

Call for awarding one Research Fellowship

Ref. RF-PHD-GLUE

One Research Fellowship is available with **Faculdade de Ciências da Universidade de Lisboa**, in the project "Gravitational Lensing in the Universe with Euclid" (GLUE) IF/01518/2014, financed by national funds by Fundação para a Ciência e a Tecnologia, I.P. (FCT), under the FCT Investigator Starting Grant, under the following conditions:

1. **Scientific Area:** Astronomy and Astrophysics

2. **Requirements for admission:**

Mandatory:

PhD degree in Astronomy and Astrophysics.

Preferential:

- Young scientist with strong interest in observational cosmology;
- Experience with large-scale structure cosmological maps, in particular with weak lensing cosmic shear map-making (for example experience with the Kaiser-Squires method, masking and inpainting techniques);
- Computational experience with higher-order estimators on cosmological maps, such as higher-order moments/correlation functions and Minkowski functionals.

3. **Work Plan**

The successful candidate will collaborate in the GLUE project, within the cosmology group of Instituto de Astrofísica e Ciências do Espaço (IA). In particular he/she will be involved in:

- Post-processing of N-body simulations of beyond- Λ CDM models, including production of weak lensing cosmic shear catalogues and convergence maps;
- Numerical implementation and testing of higher-order statistic estimators on weak lensing maps and catalogs.

This study is relevant for the preparation of the ESA-Euclid mission.

On a second step the fellow is expected to apply the techniques developed during this work to

realistic Euclid simulations, in order to test the accuracy with which future Euclid data will be able to detect non-linear properties of the cosmological evolution.

4. **Legislation framework:** Law No. 40/2004, of August 18th, as amended and republished by Decree-Law No. 202/2012 of August 27th, by Decree-Law No. 233/2012 of October 29th, by Law No. 12/2013, of January 29th, and by Decree-Law No. 89/2013 of July 9th and Lisbon University Fellowships Regulation, published by Order (extract) No. 6977/2015 of June 23th (<https://dre.pt/application/file/67564222>).
5. **Place of work:** The work will be developed at Instituto de Astrofísica e Ciências do Espaço (IA), Faculdade de Ciências da Universidade de Lisboa.
6. **Scientific supervision:** Ismael Tereno.
7. **Fellowship duration:** This fellowship is opened for 15 months, renewable for 3 months more, until a maximum period of 18 months, which includes the first period. It is expected to begin in October 2017.
8. **Monthly allowance:** The fellowship amounts to € 1495, according to Lisbon University Fellowships Regulation (<https://dre.pt/application/file/67564222>). It will be paid monthly by bank transfer.
9. **Selection criteria:**
Candidates will be assessed based on:
 - CV (50%), including assessment of grades, publication record and relevant research experience;
 - Motivation letter (20%). The motivation letter should also include a description of research interests and plans.Short-listed candidates will be notified for an on-line interview (30%).
The jury reserves the right of not assigning the grant in case it finds no suitable candidates.
10. **Selection Committee:** Ismael Tereno (President), António da Silva (1st Effective Member), Francisco Lobo (2nd Effective Member), Angeles Moliné (1st Alternate Member) and Alberto Rozas Fernandez (2nd Alternate member).
11. **Publication/notification of results:** The final results of the evaluation will become public, through a final grade ordered list which will be posted at the entrance hall of Faculdade de Ciências da Universidade de Lisboa, C4 bdg, Campo Grande, 1749-016 Lisboa.
All applicants will be notified of the results of the evaluation to the email address used for sending the respective application, or by post to the applicant's address.
12. **Deadlines:** This call for applications is open from August 21st to September 1st 2017.

13. **Application:** Application may be sent via e-mail to candidaturas@ciencias.ulisboa.pt, with the subject “RF-PHD-GLUE”, or personally, during office hours (9.00 a.m. to 4.00 p.m.), at the office address of Núcleo de Expediente da Faculdade de Ciências da Universidade de Lisboa, Edifício C5, piso 1, Campo Grande, 1749-016 Lisboa, until the deadline, by attaching the following documents:

- **In the case of being Portuguese citizen**, copy of identification document (ID or citizen card);
- **In the case of not being Portuguese citizen**, copy of identification document (ID card or passport) as well as residence authorization, permanent residence authorization or long-term resident status, if applicable;
- If you agree to be notified for your post address, please send obligatorily the declaration annexed to this Notice;
- Certificates of qualifications of all obtained academic degrees, with final ranking;
- Motivation letter;
- Curriculum Vitae, detailed and updated, stating obligatorily the full candidate’s address;
- Document of employment status, indicating the nature of the bond and functions; this document can be replaced by a declaration under honor commitment if there is any professional activity or the provision of services;
- Optionally, letters of recommendation.

DECLARATION

_____ (name of the candidate), declare that if the selection jury chooses to communicate and or notify applicants by e-mail, I agree that such communications and or notifications are made to the email address used for submission of my application.

(Date)

(Signature)