

KIC 004160683

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})
004160683-01	OBS	No	3.933820	133.444190	112.9	20.654	8.3	7.2	1.08	6214	2.06	585.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004160683-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

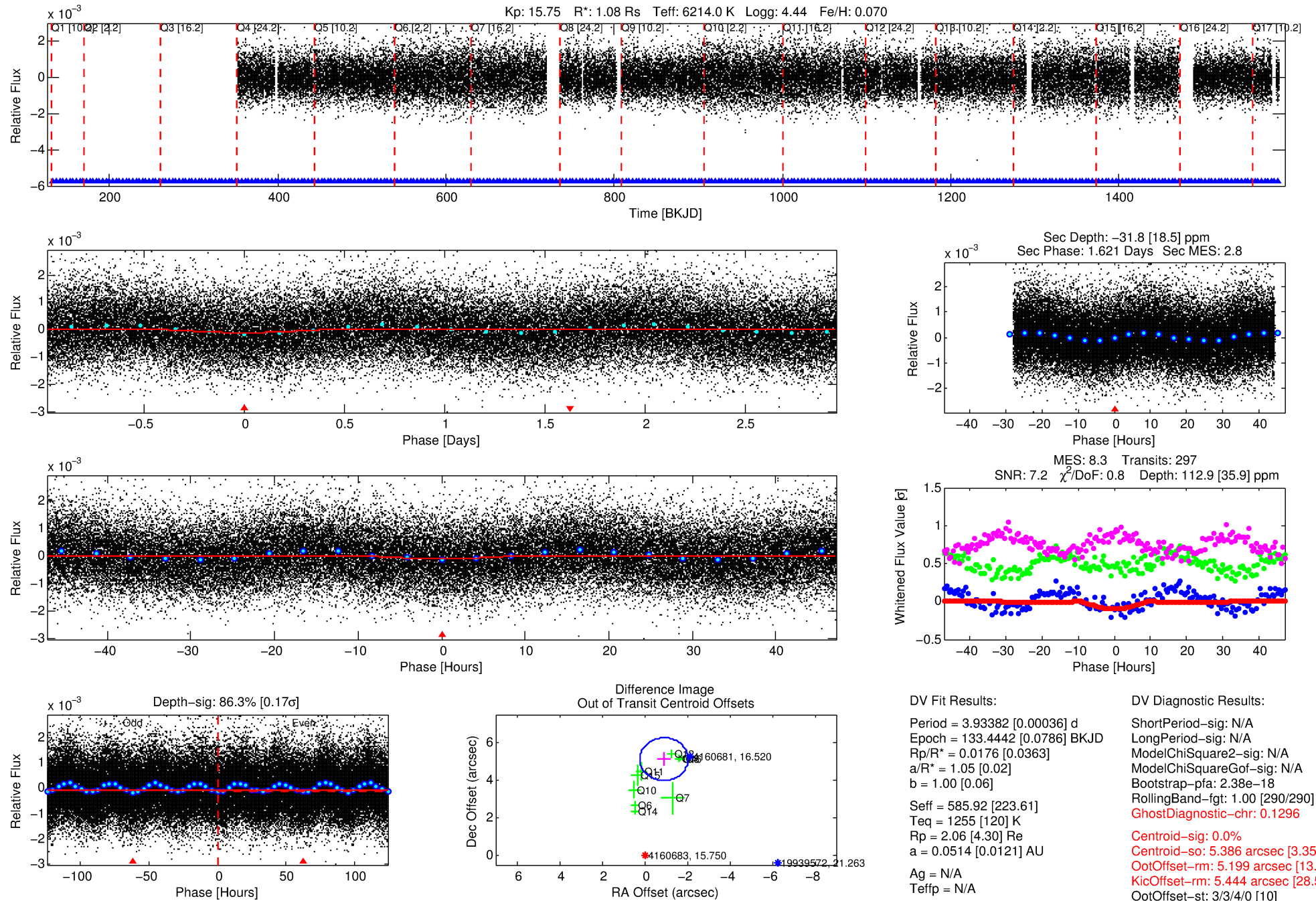
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004160683-01

No Significant Match Found

DV One-Page Summary

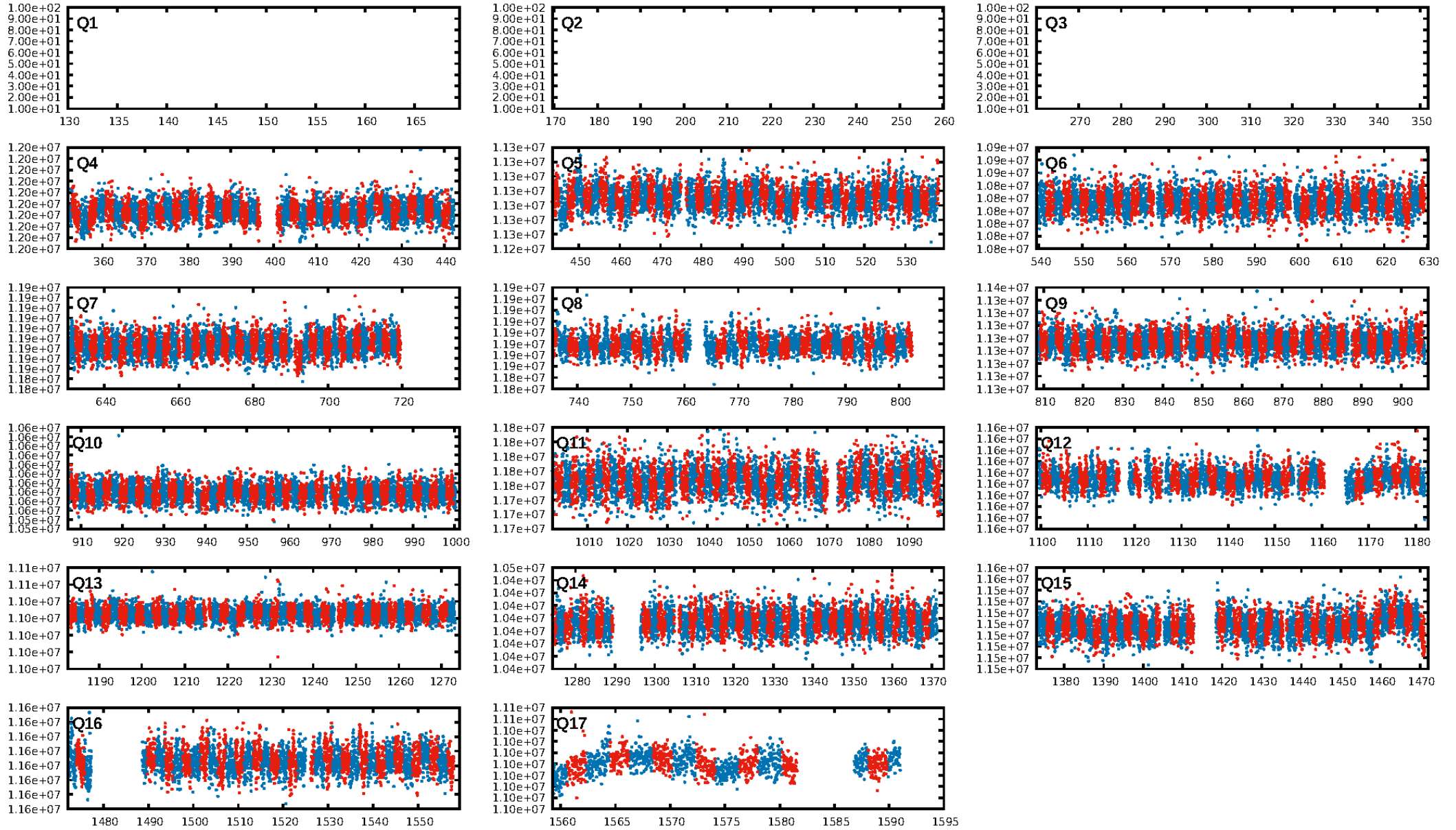
KIC: 4160683 Candidate: 1 of 1 Period: 3.934 d



