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BUCHAREST ASTRONOMICAL OBSERVATORY IN THE BLAZE OF WORLD WAR II

SORIN MARIN[1,2]

[1]*Astronomical Institute of the Romanian Academy,*
Str. Cutitul de Argint 5, 040557 Bucharest, Romania
[2]*Faculty of Geography, University of Bucharest,*
90 Panduri Street, Sector 5, 050663, Bucharest, Romania
Email*: sorin.marin@astro.ro*

Abstract. The activities carried out at the Bucharest Astronomical Observatory during the tragic years of World War II, along with the biographies of its staff from that period, are poorly covered in the specialized literature. A significant reason for this is the decrease in scientific work during that time due to the social and historical circumstances caused by the war in Romania. The reduction in activities at the observatory during World War II resulted in fewer institutional records, leading to diminished coverage in secondary sources. This study aims to explore these previously uncharted areas of research, shedding light on important facts and personal stories of dignity, drama, and survival. The actions of Romanian astronomers during this period extended beyond Romania's borders, both geographically and in significance, as they worked to safeguard the patrimony of the Astronomical Observatory of Odessa in Soviet territory. The involvement of Romanian astronomers in the Holocaust is also addressed in this study. Additionally, the impact of the war was exacerbated by the devastating 1940 earthquake and the 1944 Allied air raids, both of which inflicted varying degrees of damage on the scientific and administrative buildings of the Bucharest Astronomical Observatory. This paper seeks to discuss the key issues that shaped the fate of this important Romanian scientific institution during the dark years of World War II.

Key words: Romanian astronomy, Soviet Union astronomy, Gheorghe Demetrescu, Călin Popovici, Constantin Popovici, Constantin Drâmbă, Konstantin Pokrovsky, Mozes Moscovici, Vintilă Șiadbei, Nicolae Dinulescu, Holocaust, World War II.

1. INTRODUCTION

The outbreak of World War II in Europe did not initially lead to immediate changes in the structure and dynamics of the activities carried out at the Bucharest Astronomical Observatory. A few days after Nazi Germany's invasion of Poland on September 1st, 1939, Romania declared neutrality.

In the context of wartime realities, this research seeks to answer the following questions regarding the factors, circumstances, and developments that shaped the fate of the Bucharest Astronomical Observatory, its staff, and its institutional partners during World War II:

- What was the institutional and scientific landscape of the Bucharest Astronomical Observatory before the outbreak of World War II?

- What caused the radical shift in Romania's national and international policies, which also affected the Bucharest Astronomical Observatory?

- What were the main intrusions of the dictatorial regimes in Romania on the activities of the Bucharest Astronomical Observatory during World War II, and what measures were taken in response?

- How did the leadership of the Bucharest Astronomical Observatory address the policies and realities of the Holocaust in Romania?

- How did the astronomers of the Bucharest Astronomical Observatory contribute to the preservation of the patrimony of the Odessa Astronomical Observatory?

- What was the impact of the war on the personnel and material assets of the Bucharest Astronomical Observatory?

- How did the biographical trajectories of the astronomers discussed in this study evolve after World War II?

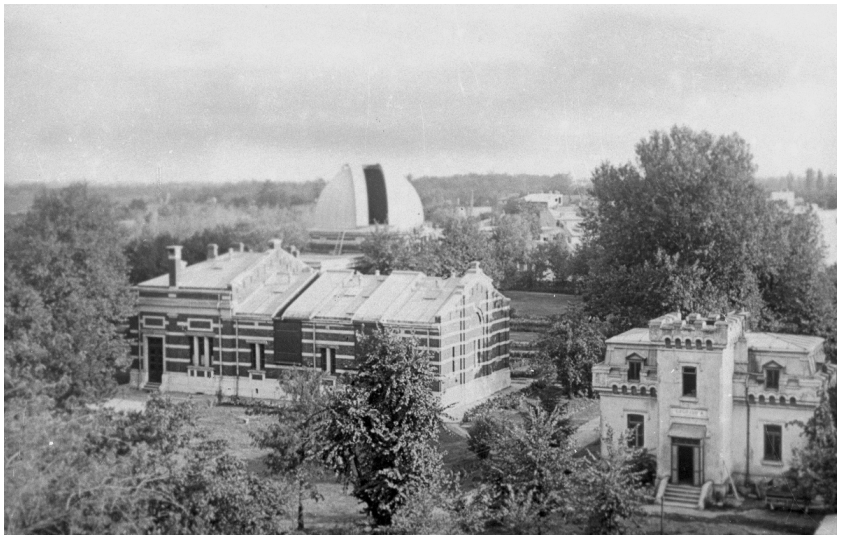


Fig. 1 – Bucharest Astronomical Observatory (1920s photo).
An historical photo taken from the tower of the Sun Building.

In the historical literature on Romanian astronomy, Magda Stavinschi has published a series of fundamental books: *Astronomy and the Romanian Academy* (2016), *Nicolae Coculescu, a Life Among the Stars* (2017), *Constantin Pârvulescu: A Hero and Researcher of the Sky* (2015), *The Astronomer Nicolae Donici: Deciphered Enigmas* (2015), and *The Sky Seen from the Moldovan Regional Lands* (2024). These works include important information on the history of Romanian astronomy, con-

tributing to the knowledge and understanding of the realities of the Bucharest Astronomical Observatory during the 20th Century.

In 2007, a group of scientists composed of Cristiana Dumitrache, Nedelia A. Popescu, Marian Doru Şuran, and Vasile Mioc published a retrospective volume of articles titled *Fifty Years of Romanian Astrophysics* (Dumitrache *et al.*, 2007). Also, another important book in this field was published in 2008, authored by Vasile Mioc, Cristiana Dumitrache, and Nedelia A. Popescu (eds.), titled *Exploring the Solar System and the Universe* (Mioc *et al.*, 2008). These reference works, which also present historical information in the field of exact sciences – astronomy, astrophysics, physics, mathematics, computer science, etc. – begin with the activities of Romanian astronomers after World War II.

Historical information about the heritage of the Bucharest Astronomical Observatory can also be found in scientific articles published over time, from those contemporary with the establishment of this heritage to those of the present day. Among these, in 1959, an article titled *The Development of the Bucharest Astronomical Observatory During the Years of Popular Democracy* appeared in the journal *Studies and Research in Astronomy and Seismology* (Year IV, No. 2). In 1962, Ioan Curea and C. Jura published the article *The Construction of a Metal Dome for the Observatory* in the same journal (Year VII, No. 2). Also in 1962, Constantin Drâmbă published the article *The Problems of the Astronomy Section and Achievements in the Period 1951–1961* in the same journal. These articles are important for historical research as they show the scientific context, the profile of the personalities of Romanian astronomy of that era, the fields and research directions pursued annually or over several years, as well as the material base used at the Bucharest Astronomical Observatory during this period.

After 1990, Magda Stavinschi was the leading scholar who published historical articles dedicated to Romanian astronomy, such as *A Century of Romanian Astronomy* (*Science and Technology*, Year LX, No. 1–2, January–February 2008), the study *Celestial History Between Romania and France* (2012) and *The History of Romanian Astronomy* (2014).

To this synthesis I also add my own article, *Laying the Foundations of Contemporary Romanian Astronomy*, published in *Romanian Astronomical Journal* (Marin, 2017).

2. THEORETICAL FRAMEWORK

This study adopts a microhistorical approach to examine the Bucharest Astronomical Observatory's activities during World War II, focusing on the institution's responses to political and military pressures. By concentrating on key figures like

Gheorghe Demetrescu and Constantin Popovici, the study highlights intellectual resistance and institutional resistance as central themes. Both forms of resistance were evident in the leadership of the Bucharest Astronomical Observatory, particularly in their commitment to protecting human lives and preserving national and foreign astronomical patrimony from the war's impact. In the same respect, the directors' actions during the Holocaust in Romania revealed their moral stance against discriminatory policies.

In addition, this study addresses the theme of survival strategies in a dire context from which no one could escape – whether facing assassination, death in battle on the Soviet front, air raids, or, in one case, the Holocaust.

Alongside these concepts, this localized study incorporates others such as cultural memory, not only in Romania but also in today's Ukraine, as the actions of Romanian astronomers on Ukrainian territory were remembered in a specific way, which this study seeks to recover.

Among the Romanian and Soviet institutional leaders discussed in this article, various forms of compromise with wartime authorities were identified and analyzed. These leaders made decisions that still respected their personal values and ethics, while ensuring the protection of their institutions – a concept closely related to patrimonial preservation, which is also explored in this study.

3. METHODOLOGY

3.1. RESEARCH FOCUS

This article examines the complex political, geopolitical, legal, economic, social, cultural and military factors that influenced the Bucharest Astronomical Observatory during World War II, and their subsequent implications for Odessa Astronomical Observatory. Central to this study is an exploration of human experiences and destinies, as well as the preservation of patrimonial assets. The analysis is based on primary documents, with discussions framed within the context of secondary literature.

