

KIC 004140813

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})
004140813-01	OBS	2117.01	13.360219	131.812973	739.6	3.067	18.7	21.1	0.69	4500	2.29	17.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004140813-01	OBS	PC	1.00	0	0	0	0	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 004140813-01

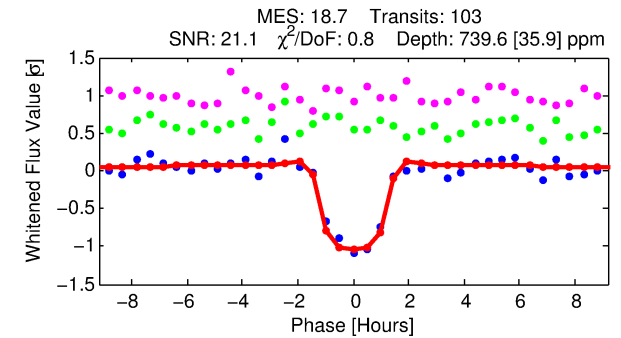
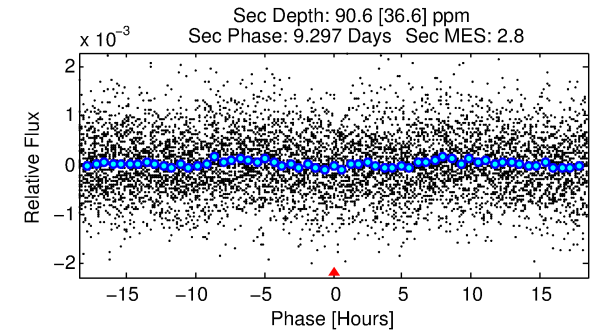
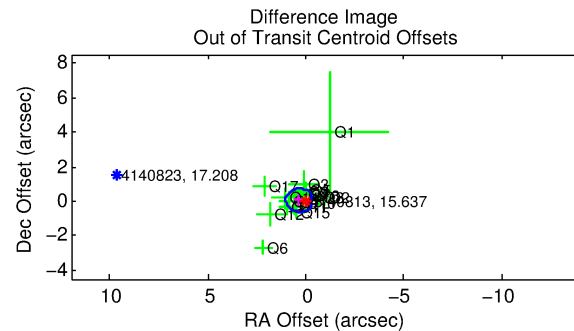
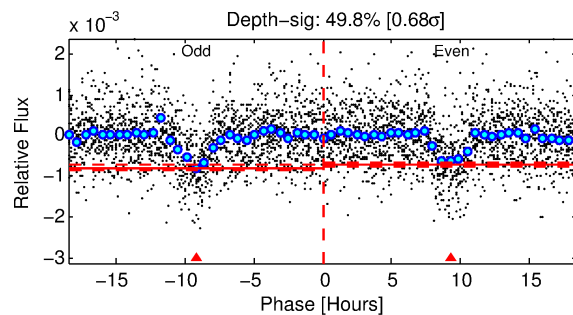
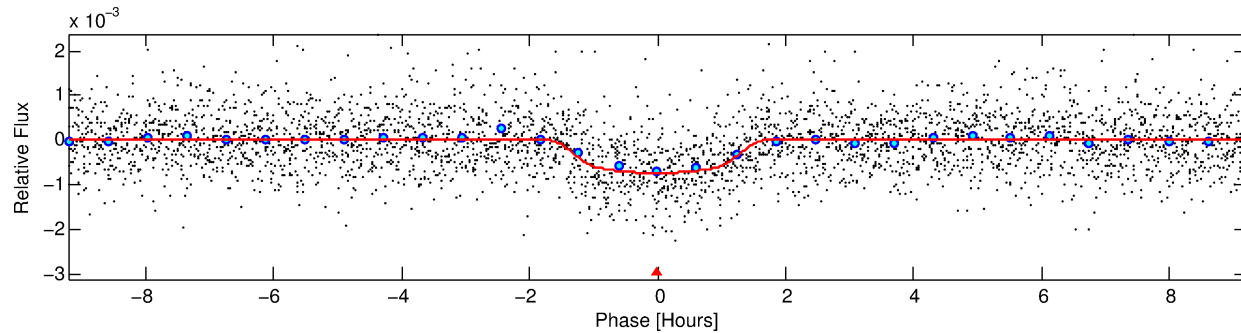
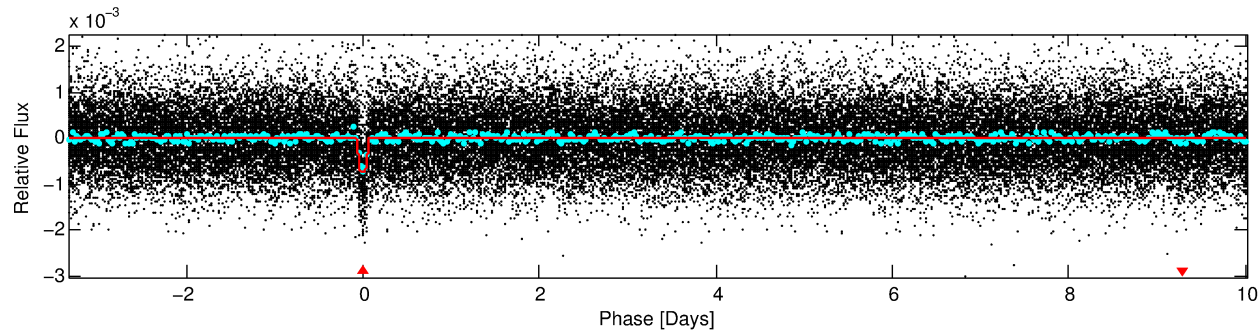
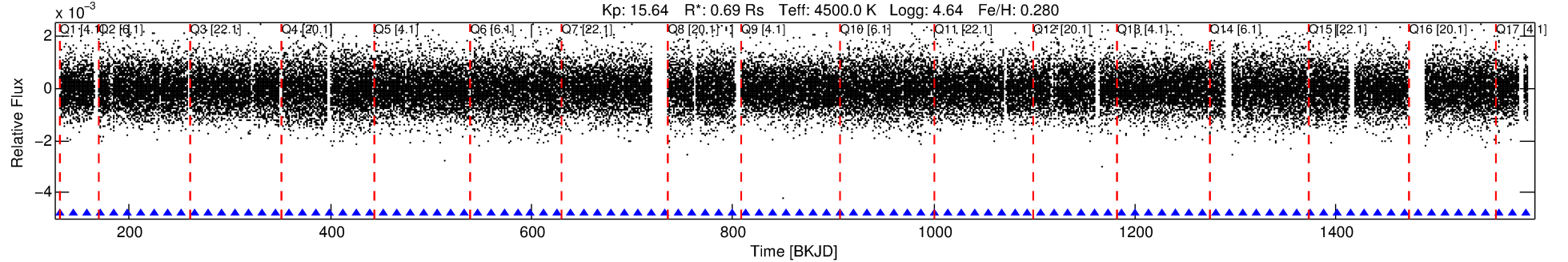
No Significant Match Found

DV One-Page Summary

KIC: 4140813 Candidate: 1 of 1 Period: 13.360 d

KOI: K02117.01 Corr: 0.953

Kp: 15.64 R*: 0.69 Rs Teff: 4500.0 K Logg: 4.64 Fe/H: 0.280



DV Fit Results:

Period = 13.36022 [0.00005] d
Epoch = 131.8130 [0.0031] BKJD
Rp/R* = 0.0305 [0.0051]
a/R* = 17.30 [9.78]
b = 0.89 [0.14]
Seff = 17.34 [2.61]
Teq = 520 [20] K
Rp = 2.29 [0.42] Re
a = 0.1001 [0.0060] AU
Ag = 95.21 [50.63] [1.86σ]
Teffp = 2513 [338] K [5.88σ]

