New Technology, New Capabilities

The next generation Very Large Array

Introducing the next generation Very Large Array (ngVLA), with the technology to astronomically amplify our understanding of the universe and place even more discovery in our reach. Here's how...

IN SYNC WITH SYNERGY

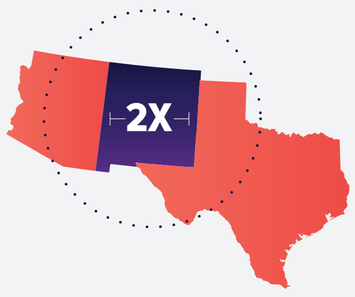
The ngVLA's unique capabilities can supplement and advance the work of other world-class observatories:

- ATHENA/Lynx
- LUVOIR/HabEx
- LSST/TMT/GMT
- JWST/Euclid/WFIRST
- SPICA/OST
- ALMA
- SKA

A PERFECT HOME IN THE U.S.

Site Location: New Mexico, Arizona, Texas, and Mexico

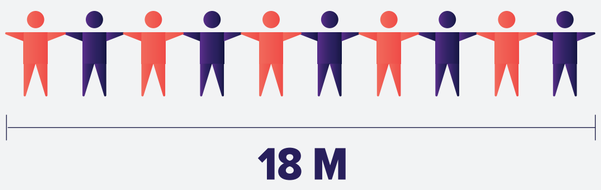
- ~2,100 m elevation
- Exceptional location to study cosmic radio light
- US-based next-generation telescope
- ~1,000 km distance between farthest antennas, creating
  - Virtual telescope nearly 2x the width of New Mexico



IMPRESSIVE STRUCTURE

18 m antenna dish diameter—a size that balances sensitivity and affordability

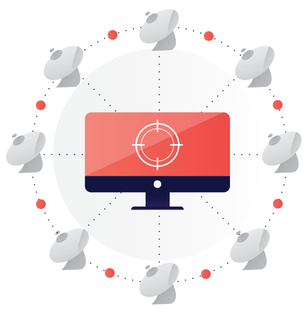
- Equal to nearly 10 persons standing fingertip to fingertip



A WHOLE GREATER THAN THE SUM OF ITS PARTS

214 Individual antennas that combine to form a single telescope

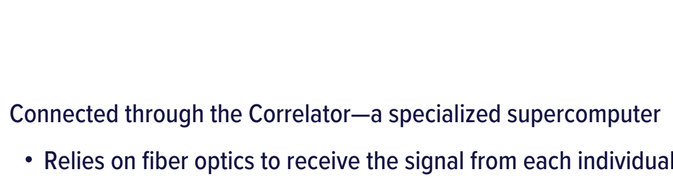
- Fully steerable
- Immensely powerful



EXCEPTIONAL POWER

Ability to detect the faintest cosmic light

- 2.6 mm to 25 cm



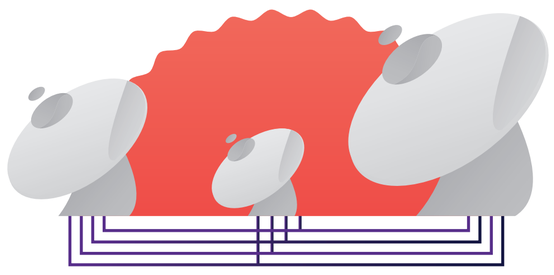
- Lightwaves 10,000x longer than those visible to the human eye
- Gives the ability to study all kinds of cosmic events and objects throughout the universe

Ability to capture fine details—even at great distances

- Able to see details about as small as the distance from Mercury to the Sun
  - *When it's 450 light-years away*
- Gives telescope incredible viewing power
  - *Imagine: Sitting in New York and reading an eye chart in Los Angeles*

Connected through the Correlator—a specialized supercomputer

- Relies on fiber optics to receive the signal from each individual antenna and combine them into one
- Processes 6.4 TB of data from the antennas every second



For more than 40 years, the VLA has expanded our awareness of the universe. With the ngVLA, we'll be able to probe deeper and answer questions that have yet to be asked.

Keep exploring with us. Learn more: http://ngvla.nrao.edu/

ngvla

National Radio Astronomy Observatory

Associated Universities, Inc.

NSF