



**Istituto Nazionale di Astrofisica**

**OSSERVATORIO ASTRONOMIC**

**DI BRERA**



The binding version is the Italian one:

Prot. n. 0002032 del 08/11/2022 -AO:INAF-OAB - Classif. III/8. Determinazioni Direttoriali in uso 100/2022

Public selection procedure based on qualification and possible interview for one postdoctoral research fellowship (Assegno di Ricerca, tipologia B "Post Doc"), with title: "The quest for and the (physical and evolutionary) characterization of dual and binary supermassive black holes (SMBHs) through multi-wavelength studies".

#### THE DIRECTOR OF THE BRERA ASTRONOMICAL OBSERVATORY

.....  
.....

#### DETERMINE

The postdoctoral fellowship, within the aforementioned research project, doesn't mean to cover specific personnel needs of the Institute or of the project itself but rather offers the opportunity of undertaking research activity within the project to all those candidates that wish to acquire knowledge and skills for their professional advancement. Besides, the postdoctoral research fellowship offers to the fellow the opportunity of professional growth by conducting their scientific or technological research activity within a highly qualified environment.

This selection will be managed electronically both for the evaluation of qualifications and for the possible interview in compliance with the directive of the Minister for Public Administration.

#### Art. 1 – Research project

A public selection is open based on qualifications, possibly supplemented by an interview, for the awarding of a research grant, for a duration of 2 years, with the confirmation of the second year following the favourable opinion of the referent of the activity, entitled "**The quest for and the (physical and evolutionary) characterization of dual and binary supermassive black holes (SMBHs) through multi-wavelength studies**".

The winner will perform the research activity at the INAF-Osservatorio Astronomico di Brera, in close collaboration with Dr. Paola Severgnini, coordinator of the project, Dr. Alessandra De Rosa (INAF-IAPS Roma), Prof. Cristian Vignali (Univ. di Bologna) and the other members of the Large-Grant financed by INAF and titled: "Dual and binary supermassive black holes in the multi-messenger era: from galaxy mergers to gravitational waves".

The winner will carry out the following activities related to the quest and characterization of dual and binary SMBHs:

- Data reduction and analysis (imaging and spectroscopy) in the optical/near-infrared and X-ray bands;
- identification of new dual and binary systems and creation of double SMBH catalogues;
- investigation of the physical and evolutionary properties of dual and binary SMBH as a function of the relative separation and redshift. Possible feedback effects on the host galaxy evolution;
- comparison with theoretical model predictions and numerical/cosmological simulations;
- simulations related to forthcoming instruments.

## Art. 2 – Requirements

The participation to the present selection is reserved to Italian or foreign citizens fulfilling the following requirements, under penalty of exclusion:

- Master Degree in Physics or Astronomy or Mathematics or Engineer or equivalent degree awarded by and Italian or foreign Institute or University followed by a documented scientific or technological research experience of at least 3 years;
- Ph.D. in Physics or Astronomy or equivalent degree awarded by an Italian or foreign Institute or University.

For the sole purpose of admission to this selection procedure, the equivalence of the qualifications obtained by a candidate in a foreign country will be ascertained by the "Examining Commission" referred to in article 8 below, on the basis of the documentation produced by the candidate pursuant to article 3 of this "Announcement". It being understood that, in the event that the candidate is the winner of the aforementioned procedure, the Administration will transmit this documentation, together with the documentation referred to in Article 3, paragraph 2, letter a) or b), of the Decree of the President of the Republic of 30 July 2009, number 189, and together with the request of the candidate, to the Ministry of University and Research, in order to obtain the opinion required by article 4, paragraph 2, of the same Decree.

Candidates are required to have:

- good command of oral and written English language.

In addition, preferential qualifications will be considered:

- experience in the reduction and analysis of data from ground-based and/or space-based facilities;
- documented knowledge of the scientific theme inherent to the fellowship;
- submission of two letters of reference, to be sent by email to [protocollo.oabr@inaf.it](mailto:protocollo.oabr@inaf.it) not later than 12:00 pm of the 3 of February 2023 and specifying in the subject "**Assegno di Ricerca: Dual and Binary SMBHs**" and the name of the candidate
- submission of a short (~1 page) description of research interests.

