

# KIC 006843454

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006843454-01	OBS	No	4.410486	133.258488	95.3	17.155	7.2	7.4	0.80	5240	0.79	177.45

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006843454-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

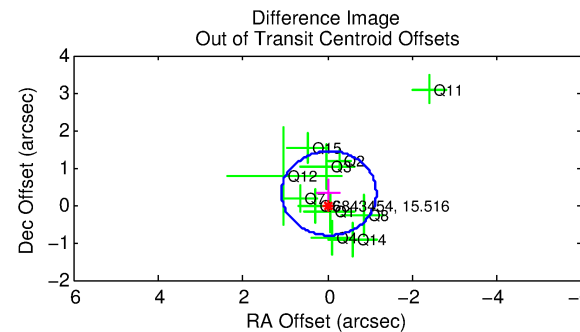
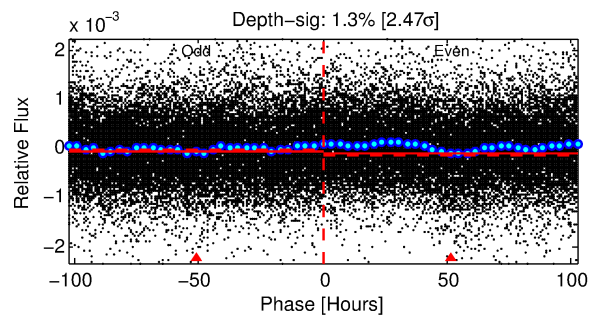
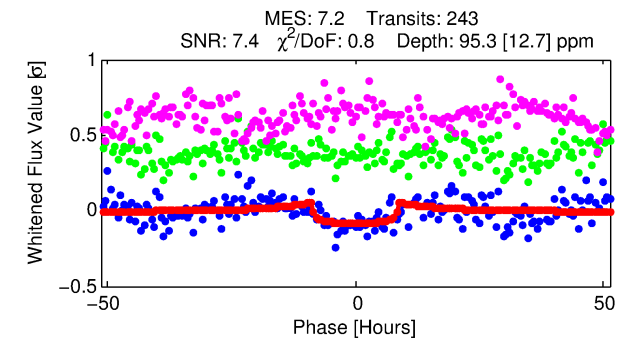
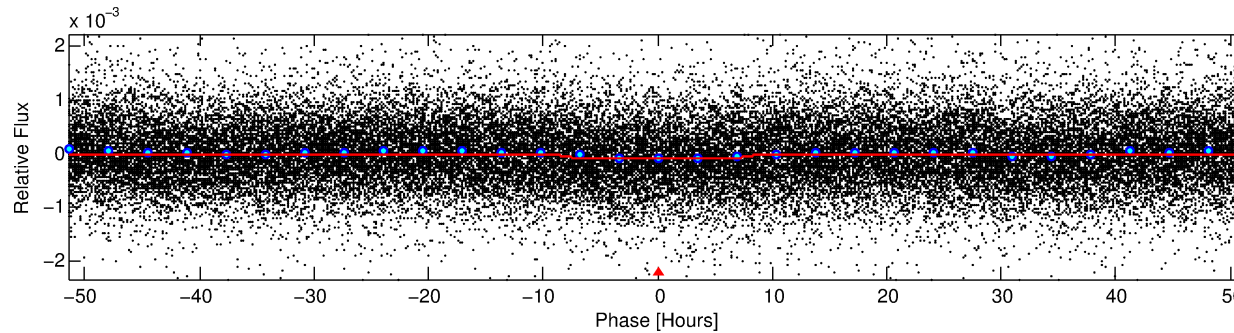
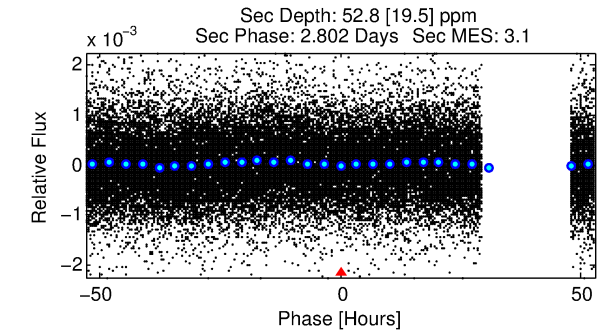
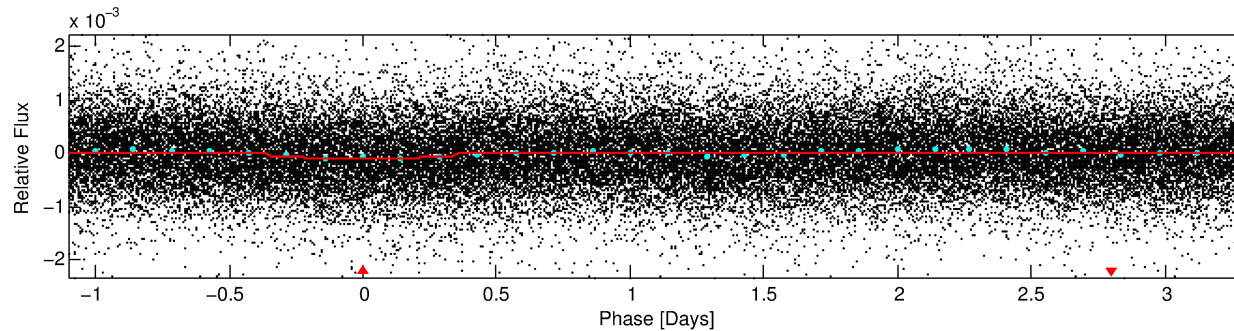
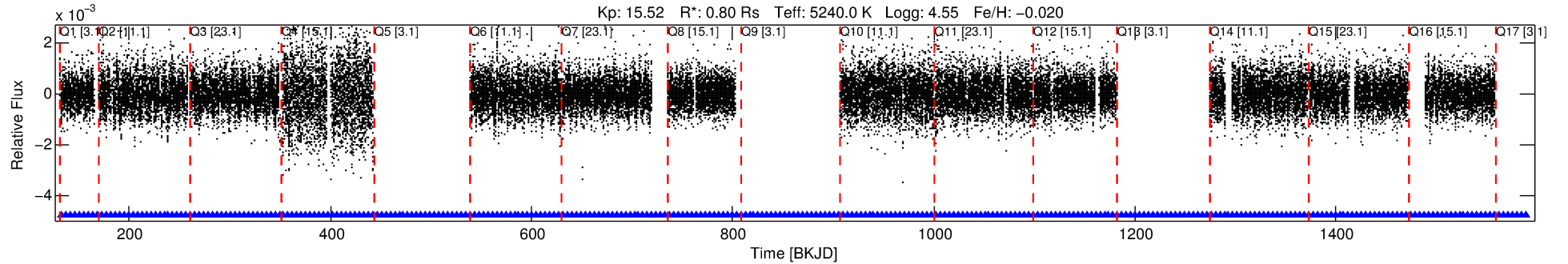
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006843454-01

No Significant Match Found

# DV One-Page Summary

KIC: 6843454 Candidate: 1 of 1 Period: 4.410 d



## DV Fit Results:

Period = 4.41049 [0.00009] d  
Epoch = 133.2585 [0.0147] BKJD  
Rp/R\* = 0.0091 [0.0065]  
a/R\* = 1.87 [3.55]  
b = 0.50 [4.07]  
Seff = 177.45 [36.66]  
Teq = 931 [48] K  
Rp = 0.79 [0.58] Re  
a = 0.0496 [0.0058] AU  
Ag = 113.34 [169.04] [0.66 $\sigma$ ]  
Teffp = 4695 [1745] K [2.16 $\sigma$ ]

