

We thank the referee for a pleasant and constructive report. We have edited the paper to accept most of the referee's suggestions, and provided justification for where we have not below. Major edits to the text in the paper have been marked in bold.

This paper presents high quality HST-COS observations of the Post Common Envelope Binary (PCEB) CC Cet which establishes, through detection of Zeeman features, that the White Dwarf is magnetic at the $\sim 600\text{-}700$ kG level. This is the only magnetic WD identified out of a sample of 13 PCEBs observed by HST-COS and also the hottest and with the weakest magnetic field of all mWDs in PCEBs so far discovered. As such this object is extremely important from an evolutionary perspective.

The paper is very well written and set out, the data (including from TESS, XMM-Newton, VLT) are good quality and the modeling is thorough. All in all this is an excellent paper which brings some new insights and I therefore strongly recommend that it is accepted, after some minor corrections/clarifications, which I outline below (where "P" indicates page #, "C" indicates column # and "L" line #). Most of these are just suggestions of re-wording.

One point to look at in more detail, maybe, is the derivation of $v \sin i$, where a more explicit breakdown of the components of the observed line broadening could be better quantified, namely i) spectral resolution, ii) orbital phase smearing, iii) partial Paschen-Back contribution and iv) the rotational broadening ($v \sin i$). I think the spin period of the WD could actually be much longer than the minimum period proposed of ~ 2000 s if a lower $v \sin i$ were considered, which would seem to be possible.

Comments:

Abstract

P1 Better to say "discovery of a magnetic white dwarf component..."

This wording may imply that we have discovered the white dwarf itself, rather than just that the known white dwarf component has a magnetic field.

1. Introduction

P2, C1,L12 would modify to "in which an accretion disc is usually formed... (there is one example of a discless IP)

Done

P2, C1,L41 "There are currently 16 PCEBs known with fields > 10 MG" (change order)

Done

P2, C2,L7 Presumably such objects that were spun up and not synchronised, so not pre-polars, as being discussed here?

The distinction is more between objects that have already undergone a period of mass transfer via Roche Lobe overflow, as with (likely) all the published magnetic white dwarfs in binaries, and with systems such as the one discussed here, which have not.

2. Observations

P2, C2,L42 Would be useful to include the spectral resolution for these G130M observations. If I am correct, then $R \sim 14,000$ so the resolution is ~ 20 km/s? This is relevant in Section 3.3.9, where eventually the width of the rotationally broadened Si lines leads to an estimate of P_{spin} .

We have included the resolution as suggested .

P3, C1, L62 Usually one says HH:MM:SS UTC

Corrected

P4 Top panel of Fig. 2 is rather difficult to see how good/bad the fit to the data looks. I'd suggest having a box with a zoom in to a smaller time interval to show this better.

We experimented, but couldn't find a good way to do this without obscuring much of the light curve or making the plot much bigger. The plot of the phase folded, binned light curve demonstrates the quality of the fit.

P4 The points are so tiny in Fig. 3 that it's hard to see them. I'd suggest increasing their size.

The “points” are simply background noise. As they are at the pixel scale of the XMM image, increasing their size would be unphysical.

3. Modelling

P7,C1,L23 Rather “whole surface of the WD in CC Cet”

Done

P8, C2 Fig. 7 is indeed “spaghetti” and given there's 8 lines, all with their π and σ sigma components, it is pretty hard to clearly work out where to expect the features to be. So

unfortunately there's no simple or obvious way to present this (unlike in Fig.5 of Khalack & Landstreet 2010, for example, albeit for a CP star). However, when I stare at this long enough, I have convinced myself that in fact where the strands of the "spaghetti" get denser, - 2 - and therefore where the dips should be more obvious, is for a somewhat high field, like 700 kG. If you just moved the green curve up from 600 to 700 kG, then I'd maintain that the bundling of the spaghetti strands matches the absorption dips a lot better!

We have adjusted the spectrum to 700 kG, and made the lines slightly thicker so the clustering is more obvious. Note that we do not claim a measurement of the field from these lines, but show that they are qualitatively consistent with the 600-700kG value measured in other lines.

P9,C1,L7 It's a funny way of saying it. Would it not be better to say something like:
"The observed profiles are inconsistent with a slowly rotating WD ($v_{\text{sin i}} \sim 0$) and support...."

We have reworded the sentence to be clearer.

P9,C1,L15 "CC Cet is a short period binary" (remove "part of")

Done

P9,C1,L20 In the discussion here, maybe be clearer about the various contributions to the broadening and their magnitudes. If I understand correctly, the instrumental FWHM is ~ 20 km/s, the orbital phase smearing is ~ 25 km/s and the partial Paschen-Back effect will add to this too, all in sum of squares sense. If the total FWHM from everything is 40 km/s (although 35 km/s is also mentioned, which is confusing), then won't the rotational broadening be much less? If it were < 40 km/s then $P_{\text{spin}} > 2000$ s. Formally, the spin period could be greater than this, so not so well constrained it would seem?

We have re-written the paragraph to explicitly state the different contributions to the velocity and clarify the measurements of the line widths at the continuum and FWHM. We confirm that the 40km/s estimate is secure.

P9,C1,L34 Would it not be better to say "the rotation period has to be longer than the exposure time" ?

The rotation period could be slightly shorter than the exposure times depending on the amplitude of the variations (for example, an exposure covering rotation phases 0 to 1.2

might reasonably be different to one covering phases 0.5 to 1.7, but exposures covering multiple rotations will probably be identical).

P9,C1,L35 Change “filed” to “field”

Done

P9,C1,L56 Quantify how much is “modestly different”

We have stated the difference to be 50-100 kG.

P9,C2,L9 Not sure what “important” means. Maybe “dominant”? Or perhaps just state that there’s no large regions of zero magnetic field.

Changed “important” to “large”.

P10 In Fig. 9 the region denoting the pn uncertainty (pale pink) overlaps the N_H region (pale orange), but the contrast is not great (better on screen). Maybe consider cross hatching?

We have adjusted the colour scheme to make the different regions clearer.