

# KIC 007538434

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007538434-01	OBS	7841.01	371.151937	415.415875	607.7	15.766	7.5	7.6	0.84	5988	2.08	0.85

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007538434-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

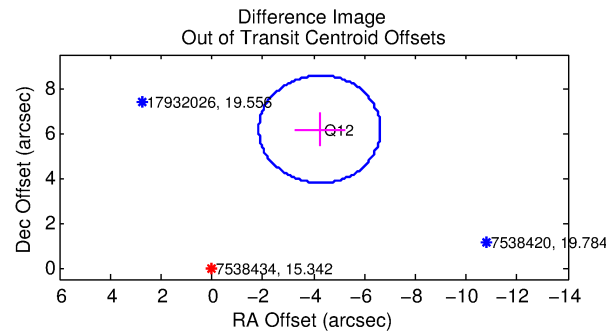
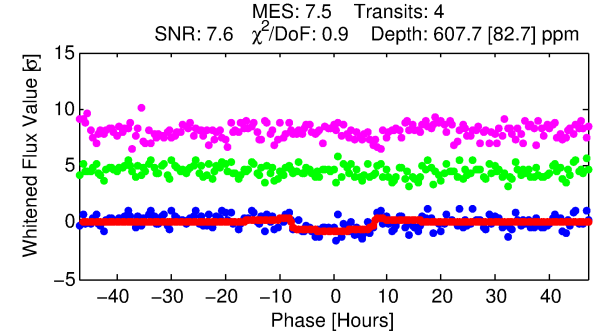
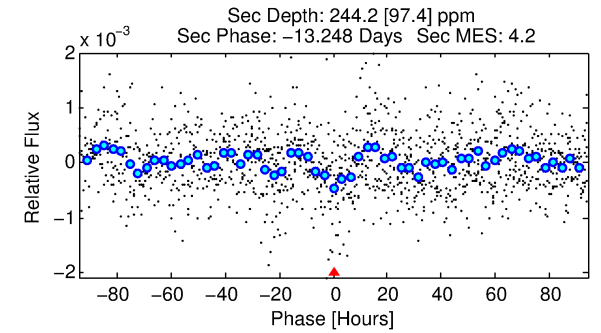
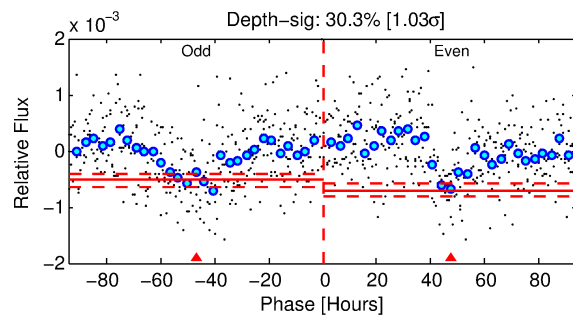
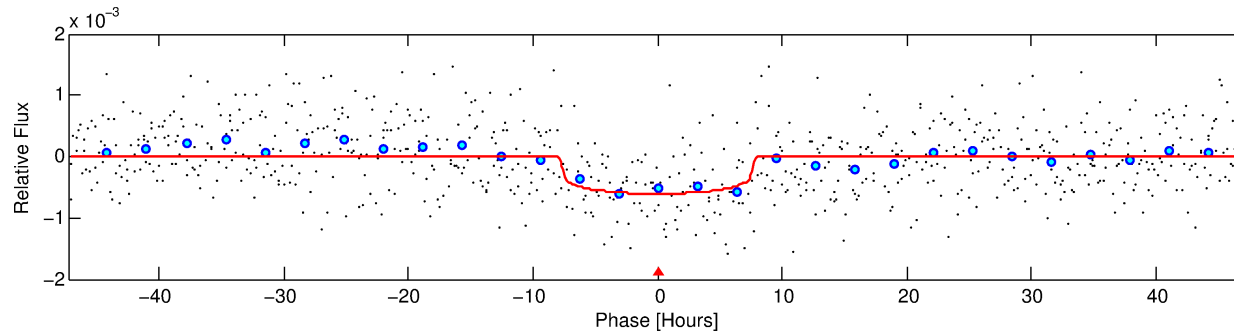
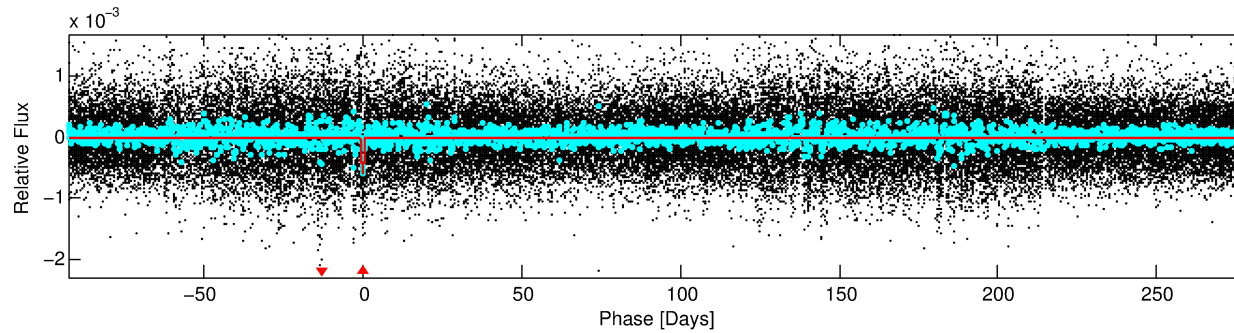
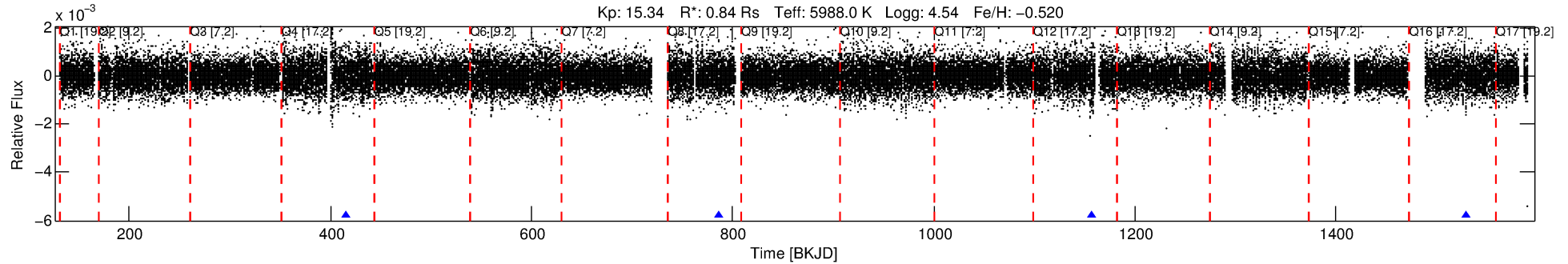
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007538434-01

No Significant Match Found

# DV One-Page Summary

KIC: 7538434 Candidate: 1 of 1 Period: 371.152 d



## DV Fit Results:

Period = 371.15194 [0.00996] d  
Epoch = 415.4159 [0.0205] BKJD  
Rp/R\* = 0.0229 [0.0172]  
a/R\* = 173.74 [649.32]  
b = 0.34 [9.91]  
Seff = 0.85 [0.30]  
Teq = 245 [22] K  
Rp = 2.09 [1.66] Re  
a = 0.9710 [0.2156] AU  
Ag = 29126.69 [46331.29] [0.63σ]  
Teffp = 4951 [1934] K [2.43σ]

