



DD. 59/2020

Subject: *Selection procedure by qualifications and interview for the assignment of one research grant entitled “Analysis, design and development of Level 1 software for the Euclid NISP instrument and support to subsequent analysis of photometric observations”*

CUP: F86C18000280005

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

The Director

- **In accordance with** Law n. 240 dated 30 December 2010 and its art. 22 in particular;
- **In accordance with** the guidelines for non-permanent staff position recruitment approved by INAF Administrative Council on January 30th 2018 that have introduced specific seniority parameters of educational qualification (N1) and maximum duration of research grants (N2) at the INAF, while providing for the possibility of exemptions for special calls;
- **In accordance with** the provisional guidelines for the assignment of research grants approved by INAF Administrative Council on January 29rd 2019;
- **In accordance with** the request by dr. Andrea Zacchei, local project manager of Euclid project;
- **Ascertained** that financial coverage of the grant amounting to 34.400,00 euro has been provided, with assigned funds to Budget 2020 amounting from Ch. 1.05.04.37.01“EUCLID-FASE D (ref. L. Valenziano) Attività scientifica per la missione - Accordo Attuativo ASI-INAF n. 2018-23-HH.0”, ch. 1.01.01.01.009 – “Research grants”.

DECREES

Art. 1- Research Project

A call is open for a selection procedure on the basis of candidates’ qualifications, integrated by an interview, for the assignment of one “Post-Doc” research grant of the duration of one year, with a possible extension, entitled *“Analysis, design and development of Level 1 software for the Euclid NISP instrument and support to subsequent analysis of photometric observations”*

The following activities will be carried out during the fellowship:

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- Assist and support the analysis and definition of the detailed design of Level 1 software for the NISP instrument, named **LE1 NISP Processor**. Specifically, the following will be analyzed:
 - the current document dealing with the requirements for Level 1 software for the Euclid mission. For the analysis of requirements the study of the documentation provided by the instrument team will be needed, as well as interaction with Level 2 team who deal with calibration and reduction of scientific data;
 - the current Software Design Document of Level 1;
 - the software developed by the Instrument Development Team of the NISP instrument for processing the instrument's raw data;
 - the Data Model of Level 1 which comprises the instrument's housekeeping telemetry, the scientific data and additional auxiliary data;
 - implementation of Level 1 pipeline, namely the LE1 NISP Processor which performs the first step in processing raw data obtained from the instrument. Implementation must follow the guidelines on software development and programming provided by Euclid System Engineering Team;
 - use of XSD language for formalization of the Data Model of Level 1 by following the guidelines proposed by the Euclid System Team;
 - definition and implementation of validation tests for Level 1 software in agreement with the Integration, Verification and Validation document of Euclid Level 1;
 - subsequent support to the integration of analysis, calibration and reduction softwares for photometric observations of the NISP instrument in collaboration with Level 2 team.

The activities will be carried out at INAF-OATs in the framework of the Euclid SDC-IT (Science Data Center) under the scientific supervision of Dr. Marco Frailis, and the successful candidate will collaborate with scientific staff working on the development, analysis and integration of algorithms for Euclid satellite.

The research grant of this call offers to candidates the opportunity of professional development by giving them the possibility to carry out scientific or technological research within a highly qualifying working environment. The research grant is aimed at the specific project of this call, and is not released with the purpose of meeting staff requirements of the Institute or of the research project itself, but offers the opportunity to pursue research in the framework of the project to candidates who deem it useful for their own personal journey of professional development.

Further questions on the scientific project can be addressed to dr. Marco Frailis (e-mail: marco.frailis[at] inaf.it).

2 – Requirements for participation

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

- PhD degree either in Physics, Astronomy, Astrophysics, Engineering, Computer Science or Mathematics or equivalent degree, also if awarded abroad (equivalence will be set by the selection committee according to criteria defined for the purpose of the selection procedure)
 - Or
 - Master degree issued according to the previous Italian University regulations or Degree (2nd level) either in Physics, Astronomy, Astrophysics, Engineering, Computer Science or
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Mathematics together with at least 3 years of subsequent documented experience in scientific or technological activities.

Applicants are required experience in the field of software development, preferably C++ and Python, as well as knowledge of the basic elements of the infrastructure for the development and integration of analysis algorithms of Euclid satellite.

The following will be evaluated:

- knowledge of object-oriented programming with particular reference to C++ and Python;
- knowledge of Linux operating system;
- knowledge of version-control systems (e.g. Git);
- knowledge of build systems (e.g. CMake);
- good ability to work autonomously;
- good ability of team working, including remote working;

- former fellowships and any contract types relevant to the topics of this Call;
- technical and scientific publications relevant to the topics of this Call;

Good knowledge of the English language, both spoken and written is required.

Art. 3 – Application

Applications must be submitted in English or Italian, by e-mail with acknowledgement of receipt to the following email address: [inafoatrieste\[at\]pcert.postecert.it](mailto:inafoatrieste[at]pcert.postecert.it).

Applications have to be submitted by and not after midday (UT) April 20, 2020. Late submissions will not be considered.

Applications that are not consistent with the attached form (Annex 1) or without the applicant's signatures will be excluded from the selection procedure.

The application must be submitted with the e-mail subject: "Application for: Research grant - *Analysis, design and development of Level 1 software for the Euclid NISP instrument and support to subsequent analysis of photometric observations*" at INAF- Osservatorio Astronomico di Trieste".

