

# ESO STUDENTSHIPS: PHD OPPORTUNITIES IN GARCHING AND SANTIAGO

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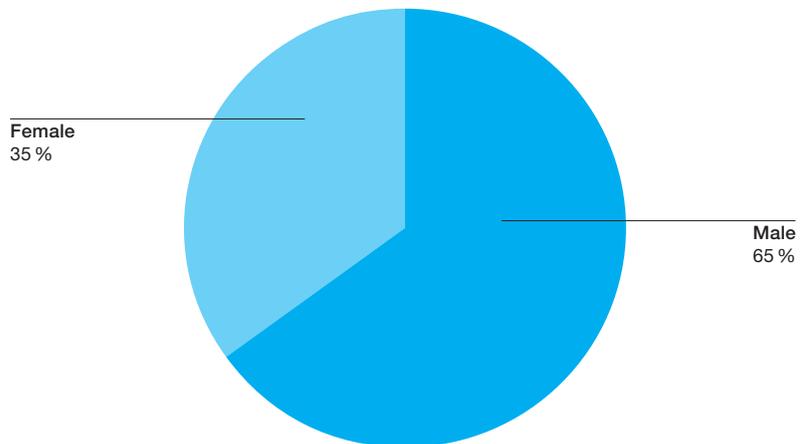
**E**SO OFFERS A NUMBER OF opportunities for graduate students to spend part of their research studies in the observatory environment. The primary aim is to give young researcher the opportunity to discover ESO during their PhD studies and participate in an exciting research environment. Further, this represents one of many opportunities for students to be immersed in an international environment and to work at one of the centres of European and worldwide astronomy. Last but not least, it allows researchers/supervisors of ESO's community to foster stronger links with their ESO colleagues.

## HISTORICAL BACKGROUND

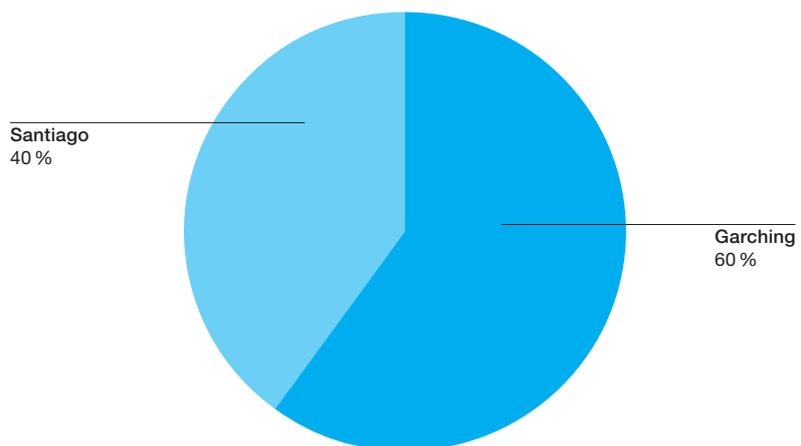
In the early days there was no formal studentship programme, and there were few students at ESO. One avenue was provided by the French, later the Belgians, who allowed some of their students to do the 'cooperant' service with ESO in Chile. Some of these students later became ESO staff astronomers and have served the organisation for many years.

The formal studentship programme was introduced to ESO under the directorship of Harry van der Laan (see *The Messenger* 55, 12, 1989). He launched, to supplement the already existing fellowship programme, a studentship programme with eight studentships split between Garching and Santiago, later 16 students at ESO at anytime.

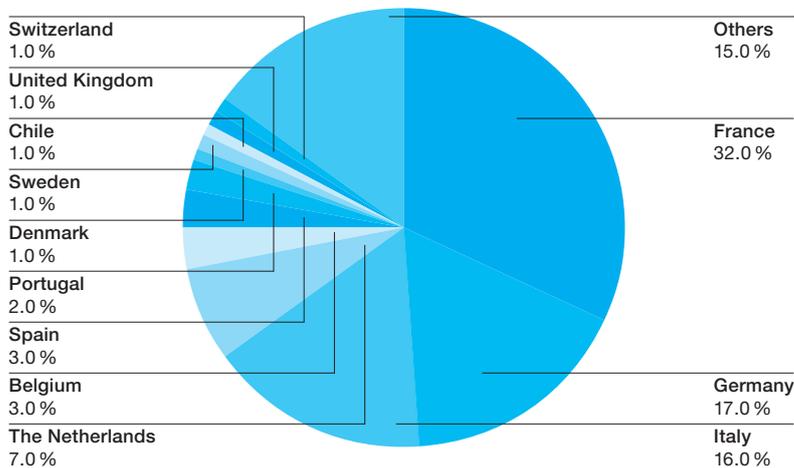
Many students who spent some time of their formative years at ESO have come back to take up a staff position or supported ESO in the community. Reading through the list of former students at ESO one encounters many of the leading astronomers in Europe today. We consider this programme to be very effective in binding ESO into its community. Together with the fellowship programme the studentships are a major link of community astronomers with their colleagues at ESO. Into the VLT era, the studentships offer rather unique opportunities, such as gaining hands-on experience with modern instrumentation, reduction and analysis techniques, or interferometry. In this respect, ESO provides distinctive complements to the education of young astronomers that may not be offered at every university. Of course, spending a couple of years of study in a country like Chile holds appeals for some as well. A comprehensive report on studentships in Vitacura is given in Danielle Alloin's recent article (*The Messenger* 117, 61, 2004).



