

DET. N° 223/2017

**Subject:** *Selection procedure by qualifications and possible interview for the assignment of one postdoctoral research grant entitled “Test and calibration activities for the Scientific Instrument onboard IXPE”.*

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## THE DIRECTOR

**In accordance with:**

- the statute of the National Institute for Astrophysics (INAF) adopted on 1 May 2011;
- INAF enterprise agreement approved by decree nr. 23/2015 of 11 May 2015, published on G.U.R.I “Serie Generale” nr. 253 on 30 October 2015, and adopted on 1 November 2015;
- INAF presidential decree nr. 46 of 23 May 2017, which nominates Dr. Emilio Molinari as director of the Astronomical Observatory of Cagliari (OAC) for 3 years starting on 1 June 2017;
- INAF director general’s decree nr. 124 of 24 May 2017, which appoints Dr. Emilio Molinari as director of OAC;
- decree nr. 20 of 1 June 2017 by the director of OAC, which appoints Dr. Andrea Possenti as deputy director in case of absence or unavailability of Dr. Emilio Molinari;
- law n. 240 of 30 December 2010, art. 22 on the assignment of research grants;
- the provisions for the assignment of research grants approved by INAF Administrative Council on 22 June 2011 and subsequent modifications and integrations;
- the request prot. nr. 1161 of 9 October 2017 by Alessio Trois, “Tecnologo III livello” at OAC, on 11 October 2017 -
- the agreement 2017-012-HO signed by the National Institute for Astrophysics (INAF) and the Italian Space Agency (ASI) for the “Italian participation in the NASA mission IXPE”, through which OAC is involved in the activities of assembly, integration, verification, and testing of the Scientific Instrument onboard;

**Ascertained** that financial coverage has been provided, with assigned funds to Budget 2017 to Ob. Fu 1.05.04.03.17 Cap. 1.01.01.01.009 - “Research Grants”;

## DECREES

### Art. 1- Research Project

A call is open for the assignment of one postdoctoral research grant of the duration of 1 year, with a possible extension, entitled: “*Test and calibration activities for the Scientific Instrument onboard IXPE*”. The selection will be carried out on the basis of the applicants’ qualifications, possibly integrated by an interview.

IXPE (Imaging X-ray Polarimetry Explorer) is a NASA Small Explorer (SMEX) mission which has been approved in January 2017. The IXPE collaboration includes the Italian Space Agency (ASI), the Italian National Institute for Astrophysics (INAF), the Italian National Institute for Nuclear Physics (INFN) and the Roma Tre University.

IXPE will launch in April 2021 to perform polarization measurements of celestial sources emitting at X-rays with unprecedented detail, more than forty years after the last orbital polarimeter onboard the OSO-8 satellite. Data collected in the first two years of the mission will allow to deeply investigate the nature of the X-ray emission from accreting black holes, pulsars and neutron stars in binary systems.

The Italian collaboration, including Cagliari Astronomical Observatory (OAC), is responsible for the scientific instrument on board IXPE, comprising the onboard computer and the detectors.

In this context, the post-doc will be involved in the following activities:

- Integration, Testing and Calibration of the instrument;
- Development of the Ground Software Pipeline supporting tests and calibration during the instrument development phase;
- Development of the Ground Software Pipeline for data analysis during the operational phase;
- Development of performance models (sensitivity, dead time, energy resolution).

Further questions on the scientific project can be addressed to Alessio Trois (e-mail: [ixpe.oac@oa-cagliari.inaf.it](mailto:ixpe.oac@oa-cagliari.inaf.it)).

### 2 – Requirements for application and selection criteria

The selection is open to Italian and foreign citizens meeting the following minimum requirements:

- A Ph.D. degree in either Engineering, Physics, Computer Science or Astronomy – or an equivalent degree – issued by an Italian or a foreign advanced studies institute or university; *or, alternatively*
- a masters degree in either Engineering, Physics, Computer Science or Astronomy – or an equivalent degree, including the Italian university degree obtained under the “vecchio ordinamento” – awarded by an Italian or a foreign advanced studies institute or university, which would entitle the applicant to enrolment in a PhD programme; *followed by* at least three years of documented experience in scientific or technological activities.

For the sole purpose of the present selection, the equivalence of any qualifications obtained outside Italy with the corresponding Italian qualifications will be established by the Selection Committee (Art. 9).