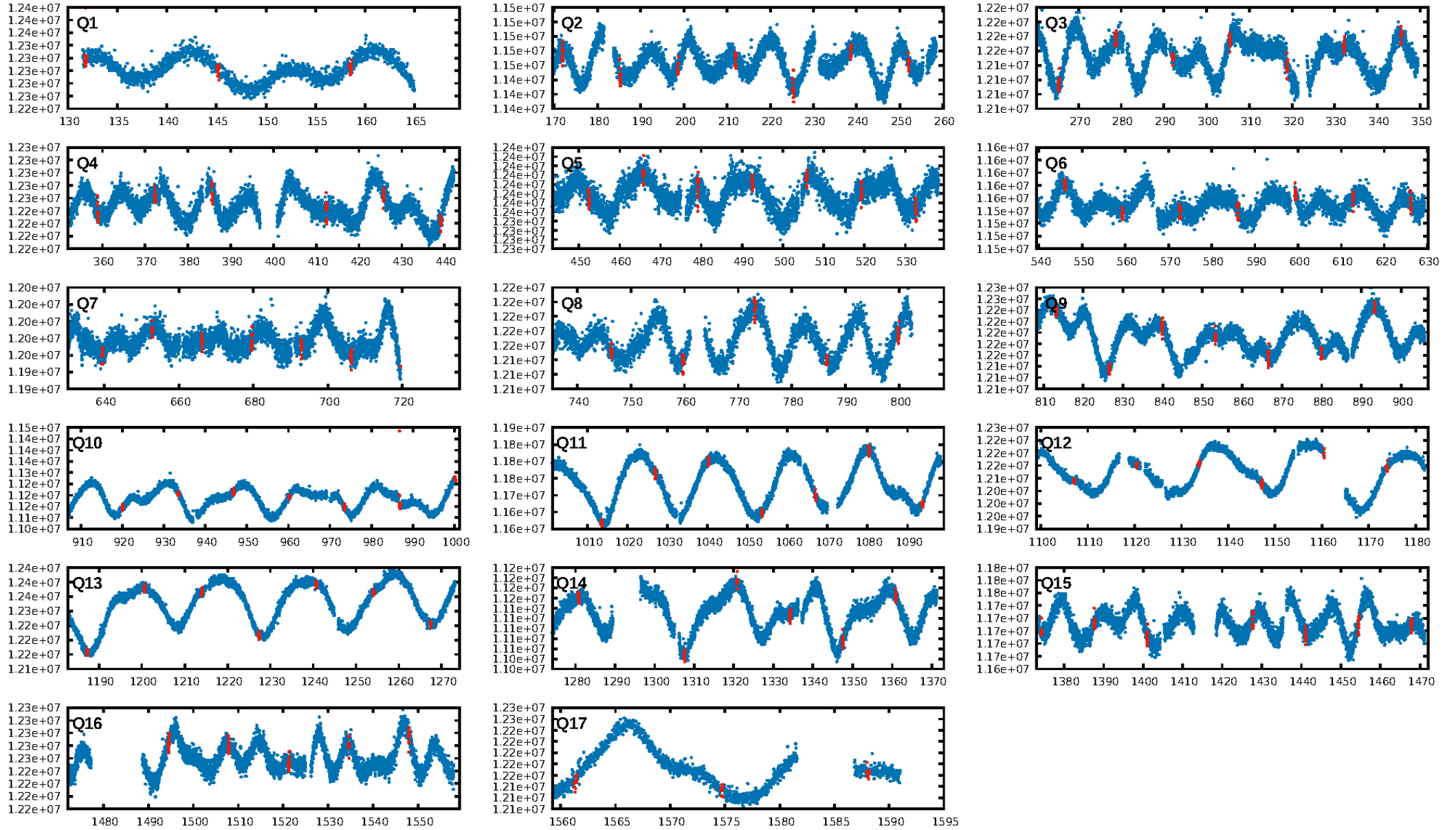
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.07e-74
RollingBand-fgt: 1.00 [97/97]
GhostDiagnostic-chr: 2.391
Centroid-sig: 12.1%
Centroid-so: 0.945 arcsec [1.99σ]
OotOffset-rm: 0.349 arcsec [1.56σ]
KicOffset-rm: 0.414 arcsec [1.20σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.82 [14/17]
DiffImageOverlap-fno: 1.00 [17/17]

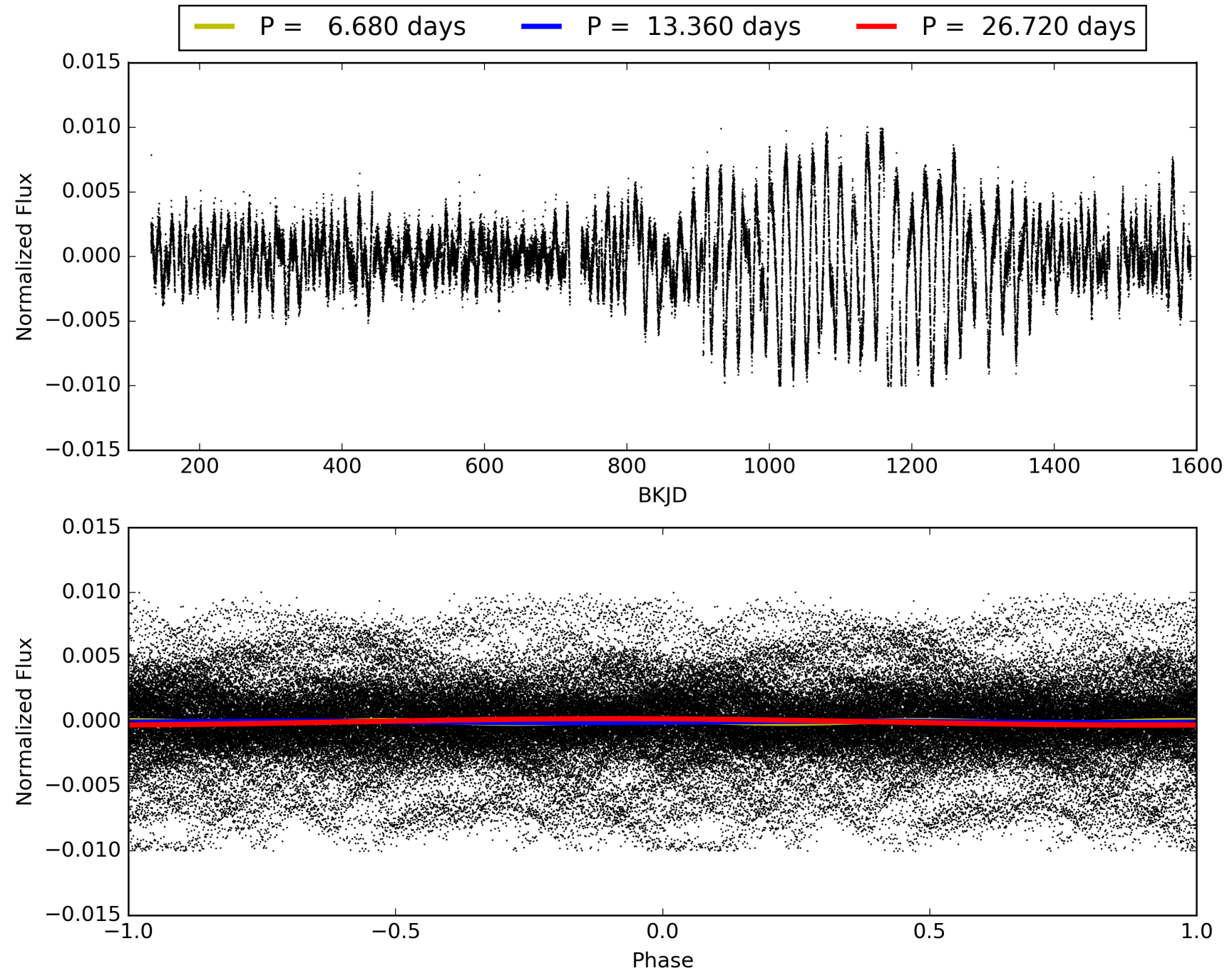
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:05:39 Z

