

KIC 009963609

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})
009963609-01	OBS	No	0.913578	132.439708	208.3	5.202	10.6	13.4	1.82	7780	2.70	22658.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009963609-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

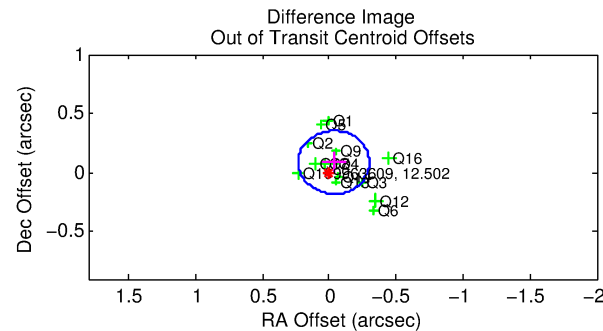
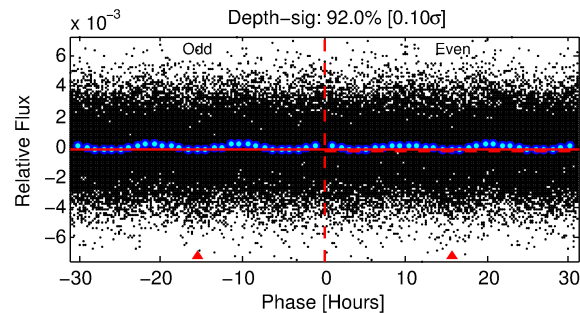
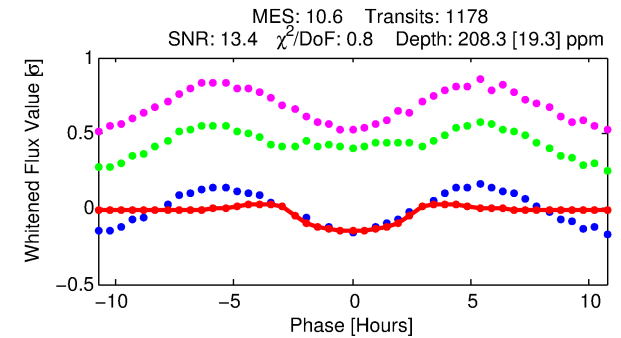
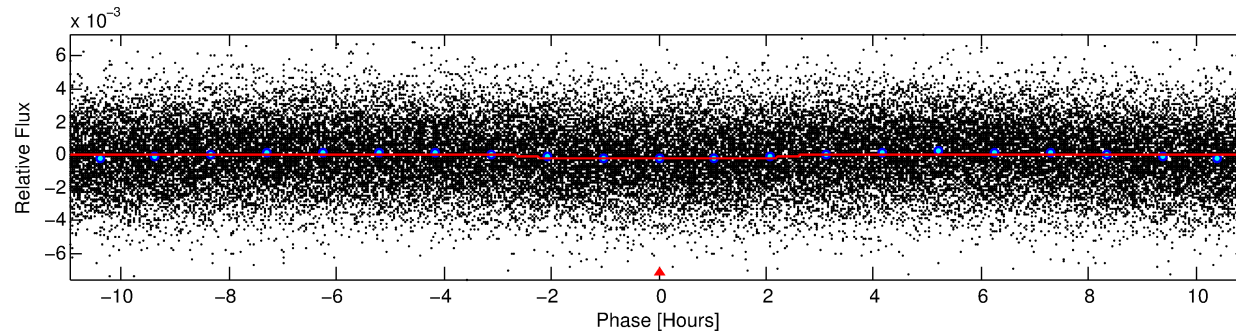
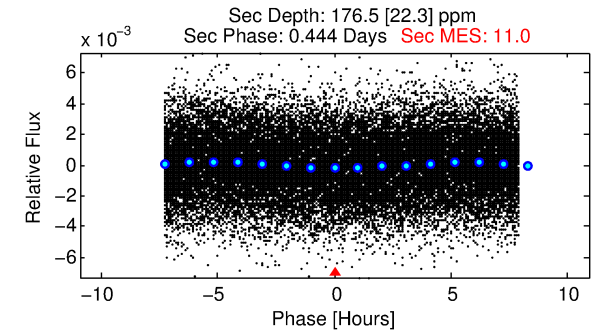
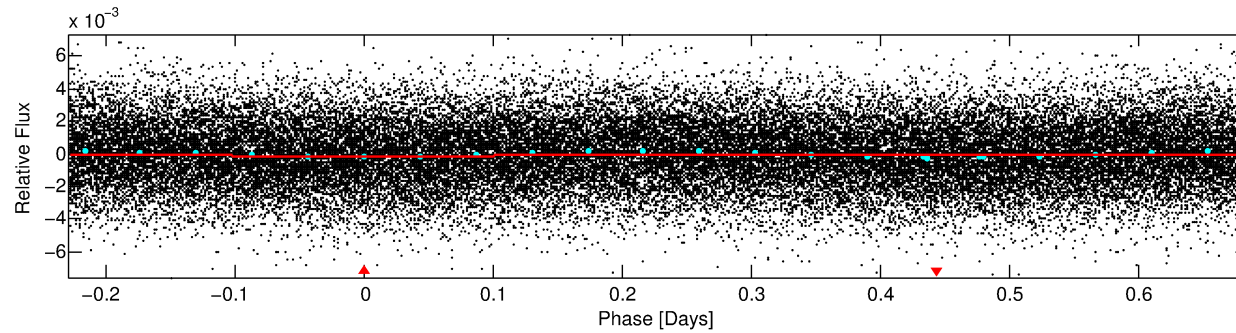
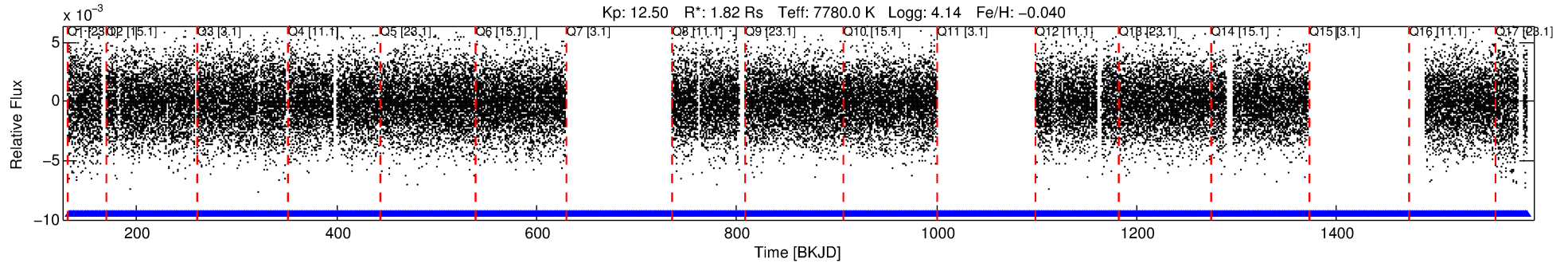
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009963609-01

No Significant Match Found

DV One-Page Summary

KIC: 9963609 Candidate: 1 of 1 Period: 0.914 d



DV Fit Results:

Period = 0.91358 [0.00001] d
Epoch = 132.4397 [0.0048] BKJD
Rp/R* = 0.0136 [0.0161]
a/R* = 1.42 [5.22]
b = 0.42 [14.46]
Seff = 22658.40 [8479.70]
Teq = 3128 [293] K
Rp = 2.70 [3.29] Re
a = 0.0219 [0.0051] AU
Ag = 6.35 [15.18] [0.35σ]
Teffp = 7678 [4555] K [1.00σ]

