

Structures in the Universe and Origin of Galaxies

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1. Introduction

Research by author of a skeletal structures of the Universe (SSU) began from the analysis of images of various types of plasma by means of a method multilevel dynamic contrasting (MMDC), developed and described earlier [1a, b]. The analysis of images MMDC is carried out by imposing of various computer maps of contrasting on the image of plasma received by the various methods and in any spectral ranges. Some results of the given analysis of a modern database of images of space objects here are given. It is shown, that the topology of the revealed space structures is identical to those which have been already found out and described earlier in a wide range of physical environments, the phenomena and scales [1-2].

The basic role in skeletal structure of the Universe is connected with its separate blocks in the form of a coaxially-tubular blocks (CTB). These CTB have complex multi-layered structure of the telescopic enclosed tubes which lateral walls represent a weaving of similar filaments of smaller diameter, with the central cord. Except for that these blocks inside have also radial connections. Extended filaments of these structures are collected of almost identical CTB, which are flexibly connected among themselves as in joints of a skeleton. It is assumed such joints may be realized due to stringing of the individual CTB on common flow of the magnetic field which penetrates the whole such filament, and itself the CTB are interacting magnetic dipoles with micro-dust skeletons, which are immersed into plasma.

One of the new phenomena which has been found out at the analysis of images of plasma, were a rectilinear dark filamentary structures which butt-end can shine as open butt-end of optical fibers in such ranges of lengths of waves which correspond with temperature of researched plasma. Such the CTS have been described and have received the name "electric torch-like structures" [1c, d]. The similar phenomena are observed in space plasma. ***Many luminous objects in the Universe represent such luminous butt-end of the CTS.*** The butt-ends of such open optical paths can correspond to sizes of stars, planetary nebulas, or galaxies and their congestions. *The put forward hypothesis allows to explain why the galaxies can have a short time for their formation and a small disorder in the diameters of spiral galaxies.*

Revelation of a Coaxially-Tubular Blocks of the SSU.

The CTS are basis of the SSU as this type of blocks composes an overwhelming part of it. With ease it is possible to show, that almost all luminous objects in the Universe are butt-ends of the above mentioned blocks of either scale. The CTS revealed in the Universe tend to self-similarity that leads to fractality of built by them and by observed structures. It is easy to demonstrate it by the examples of a structure of blocks of various scales of a galaxies. The central fragment very large spiral galaxy [3] (**Fig.1.**) where are precisely revealed the CTS of various scales (from $5 \cdot 10^{16}$ cm up to $7 \cdot 10^{18}$ cm) as an example is produced.

Fig. 1.

It is possible to show, all cooperating galaxies represent interactions of the similar CTS in the forms of a breaks and/or collisions of the CTS of a corresponding sizes. The image processed by means of the MMDC and received in the field of ultraviolet on Fig. 2 is given. Here we have a two cooperating galaxies, UGC 06471 and UGC 064724 [4] and corresponding schematic of its representations in a window overhead.

Fig. 2

In constellation Pegasus there are two pairs of cooperating galaxies which can confirm the put forward hypothesis. Processed images MMDC of these pairs are given on Fig. 3 and 4.

Fig. 3.

Fig. 4.

As it was marked above CTB have a complex multilayered structure as the telescopic enclosed tubes, the walls of which can represent the surface which has been laid with similar coaxial tubes of smaller diameter. Therefore at a break of such CTB should take place of interfaces of butt-ends of such tubes. It is possible to show it by the example of cooperating galaxies NGC 4038/4039, which are located in distance of 63 million light-years away in the southern constellation Corvus and called the Antennae (called the Antennae because a pair of long tails of luminous matter formed by the encounter resembles an insect's antennae) which are produced on Fig. 5.

Fig. 5

For statistics we shall demonstrate one more pair of cooperating galaxies which show the script of break at once of two multi-layered filaments of the Universe, an active butt-ends of which intensively cooperate among themselves forming original dance of galaxies connecting among themselves by a sleeve.

