

LSC Scientific Committee

19th Meeting

December 2,3 2016

Canfranc Estación, Spain

Summary, Conclusions and Recommendations

The LSC Scientific Committee met at the Canfranc laboratory 2, 3 December 2016, to assess progress and to make recommendations on the experimental program. The committee was very pleased to welcome three new members, Mark Chen heads the SNO+ experiment at SNOLAB, Eligio Lisi of INFN (Bari) contributes a theoretical perspective while Paula Tropea of CERN brings an engineering perspective to our discussions. It is now over a year since Aldo Ianni took up the Directorship responsibility role of LSC. The committee remain very pleased with his leadership of the facility. Due to his efforts, another two new projects were brought forward to the committee. One, considered briefly at the last meeting but now developed as a full proposal, is TREX-DM, a search for light mass WIMP dark matter. The other is a study of seismic noise in the LSC as a very preliminary step in assessment of the suitability of the site to host the Einstein Gravity Wave telescope. Earlier, short term measurements have indicated that the LSC site is particularly quiet in the relevant frequency range and to prospect of a horizontal access would be very attractive for this major potential facility. In parallel with the continued expansion of the experimental program, the committee is satisfied that the stewardship of the facility is being given proper attention. The committee was pleased to see the continued focus on safety and specifically the establishment of an active GLIMOS program together with safety training programs.

The committee received written progress reports from the accepted and proposed projects at LSC and most also made oral presentations at the review. SuperK-Gd and CUNA did not make presentations but the Spokespersons were available via SKYPE to address committee questions.

The committee was joined by an expert referee, Jens Kallmeyer, to consider the biology project GOLLUM. The SC regarded this to be very valuable and the report below is based largely on his observations and recommendations. In keeping with recent practice, the SC was joined by Mario Martinez as an observer from the Ministry.

Generally good progress has been made across the breadth of the scientific program. It appears that ANAIS is likely to obtain a set of NaI crystals of adequate quality to commence an important and competitive test of the annual modulation reported by DAMA. The NEXT collaboration NEW detector is in a commissioning phase and good data are already being recorded. ArDM is making good progress in its transition to a 2 phase detector. The SC was particularly pleased to learn of publication of data from GEODYN and ArDM in scientific journals. Not all developments were positive, however. The SC was disappointed to be informed that the scientific commitment is not currently strong enough to support

an underground accelerator facility studying processes of importance to nuclear astrophysics. The CUNA group, together with both the current and former Director's had worked hard to facilitate such a facility but it seems it must be put on hold until a more favourable climate exists for this worthwhile project.

The SC (and the LSC users) were pleased to hear that fibre would reach Canfranc next month to allow high speed network connectivity.

The next meeting of the SC will be held 11, 12 May 2017. The format of the meeting will again be a broad review of the program.