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# Development of a Micro Subglacial Lake Exploration Device

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The Micro-Subglacial Lake Exploration Device (MSLED) is currently being designed by the Jet Propulsion Laboratory (JPL) and built at the Arizona State University (ASU) to be deployed with the National Science Foundation (NSF) in subglacial Lake Whillians in an upcoming field season 2012. An eight inch borehole will be drilled in the Whillans ice stream as the MSLED, attached to the Antarctic Ice Borehole Probe (IBP), will descend into the subglacial lake. As both instruments reach the lake, the MSLED will separate from the IBP and have the capability to roam independently in the lake with a one kilometer operating range. The primary goals of the MSLED are to provide in-situ measurements of temperature, pressure, and conductivity as well as supply high resolution real-time video from the MSLED to the ground station to conduct remotely operated investigations. The MSLED will provide two-way communications to the surface and have an operating time of a minimum of 2.5 hours. The following presentation outlines the scientific background that inspired the project, the deployment method, and finally, detailed information on the individual subsystems within the MSLED.