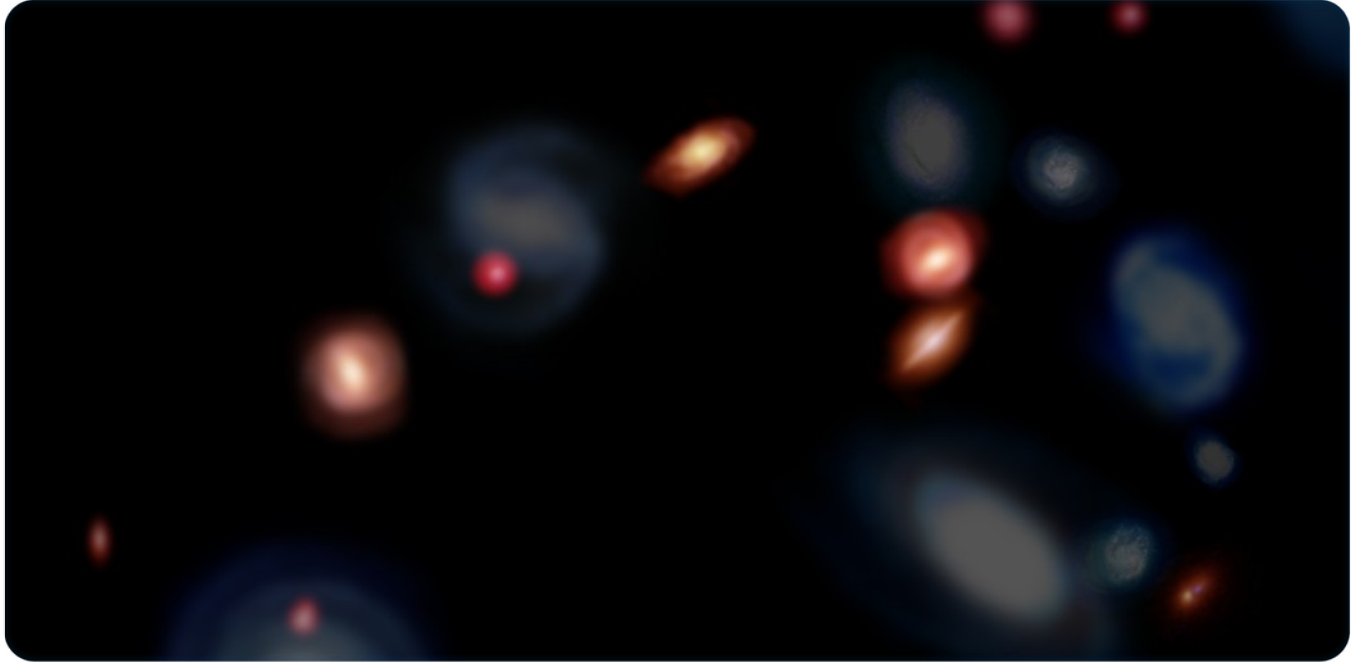




Where are all the Normal Galaxies?



If you look at the sky on a clear night, you'll see a lot of blue supergiant stars. This is not because they are a very common type of star but simply because they are so vibrant and easy to spot. Similarly, many distant galaxies we have observed and catalogued are extremely bright and easy to spot. This gives the impression that bright, active galaxies are more common in the Universe than 'normal' galaxies like our home, the Milky Way. But this may not be the case. Using the world's most sensitive radio telescope, ALMA, astronomers have finally started to uncover these illusive 'normal' galaxies (coloured red in this artist's impression).

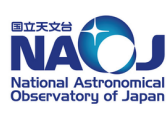
It is possible— and maybe even probable — that there are many galaxies throughout the cosmos that are hiding behind thick dust clouds, which usually block them from our view. However, radio waves have the special ability to pass through dense gas and travel to our telescopes, even when visible light is blocked. This makes radio telescopes the perfect instruments for rooting out these sneaky hidden galaxies.

In a new study, ALMA has found 15 new, extremely dark galaxies. These galaxies are 10 times fainter than the faintest galaxy previously scouted out in the cosmos but much closer to being the 'normal' galaxies we have not been able to spot up until now. This is an important step forward, because to understand the overall picture of galaxies in the Universe, we need to study 'normal' galaxies in different places across the cosmos, too.

COOL FACT



ALMA is also the perfect telescope for peering into the distant universe to discover new galaxies. The further away a galaxy is, the more of its light we can see in radio waves. This is because the Universe is expanding, and as the distant light fights against this expansion to reach us, it is pushed from visible light waves to radio waves.



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