



1  
00:00:00,000 --> 00:00:03,000  
(Music)

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00:00:03,000 --> 00:00:08,000  
I'm Alberto Behar and I am one of the co-investigators on an international expedition called WISSARD.

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00:00:08,000 --> 00:00:13,000  
Our destination was subglacial Lake Whillans in one of the most remote areas of Antarctica.

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00:00:13,000 --> 00:00:20,000  
Eight people took a dozen containers on sleds and pulled them with tractors for 10 days

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00:00:20,000 --> 00:00:23,000  
to get all of our equipment to the subglacial lake.

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00:00:23,000 --> 00:00:32,000  
The camp consisted of a drilling platform, science labs, a tent city for sleeping and a mess hall for dining.

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00:00:32,000 --> 00:00:35,000  
My part of this project was to develop a completely new instrument,

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00:00:35,000 --> 00:00:41,000  
a micro-submarine that could get deep under the ice and study the lake's characteristics.

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This amazing vehicle was mostly built by students at the Arizona State University

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and it turned out to be about the size of a baseball bat.

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It can handle the depth of one kilometer of water. It had a high-resolution camera,

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some chemical sensors and could talk via fiber optics all the way to the surface.

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00:00:59,000 --> 00:01:04,000

Our system was made up of two parts: the mothership and a submarine.

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00:01:04,000 --> 00:01:07,000

Here you see the deployment device that was connected to the mothership

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00:01:07,000 --> 00:01:11,000

and the sub is inside the deployment device.

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00:01:11,000 --> 00:01:15,000

Here I am holding the mothership in my hands ready for its first tests.

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00:01:15,000 --> 00:01:21,000

You're looking into the borehole. It was 800 meters deep and 50 centimeters wide. It took three days to make.

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00:01:21,000 --> 00:01:24,000

The borehole gave us access to a new environment.

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00:01:24,000 --> 00:01:29,000

Everybody was incredibly excited to see the first images of a subglacial lake.

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00:01:29,000 --> 00:01:33,000

Here you see the first image of the bottom of subglacial Lake Whillans.

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A very fine sediment formed by the movement of a glacier over rocks.

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One thing that was surprising to us was the lake was actually shallower than what we had measured.

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We expected to find 10 meters of water. In the end, it was 1.6 meters deep.

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By surveying the lake floor and the borehole with video, we were able to understand

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that the instruments that were going to be coming afterwards could safely make it into the lake.

