

# SOVIET ASTRONOMY

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### SERGEI VLADIMIROVICH ORLOV

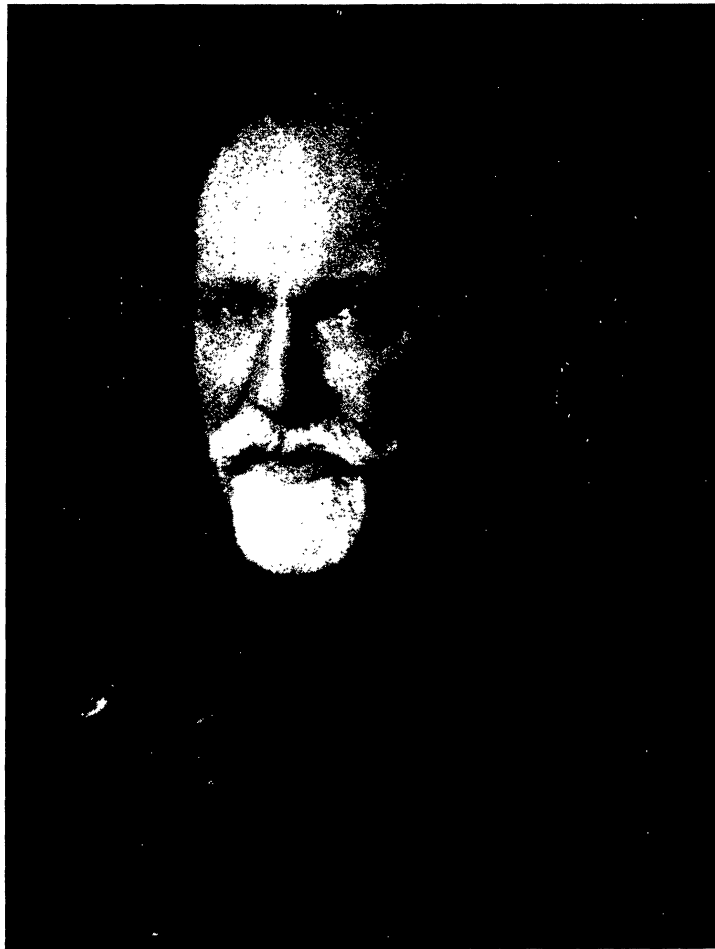
Sergei Vladimirovich Orlov, eminent Soviet scientist, Corresponding Member of the Academy of Sciences of the USSR, Stalin Prize winner, and professor at the Moscow State University, who has made a major contribution to the development of Soviet science, died on January 12, 1958, in his 79th year.

He was a direct continuator of the work of F. A. Bredikhin who received world-wide recognition for his studies of comets and was considered one of the most eminent Russian scientists before the Revolution. However, the task of Sergei Vladimirovich was incomparably more complex since, as a result of the rapid development of physics and astrophysics, he had to consider the whole complex of mechanical and physical properties of comets and give them a proper explanation.

The complexity of the problems presented by comets, and also their major importance, consists in that these bodies belong both to the solar system and to the interstellar medium and are subject to the influence not only of the sun but also of stars in remote parts of their orbits. In addition, they experience the effects of gravitational, electromagnetic and radiation fields. They are also connected with meteors and contribute to the interplanetary medium which is traversed by corpuscular streams emitted by the sun which have an effect upon the planets in general and the earth in particular. For these reasons, comets present the most complex problems in astrophysics but, at the same time, the solution of these problems may be of very great importance in the development of studies of the universe.

Sergei Vladimirovich not only perfected the mechanical theory of cometary forms developed by F. A. Bredikhin, having given, for example, a new method for improving hyperbolic orbits, a method for the determination of comet tails using syndynames, a method for the determination of the repulsive forces due to the sun from the motion of cloud formations in comet tails, and so on, but also produced the only theory of comets which connects their mechanical and physical properties. He also developed, starting on new foundations, a theory of comet heads which predicted various properties of comets and was verified in a series of examples and, furthermore, made possible the first determination of the mass of cometary nuclei.

Sergei Vladimirovich reached many brilliant results in his studies of the properties of comets. He found the common multiple of repulsive forces in cometary tails, gave a method for studying the changes in brightness and form of comets as a function of the distance from the sun, and thus began a whole series of studies both in the USSR and abroad, found a connection between the brightness of comets and the solar activity, etc. He also produced a theory of the origin of comets and showed that the nuclei of comets, asteroids and meteorites belong to the same class of objects in the solar system.



SERGEI VLADIMIROVICH ORLOV

Sergei Vladimirovich Orlov was the head of a large school of Soviet scientists concerned with the problems of comet astronomy. Among his pupils were N. D. Moiseev, B. A. Vorontsov-Vel'iaminov, S. K. Vsekhs-  
viatskii, Iu. V. Filippov, V. V. Fedynskii, S. M. Poloskov, L. A. Katasev, and a number of others.

Sergei Vladimirovich Orlov carried out a considerable amount of scientific organizational work. He took part in the organization of the Astrophysical Institute in Moscow, the Kuchino Observatory, and the development of scientific apparatus, in particular, apparatus associated with stereophotogrammetry. For a number of years he was a director of the Shternberg State Astronomical Institute, a member of the Editorial Committee of the *Astronomical Journal*, almost since its inception, a scientific consultant of the Stalinabad Observatory, a director of the Department of Comet Astronomy of the Moscow State University and the chairman of the commission for comets and meteors attached to the Astrosoviet of the Academy of Sciences of the USSR.

For his books, "Comets," "The Nature of Comets," and "The Head of a Comet and a New Classification of Cometary Forms" Sergei Vladimirovich Orlov was awarded the Stalin Prize 2nd Class in 1943. In the same year he was elected a Corresponding Member of the Academy of Sciences of the USSR.

Sergei Vladimirovich was awarded the Order of Lenin and two Orders of the Red Banner.

Sergei Vladimirovich Orlov was an active member of the community and popularized astronomy among the general public. He was a genuine scientist who, in a persistent pursuit of specific aims, achieved many important results.