SPACE awareness

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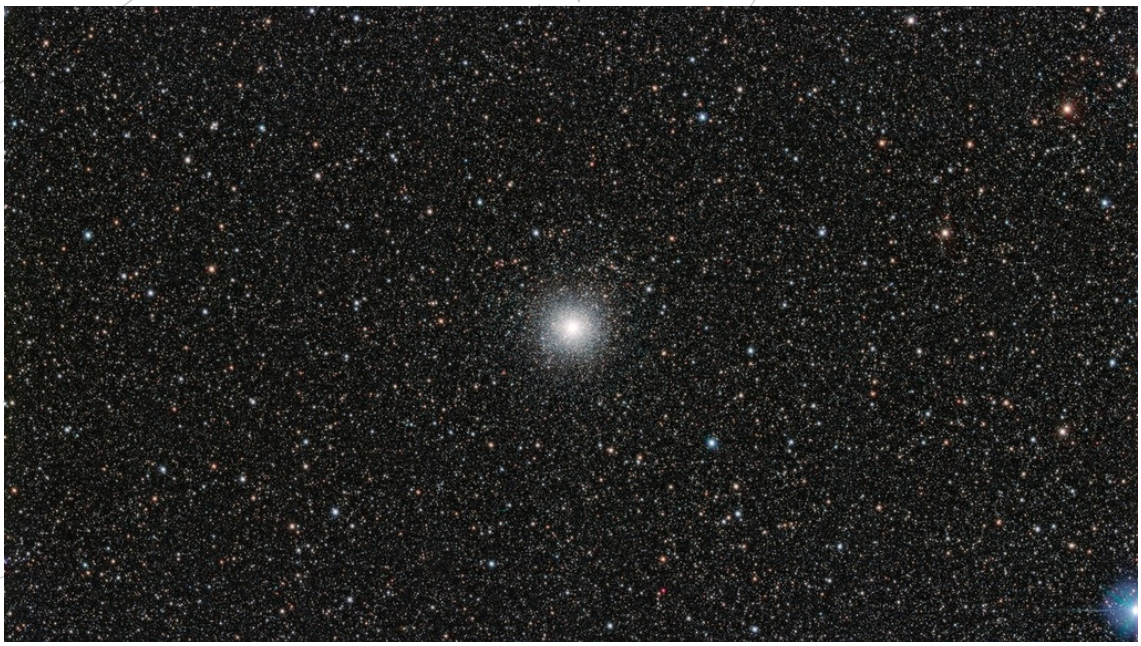

The Universe's Lost Lithium

11 septembre 2014

You may have heard the phrase 'you are made of stardust' — and it's true. Many of the particles making up your body and the world around you, were forged in the hearts of stars billions of years ago. But there are some materials that have a much older origin, at the very start of the Universe.

Just a few minutes after the Big Bang, astronomers think that certain elements (materials) started forming. These include hydrogen and helium, the most common elements in the Universe along with tiny amounts of a chemical called lithium.

Astronomers can calculate with quite a bit of confidence exactly how much lithium there should have been in the early Universe. From this, they can work out how much lithium we should see in old stars. But these two numbers don't match — there is about three times less lithium in stars than expected! The reason for this remains a mystery to this day.

Up to now we've only been able to measure the amount of lithium in nearby stars, in the Milky Way. But a team of astronomers has now managed to study the levels of lithium in a group of stars far beyond our Galaxy.

This crowded photograph shows a star cluster called Messier 54. For more than two hundred years after its discovery, Messier 54 was thought to be similar to the other Milky Way globular clusters. But in 1994 it was discovered that it actually lies in an entirely separate galaxy, more than three times as far from Earth as the centre of our Galaxy!

The new study has shown that the levels of lithium in the star cluster are similar to those within the Milky Way. This might not sound like a scientific break-though, but it does tell us that

whatever caused the low-levels of lithium probably happened all over the Universe, not just in our Galaxy.

COOL FACT!

You might not have heard of Lithium, but it can be found in many common items that you use every day including computers, cars and phone batteries.