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(*b*. Ostrolenka [now Ostroleka], Lomzhinsk province, Russia [now Poland], 29 June 1893; *d*Leningrad, U.S.S.R. , 26 December 1966)

*astronomy, mathematics*.

Subbotin was the son of an army officer. In 1910 he entered the mathematics section of the Faculty of Physics and Mathematics of Warsaw University, where he received the Copernicus stipend, awarded in competition for works on a subject set by the department. In 1912, while still a student. Subbotin worked as a supernumerary calculator at the university astronomical observatory; and after graduating in 1914, he was promoted to junior astronomer. The following year Subbotin was evacuated with the university to Rostov-on-Don; and from there he went to the Polytechnic Institute in Novocherkassk, where he worked until 1922, first as an assistant, then as a docent, and, finally, as professor of mathematics. His first scientific works of this period are mathematical. In 1917 Subbotin passed his master's examination at Rostov-on-Don.

In 1921 Subbotin was invited to work at the Main Russian Astrophysical Observatory, which soon became the State Astrophysical Institute, in Moscow. Ten years later this institute became part of the P. K. Sternberg Astronomical Institute. Subbotin moved to Tashkent in 1922 and became director of the Tashkent division of the State Astrophysical Institute, created on the basis of the old Tashkent observatory. In 1925 the observatory again became independent, with Subbotin as its director; and until 1930 he did much to revitalize and equip it. On his initiative the Kitab international latitude station was created.

From 1930 Subbotin directed the department of astronomy at Leningrad University. From 1935 to 1944 he was chairman of the department of celestial mechanics; from 1931 to 1934, head of the theoretical section of Pulkovo observatory; and from 1934 to 1939, head of the astronomical observatory at Leningrad University. Seriously ill and emaciated from hunger, Subbotin was evacuated in February 1942 from besieged Leningrad to Sverdlovsk, where, after treatment and convalescence, he accepted an invitation to work at the Sternberg Institute, which had been evacuated from Moscow. He traveled several times to Saratov to lecture and consult at Leningrad University, which had been evacuated there. At the end of 1942 Subbotin was named director of the Leningrad Astronomical Institute, which on his recommendation was reorganized in 1943 as the Institute of Theoretical Astronomy of the U.S.S.R. Academy of Sciences and became the main scientific institution in the Soviet Union for problems of celestial mechanics and ephemerides. On his return to Leningrad, Subbotin continued his professorial activity at the university and also taught at the Institute of Theoretical Astronomy.

From 1928 Subbotin was a member of the International Astronomical Union and, from 1933, president of the Commission on Theoretical Astronomy of the Astronomical Council of the U.S.S.R Academy of Sciences. In 1946 he was elected corresponding member of the Academy of Sciences of the U.S.S.R. In 1963 he was awarded the Order of Lenin.

Subbotin's first scientific work was devoted to the theory of functions and the theory of probability. Several early articles deal with astrometry, particularly the creation of a catalog of faint stars. Later, however, his attention was devoted entirely to celestial mechanics and theoretical astronomy and to related areas of mathematics. He also wrote valuable works in the history of astronomy.

Subbotin began research on celestial mechanics by dealing with the theory of unperturbed motion. His new and original method of computing elliptical orbits from three observations was based on the solution of the Euler-Lambert equation. The solution of the modified equation yielded a semimajor axis, and then the remaining orbital elements were found. A number of Subbotin's works were devoted to the improvement of orbits on the basis of extensive observations. The last of these works included calculations destined to be carried out by electronic computers. In other writings Subbotin not only showed the possibility of improving the convergence of the trigonometric series by which the behavior of perturbing forces is represented, but also gave an expression for determining Laplace coefficients and presented formulas for computing the coefficients of the necessary members of the trigonometric series.

Subbotin also proposed a new, two-parameter form of equation of the Kepler ellipse, the various values of which lead to a number of anomalies, including one that changes with time more uniformly than the true and eccentric anomalies. This greatly simplified the computational integration of the equation of motion, which was particularly important for comets having large orbital eccentricities.

Subbotin's important three-volume course in celestial mechanics embraced all the basic problems of this science: unperturbed movement, the theory of perturbation and lunar theory, and the theory of figures of celestial bodies.

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