

KIC 010031643

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})
010031643-01	OBS	7984.01	8.590054	131.989366	81.7	5.103	7.6	7.3	1.09	5638	1.12	176.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010031643-01	OBS	FP	0.00	0	0	0	1	EPHEM_MATCH

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.

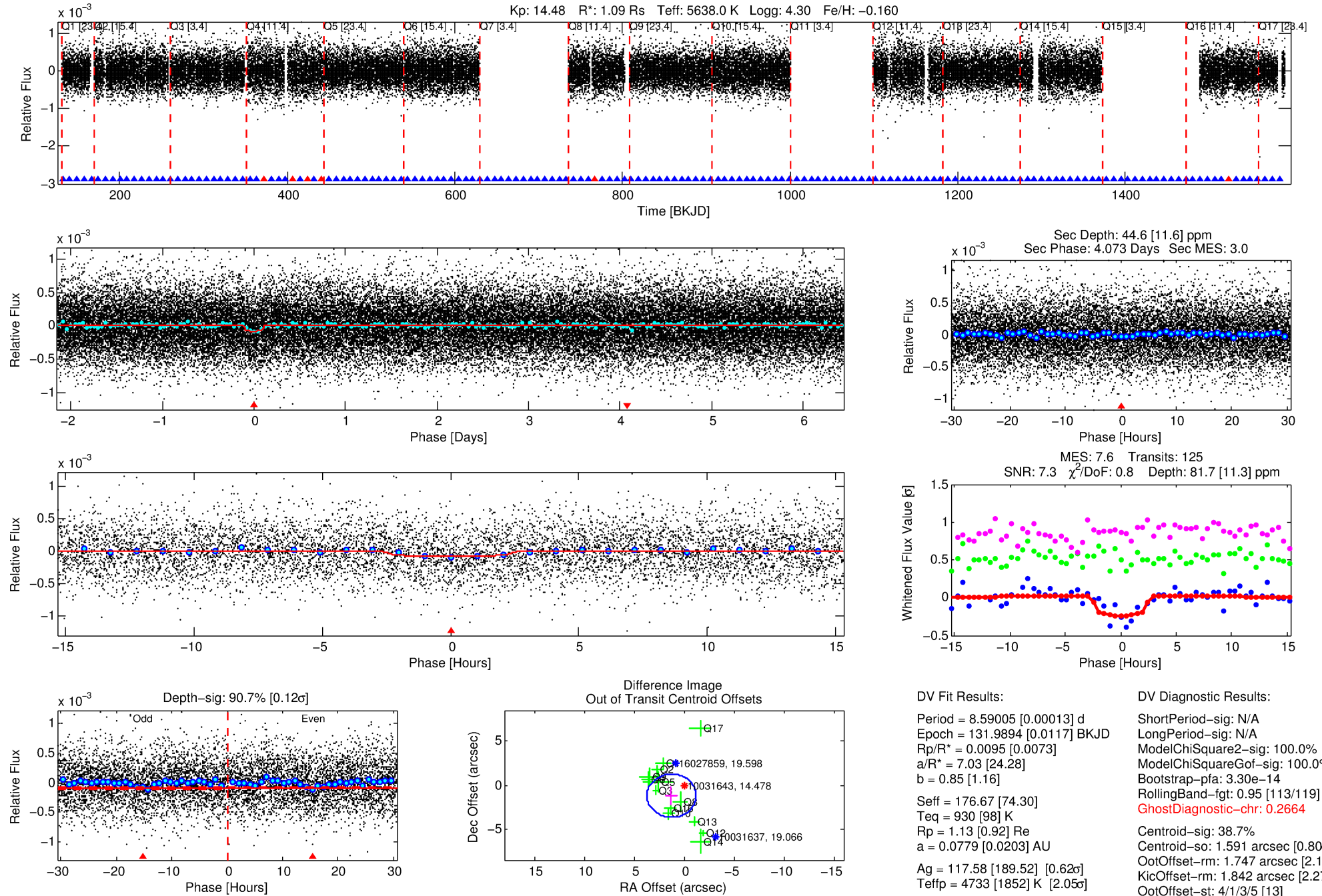
Ephemeris Match Information For 010031643-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010031643-01	10031643	010031808-01	10031808	1:1	195.5	9	48	9.56	14.48	3294.40	Direct-PRF	0	2.37	0.52

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10031643 Candidate: 1 of 1 Period: 8.590 d



DV Fit Results:

Period = 8.59005 [0.00013] d
Epoch = 131.9894 [0.0117] BKJD
Rp/R* = 0.0095 [0.0073]
a/R* = 7.03 [24.28]
b = 0.85 [1.16]
Seff = 176.67 [74.30]
Teq = 930 [98] K
Rp = 1.13 [0.92] Re
a = 0.0779 [0.0203] AU
Ag = 117.58 [189.52] [0.62 σ]
Teffp = 4733 [1852] K [2.05 σ]

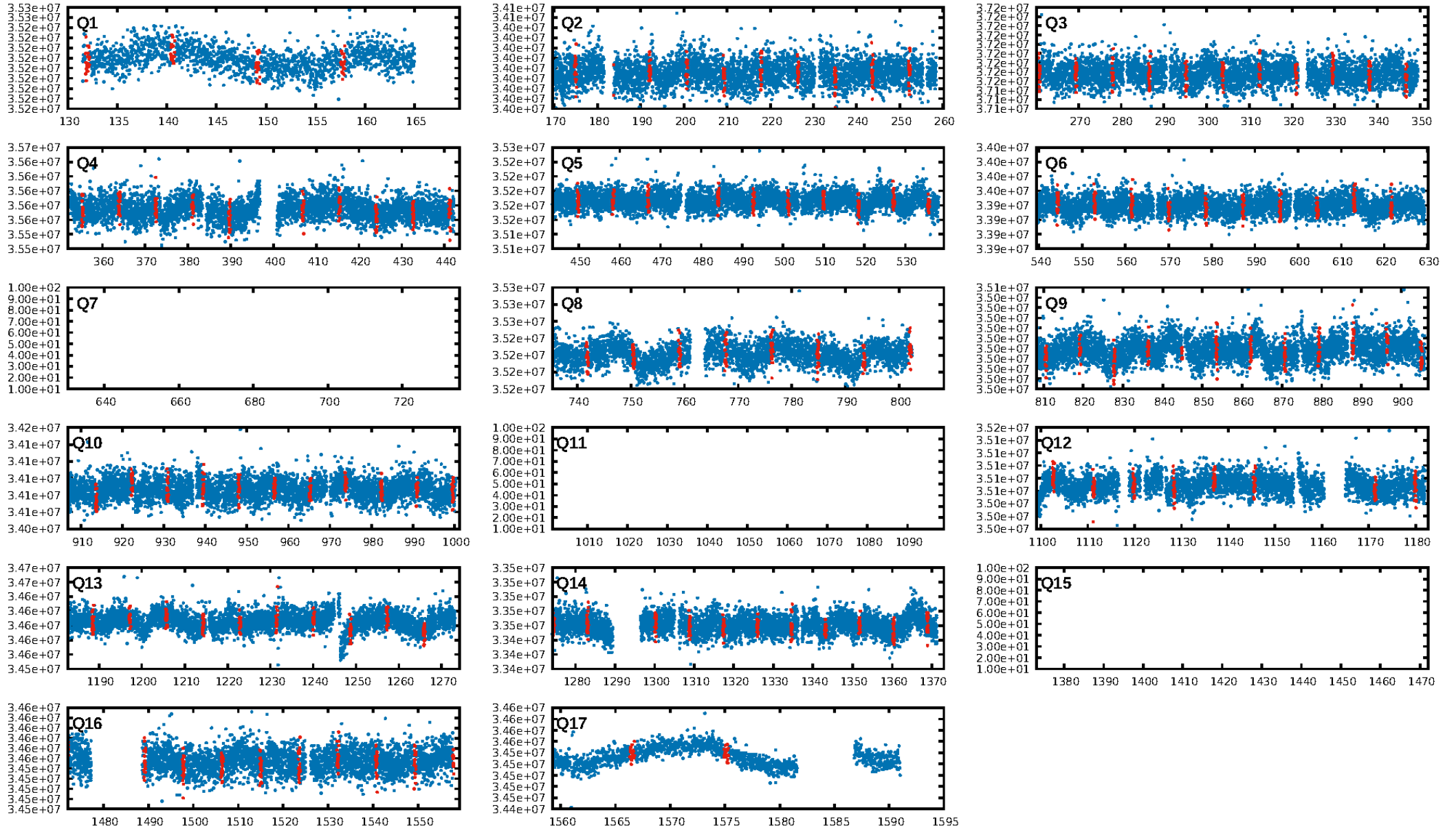
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.30e-14
RollingBand-fgt: 0.95 [113/119]
GhostDiagnostic-chr: 0.2664
Centroid-sig: 38.7%
Centroid-so: 1.591 arcsec [0.80 σ]
OotOffset-rm: 1.747 arcsec [2.13 σ]
KicOffset-rm: 1.842 arcsec [2.27 σ]
OotOffset-st: 4/1/3/5 [13]
KicOffset-st: 4/1/3/5 [13]
DiffImageQuality-fgm: 0.08 [1/13]
DiffImageOverlap-fno: 1.00 [14/14]

