

KIC 004457734

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})
004457734-01	OBS	No	363.525054	422.813681	237.2	14.953	7.6	6.3	0.77	5383	1.28	0.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004457734-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

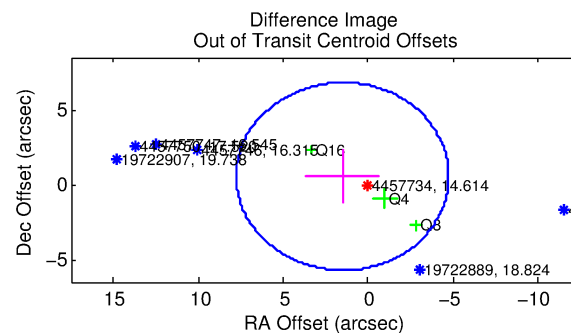
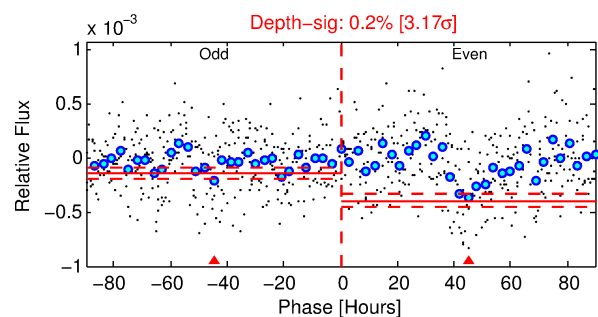
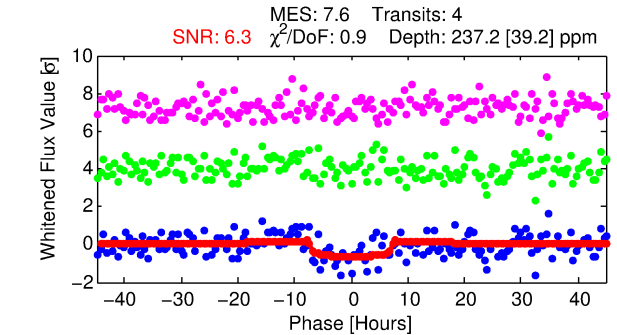
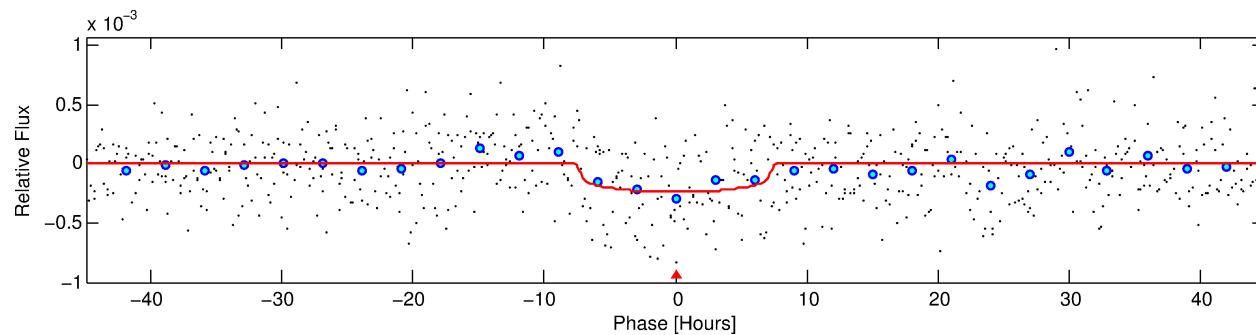
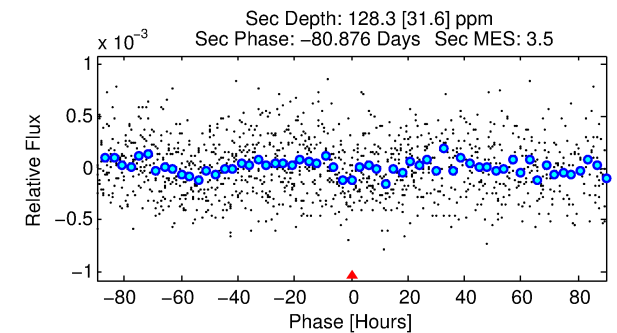
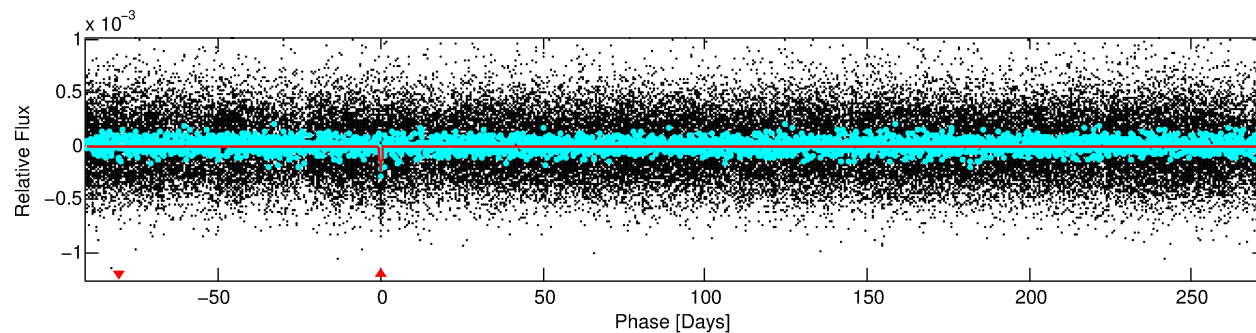
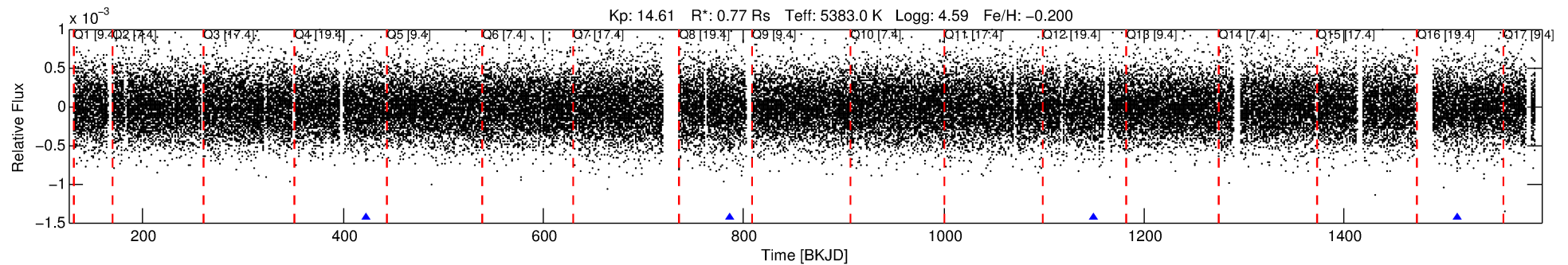
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004457734-01

No Significant Match Found

DV One-Page Summary

KIC: 4457734 Candidate: 1 of 1 Period: 363.525 d



DV Fit Results:

Period = 363.52505 [0.01495] d
Epoch = 422.8137 [0.0292] BKJD
Rp/R* = 0.0152 [0.0095]
a/R* = 129.95 [326.18]
b = 0.74 [1.58]
Seff = 0.50 [0.12]
Teff = 215 [13] K
Rp = 1.28 [0.83] Re
a = 0.9397 [0.1422] AU
Ag = 38076.83 [48985.37] [0.78σ]
Teffp = 4640 [1478] K [2.99σ]

