The Effects of Solar Radiations on Radio Astronomical lines below 3GHz

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Radiation coming from the Sun penetrates the invisible layer of atmosphere at all frequencies. Some are reflected back to space, while some successfully enters troposphere. Solar radiation is attenuating, absorbing and scattering the transmission. This paper investigates the effect of solar radiation on radio signal using patch antenna connected to spectrum analyzer in UHF band. Radio sThe nearby signal sources with the highest signal strength were identified to be at 630 MHz (-49.6613 dBm), 945 MHz (-36 dBm), 1867.5 MHz (-58.8817 dBm) and 2160 MHz (-48.7487 dBm). Spearman's correlation is used to obtain the relationship between solar radiation against time and radio signal attenuation for the same range of time. This study may benefit radio astronomers in managing RFI for solar monitoring using radio spectrometer CALLISTO. In addition, it could contribute in determining the places to build radio telescopes, which are at the lowest signal disturbance spots in Malaysia.