

October 1, 2007

Prof. B.R. McNamara  
University of Waterloo  
200 University Avenue West  
Waterloo, Ontario N2L 3G1  
Canada

Dear Prof. McNamara:

Please accept the attached application for your postdoctoral position in galaxy cluster studies advertised in the September 2007 edition of the AAS Job Register. For my thesis, entitled '*Feedback, Evolution, and Dynamics in Galaxy Clusters*', I am studying the connection of feedback mechanisms – such as AGN, star formation, and radiative cooling in the cluster core – to gas entropy, and the role of this feedback in altering global properties of the ICM and the impact on galaxy formation. I have also been studying a method for quantifying the virialization state of clusters through the band dependence of X-ray temperatures. For my thesis I assembled a sample of 350 archival *Chandra* observations for 276 clusters. The results of this laborious task have been many and are detailed in the research summary.

My expertise in X-ray astronomy, with *Chandra* specifically, ideally suits me to further work on cluster feedback and galaxy formation models. Adaptation of my skill sets to study clusters in the radio, optical, and infrared is the next step in my career and should come with a short learning curve thanks to my existing, mature programming ability. I am a great asset for anyone studying clusters both for my technical skills and to furthering their research objectives. I feel the post-doctoral position under your advisory at Waterloo is an excellent fit for me, and your research goals will benefit from my addition.

Along with this letter are my resumé, a summary of past and current research, and a brief description of possible future research directions. Letters of recommendation from Megan Donahue, Mark Voit, and Jack Baldwin will arrive under separate cover. Please do not hesitate to contact me if there is any further information I can provide as you review my application.

I will be attending the Chandra Symposium in Huntsville, AL October 22<sup>nd</sup>-26<sup>th</sup> and would like the opportunity to meet with you and discuss this position further. Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ken Cavagnolo', written over a light blue grid background.

Kenneth W. Cavagnolo  
Michigan State University