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From clouds to comets: tracing the molecular journey of interstellar ices in the JWST era

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Propositions
accompanying the thesis

From Clouds to Comets

Tracing the Molecular Journey of Interstellar Ices in the JWST Era

1. Interstellar water ice formed at the earliest stages of star formation is inherited largely unaltered by young protoplanetary disks (*Chapters 2 and 3*).
2. A large and diverse sample of protostellar HDO ice detections is needed to ascertain whether cometary water was inherited from the interstellar medium or reset in the protoplanetary disk (*Chapter 3*).
3. Semi-refractory salts are major volatile reservoirs in interstellar ices and can facilitate delivery of these volatiles into the inner protosolar disk (*Chapter 4*).
4. Securely detecting less abundant semi-refractory complex organic molecules remains challenging even with the improved sensitivity of JWST (*Chapter 6*).
5. Bulk ice abundances alone should not be used to define astrophysically relevant chemical environments.
6. Hours of time spent on a thorough literature review can save weeks or months of time spent on experiments or data analysis.
7. While science may flourish in a physical vacuum, it does not flourish in a social one.
8. Differences in defined spectral baselines can produce wildly different interpretations of the same astronomical data.
9. Differences in acquired cultural baselines can produce wildly different interpretations of the same social situations.
10. Industrialized society's lack of respect for natural circadian rhythms, sleep need, and sleep chronotype variations comes at an enormous cost of both human health and economic productivity.
11. A multicultural upbringing is both a blessing and a curse.

Kateřina Slavičinská
Leiden, 10 June 2026