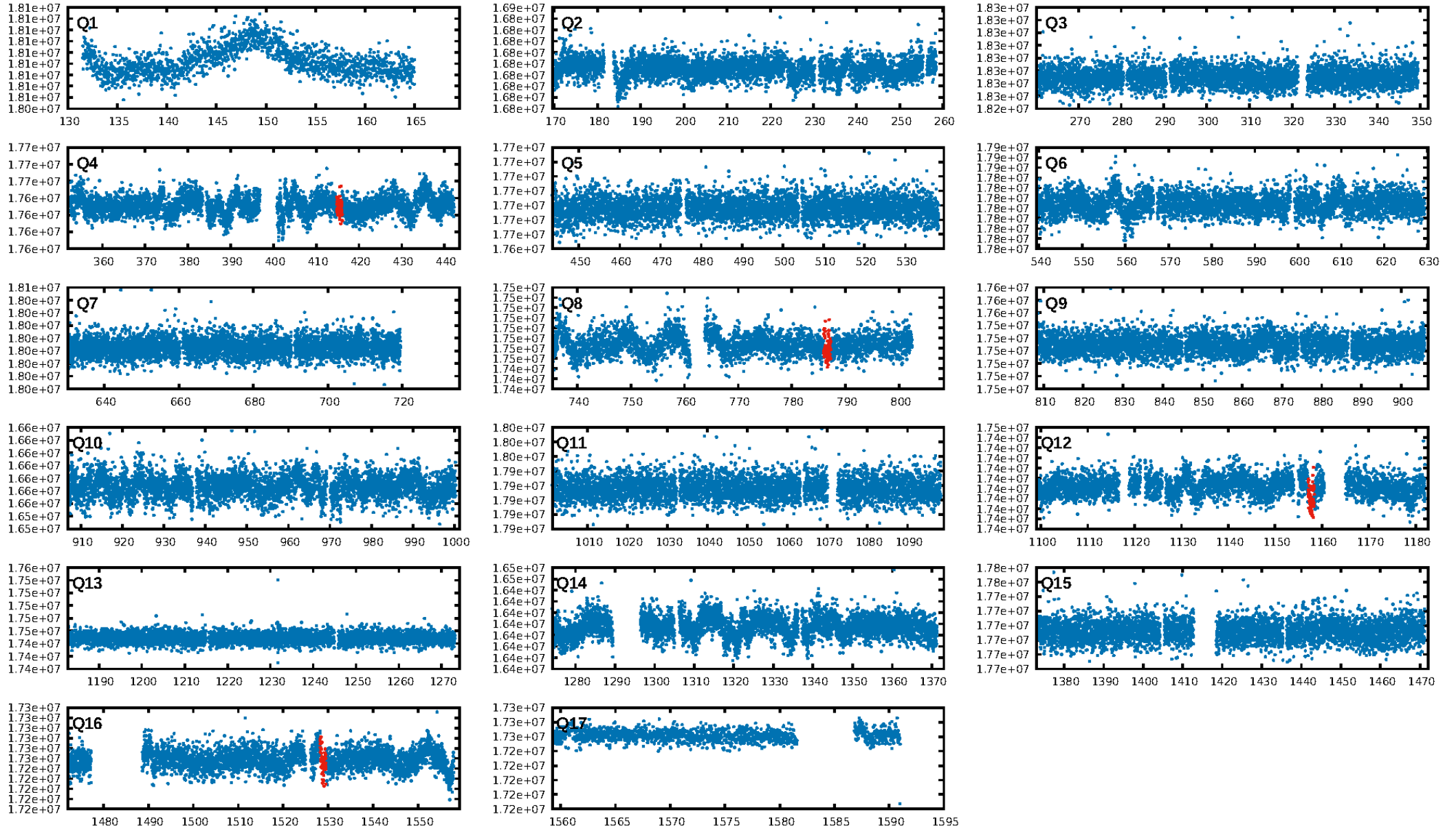
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 23.1%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 4.66e-09**  
RollingBand-fgt: 1.00 [4/4]  
**GhostDiagnostic-chr: 0.4536**  
Centroid-sig: 97.4%  
Centroid-so: 0.424 arcsec [0.21σ]  
**OotOffset-rm: 7.483 arcsec [9.39σ]**  
**KicOffset-rm: 7.332 arcsec [9.14σ]**  
OotOffset-st: 0/0/1/0 [1]  
KicOffset-st: 0/0/1/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [4/4]

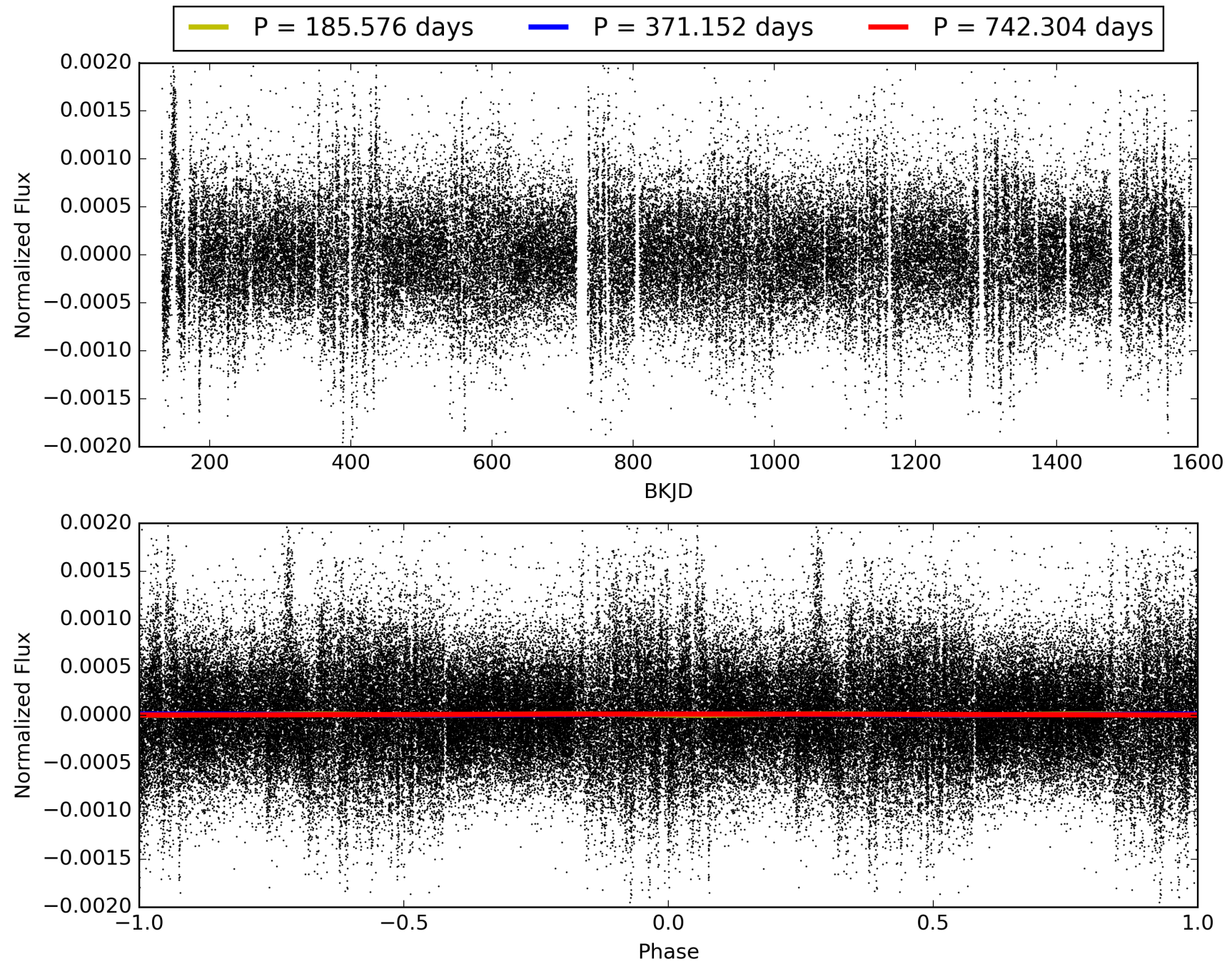
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:08:37 Z

