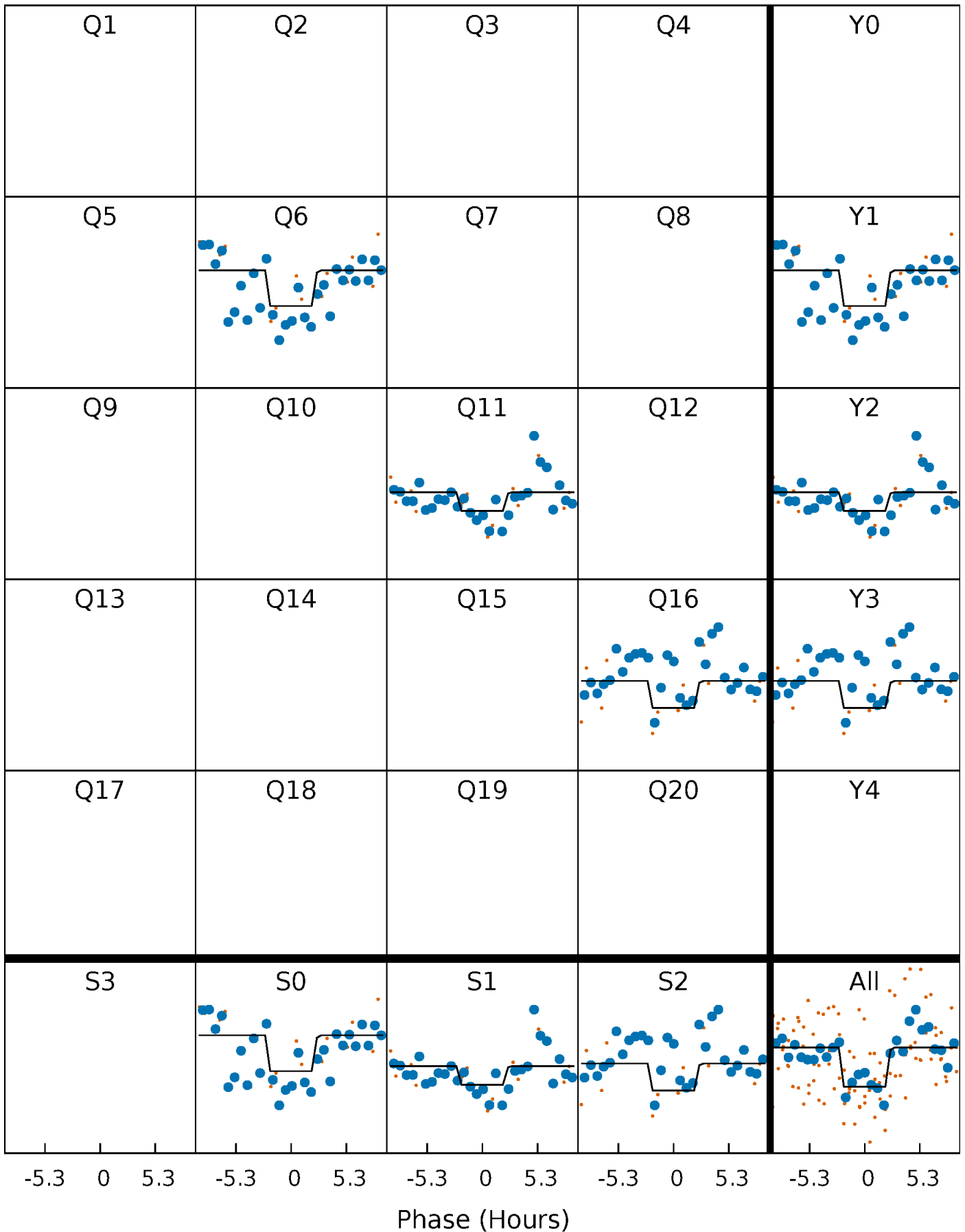
# DV Quarter-Phased Transit Curves

TCE 009426650-01 P=485.633802 Days  $T_0=560.754830$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

