

KIC 012108293

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
012108293-01	OBS	4540.01	0.705443	131.689101	58.9	2.743	12.5	14.2	0.74	5383	0.68	1945.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012108293-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—CENT_CROWDED—HALO_GHOST—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.

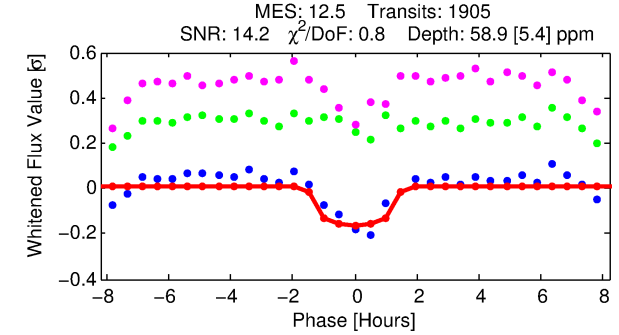
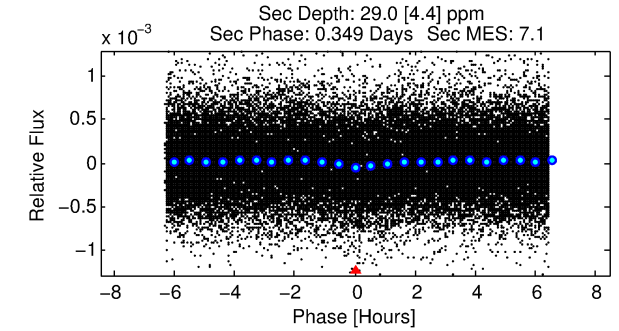
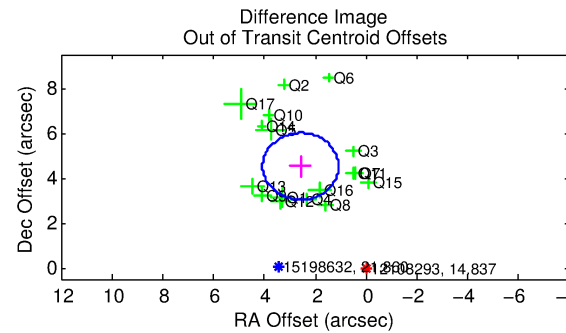
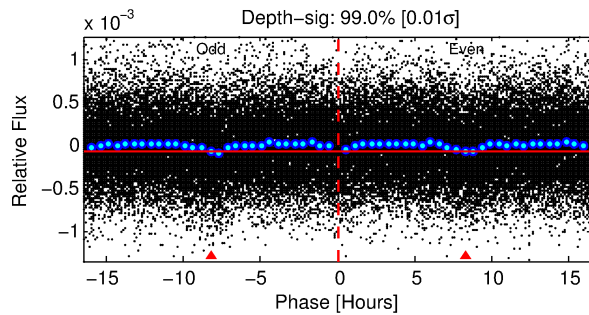
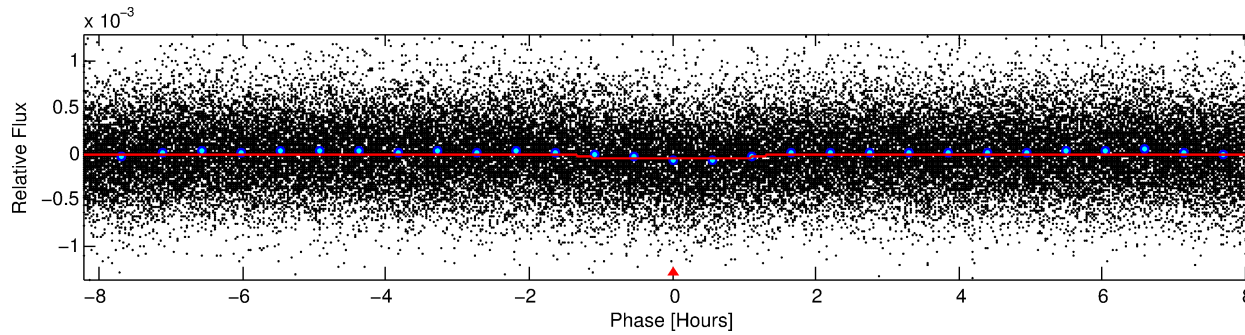
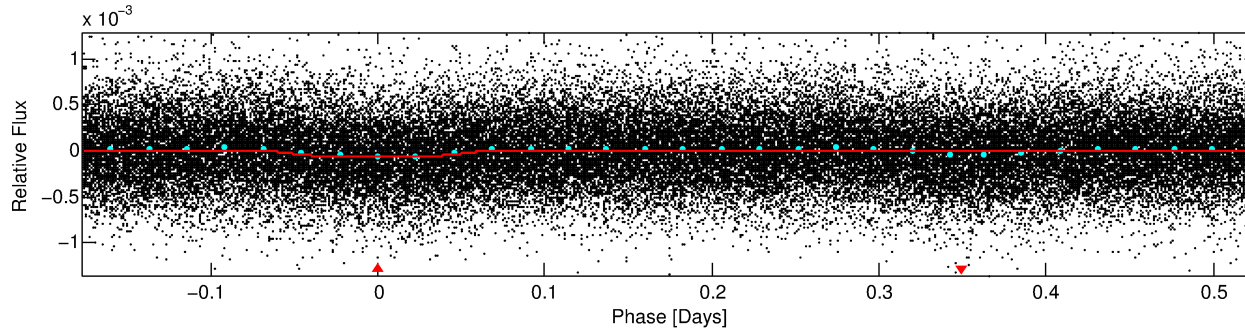
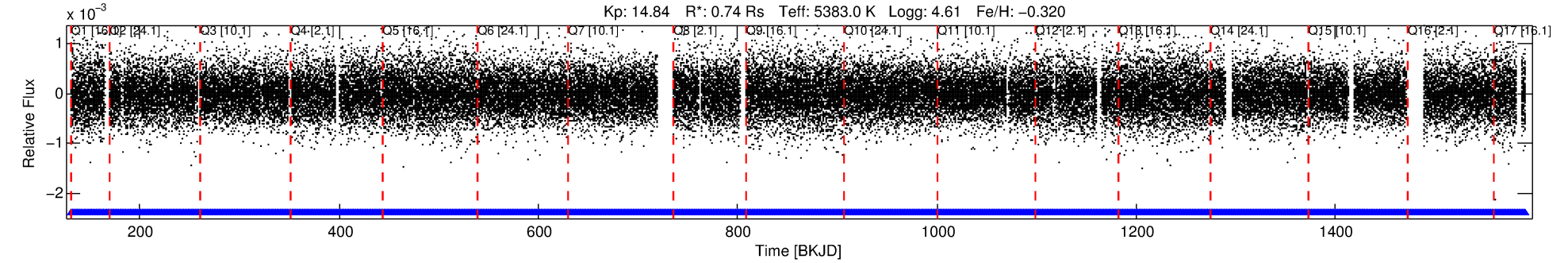
Ephemeris Match Information For 012108293-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
012108293-01	12108293	012108333-pri	12108333	1:1	50.3	-1	13	13.23	14.84	5928.80	Direct-PRF	0	0.83	0.07

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ 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 σ_P < 5.0 and σ_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: 12108293 Candidate: 1 of 1 Period: 0.705 d
KOI: K04540.01 Corr: 0.917



DV Fit Results:

Period = 0.70544 [0.00001] d
Epoch = 131.6891 [0.0024] BKJD
Rp/R* = 0.0085 [0.0046]
a/R* = 1.29 [1.26]
b = 0.90 [0.51]
Seff = 1945.19 [444.21]
Teq = 1693 [97] K
Rp = 0.68 [0.38] Re
a = 0.0145 [0.0020] AU
Ag = 7.25 [8.01] [0.78 σ]
Teffp = 4296 [1175] K [2.21 σ]