## Art. 3 – Application procedure

Applications should follow the scheme of the attached form (Annex 1), including the date and the **signature** of the applicant, together with the **required documentation**. Applications, in electronic form (PDF; not exceeding 20MB), should be sent by e-mail to [inafoamilano@pcert.postecert.it](mailto:inafoamilano@pcert.postecert.it) **not later than 12:00 pm of the 31 of January 2023**. Please quote **“Assegno di Ricerca: Dual and Binary SMBHs”** in the subject of the e-mail.

**Applications sent after the deadline mentioned above or with incomplete documentation will not be considered.**

According to “Art. 39 decreto del Presidente della Repubblica” of the 28th of December 2000, n. 445, it is not required that the signature of the applicant is certified. However, the lack of the applicant signature in the application form implies exclusion from the selection process. Similarly, applications with clear inconsistency between the applicant’s declaration and the content of the application shall not be accepted. Applicants excluded from the selection procedure will be duly notified by the Director of INAF-Osservatorio Astronomico di Brera.

INAF-Osservatorio Astronomico di Brera is not responsible for any possible delay or missing in receiving the application or all the following communications. It is under the applicant’s responsibility to communicate to INAF-Osservatorio Astronomico di Brera promptly any modification in the applicant’s address.

The applicant must clearly and precisely state in the application form, under his/her own responsibility:

- a) name(s) and surname;
- b) place and date of birth;
- c) fiscal number (if applicable);
- d) citizenship;
- e) civil and political rights in the state of citizenship;
- f) academic title(s) ;
- g) present address;
- h) list of papers and works presented as electronic attachments to the application;
- i) e-mail address to receive all the communication related to the present selection process and, possibly, a telephone number.

In addition, the applicant must state in the application form, under his/her own responsibility:

1. not to have or have had any pending process for any reason with the justice or, if any, to declare all of them;
2. if he/she has been (or it is) in charge, and if so for how long, of any contract with public or private Italian enterprises.

For the evaluation of the qualifications and according to what established by “Art. 2 Decreto 11 February 1998 by the Ministero dell’Università e della Ricerca Scientifica e Tecnologica”, the application must include what follows:

- a. curriculum vitae et studiorum (CV), where it is clearly demonstrated that the applicant has obtained the Ph.D. or the Master Degree followed by a documented scientific or

- technological research experience of at least 3 years;
- b. full list of publications;
  - c. any other work or publication that the applicant considers useful for the evaluation of his/her CV, including an electronic copy of the master thesis and/or of the Ph.D. thesis or equivalent degrees awarded by foreign institutions;
  - d. for foreign citizens, copy of the Master Degree certificate, or equivalent title, with the record of the exams;
  - e. list of the qualifications and of any document attached to the application, mentioning the number of publications attached;
  - f. declaration (under his/her own responsibility):
    - i. that the copy of the thesis, publications or any other document attached to the application are compliant to the original versions;
    - ii. that the applicant holds a Master Degree in Physics or Astronomy or Mathematics or Engineer or equivalent degree, compliant with international agreement or to the Art. 332 of the T.U. n. 1592/1933, awarded by a foreign institute;
    - iii. that the applicant holds, if already awarded, a Ph.D. in Physics, Astronomy or Engineer or equivalent degree awarded by an Italian or foreign institution;
  - i. any other degree or certificate of schools and specialization course he/she has been taking 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 working experience he/she has had;
  - b) self-declaration, under his/her own responsibility, compliant with the DPR 445/2000 which states the duration of the contracts as for the content of the Art. 22, paragraph 9 of Italian law 240/2010 (*"The overall duration of the relationships established with the holders of the grants referred to in this article and of the contracts referred to in article 24, also with different universities, state, non-state or telematic, as well as with the entities referred to in paragraph 1 of this article, with the same subject, cannot in any case exceed twelve years, even if not continuous. For the purposes of the duration of the aforementioned relationships, periods spent on maternity leave or for health reasons according to current legislation do not count"*). Research fellowships ended before the promulgation of the law 240/2010 are excluded from this declaration.

The declaration as per point e) and the self-declaration as per point f) must be presented by filling out the attached form (Annex 2), and they must be dated and signed. A copy of an ID document under validity must be attached.

The applicant must mention in the self-declaration the degrees and qualifications owned as per point 6, providing all the information for the administration of INAF-Osservatorio di Brera to check the

reliability of the declaration. Alternatively, the applicant can submit original certificates testifying the declared qualifications.

#### **Art. 4 – Ineligibility**

The postdoctoral research fellowship cannot be held either by INAF employees holding both permanent and non-permanent contracts, or by regular employees of research institutes, as listed in Art. 22, paragraph 1 of Italian Law 240/2010.

