

KIC 009209808

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})
009209808-01	OBS	8281.01	244.546983	133.362266	673.8	4.377	7.1	7.3	0.74	5094	2.49	0.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009209808-01	OBS	FP	0.14	1	0	0	0	MOD_NONUNIQ_ALT—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.

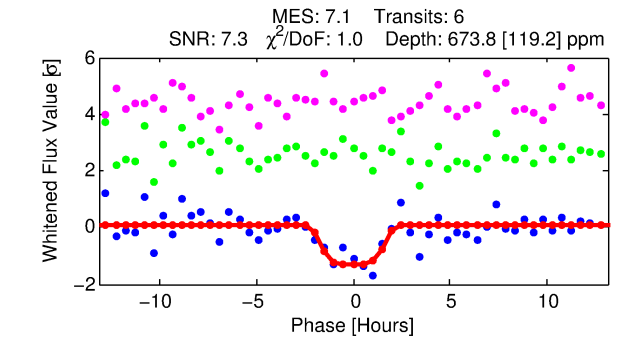
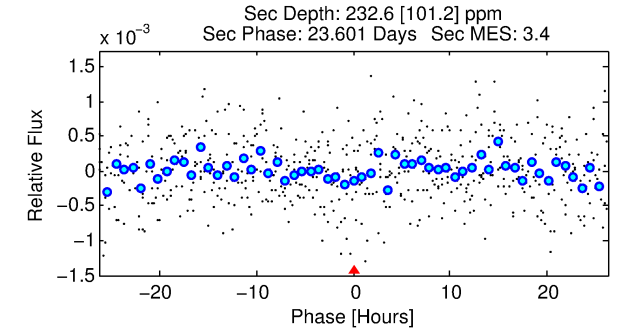
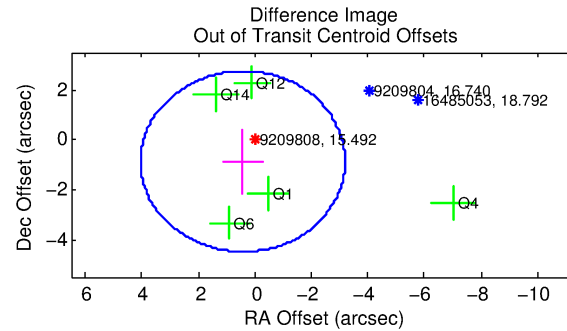
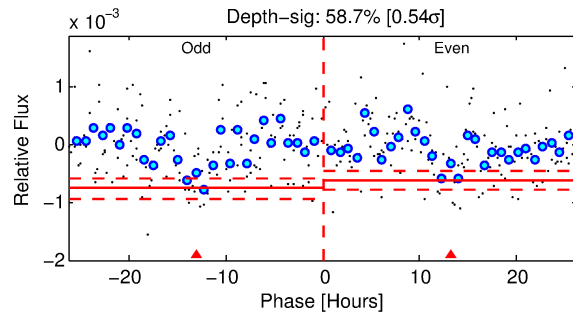
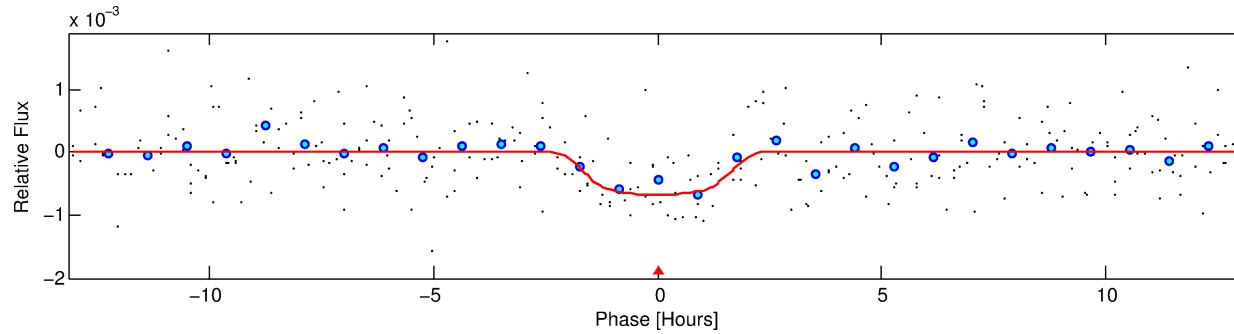
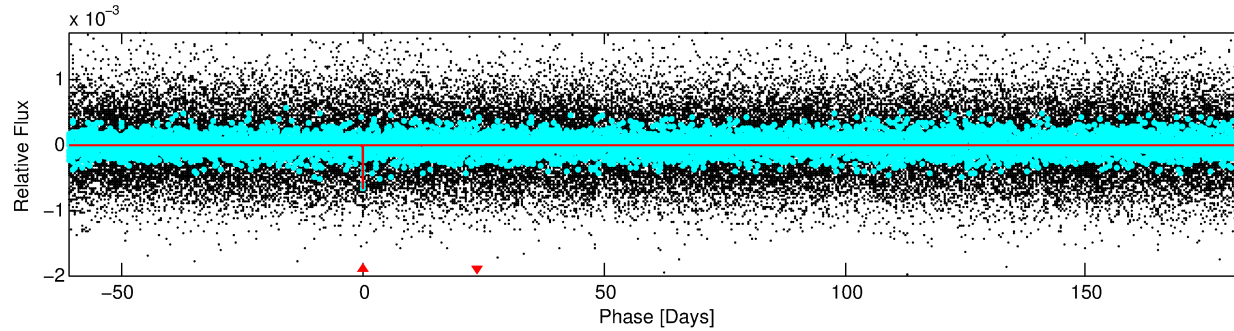
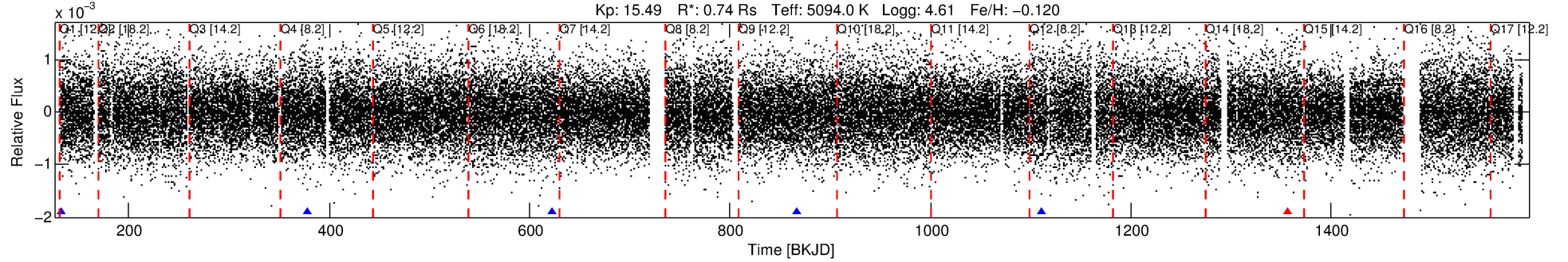
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009209808-01

No Significant Match Found

DV One-Page Summary

KIC: 9209808 Candidate: 1 of 1 Period: 244.547 d



DV Fit Results:

Period = 244.54698 [0.00454] d
Epoch = 133.3623 [0.0142] BKJD
Rp/R* = 0.0310 [0.0053]
a/R* = 174.60 [89.54]
b = 0.95 [0.06]
Seff = 0.64 [0.12]
Teq = 228 [11] K
Rp = 2.49 [0.52] Re
a = 0.7132 [0.0701] AU
Ag = 10533.02 [6006.24] [1.75 σ]
Teffp = 3576 [506] K [6.62 σ]

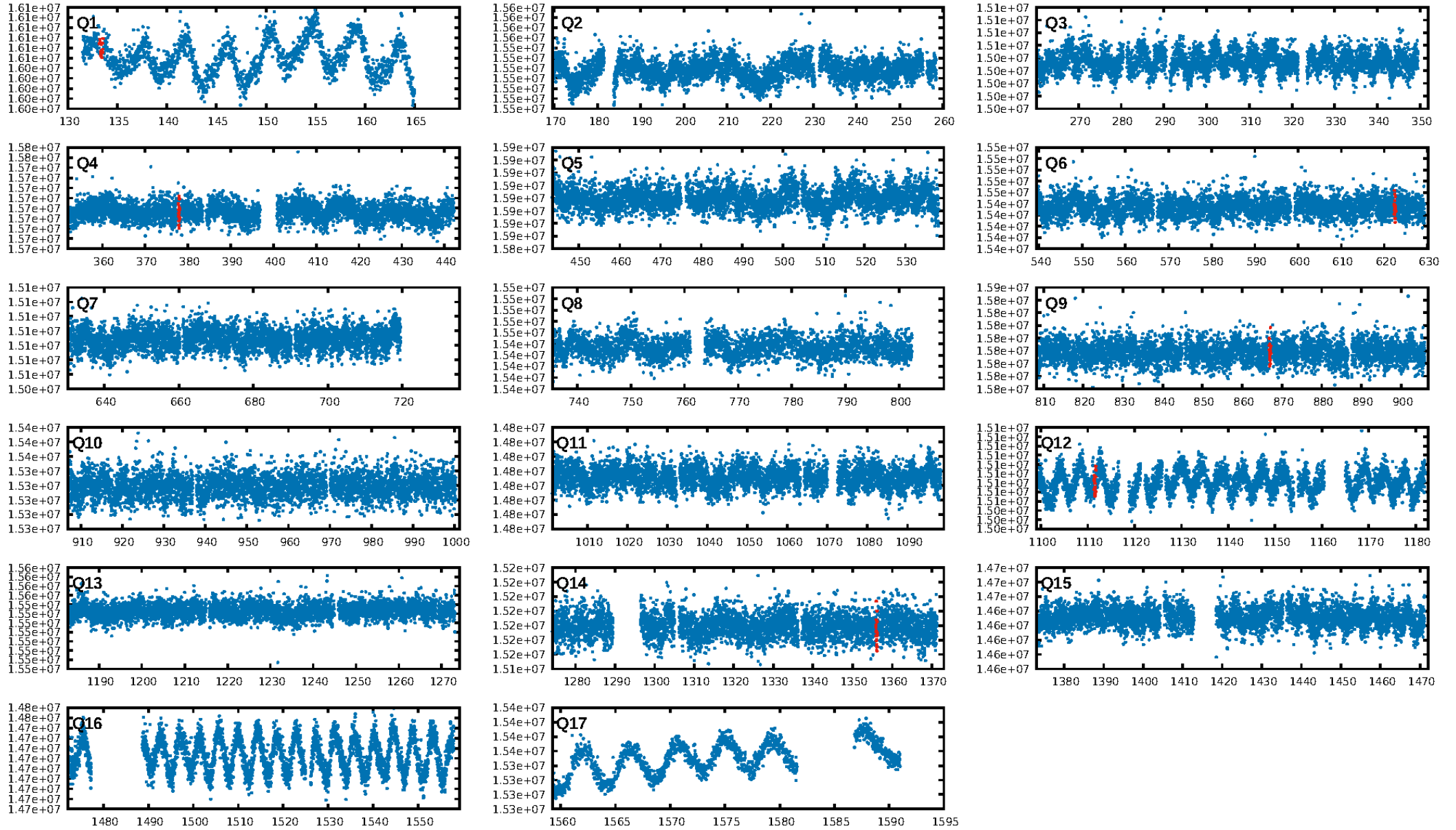
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 53.2%
ModelChiSquareGof-sig: 99.1%
Bootstrap-pfa: 1.33e-12
RollingBand-fgt: 0.80 [4/5]
GhostDiagnostic-chr: 3.064
Centroid-sig: 17.1%
Centroid-so: 2.563 arcsec [1.14 σ]
OotOffset-rm: 0.970 arcsec [0.80 σ]
OotOffset-st: 2/0/2/1 [5]
KicOffset-rm: 0.722 arcsec [0.56 σ]
KicOffset-st: 2/0/2/1 [5]
DiffImageQuality-fgm: 0.20 [1/5]
DiffImageOverlap-fno: 1.00 [6/6]

