



CARLETON'S SWINGING ATTRACTION

Carleton University students have found a new way to take their minds off studies. They go to the physics building and watch a five-storey pendulum swing back and forth. Some say it's hypnotic. There's even a way to tell the time with the Foucault pendulum; every hour it moves slightly more than 10 degrees around the circle.

(Journal Photo by Dominion Wide)

Carleton Swinger Proves The Earth Rotates on Axis

By JEFF CARRUTHERS

The earth spins around its axis, right?

You're not sure, you reply.

Well, for proof positive, visit the Physics Building at Carleton University.

In the main lobby of the building, you will notice a curious piece of moving sculpture — simply a huge bronze ball swinging back and forth at the end of a 55-foot-long wire attached to the ceiling of the tower of the building. There's a nice illuminated base and glass cylinder enclosing the ball.

In addition to, or in spite of, its aesthetics, that five-storey high pendulum is a living experiment in science.

It is called a Foucault pendulum.

And when you watch it swing laboriously back and forth for a few minutes, you will notice that the arc of its swing is moving around ever so slowly.

A French scientist by the name of Jean Bernard Leon Foucault produced the same strange motion for a group of fellow scientists in 1851, offering the motion as proof that the earth does indeed spin around its own axis as well as rotate around the sun.

For that famous experiment he used a 62-pound cannon ball attached by a piano wire to the top of the Pantheon in Paris.

Scientists now know that if you set a similar pendulum in motion in the north-south direction at the equator, it will hold that north-south line like a magnet holds the magnetic north pole.

Put one at the north pole, and the plane of the pendulum swing will go through a full circle (360 degrees) in 24 hours.

Here in Ottawa, the Foucault pendulum moves through 10 degrees and 40 minutes of arc every hour — or 256 degrees in a day.

The explanation offered is simple. The pendulum is not rotating; the ground underneath (the Earth, that is) is moving. Thinking about the North Pole situation is simplest.

The Carleton pendulum features a 12-inch diameter bronze

ball suspended free from the building's roof by a 55-foot-long wire.

The wooden base features white plexiglass, illuminated from underneath, for a pleasing visual effect. For persons looking down at the pendulum at its base, the soft light seems almost hypnotic.

The milky glass will soon be replaced by a map of the western hemisphere, centred on Ottawa, which will also be illuminated.

The whole package was envisioned for the building back in 1962.

But it took the technical staff of the physics department, headed by Keith F. Hafner, to turn the dream into a working wonder of nature.

It took them two weeks to put together and one day, Monday, to install.

Students are going to be given the responsibility for adding any frills — like a special magnet drive to give the pendulum the extra push it needs each swing to keep it going with the same amplitude all day (friction would eventually slow it to a stop).

