



International Association of Cryospheric Sciences

3rd IACS Bureau Meeting

Montreal - July 18 and 19, 2009

Auberge Bonaparte, Montreal, Canada

Preface

The 3rd meeting of the IACS Bureau preceded the Scientific Assembly **MOCA09**, which was jointly organized by three IUGG Associations: IAMAS, IAHS and IACS. The first meeting was held on July 18 and 19, with the meeting on the 18th devoted to internal matters and attended by IACS Bureau members only (except for IUGG President Tom Beer and Ross Brown from the MOCA09 local organizing Committee), while the meeting on the 19th was an open meeting with a number of delegates from other Associations or organizations present. The meeting on July 18th also saw the change in the Presidency of the Association from P Kaser to PE Allison.

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

MINUTES - Part I (18 July)

Bureau members present

Georg Kaser (President / Past President: P/PP Kaser)

Ian Allison (President-elect / President: PE/P Allison)

Manfred Lange (Secretary General: SG Lange)

Gino Casassa (Vice President: VP Casassa)

Kumiko Goto- Azuma (Vice President: VP Goto Azuma)

Claude Duguay (Division Head; *Marine and Freshwater Ice*: DH Duguay)

Charles Fierz (Division Head; *Snow and Avalanches*: DH Fierz)

Ralf Greve (Division Head; *Planetary and Other Ices of the Solar System*: DH Greve)

Valérie Masson Delmotte (Division Head; *Cryosphere, Atmosphere and Climate*: DH Masson Delmotte)

Bureau members absent with regrets

Julian Dowdeswell (Division Head; *Glaciers and Ice Sheets*: DH Dowdeswell)

Peter Jansson (Vice President: VP Jansson)

Minutes

1. Opening Remarks

P Kaser opens the meeting and welcomes the Bureau members present. He explains that this is the third IACS Bureau meeting, which will have two parts (July 18 and 19). There were two external individuals invited, IUGG President Tom Beer and Ross Brown from the MOCA09 Local Organizing Committee, who represented IACS on this Committee and was particularly helpful in organizing the IACS component of the conference.

2. Agenda additions/modifications

P Kaser suggested a number of minor changes:

- exchange items 5 and 6
- items 14 and 15 to be merged into item 14; numbers of all subsequent items changed accordingly
- Item 14 to be restructured
- the discussion on the *Global Cryosphere Watch* to be considered under agenda item 25.

Since there were no additional requests for changes, the modified agenda was accepted.

3. Minutes of the 2nd IACS Bureau meeting in Vienna

P Kaser asked for any corrections/modifications/additions

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

No modifications were requested.

DH Duguay proposed acceptance of the minutes, this was seconded by DH Fierz; with that, the minutes were accepted and will be posted on the IACS web-site.

4. Actions from the Perugia and Vienna Minutes

The following items that are still pending from the **Perugia Bureau** meeting were briefly discussed¹:

Action item 1: PE Allison to formulate immediately a brief message that P Kaser will submit to both CRYOLIST and CLIMLIST; not yet done – instead, the message shall be included in the Newsletter (see below) and there will be a note on CRYOLIST and CLIMLIST providing the website for download of the Newsletter. **No progress made.**

This Action item should be taken care of as soon as possible.

Action item 2: PE Allison and Past President (PP) Jones (to be asked) will also draft an article to be circulated to SG Lange and to VP Jansson. This article is intended to be subsequently published in EOS and ICE and is currently being drafted. **Not yet completed.**

There was consensus that this should be done, but only after a "vision statement" of IACS has been formulated. Once this is accomplished, a statement should be published, but not in ICE. DH Masson Delmotte suggested to also publish such a statement in NATURE Geoscience.

Action item 3: The President to ask PP Jones to assist him in preparing a letter to be sent to former ICSI officers, informing them about the formation of IACS; PP Jones provided this draft, but it was not sent out yet by P Kaser. P Kaser will take care of this action as soon as possible.

There was a discussion on this action item with some members suggesting not to carry it out, while others were strongly in favor of doing so. Finally, there was consensus that this was indeed to be done by P Kaser and PE Allison.

Action item 4: SG Lange to provide an IACS letterhead displaying the new logo. ✓

Action item 5: VP Jansson to update the IACS web-site at www.cryosphericsscience.org ✓ - there should be an effort to provide content to the web-site and feedback to VP Jansson as to the format of the site.

Action item 6: VP Jansson assisted by SG Lange to prepare a Newsletter within the next three months; not yet done, this needs to be done urgently and should contain a brief note on IACS' existence, the list of National Correspondents, a listing of our liaisons with different organizations and should promote the Montreal Conference. In addition, the Newsletter should contain obituaries of past ICSI Presidents who passed away during the last year. **Not proceeded beyond a first draft provided by VP Jansson in December 2008.**

There is still work to be done, but needs to be taken up urgently. This issue will be taken up again later in the meeting.

Action item 7: P Kaser to write to IUGG SG to find out when the National IUGG Committees start to nominate the NCs and how to communicate with the National IUGG Committees. ✓ A series of National IUGG Committees have appointed their correspondents to IACS (Appendix). The Chinese colleagues have also formed a National IACS Committee, which had already its first meeting. The results of this meeting are reported in a dedicated Newsletter (Appendix). **The list has grown substantially.**

¹ in the following, text in blue denotes the Action item as agreed upon in Perugia; text in green reflects discussions during the Bureau meeting in Vienna; text in red indicates comments by P Kaser and text in black denotes discussions during the Bureau meeting in Montreal; a ✓ indicates an Action item that has been completed

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

P Kaser confirmed that this list has grown substantially.

Action item 8: VP Jansson to inform the organizers of the Glacier Mass Balance Workshop about the opportunity for IUGG funding and the respective deadline. ✓

Action item 9: The President, SG Lange and VP Jansson will prepare a tentative budget plan for the next four years of IACS; *not yet done*. **Not yet done.**

This is an item that still needs to be taken care of.

Action item 10: P Kaser to find out the most appropriate way to react to the change in Thompson International's new policy on the level of IUGG and/or ICSU. VP Casassas and PE Allison will prepare a document that will be forwarded to IUGG and/or ICSU; *underway*; the P explains that the IGS Council decided to transform the *Annals* into *Special Issues* of a journal bearing the same name and potentially retaking the previous status in TI.