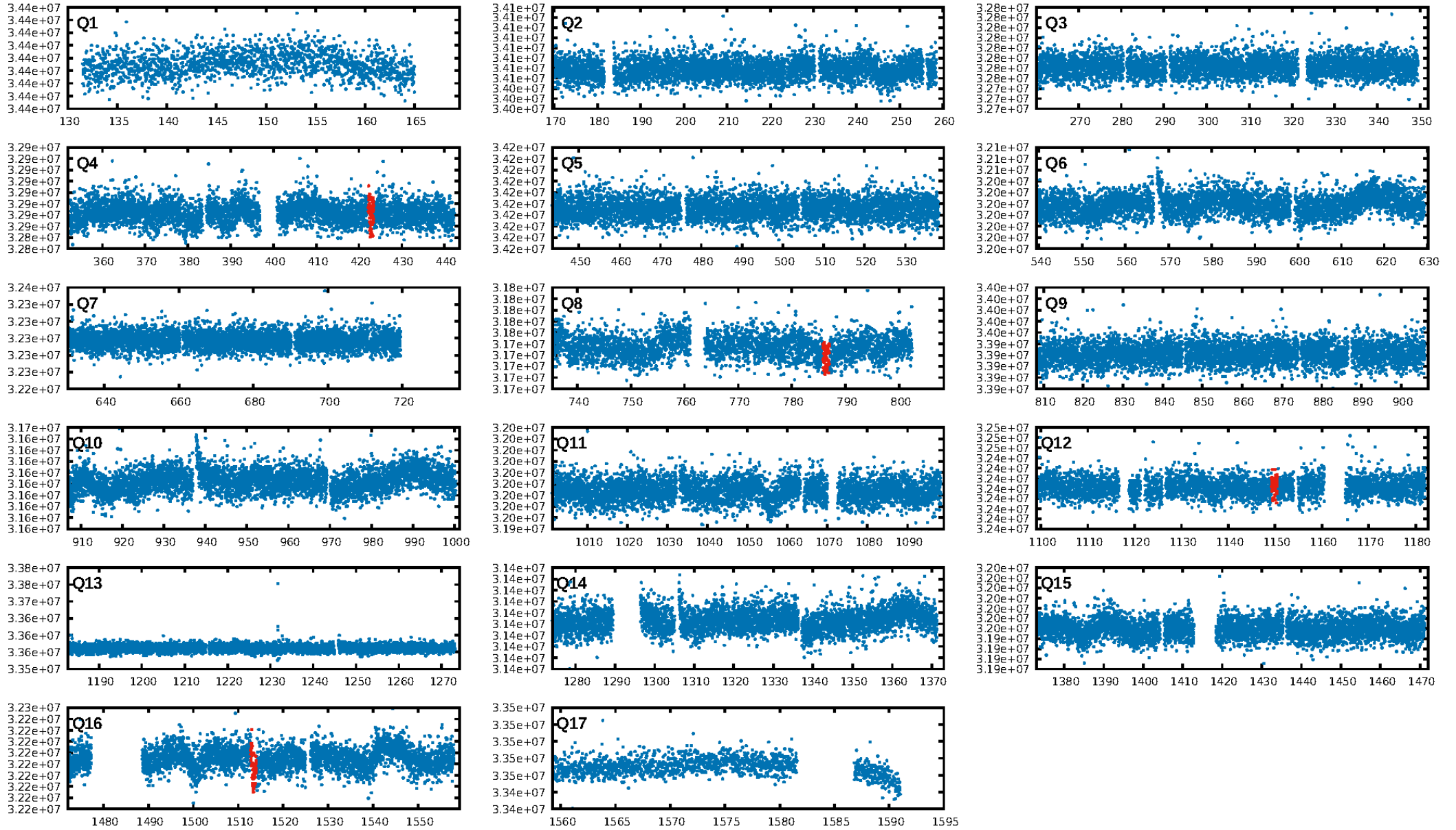
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 95.1%
Bootstrap-pfa: 1.82e-14
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.936
Centroid-sig: 0.4%
Centroid-so: 2.492 arcsec [1.45σ]
OotOffset-rm: 1.591 arcsec [0.76σ]
OotOffset-st: 0/0/3/0 [3]
KicOffset-rm: 1.490 arcsec [0.71σ]
KicOffset-st: 0/0/3/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [4/4]

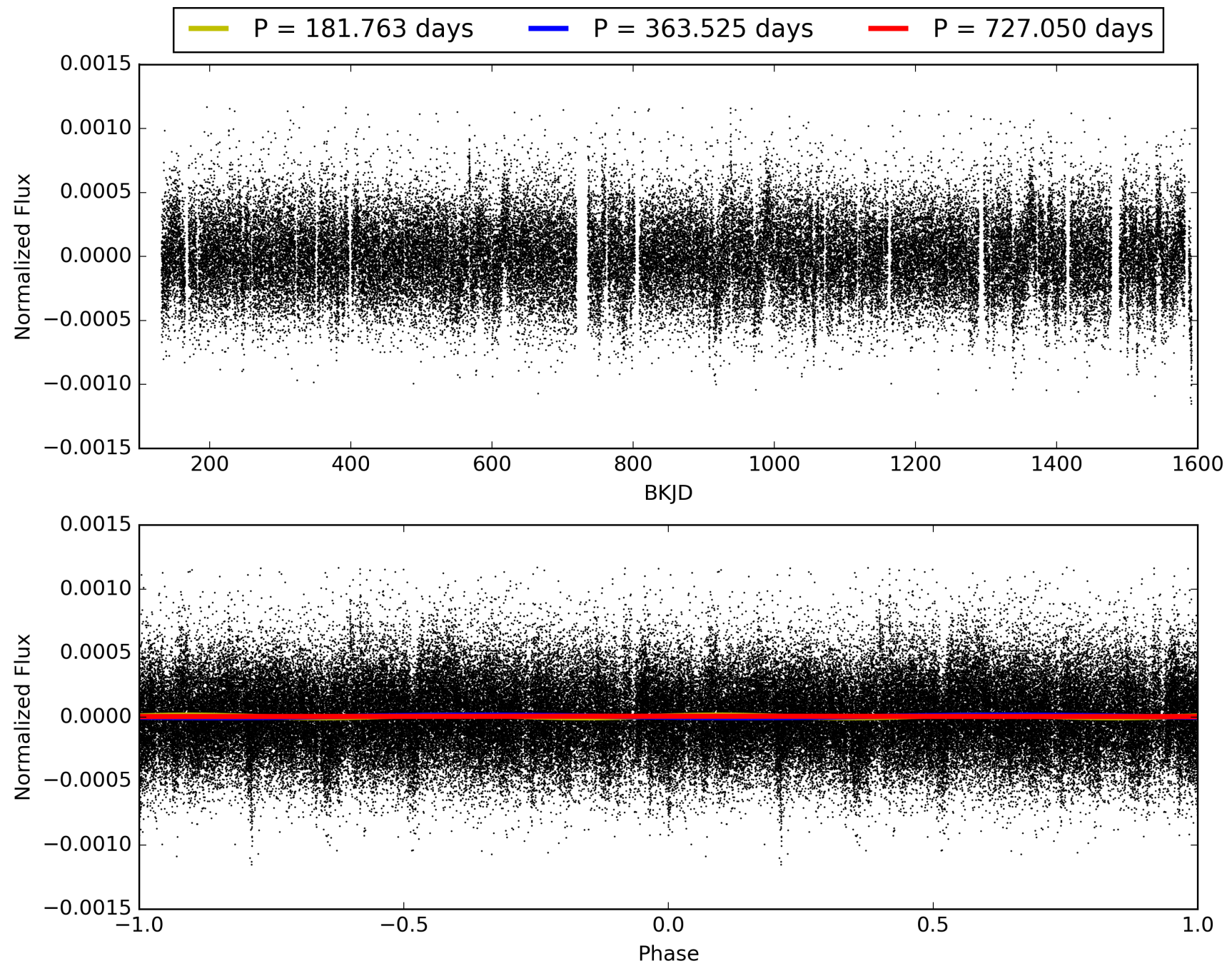
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:52:33 Z

