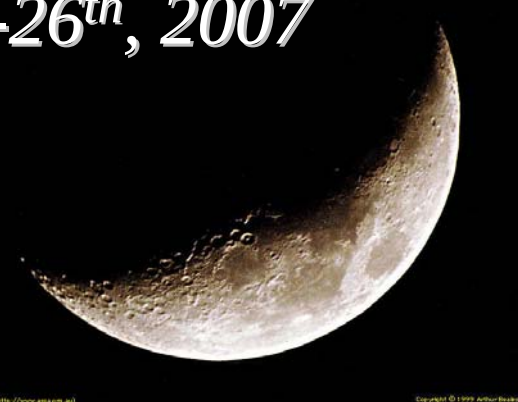
P A C

PROTECTED ANTIPODE CIRCLE

AT THE MOON FARSIDE CENTER

FOR THE BENEFIT OF HUMANKIND

ICEUM9, Sorrento, Italy, October 22nd-26th, 2007



by

Claudio Maccone

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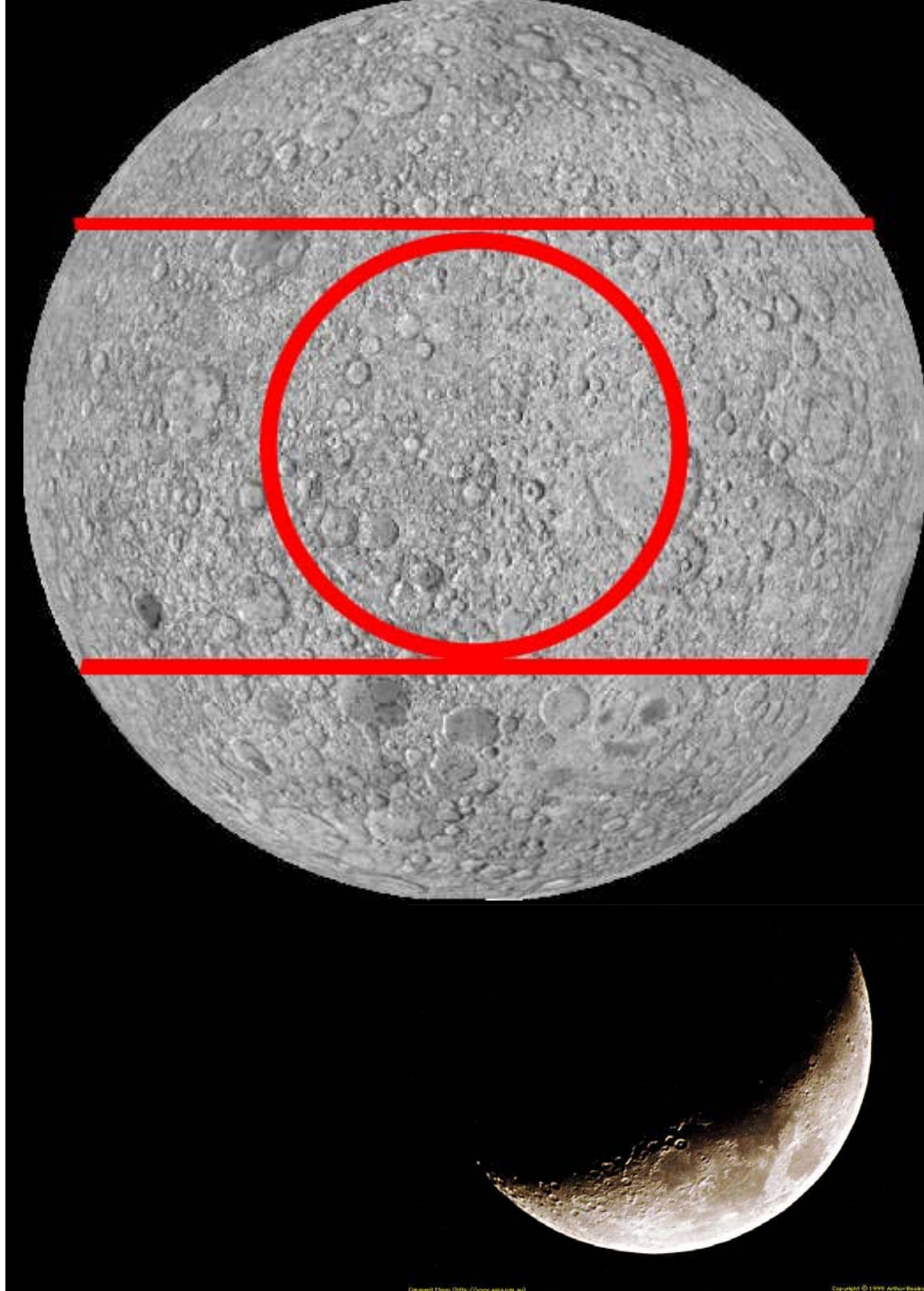


PAC is a consequence of the

Lunar Farside Radio Lab

"Cosmic Study" of the International Academy of Astronautics (IAA)

