

COLORADO

CAFÉ SCIENTIFIQUE

TUESDAY 17 NOVEMBER 2009

at the Wynkoop Brewing Company

<http://www.wynkoop.com/>

Corner of 18th and Wynkoop in LoDo, Denver

About a block from Light Rail. Thirteen minutes by foot from Auraria.

Gravity's Fatal Attraction:

How Black Holes Rule the Universe

Mitch Begelman, Professor of Astrophysical and Planetary Sciences,
Fellow of JILA, University of Colorado, Boulder.

“Is there a better place to experience pure gravity than in the vicinity of a black hole? After all, a black hole is often described as the disembodied gravitational field that is left behind when matter is sucked out of this universe and goes...who knows where?” So begins Mitch Begelman’s highly admired 2001 novel, *Turn Right at Orion*. Tonight’s title comes from the new book, due this month, that Mitch wrote with Martin Rees, the British Astronomer Royal.

Black holes are common objects in the universe. Each galaxy contains large numbers—perhaps millions—of stellar-mass black holes, each the remnant of a massive star. In addition, nearly every galaxy contains a supermassive black hole at its center, with a mass ranging from millions to billions times the mass of our sun. Black holes are places where gravity is so strong that nothing that enters them—not even light—can escape. Within a finite region surrounding the center of a black hole, all light rays and physically realizable trajectories of particles are directed inward. Space and time are so distorted that there is literally no way out. Physicists study the interiors of black holes intensively (and theoretically) for clues to the fundamental structure of matter, the quantum nature of spacetime, and the possible existence of extra dimensions. For the public, black holes will retain their metaphorical implications of disappearance and mystery. Astrophysicists, on the other hand, have recently appreciated how commonplace black holes are.

EVERYONE IS WELCOME. The discussion starts at 6:30 in the Mercantile Room (no food service there). Come before 6 PM to leave yourself time to get something to eat, or stay and eat afterwards. We end around 8 PM.

There’s no charge. The Wynkoop is generously providing the facility; we buy our own drinks. It is first come, first seated, and **seating is limited** so that everyone can take part in the discussion.

The Colorado Café Scientifique is organized by an informal group of faculty from CU and institutions up and down the Front Range, as well as science fans from industry, government and elsewhere. We welcome your input, including ideas for speakers and topics. Bring them with you to the next Café, or e-mail them and any questions to John.Cohen@UCDenver.edu

Essential information on our Web site at <http://CafeSciColorado.org>