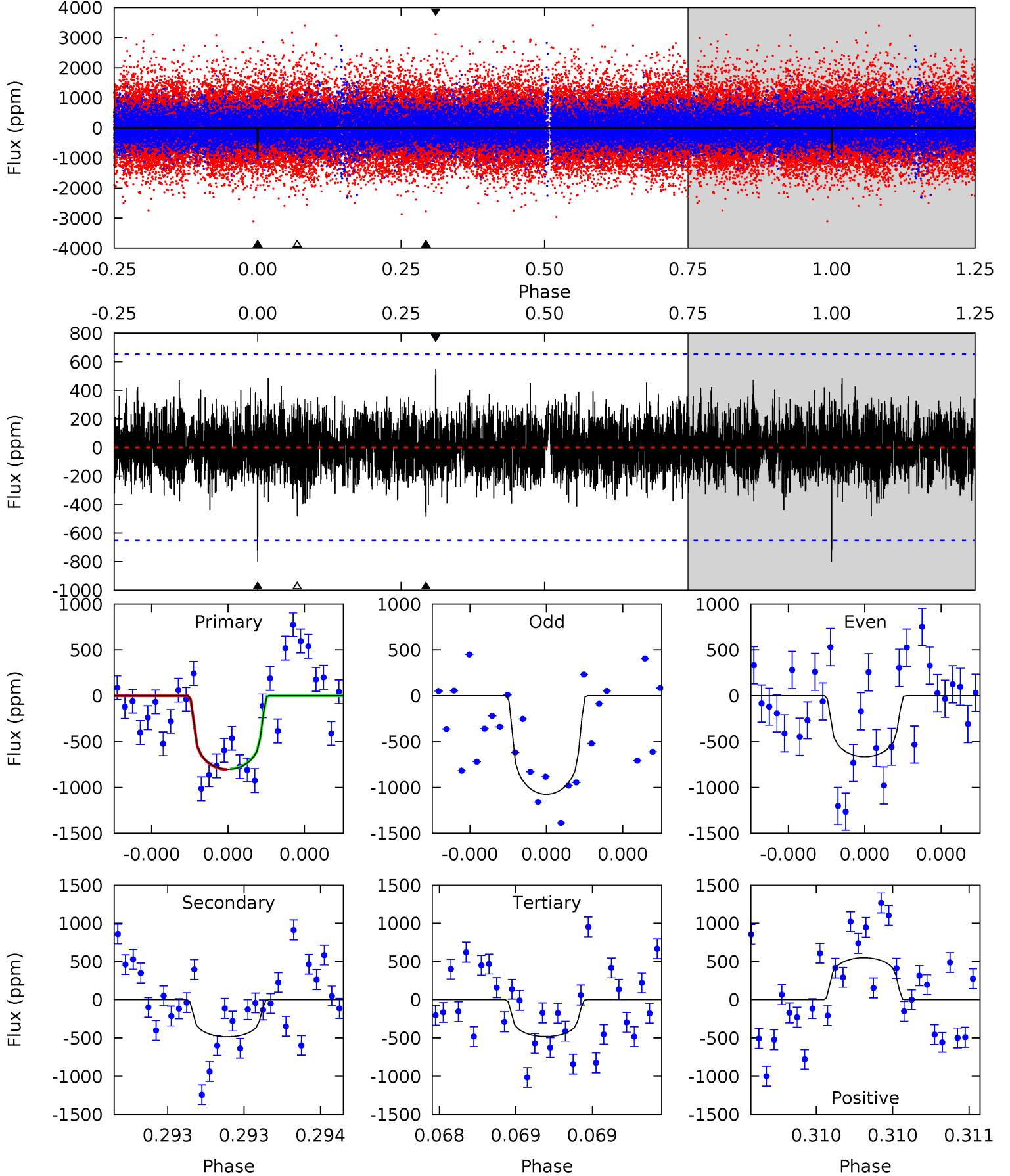
TCE 009426650-01 P=485.644421 Days  $T_0=560.741521$  (BKJD)



