

Report to ICSU Executive Board from the International Polar Year Planning Group (ICSU IPY PG)

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1. Purpose of this Document

This document summarises the progress to date by the ICSU Planning Group (PG) for an International Polar Year 2007-2008 (IPY 2007-2008), outlines the ongoing workplan of the PG to complete its tasks, and makes a recommendation to the ICSU Executive Board about the future development of IPY planning and oversight.

2. Background

At its 86th meeting in February 2003, in response to a proposal from Chris Rapley and Robin Bell, the ICSU Executive Board approved the formation of an ICSU Planning Group for an International Polar Year 2007-2008. The Terms of Reference of the Group are given in Appendix I. Chris Rapley was appointed as Chair and Robin Bell as Vice-Chair. The Planning Group membership was approved by the ICSU Officers in June (followed by a small number of subsequent additions), and is given in Appendix II. ICSU emphasized that an IPY should:

- Address both Poles
- Be interdisciplinary (including the social sciences)
- Be truly participatory / international
- Focus on science
- Add value
- Involve young scientists
- Include strong outreach and education components

3. Why hold an International Polar Year in 2007-2008?

Previous Polar Years in 1882/3 and 1932/2, and the International Geophysical Year of 1957/8 resulted in new polar knowledge and significant advances over a wide spectrum of the geosciences. The reasons for holding a new International Polar Year in 2007-2008 can be summarized as follows:

I. Why International?

- Polar processes extend across national boundaries
- The science challenge exceeds the capabilities of any one nation
- A coordinated approach maximizes impact and cost effectiveness

- International collaboration shares benefits, and builds relationships, understanding and common purpose

II Why Polar?

- Polar regions are active, highly connected components of the planet
- Remote and harsh, the Polar regions are insufficiently sampled
- Polar regions hold unique information on the past behaviour of the Earth system
- Significant changes are known to be occurring in the polar regions
- Polar regions have growing economic and geopolitical importance, especially the Arctic
- Key observing systems established during the IGY have subsequently declined and need to be re-established and enhanced

III Why a Year?

- An intensive, coordinated burst of effort will produce major new steps in knowledge and understanding
- Observations of both Polar regions in all seasons are desired
- A “Polar Snapshot” will provide a crucial benchmark for change detection in comparison to past and future data sets
- The legacy of enhanced observing systems generated by the IPY can and should provide the basis for ongoing operational monitoring

IV Why 2007-2008?

- The anniversary of past IPYs and the IGY sets a firm target for the new initiative
- There is a pressing need to capture information on contemporary change
- A 3-4 year planning horizon is challenging but feasible
- The timescale allows advances in technology and logistics to be exploited to address new issues and to access new areas

The IPY concept being developed by the PG is :

An international programme of coordinated, interdisciplinary scientific research and observations in the Earth's Polar regions:

- To explore new frontiers
- To deepen our understanding of polar processes and their global linkages
- To increase our ability to detect changes
- To attract and develop the next generation of polar scientists, engineers and leaders
- To capture the interest of the public and decision makers

The complex, interconnected nature of the Earth System makes it crucial that the approach should be interdisciplinary. Unlike the situation for previous IPYs and the IGY, when few bodies or instruments existed for the coordination of international efforts in polar research, the situation confronting the IPY PG is one in which the interests of a host of bodies,

disciplinary and interdisciplinary, national and international, non-governmental and governmental must be addressed in developing both the content and implementation of the IPY. This represents a considerable challenge.

4. Progress to date (see Chronology in Appendix III)

The PG membership, especially the Chair and Vice-Chair, have actively promoted interest in the IPY at a number of key science meetings and symposia, and through correspondence. They have encountered widespread and enthusiastic support, and endorsements from the following:

- Scientific Committee on Antarctic Research (SCAR)
- Committee of Managers of National Antarctic Programmes (COMNAP)
- US Polar Research Board (US-PRB)
- European Polar Board (EPB)
- International Arctic Science Council (IASC)
- Forum of Arctic Operators (FARO)
- US National Aeronautics and Space Administration (NASA)
- European Space Agency (ESA)
- Arctic Ocean Science Board (AOSB)
- Arctic and SubArctic Ocean Flux Study (ASOF)
- Arctic Climate Impacts Assessment (ACIA)
- Arctic Science Council

The PG has met twice, both times at ICSU Headquarters in Paris.

