

What is Spektr-RG (SRG)?

May 8, 2024 • vajiramandravi.com



About Spektr-RG(SRG):

- Spektr-Rentgen-Gamma (Spektr-RG, SRG) is a **German-Russian high-energy astrophysics space observatory to study the universe in the X-ray range** of electromagnetic radiation.
- It was launched on July 13, 2019, on a Proton-M rocket from the cosmo drome in Baikonur, Kazakhstan.
- It **moves along** a so-called **halo orbit around the outer Lagrange point (L2) of the Sun-Earth system** at a distance of 1.5 million km from the Earth with a **period of about 6 months**.
 - A Lagrange point is a position in space where the gravitational pull of two large masses precisely equals the centripetal force required for a small object to move with them.
- **Instruments:**
 - The **primary instrument** of the mission is **eROSITA**, built by the Max Planck Institute for Extraterrestrial Physics (MPE) in Germany.
- It is designed to **conduct a seven-year X-ray survey**, the first in the medium X-ray band less than 10 keV energies, and the first to **map an estimated 100,000 galaxy clusters**.
- This survey may **detect new clusters of galaxies** and **active galactic nuclei**.
 - The second instrument, **ART-XC**, is a **Russian high-energy X-ray telescope** capable of **detecting supermassive black holes**.

It is intended to **replace the Spektr-R**, known as the “**Russian Hubble**”. Spektr-R was launched in 2011 to observe black holes, neutron stars, and magnetic fields, aiding understanding of cosmic expansion.

Q1: What are Pulsars?

Pulsars are rotating neutron stars observed to have pulses of radiation at very regular intervals that typically range from milliseconds to seconds. Pulsars have very strong magnetic fields, which funnel jets of particles out along the two magnetic poles. These accelerated particles produce very powerful beams of light. Often, the magnetic field is not aligned with the spin axis, so those beams of particles and light are swept around as the star rotates. When the beam crosses our line of sight, we see a pulse; in other words, we see pulsars turn on and off as the beam sweeps over Earth.

Source: [New accreting millisecond X-ray pulsar discovered](#)

Source: <https://vajiramandravi.com/current-affairs/spektr-rg/>

© Vajiram & Ravi. For personal use only.