

KIC 009112931

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})
009112931-01	OBS	2256.01	10.712533	137.165874	1180.4	2.720	27.5	29.4	0.54	4175	2.06	13.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009112931-01	OBS	PC	1.00	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 009112931-01

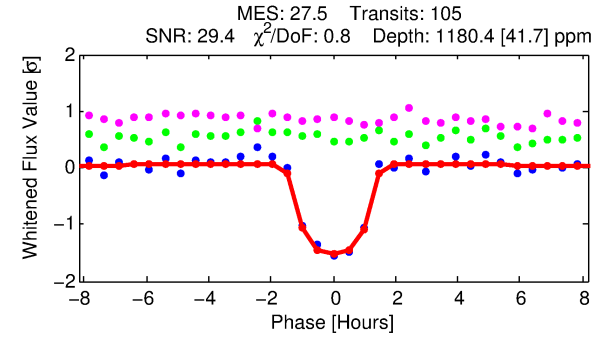
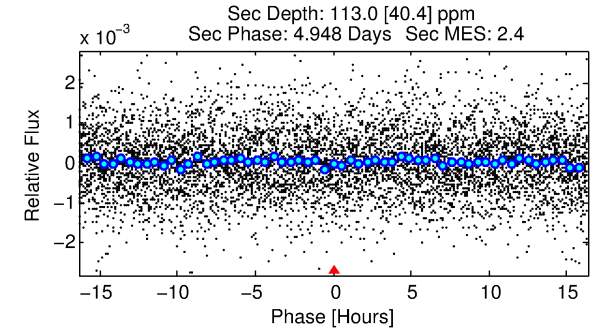
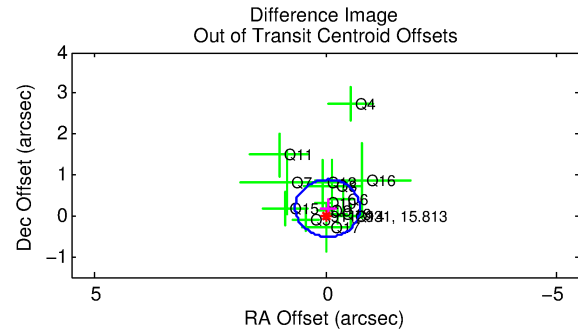
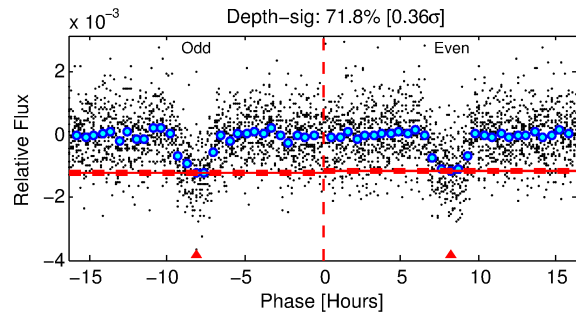
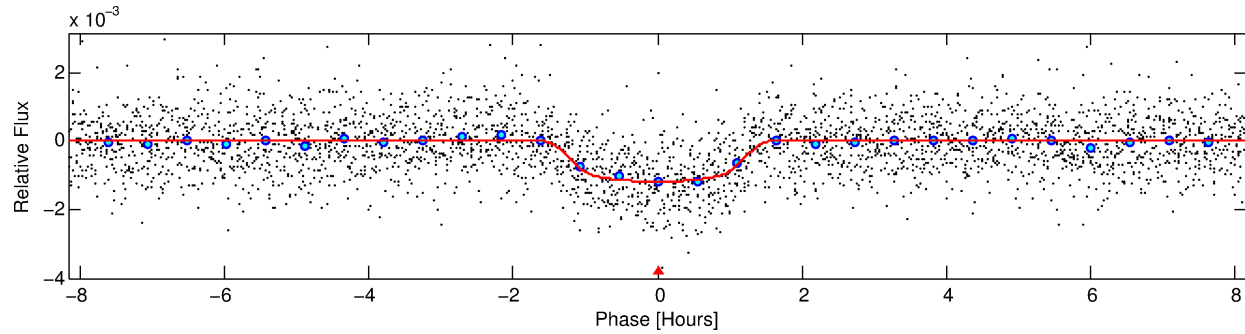
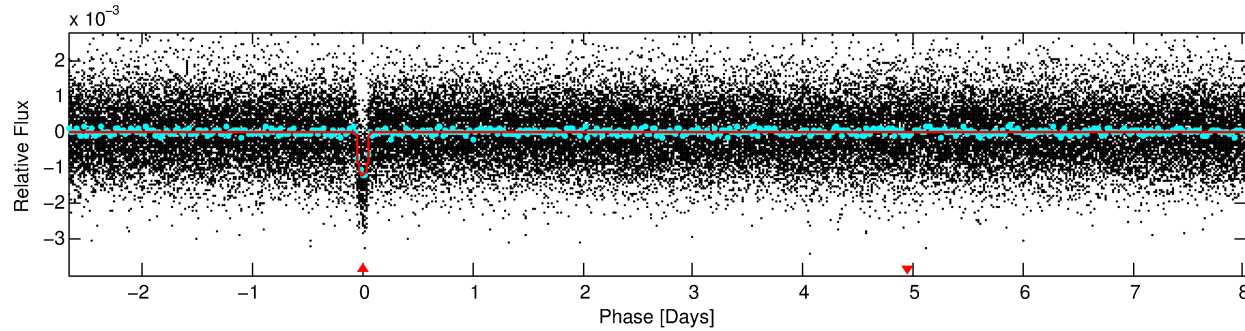
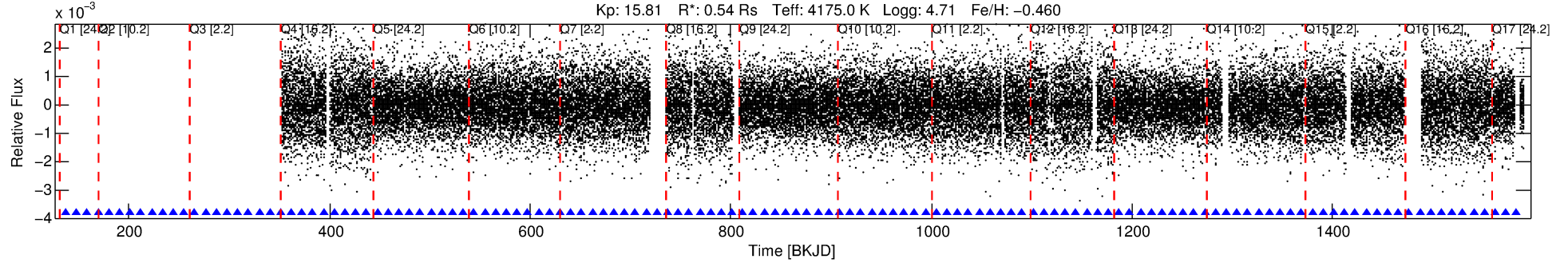
No Significant Match Found

DV One-Page Summary

KIC: 9112931 Candidate: 1 of 1 Period: 10.713 d

KOI: K02256.01 Corr: 0.998

Kp: 15.81 R*: 0.54 Rs Teff: 4175.0 K Logg: 4.71 Fe/H: -0.460



DV Fit Results:

Period = 10.71253 [0.00003] d
Epoch = 137.1659 [0.0026] BKJD
Rp/R* = 0.0348 [0.0097]
a/R* = 20.53 [23.60]
b = 0.78 [0.59]
Seff = 13.10 [1.39]
Teq = 485 [13] K
Rp = 2.06 [0.59] Re
a = 0.0784 [0.0034] AU
Ag = 89.79 [59.93] [1.48σ]
Teffp = 2309 [387] K [4.71σ]

