



“Creationist Physicist” Russell D Humphreys and his Questionable “Evidence for a Young World”

By David E. Thomas
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Self-styled "creation physicist" D. Russell Humphreys, an adjunct faculty member of the Institute for Creation Research, often lectures on "Evidence for a Young World" at creationist seminars and fundamentalist churches around America and the world. He claims to provide evidence that the Earth is not billions of years old, but just a few thousand years old, as required by some Biblical literalists. Humphreys says that if the universe and Earth are as old as scientists think, then spiral galaxies would be wound up into balls, there would be no comets, the sea floors would be choked with sediments, the ocean would be much saltier, and there would be billions of tombs of dead cavemen.

In his lectures and brochures, Humphreys tells his audience that he will show how various processes provide maximum ages for the Earth. Some of these `maximum ages' can be as long as 100 million years, but they are invariably less than the scientifically-determined age. Humphreys claims that the true age of the Earth is set by the smallest such maximum age, which conveniently turns out to be just a few thousand years. That is, he looks at several very dubious age estimates, and declares the youngest such "estimate" to be correct. It's like looking at three estimates of the "maximum" distance from Albuquerque to Los Angeles: a thousand miles, 100 miles, and 10 feet. By Humphreys' logic, the smallest "maximum" distance (10 feet) is the best, most accurate value, because it "fits comfortably within the maximum possible" values!

When Humphreys talks at churches or creationism seminars, he is introduced as a physicist at Sandia National Laboratories, a respected federal science institution. But Humphreys' conclusions on the age of the Earth are not supported by Sandia. His work in an engineering group responsible for designing bomb fuses is completely unrelated to his creationist activities. And Humphreys doesn't present his young-earth arguments to Sandia colleagues, even though many Sandia programs involve radiometric dating and the age of the Earth. In fact, when a Sandia colleague recently requested his data on problems with radiocarbon dating, Humphreys refused to supply it because it was "non-work related." Humphreys' employment at Sandia certainly does not mean that this prestigious institution endorses his radical views on the age of the Earth.

Here are brief discussions of Humphreys' five favorite young-earth arguments, and of his attack on radiocarbon dating.

- (1) **Galaxies wind themselves up too fast** (*maximum age: a few hundred million years*). Humphreys shows off a computer simulation in which a very simple "galaxy," a line of stars about a center point, develops a spiral shape. This spiral then winds up and disappears in just a few hundred million years. In this way, Humphreys claims to "prove" that galaxies can not be billions of years old. In his super-simple simulation, however, the stars are attracted to a "galactic center" - but not to each other! As a result, more distant stars move more slowly about the "galactic center," just as planets do around our Sun. But Humphreys fails to mention that the situation in real galaxies is far more complex than this: for one, real stars attract each other with large gravitational fields. Only the outermost stars of real galaxies have the "Keplerian" orbits he assumes, while the inner stars of a galaxy can move very differently, often almost as a rigid disk. Humphreys dismisses one of the modern theories of spiral formation, "density wave theory," as too complex, but it's really his ideas that are far too simple. Humphreys' strawman galaxy does not prove that galaxies are young.
- (2) **Comets disintegrate too quickly** (*maximum age: 100,000 years*). Humphreys notes that comets lose some mass with every trip around the sun, claims that there is no source of new comets in the solar system, and then concludes that comet lifetimes (10 to 100 thousand years) provide an upper limit to the age of the solar system. But Humphreys' comet theory fell apart recently because a source for new comets, the Kuiper Belt (predicted by astronomer Gerard Kuiper in 1951), has been actually photographed and confirmed by several teams of astronomers. Humphreys responds to these discoveries by saying that the supposed "Kuyper Belt" [sic] doesn't help scientists because it must be supplied by the unproven Oort Cloud; and that even if what he calls the "Kuyper Belt" existed, it would exhaust itself of comets in a short time (say, a million years). But he has his astronomy backwards - the Kuiper Belt contains the remains of the "volatile" (icy) planetesimals that were left over from the formation of the solar system - numbering in the hundreds of millions. If anything, it is the Kuiper Belt that supplies the more remote Oort Cloud, as some icy chunks are occasionally flung far away by interactions with large planets. There is a source for new comets, and the fact that we still see comets does not prove the solar system is young.
- (3) **Not enough mud on the sea floor** (*maximum age: 12 million years*). Humphreys mentions reports that 25 billion tons of sediment erode from the continents each year, and that plate tectonic subduction removes only 1 billion tons of sediment from the ocean floor per year. He then claims that it would only take 12 million years at most for the excess 24 billion tons per year to produce the current amount of sediment - at an average depth of about 400 meters. But once again, Humphreys' model is far too simple. The depth of sediments on the ocean bottoms is not a uniform 400 meters, but varies considerably. And much sediment never gets to the oceanic floor, but is trapped instead on continental slopes and shelves, or in huge river deltas. Over the years, some of these continental slopes can accumulate several kilometers of sediment, while others can even become part of mountain ranges in continental plate-to-plate collisions. Neither erosion nor subduction are expected to be constant processes over millions of years, and they are simply not very good clocks. Humphreys' strawman ocean floor does not prove the Earth is young.