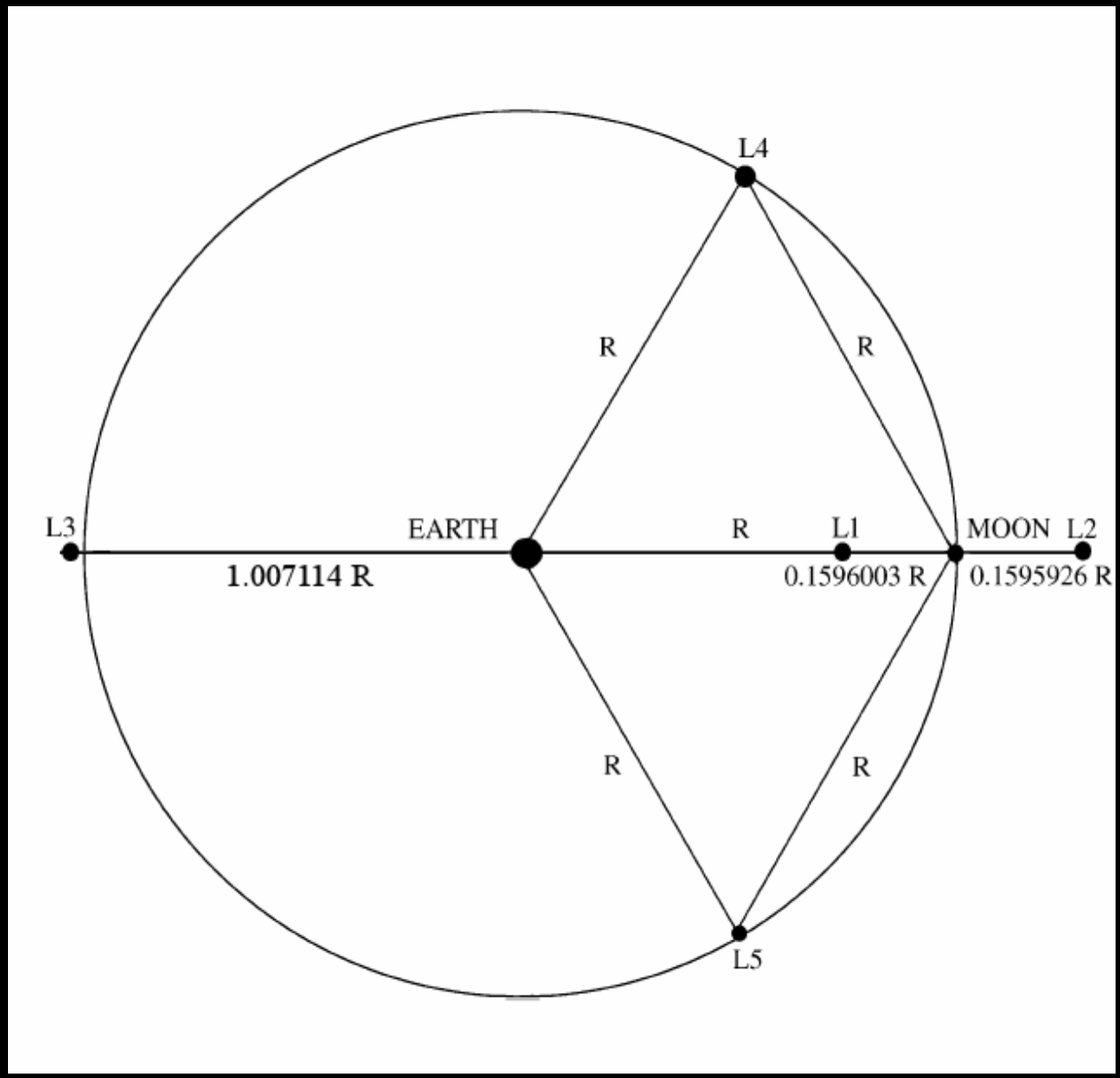
That IAA “Cosmic Study” was started by the late French radioastronomer Jean Heidmann (1920-2000)

Timeline For That "Cosmic Study"

- 1994 – Jean Heidmann proposes SETI observatory in farside Saha Crater with link to nearside Mare Smythii plain and then to Earth
- 1994 Lunar Farside Study Sub-committee established within IAA SETI Committee
- 1996 – IAA approves Cosmic Study concept
- 1998 – COSPAR meeting to solicit ideas
- 2000 – Heidmann dies, Maccone takes over
- 2001 – Meeting at JPL
- 2003 – Cosmic Study presented to IAA
- 2005 – Publication of the Cosmic Study in:

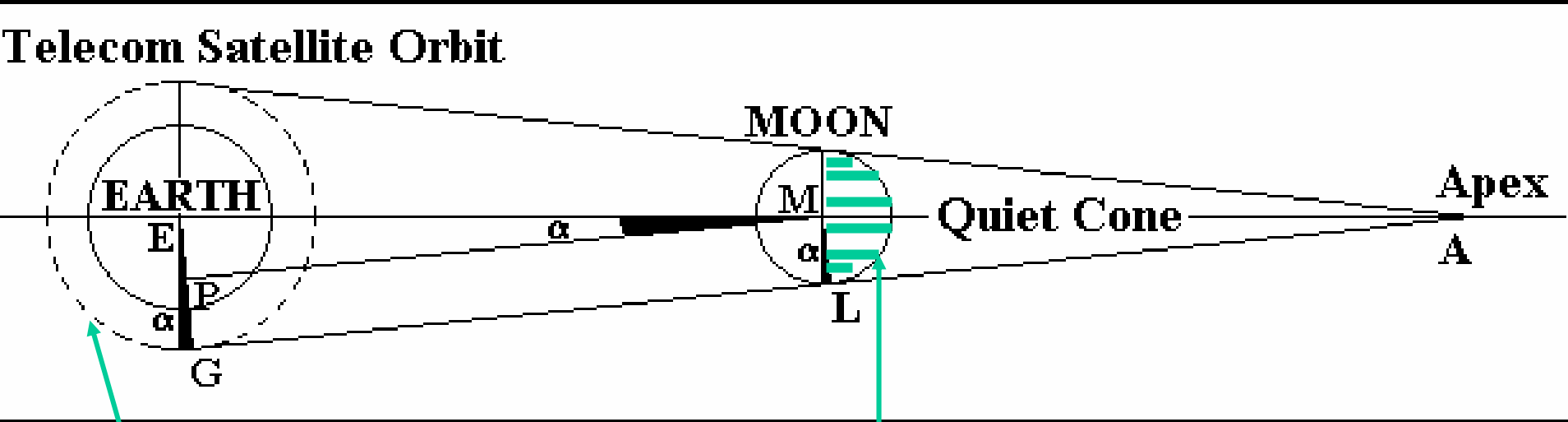
Acta Astronautica, Vol. 56, pp. 629-639.