The first meeting (PG1) took place on the 31st July – 2nd August 2003, soon after the appointment letters had been issued by ICSU. Approximately half the PG membership was able to attend, and others provided input by email. Good progress was made in considering the Terms of Reference and developing these into a workplan and timeline. A preliminary concept and a rationale for an IPY 2007-2008 were articulated, and a process of consultation with the world community of scientists with an interest in polar issues was formulated. Three overarching themes for the IPY were defined, with example of science activities within each.

The PG received presentations on the International Year of Planet Earth (IYPE) being developed by IUGS and UNESCO, and the electronic Geophysical Year (eGY) being developed by IUGG. No firm conclusions were drawn as to how best to relate to these initiatives, although it was recognized that creative synergism should be sought where a clear benefit was possible.

The PG discussed at length the endorsement by the World Meteorological Organisation's (WMO) Congress of an inter-governmental IPY initiative (Appendix IV). A similar commitment had been made by the Antarctic Treaty Consultative (Appendix V). The PG wished to avoid the possibility of the development of separate initiatives. The ICSU Executive Director and PG Chair were tasked to discuss with key individuals within WMO

how best to proceed. More generally, the PG agreed that its aim would be to incorporate as far as possible the interests of all relevant scientific bodies, and those of developing initiatives such as the proposed International Heliophysical Year (IHY).

Other issues addressed included Education and Outreach, an ICSU IPY website, an IPY Logo, Data policy and implementation, and the need to obtain funds for a Secretariat to support the IPY effort. A set of Actions was agreed, including a campaign by the PG membership to inform the community of the ICSU IPY initiative and to engage their enthusiasm and support at key science meetings and symposia.

Following the meeting, a letter was circulated to the science community worldwide via the ICSU bodies and a small number of additional key organizations (Appendix VI). The letter requested nations to establish a means of communication about the IPY, to provide feedback on the proposed IPY Themes, and to submit ideas about the content of an IPY, all with a deadline of 15th December 2003.

The second meeting of the PG (PG2) took place on the 17th to 19th December 2003. The majority of the membership participated. The meeting reviewed activities and progress since PG1, received presentations on the ongoing development of IYPE and eGY, and made further refinements to the IPY concept and rationale. Two items dominated the proceedings, namely the review and analysis of the response by the community to the letter circulated after PG1, and the consideration of a proposal by the WMO for the IPY to be jointly sponsored by ICSU and WMO.

Taking the former first, the PG agreed a process to characterize the response. Over 130 inputs had been received, in a variety of forms and formats. Contributions continued to arrive throughout the meeting.

The results are summarised in Appendix VII and in Tables 1 and 2 below. Inputs had been received from individuals, national and international consortia, nations, and research or operational science coordinating bodies originating in twenty-two nations. Twelve nations had established IPY National Committees or National Points of Contact, and at least five others were known to be in the process of doing so (two have done so since the meeting). A number of key nations (e.g. France) had not provided a national response.

Table 1. List of Nations that provided input to PG2 (* indicates National Committee or National Point of Contact)

- Argentina
- Australia*
- Austria
- Belgium*
- Canada*
- Chile
- China
- Denmark*
- Finland*

- France
- Germany*
- India
- Italy*
- Japan*
- Russia*
- South Africa*
- Sweden
- Switzerland
- Netherlands
- New Zealand*
- Norway*
- United Kingdom*
- United States of America*

Table 2. List of Organisations that provided input to PG2

- GOOS
- IUGS-IYPE
- IUGS-International Permafrost Association (IPA)
- SCOSTEP / STPP – Climate and Weather of Sun-Earth System (CAWSES)
- URSI Commission G
- WCRP
- WCRP CliC
- WCRP CliC-CLIVAR Southern Ocean panel
- WCRP (WMO-IOC-ICSU) International Programme for Antarctic Buoys (IPAB)
- Arctic Ocean Sciences Board (AOSB)
- Census of Marine Life
- European Polar Board
- International Arctic Science Council (IASC)
- International Heliospheric Year
- International Science Initiative for the Russian Arctic (ISIRA)
- International Society for Photogrammetry and Remote Sensing (ISPRS)
- World Meteorological Organisation (WMO)

When combined with endorsements given at meetings and symposia prior to PG2, approximately thirty nongovernmental and intergovernmental bodies had replied expressing support for the IPY, including a number of ICSU bodies or sub-bodies.

Interest was spread approximately equally across both poles, with many proposals addressing bipolar issues and some global in scope. The strong emphases were on physical sciences / climate / weather and ecosystem / biology / biodiversity, with solid Earth, palaeoclimate, upper atmosphere and Sun-Earth interactions also well represented. The social sciences were not well represented, and it was agreed that this should actively be addressed. One organization (IASC) had expressed concern that the ideas that they were aware of were too conservative and lacked imagination.

