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The life and work of the Moscow State University Professor V.V. Podobed

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The paper is based on the presentation given to the conference "Astrometry: past, present, future" which was held at the Sternberg Astronomical Institute, Moscow State University on 14–16th October 2019. The paper details the life and scientific work of Professor V.V. Podobed. The original Russian-language version is published in Astronomicheskii Zhurnal.

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1 Introduction

Vladimir Vladimirovich Podobed was an astronomer, a prominent astrometrist, a doctor of physical and mathematical Sciences, and a Professor at Moscow State University (MSU) (Fig. 1).

V.V. Podobed was born on November 6, 1918, at the time of the revolution and hard civil war. His father, Vladimir Illarionovich Podobed (1878–1919) was a physician (Fig. 2).

His father's parents, i.e., his grandmother and grandfather were minor nobility. I.M. Podobed, his grandfather was a court councillor at Mogilev Guberniya; his mother Maria Nikolaevna Podobed (maiden name Gionitskaya) was born at Mogilev Guberniya. V.V.'s father died rather early, in 1919, at the age of 41, of typhoid fever he had caught while performing his professional duties. At that time typhoid fever was rampant throughout Russia.

V.V's mother, Sofia Vasilievna Ivanova-Podobed graduated from the Moscow University medical faculty and became a physician (Fig. 3). She was one of the first Russian medics to master the roentgenology (or radiology) profession. Later she headed roentgenology department of Sklifosovsky Institute of Emergency Care and was awarded the title of honored physician of the Russian Federation.

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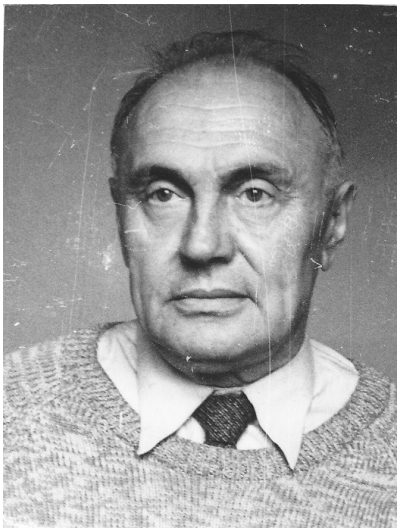


Figure 1 Vladimir Vladimirovich Podobed (6.11.1918–10.01.1992).



Figure 2 Vladimir Illarionovich Podobed (1878–1919).

V.V's maternal grandfather, Vasili Ivanovich Ivanov, although he came from a modest family of peasants of Kaluga Guberniya, was a master of printing and managed to establish a printing house of his own in Moscow and published books such as "Emblems of Russia" or "In Memory of Pushkin" (published in 1880). V.V's maternal grandmother, Maria Alekseevna Ivanova, came from a family background of merchants.



Figure 3 Sofia Ivanova-Podobed (1887–1953).

In the USSR, in the 1920s, secondary schools accepted children at the age of eight years. V.V. entered school in Moscow in 1926, graduated from it in 1936, and then found himself "at a crossroads". Probably following the example of his mother, he entered the 1st Medical Institute, but was soon disillusioned. He then moved to the faculty of locomotive engineering of Moscow Electro-mechanical Institute because since his school years he was attracted to working with devices and the design of mechanisms and mathematics.

But at the end of the first year he left the Institute and decided to enter Moscow University. In 1937 his dream came true and he became a student of the faculty of mechanics and mathematics of MSU, but then due to a serious illness, as V.V. wrote in his autobiography, he had to miss the 1939–1940 school year.

