

KIC 008431372

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})
008431372-01	OBS	No	1.076003	132.219321	8.3	6.431	7.9	5.8	2.00	7064	0.67	16324.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008431372-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

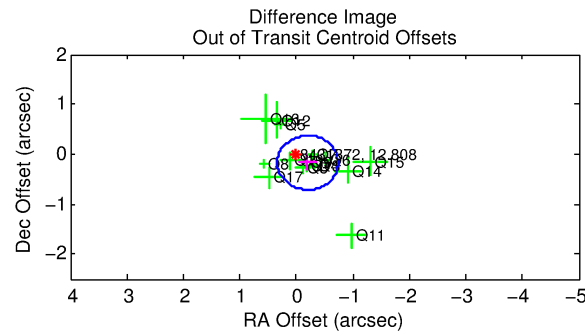
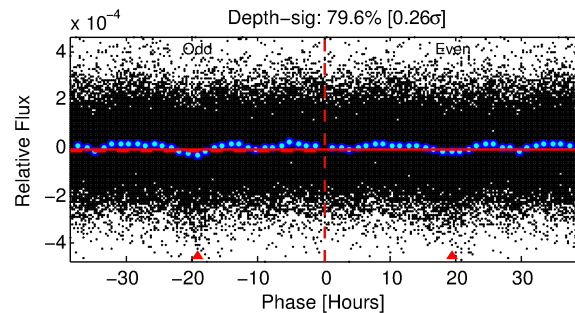
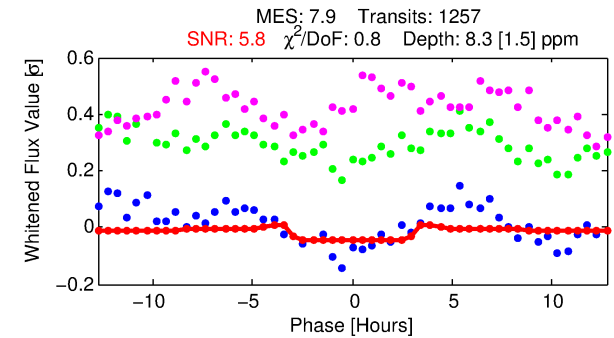
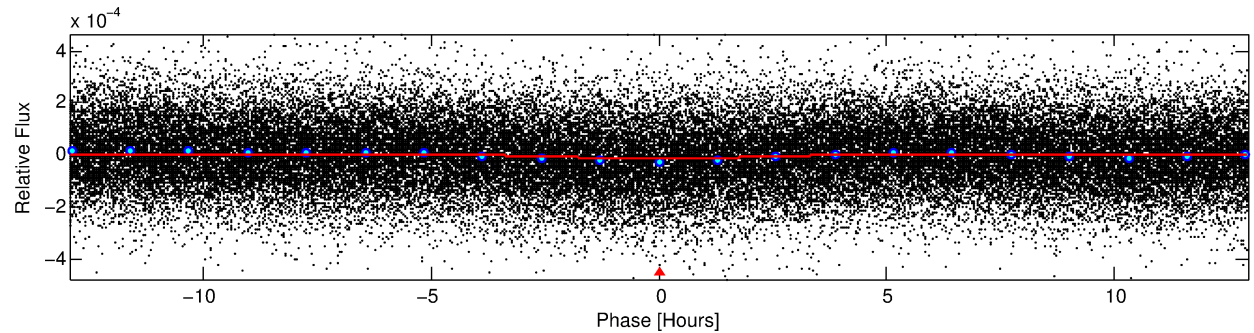
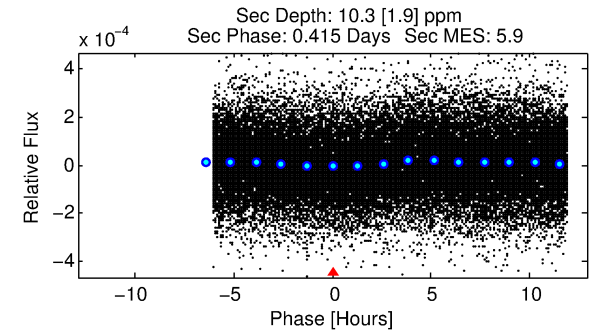
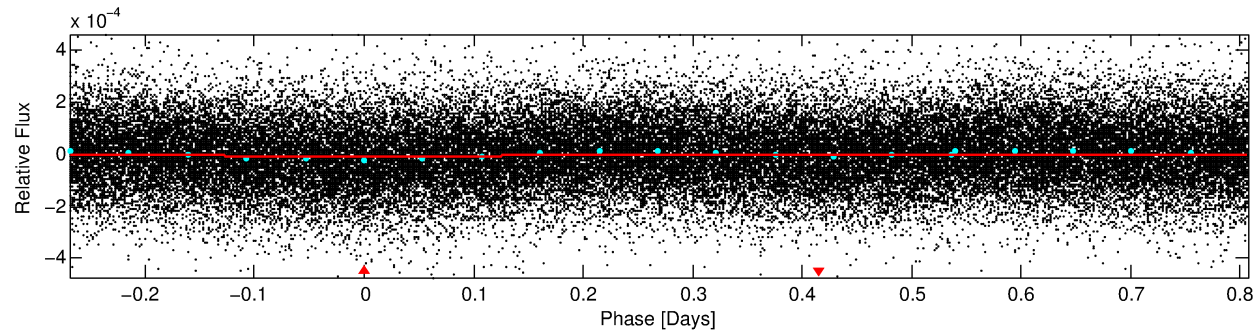
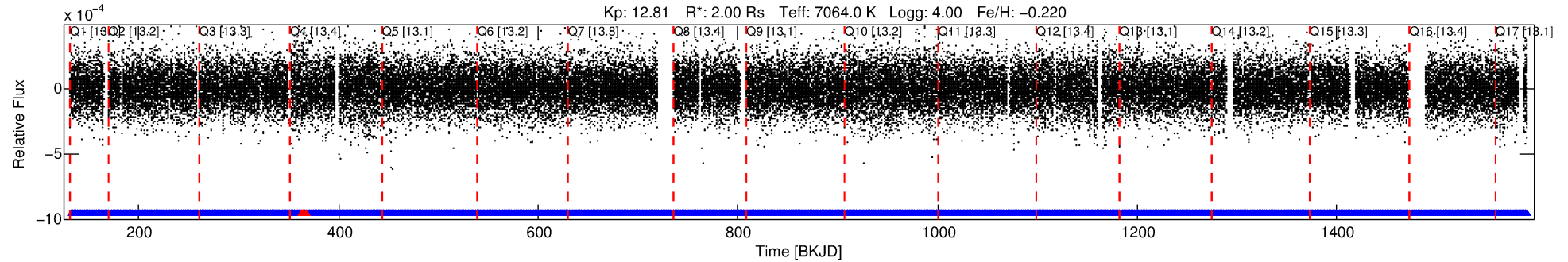
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008431372-01

No Significant Match Found

DV One-Page Summary

KIC: 8431372 Candidate: 1 of 1 Period: 1.076 d



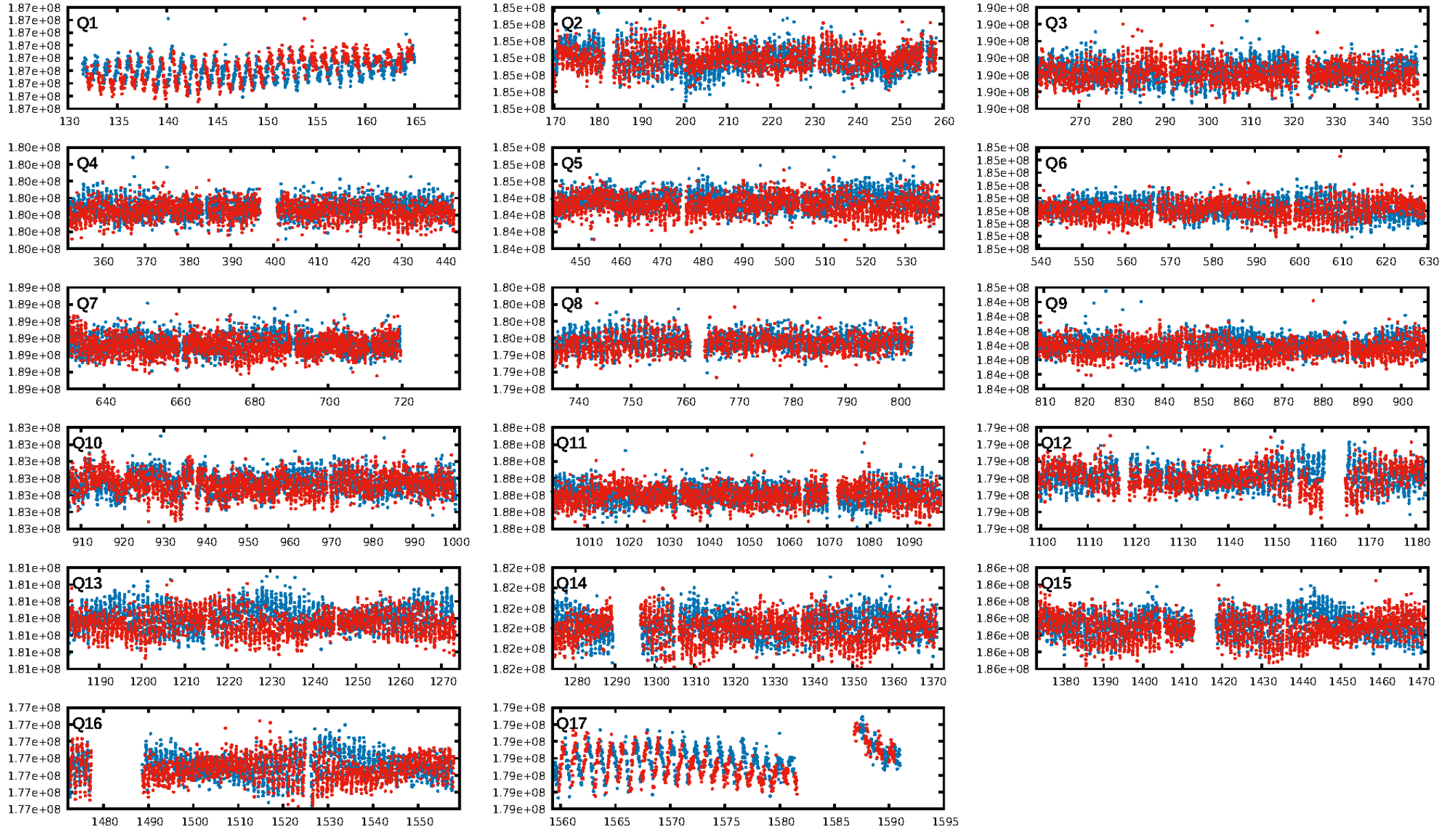
DV Fit Results:

