

KIC 007748044

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})
007748044-01	OBS	No	478.805113	431.630645	307.5	5.613	7.5	5.1	1.07	6273	2.10	1.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007748044-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—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.

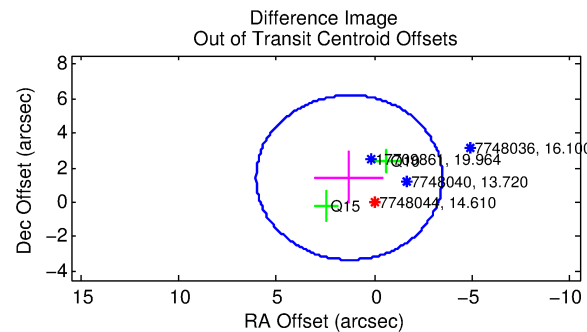
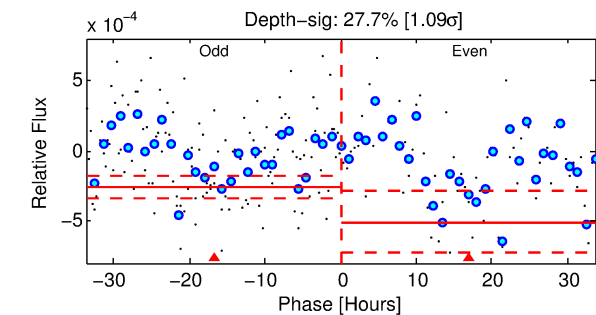
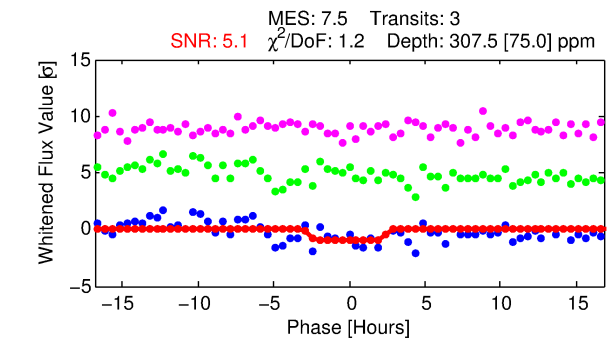
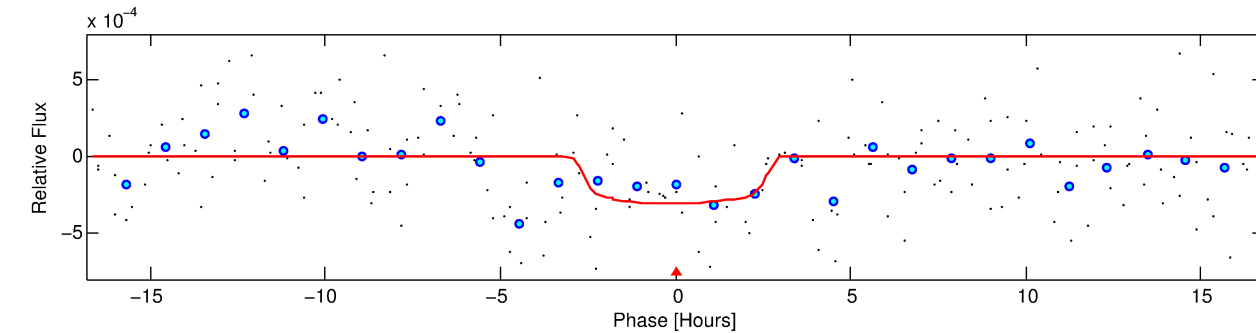
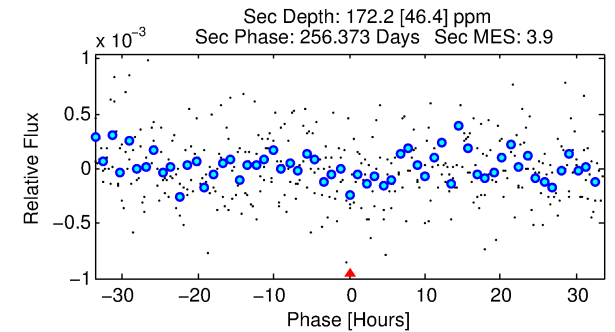
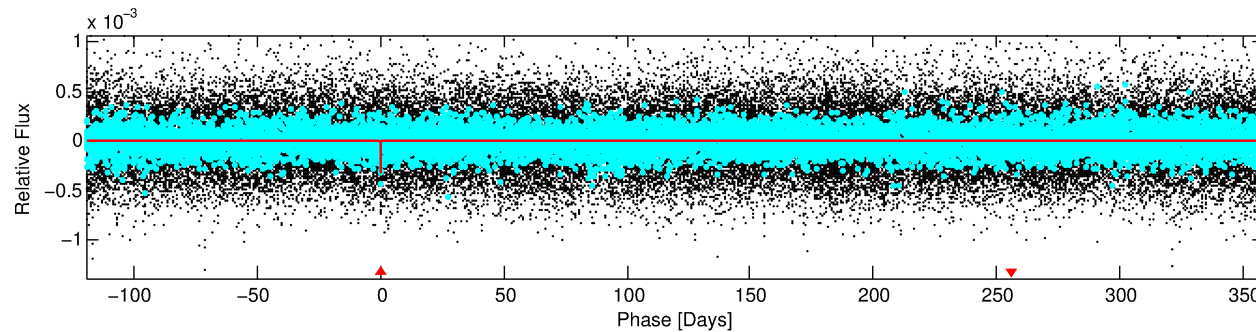
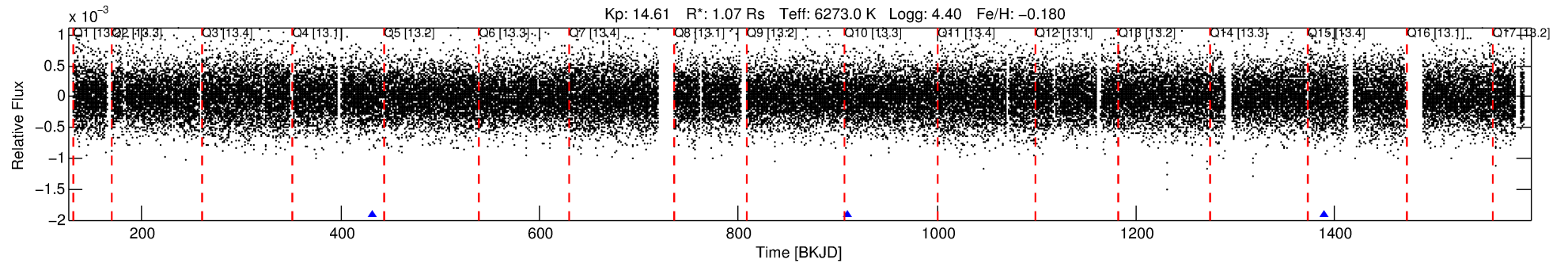
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007748044-01

