OBITUARY FOR INGEMAR FURENLID

Ingemar Furenlid died of brain cancer on February 11, 1994 at the age of 59 in Cambridge, Massachusetts. He was on sabbatical from Georgia State University at the Harvard-Smithsonian Center for Astrophysics. Ingemar was known to all practitioners of stellar spectroscopy from his ten years at Kitt Peak National Observatory, and his diverse and innovative research.

Ingemar was born in Orebro, Sweden on May 26, 1934 and entered Stockholm University in 1956 to pursue astronomy. He earned four degrees there, culminating with the PhD in 1970 under the direction of Bertil Lindblad, the discoverer of the rotation of our galaxy. In addition to research at Stockholm Observatory, Ingemar and wife Kerstin jointly wrote popular astronomy articles for newspapers and encyclopaedias. Taxes on a house built with their own hands and a Harvard experience as a Menzel fellow in 1968-69 convinced Ingemar and Kerstin to emigrate.

Thus, in 1971 Ingemar moved to Kitt Peak National Observatory in Tucson where he was appointed a Support Scientist and given responsibility for the Coudé Feed Telescope and Spectrograph. Ingemar trained dozens of visiting astronomers on its use and the reduction of their data with his analysis and calibration tools. He is invariably remembered by these visitors for his kindness and patience. Ingemar joined the astronomy faculty at Georgia State University in 1982, bringing with him high standards of personal and scientific integrity as well as a wonderful sense of comraderie and humor.

Ingemar's research interests were in stellar astrophysics and in the development of instrumentation. Early in his career, he explored the limits of photographic emulsions as quantitative detectors and was the first to properly define their signal-to-noise ratio. He recognized the potential of CCDs for high resolution stellar spectroscopy and helped initiate their use at KPNO. He recently designed a highly efficient optical-fiber-fed spectrograph, now being implemented at telescopes at Cananea, Mexico; San Diego State University; the National Central University of Taiwan; and GSU.

Ingemar had particularly productive collaborations with Arthur Young of San Diego State University on the astounding pulsational properties of the star BW Vulpeculae, and with Robert Kurucz of the Center for Astrophysics on the application of stellar model atmospheres to the interpretation of high precision observational data. In 1980, he co-authored with Kurucz a monumental spectral atlas of the sun, and they were working on a companion atlas of the star Sirius at the time of Ingemar's death.

Ingemar Karl Furenlid will be greatly missed by his colleagues around the world, and by his son, to whom he was also best friend.

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THE SPECTRUM OF SIRIUS FROM 307 TO 1040 NM

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We have combined a Kitt Peak coude-feed UV photographic spectrum taken by Kurucz, visible Reticon spectra from La Serena taken by Furenlid, and a near-IR 4m-FTS spectrum taken by Kurucz to produce a high resolution, high-signal-to-noise atlas of Sirius. The continuum level and the wavelength scale were determined by comparison to a computed spectrum that includes the atmospheric transmission spectrum. The atlas is plotted at several scales on loose 11 x 17 inch sheets. The sheets at the highest scale include the computed spectrum, and line identifications for the Sirius and telluric features. Both 0 km/s and 16 km/s rotation spectra are plotted to emphasize the blending. The complete line list used in the calculation will be available as a computer file. A printed line list will be included for lines that are labelled. In this atlas the computed spectrum has not been adjusted to match the observed spectrum.

The atlas will be printed on demand by Kurucz and will cost $100, plus shipping if sent outside North America. If we can obtain a color laser printer, we will make a $200 version with color-coded Sirius spectrum, 0 km/s computed spectrum, 16 km/s computed spectrum, transmission spectrum, transmitted spectrum, and the line indentifications. We will produce a CD-ROM with the spectrum and the line data.

This is an ongoing project of studying the bright stars to test the model atmosphere and spectrum synthesis programs and to test the atomic data. We will produce a complete abundance analysis and we will improve considerably the computed spectrum. In its present form the atlas provides a useful guide for observing and interpreting the spectra of A stars.

Practical matters: The atlas is not yet ready. Kurucz has to determine some O_2 and water wavelengths and the correct shift between the Sirius and telluric spectrum for each Reticon scan. The earliest possible date for completion is the end of 1994. Inquire by email to Kurucz@cfa.harvard.edu.

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[1] died 11 February 1994