

Ask Dr. Map!

"Strike flat the thick rotundity o' the world..." (Shakespeare, King Lear)

Dear Dr. Map,

Q: Who was "Parallax," and what did he have to do with the Flat Earth Society?

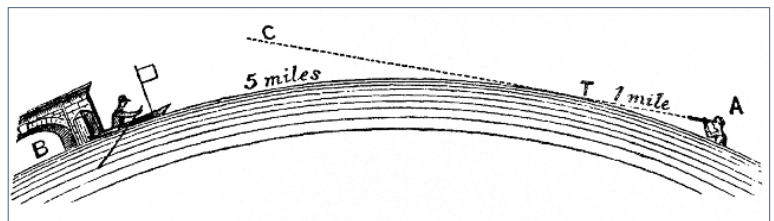
A: Parallax was the *nom-de-plume* of Samuel Birley Rowbotham (1816–1884), an English inventor and author of *Zetetic Astronomy: Earth Not a Globe*. This 16-page pamphlet published in 1849, which he later expanded into a book (1881), established what Rowbotham called Zetetic Astronomy. He believed that the Earth is a flat disk centered at the North Pole, bounded along its southern edge by a wall of ice, with the sun, moon, planets, and stars only a few hundred miles above the surface. By assumption, Parallax's Earth was flat, and he went to extraordinary lengths to try and prove it (or at least convince people of his beliefs).

Rowbotham and his followers held what would today be called rowdy "town meetings" with leading scientists of the day. After Rowbotham's death, his followers established the Universal Zetetic Society, which published the "*The Earth Not a Globe Review*" until well into the 20th century. The book "*Earth Not a Globe*" is loaded with the results of "experiments," all described in a dead-pan seriousness, and illustrated with rather humorous diagrams. The making of observations with telescopes along straight canals over long distances is quite a pervasive theme, as also were sightings at sea and railroads.

In the summer of 1838, while president of the Flat Earth Society, Rowbotham waded into a canal known as the Bedford Level in Cambridgeshire, England, and pointed a telescope just eight inches above the water at a boat with a five-foot high mast, whose owner had agreed to row away from him. He claimed that the boat remained in his view for six miles, all the way to Welney Bridge in Bedfordshire.

If the Earth (and water) surface were curved with the accepted circumference, at this distance the top of the mast should have been about eleven feet below his line of sight. Using the standard formula, with the eye at 8 inches, the horizon should be at about 1.1 miles. As we have seen in a prior column, however, the distance depends on the index of refraction chosen for the atmosphere.

The effect of the density of air at the surface is to allow one to see beyond the geometric horizon. But 4.9 miles beyond is a bit of a stretch. If we allow Rowbotham to use a non-level telescope, and include the refraction, then the distance looks more possible.

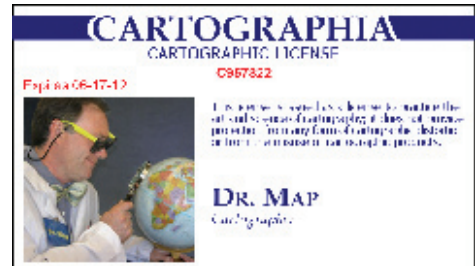


Rowbotham refined his experiments (15 are listed in his book) over the years in relative obscurity. In 1870, follower John Hampden offered a wager that he could demonstrate, using Rowbotham's experiment, that the Earth was flat. Noted naturalist and licensed surveyor Alfred Russel Wallace accepted the bet, and the publicity machine took over. Wallace is best known for independently proposing his theory of natural selection that prompted Charles Darwin to publish his own, and the Darwin controversy, peculiarly still at issue even today, is contemporary with Rowbotham's experiments.

Using his surveyor's training, Wallace avoided the errors of the preceding experiments and won his bet. Hampden published a pamphlet charging that Wallace had cheated and sued for the return of his wager, but in the end Hampden was imprisoned for libel.