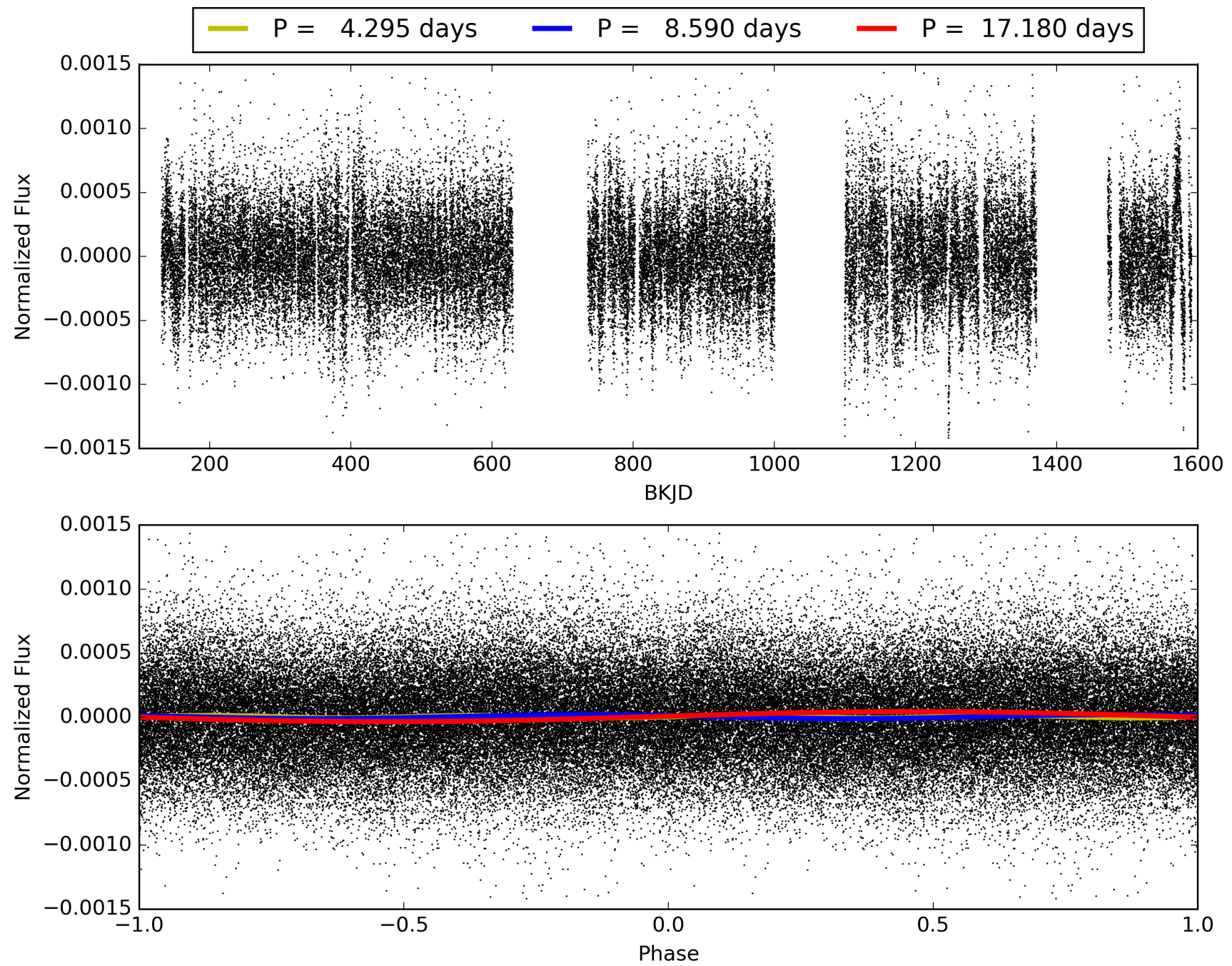
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:29:55 Z

