UNIVERSAL THREE-ARMED SPIRAL CONTROLLING THE DYNAMICS OF THE UNIVERSE IN ALL SCALES

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Summary: Graphical examples based on empirical observations starting from the entire universe of many billions of light years in size down to structures as small as a few meters are given in order to demonstrate how a universal three-armed spiral appears in all scales and drives the creation of all that exist.

Introduction

About one hundred years ago the astronomers believed the universe was a sphere of stars with sun at its centre. From 1930s this view of the universe changed when one discovered that the starry world of the Milky Way, which once they thought was the entire universe, was only one of the many other island universes of stars, called galaxies. The nebular spot, which one could see with naked eyes in the constellation of Andromeda, turned out to be the nearest island universe containing more stars than the Milky Way. It was more than two million light years distant from us. By the end of the twentieth century astronomers have observed many billions of galaxies distributed in the depth of the space spanning many billions of light years. All these galaxies were found to be moving away from us at different speeds which were interpreted as the results of a primordial explosion that created the universe. Thus the era of big-bang cosmology started.

Now the universe is believed to be an expanding sphere of galaxies where the galaxies are distributed in homogeneous and isotropic manner. However, most of these galaxies appear in large groups forming archipelagoes of many hundreds or thousands of galaxies. These archipelagoes are separated by several hundreds of millions of light years. The clusters of galaxies in turn cluster together to form even larger structures separated by billions of light years. Though such fractal clumping continues in larger and larger scales the astronomers with faith in big-bang still argue that the universe is homogeneous and isotropic.

It has turned extremely difficult to explain the formation of the fractal nature of cosmic structures from the big-bang point of view. The main discussions of structure formation these days revolve around the questions of the formation of galaxies which appear in two major morphological groups: The galaxies in one group appear in different spiral shapes and the other group consists of elliptical forms. Most galaxies which move slowly around us belong to the spiral class, while the ellipticals more often belong to the high speed objects. According to the big-bang model the speeds of galaxies are related to their distances from us: Slow moving galaxies should be near while the high-speed objects must be very far from us. Lights from far away objects take longer time to reach the observer on Earth. Therefore the high-speed structures are believed to have formed in the early time of the creation of the universe.

To complicate the matter one has observed a class of small blue galaxies with high rate of star formation moving at high speeds. They are the most numerous galaxies observed in the universe. The big-bang theorists argue that these blue galaxies, which appear in the early stage of the formation of structures, could be the building blocks of larger galaxies. Apart from these blue galaxies, which appear in many weird shapes, there are objects known as quasars which are among the most high speed objects in the universe. Their speeds indicate that quasars should belong to the earliest structures which have formed.

A variant of the big-bang theory, which has lately gained more acceptance in the astronomical and astrophysical community, is based on the idea of the existence of cold dark matter (CDM). In CDM models structures are believed to form by the process of merging of smaller structures into larger units. It is argued that the quasars have formed first, which have quickly disintegrated after their formation. The disintegrated pieces have merged and formed elliptical galaxies. After the ellipticals were formed they remained the same and did not evolve any further in the history of the universe. The spirals are the newest breed created by the process of merging of smaller structures which are left over from the earlier period. The ellipticals are also believed to be the results of merging of spiral galaxies. However, the explanations of structure formation given by these models are extremely confusing.

In complete disagreement with the big-bang cosmology I have shown in different articles before that the blue galaxies and the quasars are nothing but objects ejected from the massive galaxies moving at slower speeds while the galaxies form and evolve. These ejections mostly occur from four definite directions through which infall towards and outflow from the centre occur in all cosmic structures. The four mouths are intimately connected to central spiral structures which control the dynamics of the formation of cosmic bodies.

According to this new scenario the universe has emerged from a dark womb lying in the part of the sky in the northern hemisphere known as the Bootes void. It is a huge area covering 50 x 50 degrees in the constellation of Bootes which is practically empty of galaxies. There exists a dark spiral structure of several hundred million light years in size inside this void. It controls the existence of a spiral-shaped universe by ejecting super-clusters from the void and regulating outflows which will ultimately return as inflow towards this centre.

What one observes in the largest scale repeats in smaller and smaller dimensions. The super-clusters, which emerge as ejections from the void, themselves contain a similar spiral at their centers. The spiral in this scale controls the dynamics of the super-clusters by regulating inflow and outflow from the centre of these structures existing in the next large cosmic scale. In the same manner as the galaxy clusters emerge from the centers of the super-clusters, the galaxies emerge from the centers of the galaxy clusters, the star clusters emerge from the centers of the galaxies and so on.

In every scale the universe brings into action a universal mechanism of control with the help of the central three-armed spiral lying at the hearts of all cosmic bodies. Thus the way the entire universe evolves is reflected in all cosmic scales down to stars, planets and comets spanning dimensions from billions of light years to only a few kilometers. In every scale the cosmic objects evolve from a more chaotic unstable state towards increasing stability and order. The evolutions follow a definite pattern, which involves wrapping up of the external spiral arms towards the central bulge while building shells inside shells (rings inside rings) in a fractal manner around the three-armed spiral lying at the heart of the structure.