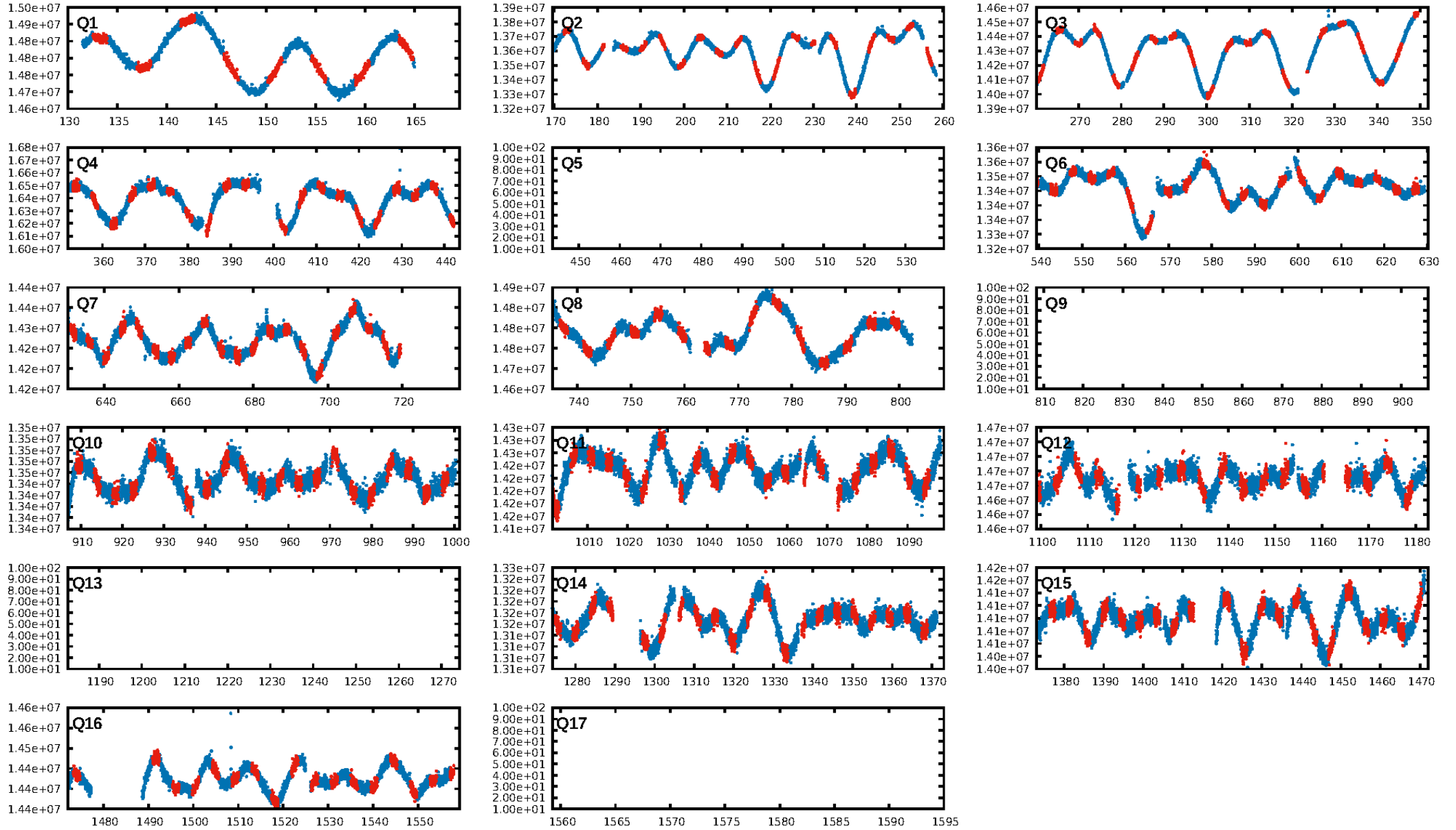
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
**Bootstrap-pfa: 1.38e-11**  
RollingBand-fgt: 1.00 [235/235]  
**GhostDiagnostic-chr: 0.6518**  
Centroid-sig: 3.0%  
Centroid-so: 1.967 arcsec [1.99 $\sigma$ ]  
OotOffset-rm: 0.316 arcsec [0.85 $\sigma$ ]  
KicOffset-rm: 0.477 arcsec [1.20 $\sigma$ ]  
OotOffset-st: 3/4/3/1 [11]  
KicOffset-st: 3/4/3/1 [11]  
DiffImageQuality-fgm: 0.82 [9/11]  
DiffImageOverlap-fno: 1.00 [13/13]

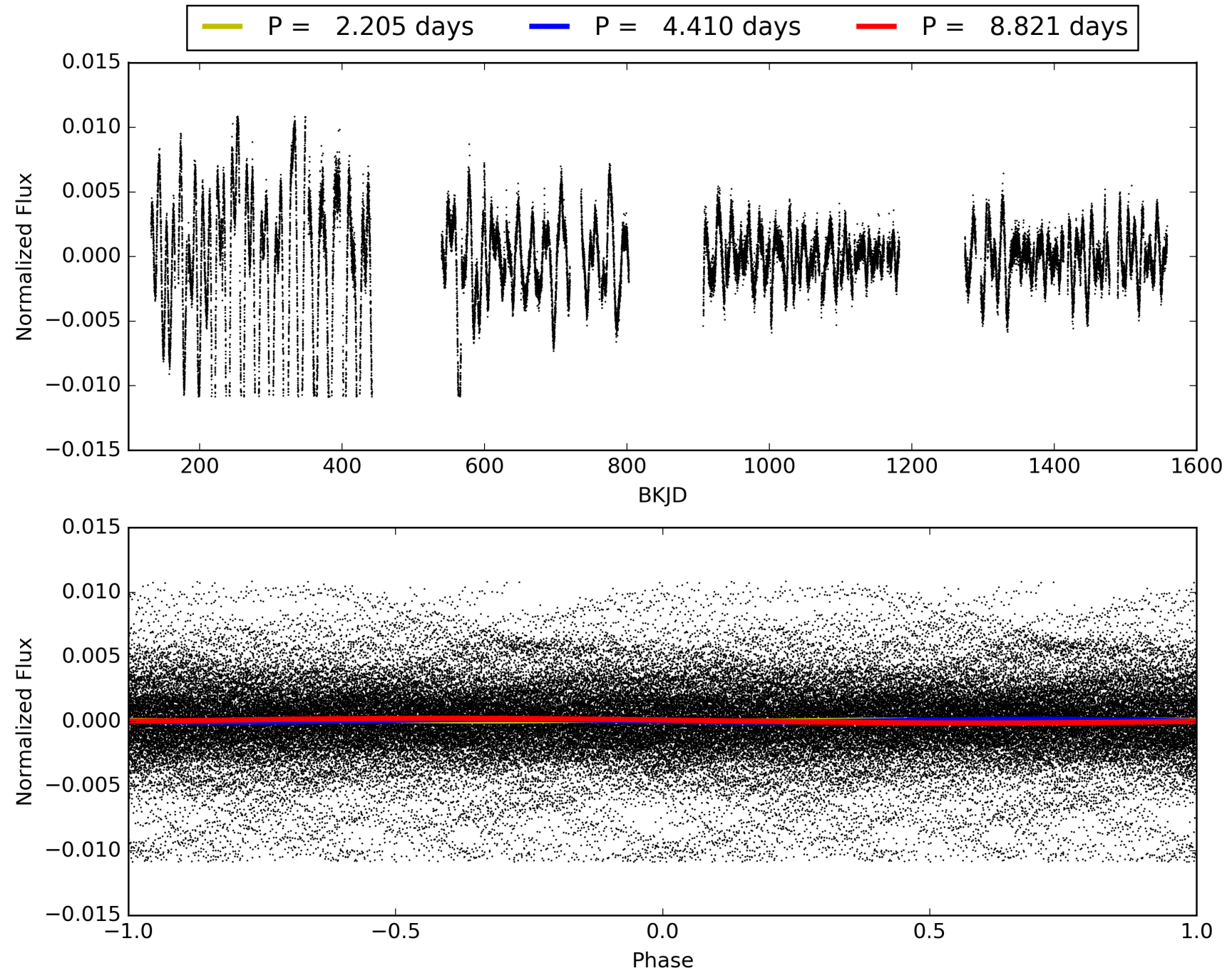
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:00:22 Z

