THE CANADIAN NASA REGIONAL PLANETARY IMAGE FACILITY: IMPACT CRATERING AND SHOCK PROCESSES. John G. Spray and Staff, Planetary and Space Science Centre, University of New Brunswick, Fredericton, New Brunswick E3B 5A3, Canada. Email: jgs@unb.ca

Introduction: The Canadian NASA Planetary Image Facility, based at the University of New Brunswick, was approved in 1999 by NASA as the national Canadian centre. The facility became fully operational in 2001 with the foundation of the Planetary and Space Science Centre. The Canadian RPIF has a research and outreach focus on impact cratering, as well as planetary geology, especially that of the Moon and Mars. We are one of the larger research groups in the world working on impact structures and related processes, including shock and friction phenomena (involving field work and analytical studies).

Training: Training is a major component of our operations, with typically 2-5 graduate students (Master's and Doctorate levels) and several undergraduate students being supervised at any one time. The facility currently comprises four staff and the Director. Undergraduates are employed annually to work on projects, including the digitization of topographic and geological maps, with recent initiatives involving the production of digital maps of the Charlevoix, Clearwater West and Manicouagan impact structures.

Assets: The RPIF comprises 3100 CDs, 1100 slides, over 500 colour images, 750 books/documents and 400 maps/cartographic materials relating to planetary and space science. Much of this collection is non-digital, though we are striving to digitize our assets where possible.

The Earth Impact Database: The facility operates and maintains the *Earth Impact Databas*e, which is one of the premier websites documenting the terrestrial crater inventory. This website typically receives ~5000 hits per month. We host an extensive collection of hand specimens and thin sections from impact craters from around the world, as well as over 10 km of drill core from the Manicouagan impact structure of Quebec, Canada. We also hold a small meteorite collection comprising loans, as well as purchased material, which includes martian and lunar samples.

NASA MSL Mission Participation: Our expertise in impact cratering processes has led to the inclusion of staff as science team members for the current NASA Mars Science Laboratory mission, which is situated (via the Cursiosity rover) in the 155 km diameter Gale impact crater. Two staff (Drs O'Connell-Cooper and Thompson) are assigned to assisting with the deployment and interpretation of the Canadian built Alpha-Particle X-ray Spectrometer(APXS) on a day-to-day basis, in collaboration with mission co-I Dr John Spray and instrument PI Dr Ralf Gellert (University of Guelph, Canada).

Outreach: Staff and graduate students of the Planetary and Space Science Centre and Canadian RPIF regularly provide presentations and lectures to the public and universities, especially concerning the MSL mission. Other popular topics include impact cratering, mass extinction, the Moon and Mars, Candian contributions to space exploration and careers in science, technology and engineering associated with the space sector.

Funding: Over the last 15 years, the Canadian RPIF has received financial support from the Canadian Space Agency, the New Brunswick Innovation Foundation, and the University of New Brunswick. We look forward to the next 15 years of serving academia, the public and the space science sector.