

# KIC 006507433

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006507433-01	OBS	3815.01	4.742554	133.137973	3534.4	1.298	93.5	107.5	1.05	6161	8.20	427.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006507433-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

**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.

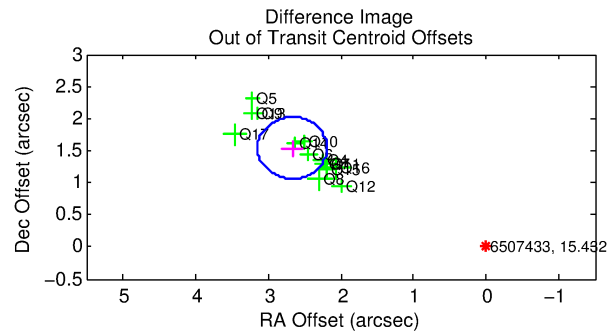
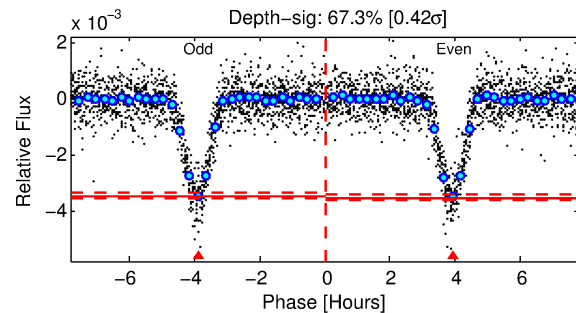
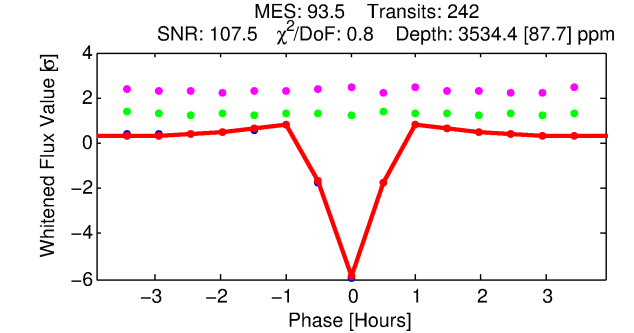
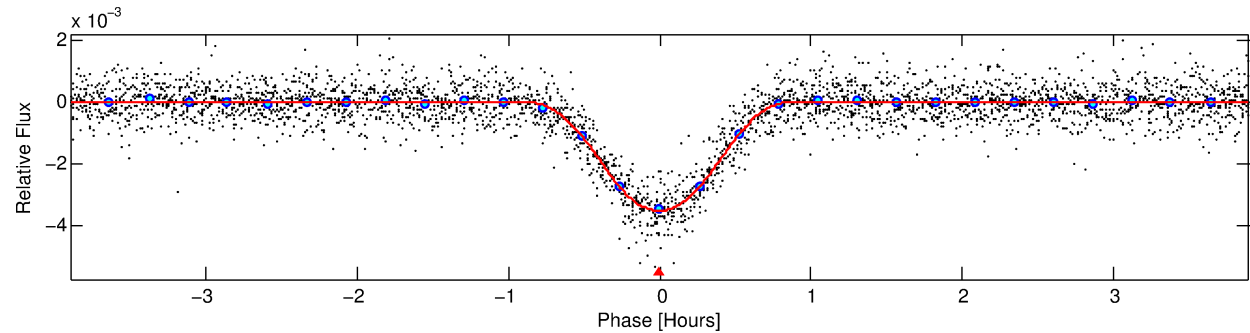
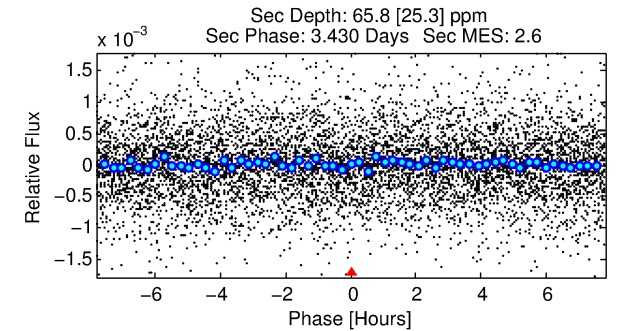
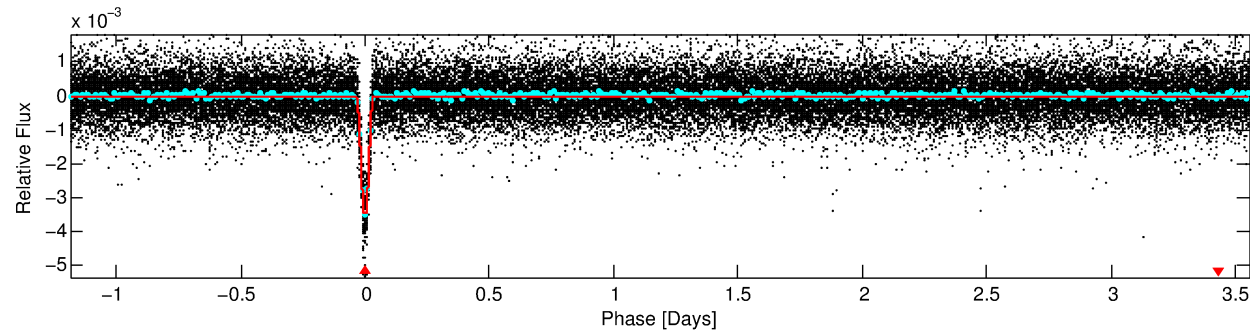
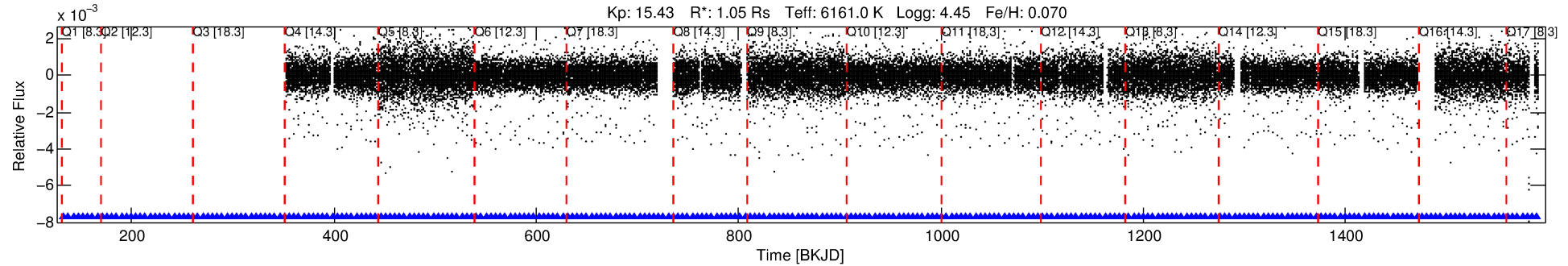
## Ephemeris Match Information For 006507433-01

No Significant Match Found

# DV One-Page Summary

KIC: 6507433 Candidate: 1 of 1 Period: 4.743 d  
KOI: K03815.01 Corr: 0.979

Kp: 15.43 R\*: 1.05 Rs Teff: 6161.0 K Logg: 4.45 Fe/H: 0.070



## DV Fit Results:

Period = 4.74255 [0.00000] d  
Epoch = 133.1380 [0.0002] BKJD  
Rp/R\* = 0.0714 [0.0092]  
a/R\* = 14.34 [1.29]  
b = 0.94 [0.03]  
Seff = 427.01 [192.26]  
Teq = 1159 [130] K  
Rp = 8.20 [2.97] Re  
a = 0.0579 [0.0166] AU  
Ag = 1.80 [1.13] [0.72σ]  
Teff = 2077 [256] K [3.20σ]

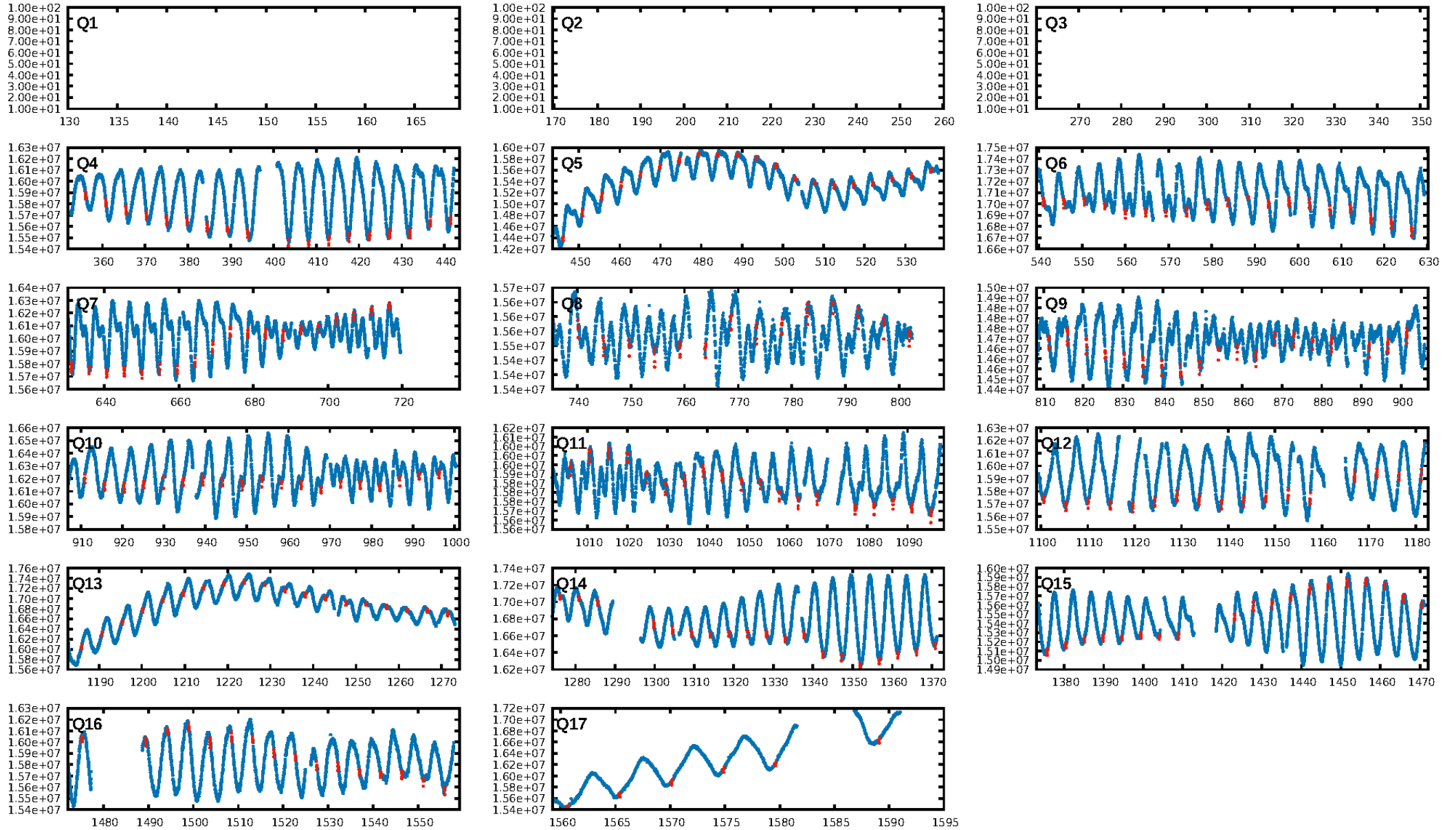
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [236/236]  
GhostDiagnostic-chr: 2.662  
Centroid-sig: 0.0%  
Centroid-so: 1.752 arcsec [40.24σ]  
OotOffset-rm: 3.082 arcsec [19.21σ]  
KicOffset-rm: 0.128 arcsec [1.55σ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

