Resolutions of the Union and of the Associations

RESOLUTIONS OF THE UNION

Resolution N°1

The International Union of Geodesy and Geophysics

Noting the COSPAR and IUCSTP decision taken at their Seattle meetings in May 1971 to approve the First Report of the International Magnetospheric Study Special Study Group and to recommend that subsequent to the completion of its task with the issue of the Second Report, the present IMS Special Study Group be dissolved and replaced by an appropriate body,

Resolves

1. to endorse the principle of the proposed IMS program and
2. to set up a working group of IAGA to consider particularly group-based, rocket borne, and balloon borne research programs which are closely related to the proposed IMS program.

Resolution N°2

The International Union of Geodesy and Geophysics

Noting

a) that it has great interest in the future progress of GARP
b) that the membership of the JOC of GARP will be reviewed and accepted by ICSU before I January 1972

Requests that the Union be included in discussions of the new membership of JOC.

Resolution N°3

The International Union of Geodesy and Geophysics

Recognising the great importance of boundary layer phenomena to the development of the GARP project and to ocean circulation projects and

Being aware of the value of international studies of regions of particular significance,

Recommends that such studies be supported, especially those concerned with

1. air mass modification in the Sea of Japan
2. wind/wave interaction in the North Sea and
3. boundary layer interaction in the Atlantic Ocean.

Resolution N°4

The International Union of Geodesy and Geophysics

Recognising the great value of the international comparisons made of turbulence instruments at Vancouver and Tsimlyansk and

Appreciating the need for further development in preparation for GARP and related programmes,

Recommends that further comparisons be arranged, emphasizing the importance of humidity sensors and of airborne instruments.

Resolution N°5

The International Union of Geodesy and Geophysics

Noting

a) that the back-scattered ultraviolet spectrophotometer on Nimbus 4 is obtaining global measurements of total ozone and also of the ozone distribution above 30 km ;
b) that global measurements of stratospheric temperatures ate ' now available, and are expected to continue to be available, and that the measured temperatures and ozone variations show the presence of large disturbances in the stratosphere ;
c) that ozone is a natural tracer by means of which the temperature changes, -and the circulations in the stratosphere, may be better understood
d) that ozone is an important factor in the radiative and photochemical properties of the atmosphere

Urges

a) that ozone measurements be included at high priority in future satellite programmes, and
b) that ozone sonde programmes be continued and established to provide ozone distribution measurements below 30 km on a synoptic scale.

Resolution N°6

The International Union of Geodesy and Geophysics

Noting that the observatory at Mont Louis (France) has been an established ozone observatory of the highest quality for many years, and

Considering the need for such measurements for meteorological studies and for studies of the possible effects of stratospheric pollution upon the natural ozone of the atmosphere,

Urges that all efforts should be made to continue ozone observations of high quality at this observatory.

Resolution N°7

The International Union of Geodesy and Geophysics

Noting

1. that there are very few measurements of the wind and air temperature at levels above 50 or 60 km; and
2. that measurements are often not readily available to all workers in the field

Recommends that a worldwide effort should be made to increase the number and coverage of measurements above 50 or 60 km.

Resolution N°8

The International Union of Geodesy and Geophysics

Noting

1. that the measurement of most of the important parameters of the physical condition of a cloud is very difficult and that different methods of measurement of the same parameter often give different results;
2. that because measurements are usually made from moving platforms there is the further difficult problem of determining the position, relative to the ground, at which an observation has been made, and
3. that since the air motions are often determined by measuring the drift of these same platforms, errors of measurement of the position of the platforms result in serious errors in the apparent wind field and thereby confuse both physical and dynamic studies therefore

Recommends to the Joint Organizing Committee for GARP that before the GARP Tropical Experiment is carried out there should be an intensive international inter-comparison of all the measuring systems, especially where aircraft are to be used as measuring platforms.