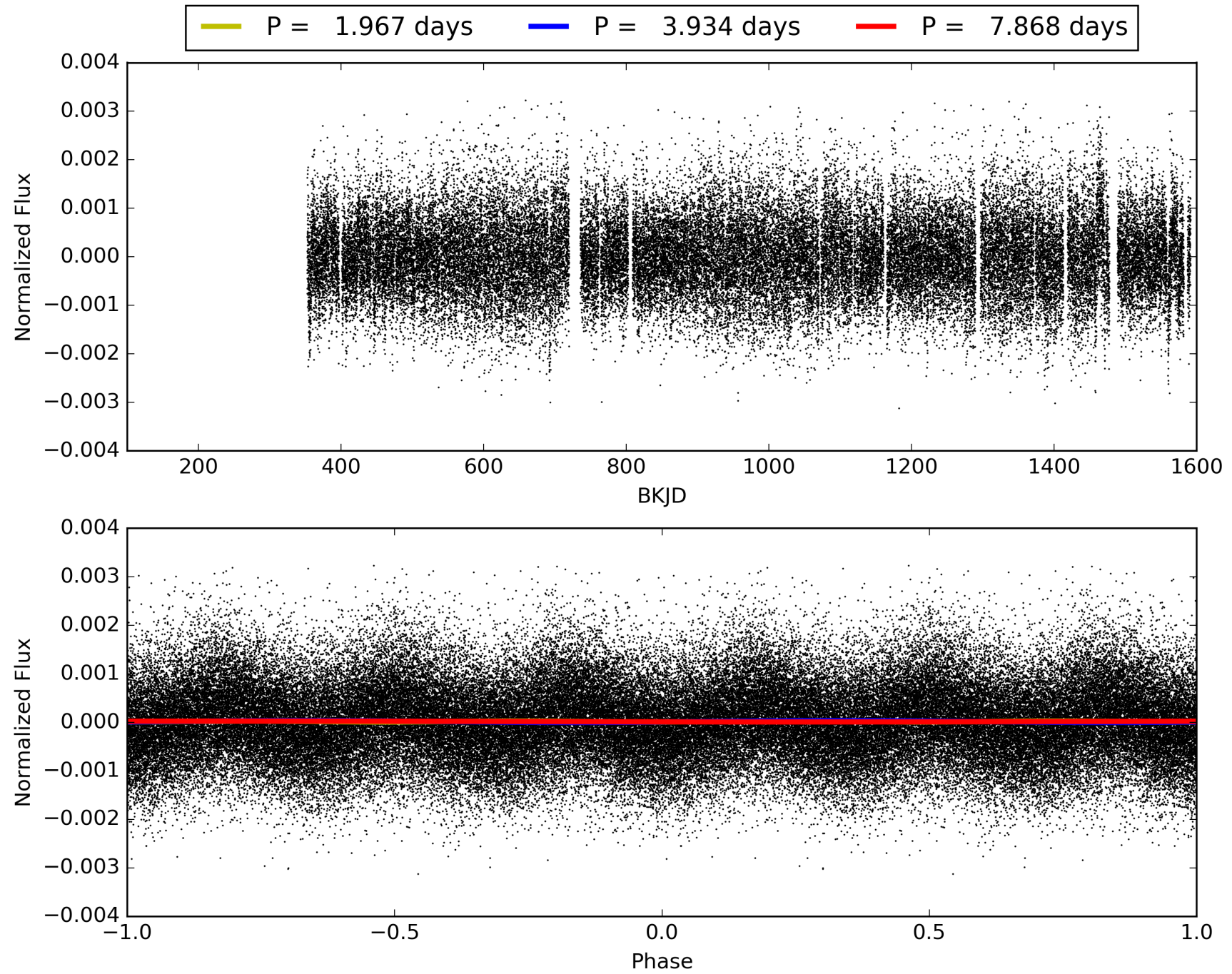
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 22:56:22 Z

