Reply to Referee regarding comments and correction recommended by reviewers.

Dear Referee and reviewers.

Thank you for the positive comments and recommendations regarding this paper. Corrections have been made based on the comments as highlighted. See reply to comments below each in red.

Thank you.

Regards

HJ van Heerden. (Primary author)

The abstract should be more precise and start of saying “The nova-like cataclysmic variable...”. Also re-word “correlation that has been”.

Corrections to abstract made. Changed wording slightly, as recommended, and added additional line highlighting results from study.

This paper reports on the study of archival X-ray observations from the Suzaku satellite of the enigmatic CV, AE Aqr. It reviews the known information on this system and discusses the nature of the X-ray periodicity as derived from the analysis of the Suzaku data.

Figure 1 could have been plotted at high resolution centred on the spin period. Replotted at higher resolution and updated caption. Figure 2 is poorly produced, dominated by horizontal error bar symbols. I find it hard to make much sense of this figure. Replotted without T in errorbars. The description and caption for the O-C figure 7 should really say that the points are the O-C values derived from the respective spin periods derived, rather than the spin periods themselves. Changed description.

Do the authors really believe that the spin down, as shown in Figure 7, “is very dramatic”? It does not look so to me and in fact the three points from their study have large enough error bars to be consistent with any of the proposed ephemerides. This is discussed and explained in the text. Text slightly edited to try and eliminate misunderstanding. “The trend of the WD spin period, based on the mean values of each dataset used, as determined in this study, does show a spin-down, but it is very dramatic, with a required spin-up in an epoch preceding this study to fit the general trends of the model ephemerides. This however **would be unrealistic** as the expected mechanisms in the system is dissipative, with the WD being in a long term spin-down phase.”

I think the author mean “starspots” rather than “sunspots”. Corrected

The objective of this work is to derive an updated and more accurate white dwarf spin ephemeris for the nova-like magnetic cataclysmic variable star, AE Aqaurii. It is claimed that a more accurate ephemeris is critical for other studies, such as a possible correlation that have been reported between the WD spin period. This work analyses publicly available data from the Suzaku X-ray observatory, together with timing analysis results from previous studies.

The results of this work do not resolve the inconsistencies between various previous studies and the authors propose that a new analysis technique is needed to derive and accurate ephemeris from currently available data.

There are however a few small corrections that could be attended to.

1) Not all the references are mentioned in the text, eg [2], [3], [9] etc. Please check the text and make the needed corrections. Unclear on what is meant by this. All references listed in the bib are used in the text. We selected to use [2],[3],[n] method to make the text less bulky and more readable. We based our reference style on recommendations from the journal style guide. Please clarify if there was a misinterpretation on our part.
2) Caption of figure 6; state what the different models that are plotted are. Updated figure caption/description
3) 2nd sentence in section 1 (Introduction). The sentence starting with “the WD is in …”, does not read very well. I suggest rewriting the sentence. Rewritten
4) The last sentence on pg 1, “This large spin down ….”. This sentence runs on a bit, I suggest breaking it up into two sentences. Corrected
5) 14th line on page 2, excepted ephemerides -> accepted emphemerides Corrected
6) 3rd line on pg 3, Clarify what is meant by correction of the light-curves. Corrected
7) 4th line on pg 3, front illuminated (FI) detectors -> front illuminated (FI) CCD detectors. The same for the BI. Corrected
8) 10th line on pg 3, e.g. Figure 1 -> as can be seen in Figure 1 Corrected
9) 13th line on pg3, See Figure 2, maybe this should be in brackets at the end of the previous sentence? Corrected