

IAA Study Group Status Report

Responsible Commission: 1

Study Number and Title: 1.6 Protected Antipode Circle on Lunar Farside

Short Study Description (repeat from Study Group Proposal):

Overall Goal: Write the text of a POSITION PAPER of the Academy to Protect the Farside of the Moon for Scientific Purposes. The PAC (Protected Antipode Circle), is a circular piece of Moon land at the center of the Farside tangent to the parallels of +30 and -30 degrees of latitude, respectively. The PAC was firstly described by Claudio Maccone in the attached paper that he presented in Bremen at the “To Moon and Beyond” Conference, held March 14-16, 2007. His paper proves mathematically that the PAC is the only safe region shielded from radio waves coming from the Earth as well as coming from future space stations constructed at the Lagrangian points L4 and L5 of the Earth-Moon system. Please see Figure 1 hereafter.

Intermediate Goals: The draft group should report to Commission 1 before submitting the paper further.

Final goal: after the completion and publication of the PAC Position Paper, the Academy would submit it to the attention of the United Nations COPUOS, which would hopefully include this issue within the new Moon Treatise.

COSPAR would also be informed about the need to have the PAC created.

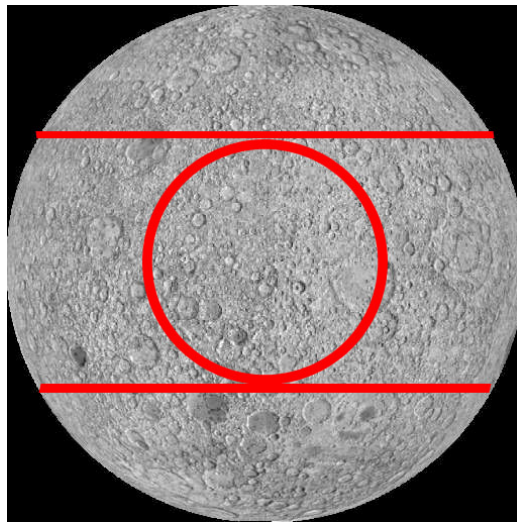


Figure 1. PAC, the PROTECTED ANTIPODE CIRCLE, is the circular piece of land on the Farside of the Moon (1820 km in diameter along the Moon surface) that we propose to be RESERVED FOR SCIENTIFIC PURPOSES ONLY. At the center of PAC is the Antipode of the Earth (on the equator and at 180 deg in longitude, both East and West) and, near to the Antipode, is crater Daedalus, an 80 km crater proposed by Maccone in 2005 as the best location for the future Lunar Farside Radio Lab (please see the paper by Claudio Maccone, “Lunar Farside Radio Lab”, Acta Astronautica, Vol. 56 (2005), pages 629-639). Inside Daedalus, the expected ATTENUATION of the man-made RFI (Radio Frequency Interference) coming from the Earth is of the order of 100 dB or higher. In the wake of Maccone’s suggestions, crater Daedalus was already selected by the European space company Astrium as one of the possible destinations of their own planned new “Life” space mission to the Moon.

Progress in past six months:

We have completed the Draft No. 4 of the Final Report, that is attached herewith and also available at the relevant IAA web site.

Website Study Information up to date? (Study Group Membership, Study Plan and Schedule): Yes, it is fairly up to date.

Issues requiring resolution? (recommend approach):

No issue requiring resolution, at least at the moment.

Product Deliveries on Schedule? (If modified explain rationale):

At the moment YES.

Study Team Member Changes? (List any Study Team Members that you wish to discontinue, and provide names plus contact coordinates of any Members you wish to add on the second page of this Study Update form.) Note: Complete contact information including email, tel. and fax must be provided for all additions. Only Members with complete contact information will be listed and receive formal appointment letters from the IAA Secretariat.)

No study team change.

Name of person providing Study Group Status (Study Group Chair or Co-Chair):

Claudio Maccone

Status Report Date:

7 March 2012.