Current scientific dating methods are sufficient to establish the age of the earth as over four billion years.

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This is Essay 4B (Rebuttal) in the NMSR/CSFNM Debate Series.

Arguing against CSFNM's essay, on behalf of NMSR : John Geohegan

Roger Lenard has given us five "glaring inconsistencies" between radiometric age dating and other fundamental evidence. We need merely to see if indeed he has provided us with truly inconsistent evidence.

1. "Grand Canyon Evidence Supports Young Earth Hypothesis." Lenard refers to age dating of Grand Canyon lava flows on the Uinkaret Plateau performed by Steven Austin, a creationist. Austin's technique, however, revealed not the age of the lava flows, but the age of the much older mantle from which the lava was derived. A lucid description of the whole fiasco, including accusations of dishonesty, can be found in Stassen[1].

2. "Radiogenic Helium Diffusion Rates in Biotite Inconsistent with Old Earth Model." Lenard has here presented us with no evidence at all. He claims that measurements performed by "a prestigious university" yield helium diffusion rates in biotite "tens of millions times greater than an evolutionist model would require," yet when asked for references he told us that the data are unpublished, nor did he say where the measurements were performed. Lenard claims that helium diffusion from bare zircons is too rapid to permit observed helium retention, but even this claim has no support. Creationists refer to a paper by Robert Gentry for support, but Gentry's paper actually says that excellent helium retention by zircons at temperatures expected for nuclear waste storage is good evidence for safe waste containment[2].

3. "Polonium Orphan Radiohalos." Lenard tells us that some radiation-induced color halos in mica can be produced only by polonium, but an alternate explanation relying on ultraslow charge diffusion instead of polonium was published in 1989[3].

4. "Insufficient Seafloor Mud." Lenard argues that there is a constant rate of accumulation of seafloor mud on ocean floors, and that in three billion years the mud would reach a thickness of some kilometers. His argument doesn't recognize that deposition rates aren't constant, and that Earth's existing ocean basins are "among its youngest features," ranging from recent at the crests of midoceanic ridges to as old as Jurassic, some 150 million years in age; certainly not billions of years[4,5,6]. The Earth is dynamic, with old sea basins being uplifted and new basins being formed over hundreds of millions of years. The "missing mud" that Lenard says evolution demands actually *can* be found in numerous places, such as the Mentawai Islands near Sumatra[7].

5. "Rapid Decay of the Earth's Magnetic Field." This argument tells us that the total energy in the Earth's magnetic field is decaying so fast that the Earth couldn't be more than about 10,000 years old.

However, the total energy in Earth's magnetic field is not measurable from the surface, nor does it appear to be decaying at a constant rate[8].

The strategem used by Lenard and CSFNM has been to repeat tired creationist claims, simply ignoring the scientific refutations which have been on record for years. This method sometimes works for oral debates, but this written interchange shows that the standard creationist claims are hollow, and have been adequately answered.

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[7] Strahler, A. N., 1987, 1999, Science and Earth History, the Evolution/Creation Controversy, Amherst, NY, Prometheus Books, page 182.

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