

are undoubtedly strongly intervening in, sometimes even dominating, the still scarcely understood evolution of the galactic population in groups and clusters.

The presented contributions, mainly based on optical researches, were complemented with results obtained in the infrared, radio and X-rays.

More than giving definite answers to the presently open questions, the workshop granted a splendid opportunity for specialists and young researchers to gather and interact, presenting and debating the numerous new results in the area and discussing the definition of the strategies to tackle in the future that will allow to better understand the evolution of galaxies.

Catarina Lobo

HUNTING THE COSMOLOGICAL PARAMETERS WITH PRECISION COSMOLOGY

The last few years saw the development of a plethora of experiments and surveys probing the cosmological parameters. The Cosmic Microwave Background (CMB), the Supernovae (SN) searches and galaxy cluster data, namely via X-rays and Sunyaev-Zel'dovich effect, are among the most prolific giving detailed information about the geometry, age and structure formation of the Universe. The program of the WS-HCP workshop was aimed at highlighting the scientific achievements and to discuss the new environment of «precision cosmology» within these three probes. The objective was to analyse different observational strategies, common problems namely foregrounds, and to assess the impact of observational uncertainties in the determination of key cosmological parameters which describe the primordial universe and the large scale structure formation mechanism.

In the workshop about 40 astronomers participated and 25 talks were given during three days in a relaxed and jovial atmosphere, which was ideal to ignite vivid discussion and to stir interactions between the participants.

The first day of the meeting was dedicated to supernovae data. The debate included a number of important issues. Among them were interesting discussions on physical mechanisms and models of star explosions, studies of the variation of colour and magnitude of supernovae Ia with redshift, and discussions on their use as standard candles. Another exciting subject of debate was the impact of future supernovae projects, like the supernovae observatory satellite SNAP, and their importance to constraint cosmological parameters.

The last two days of the workshop were dedicated to the CMB and large scale structure studies. Concerning the CMB the main subjects in debate were constraints on cosmological parameters from present data, the observation of CMB polarization, Galactic CMB foregrounds, and the new strategies for observing the CMB using: polarisation sensitive bolometers, interferometric arrays for detailed SZ measurements and multi-frequency channel observations, such as the ARCHEOPS experiment and the future all-sky survey to be done by the Planck satellite mission (ESA, 2007).

The discussions on large-scale structure included presentations about the observational properties of galaxy clusters and their theoretical modelling involving both analytical methods and hydrodynamical N-body simulations. Constraints on cosmological parameters using recent cluster X-ray observations from Chandra and XMM satellites were also presented. Concerning extra-galactic cartography, results from the local universe were discussed, like the distribution of superclusters, and methods to be used with the VLT and the Planck and Herschel (ESA, 2007) satellites. The latest results from the 2dF galaxy redshift survey were also debated.

Antonio da Silva (LAOMP),
Domingos Barbosa (CENTRA IST)

VARYING FUNDAMENTAL CONSTANTS

The workshop on The Cosmology of Extra Dimensions and Varying Fundamental Constants, which was part of JENAM 2002, was held at the Physics Department of the University of Porto (FCUP) from the 3rd to the 5th of September 2002. It was attended by about 110 participants, of which 70 were officially registered in the VFC workshop, while the others came from the rest of the JENAM workshops. There were also a few science correspondents from the press.

During the 3 days of the scientific programme, 8 Invited Reviews and 31 Oral Communications were presented. The speakers came from 11 different European countries, as well as from Argentina, Australia, Canada, Japan and the U.S.A. Nine of the speakers were Ph.D. students.

The workshop brought together string theorists, particle physicists, theoretical and observational cosmologists, relativists and observational astrophysicists. It was generally agreed that this inter-disciplinarity was the greatest strength of the workshop, since it provided people coming into this very new topic, from the various different backgrounds with an opportunity to understand each other's language and thereby gain a more solid understanding of it.

The overall aim of the workshop was to discuss the current theoretical motivations for the existence of additional spacetime dimensions, and to confront these expectations with existing or upcoming observational and experimental tests. The interaction between specialists in different areas was quite fruitful, and a number of outstanding issues were identified, which are likely to become the main paths of research to be explored in this area in the coming years.

It was clear that in any theory with extra spacetime dimensions new interactions will naturally arise which will violate the Equivalence Principle at some level. This type of test is, therefore, the most sensitive probe of new physics beyond the standard model. One unavoidable consequence of these violations are spacetime variations of the 'fundamental constants' of nature which we can directly measure (but which are, in fact, only 'effective' quantities in these models). Astrophysical and cosmological tests of these effects are much more promising than laboratory or particle accelerator tests.

