

Blind Leading the Blind: Austin, Snelling and Swenson Misinterpret Dalrymple's K-Ar Dating of Historical Volcanics

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Because radiometric dating utterly refutes their biblical interpretations, young-Earth creationists (YECs) are desperate to undermine the reliability of these dating methods. As part of their efforts, YECs clearly believe that they can discredit K-Ar dating if they can show that excess argon routinely enters rocks and minerals as they form. That is, they believe that excess argon will cause rocks and minerals that are supposedly less than 10,000 years old to have 'deceptively' old K-Ar dates of millions or billions of years. In particular, YECs attempt to demonstrate that excess argon is a 'problem' for K-Ar dating by locating examples of historically erupted volcanics, which yield K-Ar dates that are hundreds of thousands or millions of years older than their eruption dates. By listing enough examples of modern volcanics that apparently have unrealistically old K-Ar dates, YECs create the false impression that ALL K-Ar dates are spuriously old.

YECs Dr. Steve A. Austin, Dr. Andrew A. Snelling (and also here) and MD Keith Swenson list the same set of old K-Ar 'dates' for some historical lava flows. The data were miscopied from Dalrymple (1969).

G. Brent Dalrymple is a geochronologist with 40 years experience, a pioneer in the identification of excess argon in igneous samples, and an outspoken critic of young-Earth creationism (e.g., Dalrymple, 1984). As part of his seminal work on excess argon, Dalrymple (1969) dated 26 historical lava flows with K-Ar to determine whether excess argon was present. Of the 26 lava flows that were sampled and analyzed, 18 of them gave expected results. That is, no excess ^{40}Ar or ^{36}Ar were present. Eight rocks yielded unrealistic dates, which were either too old because of the presence of excess ^{40}Ar (5 of them) or too young (negative ages) because of the presence of excess ^{36}Ar (3 of them). The

details on the 8 anomalous samples are listed in Table 2 of Dalrymple (1969, p. 51), which is reproduced at Ar-Ar Dating Assumes There is No Excess Argon? The 5 samples with excessively old K-Ar dates include a Hualalai basalt from Hawaii (K-Ar 'dates' of 1.05 and 1.19 million years; the basalt erupted in 1800-1801 AD), two Mt. Etna basalts (a 'date' of 150,000 years for a sample that erupted in 1792 AD and a K-Ar 'date' of 100,000 years for the other sample, which erupted in 122 BC), a plagioclase from Mt. Lassen, California ('dated' at 130,000 years; erupted in 1915 AD), and a basalt from Sunset Crater, Arizona ('dated' at 210,000 and 220,000 years; erupted in 1064-1065 AD).

The author of Ar-Ar Dating Assumes There is No Excess Argon? attacks Snelling for misinterpreting Dalrymple (1969) and seriously overestimating the importance of excess argon in modern volcanics:

'Thus while Snelling implied that Dalrymple [1969] found severe problems with K-Ar dating when the truth is quite the opposite. Dalrymple found that they are reliable. Two-thirds of the time there is no excess argon at all. And in 25 times out of 26 tests there is no excess argon or there is so little excess argon that it will make only a tiny error, if any, in the final date for rocks millions of years old. Thus Dalrymple's data is not consistent with a young Earth whatsoever. Indeed, if Dalrymple's data is representative, 3 times out of 26 the K-Ar method will give a too young date (though by only an extremely trivial amount for a rock that is really millions of years old). The one case that would have produced a significant error, the Hualalai flow in Hawaii, was expected (see the previous essay). Even that significant error is only 1.19 million years (and not the 1.60 million years that Snelling claimed). If the identical rock had been formed 50 million years ago, the K-Ar would give a "false" age of a little over 51 million years. Thus this data is strongly supportive of mainstream geology.' [author's emphasis]

As discussed at Ar-Ar Dating Assumes There is No Excess Argon? and Dalrymple (1969, p. 49), the ONLY sample of the 26 that had significant excess argon also had very noticeable xenoliths (older rock contaminants that were incorporated into the magma as it rose through the Earth to the surface). Furthermore, as discussed in Funkhouser and

Naughton (1968, p. 4603), once the xenoliths were removed, the remaining matrix provided an expected date of 'zero years' (also see: Fresh Lava Dated as 22 Million Years Old).

As further discussed in Dalrymple and Lanphere (1969, p. 121-144) and Dalrymple (1991, p. 91-92), Dalrymple concludes that excess argon is rare in volcanic rocks. In addition, excess argon is even less of a problem with Ar-Ar dating, where excess argon can often be distinguished from radiogenic argon and its effects eliminated (McDougall and Harrison, 1999, p. 123-130; Maluski et al., 1990).

As originally uncovered at Ar-Ar Dating Assumes There is No Excess Argon?, Snelling failed to properly quote the 'apparent K-Ar dates' from Table 2 in Dalrymple (1969, p. 51). That is, Snelling mistakenly listed the concentrations of ^{40}Ar (in 10 to the -12 moles/gram) for the Hualalai, Mt. Etna (2 samples), Mt. Lassen, and Sunset Crater samples as their apparent K-Ar dates!! Austin and Swenson also contain the same erroneous data. For example, Austin, Snelling and Swenson all list the 'apparent K-Ar date' for the Hualalai basalt as '1.60 million years' instead of 1.19 million years. In reality, the Hualalai basalt had 1.60×10 to the -12 moles/gram of ^{40}Ar .

Because Austin's essay is older, we can probably assume that these copying errors originated with him. Rather than checking the accuracy and relevancy of Austin's quotations from Dalrymple (1969), Snelling and Swenson simply uncritically parroted and perpetuated Austin's mistakes in their later web essays. This is truly a case of the blind leading the blind!!

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