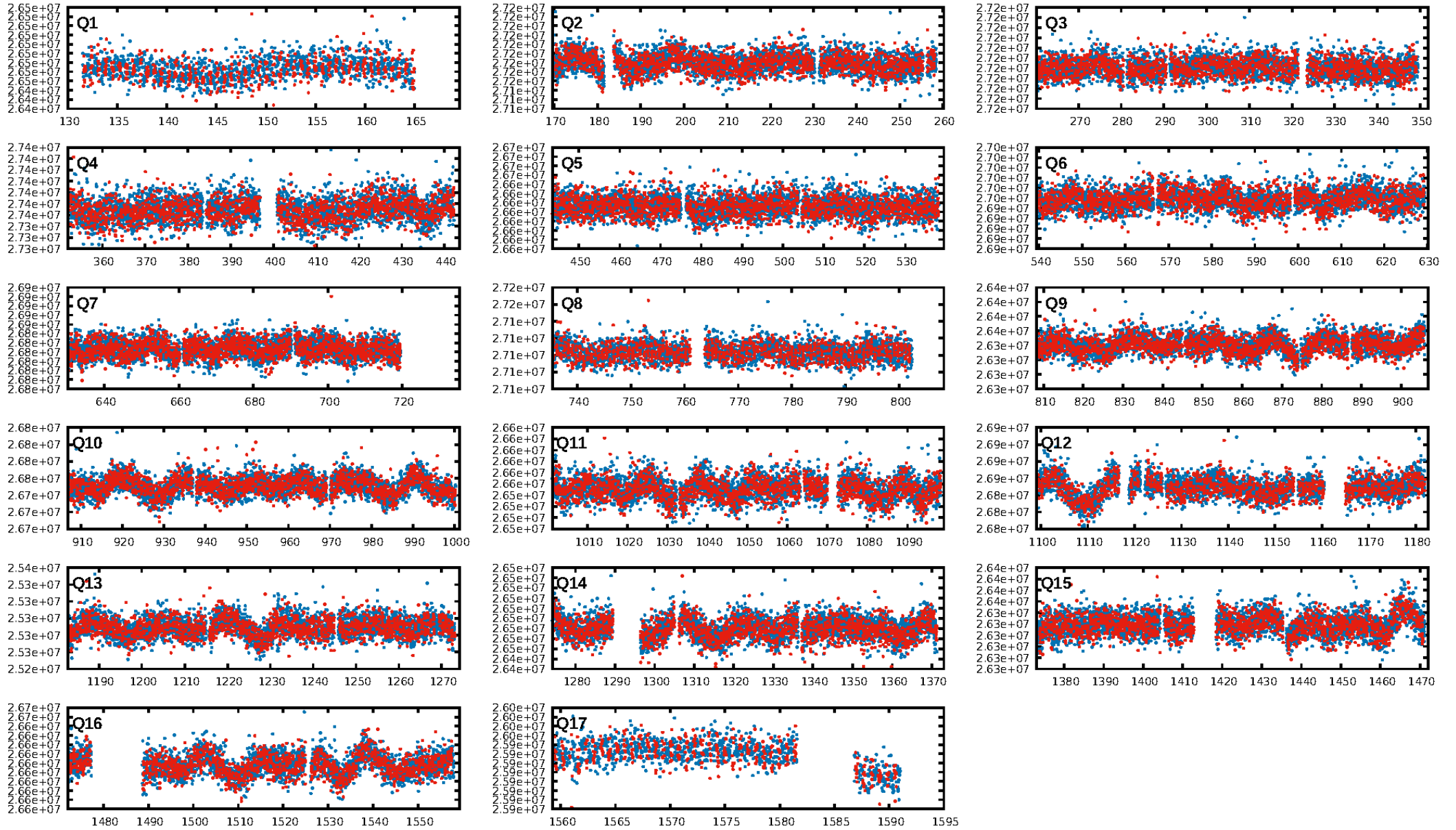
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.81e-34
RollingBand-fgt: 1.00 [1819/1819]
GhostDiagnostic-chr: 0.02135
Centroid-sig: 0.0%
Centroid-so: 4.371 arcsec [4.18 σ]
OotOffset-rm: 5.199 arcsec [10.48 σ]
KicOffset-rm: 5.133 arcsec [11.12 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 1.00 [17/17]

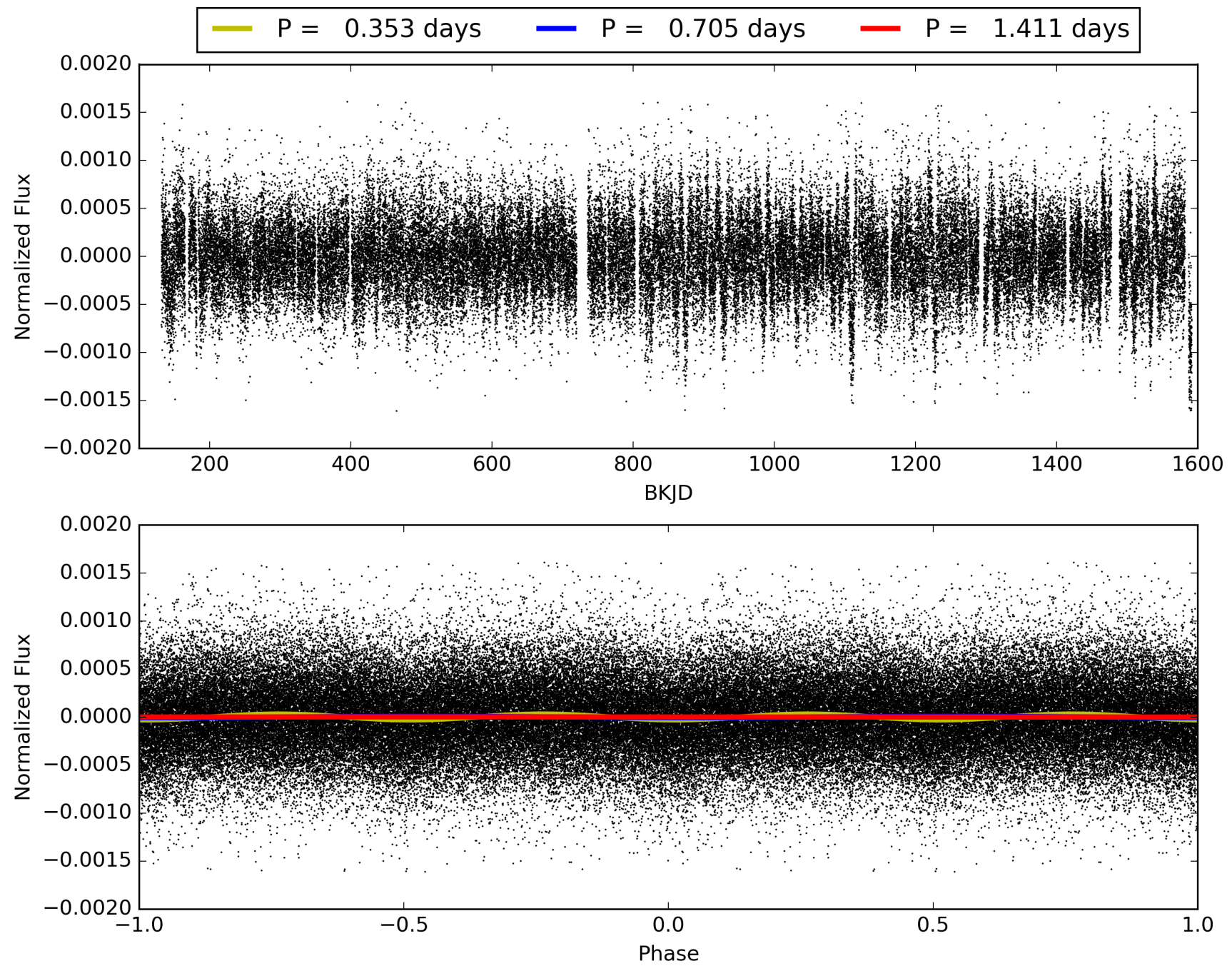
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:41:27 Z

