

COMMISSION 50: IDENTIFICATION AND PROTECTION OF EXISTING AND POTENTIAL OBSERVATORY SITES

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1. New Delhi Meeting

At the XIXth General Assembly our Commission held two meetings during the course of which the following papers were presented:

V.M. Blanco:	Climatology and Site Selection
E. Brosterhus:	Optical Site Evaluation in Saudi Arabia
J. Davis:	An Interferometric Seeing Monitor - Measuring r_0 Directly
P. Murdin, F. Sanchez:	Site Selection and Protection - Canary Islands
J.P. Osorio:	Radio Frequency Interference Problems
G. Swarup:	Radio Noise Surveys for India's Giant Meter-Wavelength Radio Telescope
A. Bhatnagar:	Site Testing for an Infrared Telescope at Mt. Laddakh
G.W. Lockwood:	1955-1985: The Effects of Volcanic Eruptions
C. Blanco:	Volcanic Activity and Astronomical Observations
B. Hidajat:	Change of Coefficients of Extinction at Lembang Caused by Volcanic Eruption
L. Huang:	The Extinction Coefficients at the Xinglong Station of the Beijing Observatory

2. Conferences

In honour of the retirement of our past president Dr. A.A. Hoag the Lowell Observatory organized a symposium May 22-23 1986 on "Identification, Optimization, and Protection of Optical Observing Sites" (Eds. R.L. Millis *et al.* - Lowell Observatory). This conference presented authoritative reviews on the physics of seeing, modern methods of site testing, characteristics of promising observatory sites, telescope and dome design factors relating to seeing and combating site degradation.

Commission 50 will sponsor a colloquium, to be held in Washington D.C., on light pollution, radio interference and the effects of man-made space debris on astronomy immediately following the XXth General Assembly of the IAU in Baltimore.

3. Activities of the Commission

During the period 1985-1987 activities of the Commission centred on dangers posed to all branches of observational astronomy by light pollution, radio interference and "space junk." A proposal to orbit a ring of satellites to celebrate the centenary of the Eiffel Tower was withdrawn following intense pressure by the French and international astronomical communities. Representations were also made to the US Department of Transportation regarding the environmental impact of the proposed launch of cremated human remains into Earth orbit by the Celestis Corporation of Florida. The proposed launch of huge satellites to convert sunlight into electricity for cities and industries on Earth by the USSR is also a source of grave concern.

During the report period the Commission provided information to assist a search for observing sites in Western China and the foothills of the Himalayas, and for a study of astronomical seeing in Saudi Arabia. The Commission also acted as a channel for expressions of concern regarding the effects of drilling for natural gas near the site of the Vienna Observatory. Commission 50 also maintained close contact with the Commission Internationale de l'Eclairage and continued its educational efforts directed towards the reduction of light pollution in cities near major observatories.

Under the active leadership of D.L. Crawford progress continues on the campaigns to control the adverse effects of light pollution on astronomical observatories. In Arizona, there are now more than 40 city or county ordinances to control outdoor lighting and minimize the urban sky glow. Several such ordinances also exist in California, near the major observatories, and on the island of Hawaii, where the Mauna Kea Observatory is located. In all these areas, there is increasing use of low pressure sodium lighting sources. LPS is the preferred light source to minimize adverse effects of urban sky glow, and it is the most cost-effective light source to operate as well.

4. Radio Interference

The principal international concern of radio astronomers during this reporting period is related to transmissions from USSR GLONASS satellites interfering with observations of the OH spectral line near 1612 MHz. Reports of serious interference have been received from several observatories worldwide. At the latest count (June 1987), nine satellites in this system are transmitting at frequencies in the range 1603.125 - 1614.375 MHz, but the system is still evolving. Periodic monitoring of the system status continues. Written inquiries have been made to Soviet officials to get more information on the system, and to try and open a dialogue to mitigate some of the problems. To date these inquiries have not been successful.