Some constructive criticism was received concerning the difficulty in separating ideas into the three themes proposed by the PG; these will need to be revisited.

It was agreed that a second letter should be circulated widely, thanking those who had responded and encouraging others to do so, especially the absent nations and under-represented disciplines. A deadline of 12th (subsequently 15th) March was set for the additional inputs. The tight schedule was set in order to provide time to prepare papers for the third meeting of the PG (PG3) which will take place on the 1st-3rd April 2004.

An attempt was made to develop “clusters” or science themes drawn from the 138 ideas as a means of identifying the priority items for the overarching IPY Science Outline Plan. Given pressure of time and the incomplete nature of the input, it was agreed to address this as ongoing work.

Actions were agreed regarding the Logo and Website, and a continuing campaign of information and discussion about the IPY at major meetings and symposia.

Regarding the proposal by WMO, the following arguments in favour were expressed at the meeting and in subsequent discussion:

- The community response (including inputs from e.g. WCRP / CliC / CLIVAR / IPAB) indicated clearly that the IPY will have a major involvement in climate-related issues; a joint programme with WMO would provide resources to help support the operational component of this as well as ensuring freedom of access and data exchange under WMO intergovernmental agreements
- WMO fund operational activities and have the goal of funding IPY-related enhancements. The Russian WMO delegates have expressed a specific interest in reinstating the northern Russian network of hydrometeorological stations and Arctic ice stations, which would constitute a major achievement of an IPY.
- A strong aim should be that new infrastructure established by WMO, such as weather stations, scientific bases, etc, should be made available to support additional science and monitoring activities. This would provide a major opportunity for new science in non-climate disciplines.
- Collaboration with WMO would help a push for a UN resolution in support of IPY
- ICSU is nongovernmental, while WMO is intergovernmental. Such a combination can be powerful (e.g. WCRP)
- WMO will carry out an IPY in response to the recommendation of its Congress. Cooperation is essential to avoid divergence of purpose, dilution of effort and the possibility of competition. A formal relationship is needed
- Support for IPY-related activities in developing Nations would likely be much strengthened by WMO joint sponsorship as a result of its intergovernmental status
- WMO have an historic association with previous IPYs and the IGY; the first and second IPY were proposed respectively by the 2nd International Congress of Meteorologists in Rome (1879) an international conference of meteorological service directors (1928) and were both linked to the International Meteorological Organisation, which was transformed into the WMO in 1947. The IGY was initiated by ICSU and supported by WMO

- WMO would establish an IPY Secretariat; access to Secretariat support would be very helpful and complement the Project Office envisaged for ICSU

Counter arguments were expressed at the meeting regarding:

- the potential impact on flexibility and progress of WMO formalities
- the possibility of an overly bureaucratic approach to process
- the importance that WMO representation in ICSU IPY PG should be proportional to the importance of climate in the IPY programme, since the ICSU IPY had a much broader remit.

Following the meeting one PG member expressed dissent concerning joint sponsorship by WMO, primarily because of the much narrower objectives of the WMO IPY initiative, and the possibility that this could distort both the perception and practice of the ICSU IPY.

The PG was cautious about the proposed inclusion of the International Oceanographic Commission (IOC) as a joint sponsor, since many other organisations could argue that they merit equivalent status, and there is a danger that an organizational structure incorporating joint sponsorship by all interested parties would be unwieldy, impeding progress. Even so, there was recognition of the need to address effectively the interests of key bodies such as SCAR, IASC, COMNAP and some others. In this regard, the PG adopted the following declaration:

“The Planning Group believes it is important to work actively to develop appropriate relationship with those organisation that have defined interests in polar regions.”

At the Russian IPY meeting in St Petersburg in January 2004 (see Appendix IX), a strong arguments was made by WMO to include IOC as a joint sponsor of the IPY, as this would ensure interchange of marine data under the terms of an IOC intergovernmental agreement.