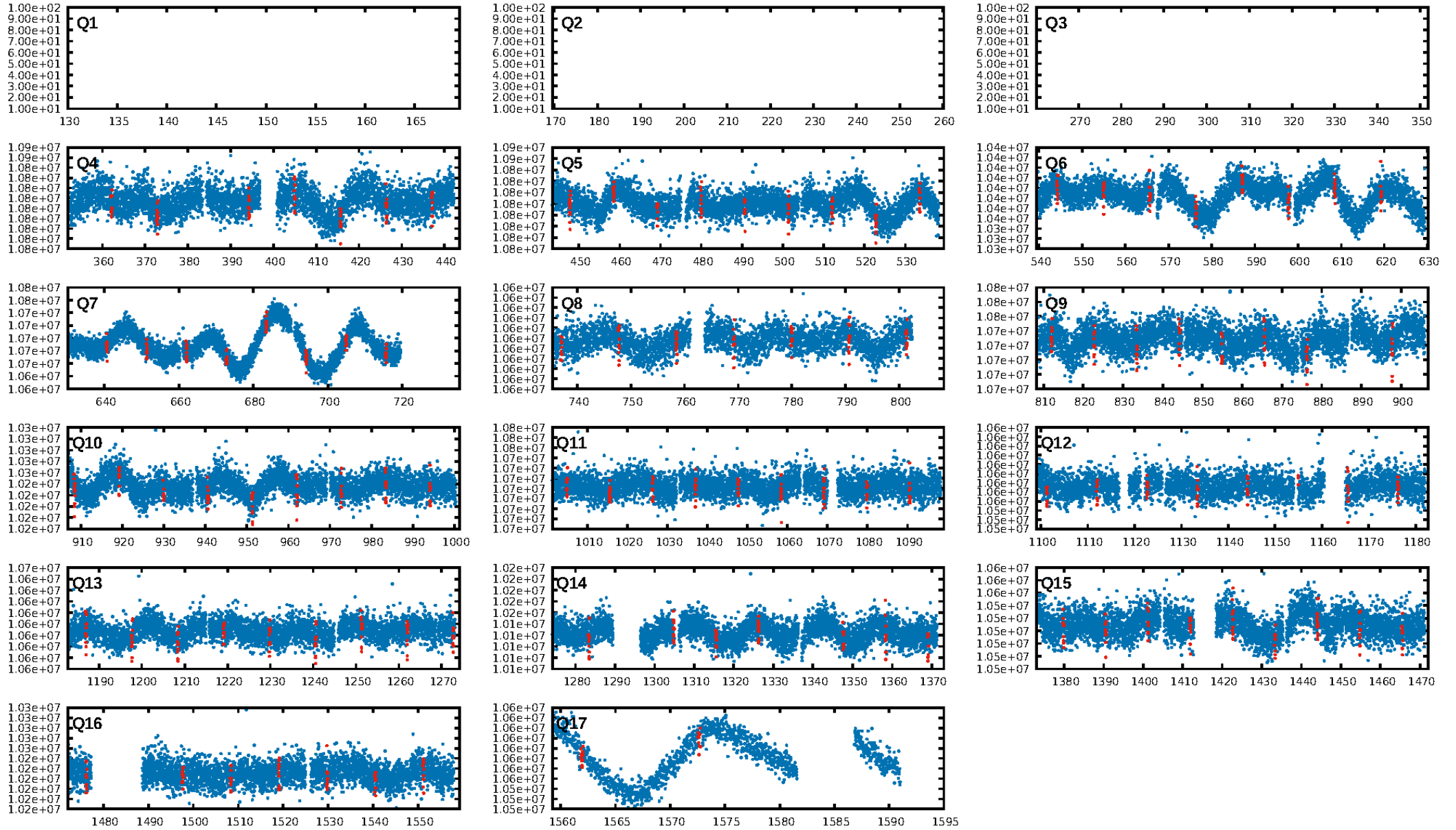
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 97.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.97e-167
RollingBand-fgt: 1.00 [103/103]
GhostDiagnostic-chr: 2.206
Centroid-sig: 0.0%
Centroid-so: 0.577 arcsec [1.36σ]
OotOffset-rm: 0.190 arcsec [0.82σ]
KicOffset-rm: 0.226 arcsec [1.40σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.93 [13/14]
DiffImageOverlap-fno: 1.00 [14/14]

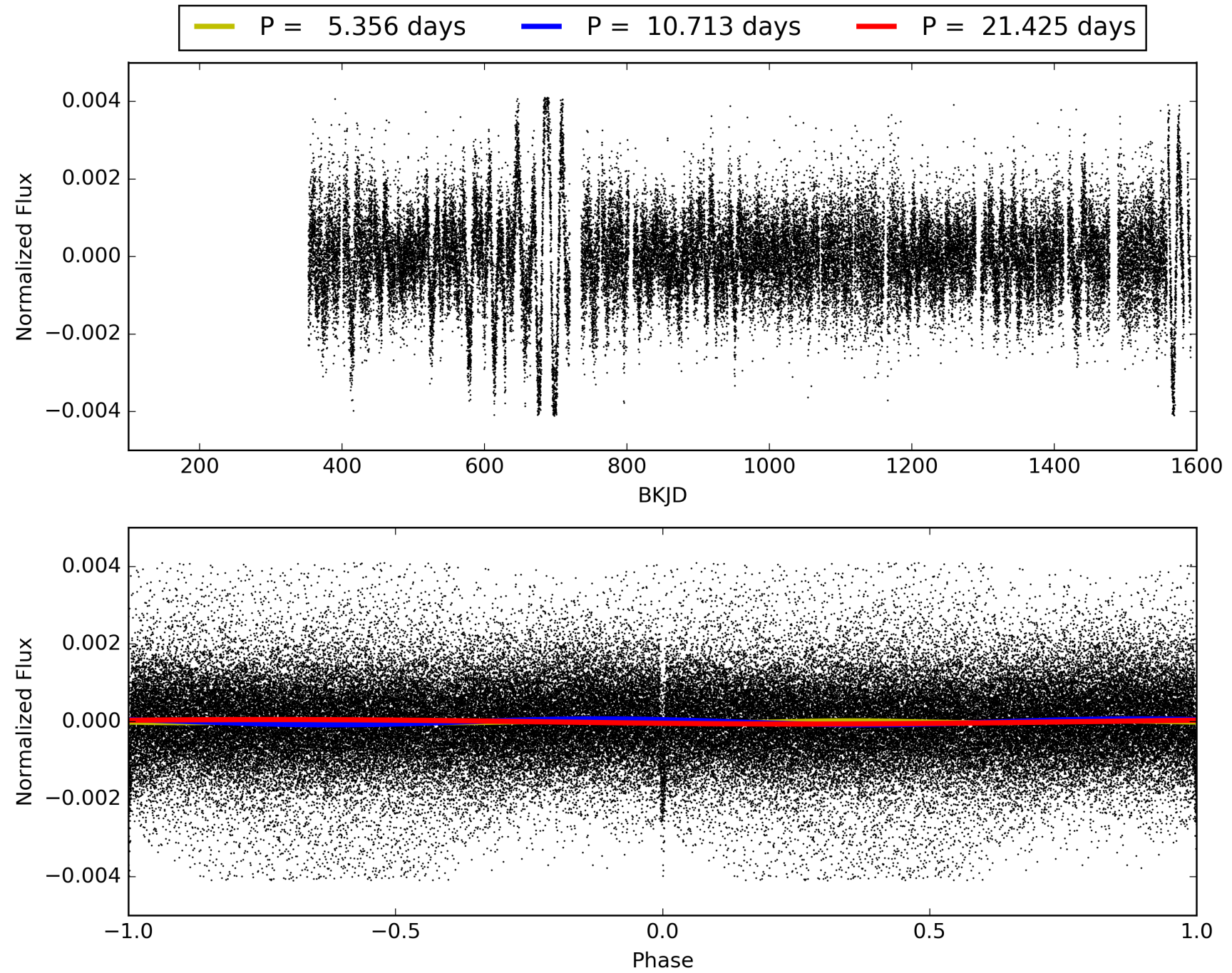
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:36:36 Z