As far as the *Annals of Glaciology* are concerned, the issue has been solved.

Action item 11: P Kaser to send the present draft of the history paper to Jo Jacka; *draft has been processed and is available at the IGS web-site until printing of the respective Annals of Glaciology volume*. **Printed as** ICSI/UCCS IACS history by H.G. Jones in Ann. Glaciol. 48, 1-5 ✓

The item has been taken care of.

Action item 12: Division Heads will prepare a brief statement describing the role, scope and objectives of their respective Division; *not yet done – should be done in a different format (see below)*.

These statements have not been prepared yet, but there remains an urgent need for them.

Action item 13: P Kaser to contact the chair of GAPHAZ, Andreas Kääb; *has been done (see below)*.

The item has been taken care of. ✓

Action item 14: DH Dowdeswell to find out whether the WG on *Debris Transport in Glaciers* wants to continue or not; *will be done shortly*. ?

We notice that this WG has been active, but mostly under ICSI. Currently, there seem to be no more activities.

Action item 15: VP Casassas to prepare a brief report on the Working Group on *Andean Glaciers* until the next Bureau meeting; *not yet done*. ?

There has not yet been a WG being formed, but P Kaser stressed that such a WGF is still needed and that VP Casassa prepares a short statement on this.

Action item 16: DH Dowdeswell and P Kaser to finalize the Guidelines for Working Groups until the next Bureau meeting; *not yet done (see below)*.

This has been done already. ✓

Action item 17: DH Duguay, PE Allison and SG Lange will look into the issue of a two new WG: one on Marine, Lake and River ice; *not yet done – to be taken up again*. ?

DH Duguay states that there will be a WG proposed towards the end of next week at the 4th IACS Bureau meeting.

Action item 18: DH Masson Delmotte to initiate respective contacts; *ongoing*. **Comes to decision in Montreal.**

Will be taken up later.

Action item 19: VP Jansson to inform Graham Cogley about the acceptance of the WG on *Glacier Mass Balance Terminology (and Methodology?)* and to initiate further steps; ✓.

This has been taken care of.

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

Action item 20: DH Dowdeswell [and Jon-Ove Hagen, former ICSI/UCSS VP] in cooperation with the WGMS will work out suggestions for a modified name for the SSC and will propose the Terms of References for the SSC. Michael Zemp (WGMS) should ask for formal letters in support of the WGMS from the main data providers (NSIDC, GLIMS) to be presented at the next Bureau meeting; **ongoing. Ongoing.**

This is ongoing activity; will be discussed later.

Action item 21: P Kaser to send out the present state draft and all Bureau members to provide input to the list of Joint Symposia; ✓.

This has been taken care of.

Action item 22: VP Jansson to contact the organizers of the Geological Congress to explore if a co-sponsorship of individual sessions is desired. If so, he will ask Jon-Ove Hagen and Hans Oerlemans to be our representatives. It should also be explored to what extent the Geological Congress is ready to commemorate the founding of the *Commission Internationale des Glaciers* during the Sixth World Congress in 1894; **to be clarified. ?**

The Congress took place, but we have no further information on it.

Action item 23: VP Casassa to investigate and report on more detail about the planned 2010 Conference in Valdivia; **To be clarified. Finalized.**

This conference is being organized and IACS will be a key supporter of it. ✓

Action item 24: P Kaser to ask Jerry Brown (SG IPA) about a possible IACS co-sponsorship of the IPA Fairbanks Conference, 2008; **to be clarified, but maybe too late. Out of date.**

DH Dugay represented IACS at the conference. ✓

Action item 25: P Kaser to inform Past VP Steffen about him being appointed as IACS CliC liaison officer; (Appendix).

Past VP Steffen continues to be our liaisons. ✓

Action items from Vienna

Subsequently, the action items from Vienna were discussed.

Action item 1: The **SG** will again inquire about the prospective transfer of funds for IACS with the IUGG Treasurer. ✓, **transfers are made.**

This issue has been taken care of.

Action item 2: **SG Lange** to contact the SGs of the other two Associations as well as the chairman of the Scientific Program Committee Jacques Derome and inquire about a common strategy for co-sponsorship. Once the strategy has been agreed upon, have the session lead conveners of these sessions to approach appropriate officers of the relevant organizations. IACS DHs should assist in this effort. ✓, **MOCA-09 without official co-sponsorship.**

This issue has been discussed with the Scientific Program Committee for MOCA09, but no satisfactory solution was derived.

Action item 3: **SG** to contact Sebastian Gerland ✓

This point will be taken up again later.

Action item 4: DH Fierz will explore possible links and/or co-sponsorship with the IGS Conference on Snow and Avalanches in Manali, India. ✓, **IACS co-sponsored the Manali Conference; Atsushi Sato IACS representative.**

DH Fierz asked Atsushi Sato to represent IACS, which was done.

Action item 5: **P Kaser** to contact VP Casassa about the plans for an Andean Glaciology symposium possibly being planned for 2010. ✓, **planning finalized and conference announced.**

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

Action item 6: P Kaser will write a letter to Richard Armstrong acknowledging and thanking him for having finalized this book. ✓

Action item 7: *P Kaser* to discuss this with Andy Kääh, John Reynolds and Christian Huggel. ✓

Action item 8: *DH Dowdeswell* to discuss with the leadership on the procedures to set the group up. ?

Could not be discussed because DH Dowdeswell was not present at the meeting.

Action item 9: *DH Duguay* to prepare a brief description of his division to be put on the IACS web site and to serve as somewhat of a template for the other divisions. **Pending.**

Action item 10: *P Kaser* to contact the DH Masson-Delmotte to clarify the situation regarding her prospective deputy. A potential candidate for this position would be Ross Brown. **Briefly discussed but no further activities made.**

This item has still not been resolved; ongoing.

Action item 11: *P Kaser* to inform IAVCEI and the already existing Commission on Volcano-Ice Interaction about the Bureau decision and discuss about a suitable IACS representative. ✓

Action item 12: *SG Lange* to inquire with Willy Weeks if he would be willing to take on a leading role in ICECLAG and to inquire about possible alternatives, if Dr. Weeks declines the request. ?