Fig. 6

The example of analysis MMDC of the image of two interacting galaxies (M 81 and M 82) is considered. It is shown, that they are end faces of two fractured branches treelike filament with diameter $\sim 3 \cdot 10^{23}$ cm. The assumption is stated - their interaction is carried out through this filament.

Fig. 7

The hypothesis is stated, that the overwhelming majority of observable luminous objects in the universe are butt-ends of the free ends of the corresponding size dark or nearly so invisible filaments, which are components SSU. As our universe till now is in dynamics the process of formation of a new galaxies takes place and now. Following the suggested hypothesis, it is possible to assume, that the foreseeable our universe is a result of a break similar filament but of the huge size comparable with the size of our universe. In that case the big explosion is understood in sense of a break of such structure.

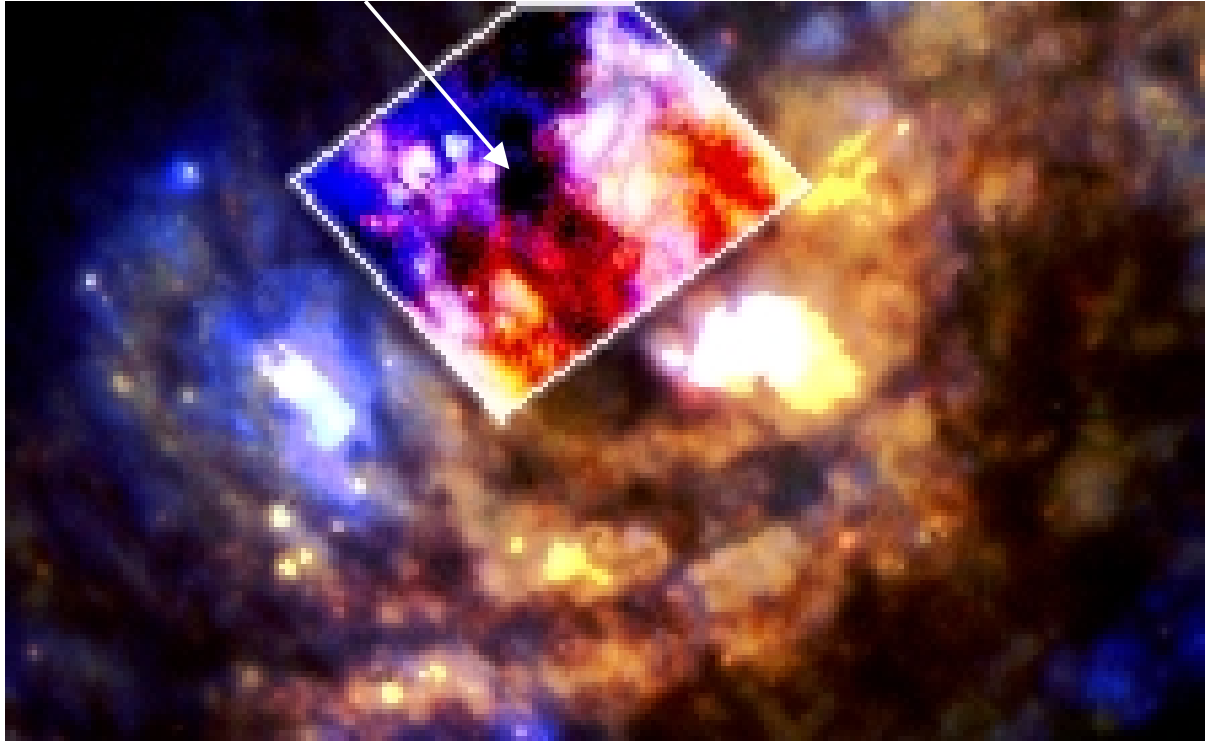


Fig. 1. Central fragment of a spiral galaxy NGC 1808 [3]. The arrow specifies a direction of an axis of a galaxy. The width of figure corresponds $\sim 7 \cdot 10^{18}$ cm. The nucleus of a galaxy represents the CTS in diameter $\sim 2 \cdot 10^{19}$ cm. In a window of figure design of the CTS in diameter $\sim 2 \cdot 10^{18}$ cm with tubular filament on an axis in diameter $\sim 7 \cdot 10^{17}$ cm inside which passes filament in diameter $\sim 2 \cdot 10^{17}$ cm and a galaxy taking place on an axis is revealed. Continuation in space above a galaxy of a central filament is a dark filament, leaving on the center same filament, but the greater diameter. The similar structure from telescopic enclosed the CTS is revealed to the left of a window. It has of blue the CTS in the center of the similar structure built from tubes with a bright blue luminescence of their butt-end. In the center inside this structure it is precisely looked through bright white the CTS which center leaves dark thin filament which butt-end above all structure shine a blue luminescence.

