

D.D. n. 89/2013

**Subject:** *selection procedure by qualifications and possible interview for the assignment research grant entitled: "Study of possible changes in the fundamental constants"*  
**CUP:** C91J12002420005 – C81J12000320001

**NATIONAL INSTITUTE FOR ASTROPHYSICS**  
ASTRONOMICAL OBSERVATORY OF TRIESTE

**The Director**

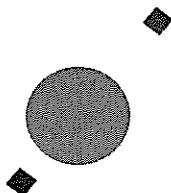
- **In accordance with** Law n. 240 dated 30 December 2010 of which art. 22 in particular;
- **In accordance with** the Provisions for the assignment of research grants approved by INAF Administrative Council on 22<sup>nd</sup> June 2011;
- **In accordance with** the request by prof. Paolo Molaro for a call offering one research grant position;
- **Ascertained** that financial coverage of the grant for € 16.680,63.000,00 is granted within CRA 1.05.01.09.18 PRIN-INAF 2011 Astronomy Probes (REF. P. Molaro) and € 33.610,15 from CRA 1.05.06.02.09 Premiale Astronomy Probes (total cost € 50.290,78) of the 2013 budget of the Astronomical Observatory of Trieste, cap. 1.05.08 Borse di studio e assegni di ricerca;

**DECREES**

**Art. 1- Research Project**

Open call for the selection procedure on the basis of candidates' qualifications, possibly integrated by an interview, for the assignment of one research grant of the duration of 18 months, entitled: ***"Study of possible changes in the fundamental constants"***.

The Standard Model of particle physics is a very successful theory and its predictions have been tested to high precision in laboratories around the world. However, the SM requires several dimensionless fundamental constants, such as coupling constants and mass ratios, whose values cannot be predicted and must be established by experiment. In theoretical models seeking to unify the four forces of nature, the 'constants' vary naturally on cosmological scales. Astronomy can indeed measure the constants in widely separated regions of the distant Universe and throughout its history. The quantities that can be tested with high precision are the fine-structure constant,  $\alpha$  and the proton-to-electron mass ratio,  $\mu$ . The most precise cosmological probes are absorption lines arising in gas clouds intersecting the sight-lines to bright background quasars. The last decade has seen some evidence for cosmological variations in  $\alpha$  and  $\mu$  emerge from absorption line studies. This evidence remains controversial after detailed scrutiny and independent measurements. Since 2010 we are conducting an ESO Large Program (P.I.:



P. Molaro) with about 40 nights on VLT-UVES, dedicated to this research. Within the LP a high-quality sample of quasar spectra have been obtained. The researcher will be dedicated to the analysis of this data.

Further questions on science can be sent to Paolo Molaro (email: molaro [at] oats.inaf.it).

#### Art. 2 – Requirements for participation

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

- PhD degree either in Physics or Astronomy, or equivalent degree, issued by an Italian or foreign Advanced Studies Institute or University.

Or

- degree either in Physics or Astronomy, issued according to the previous Italian University regulations or degree in Physics or Astronomy, either “specialistica” or “magistralis” (new Italian University regulations) or equivalent degree issued by an Italian or foreign Advanced Studies Institute or University, together with at least three years of documented experience in scientific or technological activities.

Preferential qualification will be considered a significant and documented experience in the analysis of observational astronomical data.

A good level of knowledge of the English language is required.

#### Art. 3 - Application

Applications are to be written on unstamped paper and must be consistent with the attached application form (Attachment 1), with the addition of the date and the signature of the candidate. Applications, to which the requested documentation must be attached, are to be submitted either by hand delivery to the Astronomical Observatory of Trieste or sent by express courier or by registered letter with acknowledgement of receipt. Applications have to be addressed to the Director of INAF-Osservatorio Astronomico di Trieste, Via Tiepolo n. 11, 34143 Trieste, Italy. Applications are to be submitted by Nov 30, 2013.

On the application's envelope the following must be clearly quoted: applicant's name, family name and address, and the caption: ***“Research grant: : “Study of possible changes in the fundamental constants”***.

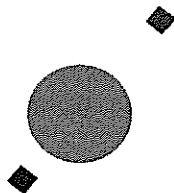
Incomplete applications will not be considered for the selection procedure.

