

KIC 009778742

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})
009778742-01	OBS	No	0.573459	132.093512	0.0	0.512	12.0	0.0	1.81	7077	0.01	29892.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009778742-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

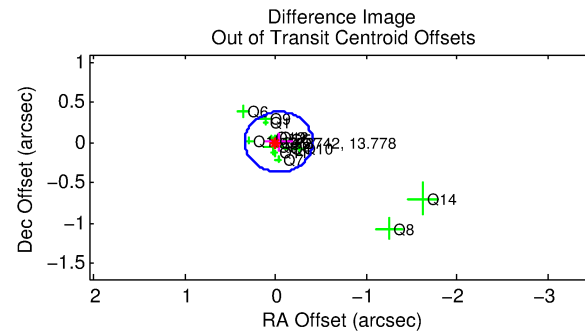
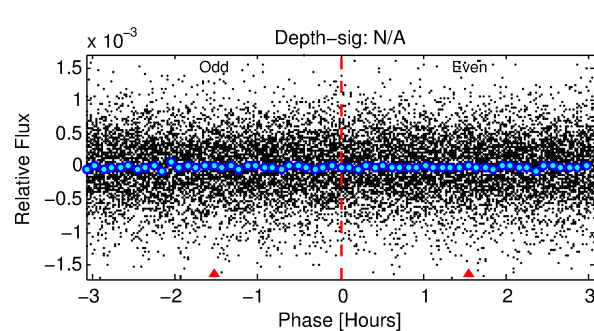
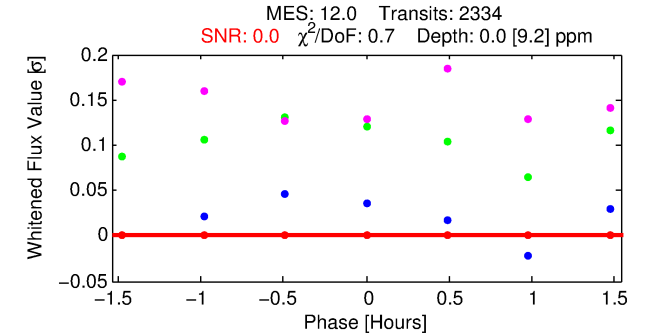
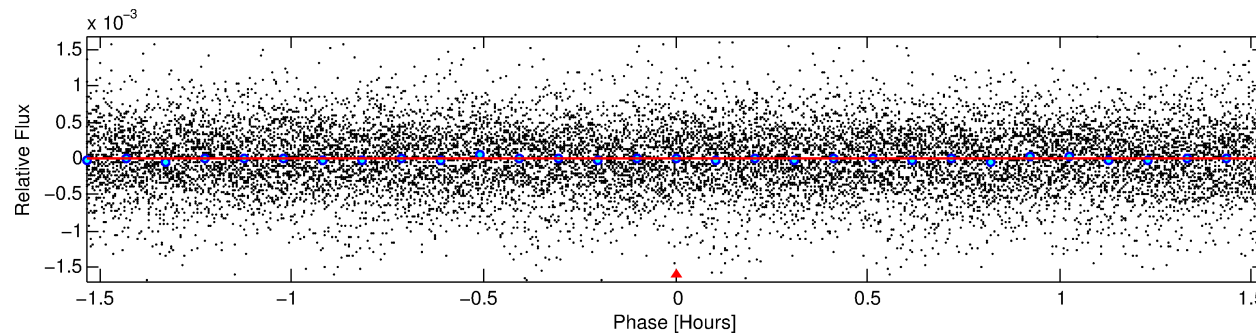
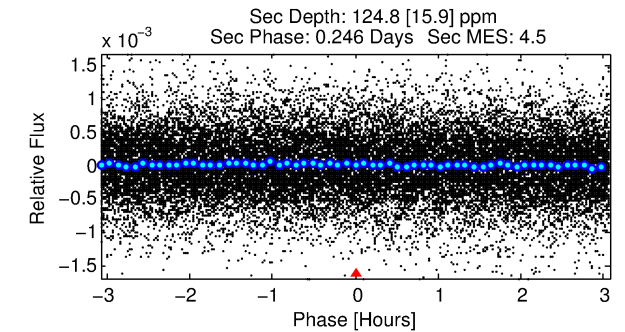
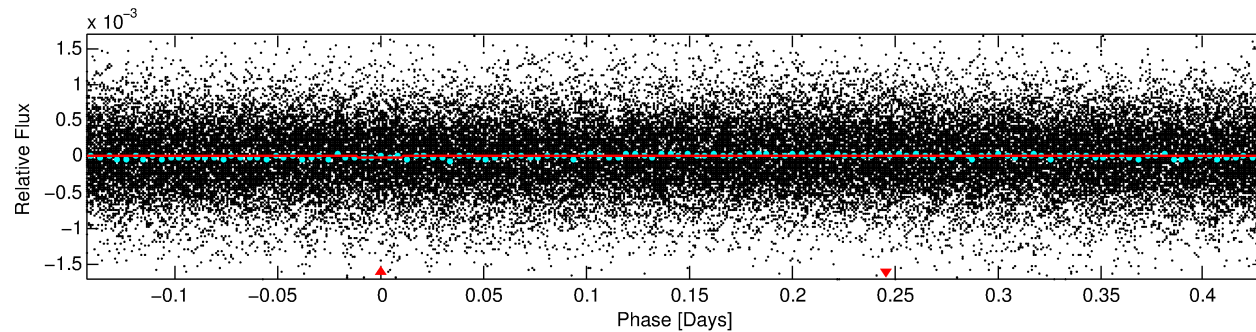
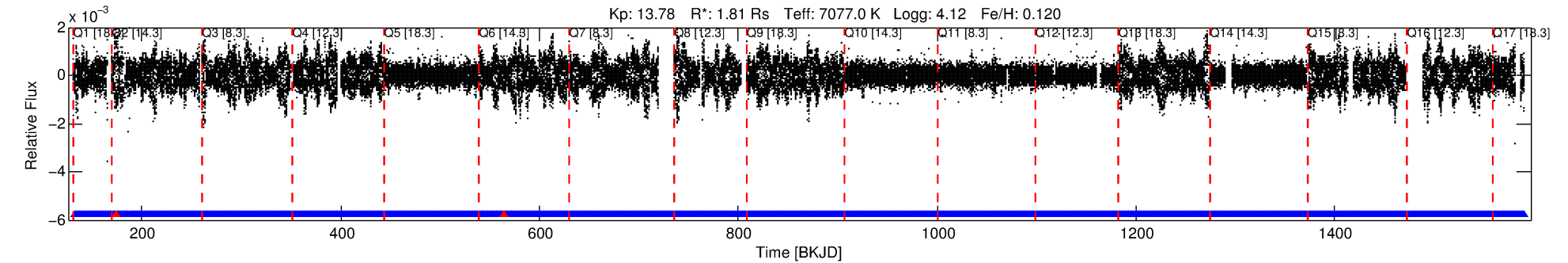
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009778742-01

No Significant Match Found

DV One-Page Summary

KIC: 9778742 Candidate: 1 of 1 Period: 0.573 d



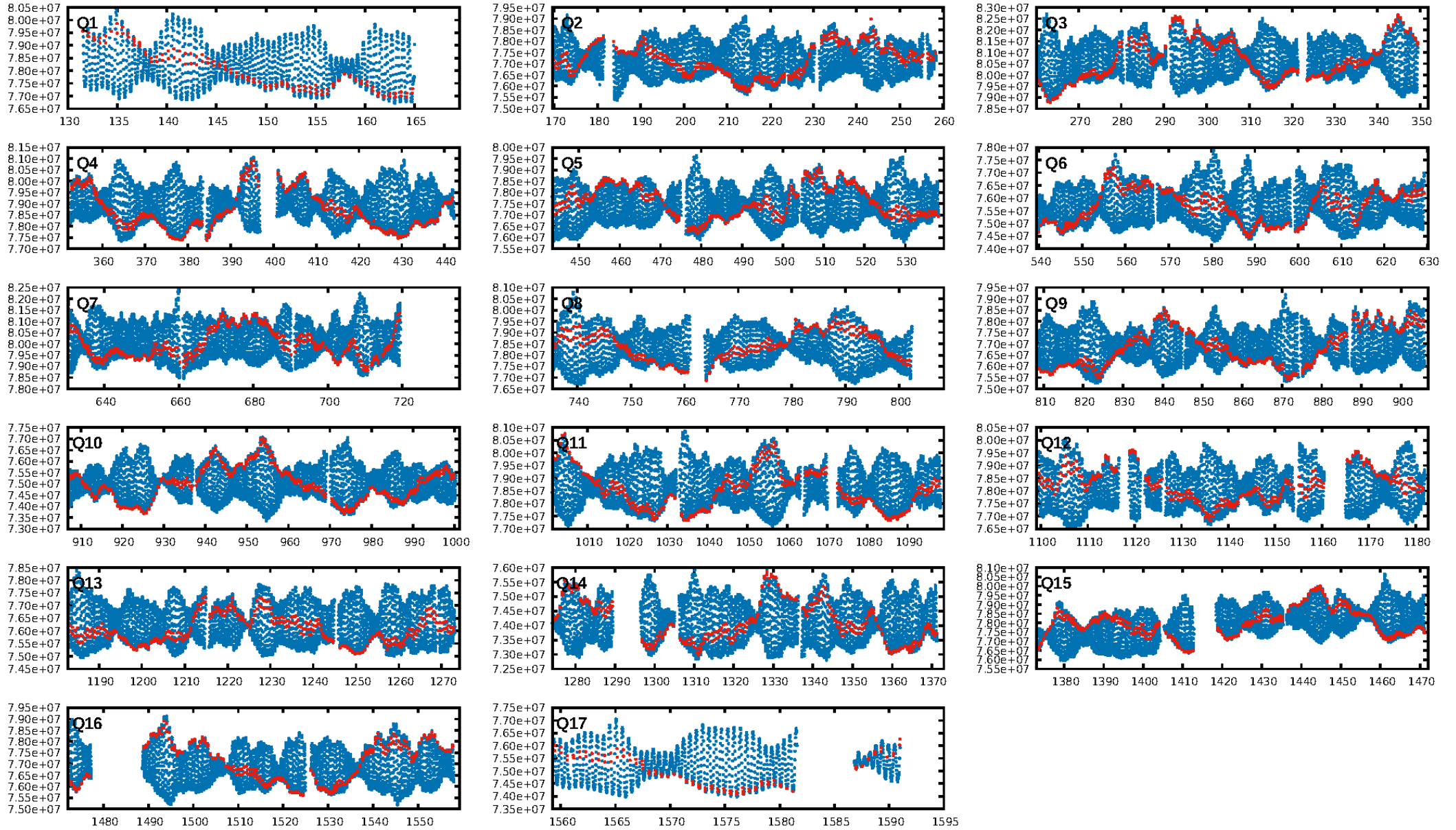
DV Fit Results:

