

relation $B \propto n^x$; $0.39 \leq x \leq 0.54$. It is concluded that magnetic field in interstellar clouds increases much less steeply than classically assumed complete frozen-in flux.

Radiative Transfer of Radio Recombination Line and Continuum in HII Regions

D. W. Kim and S. S. Hong

Seoul National University

In order to know the non-LTE effect on the analysis of radio recombination line observations, we have tried to find whether or not line and continuum are originated from same position in a given HII region.

Solving radiative transfer equation of Hydrogen α -transition line and continuum with slab-model, it is shown that maser like enhancement, i.e., negative absorption, can not be neglected in the case of E.M. $\gtrsim 10^6$ pc/cm⁶. Even in homogeneous, isothermal nebula, LTE line to continuum ratio does not agree with non-LTE results.

GOTO 60cm 망원경 성능 점검

이 용 삼

연세 대학교 천문대

GOTO 60cm 반사 망원경을 설치하는 과정에 있어서의 문제점과 망원경의 성능을 점검한 결과를 제시하려고 하며, 동시에 관측자의 입장에서 보는 이 GOTO 망원경의 작동상의 여러 문제들을 논의하고자 한다.

Identification of Old Pole Stars

Um, In Kyung

Seoul National University

The positions of Je(帝) and Book Keuk(北極) often cited as pole stars in old Korean and Chinese star charts and catalogues have been examined by calculating the trajectories of these stars and the pole in the past. According to our calculations, 1) these pole stars are not the present Polaris, Kujin-II Sung, and 2) the times at which Je and Book Keuk were closest to the pole are found to be B.C. 1507 (Thang Dynasty) and A.D. 811 (Silla Dynasty), respectively.

Dynamical Masses of Six Globular Clusters

Y. R. Suh and M. S. Chun

Yonsei University

From the previously obtained two characteristic lengths, the core radius r_c and the tidal cutoff r_t ,

we derived dynamical masses of 6 globular clusters. The masses are all in the range of $2 \times 10^5 - 10^6 M_{\odot}$ and these are compared with the masses calculated by the $r^{1/4}$ law/virial theorem method. We then calculated mass to light ratio for all clusters.

A Study on Rotational Line Profiles of 5 Diatomic Molecules C_2 , CH, CN, MgH and TiO in Sunspots*

Hyung Mok Lee and Hong Sik Yun

Seoul National University

Theoretical profiles of a few selected rotational lines of C_2 ($\lambda 5075.2$), CH ($\lambda 4218.7$), CN ($\lambda 3864.3$), MgH ($\lambda 5150.2$) and TiO ($\lambda 5257.3$) are computed by using the current models of sunspot umbrae and penumbra. It is found that carbide lines are enhanced in *penumbrae* relative to umbrae, while MgH lines are more strongly enhanced in *umbrae* than in penumbra and the quiet sun. The resulting consequences are discussed with respect to the forthcoming observational programs at Sacramento Peak Observatory.

秋季學術大會

일시 : 1981년 10월 16일~17일

장소 : 공주 사범 대학 시청각실

Origin of Planetary Nebulae

Kyu Hong Choi

Yonsei University

Static models for giant star envelopes of $L \geq 10^4 L_{\odot}$ are presented. The degree of density inversion in the convective zone of the giant star envelopes increases with the luminosity of the models eventually leading to a detached shell. The computed luminosity and effective temperature of the remnant star are found to be consistent with the observed values for the central stars of planetary nebulae. We suggest that planetary nebulae might be produced by this process.

Survival Probability of Neutrino Flux in Spherically Symmetric Neutron Stars

S. H. Kim and M. S. Chun

Yonsei University

We calculated the probable amount of reduction in neutrino number density as a result of the capture by a neutron star. To simplify the problem, we assumed that a neutron star is in spherically symmetric, homogeneous, isotropic and steady states. In addition the influx of the neutrino was assumed homogeneous.

The reaction probability is calculated from the energy and mass distribution in our model, which is independent of time in P-space. Our result shows that the reaction probability of neutrinos inside the neutron star is negligible.

* This work is supported in part by KOSEF.