Applications without the applicant's signature will be excluded from the selection procedure.

Applications which are not consistent with the attached form format will be excluded from the selection.

The following qualifications have to be attached to the application:

1. candidate's curriculum vitae et studiorum (CV), including a list of grants and fellowships hold in the past, if applicable;
2. list of publications;
3. any other qualifications or publications relevant to the applicant's scientific experience and/or training;



4. non-Italian citizens should attach copies of their University degrees inclusive of the list of exams and the degrees' final marks, or copies of the equivalent foreign degrees;
5. a list of qualifications and of all attached documents, in which the number of works and published papers is specified;
6. a personal declaration (valid as self-certification) that:
  - that submitted copies of academic theses and dissertations, of publications and works are conformal copies of the original documents;
  - the candidate has a University degree;
  - the candidate has a PhD degree, and holds any other specialization degrees or certificates of attendance to post-degree specialization courses both in Italy or abroad, and certificates concerning research activities which were carried out both at private or public institutes either under contracts, fellowships or grants both in Italy and abroad, or concerning any working tasks that the candidate deems appropriate to submit.

In addition, by the closing date applicants may send two letters of recommendation to the Director of INAF-Osservatorio Astronomico di Trieste, via G.B. Tiepolo, 11 – 34143 Trieste, Italy, or by email to molaro [at] oats.inaf.it.

The above self-certification must be consistent with the attached form format (Attachment 2), and must be dated and signed by the applicant, and a copy of a valid identity document must be attached. In using self-certification the candidate must list the submitted qualifications with details which may enable possible verification by the Observatory's Administrative Office. Alternatively, the candidate must submit original or authenticated copies of his/her qualifications.

#### Art. 4 – Incompatibility

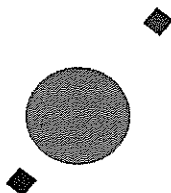
Research grants cannot be held by INAF employees holding both permanent and non-permanent contracts and by regular employees of Institutes listed in article 22, paragraph 1 of Law n. 240/2010.

The grant 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. For employees of the Italian Public Administration (Italian State) compulsory unpaid leave of absence is foreseen.

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 allowed. Instead, limited self-employed occasional work is compatible with the grant, only if this is not in contrast with or delays the research activity carried out for INAF. This must be authorized in advance by the Director of the Institute where most part of the research activity of the grant is carried out.

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



#### Art. 5 – Host institution and duration of the grant

The grant is for 18 months.

In accordance with Law n. 240/2011 the duration of the grant, inclusive of possible renewal, will not exceed four years, with the exclusion of the period in which the grant is held in coincidence with attendance at a PhD course.

Host institutions of the grant are INAF-Osservatorio Astronomico di Trieste.

#### Art. 6 – Salary amount

The grant is worth 28.000,00 (twenty-eight-thousand) Euros gross per year. This amount is net of burdens to be charged to INAF-Osservatorio Astronomico di Trieste 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.

The grant holder is bound to draw up an insurance policy against accidents at work prior to starting his/her research activities, otherwise revocation of the grant is foreseen.

#### Art. 7 – Selection Committee

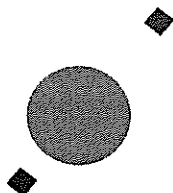
The selection of eligible candidates will be performed by a Selection Committee appointed by the Director of INAF-Osservatorio Astronomico di Trieste.

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 scientific leader of the project. According to the law in force, the composition of the Selection Committee should comply 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.

#### Art. 8 – Selection procedure

The selection is based on qualifications possibly integrated by an interview. To be admitted to the interview, candidates must exhibit their identity documents. The total ranking score established by the Selection Committee is 100 points, of which 70/100 is the maximum score for qualifications and 30/100 is the maximum score for the interview. Evaluation criteria will be defined in advance, and qualifications will be evaluated before the possible interview. Scientific qualifications and research activities are ranked as follows:

- University Degree thesis and PhD thesis: up to 20 points;



- Research and technological activity (inclusive of tasks/positions and participation to projects) both at public and/or private institutions: up to 25 points;
- Publications on international journals related to the proposed research subject: up to 25 points.

The Selection Committee shall rank eligible applicants to be interviewed.

