



MINISTER OF EDUCATION AND SCIENCE

DN.WEN.702.50.2022.2022Warsaw

, July 19, 2022.

DECISION NO. 25/601/2022

Pursuant to Article 269 (1) of the Act of July 20, 2018. - *Law on Higher Education and Science* (Journal of Laws of 2022, item 574, as amended) and Article 104 of the Act of June 14, 1960 *Code of Administrative Procedure* (Journal of Laws of 2021, item 735, as amended).

grant

The Nicolaus Copernicus Astronomical Center of the Polish Academy of Sciences was awarded the A+ scientific category in the discipline of astronomy.

The category is granted for the period until the date on which the decision to grant a scientific category under the next evaluation becomes final. In the event that an entity is not included in the next evaluation in a given discipline, it loses its scientific category at the end of the year in which this evaluation began.

Justification:

In accordance with Article 274(1)(1) of the Act of July 20, 2018. - *Law on Higher Education and Science* (Journal of Laws of 2022, item 574, as amended), hereinafter referred to as the "Act," the evaluation of the quality of scientific activity was conducted by the Commission for the Evaluation of Science, hereinafter referred to as the "Commission," which is a consultative and advisory body of the Minister responsible for higher education and science, hereinafter referred to as the "Minister." The Commission conducted the evaluation on the basis of the information contained in the POL-on Integrated Information System for Higher Education and Science, hereinafter referred to as the "POL-on system," concerning the activities of the Nicolaus Copernicus Astronomical Center of the Polish Academy of Sciences, hereinafter referred to as the "Center".

"Entity", as of December 31, 2021, available in this system as of January 31, 2022. In accordance with Article 324(1) of the Act of July 3, 2018. *Introductory Provisions of the Law*

- *Law on Higher Education and Science* (Journal of Laws, item 1669, as amended), hereinafter referred to as the "Introductory Law," the evaluation covered the years 2017-2021.

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The types of scientific and artistic achievements taken into account in the evaluation, the detailed criteria and method of evaluating achievements, the method of determining the scientific category, and the method of conducting the evaluation are specified in the Regulation of the Minister of Science and Higher Education of February 22, 2019 *on the evaluation of the quality of scientific activity* (Journal of Laws of 2022, item 661), hereinafter referred to as the "Regulation".

According to Article 267 (1) of the Law, the basic criteria for evaluation are:

- 1) Criterion I - the scientific or artistic level of the scientific activity conducted;
- 2) Criterion II - financial effects of scientific research and development work;
- 3) Criterion III - the impact of scientific activity on the functioning of society and the economy.

The Commission separately evaluated the Entity's scientific activity in the scientific discipline of astronomy in each of the above criteria, and the opinions and positions were entered into the POL-on system, in which the Entity reported its achievements, in the SEDN module - System for the Evaluation of Scientific Achievements, dedicated to this purpose. Based on the results of the evaluation, the Commission adopted Resolution No. 22/2022 of June 14, 2022, in which it proposed to grant the Entity in the discipline of astronomy the scientific category A+. On June 15, 2022. The Chairman of the Commission forwarded the aforementioned resolution to the Minister.

The Minister reviewed the scientific achievements of the Entity and the results of the Commission's assessment of the quality of the Entity's scientific activities in the discipline of astronomy, and concluded as follows.

According to Article 265(4) of the Law, evaluation shall be carried out within a discipline in an entity employing, as of December 31 of the most recent year preceding the year in which the evaluation is carried out, at least 12 employees engaged in scientific activities in the discipline, on a full-time basis related to the conduct of scientific activities in the discipline.

Based on the data entered by the Entity into the POL-on system, it was determined that as of December 31, 2021. The Entity employed 65.05 persons engaged in scientific activities in the discipline of astronomy, on a full-time basis related to the conduct of scientific activities in this discipline, and therefore - in accordance with Article 265(4), in connection with Article 265(1) of the Act - scientific activities conducted at the Entity in this discipline were subject to evaluation by law.