5. Next Steps

The PG identified the following actions and events as its next steps:

| | |
|-----|--|
| Jan | Circulate second Letter to community (Appendix VIII) |
| Feb | Presentation to ICSU Unions and Executive Board recommending that ICSU formally commit to an IPY 2007-2008 |
| Mar | Establish Website at “IPY.ORG” |
| Mar | Deadline for additional input from community |
| Apr | ICSU PG Third Meeting (Paris) <ul style="list-style-type: none"> • Complete summary and analysis of community input • Agree “themes” / “clusters |

- Establish Preliminary IPY Outline Science Plan based on community input AND addressing gaps / omissions
 - Agree actions to resolve outstanding issues – young people involvement / structure and process for implementing IPY / Data / Communication / Outreach
- Apr-July Present Preliminary IPY Outline Science Plan to community via Website and at:
- Arctic Science Summit Week, Reykjavik
 - Fifth International Conference of Arctic Social Sciences, Fairbanks
 - American Geophysical Union, Montreal
 - European Geophysical Union symposium, Nice
 - SCAR Open Science meeting / COMNAP XVI, Bremen
- Sep ICSU PG Fourth Meeting
- Finalise Science Plan

6. Terms of Reference and Outstanding Issues

The PG considers that it has made significant progress on TOR (i) and (ii), and that it has made some progress on TOR (iii) and (iv). TOR (v) has received only very limited attention to date, but will be addressed at PG3 and at the SCAR Open Science Symposium. TOR (v) has proved problematical, given the large number of IPY “stakeholders”.

A serious problem is the lack of support staff for the PG. Effort has been drawn from the limited spare time of the (volunteer) PG membership, enhanced by *ad hoc* assistance from the US Polar Research Board, British Antarctic Survey, and ICSU HQ. There is hope that a small Project Office will be funded by the UK Natural Environment Research Council. Resolving this issue is crucial if the PG is to achieve its goals and to satisfy the high expectations it has raised in the community.

7. Recommendation

The work of the PG has demonstrated strong, widespread and growing support for an IPY 2007-2008 from the science community and numerous interested organizations, including members of the ICSU family. Given this, the PG **recommends** that the ICSU Executive Board (EB) at its meeting in February 2004 should decide to sponsor an International Polar Year 2007-2008. This would remove any uncertainty as to ICSU’s commitment to an IPY and would strengthen the position of the PG in collaborating with other interested parties in developing its plans. It would also allow the establishment of an official ICSU IPY website.

The EB will need to consider whether its sponsorship should be joint with other bodies such as the World Meteorological Organisation and the International Oceanographic Commission, who have expressed interest in such an arrangement. Arguments for and against have been

given above, but it is the majority view of the PG that the initiative should be joint with WMO.

It would be helpful for the PG and the EB to consider together how best to involve the wide variety of other interested parties in the ICSU IPY initiative.

APPENDIX I

Terms of Reference of the ICSU IPY 2007-2008 Planning Group

The role of the IPY-PG should be to formulate a concept for an IPY 2007-8 and to design the means of ICSU leading such a programme.

Specifically the Group's tasks are:

- (i) To gather, summarise and make widely available information on existing ideas for an IPY, serving as a clearinghouse for ideas,
 - (ii) To stimulate, encourage and organise debate amongst a wide range of interested parties on the objectives and possible content of an IPY,
 - (iii) To formulate a set of objectives for an IPY,
 - (iv) To develop an initial high level Science Plan for an IPY which engages younger scientists throughout the planning process,
 - (v) To develop a specific set of objectives targeted at formal and informal education as well as the general public in the next IPY,
 - (vi) To develop a proposed mechanism for the design, development, guidance, and oversight of an IPY,
 - (vii) To present a draft plan to the ICSU EB at their February 2004 meeting; and
 - (vii) To report to the ICSU 28th General Assembly in 2005 a plan for an IPY in 2007-2008 for final endorsement.
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APPENDIX II

ICSU IPY 2007/8 Planning Group Members

(updated 19th September 2003)

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APPENDIX III

IPY CHRONOLOGY

2002

May-Dec Various individuals, institutes and organizations worldwide raise the possibility of an IPY and suggest possible objectives and approaches. A number of websites established. Need for a means of worldwide coordination and leadership apparent.

2003

Feb In response to unsolicited proposal, ICSU EB decide to form an IPY Planning Group

Feb-May Initial polling by proto-PG of community and key organisations via email, letters, specific visits. Discussion sessions at Arctic Science Summit Week and EGS-AGU-EUG symposium in Nice.

May World Meteorological Organization (WMO) Congress endorses IPY (Appendix IV)

June ICSU Officers establish Planning Group by appointment of members

July Antarctic Treaty Consultative parties (ATCM) endorse IPY (Appendix V)
Presentation at joint SCAR-COMNAP (Committee of Managers of national Antarctic Programmes) in Brest.

