

NEW SOLAR AND GALAXY FORMATION KNOWLEDGE

By Natural Philosopher Ivar Nielsen

nielsen.ivar(at)gmail.com

CONTENTS

- 1. Abstract of New Solar and Galaxy Formation Knowledge.**
- 2. Basic Galactic Characteristics.**
- 3. Barred and Spiral Galaxy Analysis.**
- 4. Gravitationally aligned orbits.**
- 5. New Theory of Evolution.**
- 6. New Knowledge of the Solar System Origin.**
- 7. New Knowledge Indications.**
- 8. Predictions.**
- 9. Discussion.**
- 10. Conclusion**
- 11. Links**

Abstract of New Solar and Galaxy Formation Knowledge

Standing cosmology theories and hypothesis are largely based on the modern "single points of views" and on some older theories that doesn't fit the later modern discoveries.

The 3 basic electromagnetic forces do not come to their right in the cosmological research and they are by large suppressed by the old Newtonian theories and the newer Einsteinan theories and hypothesis.

- It is very odd that traditional modern physicists and cosmologists don't take offspring in the well known facts from the 3 basic electric forces instead of working with the supposed 4.th force of gravity, which is far from understood.

The existent theories seem to lack both dynamic and cyclic descriptions instead of the static point of view.

The conventional explanation for the formation of our solar system and galaxies, etc. are that gravity collapse gas and matter together, and where gases become stars that later explode and create planets in a solar system, but there may be another explanation? More facts and a thorough analysis of these theories suggest that it may behave even much different. The purpose of this article is to see if there may be existing facts which should be reviewed by the discovery of significant new indications of the formation is our solar system is formed by a process inside the center of our galaxy, as well as a new hypothesis for galaxy formation and the formative movements in the 2 basic types, Spiral Galaxies and Barred Galaxies.

Main Hypothesis 1: The hypothesis is to show that galaxies are not just galaxies but different in the way that movement in Spiral Galaxies go inward toward its center, opposite Bar Galaxy movements that go outward from the center as in our Milky Way, where the main hypothesis also is that our solar system formed from the Milky Way's center and has slowly moved out

into the galaxy's arm where it is now located and accordingly to the hypothesis predictions will slide further into the galaxy's halo. **(Prediction 01)**

It is obviously very important to relate very open about the potential indications which may come into consideration and not reject them in advance because "we know something else about various cosmological conditions and "the laws say this and that." One should for a moment forget what is "safe and sure" and "so it has long been adopted" and start fresh from the possible indications that may appear.

The article is compiled with some information from reputable facts which are commented on and possible **#Indications** confirming the hypothesis numbered in bold font and treated in the Discussion. **#Predictions** are marked with, bold font, and numbered.

I am aware of the lack of hypothesis calculations, which is left for readers to do for themselves.

02. Basic Galactic Characteristics

The appearance of Spiral Galaxies is generally a soft, "woolly" appearance of the arms with a very bright center. The age distribution of stars of this type is that the oldest are closest to the center and the youngest out of the halo. There is a large formation of stars in the center and less in the halo.

Barred Galaxies (as our Milky Way) appearance is first and foremost bars emanating from the galaxy center and an appearance of more sharp arms. The age of stars in this type shows that the youngest stars are found inside around the Milky Way bulge and the oldest out in the Milky Way's halo. Barred Galaxies are not as bright as Spiral Galaxies and there is still a star formation in the center, but not as extensively as in Spiral Galaxies.

The age distribution of stars in both types indicates that there is a creative movement inward or outward which is specific to each type. (However, in both types is a "local" site formation due to reactions to the basic formative movement, creating smaller formations during the movement).

Based on the theory of the outgoing movement of these barred galaxy types, we see that both bars goes out from the center and out at both ends, where we can observe a very 90 degree abrupt bending where the galaxies arms starts. This appearance suggests that there has been a sudden explosive movement outward, and because of the current rotation in the galaxy, make a 90 degree bend where the larger spheres of gasses and matter (which become Stars and planets, etc.) flows into the galaxy's surroundings after the basic formation in the center of the galaxy has taken place.

It is important to point out that both types of galaxies form stars and even mini-galaxies in the inwards and outwards formative process in the halo's.

Because of the outward movement in Bar Galaxies, resulting in successive loss of the velocity ability to form stars, there will be a lower formation in the halo of a Barred Galaxy compared to a Spiral Galaxy **(Prediction 02)**

03. Barred and Spiral Galaxy Analysis

Barred Galaxies

http://en.wikipedia.org/wiki/Barred_spiral_galaxy

A barred spiral galaxy is a spiral galaxy with a central bar-shaped structure composed of stars. Bars are found in approximately two-thirds of all spiral galaxies.

AD 1: **Indication 01.** The bars consist of stars. The hypothesis says that there is a movement out from the center and out through the bars where protostars and protoplanets, etc. flows into the bars and further out into the galaxy's surroundings.

Bars generally affect both the motions of stars and interstellar gas within spiral galaxies and can affect spiral arms as well.

AD 2: **Indication 02.** Bars have "an effect" on the spiral arms in the galaxy, ie they have a formative connection with the arms.

Barred spiral galaxies apparently predominate, with surveys showing that up to two-thirds of all spiral galaxies contain a bar.

The current hypothesis is that the bar structure acts as a type of stellar nursery, fueling star birth at their centers.

AD 3: **Indication 03.** The barred structure acts as a birthplace for stars.

The bar is thought to act as a mechanism that channels gas inwards from the spiral arms through orbital resonance, in effect funneling the flow to create new stars.

