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Obituary

HARALD VON KLÜBER

Harald von Klüber was born in Potsdam on 1901 September 6, the only son of Robert von Klüber, an army officer who later entered the German diplomatic service, and was himself a descendant of a distinguished family that had held high office in the army, the law, and the public service back into the 18th century.

From childhood his interests were in science and particularly astronomy. He entered the University and Technische Hochschule in Berlin in 1920, where his teachers were among the great names of contemporary German science; in physics, they included Planck, Nernst, Einstein and Pringsheim, and in astronomy, Guthnick and Kopff, to name but a few. In 1923 he started to work with Freundlich at the recently founded Einsteininstitut in the grounds of the Astrophysical Observatory at Potsdam, where his first interest, and the subject of his doctoral thesis, was laboratory and stellar spectroscopy. In 1924 he became closely involved with bringing into operation the then new and remarkable 'Einsteinturm' solar telescope, and stayed on the staff of the Institute, becoming successively Observer (1933), Professor (1941) and Head of the Solar Department (1946).

The close association of the Institute with Einstein and with solar physics, and von Klüber's already keen interest in difficult experimental techniques, made it natural for him to involve himself in the formidably difficult problem of determining the 'Einstein deflection' of stars near to the Sun during a total eclipse. Meticulously planned expeditions under Freundlich's leadership, in which he took an increasingly important part, took him successively to sites in Sumatra for the eclipses of 1926 and 1929. As the method of observation needed comparison plates taken six months after an eclipse, von Klüber took the opportunity to spend long periods travelling through South East Asia, when he developed his interest in photography (he was an early enthusiast of the 35-mm camera and treasured an early Leica), archaeology and ancient cultures, and the history of art. During this period, and on later expeditions, he was able to visit and explore sites that were then relatively little known.

The 1929 expedition was particularly successful, and the years 1930 to 1932 were largely occupied in the measurement and reduction of the many photographs obtained on it. But despite his preoccupation with eclipse studies in the 1920s and 1930s he was able to continue his work on high resolution spectroscopy, developing from 1927 onwards a recording photoelectric photometer of novel design, and using it for studies of line profiles in sunspot spectra. These studies were extended later to include interferometric methods of very high resolving power, of which von

Klüber became a master exponent, he being one of the first to apply them to studies of solar line profiles and Zeeman effects. About this time he became closely associated with the Askania firm of optics and precision instrument manufacturers, to whom he was for many years a scientific adviser.

Von Klüber always looked back on these years at Potsdam in the 1920s with particular pleasure. The scientific team at the Einsteinturm, comprising Freundlich, van der Pahlen, Grotrian, von Klüber and the instrument maker Strohbusch, was a small and friendly one. There was a lively atmosphere in it, and frequent and stimulating contacts with his former teachers, and with such foreign colleagues as Eddington, Milne, Lyot, Minnaert and others, all of them in the relatively early years of their careers. But more difficult times were coming. It is impossible to write of the middle and later years of von Klüber's life without referring to the effect upon him of the times through which he lived. With a broad education, a cultured family background, and a natural sensitivity, and holding no bigoted political or religious views, he viewed with increasing distress the political and social changes that were overtaking his beloved Germany. Somehow he managed to hold his official Civil Service post in Potsdam without becoming a member of, or subscribing to the policy of, the Nazi party, and his always frail health exempted him from service in the army. In fact, astronomical work continued in Potsdam through the war years, at first on calculations for astronomical navigation, and later on such problems of solar physics as seemed to have a practical bearing on the structure of the ionosphere and short-wave radio transmission. However, the end of the war brought the Soviet occupying forces and later an invitation to act as adviser to them on the personalities and political inclinations of his scientific colleagues. To become an informer was, to one of von Klüber's upbringing, unthinkable, but to refuse meant probably a concentration camp. Quietly, he packed a suitcase, and together with Lotte Kohlschütter (the daughter of Dr Ernst Kohlschütter, Director of the International Institute for Geodesy) who was shortly to become his wife, managed to make his way to Switzerland. Here, practically penniless, he started his life anew.

Of this period he rarely spoke, even to close friends. But he did not hesitate to make known, in later and more settled years, his distress that those whom he regarded as the criminals of the Germany of the pre-war years should return unpunished to hold responsible positions in the post-war Federal Republic. It was not a popular view, and right or wrong, it took a quiet courage to maintain it.