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

# TCE 006843454-01, PDC Light Curves

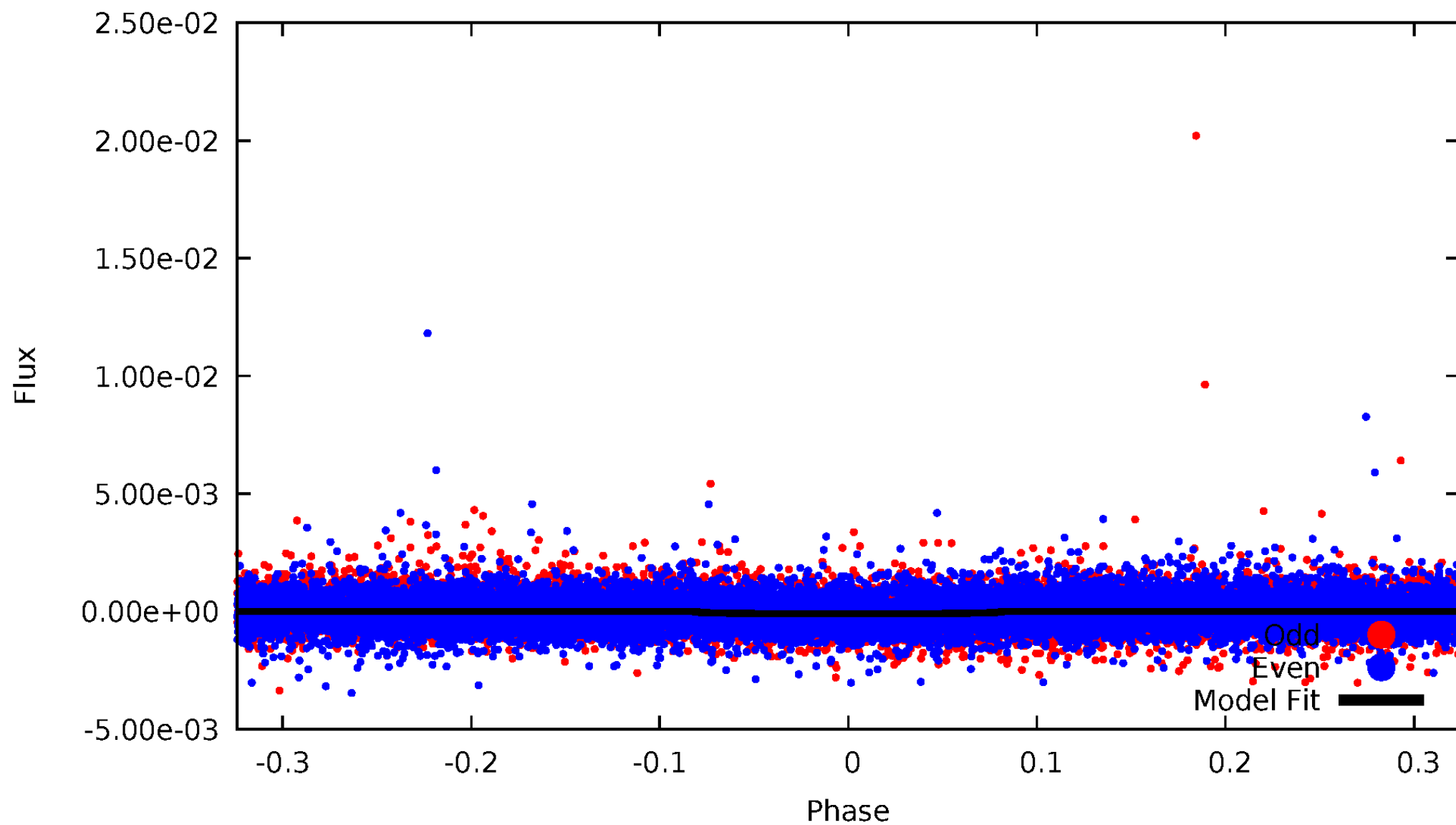


TCE 006843454-01



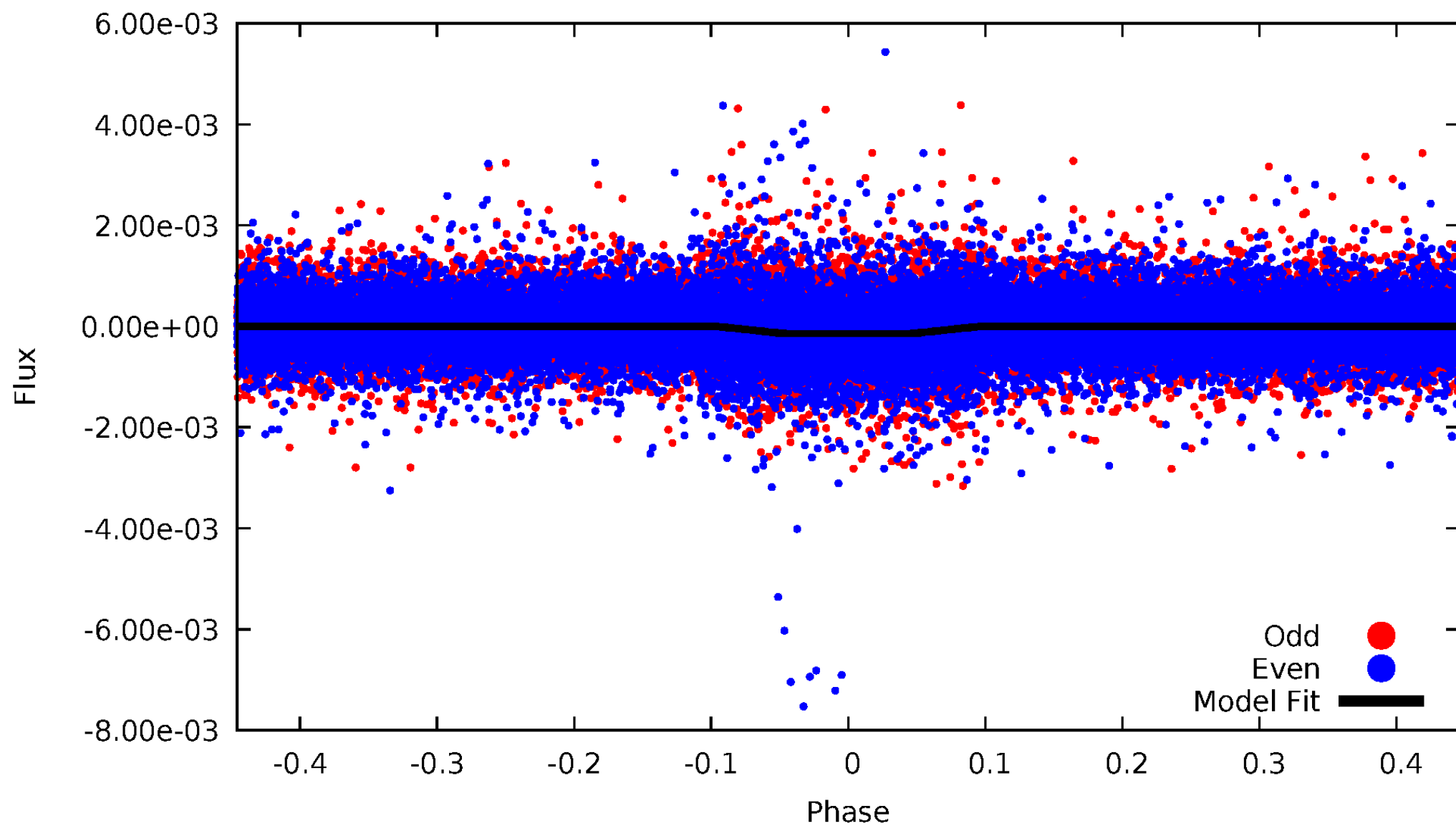
# DV Odd/Even

TCE 006843454-01



# ALT Odd/Even

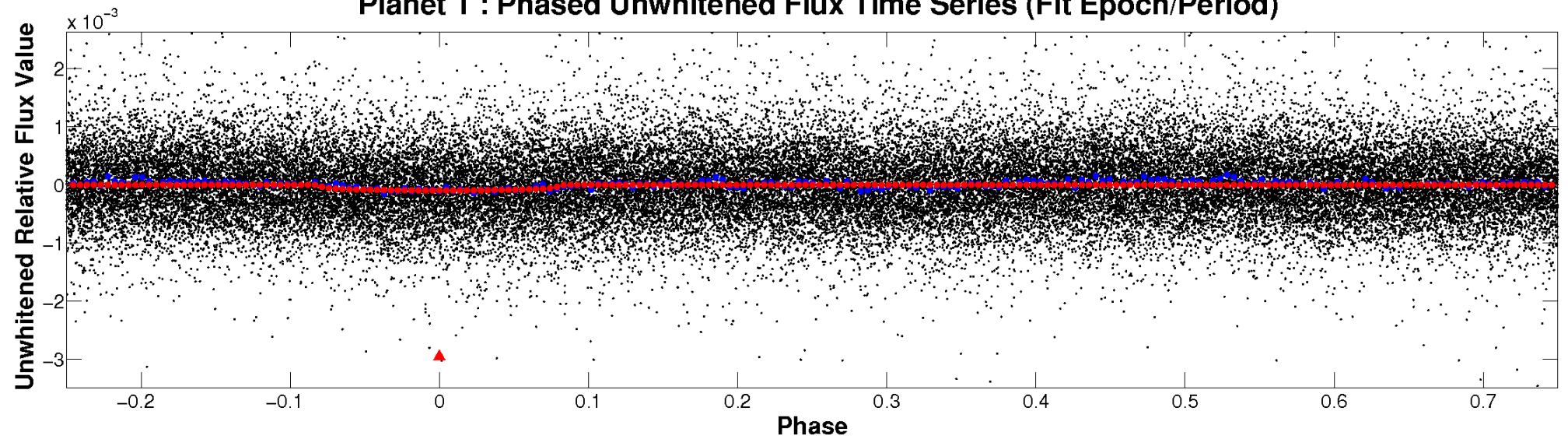
TCE 006843454-01