Period = 1.07600 [0.00003] d
Epoch = 132.2193 [0.0082] BKJD
Rp/R* = 0.0031 [0.0015]
a/R* = 1.10 [0.55]
b = 0.90 [0.62]
Seff = 16324.65 [6137.26]
Teq = 2882 [271] K
Rp = 0.67 [0.36] Re
a = 0.0234 [0.0054] AU
Ag = 6.95 [7.16] [0.83σ]
Teffp = 7234 [1773] K [2.43σ]

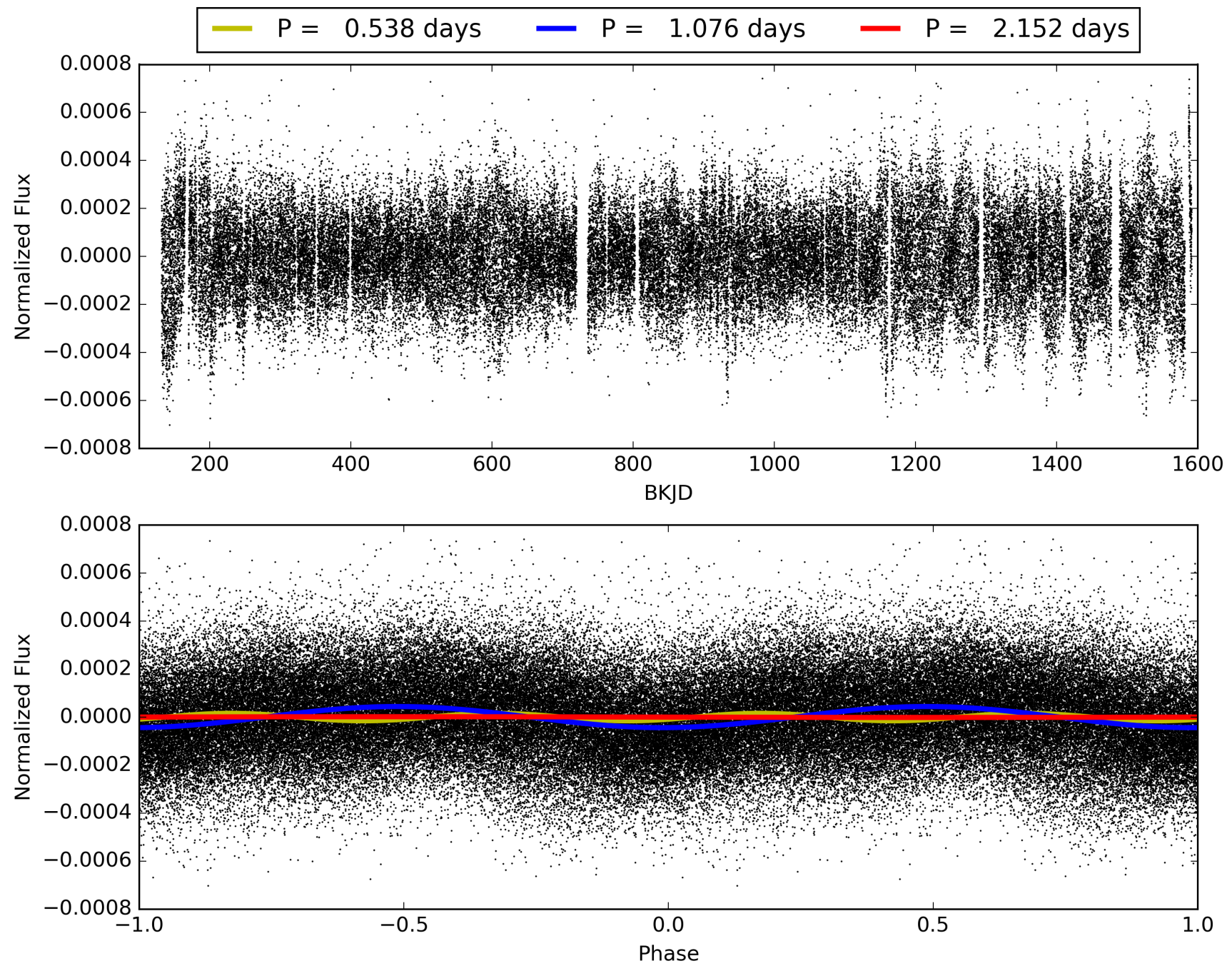
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.45e-09
RollingBand-fgt: 1.00 [1198/1201]
GhostDiagnostic-chr: 1.323
Centroid-sig: 0.2%
Centroid-so: 2.980 arcsec [1.92σ]
OotOffset-rm: 0.261 arcsec [1.45σ]
KicOffset-rm: 0.105 arcsec [0.55σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008431372-01, PDC Light Curves

