



Resolution SFCG 23-5

**PROTECTION OF FUTURE RADIO ASTRONOMY OBSERVATORIES
IN THE SHIELDED ZONE OF THE MOON**

The SFCG,

CONSIDERING

- a) that the shielded zone of the Moon (SZM) provides a unique location for radio astronomy observations shielded from interfering man-made radio transmissions on Earth or from satellites in geostationary orbit;
- b) that actual planning of a radio astronomy observatory in the SZM may not happen earlier than 2050, and that its system parameters may differ considerably from those of telescopes currently in use;
- c) that a radio astronomy observatory in the SZM will need to be designed and operated with the objective of minimizing its susceptibility to man-made emissions, including those from missions to the Earth-Sun L2 point and deep-space missions, especially those to Mars;
- d) that such an observatory will make observations in frequency bands in addition to frequency allocations made to the radio astronomy service by the ITU;
- e) that other missions, like the ones to Mars or to the Sun-Earth L2 point, will also require large bandwidths for data transfer back to Earth or to a relay satellite, and that they will inevitably illuminate the SZM under certain geometrical conditions;
- f) that by the time a radio observatory in the SZM becomes operational, optical links for broadband data transfer are expected to be available and in use;

RECOGNIZING

1. that the SZM is defined in Article 22, Section V, of the ITU Radio Regulations;
2. that emissions in the SZM are prohibited for all but the space research (active) and space operations services in order to protect radio astronomy observations;
3. that Article 22, Section V, of the ITU Radio Regulations does not include emissions from deep space missions and from missions to the Sun-Earth L2 point;

4. that ITU-R has adopted Recommendation ITU-R RA.479-4 on the protection of frequencies for radio astronomical measurements in the SZM;
5. that Resolution B15 of the International Astronomical Union addresses the issue of frequency bands to be used for radiocommunications in the SZM,

RESOLVES

1. that members planning a radio astronomy observatory in the shielded zone of the Moon inform the SFCG of such plans;
2. that members, through the SFCG, work together with IUCAF to exchange planning information for missions to the Sun-Earth L2 point and for deep space missions, specifically to Mars;
3. that members, through the SFCG, work together with IUCAF to study issues of compatibility of a radio astronomy observatory in the shielded zone of the Moon, as well as the requirements of deep-space missions and Sun-Earth L2 point missions, with the view to developing an SFCG Recommendation.