

## **Thermal Structure of the Primordial Solar Nebula Exposed to the Solar Radiation and Stellar Wind from the Central Star.**

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The temperature of the nebula exposed to the radiation and stellar wind from the central star. The nebula gas pressure is in a hydrostatic equilibrium state in  $z$ -direction. It's geometrical surface is determined by the dynamical pressure of the stellar wind. The nebula gas is heated by stellar radiation from this geometrical surface. We estimated the temperature from the equation of energy balance between the stellar radiation incident upon the this nebula surface and black body radiation of this surface. We obtained the result that the temperature as function of distance from the central star has a very steep negative gradient. The reason is that the nebula is hardly heated by the stellar radiation owing to it's flat geometry.

### **Progress of YSTAR Program**

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YSTAR program is a general sky survey looking for variability. The main equipments are three 0.5-m telescopes. These telescopes have fast F/2 optics covering nearly 3.5 square degree field onto a 2K CCD. They also have very fast slew capability, which exceed 10 degrees per second. These two factors make them most suitable for rapid target acquisition and efficient wide-field surveys of various kind. Our primary objective is to identify and monitor brightness variabilities (e.g. novae, supernovae, and variable stars) and also to detect and track positional variabilities (e.g. asteroids and comets). Our first telescope was formally inaugurated on November 24th, 2000 at the new Yonsei Survey Observatory near Chun-An city, and has been subjected to vigorous efforts to make it fully autonomous instrument. Details of recent progress will be reported at the meeting.