Frequently asked questions

for M2 interns, PhD candidates, and future PhDs

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What this document is about

While this document is mostly relevant for PhD candidates (in any year), it is also useful for those who wish to do a PhD in astrophysics, and thus in particular to the Master 2 students.

We are aware that the table of contents, and the full text, could seem quite "alarming", but that is because we have focused on the most important questions that can lead to some worries. This document is an FAQ precisely because these questions are frequent and so it is perfectly normal to wonder about them. These questions are not only legitimate, but also useful in order to constantly rethink and reevaluate one's work and one's position, a necessary skill for research, in particular for a PhD.

If you intend to do a PhD and read to know what to expect, this document will allow you to prepare yourself and to make the right choices concerning the PhD topic and supervising.

If you are doing a PhD right now, this document will allow you to reckon that you are not alone and that many other PhD candidates (the vast majority) went through some difficult phases, while still being successful. You will notice that some of the questions you may ask are not only anticipated, but we also try to provide some advice, and, when possible, some solutions. A PhD is an extended project that demands a lot of effort and an important implication from a personal point-of-view. The work, the publications, the talks, the manuscript, and the defense are great steps that will make you proud, but more generally-speaking the PhD may influence your general well-being (do something on the side, have a social life!). Some of the information are more relevant at the beginning or at the end of the PhD. Those relevant for the end are interesting to read early on anyway in order to better anticipate the various steps and phases. Ideally, we think it is useful to read this document once a year during the PhD.

So, a PhD is a fantastic experience for sure, but maybe you have some specific questions…?

Questions

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Q: Who are my contacts ?

PhD advisor	First contact for the science, and, depending on the personal relationships, first contact to share any worries.
Contact for **graduation groups (« promotions »)** or responsible Comité de thèse or "tuteurs"	This is a permanent researcher in the lab who can offer an independent ear to listen as well as an objective view on your research and on the relationship between you, your advisor, and your group.
Representatives in the **Doctoral School (ED)**	Your local contact for the doctoral school, for the preparation of ED interviews...
Representatives among **PhD candidates** in the laboratory	PhD candidates themselves, they organize meetings between all PhD candidates in the department. They also participate in the lab council to represent you. They are important contacts to compare your experience.
Representatives among **PhD candidates in the Doctoral School**	Among other things, they attend interviews for PhD fellowship provided by the Doctoral School to M2 students.
Contact among **Post-doctorates**	Useful contact to know post-docs and benefit from their experience during and after the PhD.

At the time of your arrival, you will meet the promotion contact and the various representatives will be introduced to you. Furthermore, you will be asked to fill an entry form to allow you to meet the direction, the secretaries, and the computer and security contacts.

It should also be noted that the Doctoral School is of course also available for help when the situation requires it, for instance for what concerns the last steps (manuscript, jury, defense).

Q: I already did an internship, how different is the work during a PhD ?

Most of you already did an internship in a research lab, most often for about 3 months or so. You probably have some idea of how a lab works and of the scientific activity of a group, but to know how the PhD will work out and how research in general works is much less obvious. The internship concerned a specific topic, such that the tools were more or less ready to use, such that all concepts were already well defined, and such that the result was more or less anticipated.

The PhD, although it is also accompanied with an abstract that can appear somewhat specific, includes several major differences with the internship. Obviously, the PhD is a much longer work than an internship, and it is important to be organized enough to deal with the various tasks (meetings, trips, publications, teaching...) and to keep in mind the goals to achieve. The schedule during the PhD is much denser and more complicated than during the internship and you will have to be rather autonomous so as to manage your time in the best way possible. Since a PhD is much longer than an internship and since there's some uncertainty related to a cutting-edge PhD, you might be feeling some frustration or even failure with negative results (see also Q: "*Did I make the right choice?*"). Two good solutions to reassure oneself are to share your experiences and acquire eventually enough lookback and objectivity on your PhD and on the functioning of fundamental research.

