The meteorite flux of the past 2 Myr recorded in the Atacama Desert

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Résumé

We assembled a meteorite collection in the El Médano area of the Atacama desert. We showed that with about 200 meteorites per km2, this area bears the highest meteorite concentration in hot deserts. The evolution of the meteorite flux to Earth was studied by determining the terrestrial ages of a subset of this meteorite collection using the cosmogenic nuclide 36Cl. With an average age of 710 ka, this collection is the oldest collection of non-fossil meteorites at Earth's surface. This allows a determination of the average meteorite flux intensity over the past 2 Myr (222 meteorites larger than 10 g per km2 per Myr). We also discuss the possible compositional variability of the meteorite flux over the Quaternary Period.

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