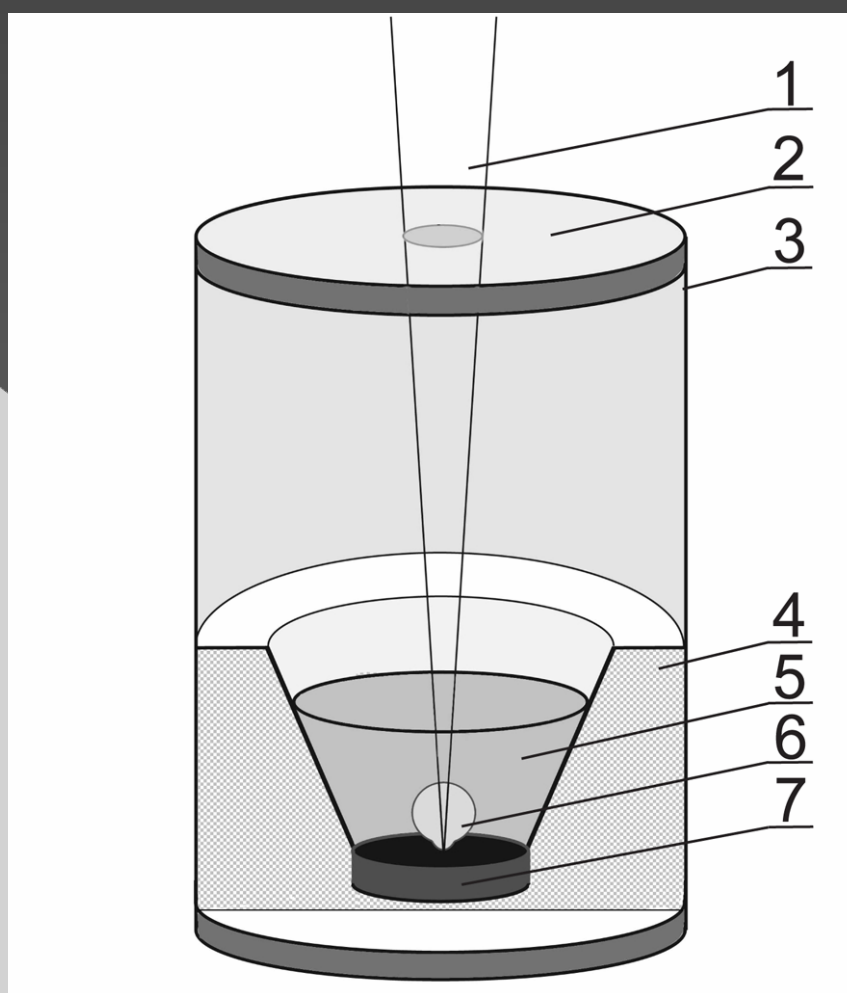# The model of Europa and a capability of the synthesis organic compounds at the underwater plasma torch.

Managadze G. G, Moiseenko D.A., Chumikov A.E., Bondarenko A.I.

Space Researches Institute

*Russian Academy of Sciences*

Laboratory of Active Diagnostics

Hermetic container for underwater plasma torch generation and accumulation of organic compounds, synthesized during the plasma emission.

