

KIC 008423903

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})
008423903-01	OBS	7038.01	12.495217	131.657589	85.9	34.244	12.1	18.4	2.73	6821	2.98	901.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008423903-01	OBS	FP	0.00	1	0	0	0	LPP_DV—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.

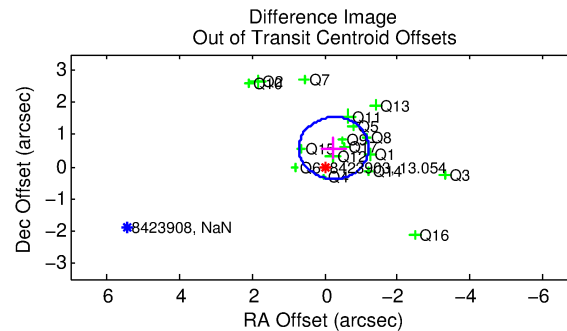
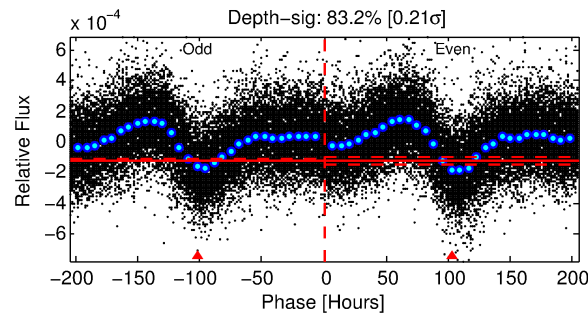
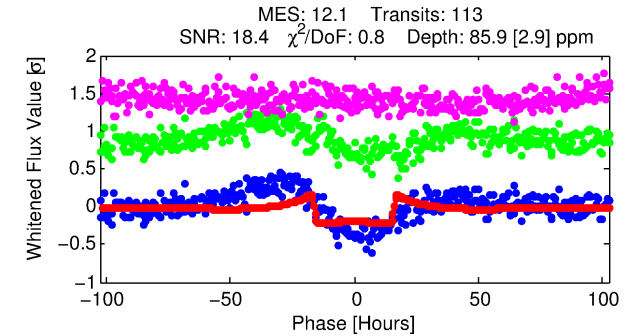
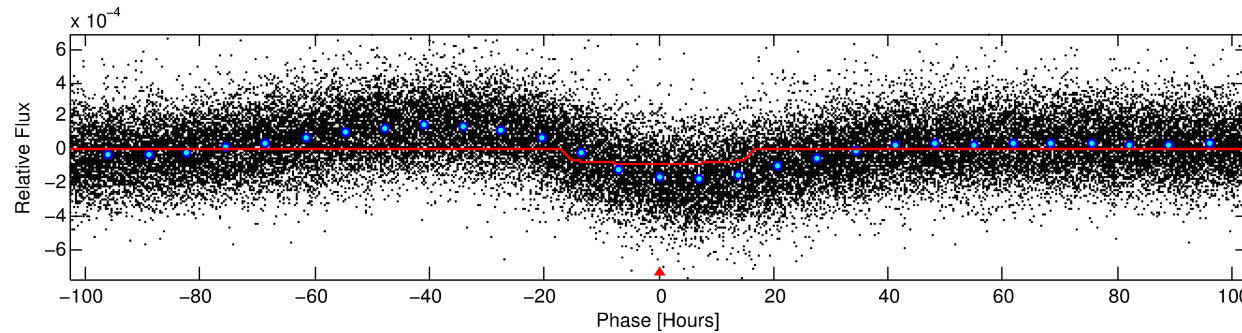
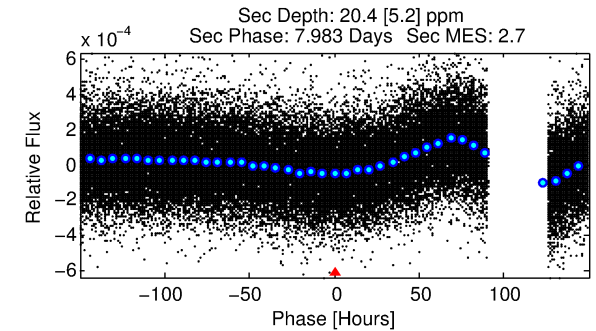
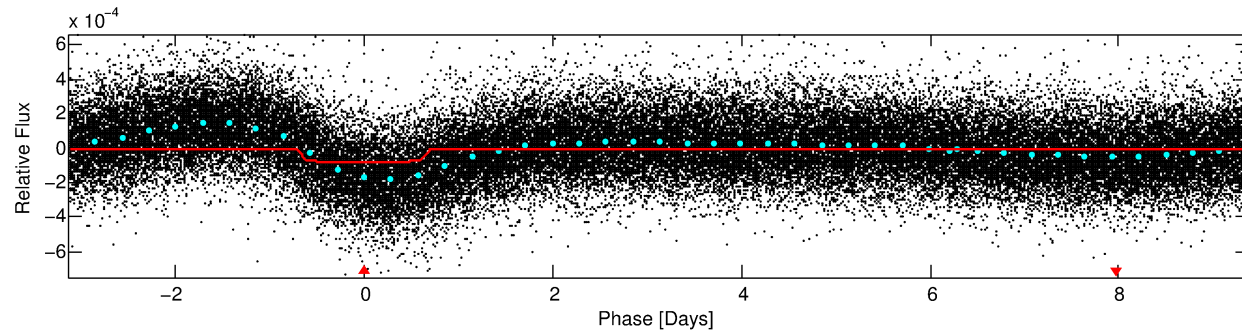
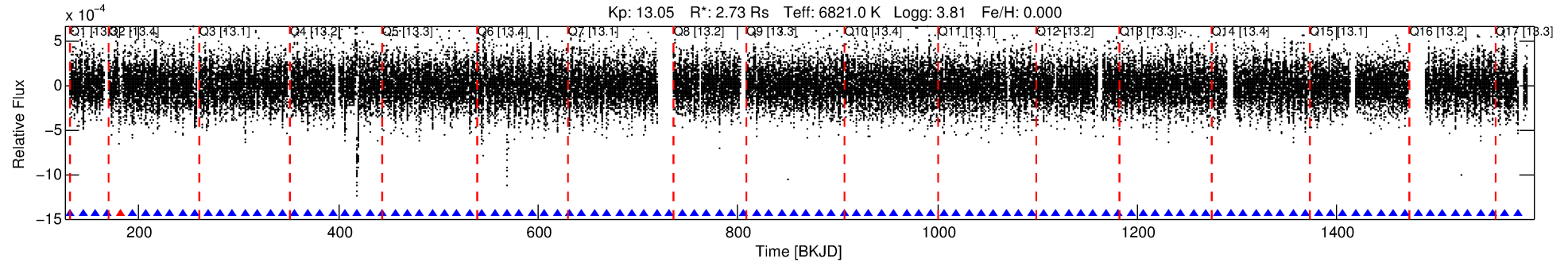
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008423903-01

No Significant Match Found

DV One-Page Summary

KIC: 8423903 Candidate: 1 of 1 Period: 12.495 d
KOI: K07038.01 Corr: 0.842



DV Fit Results:

Period = 12.49522 [0.00023] d
Epoch = 131.6576 [0.0153] BKJD
Rp/R* = 0.0100 [0.0000]
a/R* = 1.53 [0.09]
b = 0.91 [0.02]
Seff = 901.02 [623.87]
Teq = 1397 [242] K
Rp = 2.98 [1.36] Re
a = 0.1267 [0.0541] AU
Ag = 20.31 [14.58] [1.32σ]
Teffp = 4585 [348] K [7.53σ]

