ACKNOWLEDGEMENTS

The author wishes to acknowledge with gratitude his indebtedness to Dr. Bibha Chowdhuri for guidance and supervision of this work in all its facets, and to Prof. Vikram A. Sarabhai for guidance, encouragement and many helpful suggestions during this investigation.

The author is grateful to Prof. B.V. Sreekantan and his colleagues of TIFR EAS group for extremely helpful collaboration throughout the present investigation. Thanks are due to Prof. S. Naranan, Dr. K. Sivaprasad and Dr. M.V. Sreenivas Rao for many useful discussions and suggestions.

The author is grateful to Prof. S.P. Pandya who read the manuscript and suggested many improvements. Constant encouragement and advice given by Prof. R.P. Kane, U.R. Rao and Satya Prakash are gratefully acknowledged.

Author is extremely thankful to Shri S.R. Thakore, Head of the computer centre, Physical Research Laboratory, and his colleagues for the help in computations and data processing. Thanks are due to M/s M.A. Gandhi, P.S. Shah and Atchuta Rao for help in computer programming and to M/s C.R.T. Nair and V.P. Nair for the job processing on CDC 3600/160 A at TIFR, Bombay. The assistance rendered
by Miss K.B. Vijayakar in data processing at TIFR, Bombay is gratefully acknowledged.

The author is grateful to the authorities of "Kolar Gold Mining Undertakings" for providing various facilities during the course of the present investigation.

It is a pleasure to acknowledge the help rendered by M/s K.P. Kamath, C.K. Viswanathan and A.R.S. Pandian in maintainence and running of the experiment at its various stages. The efforts put up by M/s K.G. Sharma and C.S. Panchal in making the neon-flash-tubes are thankfully acknowledged.

The author is thankful to the personnel of the drafting and photographing section of the Physical Research Laboratory for help in making the diagrams presentable.

The financial help provided by the Ministry of Education, Government of India and the Department of Atomic Energy is gratefully acknowledged.

The author is thankful to Miss Lakshmi for neat typing of the draft and to Mr. T.E. John for the patient and excellent job of typing the thesis.