

KIC 010158223

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})
010158223-01	OBS	No	1.922631	131.991913	102.7	9.018	11.0	11.8	1.00	5780	1.40	1091.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010158223-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS

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

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

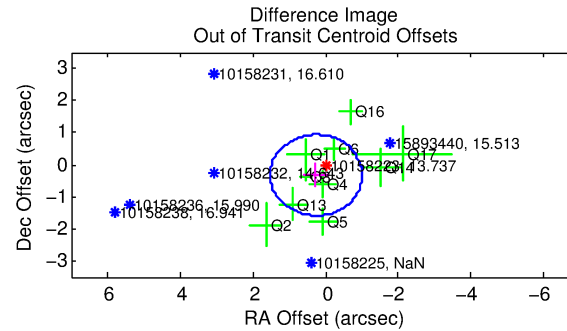
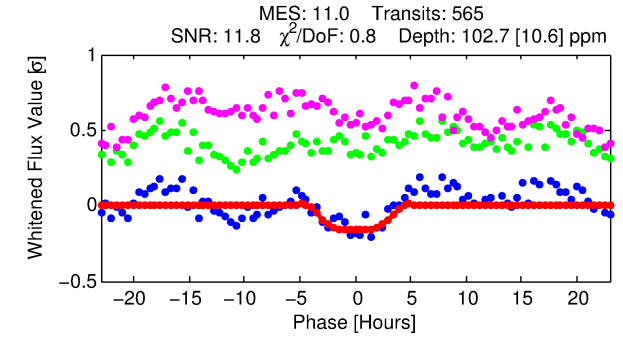
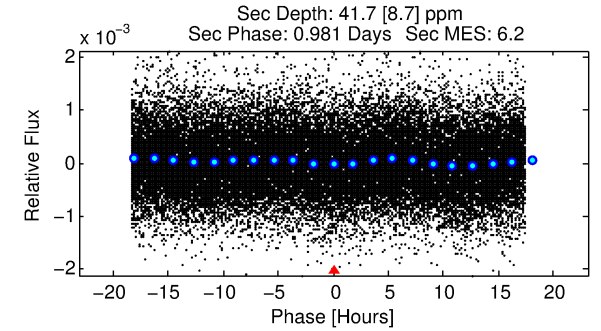
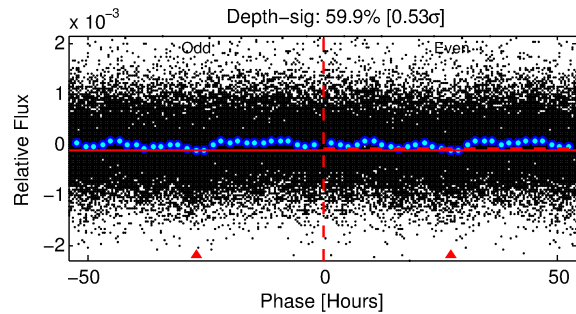
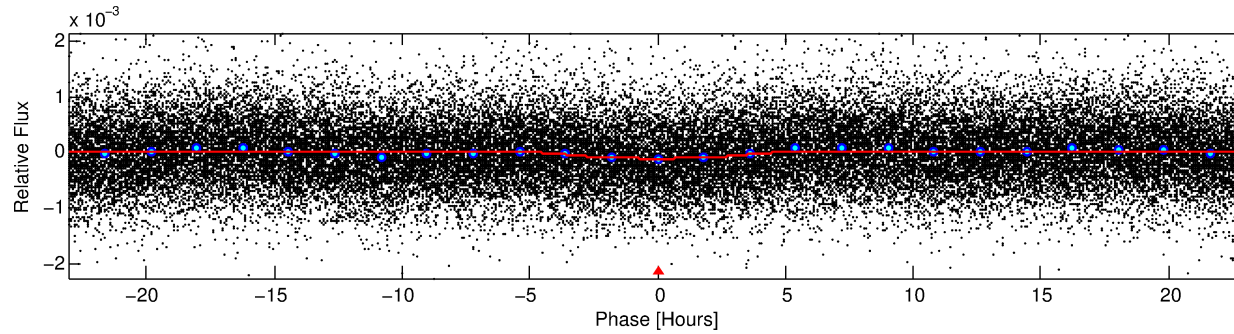
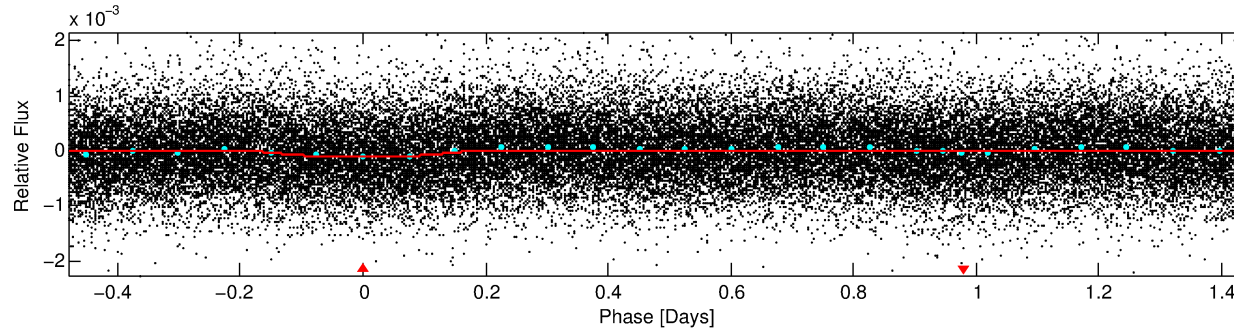
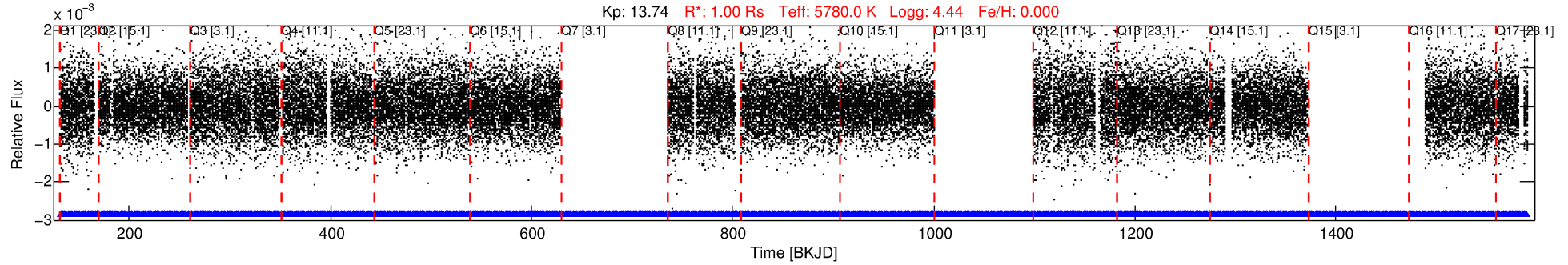
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010158223-01

No Significant Match Found

DV One-Page Summary

KIC: 10158223 Candidate: 1 of 1 Period: 1.923 d



DV Fit Results:

Period = 1.92263 [0.00004] d
Epoch = 131.9919 [0.0135] BKJD
 R_p/R^* = 0.0129 [0.0009]
 a/R^* = 1.07 [0.03]
 b = 0.98 [0.01]
 Seff = 1091.64 [0.03]
 T_{eq} = 1466 [0] K
 R_p = 1.40 [0.10] R_e
 a = 0.0303 [0.0000] AU
 A_g = 10.66 [2.69] [3.59 σ]
 T_{eff} = 4095 [258] K [10.18 σ]

