DRAGNET

One sentence summary: *The DRAGNET project extends LOFAR's detection and localization capabilities for pulsars and fast radio transients.*

Introduction

Studying the extreme astrophysics of neutron stars, black holes and other exotica is key to understanding fundamental gravitational and particle physics. Extreme astrophysical phenomena are fleeting, however, and it is a major observational challenge to detect such fast “transients”.

DRAGNET extends LOFAR with a high-speed, wide-angle radio camera mode that is capable of detecting and localizing fast radio transients in real time. We will scan the sky for sub-second bursts coming from previously unpredicted or unobserved astrophysical phenomena, while simultaneously observing hundreds of known radio-emitting neutron stars (pulsars).

The DRAGNET project started in Jan 2014 and runs for 5 years. It is funded by an NWO VIDI and an ERC Starting Grant (+ some funding from NOVA) covering about 8 fte over 3 institutes.

Work Packages

- WP1: Wide-field transient searches
- WP2: Developing DRAGNET++
- WP3: Neutron star monitoring
- WP4: Characterizing the transient radio sky
- WP5: Understanding neutron star magnetospheres

Related ASTRON/LOFAR Project Pages

- LOFAR Transients Key Science Project
- LOTAAS discoveries

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