

MUSEUMS 101

Research museums are in a rare position of being trusted to provide accurate and reliable information in a national conversation increasingly dominated by bias and vested interest [1, 2] and are well situated to share planetary mission experiences with the public. The public view the following as essential purposes of museums: care, preservation and display of heritage; entertaining education for youth; and trustworthy information for all adults, which explains why museums are held in such high regard [2].



The Royal Ontario Museum (ROM) is Canada's largest field-research institution, with research and conservation activities that span the globe. Situated in Toronto, Canada, the ROM houses diverse collections of art, world cultures, and natural history holdings, with over 6 million objects and over 1 million visitors each year. The ROM houses a significant planetary science collection (over 550 meteorites) including 22 martian meteorites (top left image), 12 lunar, 34 HED's, and 35 primitive achondrites, many the largest known samples of their type.

MOST TRUSTED

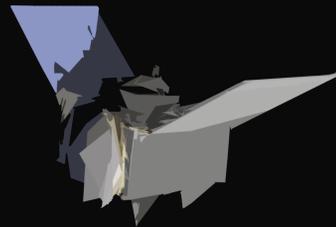
- History Museums/
Historic Sites
- Museums
- Art Museums
- Wikipedia
- Local Paper
- Academic
Reseearchers &
Professors
- US Government
- Nonprofit
Researchers
- Corporate
Researchers

LEAST TRUSTED

Public survey results regarding trustworthy sources of information in USA. Image modified from AAM [3].

CASE STUDY ROM & OSIRIS-REX

On Tues. Sept. 8, 2016, NASA successfully launched OSIRIS-REx, a sample return mission to the asteroid Bennu, with a Canadian science instrument on board (OLA). It will be the largest extraterrestrial sample return mission since the lunar Apollo missions. Dr. Kim Tait, Teck Endowed Chair of Mineralogy at the ROM, is a collaborating Canadian scientist on the mission. She will be part of the team studying the asteroid sample once returned to Earth in 2023. The ROM also provided mineral and meteorite samples to the Canadian instrument development team.



Artist conception of OSIRIS-REx. Modified from NASA image.

The ROM has worked closely with the Canadian Space Agency (CSA) and the University of Arizona over 2016 to promote the mission across numerous platforms, including the following initiatives:



Partnering with a Fleming College Environmental Visual Communication (EVC) class to create media assets that were used by the CSA.*



Commercialized video game about asteroids created during the "Space Rocks" themed ROM Game Jam [4]. See www.astrominers.ca



New display case in the ROM Vale Gallery of Minerals. Over 20 ROM volunteers and staff completed OSIRIS-REx Ambassador training to help with gallery tours.



Providing a ROM special school visit program about the mission and special talks to 10 ROM summer camps about the mission.

*Social Media Reach: An EVC video used by the CSA had a marketing reach of 20,000 with 3025 views and a ROM Facebook Live event had a reach of 15,000 (3600 views).

FUTURE WORK

The ROM is designing unique experiences that will allow new audiences to relate to planetary mission results, through direct interaction with planetary materials and data. Through co-creation and collaboration, we aim to encourage STEM and STEAM learning through interactive programs that incorporate 21st century engagement principles.



To learn more about our planetary science public engagement initiatives and to share ideas contact Dr. Marianne Mader, Managing Director, Earth & Space/ Fossils & Evolution, Royal Ontario Museum at: mmader@rom.on.ca.



3D printed model of Bennu.



MUSEUMS & PLANETARY MISSIONS

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REFERENCES: [1] LAKE, SNELL, PERRY PUBLIC OPINION SURVEY COMMISSIONED BY THE AMERICAN ALLIANCE OF MUSEUMS (2001). [2] MUSEUMS ASSOCIATION (2013) "PUBLIC PERCEPTIONS OF - AND ATTITUDES TO - THE PURPOSES OF MUSEUMS IN SOCIETY." [3] AMERICAN ALLIANCE OF MUSEUMS (2013) "MUSEUMS: DID YOU KNOW?" INFOGRAPHIC [HTTP://AAM-US.ORG/ABOUT-MUSEUMS/MUSEUM-FACTS](http://aam-us.org/about-museums/museum-facts) [4] MADER ET AL., (2016) LPSC ABSTRACT #2419.