

Telecommunications expert suggests Earth may have dark matter disc

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Credit: NASA

Ben Harris, a telecommunications and GPS satellite expert with the University of Texas has made a surprising announcement during his presentation at this year's gathering for the American Geophysical Union. He reported that using GPS data to calculate the mass of the Earth, gives a slightly bigger number than is accepted by the International Astronomical Union. The difference, he suggests, may be due to a disc of dark matter that exists over the equator.

Dark matter is of course the mysterious stuff that physicists have come

to believe exists all throughout the universe. We can't see it, but researchers have managed to sense its presence in a variety of ways (such as measuring its gravitational impact on stars, other planets, etc.). In so doing, most in the field have come to believe that it makes up approximately 80 percent of all matter. Unfortunately (mainly because it doesn't appear to absorb or emit light or [electromagnetic radiation](#)) none of the studies done so far have been able to prove that [dark matter](#) truly exists—thus, the search goes on for some new kind of method to prove that dark matter isn't just a theory, or alternatively, for some other explanation of what has been observed.

Among other studies, back in 2009, it was noted that space probes passing by Earth experienced unexplainable slight changes in velocity, which some have attributed to them encountering dark matter. It could not be proven of course, but then there weren't any other explanations for it either.

In this new effort, Harris collected data from several satellite groups (European Galileo, U.S., GPS, GLONASS and Russian), which he then used to measure the mass of the Earth—a process which he describes as calculating by "feeling" the pull on each satellite. In so doing, he reports that his calculations were between 0.005 and 0.008 percent greater than that described by the IAU. The difference, he said, could be explained by a very large disc of dark matter over the equator.

Harris's theory doesn't take into account changes in orbits of satellites that occur because of relativity, or the impact of gravity from the sun and moon, thus it's still very preliminary. If other studies confirm what he's found however, there exists the possibility that satellites could one day be used to not only prove the existence of [dark matter](#), but to measure it in a very accurate way.

More information: via [New Scientist](#)

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