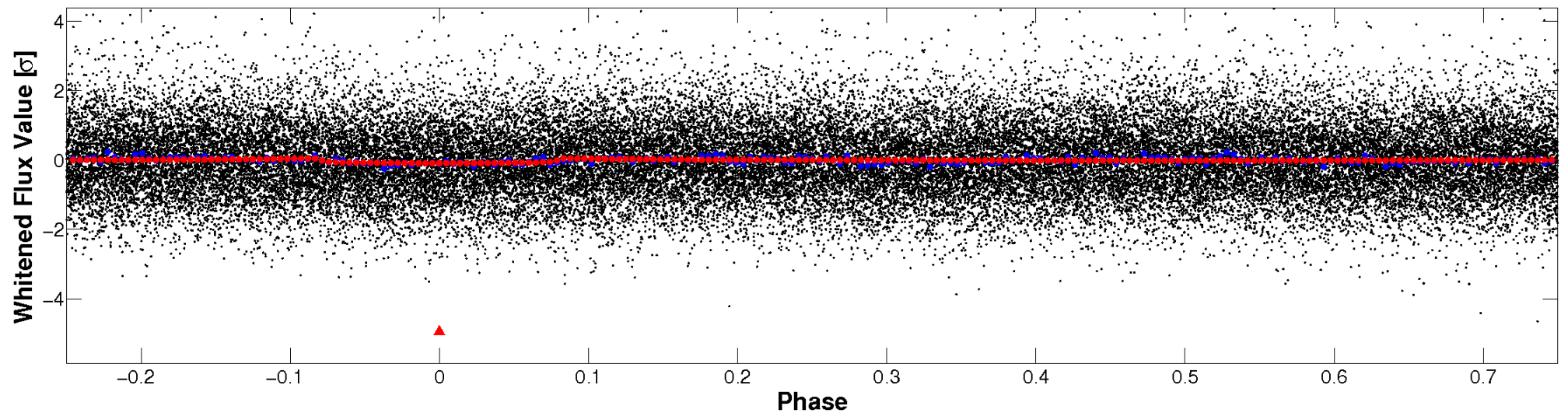


# Non-Whitened Vs. Whitened Light Curve

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

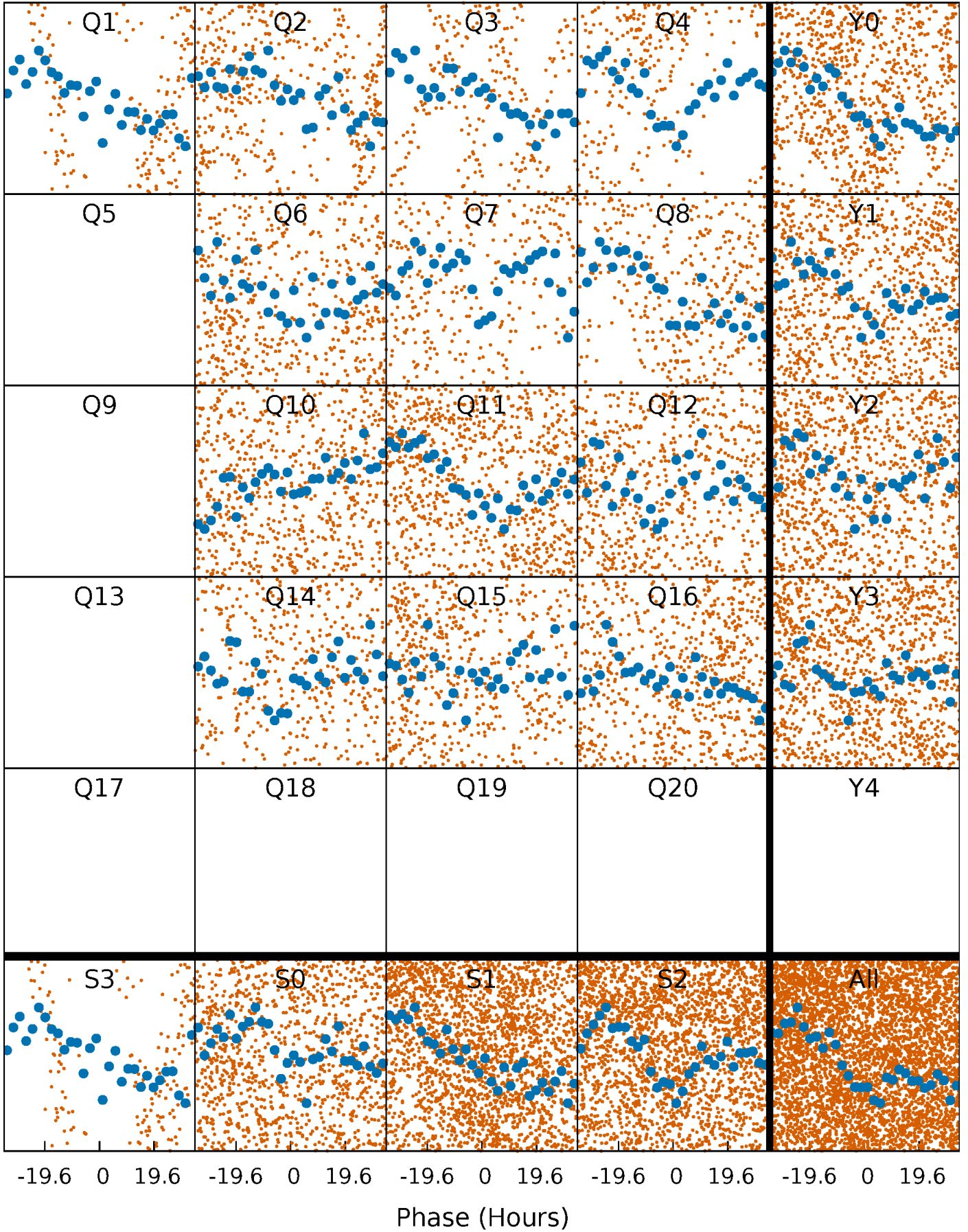


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

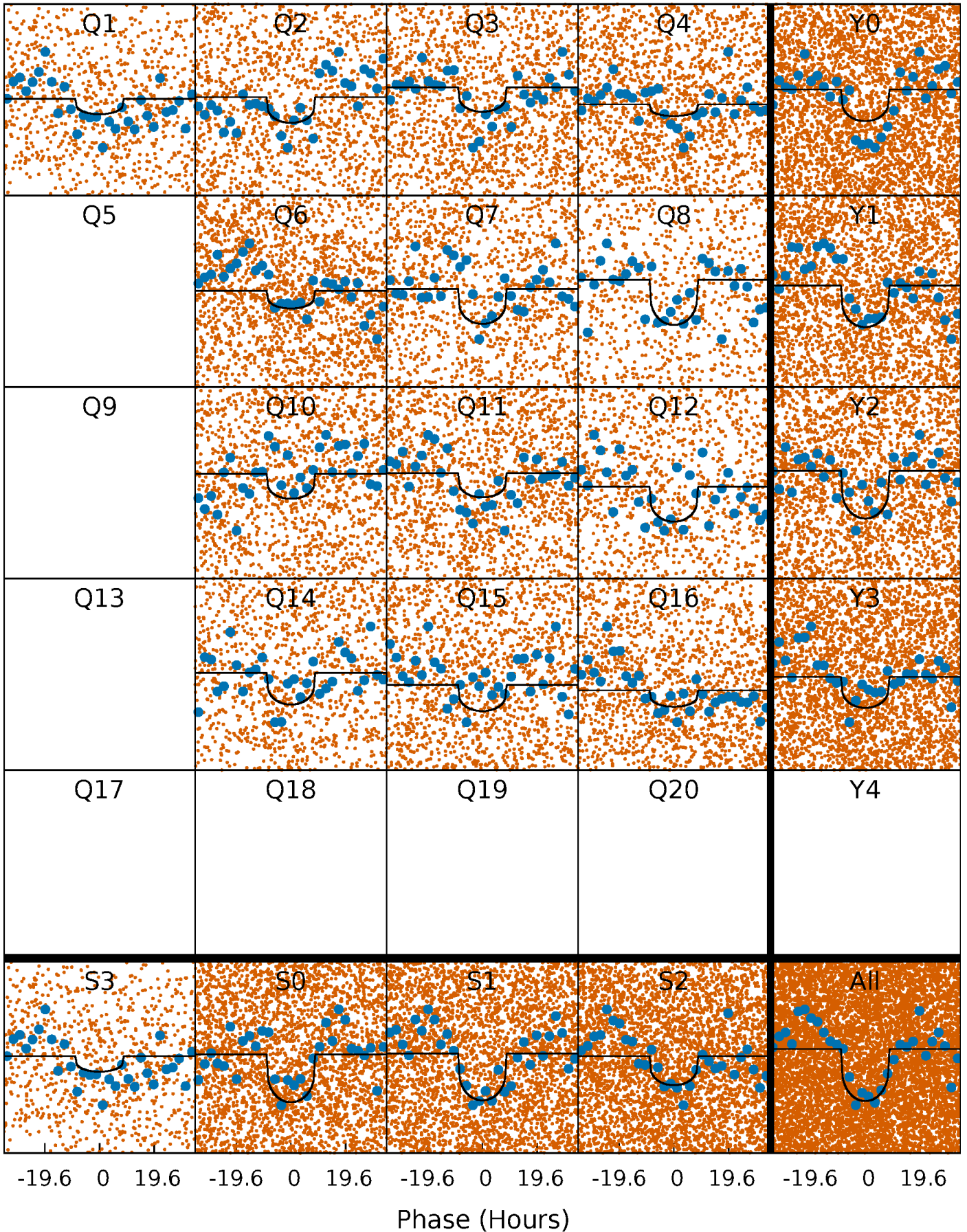
TCE 006843454-01 P= 4.410486 Days  $T_0=133.258488$  (BKJD)