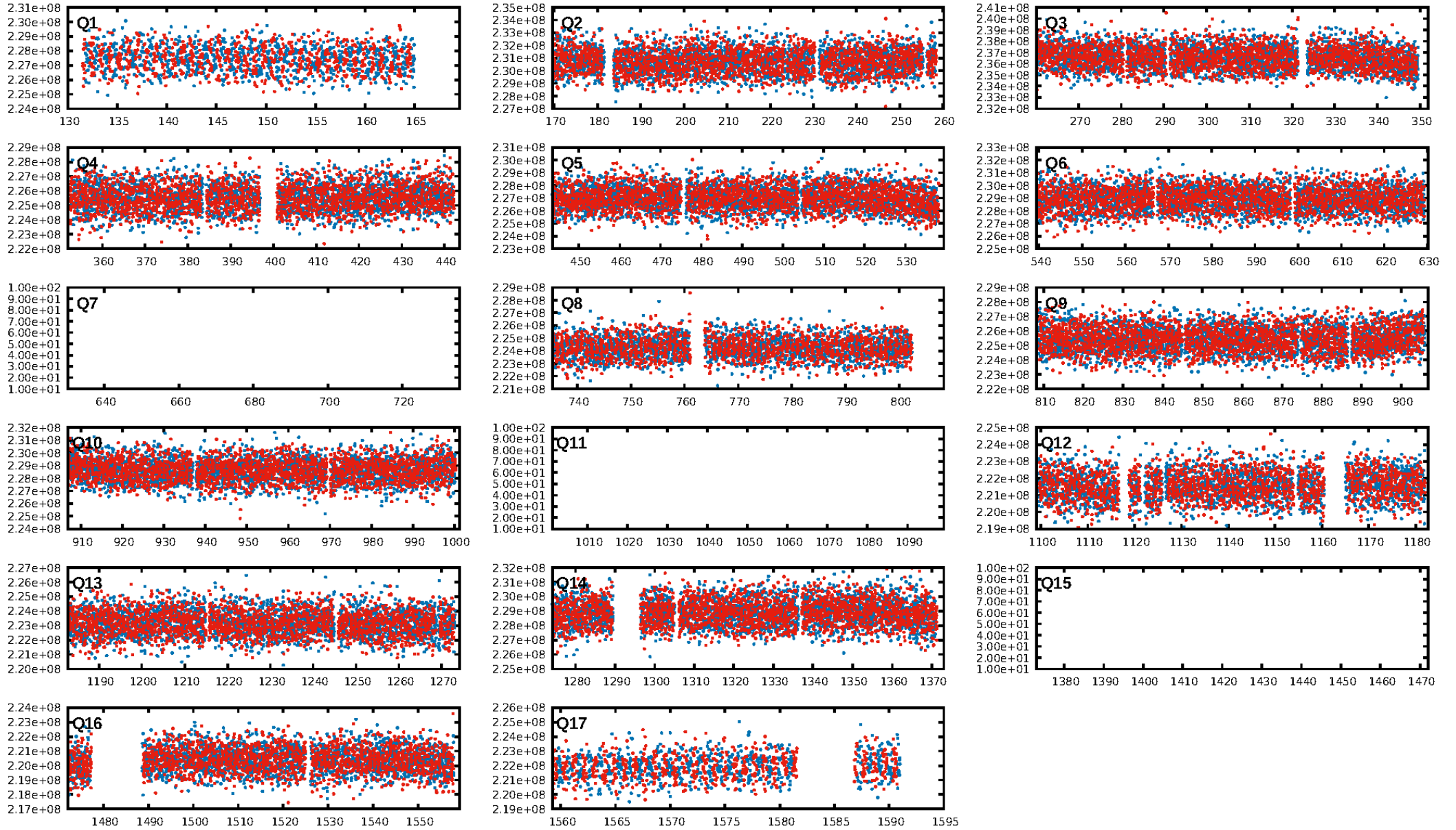
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.82e-19
RollingBand-fgt: 1.00 [1111/1111]
GhostDiagnostic-chr: 2.098
Centroid-sig: 47.3%
Centroid-so: 0.060 arcsec [0.96σ]
OotOffset-rm: 0.092 arcsec [1.04σ]
KicOffset-rm: 0.241 arcsec [2.87σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

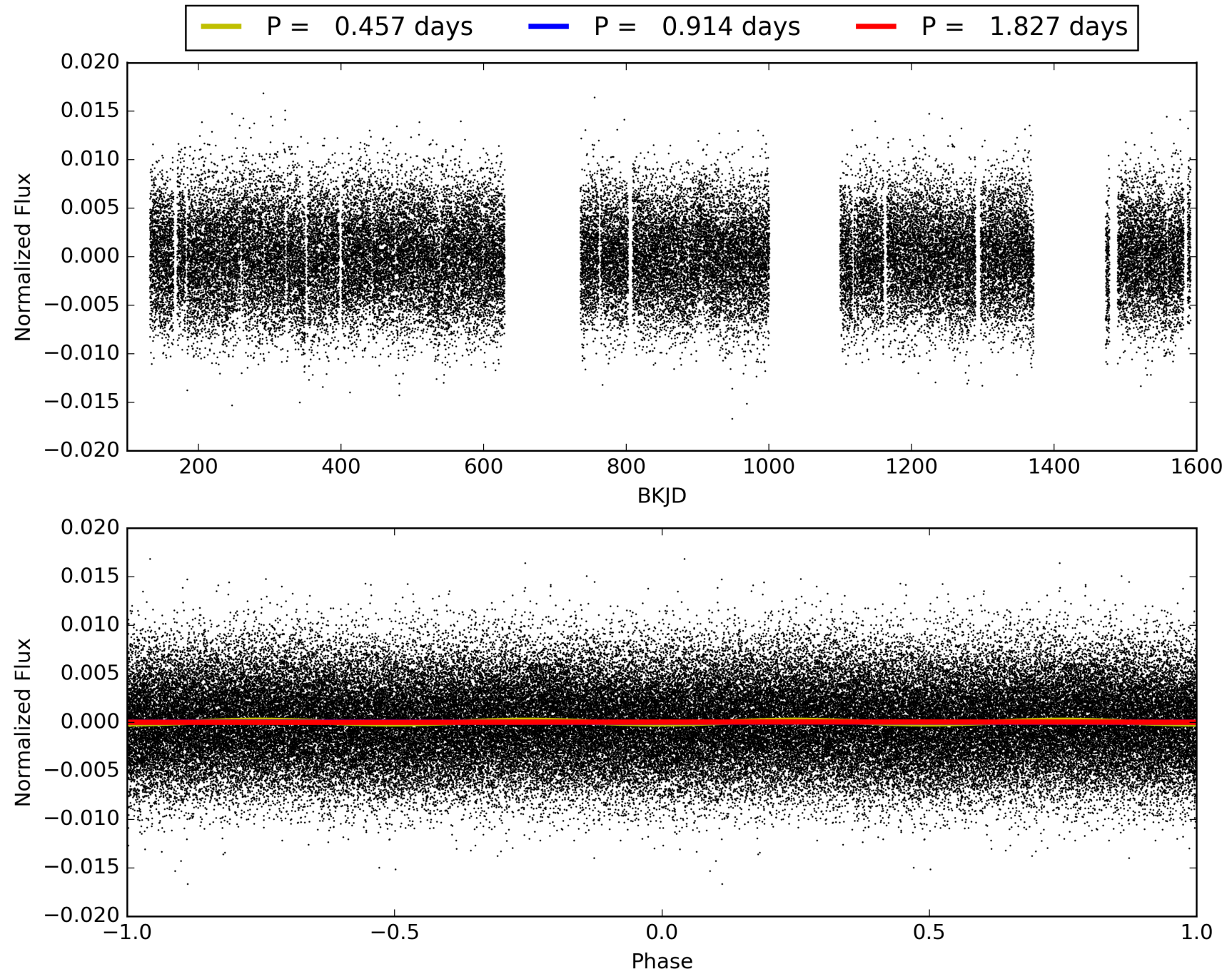
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:48:09 Z

