

## News from Santiago

*With the ever-growing number of astronomers in Chile, the ESO Topical Meetings in Santiago provide an important forum for the community to meet, exchange ideas and discuss recent research.*

*The series started with three successive meetings in October/November 1999 ("The Distant Universe", "Physics of Galaxies", "From Stars to Planets"), then continued in December 2000 with a Topical Meeting oriented towards telescopes/instruments ("New Facilities for Astronomy in Chile").*

*In 2001, we have complemented the series with two Topical Meetings recently held at ESO/Santiago. Below are short summaries of these lively and fruitful scientific meetings. Names in parentheses are speakers at the Workshops. Acronyms are written out at the end. D. Alloin*

### **ESO Topical Meeting: "Astrophysical Niches for High Resolution Spectroscopy"**

*ESO/Santiago, 2001 October 2–3  
S. Ellison*

This Topical Meeting was held in Vitacura on October 2–3. The technique of high-resolution spectroscopy is exploited in many areas of astronomy, as was reflected by the breadth of scientific talks given over the two days and the attendance of astronomers and students from universities in Santiago and Concepción as well as several visitors from Europe and other Latin American countries.

One of the most exciting and widely publicised uses of high-resolution spectrographs in recent years has focussed on their exquisite radial velocity accuracy necessary for detecting extra-solar planets.

D. Queloz presented a progress report of the on-going planet search project with CORALIE and reviewed some of the important conclusions to come out of this programme. The distribution of planet masses, which exhibits a sharp increase down to around 1 Jupiter mass before dropping sharply due to incompleteness, highlighted the motivation for future instrumentation such as HARPS, which will provide the next important step in radial velocities by routinely providing 1 m/s accuracy (F. Pepe).

Another exciting prospect is using the transit method to detect extra-solar planets. G. Mallen-Ornelas presented some recent radial velocity follow-up measurements from UVES of the first extra-solar planet candidates to be detected via the transit method, an important discovery and a complement to radial velocity techniques.

Stellar spectroscopy naturally had a significant presence at the Topical Meeting, addressing many wide-ranging issues. Important new results have surfaced in the field of metal-poor stars, as reviewed by E. Jehin. Although

many puzzles still remain (e.g. the oxygen abundance in very metal-poor stars and the issue of deep mixing), new avenues are continually opening, such as the possibility of using radioactive isotopes for age-dating. Chemical profiling was a recurrent theme of this meeting and talks by D. Minniti, J. Arenas and D. Geisler highlighted this technique in three very different populations: the Galactic bulge, the metal-poor halo and Sculptor dwarf spheroidal.

High resolution is essential for the detailed analysis of stellar magnetic fields due to the small scale of line splitting, as discussed by G. Mathys and S. Bagnulo.

High-resolution spectroscopy has also had an important impact on cosmological fields. B. Leibundgut reviewed an ESO large programme aiming at characterising the elusive SNIa progenitor population, whose nature remains unknown despite its key role as a standard candle.

The study of high-redshift quasars proves to be interesting not only for investigation of the AGN and its environment (P. Hall), but also as a tool for probing intervening matter such as the intergalactic medium and distant galaxies (S. Lopez and S. Ellison). Quasar absorption lines remain one of the best diagnostics of the high-redshift Universe, allowing us to determine detailed chemical profiles, probe primordial abundances and even measure the temperature of the CMB.

European and Chilean astronomers now have an exciting suite of spectroscopic capability available to them. In addition to the most recent addition of UVES to the ESO arsenal, the science presented at this meeting utilised a host of instrumentation including FEROS (the most over-subscribed of all ESO instruments), CORALIE and the VLC (on the 3.6-m). Instruments such as EMMI, which are not dedicated high-resolution facilities also offer an important contribution, as demonstrated in talks on cataclysmic

variables (E. Mason and R. Menickent).

Of course, high-resolution spectroscopy is not confined to the Optical and several speakers discussed results in the IR and sub-mm regime to probe the environments of AGN (E. Galliano) and to investigate the properties of star-forming regions (P. Cox).

With new instruments on the horizon, such as HARPS, FLAMES and CRIRES, the capabilities and possibilities for the future are very exciting and research in this domain will certainly continue to blossom.

### **ESO Topical Meeting: "Brown Dwarfs and Planets"**

*ESO/Santiago, 2001 October 16  
M. Sterzik*

On October 16, the second in the series of the 2001 Topical Meetings at ESO/Vitacura was about "Brown Dwarfs and Planets". More than 30 participants, the majority being researchers and students based in Chile, discussed the current status and future prospects in this rapidly growing field, a field that was actually pioneered with the discovery of the first free-floating brown dwarf, Kelu-1, in 1997 by the Chilean astronomer M.T. Ruiz. The topic was introduced by a review on the theories of star and planet formation, in the perspective of planet searches (G. Wuechlerl).

