XV Latin American Regional IAU Meeting (Cartagena de Indias, Colombia, 3-7 October 2016)
Editors: Mario Armando Higuera Garzón & Santiago Vargas Domínguez

DYNAMICAL MODELLING OF NGC 288 USING MOND

X. Hernández[1], R. A. M. Cortés[1], and R. Scarpa[2]

We present results to be soon published about NGC 288, which is a diffuse Galactic globular cluster, with the peculiarity of having internal accelerations below the critical MoND a_0 acceleration throughout. This makes it an ideal candidate to test an analytic solution for the MoNDian brightness profile in isothermal spherical equilibrium, accounting for anisotropy (β) in the dispersion of velocities. By comparing and adjusting with observational data, we find, using the MoNDian model, that the cluster's kinematics fit best to a perfectly isotropic ($\beta = 0$) solution with a total mass of $3.5 \pm 1.1 \times 10^4 M_\odot$. We also compare our data with newtonian solutions, such as a Plummer profile, finding a slightly better approximation with our model.

[1] Instituto de Astronomía, Universidad Nacional Autónoma de México, Ciudad Universitaria, Circuito Exterior S/N, C.P. 04510, México, D.F., México (rcortes@astro.unam.mx).
[2] Instituto de Astrofísica de Canarias, C/ Vía Láctea S/N, E38205, La Laguna, Tenerife, España.

THE SHELL GALAXY NGC4104 IN AN X-RAY GROUP

G. B. Lima Neto[1], F. Durret[2,3], T. F. Laganá[4], R. E. G. Machado[5], and N. Martinet[6]

Groups of galaxies are expected to collapse early in the history of the universe, in particular the so-called *Fossil Groups*, with a central galaxy that grows at the bottom of the gravitational potential well by cannibalizing smaller galaxies and/or by major mergers. An evidence of galactic cannibalism is the feature known as shells or ripples in early-type galaxies *Shell galaxies* are believed to be the result of a minor merger of a dwarf with an elliptical galaxy, resulting in a series of faint concentric ripples in surface brightness observed throughout the main stellar component.

This contribution presents very deep r and g imaging of NGC 4104 – the brightest galaxy of an X-ray emitting group – obtained with MegaCam on the 3.6 m CFHT. Using both IRAF/ELLIPSE and GALFIT 2D image-fitting programs, we show the presence of strong shell features and an extended stellar halo around the group brightest galaxy. We have run a series of N-body simulations in order to gain insight on the dynamical process that shaped NGC 4104. Numerical modeling suggests a recent (around 5 Gyrs ago) collision occurred with a dwarf galaxy, which may have also led to a central absorption feature observed in the galaxy center. Moreover, given the magnitude gap between the first and second brightest galaxies, it seems that we are witnessing the formation of an object that falls within the fossil group classification.

[1] Instituto de Astronomia, Geofísica e Ciências Atmosféricas, Universidade de São Paulo, Brazil (gastao@astros.iag.usp.br).
[2] Institut d'Astrophysique de Paris, France.
[3] Sorbonne Universités, Paris 6, France.
[4] NAT, Universidade Cruzeiro do Sul, Brazil.
[5] Universidad Andrés Bello, Santiago, Chile.
[6] Argelander Institute for Astronomy, University of Bonn, Germany.