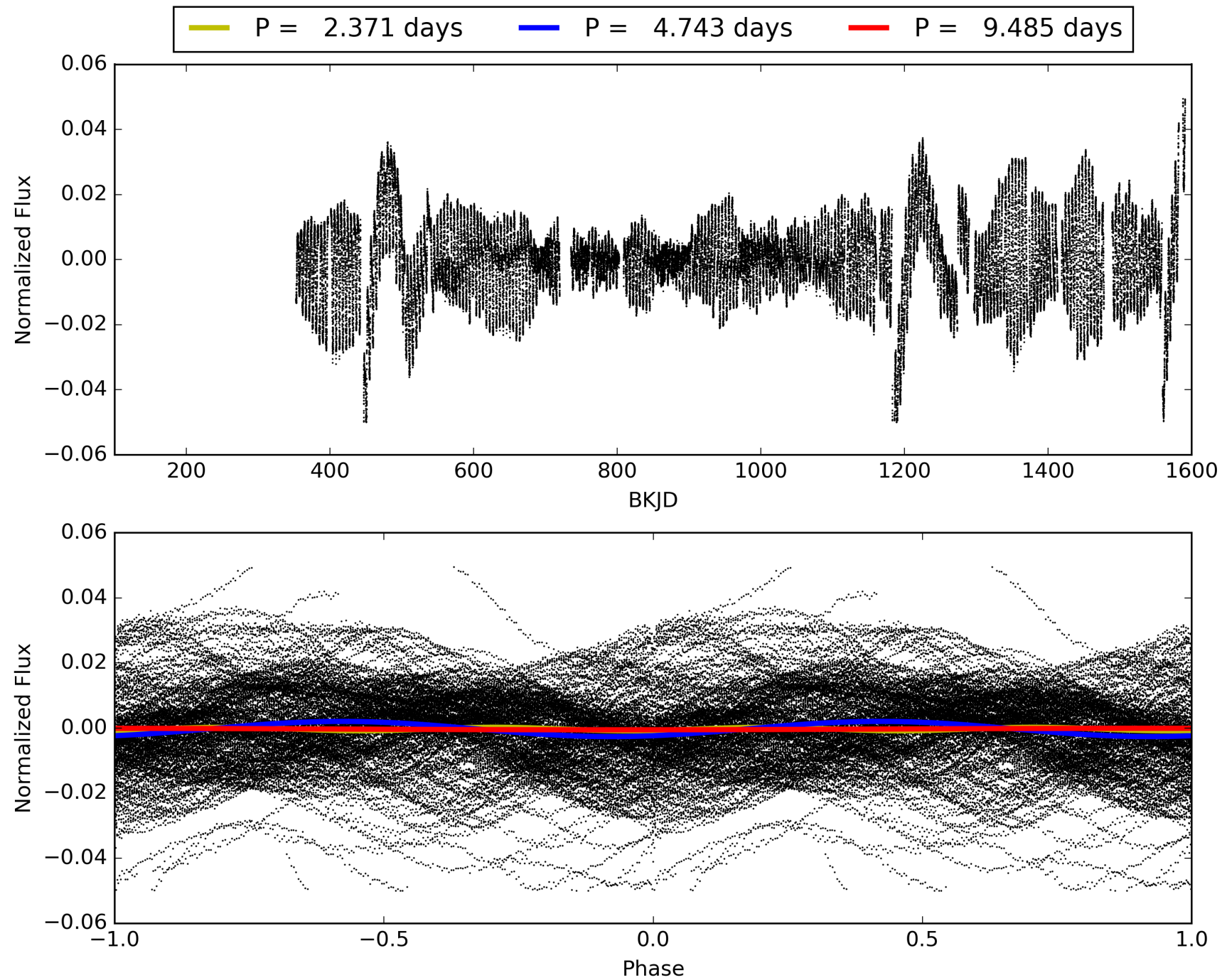
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:41:51 Z

