## V114a The Next Generation Very Large Array - Autumn 2024

泉拓磨 (NAOJ), 百瀬宗武 (茨城大), 井口聖, 深川美里, 廿日出文洋, 伊王野大介, 片岡章雅, 永井洋, 長谷川哲夫 (NAOJ), 奥住聡, 田中圭 (東工大), 大屋瑶子 (京都大), 立原研悟 (名古屋大), 佐野栄俊 (岐阜大), 竹川俊也 (神奈川大), 新沼浩太郎 (山口大), 坂井南美 (理化学研究所)

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× higher sensitivity and $>$ 10× higher resolution than the current VLA and ALMA, which will revolutionize our understandings on various aspects of the universe. In this talk, we will first report the FY2024 status of the ngVLA Study Group in NAOJ. As one of the major technical contributions from Japan, we have been developing time/frequency reference distribution systems in NAOJ/ATC. This novel technique has now passed the Conceptual Design Review (CoDR) of NRAO, which then has a high chance to be accepted as a base-technology of this interferometer. We will report this milestone, as well as our plan for on-site experiments both in Japan and US. As another technical advancement, an initial design of ultra-low cost antenna will be completed in this FY2024. We will briefly introduce the requirements for the antennas and development timeline in FY2025. Lastly, we have organized, together with the community, a series of science workshops to update unique science cases in Japan. Major outcomes from these workshops will be highlighted.