

Bando 2017- 34-AR

D.D. n. 298 del 24/11/2017

**Subject:** Selection procedure by qualifications and possible interview for the assignment of one research grant entitled: “Cometary Dust/Gas Coma Modelling and Giant Planet Atmospheres Modelling” based on project GIADA/Rosetta/ESA and JANUS/JUICE/ESA.

NATIONAL INSTITUTE FOR ASTROPHYSICS  
INSTITUTE FOR SPACE ASTROPHYSICS AND PLANETOLOGY

*The Director*

- **In accordance with** Law n. 240 dated 30 December 2010 and its art. 22 in particular;
- **In accordance with** the Provisions for the assignment of research grants approved by INAF Administrative Council on June 22<sup>nd</sup> 2011;
- **In accordance with** the request by Prof. Alessandra Rotundi and Prof. Vincenzo Della Corte, P.I. and DeputyPI, respectively, of the project GIADA/Rosetta/ESA and by Prof. Pasquale Palumbo P.I of the project JANUS/JUICE/ESA.
- **Given** the availability of finance from the projects ASI n. I/024/12/0 “Missione ROSETTA – Attività scientifica e supporto alle operazioni – Fase E2”, ROSETTA GIADA Enhanced Archive Data Delivery, REF.: ESARFP/NC/IPL-PSS/JD/34i.2016 and JUICE-JANUS, accordo 2013-056-R.I. “Fase B2/C della partecipazione italiana alla missione JUICE”. The starting of the research fellowship will be subordinated to the effective assignment of the funds allocation.

**DECREES**

**Art. 1- Research Project**

A call is open for a selection procedure on the basis of candidates’ qualifications, possibly integrated by an interview, for the assignment of one “Post-Doc” research grant of the duration of one year entitled: “Cometary Dust/Gas Coma Modelling and Giant Planet Atmospheres Modelling”.

Research will be carried at INAF-Institute for Space Astrophysics and Planetology. The successful candidate will work in collaboration with staff of the project.

Modelling cometary comae will be the main task of the work:

- Post-processing and integration with coma models of GIADA ‘in situ’ measurements in order to provide a global view of the 67P/C-G dust environment.

- Using parameters provided by other Rosetta instruments (mainly those characterizing the gas environment) and applying advanced 3D+t coma dust models, GIADA measurements will be extended to obtain dust distribution maps.

In addition, a part of the work will be devoted to develop non-LTE radiative transfer models for planet atmospheres and gas-dust emission from active areas of icy satellites.

The above activity will be carried out under the scientific supervision of Prof. A. Rotundi, Prof. V. Della Corte, Prof. P. Palumbo.

Further questions on the scientific project can be addressed to Prof. A. Rotundi (e-mail: [alessandra.rotundi@iaps.inaf.it](mailto:alessandra.rotundi@iaps.inaf.it) and [rotundi@uniparthenope.it](mailto:rotundi@uniparthenope.it)).

## **Art. 2 – Requirements for participation**

Participation to the selection is reserved to Italian and foreign citizens holding the following minimum requirements:

- A PhD degree in Physical and Mathematical Sciences, specialty: Mechanics of Fluids and Plasmas, or equivalent degree, issued by an Italian (or foreign) Advanced Studies Institute or University.

and

- at least three years of documented experience in research activities after the PhD degree;

or

- A degree in Physics or Mechanical Engineer, specialty aerospace, issued according to the previous or actual Italian University regulations which would formally entitle to the admission to a doctorate awarded by an Italian university or by a foreign university, together with at least six years of documented experience in scientific or technological activities after the degree;

Applicants are required substantial experience in these fields:

- Direct Simulation Monte-Carlo of rarefied gas flows;
- Development of cometary dusty-gas atmosphere models and related simulations;
- Development of non-LTE radiative transfer models for surfaces and atmospheres of planetary bodies;
- Development of algorithms for the Direct Simulation Monte-Carlo of rarefied gas flows on multiprocessor computational systems;

Applicants are required to have the following Computer Skills.