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

# TCE 007538434-01, PDC Light Curves

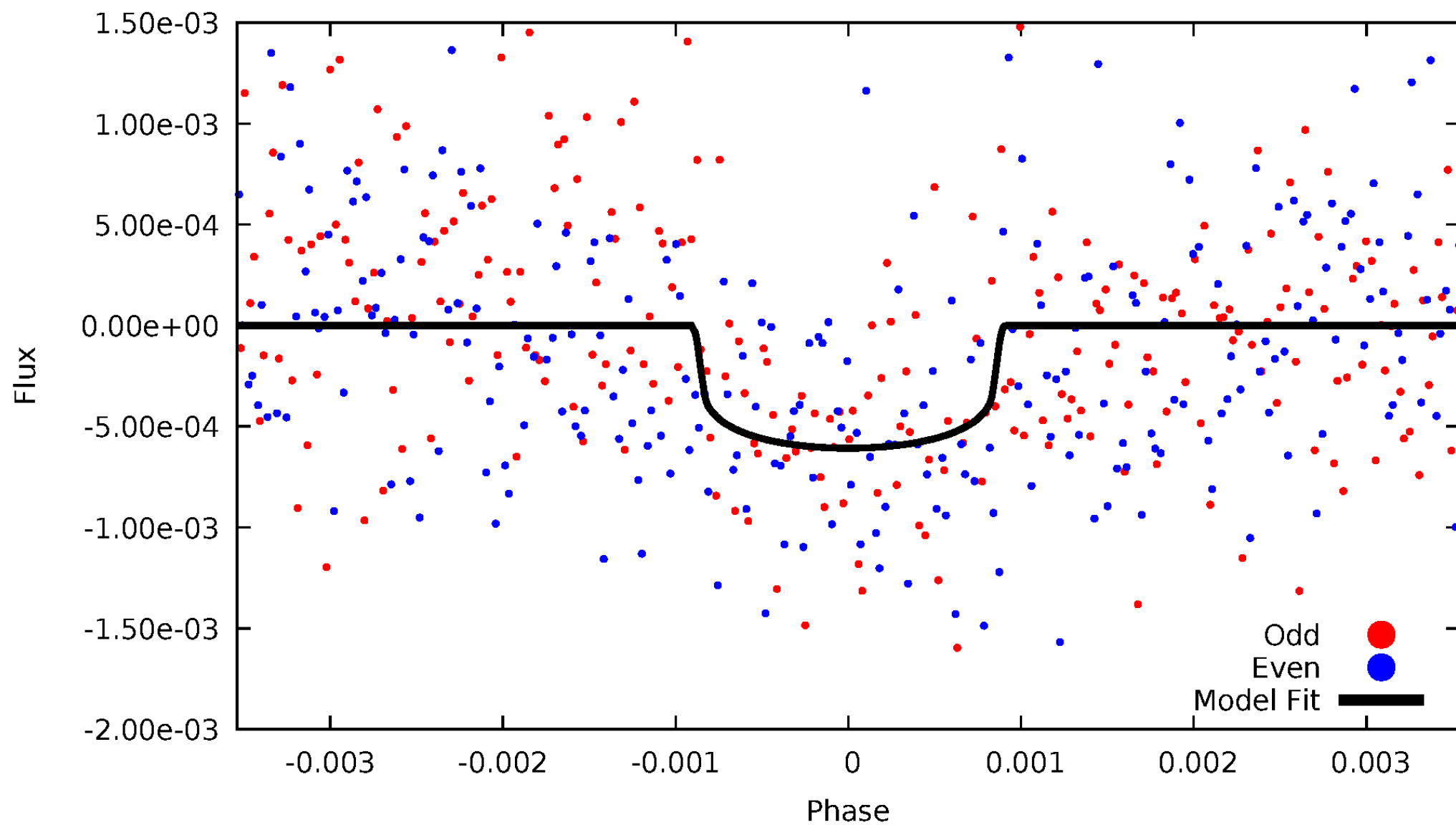


TCE 007538434-01



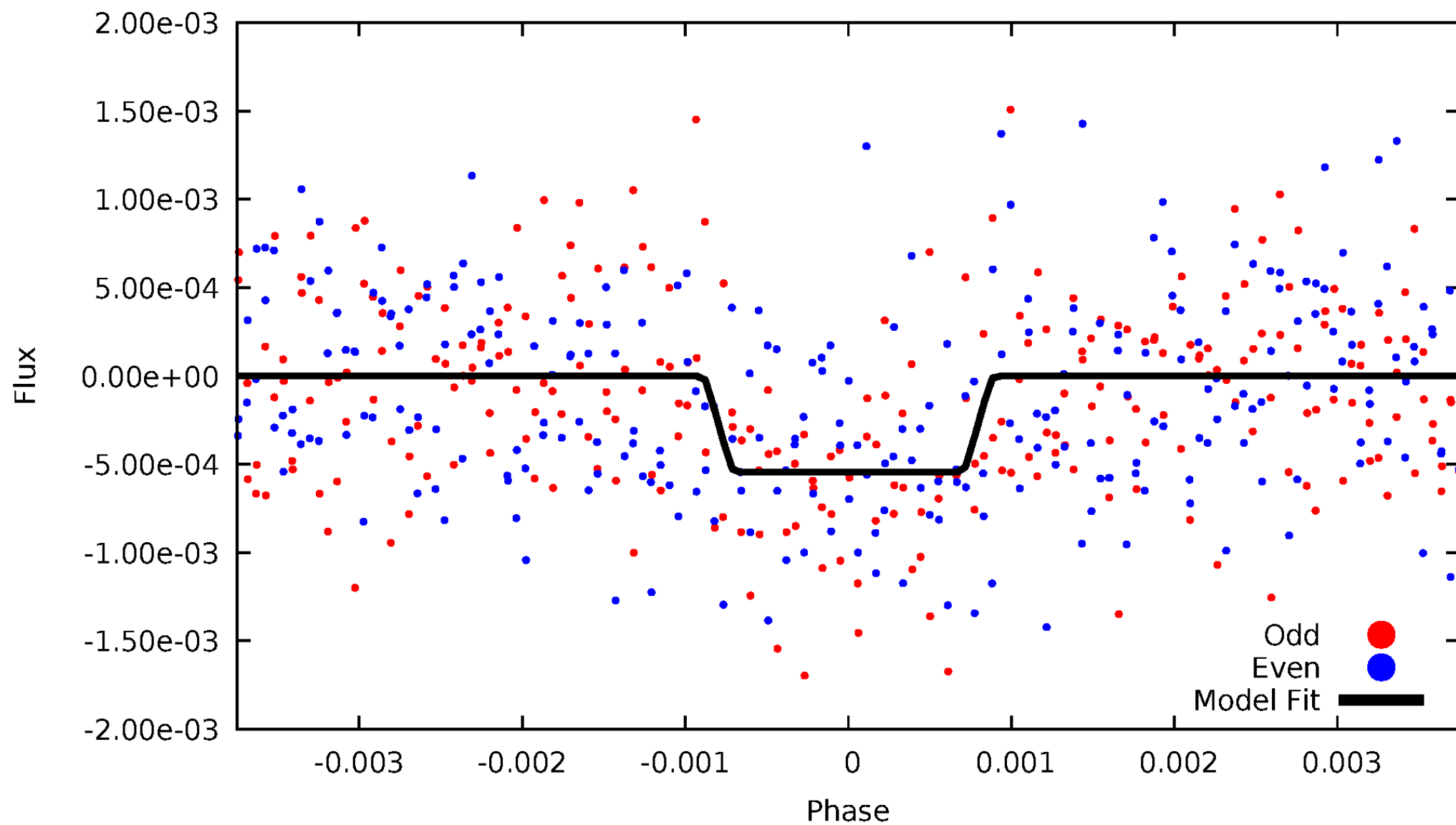
# DV Odd/Even

TCE 007538434-01



# ALT Odd/Even

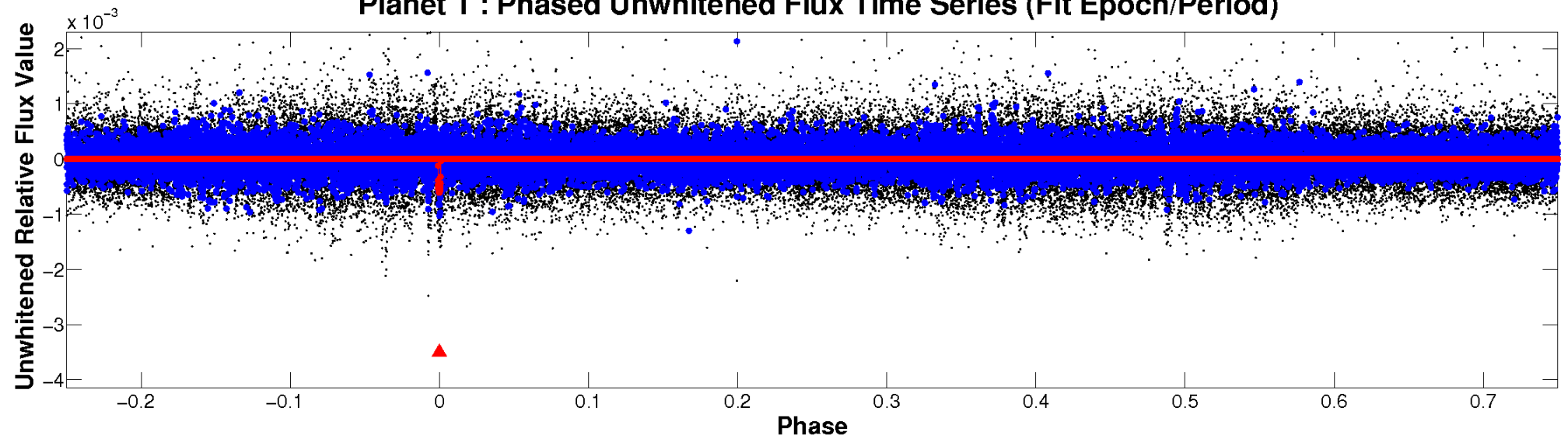
TCE 007538434-01