# DV Model-Shift Uniqueness Test

009426650-01, P = 485.633802 Days, E = 75.121028 Days

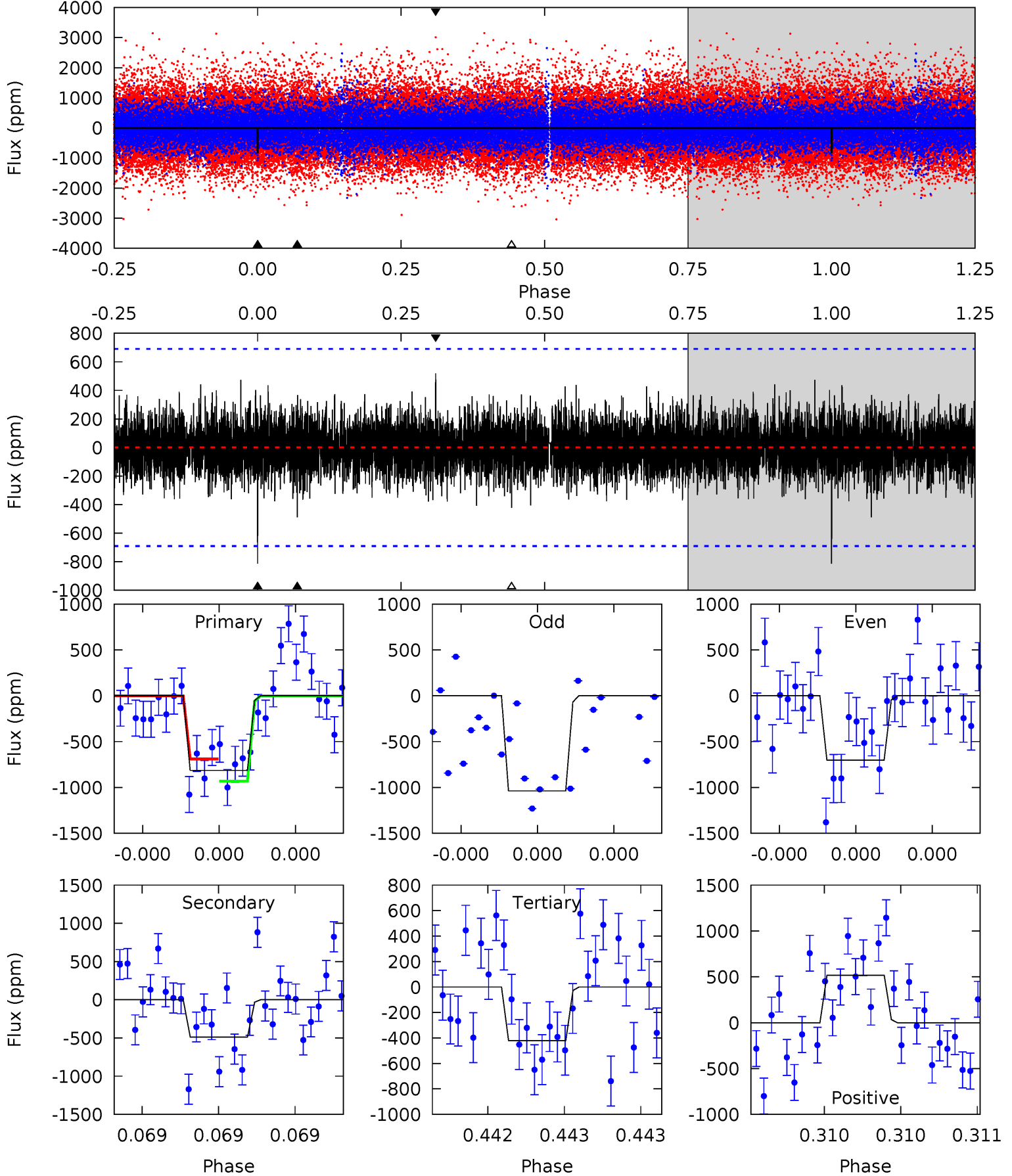
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.86	4.14	4.12	4.71	5.58	3.49	1.10	2.74	2.15	0.02	-0.57	1.67	0.86	0.41	0.03



