Gisbert Winnewisser
1936 - 2011

Eric Herbst
Departments of Physics, Astronomy, & Chemistry
The Ohio State University

Curriculum Vitae

- 1936 Birth (Karlsruhe, Germany)
- 1967 Ph. D. (Duke Univ., spectrum of HSSH)
- 1967-68 Postdoc, Duke Univ.
- 1968-70 Postdoc, NRC (with Costain/Oka)
- 1970-71 Asst. Prof., Univ. Brit. Columbia
- 1971-72 Visiting Scientist, NRC
- 1972-79 Astronomer, MPIfR
- 1979-2001 Chair in Physics, Univ. of Koeln
- Honors: Max-Planck Research Prize; Phillip
- Morris Prize; Marci-Medal; Historic Medal
- of Charles University

SOME CAREER HIGHLIGHTS

- ASTRONOMY
- 1) New species & isotopes
- 2) Maps & physical conditions (e.g. CI & CO)
- 3) Cologne telescope
- 4) Development (e.g. AOS's)
- 5) The name TMC-1

500+ papers

- SPECTROSCOPY
- 1) mm/submm studies including intracavity work
- 2) THz studies
- 3) IR studies
- 4) Database

SOME SPECTROSCOPIC EQUIPMENT

- THz spectrometers (BWO sources up to 3 THz, sideband source 1.6-2.1 THz; used for study of rotation, torsion, bending vibrations of radicals and normal species)
- OROTRON intracavity mm-wave spectrometer; up to 400 GHz; 3 orders of magnitude enhancement in sensitivity (van der Waals species, etc)

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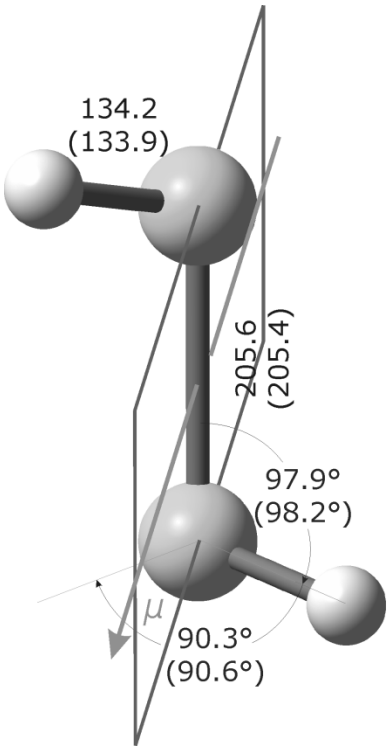
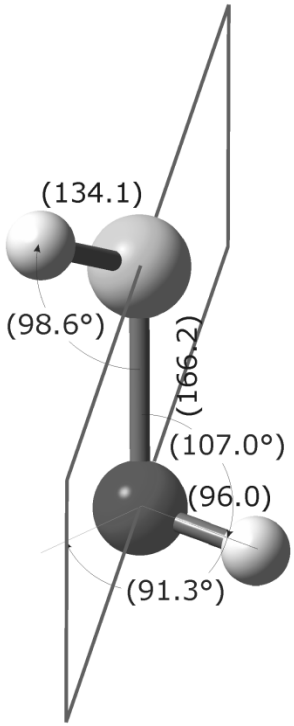
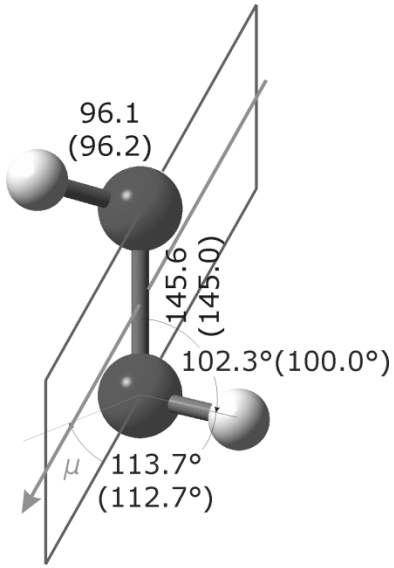
frequency-stabilized ring laser for IR work