No Significant Match Found

DV One-Page Summary

KIC: 7748044 Candidate: 1 of 1 Period: 478.805 d



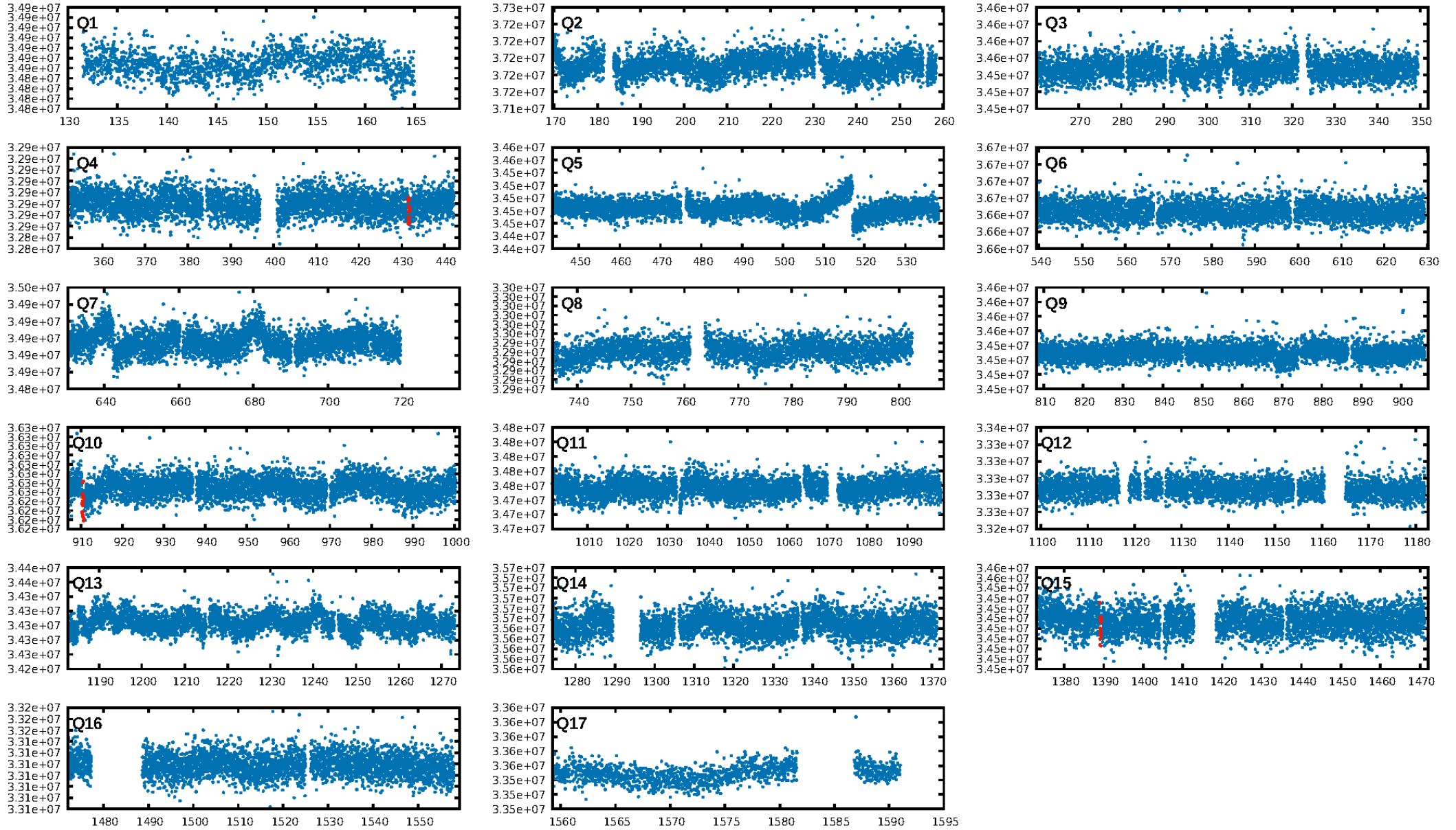
DV Fit Results:

Period = 478.80511 [0.01623] d
Epoch = 431.6306 [0.0200] BKJD
Rp/R* = 0.0180 [0.0207]
a/R* = 383.19 [2320.34]
b = 0.83 [2.28]
Seff = 1.07 [0.43]
Teq = 259 [26] K
Rp = 2.10 [2.50] Re
a = 1.2193 [0.3202] AU
Ag = 31879.04 [74536.46] [0.43 σ]
Teff = 5353 [3094] K [1.65 σ]

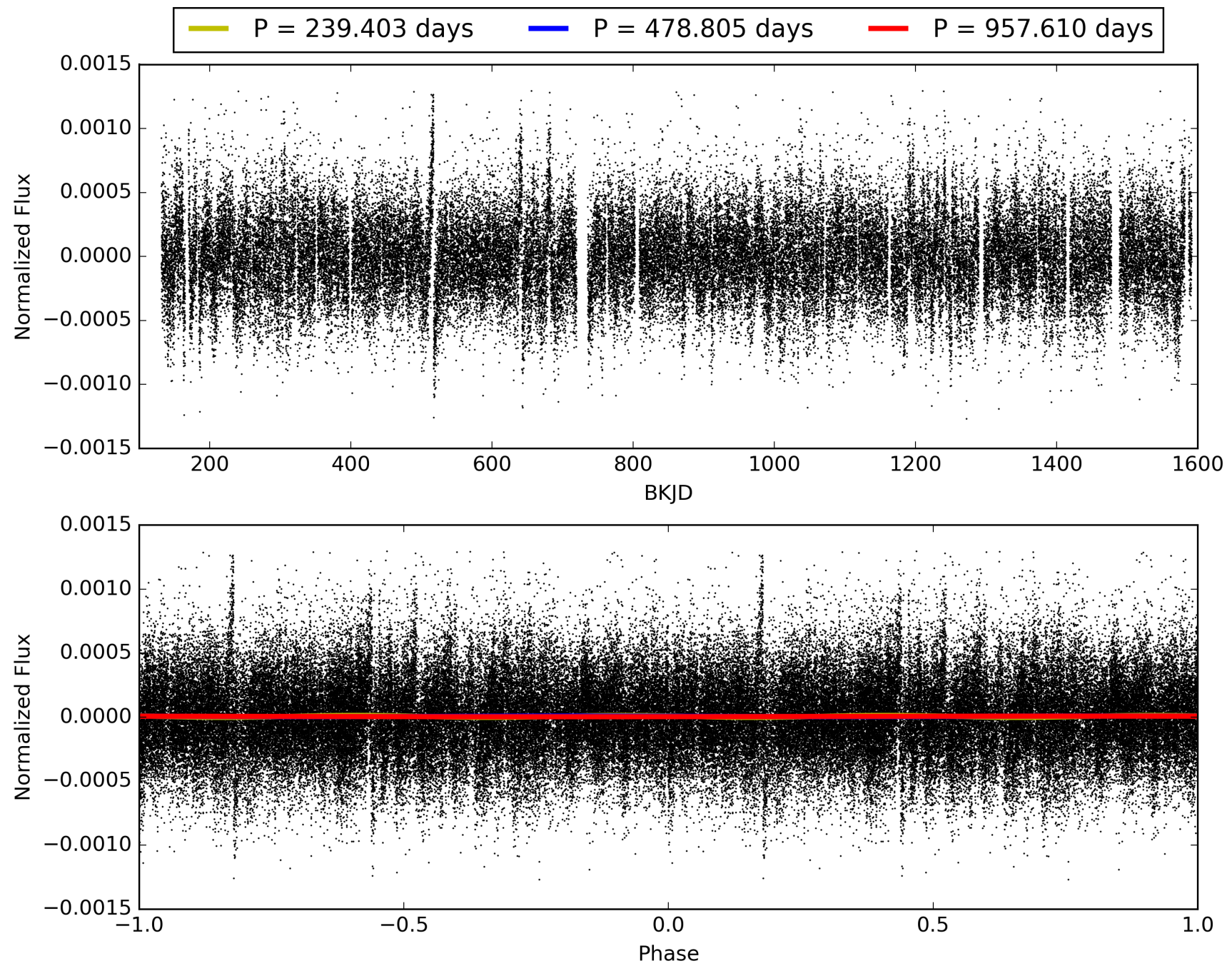
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 30.2%
ModelChiSquareGof-sig: 98.8%
Bootstrap-pfa: 1.59e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.409
Centroid-sig: 7.5%
Centroid-so: 2.817 arcsec [1.28 σ]
OotOffset-rm: 1.921 arcsec [1.21 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 2.006 arcsec [1.36 σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 007748044-01, PDC Light Curves