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

TCE 012108293-01, PDC Light Curves

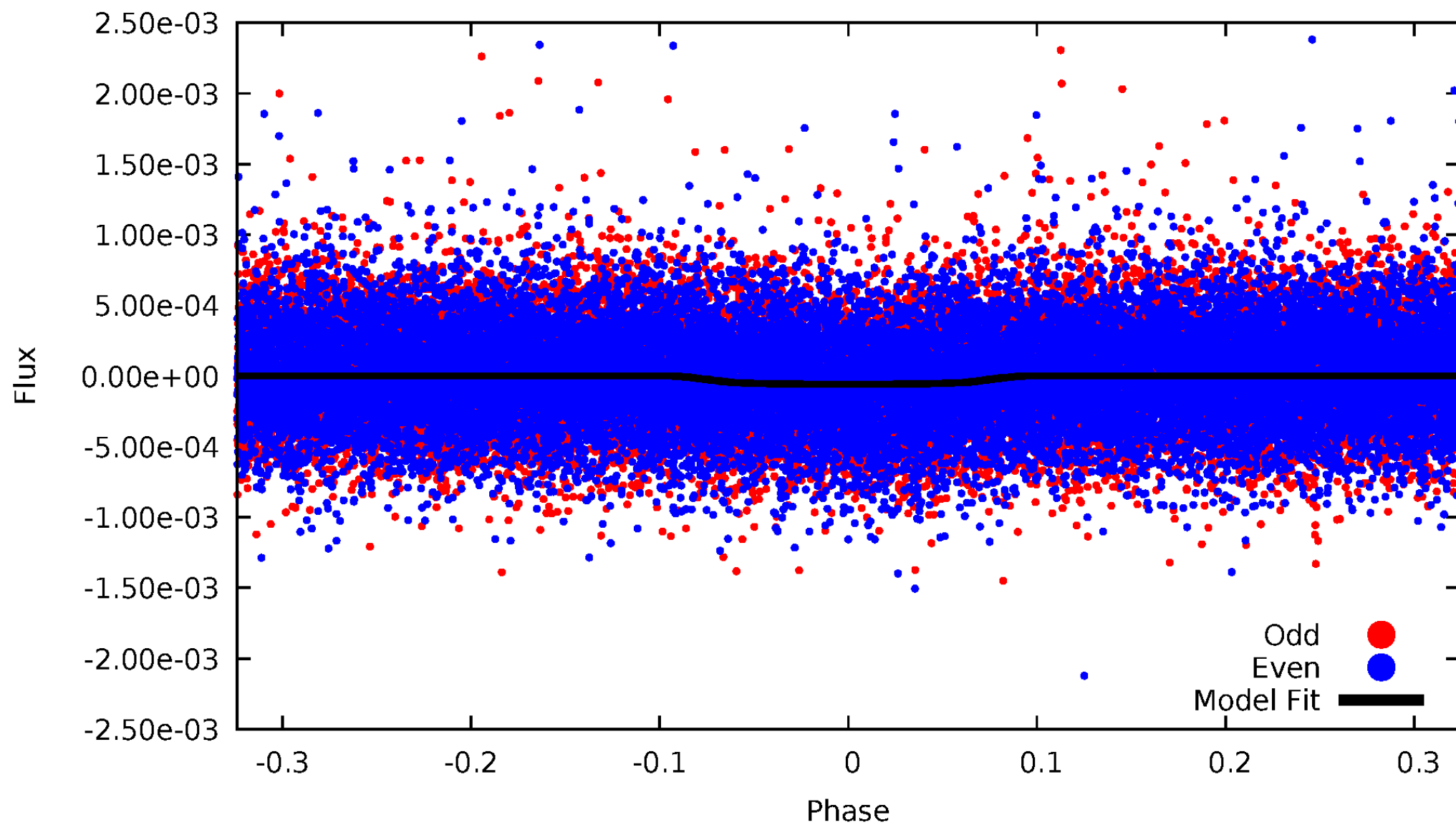


TCE 012108293-01



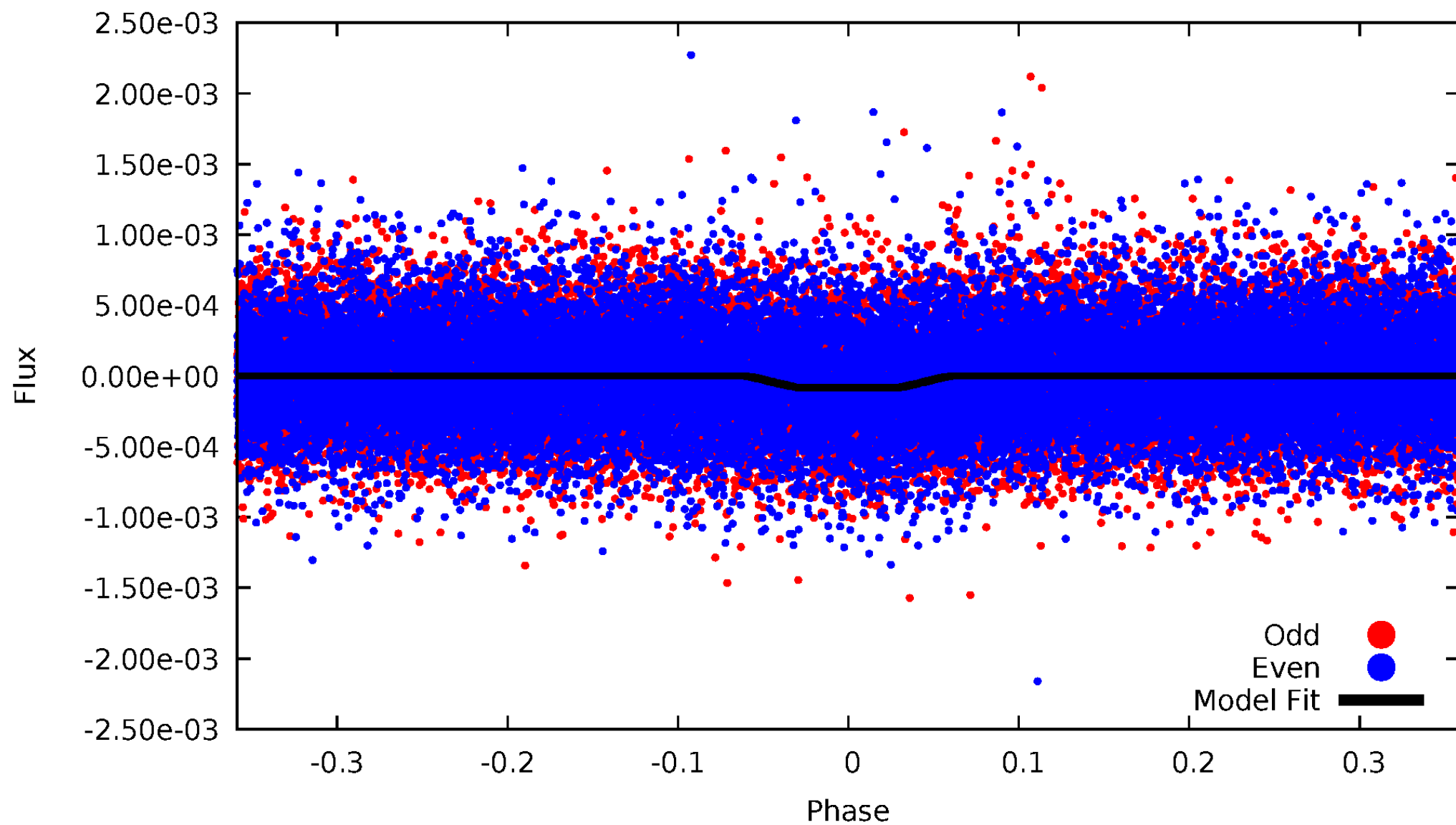
DV Odd/Even

TCE 012108293-01

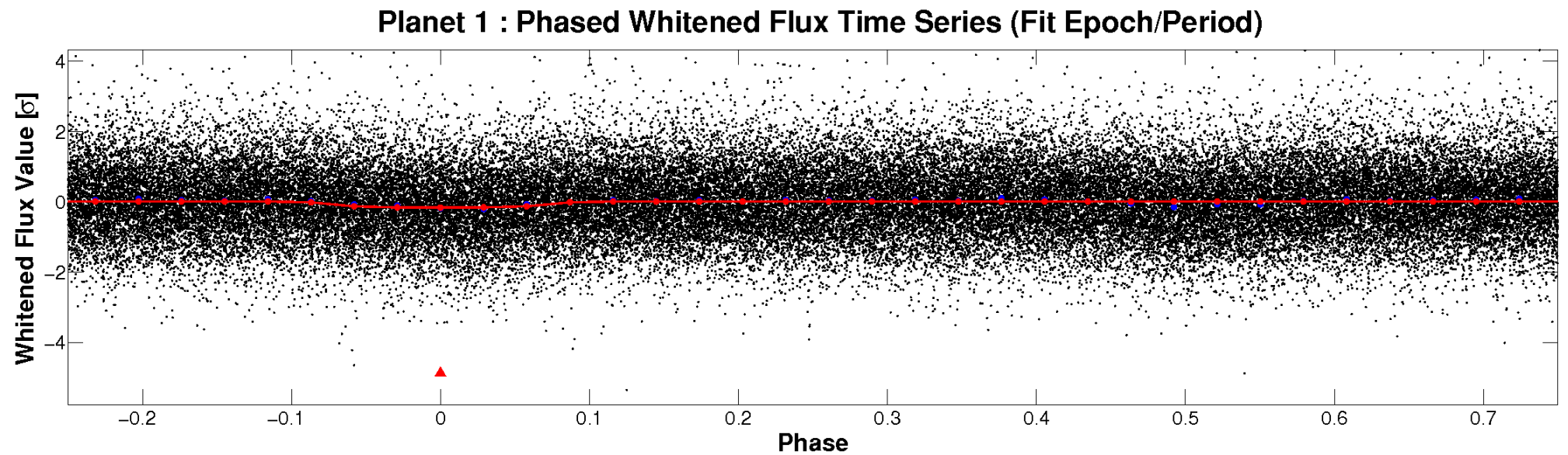
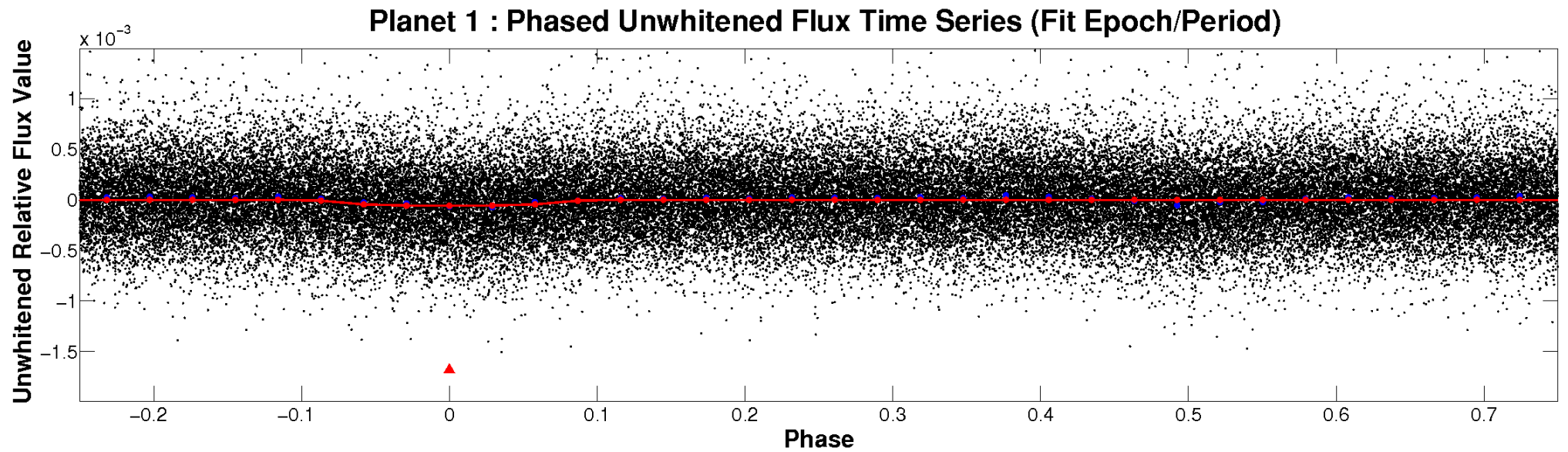


