

Part 1  
The legacy of Pulkovo  
for inertial systems and reference frames



Plate I. The original Pulkovo Observatory viewed from the southwest in winter. Photograph provided by Pulkovo Observatory.



**Plate II.** The reconstructed Pulkovo Observatory viewed from the southwest. Photograph provided by Pulkovo Observatory.

## INTRODUCTORY REMARKS

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IAU Symposium Number 141, which is titled "Inertial Coordinate System on the Sky," is sponsored by the International Astronomical Union and is co-sponsored by the Astronomical Council of the USSR Academy of Sciences. The sponsoring IAU commissions are Commission 8 (*Positional Astronomy*), Commission 4 (*Ephemerides*), Commission 7 (*Celestial Mechanics*), Commission 19 (*Rotation of the Earth*), Commission 24 (*Photographic Astrometry*), and Commission 31 (*Time*).

We are here to discuss the scientific problems which pertain to defining and to realizing reference frames so that for astronomical work we can establish an "Inertial Coordinate System on the Sky." Our meeting is also being held on the occasion of the 150th anniversary of the founding of Pulkovo Observatory which has been called the "Astronomical capital of the world."

At the time of Pulkovo's 100th anniversary in 1939 the world climate was not conducive to celebrating Pulkovo's centennial. Indeed, the observatory was destroyed a few years later during the siege of Leningrad. We are grateful that today we can commemorate the 150th anniversary of the founding of Pulkovo Observatory amid a reduced state of international tension in the world.

In the history of any individual, or of any organization, there are moments which one recalls with great satisfaction and some with a certain amount of sadness. The history of Pulkovo Observatory is no different. We will commemorate the many instances in which Pulkovo and its astronomers made lasting contributions to our field. We also remember those astronomers, such as B.P. Gerasimovich and B.V. Numerov, whose contributions were ended in the turmoil of the 30s.

From its very beginning, Pulkovo Observatory was at the forefront of scientific research for the astronomical understanding of the universe. We recall with great satisfaction, for example, the work of the early Pulkovo astronomers such as the Struves and C.A.F. Peters who were very influential and very active in the observation of double stars, in the determination of the precessional constant, in the determination of the constant of nutation, in the determination of aberration, in the determination of parallax, and in promoting international cooperation among astronomers.

During the symposium we will briefly review the past history of Pulkovo Observatory, as well as learn more about the current programs at Pulkovo as we discuss the legacy of Pulkovo as it pertains to the development of inertial systems. In other sessions we will discuss the concepts and definitions involved in setting up various models of inertial frames. We will discuss how reference frames are realized: both optical and radio, involving galactic as well as extra-galactic objects. Finally, we will consider how the various reference frames are tied to one another.



Plate III. Portrait of Wilhelm Struve, painted in 1841–42 by C.A. Jensen. Copy provided by Pulkovo Observatory via A.H. Batten.