qUESTION ITU-R 149-1/7[[1]](#footnote-1)\*

Frequency utilization on the far side of the Moon

(1990-1993)

The ITU Radiocommunication Assembly,

considering

a) that some radioastronomical and other scientific experiments are difficult, and perhaps impossible, to carry out on the surface of the Earth by reason of tropospheric and ionospheric absorption and scintillation;

b) that the development of spacecraft will enable experiments to be carried out in the relatively quiet environment on the far side of the Moon;

c) that in addition to the establishment of line-of-sight communication links for scientific and other purposes between the Earth and spacecraft, it may be necessary to establish links between stations on the far side of the Moon and other stations either on or visible from the Earth;

d) that on the far side of the Moon a great degree of isolation from terrestrial radiation is provided at all radio frequencies;

e) that Nos. 22.22 – 22.25 of the Radio Regulations recognize the necessity of maintaining the shielded zone of the Moon as an area of great potential for observations by the radio astronomy service and for passive space research and, consequently, as free as possible from transmissions;

f) that the optimum utilization of frequencies on the far side of the Moon requires better understanding of the shielding effects due to the presence of the Moon,

decides that the following Question should be studied

**1** In what way does the shielding caused by the Moon vary, as a function of frequency, angular distance from the limb of the Moon towards the centre of the far side, and distance above the surface of the Moon?

**2** What are the preferred means and routes for communicating between a station on the far side of the Moon and an earth station?

**3** In what frequency bands would radioastronomical measurements have marked advantages as compared with observations from the surface of the Earth, if carried out on the far side of the Moon?

**4** What frequency protection criteria should be adopted for a station on the far side of the Moon?

further decides

**1** that the results of the above studies should be included in (a) Recommendation(s);

**2** that the above studies should be completed by 2015.

NOTE 1– See Recommendation ITU-R RA.479.

1. \* In the year 2011, Radiocommunication Study Group 7 extended the completion date of studies for this Question. [↑](#footnote-ref-1)