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

TCE 009112931-01, PDC Light Curves

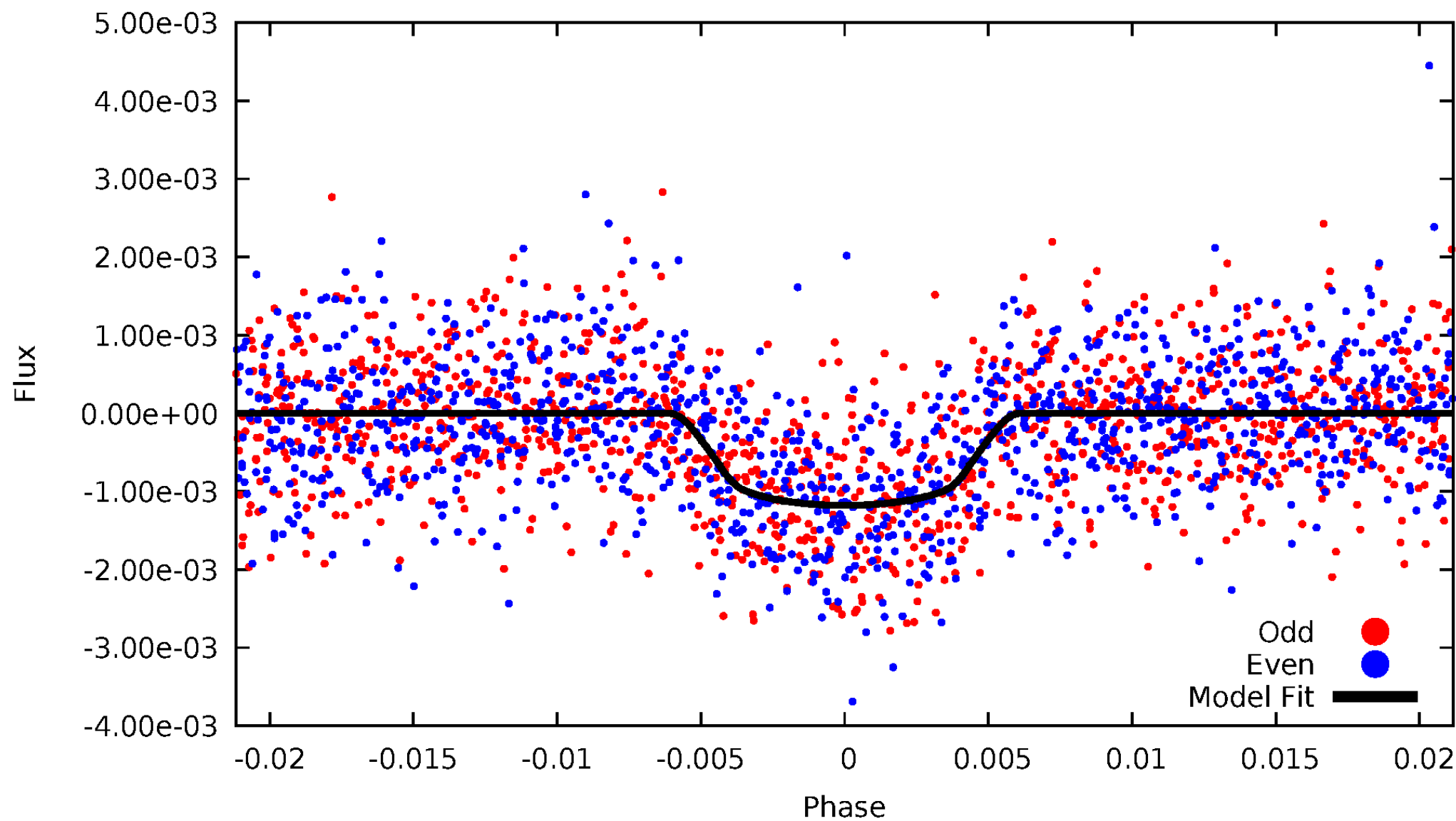


TCE 009112931-01



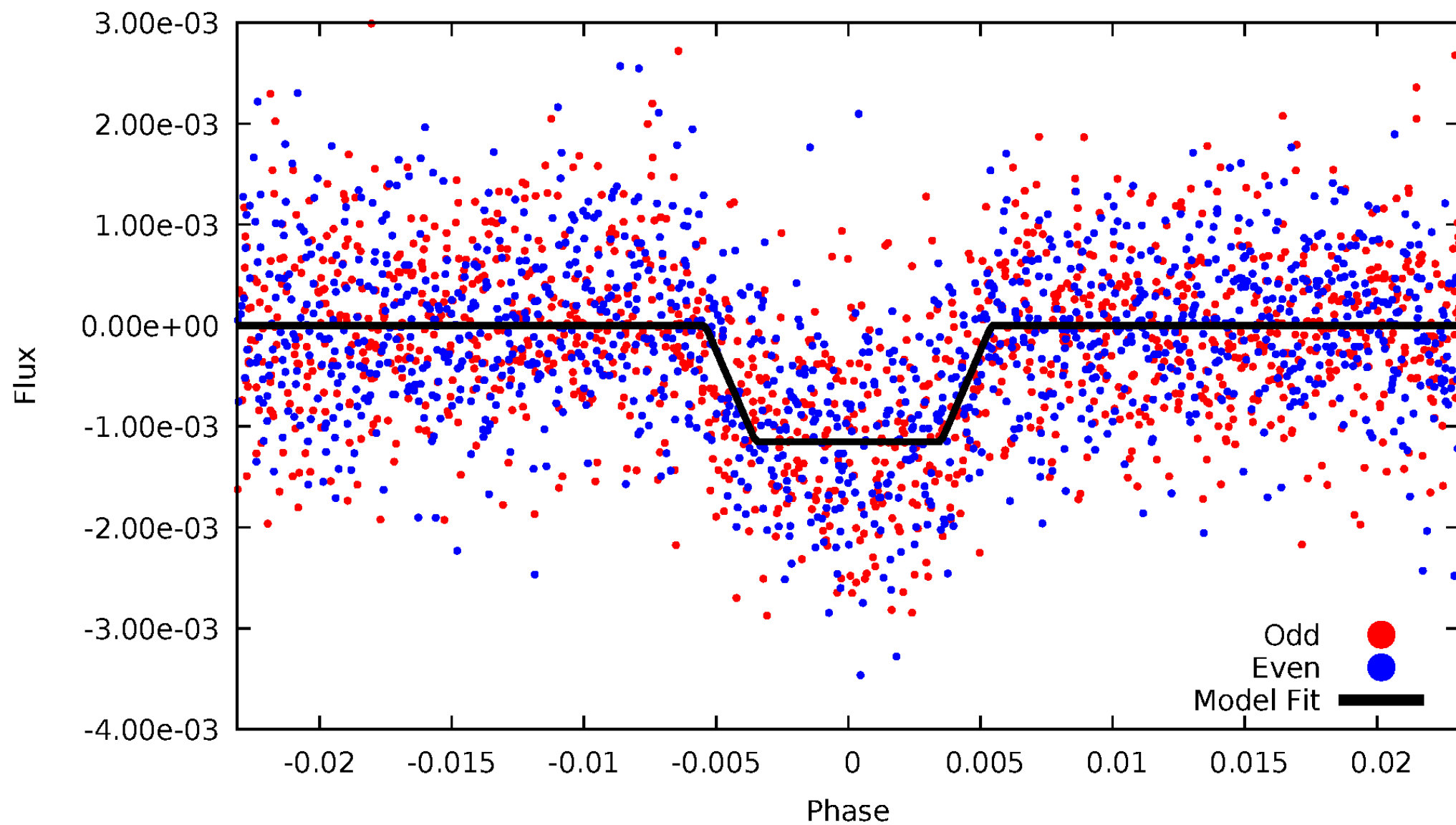
DV Odd/Even

TCE 009112931-01



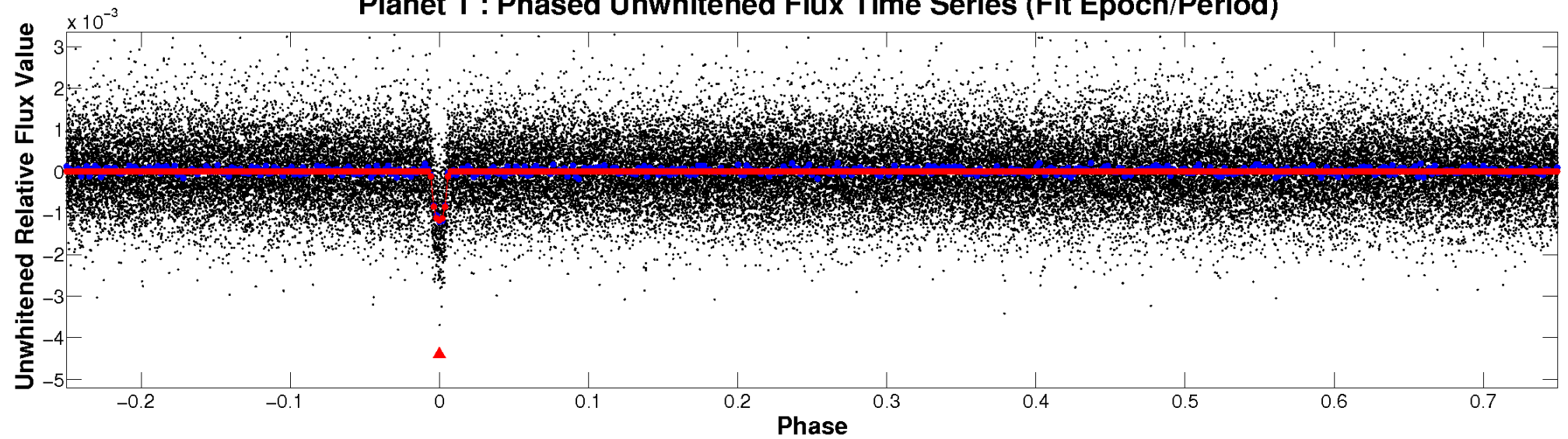
ALT Odd/Even

TCE 009112931-01

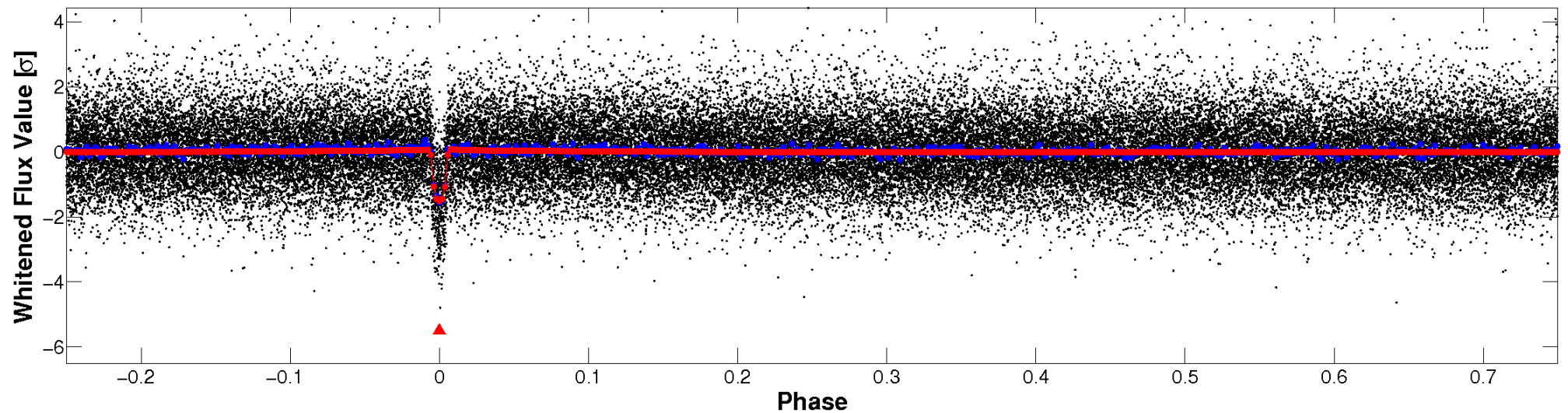


Non-Whitened Vs. Whitened Light Curve

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