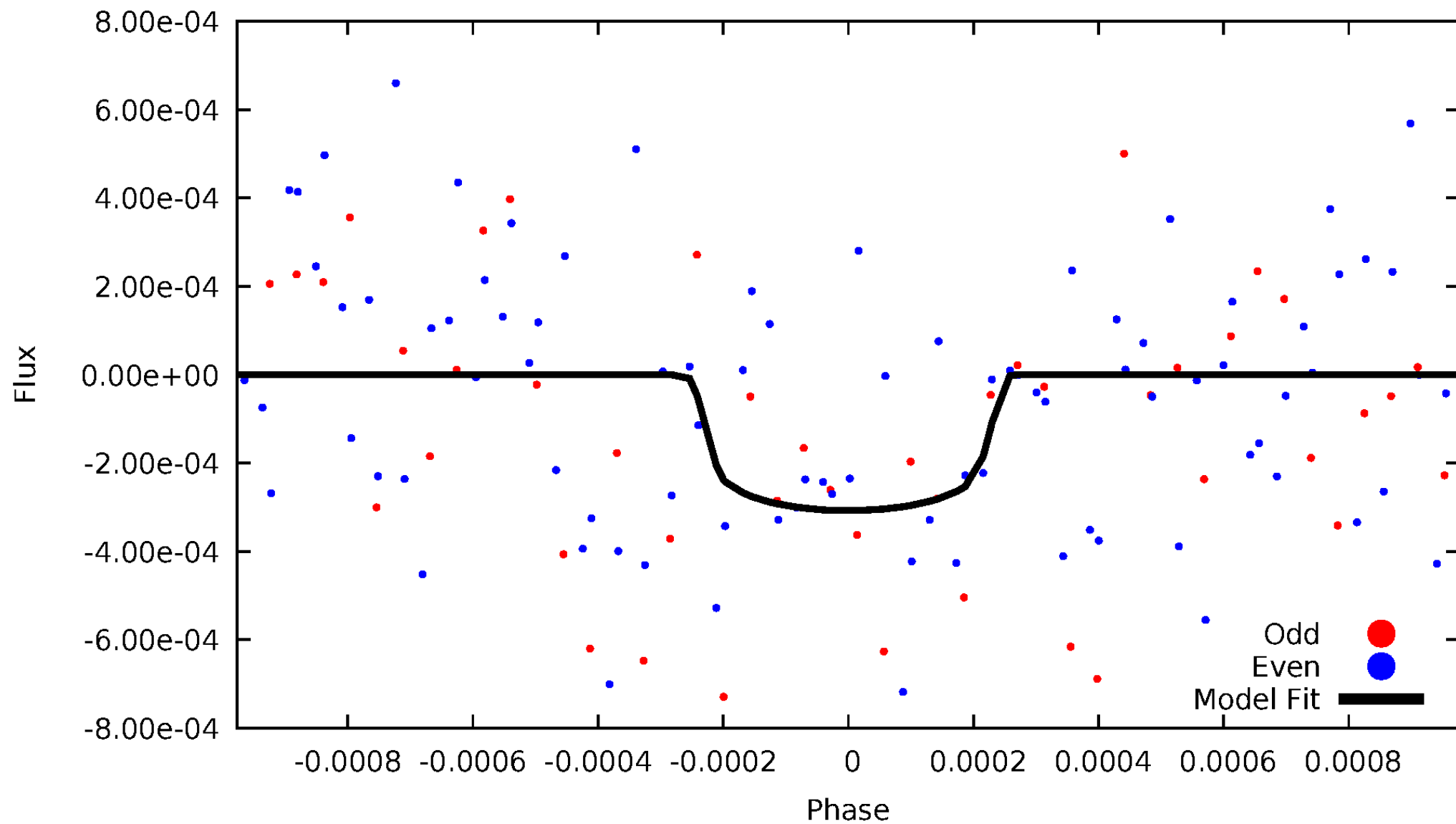


TCE 007748044-01



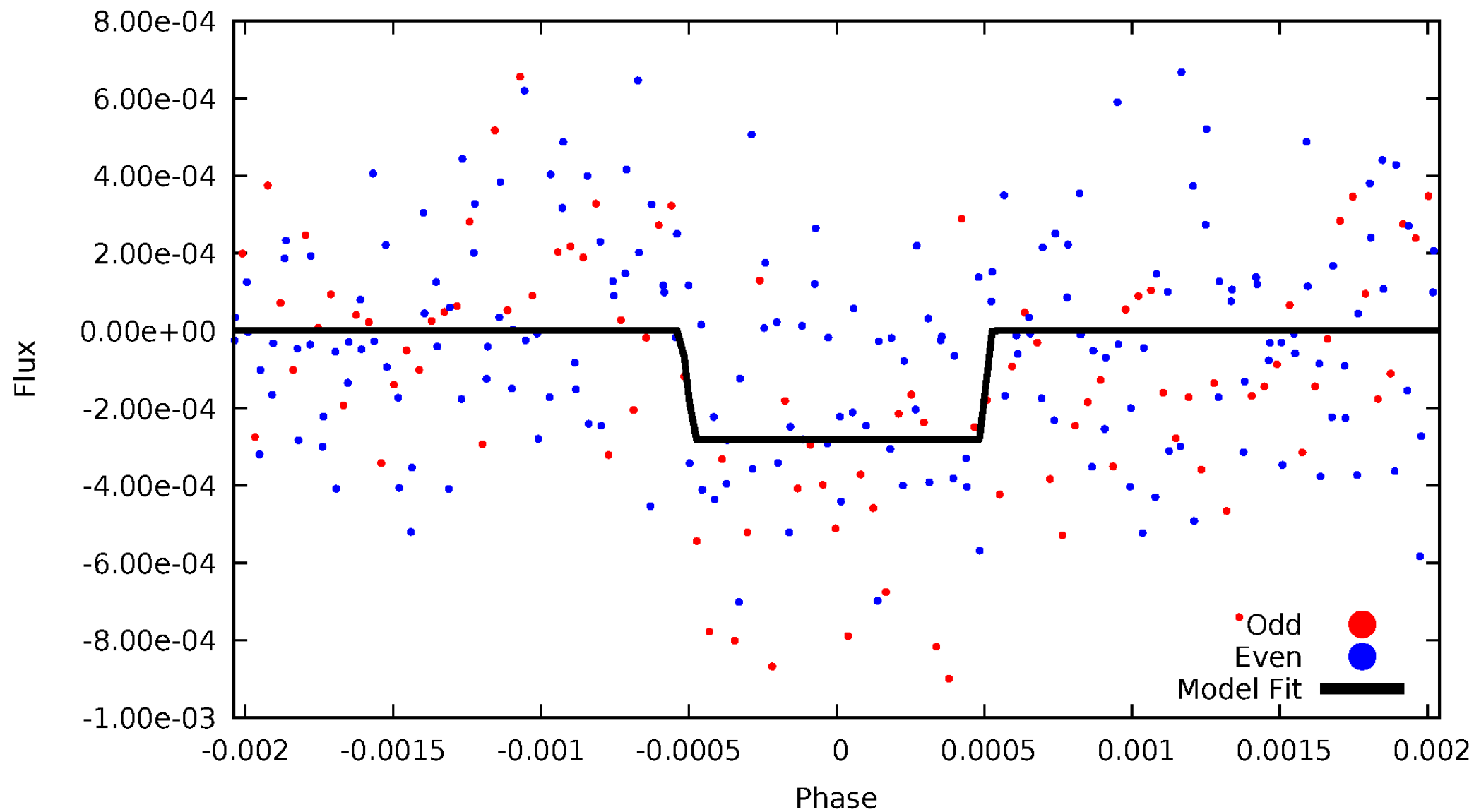
DV Odd/Even

TCE 007748044-01



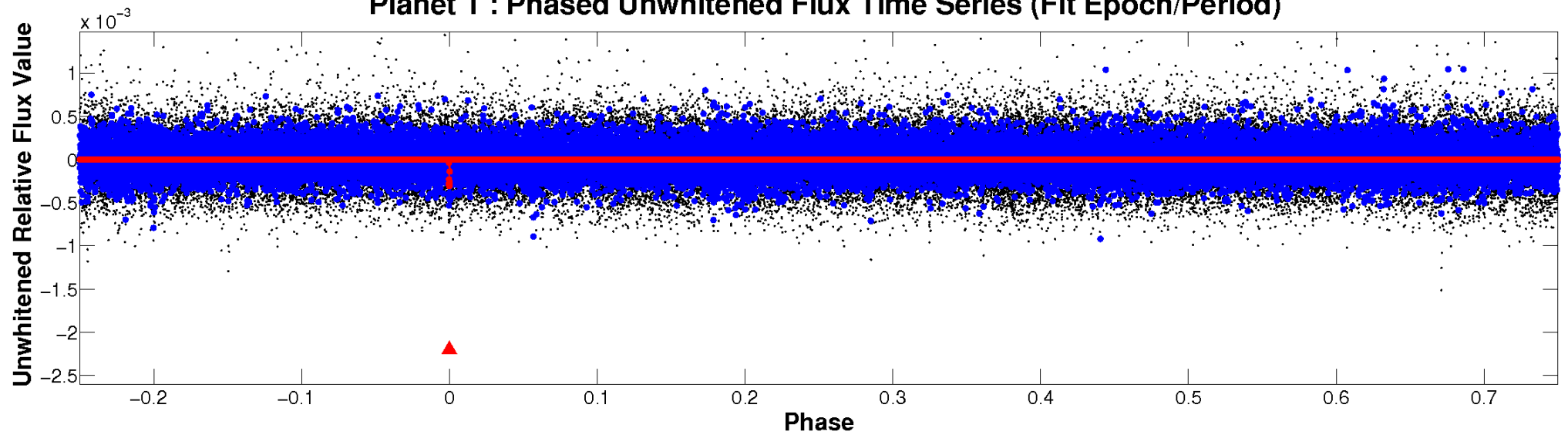
ALT Odd/Even

TCE 007748044-01

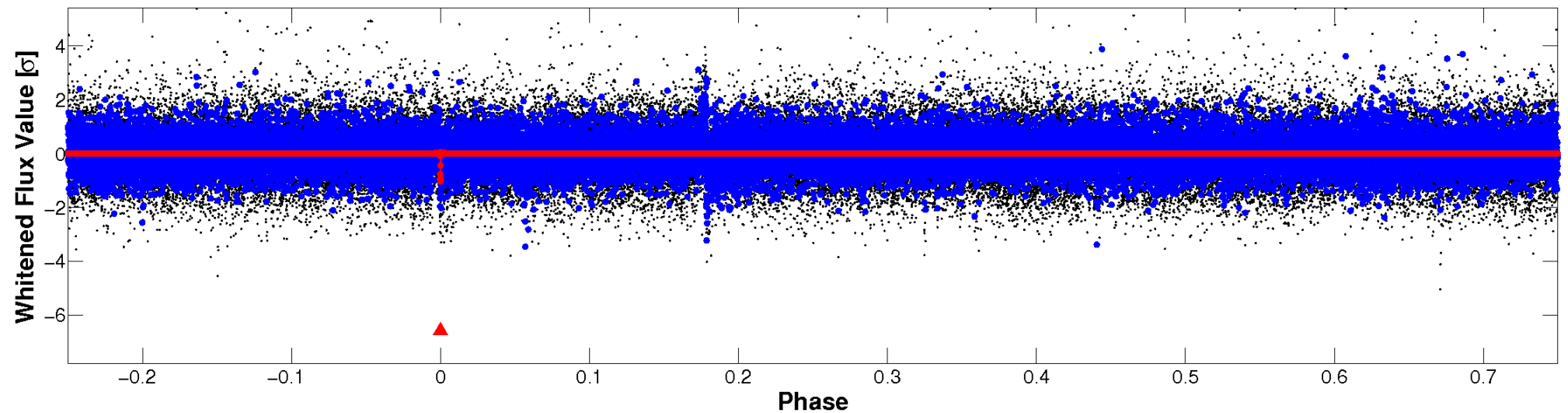


Non-Whitened Vs. Whitened Light Curve

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 007748044-01 P=478.805113 Days $T_0=431.630645$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007748044-01 P=478.805113 Days $T_0=431.630645$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

