

1000 K for the worst case.  $\log g$  was estimated with  $\sigma = \pm 0.27$  for the best and with  $\sigma = \pm 0.63$  for the worst. And  $[\text{Fe}/\text{H}]$  was estimated with  $\sigma = \pm 0.29$  for the best and  $\sigma = \pm 0.63$  for the worst.

## On the Tidal Disruption of Dwarf Spheroidal Galaxies Around the Galaxy

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We use N-body simulations to investigate the tidal interaction between dwarf spheroidal (dSph) galaxies and the Milkyway galaxy. King models are adopted for the initial models for dSph galaxies and logarithmic and point-mass potential is used for the Galaxy. Our results indicate that dSph galaxies with cutoff radius much larger than the theoretical tidal radius are unstable and likely to be tidally disrupted on the Hubble timescale. However dSph galaxies can survive over a Hubble time if their cutoff radii are less than twice their tidal radii at perigalacticon.

## On the Mechanism for the Formation of Millisecond Pulsars in Globular Clusters

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Core of globular cluster is an ideal place for the close encounters between stars. The outcome of tidal capture can be stellar mergers, close binaries between normal stars (W UMa type), cataclysmic variables composed of white dwarf and a normal star pairs. Stellar mergers can be the origin of blue stragglers in globular clusters. Low-mass X-ray binaries would eventually become binary pulsars with short pulse periods after the neutron star accretes sufficient amount of matter from the companion. However, large number of recently discovered isolated millisecond pulsars (as opposed to binary pulsars) in globular clusters may imply that they do not have to gain angular speeds during the X-ray binary phase. We propose that these isolated millisecond pulsars may have formed through the disruptive encounters, which lead to the formation of accretion disk without Roche lobe filling companion, between a neutron star and a main-sequence star. Based on recently developed multi-component models for the dynamical evolution of globular clusters, we compute the expected number of various systems formed by tidal capture or direct encounters as a function

of time. We emphasize the importance of the very brief core-collapse phase to the number of tidal capture events.

## Two-Temperature Accretion Disk Revisited

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Two-temperature accretion disk models of 70's (Shapiro, Lightman, and Eardley 1976) are reconstructed. The coupling between ions and electrons is generalized for relativistic temperatures. The cooling mechanism is specified: the central or local disk source provide copious soft photons. The radiative transfer treatment in the vertical direction is improved. The assumption that the Compton parameter is equal to 1 is reexamined.

The results under these assumptions are compared with those of SLE's classic model. We found two branches of solutions: One has electron and ion temperatures equal to the soft-photon temperature which is quite low. The other has ion temperature in the region 10~1000 times the rest mass of the electron while electron temperature 1/10~1/100 times the rest mass of the electron. The implication of the models are studied in the context of accretion by black holes and neutron stars.

## 별의 분광형과 Johnson UBV 계의 온도효과

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Hamamatsu의 1 P21의 온도효과 자료를 이용하여 공주대학교 측광계의 온도에 따른 특성을 이론적으로 계산하였다. 온도효과를 가장 민감하게 받는 영역은 V band 영역으로 그 크기는 약  $5.2 \text{ \AA}/\text{C}$  이었으며, B band 영역은 약  $0.4/\text{ \AA} \text{ C}$  으로 작은 값을 보였다. 그리고 그러한 효과를 실제 관측자료에서 검증하기 위해 변광성 AR Lac 을 1990년 9월에서 1991년 1월까지 관측하여 온도효과를 도출하여 본 결과, 거의 유사한 값을 보여 주었다.

한편 AR Lac의 광도곡선을 분석하는 과정에서 부극소의 깊이가 기존의 결과에 비해서 약 0.2등급 정도 현저하게 깊게 나타나 변광성 자체에 큰 변화가 있음을 암시해 주었다.

## CO Observations of Barnard 361

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An area covered on a prototype globule Barnard 361 was observed in the CO ( $J=1-0$ ) transition.