ALT Odd/Even

TCE 012108293-01

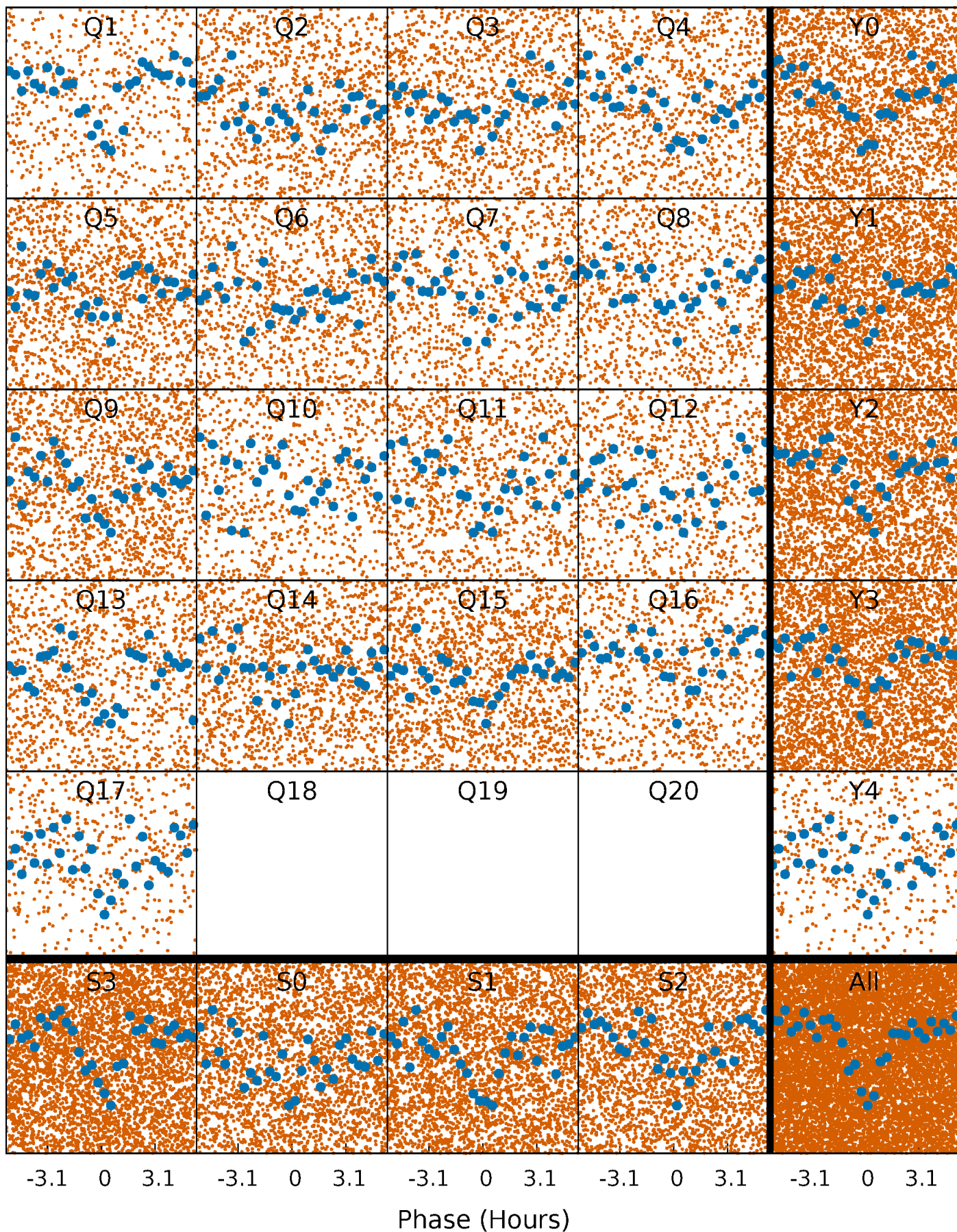


Non-Whitened Vs. Whitened Light Curve



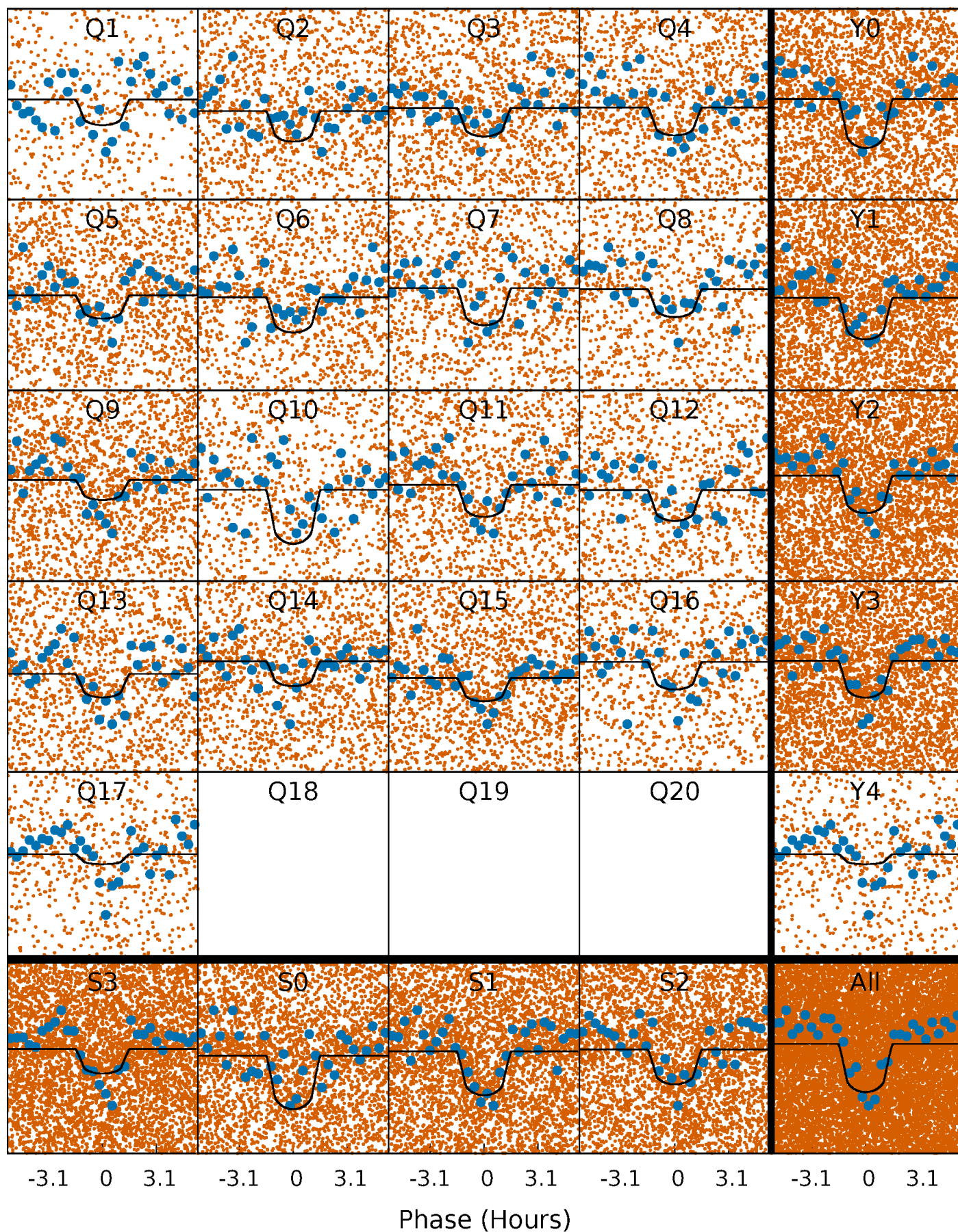
PDC Quarter-Phased Transit Curves

TCE 012108293-01 P= 0.705443 Days $T_0=131.689101$ (BKJD)



