

V101a The Next Generation Very Large Array - Autumn 2025

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We present progresses of the Next Generation Very Large Array (ngVLA) project in Japan. The ngVLA, led by NRAO, will be operated at frequencies from 1.2 to 116 GHz. The ngVLA consists of three arrays: the Main Array (214×18 -m antennas with baselines up to 1000 km), the Short Baseline Array (19×6 -m antennas and 4×18 -m single dish), and the Long Baseline Array (30×18 -m antennas with the longest baseline of 8860 km). The ngVLA will achieve $10\times$ higher sensitivity and $> 10\times$ higher resolution than the current VLA and ALMA, which will revolutionize our understandings on various aspects of the universe. In this presentation, we will first report the completion of the construction of the first prototype antenna in the US. Given this, we will explain (1) how the antenna construction plan and timeline in Japan align well with the US's plan, with a particular emphasis on the Long Baseline Array. Progress of the FY2024's designing and experiments of the domestic antenna panel will be highlighted. Recent progress of (2) on-site experiments of the time/frequency reference signal distribution systems, which successfully passed the NRAO's conceptual design review, as well as (3) re-activated designing and experiments of receiver components, will also be introduced. Lastly, we will announce the international ngVLA science workshop to be held in Japan in 2026.