All structures evolve by ejecting smaller structures: First the ejections occur from the external arms, then, as the external arms diminish the ejections take place from the shells. In more compact objects where the shells become densely packed the ejections occur from the deep heart of the nucleus. As the super-clusters evolve they eject clusters of galaxies. These clusters in turn hurl groups of galaxies. The dwarf blue galaxies are fragments from outer parts of large spiral galaxies that are in the process of evolution towards an elliptical shape. The elliptical-shaped quasars are ejections from the shells and the nuclear regions of the evolved galaxies like seyferts and massive ellipticals. Similarly the quasars themselves eject smaller structures. This process continues in a cascading manner in smaller and smaller dimensions before the structures after reaching a critical stage of evolution may disintegrate and explode as gamma-ray bursts, hypernovae or supernovae. Such disintegration and explosions feed back new material to the universe.

Thus in contradiction to the big-bang theory the structures in the universe originate by fractal clumping of large structures into hierarchically descending scales. Ejections generate turbulence which in turn drives the dynamos producing cosmic magnetic fields. Turbulence and magnetic field play more central roles than the force of gravity. In regions where the effect of turbulence and magnetic fields are minimal the force of gravity may dominate as it is in our solar system.

The purpose of this article is to give graphical illustrations based on observed data and demonstrate how a universal spiral appears in the centers of cosmic bodies. Instead of black-holes this spiral sitting at the hearts of all cosmic bodies regulate ejection and infall.

Illustrations

The entire universe

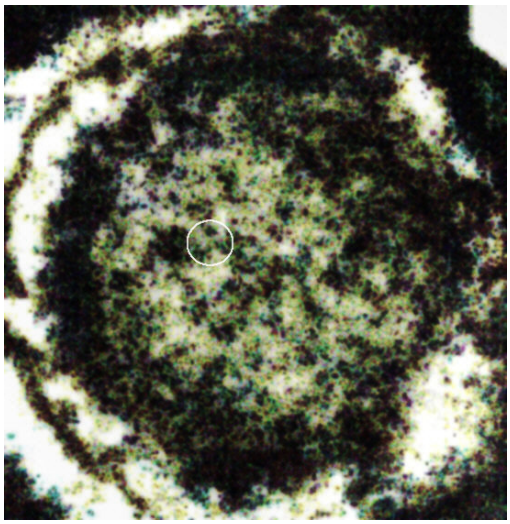


Fig. 1 The super-super-clusters emerging from the void is marked by a white ring. The super-super-clusters appear as fractal clumps forming a spiral structure of the universe. The view includes most parts of the northern and southern hemisphere. The broad ring around the image traces the clouds in the Milky Way which obstructs the view of the sky. The void, from where the universe has emerged is practically empty of galaxies. However, inside this void there exists a three-armed spiral structure of darker material, may be a billion light years in size. This central spiral is illustrated in fig.2.

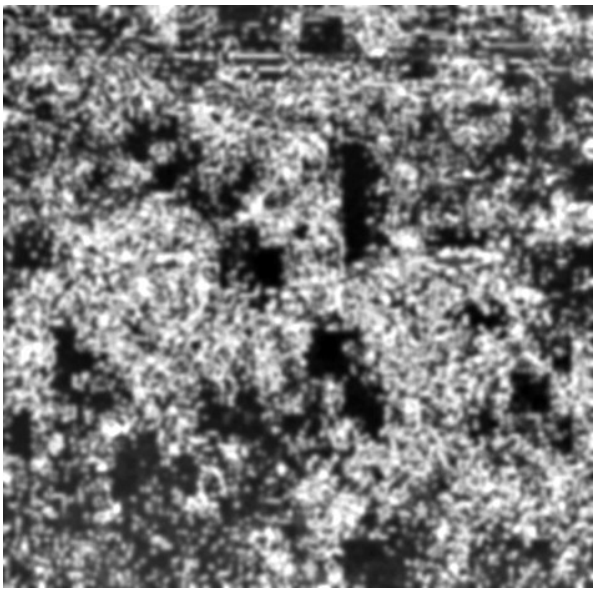


Fig. 2 The arm moving to the right ejects a super-super-cluster structure which includes the Canes Venatici clouds of galaxies. Another super-super-cluster structure, which includes the Corona Borealis super-cluster, emerges from the arm moving to the left. In the south of Venatici clouds in the lower right corner of the image a part of the coma super-cluster can be seen. Virgo super-cluster lies in the south of the void (outside the image boundary).

Super-super-cluster

Fig.3 The Canes Venatici super-super-cluster, which appears from the void in the left of fig.2, is itself a spiral structure spanning an area more than 15 deg x 15 deg in the sky. In a similar way as the super-super-clusters emerge from the Bootes void, super-clusters emerge from the super-super-clusters. As in the case of the entire universe there exists a three-armed spiral that drives the evolution of the super-super-cluster. Coma and Virgo super-clusters emerge from the south of Canes Venatici. The size of the image is hundreds of millions of light years.