Period = 0.57346 [0.71311] d
Epoch = 132.0935 [75.1177] BKJD
Rp/R* = 0.0000 [0.1567]
a/R* = 7.61 [3317.11]
b = 0.46 [2702.96]
Seff = 29892.84 [50025.97]
Teff = 3353 [1403] K
Rp = 0.01 [30.98] Re
a = 0.0157 [0.0132] AU
Ag = 525564.77 [5735921670.76] [0.001]
Teffp = 139577 [380868351] K [0.001]

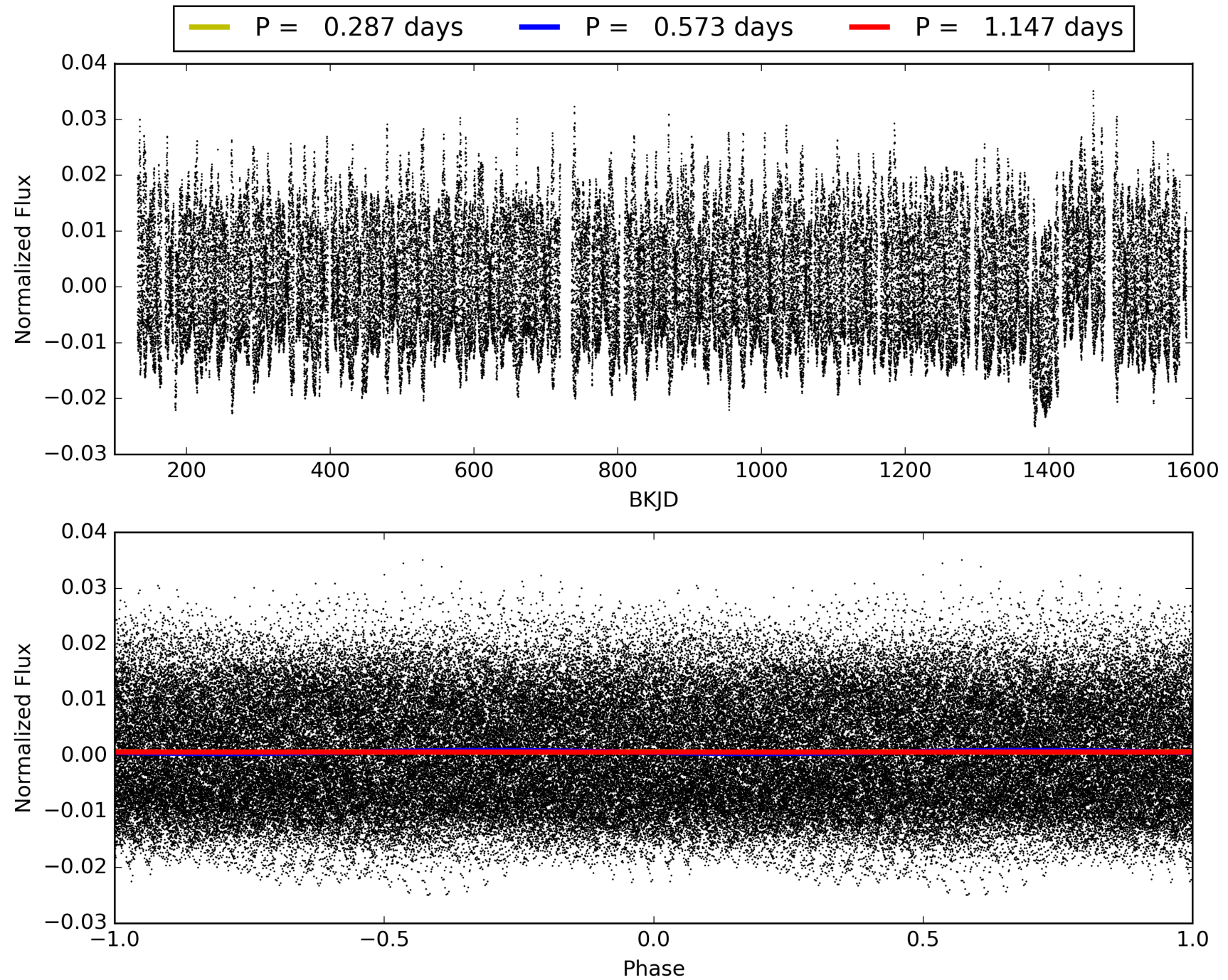
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.56e-25
RollingBand-fgt: 1.00 [2226/2228]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.038 arcsec [0.30σ]
KicOffset-rm: 0.080 arcsec [0.51σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.44 [7/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009778742-01, PDC Light Curves