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

TCE 004160683-01, PDC Light Curves

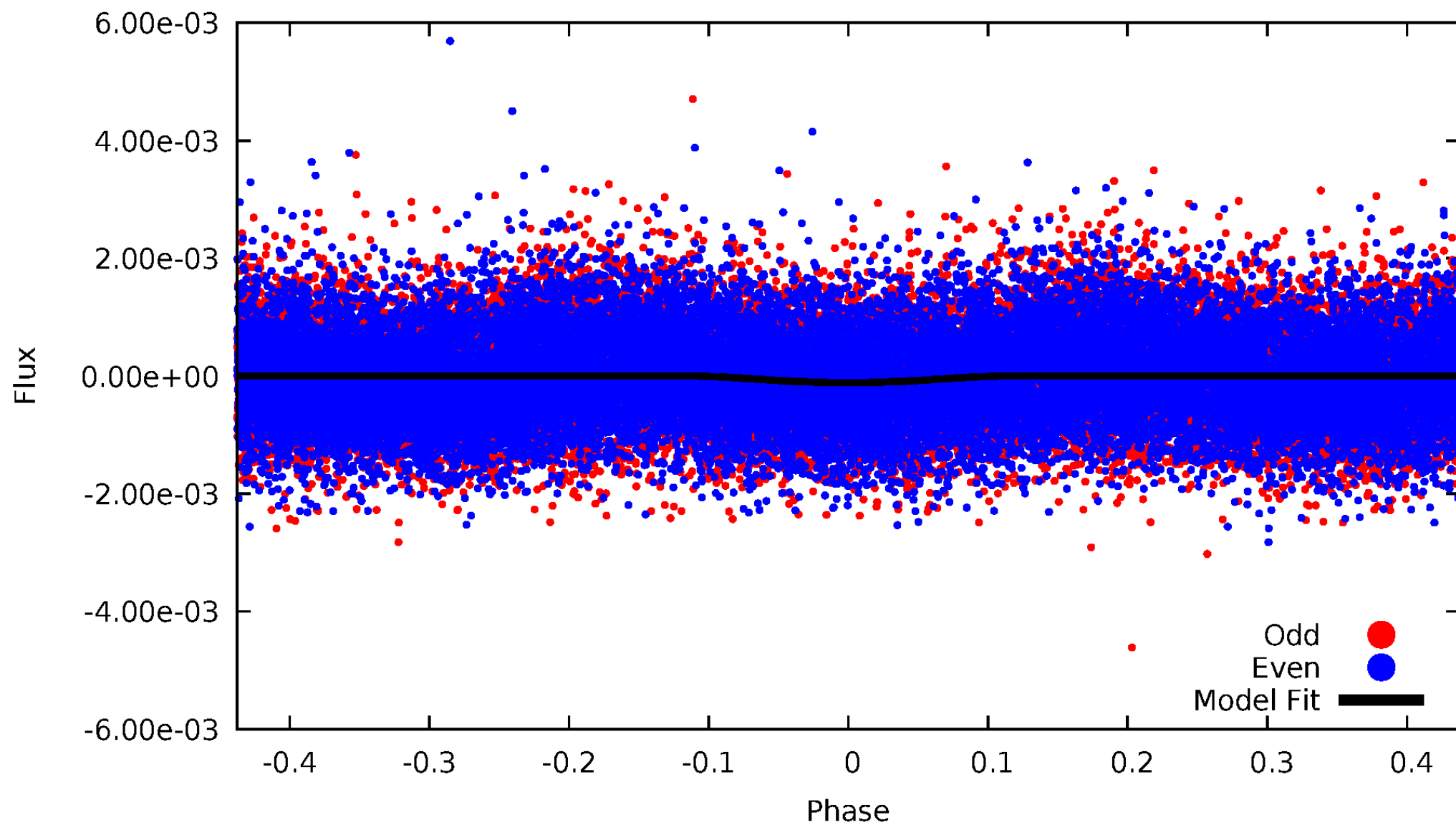


TCE 004160683-01



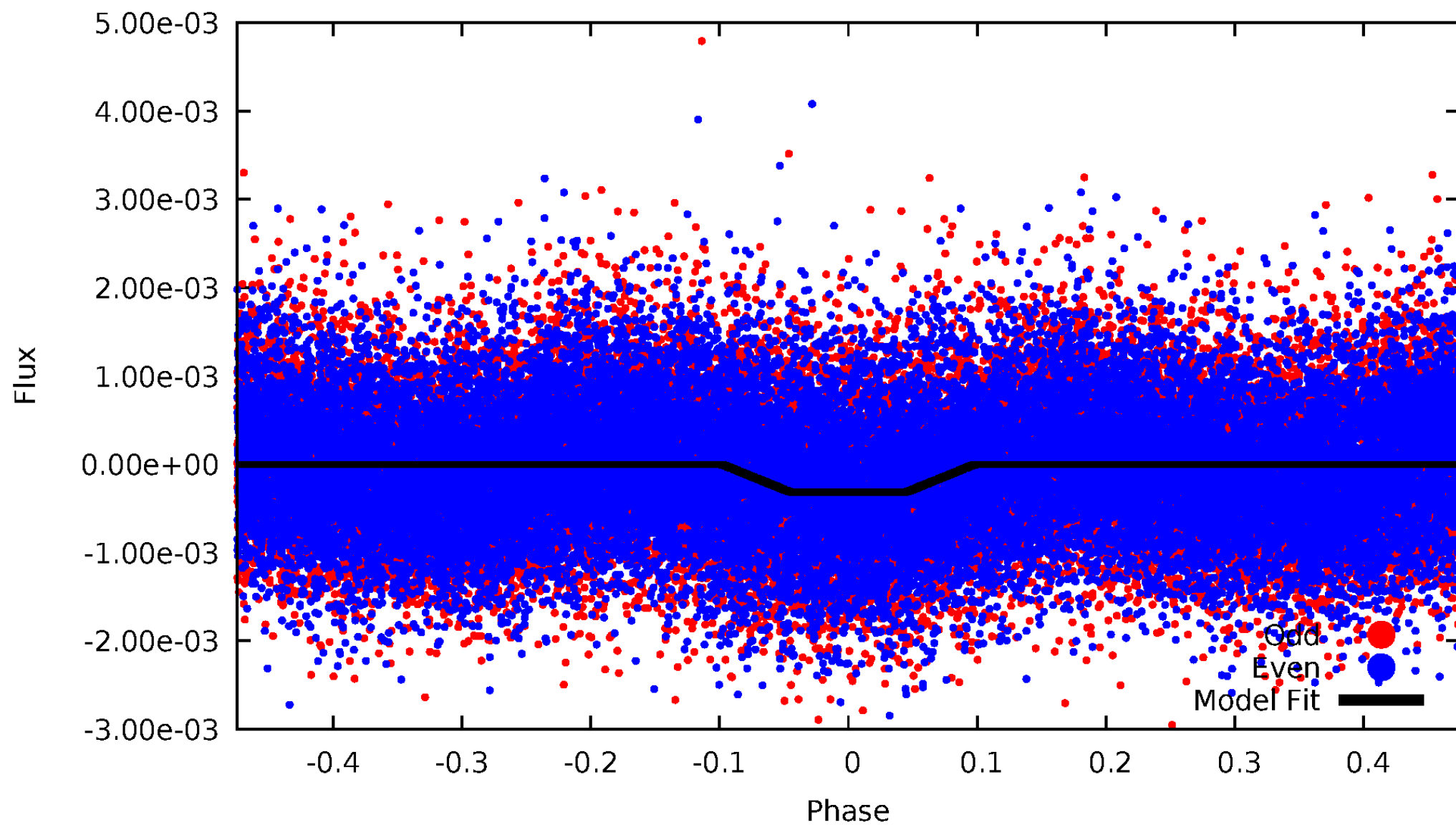
DV Odd/Even

TCE 004160683-01



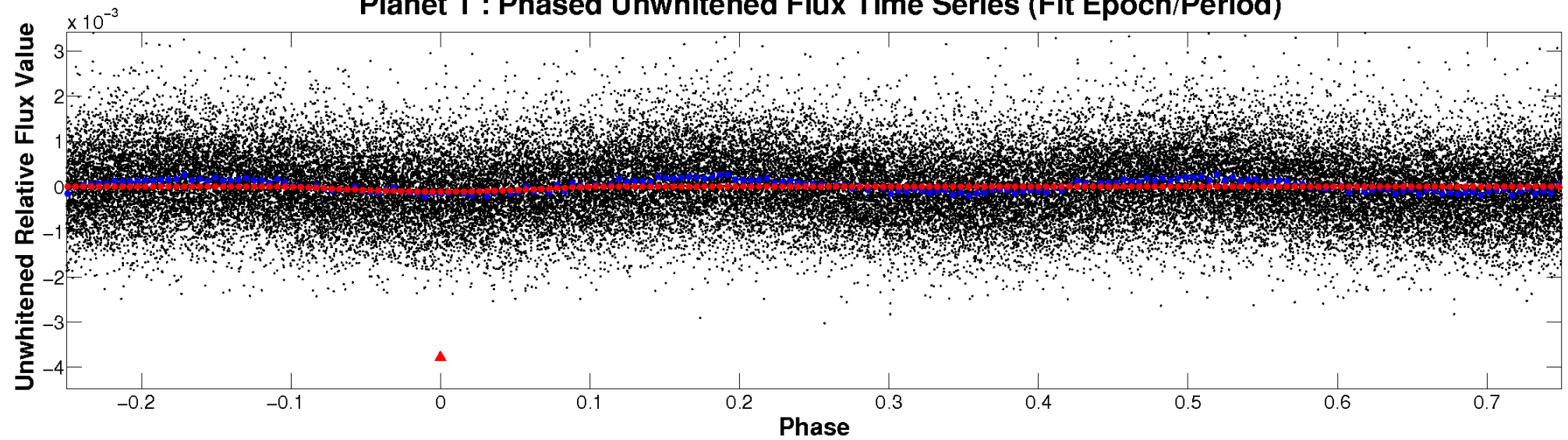
ALT Odd/Even

TCE 004160683-01