Fellows are not allowed to enrol in a “Laurea Specialistica”, or “Laurea Magistrale” (Master Level), or to join a Ph.D. program funded by fellowships, according to the Art. 22, paragraph 3 of Italian law 240/2010. For employees of the Italian Public Administration, a compulsory unpaid leave is foreseen.

The fellowship cannot be held concurrently with other fellowships of whatever kind, except those awarded with the aim of integrating the training or research activity of the fellow 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 fellowship, only if this is not prejudicial to the research activity carried out for INAF-Osservatorio Astronomico di Brera. This must be authorized in advance by the Director of INAF-Osservatorio Astronomico di Brera. Retired persons are not eligible for research fellowship.

When formally accepting the fellowship, the successful candidate will issue a declaration of absence of simultaneous fellowships.

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

The starting date of the fellowship can be arranged with the candidate but it would preferentially start before April 15<sup>th</sup>, 2023. The research fellowship of the present call is offered for 2 years, following a favourable opinion (after one year) of the scientific PI (further extensions are possible based on the project needs)).

In agreement with Art. 22 of Italian law 240/2010, the overall duration of fellowships cannot exceed six years (even not in continuous form). Are excluded in this count those periods of possible overlap of the fellowship with a Ph.D. course, but still within the limit of the legal duration of the Ph.D., as well as the periods of maternity leave or health problems according to the current laws. Are excluded in this count also the fellowships ended before the promulgation of the law 240/2010.

#### **Art. 6 – Host Institution**

The candidate will carry out his/her research activity in the premises of INAF-Osservatorio Astronomico di Brera.

### **Art. 7 - Salary**

The gross salary for this position is 28.000,00 (Twenty-eight-thousand/00) euros per year and will be paid in deferred monthly instalments.

Applicable fiscal rules are provided by Art. 4 of Italian law 476/1984 and subsequent modifications and integrations. Applicable social security rules are provided by Art. 2, paragraph 26 and following paragraphs of Italian Law 335/1995 and subsequent modifications and integrations. Applicable rules for obligatory maternity leave are provided by the Decree of the Italian Ministry of Labour and Social Security dated 12th July 2007, published in the “Gazzetta Ufficiale” n. 247 on the 23rd of October 2007. Applicable rules for sick leave are provided by Art. 1, paragraph 788 of Italian law 296/2006, and subsequent modifications. During the period of obligatory maternity leave, the allowance paid by INPS (Italian National Institute for Social Security) according to Art. 5 of the above Decree dated 12 of July 2007 is supplemented by INAF up to the total amount of the fellowship. The period of obligatory maternity leave will not contribute to the duration of the fellowship foreseen by the contract.

The appointed candidate has to subscribe, on his/her own expenses, an insurance for workers before the official starting of the contract.

### **Art. 8 – Selection committee**

The selection will be performed by a Selection Committee appointed by the Director of INAF-Osservatorio Astronomico di Brera.

The selection committee is composed of three members, selected among the research personnel of Italian or foreign institutions experts on the research topics of the proposed project, and usually includes the scientific PI of the project. In compliance with the current rules, the committee should, if possible, guarantee the gender balance of its members. The president of the selection committee is designated among the members of the committee by the Director of INAF-Osservatorio Astronomico di Brera. The president will then designate, among the other members of the committee, the secretary of the selection procedure.

### **Art. 9 – Selection procedure and final ranking list**

The comparative selection will be based on the evaluation of the CV and qualifications presented by the candidates (excluding the qualifications required for admission to this selection) and can be integrated with an interview, if the committee considers it necessary. The candidates eligible for the interview, must provide at the time of the interview a valid ID document to be identified by the committee.

The committee has a total of 100 points, to be attributed as follows: up to 60 points can be awarded for the CV and qualifications presented by the candidates in the application, the other 40 points can

be awarded in case the interview is necessary for the evaluation process. The evaluation of the CV and qualifications is completed before the possible interview.

The maximum of 60 points reserved for the evaluation of the CV and qualifications (excluding the qualifications required for admission to this selection) are attributed as follows:

- a) up to 35 points for the research activity carried out within Italian and foreign institutions as described in the CV, giving specific weight to its compliance with the research topics of the present call;
- b) up to 25 points for publications in refereed journals and in conference proceedings, considering their compliance with the topics of the present call.

Only candidates with a score of at least 40 points in the above evaluation can be admitted to the possible interview.

