JUPITER'S MOON EUROPA: PLANETARY GEOELECTRICAL MARKER AND OREOLS UNDER ICE SUBSUEFACE OCEAN ON THE SURFACE OF THE JUPITER'S MOON EUROPA

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ABSTRACT

The existence of various forms of the cryolithozone on terrestrial planets and their moons:
advanced Martian permafrost zone in the form of existing of the frozen polar caps, subsurface frozen horizons, geological markers and oreols of the martian ancient (relict) ocean, subsurface oceans of Jupiter's and Saturn's moons - Europe and Enceladus, with the advanced form of permafrost freezes planetary caps,it allows to develop a common methodological basis and operational geophysical instruments (tools) for the future space program and planning space missions on these unique objects of the solar system, specialized for specific scientific problems of planetary missions.
Geophysical practices and methodological principles, used in 1985-2015 by arthor [1-5], respectively, as an example of the comprehensive geophysical experiment MARSES to study of the Martian permafrost zone and the martian ancient (relict) of the ocean, creating the preconditions for complex experimental setting and geo-physical monitoring of operational satellites of Jupiter and Saturn - Europe and Enceladus.
This range of different planetary (like) planets with its geological history and prehistory of the common planetology formation processes of the planets formation and to define the role of a liquid ocean under the ice as a climate indicator of such planets, which is extremely important for the future construction of the geological and climatic history of the Earth.