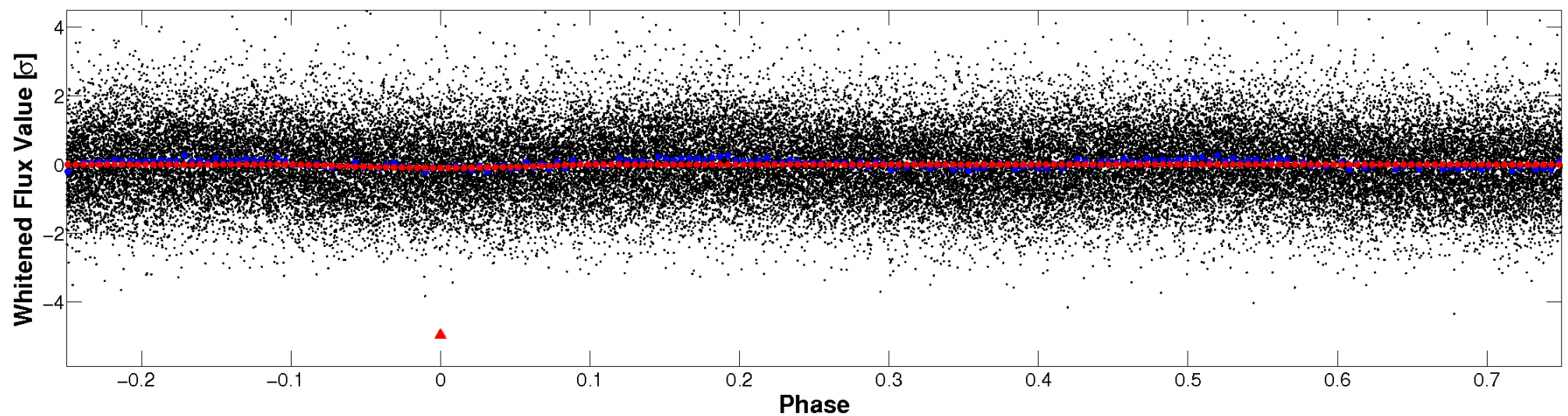


Non-Whitened Vs. Whitened Light Curve

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

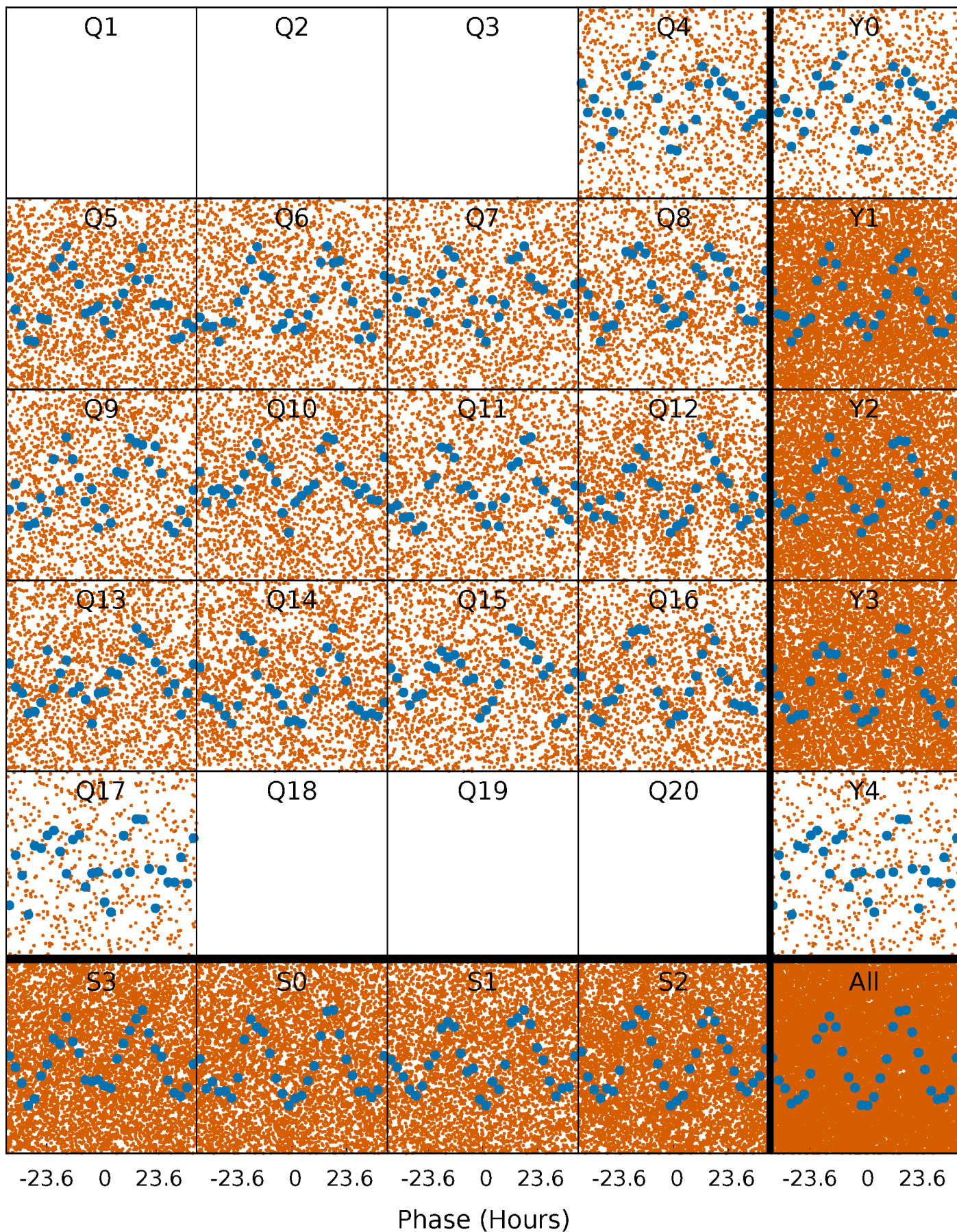


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



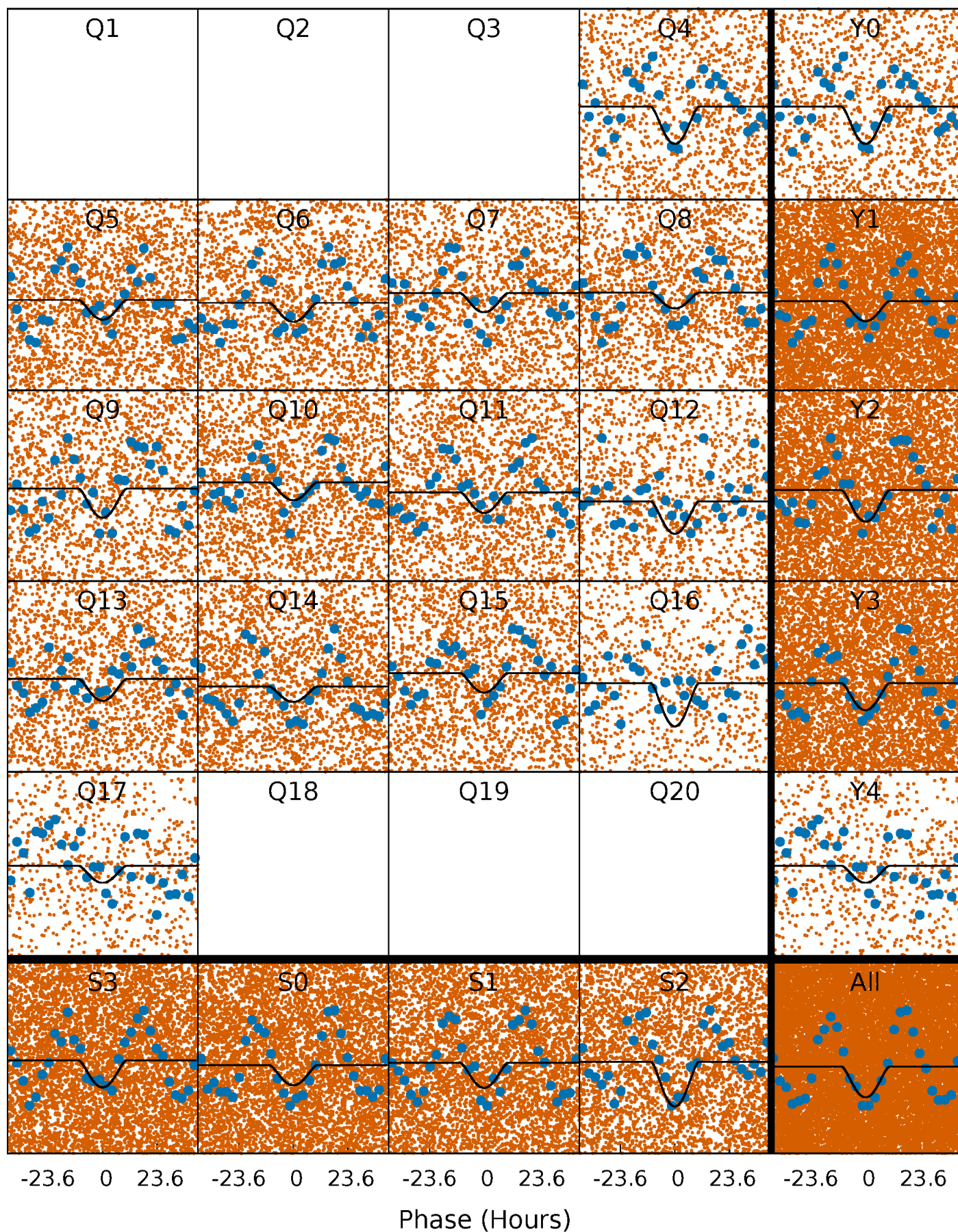
PDC Quarter-Phased Transit Curves

