

Early Life Evidence in Ruby

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Abstract:

Today's article is about evidence of early life trapped inside a ruby that formed in earth crust 2.5 billion years ago, discovered by geologists of the University of Waterloo in Canada.



The ruby found to contain carbon-12 graphite. (University of Waterloo)

What are Ruby?

Rubies are generally a crystallised form of aluminium oxide, which gets crystallised under intense heat and pressure inside earth, too deep, near the tectonic plates. Their collision between plates creates that immense temperature and pressure condition required to form crystalline rocks like ruby.



Ruby - Wikipedia

What did they find?

Now, impurities in such sedimentary rocks may seem as a disadvantage, as they can't be used as a jewellery, but serve excellent scientific purpose. It was found that a mineral, that generally forms deep inside the earth's crust and by no way could be formed in the surface level, was found preserved inside a diamond. In another case, surface minerals were found in a diamond that formed deep inside, helping the researchers to understand about the tectonic subduction to a greater extent. This way, the impurities talk about the formation process, timescale, the condition of earth surface and so on a lot.

Based on the formation process and other external factors, like all minerals, ruby also does have impurities. In this

particular case, researchers found graphite inside ruby, that sight is not that common. Now, graphite can form abiotically (from different chemical process) or biotically. But there is a way to determine its origin to a certain accuracy. For that, scientists look into the carbon isotope in graphite. For the abiotic origin, carbon 14 isotope is found, but if the isotope is carbon 12, which is the most abundant isotope on earth, can come biotically. Scientists think that the graphites in this case us biomarker as it has a lot of carbon 12 content, and can be from dead cyanobacteria.

Reference:-

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Image reference:-

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