

# Appendix 1: S196 Proposal to UNISPACE III <sup>1</sup>

Vienna

19-30 July 1999

Committee I

Agenda item 9

Benefits of basic space science and capacity-building

## Conclusions and proposals of the International Astronomical Union/Committee on Space Research/United Nations Special Environmental Symposium "Preserving the Astronomical Sky"

### Technical Forum

*Recalling* the paragraphs of the draft report of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) (A/CONF.184/3 and Corr.1 and 2) referenced in parentheses below, and noting that:

(a) Understanding the nature of the universe is one of humanity's oldest and strongest fascinations and has been of immense scientific, cultural and practical value for many centuries. Observations at all wavelengths of the electromagnetic spectrum, from the ground and from space, have been vital in the phenomenal progress in all areas of astronomy in the twentieth century, from the exploration of the solar system to discoveries of the echo of the big bang and the beginnings of structure in the universe (paras. 1, 2, 6 and 28);

(b) The space treaties adopted by the United Nations have defined outer space and the space environment as the province of all mankind, to be protected from harmful contamination and adverse changes of all kinds, the exploration and peaceful use of which should be carried on for the benefit and in the interests of all mankind (para. 313). This principle is also strongly supported by the International Astronomical Union and the Committee on Space Research;

(c) Nevertheless, continued scientific studies of the origin and evolution of the universe and mankind's place within it are being jeopardized worldwide by man-made environmental problems of rapidly growing severity. In space, interference in radio frequencies by telecommunications satellites and their ever-increasing demand for frequency space (para. 158) cloud the future of radio astronomy and the operation of scientific satellites for astronomy and remote sensing; space debris is a growing threat to scientific satellites and interferes with ground-based observations (para. 70); and projects to launch bright ob-

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<sup>1</sup>Input document A/CONF.184/C.1/L.2, which was accepted by UNISPACE III and published in the final Report, UN Document A/CONF.184/6, as Annex III, item II, pp.111-112.

jects into space to illuminate the Earth or for artistic, celebratory or advertising purposes present a growing danger to observational astronomy against which no international protection at present exists (para. 73). On the ground, man-made light pollution has already made large areas of the world unsuitable for astronomical observations and is beginning to influence wildlife;

(d) Space is not just another place to do business (para. 273), but a finite natural resource common to all of humanity and already showing inexorable symptoms of over-exploitation (para. 70). The problems enumerated above are global in extent and some are long-term or irreversible in time. Owing to the extreme sensitivity of astronomical observations, science has been the first to detect and suffer from these effects, but it will not be alone for long;

*It is recommended that:*

(a) Member States should continue to cooperate, at the national and regional levels, and with industry and through the International Telecommunication Union, to implement suitable regulations to preserve quiet frequency bands for radio astronomy and remote sensing from space (para. 162), and to develop and implement, as a matter of urgency, practicable technical solutions to reduce unwanted radio emissions and other undesirable side-effects from telecommunication satellites;

(b) Member States should cooperate to explore new mechanisms to protect selected regions of Earth and space from radio emissions (radio quiet zones), and to develop innovative techniques that will optimize the conditions for scientific and other space activities to share the radio spectrum and coexist in space;

(c) Member States should cooperate, as a matter of urgency, to ensure that future space activities that would cause potentially harmful interference with the scientific research or natural, cultural and ethical values of other nations (para. 73) are subjected to an environmental impact assessment and international consultations before approval;

(d) Member States should cooperate to ensure that the implementation of measures, at the international level, to preserve all aspects of the space environment in the long term, are included in the work plan of the Committee on the Peaceful Uses of Outer Space and its Subcommittees (paras. 318-321). It is proposed that section III, subparagraph (b) of the draft Vienna declaration on space and human development be formulated more adequately as follows:

“To improve the protection of the near and outer space environment through further research in, and implementation of, measures to control and reduce the amounts of space debris and unwanted emissions at all wavelengths of the electromagnetic spectrum”;

(e) Member States should act to control pollution of the sky by light and other causes, for the benefit of energy conservation, the natural environment, nighttime safety and comfort and the national economy, as well as science.