SILICON AUDIO SEISMIC

ENGINEERED FOR EXTREMES

Artemis III: Extreme Isolation

ARTEMIS III: FIRST HUMAN LUNAR SEISMIC DEPLOYMENT IN 50+ YEARS

Silicon Audio is the only seismometer aboard NASA's Artemis III mission, the first human return to the lunar surface since Apollo 17 in 1972.

Selected to Provide Sensors for the Lunar Environment Monitoring Station

Our broadband (BB) and short period (SP) optical seismometers will detect deep and shallow moonquakes as part of LEMS, providing the first continuous seismic monitoring of the Moon in over five decades.

NASA Selection: NASA Goddard Space Flight Center / Artemis III mission

Technology: 500G (design) / 3x industry standard

TRL-6 certified: BB & SP optical seismometers

Collaboration: NASA Goddard Space Flight Center, U. Arizona, U. Maryland

High-stakes science.

LEMS data will reveal the Moon's interior structure, characterize the lunar seismic environment, and inform sustained human presence beyond Earth, also providing **foundational science for Mars exploration**.

Mission-critical performance.

Shock tolerance up to 500G, significantly higher than other comparable seismometers with similar performance capabilities. Silicon Audio's optical technology has already passed NASA's TRL-6 certification for shock and vibration. Built in Austin, TX, in collaboration with NASA Goddard, University of Arizona, and University of Maryland, our seismometers will be launch-ready for the planned 2027 mission.

CONTACT: sales@siaudioseismic.com +1.512.389.2224 siaudioseismic.com

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We Engineer Instruments That Redefine What's Possible

For decades, seismic sensing has required compromise. Low-noise, high dynamic range seismometers deliver exceptional data but are fragile, expensive, and/or difficult to deploy. Industrial geophones are rugged and affordable, but lack the low power consumption, sensitivity and bandwidth necessary for breakthrough science. And nothing survives true extremes, not polar ice sheets, not geothermal boreholes, not spaceflight.

The question we asked: *What if a single sensor could do it all?*

Our Answer: Optical Interferometry Meets Field-Proven Engineering.

Silicon Audio took the reliable mechanics of the traditional geophone and reimagined it with optical sensing technology. The result is a paradigm shift: one compact, ruggedized sensor that delivers scientific-grade performance across bandwidth, sensitivity, and dynamic range previously impossible in a deployable package.

Sample Current Customers

- NASA Artemis III Lunar Mission (currently scheduled for 2027 launch)
- DOE Enhanced Geothermal Systems (expanding)
- Los Alamos National Laboratory / Nevada Test Site Long-term Monitoring
- Texas Seismological Network
- Subsea Data Systems SMART Cable Sensor Systems

From Energy Transition to Planetary Exploration

Our technology is proven where it matters most:

Earth's Interior: Four years of continuous geothermal monitoring at DOE/Lawrence Berkeley sites with zero maintenance, now scaling to Enhanced Geothermal Systems and next-generation energy infrastructure.

Earth's Extremes: Supporting Subsea Data Systems and Ocean Networks Canada, a SMART Cable sensor system deployed in the Cascadia Subduction Zone off the coast of British Columbia.

Beyond Earth: Selected as the supplier of multiple seismometers for NASA Artemis III, returning seismic science to the Moon after 50 years and laying groundwork for Mars exploration.

We don't just build better sensors. We remove the constraints that have limited seismic science for decades.

Terrestrial Tech Specs at a Glance

Bandwidth: 0.025 Hz to 1.5 kHz (single sensor)

Noise Floor: <1 ng/√Hz, detecting femtometer-scale motion

Tilt Tolerance: +/-15° (lowest noise floor); Up to +/-180° omni-directional

Shock Rating: 1500G

Form factors: Full range include vault, posthole, and shallow borehole packages

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