

DEPARTMENT OF PHYSICS & ASTRONOMY

Physics & Astronomy Colloquium

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3:30 - 4:30 p.m. | Tuesday, September 1
Science Building 234

Narrow-line Seyfert 1 galaxies - What is in a name?

The world of active galactic nuclei (AGN) is full of mysteries. One class of AGN that has proved itself to be full of questions with very few certain answers is the narrow-line Seyfert 1 (NLS1) galaxy class. Identification of NLS1s is done through studying their spectral line profiles. The two classification criteria are: the full width at half maximum of the broad $H\beta$ is, by definition, a maximum of 2000 km/s, and [O III] is weak in comparison to the broad $H\beta$ ($S[\text{O III}]/S(H\beta) < 3$). One of the main issues with studying NLS1s is that all large samples are contaminated to various degrees. This happens due to the spectral line profile of NLS1s being quite similar to other sources and the fact that large spectral line surveys of NLS1s are generally of lower-quality data, which further complicates the possibility of accurately identifying NLS1s. Furthermore, although from an optical perspective, NLS1s behave quite symbiotically, when moving to the radio regime, this picture largely breaks down. In my research so far, I have studied NLS1s in both radio and optical bands, studying various properties of NLS1s: spectral line profile, host galaxies, and general radio properties. All my work on NLS1s has led me to the question: NLS1 — what is in a name? In this presentation, I will go over the work I've done on NLS1s, as well as some general work on NLS1s, and how each new answer raises two more questions.

Refreshments at 3 p.m. | SC 103