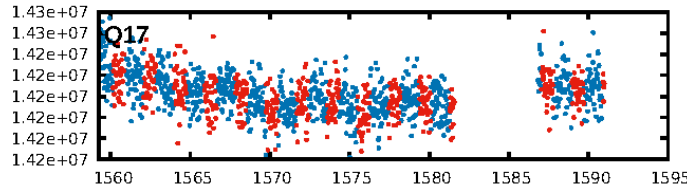
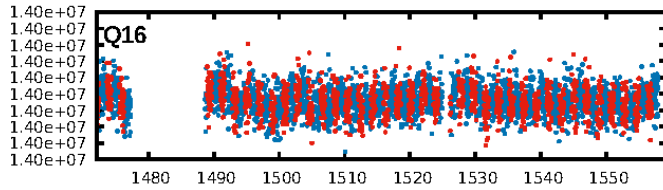
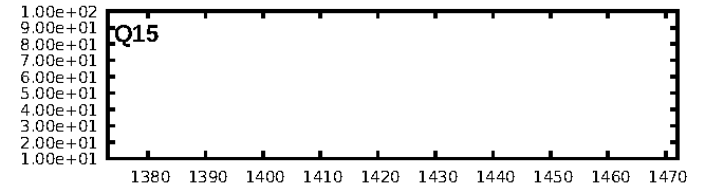
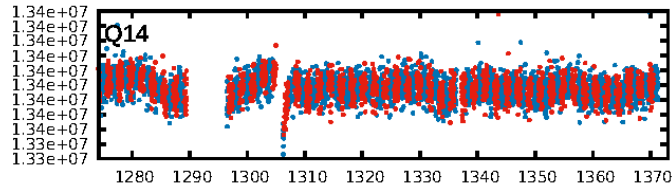
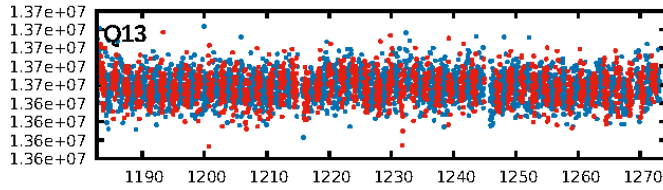
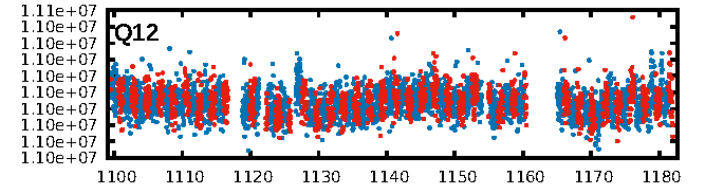
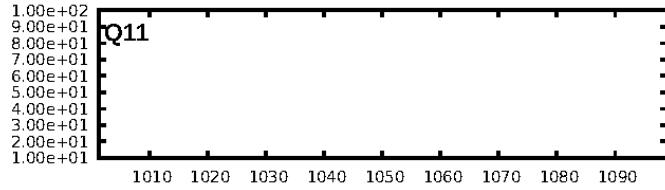
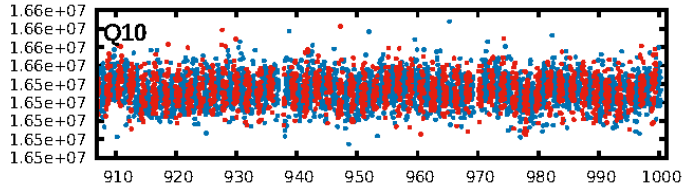
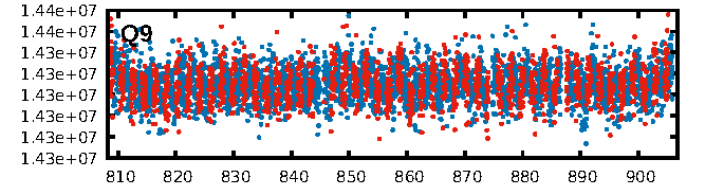
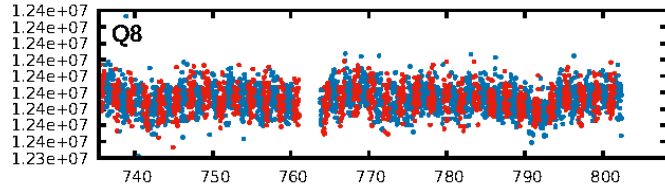
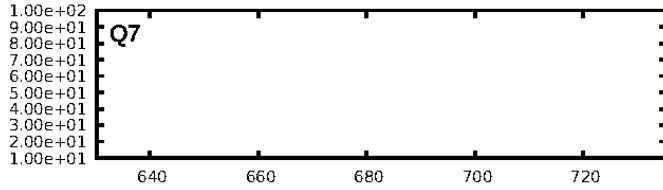
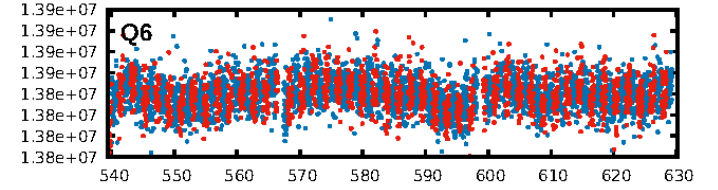
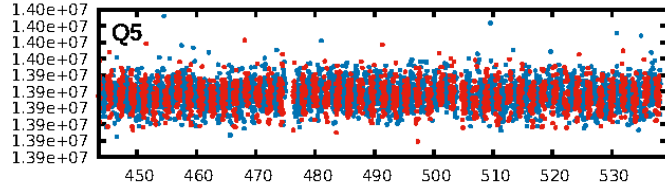
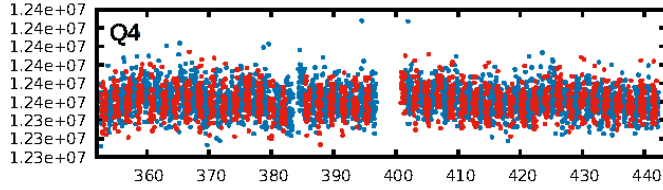
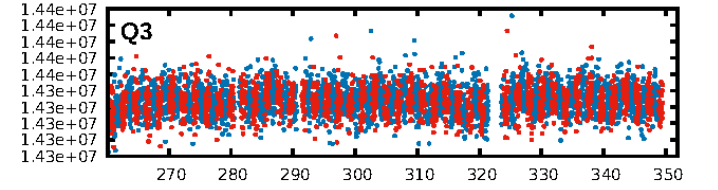
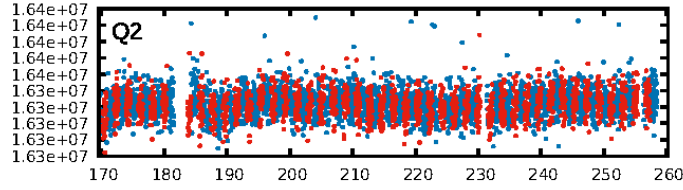
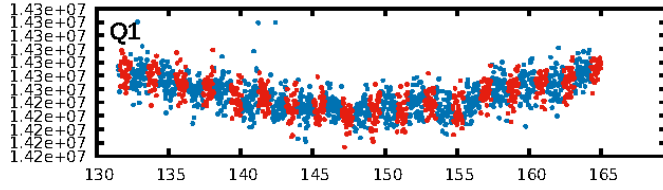
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.85e-24
RollingBand-fgt: 1.00 [533/533]
GhostDiagnostic-chr: 1.688
Centroid-sig: 88.5%
Centroid-so: 0.906 arcsec [1.37 σ]
OotOffset-rm: 0.416 arcsec [0.99 σ]
OotOffset-st: 3/1/2/4 [10]
KicOffset-rm: 1.305 arcsec [4.11 σ]
KicOffset-st: 3/1/2/4 [10]
DiffImageQuality-fgm: 0.90 [9/10]
DiffImageOverlap-fno: 1.00 [14/14]

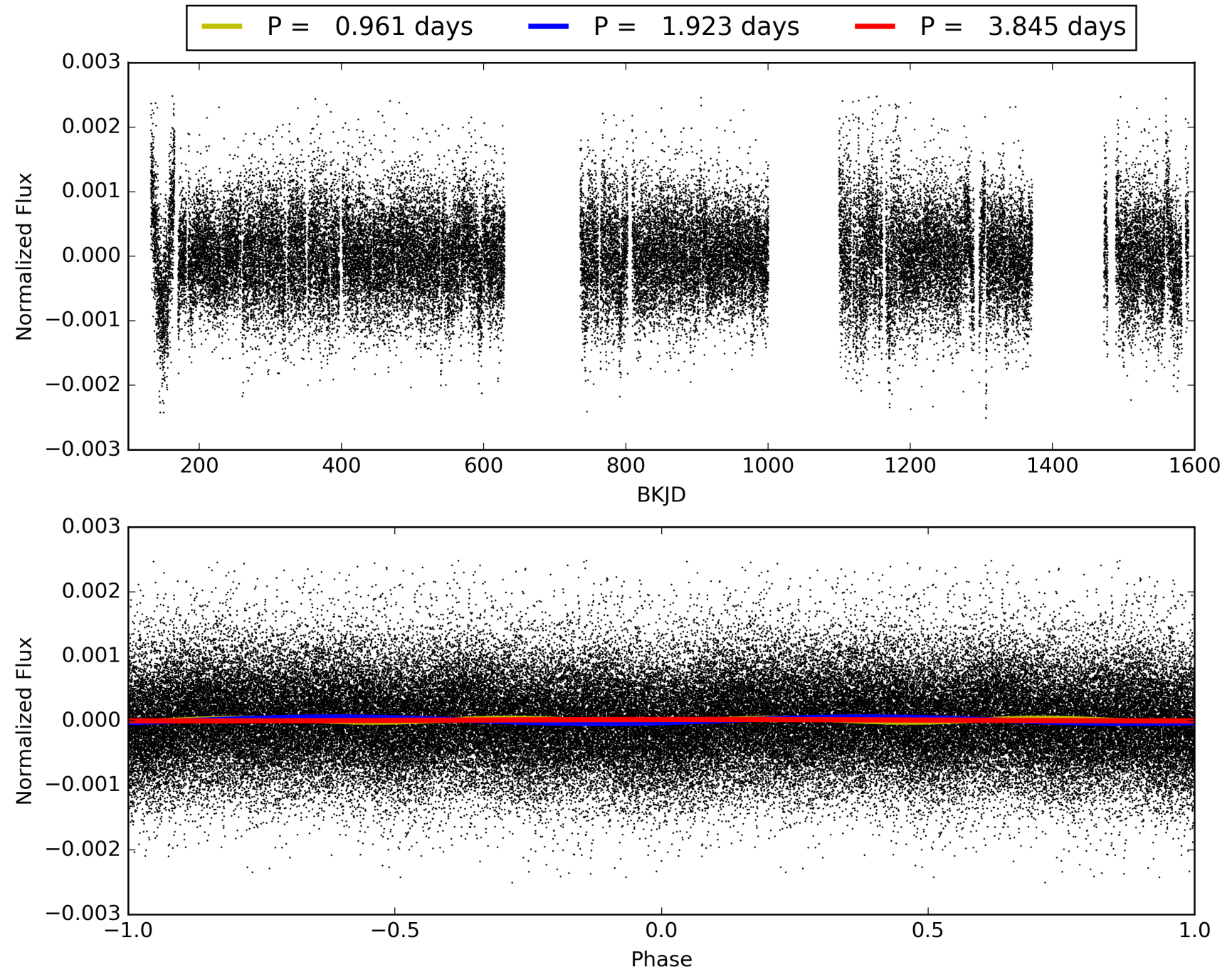
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:03:38 Z

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

TCE 010158223-01, PDC Light Curves

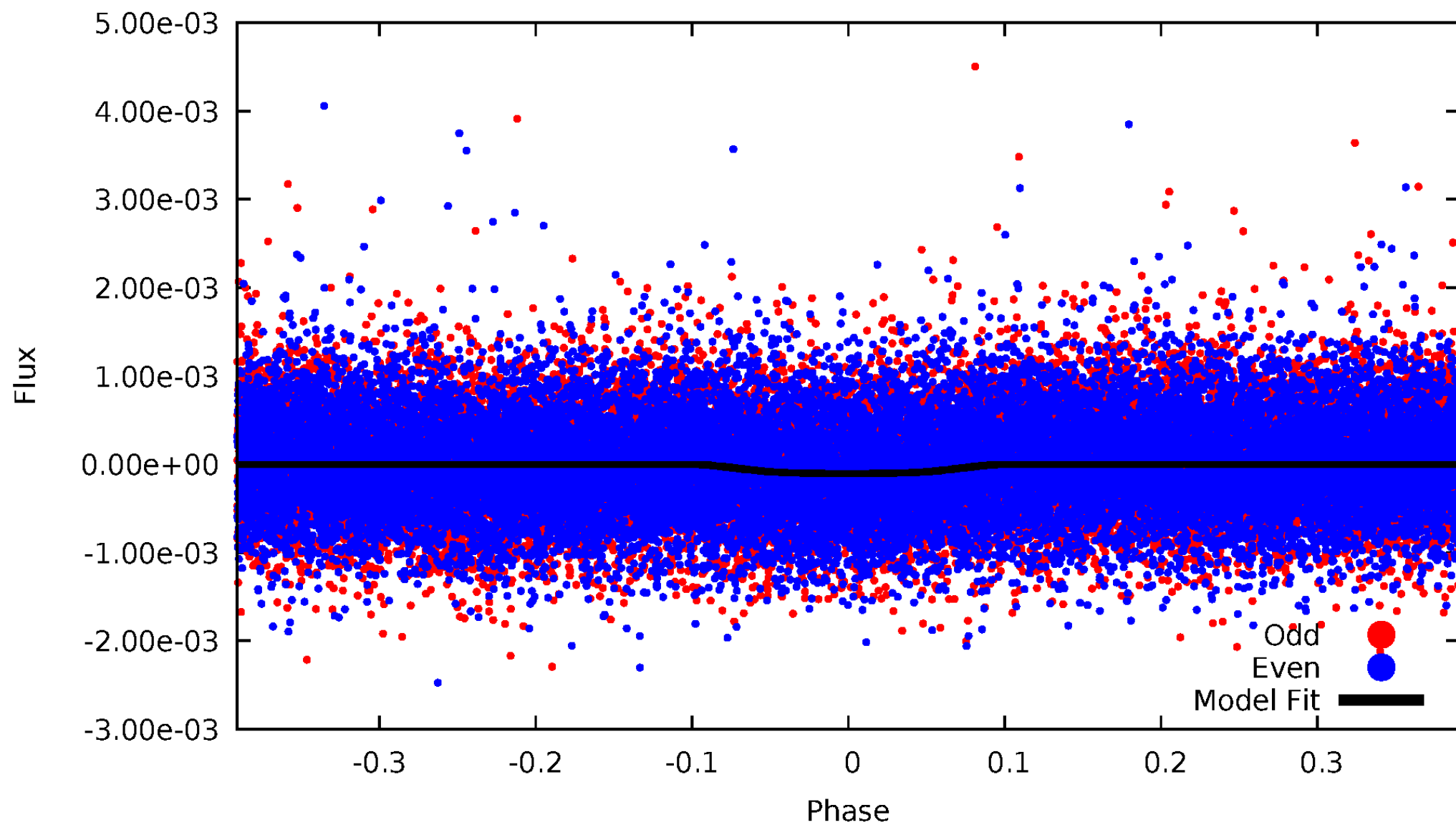


TCE 010158223-01



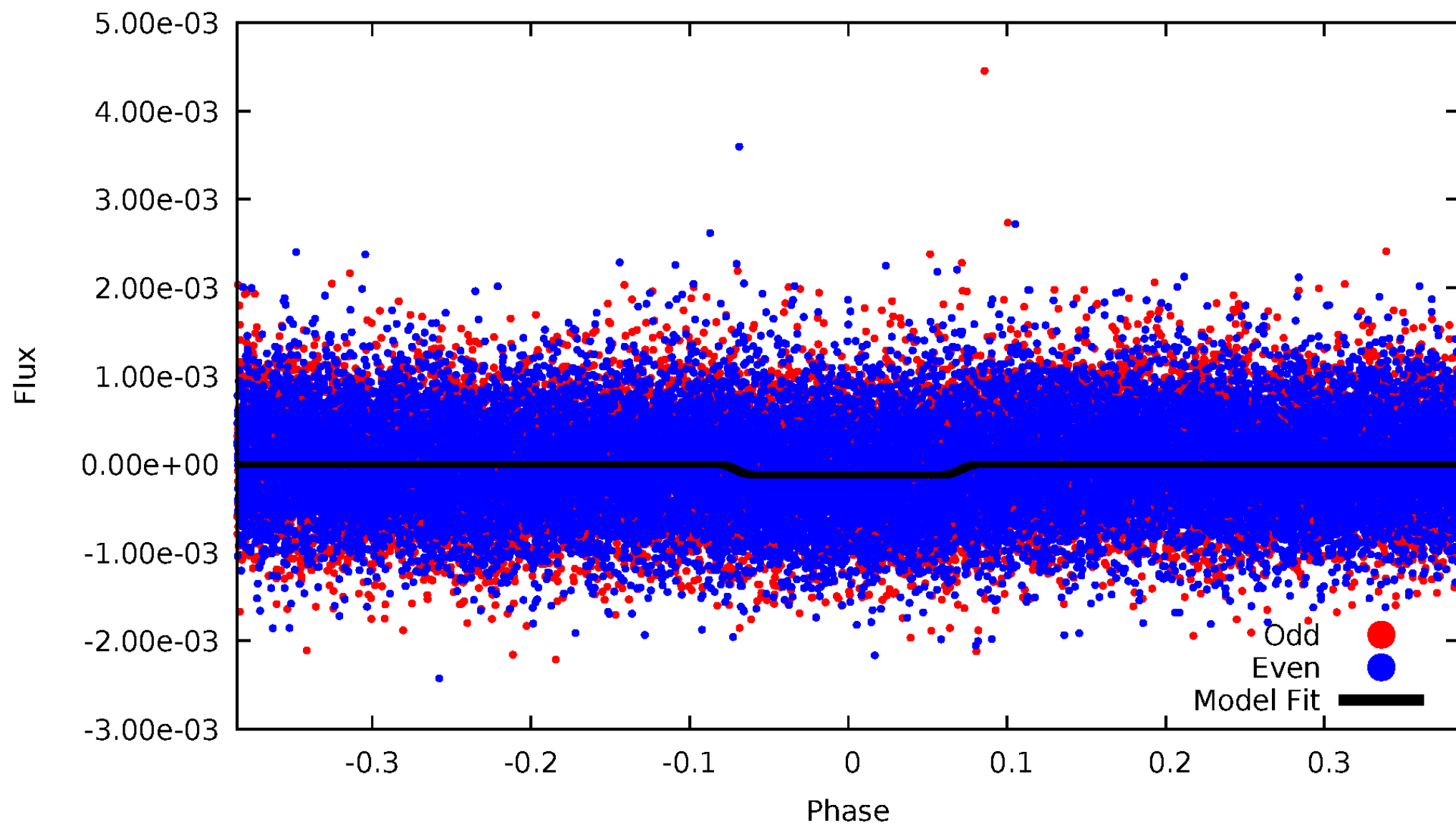
DV Odd/Even

TCE 010158223-01

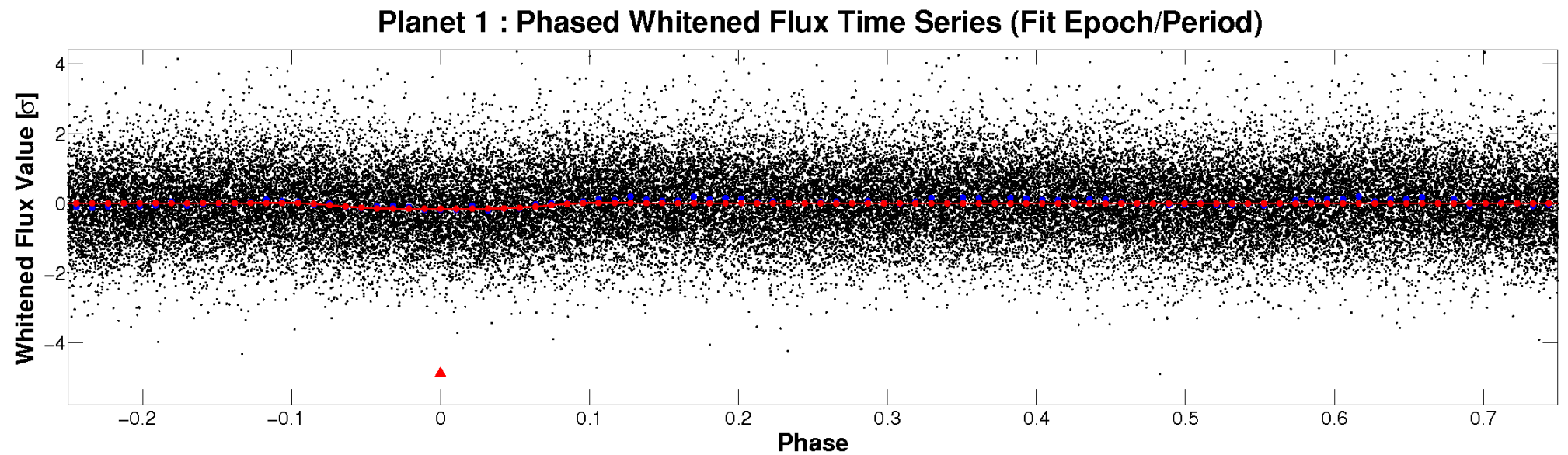
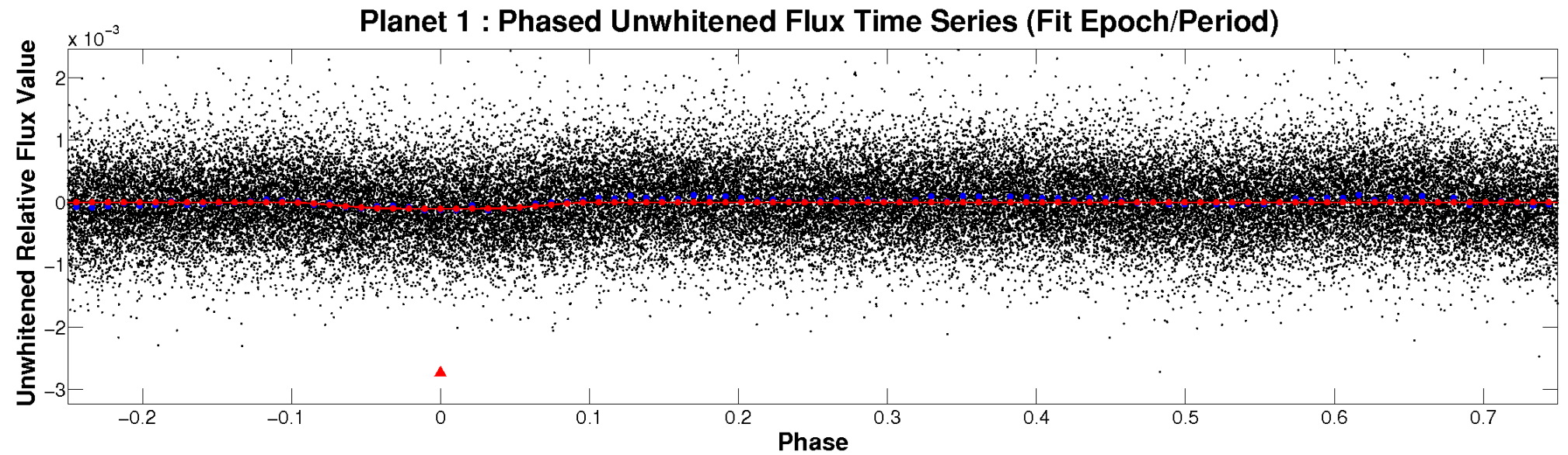


