Laboratory studies of water ice in space : optical and photochemical properties

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Propositions accompanying the thesis

Laboratory Studies of Water Ice in Space
– Optical and Photochemical Properties –

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1. Simultaneously studying astronomical ice analogues in the UV-vis and IR holds great potential in characterizing the photochemical processing of these ices. *Chapters 2 and 5*
2. The availability of temperature and wavelength dependent values of the refractive index of water ice will help in characterizing interstellar environments. *Chapter 3*
3. Triphenylene's D_{3h} symmetry and its fully benzenoid character makes this PAH aesthetically very attractive, as well as a molecule of astrophysical interest. *Chapter 4*
4. Studying photochemical reactions both in a rare gas matrix and a water environment allows one to separate primary and secondary photochemical reactions. *Chapters 2 and 5*
5. When only relying on infrared spectroscopy to study astronomical ices, the sensitivity limit constrains the depth of understanding one will be able to reach.
6. Understanding of ice in space requires a balanced contribution from both observational and laboratory studies, and the latter should aim to work within the limits of the first.
7. Using UV-vis spectroscopy and the newly derived optical constants to quantify ice thicknesses will result in more accurate infrared band strengths.
8. Despite its deceptive familiarity, the physical and chemical characteristics of water are exceedingly complex.
9. Both in science and in life, one should focus on what one *has*, not on what is missing.
10. One very important thing our educational system fails to teach is self-confidence.
11. Yoshikawa: One should not confuse education with intelligence.