



Figure 3. Large gap in our empirical knowledge of gravity. What we know about gravity is almost entirely derived from observing phenomena *over* the surfaces of large bodies like the Earth or Sun. Below the surfaces, however—within the most ponderous half of the gravitational Universe—we have not yet observed even the simplest free-falling motion that gravity is supposed to produce. Astronomical bodies are not needed to do this; the observation could be made in an orbiting satellite or an Earth-based laboratory (with a modified Cavendish balance). Why not let's replace the big question mark with real physical data?