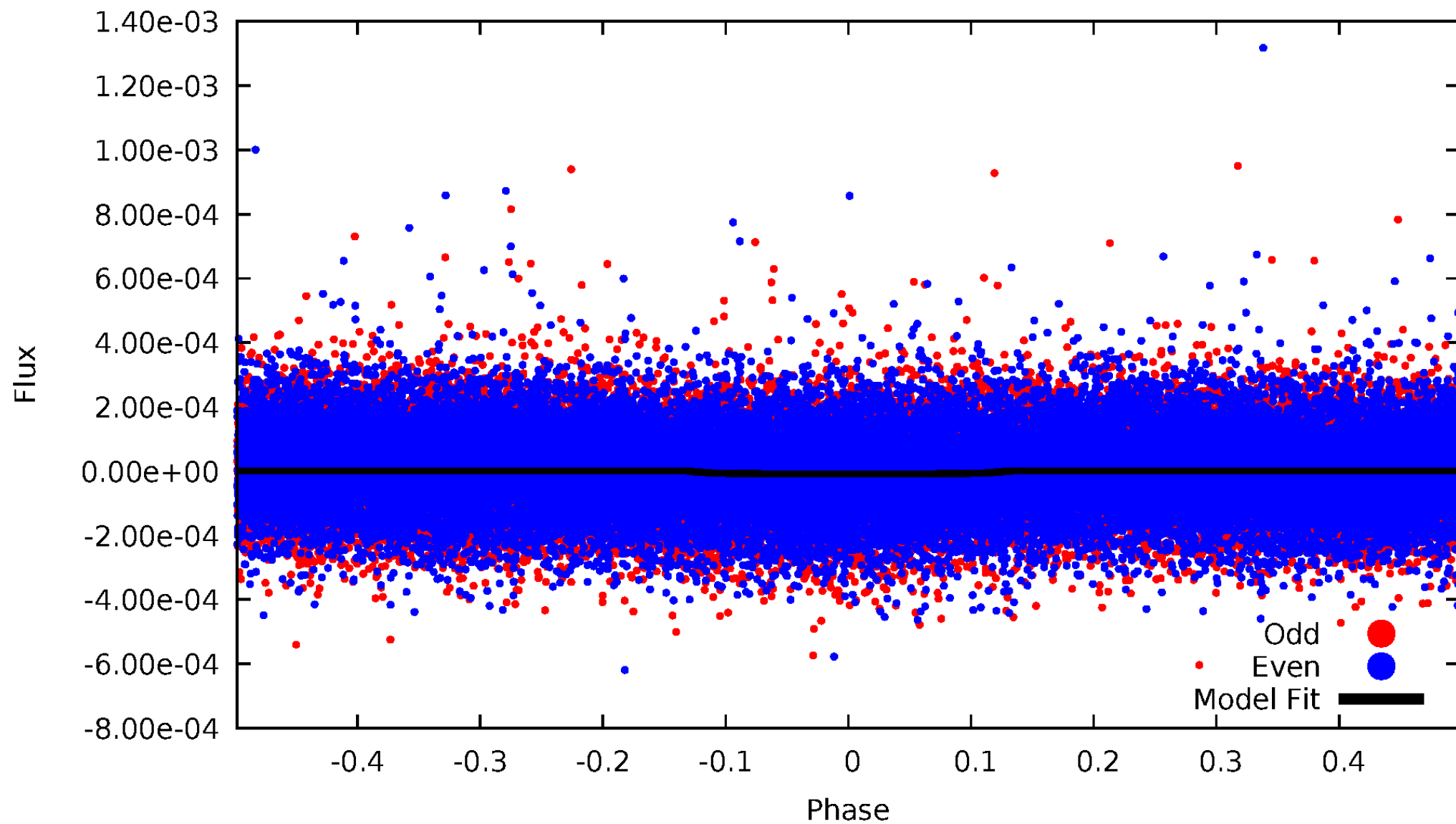


TCE 008431372-01



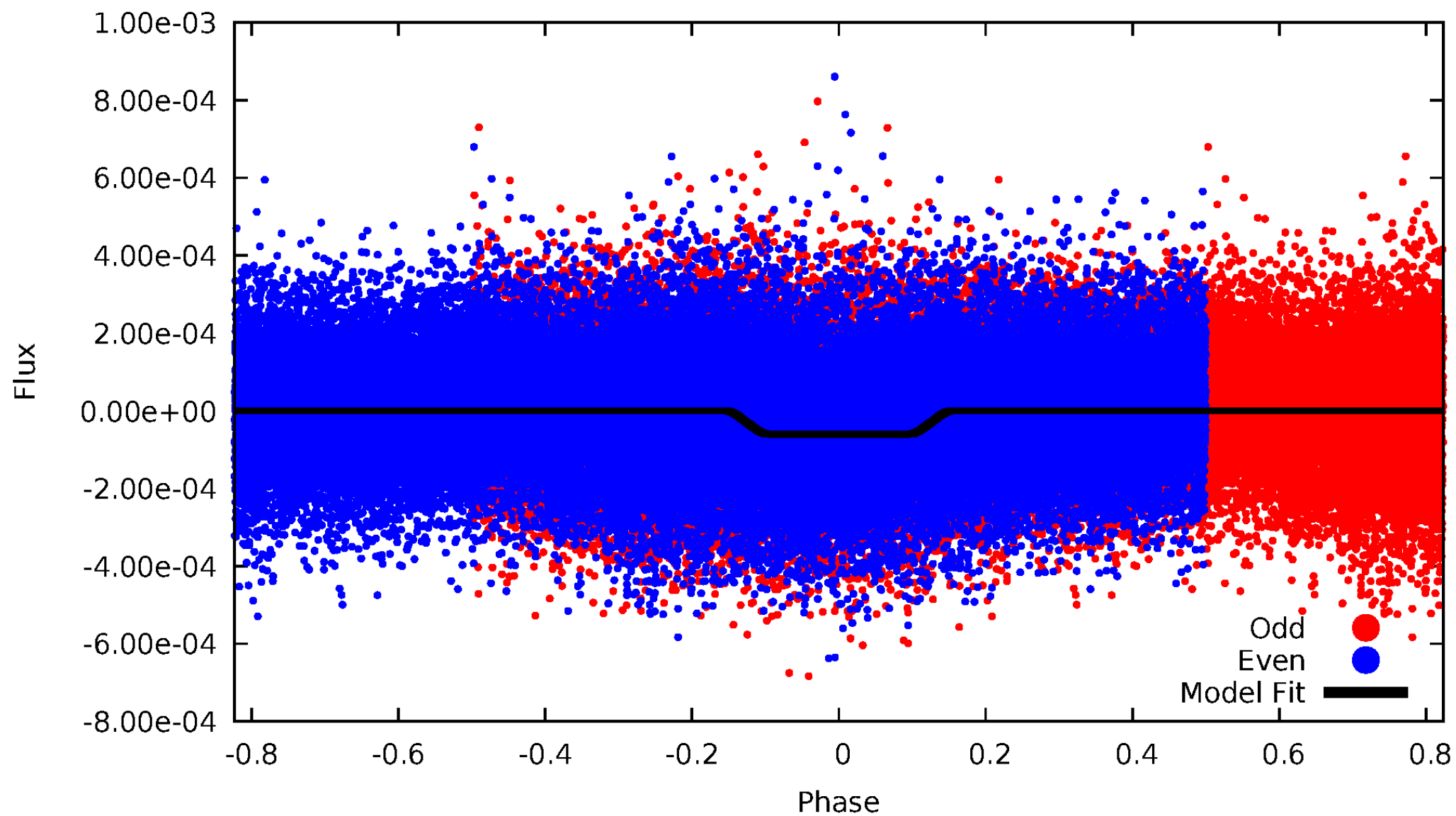
DV Odd/Even

TCE 008431372-01



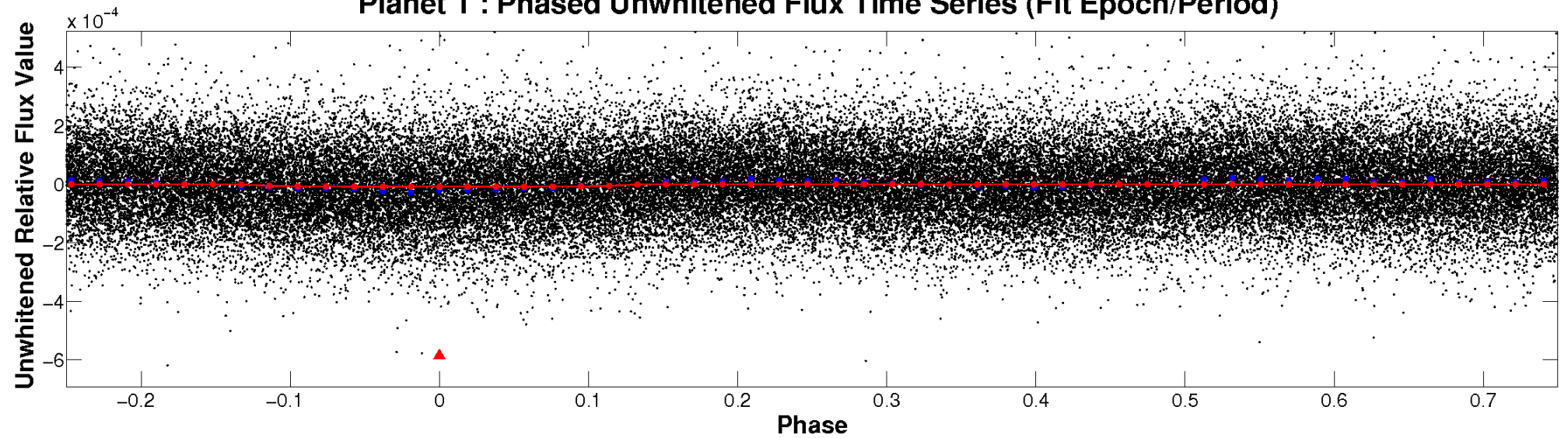
ALT Odd/Even

TCE 008431372-01

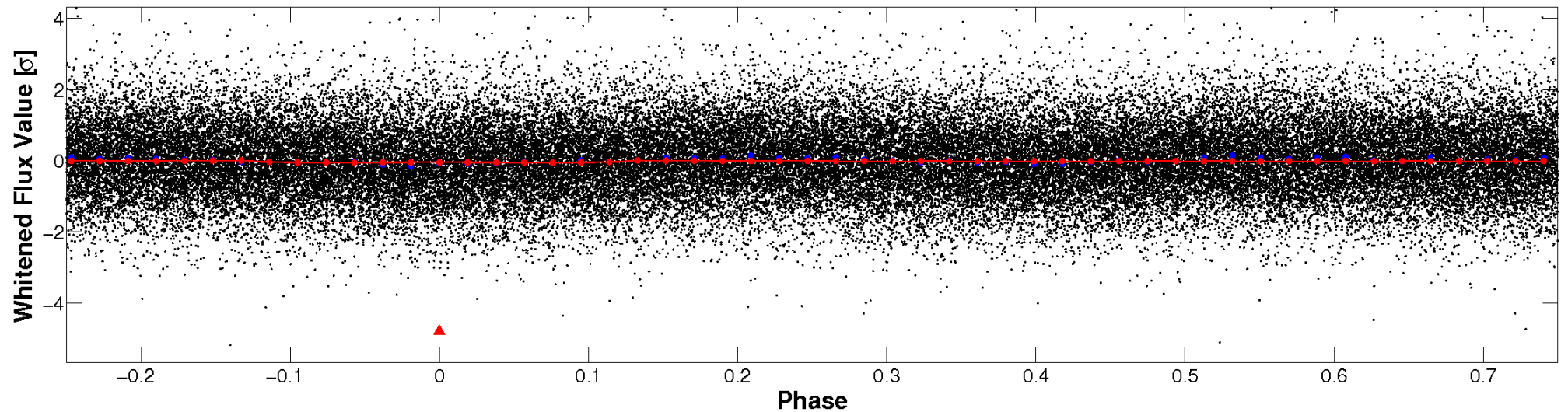


Non-Whitened Vs. Whitened Light Curve