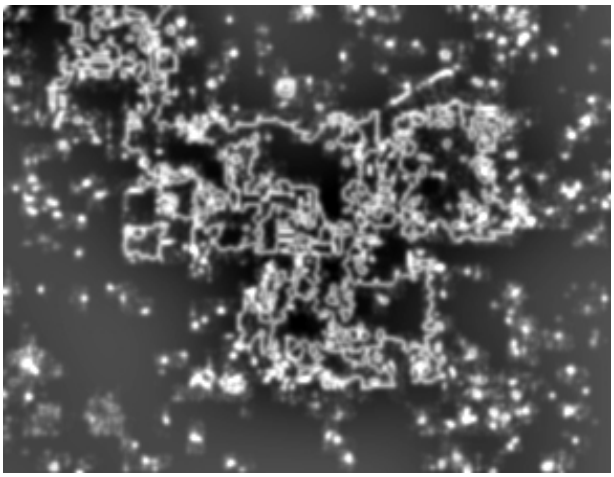
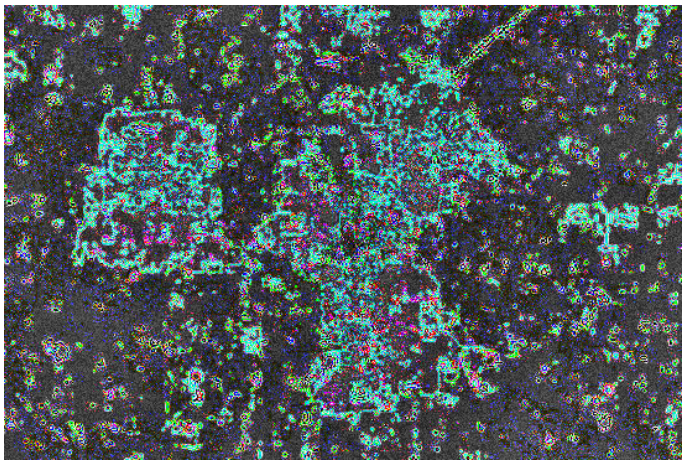
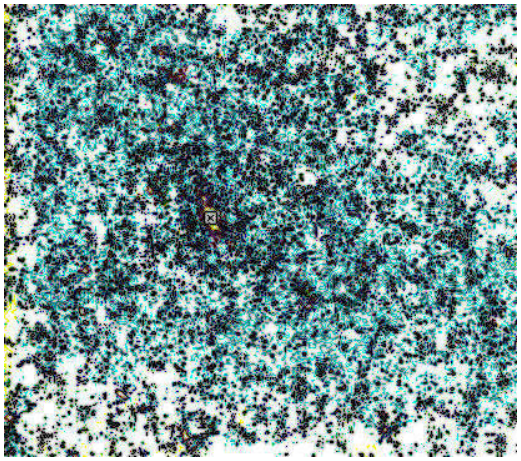


Fig. 4 Super-super-cluster structure in Ursa Major going over to Draco. This spiral structure appears in the north of Canes Venatici and seemed to be joined by spurs known as Ursa Major supercluster. It is possibly a structure ejected from Canes Venatici. Such a structure consists of many superclusters, which appear as clumps in the spiral arms.



Super-cluster

Fig.5 Supercluster in the constellation of Serpens with the Abell 2029 cluster at the center. The galaxy at the centre of the structure is the largest galaxy known and is several million light years in size. The super-cluster size is about 100 million light years. Galaxies in Abell 2029 can be seen to be moving away from the centre in fig.6.



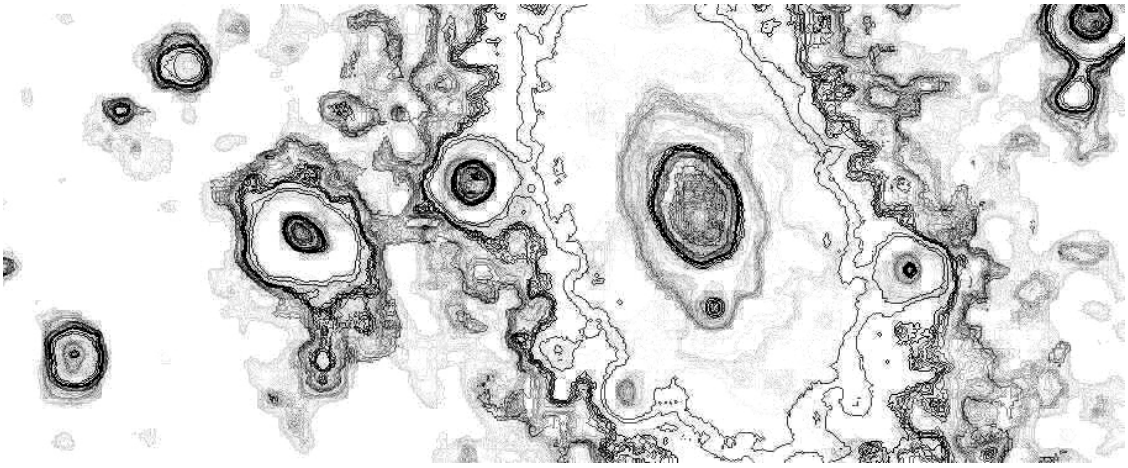


Fig. 6 The ejection of galaxies from IC 1101 situated at the centre of the Abell cluster 2029 (fig.5). A spiral sits at the very deep heart of the cluster (see fig. 7 for closeup).