In 1941 the Great Patriotic war broke out: in June, Germany attacked and assaulted the Soviet Union. V.V. for health reasons (severe congenital cardiac defect) was completely released from service in the active army. There was also a three-year long break in classes at the University. However, from July 1941 to March 1944, V.V. worked as an x-ray technician in a military hospital in Moscow. Later, classes at the University resumed, and in 1946 V.V. successfully graduated from MSU. Besides, during his last academic year V.V. combined classes with the position of a senior laboratory assistant at SAI MSU (August 1945 – October 1946). At the same time, V.V. was accepted to the MSU postgraduate program in astrometry (Fig. 4). He completed it in 1949 with a PhD thesis on the topic: "Analysis of a device for measurement of astrophotoplates". V.V.'s supervisors were: the head of SAI astrometry Department, Professor, corresponding member of the USSR Academy of Sciences Sergey Nikolaevich Blazhko and Professor, corresponding member of the USSR Academy of Sciences Mitrofan Stepanovich Zverev.



Figure 4 V.V. Podobed. The photo is taken by V.N. Korzhev in the garden of the MSU Krasnopresnenskaya Observatory.

V.V.'s interest in devices and their investigation appears obviously from the titles of his scientific papers: "Processing of 1903–1907 photographic observations by P.K. Sternberg's of the double star ζ (Zeta) of Big Dipper" (Astron. Zhurn., V. 28, No. 1, 1951); "On the study of running errors of the micrometer" (Astron. Zhurn., V. 28, No. 1, 1951); "Determining the exact positions of minor planets using a wide-angle astrograph"; "Exploring small sections of a divided circle" (Astron. Zhurn., V. 30, No. 3, 1953); "On the issue of studying the axles of astrometric instruments using an indicator" (Proceedings of the 11th Astrometry Conference, 1955).

Over many years of his scientific activities, V.V. kept working on the problems of photographic and fundamental astrometry. He introduced a number of new notions into the theory of astrometric observations and processing, and brought forward new methods of device testing, which later became known as "Podobed's methods" (original ways to study trunnions and the divided circle). V.V. wrote many popular science articles for the Great Soviet Encyclopedia, Small Soviet Encyclopedia, and other publications (Fig. 5).

From October 1949 until February 1953, V.V. worked as assistant at the faculty of mechanics and mathematics. From 1950, he read a number of general and special courses in astrometry: "Fundamental astrometry", "General astrometry", "Fundamental star catalogues", "Astronomical constants". V.V. Podobed was a novice teacher (Fig. 6) so he tried to take over the experience of of teaching and worked with professors of the older generation, including, 1943–1952, SAI director Sergei Vladimirovich Orlov. In February 1953, V.V. joined the KPSS, and around the same time won the scientific title of docent at the department of astrometry. But up until January 1954, he continued to work as assistant at MSU faculty of mechanics and mathematics. In 1954–1959, V.V. occupied the positions of Deputy Director for research under two SAI directors – Boris Vasilievich Kukarkin and Dmitry Yakovlevich Martynov (Fig. 7).

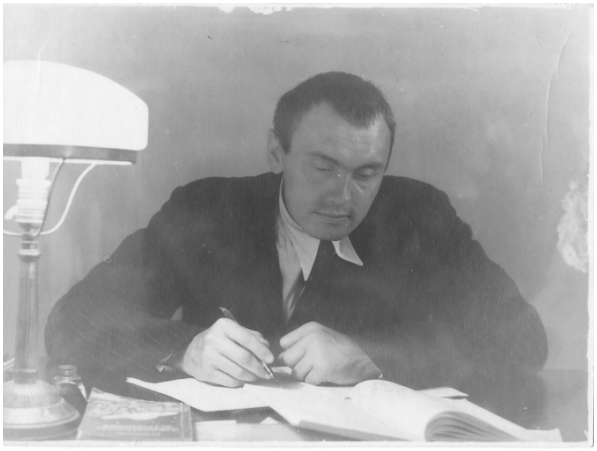


Figure 5 V.V. Podobed at work, 1949.



Figure 6 MSU Krasnopresnenskaya Observatory, 70th anniversary of Sergey Vladimirovich Orlov, 1950. V.V. is in the second row from above, first left (with a hat).