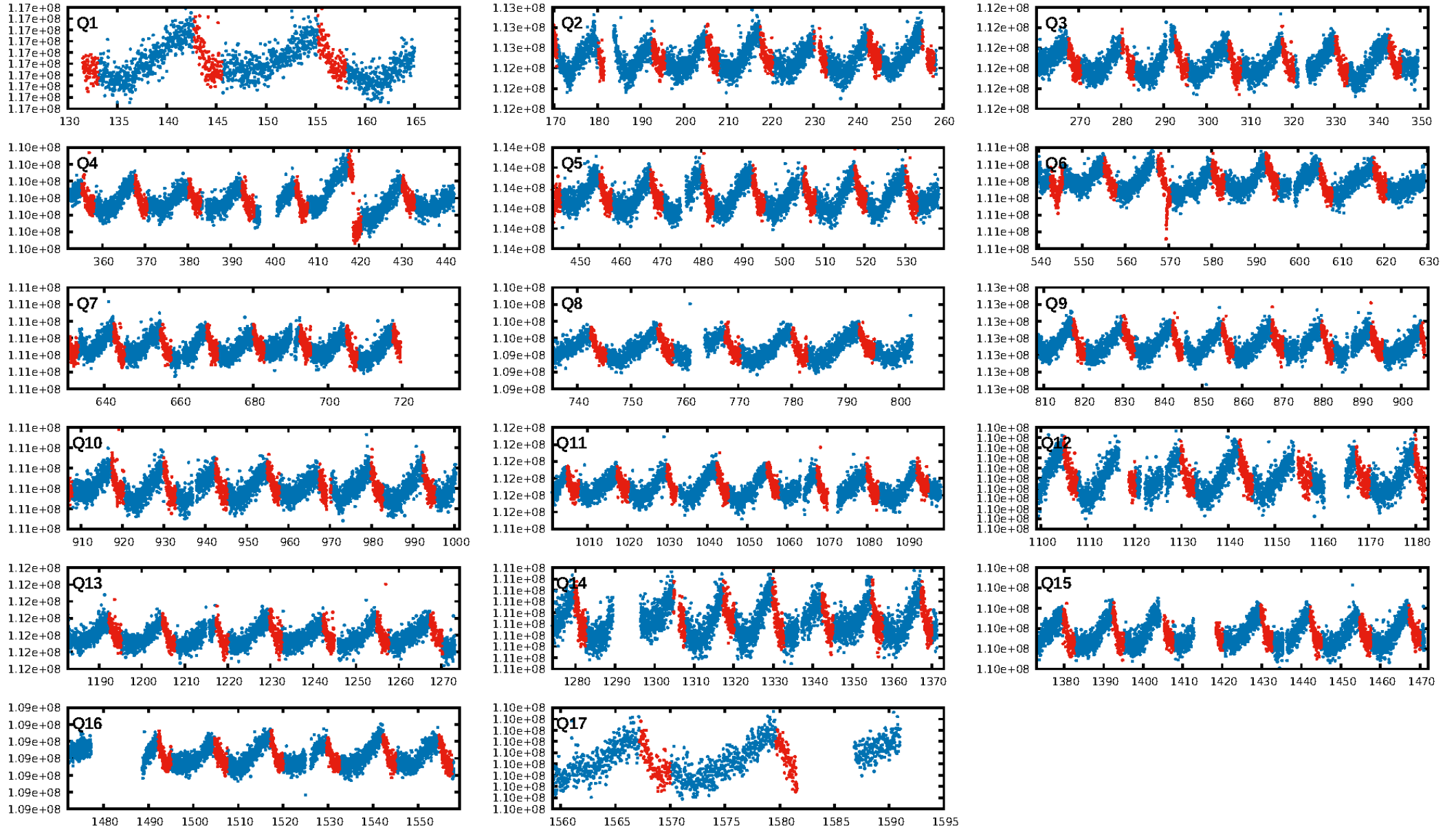
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 52.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.83e-34
RollingBand-fgt: 0.99 [107/108]
GhostDiagnostic-chr: 3.764
Centroid-sig: 0.2%
Centroid-so: 1.450 arcsec [4.00σ]
OotOffset-rm: 0.630 arcsec [1.96σ]
KicOffset-rm: 1.214 arcsec [3.82σ]
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]

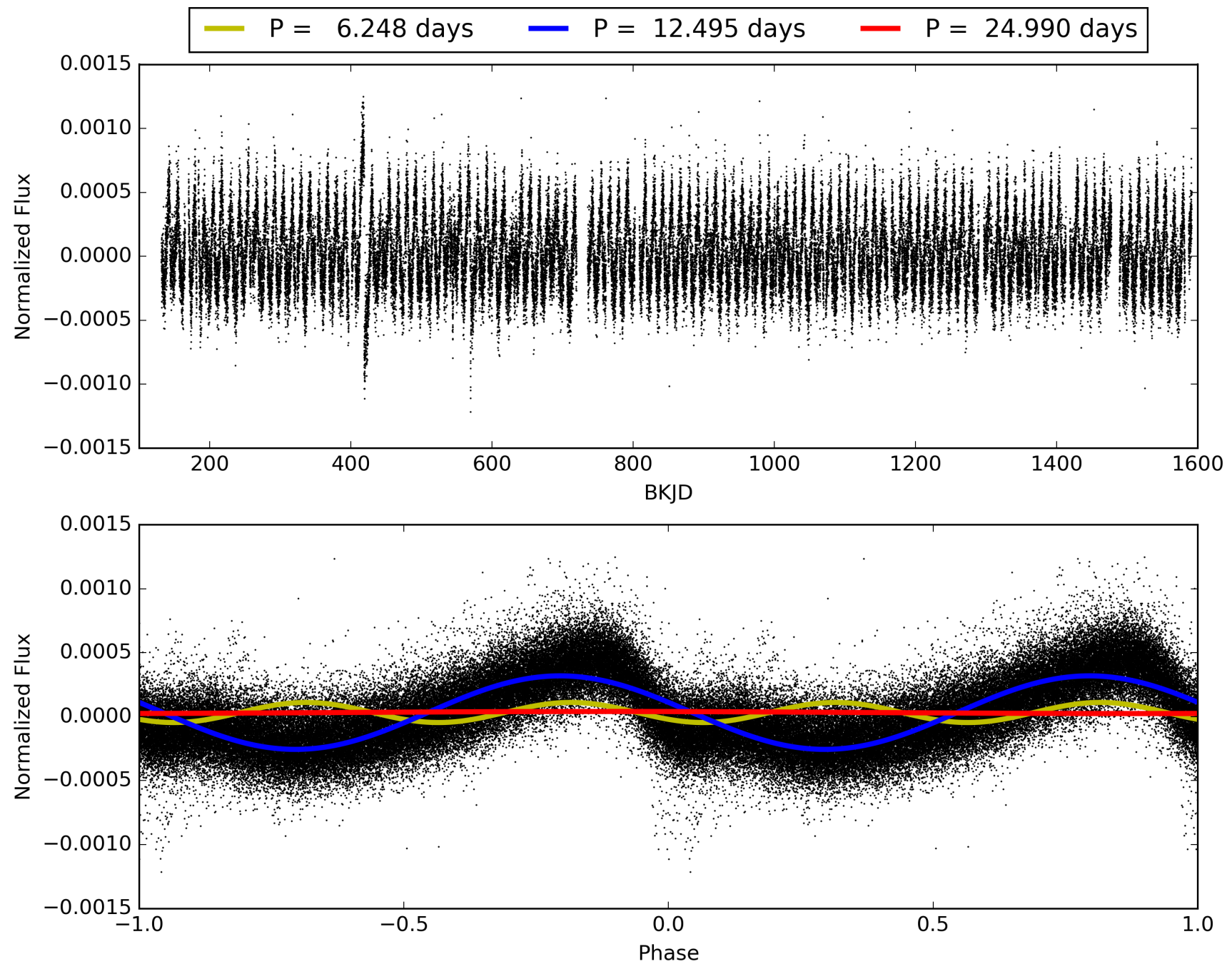
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:24:19 Z