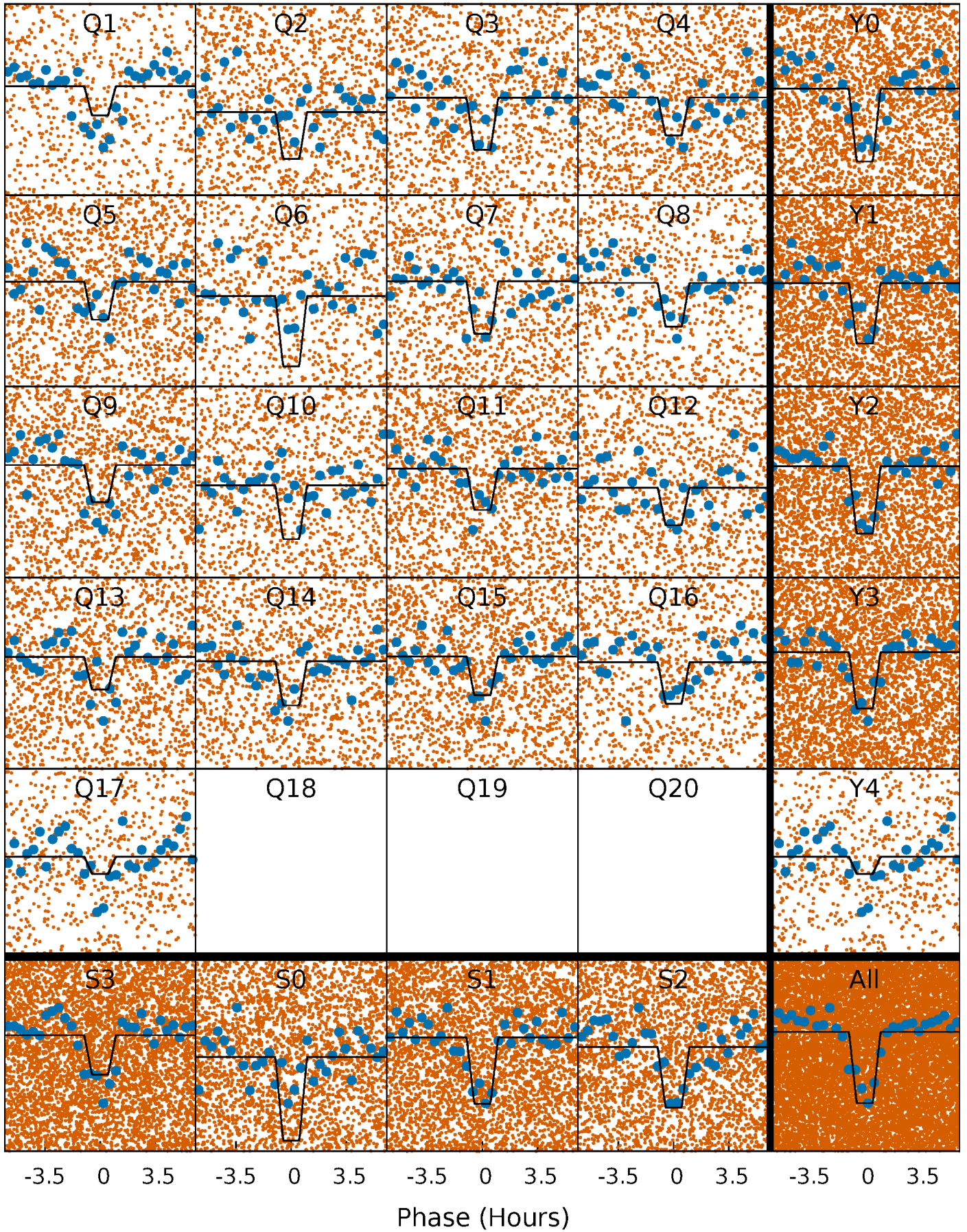
DV Quarter-Phased Transit Curves

TCE 012108293-01 P= 0.705443 Days $T_0=131.689101$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

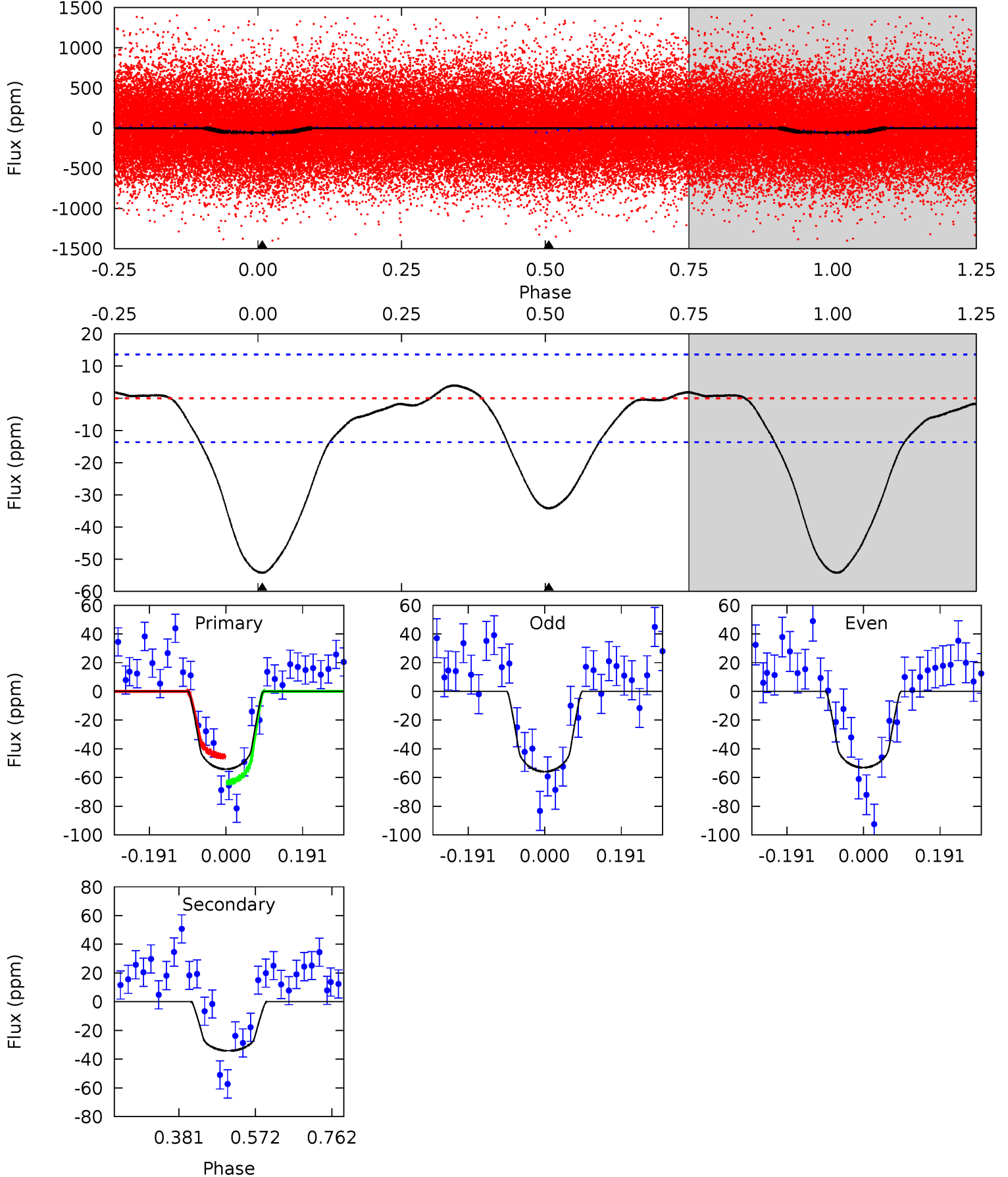
TCE 012108293-01 P= 0.705448 Days $T_0=131.688603$ (BKJD)



