

ARTS – The Apertif Radio Transient System

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Abstract

Apertif is a highly innovative receiver system that is currently being constructed for the Westerbork Synthesis Radio Telescope. Its factor 30 increase in field-of-view allows astronomers to survey the entire sky at 1.4 GHz with an unprecedented combination of sensitivity and speed. ARTS, the Apertif Radio Transient System, will extend this wide-field Apertif system to high time resolution, enabling unique searches for millisecond transients and pulsars. Beam formers and transient detectors, powerful enough to cover the full 9 square degree field of view, will run in real-time. These will provide triggers to facilities ranging from radio to high-energy regimes, for follow up and localization of fast, enigmatic transients.