

# KIC 012508335

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
012508335-01	OBS	0215.01	42.943859	155.206679	9109.5	3.734	278.9	261.5	0.94	5750	14.19	17.29

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012508335-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED

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

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

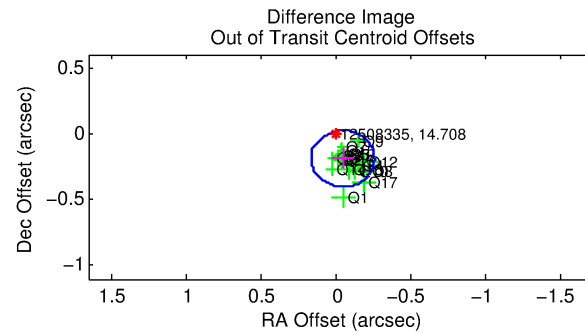
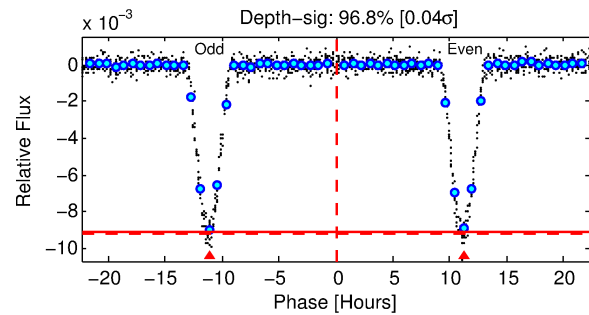
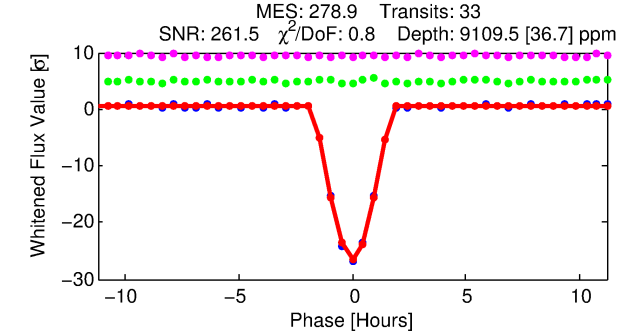
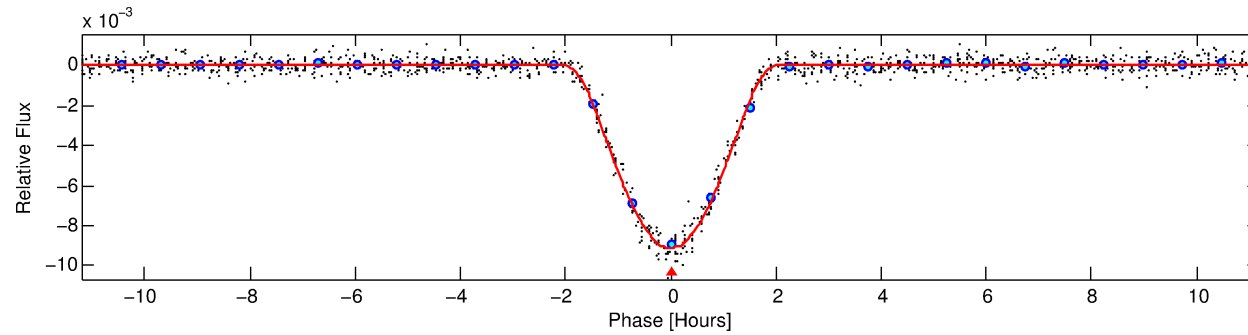
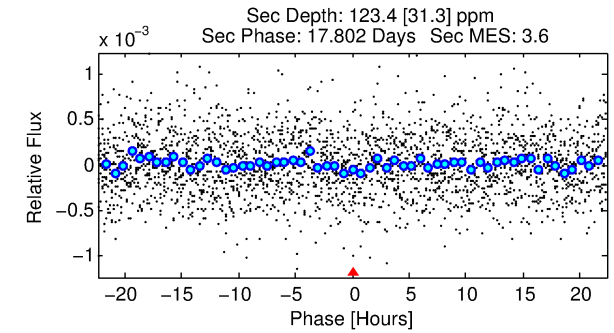
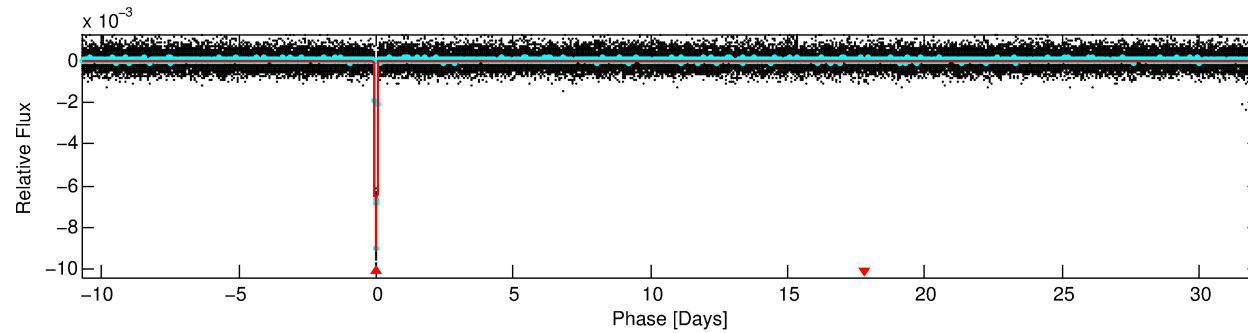
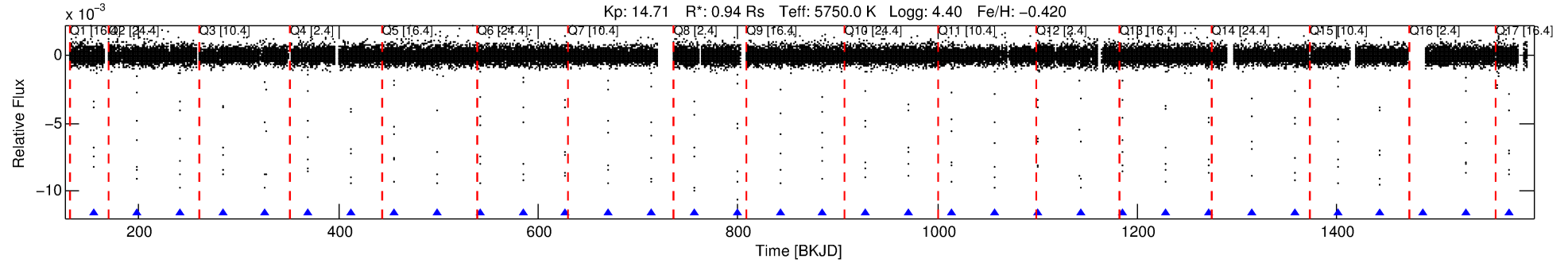
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 012508335-01

No Significant Match Found

# DV One-Page Summary

KIC: 12508335 Candidate: 1 of 1 Period: 42.944 d  
KOI: K00215.01 Corr: 0.995



## DV Fit Results:

Period = 42.94386 [0.00002] d  
Epoch = 155.2067 [0.0003] BKJD  
Rp/R\* = 0.1384 [0.0169]  
a/R\* = 52.27 [1.35]  
b = 0.97 [0.03]  
Seff = 17.29 [6.32]  
Teff = 520 [48] K  
Rp = 14.19 [4.15] Re  
a = 0.2237 [0.0517] AU  
Ag = 16.86 [8.32] [1.91 $\sigma$ ]  
Teffp = 1629 [152] K [6.98 $\sigma$ ]