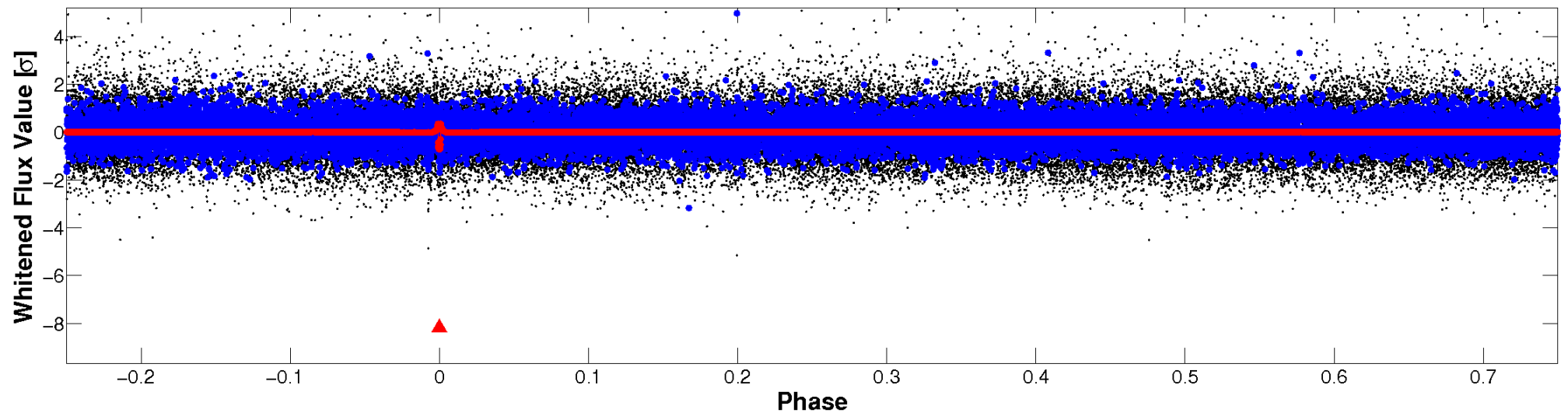


# Non-Whitened Vs. Whitened Light Curve

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

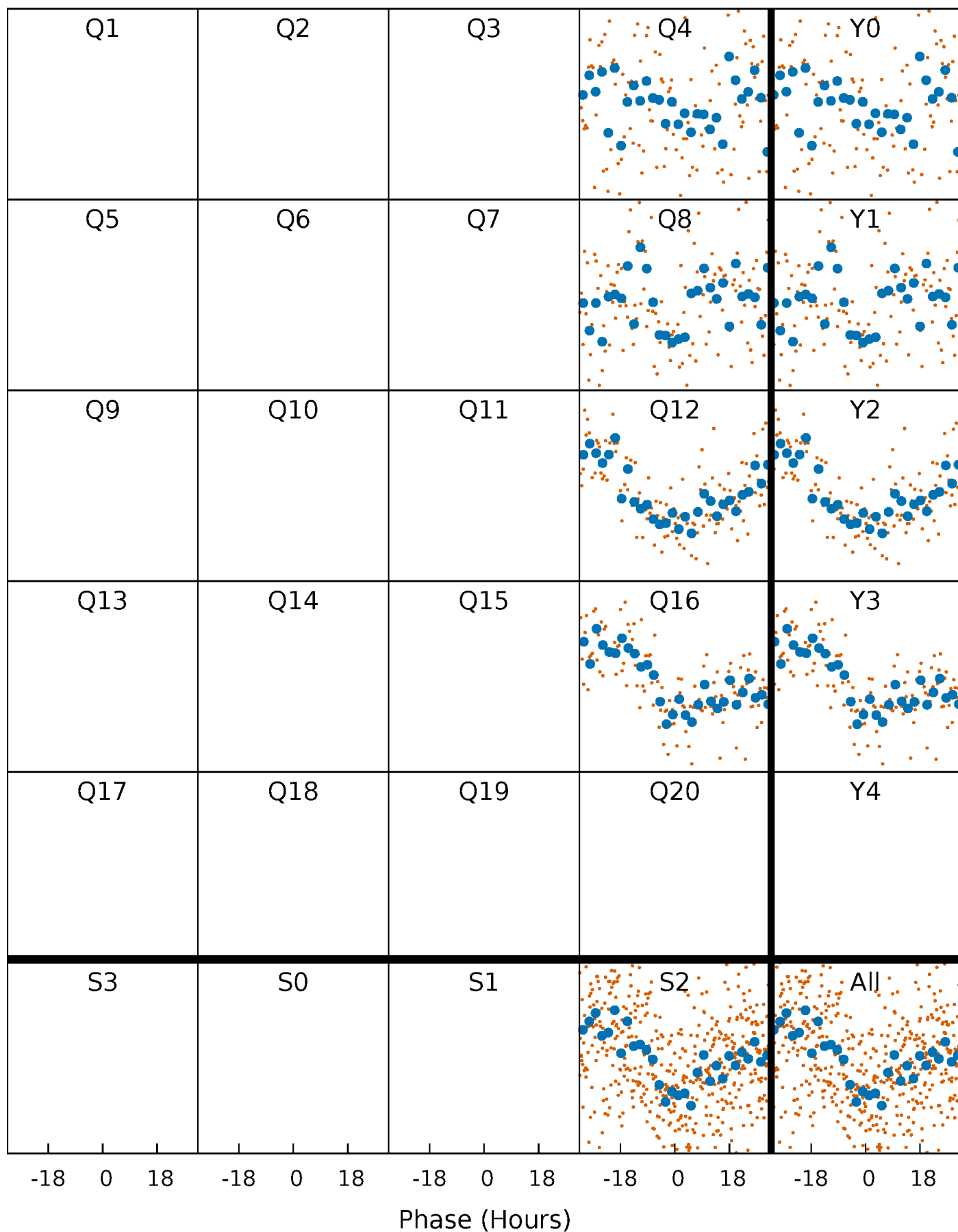


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

TCE 007538434-01 P=371.151937 Days  $T_0=415.415875$  (BKJD)





