

Earth in the heliospheric environment

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The Sun-Earth's environmental science has made a remarkable progress in the last century particularly during the recent forty years. We now know that the heliospheric environment is dynamically changing every moment, influencing Earth's magnetosphere and the upper atmosphere. Close relationships between variations in the solar wind and geomagnetic disturbances are well established today. Since the Earth's surface is protected from the hard conditions in the space by both the atmosphere and the magnetosphere, the space environment has not been taught extensively in high schools in Japan. However, space communications, which are crucial for current economic activities in the world, and spaceborne environmental assessment, which are indispensable to our future, are indebted to smooth plies of artificial satellites. The recent troubles on the Akebono and Midori-2 spacecraft attracted a great deal of public attentions. Therefore the basic knowledge on the space environment is required to be obtained by the majority of people in our country.

At the first of this paper we discuss the entire educational program on the space environment. The nine chapters are included in the course: 1. Light of Sun, 2. Energy source of Sun, 3. Photosphere and corona, 4. Sun spot, 5. Flare and coronal mass ejection, 6. Solar wind and the interplanetary magnetic field, 7. Earth's magnetosphere and aurora, 8. Space weather, 9. Earth's atmosphere and green house effect. The 7th and 8th chapters are described in detail in the proceeding of this conference. The speaker will talk briefly on the 8th chapter in the meeting.