

# KIC 007841368

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007841368-01	OBS	7851.01	25.370990	141.802078	81.9	3.986	7.3	8.0	1.49	6029	1.58	87.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007841368-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET

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

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

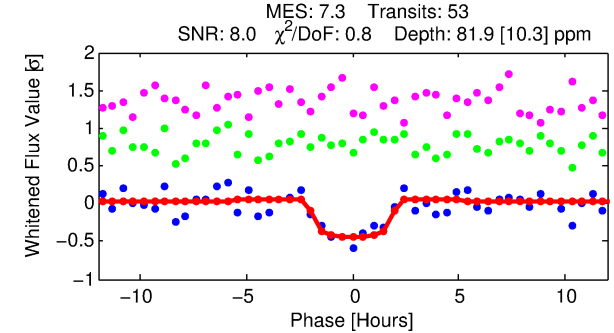
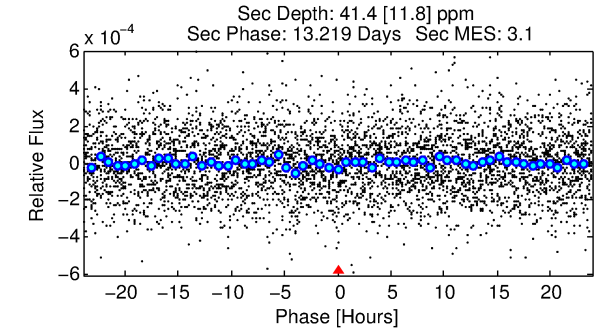
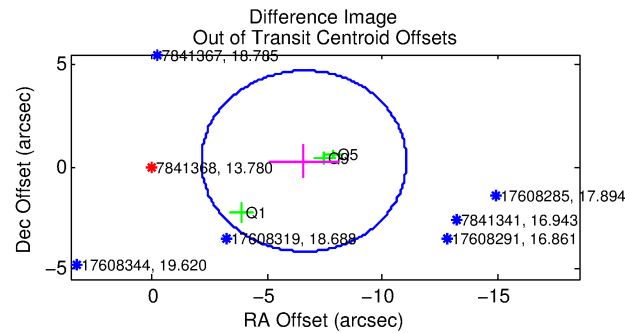
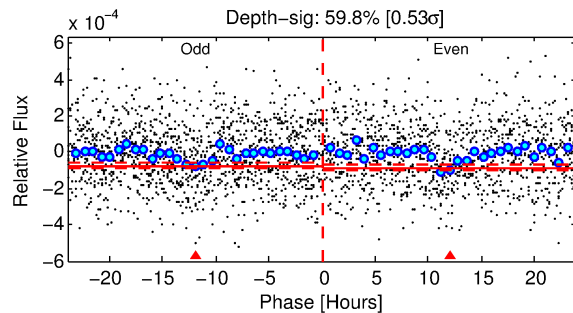
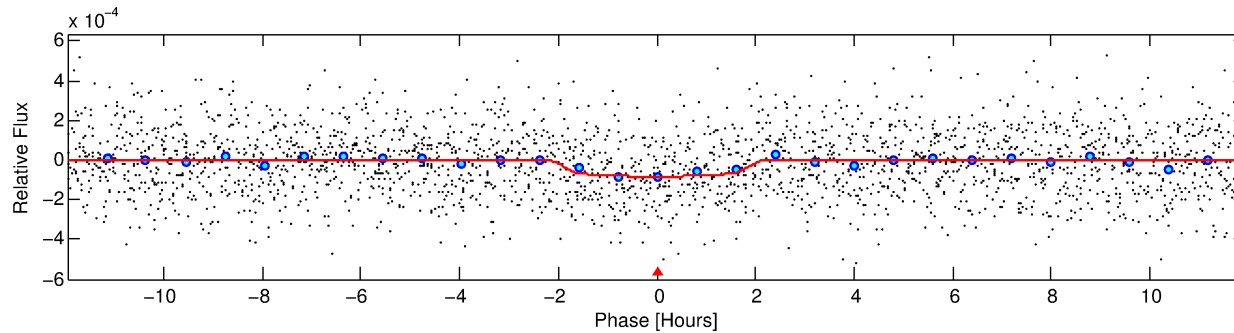
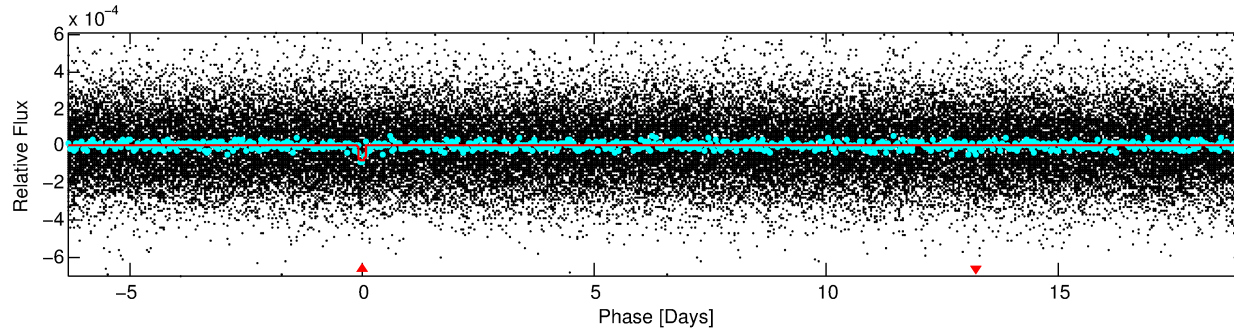
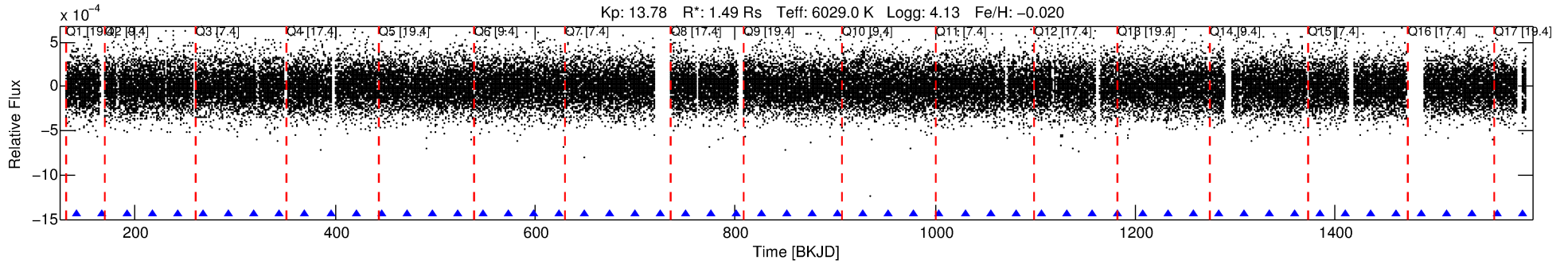
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007841368-01

No Significant Match Found

# DV One-Page Summary

KIC: 7841368 Candidate: 1 of 1 Period: 25.371 d



## DV Fit Results:

Period = 25.37099 [0.00031] d  
Epoch = 141.8021 [0.0102] BKJD  
Rp/R\* = 0.0097 [0.0055]  
a/R\* = 22.96 [66.46]  
b = 0.89 [0.67]  
Seff = 87.30 [42.65]  
Teq = 779 [95] K  
Rp = 1.58 [1.01] Re  
a = 0.1740 [0.0500] AU  
Ag = 274.32 [346.28] [0.79 $\sigma$ ]  
Teff = 4904 [1445] K [2.85 $\sigma$ ]

