

WHAT LEGAL QUESTIONS ARE RAISED BY THE ESTABLISHMENT OF A DEDICATED LUNAR FAR SIDE SPECIFIC CRATER FOR HIGH SENSITIVITY RADIOASTRONOMY?*

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Abstract:

We introduce the legal problems raised by a project for the establishment, next coming 20-30 years, of a lunar crater protected from human made radio frequency interference, dedicated to high sensitivity radioastronomy, such as SETI. We urge that these problems are taken into consideration by legal bodies for harmonious cohabitation with future exploration and exploitation of the Moon.

Rationale background:

SETI (Search for ExtraTerrestrial Intelligence) is now well rooted in the international community; the Universities of Berkeley, Harvard, Ohio, the Istituti of Argentina, of Bologna and the SETI Institute (in place of the failing NASA) have strong programs, not mentioning the Planetary Society support and Parkes, Australia, Poona, India and Nançay, France, projects. For over 30 years the efficacy of SETI systems has doubled every 6 months, a dramatic increase.

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It is not unreasonable to conjecture that within the next 2 or 3 decennies humankind will be deeply involved in collecting informations contained in signals emitted from many different extraterrestrial civilizations. As soon as an artificial signal is unravelled (if ever), this will be immediate proof that civilizations are plenty in the cosmos and the drive to investigate them in all of their varieties will get very strong.

Unfortunately, meanwhile, the tremendous increase of man-made interferences will forbid any SETI from locations on or in direct view of the Earth. Furthermore the popular solution '*do SETI from the far side of the Moon*' is usually badly received by workers envisioning lunar exploration and exploitation because they think we need all of the farside to be protected and dedicated to SETI. It is why, in a recent *Academy Transaction Note*¹, from simple, clear and rational arguments, I showed that SETI needs just one very specific neatly singled out crater: crater *Saha* (see Appendix), a little farther than *Mare Smithii*.

A duty for Humankind:

Here I wish to stress that it is a political and philosophical duty for Humankind to provide for such a safe,

unique and limited location from which SETI can be pursued for the future benefits of our global culture. Of course I think the proposed protected site could equally harbor all future high sensitivity radio astronomical observations which are devoted to the scientific investigation of the universe, such as proposals for Very Low Frequency radioastronomy already presented².

I also urge that this proposal be considered as a current plan for the next 20-30 years. In a companion paper presented at this IAF Congress Lunar Exploration Session³, I deal with the main long term programmatic issues and mission aspects, showing that the choice of a specific single crater eases very much the finding of solutions for an harmonious cohabitation with other activities for the future exploration and exploitation of the Moon.

Legal aspects of the issues:

In this paper, presented at a Legal Matters Session, I urge that my proposal for the dedicated protected far side lunar crater *Saha* be investigated and discussed in the perspective of its international space legal aspects. Important issues to be addressed are:

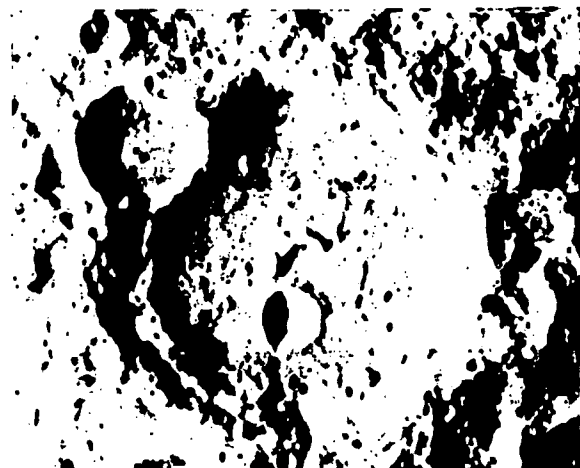
- how to initiate the discussion?
- what legal problems are raised?
- how can they be solved?
- how a mutual understanding can be planned?
- in which frame can it be elaborated?

I propose that a sub-committee takes in its hands the problems raised by these issues in order to propose possible solutions.

References:

- 1- J. Heidmann, 1994, *Saha crater: a candidate for a SETI lunar base*, Acta Astronautica, 32, 471
- 2- B. Battrick and C. Barron, 1992, *Mission to the Moon*, ESA SP-1150, 50
- 3- J. Heidmann, 1994, *A proposal for a radio frequency interference-free dedicated lunar far side crater for high sensitivity radioastronomy*, 45th International Astronautical Congress, IAF Q Symposium, Session I

Appendix:



Saha is a 100 km diameter circular strongly walled crater, just far enough on the far side to be shielded from Earth and its geostationary orbits and to be as close as possible to *Mare Smythii* where NASA has plans for a manned base. It may be connected with it by a 350 km long lunar road with slopes smaller than 5 degrees and telecommunications insured by a few ground relays; its equatorial position allows all sky visibility. (Lunar Orbiter II photograph, 1966)