3.2. DATA SOURCES AND PROCESSING

This study is based on archival and secondary literature research, utilizing sources from the Astronomical Institute of the Romanian Academy's archive as well as Romanian-language specialized books, journal studies, and press coverage from the wartime period. These sources include institutional records, official wartime correspondence, eyewitness accounts, and personal communications from the staff at the Bucharest Astronomical Observatory. The documents were analyzed using content

analysis to identify key themes, such as the measures taken to protect human lives, ensure institutional continuity, preserve patrimonial assets of global significance, and respond to external totalitarian pressures.

A comparative analysis was conducted to explore both the shared and contrasting experiences of the Bucharest and Odessa observatories during World War II. This analysis also briefly examines the case of the Astronomical Observatory at Dubăsarii Vechi, founded by Nicolae Donci in Bessarabia, which was completely destroyed by Soviet forces in 1940. The stark contrast between the destruction of this Romanian observatory and the efforts made by Romanians to safeguard the patrimony of a Soviet astronomical observatory in Odessa highlights the complex and often contradictory dynamics of wartime actions and realities.

This interdisciplinary approach, combining historical analysis, economy, warfare, legal and social studies, with a focus on human experiences and patrimonial matters, provides a comprehensive understanding of the broader impact of legal, social, and military factors on these observatories.

3.3. LIMITATIONS OF THE STUDY

The primary limitation of this research lies in the incomplete archival exploration of the topics, particularly in relation to Ukrainian and Russian language documents from local and central archives outside Romania. Regarding Romanian language documents, institutional data on specific aspects or biographies discussed in this research still need to be identified in public or private collections for future use. Additionally, while secondary sources were used to provide context, gaps in the literature regarding Romania's specific wartime activities, along with the absence of certain specialized but necessary global statistics, present further challenges.

4. FINDINGS, EVIDENCE ANALYSIS, AND CASE STUDIES

Before and during the Second World War, the Bucharest Astronomical Observatory served as a research facility under the University of Bucharest, managed by the Faculty of Sciences. The scientists at the observatory also held positions as professors and assistants at the university.

Up until the outbreak of the war, scientific research activities in Greater Romania had been consistently progressing. At the Bucharest Astronomical Observatory, the modern Gautier-Prin meridian telescope, a refractor ordered before World War I, was finally delivered in 1924 and installed by 1926. In the years following its installation, this iconic telescope was calibrated into a precise tool for astrometry, operating successfully until 1990, with one notable interruption during the Second World War.

In 1930, a Prin-Merz refractor telescope with a 6-meter focal length became operational at the Bucharest Astronomical Observatory, after several years of testing and calibration. This telescope was used for astrophotography and, by the 1990s, had produced thousands of photographic plates, including some of the first images of the newly discovered Pluto.

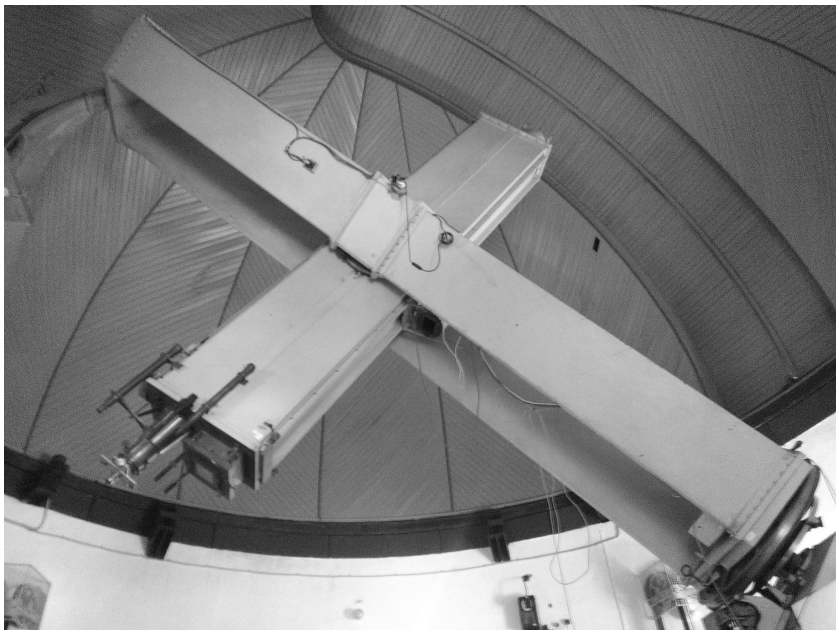


Fig. 2 – The Prin-Merz astrograph (1912), the largest refractor telescope in Romania.

The Bucharest Astronomical Observatory also operated a Time Service, which calculated the time base for its scientific activities using telescopes and scientific clocks, and as a byproduct, determined and reported Romania's official time. However, the economic crisis following World War I and the Great Depression of the 1930s caused significant delays in other investments and restoration projects at the observatory, which were postponed until the late 1930s.

By 1940, which marked one of the most disastrous years in modern Romanian history, the observatory's activities were severely impacted by extreme circumstances.

The political and military developments that followed the Soviet Union's annexation, *under the threat of war*, of approximately one-sixth of Romania's sovereign territory in June 1940 – a total of 50 000 km^2 and 3.8 million inhabitants (Scurtu, 2004) – drove this traditionally pro-French and pro-British country into an alliance with Nazi Germany.

The Soviet annexation of these Romanian territories – East Moldova (Bessarabia) and North Bukovina – was soon followed by the Second Vienna Award, imposed on an already weakened and isolated Romania by Nazi Germany and fascist Italy. This cynical dictate required that half of the historical Romanian province of Transylvania be ceded to fascist Hungary. Under direct pressure from Nazi Germany and as an indirect consequence of the Soviet annexation of Bessarabia and North Bukovina – an event equivalent to a great military defeat – Romania also ceded Southern Dobrudja to Bulgaria. By the end of 1940, Romania had lost one-third of its territory (97 790 km^2) and roughly the same proportion of its population (Bărbulescu *et al.*, 2002).

These territorial changes had a significant impact on the Bucharest Astronomical Observatory, resulting in the loss of its seismic stations in Cernăuți (North Bukovina) and Cluj (northwest Transylvania), as the observatory also oversaw seismic monitoring at the time. This resulted in a significant material and scientific loss, including buildings, capital investments, and other resources. Additionally, Romania lost the Cluj Astronomical Observatory, and the entire University of Cluj was evacuated by the new Hungarian authorities, with its faculties relocated to the unoccupied regions of Transylvania – Sibiu and Timișoara – along with their Romanian students (Stavinschi, 2018). The Astronomical Observatory in Dubăsarii Vechi (Bessarabia, East Moldova), founded and operated by Romanian astronomer Nicolae Donci, was completely destroyed by Soviet forces, including its buildings, instruments, archives, and library, while Donci himself took refuge in Bucharest (Stavinschi, 2016). It is important to note that, at that point in history, *Romania had never been a military enemy of Russia or the Soviet Union*, having been a valuable ally of Russia in two previous wars (1877-1878 and 1916-1918).

It is not the purpose of this article to discuss the Soviet miscalculation and blunder regarding Romania in the 1940s. However, the political developments following Romania's loss of population and territory, and the Soviet Union's assassination of thousands, or even tens of thousands, of Romanian civilians between 1940-1941 (Mihailiuc, 2004; Ciobanu *et al.*, 2004; Varta, 2011; Sava, 2024; Roșu, 2010; Iancu, 2024), as well as the broader European politico-military context dominated by Nazi Germany, made *a war between Romania and the Soviet Union practically unavoidable*. Romania joined the Axis in 1941 and invaded the Soviet Union with a force of around half a million soldiers, aiming to recover nearly 3 million Romanians and reclaim the territories lost to the USSR in 1940 (Scurtu, 2004, vol. IV, pp. 26-29; Giurescu, 1999, p. 95). The enormous and systematic contribution of Romania to the war against USSR both in soldiers and resources (primarily fuel), played a significant role in supporting the German war machine and contributed extensively to the Red Army's bloodshed, especially in the early stages of Operation Barbarossa.

The reduction of scientific and administrative activities at the Bucharest Astro-

nomical Observatory during World War II can be attributed to several major factors. These include the general decline of scientific activities across Europe during the war, the loss of scientific infrastructure in 1940 when the Soviet Union annexed northern and eastern Romania, and the subsequent awarding of northwestern Romania to Hungary by Nazi Germany and fascist Italy. Additionally, there was widespread fear of destruction from anticipated air raids, leading to the dismantling and relocation of critical scientific instruments from the Bucharest Astronomical Observatory to safer locations. Many of the observatory's scientists and staff were conscripted into the Romanian Army, with some being deployed to Soviet territory to support Romania's war effort. Further economic and social hardships, including the devastation caused by Allied air raids on southern Romania – particularly in Bucharest, where thousands of civilians were killed – further impacted life and work at the observatory.

