

KIC 012021943

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})
012021943-01	OBS	8075.01	6.096255	134.985028	26.7	10.471	7.2	7.6	1.03	6108	0.57	285.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012021943-01	OBS	FP	0.20	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.

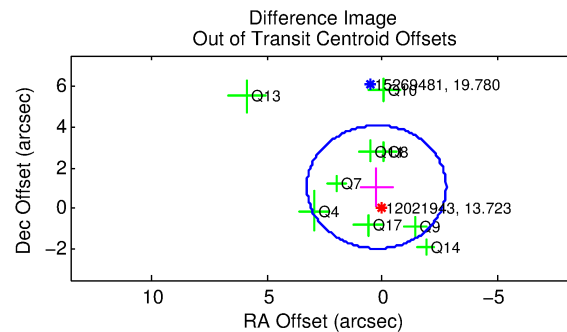
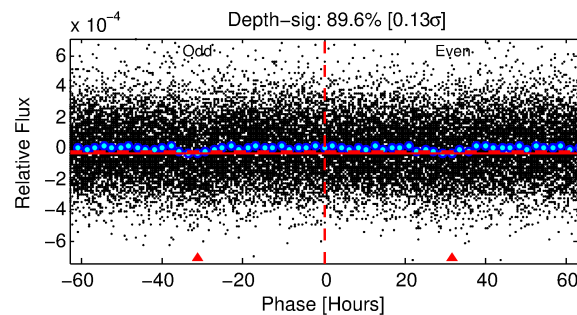
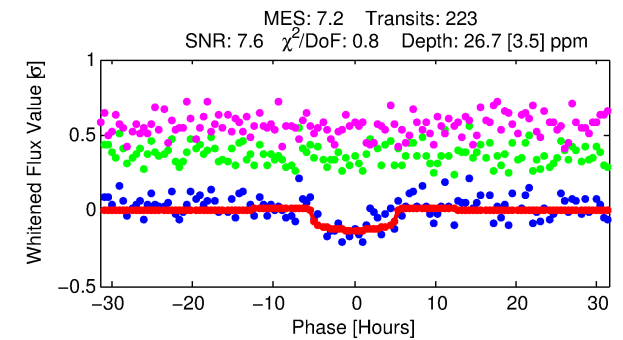
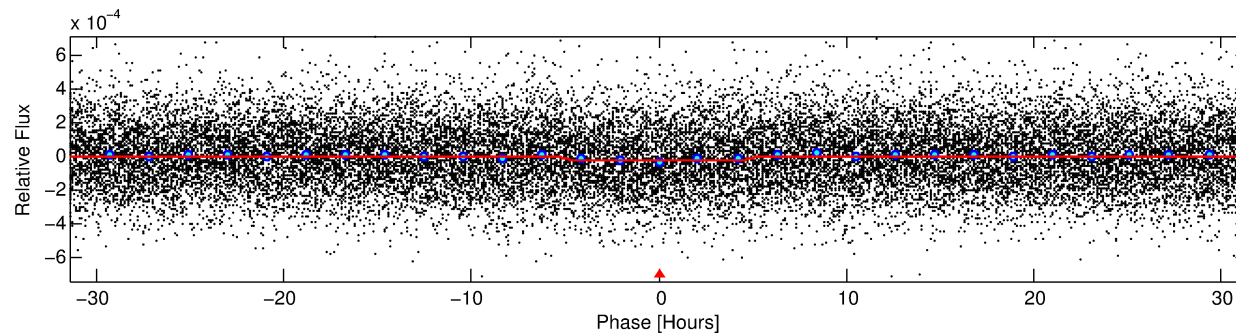
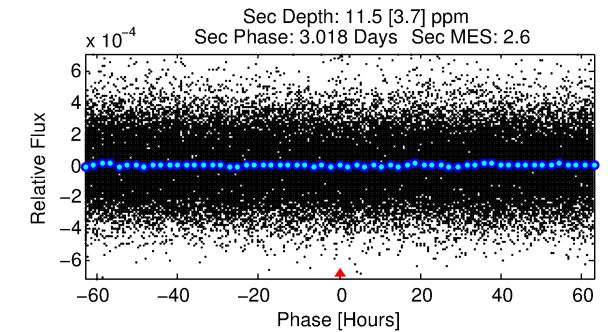
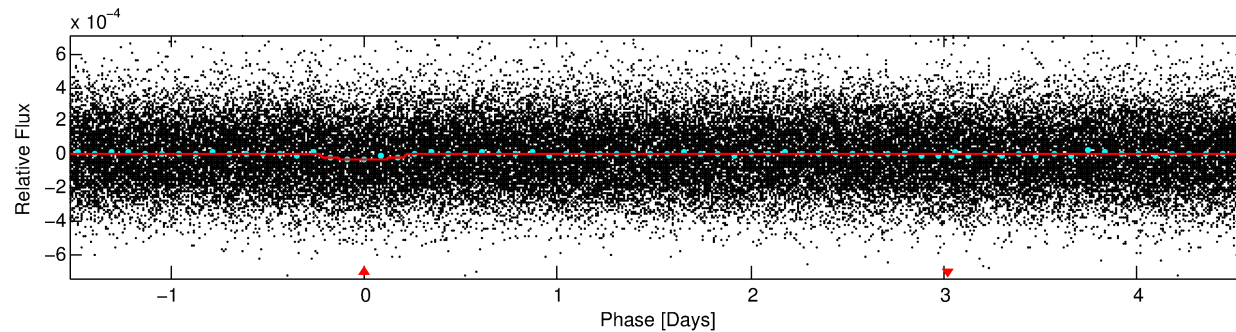
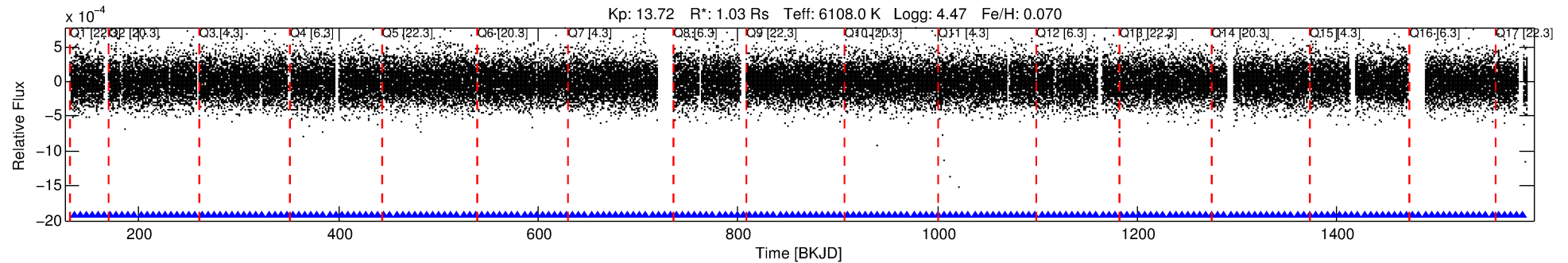
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012021943-01

No Significant Match Found

DV One-Page Summary

KIC: 12021943 Candidate: 1 of 1 Period: 6.096 d



DV Fit Results:

Period = 6.09625 [0.00013] d
Epoch = 134.9850 [0.0165] BKJD
Rp/R* = 0.0051 [0.0024]
a/R* = 3.21 [6.72]
b = 0.72 [1.54]
Seff = 285.52 [122.02]
Teff = 1048 [112] K
Rp = 0.57 [0.33] Re
a = 0.0681 [0.0190] AU
Ag = 89.39 [97.42] [0.91σ]
Teffp = 4983 [1269] K [3.09σ]

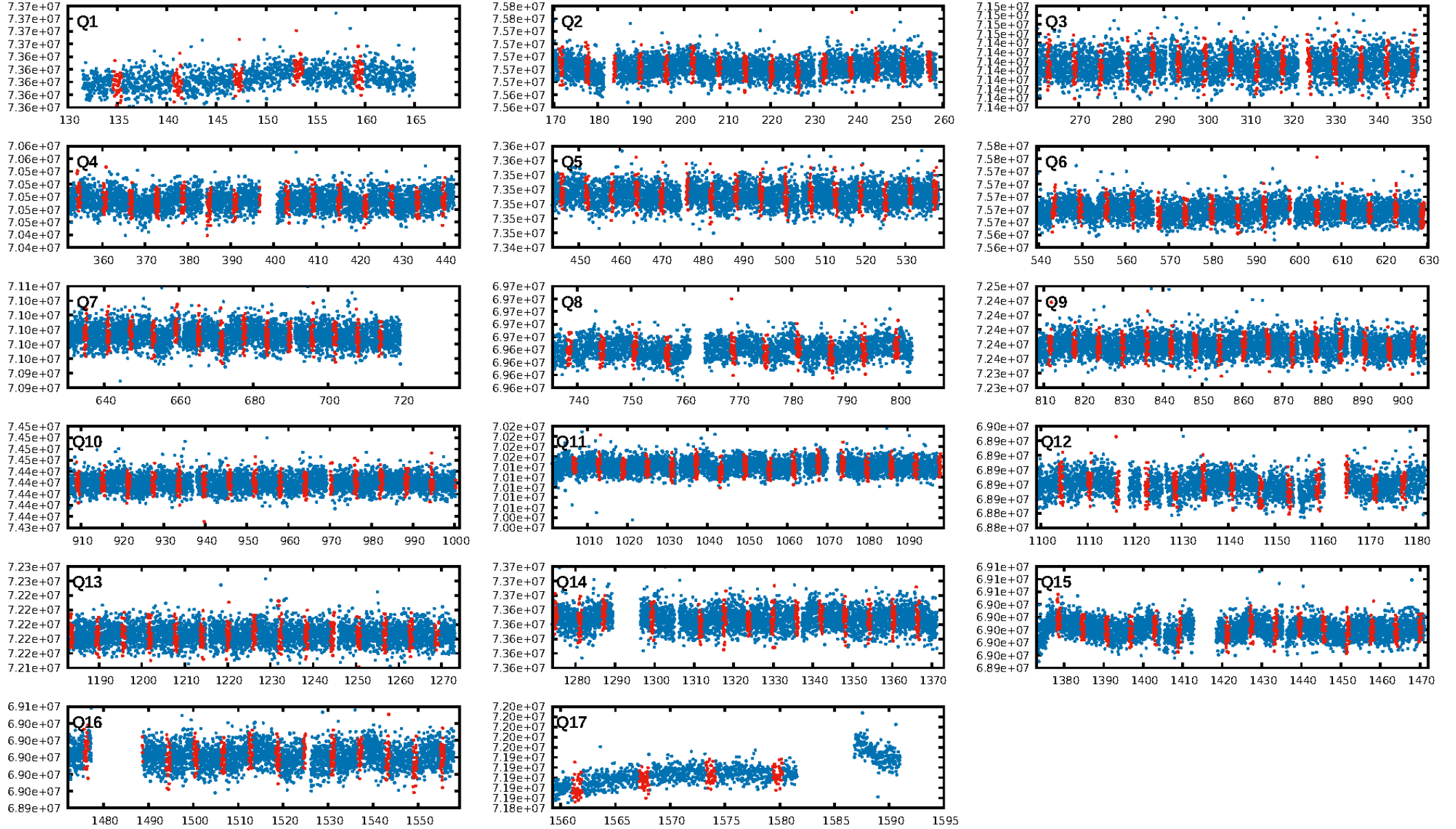
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.17e-13
RollingBand-fgt: 1.00 [214/214]
GhostDiagnostic-chr: 15.31
Centroid-sig: 5.1%
Centroid-so: 2.174 arcsec [1.17σ]
OotOffset-rm: 1.081 arcsec [1.08σ]
KicOffset-rm: 1.156 arcsec [1.22σ]
OotOffset-st: 2/2/2/3 [9]
KicOffset-st: 2/2/2/3 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 1.00 [17/17]

