

Prof. Dr. Joachim Trümper

MPI for Extraterrestrial Physics

Active Universe: X-ray and Lambda-ray Sky

During the last decades our visions of the Universe have changed dramatically. One major recognition is that violent processes play an important role in the cosmic evolution. Prime examples are the big bang giving birth to the universe, the giant supernova explosions which end the life of massive stars and lead to the formation of neutron star and black holes. But also the activity of rapidly rotating neutron stars (pulsars) which act as accelerators of very high energy particles or the enormous activities of supermassive black holes in the cores of galaxies are manifestations of the restless universe. X-ray and Lambda-ray observations which have become possible in the space era have contributed in a major way to the new visions of the universe. In X-rays we see predominately the “Hot Universe” – objects with temperatures of million to billion degrees. X-rays are also produced by ultraenergetic electrons and positrons accelerated in the extreme magnetosphere of pulsars or in the jets originating from black holes.



These classes of objects are very strong g-ray emitters as well. In the talk we will review some of the highlights of X-ray and Lambda-ray astronomy.