Eddington luminosity for a 10km neutron star with mass 1.4 times solar mass.

On the A-type Contact System DO Cas

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New UBV photoelectric observations of EB-type contact binary DO Cas were obtained at the Sobacksan Observatory. These observations covered the eclipse portions of the light curves and twice the minimum light. Both the light curves and the radial velocity curve for the primary of DO Cas (Mannino 1958) have been solved simultaneously using the Wilson-Devinney synthesis code. New geometric, photometric, and absolute elements for this system are given.

Abundance and Chemistry of Interstellar $HOCO^+$

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We derive $HOCO^+$ column densities $\sim 10^{15}cm^{-2}$ toward the Galactic center and $<10^{12}cm^{-2}$ for cold dark clouds from observations and an LVG model. We mapped the $HOCO^+$ $4_{04}—3_{03}$ line toward Sgr A. The fractional abundance of $HOCO^+$ in the Galactic center region is three orders of magnitude larger than predicted by quiescent ion-molecule chemistry and an order of magnitude larger than predicted by a MHD shock model. If $HOCO^+$ traces interstellar CO_2, the implied high abundance ($[CO_2]\sim[CO]$) in the Galactic center may result from UV photolysis of grain mantles.

세포형 구조 우주와 Fractal

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뜨거운 보이지않는 물질이 지배하는 표준 우주 모형안에서 관측된 은하 및 은하단분포의 두점상관관계 함수로 대표되는 큰크기 구조는 "세포형" 구조를 보임을 알 수 있다. "세포형" 큰크기 구조를 fractal 구조와 비교함으로서 우주의 균질성의 한계를 규정 짓는 "한계거리"가 존재해야 함을 보였고, 이에 의한 우주 배경 복사 불균질성의 각의 크기를 계산할 수 있었다.

Compact HII region K3-50 주변의 분자운에 대한 연구

노덕규 · 김효령 · 김봉규 · 민영철
(천문우주과학연구소)