Earth-Moon Lagrangian Points



Shielded Zone of the Moon

ITU Radio Regulations Article S22



If this is 100,000 Km orbit

Then this is the ITU Shielded Zone of the Moon

ARTICLE S22

Space Services [(1)]

Section V. Radio Astronomy in the Shielded Zone of the Moon

S22.22

§ 8. (1) In the shielded zone of the Moon [(9)] emissions causing harmful interference to radio astronomy observations [(10)] and to other users of passive services shall be prohibited in the entire frequency spectrum except in the following bands:

S22.23

a) the frequency bands allocated to the space research service using active sensors;

S22.24

b) the frequency bands allocated to the space operation service, the earth exploration-satellite service using active sensors, and the radiolocation service using stations on spaceborne platforms, which are required for the support of space research, as well as for radiocommunications and space research transmissions within the lunar shielded zone.

S22.25

(2) In frequency bands in which emissions are not prohibited by Nos. **S22.22** to **S22.24**, radio astronomy observations and passive space research in the shielded zone of the Moon may be protected from harmful interference by agreement between administrations concerned.

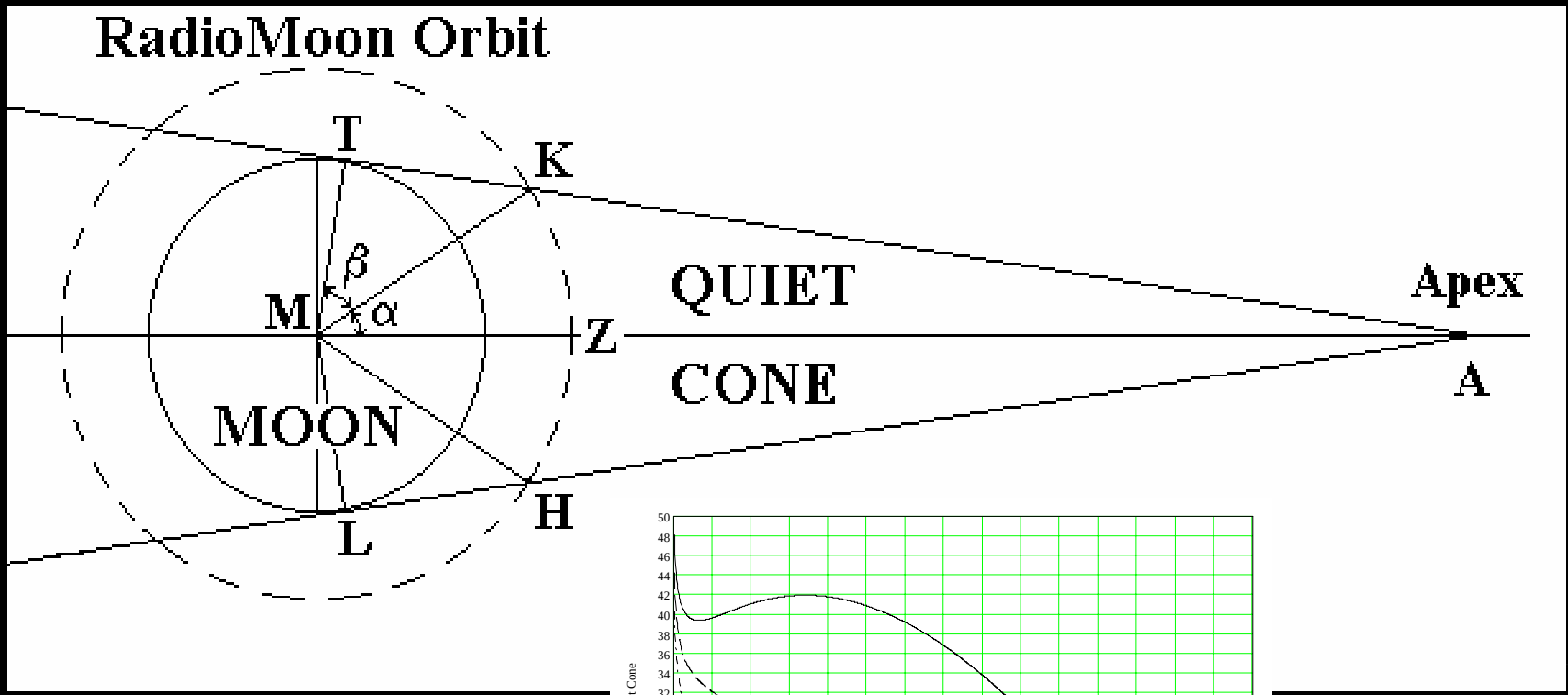
S22.22.1

9 - The shielded zone of the Moon comprises the area of the Moon's surface and an adjacent volume of space which are shielded from emissions originating within a distance of 100 000 km from the centre of the Earth.