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

TCE 008423903-01, PDC Light Curves

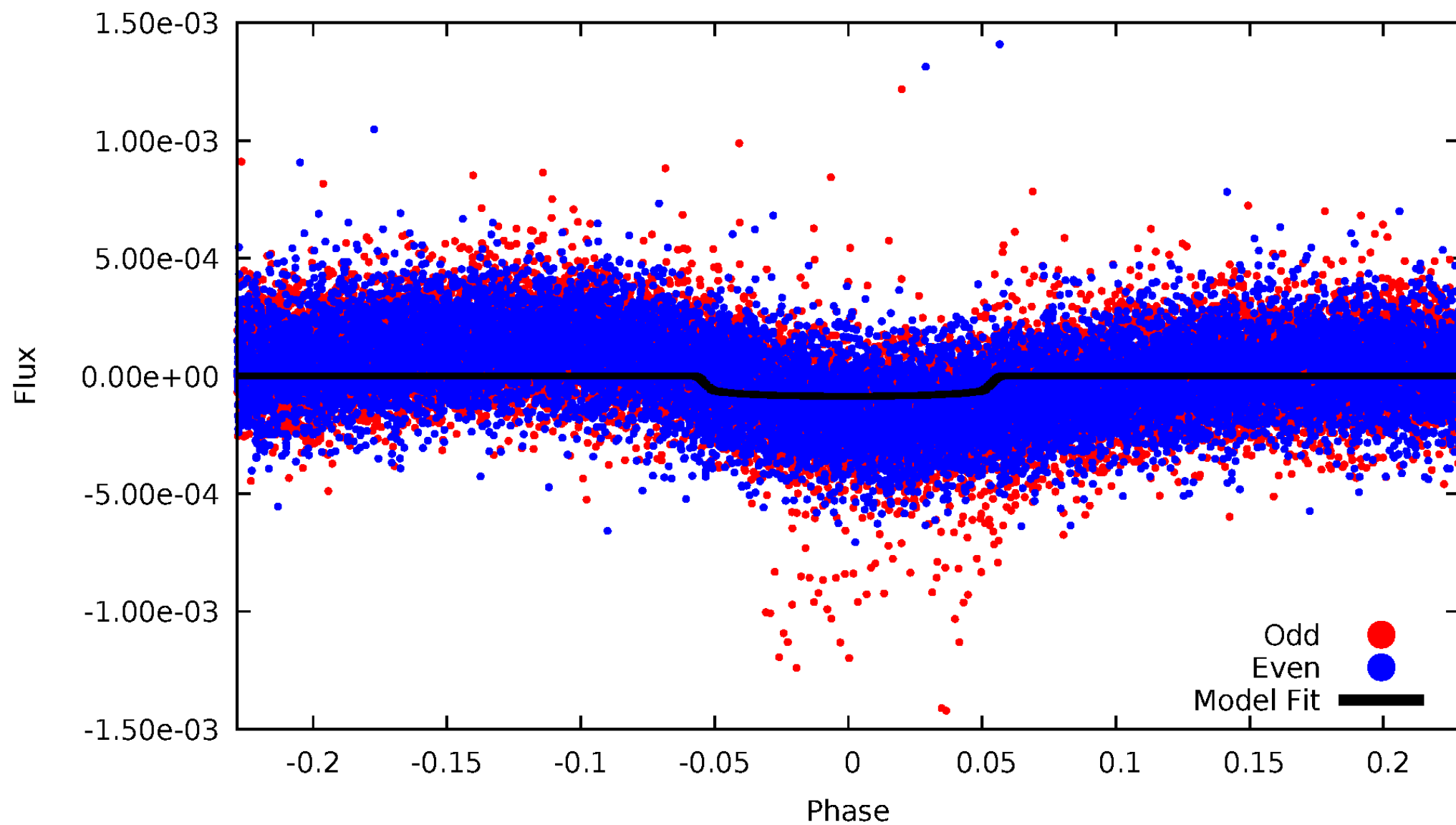


TCE 008423903-01



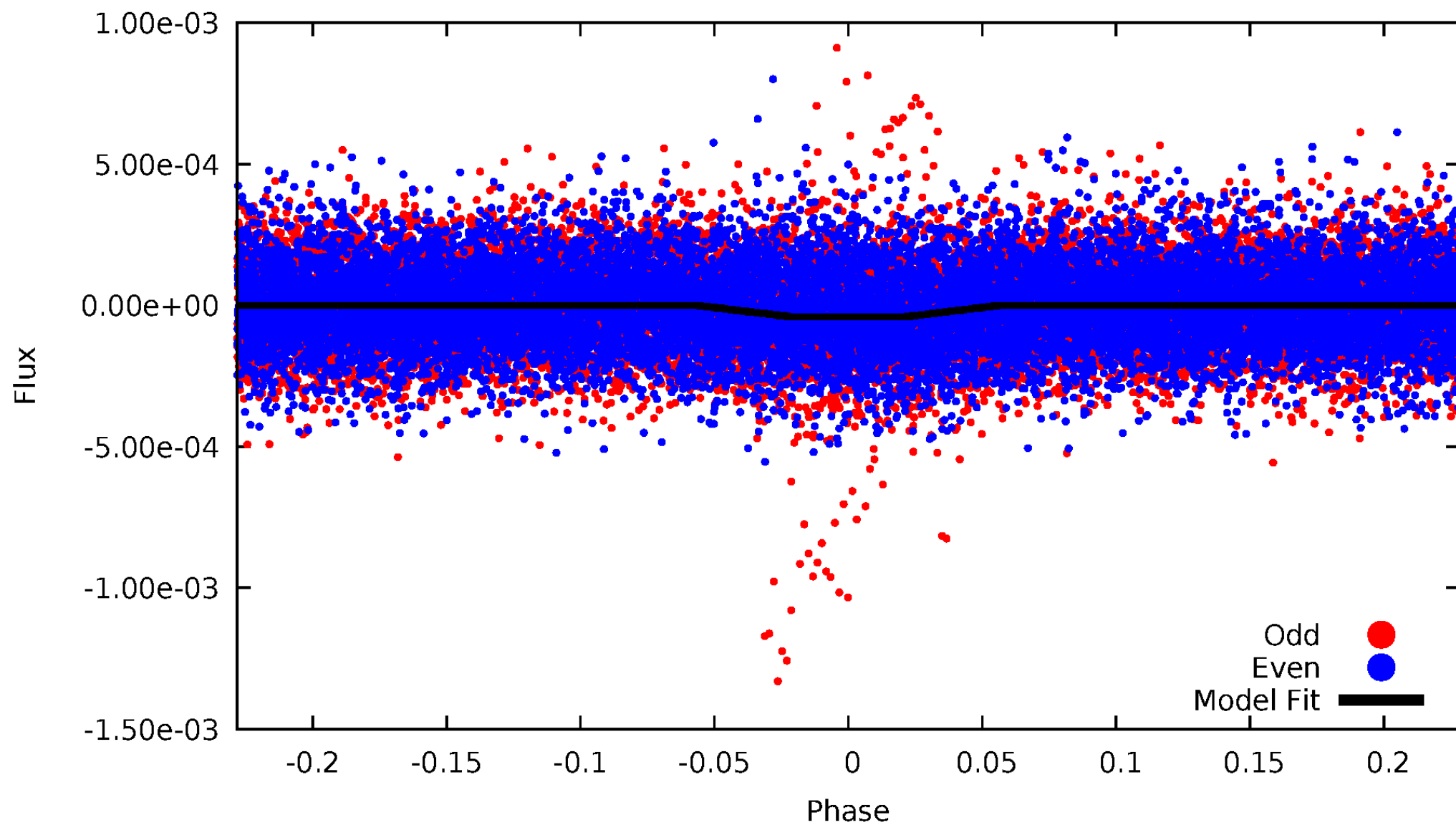
DV Odd/Even

TCE 008423903-01

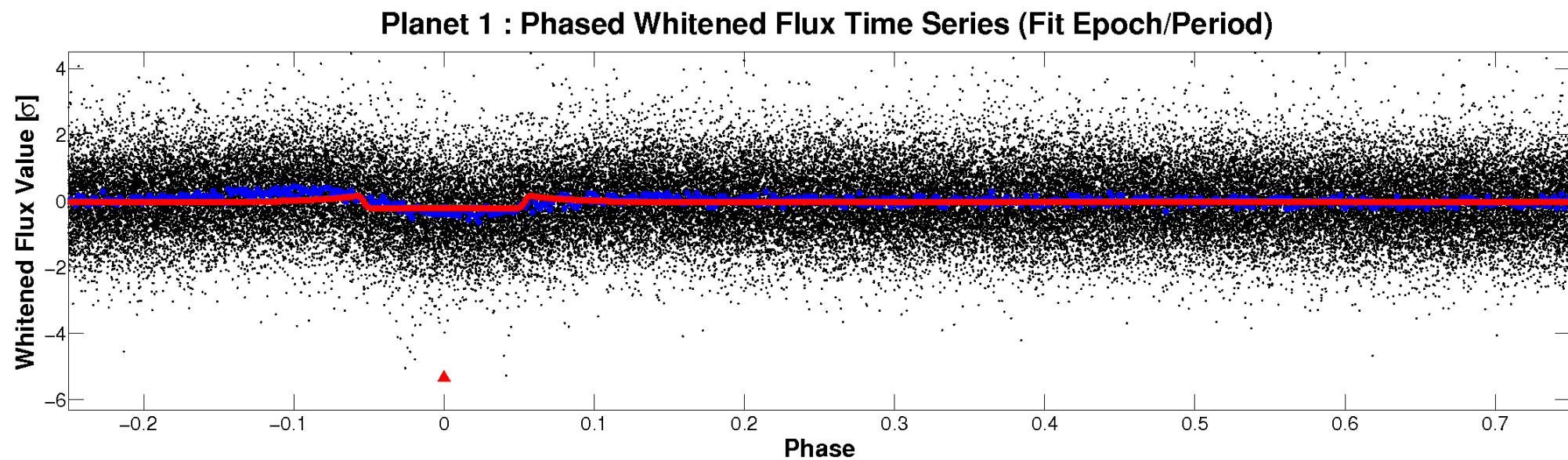
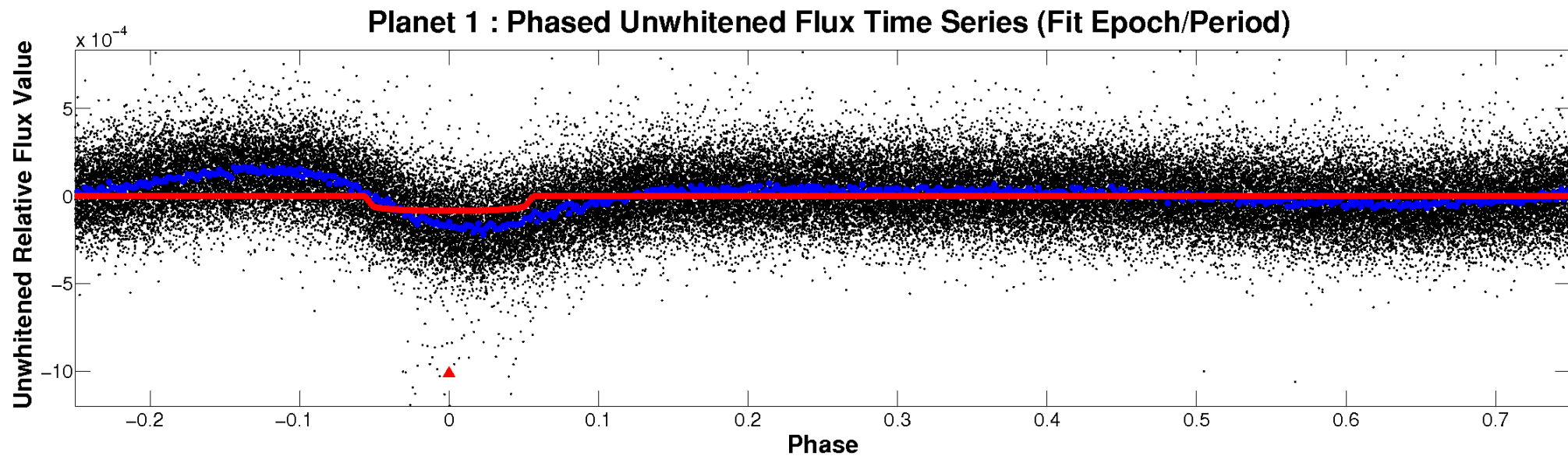