No response was received and SG Lange will inquire again.

Action item 13: *P Kaser* to talk to Michael Zemp and Richard Armstrong about these matters. ✓

Action item 14: *P. Kaser* to inform PE Allison about his nomination. In case he agrees, P Kaser to inform the IUGG EC about the nomination. ✓ **PE Allison is now the IUGG representative to SCAR**

Action item 15: *SG Lange* to ask PE Allison to serve in this capacity and/or to nominate an alternative.

This issue has been resolved.

Action item 16: *P Kaser* to inform Narelle Baker of APECS accordingly. ✓, **APECS will participate in July 19 Bureau meeting and further cooperation will be discussed there.**

This group is probably to be sponsored by IASC and SCAR; this will be discussed on July 20 again.

Action item 17: *SG Lange* to inform Jerry Brown about the IACS representation. ?

This has been taken care of.

Action item 18: *P Kaser* will meet with the IGS SG to discuss the proceedings of the Montreal 2009 Conference. ✓, **this was discussed several times; finally, only the IPY session from MOCA-09 will contribute to a JoG volume**

There will be only one volume relating to MOCA09 symposium on IPY and will be covering the Newcastle Conference, as well.

Action item 19: *P Kaser* to inform Colin Summerhay about this. ✓ **MoU with SCAR and IASC was signed.**

Action item 20: *DH Fierz* to investigate the potential for IACS representation at the International Snow Science Workshops. ✓; **see above.** Similarly, DH Fierz and Duguay will also explore representation of IACS at the Eastern Snow Conferences. ?

Will be discussed later.

Action item 21: *Bureau members* to carefully check these texts and provide input to DH Dowdeswell very soon. ✓; **Terms of Reference are published at http://www.cryosphericsscience.org/docs/Terms_of_Reference_WG_SG_JB.pdf.**

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

Action item 22: *SG Lange* to send these text drafts to all Bureau members to give their opinion. ✓, see item 21.

Action item 23: *VP Goto-Azuma* to generate and updated list of current IACS instruments: WGs, SGs, Joint Bodies; to be available on the IACS web site with an additional blind column taking note about financial supports given by IACS to the groups. ✓, to be completed by **Heads of Divisions**.

This has been done and will be discussed later.

Action item 24: *SG Lange* to contact PE Allison to ensure his presence in the next Bureau meeting. ✓

5. Past President's Report

The following items have been introduced/discussed by P Kaser: (see Annex)

PE Allison proposed to accept the report, seconded by SG Lange.

6. Georg Kaser to step down as President upon the completion of this term and to become Past President of IACS

P Kaser gave a brief account of his involvement in ICSi, IUGG-UCCS and now IACS and presented PE Allison as the new President of IACS.

President Elect Ian Allison to take over the position of IACS President

PE Allison acknowledges his nomination. He expressed his and the Bureau's appreciations to PPs Jones and Kaser and others. He stressed the importance of the Cryosphere in the context of Global Environmental Changes and its role as an integral and vital part of System Earth with sea ice being a particular point in case. The role of sea ice is particularly relevant with regard to its links to the marine biosphere and the hydrosphere.

P Allison stressed that there is an urgent need to set guidelines on IACS Divisions and Working Groups and to make them public in order for people and organizations outside IACS to be informed.

He also emphasized the need to specify more precisely our vision and perspectives for IACS. He considers that the next two years will be a period of further consolidation of IACS.

In a reply, PP Kaser pointed out the importance and validity of the earlier proposal to create IACS as an Association by Roger Barry and other members of the scientific community.

7. Treasurer's report

7.1 Report

SG gave a brief report on the budget, which will have to be audited ideally during next week as suggested by IUGG Treasurer Aksel Hansen.

7.2 Acceptance of Budget

Acceptance needs therefore to be postponed until the audit is provided.

7.3 Budget Plan for 2010 and beyond

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

The IACS Bureau needs to specify plans for budget allocations for 2010 and beyond. P Allison suggested that parts of the available funds be made available to the Divisions and to WGs. However, allocation of funds should always be based on a competitive process.

IACS should utilize opportunities for outside funding of activities (e.g., from IUGG and ICSU) as pointed out by PP Kaser. This relates particularly to organizing initial meetings of new WGs or similar initiatives.

Aside from this issue, the allocation of "head taxes" at IUGG or joint Assemblies and Symposia and their distribution between IUGG Associations was discussed. PP Kaser suggested that P Allison brings this issue up during the IUGG Executive meeting in Melbourne in October 2009.

PP Kaser mentioned a decision that was taken some time ago to the effect that Bureau members may receive travel support for their participation in Bureau meetings. It had been agreed that such support will amount Euro 500 if the meeting takes place outside of the continent, where the respective Bureau member resides and to Euro 300 for meetings which take place within the continent of residence of the respective Bureau member.

Another item discussed relates to the transfer of royalties for a book that past DH Brun published and that he makes available to IACS. Money has already been transferred twice and will be followed by additional transfers as long as the book is being sold. P Allison suggests that these funds be earmarked as "**Brun Travel Grant**" to support participation of young researchers in Cryospheric conferences. This should be made public, e.g., through the IACS Newsletter.

Action item: P Allison, PP Kaser and SG Lange to work out a plan for budget allocations and the process for requesting funds from IACS by Bureau members until mid-October.

8. Reports from absent Bureau members on issues other than listed in the Agenda
There were no reports to be discussed.

9. Divisions or new WGs and other issues (WGs' reports on 19.7.09)

PP Kaser pointed out that there is only a very limited information base on Himalayan mountain glaciers and their fate under climate change, despite the urgent need to address these issues. However, there are initiatives by a number of nations and organizations that pursue activities in the Himalaya Mountains. However, only limited exchange of information apparently takes place between these groups leading to the present situations. IACS may consider the initiation of an inter-Division WG on Himalayan Mountain Glaciers to address this problem.

Action item: PP Kaser (copying DH Masson Delmotte) to contact Richard Armstrong to initiate such a WG.

DH Fierz suggested a possible new WG on Avalanche Classifications, but such an initiative requires close liaison with the avalanche community.