If the committee needs to integrate the evaluation with an interview, the eligible candidates will be notified through e-mail or ordinary mail at least 15 days in advance. In this notification, the candidates eligible for the interview will also be notified of their score after the first step of the evaluation.

Only candidates with a score of at least 28/40 points in the interview will be considered for the post-doc positions.

After the conclusion of the evaluation process, including the possible interview, the list of candidates which were examined and the final ranking is published.

The committee declares the appointed candidate and establishes a ranking list according to the decreasing total score (sum of the evaluation of the qualifications and possible interview). This ranking list and the evaluation comments of the committee are published in the “Albo Ufficiale” of INAF-Osservatorio Astronomico di Brera. The documentation of the selection procedure and the ranking list will be approved by the Director of INAF-Osservatorio Astronomico di Brera. The final approved documents will be distributed through the “Albo dell’Osservatorio”. The final ranking can be used, if the appointed candidate resigns from the offer of the position, to offer the position to the following candidate in the same ranking list.

### **Art. 10 – Awarding the fellowship**

Within one month from the publication of the ranking list, the Director of INAF-Osservatorio Astronomico di Brera will notify the highest-ranked candidate that he/she is appointed for the fellowship. The appointed candidate, within 10 days from the receipt of the offer, must provide a formal declaration of his/her acceptance of the fellowship or its withdrawal, together with a formal declaration that none of the conditions for ineligibility stated in the Art. 4 above are applicable.

The insurance for workers should be subscribed by the appointed candidate before the official starting of the fellowship. Concerning the third-party risks, the fellow will be covered by the global insurance of INAF. This does not cover the risks of the fellow towards INAF.

The fellow can resign from the contract with a written formal communication to be sent in any moment to the Director of INAF-Osservatorio Astronomico di Brera with at least 30 days notice. This

communication should however be sent within the 1st or 16<sup>th</sup> day of the month. In case of no communication, the Administrative office can retain the payment of the fellowship for the month (30 days) expected for the formal communication. In case of resignation of the contract, the remaining amount of the fellowship can be offered to the following candidate in the ranking list.

The appointed candidate must sign the contract by the date appointed in the notification received from the Director of INAF-Osservatorio Astronomico di Brera. Exceptions to this are only under exceptional circumstances that prevent the candidate to be present at the appointed date and should be formally communicated and justified.

The fellow is required to provide periodic reports of his/her scientific activity according to the rules mentioned in the signed contract. The scientific PI of the project is entitled to evaluate and approve these reports and to communicate to the Director of INAF-Osservatorio Astronomico di Brera the outcome of the evaluation. In case of motivated non-approval of the scientific activity by the scientific PI, the contract can be resigned by the Administration office.

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. 11 – Starting date and fellowship obligations**

The expected starting date of the fellowship is established and communicated by the Director of the INAF-Osservatorio Astronomico di Brera in the communication and appointment for the signature of the contract.

The scientific PI of the project, and supervisor and coordinator of the scientific and research activity of the fellow is Dr. Paola Severgnini.

The fellow has the following obligations:

- A. to sign the contract before the starting date, accepting all the rules and regulations included;
- B. to subscribe at his/her own expenses an insurance for workers according to the Italian regulations before the starting date;
- C. to start the research activity within the date appointed in the contract with INAF-Osservatorio Astronomico di Brera, unless prevented by exceptional circumstances, of which the Director of INAF-Osservatorio Astronomico di Brera must be duly informed;
- D. to continue without interruptions the research activity during the whole duration of the fellowship;
- E. to follow all the rules of the Institute and communications that will be issued to the personnel by the Director of INAF-Osservatorio Astronomico di Brera and by the scientific PI of the project;



- F. to issue periodical activity reports as established in the contract. The activity reports will be subject to approval by the project PI.
- G. to keep confidential information secret;
- H. to keep the Osservatorio Astronomico di Brera informed about changes in his-her contact details for a period of three years following the conclusion of this research grant;

The fellow who fails in carrying out his/her regular research activity, without producing justified reasons or fails repeatedly in fulfilling requirements or, according to the evaluation of the scientist in charge, shows evident lack of skills at the planned research activities, will incur in the termination of the contract.

In this case, the fellow will be duly notified, and he/she will be allowed to defend him/herself with a written statement addressed to the Director of INAF- Osservatorio Astronomico di Brera.

The fellow will also be notified of the final decision, both in case of acceptance of his/her defense and in case of effective termination of the contract.

