



High Resolution Infrared Spectroscopy in Astronomy

By Hans Ulrich Käufel

Springer-Verlag GmbH Jul 2005, 2005. Buch. Book Condition: Neu. 242x167x38 mm. Neuware - Two specialized new instruments for ESO's VLT, VISIR and CRIRES, spawned the idea for this workshop. CRIRES is a dedicated very high resolution infrared spectrograph; VISIR features a high resolution spectroscopic mode. Together, the instruments combine the sensitivity of an 8m-telescope with the now well-established reliability of VLT-facility instruments. High resolution here means that lines in cool stellar atmospheres and H II -regions can be resolved. The astrophysical topics discussed in this rather specialized workshop range from the inner solar system to active galactic nuclei. There are many possibilities for new discoveries with these instruments, but the unique capability, which becomes available through high-resolution infrared spectroscopy, is the observation of molecular rotational-vibrational transitions in many astrophysical environments. Particularly interesting and surprising in this context, many papers on modeling and laboratory spectroscopy at the workshop appear to indicate that astronomical observations are lagging a bit behind in this field. The papers are an interesting mix of reports from existing high resolution facilities, reports on modeling efforts of synthetic spectra and reports on laboratory spectra. In this sense, a fruitful exchange between molecular physics and astronomy was again accomplished...



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