ALT Odd/Even

TCE 008423903-01

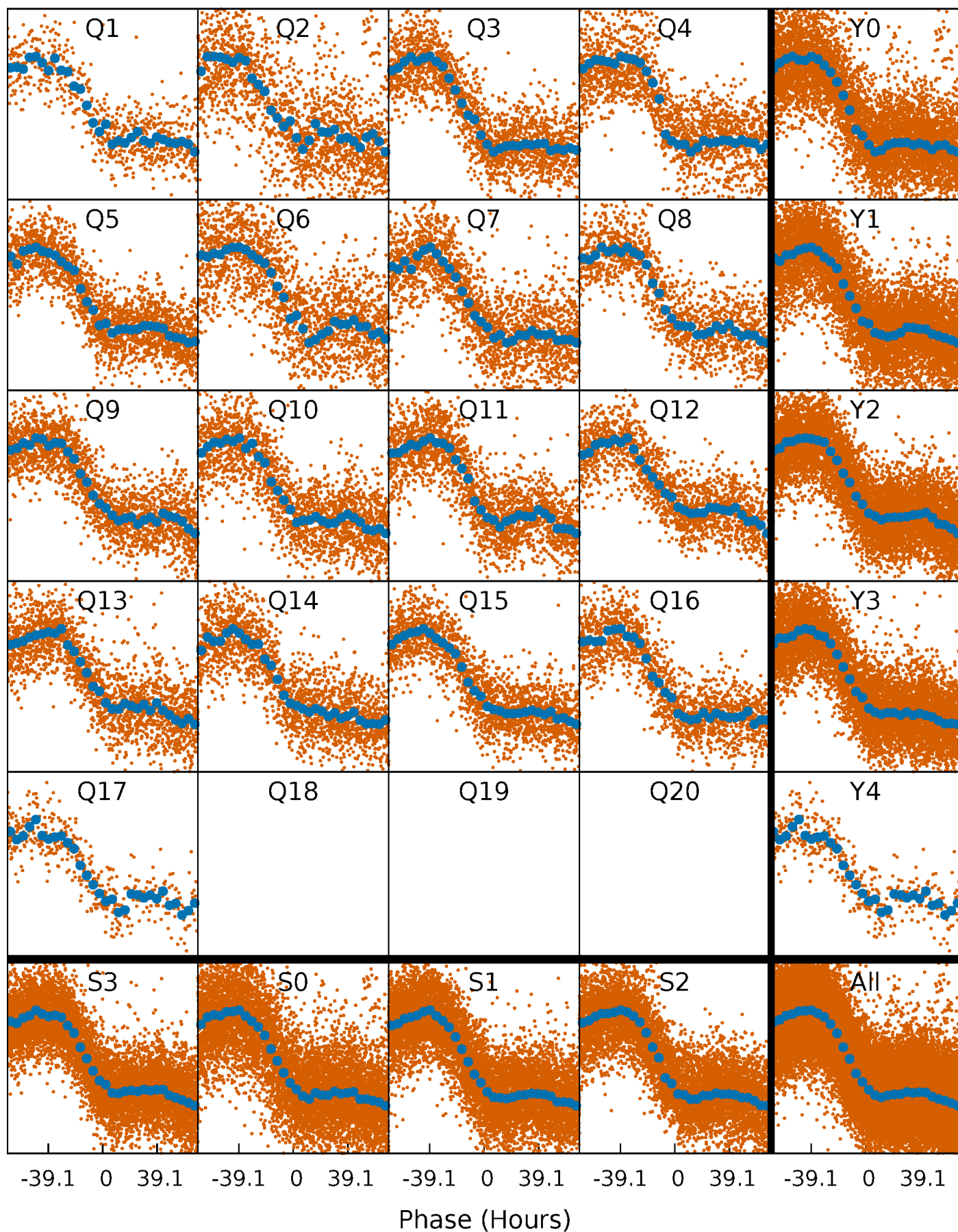


Non-Whitened Vs. Whitened Light Curve



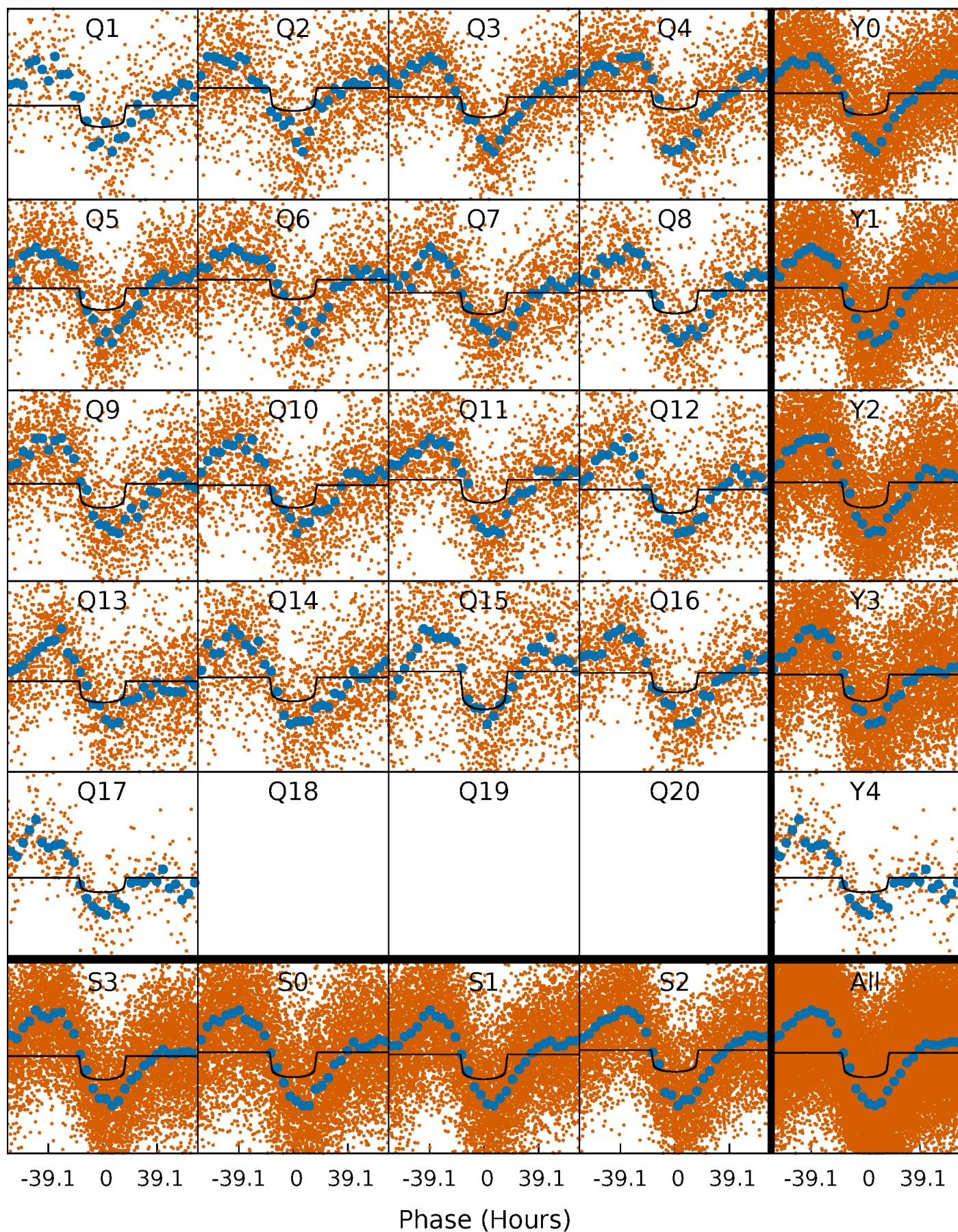
PDC Quarter-Phased Transit Curves

TCE 008423903-01 P= 12.495217 Days $T_0=131.657589$ (BKJD)



