

STATEMENT

on a competition for the academic position

„Associate Professor“

**in the professional field 4.1. Physical Sciences /Astronomy and Astrophysics/,
for the needs of the Sofia University “St. Kliment Ohridski”, Faculty of Physics,
opening call published in the State Newspaper, No 54 from 29.06.2021.**

The statement is written by Assoc. Prof. Antoniya Trendafilova Valcheva, PhD, Sofia University “St. Kliment Ohridski”, Faculty of Physics, 4.1. Physical Sciences /Astronomy and Astrophysics/ member of the scientific jury for the competition according to the Sofia University Rector’s order № 38-370/ 21.07.2021.

One applicant has submitted documents for the competition:

Senior Ass. Prof. Vladimir Veselinov Bozhilov, PhD, Sofia University “St. Kliment Ohridski”

I. General Description of the Applicant’s documents submitted for the competition

1. Application documents

For participation in the competition, the candidate D-r Vladimir Veselonov Bozhilov has submitted a list of a total of 22 titles, all of which were published in international refereed and indexed journals with an impact factor. 15 publications are in Q1 journals, 3 are in Q2, 2 in Q4 , and 2 have SJR. The publications with numbers [1-5] in the submitted list were used as a proof of obtaining the PhD degree and the academic position "Senior Assistant Professor".

There are 3 letters: from Dr. Massimo Villata - President of the WEBT collaboration and Executive Officer for Publications, from Assoc. Prof. Evgeni Ovcharov, PhD - Head of the research team of the Department of Astronomy at the Faculty of Physics at Sofia University in the GASP-WEBT collaboration and the initiative CTA-MAGIC, and from Assoc. Prof. Stefan Lalkovski, PhD - head of the research team of the Faculty of Physics at Sofia University on the project "New gamma astronomy detectors - (NdeGRA), certifying the significant contributions of the candidate in the submitted publications. There is also 1 reference certifying an accepted for publication in Astronomy & Astrophysics article (#21 in the list).

The submitted documents from the applicant comply with the Bulgarian national requirements and the Rules for the conditions and the procedure for acquiring scientific degrees and occupying academic positions at Sofia University “St. Kliment Ohridski ”(PURPNSZADU).

2. Applicant’s data

Vladimir Veselinov Bozhilov graduated from the 9th French Language High School "A. De Lamartine" with a profile "French language and culture" in 2004. In 2008 he graduated with a bachelor's degree from the Faculty of Physics at Sofia University "St. Kliment Ohridski", where he received a master's degree in Astrophysics and Astronomy in 2009. He finished a PhD degree in Astrophysics and Astronomy in 2014 at the Faculty of Physics, Sofia University. Vladimir Bozhilov is the winner of the 2012 Alma Mater Annual Award for Contribution to Science.

Dr. Bozhilov has been a senior assistant at the Department of Astronomy since 2015. In the period (2015 - 2021) he is/was an instructor or assistant in 15 bachelor's and master's courses in the educational programs of the Department of Astronomy. He is/was the leader of: 6 projects related to the popularization of the scientific and educational activities of astronomers, meteorologists and geophysicists funded by the NSF of Sofia University; 1 educational project funded by the European Space Agency; and 1 project funded by the national program "Young Scientists and Postdoctoral Students". He is/was a member in 12 more research projects, funded by the Ministry of Education and Science, the NSF at the Ministry of Education and Science and the NSF at Sofia University.

As additional professional experience, Dr. Bozhilov presented in his CV an impressive list of activities. He is a former or current coordinator/contact person for several international programs, a current scientific expert at the Children's Science Center "Muzeiko", a scientific and later editor-in-chief of the BBC KNOWLEDGE magazine from 2012 to 2018. He is a co-author of two books, published in 2009 and 2010, editor of an astronomy textbook in 2014 - "Astronomy Today" (2014, Pearson Book), and a translator and scientific editor of 10 popular science books.

Dr. Bozhilov is also a strong science communicator. He won second place in the competition "Laboratory of FameLab" in 2010 and was a laureate in the international competition "Hall of FameLab" in 2014. He is the author of a series of popular lectures on Astronomy and Astrophysics for the general public and is a frequent guest in television and radio broadcasts (over 300 participation) related to the Universe - the processes and objects in it.

3. General description of the Scientific Publications and Achievements of the Applicant

Dr. Vladimir Bozhilov meets the minimum national requirements for occupying the academic position of «Associate professor», adopted by the "Rules for the Implementation of the Law for the Development of Academic Staff in the Republic of Bulgaria" (PPZRASRB) on 19.02.2019.

Indicators of the applicant (described in document #12):

- Group A - **scored 50 points** when min 50 points are required.
- Group V (Indicator 3 - 4) - **scored 100 points** (Indicator 4) when min 100 points are required.
- Group G (Indicators 5-10) – **scored 300 points** (Indicator 7) when min 200 points are required.
- Group D (Indicators 11) – **scored 412 points** when min 50 points are required.

The candidate also meets the Rules of Sofia University "St. Kliment Ohridski" for the academic position of „Associate Professor“ as well as the additional requirements of the Faculty of Physics accepted on 29.01.2020.