Operating system: Windows, UNIX/LINUX;

Programming language: ANSI C/C++, FORTRAN 95;

Parallel programming: MPI, IPC of UNIX/LINUX;

Text editing: L<sup>A</sup>T<sub>E</sub>X, MS Office

As additional assets will be considered:

- knowledge of cometary science;
- knowledge of planetary atmospheres;
- experience in Rosetta/ESA space mission.

Required Languages:

A good knowledge of English written and spoken is required.

## **Art. 3 – Application**

1 - Applications must be submitted in English by means of:

- Hand-delivery to the IAPS 'area concorsi', which will acknowledge the receipt date.
- From certified e-mail, including all the required documents in PDF format, sent to [areaconcorsi.iaps@legalmail.it](mailto:areaconcorsi.iaps@legalmail.it), you can send the documentations to the indicated address only if you have a personal certified mail (pec), pay attention not ordinary mail, by 18 December 2017 – 23:59 CET. Only certified emails sent through one of the email providers included in the list of the AgID (Agenzia dell'Italia Digitale) in according to DPR no.68 of 11/02/2005.
- Registered mail with acknowledgement receipt or express courier to INAF-Istituto di Astrofisica e Planetologia Spaziali – Via Fosso del Cavaliere 100, 00133 Roma. The

applications need to arrive by 18 December 2017 – 23:59 CET (postmark date will not suffice).

Applications are to be received by and not after **23:59 (CET)** on 18 December 2017. Late submissions will not be considered.

Applications which are not consistent with the attached forms (Annexes 1 and 2) or without the applicant's signatures will be excluded from the selection procedure.

The applications must be delivered reporting on the envelope or in the e-mail subject the following sentence: **"Application selection 2017-34-AR"**.

Aware that false declarations are against the law and that the Administration will carry out random checks on their accuracy, the applicant under his/her own responsibility, must clearly and precisely state in the application the following:

- name(s) and surname, date and place of birth, nationality, place of residence and address for correspondence;
- that s/he satisfies all the requirements described in article 2 of this Call;
- that s/he is aware of and is not ineligible under any of the restrictions described in article 4 of this Call.

The lack of any of the above-mentioned declarations will determine the exclusion from the selection procedure for incomplete application.

For selection purposes the applicants:

- shall directly state any academic qualifications in the application form (Annex 1)

In addition

- non-EU citizens residing outside Italy, if successful, must produce originals or suitably certified copies of academic qualifications obtained outside Italy.

2 - The following documents have to be submitted:

1. Annex 1 "Application form";
2. Annex 2 "Certification - Declaration in lieu of affidavit (Art. 19 - 46-47 the DPR 28th December 2000, n. 445)";
3. "Curriculum vitae", **signed and dated** by the applicant including a list, if applicable, of grants and fellowships held in the past or in progress;
4. copy of a valid identity document (ID card or passport);
5. list of publications;
6. any other qualification, working task, research activity for public and private institutions and publications consistent with the application;
7. The list of all submitted documents.
8. Annex 3 "Interview Request In Video Conference". For applicants residing abroad: you can make the possible interview remotely by means of a conference call audio and video (e.g. Skype or similar). The candidate who chooses this option must indicate this in the application and make an explicit request by filling out the appropriate form (request for interview Videoconference) and attach it to the application form, together with the front/back copy of a readable valid identity document.

3 - Applicants are admitted to the selection with reserve and may – at any time – be notified of exclusion from the selection procedure for the following reasons:

- submission of the application after the deadline;
- incomplete and/or unsigned application form;
- unsigned curriculum vitae;
- missing copy of a valid identity document;
- non-compliance the requirements indicated in paragraph 2.

Should the reasons for exclusion be determined after completion of the selection procedure the applicant will lose any right deriving from participation in the selection procedure; similar loss will be applied to applicants providing any false statement or document.

INAF accepts no responsibility for lost applications or documents when the applicant provided incorrect contact details or failed or delayed in notifying any changes to these details.

#### **Art. 4 - Ineligibility and incompatibility with other funding**

Full professors, associate professors and researchers of Italian Universities and employees of Italian public research institutions are all excluded from entering the competition.

The grant is not compatible with the attendance of academic courses as those that formally give access to a doctorate, as well as with Ph.D. fellowships. For employees of the Italian Public Administration (Italian State) unpaid leave of absence is mandatory.