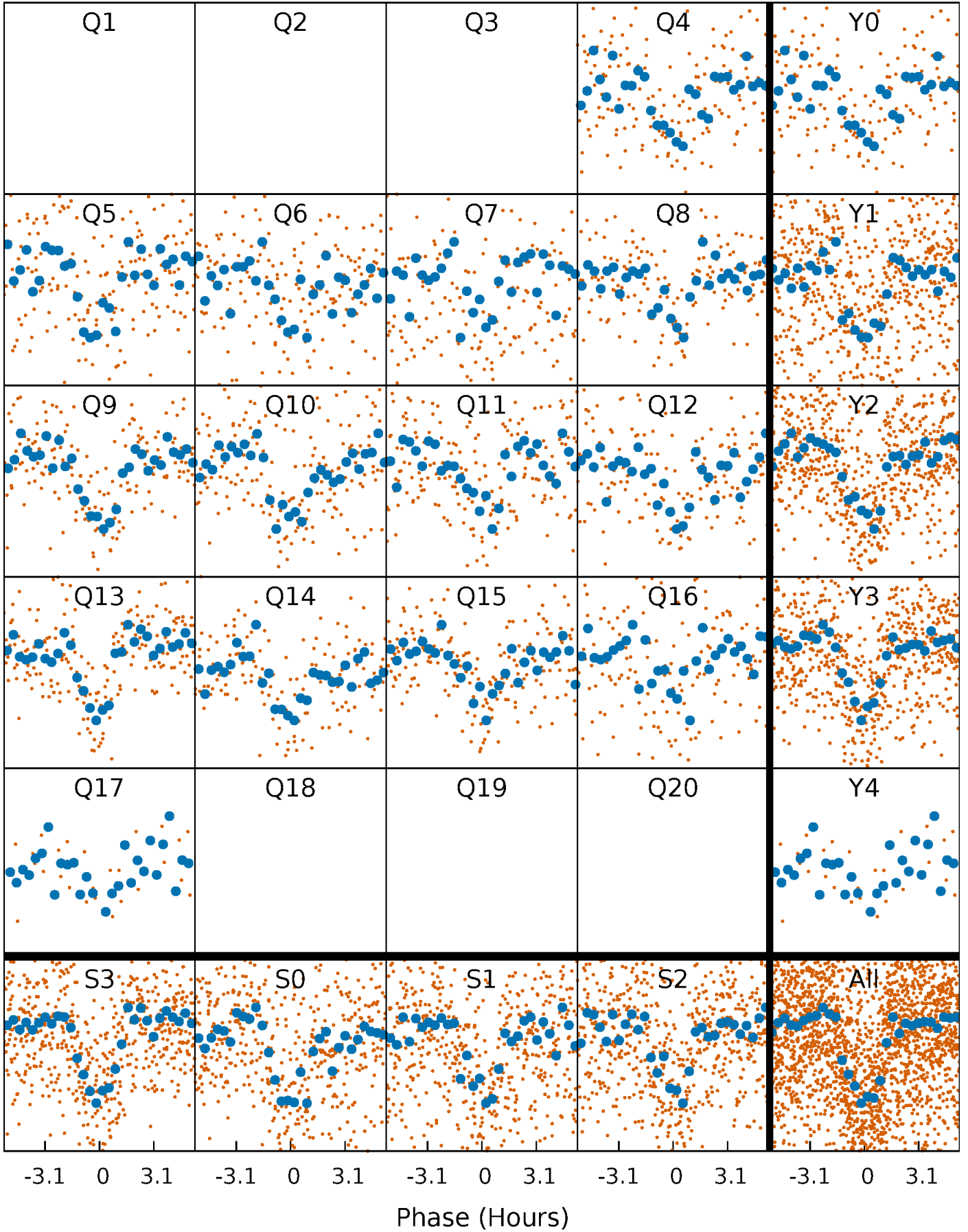


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



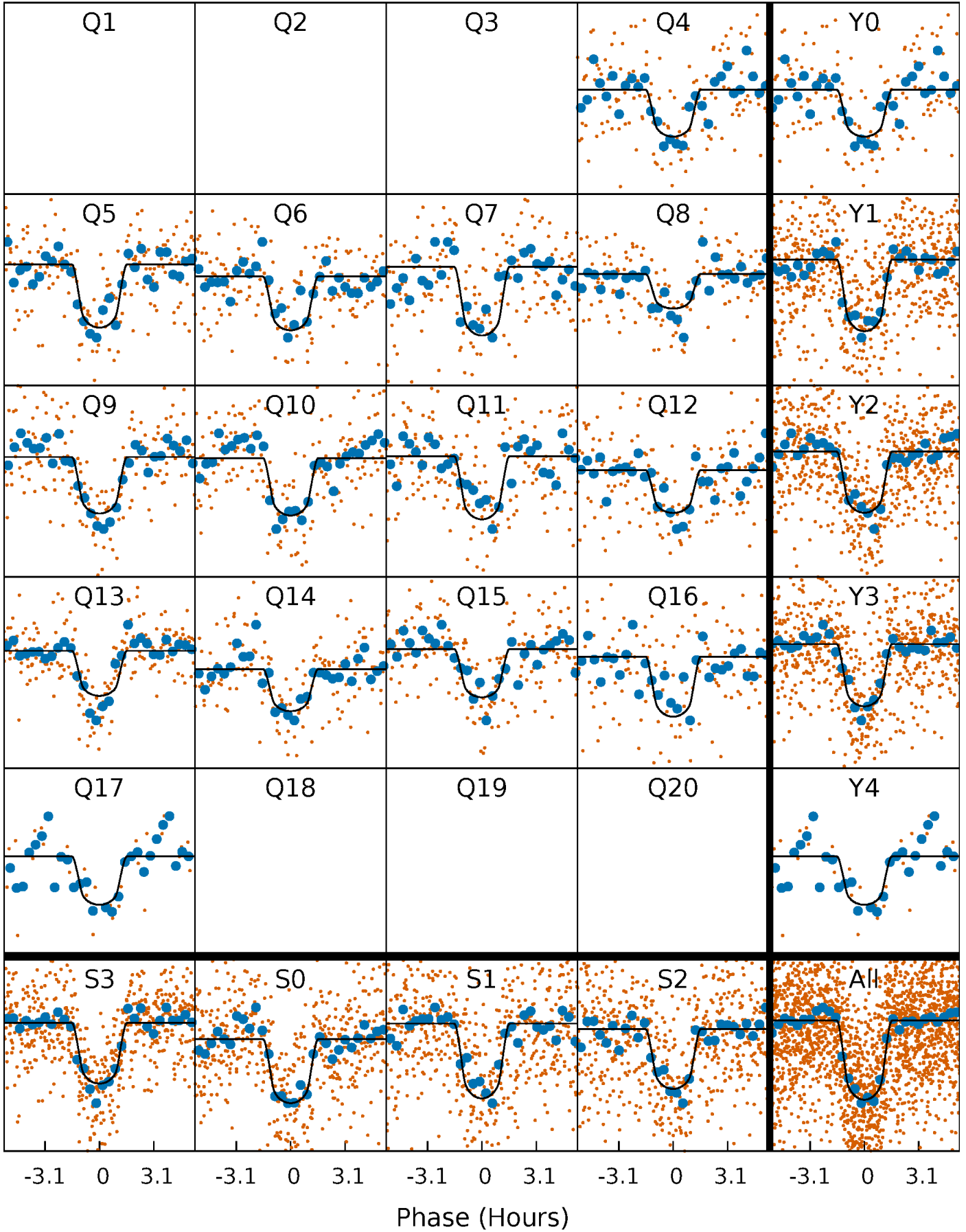
PDC Quarter-Phased Transit Curves

TCE 009112931-01 P= 10.712533 Days $T_0=137.165874$ (BKJD)



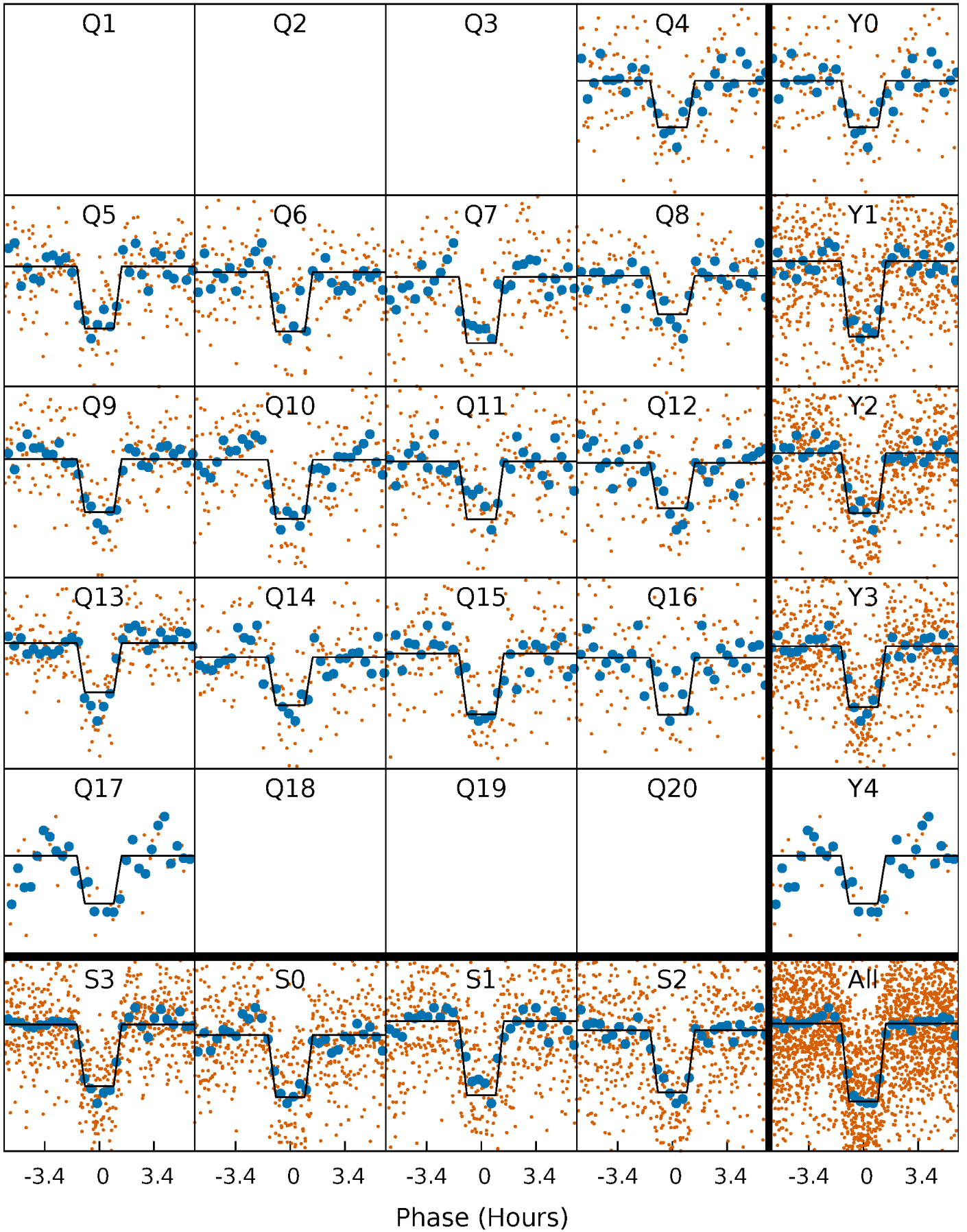
DV Quarter-Phased Transit Curves

TCE 009112931-01 P= 10.712533 Days $T_0=137.165874$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