From 1949, SAI staff were engaged in implementing the Decree of the USSR Council of Ministers on reconstruction of the MSU. The erection of a high-rise building of MSU began at that time. At SAI a special commission was created and V.V. was put at the head of that commission. He put a lot of energy and effort into development of technical specification for a large number of unique astronomical equipments and the devising and design of special pavilions for astronomical instruments, as well as into the institute new building project (in particular he insisted that the building



Figure 7 V.V. Podobed, SAI Deputy Director for research (1954–1959) at SAI. At the right: SAI Director, Dmitry Yakovlevich Martynov and Petr Stepanovich Soluyanov, Deputy Director for Administrative and Economic Affairs.

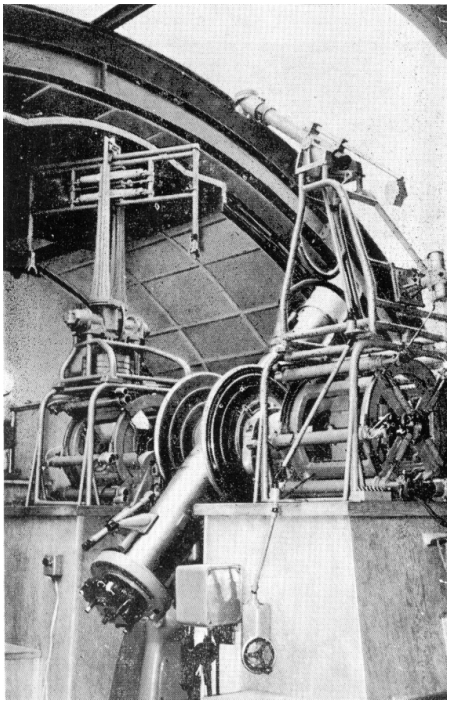


Figure 8 Meridional circle (produced at the State Optical-mechanical Plant) at Lenin Hills SAI Observatory, 1961.

should have 3 floors (the 3rd one in the form of an additional ground floor). Originally the architects had worked out a 2-storey building project. In 1954–1955, the SAI staff began to move to the new place (at Lenin Hills, now Vorobievy Hills). V.V. gave much attention to allocation and installation of the astrometric instrumentation – the



Figure 9 A group of SAI staff members at the Southern Station, 1950–1960s. Podobed is the third at the left.

meridian circle, AFR-1, reflector, photographic Zenith tube (PhZT), Zenith telescope (ZTL-180).

The author of this paper, having started to work at SAI in 1959, remembers how the large room in the new building (or, rather, the big auditorium for students' practical training) was converted, for a period of time, into a large laboratory for the new meridian circle mounting: engineers from Leningrad, from the GOMZ factory arrived and, together with V.V., discussed installation of certain parts on the new device, that had already been placed into the special pavilion built nearby, near the windows of SAI astrometry department (Fig. 8). In spite of his SAI vice-director duties, V.V. held scientific seminars on astrometry for the department staff.

He was a performer and continued the great collective work of Soviet astrometry – the Fundamental Catalogue of Faint Stars (FCFS). He supervised and personally participated in completing the observations for the Fundamental Catalogue of Faint Stars with the Rapsold Meridian Circle in Moscow, at MSU Krasnopresnenskaya Observatory. As Deputy Director for research, V.V. Podobed inspected and guided the works on development of our observation stations, such as the one at Kuchino, near Moscow, the Southern Station at Crimea (Fig. 9), and, later, in relation with contractual works, at Maidanak (Uzbekistan).

V.V. held a number of public positions. He headed the section "Astronomy and Geodesy" of the USSR Ministry of Higher Education Scientific and methodological Council, vice-chaired the Bureau of the section "Astrometry" of the Astrosovet ("Astro-council") of the USSR Academy of Sciences; member of the Council for the training of astronomical staff at the Astrosovet; later, he participated in two IAU commissions (Numbers 8 and 24). In official documents it was always noted that V.V. was many times elected member and Secretary of the SAI party Bureau.

