



**INAF**  
**Istituto Nazionale di Astrofisica**  
**Osservatorio Astronomico di Palermo**  
**Giuseppe S. Vaiana**



**D.D. n 62/2015**

*Selection procedure based on titles for the awarding of one research fellowship entitled: “Filling the gap between supernova explosions and their remnants through magnetohydrodynamic modeling and high performance computing” Category: Post-Doc (in accordance with Article 22, Law 240/2010)*

**THE DIRECTOR OF INAF – Palermo Astronomical Observatory**

**Having seen** the Statute of the Istituto Nazionale di Astrofisica (INAF), adopted by INAF Administrative Council on 7 March 2011 and entered into force on 1 May 2011;  
**taking into account** the internal regulations of INAF;  
**in accordance with** Italian Law n. 240 dated 30 December 2010, Article 22;  
**having seen** the INAF Regulations for the awarding of research fellowships approved by INAF Administrative Council on 22 June 2011, Resolution n. 06/11 and subsequent modifications and integrations;  
**in accordance with** the Grant PRIN-INAF 2014 approved by INAF Administrative Council on 25 June 2014;  
**considering** that the scientific project presented by Dr. Salvatore Orlando entitled “Filling the gap between supernova explosions and their remnants through magnetohydrodynamic modeling and high performance computing” has been funded in the framework of the above mentioned Grant;  
**considering** it appropriate to issue an announcement of competition for the award of a research fellowship;  
**given** the availability of finance from funds of the above mentioned Grant;  
**having seen** the circular n. 3669/2010 issued on may 27<sup>th</sup> 2010 by the Director of the Research Structure Department of INAF, subordinating the availability of the fellowship to the effective assignment of the project and funding availability;

**DECREES**

**Art. 1**

A selection based on titles, possibly integrated by an interview, is open in order to award one research fellowship entitled “Filling the gap between supernova explosions and their remnants through magnetohydrodynamic modeling”, category Post-Doc (type A), code CUP C73J15000000001. The fellowship holder will be involved in the following activities: 1) modeling the post-explosion evolution of supernovae with the aim to study the dynamics and energetic of the ejecta, and their chemical evolution; 2) modeling of supernova remnants and, in particular, the evolution of young supernova remnants; 3) synthesis of thermal X-ray emission from the model results; development of new diagnostic tools of the plasma properties of a supernova remnant with the aim to link them with the characteristics of the progenitor supernova and of the surrounding ambient medium; 4) synthesis of the non-thermal emission in radio, X-ray, and gamma-ray bands from the model results aimed at gaining insight onto the mechanism responsible for the acceleration of cosmic rays at the shock front of supernova remnants. The above research work will be carried out in close collaboration with the research group at INAF-OAPA and under the scientific supervision of Dr. Salvatore Orlando. For more information on the research activities to be carried out, the applicants are invited to contact Dr. Salvatore Orlando ([orlando@astropa.inaf.it](mailto:orlando@astropa.inaf.it)) or visit the web site [http://www.astropa.unipa.it/progetti\\_ricerca/HPC/index.html](http://www.astropa.unipa.it/progetti_ricerca/HPC/index.html).

### Art. 2

The Research fellowship duration is one year, beginning on **December 15<sup>th</sup> 2015** and ending on **December 14<sup>th</sup> 2016**. Extensions depend on availability of funds obtained from applications regarding the above mentioned research project, on the needs of the research program and on the results gained, as valued by the scientist in charge of the research (S. Orlando). In accordance with Italian Law n. 240/2010 the duration of the fellowship, inclusive of possible renewals, will not exceed six years, excluding periods of maternity leave or sick leave, in accordance with current legislation.

### Art. 3

Duly signed applications should be sent by registered post with acknowledge of receipts to: The Director, INAF-Osservatorio Astronomico di Palermo, Piazza del Parlamento 1, 90134, Palermo, **by November 6, 2015**.

Only applications received by this date will be accepted, regardless of the date of dispatch. Late submissions will not be considered.

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

The envelope containing the application should be endorsed "Application for SN2SNR position at INAF-Palermo Astronomical Observatory".

The applicant must indicate clearly and accurately in the application

- name(s) and surname;
- date and place of birth;
- nationality;
- capacity to exercise civil and political rights in his/her Country;
- educational qualifications;
- place of residence and address for correspondence;
- position relative to obligatory military service;
- titles presented, specifying the amount of publications;
- National Insurance number.

Moreover, the applicant must state under his/her own responsibility:

- Of not having been convicted of any crime nor having any ongoing penal proceedings
- of having been or of still being holder of research contracts or grants from public or private bodies, and the duration of the same.

Applications devoid of the above mentioned declarations will be considered incomplete and thus excluded from the selection procedure.