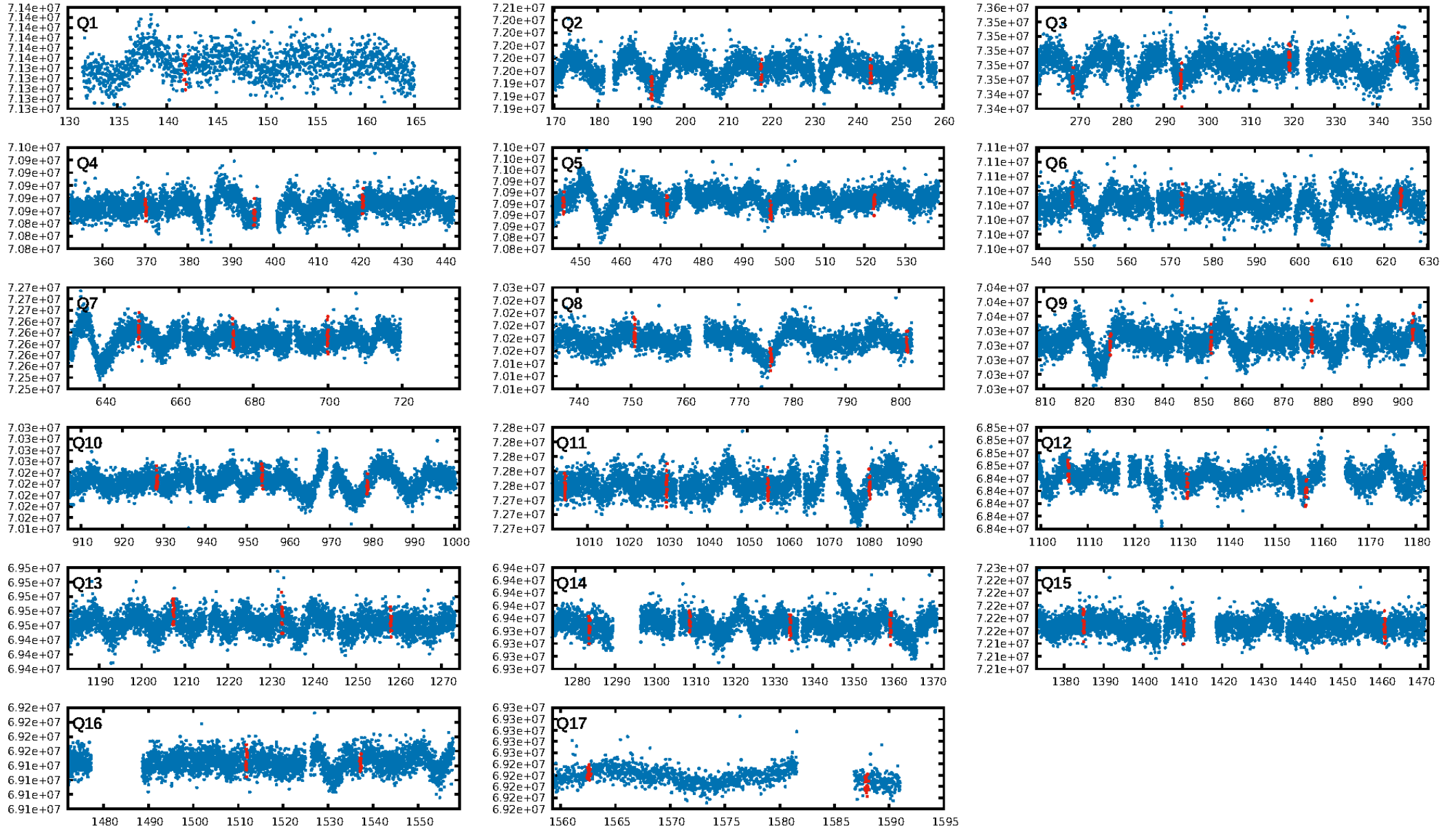
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 98.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.22e-13  
RollingBand-fgt: 1.00 [50/50]  
GhostDiagnostic-chr: -0.3836  
Centroid-sig: 0.0%  
Centroid-so: 135.763 arcsec [85.94 $\sigma$ ]  
OotOffset-rm: 6.600 arcsec [4.47 $\sigma$ ]  
KicOffset-rm: 6.477 arcsec [4.42 $\sigma$ ]  
OotOffset-st: 0/0/0/3 [3]  
KicOffset-st: 0/0/0/3 [3]  
DiffImageQuality-figm: 0.00 [0/3]  
DiffImageOverlap-fno: 1.00 [17/17]

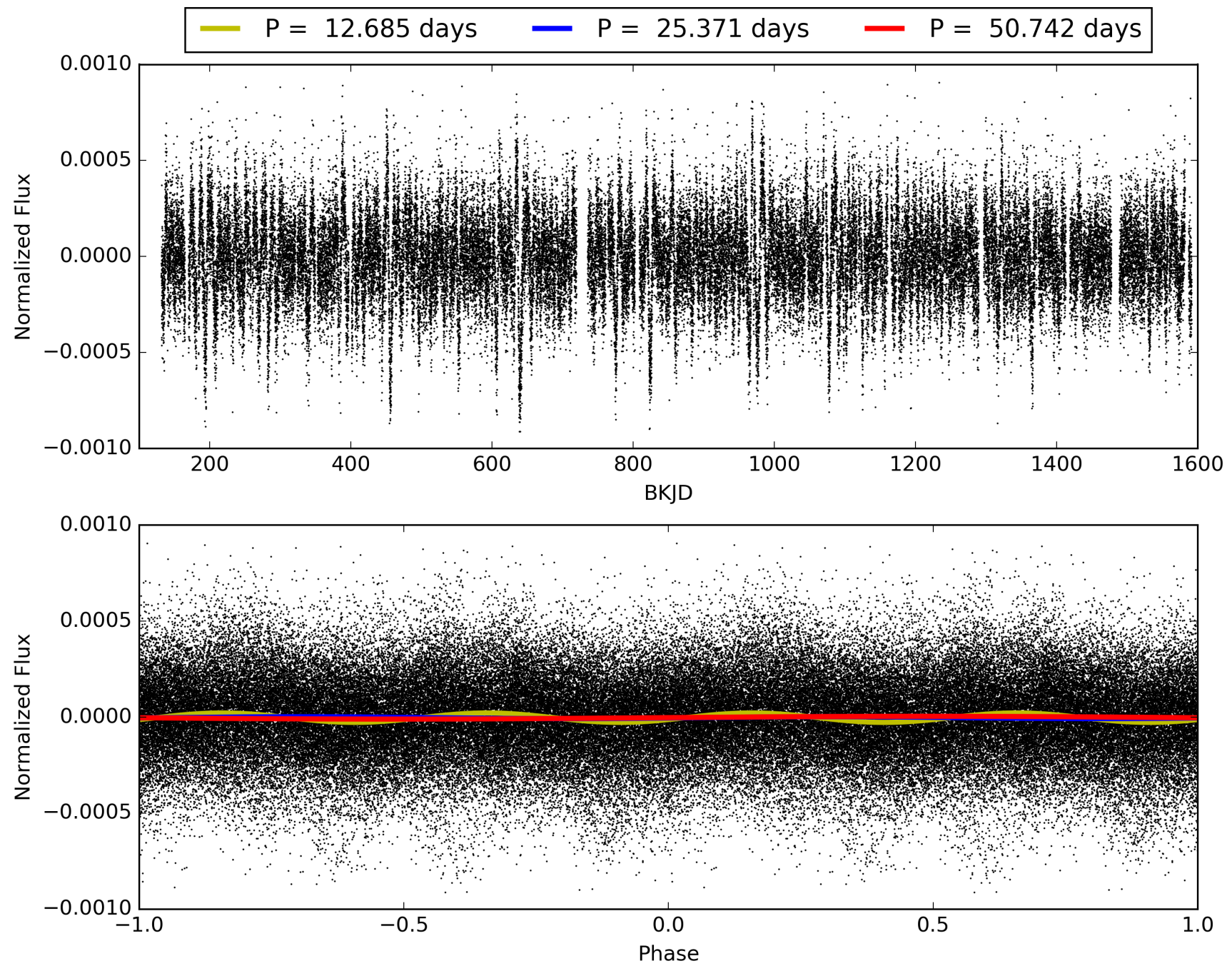
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:30:34 Z