HSSH AND BRETHREN





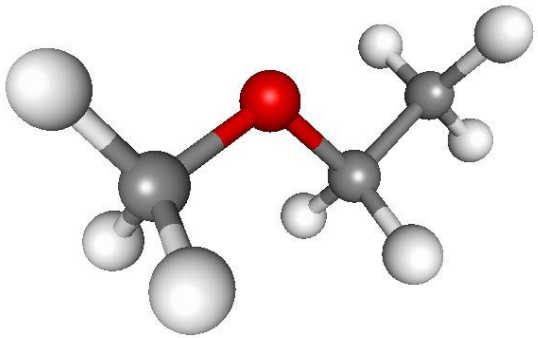


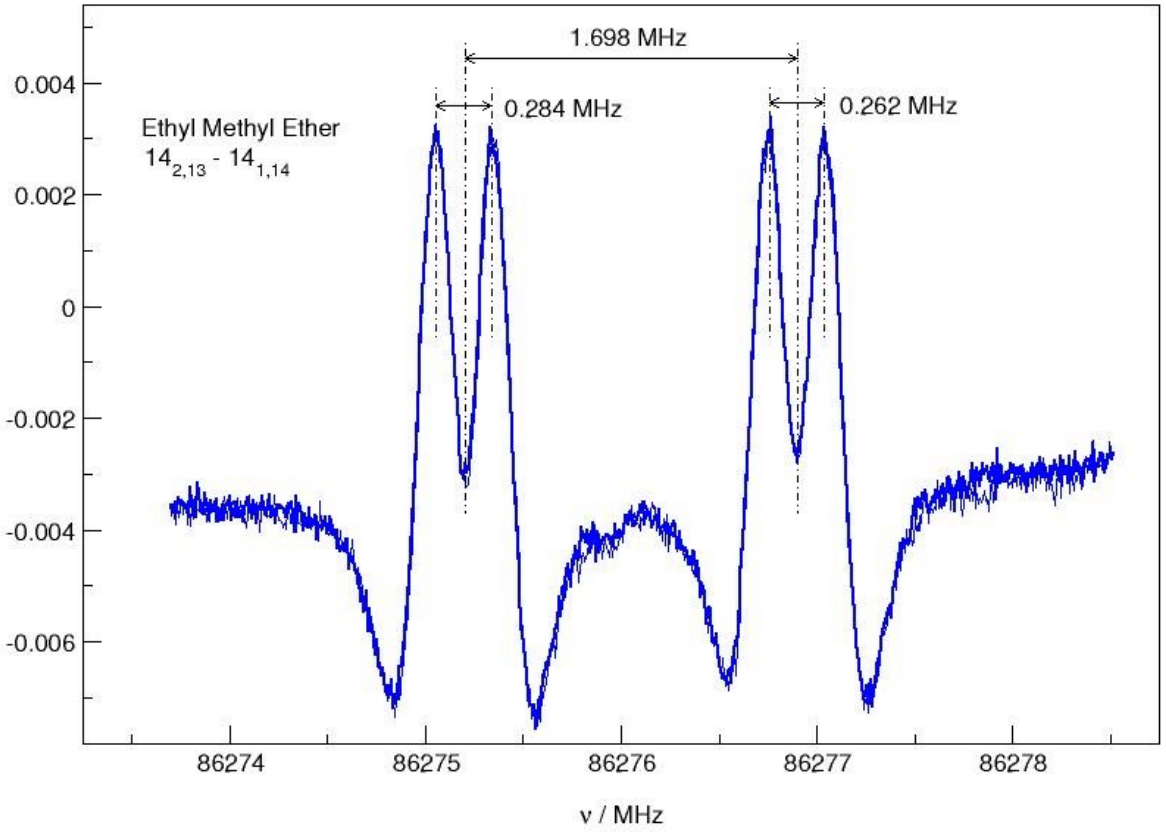
HSSH

HSOH

HOOH

trans-Ethyl Methyl Ether