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

# TCE 006507433-01, PDC Light Curves

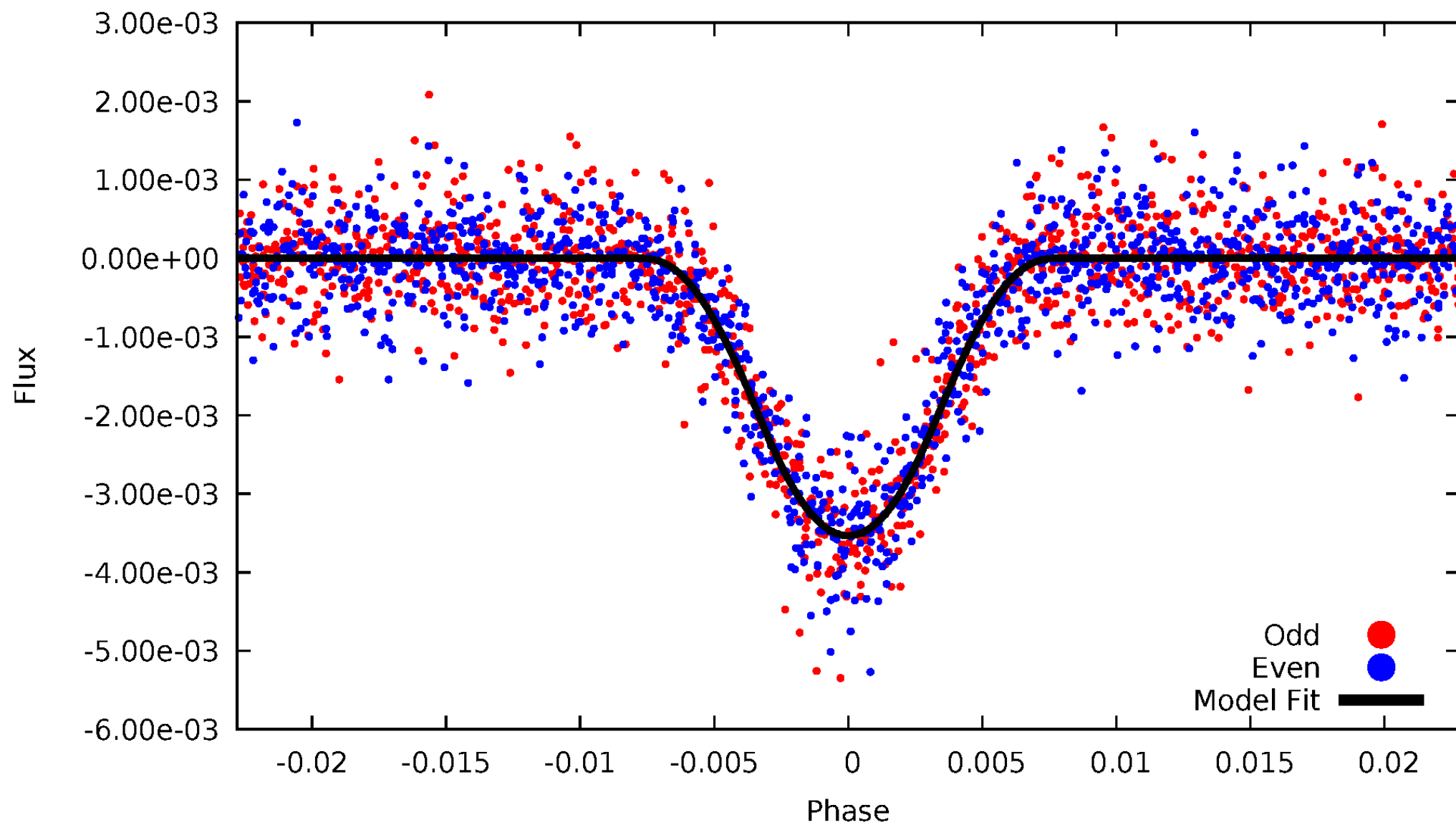


TCE 006507433-01



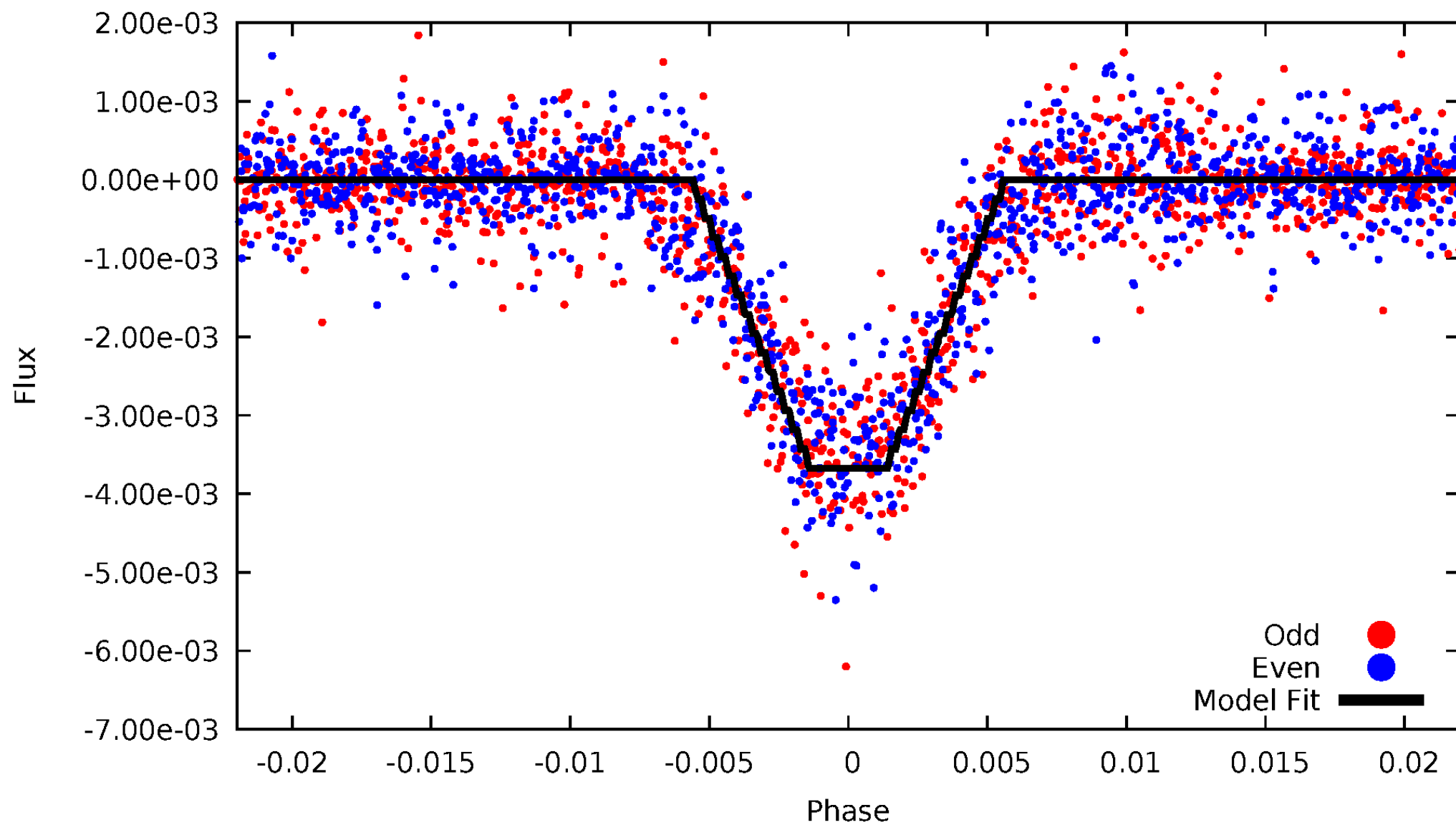
# DV Odd/Even

TCE 006507433-01



# ALT Odd/Even

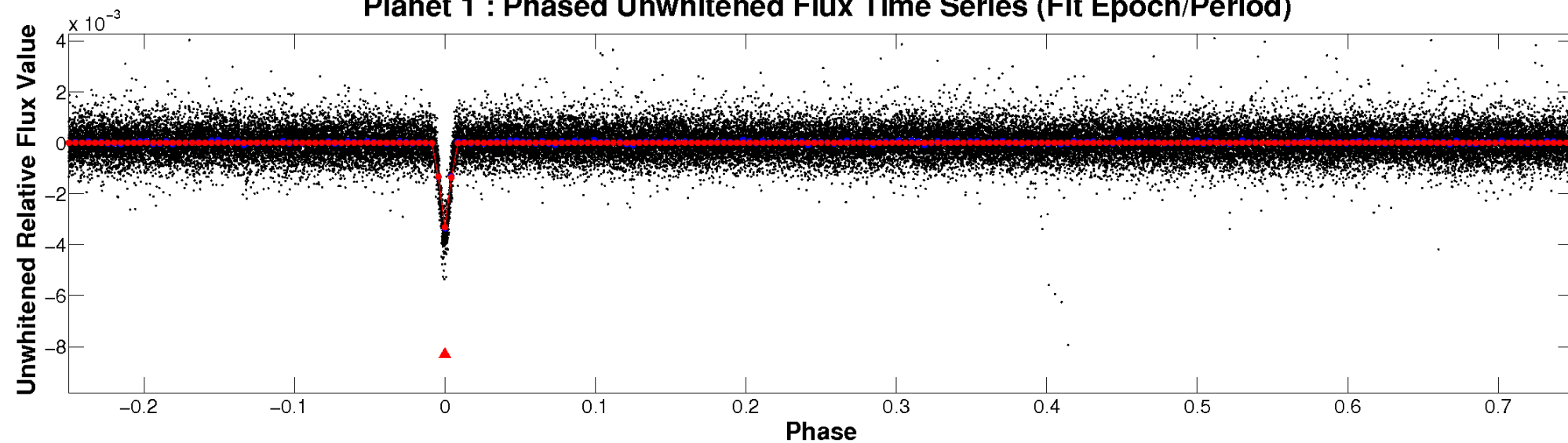
TCE 006507433-01



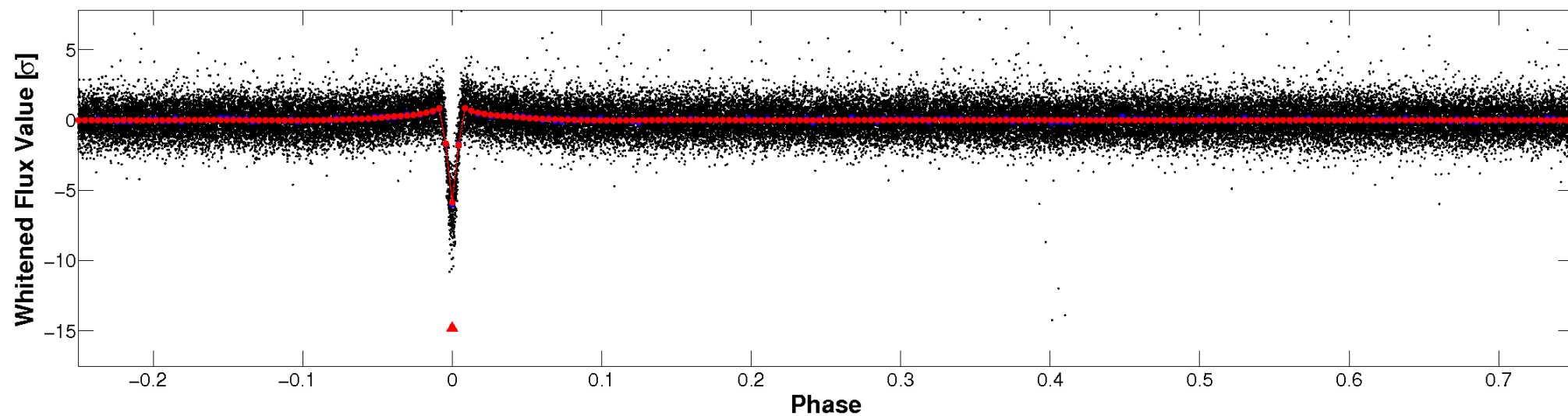


# Non-Whitened Vs. Whitened Light Curve

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