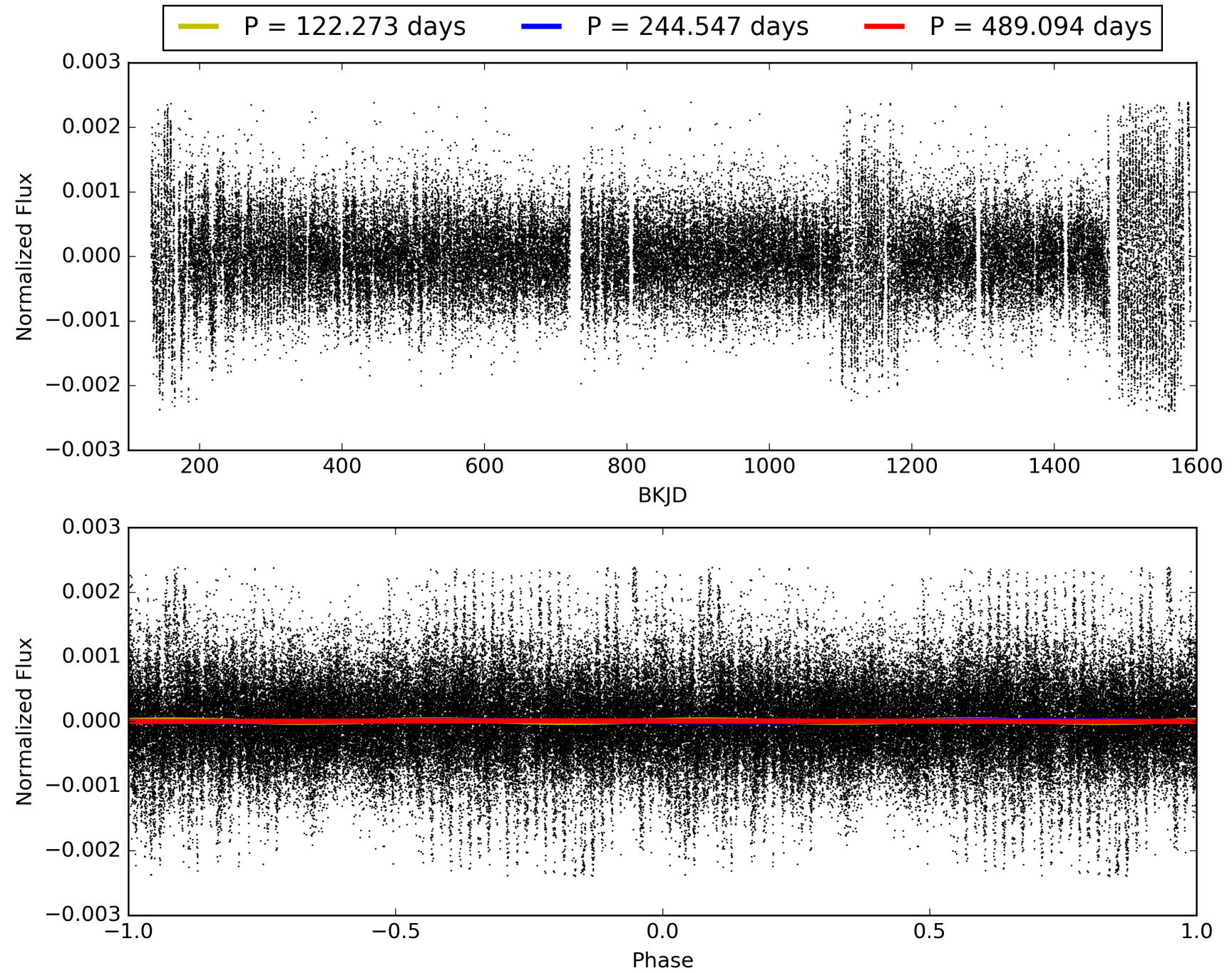
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:13:10 Z