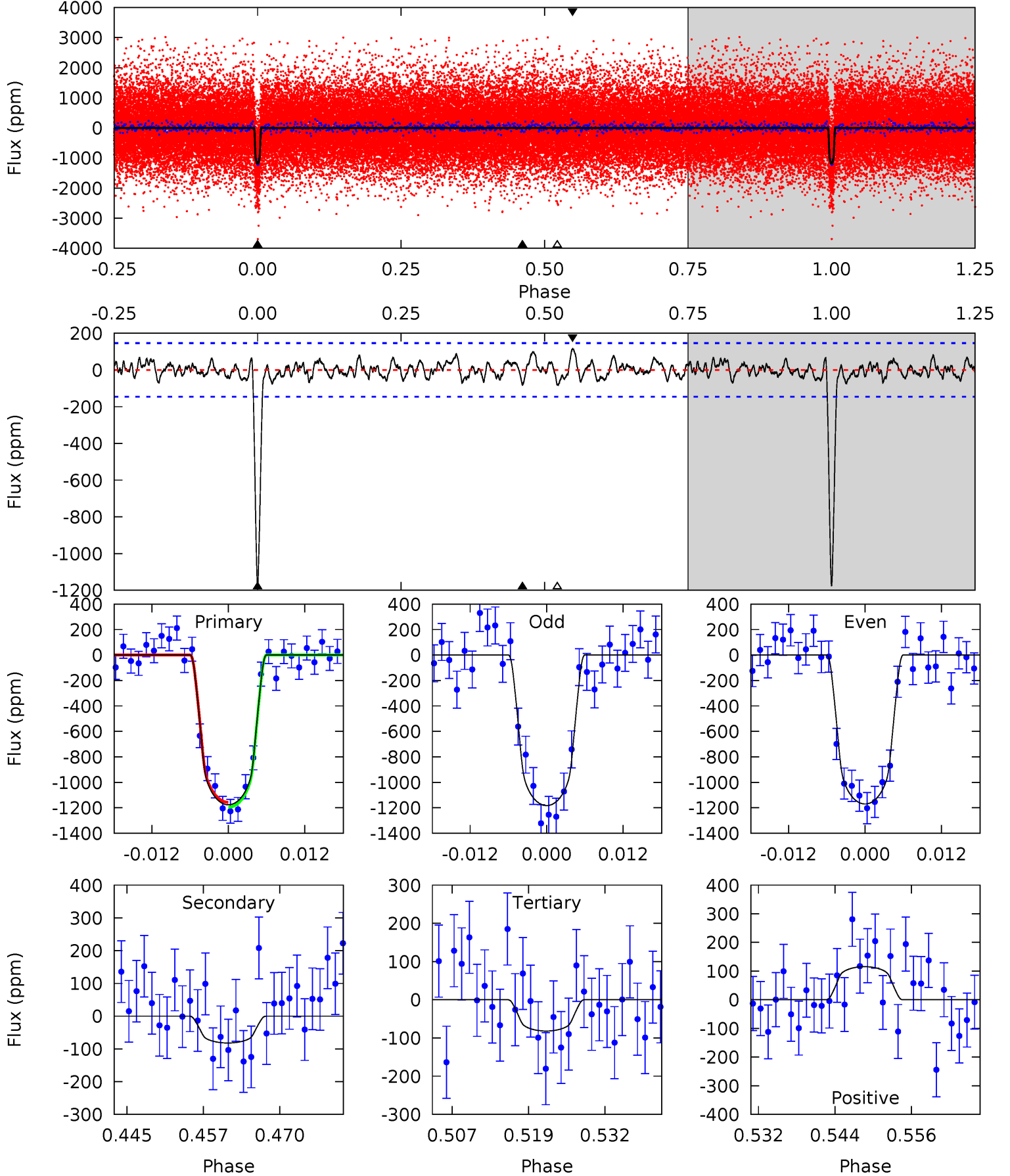
TCE 009112931-01 P= 10.712473 Days $T_0=137.169552$ (BKJD)



DV Model-Shift Uniqueness Test

009112931-01, $P = 10.712533$ Days, $E = 137.165874$ Days

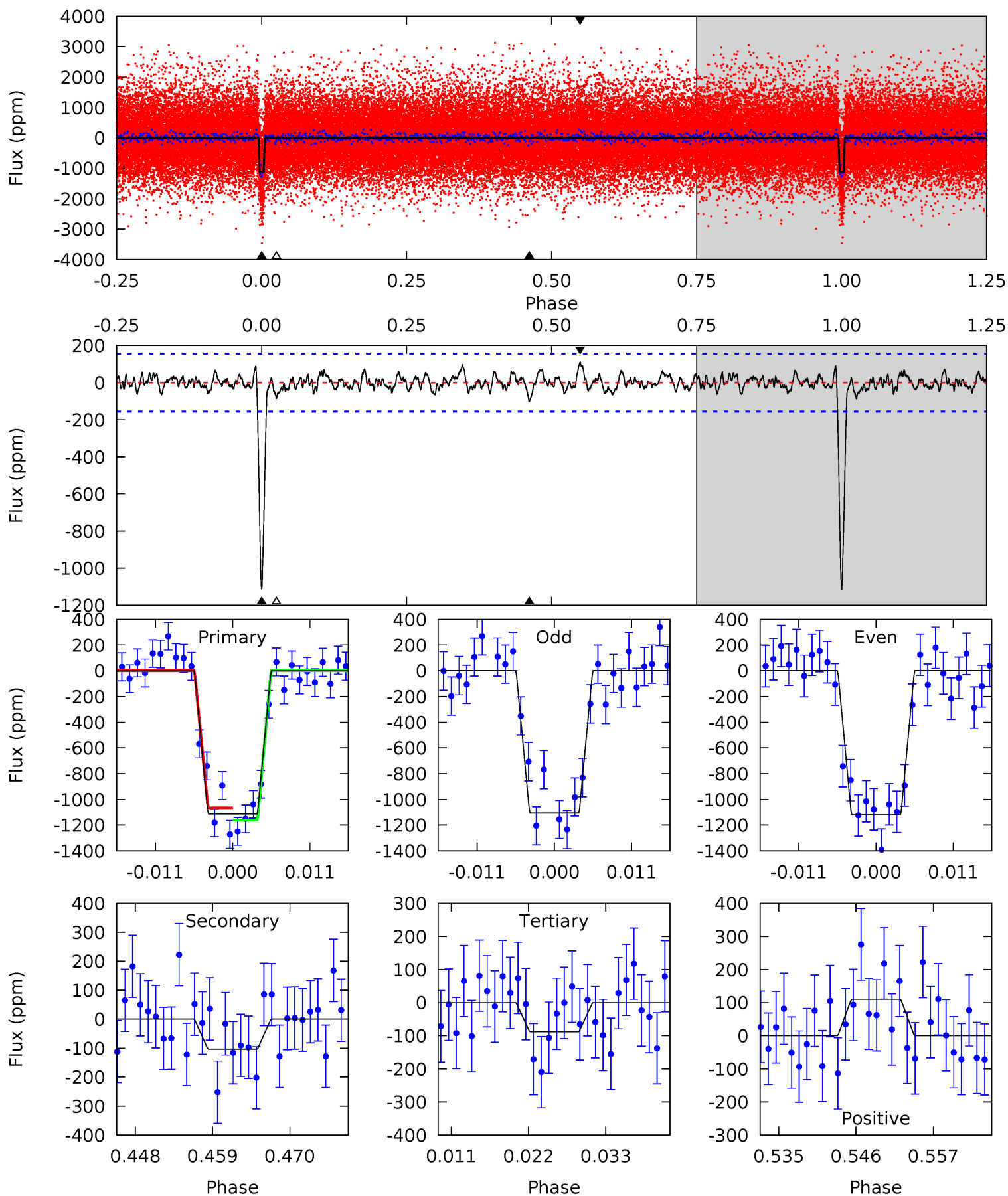
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.1	2.79	2.79	3.93	4.99	2.50	1.19	37.3	36.1	0.00	-1.14	0.21	0.96	0.09	0.66



Alt Model-Shift Uniqueness Test

009112931-01, $P = 10.712473$ Days, $E = 137.169552$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.7	3.31	2.81	3.52	5.01	2.55	1.01	32.9	32.2	0.50	-0.22	0.21	0.99	0.09	1.53



Stellar Parameters For KIC 009112931

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4175^{+83}_{-91}	$4.715^{+0.025}_{-0.032}$	$-0.460^{+0.150}_{-0.150}$	$0.544^{+0.029}_{-0.029}$	$0.561^{+0.028}_{-0.033}$	$4.897^{+0.596}_{-0.581}$
	+2%/-2%	+1%/-1%	+33%/-33%	+5%/-5%	+5%/-6%	+12%/-12%
Source	SPE60	SPE60	SPE60	DSEP		

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

Secondary Eclipse Parameters for KIC 009112931-01 / KOI 2256.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-82 ± 29	$2.07^{+0.60}_{-0.59}$	678^{+17}_{-17}	2739^{+307}_{-211}	63^{+72}_{-30}
Alt.	-103 ± 31	$2.04^{+0.59}_{-0.58}$	679^{+16}_{-17}	2851^{+299}_{-229}	81^{+90}_{-36}

