

KIC 003102309

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})
003102309-01	OBS	7643.01	4.202536	132.300392	35.8	6.608	7.5	7.5	1.01	5596	1.27	395.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003102309-01	OBS	FP	0.10	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.

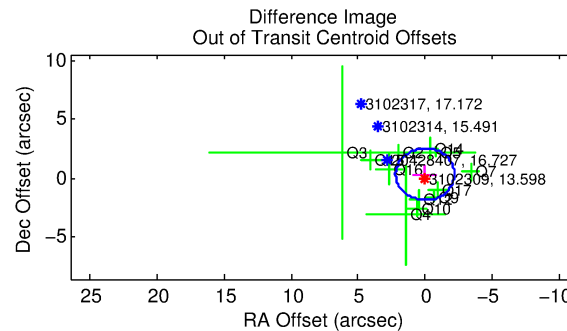
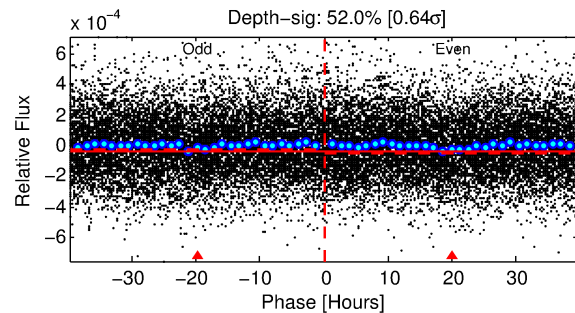
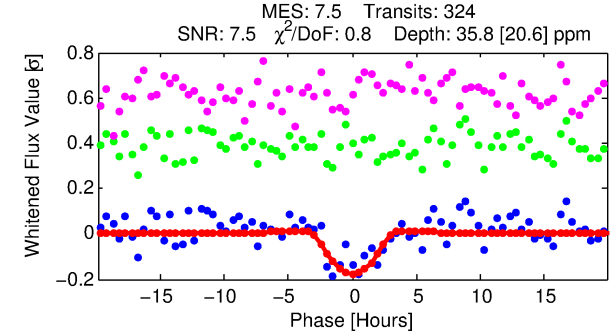
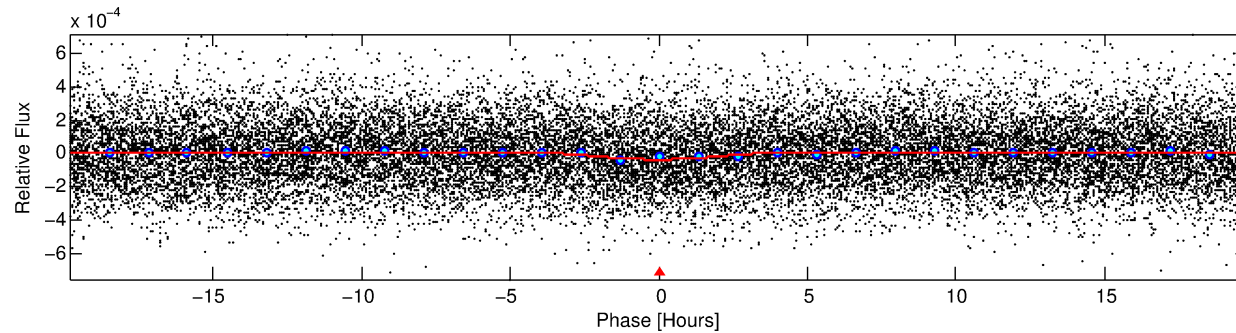
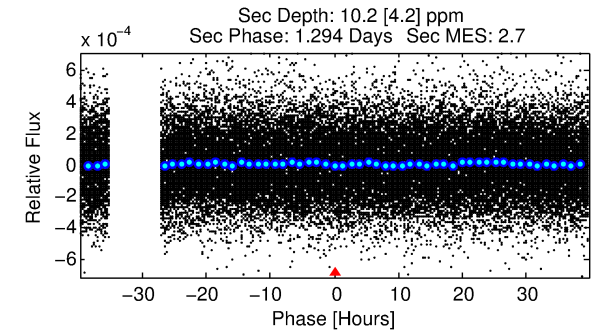
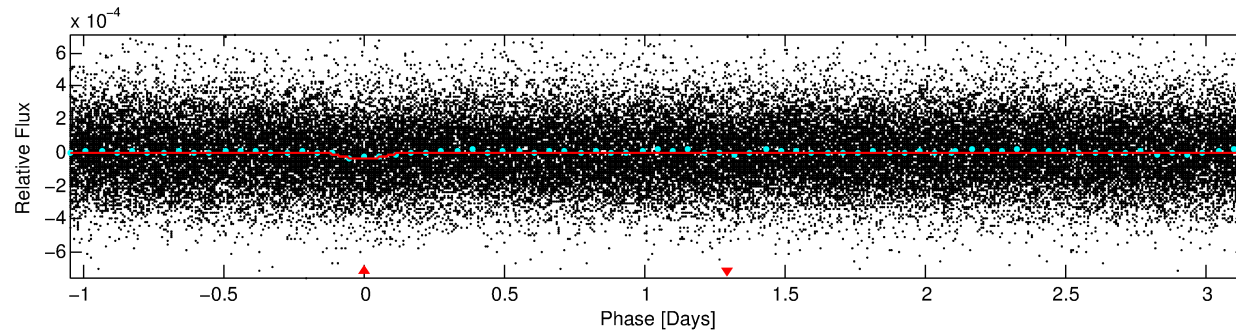
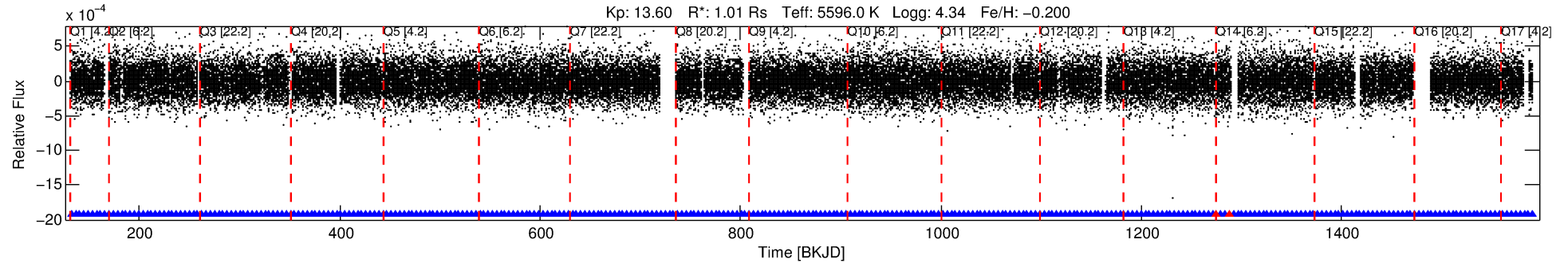
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003102309-01

No Significant Match Found

DV One-Page Summary

KIC: 3102309 Candidate: 1 of 1 Period: 4.203 d



DV Fit Results:

Period = 4.20254 [0.00010] d
Epoch = 132.3004 [0.0194] BKJD
Rp/R* = 0.0115 [0.0438]
a/R* = 1.26 [0.47]
b = 1.00 [0.07]
Seff = 395.09 [152.51]
Teq = 1137 [110] K
Rp = 1.27 [4.87] Re
a = 0.0479 [0.0121] AU
Ag = 7.90 [60.43] [0.11σ]
Teffp = 2947 [5630] K [0.32σ]

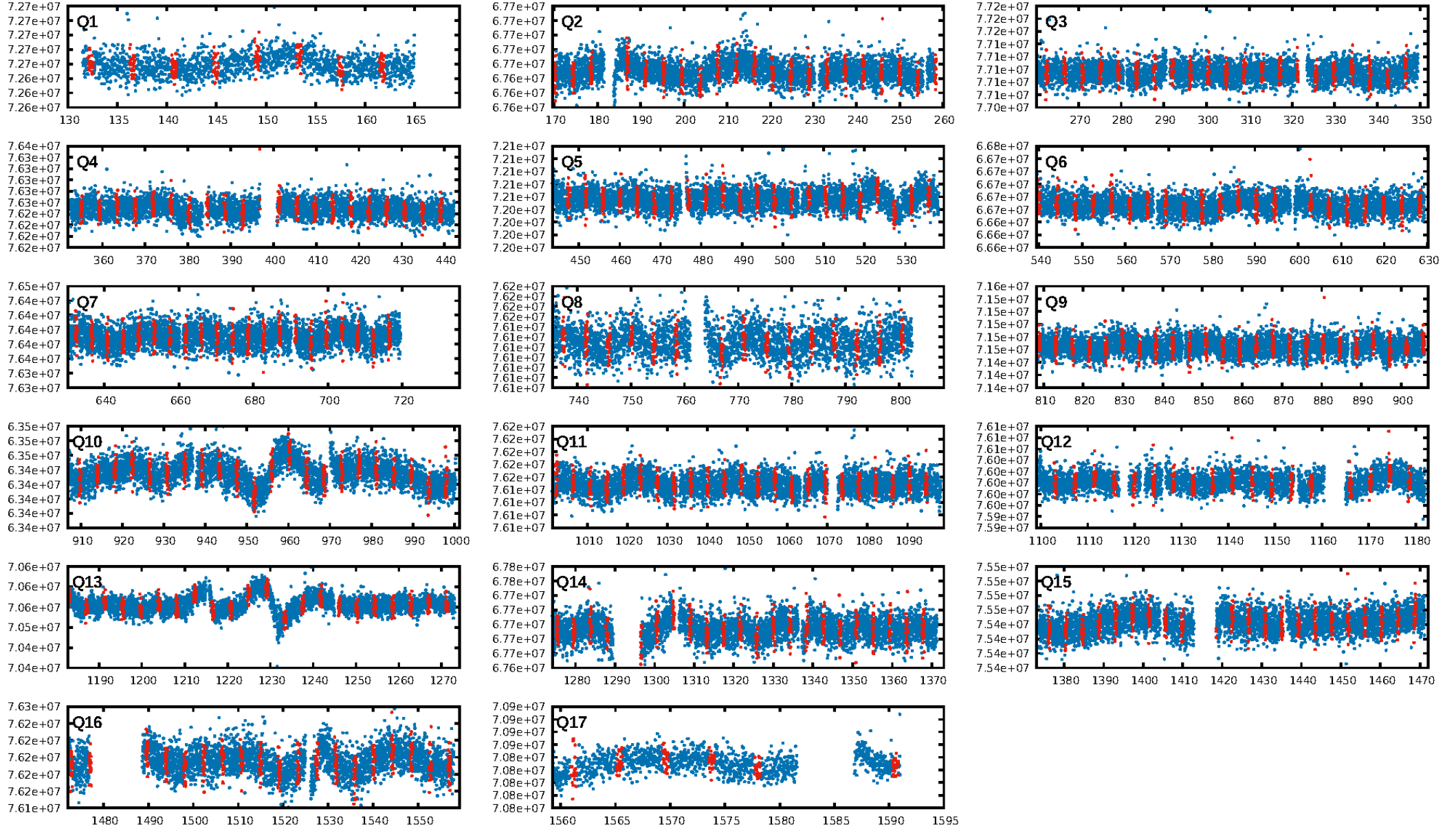
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.74e-14
RollingBand-fgt: 0.99 [308/310]
GhostDiagnostic-chr: 3.544
Centroid-sig: 4.2%
Centroid-so: 2.474 arcsec [1.42σ]
OotOffset-rm: 0.356 arcsec [0.49σ]
KicOffset-rm: 0.185 arcsec [0.24σ]
OotOffset-st: 3/3/3/3 [12]
KicOffset-st: 3/3/3/3 [12]
DiffImageQuality-fgm: 0.58 [7/12]
DiffImageOverlap-fno: 1.00 [17/17]

