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An overview of the EAIIST (East Antarctic International Ice Sheet Traverse) project

Content

The EAIIST project is an international collaboration between French, Italian, and Australian scientists to explore a portion of the East Antarctic Plateau between Dome C and the South Pole with a land vehicle traverse. The EAIIST traverse, which was inspired by the SCAR-ITASE (International TransAntarctic Scientific Expedition) guidelines, started its journey from the French-Italian Antarctic coastal station at Cap Prud'Homme on the Adélie coast in early November 2019, reached its most remote point 650 km south of Dome C, and finished back at Cap Prud'Homme at the end of January 2020, having covered a distance of 3 600 km. The primary scientific objectives of EAIIST were to study the icy terrain of the Antarctic continent south of Dome C in one of its driest places. These large unexplored and unknown areas have unique and extraordinary surface morphological features (e.g., megadunes, wind glazed areas, surface cracks, etc.) that are suspected to be analogous to glacial conditions at the sites of deep ice core drilling. During this successful traverse, over 600 m of ice cores were drilled in 5 different sites, and two Automatic Weather Stations and two snow towers were installed. Throughout the traverse, snow pits, snow surfaces, and aerosols were routinely sampled for chemical analysis, water vapor isotopes were near-continuously monitored and 2 000 km of echo radars, SSA, density, ice flow and other physical parameters of the ice sheet were recorded. Additionally, seismographs were installed and recovered the year after with almost continuous data records. This poster will present the ambitious scientific goals of this collaboration and the material and data recovered during the traverse.

Primary author: SAVARINO, joel (IGE-CNRS)

Co-authors: PICARD, Ghislain; CAILLON, Nicolas; AKERS, Pete; LE MEUR, Emmanuel; FAVIER, Vincent; LARUE, Fanny; STENNI, Barbara; SPOLAOR, Andrea; FREZZOTTI, Massimo; JONG, Lenneke; LANDAIS, Amaelle; ZIGONE, Dimitri; BARONI, Mélanie

Presenter: SAVARINO, joel (IGE-CNRS)