

# HIGH RESOLUTION INFRARED SPECTROSCOPY IN ASTRONOMY

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**I**NFRARED SPECTROSCOPY at a resolution of a few km/s allows to study rotational-vibrational transitions of many abundant molecules as well as important atomic lines in a multitude of interesting astrophysical environments. The ESO VLT will shortly be equipped with two unique infrared spectrometers which combine spectral resolution with spatial resolutions of  $\approx 0.2$  arcsec:

- CRIRES, an adaptive optics fed 1–5  $\mu\text{m}$  spectrograph with  $\lambda/\Delta\lambda \approx 10^5$
- VISIR, including a mode with  $\lambda/\Delta\lambda \approx 3 \cdot 10^4$  between 8–13  $\mu\text{m}$ .

The Workshop held in Garching on November 18–21, 2003 was organized mainly to create awareness of these new observational capabilities and to stimulate their use by the community. The first positive result was that more than 100 astronomers braved the November weather and made it to Garching, twice as many as attended a similar workshop in 1992 devoted to both optical and infrared high resolution spectroscopy. Many late applicants also, unfortunately, could not be accommodated. The second clear difference compared to 1992 was the breadth and maturity of the scientific interest despite the still limited high resolution instrumentation available.

There were 26 invited, 29 contributed and 39 poster papers covering the observable universe between 0.2 AU and several Mpc. State-of-the-art instrumentation, observational highlights, exciting new



Owing to the average Garching November weather the participants had to be squeezed into the ESO central staircase for a group photo.

observational projects, sophisticated models and laboratory studies were presented covering as diverse fields as our solar system, star-formation and young stars, “normal” stars, late-type stars, AGB stars and post-AGB-Objects, the possible direct detection of exoplanets, measurements of the abundances and magnetic

fields of stars, studies of ISM chemistry and the kinematics of stars and gas in galactic centres.

As the “cement” for this conference was infrared spectroscopy many people came together from different fields who would normally not meet at conferences focused on a specific astronomical topic. There is thus a good chance that the workshop has fostered new contacts and collaborations. Certainly the participants went away very happy and we at ESO learned a lot which is relevant to the fine tuning and putting into operation of the CRIRES and VISIR instruments.

In the next issue of The Messenger there will be an in-depth article summarizing the highlights and Lessons Learned of this particular workshop.

Those interested in the programme or any other details please consult the webpage: <http://www.eso.org/gen-fac/meetings/ekstasy2003>.

*Intrigued by the aesthetic beauty of this creation of our colleagues in earlier epochs, the photo of the Nebra Disc (courtesy of the Landesmuseum für Vorgeschichte of Saxony-Anhalt, Germany) was selected as the basis of the workshop poster.*

*This 32 cm diameter bronze disc, which is by itself already very fascinating, appears even more thrilling given the fact that this artifact is being interpreted by archaeo-astronomers as a pocket-version of the Stonehenge site. For more information, please look at the conference web site.*