Then, coming to the question of discoveries, the whole variety of observational methods employed in brown dwarf and planet search programmes was discussed.

Precise radial velocity Doppler measurements are currently the most successful method in discovering planetary mass companions (e.g. with the spectrographs CES, UVES, CORALIE and in the future HARPS) as was discussed by M. Kuerster.

But also direct imaging methods are now promising, ranging from Deep NIR

imaging with ISAAC in star-forming regions down to sensitivities of planetary masses for free-floating objects (F. Comerón), as well as photometric transit and microlensing searches which are currently pursued or planned (D. Minniti).

Searches for faint companions, mostly done with adaptive optics in the NIR, also reach sensitivities below the hydrogen burning limit (S. Hubrig). However, the brown dwarf companion frequency inferred from such observations appears to be low, and the so-called “brown dwarf desert”, already well-known from radial velocity surveys, likely extends over a broader distance range (M. Sterzik). The promises of adaptive optics for planetary science studies in general

was also highlighted at the meeting (F. Marchis).

Among other predicted observable signatures of planets are e.g. their interaction with circumstellar disks. This will be visible with future high-sensitivity, high-resolution IR imaging techniques (O. Schuetz). Atmospheric signatures, especially OH features, can eventually be identified with the next-generation high-resolution VLT/MIR spectrograph CRIRES (U. Kaeuffl).

In the near future, a very powerful way to identify new brown dwarf and planetary mass companions will involve the VLT interferometer, measuring both astrometric variations in close binary systems, and also direct imaging by nulling techniques (M. Schoeller, M. Wittkowski).

In conclusion, we should expect in the coming years very exciting discoveries in this area of research, thanks to performing and inventive new instruments. The quest for extra-solar planets has just started to bring us beautiful results. There is no doubt that this success will continue and unveil at some point the awaited Earth-like planets.

HARPS: High-Accuracy Radial-velocity Planetary Search  
 FEROS: Fiber-fed Extended Range Optical Spectrograph  
 FLAMES: VLT Fibre Large Array Multi Element Spectrograph  
 UVES: VLT UV-Visual Echelle Spectrograph  
 ISAAC: VLT Infrared Spectrometer And Array Camera  
 CRIRES: VLT Cryogenic high-resolution InfraRed Echelle Spectrograph  
 VLC: Very Long Camera (used together with the CES, Coudé Echelle Spectrometer)

## The ESO Users Committee

*L. WISOTZKI, Chairperson of the UC*

Founded as an advisory body to the Director General, the Users Committee mainly works at the interface between ‘common users’ and ESO representatives. This article describes the role of the UC, highlights some of its recent activities, and outlines some areas where the communication between ESO and its users can be improved.

ESO’s status as an international organisation requires that its member states are appropriately represented in the shaping of decisions and policies. As part of this principle, several panels were created where delegates from the ESO member countries participate to define various aspects of ESO policies. Among these, the Observing Programmes Committee (OPC) with its biannual verdicts on the submitted proposals is probably most prominently present in the daily life of many astronomers. Other important institutions are the Scientific Technical Committee (STC), the Finance Committee, and ul-

timately the ESO Council. Wait – there’s something else: the **Users Committee (UC)**. Maybe less central in high ESO politics, it nevertheless fulfils an important function: representation of the ‘common user’ towards ESO, and support of the communication between ESO and its users. This article is meant to give a little background information on tasks and challenges of the UC and its members.

Suppose you have been granted observing time and enjoyed the trip to Chile (or alternatively, enjoyed preparing your Observing Blocks at home). If the weather is good, you’ll get a lot of data and can start doing science. Usually, that’s all there is to be said, most users are quite satisfied with the way their needs are taken care of, with the support on the mountains, and with the quality of their data. But nothing is perfect, and ESO is no exception to this rule – instruments might not work properly, there might be conflicts with staff

members, or certain things might just run somewhat below optimum. Now what are you – as an ESO user – supposed to do if you run into troubles that cannot be solved on the spot? For such cases, a number of options exist:

- Don’t do anything at all. Or, to make it worse, tell your colleagues at the next conference that ESO is a lost case. This method has the virtue of being at least partly self-fulfilling, in that you certainly don’t accomplish a lot.

- Complain to your ESO friend, ideally to the person highest up within the ESO hierarchy you can get hold of. Works sometimes, but this route is clearly not always open.

- Fill in a detailed comment in your end-of-mission questionnaire. Actually, that’s what these forms are for, and ESO *does* react on them. Unfortunately, not too many people make use of this option, see below.

- Talk to the User Support Group. It is their task (among others) to take com-

### Contact your representative in the Users Committee

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This list is updated every year. Check at <http://www.eso.org/gen-fac/commit/uc/>