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

# TCE 007841368-01, PDC Light Curves

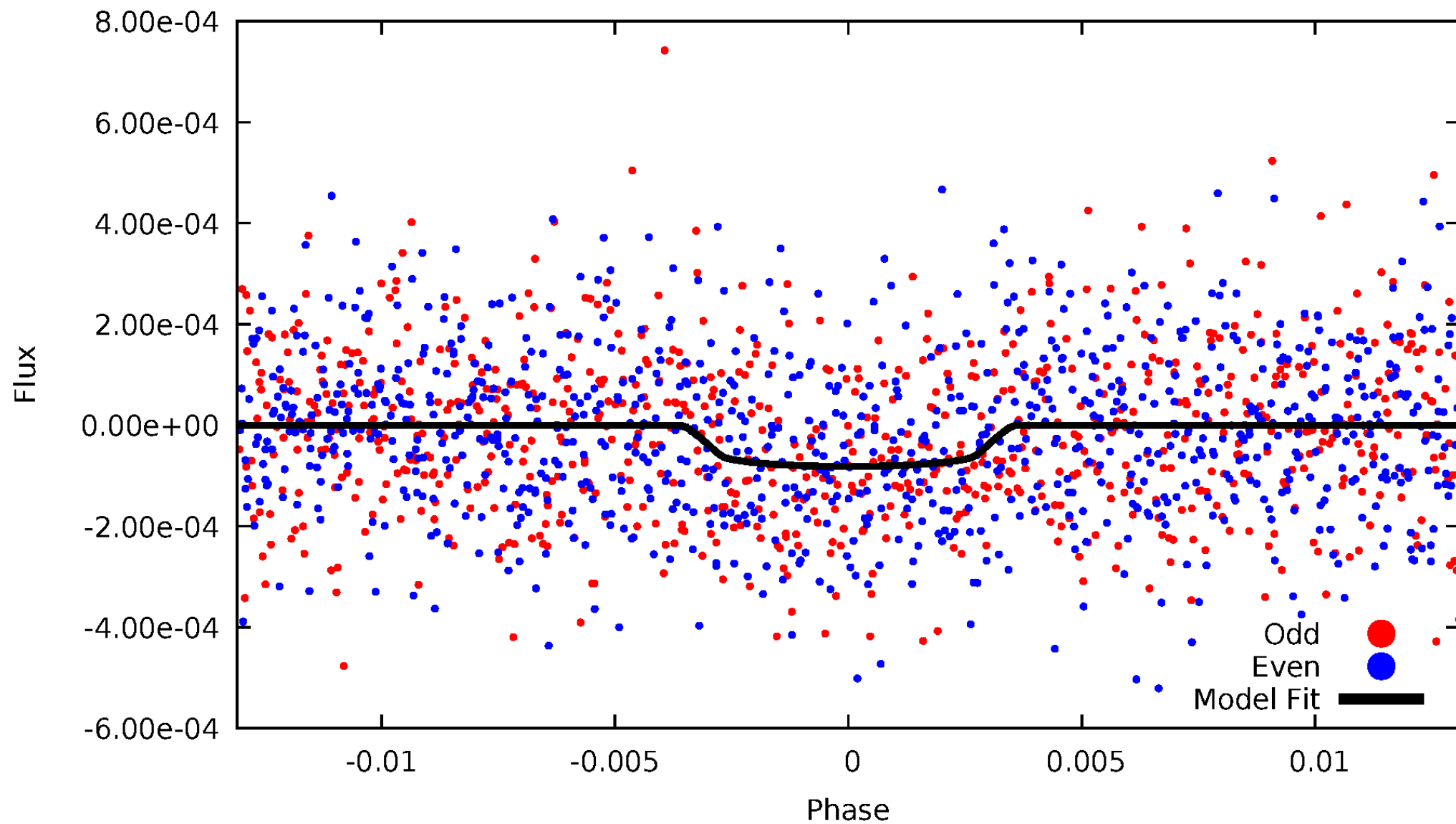


TCE 007841368-01



# DV Odd/Even

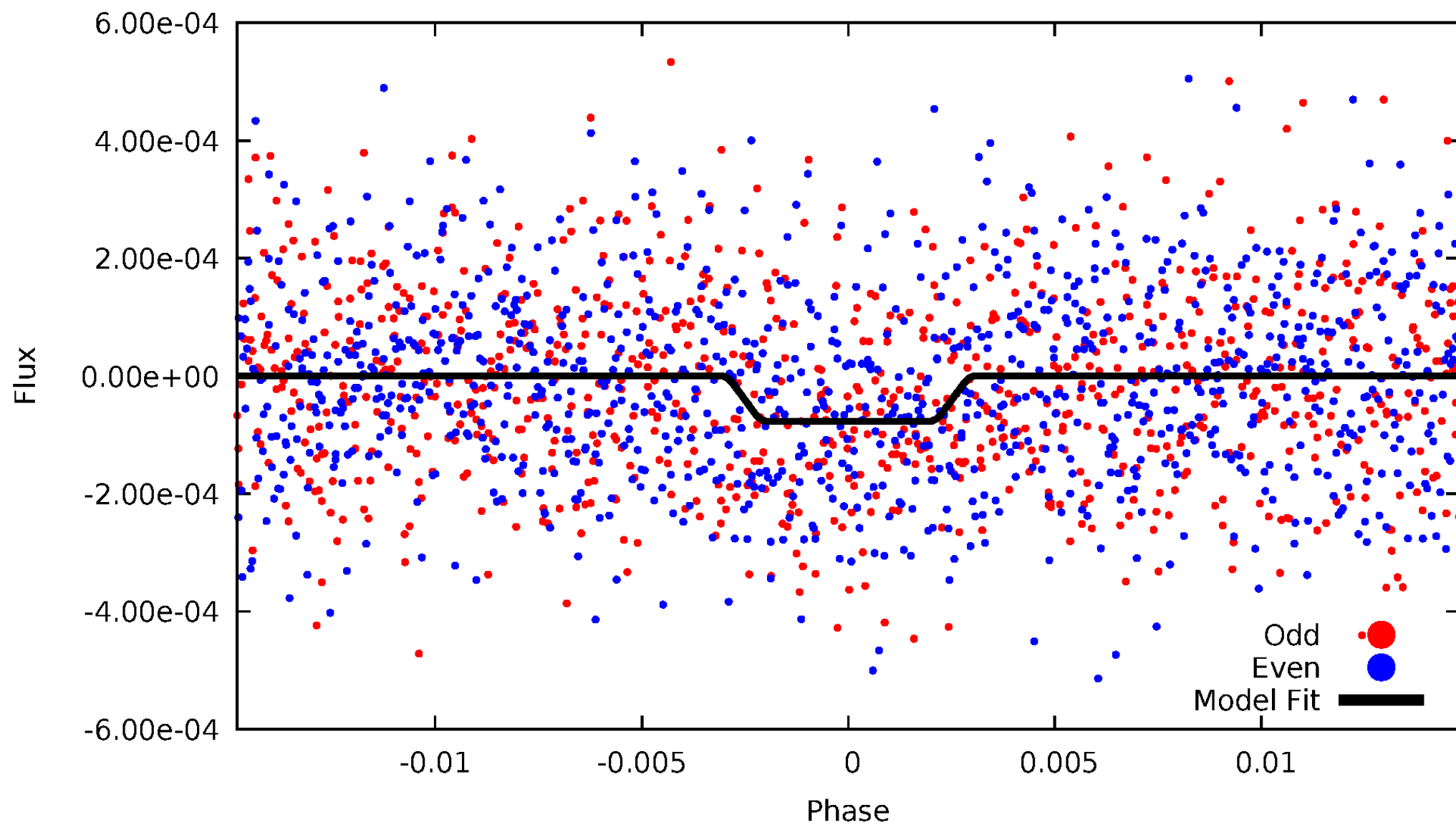
TCE 007841368-01





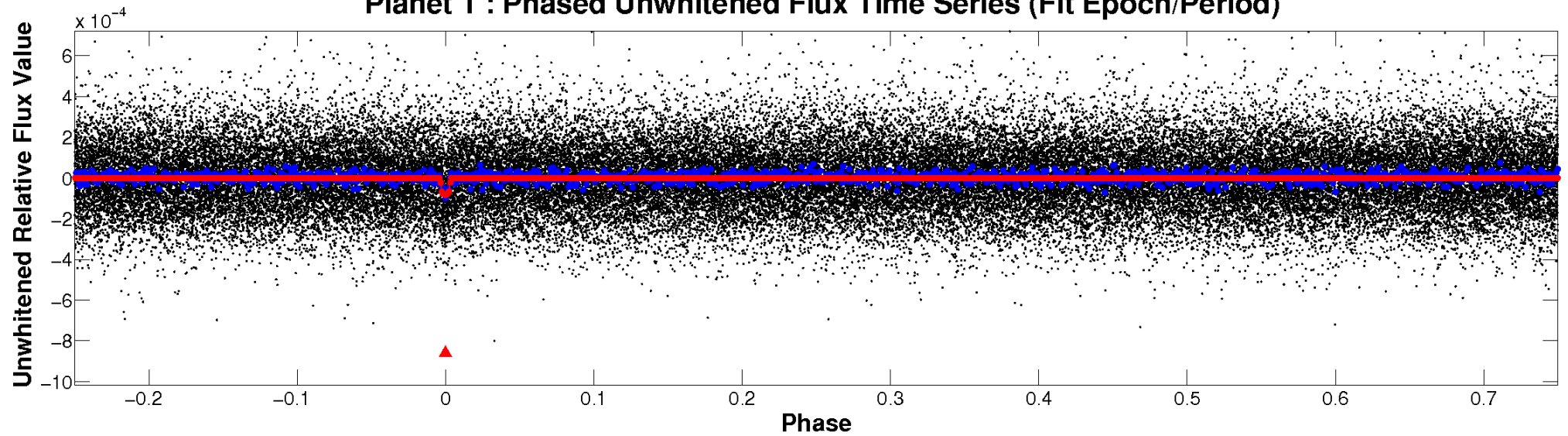
# ALT Odd/Even

TCE 007841368-01