DH Duguay pointed out the need for activities in the field of freshwater and river ice, particularly issues such as data rescue and the need to evaluate remote sensing data on these topics. He also noted the need to incorporate freshwater (lake) models into weather prediction and regional climate models.

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

In addition, there is the issue of Arctic sea ice and the regional to sub-regional differentiation in sea ice behavior during the recent past, which might be taken up in a new WG, as suggested by DH Duguay.

DH Masson Delmotte pointed out that there will be a major IPY meeting in Oslo, Norway; ideas for new WGs may emerge from this conference.

DH Greve spoke on the difficulty to bring the Glaciological/Cryospheric and the Planetary Sciences communities together. He suggested that joined meetings might be a way to pursue this, e.g., for Melbourne.

9.1 Reports (beyond the agenda item on July 19)

No additional reports were presented under this agenda item.

9.2 Publication of Snow Classification

DH Fierz reported on the work on the snow classification manual, which is now available as a text-only version. He is presently trying to collect all the figures for the manual. Once this has been done, the full report will be transferred to IGS for lay-outing and subsequently to UNESCO for publication of the classification manual. DH Fierz emphasized his appreciation for being given resources for the editing process of the manual. He also asked to note explicitly that the Institute for Snow and Avalanches in Davos, Switzerland provided about Euro 2 000 for the design of the snow-stratigraphy-symbol fonts that are freely downloadable from IACS's web site.

An related issue discussed was the translations of the classification manual. At present, there are already three translations in Italian, Persian and Spanish available. It is not clear yet, as to how to publish these translations. As far as the quality control of these translations is concerned, it is assumed that this is taken care of by the organization and the individuals that stand behind the translation. With regard to copyright issues, we need to address UNESCO and to clarify possible concerns. Apparently, UNESCO has the copyright for the present (English) classification and will therefore also have to have a say with regard to copyrights of possible translations thereof.

P Allison expressed his gratitude to the Institute for Snow and Avalanches and to DH Fierz and the respective WG for expert work on the classification. He also posed the question to what extent this classification is applicable to snow on sea ice. DH Fierz expressed his hope that such an extension may evolve from the existing classification without a new WG.

9.3 Intended publication of Glacier Mass Balance Glossary

PP Kaser explained the process for deriving the Glossary, whose drafting was headed by Graham Cogley. He subsequently addressed the publication of the Glossary and explained that a consensus had evolved for having both a PDF- as well as a printed version. This relates to the idea of a possible IACS Publication series that was proposed by VP Jansson some time ago. The UNESCO might be a possible institution to publish such a series. However, this is seen somewhat critically as UNESCO does not permit any other organization than UNESCO to appear on the cover of such publication, thus somewhat reducing IACS' visibility on work that has originated by IACS WGs.

P Allison emphasized that any publication by IACS should be made available on a no-cost basis. Secondly, he stressed the issue of quality control for any IACS publication, hastening to say that the quality of the Mass Balance Glossary is undoubtedly given.

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

10. WGMS

10.1 Resignation of W. Haeberli as WGMS Director

PP Kaser reports about the forthcoming of resignation of W. Haeberli as Director of WGMS. As pointed out in a letter to IACS, he has been instrumental in defining a procedure for appointing his successor. It was further noted with gratitude that W. Haeberli succeeded in securing long-term funding for WGMS by the Swiss government. Additional details were to be provided by W.H. during the meeting on July 19th. The Bureau agrees with and accepts the letter sent to us by W. Haeberli and discussed the issue of how to set up a nomination committee for Wilfried's successor.

10.2 WGMS/NSIDC/GLIMS Steering Committee

There is a steering committee by WGMS/NSIDC/GLIMS on glacier monitoring headed by DH Dowdeswell. There is also a proposal by DH Dowdeswell for an Advisory Committee to oversee and steer work of the aforementioned committee. This committee will have DH Dowdeswell as the chair as well as the following members: Liss Andreassen (Norway), Anthony Arendt (USA), Graham Cogley (Canada), Vladimir Ryabinin (WCRP, CliC), [Christian Vincent (France)]. The Terms of Reference for the Advisory Committee have been formulated, but are not finalized yet. In particular, the issue of whether or not this committee should become a **Standing Group** within IACS has not yet been decided (see 10.3).

10.3 WGMS to be accepted as IACS Standing Group (Global Terrestrial Network-Glaciers Steering Committee - GTN-G SC)

DH Fierz posed the question if the GTN-G SC should become a Standing Group (SG) by itself? Indeed, the first paragraph of the current version of the Terms of Reference apparently are fully compatible with the functions of an IACS SG. Thus this SG would coordinate and supervise the activities of three monitoring services that are part of the SG by virtue of its Executive Board. That way the number of SGs (WGMS, GLIMS) and other "bodies" (Steering Committee) would be kept small and the structure more transparent and flexible.

Michael Zemp (WGMS) pointed out that the suggestion to link the GTN-G Steering Committee as a Standing Group to IACS, and indirectly link the three operational bodies (WGMS, NSIDC, GLIMS) appears to be straightforward. He pointed out, however that this solution might create conflicts with the existing link between GTN-G and GCOS/GTOS and its sponsoring organizations (FAO, UNEP, UNESCO, WMO, ICSU). The WGMS has been in charge of GTN-G through a mandate by the Terrestrial Observation Panel for Climate (TOPC) of GCOS/GTOS since the late 1990s. WGMS' suggestion amounts to establishing direct official links to the operational bodies, i.e. WGMS and GLIMS and both becoming Standing Groups of [IACS](#).

According to M. Zemp, this will have the following advantages:

- the long-standing direct link between WGMS and IACS as well as its predecessors continues to be maintained
- GLIMS finally obtains a formal status
- assuming the chair of the GTN-G Advisory Board, IACS will have a strong link to the GTN-G Steering Committee without getting into conflict with existing links to the UN organizations.

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

M. Zemp also pointed out that for WGMS, a change of status from a "Service" to "Standing Group" does not create any problems, particularly so, if this transition is formulated along the lines proposed in the current version of the GTN-G Terms of References, specifically with regard to the statement: "The WGMS is a service of the IACS, having the formal status of an IACS Standing Group."

