AIN SHAMS UNIVERSITY
FACULTY OF SCIENCE

DISCRIMINATION BETWEEN NATURAL EARTHQUAKES AND ARTIFICIAL EXPLOSIONS

A THESIS
SUBMITTED IN PARTIAL FULFILLMENT FOR THE REQUIREMENTS OF THE MASTER DEGREE IN GEOPHYSICS

By
MOHAMMED SHOKRY MOHAMED AHMED FARAG
B.Sc. in Geology/Geophysics (1996)
Geology/Geophysics Department
Faculty of Science
Ain Shams University

SUPERVISED BY

Prof. Dr.
Ahmed Sayed A. Abu El-Ata
Prof. of Geophysics,
Geophysics Department,
Faculty of Science,
Ain Shams University.

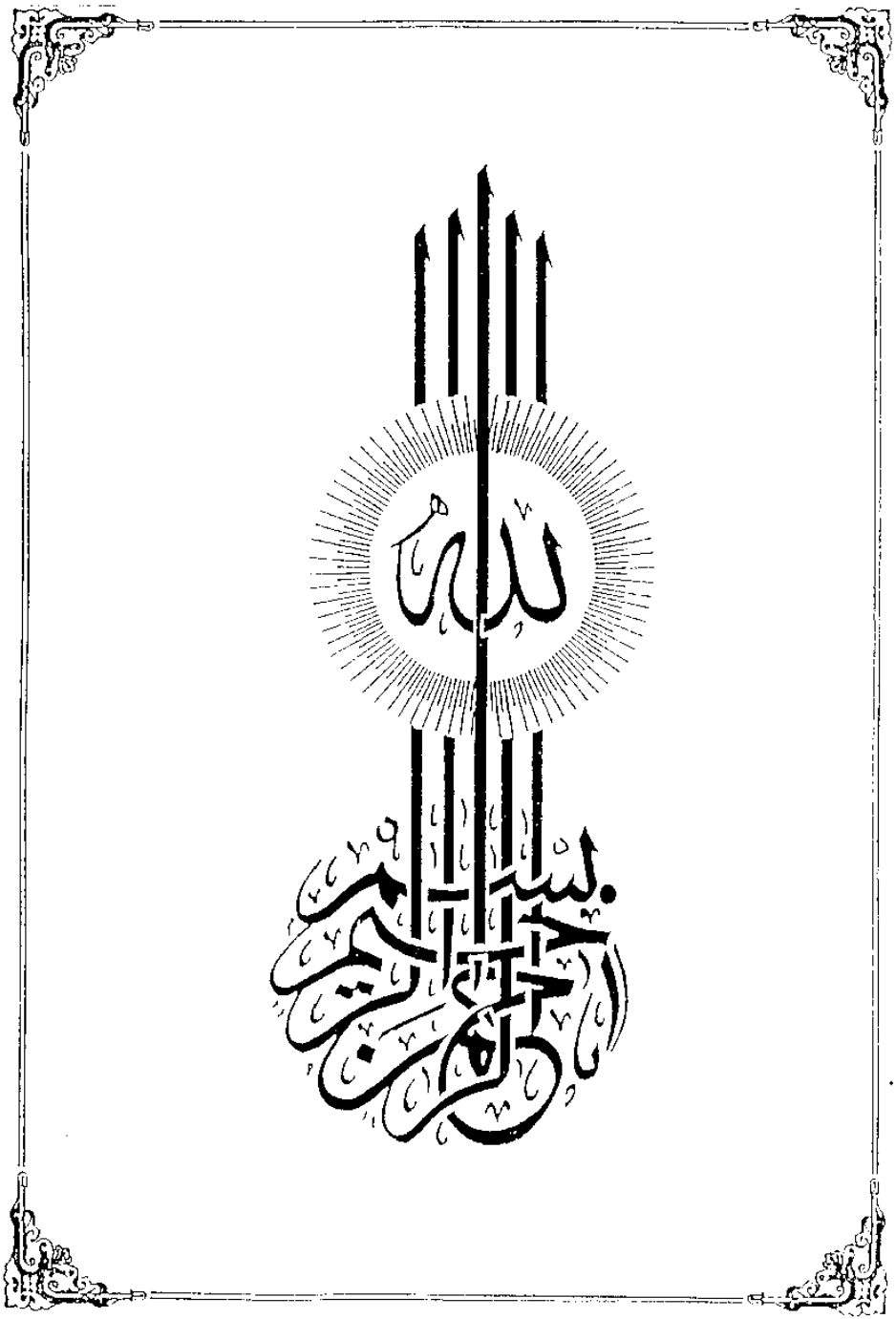
Prof. Dr.
Ramsis Nashed Hanaa
Prof. of Seismology and head
of Seismology Department,
National Research Institute of
Astronomy and Geophysics.

