

## CALL for APPLICATIONS

**(Determina Direttoriale 296/2024 del 20.06.2024)**

Public competition, based on qualification and possible interview to award n.1 position of Research Fellowship for Professionalization for a duration of 12 months with the possibility of extension whose title is "Development of HPC codes oriented towards research in the exoplanet area", within the Project NATIONAL CENTRE FOR HPC, BIG DATA AND QUANTUM COMPUTING, Codice Identificativo CN\_00000013, CUP C53C22000350006 – Obiettivo Funzione 2.01.01.03 Spoke 3: Astrophysics and Quantum Observations, capitolo 1.01.01.01.009 "Assegni di Ricerca".

The Research Fellowship for Professionalization is not intended to cover specific personnel needs of the Institute or of the project itself, but it offers the opportunity of undertaking research activity within the project to those candidates wishing to acquire knowledge and skills for their professional advancement. Besides, the research fellowship offers the fellow the opportunity of professional growth by pursuing her/his scientific or technological research activity within a highly qualified environment.

### Art. 1 Research project

A public selection based on qualifications, possibly integrated by an interview, is open to award one Research Fellowship for Professionalization for one year, possibly extendable provided the financial funding, under the project NATIONAL CENTRE FOR HPC, BIG DATA AND QUANTUM COMPUTING, Codice Identificativo CN\_00000013, CUP C53C22000350006 – Obiettivo Funzione 2.01.01.03 Spoke 3: Astrophysics and Quantum Observations, capitolo 1.01.01.01.009 "Assegni di Ricerca".

The purpose of this call is to enable qualified candidates, with an adequate scientific curriculum, to pursue the research entitled "Development of HPC codes oriented towards research in the exoplanet area" at the INAF – Osservatorio Astrofisico di Catania.

The successful candidate will carry out the following activities, under the scientific supervision of Dr. Gaetano Scandariato:

- Development of new algorithms for data analysis and optimization of existing codes;
- Parallelization on CPU/GPU infrastructures;
- Application of the developed software to observational data and publication of the results on peer-reviewed journals

The candidate is required to have adequate skills in the following aspects:

- Exoplanet discovery techniques and methodologies to extract the exoplanetary signals in the datasets;
- Methodologies for the characterization of exoplanetary atmospheres from spectroscopic and photometric data;

- Python programming;
- Bayesian statistical analysis
- English language

This selection procedure is simultaneously finalized:

- to offer an opportunity for professional growth to young people in possession of the master degree, to research fellows or to fixed-term employees, willing to experience the national and international research environment, in a dynamic and flexible scenario, or to enlist specific skills in the context of fixed-term projects and/or activities;
- to cover positions that fall outside the planning of permanent positions inside the Institute and, consequently, do not constitute a binding prerequisite for entry into permanent position of the Institution.

#### **Art. 2 Duration and fellowship amount**

The fellowship is awarded for **12 months**, with possible extension within the limit of 6 years, as set forth in art. 6 c. 2 bis of Legislative Decree 31 December 2014 n. 192, provided that the positive evaluation of the research and the financial availability occur.

The expected date of the fellowship start is **26 August 2024**.

The gross annual amount of the fellowship, paid in 12 postponed instalments, is Euro **26.000,00**.

This amount is net of burdens to be charged to INAF – Osservatorio Astrofisico di Catania, social charges, and includes the social security tax charged to the fellow.

Italian tax and social security rules will be applied.

The fellow will be requested to take out an accident insurance for the duration of the fellowship.

#### **Art.3 Eligibility**

All nationals, both from the European Community and non-European countries having obtained either:

- Degree in Astronomy, Physics, Mathematics, Engineering, Informatics obtained according to the educational system prior to the reform introduced by the Ministerial Decree of 3 November 1999, number 509
- Degree obtained in the field of specialist degrees (LS), according to the educational system provided for and regulated by the aforementioned Ministerial Decree, or in the field of master's degrees (LM), according to the educational system provided for and regulated by the Ministerial Decree of 22 October 2004, number 270, to which the aforementioned Degrees were equated by the Interministerial Decree of 9 July 2009 for the purposes of participation in public competitions.

The skills and the experiences in the topics listed in art. 1 must be described in the CV and proven by attached appropriate documents.

Applicants who have earned a Master's Degree or a Ph.D. in any European or non-European country, which has not been formally recognized as "equivalent" to an Italian Master's Degree under Italian legislation, are required to submit a **specific request to the examination board** for the assessment and potential declaration of equivalence to an Italian Master's Degree. This request should be made using Annex 1. The decision issued by the evaluation board is solely intended for the purpose of admission to this competition.

