

Meteorites from Morocco: an important implication in Meteoritics and Planetary Sciences improvement

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Morocco is one of the most important countries in the world on term of meteorite collection. All classes of meteorites are found from the most common such as ordinary chondrites to the rarest such as lunar meteorites, martian meteorites, angrites, ureilites and many other types. In parallel of this richness of meteorite finds, during the last fifteen years, Morocco experienced also a great number of meteorite falls in a relatively short time [1].

The exact geographic coordinates of most meteorites collected in Morocco is unknown as they are collected essentially by nomads crossing the desert all the year long without GPS. The lack of information concerning the exact location origin explain the nomenclature chosen by the Nomenclature Committee (NomCom) of the Meteoritical Society (MetSoc): North West Africa following by a number NWAxxxx. This situation is not in favour of promotion of Moroccan Geoheritage, so we are working for many years on improving the information on the exact site collection to make possible a more adequate nomenclature with a locality name such as Benguerir, Agoudal etc.... [1].

Meteorites from Morocco and surrounding countries are easily getting by collectors and scientists from all over the world, they are sold by local and international dealers. This fact facilitate the access to valuable scientific material and allow valuable and original researches, results, and publications. We estimate that at least half of scientific publications on meteorites are supported by results acquired on meteorites from this part of the continent. Very fundamental results such as the proof of Martian atmosphere trapped in a Martian meteorites and the proof of existence of fluids on Mars are supported by the research conducted on Tissint the latest martian meteorite fall in Morocco [2] or the first 2 Gy old rock from the red planet NWA 7034 that was found on the Moroccan desert in Rbt Sbayta [3].

Morocco has the most important number of meteorite falls in his territory comparing to all other countries in the world during the last fifteen years. Meteorites falls are accepted to be totally random by the meteoritics community, we should find an explanation of this reality that may be related to the big interest of all population especially in the southern part of the kingdom.

Meteoritics and planetary sciences play a fundamental role understanding on formation and evolution history of the Earth, planets and the solar system. Meteorites provides to scientists extra-terrestrial material that is not yet available by space missions and will not be available before many decades. Meteorites from Morocco participate actively to the development of the knowledge on this area. Unfortunately, all of them are exported, it's a lost of a part of the national geoheritage that may be, at least, partially protected by the creation of a national museum that can acquire samples for research and promotion of geosciences in general.

In parallel to our efforts to promote meteorites from Morocco, we also are working on the development of an all-sky camera network that can help on the meteors detections and the meteorites recovery after a fall.

References:

- [1] Chennaoui Aoudjehane et al. (2014) Meteoritics and Planetary Sciences 49:9 abs #5289
- [2] Chennaoui Aoudjehane et al. (2012) Science, 338 (6108): 785-788
- [3] Agee et al. (2013) Science, 339 (6121): 780-785.