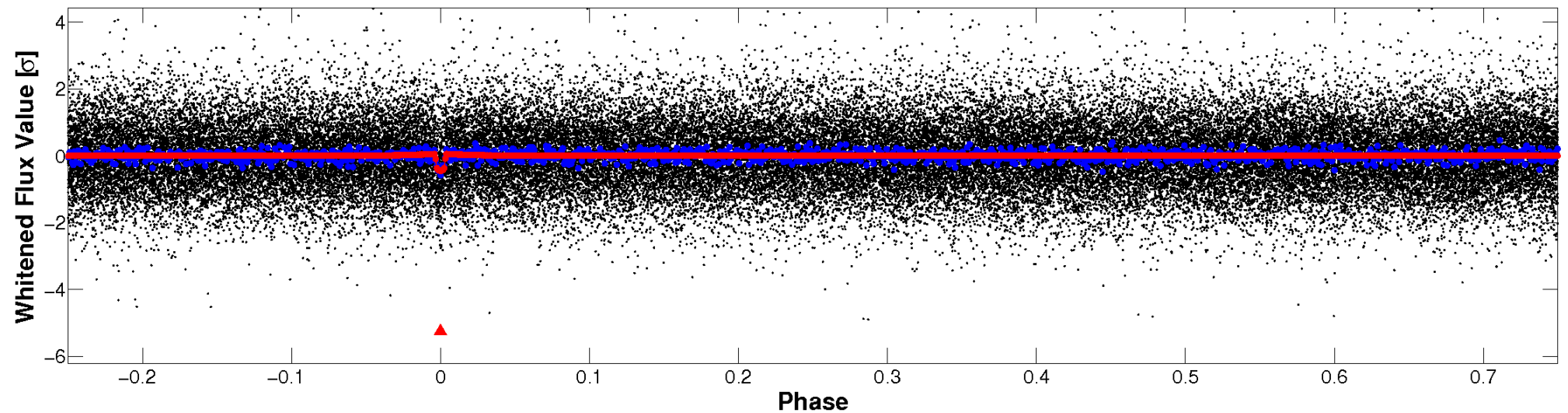


# Non-Whitened Vs. Whitened Light Curve

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

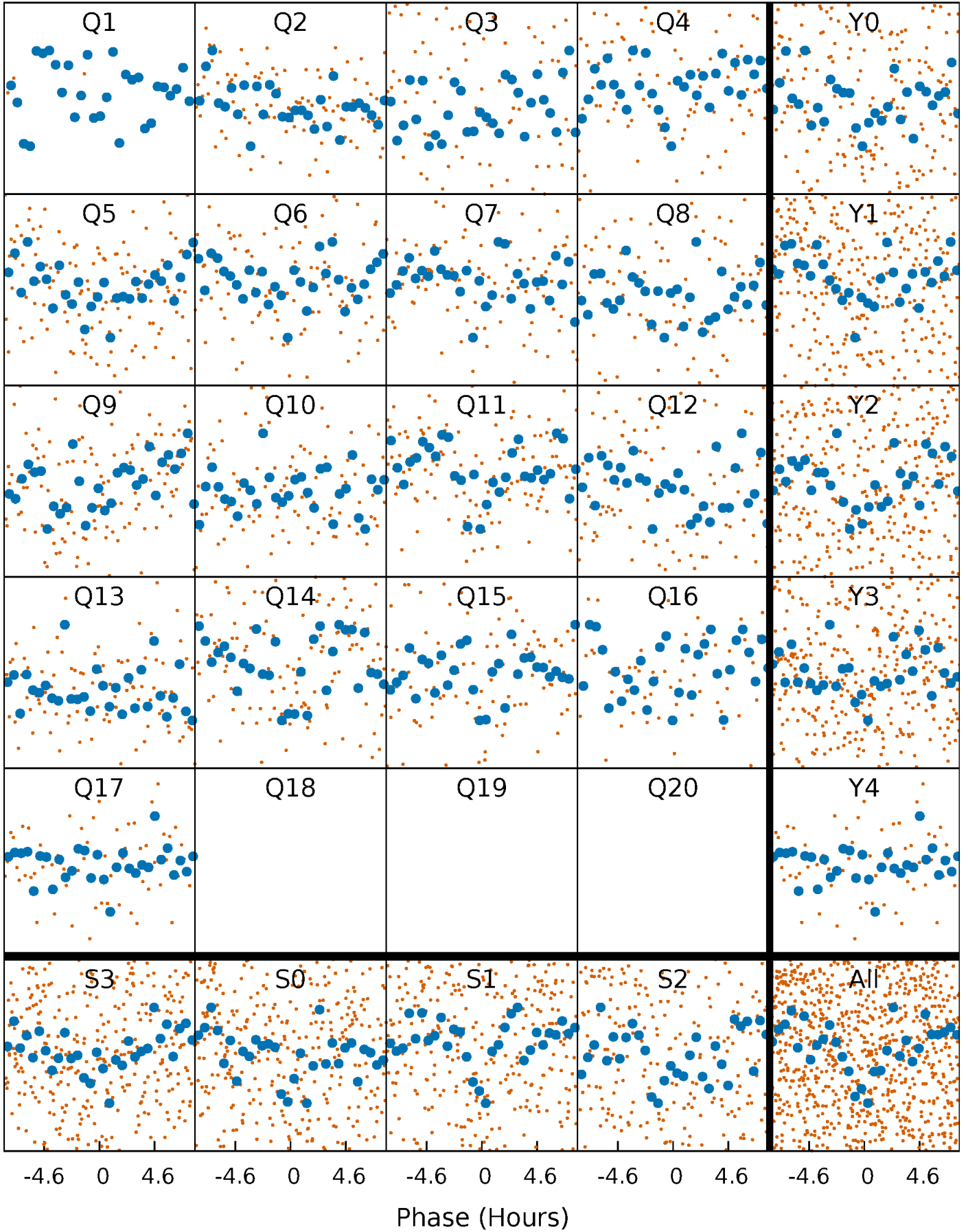


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

TCE 007841368-01 P= 25.370990 Days  $T_0=141.802078$  (BKJD)