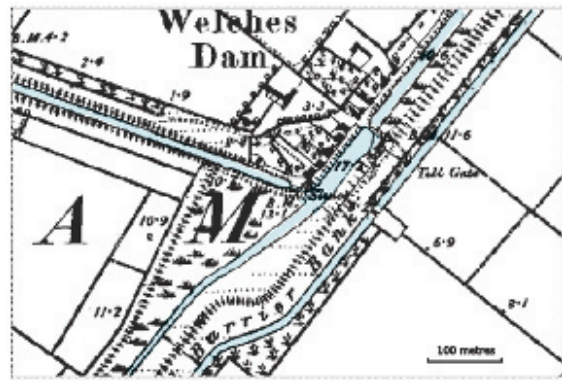
In 1901 Henry Yule Oldham, a geography professor at King's College, Cambridge, conducted the definitive experiment and proved Wallace indeed was correct. Even so, the Flat Earthers would not quit. In 1903 the extraordinary Lady Anne Blount paid a photographer to use a telephoto lens camera to take a picture from Welney of a white sheet at "Welche's Dam," Rowbotham's start point.

Lady Blount published the pictures showing the sheet, and these have not yet been explained. The most likely cause is surface light refraction, which can cause the "superior image mirage." A superior mirage occurs when the air below the line of sight is colder than that above, a temperature inversion, not uncommon directly over cold water. The light rays from the



target are bent down, so the image appears above the true object, hence it is called a superior mirage.

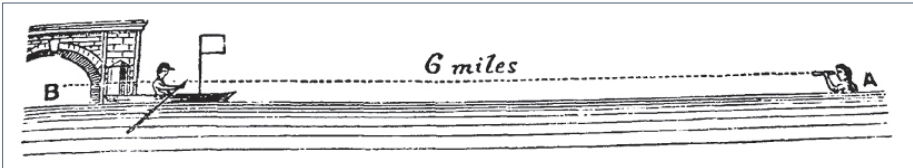
Rowbotham's book was loaded with rather radical and zany claims. Lest we create a belief based on just one fact, Dr. Map quotes from one of Rowbotham's contemporary critics. Reverend M. R. Bresher of York, England, studied the book carefully and wrote a detailed rebuttal in 1868. One "fact" concerns the visibility of lighthouses, as reported in Findlay's 1862 inventory. The reverend states:



the Earth is flat. However, there are also members who do not.
Q: "Why do you guys believe the Earth is flat?"

A: Well, it looks that way up close. In our local frame of reference, it appears to take a flat shape, ignoring obvious hills and valleys. Also, Samuel Rowbotham et al. performed a variety of experiments over a period of several years that show it must

be flat. They are all explained in his book, which is linked at the top of this article. Still a believer?



"I have carefully looked over the book alluded to, and find that out of above 2000 cases, the few selected by "Parallax" are nearly the whole that do not verify the truth of the doctrine in question. ... The proper conclusion from the above facts is, that either there is a misprint in the book at these places, or that the localities where these lighthouses are situated possess some peculiarities which, if known, would account for these deviations. For it is a monstrous assertion which "Parallax" makes ... that one single instance, like the one he mentions, entirely destroys the doctrine of the Earth's rotundity."

Was the issue then resolved in 1868? I finish with a quote from the FAQ on the website at www.physics.smu.edu/pseudo/Flat-Earth/:

Q: "Is this site for real?"

A: This site is real. There are members who seriously believe

References

- Bresher, M. R. 1868. The Newtonian system of astronomy; with a reply to the various objects made against it by "Parallax." London, U.K.: Whittaker & Co.
- Findlay, Alexander G. 1862. A description and list of the lighthouses of the world. London: Richard H. Lawrie. Cited in Rowbotham, 1865.
- Rowbotham, Samuel B. ("Parallax"). 1865. Zetetic astronomy: Earth not a globe. London: Simpkin, Marshall, and Co.
- Schadewald, R. J. (1992) Looking for lighthouses. *Creation/Evolution*, no. 31.

Dr. Map has a PhD and cartographic license. Send questions to Dr. Map at askdrmap@cox.net or visit him on the web at <http://www.drmap.info>.

A thought for the day....

Surveyor's Traverse

The measure of a man is not by link or chain, he is surveyed by his life and measured by the use of it.

He is measured by the people he metes and is bound by the promises he makes.

His beginning is tied to past generations and his course determines his future.

He is the land, traversing his

way one foot at a time until he completes the map of life.

This map influences future generations and all the details of the legend is passed on.

The journey starts at the point of beginning and ends when he finds the meaning of it all.

In the middle is happiness...

—by Melissa Peacock