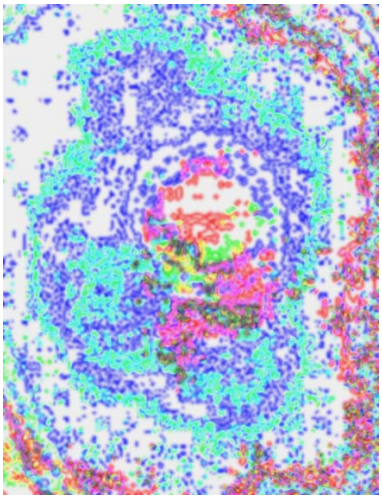
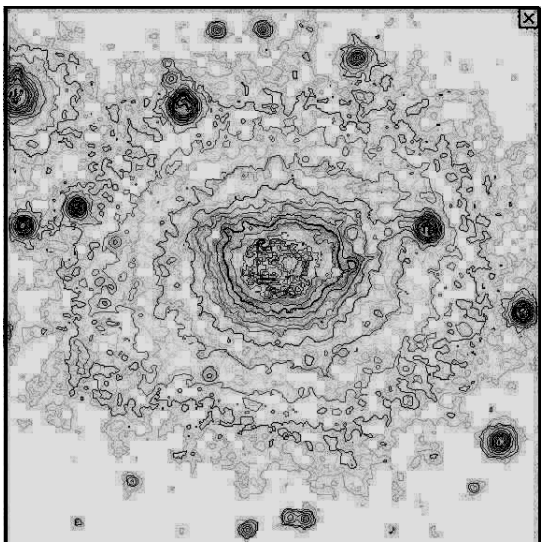


Fig. 7 **Spiral ejecting galaxies from the heart of the galaxy cluster**
A spiral (pink arms) sitting at the very deep heart of Abell 2029. The bulges in the north and the south are the newborn galaxies about to separate from the nuclear spiral (false colors).

Galaxy cluster

Fig. 8 Ejections of galaxies from the centre of the Perseus cluster, which harbors a spiral in its center as seen in fig.9.



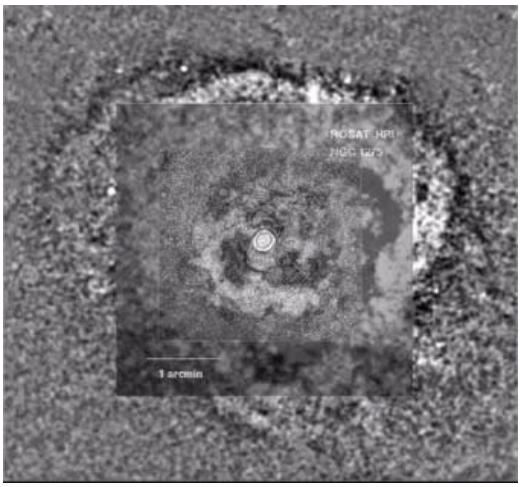


Fig. 9 A spiral inside a ring exists inside the centre of the Perseus cluster. At the heart of this spiral lies a huge elliptical galaxy known as NGC 1275 (circular white dot). At the very deep heart of this galaxy, again lies another spiral shown in fig.10.

Fig. 10 A three-armed spiral at the heart of the massive structure in the center of the Persesus cluster (fig.9)

Galaxy

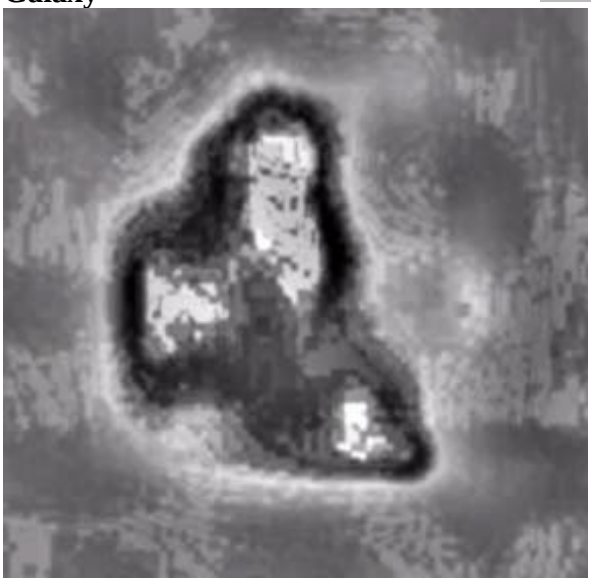


Fig.11 The x-ray image reveals a spiral at the heart of our own Milky Way galaxy. Clusters of massive helium stars are ejected from the center of this spiral which is about two light years in size. At the center of this spiral again another spiral can be onserved. This microspiral structure is shown in the image 12.

