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P-RAID: a bottom-of-the-hole subglacial bedrock sampler

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The British Antarctic Survey (BAS) Rapid Access Isotope Drill (RAID) is an innovative new class of electromechanical ice drill. Once the bedrock is reached, it can now be fitted with a percussive head (P-RAID) to deliver a bottom-of-the-hole rock sampling capability.

This head uses a local control loop to manage weight-on-bit downhole, with a decoupled rotary-percussive drill mechanism and a passive core retention architecture.

The results of the test programme to date, including an initial Antarctic shakedown, will be outlined, along with our plans for the next drilling and bedrock recovery campaign at Sherman Island.

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