The grant is not compatible with other kinds of fellowships, except for those awarded with the aim of integrating the training or research activity of the fellowship holder with a period spent abroad.

Incomes from working activities, also part-time, carried out continuously are not allowed. On the contrary, limited self-employed occasional work is compatible with the grant, only if it does not affect the research activity and must be authorized in advance by the Director of INAF- Istituto di Astrofisica e Planetologia Spaziali (IAPS).

Retired persons are not eligible for Research fellowship.

Applications are not accepted from candidates who carried out research fellowships under article 22 of Italian Law 240/2010 and integrative for a total period indicated in the current law, including extensions, but excluding the concurrent periods of doctoral studies up to the legal duration of the course and excluding periods of maternity leave or sick leave, in accordance with current legislation. When formally accepting the grant, the successful candidate will provide a declaration of absence of inadmissible conditions.

#### **Art. 5 – Duration of the Research grant**

The Research grant is expected to begin in February 2018. The grant is for one year with additional possible extensions depending on the favourable opinion of the scientific leaders of the projects involved and on funding availability, in any case within the limits of Article 22 paragraph 3 of Law 240/2010 and subsequent amendments.

#### **Art. 6 – Host Institution**

The host institution of the grant is INAF-Institute for Space Astrophysics and Planetology. The successful candidate will have the possibility to travel on duty abroad.

#### **Art. 7 – Salary amount**

The annual gross salary of the grant is 36.500,00 (thirty-six-thousand-five-hundred) Euros to be paid in deferred monthly payments. This amount does not include the burdens paid by INAF-Institute for Space Astrophysics and Planetology.

Applicable tax regulations are stated art. n. 4 of Italian law n. 476/1984 and subsequent modifications and integrations. Applicable social security rules are stated in art. n. 2, paragraph 26 and following paragraphs of the Italian law n. 335/1995 and subsequent modifications and integrations. Applicable regulations for mandatory maternity leave are provided in the Decree of the Ministry of Labour and Social Security dated 12 July 2007, published in the "Gazzetta Ufficiale" n. 247 dated 23 October 2007. Applicable regulations for sick leave are provided in art. n. 1, paragraph n. 788 of Italian law n. 296 dated 27 December 2006 and subsequent modifications. During the period of mandatory maternity leave the allowance paid by INPS (the Italian National Institute for Social Security) according to art. n. 5 of the above-mentioned Decree dated 12 July 2007 is integrated by INAF up to the total amount of the grant. The period of mandatory maternity leave will not contribute to the duration of the grant.

As for third party liability, the grand holder will be covered by insurance policy at the expense of INAF. This will not cover the civil liability of the grant holder towards INAF.

The grant holder must pay at his/her own expenses an insurance policy against work related injuries.

Accidents insurance will be paid by INAF-IAPS in favour of the fellow, to provide coverage for work related injuries, diseases and invalidity.

#### **Art. 8 – Selection Board and selection procedure**

The selection of eligible candidates will be carried out by a Selection Board appointed by the Director of INAF-IAPS. The Selection Board is composed of 3 members, from both Italian and foreign research staff, including also University staff, with expertise in the research field of the position. According to the current regulation, the composition of the Selection Board should comply with gender balance. The president of the Selection Board is nominated in the appointment decree and is chosen among the Board members. The Selection Board Secretary is also appointed in the above-mentioned decree.

The selection is based on qualifications, possibly integrated with an interview. Candidates must exhibit their identity documents in order to be admitted to the interview.

The Selection Committee can establish a short list of the eligible applicants to be interviewed, on the basis of qualifications and documented experience in scientific or technological activities concerning the specific subject of the research fellowship. All the activities of the selection procedure (e.g. meetings of the Selection Board, interviews...) can be carried out by using videoconference systems.

Applicants selected for the interview will be formally notified 15 days in advance by e-mail with acknowledgement of receipt, containing the individual evaluation score.

The selected candidates who miss the interview will be excluded from the competition.

The total ranking score is 100 points, of which 60 points is the maximum score for qualifications and 40 points is the maximum score for the interview. The minimum score in order to access the possible interview is 42/60. The candidates who obtain, in the same test, a score of at least 28/40 will pass the oral examination.

