

Development of Space Electromagnetic Environment Monitor

Hirotsugu Kojima[1]; Hiroshi Imakubo[1]; Takashi Matsumoto[1]; Toshimitsu Hata[2]; Yoshikatsu Ueda[3]; Hiroshi Matsumoto[4]

[1] RISH, Kyoto Univ.; [2] RISH, Kyoto Univ.; [3] RISH, Kyoto Univ.; [4] RASC, Kyoto Univ.

Environments in space are strongly controlled by electromagnetic phenomena. Since space plasmas are collisionless, we can recognize a status of electromagnetic environments by monitoring plasma/radio waves. Especially, when we extend our humanosphere to space, our activities themselves in space disturb electromagnetic environments. For example, the interaction between the huge structure such as space colony and space plasmas might cause artificial disturbances around the structure. Since such artificial disturbances reflect on the human activities in space, we need to conduct the continuous monitoring of the change of electromagnetic environments in space. In order to realize the monitor system of space electromagnetic environments, we need to develop a new system based on the plasma wave observation receiver system. In the present paper, we introduce our design of space electromagnetic environment monitor system. It is very small and light-weight. But it provides the information on the electromagnetic environment by observing plasma/radio waves. It is a very comprehensive system which consists of solar cells, signal transmitter as well as plasma/radio wave receivers. However, it is not a satellite. It is a new concept environment monitor in space.