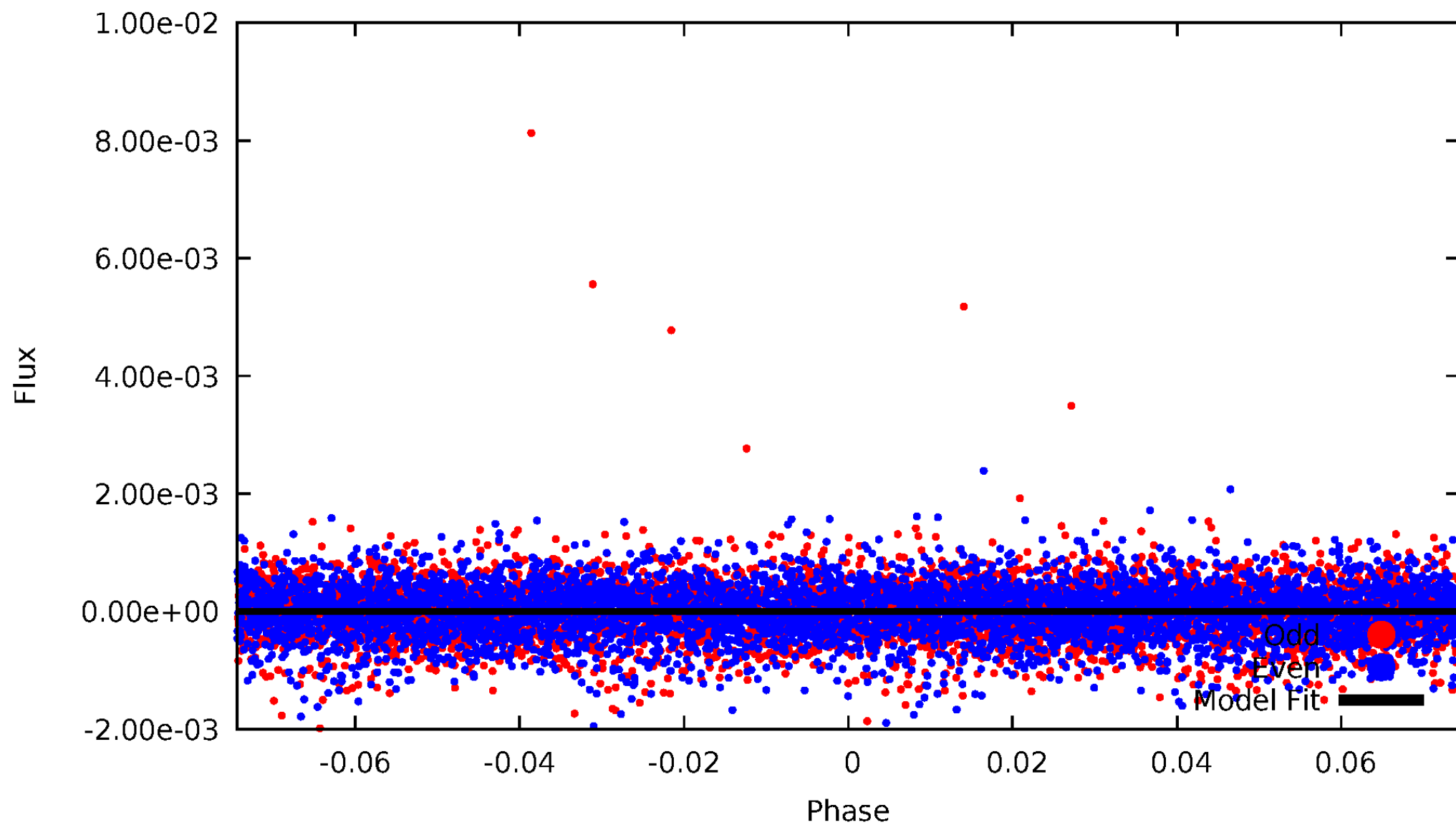


TCE 009778742-01



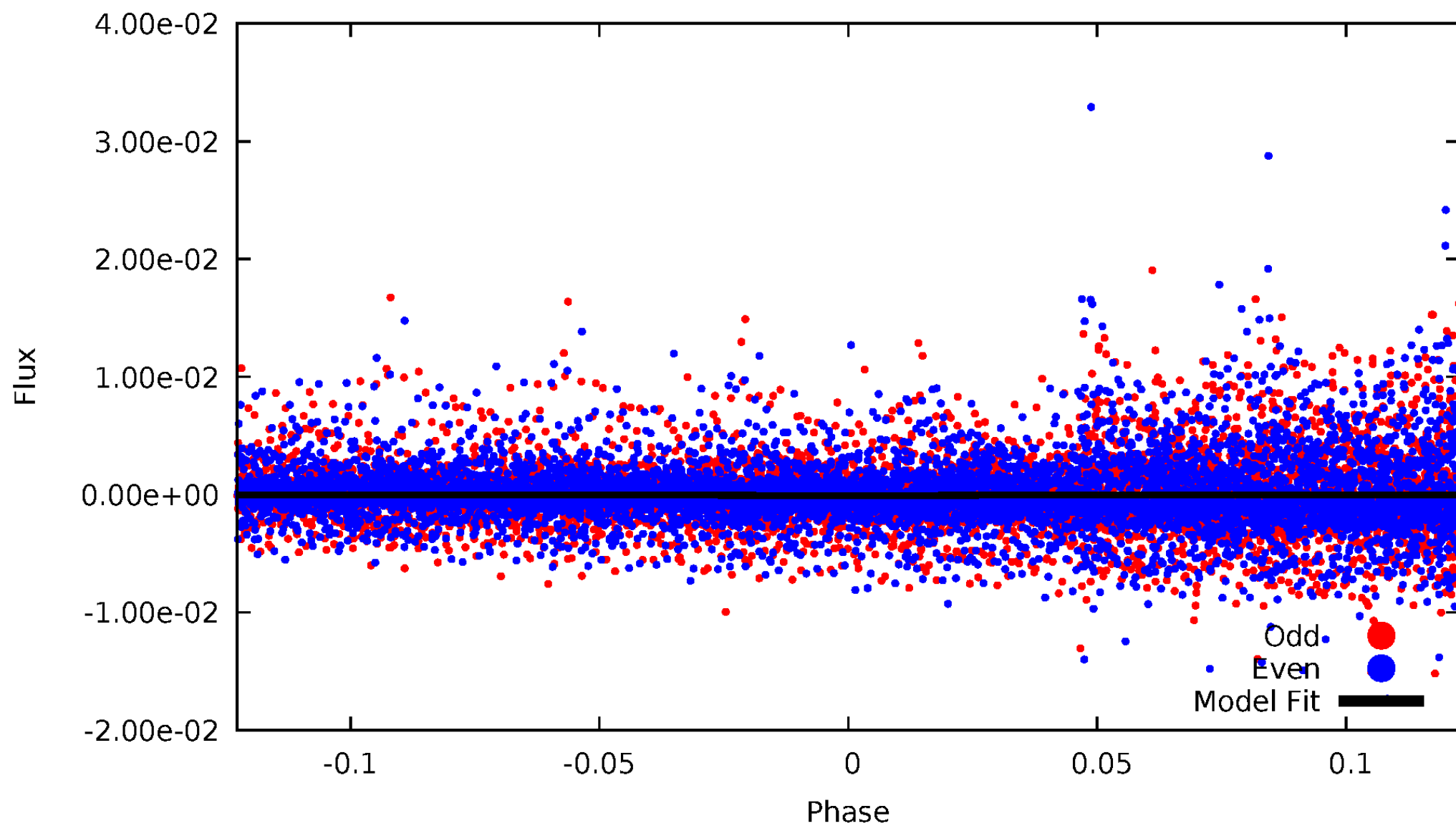
DV Odd/Even

TCE 009778742-01



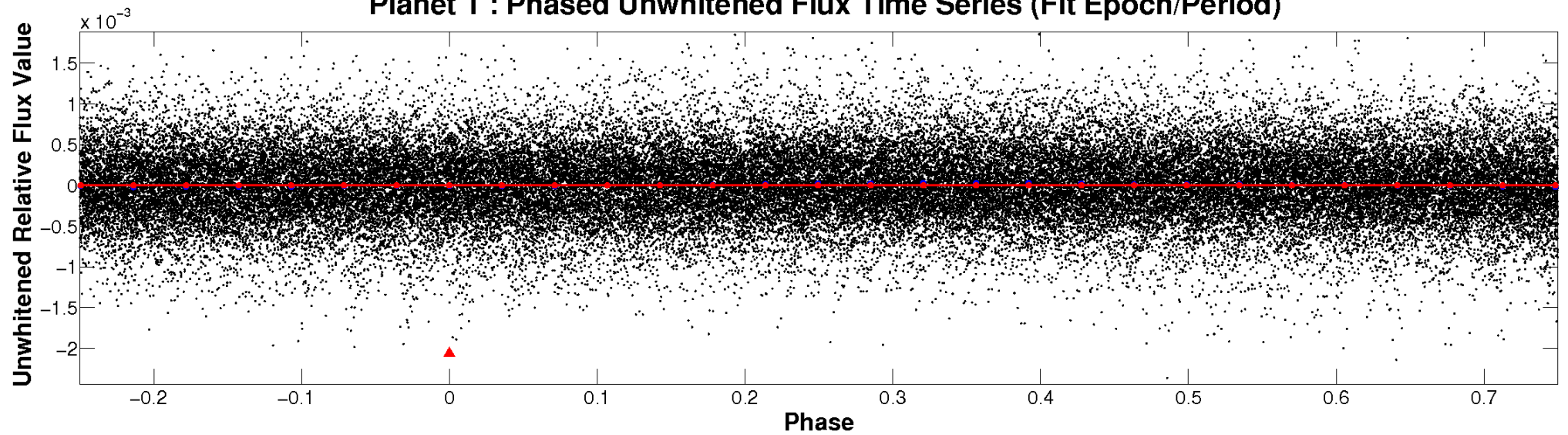
ALT Odd/Even

TCE 009778742-01

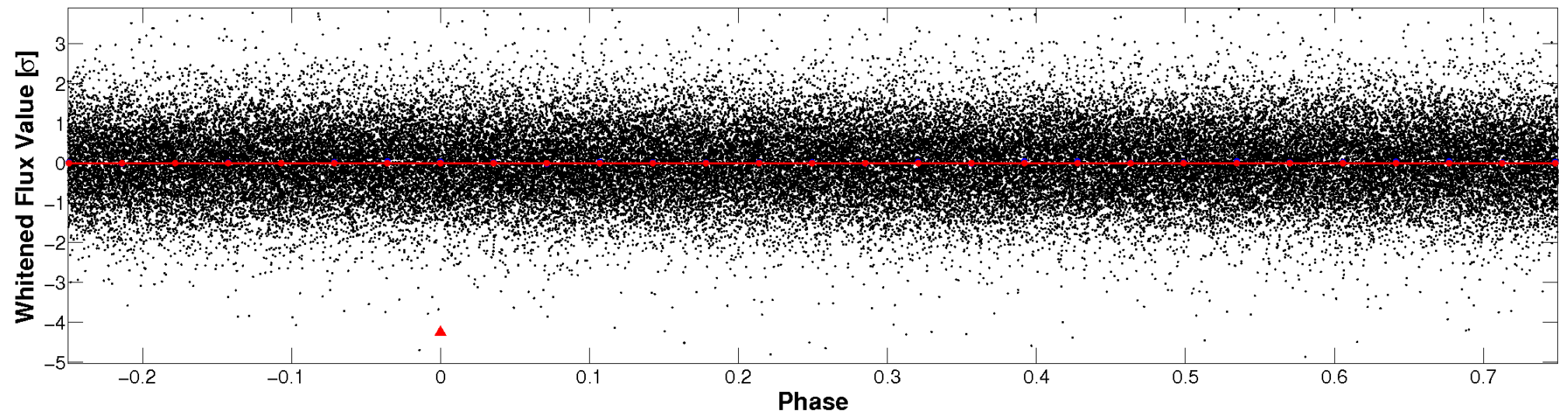


Non-Whitened Vs. Whitened Light Curve

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

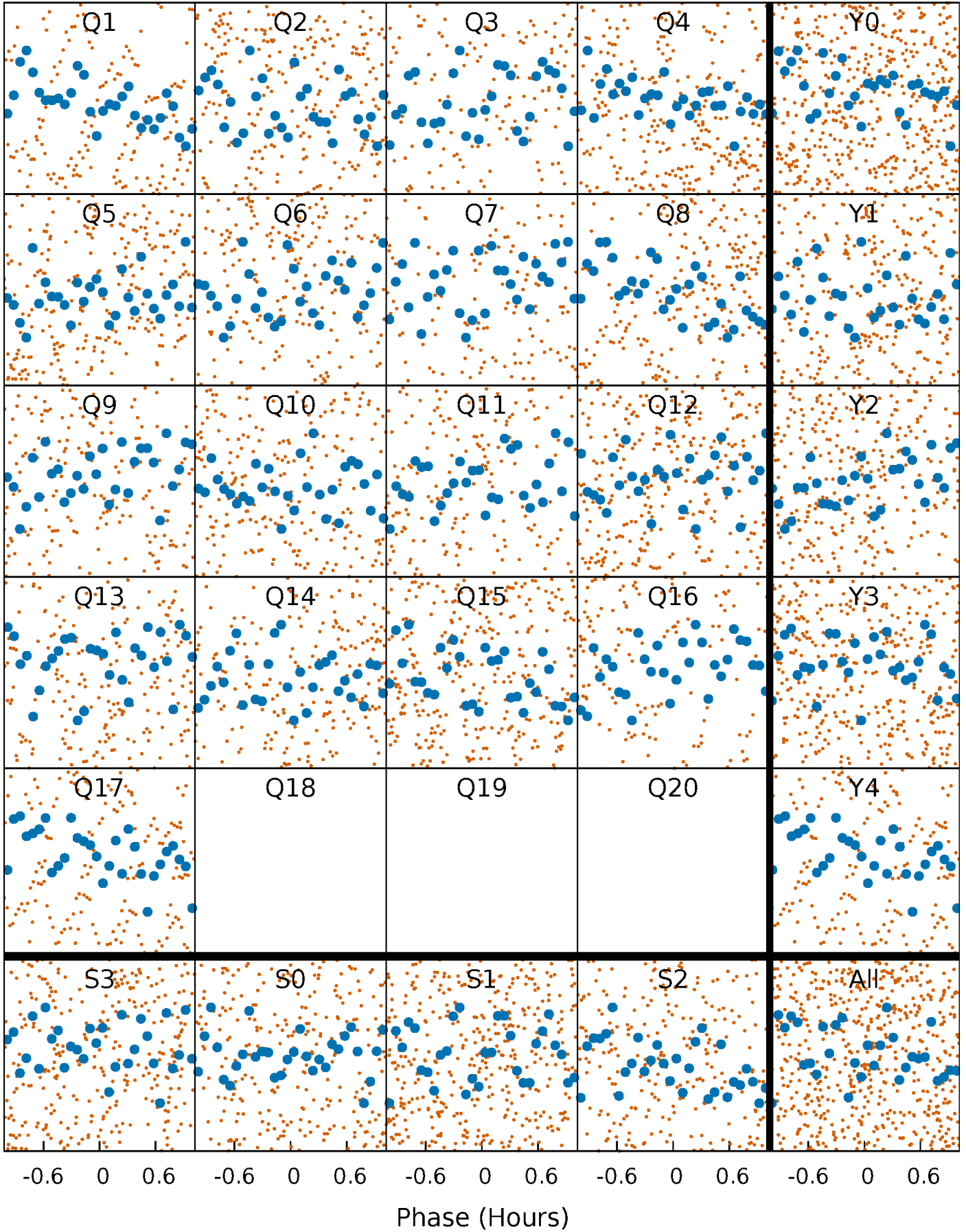