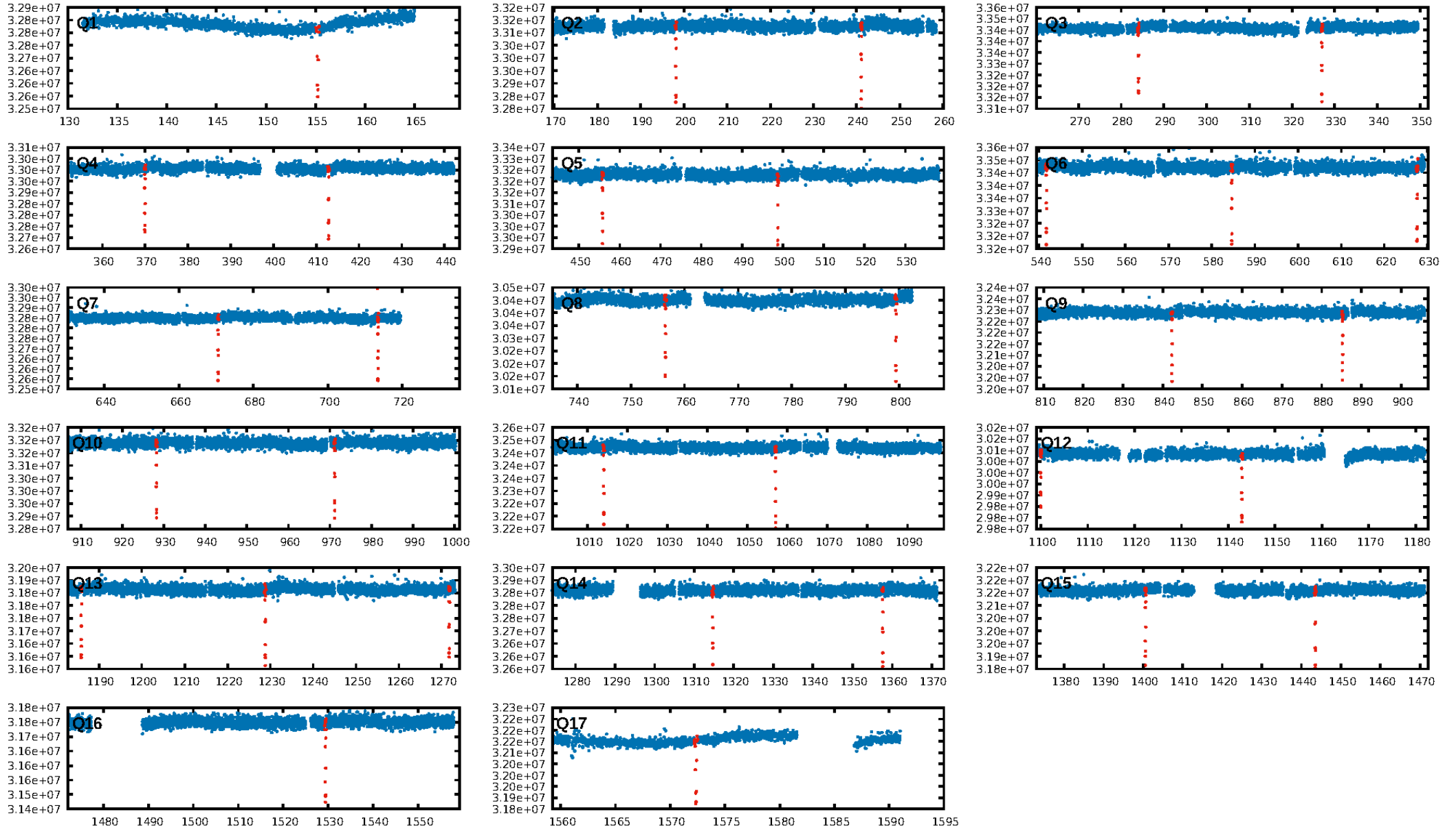
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [31/31]  
GhostDiagnostic-chr: 3.448  
Centroid-sig: 0.0%  
Centroid-so: 0.829 arcsec [16.67 $\sigma$ ]  
OotOffset-rm: 0.197 arcsec [2.77 $\sigma$ ]  
KicOffset-rm: 0.048 arcsec [0.70 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

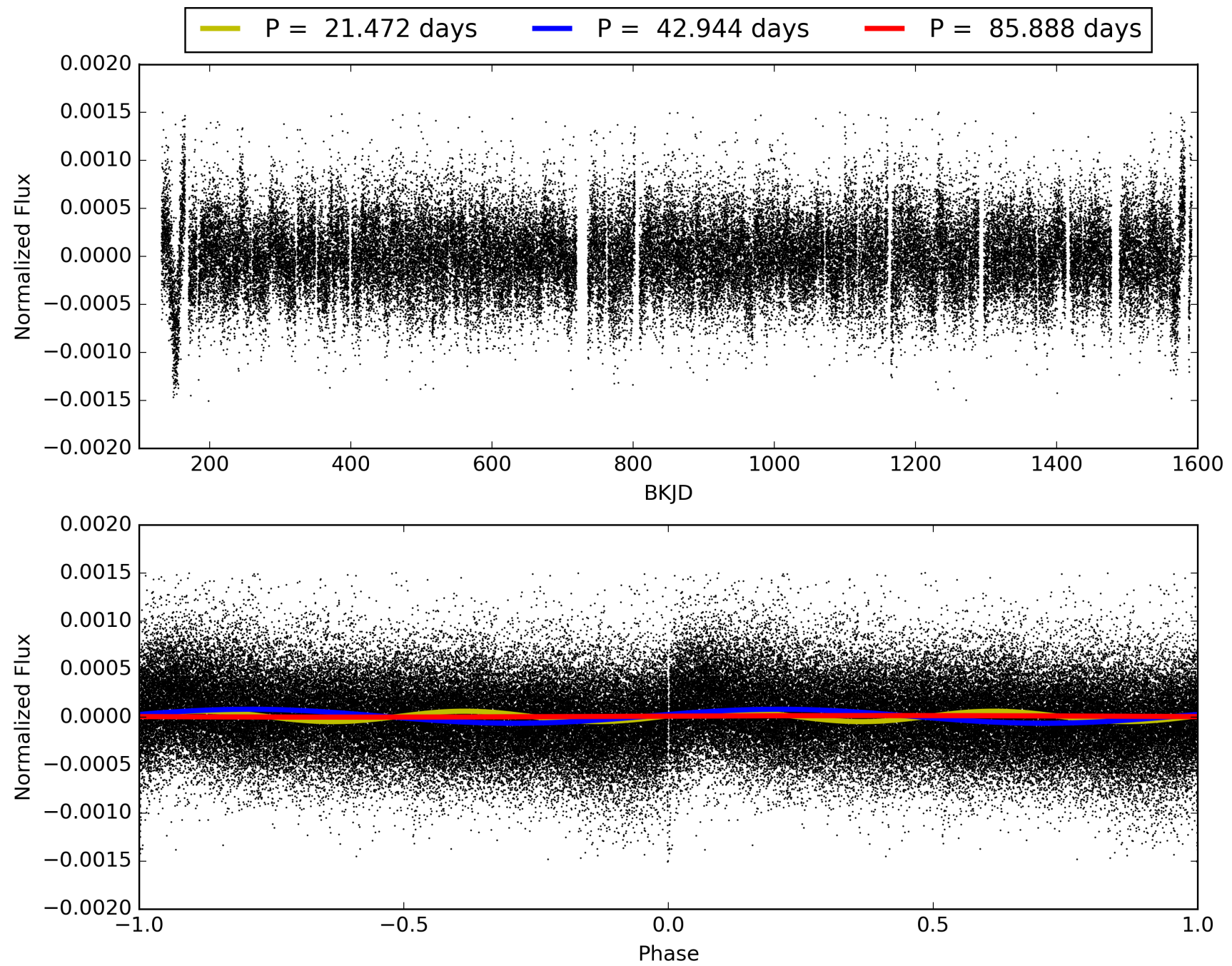
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:58:01 Z