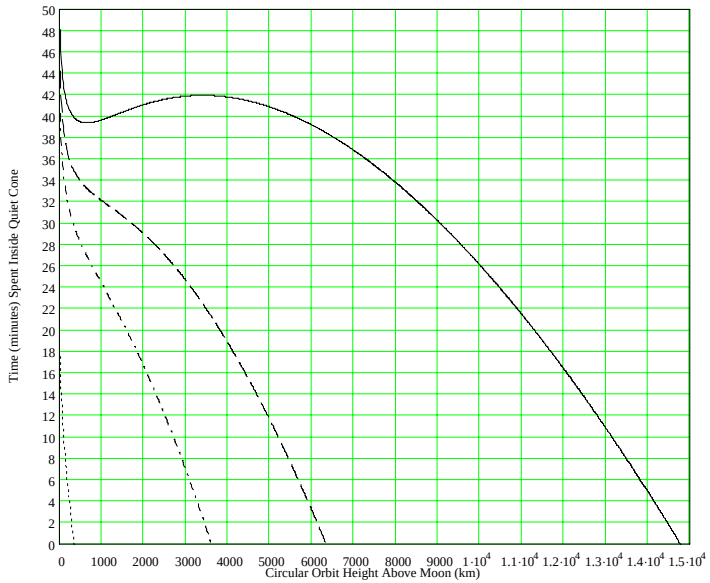
S22.22.2

10 - The level of harmful interference is determined by agreement between the administrations concerned, with the guidance of the relevant ITU-R Recommendations.