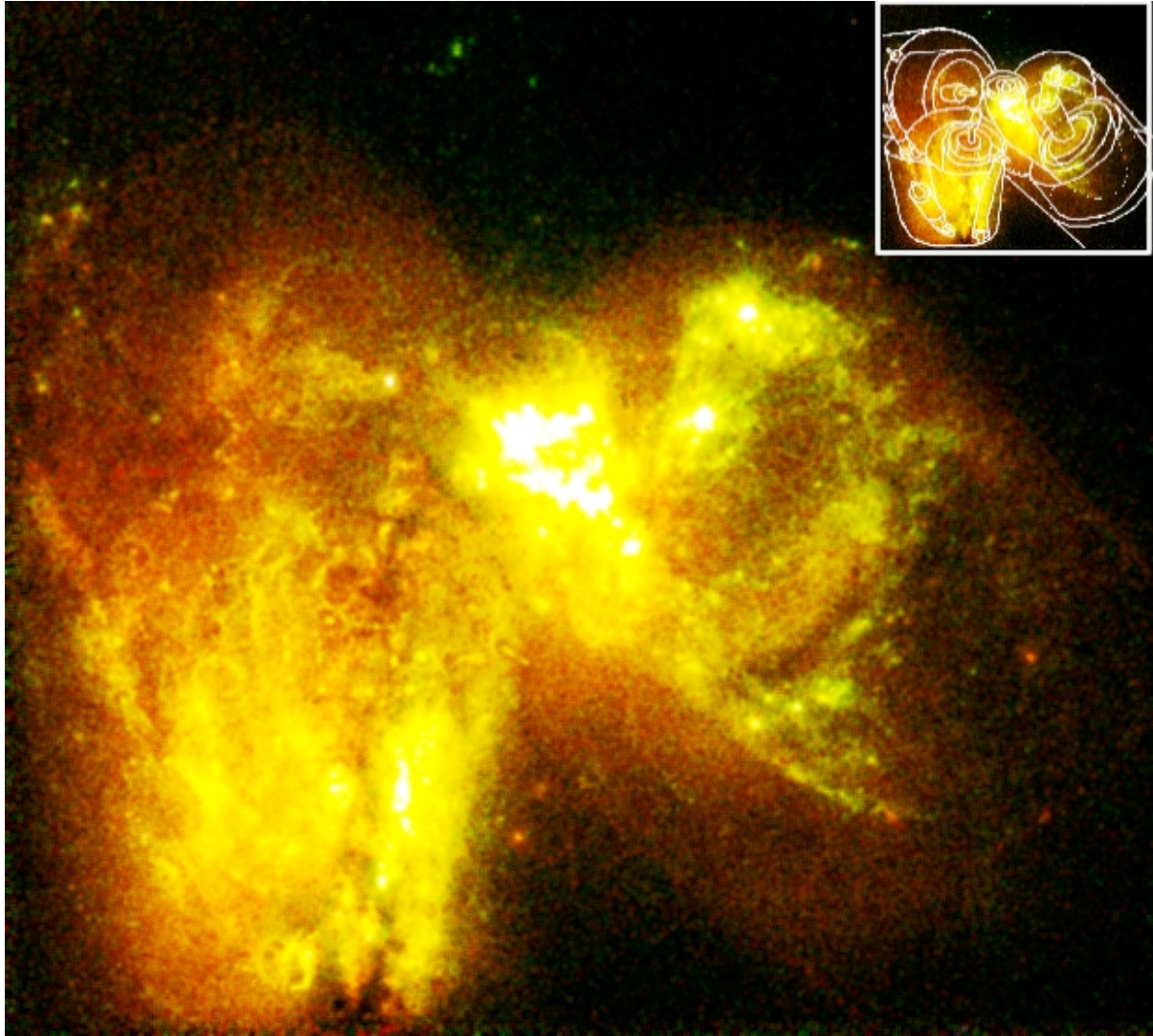


Fig. 2. A two cooperating galaxies, UGC 06471 and UGC 064724 [4] and corresponding schematic of its representations in a window overhead. It is revealed, that the given object represents interaction of a three CTS. It is possible to assume, that two galaxies in the foreground are butt-end of a break of one the CTS (from the analysis of identity having chopped off on their external environments). The third CTS could be the reason of such break, as a result of its collision with a joint of first two. More thin analysis of this group of the CTS shows their topological identity. These blocks represent telescopic the enclosed tubes with radial connections. The resolution of the given figure, allows its repeated increase for revealing more thin details of the submitted CTS.



Fig. 3. Two interacting galaxies NGC 7318A and B [5] which are in constellation Pegasus on distance 270 million light years from the Earth is represented on figure. These galaxies represent mutually - perpendicular butt-ends of a break of one CTS with diameter $\sim 3 \cdot 10^{22}$ cm. The structure of this break is precisely traced and its plan is given in a window below . The multi-layered design of an internal structure of break-up of this CTS is very well seen.

