

KIC 009412623

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})
009412623-01	OBS	4640.01	6.108319	131.872521	56.2	3.616	9.7	9.7	1.29	6720	1.12	609.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009412623-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT

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

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

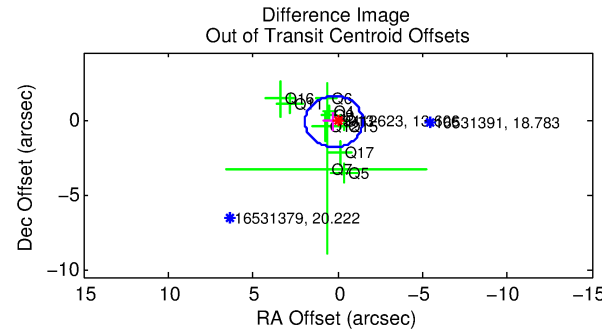
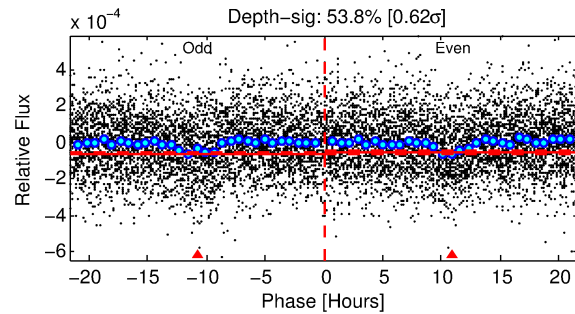
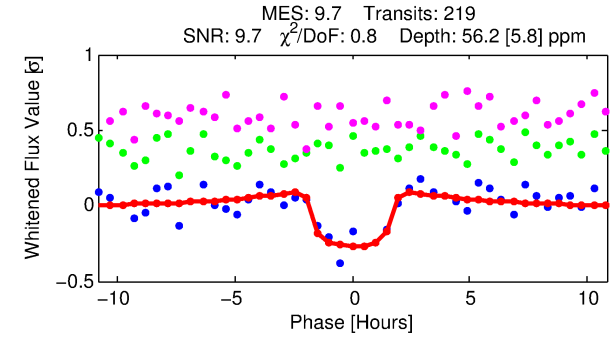
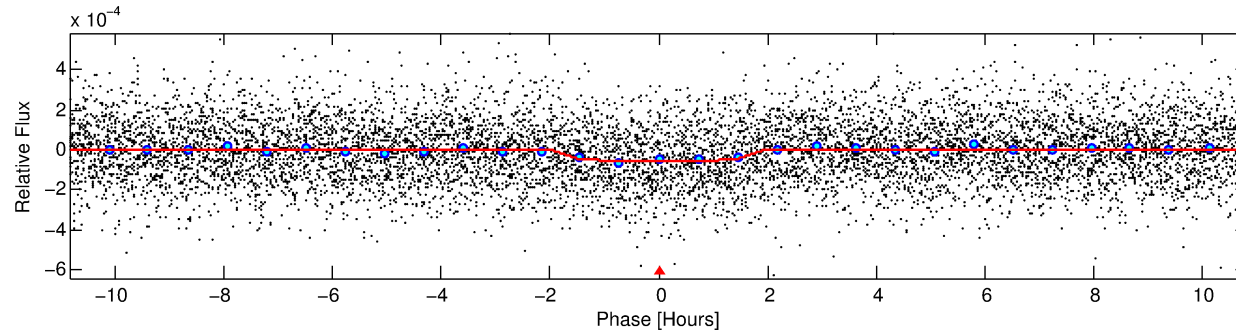
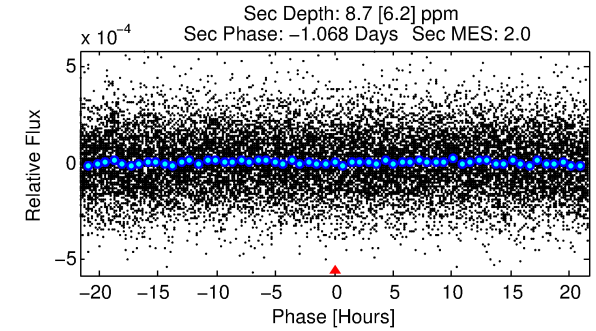
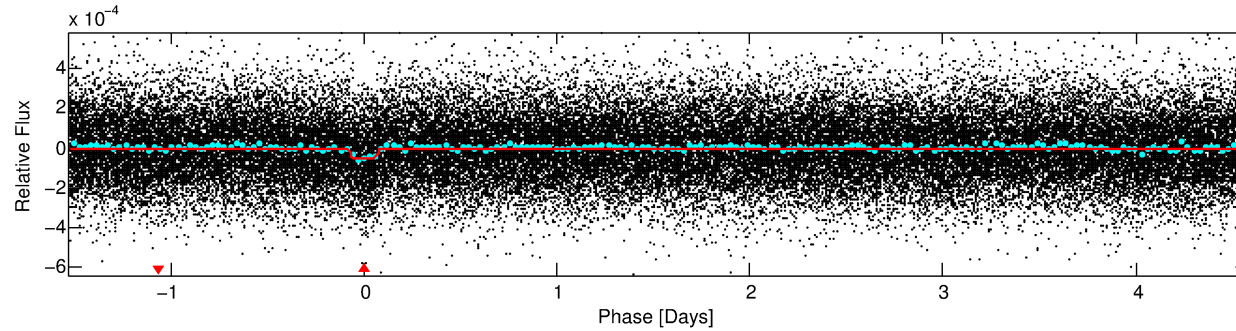
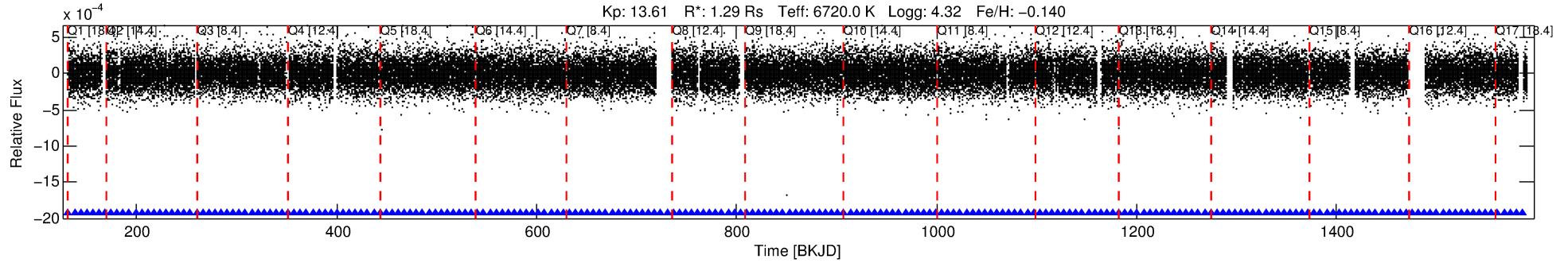
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009412623-01

No Significant Match Found

DV One-Page Summary

KIC: 9412623 Candidate: 1 of 1 Period: 6.108 d
KOI: K04640.01 Corr: 0.974



DV Fit Results:

Period = 6.10832 [0.00004] d
Epoch = 131.8725 [0.0051] BKJD
Rp/R* = 0.0080 [0.0029]
a/R* = 6.06 [12.57]
b = 0.89 [0.48]
Seff = 609.97 [253.88]
Teff = 1267 [132] K
Rp = 1.12 [0.55] Re
a = 0.0705 [0.0194] AU
Ag = 18.83 [20.53] [0.87σ]
Teffp = 4081 [1048] K [2.66σ]

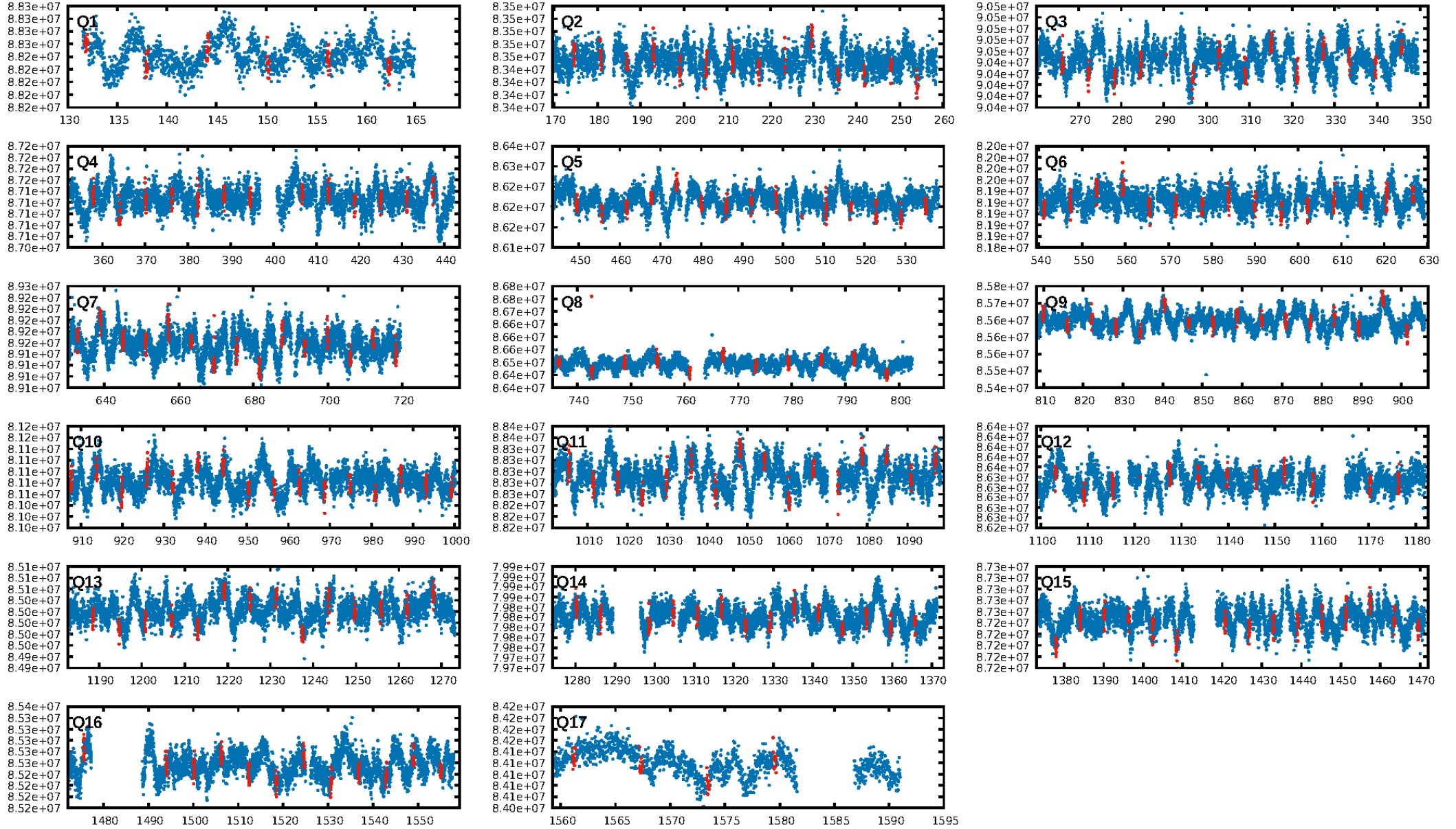
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.34e-22
RollingBand-fgt: 1.00 [209/209]
GhostDiagnostic-chr: -12.2
Centroid-sig: 0.9%
Centroid-so: 1.742 arcsec [1.85σ]
OotOffset-rm: 0.252 arcsec [0.45σ]
KicOffset-rm: 0.250 arcsec [0.45σ]
OotOffset-st: 1/3/3/4 [11]
KicOffset-st: 1/3/3/4 [11]
DiffImageQuality-fgm: 0.73 [8/11]
DiffImageOverlap-fno: 1.00 [17/17]