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

TCE 009209808-01, PDC Light Curves

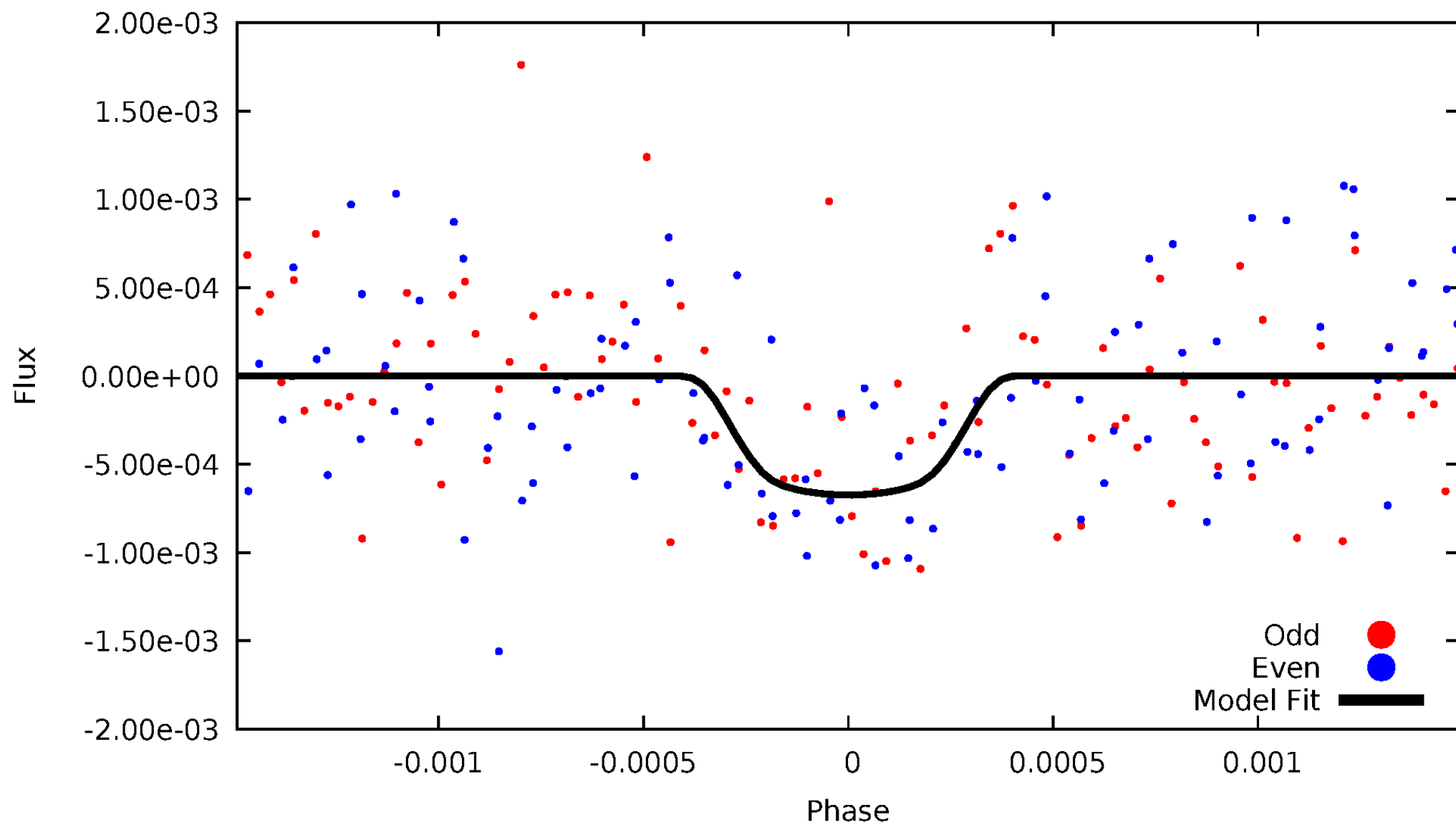


TCE 009209808-01



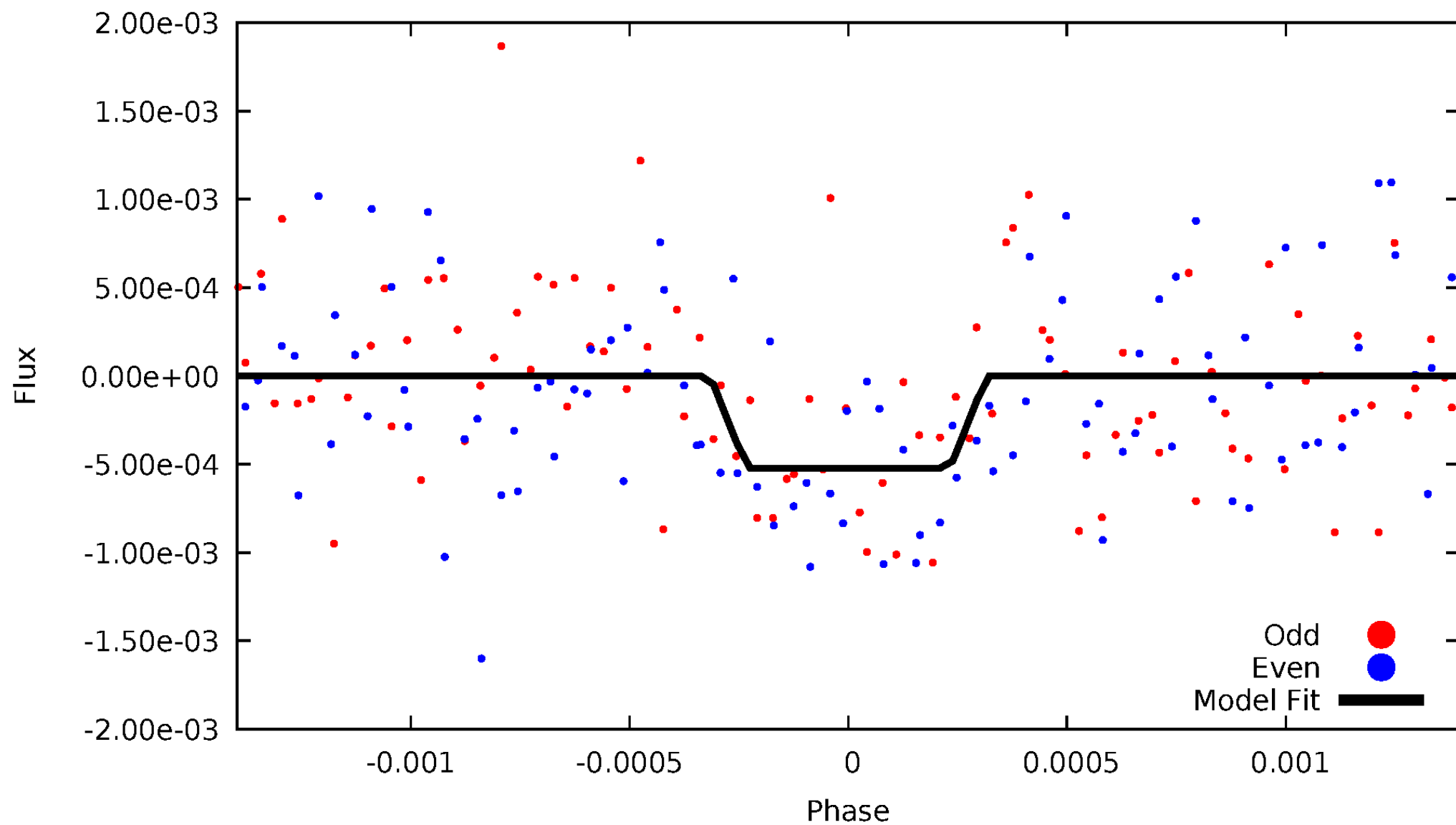
DV Odd/Even

TCE 009209808-01



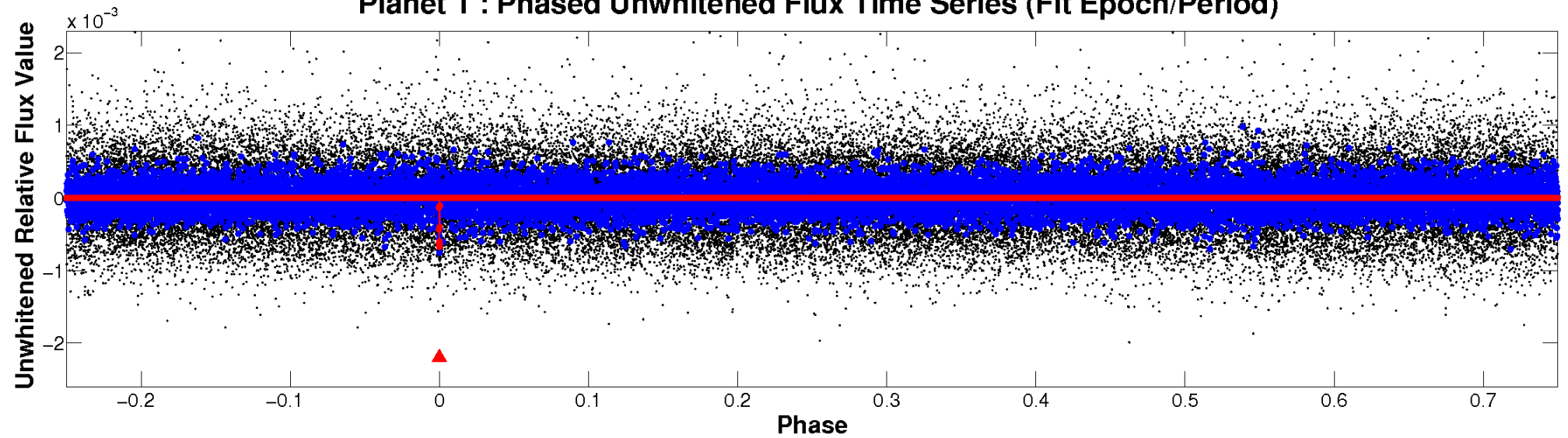
ALT Odd/Even

TCE 009209808-01

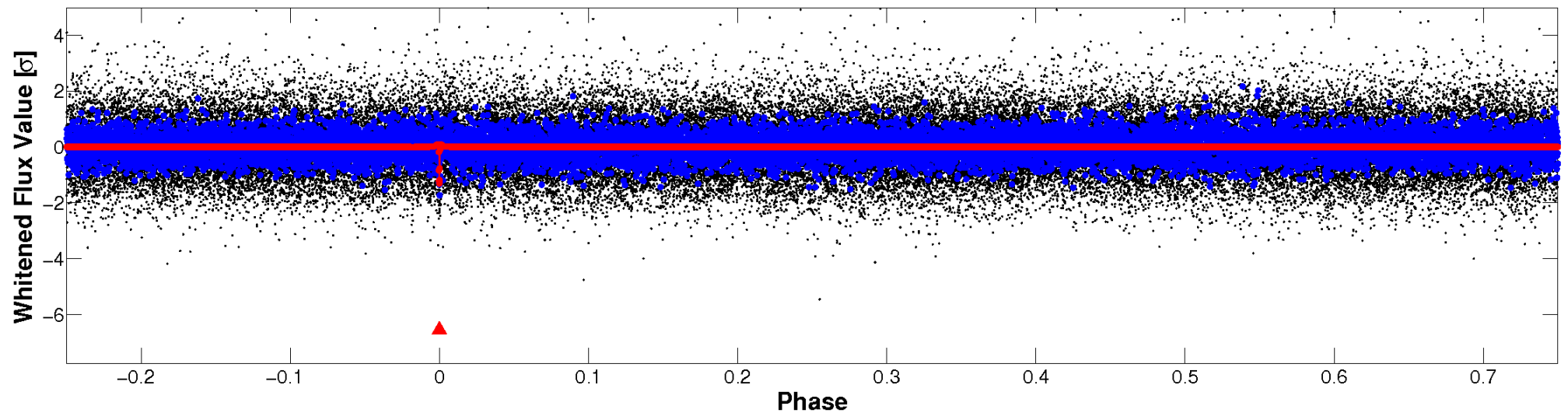


Non-Whitened Vs. Whitened Light Curve

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

