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Science Highlights from the VLA Sky Survey and the Quest for a 4th Epoch Adventure

Wednesday, 8 May 2024 16:30 (15 minutes)

The Very Large Array Sky Survey (VLASS) is a broadband (2-4 GHz), high-resolution (2.5”), multi-epoch, full-polarimetric radio continuum survey of the entire sky above -40 degrees declination. It was designed in response to a community led initiative to enable forefront science over a wide range of science topics by exploring new temporal, spectral, and spatial domains. A unique aspect of VLASS is that it was designed to capture dynamic changes in the radio sky over a 7-year period (2017-2024) through a sequence of 3 distinct observing epochs each separated by a cadence of 32 months. The multi-epoch strategy of VLASS has been particularly successful in advancing our understanding of the dynamic radio sky, including rare classes of objects such as stellar explosions, tidal disruption events, flaring radio stars, and newborn quasar jets. In this talk, I will review scientific highlights from VLASS so far and discuss opportunities for synergy between VLASS and other radio surveys with SKA pathfinders.
I will also make a case for extending the survey to an additional 4th epoch in the late 2020’s. A prospective 4th VLASS epoch holds the promise of unveiling thousands of radio transients, providing new opportunities for multi-wavelength/multi-messenger science, and leveraging recent upgrades to commensal instruments on the VLA.

keywords

In-person or online?

Career level

Presenter: NYLAND, Kristina (NRL)

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