

*Felix qui potuit boni  
fontem visere lucidum,  
felix qui potuit gravis  
terrae solvere vincula.*

*Boethius*

## Preface

Why should anybody still practice celestial navigation in the era of electronics and GPS? One might as well ask why some photographers still develop black-and-white photos in their darkroom instead of using a high-color digital camera. The answer would be the same: because it is a noble art, and because it is rewarding. No doubt, a GPS navigator is a powerful tool, but using it becomes routine very soon. In contrast, celestial navigation is an intellectual challenge. Finding your geographic position by means of astronomical observations requires knowledge, judgement, and skillfulness. In other words, you have to use your brains. Everyone who ever reduced a sight knows the thrill I am talking about. The way is the goal.

It took centuries and generations of navigators, astronomers, geographers, mathematicians, and instrument makers to develop the art and science of celestial navigation to its present level, and the knowledge thus acquired is a treasure that should be preserved. Moreover, celestial navigation gives an impression of scientific thinking and creativeness in the pre-electronic age. Last but not least, celestial navigation may be a highly appreciated alternative if a GPS receiver happens to fail.

When I read my first book on navigation many years ago, the chapter on celestial navigation with its fascinating diagrams and formulas immediately caught my particular interest although I was a little deterred by its complexity at first. As I became more advanced, I realized that celestial navigation is not nearly as difficult as it seems to be at first glance. Studying the literature, I found that many books, although packed with information, are more confusing than enlightening, probably because most of them have been written by experts and for experts. Other publications are designed like cookbooks, i. e., they contain step-by-step instructions but avoid much of the theory. In my opinion, one can *not* really comprehend celestial navigation and enjoy the beauty of it without knowing the mathematical background.

Since nothing really complied with my needs, I decided to write a compact manual for my personal use which had to include the most important definitions, formulas, diagrams, and procedures. The idea to publish it came in 1997 when I became interested in the internet and found that it is the ideal medium to share one's knowledge with others. I took my manuscript, rewrote it in the HTML format, and published it on my web site. Later, I converted everything to the PDF format, which is an established standard for electronic publishing now.

The style of my work may differ from standard books on this subject. This is probably due to my different perspective. When I started the project, I was a newcomer to the world of navigation, but I had a background in natural sciences and in scientific writing. From the very beginning, it has been my goal to provide accurate information in a highly structured and comprehensible form. The reader may judge whether this attempt has been successful.

More people than I ever expected are interested in celestial navigation, and I would like to thank readers from all over the world for their encouraging comments and suggestions. However, due to the increasing volume of correspondence, I am no longer able to answer every individual question or to provide individual support. Unfortunately, I have still a few other things to do, e. g., working for my living. Nonetheless, I keep working on this publication at leisure.

I apologize for misspellings, grammar errors, and wrong punctuation. I did my best, but after all, English is not my native language.

Last but not least, I owe my wife an apology for spending countless hours in front of the PC, staying up late, neglecting household chores, etc. I'll try to mend my ways. Some day ...

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