RECOMMENDATION 513-1

PREFERRED FREQUENCY BANDS FOR SPACECRAFT TRANSMITTERS USED AS BEACONS

(Question 10/2)

(1978-1986)

The CCIR,

CONSIDERING

(a) that a continuing need is envisaged for space experiments for research of the neutral and ionized atmosphere;

(b) that the conclusions drawn in Report 456 indicate the necessity for certain frequencies in order to contribute to these studies and measurements;

(c) that to measure differential Doppler effect, use should be made of two harmonically related frequencies;

(d) that simple techniques to measure Faraday rotation effects need two VHF frequencies differing by 1 to 3%;

(e) that based on frequency dependence of the atmospheric attenuation, frequencies near 15, 20, 30, 90 and 150 GHz are technically suitable for measurement of the neutral atmosphere;

(f) that sharing of beacon frequencies in the space research service with other services has introduced serious difficulties through interference,

UNANIMOUSLY RECOMMENDS

1. that in addition to frequencies presently allocated, a frequency harmonically related to 20 MHz and located in the range 80 to 200 MHz is technically suitable and desirable for differential Doppler observations;

2. that consideration be given to improved protection of the 40.98 to 41.015 MHz band allocated for Faraday rotation measurements;

3. that frequencies near 15, 20, 30, 90 and 150 GHz are desirable for measurements of the neutral atmosphere.