

circumstellar gas being overtaken by the expanding supernova envelope. The temporal behavior of the $H\alpha$ line width and the [Fe X] flux suggests the velocity and density of the progenitor wind was enhanced less than a year before the supernova explosion. A similar effect, but on a larger scale, was seen in SN1984E and indicated enhanced mass-loss may precede most supernova events. The observed helium to hydrogen emission line flux ratio is larger than expected and implies helium abundance was enhanced in the precursor wind.

Broad, shallow, blue-shifted absorption features attributed to $H\alpha$ and He I 5875Å are also seen in the spectra and indicated the velocity of the expanding supernova photosphere to be approximately -14000kms^{-1} . The time series of individual spectra shows a rapid color evolution for the spectral range between 5500Å and 7000Å, with the steepest continuum slope occurring between March 30.5 and 30.9(UT).

Spectral Analysis of Low Mass X-ray Binary X1735-44.

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The X-ray burst source X1735-44 was observed with the Large Area Proportional Counters on board Ginga between 1991, September 27, 9:59 UT and September 28, 22:40 UT. We observed one burst during this period. We analyzed the persistent spectrum and burst spectrum. The persistent spectrum was well fitted with the two component model the power law with an exponential cut off and a blackbody. The photon index correlates with the intensity when the luminosity is not very high, while the blackbody temperature remains more or less at the constant level. The burst shows a typical type I light curve. The burst spectrum shows a hard tail in the decay phase and a sharp drop of the temperature according to the expansion of the photosphere.

산개성단 및 성협의 측광학적 진화 연구

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어두운 별까지 잘 관측된 산개성단 12개와 성협 3개를 선택해서 이들의 주계열성의 현재 질량함수와 색-색도, 색-등급도를 제한조건으로 이용하여 각 성단이 초기질량함수를 결정하였다.

본 연구에 선택된 산개성단의 경우 초기질량함수가 성단마다 서로 다른 시간적 변화 양상을 보이는데 반해, 성협의 경우에는 산개성단의 초기질량함수와는 달리 시간에 따라 거의 변하지 않는 초기질량함수를 갖고 있는 것을 확인하였다.

관측적인 주계열성의 현재질량함수로부터 결정된 초기질량함수와 시간의존적 별생성률을 가

정하고, 또 항성 진화 모형 결과를 이용하여 성단의 측광학적 진화와 종합인자들을 살펴보았다. 시간의존적 초기질량함수를 가정한 본 계산에서, 성단 형성 초기($t < 10^7$ 년)에서 무거운 별들의 생성으로 인한 총등급의 급격한 증가 양상이 나타났다. 이러한 양상은 현재 관측되는 산개성단들의 종합인자경향과 부합되는 것으로서, 본 연구에서 가정한 시간의존적 초기질량함수가 올바른 것이었음을 보여주고 있다.

측광학적 진화 모형의 계산 결과로부터 얻어지는 성단의 구성원 별들의 질량 및 갯수 분포는 대체로 관측과 잘 일치했으며, 산개성단내 백색왜성의 갯수분포와 성단의나이를 고려하여 조사한 결과, 백색왜성이 될 수 있는 별의 초기 질량 상한은 약 5-7의 태양질량 정도로 추정된다.

**Evolutionary Population Synthesis of Globular Cluster:
Its Implications for the Origin of UV Radiation**
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We present the preliminary result of our population synthesis models for globular clusters. The model calculations include all evolutionary phases - from zero age we have synthesized spectral energy distributions of model globular clusters. Old metal - poor globular clusters show UV upturn near 2000Å, which is reminiscent of elliptical galaxies and spiral bulges. Implications of this result on the formation of galaxies will be discussed.

Background Correction for the IRAS Images of Dark Globules
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Most of the Bok globules are extremely thin in the optical depths at the IRAS bands. Emission from back- and fore-ground material of a globule is often of the strength comparable to the emission from the globule itself, and for some cases, it is even stronger. Furthermore intensities of globules at 60 and 100 μ m depend on the dust temperature more sensitively than they do on the dust column density. These all make it difficult to recognize cold globules directly from the IRAS maps of intensity distribution. If the temperature effects are somehow removed from the observed information of intensity, it would be easier to notice the existence of globule from the remaining information of the dust column density. This line of thoughts has led us to devise the following scheme of background correction.