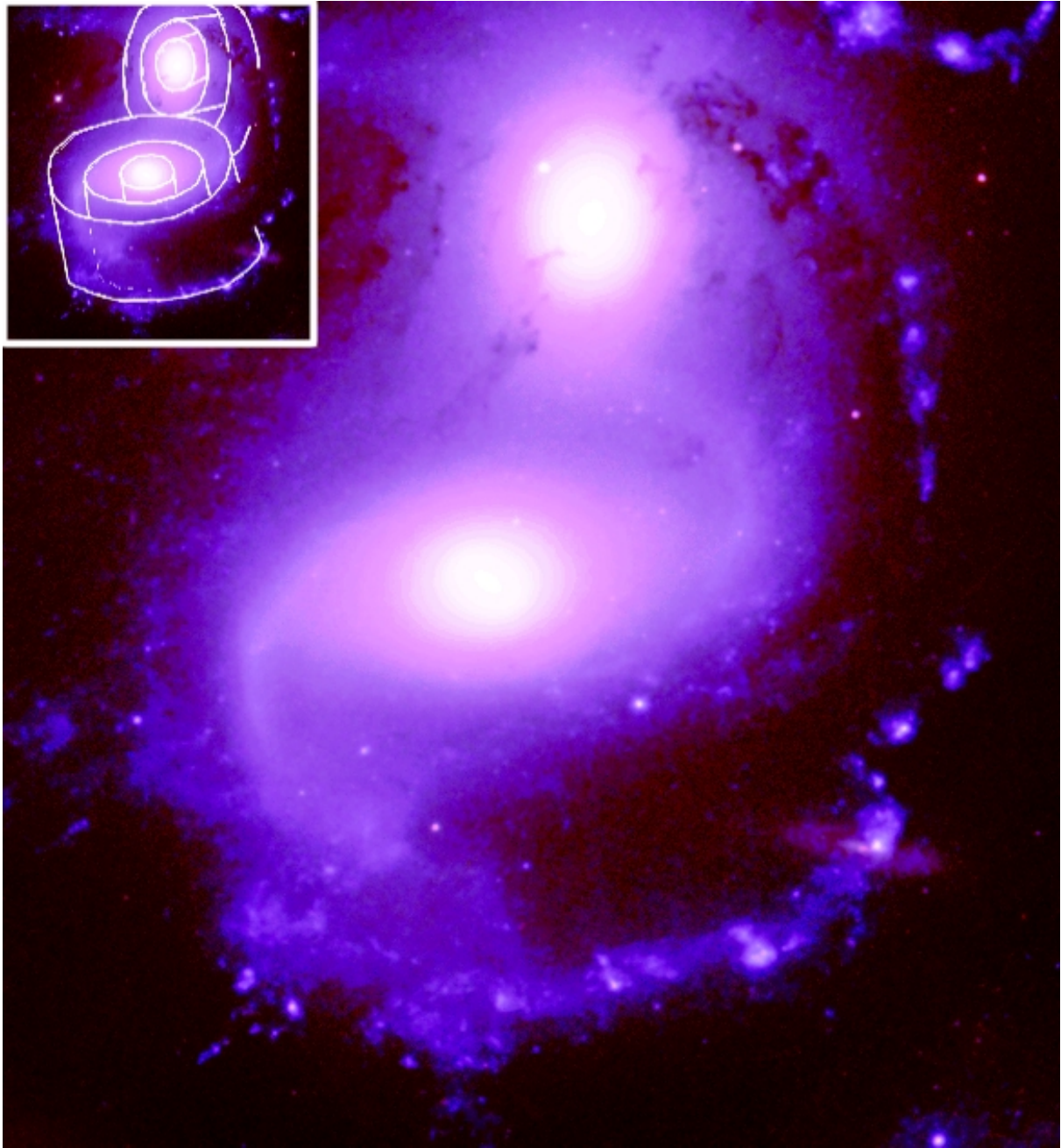


Fig. 4. Cooperating galaxies NGC 7319A and NGC 7319B [5] of the same constellation Pegasus which also are break of the CTS in diameter $\sim 3 \cdot 10^{22}$ cm. Butt ends of a break are located mutually perpendicularly. The circuit of the image is resulted in a window at the left. Dark filament on the right shows possible points of interface of a break. From under a window the outline dark filament which could be the reason of break of this CTS at the left is looked through.

