

January 17, 2008

Dr. M. Arnaud
Orme des Merisiers - Bat 709
Service d'Astrophysique
Gif sur Yvette, F-91191
France

Dear Dr. Arnaud:

Please accept the attached application for your postdoctoral position in X-ray astronomy advertised in the January 2007 issue of the AAS Job Register. For my thesis (advised by Megan Donahue and Mark Voit), entitled '*Feedback, Evolution, and Dynamics in Galaxy Clusters*', I am studying the coupling of feedback mechanisms – such as AGN, star formation, and conduction in cluster cores – to gas entropy, and the role of this feedback in altering global ICM properties and truncating the high mass end of the galaxy luminosity function. 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 totaling 11.6 Msec of data. The results of this laborious effort have been many and are detailed in my research summary.

I feel the post-doctoral position under your advisory at SAp is an excellent fit for me, and your research goals will benefit from my addition. My expertise in X-ray astronomy ideally suits me to further study the evolution of galaxy clusters and mass-observable relations as tools for conducting tests of cosmological models and toward a better understanding of the cluster mass distribution as a function of redshift. 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.

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

Thank you for your consideration.

Sincerely,

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

Kenneth W. Cavagnolo
Michigan State University