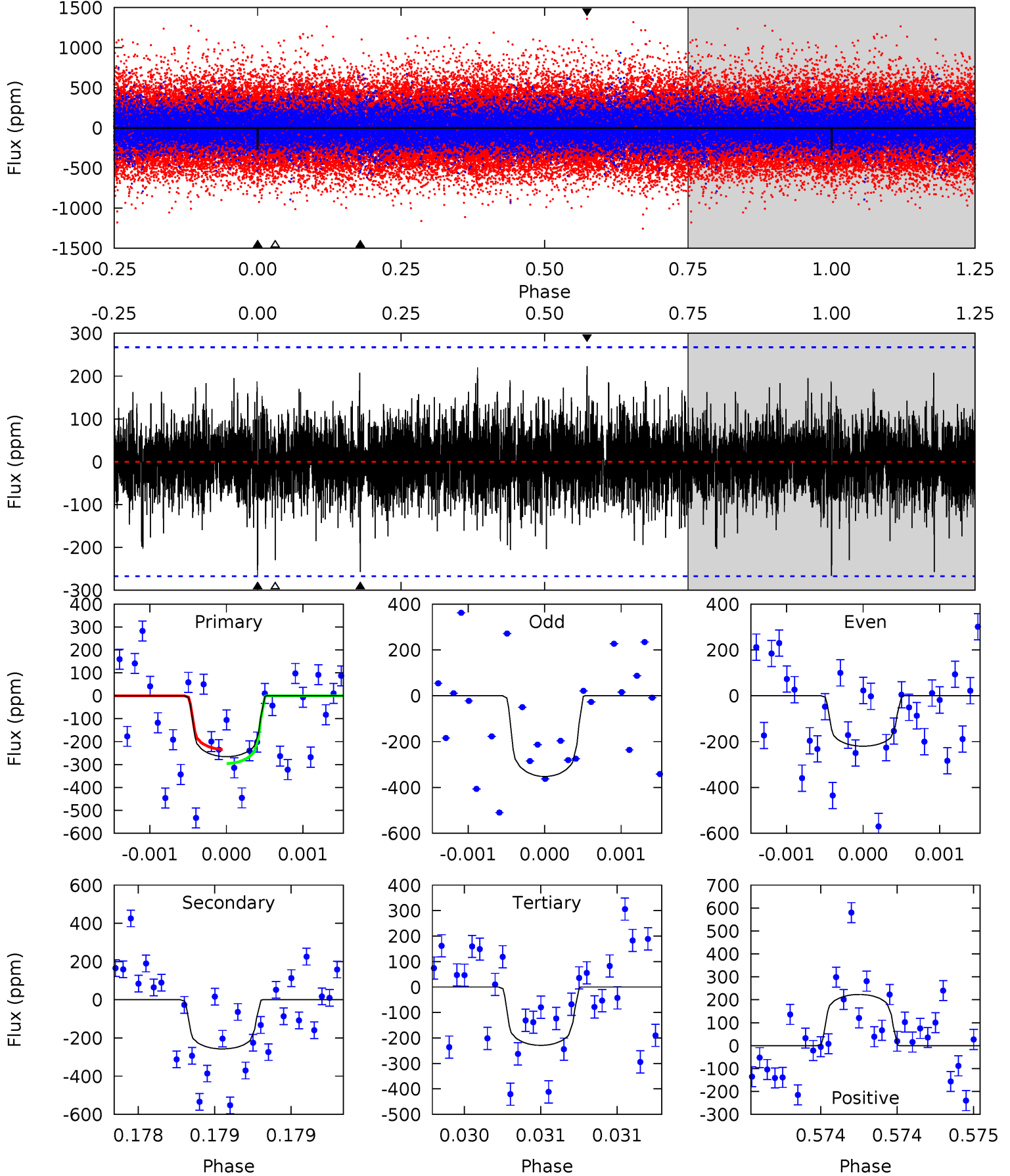
TCE 007748044-01 P=478.771933 Days $T_0=431.672353$ (BKJD)



DV Model-Shift Uniqueness Test

007748044-01, P = 478.805113 Days, E = 431.630645 Days

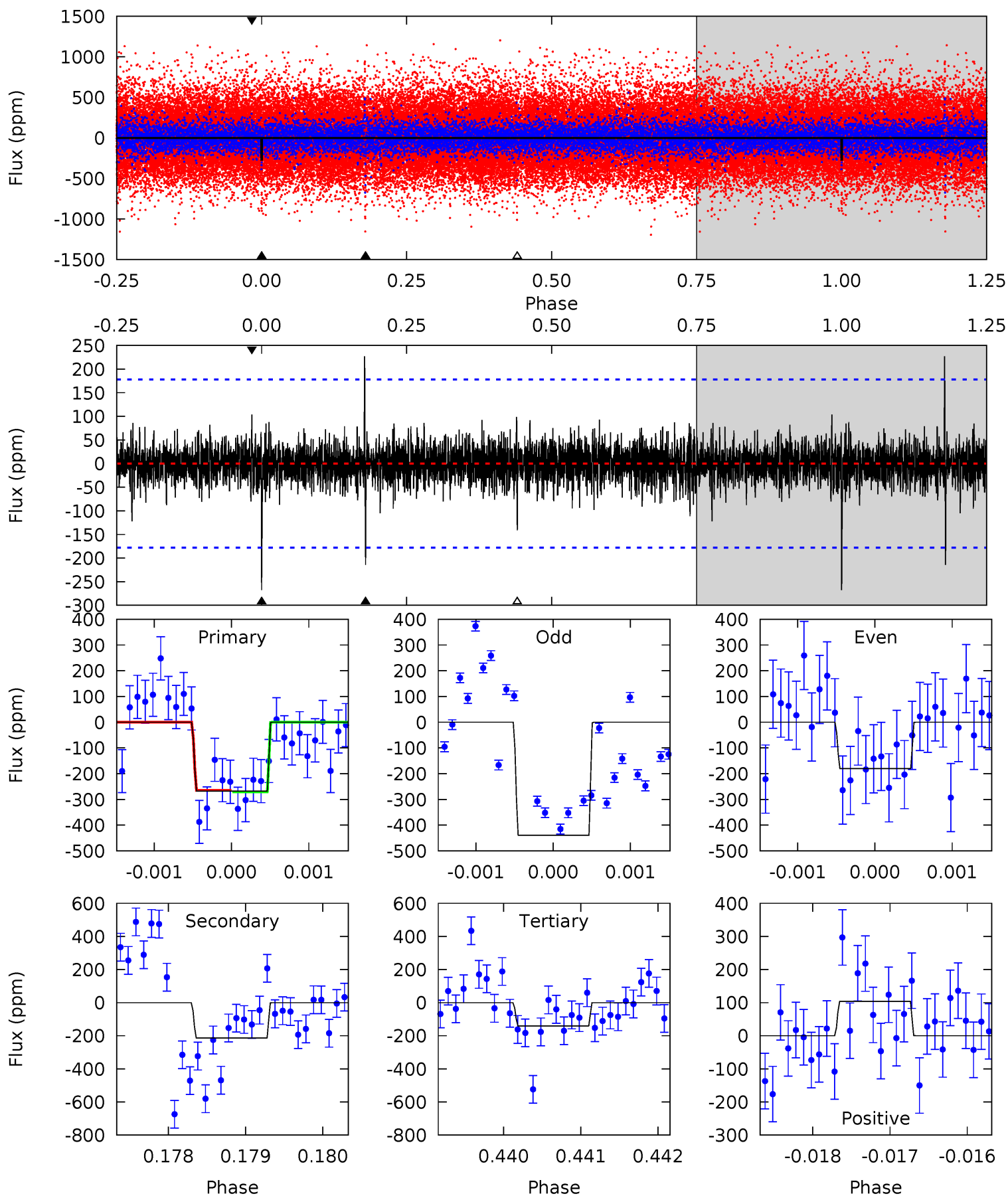
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.54	5.36	4.77	4.65	5.57	3.47	1.15	0.77	0.89	0.59	0.71	1.29	0.85	0.46	0.64