Resolution N°9

The International Union of Geodesy and Geophysics

Noting

1. that because of possible interactions between the magnetosphere and the ionosphere, geomagnetic lunar tides are likely to be influenced by the presence of lunar tides in the magnetosphere, but that these have not yet been observed;
2. that there are now increasing numbers of satellite observations of particle flux and density, and of the electric and magnetic fields in the magnetosphere;

Recommends that an effort be made to detect lunar tidal effects in the magnetosphere and that space experiments should be planned to facilitate this, with special emphasis on the influence of the slowly-varying components of solar activity.

Resolution N°10

The International Union of Geodesy and Geophysics

Noting that there is confusion over the definition of the two parameters fisted below,

Recommends the following definitions:

1. the "reduction factor" of a measurement of an electric field made in a disturbed region is the number by which the observed field must be multiplied to obtain the value over an extensive horizontal surface;
2. the "degree of fulfilment of Ohm's Law Q" is given by one of the two equations:

$$\Omega = \frac{i}{E(\gamma^{+} + \gamma^{-})} \quad \text{OR} \quad \Omega = \frac{I}{u\,G}$$

where: **i** is the measured current density,
E is the measured electric field,
γ^{+} **and** γ^{-} are the positive and negative polar conductivities,
I is the current,
u is the voltage,
G is the conductance.

Resolution N°11

The International Union of Geodesy and Geophysics
Noting
1. that accurate knowledge of the solar radiation reaching the earth is essential for understanding the radiation input to the atmosphere and
2. that, though this problem is fundamental, there is no complete programme operational at present;

Recommends that serious efforts be made to monitor the solar constant and the absolute and relative intensities of the solar spectrum from a satellite or from the moon.

Resolution N°12

The International Union of Geodesy and Geophysics
Noting
1. the deep concern about the effects of pollution on the climate of the earth and that the climate may be changed by the presence of aerosols and
2. our small knowledge of the optical properties of aerosols

Calls the attention through SCOPE of atmospheric physicists to the urgent need to determine the optical properties of aerosols and clouds in all relevant parts of the spectrum.

Resolution N°13

The International Union of Geodesy and Geophysics
Recognizing the potential benefits offered by geothermal energy, and on the other hand, the continuing hazard of destructive earthquakes and volcanic eruptions,
Urges member countries to pursue vigorously and further develop:
1. shallow and deep geophysical studies of active and dormant volcanoes, and
2. research into the relations between volcanism and earthquakes in the mantle and crust.

Resolution N°14

The International Union of Geodesy and Geophysics
Noting that the compilations of crustal thickness produced by the Permanent Service on Crustal Thickness are now fairly complete, believing that they may be maintained without the need for a permanent service, and taking into account the desire of the present host institute to be relieved of this responsibility
Thanks the director, Prof. J.T. Wilson for his initiative and effort in this work and
Recommends to FAGS that the Permanent Service on Crustal Thickness be discontinued.

Resolution N°15

The International Union of Geodesy and Geophysics
Realizing that the scientific value of lunar laser ranging experiments would be greatly enhanced if international cooperation in the observations and theoretical developments as well as in prompt data exchange, is achieved by all groups active in the fields; and,

Noting that a panel under the chairmanship of C.O. Alley was appointed by COSPAR (decision no7, 1970, internal decision no1, 1971) and endorsed by the IAU (1970) in order to accomplish such coordination:
Welcomes the formation of the panel which will strengthen international and inter-union cooperation and
Decides that, subject to the appointment of 6 members by the Union, it may be considered as a special study group of IAG.

Resolution N°16

The International Union of Geodesy and Geophysics
Recognising that the Potsdam datum adopted in London, 1909, has served its purpose in providing a reference for international gravity measurements;
Considering

a) that for scientific purposes a more accurate, system of gravity values is needed to provide both datum and scale;
b) that the IAG has adopted at the Lucerne meeting in 1967 a provisional correction of - 14 mgal to the Potsdam value (Resolution no 22);
c) that the International Committee on Weights and Measures adopted in 1967 a resolution for a correction of - 14 mgal to the value of gravity in the Potsdam datum to be used for metrological purposes;
d) that recent absolute, and relative observations have provided a firm basis for the determination of datum and scale to the required accuracy;
e) that the above mentioned measurements have been adjusted to provide a homogeneous International Gravity Standardization Net (IGSN 71) which defines the datum and scale and gives gravity values with the same order of accuracy throughout its extension;
f) that the establishment of such a system represents a major international effort and provision for maintenance and improvement must be made;
g) that the accuracy of the absolute determination of gravity is adequate for studies of variations in the distribution- and displacements of masses and possible variations of G;

