



Yutaka Uchida (1934-2002)

OBITUARY YUTAKA UCHIDA

Yutaka Uchida, one of the leading figures of Japan's as well as world's solar and astrophysics community, passed away on August 17, 2002, at the age of 68. He was at his son's wedding ceremony, made a closing speech, and then collapsed. His unexpected death was from cerebral bleeding.

He was born in 1934 in Tokyo. After finishing the undergraduate course of the University of Tokyo in 1958, he proceeded to the graduate course at the department of astronomy. In the middle of the graduate course he was appointed research associate of the department in 1962. He obtained a Ph.D. degree in September, 1963, under the supervision of T. Hatanaka and W. Unno. His early works on solar type II/III radio bursts and wave heating of the corona had already indicated his rare talent for identifying the basic mechanisms behind natural phenomena. One possible exception may be his (now incorrect) interpretation of five-minute oscillations as trapped gravity mode waves (1965), but this was mostly due to the limitation of data available at that time.

He spent three years as a postdoctoral research fellow at Princeton University and HAO/NCAR from 1963 to 1965. He visited HAO several times since 1964, which resulted in his famous study on Moreton waves: he interpreted these as MHD fast-mode shock waves propagating in the corona. This model is still believed to be valid.

In 1965 he moved to Tokyo Astronomical Observatory, the University of Tokyo, became associate professor in 1971 and professor in 1978. There he belonged to the solar radio division. The basic paper on gyro-synchrotron radiation by Takakura, Uchida, and Kai (1968) appeared in *Solar Physics* in this period.

In the mid 80's he started collaboration with K. Shibata on MHD numerical simulation of various astrophysical phenomena, ranging from spicules, solar flares, prominence eruptions, accretion disks around young stars and bipolar outflows from star-forming regions to jets from active galactic nuclei. From the beginning he was aware of the importance of graphic and movie representations of the results of numerical simulations, and in spite of the premature computer hardware and software in those days he made every possible effort to make presentations using movies.

In 1987 he moved back to the University of Tokyo, where he took responsibility for the department of astronomy after the retirement of W. Unno. In 1994 he retired from the University of Tokyo, and moved to the physics department of the Science University of Tokyo. There he created a group of computer simulation with S. Hirose, and established a new Frontier Research Center for Computational Science in 1996. He also continued analysis of X-ray data of *Yohkoh* together with his students.

Among his important roles in the solar physics community, he was president of Commission 12 of IAU in the period 1982–1985, and president of the Astronomical Society of Japan during the period 1993–1995. He was the managing editor of PASJ (1983–1988), and a member of the Editorial Board of *Solar Physics* since 1976. His international reputation and warm personality created good relations with many people. Based on this, he successfully established an international collaboration in space program leading to the Solar-A (*Yohkoh*) mission, together with Y. Ogawara (the project manager of *Yohkoh*). He was the project scientist of *Yohkoh* since 1986, and he also played a key role in realizing the Solar-B mission.

His research cooperation ranged over a wide variety: MHD equilibrium theory with B.C. Low (1981), magnetic heating of the solar corona with P.A. Sturrock (1981), magnetic activity of evolving stars with M.K.V. Bappu (1982), astrophysical jets with R. Rosner, A. Ferrari, and C. Norman (1992, 1996), X-ray giant coronal arches with Z. Švestka (1995), convective origin of coronal electric currents with N. Weiss and D. Galloway (2001), and hard X-ray flare source with D. Melrose (2001), to name a few. In the last fifteen years or so, his research was half on solar physics and half on cosmical plasma phenomena. The latter included observational works as well, e.g., the discovery of rotating molecular outflows from the star-forming region L1551 with the 45m radio telescope at Nobeyama, Japan. His main topics of research in solar physics in recent years were about the nature of CMEs (loop-type CMEs and blast-wave CMEs), and a quadrupolar magnetic model of prominences and flares. His model for the Moreton waves has been revived recently due to the discovery of EIT waves.

Because he had so many interesting research topics in his mind, his desk was never large enough to accommodate his curiosity. Books, copies of research papers, and drafts of papers sooner or later occupied his desk, and only a handful space just in front of him remained clear, until his secretary cleaned his desk. He liked sports (tennis, bowling, skiing), classical music, and above all, discussions with his collaborators, in particular with his young students.

We are all saddened by the loss of a great scientist. His enormous contributions to solar research and astrophysics, and to the *Solar Physics* journal, will be remembered by the community.

SHIGENOBU HIROSE
TAKEO KOSUGI
TAKASHI SAKURAI
KAZUNARI SHIBATA