



The cloud G2 at the center of the Milky Way

Observations in near-infrared (NIR) with the Very Large Telescope (VLT) allowed the detection of a little cloud, named G2, orbiting very fast around the supermassive black hole (SMBH) at the very center of the Milky Way and getting as close as few light days to this astrophysical monster. The two upper panels on the left show observations in the L' band of the NIR imager NACO, showing G2's dust component, while the upper panel on the right shows the gaseous part of G2 in the Brackett- γ Hydrogen recombination line, as detected by the integral field spectrograph SINFONI. Some trailing material, named G2t, is also visible with SINFONI. G2 can be explained just by a diffuse cloud or as being the outflow from a young stellar object embedded in it (see lower left panels). If the outflow is exceptionally fast, it can also simultaneously reproduce G2t and its tail G2t (see lower right panel).