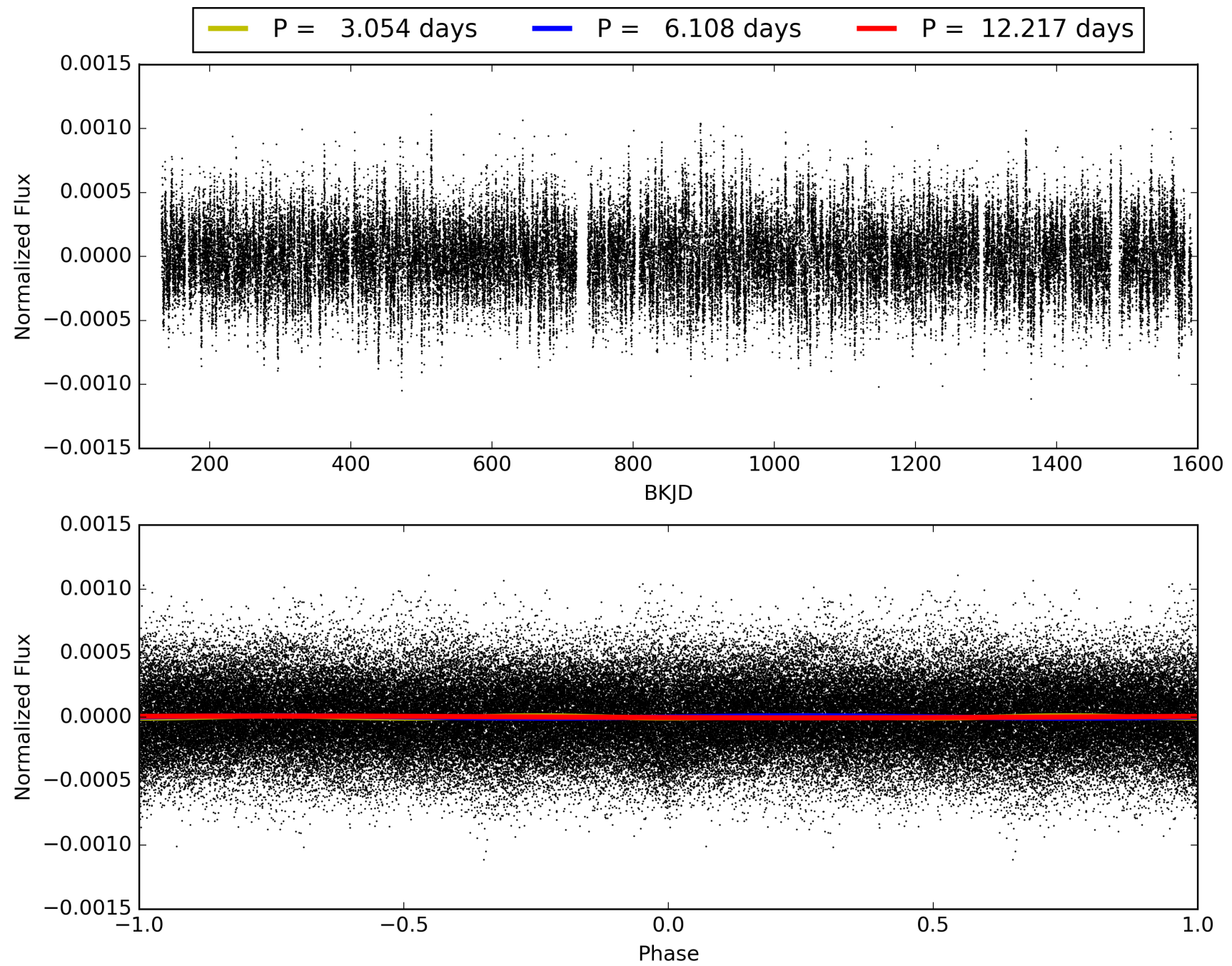
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:55:36 Z

