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Mineralogical characterization of three new lunar meteorite finds from the Sahara.

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In recent years huge numbers of new lunar meteorites were detected within the Sahara. Thus, now 310 different samples from the Moon are listed in the Meteorite Database [1].

Here, we report on the identification of three new lunar rocks. All three are feldspathic lunar highland breccias. NWA 11407 is composed of angular anorthite-rich lithic and mineral fragments embedded in a fine-grained clastic matrix. The sample contains abundant shock-melted areas. Observed minerals include anorthite, olivine, low-Ca pyroxene, Ca-rich pyroxene, a silica polymorph, Al-Ti-chromite, kamacite, ilmenite, troilite, and pendants. Some Ba-sulfate indicate terrestrial alteration. Olivine has a mean composition of $\text{Fa}_{34.4 \pm 16.6}$ (range: 7.1-85.5 mol% Fa; Fe/Mn: 94 (N=42)) and average low-Ca pyroxene is $\text{Fs}_{29.9 \pm 12.5}$ (range: 15.6-64.6 mol% Fs; Fe/Mn: 60 (N = 39)).

Details on the other two samples will be presented at the meeting.

[1] <https://www.lpi.usra.edu/meteor/metbull.php>.

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