Biographical Sketch: Mukul Kundu

Mukul Kundu was born in Calcutta in 1930 and received most of his education there. He attended High School through the Second World War and graduated (at the young age of 15) first in his High School class, receiving three silver medals for various accomplishments.

He remained in Calcutta to do a Bachelor of Science degree at the University of Calcutta, which he achieved with First Class Honours in Physics. He received several more honours at graduation: a University Medal and scholarship for topping Theoretical Physics, and the Krishna Lal De Gold Medal as best science student of the year.

Mukul Kundu spent 4 more years at Calcutta University: two years working on a Masters' degree in Radio Physics and Electronics (which he again achieved with First Class Honours, another University Medal, and another scholarship), and then two years carrying out research in ionospheric physics. It was during this period that his interest in the Sun and the possibilities of radio research were developed.

In 1954 he was awarded a French Government scholarship to the prestigious Ecole Normal Superieure in Paris, and thus began his close connection with the Paris Observatory. He joined the radio astronomy group there, and chose to work on solar radio astronomy as his Ph.D. thesis topic. This was a period of rapid development in radio astronomy techniques, and Mukul's work was pioneering: he built the first one–dimensional earth–rotation synthesis interferometer intended for studies of the Sun, operating at a wavelength of 3 cm. The use of the rotation of the earth to "fill–in" the spatial Fourier components missing from a snapshot observation is now the standard mapping technique of modern radio astronomy, but in those days it was understood by only a few groups. Mukul was awarded the degree of Docteur des Sciences with a "mention trés honorable" in December 1957.

Two years later, Fred Haddock invited Mukul to come to the University of Michigan as a research scientist. There he worked on data from dynamic spectrum analyzers (i.e., frequency–versus–time observations) which he used to study active regions and radio bursts. Towards the end of his stay in Michigan (1962), Mukul wrote a review which was later to be published by Wiley as the book "Solar Radio Astronomy" in 1965. This book has been the introduction to solar radio astronomy for a generation of astronomers and has had a lasting influence, and remains even today a landmark reference work.

Mukul was always a vigorous and forthright speaker, and attracted considerable attention at the scientific meetings he attended. Tommy Gold was one of those he impressed, and he invited Mukul to become an Associate Professor at Cornell University in 1962. Mukul took up this invitation and stayed for three years, taking the opportunity while there to use the recently opened 1000 ft diameter radio telescope at Arecibo.

In 1965, Mukul returned to India to join the Tata Institute of Fundamental Research in Bombay, where he worked on the design and construction of the large Ootacamund Radio Telescope. After 3 years in India, Mukul was lured back to the US by Bill Erickson and Gart Westerhout to join the growing group of astronomers at the University of Maryland as a full Professor, and College Park has remained his home (and that of his wife Ranu, their two daughters and one son) ever since.

In addition to his teaching responsibilities and a long stint as Director of the (then) Astronomy Program at Maryland, Mukul has concentrated his efforts on building a strong and diverse research group working in all areas of solar radio astronomy. During his career he has supervised many students who have gone on to become excellent astronomers. They and the post–docs in the group got to work with the best telescopes available. During the expansion of large multi–element microwave interferometers (first Westerbork and then the Very Large Array) in the 1970s and 1980s, Mukul recognized the potential of these instruments for carrying out types of high–spatial–resolution imaging observations of the Sun which were not feasible with the solar–dedicated instruments of the day, and was vocal in his advocacy that the design of these instruments should allow solar work. When they became available, he was among the first to exploit them.

Funding for and operation of the world's premier low–frequency synthesis radio telescope, conceived and designed by Bill Erickson and operated by the University of Maryland at Clark Lake in California, became his main focus in the 1980s. Mukul gave his heart and soul to this project, and fought hard to try to keep it alive when funding became tight. This telescope was a happy marriage of interests, with Mukul carrying out solar observations during the day and Bill running sidereal observations at night. When funding for Clark Lake ceased in the late 1980s and the University instead opted to become involved at the other end of the radio spectrum, Mukul seized the opportunity to initiate yet more pioneering work in the field of solar millimeter interferometry. In recent years he has enjoyed frequent trips to Japan and a healthy collaboration with both solar radio and solar X–ray astronomers there, while maintaining his older ties to Meudon Observatory in Paris. He was instrumental in the establishment of a new institute for astronomy–related research in India in recent years.

Mukul is author or co–author on over 250 papers on solar physics published in refereed journals.