

Basic Plan for the PhD Program “Astrophysics and Stellar Astronomy” at the Institute of Astronomy and National Astronomical Observatory - Bulgarian Academy of Sciences

1. Overview and Goals

Goal: To carry out high-quality research using the observational resources of the IA and NAO (Rozhen NAO and Belogradchik AO), to publish scientific articles, and to defend a dissertation that contributes original results to science.

To develop in-depth expertise in astronomy through coursework, independent scientific research, and scientific communication.

Main expected outcomes:

- Defense of a PhD dissertation on the chosen research topic
- Publications in peer-reviewed journals with impact factor and/or impact rank
- Participation in national and international conferences
- Development of practical skills: working with observational equipment, data analysis, computer simulations

2. Plan by years

First Year

Main objectives:

- Building a good theoretical foundation
- Start of early-stage research work

Activities:

- Completing courses at the BAS Training Center
- Getting acquainted with the observational equipment of Rozhen NAO and Belogradchik AO
- Conducting an in-depth literature review on the dissertation topic
- Presentation of the annual results to the Institute's Seminar

Achievements:

- Successful completion of courses at the Training Centre of BAS
- First results of the research work

Second Year

Main objectives:

- Deepening specialization
- Starting substantial research activity

Activities:

- Elective courses more closely related to the dissertation topic
- Conducting original scientific research

- Developing computational, analytical, and observational skills depending on the dissertation topic
- Participation in trainings on scientific writing, programming, and project development
- Presentation of the annual results to the Institute's Seminar

Achievements:

- Passing the required doctoral minimum exams
- Conference participation with a poster or presentation of first results

Third Year

Main objectives:

- Publishing results in scientific journals
- Finalizing the research and writing the dissertation

Activities:

- Completion of computer simulations, observational data, and data analysis
- Participation in international conferences
- Writing dissertation chapters and reviewing them with the supervisor
- Review with the scientific supervisor, corrections, and revisions
- Submission of the final publications
- Organizing and conducting the public defense before the Institute's Seminar

Achievements:

- Publishing 2–3 scientific papers
- Presenting of at least one scientific article submitted and accepted for publication in a peer-reviewed journal with impact rank/factor as first author
- Presentation of the scientific results at conferences
- Successful defense of a doctoral dissertation

3. Additional Information

Supplement 2.2 of the Statutes of the Central Academic Office of the BAS and additional requirements of IA and NAO, Minimum 200 points as follows:

1. Completion of the Educational Program (Mandatory minimum: 130 points)

- 1.1. Successfully passed exam in a basic specialized subject – 40 points
- 1.2. For each approved additional course contributing to general foundational preparation in the scientific field or an interdisciplinary field related to the dissertation topic – 20 points (minimum 2 courses $\times$ 20 pts = 40 pts)
- 1.3. Successfully passed exam in language training – 25 points
- 1.4. Successfully passed exam in computer skills – 25 points

2. Approval of the Scientific Program Progress (Mandatory minimum: 40 points)

Reporting dissertation-related scientific results at scientific forums:

2.1. Presentation at a scientific seminar of the research division – 8 points

2.2. Presentation at a scientific event in Bulgaria – 24 points

2.3. Presentation at a scientific event abroad or at an international scientific event in Bulgaria – 32 points

3. Publications of Scientific Results Related to the Dissertation

(Mandatory minimum: one publication in a journal with impact factor/rank as first author* and at the same time a minimum of 30 points according to Group “G” of the minimum requirements for field 4.1 Physical Sciences in Appendix No. 1 of the “Regulations for the Conditions and Procedures for Awarding Academic Degrees and Academic Positions at the Bulgarian Academy of Sciences”)

3.1. Scientific publication in journals indexed in major international scientific databases (Web of Science, Scopus), excluding the habilitation work:

- 25 points for Q1 publication
- 20 points for Q2 publication
- 15 points for Q3 publication
- 12 points for Q4 publication
- 10 points for publication in a journal with SJR but without impact factor (IF)

*Specific additional requirements of the IA and NAO for scientific degrees:

https://astro.bas.bg/Docs/Kriterii_AD_IANAO.pdf

Required documents for admission to pre-defense and dissertation defense:

https://astro.bas.bg/DokumentiKonkursi/doks1/konkursi_doks.html

Declaration of authorship of the dissertation:

https://astro.bas.bg/konkursi_bg.php