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

TCE 004140813-01, PDC Light Curves

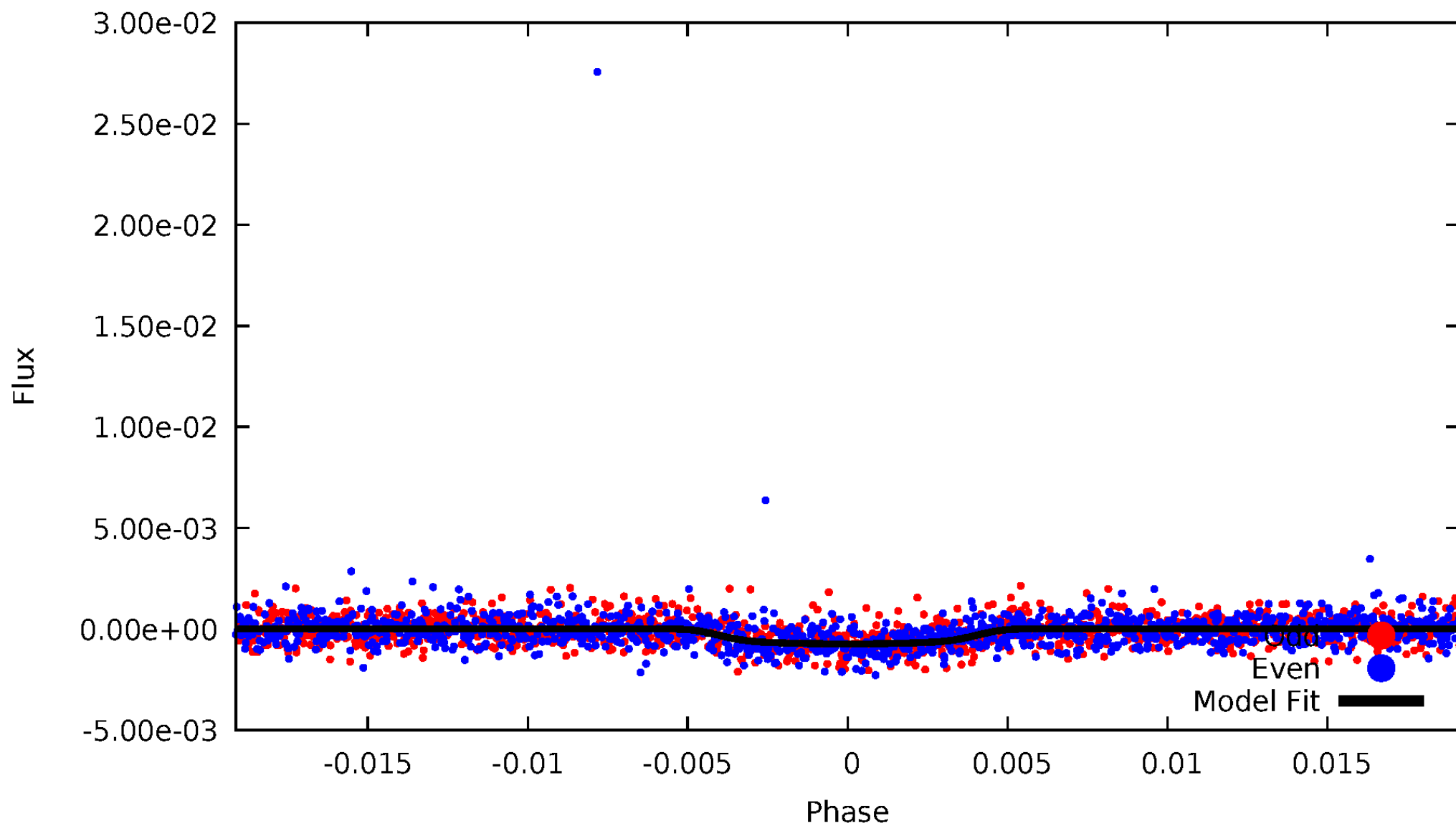


TCE 004140813-01



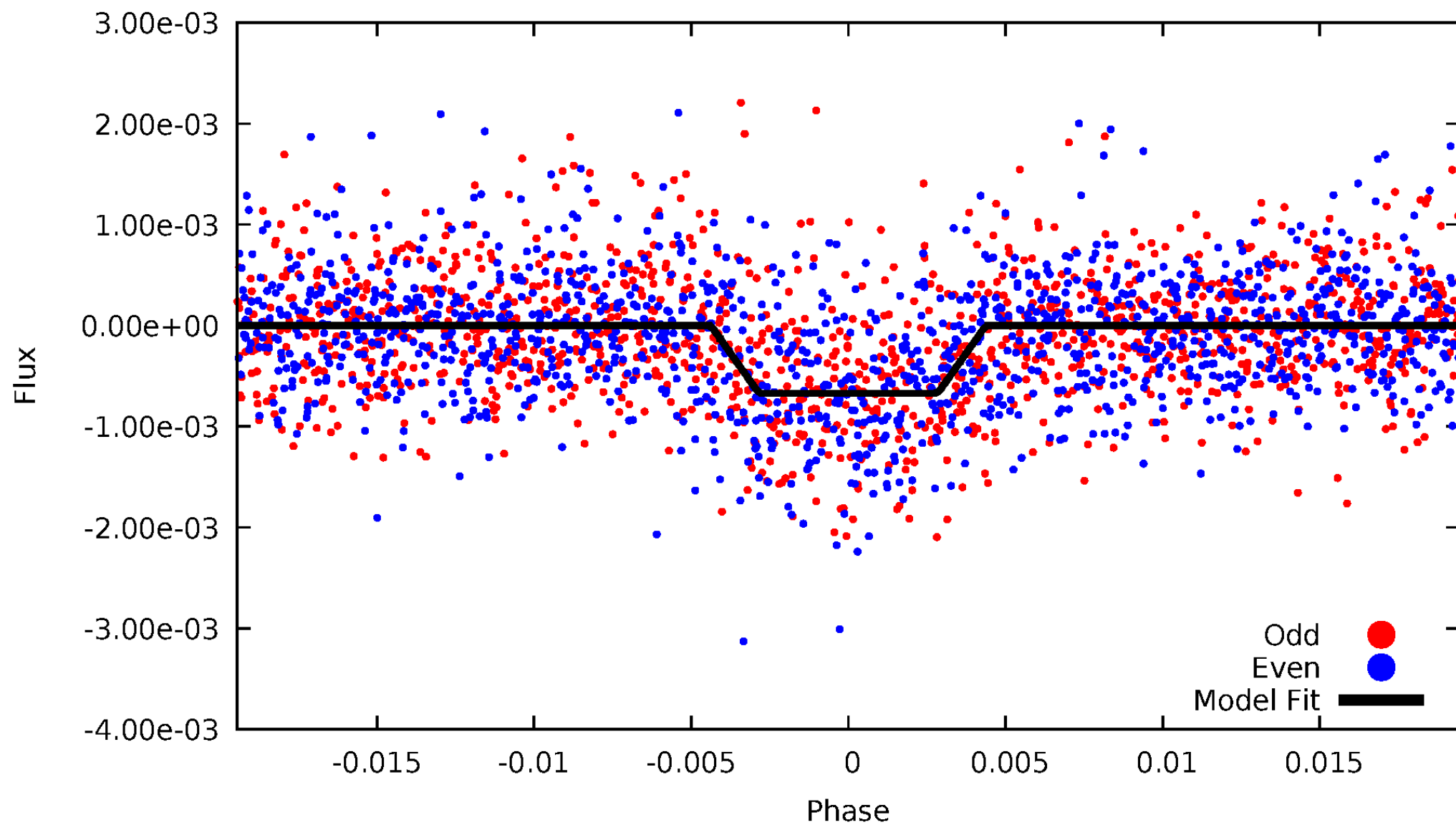
DV Odd/Even

TCE 004140813-01



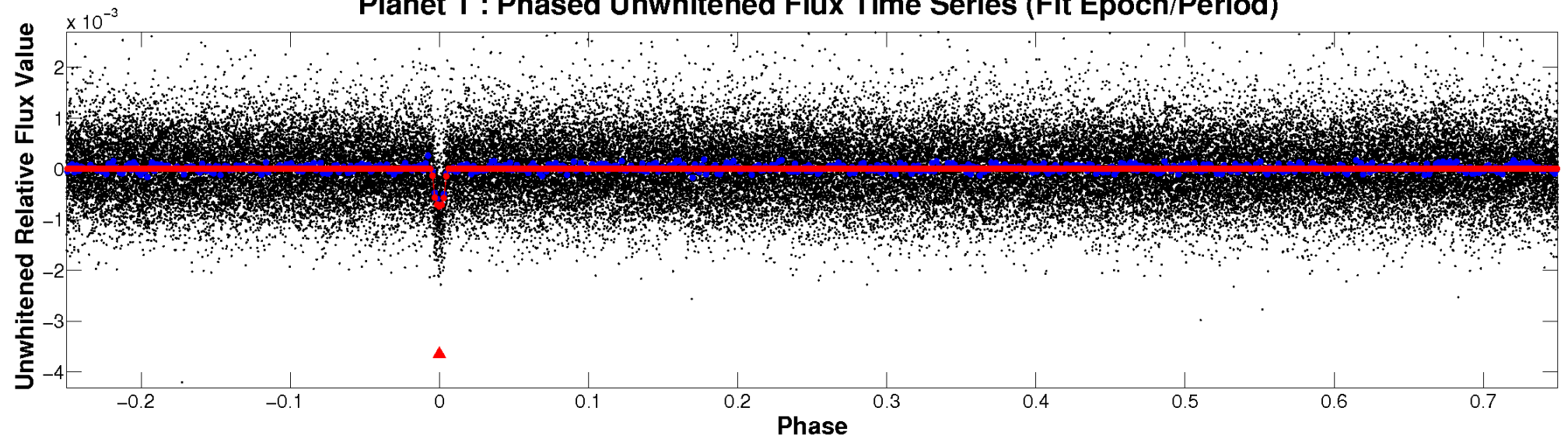
ALT Odd/Even

TCE 004140813-01

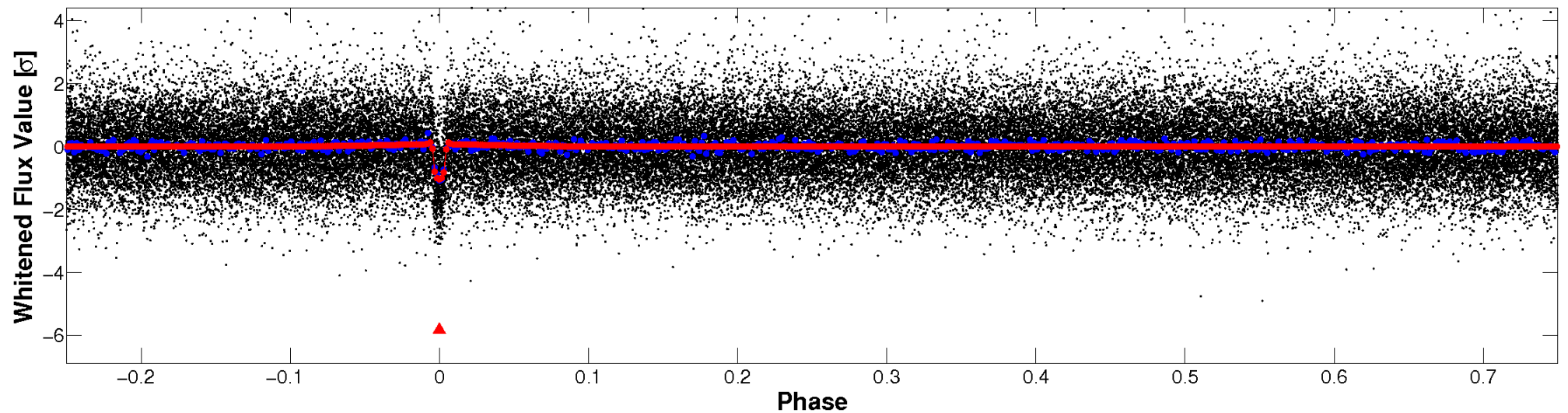


