

Memories of Tihiro:

I knew Tihiro as a friend and as an inventor.

I probably knew Tihiro longer than any US fusion person except Don Kerst, then at Illinois. I was a new PhD student at Madison working with Keith Symon when the MURA accelerator group learned about Tihiro's independent invention of alternating gradient focusing – an idea Keith had developed also. Keith had asked me to build an upside-down pendulum to demonstrate the idea in his lectures, then to follow him to a summer workshop in Ann Arbor. That was 1955, after Kerst had invited Tihiro to Illinois so Tihiro was in Ann Arbor, also. Despite the attention around him, he was not much older than me so we kind of hit it off I think. The next time I remember seeing Tihiro was at an international fusion meeting at Culham (England) in 1962 where he brought Yoko and I brought my wife Carol, and again we hit it off. By then I was working at Oak Ridge, soon to move on to General Atomics in 1965 after Don Kerst had left to go to Madison. Don had brought Tihiro to GA. Though my job concerned other stuff, I spent a lot of time with Tihiro at GA and loved to hear about his experiments and argue with him about his new ideas.

When GA sort of fell apart in 1967 and I moved on to Livermore, I tried to persuade Tihiro to go with me. At that time Livermore could not hire foreigners and Tihiro had not taken out citizenship. But the Lab came through for me and made him the first offer ever to a non-citizen. I was of course disappointed when Tihiro turned us down, but after that we were still fairly close as he built up GA toward DIIIID and I helped move Livermore mirror machines out of the shadows for a time. Tihiro and I were on what was called the Standing Committee including all of the heads of the largest fusion programs. Sometimes my job was peacemaker and I remember especially a night in Princeton in a parked, darkened car with Tihiro and Mel Gottlieb, trying to persuade them to see eye to eye. Then when Tihiro started Archimedes, and hired John Gilleland who we at Livermore had hired from GA, I spent a few years visiting Archimedes where again the fun was Tihiro. After Archimedes disbanded, the last and only nuclear fission paper I published at Berkeley was trying to stir up interest in Tihiro's Archimedes machine to refine fission waste suitable for shallow burial on site.

As I think back on all those years, I realize what a private yet exciting person Tihiro was to be around. Maybe it was because I had wished I was an inventor, too.

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