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### Cornelis de Jager

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# Obituaries



Kees de Jager in 1967

Rob Rutten/CC BY-SA3.0

## Cornelis de Jager (1921–2021) Astronomer, pioneer of European space research, inspiring teacher, and a popularizer of science, here remembered by Edward P J van den Heuvel.

**K**ees de Jager was born on 29 April 1921 in Den Burg on the Dutch island of Texel, the place where he returned to live for his last 18 years. He spent his childhood in the Dutch East Indies (now Indonesia), where his father was principal of a primary school, first in North Celebes (now Sulawesi), where Kees attended primary school, and later on Java, where Kees completed his secondary education (HBS) in the city of Surabaya, where he also met Doetie Rienks, later his wife. The beautiful starry sky of Celebes made a deep impression on him. His father had already pointed out the different colours of the stars and told him that this meant that they had different temperatures, which sparked Kees's interest in astronomy.

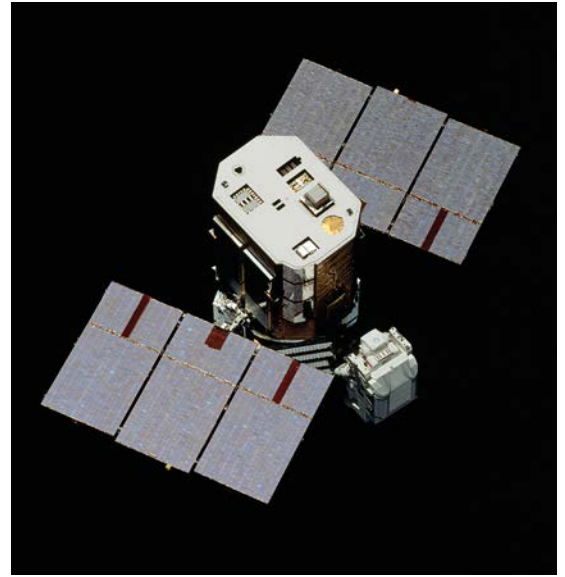
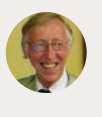
In August 1939 he left by steamship for the Netherlands to study physics at Utrecht University. Professor Marcel Minnaert's astronomy lectures impressed him so much that he decided to study astronomy, much against the wishes of his parents. During the war, which started for the Netherlands in May 1940, de Jager continued his studies in hiding; he had refused to sign the declaration of loyalty to the occupying forces and should have gone to forced labour in Germany. In 1946 he graduated and began a doctoral research project on the spectrum of the Sun. His thesis, in which he derived the height-dependence of temperature and pressure in the Sun's atmosphere from a precise study of the shape of the hydrogen lines in the solar spectrum, made a great impression internationally. It led to an offer of a position at Princeton University in the USA that he was unable to accept; the US refused him a visa because of his left-wing sympathies.

In 1957 he was appointed associate professor and in 1960 full professor at Utrecht University. In 1963 he succeeded Minnaert as director of the Utrecht Observatory, a position he held until his retirement in 1986. De Jager remained active in solar studies until the end of his life: in 2020 he and two collaborators published a book on the influence of the solar activity on climate.

In 1961 he founded the Utrecht Laboratory for Space Research (now part of the Institute SRON of the Netherlands research council NWO), which within a short time became one of the foremost laboratories in this field in Europe, with more than 150 employees. He led this institute until 1983. He also participated in the establishment of the European space research organization ESRO (now ESA). His laboratory built instruments for satellites for measuring ultraviolet and X-ray radiation from the Sun and stars, among them a successful X-ray telescope for the first Dutch satellite ANS, launched in 1974.

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NASA's Solar Maximum Mission satellite, which, despite a troubled early life, made possible pioneering work by de Jager and his team at the University of Utrecht. (NASA)

One of the great successes of his laboratory was an instrument built for NASA's Solar Maximum Mission satellite, with which his team discovered in 1980 that during solar flares, the gas in the solar atmosphere is heated to more than 100 million K. Thanks to this pioneering work, the Utrecht laboratory became a world leader in building instruments for X-ray spectroscopy in space, for example, contributing to NASA's Chandra X-ray Observatory and

*"The United States refused him a visa due to his left-wing sympathies"*

ESA's XMM-Newton Observatory. De Jager also founded the international scientific journals *Space Science Reviews* (1962) and *Solar Physics* (1967).

From around 1980, de Jager focused on stars other than the Sun, choosing to study the most massive and luminous stars. He wrote the book *The Brightest Stars* and did important research in this area with a group of co-workers, focusing on the effects of mass loss on evolution.

He devoted much time to popularizing science, giving many public lectures and writing popular books. De Jager was also the co-founder and chairman of the Netherlands Skeptical Society, and president of the council of European skeptical societies, dedicated to fighting pseudoscience and quackery. Kees kept up his childhood interest in athletics, especially long-distance running, and completed the New York marathon aged 75.

A gifted diplomat of science, de Jager was from 1970–73 Secretary General of the International Astronomical Union, and with the support from both the United States and the Soviet Union, he was twice elected President of the world space research organization COSPAR (1972–78 and 1982–86). He also served as president of the International Council of Scientific Unions.

For his scientific work de Jager received many national and international distinctions, with honorary doctorates of the Universities of Paris and Wrocław and the Gold Medal of the Royal Astronomical Society. With his death, an exceptionally inspiring scientist has passed away. ●