Transactions IAU, Volume XXVIIIB
Proc. XXVIII IAU General Assembly, August 2012
Thierry Montmerle, ed.
© International Astronomical Union 2015
doi:10.1017/S1743921315005554

DIVISION III
COMMISSION 15

PHYSICAL STUDIES OF COMETS AND MINOR PLANETS
(ETUDE PHYSIQUE DES COMETES & DES PETITES PLANETES)

PRESIDENT	**Dominique Bockelée-Morvan**
VICE-PRESIDENT	**Ricardo Gil-Hutton**
PAST PRESIDENT	**Alberto Cellino**
SECRETARY	**Daniel Hestroffer**
ORGANIZING COMMITTEE	**Irina N. Belskaya,**
	Björn J.R. Davidsson,
	Elisabetta Dotto,
	Alan Fitzsimmons,
	Daniel Hestroffer,
	Hideyo Kawakita,
	Thais Mothe-Diniz,
	Javier Licandro,
	Diane H. Wooden,
	Hajime Yano.

PROCEEDINGS BUSINESS SESSION, 29 August 2012

1. Business Session

The business meeting of IAU Commission 15 (C15) took place in Beijing on 29 August 2012, from 14:00 to 18:00, in room 405 of the China National Convention Center. This report of the business meeting of Commission 15 at the 2012 IAU GA is based on the report provided by Alberto Cellino, past president, and on the minutes taken by Daniel Hestroffer, secretary of Commission 15 in the triennium 2009 to 2012, and current secretary.

The President, A. Cellino, opened the meeting, welcoming members and others in the audience interested in the commission activities. The incoming President, Dominique Bockelée-Morvan, the past Division III President, Karen Meech, were in attendance, as were approximately 15 commission members.

The agenda, as presented by Albeto Cellino, was adopted. The first item of the business meeting was a discussion on the name of Commission 15 (Sect. 2). The next items were the presentation of the new officers and Organizing Committee (Sect. 3), the justification for continuation of the Commission Working Groups and Task Groups, and propositions for new Task Groups (Sect. 5).

The outgoing President noted that, in past C15 business meetings, most time was devoted to a report on the new Commission Officers and to reports from the Chairmen of the WGs and Task Groups. This time, the idea has been instead to minimize the time devoted to the above matters, and to devote a longer time to a few scientific presentations devoted to a handful of currently hot topics in our science. The goal was to stimulate

Downloaded from https://www.cambridge.org/core. IP address: 2.236.118.59, on 06 Nov 2020 at 12:16:23, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/S1743921315005554

discussions and thinking, and to give the participants some time to appreciate how much our discipline is evolving and how it is effective in facing new challenges posed by new discoveries, both from the remote sensing and in situ, and in developing new reassessments of classical topics. The scientific part of the meeting started then, including the following talks:

- Henry Hsieh: Main Belt Comets.
- Dan Boice (chair of WG Physical studies of Comets): What is a Comet? What is an Asteroid?
- Karri Muinonen (Task Group Asteroid magnitudes): On a new photometric system to replace the IAU (H,G).
- Hajime Yano: What we learnt from Hayabusa?
- Peter Jenniskens: Analysis of a sample of the meteorite that fell recently in California in an event which released 4 kTon of energy.

The outgoing President made some comments about the intense scientific activity carried out in recent years in the fields covered by C15. In particular, he noted that the research activity in the field of physical studies of small bodies has been intense during the last triennium, including theory and remote-sensing observations, as well as in situ (Hayabusa, DAWN, Rosetta, Stardust Next, EPOXI) and remote (Herschel, WISE) space observations. This has led to publication of a number of the order of 1,000 scientific papers, a very impressive result. The physical properties of small bodies are recognized to be of outstanding importance to understand the formation and evolution of our Solar System, and more in general of planetary systems. The small bodies are also very important from the point of view of the evolution of the terrestrial biosphere (delivery of water) and for the role played by catastrophic collisions in mass extinction of biological species. The President noted also with satisfaction that during the last triennium new public web facilities have been developed to help researchers in several fields (Asteroid taxonomy, computation of absolute magnitudes, etc.), a much appreciated improvement.

At the end of the meeting, the new President, Dr. Bockelée-Morvan, thanked Dr. Cellino for the good job done during the past triennium. The meeting was officially over at 18:05.