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

TCE 009412623-01, PDC Light Curves

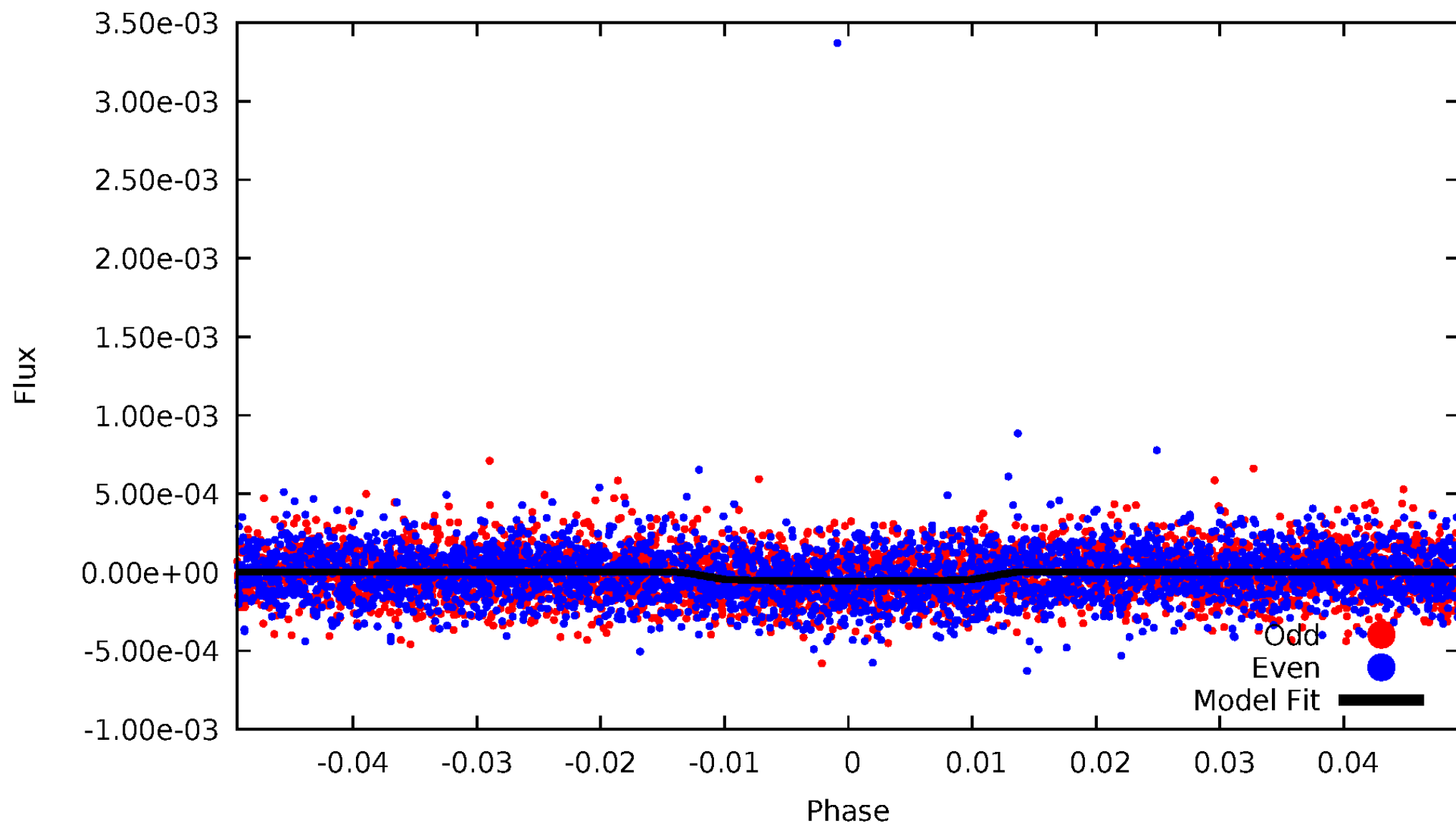


TCE 009412623-01



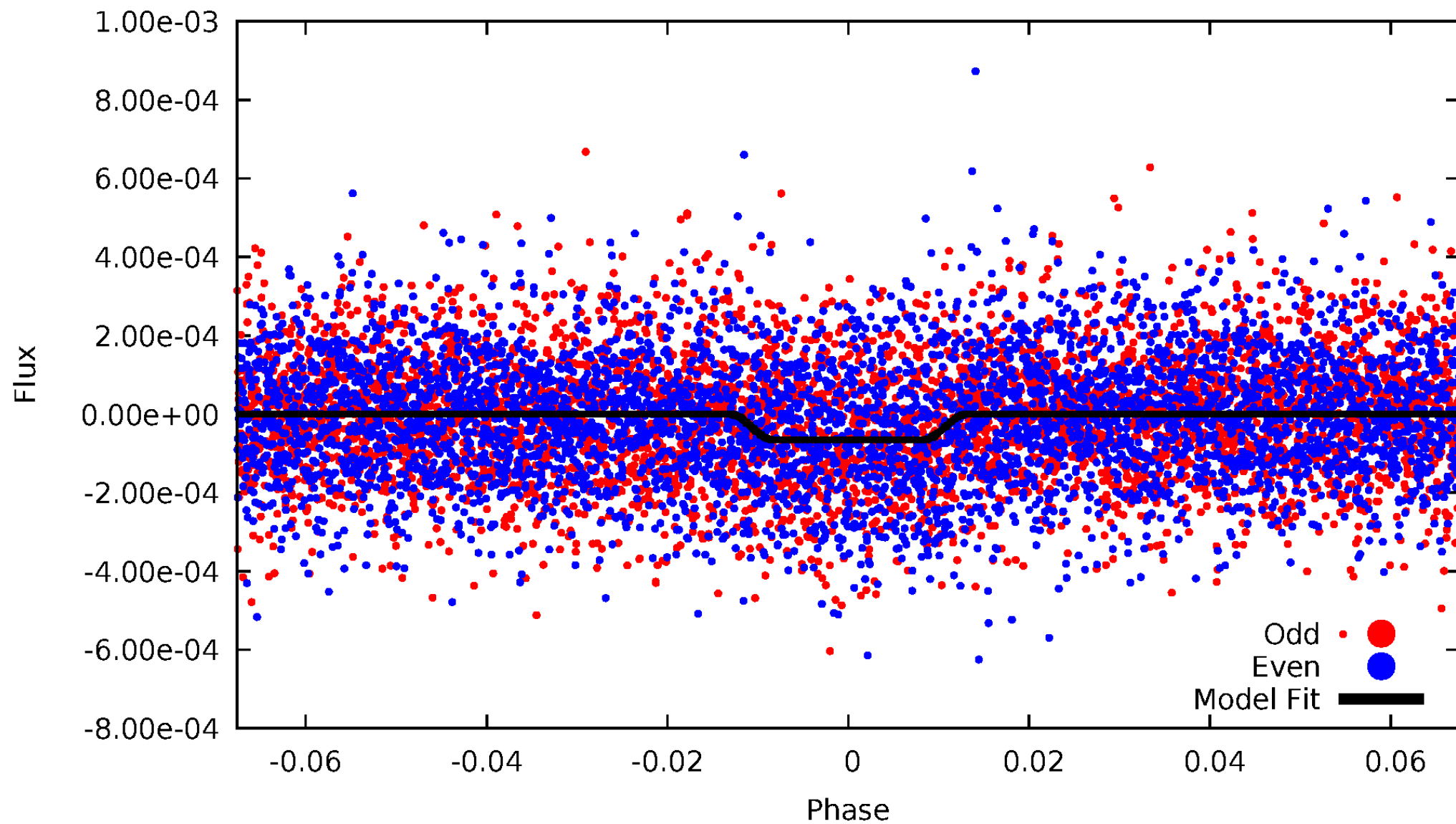
DV Odd/Even

TCE 009412623-01



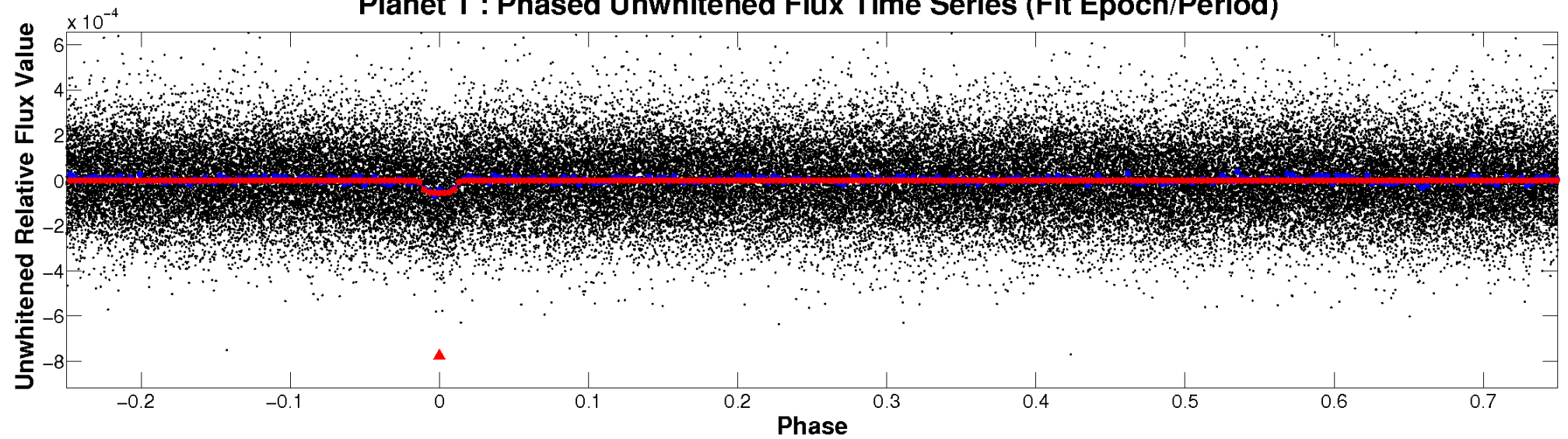
ALT Odd/Even

TCE 009412623-01

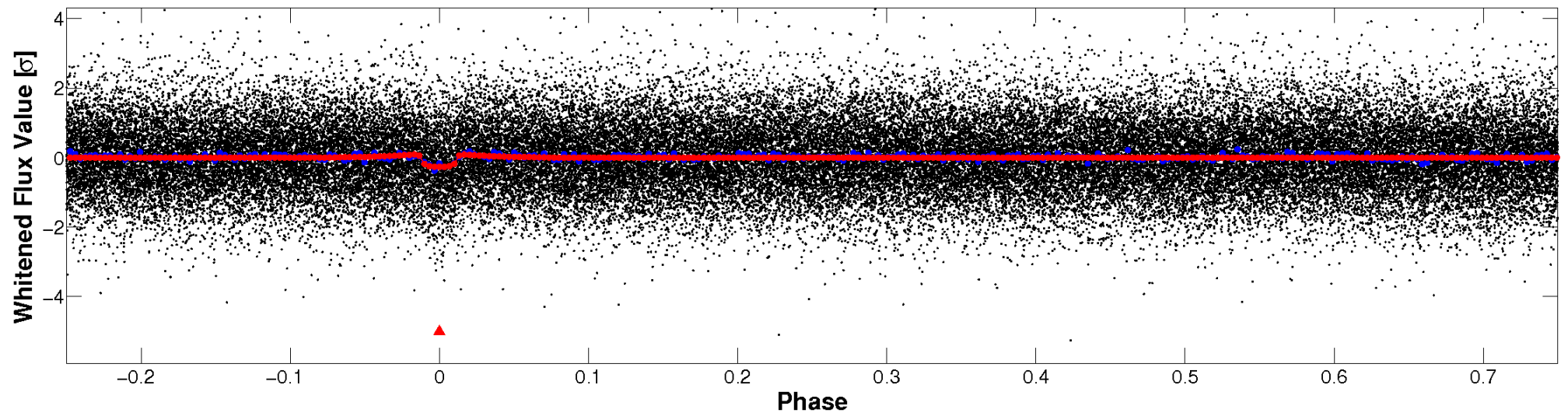


Non-Whitened Vs. Whitened Light Curve

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

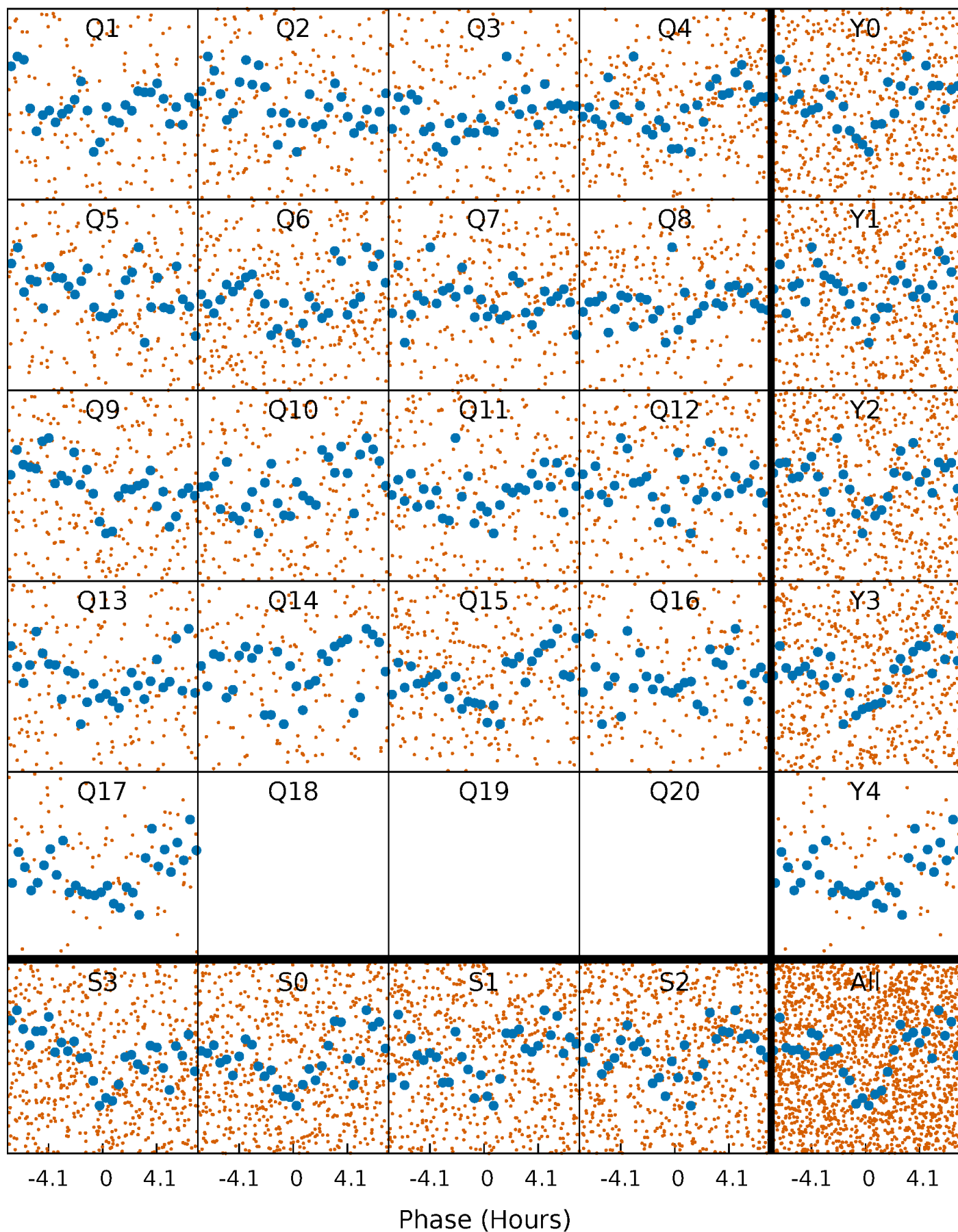


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



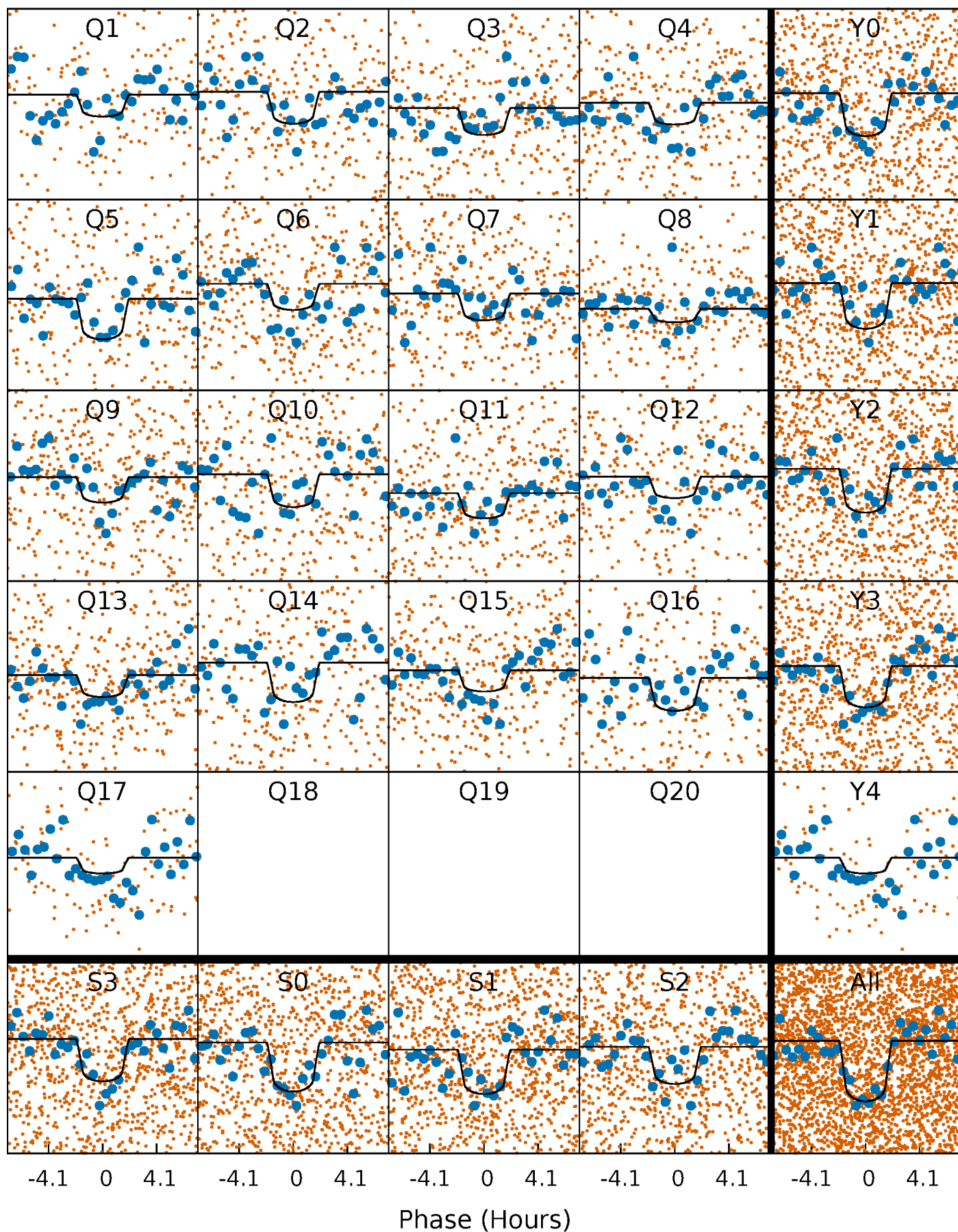
PDC Quarter-Phased Transit Curves

TCE 009412623-01 P= 6.108319 Days $T_0=131.872521$ (BKJD)