TCE 004160683-01 P= 3.933820 Days $T_0=133.444190$ (BKJD)



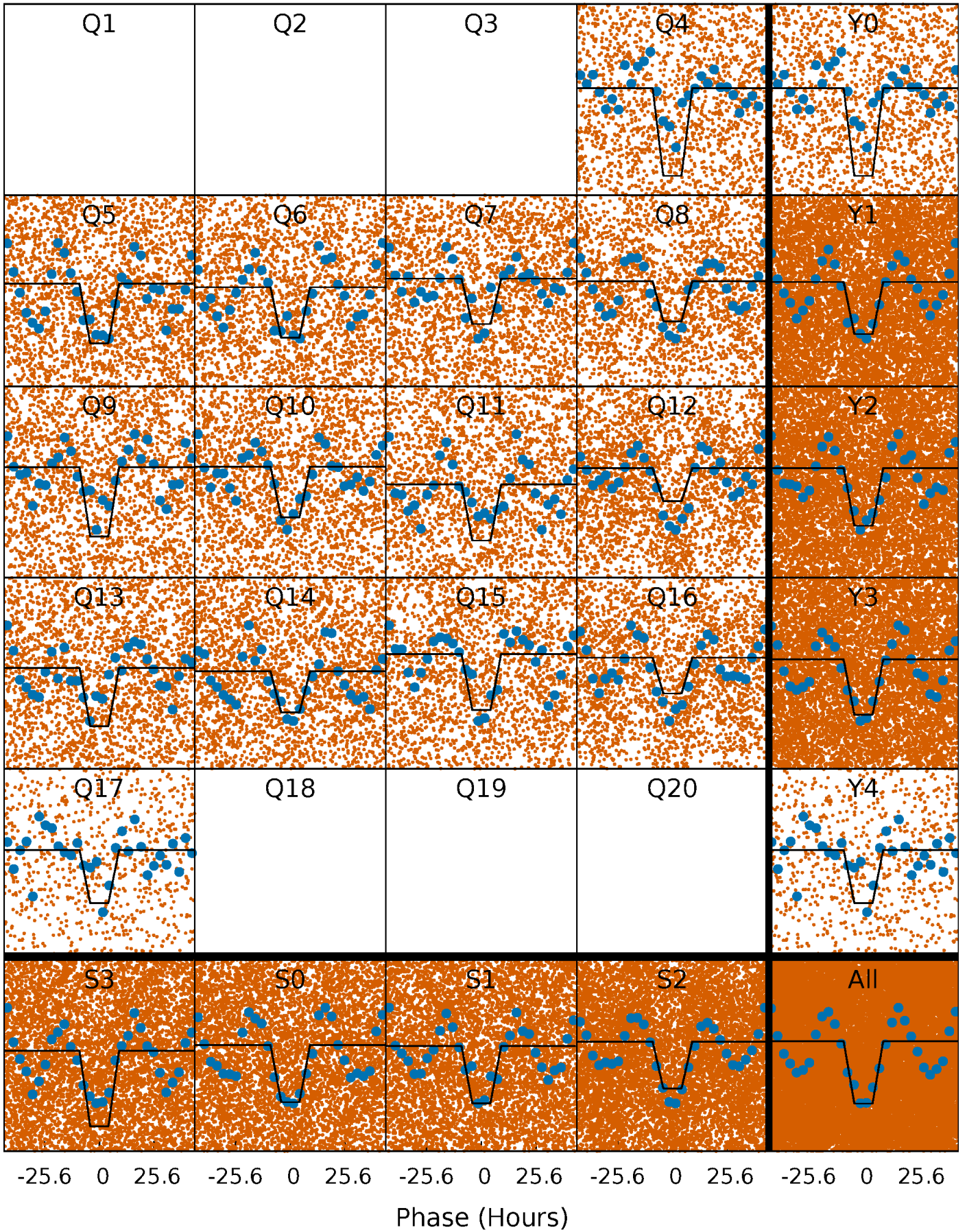
DV Quarter-Phased Transit Curves

TCE 004160683-01 P= 3.933820 Days $T_0=133.444190$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

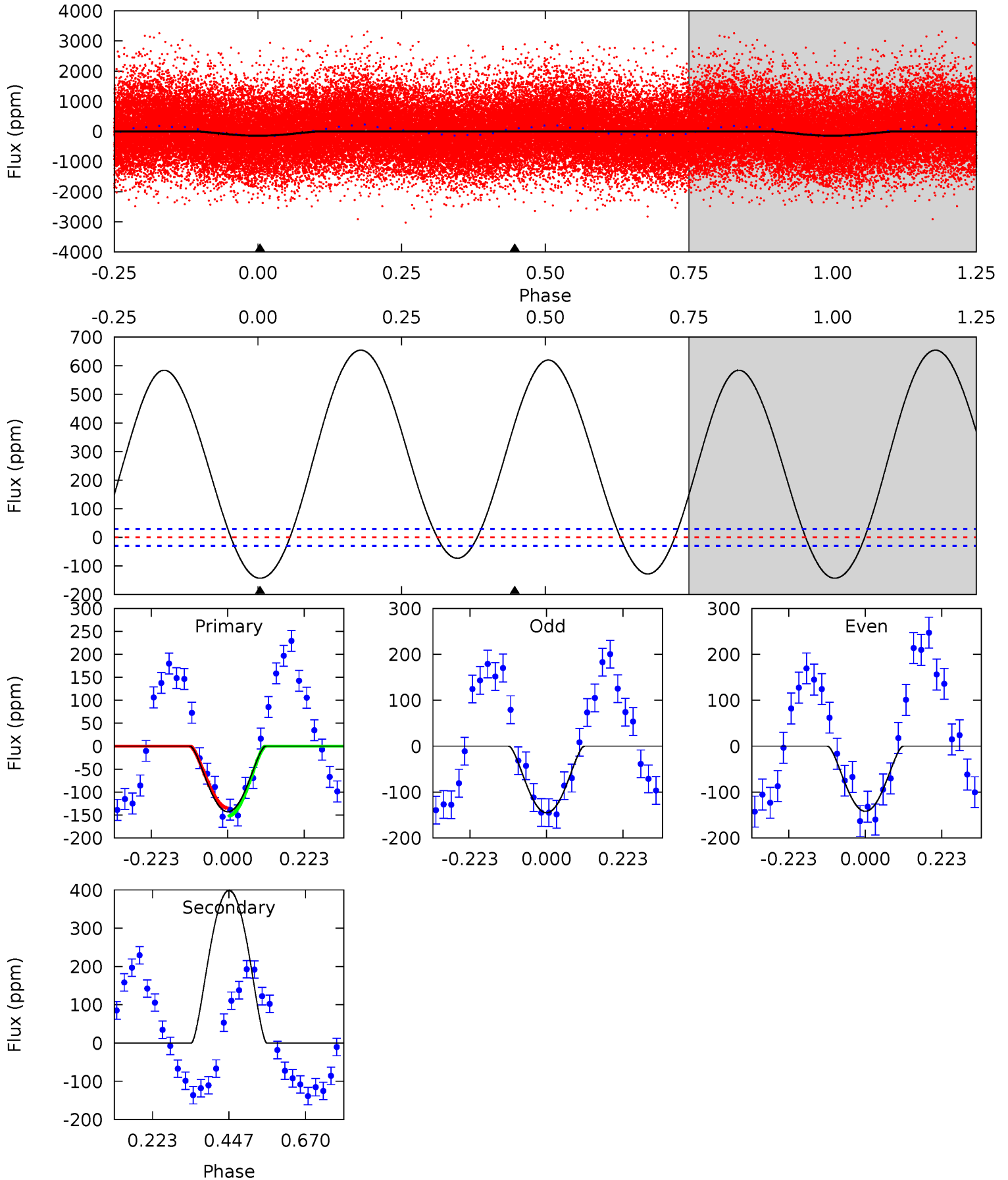
TCE 004160683-01 P= 3.933739 Days $T_0=133.483137$ (BKJD)