The NSIDC, being a US National Data Center, will obviously not be suitable to becoming an IACS Standing Group. However, as a World Data Center it has a formal status and will be linked with IACS through the GTN-G Steering Committee.

After quite a lengthy discussion, it was decided that we need more information to resolve the issues and that we will come back to it at a later time.

11. Other new and pending Standing Groups (SG reports on 19.7.09)

11.1 Standards and Classifications

DH Fierz reported briefly on the history of this initiative, which was at some point submitted as an IPY proposal. This proposal may serve as the basis for the Terms of Reference for a future Standing Group.

During the quite extensive discussion that followed, it was decided not to form a Standing Group on Standards and Classifications at this time. However, it was also decided to have a permanent agenda item on this issue for each of the future Bureau meetings until it has successfully been resolved.

11.2 APECS (Association of Polar Early Career Scientist)

P Allison briefly reported on APECS and its history and stressed that this is a very active and lively group that IACS could provide a "home" for. However, there are also suggestions by SCAR and IACS to host APECS under their "wings". This appears to be a more feasible route for APECS. This notwithstanding, IACS should maintain close contacts to APECS, e.g., through invitations to APECS members to IACS Bureau meetings.

11.3 IPICS (International Partnerships in Ice Core Sciences)

VP Goto Azuma reported on the development of IPICS, which has sought affiliations to IACS. There were discussions between VP Goto Azuma and Eric Wolff (IPICS co-chair together with Ed Brooks) about IPICS becoming an IACS Standing Group. This has been expressed by a formal written request by IPICS to IACS.

It was decided to invite IPICS to become a Standing Group within IACS. SG Lange will write a letter to IPICS explaining what this will encompass.

Action item: SG Lange to write a letter to E. Wolff and E. Brooks inviting IPICS to become an IACS Standing Group and explaining the conditions that apply to an IACS SG

12. Database on IACS WGs and SGs

PP Kaser explained that VP Goto Azuma agreed to provide a data base on ICSI/UCSS/IACS Standing Groups and Working Groups. VP Goto Azuma has started this work with the help of DH Fierz and Dugay. The tables (EXCEL Sheets) will be made available to all Bureau Members for comments and revisions.

P Allison thanked VP Goto Azuma for her valuable work.

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

13. National IACS Correspondents

There is a list of National Correspondents that has been made available by IUGG and that has been updated and finalized by SG Lange.

14. IUGG and ICSU

14.1 IUGG Executive Committee. Karlsruhe, Aug. 2008

A list of items was presented by PP Kaser.

14.2 IUGG Bureau and EC Meeting, Melbourne, Oct. 2009

The IUGG Bureau and EC Meeting will be attended by P Allison.

14.3 Union Commissions/Committees

- on Data and Information (UCDI): Mark Parsons represents IACS in this Commission; UCDI and Mark Parsons are also active in the ICSU Committee on Data for Science and Technology (CODATA);
- Polar Information Commons (PIC) ICSU: Framework for Long-term Stewardship of Polar Data and Information. Initial planning meeting for the PIC at the end of April 2009.
- on Geophysical Risk and Sustainability (GeoRisk): M. Funk is IACS' representative; however, there has so far been no report on the work of this Commission submitted by him.

14.4 IUGG workshop, summer school etc.; support for 2010

PP Kaser stressed that we should not forget the opportunity to apply for funds from IUGG for workshops and summer schools; the deadline for proposals will be October 31st, 2009

14.5 Melbourne 2011

The focus of our activities related to the General Assembly should lie on the scientific program for Melbourne. We need to send out requests to our members for suggestions for symposia during the General Assembly. We should aim at proposing a Union Session.

14.6 Other business

- (i) The Martha Muse Prize (<http://www.museprize.org/>) is being provided by the American Tinker Foundation (<http://foundationcenter.org/grantmaker/tinker/>), a prize worth US\$ 100 000, which can be used without restrictions. The prize is intended for young and mid-career scientists and IACS was urged to put forth nominations.
- (ii) Association Reports: The report for IACS will be due by November 15, 2009.
- (iii) Guidelines for IUGG General Assemblies: As pointed out by PP Kaser, they may serve as guidelines for IACS Assemblies as well.
- (iv) Greece becomes an Associate member of IUGG (provisionally); final decision by the IUGG Council are expected for 2011.

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

- (v) Georgia becomes an Associate member of IUGG (provisionally); final decision by the IUGG Council is expected for 2011.
- (vi) Status of Bulgaria within IUGG has changed from "Associate" to "Ordinary, Category 1"
- (vii) International Sociological Association (ISA): Application for admission to ICSU as a Union Member has been submitted.
Structural concerns about having an Association instead of a Union as ICSU member, but basically supported by all IUGG Association. David Jackson (IUGG EC Member) investigates and finds that ISA fulfils all requirements for being a Union despite its name
- (viii) International Polar Year celebration: 25 Feb 2009, Geneva: IUGG was represented by PE Allison
- (ix) Scientific Committee on Problems of the Environment (SCOPE): ICSU Commission; Jake Peters to become IUGG member of SCOPE, Interesting for IACS in Environmental Risk part
- (x) Union Commission on Mathematical Geophysics: IACS will nominate DH Greve as IACS representative.
- (xi) ICSU-TWAS-UNESCO-UNU Visiting Scientists Program for 2008: send from IUGG SG to SGs, forwarded to ICIMOD in Nepal
- (xii) ICSU Grants 2010: (deadline expected to be December 1st, 2009; call expected in October 2009; must fit to ICSU strategic plan, total of \$ 300 000, with a ceiling of \$ 30 000 per proposal. Summer school on Ice Sheet Modeling in Portland, 2009 was supported through such a grant.
- (xiii) ICSU strategy discussion: IAHS and IAGA gave detailed input by early January 2009; no input from IACS. The following items have to be seen as parts of the ongoing ICSU strategy discussion. As a follow-on, a number of issues have been pursued:
- (xiv) ICSU Geo Unions collaboration with the International Geosphere-Biosphere Program, IGBP: ICSU and the International Group of Funding Agencies for Global Change Research (IGFA) initiated a review of IGBP (Oct. 2008); IUGG sees weakening of cooperation, despite joint programs with Atmospheric Chemistry Commission of IAMAS (March/April 2009); no input from IACS (documents available)
- (xv) ICSU, WMO, UNESCO, and (IGFA) initiated a review of WCRP: IUGG input mainly from IAMAS
- (xvi) Report on Ecosystem Change and Human Well-being (ICSU, UNESCO, UNU): IUGG SG asked for comments by September 3, 2008. No input from IACS
- (xvii) Integrated Research on Disaster Risk (IRDR): Kuni Takeuchi, chairman of IUGG GeoRisk Commission is IUGG's delegated member to the IRDR Scientific Committee. Inaugural meeting was held on May 12, 2009, in Bergen, World Social Science Forum (documents available)
- (xviii) Earth System Research Visioning Process: ICSU considers that in order to continue to effectively serve society, the global environmental change research community needs to develop cross-cutting research priorities and addresses them through a more integrated and new strategy: Earth System research