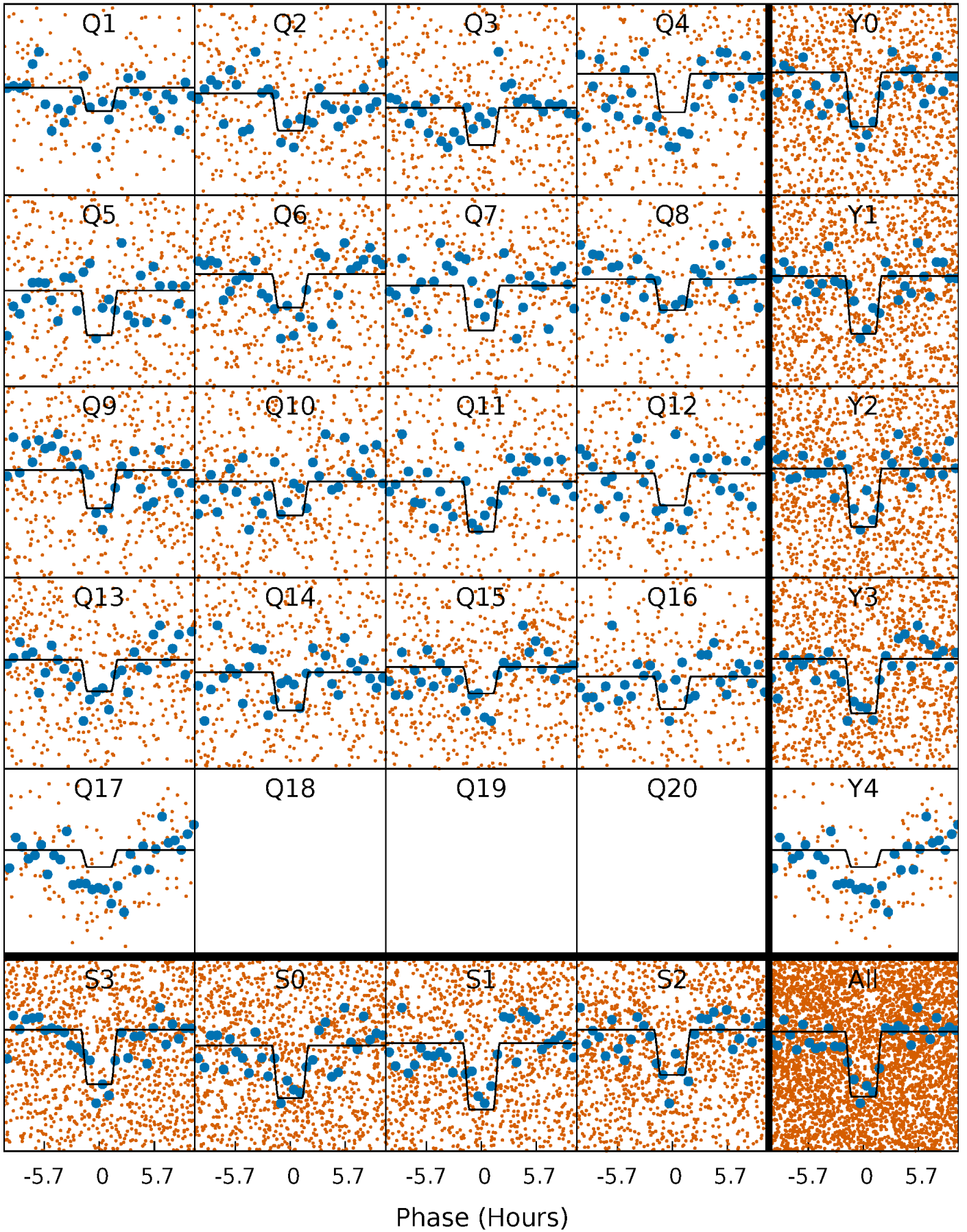
DV Quarter-Phased Transit Curves

TCE 009412623-01 P= 6.108319 Days $T_0=131.872521$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

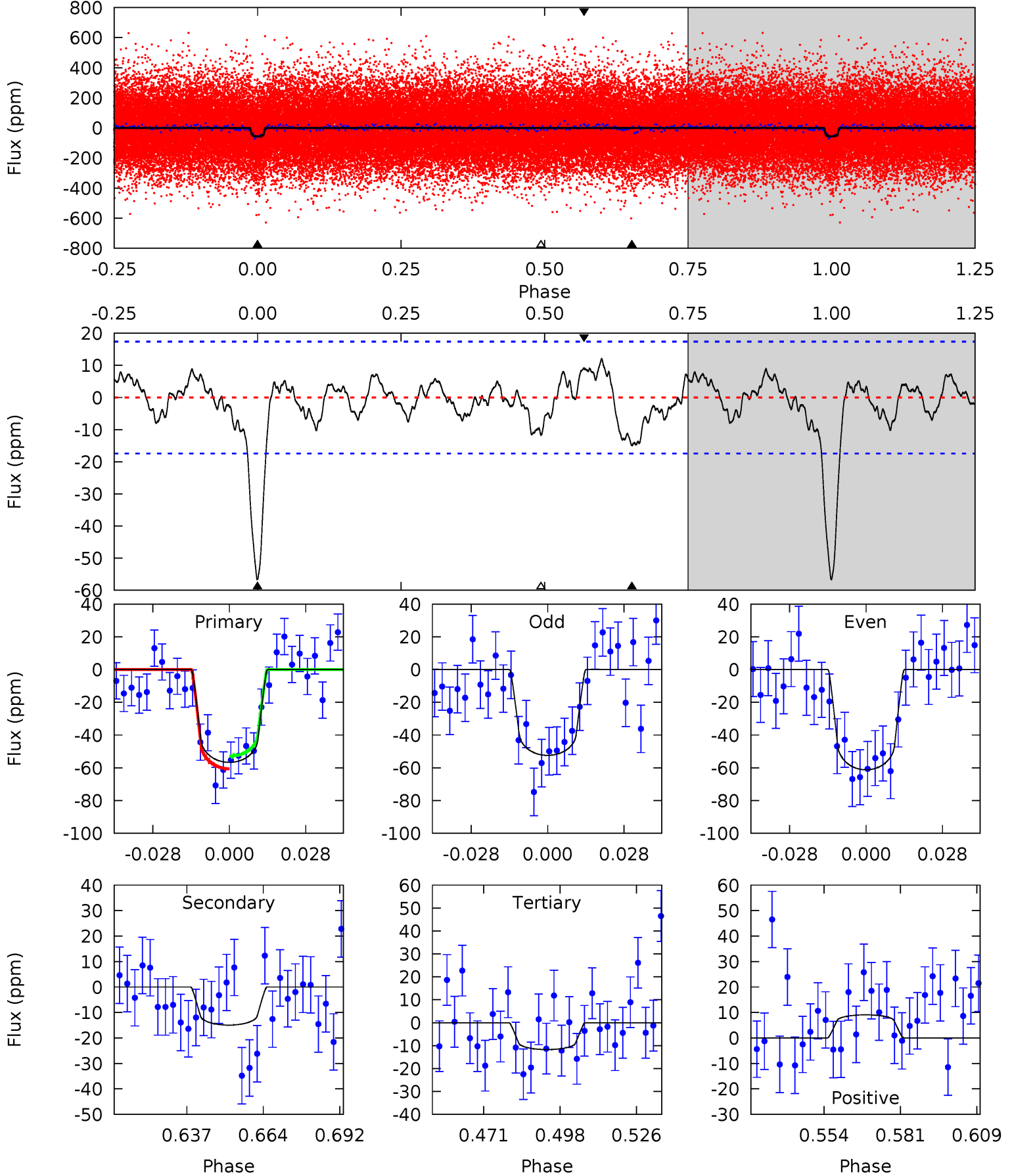
TCE 009412623-01 P= 6.108354 Days $T_0=131.867152$ (BKJD)



DV Model-Shift Uniqueness Test

009412623-01, P = 6.108319 Days, E = 125.764202 Days

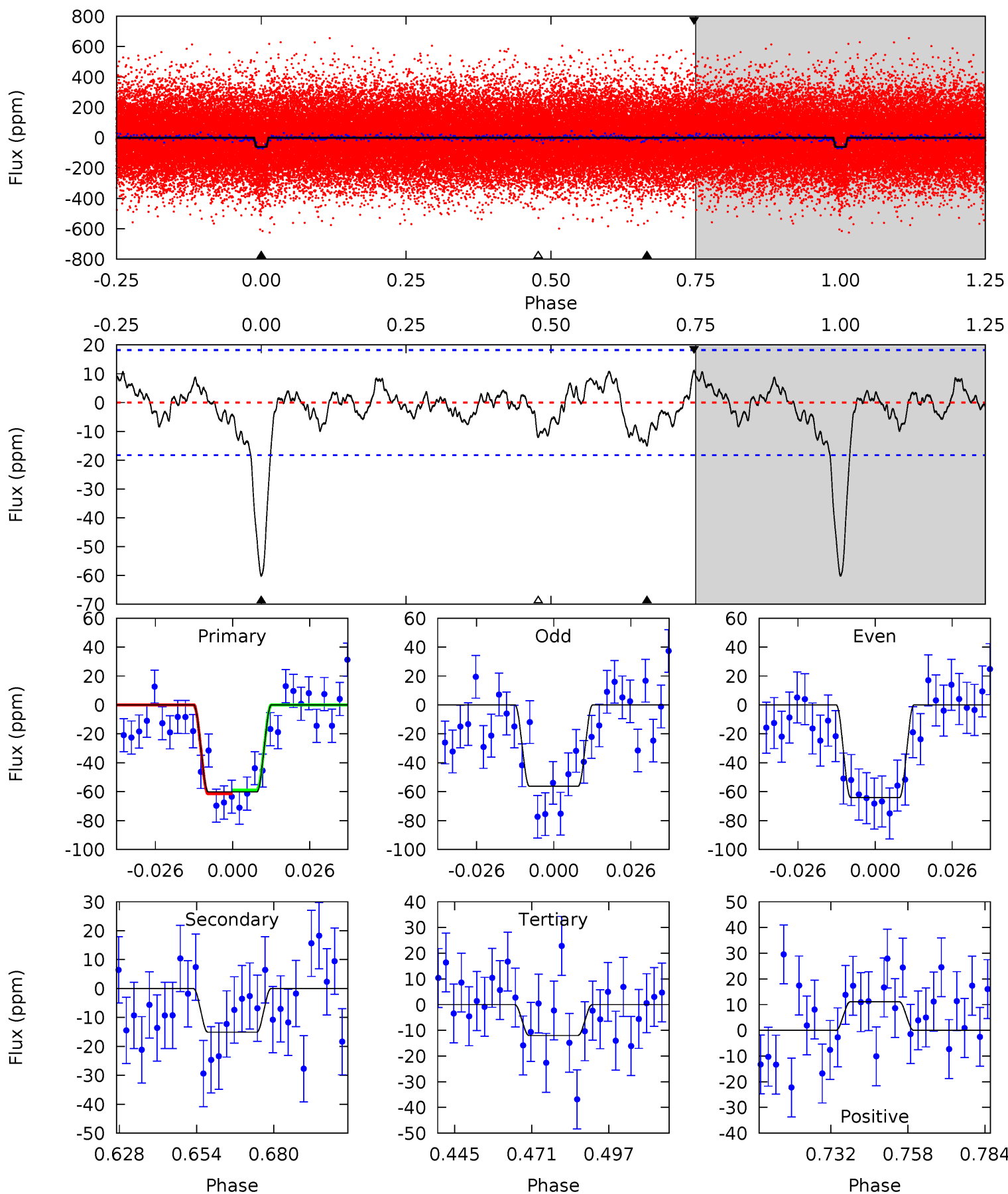
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	4.15	3.25	2.52	4.83	2.20	1.36	12.5	13.2	0.89	1.63	1.22	0.98	0.17	1.07