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

TCE 004457734-01, PDC Light Curves

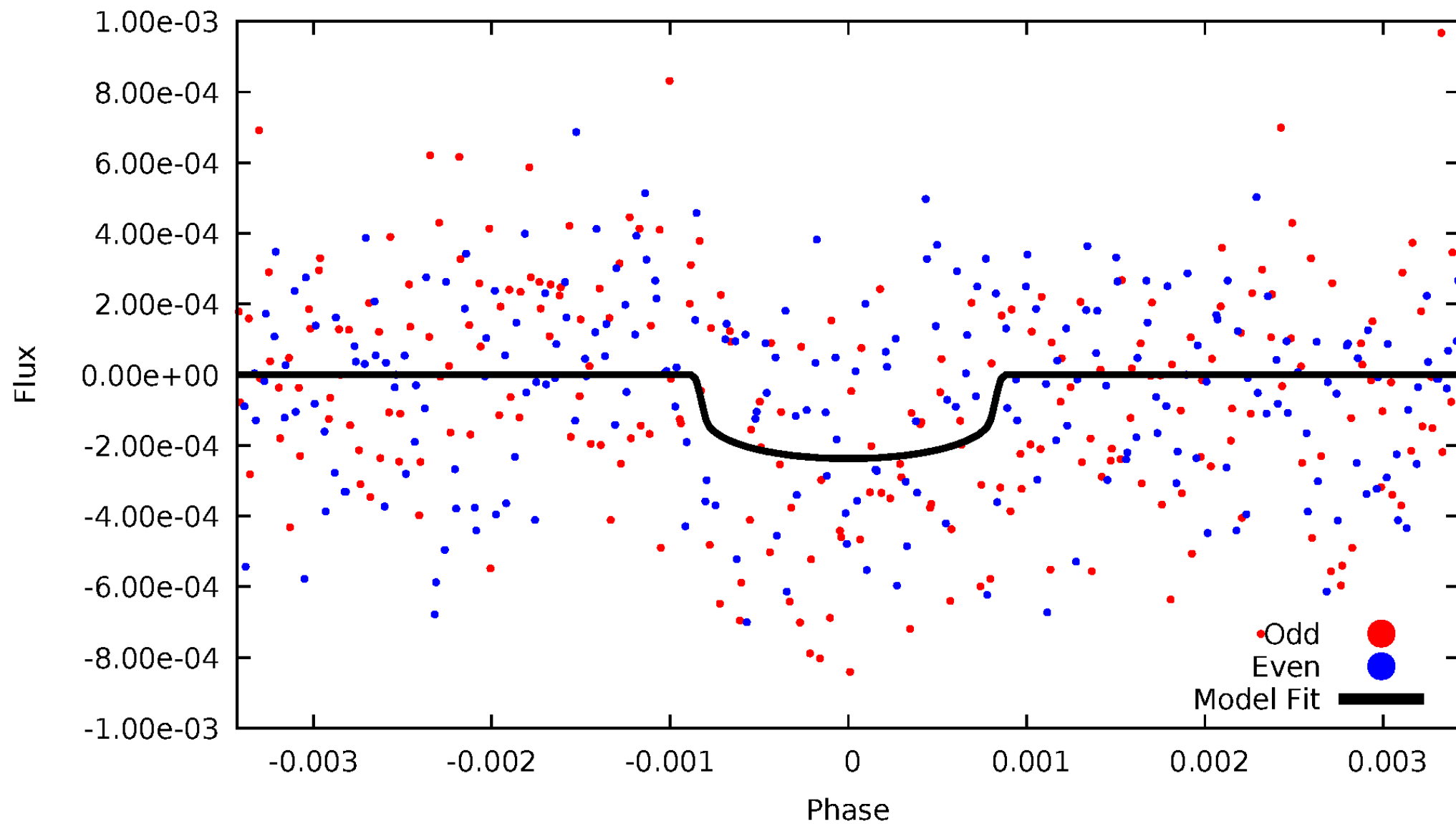


TCE 004457734-01



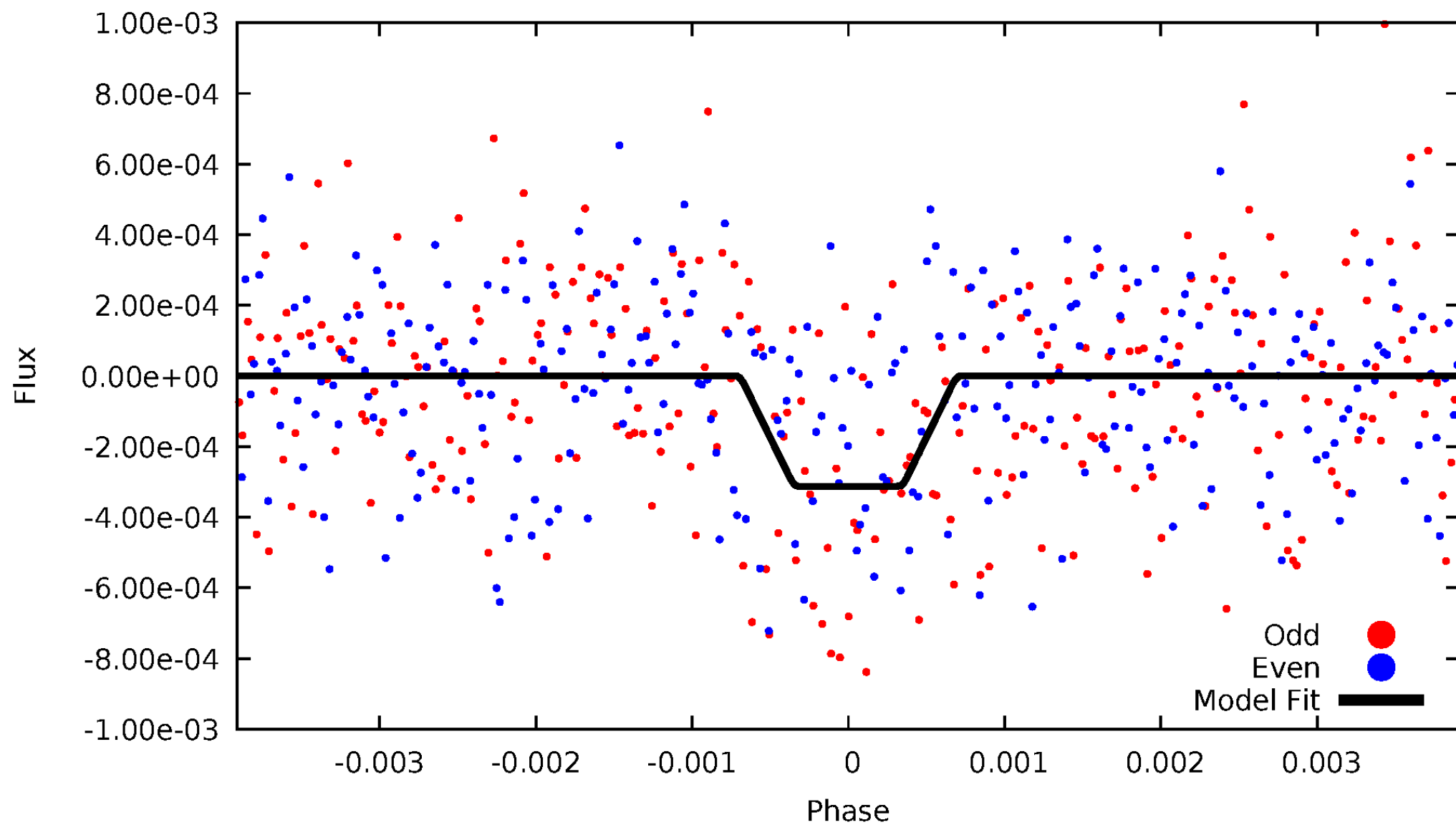
DV Odd/Even

TCE 004457734-01



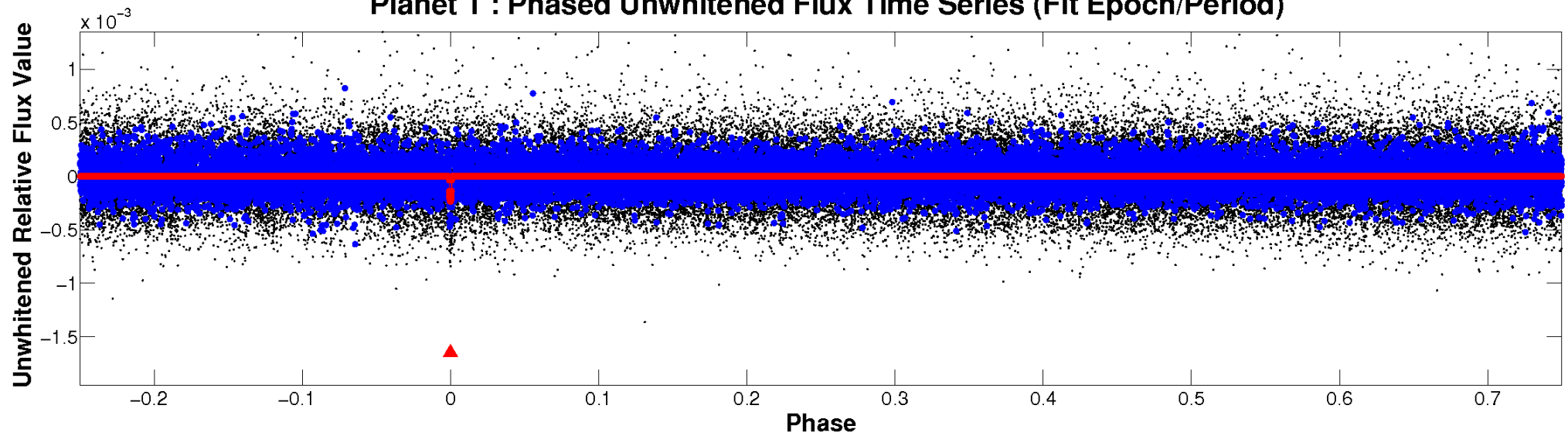
ALT Odd/Even

TCE 004457734-01

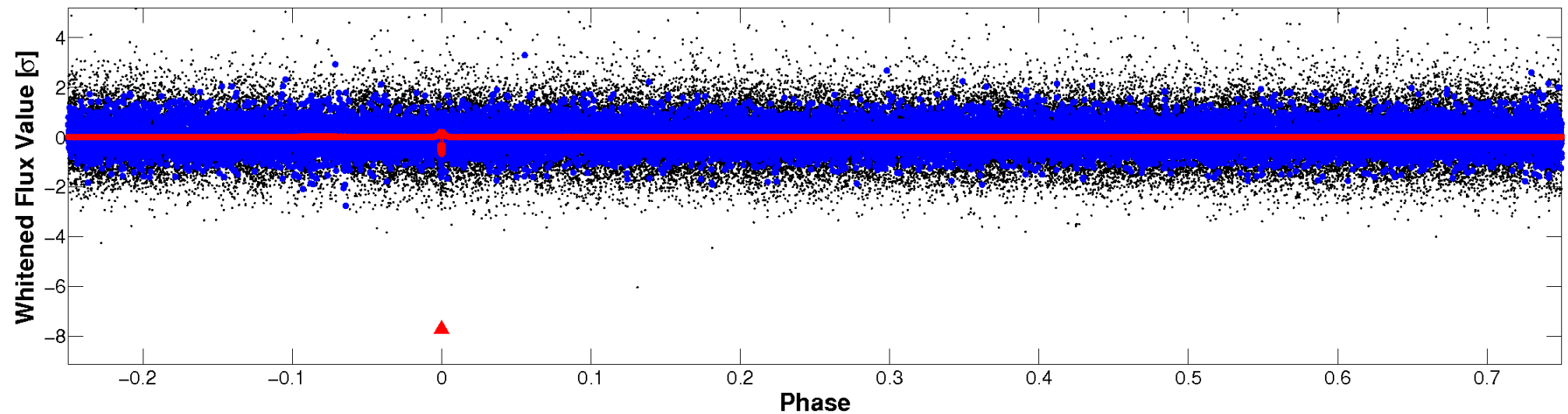


Non-Whitened Vs. Whitened Light Curve