DV Model-Shift Uniqueness Test

004160683-01, P = 3.933820 Days, E = 133.444190 Days

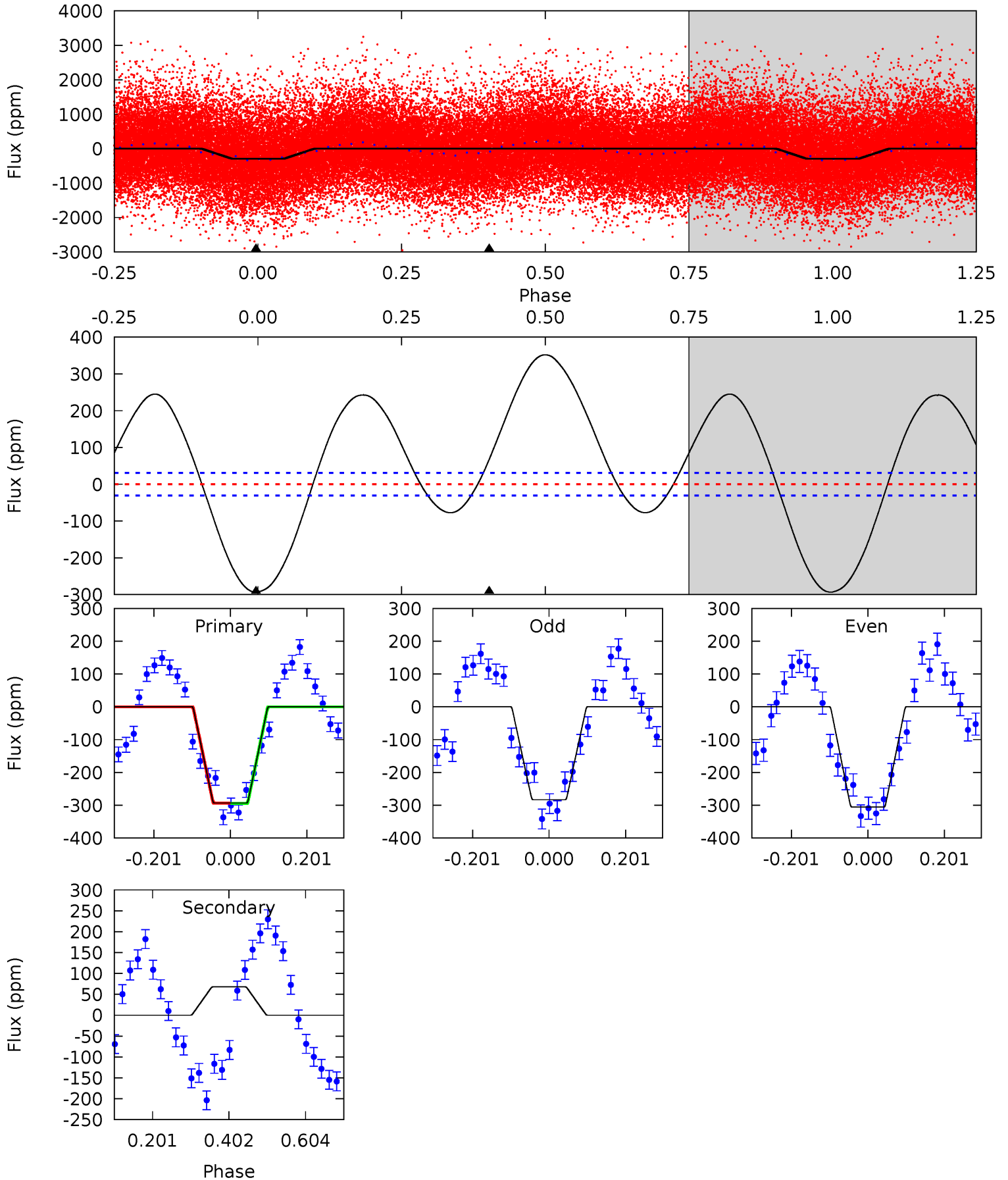
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	-59.2	0	0	4.39	1.22	22.9	21.2	21.2	-59.2	-59.2	0.24	0.99	0.82	1.35



Alt Model-Shift Uniqueness Test

004160683-01, P = 3.933739 Days, E = 133.483137 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.1	-9.71	0	0	4.42	1.28	13.1	42.1	42.1	-9.71	-9.71	1.59	1.21	0.55	0.07



Stellar Parameters For KIC 004160683

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6214^{+172}_{-258}	$4.442^{+0.062}_{-0.188}$	$0.070^{+0.250}_{-0.350}$	$1.076^{+0.301}_{-0.129}$	$1.169^{+0.132}_{-0.182}$	$1.321^{+0.413}_{-0.616}$
	+3%/-4%	+1%/-4%	+357%/-500%	+28%/-12%	+11%/-16%	+31%/-47%
Source	KIC0	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 004160683-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	399 ± 7	$4.09^{+3.89}_{-2.83}$	1781^{+117}_{-91}	-4860^{+1017}_{-3988}	$-33.573^{+24.781}_{-313.454}$
Alt.	68 ± 7	$3.83^{+3.72}_{-2.43}$	1779^{+114}_{-91}	-3626^{+618}_{-1755}	$-6.552^{+4.883}_{-42.925}$