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

TCE 009963609-01, PDC Light Curves

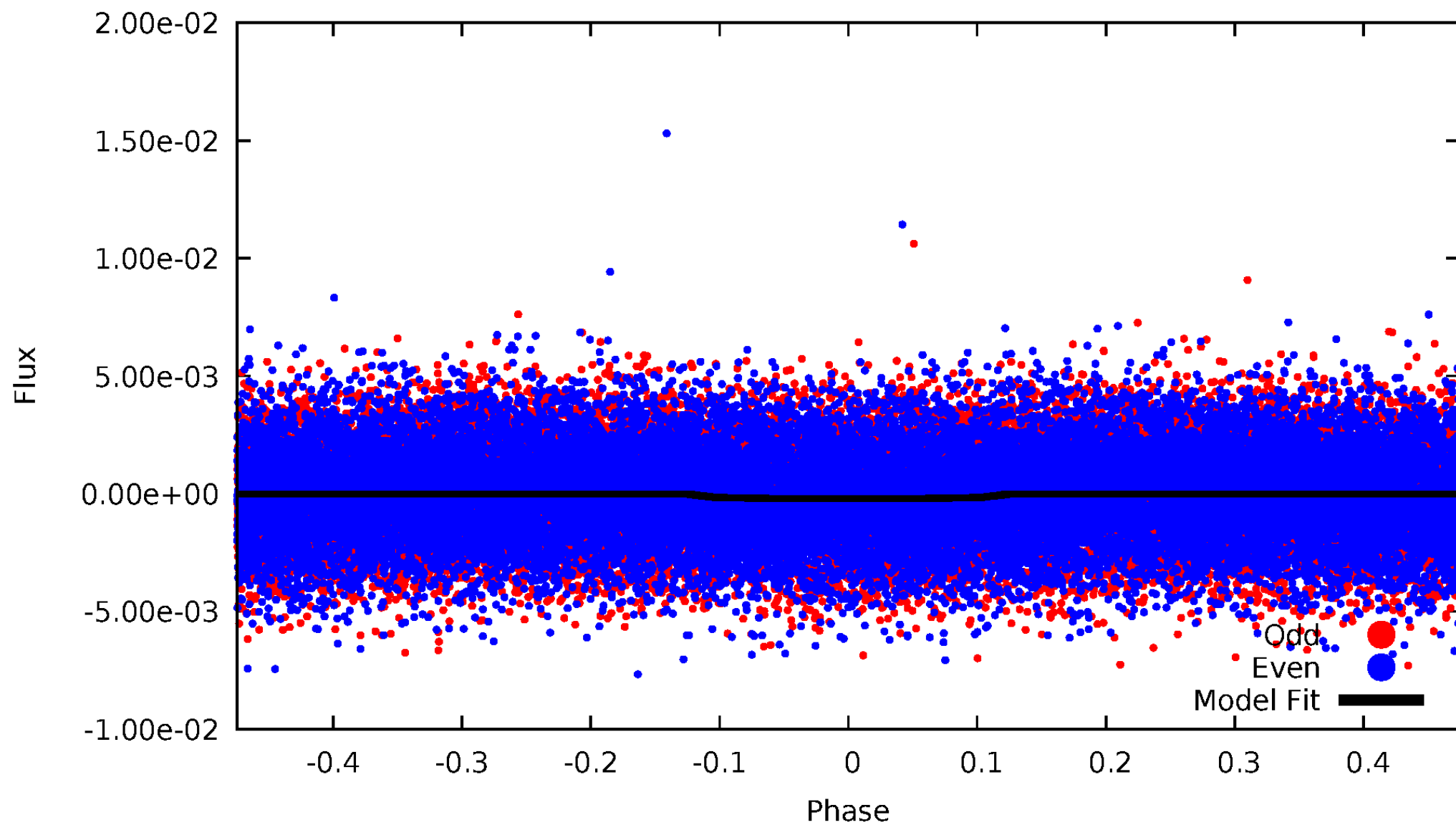


TCE 009963609-01



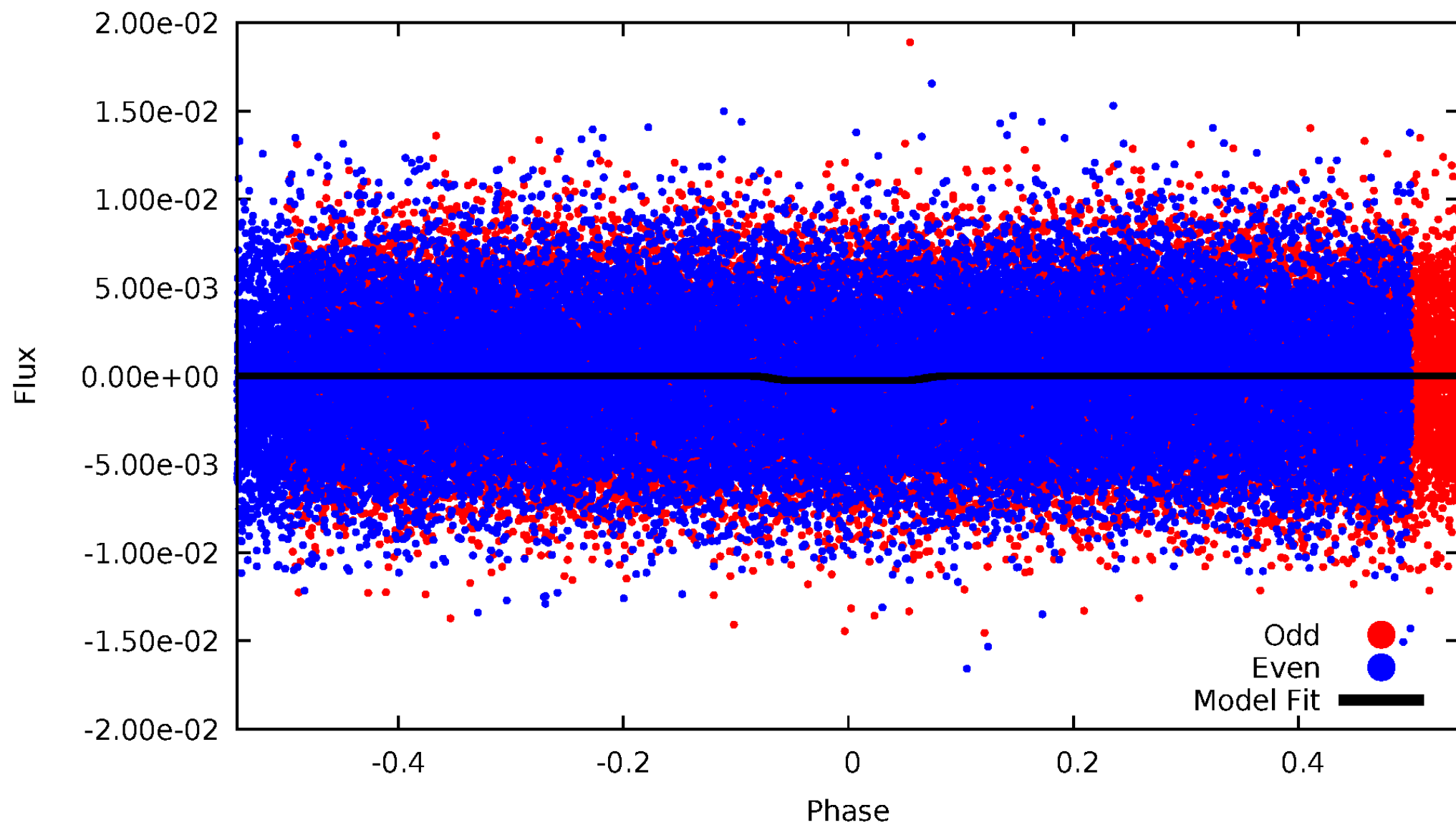
DV Odd/Even

TCE 009963609-01

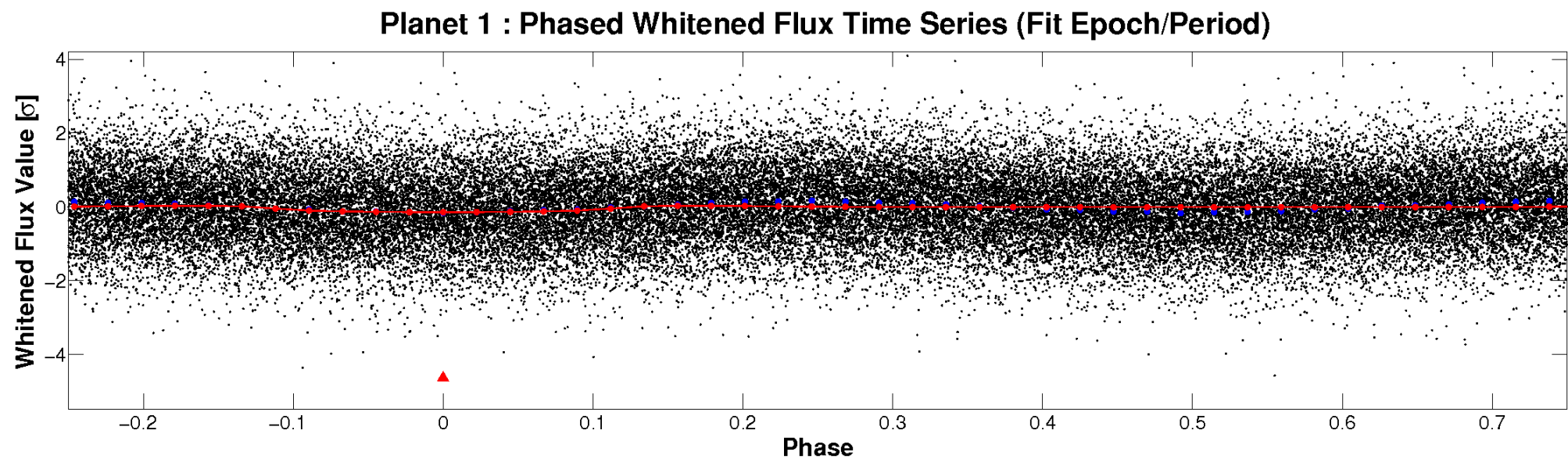
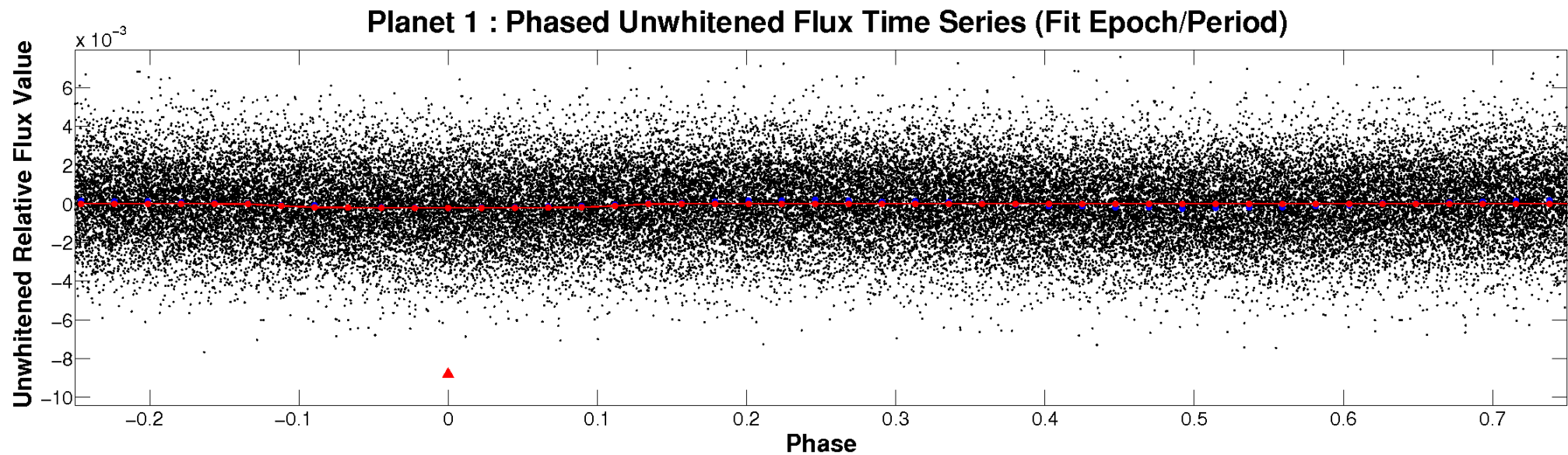