2. Discussion on Commission 15 name

Reminding that the name of the Commission is Physical Studies of Comets and Minor Planets (L'Étude Physique des Comètes et Petites Planètes), Alberto Cellino noted that there are some reasons to think that this name may look somewhat old-fashioned and might be possibly changed, taking into account that the term "minor planets" tends to be immediately associated with the term "asteroid", and much less with the population of Trans-Neptunian objects. Moreover, recent discoveries do suggest that the conventional distinction between asteroids and comets can be much less sharp than previously imagined (existence of so-called Main Belt Comets, and of extinct comets, possible migration of Trans-Neptunian objects). As a consequence, an updated name for this Commission might be something like "Physical Studies of Small Bodies". In the following discussion, somebody noted that the term "comet" should be kept, whereas someone stated that the term "Minor Planet" is perfectly acceptable, and moreover suggested merging C15 and C20. Another participant mentioned that the use of the terminology 'minor planet' is not recommended by the IAU itself; someone else agreed on the possibility to rename the Commission as Physical Studies of Minor Bodies. The President noted, however, that it is always very difficult to reach a general agreement on this kind of issues, and in any case, whatever may be the suggestion issued by this meeting, the final decision is under the

Downloaded from https://www.cambridge.org/core. IP address: 2.236.118.59, on 06 Nov 2020 at 12:16:23, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/S1743921315005554

responsibility of Division III. The suggestion of C15 is therefore that of inviting Div.III to open an internal discussion about the possibility to change the name of C15 taking into account all pros and cons.

3. Officers and Organizing Committee

The President showed the list of the C15 Officers for the next triennium, as they have been decided by the Organizing Committee (OC):

- *New President :* Dominique Bockelée-Morvan
- *New Vice-President :* Ricardo Gil-Hutton
- *Secretary :* Dr. Bockelée-Morvan informs that she will confirm D. Hestroffer in this task.
- *Members of the Organizing Committee :* Irina N. Belskaya (new), Björn J.R. Davidsson (confirmed), Elisabetta Dotto (confirmed), Alan Fitzsimmons (confirmed), Daniel Hestroffer (new), Hideyo Kawakita (new), Thais Mothé-Diniz (confirmed), Javier Licandro (new), Diane H. Wooden (confirmed).

The outgoing President informed that an additional member of the OC who had been elected for the next triennium, Dr. Shinsuke Abe, has regretfully declined the appointment, because he is already member of the OCs of two other IAU Commissions. Since Dr. Hajime Yano has expressed his willingness to possibly replace Dr. Abe in the C15 OC, Dr. Cellino said that he is personally in favour of this, but since new OC members are elected by the OC, he invited the new President to discuss this issue with the new OC in the near future. Dr. Yano was unanimously supported by the new OC to replace Dr. Abe in C15 OC, via an e-mail consultation carried out in September 2012, and the IAU secretary was informed.

The President thanked the members of the OC who have now ended their duty: D. Bockelée-Morvan, P. M. M. Jenniskens, D. F. Lupishko, and G. Tancredi.

4. Commission Members

The outgoing President informed that IAU C15 includes at present 383 members (according to the IAU web page). The IAU Secretariat has informed that 54 new C15 Members are being appointed for the next Triennium. A few previous members resigned due to health problems. In addition, three other well known colleagues have asked to be included as members of C15: Daniela Lazzaro, Patrick Michel and Hajime Yano. The President approved after having checked that all of them are already IAU members. Their C15 membership will be communicated to the IAU Secretariat.

The President reminded also that during the 2009-2012 triennium, eight eminent scientists, members of C15, passed away: W. Ian AXFORD (1933 - 2010), Zdenek CEPLECHA (1931 - 2009), Tom GEHRELS (1925 - 2011), Charles KOWAL (1940 - 2011), Brian MARSDEN (1937 - 2010), Douglas O. REVELLE (1945 - 2010), Vladimir SHKODROV (1930 - 2010), Andrzej WOSZCZYK (1935 - 2011). The meeting observes a minute of silence.

5. Working Groups and Task Groups

5.1. *Status and activity of current groups*

Commission 15 has two Working Groups (WG):

- Physical Studies of Asteroids;
- Physical Studies of Comets;

As well as four Task Groups (TG):

- Asteroid magnitudes;

Downloaded from https://www.cambridge.org/core. IP address: 2.236.118.59, on 06 Nov 2020 at 12:16:23, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/S1743921315005554

- Cometary Magnitudes;
- Asteroid polarimetric Albedo Calibration;
- Geophysical and Geological Properties of near-Earth Objects.

The President summarized the state of the existing C15 WGs and TGs. In particular, he suggested that the two existing WGs (on asteroids and comets) will continue in the next triennium. The President informed that the Working Group Chairmen for the next triennium will be: David Tholen (Physical Studies of Asteroids), who will replace Dr. Gil-Hutton, and Daniel C. Boice, confirmed for the WG on Physical Studies of Comets.

