

Subject:
MNRAS: MN-06-0094-MJ
From:
cg@ras.org.uk
Date:
Tue, 14 Feb 2006 05:23:46 -0500 (EST)
To:
dcohen1@swarthmore.edu

Dear Prof Cohen

I attach the reviewer's comments on your manuscript entitled "Wind signatures in the X-ray emission line profiles of the late O supergiant |*zeta*| Orionis", ref. MN-06-0094-MJ, which you submitted to Monthly Notices of the Royal Astronomical Society.

The reviewer has recommended some minor revision of your manuscript before it is reconsidered for publication.

You should submit your revised version, together with your response to the reviewer's comments via the Monthly Notices Manuscript Central site <http://mc.manuscriptcentral.com/mnras> . Enter your Author Centre, where you will find your manuscript title listed under "Manuscripts with Decisions." Under "Actions," click on "Create a Revision." Your manuscript reference will be appended to denote a revision.

IMPORTANT: do not submit your revised manuscript as a new paper!

You will not be able to make your revisions to the originally submitted files of the manuscript held on Manuscript Central. Instead, you must delete the original files and abstract and replace them with your revised files. Check that any requests for colour publication or online-only publication are correct. Proof read the resulting PDF and HTML files that are generated carefully.

When submitting your revised manuscript, you will be able to respond to the comments made by the reviewer in the space provided. You should also use this space to document any changes you make to the original manuscript. In order to expedite the processing of the revised manuscript, please be as specific as possible in your response to the reviewer.

Because we are trying to facilitate timely publication of manuscripts submitted to MNRAS, your revised manuscript should be uploaded promptly. If you do not submit your revision within six months, we may consider it withdrawn and request it be resubmitted as a new submission.

I look forward to receiving your revised manuscript.

Regards,

Miss Claire Geeson
Monthly Notices of the Royal Astronomical Society

Reviewer's Comments:

I found this a very interesting paper to read, with some pleasing results and conclusions. It consists of a detailed analysis of high resolution X-ray data for Zeta Orionis taken with Chandra. This work is important in that Zeta Ori has been used as something of a counter-example to a developing prevailing view of the origin of the X-ray emission in single O stars. This paper demonstrates that, on closer inspection, Zeta Ori is in fact a good example of this viewpoint rather than a counter-example. The paper also highlights some of the outstanding issues with the basic model, and has some broad comments about the possible explanations for them.

The paper is well written, coherent and concise and needs relatively little modification, and as such the paper certainly merits publication.

My comments are detailed below, the vast bulk are minor, involving rewording or action to improve the clarity of the paper or diagrams. The only comment of substance concerns the beta law (see below).

p.1 As a tongue-in-cheek comment, in the first paragraph you cite a record number of papers on O star winds, but manage to miss out a reference to the classic CAK paper. I will leave that to the authors conscience.

p.2 (and elsewhere): "XMM" should be referred to as "XMM-Newton"

p.2 "beta velocity law" - this concept is introduced without reference (see also comment below).

p.2 "overall X-ray properties of Zeta Ori..." provide a reference for this.

p.3 The authors refer to Waldron and Cassinelli (2001) as the "discovery paper for Zeta Ori". I would reword or clarify this statement - this paper presented the first high resolution X-ray spectrum for this star.

p.3 (and elsewhere) Lyman alpha and Halpha - these should be $\text{Ly}\alpha$ rather than Ly_α etc.

p.4 (and elsewhere) - a couple of mathematical expressions used within a paragraph are rather small and maybe better off on separate lines (example of s on p.4 and tau on p.6).

p.5 Concerning the assumption of a beta=1 wind law. This is the assumption that was adopted in previous work on Zeta Pup (Kramer et al. 2003). Have you investigated how important an assumption this is - does using beta=0.8 (or beta=2) make any substantial difference. My gut feeling is that it is not a major issue (for a plausible range of beta), but would appreciate some comments on this.

p.10 Table 3 - I would be inclined to bolster the caption for this table, defining a bit more what the columns are.

p.10 Table 4 - to be picky, you are not consistent in use of the zero in the errors.

p. 9-11 Quite a few of the diagrams are too small on the version I received, with the labels almost illegible. They should be larger (or redrawn). Also you do not specify the units of R_{min} in the caption or the label of Fig. 6.