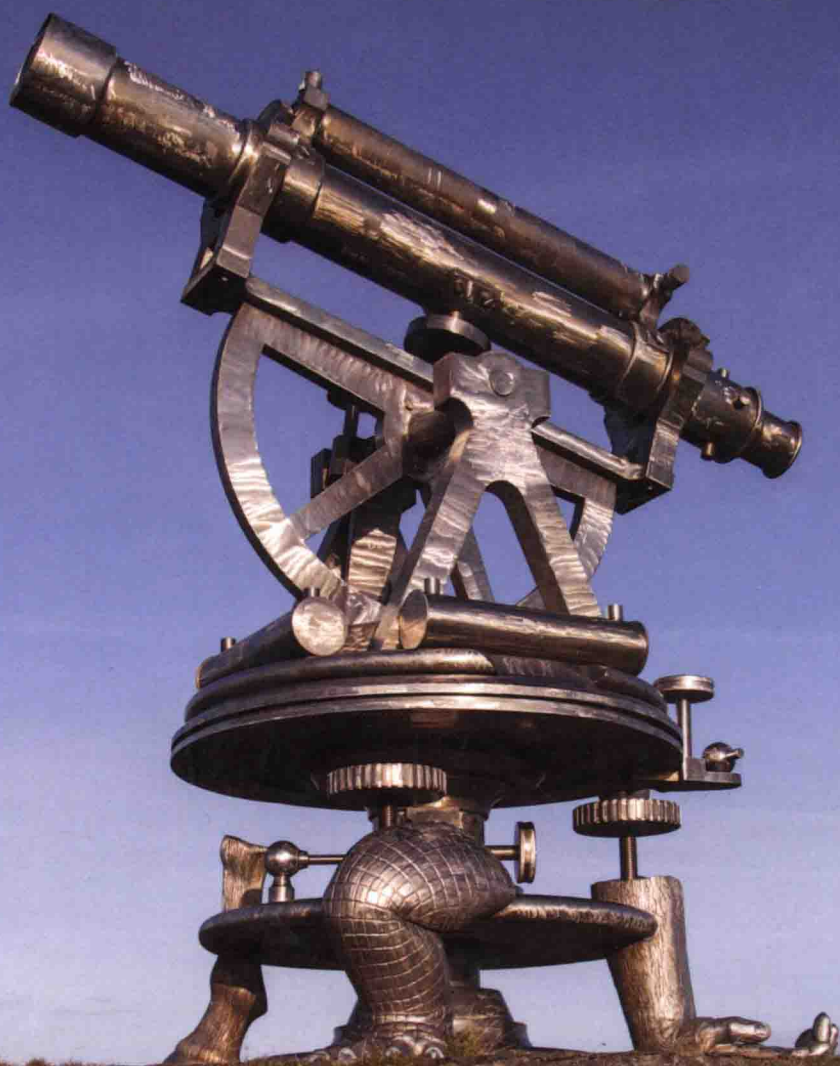


Eugene Levin • Leonid Nadolinets • Daulet Akhmedov

# Surveying Instruments and Technology



CRC Press  
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# Surveying Instruments and Technology

"I am impressed by the detail of this book. Not only has this book provided the history of surveying equipment, but also the reason and technological advances led to these changes. It is also pleasing to see the corresponding mathematics and the accuracies that have evolved to accommodate societies' needs along with equipment companies. It is not difficult to imagine this book will be a good reference in classroom and surveying research as well."

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**Leonid Nadolinets, Eugene Levin,  
and Daulet Akhmedov**



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# **Surveying Instruments and Technology**





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# Preface

Surveying is one of the most ancient professions, and in recent years it has been boosted by technology advances. These advances come from developments in optical, mechanical, electronics, aerospace, sensor, and information technologies. To this end, instrumentation deployed by modern surveyors is associated with a significant body of knowledge. This book is about surveying instruments and covers all aspects of them, including historical references, physical and constructional principles of operation, and features of modern instruments. The idea of creating a book about surveying instruments occurred to us while speaking with our colleagues and customers. Existing books in the field of surveyor's instruments were published many years ago and do not include up-to-date surveying instruments information. We believe this book is long overdue as a complete description of the latest surveying instruments.

This book is suitable for undergraduate and graduate students who are taking surveying courses, and professional surveyors seeking a better understanding of surveying instruments. Field surveyors working on large construction projects, such as road networks and buildings, and other geodetic control networks may find useful details presented in this book. Surveying business owners may also benefit.

It is hoped that this book will help readers to become aware of technological solutions behind the development of surveying instruments.





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**Daulet Akhmedov** has a PhD in theory of mechanisms and machines, and a PhD+ in geo-information and geotechnology. He is currently a director at the Institute of Space Technique and Technology, in Almaty, Kazakhstan. His research interests include mathematical models and numerical methods for solving the problem of simulating motion of mine dumps of various models, mainline, and shunting locomotives and trains; mathematical models and numerical methods for high-precision satellite navigation; design and development of geographic information systems (GIS); design, manufacture, and implementation of communication systems based on low-orbit sat-

ellite communication systems; design, manufacture, and implementation of high-precision satellite navigation systems; and development of dispatching systems based on the use of low-orbiting satellite systems, VHF and GSM communications, satellite navigation technologies, and GIS technologies.

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