

Tribute to Alan L. Mackay

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In 1982, Alan Mackay and I did not know each other, but the seeds that linked us years later were sown that year. Alan published then his article in *Physica 114A* on Crystallography and the Penrose Pattern, and I observed the Icosahedral Phase, the first discovered quasiperiodic intermetallic compound, by transmission electron microscopy.

In the work described in his paper, Alan satisfied his curiosity by answering the question—what would a diffraction pattern from two-dimensional Penrose tiles look like. Alan gave a drawing of circles he placed on each quasilattice point of Penrose tiles pattern to his colleague Dr. G. Harburn of Cardiff who had an optical diffractometer, and he produced a tenfold optical diffraction pattern from Alan's drawing. Alan noted that similar patterns were observed in multiply twinned pentagonal gold

crystals, and I have observed in previous years the same pattern on twinned Al–Fe intermetallic compound. This was the reason that I looked for the possible twins in the first day of my discovery. There were no twins there. In this seminal paper, Alan used “atoms” to describe the circles he drew on the Penrose tiles, hinting at possible actual crystals to be found later.

Alan and I met several times in conferences dedicated to the newly discovered quasiperiodic crystals. I enjoyed his company very much for serious discussions on the nature of crystals and for his hilarious sense of humor.

Alan is not a regular crystallographer. He asks general questions and answers them in a most creative way. Alan is a towering master of crystallography and a prophet of discoveries to come.

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