July/August PG First meeting (ICSU, Paris)

Sept ICSU / PG circulate Letters to ICSU Bodies and selected non-ICSU organizations

Sept Presentation at International Earth Sciences symposium, Potsdam

Dec IPY session at American Geophysical Union meeting
WMO submit concept for Joint ICSU/WMO sponsorship
ICSU PG receive initial community response (Appendix VII)
PG Second meeting (ICSU, Paris)

2004

Jan Russian IPY meeting, St Petersburg – Joint Statement (Appendix IX)

APPENDIX IV

WMO Congress Resolution – May 2003

Resolution 33(Cg-XIV)

HOLDING OF A THIRD INTERNATIONAL POLAR YEAR IN 2007-2008

THE CONGRESS,

CONSIDERING the fundamental contribution of the First and Second IPYs, held in 1882-1883 and 1932-1933, to the understanding of hydrometeorological processes in the polar regions,

NOTING the sensitivity of high latitude regions of our planet to natural and human impacts at global and regional levels and the need in this connection to study processes governing environmental changes in polar areas,

FURTHER NOTING that the main efforts at international cooperation under a third IPY will be to determine present and evaluate future climate change and the state of the environment in the polar regions,

CONSIDERING FURTHER that the observational data and scientific research results obtained will form a basis for developing recommendations for national government agencies and bodies involved in activities in the Arctic and Antarctic,

APPROVES the idea of holding a third IPY in 2007-2008 under the auspices of WMO;

REQUESTS the Executive Council at its fifty-sixth session to examine the preparation and holding of a Third International Polar Year in 2007-2008 in collaboration with other international organizations such as the Arctic Council, the Consultative Conference on the Antarctic Treaty, the International Arctic Science Committee, the Intergovernmental Oceanographic Commission and the Scientific Committee on Antarctic Research and the establishment of an ad hoc working body to prepare a plan of action in preparation for a third IPY and to coordinate its implementation;

REQUESTS the Secretary-General to prepare the relevant programme document for the abovementioned Executive Council session.

APPENDIX V

Antarctic Treaty Consultative Meeting Resolution regarding the IPY 2007-2008 – June 2003

- (122) SCAR introduced IP 120 on “International Polar Year (IPY) 2007-2008”. The IPY will provide an opportunity to galvanise ongoing programmes and promote new activities in Polar Regions. Moreover, SCAR pointed out that the International Council for Science has established a planning group charged with developing a concept for the IPY and a work plan. The United Kingdom, Russia, Chile, France, the United States, New Zealand, Canada, Norway and the Netherlands agreed on the need to adopt a resolution to support SCAR’s efforts in this area.
- (123) Australia and Canada understand that paragraph 4 of the IP provides a basis for IPY preparations by the States in close cooperation with SCAR. Chile believes that this IP provides a new framework for the Parties’ work. Even though there are political and legal differences between the two poles, there is also a strong interdependence which demands a global approach to scientific and environmental matters.
- (124) The ATCM adopted Resolution 3 (2003) on “Support of the ATCM for the International Polar Year 2007/8”, reproduced in Annex C.

Resolution 3 (2003)

SUPPORT OF THE ATCM FOR THE INTERNATIONAL POLAR YEAR 2007/8

The representatives,

Aware that the Polar Regions are key components of the Earth System;

Considering the important role of the Polar Regions both in driving and responding to Global Climate Change;

Recognising the opportunities afforded by new technological and logistical developments for polar research in the 21st century to develop an understanding of key global phenomena at the frontiers of discovery;

Acknowledging the important contribution to scientific knowledge resulting from international cooperation in scientific investigations in the Polar Regions;

Noting the opportunity offered by the 125th anniversary of the first International Polar Year (IPY), the 75th anniversary of the second IPY, and the 50th anniversary of the

International Geophysical Year (IGY), to galvanise an intensive programme of internationally coordinated research in the Polar Regions;

Noting the active commitment to an International Polar Year of the World Meteorological Organisation (WMO), and interest of other international bodies responsible for the coordination of research in the Arctic.

Noting the establishment by the International Council for Science (ICSU) of an overarching Planning Group to coordinate the planning for and the establishment of the IPY (2007/08) that will encompass a wide range of science issues of global interest;

Recommend that the parties:

- call upon SCAR and COMNAP to work with ICSU to pursue actively the planning and implementation by all interested organisations of an International Polar Year (2007/9) to address priority polar science issues of global relevance;
- within the context of their national Antarctic research programmes and capabilities to support science programmes proposed for the IPY (2007/8) to achieve outcomes which would not otherwise be possible if undertaken by national programmes alone and make the support of the IPY (2007/8) a priority within their national research activities.