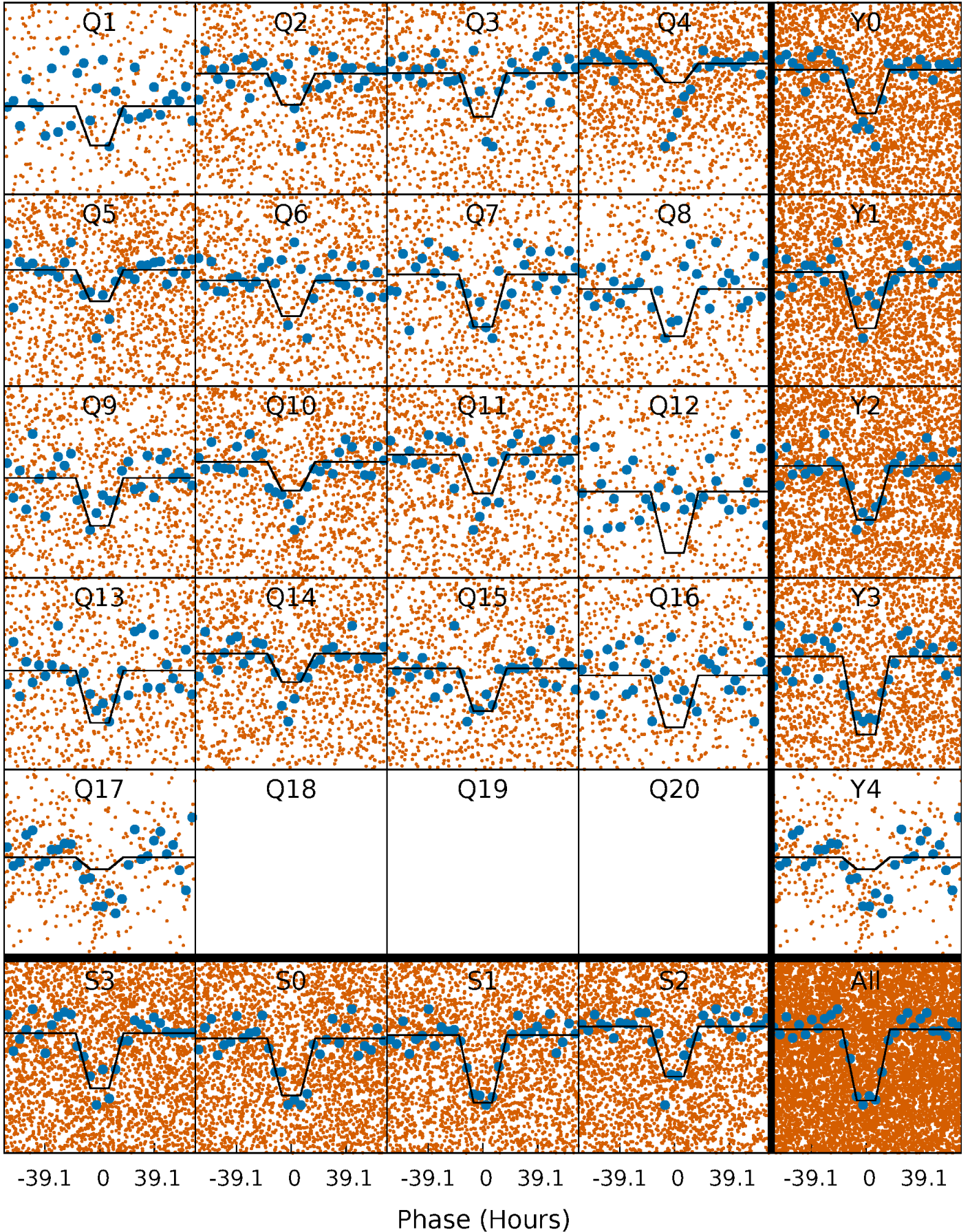
DV Quarter-Phased Transit Curves

TCE 008423903-01 P= 12.495217 Days $T_0=131.657589$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

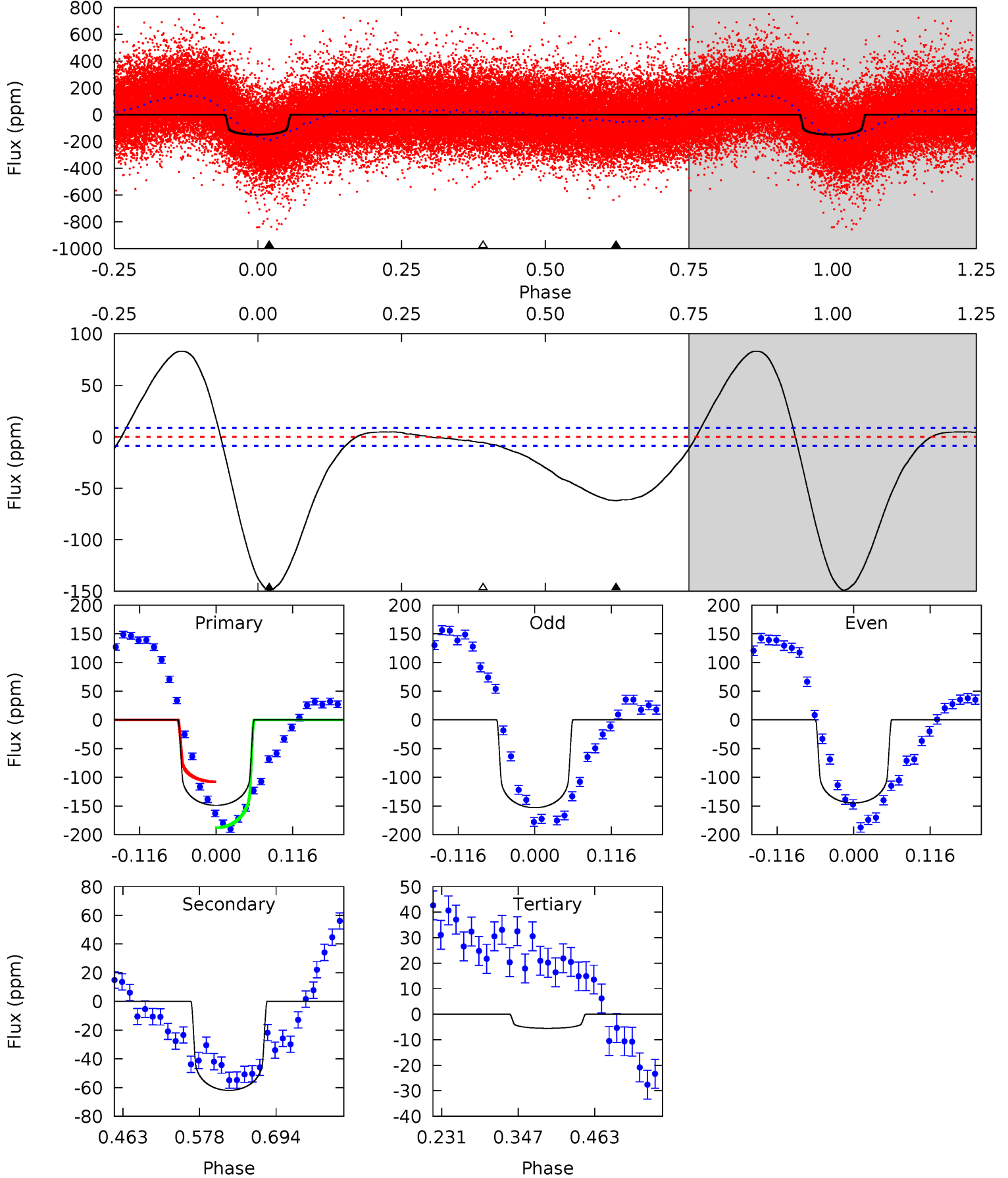
TCE 008423903-01 P= 12.494691 Days $T_0=131.674601$ (BKJD)



DV Model-Shift Uniqueness Test

008423903-01, P = 12.495217 Days, E = 119.162372 Days

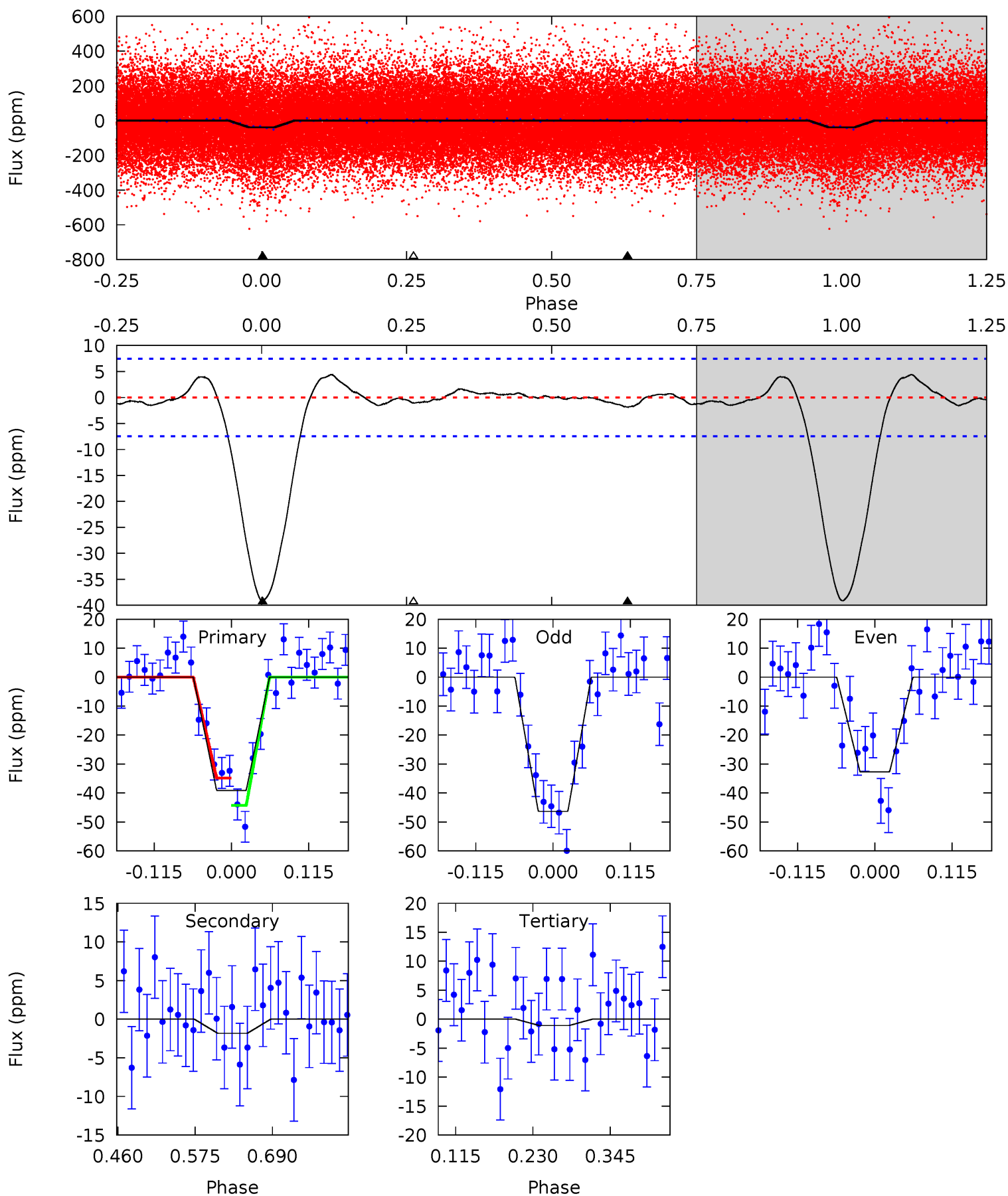
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
77.8	32.4	2.89	0	4.53	1.57	16.3	75.0	77.8	29.5	32.4	2.13	1.04	0.36	21.1