**Students' gender**  
Distributions of genders of ESO students, averaged since 1992. The 1/3–2/3 female/male distribution corresponds closely to the distribution of applications from both genders. The distribution is similar for Santiago and Garching.



**Students' duty station**  
Distribution of students per duty station since 1992 – While the distribution was close to 50/50 until the end of the '90s, the IMPRS has tipped the balanced in favour of Garching in recent years.



**Students' nationality**  
Breakdown of ESO students' nationality since 1992. French students seem to have made the most out of ESO studentships, followed equally by Germans and Italians. About 1/6 of the studentships were taken by non-ESO member state applicants.

### THE 'REGULAR' ESO STUDENTSHIPS: A VISIT DURING YOUR PHD STUDIES

The regular ESO studentships comprise the core of the studentship programme. These provide PhD students with funding for 12 to 24 months to pursue their research at ESO. The studentships can be taken up either at the ESO headquarters in Garching, Germany, or at the ESO science office in Santiago, Chile.

In order to be eligible for this programme, students must be enrolled in a PhD programme at their home university. Ideally, they would come after their first year to visit ESO for 1–2 years, before returning to their home institutions to finish their PhD. This implies that the student's supervisor gets into contact with an ESO scientist who could act as local supervisor during the student's stay. The home supervisors are usually encouraged to profit from ESO's visitor programme and could spend extended periods of time at ESO themselves.

We have about 10 such studentships available at a given time at each site. We can typically offer five new positions per year both in Garching and in Vitacura. Indeed most students choose to stay for the maximum of two years at ESO.

The deadline for applications is June 15 every year, with an evaluation and notification in July for starting dates anytime after September, typically within the next year. The application form and list of material to provide can be found on the ESO web pages under 'Vacancy Announcement > ESO Studentship Programme'. The studentship web pages also include a link to the faculty pages on which the research interests of the ESO faculty members are listed.

Funding schemes for students in Europe still vary from country to country. We try to provide flexibility as much as possible within the two-year studentships. With the application we request a guarantee from the home institution that the financing for the student is secured for the whole PhD.

We also receive requests from students who would like to spend some time at ESO with their own funding. We try to accommodate these students at ESO within the available resources.

The students are selected by ESO astronomers according to their proposed research programme, the expected support by the ESO supervisor and the home PhD supervisor, and the promise they show for future research. We have had rather good success in the past and ESO students have fared rather well in their research careers.

### THE IMPRS STUDENTSHIPS IN GARCHING: FULL PHD STUDIES AT ESO

ESO participates in the 'International Max-Planck Research School for Astrophysics' in Garching (see also [www.imprs-astro.mpg.de](http://www.imprs-astro.mpg.de)). This graduate school is funded through the Max-Planck Society and involves the astronomical institutes around the Garching Campus: the Max-Planck Institute for Astrophysics (MPA), Max-Planck Institute for Extraterrestrial Physics (MPE), ESO, and the astronomy departments of the Ludwig-Maximilian University and Technical University of Munich.

The graduate school hosts over 50 students at any given time, of which ESO provides two positions per year, i.e. six students total at any given time.

The difference to the regular studentships is that these IMPRS studentships are only offered in Garching, and more importantly, allow students to spend their full PhD period at ESO and obtain a PhD from the IMPRS graduate school (formally, the PhD certificate is issued by one of the universities in Munich).

Thus, students can apply directly to this scheme without enrolling at any other university or having already a supervisor or defined subject. The application deadline for an IMPRS studentship is December 15, to start the studies in the following September – it is therefore wise to plan a bit ahead of time and already think about applying early during the masters/diploma/DEA/etc. period.

The application procedure is described on the IMPRS web page (see above), and it is recommended to contact ESO faculty members in Garching to learn about the proposed topics (also listed on the ESO faculty web pages).

ESO IMPRS students get a grant similar to that of the regular students, but lasting for the full 3 years of their PhD. The competition is fierce: usually over 140 students apply for the ~ 15 offered positions, of which only two are typically available at ESO (the others in the other institutes of the graduate school).

