

# Karl Jansky Biography

## Karl Jansky

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# Biography

Karl Jansky was not an astronomer, but a radio engineer who inadvertently made an important contribution to astronomical science. He was born in Oklahoma in 1905 and studied at the University of Wisconsin. He took a job with Bell Telephone Laboratories in 1928 and was assigned to find out what was causing bothersome interference with radio-telephone calls over the Atlantic Ocean.

Jansky built an antenna designed to detect radio signals at the 20.5 megahertz frequency. He discovered three noise sources: a weak signal created by distant thunderstorm activity; powerful bursts came from nearby thunderstorms; and a mysterious signal that produced a steady hiss. While not a problem to radio communications, Jansky was determined to track down the source of the hiss.

At first Jansky thought that the Sun might be responsible for the noise, since the intensity varied on a daily cycle. He spent several months gathering data and noticed that the signal peaked about four minutes earlier each day. Obviously the Sun was not the cause, and he discussed the puzzling phenomena with Albert Melvin Skellett, a friend. Skellett realized the significance of the four minute variation. Whatever Jansky was tracking was keeping sidereal time--in other words, its location was fixed with respect to the stars.

If the source came from the stars, the Sun should also be producing radio noise, but Jansky found that it did not. (As it happened, the Sun was at an inactive point in its sunspot cycle, which is what made it possible for him to detect anything at all from deeper space. Had the activity been high, the Sun would have been the only noise he heard.) Perhaps stars were not the source. Perhaps the radio signals were produced from interstellar gas and dust, he suggested. That assumption turned out to be correct.

Jansky's announcement attracted much notice in 1933. He believed that better receivers should be constructed and observations made but, because this had no importance to radio communication, his employers declined. They believed that the job was more suited to university staffs. Unfortunately, no academics were interested in undertaking such studies either. It would take the efforts of amateur astronomer Grote Reber to single-handedly launch radio astronomy.

In remembrance of Jansky's contributions, the "Jansky" has been adopted as a unit of measurement in radio astronomy, used to describe the amount of energy being received from an object over a unit interval of time.