Aware that false declarations are punishable by law and that the Administration will carry out random checks on their accuracy, the applicant must state clearly and precisely in the application, under his/her own responsibility:

- name(s) and surname, date and place of birth, nationality, place of residence and address for correspondence;
- that s/he satisfies all the requirements described in article 2 of this Call;
- that s/he is aware of and is not ineligible under any of the restrictions described in article 4 of this Call.

The lack of any of the above mentioned declarations will determine the exclusion from the selection procedure for incomplete application.

For selection purposes the applicants:

- shall directly state any academic qualifications in the application form (Annex 1)

in addition

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

The following documents have to be submitted:

1. Annex 1 "Application form";



2. 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;
3. copy of a valid identity document (ID card or passport);
4. list of publications;
5. any other qualification, working task, research activity for public and private institutions and publications that the applicant deems appropriate to submit.

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 form;
- unsigned curriculum vitae;
- 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

Full professors, associate professors and “ricercatori” in Italian universities and employees of Italian research public institutions are all excluded from the competition.

The grant cannot be held at the same time with attendance at academic courses as those that formally give access to a PhD, 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 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-Osservatorio Astronomico di Trieste.

Retired persons are not eligible for Research fellowship.

Also excluded from participation are any applicants who carried out Research fellowships under article 22 of Italian Law 240/2010 for a total period exceeding six years, as amended by Law 11/2015, including extensions, but excluding the periods in which the grant was held in coincidence with doctoral studies up to the maximum legal time limit of the course, and excluding periods of maternity leave or sick leave, in accordance with current legislation. When formally accepting the grant, the successful candidate will issue a declaration of absence of inadmissible cumulating of grants/fellowships.

Art. 5 – Duration of the Research fellowship



The Research fellowship is expected to begin by May 15, 2020. The exact initial date could be reasonably delayed if requested by the completion of administrative procedures and/or for the cases mentioned in art. 10 of this call.

The grant is for one year, with a possible extension, depending on the development of the project, the favourable review of the supervisor and on funding availability.

Art. 6 – Host Institution

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

Art. 7 – 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.

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 selection of 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 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 integrated by a possible interview. To be admitted to the interview, candidates must exhibit their identity documents.

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 also using electronic devices for the communications.

Applicants selected for the possible interview will be informed with 15 days notice by e-mail with acknowledgement of receipt, containing the individual score for qualifications.



The total ranking score is 100 points, of which 30 points is the maximum score for qualifications and 70 points is the maximum score for the interview.

The ranking scores of qualifications are calculated as follows:

- Seniority on research activities: higher scores will be assigned to the shortest period of time (years) elapsed since PhD graduation, or since completion of at least 3 years' experience after attainment of Bachelor and Master Degrees or Degrees of the previous University graduation system.
Maximum score: 5/30 (subtracting 1 score for any additional year)
- Scientific and technological publications relevant to the topics of the call and/or functional in relation to its scope
Score: 10/30
- Curriculum vitae and past scientific research bearing relation to the topics of the Call
Score: 15/30

In case of equal scores, the PhD title will be considered as preferred qualification.

At the end of the selection procedure the Selection Committee will draw up the ranked list.

The approval decree of the selection procedure and the ranked list will be published on the following website: www.oats.inaf.it

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 s/he must provide 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.

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 – Fellowship obligations

The holder of the fellowship:

1. will start the research activity at the date due as per the contract at INAF-Osservatorio Astronomico di Trieste, unless prevented by *force majeure* or exceptional circumstances, of which the Director of INAF-OATs must be timely informed;
2. will carry out her/his research activity under the supervision of the project manager, dr. Marco Frailis, who will also monitor the fellow's activity progress;
3. 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-OATs. Approval failing, duly reasoned by the scientific advisor, will give INAF-OATs the right to terminate the contract;
4. is required to send a written note in case of withdrawal, with at least 30 days notice, otherwise the INAF-Osservatorio Astronomico di Trieste is entitled to retain or request the reimbursement of the salary amount corresponding to the period of 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, dr. Marco Frailis, 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-OATs.

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 (e-mail: mirella.giacchetti[at]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.

Trieste, March 25, 2020

Director
Dott. Giovanni Vladilo



ANNEX 1 APPLICATION FORM

To the Director of INAF-Osservatorio Astronomico di Trieste
Via Tiepolo n. 11
34143 Trieste

I, THE UNDERSIGNED,
(Forename(s))..... (Surname).....
Place of birth (City/State/Country)
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 59/2020 for the appointment of one research fellowship entitled: - ***“Analysis, design and development of Level 1 software for the Euclid NISP instrument and support to subsequent analysis of photometric observations”***

request

to apply for the above mentioned fellowship, and to this end, aware that false declarations are punishable by law and that this Administration will carry out random checks on the accuracy of the declarations made by candidates,

DECLARE

under my own responsibility

- that I hold the following educational qualifications.....; awarded by.....Date.....;
- that I have a good knowledge of the English language;
- that I have years of documented experience in scientific or technological activities;
- 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 of¹:
- a research fellowship entitled,

¹ Indicate the number of months for which the award was used and the name of the institution granting the award. Please provide details of each award, for example, if you have had two awards of 24 months each at the same institution indicate these as two separate awards on two different lines.



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 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/city /postal code/Country):

.....
Email address:

I attach 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

Date

Signature



ANNEX 2 CURRICULUM VITAE

I, THE UNDERSIGNED,

aware that false declarations are punishable by law and that this Administration will carry out random checks on the accuracy of the declarations made by candidates

DECLARE UNDER MY OWN RESPONSIBILITY

THAT THE CONTENT OF THE ATTACHED “CURRICULUM VITAE” IS TRUE

Date

Signature*

** the photocopy of a valid identity document of the signer must be attached*