- At least 7 publications from Group 1 in indicators 3 and 4 – **has 18 in Group I.**
- At least 1 publications from Group 1 in the last 3 years - **has 7 publications.**
- At least 4 publications from Group 1 with significant contribution – **has 22 publications**
- At least 50 independent citations in refereed journals - **has 206 citations.**
- h-index at least 5 - **has h=8.**
- Teaching experience – at least 540 hours – **1038 hours of lectures for three years.**
- scientific guidance of at least 1 successfully defended (under)graduate – **has 13 graduates**
- guidance and/or participation in international and/or national projects – **20 projects.**

Analyzing the materials presented in the competition, I declare:

- (a) the scientific publications meet the minimal Bulgarian national requirements and as well the additional requirements of the Sofia University "St. Kliment Ohridski" for the the academic position "Associate Professor" in the scientific field and professional direction of the competition;
- (b) the presented scientific materials [6-22] do not repeat previous materials submitted for acquiring other scientific title or academic position;
- (c) there is no proven plagiarism in the scientific works submitted under the competition.

4. Characterization and Assessment of the Teaching Experience of the Applicant

Dr. Bozhilov has extensive teaching experience. He is the author and the instructor of 3 master's courses, and in the other two he is a co-author and instructor. In the time interval 2015 - 2020 he was an instructor/assistant in 10 more bachelor's and master's courses in the programs of the Department of Astronomy. From personal experience as a co-instructor in two master's courses I can say that Dr. Bozhilov is a dedicated and initiative teacher who is strongly committed to the students. This is proven by the 13 successfully defended graduates under his leadership.

5. Detailed Analysis of the Scientific Achievements of the Applicant According to the Submitted Documents

The scientific contributions of Dr. Bozhilov can be divided into the following areas:

- *Study of highly variable objects - blazars (publications [6-13], [16-20]).*

Blazars are one of the most actively studied objects in the Universe, due to the strong and rapid changes in the entire spectral range associated with features of the accretion disk and physical processes caused by the supermassive black hole and the existing jet. The publications regarding these objects are of great interest to the scientific community (evident from the number of citations of these publications - 160). On the other hand, the participation of a large number of international teams makes it possible to accumulate a large amount of data in a short period of time and the results to be published regularly.

The main part of the candidate's science work is related to the international partnership WEBT, in which the Department of Astronomy has been actively participating for years. The obtained scientific results from WEBT collaboration enrich the existing knowledge about the blazars CTA102 [6,7,9], Mkr42 [8,20], BL Lac [10,17], PKS 1510-089 [11], PG 1553 + 113 [12], OJ 248 [13], 4C 71.07 [16], 3C 279 [18], S4 0954 + 65 [19]. Dr. Bozhilov has a personal contribution in the observation campaigns, in the processing of the scientific data, as well as in their analysis. His significant contribution to the research and publications of the WEBT collaboration is declared in the letters from WEBT president Dr. Massimo Villata and the head of the research team from the Department of Astronomy Assoc. Prof. Ovcharov.

- *Development of new gamma-ray astronomy detectors (publications [14] and [15]).*

The New Gamma Astronomy Detectors (NdeGRA) project is dedicated to researching and developing a prototype of a new fast position-sensitive detector that could be used to create the next generation of gamma-ray telescopes. The initial results of the project work are related to the testing of a new scintillation detector with which to achieve a very good positional resolution and have the character of the introduction of new equipment in practice.

Another line in the scientific activity of Dr. Bozhilov is as part of the team of the NdeGRA project. His personal scientific contribution has been declared by the head of the scientific team of NdeGRA - Assoc. Prof. Dr. Lalkovski and includes participation in discussions of scientific work, methodology and scientific results. In addition, a significant contribution of the candidate is declared in the preparation and production of some of the elements in the experimental installation, and also in the preparation of the scientific publications.

Dr. Bozhilov is a co-author of a total of 48 scientific publications and has participated in 17 national and international conferences with talks and posters. He has h-index = 8. The results of his publications submitted for participation in the competition for "Associate Professor" are cited 206 times.

6. Critical Remarks

I have no critical remarks and no recommendations to the candidate.

7. Personal Impressions

I have known Dr. Bozhilov since the time of his PhD in the Department of Astronomy and I can say that he is a motivated and initiative scientist and communicator of science. My personal opinion is that he is an extremely organized colleague who is able to work in a team and I am sure that he is a person that can be relied on.

8. Conclusion on the Application

After reviewing the materials and scientific works presented in the present call and on the basis of the analysis of their importance and the scientific and applied contributions contained therein, I **confirm** that the scientific achievements meet the Bulgarian national requirements, and the corresponding Rules of Sofia University "St. Kliment Ohridski" for the academic position of „Associate Professor“ in the scientific field and professional direction of the competition. In particular, the applicant meets all the minimum national requirements in the professional field and no plagiarism has been detected in the scientific papers submitted at the competition.

I give my **positive** assessment of the application.

II. GENERAL CONCLUSION

Based on the above mentioned, I recommend to the Scientific Jury to propose to the Faculty Council of the Faculty of Physics at Sofia University "St. Kliment Ohridski" to select Dr. Vladimir Veselinov Bozhilov for the academic position "Associate Professor" in the professional field 4.1. Physical Sciences /Astronomy and Astrophysics/.

18.10.2021 г.

Jury member:

Assoc. Prof. Antoniya Valcheva