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

TCE 010031643-01, PDC Light Curves

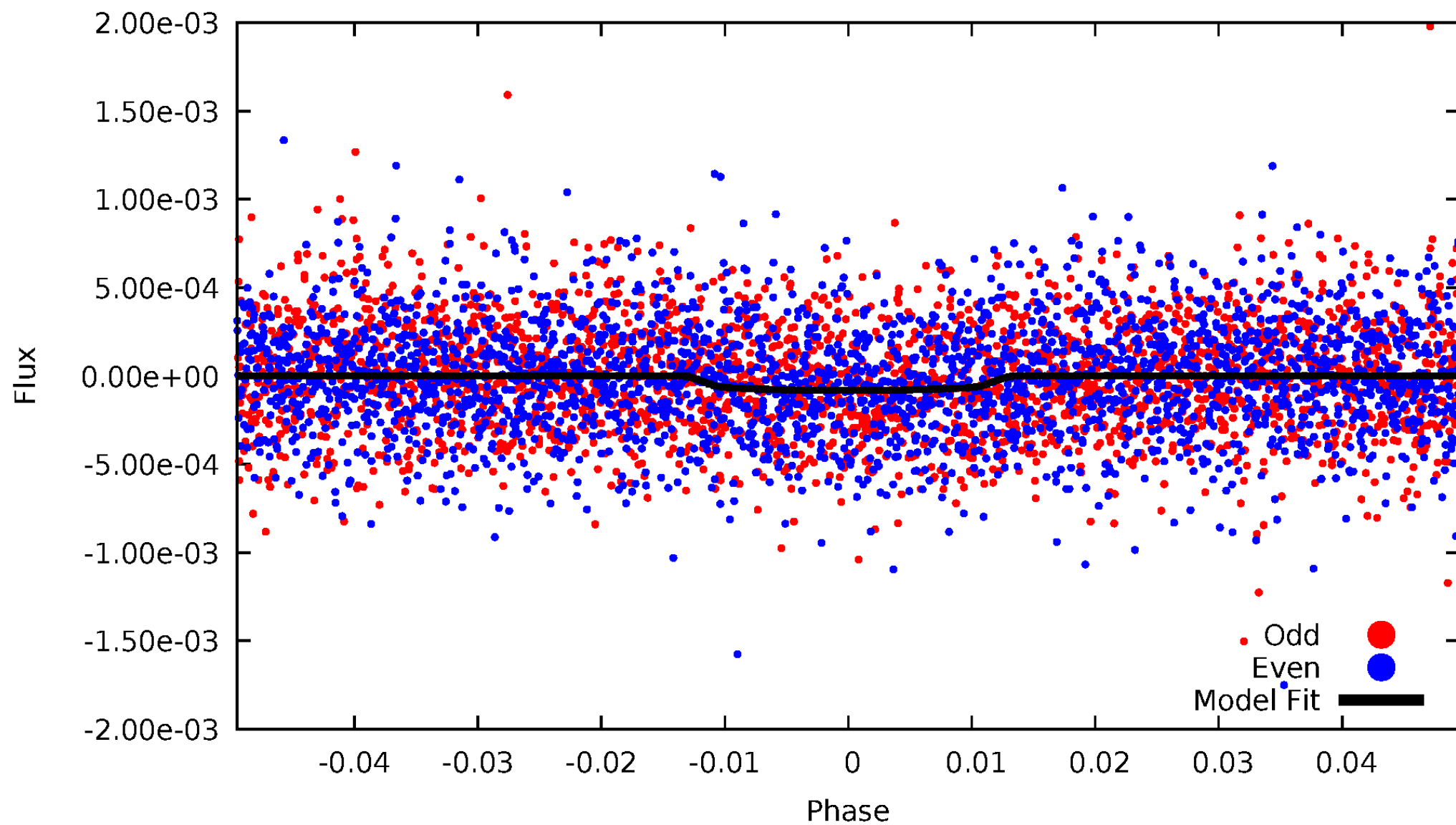


TCE 010031643-01



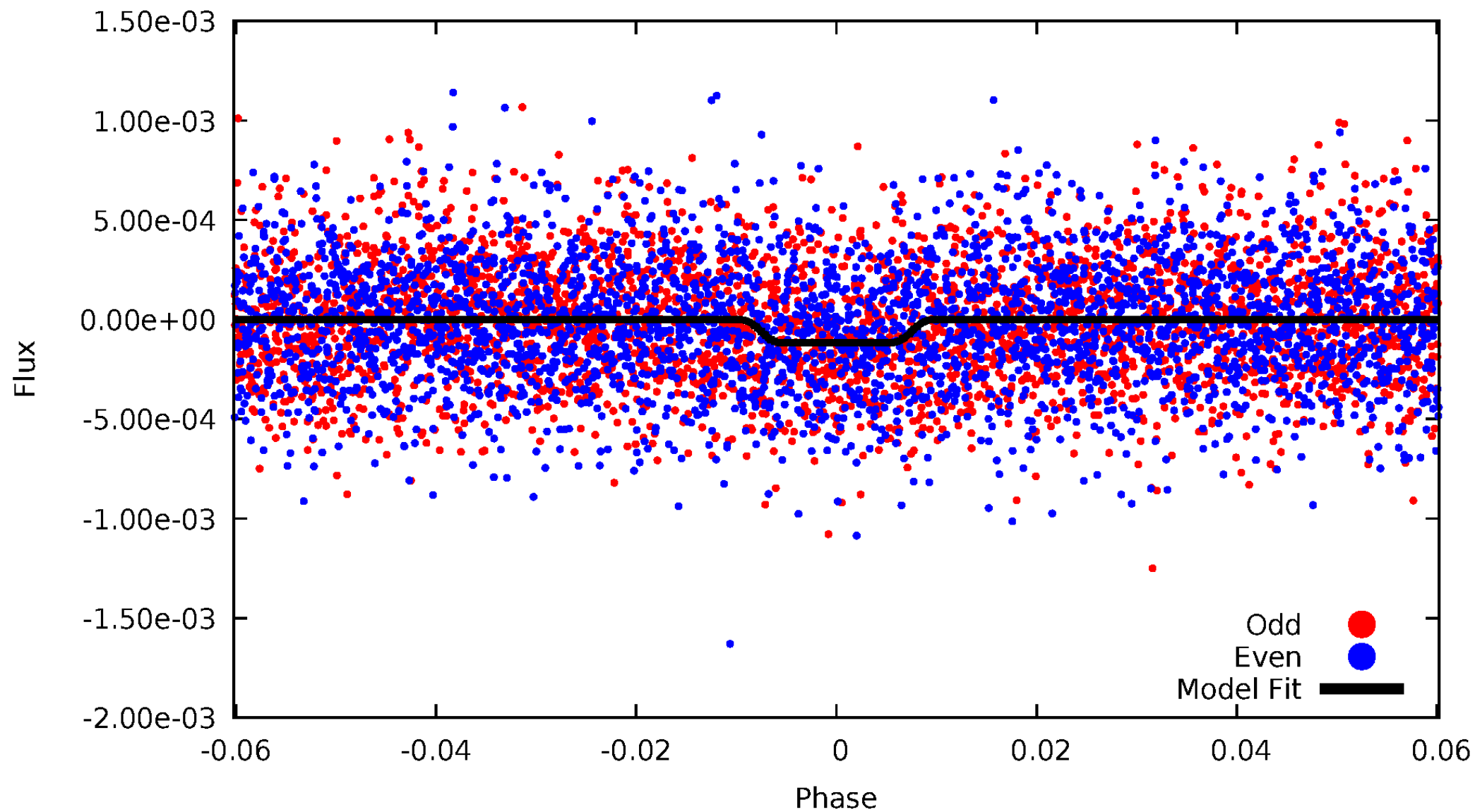
DV Odd/Even

TCE 010031643-01



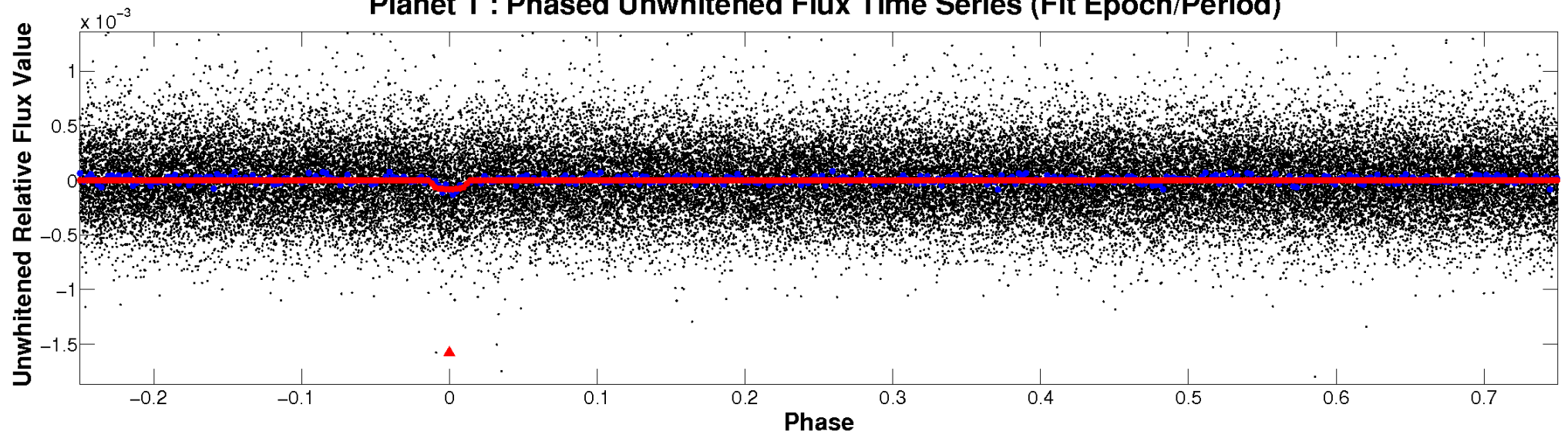
ALT Odd/Even

TCE 010031643-01

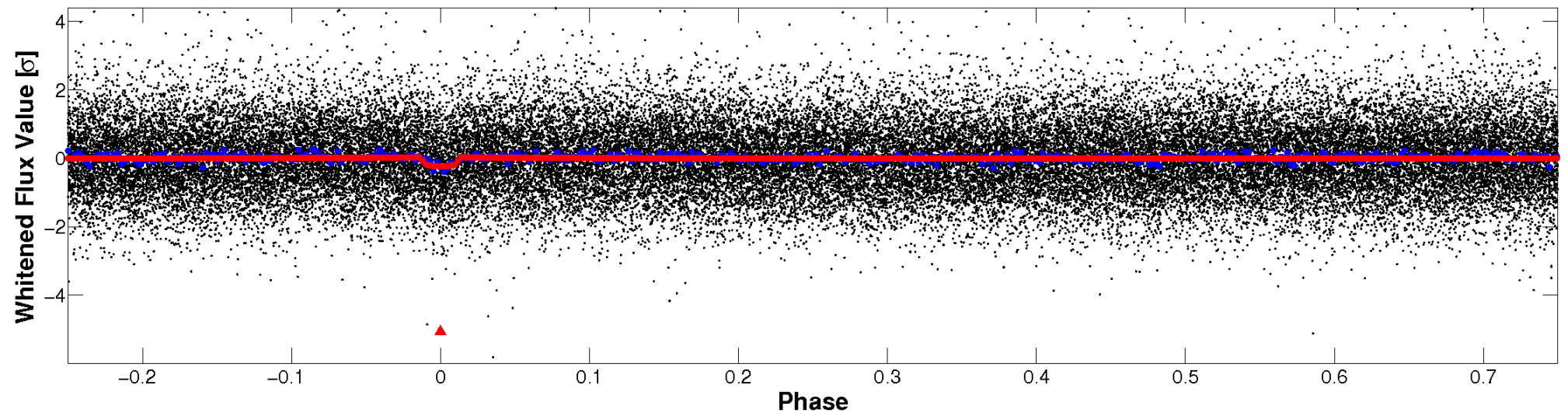


Non-Whitened Vs. Whitened Light Curve

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

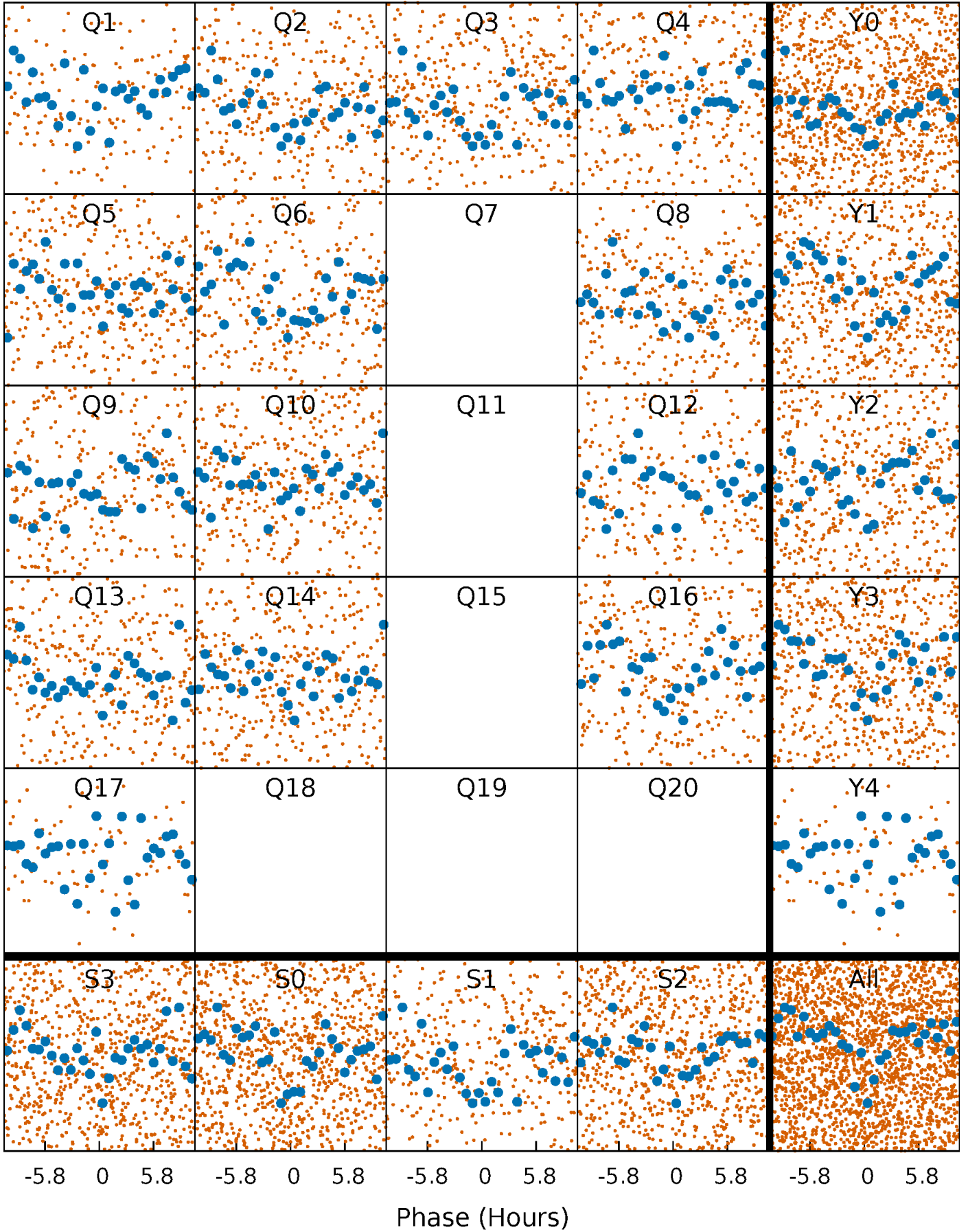