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



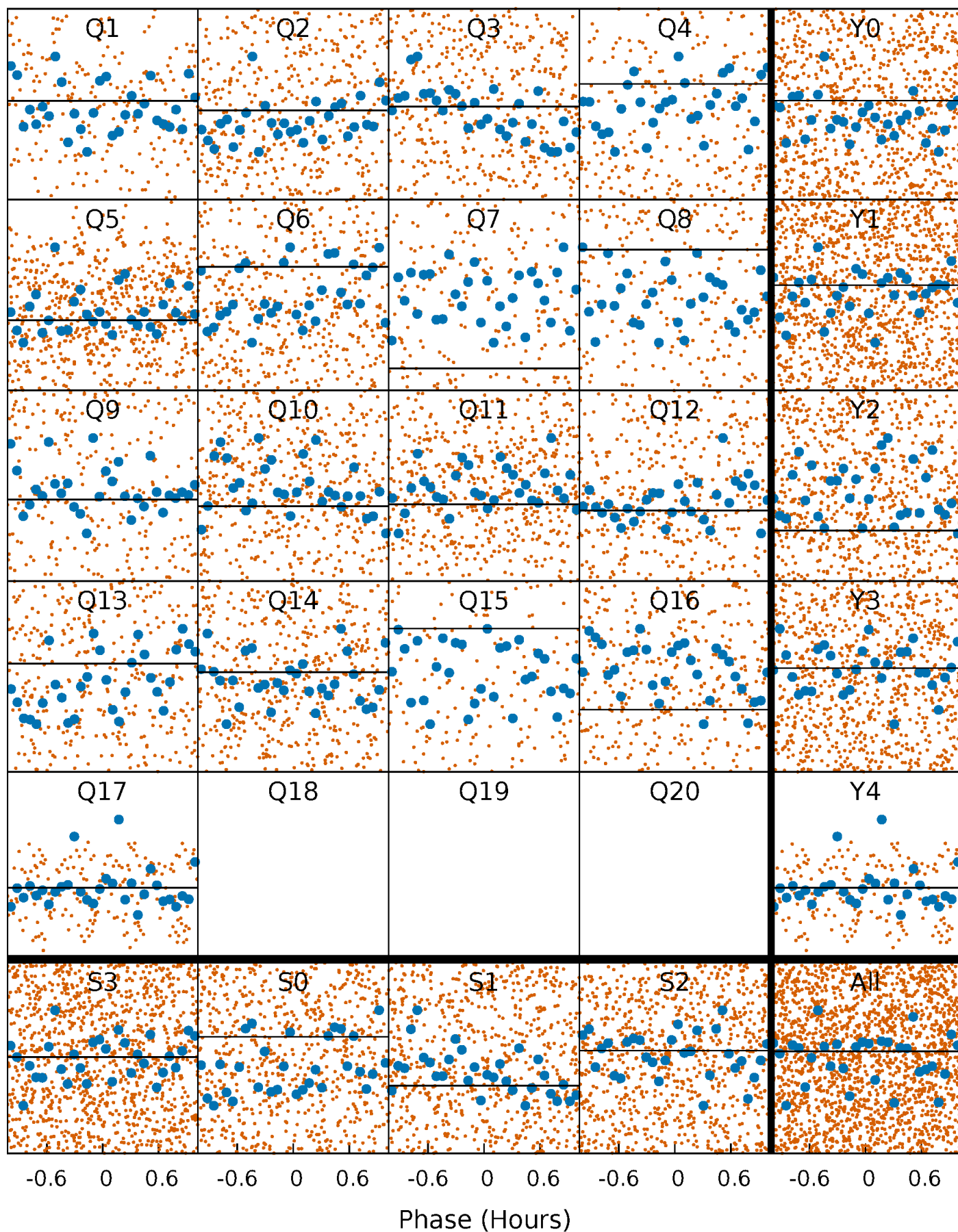
PDC Quarter-Phased Transit Curves

TCE 009778742-01 P= 0.573459 Days $T_0=132.093512$ (BKJD)



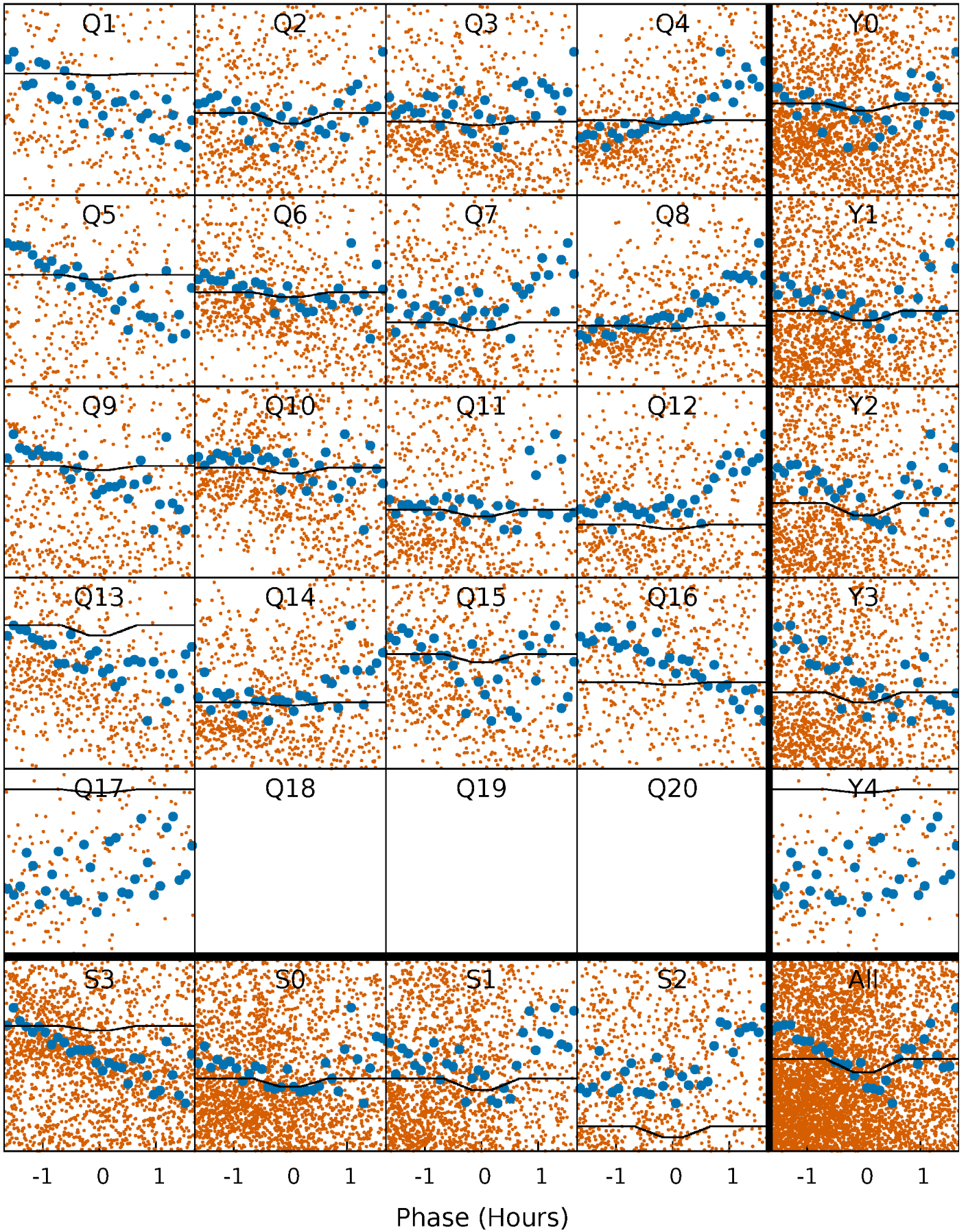
DV Quarter-Phased Transit Curves

TCE 009778742-01 P= 0.573459 Days $T_0=132.093512$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