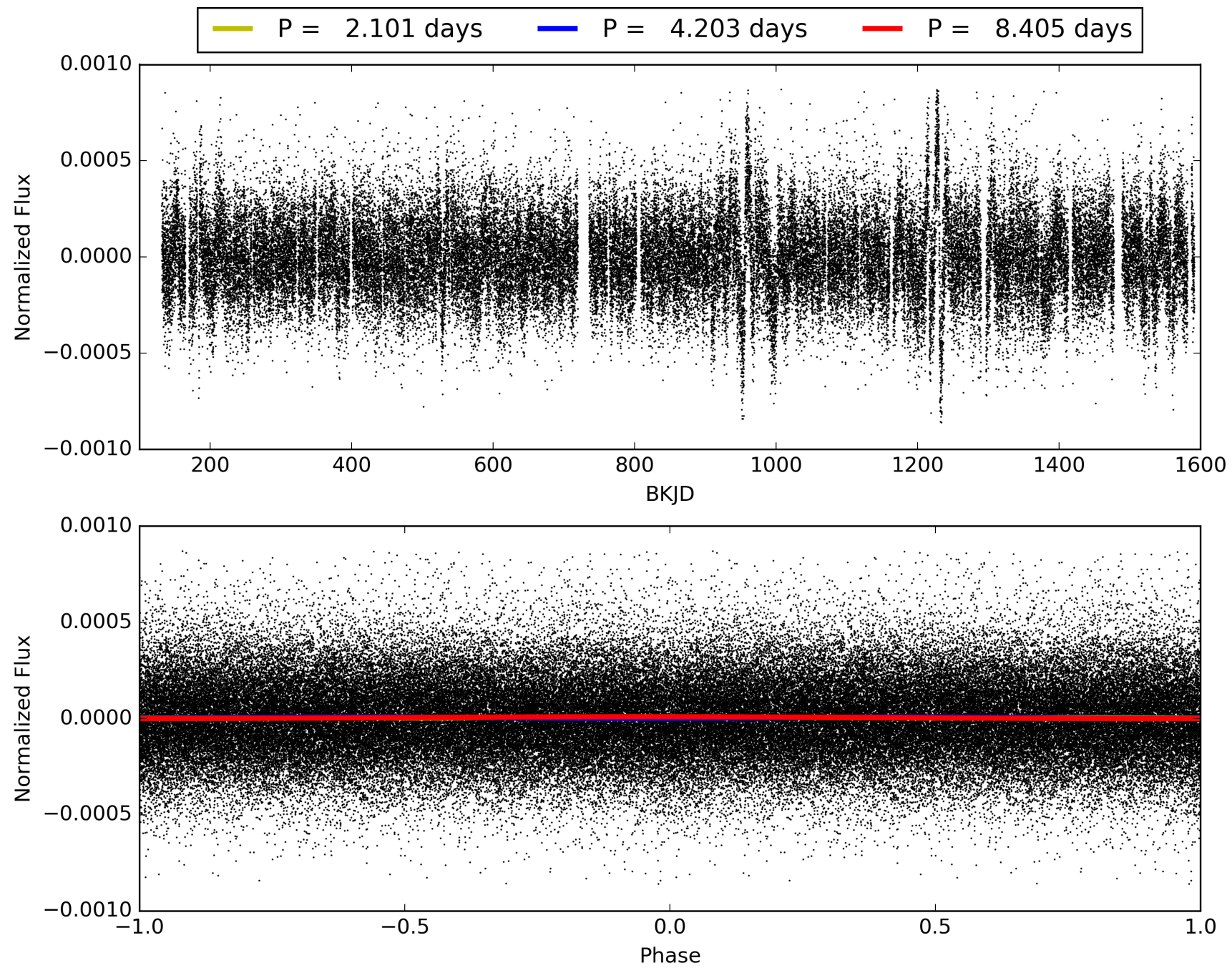
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:30:07 Z

