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Core handling for the South Pole ice core (SPICEcore) project

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The stable isotope, aerosol, and atmospheric gas records in ice cores provide exceptional archives of past climate. Supported by the U.S. National Science Foundation (Office of Polar Programs –Antarctic Glaciology), a new 1,750-meter long ice core (~54,000 years in age) was recovered from South Pole, Antarctica, during the 2014-2015 (0 to 736 m) and 2015-2016 (736 to 1750 m) field seasons using the new U.S. Intermediate Depth Drill. Ice from the brittle ice zone was left at the site to relax. A third field season was required to pack and ship the brittle ice from the second field season back to US, although in hindsight the ice was not brittle. Very few measurements were performed on the ice in the field. The primary goal of the on-site core handling was to remove as much of the Estisol-140 drill fluid from the core as possible, assign a precise depth to the ice, and safely prepare the ice for transport back to the National Science Foundation –Ice Core Facility in Denver, Colorado, USA, for subsequent intensive processing and sampling. This presentation provides an overview of the core handling operation for the SPICEcore project.

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