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

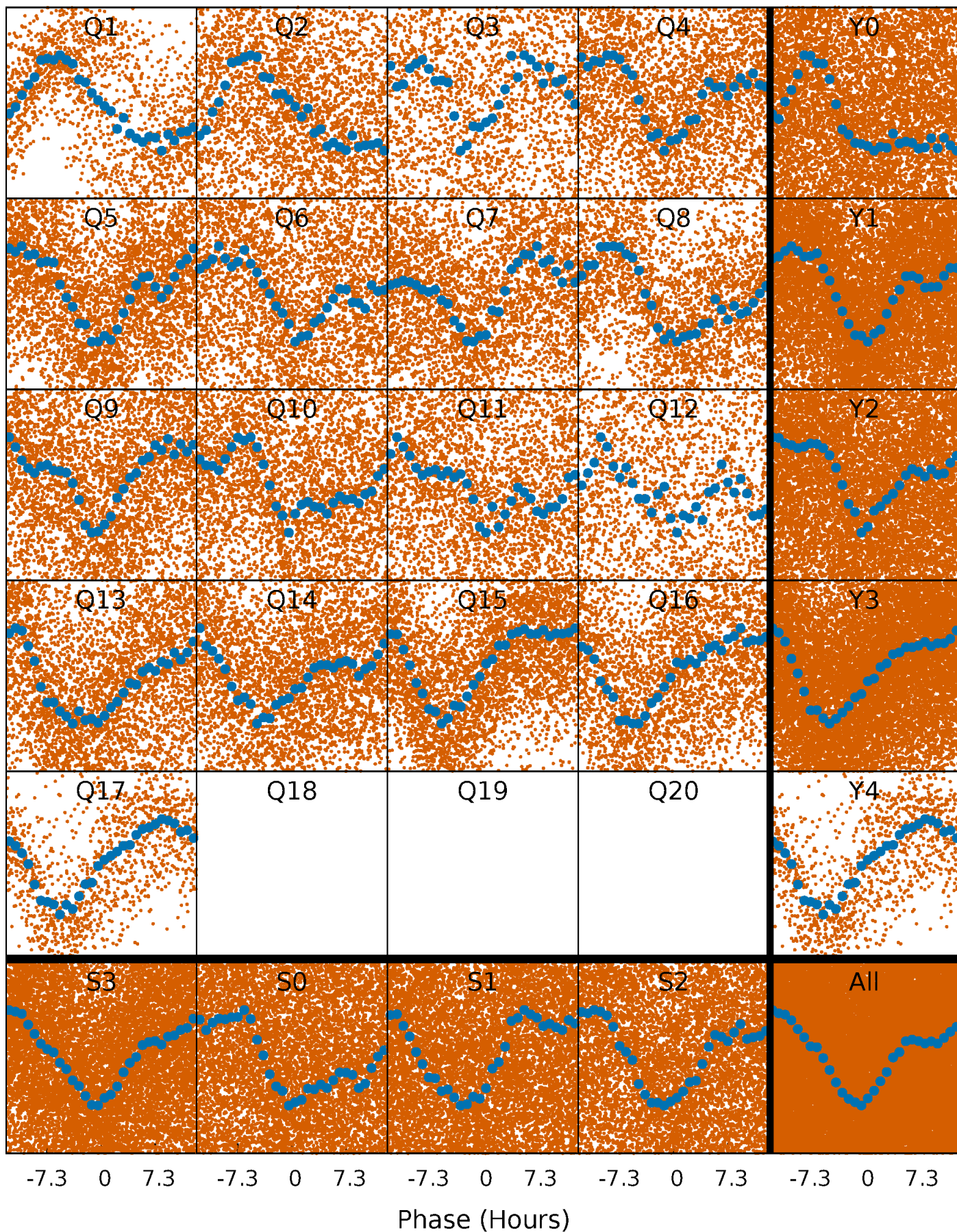


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



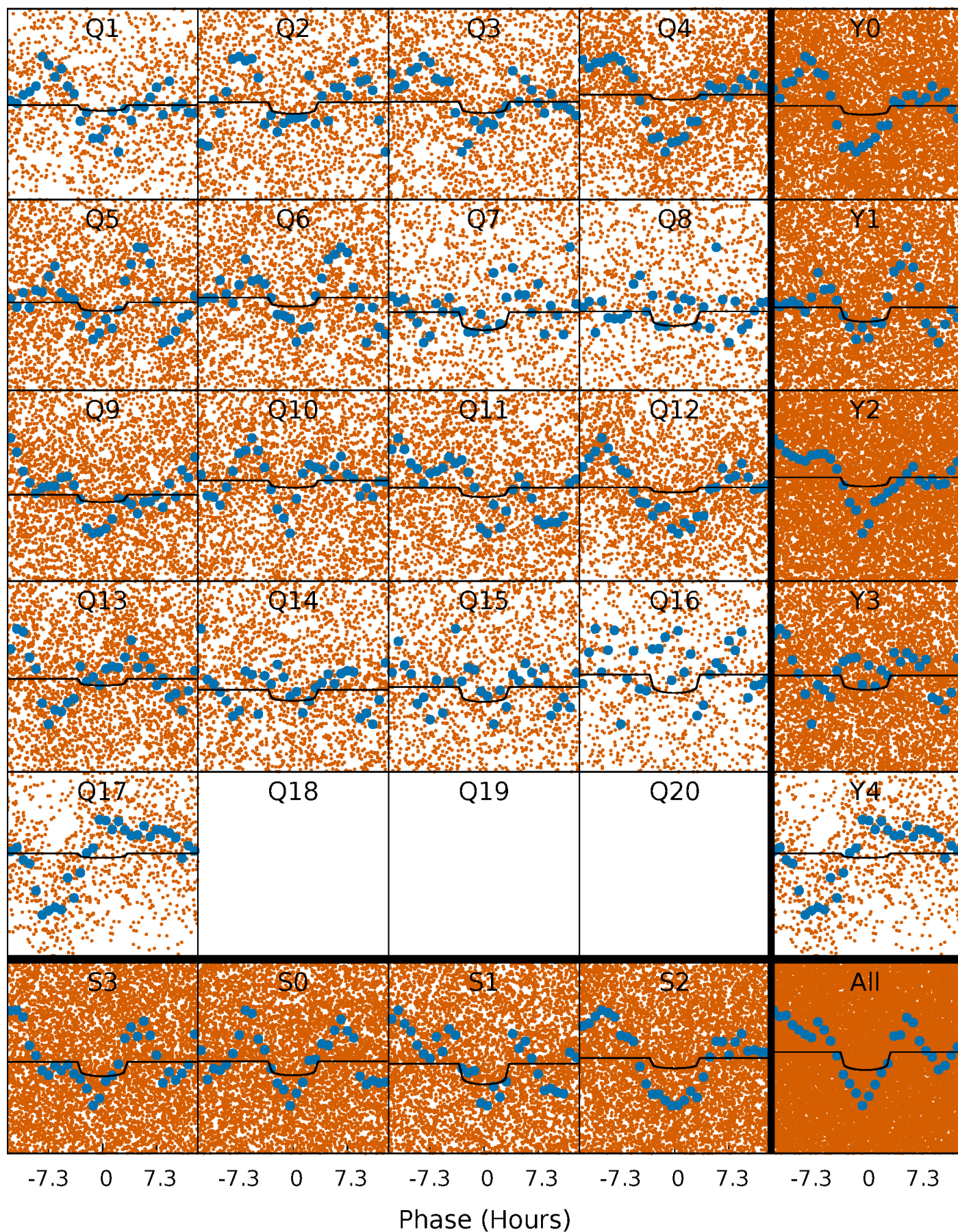
PDC Quarter-Phased Transit Curves

TCE 008431372-01 P= 1.076003 Days $T_0=132.219321$ (BKJD)