- (4) **Not enough sodium in the sea** (*maximum age: 62 million years*). This is another example of processes which vary greatly being used as "constant-rate" processes for dating the Earth. Humphreys finds estimates of oceanic salt accumulation and deposition that provide him the data to "set" an upper limit of 62 million years. But modern geologists do not use erratic processes like these for clocks. It's like someone noticing that (A) it's snowing at an inch per hour, (B) the snow outside is 4 feet deep, and then concluding that (C) the Earth is just 48 hours, or two days, in age. Snowfall is erratic; some snow can melt; and so on. The Earth is older than 2 days, so there must be a flaw with the "snow" dating method, just as there is with the "salt" method. (Several other creationist "proofs" of a young Earth involve similar extrapolations.)
- (5) **Not enough stone age skeletons** (*Upper limit for duration of Stone Age: 500 years*). Humphreys assumes that the Stone Age had a constant population of about 1 million, with 25 years average between generations. Thus, if the Stone Age lasted for 100,000 years (like those "evolutionists" think), then there should be 4,000 generations, times one million people per generation, for a total of 4 billion buried bodies to be found. Humphreys notes that only a few thousand have been found, and concludes that the actual duration of the Stone Age is only 500 years. He provides no justification for his model of grave discovery rates as a "clock." Perhaps, in a thousand centuries, some of those burial sites might just have been eroded away, or covered with tons of soil or debris. Predators or vandals might have disturbed some of the graves, and subsequent generations of cavemen may have even re-used some of the same traditional burial sites. In any event, it is clear that the number of discovered Stone Age graves does not provide a very accurate "clock" for finding the age of the Earth.

Finally, Dr. Humphreys rejects scientifically-accepted methods for determination of the Earth's age, such as radioactive dating. He often shows a slide indicating that carbon-14 (C-14) radioactive dating methods are inaccurate because "the ratio of radioactive (C-14) to normal (C-12) carbon was at least 16 times smaller before the flood [of Noah]," and therefore that "Evolutionists overestimate C-14 ages." Humphreys' statement on carbon ratios is based on a short piece in the journal *Nature* (C. J. Yapp and H. Poths, Vol 355, p. 342, 23 Jan. 1992), which refers to a 16-fold increase in atmospheric carbon in rocks from the Ordovician Period. These rocks are actually about 440 million years old. Now, the relatively rapid decay of carbon-14 prevents its use as a clock on anything older than about 50,000 years. Using C-14 to find the age of a rock which is millions of years old is a lot like trying to look at Mars with a microscope instead of a telescope; it's simply not the right tool for the job. Humphreys has presented this "analysis" of radiocarbon dating for years, even though he cannot point to even one age estimate which has been incorrect because of the "pre-flood" carbon dioxide levels.

Humphreys creates a slick, scientific-sounding argument for a "young" Earth, but in the process seriously misrepresents modern consensus. All serious dating methods (radiometric age dating, dendrochronology, ice core analysis, varve deposition, and more) yield ages far older than Humphreys' methods.

D. Russell Humphreys breaks all the rules of science. He uses flawed logic, overly simple models, and twisted data to sell his young Earth. Caveat Emptor!