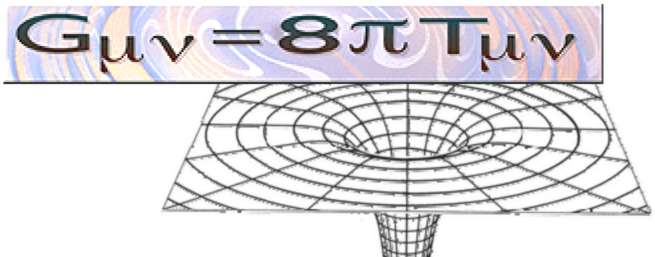
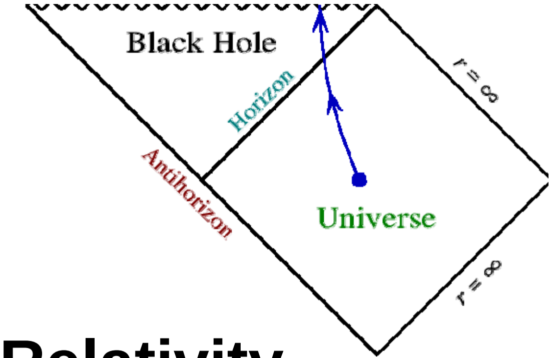




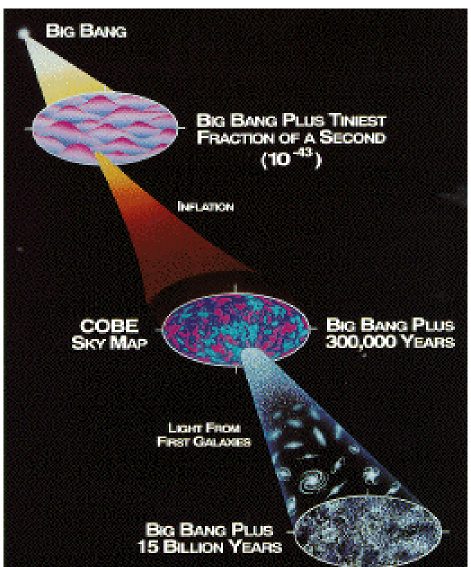
PHY 490 – Spring 2008
Introduction to General Relativity

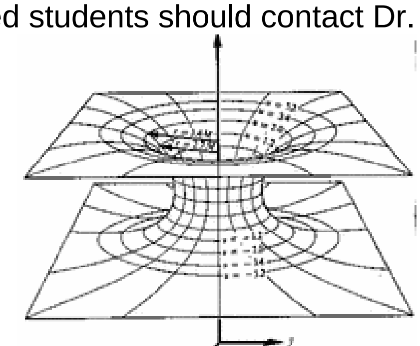
Instructor - Dr. R. Herman

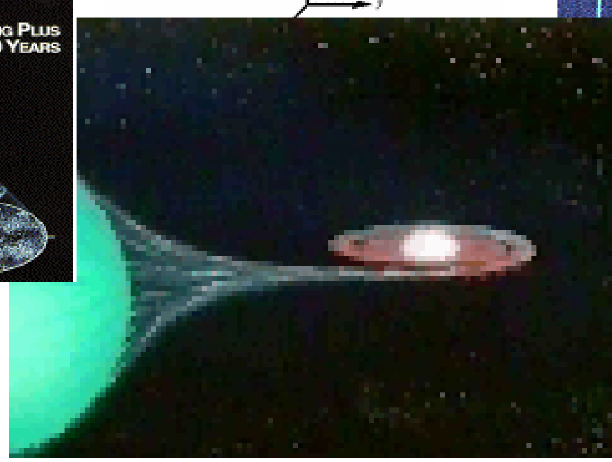
One of the greatest achievements in theoretical physics, only later to lead to exciting frontiers in experimental and computational physics, was Einstein's development of the General Theory of Relativity from 1907 to 1915. General Relativity is a theory of gravity and is necessary to understand recent advances at the forefront of physics research, including black hole physics, the early universe, string theory, high energy physics and astrophysics.

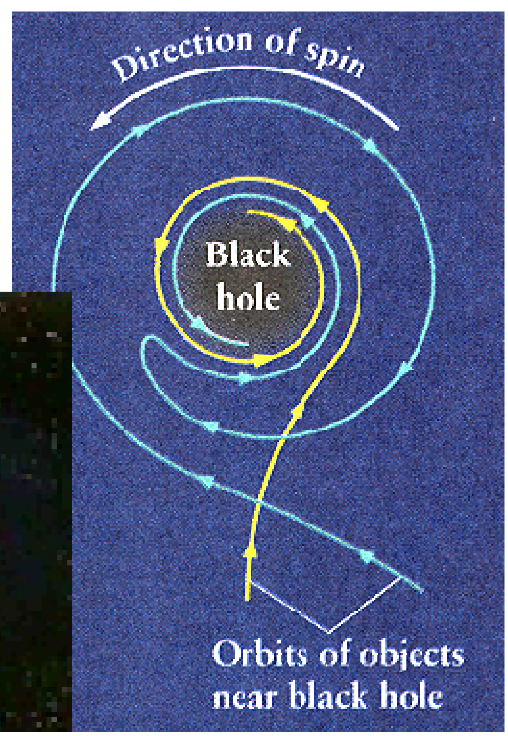
In this course we will study the geometry of spacetime for Newtonian gravity and curved spacetimes. We will be lead into the space-time of spherical stars and black holes, study the geodesics of particles and light rays. Along the way we will explore a variety of applications in cosmology from the big bang to gravitational waves, gravitational lensing, and cosmological models of the universe.

Prerequisites: Junior/Senior Standing. Preferably, students should have had a some classical dynamics, seen Lagrangians, and should have completed Calculus III. Additional mathematics and physics is a plus. Interested students should contact Dr. Herman for additional information.









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