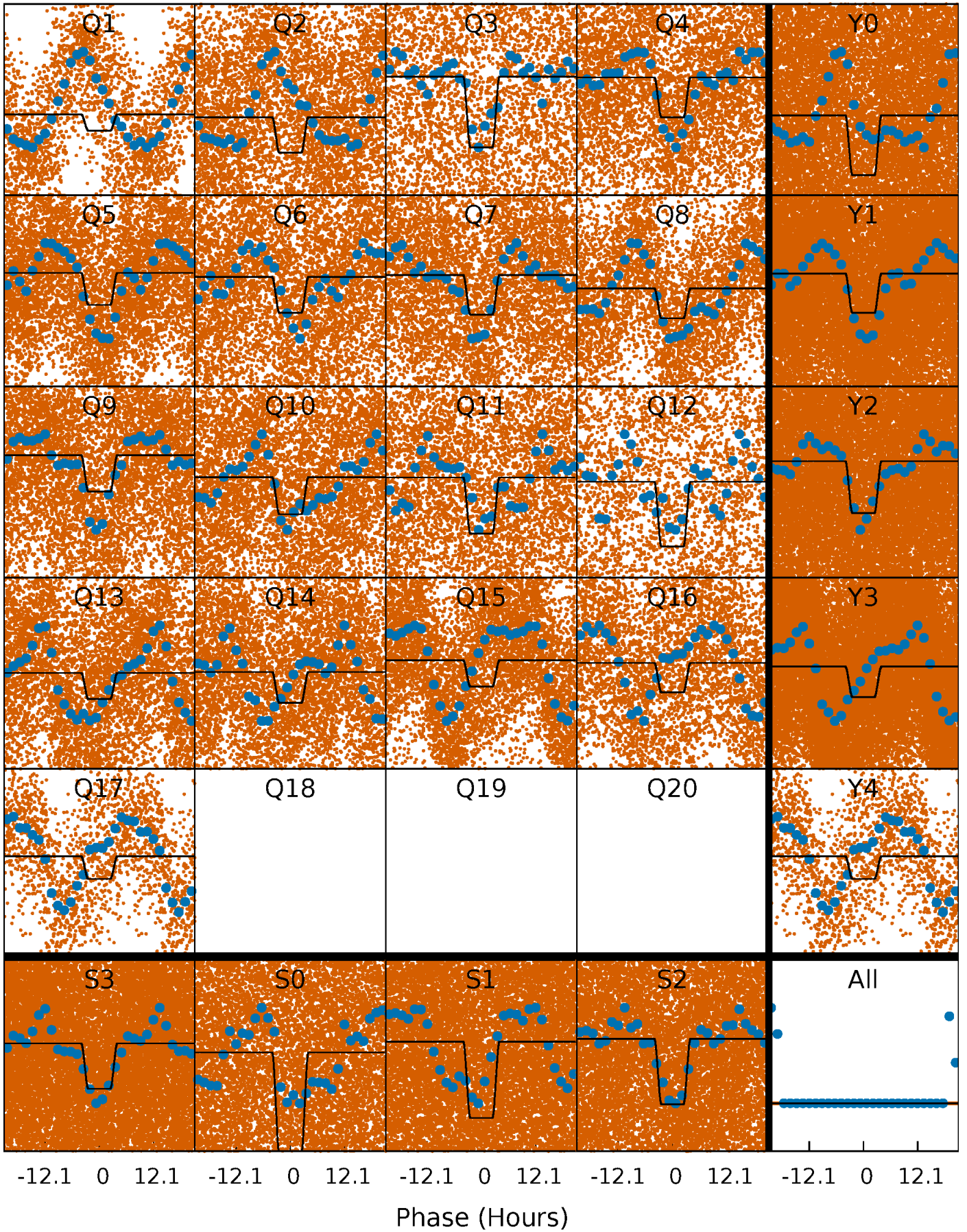
DV Quarter-Phased Transit Curves

TCE 008431372-01 P= 1.076003 Days $T_0=132.219321$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

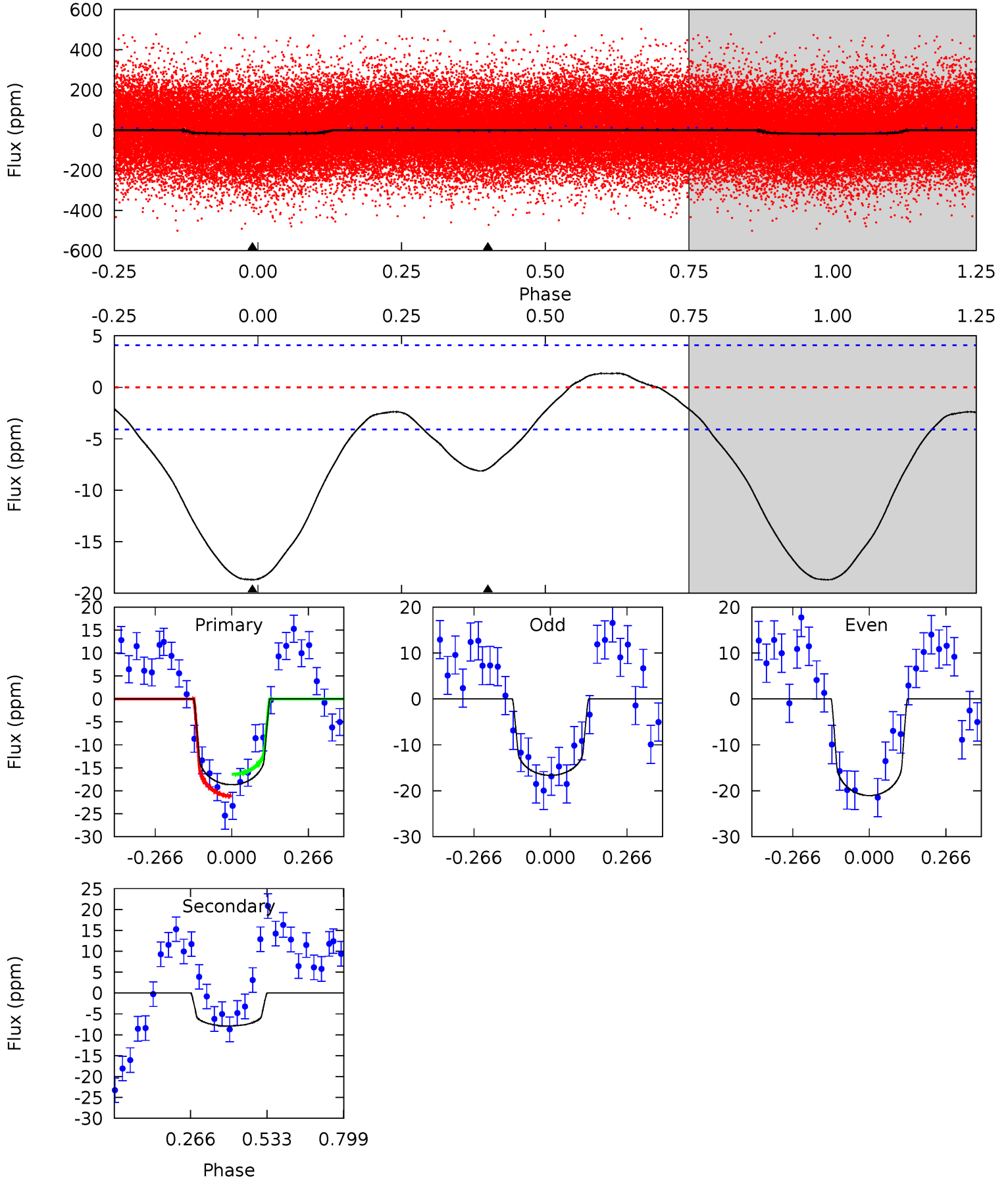
TCE 008431372-01 P= 1.076138 Days $T_0=132.132993$ (BKJD)



DV Model-Shift Uniqueness Test

008431372-01, P = 1.076003 Days, E = 131.143318 Days

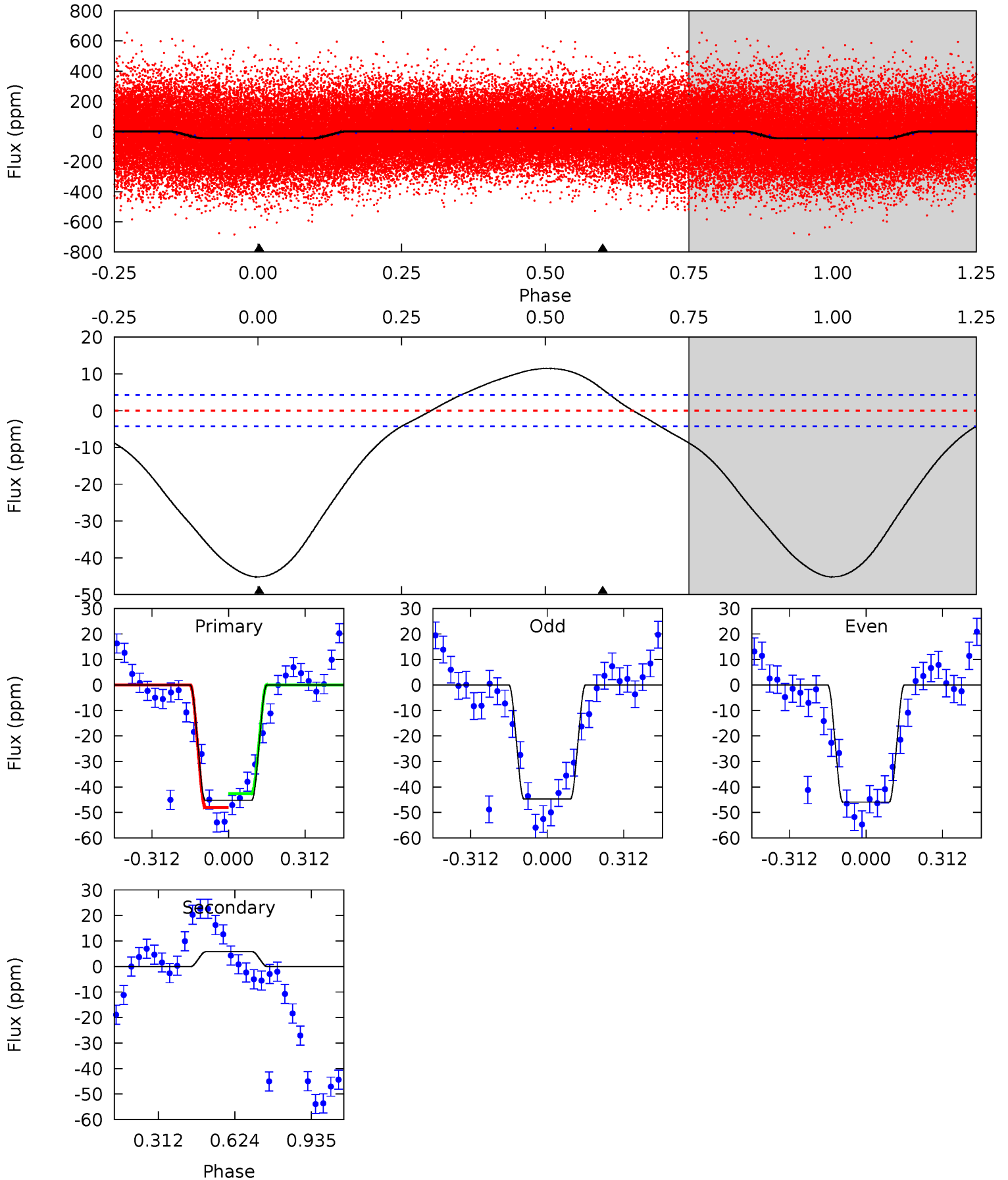
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.9	8.43	0	0	4.35	1.11	0.87	19.9	19.9	8.43	8.43	2.36	1.31	0.07	2.56