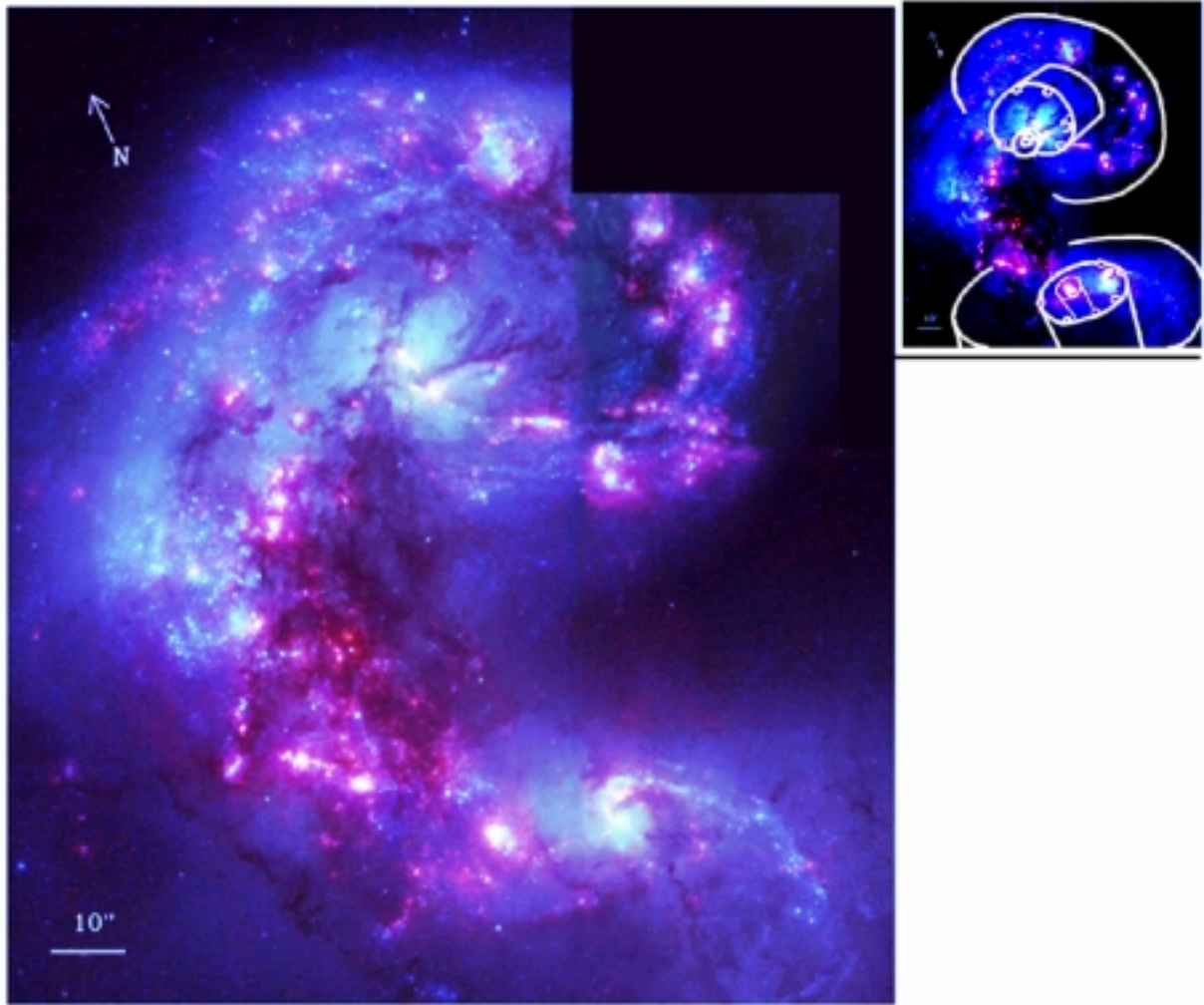


Fig. 5. On this figure the images of two cooperating galaxies NGC 4038/4039 of constellation Corvus [6] are submitted. A schematic representation of the image, which is two butt-ends of a CTB and represent butt-ends of a break of the Universe filamentary structure on the right in window is given. Identity of structures of these two galaxies as topological, so and in the sizes is visible. Moreover, in structure of the top galaxy a radial spokes which connects a central coaxially-tubular structure and tubes located on lateral surface of a CTB of the greater size are looked through. It is observed, what interface details of the bottom galaxy have the same sizes as at the first galaxy. The external coaxial of the top galaxy shows that the coaxially-tubular structures from which it consist have topology as and the structure of whole galaxy.