Moreover, although the concepts are already present in the PhD topic, the objectives often have to be redefined, or the data sometimes have to be interpreted in a completely different way than anticipated at first. The results just cannot be always anticipated, otherwise there would be no need to a PhD ! A PhD is therefore an evolutionary process and it is not uncommon that the final abstract/titles differ sometimes significantly from the initial text. These changes are often proposed by your advisor directly, or between you, your advisor, and possibly your group, or because you took the initiative yourself, in agreement with your advisor. At some point during the PhD, you will actually be the expert in your topic, and you will be the best possible person to take some decisions, which was not necessarily the case during internships. In practice, some interpretative tools do not exist yet when one starts a PhD, and you will likely have to develop some from scratch (or from little).

The internship is halfway between a "student" work and a research work. Nevertheless, your work during the PhD is truly that of a full researcher, and nothing will differentiate you from permanent researchers, apart from your experience. PhD topics deal with leading edge research, and you will be the first one to find the results and answers, even before your advisor. The way in which you work during the PhD is also an evolutionary process. At first, the work will be pretty "scholar", like an internship in which everything is taken at a higher level. The work will then evolve by taking initiatives, creating tools, demonstrating/presenting the results and the motivations, taking some important decisions that will bear consequences for the results, exploring the literature, reflect on the fundamental questions you wish to address (questions that will define and identify your thesis in particular), and many more things. In summary, at some point during the second year, it will be necessary to make the PhD topic your own, and wrap your mind around the objectives and the strategy to fulfill them.

During your PhD, you will slowly discover what really makes a PhD work, and you may be

either happy or worried about it. You will probably experience many ups and downs throughout, the PhD being really a personal challenge that has not so much to do with your previous university years. It happens regularly that PhD students meet some difficulties despite brilliant years (and grades) at the University before that. Inversely, it's not uncommon that students who met difficulties during the "school-like" University years do remarkably well during PhD.

In any case, you need to share any worries as soon as possible with the other PhD candidates, with the post-doctorates, and with the researchers in the department. For instance, you should not hesitate in asking questions on the inner workings of research in general, at the level of the department, but also at the national and international levels.

Q: How to choose your advisor ?

There are as many PhD thesis as there are advisors, PhD students, and PhD topics, which is precisely why one should always be careful when comparing oneself to other PhD colleagues. The choice of the advisor is therefore of utmost importance, as much as the choice of the topic itself.

At one extreme the supervising can be particularly rigid and/or demanding, with a constant pressure and expectations[1] that appear rather high. At the other extreme the supervising can be rather flexible, permitting (and sometimes requiring) some independence, sometimes right at the beginning of the PhD, which can also be quite offsetting and difficult to manage.

You must choose your thesis supervisor according to your affinities and according to the mutual relationship that can be established and with your potential strengths or weaknesses in mind. For instance, don't overestimate your ability to work independently – as tempting as it can be – when you would clearly prefer to see your advisor every day. That said, you also need to keep an open mind, and for example, a very demanding environment can seem discouraging when choosing an advisor, but it may well result in a positive and successful experience in practice. However, a harmful combination would be high expectations combined with an attitude of mistrust that varies in an abnormally exaggerated way depending on the results obtained and the effort made and which results in an unpleasant environment.

It is therefore necessary to choose your thesis director in full knowledge of the facts and to ensure before starting the thesis that the conditions will be met to make the PhD a great experience. To take a step back as quickly as possible on the nature of the supervising, it is obviously necessary to exchange as much as possible with the potential future supervisors, talk to the current and former doctoral students, find out about those who have finished and their post-thesis experience, and also do not hesitate to talk to different people (doctoral representatives, doctoral student follow-up group, etc...).

During the PhD, the attitude of people can vary, so it is possible that the type of supervision (rigid, flexible, increase the frequency of regular meetings etc...) may need to change as a consequence.

1 We are talking about expectations that fold into the normal process of a PhD work that the Doctoral School endorses.

Q: What is expected from me? What are my responsabilities?

You accepted to do a PhD. Obtaining doctoral fellowships is not an easy thing, so your first responsibility is to honor your contract to the best of your ability. Some PhD topics were attributed through a special funding (CIFRE, CFR...) for which your PhD advisor, the lab, and the doctoral school have invested both time and effort. The fellowships are attributed to few students, implying some responsibility once you have accepted the contract. In any case, a fellowship was awarded to you because you deserve it. Your contract can be fulfilled, with or without any adjustment, if you often discuss with your PhD advisor, and, if need be, with the various contacts and representatives (see page 3). Below and through this document, you may find an echo of some of your worries, and you will also find the reasons to be reassured.