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



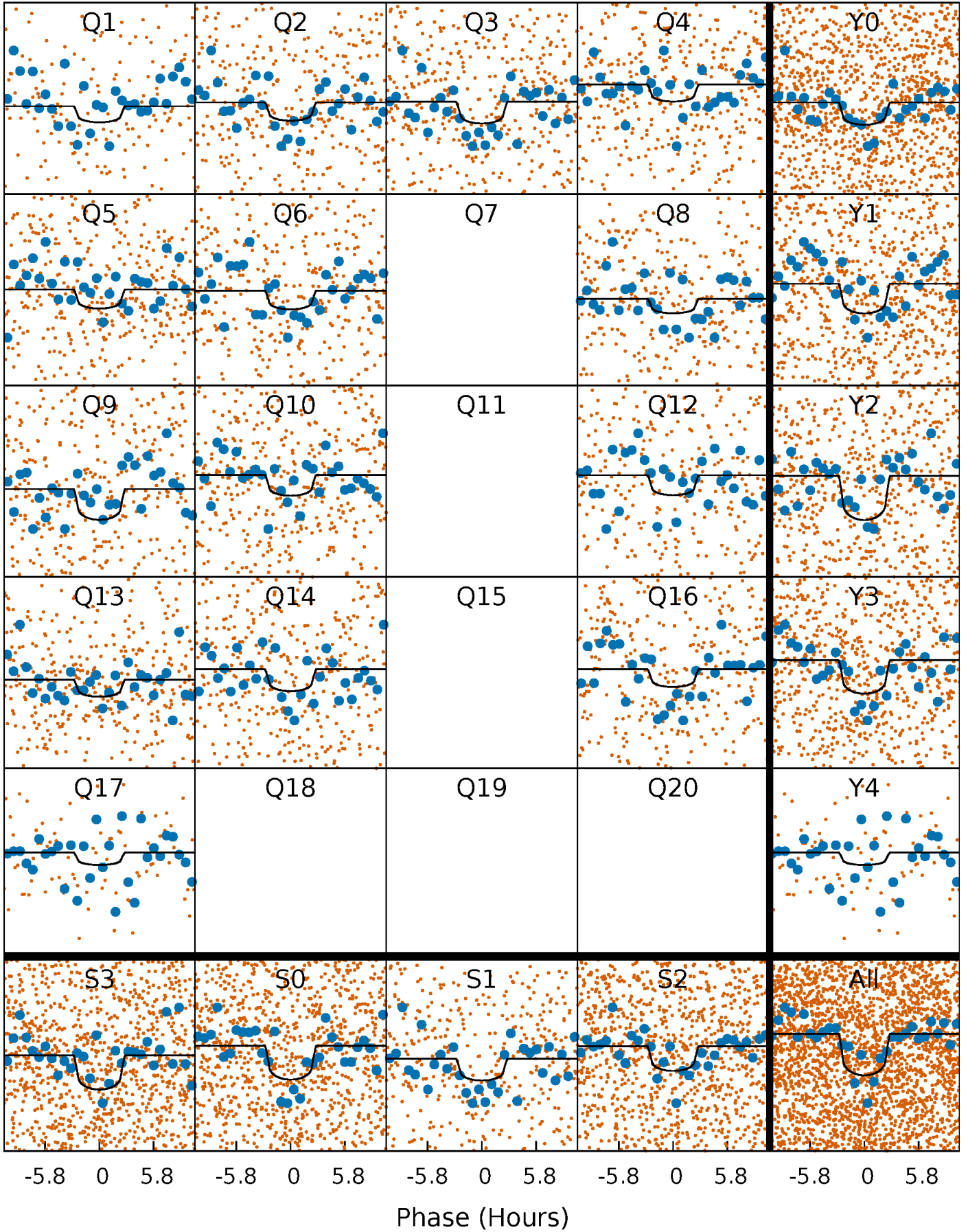
PDC Quarter-Phased Transit Curves

TCE 010031643-01 P= 8.590054 Days $T_0=131.989366$ (BKJD)



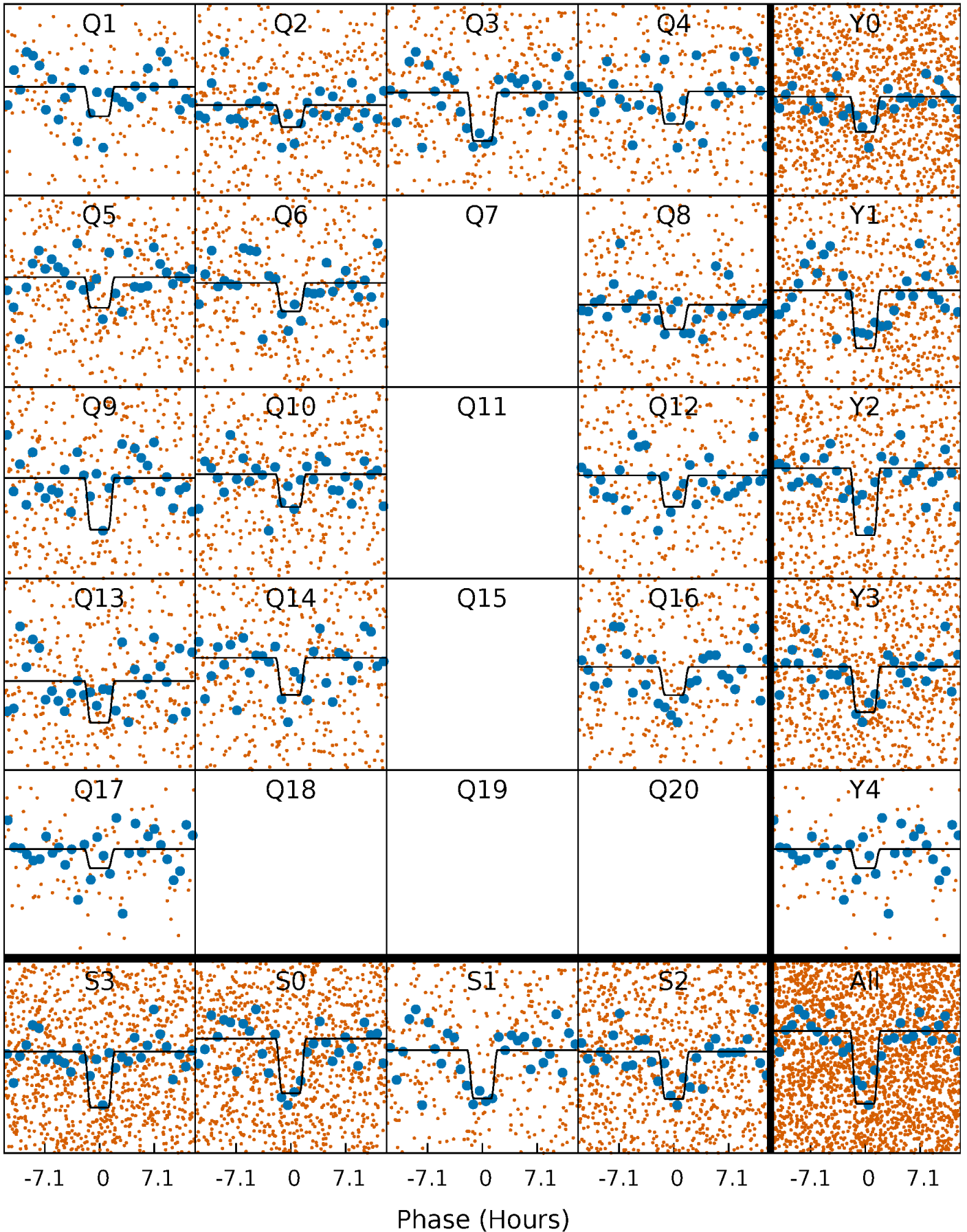
DV Quarter-Phased Transit Curves

TCE 010031643-01 P= 8.590054 Days $T_0=131.989366$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

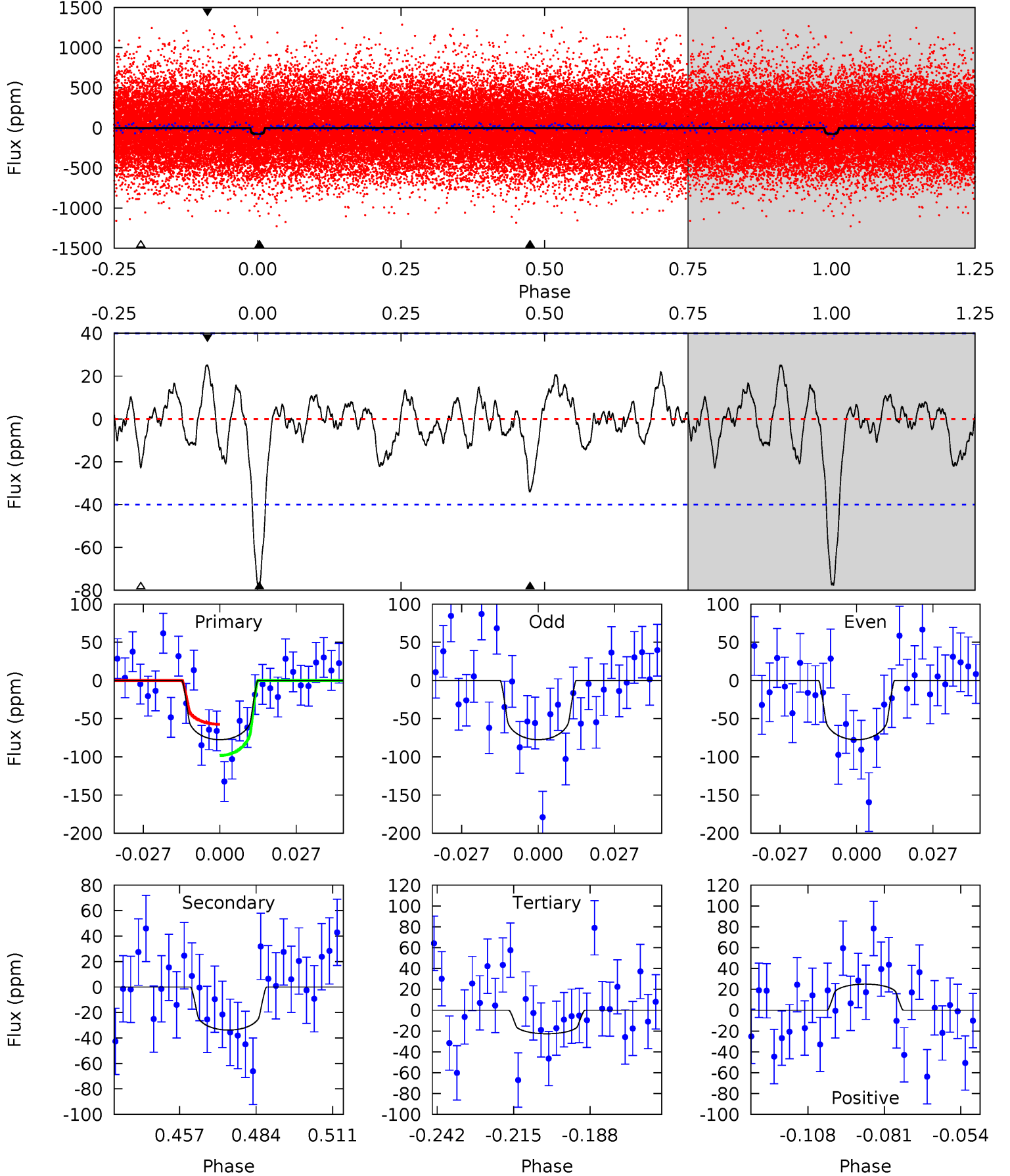
TCE 010031643-01 P= 8.590058 Days $T_0=132.003048$ (BKJD)



