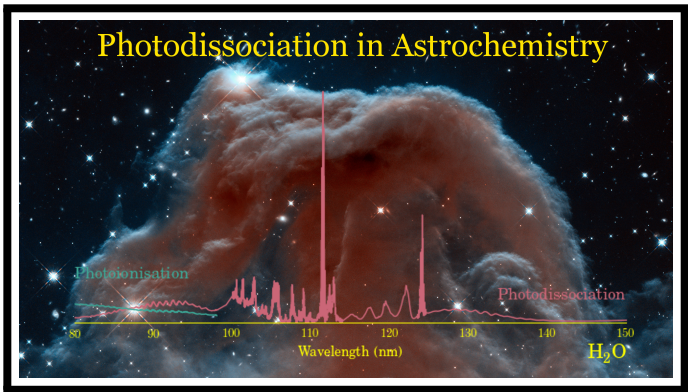


# Photodissociation in Astrochemistry



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February 2015



# Welcome!

Tuesday night dinner – Surakata restaurant  
Coach from Poelgeest at 18:45 – Taxi back

Wednesday night dinner – buffet at Poelgeest

Payment of fees etc.

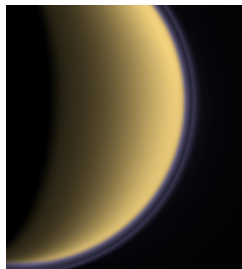
# Photodissociation regions



Interstellar clouds –  $\rho$  Ophiuchus



Protoplanetary disks – Orion

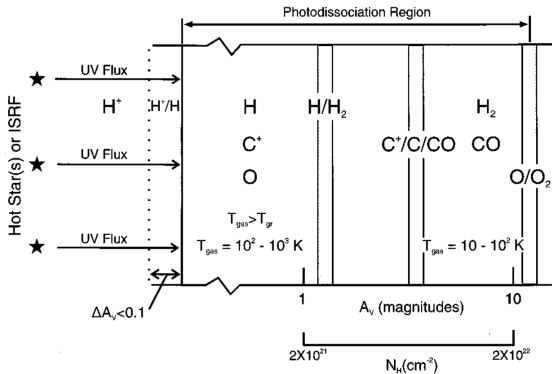


Atmospheres – Titan



Cometary coma – Halley's

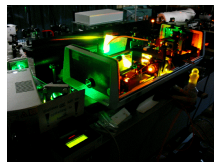
# Photodissociation regions



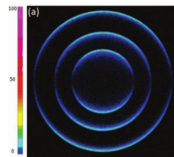
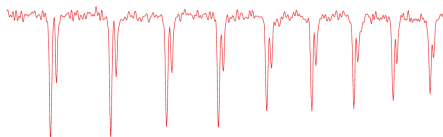
1D model of an interstellar cloud – Hollenbach & Tielens (1999)

- Full range of temperature, density, radiation intensity
- Larger molecules and complex organics / PAHs / ices
- Complex geometries and UV scattering

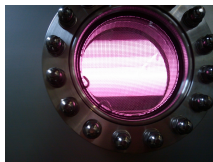
# Laboratory experiments



Light sources

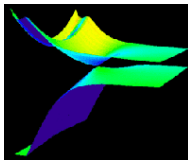


Detection schemes

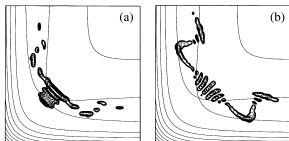


Terrestrial samples

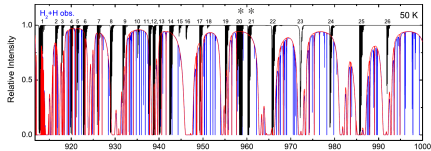
# Theoretical models



Excited electronic states and dipole moments



Nuclear dynamics



Semi-empirical models

- Which molecules to study
- Raw-experimental or simulated-theoretical cross sections.
- Fully assigned linelists.
- One “rate”