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

TCE 003102309-01, PDC Light Curves

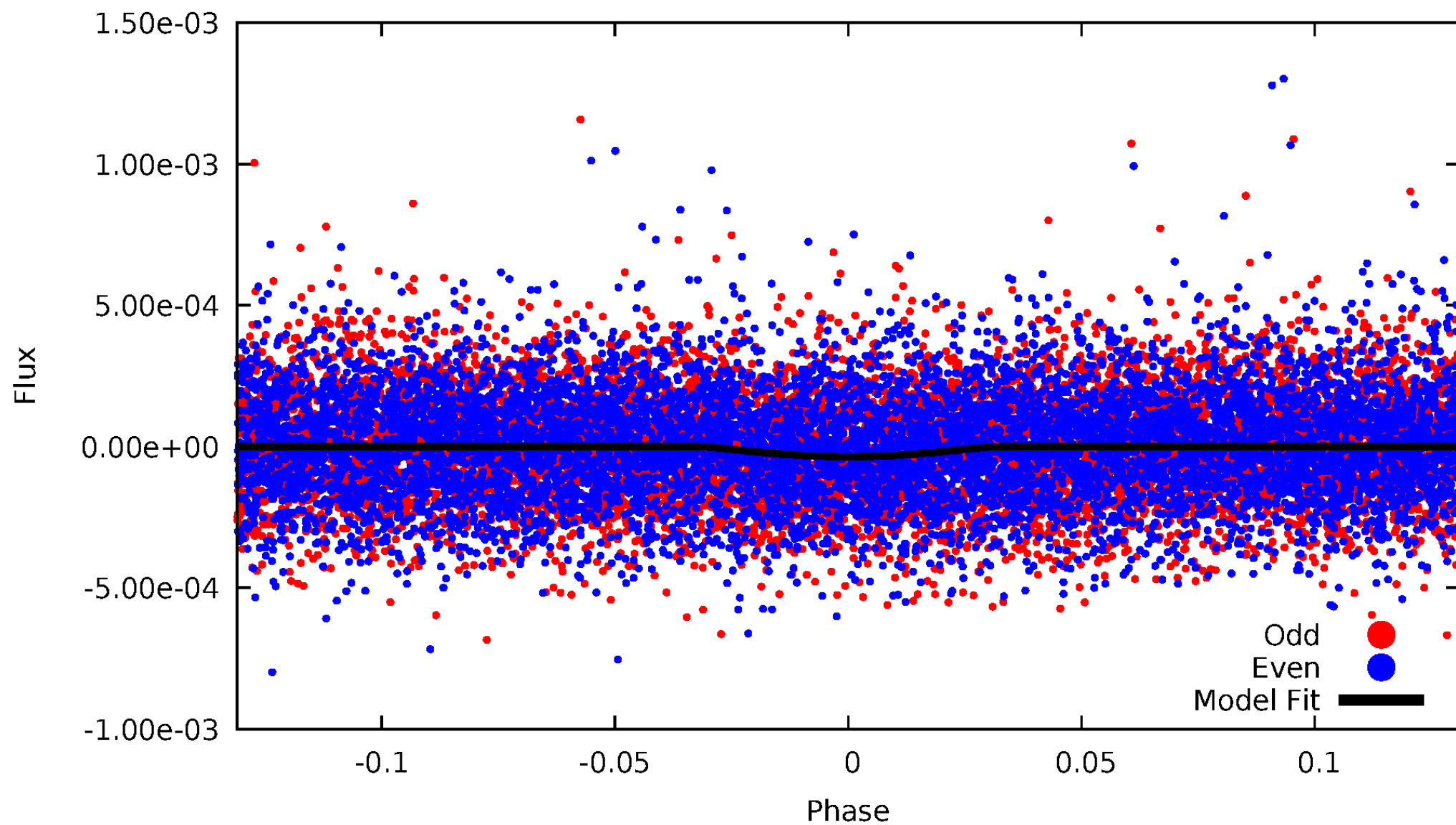


TCE 003102309-01



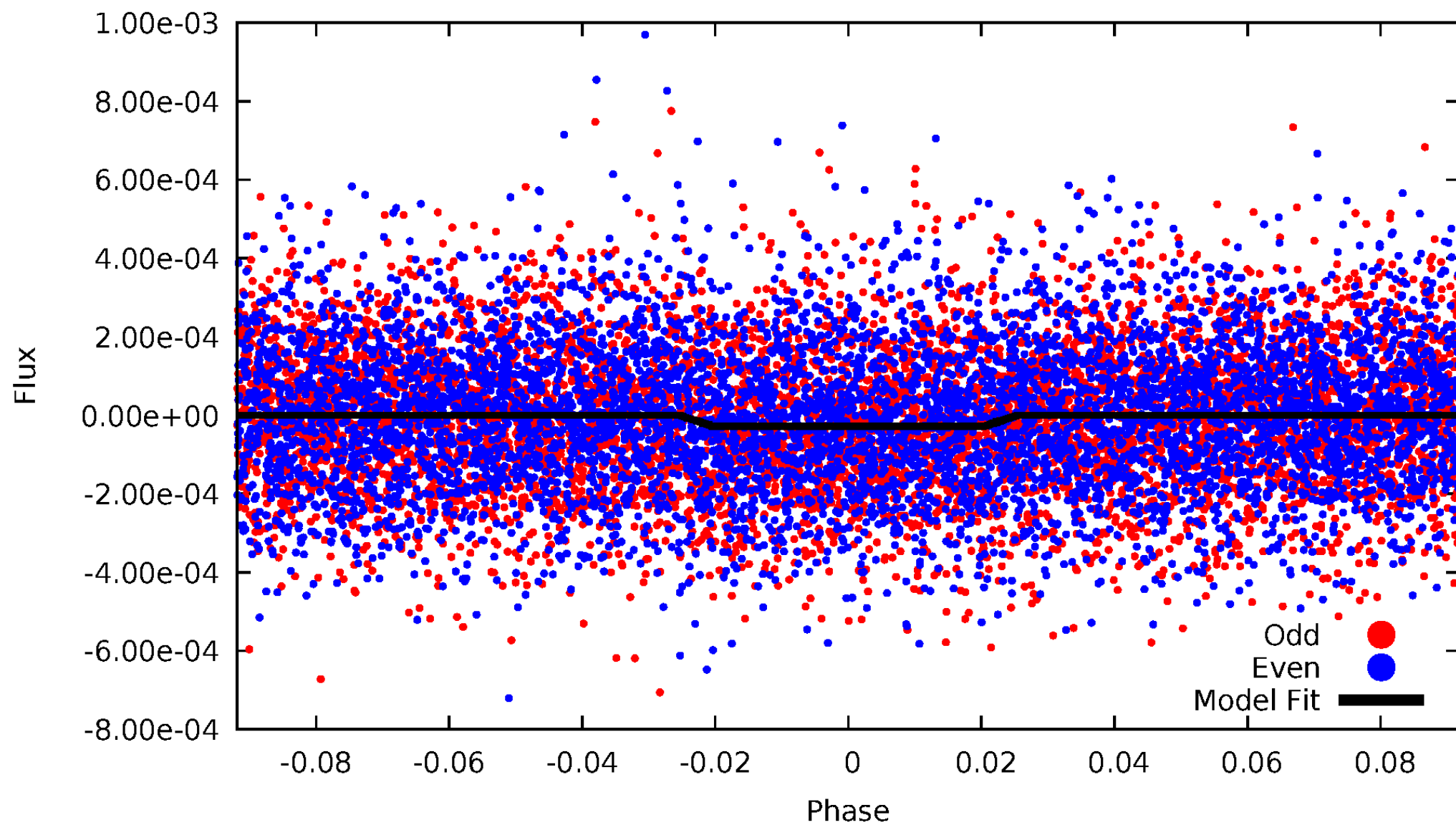
DV Odd/Even

TCE 003102309-01

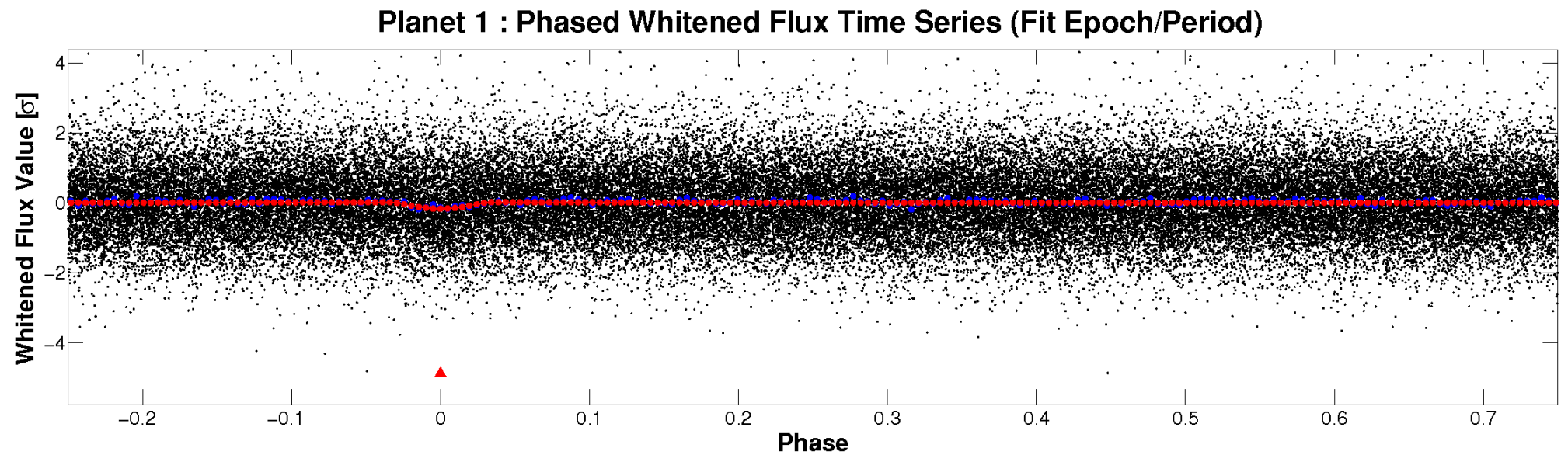
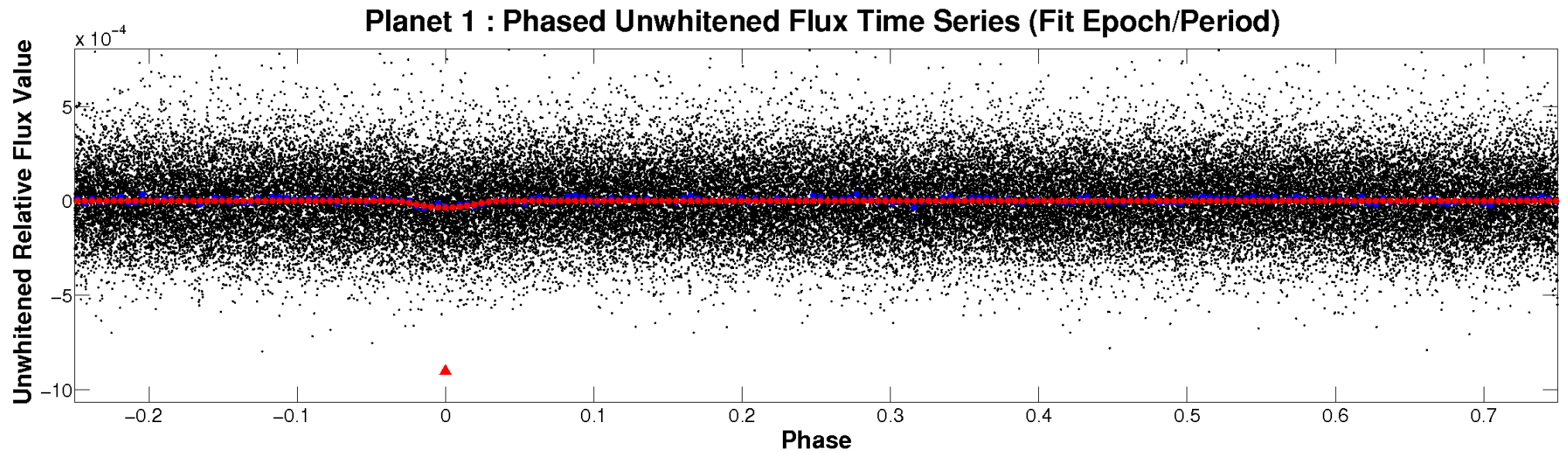


ALT Odd/Even

TCE 003102309-01

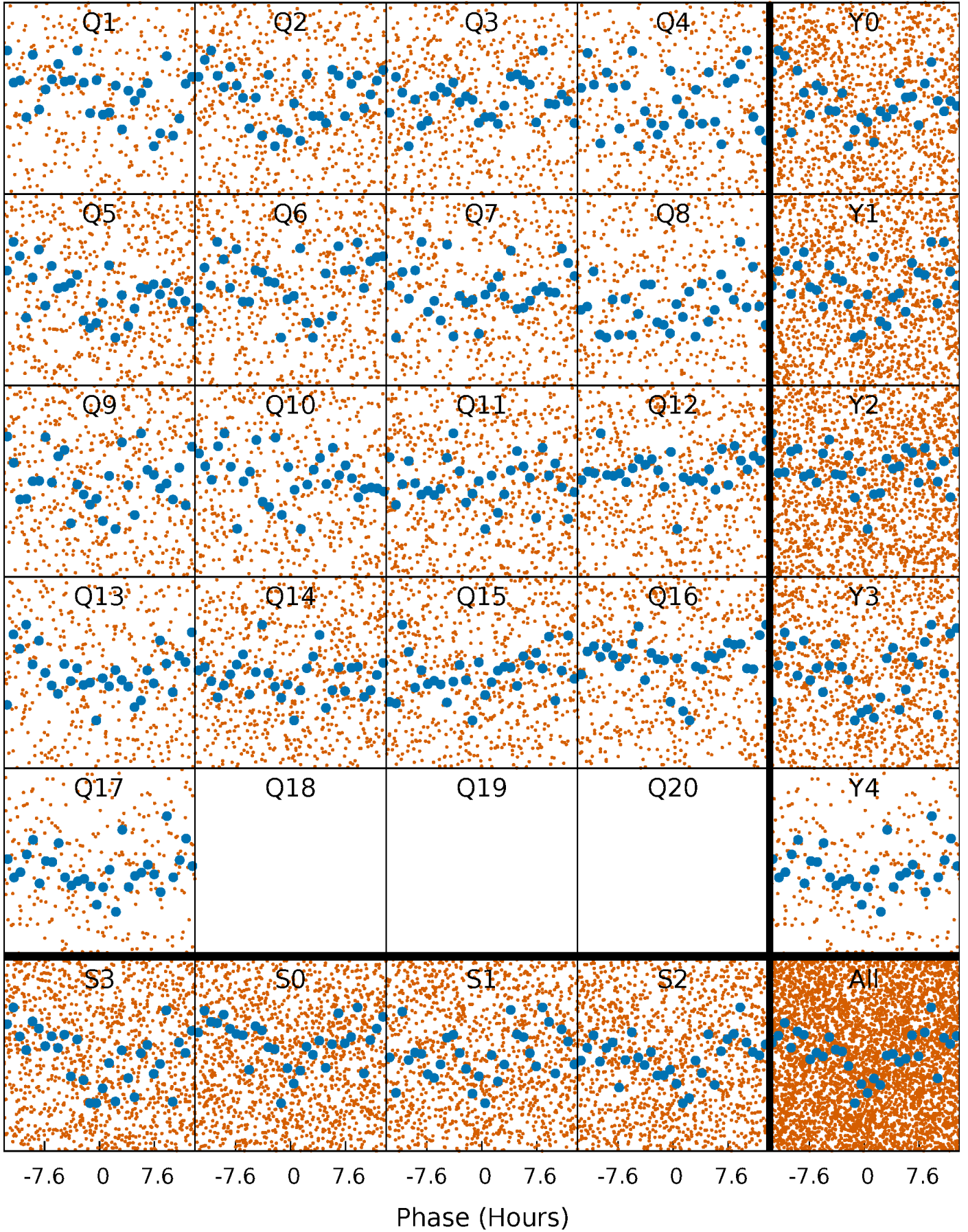


Non-Whitened Vs. Whitened Light Curve



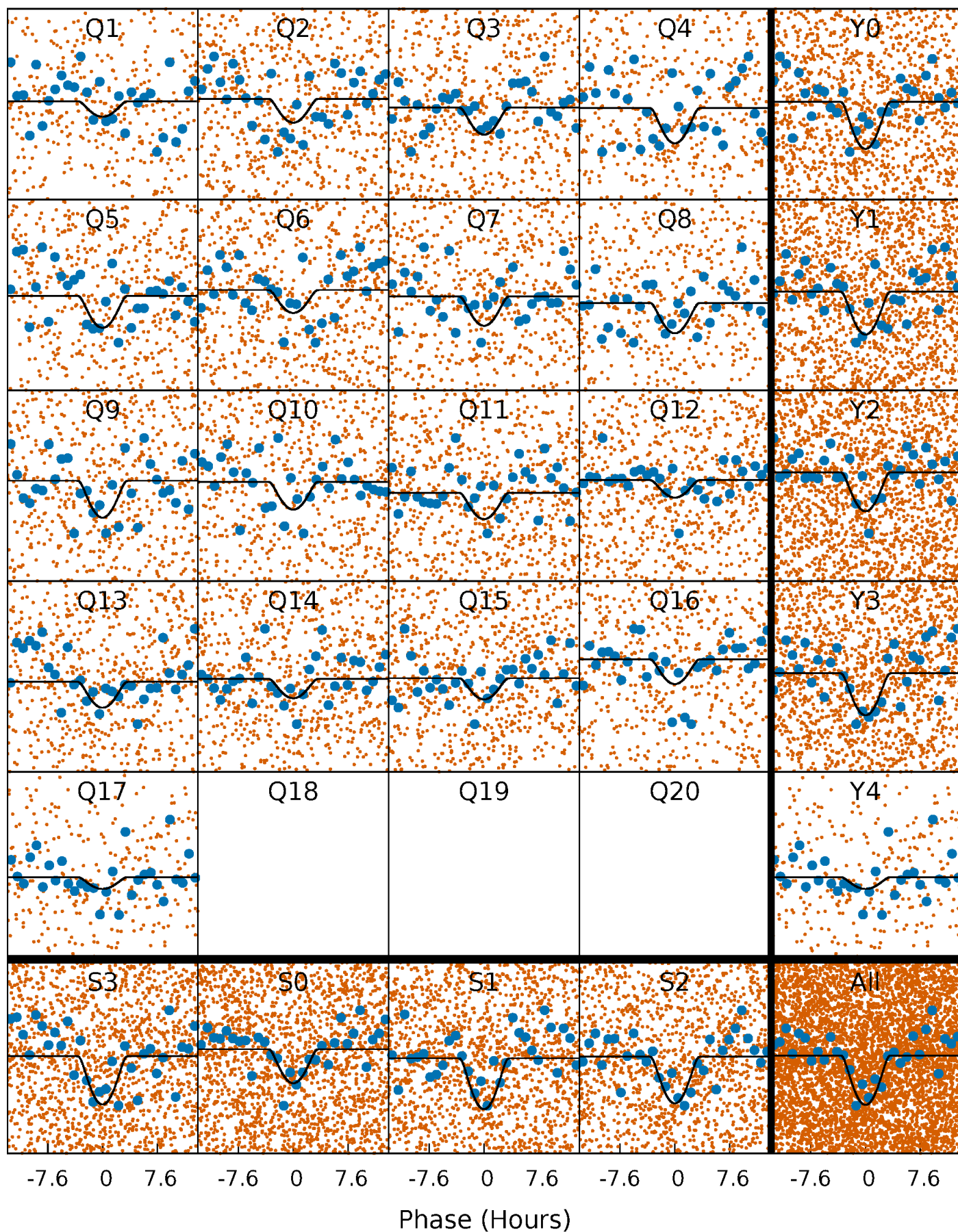
PDC Quarter-Phased Transit Curves

TCE 003102309-01 P= 4.202536 Days $T_0=132.300392$ (BKJD)



