

### VISUAL SPECTRUM OF ORDINARY CHONDRITE H5 SIERRA GORDA 008

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The task of measuring terrestrial rock reflectance spectra and their comparison with the spectra of meteoroids and asteroids is extremely important. It is related both to the Solar system body origin and evolution problem, and the problem of detecting space bodies dangerous for the Earth.

The meteorite Sierra Gorda 008 was found in the Chile's Atacama Desert, Antofagasta province by Timur Kryachko on April, 10, 2018. Its coordinates are: Latitude 22°30.15'S; Longitude 69°7.97'W. It was classified as an ordinary chondrite H5. Its total mass was 66 g.

We investigated the piece from this meteorite with the mass of 53 g was presented by Museum of the Universe, Dedovsk, Moscow region to Ryazan astronomy amateur Alexey Busarov (Figure 1).

We measured the scattering visual spectrum of the Sierra Gorda 008.

We conducted the measuring of the reflectance spectra, based on the methods previously used for the experiments on physical simulation of photometric and spectral characteristics of satellite and asteroid surfaces.

We used a small-size monochromator with a 3-4 nm/mm dispersion concave diffraction grating. As a receiving instrument, we used a photoconductor which is sensitive within the range of 400-900 nm. The incident and scattering light beams formed the angles of 0 and 45 degrees, respectively, to the sample surface normal. For the standard, the flat surface of MgO was used. The relative error of the measurements was 3-4% in the middle of the spectral range and grew up to 10-12% at the range's limits.

Figure 2 shows the averaged Sierra Gorda 008 meteorite spectrum as compared to the spectra of basalt lava from Tenerife.

The simplest comparative analysis of the Ozerki meteorite spectrum and volcanic basalt lava with the spectra of stony meteorites and asteroids shows, that visibly they are sufficiently close.



Figure 1.  
Fragment of Sierra Gorda 008 meteorite

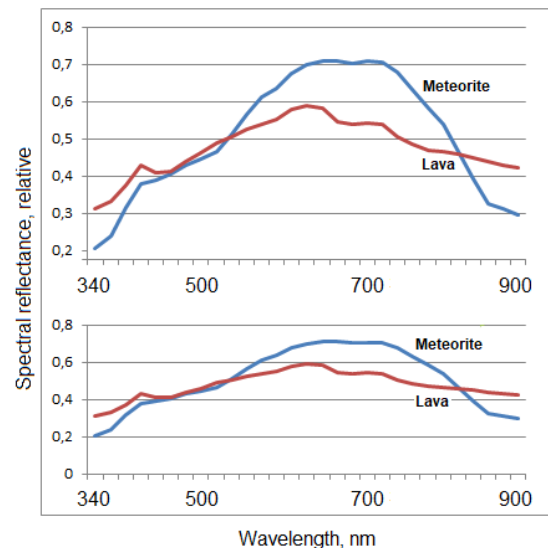


Figure 2.  
Sierra Gorda 008 and basalt lava spectra  
(different parts)

### References

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