Adding to the national tragedy was the massive earthquake on November 10, 1940, which measured 7.4 on the Richter scale. This event greatly affected the activities of the Bucharest Astronomical Observatory, as all of its scientific and administrative buildings sustained damage, from cracked walls and structural issues to partial collapse. The Geophysics Building (Pavilionul Geofizic) was left on the verge of collapse, while the tower of the Sun Building (Cladirea Soare) completely collapsed. Though the Sun Building was restored soon after the earthquake, it was not rebuilt according to its original plans. Only in the 1990s, during a large restoration and conservation project led by the Director of the Astronomical Institute of the Romanian Academy, Magda Stavinschi, was the building restored to its pre-1940 condition.

The most significant problem caused by the 1940 earthquake at the Bucharest Astronomical Observatory was the structural damage to the mount of the Prin-Merz refractor telescope in the Equatorial Dome. The telescope shifted on its supporting pylons and was left in a precarious state (Official note from Constantin Popovici to the Dean and Rector of the University of Bucharest regarding the damages caused to the Bucharest Astronomical Observatory by the 1940 earthquake, November 10, 1940). Not only did this make the telescope completely inoperable, but it also raised the serious risk of a total collapse, which would have resulted in the destruction of the telescope, its supporting elevator platform, and possibly the entire Equatorial Dome. The repairs, which included building a wooden scaffold around the telescope and reinforcing its concrete pylons, were completed in 1941 by a local company owned by M. Covacs (Letter of communication sent from Bucharest Astronomical Observatory to the Minister of National Culture in Romania, June 11, 1941).

Documents preserved in the archive of the Astronomical Institute of the Romanian Academy reveal the impact of the new Romanian authorities' policies on the Bucharest Astronomical Observatory. Official communications informed the observatory's leadership of new legal changes and demands, including those based on ethnic origin, foreign citizenship, and antisemitic policies.

On the 29th of July 1940, the authorities of the newly installed pro-German government of Romania requested that the observatory submit a nominal list of all its scientific, administrative, and technical personnel, specifying for each individual their ethnic origin, nationality, and religion, as well as the same information for their parents (Copy of the note no. 124.606 of 1940 issued by the Ministry of National Education in Romania demanding from subordinate institutions the nationality, ethnicity, and religion of their employees, July 29, 1940). In response, the observatory's Director, Constantin Popovici, formally notified that all personnel were Christian Orthodox Romanians, implying that no further investigation into their backgrounds was necessary. The observatory was also required to collect personal statements from all employees regarding this matter; however, the archival content show that Constantin Popovici *ignored* this official request. No such personal statements were recorded, and no administrative actions were taken to implement the demand.

The state of war led to significant changes in the hierarchical structure between the Bucharest Astronomical Observatory and its governing bodies, specifically the University of Bucharest and the Romanian Government. Administrative reports became subject to new legislation with a distinctly military character. The newly installed government staff clearly informed the observatory's leadership that its new status of subordination placed it under supreme military authority and laws.

During the war, eight of the twelve employees of the Bucharest Astronomical Observatory were mobilized for the needs of the Romanian Army: Constantin Drâmbă, Gheorghe Petrescu, Mircea Marcopol, Nicolae Dinulescu, Aurelian Iacovache, Victor Ghidu, Dumitru Cenușe, and Vasile Suhar. The mathematician and astronomer Constantin Drâmbă was assigned to the 53rd Transmission Battalion and sent directly to the Soviet front. Another astronomer, Gheorghe Petrescu, became a military flight instructor at the Otopeni School of Aviation, as Romanian military pilots prepared for the expected air war against the Soviet Air Forces, the United States Army Air Forces (USAAF), and the Royal Air Force (RAF). Administrative employee Victor Ghidu was sent to the 2nd Rosiori Regiment, while Vasile Suhar served in the combat zone of North Bukovina. The remaining male staff of the observatory had their military status changed from "Reserve" to "Mobilized" and were dispatched to serve in various Romanian Army units.

In a context dominated by Nazi Germany, the legal status of all Romanian Jews changed. For the first time in its history, the Bucharest Astronomical Observatory received official demands to report any Jewish employees to the higher authorities (Official note no. 3808 from the Dean of the Faculty of Sciences, University of Bucharest, to the Director of the Bucharest Astronomical Observatory, October 12, 1940). In response, the observatory stated that "the Astronomical Observatory in Bucharest *has no employees of Jewish origin*" (Response note no. 205 from the Director of the Bucharest Astronomical Observatory, Constantin Popovici, to the Dean

of the Faculty of Sciences, University of Bucharest). Given the way the observatory's directors handled previous similar demands from the regime, as reflected in the documents, this response was likely formal and may or may not have been accurate. There are no documents indicating that Constantin Popovici and Gheorghe Demetrescu, directors of the Bucharest Astronomical Observatory from 1938 to 1943 and 1943 to 1963, respectively, ever showed interest in determining the ethnicity of their employees. In other words, both of them provided the authorities with the information they wanted to hear and then continued their work without further inquiry.

Facing personal and professional risks during the Holocaust in Romania, the Director of the Bucharest Astronomical Observatory, Gheorghe Demetrescu, intervened with the Romanian Army, which controlled the work regime of the country's Jewish population, to allow the Jewish-Romanian mathematician and astronomer Mozes Moscovici to work at the observatory. Mozes Moscovici was born in 1902 in Botoșani to Lupu and Lina Moscovici. He studied at the University of Bucharest's Faculty of Mathematics, where he earned his degree and during that time, he gained practical experience at the Bucharest Astronomical Observatory. Initially, the Army accepted this request, and his role at the observatory was as an Astronomer-Calculator. However, as the work permit was only temporary (from May 5 to October 13, 1943), Demetrescu had to intervene again to keep Moscovici on the scientific team. In his plea to the Romanian Army general who approved the initial request, Demetrescu argued: "We know Mozes Moscovici, as he worked for us during his training as a student of Bucharest University and then for the last six months, so he is familiar with our work at the Observatory" (Official letter from the Director of the Bucharest Astronomical Observatory, Gheorghe Demetrescu, to the Romanian Army High Command requesting permission for Mozes Moscovici to continue his work at the observatory, 1943). However, the Army ultimately rejected the second request, citing that it would violate Army procedures.

It is important to note that while working at the Bucharest Astronomical Observatory, Mozes Moscovici's official work status was classified as "mandatory labor" (*i.e.*, forced labor). Forced labor is one of the Holocaust crimes committed in Romania, but neither Demetrescu nor anyone else at the observatory had any control over this status. Under the antisemitic legislation implemented by the Gigurtu Government (July 9, 1940), all Jews in Romania were barred from holding public service jobs (Bărbulescu *et al.*, 2002). Therefore, as a Romanian-Jewish astronomer at that time, Moscovici's only opportunity to work at an astronomical research facility in Romania was under the terms of this legislation. By using his position and influence, Demetrescu secured permission from the Romanian Army High Command for the astronomer Moscovici to be "forced" to work at the Bucharest Astronomical Observatory for half a year. This intervention *may have saved Mozes Moscovici's life*.

After officially informing the authorities that the Bucharest Astronomical Ob-

Fig. 3 – Gheorghe Demetrescu: Astronomer, mathematician, seismologist, Director of the Bucharest Astronomical Observatory (1943-1963). and member of the Romanian Academy.

servatory had no Jewish employees, as the law required, Demetrescu, through a separate bureaucratic channel requested a Jewish staff member according to the same legislation. Today, many years after these events, when we reflect on their memory and share their story with the numerous groups of students who visit our headquarters in Bucharest, we believe that Gheorghe Demetrescu is a strong candidate to be recognized as a *Righteous Among the Nations*.

On the other hand, both directors of the Bucharest Astronomical Observatory during the Second World War, Demetrescu and Popovici, were entirely unsuccessful in persuading the Romanian Army to bring Constantin Drâmbă home from the bloodshed of the Soviet front. Drâmbă, a former PhD student of Professor Jean Chazy at the Faculty of Sciences in Paris (Stavinschi, 2016), is remembered as a brilliant figure in Romanian mathematics and astronomy. The directors' primary argument to the Romanian Army High Command was that Drâmbă had been continuously serving in the Army for three years and was needed at the observatory due to his high level of expertise. Despite their repeated requests to various military and civilian decision-making bodies, the response was the same: "Constantin Drâmbă is in the combat zone of the Soviet Union and cannot be withdrawn" (Official note from the Dean of the Faculty of Sciences, University of Bucharest, to the Director of the Bucharest Astronomical Observatory regarding the Army's refusal to bring back Constantin

Drâmbă, March 13, 1942).