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

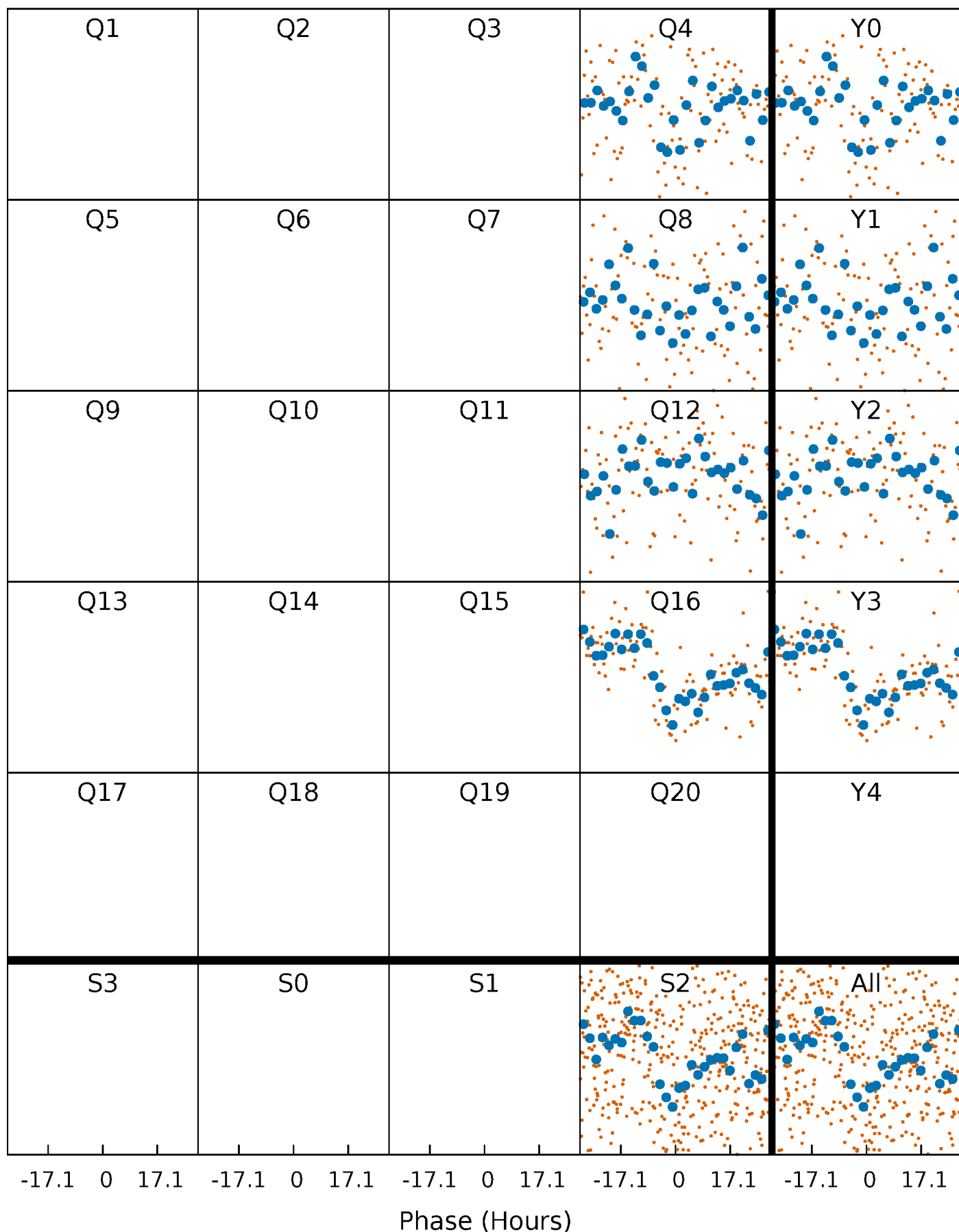


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 004457734-01 P=363.525055 Days $T_0=422.813681$ (BKJD)



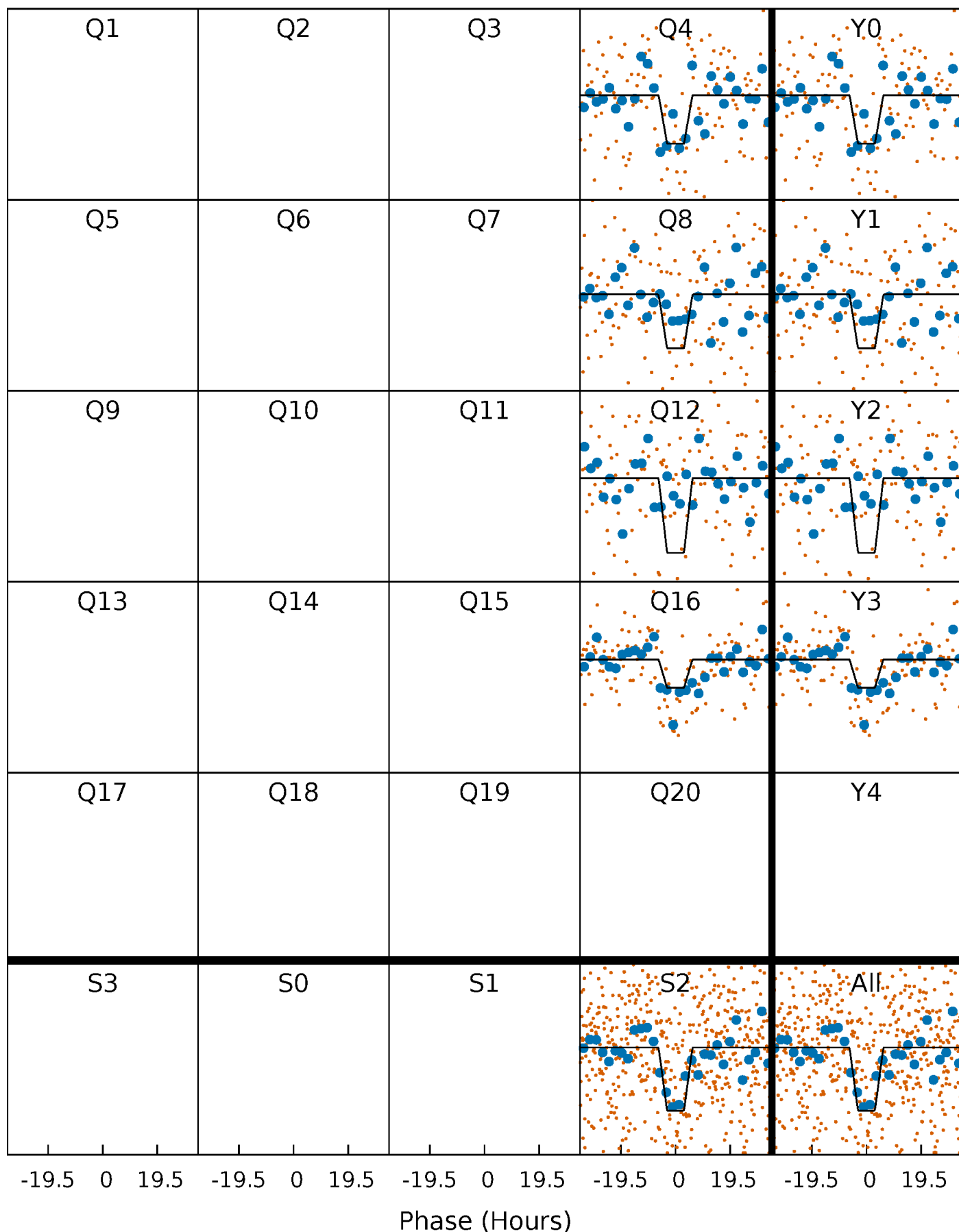
DV Quarter-Phased Transit Curves

TCE 004457734-01 P=363.525055 Days $T_0=422.813681$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