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

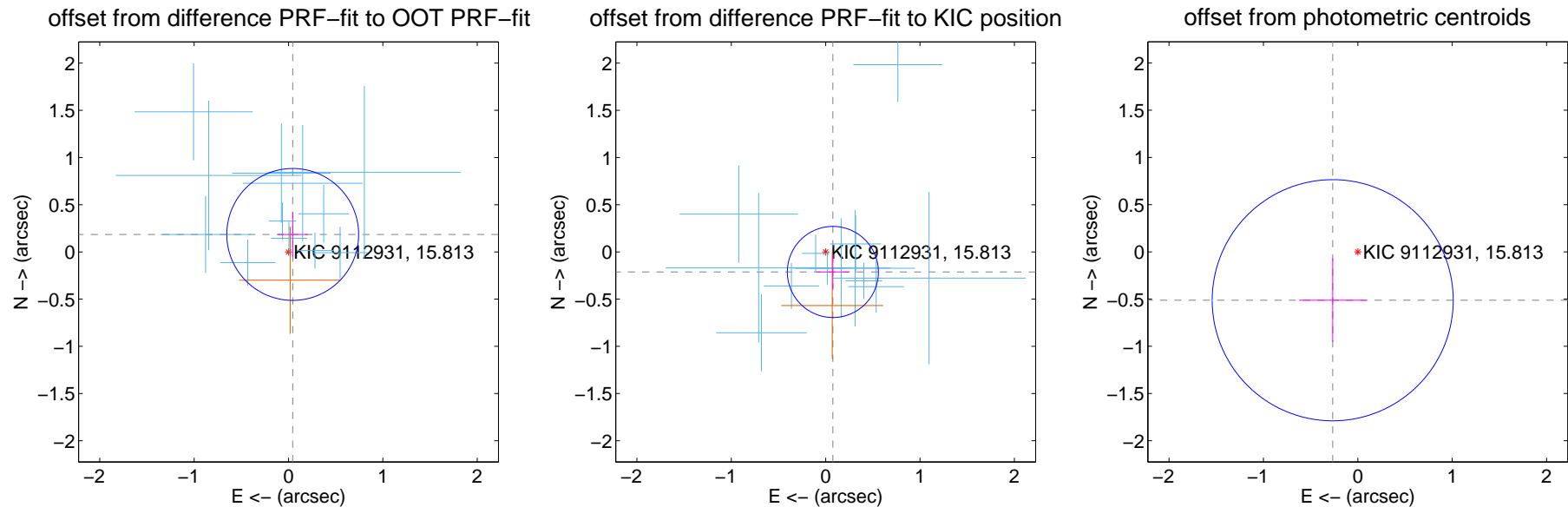
DV Centroid Data

Supplemental centroid analysis for 009112931-01. Kepler magnitude: 15.81. Transit SNR 29.37

There are 13 quarters with good PRF difference image offsets

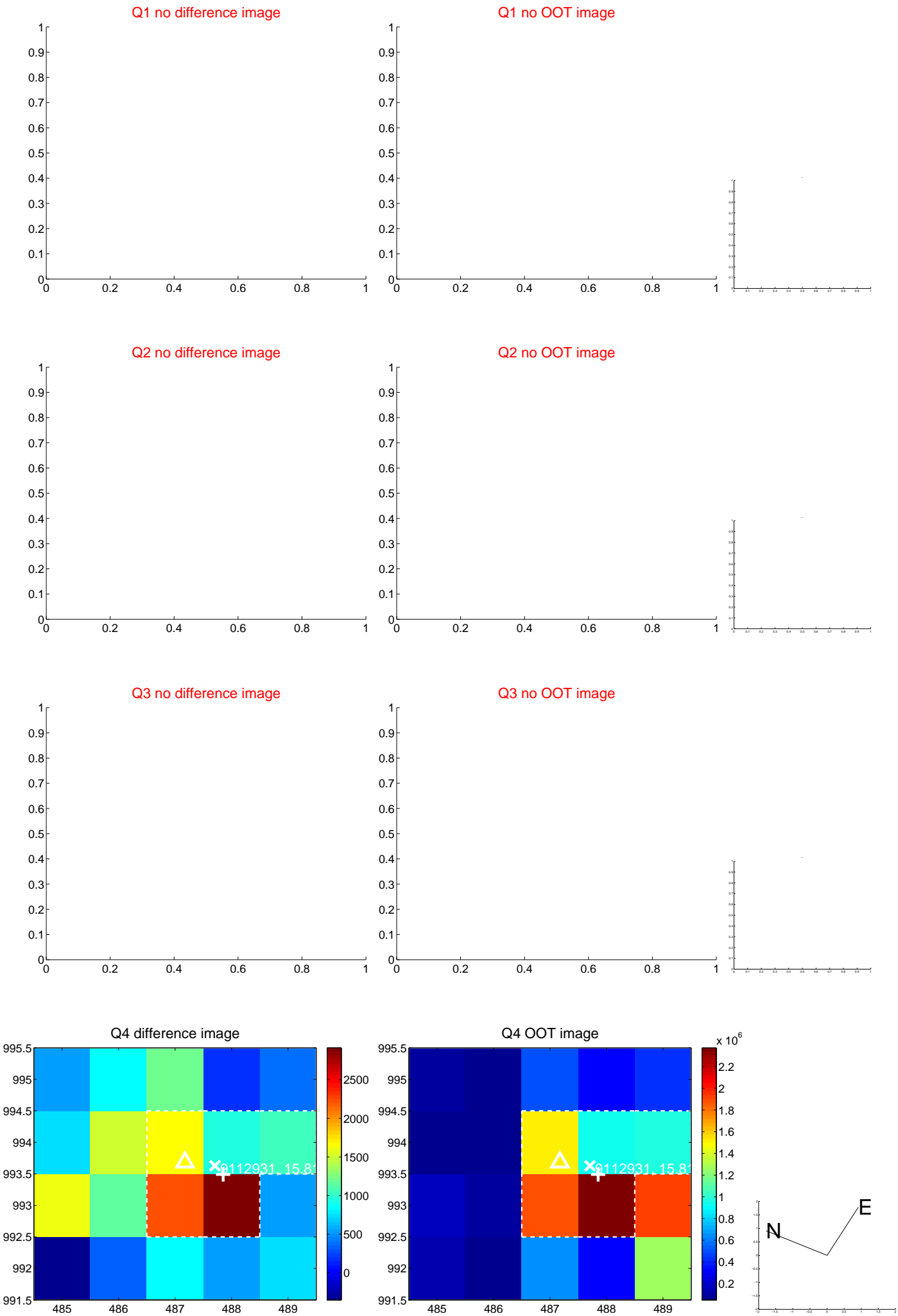
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.190 ± 0.233	0.82	-0.045 ± 0.160	0.185 ± 0.235
PRF-fit source offset from KIC position	0.226 ± 0.161	1.40	-0.077 ± 0.174	-0.212 ± 0.181
photometric centroid source offset	0.58 ± 0.43	1.36	0.27 ± 0.36	-0.51 ± 0.44