APPENDIX VI

SEPTEMBER 2003 LETTER TO COMMUNITY REQUESTING IPY ACTION AND INPUT

3rd September 2003

Dear Colleague:

As you may know, planning is underway for an International Polar Year in 2007/8. IPY 2007/8 provides a major opportunity to intensify and enhance polar regions research. It also has the potential to capture the public's imagination and convey the crucial role that the polar regions play in the functioning of the Earth as a system. IPY 2007/8 is envisioned to be an intense, international campaign of coordinated polar observations and analysis; it will be bipolar in focus, multidisciplinary in scope, and truly international in participation. Our vision is for researchers from many nations to work together to gain holistic insights into planetary processes, targeted at exploring and increasing our understanding of the poles and their roles in the global system.

The concept of an International Polar Year 2007 - 2008 has been endorsed and advanced by a broad range of polar and global research groups. Earlier this year, in response to this groundswell of interest, the International Council for Science (ICSU) formed an International Polar Year Planning Group (IPY-PG), which met for the first time at the end of July. Chaired by myself, and with Robin E. Bell as Vice-Chair, this committee has broad representation from the global science community. A list of the committee's members is attached.

At its July meeting in Paris, the Planning Group discussed ways to create an open process that encourages broad input from the international community. We began to describe the desired goals of IPY 2007/8, which we believe should address compelling science issues through multi-national programmes, enable scientific programmes which would not otherwise occur, attract and develop the next generation of polar scientists, and engage the public. A key objective will be the exploitation of opportunities afforded by new Information Technologies to achieve unprecedented participation in the IPY science.

The Planning Group has identified three overarching themes that we hope can serve as the foundation for IPY 2007/8:

- *Exploration of New Frontiers*
- *Understanding Change at the Poles*
- *Decoding Polar Processes*

The Planning Group envisions focused research activities under each of these major themes. During the next six months, we need the science community's input on the proposed themes, and their suggestions for specific research activities.

Given the challenges of designing a science plan, arranging funding, and organizing collaborative, logistically intensive activities, we need to act quickly (see attached timeline). We especially need to move promptly on major field initiatives that would require coordinated use of platforms (e.g., satellites, ships, traverse vehicles, aircraft).

To move ahead, the Planning Group is requesting preliminary input from the community by our next Planning Group meeting in late December.

To achieve this, we request that each nation interested in participating in the International Polar Year 2007/8 considers establishing an appropriate mechanism, for example through the establishment of a national committee or a national point of contact, to communicate with ICSU IPY-PG and facilitate their nation's participation. We request that participating nations involve people that reflect the key components of IPY – both poles, multi-disciplinary, including social science, and a strong outreach and education element.

We appreciate that the timescale is very short, but if at all possible we request that by the 15th December 2003 each interested nation provides the following:

- (1) A statement of intent on the national communication mechanism, including the name of a key contact.
- (2) Comments on the three proposed overarching themes.
- (3) Brief descriptions (1-2 pages maximum) of proposed concepts for research activities, including a title, contact person and contact information, and concise description outlining the possible national contribution in terms of effort, assets, etc. This would not be a formal science proposal, but a mechanism to create a compendium of IPY ideas that then can be sorted and considered. It should indicate the “value added” achieved by its being adopted within the IPY.
- (4) Brief descriptions (1-2 pages) of concepts for cross-cutting activities, with major logistical requirements.

These items should be provided electronically to ipy@nas.edu. We understand that nations have different processes for decision making and funding, and thus are building flexibility and inclusiveness into the planning process. We look forward to your input and suggestions.

Please note that there will be further opportunities to provide input and guidance as the IPY 2007/8 planning continues.

IPY 2007/8 is a unique opportunity that we hope will have the kind of impact created by past IPYs and the International Geophysical Year in 1957-1958. We hope to

do new things, make lasting discoveries, and excite the public about the polar regions. We want to provide a model of truly participative, international, multidisciplinary coordination.

We look forward to working with the community on launching a successful International Polar Year 2007/8.

Sincerely yours

A handwritten signature in black ink, appearing to read "Chris Rapley". The signature is fluid and cursive, with the first name "Chris" written in a large, looped style and the last name "Rapley" in a more standard cursive script.