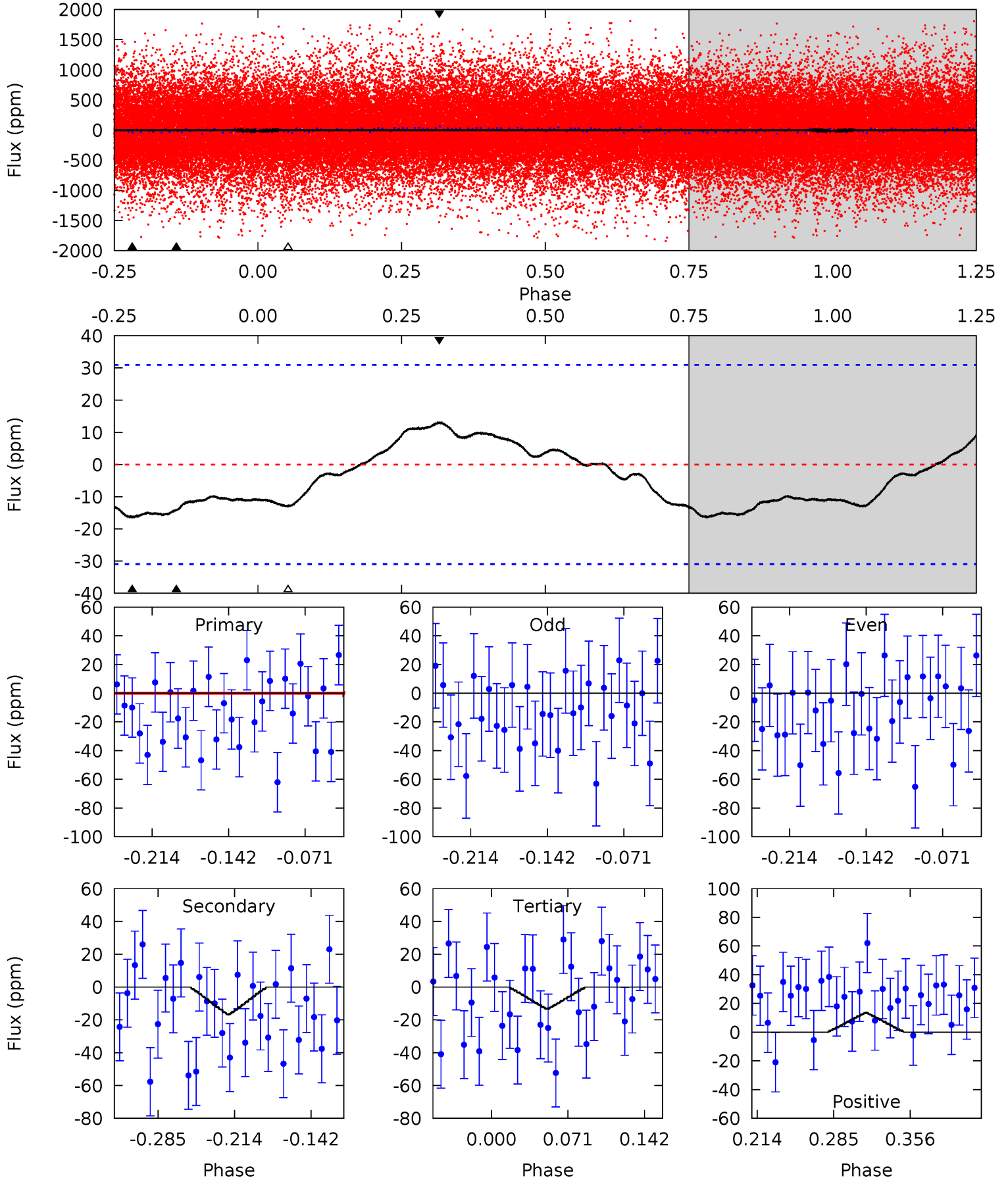
TCE 009778742-01 P= 0.573748 Days $T_0=131.504414$ (BKJD)



DV Model-Shift Uniqueness Test

009778742-01, P = 0.573459 Days, E = 130.946594 Days

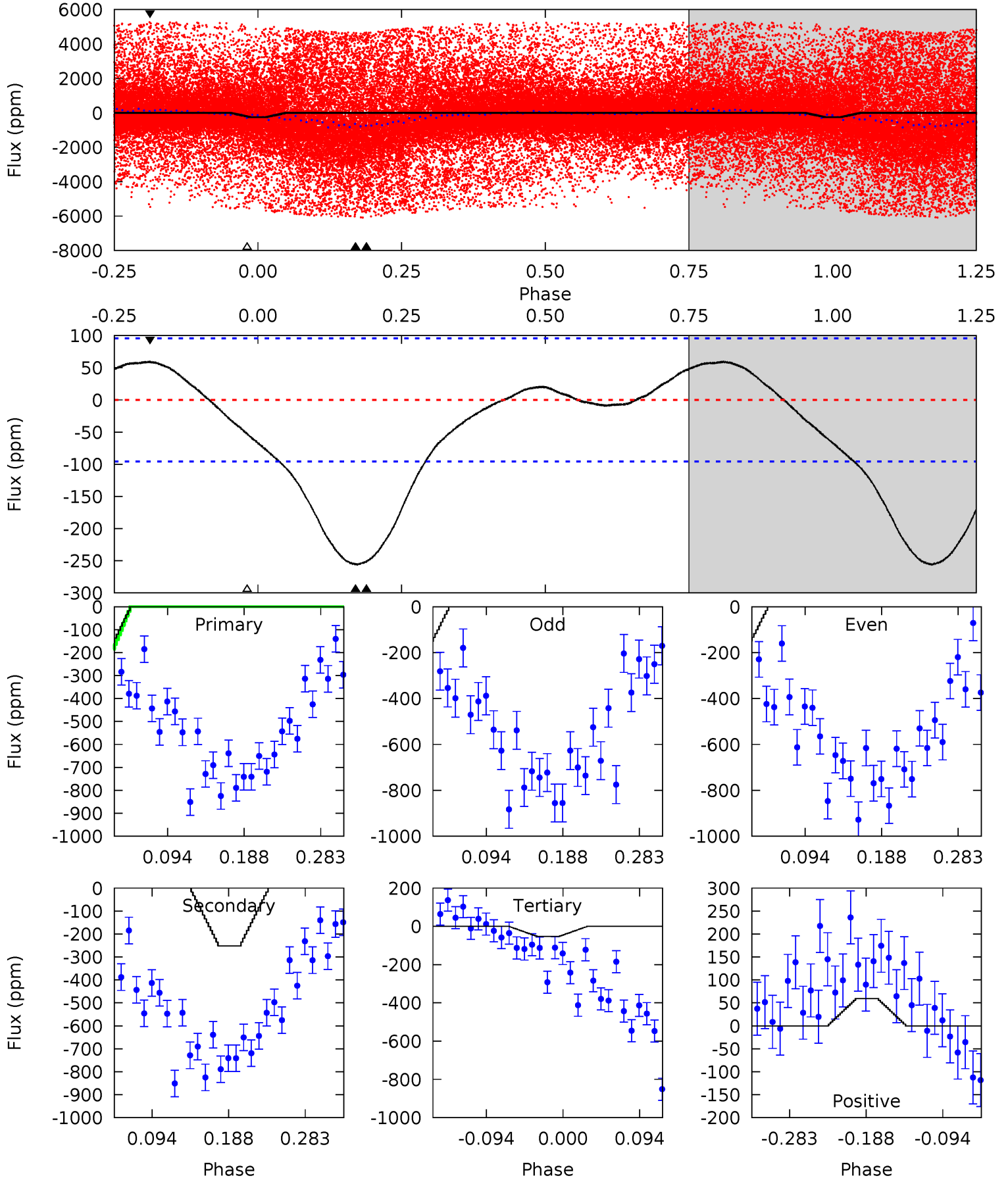
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.15	2.49	1.98	2.00	4.64	1.80	1.21	0.16	0.14	0.51	0.49	0.28	2.17	0.45	0.73



Alt Model-Shift Uniqueness Test

009778742-01, P = 0.573748 Days, E = 131.504414 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	12.0	2.54	2.85	4.58	1.67	2.16	9.71	9.41	9.48	9.17	0.05	0.41	0.19	3.23



Stellar Parameters For KIC 009778742

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7077^{+74}_{-95}	$4.118^{+0.080}_{-0.120}$	$0.120^{+0.150}_{-0.150}$	$1.811^{+0.330}_{-0.220}$	$1.570^{+0.128}_{-0.107}$	$0.372^{+0.135}_{-0.137}$
	+1%/-1%	+2%/-3%	+125%/-125%	+18%/-12%	+8%/-7%	+36%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009778742-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-17 ± 7	$21.40^{+24.02}_{-14.50}$	4233^{+2074}_{-769}	-3749^{+575}_{-1349}	$0.006^{+0.056}_{-0.006}$
Alt.	-252 ± 21	$21.95^{+24.13}_{-15.23}$	4218^{+1793}_{-764}	-3355^{+7808}_{-1336}	$0.094^{+1.096}_{-0.079}$

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 $A_{\text{obs}} \gg 1.0$

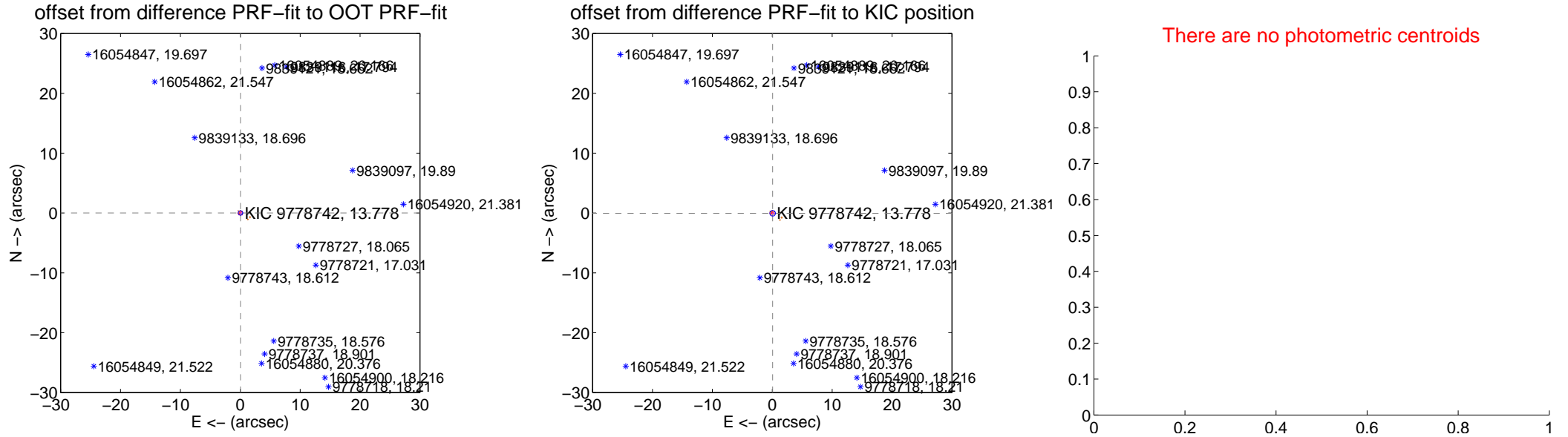
DV Centroid Data

Supplemental centroid analysis for 009778742-01. Kepler magnitude: 13.78. Transit SNR 0.00