In Switzerland in 1948, the year of his marriage, he was welcomed at the Zurich Observatory and enjoyed working at the Arosa High Altitude Station, which he had long wanted to do. Here he used the Lyot coronagraph and helped to install the newly completed horizontal solar telescope. Meanwhile, in Cambridge, England, R.O.Redman had recently been appointed Director of the Observatory with its long tradition of work in solar physics, and was recruiting staff. Von Klüber accepted the modest post that was all the straitened circumstances of the University could offer and in 1949 moved with

his wife into a pleasant but equally modest house attached to the Solar Physics Observatory (now incorporated in the Institute of Astronomy). He remained in Cambridge until his retirement in 1971, becoming Assistant Director of the Solar Physics Observatory in 1961.

Although the resources were necessarily more limited than von Klüber had been accustomed to in Potsdam, Redman gave him all possible support, and encouraged him to develop the high resolution solar spectroscopy that he had started in Potsdam. Together they designed a new horizontal solar telescope, and with D.W.Beggs, von Klüber developed a magnetograph of the Babcock type to study the general magnetic field of the Sun, and the fields of individual regions. Later, in 1961, funds, albeit limited, became available to move the equipment to a more favourable Mediterranean site. Von Klüber searched extensively for a suitable location, and after frustrating delays caused by political uncertainties in Rhodes and Cyprus a solar outstation was constructed in the grounds of Tal Virtu Castle, Malta, starting in 1965. Dr and Mrs von Klüber took up permanent residence there in that year. The work was hard, but together with Beggs and occasional visiting staff von Klüber continued to improve the magnetograph and obtained simultaneous measures of small solar magnetic fields and of related line intensities.

In parallel with this, in his earlier years in Cambridge, von Klüber resumed his earlier eclipse studies, and at first with Redman, and later as leader himself, took part in a series of carefully planned and in consequence very successful expeditions, to Khartoum (1952, photometry and polarimetry of the corona), Sweden (1954, coronal emission lines by Fabry–Perot methods), and Atafu Atoll in the Pacific (1958, an improvement on his 1954 method); the weather unfortunately failed him in Ceylon (1955) and the Canary Islands (1959). On all of these expeditions he was accompanied by Mrs von Klüber who, in addition to being responsible for domestic duties, also participated in the observational work.

Von Klüber's scientific output was considerable. His major contributions alone total almost one hundred scientific papers; his standards were high and he published nothing that had not been carefully researched, meticulously done, remorselessly analysed to avoid all possibility of misinterpretation, and fastidiously written. One example only of his caution must suffice. Emerging from the dark room after the 1954 eclipse, at which he succeeded (and knew he had succeeded) in the difficult technique of photographing the green coronal line over the corona with a Fabry–Perot interferometer, he would say only, 'Yes, there are fringes on the plate, but it is necessary first to be sure they are the real ones'.

His manner of life, like that of his work, reflected his upbringing. He was quietly spoken, always neatly dressed, ever punctilious in the correctness of his dealings with others, and accepted misfortune uncomplainingly. Sometimes, it must be admitted, he found the habits of the English young (whether it were in carelessness of manners or in the handling of a delicate piece of optics) displeasing, but his displeasure was always contained, and resulted only in a mild rebuke, usually conveyed later and indirectly. Always interested

in motor cars, his especial pride in Cambridge was an open tourer which he and Mrs von Klüber treated with loving care.

Happily, the years of his retirement brought some recompense for the troubles of his middle years, for the old family country home at 11, Kapuzinerstrasse, Baden-Baden, had escaped destruction during the war, and he was able to recover some of his family possessions. On retirement he returned to Germany, and with his wife took pleasure in restoring the house to its former comfort and elegance, and enjoyed strolls in the surrounding fields and forests.

Von Klüber died in hospital near Baden-Baden on 1978 February 14. He is survived by his wife and devoted helpmeet Lotte, whose loving care had supported him through uncertain health and troubled years. She and her husband ensured that, wherever it was, the von Klüber home was always a welcoming and hospitable place, and many astronomers who worked with von Klüber at the Malta outstation and on eclipse expeditions in the wilder parts of the world will remember that Mrs von Klüber's cheerful efficiency (and excellent cooking) could still maintain that comfort and hospitality among the most unpromising surroundings.

In his retirement von Klüber compiled a short autobiography. It contains the principal facts about his forebears, his life and career, and a list of his major published work, but no word of personal opinion or judgement upon them. Although not formally published, he arranged for typescript copies of it to be sent to a few astronomical libraries after his death. We have drawn upon it in writing this notice. In others such an action might seem egotistic, but it was manifestly von Klüber's intention to spare the time and ease the labour of whoever might be asked to write his obituary. We gratefully acknowledge this last of the many courteous and thoughtful acts of a late friend and colleague.

D.W.Dewhirst

D.E.Blackwell