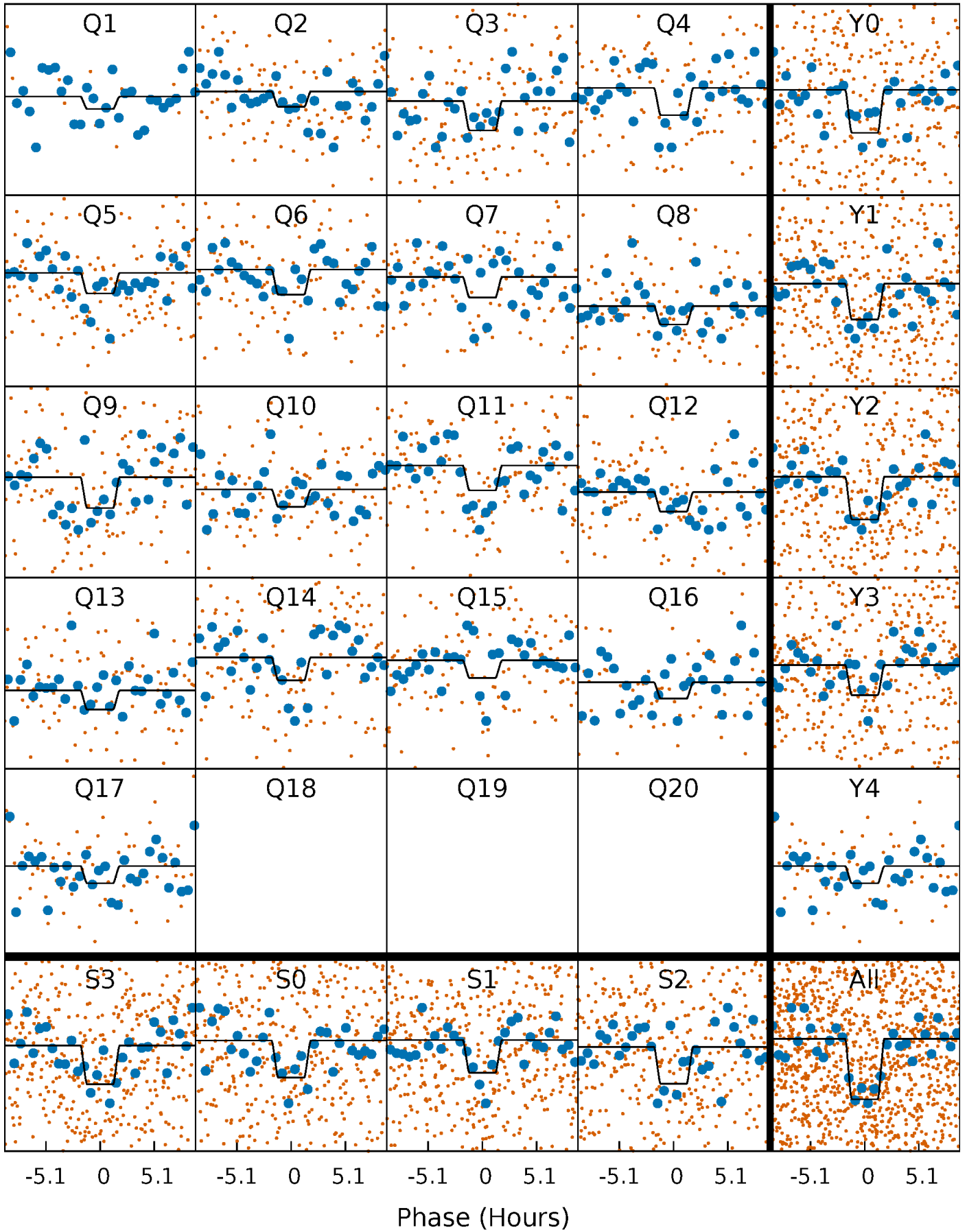
# DV Quarter-Phased Transit Curves

TCE 007841368-01 P= 25.370990 Days  $T_0=141.802078$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

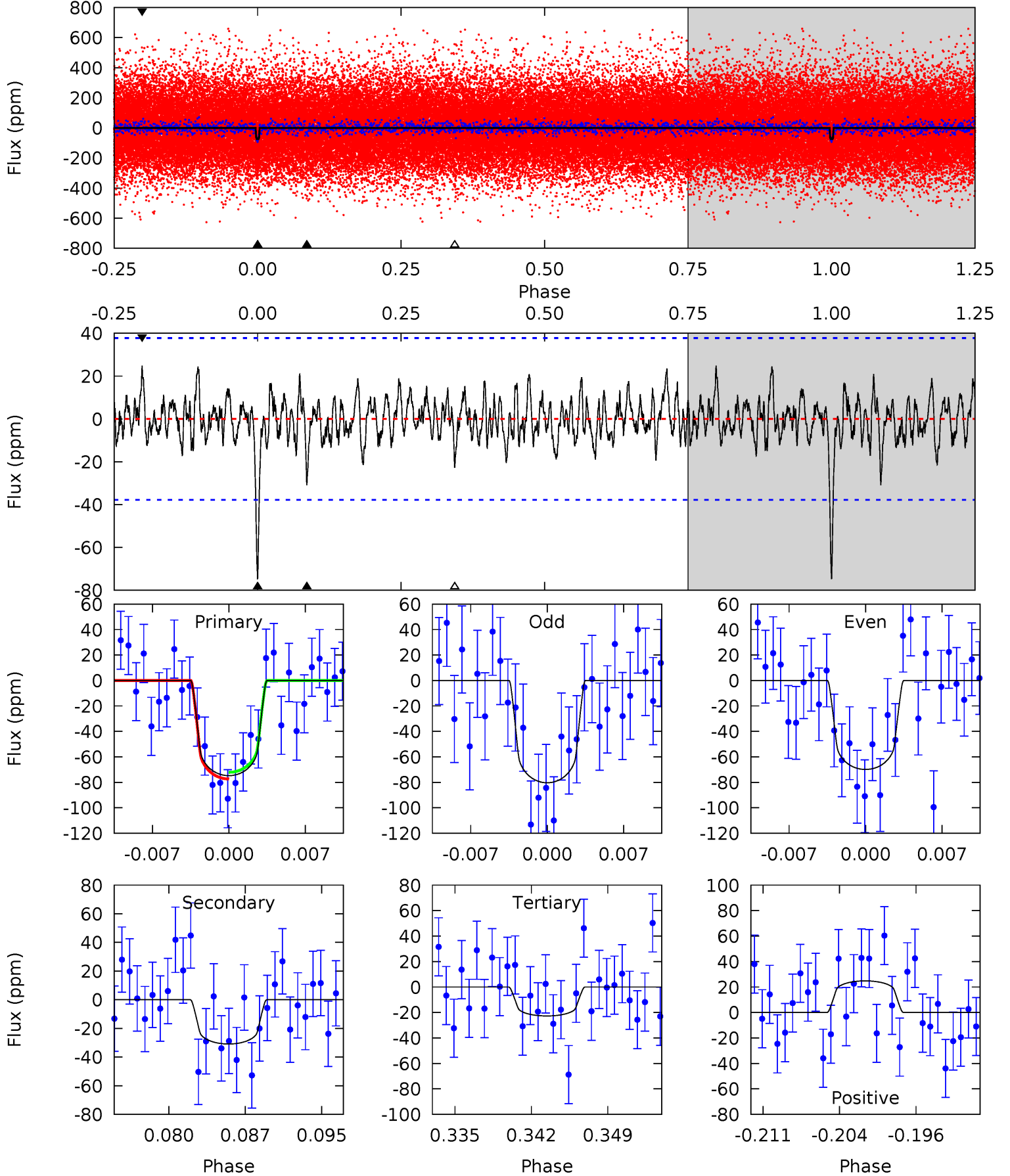
TCE 007841368-01 P= 25.370672 Days  $T_0=141.807178$  (BKJD)



# DV Model-Shift Uniqueness Test

007841368-01, P = 25.370990 Days, E = 116.431088 Days

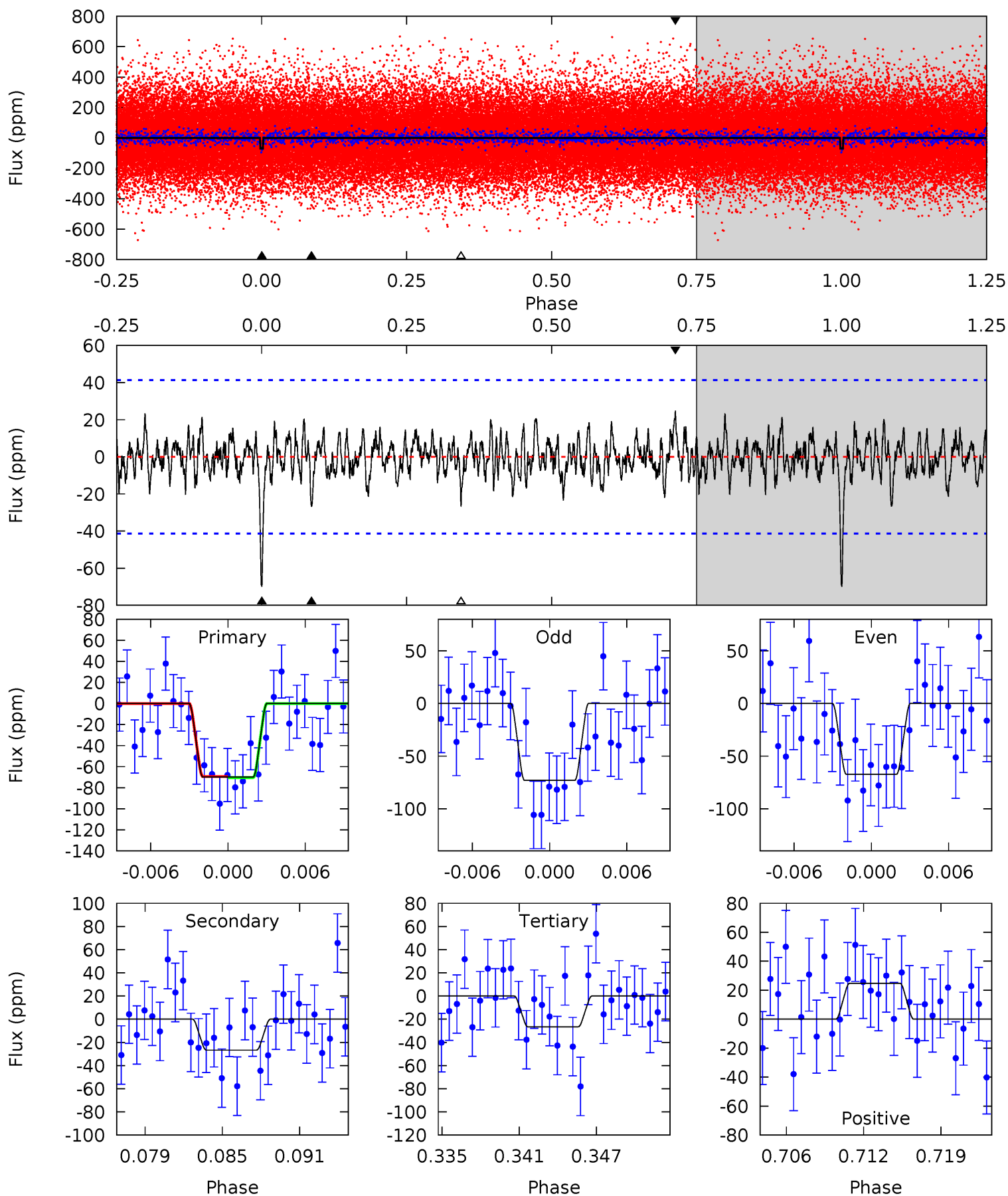
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	4.16	3.06	3.34	5.09	2.68	1.10	7.01	6.73	1.10	0.82	0.70	0.92	0.25	0.35