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

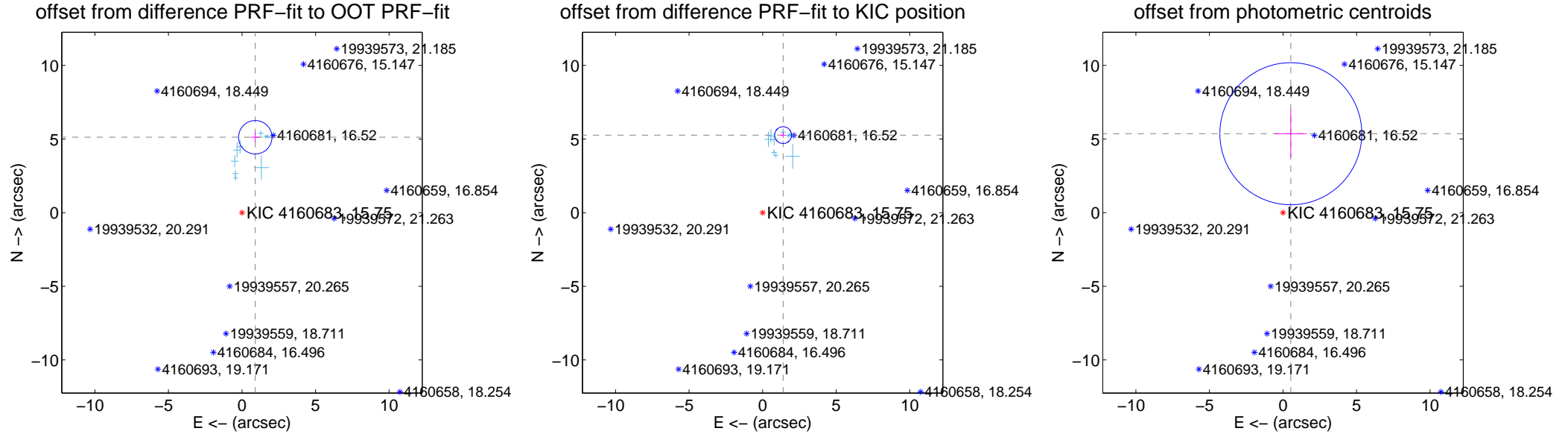
DV Centroid Data

Supplemental centroid analysis for 004160683-01. Kepler magnitude: 15.75. Transit SNR 7.22

There are 10 quarters with good PRF difference image offsets

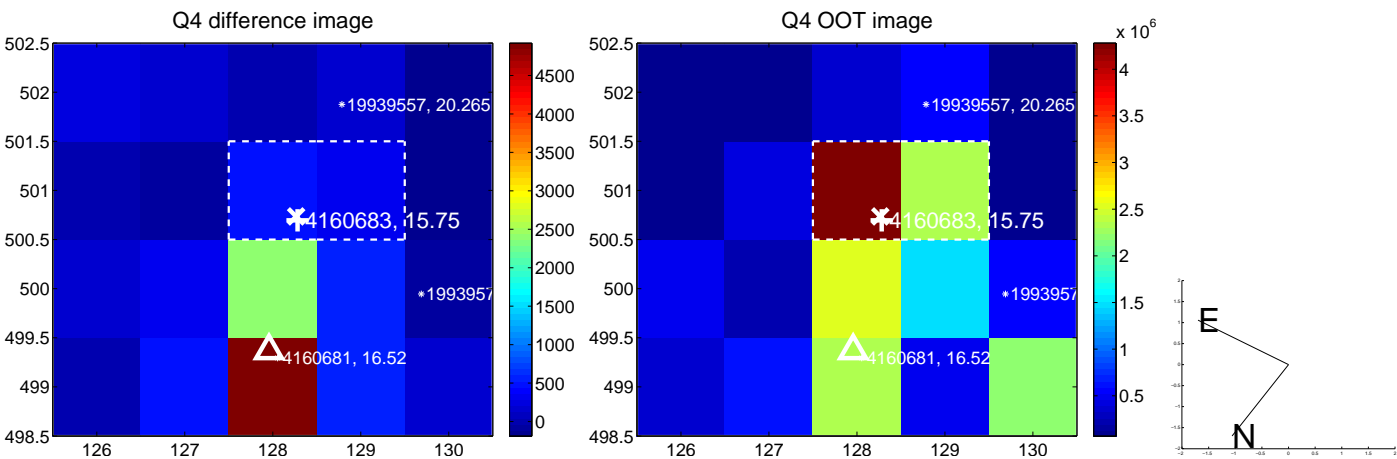
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.199 ± 0.378	13.74	-0.903 ± 0.306	5.120 ± 0.351
PRF-fit source offset from KIC position	5.444 ± 0.191	28.54	-1.392 ± 0.197	5.263 ± 0.187
photometric centroid source offset	5.39 ± 1.61	3.35	-0.53 ± 1.09	5.36 ± 1.61