The following documents have to be submitted: -

- Annex 1 "Application form"; -
- Annex 2 "Curriculum vitae", **signed and dated** by the applicant, 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); -
- list of publications;
- any other title, i.e. working and research experience made at public and private institutions, and publications that the applicant deems appropriate to submit;
- copy of the PhD certificate or the equivalent foreign academic qualification.

INAF accepts no responsibility for lost applications due to incorrect contact details provided by the applicants or delays in notifying any changes to these details, or for failure of postal delivery not attributable to INAF.

#### **Art.4**

In order to participate in the selection, applicants must possess, on pain of exclusion

- a PhD degree in Astronomy or Physics awarded by an Italian university or a formally recognized foreign university;
- or , alternatively, a three-years full time post-graduate research documented activity (graduation in Astronomy or Physics or equivalent).

The following knowledge, skills and experience will be considered as preferential titles:

- Experience and knowledge in the modeling of supernova remnants;
- Experience in the development of hydrodynamic or magnetohydrodynamic numerical codes;
- Experience in parallel computing based on the use of Message Passing Interface (MPI) library;
- Knowledge of techniques for the synthesis of emission from model results and comparison of model results with observations;

#### **Art. 5**

The Research fellowship cannot be awarded to INAF employees holding both permanent and non-permanent contracts and to regular employees of Institutes listed in article 22, paragraph 1 of Italian Law n. 240/2010. The grant cannot be awarded to students enrolled in academic courses such as “*laurea specialistica*” and “*laurea magistrale*”, as well as in PhD courses funded by a fellowship. Employees of the Italian Public Administration are expected to take unpaid leave of absence during the period covered by the fellowship. The grant cannot be held contemporarily with other fellowships of whatever kind, except for those aiming to integrate the training or research activity of the fellowship holder during a period spent abroad. Aggregation of income from regular working activities, even part-time, is not accepted. However, a limited amount of self-employed occasional work is compatible with the grant, as long as this is not prejudicial to the research activity carried out for INAF. This must be authorized in advance by the Director of INAF- Astronomical Palermo Observatory (INAF-OAPa hereinafter) where most of the research activity of the grant is carried out.

When formally accepting the grant, the successful candidate will declare the absence of any inadmissible accumulation of grants/fellowships. Retired persons are not eligible for Research fellowship. Also excluded from participation are people who have carried out Research fellowships under article 22 of Italian Law 240/2010 for a total period of over four years, including extensions, but excluding the periods in which the grant was held during doctoral studies up to the maximum legal time limit of the course and also excluding periods of maternity leave or sick leave, in accordance with current legislation.

#### **Art. 6**

The fellow will carry out the research at INAF-OAPa

#### **Art. 7**

The gross annual salary will be 28000 Euro. This amount is net of burdens to be charged to INAF-OAPa and will be paid in deferred monthly installments. Applicable fiscal rules are the provisions of art. 4 of the Italian law n. 476/1984 and subsequent modifications and integrations. Applicable social security rules are provided by 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 Italian 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. 1, paragraph n. 788 of the 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. 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 indicated in the contract.

The INAF-OAPa will provide civil liability insurance cover. However, the fellow will have to provide him/herself with insurance for accidents at work. Copy of the accident insurance contract should be

consigned to the Administrative Offices of Palermo Astronomical Observatory at the starting of research activity.

#### **Art. 8**

The selection will be made by a Selection Committee appointed by the Director of INAF-OAPa and composed of three members chosen among the INAF research staff and University research personnel in the field of Astronomy, according to the INAF rules defined in art. 9 of “Disciplinare per il conferimento di assegni per lo svolgimento di attività di ricerca”.

A maximum of 100 grades can be assigned to each participant, based on the titles held (final degree grade, research Doctorate, degree thesis and publications – up to a maximum of 70 grades), followed by an interview (up to a maximum of 30 grades) if the Committee feels in need to discuss the originality and relevance to the fellowship research of the degree and doctorate theses and of the publications.

The Committee will establish the minimum grades required for an applicant to pass the selection (=idoneità) Applicants selected for the interview will receive an e-mail with acknowledgement of receipt, stating the date of the interview (with at least 15 days’ notice) and the grades gained from evaluation of the titles. At the conclusion of the selection procedure the Selection Committee will produce a ranked list of the applicants who have passed the selection.

Should the winner retire, the fellowship will be awarded to the applicant second on the ranked list. The approval decree of the selection procedure and the ranked list will be available at the Palermo Observatory, and also sent by post to all applicants.