Non-Whitened Vs. Whitened Light Curve

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

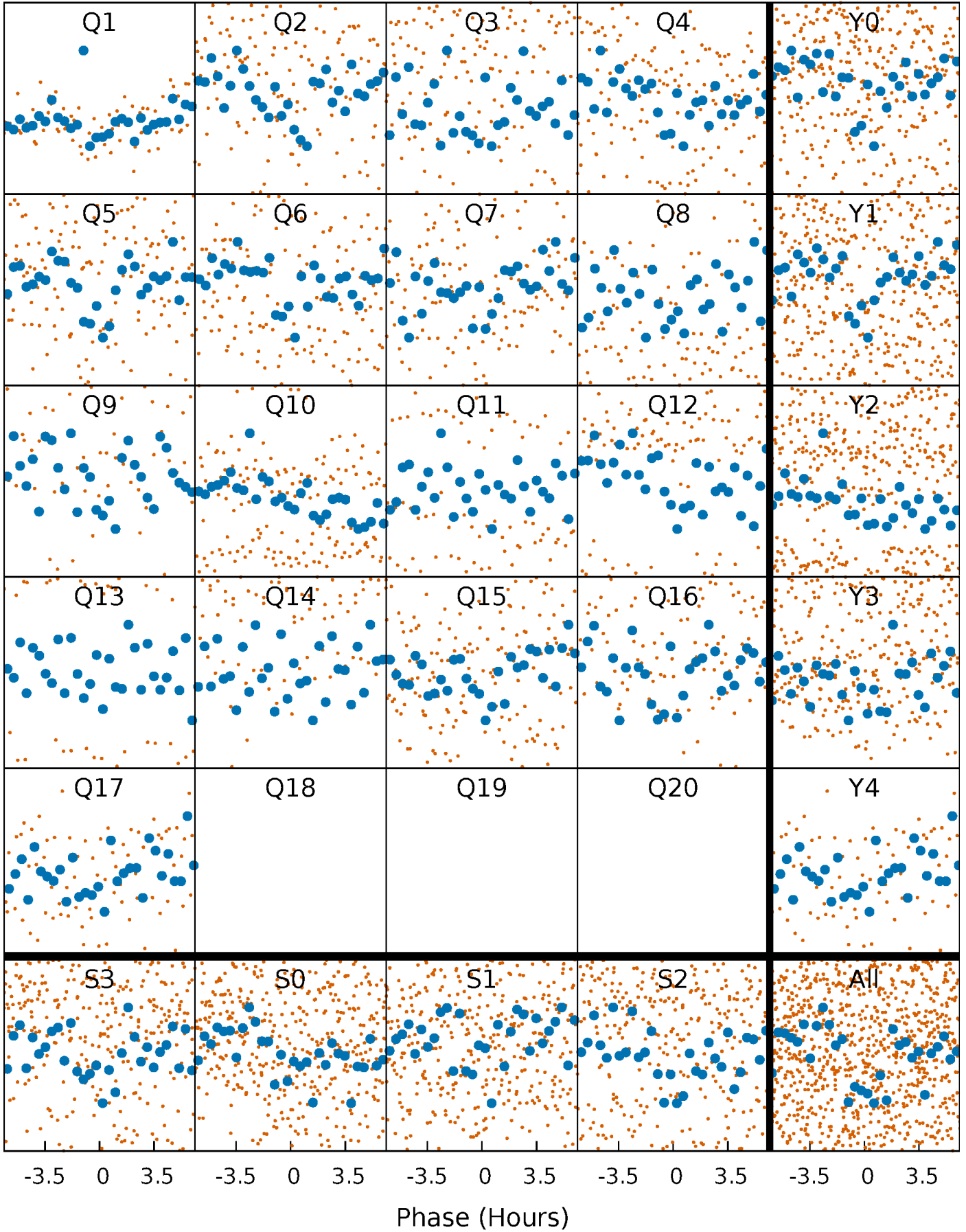


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



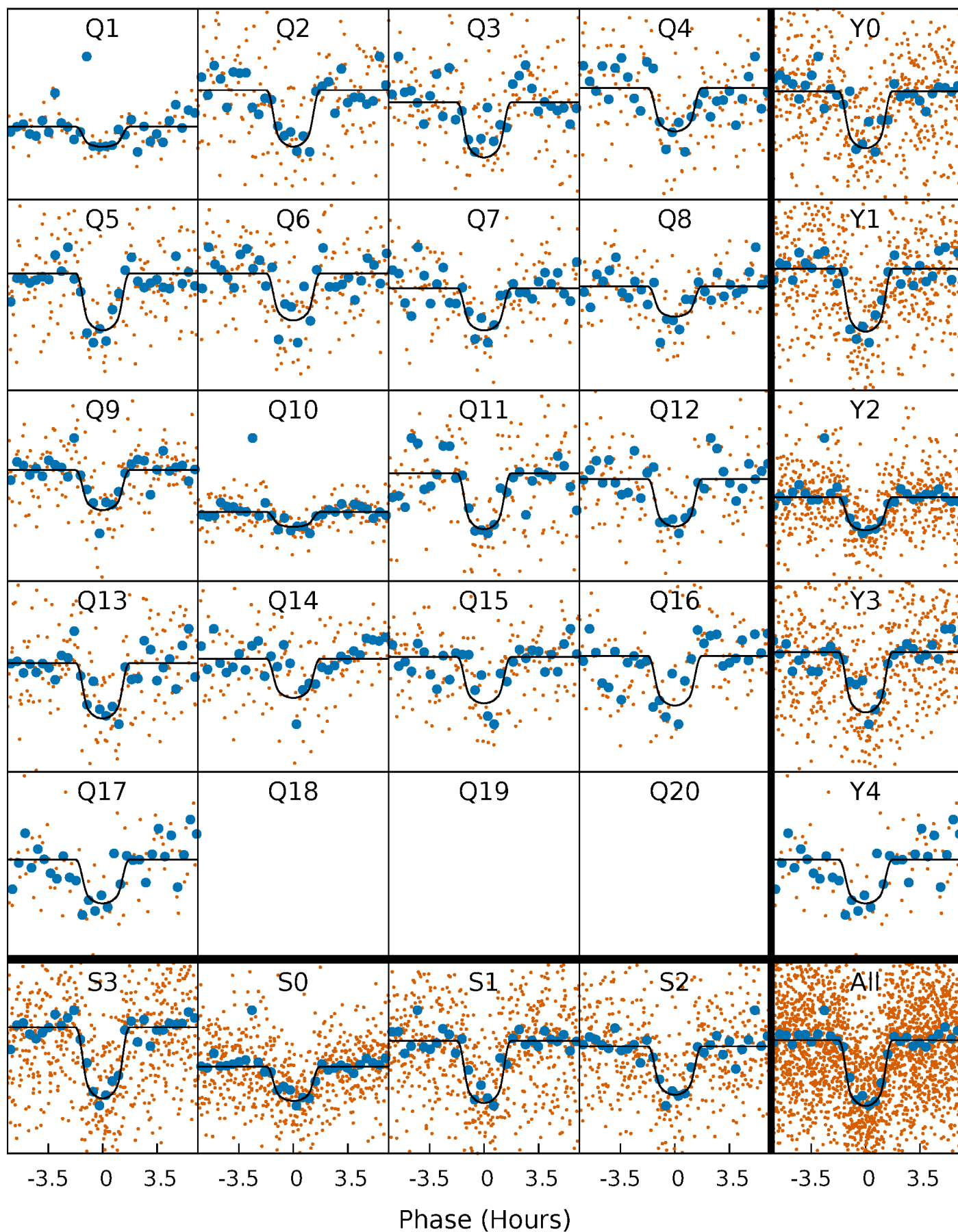
PDC Quarter-Phased Transit Curves

TCE 004140813-01 P= 13.360219 Days $T_0=131.812973$ (BKJD)



