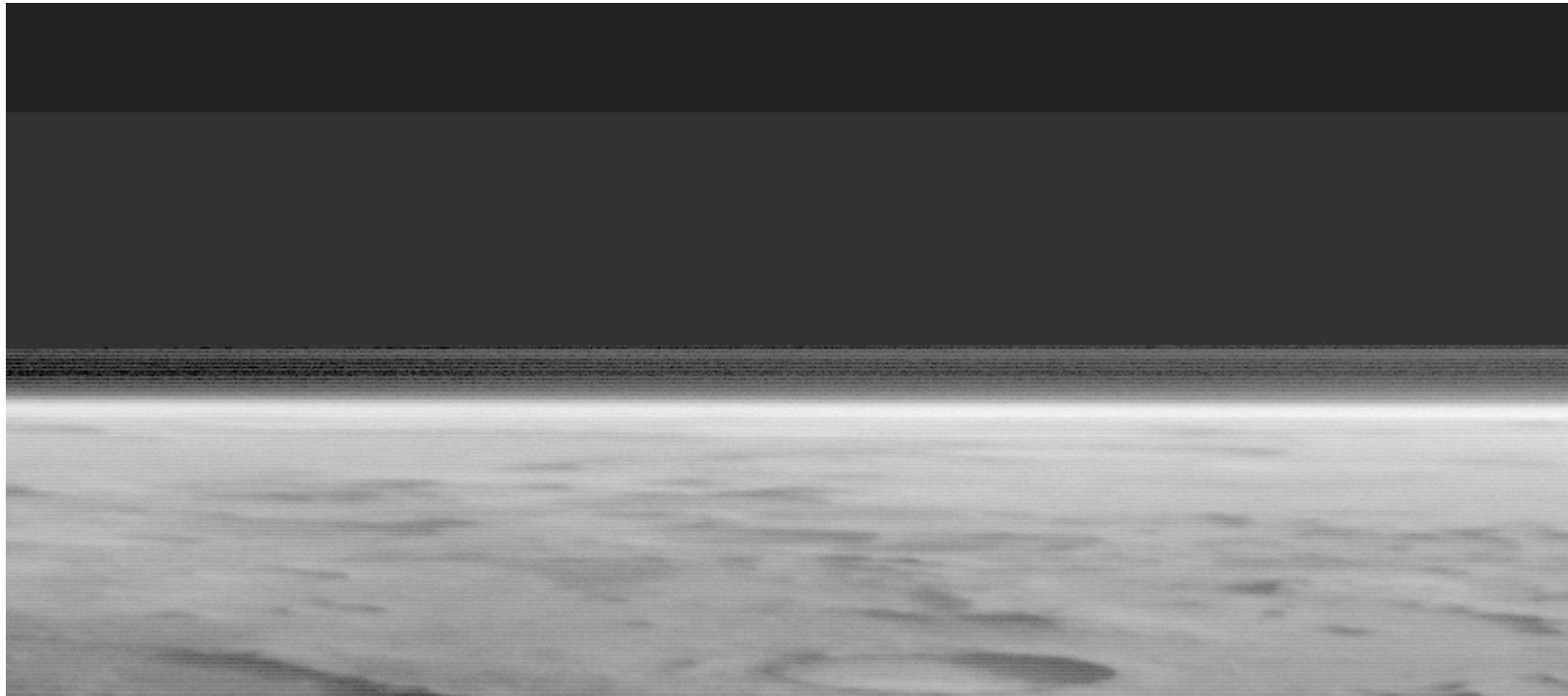


THE FORMALDEHYDE OBSERVATIONS OF 1969 AND 1989: ANALYSIS OF THE OBSERVATIONS AND PROPOSALS FOR INTERPRETATION.

