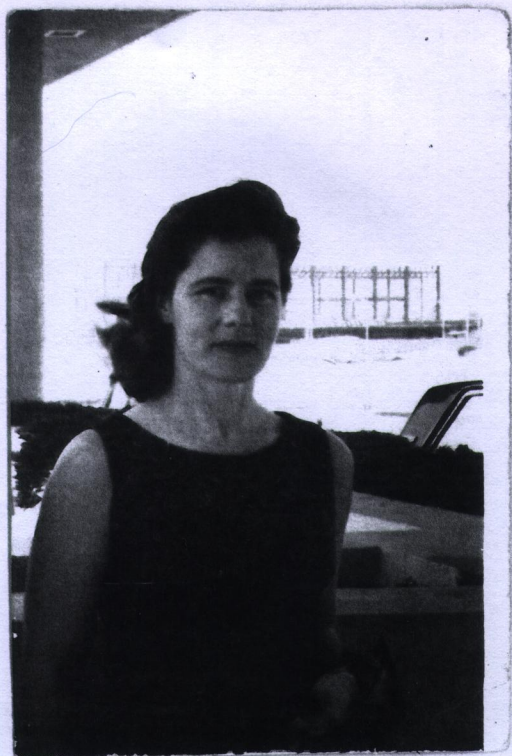




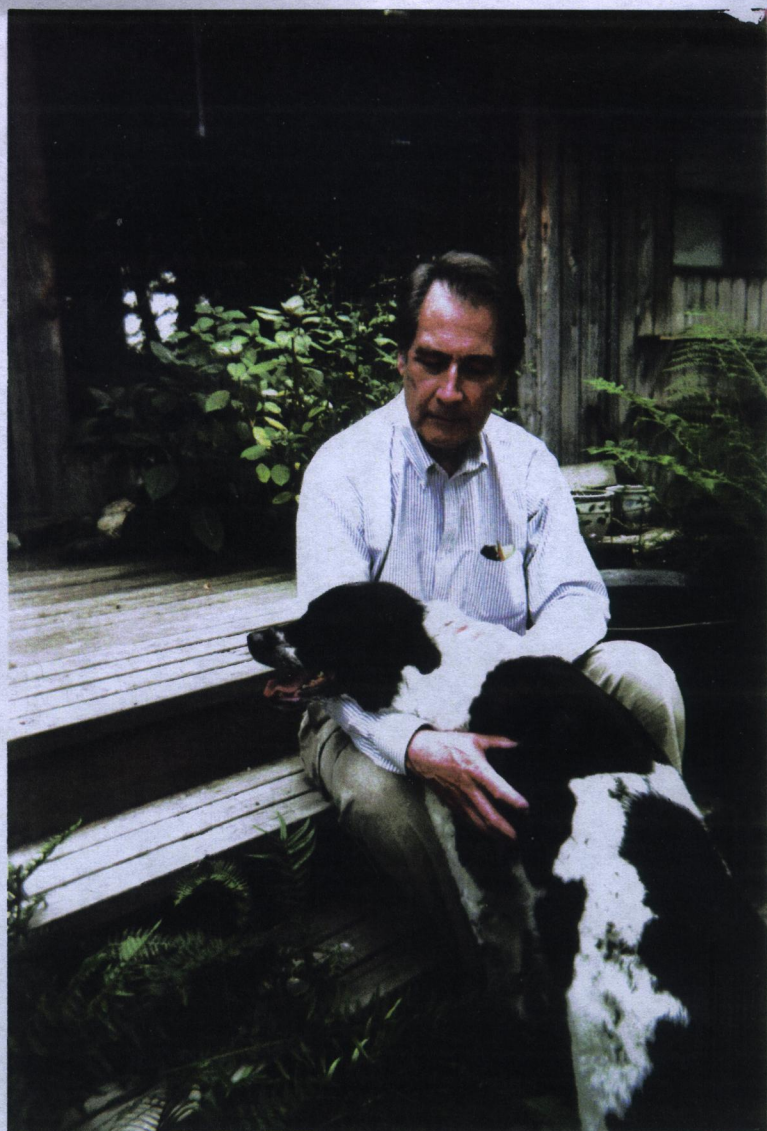
Ann Kilby & Mom  
(Ruth Moira Kane)  
1950



Ann Kilby & Mom (Ruth Moira Kane)  
1959



Ruth Meira Kane  
(1921-2007)  
this photo 1959, during  
her physics career



Wallace F. Kane b. 1930  
this photo ~ 2005, the year he  
finally retired  
with the family dog [redacted]

April 26, 2012

Dear Mike Konshak,

This is a list of items enclosed in this package:

1) World Book Encyclopedia (1955) entry on slide rules. (I happened to be dismantling the set for recycling.)