There are 7 quarters with good PRF difference image offsets

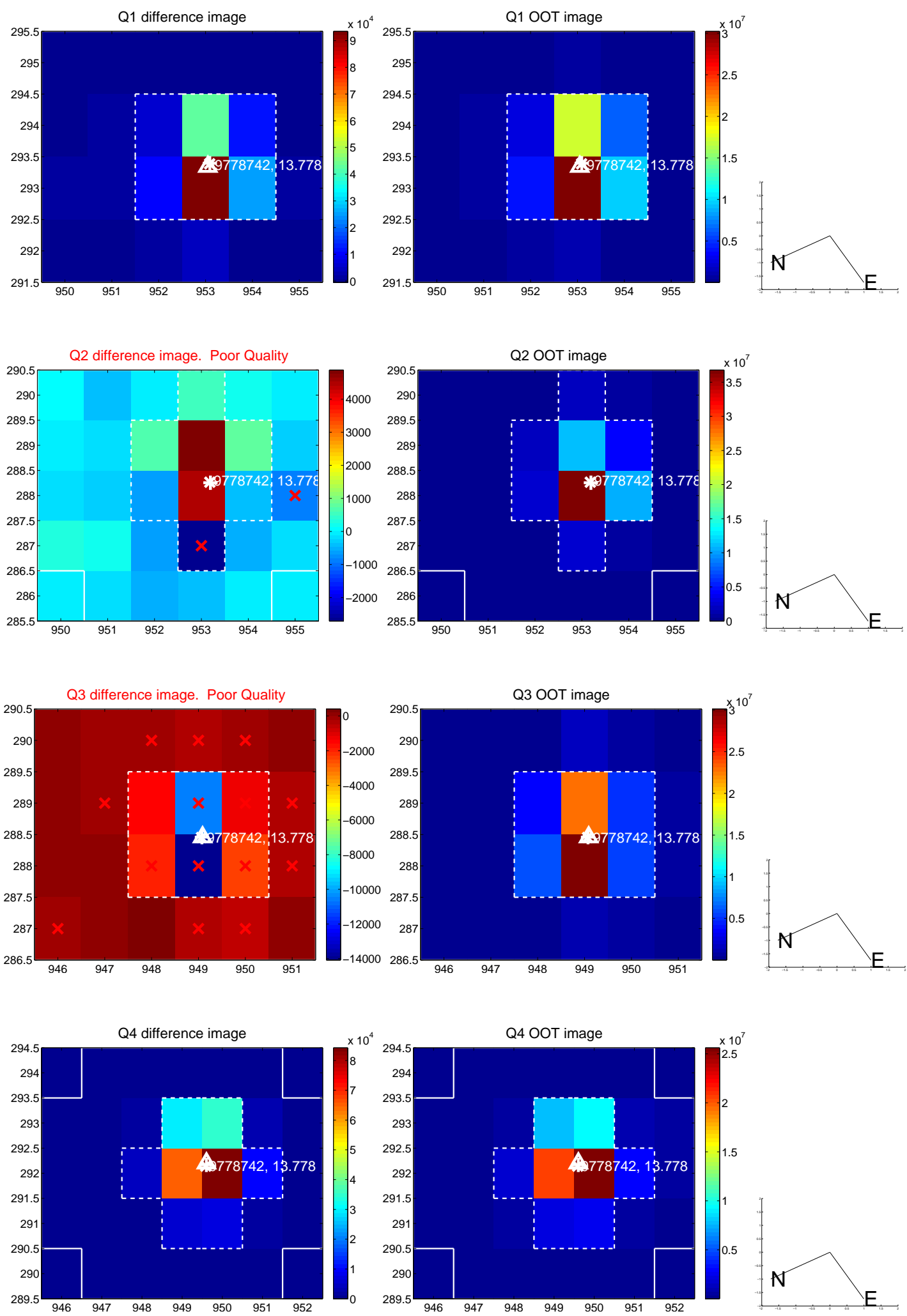
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.038 ± 0.125	0.30	-0.037 ± 0.141	0.008 ± 0.107
PRF-fit source offset from KIC position	0.080 ± 0.155	0.51	-0.066 ± 0.134	-0.045 ± 0.108
photometric centroid source offset	—	—	—	—

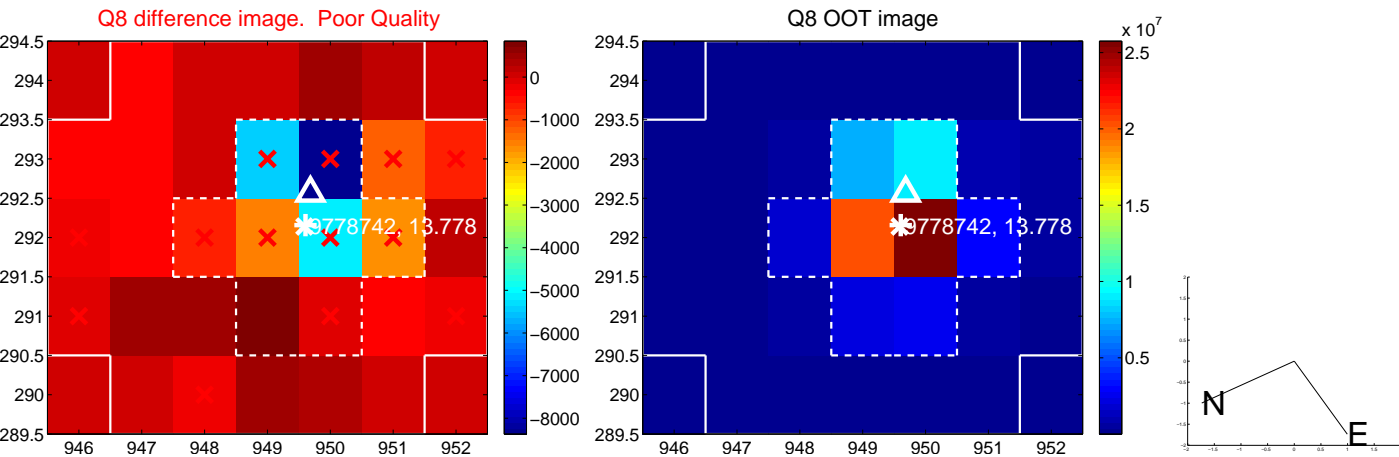
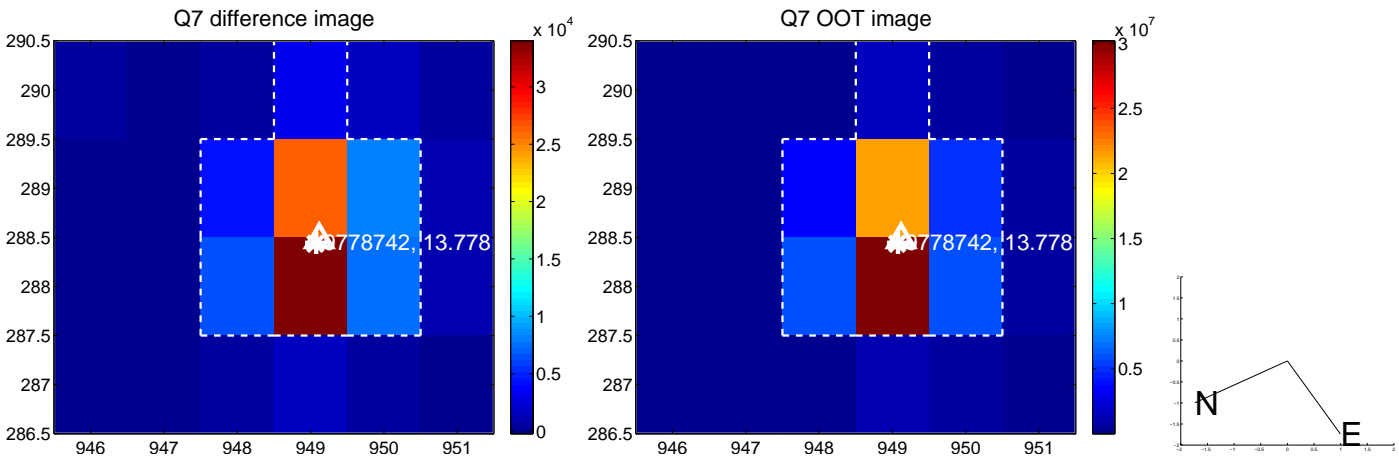
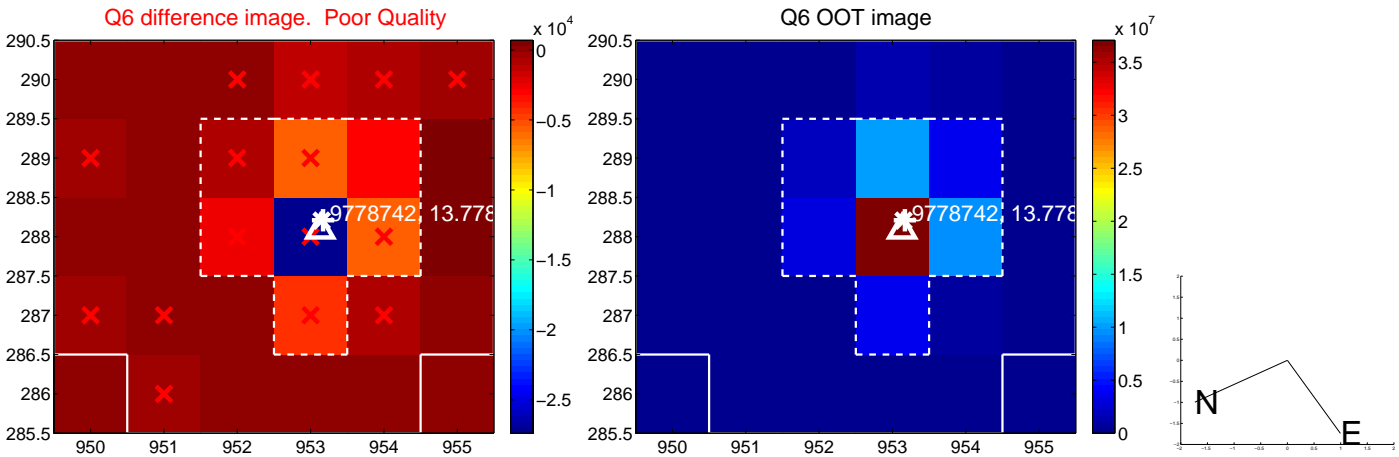
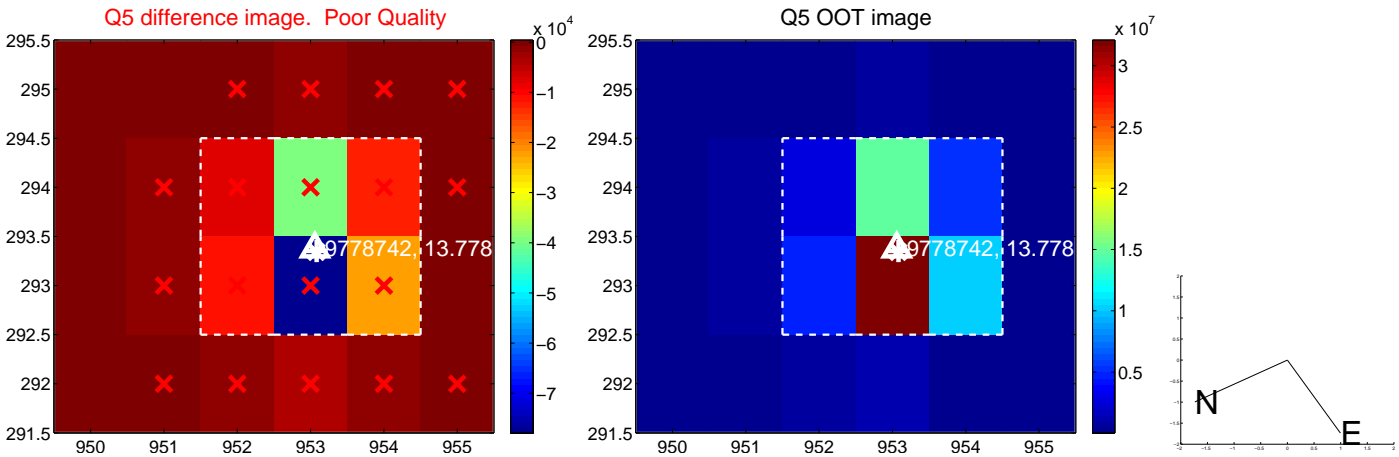