In 1957–1959, the international geophysical year events were held. V.V. took active part in corresponding activities. By an order of the Minister of Higher Education

dated 30.01.1958 "For the great and fruitful work on the preparation of equipment for photographic observations of artificial earth satellites and the organization of such observations", gratitude was declared: 1) to the Director of the Astronomical Observatory of Odessa University, Prof. V.P. Tsesevich and 2) Deputy Director of Sternberg Astronomical Institute of Moscow University associate professor V.V. Podobed. Signed by the Minister V. Elutin.

In 1960 V.V. was again an associate Professor at the Department of astrometry, and from 1964 (after the merger of the two departments) up to 1972 he was associate Professor of the Department of stellar astronomy and astrometry of the physical faculty of Moscow State University. In 1962, V.V. Podobed's textbook for universities "Fundamental astrometry. Determination of stellar coordinates" was published. The same textbook was published in the United States: "Podobed V.V. Fundamental Astrometry. Determination of Stellar coordinates. The University of Chicago Press, Chicago and London, 1965". In "Soviet Astronomy" (vol. 42, no. 5, 1965) the paper "Astrometry" by V.V. was published, and in "The MSU Bulletin" (no. 5, 1967) – another paper, "The Problem of inertial system determination in astronomy", both papers co-authored by V.V. Nesterov.

A paper by V.V., "Inertial coordinate system and some problems of astrometry" was published in the book "Coordinate Systems in astronomy" (Tashkent, 1971). Also, a number of other scientific papers on problems of astrometry, i.e., the problems of determining and constructing the main universal reference system, were published.

The above-mentioned textbook and articles were the steps towards the defense of the doctoral thesis, which took place on June 18, 1970, and where V.V. made a report entitled "Fundamental astrometry", which included a set of works on this topic. On November 13, 1970, V.V. was awarded the degree of doctor of physical and mathematical Sciences.

In 1972–1988, V.V. headed the SAI Department of Astrometry (the Department staff consisted of more than 20 persons), and he was engaged at the same time in pedagogical activities: lecturing, directing students' course and diploma works. Meanwhile in the Department, under the leadership of V.V., 17 PhD theses were defended, and two of these PhD later won the title Doctors of science. On May 21, 1976, V.V. Podobed was awarded the academic title of Professor in the following specialties: astronomy, astrometry, and celestial mechanics. In 1975, the textbook "General astrometry" was published; in 1982, the second edition (revised and supplemented) was published as a textbook for University students; both books were written in collaboration with V.V. Nesterov. V.V. Podobed was certainly an active participant in the All-Union astrometric conferences (Figs. 10 and 11).

In the 1970s, V.V. Podobed was already a distinguished Soviet scientist, a well-known specialist in the field of astrometry. During this period, he paid much attention to the scientific management of contractual works by decision of directive organisations. It was then possible to build the Central Asian high-altitude Observatory for SAI in the vicinity of the city of Samarkand, on a mountain plateau, near Mount Maidanak. V.V. headed the SAI Commission on the selection of a suitable location for the future Observatory. Together with other members of our Institute staff he repeatedly traveled to those southern places. After 10 years, the Observatory was built. Among other instruments, there was a reflector with a one-and-a-half-meter mirror, made in Leningrad at LOMO (Leningrad optical and mechanical Association, now



Figure 10 XX All-Union astrometry conference participants (Pulkovo, May 20–23, 1975), during an excursion to Pavlovsk.



Figure 11 XXII All-Union astrometry conference (Moscow, SAI MSU, June 1981). Podobed is the fourth from the left in the first row.

called GOMZ). But after the collapse of the USSR, the Observatory was transferred to the independent state of Uzbekistan, since it is located on its territory. However, the contractual work on compiling catalogs with coordinates and other characteristics

of stars was performed by employees of the Department of astrometry and partially by other departments of SAI. In 1975, 1980, 1985, 1987, these works won government awards. V.V. was awarded the orders "Red Banner of Labour" (1975) and "Badge of Honor" (1987). V.V. had got other awards in the past, including medals "For the Defense of Moscow", "For valiant labor in great Patriotic war", "In memory of 800th anniversary of Moscow", "In commemoration of the 100th anniversary of the birth of V. I. Lenin", etc.

