ACKNOWLEDGEMENT

I would like to express my sincere gratitude to **Mr. Sundar M. N.** and **Dr. Tanmoy Samanta** for their invaluable guidance and support throughout my project. Their expertise has been instrumental in my success. I am truly grateful for their contributions and the knowledge I have gained under their mentorship.

I would like to specially thank **Indian Institute of Astrophysics** (IIA), Koramangala, Bengaluru for letting me use their library for study purpose and also their internet facility during my time spent in the campus for this project.

Special thanks to **Dr. Dhanush Vittal Shenoy**, my brother, for his constant support and motivation.

I am also grateful to **Dr. Asha Rajiv**, Director, School of Sciences, **Dr. K. N. Varalakshmi**, Director, Centre for Research in Pure & Applied Sciences and **Dr. S. A. Hariprasad**, Dean Academics, JAIN (Deemed-to-be University) for providing us with this opportunity. I am thankful to **Dr. Sudhakara Reddy**, Head of the Department of Physics and Electronics and **Dr. N. Shanthi**, Program-Head, M. Sc. Programme, for their constant support and encouragement.

I thank **Dr. Chenraj Roychand**, Chancellor, **Dr. N. Sundararajan**, Pro-Chancellor, **Dr. Jithendra Kumar Mishra**, Registrar and **Dr. Raj Singh**, Vice-Chancellor, JAIN (Deemed-to-be University) for providing the required infrastructure and support without which this project would not have been possible.

I am grateful to all the faculty members, Mr. Arvind Krishnapur, Physics lab technician and Mr. Rajesh, Physics lab assistant for their kind support towards us.

Thenoy

(Dheeraj Vittal Shenoy)

April, 2024 Bengaluru