Alt Model-Shift Uniqueness Test

007748044-01, P = 478.771933 Days, E = 431.672353 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.18	6.54	4.31	3.17	5.44	3.28	0.87	3.86	5.01	2.23	3.38	3.75	1.47	0.46	0.09



Stellar Parameters For KIC 007748044

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6273^{+169}_{-225}	$4.403^{+0.072}_{-0.203}$	$-0.180^{+0.250}_{-0.300}$	$1.069^{+0.339}_{-0.145}$	$1.049^{+0.173}_{-0.129}$	$1.209^{+0.472}_{-0.653}$
	+3%/-4%	+2%/-5%	+139%/-167%	+32%/-14%	+16%/-12%	+39%/-54%
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 007748044-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-257 ± 48	$2.75^{+2.29}_{-1.71}$	369^{+26}_{-20}	5358^{+3538}_{-1182}	$26866^{+173828}_{-18771}$
Alt.	-214 ± 33	$2.95^{+2.35}_{-1.97}$	369^{+27}_{-20}	4974^{+3764}_{-981}	$19953^{+159239}_{-13905}$

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

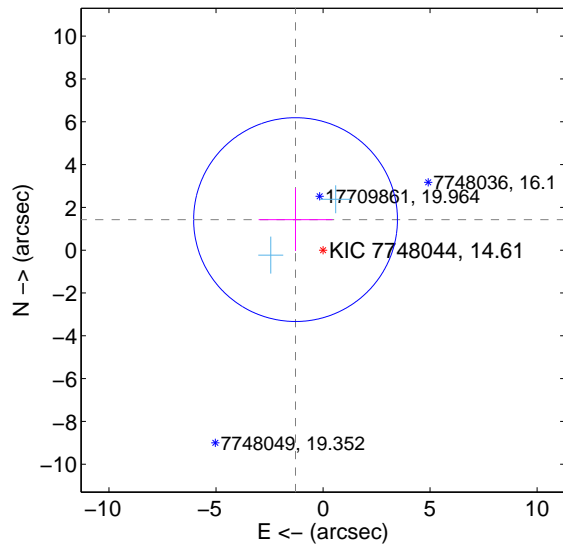
Supplemental centroid analysis for 007748044-01. Kepler magnitude: 14.61. Transit SNR 5.07

There are 2 quarters with good PRF difference image offsets

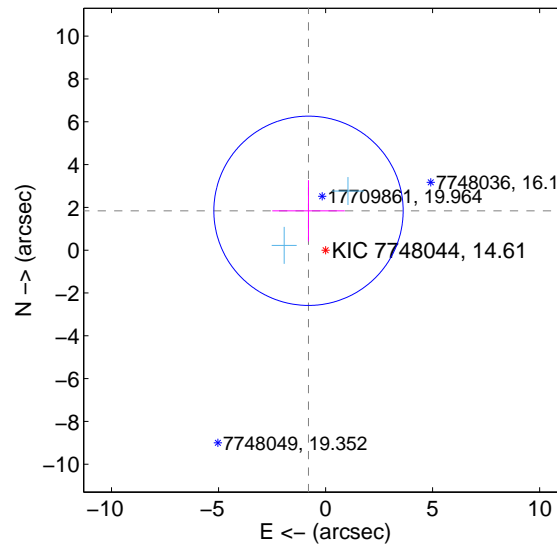
The direct PRF centroid is offset from the target star catalog position by about 0.68 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.921 ± 1.587	1.21	1.284 ± 1.724	1.428 ± 1.467
PRF-fit source offset from KIC position	2.006 ± 1.474	1.36	0.798 ± 1.692	1.840 ± 1.430
photometric centroid source offset	2.82 ± 2.20	1.28	1.86 ± 2.17	2.12 ± 2.23

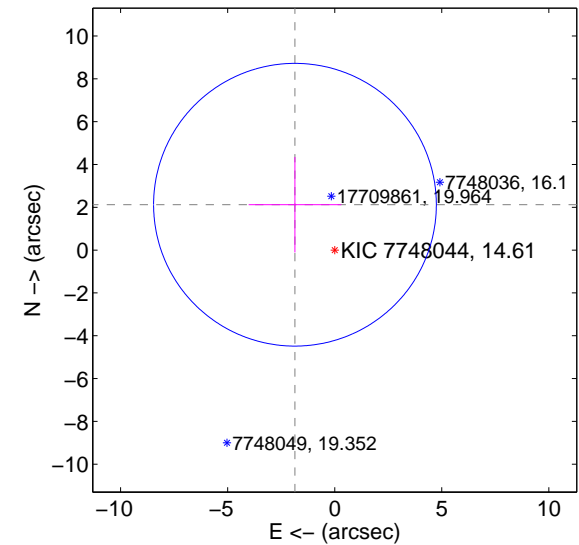
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