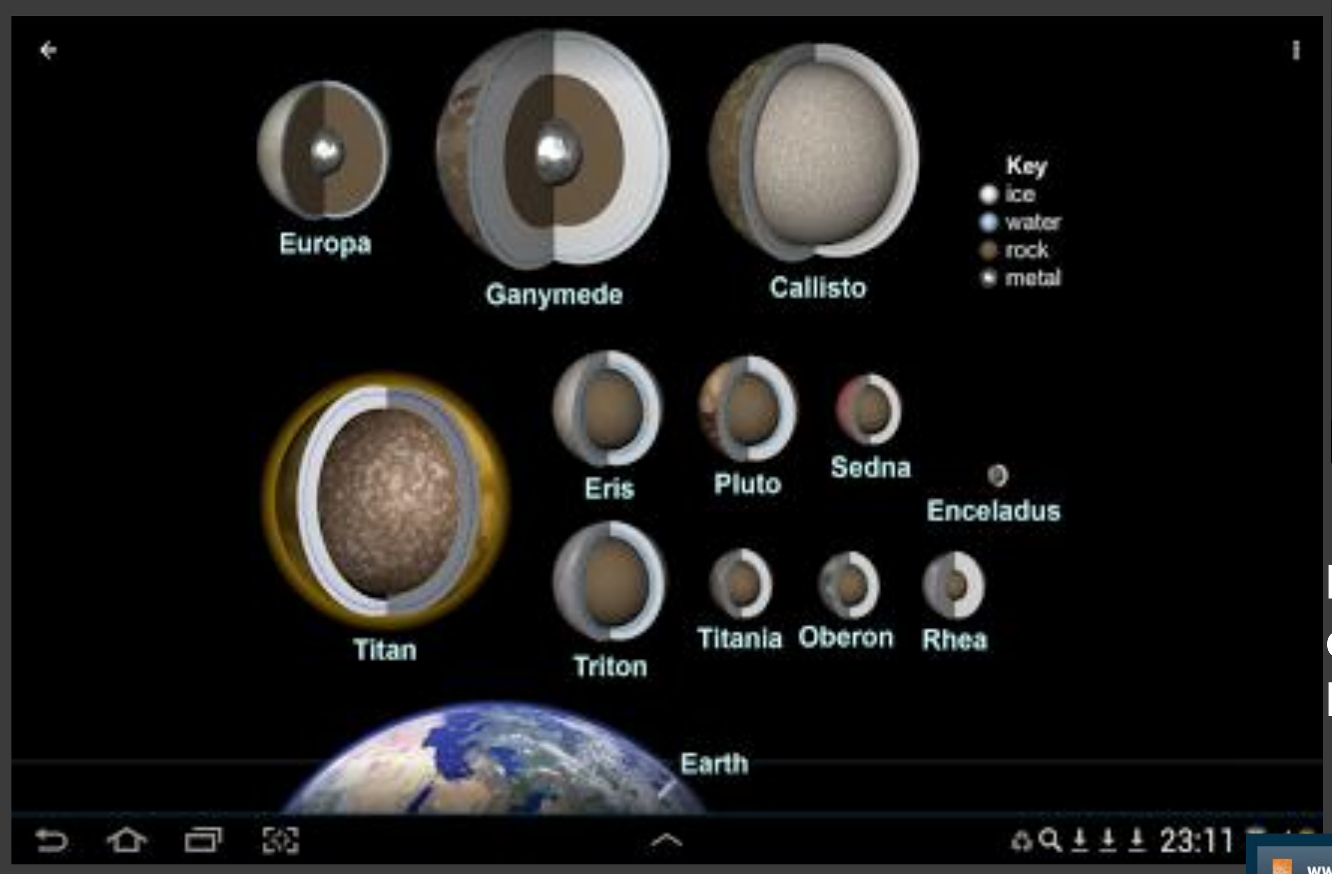

Figure 1. Geologycal structure (model) of the Jupiter's and Saturn's moons (Credit Planetary Society, Pasadena, USA)

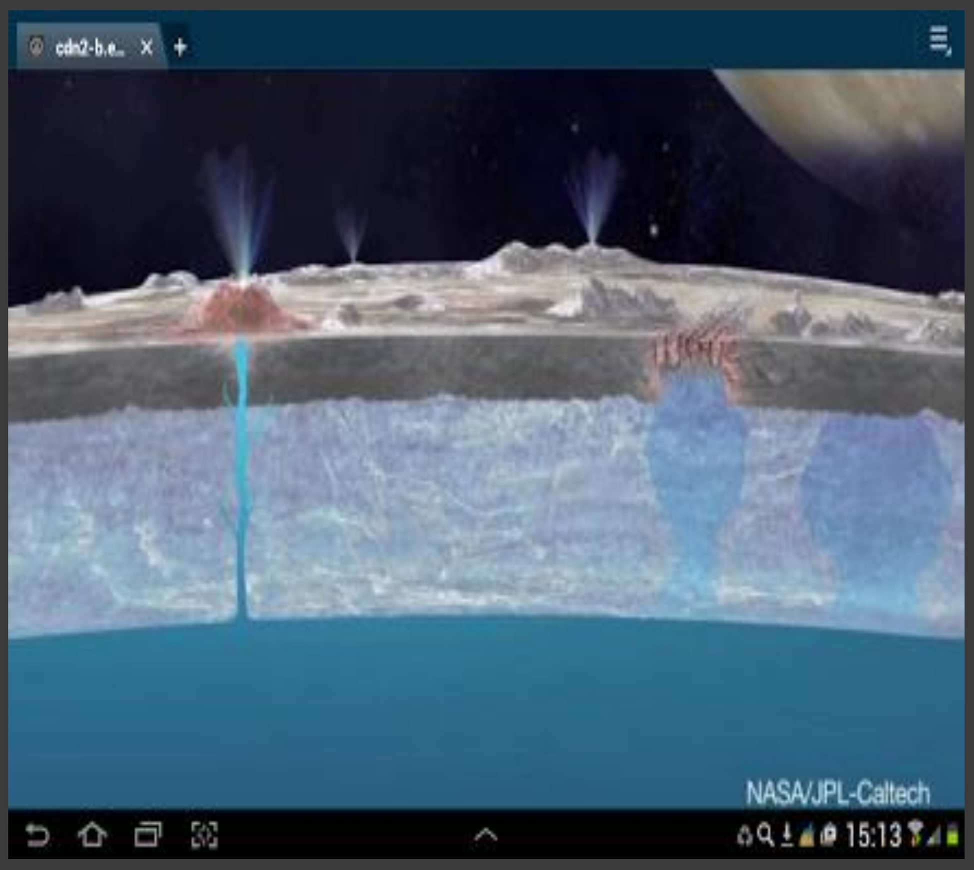

Figure 2. Structure of the ice core and subsuface global ice(preliminary model)

