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# What was before the Big Bang?

**J. Brandes**

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**Abstract 2025**
**What was before the Big Bang?** — •Jürgen Brandes — Karlsbad, Germany
The Einstein interpretation (EI, classical general theory of relativity) says: Before the Big Bang there was nothing, neither space, nor time, nor space-time. But the EI is contradicted by the measurement of two different Hubble constants, because the expansion of the universe cannot take place at two different speeds at the same time. That leaves the Lorentz interpretation (LI): The Big Bang is the explosion of a supermassive object. Its mass must come from somewhere. The simplest assumption: by accretion from emissions from neighboring galaxy clusters on a large scale analogous to the growth of galaxy nuclei on a small scale. This is supported by the observation of galaxies older than the Big Bang [1]. **The main objection:** Supermassive objects are black holes and cannot explode. The proposed solution can also be found at *www.grt-li.de* or [2].
[1] Labbé, I., van Dokkum, P., Nelson, E. *et al.* A population of red candidate massive galaxies 600 Myr after the Big Bang. *Nature* 616, 266*269 (2023) and Olivia Dittrich Berliner Morgenpost 6.3.2023
[2] J. Brandes, J. Czerniawski, L. Neidhart: *Special and general relativity for physicists and philosophers* VRI: 2023, chapter 21, 22, page 279

**Abstract 2026**
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The considerations of the previous year are continued.
A good overview of the numerous observations that contradict the cosmological principle of GRT can be found in [1]. These include the Hubble Tension [2] as well as the remarkable observation that the expanding universe has angular momentum, as if it were a rotating stellar object. A fundamental theoretical objection to the idea of GRT that space expands is its contradiction with the law of conservation of energy. The energy of background radiation (CMB) decreased from 3000◦K to 2.7◦K over time due to space expansion. However, it is unclear where the lost energy remains. The LI of GRT does explain it, given that the source and receiver move relative to each other [3]. A physical theory that contradicts the law of conservation of energy leaves some questions unanswered.
[1] Pavan Kumar Aluri et al. ***Is the Observable Universe Consistent with the Cosmological Principle?*** arXiv:2207.05765v4 [astro-ph.CO] 27 Feb 2023
[2] J. Brandes, J. Czerniawski, L. Neidhart: *Special and General Theory of Relativity for physicists and philosophers* 2023, chapter 24.11.2, page 324.
[3] The LI of GRT states: The energy or frequency of CMB radiation does not change, but its measured value changes for two reasons. Due to Hubble's law, the transmitter and receiver move relative to each other (Doppler effect), and both are located at different gravitational potentials. The formulas for predicting the measurement result are the same. Despite identical predictions of the measurement results, the wavelength has changed for GRT due to the expansion of space. For LI of GRT, there is only movement in space and time [2], chapter 19.