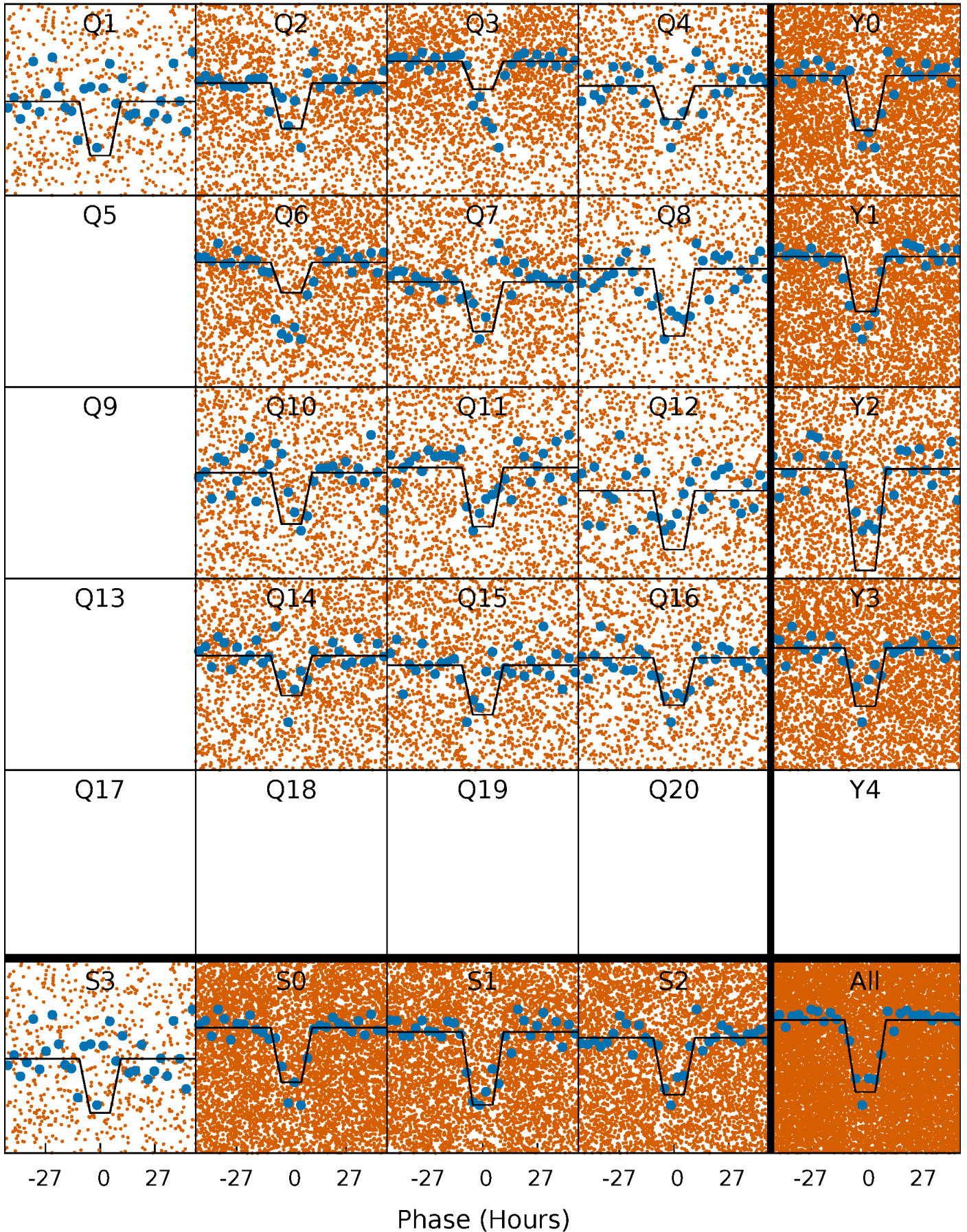
# DV Quarter-Phased Transit Curves

TCE 006843454-01 P= 4.410486 Days  $T_0=133.258488$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006843454-01 P= 4.409485 Days  $T_0=133.397453$  (BKJD)

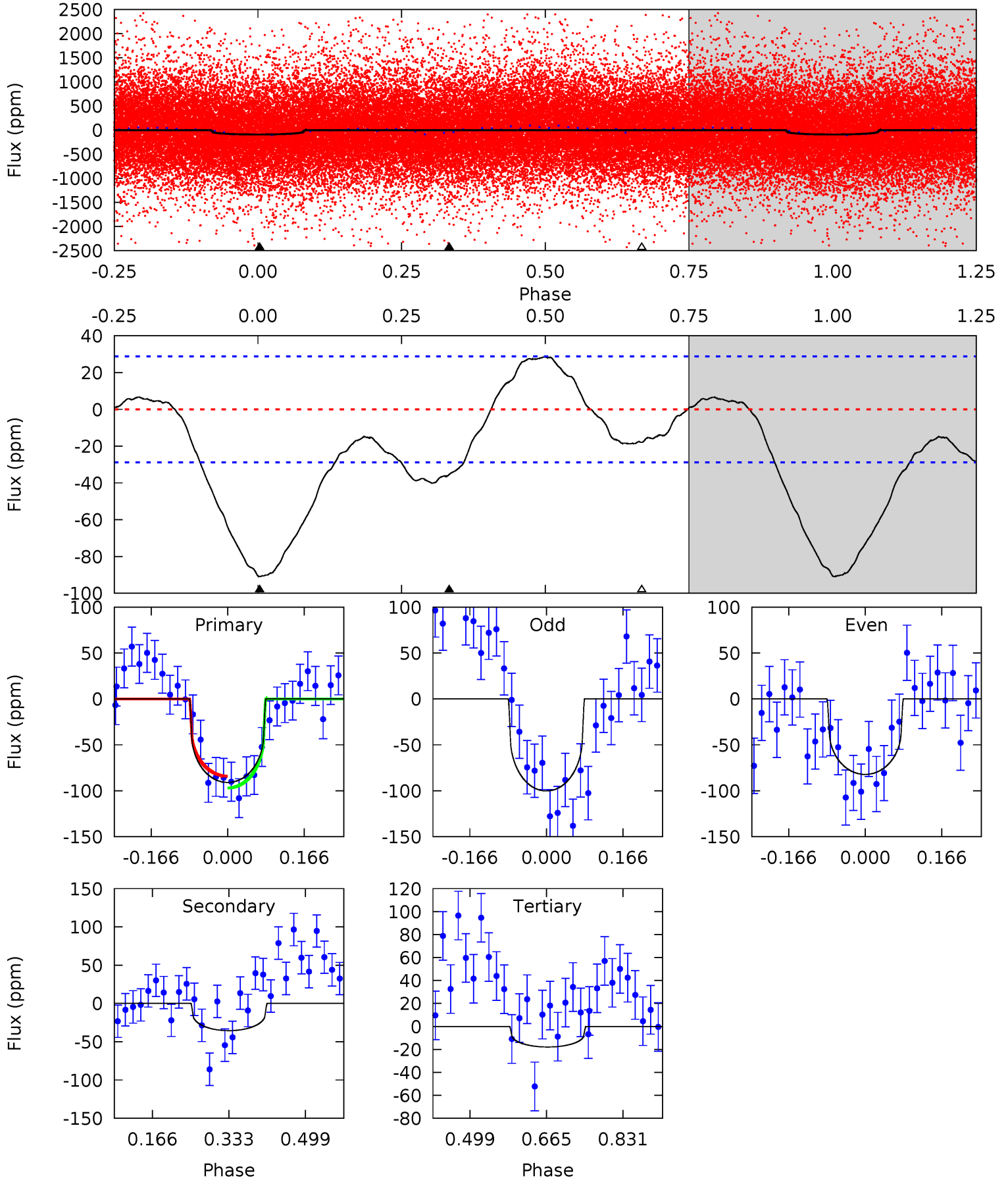




# DV Model-Shift Uniqueness Test

006843454-01, P = 4.410486 Days, E = 128.848002 Days

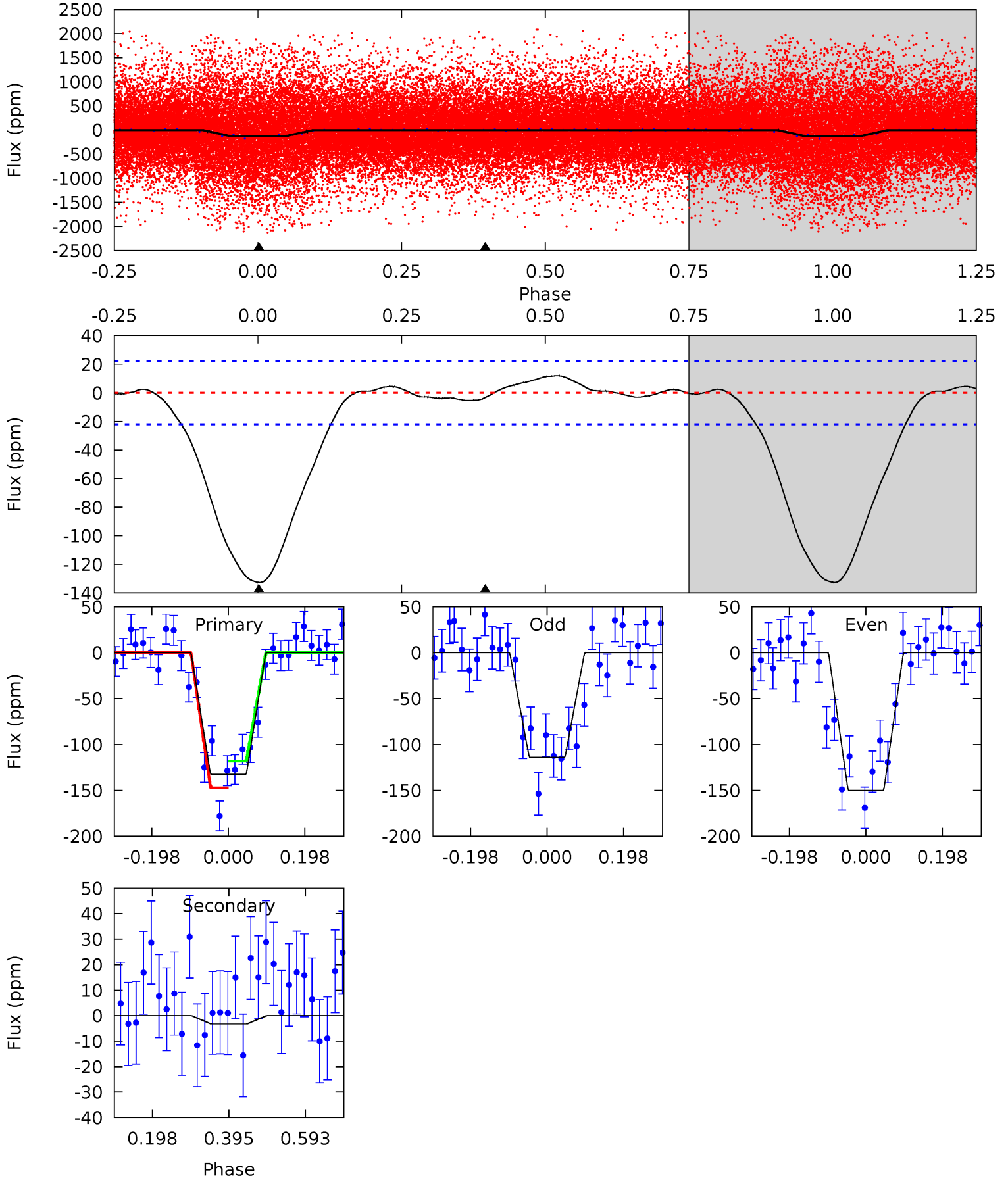
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.1	5.49	2.77	0	4.46	1.38	2.09	11.3	14.1	2.72	5.49	1.37	1.15	0.24	0.98