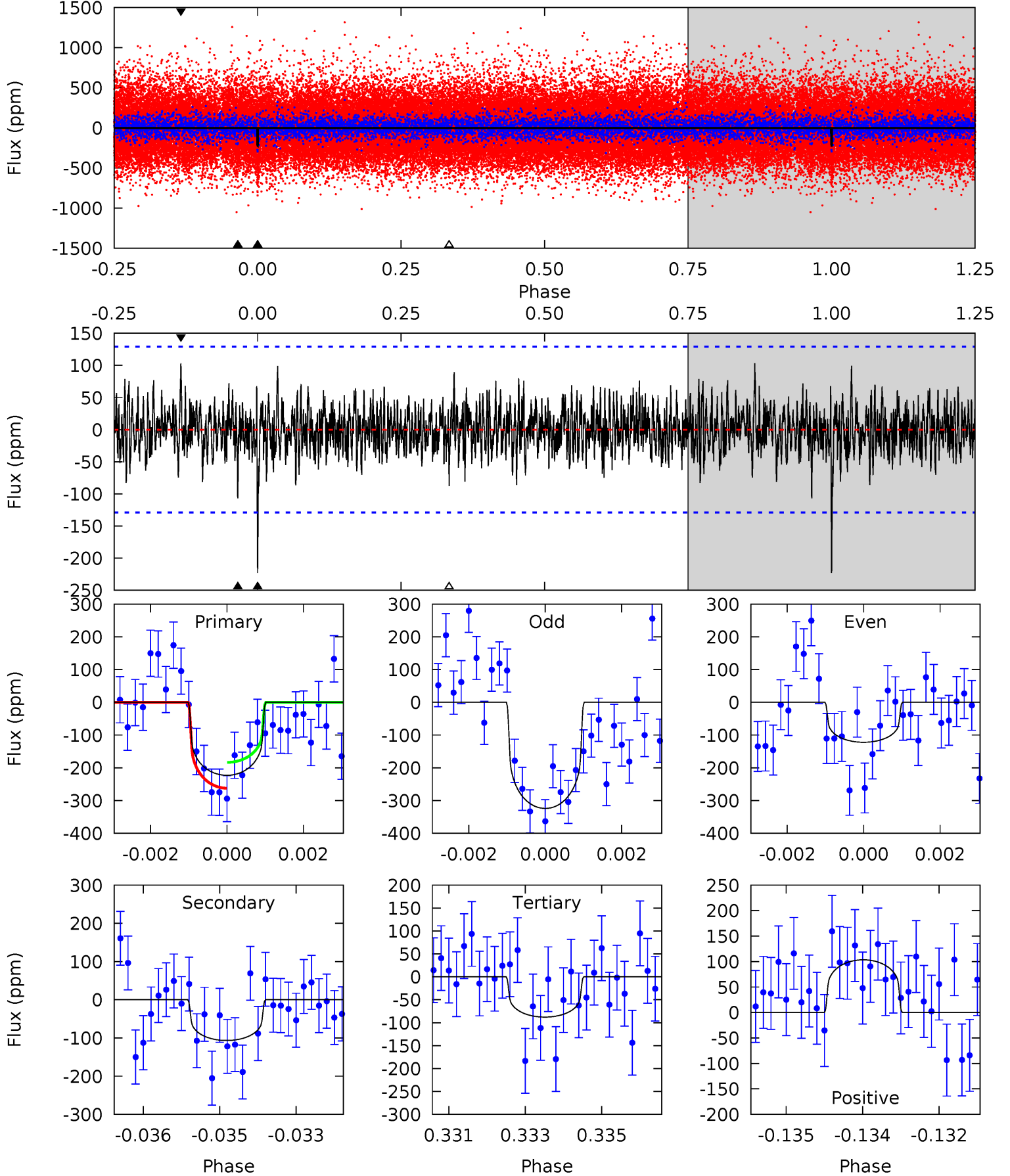
TCE 004457734-01 P=363.519844 Days $T_0=422.791236$ (BKJD)



DV Model-Shift Uniqueness Test

004457734-01, P = 363.525055 Days, E = 59.288626 Days

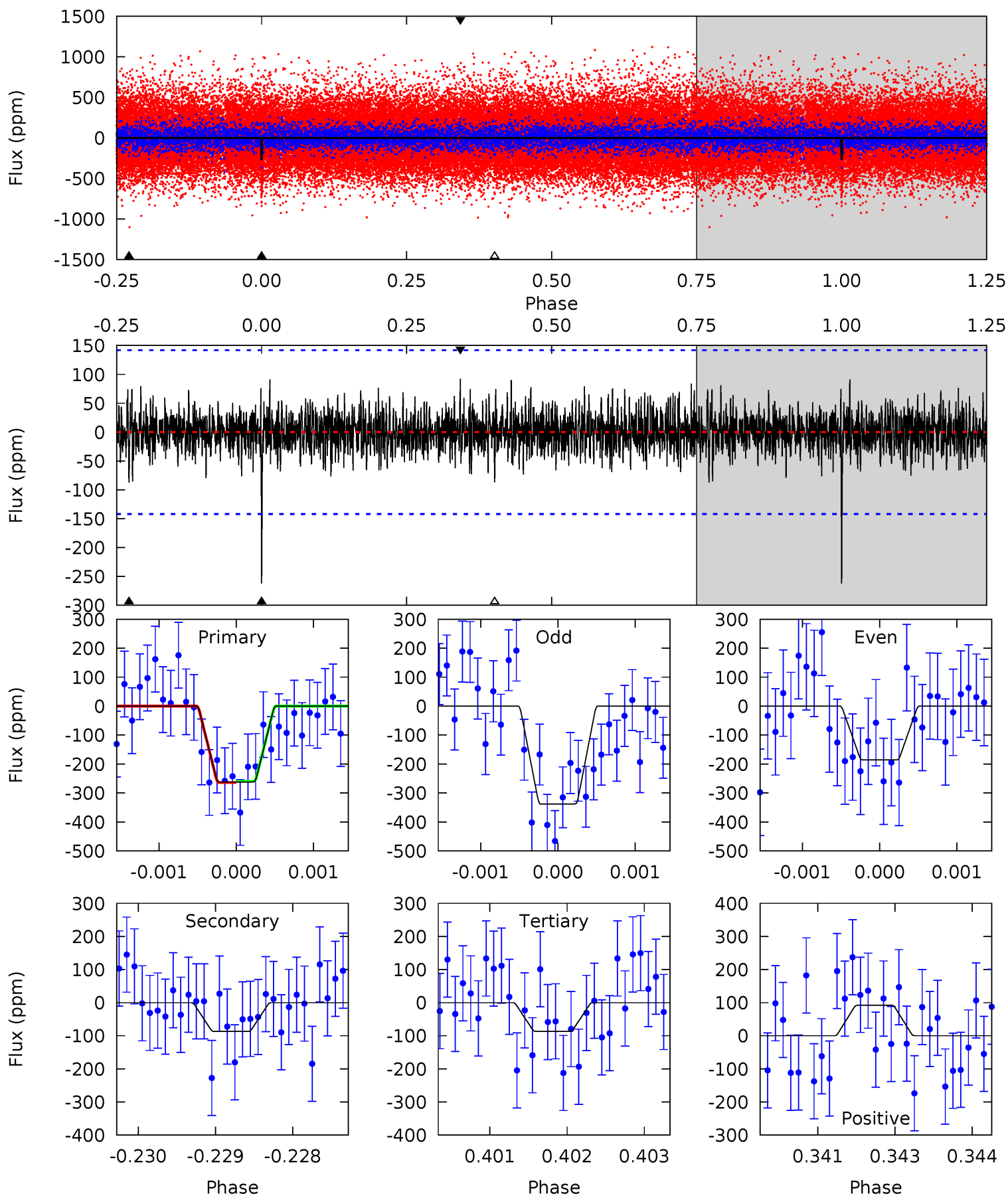
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.25	4.42	3.64	4.29	5.35	3.13	1.18	5.61	4.96	0.78	0.13	4.21	1.14	0.32	1.63



Alt Model-Shift Uniqueness Test

004457734-01, P = 363.519844 Days, E = 59.271392 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.95	3.31	3.30	3.50	5.39	3.19	1.00	6.65	6.45	0.01	-0.19	2.90	1.11	0.26	0.08



