BROADBAND, HIGH RESOLUTION SPECTROSCOPY WITH NRAO FACILITIES

ANTHONY J. REMIJAN, *NRAO, 520 Edgemont Road, Charlottesville, VA 22903.*

Over the next several years, NRAO facilities will provide the scientific community with unprecedented advances in high spatial resolution observations. What is not currently emphasized is at the same time, these observations will also provide broadband, high spectral resolution data in frequency ranges that are sparsely covered by any other astronomical facility. ALMA and the eVLA will be able to record over 2 GHz of instantaneous bandwidth at high spectral resolution and provide high fidelity, high spatial resolution images that are well suited for studies of Galactic sources. The GBT is currently being upgraded with a K band focal plane array that will provide information on the widespread distribution of species in addition to the 800MHz continuous spectral line coverage. Finally, the VLBA upgrade will provide higher sensitivity observations over much wider bandwidths to investigate phenomenon at the highest spatial and spectral resolution ever obtained. All these capabilities will be highlighted along with the current progress in the construction of ALMA, eVLA, GBT and VLBA