Applicants selected for the interview will be summoned with 15 days' notice by registered letter with acknowledgement of receipt.

The ranking list and individual scores by the Selection Committee shall be publicly notified by posting on the official Notice Board of INAF-Astronomical Observatory of Trieste, via Tiepolo 11, Trieste.

The decree of approval of the selection procedure and any other decrees relevant to the selection shall be notified by posting on the Notice Board of the Observatory and on the website of the Observatory [www.ts.astro.it](http://www.ts.astro.it).

In case of renunciation of the grant winner, the grant shall be awarded to the next eligible candidate in the ranking list.

#### Art. 9 – Contract Formalization

Within 10 days from the receipt of the formal notification of the award, the successful candidate will provide a formal declaration of acceptance of the research grant without reservation and under the conditions prescribed in the contract which shall be signed on the date and place established by the Observatory. The successful candidate will also declare that he/she is not subject to any of the exclusion conditions listed in Article n. 4 of this announcement.

Within the same time limit of ten days, in case of renunciation, the winner is bound to provide formal declaration of renunciation to the Astronomical Observatory of Trieste. Under no circumstances the signing of the contract starts a subordinate employment relationship or ensures any rights to access to permanent INAF staff positions.

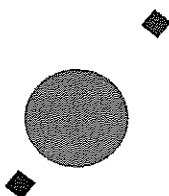
The grant holder is bound to draw up an insurance policy against accidents at work prior to starting his/her research activities, otherwise revocation of the grant is foreseen.

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

The Director of the Observatory has appointed dr. Paolo Molaro as scientific tutors of the grant holder. Their specific task is to supervise and coordinate the grant holder's research activity.

The grant holder is bound to issue periodical activity reports. The issuing frequency will be established in the contract. The activity reports will be subject to approval from the scientific leader and will be transmitted to the Director of the Astronomical Observatory of Trieste. Approval failing, duly reasoned by the scientific leader, will give the Institute the right to terminate the contract.

In case of contract rescission, the grant holder is bound to send a written communication with 30 day's notice. The notice starts from day 1 or day 16 of each month. In case of lack of notice, the Institute has the right to retain or request the reimbursement of the salary amount corresponding to the notice time-span which the grant holder failed to



communicate. The next eligible applicant in the ranking list is entitled to receive the remaining amount of the grant salary, after drawing up the contract.

#### Art. 10 – Starting date and obligations

The starting date of the grant is established by the Director of INAF-Astronomical Observatory of Trieste in the notice of summons for drawing up the contract. Expected starting date of the grant is before 1<sup>st</sup> February 2014.

The grant holder has to fulfil the following obligations:

- a) to sign in advance the contract governing collaboration to the planned research activity project and to whatever else foreseen in the contract;
- b) to start research activity at the date due as for the contract at the seat of INAF-Astronomical Observatory of Trieste, unless prevented by motivated temporary hindrance, of which the Observatory must be timely informed;
- c) to carry out research activity for the whole duration of the grant regularly and continuously;
- d) to comply with the rules and regulations of the Observatory and with the directives of the Director and of the scientific leader of the project;
- e) to present periodical reports on research activity to the Director of the Observatory after approval from the scientific leader.

The grant holder who, after having started the planned research activity, does not carry out his/her work regularly and without interruptions for the duration of the grant without producing justified reasons, or lacks repeatedly to fulfil requirements or, according to the evaluation of the scientific leader, eventually shows evident lack of skill at the planned research activity, will incur termination of the contract and consequent deprivation of the grant after motivated decision of the Director.

The grant holder will be informed of the possible start of administrative proceedings for terminating the contract, and he/she will be allowed to submit his/her own reasoned reply on the matter to the Director of the Observatory in writing.

The grant holder will be informed by reasoned notice both in case the administrative proceedings are filed away without further consequence, and in case of actual decision to terminate the contract.

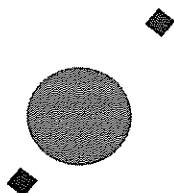
Temporary suspensions of the research grant are justified only if absence is due to pregnancy and post-natal leave, or to illness which lasts longer than one month, or to any other serious reason. The reasons for suspending the research grant must be proved and certified, and promptly sent to the Observatory.