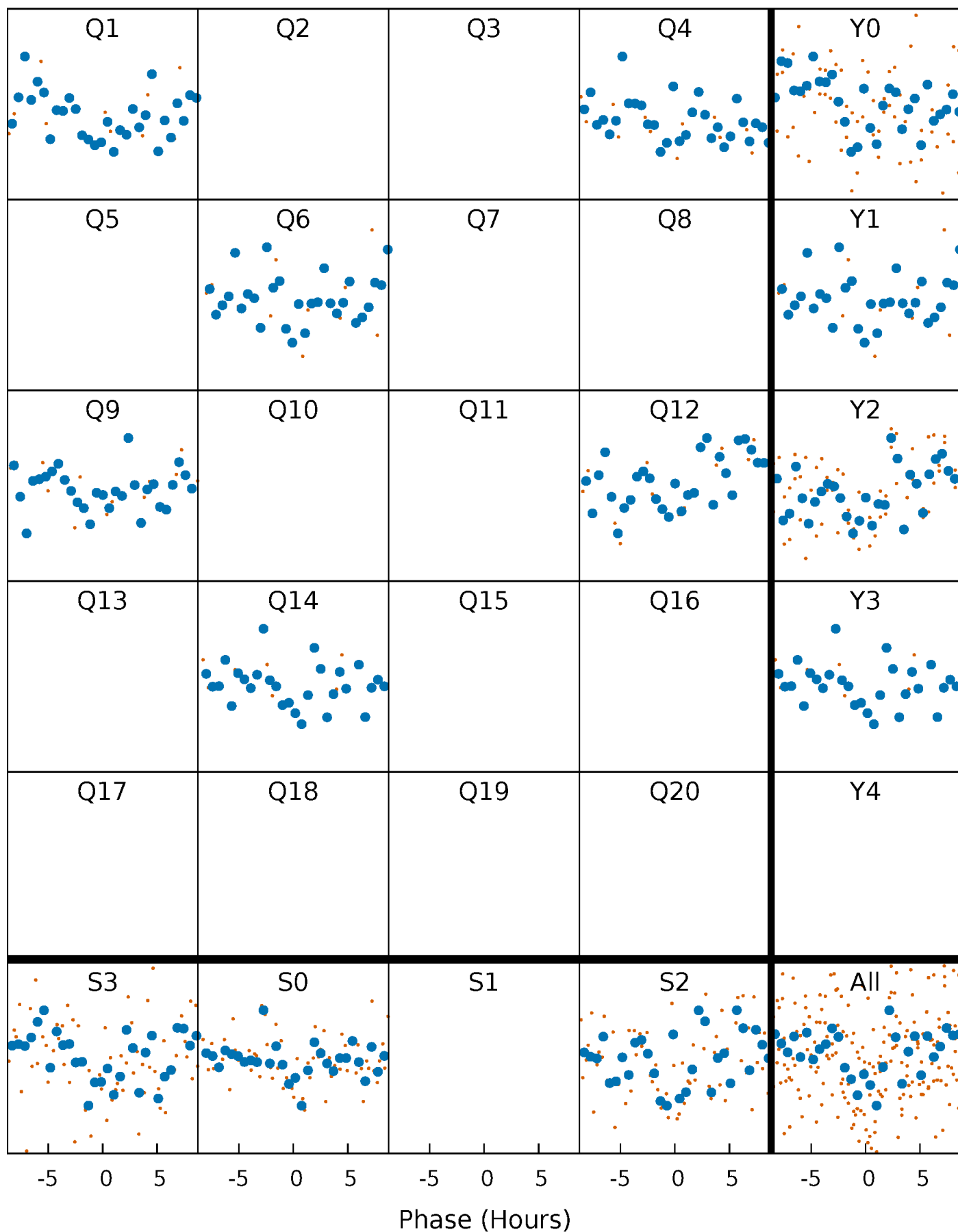


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



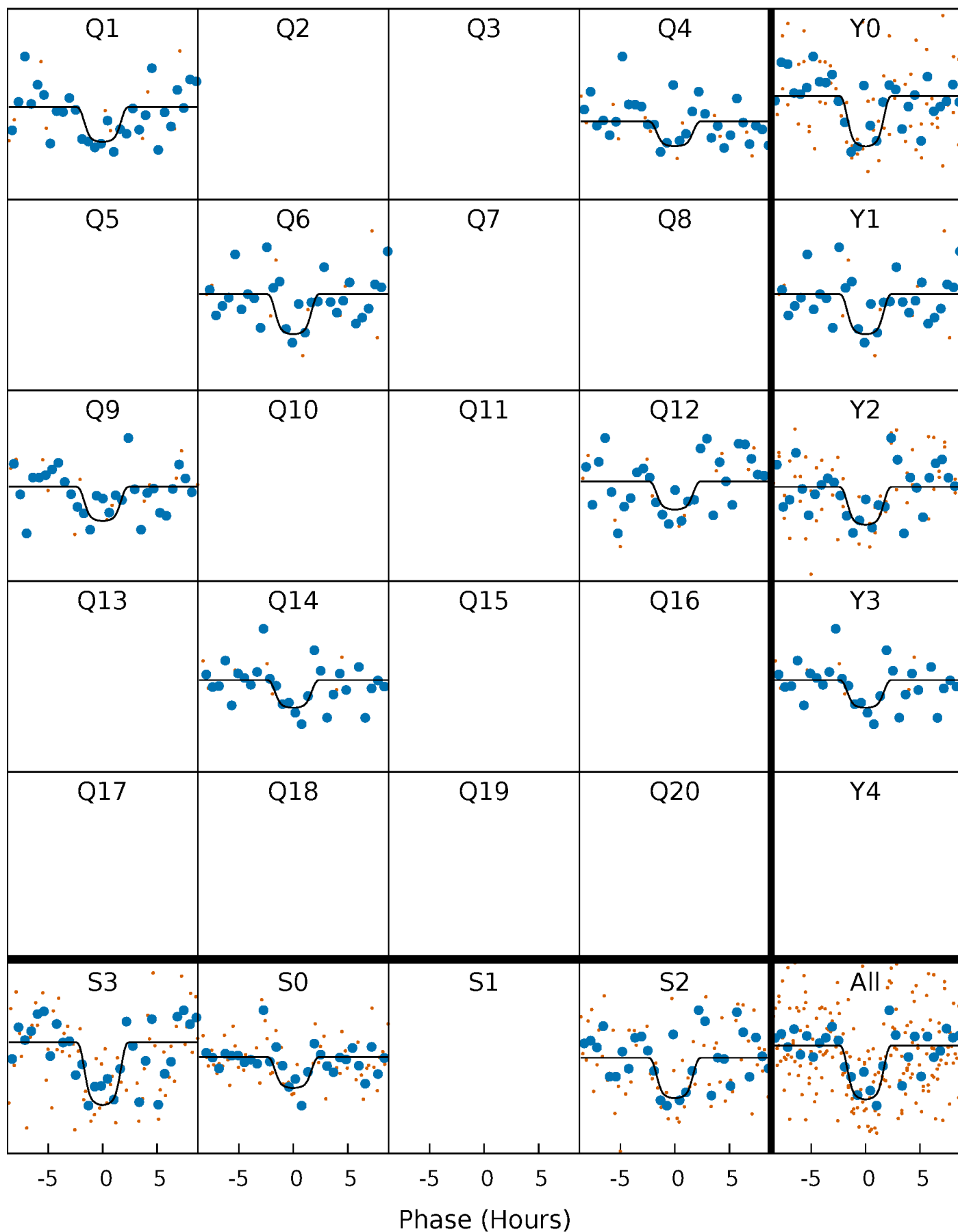
PDC Quarter-Phased Transit Curves

TCE 009209808-01 P=244.546983 Days $T_0=133.362266$ (BKJD)



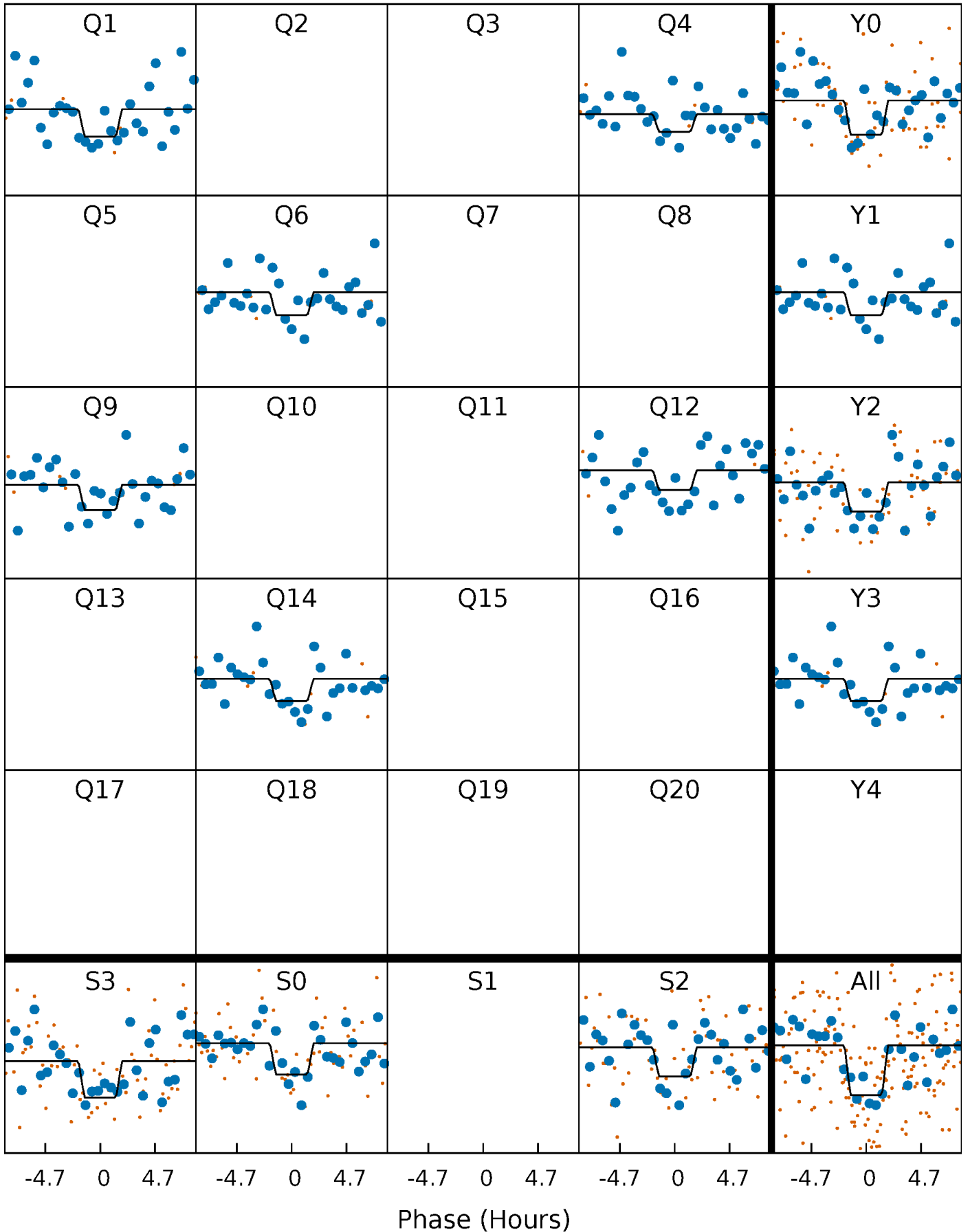
DV Quarter-Phased Transit Curves

TCE 009209808-01 P=244.546983 Days $T_0=133.362266$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