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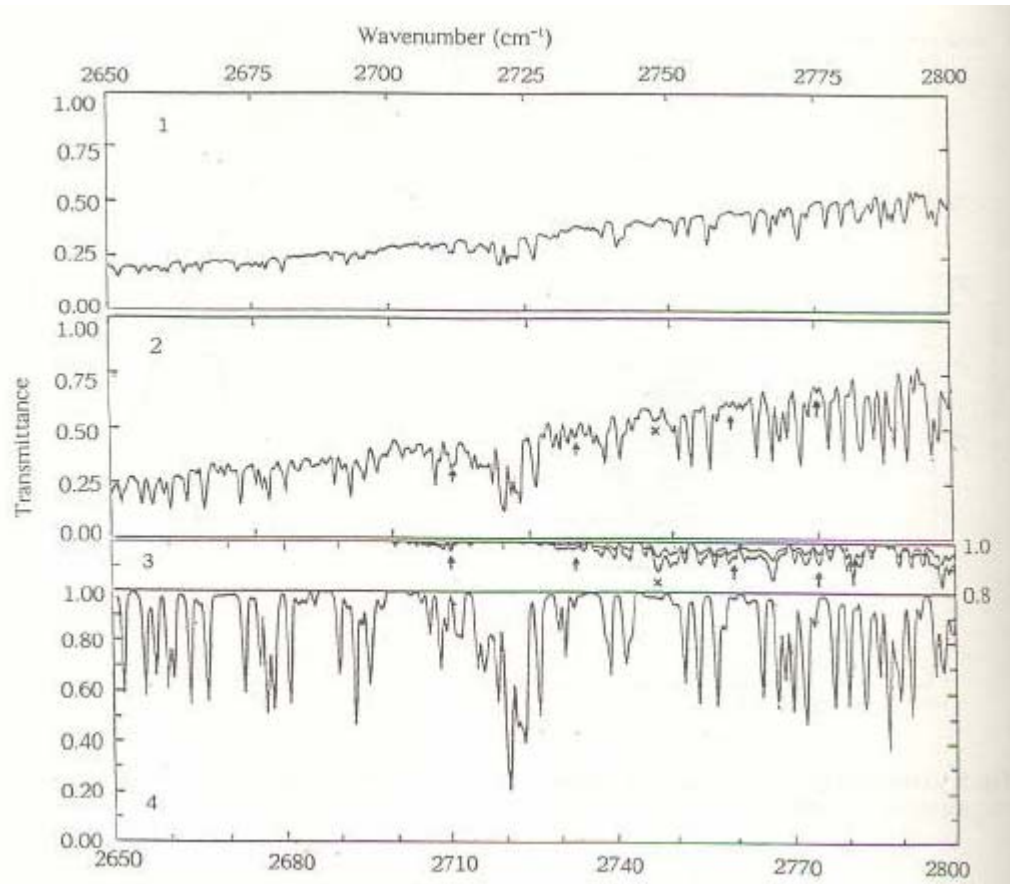


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Formaldehyde on Mars: a long story.

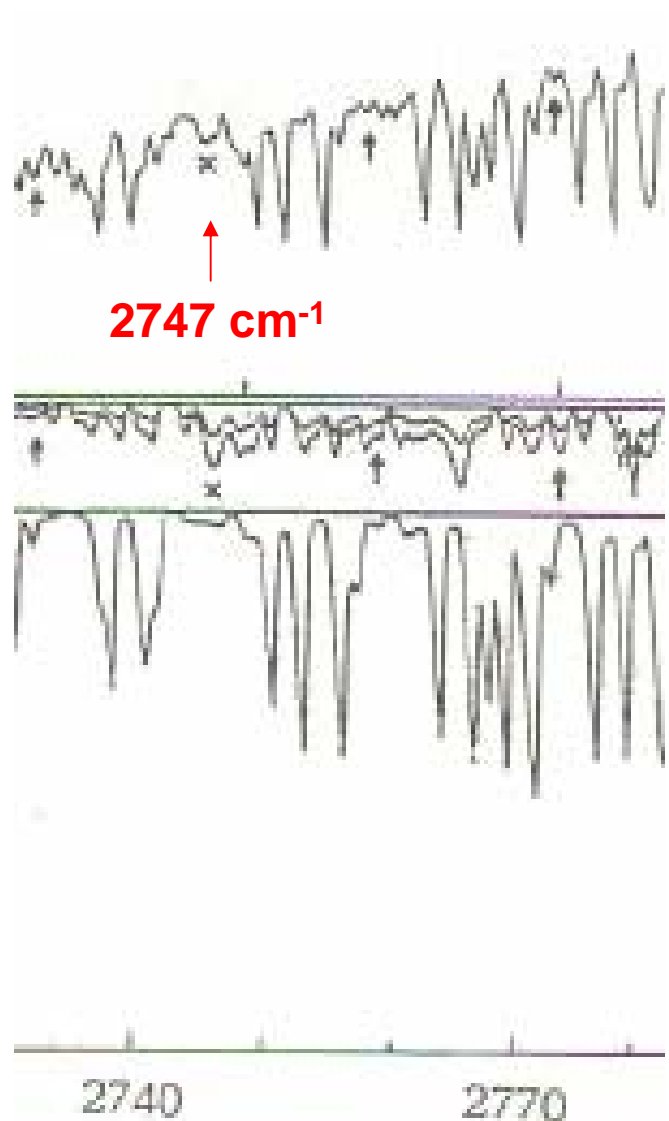


1969: Reinhard Beers's Mars observation at Palomar.