DV Model-Shift Uniqueness Test

010031643-01, P = 8.590054 Days, E = 123.399312 Days

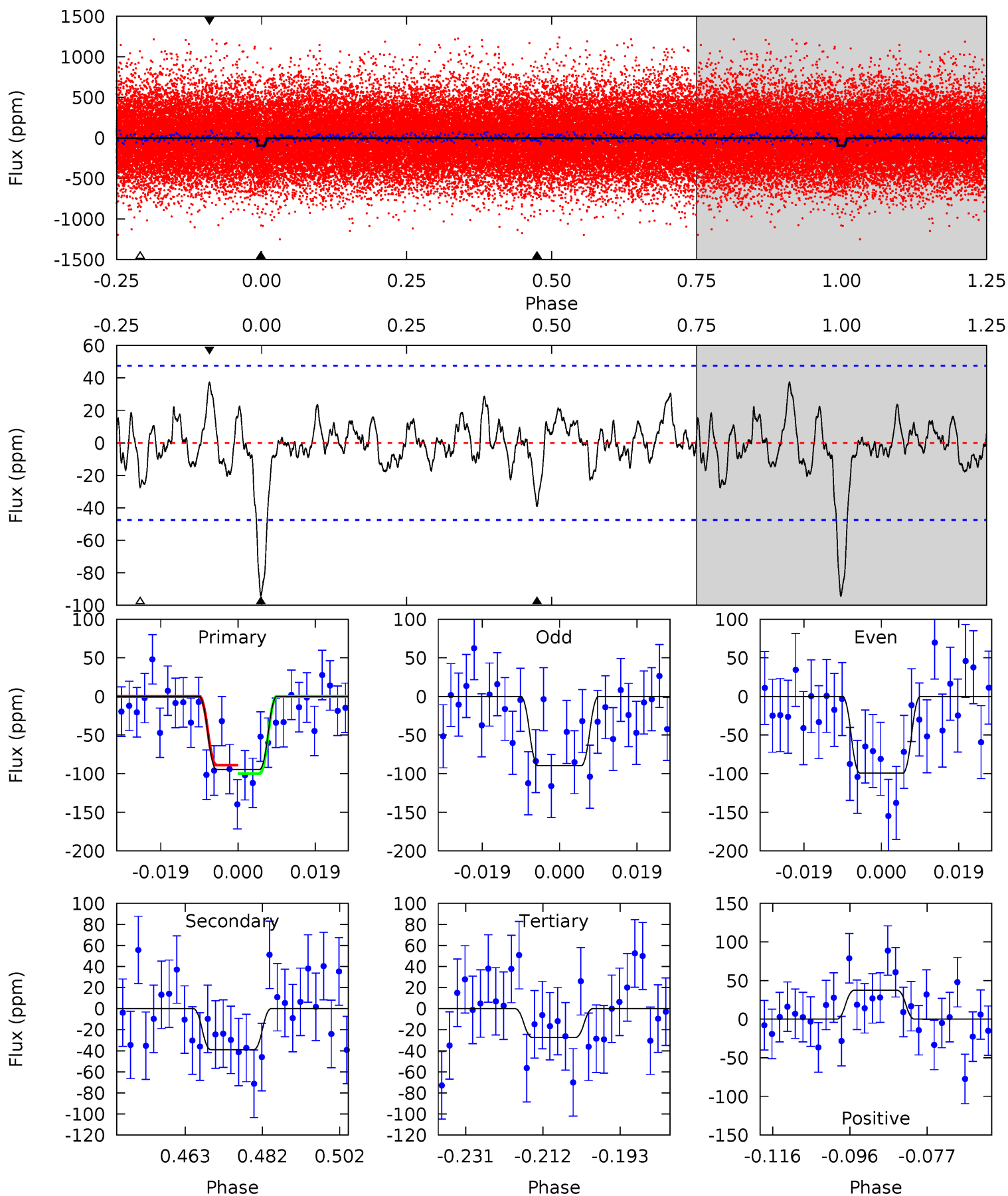
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.37	4.09	2.74	3.02	4.83	2.21	1.09	6.63	6.35	1.35	1.06	0.00	0.97	0.24	2.47



Alt Model-Shift Uniqueness Test

010031643-01, P = 8.590058 Days, E = 123.412990 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.74	4.01	2.82	3.85	4.90	2.34	1.14	6.91	5.88	1.18	0.15	0.50	1.01	0.28	0.56



Stellar Parameters For KIC 010031643

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5638^{+169}_{-152}	$4.296^{+0.231}_{-0.189}$	$-0.160^{+0.300}_{-0.250}$	$1.088^{+0.313}_{-0.228}$	$0.856^{+0.125}_{-0.073}$	$0.935^{+1.007}_{-0.482}$
	+3%/-3%	+5%/-4%	+188%/-156%	+29%/-21%	+15%/-9%	+108%/-52%
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 010031643-01 / KOI 7984.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-34 ± 8	$1.22^{+0.86}_{-0.70}$	1295^{+103}_{-92}	4375^{+2087}_{-756}	75^{+317}_{-51}
Alt.	-39 ± 10	$1.33^{+0.92}_{-0.75}$	1280^{+109}_{-86}	4360^{+1801}_{-727}	74^{+298}_{-50}

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

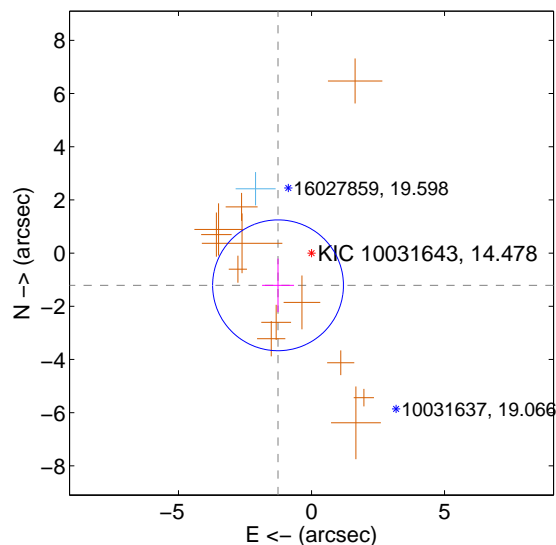
Supplemental centroid analysis for 010031643-01. Kepler magnitude: 14.48. Transit SNR 7.30

There are 1 quarters with good PRF difference image offsets

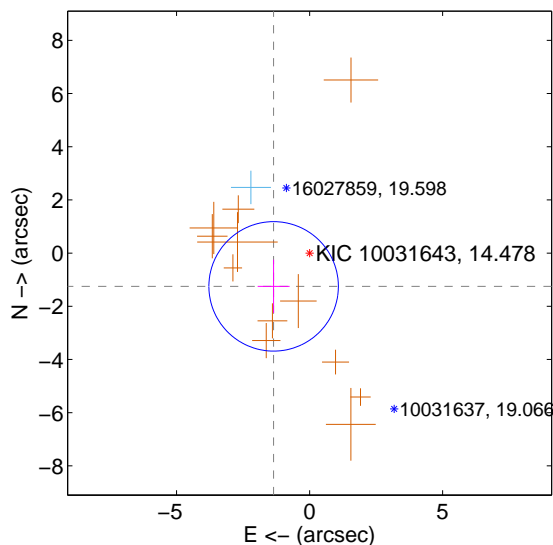
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.747 ± 0.820	2.13	1.258 ± 0.600	-1.211 ± 1.004
PRF-fit source offset from KIC position	1.842 ± 0.811	2.27	1.352 ± 0.599	-1.251 ± 1.004
photometric centroid source offset	1.59 ± 2.00	0.80	1.09 ± 1.95	1.16 ± 2.04

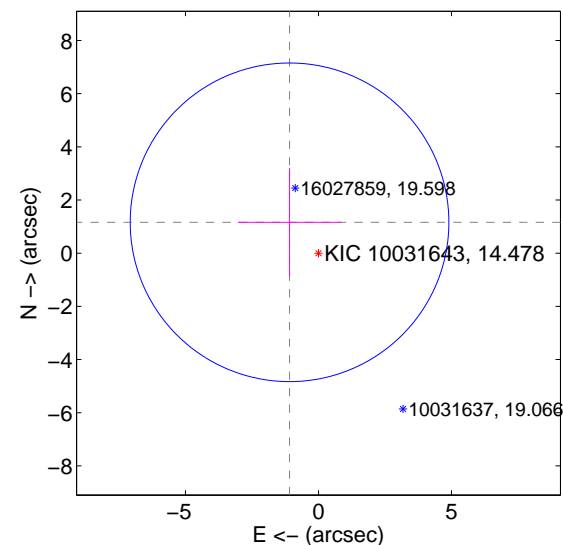
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