DV Model-Shift Uniqueness Test

012108293-01, P = 0.705443 Days, E = 130.983658 Days

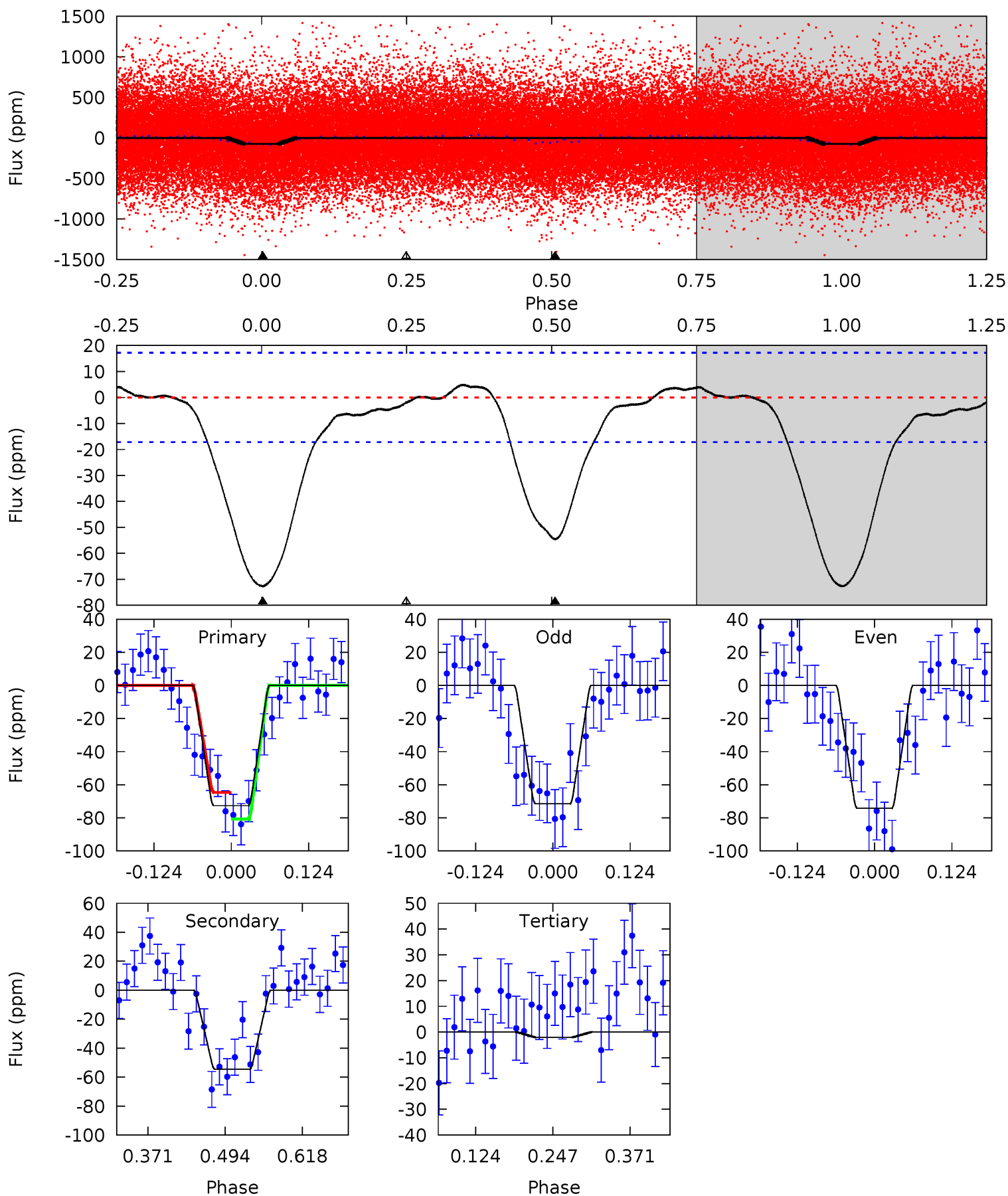
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.6	11.1	0	0	4.43	1.31	0.59	17.6	17.6	11.1	11.1	0.46	0.90	0.07	2.96



Alt Model-Shift Uniqueness Test

012108293-01, P = 0.705448 Days, E = 130.983155 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.1	14.3	0.54	0	4.52	1.54	0.90	18.6	19.1	13.8	14.3	0.36	1.00	0.06	2.11



Stellar Parameters For KIC 012108293

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5383^{+159}_{-143}	$4.614^{+0.035}_{-0.105}$	$-0.320^{+0.300}_{-0.300}$	$0.736^{+0.122}_{-0.057}$	$0.824^{+0.078}_{-0.096}$	$2.906^{+0.432}_{-0.936}$
	+3%/-3%	+1%/-2%	+94%/-94%	+17%/-8%	+9%/-12%	+15%/-32%
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 012108293-01 / KOI 4540.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-34 ± 3	$0.71^{+0.40}_{-0.34}$	2401^{+105}_{-94}	4563^{+1533}_{-720}	$7.846^{+21.190}_{-4.676}$
Alt.	-55 ± 4	$0.78^{+0.37}_{-0.38}$	2405^{+103}_{-95}	4834^{+1603}_{-740}	10^{+26}_{-6}

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 $A_{obs} \gg 1.0$

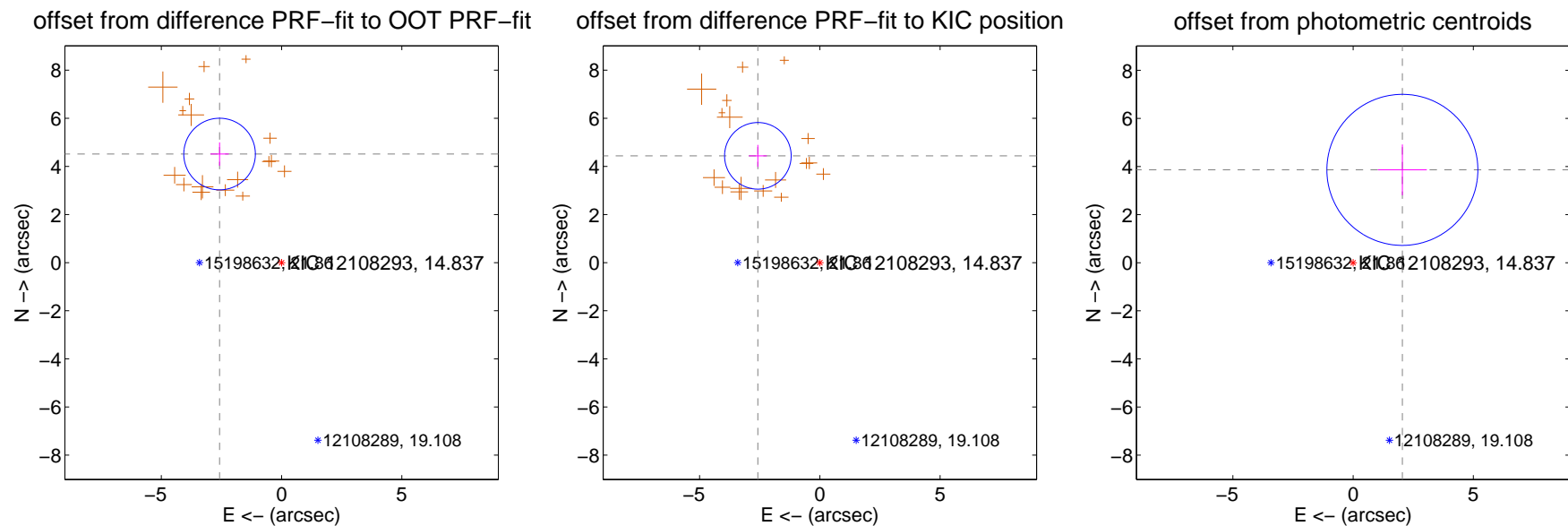
DV Centroid Data

Supplemental centroid analysis for 012108293-01. Kepler magnitude: 14.84. Transit SNR 14.18

There are 0 quarters with good PRF difference image offsets

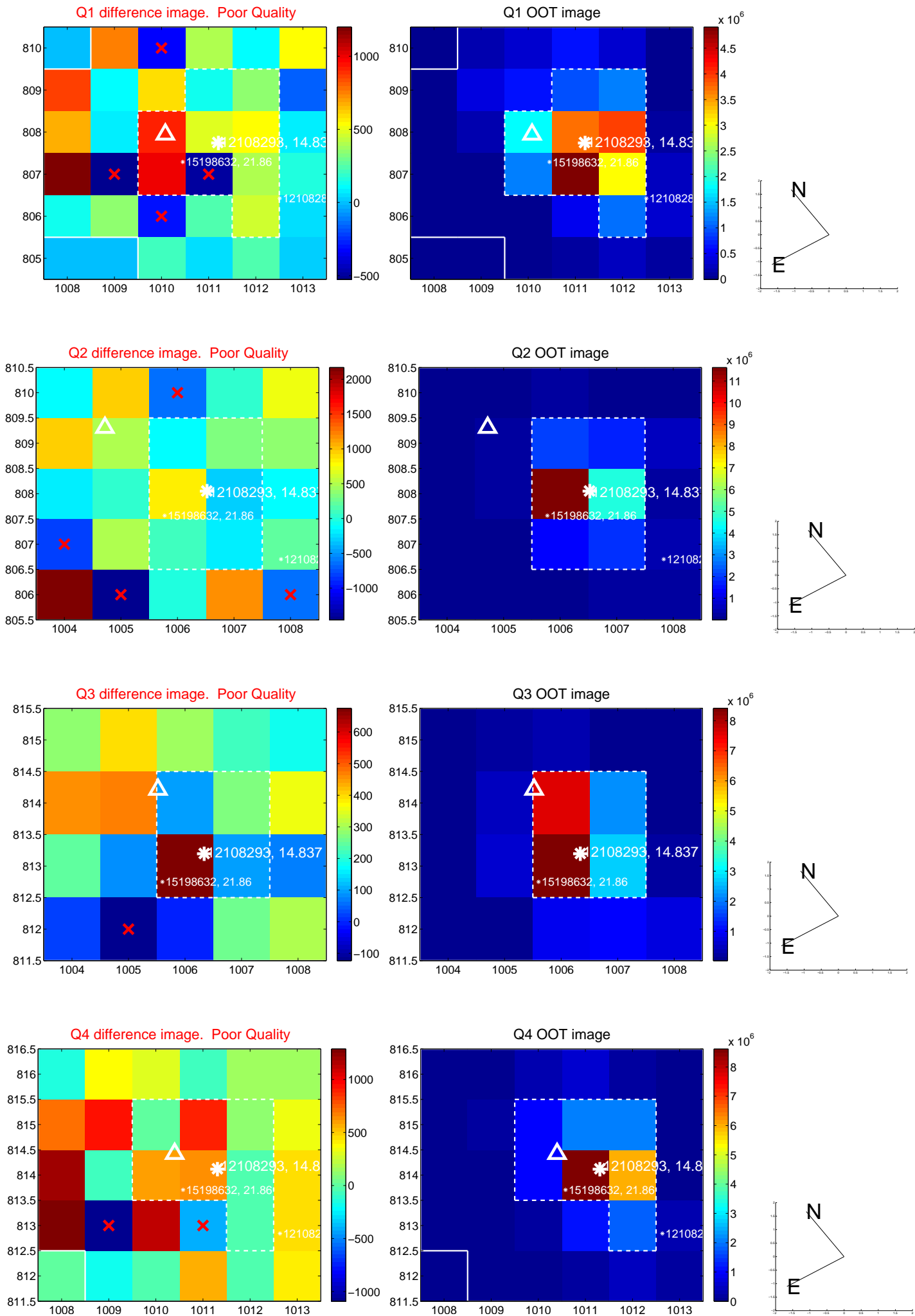
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.199 ± 0.496	10.48	2.579 ± 0.379	4.514 ± 0.484
PRF-fit source offset from KIC position	5.133 ± 0.462	11.12	2.577 ± 0.372	4.439 ± 0.455
photometric centroid source offset	4.37 ± 1.05	4.18	-2.05 ± 1.02	3.86 ± 1.06

