

RFI Issues for the next generation Very Large Array (ngVLA)

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Building on the remarkable success of the VLA, VLBA, and ALMA, NRAO is planning a large collecting area interferometer which will replace the VLA and VLBA - the next generation Very Large Array (ngVLA) [1]. For many of the same reasons that the VLA was constructed where it was (fraction of sky visible, quality of site, accessibility, etc.), the core and bulk of the collecting area of the ngVLA will be on the Plains of San Agustin, near where the center of the current VLA is. Despite the general quality of the site, RFI is nearly ubiquitous, especially at frequencies below 2 GHz, and the spectrum is getting worse with time, as experienced in other areas across the world. Also, because of the spatial resolution needed to satisfy science requirements, antennas will be spread across the U.S., Canada, and northern Mexico, and so be in various different RFI environments (see Figure 1 for locations of antennas in the current design) [2,3].

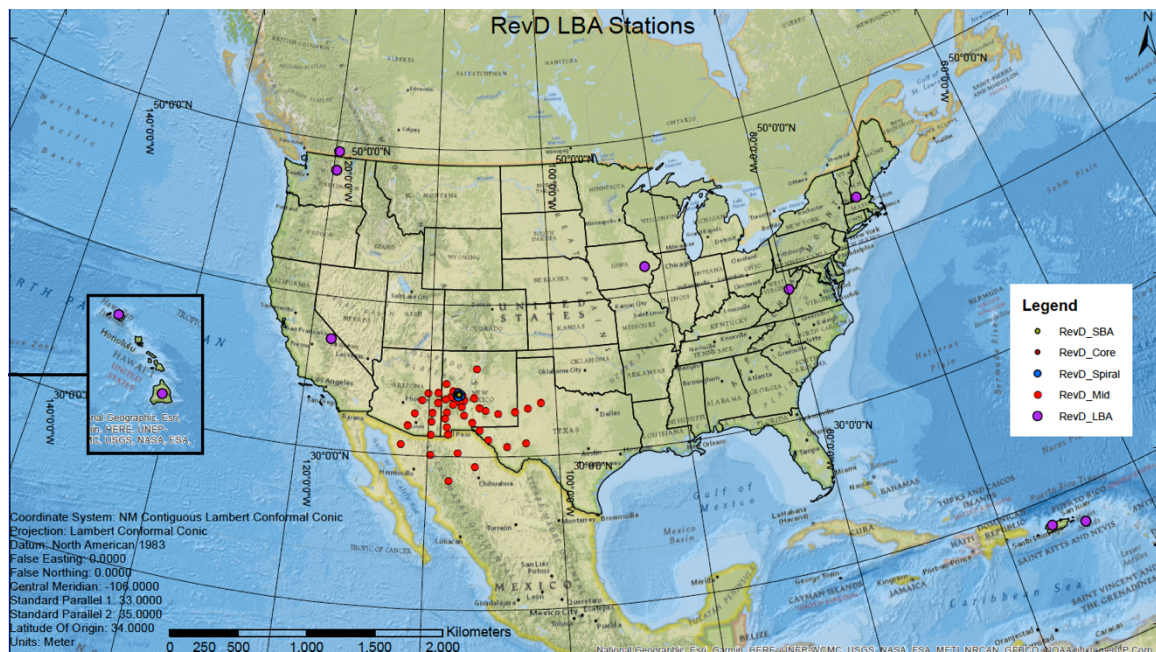


Figure 1. Locations of ngVLA antennas [2].

Because of this, the NRAO has been developing a strategy for measuring, alleviating the impact of, and excising (in early or final data) the effects of RFI on the ngVLA [4,5]. This involves all aspects of the telescope, including hardware, software, system design, and operations, and is being designed in to all of these elements from the beginning. We will present our current plans for all aspects of RFI management for ngVLA in this talk.

References

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