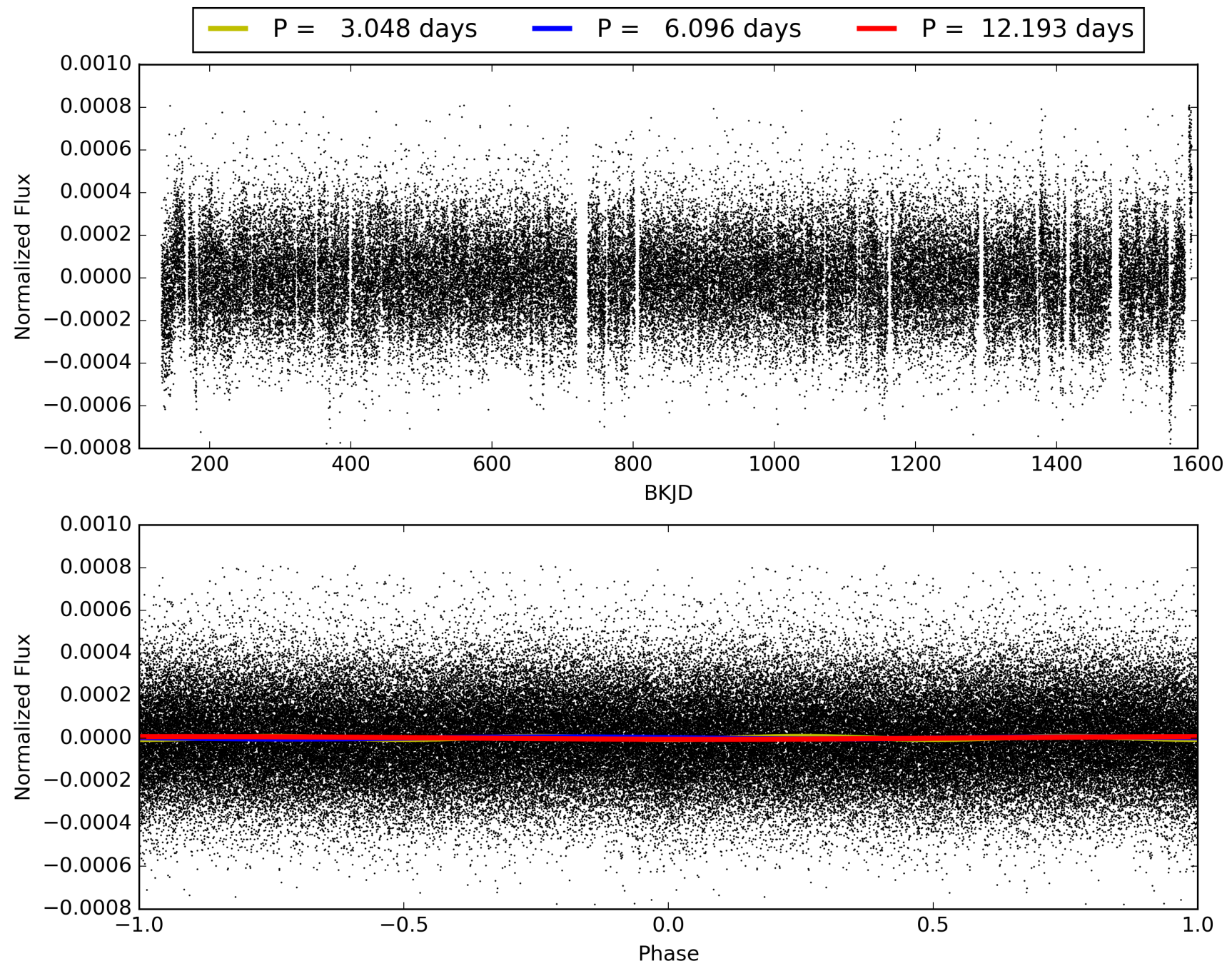
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:09:33 Z

