

Weight of the World challenge repeated 230-year-old 'Schiehallion' measurement

June 30 2005

The world was weighed on 21st June 2005, in a new experiment inspired by the famed 'Schiehallion' measurement. The initiative, known as the Weigh the World challenge, was unveiled on 7th June 2005 at Glasgow Science Centre, where the results will be revealed to the public in July. Weigh the World is the brainchild of three young astronomers who run Glasgow-based scientific consultancy Counting Thoughts and their idea has the support of Professor John Brown, the Astronomer Royal for Scotland. The organisers hope to raise the public profile of science, in particular physics and astronomy, at a time when thought-provoking parallels can be drawn between the weight of the world and the G8 summit scheduled to take place at Gleneagles in July.

The mass of the Earth was first determined in 1774 by the then Astronomer Royal Nevil Maskelyne who used the mountain Schiehallion in Perthshire as a counterweight to the Earth in a series of astronomical observations. Having estimated the mass of the mountain, he was then able to determine the mass of the Earth from his observations.

The method being employed for the Weigh the World Challenge is inspired by this original technique; the first time it has been attempted again in over 230 years.

Advancements in technology and scientific knowledge mean that the measurements can be gathered over the course of one day on Schiehallion – as opposed to the 17 weeks spent by Maskelyne. Specialist apparatus has been designed and manufactured by DJB

Microtech for the experiment. Counting Thoughts and Glasgow Science Centre also made a web-based worksheet available, showing people how they can join in by weighing the world at school or at home on 21st June 05.

The results of the experiment were revealed at a public lecture under the glittering stars of Glasgow Science Centre's ScottishPower planetarium on 28th July 05. Using the planetarium's star ball technology, the audience sat under a starry sky set to the year 1774, observing the heavens just as Maskelyne himself would have done 230 years ago on Schiehallion.

Astronomer Royal for Scotland Professor John Brown, comments: "To the best of my knowledge, this is the first time that anyone has attempted to follow in the footsteps of Maskelyne and weigh the world. I think it is a great way to raise public awareness of the contribution science, in particular astronomy, has to make to society."

Dr Peter Clive of Counting Thoughts explains: "The idea of weighing the world is amazing and to think that Maskelyne did just that over 230 years ago is inspiring. The Weigh the World initiative pays tribute to his work at a very appropriate time and we hope it encourages the general public, especially children, to take an interest in science."

Background information is available at www.countingthoughts.com/wtw.html

A worksheet for schools describing a class room based pendulum experiment for determining the mass of the Earth is also available. The worksheet can be freely downloaded and freely distributed. Details are at www.countingthoughts.com/wtw.html , where schools can post their results and compare them with the results obtained by other schools.

Citation: Weight of the World challenge repeated 230-year-old 'Schiehallion' measurement (2005, June 30) retrieved 24 April 2024 from <https://phys.org/news/2005-06-weight-world-year-old-schiehallion.html>

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