

Radiohalos and the Flood

Evidence for Accelerated Decay

Radiohalos formed rapidly under catastrophic conditions like the Flood offer strong evidence for accelerated decay.

Technical Definitions:

- **Radiohalos:** a zone of discoloration surrounding zircons caused by radioactive decay in certain rocks, especially granites.
- **Zircon:** a crystal containing uranium and thorium. Zircons are radioactive and important minerals for radioisotope dating.

In 1907 the Irish geologist John Joly first noticed a connection between radiation and "burn marks" in crystals. These burn marks are radioactive halos and are called **radiohalos**. When rocks are put under tremendous pressure and heat, they melt, and then as they cool, they solidify. As this cooling process takes place, radioactive uranium and thorium atoms cluster within the mineral **zircon**. (The **zircon** crystals were introduced in the last section). Over time, the radioactive atoms within the **zircon** will experience decay, sending alpha particles outward randomly in all directions. When **zircon** crystals are large, those of 50 or more microns, the alpha particles are trapped within it and become helium atoms. (This was discussed in the previous section). Other **zircon** crystals are much smaller, less than a single micron in diameter. Alpha particles in these crystals are ejected out of the **zircon** and pass into the surrounding rock. The ejected alpha particles are like tiny bullets that damage the structure of the surrounding rock, discoloring it. These bullets travel different distances into the surrounding rock. The result is a starburst pattern of alpha particles moving outward from the radiocenter, often with multiple rings occurring.¹⁴¹

A large number of alpha particles are needed to form a visible **radiohalo**. It has been determined that to form a full dark **radiohalo** takes about 500 million to 1 billion alpha particles. This amounts to about 100 million years of decay at today's decay rates. But these **radiohalos** were formed under extreme temperatures of about 150 degrees Centigrade (or 302 degrees Fahrenheit). In addition, if the rock is reheated at a later time, the **radiohalos** will fade and disappear as the crystal atoms realign themselves and repair the crystal defects. Granites around the world contain dark **radiohalos**.¹⁴²

Radiohalos are made up of either uranium or polonium, but there is a mystery surrounding these polonium radiohalos. The unstable polonium radiohalos have only short existences or decay rates. For example, polonium-218 has a 3-minute existence, polonium-210 has a 138-day existence and polonium-214 has a 164-microsecond existence.

Since polonium is such a rare element, where did it come from to form polonium radiohalos? The only nearby source is the uranium as it decays into polonium in the zircons, which is also generating the uranium radiohalos in the same rock. So the uranium and polonium **radiohalos** had to form *at the same time*. But the uranium decay has to deliver enough polonium to generate 500 million to 1 billion alpha particles to form each dark **radiohalo** *before the polonium decays!* Coexisting uranium and polonium radiohalos in many types of granite around the world are observable physical evidence that abundant nuclear decay has occurred at an accelerated rate. The very fact that we can find **radiohalos** means that they had to form very rapidly under extreme pressure. *Their formation had to occur rapidly under catastrophic conditions like the creation or the Flood.* Therefore, the existence of **radiohalos** is strong evidence for **accelerated decay**, and a young earth.