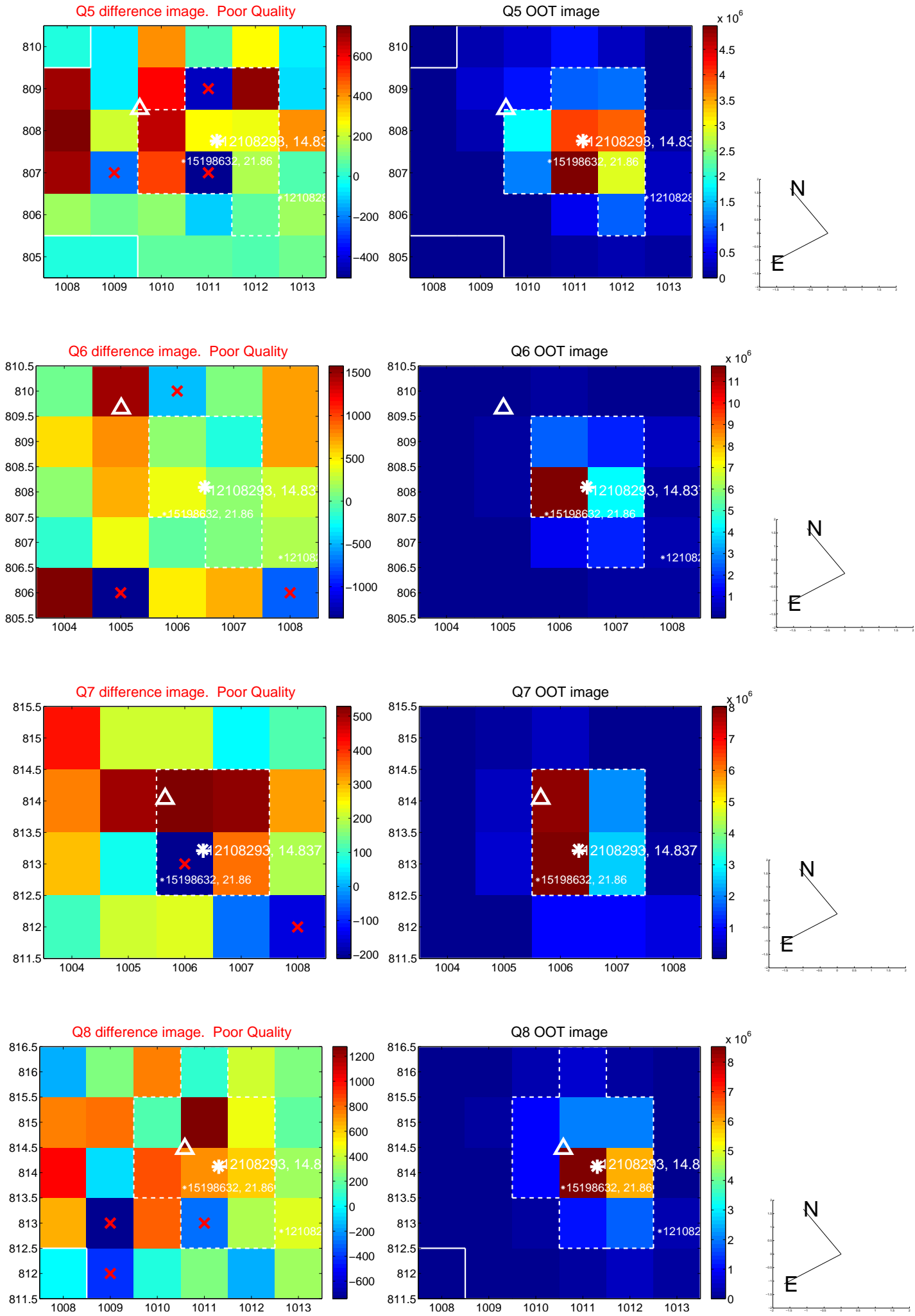


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

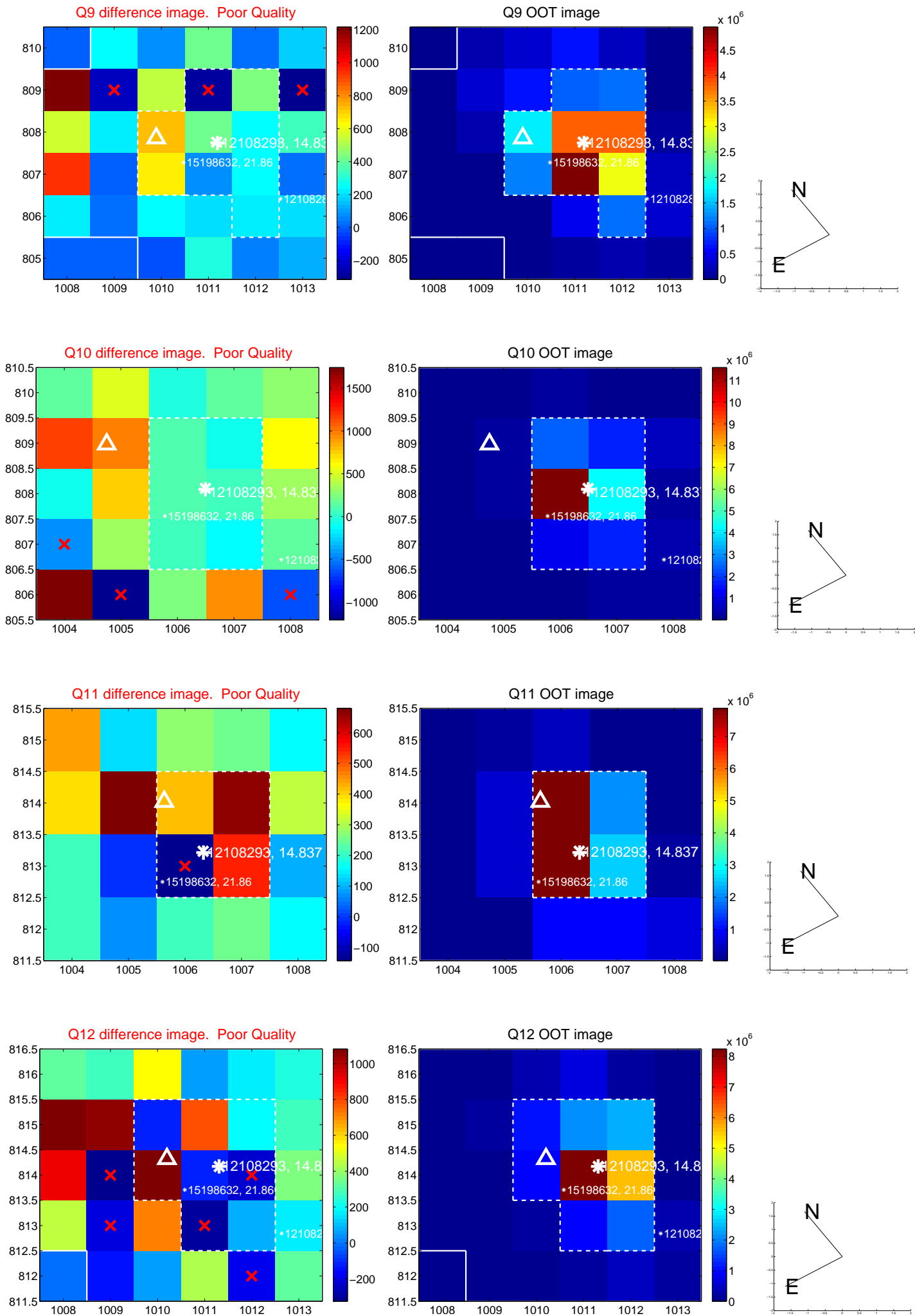
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