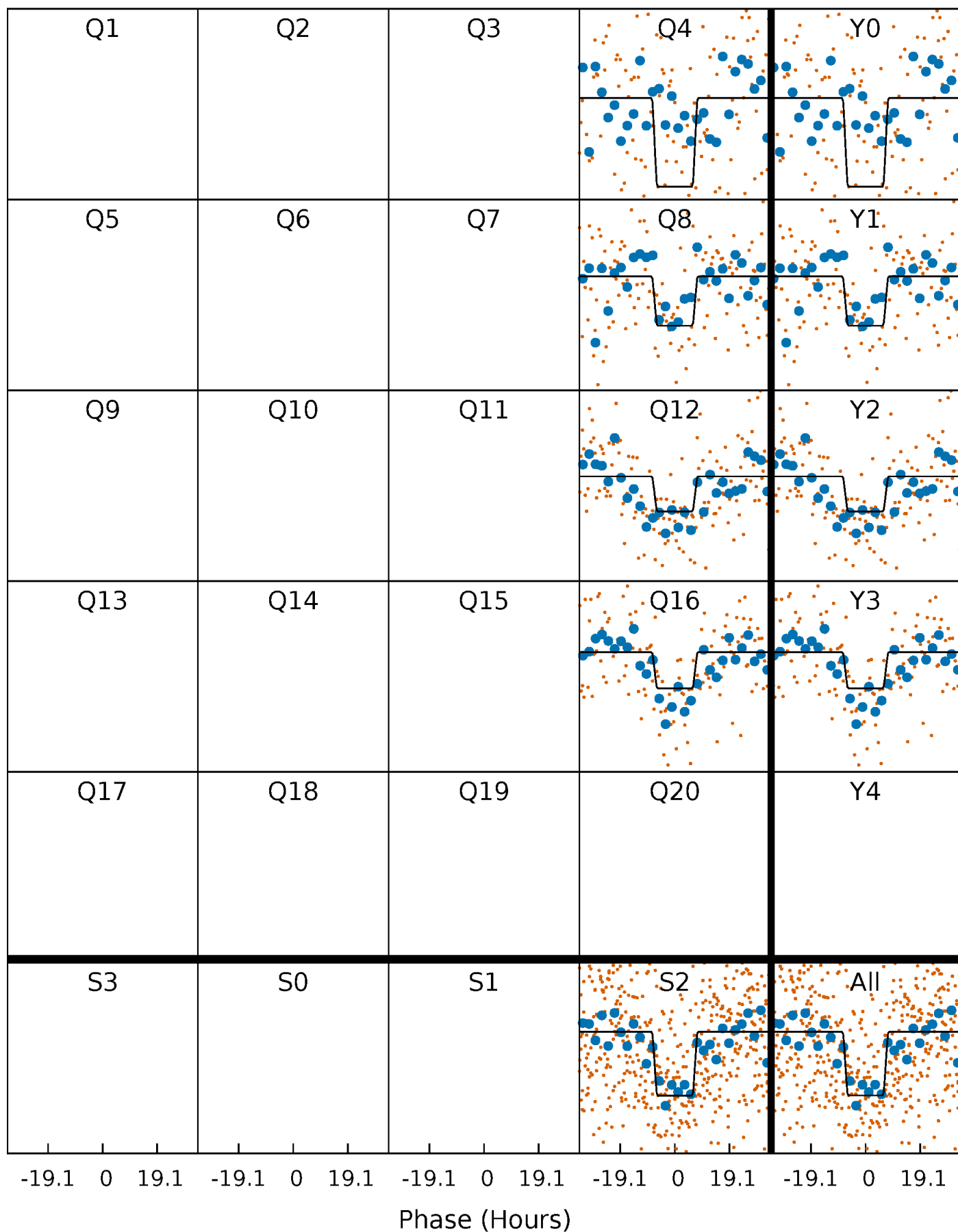
# DV Quarter-Phased Transit Curves

TCE 007538434-01 P=371.151937 Days  $T_0=415.415875$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

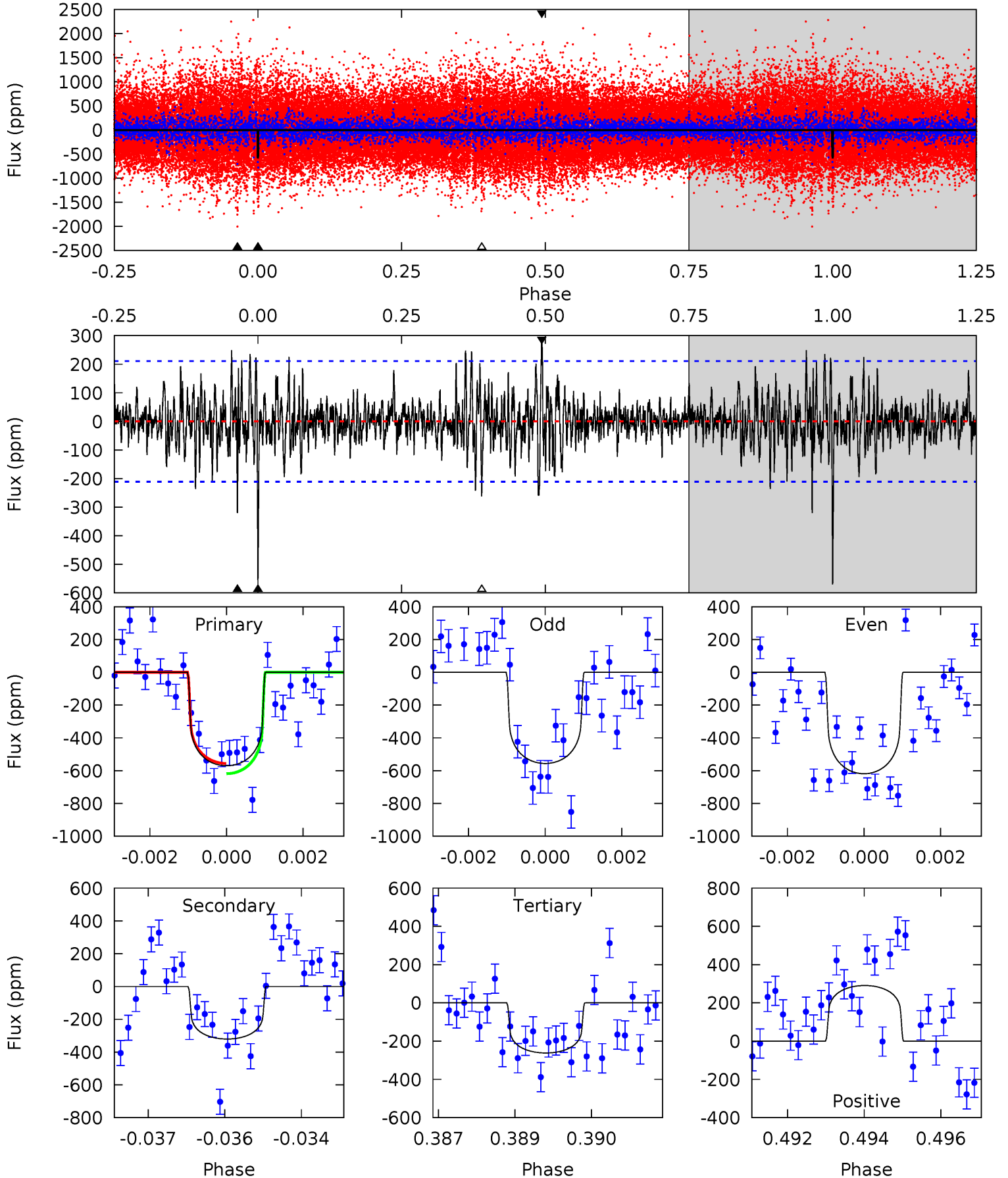
TCE 007538434-01 P=371.155184 Days  $T_0=415.413273$  (BKJD)