ALT Odd/Even

TCE 010158223-01

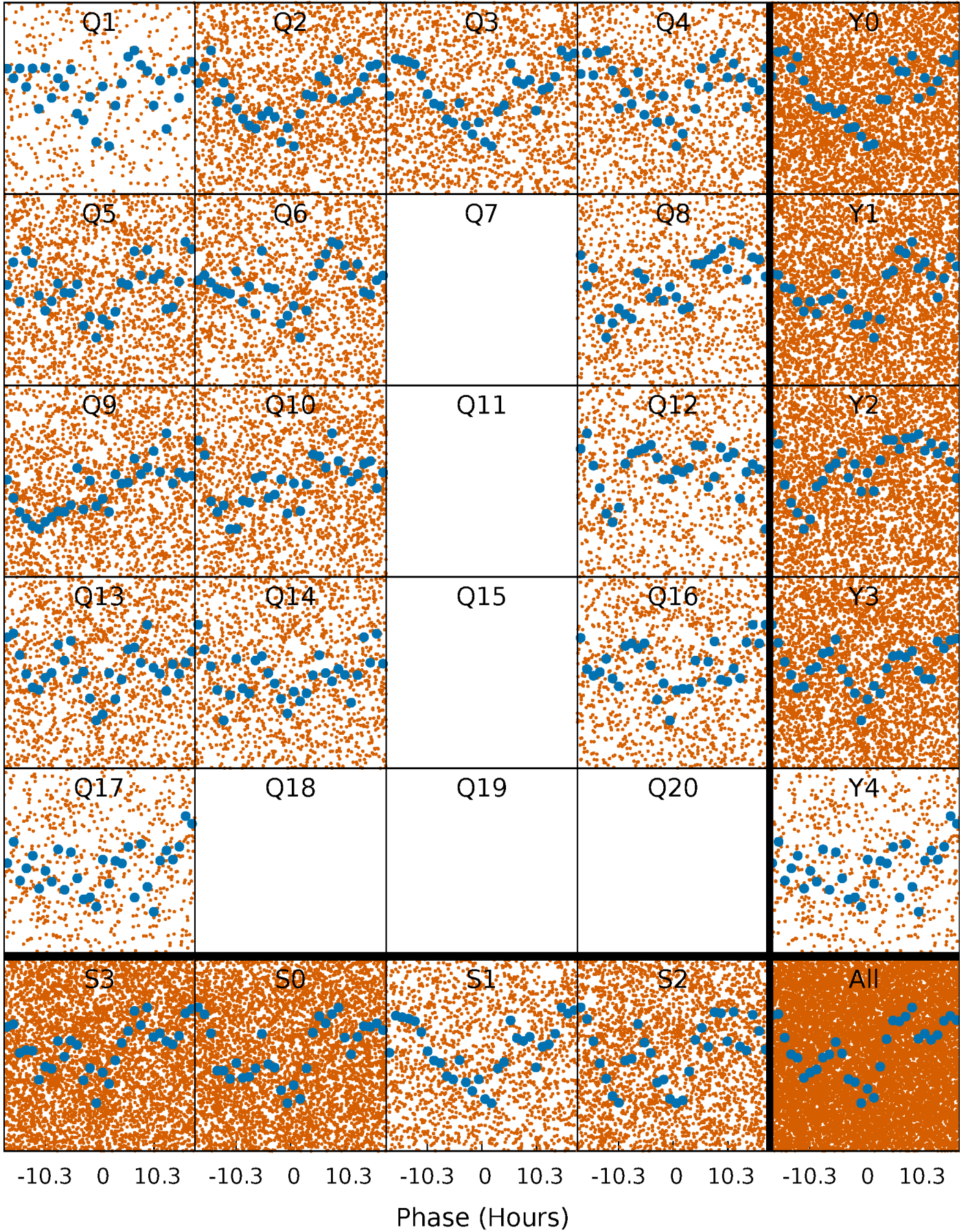


Non-Whitened Vs. Whitened Light Curve



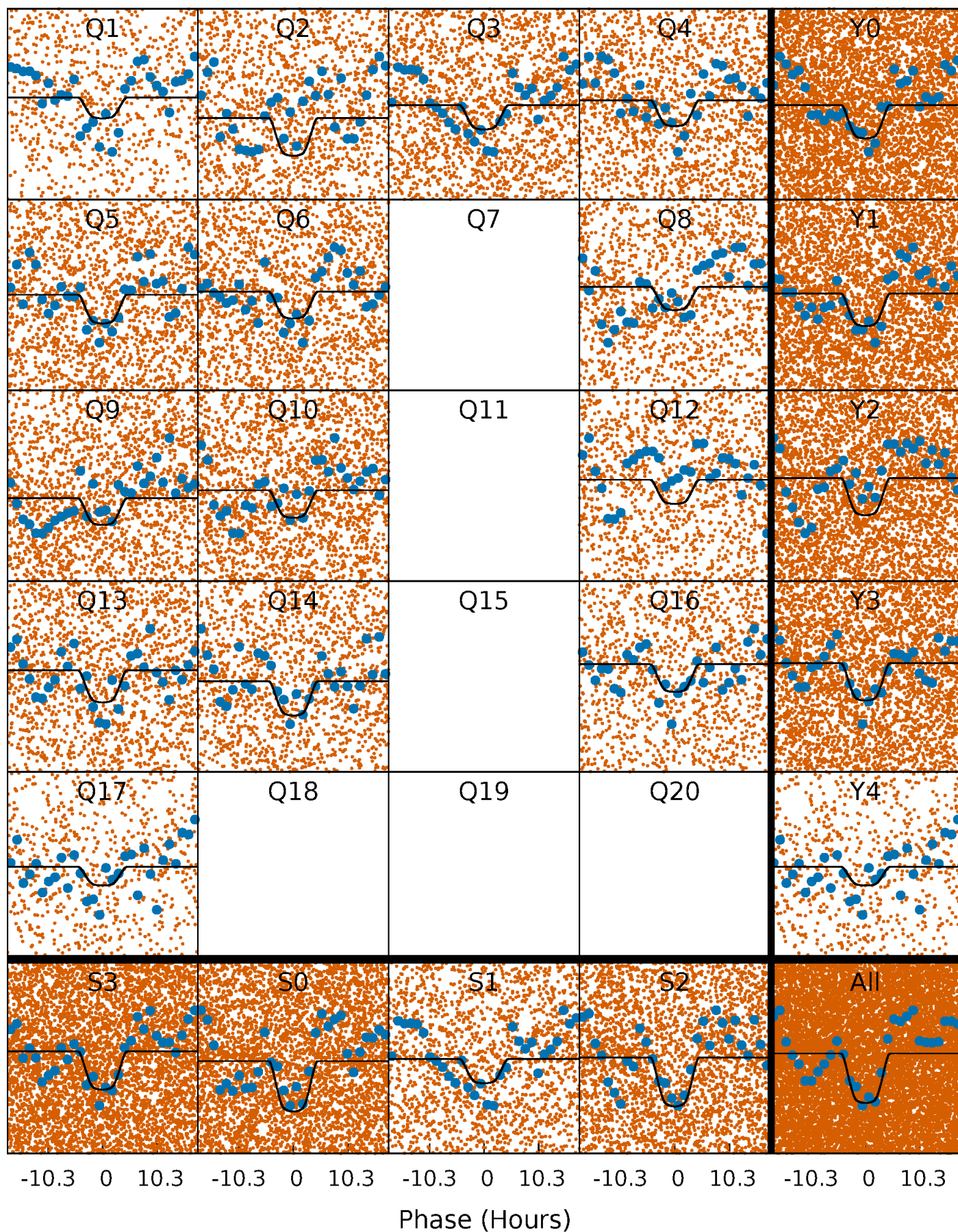
PDC Quarter-Phased Transit Curves

TCE 010158223-01 P= 1.922631 Days $T_0=131.991913$ (BKJD)



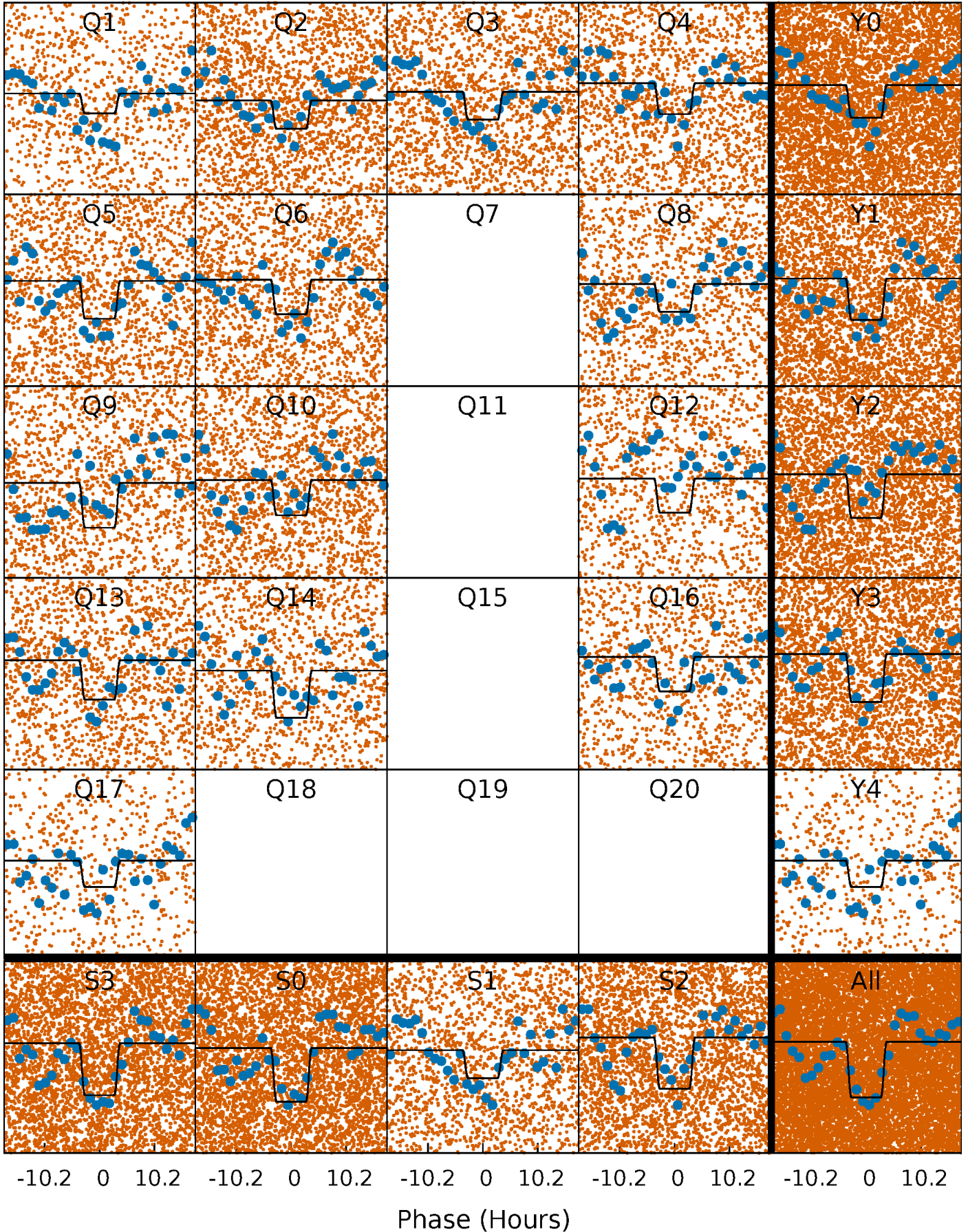
DV Quarter-Phased Transit Curves

TCE 010158223-01 P= 1.922631 Days $T_0=131.991913$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

