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PARÂMETROS FÍSICOS E ORBITAIS DE BINÁRIAS COMPACTAS A PARTIR DAS VARIAÇÕES ELIPSOIDAIS NO INFRAVERMELHO PRÓXIMO

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Apresentamos uma abordagem Bayesiana para estimar parâmetros físicos e orbitais de binárias compactas como Variáveis Cataclísmicas, Binárias-X de Baixa Massa e Binárias "Supersoft". Como o contraste entre a estrela secundária e as outras fontes de luz em uma binária deste tipo é bastante favorecido no infravermelho próximo, muitos sistemas apresentam variações elipsoidais mensuráveis. As variações elipsoidais permitem, em princípio, obter a inclinação orbital e a razão de massas da binária. A exploração do espaço de parâmetros de maior interesse (inclinação orbital, razão de massas, temperaturas e raios das componentes, fração de luz constante, distância ao sistema) é realizada através da técnica de Cadeias de Markov com Monte Carlo (MCMC). Nós discutimos os aspectos-chave da técnica: implementação da amostragem da distribuição "à posteriori" de probabilidade do modelo face à evidência observacional, tempo de processamento, convergência, unicidade e intervalos de confiabilidade. Discutimos também as limitações de certas aproximações do modelo teórico para as variações elipsoidais, como a aproximação de corpo negro para emissão das componentes e os coeficientes de obscurecimento de borda adotados. São apresentados os resultados do método aplicado aos dados nas bandas *J* e *H* da `CamIV` para o sistema "Supersoft" WX Cen. Confirma-se a necessidade de uma razão de temperaturas da componente quente para a componente fria bastante alta. São favorecidos valores pequenos da razão de massas e a inclinação orbital deve ser menor que 40 graus.

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ON THE ORIGIH OF THE VERY YOUNG GROUPS ? AND [epsilon] CHAMAELEONTIS

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It is remarkable that some stars distributed in vast regions of the Southern Hemisphere sky, apparently without any relation among them, belong to young moving groups or associations. This has been the result of surveys based on the spectroscopic identification of hundreds of far-infrared and X-ray sources, together with astrometric catalogs like Hipparcos and Tycho-2. Such moving groups or associations contain a few dozen of members represented mainly by low mass stars at distances between about 10 and 100 pc. The derived ages of these groups range between 5 and 30 Myr so that they can be considered to be post-T Tauri stars. The groups are quite dispersed making it hard to establish their present spatial dimensions. This is the case of some older associations such as the Horologium association (Torres et al. 2000) and Tucana association (Zuckerman et al. 2000, 2001) but also of some young groups like the ? Pictoris and TW Hya associations. Nevertheless, some very young groups like ? and [epsilon] Chamaeleontis (Cha) (Mamajek et al. 1999, 2000, Lawson et al. 2001, Feigelson et al. 2003, Song et al. 2004, Lyo et al. 2004, Luhman and Steeghs 2004) appear to be compact and probably bound systems. Here we wish to study the origin of ? and [epsilon] Cha on the basis of their past orbits using a model of the Galactic potential. Such an approach is expected to shed light on the formation and evolution scenario of young groups in the region of the Sco-Cen OB association. The ? Cha and [epsilon] Cha stellar groups exhibit characteristics quite different compared to other post-T Tauri groups in the Sco-Cen region as for example, TW Hya and ? Pictoris associations. Their compactness and density suggest gravitationally bound stellar systems: in fact, they look more like young open clusters indicating a different outcome of the star formation process. On the other hand, ? Cha and [epsilon] Cha show remarkable similar characteristics such as stellar content, structure and age (Feigelson et al. 2003). In their study of ? Cha, Mamajek et al. (2000) examined the past motion of its center by adopting the linear ballistic approximation and arrived at the conclusion that this group and LCC were closer in the past. In the present work we study the 3D kinematics of ? Cha and [epsilon] Cha by considering their motion in the Galactic potential. Retracing back the orbits of the kinematical centers of these groups we confirm that *both* locate their birthplaces in the LCC region, more exactly at the bordering edge of this subgroup. Besides, the analysis of the relative positions in the orbits of ? Cha and [epsilon] Cha shows that the minimal distance between their centers was only about 3 pc and, remarkably, that this occurred at the age (?6.7 Myr) consistent with evolutionary estimates. This immediately suggests that these groups may have been born together, in comparable physical conditions, what would explain the observed similarities between them. The formation scenario of ? Cha and [epsilon] Cha must take into account the fact that these groups move in different directions. A possible scenario, already mentioned by Lyo et al. (2004) for ? Cha, might be the collision of clouds. Of course, we cannot rule out formation assisted by some other trigger acting on two quite close neighboring clouds.