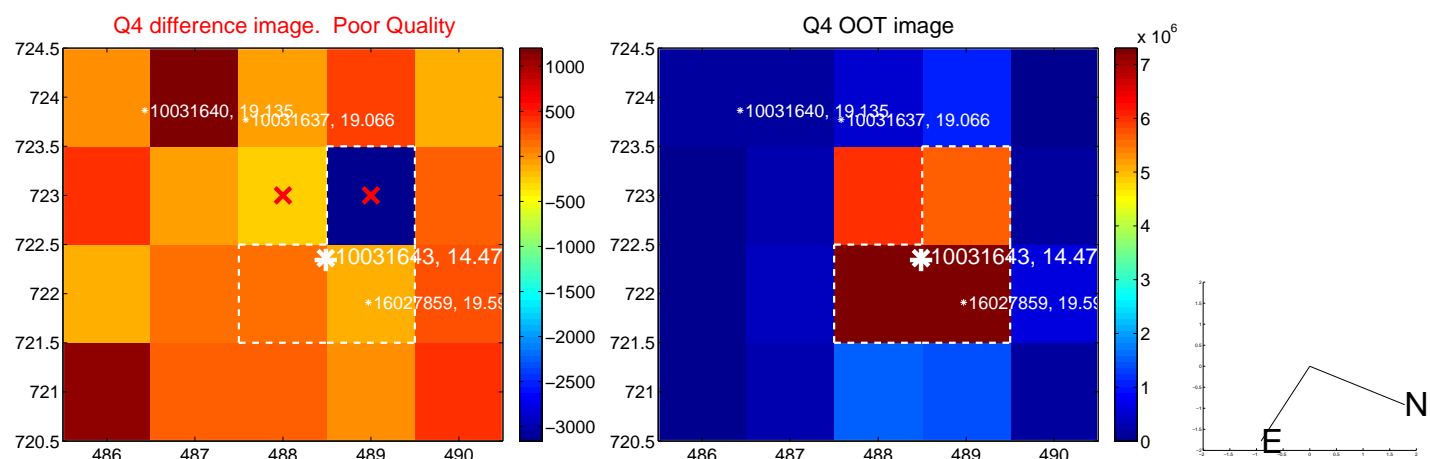
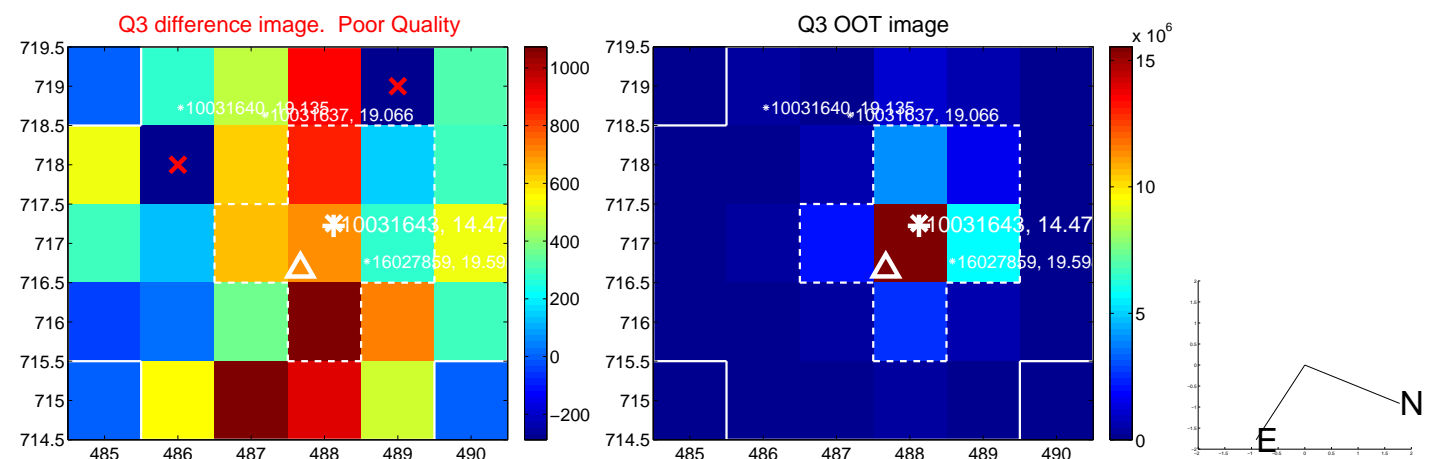
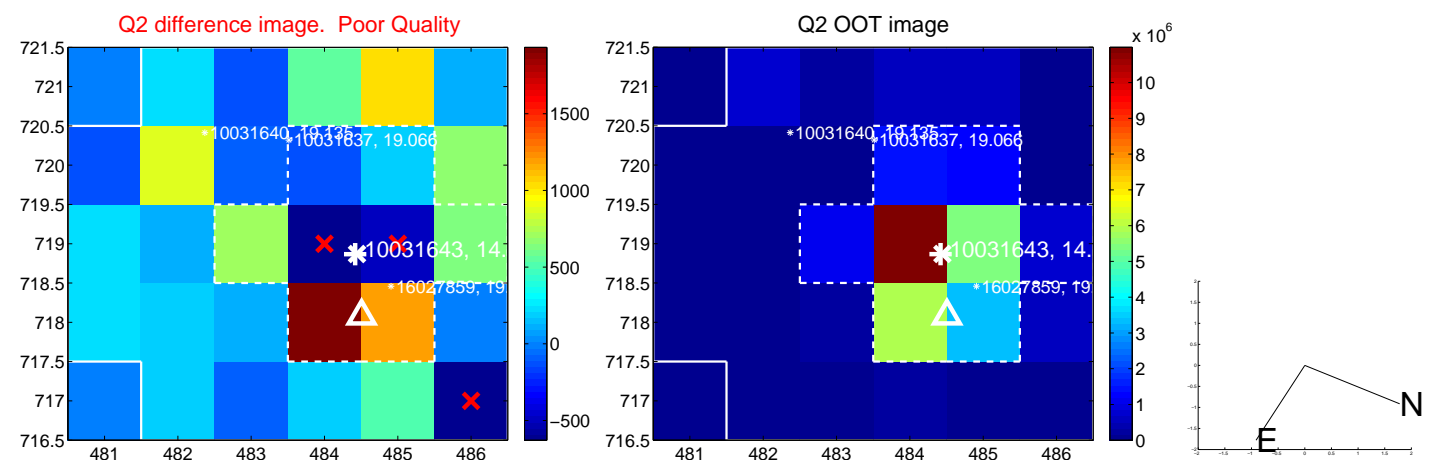
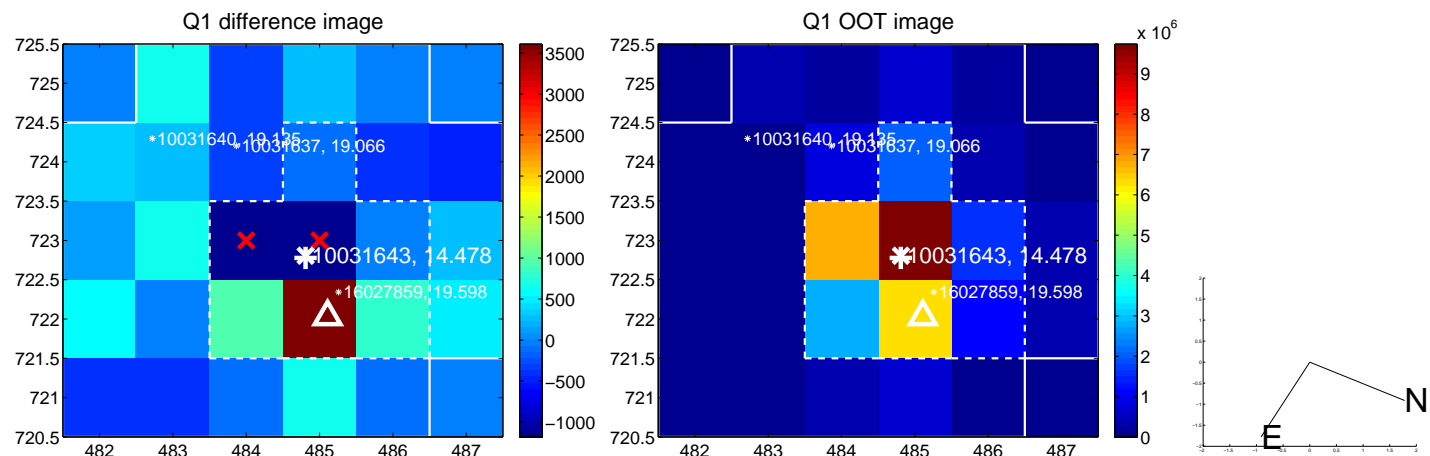


