

## Polar Patrol Balloon experiment in Antarctica during 2002-2003

# Akira Kadokura[1]

[1] NIPR

First scientific campaign of the Polar Patrol Balloon (PPB) experiment (1st-PPB) has been carried out at Syowa Station in Antarctica during 1990-1991 and 1992-1993. Based on the fruitful results of the 1st-PPB experiment, next campaign (2nd-PPB) will be carried out in austral summer during 2002-2003. This paper introduced abstract of the 2nd-PPB experiment. In that experiment, total 4 balloons will be launched for the purpose of astrophysics observation (1 balloon) and upper atmosphere physics observation (3 balloons). The former 1 flight installs a very sophisticated instrument which observes primary cosmic-ray electrons in the energy range of 10 GeV - 1TeV. Payloads of the latter 3 flights are identical with each other, and they will be launched successively as possible as weather condition permits to constitute a cluster of balloons during their flights. Such a Balloon Cluster is suitable to observe temporal evolution and spatial distribution of various phenomena in various magnetospheric and ionospheric regions and boundaries where the balloons traverse during their circumpolar trajectory. Expected flight duration of each balloon is set to 20 days, and observation data are obtained mainly by a satellite communication system with a much higher temporal resolution than in the 1st-PPB experim