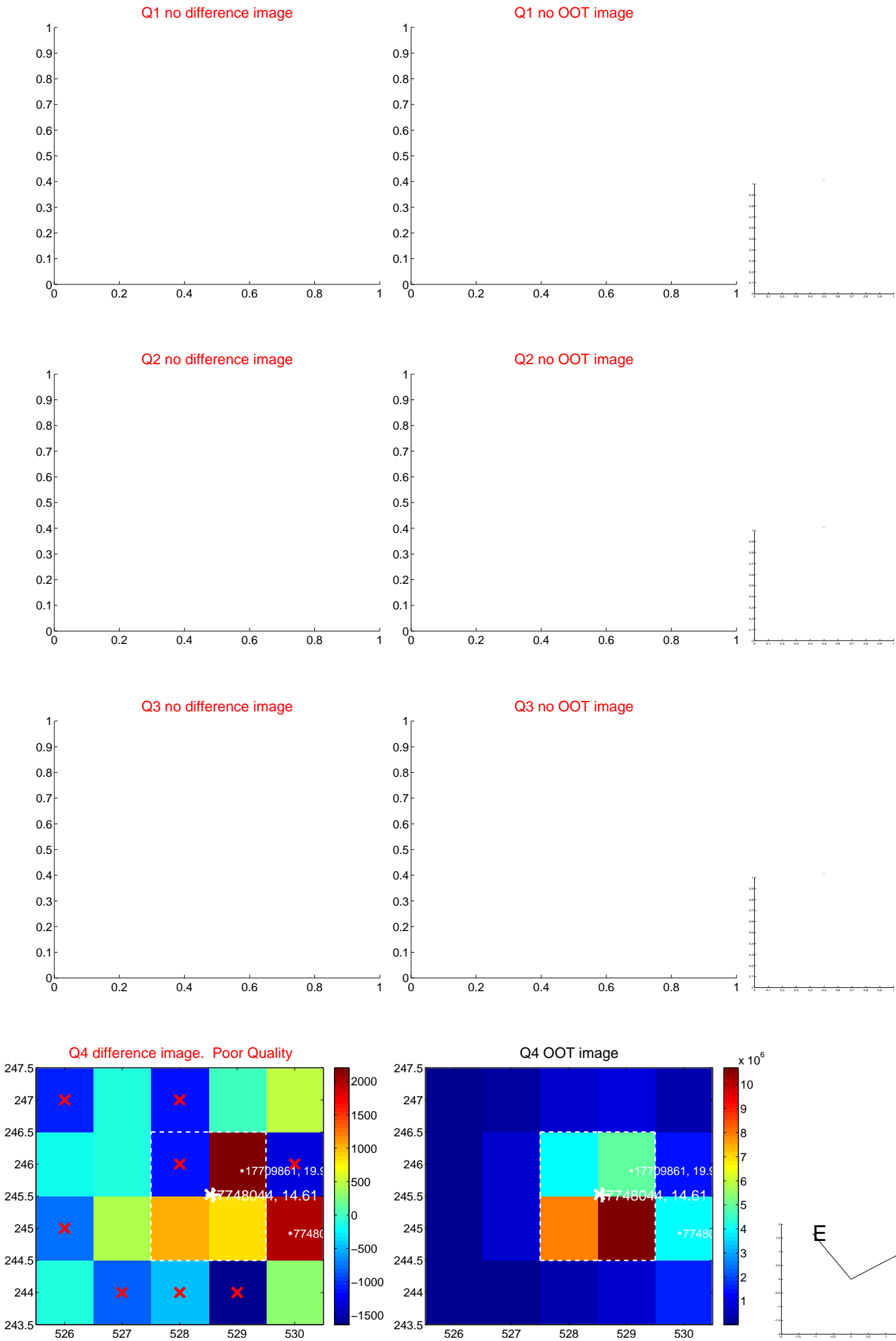


offset from photometric centroids



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- σ uncertainty. Blue circle: three- σ . 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.

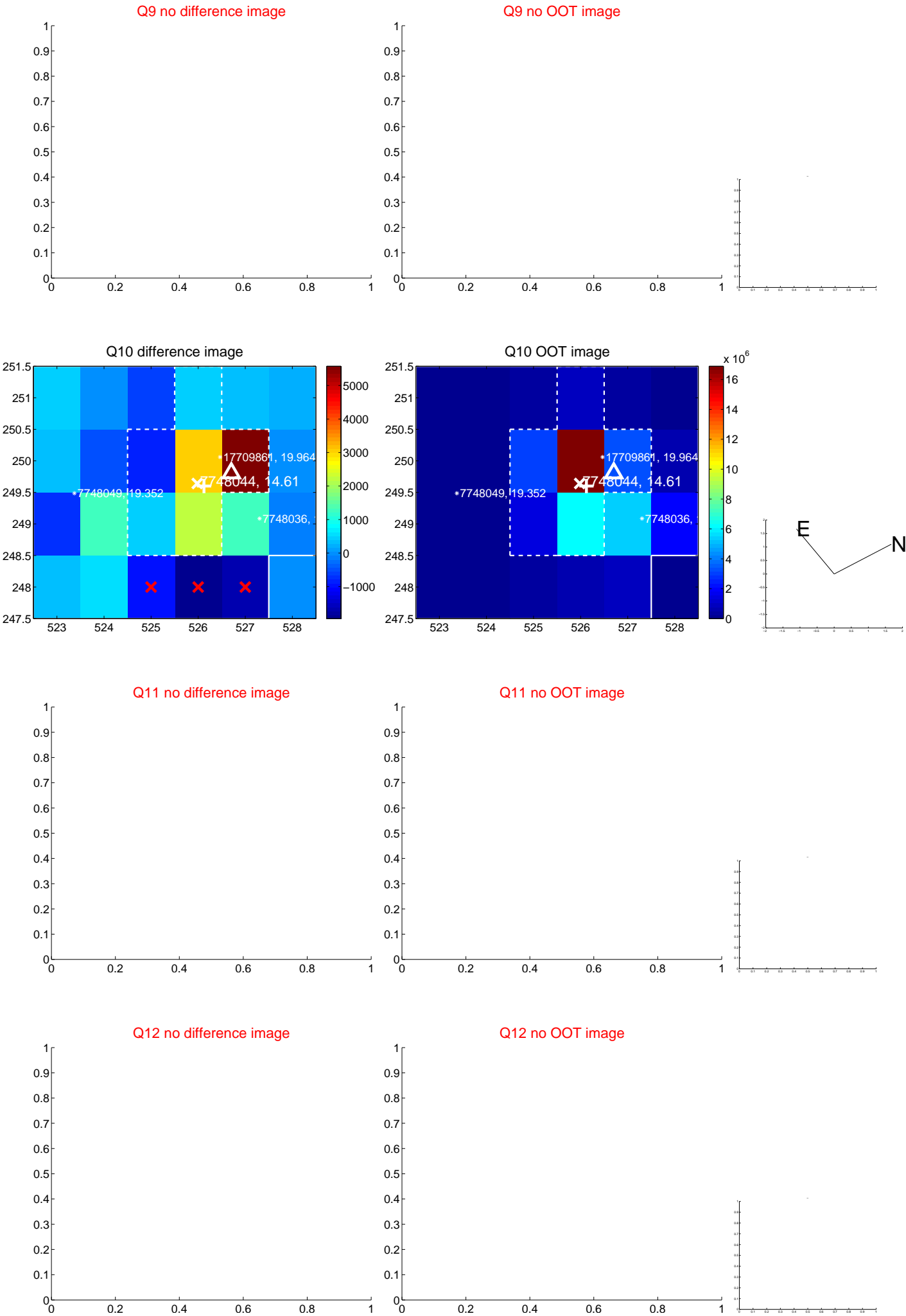
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