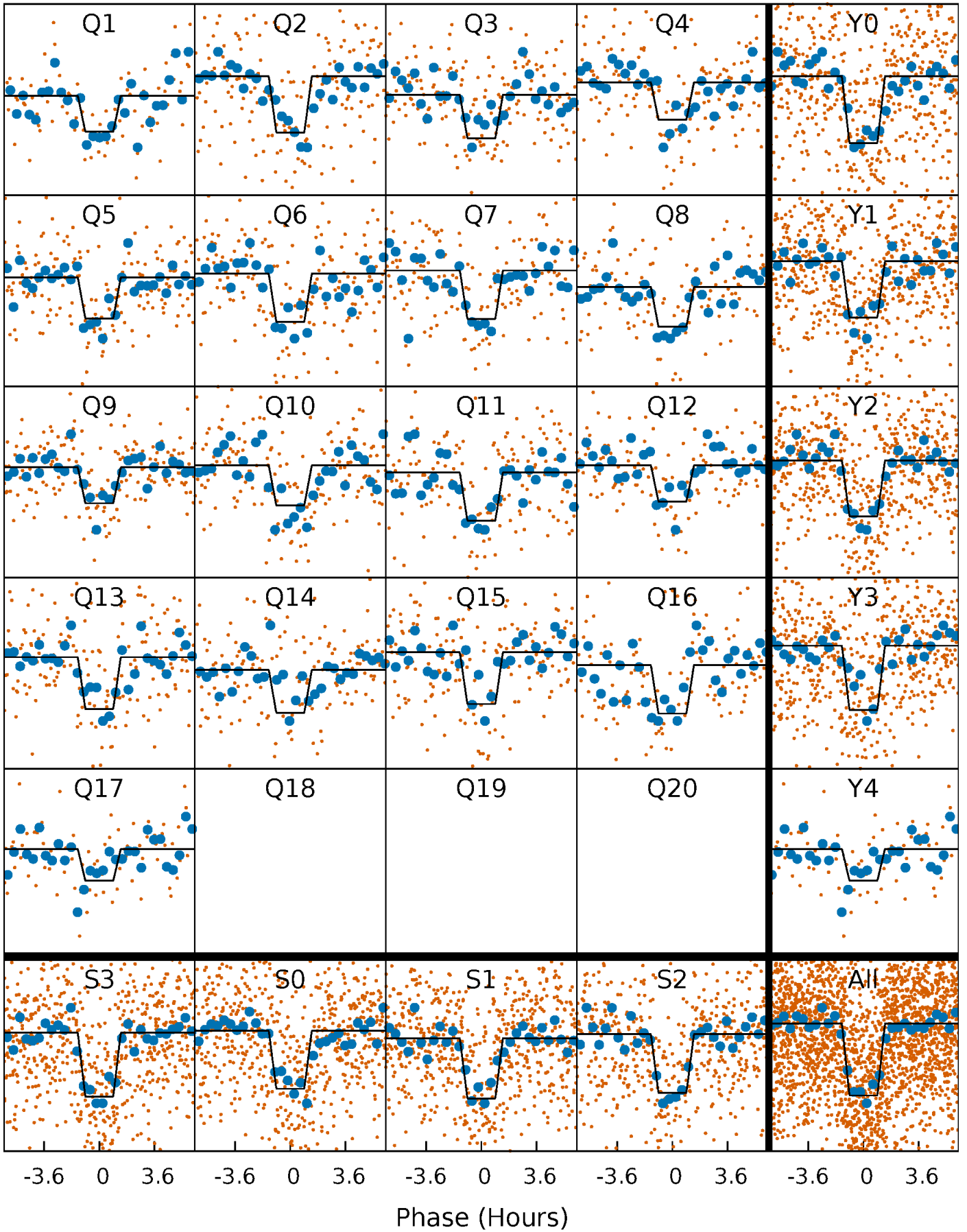
DV Quarter-Phased Transit Curves

TCE 004140813-01 P= 13.360219 Days $T_0=131.812973$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

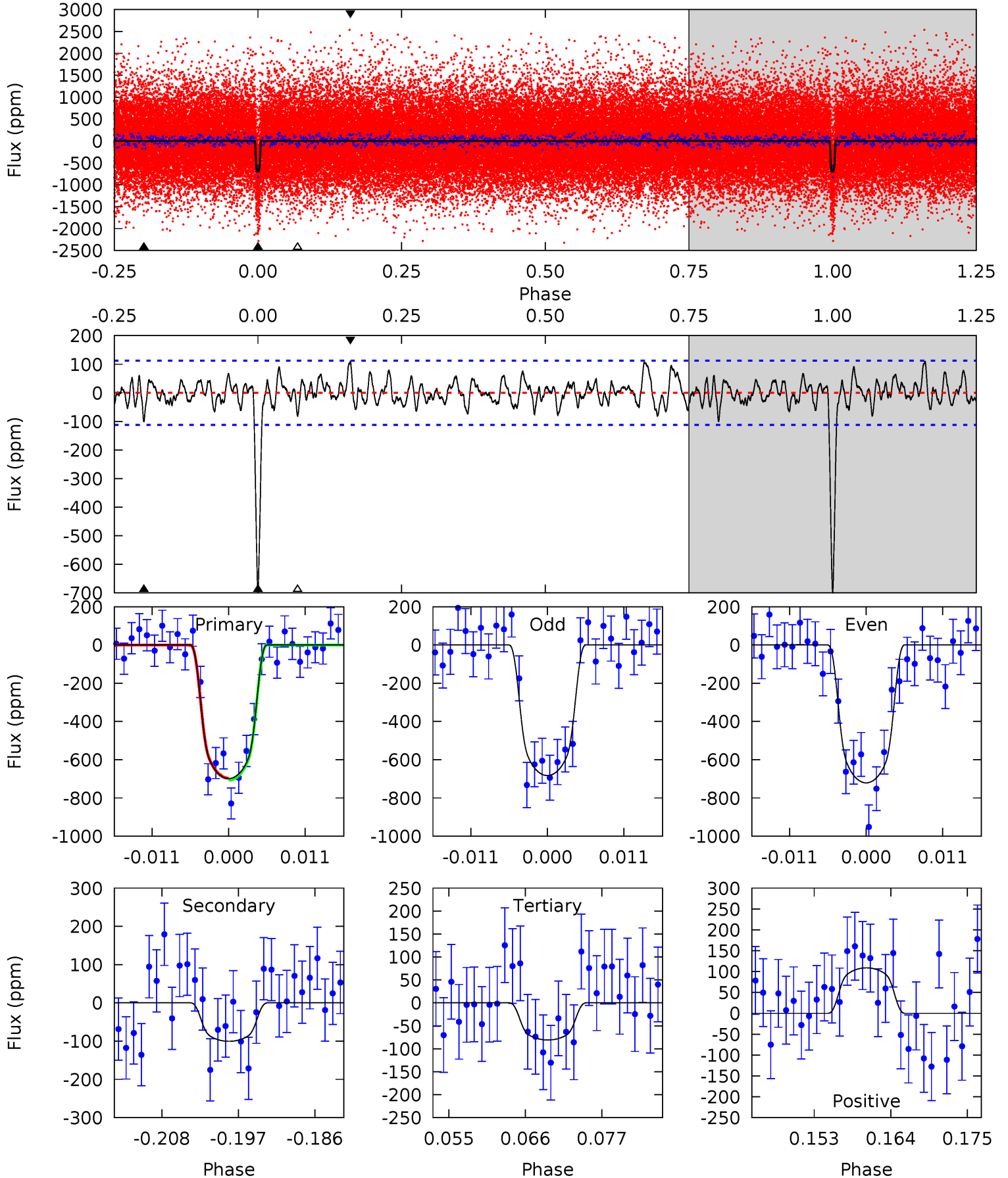
TCE 004140813-01 P= 13.360371 Days $T_0=131.804485$ (BKJD)



DV Model-Shift Uniqueness Test

004140813-01, P = 13.360219 Days, E = 118.452754 Days

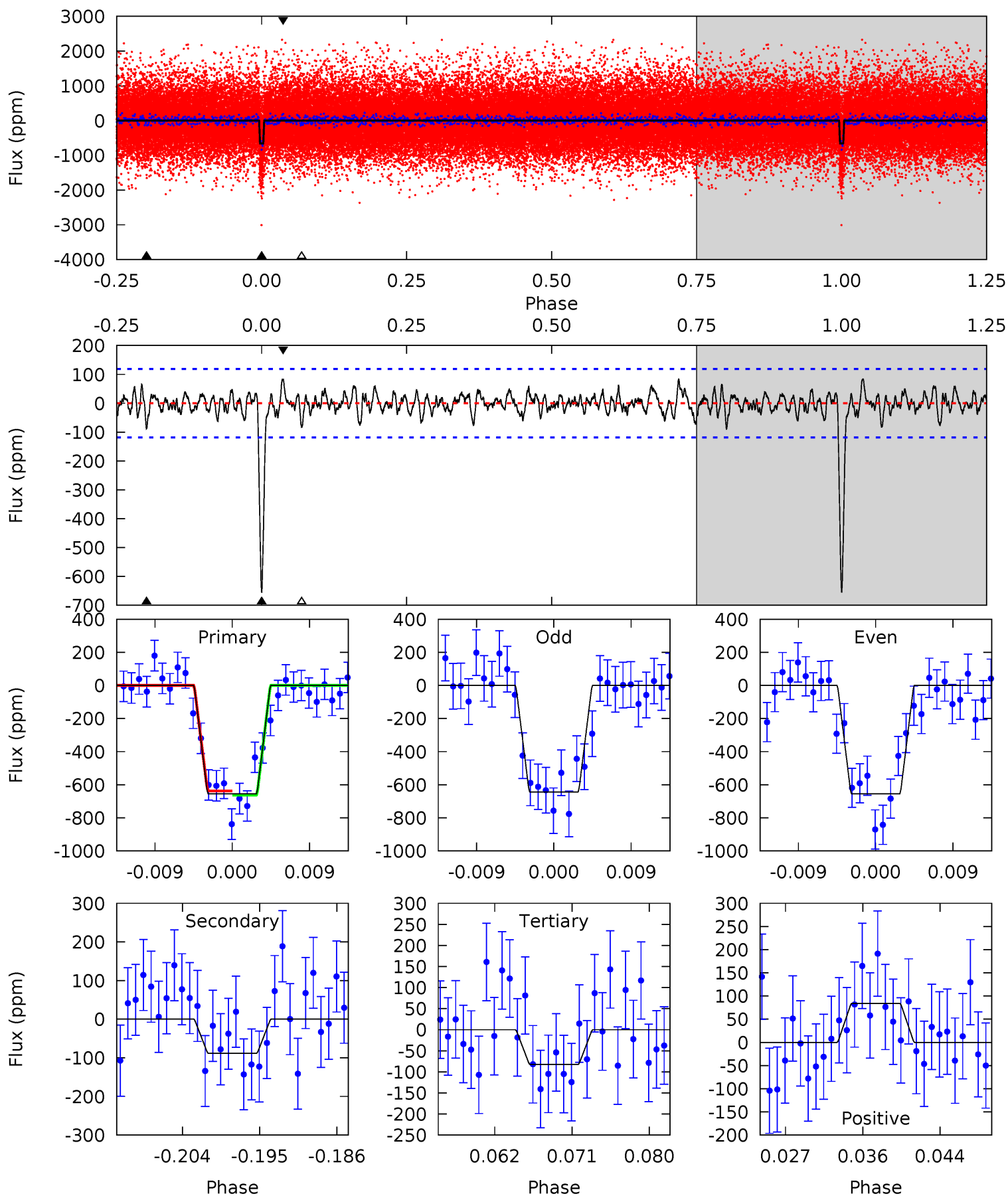
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.1	4.48	3.60	4.86	5.01	2.54	1.56	27.5	26.3	0.87	-0.38	0.85	0.95	0.13	0.23



