

COMMISSION 50: IDENTIFICATION AND PROTECTION OF EXISTING OR POTENTIAL OBSERVATORY SITES (IDENTIFICATION ET PROTECTION DES SITES D'OBSERVATOIRES EXISTANTS OU POTENTIELS)

Report of Meetings, 17 August, 1979

PRESIDENT: R. Cayrel

SECRETARY: J. Kovalevsky

I. ADMINISTRATIVE SESSION

1. Election of new officers, new organizing committee, membership

The meeting was called to order by the President at 9:15 a.m.

The Commission unanimously approved the proposal of the organizing committee for the following new officers: President, F.G. Smith; Vice-President, A.A. Hoag.

The composition of the new organizing committee, the replacement of Dr. Treanor (deceased) by Dr. J. Casanovas (Vatican state) and the cooptation of A.J. Fisher, President of the Committee of Road Lighting at the CIE, as consultant, were also unanimously approved. It was felt that other changes should require further steps through the national committees each of which has been asked, in the first place, to appoint one member at Commission 50.

It was agreed that the new president will, in due time, ask the national committees if they wish to update their initial choice.

2. Report on the activities of the Commission

The President called for comments or remarks from the floor on the document entitled "Report and Recommendation of Commission 50" prepared at the request of the 1976 General Assembly and issued in June, 1978.

Several directors of observatories have already made use of this report in their negotiations with local authorities to preserve observing conditions at their observatories and found it useful. However, it was pointed out that the document should not be thought of as a panacea, and that in each particular case decisions have to be made at the local, provincial or national level.

It was also indicated that in Recommendation 1 of the Report, the natural level of continuum radiation near 550 nm was correctly stated as 10 Rayleigh per nm, but translated afterwards into improper units. The number  $2.10^{-11}$  stilb and  $2.10^{-7}$  Nit should be read  $2.10^{-11}$  stilb  $\text{\AA}^{-1}$  and  $2.10^{-7}$  Nit  $\text{\AA}^{-1}$ .

This removes the apparent discrepancy with the currently quoted sky brightness of  $2.10^{-4}$  Nit for the total visible light, the effective band width of the eye response being of the order of 1000  $\text{\AA}$  (or 100 nm).

A second report has been drafted to deal in more detail with practical ways to implement light control near observing sites even in cases where some degradation beyond the ideal limits has already taken place.

It has been thought that a report jointly sponsored by the IAU and the CIE (Commission Internationale de l'Eclairage) would be of greater weight and a draft

was distributed to the members of the Commission for comments to be received by R. Cayrel before the end of September, 1979.

### 3. ICSU-UNESCO Grant

It was indicated that a grant of \$5,000.00 had been made available to the IAU from a UNESCO program in order to gather, edit, and publish the information contained in the two reports mentioned in the above paragraph.

### 4. Relations with COSPAR

COSPAR has established a panel called PEDAS (Potentially Environmentally Detrimental Activities in Space) which is to report to the United Nations Committee on Peaceful Uses of Outer Space. The advice of Commission 50 is requested on space activities which might interfere with astronomical observations. The President-elect will be in charge of pursuing the matter with the advice of the O.C.

### 5. Miscellaneous

It was agreed that Commission 50 will make sure that recommendations for the protection of radio-astronomy observations, even if studied in the first place by Commission 40, will be ultimately included in Commission 50's report.

## II. SCIENTIFIC SESSION

The following presentations were made:

W. Howard: meeting of the NSF Committee on site testing and preservation

P. Edwards: site testing in New Zealand

M. Roth: a new site in Mexico, Teotepec

F.G. Smith: a new ordinance controlling La Palma (Canary Islands)

M.F. Walker: seeing monitoring: the polaris trail method

R.G. Bingham: seeing monitoring: wave-front analysis

Bill Howard reported on a meeting of the National Science Foundation *ad hoc* committee on site testing and preservation held in Tucson, Sept. 18-19, 1978. The committee was concerned by gathering more complete and systematic information on good existing or potential sites under U.S. control. A request was made for additional seeing measurements, sky brightness and meteorological conditions. However, it was felt that it was not very likely to find anything significantly better than already identified sites. A special request was expressed for the protection of Mauna Kea Observatory (first-ranked site) and for Junipero Serra, California, considered as prime sites for ground-based astronomy. The preservation of the quality of other astronomical existing sites was also encouraged.

Paul Edwards reported measurements of atmospheric extinction made in New Zealand. The proportion of the extinction due to aerosols has been determined and found to be 5% at the zenith.

M. Roth reported on a site study carried out by a group at the Instituto de Astronomía (UNAM - Mexico). The site is the mountain Teotepec (3,500 m) located 100° 08' W, 17° 27' N. The site was picked up from an infrared satellite survey.

It is fairly good during the dry season, partly useable during the rainy season, thanks to the fact that it is frequently above the cloud layer.

F.G. Smith reported on a clause protecting the site of the International Astronomical Center at La Palma (one of the Canary Islands). This clause is part of an intergovernmental agreement signed on May 26, 1979, by the governments of Spain, Denmark, Sweden, and U.K. It states that the Government of the Kingdom of Spain shall guarantee the protection of the research work and "shall maintain the astronomical qualities of the observatories and endeavor to adhere to the recommendations of the International Astronomical Union".

It is the first time that the recommendations of the IAU are playing a major role in a site protection ordinance.

M.F. Walker summarized the broadly used "polaris trail method" and indicated its advantages and limitations. As the method has been already described in the literature (pub. A.S.P. 82, 672 and 83, 401) we have not given more details in these proceedings.

R.G. Bingham presented some new ideas on wave-front measurements with the goal to obtain more rigorously statistical characteristics of the wave-front. However, the practical aspects remain a little bit of a problem.

A general discussion followed on seeing monitoring devices.