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The Atacama desert (Chile) is one of the world's oldest and driest desert [1]. We describe here the main features of the San Juan Dense Collection Area (DCA), a deflation area located in the Central Depression of the Atacama desert (Chile). This study is based on the recovery of 31 meteorite stones collected on a surface of 2.8 km² during two systematic search campaigns organized by the University of Chile (Chile) and CEREGE (France).

Petrographic observations, electron microprobe data, physical properties, 14C terrestrial ages, and magnetic susceptibility data show that the 31 stones (ordinary chondrites except one CO3, San Juan 009) represent a minimum of 26 unpaired meteorites. The meteorite density can therefore be estimated to about 10 different meteorites per km². This is a lower estimate since some meteorites may have been left on the field due to the ubiquitous presence of dark magmatic rocks on this surface. This meteorite density is higher than other productive area like Roosevelt County with 5 meteorites/km² [2], and one or more orders of magnitude higher than other DCA like the Nullarbor region with ~1 meteorite/km² [3] or Dar al Gani area with ~0.2 meteorite/km² [4].

In San Juan DCA, the meteorite density is not homogeneous within the (limited) investigated area. The number of meteorites inside a 0.5 km² sliding square varies between 3 and 15. Field observations suggest very limited transport, so that these variations are more likely to be statistical noise or differential deflation rates within the area. Forthcoming search in the same area will hopefully solve this question.

The mass histogram of the San Juan meteorites differs from those of most other hot desert DCA in that we have more than twice as many stones < 40 g, but we lack stones > 550 g that make up ~25% of other collections. We attribute this to a more systematic and careful search by foot in the San Juan area than in other DCA where there is a bias toward larger stones searched by car. Indeed the San Juan mass distribution is similar to that of Nullarbor region [3] that was also searched by foot in a systematic way.

The terrestrial age spectrum (based on 9 ages 14C only) shows that all stones from the San Juan DCA but one are younger than 20 ka. However, the meteorite flux estimated in other studies (e.g., [5,6]) is way too low to explain such a high density of "young" meteorites (almost 10 stones/ km²). 14C dating of the 22 other stones will hopefully solve this apparent misfit.

Despite the high meteorite density, the ubiquitous presence of dark local rocks and the dark color of the desert varnish make meteorite search in the San Juan DCA a tedious activity. Therefore it takes much more time to search a given surface in Atacama than on a homogeneously bright-colored surface like in Dhofar or Dar al Gani areas. Moreover adequate surfaces seem quite limited. It is therefore unlikely that this area will provide large numbers of meteorites in the future.