Alt Model-Shift Uniqueness Test

009412623-01, P = 6.108354 Days, E = 125.758798 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	4.01	3.18	2.95	4.84	2.22	1.33	12.8	13.0	0.83	1.06	1.05	0.98	0.16	0.34



Stellar Parameters For KIC 009412623

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6720^{+164}_{-234}	$4.316^{+0.084}_{-0.210}$	$-0.140^{+0.250}_{-0.300}$	$1.289^{+0.432}_{-0.154}$	$1.261^{+0.187}_{-0.187}$	$0.830^{+0.320}_{-0.443}$
	+2%/-3%	+2%/-5%	+179%/-214%	+34%/-12%	+15%/-15%	+39%/-53%
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 009412623-01 / KOI 4640.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-15 ± 4	$1.16^{+0.39}_{-0.42}$	1793^{+137}_{-98}	4791^{+1042}_{-571}	30^{+44}_{-15}
Alt.	-15 ± 4	$1.15^{+0.48}_{-0.40}$	1788^{+134}_{-94}	4745^{+1043}_{-604}	29^{+45}_{-15}

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 $A_{obs} \gg 1.0$

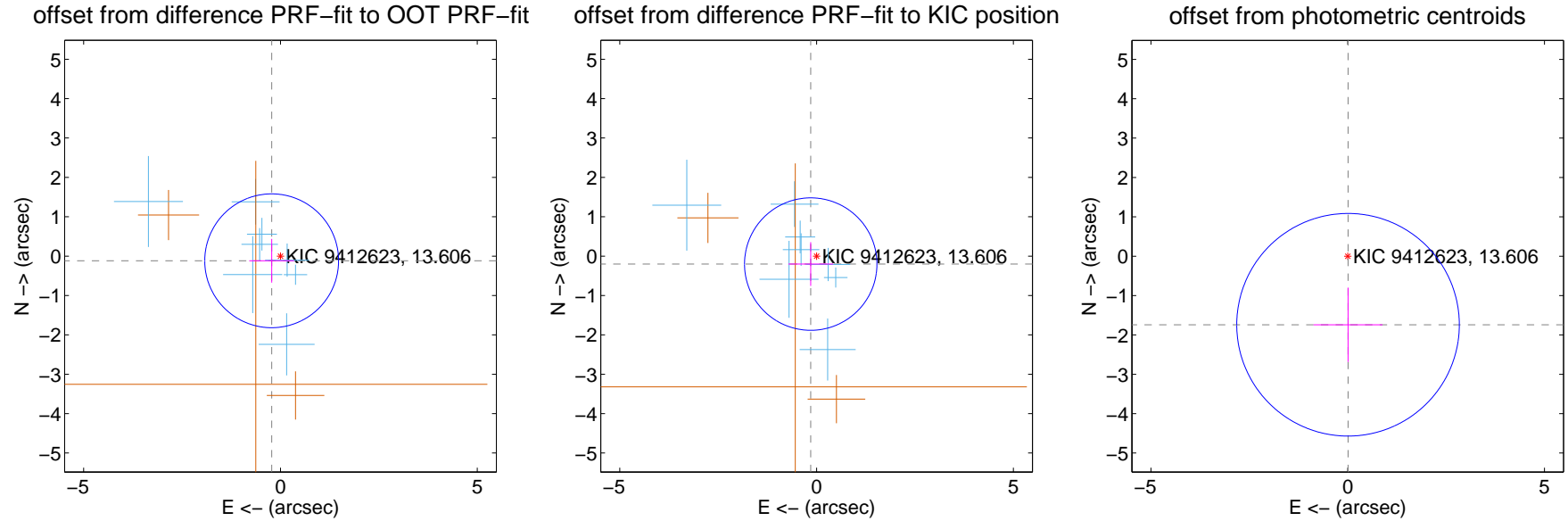
DV Centroid Data

Supplemental centroid analysis for 009412623-01. Kepler magnitude: 13.61. Transit SNR 9.71

There are 8 quarters with good PRF difference image offsets

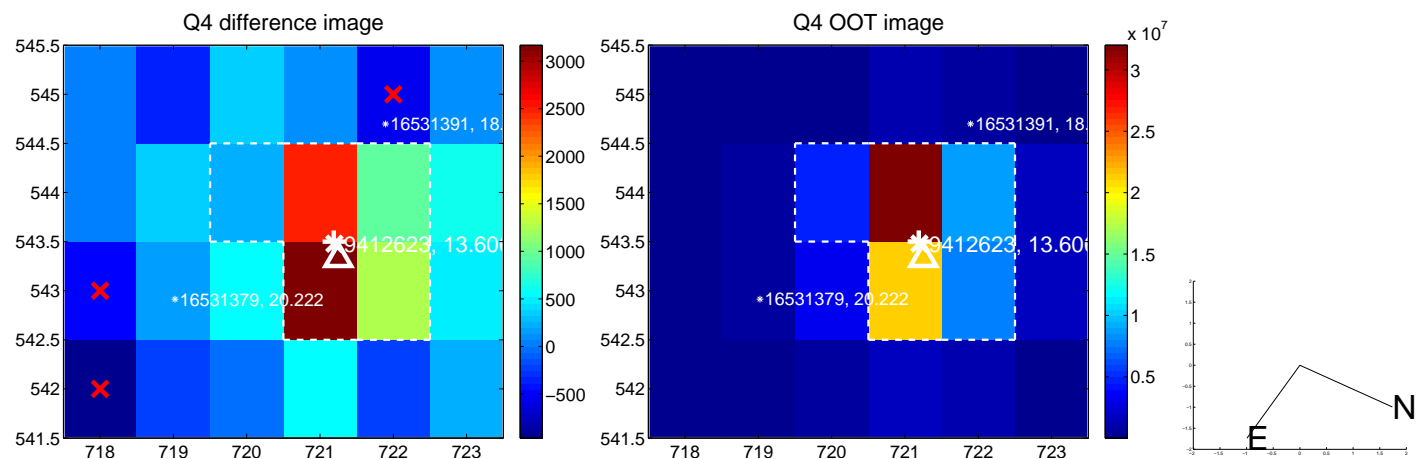
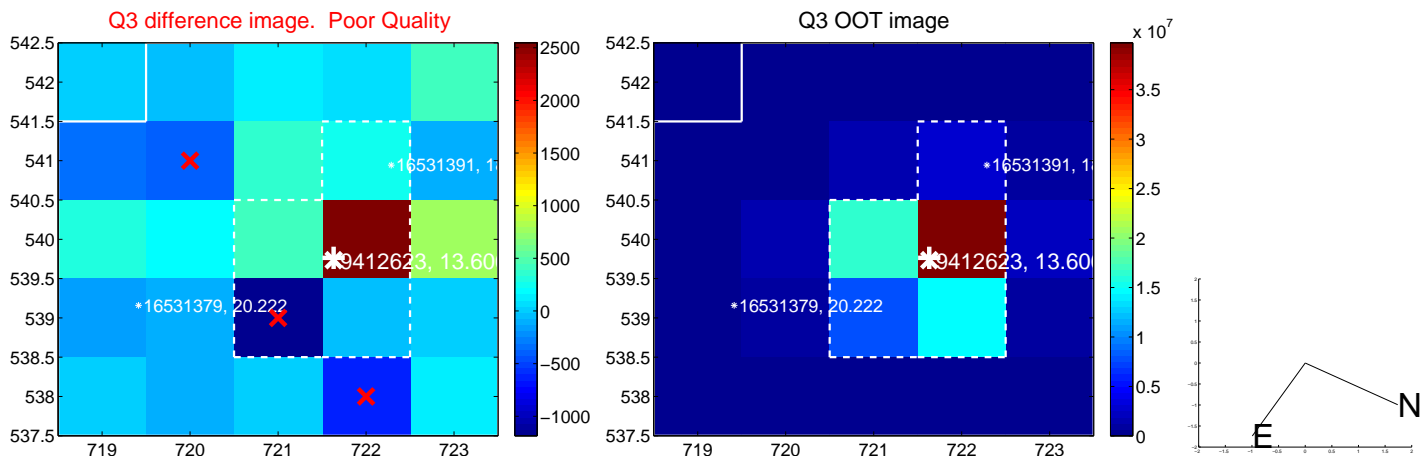
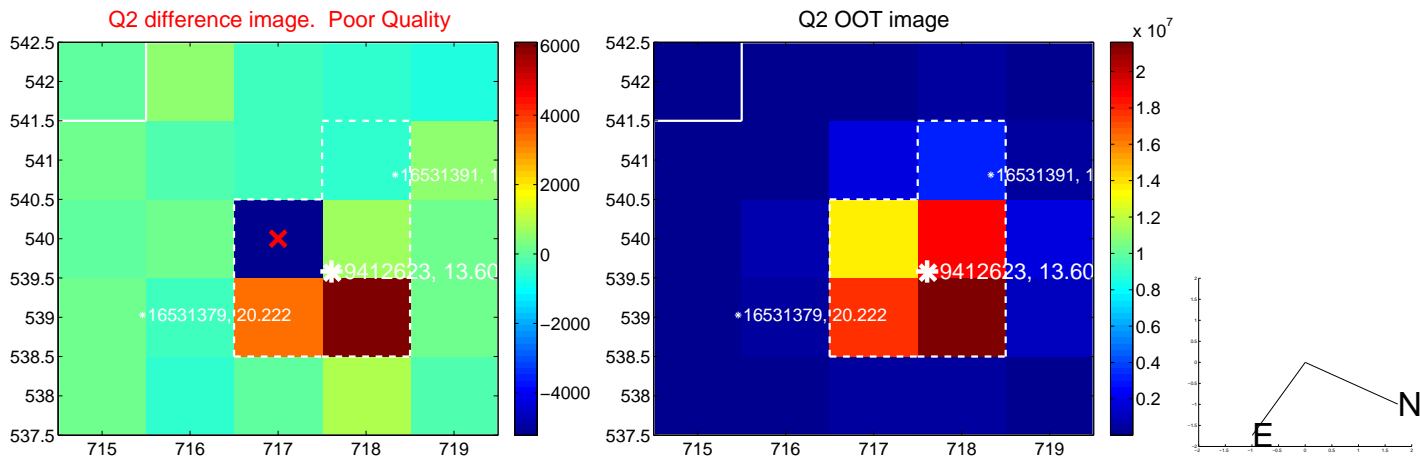
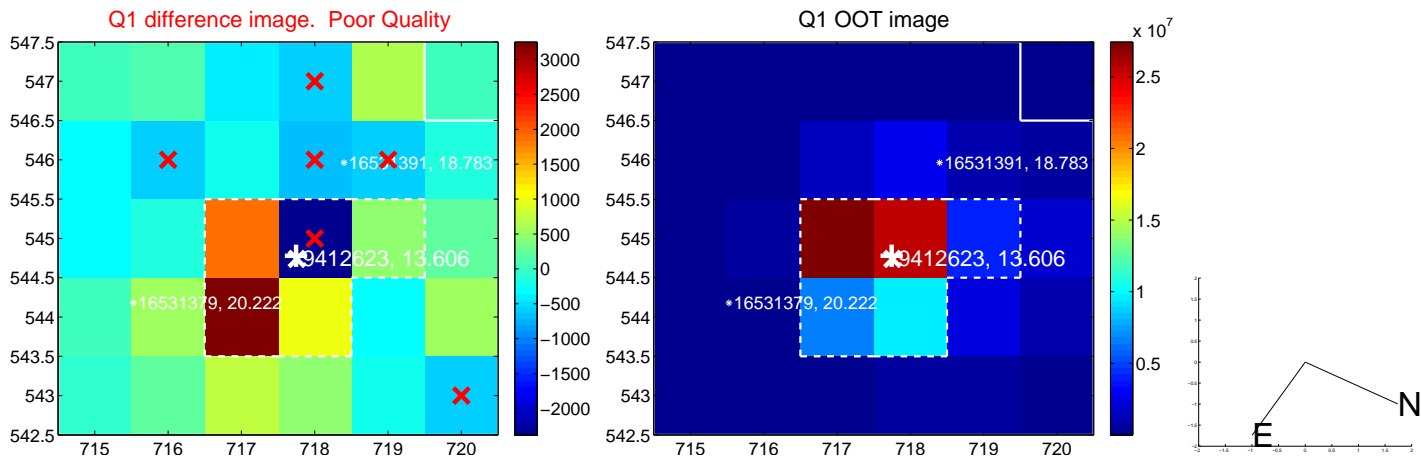
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.252 ± 0.567	0.45	0.223 ± 0.570	-0.118 ± 0.556
PRF-fit source offset from KIC position	0.250 ± 0.561	0.45	0.148 ± 0.570	-0.202 ± 0.556
photometric centroid source offset	1.74 ± 0.94	1.85	-0.01 ± 0.88	-1.74 ± 0.94

