A MYSTERY TO BE SOLVED IN THE FUTURE!

THE BLACK HOLE

The IPhO 2016 Logo illustrates an active galactic nuclei. The most energetic objects known in our universe and yet their existence remains a mystery.

These powerful sources of energy consist of a super massive and extremely dense object which can exceed a billion times the mass of our Sun. The enormous gravitational attraction makes even light not escape from the innermost part - the super massive black hole.

When gas is spinning inwards into the black hole, there is an enormous amount of gravitational energy released. The gas accelerates to very high velocities and heats up and releases an enormous amount of energy in the form of light. This process can outshine an entire galaxy consisting of several billions of stars.

Only with Einstein's theory of General Relativity and his calculations, such objects became even thinkable. Albert Einstein obtained his PhD by the University of Zurich, the host university of the IPhO 2016.

The formation and evolution of the super massive black holes remains a mystery to date. It is very unclear how the surrounding galaxy acts on the central black hole and vis versa. Who knows what insights are waiting for us - to be discovered by the next generation of physicists?