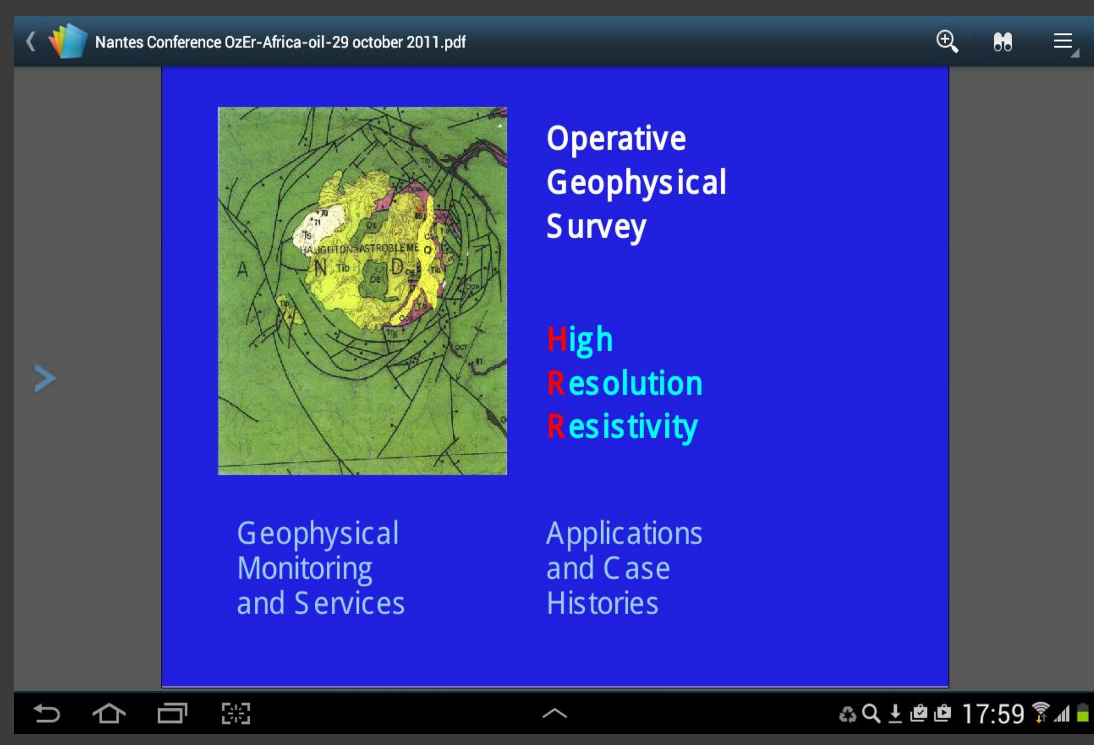

Figure 3. Operative geophysical survey planetary geoelectrical markers and oreols on the surface ice moon and Mars (Credit IKI RAS)

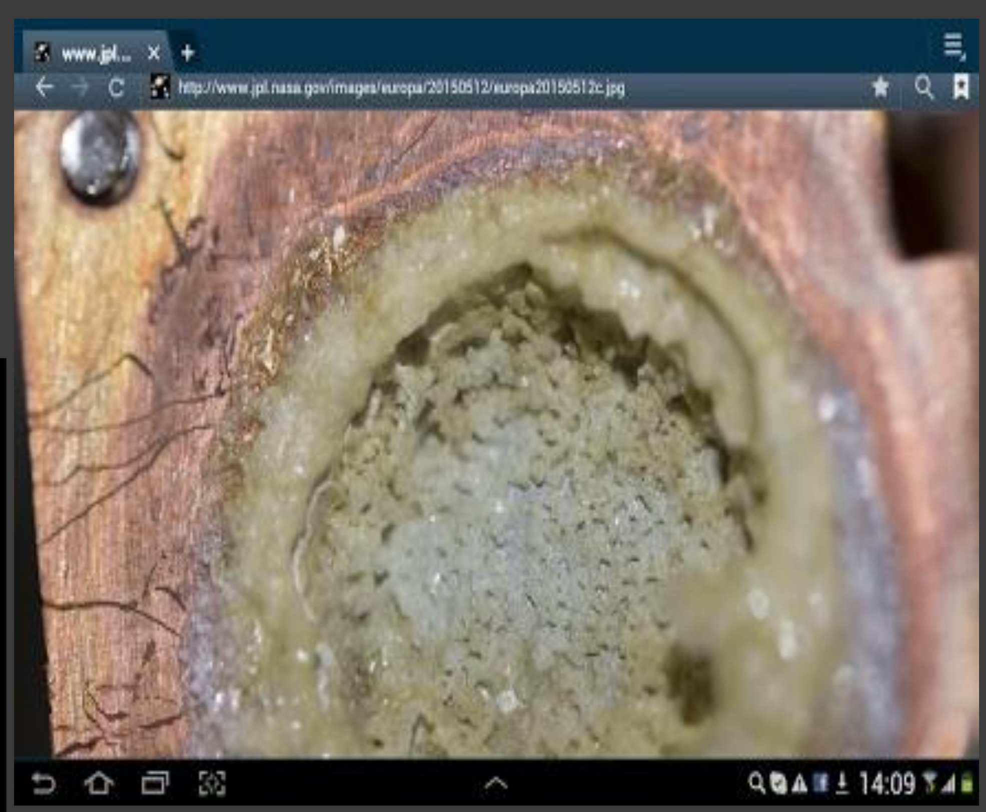

Figure 4. Local salt erraption structure on the surface of the Europa..(Credit NASA,JPL)