In 1988, V.V. changed from the position of head of the Department and became the chief scientific officer of the Department of astrometry of SAI. By that time he had published more than 70 scientific works. While heading the Department, V.V. always took an active role, sought justice in solving certain problems and always tried to help his younger colleagues with their work. V.V. was the oldest among us (except for Professor Konstantin Alekseyevich Kulikov) and we all treated V.V. with sincere respect. I remember the gift we prepared for Podobed on the occasion of his 50th birthday – we gave him a large commemorative medal, 10–12 cm in diameter, with the relief of V.V.'s head in profile, as on a coin (V.V. himself was of great height, under 190 cm, probably, that's why he also liked everything big). Our colleagues, Albert Petrovich Gulyaev and Yuri Ivanovich Prodan, cast this medal in the workshops of SAI.

Unfortunately, V.V. did not work long as the chief scientific officer of SAI because an injury (a fall on a slippery sidewalk on March 15, 1988) prevented him from working with the same energy. V.V. underwent two surgeries in 1988 and in 1992. After the second one, he died on January 10, 1992. V.V. was buried in the grave of his parents, in Moscow, at the Novodevichy cemetery (Fig. 12).

It should also be mentioned that during vacations, V.V. liked to travel in Russia and sometimes abroad. He also made several foreign business trips. He first went on a foreign trip in 1954, to France to a Congress on chronometry; then, in 1967, to a scientific conference in Czechoslovakia and in 1970, to a scientific expedition to Cuba (32 days). Also in 1967, V.V. traveled as a tourist, along the Danube; in 1969, as a tourist, he visited India and Ceylon. And traveling over the USSR began with the Carpathians, which V.V. visited in the late 1950s. In 1965, V.V. traveled to Karelia with his eldest daughter Olga (in kayaks), and in 1968 he flew to lake Baikal and brought back a large root of a tree. Travel to Central Asia including Tashkent, Samarkand, Kitab, Maidanak was in the 1970s–1980s. V.V. visited the far East and Kamchatka in the late 70s.

In the 1960s, we went with V.V. on excursions to nearby cities, to Suzdal, Pereslavl-Zalessky and other places.

I remember that at some stage in the 1980s an exhibition was held at SAI of two collections of minerals, gathered by two of our collaborators: V.V. Podobed and Vladimir Nikolaevich Korzhev (1925–2016). Each of them brought to SAI pieces of various geological rocks of incredible and extraordinary beauty. It was hard to tell which collection was better, both were good.

The life and deeds of Vladimir Vladimirovich sparkle like his "precious stones from the collection" in the memory of younger generations. In 1991, the name of V.V. Podobed was assigned to the minor planet No. 3311.

I would like to add that the Conference was attended by V.V.'s granddaughter, Natalia E. Kogutovskaya (the daughter of V.V.'s eldest daughter, Olga V. Podobed.



Figure 12 The gravestone at Novodevichy Cemetery in Moscow, where Professor V.V. Podobed was buried.

They both in their time graduated from the Moscow State University, only from different faculties). Natasha came with her children: the son Misha (12 years old) and daughter Yulia (8 years old). V.V.'s great-grandchildren were welcomed, especially Misha (he is interested in astronomy) and given children's books on astronomy as a present from EAAS (the Eurasian Astronomical Society).

The information in the article is based on the following sources used:

1. Dossier of V.V. Podobed at the Archive of SAI staff office.
2. Gribko L.P. *Vladimir Vladimirovich Podobed. To the centenary of the birth.* Odessa Astronomical Calendar 2018, Ed. Astroprint, 2017, issue 19, Odessa, Ukraine, pp. 223–228.
3. Memories of Olga Vladimirovna Podobed (oral) and photos of V.V. Podobed's parents provided by her from the family archive.