But soon, the tables turned for the Soviet Union in the territories of Romania that it had occupied. During Operation Barbarossa in 1941, Romania, with the support of Germany, regained control over the provinces of Bessarabia and North Bukovina. Romanian forces then crossed the Dniester River into Soviet territory and began the siege of Odessa. The Battle of Odessa in 1941 was primarily a Romanian military operation, conducted under the broader strategic direction of Nazi Germany but with minimal direct German involvement. It featured roughly two and a half months of artillery bombardments followed by relentless attacks and bayonet charges against Soviet defensive lines, carried out by over one-third of a million Romanian troops (Giurescu, 1999). Odessa was the only major Soviet city conquered and administered by an Axis power during World War Two without significant German involvement (Stănescu, 2016).

Documents preserved in the archive of the Astronomical Institute of the Romanian Academy, as well as secondary literature, confirm that the Bucharest Astronomical Observatory did not receive any goods seized by the Romanian Army in the occupied Soviet territories.

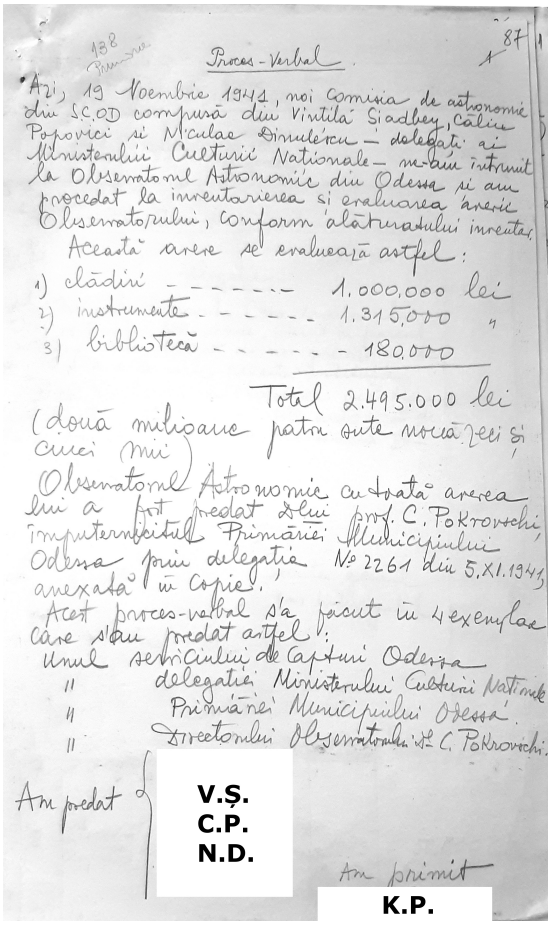
Between November 11 and 22, 1941, in the ravaged city of Odessa – partially demolished after two months of Romanian bombardments – a delegation of three scientists, two from the Bucharest Astronomical Observatory (Călin Popovici and Nicolae Dinulescu), along with Vintilă Șiadbei from the University of Iași, was sent by the Romanian Ministry of National Culture to inventory all goods found by the Romanian administration in the Odessa Astronomical Observatory.

In their report, the Romanian astronomers described the situation they found upon arriving in Odessa (Report on the situation at the Astronomical Observatory in Odessa, November 29, 1941). By sheer luck, the Odessa Astronomical Observatory survived the almost three months of Romanian shelling. A few bombs landed in the park, but the buildings sustained only moderate damage, with the equatorial mount of the Cooke photographic refractor telescope being partially destroyed. The rest of the instruments and buildings were intact. The Romanians found several devices and components (including ocular lenses, objectives, and smaller instruments) stored in the basements, all of which were undamaged. During their retreat, the Soviet authorities had managed to evacuate only the radio station used for receiving time signals.

A key factor that helped preserve the integrity of the Odessa Astronomical Observatory was that the 3rd Fighter Squadron (Flotila 3 Vânătoare) of the Romanian Air Force had set up a war captures depot in the observatory's park. This depot, guarded by Romanian military personnel, prevented looting or damage. To ensure the observatory's continued protection, the Romanian astronomers secured an extension of the military guard service, a fact confirmed by both Romanian documentary

sources (Report on the situation at the Astronomical Observatory in Odessa, November 29, 1941) and Ukrainian accounts (*Our History*, 2024).

The Romanian astronomers transferred *all* the goods of the Odessa Astronomical Observatory to its Director, Konstantin Pokrovsky (Handover-takeover report between the Ministry of Culture in Romania and Konstantin Pokrovsky, the representative of the Odessa Astronomical Observatory, November 19, 1941). It is important to note that the Romanian-controlled Mayoralty of Odessa officially empowered Pokrovsky to serve as the observatory's legal representative and Director. By accepting this role, Pokrovsky essentially placed himself under pain of death, becoming a marked man in the eyes of the Soviets.



Proces-verbal

Azi, 19 Noembrie 1941, noi Comisia de astronomie din S.C.O.D. compusă din Vintilă Siadbey, Călin Popovici și Nicolae Simulescu – delegați ai Ministerului Culturii Naționale – ne-am întrunit la Observatorul Astronomic din Odessa și am procedat la inventarierea și evaluarea averii Observatorului, conform alăturatului inventar.

Această avere se evaluează astfel:

1) clădiri ------ 1.000.000 lei
2) instrumente ------ 1.315.000 "
3) bibliotecă ------ 180.000

Total 2.495.000 lei

(două milioane patru sute nouăzeci și cinci mii)

Observatorul Astronomic cu toată averea lui a fost predat d-lui prof. C. Pokrovschi, împuternicitul Primăriei Municipiului Odessa prin delegația No 2261 din 5.XI.1941, anexată în copie.

Acest proces-verbal s'a făcut în 4 exemplare care s'au predat astfel:

Unul serviciului de Capturi Odessa
" delegației Ministerului Culturii Naționale
" Primăriei Municipiului Odessă.
" Directorului Observatorului d-l C. Pokrovschi.

Am predat V.Ș. C.P. N.D.

Am primit K.P.

Fig. 4 – Handover-takeover report between the Ministry of Culture in Romania and Konstantin Pokrovsky, the representative of Odessa Astronomical Observatory, 19 November 1941.

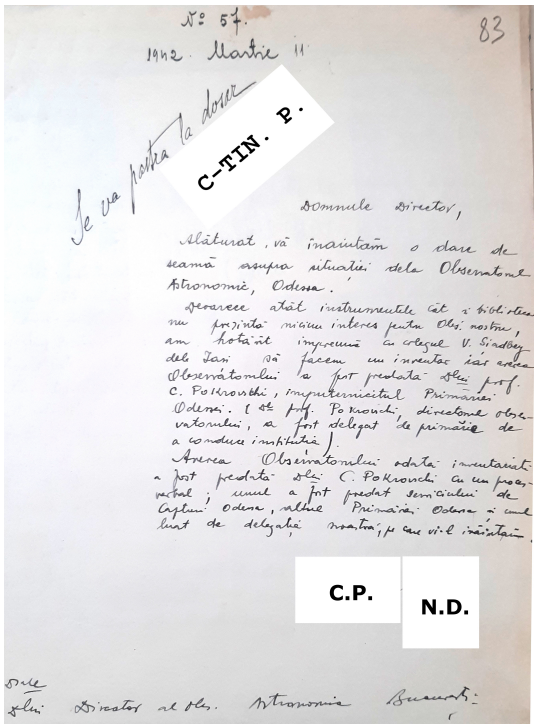
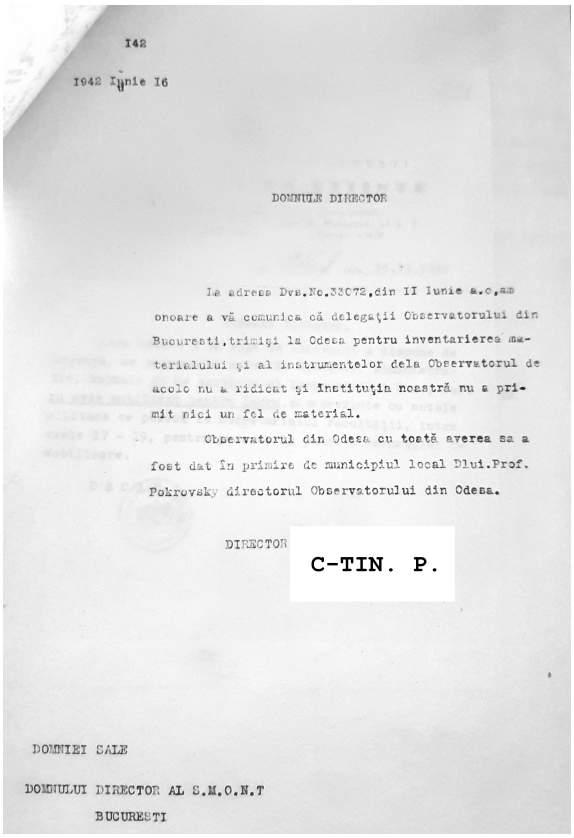


Fig. 5 – After evaluating the Odessa Astronomical Observatory's patrimony at 2.5 million lei in 1941, a substantial sum at the time, the Romanian astronomers sent to Odessa – Călin Popovici and Nicolae Dinulescu – reported to their superiors that "the Bucharest Astronomical Observatory is not interested in any instrument or library item from here".

