

STRUCTURE AND MORPHOLOGY OF NGC6369

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ABSTRACT. NGC 6369 is a remarkable object, especially in the light of structure and morphology. We studied this object by taking many red plates (103aE), coupled with red filters (F29), of varying exposures using the Schmidt Telescope of the INAOE. The structure brought out by the analysis of the plates indicate that the object consists of a prolate disk shaped ring nebula with a central hole and featuring huge plumes emanating out of the ring which engulf an outer envelope having a diameter about twice that of the ring. The striking feature of the plumes is that they emanate almost symmetrically out of the two prolate ends of the ring and curve out almost symmetrically along opposite directions.

A comparison of the structures of this object with the temporal evolution of the gas density in the numerical simulations of a purely gaseous self-gravitating polytropic ring is conducted. Features resembling the plumes of this object are found at a certain stage of the simulations. A careful comparison of the observed and computer generated features indicate a marked similarity in the sense that both, the observed and simulated ring appear to be similar to the cross section of a prolate spheroid at the ends of which emanate the plumes. This seems to confirm that the evolution of this object is consistent with its being a planetary nebula having the appearance of a prolate spheroid with a central hole, which is a basic observational feature of most planetary nebulae.

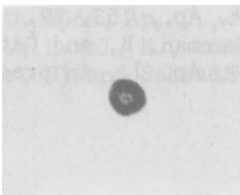


Figure 1. NGC6369 underexposed.

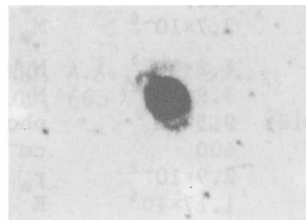


Figure 2. NGC6369 overexposed.