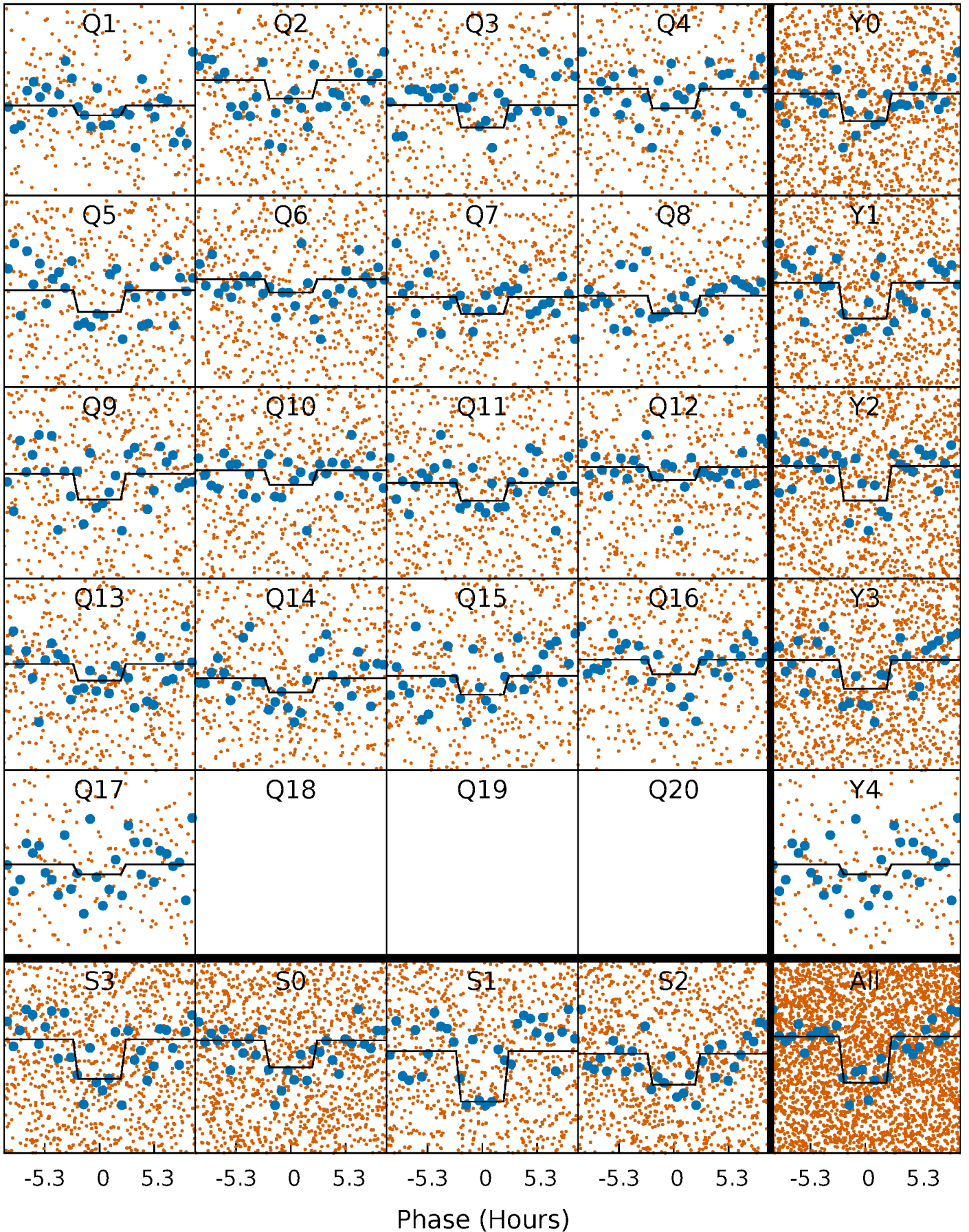
DV Quarter-Phased Transit Curves

TCE 003102309-01 P= 4.202536 Days $T_0=132.300392$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

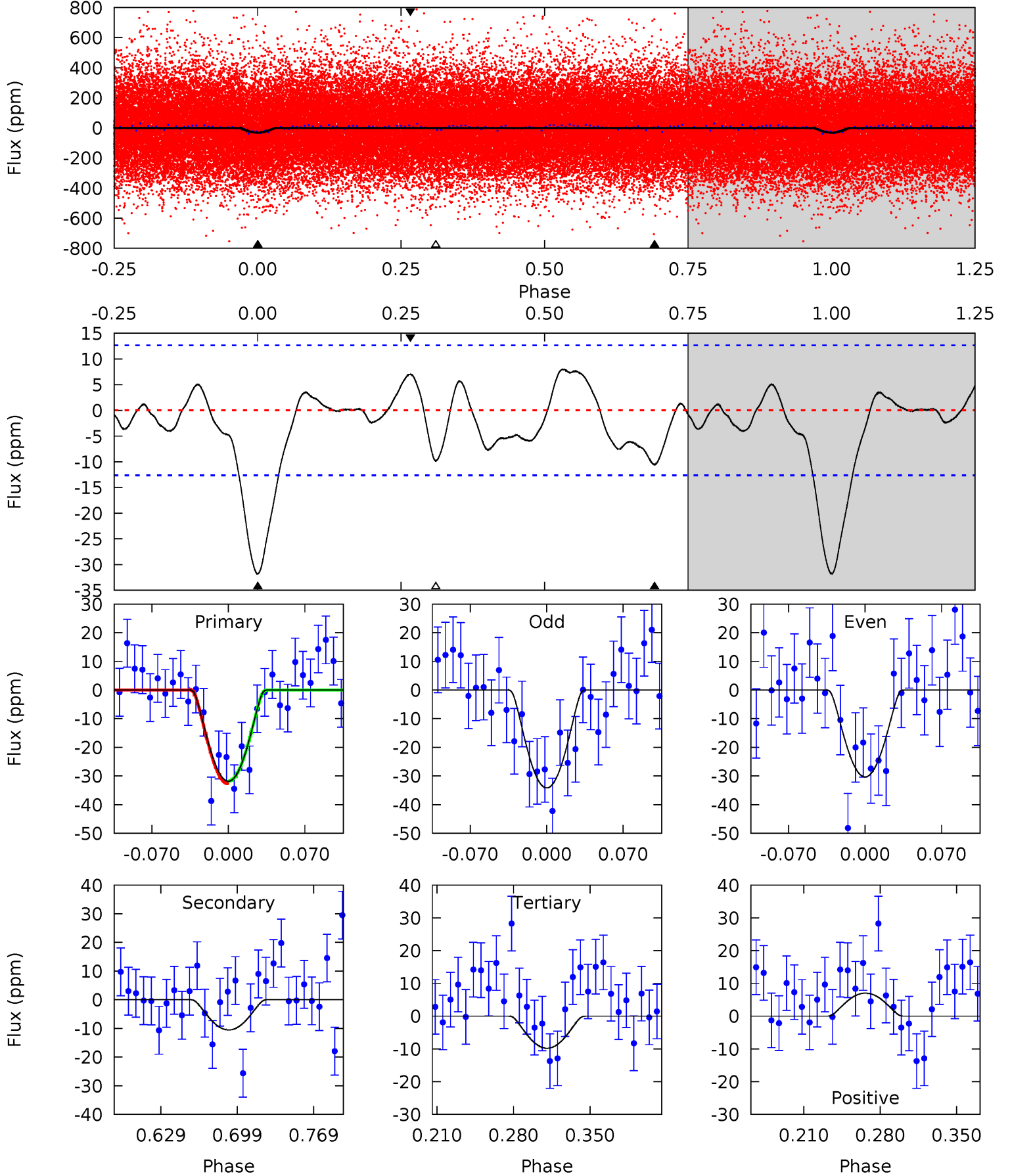
TCE 003102309-01 P= 4.202572 Days $T_0=132.296816$ (BKJD)



DV Model-Shift Uniqueness Test

003102309-01, P = 4.202536 Days, E = 128.097856 Days

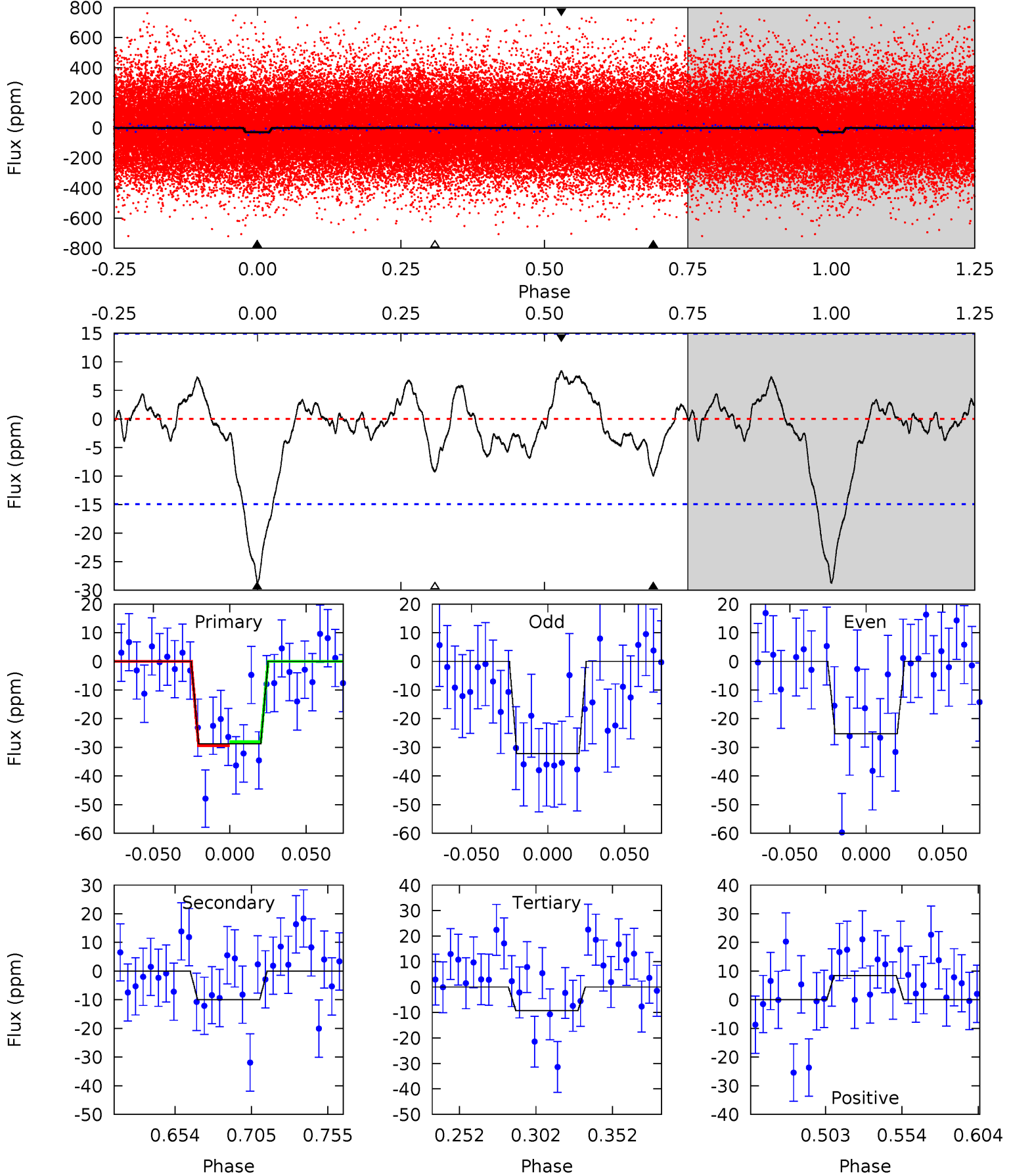
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	3.87	3.60	2.58	4.64	1.81	1.57	8.08	9.10	0.27	1.29	0.71	0.95	0.20	0.16