ALT Odd/Even

TCE 009963609-01

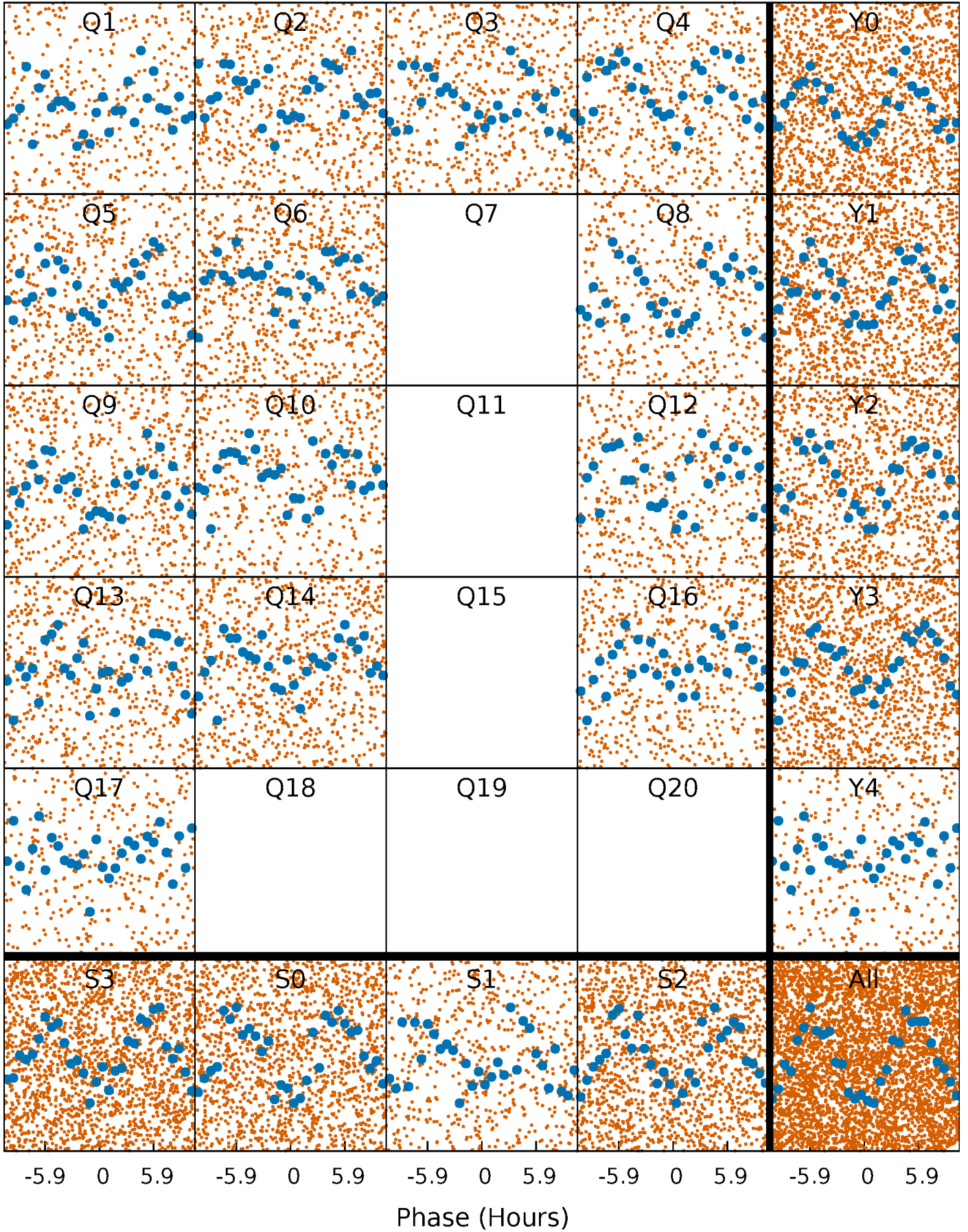


Non-Whitened Vs. Whitened Light Curve



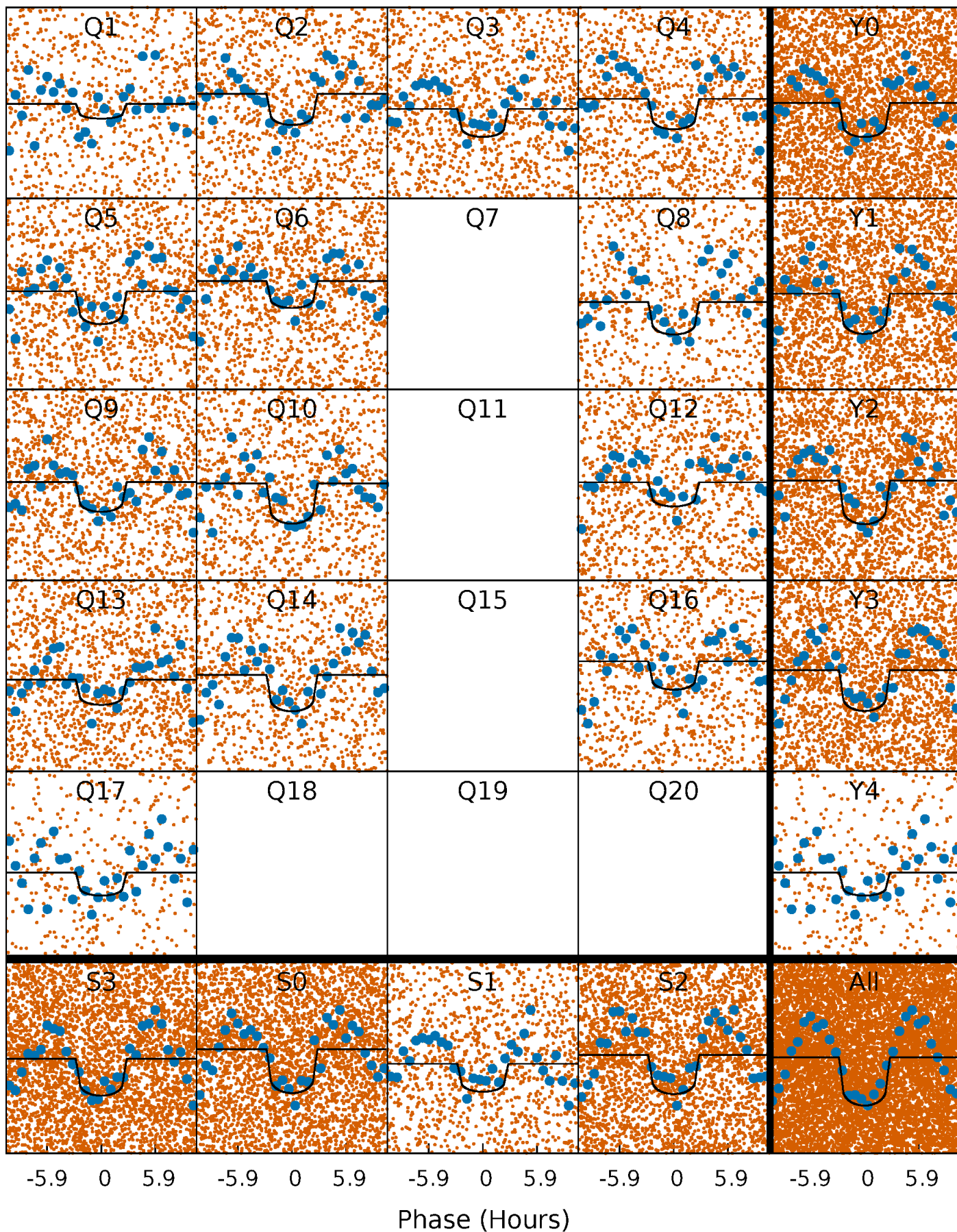
PDC Quarter-Phased Transit Curves

TCE 009963609-01 P= 0.913578 Days $T_0=132.439708$ (BKJD)