In order to determine the number of achievements subject to evaluation in each criterion, the number of employees conducting scientific activity in the Entity in the discipline of astronomy, who indicated this discipline in the statement referred to in Article 343(7) of the Act and submitted the statement referred to in Article 265(5) of the Act, hereinafter referred to as the "N-number", was determined on the basis of data from the POL-on system.

The number N was determined as the arithmetic average of the number of such employees in each year of the period covered by the evaluation, on a full-time basis, taking into account the share of working time related to the conduct of scientific activities in the discipline. It should be noted that the number of persons conducting scientific activity in the discipline of astronomy in the Entity in 2017 was determined, in accordance with § 34a of the Ordinance, *on the basis of the* number of employees counted as of December 31, 2017 under the provisions of the Act of April 30, 2010 *on the principles of financing science* (Journal of Laws of 2018, item 87) among those participating in the implementation of scientific research or development work, taking into account the disciplines indicated by these employees in the statement referred to in Article 219, paragraph 11 of the Introductory Law. The number of persons conducting scientific activities in a given scientific discipline in 2017 did not include scientific-technical and engineering-technical employees. The time share of a person conducting scientific activity in a given discipline in 2017 was determined as of December 31, 2018.

According to the data in the POL-on system, the number of these employees conducting scientific activities in the Entity in the discipline of astronomy as of December 31 in the individual years covered by the evaluation was:

w 2017. - 50,75,

w 2018. - 58,5,

w 2019. - 63,55,

w 2020. - 63,05,

w 2021. - 65,05.

Based on the above data, the number was found to be N=60.18.

The scientific level of conducted scientific activity (criterion I) is evaluated taking into account the scientific achievements indicated in § 8 of the regulation, i.e. scientific articles, scientific monographs, chapters in scientific monographs and scientific editors of these monographs, granted patents for inventions, protection rights for utility models and exclusive breeder's rights to plant varieties.

According to § 16(1) of the Ordinance, for each scientific publication, the unit share of each author in the publication is determined, hereinafter referred to as the "unit share." The method of determining the unit share is specified in § 16(2) and (3) of the Regulation. In the case of a multi-author publication, the unit share depends on the total point value of the scientific publication, the conversion point value of the scientific publication, determined in accordance with the provisions of § 13-15 of the Ordinance, as well as the number of co-authors who are persons referred to in § 11(1) of the Ordinance, who authorized the evaluated entity to list a scientific publication in a given scientific discipline.

According to § 17(5) of the regulation, the sum of unit shares in scientific publications considered for evaluation in the scientific discipline of astronomy could not be greater than 3 times the number N, or **180.54**.

In accordance with § 17(8)(1) of the Ordinance, this value was reduced by 3, since one of the employees conducting scientific activities in the discipline of astronomy did not authorize the Entity to show for evaluation purposes in this discipline any of the scientific publications referred to in § 8(1) or (3) or § 12(6) of the Ordinance.

Accordingly, no more than **177.54 unit shares** in scientific publications authored or co-authored by persons referred to in § 11(1) of the Regulation could be included in the Entity's evaluation under Criterion I.

After reviewing the Commission's evaluation, the Minister found that the unit shares of the individual authors of the publications included in the evaluation, as well as the point value of these shares, were calculated correctly, in accordance with the Regulation. In determining the point value, Article 324 (2-2b) of the Introductory Law and the relevant provisions of the Ordinance were applied, taking into account the relevant lists of scientific journals and publishing houses that publish peer-reviewed scientific monographs, viz:

- for scientific articles published in final form in 2017 and 2018 - the list of scientific journals announced by the announcement of the Minister of Science and Higher Education dated January 25, 2017,
- for scientific articles published in final form in 2019-2021 - the latest list of scientific journals and peer-reviewed materials from international conferences, compiled and made available by the Minister during the evaluation period, i.e., the list announced by the communication of the Minister of Education and Science dated December 1, 2021, as amended and corrected on December 21, 2021,

- in the case of scientific monographs published between 2017 and 2021 - the latest list of publishing houses publishing peer-reviewed scientific monographs, compiled and made available by the Minister during the evaluation period, i.e. the list announced by the Communication of the Minister of Education and Science dated July 22, 2021.

