
BIOMINING
IN SPACE

1
00:00:00,170 --> 00:00:05,549
The International Space Station will
soon host some of the smallest miners in

2
00:00:05,549 --> 00:00:12,210
the universe-microbes. Microbes growing
on the surface of rocks can gradually

3
00:00:12,210 --> 00:00:17,910
break them down and extract useful
minerals and metals. This is a process

4
00:00:17,910 --> 00:00:21,109
called biomining.

5
00:00:21,250 --> 00:00:26,320
As we explore space we are seeking to
use biomining to turn rock and regolith

6
00:00:26,320 --> 00:00:31,689
into soil for growing plants and food,
but before we can use this technique in

7
00:00:31,689 --> 00:00:36,870
planetary settlements we first need to
test it in space.

8
00:00:40,020 --> 00:00:45,190
On the space station bioreactors will be
placed inside a centrifuge where

9
00:00:45,190 --> 00:00:49,390
microbes will grow on rocks in
microgravity and simulated Martian

10
00:00:49,390 --> 00:00:53,390
gravity.

11
00:00:54,469 --> 00:00:59,190

Investigators will examine how three
types of microbes behave within pieces

12
00:00:59,190 --> 00:01:03,989
of basalt and evaluate how well the
different microbes extract elements from

13
00:01:03,989 --> 00:01:08,210
the rocks.

14
00:01:08,210 --> 00:01:17,390
The findings will be compared to
ground-based results. We hope to gain

15
00:01:17,390 --> 00:01:22,550
insights into how microbes interact with
rocks in microgravity and how we might