# Alt Model-Shift Uniqueness Test

006843454-01, P = 4.409485 Days, E = 128.987968 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
26.6	0.66	0	0	4.42	1.29	0.32	26.6	26.6	0.66	0.66	3.56	1.34	0.08	2.90



### Stellar Parameters For KIC 006843454

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5240^{+158}_{-158}$	$4.550^{+0.049}_{-0.091}$	$-0.020^{+0.300}_{-0.300}$	$0.804^{+0.112}_{-0.075}$	$0.837^{+0.086}_{-0.078}$	$2.267^{+0.489}_{-0.646}$
	+3%/-3%	+1%/-2%	+1500%/-1500%	+14%/-9%	+10%/-9%	+22%/-29%
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 006843454-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-36 \pm 6$	$0.88^{+0.55}_{-0.51}$	$1310^{+57}_{-49}$	$4253^{+1851}_{-671}$	$61^{+265}_{-38}$
Alt.	$-3 \pm 5$	$1.08^{+0.58}_{-0.54}$	$1311^{+55}_{-50}$	$2691^{+706}_{-5217}$	$3.356^{+13.536}_{-4.943}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming A=0.3)

$A_{\text{obs}}$  = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$



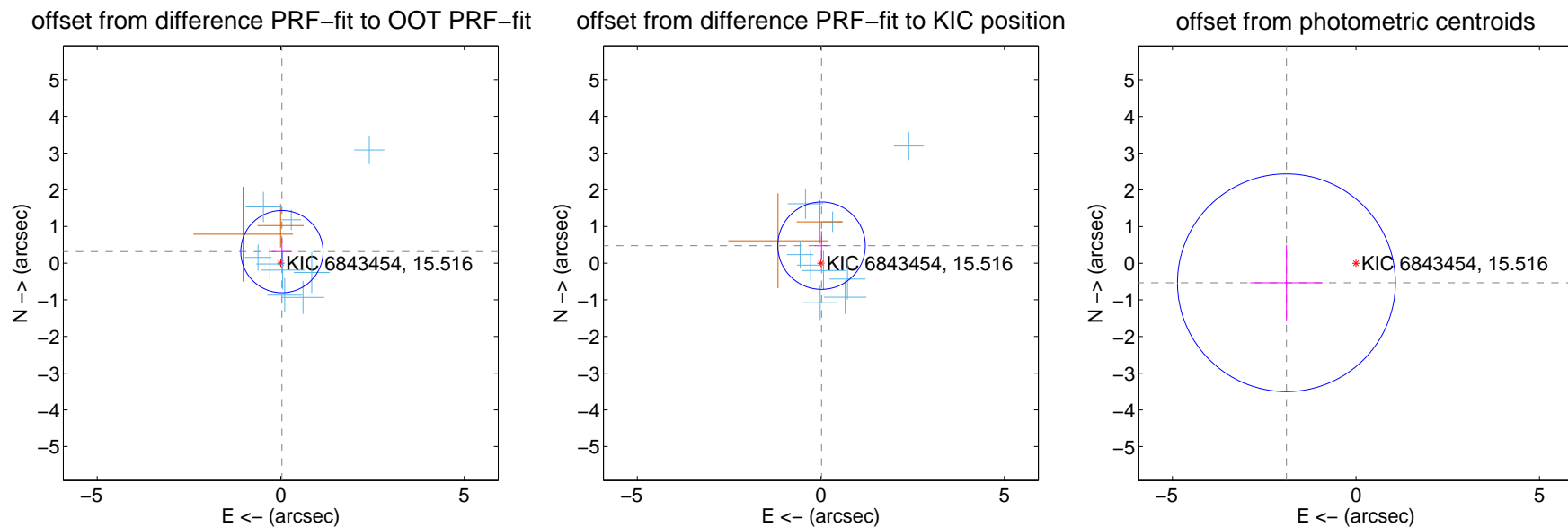
## DV Centroid Data

Supplemental centroid analysis for 006843454-01. Kepler magnitude: 15.52. Transit SNR 7.40

There are 9 quarters with good PRF difference image offsets

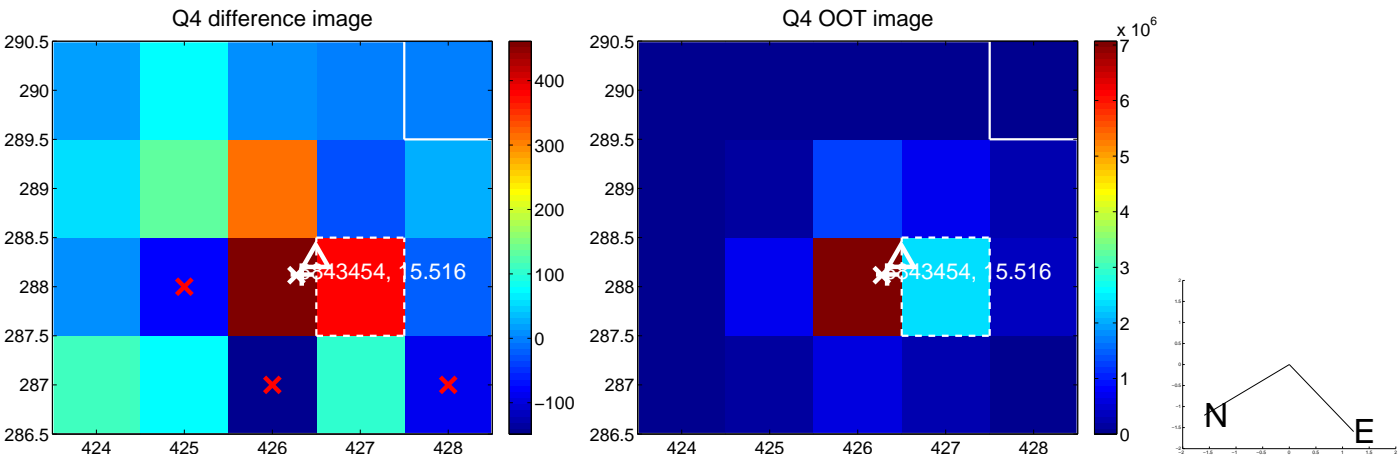
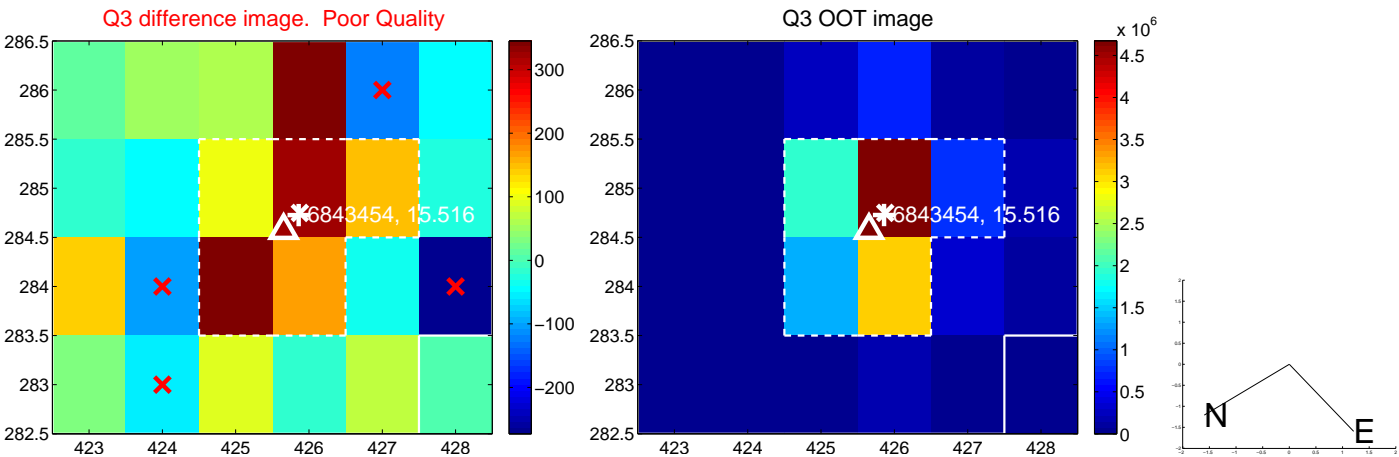
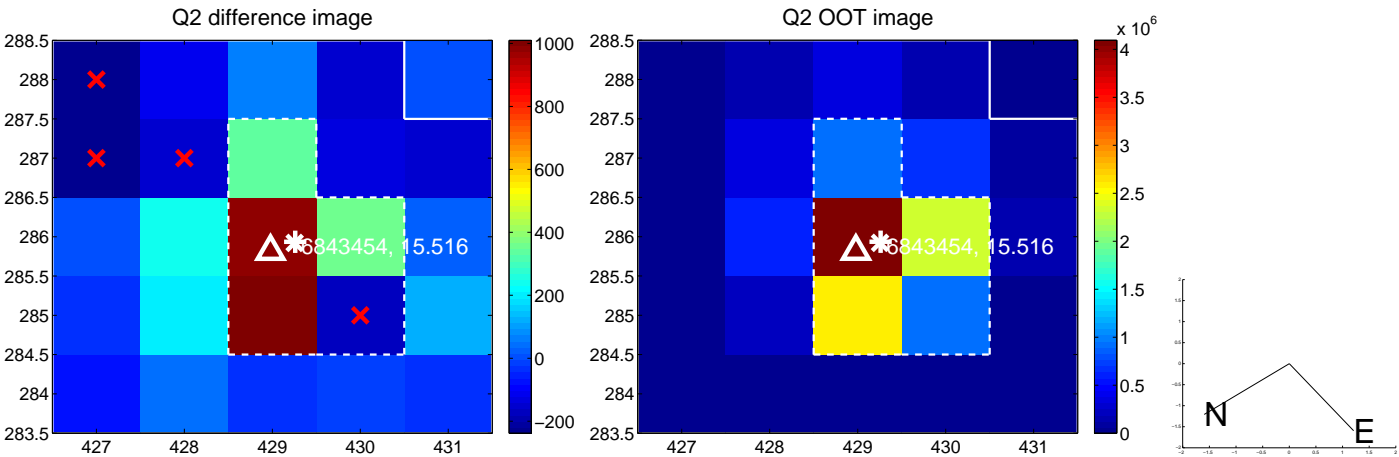
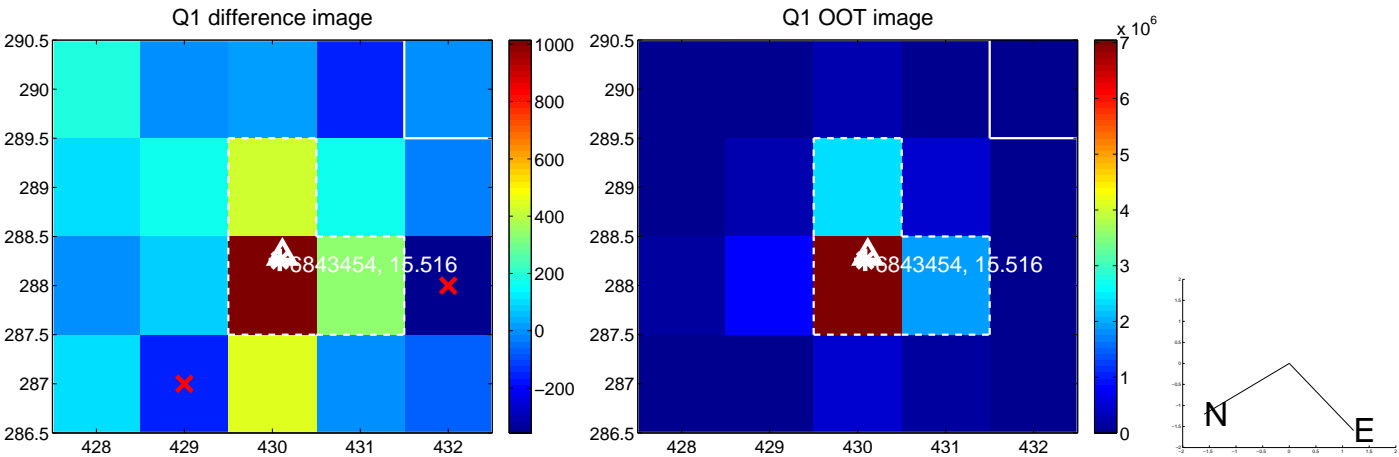
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.316 \pm 0.374$	0.85	$-0.032 \pm 0.274$	$0.315 \pm 0.363$
PRF-fit source offset from KIC position	$0.477 \pm 0.397$	1.20	$-0.018 \pm 0.186$	$0.476 \pm 0.397$
photometric centroid source offset	$1.97 \pm 0.99$	1.99	$1.89 \pm 0.99$	$-0.53 \pm 1.03$