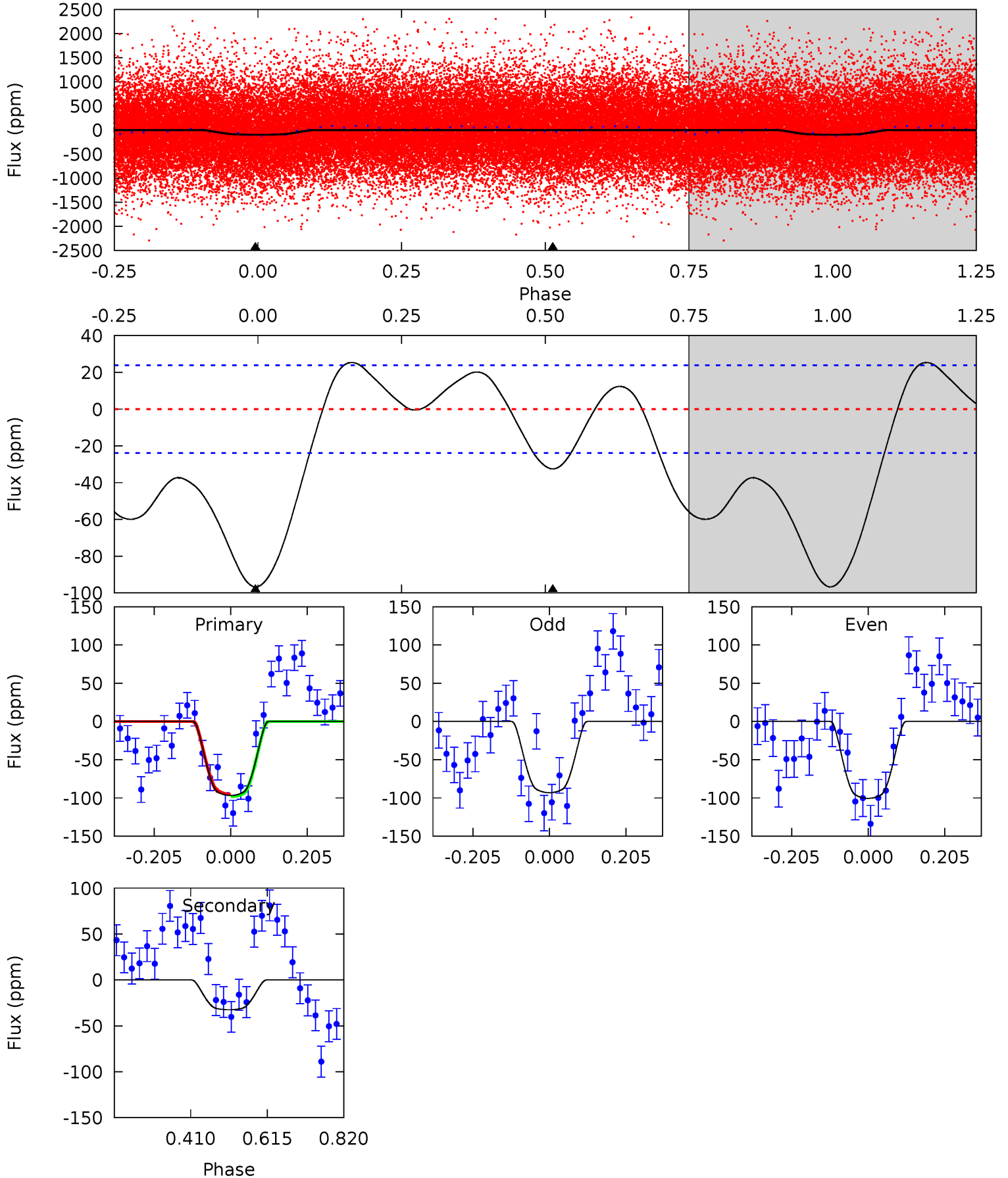
TCE 010158223-01 P= 1.922634 Days $T_0=131.981270$ (BKJD)



DV Model-Shift Uniqueness Test

010158223-01, P = 1.922631 Days, E = 130.069282 Days

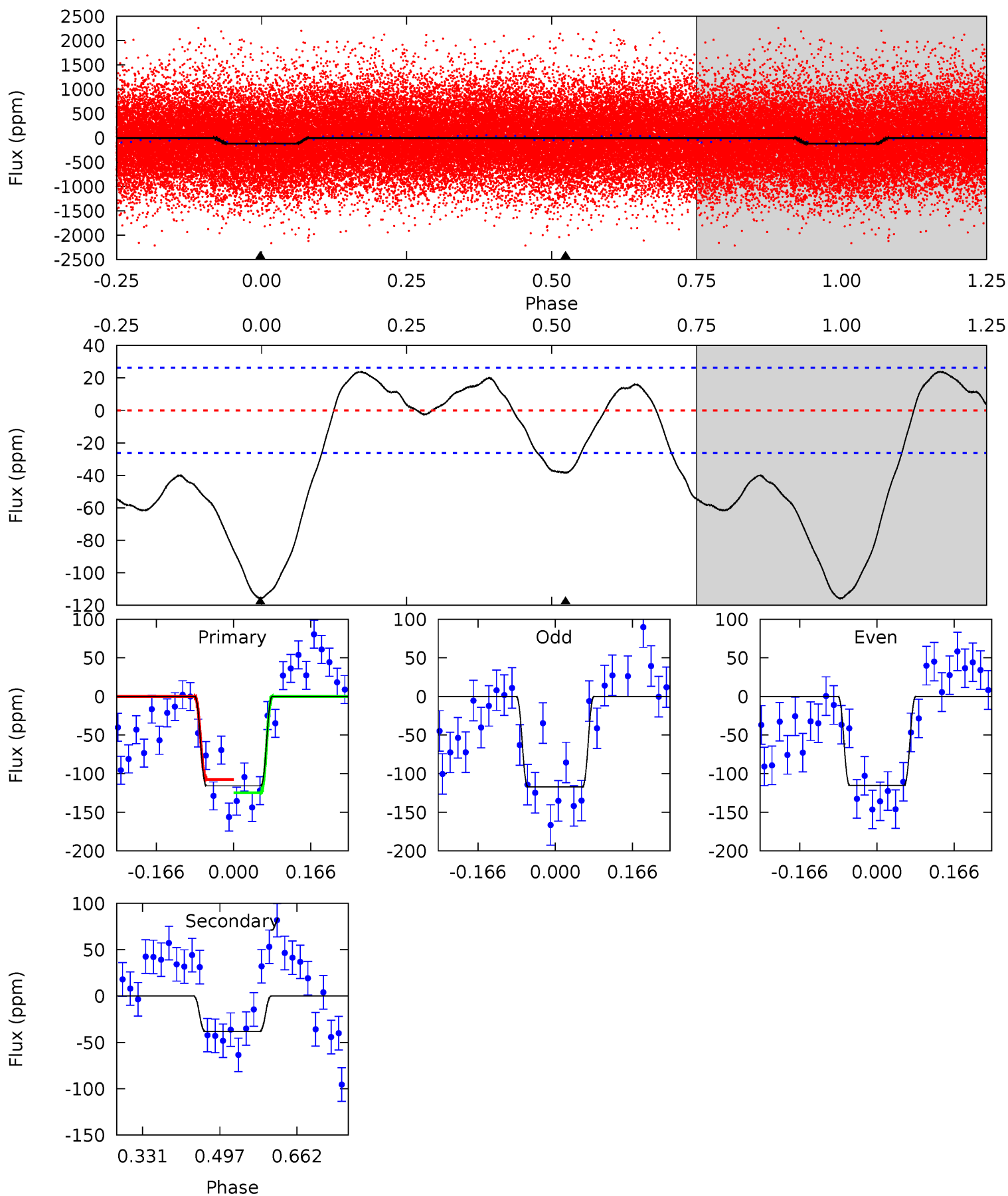
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	6.00	0	0	4.41	1.27	5.50	17.9	17.9	6.00	6.00	0.69	1.03	0.21	0.29



Alt Model-Shift Uniqueness Test

010158223-01, P = 1.922634 Days, E = 130.058636 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.6	6.50	0	0	4.46	1.39	5.19	19.6	19.6	6.50	6.50	0.18	1.02	0.17	1.44



Stellar Parameters For KIC 010158223

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 010158223-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-32 ± 5	$1.41^{+0.14}_{-0.14}$	2047^{+98}_{-96}	4087^{+219}_{-188}	$8.249^{+2.429}_{-1.886}$
Alt.	-38 ± 6	$1.20^{+0.13}_{-0.13}$	2046^{+97}_{-92}	4491^{+261}_{-230}	14^{+4}_{-3}

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

DV Centroid Data

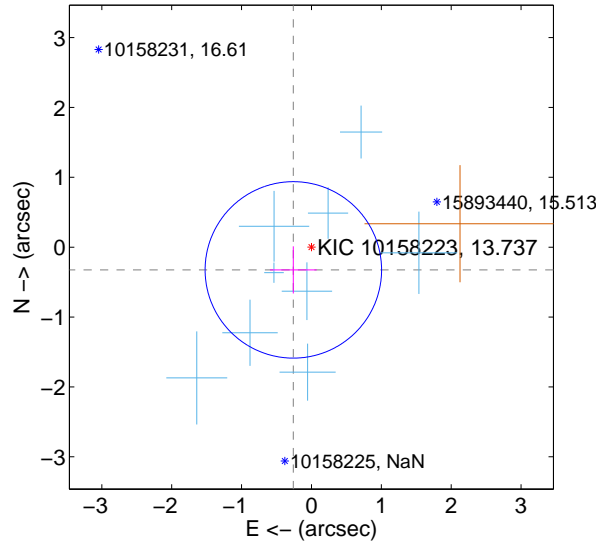
Supplemental centroid analysis for 010158223-01. Kepler magnitude: 13.74. Transit SNR 11.81

