

V121a The Next Generation Very Large Array

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We present an overview and the current status of the Next Generation Very Large Array (ngVLA), including the recent scientific and technical activities of the ngVLA study group which is managed by NAOJ along with the members of the science community. The ngVLA is a multi-disciplinary general-purpose facility that will significantly advance our understanding of the Universe and offer new physical insights to various phenomena observed in the sky. The telescope will be composed of 214 18-m antennas placed around the current JVLA site in New Mexico, USA. This will provide large collecting surface with baselines up to 1000 km, which will translate into unprecedented sensitivity and milli-arcsecond angular resolution at frequencies from 1.2 to 116 GHz, covering the atomic hydrogen line to the lowest rotational transition of carbon monoxide, known as the best tracer of total molecular gas mass in galaxies. The array will be complemented with the Short Baseline Array, which will comprise 19 antennas of 6-meter diameter, and 4 antennas of 18-meter diameter operating as single dish telescopes. The highest angular resolution will be achieved by the Long Baseline Array, which will consist of 30 antennas of 18-meter diameter operating in VLBI mode with a longest baseline of 8860 km. According to the current plan, the construction led by NRAO begins in 2024 and full operation will begin in the mid 2030's.