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

TCE 012021943-01, PDC Light Curves

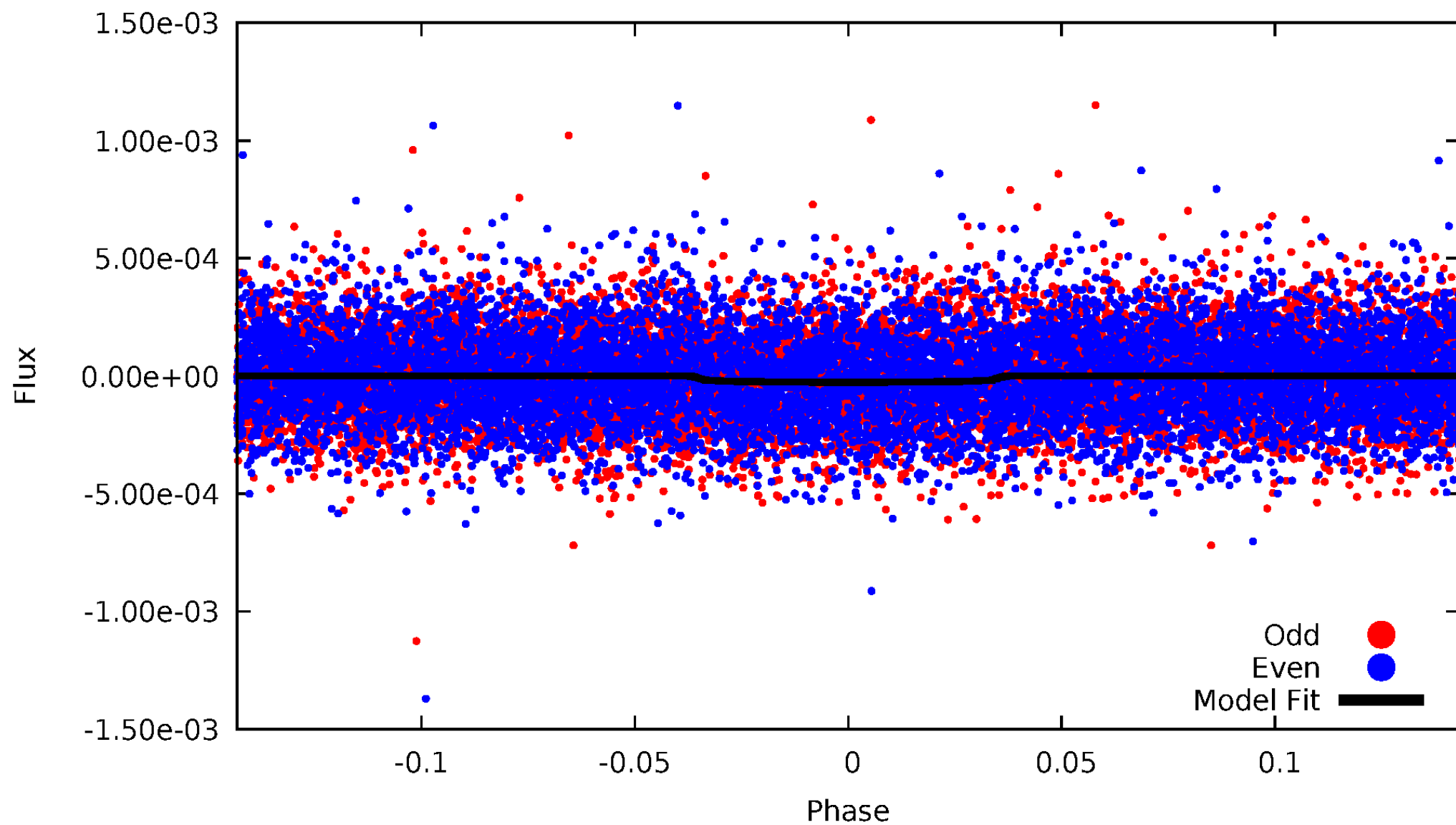


TCE 012021943-01



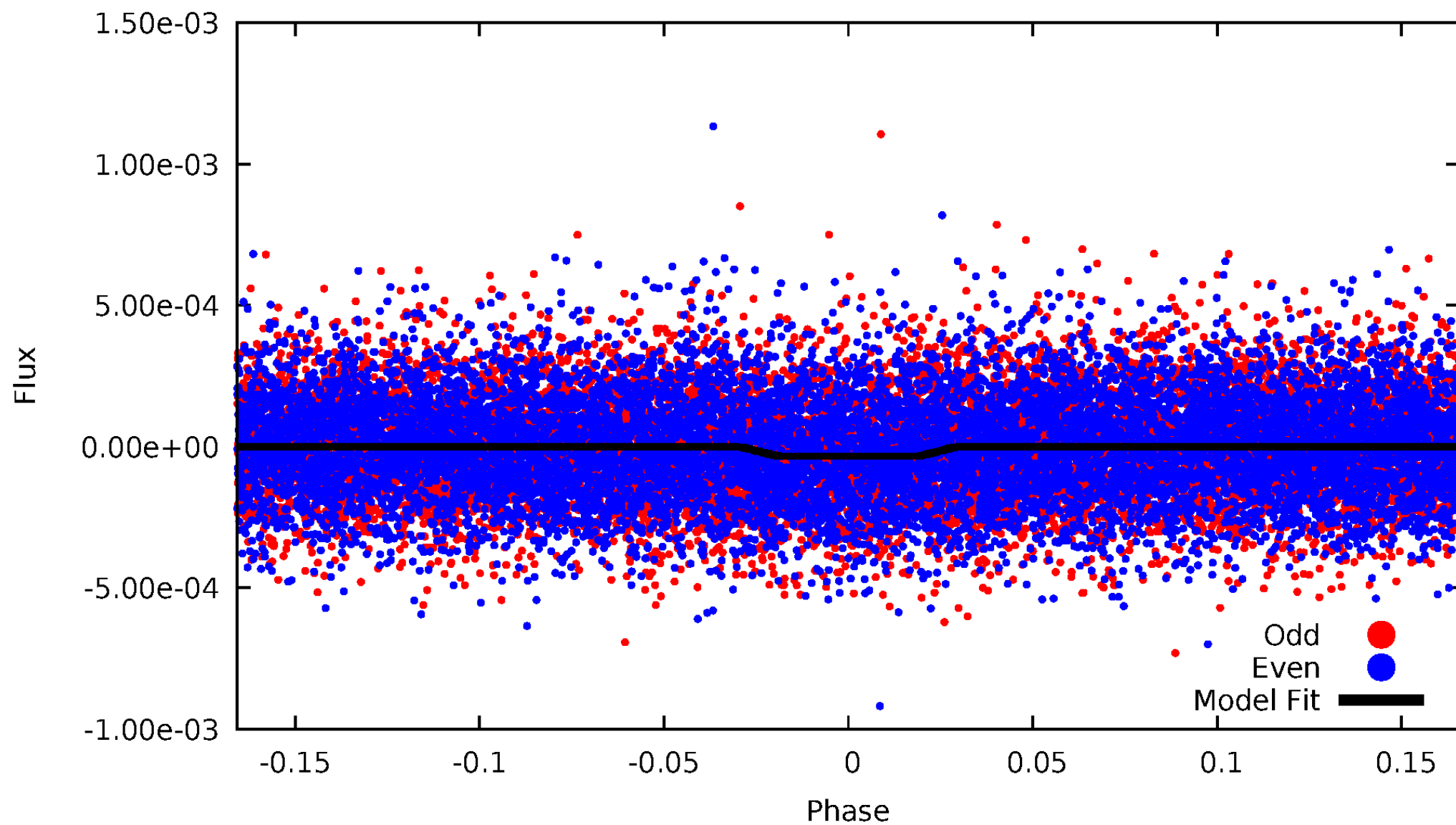
DV Odd/Even

TCE 012021943-01



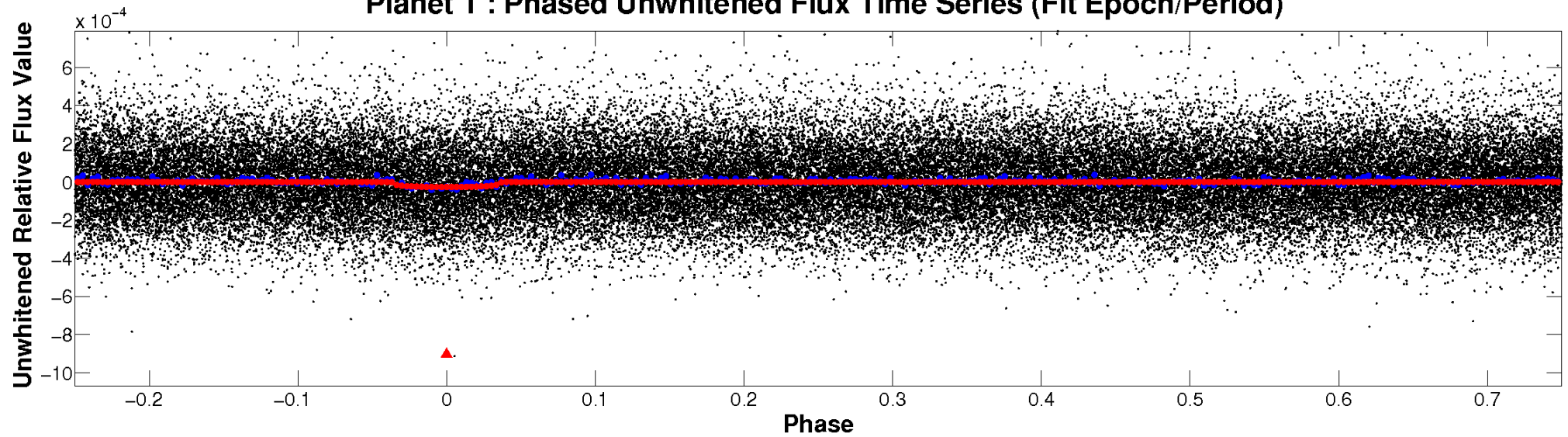
ALT Odd/Even

TCE 012021943-01

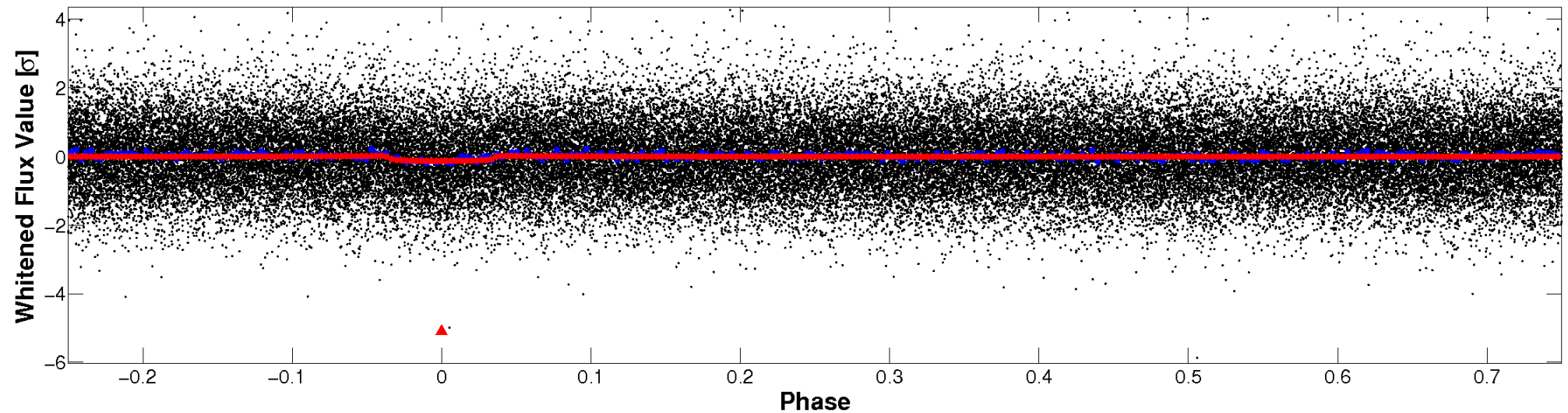


Non-Whitened Vs. Whitened Light Curve

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