# Alt Model-Shift Uniqueness Test

007841368-01, P = 25.370672 Days, E = 116.436506 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
8.66	3.31	3.29	3.07	5.12	2.74	1.02	5.37	5.59	0.02	0.24	0.36	1.07	0.26	0.06



### Stellar Parameters For KIC 007841368

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6029^{+181}_{-199}$	$4.127^{+0.280}_{-0.151}$	$-0.020^{+0.250}_{-0.300}$	$1.494^{+0.428}_{-0.428}$	$1.091^{+0.167}_{-0.150}$	$0.461^{+0.750}_{-0.221}$
	+3%/-3%	+7%/-4%	+1250%/-1500%	+29%/-29%	+15%/-14%	+163%/-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 007841368-01 / KOI 7851.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-31 \pm 7$	$1.58^{+0.96}_{-0.79}$	$1074^{+87}_{-95}$	$4602^{+1676}_{-758}$	$203^{+602}_{-129}$
Alt.	$-27 \pm 8$	$1.40^{+0.95}_{-0.83}$	$1068^{+88}_{-88}$	$4639^{+2539}_{-782}$	$216^{+1150}_{-141}$

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



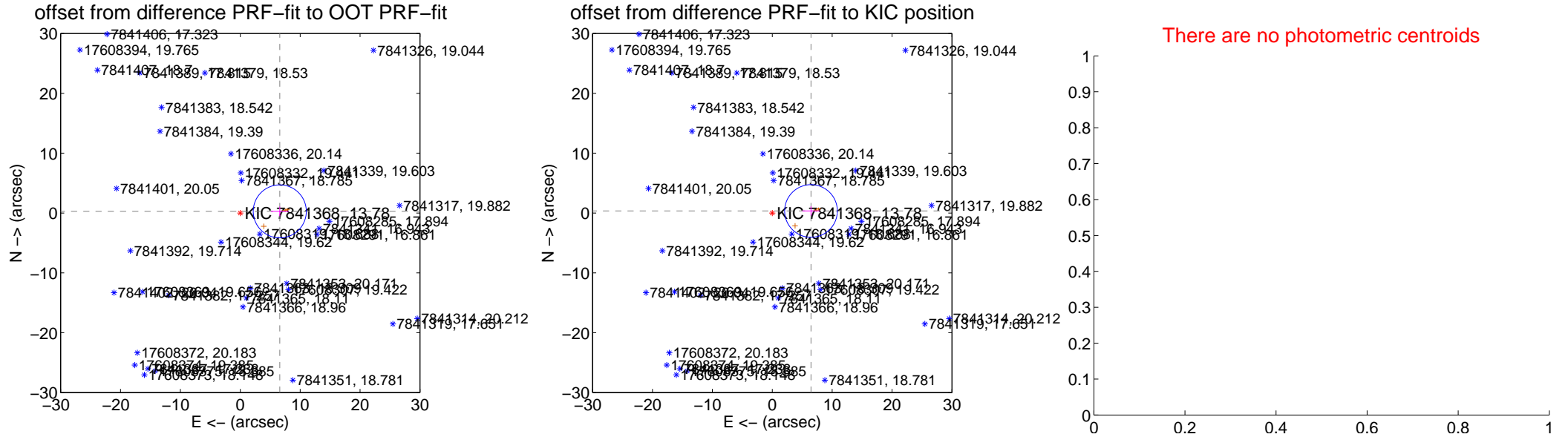
## DV Centroid Data

Supplemental centroid analysis for 007841368-01. Kepler magnitude: 13.78. Transit SNR 7.98

There are 0 quarters with good PRF difference image offsets

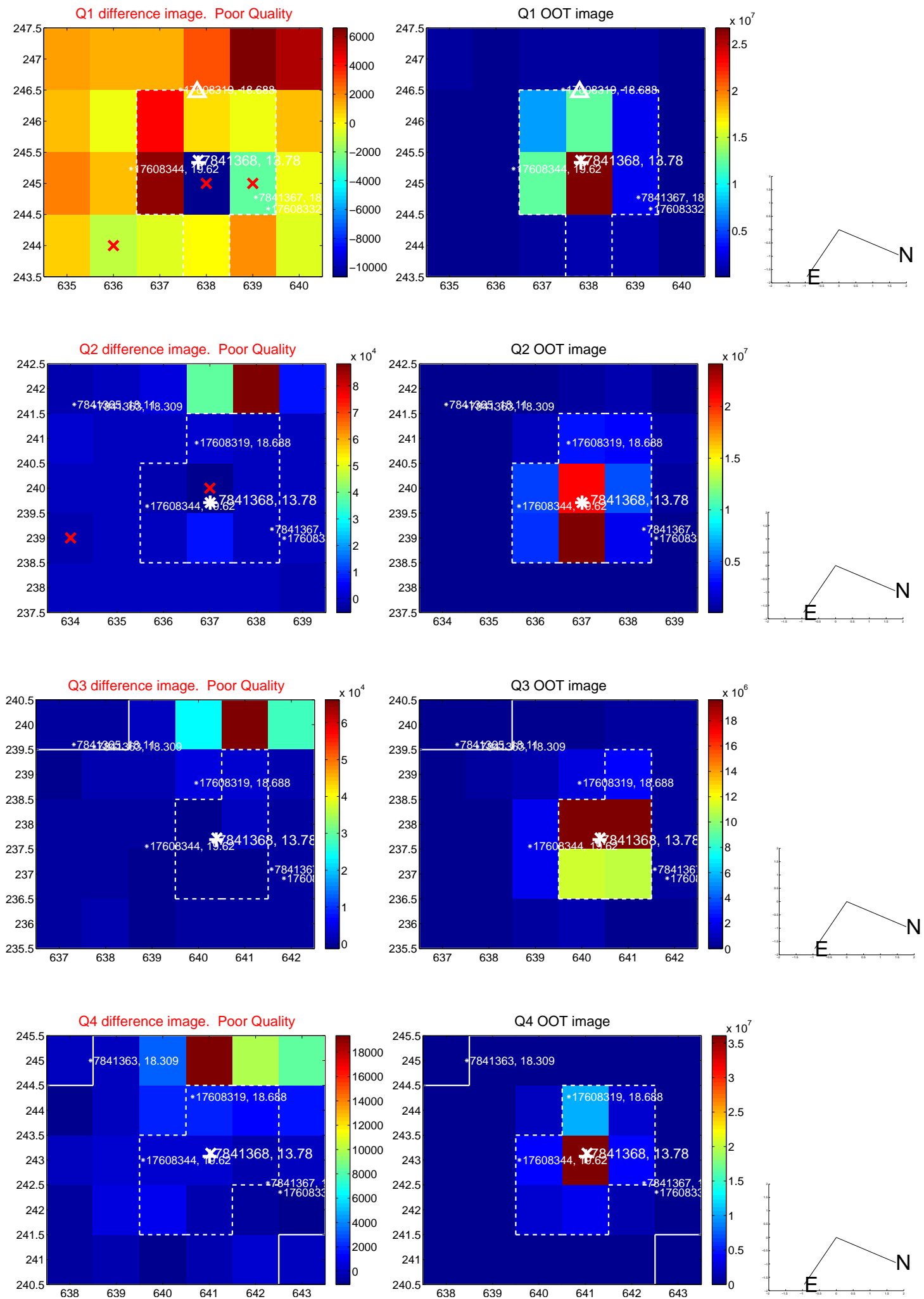
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$6.600 \pm 1.476$	4.47	$-6.595 \pm 1.477$	$0.273 \pm 0.793$
PRF-fit source offset from KIC position	$6.477 \pm 1.466$	4.42	$-6.468 \pm 1.468$	$0.341 \pm 0.779$
photometric centroid source offset	—	—	—	—

