

After discovering the 1971 paper [40Ar/39Ar Technique of K-Ar Dating: a Comparison with the Conventional Technique](#), the Icelandic historian of science, Steindór J. Erlingsson, wrote a letter to one of the authors, the geologist [G. Brent Dalrymple](#), asking about Sigurgeirsson's contribution to the discovery of 40Ar/39Ar dating. Here is a part of Dr. Dalrymple's answer (from January 26., 2016):

"My colleague at the USGS, Richard Doell, knew Sigurgeirsson and made at least one trip in 1964 to Iceland to collect samples. He was accompanied by David Hopkins (also of the USGS) and guided by Sigurgeirsson. I think that Richard may have made more than one trip to Iceland, but I am not sure of that. Sigurgeirsson gave Richard a copy of his paper to bring to me in 1964. I didn't know Sigurgeirsson at that time (I met him later when he visited Menlo Park), but Richard told him that he and Allan Cox had hired me to work with them at the USGS on geomagnetic reversals, so he knew who I was and what I did. Because the paper was in Icelandic, I could only make sense of the diagrams, but it was clear to me what he was proposing from the diagrams alone. I also knew quite a bit about Craig Merrihue's work using this method on meteorites—Craig and I were both graduate students at Berkeley—so what Sigurgeirsson had proposed was not so unusual to me. In 1964 I had been at the USGS for only a short time and had too much on my schedule to pursue 40Ar/39Ar dating, so I filed the paper and didn't think too much about it for the next few years.

A few years later I had the paper translated by a professional translation service because I had become interested in seeing if the 40Ar/39Ar technique could be applied to young rocks. When I finally read Sigurgeirsson's paper in its entirety, I realized that he had outlined the total fusion method, including potential problems, in considerable detail, and it paralleled what Merrihue and Reynolds had been doing with meteorites at Berkeley in the early 1960s.

You might be interested to know that John Reynolds, who was Craig Merrihue's thesis professor, was a bit upset when I made known the existence of Sigurgeirsson's paper because so far as he knew, Merrihue (and Reynolds) had discovered the technique. I did send John a copy of Sigurgeirsson's paper (and the translation) and I am quite sure that neither he nor Craig knew of that paper, but had discovered the technique independently. I am also quite sure that no one else in the K-Ar community, which was quite small at the time and I knew them all, was aware of Sigurgeirsson's paper until I revealed it in that 1971 paper with Marvin Lanphere.

It is a pity that Sigurgeirsson did not submit his paper to a journal so that more people could have known about his work in this area, but at least I was able to give him some credit for his pioneering idea. I know of no one who does K-Ar dating anymore using the conventional technique wherein an 38Ar tracer is required. All K-Ar dating is now done using the method that Sigurgeirsson proposed, and its variant the step-heating approach."