IPAG - Institut de planétologie et d'astrophysique de Grenoble

Rapport Hcéres

HCERES

High Council for the Evaluation of Research and Higher Education

Research units

HCERES report on research unit:

Institut de Planétologie et d'Astrophysique de Grenoble

IPAG

Under the supervision of the following institutions and research bodies:

Université Joseph Fourier - Grenoble - UJF

Centre National de la Recherche Scientifique - CNRS

Evaluation Campaign 2014-2015 (Group A)

HCERES

High Council for the Evaluation of Research and Higher Education

Research units

In the name of HCERES,[1]

Didier HOUSSIN, president

In the name of the experts committee,[2]

Jean-Marie HAMEURY, chairman of the committe

Under the decree N°.2014-1365 dated 14 november 2014,

[1] The president of HCERES "countersigns the evaluation reports set up by the experts committees and signed by their chairman." (Article 8, paragraph 5)

[2] The evaluation reports "are signed by the chairman of the expert committee". (Article 11, paragraph 2)

Evaluation report

This report is the result of the evaluation by the experts committee, the composition of which is specified below.

The assessments contained herein are the expression of an independent and collegial deliberation of the committee.

Unit name:	Institut de Planétologie et d'Astrophysique de Grenoble
Unit acronym:	IPAG
Label requested:	UMR
Present no.:	5274
Name of Director (2014-2015):	Mr Jean-Louis MONIN
Name of Project Leader (2016-2020):	Mr François-Xavier DÉSERT

Expert committee members

Chair:	Mr Jean-Marie HAMEURY, Université de Strasbourg
Experts:	Ms Caroline BARBAN, Observatoire de Paris (representative of CNAP)
	Ms Carine BRIAND, Observatoire de Paris (representative of CoNRS)
	Mr André CHARDIN, Université Paris-Sud
	Mr David CLARY, Oxford University, United Kingdom
	Mr John Kirk, Max-Planck-Institut für Kernphysik, Germany
	Mr Marc OLLIVIER, Université Paris-Sud
	Mr Francesco PALLA, Osservatorio Astrofisico di Arcetri, Italy
	Mr Cyril SZOPA, Université Pierre-et-Marie-Curie (representative of CNU)

Scientific delegate representing the HCERES:

Mr Michel BLANC

Representative(s) of the unit's supervising institutions and bodies:

Mr Jean BRAUN (Director of Doctoral School n°105, ED TUE)

Mr Alain CARTELIER, UJF

Mr Johann COLLOT (Director of Doctoral School n°47, ED Physique)

Mr Christian COMMAULT (Director of Doctoral School n°220, ED EEATS)

Mr Olivier LAMARLE, CNES

Mr Denis MOURARD, CNRS/INSU

Mr Francis ROCARD, CNES

Mr Jérôme VITRE, CNRS/DR11

1 • Introduction

History and geographical location of the unit

IPAG results from the merging on January 1st, 2011 of two research units: LAOG (Laboratoire d'Astrophysique de l'Observatoire de Grenoble), and LPG (Laboratoire de Planétologie de Grenoble). LAOG and LPG were created 30 years and 10 years respectively before the merging, both from very small initial groups. IPAG is located on the UJF campus, hosted in three buildings separated by approximately 200 m. They are next to the IRAM (Institut de Radioastronomie Millimétrique) building which hosts the French-German-Spanish institute operating two international major facilities located in "Plateau de Bure" and in Spain, and which is the other astronomical institute in Grenoble (albeit with a specific, international status).

Management team

Director: Mr Jean-Louis MONIN; Deputy directors: Mr Jérôme BOUVIER and Mr Sylvain DOUTÉ.

Technical director: Mr Étienne Le COARER.

HCERES nomenclature

ST3 (Earth and Universe sciences)

Unit workforce

Unit workforce	Number as at 30/06/2014	Number as at 01/01/2016
N1: Permanent professors and similar positions	34	32
N2: Permanent researchers from Institutions and similar positions	24	23
N3: Other permanent staff (without research duties)	36	34
N4: Other professors (Emeritus Professor, on-contract Professor, etc.)	2	2
N5: Other researchers from Institutions (Emeritus Research Director, Postdoctoral students, visitors, etc.)	15	4
N6: Other contractual staff (without research duties)	8	
TOTAL N1 to N6	**119**	**95**

Unit workforce	Number as at 30/06/2014	Number as at 01/01/2016
Doctoral students	29	
Theses defended	25	
Postdoctoral students having spent at least 12 months in the unit	2	
Number of Research Supervisor Qualifications (HDR) taken	6	
Qualified research supervisors (with an HDR) or similar positions	38	35