# Alt Model-Shift Uniqueness Test

009426650-01, P = 485.644421 Days, E = 75.097100 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
6.58	3.95	3.41	4.19	5.59	3.50	0.97	3.17	2.39	0.54	-0.24	1.31	0.80	0.39	0.97



### Stellar Parameters For KIC 009426650

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5495^{+191}_{-172}$	$4.538^{+0.050}_{-0.150}$	$-0.060^{+0.300}_{-0.300}$	$0.841^{+0.198}_{-0.071}$	$0.891^{+0.091}_{-0.091}$	$2.111^{+0.439}_{-0.912}$
	+3%/-3%	+1%/-3%	+500%/-500%	+24%/-8%	+10%/-10%	+21%/-43%
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 009426650-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-484 \pm 117$	$4.05^{+3.45}_{-2.66}$	$292^{+16}_{-13}$	$4202^{+2362}_{-830}$	$22359^{+154849}_{-16410}$
Alt.	$-489 \pm 124$	$3.82^{+3.57}_{-2.65}$	$292^{+17}_{-13}$	$4262^{+3104}_{-893}$	$24631^{+220995}_{-18576}$

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

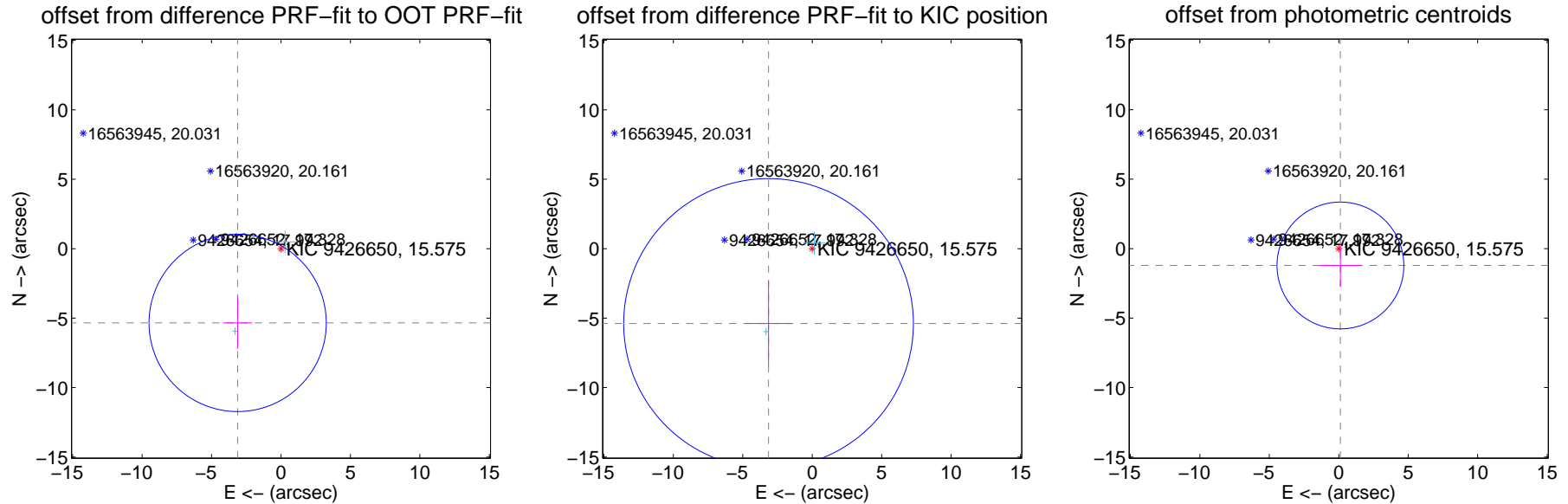
## DV Centroid Data

Supplemental centroid analysis for 009426650-01. Kepler magnitude: 15.57. Transit SNR 7.86

