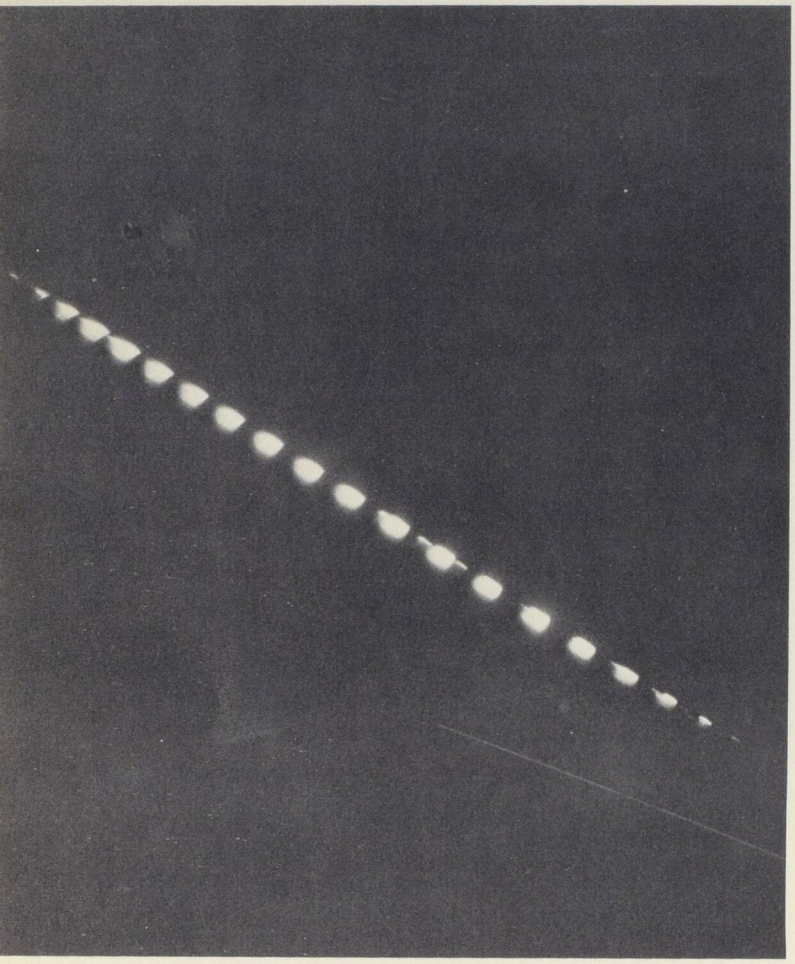

Bright meteor photographed from the Watson, Saskatchewan, station on August 18, 1971. A total of eight MORP stations recorded this object which may possibly have dropped a small meteorite near Nokomis, Saskatchewan.
• *Météore brillant photographié à Watson, au Saskatchewan, le 18 août 1971. Huit stations de PORM ont enregistré cet objet qui a peut-être donné une petite météorite tombée près de Nokomis au Saskatchewan.*

multiplier watching the sky through two perforated cones, one inside the other. A moving light source produces a flickering signal which will be interpreted as a probable meteor if it is within a certain frequency range and lasts for at least a second. Occasionally, the photometer will respond to unusually long bursts of lightning but moonlight does not vary quickly enough to influence the photometer. Either photometer can signal the end of an exposure and initiate the advance of the film in all five cameras; in one case the signal is due to the total amount of integrated skylight, in the other it is the detection of a flickering signal produced by a moving light source.

Every night the cameras are switched on electronically and all the observatories operate on Greenwich time to ensure a standard time across the network. The time of a meteor sighting is photographed on the film to determine the position of the earth in its orbit. Because the stars move and the cameras are stationary, stars appear as curved lines on the film and a meteor trail is recorded as a dashed line due to the rotating shutter in the camera which interrupts the picture every quarter of a second.

Analysis of the photographs yields precise data on the atmospheric path of the meteor and, by ballistic equations, the probable impact point can be determined. Measurements between the dashes of a meteor photograph enable the scientist to compute the velocity vector of the meteor as it entered the atmosphere, from which the meteor's orbit may be deduced. The recovery of a meteorite enables the scientist to study possible cosmic radiation effects. The camera networks in Czechoslovakia and the United States have computed orbits for many meteors but there are still only the two cases where a recovered meteorite can be studied with reliable knowledge of its orbit in the solar system.

Twelve part-time technicians visit the stations, which are virtually self-operative, two or three times a week to check for problems and to reload film, when necessary. The exposed rolls of film are sent to a two-man NRC team headed by A.T. Blackwell, which is located at the MORP network operational headquarters at the Physics Building of the University of Saskatchewan in Saskatoon. Measurements and computations of meteor photographs are conducted both in Saskatoon and in Ottawa.

A meteorite's only value is in scientific research but they are so rare that the Geological Survey of Canada of the Department of Energy, Mines and Resources, guarantees a minimum federal reward of $100 for a new Canadian meteorite. The award may be considerably larger, depending on the meteorite's freshness, size, condition and any information which can be given concerning its fall.

"The MORP project relies on public feedback since the film is processed monthly," Dr. Halliday says, "If MORP officials were to learn from the public of a spectacular meteor event the film would be rushed from the appropriate stations, measured and the results fed to a computer. Under ideal circumstances, we would be in a position to verify the impact point and begin searching for the meteorite within a week.

"We're also maintaining a publicity campaign which is especially intense on the prairies, asking people to inform us of suspected meteorites they have found and to provide information concerning a meteorite's fall. We located one that way last year in Saskatoon, Saskatchewan. Two meteorites were identified in Manitoba in 1971. In the late 1960s, meteorites were being found at the rate of one a year in Canada. In 1965, a meteor weighing tons hit the atmosphere from which a number of fragments totalling less than a gram were recovered on a frozen lake in British Columbia. Its atmospheric explosion produced air shock waves which were recorded on barographs and seismographs in Canada and the northern United States," Dr. Halliday says.

The 1960 Bruderheim meteorite fall in Alberta, which sparked the installation of the MORP project, has come and gone. But the presence of the MORP network has increased the possibility of recording a similar meteorite fall and providing valuable data for the recovery and study of meteorites. □