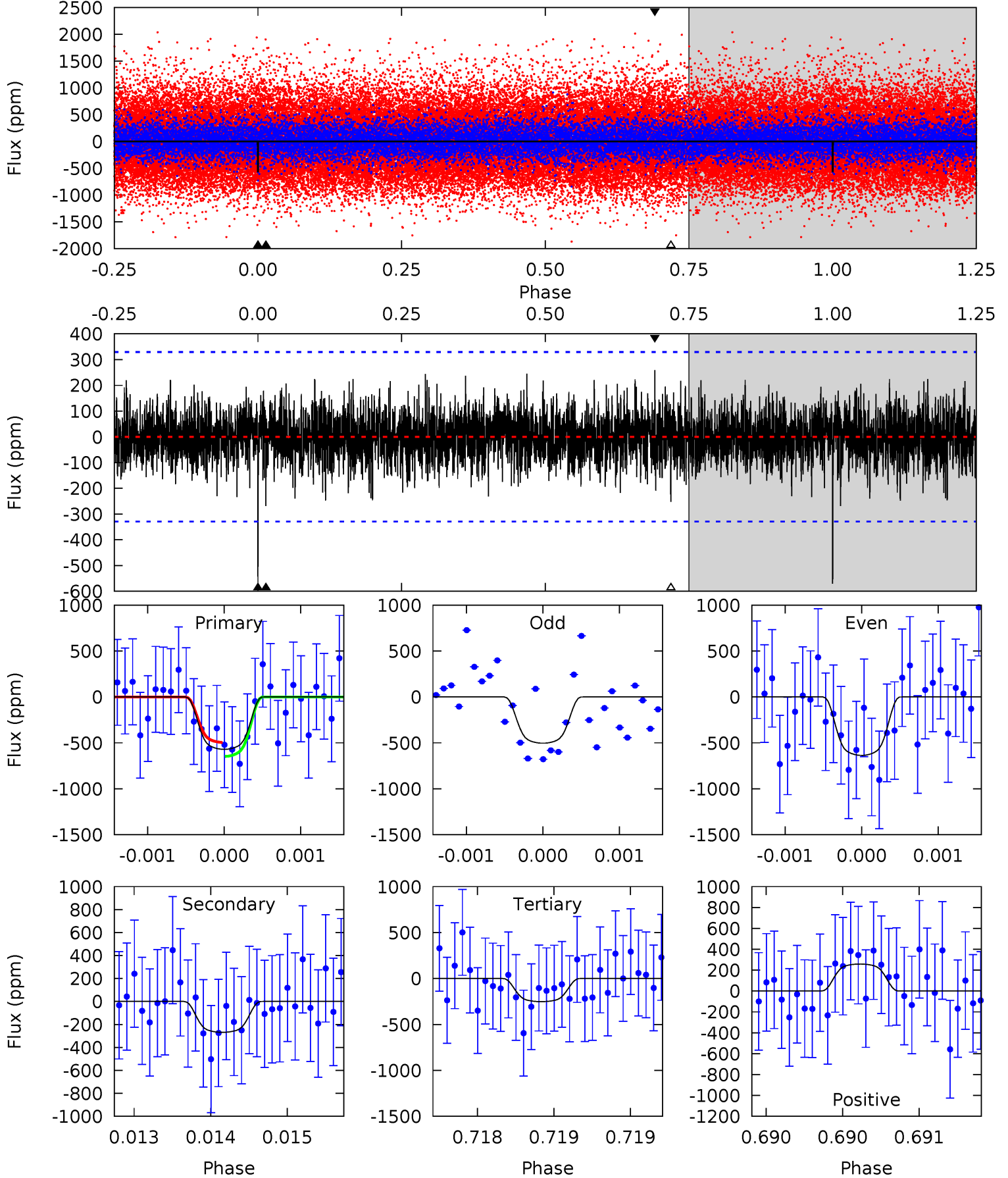
TCE 009209808-01 P=244.546274 Days $T_0=133.361628$ (BKJD)



DV Model-Shift Uniqueness Test

009209808-01, P = 244.546983 Days, E = 133.362266 Days

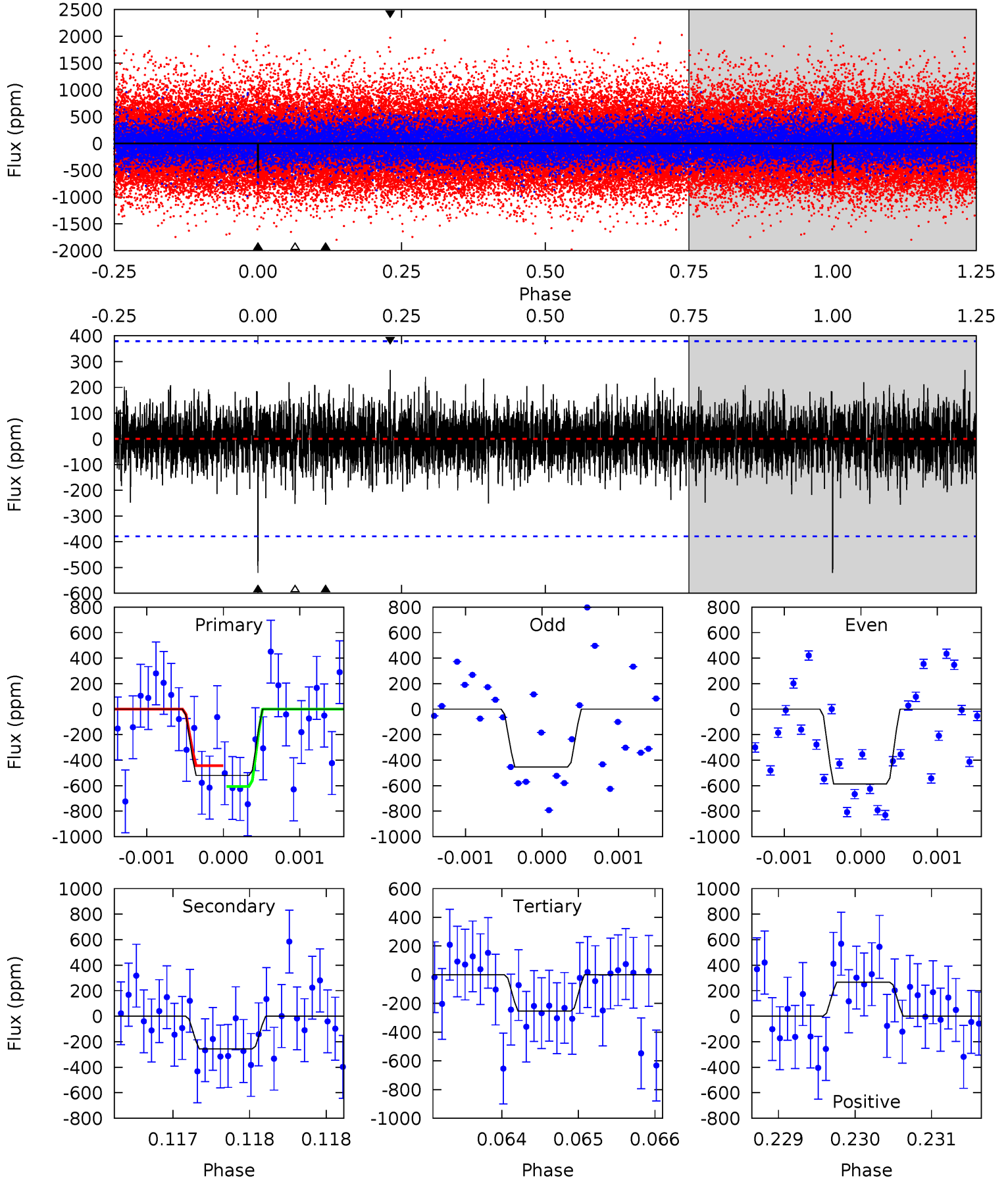
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.51	4.48	4.20	4.31	5.49	3.35	1.23	5.30	5.20	0.27	0.17	1.11	1.00	0.31	1.27



Alt Model-Shift Uniqueness Test

009209808-01, P = 244.546274 Days, E = 133.361628 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.60	3.74	3.69	3.91	5.53	3.42	1.00	3.92	3.70	0.05	-0.17	0.98	1.06	0.34	1.19



Stellar Parameters For KIC 009209808

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5094^{+153}_{-138}	$4.612^{+0.035}_{-0.075}$	$-0.120^{+0.300}_{-0.300}$	$0.736^{+0.088}_{-0.059}$	$0.821^{+0.059}_{-0.095}$	$2.895^{+0.475}_{-0.711}$
	+3%/-3%	+1%/-2%	+250%/-250%	+12%/-8%	+7%/-12%	+16%/-25%
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 009209808-01 / KOI 8281.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-269 ± 60	$2.51^{+0.46}_{-0.41}$	323^{+12}_{-12}	4005^{+325}_{-307}	11985^{+6042}_{-4262}
Alt.	-256 ± 68	$1.88^{+0.42}_{-0.42}$	322^{+13}_{-11}	4392^{+512}_{-395}	19624^{+14292}_{-7528}