Alt Model-Shift Uniqueness Test

003102309-01, P = 4.202572 Days, E = 128.094244 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.07	3.14	2.93	2.66	4.71	1.96	1.18	6.14	6.40	0.21	0.47	1.10	0.92	0.23	0.22



Stellar Parameters For KIC 003102309

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5596^{+186}_{-186}	$4.343^{+0.195}_{-0.195}$	$-0.200^{+0.300}_{-0.300}$	$1.015^{+0.311}_{-0.207}$	$0.829^{+0.125}_{-0.063}$	$1.115^{+0.991}_{-0.567}$
	+3%/-3%	+4%/-4%	+150%/-150%	+31%/-20%	+15%/-8%	+89%/-51%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003102309-01 / KOI 7643.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-11 ± 3	$3.89^{+3.89}_{-2.67}$	1587^{+128}_{-118}	2390^{+1096}_{-4355}	$0.867^{+8.838}_{-0.661}$
Alt.	-10 ± 3	$3.38^{+3.88}_{-2.36}$	1576^{+132}_{-104}	2470^{+1196}_{-4394}	$1.028^{+11.396}_{-0.796}$

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 $A_{obs} \gg 1.0$

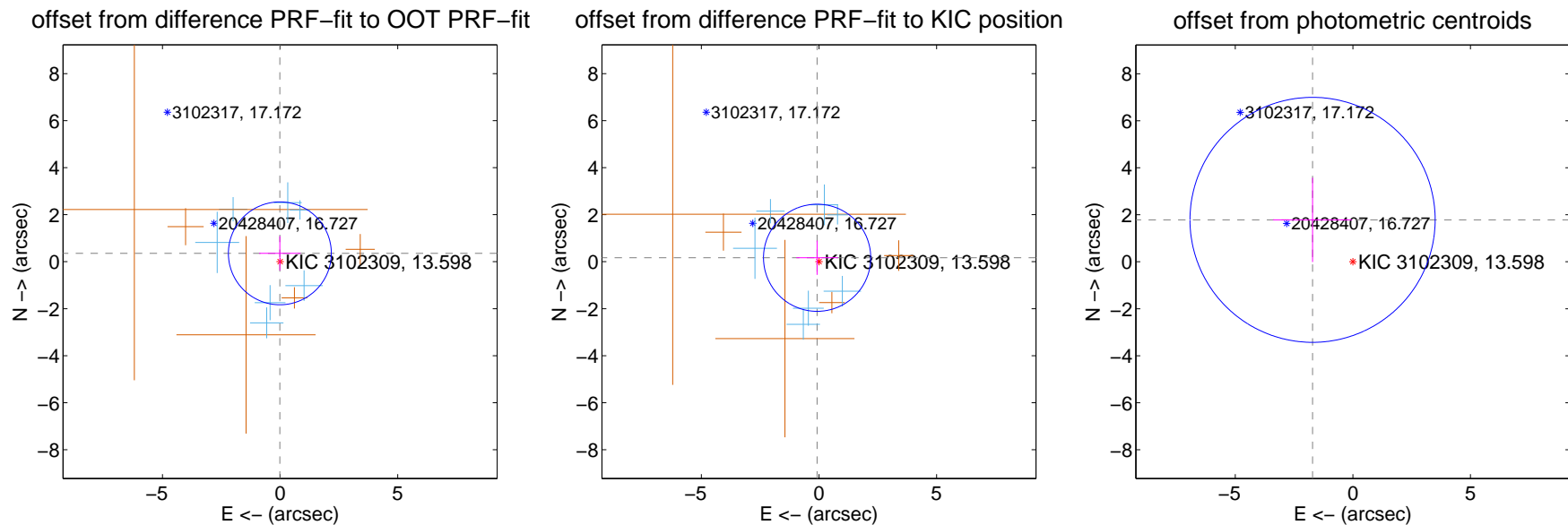
DV Centroid Data

Supplemental centroid analysis for 003102309-01. Kepler magnitude: 13.60. Transit SNR 7.48

There are 7 quarters with good PRF difference image offsets

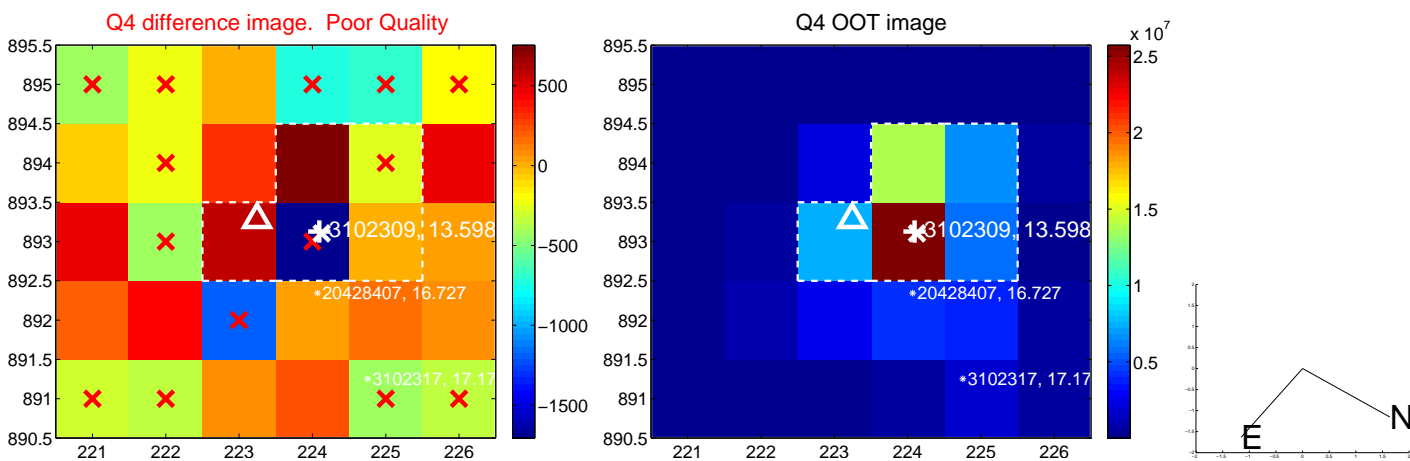
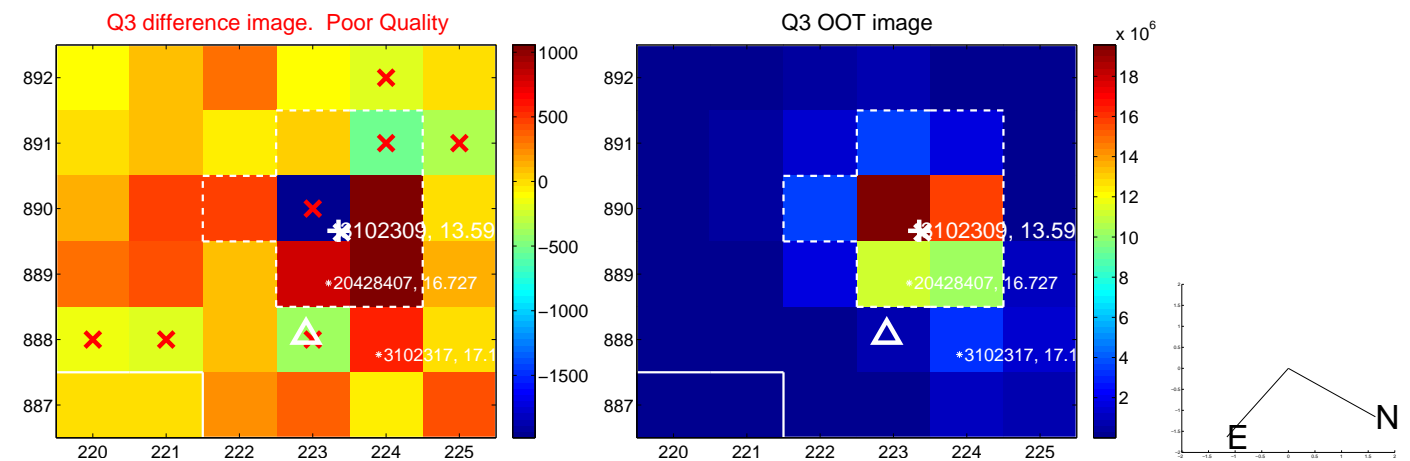
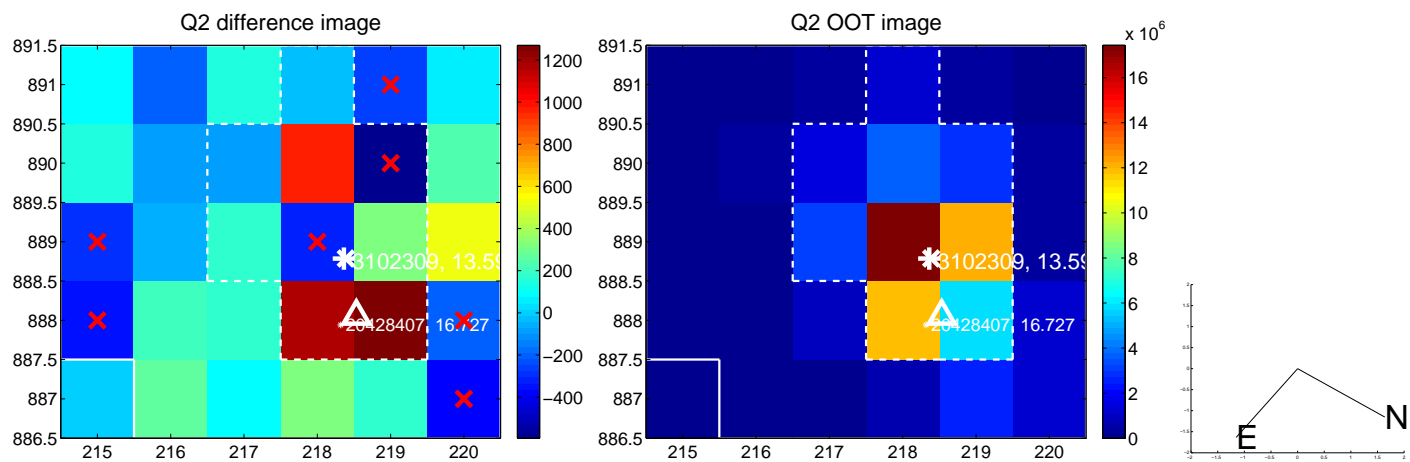
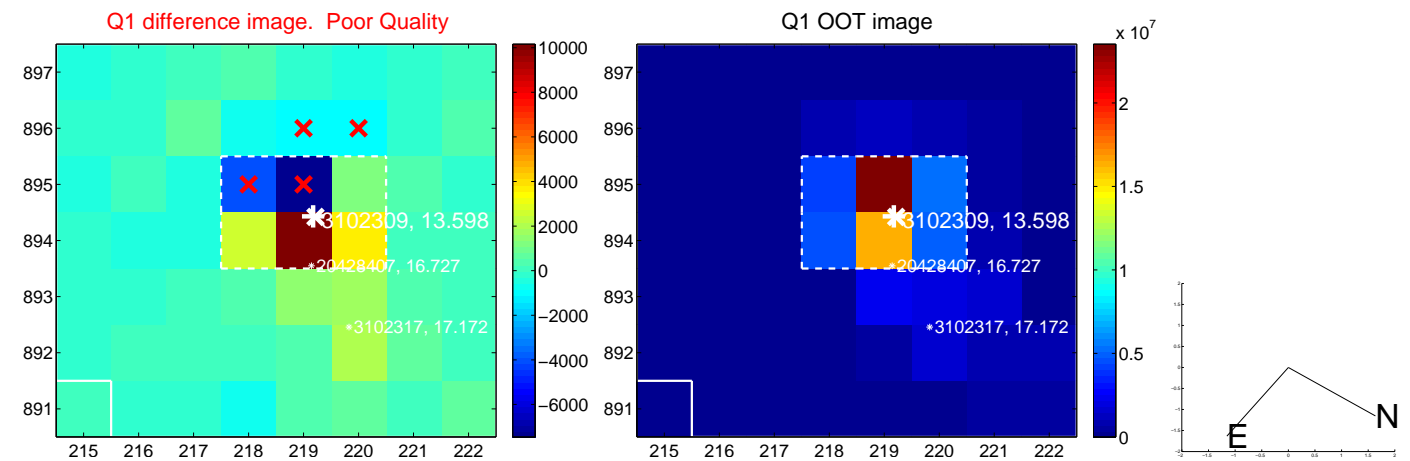
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.356 ± 0.729	0.49	0.010 ± 0.883	0.356 ± 0.729
PRF-fit source offset from KIC position	0.185 ± 0.760	0.24	0.079 ± 0.883	0.167 ± 0.729
photometric centroid source offset	2.47 ± 1.74	1.42	1.71 ± 1.67	1.78 ± 1.79