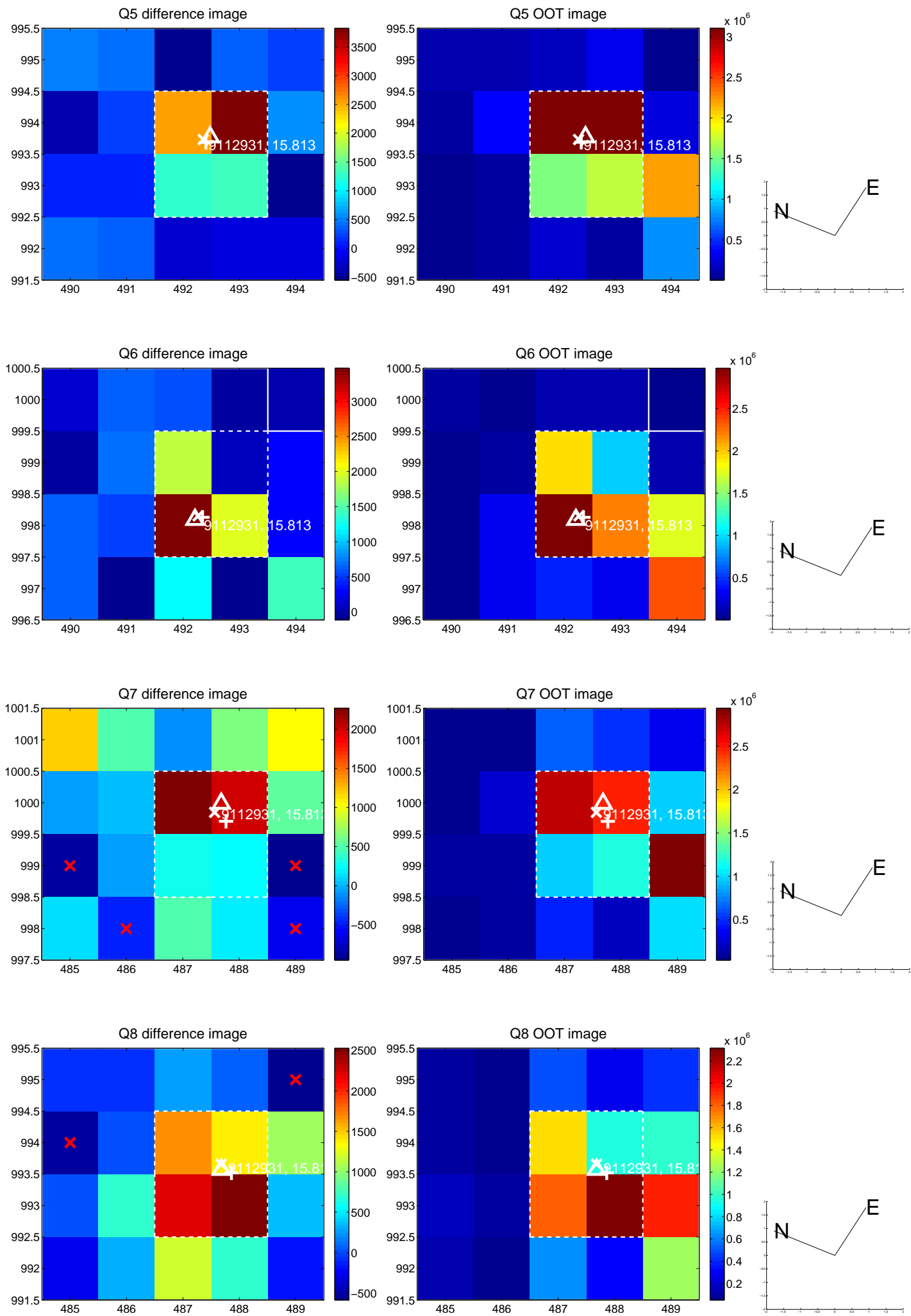


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

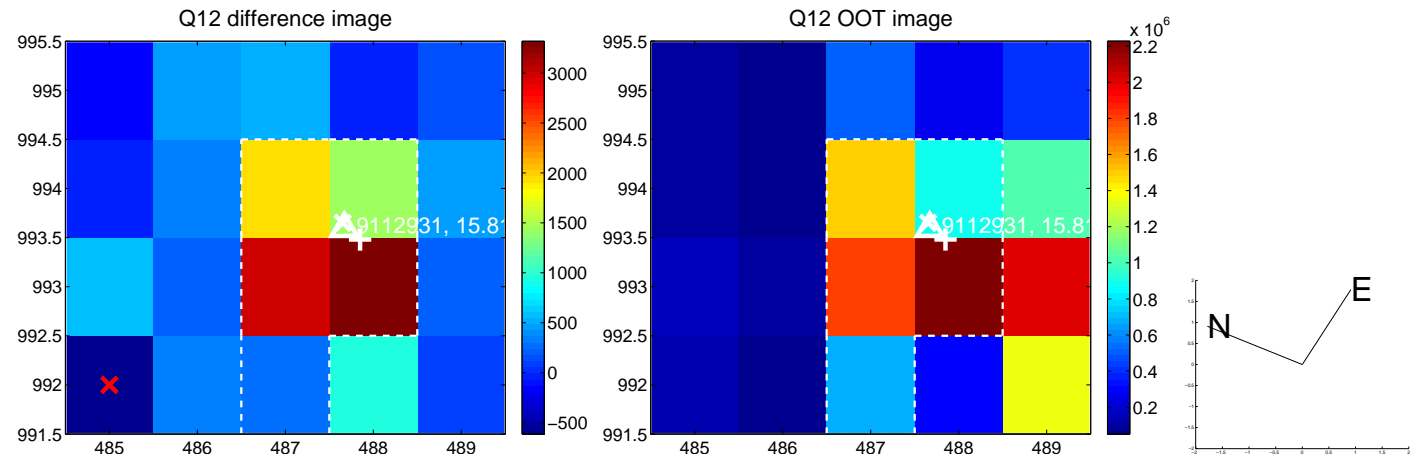
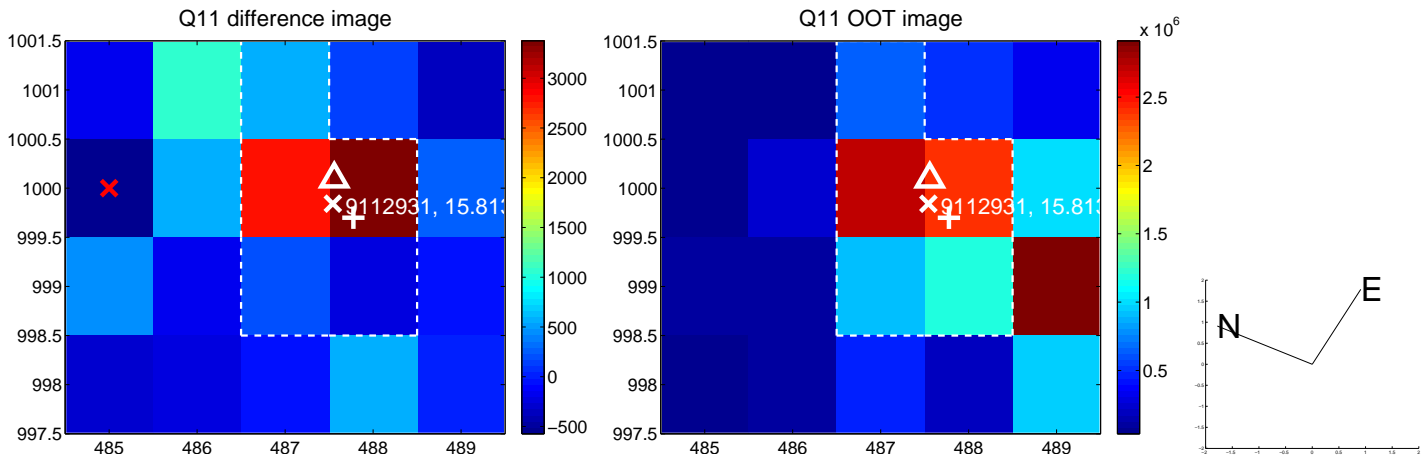
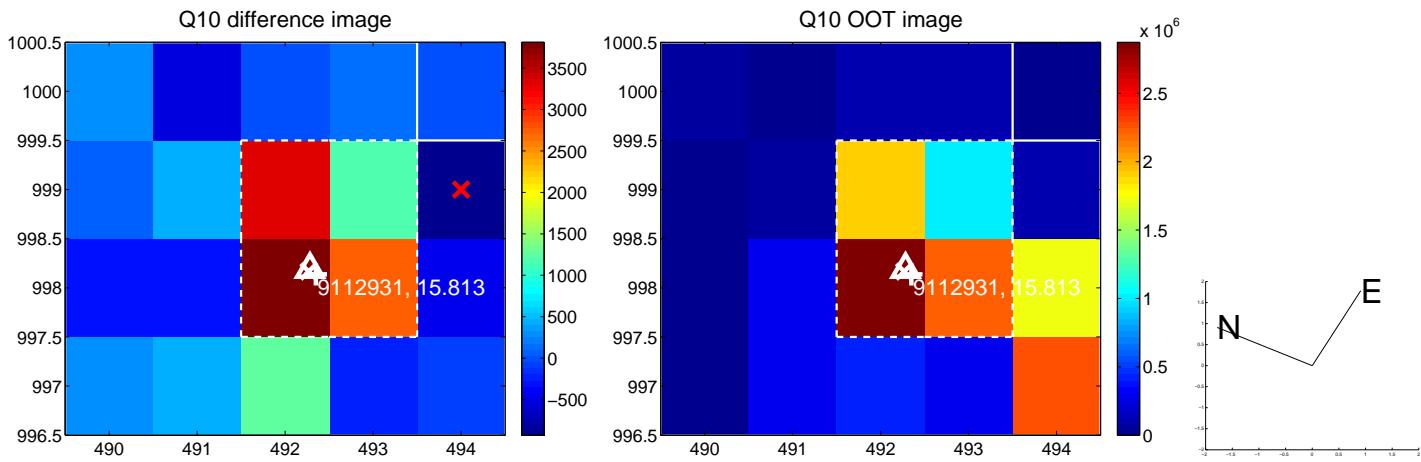
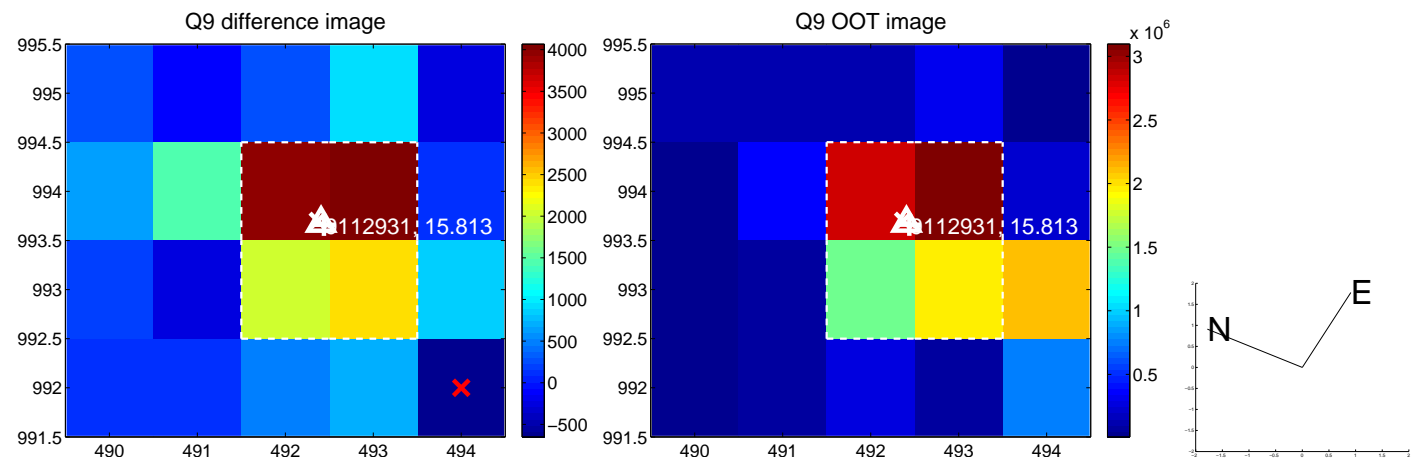
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



