V107a   The Next Generation Very Large Array - Fall 2021

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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 the NAOJ along with the members of the science community. A series of successful science workshops were held in the year 2020, leading to $\sim$ 30 science articles (ngVLA-J memo series) in various science fields from local objects to distant galaxies. The study group will host the first ngVLA-J technical workshop on July 15-16, and a Japanese project book will be published in Summer/Fall of 2021.

The ngVLA will be composed of the Main Array with 214 18-m antennas placed around the current JVLA site. 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. The Main 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 30 18-meter antennas with a longest baseline of 8860 km. The construction led by NRAO is planned to begin in the mid 2020's, and the full operation is expected in the mid 2030's.