

GR 17: Invited Talks 7

Time: Friday 9:30–10:50

Location: H 2013

Invited Talk

GR 17.1 Fri 9:30 H 2013

The Galactic Center Massive Black Hole — •REINHARD GENZEL
— MPI für extraterrestrische Physik, Garching

Evidence has been accumulating for several decades that many galaxies harbor central mass concentrations that may be in the form of black holes with masses between a few million to a few billion times the mass of the Sun. I will discuss measurements over the last two decades, employing adaptive optics imaging and spectroscopy on large ground-based telescopes that prove the existence of such a massive black hole in the Center of our Milky Way, beyond any reasonable doubt. These data also provide key insights into its properties and environment. Most recently, a tidally disrupting cloud of gas has been discovered on an almost radial orbit that reached its peri-distance of ~ 2000 Schwarzschild radii in 2014, promising to be a valuable tool for exploring the innermost accretion zone. Future interferometric studies

of the Galactic Center Black hole promise to be able to test gravity in its strong field limit.

Invited Talk

GR 17.2 Fri 10:10 H 2013

Gravitational lensing – a versatile tool for astrophysics —
•PETER SCHNEIDER — Argelander-Institut fuer Astronomie, Universitaet Bonn

Gravitational light deflection was a crucial early test of GR, and has since developed into a versatile tool for astrophysics and cosmology, with strong impact on topics like extra-solar planet detections, galaxies and clusters of galaxies, dark matter, the innermost structure of active galactic nuclei, dark matter, the evolution of the large-scale structure in the Universe and its expansion history. In this talk, several highlights of gravitational lensing research will be provided.