#### Art. 11 - Proceedings Responsible

In accordance with Art. 8, paragraph 3 of INAF Provisions on the assignment of research grants, dr. Mirella Giacchetti is the responsible of the competition proceedings relevant to this competition announcement.

#### Art. 12 - Publicity

This competition announcement shall be electronically forwarded to Astronomical and Astrophysical Observatories and to scientific institutes in the field of interest. The announcement will be posted on the websites of INAF ([www.inaf.it](http://www.inaf.it)), of the Astronomical



Observatory of Trieste ([www.ts.astro.it](http://www.ts.astro.it)), of the Italian Ministry of Education, University and Research and of the European Union according to MIUR guidelines.

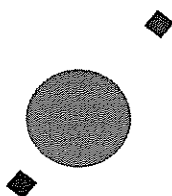
Art. 13 – Applicable regulation

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.

Trieste, 23 october 2013

THE DIRECTOR  
dott. Stefano Borgani



## ATTACHMENT 1

### APPLICATION FORM FORMAT FOR PARTICIPATION TO THE SELECTION

To  
the Director  
INAF-Osservatorio Astronomico di Trieste  
Via G.B. Tiepolo, 11  
34143 Trieste, Italy

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): .....

Hereby applies to participate to the selection for the appointment of one research grant entitled: : ***“Study of possible changes in the fundamental constants”***.

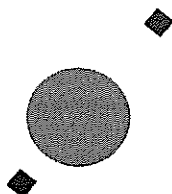
Under her/his personal responsibility the undersigned declares:

- a) her/his nationality is: .....
- b) to enjoy civil and political rights of the State of which she/he holds citizenship;
- c) not to have been in the past or not to be at present under any penal sentence (if liable, please specify) .....
- d) to hold the following educational qualifications: .....
- e) research grants and/or fellowships hold in the past (length and host Institution):  
.....;
- f) to be presently holding the following research grant or fellowship (length and host Institution): .....

The following documents are attached:

1. curriculum vitae et studiorum, in which also past research grants or fellowships are listed;
2. list of publications available on the web;
3. any work or publications which is not available on the web which might be useful for qualifying the scientific curriculum;
4. foreign citizens are requested to attach copy of the University degree/academic qualification certificate inclusive of the list of individual exams and the final score, or copy of the equivalent foreign degree certificate, and copy of the PhD certificate or of the equivalent foreign academic qualification;
5. list of qualifications and of any other submitted document, specifying the number of works and published papers;
6. declaration (Attachment 2).



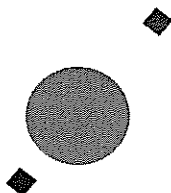


The undersigned authorizes the Administrative Office of INAF-Osservatorio Astronomico di Trieste to use and store her/his personal data only for the purpose of the present selection.

The undersigned wishes to receive communications concerning the selection at the following address (number/street/town/postal code/State): .....  
(if possible list also phone number, fax number and e-mail address): .....

Place and date (dd/mm/yy).....

(Applicant's signature, not to be authenticated)



ATTACHMENT 2

SELF-CERTIFICATION

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 to the selection for one research grant issued by INAF-Osservatorio Astronomico di Trieste with Director's Decree n. 89/2013, aware that producing false statements and forged documents, as well as the use of forged documents shall be punished in accordance with the Criminal Code and with any other applicable special acts on this matter,

DECLARES AND SELF-CERTIFIES

- 1) that submitted copies of academic theses and dissertations, of publications and works are conformal copies of the original documents;
- 2) to hold the following degree in: (discipline) .....  
Date of award: (dd/mm/yy).....  
Awarding University: ..... Final mark: .....
- 3) to hold the following academic qualifications:  
PhD degree in: (discipline) .....  
Date of award: (dd/mm/yy)..... Awarding University:.....  
Final mark: .....

Certificates of attendance to post-degree courses: .....

Fellowships: .....

Research contracts/grants at private and/or public institutions: .....

Other:.....

Place and date (dd/mm/yy)

..... (\*)  
(full applicant's signature)

(\*) Not authenticated

N.B. A photocopy, not authenticated, of a valid identity document of the applicant must be attached.