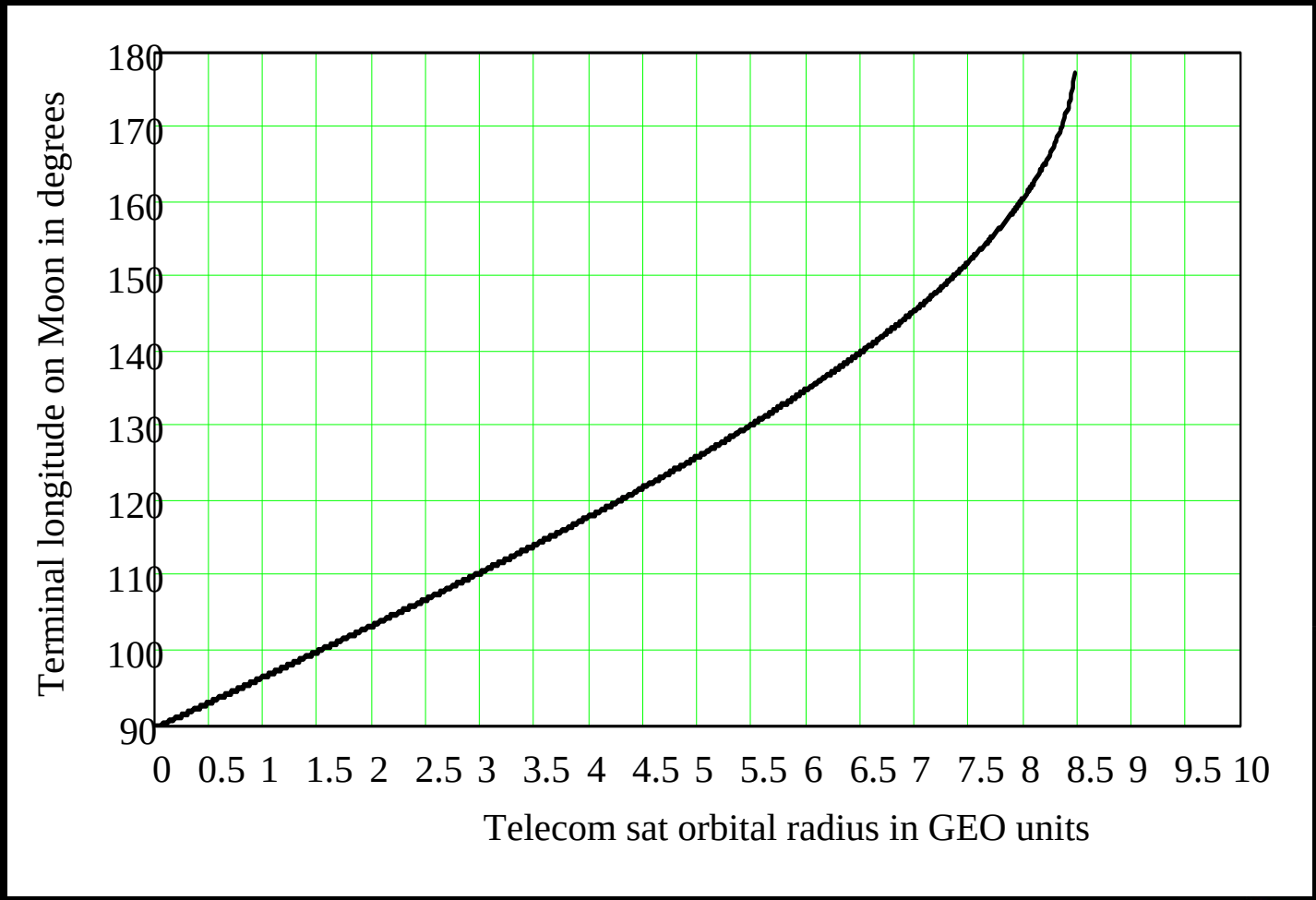
Satellites In Orbit Around Moon



Depends on height of communication satellites around Earth



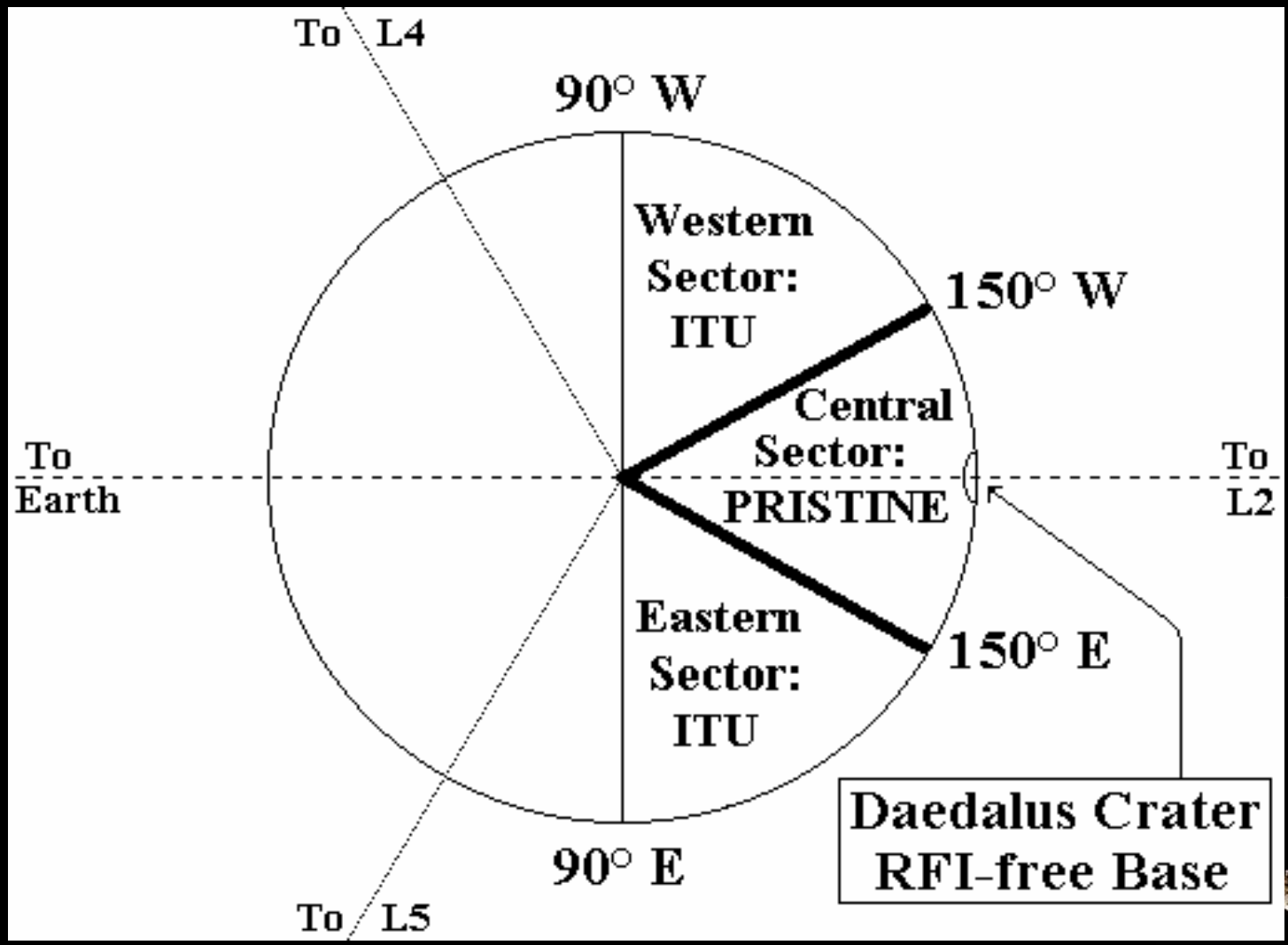
Orbits Higher Than Geostationary Move Shielded Zone Back



Daedulus Crater Is Proposed

- Formerly I.A.U. Crater No. 308
- 179 degrees east longitude
- 5.5 degrees south latitude
- 80 km diameter

Three Zones On Farside
"Sharing The Moon By Thirds"



How Quiet Is The Farside?

- L5 Society wants to have space colony in orbit at L5
  - Western third would be shielded from this by the body of the moon
- Symmetric situation for L4
- Leave L2 alone!
- There is another L2 that matters…