Alt Model-Shift Uniqueness Test

004140813-01, $P = 13.360371$ Days, $E = 118.444114$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.8	3.76	3.50	3.57	5.05	2.62	1.15	24.3	24.3	0.26	0.19	0.24	0.94	0.11	0.54



Stellar Parameters For KIC 004140813

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4500^{+123}_{-137}	$4.638^{+0.018}_{-0.049}$	$0.280^{+0.150}_{-0.300}$	$0.688^{+0.048}_{-0.040}$	$0.768^{+0.024}_{-0.067}$	$3.318^{+0.338}_{-0.585}$
	+3%/-3%	+0%/-1%	+54%/-107%	+7%/-6%	+3%/-9%	+10%/-18%
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 004140813-01 / KOI 2117.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-100 ± 22	$2.33^{+0.40}_{-0.39}$	732^{+24}_{-24}	3097^{+217}_{-196}	102^{+55}_{-37}
Alt.	-89 ± 24	$1.97^{+0.40}_{-0.38}$	734^{+22}_{-24}	3186^{+232}_{-221}	123^{+70}_{-47}

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

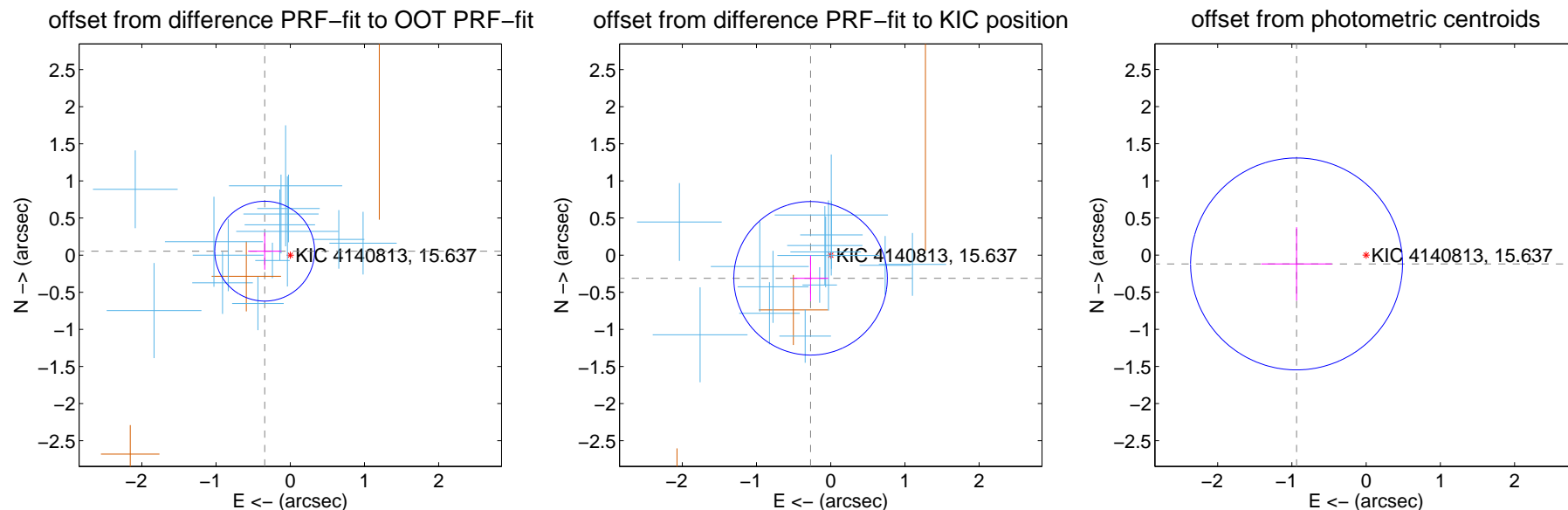
DV Centroid Data

Supplemental centroid analysis for 004140813-01. Kepler magnitude: 15.64. Transit SNR 21.15

There are 14 quarters with good PRF difference image offsets

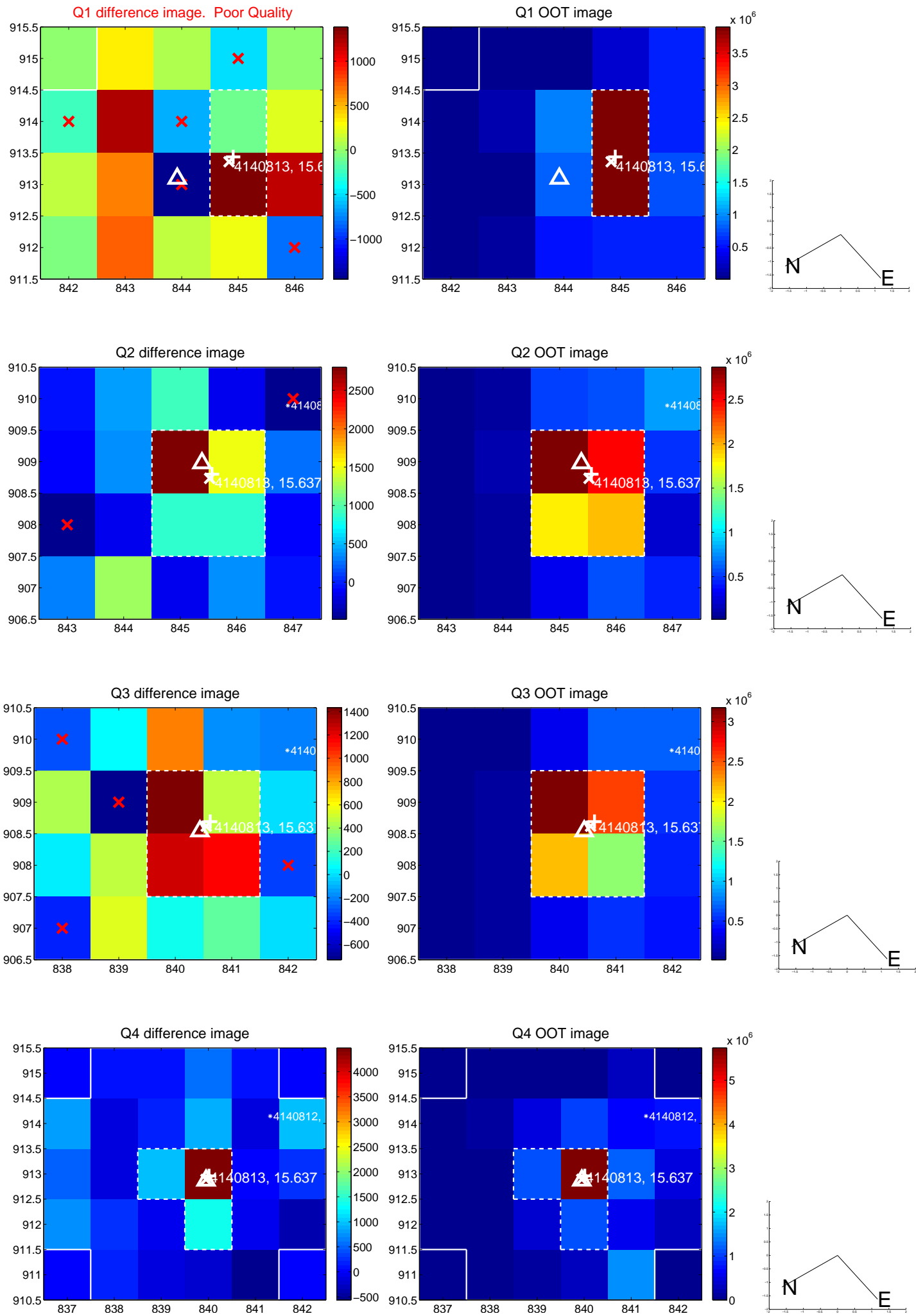
The direct PRF centroid is offset from the target star catalog position by about 0.44 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.349 ± 0.224	1.56	0.345 ± 0.224	0.054 ± 0.249
PRF-fit source offset from KIC position	0.414 ± 0.345	1.20	0.272 ± 0.240	-0.312 ± 0.306
photometric centroid source offset	0.95 ± 0.48	1.99	0.94 ± 0.48	-0.12 ± 0.49