Dr.
Salah El-Hadidy Ali Youssef
Dr. of Seismology Department,
National Research Institute of Astronomy and Geophysics.

CAIRO – 1999

قَالُوا سُبْحَانَكَ لا عِلْمَ لَنَا إِلاَّ مَا
عَلَّمْتَنَا إِنَّكَ أَنتَ
الْعَلِيمُ الْحَكِيمُ

صدق الله العظيم
(سورة البقرة)
الآية «٣٢»



ACKNOWLEDGMENTS

My all gratitude is due to almighty God guided and helped me to bring-forth the present study.

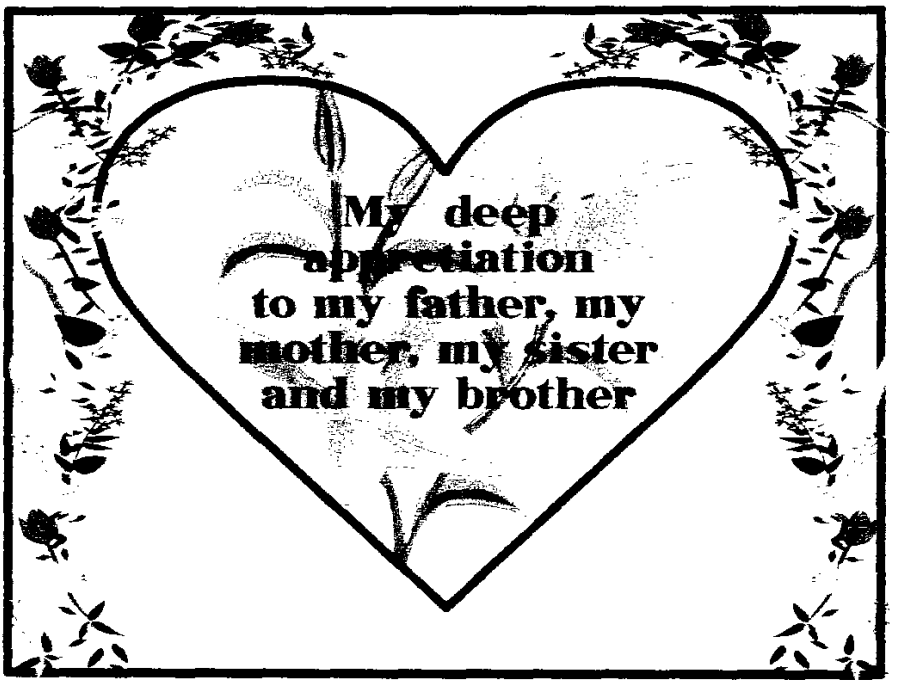
I would like to express my deepest appreciation to **Prof. A. S. A. ABU El Ata**, Professor of Geophysics, Geophysics Department, Faculty of Science, Ain Shams University, for his kind supervision, guidance, and encouragement throughout this study and for critical reading of the manuscript.

I am also grateful to **Prof. R. N. H. Albert**, Prof. of Seismology, National Research Institute of Astronomy and Geophysics (NRIAG), for his generous supervision and affering to accomplish this work.

I wish to express my honest and deepest gratitude to **Dr. S. E. A. Youssef**, Dr. of Seismology, National Research Institute of Astronomy and Geophysics (NRIAG), for his kind supervision, valuable scientific discussion, guidance, effective assistance in the preparation and progress of this study.

I would like to thank my friends **Dr. M. K. Yzbek**, **Mr. B. J. Faiad** and **Mr. M. A. El-melhem** for their assistance to me.

The author wish to thank the Geophysics Department at Ain Shams University and the National Research Institute of Astronomy and Geophysics for providing excellent facilities and techniques which made the completion of this work possible. Finally, my deep appreciation to my family and to all individuals who assisted in the careful, often tedious work of preparing this thesis.



NOTE

The present thesis is submitted from **Mr. Mohammed Shokry Mohamed Ahmed Farag** Refaie to the Faculty of Science, Ain Shams University in partial fulfillment for the requirements of Master of Science in Geophysics.

Beside the research work materialized in this thesis, the candidate attended and successfully passed post-graduate courses for one academic year in the following topics:

1- Geophysical Field Measurements.
2- Numerical Analysis and Computer Programming.
3- Elastic Wave Theory.
4- Seismic Data Acquisition.
5- Seismic Data Processing.
6- Seismic Interpretation.
7- Seismology.
8- Seismic Engineering.
9- Deep Seismic Sounding.
10- Structure of the Earth.
11- English Language.

Prof. Dr.: Nasser. Abou Ashour,
Head of Geophysics Department,
Faculty of Science,
Ain Shams University.

CONTENTS

LIST OF FIGURES