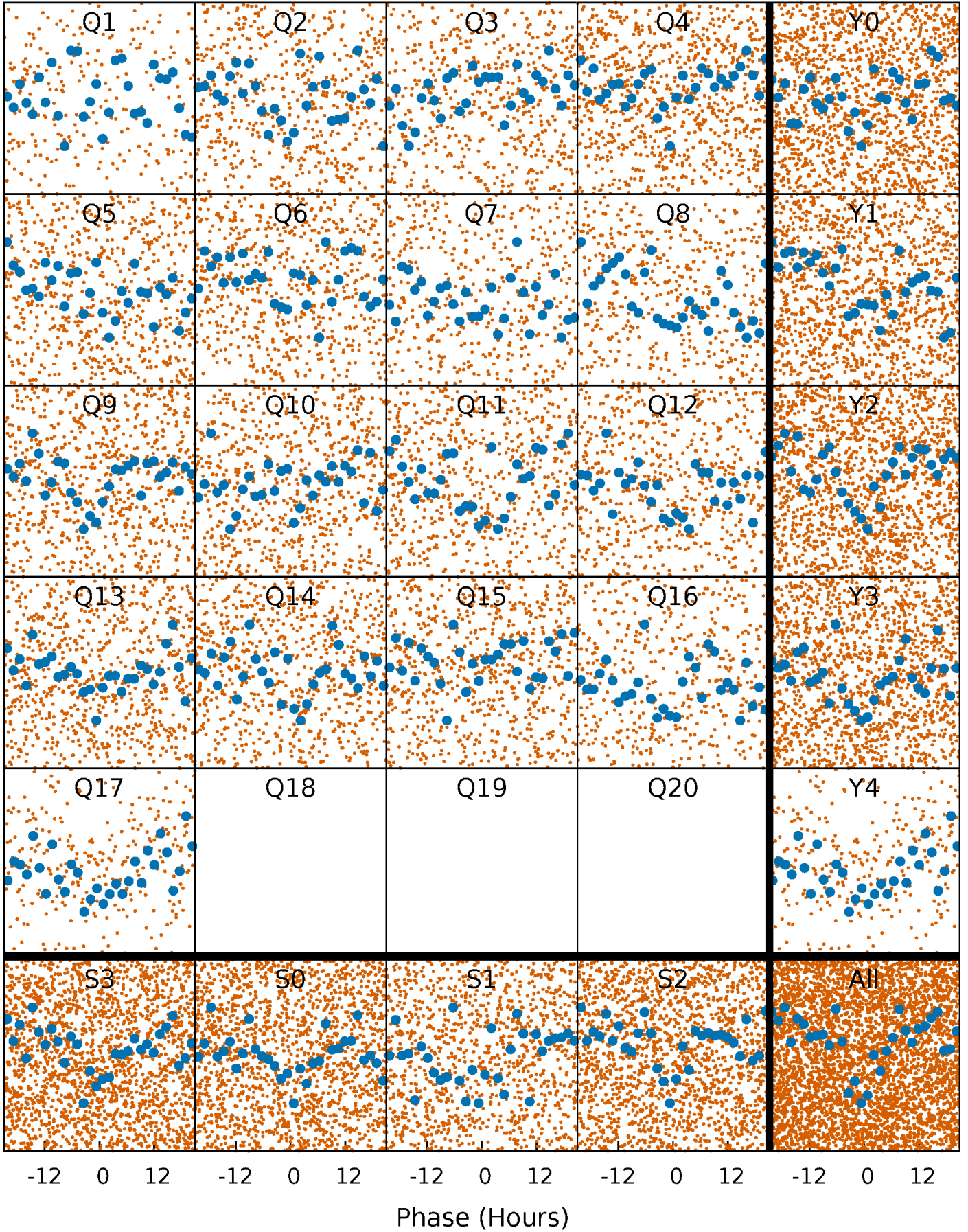


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



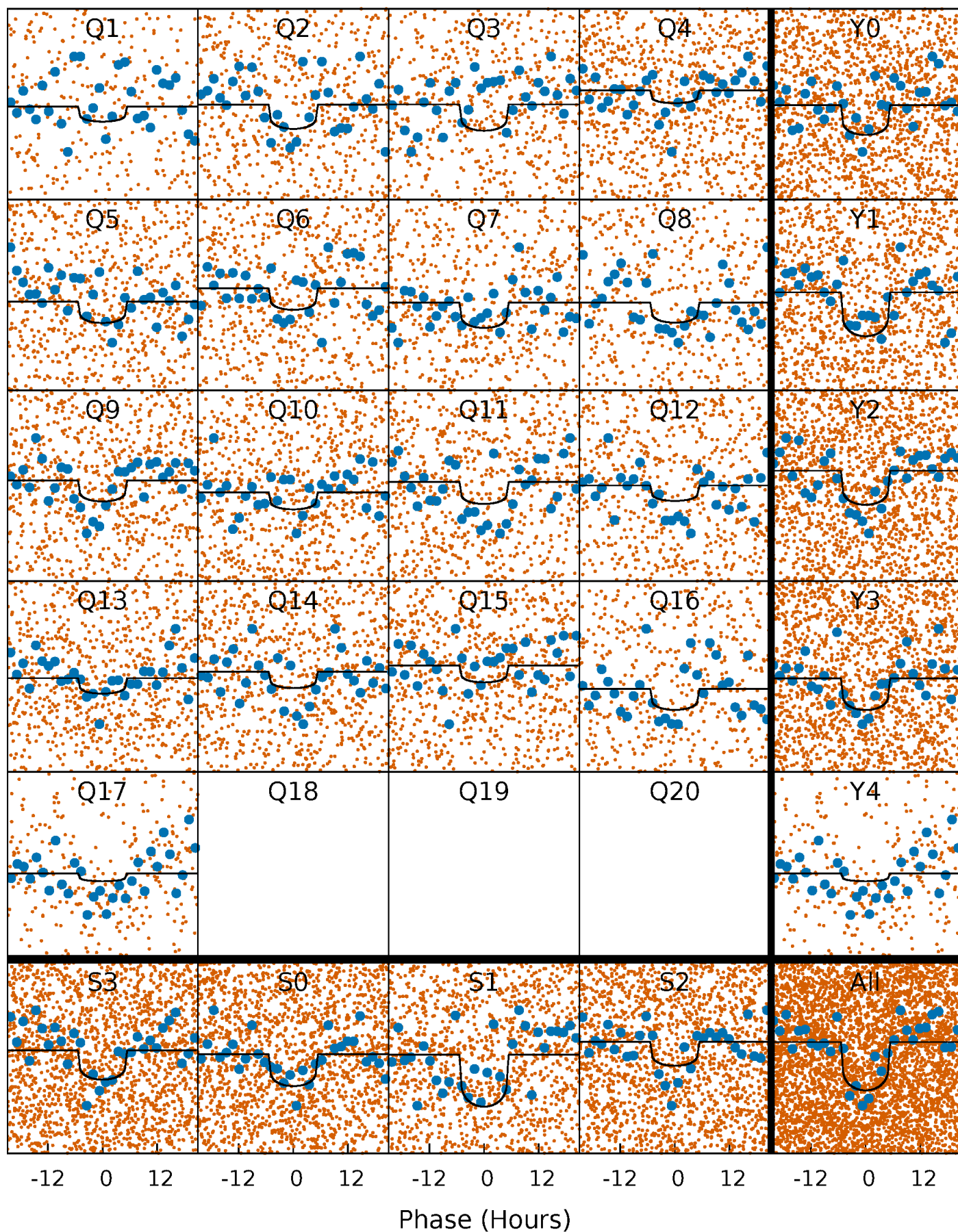
PDC Quarter-Phased Transit Curves

TCE 012021943-01 P= 6.096255 Days $T_0=134.985028$ (BKJD)



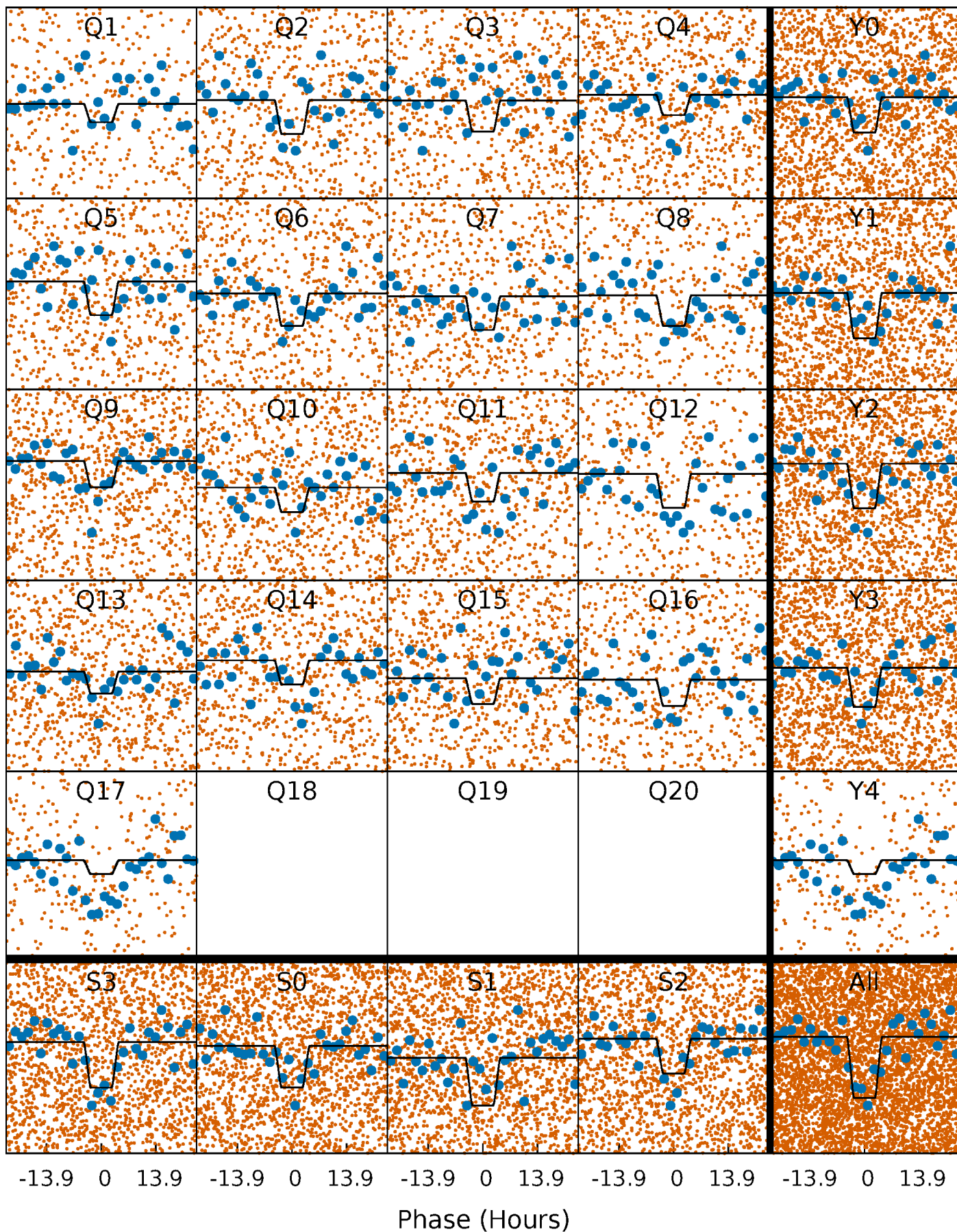
DV Quarter-Phased Transit Curves

TCE 012021943-01 P= 6.096255 Days $T_0=134.985028$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