2 • Overall assessment of the unit

Global assessment of the unit

IPAG is a top-level laboratory for astrophysics and planetary sciences in France. Impressive scientific results have been obtained since the last AERES visit, thanks in particular to the exploitation of major space and ground-based facilities such as ALMA, IRAM, Planck, Herschel, VLT, HESS, Fermi, etc., and to the development of theoretical models to interpret these data. The laboratory also had major contributions in instrumental developments such as SPHERE, PIONIER, Rosetta/Consert, etc. which are now providing exciting data and are promises for great scientific achievements in the next few years. These successes are due both to an adequate strategy developed in the past and to the excellence of many individual staff members, both from the research teams and from the technical group. IPAG visibility at national and international levels is very good; there is however, given the excellence of the scientific results, room for some improvement in a few areas, in particular with respect to the U.S. community.

A new director for IPAG will be appointed in 2015, and the nomination process had just started before the visiting committee; the committee had the opportunity to interview the prospective director. This move should not affect the future scientific strategy, which the committee found to be sound, but will certainly have an effect on the general organization of the unit. The committee was able to assess the general philosophy of the proposed management scheme and found it appropriate, but did not consider the details of the reorganization that are likely to change.

Strengths and opportunities in relation to the context

The strength of IPAG relies first on the high quality of the staff, on the quality of the scientific results, and on the technical achievements. The number of publications in refereed journals is large (more than 1000 over the reference period, *i.e.* more than 3 publications per permanent researcher per year), and their quality is high as well. The arrival of Rosetta on the comet, the first light of SPHERE were major events for the international scientific community in which IPAG played a key role. The strength of the technical group relies in part on long-term R&D activities that enabled the proposal, approval and realization of cutting edge instruments.

IPAG also benefits from a high quality scientific environment in Grenoble. The current reorganization of the universities, the creation of a research pole PAGE (Physique des Particules, Astrophysique, Géosciences, Environnement) will help developing and strengthening relations in the high energy and astroparticle domain. The creation of a "student spatial centre" in Grenoble is another opportunity that IPAG must grasp, with a careful monitoring of human resources devoted to this project, though. The successes of two LabEx projects (OSUG@2020 and FOCUS) guarantee some resources on the long term, which partly alleviate the reduced funding via ANR. The age distribution of IPAG staff is also wealthy, and retirements should not be a major problem in the medium term, even if some departures will occur and may have significant effects. In addition, the FOCUS LabEx is a tool for strengthening the coherence of the R&D activity, and will certainly enable stronger links with the Service d'Astrophysique of CEA in Saclay and with CEA/LETI in Grenoble.

The merging of LPG and LAOG occurred 4 years ago and can be viewed as a success, despite the difficulties inherent to this major evolution. The committee noted significant scientific interactions between the planetology group and other teams at IPAG, and the creation of a technical group has had positive effects for all teams.

Weaknesses and threats related to the context

The rapid growth of the two laboratories whose merging gave birth to IPAG seems to be over now. The management team (present and prospective) is well aware of this, but opportunities for new developments should not be neglected, however. This will require a delicate balance of ambition and realism.

The organization and management structure had to be adapted shortly after the creation of IPAG to the new size of the unit, and there is still a need to check that the present organization is well adapted to the scientific objectives and size of the unit. The committee agreed upon the scheme proposed for evolution, but this will need an active support of the IPAG staff to be implemented in a successful way, and it is not unusual that changes generate tensions. Convincing the staff of the need for such changes and their adequacy with IPAG needs will clearly be an immediate, important task of the future IPAG director.

Despite the growth of IPAG, some projects rely on very few individuals having a crucial expertise, making them quite sensitive to *e.g.* departures. Recruitments would solve this problem, but it is not clear that they can possibly cover all the needs.

Recommendations

- IPAG management and staff must be ambitious, given the high scientific quality of the unit. Reinforcing the international visibility should be a priority. Several teams have the capacity to host an ERC at senior level, and applications should be encouraged;
- the next major step for instrumentation for exoplanet imaging will be the planet finder for the ELT (PCS). A roadmap should be developed for attaining this long-term goal, which will include contributions to the first light ELT instruments and a careful planning of long term R&D activities;
- the creation of a technical group 5 years ago, together with the creation of an instrumental team (CRISTAL) was a good move which should go further with the transformation of CRISTAL into a transverse axis, in support to scientific teams;
- links with IRAM have been strengthened in the recent past, in particular with the signature of an agreement between UJF and IRAM, but they must be much more developed;
- all but one of the 10 researchers recently recruited at IPAG defended their PhD thesis in Grenoble. Opening the recruitments by attracting excellent external candidates would certainly be desirable, and would also help to improve the international visibility of IPAG;
- the number of PhD students is still low, and the IPAG management should do its best efforts to attract them (and find the corresponding funding).