# DV Model-Shift Uniqueness Test

007538434-01, P = 371.151937 Days, E = 44.263938 Days

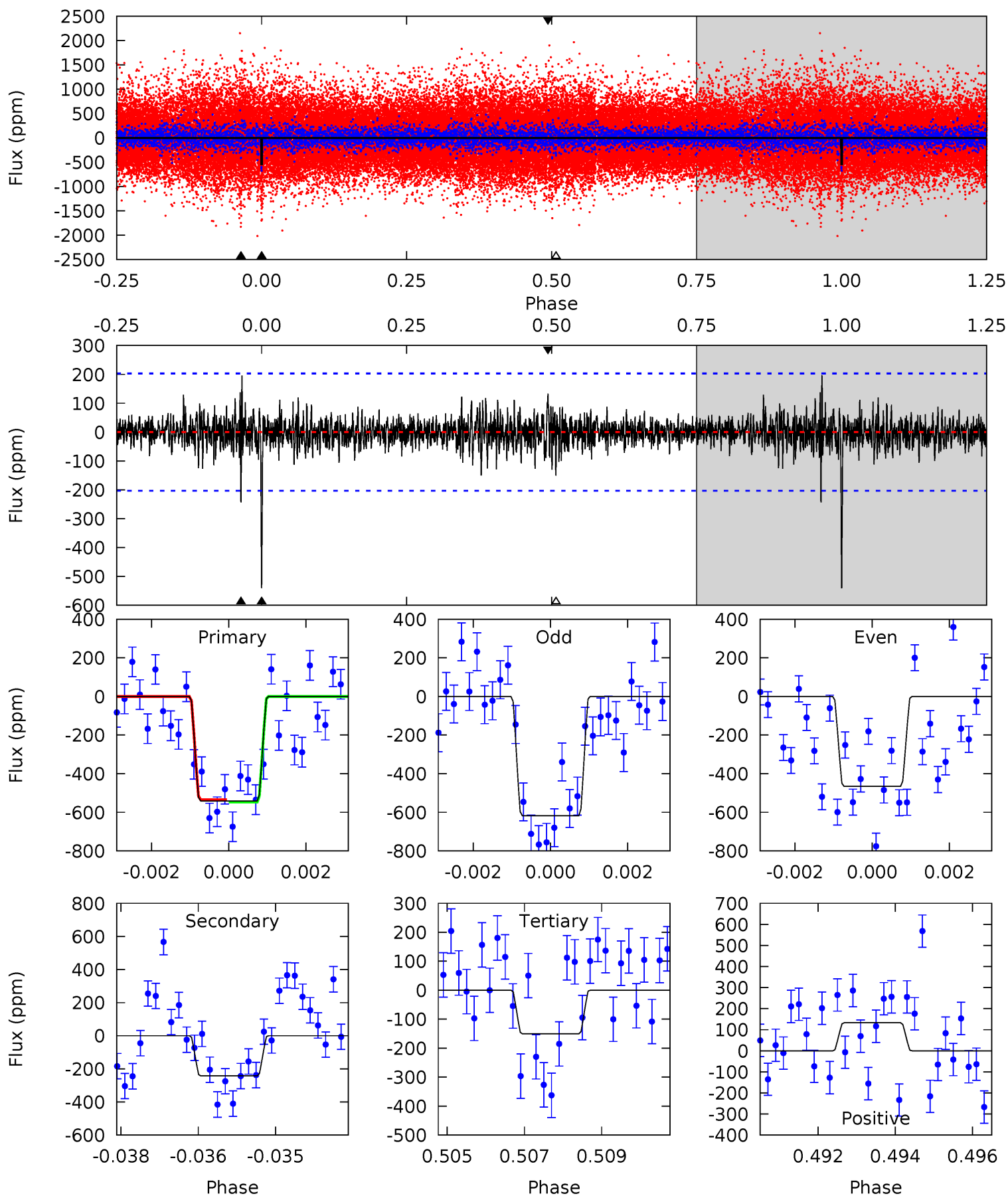
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	8.12	6.64	7.37	5.35	3.12	1.68	7.81	7.08	1.49	0.76	0.79	1.02	0.34	0.79



# Alt Model-Shift Uniqueness Test

007538434-01, P = 371.155184 Days, E = 44.258089 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
14.2	6.39	3.97	3.50	5.34	3.12	0.94	10.3	10.7	2.42	2.89	2.01	0.89	0.27	0.16



### Stellar Parameters For KIC 007538434

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5988^{+161}_{-197}$	$4.541^{+0.048}_{-0.180}$	$-0.520^{+0.300}_{-0.300}$	$0.836^{+0.218}_{-0.078}$	$0.885^{+0.099}_{-0.090}$	$2.132^{+0.529}_{-1.042}$
	+3%/-3%	+1%/-4%	+58%/-58%	+26%/-9%	+11%/-10%	+25%/-49%
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 007538434-01 / KOI 7841.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-321 \pm 39$	$2.46^{+1.51}_{-1.37}$	$348^{+22}_{-16}$	$5046^{+2850}_{-842}$	$27342^{+114233}_{-17238}$
Alt.	$-243 \pm 38$	$2.48^{+1.53}_{-1.43}$	$349^{+21}_{-15}$	$4754^{+2266}_{-798}$	$20050^{+94496}_{-12527}$

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

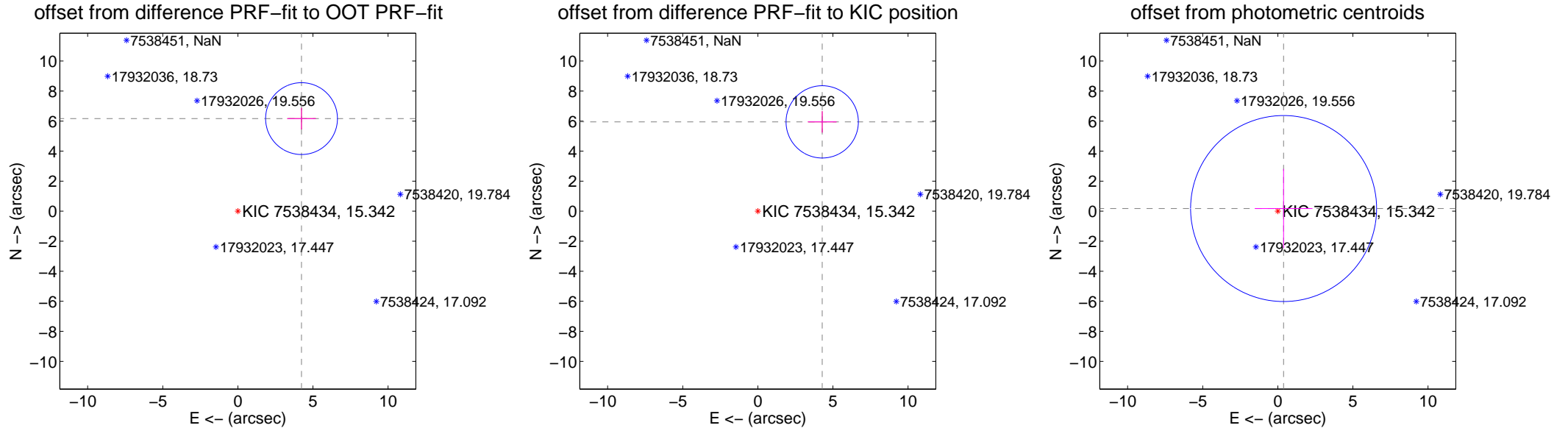
## DV Centroid Data

Supplemental centroid analysis for 007538434-01. Kepler magnitude: 15.34. Transit SNR 7.62

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

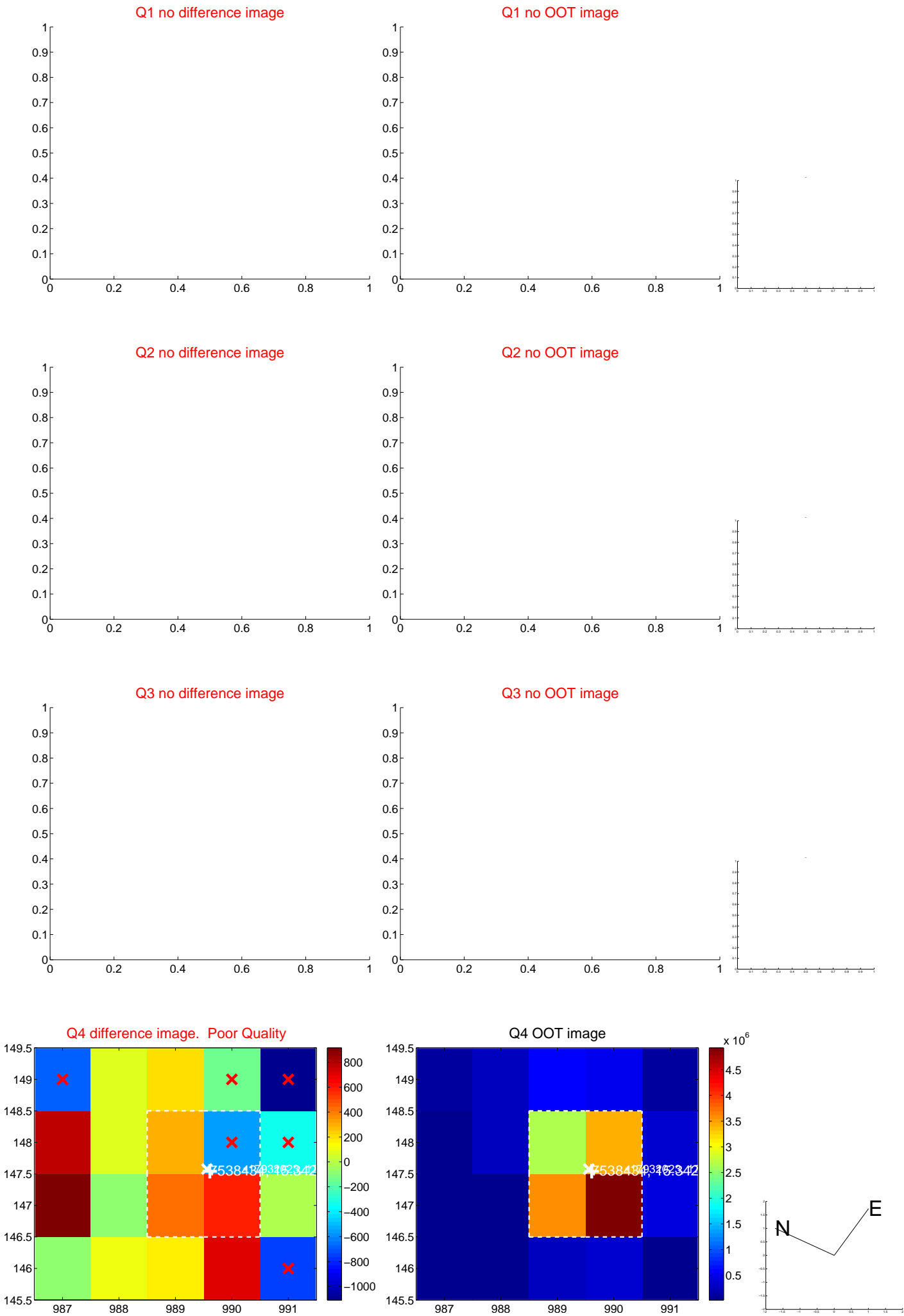
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$7.483 \pm 0.797$	9.39	$-4.240 \pm 0.952$	$6.166 \pm 0.713$
PRF-fit source offset from KIC position	$7.332 \pm 0.803$	9.14	$-4.286 \pm 0.952$	$5.949 \pm 0.713$
photometric centroid source offset	$0.42 \pm 2.06$	0.21	$-0.39 \pm 1.92$	$0.18 \pm 2.64$