A small residual corresponds to an unidentified gas: it coincides with formaldehyde.

Some features have a strong similarity



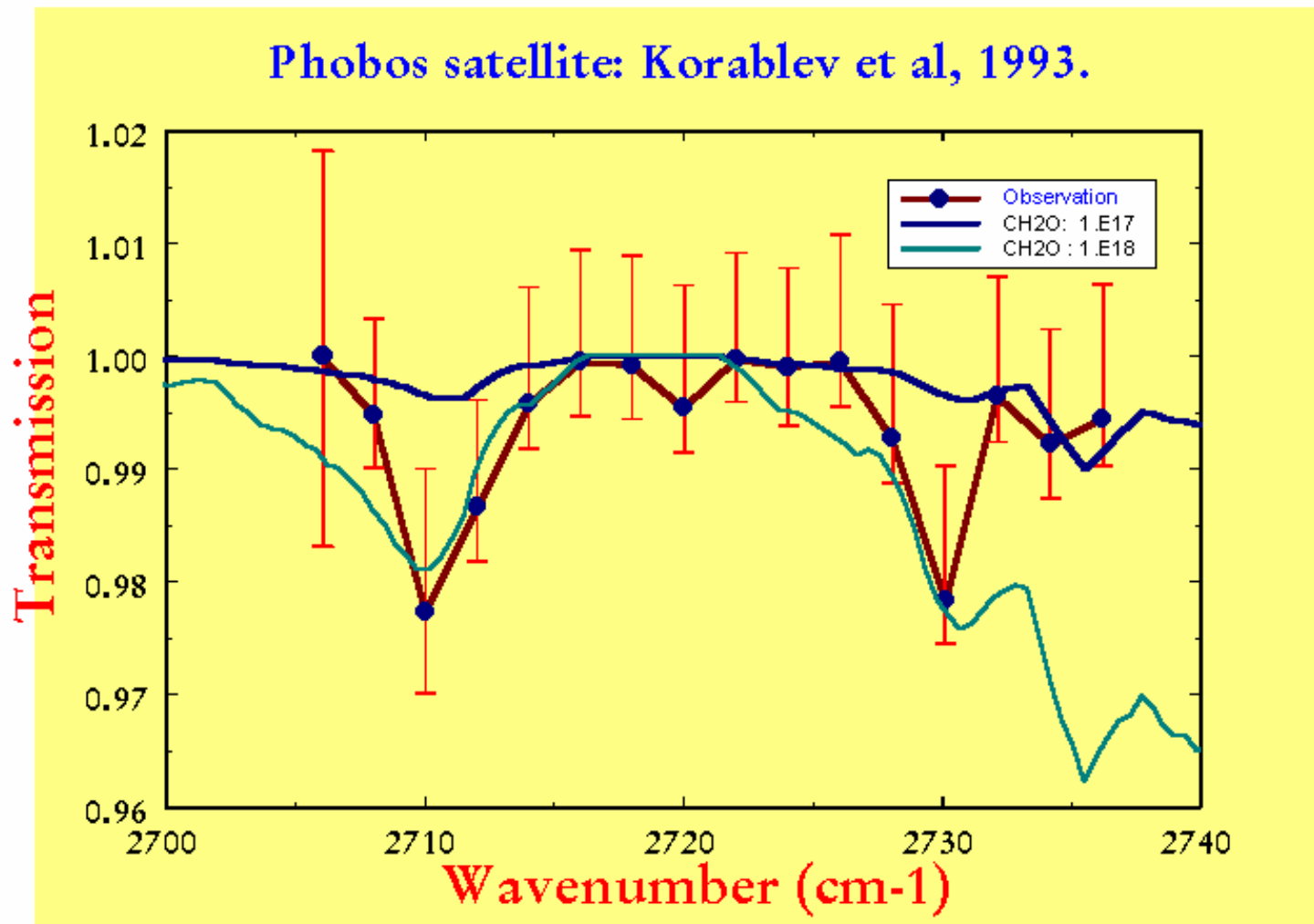
Observation

Formaldehyde synthetic spectrum

The two curves correspond to 1 and 10 ppm

Simulation of the earth reference spectrum

1989: an observation aboard the PHOBOS satellite



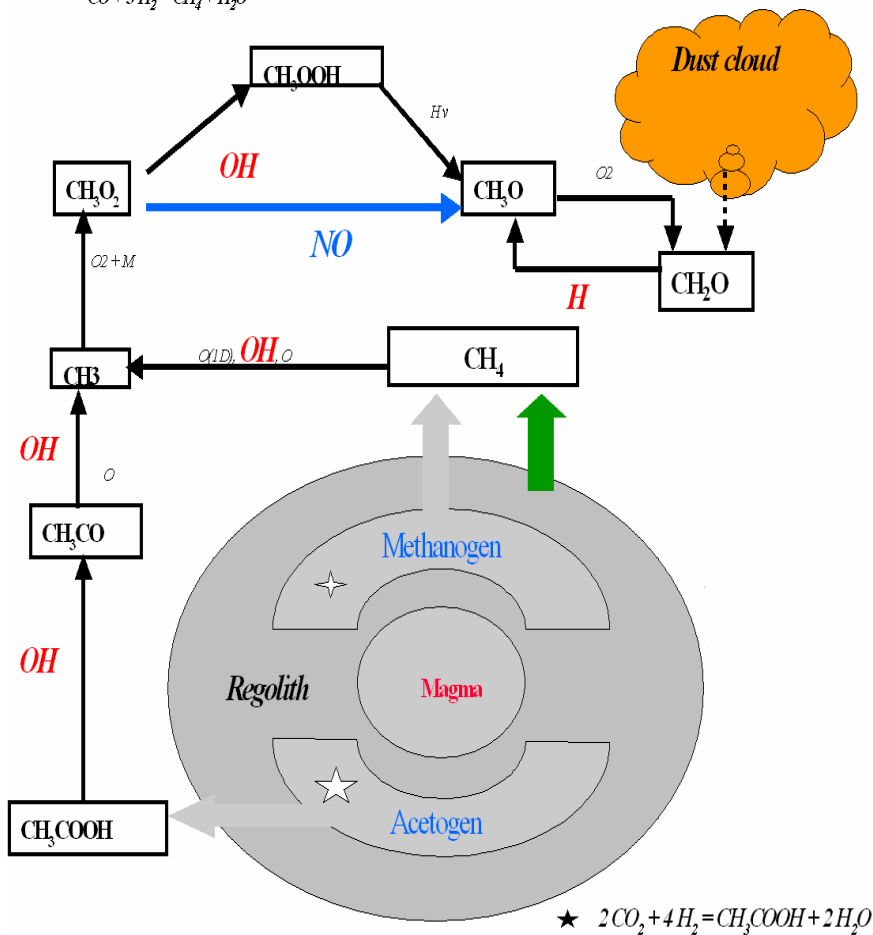
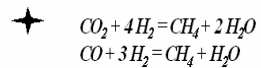
This spectrum is an average of 100 spectra, corresponding to an altitude of 17 km, the mixing ratios are 0.3 and 1 ppm.



Critical analysis of both observations

- Beer's spectra: best possible instrument and operators at the time, problem: the formaldehyde spectrum looks very much as a filtered noise. A spectrum deduced from an interferometer contains a signal like transform of the noise, a coincidence cannot be excluded; Beer refused himself to identify formaldehyde because he could not see a process consistent with his own composition inventory.
- PHOBOS' spectra: a repetitive feature is seen on several spectra and corresponds to an altitude layer around 17 km, **this is not compatible with a CO₂ isotopologue!**
- "Even if the authors had observed formaldehyde, I would refuse publication because they do not give any explanation to its presence" (anonymous NATURE referee)

Heterogeneous chemistry and polymerisation of formaldehyde on Martian dust?



- Question marks?
- Why should formaldehyde be more abundant than methane?
- What are the real abundances of hydrogen, water, methane and formaldehyde on Mars?
- Has Martian dust collected organic ices?