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

# TCE 012508335-01, PDC Light Curves

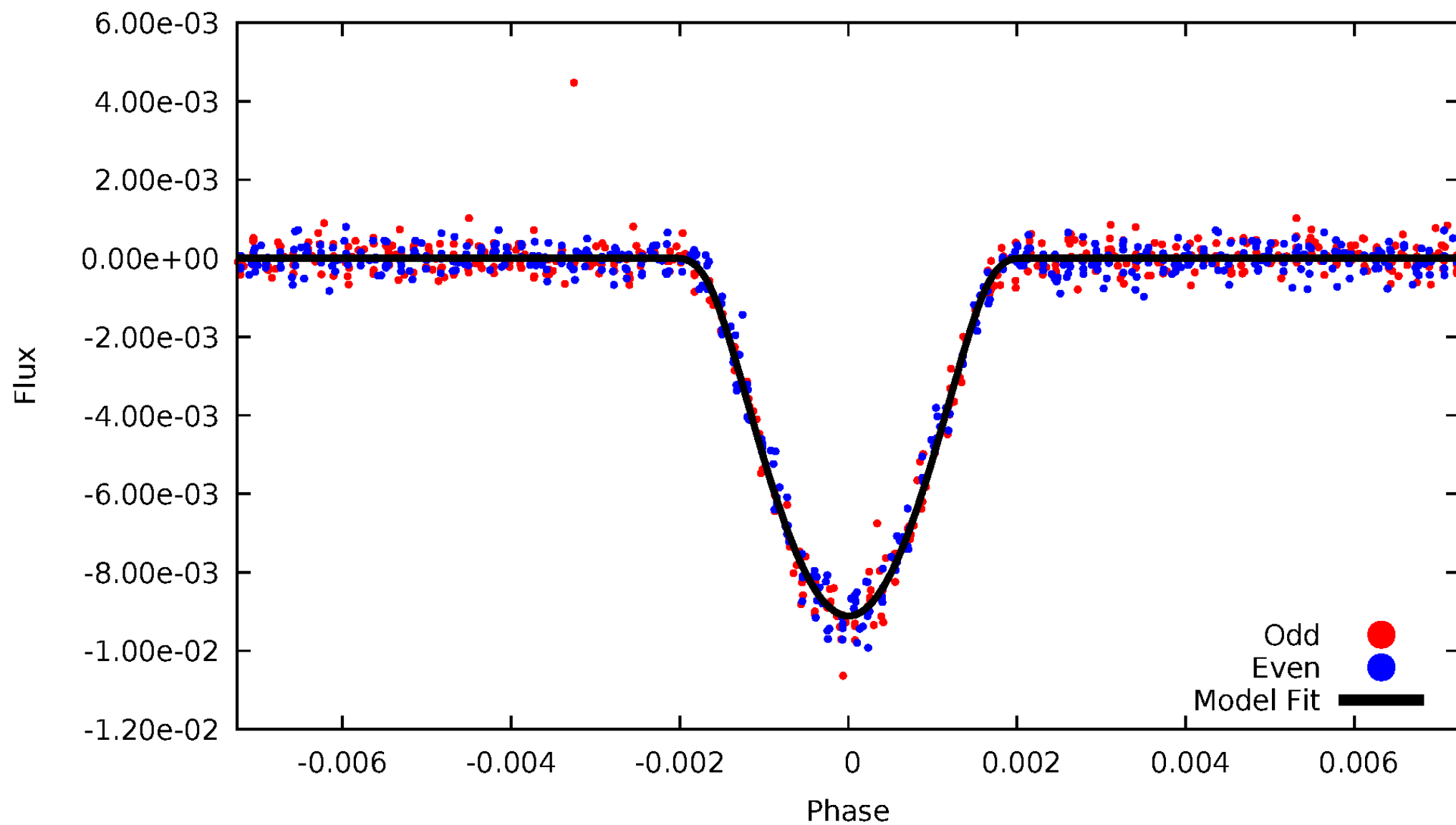


TCE 012508335-01



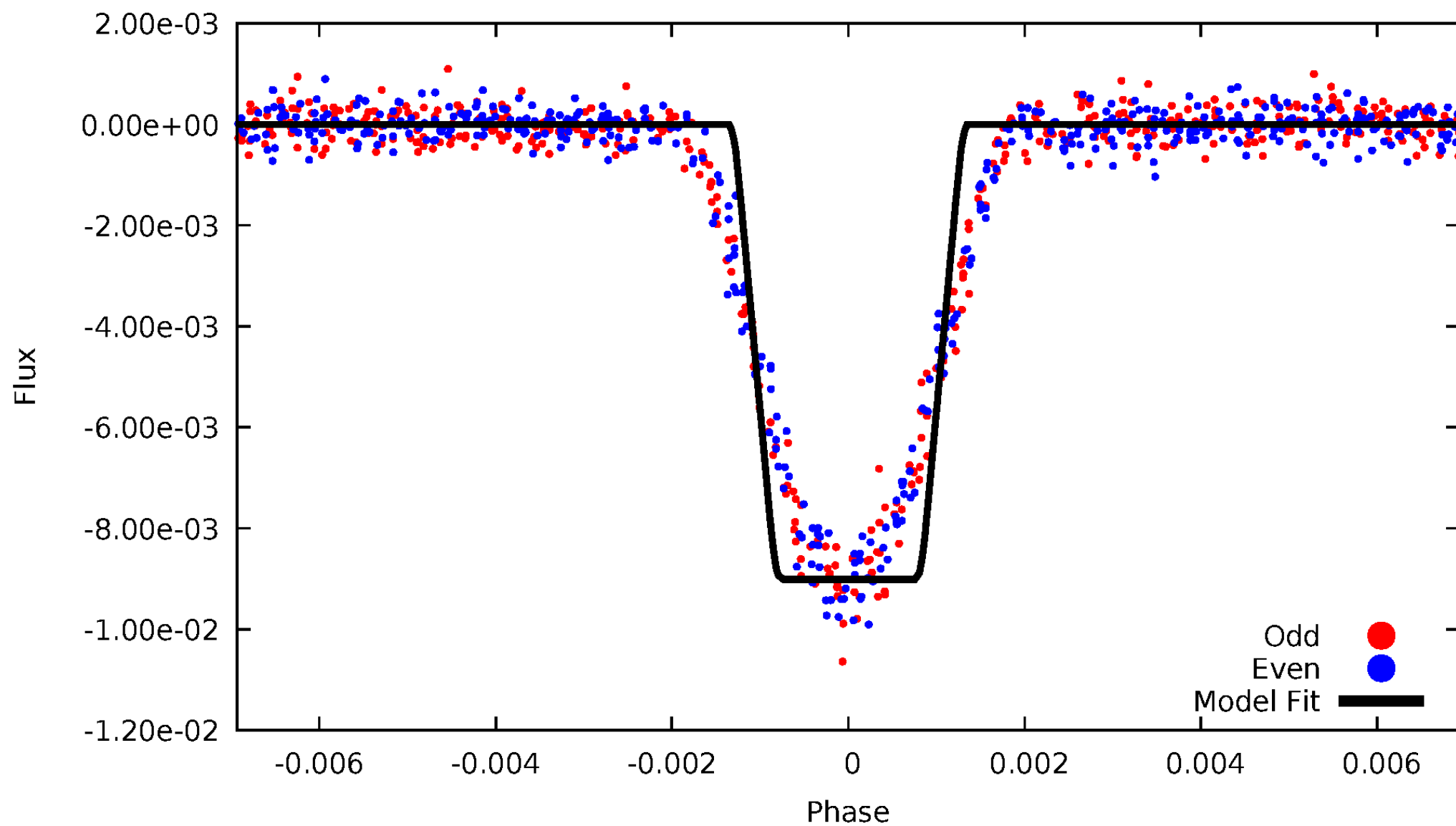
# DV Odd/Even

TCE 012508335-01

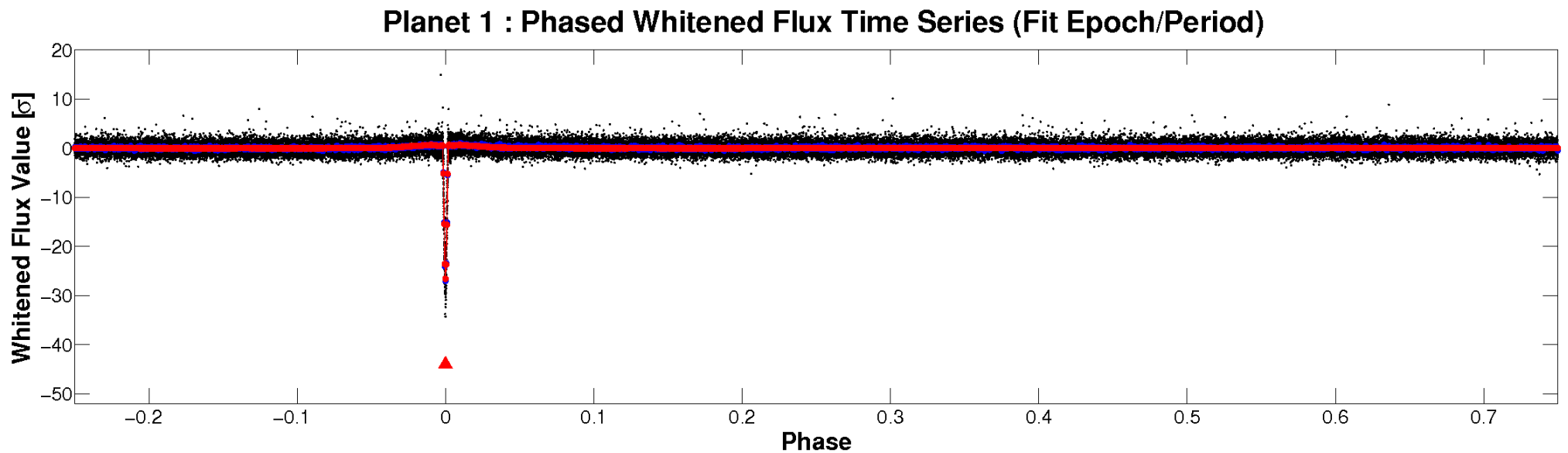
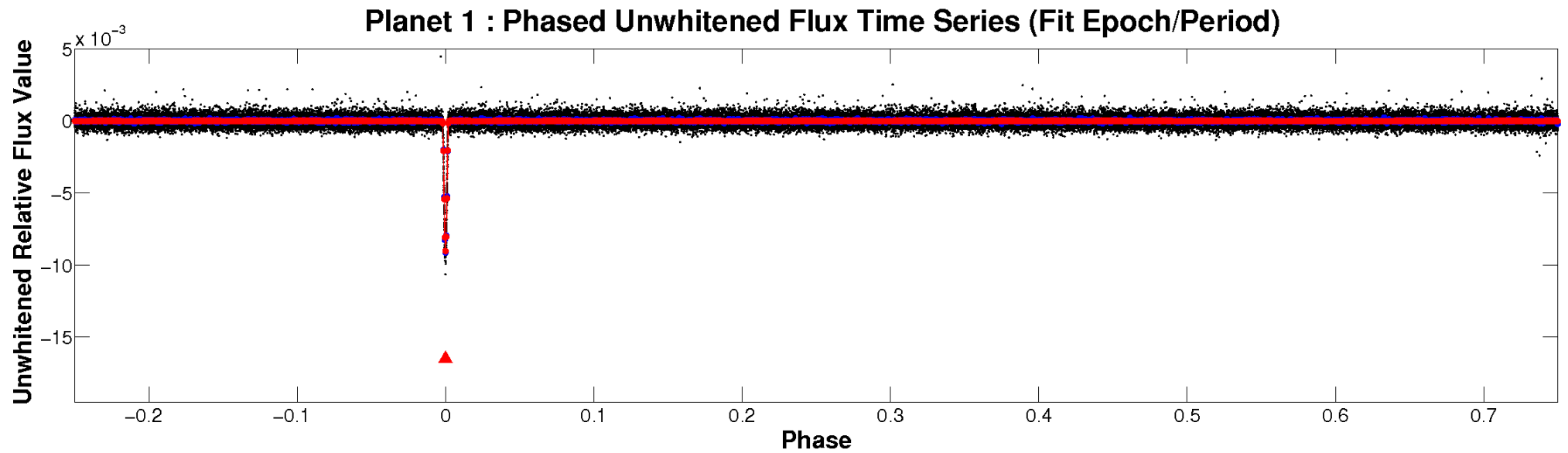