Alt Model-Shift Uniqueness Test

008431372-01, P = 1.076138 Days, E = 131.056855 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.9	-5.85	0	0	4.32	1.01	2.51	45.9	45.9	-5.85	-5.85	0.62	0.84	0.20	2.49



Stellar Parameters For KIC 008431372

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7064^{+197}_{-246}	$4.004^{+0.198}_{-0.132}$	$-0.220^{+0.300}_{-0.300}$	$2.001^{+0.469}_{-0.516}$	$1.473^{+0.195}_{-0.239}$	$0.259^{+0.296}_{-0.105}$
	+3%/-3%	+5%/-3%	+136%/-136%	+23%/-26%	+13%/-16%	+114%/-40%
Source	PHO1	FLK73	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 008431372-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-8 ± 1	$0.64^{+0.33}_{-0.30}$	4003^{+247}_{-281}	6685^{+3233}_{-1361}	$5.713^{+14.048}_{-3.258}$
Alt.	6 ± 1	$1.67^{+0.41}_{-0.37}$	3978^{+288}_{-296}	-4482^{+249}_{-296}	$-0.636^{+0.247}_{-0.389}$

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

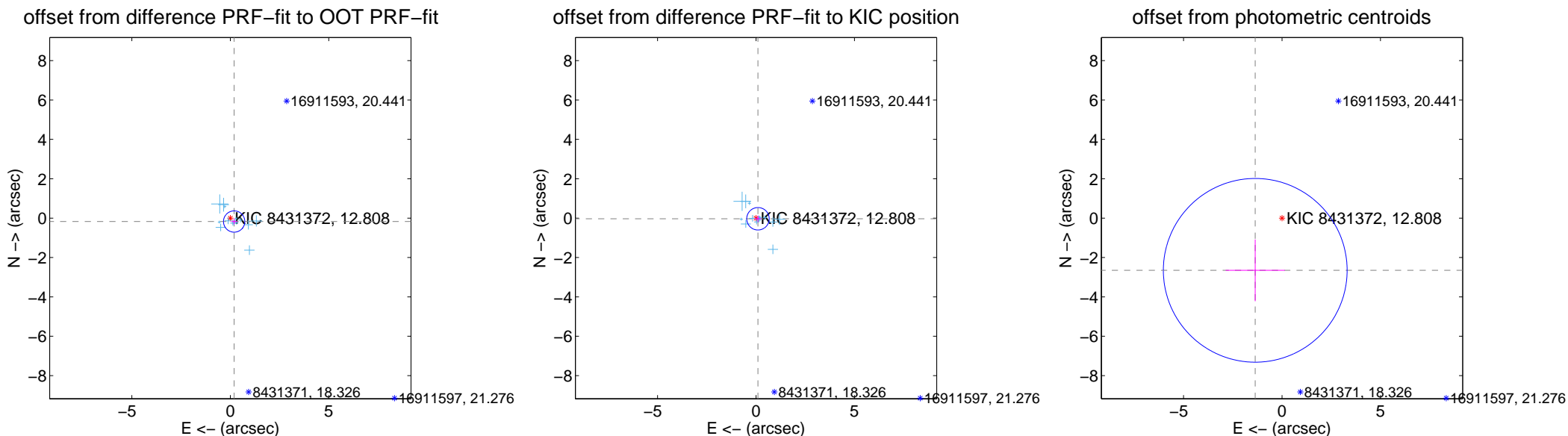
DV Centroid Data

Supplemental centroid analysis for 008431372-01. Kepler magnitude: 12.81. Transit SNR 5.79

There are 15 quarters with good PRF difference image offsets

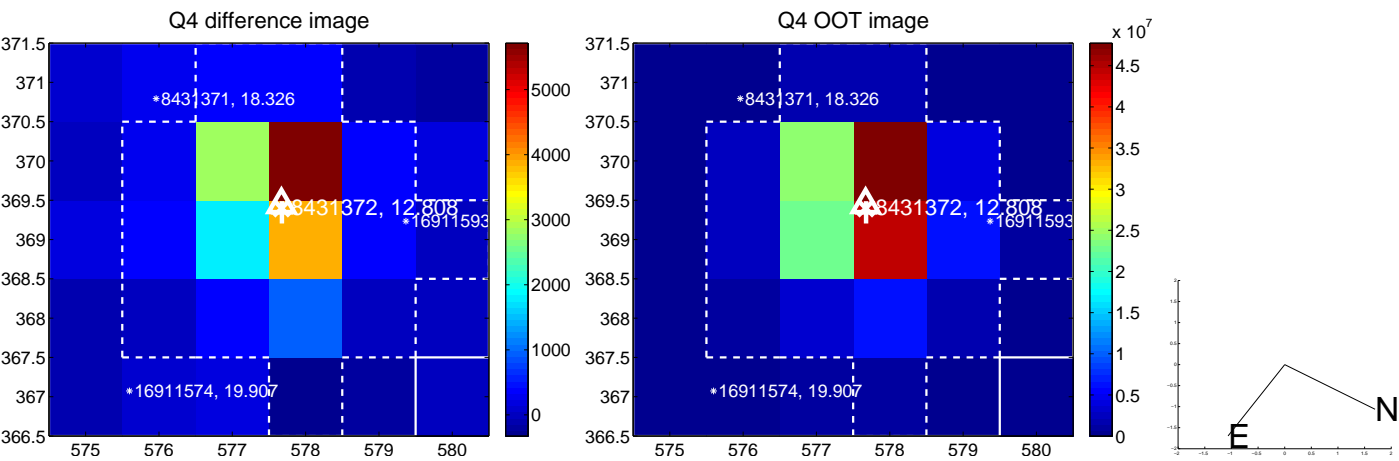
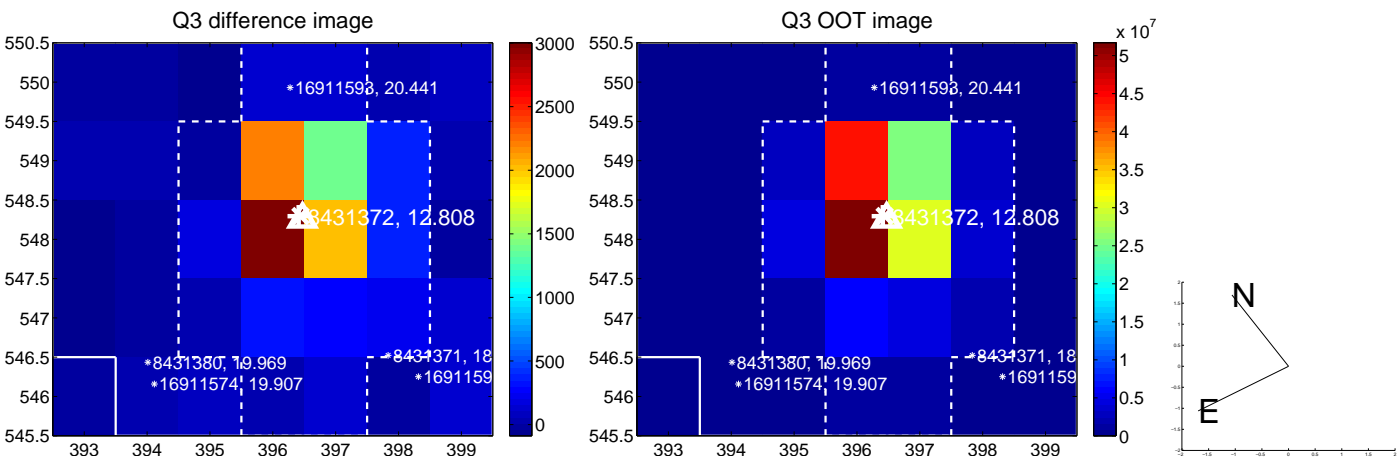
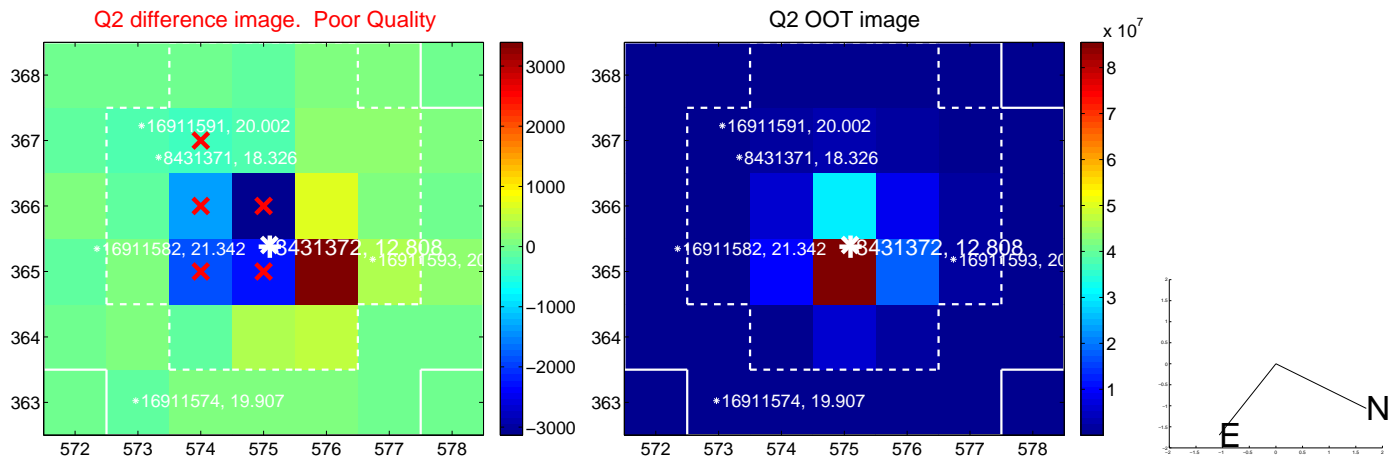
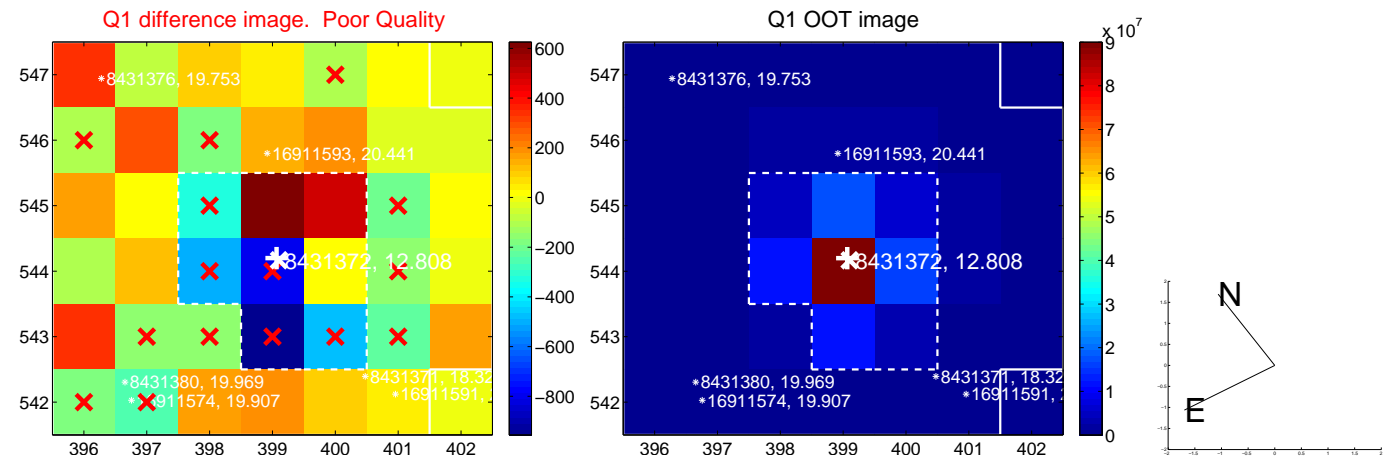
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.261 ± 0.180	1.45	-0.195 ± 0.156	-0.173 ± 0.148
PRF-fit source offset from KIC position	0.105 ± 0.190	0.55	-0.099 ± 0.170	-0.033 ± 0.163
photometric centroid source offset	2.98 ± 1.56	1.92	1.36 ± 1.50	-2.65 ± 1.57