Signs : 1- Laser impact aperture, focused at the carbon tablet, 2 – antireflection lens, 3 – container's body, 4 – vertical section of cartridge, 5 – nitrate ammonium water solution, 6 – underwater plasma torch, 7 – the tablet of superpure carbon
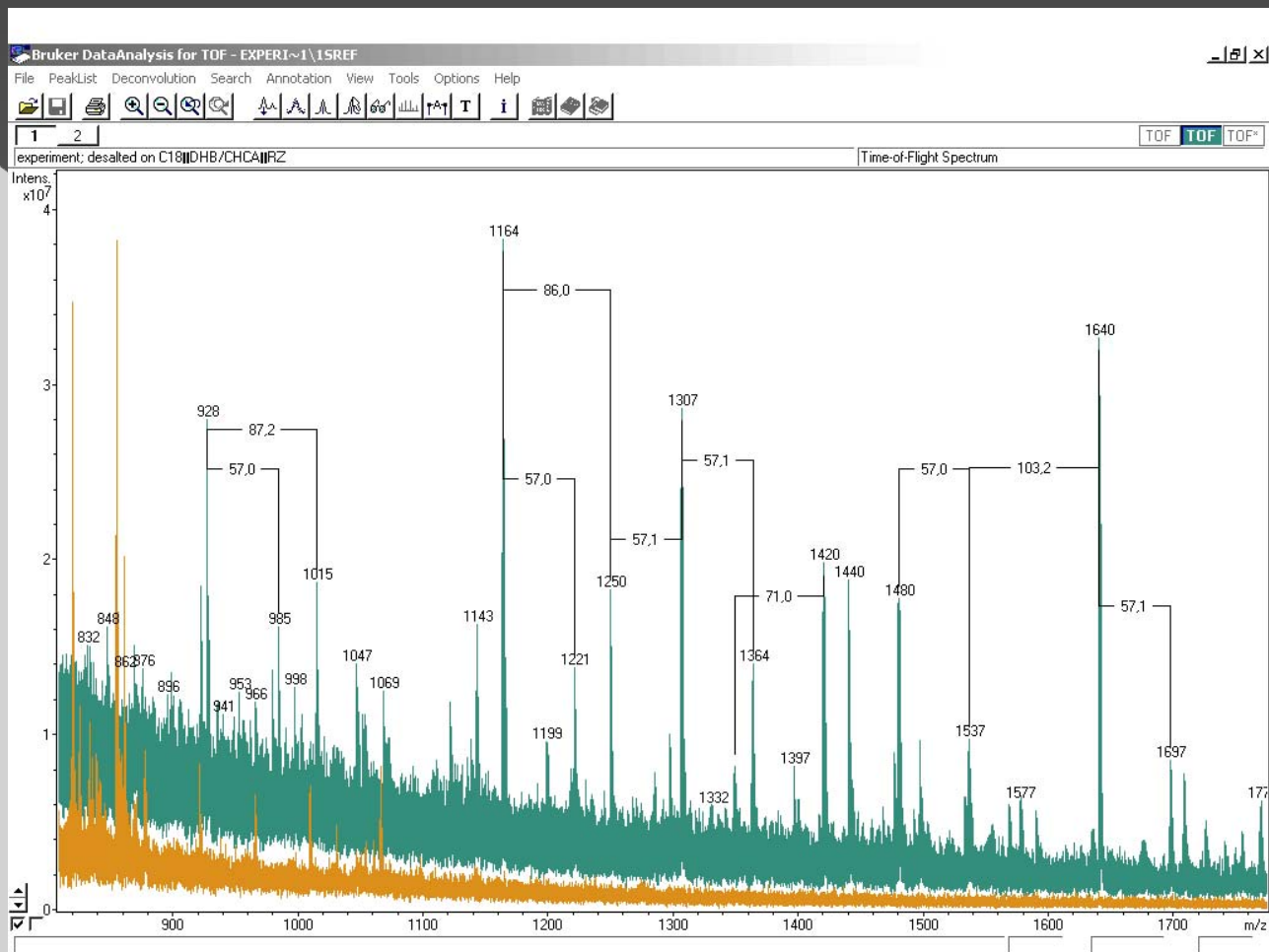
Mass peaks of OC formed in a sub water plasma torch generated under the influence of laser radiation on a target made from carbon and water solution of NH_4NO_3, with an possibility of synthesis of Gly, Ala, Ser and Cys.
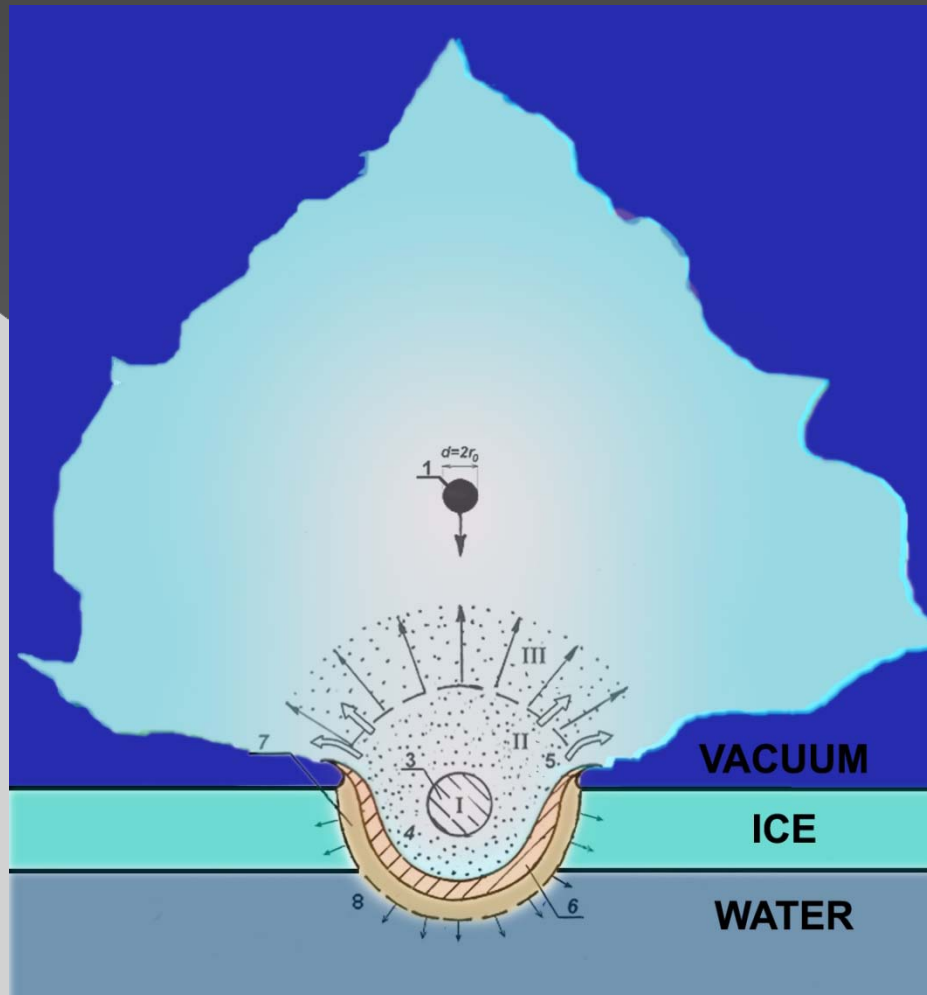
Penetrating meteorite impact
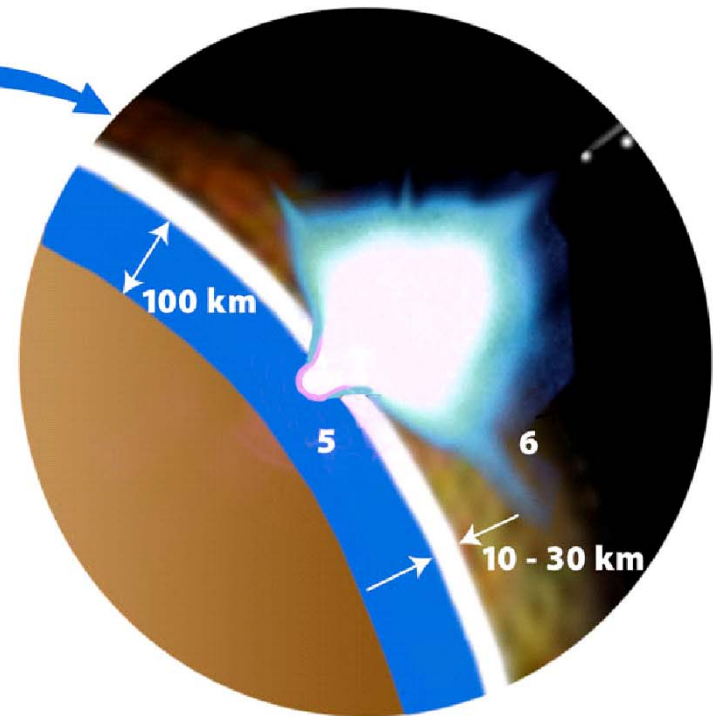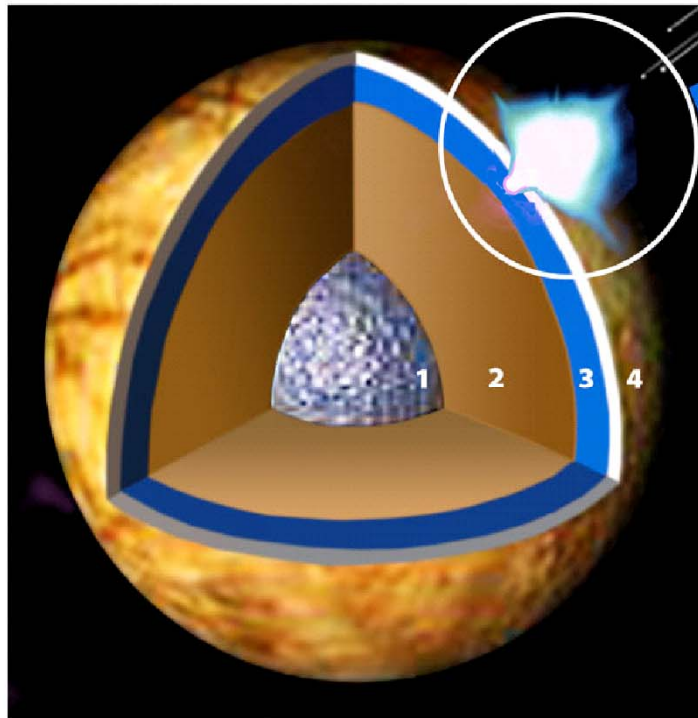
Penetrating meteorite impact at the Jupiter's moon Europa.
1. Iron nucleus.
2. Rock formation
3. Ocean
4. Ice crust
5. Unloading area
6. External (outward) plasma torch

Estimatoions of OC density at the Europa ocean

R_{Europa}=1569км. H_{Ocean}=100км. V_{Ocean}=10^9км^3.

To the Earth at the first 200 million years:

5 10^9 meteorites with diameter 3 км. V=13км^3

(Ordinary chondritis 90%, Carbon chondritis 10% ,
comet nucleus1%.)

To the Europa: 5 10^{13} / 20= 2.5 10^{12} comet nucleus.
V_{comet}=3$10^{13}$km^3

Ratio: V_{comet}/V_{ocean}=6 10^3.

Corrections: Carbon concentration   10%.
Number of carbon at OC   10
Effective yield of OC   1 – 10%

Total correction: 2. 10^3 –2. 10^4

The ratio is 3 – 0.3.

This value approximately correspond to the density of the OC
solution from 0.01 to 0.1 % with average mass ~ 100 a.m.u.