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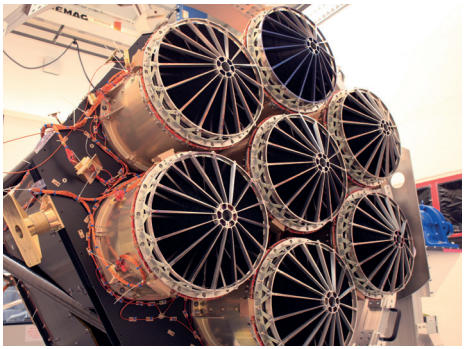
eROSITA

Hunting for Dark Energy

Brief description

It is a search for clues with 'cosmic inventory': Far from Earth, the eROSITA X-ray telescope will, from 2019 systematically scan the sky for X-ray sources and detect unknown neutron stars, quasars and galaxy clusters. The eROSITA all-sky survey will be about 25 times more sensitive than the pioneering ROSAT mission of the 1990s.



Aims

eROSITA will search for Dark Energy, which could play a major role in the expansion of the Universe since the Big Bang. The primary instrument on board the German-Russian Spectrum-Roentgen-Gamma mission, the X-ray telescope will focus on clusters of galaxies. This will make it possible to derive conclusions about the effect of the hitherto mysterious dark energy.

Parties involved

Max Planck Institute for Extraterrestrial Physics, University of Tübingen, University of Erlangen-Nuremberg, Leibniz Institute for Astrophysics Potsdam, University of Hamburg, DLR Space Administration

Applications

- Precise statements about the state and changes of the Universe

Outlook

- Better understanding of the origin of the Universe
- Insights into the role/effect of dark energy

Facts and figures

- **Launch:** scheduled for 2019
- **Orbit:** around the second Lagrange point of the Sun-Earth system, L2 (1.5 million km from Earth)
- **Telescope dimensions:** approx. 3 m long (open 4.5 m)
- **Optics:** 7 mirror modules, each with a diameter of 36 cm with 54 mirror shells, focal length: 1.6 m
- **Detector:** CCD camera, The centrepiece is a silicon-frame store pnCCD. The image area of approx. 3 x 3 cm is subdivided into 384 x 384 pixels with a size of 75 x 75 microns

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