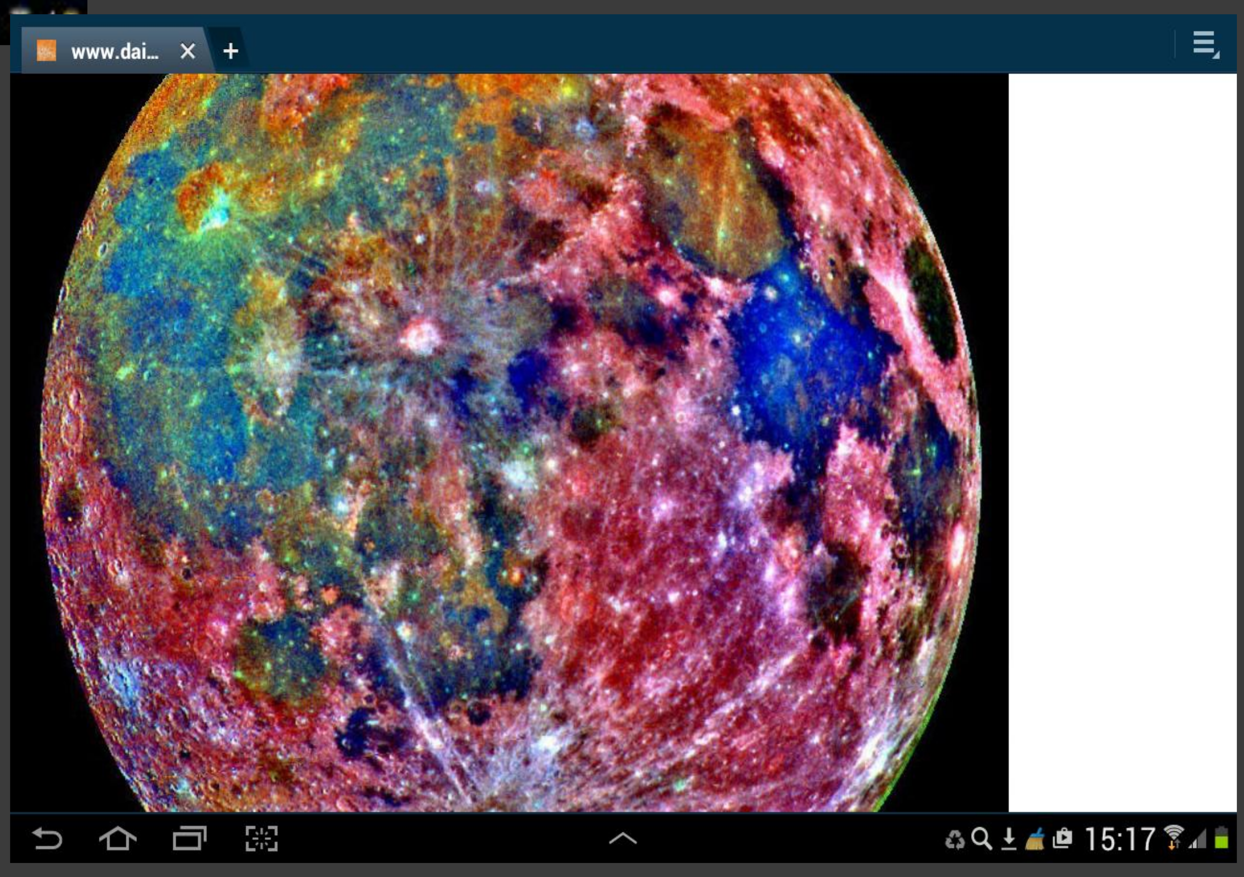

Figure 5. Planetary geoelectrical markers and oreols of the subsurface global ocean on the surface of the Europa in optical range (Credit NASA,JPL)