It should be reminded that the PhD is a full-time professional activity, with a 3-year contract, including all the related responsibilities. Hardware will be made available to you, by the lab, for which you will also be responsible. One should also remain aware of the fact that the PhD project is part of a collaboration potentially across many persons/teams/countries, and, while your work may depend on other people's projects, the inverse is also true.

Being supervised

During the first few months, in some cases, it happens that the way you are being supervised can appear as too rigid. This should be seen as a way to start the PhD in good conditions, and also to allow the advisor to adapt step by step his/her interactions with you.
The supervising will evolve – more or less rapidly – toward a true and synergetic collaboration between you, your advisor, and your group members. You will gradually become the expert in your topic, and you will be able to take initiatives and become independent. However, on the long term and depending on your advisor, the way you are being supervised may appear too rigorous, or on the contrary too flexible. In any case, you need to speak to your advisor first, and possibly to your group members, and to the various contacts in your lab.

Whatever way you are being supervised, what is expected from you is to succeed in your PhD. There are many ways to achieve this, but you should always remember the final goal.

Communication

Apart from the pure research work, it is important that you share your results. It is expected that you communicate with your group (for instance during group meetings), with the people in the lab (for instance during seminars), and with the astronomical community in general (for instance during conferences or through publications). One could also add outreach to the communication skills, although this is more of a personal choice. Scientific communication is an essential component of research. You should not

be afraid of this, because one learns how to communicate well, even though sometimes very slowly. To make things clear and to reassure you, you are not being asked to communicate like a commercial representative! You "simply" need to learn how to speak in public, sufficiently well for your ideas to be understood. To communicate well enough for this can take several years, no need to worry too much about it.

It will be expected that you are able to adapt your speech to both the format (e.g., length of talk) and the audience. While a series of figures may suffice for a group meeting, this won't do for all the other presentations – one cannot systematically suppose that the audience already knows this or that concept (and by the way, that's when one explains apparently simple concepts or things that are apparently well known that one realizes this is not that simple) and let people sort out the ideas and identify the important messages. Therefore, you will have to guide the audience by explaining the context, the important questions that motivate the work, the current situation (results from different groups), the strategy for your work, the results, and the prospective. You should also try and find a message of one or two sentences that summarizes in a concise manner what should be taken away from each slide (and possibly write it on the slide).

It is of course important to take advantage of the group meetings or journal-clubs to get used to presenting your own work, but one can also consider that these meetings are excellent occasions to present reference papers, be it by the PhD candidates, by post-docs, or by the permanents. For PhD candidates, the motivations are numerous: absorb the fundamental papers relatively early on, be able to answer questions on them, rethink the PhD project with respect to the state-of-the-art works, and provide reminders that are useful for everyone!

Communications are sometimes in French (group meetings, corridor discussions, national meetings...), and often in English (refereed publications, conferences...). It is not expected that you speak English or French fluently, neither at the PhD start nor at the end. However, you need to improve enough to reach an intermediary level that will allow you to speak and be understood. The first publication and the first oral presentation in English or French are sometimes difficult, but you are helped by your colleagues in both cases. English and French classes are proposed for those of you who prefer a school-like learning method rather than an on-the-go method.

During your internship, you may have started to write a publication, and you are expected to publish one or two publications during the PhD. The first publication can become a difficult experience, due to the language, the style (concise, rigorous, logical[2]) and the comments from the referee(s) that may appear rough. It is important to go beyond the initial frustration against the referee or any people who will critique your work (even people from your own group!). Critics constitute an important step to accomplish and improve your work, so one should accept them and implement them in

2 Very schematically, the structure of the text (paper or PhD manuscript) should reflect a series of scientific objectives around a thread (rather than a series of results and/or methods presented independently and discussed later on). In each section or chapter, the reader should know "where we come from, where we stand, and where we go", i.e., the progress made so far, how the current section folds into the global strategy, what are the progresses associated to the corresponding scientific objective, and what are the next steps. One should understand a publication not as a factual and historical account of the work done, but as a reorganized text whose purpose is to guide the reader along a thread until the conclusions.

the most constructive and “generous” way possible. In general, it is often healthy to dissociate as much as possible what concerns the practical work and what concerns the person’s feelings, even though the PhD is obviously a personal project and a human experience in many ways.

