

IAF SYMPOSIUM ON PLANETARY DEFENSE AND NEAR-EARTH OBJECTS (E10)  
Interactive Presentations - IAF SYMPOSIUM ON PLANETARY DEFENSE AND NEAR-EARTH  
OBJECTS (IP)

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FUTURE PLANETARY DEFENSE FROM THE MOON

**Abstract**

In the future, the Moon will be an excellent base for Planetary Defense. In fact:

1) The astronomical seeing on the Moon is excellent due to the lack of an atmosphere. Thus, optical telescopes on the Moon will allow better observations of asteroids and comets when they pass around the Sun at perihelion. The resulting higher precision on orbital parameters will finally lead to a better understanding of the LEAD TIME that we have in order to prepare for a space mission intended to deflect asteroids and comets from their collision course with the Earth.

2) The Moon Farside is particularly suited to set up radio telescopes since man-made radio waves are SHIELDED by the spherical body of the Moon. As early as 2010 did this author suggest Farside Crater DAEDALUS as the most radio-shielded crater on the Farside since quite close to the Antipode of the Earth at the Farside Center. Actually, even earlier, back in 1974, had the International Telecommunications Union (ITU, the United Nations branch for telecommunications) issued ITU Regulations S22 defining the SHIELDED ZONE (SZ) on the Moon Farside as follows: consider a CONE in space having its base equal to a circle 100,000 km in diameter. Suppose that this circle is the circular orbit of a telecommunication satellite in a plane orthogonal to the Earth-Moon axis. Then extend this cone into space so as to make it TANGENT to the spherical body of the Moon. Then the part of the Farside encircled by this circle is the ITU SHIELDED ZONE.

3) The Moon might also serve as a SPACE BASE to launch asteroid-deflecting missions quite easily, since the gravity on the Moon is 1/6 of the gravity on Earth.

These topics will be presented at IAC 2024 in Milan if the Co-Chairs of Session E10.2 give us the possibility to do so.