The Next Generation Very Large Array Operations Concept

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Science Operations

Proposing

- Science program for open skies time will be determined by PI led proposals.
- Proposals for these projects will be peer reviewed and ranked based on scientific merit, technical feasibility, and the number of existing and current projects requesting targets at similar Right Ascensions.
- The proposal review process will adopt the best practices aimed at minimizing bias.

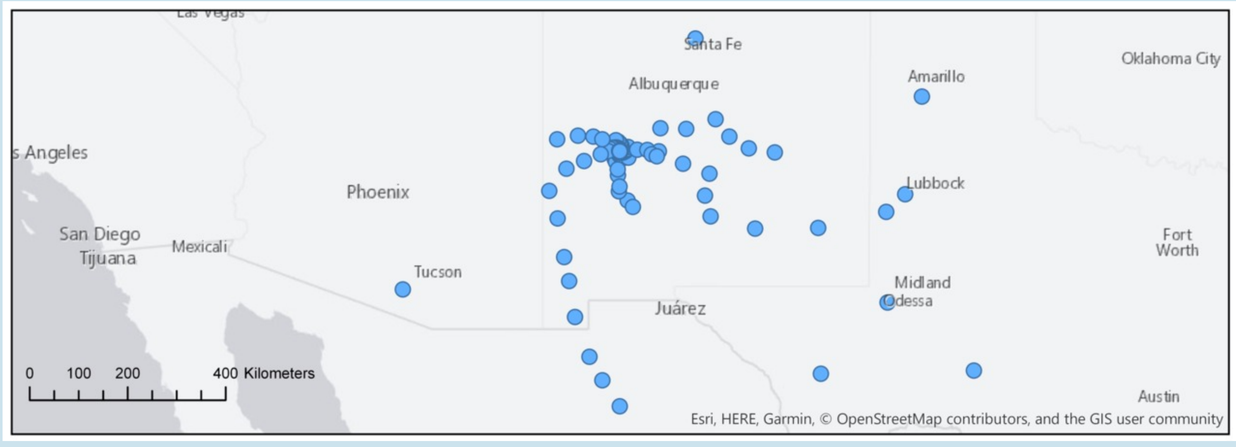
Observing

- The telescope will be scheduled dynamically based on environmental conditions and array status, consistent with the user's scientific requirements.

Data

- The ngVLA will aim to support both a broad community of scientific users and to facilitate multi-wavelength and multi-messager astronomy.
- Most projects will use a diverse, but well-defined, set of standard observing modes.
- These modes will be commissioned during construction.
- Data for most observing modes will be reduced and imaged by automated pipelines developed and run by the Observatory.
- Science Ready Data Products (i.e., continuum images and spectral data cubes) will be available to PIs and archival users for most projects.

Array Operations and Maintenance



Operations

- All the antennas in the array will be able to be used for a single science project.
- However, the array will often be partitioned into subarrays, running two or more projects simultaneously.
- Subarrays will allow the resolution and sensitivity of the array to be tailored to match the scientific goals of a project as well as concurrent science and maintenance operations.

Maintenance

- A major goal of the ngVLA is to keep the operations and maintenance costs to less than 3 times that of the VLA.
- The design of the ngVLA will focus on maintenance efficiency, including using modularized components, minimizing preventative maintenance and repair visits, and automating diagnostics.
- The operation and maintenance of the array will be supported by three primary centers to optimize the efficiency of these actions:
  - A Maintenance Center near the array core at the current VLA site,
  - An Array Operations and Repair Center near Socorro, NM, and
  - A Science Operations/Data Center likely located in a larger metropolitan area.

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