

Table of Contents

Introduction.....	3
Chapter I : Introduction to Geomagnetism.....	6
1.1 Earth's magnetic field in space	
1.2 Origin of Earth's magnetic field	
1.3 The crustal magnetic field	
1.4 The wandering dipole field	
1.5 Paleomagnetism	
1.6 Earth's magnetic field in the Universe	
1.7 Some quantitative considerations	
 Chapter II: Space Weather Effects.....	 24
2.1 Magnetic storms and auroral activity	
2.2 Solar storms	
2.3 Magnetic storms and substorms	
 Chapter III: The THEMIS Mission.....	 31
3.1 Scientific objectives	
3.2 Magnetic field coordinate systems	
 Chapter IV: Magnetism and Measurement Techniques.....	 36
4.1 The soda-bottle magnetometer	
4.2 The dip circle	
4.3 The Bache magnetometer	
4.4 The electromagnetic magnetometer	
4.5 The Proton presession magnetometer	
 Chapter V: The Fluxgate Magnetometer.....	 39
5.1 Operating principles	
5.2 Applications in science, medicine and industry	
 Chapter VI: The THEMIS Magnetometer.....	 41
6.1 Design and block diagram	
6.2 Hardware Setup	
6.3 Computer and Software Setup	
6.4 Calibration and Data Collection	
 Chapter VII: Web Resources.....	 45
 Bibliography.....	 48