Konstantin Pokrovsky, born in Nizhny Novgorod, Russia, in 1868, was a prominent scholar and corresponding member of the USSR Academy of Sciences since 1926. Throughout his career, he served as a professor and Rector of Perm University, Director of the Main Russian Astronomical Observatory in Pulkovo, and Dean of the Faculty of Physics and Mathematics at Odessa State University. His renowned books on astronomy, *Guide to the Sky* and *Star Atlas*, earned him high honors and international recognition, while his *Cosmography* was used in the Russian educational system (Kostitsyn *et al.*, 2001). As the documentary sources confirm, the Romanian astronomers treated him as a colleague and friend, offering personal support. They provided him with legal documents that allowed him to receive payment as a "Romanian worker" in Odessa and frequently wrote letters to various authorities to assist him during the war (Copy of a personal letter from Constantin Popovici to Konstantin Pokrovsky with legal advice and annexed documents, June 8, 1942).

The scientists from the Bucharest Astronomical Observatory, along with its Director, responded negatively when the Romanian Army's War Captures Service

inquired whether any scientific patrimony from the Odessa Astronomical Observatory had been transferred to Bucharest. In this regard, the Director of the Bucharest Astronomical Observatory confirmed that no such items were ever received at the observatory (Official letter from Constantin Popovici, Director of the Bucharest Astronomical Observatory, to S.M.O.N.T. Bucharest, confirming that no goods from the Odessa Astronomical Observatory were taken or received, June 16, 1942).



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1942 Iunie I6

DOMNULE DIRECTOR

La adresa Dvs.No.33072,din II Iunie a.c,am onoare a vă comunica că delegaţii Observatorului din Bucuresti,trimişi la Odesa pentru inventarierea materialului şi al instrumentelor dela Observatorul de acolo nu a ridicat şi Institutia noastră nu a primit nici un fel de material.

Observatorul din Odesa cu toată averea sa a fost dat în primire de municipiul local Dlui.Prof. Pokrovsky directorul Observatorului din Odesa.

DIRECTOR

C-TIN. P.

DOMNIEI SALE

DOMNULUI DIRECTOR AL S.M.O.N.T

BUCURESTI

Fig. 6 – Official letter from Constantin Popovici, Director of the Bucharest Astronomical Observatory, to S.M.O.N.T. Bucharest, confirming that no goods from the Odessa Astronomical Observatory were taken or received, June 16, 1942.

A closer look at the inventory lists made by the Romanians at the Odessa Astronomical Observatory, comprising its buildings, library funds, and instruments, shows that the estimated value of this patrimony at about 2.5 million Romanian lei in 1941 strictly represents its accounting value. In today's money, this figure would probably be around half a million US dollars if we only take into account inflation and the denomination regarding the parity of the Romanian currency (LEU) to the US dollar.

However, considering the increase in patrimonial value over the last 80 years, we believe that this figure today lies between one and several million US dollars. Moreover, as this patrimony included historical scientific buildings, original instruments, and complete research data, all connected to the Imperial Russian and later Soviet astronomical research community up until 1944, along with the contributions of the Ukrainian people during this period, its cultural value today is immense.

Constantin C. Popovici **Konstantin Pokrovski** **Constantin Drâmbă**

Odesa Astronomical Observatory, today part of the Scientific Research Institute "Astronomical Observatory" of I. I. Mechnikov Odessa National University, Ukraine

Fig. 7 – "Astronomers help each other". Despite the fact their countries were enemies on the battlefield, the astronomers of Romania and the Soviet Union worked closely during the Second World War to safeguard the invaluable patrimony of the Odessa Astronomical Observatory.

In the autumn of 1941, at the time of the Romanian inventory procedure, the patrimony of the Odessa Astronomical Observatory included: a Repsold Meridian Circle (built in 1862); a Cooke photographic equatorial instrument (1913); another Cooke equatorial instrument (1881); a refracting telescope for universal use built in

Moscow; three precision pendulums – Riefler (1927) and Knoblich (1870, 1881); a Bamberg meridian refracting telescope (1890); three other refracting telescopes for universal use (Bamberg, Merts, Praguesch); a coelostat; a Topfler protuberance spectroscope; seven chronometers made by different manufacturers; a Zeiss stereo comparator (1913); an Askaina Werke micro-photometer, binoculars, and other instruments, spare parts, along with about 8 000 periodicals and books in the library. The inventory text does not mention the scientific archive, but most likely it existed and survived the bombing; otherwise, it would have been reported as destroyed or taken by the Soviets in the Romanian astronomers' reports (Inventory list made by the Romanian astronomers at Odessa Astronomical Observatory, November 1941).

All of this clearly reveals that the response sent by the leadership and staff of the Bucharest Astronomical Observatory to the corresponding Romanian Army's War Captures Service was purely moral, ensuring that this patrimony remained fully intact in Odessa until the end of the war. It was a patrimony belonging to another nation, and *the Romanian astronomers knew and respected that*. Let's contrast this with what the Soviet Union did at the Dubăsarii Vechi Astronomical Observatory after they occupied Romania's Bessarabia in 1940.

Beyond any moral and legal implications, there is also practical significance in the success of the Romanian astronomers in safeguarding the patrimony of the Odessa Astronomical Observatory. Following the Romanian Army's retreat from Odessa in March 1944, due to the Red Army's offensive, scientific activity at that observatory resumed immediately.

A comparative analysis, considering the start of research activities, patrimonial value, war damage, and biographical pathways, reveals both the similarities and differences in the experiences of the Odessa and Bucharest Astronomical Observatories during World War II. Both observatories were bombed during the war and survived due to the proactive leadership of Romanian astronomers and authorities, and, of course, sheer luck. In Bucharest, astronomers took preventive measures by dismantling and sheltering certain instruments to protect them from war damage. In Odessa, the entire patrimony was inventoried by them and handed over to Soviet astronomers, while a Romanian military guard was secured to protect the observatory.

In terms of differences, while the Bucharest Astronomical Observatory benefited from more advanced technological equipment, the Odessa Astronomical Observatory had a longer-established tradition, allowing it to produce significant scientific data much earlier. The Bucharest Observatory's main refracting telescopes – the cutting-edge Prin-Merz 6 m astrograph, installed in 1912, and the Gautier-Prin Great Meridian Circle, installed in 1926 – were fine-tuned to achieve excellence in science up until the 1930s, and then continued to yield remarkable results, unmodified, until the 1990s. Unfortunately, differences also arose due to the biographical pathways of some staff members at both observatories during the war, as this article will further

explore.

Since Romania's involvement in the Second World War, the specialized services of the Romanian Army began taking defensive measures to minimize human loss and material destruction in anticipation of Allied bombing raids on the country. Such measures were also implemented at the scientific park of the Bucharest Astronomical Observatory. The roofs of the observatory were painted with camouflage rubberized paint, two bomb shelters were built, and most of the instruments were dismantled and transported to safe locations (Receipt for the dismantling and storage of certain instruments from the Bucharest Astronomical Observatory, June 28, 1941).

This decision proved wise, as Bucharest was heavily bombed by the Allies during the Second World War. The majority of these bombing raids were carried out by American and British forces, with the Allies' military strategy in Europe assigning the USAAF and RAF a leading role in the air campaign over Romania – a direct and significant Anglo-American intervention in the Eastern European theater of war in support of the Soviet Union. The Allies specifically targeted military and economic infrastructure in order to weaken Nazi Germany's war effort (Brestoiu, 1986).

In Romania, the primary objective of the Allied bombing campaigns was to destroy the oil fields and refineries in the Ploiești and Prahova Valley areas, which were among the main sources of fuel available to Nazi Germany. A secondary objective of the Allies was to destroy critical railway centers (including railways, rail yards, rail bridges, and trains) in Bucharest and other Romanian cities, as they were used by Nazi Germany to transport troops, large quantities of fuel, and other supplies from Romania to the front line, supporting the Axis war effort (Annex to the Report of the Subsecretariat of State for Air concerning the procedures and means of attack of Anglo-American aviation on national territory, May 13, 1944; Note of the Subsecretariat of State for Air concerning the procedures and means of attack of Anglo-American aviation on national territory, June 13, 1944). Therefore, during World War II, Bucharest, along with the Ploiești oil fields and refineries (often spelled "Ploesti" in English literature), was bombed numerous times, both day and night.