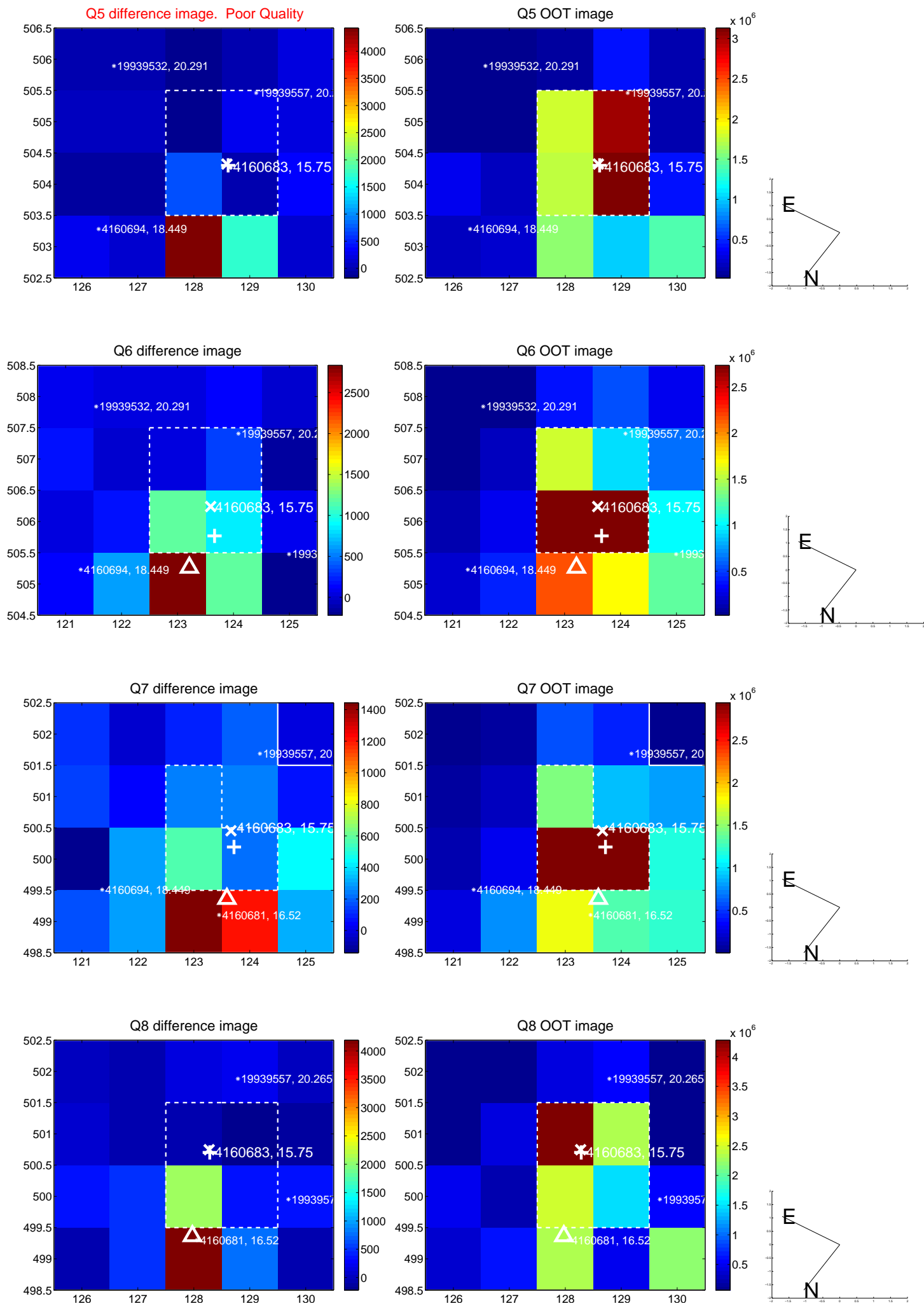


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

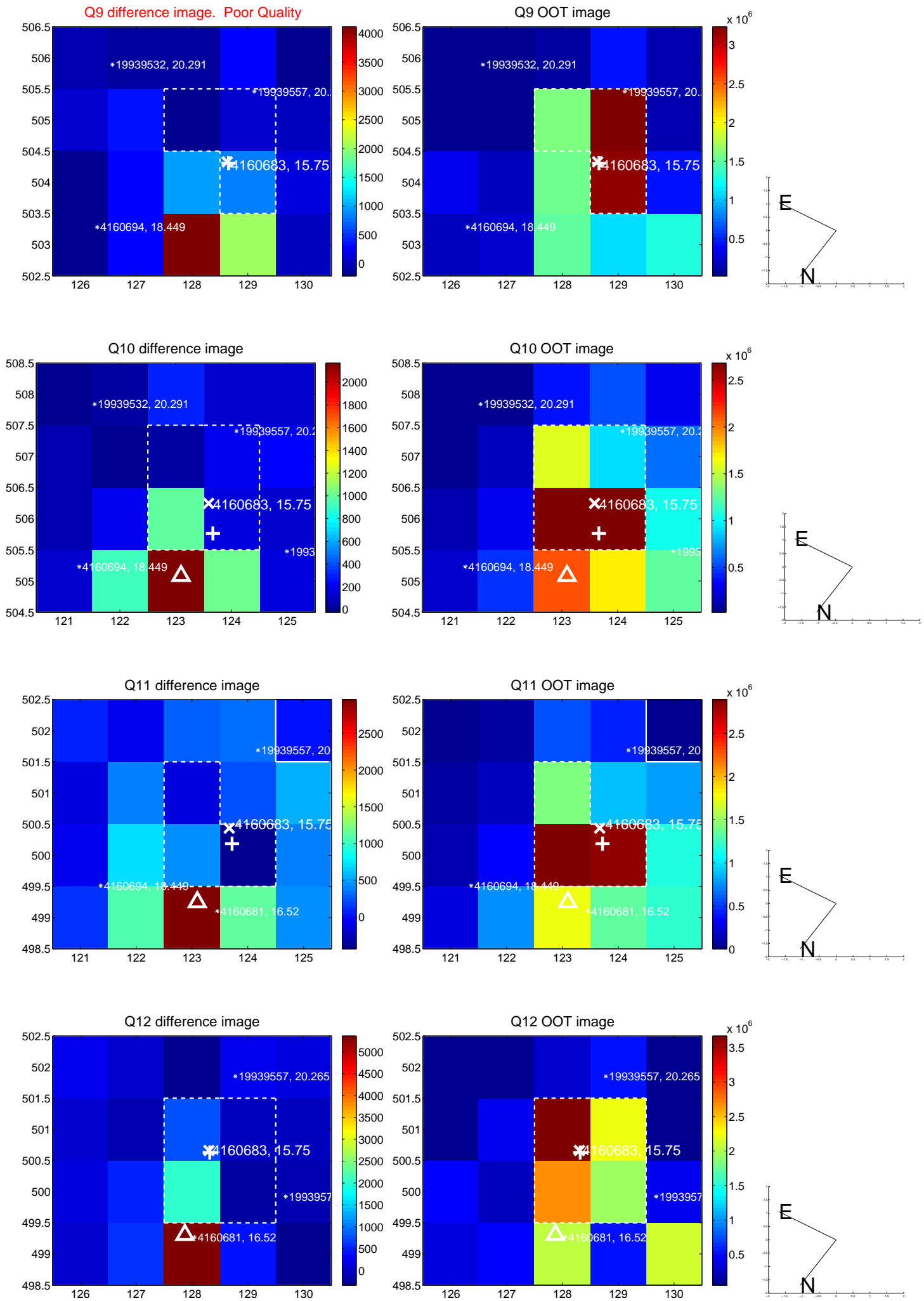
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



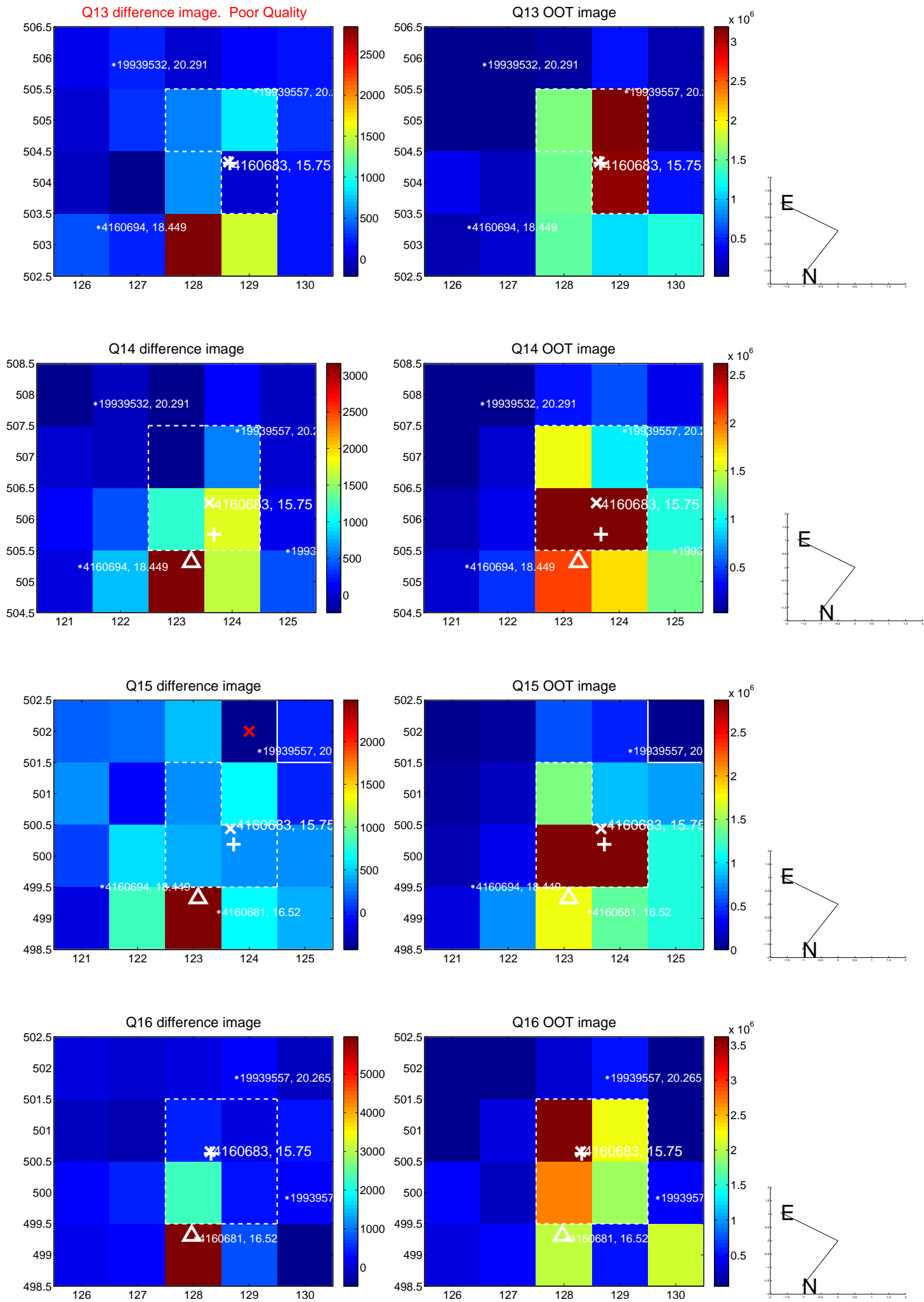
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



Declination