At the end of the selection process the selection board will draw up a ranked list based on the sum of the scores obtained both in the qualifications evaluation and the interview.

For candidates with the same score on the ranked list, preference will be given to the younger candidate.

The approval decree of the selection procedure and the ranked list will be published on the following website: <http://www.iaps.inaf.it/work-with-us/>

#### **Art. 9 – Awarding of the fellowship**

The highest ranked candidate will receive written notification of award of the research fellowship.

Within 10 days from receipt of the formal notification of the award he/she must provide a formal declaration of acceptance of the research grant. The declaration will also state that he/she is not subject to any of the exclusion conditions listed in article 4 of this Call.

If the candidate does not provide declaration of acceptance within a time limit of 10 days, he/she will lose his/her entitlement to the research fellowship that is automatically awarded to the next ranked candidate.

Under no circumstances the signing of the contract establishes a subordinate employment relationship or ensures any rights to access to permanent INAF staff positions.

#### **Art. 10 – Fellowship obligations**

The holder of the fellowship:

- will start the research activity at INAF-IAPS on the date indicated in the contract, unless prevented by exceptional circumstances, of which the Director of INAF-IAPS must be timely informed;
- will carry out his/her research activities under the supervision of the scientists in charge of the project, Prof. Alessandra Rotundi, Prof. Vincenzo Della Corte, Prof. Pasquale Palumbo;
- is required to issue an activity report every 12 months. The activity reports will be subject to approval from the scientist in charge of the project and will be transmitted to the Director of INAF - IAPS. Approval failure, properly explained by the supervisors, will give INAF- IAPS the right to withdraw the contract;
- is required to send a written note in case of withdrawal, with at least 30 days' notice, otherwise INAF-IAPS is entitled to retain or request the reimbursement of the salary amount corresponding to the missed notice period.

The holder of the fellowship who does not carry out his/her research activity regularly without justifications, or repeatedly fails to fulfill the requirements or, according to the supervisors, Prof. Alessandra Rotundi, Prof. Vincenzo Della Corte, Prof. Pasquale Palumbo, shows evident lack of skills with the planned research activities, will incur the withdrawal of the contract.

Temporary suspensions of the research fellowship are due in case of mandatory maternity leave or in case of illness periods exceeding one month or of any other serious reasons. The reasons for suspending the research fellowship must be proved and certified, and promptly sent to the Director of INAF-IAPS.

#### **Art. 11 - Proceedings Responsible**

In accordance with Art. 8, paragraph 3 of INAF Regulations on the assignment of research grants, Mrs. D. Segatori (daniela.segatori@iaps.inaf.it) is the responsible of the selection procedure relevant to this call.

#### **Art. 12 – Applicable regulation**

The INAF-IAPS shall comply with the current regulations promoting equal opportunities for women and men, non-discrimination and respect for privacy in processing personal data.

As for the cases not mentioned in this call, INAF-IAPS shall act in compliance with the current regulations concerning Italian public selection procedures.

Rome, 24 November 2017

The Director  
Dr. Fabrizio Capaccioni

  
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MR

**ANNEX 1  
APPLICATION FORM**

To the Direction of INAF-Institute for Space Astrophysics and Planetology  
Via Fosso del Cavaliere 100  
00133 ROMA - Italy

I, THE UNDERSIGNED,  
(Forename(s)) ..... Surname) .....  
Place of birth (City/State/Country) .....  
Date of birth (dd/mm/yy) .....  
Nationality .....  
Gender .....  
Permanent residence address (number/street/town/postal code/Country):  
.....  
Email address: .....

agree to the processing of my personal data, in accordance with Italian Leg. Decree n. 196/2003, for the purposes of the present selection procedure.