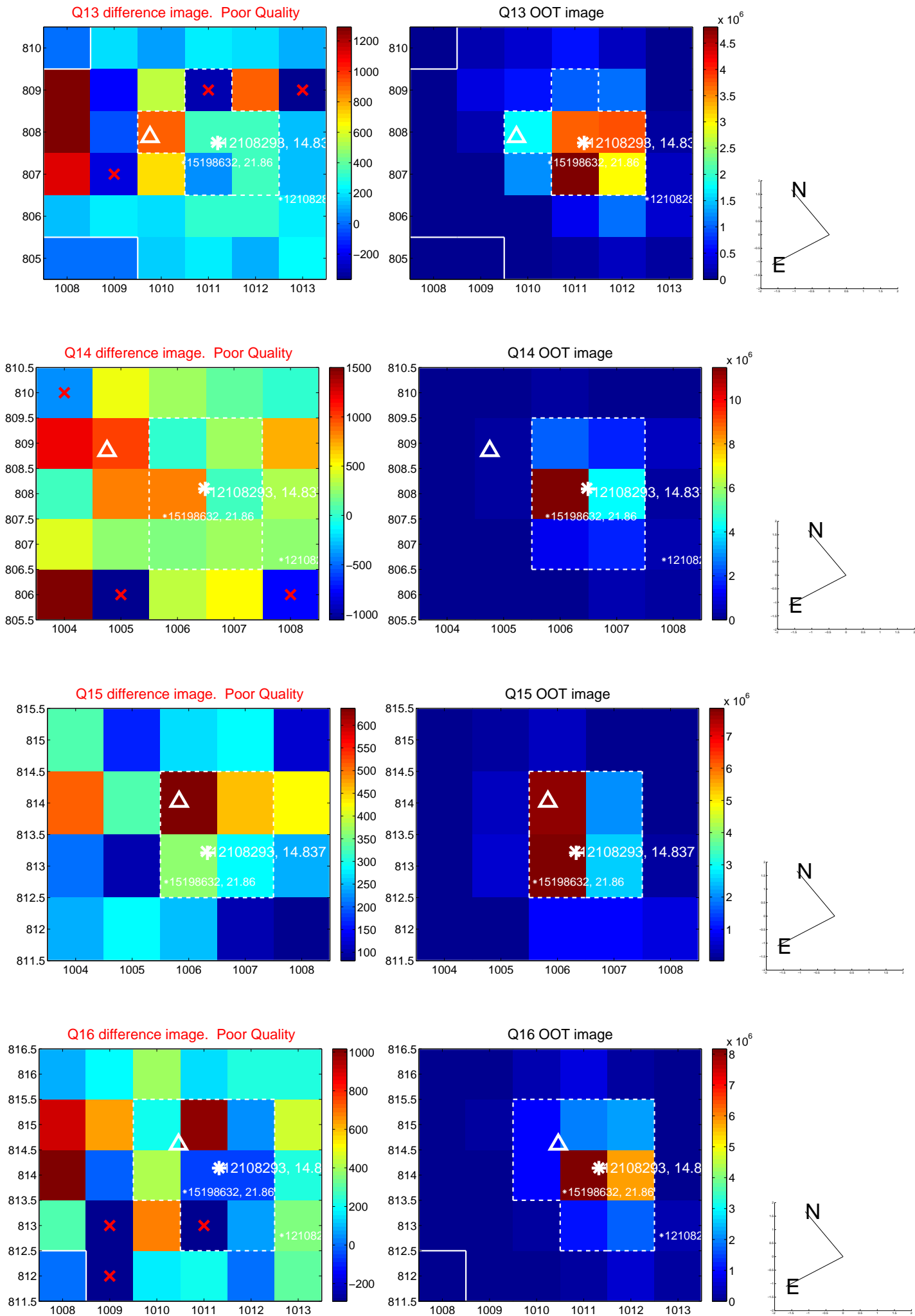
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



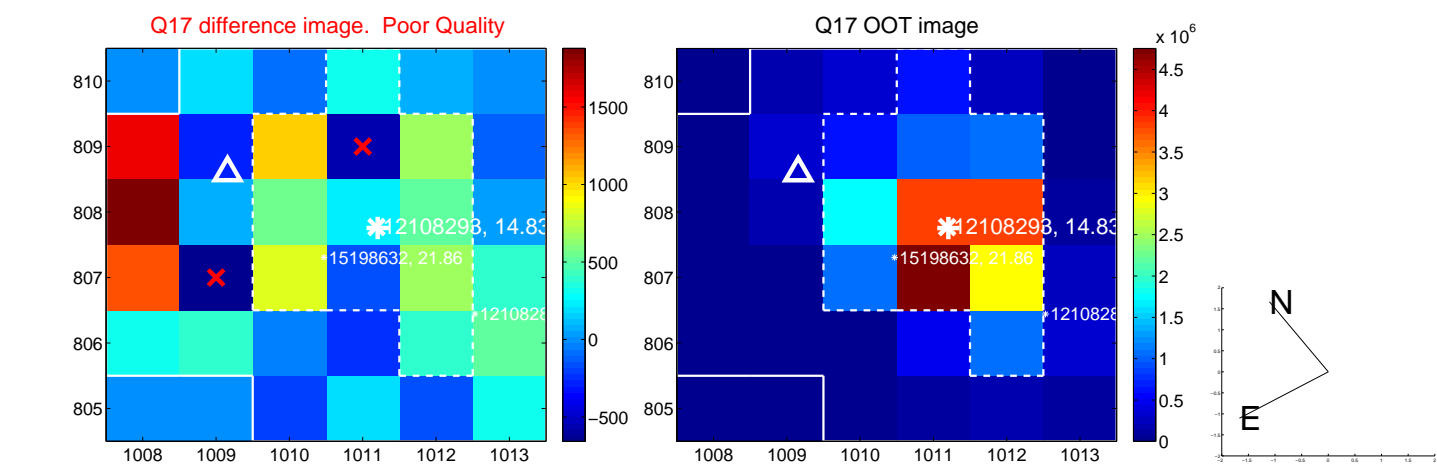
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



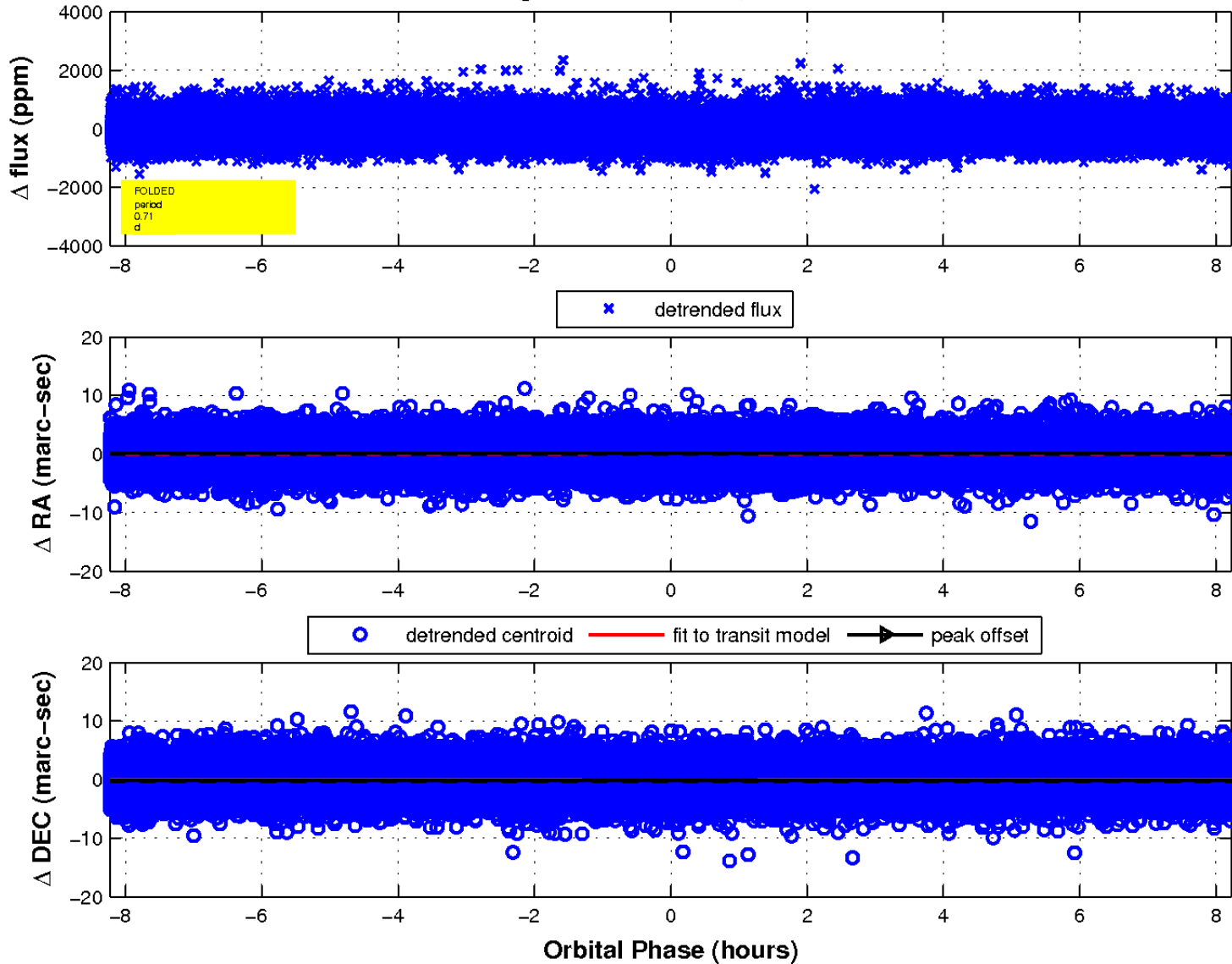
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