Fig.12 A micro-spiral at the heart of the spiral shown in fig.11 is the site of ejections of clusters of massive helium stars. The star cluster of newly born stars known as IRS 16 can be seen to be emerging from the center of the micro-spiral which is about one and half light-month in size. The position marked by two arrow heads (SgrA*) is the place from where intense radio emissions are observed. The scientific community argues that there exists a black-hole at that position. It does not seem to be the case. The activities at the center of the Milky Way galaxy is driven by the spirals which are fractally embedded.

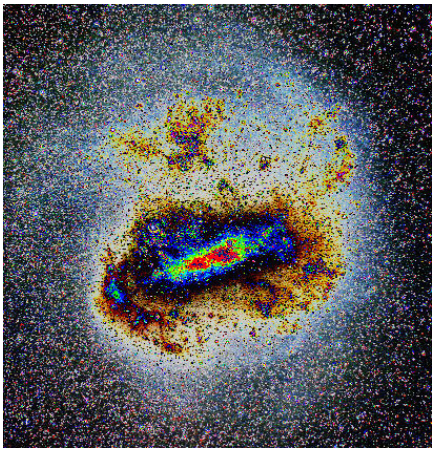


Fig.13 A small galaxy, which is ejected from the Vela- Canis Major region of the Milky Way galaxy and known as Large Magellanic Cloud (LMC), shows ejections of star clusters. The size of this small galaxy is 15 000 light years while our Milky Way is about 100 000 light years big. Many of these star clusters form from filamentary spiral structures as they evolve. The ejections of such spirals are shown in fig.14.

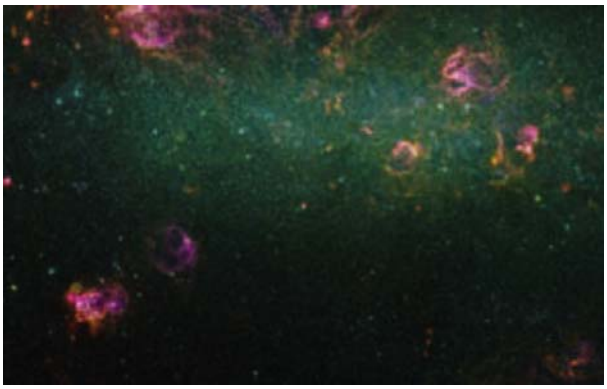


Fig.14 Ejections of spiral filaments from LMC center. The galaxy appears as faded blue-greenish color in the upper part of the image. These spirals evolve while creating star clusters in their wombs. In the north of the spiral, which can be seen in the upper left side of the picture, lies the largest star cluster R136 consisting of millions of stars (outside the image boundary).

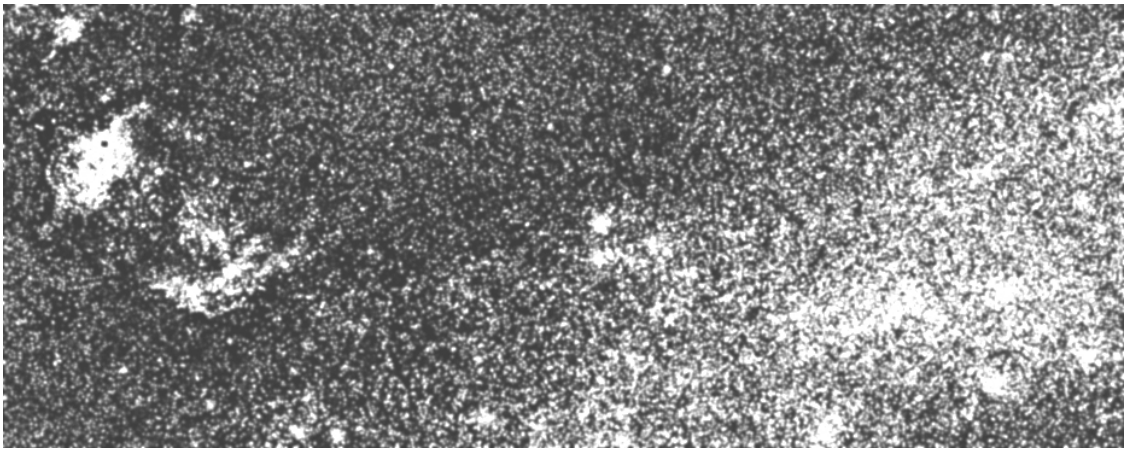


Fig. 15 A more detailed view of the ejection of a chain of spirals from the centre of the Large Magellanic Cloud. R136 (not seen in the picture) lies in the end of the chain curving upward towards the left.