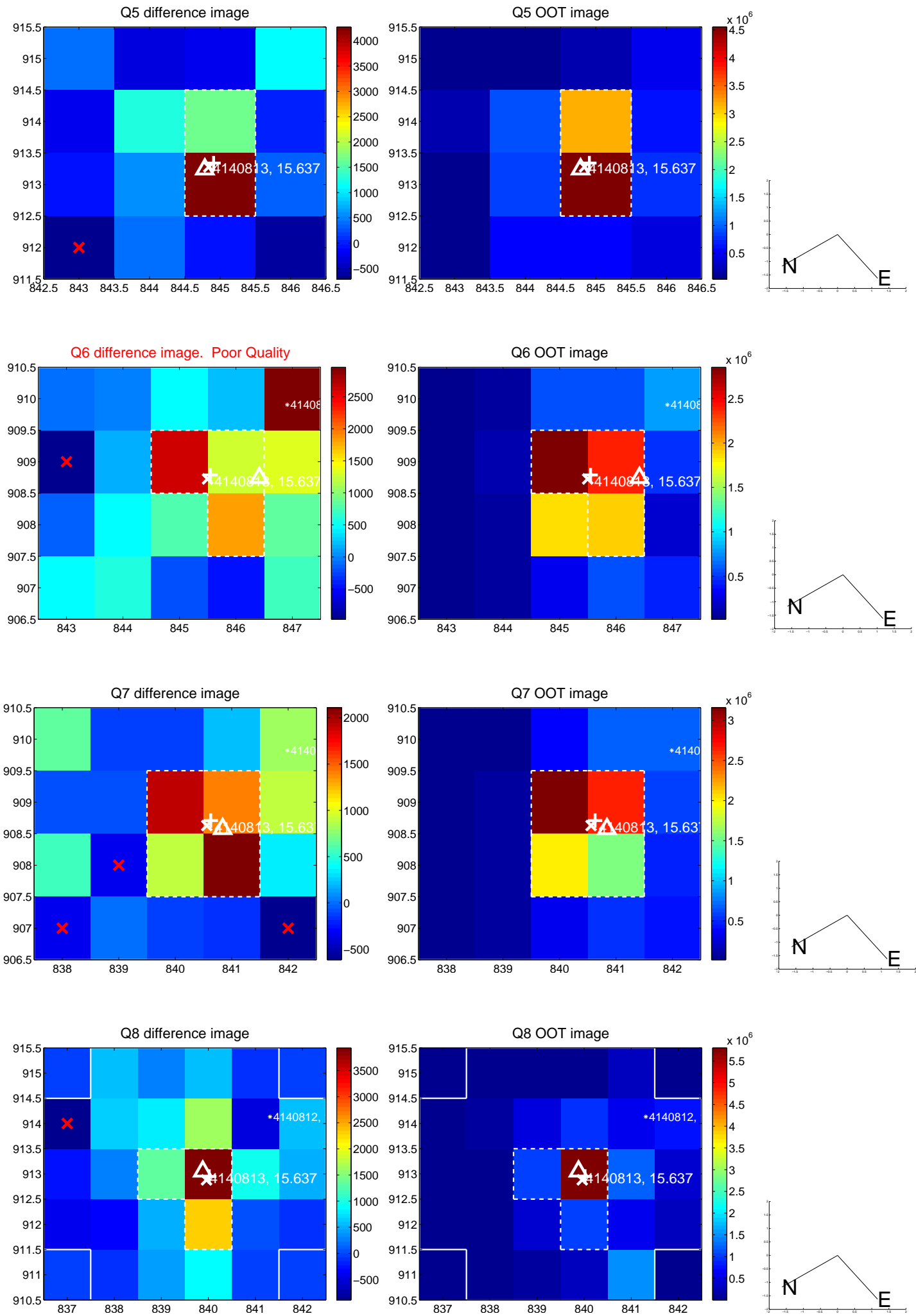


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

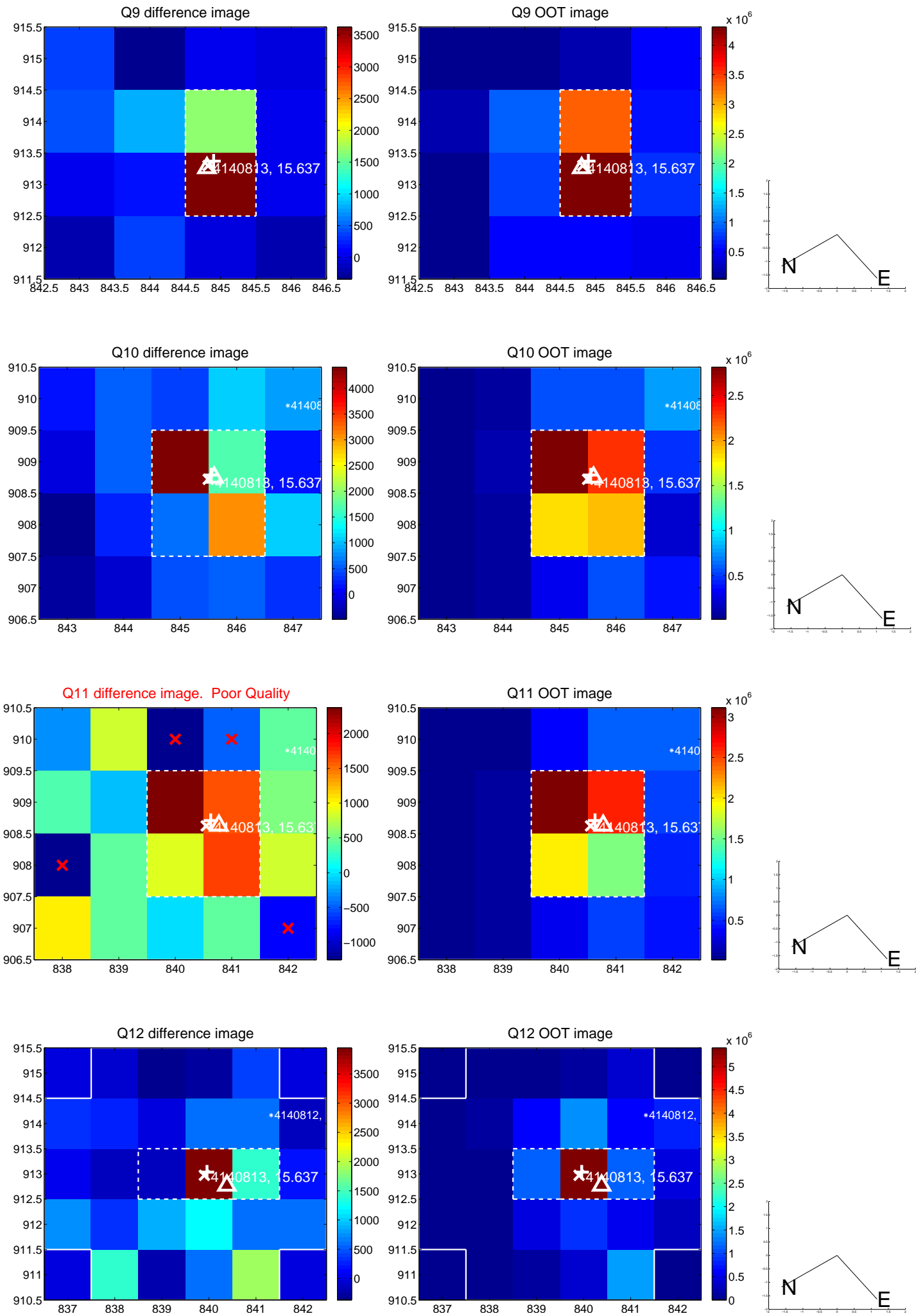
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



