

**Reference Letter**  
**with regards to a competition for an academic position**  
**"Associate Professor"**  
**in a professional area of research 4.1. Physical sciences (Astronomy and astrophysics),**  
**for the needs of Sofia University "St. Kliment Ohridski "(Sofia University),**  
**Faculty of Physics, announced in SG no. 54 of 29.06.2021**

The reference letter was prepared by: **Assoc. Prof. Dr. Stefan Peshev Lalkovski - Faculty of Physics at Sofia University "St. Kliment Ohridski »**, in his capacity of a member of the scientific jury in the professional area 4.1. Physical Sciences (Astronomy and Astrophysics) under the competition according to Order № .... / ..... of the Rector of Sofia University.

Single candidate who has submitted documents for participation in the announced competition: chief assistant Dr. Vladimir Veselinov Bozhilov, Sofia University "St. Kliment Ohridski »

### **I. General description of the submitted materials**

#### **1. Details of the application**

The documents submitted for the competition by the candidate comply with the requirements of ZRASRB, PPZRASRB and the Regulations on the terms and conditions for acquiring scientific degrees and holding academic positions at Sofia University "St. Kliment Ohridski "(PURPNSZADSU). The list of publications of the candidate Dr. Vladimir Bozhilov contains a total of 22 titles in Bulgarian and foreign scientific publications and scientific forums. Eighty one other documents (in the form of official notes and certificates from the employer, project manager, financing organization or project assignor, references and feedback, awards and other relevant evidence) supporting the candidate's achievements have been also presented.

#### **2. Details of the candidate**

Vladimir Bozhilov graduated from the 9th French Language High School (Sofia) in 2004. From 2004 to 2009 he was a student at the Faculty of Physics at Sofia University, where he graduated with a Bachelor's degree in Physics and a Master's degree in Astrophysics and Astronomy. From 2010 to 2014 he was a doctoral student at the Department of Astronomy, where he successfully defended his doctoral dissertation on "Polarimetric and photometric studies of blazars" under the supervision of Assoc. Prof. Dr. E. Ovcharov. Dr. Bozhilov acts as the National contact person for the European Research Council of the Horizon Europe Framework Program; National Coordinator for Astronomy Education in Bulgaria at the Office for Education at the IAC; PR associate at NSF; Scientific expert at Muzeiko; Vladimir Bozhilov is an active member of the Cosmos branch of the Bulgarian Union of Physicists; He is a member of the International Astronomical Union, the European Astronomical Society, as well as the Physics Faculty Council, as well as the Commission for Communication Strategy at the Faculty of Physics at Sofia University. V. Bozhilov has significant teaching experience. He is the author and co-author of 4 courses and is teaching 11 courses for students from the Bachelor's and Master's programs at the Faculty of Physics. He has tutored 13 successful graduates. In his creative journey so far, Dr Bozhilov has participated in a total of 19 projects with national and international funding, 8 of which he has led. Dr. Bozhilov is fluent in English and French and is an active communicator of science with significant media experience. He has participated in 24 national and international events. He is the author and co-author of two books. He is the translator and editor of 10 scientific and popular science publications. The scientific publications in which he is an author or co-author are 48.

#### **3. General characteristics of the scientific works and achievements of the candidate**

Much of Dr. Bozhilov's research is focused on the study of one of the most dynamic and current areas in modern astrophysics, namely the study of active galactic nuclei - quasars and blazars. The scientific research has been conducted with data from NAO Rozhen at the Executive Agency at the Bulgarian Academy of Sciences and the Plana Student Astronomical Observatory. Results of these studies have been published in 8 prestigious journals. The candidate participates as a co-author on relevant topics in a paper published in the "Nature" journal. In recent years, V. Bozhilov has participated in several projects for the development of new technologies for registration of high-energy electromagnetic radiation. Undoubtedly, the research conducted by Dr. Bozhilov and collaborators is on the front line of science. The presented list of scientific works and pedagogical activity covers the minimum national requirements (under Art. 2b, para. 2 and 3 of ZRASRB), as well as the additional requirements of the Faculty of Physics at Sofia University "St. Kliment Ohridski for holding the academic position" Associate Professor "in the scientific field and professional field of the competition, namely the candidate

