enabled the spectra of the central object Sag A* to be followed as it undergoes outbursts on a time scale of hours. It was salutory to see spectra of tens of stars in an area the size of a ground-based seeing disc! The "weather" around the nearby Seyfert nucleus of NGC 1068 was described by Gerald Cecil (University of North Carolina) with some fine animations. This environment has been systematically studied by IFUs and probes how shocks play an important role proximate to the active nucleus.

Emission-line nebulae were often considered the staple targets for 3D instruments providing well-resolved, kinematically complex targets. A number of talks described imaging spectroscopy studies of planetary nebulae (Martin Roth, AIP, using the PMAS instrument; Katrina Exter, IAC, using Integral) and H II regions such as the proplyds in Orion (Henri Plana, LATO, Brasil, using the Gemini GMOS IFU) and Herbig Haro objects (Rosário Lopez, Universidad de Barcelona). The ability to post-bin the IFU data enables the detection of very low surface brightness features, such as the faint emission-line haloes around planetary nebulae. Several talks described work done with the MPFS on the Russian 6-m telescope which has been collecting data for almost 15 years. Sergei Fabrika (Special Astrophysical Observatory, Russia) and Pavel Abolmasov (Moscow State University) discussed IFU observations of the shock nebulae associated with Ultra-luminous X-ray binaries (high luminosity cousins of SS433); here He II emission is an important diagnostic. The SNR around SN1987A is now large enough for AO corrected imaging spectroscopy and Karina Kjær (ESO) described VLT SINFONI observations.

Far from being restricted to large extended objects, IFUs are beginning to make an impact in high-redshift observations to which the entire last day was dedicated. The often complex, knotty appearance of high-redshift galaxies, which are probably interacting or merging, can be sampled in an unbiased way with an IFU. This can be important since the obvious nucleus may not be apparent and rotation curves can be derived for apparently rather chaotic objects and emission-line haloes, as shown for example by Montse Villar-Martin (Andalucia) and Richard Wilman (Durham). Deep surveys of blank sky, or regions around QSOs for indications of local overdensity of galaxies, are being conducted with Sauron and the VIMOS IFU, as shown in several talks (see Jarvis et al. in the last issue of The Messenger (121, 38)). Serendipitous discovery of emission-line objects which can be missed by photometric surveys was highlighted, although the number of such objects is small.

The conference summary was presented by Andreas Quirrenbach (Leiden). He said that October 14 was a historic day: it was the last day of the last conference devoted to the subject of 3D spectroscopy. The technique has come of age and can now enter the repertoire of standard observational tools employed by an astronomer. (Imagine a conference on long-slit spectroscopy!). The very wide range of topics covered at the conference to which imaging spectroscopy had been applied was indeed striking. There seemed to be little area of the parameter space of spatial coverage, spatial scale, spectral coverage and spectral resolution which had not been described at the meeting. The discussion following the summary concentrated on instrumental issues and possible developments, such as the ideal detector able to determine the position, wavelength and polarisation state of each incoming photon, currently imperfectly realised but the ultimate goal of 3D spectroscopy.

Report on the

Science Day in Honour of Alvio Renzini

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The scientific legacy of Alvio Renzini was celebrated with a one-day workshop in Garching on October 19. Alvio retired as the VLT Programme Scientist in June this year and this conference was a way to look back at his many scientific achievements and his influence on ESO and the VLT project.

The programme of the day was only a partial reflection of Alvio's scientific work. There were no presentations of his early work, e.g. on stellar evolution. Instead the topics concentrated on research he is currently interested in and actively working. The programme was as varied as Alvio's work. The diversity was clear right from the start: Pascale Jablonka (Lausanne) described work on the bulge of M31, followed by a status report on white dwarfs in globular clusters given by Sabine Moehler (ESO). Gianpaolo Piotto (Padova) introduced globular cluster oddities and Markus Kissler-Patig (ESO) used globular clusters as template stellar populations. A topic that was hot when Alvio joined ESO were flares at the centre of elliptical galaxies, and Francesco Bertola (Padova) gave an update of this research. Moving into more cosmological topics Adriano Fontana (Rome) talked about the galaxy mass function at high redshifts and Claudia Maraston (Oxford) presented work inspired by Alvio on the importance of AGB stars in the interpretation of