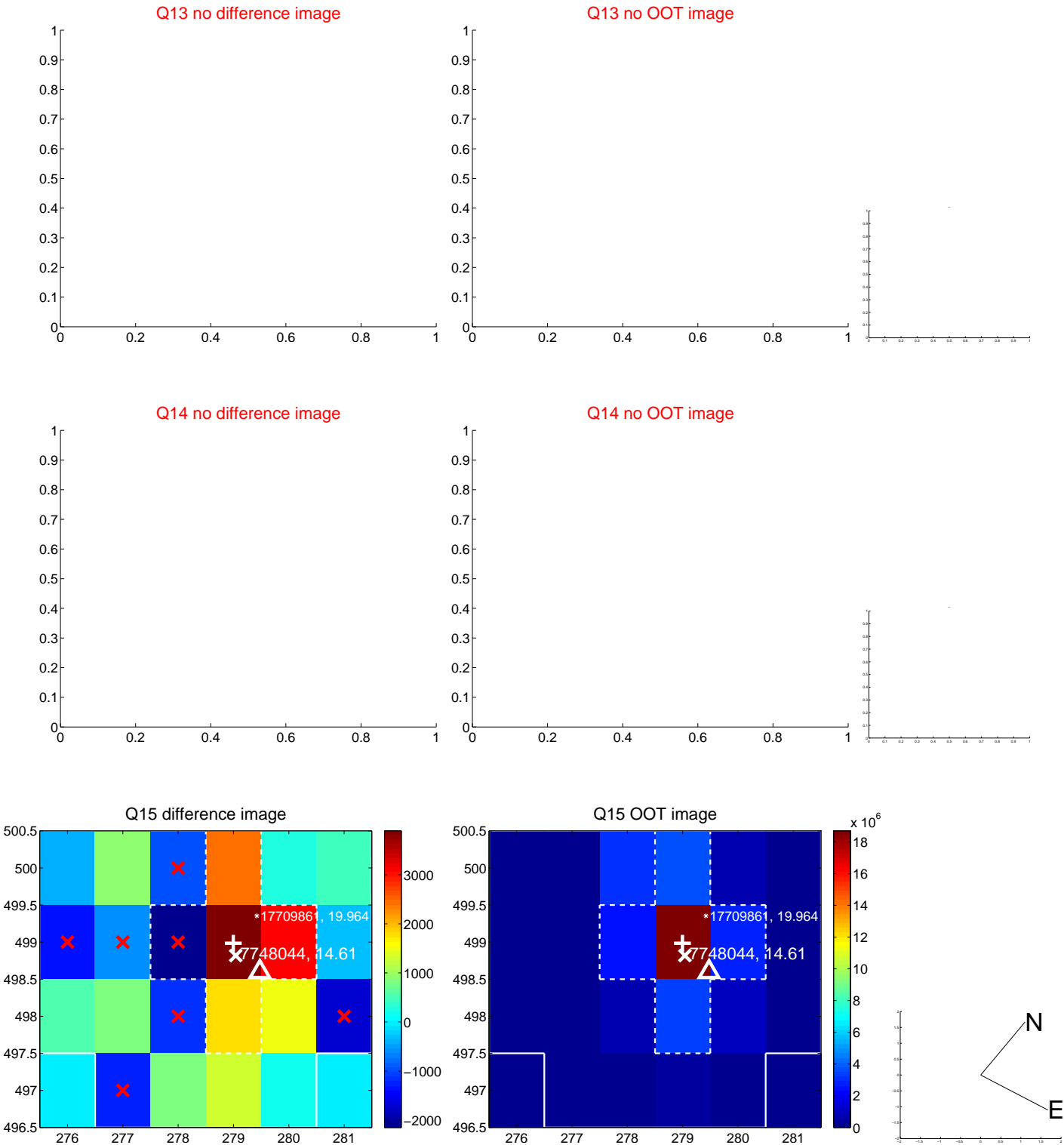
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



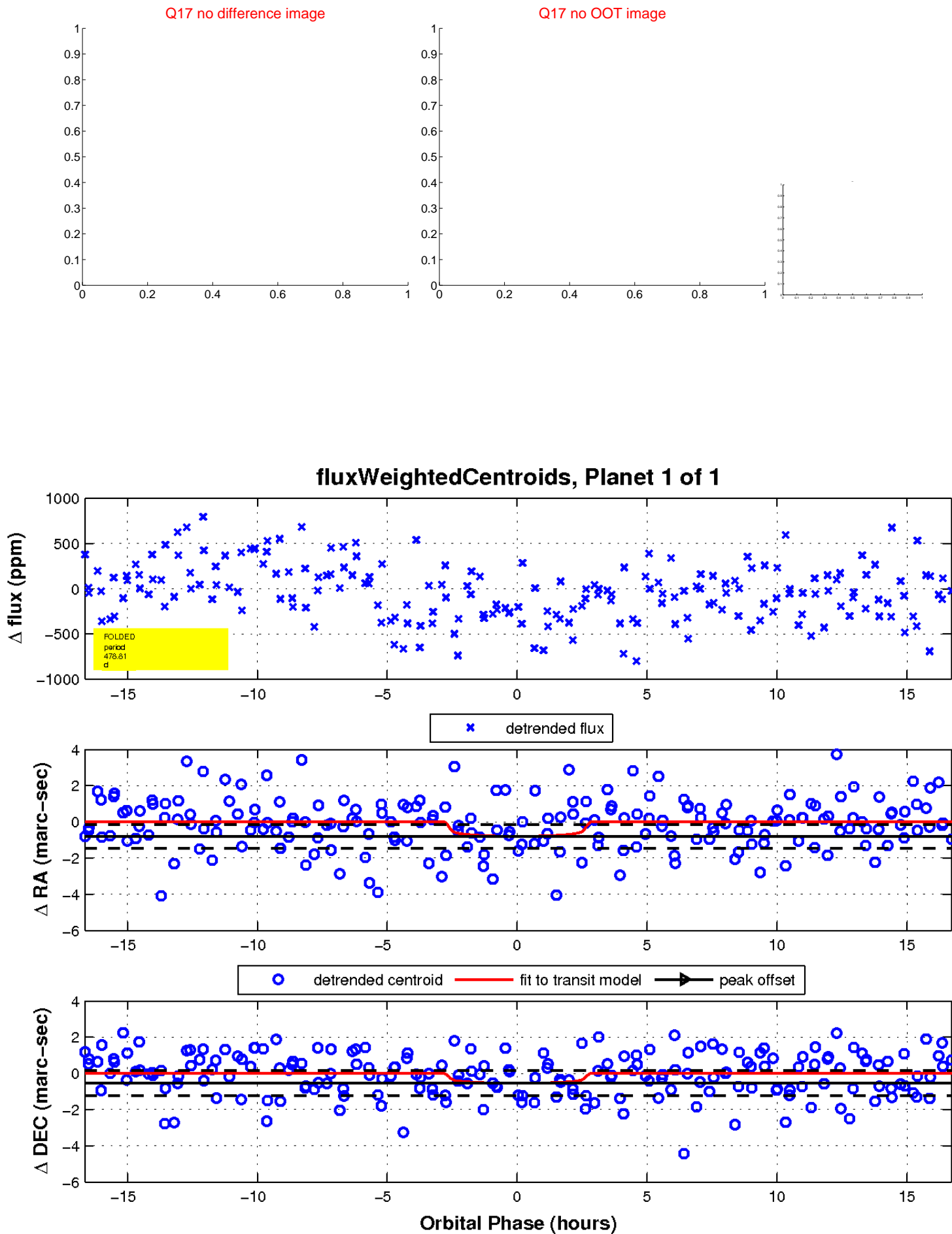
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: 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