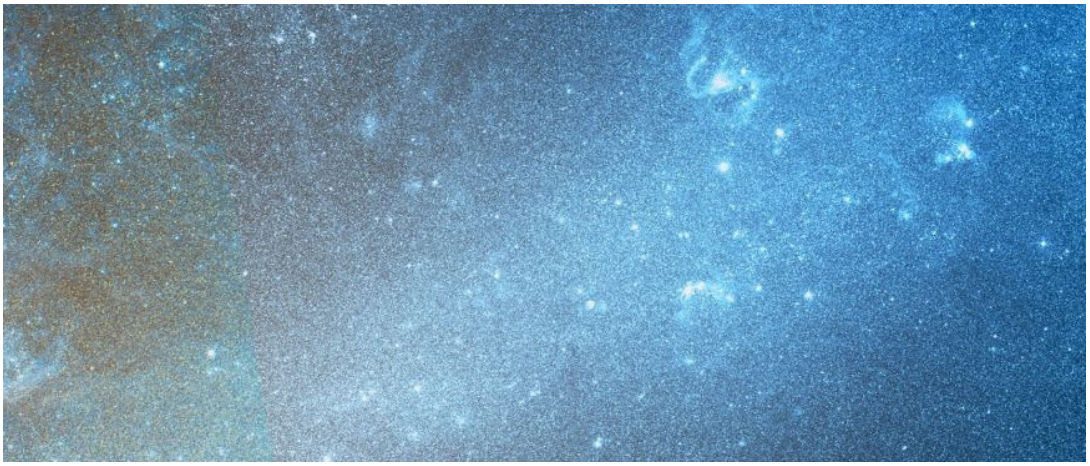


Fig.16 A similar ejection from the right side of the LMC center. The spiral to the right in the upper part of the image looks more like a galaxy. A closer look at this structure is shown in fig.17.

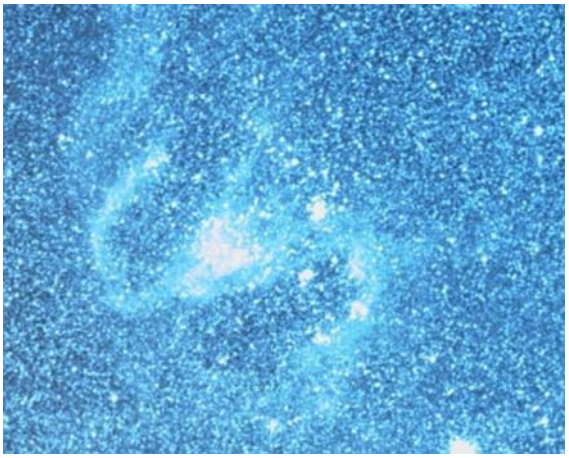


Fig.17 The image shows the way large star clusters form at the core of the spiral and smaller clusters develop in the spiral arms. As the spiral will evolve it will wind up the spiral arms more tightly around the core, while ejecting smaller star clusters, which are being born in the arms.

Globular clusters

Fig.18 The globular cluster M13 in the constellation of Hercules is 150 light years in size. It contains hundreds of thousands of stars. A spiral lies at the heart of this cluster and ejects stars from the centre.

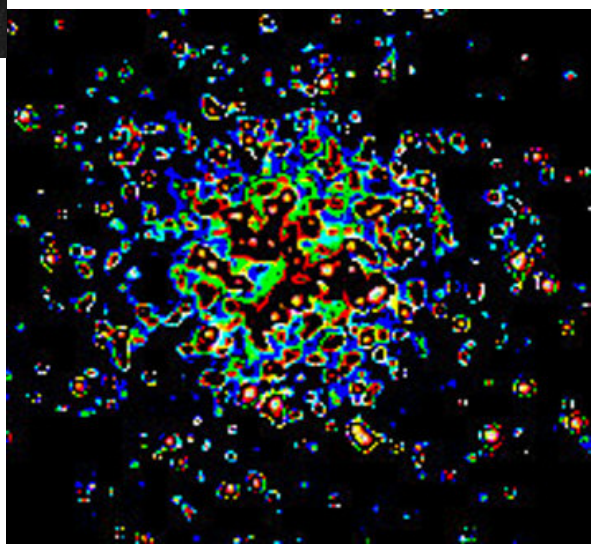
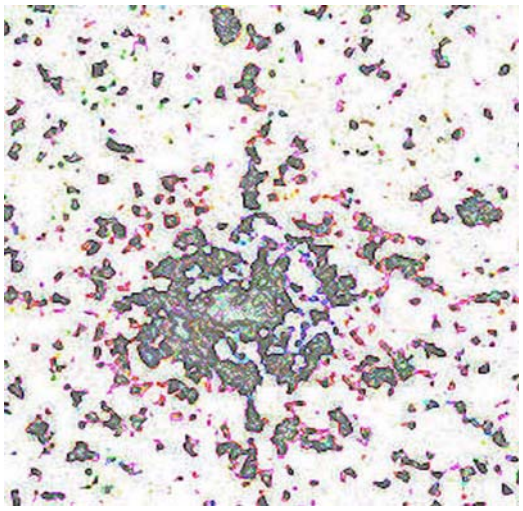


Fig. 19 The spiral at the heart of the globular cluster M13 shown in fig.18



Stars and planets

Fig.20 The structure seen in a sun like star in the constellation of Pegasus, called 51 Pegasi where planets have been discovered. This is very similar to what one sees in the centers of larger cosmic structures like super-clusters, galaxy clusters, galaxies etc. The stars too eject smaller bodies, which become the planets. In the middle along the upper edge and near the middle of the right side edge of the image one can see these planetary structures.