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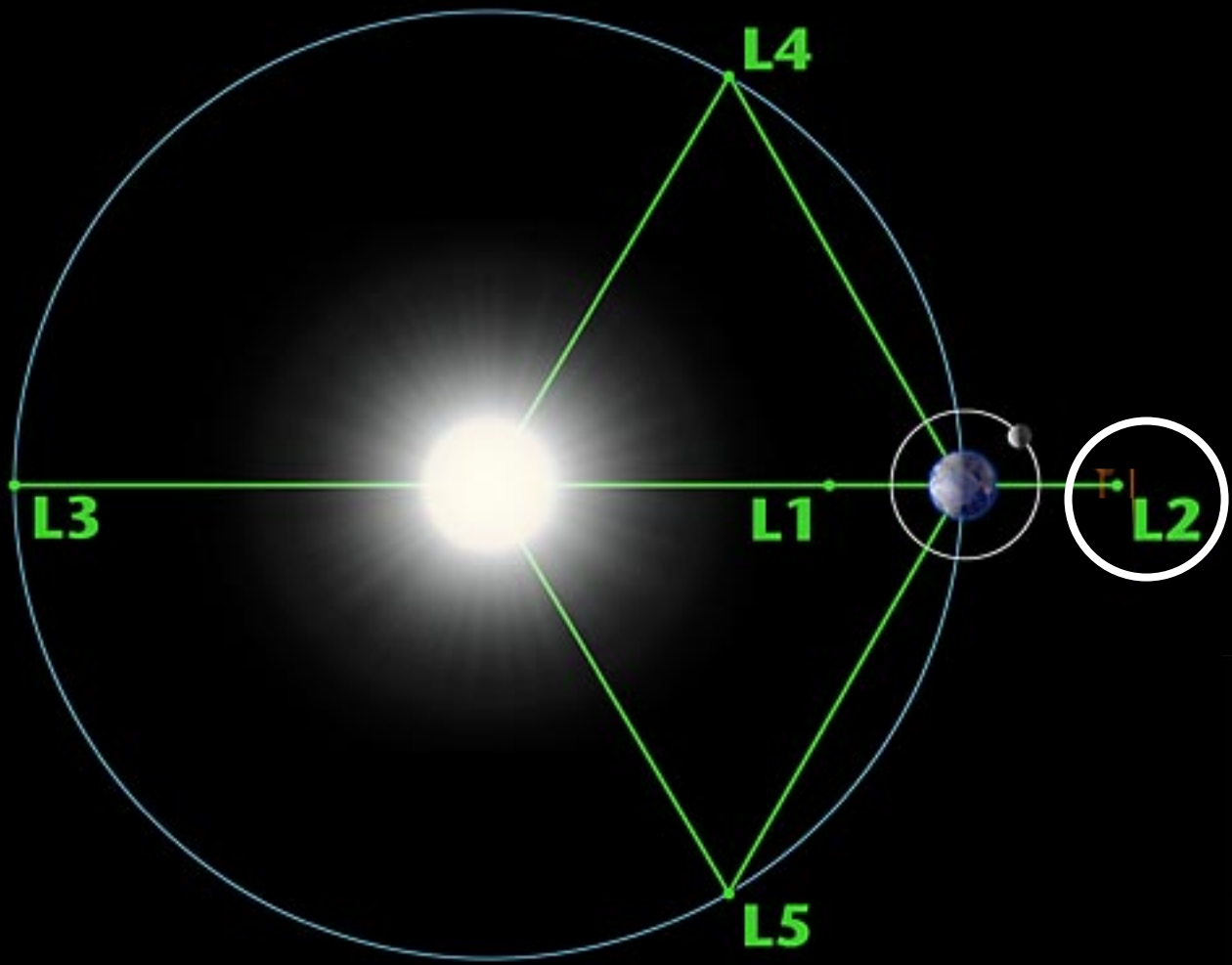
Earth-Sun Lagrangian Points



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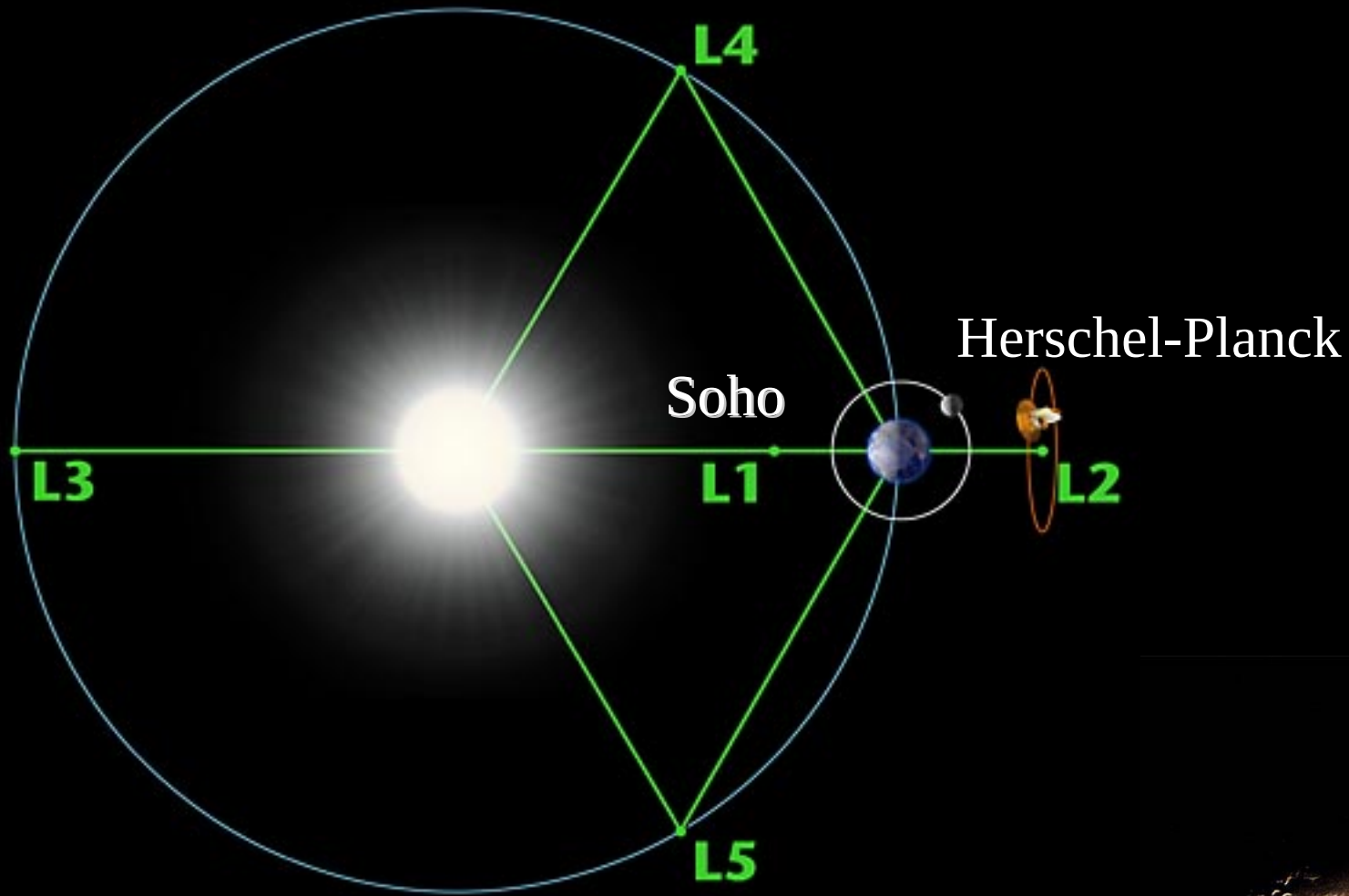