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

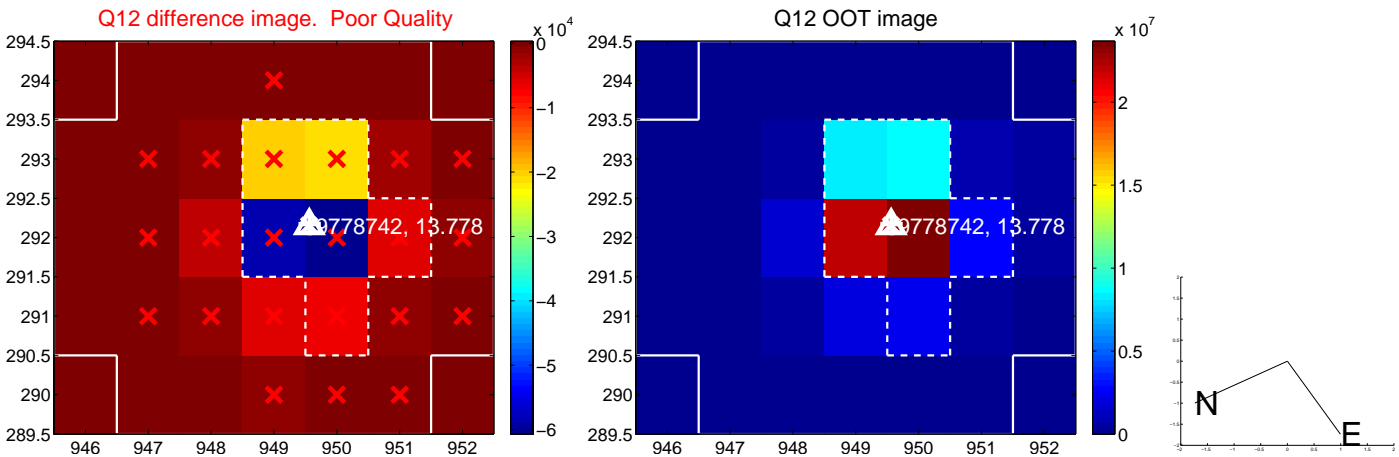
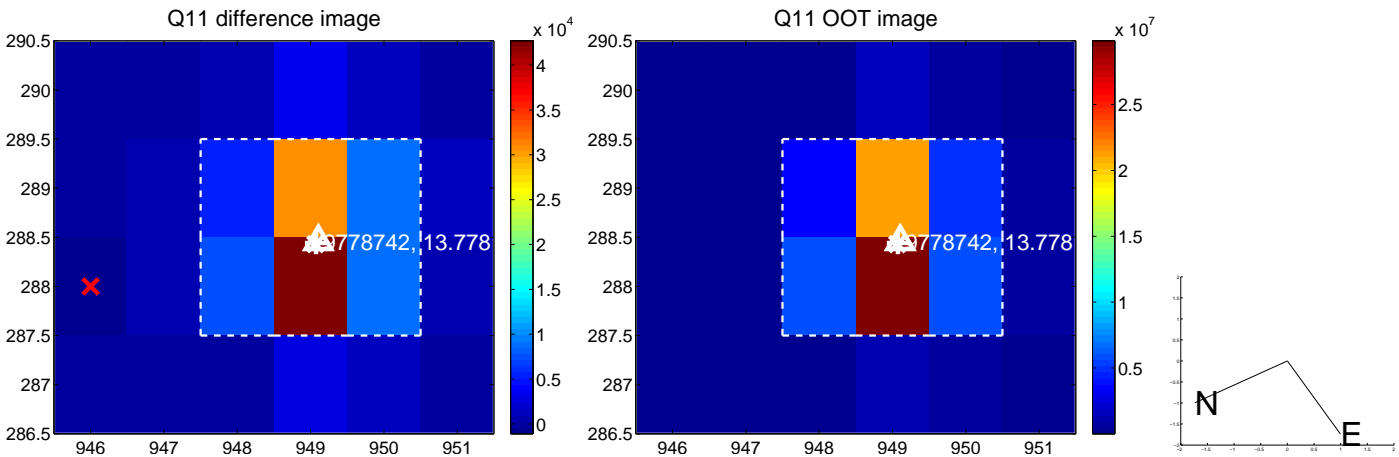
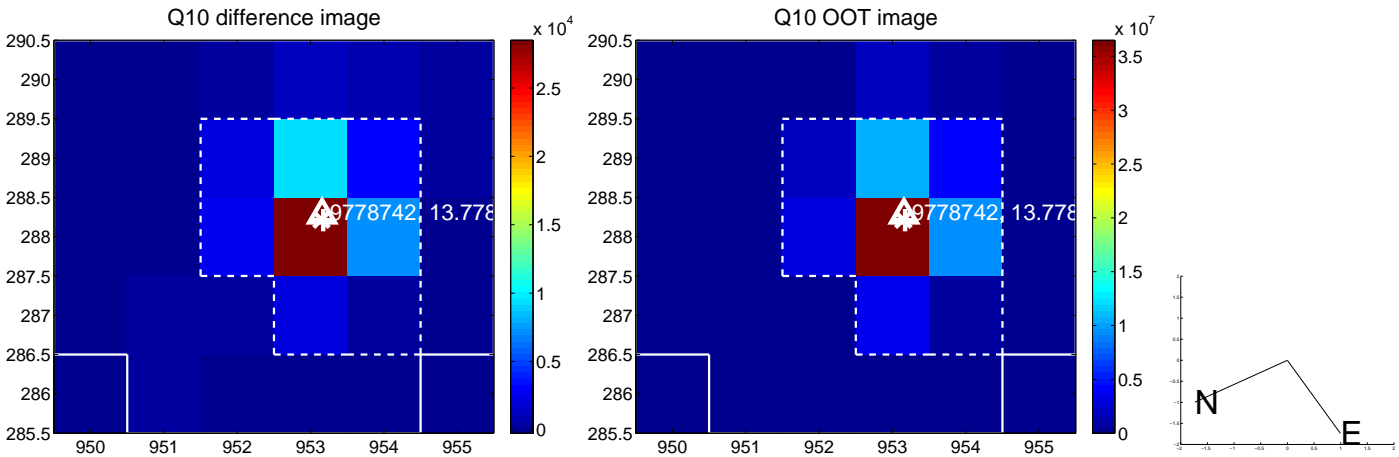
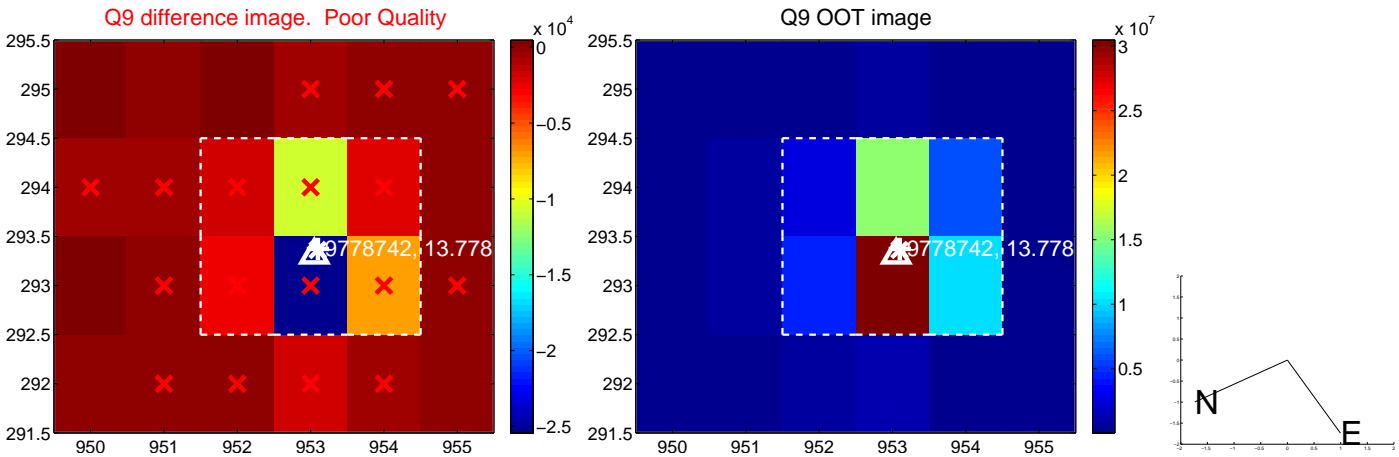
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