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$6.189 \pm 2.127$	2.91	$3.121 \pm 1.042$	$-5.344 \pm 1.856$
PRF-fit source offset from KIC position	$6.235 \pm 3.477$	1.79	$3.145 \pm 1.665$	$-5.384 \pm 3.054$
photometric centroid source offset	$1.22 \pm 1.52$	0.80	$-0.12 \pm 1.52$	$-1.21 \pm 1.52$



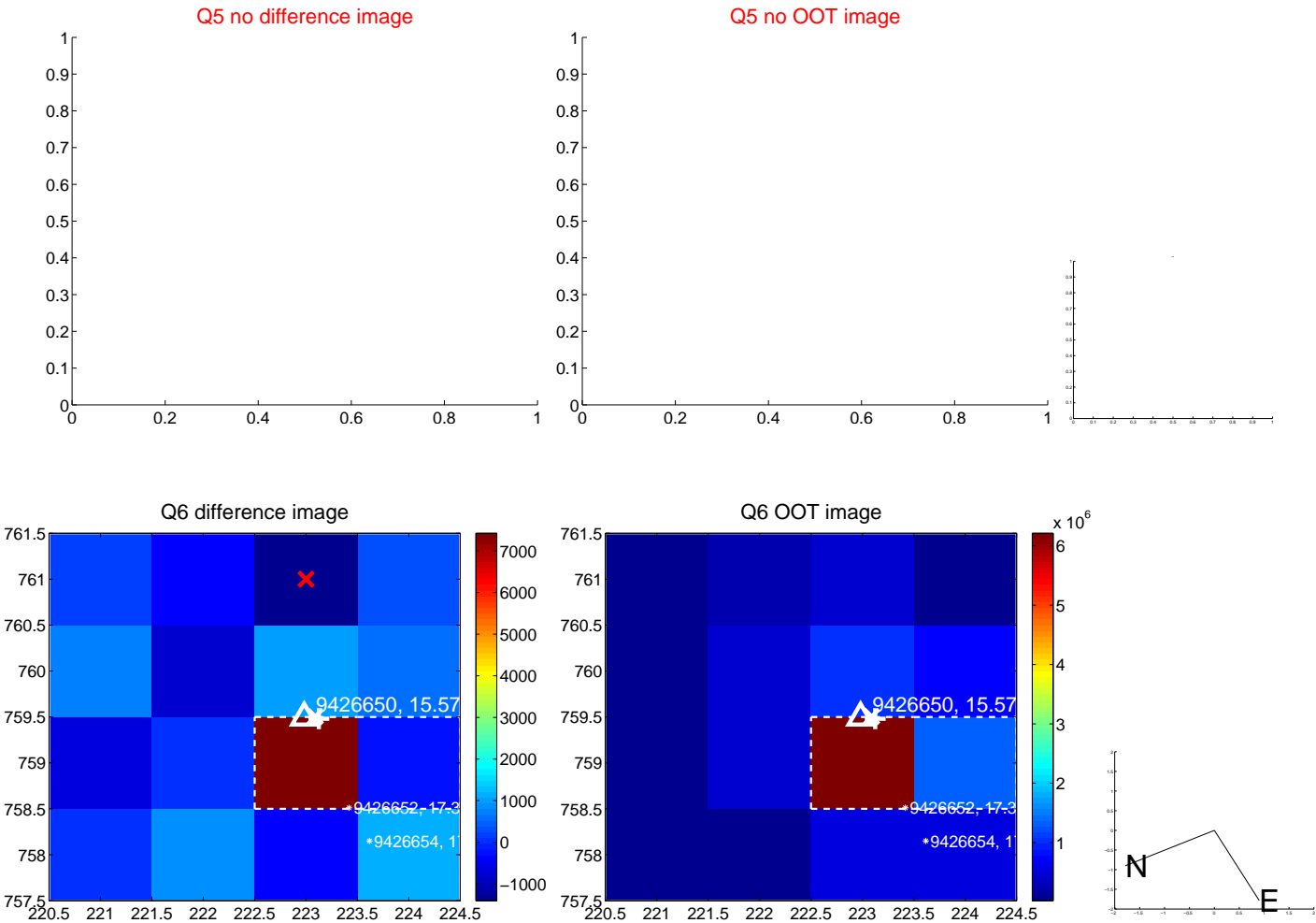
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