Travels and external collaborations

For some PhD topics, you may be asked to travel for work, in France or outside, sometimes for several weeks/months. You may also have another advisor, once again either in France or outside. In all cases, travels can produce quite different experiences, depending on your personality and on the conditions of the travel (length, place, working environment...). While leaving for a conference once or twice in the year for a week each time is not very constraining, leaving for a lengthy collaboration/observation run can become difficult. During your first meetings with your advisor, you probably already defined, together, the general schedule for your PhD, with long trips already anticipated. The PhD can always be re-structured and re-scheduled, and even though things are already moving, you should not hesitate in sharing your concerns with your advisor and the various contacts in the lab.

Q: Help, my PhD topic doesn't suit me!

The PhD topic has been proposed to you, with some guidelines (some combination of theory, modeling, simulation, observation, instrumentation...). During your first meetings with your advisor, it is expected that you agreed with these guidelines, or that your advisor already proposed some modifications depending on your experience and interests (provided the topic is flexible enough). Your advisor, the group in which your work, and more generally the lab, all assume that the initial guidelines are ok with you.

Broadening your horizon during your PhD

With all of the above said, while your PhD progresses, you may realize that your interests have evolved. It is normal to have only a rough idea of what research means to you and what kind of research will suit you on the long term. Some researchers change specialties during their career, and this is quite normal. To change specialties *during* the PhD is a much more delicate matter, because there is a working plan defined over 3 years, and re-orienting the PhD can make it weaker and/or lead to significant delays. Rather than reorienting the PhD, you should keep in mind that it may be useful to slowly build on contacts or on collaborators in your lab or in other labs, allowing you to discover other specialties in astronomy.
Moreover, if you are interested in teaching, you can do a "charge de mission d'enseignement"[3] during your PhD (for instance to apply to "Maître de Conférences" positions). Finally, it should be reminded that a post-doctorate, if you consider doing one, is a great way to probe a somewhat different specialty after the PhD.

Reorienting

In some cases (problems with observations, competition with another team...), if the PhD topic is sufficiently flexible and depending on your responsibilities, it is possible to reorient. In all cases, you need to always speak openly with your advisor, not always focus on science itself but take advantage to share your worries. For any worry or concern, communicating with your fellow PhD candidates and then with the various contacts in your lab is essential, always contributing to improve the situation for the best. In particular, your various contacts will advise you based on their own experience in supervising and interacting with PhD candidates over the years. Don't wait until it's too late!

3 Beware, if you would like to teach during the first year of your PhD, you need to apply to the "monitorats"/vacations before the end of the academic year for next !

Q: Why (and how) participate to the department life?

Whether this is the administrative personnel, the direction, the researchers, engineers, or students, everybody participates in making the lab a good place to work. During your PhD, you will spend 3 years with these people every day and you can contribute to help everybody and you in particular, work in good conditions, in a friendly environment.

Social life

The onboarding days will allow you to know better your working environment and the hierarchical structure of your institute. You will then have many occasions to share your experience during the breakfasts organized by PhD candidates, discuss with lab people during coffee breaks, during the pre-seminar breakfast, and during annual events. Lunches are also a great occasion to share and discuss (for instance with other PhDs) – your group members will not complain if you don't accompany them every day!

Seminars and conferences

Apart from the social life in the lab, it is important to also participate in its intellectual life. An excellent way of thriving socially but also intellectually is to attend the seminars (lab seminars, post-doc seminars...), conferences, group meetings, PhD journal-club, and of course PhD defenses. Your PhD topic being quite specific, you may find it difficult to step back and contemplate your work, especially during the first year. Yet, some of the motivations for your research may also appear, more or less directly, in the research of other people. It is important to be aware of the various points of view to establish yours. You will also discover many other fields in astronomy, and despite their apparent lack of connection to your topic, you may want to explore such different research fields for your future interests! Furthermore, what a pity it would be to reach the end of the PhD and realize that you have – quite paradoxically – only a relatively small and narrow view of astrophysics. Seminars are the perfect occasion to broaden your knowledge. Having a strong astrophysical background is not only a way to appear smart around the table at a restaurant, it allows you to acquire enough knowledge that you can use at your advantage during post-doc or permanent job interviews. It is a quite remarkable skill to be able to grasp the major recent advances in astrophysics, and to anticipate what modern astrophysics will (or should) concentrate on.

