

정은 영역에 비한 강한 외부복사장이 방출되기 때문에 홍염의 내부에너지 상태를 심각하게 변화시킨다. 본 연구에서는 여러 관측 사실을 토대로 홍염의 위치에 따른 외부복사장 세기 및 방출스펙트럼의 변화에 대한 연구결과를 수소선과 Na I선을 대상으로 소개한다.

Substructures of Barnard 361

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The detailed substructures of a prototype globule B361 was studied by using the blue and red intensity maps integrated over two different velocity ranges in the $^{13}\text{CO}(J=1-0)$ line profile. Our analysis reveals that B361 is composed of three sub-clumps. One of the three recedes from us and the other two approach us. Our LTE analyses estimated the masses of each clumps to be $220 M_{\odot}$ for the receding one and for the two approaching ones $130 M_{\odot}$ and $150 M_{\odot}$, respectively. The maximum difference of velocity between the clumps is found to be 2 km/s. At the distance of 600 pc and with the angular separation between the clumps, this amount of velocity difference is insufficient for the clumps to escape from each other. We thus conclude that B361, at least in its central part, is composed of several clumps and that they form a bound system. It is also pointed out that the previous studies with spacial resolutions poorer than that of ours often misinterpreted the movement of the clumps as a general rotation for this globule.

^{12}CO , ^{13}CO and C^{18}O Observations toward OMC-1

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Interstellar carbon monoxide and its isotopes toward Orion Molecular Cloud - 1 (OMC-1) were observed with the 13.7m radio telescope at the Daeduk Radio Astronomy Observatory.

We derived the excitation temperature, optical depth, column density, and isotope abundance ratios from the observed $J=1-0$ lines of ^{12}CO , ^{13}CO and C^{18}O in a region $11' \times 11'$ centered on BN-KL.

The one arcmin spacing maps reveal the compressed gas structure behind the shocks produced by the expansion of the ionized gas into the molecular cloud. Also we find a systematic gradient in the $^{12}\text{C}/^{13}\text{C}$ isotopic ratio across the OMC-1. Uncertainties in the determination of the CO isotopic abundances are also discussed.

VLA H I 21 cm Line Observations of the Old Supernova Remnant CTB 80

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