Main publications:
[1]https://www.researchgate.net/publication/281270655_YUPITERS_MOON_EUROPA_PLANETARY_GEOELECTRICAL_MARKERS_AND_OREOPLS_OF_THE_LIQUID_OCEAN_UNDER_THE_ICE_ON_THE_SURFACE_OF_THE_YUPITERS_MOON_EUROPE
[2] https://www.researchgate.net/publication/276005128_Science-technology_aspects_and_opportunities_of_em_sounding_frozen_%28_permafrost%29_soil [3]https://www.researchgate.net/publication/275638508_Cryolitozone_of_Mars_-_as_the_climatic_indicator_of_the_Martian_relict_ocean
[3]https://www.researchgate.net/publication/275266762_Microwave_remote_sensing_of_Martian_cryolitozone

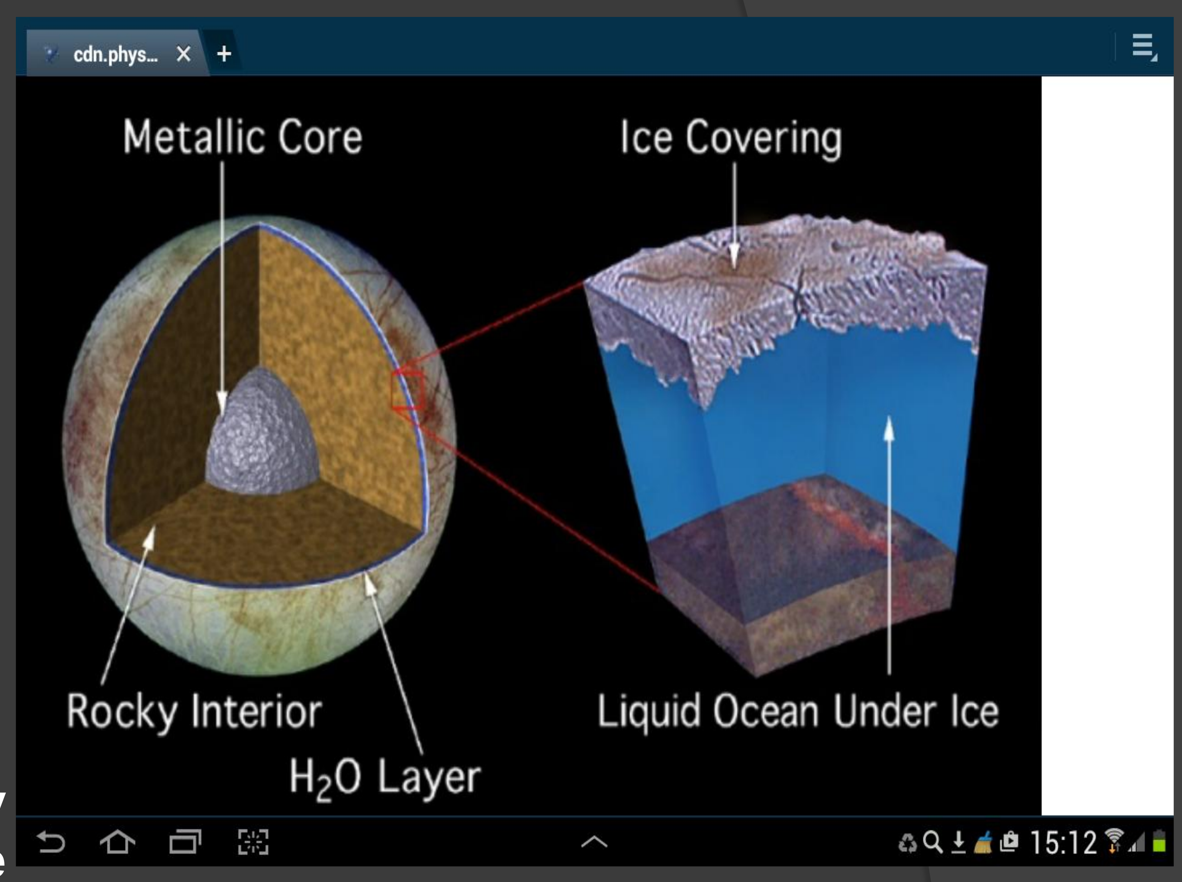

Figure 6. Preliminary geologycal model of ice moon Europa (Credit NASA,JPL)