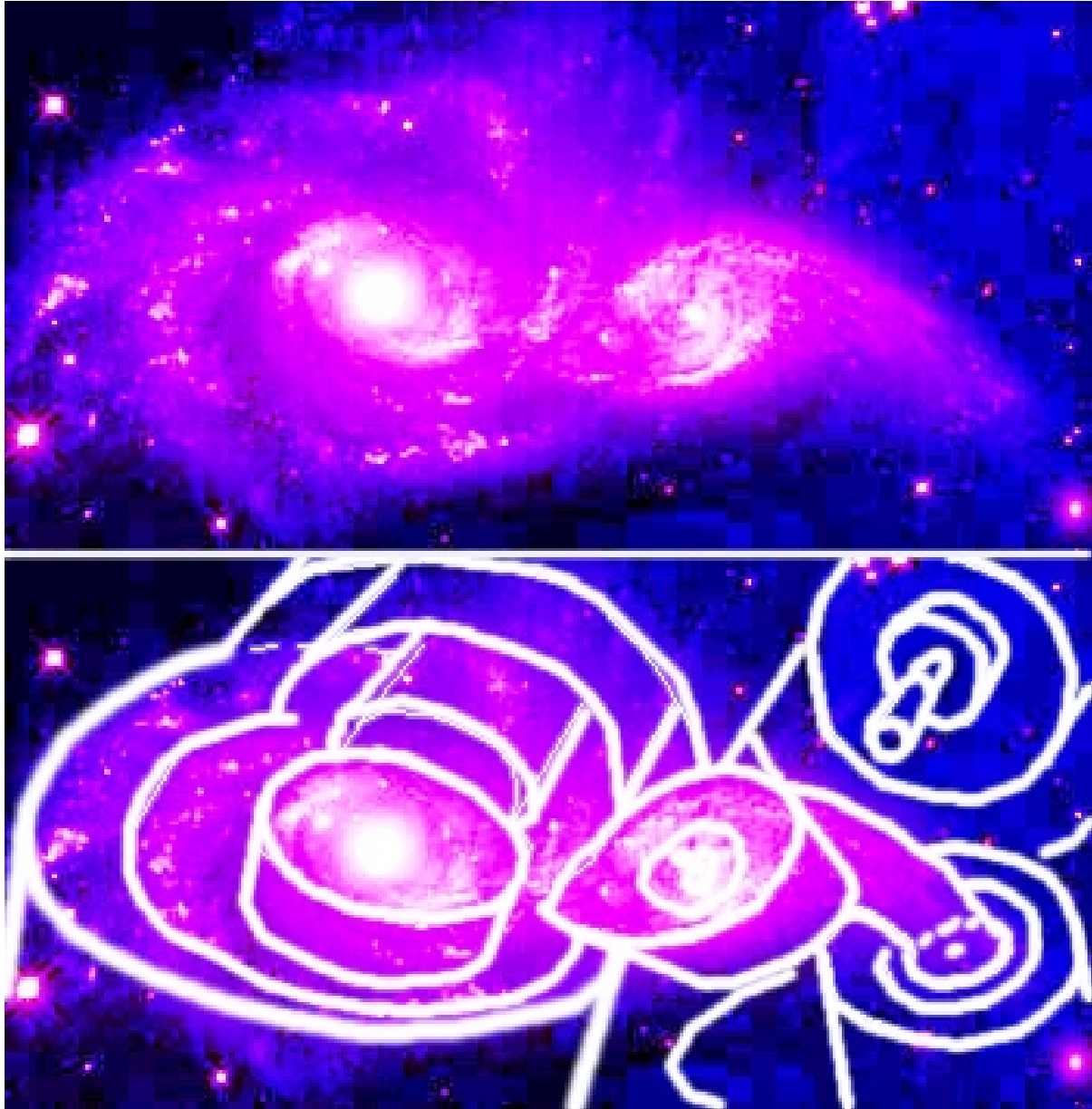


Fig. 6. Here two cooperating galaxies - NGC 2207 and IC 2163 are submitted [7]. The width of figure corresponds $\sim 4 \cdot 10^{23}$ cm. The analysis of the image (by means of MMDC) is applied for revealing structure of interaction. For simplification of perception the schematic image of the given interaction of galaxies below is given. It is visible, that the given galaxies represent butt-ends of the broken CTB (the larger galaxy, NGC 2207, is on the left; the smaller one, IC 2163, is on the right). The first of them has the same size which is characteristic for spiral galaxies $\sim 2 \cdot 10^{23}$ cm Proceeding from the submitted scheme, it is possible to tell that the script of observable process can appear absolutely other, than it is represented now by astronomers.