The **Asteroid magnitudes Task Group** has produced a proposal to improve the currently adopted (H,G) system with a new three-parameter system. A 2010 paper published on Icarus has suggested that the new proposed photometric system is significantly better than the (H,G) system. Moreover, a student of Dr. Karri Muinonen has already applied the new photometric system to a large sample of more than 400,000 asteroids. A presentation by Dr. Muinonen clarified the situation in the second part of the business meeting. As a conclusion, it was decided that this TG should continue to exist. The final decision whether to adopt the newly proposed (H, G1, G2) system will be taken by Div. III level. C15 is in favor of adopting the new system, since this proposal is issued by the activity of one of its Task Groups.

Task Group Cometary magnitudes: No significant activity during the last triennium. This TG is removed.

Task Group Calibration of polarization-albedo: some results have been obtained, according to the President. Work is still in progress and this TG should continue to exist.

Geophysical and Geological Properties of NEOs: the President noted that the activity of this TG has not been very strong during the last two triennia, in spite of the successful execution of important space missions. The original idea of this TG was to create a large database of geophysical and geological information on NEOs, but this has hardly been done. Moreover, the President noted that there is already a very active Div.III WG on NEOs (although, not totally overlapping). The Chairman of this C15 TG agreed with the President that this TG can be suppressed.

All the above suggestions by the President were approved. The TG on cometary magnitudes and Geophysical and Geological Properties of NEOs are now officially removed.

5.2. *New Task Groups*

A new WG concerning cometary chemistry has been proposed by Dr. Irakli Simonia, who had not a chance to be present at the IAU GA. Dr. Bockelée-Morvan took care of taking contacts with Dr. Simonia in order to understand precisely the details of this proposal. She made a presentation of the proposal, which is aimed at establishing a large database of cometary spectroscopic data in the visible wavelength range, since these data are currently scattered and often difficult to retrieve. Dr. Bockelée-Morvan concluded that this is a very ambitious program requiring a lot of manpower. As a consequence, she thinks that, as a pre-requisite to even begin such a task, it would be advisable to set up first a more limited Task Group with the purpose of judging whether the cometary community is interested in such a program, whether authors having their own data would be willing to contribute, and to assess in general how the database should be designed and what should be requested to include. This suggestion was approved by the C15 members present at the business meeting. The membership of this new Task Group will be decided in the near future.

The outgoing President proposed to create a new C15 TG on "Asteroid Families" to set up some commonly accepted criteria and procedures to be applied to the identification of groupings of objects sharing a common collisional origin. The membership of this TG

Downloaded from https://www.cambridge.org/core. IP address: 2.236.118.59, on 06 Nov 2020 at 12:16:23, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/S1743921315005554

is still to be defined, but it is clear that it should include specialists from C20 (who also supports this proposal at Div.III level). Due to the interdisciplinary nature of this subject, the C15 suggests that Div.III might discuss the possibility to set up this as a new Div.III WG, including both C15 and C20 members. In the case that this WG is not accepted at Div.III level, C15 will set up a dedicated Task Group on this subject.

6. WEB page of Commission 15

Alberto Cellino noted that during the last triennium there has been an effort to completely re-design the web page of Commission 15. This has been done by Mrs. S. Rasetti at the Observatory of Torino, in collaboration with the Commission President and Secretary. The redesigned web page can be found at URL http://iaucomm15.oato.inaf.it/. He noted that, in the case that IAU Commission web pages are not moved to some fixed IAU web site (a fixed an editable site is preferable than a site moving every 3 years), the Torino Observatory, in particular Mrs. Rasetti, is willing to continue to maintain and possibly improve the C15 web page and Forum for the next triennium, at least. This was approved by the new President. This new web page includes also a link to a brand new Forum, which has been developed with the aim of possibly becoming a useful tool for C15 members. The idea is that, by registering in the Forum, each member will have the possibility to successfully interact with other members on matters of common interest, writing texts containing a variety of useful and always up-to-date information, and will be automatically informed whenever a new message is posted. In this way, it should be possible to create a kind of dedicated network to make it easier the interactions between C15 members, to encourage exchange of ideas, sharing of telescope time, organization of meetings, etc. So far, however, the Forum has not been used very much. Some details were given by a short presentation by the C15 Secretary, D. Hestroffer.

Dominique Bockelée-Morvan
President of the Commission

Downloaded from https://www.cambridge.org/core. IP address: 2.236.118.59, on 06 Nov 2020 at 12:16:23, subject to the Cambridge Core terms of use, available at https://www.cambridge.org/core/terms. https://doi.org/10.1017/S1743921315005554