There are 9 quarters with good PRF difference image offsets

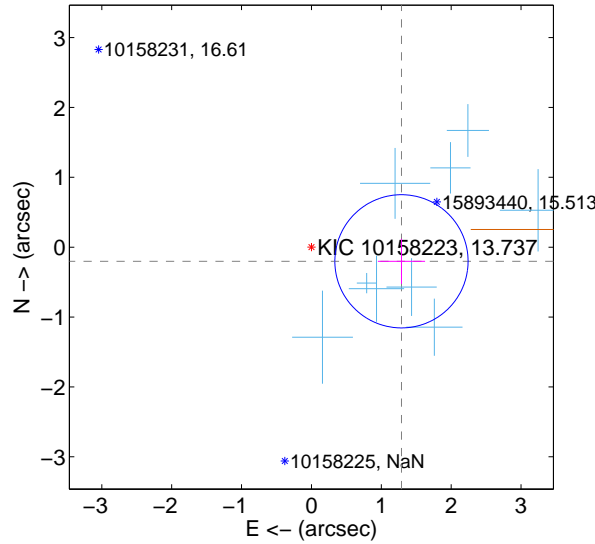
The direct PRF centroid is offset from the target star catalog position by about 1.52 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.416 ± 0.421	0.99	0.259 ± 0.334	-0.325 ± 0.337
PRF-fit source offset from KIC position	1.305 ± 0.318	4.11	-1.289 ± 0.337	-0.202 ± 0.323
photometric centroid source offset	0.91 ± 0.66	1.37	-0.87 ± 0.65	-0.24 ± 0.81

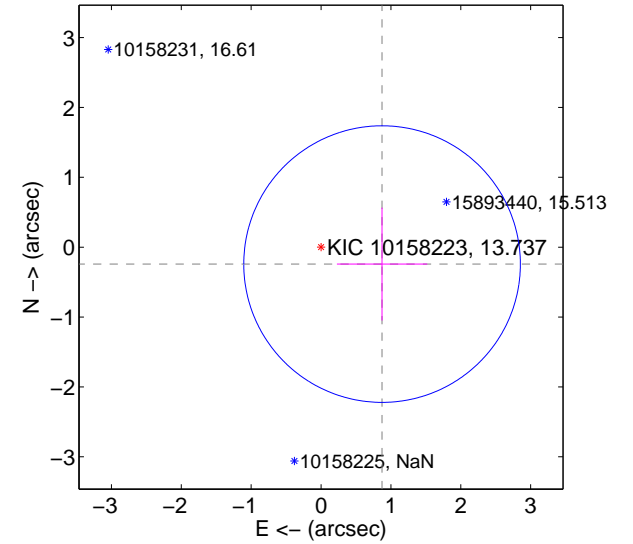
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

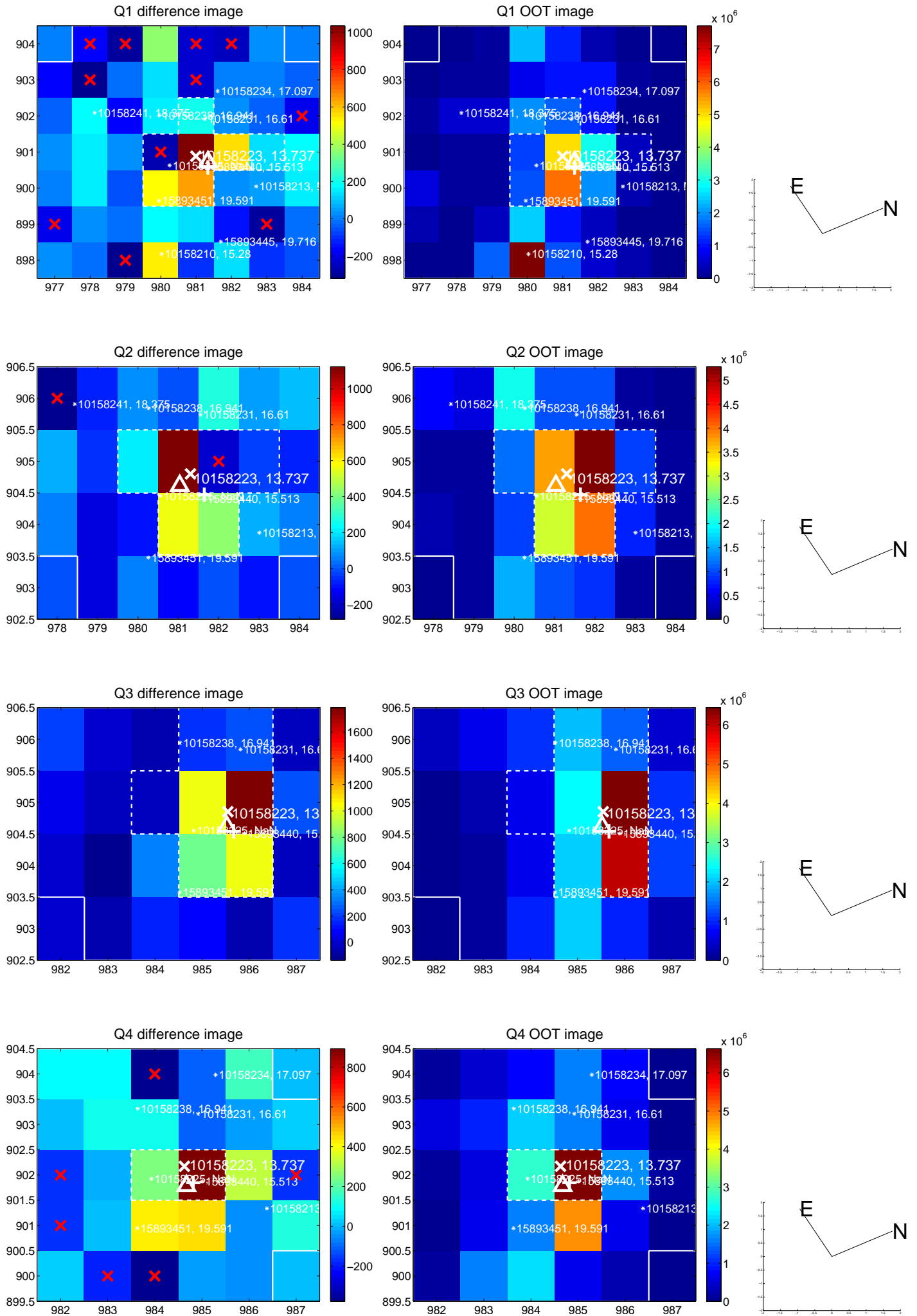


offset from photometric centroids

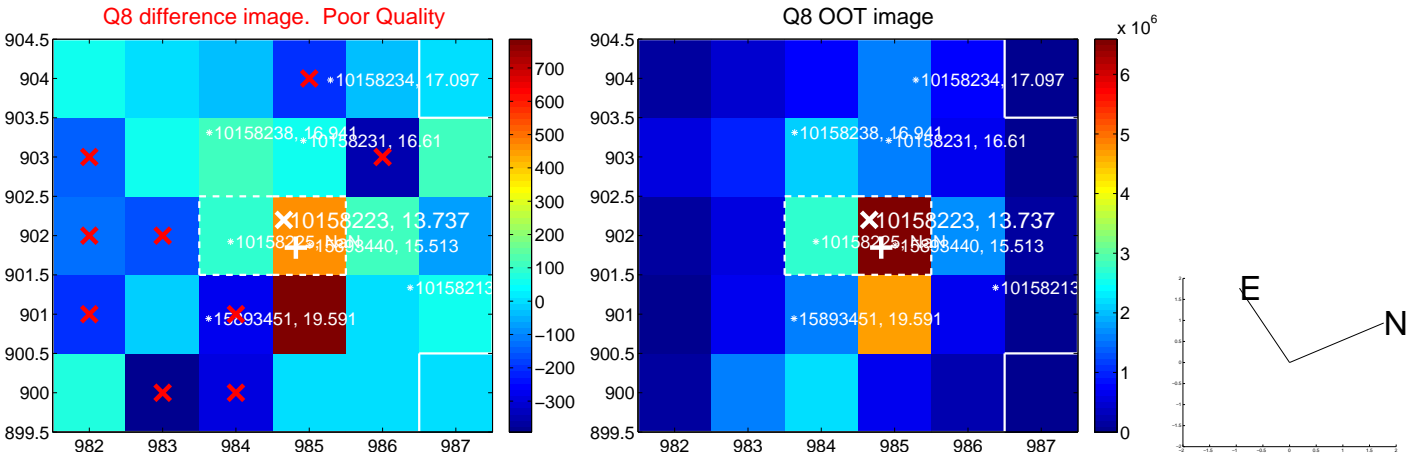
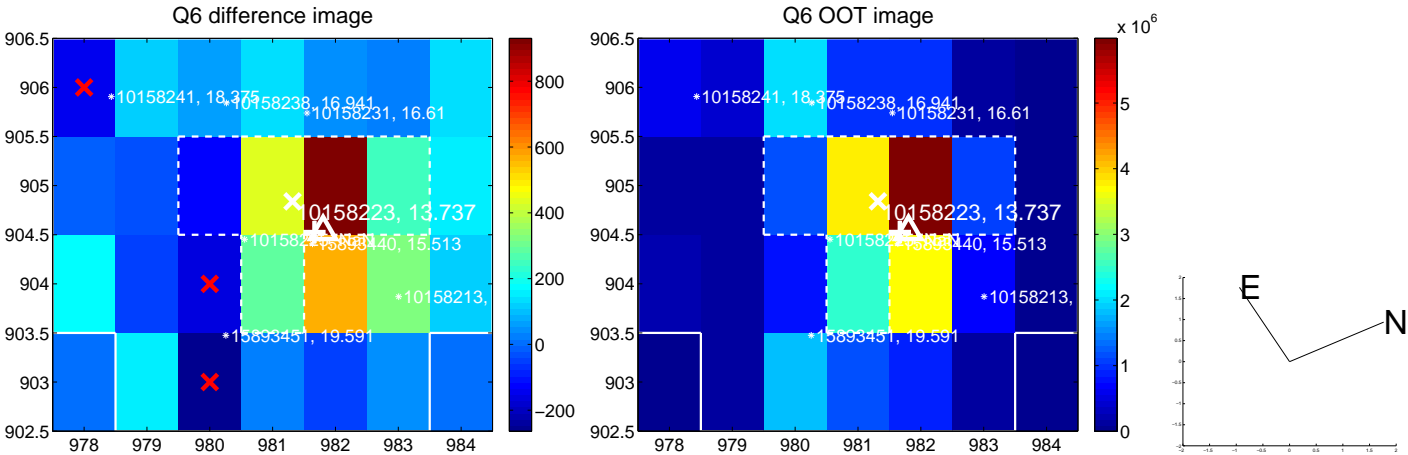
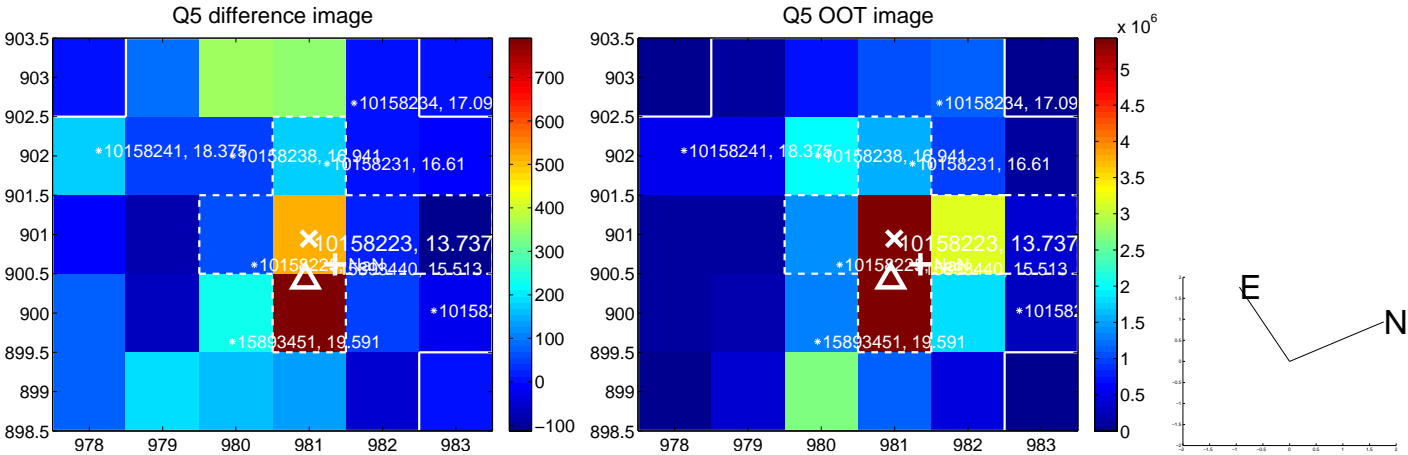


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

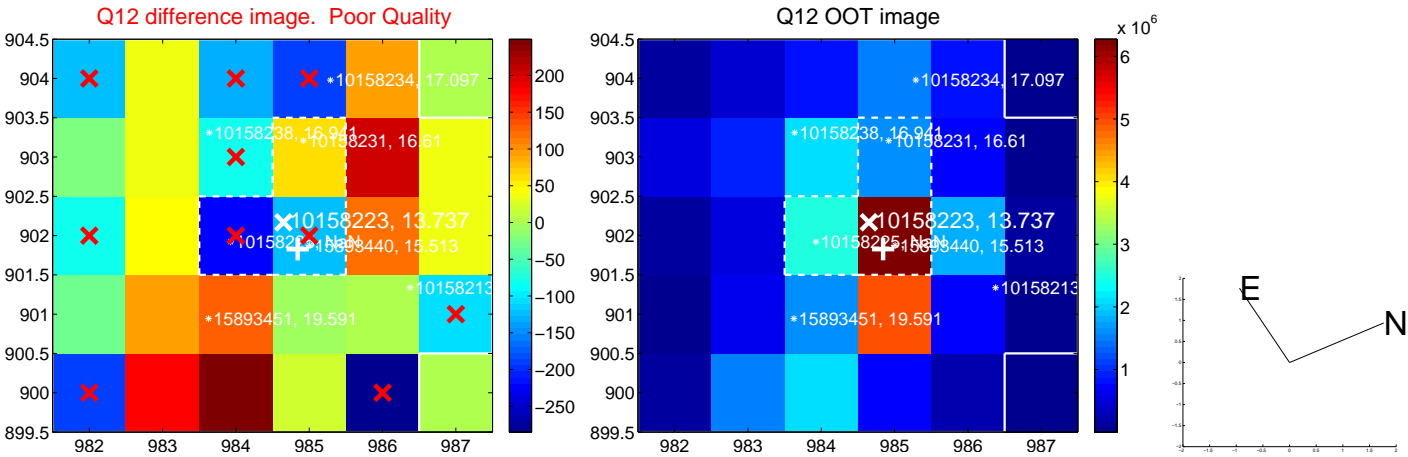
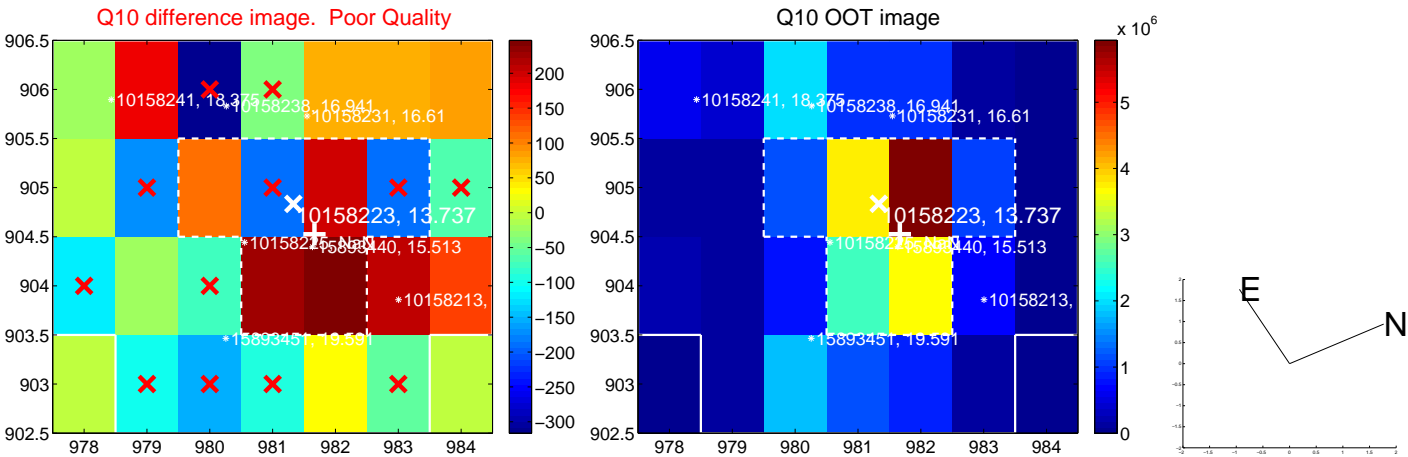
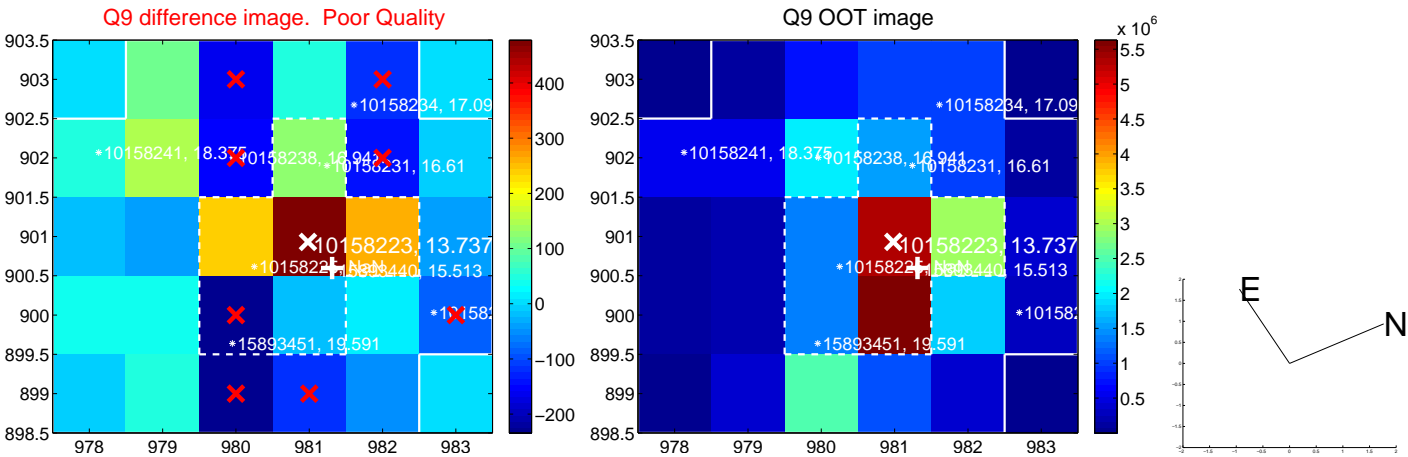
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