U. Fuchs et al. (2003)

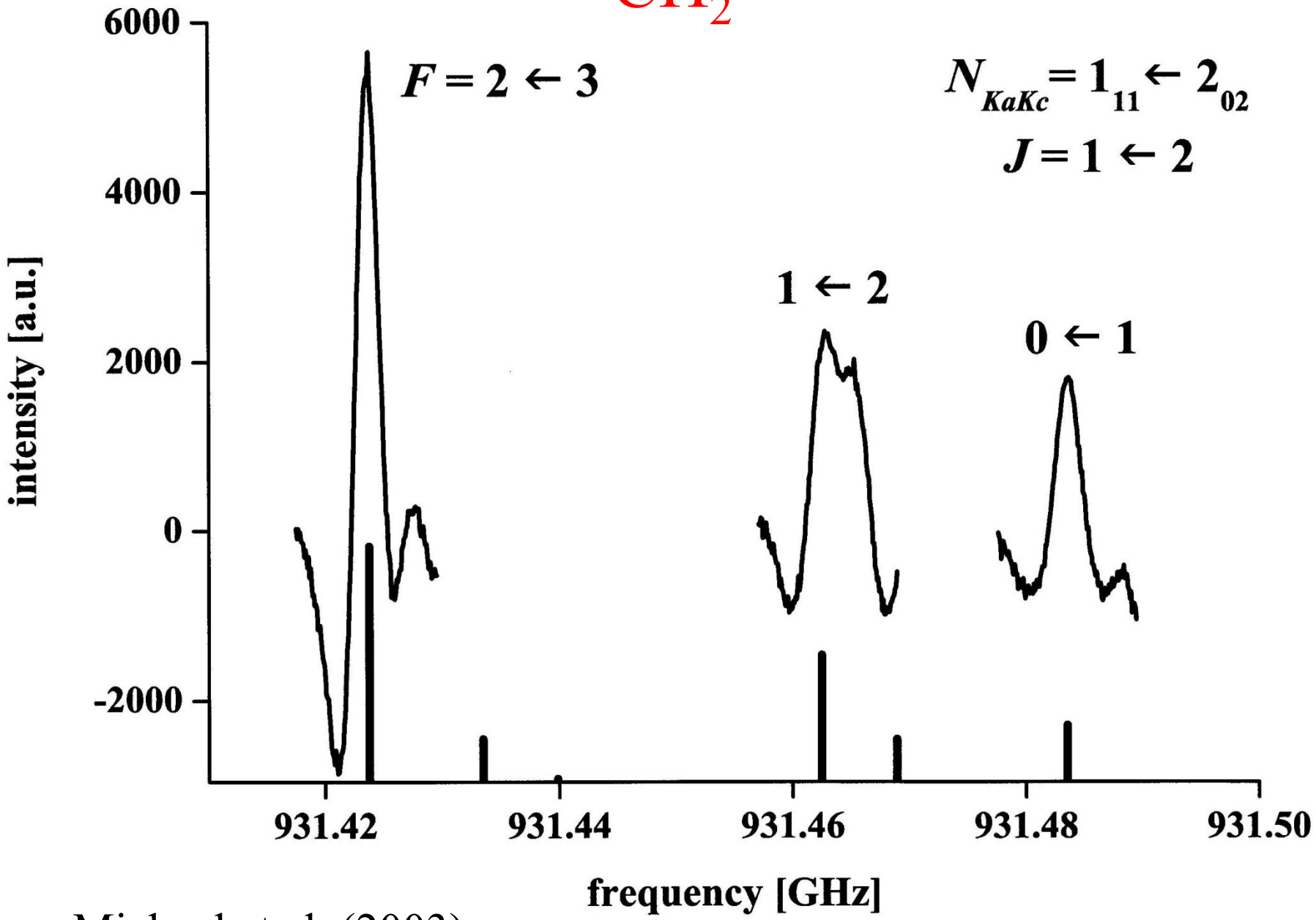
Rotational Spectra of Radicals

Some examples of recent years:

CH_2 NH NH_2 PH PS CP CF CN

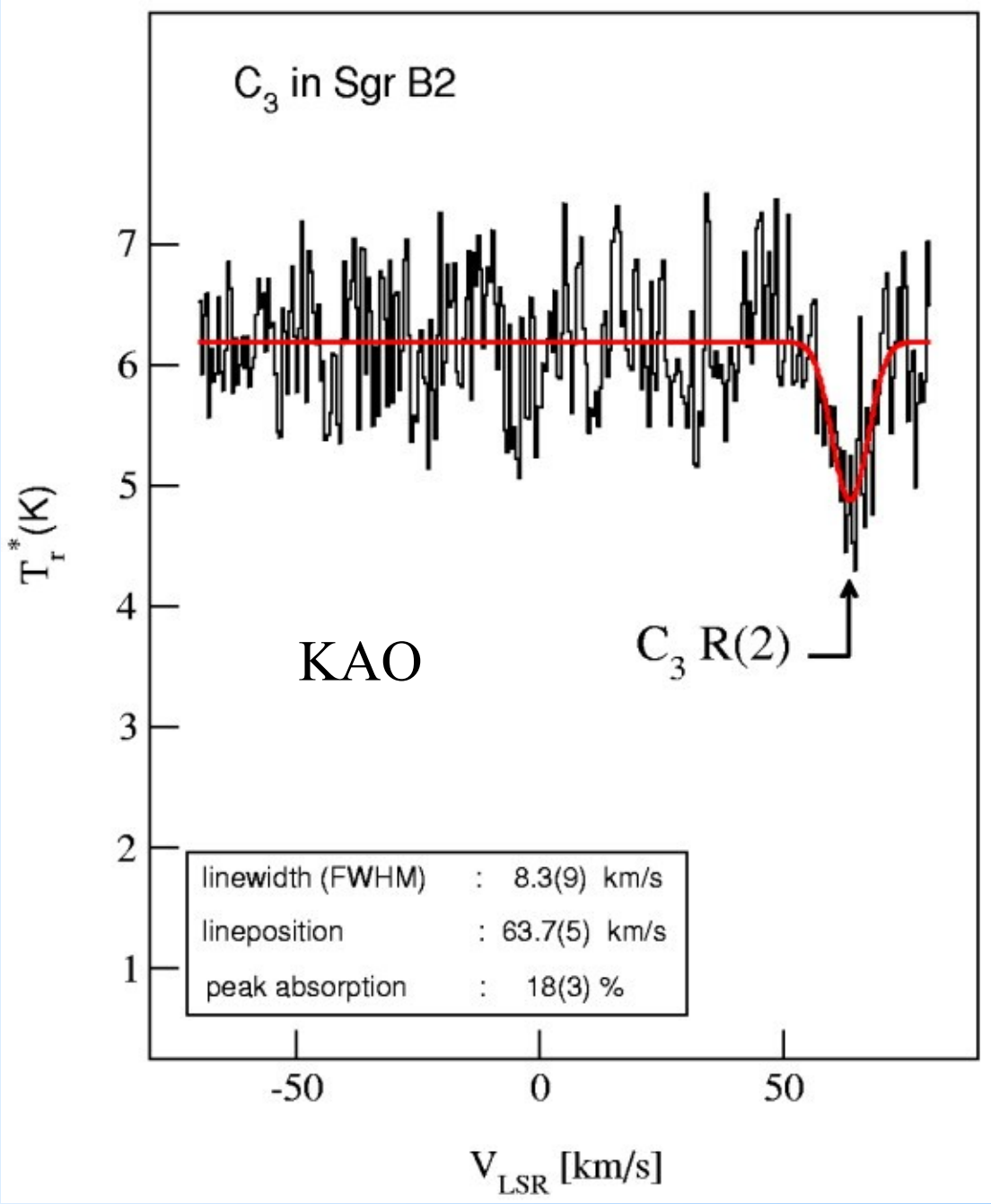
Plus the ion HCS^+ through 1 THz

CH_2



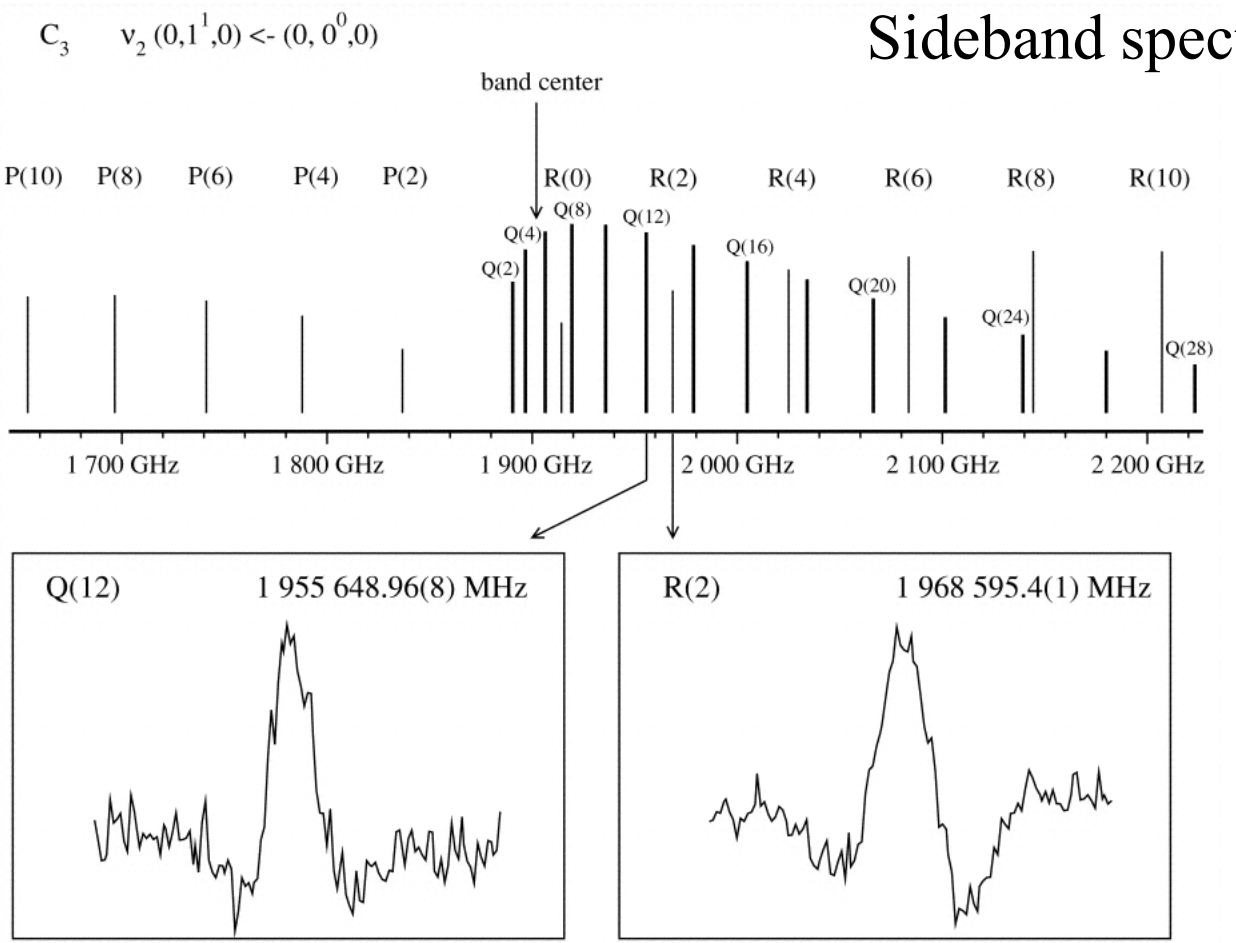
Michael et al. (2003)

Giesen et al. (2001)



Low Frequency Bending of C_3

Sideband spectrometer



Giesen et al. (2001); Gendriesch et al. (2003)

NEW INTERSTELLAR MOLECULES

- Formic acid HCOOH (1971,1975; Sgr B2)
- HNC **(lab;1976)
- Vinyl cyanide C_2H_3CN (1975; Sgr B2)
- CH_3CCCCH (1984: TMC-1)

- Three 13C isotopomers of HCCCN (1975,1977; Sgr B2,fractionation),
- NH_2D (1985; 3 clouds)

TMC-1

In 1978, Churchwell, Winnewisser, and Walmsley put TMC-1 on the map (despite thunderstorm; pointing errors)

"Molecular Observations of a Possible Proto-Solar Nebula in a Dark Cloud in Taurus"

In the following, we will refer to this small cloud as the Taurus Molecular Cloud 1, or TMC1 ……

Kölner Observatorium für Submm-Astronomie

HISTORY OF KOSMA

- 1984 KOSMA 3-m first light
- 1985 move to Gornergrat
- 1995 new dish and mount

SELECTED KOSMA CO and CI STUDIES

- 2003: Virgo cluster spiral galaxies
- 2002: CI emission from star-forming regions (1-0 & 2-1)
- 2000: Cepheus B cloud
- 2000: high latitude cloud MBM 32
- 2000: galactic 5kpc ring
- 1998: Rosette molecular complex
- 1998: Comet Hyakutake
- 1991: fragmentation in California nebulae
- 1991: L1495 survey
- 1990: nearest cloud (L1457): fragmentation

I. Physikalisches Institut, Koeln

- Size: 100 people (students, researchers, machinists, etc.)
- PhD's granted: >100
- Yearly funds: 8 000 000 euros
- Construction of astronomical hardware for a variety of telescopes in-house (KOSMA, SWAS, HIFI, SOFIA)

Gisbert came into my life at a moment when I was completely unsure which directions my research should take. His enthusiasm made me realise a truth which should have been obvious but was not ; that it was possible to discover new phenomena as opposed to confirming old ones. In fact, given the new and powerful instrumentation, we would be stupid if we did not "push back the frontiers of knowledge". The enthusiasm was infectious and made me think about those frontiers and what lay behind them. He also of course was a wonderful teacher and I learnt most of what I know about molecular spectroscopy from Gisbert. But the enthusiasm was in the end a more fundamental gift.

Malcolm Walmsley