Abstract Submitted
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Study of Galaxy NGC 3885 Centered at 100 micro meter Far Infrared Cavity[1] BARUN GUPTA, University of Utah — A cavity in the 100 μm infrared sky is investigated and it's shaping mechanism is studied. Interestingly, a galaxy NGC 3885 is found to be located at the center of the cavity. In this work we have calculated the amount of the displaced mass emitted from the cavity. In addition, we estimated the energy required to displace the calculated mass from the cavity. For this, we used Groningen server in order to get high resolution 500 x 500 pixel image of the region of interest. The software ALADIN2.0 is used for the data processing and MATLAB6.2 is used for the calculation. The nature of the discrete sources and the multiwave-length images are studied in the field of interest. The displaced mass is found to lie in the range 8.60x10^{-6} M (solar mass) to 1.73x10^{-6} M (solar mass) for the distance 20±20% pc and the temperature 20±20% K. Active galactic nuclei of the galaxy NGC 3885 powers the surroundings by emitting a jet having energy in the range 10^{32}-10^{34} Joule/s. In our case, we estimated $\sim$ 1.1x10^{31} Joule/s to 7.5x10^{32} Joule/s energy, which is essential to create the cavity. Thus, there is a very good compatibility between these estimates. We conclude that the shaping mechanism of this cavity is due to the extragalactic jets emitted from the super massive black hole of the galaxy NGC 3885.

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