Finally, you need not worry if you do not understand the talks in seminars or conferences. In the beginning of the PhD, one often understands only the general introduction, that is, the first 2-3 slides. Only after some time, during and well after the PhD, building on many such presentations, will you be able to understand talks on different topics than yours. If you completely gave up understanding a given talk, remember that you can still take the occasion to find some ideas on how the slides are presented, how the presenter talks. For your future talks, you will quickly learn the things to do... and not to do!

Q: Did I make the right choice?

It is quite normal to reflect on yourself and your work during the PhD, and normal to take a new look, reconsider what is being or has been done. This is mostly the case at the beginning of the PhD ("Am I really meant to do this?") and at the end ("Should I continue?"). You should not regard these questions as a problem or a discontent, but rather as a useful (and necessary) questioning. Some time may be spent before you realize that your topic actually interests you, because the work is difficult at first or because you do not understand enough the broad picture. At first one is often entangled in technical details that prevent us from grasping the global motivations and the importance of the topic.

Not questioning implies that you pursue with the same initial motivations, the same tools, the same way of working, all of which can inhibit your intellectual thriving while narrowing down your scientific horizon. It is therefore normal to adapt from time to time after such questioning. Uncertainties and worries that can spring during the PhD are not always easy to explain to someone outside the academic circle. For this reason, you should rapidly become used to compare your experience with others, and seek as many advices as possible, even in cases when this is "only" to be reassured as opposed to solving an important matter.

During the PhD, you will probably experience situations of "failure" or results that are not as exciting as anticipated (experiments going wrong, rejected paper, very negative feedback...), and maybe for some this will be the first time since you started your studies. Such situations are normal because being in the research frontline produces situations where doubt is omnipresent and where failure should be anticipated and accepted as a normal process toward progress, even though it is sometimes difficult to find its value. Generally speaking, the research process always raises and needs doubtfulness and skepticism to progress.

Doing a PhD doesn't necessarily imply that you will continue in academia. Hence, you shouldn't suppose that people are expecting this from you! Once started, the PhD is part of your professional project. The formation courses during the PhD must allow you to broaden or adapt this project on the longer term, and to better anticipate the post-PhD years (see next question). Completing the PhD thesis is thus very important, even though one decided not to continue in academia. Eventually, you will have to show, for instance during job talks, that you successfully completed the thesis project, which implies an obvious dedication in accordance with the contract agreed upon. This is, of course, in addition to many skills that one acquires during the PhD, skills that are more and more required (see following). The PhD project is defined over a limited number of years, which means that completing this project involves a success, regardless of the path that is foreseen after the PhD.

In cases when the PhD is a step toward becoming a researcher, a lecturer, or a research engineer, this is still considered a professional project, with a formation that is adequate. The various contacts (other PhD candidates, representatives, advisors...) will help you to make the best decisions, considering your profile and your interests.

Q: How to manage teaching during the PhD?

First, register for the formations such as "pédagogie" as soon as possible, as it is useful right away especially if you're teaching!

"Missions complémentaires"

The "missions complémentaires[4]" concern teaching, science outreach, and expert duties. These missions are great occasions to learn and validate skills that can prove useful after the PhD.

Each university decides the exact number of teaching hours in the contract, with a maximum of 64h/year. Contact the doctoral schools for more information on the doctoral teaching contracts[5]. In all cases, if doing such a duty is considered, you first have to make sure that this is allowed by your doctoral contract. The mission application process happens in the Spring, and, if the plan is to teach during the first year, this implies applying before knowing whether your PhD will be financed or not, with all the problems it can entail (do not hesitate to apply to several universities though). Despite these problems, this may be worth in order to spend the third year (the most complicated to manage) with all teaching duties done. If a mission is not possible, then it remains possible to do teaching "vacations" (other kind of duty with different rules).

It is not uncommon that mission contracts are ready and signed well after the teaching started (the same goes for the associated income). In such cases, insist and make sure that the university is working on your contract, that all documents are ok, and that the contract will be ready as soon as possible. Let your doctoral school and your representatives know if there is any problem.

