

BRAZILIAN METEORITE RECENTLY FALLS AND THE NEED OF A REGULATORY LAW

M. E. Zucolotto¹, A. A. Tosi¹, D. P. P. Andrade¹, D. C. Rios² ¹Universidade Federal do Rio de Janeiro, Brazil, CEP: 21941-909, meteoriticas@ov.ufrj.br ²Universidade Federal da Bahia, Brazil

The last few years the number of Brazilian recovered meteorites has doubled due to an intensive outreach program on meteorites, which began in 2009 with "There is an ET in your backyard [1,2], followed by Geologando project, and with collaboration of fireball camera networks. The number of new recovered freshly meteorite in the last 12 years is: 6 recovered falls, 3 probably falls, added to many finds some not yet submitted to NomCom. Many strewnfields were already determined by the sky observation cameras, but without recoveries yet, due to tropical vegetation and no government efforts.

In Brazil there is no financial support to researchers for travel or to buy meteorites. This situation leads to an unbalanced scenario between individual and scientific interests. Recently, a fallen meteorite in Santa Filomena (SF) caught the media's attention, even during the Covid-19 pandemic [3]. Almost instantly, collectors and foreign dealers arrived at the small city, alarming the local authorities regarding the existence of a legal commercialization. How there is not yet a law that regulates meteorite property rights, these space objects could be treated as a thing without a previous owner, called "res nullius" [4]

The Brazilian Constitution allows the creation of laws, therefore deputies proposed two specific bill for meteorite property. One of them known by the number 4.471/2020, prays to keep meteorites found in Brazil in private hands, but allows the State to retain the pieces for a limited time, if there is interest in researching them. The other one, registered under number 4.529/2020, aims to create what is called Brazilian Scientific Heritage from Space. Under this project, all meteorites found in Brazil would be state property [5]. The Brazilian Society of Geology (SBG) created a working group to propose a law substitute for the bills, which guarantees that Brazilian meteorites be studied by Brazilian scientists and after that, released to the market.

The law had not yet been voted on when the scientific society became aware that a new Brazilian meteorite, named Socorro, had been approved at MB 110. It happens to be the second Brazilian Martian meteorite and the first basaltic shergottite, reinforcing the arguments, of some researches, whose deffends the need of a restrictive law in Brazil. To ensure the discontent of Brazilian scientists, four grams of Socorro meteorite was gently donated by the dealer Michael Farmer.

Socorro has been analysed by optical microscopy, Electron Probe Micro-Analyzer, Raman Spectroscopy, X-ray Fluorescence Spectroscopy, Inductively coupled plasma mass spectrometry (ICP-MS), Time of flight-Mass spectrometry, Particle Induced X-Ray Emission and other techniques. Some of those laboratories are working with meteorites for the first time. This could be of few interest for the international meteorite community, but the engagement of new scientists in the study of meteorites in Brazil have been very producent.

References: [1] Guedes D.A. et al. 2010. <https://www.lpi.usra.edu/meetings/metsoc2010/pdf/5357.pdf> . [2] Boletim da SAB 2020. 32,(1) 165-166 <https://sab-astro.org.br/wp-content/uploads/2020/04/Meteoritics.pdf> . [3] Tosi A.A. et al MAPS (submitted 2022). [4] Neves, M.P. 2014. https://www.emerj.tjrj.jus.br/paginas/trabalhos_conclusao/2se-mestre2014/trabalhos_22014/MarianiPolicarpoNeves.pdf [5] Vesule R. et al 2020 <https://periodicos.unb.br/index.php/revistadedireitounb/article/view/34767>