- holds a scientific-educational degree "doctor"
- has at least two years of full teaching utilization
- has a minimum of 7 Group I publications, one of which has been published in the last 3 years
- possess  $h\text{-index} \geq 5$
- has provided scientific guidance of at least one successful graduate
- has managed and participated in national and international projects

The scientific papers submitted by the candidate do not duplicate those of previous procedures for acquiring a scientific title and academic position;  
There is no legally proven plagiarism in the scientific papers submitted at the competition.

#### **4. Characteristics and evaluation of the candidate's teaching activity**

Dr. Bozhilov has solid experience as a teacher. He actively participates both in the development of new courses and in the teaching of already approved programs of the Bachelor's and Master's programs of the Faculty of Physics. He is the supervisor of many diploma theses.

Dr. Bozhilov is the initiator of the SpaceEdu4BG project and is its leader. The SpaceEdu4BG project is funded by ESA and aims to develop 9 courses for FZF educational programs. Within the framework of this project, for the first time in Bulgaria, courses are being developed in cooperation with the Agency.

#### **5. Content analysis of the scientific and scientific-applied achievements of the candidate contained in the materials for participation in the competition**

Dr. Bozhilov is the author and co-author of 22 articles published in full text in renowned international journals with impact factor, 8 refereed articles in journals without impact factor and 3 articles from conferences published in full text. Publications 1-3, 5-14 and 16-20 of the list of publications are related to the study of active galactic nuclei through observations in the optical, radio frequency and infrared ranges of the electromagnetic spectrum. Publications 14 and 15 are related to the development of new technologies for recording gamma quanta from orbital observatories. Works 21 and 22 are related to the development of the Cherenkov Observatory CTA. The participation of the Bulgarian team from the Department of Astronomy is supported by the National Roadmap for Scientific Infrastructure of the Republic of Bulgaria (2017-2023) The total number of observed citations as of July 2021 is 206.

#### **6. Critical remarks and recommendations**

None

## **7. Personal impressions of the candidate**

I have known Dr. Bozhilov for 5 years - first in his capacity as Editor-in-Chief of BBC Znanie magazine, and then in his role as a lecturer at the Faculty of Physics. We have worked on my presentations at the Astronomy Club, which my colleagues from the Astronomy Department organize. Since December 2017, we have been working on the NDeGRA project, in the framework of which we study the characteristics of scintillation detectors, which are of potential interest for astronomical observations in the high-energy register of the electromagnetic spectrum. We have been working on the SpaceEdu4BG project for about a year now.

Dr. Bozhilov has also actively participated in the Second National Forum for Modern Space Research.

My impressions of Dr. Bozhilov that he is a dedicated young researcher who lives with the problems of the community. Vladi is an incorrigible optimist who knows how to infect others with his optimism.

I believe that Dr. Bozhilov's experience goes beyond the basic requirements of the Law on assignment of academic positions and the regulations for its applications.

## **8. Conclusion on the application**

After getting acquainted with the materials and scientific works presented in the competition and on the basis of the analysis of their significance and the scientific and applied contributions contained in them, I confirm that the scientific achievements meet the requirements of ZRASRB, the Regulations for its application and the respective Regulations of Sofia University "St. Kliment Ohridski" for assigning the candidate at the academic position "Associate Professor" in the scientific field and professional direction of the competition; the candidate satisfies the minimum national requirements in the professional field; no plagiarism was found in the scientific papers submitted for the competition.

I give my positive assessment of the candidacy.

## **II. General Conclusion**


Based on the above, I recommend to the scientific jury that it proposes to the competent authority for the selection of the Faculty of Physics at Sofia University "St. Kliment Ohridski" to approve Dr. Vladimir Bozhilov for the academic position of "Associate Professor" in 4.1. Physical sciences (Astronomy and Astrophysics) research area.

29.10 2021

Signature: .....

(Assoc. Prof. Dr. Stefan Lalkovski)

This document is signed by



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