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

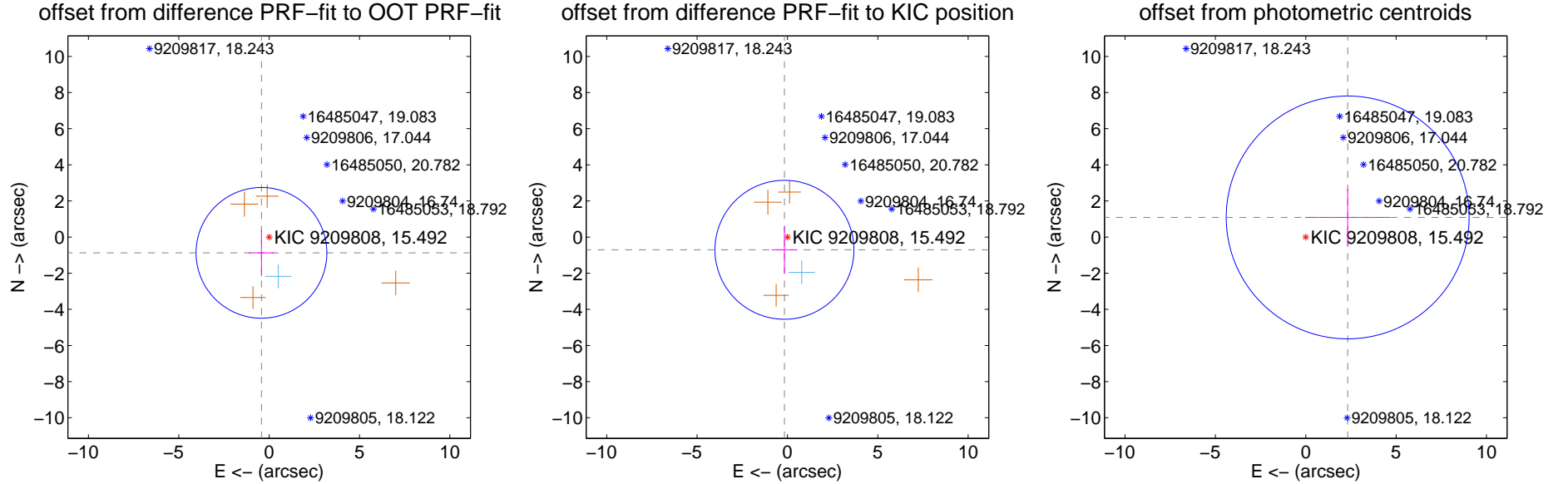
DV Centroid Data

Supplemental centroid analysis for 009209808-01. Kepler magnitude: 15.49. Transit SNR 7.33

There are 1 quarters with good PRF difference image offsets

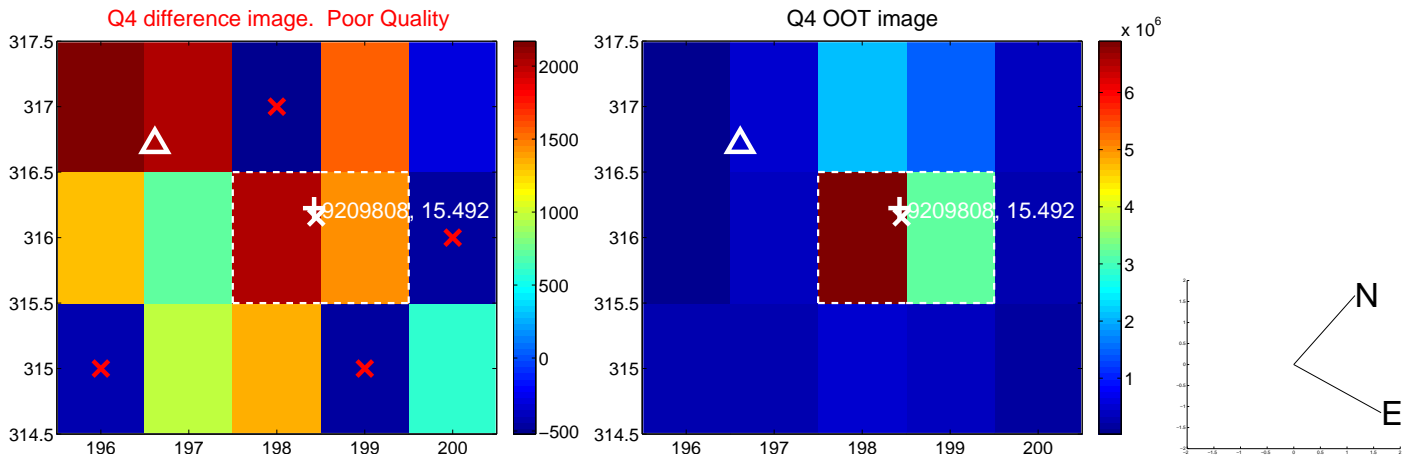
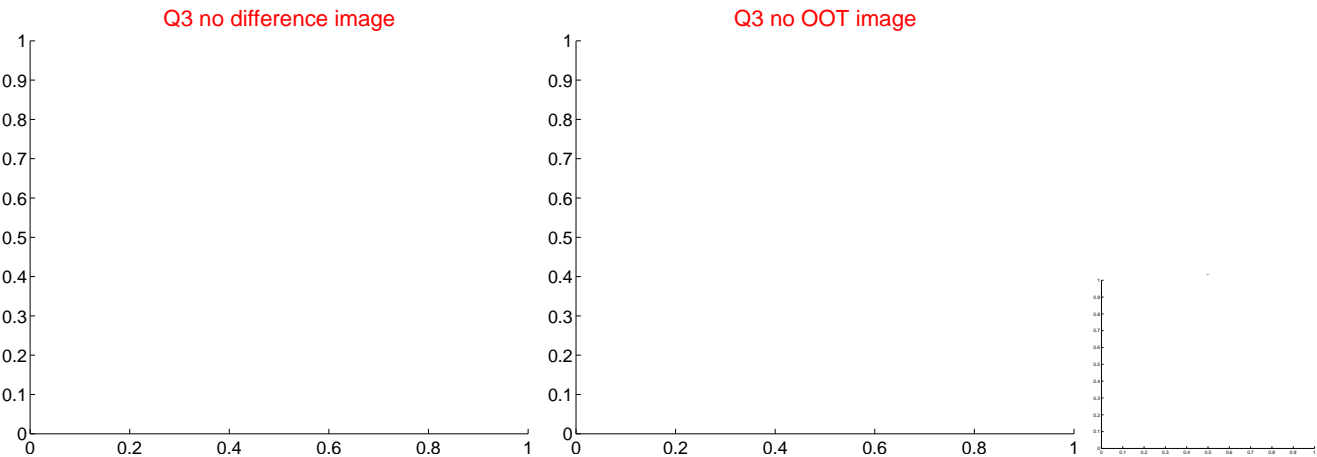
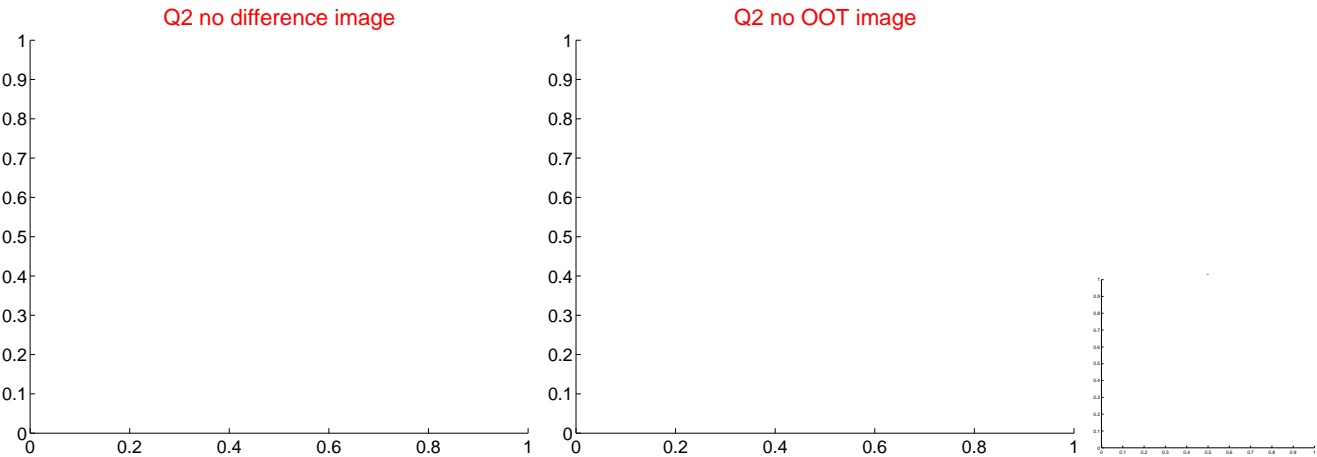
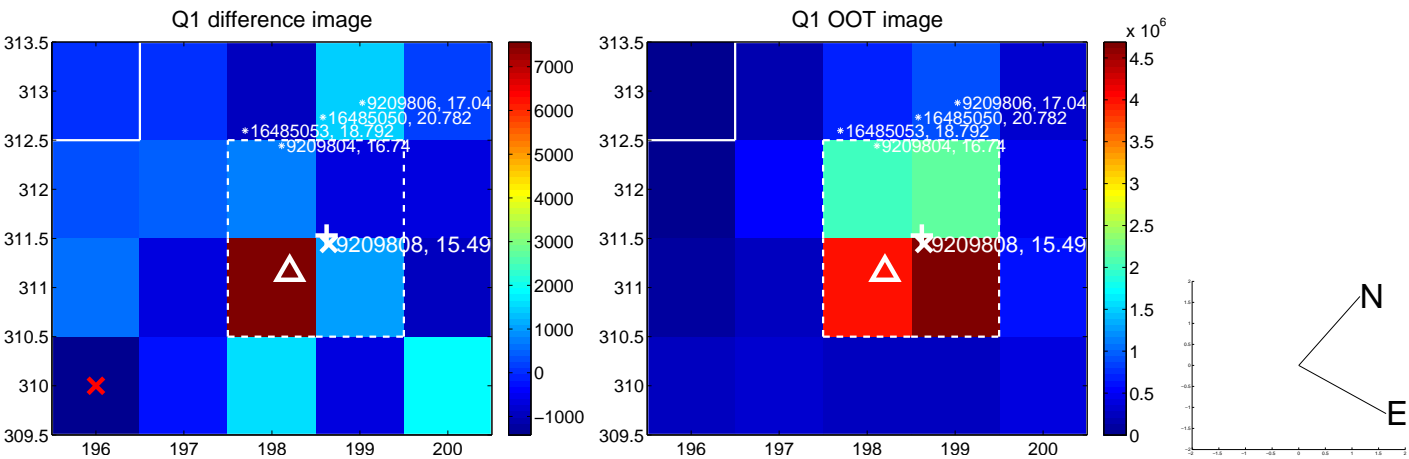
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.970 ± 1.206	0.80	0.425 ± 0.709	-0.872 ± 1.297
PRF-fit source offset from KIC position	0.722 ± 1.282	0.56	0.165 ± 0.705	-0.702 ± 1.306
photometric centroid source offset	2.56 ± 2.24	1.14	-2.32 ± 2.36	1.09 ± 1.62