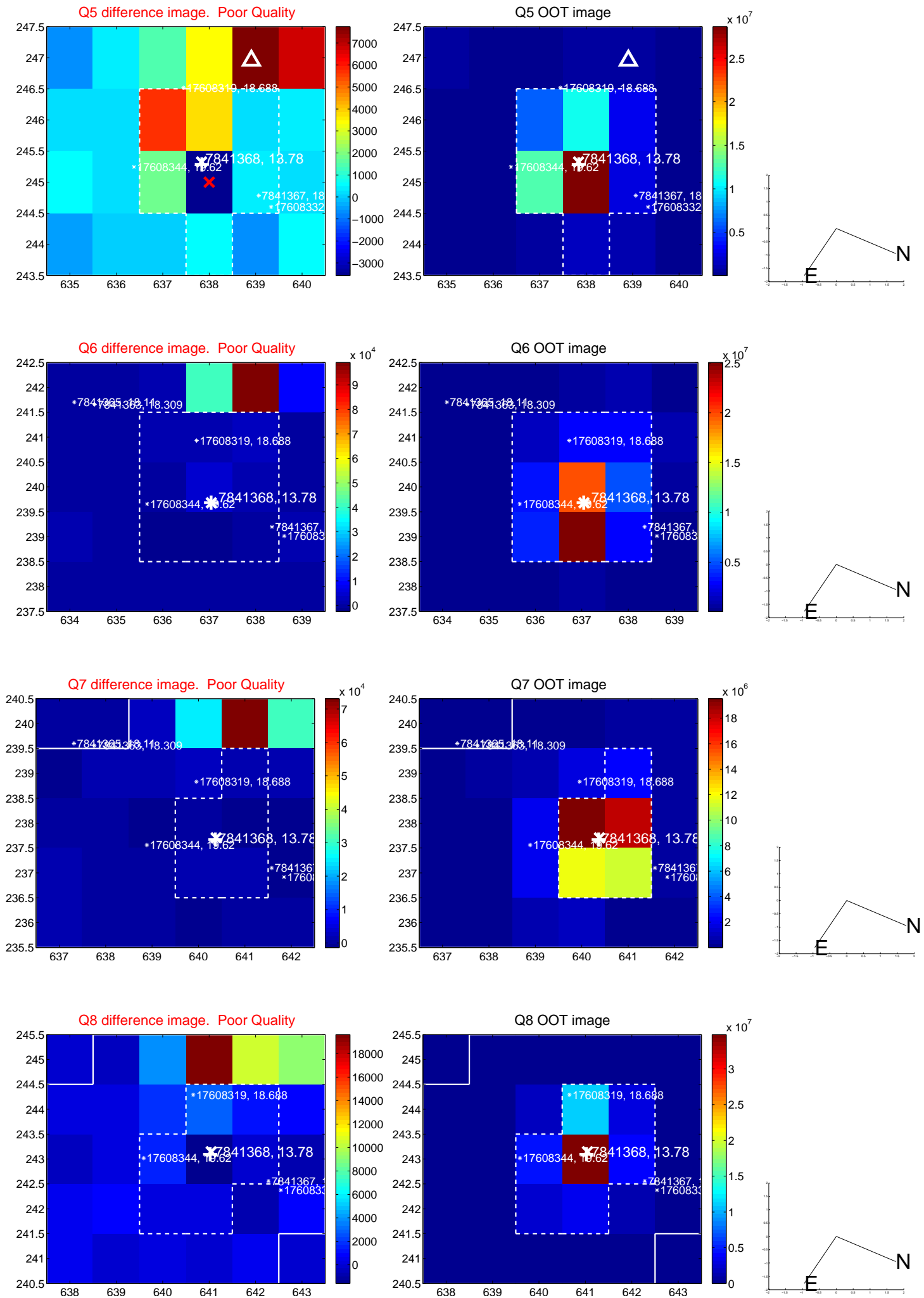


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

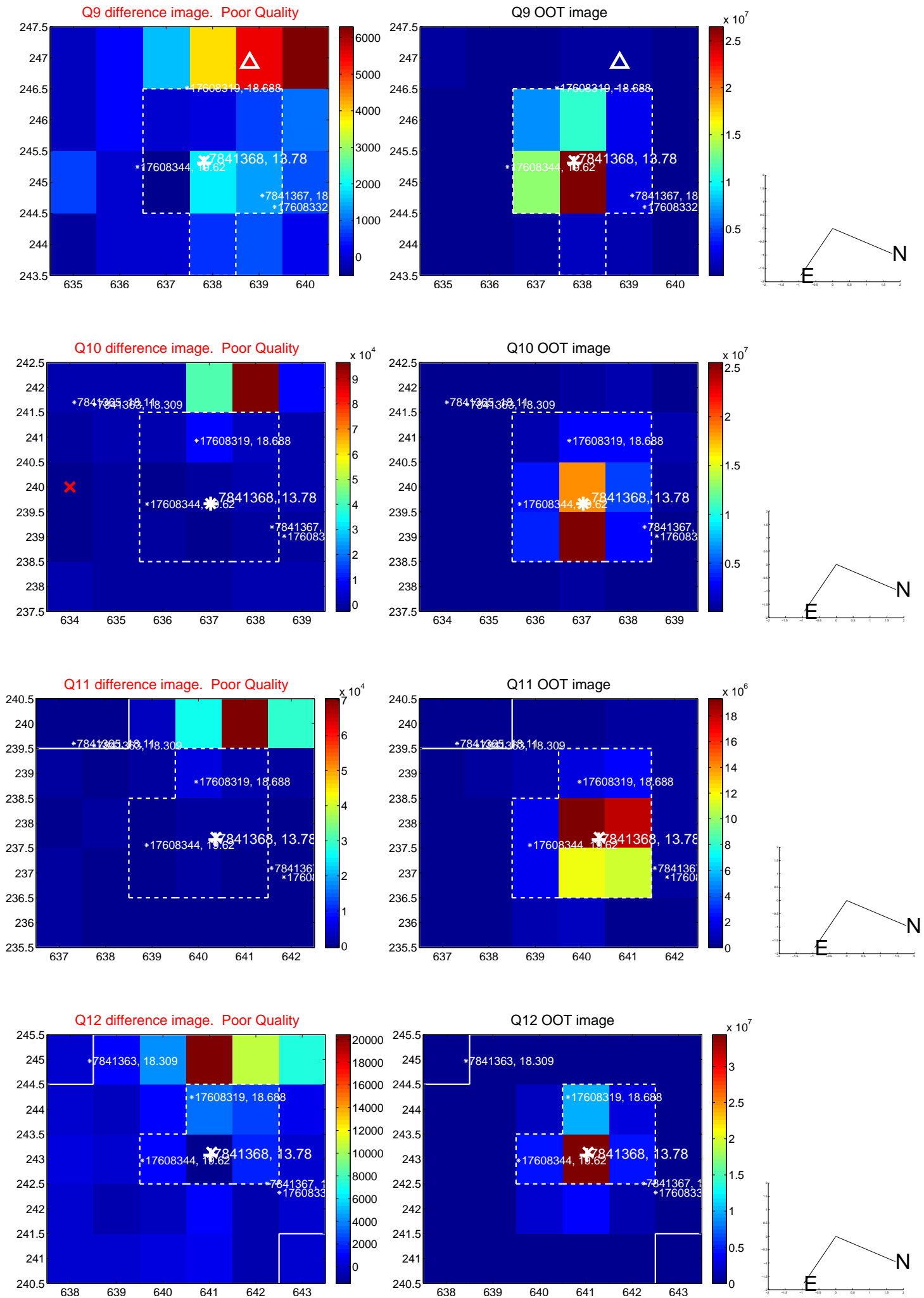
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