Applications will be further evaluated on the basis of the following selection criteria:

- a good knowledge of the concepts of the development of a scientific space mission and related issues;
- ability to develop scientific and engineering software, preferably in the astronomical field;
- documented experience in participating in the development of space scientific missions;
- documented experience in the integration, testing and calibration of scientific instruments;
- proven experience of software pipeline development for the exploitation of data acquired from scientific instruments;
- knowledge of Python and C / C ++ programming languages.
- a good knowledge of written and spoken English.

### Art. 3 – Application procedure

Applications must be submitted in English or Italian via e-mail to the following email address: [protocollo@oa-cagliari.inaf.it](mailto:protocollo@oa-cagliari.inaf.it) . The e-mail subject should indicate the position which is being applied for.

**Applications must be submitted by noon (CEST) Dec 01, 2017.** Late submissions will not be considered.

Applicants must state clearly and precisely using the attached Application Form (Annex 1) the following (under his/her own responsibility and being aware that false declarations are punishable by law and that the administration will carry out random checks on their accuracy):

- name(s) and surname, date and place of birth, nationality, residential address and email address for correspondence;
- that s/he satisfies all the requirements described in article 2 of this Call;
- that s/he is aware of the restrictions described in article 4 of this Call.

In the absence of any of the above the applicant will be excluded from the selection procedure.

For the purpose of this selection procedure, applicants shall list any academic qualifications in the same Application Form (Annex 1).

Applicants must fill in and include in the applications also Annex 2.

Applications that are not consistent with the attached forms (Annexes 1 and 2) or have not been signed by the applicant will be excluded from the selection procedure.

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

Applications must include the following documents:

- Application Form (Annex 1) **signed and dated**;
- Annex 2 **signed and dated**;
- Curriculum vitae providing evidence of possession of the titles and the skills required to carry out the research and including a list, if applicable, of grants and fellowships held in the past;
- copy of a valid identity document (ID card or passport);
- publication list;
- any other qualification, work experience, research activity for public and private institutions and publications that the applicant deems appropriate to submit;

- a maximum of three reference letters, to be sent directly by the referees to the address [protocollo@oa-cagliari.inaf.it](mailto:protocollo@oa-cagliari.inaf.it) by noon (CEST) Dec 01, 2017. Letters received after this deadline will not be considered;

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 forms (Annexes 1 and 2);
- lack of the copy of a valid identity document;
- lack of the requirements indicated in paragraph 2.

Should the reasons for exclusion be ascertained after completion of the selection procedure, the applicant will lose any right deriving from participation in the selection procedure; the same will apply to applicants providing any false statement or document.

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

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

The grant cannot be held by full professors, associate professors and “ricercatori” in Italian universities, and by employees of Italian public research institutions.

The grant cannot be held simultaneously with attendance of academic courses (such as those that formally give access to a PhD programme) or with enrolment in a PhD programme. For employees of the Italian Public Administration (Italian State) compulsory unpaid leave of absence is required. The grant cannot be held contemporarily 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.

Aggregation of income from working activities, also part-time, carried out continuously is not accepted. Instead, limited self-employed occasional work is compatible with the grant, only if this is not prejudicial to the research activity carried out for INAF. This must be authorized in advance by the Director of INAF-OAC.

Retired persons are not eligible for Research fellowship.

Applicants who have held Research fellowships under article 22 of Italian Law 240/2010, amended by Law 11/2015, for a total period exceeding six years including extensions are excluded from the selection. The six years exclude periods in which the grant was held in coincidence with doctoral studies up to the maximum legal time limit of the Ph.D. programme, and excluding periods of maternity leave or sick leave, in accordance with current legislation.

When formally accepting the grant, the successful applicant will issue a declaration of absence of inadmissible cumulating of grants/fellowships.

#### **Art. 5 – Starting date and duration of the Research fellowship**

The Research fellowship is expected to begin approximately in January 2018. The exact initial date could be reasonably modified if required by the supervisor, by the completion of administrative procedures and/or for the cases mentioned in art. 10 of this call.

The initial grant duration is of 1 year. The funding availability allows an extension of the grant up to a total duration of 2 years depending on the favourable review of the supervisor.

Further extensions are possible up to a total duration of 6 years depending on the development of the project, the favourable review of the supervisor and additional funding availability.

### **Art. 6 – Host Institution**

The host institution of the grant is INAF-OAC, and the applicant will be requested to travel abroad, also outside the European Union.

### **Art. 7 – Salary and related items**

The grant amounts to 28,000.00 (twenty-eight-thousand) Euros gross per year. This amount is net of burdens to be charged to INAF-OAC and will be paid in deferred monthly instalments.