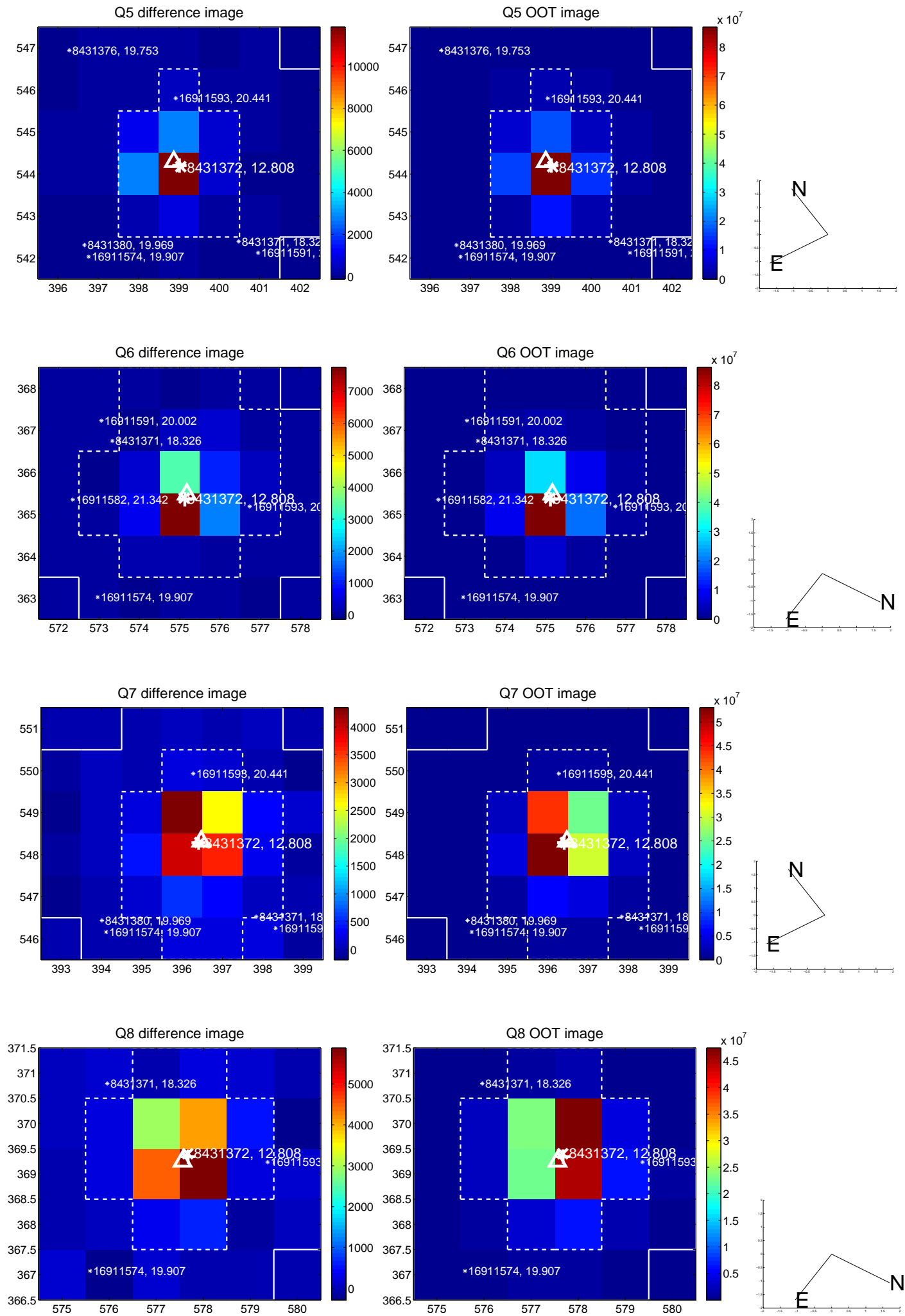


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

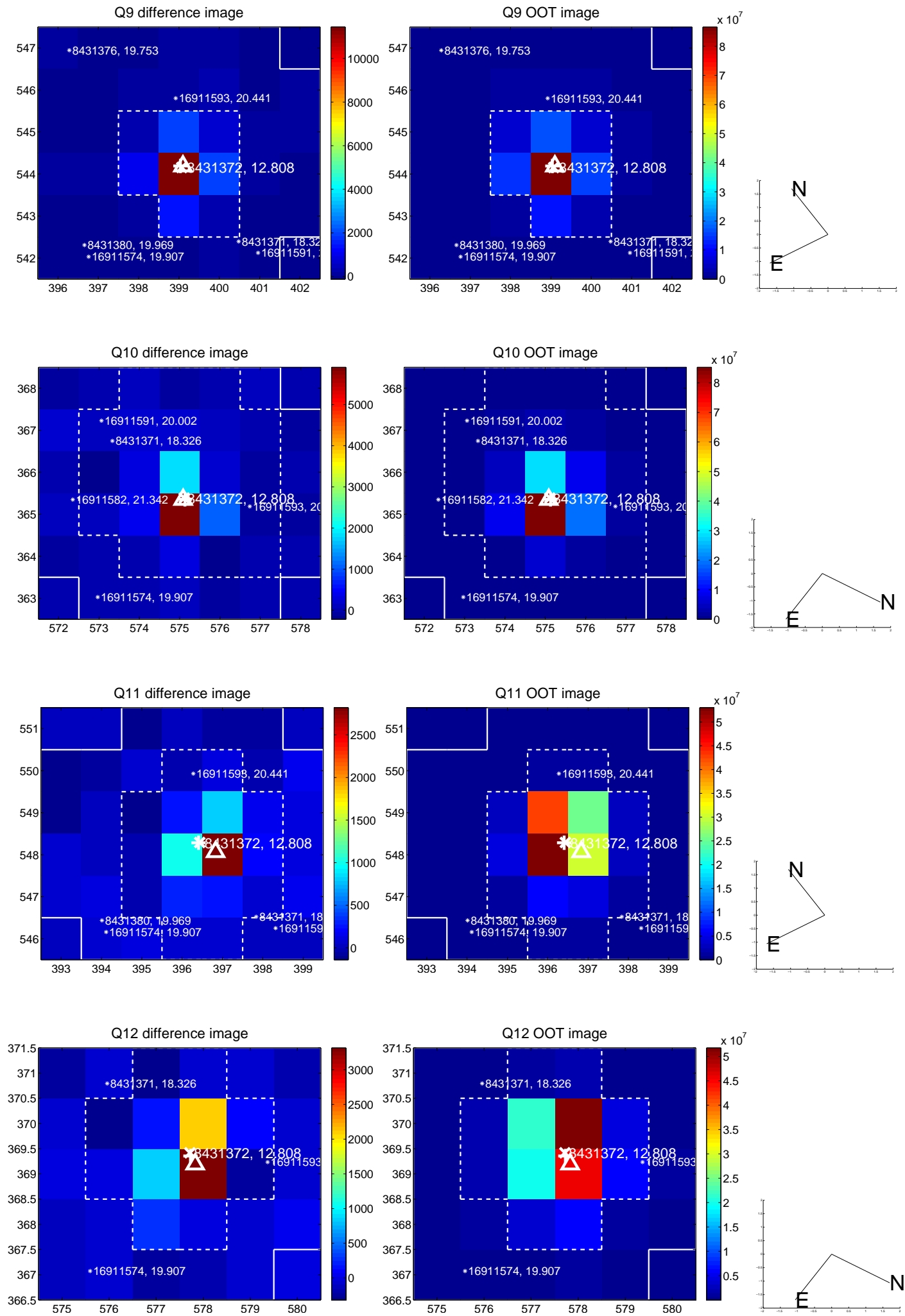
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