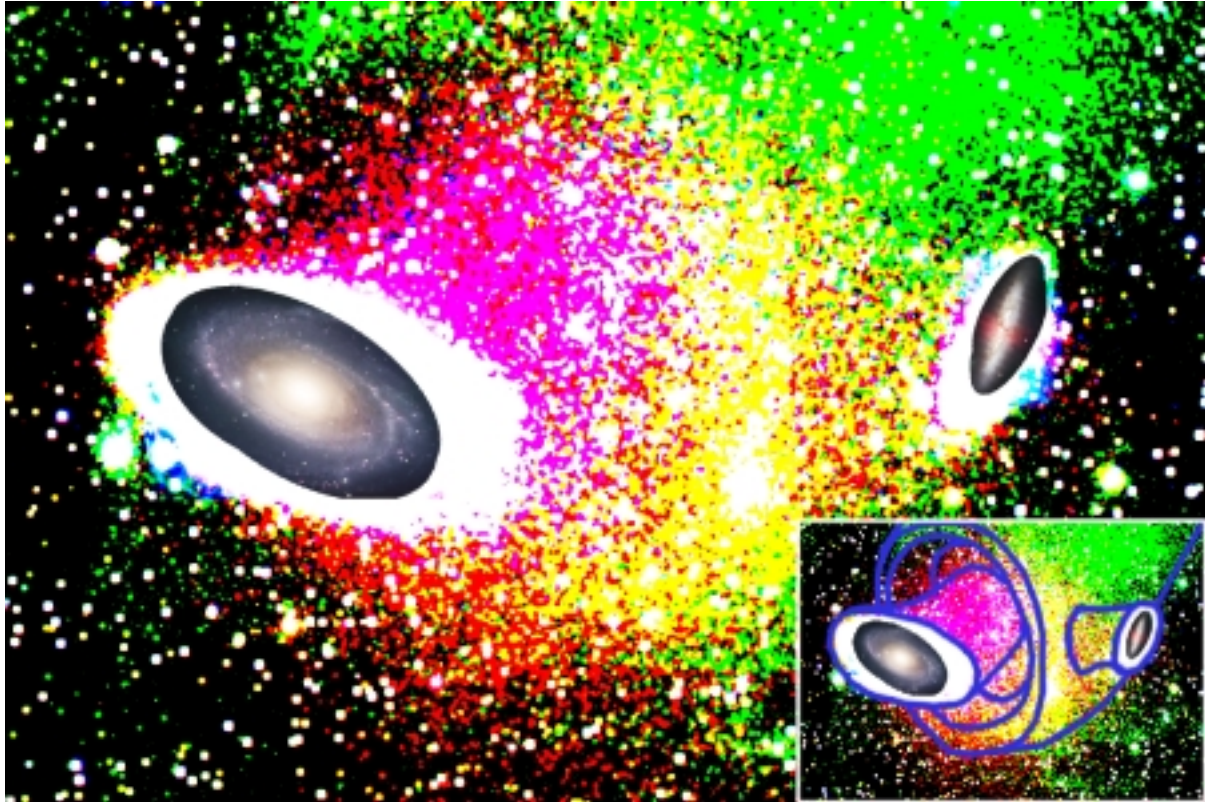


Fig. 7. They are the cooperating galaxies M81 and M82 of the constellation « the Big she-bear » [8]. The MMDC has allowed to reveal their structural interaction. M81 is a butt-end of an internal and acting part of a treelike filament with diameter $\sim 3.5 \cdot 10^{23}$ cm, and M82 a butt-end of its lateral cut down branch. To the right of the M82 it is looked through parallel to an axis of the basic filament the dark CTS which, obviously, has cut off a branch, having created the given galaxy. The bright luminous object located before M82 and hardly below of it, lays on an axis of this dark structure. Schematic representation of the image is given in a window on the right. Contrary to opinion of a contemporary astronomers, according to the image, obviously, these galaxies did not collide.

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