

U.S. Department of the Interior  
U.S. Geological Survey

**HYPOELLIPSE:**

A Computer Program for Determining  
Local Earthquake Hypocentral Parameters,  
Magnitude, and First-Motion Pattern  
(Y2K Compliant Version)

1999 Version 1.0

**By John C. Lahr**

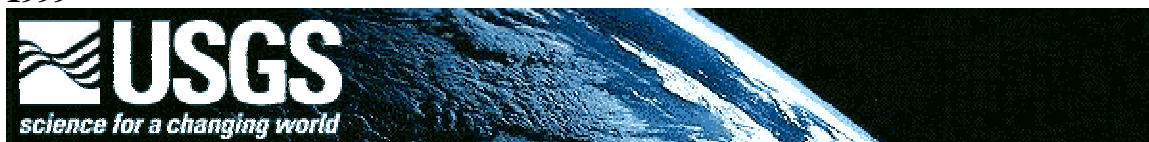
Denver Federal Center  
Box 25946, Mail Stop 966  
Denver, CO 80225  
(303) 273-8596  
lahr@usgs.gov

**U. S. Geological Survey Open-File Report 99-23, On-Line Edition**

This report is preliminary and has not been edited or reviewed for conformity with U.S. Geological Survey (USGS) editorial standards. Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Although this program has been used by the USGS, no warranty, expressed or implied, is made as to the accuracy and functioning of the program and related program material nor shall the fact of distribution constitute any such warranty, and no responsibility is assumed by the USGS in connection therewith.

1999



## Table of Contents

[Chapter 1 -- Introduction to HYPOELLIPSE](#)

[Chapter 2 -- HYPOELLIPSE Users Guide](#)

[Chapter 3 -- Error Estimates](#)

[Chapter 4 -- Magnitude Determinations](#)

[Chapter 5 -- Determination of Vp/Vs Ratio](#)

[Chapter 6 -- Generating Travel-Time Tables](#)

[Chapter 7 -- Use of Cylindrical Delay Regions](#)

[Chapter 8 -- Summary of Important Formats](#)

[Chapter 9 -- Acknowledgements](#)

[Chapter 10 -- References](#)