Prof Chris Rapley,
Chair

Dr Robin E. Bell,
Vice-Chair

Alternative Text for ICSU bodies, IASC, EPB and others:

To achieve this, we request that each scientific union or similar international organisation interested in participating in the International Polar Year 2007-2008 establish as soon as possible a point of contact to communicate with ICSU IPY-PG and facilitate their participation. We request that participating organisations involve people that reflect the key components of IPY – both poles, multi-disciplinary, including social science and a strong outreach and education component.

APPENDIX VII

SUMMARY OF RESPONSE TO SEPTEMBER LETTER

1. Total number of ideas = 138

2. Geographical balance:

| | |
|----------------|----------------|
| Arctic only | 50 submissions |
| Antarctic only | 36 submissions |
| Bi-polar | 42 submissions |
| Global | 8 submissions |

3. Fit to the proposed IPY overarching “Themes”:

| | |
|---------|----|
| Change | 55 |
| Decode | 70 |
| Explore | 37 |
| and | |
| Monitor | 23 |

4. Distribution of the ideas by discipline was as follows (n.b. a submission may fit more than one category):

| | |
|---|----|
| Atmosphere-cryosphere-ocean interaction | 20 |
| Biogeochemistry | 14 |
| Climate and weather | 44 |
| Ecosystems and biodiversity | 37 |
| Humanities and social science | 7 |
| Land-ocean interaction | 8 |
| Palaeo-climate | 19 |
| Solid earth | 18 |
| Upper atmosphere and Sun-Earth interactions | 17 |

APPENDIX VIII

JANUARY 2004 LETTER TO COMMUNITY

ICSU INTERNATIONAL POLAR YEAR 2007-08 PLANNING GROUP

28th January, 2004

The ICSU planning group is very pleased with this high degree of mobilization of the international science community and thanks all who have contributed to date. All submissions have been logged and retained for the future. It would be helpful if you would advise us whether or not we can make individual submissions public.

The science ideas submitted so far encompass the 3 major themes of Change, Exploration and Decoding Polar Processes. The ideas are geographically balanced with a roughly even split between the poles. Although we envision the IPY 2007-2008 as an international and interdisciplinary activity we have subdivided the proposals into disciplinary clusters to highlight some of the gaps. Some disciplinary interests were skewed towards one pole or the other and some disciplines are poorly represented. Specific gaps we have identified are studies of the humanities, social sciences and solid Earth studies, especially in the Arctic. Also, some nations are notable by their absence.

We will be presenting the current state of planning to the ICSU Executive Board in February and will send another update at that point. The ICSU EB will decide whether or not to proceed with an IPY 2007-2008.

The ICSU Executive Board will also consider the proposals from the World Meteorological Organisation and the Intergovernmental Oceanographic Commission to jointly support and coordinate the IPY. The World Meteorological Organisation coordinated the first 2 International Polar Years and jointly sponsored the IGY in 1957-1958

Assuming that the ICSU Board decision to proceed with the International Polar Year 2007-2008 is positive, the primary activities for the IPY Planning Group for the next two months will be to update the community on the planning process, synthesize ideas submitted to date, and seek additional input. By late April, we aim to develop an outline Science Plan including justification for the IPY 2007-2008, and the major themes. The Science Plan will articulate the overarching big science questions to be addressed, integrate the ideas submitted into major clusters, and identify some of the initial proposed projects.

We aim to present this Preliminary Science Plan Outline at the Arctic Science Summit Week in Reykjavik, the European Geophysical Union in Nice, American Geophysical Union in Montreal, Arctic Social Science Conference in Alaska and the

SCAR Open Science Conference in Bremen. We anticipate lively discussion and feedback.

In the meantime, we look forward to:

- (1) additional nations establishing National IPY committees;
- (2) receiving input from all the National IPY committees;
- (3) receiving input from ICSU scientific unions and additional relevant non-ICSU bodies;
- (4) receiving additional input from the international science community;
- (5) active and fruitful discussion with the international science community of the Science Plan Outline at the planned venues.

Input from National IPY committees, ICSU unions, other scientific bodies and the broader science community will be most useful if it is received by **March 15th, 2004**.

The Planning Group welcomes suggestions for additional venues for presentation of the IPY concept and the Science Plan outline.

Yours sincerely

A handwritten signature in black ink, appearing to read 'C.G. Rapley'. The signature is fluid and cursive, with a large initial 'C' and a long, sweeping tail.

