

# The Virtual Museum for Meteorites: an Online Tool for Researchers, Educators and Students

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## Abstract

The Virtual Museum for Meteorites (Figure 1) was created as a tool for students, educators and researchers [1, 2]. One of the aims of this online resource is to promote the interest in meteorites. Thus, the role of meteorites in education and outreach is fundamental, as these are very valuable tools to promote the public's interest in Astronomy and Planetary Sciences. Meteorite exhibitions reveal the fascination of students, educators and even researchers for these extraterrestrial rocks and how these can explain many key questions related to the origin and evolution of our Solar System. However, despite the efforts of private collectors, museums and other institutions to organize meteorite exhibitions, the reach of these is usually limited. The Virtual Museum for Meteorites takes advantage of HTML and related technologies to overcome local boundaries and offer its contents for a global audience. A description of the recent developments performed in the framework of this virtual museum is given in this work.

## 1. Introduction

The specimens included in the Virtual Museum for Meteorites are based on the private meteorite collection owned by Prof. Jose Maria Madiedo [3]. The Madiedo Meteorite Collection consists of over 800 specimens which are available for research purposes but also for education and outreach. Some of these meteorites are being regularly exhibited in Spain in collaboration with universities, museums, research centers and other institutions (Figure 2).

The Virtual Museum for Meteorites (Figure 1) is available in both, English and Spanish versions, since November 2011 at <http://www.museodemeteoritos.es>. The rocks exhibited there were photographed by using two different techniques. Thus, some of them

were imaged from different angles in order to make small interactive animations that can be easily manipulated from the user-friendly web interface. In this way, the visitor can rotate 360° the corresponding meteorite to visualize the rock from different points of view. This has one big advantage, as interesting and important features present on the whole surface of the meteorite can be easily displayed. For other specimens, however, high-resolution digital photographs were taken in order to display zoomed images of these meteorites. These images can be also manipulated by the visitor from the web interface.

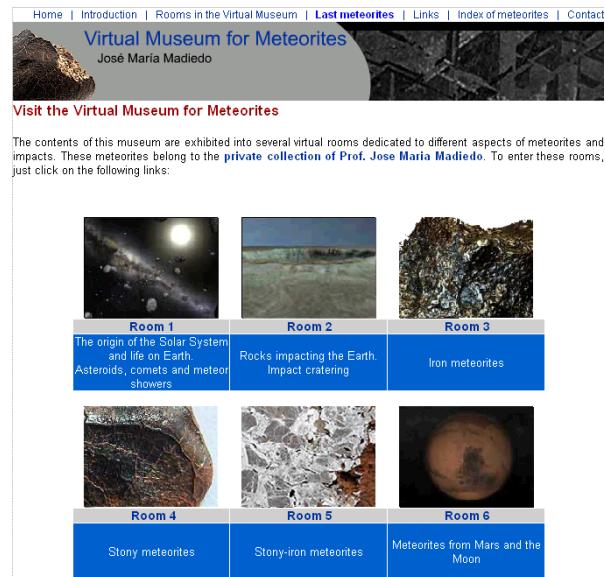


Figure 1. Screenshot of the web page from which the different rooms in the Virtual Museum for Meteorites can be accessed.

The contents exhibited by the Virtual Museum are placed within six virtual rooms. Each room is dedicated to a different subject related to meteorites and impacts:

Room 1: The origin of the Solar System and life on Earth. Asteroids, comets and meteor showers  
 Room 2: Rocks impacting the Earth. Impact cratering.  
 Room 3: Iron meteorites.  
 Room 4: Stony meteorites  
 Room 5: Stony-iron meteorites.  
 Room 6: Meteorites from Mars and the Moon.

## 2. Recent developments

Several major improvements have been performed during 2012. Thus, new images have been included for the specimens included in the first version of the Virtual Museum for Meteorites. The graphics interface for interactive animations has also been enhanced (Figure 3). On the other hand, about 20 new meteorites have been added to the Virtual Museum. Two of the most remarkable ones are the Dar Al Gani 400 lunar anorthosite and the North West Africa 6963 shergotite. This martian meteorite was found in 2011.

Recently, anaglyph red-cyan images were added for some of the specimens. This provides interesting 3D views of these meteorites and makes the contents of the Virtual Museum more attractive. In a near future, more of these images will be added. These anaglyph images were prepared by obtaining two images of the rock from slightly different points of view and then by combining them with a software.

## 3. Summary and Conclusions

The Virtual Museum for Meteorites is available since Nov. 2007 as an online tool oriented to students, educators and researchers. Its contents are based on the Madiedo Meteorite Collection. During 2012 significant improvements have been performed. Among these, the most significant ones are related to an increase in the number of specimens exhibited, but also to the availability of 3D images of some of the meteorites.

## References

- [1] Madiedo J.M. (2012) *43st LPSC*, Abstract #1300.
- [2] Madiedo J.M. (2012) *EPSC*, Abstract #Vol. 7 EPSC2012-3.
- [3] Madiedo J.M. (2012) *EPSC*, Abstract #Vol. 7 EPSC2012-7.



Figure 2. Image taken during a public exhibition of some specimens belonging to the Madiedo Meteorite Collection.

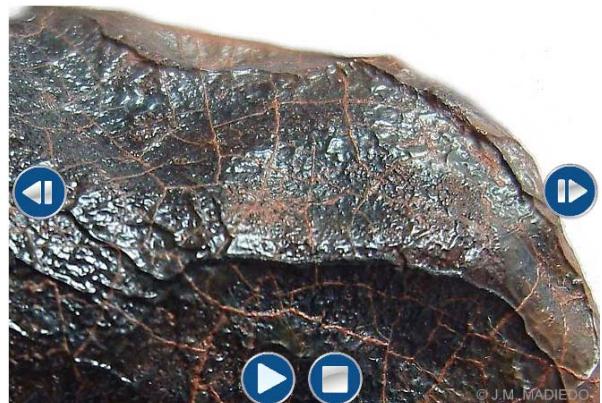


Figure 3. Image showing the enhanced graphics interface for interactive animations. This example corresponds to an specimen of the Millbillillie eucrite.