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Mentor: Lawrence Rudnick,
Astronomy

Measuring and Classifying Polarized Structures in Space Using X-ray and Radio Images

I present the progress of my work in measuring and classifying extraterrestrial polarized structures. The polarized objects that we found in space can be many different things, from supernovae to clouds of dust. The problem with some of these polarized structures is that they come from very bright objects that have already been studied, and we are looking for never before noticed structures. I therefore have to categorize these objects and separate them from known sources.

I present the polarized NRAO VLA Sky Survey images of the polarized structures, along with ROSAT All-Sky Survey x-ray images and NRAO VLA Sky Survey radio intensity images that I used to categorize these structures. Through various categorization techniques, such as comparing the images and looking for possible causes of the polarization in the radio intensity and x-ray intensity images, I am able to find which of the polarized objects are diffuse radio sources, sources that come from large dust clouds in space. These sources will eventually be put into the first catalog of diffuse polarized radio sources. I present these techniques as a model that could be applied to later surveys in polarized emissions to classify sources effectively and efficiently. I also present the discovery of a "radio gischt," an unusual polarization source that is found very far away from any bright sources, that I discovered in Abell 400, which was found through the use of these techniques.



Poster Number: Session: