

November 30, 1959

Miss Isabelle K. Williamson
5162 Bellmore Avenue
Montreal 29, Quebec, Canada

Dear Miss Williamson:

This letter is being addressed to the members of the special committee to investigate the possibility of cooperation among observing centers of the Royal Astronomical Society of Canada, your committee having been appointed by the Society at its national council meeting last June. This matter concerns cooperation with this Observatory in connection with the Satellite Visual Observing Program known as Moonwatch.

It is hoped that your committee may stimulate action to bring about formation of nine to ten Moonwatch teams in Canada, the stations to be as nearly as possible appropriately spaced so as to cover the Dominion. I am confident that through the good offices of your society it may be possible to achieve soon organization of these stations.

It is particularly desirable that the World-wide network of Moonwatch stations be extended into the higher latitudes for more effective observing, especially of the higher inclined satellites.

Moonwatch is a volunteer visual observing program participated in by 200 stations in the United States and 20 other countries. It is directed by this Observatory and is a part of the Satellite Optical Tracking Program. Its aims are: (1) to acquire newly launched satellites, (2) to make regular and frequent observations for tracking purposes, (3) to conduct special search and research projects, and (4) to observe the dying phases of satellites when they decay into the atmosphere.

The basic, required data are the position of the observed satellite to the nearest degree of arc and the time the satellite occupies that position to the nearest second. These data generally are telegraphed to this Observatory, and it is essential that receipt of information be within a few hours.

Instrumentation necessary to perform the task consists of small telescopes of about 2-inch objective with wide angle eyepiece, a radio receiver for reception of time signals, and a wire recorder for recording the time signals as the time of satellite transit is signalled by the observer.

The technique usually employed is to set up a fan of overlapping telescopes across an arc in the sky, through which the satellite is expected to transit, and to note the position of the object in relation to a star of known position; at the same time to note the instant of time the object was in the observed position. This position usually is given in right ascension and declination, but also may be reported in altitude and azimuth. A wire recorder or stop watches may be used with a radio receiver giving out time signals for time reference.

Usually, newly organized Moonwatch teams provide their own equipment and operating expenses except that observational reports are telegraphed at the expense of this Observatory; but depending upon their performance, teams become eligible for material support from this Observatory as resources are available on a priority basis. Moonwatch teams are provided predictions of satellite transits, usually by airmail, but depending upon pertinent factors, these predictions may be telegraphed from time to time. It is expected that an affiliated team will constitute about 25 members, but under unusual circumstances a group of eight to ten earnest observers may perform satisfactorily. Fewer than eight to ten is hardly desirable since the group may not carry on a full observing schedule with such a limited number of observers to call upon from time to time. The team leader is looked upon by Moonwatch Headquarters as the direct and sole contact for all operational and administrative matters. He organizes the team, trains the observers, supervises the observing sessions, and transmits the observations. He is responsible for the performance of the stations and supervises its observing program, but overall direction of all the stations is from Moonwatch Headquarters. It is usual that teams will observe satellites at least once or twice a week.

It is to be emphasized that the Moonwatch Program is a team rather than an individual observing project. It is only through team effort that the observing schedule can be carried out effectively.

There are available presently a limited number of M-17 elbow telescopes of 6° fields, and it is proposed to loan about four of these to each team to be organized in your

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country. In addition, stop watches may be provided. Regular, effective performance by a team will lead us to consider seriously an extension of support beyond that I have mentioned. I shall be pleased to have the information contained in this letter disseminated to interested persons, with whom I shall be glad to communicate directly regarding further pertinent information.

The purposes of this Moonwatch Program are specifically scientific and I believe you will find any effort you may make on behalf of it rewarding to the scientific community.

Cordially yours,

Leon Campbell, Jr.
In Charge Moonwatch Project

LC:jbz