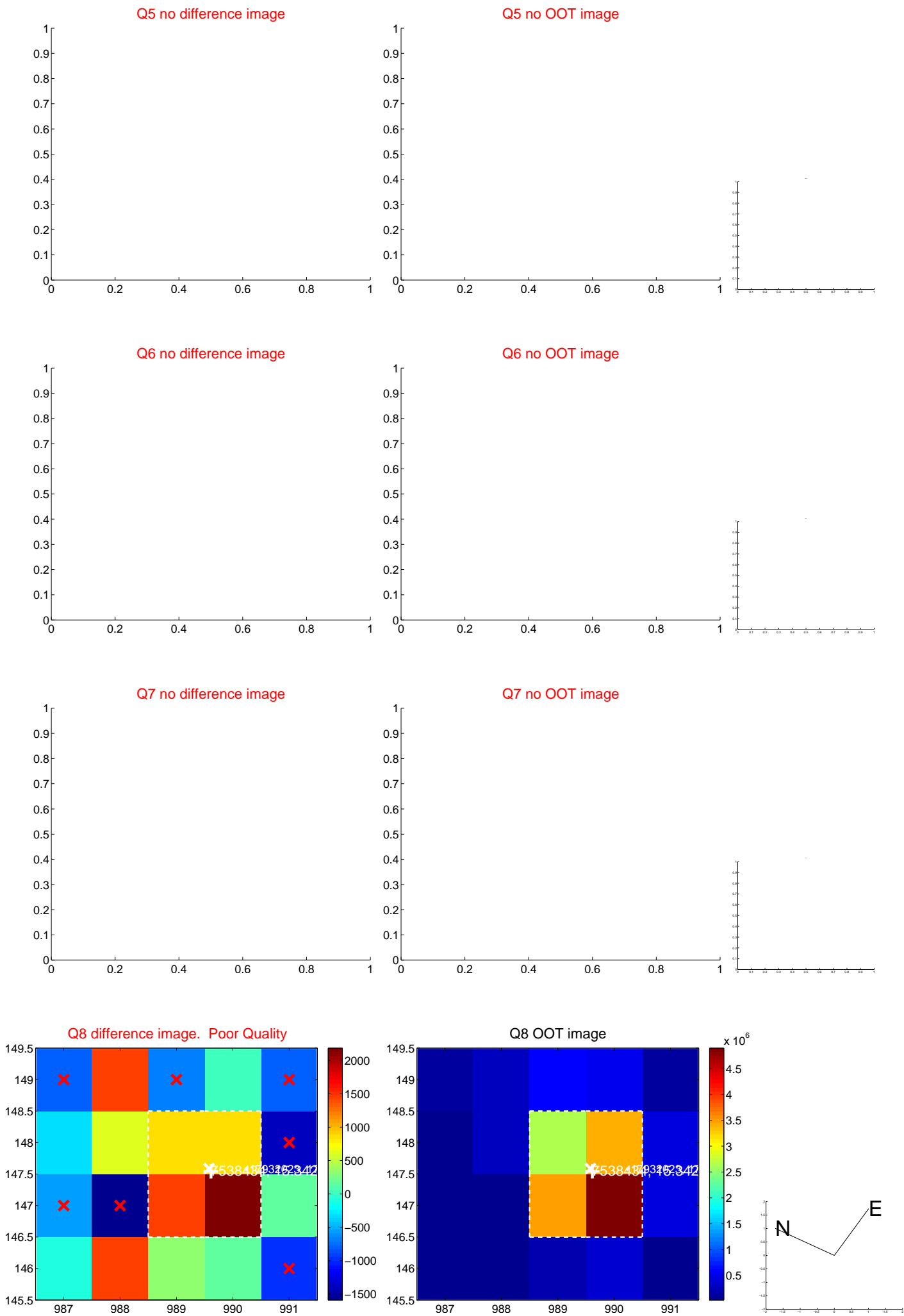
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



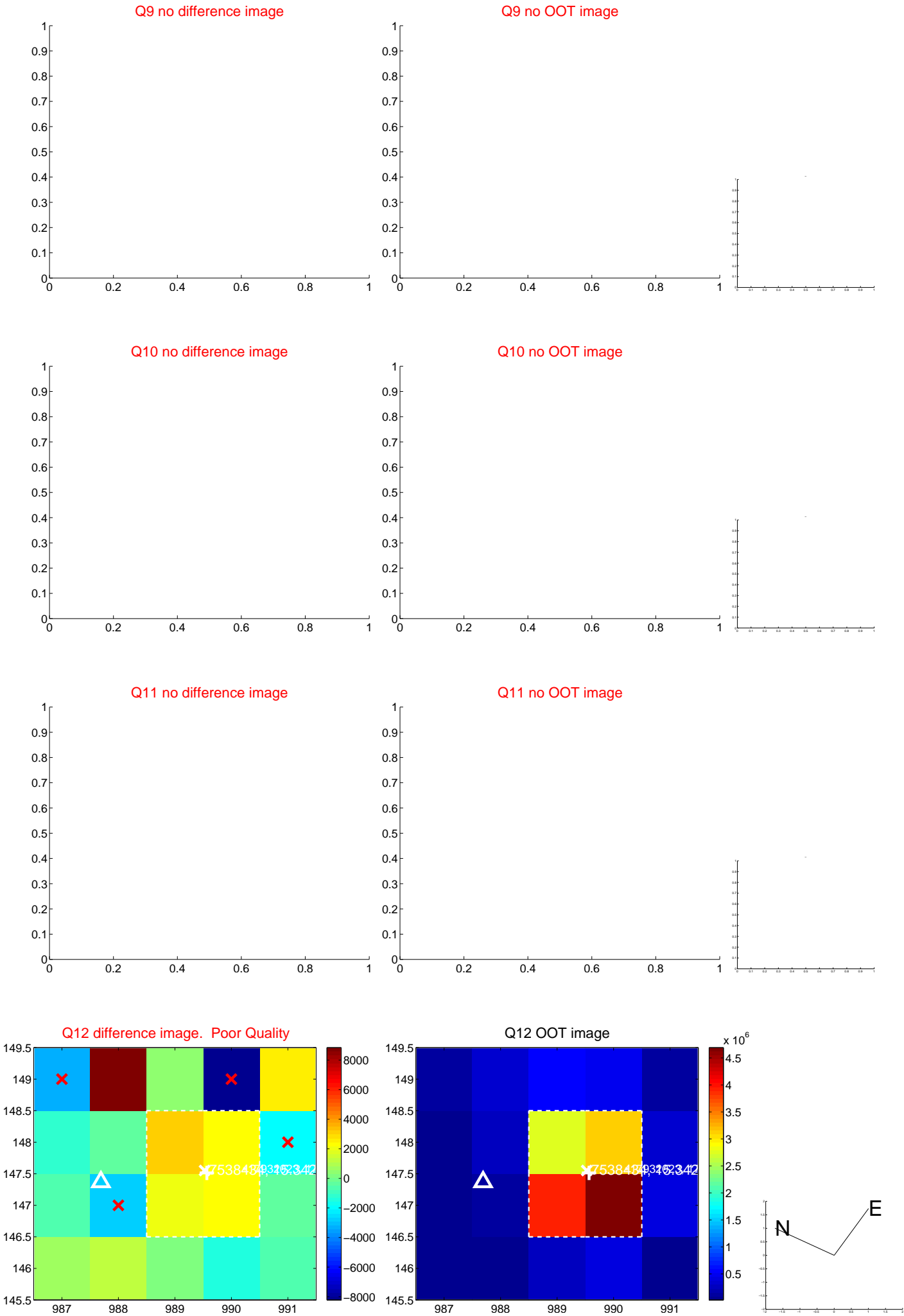
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