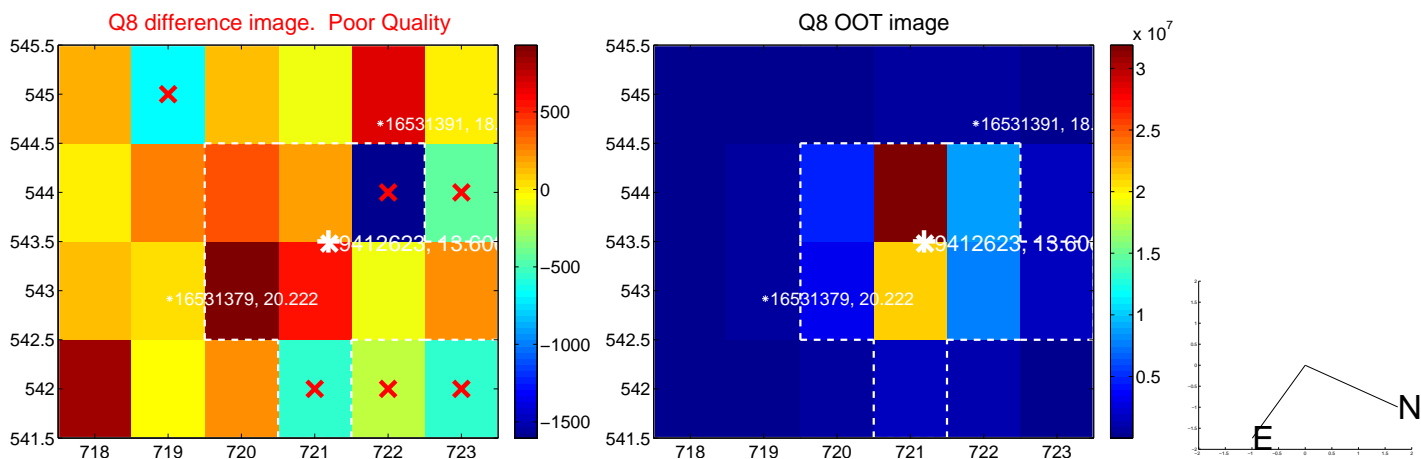
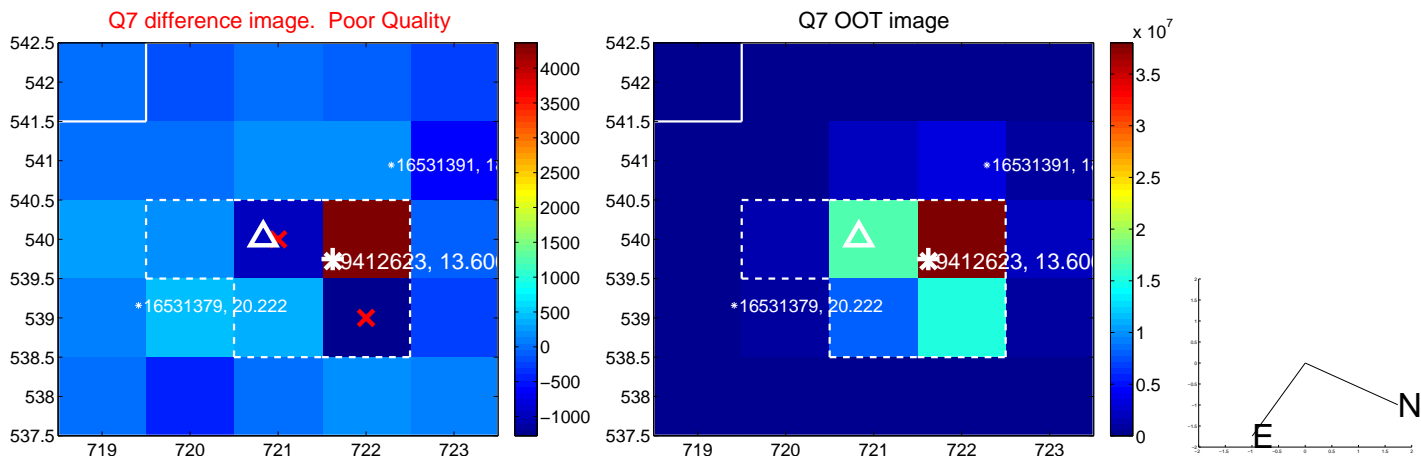
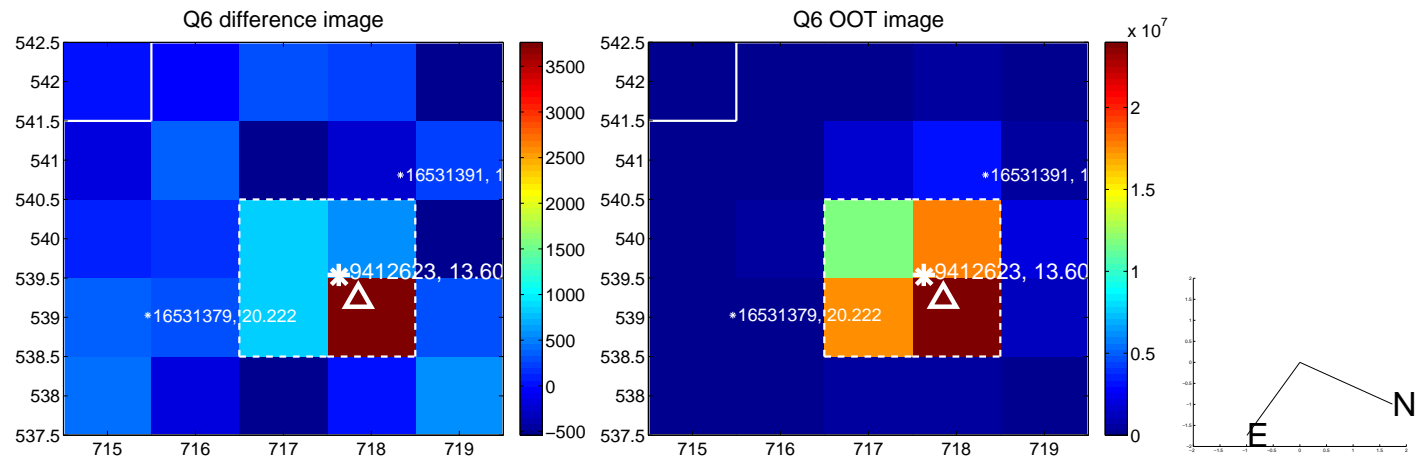
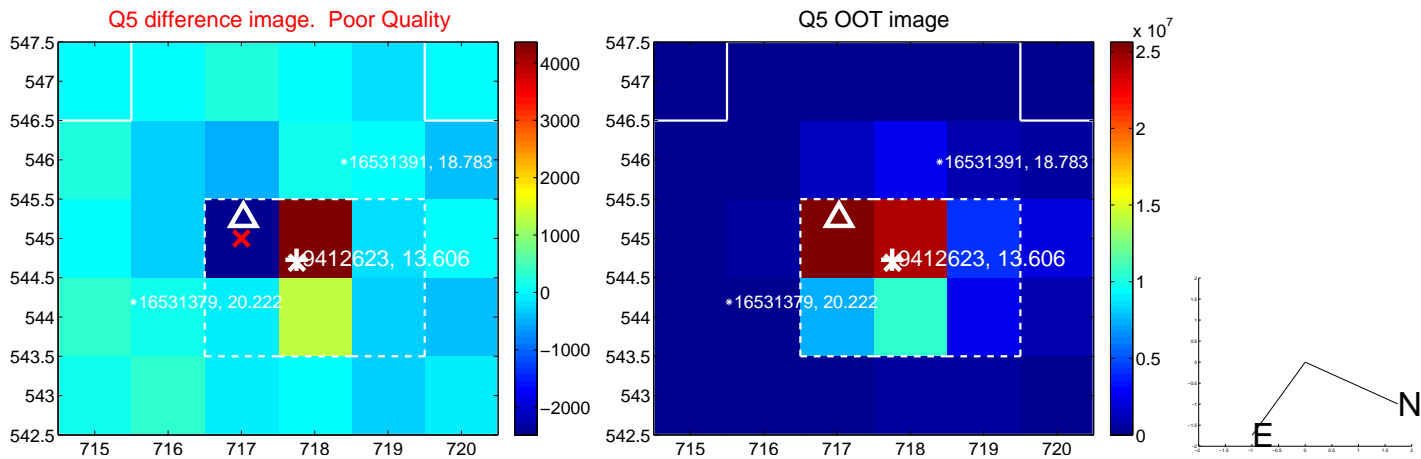