# ALT Odd/Even

TCE 012508335-01

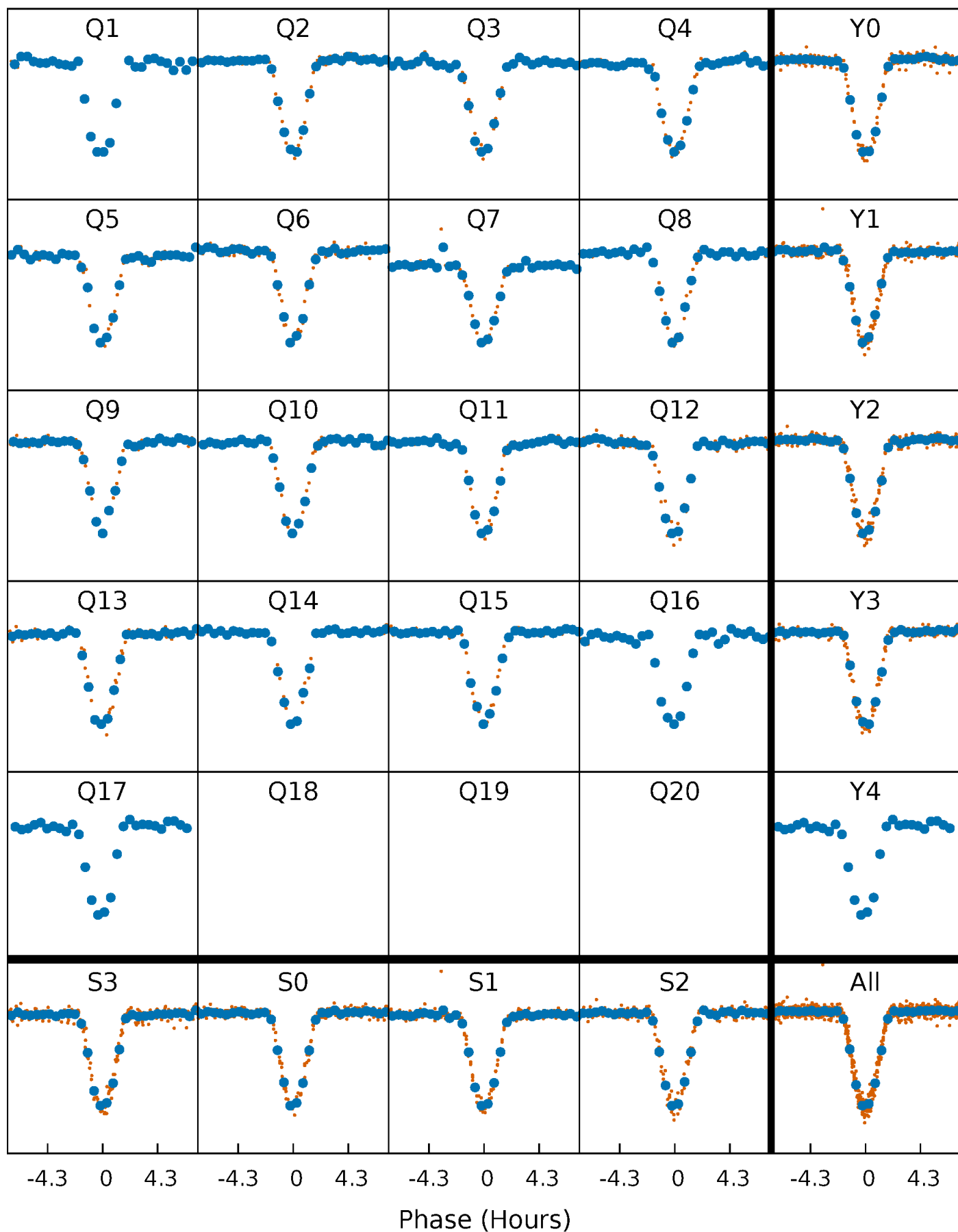


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

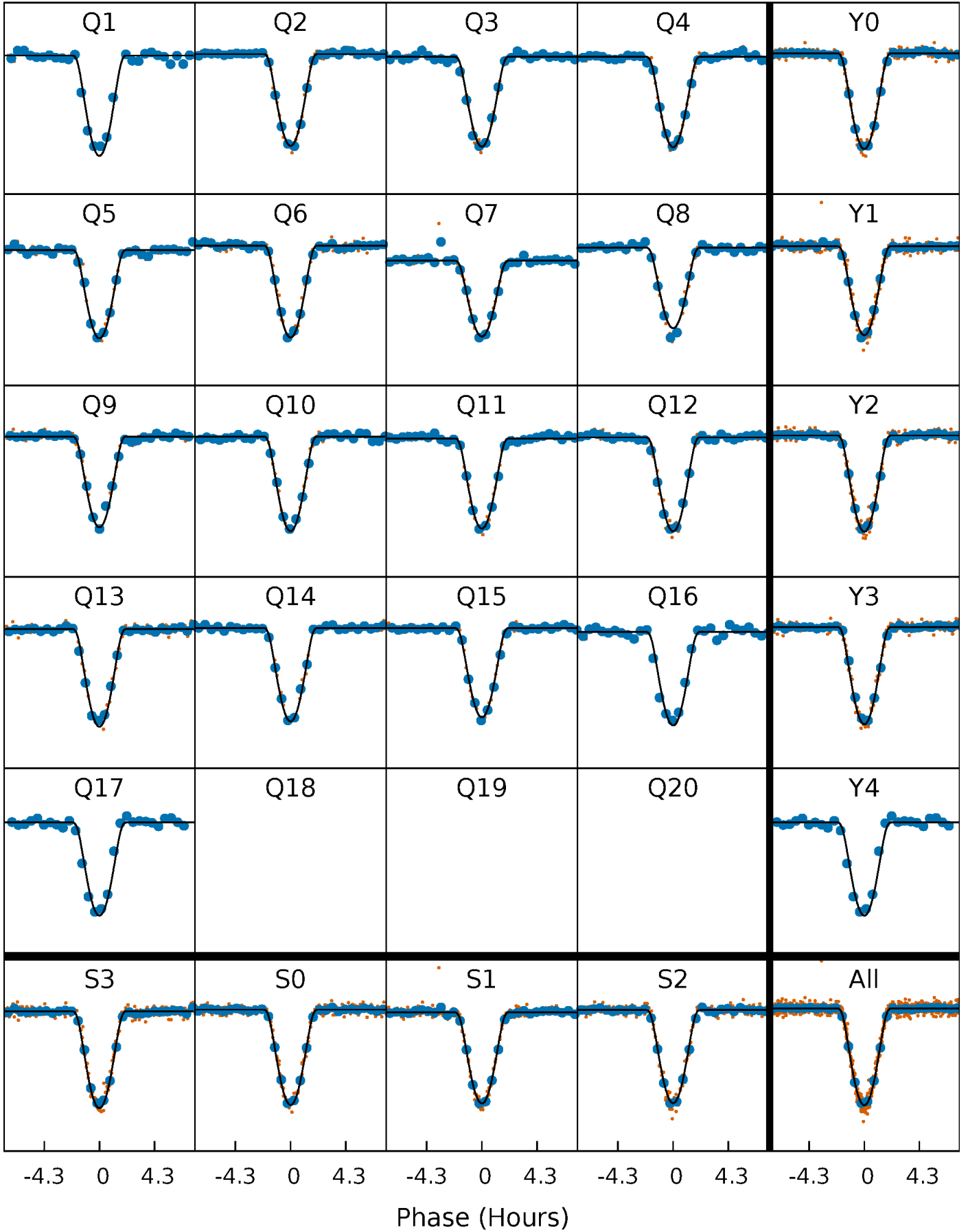
TCE 012508335-01   P= 42.943859 Days    $T_0=155.206679$  (BKJD)