spectral energy distributions at high redshifts. The large surveys, for which Alvio played a pivotal role in having ESO making significant contributions were presented by Piero Rosati (ESO), who gave a status report on GOODS, and Simon Lilly (Zurich) provided a glimpse at what is to come for zCOSMOS. The latest update on the continuation of the K20 survey and the GMASS project was presented by Andrea Cimatti (Arcetri). Massimo Tarenghi (ESO) looked back at the time when the VLT was being built and elaborated on the important scientific input and guidance Alvio provided. The day was rounded of by Alvio himself giving his view on current research (adding the latest result on a search for eclipsing planets in the direction of the Galactic bulge) and some more speculative ideas. A recurring theme in all presentations was that Alvio must not retire from his scientific career and several pleas were made for him to continue to contribute his physical insights into the many diverse projects he has been involved in.

Coming to ESO was a gamble for Alvio (maybe also for ESO). Entering the world of hard observational realities as a theorist has not always been easy. Even before coming to ESO, Alvio was deeply involved in observational research. However, he was collaborating with observers and helping them interpret their data. At ESO he formulated important parts of the ESO programme, introduced ESO to survey work and gave scientific direction for the use of the telescopes and future instrumentation. He sensed interesting scientific developments very early on and prepared ESO for them. He led a working group to discuss the best ways to observe extra-solar planets, which led to the construction of HARPS, and organised the best way to observe GRBs with the VLT. The latter has provided an observational mode, the rapid response mode, which is not offered at any other ground-based observatory. The VLT has always been at the heart of his concerns and he has been an unwavering champion in its support.

Unknown to many astronomers Alvio had a defining influence on the way the VLT has developed and is used by astronomers. He wrote the Level 1 Requirements for the VLT kind of as a “warm-up.” The VLT Science Policy document was also part of his work. Alvio led a group of ESO scientists to discuss conceptual tests of the VLT system (and define reference programmes) to see whether the system was able to cope with them. He effectively assessed design and construction decisions for their implications for the (then future) science applications and found ways to involve the ESO science community with the VLT project. Once the first telescope became reality Alvio led the science verification of the first UT and later the instruments as they came online.

Alvio was deeply involved in the instrumentation programme for the VLT. He constantly tried to improve the performance of the instruments and made many proposals for upgrades. The improvement of the red sensitivity of FORS2 was his proposal, as was the fibre connection from FLAMES to UVES. He was told several times that this was not possible and should not be considered. But he persisted and today this is one of the most successful instrument combinations.

Alvio made sure that the second HDF happened and was located in the Southern Hemisphere so that the VLT would have access. He followed through with the large cosmological surveys and involved ESO in them. The ESO contribution to GOODS was initiated by Alvio. The ISAAC IR imaging and the FORS2 (see the article by Vanzella et al. on page 25 in this issue of The Messenger) and VIMOS spectroscopy are due to his initiative and his constant support. zCOSMOS is the logical continuation of these activities.

Alvio in general was a great ambassador for the VLT project in the astronomical community in Europe. He advocated VLT science wherever he went.

As Alvio’s last months and weeks at ESO were approaching many young people were wondering “How will research at ESO continue without Alvio?”. This question was asked many times at coffee and in the corridor. Who will replace Alvio and his scientific input, his scientific insights and his experience? This was (and is) a real concern among many younger scientists who enjoyed the quiet scientific leadership Alvio provided on the fourth and fifth floor of the ESO building in

Photo: H. H. Heyer, ESO

Garching. His contributions to the journal clubs, seminars and colloquia were very much appreciated and they always showed a new and different aspect of the scientific topic at hand. His vast research experience was a guiding light for many at ESO. It was not by chance that he organised five ESO workshops and provided new ideas every year.

Alvio has been amongst the most highly regarded and respected ESO astronomers in the community. In a sense he represented the scientific conscience of ESO.

The science day was a great success and enjoyed by all. We wish Alvio many more successful and fruitful years to come.