A STUDENT-PROJECT CONTRIBUTING TO THE SEARCH OF NEW IMPACT STRUCTURES IN MOROCCO. D. Baratoux[1], H. Chennaoui-Aoudjehane[2], S. Chaabout[2], S. Bouley[3], F. Colas[3], J. Lasue[1], P-Y. Meslin[1], L. Maquet[3] [1]Université de Toulouse, UPS-OMP; IRAP; Toulouse, France (david.baratoux@irap.omp.eu). [2]Hassan II University Casablanca Faculty of Sciences - Department of Earth Sciences. [3]Observatoire de Paris, Institut de Mécanique Céleste et de Calcul des Ephémérides, Paris, France.

Introduction: The current terrestrial impact crater record includes about 170 accepted structures (http://www.passc.net/EarthImpactDatabase). The distribution of structures that remain to be discovered will be heterogeneous, and their number depends both on the age of terrains, the level of erosion, and the quality of exploration by geologists familiar with field evidences for impact structures. For remote and poorly explored areas, satellite imagery is a powerful tool to indentify circular structures of various sizes. However, a systematic exploration of Morocco (710 850 km^2) with a resolution of tens of meters per pixel is a long and demanding task. Considering these aspects, we have initiated a project involving students who will examine satellite imagery of Morocco with the aim to build in 2012 a data base of circular structures. This collaborative project has also the objective to promote impact science in geosciences classes with the support of the "Magma" student-association at Toulouse University. The projet has started in January 2012 in the frame of a scientific partnership between France and Morocco [1], and the three-steps approach is described here. First results will be presented at the conference.

Step 1 - Parcel attribution and search: Morroco has been subdivided into 297 parcels, which are progressively attributed to students as individual "kmz" files which can be opened by Google Earth.

Parcels cover about 1500 km^2 and students typically spend about 30' analyzing one parcel. This represents more than 750 hours of work for a single individual, but only a couple of days of analysis for each person for a few tens of active volunteers. As circular structures may be observed at different scales, the students are encouraged to perform two or more systematic searches at a different resolutions, in order not to miss any structures of interest. Circular structures are then annoted and archived as "kmz" files at IRAP.

Step 2 - Selection of potential impact stuctures: Preliminary results suggest that students typically pick a few circular structures per parcel. There will therefore be an important task of further analysis of these structures. Geological maps and available information on the proposed structures will be used at this stage to eliminate those that can be attributed to volcanic or tectonic processes. This part of the project has an educational aspect, emphasizing the number of geological processes that may produce circular structures on Earth and other planets. A number of structures will certainly remain non elucidated at this stage and will be considered for yet a second run of analysis in the field.

Step 3 - Field investigation of selected structures: Non-elucidated structures will be submitted for potential field investigation. Students will defend one or several sites, using available geological/geophysical and remote sensing data. They will finally participate in the final selection of places visited on the basis of a 10 days fied expedition per year. The participation of some of the students to field work will be hopefully possible, and obviously represents a great motivation for the active participation to this project.

Future developments: If successful**,** such projects could be easily extended to larger regions of the world. Collaborative projects for the search of impact craters could follow the path of other success stories in planetary sciences and astrophysics such as "Moon zoo" and "Galaxy zoo."

References: [1] Baratoux et al., this issue. [2] K. Joy et al. (2011) *Royal Astronomical Society*, 52, 2,10-12. [3] J. Raddick et al. (2007) *Bulletin of the American Astronomical Society*, 39, 892. **Acknowledgments:** Students of the Master "Geosciences, Terre, Planète, Matériaux" are gratefully aknowledged for their participation to the launch of this collaborative project - B. Arnoux, D. Habchi, G. Vic, J. Degboe, J. Ezraidi, M. Valette, M-L. Bachèlery, M. Nadrani, N. Herrero, H. Lefevre, R. Nagoudi.