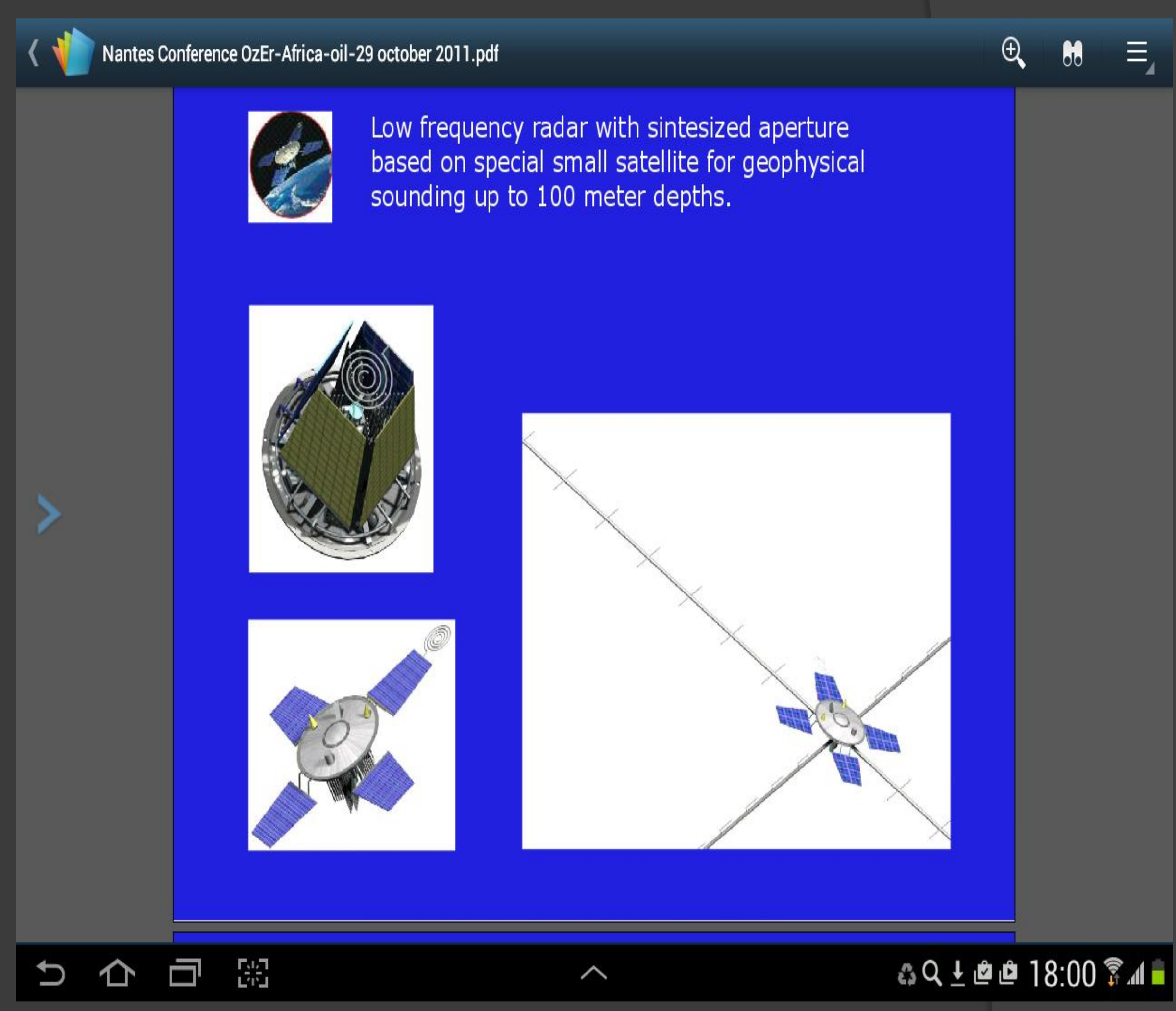

Figure 7. Prototipe of low frequency radar for geophysical survey ice moon and Mars (Credit IKI RAS)

CONCLUSION

Generally it is desirable to match the radiometer system observation zone with that of optical and TV systems and infrared radiometer as well. Martian and ice moon surface radio images should be geographically identified. Data processing and temperature and humidity maps drawing is performed by processor system back on Ground.
On the base space - technology platform
- the small satellite CHIBIS, also will planning to create prototype of Martian instrumentation for the operative geophysical monitoring system of the natural ecosystem for remote sensing in the range of 18 - 21 cm and 8-13 mkm.
This is allowed to realize preliminary testing and calibration of the prototype of the Martian instrument and the future tools for space mission to the ice moon in the Earth's condition on the small satellite orbits.