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

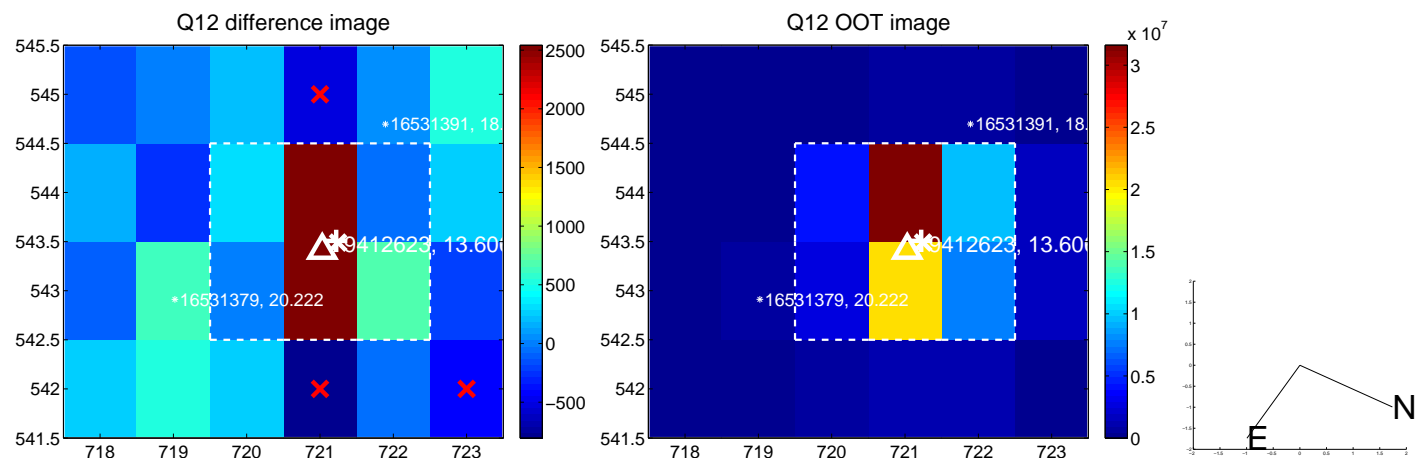
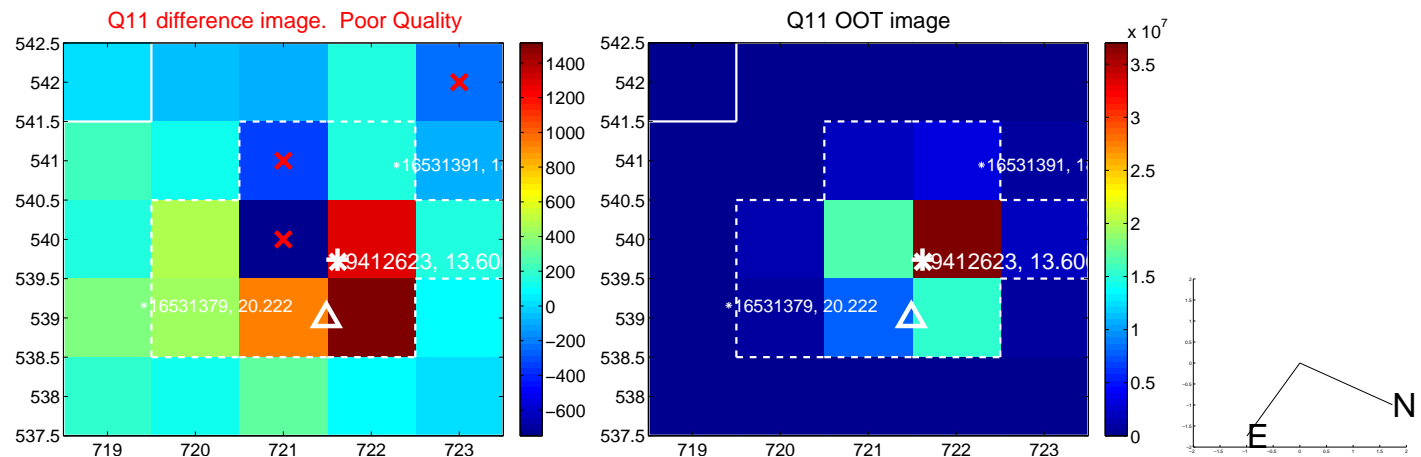
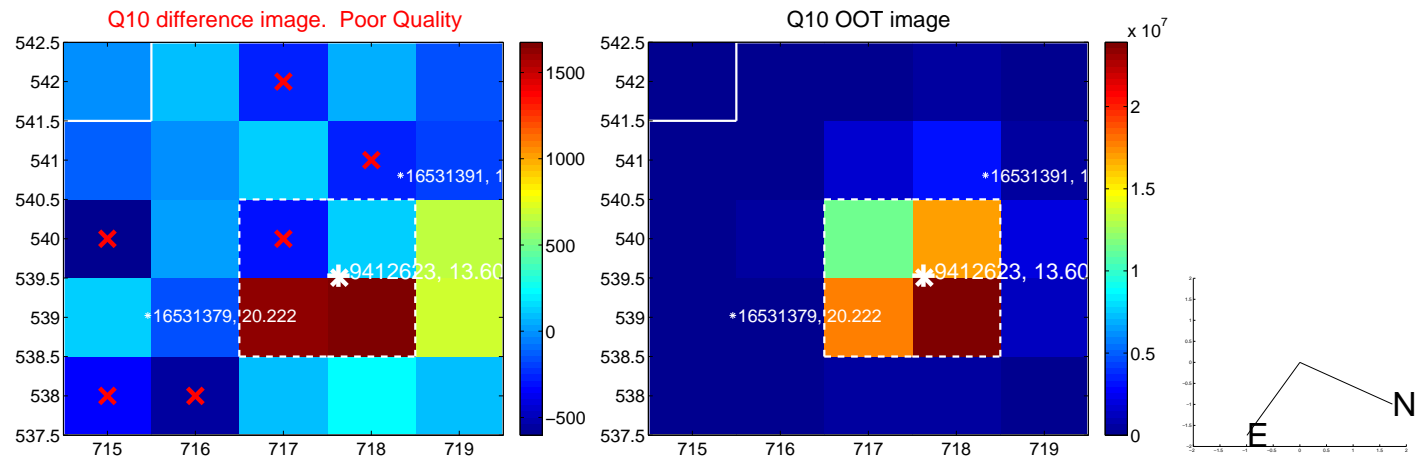
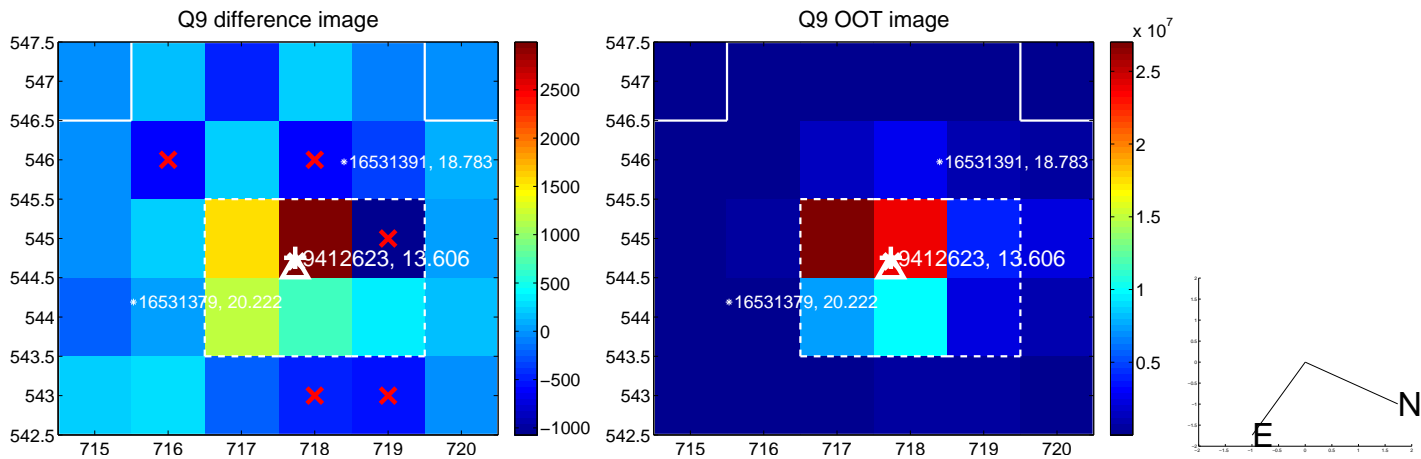
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



