New astronomical observatory

Mount Megantic, 130 miles from Montreal and Quebec City, is the site of the new Quebec Astronomical Observatory, which will house a 1.6-m aperture telescope to be used among other things, for developing and testing techniques and instruments for the Canada/France observatory in Hawaii.

The new $400-million observatory, scheduled to begin operations in the summer of 1978, has been made possible through the co-operation of the National Research Council of Canada, the Quebec Department of Education and the Universities of Montreal and Laval.

Choice of site

The relative isolation from any large urban centre whose light and pollution would scatter and obscure the feeble rays of light from the stars is one of the major reasons Mount Megantic was chosen as the site for the new observatory. Elevation, also, constitutes an important factor and, with its altitude of 3,625 feet, Mount Megantic was considered to be one of the best.

The geographical setting, the weather conditions in the area and the improbability of any large urban centre developing there were also determining factors. Scientists should have some 120 clear nights each year, which would be equivalent to approximately 1,000 hours of observation.

Finally, the fact that Mount Megantic is relatively far from any other comparable geographical elevation is itself very important, since the ten to 25 miles of flat, open country surrounding the site greatly reduces air turbulence and facilitates observation.

The Quebec Astronomical Observatory, with its 1.60-m telescope will compare favourably with other Canadian observatories – the National Research Astrophysical Observatory in Victoria, British Columbia, which houses a 1.80-m instrument, and the University of Toronto observatory, which uses a 1.85-m telescope.

A modern, versatile reflector

The new instrument, constructed by Bollet & Chivens of the United States, is a copy of an original model built for an observatory in Brazil, with a few minor improvements.

The principal and secondary mirrors will be of CERVIT (vitreous ceramic) – a new material that helps solve the problem of thermal stability at the surface of the disk. The polished parabolic surface of the principal mirror must be accurate to within one tenth of a wavelength. This requirement, which is necessary for the quality of the instrument, involves a precision in polishing in the order of four millionths of a millimetre. Once the disk is polished, a thin layer of aluminium is sprayed on the surface to enable it to reflect visible light. Because of oxidation, it is necessary to respray this surface at regular intervals.

This large aspherical mirror will have a clear aperture of approximately 157.5 cm and an aperture ratio of f/3. It can be combined with other secondary mirrors to produce two separate optical assemblies.

Newton still with us

Several auxiliary instruments are used in conjunction with the telescope. Observers, for example, have at their disposal a Richardson spectrometer, a photographic chamber, an electronic photometer, a polarimeter and a complete system for photoelectric detection and for processing images.

The telescope will lend itself very well to medium- and wide-dispersion spectroscopy work. Spectroscopy consists essentially of diffracting light as Newton did with his prism. By diffracting the light from a star it is possible to determine the chemical elements from which it is made, ascertain its temperature, calculate the speed at which it is moving away from earth, measure the magnetic field at its surface, etc.

Participation of universities

The direction of the research work and the selection of work to be carried out will be the responsibility of the observatory's board of directors, made up of an equal number of members, researchers and administrators from each of the universities involved. The University of Montreal will be in charge of the administration and management of the site.

René Racine, a well-known astrophysicist, will head the new Quebec Astronomical Observatory.

Canada welcomes 1976 Paralympics

First the Olympics, then the Paralympics!

Just two days after the closing ceremonies of the 1976 Olympic Games in Montreal, another group of equally-dedicated athletes will go after world records of their own: this time, in the Metropolitan Toronto borough of Etobicoke.

These games, officially called the 1976 Olympiad for the Physically Disabled, are for semi-paralyzed competitors in wheelchairs, amputees and blind athletes. They start August 3 and end August 11.

All events take place at Centennial Park, a 260-acre "oasis" in Etobicoke, where the new sports complex includes an Olympic-standard swimming pool with 1,500 seats, a gymnasium with two basketball courts and 2,500 seats and a second-floor gymnasium measuring 25 feet by 120 feet.

At least 15,000 spectators are expected at the games.

Of the 1,700 athletes from 75 nations expected to compete, 300 are blind, 300 are amputees and 1,100 will be in wheelchairs.

Although the athletes are disabled, they are not sick, and have trained as hard as "full-bodied" athletes to set their own records, some of which are embarrassingly close to Canadian top marks.

Kozuck of Poland, a blind man, has run the 100 meters in 11.5 seconds, just 1.6 seconds short of the world record.

Jon Brown, a paraplegic from California, has lifted 562 pounds in the bench press, while an amputee from Germany has thrown the discus 151 feet.

Wheelchair basketball is a high-scoring game with few changes from the regular game. This is one of the events in which Canada is a favourite.

Athletes are classified by degree of disability and compete only in their own class. There are distinct divisions for paraplegic, blind and amputee athletes and competitions are open to men and women in separate groups.

Disciplines include swimming, track and field, lawn bowling, table tennis, fencing, archery, rifle shooting, volleyball, basketball and others.

The International Stoke Mandeville