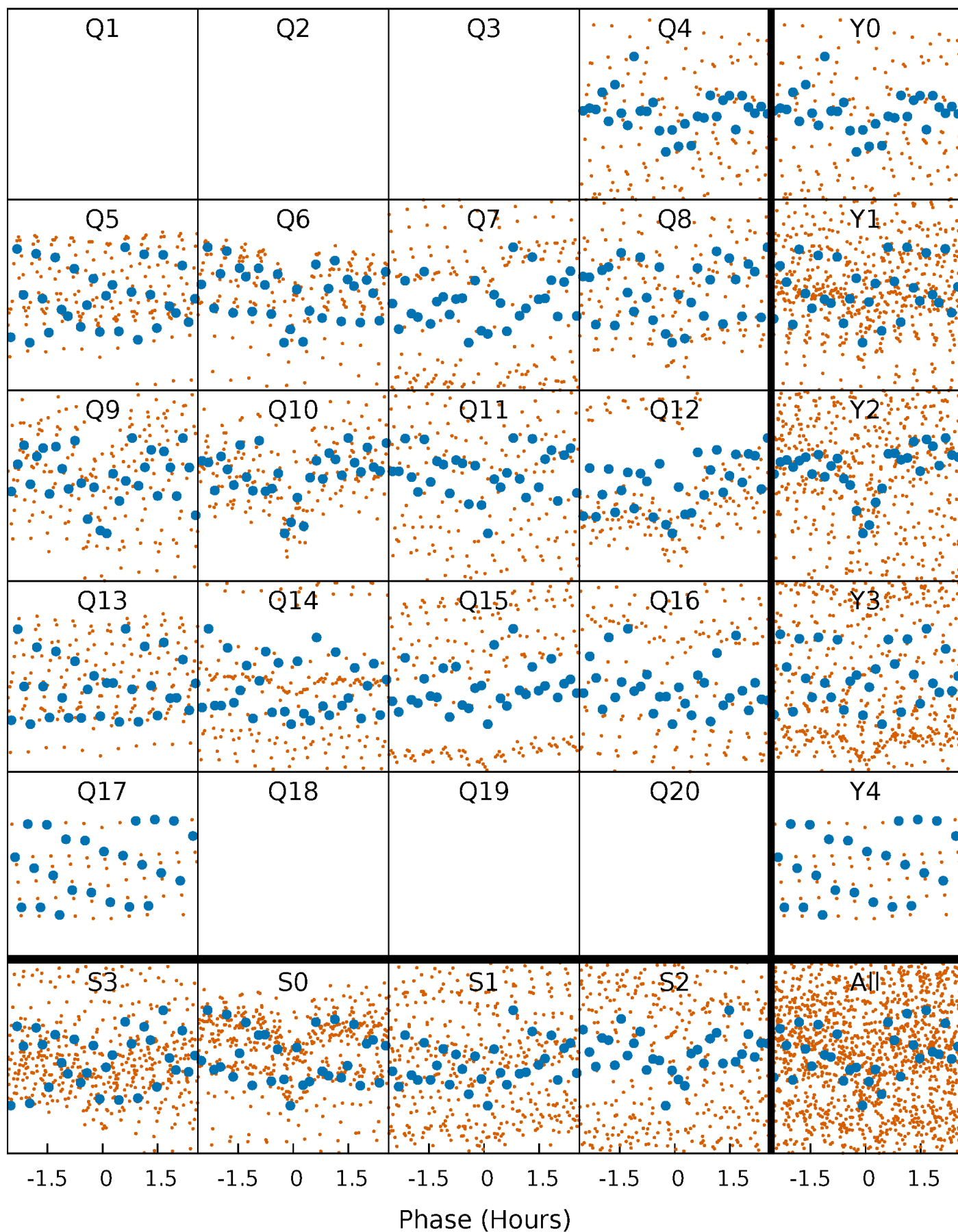


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

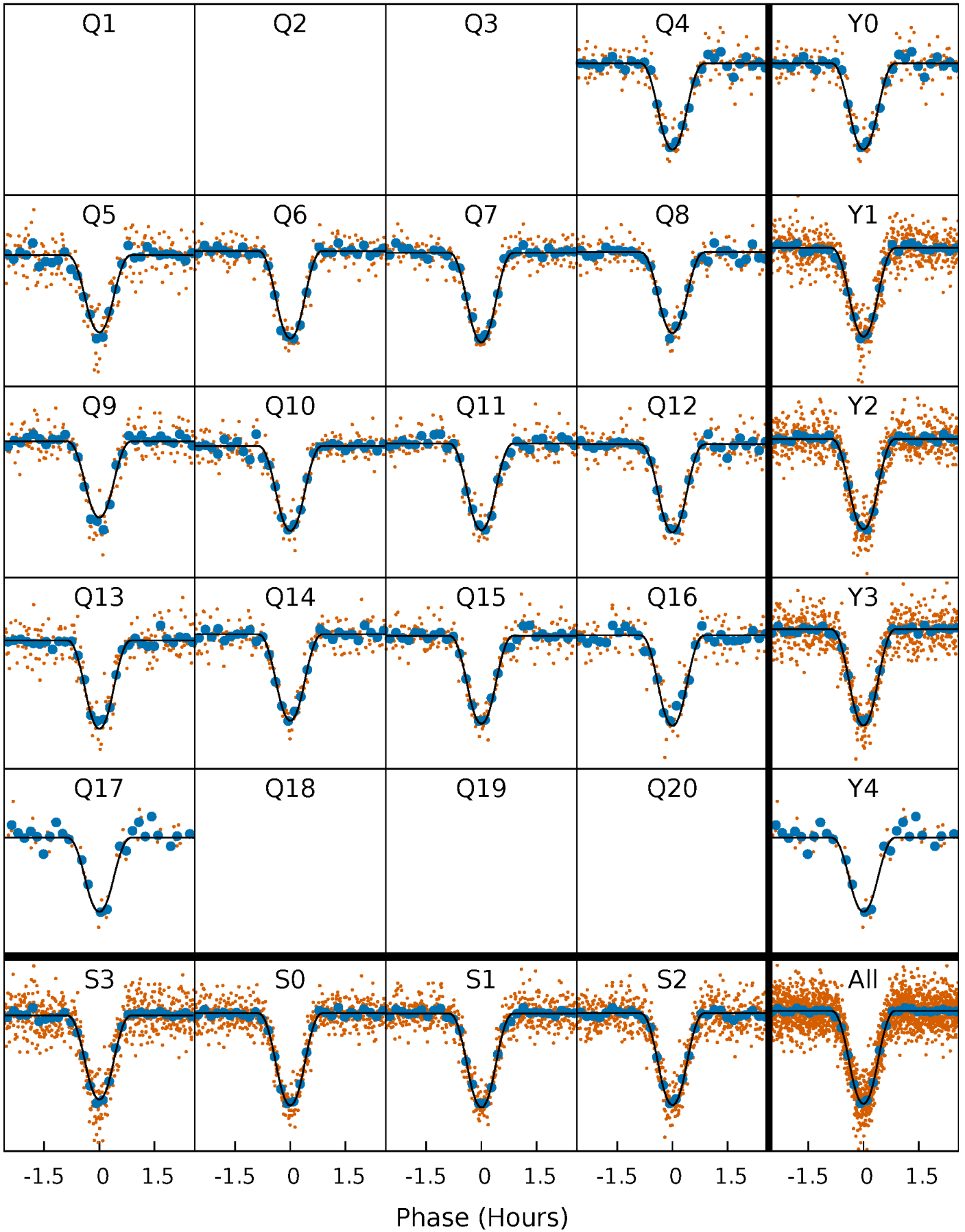
TCE 006507433-01 P= 4.742554 Days  $T_0=133.137973$  (BKJD)





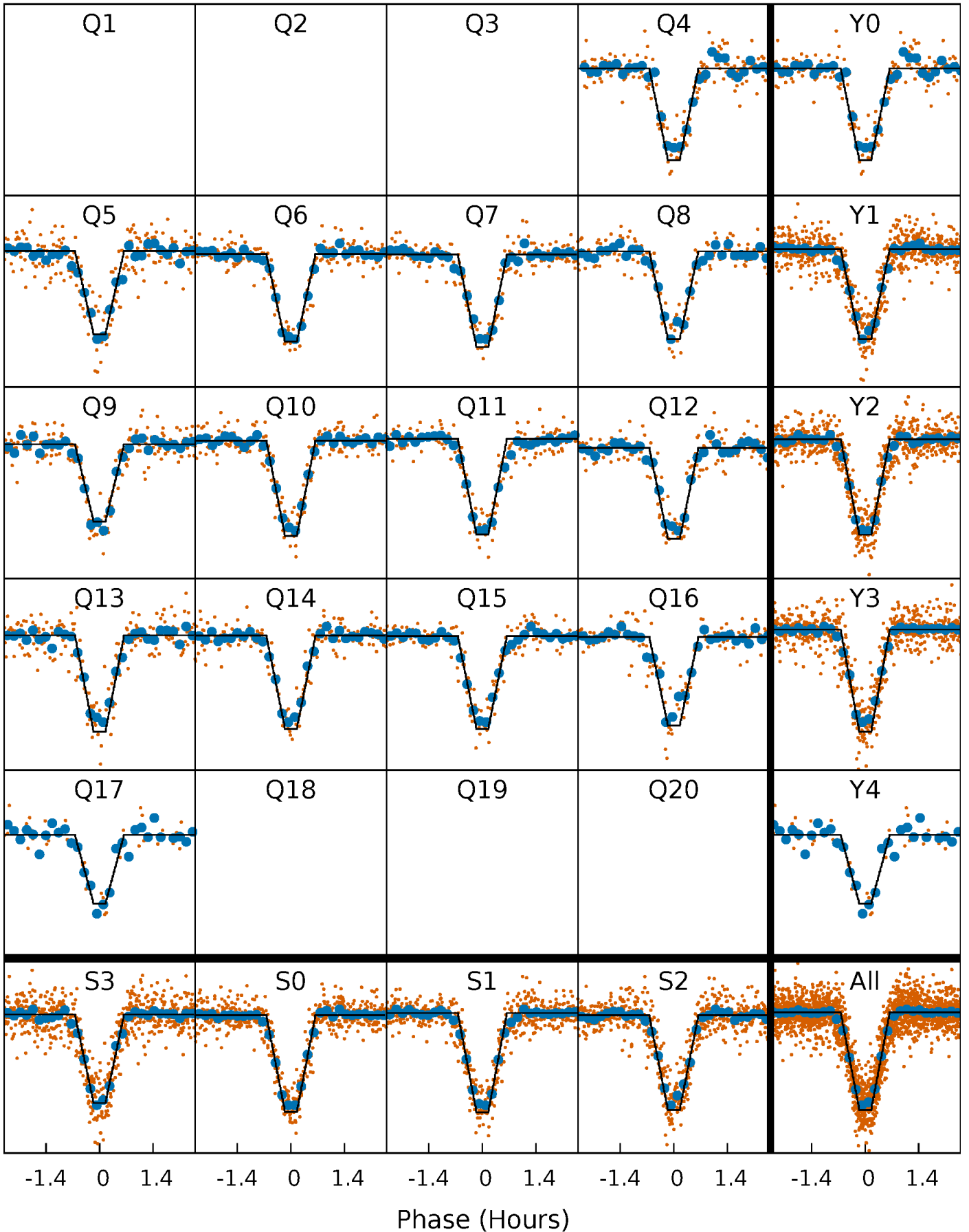
# DV Quarter-Phased Transit Curves

TCE 006507433-01   P= 4.742554 Days    $T_0=133.137973$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

