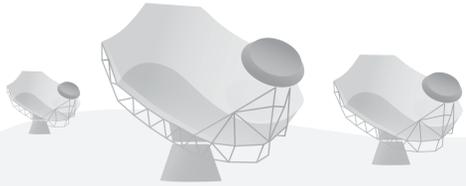


New Technology, New Capabilities

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...



A PERFECT HOME IN THE U.S.

Site Location: Concentrated in New Mexico and adjacent states, though antennas are located across the U.S. from Hawaii to the Caribbean.

- ~2,100 m elevation
- Exceptional location to study cosmic radio light
- US-based next-generation telescope
- The central concentration of antennas spans ~1,000 km, creating a virtual telescope nearly 2x the width of New Mexico.



IMPRESSIVE STRUCTURE

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

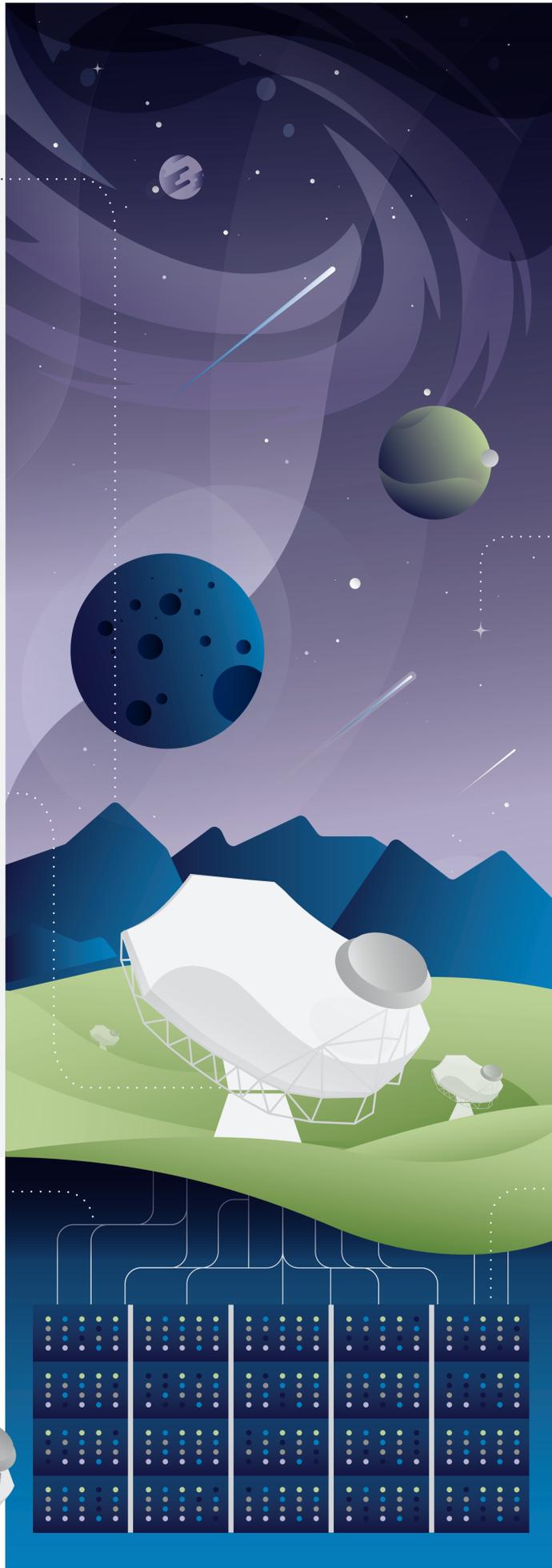
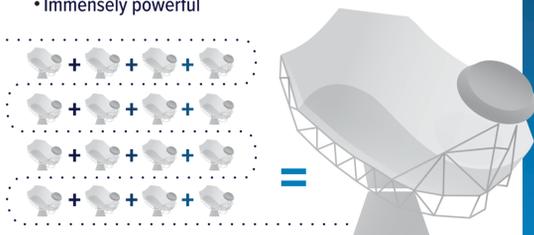
- Equal to nearly 10 persons standing fingertip to fingertip



A WHOLE GREATER THAN THE SUM OF ITS PARTS

263 Individual antennas that combine to form a single telescope

- Fully steerable
- Immensely powerful



IN SYNC WITH SYNERGY

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



EXCEPTIONAL POWER

Ability to detect the faintest cosmic light

- 2.6 mm to 25 cm
- Light waves 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 a specialized supercomputer called the Central Signal Processor (CSP)

- Relies on fiber optics to receive the signal from each individual antenna and combine them into one
- Processes 21 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: ngvla.nrao.edu