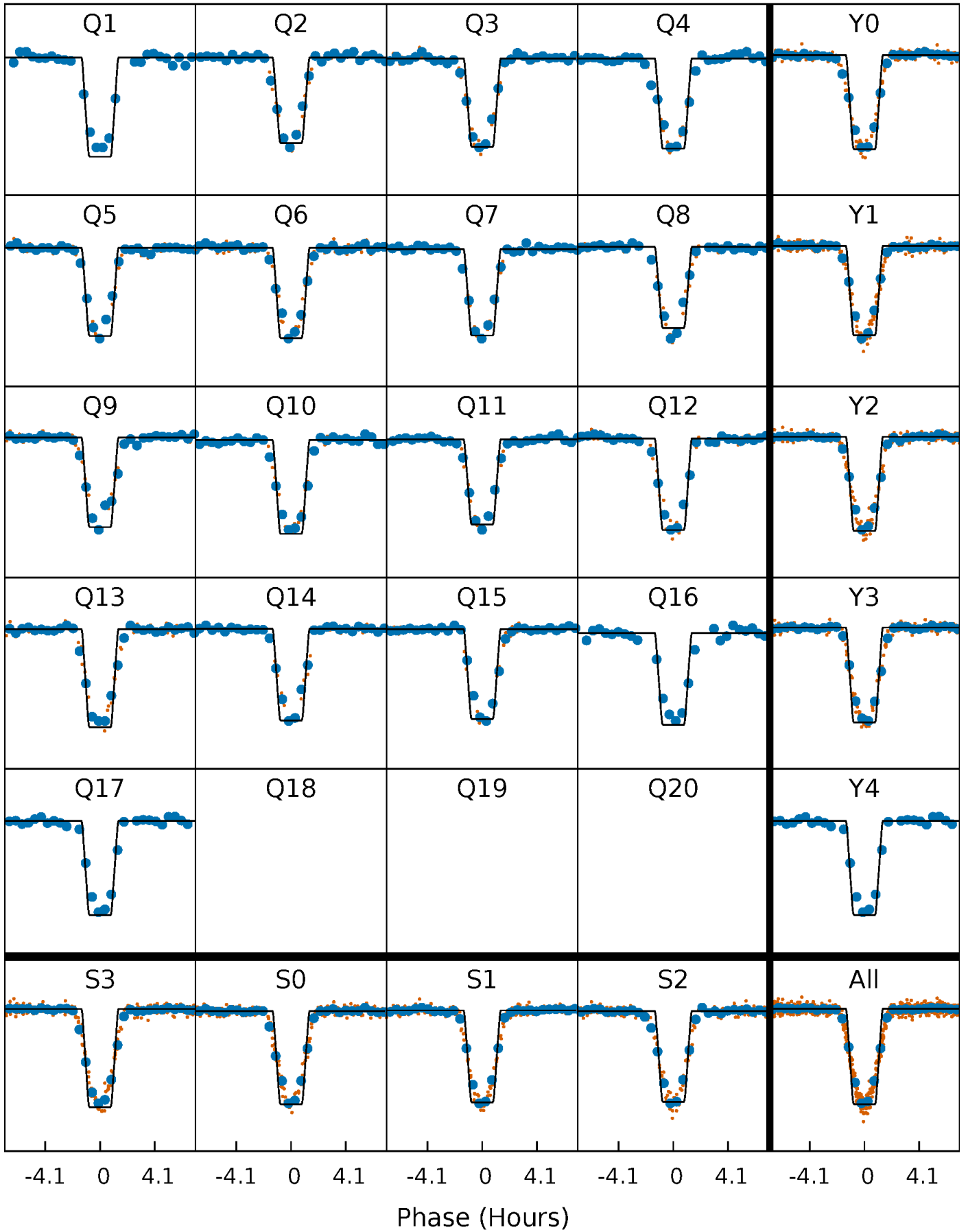
# DV Quarter-Phased Transit Curves

TCE 012508335-01 P= 42.943859 Days  $T_0=155.206679$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

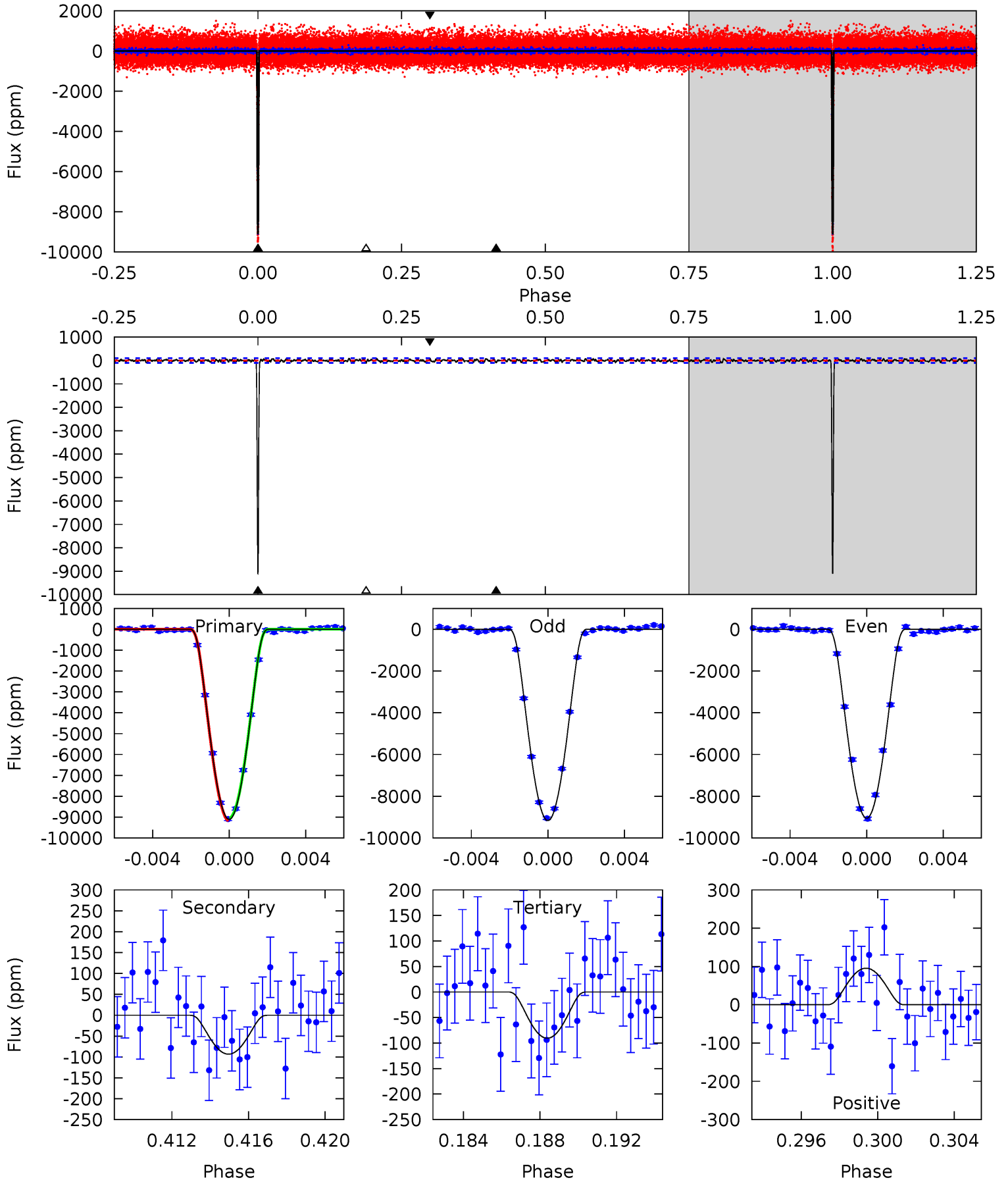
TCE 012508335-01 P= 42.943710 Days  $T_0=155.208926$  (BKJD)