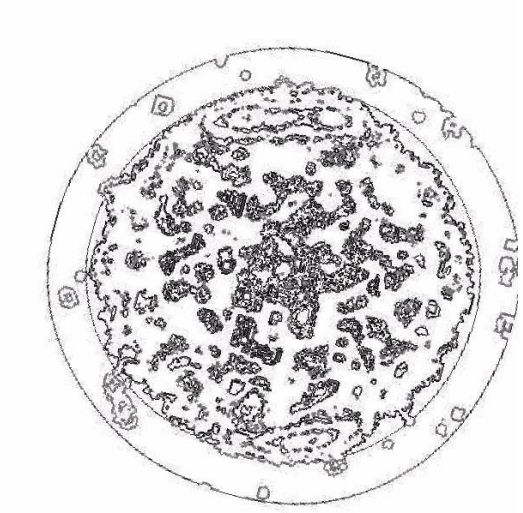


Fig.21 In the centers of the planets too similar structures can be observed. The planets also eject smaller bodies as can be seen in the lower left side of the picture of Jupiter taken in x-ray and then enhanced by digital technique.

Fig.22 Exploding stars may reveal three-armed spiral as in the center of Tycho supernova, which exploded in November 1572 and could be seen as a bright object in the sky in daylight for more than two weeks.

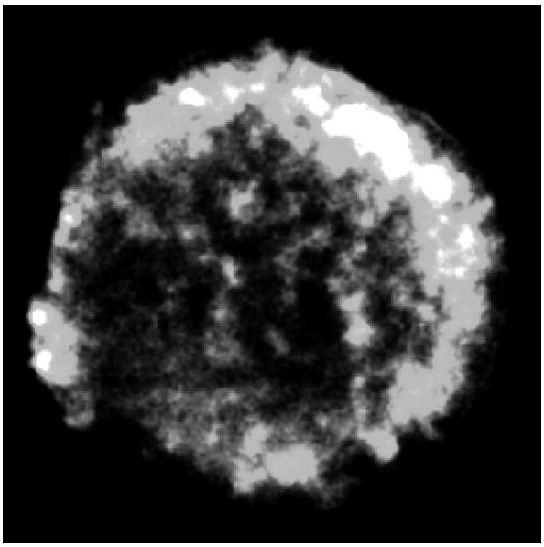


Fig.23 Planets develop from ejected three-armed spirals, as the stars themselves do, and may turn into very compact 3D structures where the three spiral arms twist to embosom a core as could be seen in Pluto, which is a cold frozen world.

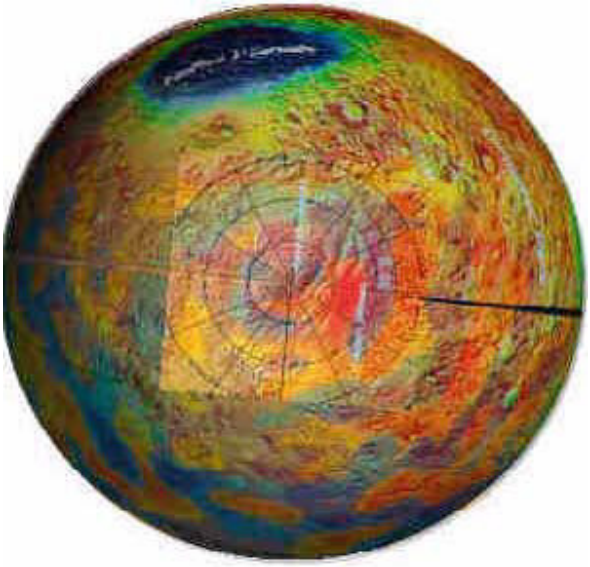


Fig.24 The three armed spiral in the southern hemisphere of Mars. The volcanic outflow from the southern pole has created ring like structures around the southern hemisphere of Mars surrounding the polar spiral structure.

Comets

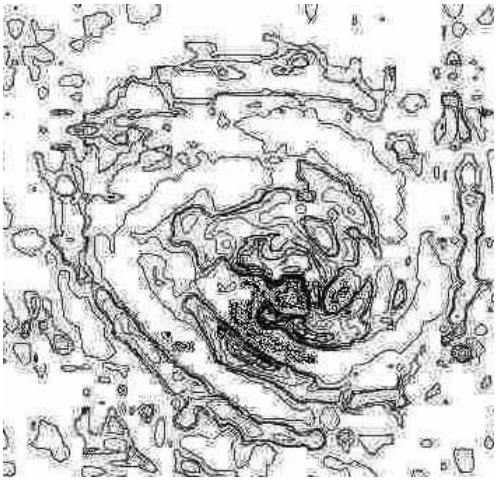


Fig. 25 Nucleus of Hale-Bopp comet which appeared in 1995 and was visible in the sky for 18 months. It is the greatest comet seen in the recent time. One can see the three-armed spiral structure in the center of the comet, which ejects dust and gas and creates a two armed spiral structure, like a spiral galaxy, as it rotates. The size is around 50 kilometers.