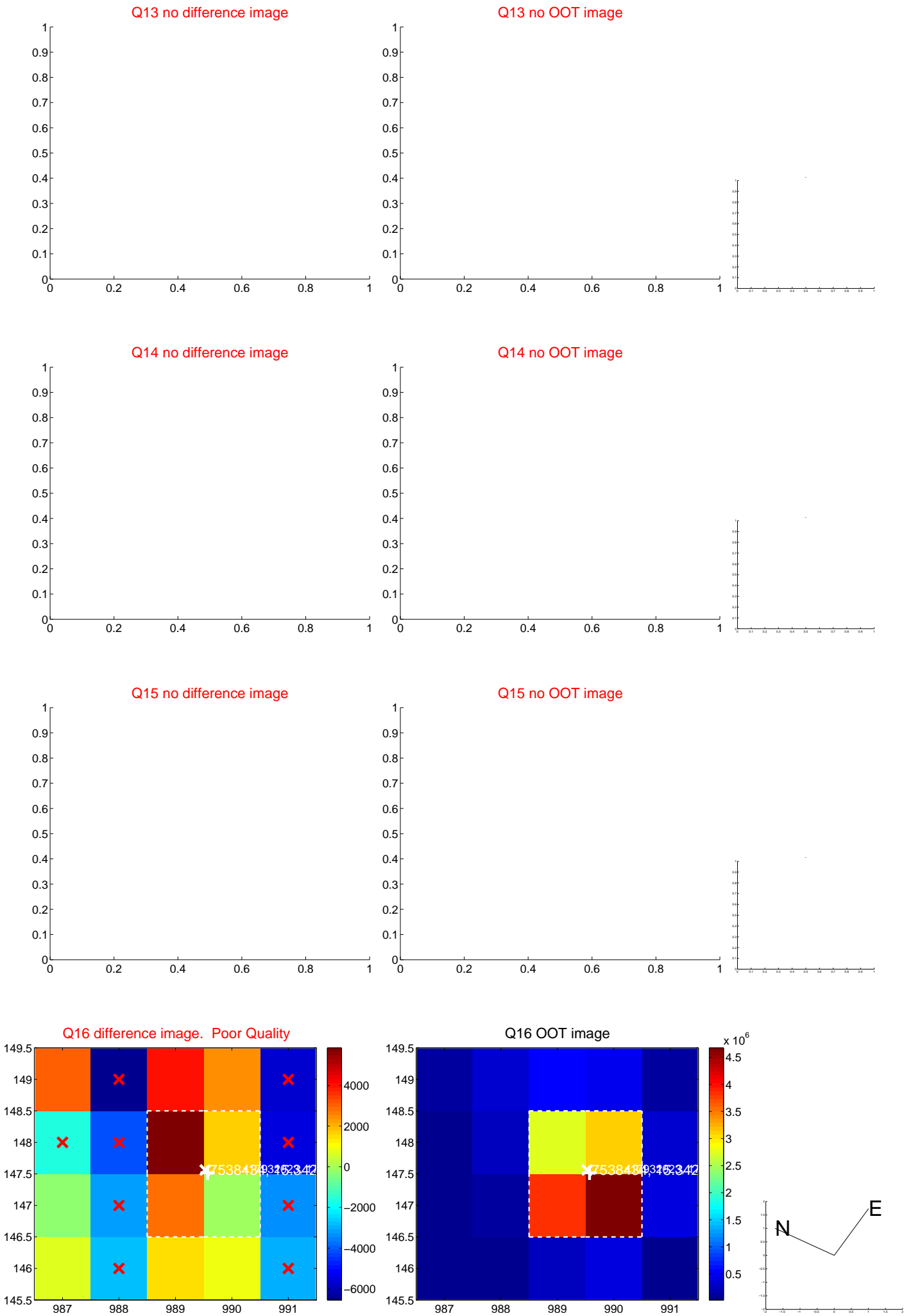
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



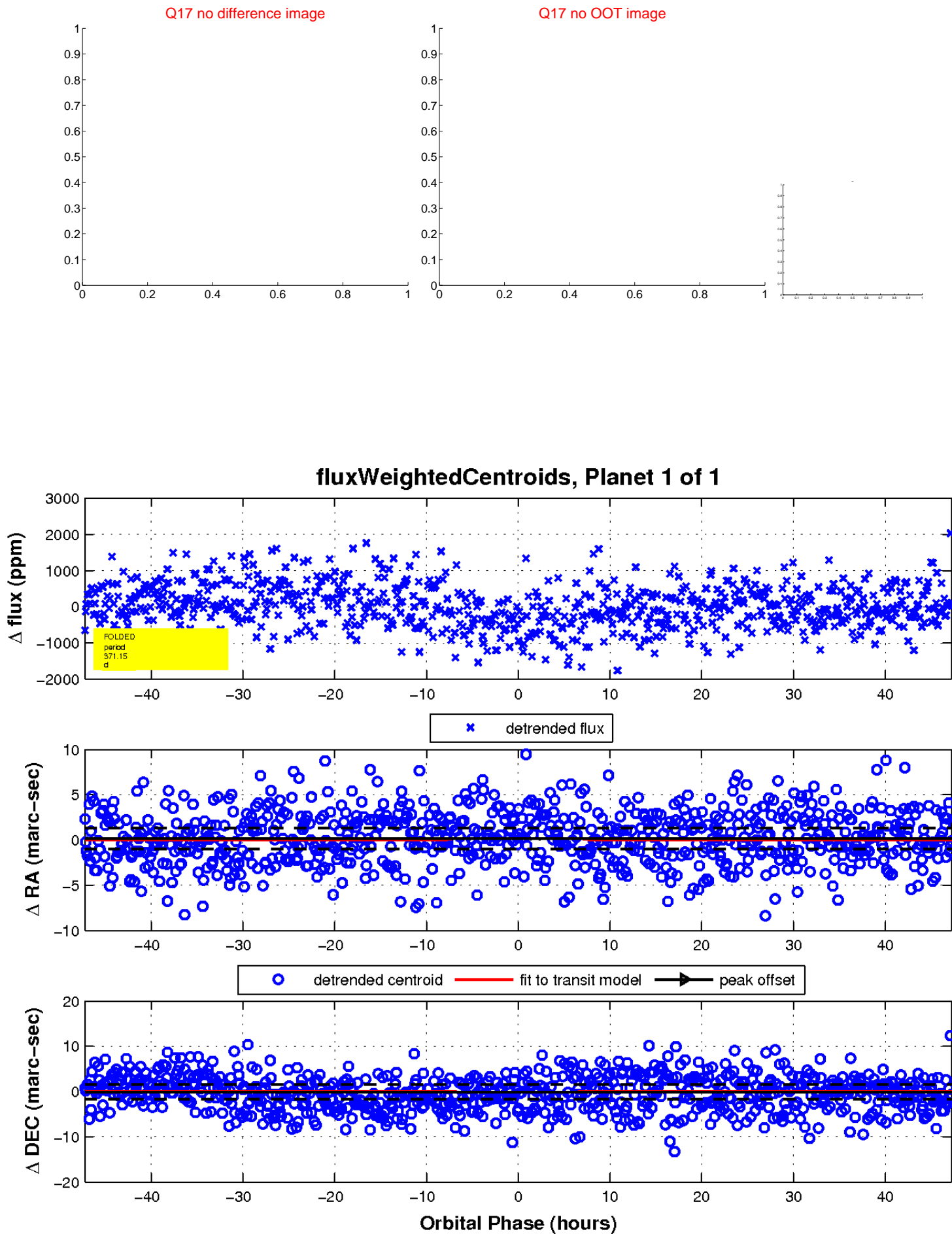
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

