

LOFAR-UK statement on STFC Science Programme Prioritisation 2010-2015

LOFAR is a large new radio astronomy facility in the final phases of construction and commissioning. It will be the largest low-frequency radio telescope in the world, and is the major pathfinder for the low-frequency component of the Square Kilometre Array (SKA). The science case for LOFAR is extremely diverse, from planetary astrophysics to galaxy formation to the epoch of re-ionisation, facilitated by its multiple very large fields of view and resultant unparalleled survey speed.

LOFAR-UK is a consortium of astronomers with the goal of constructing and operating one or more antenna stations in the UK forming a key part of the International LOFAR Telescope across Europe. The consortium represents over 20 British universities, making it the largest radio astronomy collaboration in the country. More than 70 leading UK astronomers are directly involved in the project. Since 2005, LOFAR-UK has raised £1.2M from its member institutions independently of the research councils. We have been engaged with, and multiply-reviewed by STFC, as funding was sought for additional UK stations, technical development effort and, crucially, the bulk of the operating costs for the first station, dominated by the costs of data transport to the supercomputer in The Netherlands. All the various STFC panel recommendations have been for significant funding for the project. With the support of STFC, LOFAR-UK's independent funds were therefore used to purchase the first station, sited at the STFC facility at Chilbolton.

Our most recent request to STFC was therefore for running costs for this station, now under construction. These costs are at a level around 0.1% of the total current ground-based astronomy award, and this extremely modest operational budget would enable the UK astronomy community to participate in over 40% of the science from the International LOFAR Telescope, a 200MEuro facility, giving an extremely good return on STFC's investment.

During the response to the STFC funding crisis, LOFAR-UK was reviewed by both the Far-Universe- and Near-Universe Advisory Panels (FUAP and NUAP respectively) as well as the Ground-Based Facilities Review (GBFR). All three panels rated the project extremely highly; in an open poll of UK astronomers, which was published in the GBFR, LOFAR-UK was rated as the sixth (out of 26) most important facility for UK astronomy over the next 10 years (only ESO facilities [ESO, VISTA, ALMA and E-ELT] and SKA R&D were ahead of it).

However, on Dec 16, LOFAR-UK was informed by STFC that there will be no funding of the project by the research council. This puts the entire project, and with it any UK involvement in LOFAR, in jeopardy.

LOFAR-UK will campaign to get this decision by STFC reviewed as soon as possible.

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