In Bucharest, the Allied bombing raids had disastrous effects, causing not only the targeted economic, military, and infrastructure damages but also thousands of civilian deaths and the destruction or damage of many buildings.

After the USAAF bombardment raids that took place on April 4 and 5, 1944, the number of civilian casualties in Bucharest was: 2942 dead, 2126 wounded, 905 houses destroyed and 1373 damaged (Giurescu, 1999). The scenes witnessed by survivors in this busy city known as the "Little Paris" of Eastern Europe were horrific: corpses lying in the streets, many of them children, tramway cars blown onto rooftops or found in the streets with their metal contorted and passengers dead inside and mothers running aimlessly down boulevards, holding their dead babies (Universul,

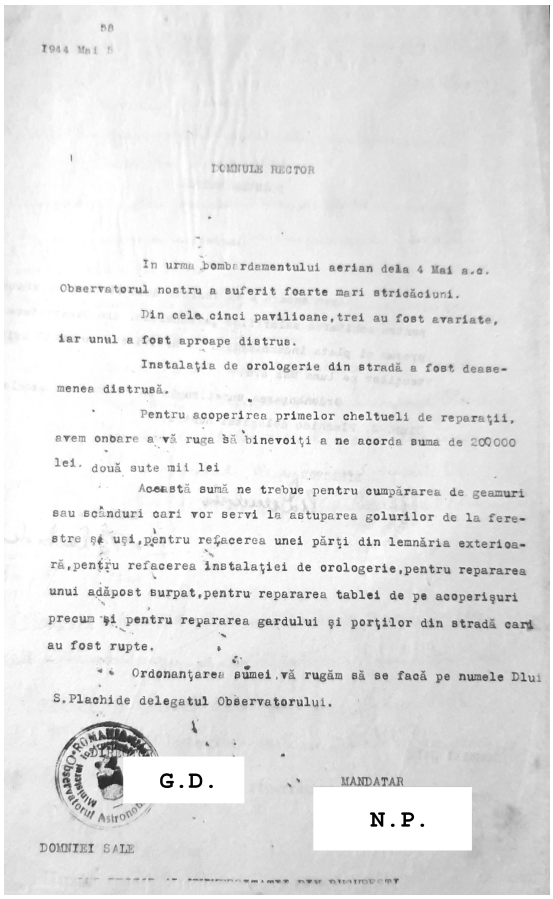
Fig. 8 – Călin Popovici: A Romanian professor and astronomer, he was regarded by Gheorghe Demetrescu as. "the best-prepared Romanian in Astrophysics of his time" (Stavinschi, 2016).

1944, p. 1; Bălteanu, 1944, p. 3; Universul, 1944, p. 3).

During the Second World War, Gheorghe Demetrescu, Constantin Popovici, Călin Popovici, along with a few other administrative employees and some of their family members, lived in the buildings of the Bucharest Astronomical Observatory, which at the time had several spaces that could be used as service apartments. It remains unclear whether they were informed by the Army about the level of danger they faced, living and working just 500 meters from the Filaret Railway Station – a specific military target for the Allies. While the North Railway Station and its rail yard were the primary targets of Allied bombings in Bucharest, smaller stations like Filaret were also secondary but significant targets in this military context.

According to a report by Gheorghe Demetrescu to the Rector of Bucharest University, the Allies bombed the Bucharest Astronomical Observatory on May 4, 1944.

The attack damaged three of the five buildings in its scientific park and nearly destroyed one of them completely (Report by Gheorghe Demetrescu to the Rector of Bucharest University regarding the consequences of the Allied air raid on May 4, 1944, on the patrimony of the Bucharest Astronomical Observatory, May 5, 1944). This bombing was a part of the British night raid on Bucharest between May 3 and 4, 1944, which targeted railways, railway stations, and other military objectives (Report of the General Staff, 2nd Section, on the interrogation of Anglo-American prisoners and the exploitation of captured documents following air raids conducted on Roma-



58
1944 Mai 5

DOMNULE RECTOR

In urma bombardamentului aerian dela 4 Mai a.c. Observatorul nostru a suferit foarte mari stricăciuni.

Din cele cinci pavilioane, trei au fost avariate, iar unul a fost aproape distrus.

Instalaţia de orologerie din stradă a fost deasemenea distrusă.

Pentru acoperirea primelor cheltueli de reparaţii, avem onoare a vă ruga să binevoiţi a ne acorda suma de 200000 lei. două sute mii lei

Această sumă ne trebue pentru cumpărarea de geamuri sau scânduri cari vor servi la astuparea golurilor de la ferestre şi uşi, pentru refacerea unei părţi din lemnăria exterioară, pentru refacerea instalaţiei de orologerie, pentru repararea unui adăpost surpat, pentru repararea tablei de pe acoperişuri precum şi pentru repararea gardului şi porţilor din stradă cari au fost rupte.

Ordonanţarea sumei vă rugăm să se facă pe numele Dlui S. Plachide delegatul Observatorului.

G.D.

MANDATAR

N.P.

DOMNIEI SALE

Fig. 9 – Report by Gheorghe Demetrescu to the Rector of Bucharest University regarding the consequences of the Allied air raid on May 4, 1944, on the patrimony of the Bucharest Astronomical Observatory, May 5, 1944.

nia, May 24, 1944).

In this context, the proximity of the Filaret Railway Station, located about 540 meters from the Bucharest Astronomical Observatory, may explain why the area was bombed. Several roofs at the observatory were damaged by bomb fragments, while an air shelter and the public clock on Cuțitul de Argint Street were also in need of repair. Windows were shattered, doors were dislodged, and various exterior wooden elements, along with the fencing and entrance gate, sustained damage.

Gheorghe Demetrescu's report does not specify which of the observatory's buildings was nearly destroyed during this air raid. However, the concentration of damage around the entrance gate, fence, and street clock, combined with the lack of reported destruction in buildings containing scientific instruments, suggests it was

likely the Geophysical Building or the Meteo-Ateliere Building, both of which had multiple exterior doors and windows but housed no instruments at the time. No casualties were recorded but the damage was considerable (evaluated by Demetrescu to 200 000 lei).

Possibly during the same air raid on the night of May 3-4, 1944, a large shell fragment pierced the wooden covering boards of the Meridian Hall at the Bucharest Astronomical Observatory, hitting precisely where the Gautier-Prin refracting telescope had once stood (Stavinschi, 2016). Fortunately, this instrument was likely the first to be dismantled and relocated for safety.

Despite the challenges posed by war, the Bucharest Astronomical Observatory continued both its research and educational activities. Due to the big earthquake of 1940 and then the wartime protective measures, the observatory's Gautier-Prin telescope, was inoperable for the period of the war. However, after the repositioning of the astrograph Prin-Merz refracting telescope following the damage from the 1940 earthquake, the comet C/1943 R1 (Daimaca), discovered in Romania by Victor Daimaca in 1943, was studied and photographed with this instrument at the Bucharest Astronomical Observatory. Here, Călin Popovici was the scholar who confirmed the discovery and successfully secured its international recognition (Copy of the response letter from Bucharest Astronomical Observatory to Victor Daimaca, the discoverer of the (C/1943 R1 (Daimaca) comet, n.d.; Stavinschi, 2016). The comet was photographed at the Bucharest Astronomical Observatory on September 9, 10, and 11 using the camera of the Prin-Merz refracting telescope. The discovery and positional data for this celestial body were sent to the International Astronomical Union in Copenhagen, which then transmitted the information worldwide (Cârlugea, 2010).

Additionally, scientific radio reception devices were employed to integrate time signals into the calculation of both the scientific time at the observatory and Romania's official time. The observatory maintained its transmission of Romanian Legal Time to the Romanian Radio Broadcasting Company and the Romanian Railways Company via direct wiring (Official letter regarding personnel mobilized for the Army's needs, sent from the Bucharest Astronomical Observatory to the Romanian Army authorities, February 9, 1940).

The observatory also provided essential services to the Romanian Army High Command, including calculating the Moon and Sun ephemerides. It assisted in verifying precision chronometers and was involved in various astronomical and magnetic determinations. Moreover, its personnel contributed to the installation of new seismic stations across Romania, particularly after the major earthquake of 1940.

Significant repairs to the observatory's buildings were carried out during the war by local companies. In addition to these efforts, the observatory acquired new equipment, including a calculating machine and a Zeiss photometer imported from

Germany, along with scientific publications to enhance its library.

Gheorghe Demetrescu, Director of the Bucharest Astronomical Observatory, was one of 66 Romanian intellectuals who signed a letter addressed to Marshal Ion Antonescu on April 1, 1944, urging him to withdraw Romania from the war against the Soviet Union, the United States, and Great Britain (Scurtu *et al.*, 1995). Antonescu, a controversial figure in Romanian history and a WWI veteran, served as Prime Minister between 1940 and 1944, leading a pro-German military dictatorship under extremely complex circumstances, unprecedented in the entire history of Romania. Despite his wartime authoritarian rule, Antonescu allowed some degree of personal and public criticism, and Demetrescu was among those who opposed his policies.

