December 15, 2007

Dr. Casey Papovich
Texas A&M University
Department of Physics
4242 TAMU
College Station, Texas 77843-4242

Dear Dr. Papovich:

Please accept the attached application for your postdoctoral position advertised in the November 2007 issue of the AAS Job Register. For my thesis (advised by Megan Donahue and Mark Voit), entitled *'Virialization, Entropy, and Feedback in Clusters of Galaxies'*, 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 collection 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 am a great research asset for any astrophysics group because of my extensive experience with complex data analysis, innovative technical skills, and ability to independently advance the group's and my own research objectives. I feel the post-doctoral position under your advisory at Texas A&M is an excellent fit for me and your research goals will benefit from my addition. My expertise in X-ray astrophysics ideally suits me to further work in the area of galaxy cluster evolution and developing better methods for understanding ICM substructure created by both feedback mechanisms and mergers.

Along with this letter are my resumé and a summary of past, current, and future research directions. Letters of recommendation from Megan Donahue, Mark Voit, and Jack Baldwin will arrive under separate cover. Please contact me if there is any further information I can provide as you review my application.

Thank you for your consideration.

Sincerely,

Kenneth W. Cavagnolo
Michigan State University