# DV Model-Shift Uniqueness Test

012508335-01,  $P = 42.943859$  Days,  $E = 112.262820$  Days

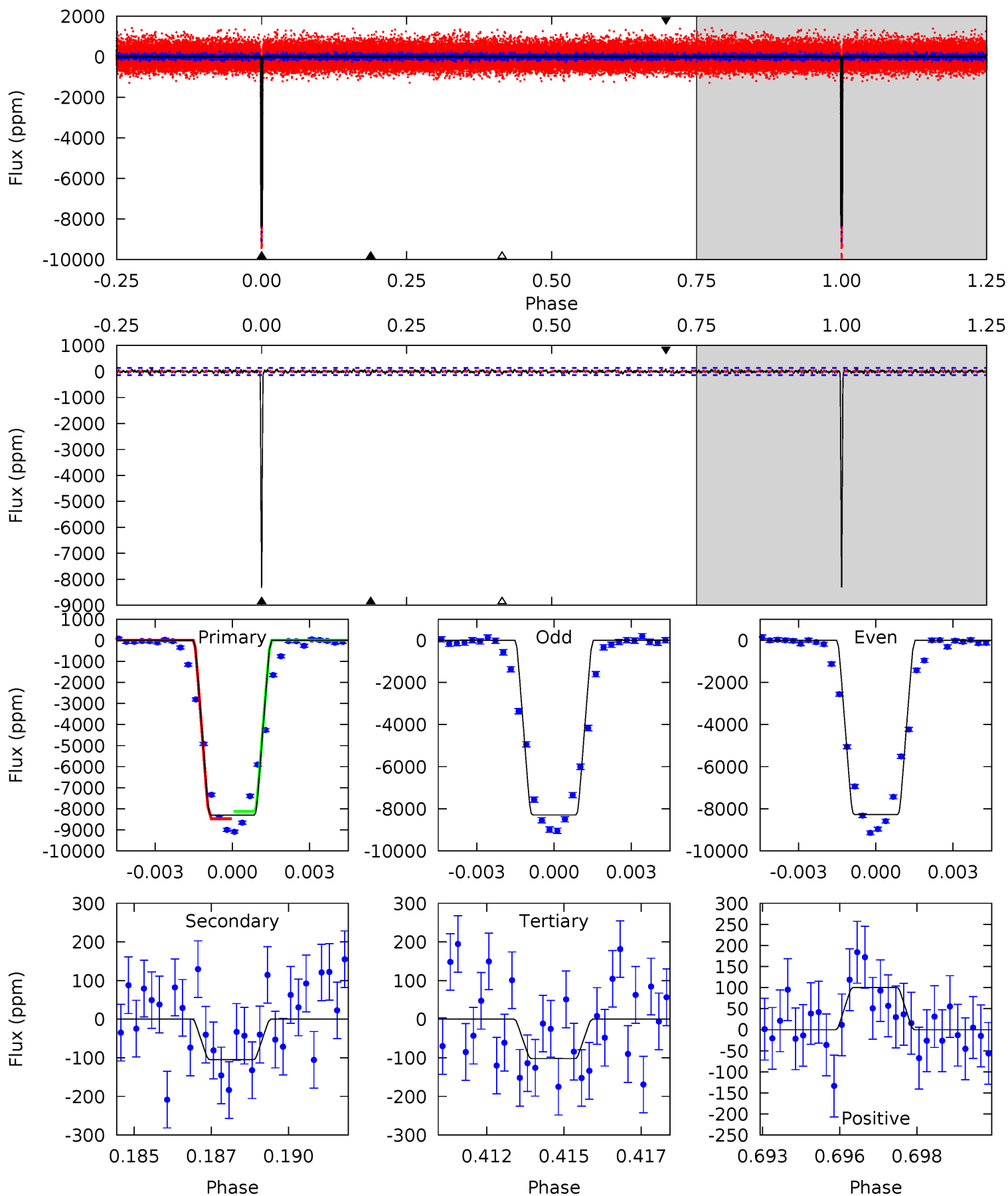
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
459.7	4.71	4.57	4.83	5.20	2.88	1.53	455.2	454.9	0.14	-0.11	2.84	1.01	0.01	3.15



# Alt Model-Shift Uniqueness Test

012508335-01, P = 42.943710 Days, E = 112.265216 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
316.3	3.99	3.88	3.81	5.27	3.00	1.13	312.4	312.5	0.11	0.18	0.38	1.01	0.01	6.46



### Stellar Parameters For KIC 012508335

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5750^{+173}_{-155}$	$4.400^{+0.158}_{-0.193}$	$-0.420^{+0.300}_{-0.300}$	$0.940^{+0.250}_{-0.167}$	$0.808^{+0.114}_{-0.061}$	$1.372^{+0.968}_{-0.654}$
	+3%/-3%	+4%/-4%	+71%/-71%	+27%/-18%	+14%/-8%	+71%/-48%
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 012508335-01 / KOI 0215.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-93 \pm 20$	$14.54^{+2.83}_{-2.64}$	$729^{+54}_{-45}$	$2394^{+107}_{-99}$	$12^{+7}_{-4}$
Alt.	$-105 \pm 26$	$9.94^{+2.34}_{-2.17}$	$729^{+53}_{-42}$	$2673^{+172}_{-150}$	$30^{+20}_{-12}$

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

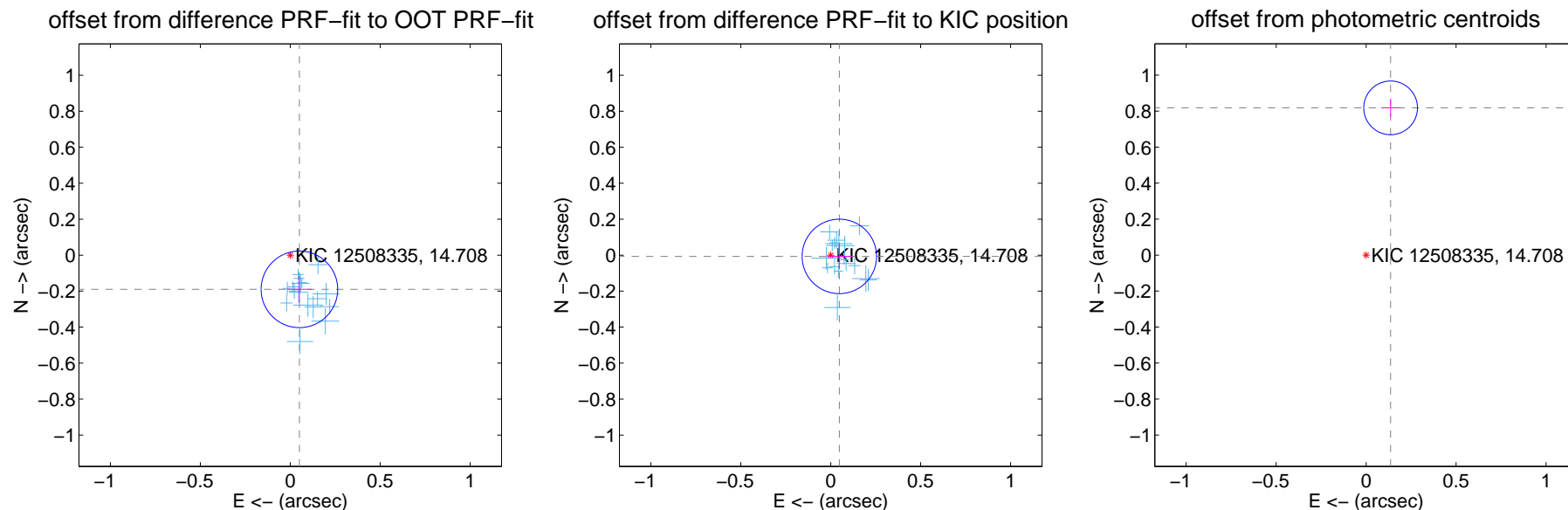
## DV Centroid Data

Supplemental centroid analysis for 012508335-01. Kepler magnitude: 14.71. Transit SNR 261.50