Stellar Parameters For KIC 004457734

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5383^{+159}_{-143}	$4.589^{+0.038}_{-0.113}$	$-0.200^{+0.300}_{-0.300}$	$0.769^{+0.143}_{-0.061}$	$0.840^{+0.087}_{-0.087}$	$2.598^{+0.515}_{-0.897}$
	+3%/-3%	+1%/-2%	+150%/-150%	+19%/-8%	+10%/-10%	+20%/-35%
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 004457734-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-107 ± 24	$1.41^{+0.75}_{-0.83}$	305^{+14}_{-11}	4479^{+2080}_{-695}	$26403^{+125888}_{-16151}$
Alt.	-87 ± 26	$1.50^{+0.84}_{-0.77}$	304^{+14}_{-11}	4152^{+1402}_{-644}	18005^{+55272}_{-11385}

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

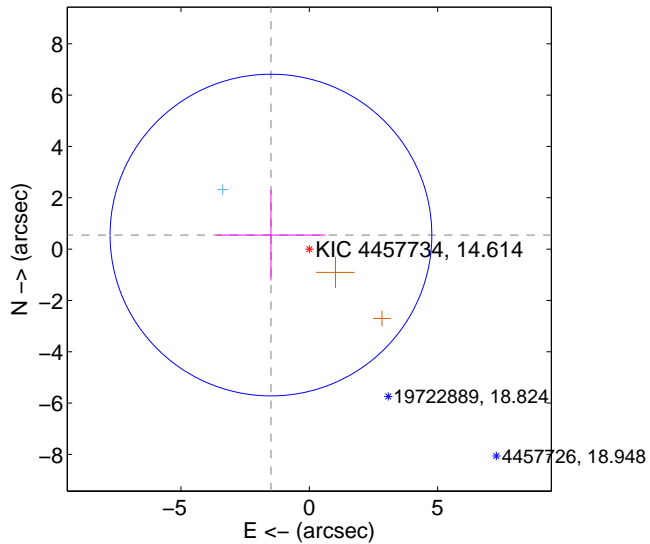
Supplemental centroid analysis for 004457734-01. Kepler magnitude: 14.61. Transit SNR 6.27

There are 1 quarters with good PRF difference image offsets

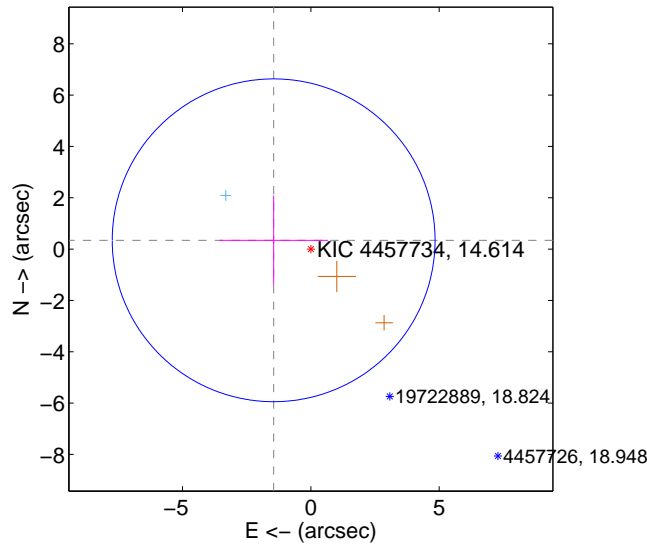
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.591 ± 2.090	0.76	1.494 ± 2.129	0.547 ± 1.769
PRF-fit source offset from KIC position	1.490 ± 2.097	0.71	1.450 ± 2.115	0.343 ± 1.746
photometric centroid source offset	2.49 ± 1.71	1.45	-0.49 ± 1.73	2.44 ± 1.71

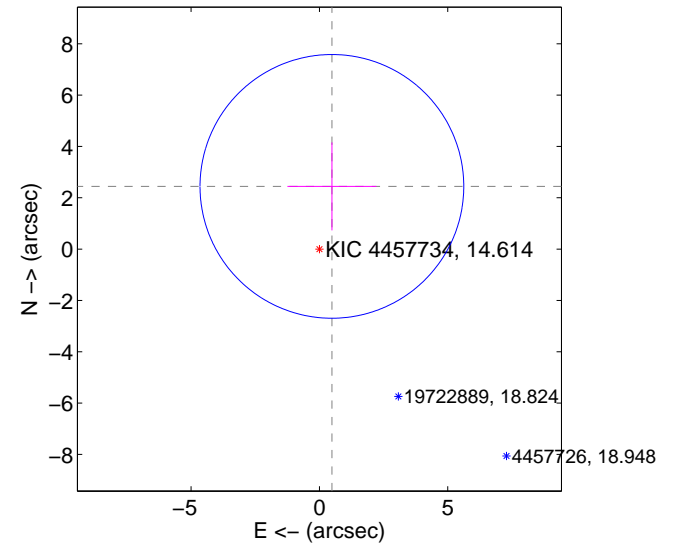
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