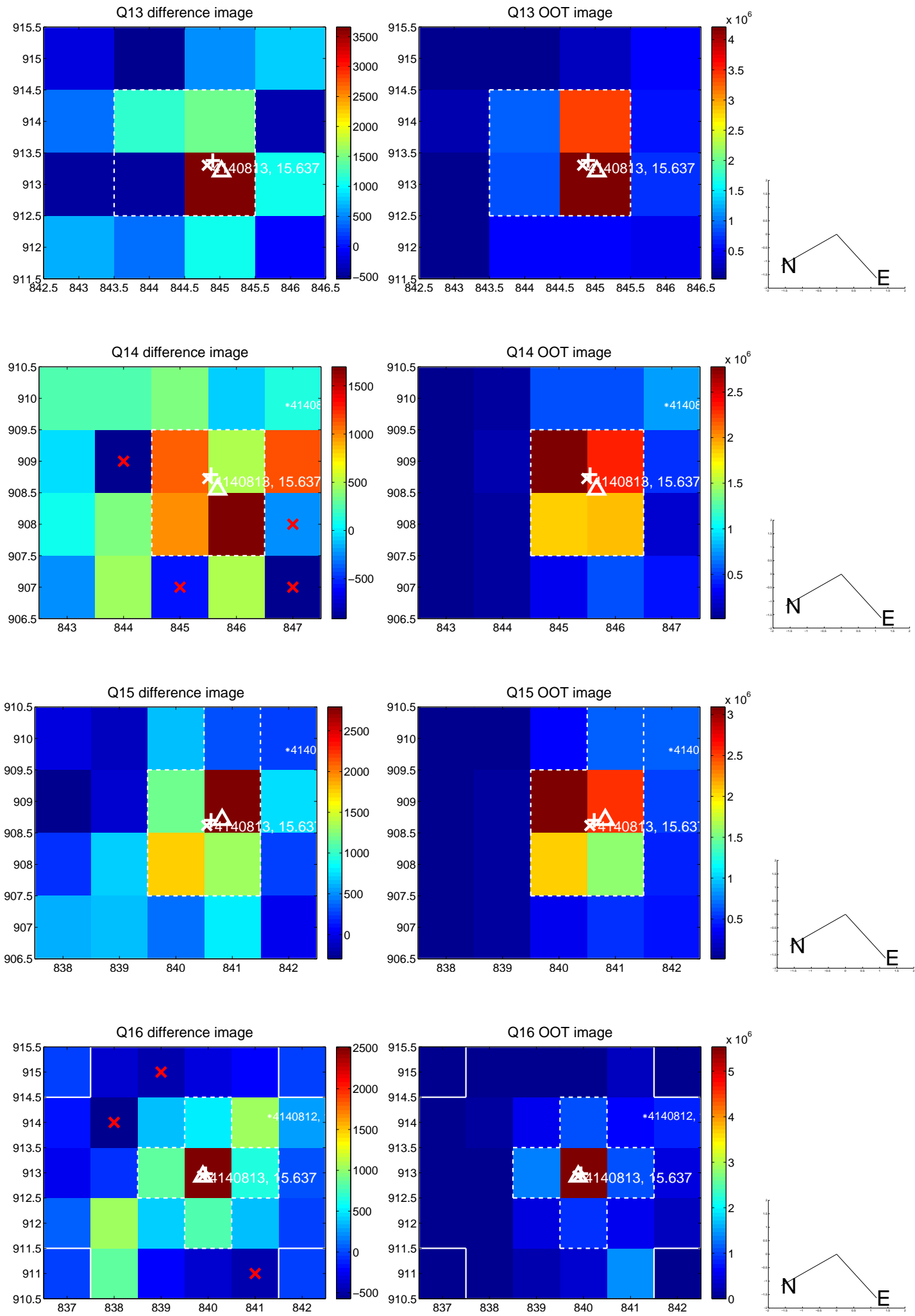
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



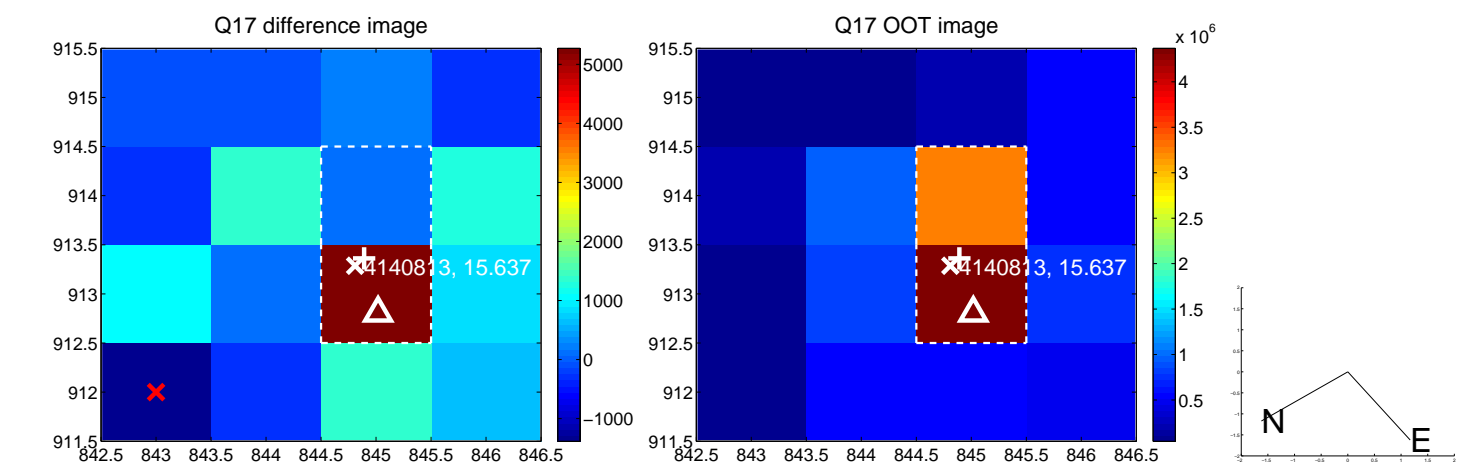
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



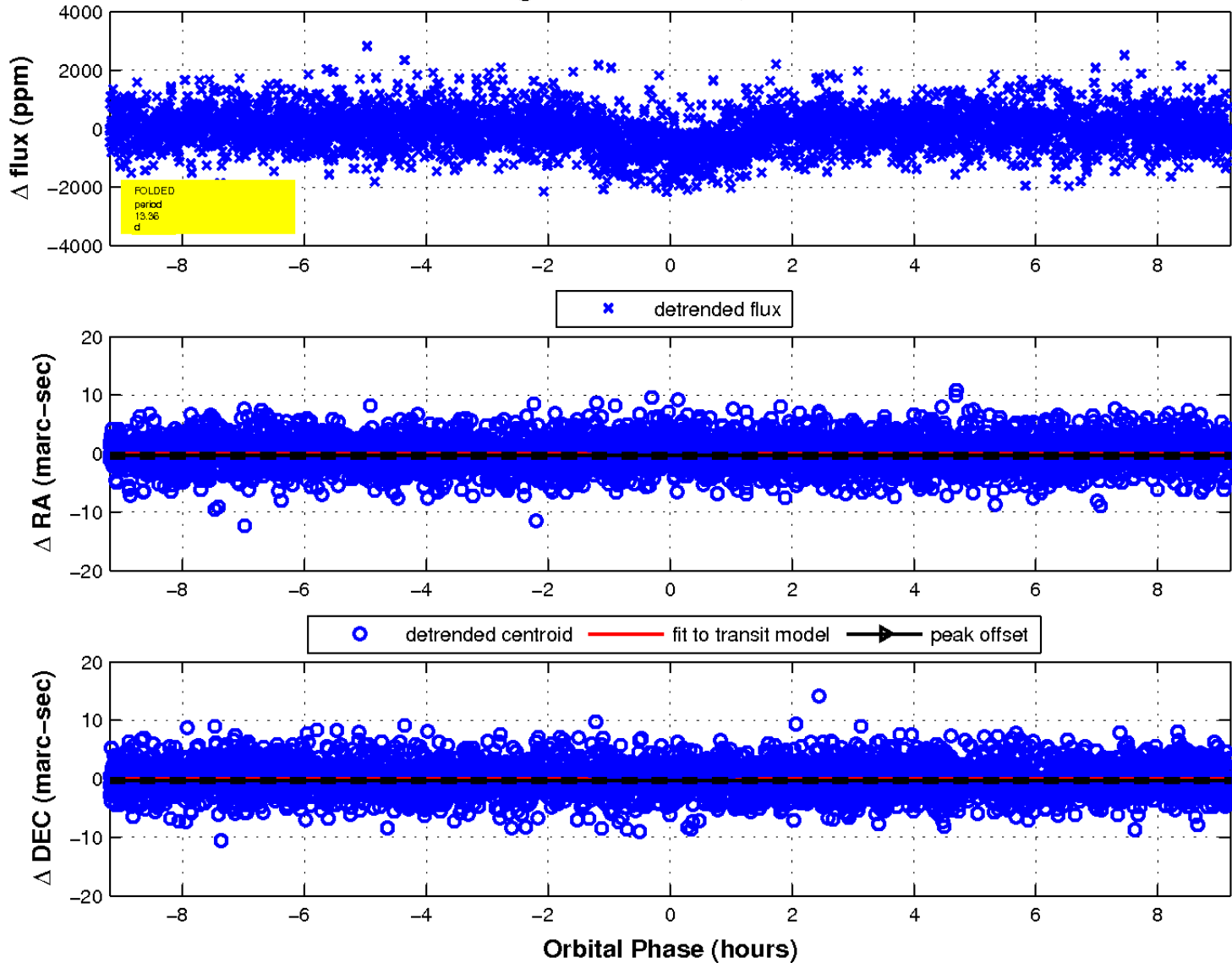
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