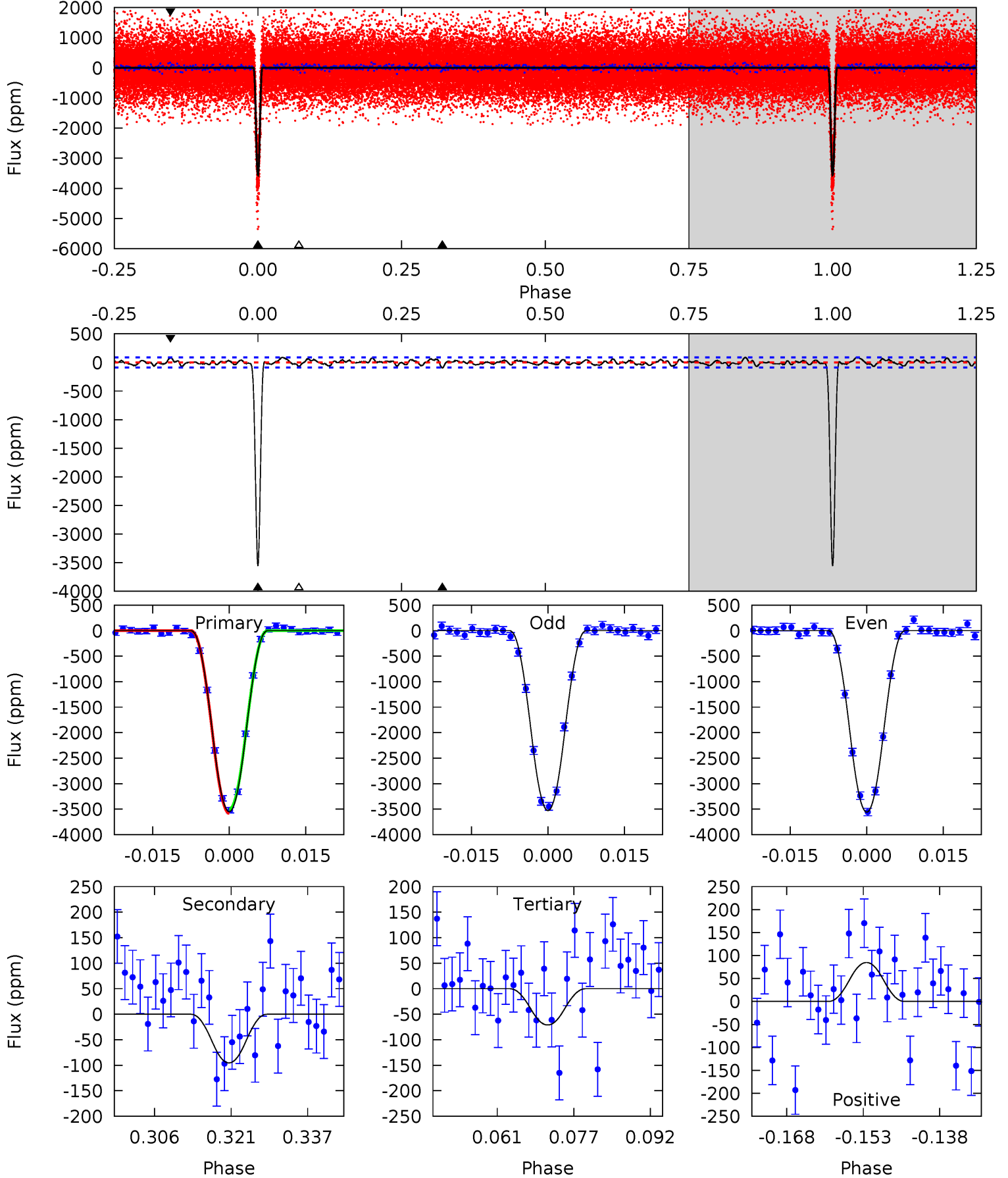
TCE 006507433-01 P= 4.742561 Days  $T_0=133.136533$  (BKJD)



# DV Model-Shift Uniqueness Test

006507433-01, P = 4.742554 Days, E = 133.137973 Days

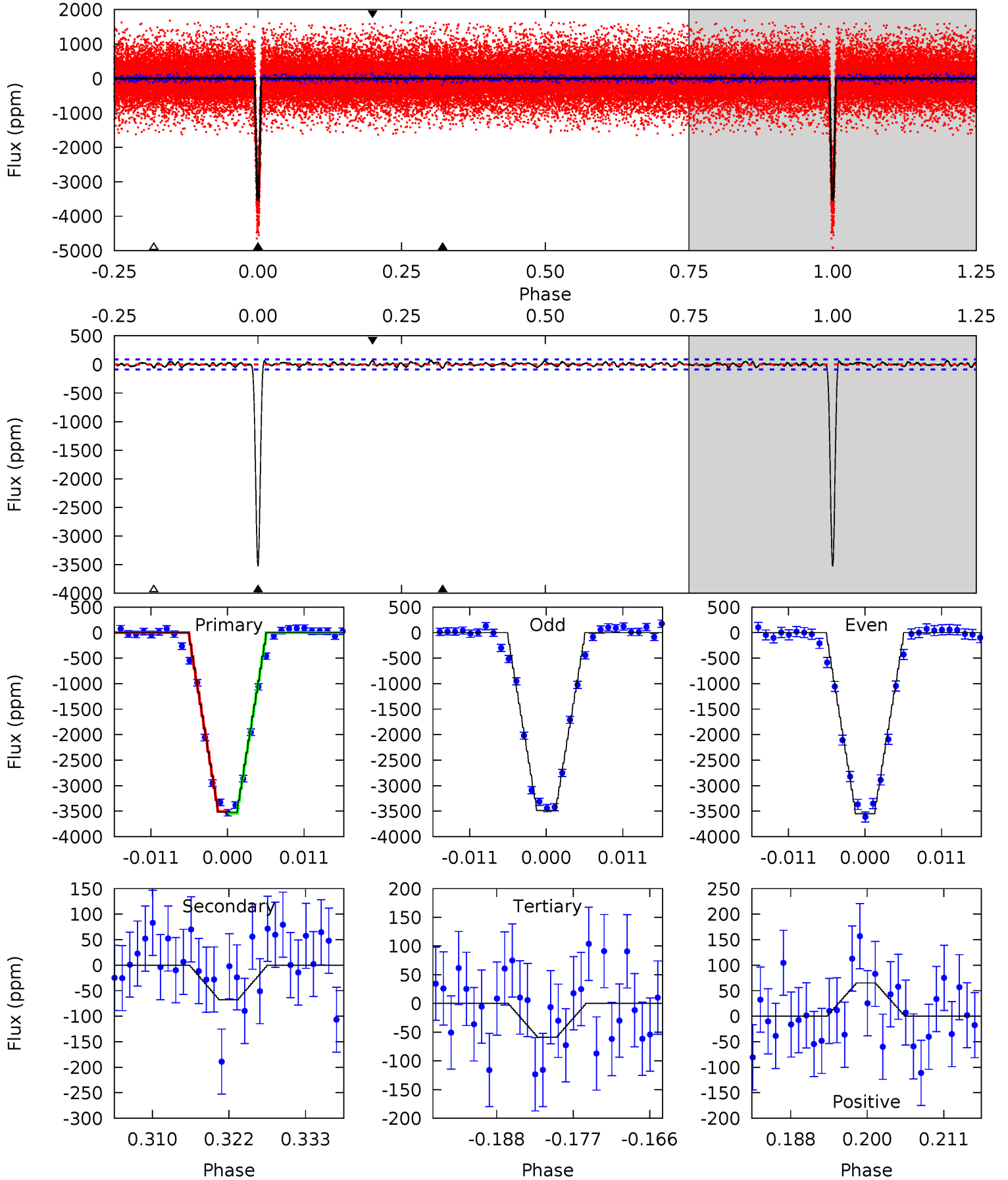
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
199.3	5.35	3.99	4.76	4.94	2.43	1.69	195.3	194.5	1.36	0.59	0.86	1.00	0.02	2.08



# Alt Model-Shift Uniqueness Test

006507433-01, P = 4.742561 Days, E = 133.136533 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
199.7	3.85	3.35	3.70	5.01	2.54	1.24	196.3	196.0	0.50	0.15	1.83	1.00	0.02	0.92



### Stellar Parameters For KIC 006507433

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6161^{+193}_{-258}$	$4.454^{+0.054}_{-0.229}$	$0.070^{+0.250}_{-0.300}$	$1.053^{+0.357}_{-0.119}$	$1.150^{+0.153}_{-0.153}$	$1.388^{+0.320}_{-0.784}$
	+3%/-4%	+1%/-5%	+357%/-429%	+34%/-11%	+13%/-13%	+23%/-56%
Source	KIC0	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 006507433-01 / KOI 3815.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-95 \pm 18$	$8.65^{+1.71}_{-1.33}$	$1656^{+137}_{-93}$	$2880^{+178}_{-153}$	$2.235^{+1.053}_{-0.730}$
Alt.	$-68 \pm 18$	$7.30^{+1.43}_{-1.28}$	$1653^{+133}_{-88}$	$2899^{+191}_{-196}$	$2.307^{+1.317}_{-0.855}$

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

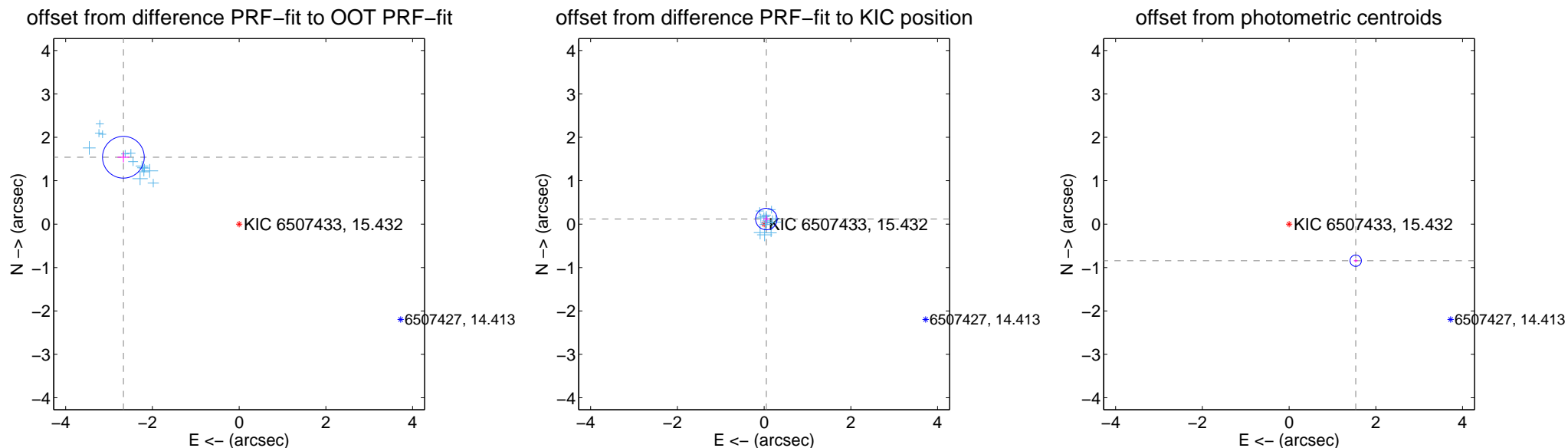
## DV Centroid Data

Supplemental centroid analysis for 006507433-01. Kepler magnitude: 15.43. Transit SNR 107.49