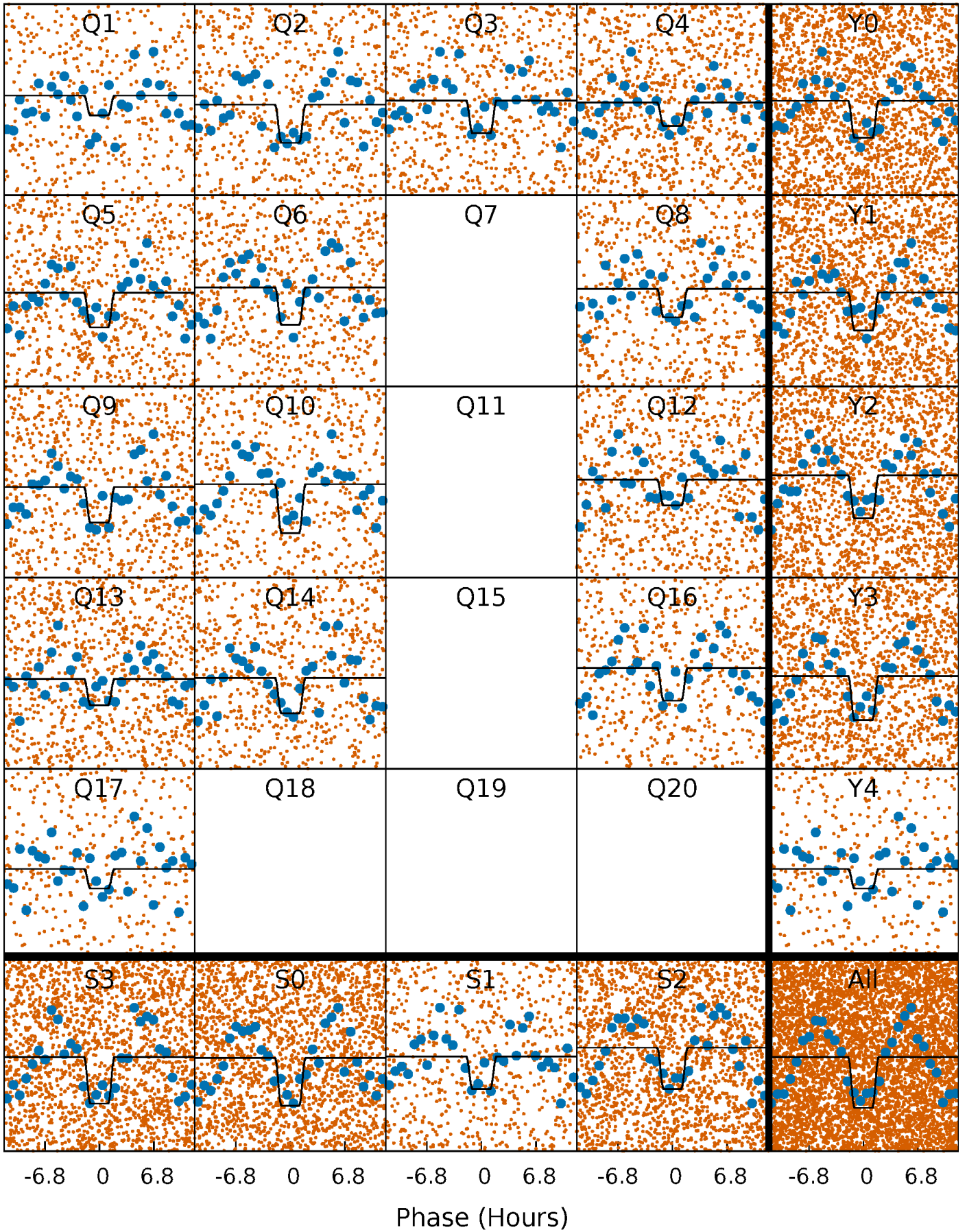
DV Quarter-Phased Transit Curves

TCE 009963609-01 P= 0.913578 Days $T_0=132.439708$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

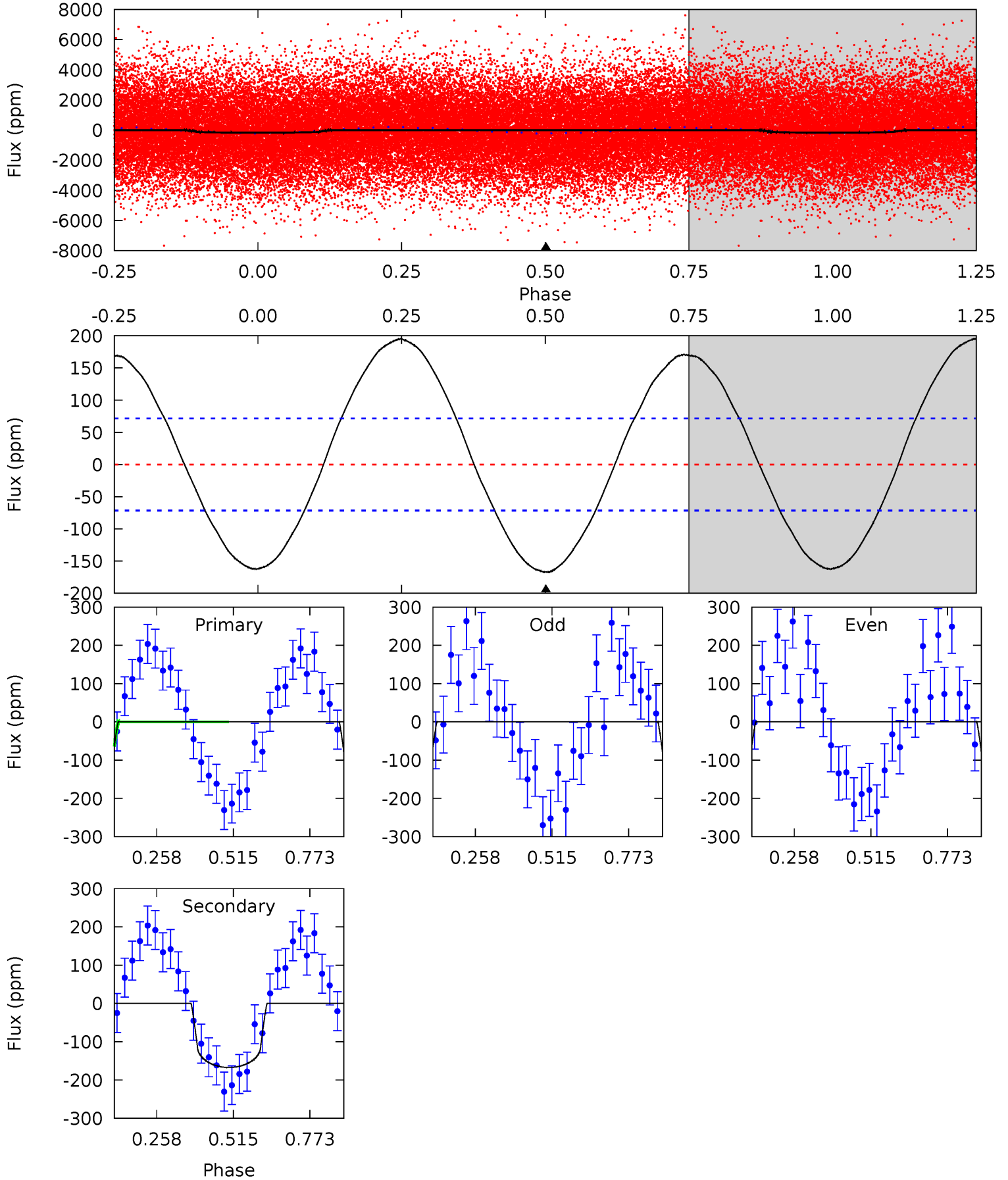
TCE 009963609-01 P= 0.913628 Days $T_0=132.401677$ (BKJD)



DV Model-Shift Uniqueness Test

009963609-01, P = 0.913578 Days, E = 130.612552 Days

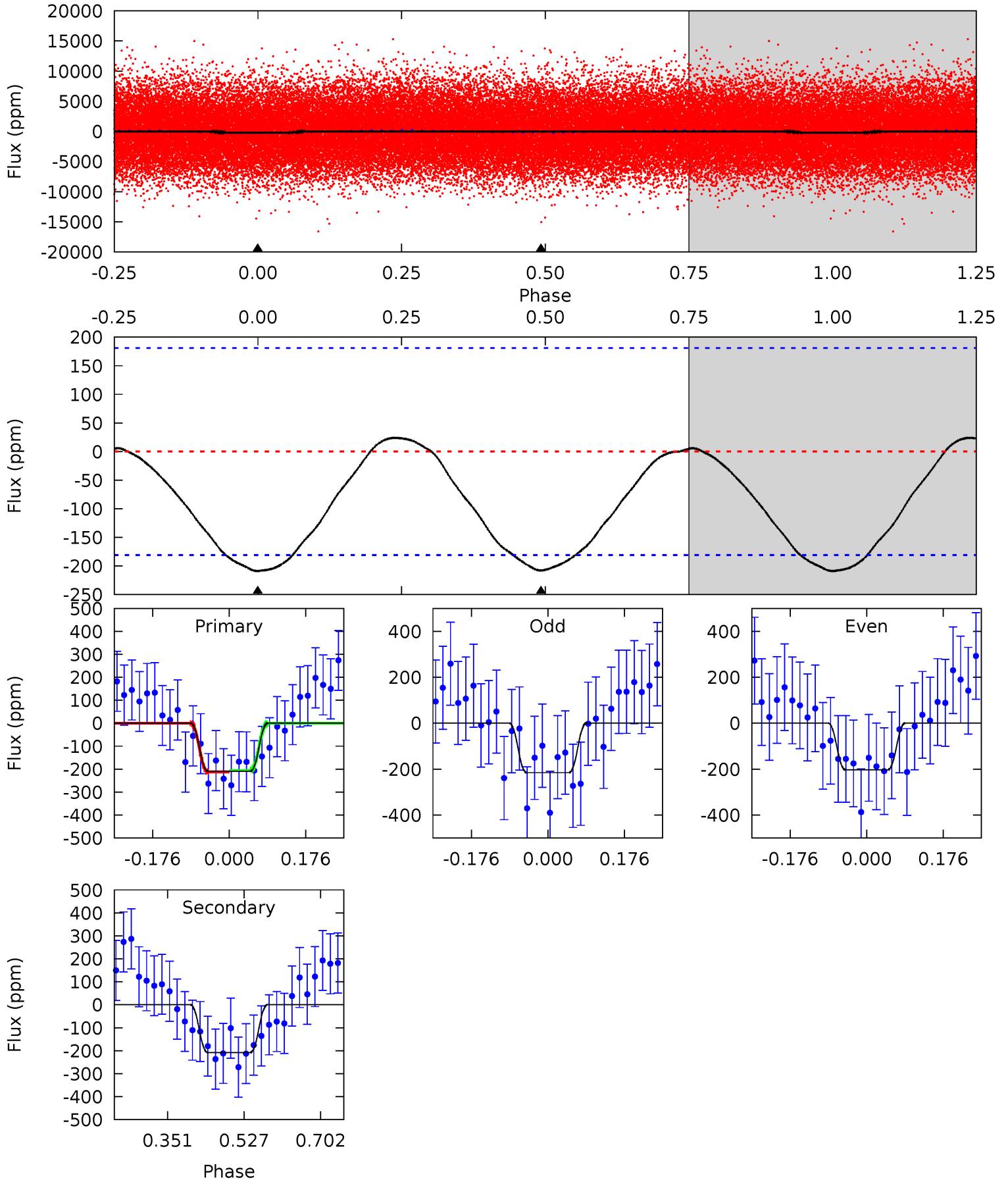
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	10.2	0	0	4.36	1.13	7.33	10.2	10.2	10.2	10.2	0.06	1.24	0.54	0.20



