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Poster
Magnetometry is a fundamental tool for studying Earth’s space environment. Among the different techniques for measuring Earth’s magnetic field, optically pumped magnetometers (OPMs) have recently gained increased interest. OPMs use the optical properties of alkali vapors to detect minute variations in Earth’s magnetic field with high sensitivity and speed, without requiring external calibration. Over the past decade, advancements in OPM technology have enabled the production of high-performance, compact sensors at scale, facilitating the deployment of large sensor arrays. Here, we present the development and deployment of a ground-based array of 64 scalar OPMs and highlight space weather events recorded during its first months of operation. Installed at the Edgar Experimental Mine in Idaho Springs, CO, the array has been continuously operating since June 2024, enduring Colorado’s summer, fall, and winter conditions. The sensors are synchronized via GPS-based time references, allowing for increased spacing between nodes to establish a regional OPM sensor network.

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