### STUDENTSHIP CONDITIONS – GRANT, BENEFITS, NO DUTIES

The studentship employment conditions are comprehensively described on the ESO web pages under 'Personnel Dept > Employment Conditions for Students'. In summary, the grant includes travel expenses and some removal expenses when joining/leaving ESO, a competitive monthly salary, as well as some extra allowance for married students. Students and their families are covered through ESO's health insurance. In addition, ESO will pay for the students to visit their home institution once per year, support their scientific travels (observing runs and conferences) within some generous limits, and offer to their supervisors to plan a stay at ESO within the frame of ESO's visitor programme.

A student does not need a visa or work permit when employed by ESO (given the international status of the organization), nor does her/his family need a residence permit. Note, however, that spouses that wish to work will need a regular German/Chilean work permit (and that this might be complicated in Chile without the spouse renouncing the privileged ESO status).

Students in Chile have the opportunity to volunteer for a small amount (up to 40 days/nights per year) of functional work at the La Silla Paranal Observatory, if they wish to gain some experience in observatory operations.

### VITACURA AND GARCHING – GREAT SCIENTIFIC SURROUNDINGS

Both Vitacura and Garching offer exciting scientific environments to students. Vitacura hosts about 10 students, 15 postdocs and 35 faculty members; Garching hosts about 15 students, 15 postdocs, 45 faculty members. Both sites have state-of-the-art computer and networks facilities to which students have full access. Further, the Santiago office has tight connections to the astronomy departments for the Universidad de Chile and the Pontificia Universidad Católica (including regular joint activities and colloquia) and an analogous programme in Chile to the IMPRS is being discussed between the Office of Science in Vitacura and the Universities of Chile. ESO Garching is within a short walking distance of the Max-Planck Institutes for Astrophysics and Extraterrestrial Physics with which colloquia and conferences are shared on a regular basis.

Both sites host several workshops and conferences per year to which the students have free access. Garching also offers, through the IMPRS, a three-week block of lectures (in English) at graduate level each semester.

In summary, the alternatives to conduct research as a student ESO are manifold and the scientific environment very rich. The ESO studentship represents unique opportunities to immerse in an international observatory environment during one's PhD studies.

The only complaint lately received from students was about the weather, and this only in Garching. But surely the many other advantages more than make up for it.



Current ESO students in Chile: in the back from the left – Nicole Nesvacil, Pascale Hibon, Sylvain Baumont, Christophe Couronne, Hannes Horst; in the front row: Pasquier Notredame, Alessandro Ederoclite, Alberto Scatarzi (missing on the picture: Carla Gil, Celine Delle Luche, Frank Coppolani).



Current students in Garching – in the back from the left: Michaela Döllinger, Marta Mottini, Alessandro Rettura, Karina Kjær, Andres Carmora Gonzalez, Stephane Blondin, Andreas Seifahrt; in the front from the left: Veronica Strazzullo, Bettina Gerken, Kim Nilsson, Isabelle Gavignaud, Nate Bastian, Yuri Bialecki, Stefan Uttenthaler, Jarek Rzepecki, Marcelo Mora, Morag Hastie (missing: Aglae Kellerer, Jörg-Uwe Pott, Silvia Vicente).

## 'TOWARDS A EUROPE OF KNOWLEDGE AND INNOVATION' – EIROFORUM PRESENTS A MAJOR SCIENCE POLICY PAPER

CLAUS MADSEN, ESO

**T**HE EUROPEAN SOCIETIES ARE undergoing fast changes these years. The need to manage the European integration process as well as to develop adequate solutions in the face of globalization and the pressure on the 'European way of life' led the Heads of states and governments of the EU to set for themselves the goal of developing the most dynamic knowledge-based economy in the world within a 10-year period. Both the goals and the policies to reach them are known as the *Lisbon Agenda* and the *Lisbon Process*, respectively, reminding us that it was in the city of Lisbon – in the year 2000 – that this development was started. Now, at half-time, the process has been reviewed and

the governments have acknowledged the need to focus on the most essential policy areas that must be developed to achieve success. Central to the revised Lisbon agenda is the notion of 'knowledge' – 'creation' of knowledge through science, its dissemination through education and its exploitation by society through technological development.

As part of its contribution to the ongoing debate about *Lisbon*, the seven EIROforum partner organizations have presented a joint science policy paper laying out their ideas and proposals in order to further the Lisbon Process. With the title 'Towards a Europe of Knowledge and Innovation', the paper analyses the challenges to science raised by the Lisbon Agenda and the contribution that

science can make in this context. It suggests directions that political actions should take to strengthen science and thus enable it to support the attainment of the goals set at the Lisbon Summit. These suggestions include proposals for concrete actions involving the EIROforum organizations, both in terms of activities that reach out to society at large (e.g. in education, public awareness of science, etc.) and actions that aim to improve the conditions for researchers and thus to achieve EIROforum's overall vision of 'creating a climate in Europe in which relevant, competitive scientific research (basic and applied) can be undertaken in an efficient, cost effective and successful way'. The document discusses the need for fundamental research