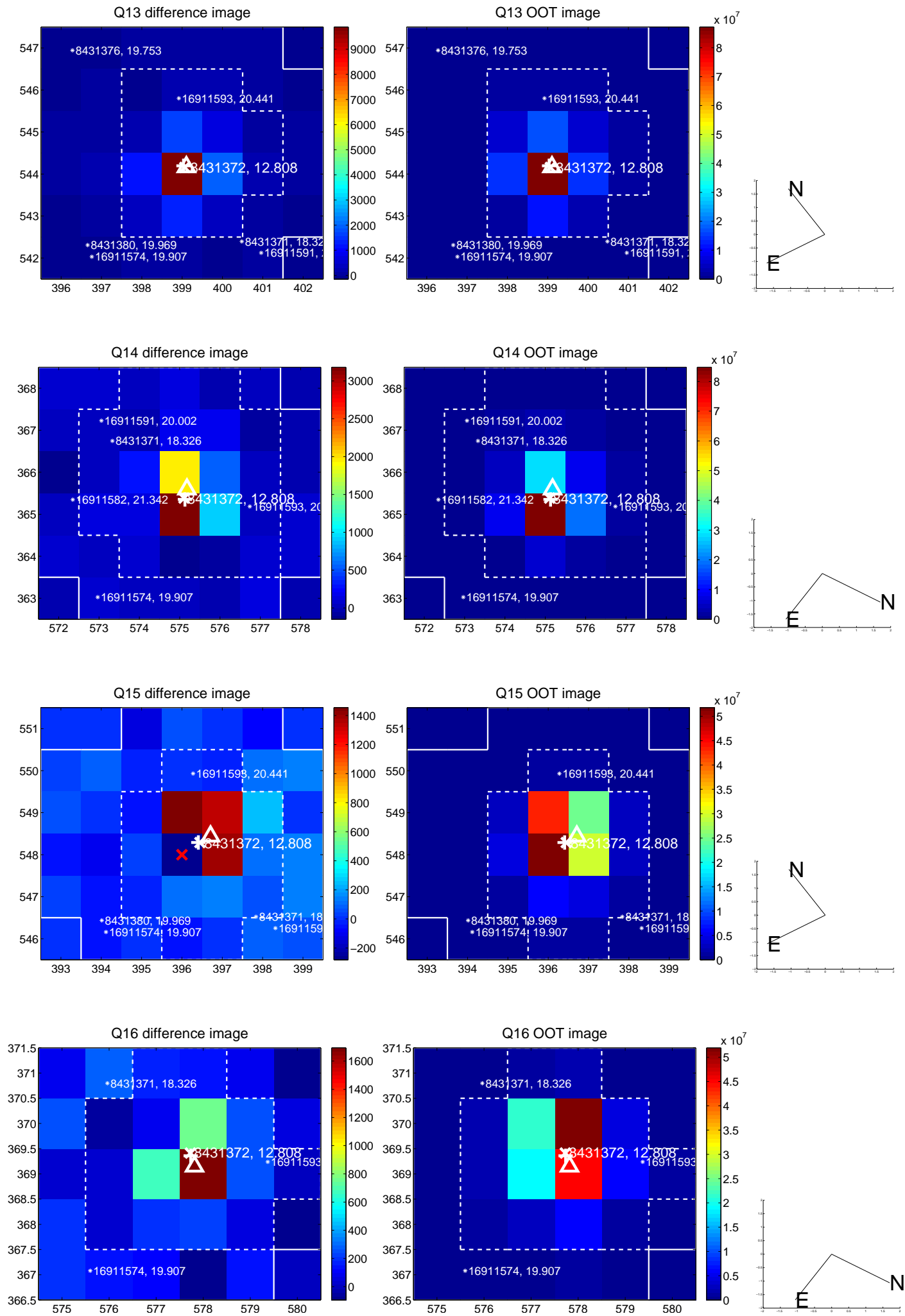
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



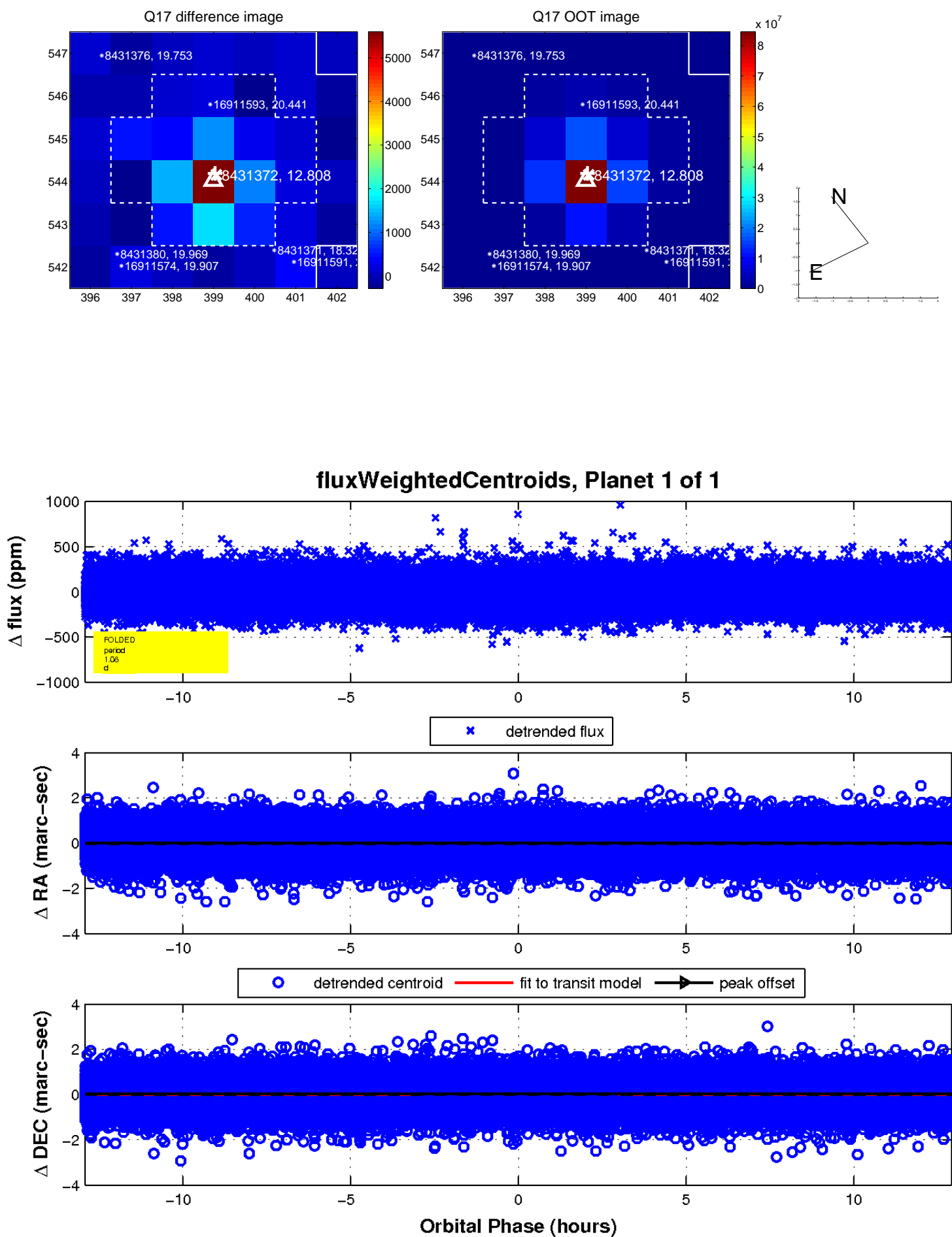
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