There are 17 quarters with good PRF difference image offsets

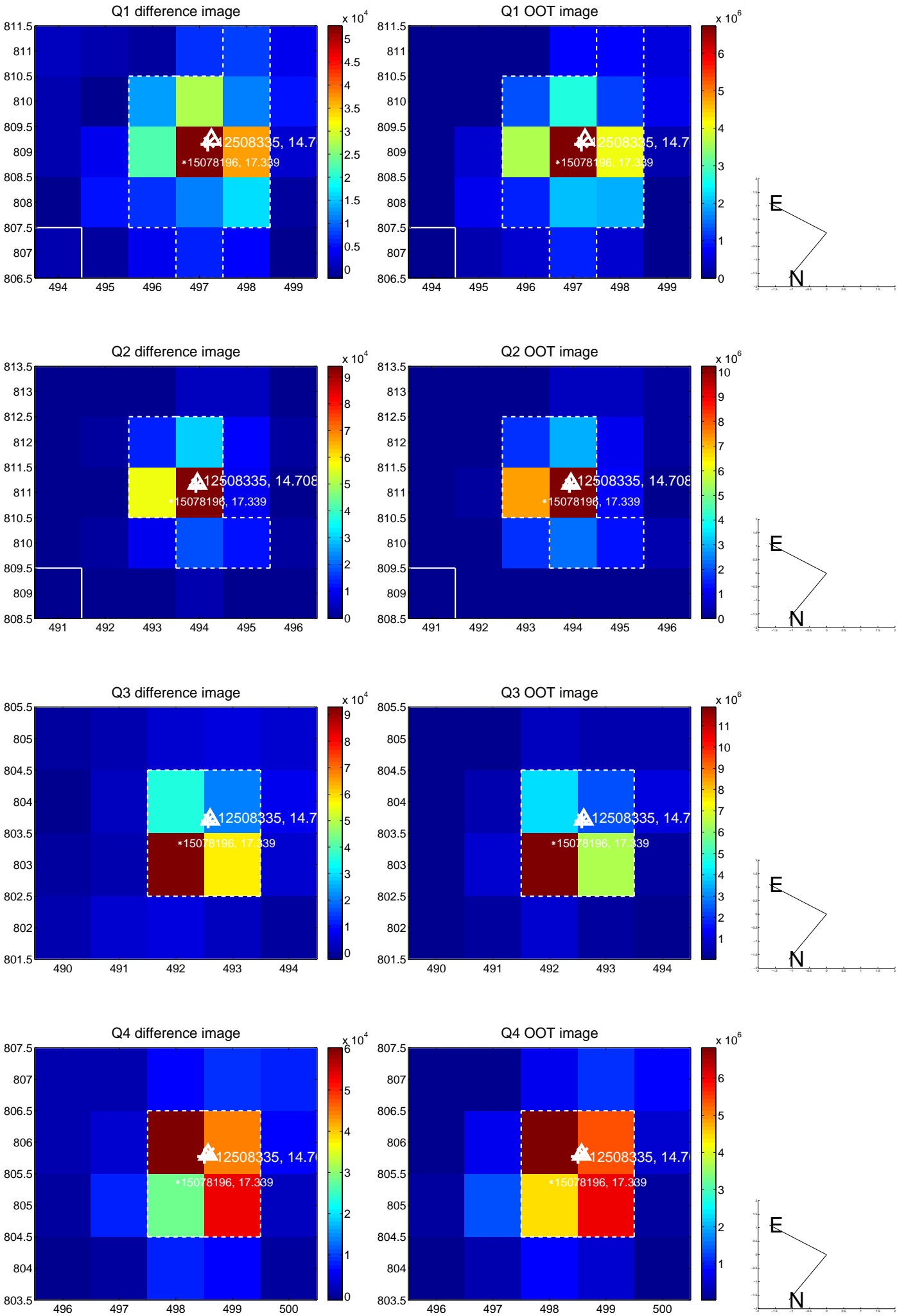
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.197 \pm 0.071$	2.77	$-0.051 \pm 0.069$	$-0.190 \pm 0.071$
PRF-fit source offset from KIC position	$0.048 \pm 0.069$	0.70	$-0.048 \pm 0.069$	$-0.007 \pm 0.072$
photometric centroid source offset	$0.83 \pm 0.05$	16.67	$-0.14 \pm 0.05$	$0.82 \pm 0.05$