There are 14 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 3.89 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

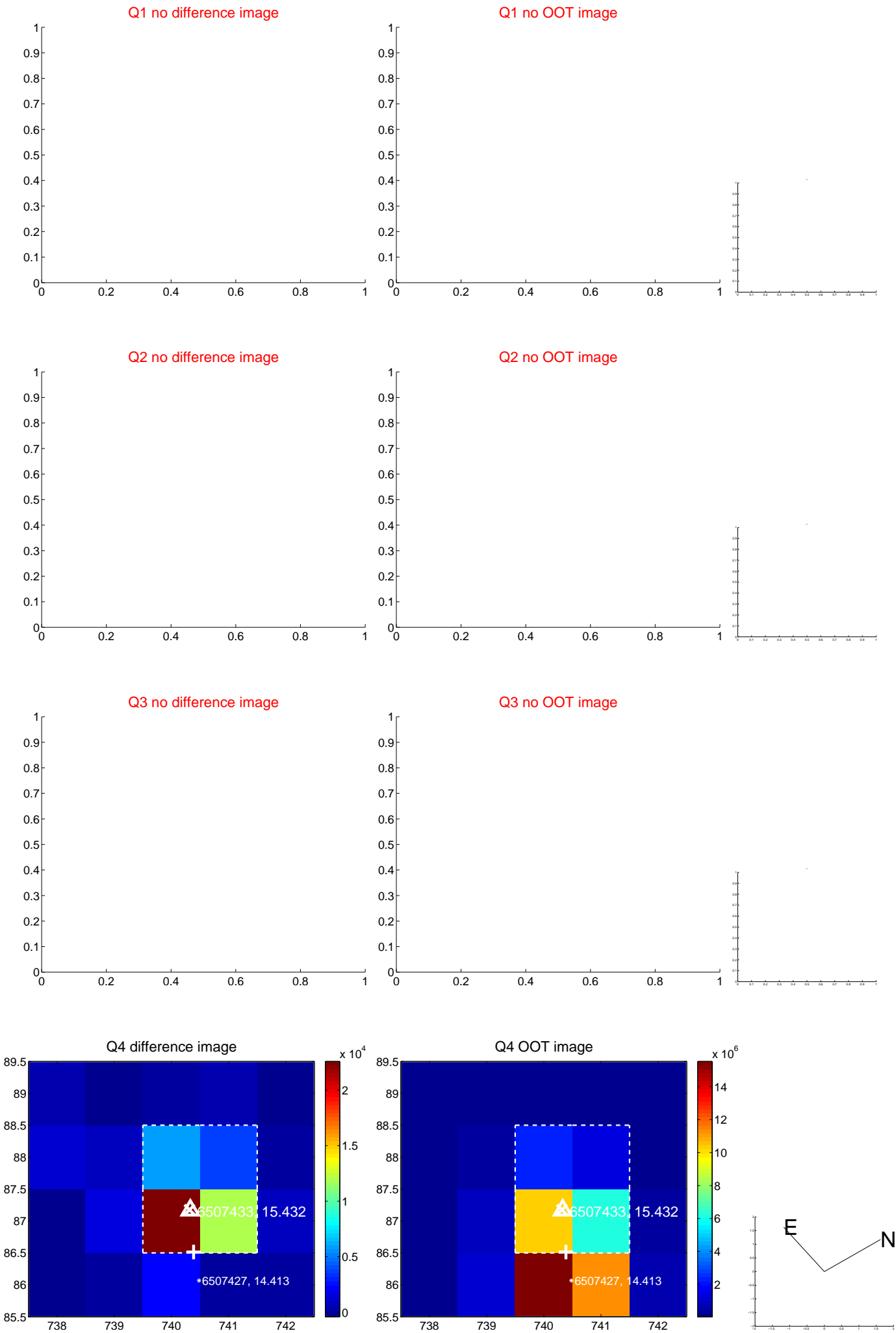
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.082 \pm 0.160$	19.21	$2.669 \pm 0.134$	$1.541 \pm 0.117$
PRF-fit source offset from KIC position	$0.128 \pm 0.083$	1.55	$-0.052 \pm 0.074$	$0.117 \pm 0.084$
photometric centroid source offset	$1.75 \pm 0.04$	40.24	$-1.54 \pm 0.04$	$-0.84 \pm 0.04$



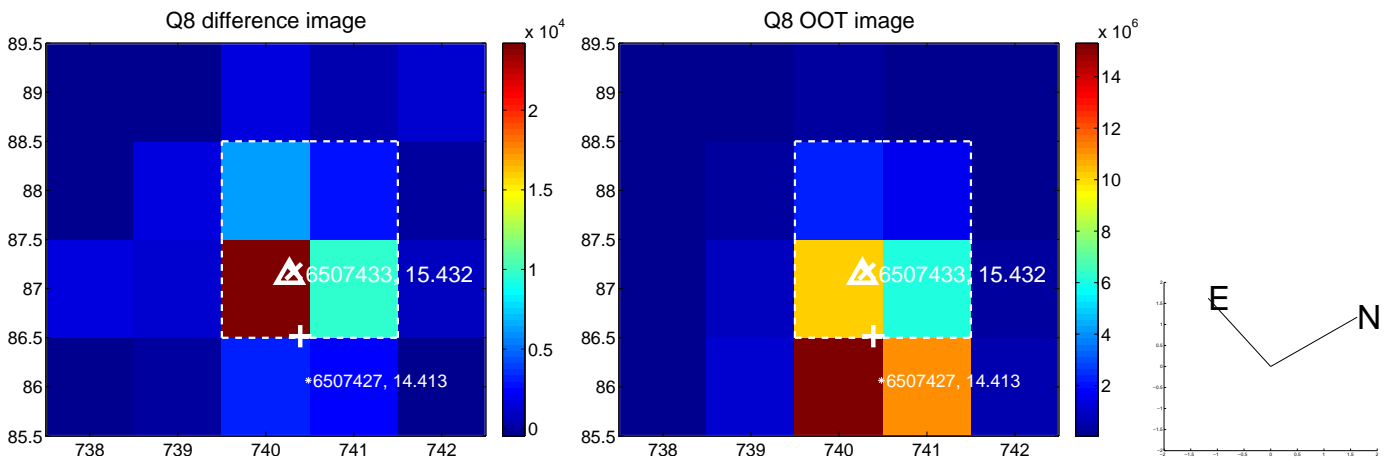
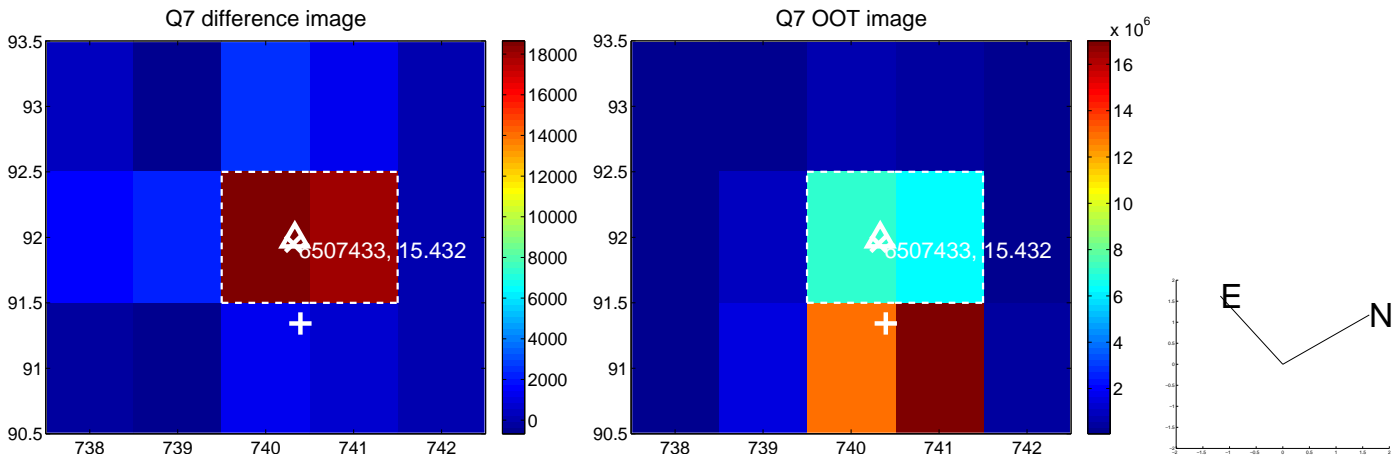
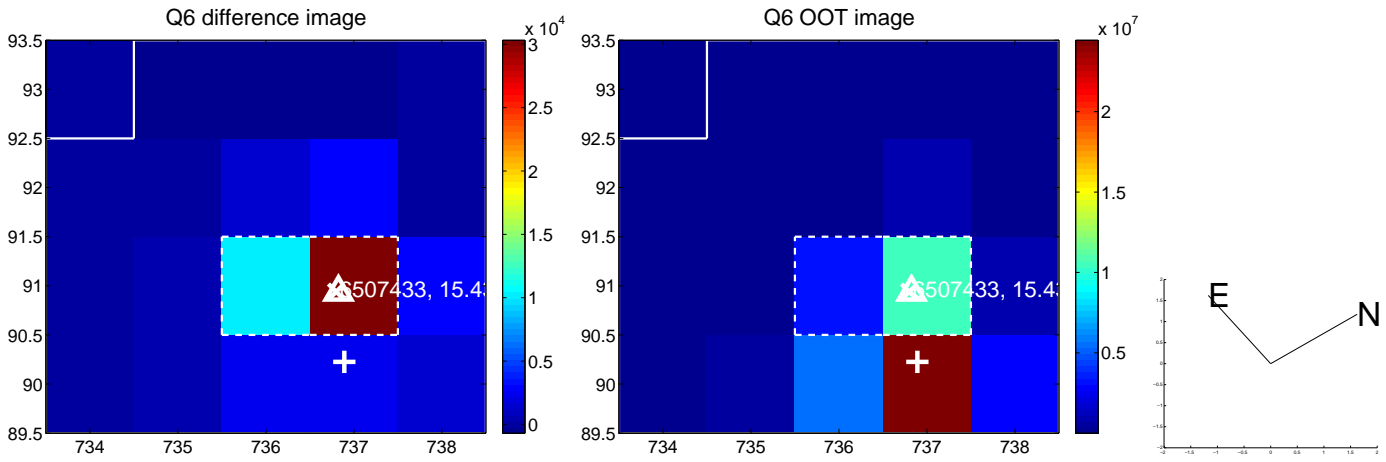
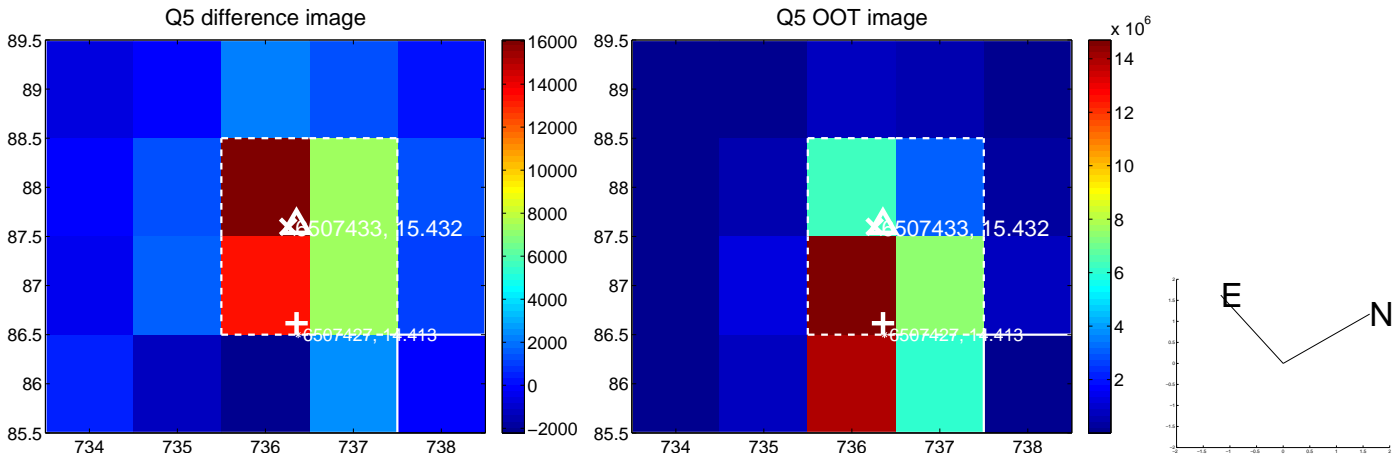
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