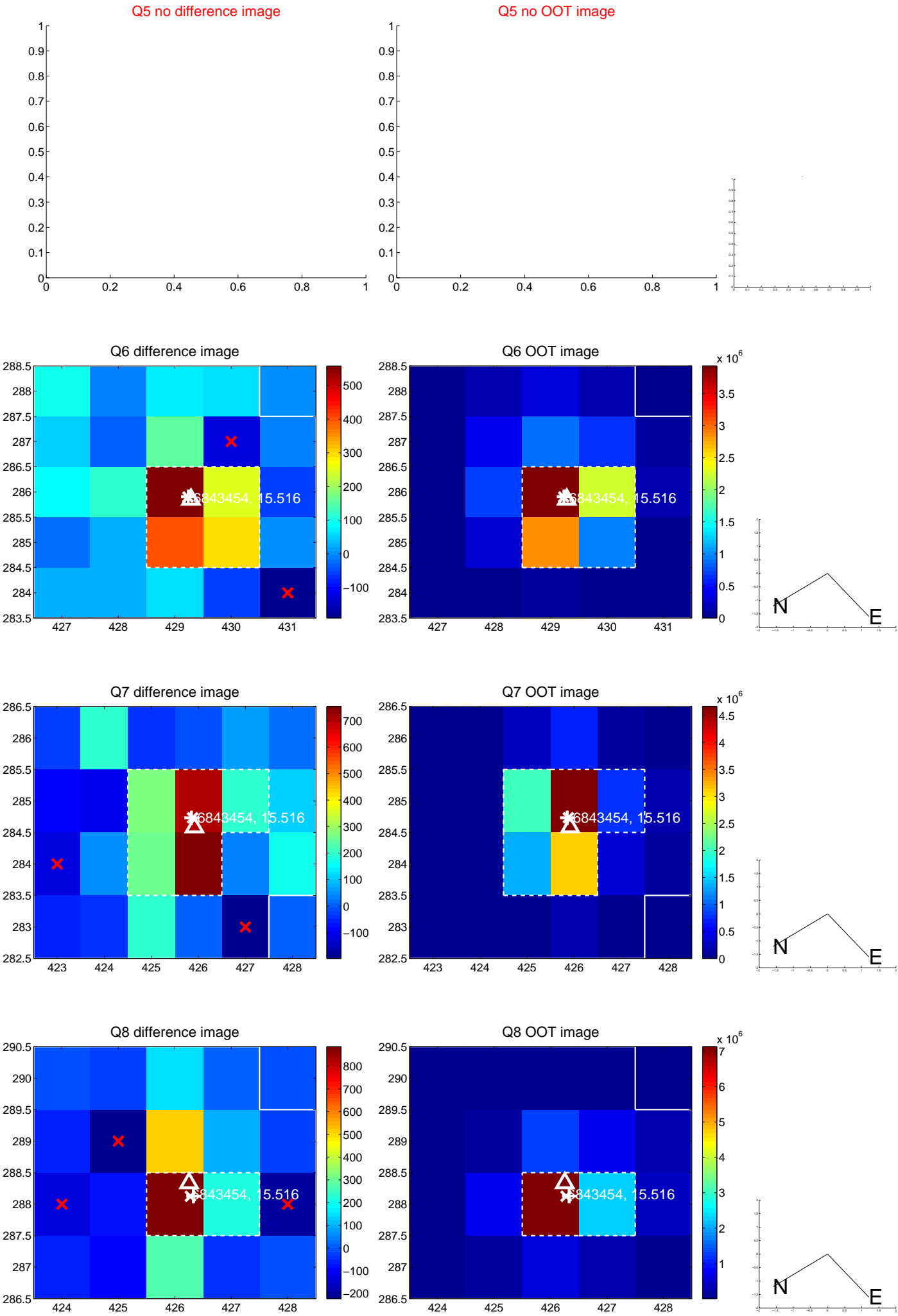


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

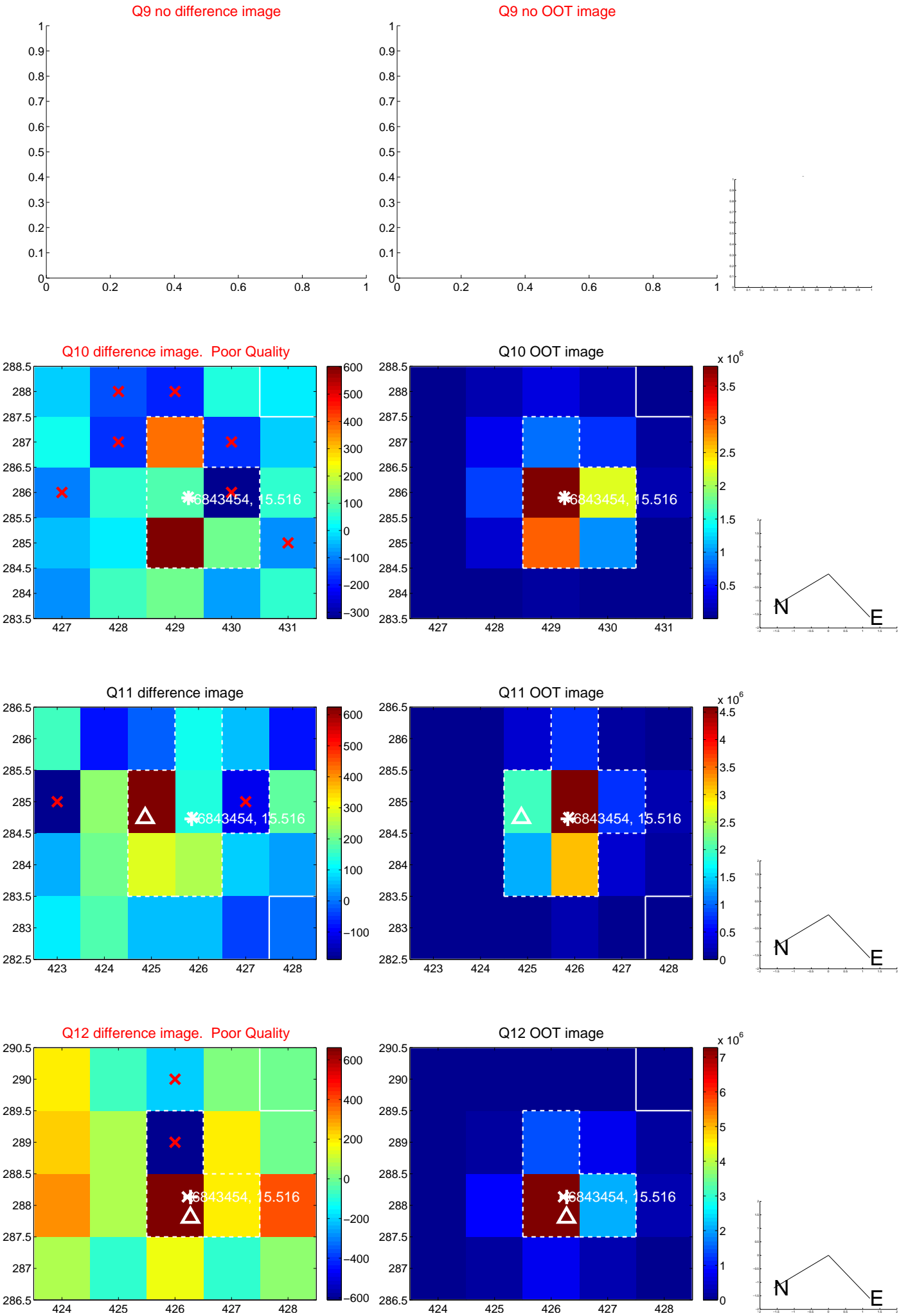
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