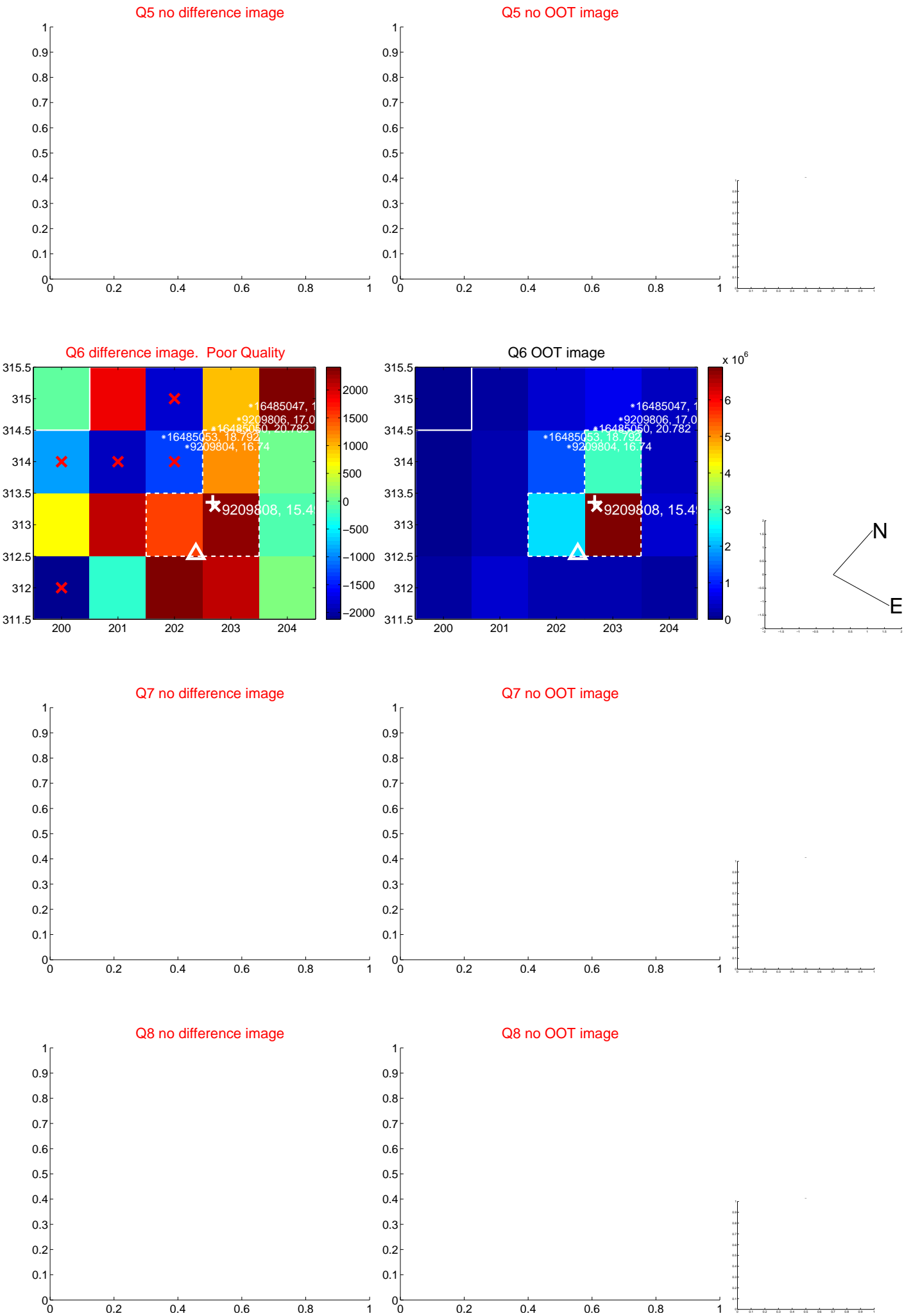


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

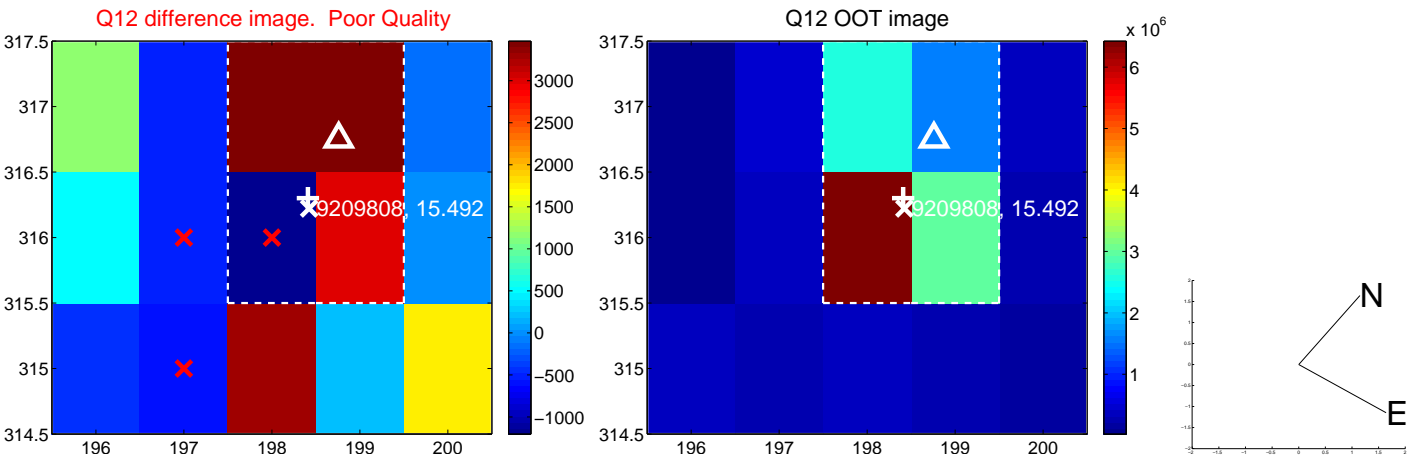
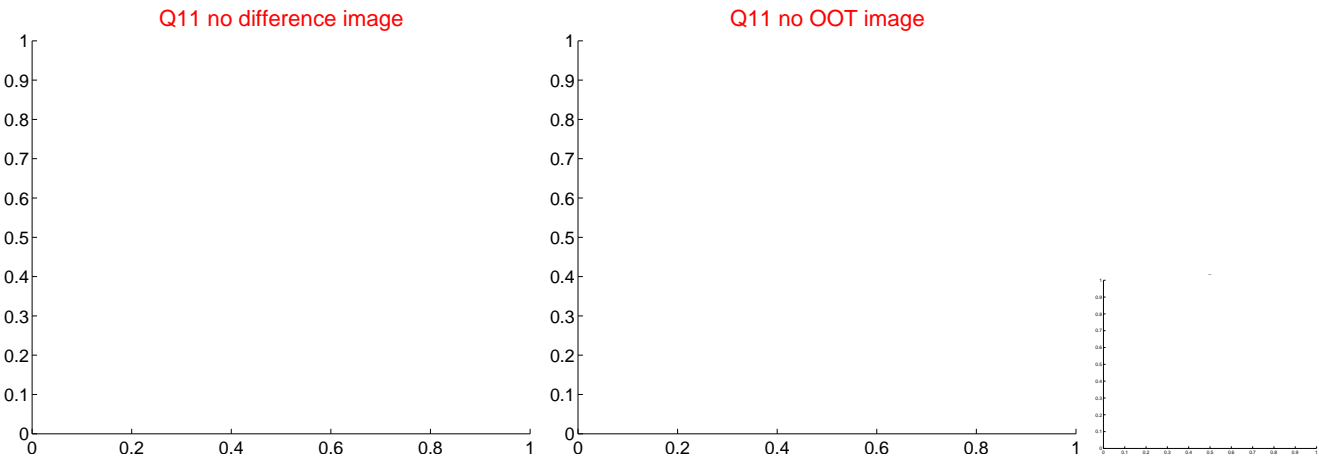
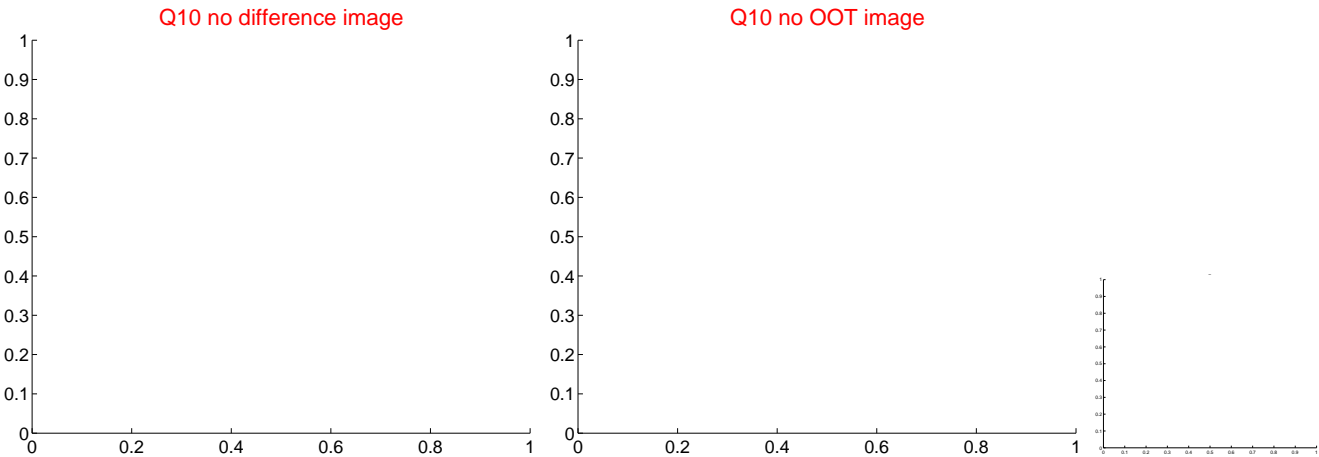
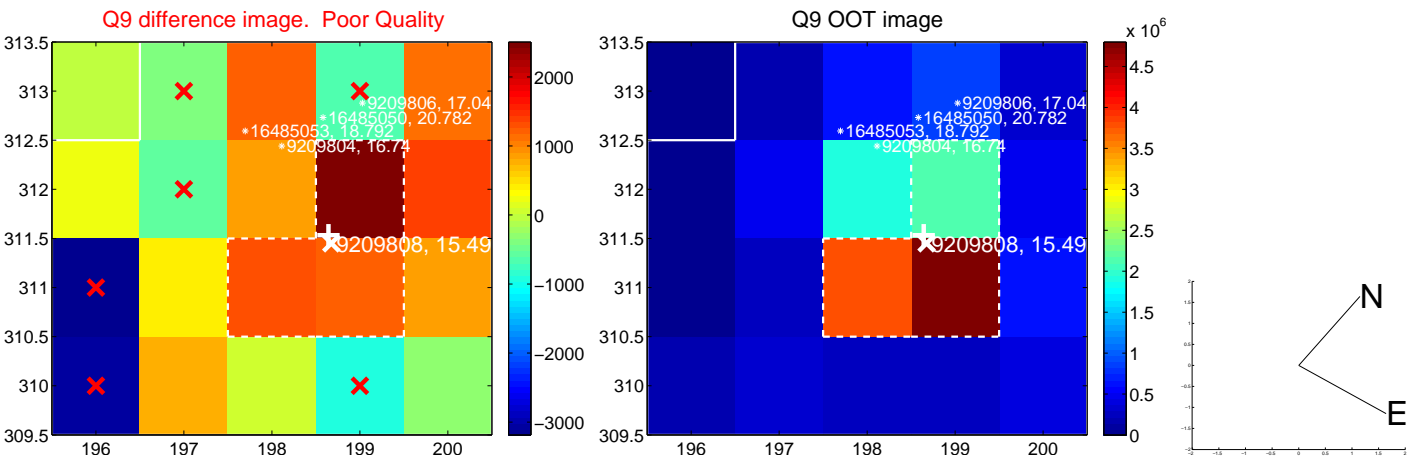
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