Alt Model-Shift Uniqueness Test

009963609-01, P = 0.913628 Days, E = 131.488049 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.13	5.11	0	0	4.45	1.35	0.40	5.13	5.13	5.11	5.11	0.15	1.05	0.10	0.08



Stellar Parameters For KIC 009963609

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7780^{+214}_{-322}	$4.142^{+0.120}_{-0.180}$	$-0.040^{+0.150}_{-0.400}$	$1.816^{+0.519}_{-0.346}$	$1.666^{+0.204}_{-0.271}$	$0.392^{+0.235}_{-0.200}$
	+3%/-4%	+3%/-4%	+375%/-1000%	+29%/-19%	+12%/-16%	+60%/-51%
Source	KIC0	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 009963609-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-167 ± 16	$3.37^{+2.88}_{-2.28}$	4407^{+335}_{-298}	6517^{+8351}_{-1798}	$3.777^{+32.484}_{-2.641}$
Alt.	-208 ± 41	$3.84^{+3.16}_{-2.50}$	4378^{+343}_{-273}	6344^{+6502}_{-1672}	$3.579^{+25.289}_{-2.459}$

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

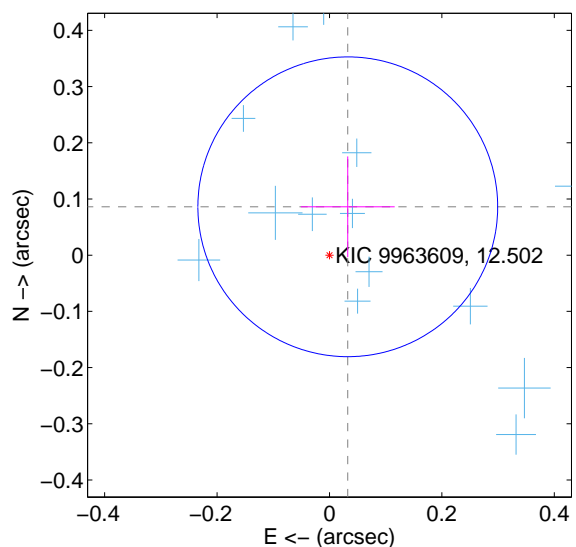
Supplemental centroid analysis for 009963609-01. Kepler magnitude: 12.50. Transit SNR 13.40

There are 14 quarters with good PRF difference image offsets

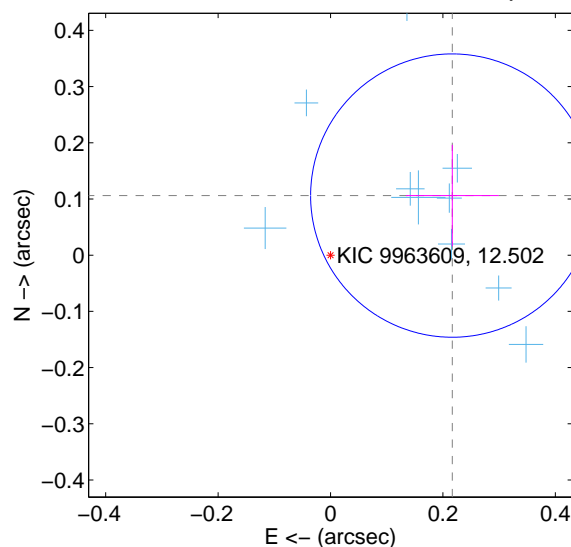
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.092 ± 0.089	1.04	-0.033 ± 0.083	0.086 ± 0.090
PRF-fit source offset from KIC position	0.241 ± 0.084	2.87	-0.217 ± 0.082	0.106 ± 0.090
photometric centroid source offset	0.06 ± 0.06	0.96	0.01 ± 0.06	-0.06 ± 0.06

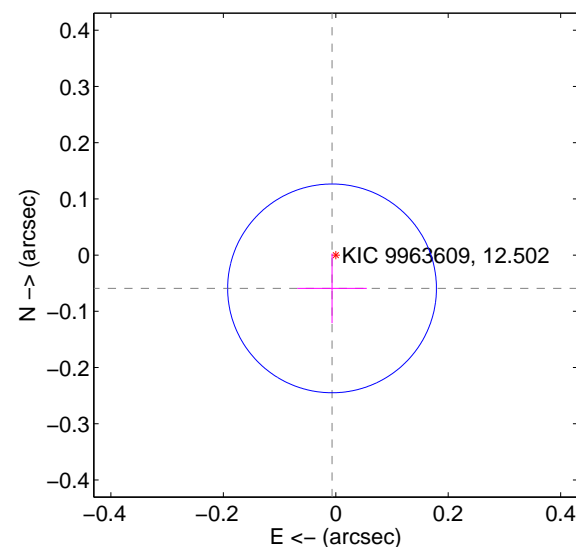
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

