

TOP STORIES



ASTRONOMY

This tiny galaxy might rewrite the early history of the universe

This dwarf galaxy is located just 59 million light-years away, making it one of the closest galaxies to our own. But because most of its stars are still just starting out, it's like a portal to the early universe.

The galaxy, whose rather nice full name I Zwicky 18 is generally shortened to the fiercely unpronounceable I Zw 18, appears to be much younger than most of its galactic neighbors, including our own Milky Way. While the Hubble Telescope has picked up the very faint traces of some ten billion year old stars in the galaxy, almost all the stars we can see are just a billion years old.

While it might not be a perfect simulacrum of young galaxies from the early universe, it's definitely the best approximation we're going to get at such close range, particularly because it's very poor in heavy elements, just like we would expect early galaxies to be. That all makes I Zw 18 a very busy subject of research, and the latest findings from the Center for Astrophysics of the University of Porto (CAUP) could have big implications for how we look at ancient, faraway galaxies.

Astronomers from the CAUP discovered a huge gas halo all around I Zw 18. This halo is about 16 times larger than the part of the star-filled portion of the galaxy, and in fact it is completely devoid of any stars at all. It's apparently created by the intense star formation going on in the rest of the galaxy, but here's the crucial bit - the energy released by the star formation makes the halo *exactly* the same brightness as the star-filled part of the galaxy.

That may seem like a minor point, but if this phenomenon holds true of other young galaxies, then we might not be able to tell whether the light we see is coming from stars or gas. Until now, astronomers assumed that the luminosity of a galaxy was a good proxy for estimating the number of stars in a galaxy that's too far away to see clearly.

But if up to 50% of the apparent starlight is *actually* coming from surrounding nebular gas, then that would mean there are far fewer stars in these galaxies than we thought, and might mean we have to reclassify these apparently fully formed galaxies as one that are actually still only developing. This could help us see the early galaxy in a whole new light — assuming, of course, that we can actually figure out a way to tell the two different types of light apart.

Via *Astronomy & Astrophysics*.

Contact Alasdair Wilkins:

[EMAIL THE AUTHOR](#)

[COMMENT](#)

RELATED STORIES

BY ALASDAIR WILKINS

FEB 27, 2012 1:27 PM

Share

Like 30

7,631 6

FOLLOW IO9.COM

Like

André Filipe, Sandra Reis and 105,781 others like this.