I, THE UNDERSIGNED,

having read the Call for applications D.D for the appointment of one research fellowship entitled: **“Cometary Dust/Gas Coma Modelling and Giant Planet Atmospheres Modelling’**.

request

to apply for the above-mentioned fellowship, and to this end, aware that false declarations are punishable by law and that this Administration will carry out random checks on the accuracy of the declarations made by candidates,

declare

under my own responsibility

qthat I hold the following Research Doctorate (PhD) ..... awarded by..... on date..... Title of the thesis.....;

qthat I hold the following educational qualifications....., awarded by.....Date.....;

qthat I have professional knowledge of the English language;

qthat I have ..... years of documented experience in scientific or technological activities;

qthat I am aware of the restrictions described in Article 4, of the Call for applications for this research fellowship;

qthat I have never received a research award as per art. 22, Italian Law 240/2010;

qthat I have previously received a research awards as per art. 22, Italian Law 240/2010 and, in particular I have been the recipient of<sup>1</sup>:

- a research fellowship entitled .....  
at (name of the institution) .....  
beginning.....ending.....total months .....
- a research fellowship entitled .....  
at (name of the institution) .....

<sup>1</sup> Indicate the number of months for which the award was used and the name of the institution granting the award. Please provide details of each award, for example, if you have had two awards of 24 months each at the same institution indicate these as two separate awards on two different lines.

beginning.....ending.....total months .....

- a research fellowship entitled .....,  
at (name of the institution) .....,  
beginning.....ending.....total months .....

qthat I am not a retired person;

qthat I am aware that, under art. 22 Italian Law 240/2010, the research fellowship:

- cannot be held contemporary with attendance at academic courses, “laurea specialistica” academic courses, and “laurea magistrale” academic courses, as well as with attendance at Ph.D courses with fellowship;
- cannot be held contemporary with other fellowships of whatever kind, except those awarded with the aim of integrating the training or research activity of the fellowship holder through a period spent abroad;
- cannot permit aggregation of income from working activities, also part-time, carried out continuously.

qthat I wish to receive any communication relating to the selection at the following address and that I will give due notice of any change of address:

Address (number/street/city /postal code/Country):

Email address: .....

I attach to this form:

1. Annex 2 “Certification - Declaration in lieu of affidavit (Art. 19 - 46-47 the DPR 28th December 2000, n. 445)”;
2. “Curriculum vitae”, signed and dated by the applicant including a list, if applicable, of grants and fellowships held in the past or in progress;
3. copy of a valid identity document (ID card or passport);
4. list of publications;
5. any other qualification, working task, research activity for public and private institutions and publications that the applicant deems appropriate to submit;
6. The list of all documents submitted.

Done at ..... Date.....

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Signature (not authenticated)



**ANNEX 2**

**Certification and Self-Declaration in lieu of affidavit  
(Art. 19 - 46-47 the DPR 28th December 2000, n. 445)**

**DICHIARAZIONE SOSTITUTIVA DI CERTIFICAZIONE  
DICHIARAZIONE SOSTITUTIVA DI ATTO DI NOTORETÀ  
(Art. 19 – 46 – 47 del D.P.R. 28 Dicembre 2000, n. 445)**

I, the undersigned,

(Forename(s))..... Surname).....  
Place of birth (City/State/Country) .....  
Date of birth (dd/mm/yy) .....  
Nationality .....  
Gender .....  
Permanent residence address (number/street/town/postal code/Country):  
.....  
Email address: .....

aware that false declarations are punishable by law and that this Administration will carry out random checks on the accuracy of the declarations made by candidates

**self-declare**

- that the content of the attached “curriculum vitae” is true
- That the documentation produced in copy: of the original

.....  
.....  
.....

Done at ..... Date.....

Signature (not authenticated)\*

*\* the photocopy of a valid identity document of the signer must be attached*

**ANNEX 3  
INTERVIEW REQUEST IN VIDEO CONFERENCE**

I, the undersigned / a (name) .....  
(last name) .....  
Place of birth .....  
Birth date .....  
Nationality .....  
Place of residence (country, town, postcode, street, n.), .....  
.....  
E mail .....

wonder

to be admitted to the oral exam provided by the call 2017-34-AR entitled  
"Cometary Dust/Gas Coma Modelling and Giant Planet Atmospheres Modelling".  
through videoconference procedures for this purpose communicate the following data:

1 - platform used to connect via the web

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2 - address for the connection

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(Place and Date) .....

(Signature, not authenticate) \*

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*\* the photocopy of a valid identity document of the signer must be attached*