Jan Schilt

Jan Schilt was born in Gouda, the Netherlands, on 3 February 1894 and died in Englewood, New Jersey, on 9 January 1982.

Schilt graduated from the University of Utrecht in 1915 and obtained the PhD degree at the University of Groningen in 1924. He was assistant astronomer at the Leiden Observatory from 1922 to 1925. Both in Groningen and in Leiden Schilt studied astronomy with Jacobus Cornelius Kapteyn, one of the world's leading astronomers in the first part of this century. Kapteyn's life work was a continuing attempt to obtain insight into the structure, mechanics and dynamics of our Milky Way system.

Thus a foundation was laid for Schilt's future activities, which dealt primarily with galactic structure. While he still was at Leiden, his study of intrinsically bright c-stars led to an important discovery: that the mean radial velocities of these stars indicate a strong dependence on galactic longitude and suggest that one section of the Milky Way moves with respect to another. This was one of the several results Jan Oort later discussed in his classical study of differential galactic rotation. At Leiden, Schilt also developed a thermophile–microphotometer, generally known as the Schilt photometer, for determining stellar brightnesses from photographic star images by means of a thermo-electric cell.

Schilt came to the US in 1925 to the Mount Wilson Observatory. In 1926, at the invitation of Frank Schlesinger, he went to the Yale Observatory, where he stayed until he joined the faculty of Columbia University in 1936 and became director of the Rutherford Observatory; he retired in 1962.

Schilt's continuing research in galactic structure was accompanied by his involvement in organizing and participating in conferences. One conference

Schilt (left) with Jan Oort attending a conference in the 1950s.

in which Schilt (and Walter Baade) played a leading role, on the cosmic distance scale, produced a recommendation that led to the construction of the quartz reflector that has been in operation at the Flagstaff station of the US Naval Observatory since 1964. This magnificent instrument has already resulted in the determination of more than three hundred parallaxes of faint nearby dwarf stars and the discovery of perturbations for several of these stars.

Schilt was always concerned with the cosmic distance scale and the value of the statistical approach through stellar motions. He wrote in 1956:

> The distance scale is a precarious matter because of the paucity of independent methods of observation. Everything, aside from isolated cases, depends on the mean secular parallaxes. Trigonometric parallaxes have to be reduced to absolute parallaxes by them, and they are also the basis of the zero point of the period–luminosity relation of the Cepheid variables. . . . The method of the mean parallaxes has paved the way toward a consistent picture of the stellar world. . . . Still, unfortunately for astronomy, the picture is not complete, and it is good to remember that the method which has so much contributed is a statistical tool and not the embodiment of a physical law.

His social concerns appear in a letter he wrote to the New York Times in 1945, which concluded:

> What, then, can we do if it is true that no safety can be obtained by military preparations, and if we have to admit that, as a consequence of the production of a super-military weapon, the military has been rendered powerless? The question leads inevitably to the necessity of a world-federal control with considerable sacrifice of sovereignty on the part of all countries. In the words of the President, we have the grave responsibility of trusteeship over these weapons. The world-federal control plan gives us the opportunity to discharge this responsibility and to provide for our cities the permanent safety that we cannot otherwise insure.

Shortly after the first Sputnik, Schilt proposed a journey to one of the two small lightweight moons of Mars, either of which would permit a gentle landing, serve as an ideal space platform from which to study the Martian surface, and permit a gentle effort to start the space ship home to Earth.

Schilt was unorthodox, alert and receptive to new ideas and breakthroughs. I recall his early recognition in the late thirties of Grote Reber's pioneering work on radioradiation from the Milky Way, a discovery at first ignored or doubted by most astronomers. Schilt was a dedicated scientist, frequently a loyal opponent, always a faithful friend. His frank and wise counsel meant a great deal to me during my early years at the Sproul Observatory.

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Thomas L. Weatherly

Thomas L. Weatherly, professor of physics at the Georgia Institute of Technology, died on 10 March 1982 at the age of 58.

Weatherly completed his BS in engineering physics in 1947 and his PhD in physics in 1951, both at The Ohio State University. He wrote his doctoral dissertation under the direction of Dudley Williams. Upon graduation, he became associate professor of physics at the Georgia Institute of Technology; he was made professor in 1961. He was a part of the small group of relatively new faculty members who initiated research programs and graduate-level courses in support of a doctoral program in physics.

Weatherly's research was in microwave spectroscopy. He studied the pure rotational spectra of molecules, with particular emphasis on the hyperfine splitting of the Stark effect and nuclear quadrupole interactions. He made important contributions to our knowledge of these phenomena both through experimental measurements and by development of theoretical analysis. In more recent years he conducted analysis and experiments directed toward the use of microwaves for the production of a population inversion.

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