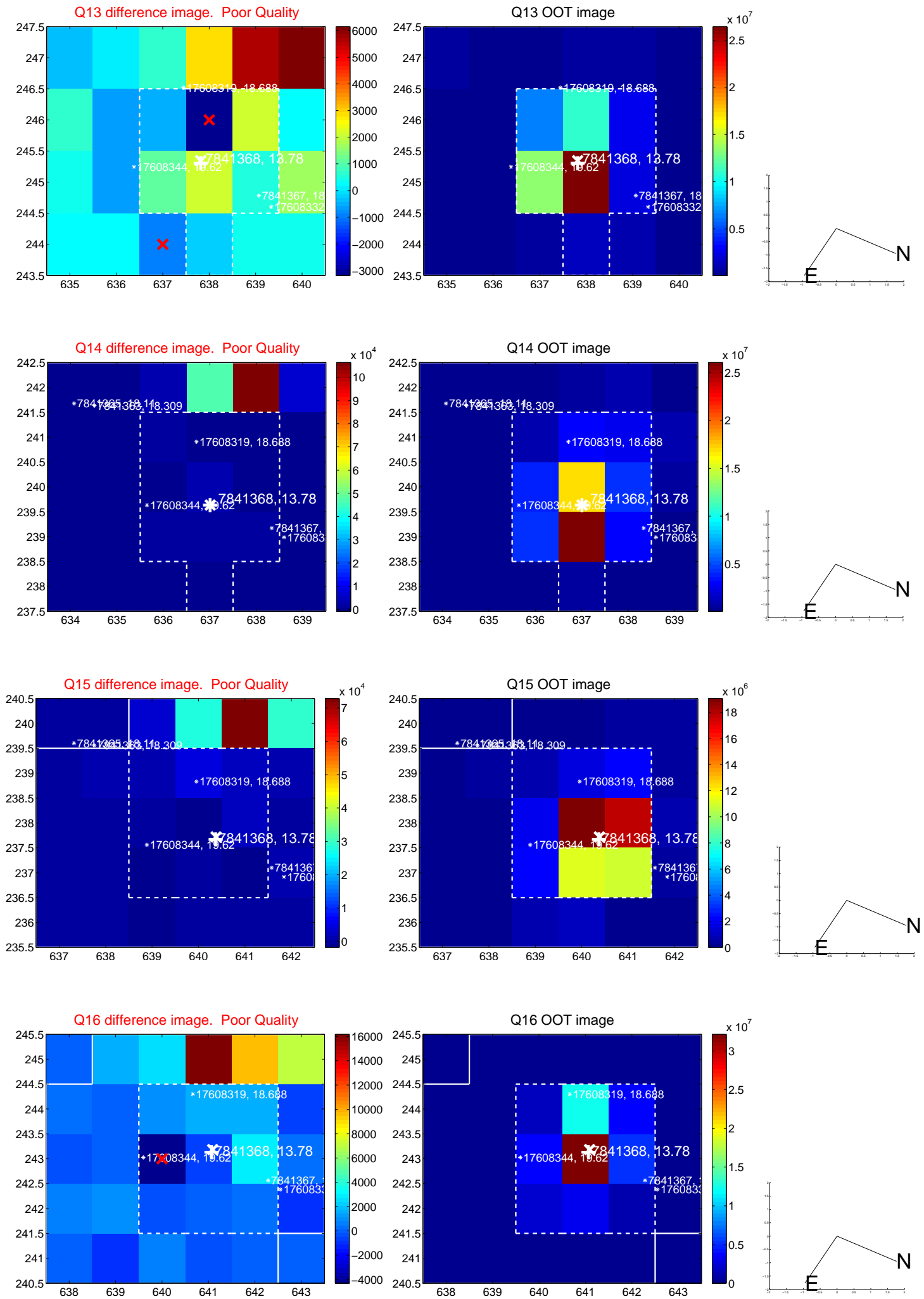
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

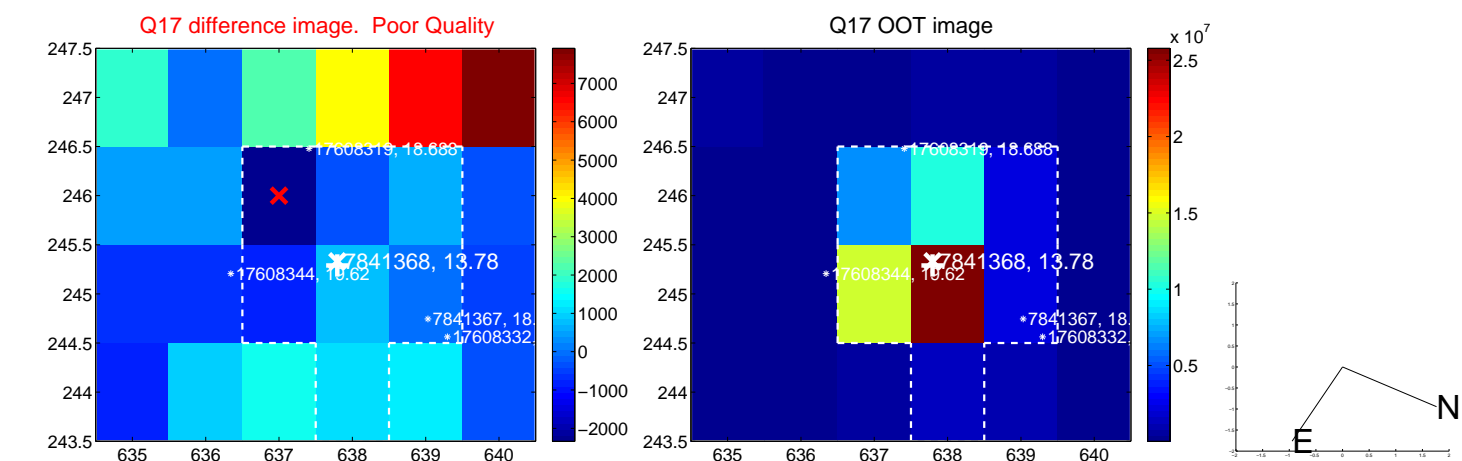


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

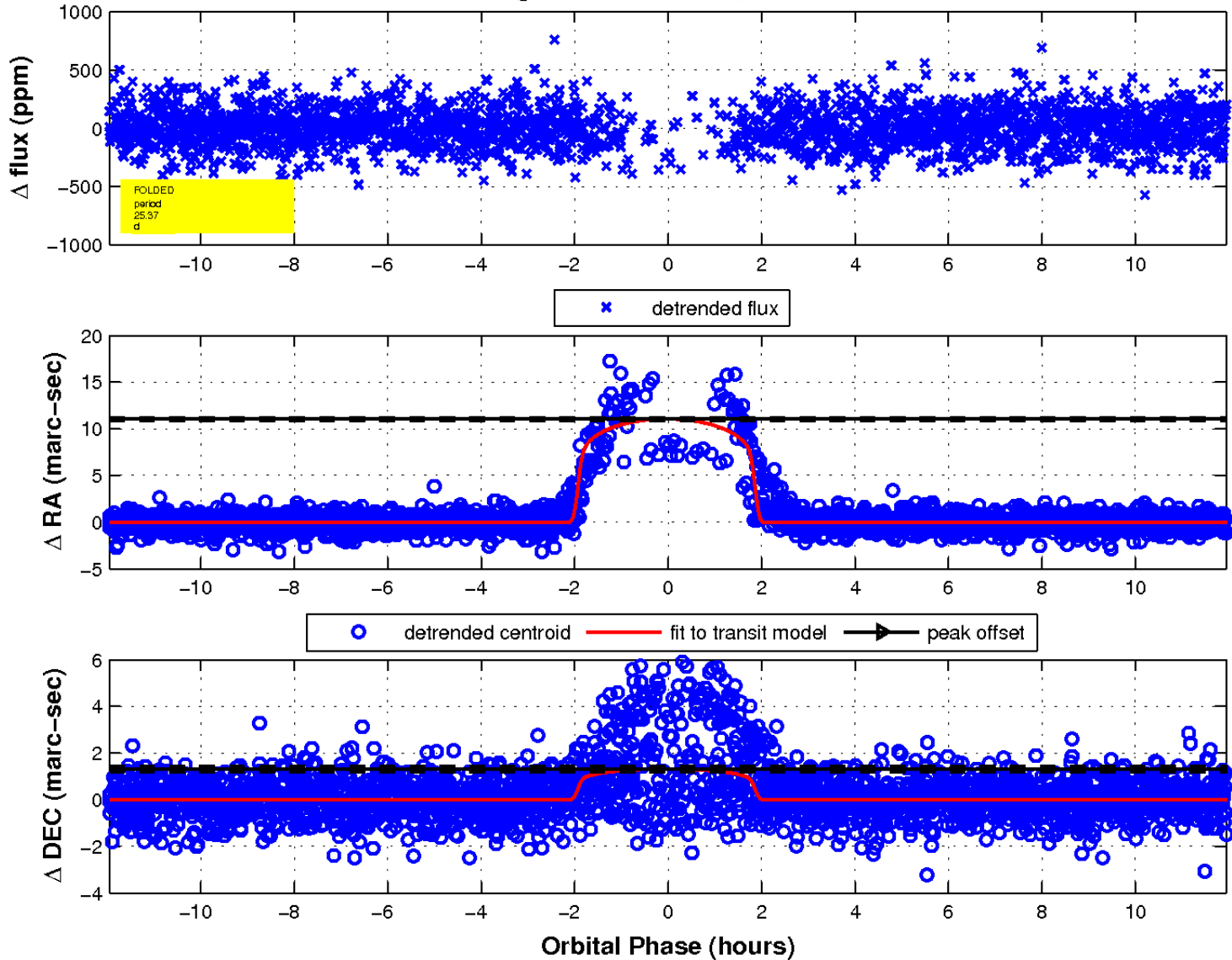




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