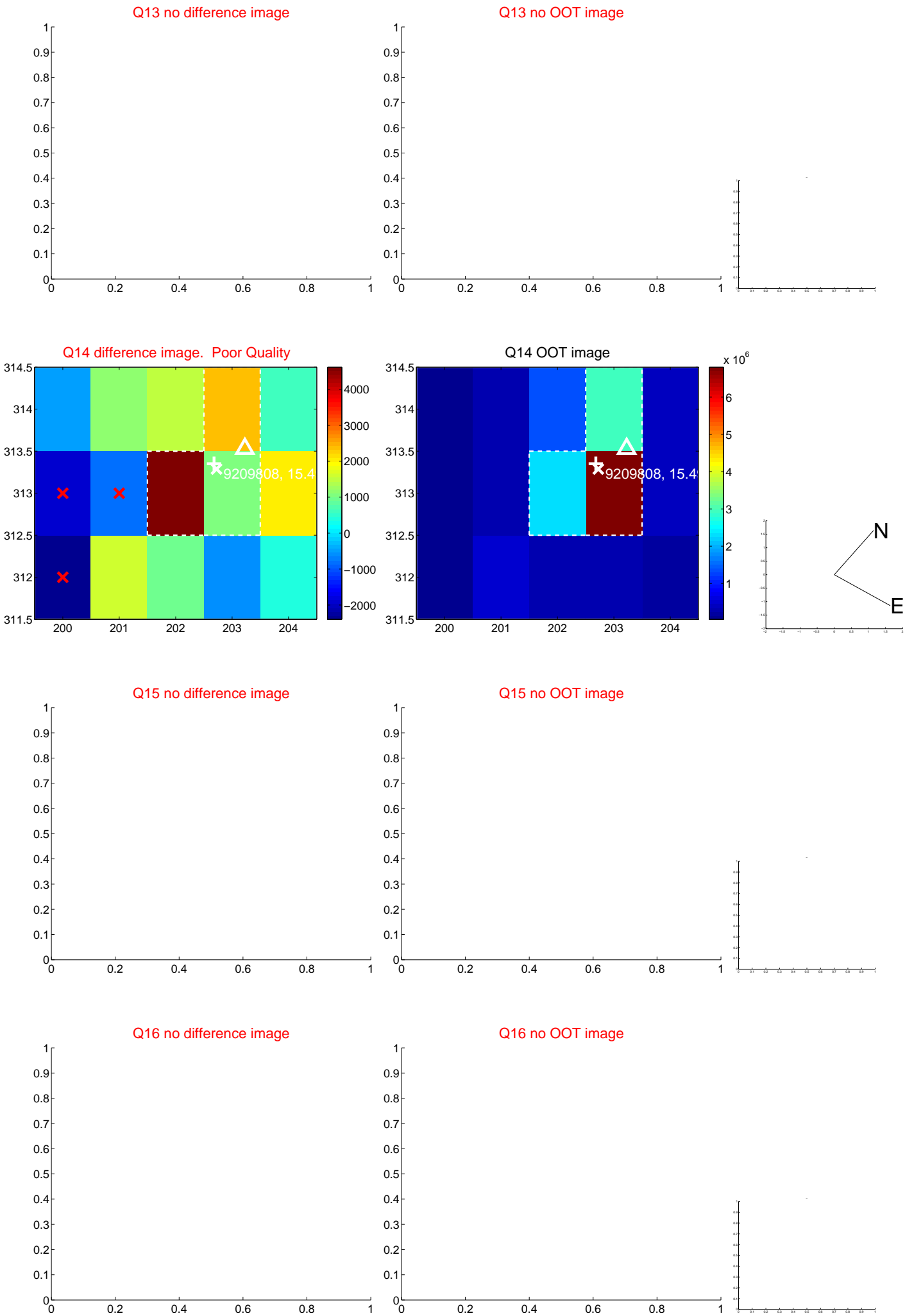
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



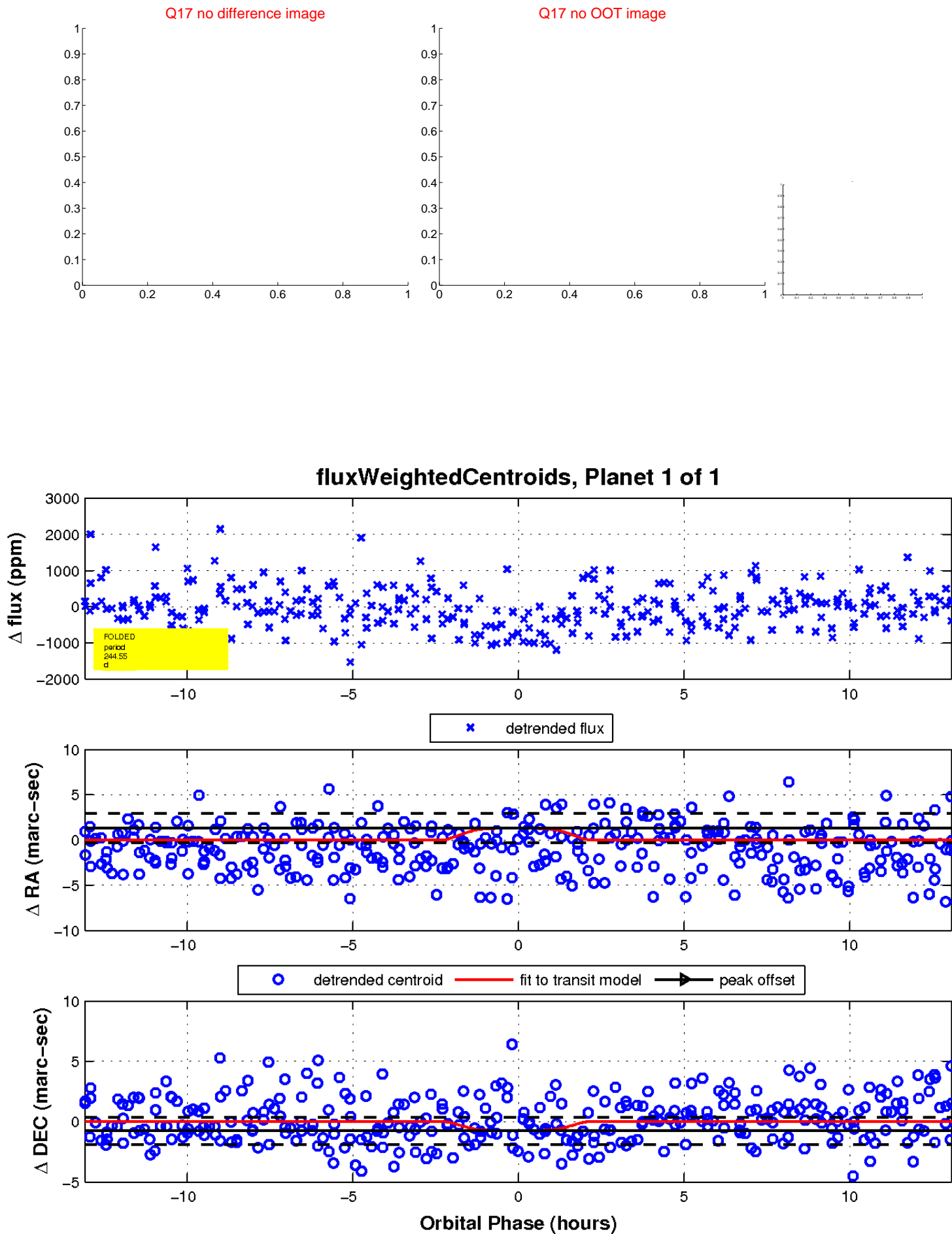
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