For those who have the "agrégation", a mission of at least two years (2x64h) is supposed to validate the agrégation teaching internship.

The doctoral formation accounts for teaching activities during the PhD, with fewer hours of required formation when teaching. A pedagogical formation may be necessary, depending on the doctoral school.

When the professional career path is not yet clear and when teaching is considered as one of the possibilities, it can be tempting to be "too much"involved in the teaching duties during the PhD. However, it is important to remember that, while the teaching contract implies a given number of working hours, the doctoral contract implies all the rest! It will be therefore expected that you respect the doctoral contract in its entirety.

"Qualification" for "Maître de conférence (MCF)"

The qualification is necessary in order to apply to positions of Maître de conférence. The validating criteria are the following: (1) defend the PhD before mid-december of the year the application is made, (2) have at least one first author paper within the scope of section 34 (Astronomy and Astrophysics) of the Comité National des Universités (CNU),

4 Official text JORFTEXT000033076338 (Décret n° 2016-1173 du 29 août 2016) of the Journal Officiel de la République française (*https://www.legifrance.gouv.fr*)

5 In particular (in French): *https://ecole-doctorale.obspm.fr/fr/Etapes/Missions*

and (3) having taught. There is no minimum number of teaching hours, but if you have taught little, you will have to explain why your application should be considered. In all cases, you are asked to demonstrate your interest for teaching. Activities like science outreach (general audience conferences, talks in schools…) and supervision or co-supervision of students can be also considered. Foreign applicants must have a good knowledge and practice of the French language.

In practice, in order to apply for a qualification, you must first register between September and October on the Galaxie website[6]. You can then upload documents until mid-December. The CNU section meets around February to validate the qualification, and the results are available a few weeks later.

If the qualification is obtained beginning of year N, it is valid until December 31st of year N+4. Hence you can apply to positions for which the deadline if on / before December 31st of year N+4. You should consider reapplying for a qualification around the Fall of year N+3.

The qualification, once validated, allows you to apply to MCF positions of any other sections. For instance, a qualification for section 34 allows you to apply to positions in section 29 and inversely. A mailing-list[7] exists that allows you to be informed of opened positions corresponding to certain criteria.

The application number you receive when applying for the qualification is an important number to keep. This will be the number to use for all the applications. Even once hired, the same number will be used when applying to promotions to become "Professeur des Universités".

For more information about the qualification, check the FAQ on the Galaxie website:
https://www.galaxie.enseignementsup-recherche.gouv.fr/ensup/cand_FAQ_qualification.htm#57

6 *https://www.galaxie.enseignementsup-recherche.gouv.fr/ensup/candidats.html*
7 *https://galaxie.enseignementsup-recherche.gouv.fr/antares/newsletter_01.jsp*

Q: How to anticipate the post PhD?

Each PhD candidate has some idea, more or less precise, of what the post PhD will be like (pursuing in research, scientific communication, teaching, private sector...). Toward the middle of the PhD, the reflexion must start. This is delicate, because one goes from a stable state of mind (studies, doctorate, 3-year project) to an unstable one in which your ideas can completely change along with your future. At the end of the PhD, you have acquired numerous skills that you should not underestimate. Among other things: work in a group, manage a project, deal with several projects simultaneously with time and resource management, supervise someone (e.g., interns, starting PhDs...), take initiatives, be independent and original, communicate in public, communicate in different languages, work within international collaborations... All these skills must be accounted[8] for when you think of your future and of what the PhD brought to you.

If you wish to pursue in research, you will most likely go for a post-doctorate, often abroad (although a non-negligible fraction of PhDs stays in France for a post-doctorate). Post-doctorate positions are quite beneficial. Among other things, they allow stepping back and reflecting on one's PhD research, learning how to collaborate remotely, juggling with various projects, learning another way of working or seeing things, and acquiring some independence. It should be noted that a post-doctorate abroad provides useful skills not only for the academic world but also for the private sector. Although going for a post-doctorate position can be difficult because of the moving and of the new environment, all the positive experience that comes with it should be considered.