Citizens of non-European Union countries who do not hold a residence permit or a permanent residence permit, as defined in Article 38 of Legislative Decree No. 165 of March 30, 2001, and subsequent amendments and additions, must provide evidence of meeting the requirements mentioned in the previous paragraph. This evidence should be in the form of certificates or attestations issued by the competent authority of their home country, accompanied by a translation into Italian authenticated by the Italian consular authority to certify its conformity with the original document.

To this aim, applicants must attach the documents listed in art. 5 to the application form.

The requirements for participating to the competition must be met on the deadline for submitting applications.

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

Full professors, associate professors and researchers in Italian universities and employees of INAF or Italian University or research public institutions are all excluded from the competition.

Research grants may be assigned to personnel employed at public institutions other than those listed in the previous paragraph, provided they are on leave and do not receive any grant from their employer for the entire period of the contract.

During the duration of the fellowship, the grant holder cannot enroll in any academic course giving access to a doctorate, Phd programmes, or any other academic course.

The grant cannot be held contemporarily with whatever fellowships, except those awarded with the aim of supporting the training or research activity of the fellow during a period spent abroad.

Full-time or part-time job, cannot be carried out during the duration of the fellowship, while limited self-employed temporary job is compatible with the grant, provided that the job commitment does not compromise the research activity carried out for INAF.

In this case the Director of INAF – Osservatorio Astrofisico di Catania formally authorizes the fellowship.

Retired people are not eligible for Research fellowship.

Any person who has held Research fellowships under article 22 of Italian Law 240/2010 (namely Assegno di Ricerca) for a total period exceeding six years, are ineligible for the competition. The above period does not include extensions or periods in which the grant has been held in coincidence with doctoral studies up to the maximum time limit of the course and the periods of maternity leave or sick leave, in accordance with current legislation.

Research grants cannot be awarded to those who have signed contracts, pursuant to Art. 22 (Research grants) and Art. 24 (Temporary research positions) of Law n. 240 dated 30 December 2010, with other universities and/or other Italian public institutions, whose duration together with that of the contract outlined in this call for applications, exceeds 12 years, even non-continuous, as set out in Art. 22, comma 9 of the cited Law; maternity leave and sick leave are not taken into consideration when calculating the time limit.

### Art.5 Application process

Applications, with attached CV and any document or publication deemed useful for the purposes of this competition must be submitted, in Italian or in English, filling the attached forms (Annexes 1, and 2 the latter only for EU citizens) exclusively via mail at the following PEC address: [inafoacatania@pcert.postecert.it](mailto:inafoacatania@pcert.postecert.it) and must **arrive not later than h. 13:00 (local time) of 12 July 2024**. Late arrival will not be considered. Please quote **“AdR professionalizzante CN esoplanetologico”** in the subject of the e-mail.

For Italian participants: the forwarding will be valid only if the applicant sends the application form from his/her own PEC email box. For European and non-European participants: the application form must be sent to the PEC address: [inafoacatania@pcert.postecert.it](mailto:inafoacatania@pcert.postecert.it) from his/her email address. The forwarding time and date are certified by the IT system. The applicant must clearly and precisely state in the application form, under his/her own responsibility:

1. name(s) and surname,
2. date and place of birth,
3. nationality, Italian tax code (if any),
4. place of residence and address for correspondence and email address if available or PEC
5. the possession of either
  - a Master's Degree in one of the following fields: Astronomy, Physics, Mathematics, Engineering, Informatics, the University which awarded the Master's Degree and the obtained marks (if attributed)
6. to enjoy civil and political rights
7. not to have reported convictions, or ongoing pending convictions (if not, please specify it)
8. titles of any other qualifications awarded (e.g. specialization diplomas, attendance certificates for post-graduate specialization courses held in Italy or abroad, documented research, under contract, conducted at public or private bodies, scholarships or appointments, both in Italy and abroad);
9. not to hold scholarships, research grants or contracts or to be willing to terminate them in case of successful evaluation,
10. that s/he will communicate promptly any changes in the positions referred to in the application as well as changes to the residence and contact details;
11. that s/he has read and understood the regulations governing the call for applications.

The lack of any of the above-mentioned declarations causes the exclusion from the selection procedure for incomplete application. The following documents have to be submitted:

1. Annex 1 “Application form” signed and dated;

2. Annex 2 "Self-declaration" (only for EU citizens)

- i. that the copies of the master thesis, phd thesis, publications or any other document attached to the application are compliant to the original versions;*
- ii. that the applicant holds a Master's Degree in Physics, Astrophysics or Astronomy awarded by a foreign institute followed by three years of documented scientific experiences or a PhD in Physics, Astrophysics or Astronomy*
- iii. any other degree or certificate of schools and specialization course he/she has taken in Italy or abroad and/or any contract he/she has been assigned in the form of fellowship by Italian or foreign research institutions or Universities, and/or any other contract or work experience;*

3. Master thesis or Phd thesis (if obtained);

The candidate holding a foreign academic qualification is required to explicitly declare whether, based on the current regulations, it has already been declared equivalent or corresponding to one of the qualifications required for admission to the selection procedure outlined in this "Call for Applications."