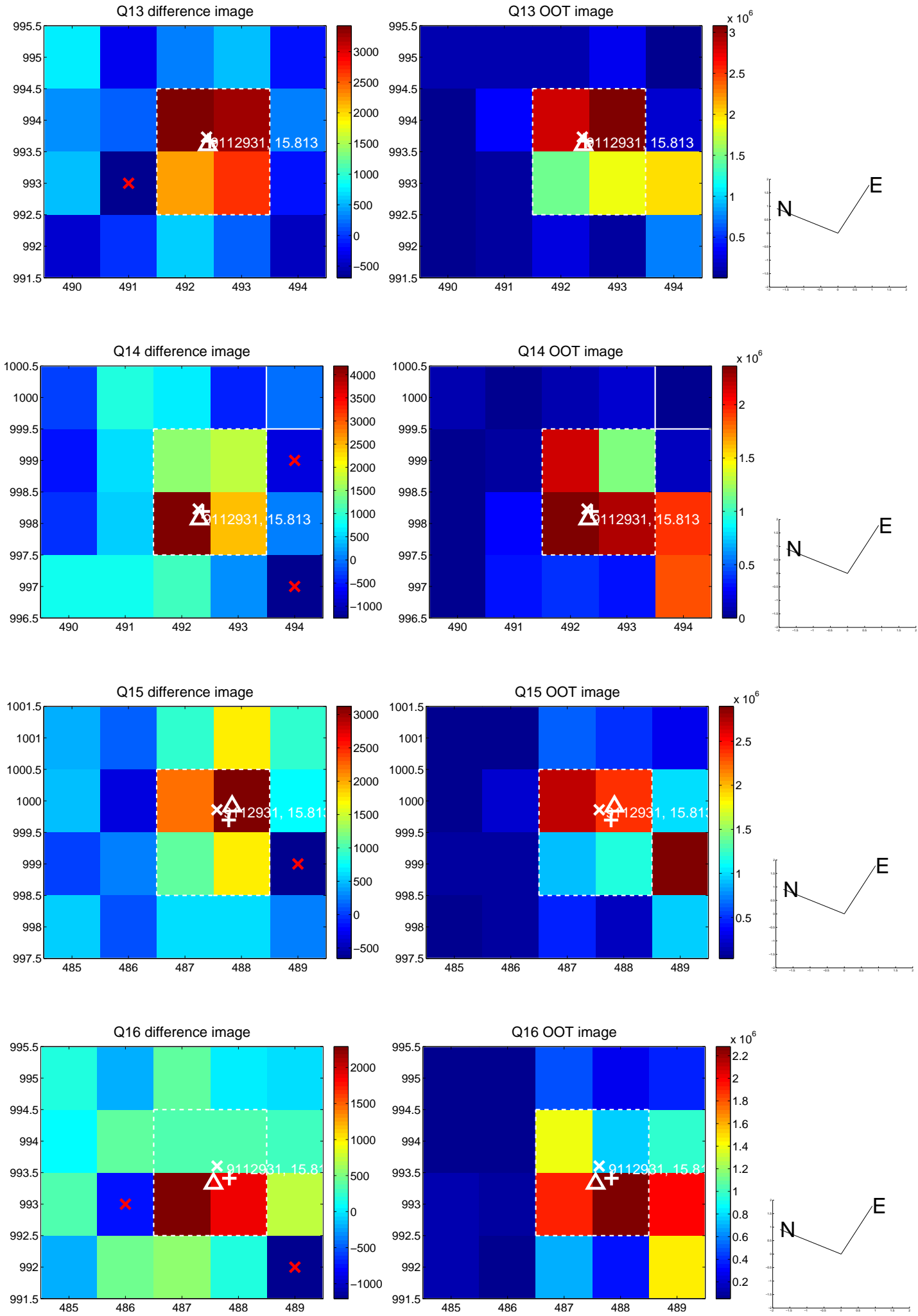
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



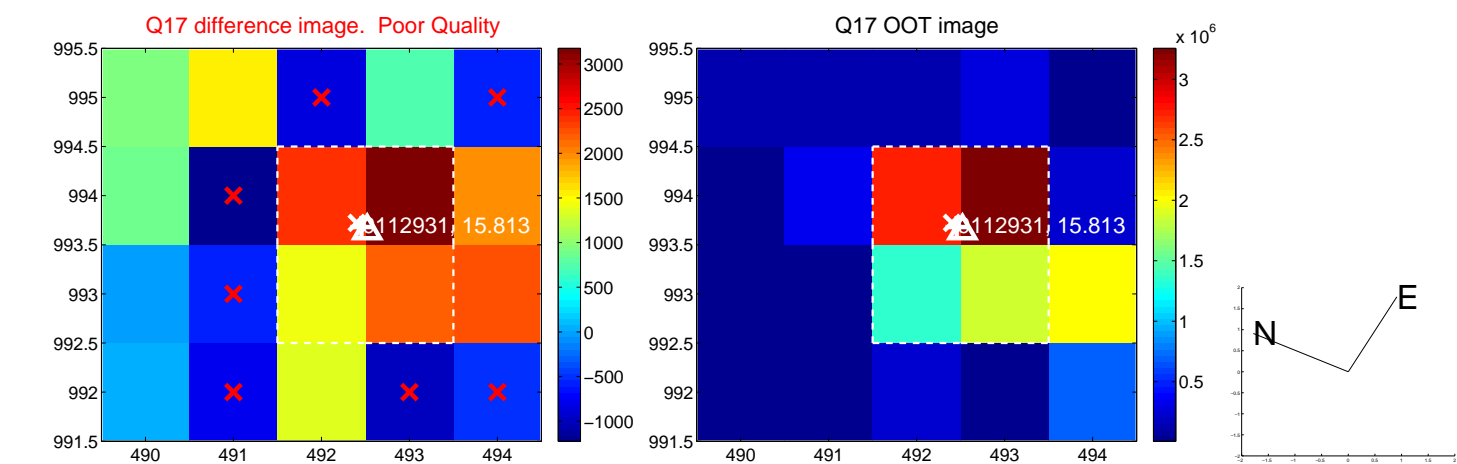
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



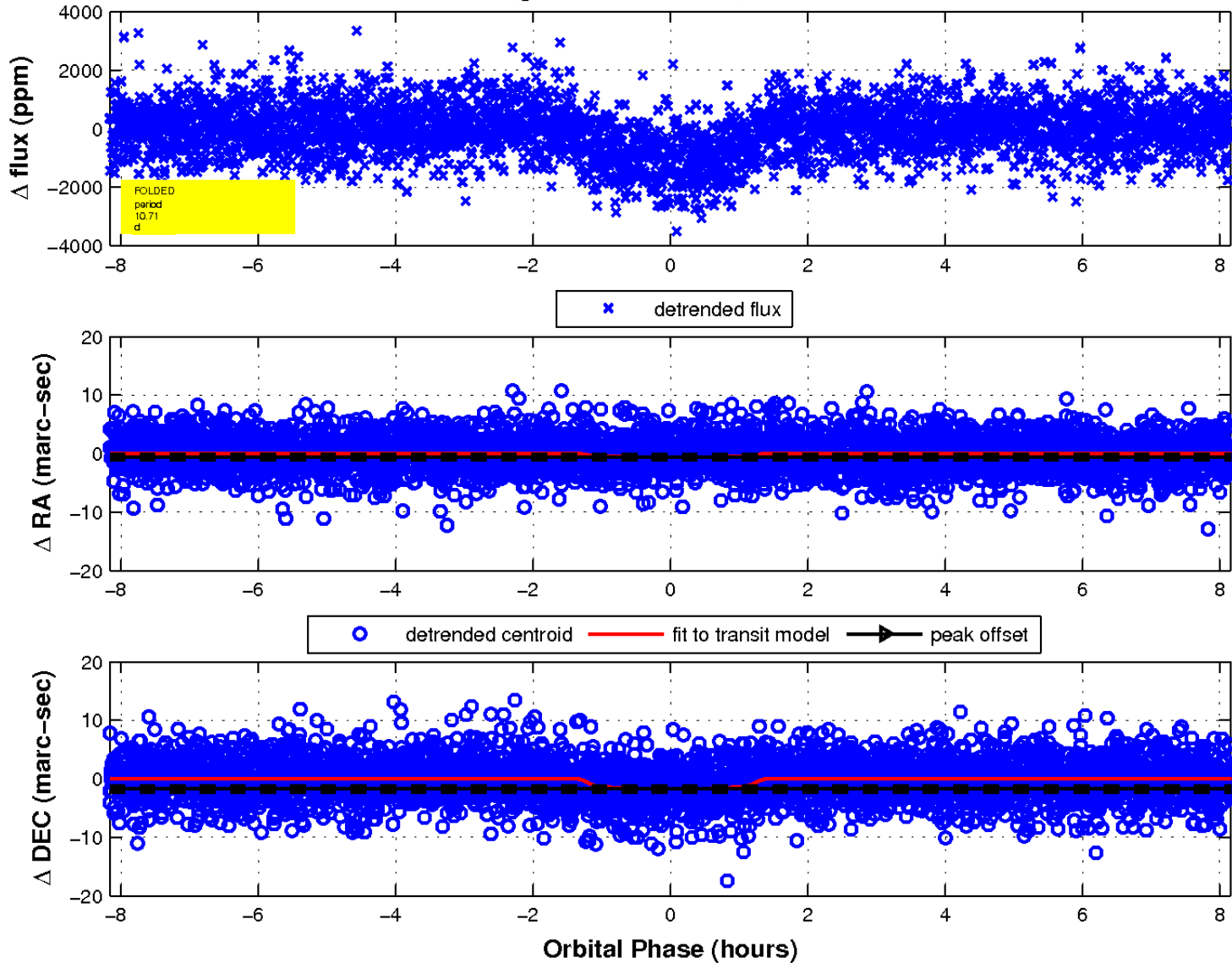
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

