

# АКАДЕМИЯ НАУК АРМЯНСКОЙ ССР

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## THE RADIO EMISSION OF NGC 5363

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It is shown that the radio source in the galaxy NGC 5363 is coincident with the optical nucleus of galaxy and consists of a compact core with diameter less than 2 arc sec, and probably an extended component with a size of about 20 arc sec. The location of the radio source in NGC 5363 and its radio spectrum favour the suggestion that an explosion similar to that in M 82 has taken place in this galaxy.

NGC 5363 is an irregular galaxy included by Markarian [1] in the group of galaxies, with morphology, spectra and colors similar to that of M 82, a galaxy well known for the explosion in its nucleus [2]. A detailed spectrophotometric and photometric study of a number of irregular galaxies carried out by Chromey [3], Snapovalova [4, 5] and Krienke and Hodge [6] suggests that these type Irr II galaxies do not all belong to a single class; however, according to Shapovalova [5], NGC 5363 is among the few explosive galaxies of M 82 type. According to Krienke and Hodge [6] NGC 5363 is a dusty galaxy, probably of S0 type.

We present in this paper the results of radio interferometric observations of the radio source in NGC 5363 first detected by Tovmassian [7] at 1410 MHz. Our observations permitted us to measure with high precision the position of the radio source in NCC 5363.

The observations were made in 1972 with the Green Bank radio interferometer at frequencies of 2695 and 8085 MHz. The observing procedures are described by Sramek and Tovmassian [8]. Components down to 2 arc sec were resolved by the baselines used and components larger than 3 arc min would not be seen.

Observations at 2695 MHz show that the radio source in NGC 5363 consists of a compact core and a very weak extended component.





**Plate 1.** The NGC 5363 and the position of the radio source in it, noted by +.

To the article by H. M. Tovmassian and R. A. Sramek

If a two component spectrum is desired, the spectral index is about  $-0.3$  between  $408\text{ MHz}$  and  $1400\text{ MHz}$ , and becomes somewhat steeper at higher frequencies, where the spectral index is about  $-0.5$ . The data may also be fit by a single power law spectrum of  $\alpha = -0.4$ . The inspection of Fig. 1 shows also that the flux at  $2650\text{ MHz}$  measured by Tovmassian [7] in 1965 is most likely overestimated as in the case of NGC 520 [14].

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## РАДИОИЗЛУЧЕНИЕ ОТ NGC 5363

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Показано, что радиисточник в галактике типа M 82, NGC 5363, расположен в оптическом ядре галактики и состоит из компактного ядра с диаметром менее  $2''$  и, возможно, протяженного источника с размером около  $20''$ . Расположение радиисточника в NGC 5363 и его радиоспектр подтверждают предположение о том, что взрыв, аналогичный в M 82, возможно, имел место и в этой галактике.

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