In the absence of the declaration mentioned in point 1), the candidate is required to attach to the admission application a copy of the certificate or, alternatively, documentation verifying the academic qualification obtained, exams taken, and/or educational and research activities completed, along with the final grade. This is to enable the Examination Board to acquire all the necessary and relevant assessment elements for determining its equivalence to one of the qualifications required for admission to the selection procedure outlined in this "Call for Applications."

4. "Curriculum vitae", signed and dated by the applicant, providing evidence of qualifications, professional experience and the skills required to carry out the research and including a list, if applicable, of grants and fellowships held in the past and a statement of research interests;

5. Copy of a valid identity document (ID card or passport);

6. List of publications

7. PDF copies of any document deemed useful for the evaluation, e.g. post-graduate diplomas, certificate of attendance at post-graduate courses, schools, conferences scholarships, or research contracts

8. List of documents attached.

For selection purposes:

- EU citizens shall directly state any academic qualifications in the application forms and attach copy of the academic qualification and the list of exams taken, relative marks and course duration (Annexes 1 and 2).
- non-EU citizens residing outside Italy, together with ANNEX 1, must attach suitably certified copies of academic qualifications obtained outside European countries, together with a **declaration of value**, certified, translated and **legally validated**, complete with the record of the examinations taken, relative marks and course duration.

## Art. 6 Causes of exclusion from the competition

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:

- Applications arrived after the deadline mentioned above or

- Applications with incomplete documentation
- unsigned application form, curriculum or declarations
- Applications lacking of requirements listed in art. 3
- Applications lacking of ID
- Applications with false declarations or false documents will not be considered.

### **Art 7. Board of evaluation**

The board of evaluation, made of three members and a secretary, is appointed, ensuring an adequate balance of gender, by the Director of INAF – Osservatorio Astrofisico di Catania.

### **Art. 8 The selection process**

The selection is based on qualifications possibly integrated by an interview (which can also be done remotely).

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 on the specific subject of the research fellowship. All the stages of the selection procedure can be performed also using electronic devices for the communications.

The assessment of the CV and of the qualifications precedes any interview and will be made on the basis the documents attached, their relevance to the scientific/technological research programme and on possible possession of one or more of the preferential titles.

The total ranking score is 100 points, 60 points are the maximum score for qualifications and 40 points are the maximum score for the interview.

The candidate must obtain a minimum score of 42 points for qualifications to be eligible.

The maximum of 60 points reserved for the evaluation of the CV and qualifications are assigned as follows:

1. Graduation thesis, up to a maximum of 10 points;
2. Curriculum vitae et studiorum, up to a maximum of 30 points;
3. Publications: up to a maximum of 5 points;
4. Working experience: up to a maximum of 5 points;
5. Other qualifications (e.g. PhD degree), up to a maximum of 5 points;
6. Language certificates of proficiency in English, documented experience of Coding (e.g. C++, IDL, Python, Matlab), training internship in research institutes in Italy or in foreign institutes, participations to observing campaigns with ground-based and/or space-based instruments etc.: up to a maximum of 5 points.

Applicants selected for the interview will be informed with a minimum of 15 days' notice by e-mail, containing the individual score for qualifications.

Any interview will be aimed at verifying the applicant's specific experience and will focus on the topics of the research project listed in art. 1. It will be assigned up to a maximum of 40 points.

Applicants are expected to get the minimum score of 20 points in the interview to be eligible.

At the end of the selection process the board of evaluation will draw up the ranked list.

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

The highest ranked candidate will receive the written notification awarding of the research fellowship. Within 10 days from receipt of the formal notification, the successful applicant must send a formal declaration of acceptance of the research grant. The declaration will also state that s/he is not subject to any of the exclusion conditions listed in article 4 of this Call.

If the candidate does not provide the declaration of acceptance within a time limit of 10 days, s/he will lose her/his entitlement to the research fellowship, which can be awarded to the next ranked candidate.

In the event that the winner of the selection process holds a foreign academic qualification that has not been previously declared, in accordance with the current regulations, as equivalent or corresponding to one of the academic qualifications required as per Article 3, paragraph 1 of this "Call for Applications," the Administration, upon receiving the findings of the assessment carried out by the "Examination Board" solely for the purpose of admission to the procedure, will transmit these findings, along with the documentation mentioned in Article 3, paragraph 1, letter a) or b) of the Decree of the President of the Republic dated July 30, 2009, No. 189, accompanied by the candidate's request, to the Ministry of University and Research for the purpose of obtaining the opinion as stipulated in Article 4, paragraph 2, of the same Decree.