2) Various slide rules formerly used by members of our family.

3) Various extra instruction materials.

4) Photos and biographical information for each of us three.

5) Web material on the development of computer-based calculation in the 1950's (included because my reminiscence mentions the matter, and specifically refers to the two guys who worked to solve the riddle of Sputnik I's orbit, i.e. Nevin Sherman and Joe Brady.) (Also included because someone on your end might find it interesting in some way.) The one interview is complete, because I had an extra copy in the house. So far as I know, Nevin Sherman is still alive and still thinking math, about 20 miles from here.

I understand that the narratives I'm sending may be much longer than you would use to accompany the slide rules in the field, so to speak. On the other hand, my elders having both lived a long time (one of them still counting), I had to put in more than for a younger person, to make sense of a life for each. So I rely upon your judgement to select from their biographies the information that suits your format and criteria.

The reminiscence partly serves the same purpose for my own life, but I thought it might also find a place among articles offered to the public about slide rules and users. I hope someone will enjoy it.

Should you wish me to add or clarify any detail, please phone rather than using email — I only have sporadic computer access in this area (usually live elsewhere.) (360) 297-2212 (Puget Sound area.) My stepdad would be sure to appreciate an acknowledgement addressed to him, for the slide rules that were his; for the rest, something addressed to me would be nice.

Sincerely,  
Ann Kilby

Ann Kilby (b.1946)

### Reminiscence Including Slide Rules

When I was little, my preschool was the Astronomy Department at UC Berkeley, where my mom was a graduate student. The department inhabited a set of small, very beautiful old one-story wooden buildings clad in cedar shakes, in which there were offices and classrooms, a library, and a telescope. In the quadrangle a wooden platform with a ship's helm at one end served as the lab facility for navigation classes. Mom's major professor was Otto Struve. An important mentor in Mom's studies was Struve's close associate Su-Shu Huang; a kind and sociable man who loved children, he often took me for walks (real adventures for me) to other parts of the campus. We valued him deeply as a family friend as long as he lived (1978.)

In the course of a day, at intervals adults would arrive to congregate in some of the rooms, where certain ones would conduct sessions of some sort. People in these groups often carried with them some special stick-shaped devices; through the doors, open in Spring and Fall for ventilation, I would see them operating these sticks sometimes during their discussions. The sessions led by my mom (a TA) were very calm; those led by older people (all men), where my mom and most of the other adults I knew sat among the students, became either rapt or lively, depending on who stood at the front.

I also noticed that Su-Shu kept one of those stick devices atop the papers spread over the large old wooden desk in his office, and I hoped that when I wasn't too little anymore, I might get to see it close up and commune with it as the grownups did.

After those sweet preschool years, starting school proved a letdown; I could already read and write, and there weren't any adults around doing interesting things I could learn from. Two years later we moved to Livermore, in train with most of the immediate circle of graduate students and families we had kept company with in Berkeley. Social shop-talk would now mainly concern involved calculations carried out on a device occupying a whole house (they said), a machine that performed so exactly to instruction (and without such, not at all) that highly intelligent users were nonetheless constantly reduced to spending real effort reviewing and editing the long sets of minutious instructions they had composed, so as to figure out how to get these programs to yield proper results. Run time could be many hours, and the machine operated around the clock, so users often had to work at all hours to get projects done.

Of course the adults still used those special stick-objects, too, and just as things like my permanent teeth, and (everlastingly dull) schoolwork, and a real bicycle to use in a whole town entered my horizon, I also learned more details about the remarkable sticks from my elders. Some of my friends in grade school had also experienced them, but many others (from Air Force or farm or service-professional or retail-professional families, for example) would not even have heard about them.

The large group of "Lab" families who moved there (the town population rose from 2,000 to 10,000 in 10 years) took initiatives (and provided tax money) to facilitate much new sophistication in local school programs; grade school was still pretty conventional, but high school offered much more for bright kids' interests. My class was in seventh grade when the USSR launched Sputnik I (October 1957.) Within a few days, two of our Lab friends became the first Western scientists to calculate a close approximation of its orbit and to correctly predict the date it would re-enter the atmosphere (they used two of those machines that took up a whole house, and forgot about sleep for several days...) The national alarm reaction ("eek! the Russians beat us to it!") was soon refocused to "eek! We need better education right now!"

