

Understanding M87

Abstract

We propose the observation of M87 in the S-band with MeerKAT. These observations are in the frame of a bigger campaign involving multiple radio-telescopes, which aims to observe M87 from 30 MHz to 3 GHz with a dense band coverage and at a few arcsec resolution. The improved sensitivity, bandwidth and spectral resolution of the MeerKAT will allow us to obtain the highest resolution, highest frequency, polarized map of M87 core and extended halo ever obtained. With these we will: (i) perform detailed spectral studies of the source, (ii) investigate the plasma aging, (iii) study the relation between radio and X-ray emission and (iv) derive the RM map of the extended halo to understand its environment. The peculiarities of M87 as a radio source makes it a perfect target to test the new S-band receivers of MeerKAT.