offset from photometric centroids

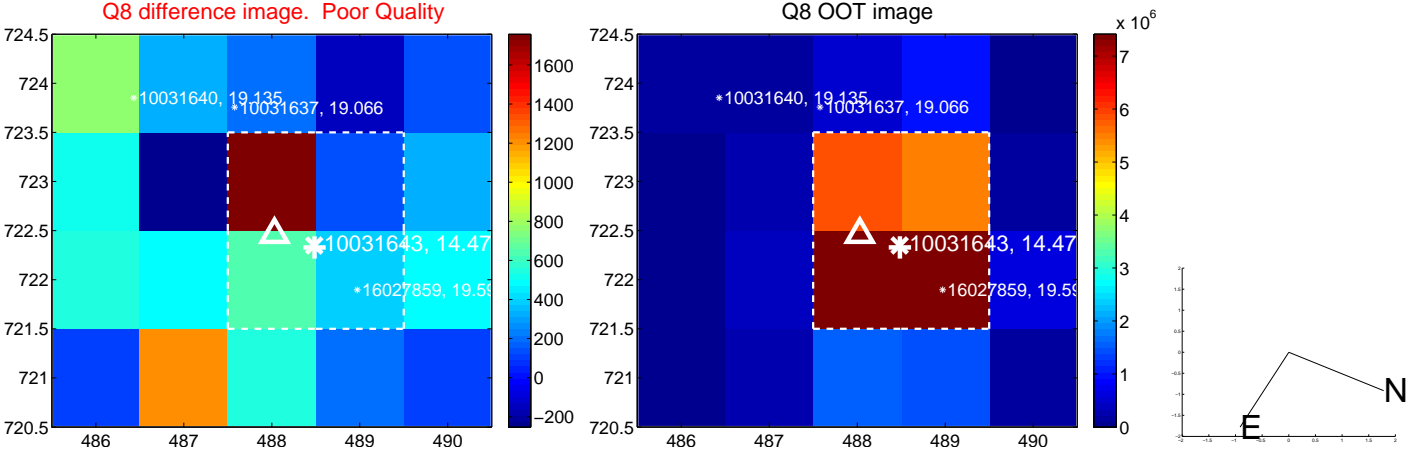
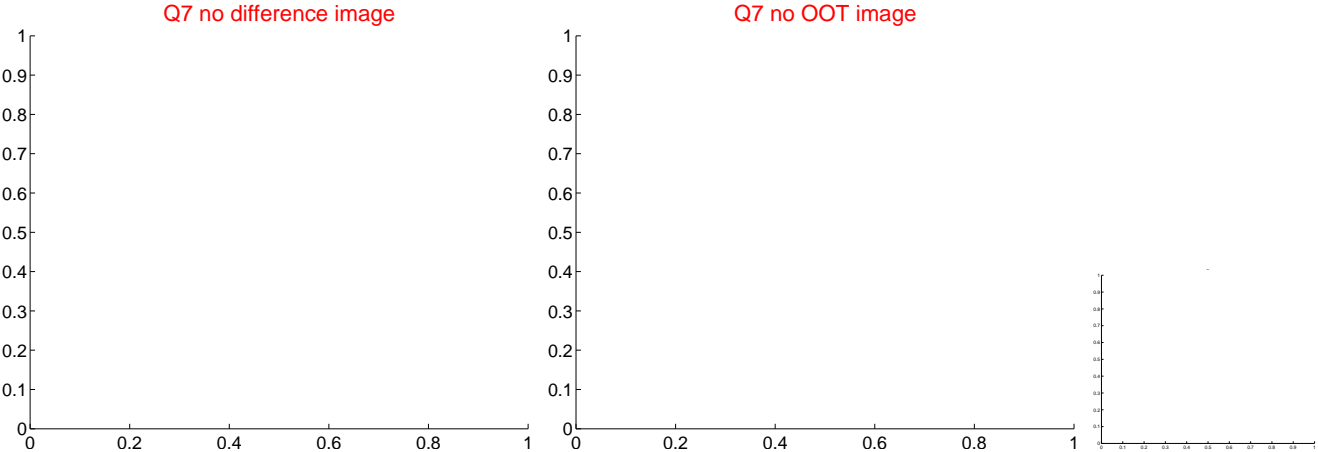
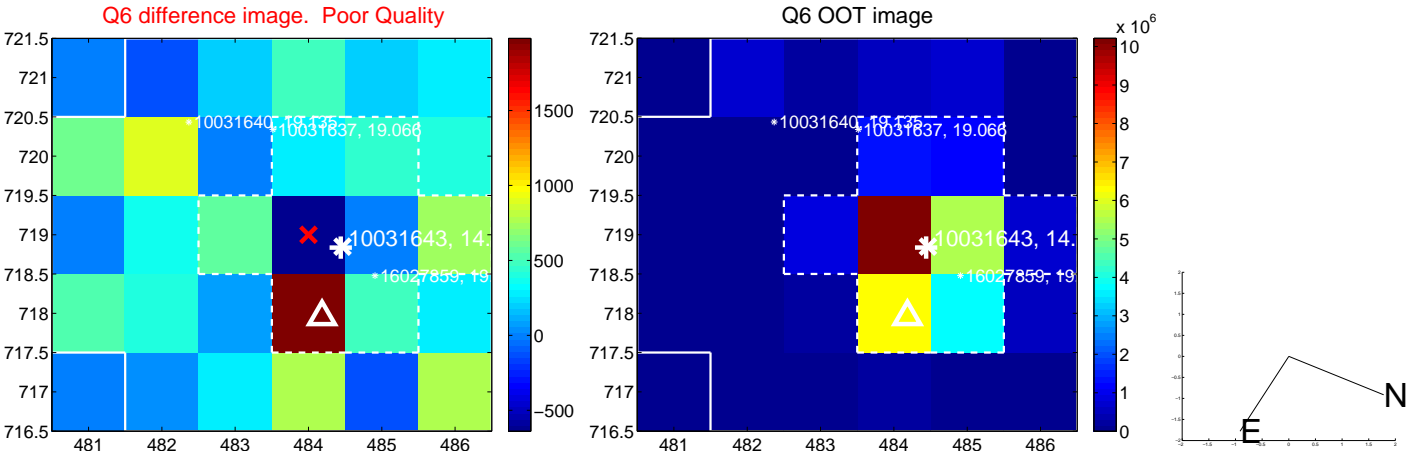
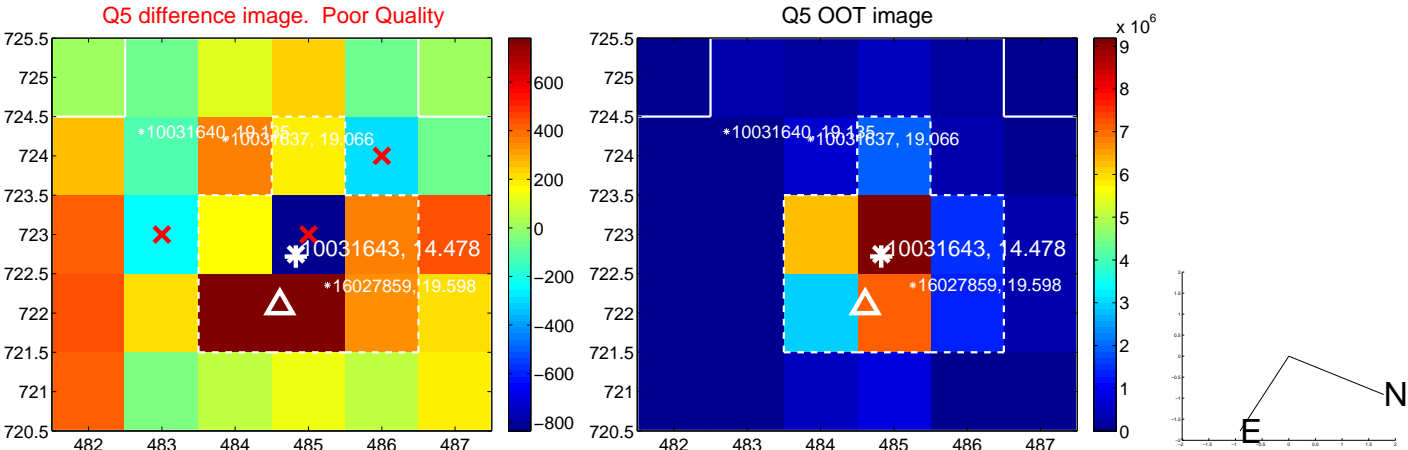


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

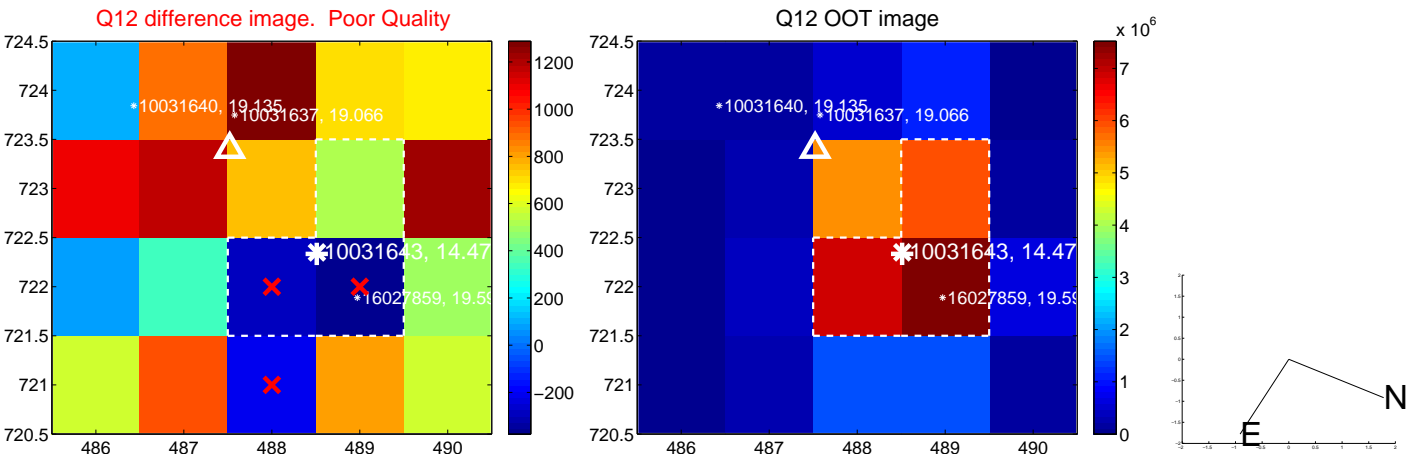
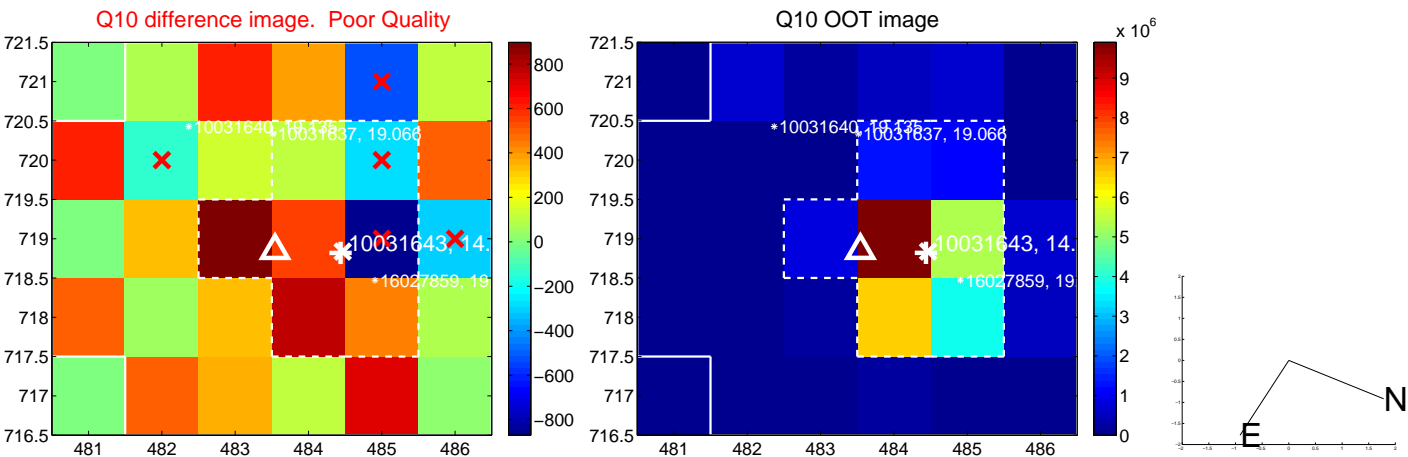
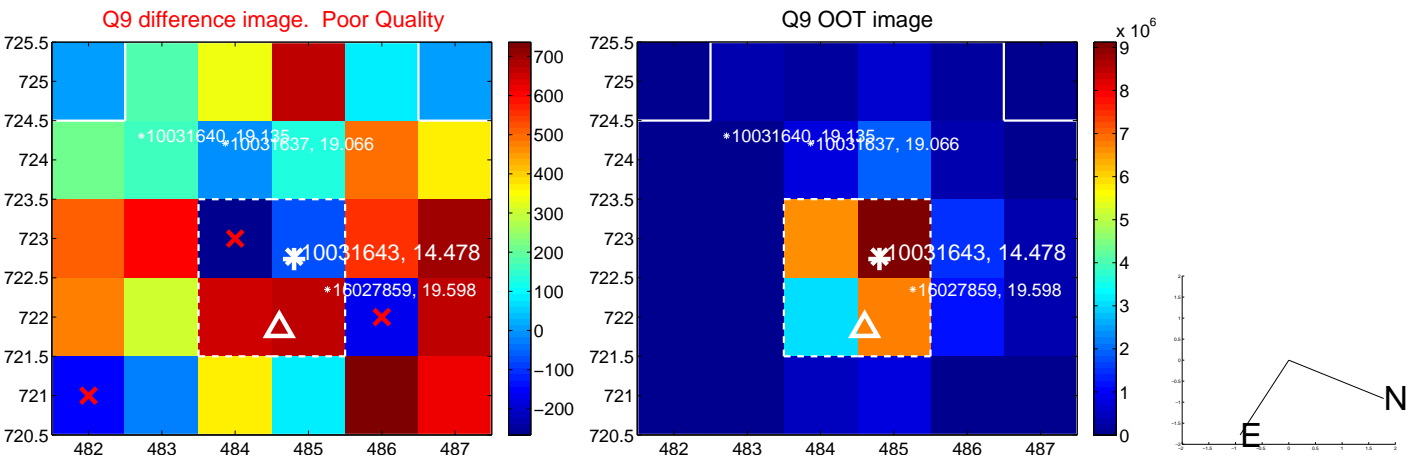
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