Applicable fiscal rules are the provisions of art. n. 4 of Italian law n. 476/1984 and subsequent modifications and integrations. Applicable social security rules are art. n. 2, paragraph 26 and following paragraphs of the Italian law n. 335/1995 and subsequent modifications and integrations. Applicable rules for obligatory 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 rules for sick leave are provided by art. n. 1, paragraph n. 788 of Italian law n. 296 dated 27 December 2006 and subsequent modifications. During the period of obligatory maternity leave the allowance paid by INPS (Italian national institute for social security) according to art. n. 5 of the above Decree dated 12 July 2007 is supplemented by INAF up to the total amount of the grant. The period of obligatory maternity leave will not contribute to the duration of the grant foreseen by the contract.

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

The grant holder must draw up at his/her expenses an insurance policy against accidents at work.

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

The evaluation of the applications will be performed by a Selection Committee appointed by the Director of INAF-OAC.

The Selection Committee is composed of three members from both Italian and foreign research staff, including also University staff, with expertise in the research field of the position offered in this announcement, and will include the principal investigator of the project. According to the law in force, the composition of the Selection Committee should comply, when possible, with gender balance. The president of the Selection Committee is nominated in the appointment decree and is chosen between the Committee members. In the decree the Selection Committee Secretary is also appointed.

The selection is based on qualifications, possibly integrated by an interview. At the interview, applicants must exhibit their identity documents unless the interview is being carried out remotely via electronic devices. In the latter case the Selection Committee verifies the applicant’s identity.

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 (e.g. meetings of the Selection Committee, interviews and so on) can be performed using electronic devices.

Applicants selected for the interview will be informed with a minimum of 10 days notice via e-mail. The email will include the final score assigned to the applicant's qualifications.

The total ranking score is 100 points, of which 40 points is the maximum score for the qualifications and 60 points is the maximum score for the interview. The minimum score for admission to the possible interview is 20 points. The minimum score at the possible interview for an applicant to be awarded the fellowship is 30 points.

At the end of the selection procedure the Selection Committee will release a ranked list of applicants. The approval decree of the selection procedure and the ranked list of applicants will be published on the website [www.oa-cagliari.inaf.it](http://www.oa-cagliari.inaf.it).

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

The highest ranked applicant will be notified of the award of the research fellowship via email. S/he must provide a formal declaration of acceptance of the research grant within 10 days of such formal notification. The declaration of acceptance must also state that s/he is not subject to any of the exclusion conditions listed in article 4 of this Call.

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

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

### **Art. 10 – Fellow's obligations**

The holder of the fellowship:

- will start the research activity at the date due as per the contract at INAF-OAC, unless prevented by *force majeure* or exceptional circumstances, of which the Director of INAF-OAC must be timely informed;
- will carry out her/his research activity under the supervision of the scientific coordinator of the activities, Alessio Trois, who will also monitor the fellow's activity progress;
- is required to issue an activity report every six months. The activity report will be subject to approval from the scientific advisor and will be transmitted to the Director of INAF-OAC. Approval failing, duly motivated by the scientific advisor, will give INAF-OAC the right to terminate the contract;
- is required to send a written note in case of withdrawal, with at least 30 days notice; failing that, the INAF-OAC is entitled to retain or request the reimbursement of the salary amount corresponding to the period not notified.

The holder of the fellowship who does not carry out her/his research activity regularly without producing justified reasons or lacks repeatedly to fulfil requirements or, according to the evaluation of the supervisor, Alessio Trois, eventually shows evident lack of skills at the planned research activities, will incur the termination of the contract.

Temporary suspensions of the research fellowship are due in case of obligatory maternity leave or in case of illness which lasts longer than one month or to any other serious reason. The reasons for suspending the research fellowship must be proved and certified, and promptly sent to the Director of INAF-OAC.

### **Art. 11 Administrative staff in charge of the selection procedure**

In accordance with Art. 8, paragraph 3 of INAF's provisions on the assignment of research grants, Mr. Claudio Pili is the administrative staff responsible of the selection procedure for the present research grant (e-mail: pili[at]oa-cagliari.inaf.it).

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

The Astronomical Observatory shall abide by provisions in force promoting equal opportunities for women and men, non-discrimination and respect of privacy in processing personal data. For what not explicitly mentioned in this announcement, the Observatory shall act in compliance with the regulations in force concerning public selection procedures, when applicable by analogy.

Cagliari, October 12, 2018

**Deputy Director**  
Dr. Andrea Possenti