Alt Model-Shift Uniqueness Test

008423903-01, P = 12.494691 Days, E = 119.179910 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.8	1.11	0.67	0	4.54	1.58	0.74	23.1	23.8	0.44	1.11	4.17	1.15	0.10	2.89



Stellar Parameters For KIC 008423903

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6821^{+190}_{-286}	$3.805^{+0.390}_{-0.130}$	$0.000^{+0.250}_{-0.300}$	$2.730^{+0.535}_{-1.248}$	$1.733^{+0.157}_{-0.440}$	$0.120^{+0.413}_{-0.047}$
	+3%/-4%	+10%/-3%	+inf%/-inf%	+20%/-46%	+9%/-25%	+344%/-39%
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 008423903-01 / KOI 7038.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-62 ± 2	$2.94^{+0.35}_{-0.68}$	1912^{+142}_{-199}	6009^{+173}_{-233}	64^{+37}_{-13}
Alt.	-2 ± 2	$1.83^{+0.24}_{-0.43}$	1914^{+141}_{-206}	3582^{+428}_{-947}	$5.341^{+5.117}_{-4.428}$

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

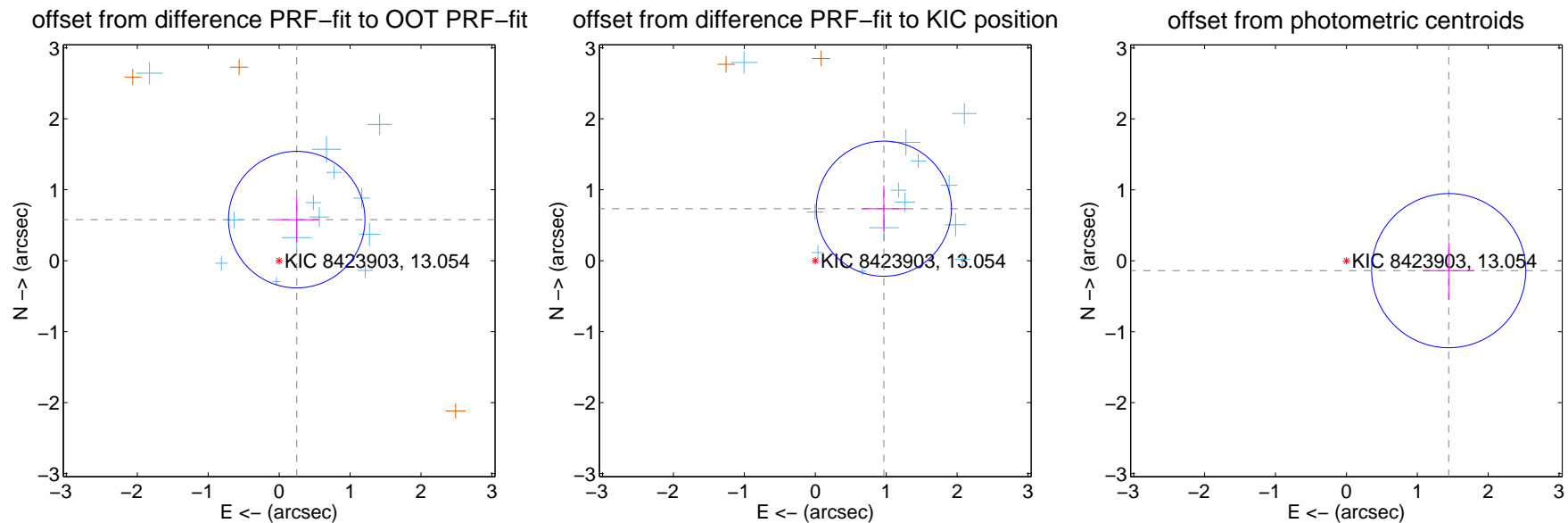
DV Centroid Data

Supplemental centroid analysis for 008423903-01. Kepler magnitude: 13.05. Transit SNR 18.43

There are 14 quarters with good PRF difference image offsets

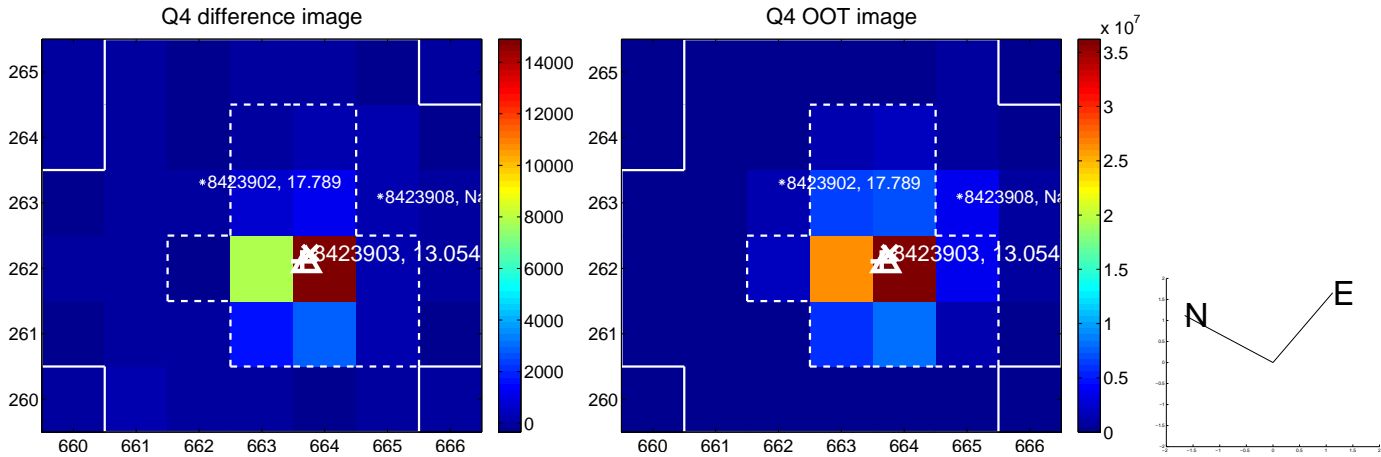
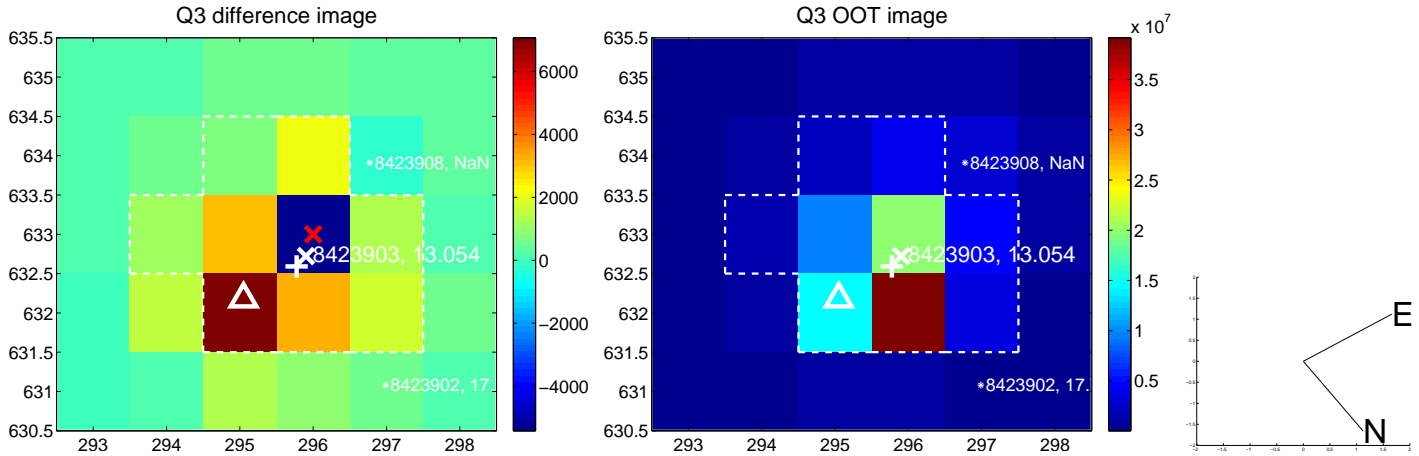
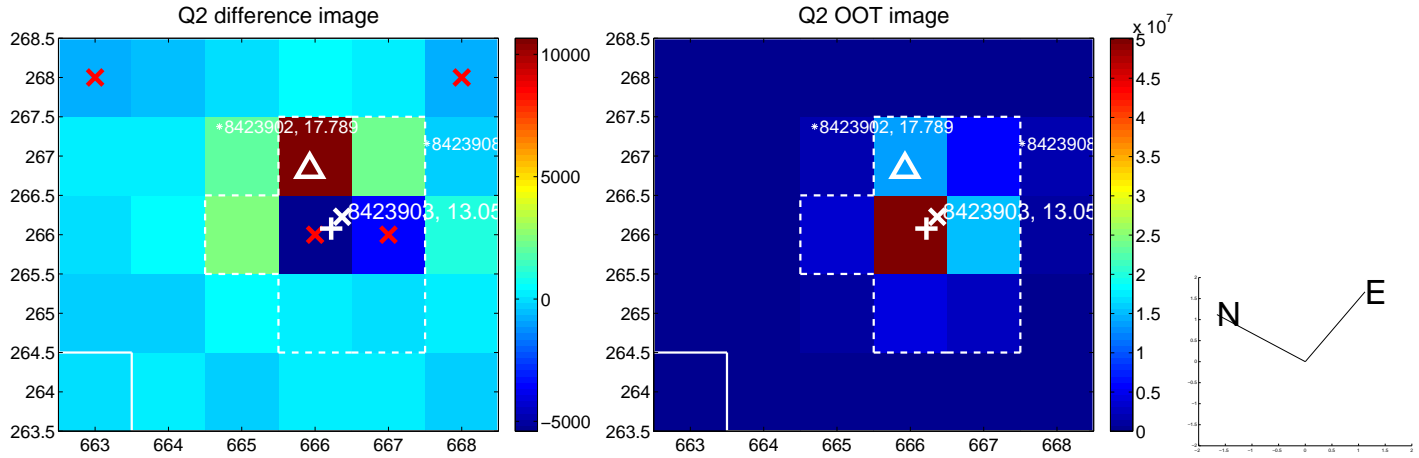
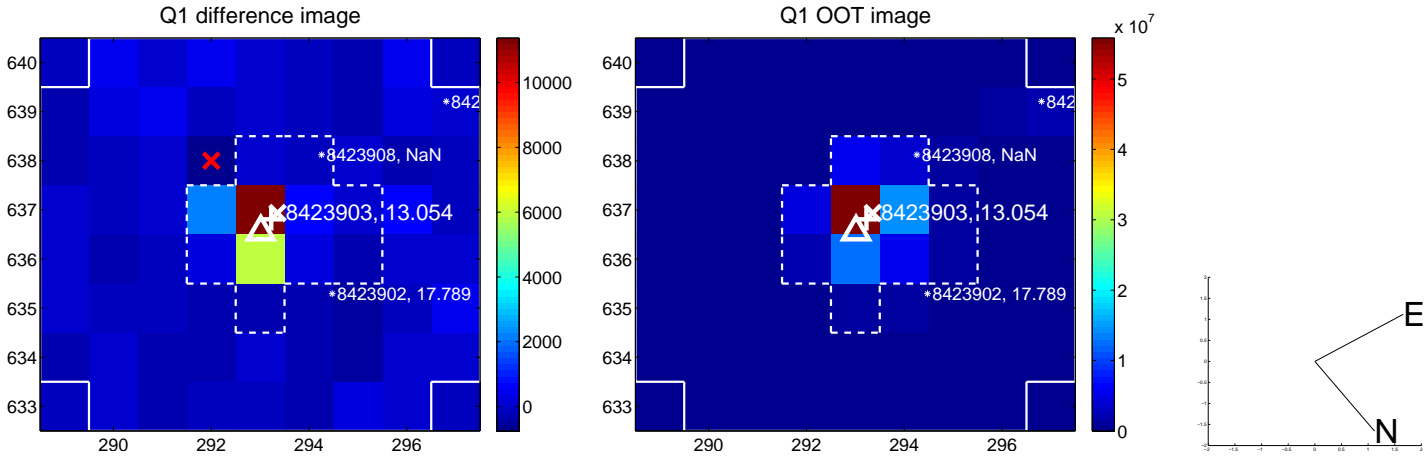
The direct PRF centroid is offset from the target star catalog position by about 0.73 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.630 ± 0.321	1.96	-0.248 ± 0.320	0.579 ± 0.321
PRF-fit source offset from KIC position	1.214 ± 0.318	3.82	-0.967 ± 0.315	0.733 ± 0.322
photometric centroid source offset	1.45 ± 0.36	4.00	-1.44 ± 0.36	-0.14 ± 0.40

