

Catching Cosmic Whispers: IEEE Benelux LMAG Explores ASTRON

On 27 Augustus 2026, the IEEE Benelux Section LMAG enjoyed an inspiring visit to ASTRON, the Netherlands Institute for Radio Astronomy, in Dwingeloo. Located within the Dwingelderveld nature reserve, ASTRON leverages this protected radio-quiet environment to explore the universe through advanced radio technology.

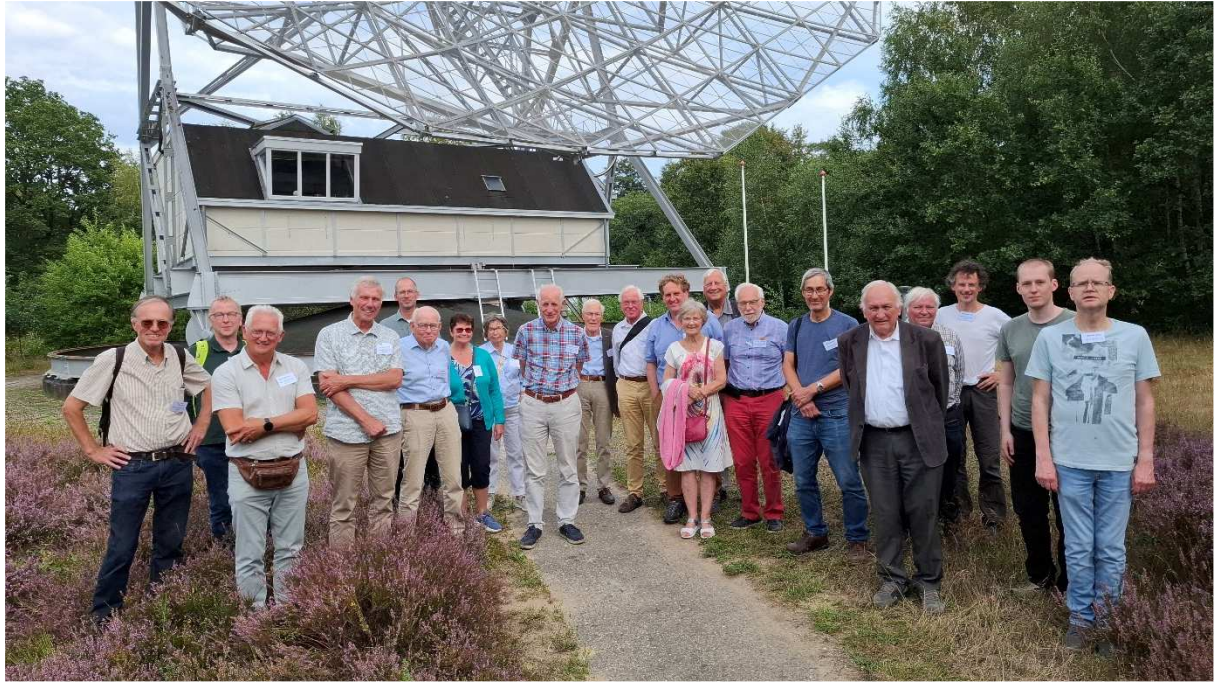
Expert presentations traced ASTRON's history, beginning with the 1951 detection of the 21 cm neutral hydrogen line by prof. Oort using a former German WW2 era radar antenna. This breakthrough enabled mapping of the Milky Way's spiral structure and led to the 1956 inauguration of the iconic 25 m Dwingeloo dish - once the world's largest steerable radio telescope.

We explored the iconic 1956 Dwingeloo dish, the Westerbork Synthesis Radio Telescope (WSRT) - an aperture synthesis phased antenna array comprising sixteen 25m dishes and the LOFAR network. Unlike traditional dishes, LOFAR consists of omnidirectional flat antenna arrays. LOFAR is also contributing to the VLBI radio astronomy array operating European wide. ASTRON's also plays a crucial role in the new Square Kilometre Array (SKA).

Technologically, LOFAR doesn't just peer into deep space; its innovative pico-second clock synchronization enables groundbreaking 3D mapping of lightning strikes.

The visit's highlight was the renovated 1956 dish's control room. Led passionately by Dr. Tammo Jan Dijkema, members listened to solar noise and pulsar signals, felt the massive dish physically repositioning, and witnessed stunning demonstrations. These included writing light with the radio telescope, Earth-Moon-Earth voice bounces (echoing the song "Broer Jacob"), and even bouncing signals off Venus.

This perfect blend of cutting-edge engineering and living radio history made for an unforgettable experience



More pictures:

<https://photos.google.com/share/AF1QipNjTNFmMt3F6ZcZmWul6fwftni5akxUArpaPD8UVLcTUXO3NuzBdl7-ILdpvQ0vQ?key=Rk9iU0g4SWIUaVlld0dsbElrUHcxRUNhSmhOX1FR>