

Pro ISSI talk

„Mirages in the Universe“

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Mirages do exist in the Universe, as a direct consequence of Einstein's theory of General Relativity: as light rays from a distant source pass in the vicinity of a massive and compact object, their trajectories are deflected and the image of the source is perturbed. This phenomenon, called gravitational lensing, was first observed in 1919 around our Sun during a total solar eclipse. The second gravitational lens was discovered only 60 years later, when astronomers realized in 1979 that the single image of a distant quasar was actually split into two well separated images. First considered as a mere theoretical curiosity, gravitational lensing is now used as a powerful astrophysical tool. We shall illustrate a few applications of this fascinating and ubiquitous phenomenon, allowing for example, to study dark matter and dark energy, and even to determine the age of the Universe!