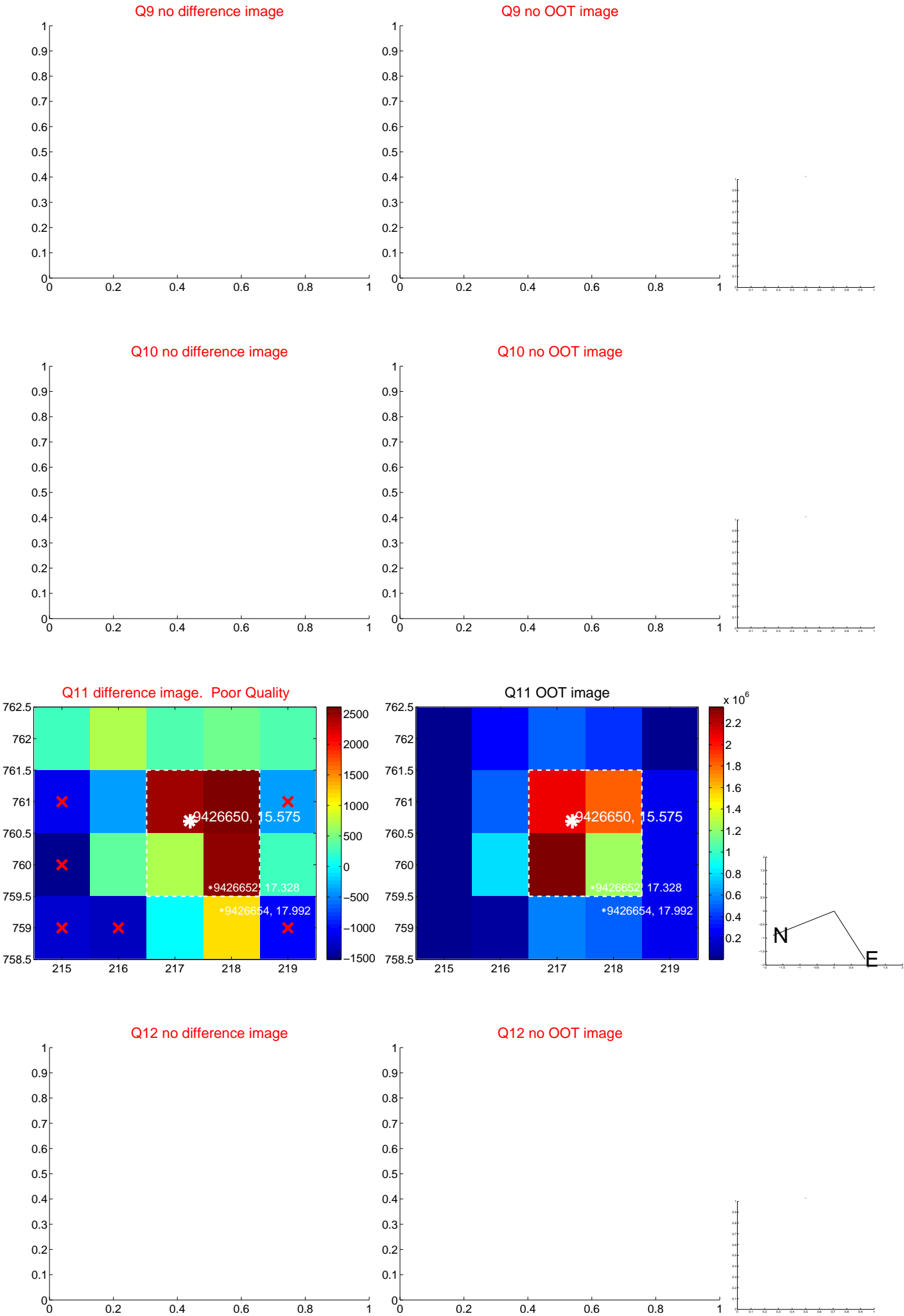




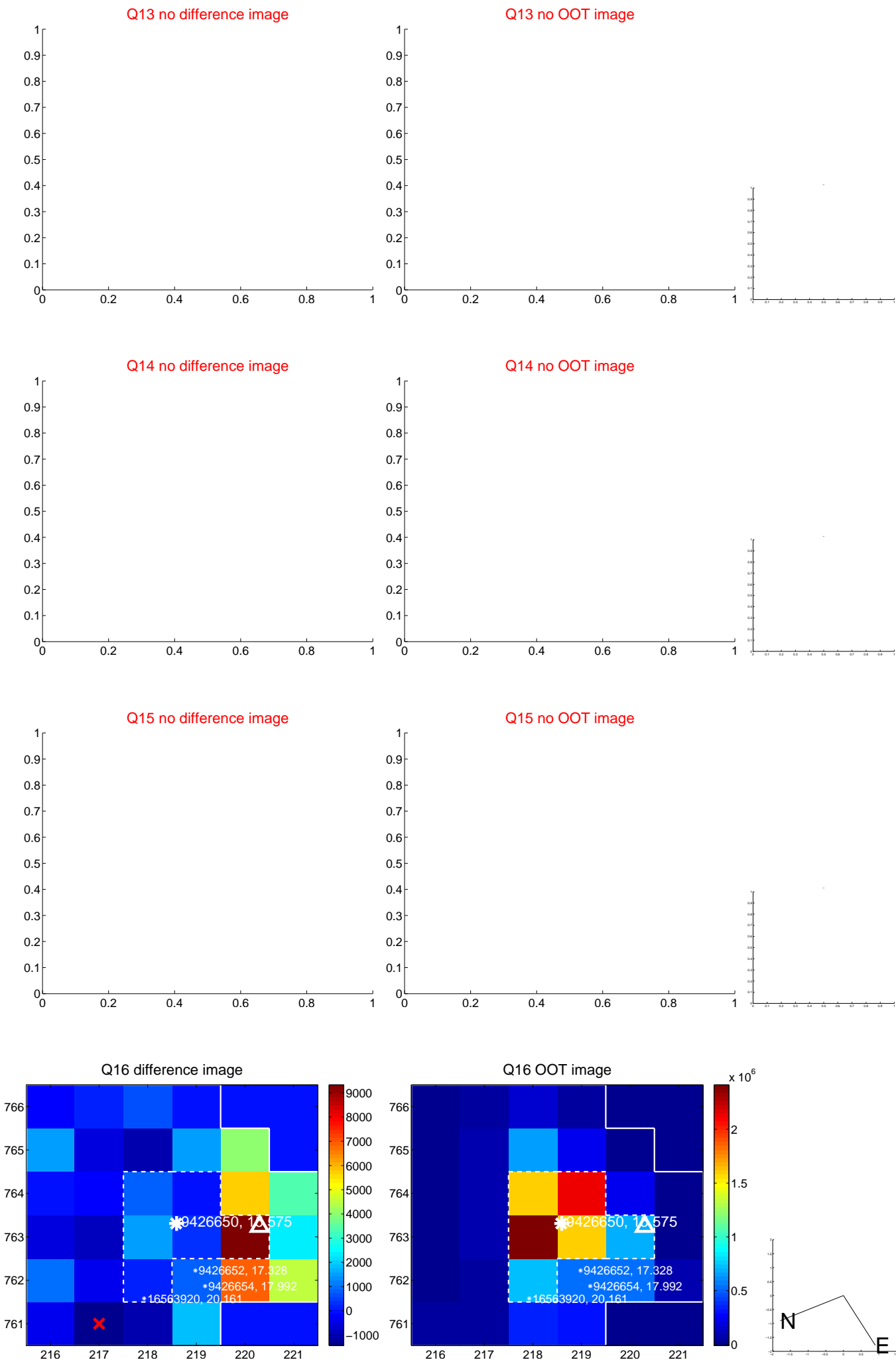
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



