# No Evidence of Recent Volcanism on the Moon

**Kevin R. Henke, Ph.D.**



Extensive volcanism probably ended on the Moon about three billion years ago as the number of impacts began to substantially decrease and the amount of heat-generating radioisotopes significantly declined (Beatty et al., 1999, p. 138-140). Nevertheless, high-titanium mare flows may have continued until about one billion years ago (Beatty et al., 1999, p. 138). Of course, local melting on the Moon is still possible from any impacts of large meteorites and asteroids.

Young-Earth/Moon creationists (YECs), including Don B. DeYoung, believe that the Moon is only a few thousand years old and was literally created by God from "nothing" as supposedly described in *Genesis 1:16* of the Bible. Excluding any modern impacts, DeYoung (2003, p. 5) argues that there is "evidence" of modern eruptions and other volcanic activity on the Moon ("Transient Lunar Phenomena", TLPs). YECs claim that these supposed TLPs indicate that the Moon is still "hot" and "young".

For years, people have claimed to have seen unusual phenomena on the Moon, including volcanic eruptions, mysterious lights and even bases built by extraterrestrial aliens. DeYoung (2003, p. 6) discusses some of the reports of "volcanism" that have been recorded over the past 400 years. He (2003, p. 5) argues that any volcanic phenomena on the Moon would tend to last for only a few hours and would be very difficult to verify. However, if the Moon is only a few thousand years old, why wouldn't extensive and long-term Hawaiian-type volcanism still be occurring? The Moon is covered with igneous rocks, yet how could the Moon be so cold and inactive after only 6,000 years? Obviously, DeYoung and other YECs can only invoke groundless miracles to explain away this heat problem.

To support his claims for a "young" and "hot" Moon, DeYoung (2003) places great faith in "eyewitness testimonies" of "lunar volcanism". Whether these reports are real or based on lies, sunlight mirages, distortions from the Earth's atmosphere, and/or the result of healthy imaginations and poorly made optical

telescopes can be debated. Nevertheless, one must remember that Percival Lowell once saw "intelligently built canals" on Mars. Of course, no extensive networks of artificial canals were found on Mars and they are now recognized as optical illusions. As any forensic scientist or serious UFO investigator knows, eyewitness accounts (even with photographs and video tapes) are often unreliable.

DeYoung (2003, p. 6) notes that the Apollo 15 crew detected relatively high concentrations of radioactive radon-222 gas near Aristarchus Crater. Contrary to DeYoung's implication, the presence of radon gas on the lunar surface is no evidence of recent volcanism. Radon simply indicates that uranium is present in nearby lunar outcrops or regolith. On Earth, radon gas is a threat to home air quality in areas with uranium-enriched soils, sediments and surface rocks, including sedimentary rocks. Because radon is not restricted to currently active volcanic areas on Earth, we wouldn't expect the gas to indicate current volcanism on the Moon either. Indeed, the short half-life of the gas (only 3.8 days) precludes a deep lunar source.

DeYoung (2003, p. 6) also cites a fairly old reference (Taylor, 1975, p. 292) and claims that heat flow measurements from the Apollo 15 and 17 missions are surprisingly "high" and "conflict" with an ancient Moon. Although the Apollo missions only performed a couple of heat flow measurements and the results are far from definitive, Taylor (1975, p. 292, 294) was surprised by the results. Nevertheless, Taylor (1975, p. 292, 294) says nothing about the heat resulting from volcanism. The average heat flow of the Apollo 15 and 17 sites was only 0.02 watts/square meter. In comparison, geothermally active Wairakei, New Zealand has a heat flow of 1.7 watts/square meter and more than 2.5 watts/square meter occurs on Jupiter's volcanically active moon, Io (Beatty et al., 1999, p. 244). Taylor (1975, p. 292, 294) credited the heat from these lunar measurements to the presence of average concentrations of 0.060 parts of million (ppm) of uranium, 0.16 ppm of thorium, and 120 ppm of radioactive potassium in Moon rocks. These concentrations are very reasonable. In comparison, a typical terrestrial diabase (basalt) has even higher concentrations of uranium (0.6 ppm) and thorium (2.4 ppm) (Krauskopf and Bird, 1995, p. 590). The abundance of radioactive potassium-40 in the Earth's crust is about 117 ppm (Dalrymple, 1991, p. 92).

## CONCLUSIONS

Like many YEC documents, the arguments in DeYoung (2003) are weak, inappropriate, based on misinterpreted old literature, and largely depend on hearsay and questionable eyewitness accounts. Certainly, impacts on the Moon

could create local melts or produce dust clouds that might be misinterpreted by Earth-based observers as eruptions. Although very minor volcanism on a 4.5 billion year old Moon cannot be ruled out, the physical properties of the Moon and its history indicates that modern volcanism is unlikely.

## REFERENCES


Beatty, J.K.; C.C. Petersen and A. Chaikin, 1999, The New Solar System, 4th ed., Sky Publishing Corp., Cambridge, Mass., USA and Cambridge University Press, Cambridge, UK.

Dalrymple, G.B., 1991, The Age of the Earth, Stanford University Press, Stanford, CA.

DeYoung, Don B., 2003, 'Transient Lunar Phenomena: A Permanent Problem for Evolutionary Models of Moon Formation,' Technical Journal, v. 17, n. 1, p. 5-6.

Krauskopf, K.B. and D.K. Bird, Introduction to Geochemistry, WCB McGraw-Hill, Boston.

Taylor, S., 1975, Lunar Science: A Post-Apollo View, Pergaman Press Inc., New York.