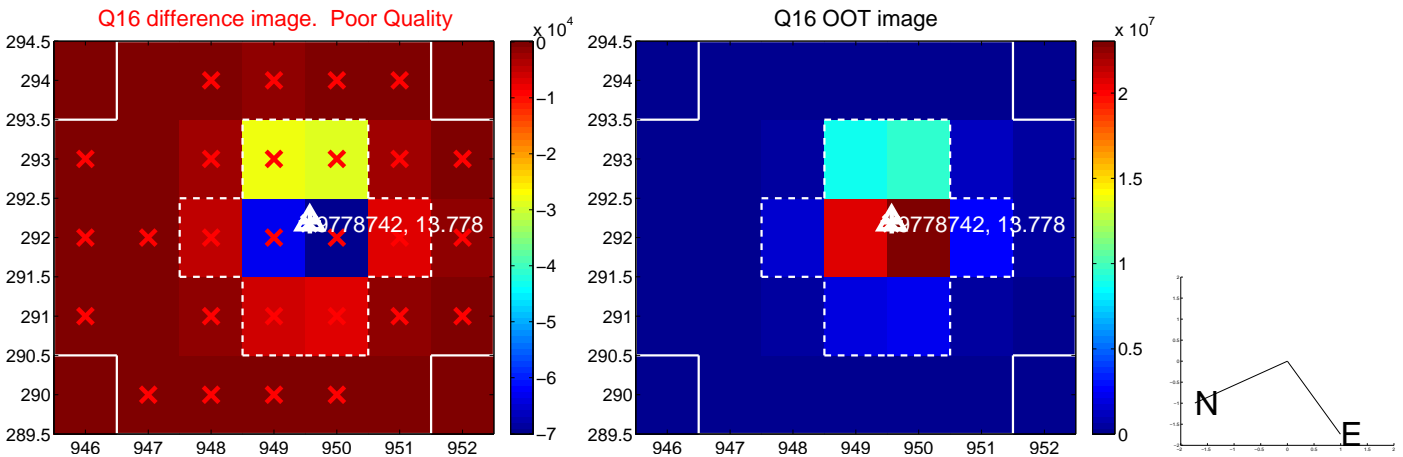
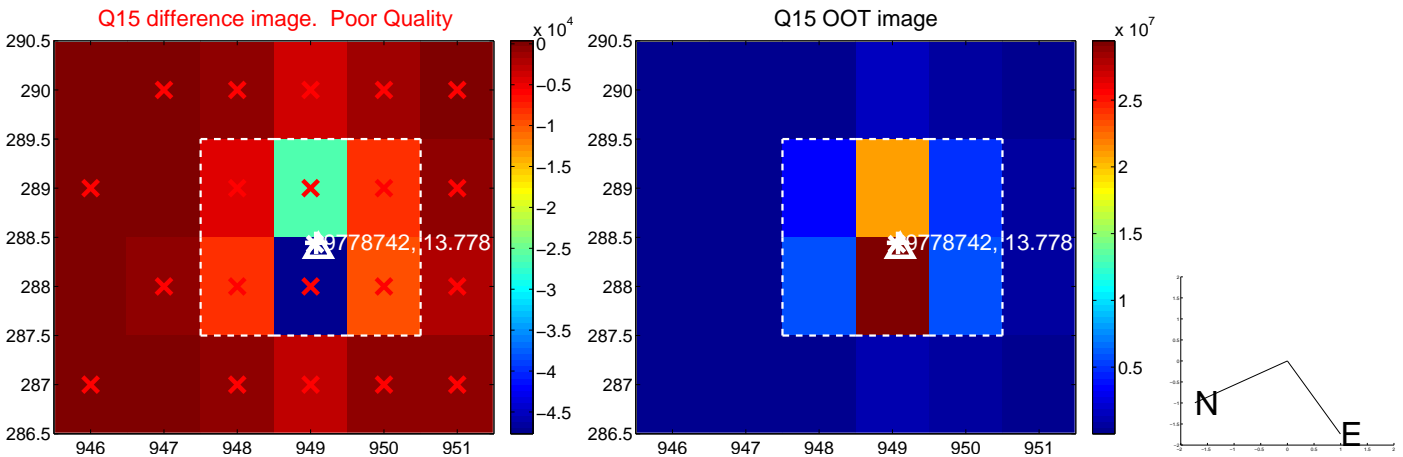
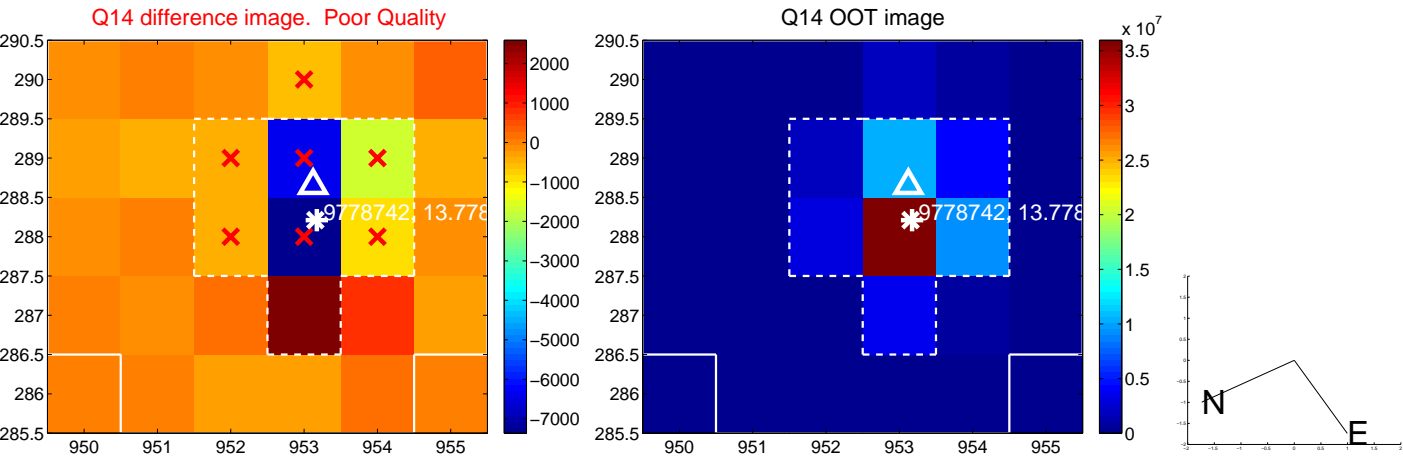
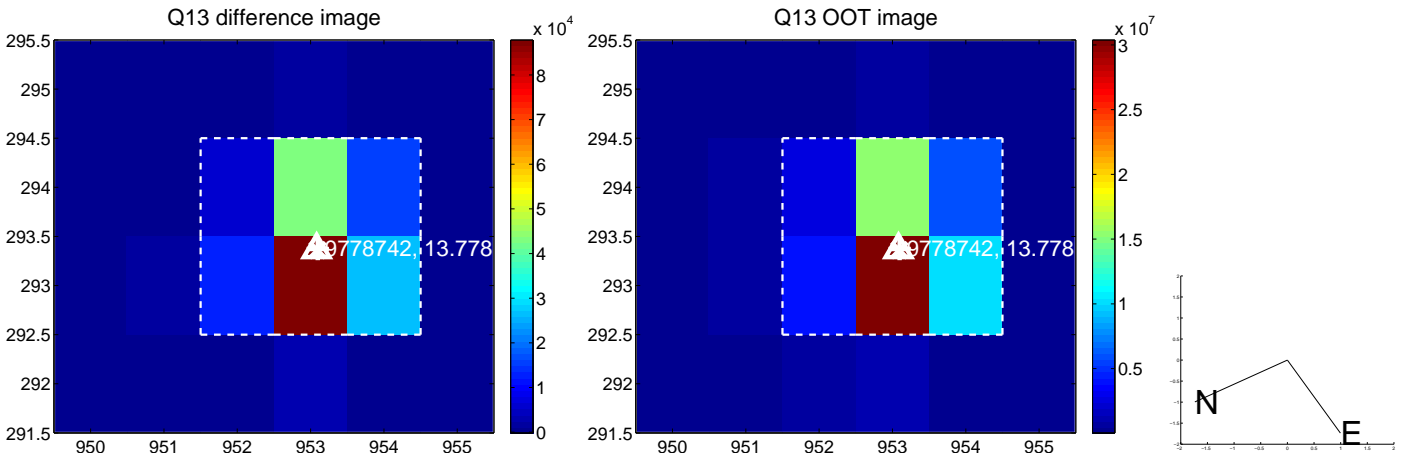
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



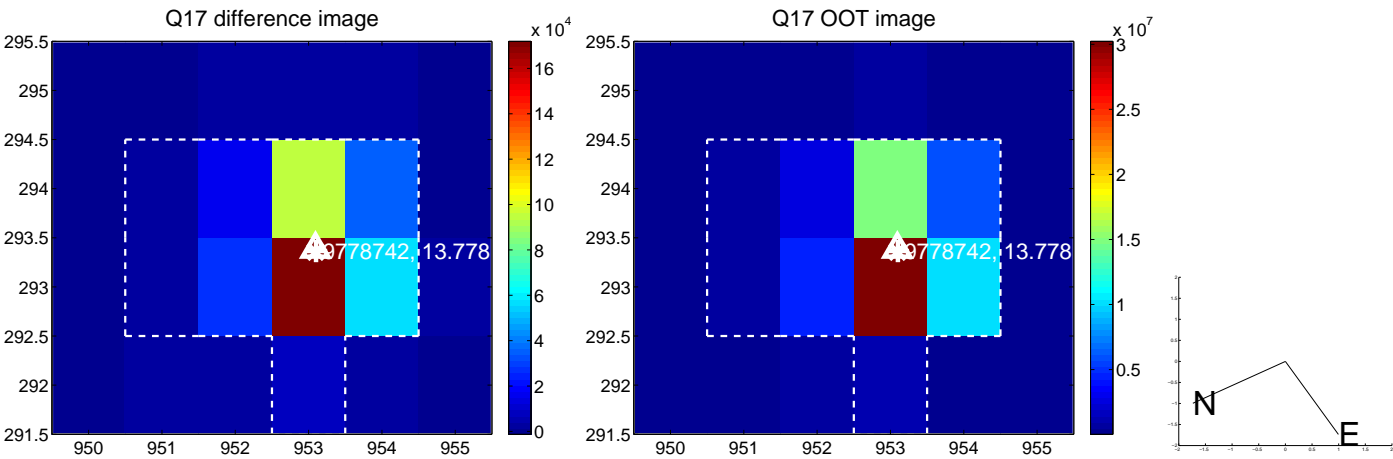
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



folded centroid time series figure for this object.

UKIRT Image

Declination