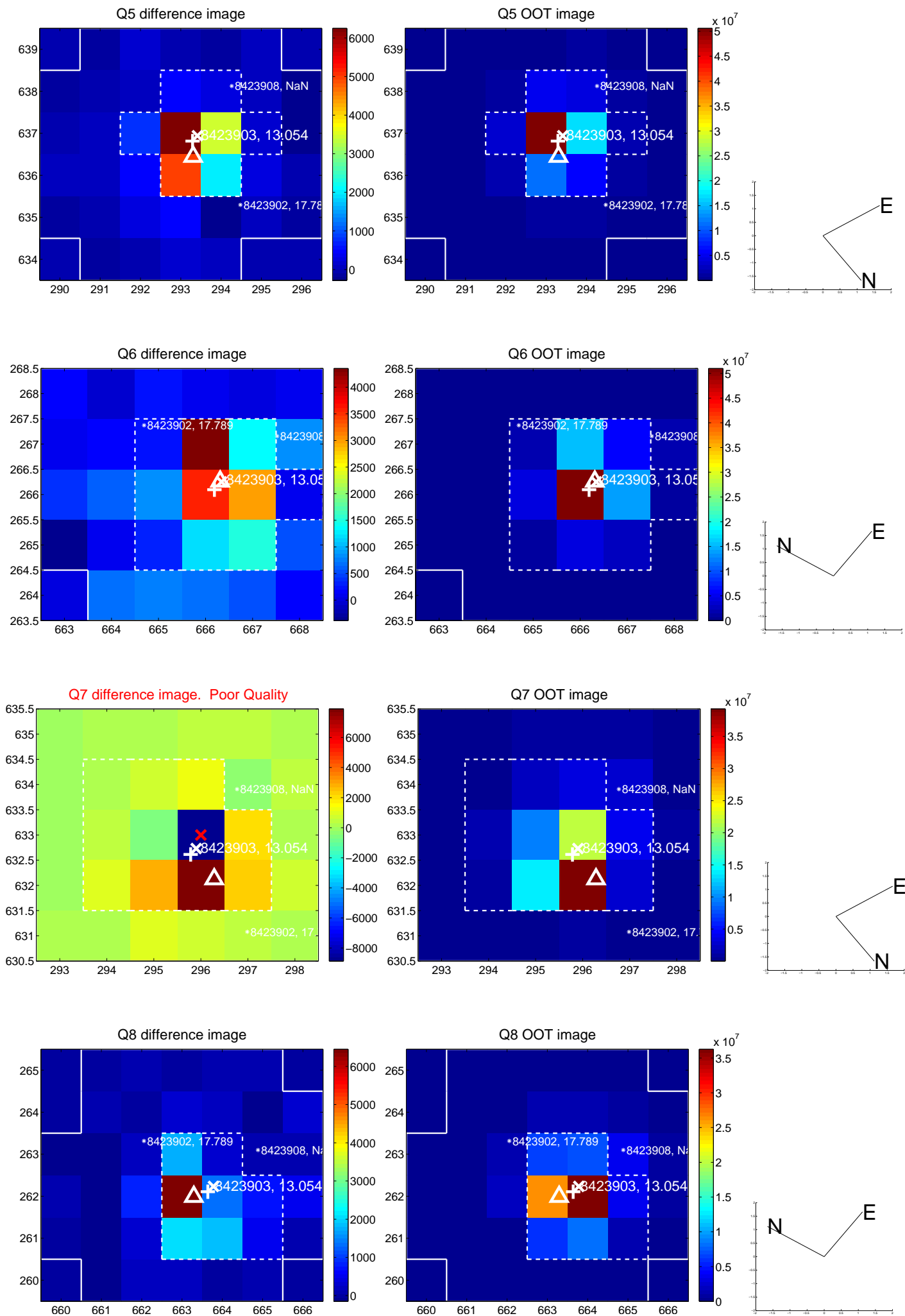


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

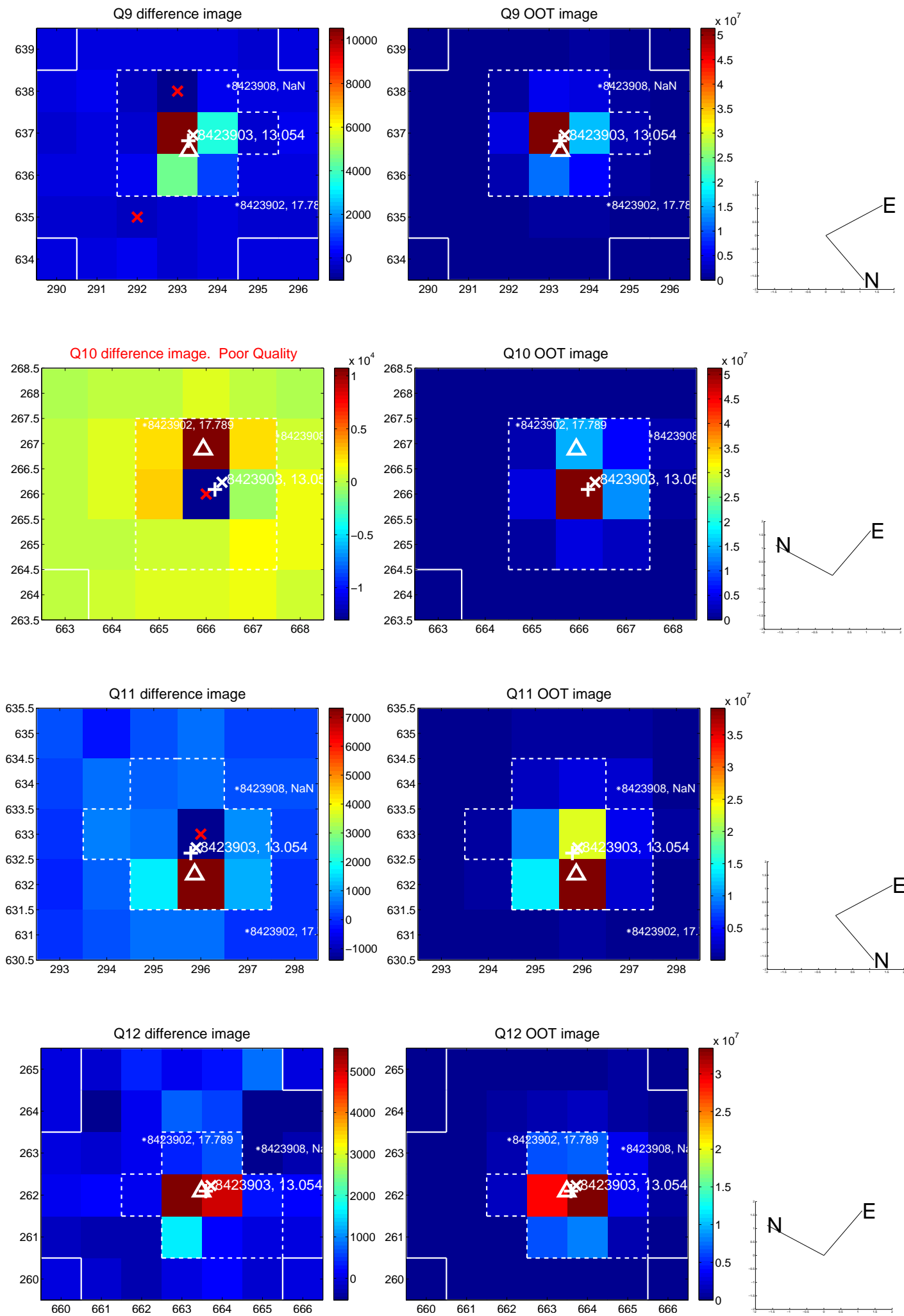
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