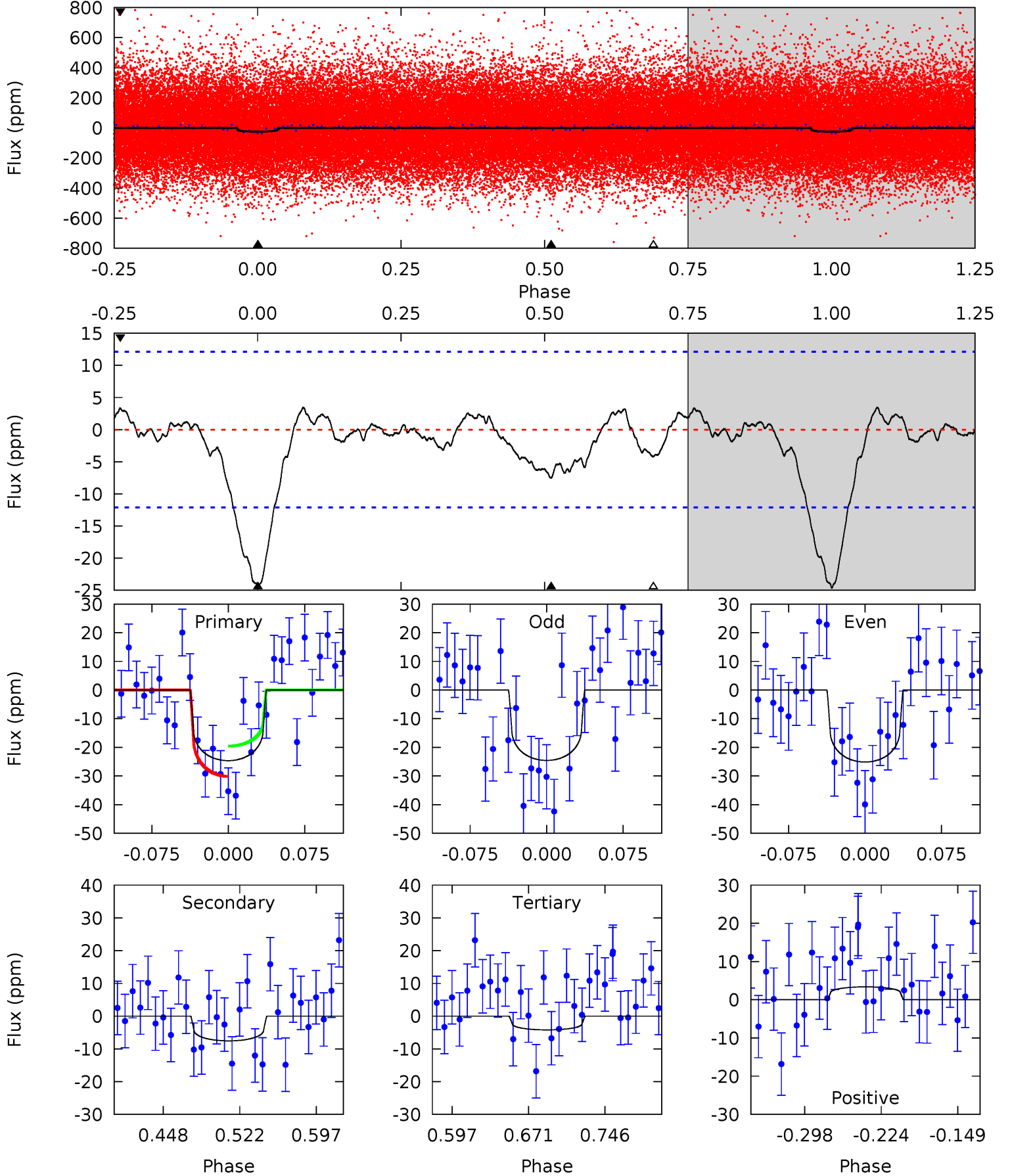
TCE 012021943-01 P= 6.096301 Days $T_0=134.959879$ (BKJD)



DV Model-Shift Uniqueness Test

012021943-01, P = 6.096255 Days, E = 128.888773 Days

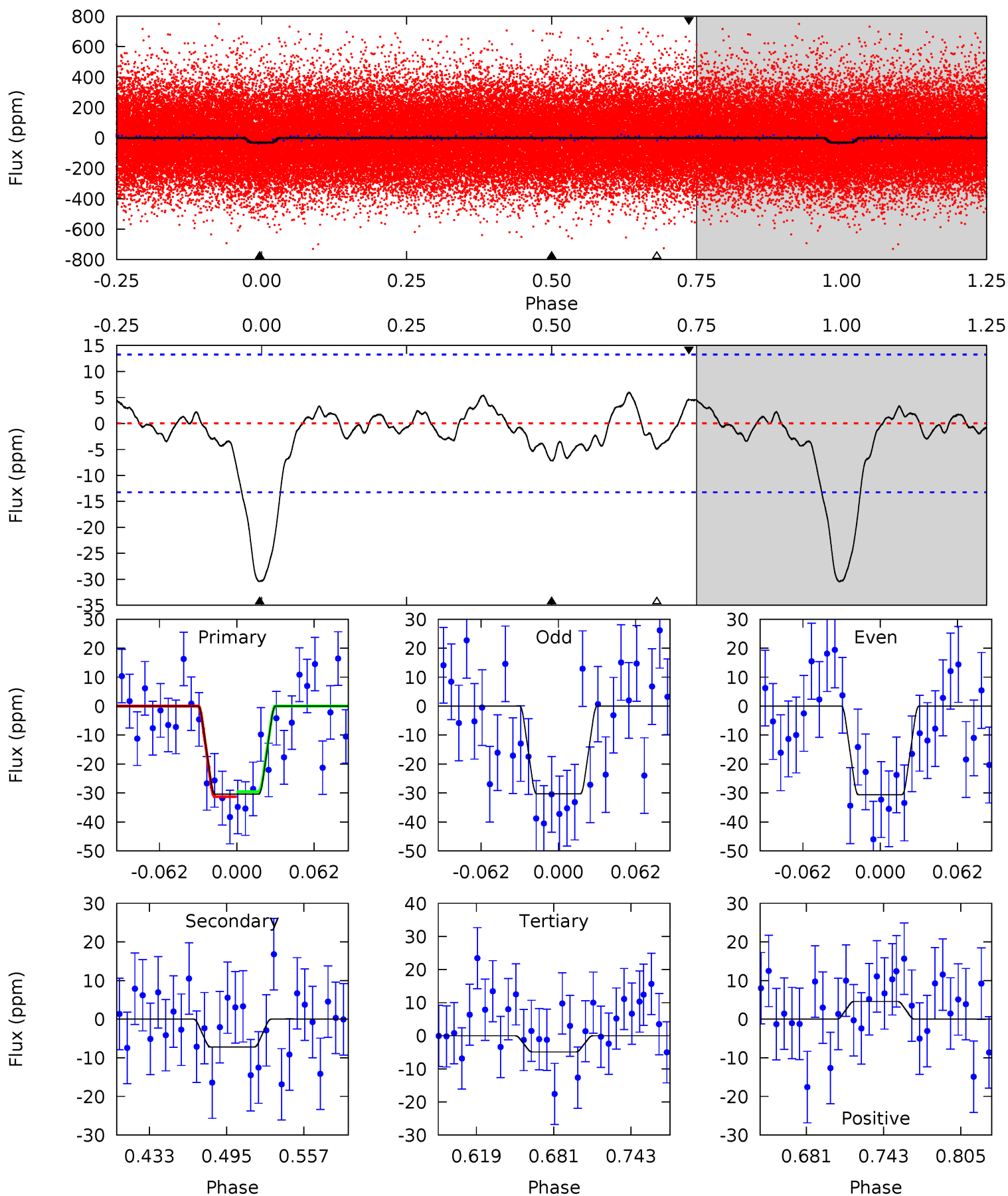
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.41	2.88	1.60	1.28	4.63	1.78	0.69	7.80	8.12	1.28	1.60	0.11	0.93	0.12	2.03



Alt Model-Shift Uniqueness Test

012021943-01, P = 6.096301 Days, E = 128.863578 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	2.53	1.72	1.61	4.66	1.87	0.89	8.99	9.10	0.81	0.92	0.05	0.89	0.16	0.30



Stellar Parameters For KIC 012021943

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6108^{+172}_{-193}	$4.466^{+0.042}_{-0.224}$	$0.070^{+0.250}_{-0.300}$	$1.030^{+0.340}_{-0.113}$	$1.132^{+0.141}_{-0.156}$	$1.457^{+0.324}_{-0.800}$
	+3%/-3%	+1%/-5%	+357%/-429%	+33%/-11%	+12%/-14%	+22%/-55%
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 012021943-01 / KOI 8075.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-8 ± 3	$0.62^{+0.29}_{-0.27}$	1501^{+118}_{-72}	4592^{+1302}_{-675}	49^{+108}_{-29}
Alt.	-7 ± 3	$0.70^{+0.31}_{-0.28}$	1502^{+113}_{-69}	4313^{+1090}_{-656}	34^{+71}_{-21}