This confirms once again that the institutional responses of the Bucharest Astronomical Observatory to higher authorities, under the leadership of Constantin Popovici and Gheorghe Demetrescu during World War II, were founded on a clear stance of resistance against the oppressive policies of the regime. As evidenced by primary documents and secondary literature, the observatory had no involvement with groups, activities, publications, or organizations associated with fascist or national-socialist ideologies.

On the other hand, a local history has survived within today's Bucharest Astronomical Observatory, dating back to the Second World War. This story, confirmed by former employees of the observatory who had worked with some of the astronomers from the 1940s, tells of an illegal communist printing press operating in a technical space beneath the elevator platform of the Equatorial Dome. If it indeed existed, the press produced an unknown number of manifestos and other materials for the Communist Party during its period of illegality in Romania, prior to the coup d'état of August 23, 1944, and the fall of Ion Antonescu's regime. It is said that both directors of the observatory during World War II, Popovici and Demetrescu, were unaware of the press's existence – although it is equally possible that they may have known. Printing communist manifestos was highly illegal in Romania at the time, and such a proven accusation would have almost certainly resulted in their dismissal and arrest for undermining state order and security (Scurtu *et al.*, 1995; Cioroianu, 2014). Given that the printing press supposedly operated within the locked and guarded facility of the observatory, it is reasonable to assume that one or several employees of the Bucharest Astronomical Observatory might have been communists or sympathizers at the time.

During World War II, the Communist Party in Romania was an illegal political organization that aligned itself with the criminal policies and practices of the Soviet Union. The party praised the Soviet occupation of Bessarabia and Northern Bukovina and regarded the subsequent Soviet repression and mass crimes as a "liberation" of the "Moldavian" workers and peasants from the "savage exploitation" by

the Romanian bourgeoisie and landowners (Burcea, 2014).

As for the post-war destinies of some of the astronomers involved in the events discussed in this study, history records divergent and even tragic biographies.

Konstantin Dorimedontovich Pokrovsky (1868–1944), the Director of Odessa Astronomical Observatory during the Romanian military occupation of this city, was arrested by the Soviet authorities immediately after the Romanians retreated. He was accused of treason and collaboration, being interrogated by the NKVD to confess his "crimes." He died in prison in November 1944. A patriot of his country, Konstantin Pokrovsky took on his shoulders the great responsibility of managing and preserving Odessa Astronomical Observatory during the Second World War. He was rehabilitated in 1993 (Kostitsyn *et al.*, 2001).

Vintilă Șiadbei (1898–1944 was an astronomer, mathematician, and associated professor, who collaborated closely with Constantin Popovici at the University of Iași. He was the third member of a delegation sent by the Romanian Ministry of National Culture to Odessa Astronomical Observatory. Notably, his signature is found on the inventory lists documenting the transfer of patrimonial assets from the Romanian astronomers to in Odessa to Konstantin Pokrovsky. He died in 1944, when the entire University of Iași was forced to relocate to Alba-Iulia and Zlatna due to the Red Army's pressure on the Romanian front line (Stavinschi, 2024). The cause of his death remains unclear. Some sources indicate that he died during an air raid, while others suggest that he suffered a heart attack, possibly related to the stress and difficult conditions he endured during the wartime period.

Constantin Drâmbă (1907–1997) served as an officer in the Romanian Army's Geographic Service during military operations in the Soviet Union. He survived the war, returned home, and became one of the leading mathematicians and astronomers of his generation. In 1963, Constantin Drâmbă became the new Director of the Bucharest Astronomical Observatory after Gheorghe Demetrescu retired. A member of the Romanian Academy, he had a good professional relationship with Soviet astronomers, his former enemies during the war.

Constantin C. Popovici (1878–1956), maintained his status as a prominent mathematician and astronomer in Romania, publishing over 100 scientific papers. He was a veteran of the First World War, where he took part to combat operations as a company commander to realize the Romanian dream of *national unity and freedom*. During the Second World War, he expressed hope for a Romanian victory against the USSR. This, along with his interventions on behalf of Konstantin Pokrovsky to the Governor of Transnistria, Gheorghe Alexianu, who was later executed as a war criminal (Giurescu, 1999), was likely noted by Romania's post-war Stalinist authorities. In

1946, Popovici was honored as an Honorary Member of the Romanian Academy, but this recognition was soon revoked, and he was marginalized during the Stalinist repression that followed. Despite this, the success achieved by Romanian astronomers under his leadership in preserving the patrimony of Odessa Astronomical Observatory during the war remained an indisputable fact. He was known as a scientist and professor who taught many hours at the university for free and remained uninvolved with any political ideology throughout his lifetime. Archival records confirm that he was one of the leaders of the *administrative resistance* at Bucharest Astronomical Observatory, opposing the discriminatory, chauvinistic, and antisemitic policies of the pro-German regime in Romania during the Second World War. Despite his marginalization, Popovici faced no formal charges after the war, and in 1990, his membership in the Romanian Academy was posthumously restored.

Călin Popovici (1910–1977) emerge as an internationally reknown astronomer, after the war, mentoring numerous students in both civilian and military fields. His groundbreaking scientific papers earned him global recognition, including the development of a new method to determine the movement of the Sun in relation to stellar parameters; the Simultaneity Circle Method – a novel geometrical approach in geodesy using satellites – along with practical applications for studying the convergence of star clusters and their angular measurements. These and other contributions are documented in over 100 scientific studies (Stavinschi, 2016).

Nicolae Dinulescu (1907-1989) became an important 20^{th}-century Romanian astronomer who made notable contributions to both practical and theoretical astronomy. In addition to his work at the Bucharest Astronomical Observatory, he became a professor at the University of Bucharest. One area where he excelled was astronomical refraction, improving our understanding of observational precision. He also made significant contributions to determining the latitude of the Bucharest Astronomical Observatory, a key factor in ensuring accurate celestial observations and calculations. His work in the field of fundamental astronomy and astrometry further advanced modern astronomical studies in Romania.

Mozes Moscovici (1902 - ?). Little is known about his fate during the rest of the World War II period and after, but one clue suggests he may have survived the Holocaust in Romania. A mathematics book found in the Bucharest Astronomical Observatory's library, published in 1956 by an author of the same name, may be linked to him: "O interpretare geometrică naturală a soluțiilor complexe rezultate din unele probleme de geometrie analitică" / A natural geometrical interpretation of the complex solutions resulting from certain problems in analytic geometry. It is possible that he donated this book to the observatory's library after the war, perhaps

upon reconnecting with his former mentor, Gheorghe Demetrescu. Further research is needed to fully recover his personal history.

Gheorghe Demetrescu (1885 - 1969), was a director, astronomer, and seismologist at the Bucharest Astronomical Observatory, serving until 1963. A World War I veteran, Demetrescu is a remarkable exception, having maintained his directorship uninterrupted from the Antonescu regime through the Stalinist period, during which the Red Army occupied Romania and collaborated with foreign and local communists to imprison and assassinate a significant portion of the Romanian elite in concentration camps and jails.

What probably saved his position as a Director of Bucharest Astronomical Observatory in the Stalinist years of the Romanian communism, were the following relevant facts: 1) His public official position as an opponent of Antonescu's regime policies; 2) As a Director of Bucharest Astronomical Observatory, he was like his predecessor Constantin Popovici, a leader of the *institutional resistance* against the discrimination, chauvinism and antisemitism of the pro-German regime of Romania during the period of World War II; 3) His personal biography, as a dedicated scientist of international notoriety unrelated to any political ideologies and practices of the time; 4) In 1941 he was a Vice-Director of Bucharest Astronomical Observatory and therefore was directly involved in the mission of the Romanian astronomers to save the entire patrimony of Odessa Astronomical Observatory, a gesture remembered by the Soviet authorities after 1945; 5) With a certain probability, the illegal and highly risky operation of a printing press belonging to the Communist Party in Romania inside the Bucharest Astronomical Observatory during the time he was Director of the institution might have given him a degree of neutrality capital during the Stalinist repression in Romania.

Therefore, Gheorghe Demetrescu simply couldn't have been accused by the Stalinist communists in Romania of the typical cliché that he was "an exploiter of the people", due to his focus and hard work throughout his life as a seismologist, professor, but first and foremost, an exploiter of the stars.

