**Physics** & **Astronomy**

Colloquium

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**Dr. Dillon Dong**

National Radio Astronomical Observatory

**3:30 - 4:30 p.m. | Tuesday, March 11**

**Science Building 234**

**4D Radio Astronomy with the VLA Sky Survey**

In October 2024, the VLA Sky Survey (VLASS) completed its third full epoch, conducting sensitive, high-resolution 3 GHz observations of all ~34,000 deg² accessible to the VLA for the third time since 2017. Thanks to the efforts of the VLASS team, all observations have now been calibrated and “quicklook” imaged, enabling high-quality, multi-epoch measurements of ~99% of the surveyed area. The ~106,000 quicklook images represent a ~2 order of magnitude reduction in volume from the raw visibilities, transforming a ~petabyte-scale problem to a straightforwardly manageable ~5 TB dataset. In this talk, I will discuss several ongoing efforts to distill these data further (into data products and science) and make them readily available to all. This will include a preview of the VLASS transient, variable and persistent source catalogs and efficient/robust means of crossmatching these sources to multi-wavelength counterparts, and a new VLASS image cutout server capable of delivering cutouts at arbitrary locations in ~100 milliseconds per coordinate. I will additionally talk about the vast luminosity range of synchrotron-emitting sources and what we might learn from our ever-more-complete sampling of GHz-frequency radio photons in space and time.

**Refreshments at 3 p.m. | SC 103**