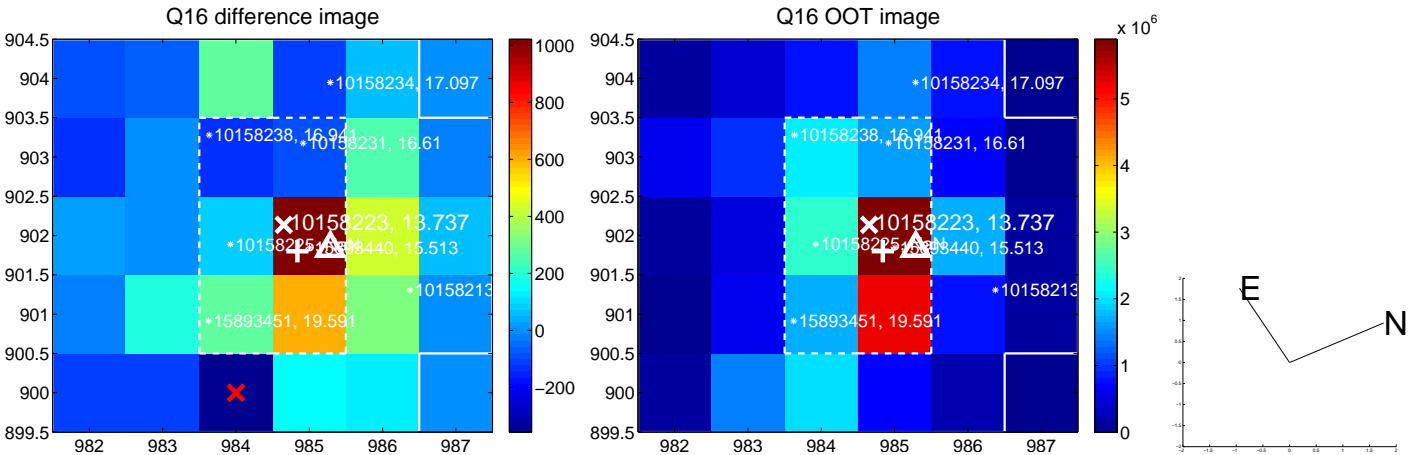
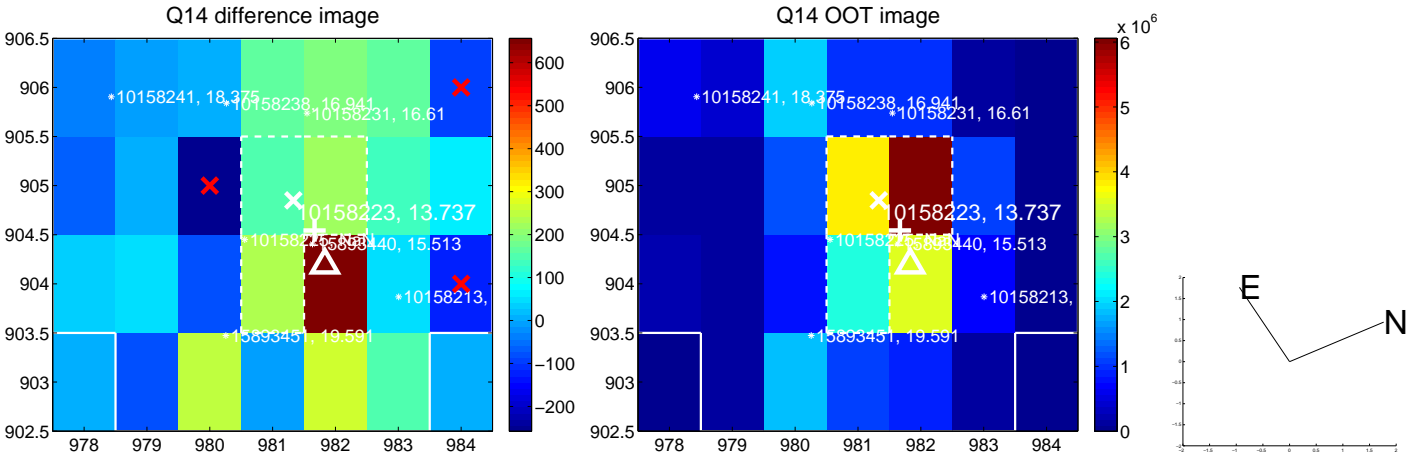
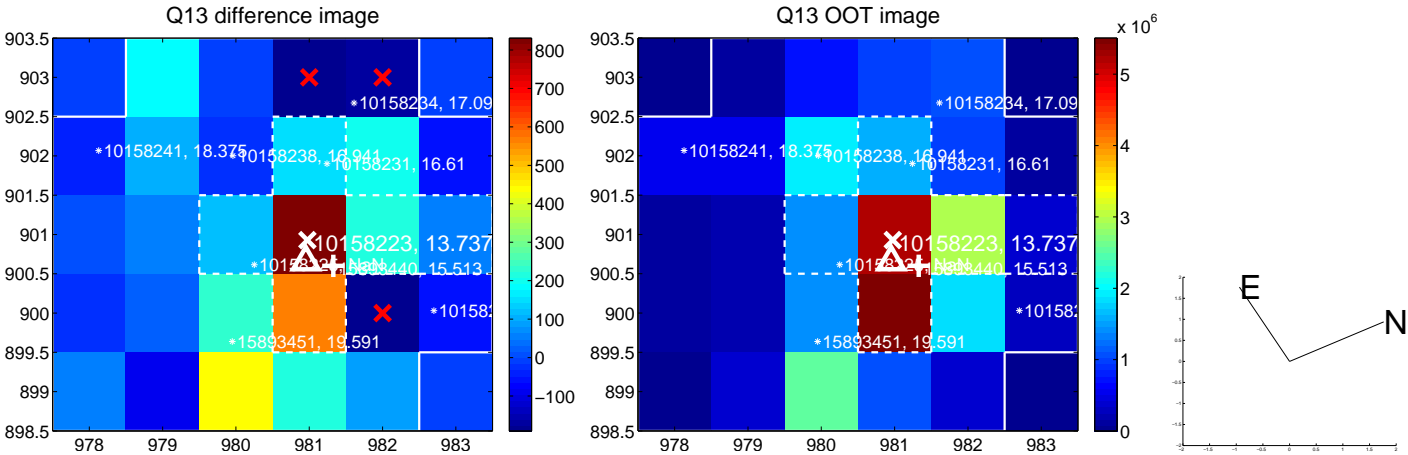
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



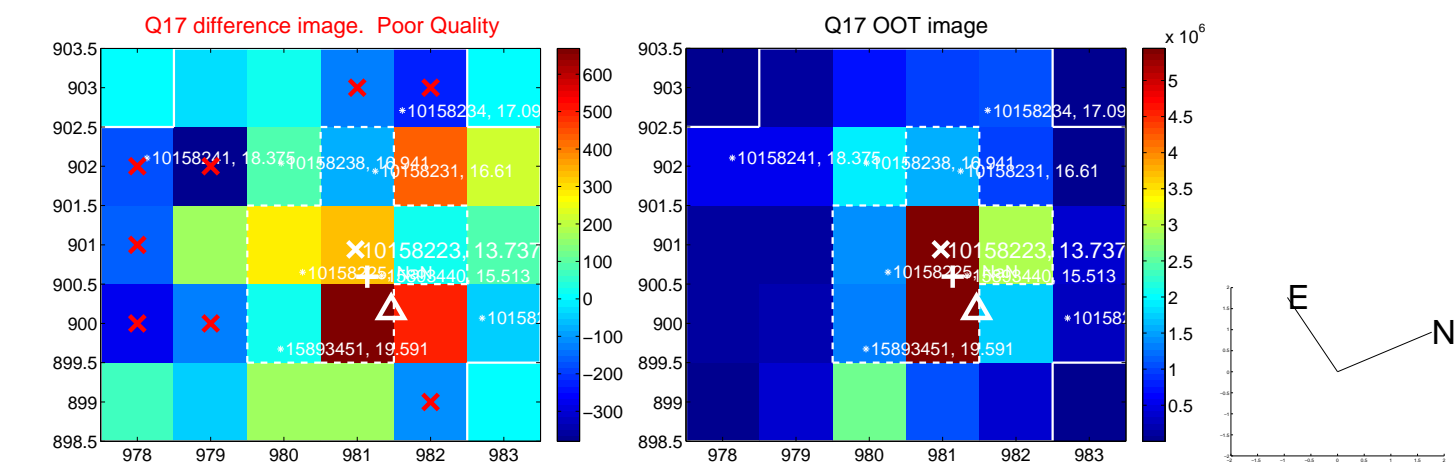
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



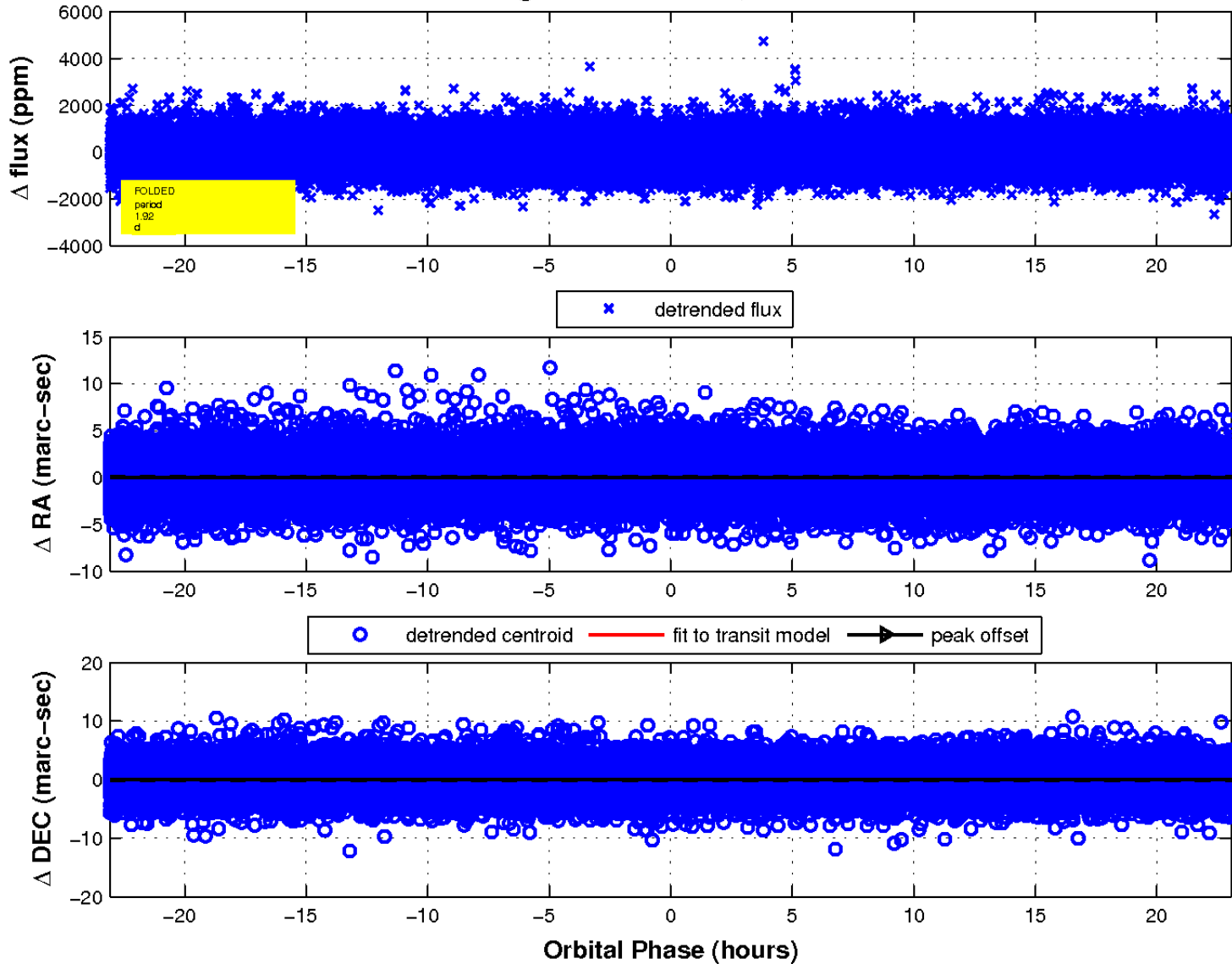
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