Recommends

1. that the International Gravity Standardization Net 1971 (IGSN 71) be adopted and published in the Bulletin G6od6sique,
2. that the Potsdam datum be corrected by the amount specified in the adjustment.

Resolution N°17

The International Union of Geodesy and Geophysics
Desiring to establish an international framework for

a) the determination of variations of mean sea level in time with respect to a local fixed mark at a significant number of sea coast points,
b) the provision of oceanographic information for the commencement of a study of variations of mean sea level in space,

Recommends that each country, according to its capability, should give high priority to the establishment of a number of more sophisticated tide gauge installations run by scientific staff and observing all parameters associated with the perturbation of the sea surface and,
Recommends furthermore, that the Tide Gauge Bench Mark (Reference du Marigraphe) of each such site be connected to the first order levelling net of the Country.

Resolution N°18

The International Union of Geodesy and Geophysics
Endorses the recommendation n°1 of the Joint Panel on Oceanographic Tables and Standards dealing with the determination of the absolute density of pure water at 4°C and at least two different temperatures, preferably 0° and 20°C, and of the coefficient of thermal expansion, with the necessary precision, between 0° and 40°C, in order to obtain a sound basis for the determination of the absolute density of sea water.

Resolution N°19

The International Union of Geodesy and Geophysics

Taking into account the increasing use of instruments for in situ measurements of thermal conductivity, *strongly recommends* that

a) high precision measurements of conductivity of sea water are carried out in the temperature range 0°C to 14°C,
b) that high precision measurements are made of conductivity as function of temperature and pressure,
c) that high precision measurements are made of sound velocity as function of temperature, salinity and pressure.

Resolution N°20

The International Union of Geodesy and Geophysics

Convened in its XVth General Assembly in Moscow in August 1971,

Conscious of its dedications to the study of the physical and chemical processes taking place on Planet Earth and in its environs and of its responsibility to provide scientific advice on practical problems of a geodetic or geophysical nature,

Recognizing that man's mastery of matter, energy and information handling, as well as his expanding knowledge of life processes have brought mankind to the threshold of an era within which the material necessities and aesthetic amenities of human existence are within the reach of every person on this globe,

Aware that this elevated state of man is being jeopardized by a disturbing lack of harmony between man and his natural and social environment,

Persuaded that new knowledge, revised human values and new and renewed institutions are required to achieve the quality of human environment that is now within reach,

Noting that the United Nations is convening a Conference on Human Environment in Stockholm in June 1972 to focus the attention of governments and public opinion on the importance and urgency of this problem and to identify those aspects that could best be solved through international cooperation,

Recalling the advances in the understanding of Planet Earth that have been made through the series of international scientific programs beginning with the International Geophysical Year,

Persuaded that the time is propitious for a concerted effort by all nations and all disciplines to "tend our understanding of the human environment,

Urges the Stockholm Conference to declare the interval 1975 to 1980 a Special International Environmental Period during which the nations of the world are called upon to set aside their differences and join together in a coordinated effort to start the process of bringing the environment and man into a harmonious state,

Expresses the hope that colleagues in the life and social sciences will participate, and

Decides to offer the active support of the Union through its Associations, Commissions and Committees in this endeavour.

Resolution N°21

The Council of the International Union of Geodesy and Geophysics and the participants in the 15th General Assembly of the Union extend their warmest thanks to the Government of the USSR for the arrangements made to hold the General Assembly in Moscow and to all who have welcomed them so warmly and who have contributed to the success of the Assembly. Their thanks are addressed especially to the Academy of Sciences of the USSR, to the President and the members of the Organizing Committee, to the City Council of Moscow and to the University of Moscow.