On the observational side, two new sets of results were announced which provide evidence for time variation of the fine-structure constant (Webb et al.) and the ratio of the proton and electron masses (Ivanchik et al.) at redshifts around three relative to the present-day values. Other experimental and observational bounds, as well as the possible sources of systematic errors in all of the above methods and some possibilities for future independent tests were also discussed.

Finally, an informal discussion session was organised jointly with the HCP workshop, with the theme being 'JENAM 2020'. Two of the invited speakers of each workshop were asked to imagine themselves giving a plenary talk at JENAM 2020, and summarise the main achievements in the field in the period 2000-2020. In 18 years we will know if truth turns out to be stranger than fiction

Carlos JAP Martins

GALACTIC DYNAMICS

The Galactic & Stellar Dynamics workshop is now a fixture in the JENAM programme going back to 1998. As always the workshop was a self-organised affair, with no pre-set agenda: the convenors and SOC's main job was to assemble a homogeneous programme completely made up from contributions volunteered by JENAM participants.

A total of 32 papers were presented, along with 12 posters. These were then split thematically into three:

- 1) galactic morphology (bars, spirals, bulges);
- 2) galaxy formation and environment (satellites, halos, etc.);
- 3) stellar clusters (observations and dynamics).

A rough balance between theoretical and observational talks was achieved (the programme can be viewed at url <http://astro.u-strasbg.fr/scyon/jenam2002.html>). Such a balance reflects the broad appeal of the JENAM meetings in general, and the 2002 edition in particular. This workshop benefited much from the diverse backgrounds of the attendees.

The review papers gave the workshop much momentum. Two 40-minute review papers were scheduled each day, while normal talks were allocated 20 minutes. Space does not allow me to discuss the string of excellent papers which complemented the six reviews, and I chose to highlight those briefly below (in chronological order):

W. Maciejewski (Arcetri), who discussed the formation and evolution of galactic bars. He highlighted the problems met in accounting for the fine structure of 'bars within bars', a problem that will keep theoreticians busy for some time yet.

Marc Balcells (IAC) showed the close links between bulge and disc stellar populations. Observations of extended bulge-type stars well into the disc of galaxies must set constraints on galactic formation times and merger histories. Will computer models keep pace? Stay tuned.

T. Tsuchiya (ARI) considered the statistics of warps and mechanisms to explain their origin. His recent N-body models of the Milky Way/LMC system suggest a close inter-play

between dark mass and discs, in the way of a (dark) mechanical lever which may then drive the warp.

Ch. Conselice (CalTech) reviewed the statistics of galactic mergers and presented a method of identifying them as function of redshift. The classic interrogation 'where have all the mergers gone?' may soon receive quantitative answers from identification tools now being developed.

G. de Marchi (ESA) reviewed stellar populations in star clusters and observational consequences of their evolution. Models of stellar populations in a variety of clusters would point toward a universal profile. The implications for cluster modelling are clear and should help constrain our understanding of the dynamics of these objects.

Holger Baumgardt could not present his review of stellar cluster dynamics, but we hope to include his paper in the proceedings of the workshop. The proceedings will appear in the EAS Conference Series, and are scheduled to appear in 2003. An early order of the book can be made at a special discount: see the programme web site for details.

The workshop was self-financed and self-organised – up to a point: EAS and LOC sponsored half a dozen of our participants, plus all of the plenary sessions books. We are grateful to them for their generosity. We congratulate the LOC and Mario Monteiro in particular for a truly well organised JENAM.

Christian Boily (Strasbourg)

THE REGIONAL MEETING OF THE EAS SOUTH-EASTERN BRANCH

NEW RESULTS IN STELLAR PHYSICS

The second regional meeting of the South-Eastern Branch of the European Astronomical Society, «New Results in Stellar Physics», was held in Timisoara (Romania) between 3 and 5 October 2002.

The problems discussed during the meeting were related especially to stellar physics and evolution, pulsating stars, binary systems, photometry of variable stars, models of stellar structure. The communications covered both the observational and the theoretical area.

Even if the distances between the neighbour countries of this part of Europe are small, some astronomers who liked to participate, could not obtain financial support from their institutions. So, only a small number of participants were present from Hungary, Romania and Yugoslavia, who had enjoyed unlimited time for discussions after each presentation.

The meeting was organized mainly by the Astronomical Institute of the Romanian Academy (Timisoara and Bucharest Observatories), the Timisoara Branch of the Romanian Academy, the West University of Timisoara, with an important help from the Mayorality of the city.

Finally this meeting gave the opportunity to the participants for visiting this wonderful city of the South-Western part of