Switching fields altogether is a personal choice and you will be guided, if need be, by the various contacts in the lab. Professional social networks may also allow you to meet and share with former PhDs who have since pursued in academia or switched to something completely different.

In all cases, but in particular when a post-doc is considered, it is quite important to prepare the application material (statement of research, research proposal, publication list, CV...) early enough, so that when an interesting job offer appears, the application is already polished. Getting the initial set of files is difficult, but once it is done, the material "just"needs to be updated for future applications, which saves a lot of time. In general, one shouldn't hesitate to apply to offers that seem a bit unrelated to your exact line of work, despite a certain relevance, for a variety of reasons, (1) it is a way to have your name and work be known from people around the world, (2) it is a way to "test" the application material, (3) the offers are sometimes vague and the post-doc theme may change according to the applicant profiles, and (4) happy and unexpected surprises happen!

From the beginning of the PhD, it is important to think about what training classes ("formation") are adapted to the professional path you would like to pursue (of course with some flexibility and open-mindedness when the latter is not well known). Keep in mind that INSTN proposes numerous training classes, including «Encadrer et Valoriser la thèse».

8 In case a career path in the private sector is envisioned, you can show yourself as a project manager.

Calendar

The following calendar is informative and can fluctuate. It should allow you, however, to anticipate the few events that will mark your PhD.

First year	Start	• Meeting with Doctoral School and PhD candidates representatives. • Check and register to important formations (INSTN, IDRIS, CFDIP...) right away! • Meeting with contact for graduation groups, meeting with the various contacts, representatives, and important people in the lab. • Elbereth conference / Rencontres jeunes physicien(ne)s.
	After 6 months	• Annual meeting with follow-up committee.
Second year	Start/half-thesis	• Mid-thesis meeting with Doctoral School. • Elbereth conference / Rencontres jeunes physicien(ne)s. • Annual meeting with follow-up committee and recommendation from the committee for the 3rd year registration. • Prepare the after-thesis.
	End	• Some fellowships with fixed deadlines (ESO, Einstein, Hubble, Marie Curie…) between end of 2nd year and beginning of 3rd year.
Third year	Start	• Meeting to prepare the timeline until the defense • Annual meeting with follow-up committee. • See next page for the steps in the 3rd year.
	Middle	• Elbereth conference / Rencontres jeunes physicien(ne)s.

Annual **conferences** to keep in mind for submitting an oral or poster contribution :
- Elbereth (conference organized by and for the PhD students in Île-de-France)
- SF2A (France ; mostly in French), EAS (Europe)
- Programmes Nationaux (e.g., PCMI, PNCG colloquia, PNHE workshops etc., usually in French)

Third year steps

The very first step will be to think of an approximate date for the defense, which has to happen before the end of the contract. PhD contracts usually cannot be extended beyond the initial term. Once an approximate date chosen, follow the calendar below, and remember to consider the summer break and the vacations of everybody (including the president of the University). Some universities require a new registration for a defense after the start of October (e.g., P7), while some others seem to be more flexible (e.g., UPS).

Calendar (example for UPS+ED127) :

- Start reading PhD manuscript of former students well in advance to understand what will be expected from you. When: the earliest possible !

- Start writing ! Plan at least 3 months ahead of the defense but, considering the various tasks to do in parallel (continuation of the work, finalizing results, conferences, referee reports, ongoing publications, post-PhD preparation etc...), it is better to plan 6 months ahead. If you start early, you can also better assess your rhythm and your writing skills. It can be useful and reassuring to invest several days just for constructing an outline that can be either detailed (chapters, sections, sub-sections) or very detailed (paragraphs, and even items corresponding to sentences). When: the earliest possible ! It is often useful and advised to start a draft of the outline of the manuscript with the advisor around the start of the defense year (~January).

- Find the jury members (officially a proposition of the PhD advisor). Check the availability of everyone for the approximate date and check whether the referees can read the manuscript on time (especially during the Summer). When : at least 3 months before defense (plan about 6 months).
- Validate the jury members as soon as possible with the responsible of the doctoral school and the responsible of the doctorate studies at the University. The rules for the selection of the jury are different (and complementary) for the University and the doctoral school. When : at least 3 months before.
- Finalize the defense date, book the room, confirm the important dates with the jury. When : at least 3 months before.
- Many defenses in astrophysics will happen around the same time of the year, often in September after the “rentrée universitaire”. For this reason, it is important to work on the 3 steps above way ahead. It can also be useful to talk to the other PhD candidates to optimize defense dates and times and to avoid problematic overlaps...!