‘Dueling’ Cosmic Studies

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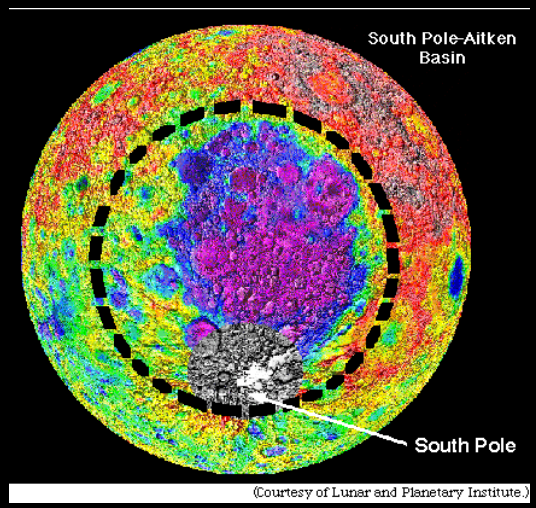
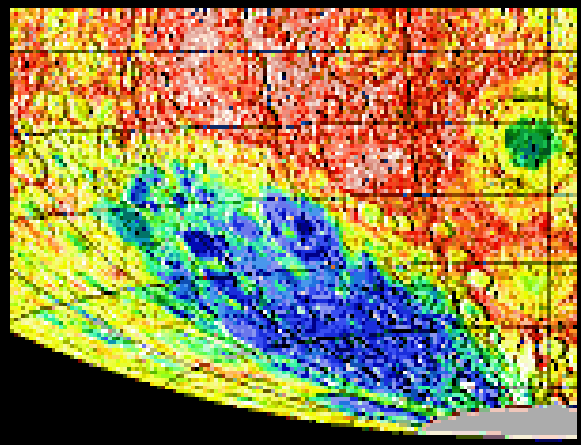
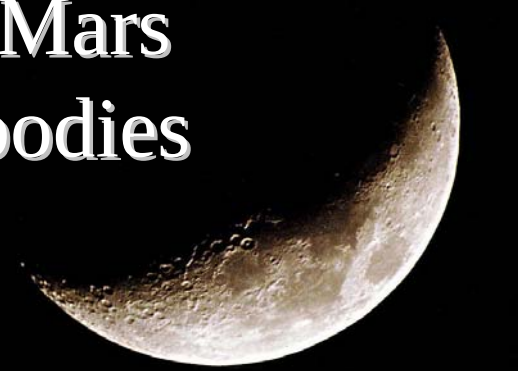