C.G. Rapley (Chair)
R. Bell (Vice Chair)
On behalf of the ICSU IPY Planning Group

APPENDIX IX

ST PETERSBURG IPY MEETING JOINT STATEMENT

International Meeting **“Cooperation for the International Polar Year 2007-2008”**

Joint Statement 23rd January 2004

The International Meeting “Cooperation for the International Polar Year 2007 – 2008 (IPY 2007/2008) was held at the Arctic and Antarctic Research Institute of Roshydromet in St. Petersburg on January 22-23, 2004. The Meeting was initiated at the “Russia – EU Workshop on Polar Research” in Brussels (June 2003) and organized by Roshydromet and the Russian Academy of Science with support from the European Commission, by the International Science and Technology Centre, and the Russian Polar Foundation. Forty experts including representatives of the international organizations and programs and scientists from the national polar institutes participated in the Meeting.

The main aim of the Meeting was to determine the potential national participation in the IPY 2007/2008 and the interested international organizations, and to define the areas of common interest and possibilities for future cooperation in holding the IPY. The participants agreed the following statement:

The participants in the Meeting recognise that available data confirm the existence of significant changes in the state of both polar regions, especially the phenomenon of global change and its many consequences, which will have a significant impact on the natural environment as well as social and economic activity, locally and globally. In this connection, the Meeting stresses the need for creating reliable methods for assessing the state and forecasting the processes in the Polar atmosphere, ionosphere, hydrosphere, cryosphere, ocean and socio-economic systems, based on the data of modern observing systems and methodologies.

It is noted that in addition to natural changes, the environment of the polar regions experience anthropogenic impacts. Pollutants transferred to high latitudes through the atmosphere, river and sea waters influence the ecosystems and, ultimately, Mankind. This can affect the population of the Arctic, whose way of life is closely connected with their specific environmental circumstances.

The scientific priorities for the IPY are currently being formulated by the ICSU IPY Planning Group under three general themes:

- Understanding Change at the Poles
- Exploring Earth's Icy Domains
- Decoding Polar Processes

In the meantime, given the global character of environmental changes and their consequences in polar regions, the need for developing the forecasting systems of the processes in high latitudes of the Earth, and vulnerability of the polar ecosystems with respect to anthropogenic impacts, the Meeting believes that the IPY 2007/2008 should include but should not be restricted to :

- Study of current and assessment of future climate changes in polar regions;
- Development of the scientific basis for forecasting the processes in the atmosphere, ionosphere, hydrosphere, cryosphere and the ocean in polar regions;
- Determination of anthropogenic and natural environmental state changes and their influence on the ecosystems of polar regions;
- Ensuring the development and availability of the technical infrastructure needed for research in the Arctic, Antarctic and Southern Ocean;
- Assessment of the social and economic consequences of the environmental state changes in polar regions primarily influencing the life activity of indigenous peoples of the Arctic.

The results of the IPY 2007/2008 will serve as a basis for developing recommendations for governmental bodies and interested organizations operating in the Arctic and the Antarctic.

Additional important aspects of the IPY will be to attract and develop the next generation of polar scientists, engineers and leaders, and to capture the interest of the public and decision-makers.

The meeting recommends to ICSU, WMO and other organizations concerned to consider the development of the IPY concept as a matter of high priority.

The participants to the Meeting believe that during the period of preparation for the IPY 2007/2008 and directly during the IPY, the interdisciplinary observing

systems should be improved and enhanced and intense scientific studies in the framework of national and international scientific programs in Polar Regions should be carried out.

An extended complex of field studies during the IPY 2007/08 should provide a detailed picture of the variability of the processes within the 2007-2008 period and become a target of careful analysis. For this, it is necessary to generate databases available for a wide exchange.

The Meeting considers that participation and jointly-coordinated efforts of WMO and ICSU will contribute to involvement of their member-countries in holding the IPY 2007/2008.

The Meeting believes that participation of international organizations such as IASC, SCAR and others possibly including the IOC, UNEP and the Arctic Council, will make a substantial contribution to the preparation and holding of the IPY 2007/2008.

For the coordination and support of joint actions, the Meeting considers it necessary to develop a plan based on a wide range of inputs and the Meeting recommends the WMO and ICSU in close cooperation with IASC, SCAR and the EC undertake steps in this direction.

The Meeting also addresses the countries carrying out polar research and the non-governmental organizations and foundations with a proposal to participate in and render comprehensive assistance to the IPY 2007/2008.

The Meeting is supportive of a member-country or a group of countries addressing the UN General Assembly with a proposal to approve a UN Resolution on holding the IPY 2007/2008.