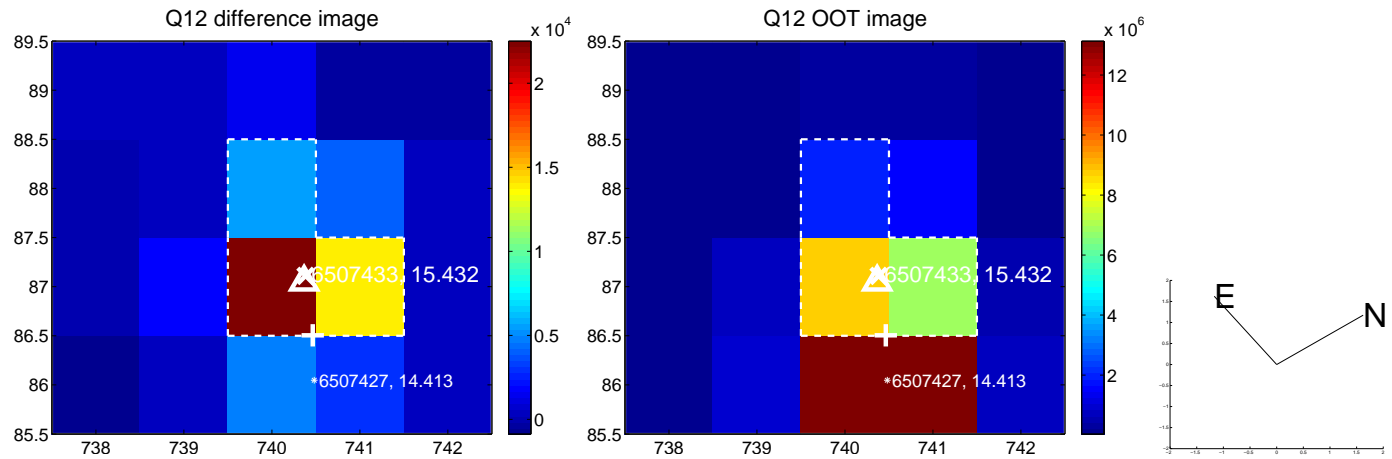
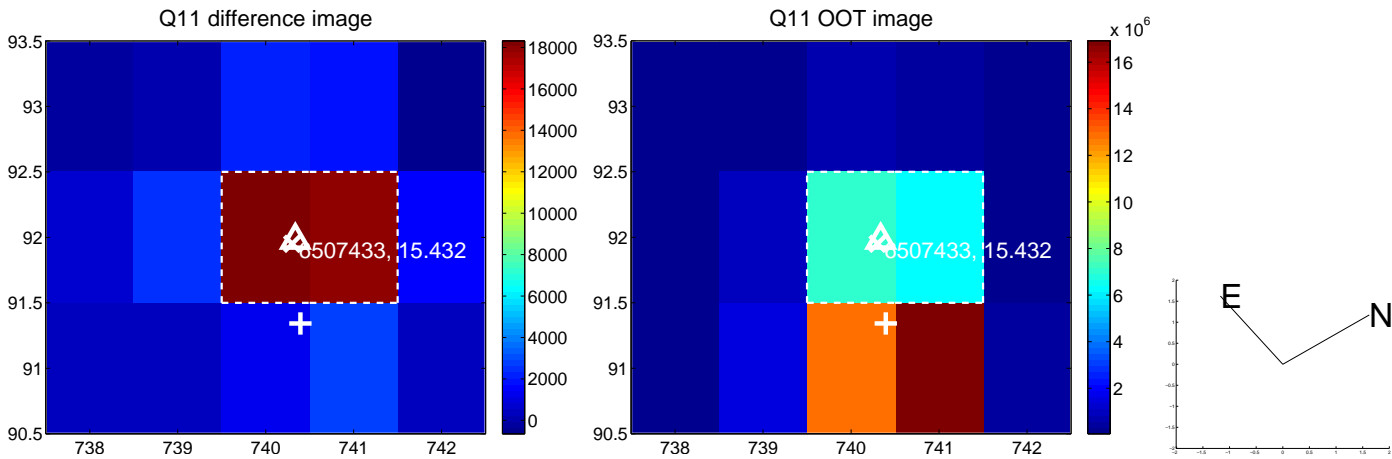
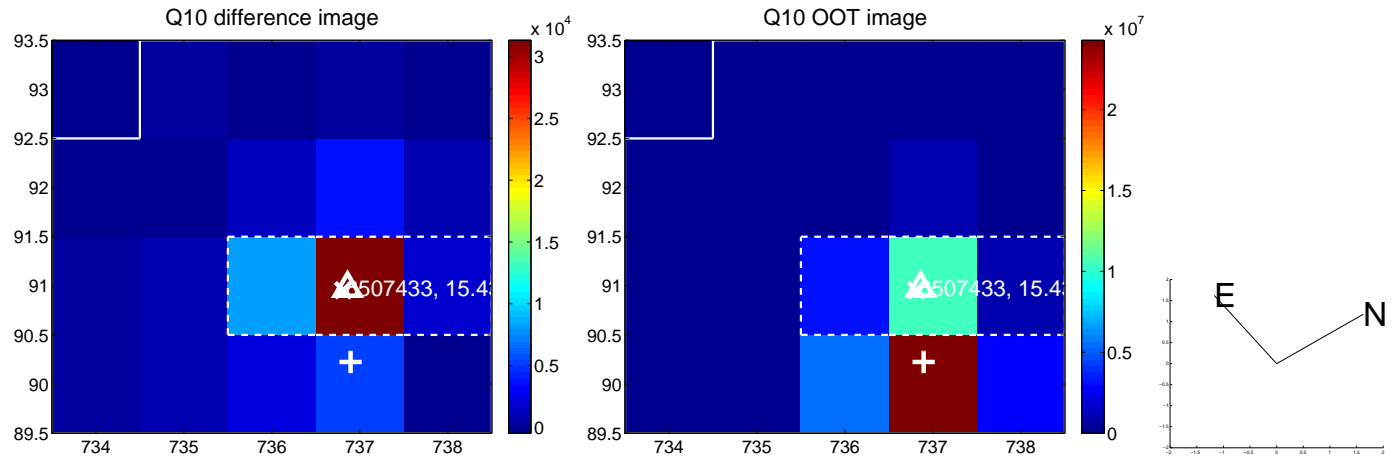
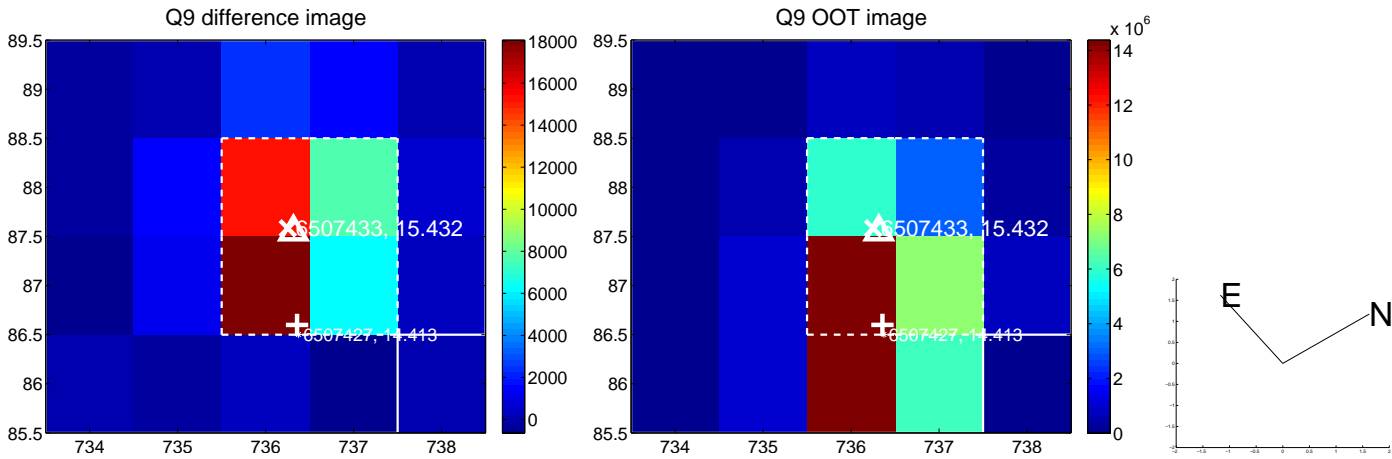
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