- Submit the dossier to the doctoral school. Prepare a summary and title in French and English. For ED127 : submit the information in ADUM (note: the data is not finalized in ADUM until actions are validated), print the ADUM documents, have them signed by the advisor, the Department head and the responsible of the doctorate studies at the University, and bring the documents to the doctoral school secretary so it can be signed by the president of the University. When : at least 2 months before.
- Send the manuscript to the referees. When : about 1.5 months before (about 3-4 weeks for the referees to work + reports to be sent at least 3 weeks before defense).
- Prepare the defense presentation! For the ED127: submit a draft of the manuscript in ADUM, at least 20 pages in French and an additional summary in English

if thesis text in French. When: 1 month before.

- The reports of the referees are received by the University. When : at least 3 weeks before (ideally 4-5).
- Notification sent to the jury by the doctoral school. When : 4 weeks before.

- After the defense : "rapport de soutenance" sent by the president of the jury a month after at the latest, corrections of the manuscript, submission etc...

Specific information for ED560 :
http://ed560.ipgp.fr/index.php/Soutenance
Specific information for ED127 :
https://ecole-doctorale.obspm.fr/fr/Etapes/Soutenance

Guides for writing the manuscript :

The dissertation journey :
https://mycore.core-cloud.net/index.php/s/NvkEiXaTBv79LyY

Writing the dissertation :
https://mycore.core-cloud.net/index.php/s/ft3LgMw23DP6D7z

How to manage the post-PhD :

Handling the end of the contract (e.g., social security, health complemeetary...) :
http://ed560.ipgp.fr/index.php/Fin_de_contrat_de_th%C3%A8se

Jobs, post-docs etc.
https://jobregister.aas.org/

APEC, PhDTalent, ... (see next page).

Some useful links (mostly in french)

PhD

ED 127 :
https://ecole-doctorale.obspm.fr/fr/

ED 560 :
http://ed560.ipgp.fr

FAQ (general) for PhD candidates:
http://cjc.jeunes-chercheurs.org/faq/rubrique.php?r=doctorat

Conflict management during a PhD:
http://cjc.jeunes-chercheurs.org/doctorat-a-la-loupe/fiches/FicheDoctoratALaLoupe-15.pdf

The Chronicle of Higher Education:
https://www.chronicle.com/section/Advice/66

Associations

Association Unissant les Doctorants et Docteurs en Astrophysique (AUDDAS) :
http://www.auddas.fr/

D2I2 : doctorants des deux infinis (ateliers, événements…) :
https://d2i2.in2p3.fr

Post-PhD

Making the best of one's skills:
http://www.afsp.msh-paris.fr/observatoire/dossiers/doctorat/rapportpoulaindoct2011.pdf

French organisation "PhDTalent" to connect PhD students and companies:
https://www.phdtalent.org

APEC (CV improvement, simulation of interviews, general help, job offers…):
https://www.apec.fr/

S2DS – Science to Data Science (data science training programs for PhD)
https://www.s2ds.org

Individual Development Plan (science careers)
https://myidp.sciencecareers.org/

Mailing-lists/ others

Astro-jc (young researchers, job posting, summer schools etc...)*: :*
https://sympa.obspm.fr/wws/info/astro-jc

SF2A (summer schools, conferences, information on section 17, CNAP, etc...)*:*
http://www.sf2a.eu/

Each « programme national » INSU (PN) has its mailing-list, check with your advisor which ones are relevant to you:
http://www.insu.cnrs.fr/node/1672

Foreign PhD students

Science-Accueil (various, including courses for French language):
https://www.science-accueil.org/
Welcome to France guide: *https://fr.calameo.com/read/004936265361c1ada9277*

GATE (Guichet d'accueil des talents étrangers; available in English) :
https://www.science-accueil.org/en/point-dinformation-science-accueil/

Formations

INSTN (manuscript writing, PhD defense, professional project, private sector etc...):
http://www-instn.cea.fr/formations/formations-continues/liste-des-formations-courtes.html