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Laboratoire d'Études Spatiales et d'Instrumentation en Astrophysique

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SIAMOIS: asteroseismology at Dome C – schedule of the project

In the last years, after the report of exceptional conditions for astronomy at Dome C IPEV (the French polar institute) has identified astronomy as one of the leading science for the Concordia station. The winter measurements have clearly shown that the seeing is excellent only above a 30-m thick turbulent ground layer. But removing the contribution of this layer implies further studies and site testing. Furthermore, another problem appears with the deposit of frost on the metallic structures and the optical surfaces. SIAMOIS is not directly affected by these difficulties because aimed at observing bright single stars, it has enough field of view to tolerate poor seeing conditions on ground, but these adverse conditions introduce difficulties for other projects and slow down the definition of a roadmap for astronomy at Dome C.

The ARENA network has been extended for one year from the conclusions of the mid-term report, up to the end of 2009, in order to be in better position at the end to deliver clear conclusions for the development of astronomy at Dome C. Thus, that is another important reason for the current lack of a precise plan.

Today, INSU considers that Dome C is an interesting but difficult site, requiring many more site testing before any strong developments. Constructing rapidly small projects, for preparing medium then large projects is certainly not the current paradigm.

The opening of the station to other countries besides France and Italy is one of the major strategic aspects of the future Concordia development, and we know that in this direction IPEV has engaged contacts with Germany through the Alfred Wegener Institute and with Spain through CSIC. The confirmation of an effective collaboration with these partners and with other European institutions is an important condition to elaborate a precise roadmap for astronomy at the Concordia station.

In the same time, the schedules of projects already funded at Dome C (IRAIT 80-cm telescope, A-Step exoplanetary search) have been more or less delayed, for various reasons, which would be to long to detail.

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The phase A for the telescope and the mounting device being provided by A-Step, the delay of A-Step implies the delay of SIAMOIS.

Concerning SIAMOIS particularly, a positive signal was given by IPEV, that has identified SIAMOIS as a project suitable to be managed at Dome C, with the current technological environment. SIAMOIS has obtained the highest rank. On the contrary, a negative signal was given by the PNPS (Programme National de Physique Stellaire). Its current scientific committee does not consider asteroseismology as a priority. This advice seems at odds with the efforts put in CoRoT, and it does not take into account that asteroseismology has been clearly identified as the first scientific programme for stellar astronomy at Dome C. Part of the future preparatory work for SIAMOIS will consist in convincing this committee that SIAMOIS is a necessary complement to the CoRoT observations, by the unique possibility of long term spectroscopic observations of typical stellar targets. CoRoT results show clearly the importance of ground-based spectroscopic observations.

With all these informations, after a careful analysis by Tristan Buey and in agreement with the other laboratories involved in the project, LESIA has decided to postpone the project to next year. Even if the ARENA conclusions will not be given at that time, we expect that clues for the roadmap will have emerged ; signs in favour of small projects as SIAMOIS were in fact already given by ARENA at the Postdam workshop (september 2007). In the mean time, active work will be achieved to convince INSU and PNPS that stellar science requires asteroseismic observations at Dome C. We remain convinced that it is essential to manage the project as space project: the schedule and the budget of the project include already this specification. I have already identified with the management of LESIA that 2009 is a good window for starting the phase B of the project.

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