

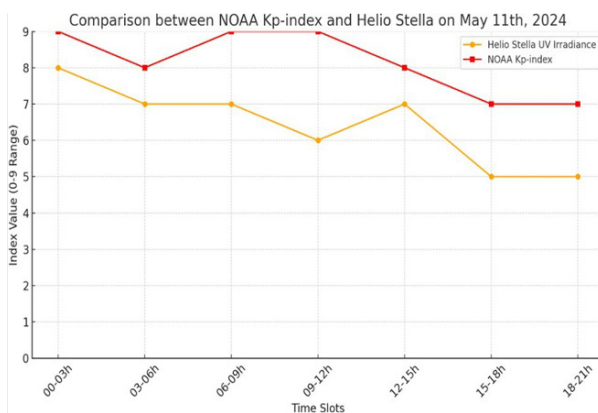
Helio-STELLA



See the Sun in color. Helio-STELLA is a low-cost, no-solder spectral instrument from NASA Goddard Space Flight Center that measures visible sunlight across 8 channels (415–680 nm) plus UVA radiation at 320 nm — every second, all day, logged to a micro SD card.

Assembly requires only scissors, a craft knife, glue stick, and clear tape. No soldering.

Proven in the Field



May 2024 Geomagnetic Storm (Kp 6–9) — Solar spectra correlated with NOAA storm indices, analyzed by an undergraduate using Python.

2024 Total Solar Eclipse — All visible and UV channels dropped to zero during totality in Oberlin,

OH, confirming UV does not scatter under the Moon’s shadow.

Teacher Workshops — Educators built and collected data with Helio-STELLA in a single session at the Dallas Arboretum.

What You Can Do With It

Eclipses — Watch each color disappear and return

Space Weather — Correlate solar spectra with geomagnetic events

UV & Sunburn — Track UVA exposure through the day

Air Quality — Does smoke or haze block UV differently than visible light?

Pair with STELLA-Q2 — Measure incoming light + reflected light = explore surface reflectance

Free & Open Source Software, build instructions, 3D print files, and activities.

