



LULEÅ UNIVERSITY OF TECHNOLOGY

SOLAR SYSTEM PROJECT

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Are Comets the source of our water?

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Summary

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1 Introduction

A simple introduction [1, p. 199].

D (or HDO) ratio on Earth compared to Comet 67P/Churyumov-Gerasimenko: Are Comets the source of our water?

State the three possibilities

1 Asteroids/ chondrites/ meteors

2 Comets

3 It always have been here

TODO document:

- Header on top of page with logo??
- Revision History??
- Make input file for each subject

2 The formation of comets & asteroids in the early solar system

How/ where comets/ asteroids/ chondrites/ meteors are created and what this means for the d/h ratio (and perhaps other ratios) of those objects.

3 The formation of Earth in the early solar system

How did the earth form in the solar system and is it possible that there was water on earth.

Was is possible for the Earth to keep the water (somewhere deep within) even with all the heat? Would this amount of water be enough to fill the oceans on earth (and other terrestrial bodies)?

The difference between Venus, Earth and Mars d/h values.

4 The bombardment of Earth

The current amount of water in asteroids is quite low (way lower than comets). Were there enough asteroids to deliver the water to Earth?

Wouldn't a comet/asteroid heat up the atmosphere so much that most of the vapor won't get stuck in Earths atmosphere?

Where did those asteroids/comets come from?

5 Earths atmosphere compared to comets & asteroids

D/H ratio and atmosphere ratios (like xenon and nitrogen)

6 Conclusion

7 Recommendations

What can we do/measure to get more information about the origin of water.

References

- [1] Nobody Jr. My article, 2006.