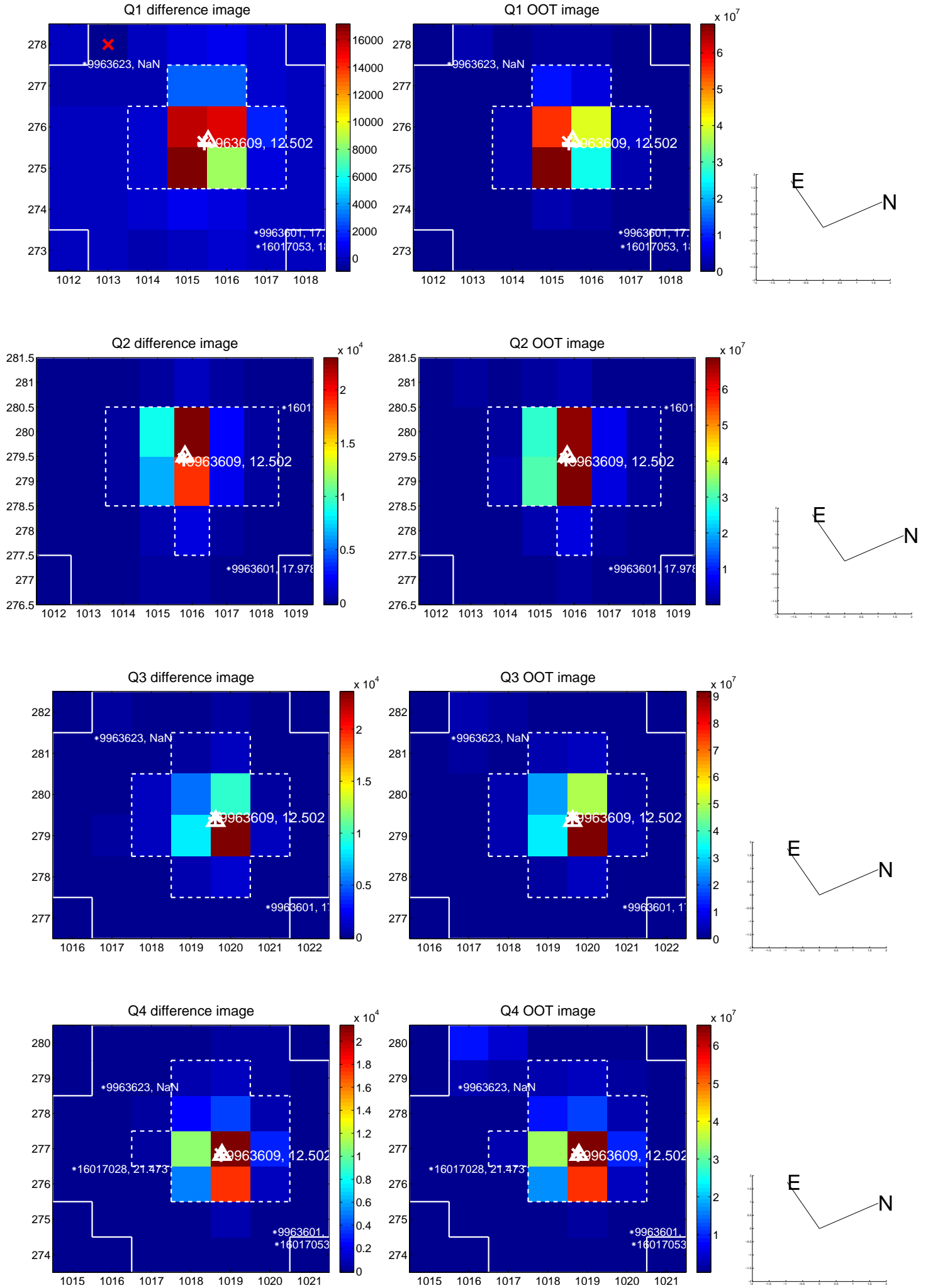


offset from photometric centroids

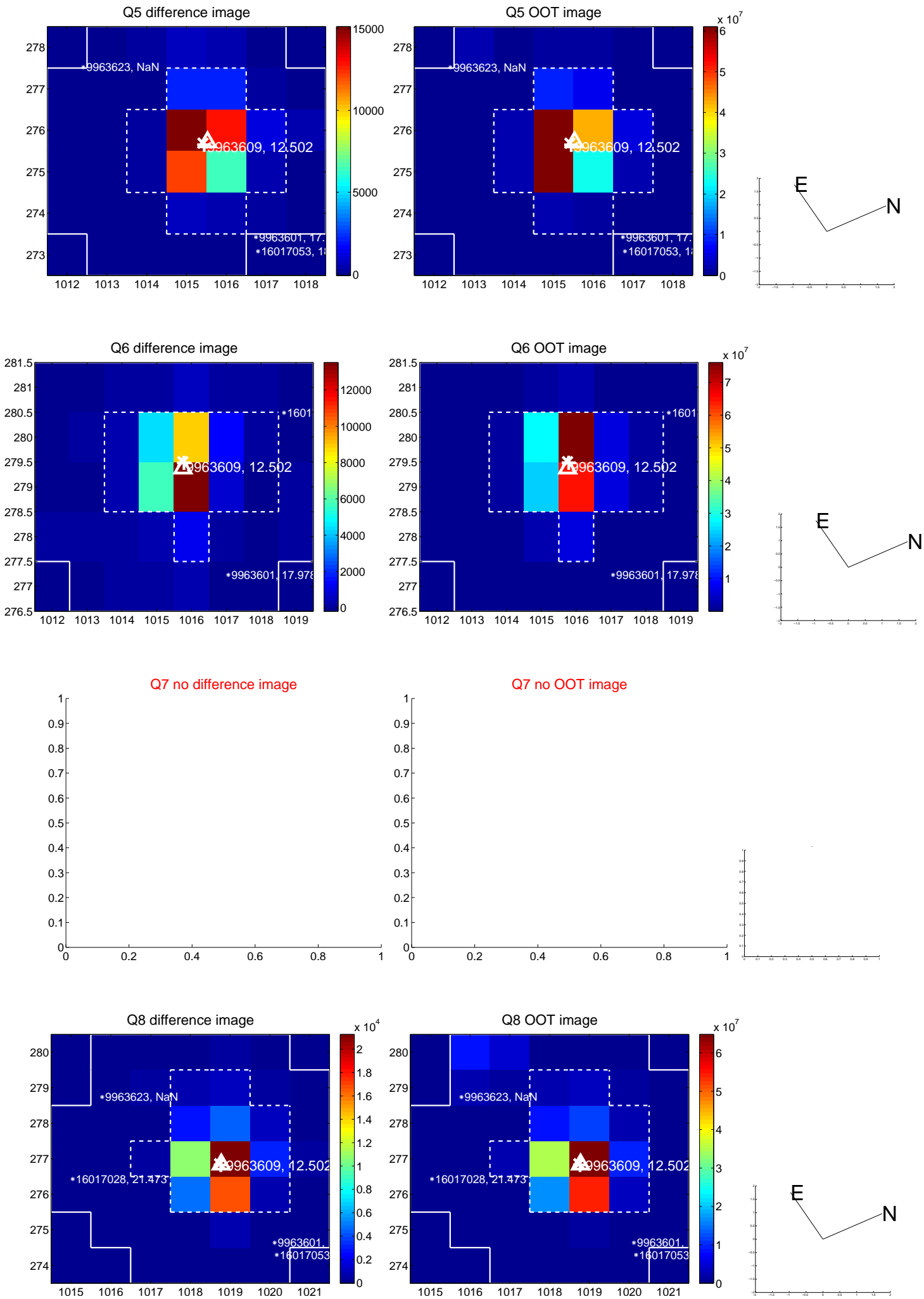


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

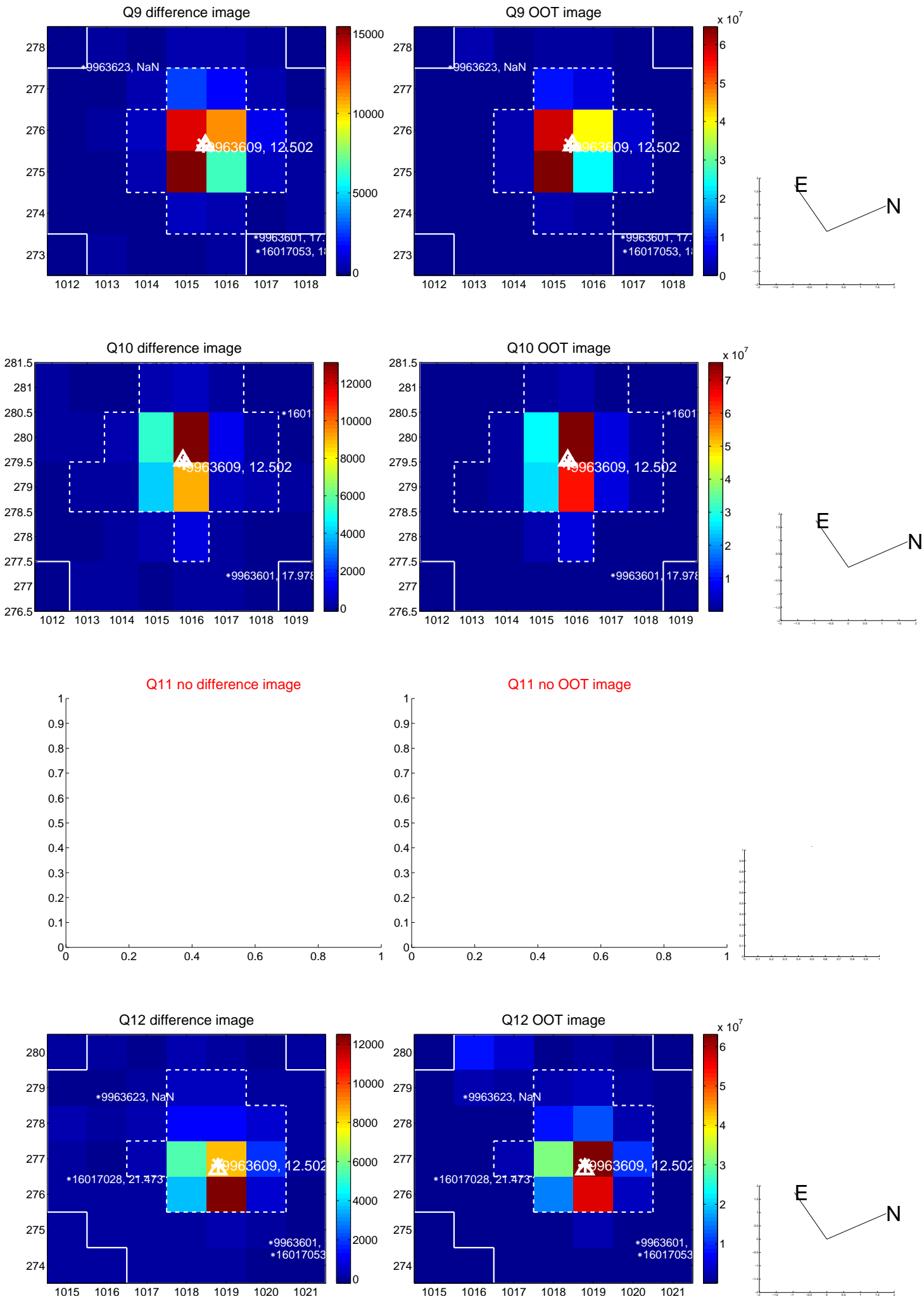
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