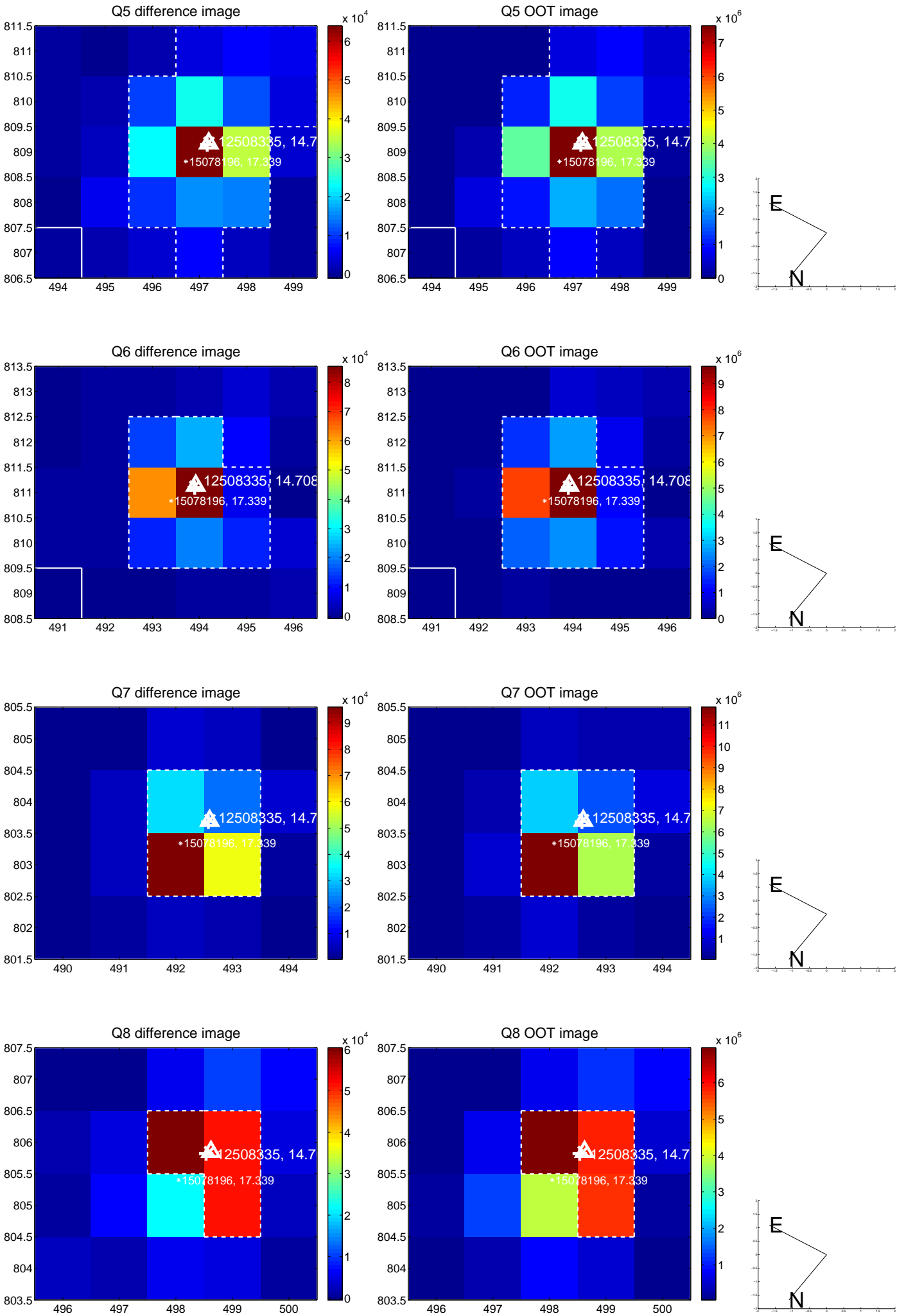


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

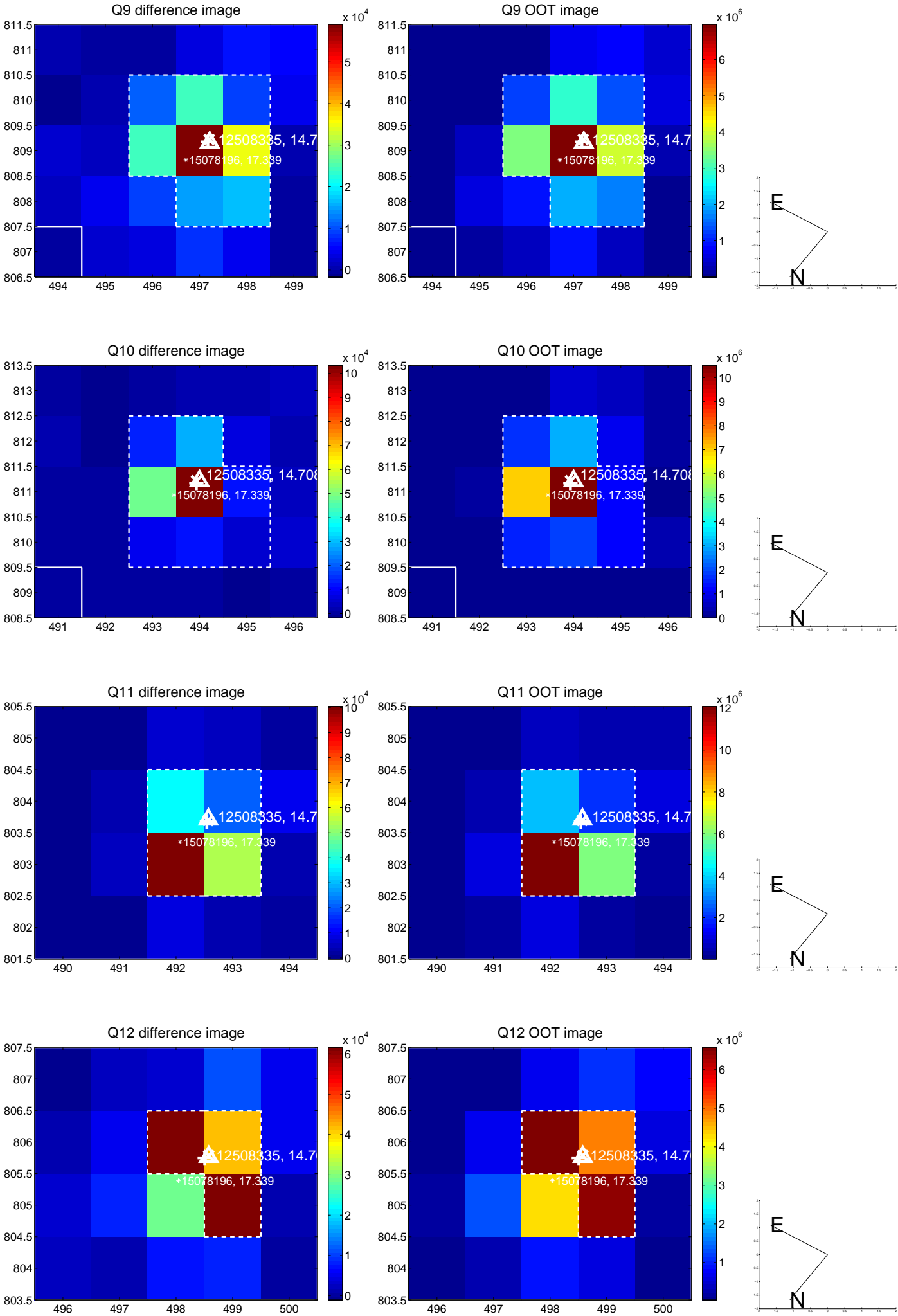


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

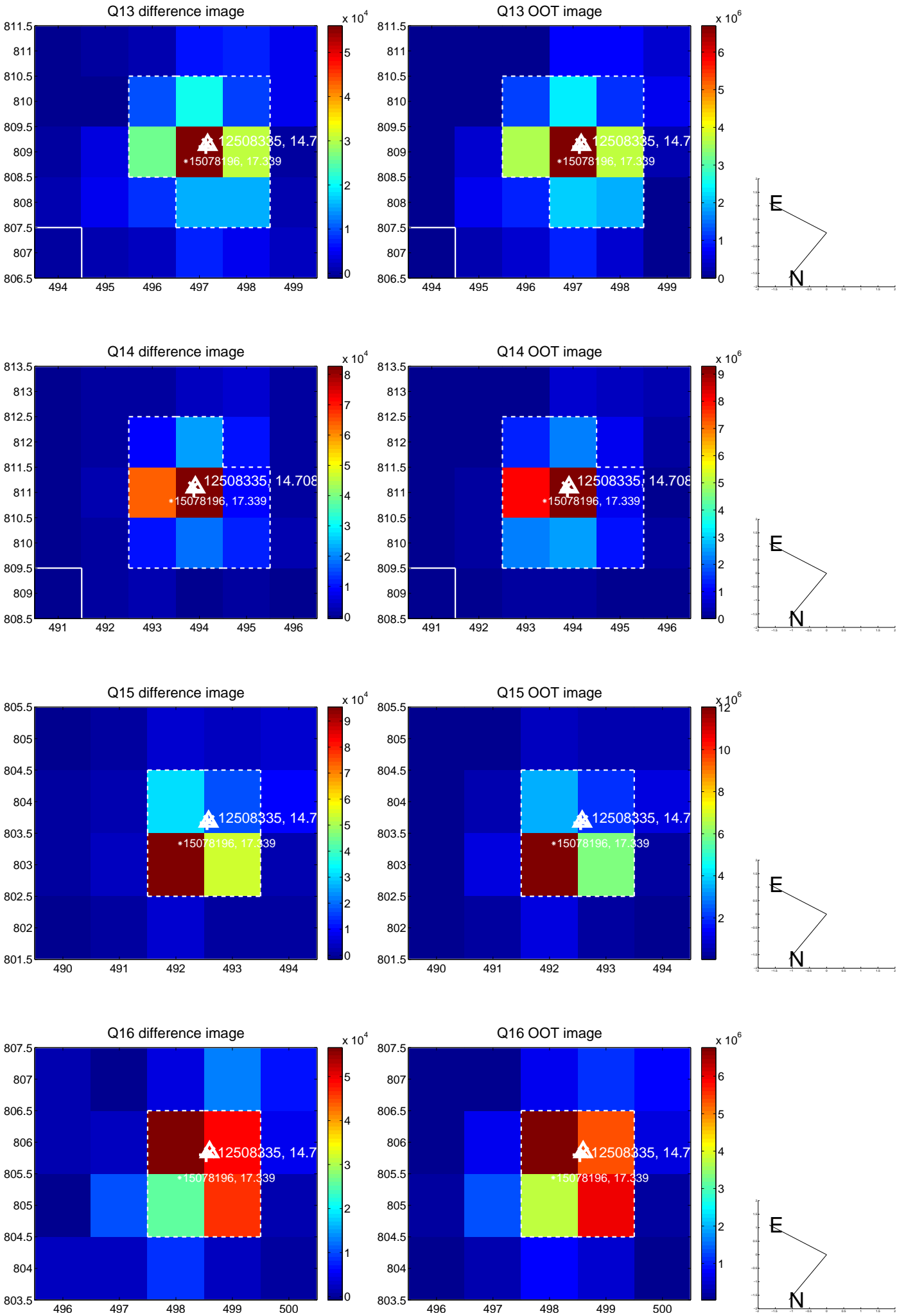




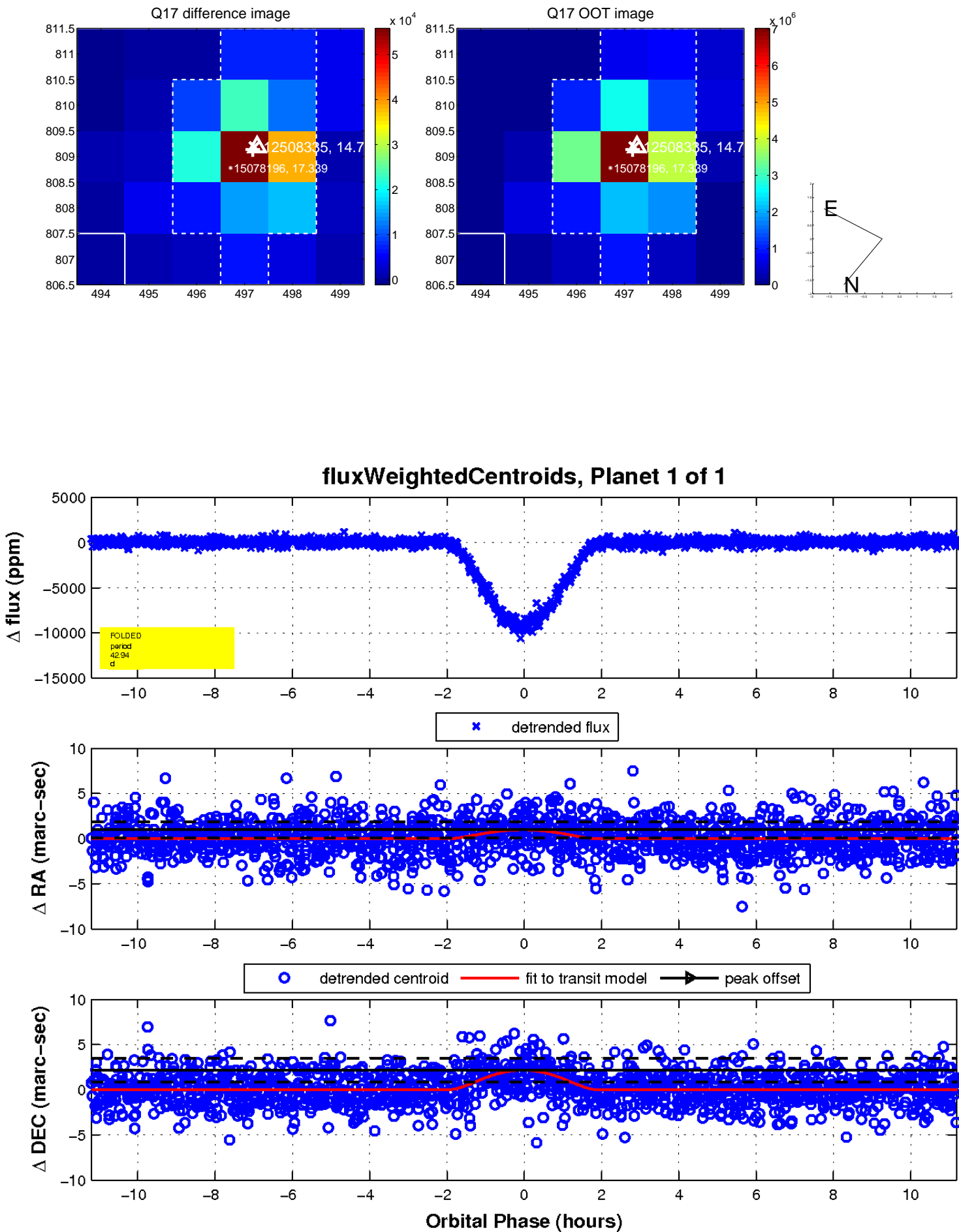
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



# UKIRT Image

Declination