On the basis of the information entered into the POL-on system, the optimization algorithm referred to in § 24(1) of the Regulation selected the achievements constituting the basis for the evaluation in a manner that ensures the maximum point score, taking into account the conditions specified in § 17, § 18 and § 34-36. On February 10, 2022. The entity received in the POL-on system a list of achievements selected as a result of the optimization algorithm. In accordance with § 24(3) of the Regulation, the head of the Entity was allowed to indicate for evaluation achievements other than those selected as a result of the optimization algorithm. The Entity did not use this option. Only scientific achievements indicated in the manner described above were included in the evaluation in criterion I.

Achievements identified by the Entity for evaluation in the discipline of astronomy were evaluated by the Commission, which posted its position with regard to individual achievements in the POL-on system, in the SEDN module.

After reviewing the information on the Entity's publication achievements submitted for evaluation and after a detailed analysis of the results of the Commission's evaluation, the Minister fully shared the Commission's position. The Minister concluded that the scores for the achievements accepted by the Commission were determined correctly, in accordance with the aforementioned regulations.

Accordingly, the number of points for the unit shares of publications included in the evaluation ultimately amounted to **22,758 points**.

In addition to scientific publications, granted patents for inventions, protection rights for utility models and exclusive breeder's rights for plant varieties are also taken into account in the evaluation of the scientific level of the activity carried out (§ 8(5) of the Regulation). According to § 11(4) of the Regulation, the number of these achievements taken into account in the evaluation cannot be greater than N. The entity showed 1 utility model, but did not report patents or other protective rights. The Commission took the reported utility model into account, awarding **30 points** for it.

Accordingly, a total of **22,788 points** were awarded to the Entity in the discipline of astronomy as part of the evaluation in criterion I.

The Entity's score in criterion I of the evaluation, determined in accordance with the relationship specified in § 21 of the regulation, was $Q_I = 378.66$.

Criterion II "Financial effects of scientific research and development work" takes into account projects referred to in § 22(1)(1) and (2) of the Regulation, as well as revenues from commercialization of the results of scientific research or development work or know-how related to these results, and revenues from research services provided on behalf of entities not belonging to the system of higher education and science. Of the achievements indicated by the Entity in the POL-on system, the Commission gave a positive opinion to 35 projects, awarding **8,325.68 points**.

In determining the scores, the point conversion factors specified in Paragraph 22(4) of the Ordinance were applied, taking into account the increases in scores resulting from Paragraph 6.

In the POL-on system, in which the Entity reported on all implemented projects, the SEDN module provided the Entity with access to a detailed list of included projects along with the score for each project, resulting from the aforementioned provisions of the Regulation.

The entity did not submit for evaluation revenues from the commercialization of research or development results or know-how related to these results, but reported 8 research services provided on behalf of entities not belonging to the higher education and science system.

The Commission took into account all of the above achievements reported by the Entity.

Pursuant to § 22(4)(3) of the Ordinance, a conversion rate of 1 point per N10,000 in revenue was applied in determining the scores for the above achievements. At the same time, the number of points that the entity could obtain for these achievements could not exceed 10 times the number of N. Accordingly, the Entity received **72.68 points for the aforementioned revenues**.

In total, for the Entity's achievements under criterion II of the evaluation, the following were awarded

8,398.36 points.

Subject's score in criterion II of the evaluation, determined in accordance with the relationship specified

§ Paragraph 22(9) of the regulation, was $Q_{II} = 139.55$.

As part of the evaluation under criterion III "Impact of scientific activity on the functioning of society and the economy", in accordance with § 23(3) of the Regulation, the Entity was required to submit 2 impact descriptions for evaluation. The Entity submitted the required

impact descriptions and evidence of impact - these were subject to evaluation by two experts appointed by the Minister at the request of the Commission Chairman.

Individual impact descriptions were evaluated by experts as follows:

1) The impact of CAMK PAN on the development of the space industry in Poland through the implementation of scientific space missions.