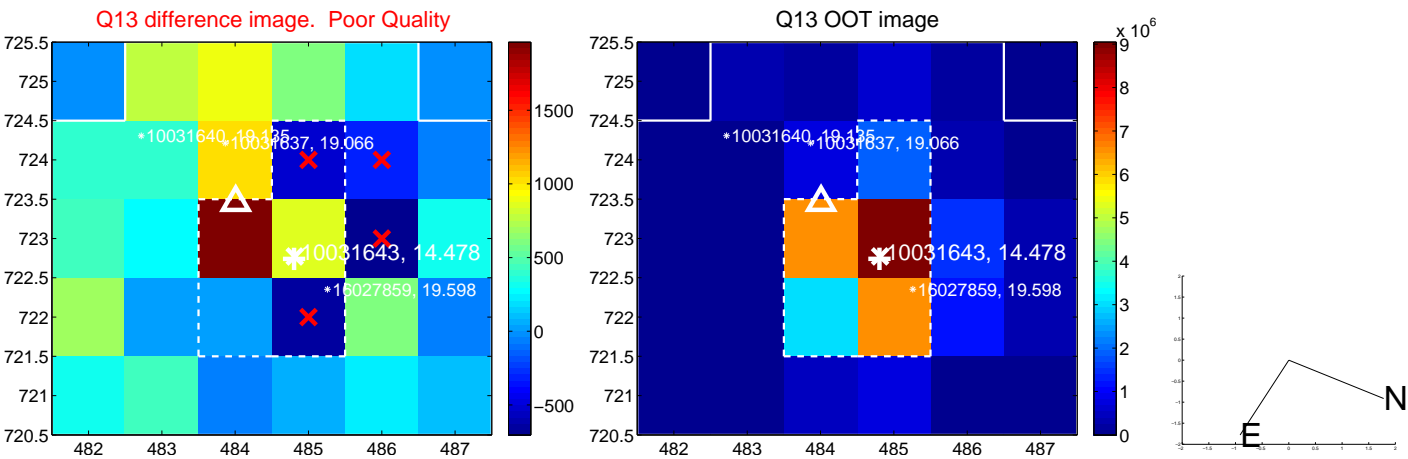
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



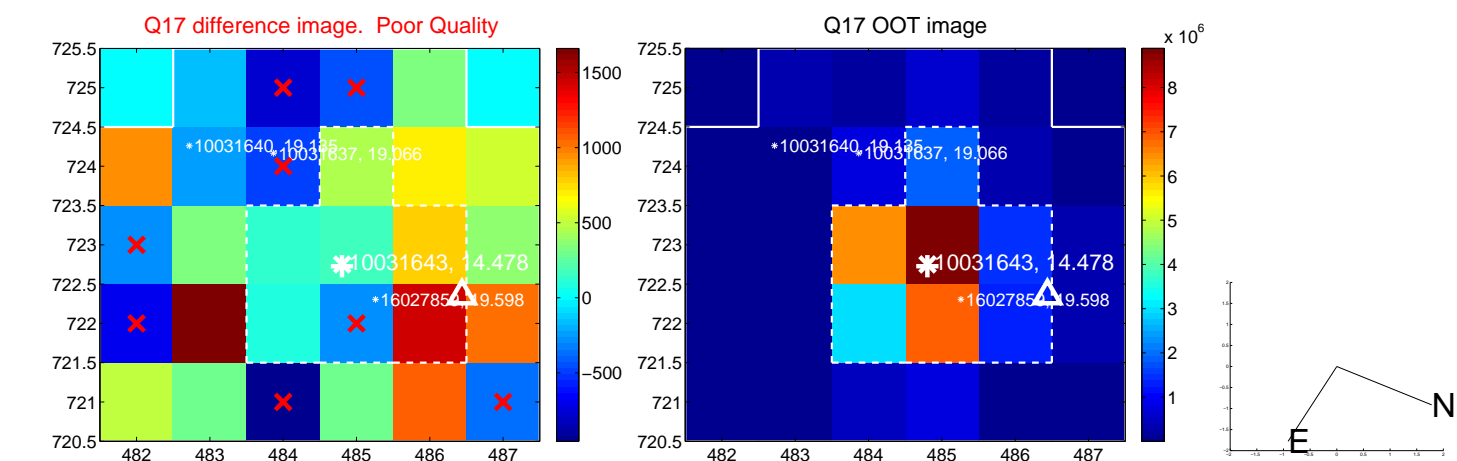
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



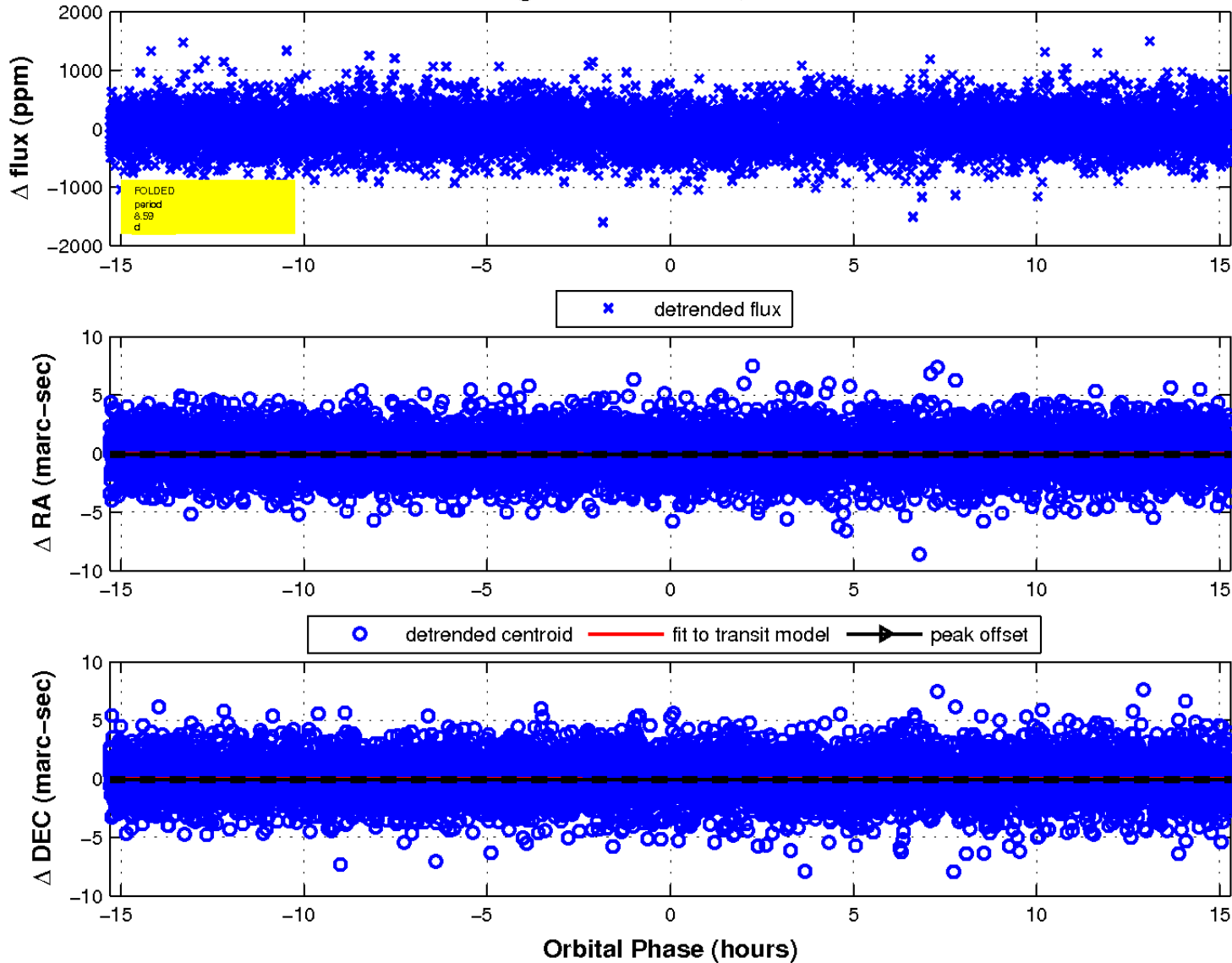
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

