XIV Latin American Regional IAU Meeting (Florianópolis/SC, Brazil, 25-30 November 2013)
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analysis we assembled a catalog of new LMC stellar clusters.

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GALAXIES AT HIGH REDSHIFT

F. E. Bauer[1]

Recent years have seen tremendous progress in finding and charactering star-forming galaxies at high redshifts across the electromagnetic spectrum, giving us a more complete picture of how galaxies evolve, both in terms of their stellar and gas content, as well as the growth of their central supermassive black holes. A wealth of studies now demonstrate that star formation peaked at roughly half the age of the Universe and drops precariously as we look back to very early times, and that their central monsters apparently growth with them. At the highest-redshifts, we are pushing the boundaries via deep surveys at optical, X-ray, radio wavelengths, and more recently using gamma-ray bursts. I will review some of our accomplishments and failures.

Telescope have enabled Lyman break galaxies to be robustly identified, but the UV luminosity function and star formation rate density of this population at $z = 6 - 8$ seems to be much lower than at $z = 2 - 4$. High escape fractions and a large contribution from faint galaxies below our current detection limits would be required for star-forming galaxies to reionize the Universe. We have also found that these galaxies have blue rest-frame UV colours, which might indicate lower dust extinction at $z > 5$. There has been some spectroscopic confirmation of these Lyman break galaxies through Lyman-α emission, but the fraction of galaxies where we see this line drops at $z > 7$, perhaps due to the onset of the Gunn-Peterson effect (where the IGM is opaque to Lyman-α).

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METAL-POOR ACTIVE GALACTIC NUCLEI

I. C. Bicalho[1] and E. Telles[1]

Active galaxies are considered to be metal-rich, with metallicity ranging from solar to slightly supersolar. This is due to the fact that the active galaxy nuclei are usually found in supermassive galaxies. We aim to test this statement by obtaining near infrared spectra of peculiar dwarf galaxies to see if they host an AGN. We present the results based on analysis of data from Gemini Near Infrared Integral Field Spectrograph (NIFS) of the metal-poor HII galaxy SDSS J1047+0739 ($12 + \log O/H \sim 7.85 \pm 0.02$). The spectrum of this galaxy shows strong permitted emission lines with extended wings, which is atypical for HII regions. We use unconventional methods such as PCA tomography due to the benefits that it provides to data cube analysis. We are studying the kinematics of the nuclear region and the regions of star formation surrounding it, mostly through the Paschen-α and He lines. We find that the broad line emission comes only from the unresolved central region. The results of this analysis agree well with the existence of an AGN in this metal-poor galaxy.

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ANALYSIS OF THE VELOCITY DATA OF CLUSTER A562

D. Calderón Espinoza[1] and P. Gómez[2]

We present a recent study of the dynamics of the cluster of galaxies Abell 562 intended to determine if ram pressure is responsible for the jet bending in the Wide-Angle Tailed (WAT) radio source located in the central elliptical galaxy. Given the properties of the jet and of the intra-cluster medium (ICM), a relative velocity between the galaxy and the ICM greater than 800 km/s is needed for this mechanism to bend the WAT jet. We find that the peculiar velocity of the WAT galaxy is 170±140 km/s which is not enough to produce the bending. This is based on the analysis of the velocity of 146 galaxy cluster members obtained with the Gemini Multi-Object Spectrometer (GMOS) at Gemini North. However, our analysis of these velocity data and archival Chandra data suggests that an off-axis merger occurred in this system. This type of merger typically produces bulk flow motions with peak velocities greater than 1000 km/s which should be enough to explain the bending of the jets.

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INTERNAL KINEMATICS OF H II GALAXIES

M. S. Carvalho[1] and H. Plana[1]

H II galaxies are dwarf galaxies characterized by high stellar formation rate with spectrum dominated by strong emission lines, superimposed on a weak stellar continuum. The study of internal kinematics of these objects may be realized using the observed emission lines. Based on these lines we obtained monochromatic intensity, velocity dispersion and radial velocity maps.

We have studied the internal kinematics of two H II galaxies: UM 461 and CTS 1020, observed with the Gemini South telescope using the GMOS instrument equipped with an IFU.

We aim to investigate the origin of the line-broadening observed on emission lines from the use of kinematics diagnostic diagrams: $I\ vs\ \sigma$, $I\ vs\ V$, e $V\ vs\ \sigma$. The analysis of these diagrams was based on the *Cometary Stirring Model* that allows us to identify, for example, the presence of expanding shells and stellar winds.

We found that radial velocity and velocity dispersion maps, for each galaxy, show a different kinematical pattern, although both are H II galaxies. CTS 1020 shows a velocity gradient consistent with a rotating disc with a velocity amplitude of $\sim$40 km s^{-1}. On the other hand UM 461 does not exhibit a typical pattern of a rotating system, despite of the observed velocity gradient in both emission nuclei.

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EMISSION LINE IMAGING SURVEY OF THE ABELL 901/902 SUPERCLUSTER

A. Chies-Santos[1], B. Rodriguez del Pino[1], A. Aragón-Salamanca[1], S. Bamford[1], and M. Gray[1]

It is widely debated whether galaxy evolution is more prone to internal or external effects. Trends to passive and/or more spheroidal populations in dense environments are widely observed and star-formation rate and stellar age and AGN fraction all correlate with measurements of the local galaxy density. However, in the hierarchical framework of galaxy formation the galaxies in the densest peaks start forming stars and assembling mass earlier making stellar mass one of the key determinants of galaxy properties. Nonetheless environmental effects are still very important and could be separated from the effect of internal galaxy properties. The Abell 901(a,b)/902 multiple cluster system at $z \sim 0.165$ is a unique laboratory for galaxy evolution. Besides three main clusters it includes a few related groups. The field comprises a very broad range of galaxy environments and masses at a single redshift. Therefore by observing this single region one is able to study galaxy evolution decoupling environmental and stellar mass effects from redshift-related ones. We are currently undertaking a survey of the region with the OSIRIS tunable filter imager on the GRANTECAN. We have targeted the Hα and [NII]λ6584 lines Together, these will provide the urgently needed star formation rate and AGN diagnostics for a full census of such properties in this field. In this talk I will present the first results of the survey on the high density regions A901a and A902 probing AGN and star formation.

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DYNAMICAL ANALYSES OF Z= 0.3, 0.5 GALAXY CLUSTERS FROM THE SOAR GRAVITATIONAL ARCS SURVEY

N. Cibirka[1], E. Cypriano[1], G. Caminha[2], and M. Makler[2]

We have performed dynamical analyses of galaxy clusters using optical spectroscopic data. These clusters belong to the SOAR Gravitational Arcs Survey (SOGRAS) (Furlanetto et al. 2013) and are among the richest structures in SDSS stripe 82 with redshifts around z= 0.3 or z= 0.5. For three of those clusters, all with strong lensing features, we carried out individual analysis using Gemini/GMOS data ($\sim$ 25 velocities per cluster). We obtained masses in the range of $3-8\times10^{14}$ M$_\odot$ and signs of substructure in one of them. For the whole SOGRAS sample (47 clusters) we used SDSS spectroscopic data. Given the low number of velocities per clusters, we stacked the data per redshift and/or richness. Our results indicate that the richest half of the clusters, independently of the redshift, tend to be $\sim$ 2.5 times more massive than the poorest half. Also we have found