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

framework. Builds upon WCRP, IGBP, IHDP, DIVERSITAS and their Earth System Science Conferences. IUGG asked for input. Documents available.

- (xix) ICSU ad hoc review committee for science education: IUGG SG asks for representative; IAHS nominates Dr Thorsten Wagener of the Civil and Environmental Engineering Department of Pennsylvania State University, USA. He is a member of the IAHS Working Group on Education; IAGA nominates Prof. Carlo Laj from Laboratoire des Sciences du Climat et de l'Environnement (LSCE), France, also in charge of educational program within EGU. pending

15. Montreal 2009

SG Lange gave a brief account on the history of the Conference, which is organized jointly between IAMAS, IAPSO and IACS with J. Derome as the chair of the Scientific Steering Committee (SSC). Other members of the SSC are the SGs of the two other Associations. He stressed that the organization was most competently taken care of by J. Derome, Michele Bourgeois-Doyle and other individuals from the local organizing committee. PP Kaser particularly thanked the IACS local representatives S. Munro and S. Brown; the latter was present during this part of the meeting.

16. IACS Plenary meeting Montreal

A schedule will be prepared and published in the course of the MOCA09 Assembly.

17. IACS 4th Bureau meeting during MOCA-09

This meeting will be prepared in the course of the MOCA09 Assembly

18. IACS Assembly 2013

PP Kaser proposed to start thinking about the Assembly as soon as possible. One important issue relates to the question if IACS wants to organize the Assembly on its own or jointly with IAMAS.

There are various offers for the location of the Assembly, i.e., Innsbruck, if this will be an IACS-only event and from Yunnan, China and Toulouse, France if it will be an IAMS/IACS conference.

19. Other conferences in which IACS was/is/will be involved

- 19.1. Glacier Mass Balance Workshop Skeikampen 2008 *P. Jansson*
- 19.2. 33. IGC Oslo: *P. Jansson*
- 19.3. Manali, India, April 2009: *Ch. Fierz*
- 19.4. IAHS Hyderabad, India, Sept. 2009: *G. Kaser*
- 19.5. Valdivia, Chile, 1. - 3. February 2010: *G. Casassa*

VP Cassasa appreciated the support and sponsorship of IACS. He invited all Bureau member who can make it to Valdivia on their own funds and offered to provide free lodging and food .

- 19.6. Lijiang, China, August 2010: I. Allison
- 19.7. *Perth+5* conference in Perth in autumn 2010: G. Kaser

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

19.8. Other conferences

- GAPHAZ Workshop in Vienna, November 10 to 13, 2009
- IGS Conference (15.-20.8. 2010) in Sapporo, Japan
- IPY Conference in Oslo, June 2010

20. Cryospheric Managers

DH Fierz introduced the Cryo-Calendar. This was an activity in the early phases of the Cryospheric Manager Forum, but has not been followed up.

21. IACS newsletter

Still pending, needs to be addressed

22. IACS web site

This is taken care of by VP Jansson, but needs input by all Bureau members.

23. IACS Bureau elections 2011

24. Part II of 3rd Bureau Meeting

25. Any other business

26. Closing

Minutes - Part II (19. July, morning)

Participants

Bureau members present

Georg Kaser (President / Past President P Kaser)

Ian Allison (President-elect / President: PE Allison)

Manfred Lange (Secretary General: SG Lange)

Gino Casassa (Vice President: VP Casassa)

Kumiko Goto- Azuma (Vice President: VP Goto Azuma)

Claude Duguay (Division Head; *Marine and Freshwater Ice*: DH Duguay)

Charles Fierz (Division Head; *Snow and Avalanches*: DH Fierz)

Ralf Greve (Division Head; *Planetary and Other Ices of the Solar System*: DH Greve)

Valérie Masson Delmotte (Division Head; *Cryosphere, Atmosphere and Climate*: DH Masson Delmotte)

Bureau members absent with regrets

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

Julian Dowdeswell (Division Head; *Glaciers and Ice Sheets*: DH Dowdeswell)

Peter Jansson (Vice President: VP Jansson)

Guests

Tom Beer, President, IUGG

Gordon Young, President elect, IAHS

Richard Essery, SnowMIP2

John Pomeroy, President, ICSI-H

Volker Rachold, Secretary General, IASC

Lawrence Mysack, President, IAPSO

Anette Rinke, CLIC

Liz Thomas,, APECS

Graham Cogley, Glacier Mass Balance Terminology

Hans Volkert, SG, IAMAS

Jo Jacka, Chief Editor, IGS

Wilfried Häberli, Director, WGMS

Guoxiong Wu, President, IAMAS

Shichuang Kang, Chinese IACS National Committee

1. Welcome to delegates and opening remarks by IACS President *Ian Allison*

P Allison welcomes the guests and the IACS Bureau members. He briefly alluded to the history of IACS from ICSI via UCCS to the Association. He stressed that IACS aims to represent Cryospheric sciences within IUGG and explained the IACS structure. Divisions are the backbone of IACS. IACS strives to maintain and develop partnerships with various organizations within and outside IUGG. He ended by introducing the IUGG President Tom Beer.