In the case of a positive response from the Ministry of University and Research or if the deadline for rendering the opinion elapses without result, the Administration, through the same provision, communicated to both the individual concerned and the Ministry, will recognize the academic qualification and authorize the award of the research grant.

In the event of a negative opinion from the Ministry of University and Research, the Administration, through the same provision, communicated to both the individual concerned and the Ministry, will declare that the academic qualification is not valid for admission to the selection procedure, resulting in the exclusion of the candidate. It will also authorize both the advancement of the merit ranking of the procedure and the awarding of the grant to the first eligible candidate.

In the acceptance declarations mentioned in the preceding paragraph, the grant holder for research activities must, under their own responsibility, undertake not to avail themselves of scholarships, except those granted by Italian or foreign institutions for the purpose of supplementing their research activities, subsidies, or other research grants throughout the entire duration of the aforementioned grant.

Before the start of the research fellowship, the successful applicant is requested to take out an insurance against accidents at work, valid for the duration of the fellowship. As for third party liability risks the fellow will be covered by the insurance policy drawn out by INAF.

If the fellow is employed by a public or private employer, before the start of the fellowship, s/he is requested to submit a copy of employee leave, shall the forfeiture of the fellowship.



The fellow will carry out the research activity in a flexible, autonomous, continuous way and in coordination with the scientific supervisors and the research team.

The fellow who after starting the research activity interrupts it for no valid reason or proves to be unsuitable for it, will lose the right to the fellowship, on the advice of the scientific supervisors.

The contract will be terminated without notice if:

- the fellow does not carry on the research activity;
- the fellow incurs in the one of the incompatibility clauses stated in art. 4;
- the fellow lacks repeatedly to fulfil requirements or, according to the evaluation of the scientific supervisor, Dr. Gaetano Scandariato, eventually shows evident lack of skills at the planned research activities;
- the fellow has presented false declarations or false documents.

The fellow can terminate the contract giving 30 days' notice to the administrative office.

If no notice is given, the amount corresponding to the missing days of notice will be withheld from the paycheck, or directly reimbursed by the fellow.

Under no circumstances the fellowship implies a subordinate employment relationship or gives right to access to permanent INAF staff positions.

#### **Art.10 Evaluation of research activity**

Before the expiration of the contract, the fellow will submit a detailed report, describing the progresses in the research topic. Any possible extension of the contract will be based on the positive evaluation of the report.

#### **Art. 11 Information under articles 13 and 14 G.D.P.R. 2016/679**

1. Pursuant to Article 13 of the ***"Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC" ("General Data Protection Regulation")***, the National Institute for Astrophysics, acting as data controller, hereby informs that the personal data of applicants will be processed exclusively for the purposes connected to the aforementioned procedure by INAF personnel who, under the direct authority of the controller, are authorized to process personal data.
2. The personal data shall be processed even through automated means, also in case of communication to third parties.
3. The provision of such data is necessary to verify the participation requirements and failure to indicate them may preclude such verification.
4. Pursuant to Articles 15-21 of the ***"General Data Protection Regulation"*** the applicants can require anytime the access to his/her personal data, the rectification and correction of his/her personal data and/or, where possible, the erasure of his/her personal data and/or the limitation of his/her data processing and the opposition of his/her data processing.



5. Applicants can exercise the abovementioned rights by addressing to the Data Protection Officer of the National Institute of Astrophysics at the following addresses:

- a) Viale del Parco Mellini, 84 - 00136 Rome (registered letter);
- b) [rpd@inaf.it](mailto:rpd@inaf.it) (Email);
- c) [rpd-inaf@legalmail.it](mailto:rpd-inaf@legalmail.it) (Certified mail).

### **Art. 12 Call advertisement**

The present call will be advertised on the website of the INAF – Osservatorio Astrofisico di Catania. Moreover, it will be sent to the Scientific Director of INAF for publication on INAF and MIUR websites. For further scientific information about the position and planned activities, contact the Scientific Responsible, Dr. Gaetano Scandariato ([gaetano.scandariato@inaf.it](mailto:gaetano.scandariato@inaf.it)). For further administrative information contact Dr. Agata Grasso (email: [agata.grasso@inaf.it](mailto:agata.grasso@inaf.it)).

For what not explicitly mentioned in this call, please refer to the Italian Call **(Determina n. 296/2024 del 20.06.2024)** which contains detailed information on the laws and regulations in force which rule Italian public selection processes.

### **LA DIRETTRICE**

*Dott.ssa Isabella Pagano*