Score: 0 points (0 points for reach of impact and 0 points for significance of impact).

Experts pointed out that the Entity conducts world-class research in space observation. The Entity participates in scientific satellite observation programs, domestic and international. According to the experts, scientific achievements confirm that the Entity is an excellent scientific center in the field of satellite scientific observations - the Entity participates in the conceptual and development work of satellites and in the observations themselves.

According to the experts, the evidence of impact provided confirms the Entity's involvement in scientific research, while it does not indicate the impact of this research on the social and economic environment. The NIK report cited as impact evidence No. 1 lists only scientific achievements and programs as achievements of the Entity. According to the experts, it is clear from the scientific article (scientific achievement No. 1) about the BRITE-PL mission that all elements for the mission were purchased from external companies. Proof of impact No. 2 lists the Subject's activity areas and projects. The experts found the list to be very vague - the activity areas do not specify what activities are being undertaken, other than scientific research (space junk is the second, separate impact effect claimed by the Entity). According to experts, the space sector projects listed are exclusively research projects. Impact Exhibit 3 is the result of the tender process of the Polish Space Agency for conceptual services. The Entity was selected as coordinator and contractor in task 1) of developing a project concept in the area of space research (in science-only issues). In the other tasks of the tender proceedings, which have or may have some application components, the Entity did not participate (was not selected in the tender). According to experts, proof of impact No. 3 does not indicate that the Entity has achieved social impact outside the field of scientific research. Impact proof No. 4, on the other hand, is an interview describing the Subject's research and scientific projects, in which, according to the experts, no measurable socio-economic impact outside the field of scientific research was demonstrated and cited. The report on space research (proof of impact No. 5) lists the Entity as one of the members of the Polish delegation to the ESA and as a contractor for NCN scientific projects. The experts stated that although the previous impact evidence shows that the Entity participates in ESA scientific missions, it does not mention

however, any example of a specific activity of the Entity outside the scientific sector. The paragraph on interdisciplinarity states: "The CAMK ground station has additional receivers that can be used to communicate with other facilities." According to the experts, they are therefore not currently an element of impact to be assessed.

The experts concluded that the impact evidence presented did not indicate the existence of the claimed social impact of the Subject's scientific research in the discipline of astronomy on the development of the space industry beyond the scientific sector.

According to experts, research in the field of observational astronomy is typically basic research. The construction of observation satellites requires the use of advanced electronic, material, mechanical solutions, which does not mean that the research itself is interdisciplinary.

The experts therefore concluded that the interdisciplinarity of the scientific research or development work was not crucial to the creation of the impact in question.

2) Participation of CAMK PAN in monitoring near-space threats and tracking space junk.

Score: 60 points, including 50 points for impact reach and 10 points for impact significance.

The experts pointed out that the Subject conducts astronomical observations with the SOLARIS network of telescopes. According to the experts, the achievements submitted for evaluation indicate the significant involvement of the Subject's astronomers in the two scientific projects described.

In light of the evidence of impact presented, the experts distinguished the following direct effects: the Subject's participation in the usable EU SST consortium and the Subject's participation as a contractor in the OmniSky and OmniSkyNET observation development projects. Monitoring of threats in space takes place on a European or even global scale. It is coordinated by European agencies rather than private entities. However, this activity itself is not, in the experts' opinion, a research activity. The experts assessed that the very participation of the Entity as a contractor in the said project or consortium constitutes an impact on the socio-economic environment. In light of the impact evidence presented, the experts assessed the significance of the social impact of "CAMK's participation in the SST program" as limited. The work on the utilitarian use of the bolide network is, in their opinion, development work, of local scope. At this stage, they are only concerned with the actors involved, and the significance of the social impact is marginal.

Experts pointed out that scientific research in observational astronomy is basic research - it uses technological advances from other fields and disciplines (computer science, optics, mechanical engineering), which does not mean interdisciplinary activity.

The experts therefore concluded that the interdisciplinarity of the scientific research or development work was not crucial to the creation of the impact in question.

