relatively strong magnetic field (e.g., B > 40 mG) is correlated with flux enhancements at mm wavelengths (e.g., 86 GHz).

[박C-04] A Study of Globular Cluster Systems in the Coma, Fornax, and Virgo Clusters of Galaxies from *HST* ACS and WFC3/IR Imaging

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I present new near-infrared (NIR) photometry of globular cluster (GC) systems associated to a cD galaxy NGC 4874 in the core of the Coma cluster and 16 early-type galaxies in the Fornax and Virgo clusters of galaxies using the Infrared Channel of the Wide Field Camera 3 (WFC3/IR) on board the Hubble Space Telescope (HST). Combining these high-resolution NIR data with new HST Advanced Camera for Surveys (ACS) optical photometry for NGC 4874 and existing ACS GC catalogs from the ACS Fornax and Virgo Cluster Surveys, I have examined for the first time the GC systems in a statistically significant optical/NIR sample of galaxies spanning a wide range of luminosities and colors. A primary goal of this study is to explore empirically whether the distributions of purely optical and hybrid optical-NIR color indices for extragalactic GCs have different forms and whether the relations between these color indices are nonlinear, indicating that they behave differently with underlying metallicity. I find that some GC systems of large galaxies in our sample show color bimodalities that differ between the optical and optical-NIR colors, in the sense that they have disparate ratios of "blue" and "red" peak GCs, as well as differing ratios in their color dispersions. Consistent with these results, I find empirically that the dependence of hybrid optical-NIR color on purely optical color is nonlinear, with an inflection at intermediate metallicities. These findings underscore the importance of understanding the nature of galaxy-to-galaxy variations in the GC color distributions and color-color relations, as well as the exact forms of the color-metallicity transformations, in interpreting the observational data on GC color bimodality. Our ACS data for NGC 4874 shows that its GC system exhibits a very strong blue tilt, implying a very steep massmetallicity scaling, and the centroid of this GC system is offset by 4±1 kpc from the luminosity center of NGC 4874, in the direction of NGC 4872. Finally, I discuss the asymmetrical GC distribution around a dwarf elliptical galaxy in Coma that has a very high relative velocity with respect to the cluster mean at small clustercentric radius.

[구 GC-05] New insights on the chemical evolution in proto-globular clusters and galaxy building blocks (원시 구상성단과 은하 빌딩블럭의 새로운 화학적 진화모델)

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초기 우주의 구상성단과 같은 소규모 은하 빌딩블럭이 은하의 형성에 미치는 영향을 이해하기 위하여 우리는 완 전히 새로운 개념의 화학적 진화모형을 구축하였다. 최근 의 이론적 진보를 바탕으로 우리의 모델에서는 이전 모델 과 달리 초신성의 폭발과 분출물이 원시 구상성단 내 잔존 가스에 아무런 영향을 끼치지 못하고 대부분 빠져나간다. 이 경우 화학적 진화는 질량이 큰 별의 윈드와 점근거성계 열성의 분출물에 의해 좌우된다. 놀랍게도 우리의 모델은 오랜 난제인 구상성단 내 Na-Oxygen anticorrelation 및 다중항성종족의 기원을 자연스럽게 설명하면서 동시에 Lee, Joo, & Chung (2015) 이 최근 주장한 것처럼 은하 별지에 헬륨 함량이 매우 높은 항성이 존재할 것으로 예측 한다. 이 결과는 은하의 헤일로와 별지 형성에 매우 중요 한 단서를 제공한다.

[7 GC-06] Constraints on the Evolution of the Galaxy Stellar Mass Function I: Role of Star Formation, Mergers and Stellar Stripping

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We study the connection between the observed star formation rate-stellar mass (SFR-M) relation and the evolution of the stellar mass function (SMF) by means of a Subhalo Abundance Matching technique coupled to merger trees extracted from a N-body simulation. Our approach, which considers both galaxy mergers and stellar stripping, is to force the model to match the observed SMF at redshift z>2, and let it evolve down to the present time according to the observed (SFR-M) relation. In this study, we use two different sets of SMFs and two SFR-M relations: a simple power law and a relation with a mass-dependent slope.

Our analysis shows that the evolution of the SMF is more consistent with a SFR-M relation with

[7 GC-07] The mass of the high-z (z~1.132) massive galaxy cluster, SPT-CL J2106-5844 using weak-lensing analysis with HST