Large Impacts May Cause Volcanic Eruptions

This is scientific American 60 second science, I'm Julia Rosen

The other rocky planets in solar system show a common feature, within giant Creaters caused by impacts, there's evidence of vocanic activity.

which make scientists wonder, can big impacts actually caused vocanic eruption?

And has that scenario ever happen here?

To find out, scientists went to one of the few massive tectonics on Earth that not erased by plate tectonics, the S crater in Canada.

S is 1.85 billion years old impact structure.

TU, a geochemist in the University of Queensland in Australia.

S was generated when a **bolide\trans火流星** of 10 to 15 km diameter hit Earth, and what happened was it obviously generated a large basin and also melted the crust out of the earth at that time

And generate the massive melt pool, 2.5 km in depth.

but Ob and her colleagues find that impact did more than that, it also seems to have triggered eruptions that magma that came from deep in mental.

The evidens lies in the fact the chemistry of lava, that erupted at S changed over time.

At first it match the serface rocks suggesting it was just from local melting.

But as the eruptions continue, the lava appear to come from deep in the mental, suggesting the impact **stirs\trans搅动** things up inside the earth.

No one knows yet exactly how the impact could start to prolong episode of volcanism.

One possible explanation is that after the object smashed into the surface the crust would have rebounded upward, temporarily decompressing the mostly solid **mantle\trans覆盖层** and causing it to melt and produce magma.

The results are in the journal of Geophysical Research: Planets.

It is hard to know if the same thing happend on other planets Ob says.

In many spots in the solar system, it looks like **volcanism\trans火山作用** have been much longer after the impact than what he saw at S

But without material to examine directly we cannot be sure

Nevertheless, these results do help to explain a mysterious chapter in Earth's own history.

Most major impacts on our planet happened about 4 billion years ago, when the solar system was still settling down.

But there's no crust around from that time, suggesting the entire planet got a makeover soon after.

we suggesting that the impacts are able to not only generate the crater, but also generate melting deeper say in the mantle, and you know bring to the surface material from depth.

so actually recycle and resurface?

it seems the **pummeling\trans连续猛击** that Earth endure in the beginning, may have triggered vocanic activity, that help the wipe away the evidence of those early impacts,

In other words, our planet took a beating that may acclerated its own recovery.

Thanks for Listenning, for scientific American 60 seconds science, I'm JR.