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LiteBIRD, in quest for the primordial gravitational waves

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Cosmological inflation is the leading hypothesis to resolve the problems in the Big Bang theory, predicting that primordial gravitational waves were created during the inflationary era, which then imprinted large-scale curl patterns in the cosmic microwave background (CMB) polarization map, called the B-modes. Measurements of the CMB B-mode signals are known as the best probe to detect the primordial gravitational waves.

LiteBIRD is a JAXA's strategic large mission (planned to be launched in 2029) inside an international collaboration including strong contributions from Europe, and designed to map the polarization of the CMB radiation over the full sky at large angular scales with unprecedented precision, which will offer us a crucial test of cosmic inflation. It will also serve as the first crucial test of quantum gravity such as superstring theory. Precise polarization maps of LiteBIRD will also provide us with valuable pieces of information on particle physics and astrophysics.

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