



Exploring Antarctic subglacial lake environments during the International Polar Year 2007-2008.

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Subglacial lakes are novel environments first recognized with the discovery of Subglacial Vostok Lake in 1995. Using airborne geophysical surveys, around 140 lakes have now been identified across Antarctica, though Vostok Lake is, by a substantial margin, the largest on the continent and is the most studied of subglacial lakes though it has yet to be penetrated. Airborne studies complemented by ground-based seismic studies have yielded valuable data on geological setting, lake morphometry, ice characteristics, sediment distribution, etc., and underpinned a considerable modeling effort. The lake is located in a substantial geological basin beneath 4 km of glacial ice sheet and appears to have been isolated for millions of years. The presence, at the base of the ice sheet, of accreted ice originating from the lake water has provided an opportunity to examine biological and chemical information from the lake, albeit with substantial caveats. This has possible relevance to astrobiological in Mars and Europa. Research has also been undertaken on the large group of lakes at Dome C and plans are developing to study a small lake (Subglacial Ellsworth Lake) located in West Antarctica. The exploration of these unique environments is being coordinated by the SALE (Subglacial Antarctic Lake Exploration) programme of SCAR (Scientific Committee on Antarctic Research) and this talk outlines the current planning for activities during the IPY period (2007-2009).