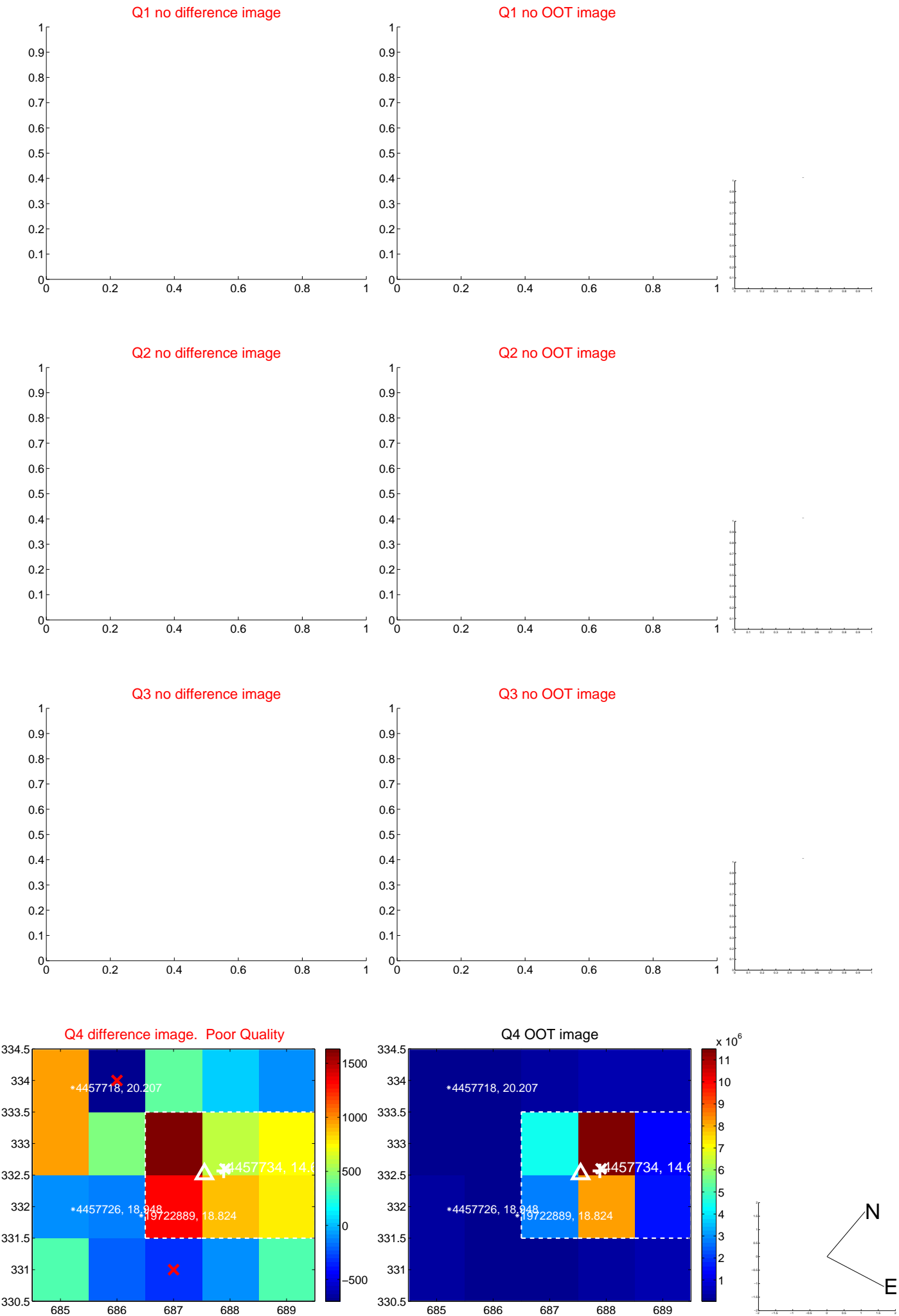


offset from photometric centroids

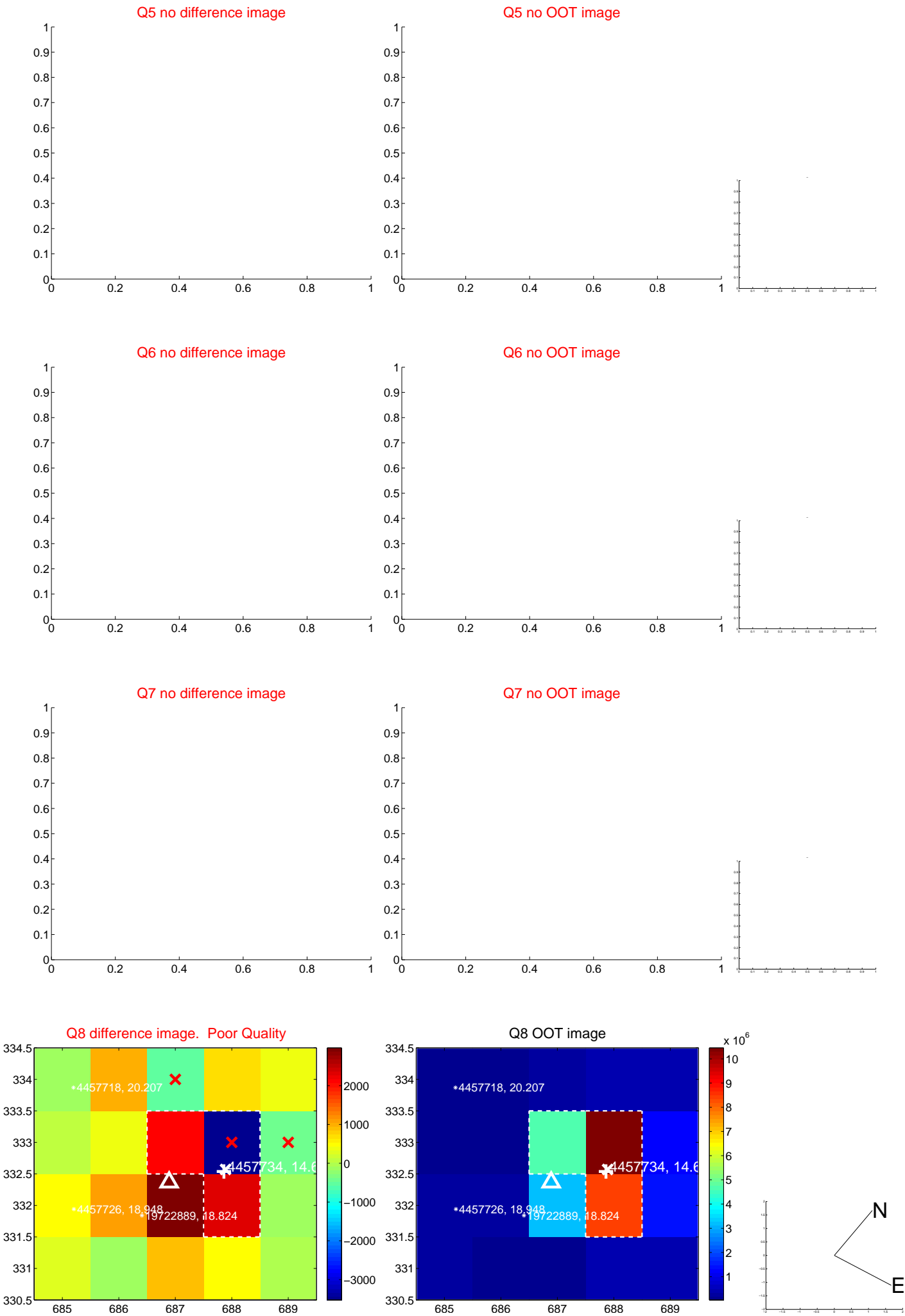


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

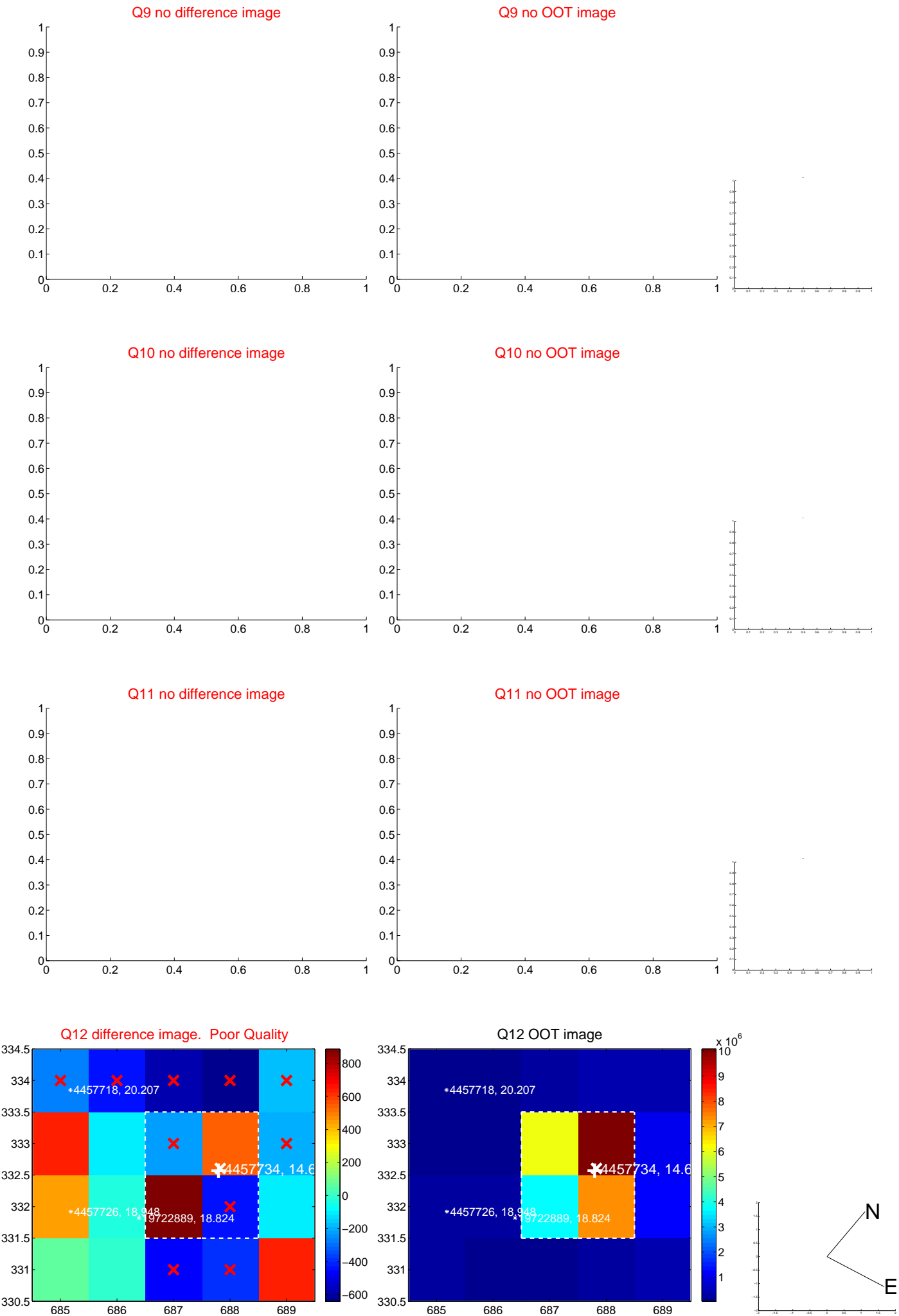
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