Accordingly, the Subject's score in evaluation criterion III, determined - in accordance with Paragraph 23(11) of the Regulation - as the arithmetic average of the Subject's impact description scores, is $Q_{III} = 30$.

In accordance with Paragraph 27(1) of the Regulation, the Commission determined the scientific category proposed for the Entity in the scientific discipline of astronomy on the basis of a comparison of the grades awarded to it, under the various evaluation criteria, with the corresponding reference values for scientific categories A, B+ and B, using the algorithm set forth in Annex 2 to the Regulation. For the comparison, the threshold of full surpassing G, set by the Commission by Resolution No. 15/2022 of April 27, 2022, at 0.3, was used.

Reference values means a set of reference scoring values defined for each of the scientific activity evaluation criteria for qualifying scientific activity entities within a discipline into scientific categories A, B+, B or C.

Taking into account the rationale set forth in Paragraph 26(2) of the Ordinance, the Commission determined the proposed reference values for each scientific and artistic discipline by Resolution No. 15/2022 of April 27, 2022. The Chairman of the Commission presented a set of proposed reference values to the Minister. Based on the above proposal, taking into account the specifics of conducting scientific activities in these disciplines, on May 13, 2022. The Minister established reference values for scientific categories A, B+ and B for individual scientific and artistic disciplines.

For the scientific discipline of astronomy, the reference values are:

Criterion I "Scientific or artistic level of conducted scientific activity" $O_{IA} = 339.222$

points, $O_{IB+} = 276.54$ points, $O_{IB} = 147.488$ points,

Criterion II "Financial effects of scientific research and development

work" $O_{IIA} = 27.582$ points, $O_{IIB+} = 22.485$ points, $O_{IIB} = 11.992$

points,

Criterion III "Impact of scientific activity on the functioning of society and the economy"

$O_{III A} = 46$ points, $O_{III B+} = 37.5$ points, $O_{III B} = 20$ points.

The total score of the comparison of the marks that the Entity received in each criterion for conducting scientific activities in the discipline of astronomy with each of the corresponding reference values was calculated taking into account the weights assigned to each evaluation criterion - in accordance with Table 2 in Annex 2 to the Regulation.

For the discipline of astronomy, these weights are:

- 1) Criterion I "Scientific or artistic level of the scientific activity carried out" - 60;
- 2) Criterion II "Financial effects of scientific research and development work" - 20;
- 3) Criterion III "Impact of scientific activity on the functioning of society and the economy". - 20.

The comparison of the scores obtained by the Entity in the discipline of astronomy according to the above weights with the reference values for scientific category A gave a total point score of 23.4, the comparison with the reference values for scientific category B+ gave a total point score of 63.4, and the comparison with the reference values for scientific category B gave a total point score of 100. The point scores obtained, in accordance with § 27 of the Regulation, formed the basis for the inclusion of the Entity's scientific activities in the discipline of astronomy in scientific category A.

In order to select the evaluated entities whose scientific activities carried out within the framework of individual scientific and artistic disciplines will be classified as scientific category A+, in accordance with § 28(3) of the Regulation, the Commission established in each discipline of science and art a percentage threshold for qualifying candidates. The value of the percentage threshold depended on the position of Polish science in the discipline in such a way that a higher position in the international Scimago Journal & Country Rank (SJR) database resulted in a lower value of the percentage threshold. For the discipline of astronomy, the Commission, by Resolution No. 17/2022 of May 9, 2022, set the percentage threshold for selecting candidates for the A+ category at 86%. The rating of the entity's performance under criterion I of the evaluation is 86% of the rating of the highest rated entity in criterion I in this

discipline, which amounted to 439.26. In view of the above, the Commission concluded that the Entity's scientific activities in the discipline of astronomy qualify it to apply for the scientific category A+, and therefore the Entity was subject to the additional expert evaluation referred to in § 28 of the Regulation.