#### **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 she/he must provide a formal declaration of acceptance of the research grant. The declaration will also state that she/he is not subject to any of the exclusion conditions listed in article 4 of this Call. If it occurs, the awarded candidate is bound to provide formal declaration of withdrawal within the same time limit of 10 days. If the candidate does not provide declaration of acceptance within the aforementioned 10 days’ period, she/he will surrender his/her entitlement to the research fellowship and it can be awarded to the next ranked candidate. Under no circumstances the signing of the contract starts a subordinate employment relationship or ensures any right to access to permanent INAF staff positions.

#### **Art. 11 – Personal Data**

In accordance with art. 13, paragraph 1 of the Italian Legislative Decree n. 196/2003 and subsequent modifications, personal data provided by the candidates will be used exclusively for the purposes of this selection. Candidates wishing to obtain further information or to exercise their rights under art.7 of the above mentioned Legislative Decree, may contact Dr. Salvatore Orlando (email [orlando@astropa.inaf.it](mailto:orlando@astropa.inaf.it)).

#### **Art. 10 –**

The Officer in charge of this Call proceeding is Dr. Filippo Salemi

#### **Art. 11**

The INAF-OAPa shall abide by provisions in force, promoting equal opportunities for women and men, non-discrimination and respect of privacy in processing personal data.

**Art. 12** - The present document will be published on the website of INAF (<http://www.inaf.it/concorsi/concorsi.htm>), and of Osservatorio Astronomico di Palermo “Giuseppe S. Vaiana” (<http://www.astropa.unipa.it>), in accordance with art. 22 par. 1 of Law 30.12.2010 n. 240.

Palermo, 12<sup>th</sup> October, 2015

[ *The Director* ]  
Dr. Guseppina Micela

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# ANNEX 1 APPLICATION FORM

To the Director of INAF- Palermo Astronomical Observatory.

I, THE UNDERSIGNED,

(Name(s)) ..... (Surname)..... Place of birth (Town/State)

..... 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 42/2012 for the appointment of one research fellowship entitled: "Stellar activity effects on the study of planetary atmospheres".

INTEND

to apply for the above mentioned fellowship, and to this end, aware that false declarations are punishable by law under art. 76 of Italian Presidential Decree n. 445/2000 and that this Administration will carry out random checks on the accuracy of the declarations made by candidates,

DECLARE

under my own responsibility and in accordance with articles 46 and 47 of Italian Presidential Decree 445/2000,

- that I hold the following Research Doctorate (PhD) ..... awarded by..... on..... Title of thesis .....
- that I hold the following educational qualifications ....., awarded by....., Date.....;
- that I have an advanced level of knowledge of English language; that I am aware of the restrictions described in Article 4, of the Call for applications for this research fellowship;
- that I have never received a research award as per art. 22, Italian Law 240/2010;
- that I have previously received a research awards as per art. 22, Italian Law 240/2010 and, in particular

I have been the recipient of:

- a research fellowship entitled ....., at (name of the institution)....., beginning.....ending.....total months .....
- a research fellowship entitled ....., at (name of the institution)....., beginning.....ending.....total months .....
- a research fellowship entitled ....., at (name of the institution)....., beginning.....ending.....total months .....
- that I am not recipient of similar contract for research activities at INAF or any other Italian or foreign institution;
- that I am not a retired person;
- that I am aware that, under art. 22 Italian Law 240/2010, the research fellowship:

- cannot be held contemporarily with attendance at academic courses, “laurea specialistica” academic courses, and “laurea magistrale” academic courses, as well as with attendance at PhD courses with fellowship;
  - 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;
  - cannot permit aggregation of income from working activities, also part-time, carried out continuously.
- that 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/town/postal code/Country):  
 .....  
 Email address: .....

To be attached to this form:

- Attachment 2 “Curriculum vitae”, **signed and dated** by the applicant, providing evidence of possession of 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);
- list of publications;
- any other qualification, working task, research activity at public and private institutions and publications that the applicant deems appropriate to submit;
- copy of the PhD certificate or of the equivalent foreign academic qualification.

Date

Signature

\_\_\_\_\_

\_\_\_\_\_

## ANNEX 2 CURRICULUM VITAE

I, THE UNDERSIGNED,

aware that false declarations are punishable by law under Article 76 of Presidential Decree no. 445 of 28th December 2000, and that this Administration will carry out random checks on the accuracy of the declarations made by candidates

DECLARE UNDER MY OWN RESPONSIBILITY

and in accordance with Articles 46-47 of Presidential Decree no. 445 of 28th December 2000 (“SELF-EXECUTED CERTIFICATE AND SELF-EXECUTED AFFIDAVIT”)

THAT THE CONTENTS OF THE ATTACHED “CURRICULUM VITAE” ARE TRUE

Date

Signature

\_\_\_\_\_

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