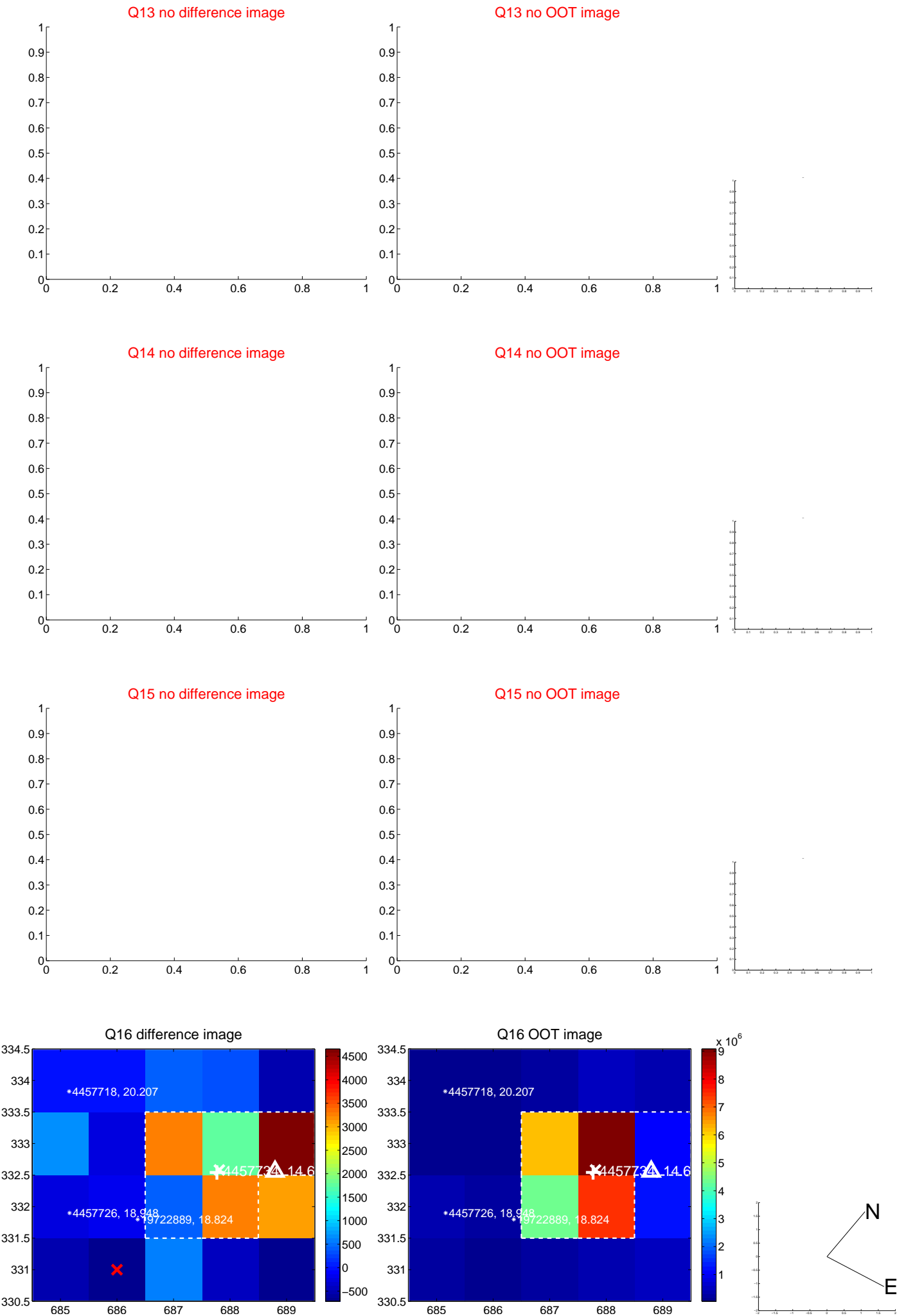
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



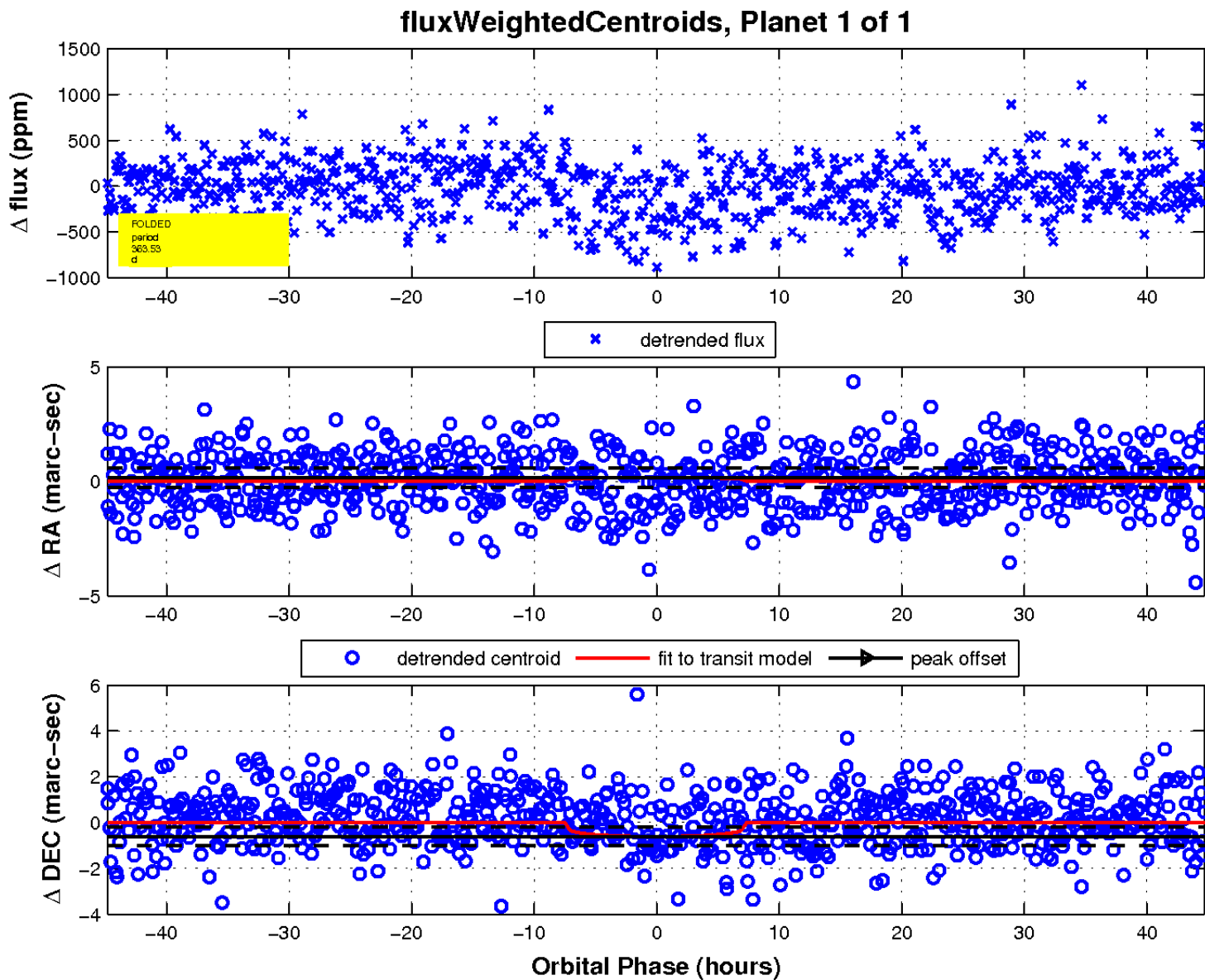
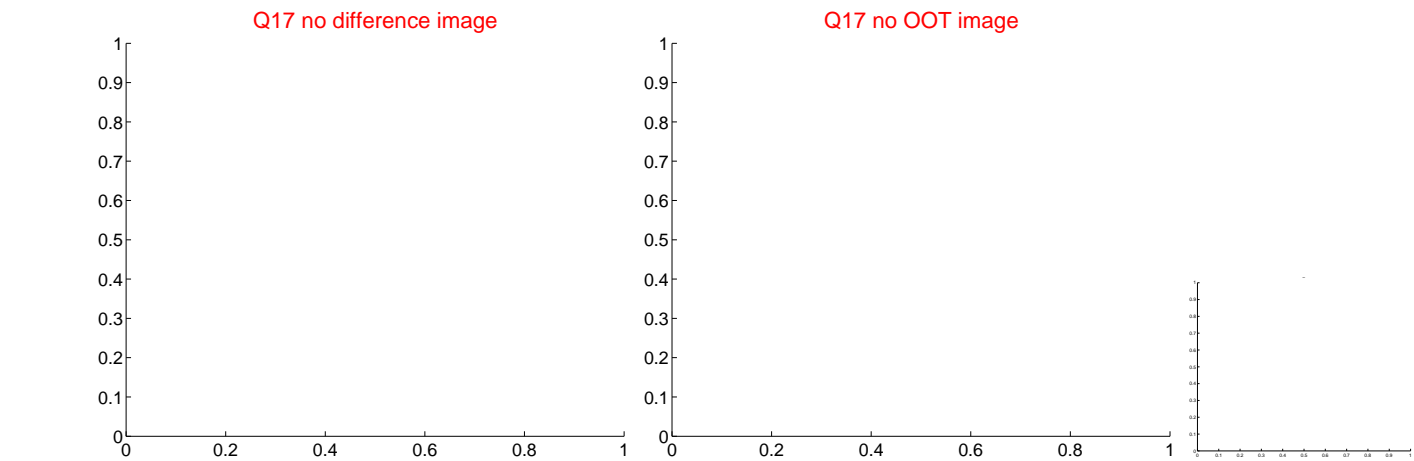
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