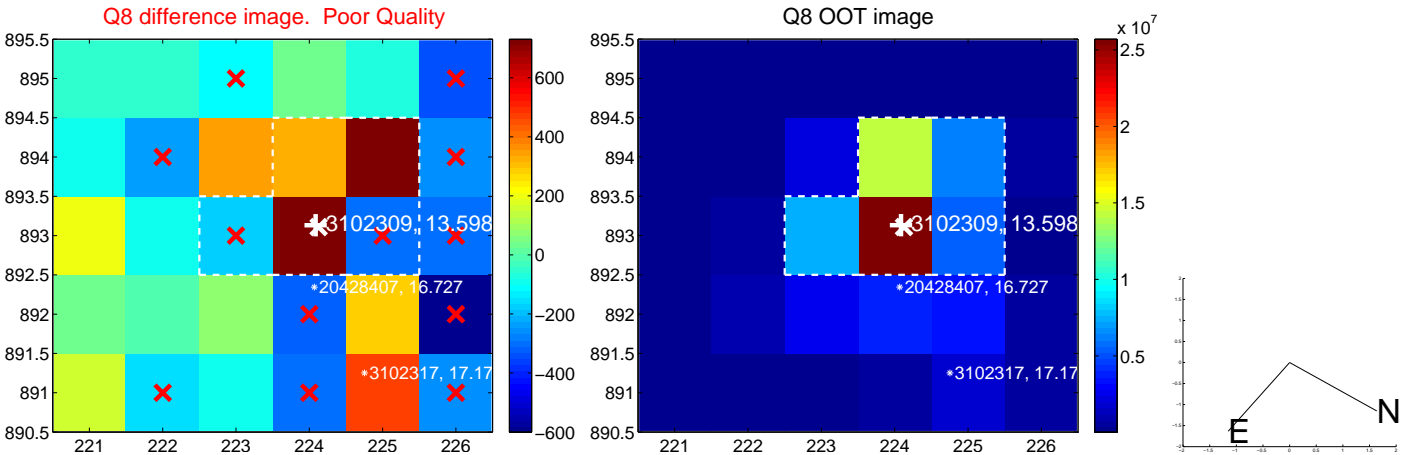
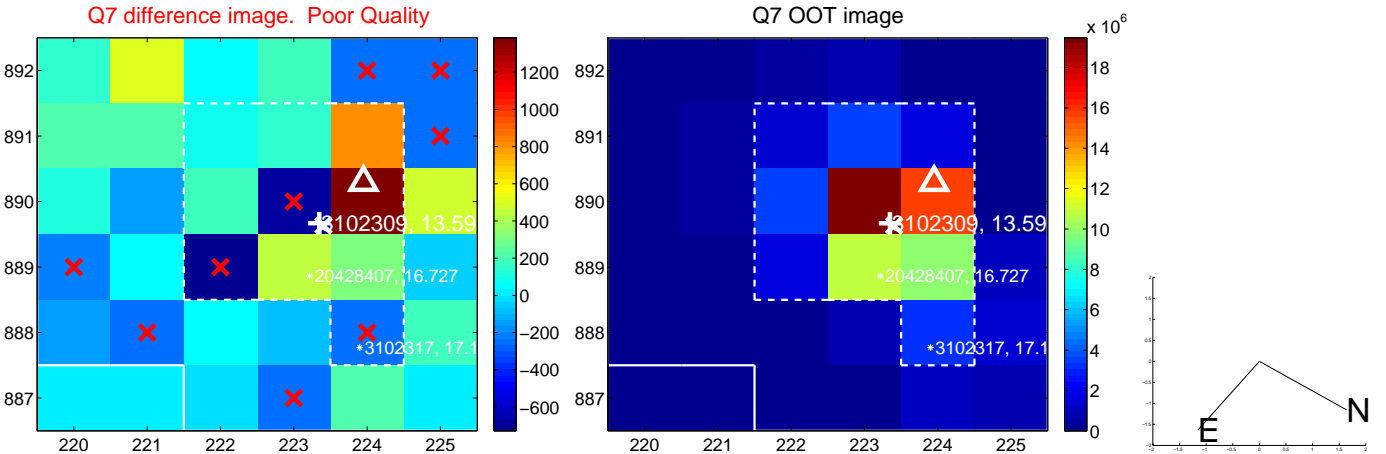
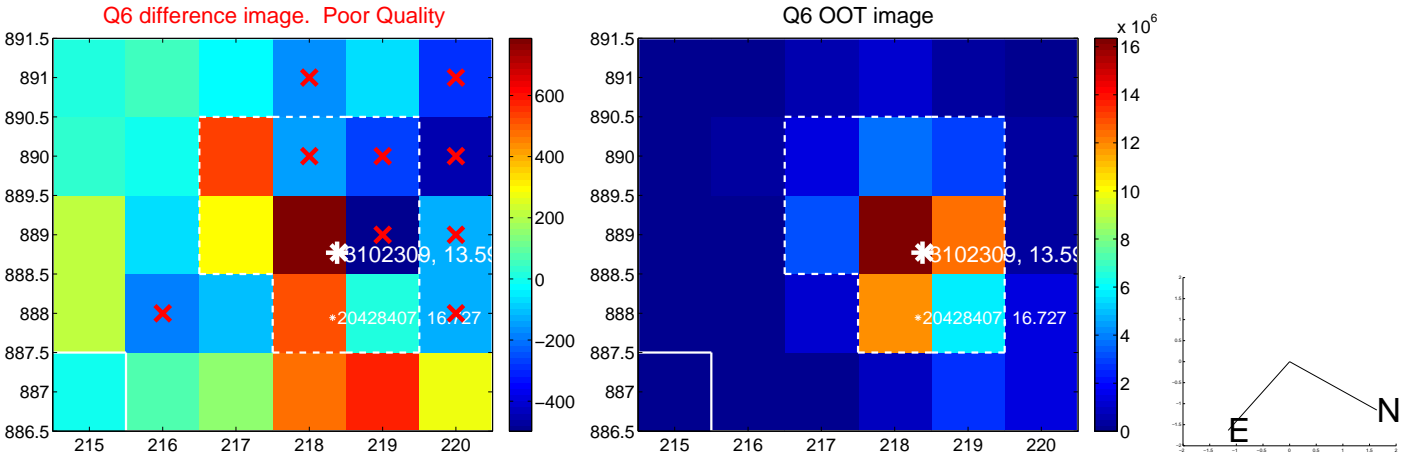
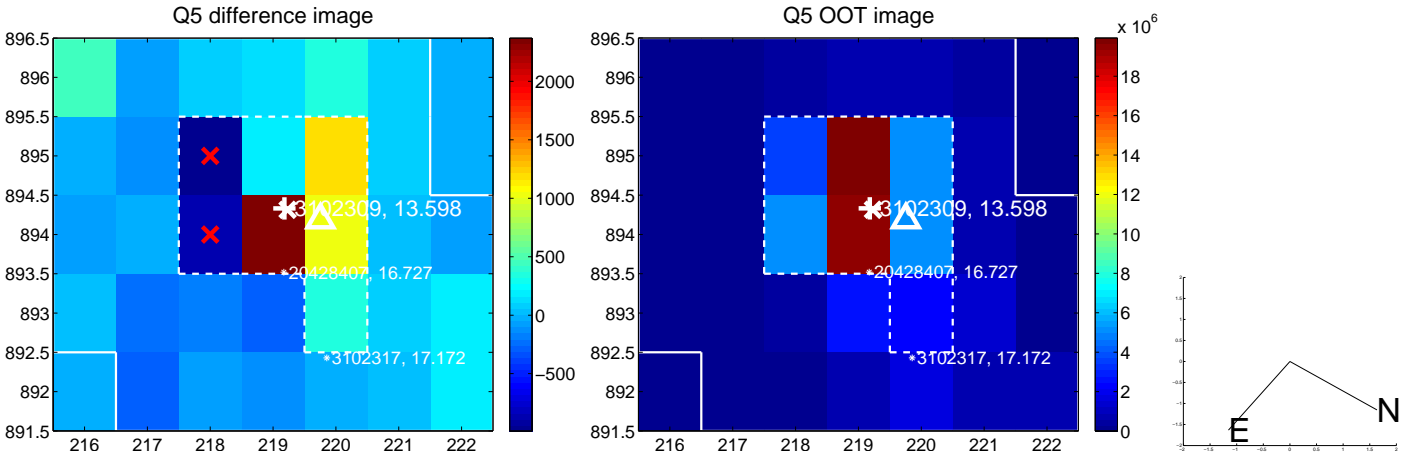


