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Établissement de Plain air du Québec) report in their 2008 August 4 press release that the Mont-Mégantic park pumped over \$10 million into the local economy, mostly through spin-offs. Similar economic numbers could be generated by the presence of the OMI. Indeed this past July, when I visited Mont-Mégantic, I saw two new sub-divisions under development with lots for sale in the nearby town of Saint-Dame-des-Bois only 9 km from the Observatory! The Observatory and the connected Astrolab are the only thing happening in the area, an indication of the economic impact of Mont-Mégantic. Such close-by development could become a significant concern for future operation of an observatory.

### Endorsements and Support

After several months of significant effort, endorsements and support for OMI have been garnered from all the nearby counties and many nearby municipalities. Local politicians, including representatives of five Ontario ministries, have acknowledged that the OMI will be important to the local economy, will help Canadian universities that offer astronomy programs, and will be a welcome addition to Canada's scientific assets. Local businesses, the tourist industry, and at least one centre of the RASC all support the idea enthusiastically. Extensive press coverage in newspapers, on TV, from radio interviews, and in magazine articles have given the OMI much needed exposure since October 2008. Three Canadian universities have expressed an interest in using the instrument.

In addition to moral support, the One-Metre Initiative project was granted \$14,000 by the Frontenac Communities Futures Development Corporation (FCFDC). The grant was used in part to pay for a detailed optical analysis of the telescope, an error budget, and a draft of the Calotte dome. The FCFDC mandate is to spur economic development in the County of Frontenac. This County is in desperate need of economic development and the presence of a major astronomical observatory would be a welcome asset. The FCFDC recognized some five years ago that its spectacular night skies are a high-value natural asset to the county.

Enthusiasm and support for the OMI is overwhelming and extremely encouraging, showing the very strong support we have from the local communities and residents.

### University Interest

Three Canadian Universities have shown strong interest in using the OMI. The University of Western Ontario will play a vital role in developing some of the science programs and will assist in telescope calibration *etc.*, as well as acting as the main repository for data. Paul Wiegert is our principal associate at Western. Western's main interest is minor planets, including NEOs. Queen's University in Kingston, represented by Stephane Courteau, has an interest in providing telescope time for graduate and undergraduates for a variety of astrophysical research projects. Queen's is the nearest university to the OMI, only a two-hour drive from the facility. The Université de Montréal has shown some interest, as the OMI will complement the MMO and relieve some of the time-allocation pressures on their 1.6-m telescope. The unique wide-field and high-throughput capabilities will benefit Québec researchers (CRAQ). René Doyon is the principal contact at UdeM.

### Using the OMI

Certainly the OMI will be open to a broad audience and not just professional astronomers — indeed, a percentage of the available time will be dedicated to outreach and education. The facility is fully autonomous, using a queuing scheme that will permit users to input their observational requirements, leaving the computers to manage the details. Tools will be available for less-experienced users to make use of the One-Metre Initiative's vast potential. The OMI's ability to image very large and very deep fields quickly will permit the discovery of supernovae far beyond the capabilities of any amateur instrument — indeed, several supernovae per night are expected.

The OMI is designed as a dedicated imaging instrument, and here the opportunities are endless. A 100-minute exposure on the Coma-Virgo cluster centre will yield a million galaxies in its 5 degrees<sup>2</sup> FOV, reaching magnitude 25 in the  $r'$  (622 nm,  $s/n=5$ )! Discovering comets will be commonplace with the OMI due to its exceptionally large FOV. With many hours of imaging stacked together, it will be possible to reach magnitude 28. Faint galaxies in such a field would reach back almost to the beginning of time and billions of light-years away.

Cepheid variables could be studied in M31 and M33 with ease. The entire Andromeda Galaxy could be imaged in three colors in about 3 hours to magnitude 25 ( $r'$ ,  $s/n=3$ ) using two frames to cover its extent. Such images will be enormous: 200 MB per colour yielding a 1.2-GB tri-colour image with a resolution of 0.76"/pixel, with an image size of 10,580 pixels  $\times$  21,120 pixels on a field 2.23°  $\times$  4.46°. This would generate a poster 3'  $\times$  6' at 300 dpi! Half of the sky could be imaged down to magnitude 22 ( $r'$ ,  $s/n=5$ ) in a single eight-hour night. Such is the power of the OMI.

### Conclusion

We have shown why Mallory Hill is the best site to establish a professional observatory in southern Canada in terms of sky darkness and very favourable local site conditions that will permit the best possible natural seeing. The easy access to the site and its extremely low operating cost, due to its autonomous nature and proximity, will provide a very high scientific return for an extremely modest investment.

Strong local support from the counties, townships, and politicians indicates that the OMI is now recognized as a potential economic and cultural asset to their communities. Neil Turok, Scientific Director of the Perimeter Institute, and René Racine, Canada's preeminent telescope man (Université de Montréal and the Thirty Metre Telescope), have both commented on the impressive design and potential performance of the One-Metre Initiative.

The OMI will be available to professionals and non-professionals alike and will open up vast possibilities with potential for significant discoveries. The astroimaging capabilities will be far greater than anything available to amateurs by a very wide margin. Probing 25th-magnitude galaxies could be commonplace and detecting 26th-magnitude stars will be fairly "easy." The images generated by the OMI will completely change the landscape and set standards by which astroimages will be gauged.

Having an important astronomical observatory within a reasonable driving distance to millions is bound to have a positive impact on astronomy, especially if the observatory makes important discoveries that will be covered by the national media. The ability to