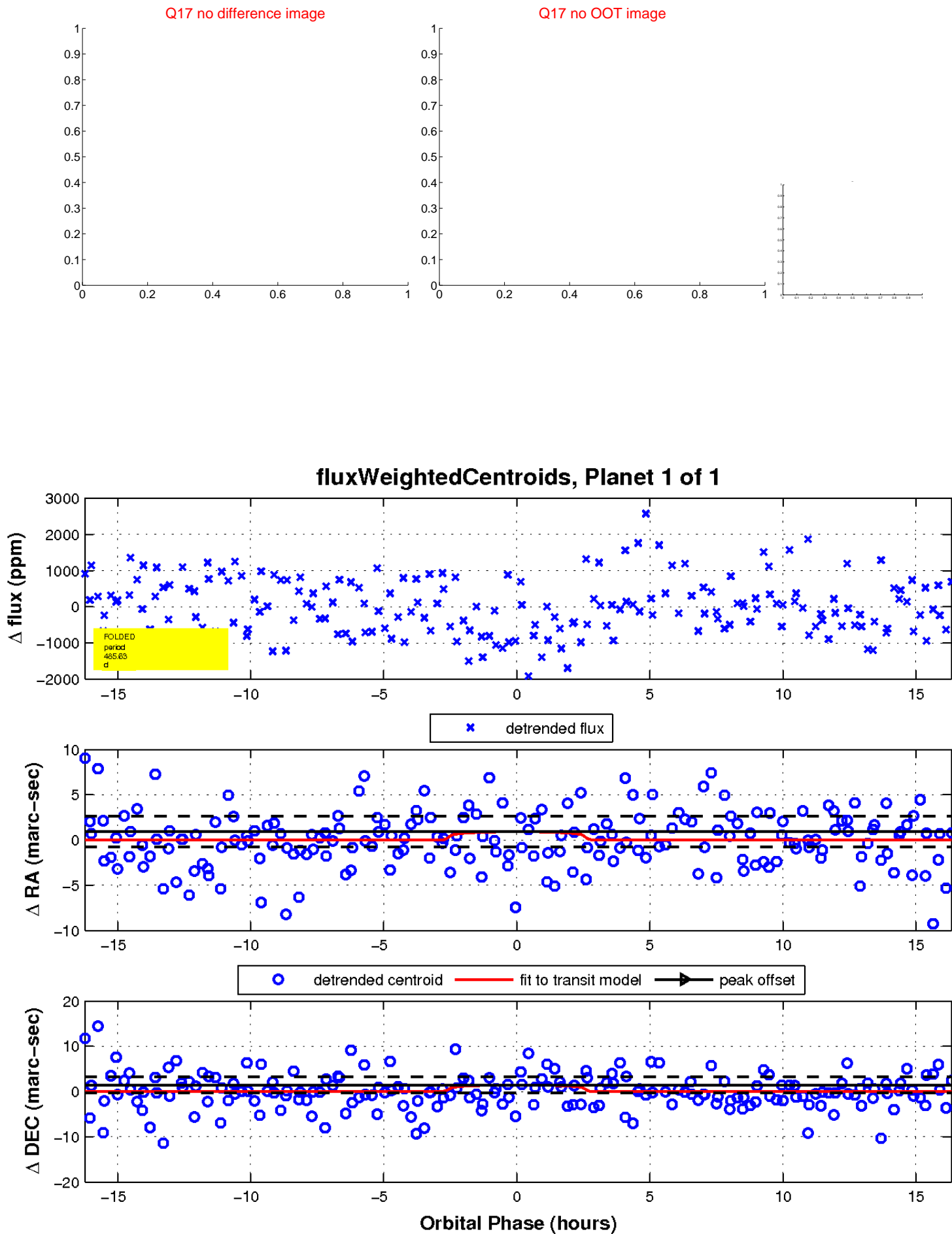
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.



UKIRT Image

Declination

