Development of Space Weather Monitoring Platform Using Wix.com

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ABSTRACT

Space weather monitoring is crucial in ensuring maximum benefit in the operation of satellites, radio, power grids and many more. In this thesis, it discusses the development of space weather monitoring platform named as Space and Earth's Electromagnetism-Universiti Teknologi MARA (SEE-UiTM). Prior to the development of SEE-UiTM, the local researchers in space weather monitoring area are required to refer various websites and data bases. This causes monitoring process less effective. This platform provides a 'one-stop-center' for the researcher to monitor the space weather events comprehensively. It covers parameters of Sun, Interplanetary Space, Magnetosphere and Geomagnetic. The data for these parameters are extracted from Solar Monitor for Sun, ACE Real Time Solar Wind for Interplanetary Space, Geomagnetic Data Service for Magnetosphere and INTERMAGNET for Geomagnetic. The assigned members or researchers will prepare daily or weekly space weather report and will be validated before it is publicized. The navigation panel is arranged systematically to help new researchers or beginners understand the space weather monitoring processes. With this platform, the space weather monitoring process will become easier and systematic. Since space weather areas are relatively new in Malaysia, this developed platform is expected to encourage more researchers or students to explore into this area of study.

CONTENTS

CHAPTER 1

INTRODUCTION

1.1 PROBLEM STATEMENT

Space weather is the changes of the space conditions from time to time. The conditions are unpredictable and unstable by which sometimes the solar activity produce more radiation while, sometimes it gives off less. Earlier, people might once question on why is it important to care about the space weather? The main reason is because it produces a lot of severe effects to the Earth such as damages to the satellites, failure in power grid systems and the most critical matter is that the radiation is hazardous to human being. That is the rationale why the navigating and monitoring activity of the solar events became more familiar all across the world.

Unfortunately, the current capabilities of navigating the space weather events are still ineffective. This is due to the requirements that need to be followed by the forecasters and researchers. They are required to refer to various space weather websites and data bases as there is no centralize data in order to obtain and gather the data which indirectly takes more time to accomplish the process. Besides, the current ways of monitoring the event produce a lot of difficulties for the new researchers or beginners in understanding more on the space weather events.