2. Address by IUGG President Tom Beer

IUGG President Tom Beer expressed his pleasure to be at the meeting. He expressed his desire to foster the work of the Associations and expressed his view of IACS being the "jewel in the crown of IUGG" with the International Polar Year (IPY) and the International Year of Planet Earth (IYPE) in full swing. He expressed his view, though that the IPY achieved higher standards in scientific activities than the IYPE.

The participants of the meeting introduced themselves.

3. Agenda additions/modifications

Report about the 3rd IACS Bureau meeting part I (July 18, 2009)

P Allison gave a brief account of the Bureau meeting on July 18 (see separate document).

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

4. **World Glacier Monitoring Service, WGMS**

W. Haeberli (Director)

ICSI, UCCS and IACS have been and are advisory bodies to the WGMS. W. Haeberli gave a brief overview over the activities and products of the WGMS (see separate document). He suggested that GLIMS becomes a Standing Group within IACS.

P Allison expressed his gratitude to W. Haeberli for his work as WGMS Director. He also thanked him for securing continued funding from the Swiss government.

5. **World Glacier Monitoring Service, WGMS**

This item was deferred to the afternoon session.

6. **Reports from IACS Standing Groups**

Joint IAVCEI Commission / IACS Standing Group on Volcano Ice Interactions

G. Kaser on behalf of Ch. Huggel presented a presentation on the joint commission (see separate document).

7. **IACS Divisions' Working Group Reports**

- **SnowMIP2**

R. Essery gave a brief account on the recent activities (see separate document).

- **Glacier Mass Balance Terminology**

G. Cogley also gave a brief report and referred to the separate document that has been provided. The report on the Glossary has been completed and work is now underway to get it published; a possible outlet might be UNESCO.

- **GAPHAZ**

(A. Kääh – afternoon only)

8. **Partners and Guests**

IAMAS (Guoxiong Wu (P); H. Volkert (SG))

H. Volkert welcomed the opportunity to address the meeting and mentioned that there is apparently interest to have a joint Scientific Assembly with IACS in 2013 in Switzerland on behalf of IAMAS. He invited IACS to join forces with IAMAS. He also invited any observer from IACS to participate in the IAMAS Bureau meeting on Monday July 20, at 15:15.

IAPSO (L. Mysak, P)

L. Mysak (IAPSO President) expressed the plan that IAPSO will have a IAPSO meeting jointly with IAPSEI and IAHS(?) in Göteborg, Sweden in 2013.

He also reported that Harry Briden is the recipient of the Prince Albert Medal. He briefly mentioned activities in relation to the Scientific Committee on Ocean Research (SCOR) and alluded to the need to develop links to biological sciences.

ICSIH-IAHS (G. Young, PE)

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

G. Young started with a few general remarks. On a personal note, he remarked that he was SG of IAHS ten years back. He sees IAHS as being "in the middle of the fluid part" of IUGG. He mentioned the next Assembly in Heidelberg and stressed the desire to link up with biological sciences. IAHS hosts nine Associations and has a long tradition of publishing the "red books". However, IAHS is currently considering the options and challenges of electronic publishing.

John Pomeroy (ICSIH President): joint activities Obergurgl proceedings, Hyderabad, Melbourne

PP Kaser emphasized J. Pomeroy's role in initiating MOCA09 and thanked him for his efforts.

J. Pomeroy stressed that ICSIH is an organization different from the former ICSI and was officially established in Perugia in 2007. He briefly explained the mission and objectives of ICSIH. ICSIH sponsored and co-sponsored a number of international conferences and meetings. He introduced a number of proposals for symposia in Melbourne 2011. He also stressed that he would welcome more interactions and collaboration between IACS and ICSIH.

W. Häberli raised the issue that according to IPA, there is apparently little research activities on the issue of permafrost and hydrology.

IPA (H. Hubberten, P; C. Duguay, IACS rep.)

DH Duguay is the IACS representative to IPA. He attended the IPA conference in Fairbanks, AK, USA in 2007 and gave a brief report.

IGS (J. Jacka (IGS, Chief Editor)

J. Jacka reported on a joint workshop on Glacier Mass Balance Measurements and Modelling, Skeikampen, April 2008, which has been published as a special issue of *Annals of Glaciology*.

There are/will be also special issues of *Annals* on IPY symposia at MOCA-09 and Newcastle

J. Jacka explained some of the aspects of collaboration between IGS and IACS and refered particularly to the publications of the Perugia Proceedings. He explained his new role as Chief Editor of IGS and gave some details on the altered role of the *Annals of Glaciology*. The *Annals* extend beyond publishing peer-reviewed papers resulting from conferences to thematic volumes. The IPY volume will be a point in case.

UNESCO IHP (G. Kaser; IACS PP)

PP Kaser reported on UNESCO Workshops in Paris, France and Kathmandu, India. He also organized a Glacier Mass Balance Training course in Nepal in the context of the UNESCO Friend Program.

CLiC (A. Rinke)

Annette Rinke gave a brief introduction to CLiC and its activities (see separate document).

SCAR

P Allison gave a brief report on SCAR activities; he is the IUGG representative to SCAR. He briefly explained the MoU between IASC, SCAR and IACS. He also gave a brief introduction into the Muse Prize of the Tinker Foundation.

PP Kaser attended the Executive Council Meeting of SCAR, but was not really able to introduce IACS at the meeting.

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

He also explained that IACS supports a summer school in Portland that also receives support by ICSU.

IASC (V. Rachold, IASC SG)

V. Rachold briefly explained joint activities related to a number of IPY conferences. IASC has signed a MoU with APECS and the IPA. IASC is an Associate Member to ICSU but seeks to reach a status similar to SCAR.

IASC has five Standing Committees on different issues on Arctic research and is an observer to the Arctic Council. One of the outcomes of joint Arctic Council-IASC initiatives was the Arctic Climate Impact Assessment. A follow-on study is SWIPA, which is also endorsed by the Arctic Council.

IASC has a number of activities in Cryospheric sciences.

APECS (E. Thomas (APECS Vice President))

E. Thomas gave a brief introduction into APECS. She is a Vice President of APECS which has currently has about 1800 members. and sees a number of contacts between APECS and IACS. She welcomed the opportunity to be present at the meeting. An important focus of APECS' activities centers on career development of young researchers.

