

Charter of the

## **Commission on Map Projections**

of the International Cartographic Association (ICA)

## INTRODUCTION

Every map requires a map projection. This basic truth establishes the importance of map projections in the cartographic endeavor. Yet sometimes map makers do not choose worthy projections for their maps. They may not know how to. They may not have suitable tools at their disposal. It may not be convenient. Regardless of the reason, a map with an unworthy projection is an unworthy map.

The computing and telecommunication revolutions transformed cartography forever, bringing massive efficiencies, new techniques, and deluges of information to bear on an ancient craft. The Global Positioning System made surveyors out of anyone who cared to follow a track. Geographic Information Systems made cartographers out of anyone who had a spatial data story to tell. The Internet made researchers out of anyone who had a question to answer. The new tools have hugely improved the productivity of expert map makers. They have also entranced a generation of dilettantes so naïve they believe themselves expert solely by virtue of the tools they wield. As in every other field rebuilt around computers, novices use these new, egalitarian tools to proliferate awful products with mind-boggling efficiency. Of all the elements of a map that can be corrupted by ignorance, the projection receives the worst abuse: It is the only component likely to be left off the list if a typical person were asked to inventory everything visible on a map.

Projecting the globe distorts it. To study map projections is to study distortions. This study, being primarily a mathematical endeavor, benefits crucially from computer automation. Computers bring the practical ability to analyze projections, synthesize optimal ones, automate projection choice, and disseminate knowledge about projections. The classical projections can be imaged instantly to any practical precision. New projections conceived in the minds of map projectionists can be explored, tuned, and developed into real maps. Suitably programmed, a computer can be given a set of criteria and charged with constructing the map projection that optimally fulfills those criteria. Understanding the extraordinary benefits computers impart to the field, map projectionists pioneered their use in the latter half of the twentieth century. The field advances comparatively rapidly now despite the rarity of map projectionists.

The pioneers tended to work alone. They were distributed exceedingly thinly throughout the population; nor had they the benefit of any organized body dedicated to map projections. Hence map projection knowledge is scattered throughout isolated texts, Internet sites, and occasional professional papers hosted by journals devoted to mathematics, cartography, or geodesy.

The Commission on Map Projections within the International Cartographic Association (ICA) has been established with the goals of consolidating, coordinating, advancing, and disseminating knowledge of small-scale map projections. Its audiences are map projection researchers, professional and happenstance cartographers, and the public at large.

Daniel R. Strebe  
Founding Chair  
*16 September 2003*

# 1. MOTIVATION

The public at large refers to maps often. Their perception of the world is informed by maps. If they cannot properly interpret maps, their perceptions cannot be accurate. At the scale of world maps, at least, the public ought to understand rudiments of map projection.

Map projections, which have always been important to maps, are more practically available now than they ever have been. They play, or ought to play, an important role in the daily work of cartographers everywhere in order to improve the maps they produce. Hence the cartographer ought to be knowledgeable about map projections and ought to have practical access to the best tools for and information about map projections.

Many researchers are active in the field of map projections today. Their efforts have lacked coordination, standardization, and accessibility. Researchers ought to be able to efficiently research map projections as well as coordinate and disseminate their results.

To advance the knowledge of the public, the skills of the cartographer, and the efficiency of the researcher, we establish this **COMMISSION ON MAP PROJECTIONS** under the auspices of the International Cartographic Association. The commission was approved as an ICA group at the 21<sup>st</sup> International Cartographic Conference on 16 August, 2003, in Durban, South Africa.

# 2. PURVIEW

This commission shall devote itself to the subject of small-scale map projections. Groups dedicated to large-scale map projections already exist, primarily in the field of geodesy. The purposes, methods, and applications of large-scale projections differ from small-scale projections. Therefore this commission excludes large-scale projections from its purview.

This commission defines small-scale map projections to be those which are intended to model planetary bodies, and which are meaningful when the model is spherical or an irregular solid. Qualifying projections may also have meaning using an ellipsoidal datum, and this commission embraces ellipsoidal developments. However, no projection whose meaning derives solely from its ellipsoidal development qualifies under this charter.

Hereafter, all references to “map projections” or even “projections” shall mean “small-scale map projections” unless otherwise noted.

# 3. GOALS

- To establish a repository of map projections knowledge;
- To promote map projections to all relevant audiences;
- To provide a platform promoting research, collaboration, and a common language within the field of map projections.

## 4. ACTIVITIES

In no particular order, and not limited to:

- Research cartograms;
- Research deformation analysis for map graticules and methods for comparative deformation analysis;
- Research map projections for planetary bodies, including graticules for irregular bodies;
- Research efficient algorithms for calculating map projections, supplying numerical examples in those results;
- Research optimal map projection choice and use;
- Research historical map projection usage;
- Research map projections and spatial cognition;
- Disseminate research products;
- Maintain map projections bibliography;
- Maintain a World Wide Web site hosting the Commission's products;
- Maintain a database of commission members and interested parties;
- Recommend canonical names for map projections;
- Recommend terminology and taxonomies for map projections;
- Monitor computer software published by other parties for availability and accuracy of map projections they implement;
- Monitor the state-of-the-art in map projections research and translate it into practical recommendations and methods for map projections selection and use;
- Lend technical support and consulting to cartographers, teachers, and other scientists dealing with map projections;
- Provide channels for teachers to exchange information on map projections;
- Serve as an authority on map projections for the general public as well as for our ICA hosts.

## **5. DISSEMINATION OF KNOWLEDGE**

Recognizing the prohibitive cost of print publishing, the Commission shall supply all of its products in electronic form and shall make them available via the Internet. From time to time the Commission and the ICA may determine that a particular publication ought to be available in printed form; this charter does not prohibit that.

The Commission shall adhere to public, free standards wherever practicable in the exchange and dissemination of knowledge. The Commission shall respect intellectual property rights and shall endeavor to properly attribute all substantial information.

The Commission shall procure and maintain a World Wide Web domain of suitable name and shall continuously host a site at that domain as a repository for Commission knowledge.

From time to time the Commission may host workshops on relevant themes at venues approved by the ICA.

## **6. COLLABORATION WITH RELATED ORGANIZATIONS**

The Commission shall maintain contacts and exchange information with organizations likely to be clients of its knowledge or interested in its proceedings. Some of the organizations thought to be relevant are listed here.

- Other ICA working groups and commissions: Map Production, Planetary Mapping, Maps and the Internet, Mapping from Satellite Data, Education and Training, Visualization, Theoretical Cartography, Cartography and Children, History of Cartography.
- EUREF (EuroGeographics Work Group 8).
- Swiss Society of Cartography (SGK).
- MapHist discussion group and mailing list ([www.maphist.org](http://www.maphist.org)).
- North American Cartographic Information Society (NACIS).
- Cartography and Geographic Information Society (CaGIS).

## **7. ACKNOWLEDGEMENTS**

The Commission gratefully acknowledges Dr. Christoph Brandenberger of the Institute of Cartography within the Swiss Federal Institute of Technology at Zürich. He recognized the need for this commission and organized the effort to establish it. This charter is based substantially on his original petition to the ICA.