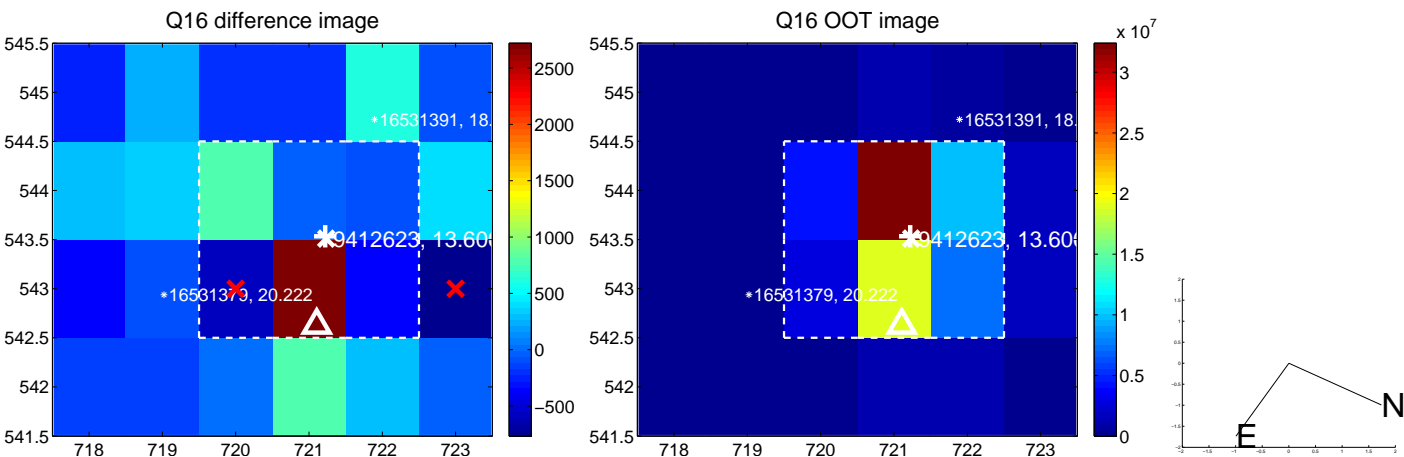
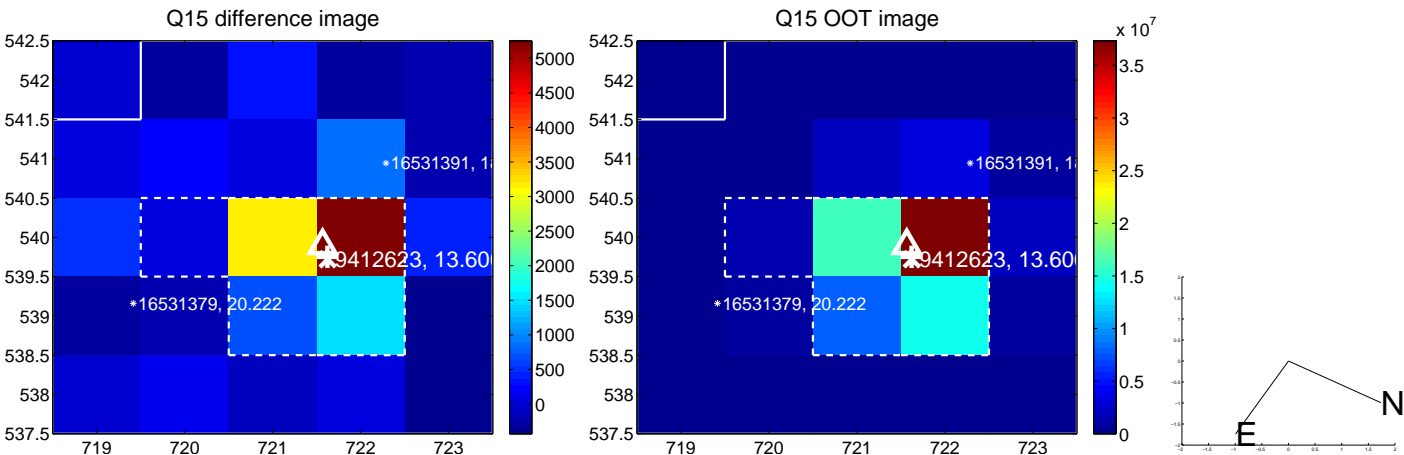
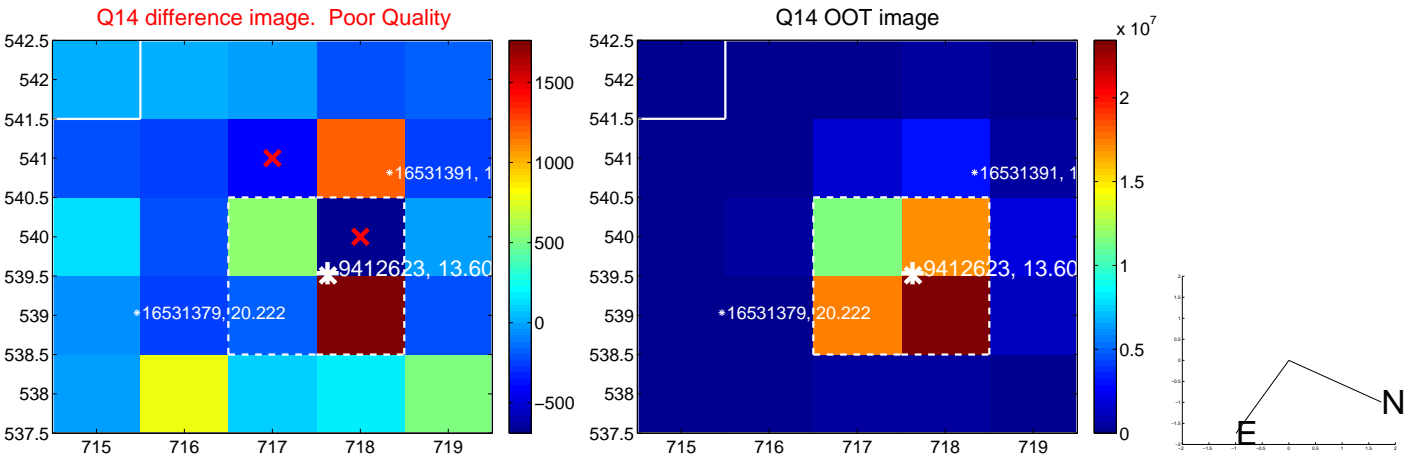
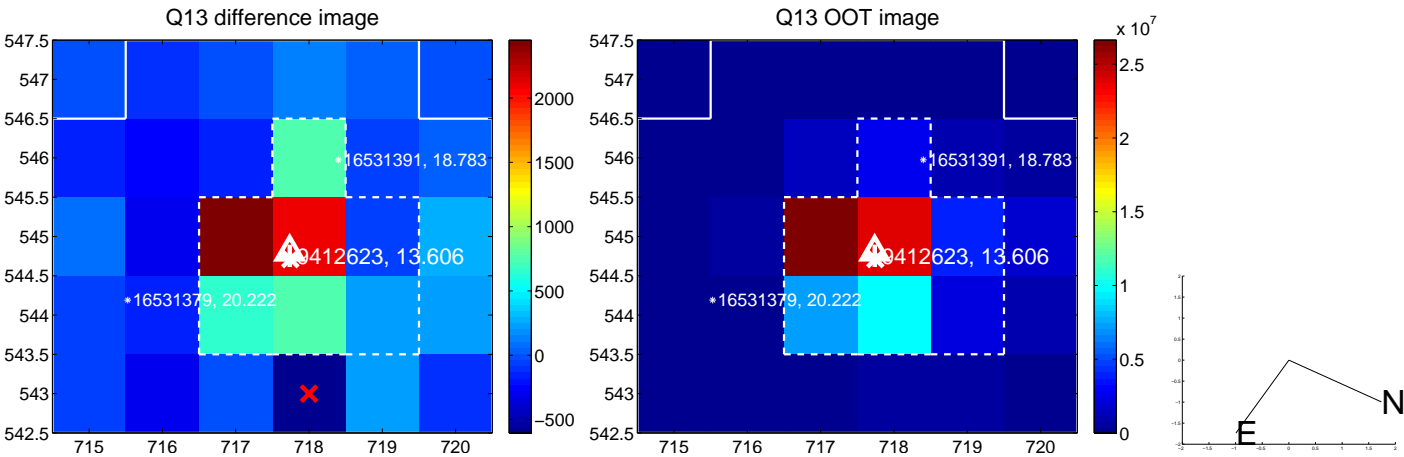
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



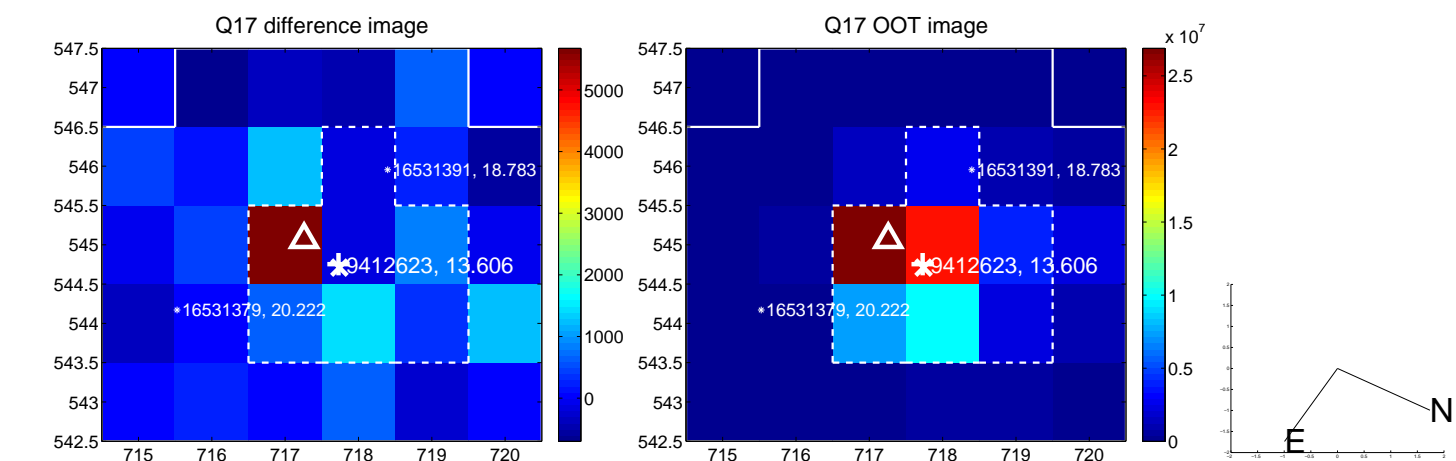
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



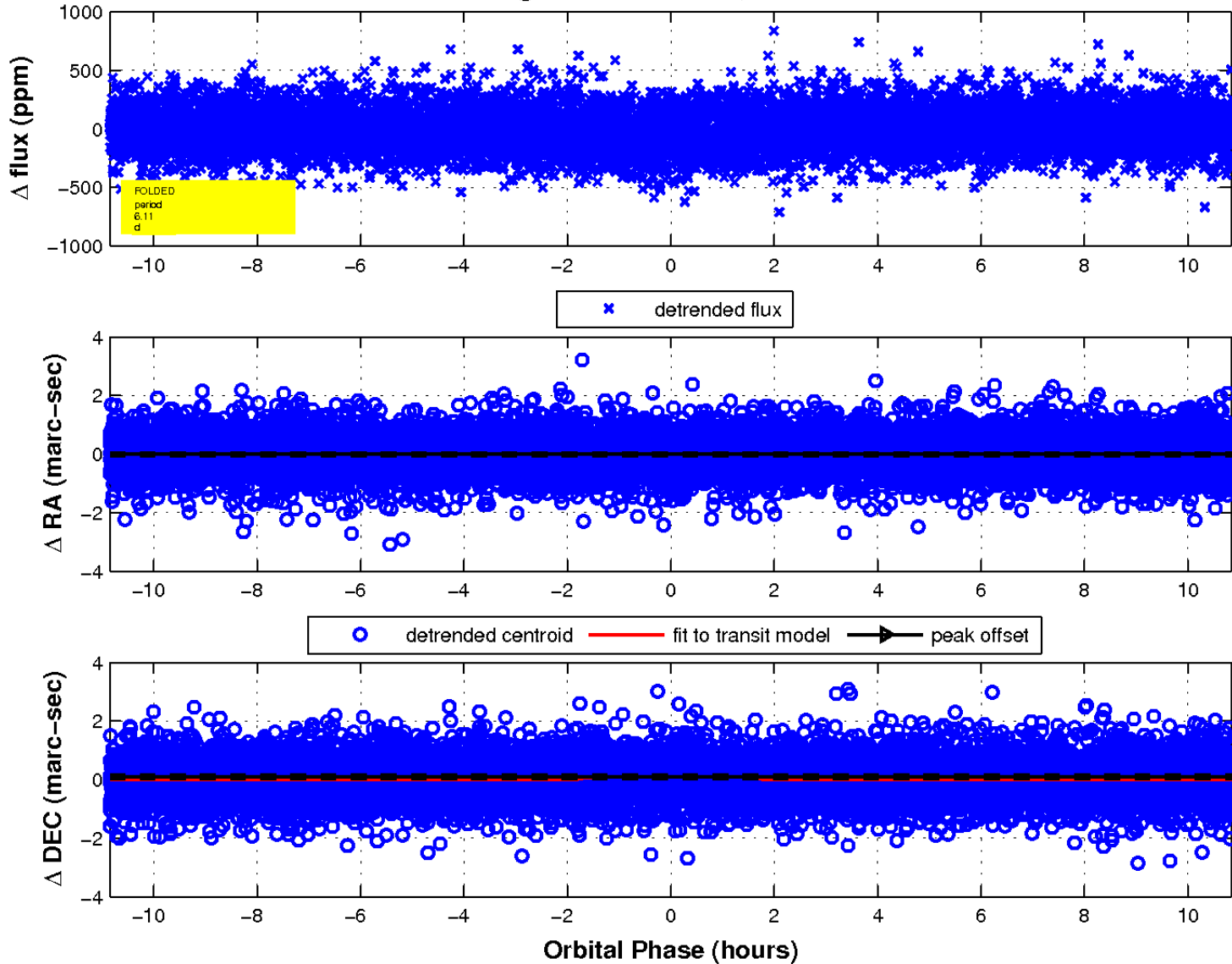
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