In the discussion following E. Thomas' presentation, there was unanimous support on this initiative. This notwithstanding, there is the issue of continuity and support for APECS. PP Kaser suggested applying for an ICSU grant to obtain some funding for APECS.

Global Cryosphere Watch (P. Haeberli)

W. Haeberli reported on a recent meeting of GCW. GCW is still trying to organize data acquisition from various components of the Cryosphere, which is met with different degrees of difficulties.

Introducing the IACS National Committee for China (Shichuang Kang)

S. Kang distributed some material on the National ISACS Committee, which is at this point the only one existing. The committee consists of eight groups, which publish their most recent results annually.

9. Plenary meeting during MOCA-09

P Allison introduces and announced the IACS Plenary on July 23, 12:00 - 13:30 in room 516b. Anybody interested in the Cryosphere is welcome.

10. IUGG General Assembly, Melbourne 2011

P. Allison referred to the Assembly and announced that we welcome suggestions and proposals for session themes.

11. Any other business

L. Mysak raised the issue of membership and visibility. The IUGG Associations usually do not have paid membership, which may or may not be a problem.

The role of IUGG may particularly focus on lesser developed countries and their scientific communities.

12. Closing

The meeting was closed for a Lunch break.

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

After the break the meeting was continued with the following agenda items.

Continuation of Items item 8.

GAPHAZ (A. Kääh)

A. Kääh presented a report on the GAPHAZ Working Group. GAPHAZ now has good global data coverage with the exception of China. The Working Group is now mid-way through its second term, and needs to consider mechanisms for continuing activities on the longer term

Action: Write to Chinese National IACS Committee to seek support for GAPHAZ activities (S-G)

WG Snow and Avalanches of the International Union of Forest Research Organizations (P. Bebi, cair)

Peter Bebi, Chair of the IUFRO WG, reported on the activities of this group. There are synergies between their activities and those of the IACS Division on Snow and Avalanches. DH Fierz and Peter Bebi will discuss the value and practicality of making the IUFRO group a joint WG with IACS.

Outstanding discussions from Part I

9.3 Intended publication of Glacier Mass Balance Glossary

Graham Cogley participated in the Bureau discussion of this item. Publication and Distribution of the Glossary by UNESCO might be possible but, as with the Snow Classification, this presently requires devolving the copyright to UNESCO, and losing any recognition on the front Cover of the IACS contribution. Copyright could be particularly an issue if it is decided to update the glossary at some stage, or to translate it into other languages.

Action: GK to seek clarification, via his contacts in UNESCO, on their Guidelines for publication (copyright, recognition), and to explore whether a copyright agreement might be made that would allow IACS to translate and update as required both the Snow Classification and the Glacier Mass Balance Glossary publications.

The Bureau thanked Graham Cogley and the Working Group for their excellent and speedy work in preparing the glossary.

5. WGMS (originally scheduled for morning session)

Wilfried Haeberli (WH) joined the Bureau for a discussion of the organisational structure whereby IACS might continue to exercise scientific oversight of WGMS (which had been a permanent service under ICSI's scientific control) and the other organisations and programs concerned with glacier monitoring (NSIDC, GLIMS). The Bureau accepted WH's proposal that collaboration and cooperation between the operational units (WGMS, NSIDC and GLIMS) be overseen by an Advisory Board, appointed by and reporting to IACS, and that there should also be an Executive Board, comprising one representative of each of the operational units, to facilitate

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

routine interaction between them. Together, members of the Advisory Board and the Executive Board would form the GTN-G Steering Committee.

A chair and potential members of the Advisory Group have been identified.

The Bureau discussed two different models to strengthen IACS' oversight of glacier monitoring and to provide support for GLIMS activities, which currently have no strong organisational affiliation. In the first, GLIMS would become an IACS Standing Group; in the second, the GTN-G Steering Committee would become an IACS Standing Group. The consensus decision of the meeting was that the second model, the GTN-G Steering Committee as an IACS Standing Group, was the preferred option. It was recognised however that implementation of this first required discussion with, and agreement from NSIDC, the GLIMS program group, and with TOPC (Terrestrial Observation Panel for Climate of GCOS/GTOS) representing UN interests in glacier monitoring.

Action: Seek agreement of the preferred option with TOPC (WH), NSIDC (IA) and GLIMS (PP Kaser) before establishing the GTN-G Steering Committee and recognizing it as an IACS Standing Group.

WH reported that he had obtained long-term funding for WGMS from the Swiss Federal Council and that this will be provided through the Swiss GCOS Office at MeteoSwiss. A funding contract between MeteoSwiss and the University of Zürich has been signed in May 2009. WH now plans to retire as soon as a successor is appointed to lead WGMS.

The Bureau endorsed the Swiss offer for continued support and management of the WGMS, led and coordinated from an office in Switzerland. The Bureau also accepted WH's offer to resign as the Director of WGMS as soon as a new Director is formally determined. The IACS Bureau needs to approve the selection criteria, and the job description for the position of WGMS Director. (Its Executive will do this, working out of session). The Bureau also confirmed that it will nominate a representative to serve on the selection committee for the WGMS Director. IACS will be represented in the selection process by its nominee on the selection committee, and will accept the majority decision of that committee.

WGMS was a service within FAGS (ICSU Federation of Astronomical and Geophysical Data Analysis Services) operating under the authority of IUGG/ICSU. FAGS is to be incorporated in to the new World Data System. It may be necessary to clear the process for appointment of a new WGMS Director with ICSU.

Action: P Allision to confirm that ICSU/WDS agree to the process of appointing a new Director of WGMS.

The Bureau thanked WH for his many years of dedicated work as Director of WGMS, and for his outstanding effort to ensure ongoing financial support for WGMS Activities from the Swiss GCOS committee.

Deferred to 4th Bureau Meeting on July 24

7.2 Acceptance of budget

2.1 IACS newsletter

2.2 IACS web site

2.3 IACS Bureau elections 2011

Minutes of the IACS Bureau Meeting, Montreal 18. - 19. July 2009

2.5 Others

- Issues from Plenary meeting
- 2013 Assembly jointly with IAMAS? DH Fierz to report
- Global Cryosphere Watch
- 5th Bureau Meeting