Variable Radiation

12-22-48

In favor of Variable Source like Sun.

1. Observer notes random amplitude variations having period of several seconds to few minutes.
2. Variability observed superimposed on diffraction pattern. Minimums in pattern not raised as if angle of incident radiation varied.
3. Amplitude of Variability greater at frequencies below 100mc than at higher frequencies.
4. Variations observed at both low and high altitude angles. However no comparison of magnitude available so far.

Against Variability at Source like Sun

1. Amplitude of star variations only of same order of magnitude to a fraction of magnitude of the steady background radiation. Solar variations are from a few times to several thousand times background intensity.
2. Solar radiation is circularly polarized because of magnetic fields while stellar radiation is random polarized
3. High speed ionosphere equipment has shown substantial changes in ionosphere in as little time as 3 sec.
4. all sources do not vary. If some have appreciable size like a planet, the twinkling effect will be greatly reduced.

5. Sometimes the variations are absent for several days or weeks. These quiet periods have not yet been shown to coincide or not to coincide with quiet ionospheric conditions. at frequencies below 100 mc the sun has variations in amplitude present most of the time.

6. Solar variations have been observed simultaneously to coincide at places several hundred miles apart on earth. The same experiment has not been performed on stellar sources.