

# Was the real discovery of the expanding universe lost in translation?

November 9 2011

---



This illustration shows American astronomer Edwin Hubble (1889-1953) on the right and Belgian priest and cosmologist Georges Lemaître (1894-1966) on the left. Based on new evidence, both scientists should share credit for independently uncovering evidence for the expanding universe in the late 1920s. Lemaître is also credited with proposing a theory for the origin of the universe that would later be called the "big bang." The telescope on the left is the 100-inch Hooker Telescope on Mt. Wilson in California. The Hubble Space Telescope is on the right. Credit: NASA, ESA, and A. Feild (STScI)

(PhysOrg.com) -- The greatest astronomical discovery of the 20th century may have been credited to the wrong person. But it turns out to have been nobody's fault except for that of the actual original discoverer himself.

Writing in the November 10th issue of the journal *Nature*, astrophysicist Mario Livio of the Space Telescope Science Institute has put to bed a growing conspiracy theory about who was fairly credited for discovering

the expanding universe.

For nearly a century, American astronomer Edwin P. Hubble has held the fame for this landmark discovery, which would recast all of 20th century astronomy. Hubble reported that the universe is uniformly expanding in all directions. It solved Einstein's dilemma of explaining why the universe didn't already collapse under its own gravity.

Ironically, Hubble never got a Nobel Prize for this discovery, though astronomers from two teams who independently uncovered evidence for an accelerating universe won the 2011 Noble Prize in Physics. But Hubble did get the most celebrated telescope of modern history named after him.

Hubble published his landmark paper in which he determined the rate of expansion of the universe in 1929. This was based on the apparent recessional velocities (deduced from redshifts) of galaxies, as previously measured by astronomer Vesto Slipher, coupled to distances to the same galaxies, as determined by Hubble.

Hubble's analysis showed that the farther the galaxy was, the faster it appeared to be receding. The rate of cosmic expansion is now known as the Hubble Constant.

But two years earlier, a Belgian priest and cosmologist, Georges Lemaître, published very similar conclusions, and he calculated a rate of expansion similar to what Hubble would publish two years later.

Lemaître based his analysis on Slipher's same redshift data, which he combined with estimates of galaxy distances inferred from Hubble's 1926 published observations.

But Lemaître's discovery went unnoticed because it was published in

French, in a rather obscure Belgian science journal called the *Annales de la Société Scientifique de Bruxelles* (Annals of the Brussels Scientific Society).

The story would have ended there, except that Lemaître's work was later translated and published in the *Monthly Notices of the Royal Astronomical Society*. When published in 1931, some of Lemaître's own calculations from 1927, of what would be later called the Hubble Constant, were omitted!

The fact that paragraphs were missing from the translated paper has been known (although not widely) since 1984. There has been persistent speculation among astronomers over "who dunnit?" Did the *Monthly Notices* editors cut the paragraphs out? Did Edwin Hubble himself have an influencing hand and censor the paper to eliminate any doubt that he was the original discoverer of the expanding universe?

After going through hundreds of pieces of correspondence of the Royal Astronomical Society, as well as minutes of the RAS meetings, and material from the Lemaître Archive, Livio has discovered that Lemaître omitted the passages himself when he translated the paper into English!

In one of two "smoking-gun letters" uncovered by Livio, Lemaître wrote to the editors: "I did not find advisable to reprint the provisional discussion of radial velocities which is clearly of no actual interest, and also the geometrical note, which could be replaced by a small bibliography of ancient and new papers on the subject."

The remaining question is why Lemaître essentially erased evidence for credit due to him, for first discovering (at least tentatively) the expanding universe.

Livio concludes, "Lemaître's letter also provides an interesting insight

into the scientific psychology of some of the scientists of the 1920s. Lemaître was not at all obsessed with establishing priority for his original discovery. Given that Hubble's results had already been published in 1929, he saw no point in repeating his more tentative earlier findings again in 1931."

Perhaps in some alternative history parallel universe, people are marveling at the deep-space pictures from the Lemaître Space Telescope.

Provided by ESA/Hubble Information Centre

Citation: Was the real discovery of the expanding universe lost in translation? (2011, November 9) retrieved 23 April 2024 from

<https://phys.org/news/2011-11-astronomy-hubble-whodunnit.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.