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

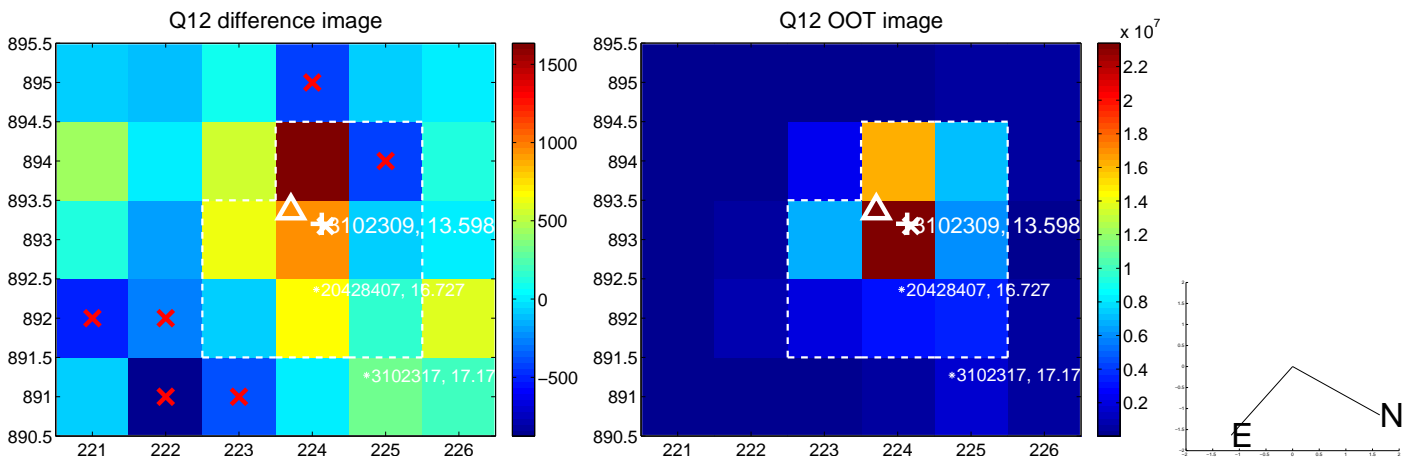
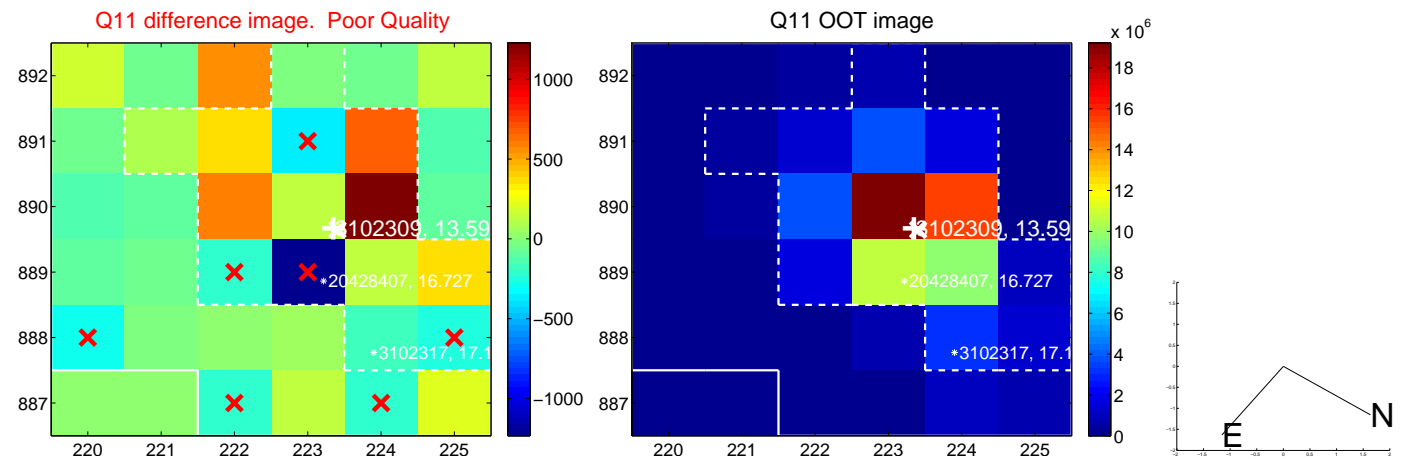
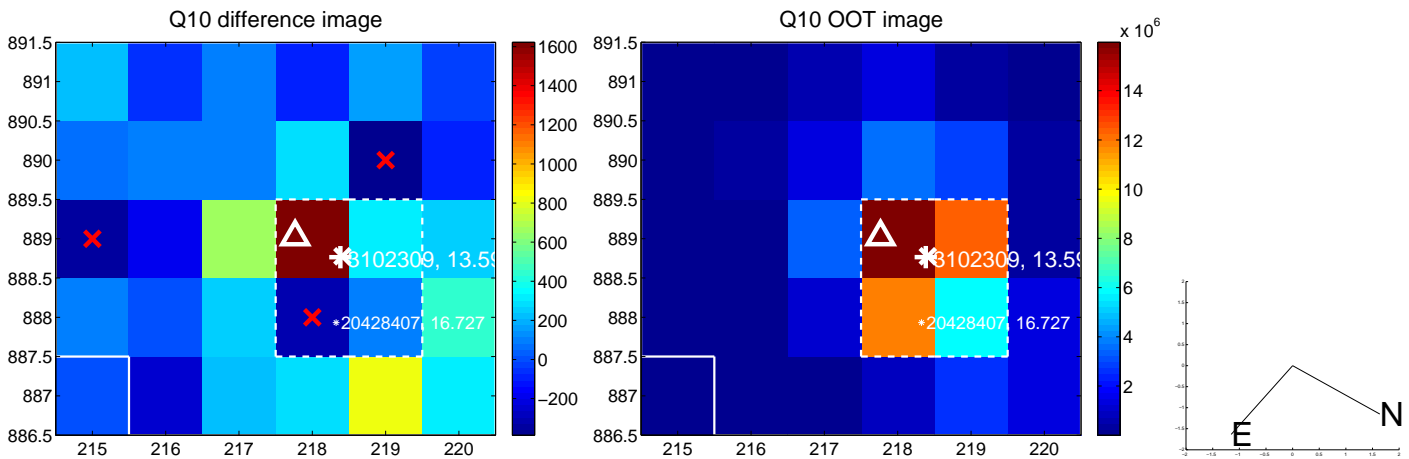
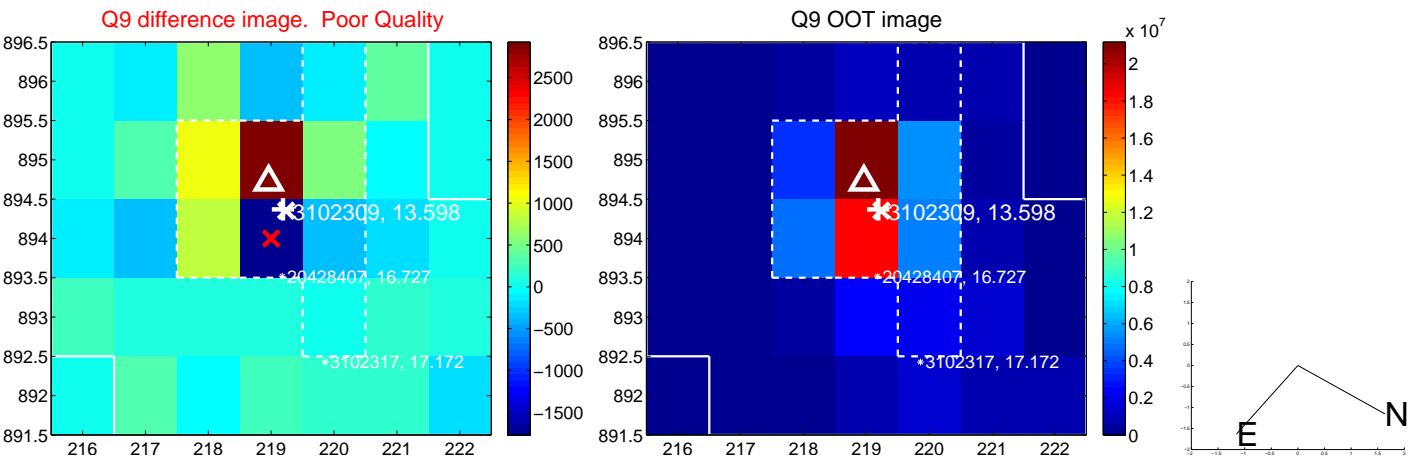
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