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

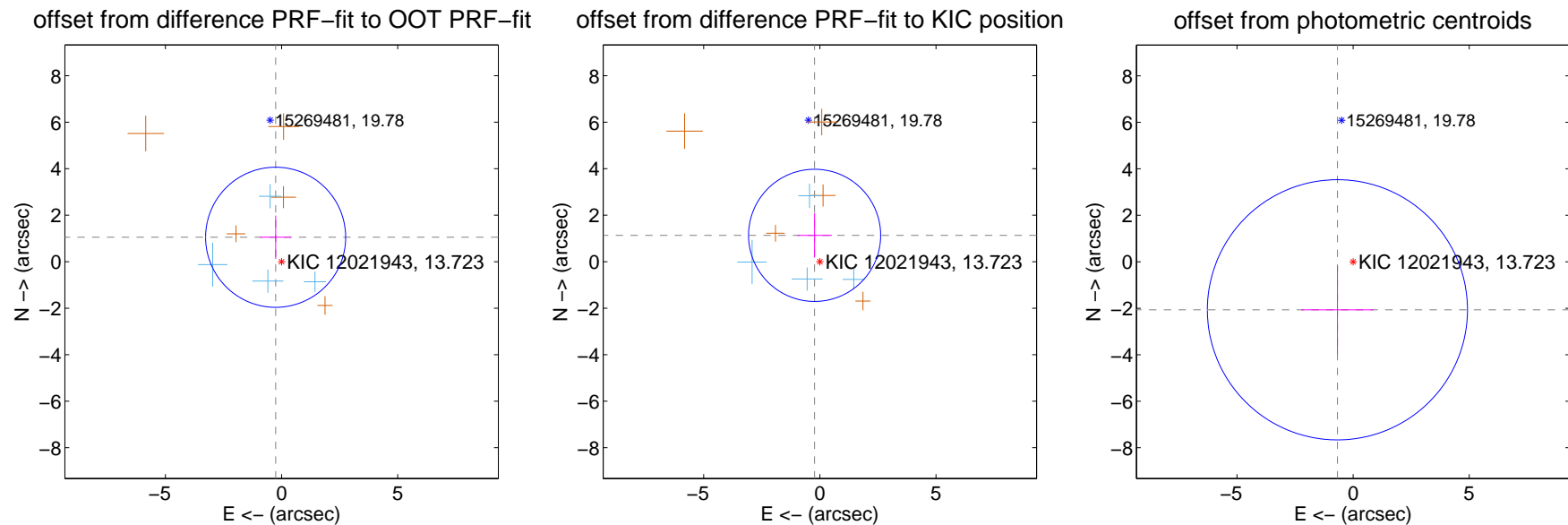
DV Centroid Data

Supplemental centroid analysis for 012021943-01. Kepler magnitude: 13.72. Transit SNR 7.64

There are 4 quarters with good PRF difference image offsets

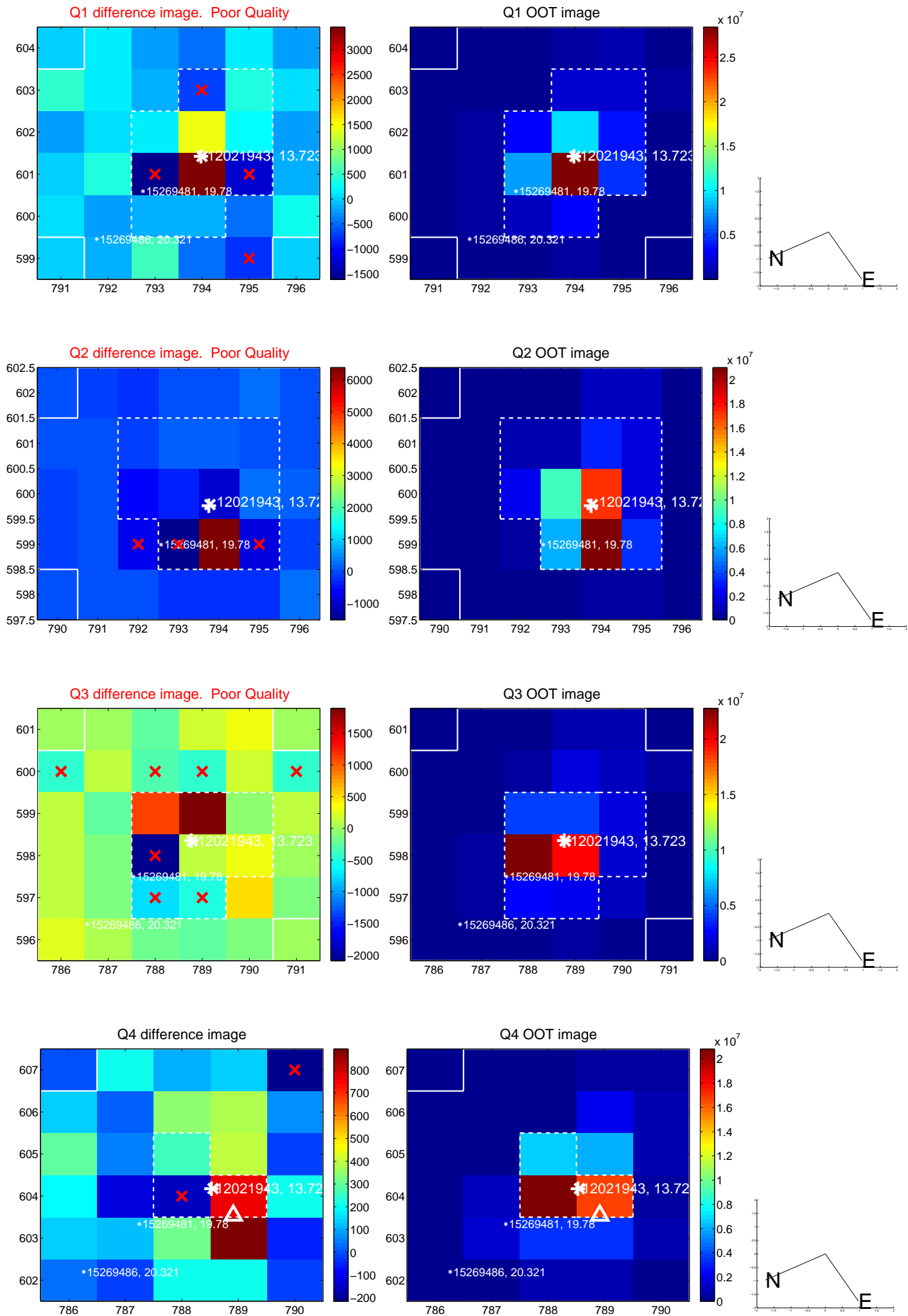
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.081 ± 1.004	1.08	0.256 ± 0.677	1.051 ± 0.931
PRF-fit source offset from KIC position	1.156 ± 0.947	1.22	0.226 ± 0.743	1.134 ± 0.955
photometric centroid source offset	2.17 ± 1.87	1.17	0.68 ± 1.56	-2.07 ± 1.90