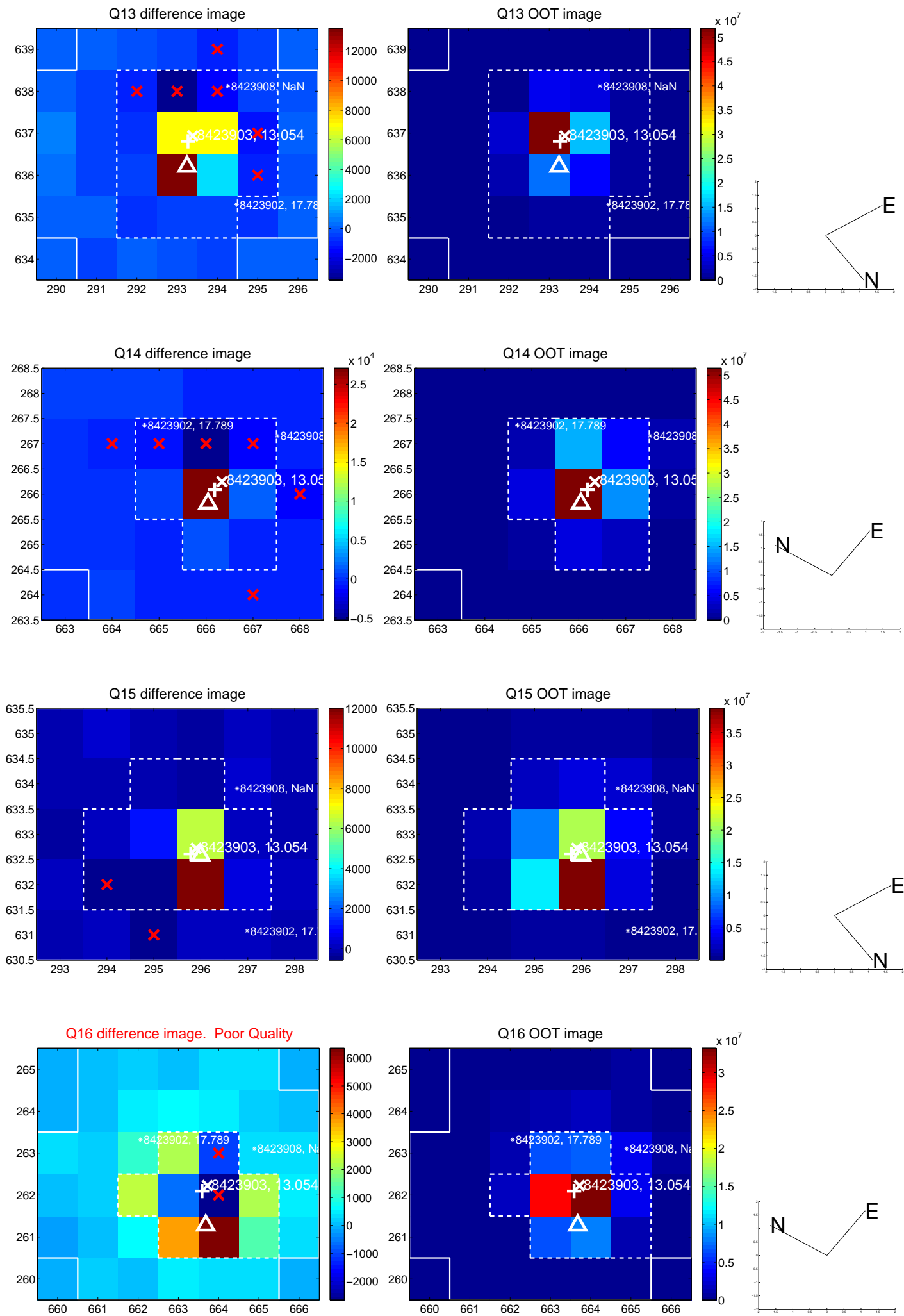
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



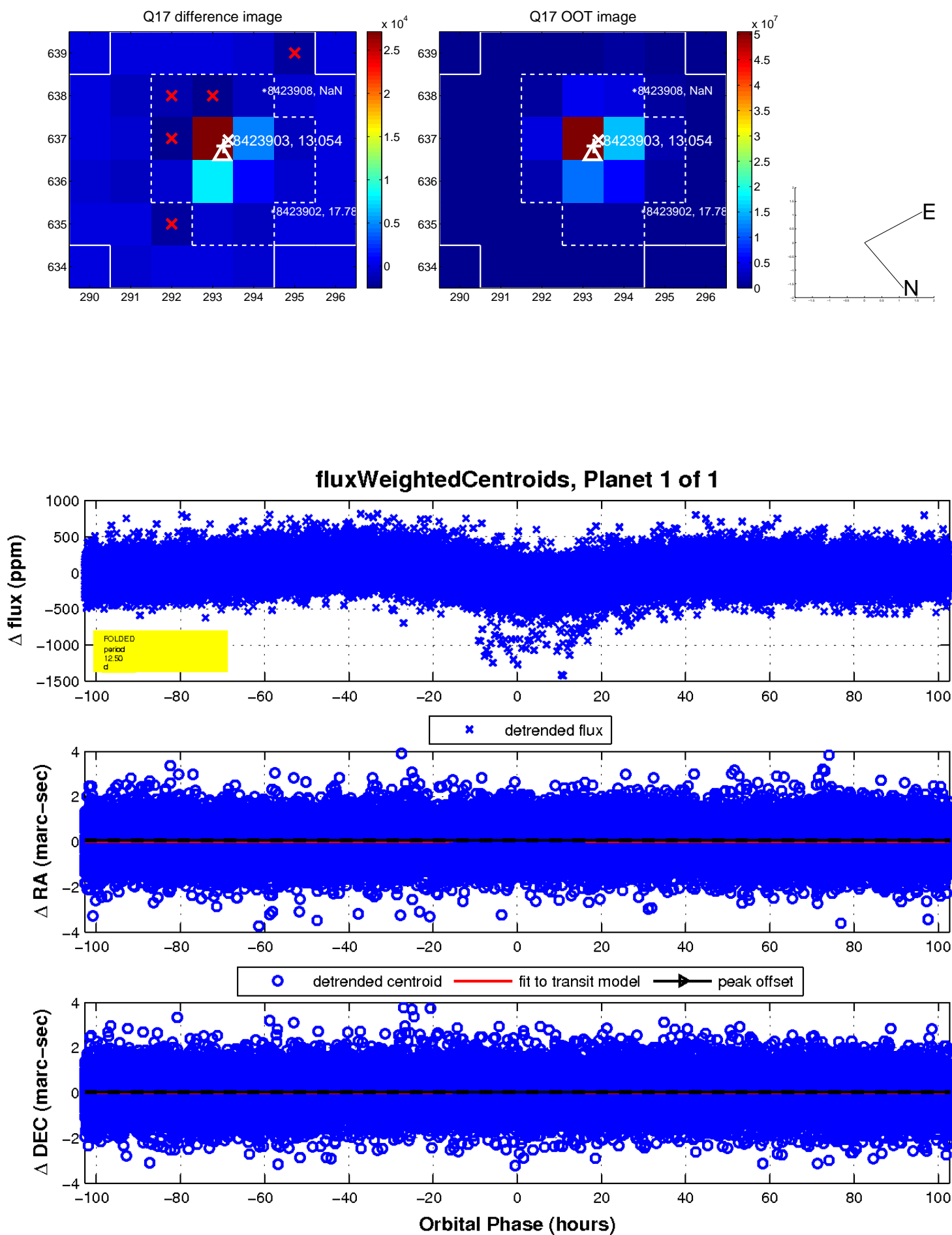
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

