Email

Manuscript #	ApJ80631
Title	A Relationship between AGN Jet Power and Radio Power
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Date:	2010-06-15 11:48:41
Last Sent:	2010-06-15 11:48:41
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Email	June 15, 2010 Dr. K. W. Cavagnolo University of Waterloo Department of Physics & Astronomy 200 University Avenue West Waterloo, ON N2L 3G1 Canada Title: A Relationship between AGN Jet Power and Radio Power Dear Dr. Cavagnolo, I have received the referee's report on your above submission to The Astrophysical Journal, and appended it below. As you will see, the referee thinks that your article is interesting and that it will merit publication once you have addressed the issues raised in the report. When you resubmit the manuscript, please include a detailed cover letter containing the (mandatory) listing of the changes you've made to the text and your responses to the report. Click the link below to upload your revised manuscript, which will work one time. <Link Not Available ?el=A1Ew2cE5A2MKI1F4A9kOrrQaMAA5SPLtqPxJ0a6QZ> Alternatively, can also log into your account at the EJ Press web site, http://apj.msubmit.net. Please use your user's login name: kcavagnolo. You can then ask for a new password via the Unknown/Forgotten Password link if you have forgotten your password. The Astrophysical Journal has adopted a new policy that manuscript files become inactive, and are considered to have been withdrawn, six months after the most recent referee's report goes to the authors, provided a revised version has not been received by that time. If you have any questions, feel free to contact me. Sincerely, Joan M. Wrobel Scientific Editor The Astrophysical Journal apjjmw@nrao.edu ---------- Referee Report Reviewer's Comments: This is a good piece of work, building on some solid foundations, extending and improving them. There are a few places where the text could be expanded and clarified which I detail below. Sect 1, Para 1 - Perhaps give an example of the Chandra evidence for AGN interaction for completeness Sect 1, Para 2 - Perhaps mention that the coupling of the cavities to the ICM is currently uncertain, even if the energies balance.

- mention the large scatter of the B06/08 relations, especially as you have an explanation for it later in the paper.

Sect 2, Para 1 - Some reordering of this paragraph might help it be clearer - I was wondering how the Jones et al sample was created until the second reading. e.g. The second sentence should go at the end of the paragraph.

- I am surprised that the selection was done only on depressions in the X-ray emission as the visibility function of these is not sure. A combination with radio emission would make the detection of depressions firmer. Perhaps add a sentence justifying the selection procedure.

Sect 3.1, Para 1 - As both Jones et al and Nulsen et al are in preparation, perhaps add a sentence explaining how the gas properties and how the cavity locations were determined.

- why is the buoyancy timescale used as opposed to the sound speed timescale? And are there appreciable differences between the two estimates?

Sect 3.2, Para 1 - please clarify the 200-400MHz statement - I initially read it as a radio power over 200-400MHz range, rather than as one at some frequency within this range.

Sect 3.2, Para 3 - "... detected in NVSS because of a the higher flux limit" - please clarify this statement.

- the low nuclear contribution to the total radio fluxes, perhaps be a little more quantitative - eg "all were below 0.1, except NGC12345 which had 0.??". The \lesssim symbol can hide a lot.

Sect 4.1, Para 1 - The Figures of Merit discussion, perhaps give well known examples of the AGN which fall into each category. Also how are the cavities "associated" with the AGN activity? Does this requires clear correspondence with extended radio emission? How can cavities which are associated with AGN radio
activity lack clear boundaries - does this mean that they are defined from the radio emission only, and the FM-A ones from radio and X-ray morphology. A bit more precision with the wording would make everything clear.