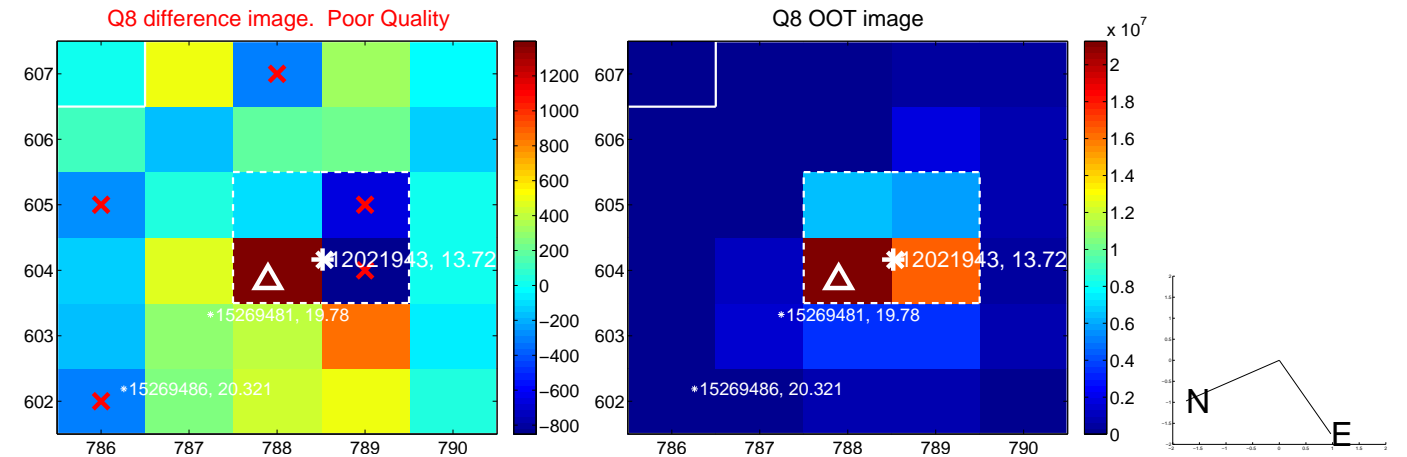
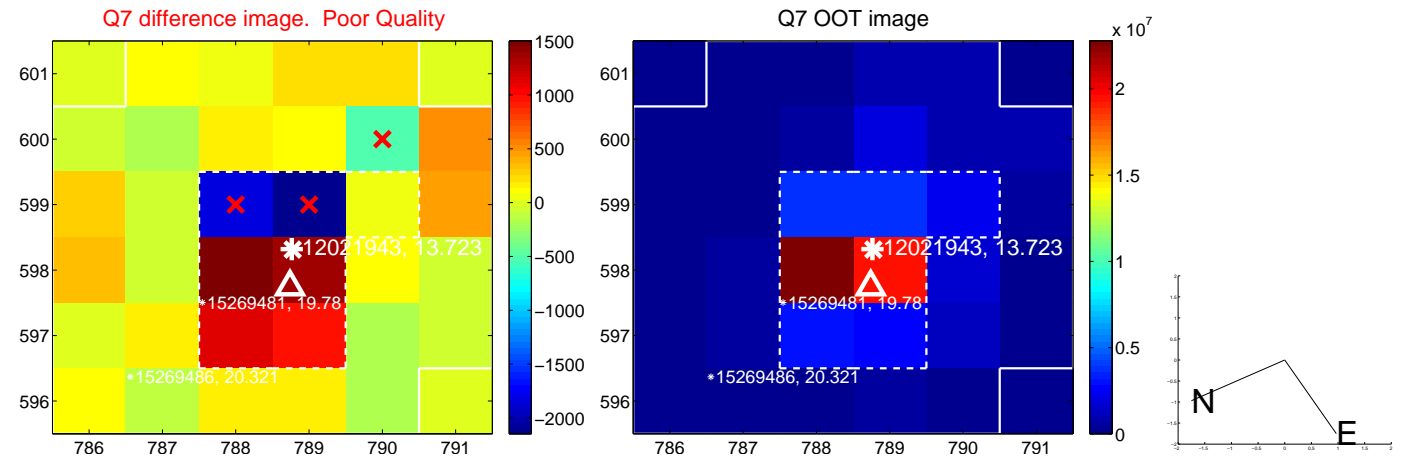
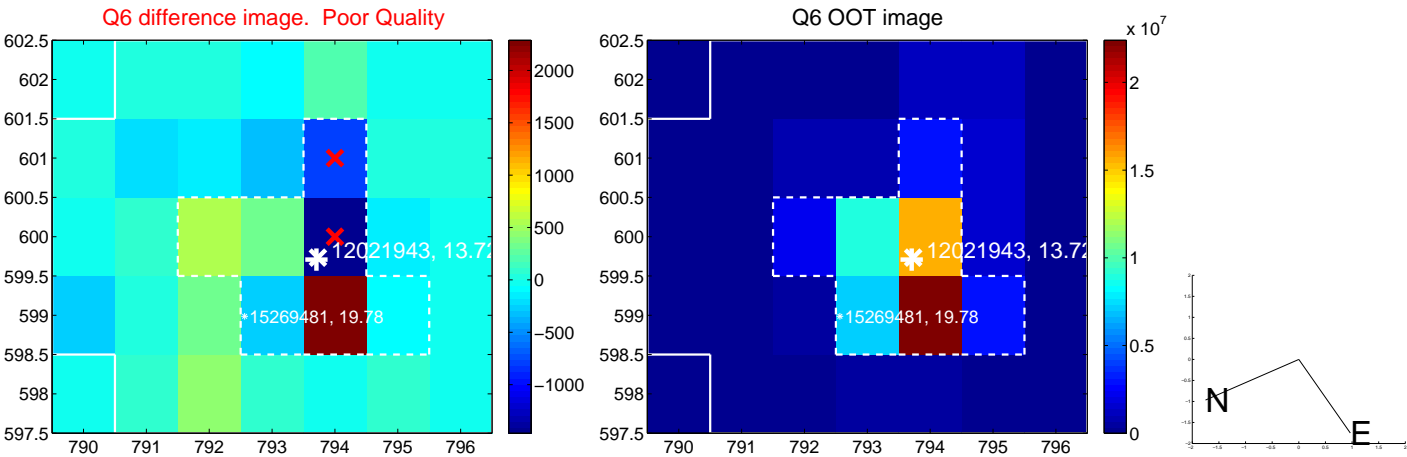
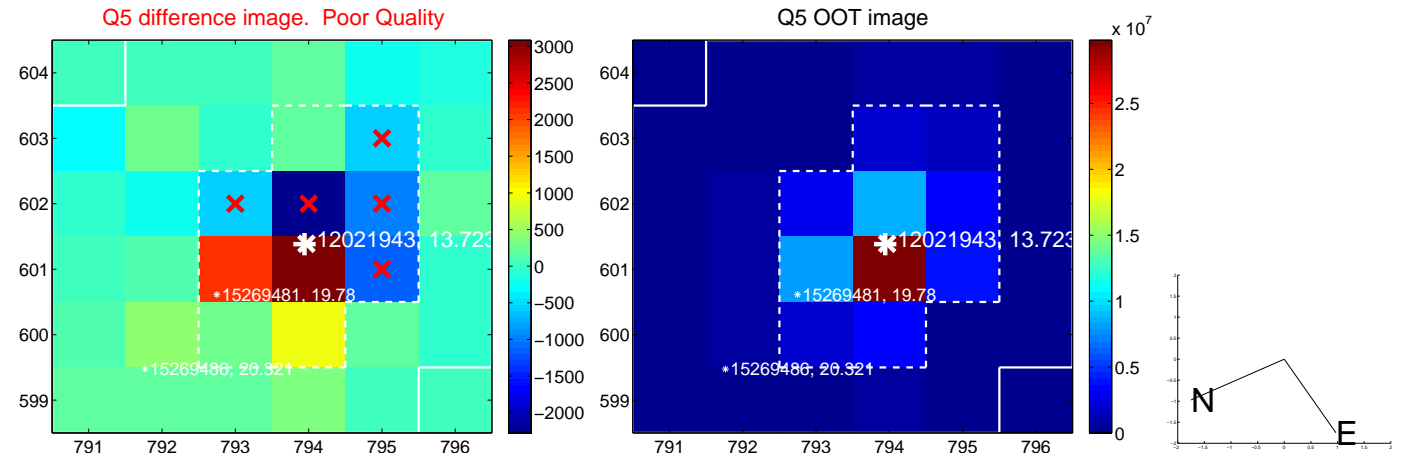


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

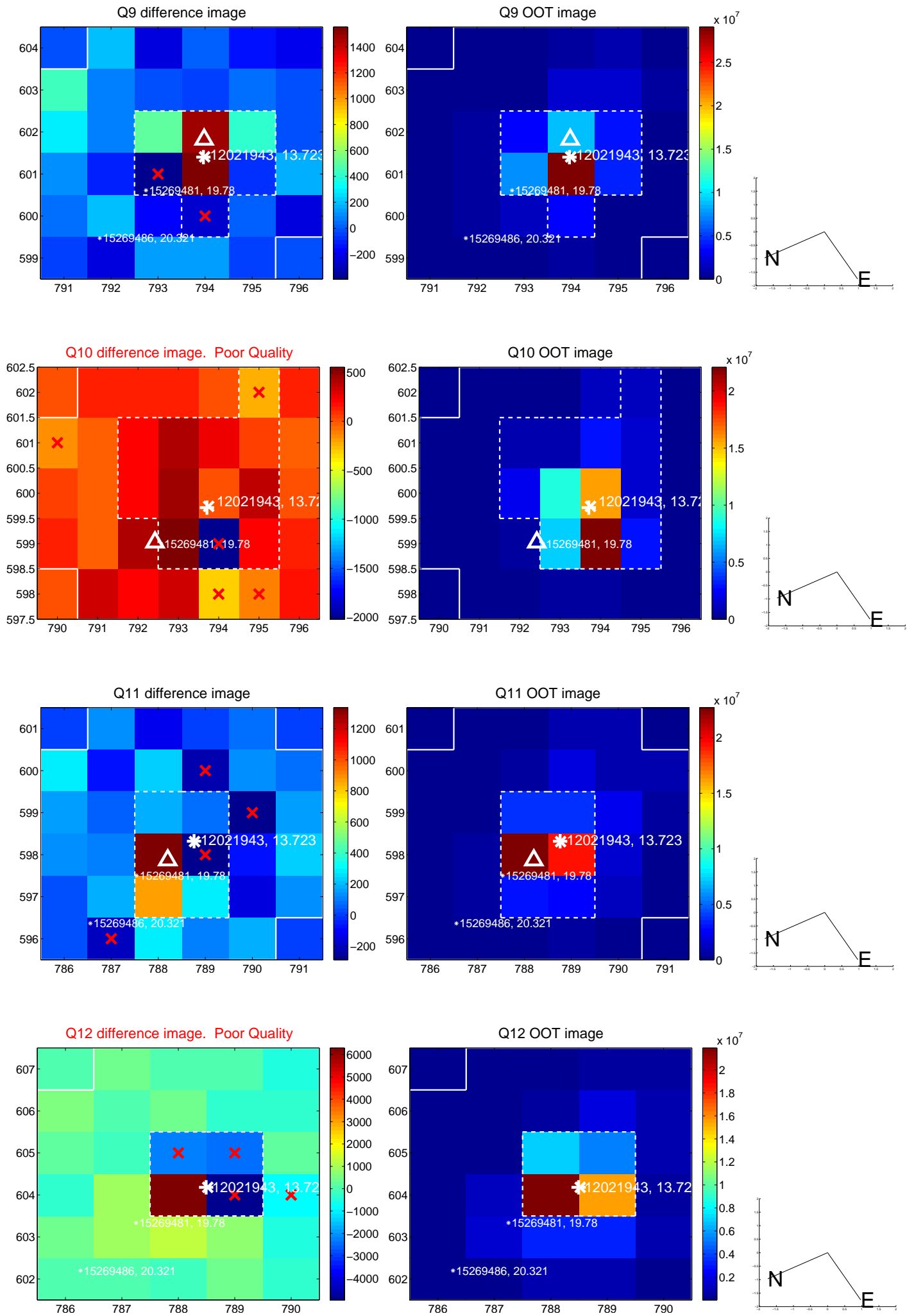
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