And that's what we got: high-school courses you could use a slide rule for, and four

years of real substance in science and math (kids a little later got Russian language, too.) The big-city schools offered more still, but we had some fine teachers (who had wished for the upgrades for years...), and many of us went on to just the sorts of higher education and careers our folks had wanted us to get a crack at. So for many of us kids as teenagers, a slide rule was as natural a part of schoolwork as the books and such; and in the scientific world as we knew it, people doing calculations at work used slide rules professionally. We noticed that the ones the real pros used were a lot longer, and also had more scales than ours, and gave more subdecimal digits; we aspired to getting similar ones ourselves, when we would have problems to solve that called for them.

There was, to be sure, a problem of physical logistics even with the medium-sized ones we used: we had binders, piles of large textbooks, plus lunch and often gymwear to lug home and back, and for me that slide rule was often just one more nasty gravity-thrilled piece of matter to manage (why on Earth did we not use bookbags until college?) So the round pocket-sized slide rule bought on one of our family's weekly trips to The City, although not so easy to use, still made my life better. (I later found that my mom had kept it-- along with my childhood vacation letters to her and the potholders I made for her when I was nine-- for the rest of her life (2007.)

College! Now I'd finally get to learn *something that would actually enlighten*, after waiting all those years. Well, what else would a 16-year-old expect? My mates from high school all seemed to understand the purpose, limits, and good strategies for higher education, and how to enjoy the process as well. In fact, most of them kept on paths such as we had all envisioned, and did later use those larger, more wonderful slide rules we had admired, to make those professionally intricate calculations. But I never did grow out of expecting to learn something even bigger, and never really got practical about it.

My path in college eventually departed from the arena of intensive calculation, and I gave my middle-sized slide rules away to a good home. I went into Zoology, then into the secondary-school teaching certificate program. A graduation trip to Europe turned into a 14-year sojourn in Denmark. For the first few years there, I worked in labs (physical chemistry and later genetics), then for seven years pursued a dual program of university degree in Sinology and apprenticeship training as a psychotherapist. I have made healing arts and counseling my profession, with an avocation in biology and ecology. I live in a rural county, in a house in the sticks, and plan to move to truly wild parts sometime soon.

Obviously, when the new small computers came in, my old slide rules were some years ahead of my classmates' in the process of turning into mementos. Maybe those old friends, wherever they are now, also look back with pleasure on the times when we used them with excitement.

## Ruth Moira Kane (1921-2007)

Ruth Mary Farwell (later Moira Kane) was born in Seattle, Washington, and grew up there. Her mother was a child of academic educators; when the father died early, the family struggled to manage financially. Intelligent and serious, Moira's mother continued learning and exploring all her life, although she married early and became a homemaker with four children. Moira's father was a child of a Seattle lawyer family of limited means, so he could not afford college until he was 22; attending UC Berkeley, he later became a master mariner, professor at University of Washington, and a national authority on marine collision law.

Moira showed fascination with music very early, as did her younger sister; both were assessed as highly talented, so the family scrimped to provide piano lessons for them. Entering college, both were already professional-level musicians (Moira was just 16.) Her sister went on to teach piano after college. Moira completed two majors, in music and in philosophy, with honors. She interrupted graduate music studies to marry, and supported the two of them through her husband's grad school by cataloging books at the Yale University library for three years. She taught music the first semester at the same college where her husband first taught psychology, but had to take the next term off to recover from the medical effects of giving birth in a Southern hospital during the Dark Ages of Obstetrics.

The family moved the next Fall to the University of Denver, and Moira decided to change career focus, to study astronomy. As part of the preparation, she worked as assistant to Dr. Recht at the observatory on campus, helping with observing projects and conducting public viewing evenings. She acquired her first slide rule to use in her physics and math courses. She delighted in the beauty of the heavens, and was excited about working on puzzles in the field.