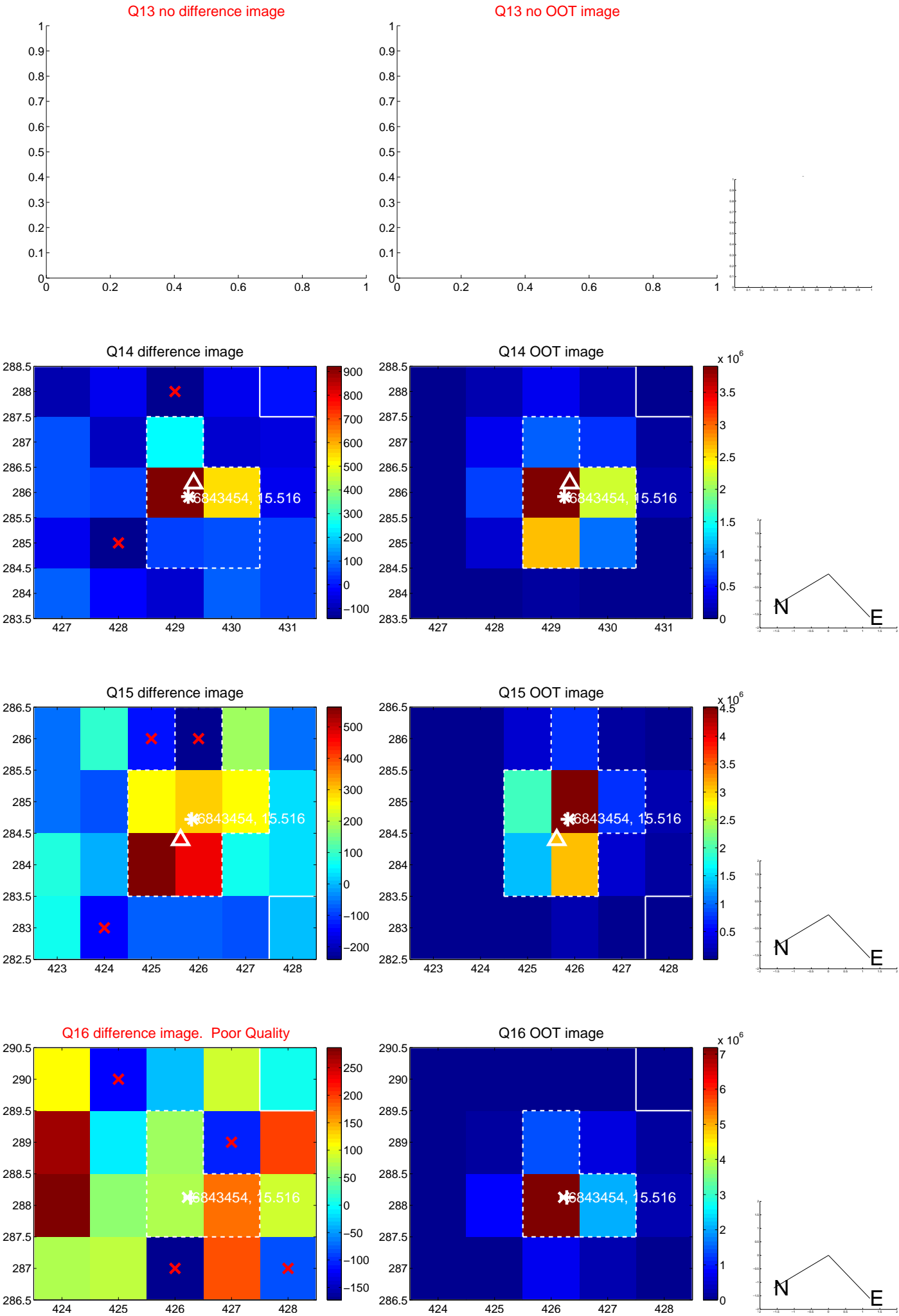
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

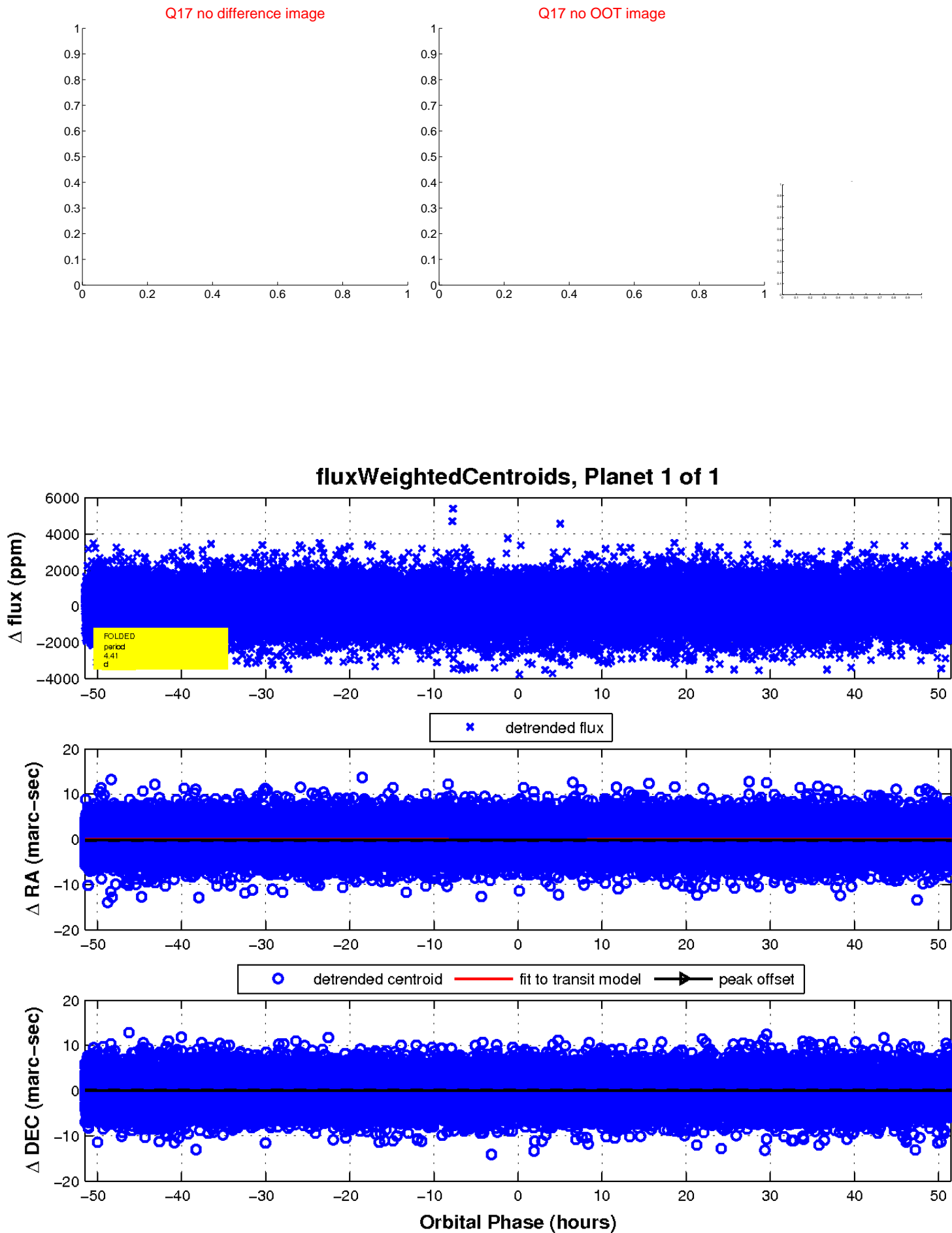


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