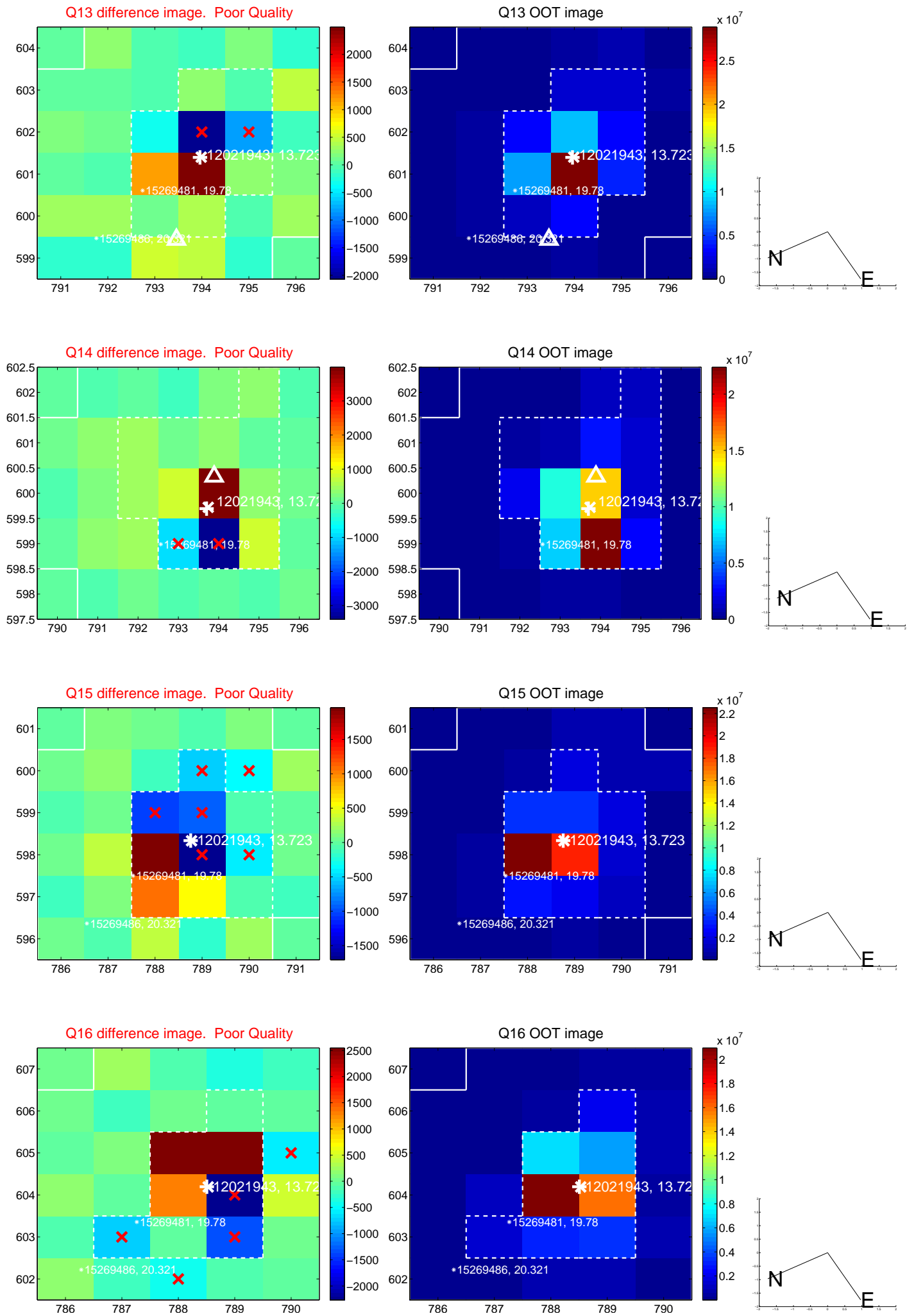
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



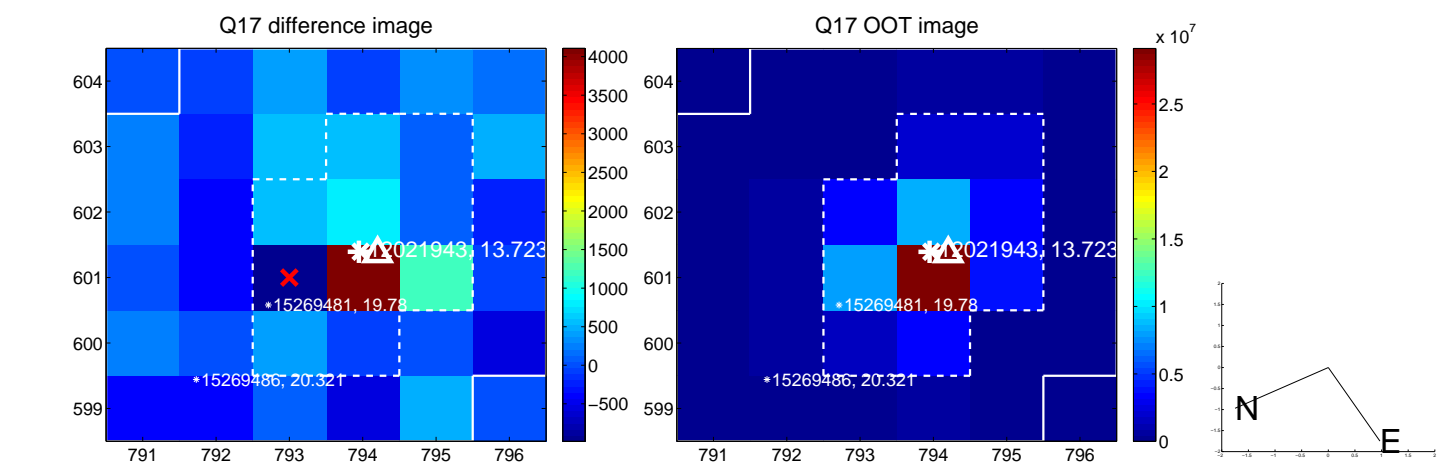
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



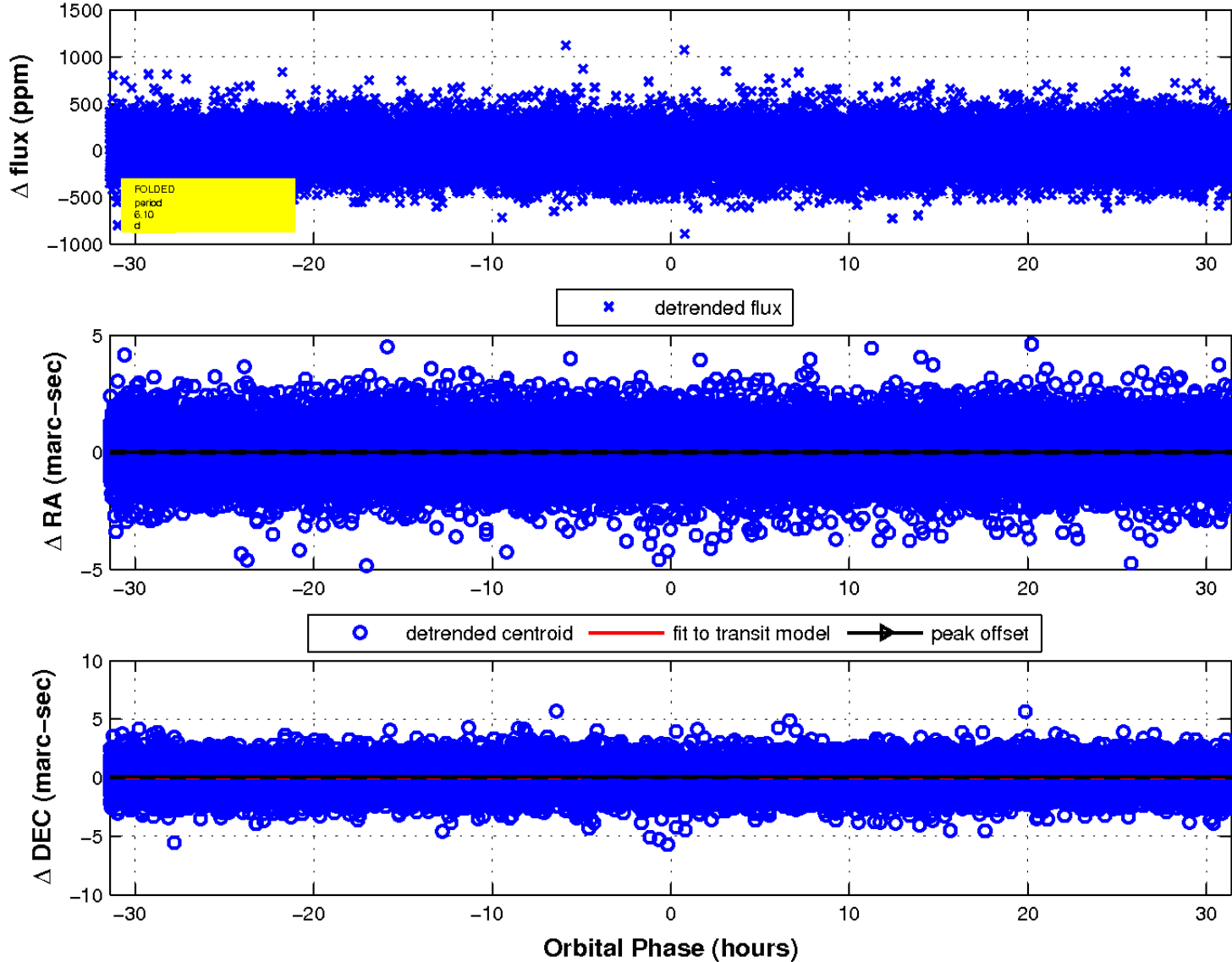
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