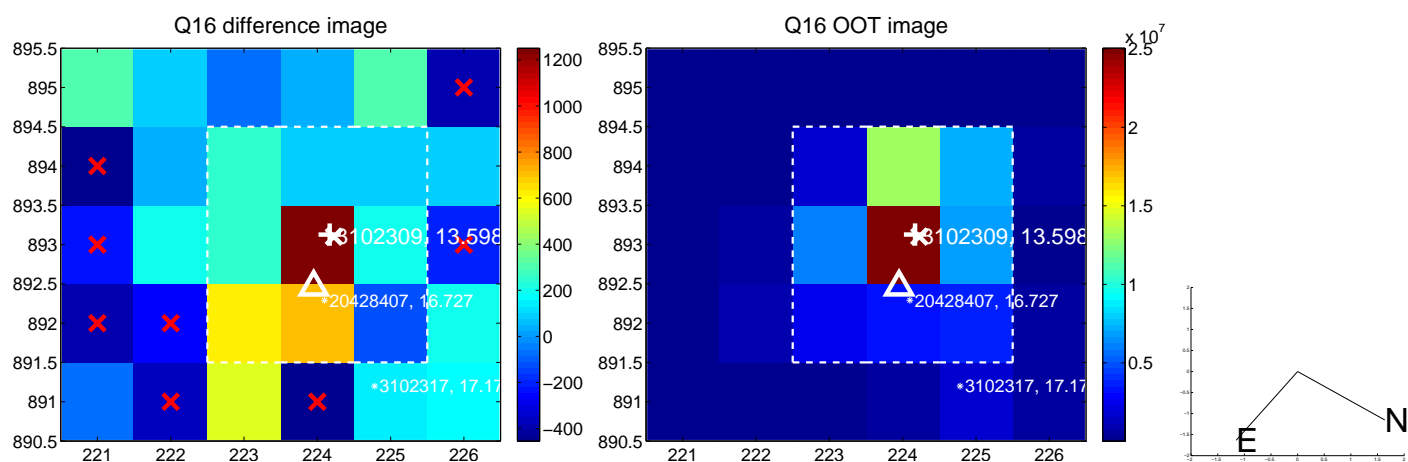
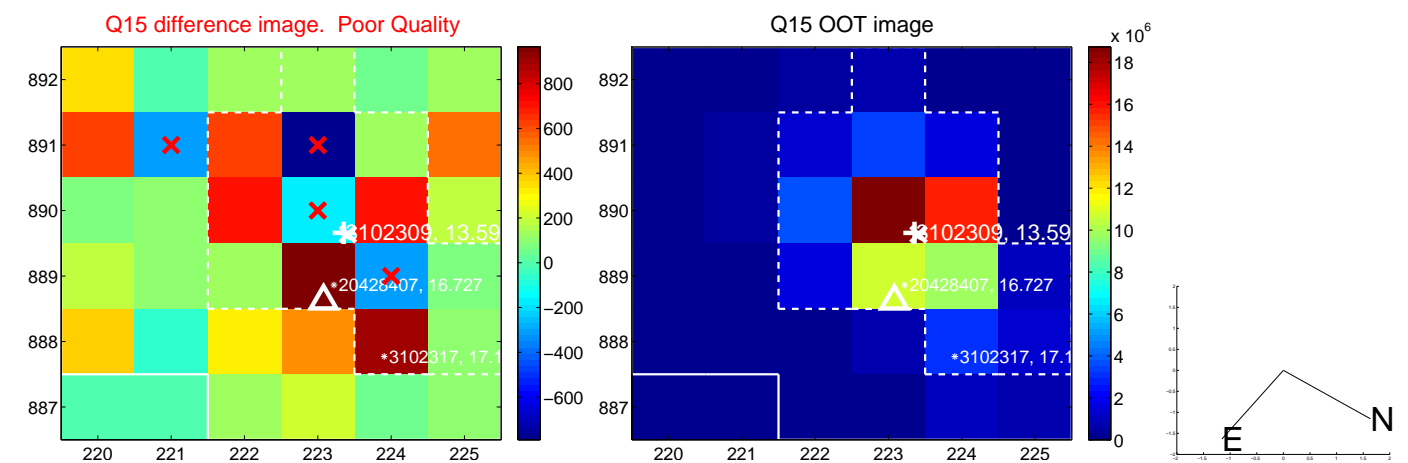
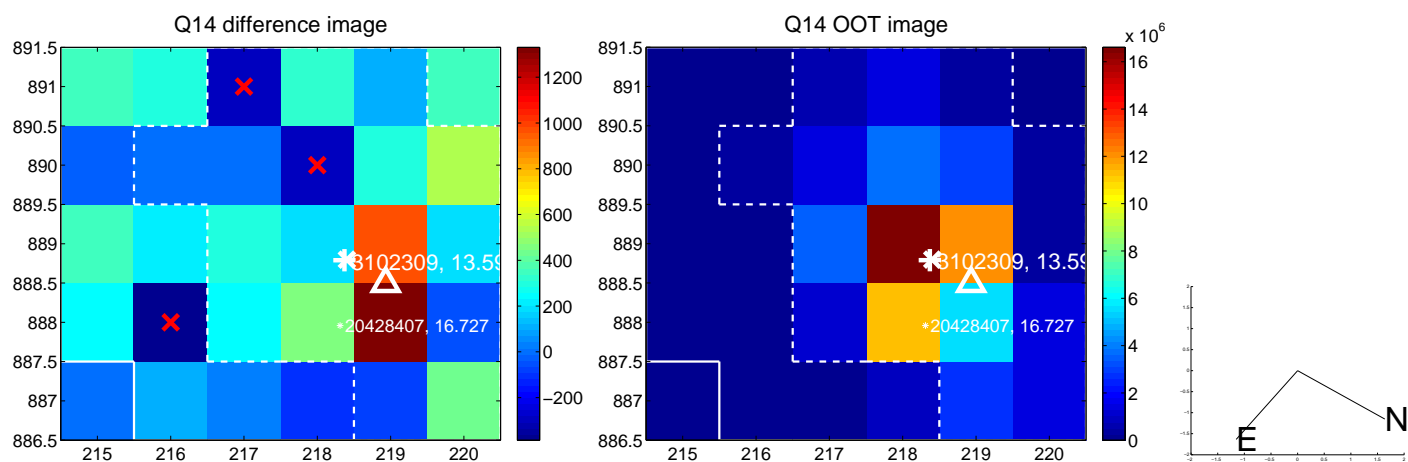
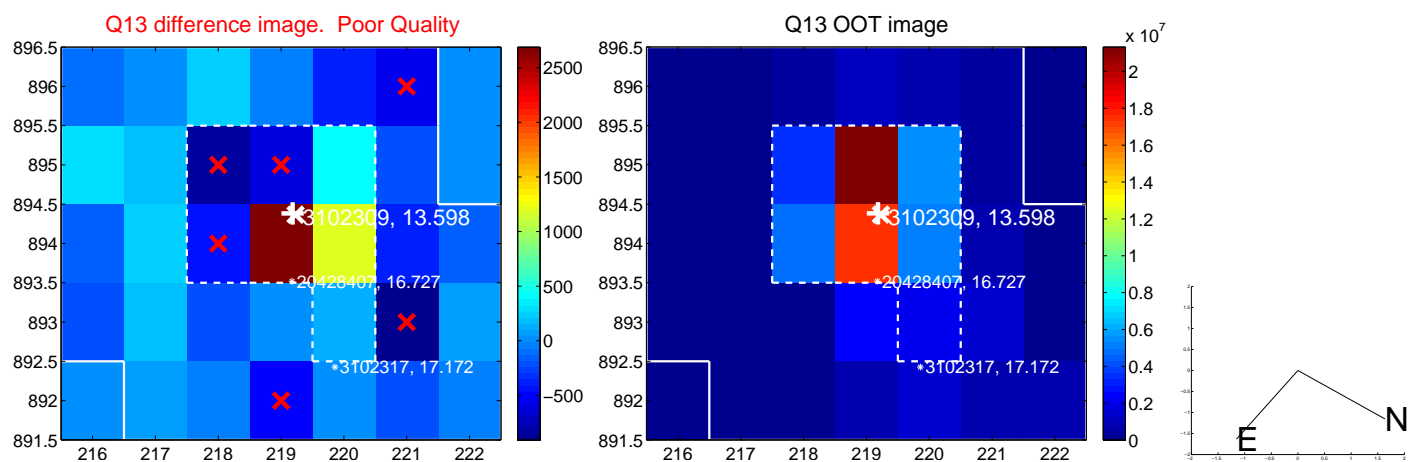
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



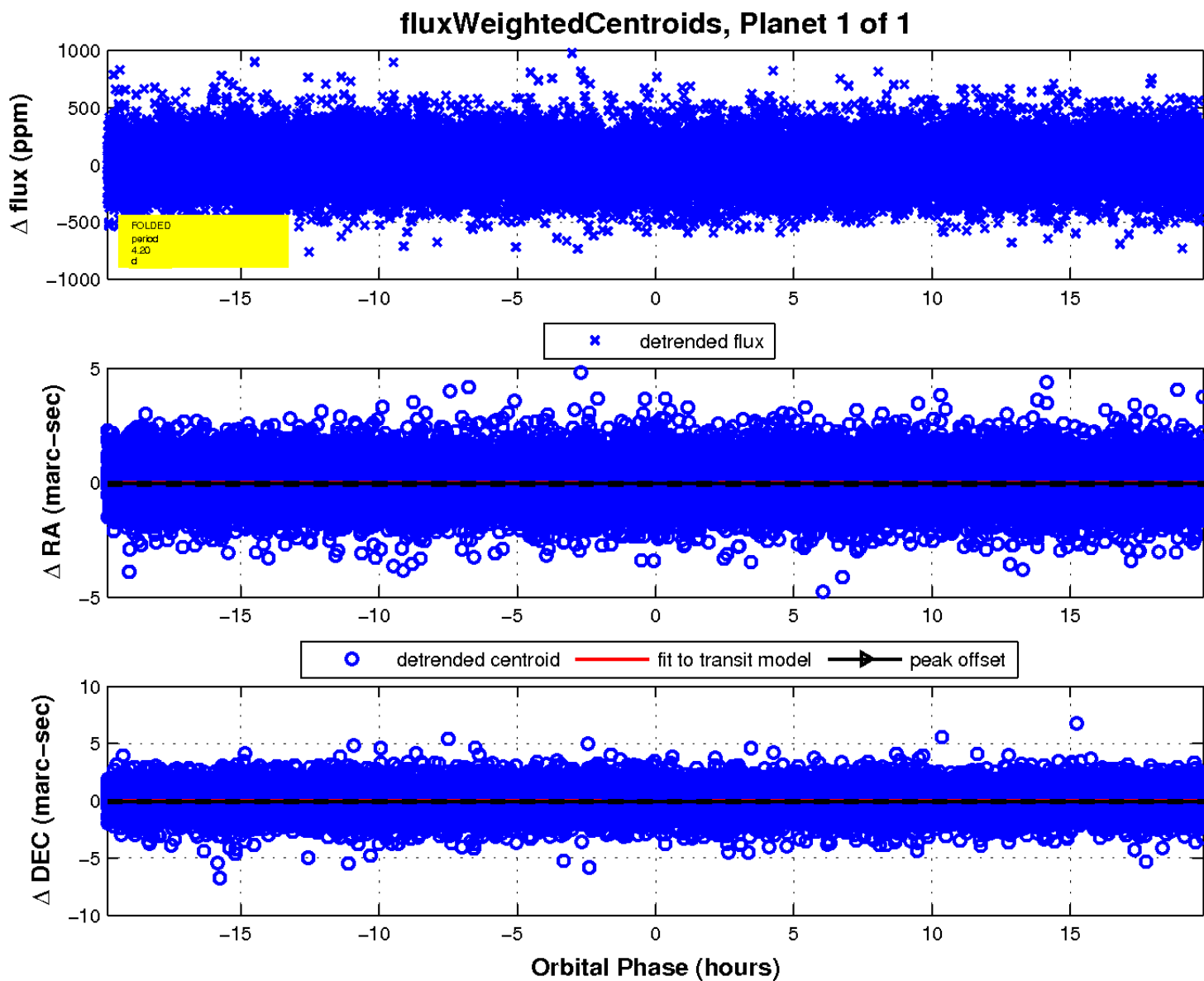
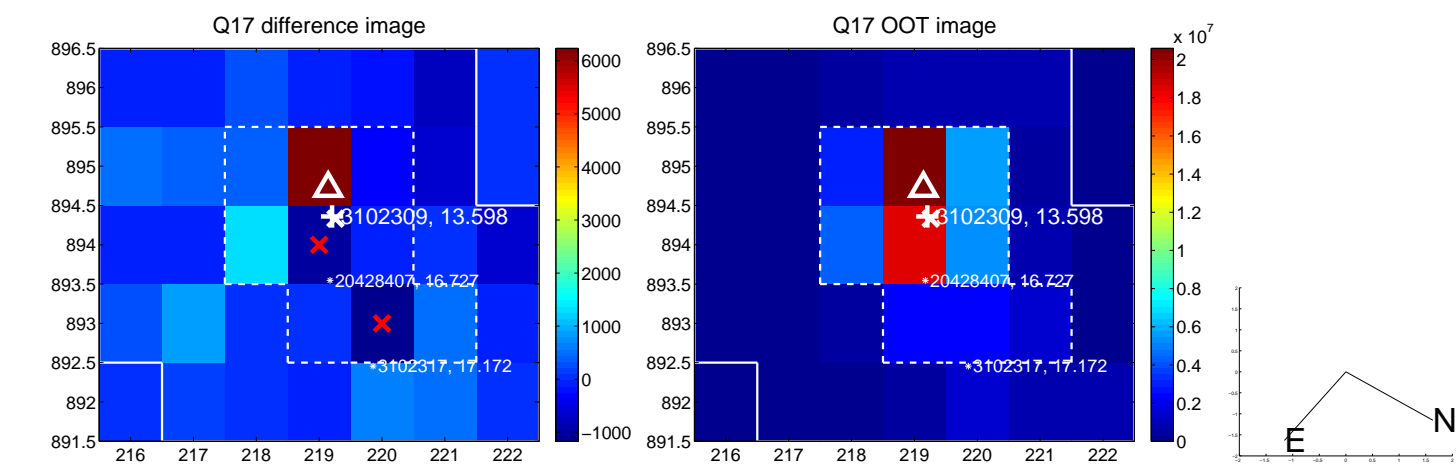
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