The Commission conducted, in accordance with § 28(4) of the Ordinance, an additional evaluation of the Entity's scientific activity on the basis of an analysis of the results of scientific activity, taking into account the international significance of scientific or artistic achievements, their impact on the development of civilization, including the development of culture and art, in comparison with the quality and effects of scientific activity carried out within this discipline by leading European scientific centers of similar scientific potential. The evaluation was carried out by two experts, including one from a significant foreign scientific center, appointed by the Minister at the request of the Commission Chairman. The evaluation was carried out taking into account the parameters set forth in § 28(5) of the Regulation. It should be noted that, in accordance with § 28(7) of the Regulation, each of the experts evaluating the Entity could express a positive or negative opinion on the inclusion of the scientific activity carried out by the Entity within the evaluated scientific or artistic discipline in the A+ scientific category.

The entity received positive evaluations from both experts. Justification of the experts' evaluations was made available in the POL-on system, in the SEDN module.

Based on expert evaluations and the analysis of achievements, the Commission concluded that the Entity's performance in the discipline of astronomy warranted the award of an A+ category.

After reviewing the case, the Minister found that the evaluation was carried out by the Commission in accordance with the provisions of the Act and the Ordinance, accepted in full the results of the evaluation of the scientific achievements of the Entity in the evaluated discipline, and did not comment on the results. In the Minister's opinion, the result of the evaluation allows the Nicolaus Copernicus Astronomical Center of the Polish Academy of Sciences to be granted the scientific category A+ in the discipline of astronomy.

In view of the above, it was decided as in the operative part.

On the authority of

**MINISTER OF EDUCATION AND
SCIENCE**

Izabela Stępień

Director

Receives:

- 1) Subject;
- 2) a/a.

Reminder:

Pursuant to Article 269(4) of the Law of July 20, 2018. - *Law on Higher Education and Science* (Journal of Laws of 2022, item 574, as amended), a party dissatisfied with the decision may apply to the Minister of Education and Science for reconsideration of the case, within 30 days from the date of delivery of the decision.

Pursuant to Article 127a of the Act of June 14, 1960, the Administrative Procedure Code. - *Code of Administrative Procedure* (Journal of Laws of 2021, item 735, as amended), during the time limit for filing a motion for reconsideration, a party may waive the right to file such motion. As of the date of delivery to the Minister of Education and Science of the statement of waiver of the right to file an application for reconsideration, the decision shall become final and legally binding.

Pursuant to Article 52 § 3 and 53 § 1 of the Act of August 30, 2002. *Law on Proceedings before Administrative Courts* (Journal of Laws of 2022, item 329 and 655), in connection with Article 107 § 1 item 9 of the Act of June 14, 1960, *Code of Administrative Procedure*, if a party has the right to apply to the body that issued the decision with a request for reconsideration of the case, the party may file a complaint against the decision without exercising this right. A party may file a complaint with the Provincial Administrative Court in Warsaw, through the Minister of Education and Science, within 30 days from the date of delivery of this decision.

Pursuant to § 2(6) of the Regulation of the Council of Ministers of December 16, 2003 *on the amount of and detailed rules for collecting entry fees in proceedings before administrative courts* (Journal of Laws 2021, item 535), a fixed entry fee of PLN 200 applies in the case of filing a complaint against a decision. According to Article 220 § 1 of the Law - *Law on Proceedings before Administrative Courts*, the Court will not take any action as a result of a letter on which the due fee is not paid. In this case, the chairman

shall call upon the petitioner to pay the fee within seven days from the date of service of the summons, on pain of leaving the letter unprocessed.

At the same time, I would like to inform you that, in accordance with Article 243 § 1 and Article 244 § 1 of the Law - *Law on Proceedings before Administrative Courts*, the right of assistance may be granted to a party upon his application filed before the initiation of the proceedings or in the course of the proceedings. This request is free of court fees. The right of assistance includes exemption from court costs and the appointment of a lawyer, legal counsel, tax advisor or patent agent. Detailed rules of the right to assistance are regulated by the provisions contained in Articles 243-262 of the Law - *Law on Proceedings before Administrative Courts*.