Conclusion

I have demonstrated the existence of the universal mechanism of structure formation driven by a three-armed spiral existing inside all cosmic bodies starting from the size of the universe of many billions of light years in dimension to planets and comets down to sizes of tens of kilometers.

One can only speculate to how small dimensions this universality may extend. The spirals are seen in the atmospheres of planets like Jupiter and our own Earth. It is also visible on the crusts of the planets. The entire continent of Asia is designed with mountain chains forming several spirals surrounding the Tibetan Plateau and the Tarim Basin. When one studies the formations of the mountain ranges one gets mesmerized by the amazing scenes where spirals play integral parts in forming structures to the level one may like to study.

Fig. 26 The spirals around the Tibetan plateau and Tarim Basin. One of these spiral arms has formed the Himalayan range.

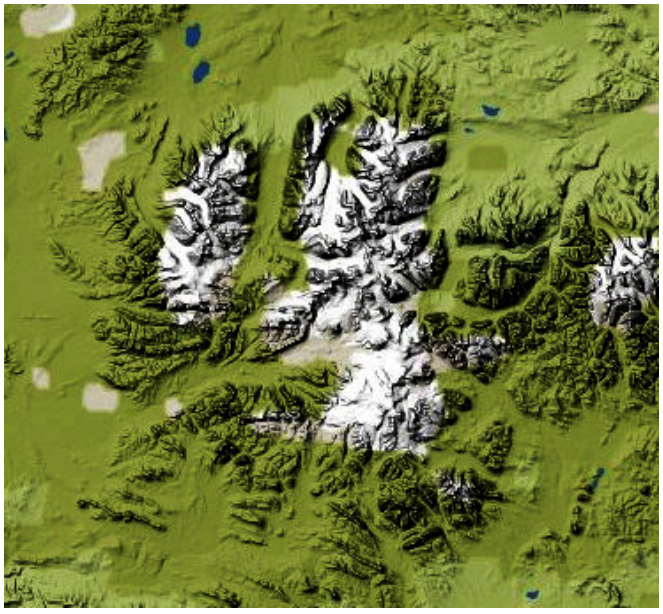
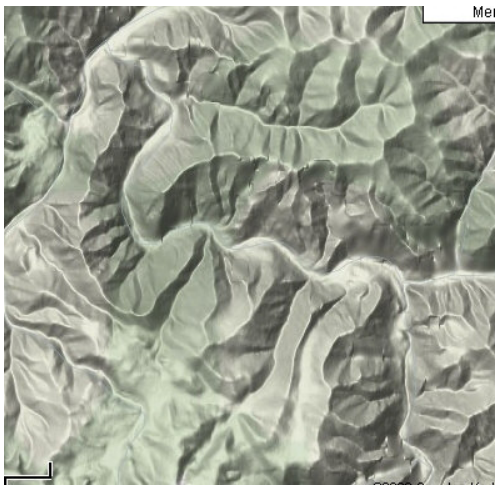


Fig.27 The spiral near the center of the Tibetan plateau (roof of the world) made of mountains of about 6000 meters high. The size of the spiral in the image is about 50 kilometers in diameter.

Fig.28 Spiral in the Altai mountains of size 10 kms. The mountains are 1500 – 2200 meters high.



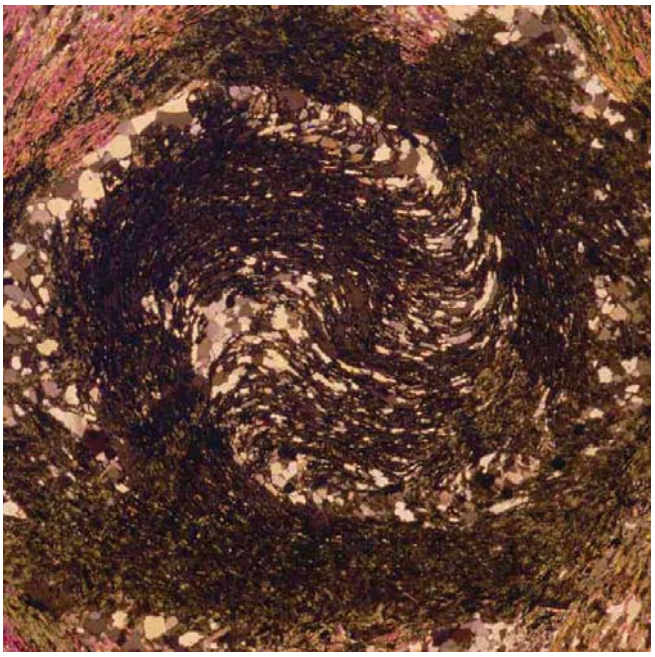


Fig. 29 Spiral formed in metamorphic rock in the Himalaya of the size of meters.

Similarly spirals are abundant in the biological world in sizes down to millimeters and microns.

One may wonder why the structure seen at the heart of the universe, which is billions of light years in size, appears in all scales in both the living and the non-living worlds?