She started graduate studies at UC Berkeley in 1949; she completed a MS, and the exams and thesis research for the PhD, with Otto Struve as major professor and his close associate Su-Shu Huang as mentor. By then a single parent, and feeling too weary to face writing and defending the thesis over another year, she accepted a job offer when UC started the defense laboratory at Livermore, and started there at PhD rating in 1952. She deeply regretted what she saw as a necessary negative choice, and always missed the work and working conditions she would have enjoyed in astronomy.

She met her second husband, Wallace Kane, also a physicist with a piano career in his past, while both worked at "The Lab."

After leaving the Lab in 1971, she did scientific editing and manuscript advising for some years, as well as translating German scientific articles.

The couple moved north to her home area in 1973, settling on 20 acres of forest land near Puget Sound. There she was thrown into an entirely new role in 1991, by a graft-inspired, illegally conducted County government attempt to force development zoning upon an area that included her forest. She became a public organizer and presenter, a meeting facilitator, legal researcher, coordinator, legal assistant, and media liaison on the team leading the large grassroots opposition to this attempt. She filed and paid for the actual lawsuit, and spent most of her 70's (eight years) on this crisis effort. County officials pressed the matter through to the state supreme court, which reaffirmed all the lower courts' findings in favor of Moira and her neighbors. She was glad they won, but the cost to her life was enormous.

After concluding that battle, she had more time for her own interests. For her that meant music (when she died, she had been an active musician for 80 years), and she also continued to relish keeping up with developments in astronomy and cosmology, and in theoretical physics in general; and always, she nurtured and avidly enjoyed her natural surroundings.

(by Ann Kilby, her daughter)

Wallace E. Kane

Wallace Kane was born in Wisconsin in 1930. His mother was a child of Danish immigrant homesteaders, and grew up in a remote rural spot in central Wisconsin. Very intelligent and curious, she continued self-education after high school, and managed the office work for her husband's successive small businesses. Wally's father was the child of second-generation Chinese immigrants, and grew up on the family taro farm in Waiipio, Hawaii. He, too, was very intelligent, as well as being musically gifted; he traveled to the mainland as a member of a Hawaiian band (he played ukulele, guitar, and french horn), intending to see all 48 states, and he and his future wife met during the tour. Professionally, he started with army service, then doing auto and truck repair, and later as proprietor of a butcher shop-- and also gave music lessons all along. After WW II he used the GI Bill to become an optometrist.

The family lived in Hawaii for a few years during the worst of the Depression, and in a small Wisconsin town before and after that. Chinese culture and Chinese friends were an important positive part of family life for them, as were the mother's many kinfolk in Wisconsin.

Wally inherited his father's musical gift, and started on piano as a small boy. He and his brother (the well-known Hawaiian artist, cultural researcher -- and designer of the voyaging canoe Hokule'a-- Herb Kawainui Kane, 1928-2010) had to take part-time jobs throughout high school to help family finances during their dad's WW II service. But whereas Herb, already an enthusiastic artist, had to take quite mundane sorts of jobs, Wally had steady work all four years playing piano in a dance band.

He continued his education at nearby Lawrence College (now University), intending to make a career in music. Already considered a very fine jazz pianist, he also studied and loved classical repertoire. After graduation he enlisted in the Air Force as a musician. Because they had no openings for piano players at the time, they sent him to their musician school for retraining, and he became a 90-day-wonder saxophonist, to fill an opening in the enlisted men's dance band (and also in the parade band) at the Keflavik, Iceland base.

Returning home, Wally decided to change professional focus, and re-entered school at University of Wisconsin at Madison to complete a new major and then graduate work in physics. On finishing the MS degree, he took a job at Lawrence Radiation Laboratory at Livermore (now LLNL), where he worked until 1973. He and his wife, Ruth Farwell Kilby\* (1921-2007), who had also been a professional pianist, met as fellow physicists at LRL. The couple relocated in 1973 to the Puget Sound area (her home area); Wally worked for the next 33 years as a civilian-employee physicist at the Navy facility at Keyport, Washington, retiring at age 75.

Since retiring, Wally has enjoyed music, of course, and he still does damage at an all-you-can-eat restaurant, without gaining a bit. He reads Science News. He has also pursued interests he had long put off, such as watching pelicans at his local waterfront, going for rides in the country, watching PBS cultural, travel and nature programs-- and thinking about whatever he wants to, right when he wants to.

(by Ann Kilby, his stepdaughter, March 2012)

*\*After they married, her name was Ruth Moira Kane*





2nd state  
3rd print

HERBERT R. MANN

Portrait of the Artist's Brother