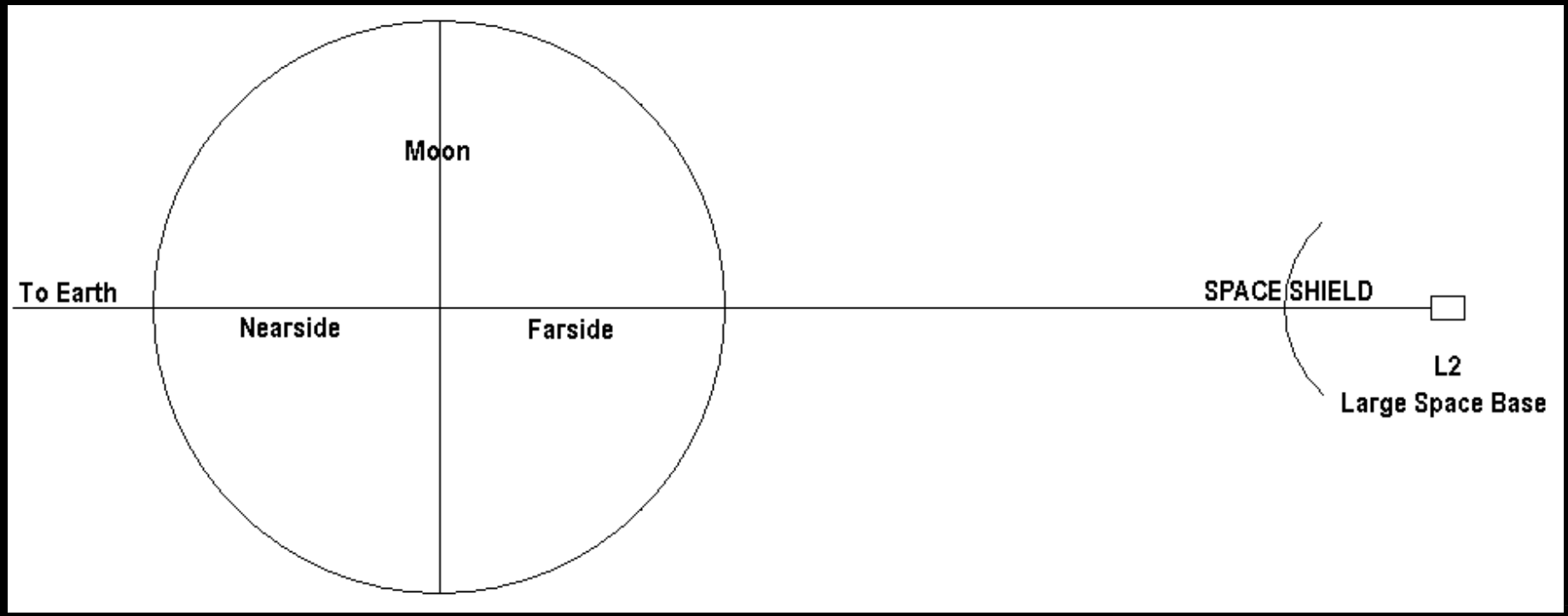
South Pole Aitken Basin

‘Dueling’ Cosmic Studies

- A new ‘moon rush’
- Lunar Prospector and Clementine find water
- IAA Cosmic Study S 1.1 “The Next Steps in Exploring Deep Space“
  - Use Earth-Moon L2 for servicing station for satellites
  - Low-gravity launching platform for large spacecraft to the Asteroids, Mars and the outer solar system bodies



Peaceful Co-existence At A Price



A permanent shield between L2 and the moon

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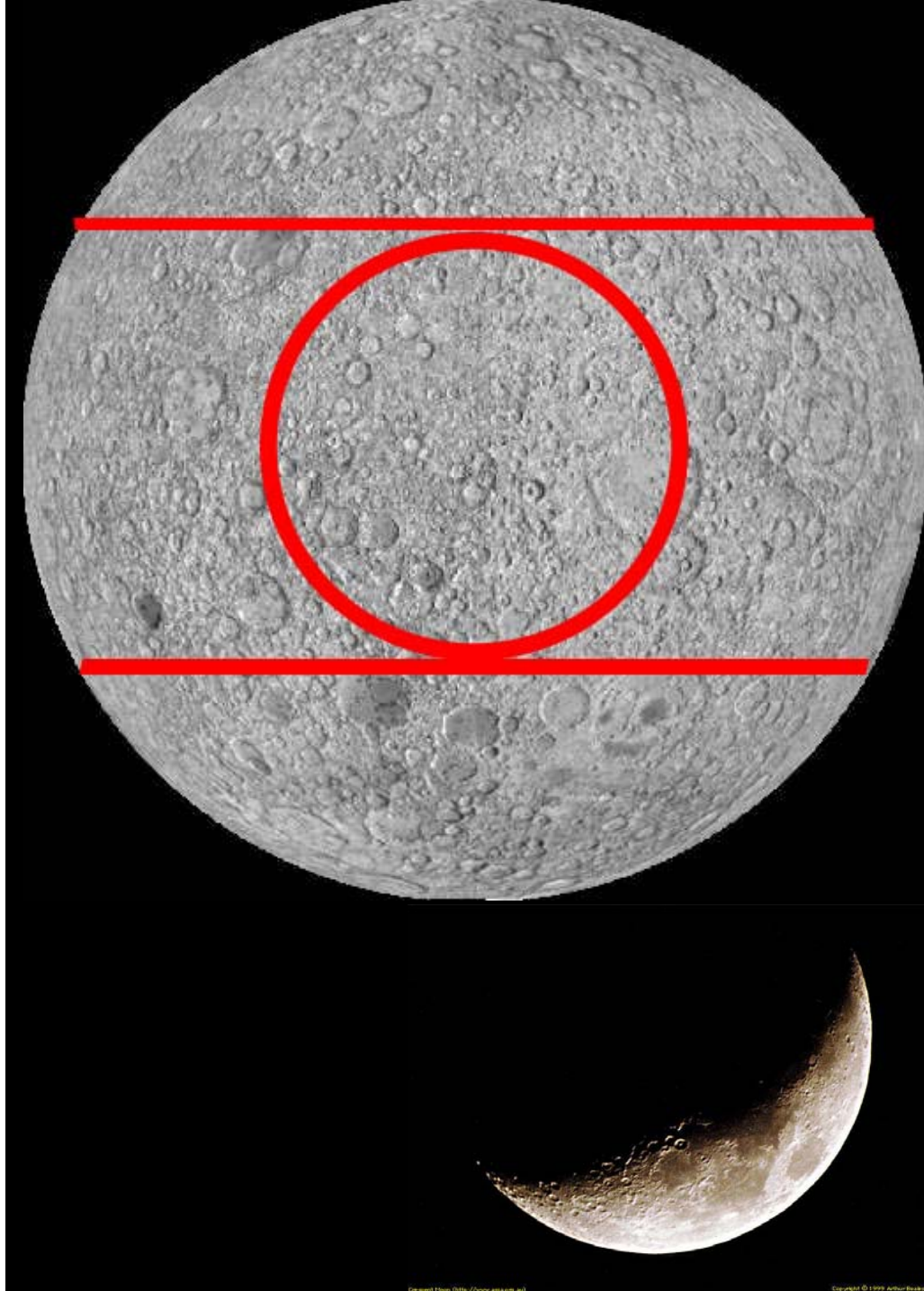

Thank you !