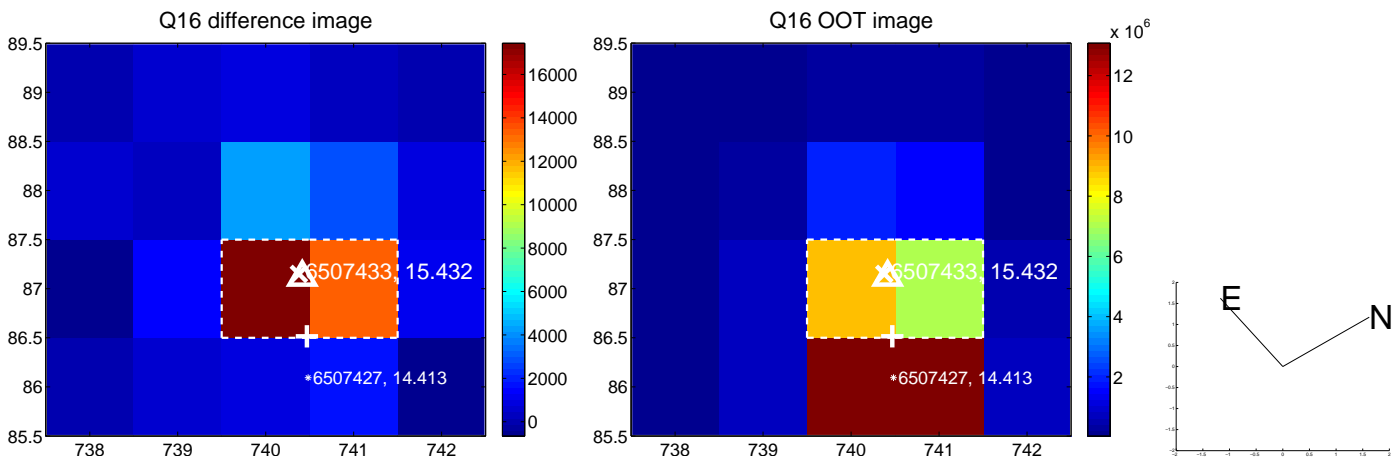
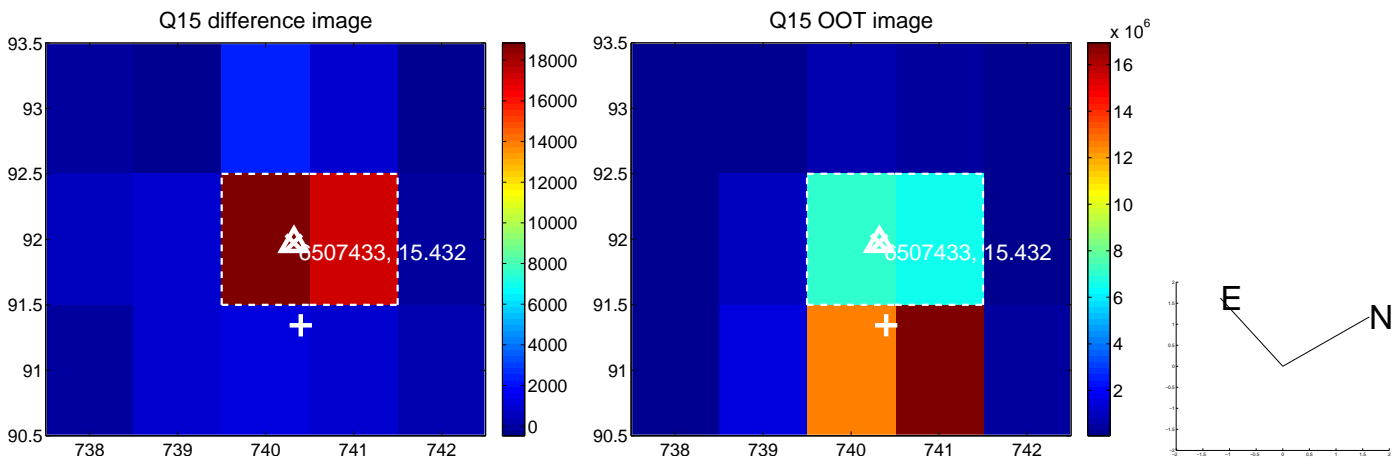
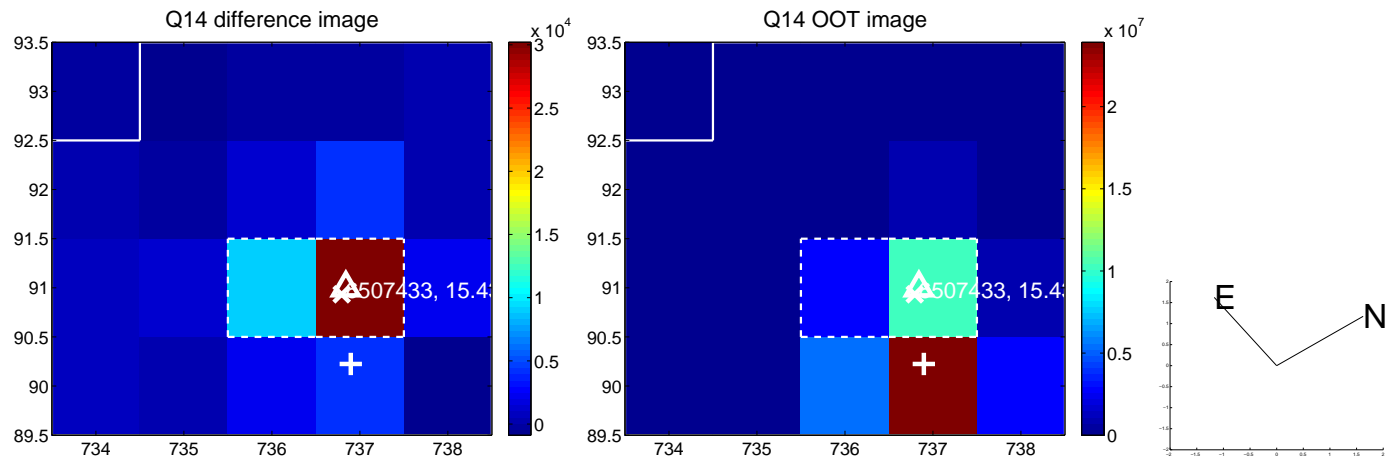
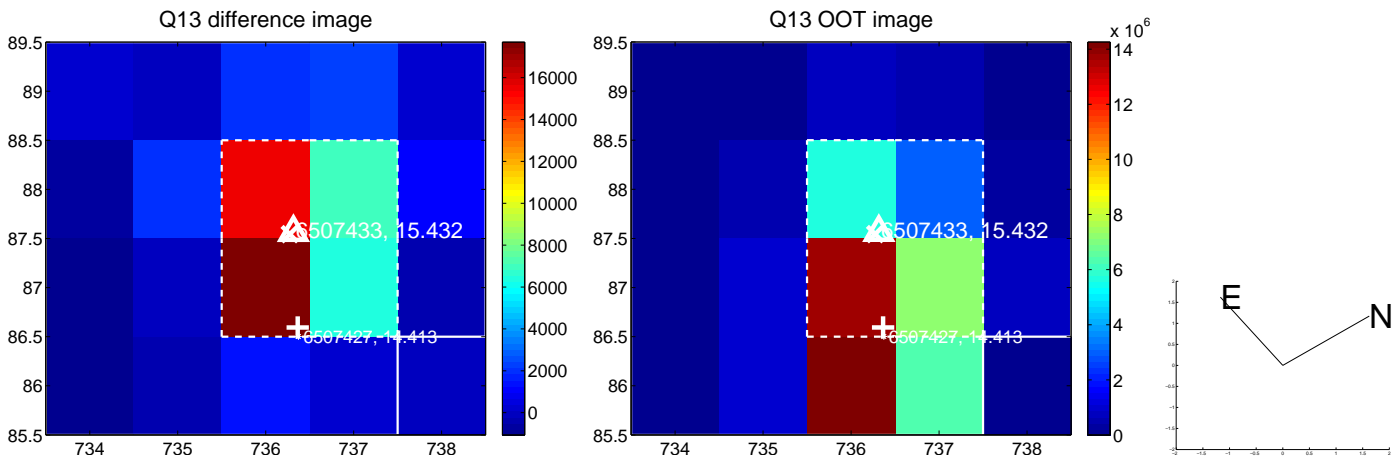
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.