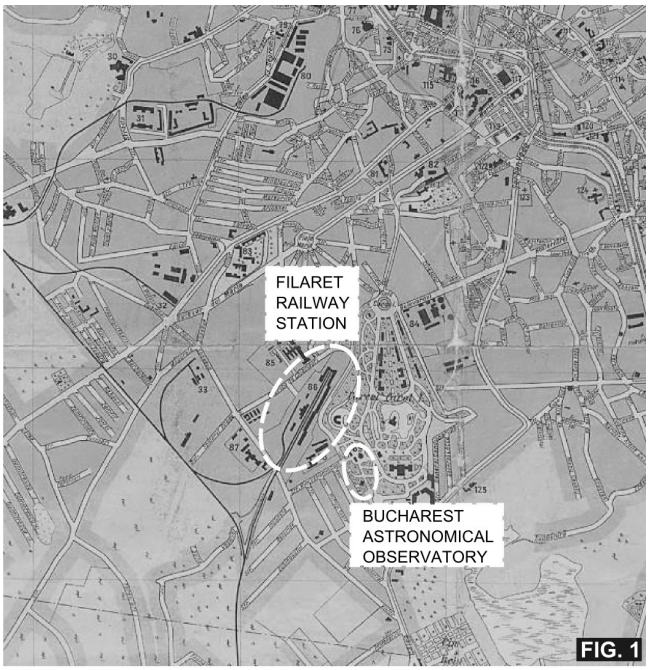
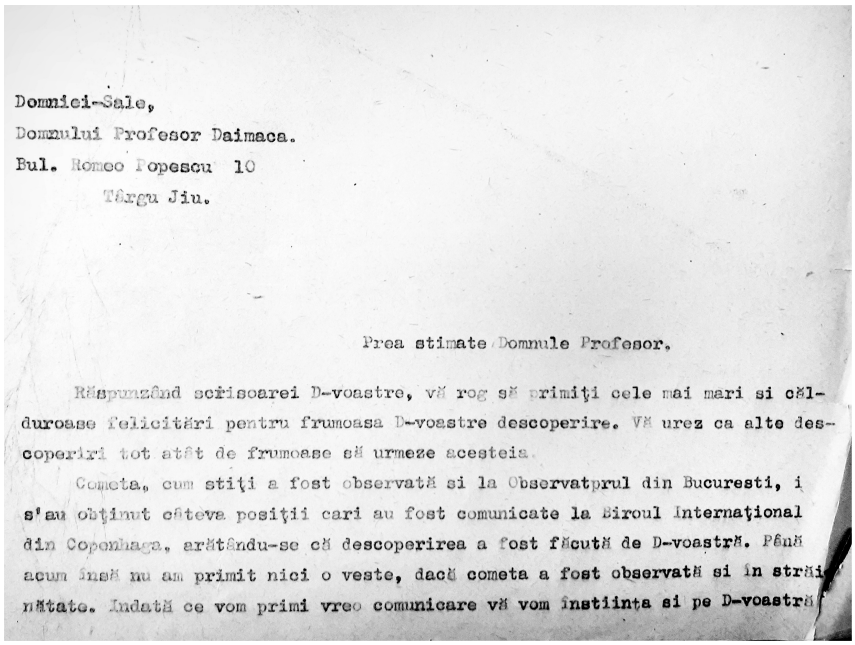


Fig. 10 – Proximity range between Filaret Railway Station and the Bucharest Astronomical Observatory – Socec Plan, 1914; FIG. 2 - Measured distance (540 m) between the Filaret Bus Depot (formerly Filaret Railway Station) and the Bucharest Astronomical Observatory – ©Google MyMaps, 2024.



Dommici-Sale,
Dommului Profesor Daimaca.
Bul. Romeo Popescu 10
Târgu Jiu.

Prea stimate Domnule Profesor,

Răspunzând scrisoarei D-voastre, vă rog să primiţi cele mai mari si căldurose felicitări pentru frumoasa D-voastre descoperire. Vă urez ca alte descoperiri tot atât de frumoase să urmeze acesteia.

Cometa, cum ştiţi a fost observată si la Observatprul din Bucuresti, i s'au obţinut câteva poziţii cari au fost comunicate la Biroul Internaţional din Copenhaga, arătându-se că descoperirea a fost făcută de D-voastră. Până acum însă nu am primit nici o veste, dacă cometa a fost observată si în străinătate. Îndată ce vom primi vreo comunicare vă vom înstiinţa si pe D-voastră

Fig. 11 – Copy of a response letter to Victor Daimaca, the discoverer of C/1943 R1 (Daimaca) comet, proving that the Prin-Merz astrograph was still in use during the Second World War.

Fig. 12 – The University of Bucharest, where several of the Bucharest Astronomical Observatory's scientists worked as professors and assistants, was devastated by the 1944 bombing raids. The interior collapsed, but the facade remained standing. In front of the building are the doors to a bomb shelter. It should be noted that after August 23, 1944, when Romania exited the war against the Allies, Nazi Germany bombed downtown Bucharest for several days as reprisals (Image source: b365.ro).

5. DISCUSSION

The key findings of this research highlight the personal and institutional resistance exhibited by the leadership of the Bucharest Astronomical Observatory during World War II. Through careful examination of documents, it is evident that Gheorghe Demetrescu and Constantin Popovici, along with their colleagues, navigated oppressive wartime policies to protect human life and preserve the patrimony of both the Bucharest and Odessa observatories. One notable example is the legal loophole found by Demetrescu, which allowed the Jewish-Romanian astronomer, Mozes Moscovici, to work at the observatory for nearly six months, despite the stringent antisemitic legislation in place. Also important is the role played by Romanian astronomers in safeguarding the patrimony of the Odessa Astronomical Observatory during the war. Their efforts ensured that the instruments, buildings, library fund and research data remained intact, facilitating the rapid resumption of scientific work after the war. While these actions are significant in their immediate context, they also reflect a broader commitment to human life and moral integrity, even in the face of the destruction and legal dilemmas of wartime.

In contextualizing these findings, this study addresses a significant gap in historiography. Previous literature has often overlooked the nuanced behavior of Romanian institutions during the war, especially in their interactions with both the pro-German regime in Romania and the Soviet Union. This research presents an evidence-based alternative to Soviet propaganda and the subsequent historiography, which claimed that Romanians caused extensive damage to Soviet territory during the Second World War. By documenting the efforts of Romanian astronomers to preserve the patrimony of the Odessa Astronomical Observatory, this study contributes to a more balanced interpretation of these events. Furthermore, it underscores the importance of cultural memory and the need for a more accurate understanding of past events and the individuals who shaped them.

Even under the constant threat of Allied bombing raids, Romanian astronomers led by Constantin Popovici and Gheorghe Demetrescu chose to remain at the Bucharest Astronomical Observatory, continuing their scientific work under extreme danger. This decision not only reflects their commitment to preserving the observatory's patrimony but also stands as a moral stance against the war, prioritizing the continuity of scientific work and the protection of human life with all the destruction around them.

Despite its relevant findings, this study is limited by the lack of access to archival sources from the former Soviet Union, particularly those now located in Ukraine and Russia. These sources could potentially provide deeper insights into the wartime experiences of both Romanian and Soviet astronomers. Additionally, a key question emerging from this research is whether Mozes Moscovici survived the en-

tire Holocaust period and, if so, how. Further investigation into archival documents may reveal more about his life during and after the war. Another important direction for future research is understanding how the preservation of the Odessa Astronomical Observatory's patrimony contributed to Soviet science and how this may have facilitated post-war collaboration between Romanian and Soviet astronomers.

6. CONCLUSIONS

During the Second World War, the Bucharest Astronomical Observatory faced a complex situation caused by a chain reaction of geopolitical, military, economic, and social effects. Its activities were greatly reduced in the turmoil of the war, yet they never ceased. As limited as they were and shaped by the circumstances, the actions undertaken by the leadership and staff of the Bucharest Astronomical Observatory during the war had a major impact on people's lives and on a vast patrimonial treasury of instruments, buildings, and documents belonging to both the Bucharest and Odessa astronomical observatories. The war also marked a distinctive period of collaboration between Romanian and Soviet astronomers, who worked in good faith to preserve both scientific assets and human lives. The leadership of the Bucharest Astronomical Observatory, represented by Constantin Popovici and Gheorghe Demetrescu, silently implemented a personal and institutional *resistance policy* against the multifaceted oppression of the political regime in Romania during those years. They and their colleagues never considered relocating their astronomical research, educational, or administrative activities for the entire duration of the war, choosing to remain in Bucharest, at the Cuțitul de Argint Street headquarters, living and working under the threat of bombs.

The greatest recognition received by the people of the Bucharest Astronomical Observatory after this period was how their collective and individual memory was preserved for posterity, as Romanians whose pathway under the stars was straight.

Acknowledgements. I thank my colleagues Mirel Birlan, Dan Alin Nedelcu, and Petre Paraschiv, as well as Magda Stavinschi, Petre Popescu, Neculai Rădulescu, and Gheorghe Vass, for the information they have provided me over the years.

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