Temporary suspensions of the research fellowship are due in case of obligatory maternity leave or in case of illness lasting 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- Osservatorio Astronomico di Brera.

INAF- Osservatorio Astronomico di Brera can use anytime any adequate method to check on the development of the research activity of the fellow.

### **Art. 12 – Responsible for the selection procedure**

According to Art. 8, paragraph 3 of “Disciplinare per il conferimento di assegni per lo svolgimento dell'attività di ricerca dell'INAF” of the 22nd June 2011, the referent for this selection procedure is Mr. Luca Pio Ciarfaglia.

### **Art. 13 – Publication of the call**

The present call is distributed to all the Astronomical and Astrophysical Observatories and to all interested research institutes in general, and is published on the following web sites: <http://www.inaf.it> and <http://www.brera.inaf.it>, on the web pages of the Ministero dell'Istruzione, dell'Università e della Ricerca (MIUR) and of the European Union, according to the guidelines defined by MIUR.

### **Art. 14 – Applicable regulations**

INAF- Osservatorio Astronomico di Brera 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, INAF- Osservatorio Astronomico di Brera shall act in compliance with the regulations in force concerning Italian public selection procedures, when applicable by analogy.

Milano, 8 Novembre 2022

Il Direttore  
Dr. Roberto Della Ceca



of the exams;

- 3) list of the qualifications and of any document attached to the application, mentioning the number of publications attached;
- 4) declaration according to the form Allegato 2.

I, the undersigned, declare my consensus for my personal data to be treated respecting the Italian Law 196/2003 and subsequent modifications and integrations, in order to fulfill the procedures necessary for the present call.

I, the undersigned, ask to receive all the communications concerning the present call to the following address (please include the full address, including an e-mail address):

.....

Place and Date

Signature

---

---

## ANNEX 2: DECLARATION

I, the undersigned (Forename(s))....., (Surname)....., Place of birth (Town/State)....., Date of birth (dd/mm/yy) ....., Permanent residence address (number/street/town/postal code/Country)....., as candidate for a selection procedure for an “Assegno di Ricerca” (research fellowship) titled:

“ \_\_\_\_\_ ” at INAF-Osservatorio Astronomico di Brera, aware that false declarations are punishable by law

### DECLARE UNDER MY OWN RESPONSIBILITY THAT

1. the attached copy of the Thesis or any other publication and qualification/certificate attached to this application are conformal with the original version;
2. the Master degree in ..... was awarded by ..... the (date) ..... with the final mark/score .....
3. I possess the following qualifications (please include the period, duration and Institution):
  - a. Ph.D. degree: .....
  - b. certificate of school or courses attendance: .....
  - c. fellowships: .....
  - d. research contracts for public or private companies: .....
  - e. anything else: .....

Date

Signature

The declaration must be sent together with a copy of a valid document of the applicant (ID or passport).

## ALLEGATO 2

### AUTOCERTIFICAZIONE

Il/la sottoscritto/a, ..... nato/a a ..... il ....., residente in Via/Piazza ..... n ....., (località ..... ) Comune ..... CAP ..... Provincia ..... Stato ..... , nella sua qualità di candidato a selezione per assegno di ricerca bandito dall'INAF-Osservatorio astronomico di Brera con determina n. \_\_ , consapevole che le dichiarazioni mendaci, la falsità in atti e l'uso di atti falsi sono puniti ai sensi del Codice Penale e ai sensi delle Leggi speciali in materia,

### DICHIARA E AUTOCERTIFICA

- 1) che le copie delle tesi, delle pubblicazioni, e dei lavori presentati sono conformi all'originale;
- 2) di avere conseguito in data ..... la laurea in ..... presso l'Università di ..... con la votazione di .....
- 3) di possedere i seguenti titoli (indicare gli estremi di conseguimento):
  - a) diploma di dottorato ..... conseguito il .....
  - a) attestati di frequenza a corsi di perfezionamento post-laurea: .....
  - b) assegni di ricerca, specificando la durata e il periodo (dal \_\_ al \_\_) per la verifica del comma 3 dell'art. 5 del bando: .....
  - c) borse di studio: .....
  - d) contratti per attività di ricerca presso soggetti pubblici e privati: .....
  - e) altro: .....

.....

*(Luogo e data)*

..... (\*)

*(Firma per esteso del dichiarante)*

(\*) La firma non deve essere autenticata.

N.B. La dichiarazione deve essere presentata o inviata unitamente a fotocopia, non autenticata, di un valido documento di identità personale del dichiarante.