# Are Comets the source of our water? Literature research into D/H ratio

A. Hoehne, A. Möslinger and E.F.M. Weterings

Luleå University of Technology

17 October 2018



#### Table of Contents

- Formation comets & asteroids
  - D/H ratio of asteroids and comets
  - Timescale creation of comets
- 2 Creation terrestrial planets
  - Collisions protoplanets
  - Current D/H ratio of terrestrial planets
- Bombardment of Earth
  - Extra-Planetary Objects
  - Effects of Bombardment
- Questions



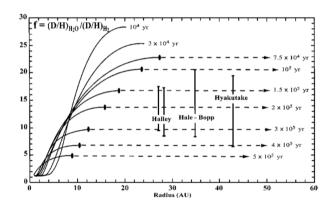
#### D/H ratio of asteroids and comets

#### Depends on:

- position of creation
  - Asteroid Belt
  - Kuiper Belt
  - Oort Cloud
- for comets: behind the snow line
- time of creation

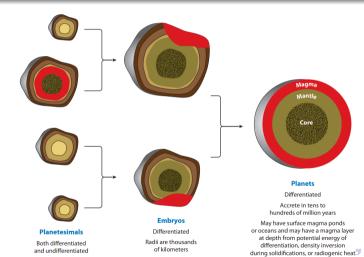


#### Timescale creation of comets





## Collisions protoplanets

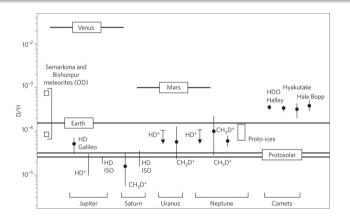


TEKNISKA

LULEÅ

UNIVERSITET

## Current D/H ratio of terrestrial planets





# Extra-Planetary Objects

#### Comets

- High Water Content
- Sufficient Quantities
- High D/H Ratio

#### Asteroids

- Closer D/H Ratio
- Possibly Insufficient Quantities
- Questions Raised About Primordial Belt



## Something else

- Atmosphere
- Plate Tectonics
- Lava Oceans
- Nuclear Winter
- Elevated Atmospheric Water Vapor



#### Questions

# Thanks for listening Questions?

A. Hoehne, A. Möslinger and E.F.M. Weterings