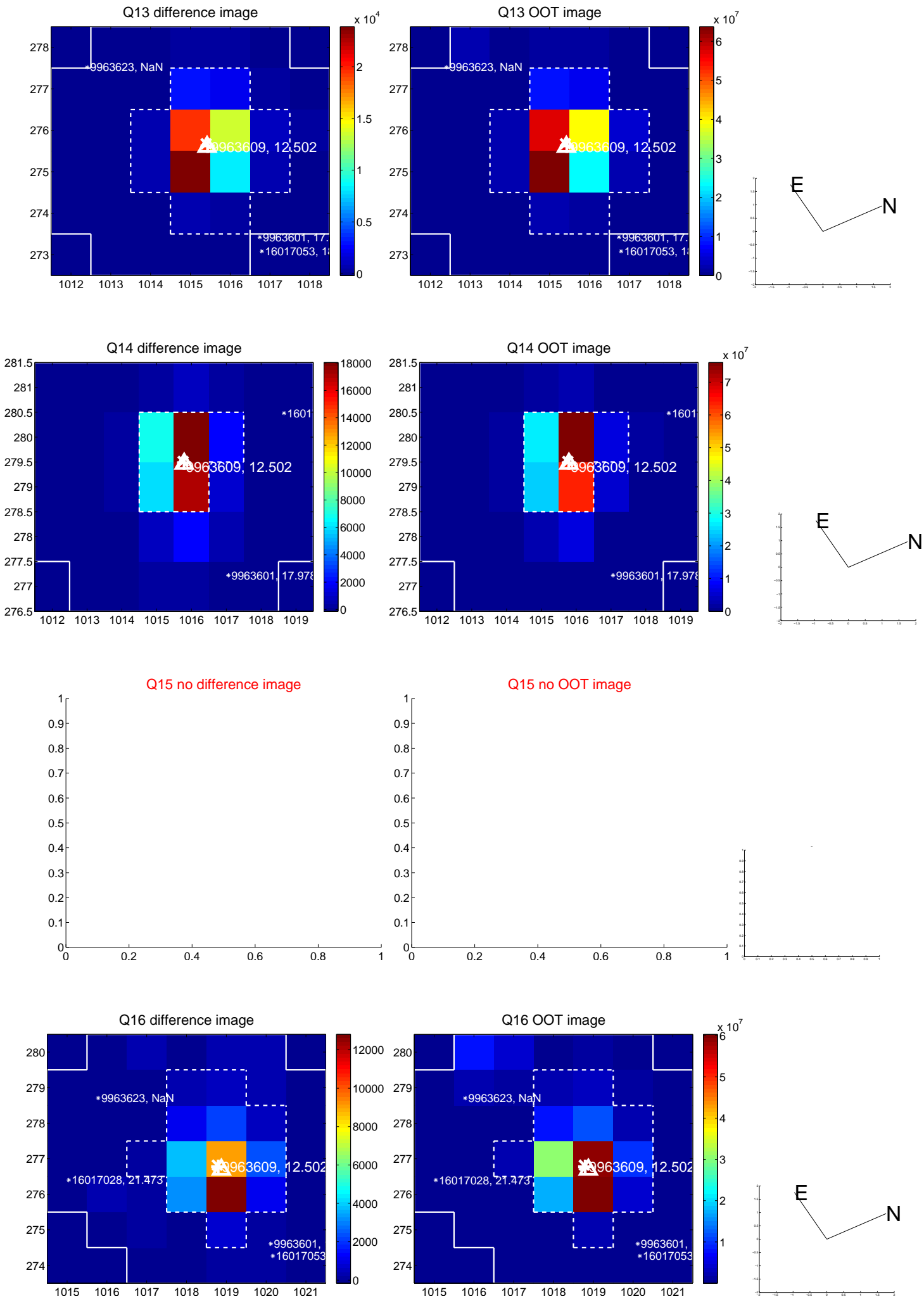
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



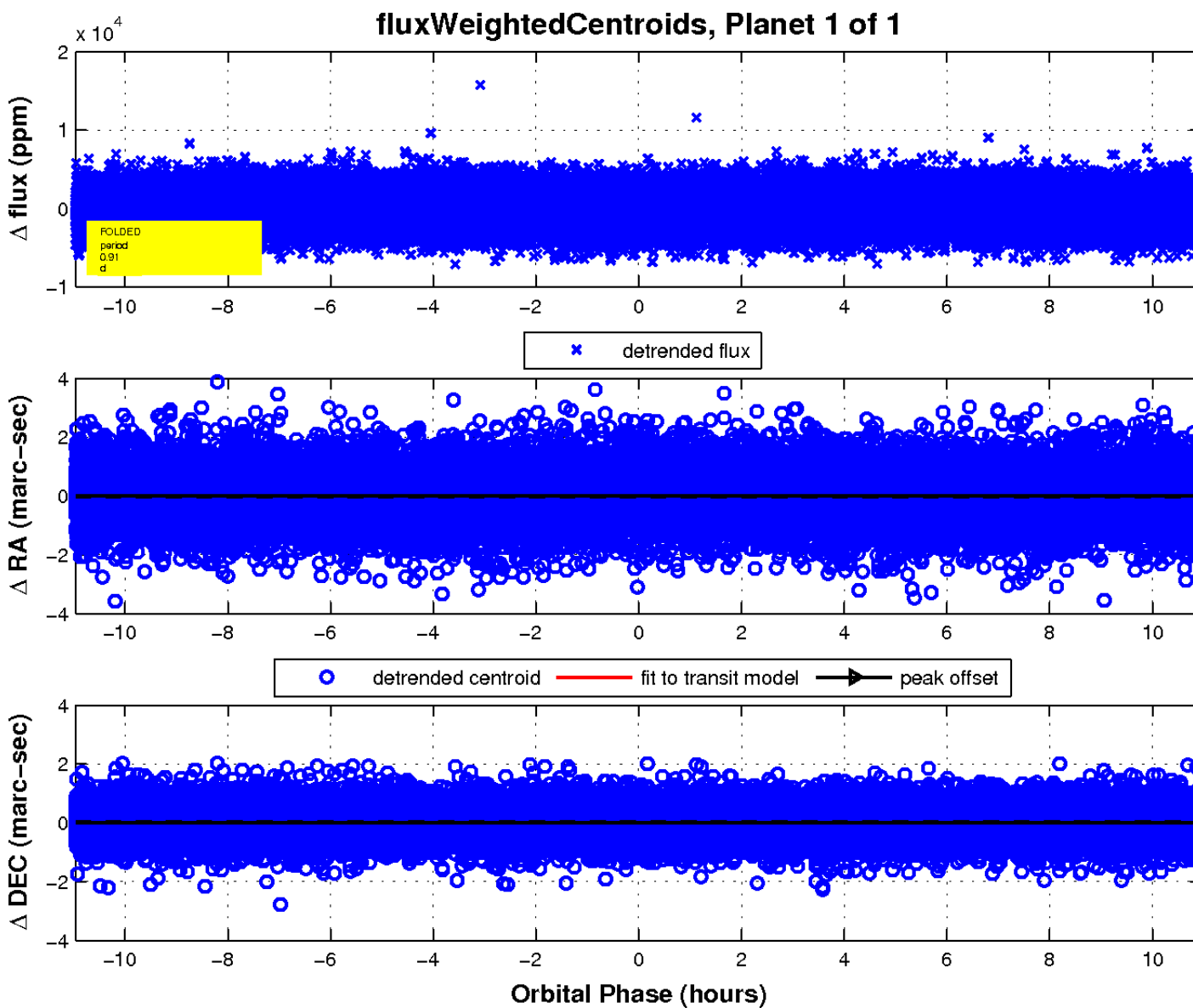
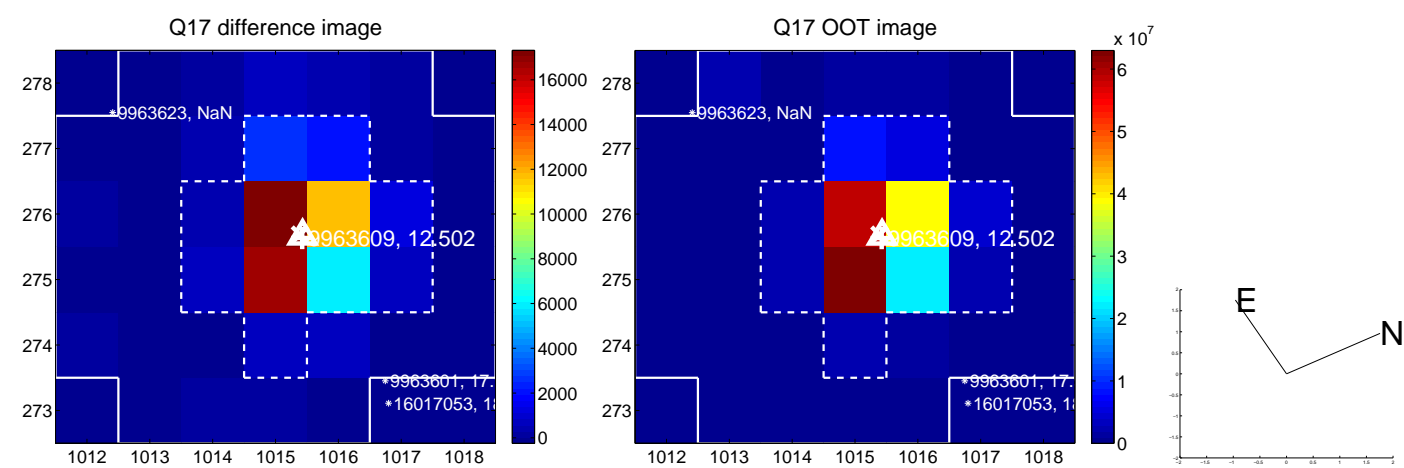
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UKIRT Image

Declination