AD 4: The gases are not channeled toward the center via the bars, but out from the center.

The creation of the bar is generally thought to be the result of a density wave radiating from the center of the galaxy whose effects reshape the orbits of the inner stars. This effect builds over time to stars orbiting further out, which creates a self-perpetuating bar structure.

AD 5: **Indication 04.** It cannot be said much clearer to fit the hypothesis of the outgoing movement in Barred galaxies as our Milky Way. The movement goes from within and out. The stars and planets and everything with them, are born directly out from the barred Milky Way centre.

And when the movement goes outwards, everything in our galaxy continue to move further out in the surroundings of the galaxy and create a pattern of motion which is related to the swirling center velocity. (**Prediction 03**)

Bars are thought to be a temporary phenomenon in the life of spiral galaxies, the bar structure decaying over time, transforming the galaxy from a barred spiral to a "regular" spiral pattern.

AD 6: **Indication 05.** This is correct.

When the formation of a bar galaxy subside, (bar galaxies is said to be mature galaxies) there will be formed fewer and fewer stars out from center and the bars will vanish.

Past a certain size the accumulated mass of the bar compromises the stability of the overall bar structure.

Barred spiral galaxies with high mass accumulated in their center tend to have short, stubby bars.

AD 7: **Indication 06.** This confirms **Indication 05** very well.

Since so many spiral galaxies have a bar structure, it is likely that it is a recurring phenomenon in spiral galaxy development.

The oscillating evolutionary cycle from spiral galaxy to barred spiral galaxy is thought to take on the average about two billion years.

AD 8: **Indication 07.** This confirms my hypothesis that a Spiral Galaxy changes to a Barred Galaxy via an inward going movement in the Spiral Galaxy to an outwards going movement in the Bar Galaxy. (**Prediction 04**)

Recent studies have confirmed the idea that bars are a sign of galaxies reaching full maturity as the "formative years" end.

AD 9: Confirms **Indication 07.**

Spiral Galaxies

http://en.wikipedia.org/wiki/Spiral_galaxy

A spiral galaxy is a certain kind of galaxy originally described by Edwin Hubble in his 1936 work *The Realm of the Nebulae* and, as such, forms part of the Hubble sequence.

Spiral galaxies consist of a flat, rotating disk containing stars, gas and dust, and a central concentration of stars known as the bulge.

These are surrounded by a much fainter halo of stars, many of which reside in globular clusters.

AD 1: **Indication 08.** The star formations take place when the inwards turning motion connects gas and dust in an accelerated and denser spiral-movement that generate more and more energy to the star formation. That is why the density increases closer to the spiral galactic centre.

Spiral galaxies are named for the spiral structures that extend from the center into the disk.

The spiral arms are sites of ongoing star formation and are brighter than the surrounding disk because of the young, hot OB stars that inhabit them.

AD 2: This confirms a dynamic movement in all galaxies. And therefore younger and older stars can be found locally in the picture of the overall tendency of older younger stars in the halo of the spiral galaxy and older closer to the galactic centre. (Visa versa with the Bar Galaxies)

Roughly two-thirds of all spirals are observed to have an additional component in the form of a bar-like structure, extending from the central bulge, at the ends of which the spiral arms begin.

AD 3: Having a dynamic cyclic movement, all kind of increasing and decreasing formation can be found.

Our own Milky Way has recently (in the 1990s) been confirmed to be a barred spiral, although the bar itself is difficult to observe from our position within the Galactic disk. The most convincing evidence for its existence comes from a recent survey, performed by the Spitzer Space Telescope, of stars in the Galactic center.

Together with irregular galaxies, spiral galaxies make up approximately 60% of galaxies in the local Universe. They are mostly found in low-density regions and are rare in the centers of galaxy clusters.

AD 4: **Indication 09.** This indicates that it is a universal formation movement, going inwards into the increasing formation process in the centers.

More young stars in spiral arms

The arms appear brighter because there are more young stars (hence more massive, bright stars). These massive, bright stars also die out quickly, which would leave just the darker background stellar distribution behind the waves, hence making the waves visible.

AD 5: **Indication 10.** Confirmation of the AD 2 above. Proto Stars and Planets formed in the outskirts of the spiral galaxy can be transformed several times along the path towards the spiral centre.

While stars, therefore, do not remain forever in the position that we now see them in, they also do not follow the arms. The arms simply appear to pass through the stars as the stars travel in their orbits.

AD 6: **Indication 11.** This is an excellent confirmation of the dynamic movement where the already formatted and heavier stars are moving different compared to the less denser gas and dust in their surroundings.

04. Gravitationally aligned orbits.

http://en.wikipedia.org/wiki/Gravitationally_aligned_orbits

In a recent paper published in Proc. Roy. Soc. Charles Francis and Erik Anderson showed from observations of motions of over 20 000 local stars (within 300 parsecs), that, contrary to density wave theory, stars do move along spiral arms, and described how mutual gravity between stars causes orbits to align on logarithmic spirals. When the theory is applied to gas, collisions between gas clouds generate the molecular clouds in which new stars form, and evolution towards grand-design bisymmetric spirals is explained.

AD 1: **Indication 12.** The gravitational movements doesn't take place via the consensus gravity collapse theories, but via a cosmic charge making spiraling movements in a cosmic molecular cloud, creating magnetic fields and circuits that concentrates gas and matter, heating; sorting and melting gas and dust together, making larger spheres of gas and matter that becomes stars and planets etc. when slung out from the centre of a galaxy. (**Prediction 05**)

05. New Theory of Evolution

http://en.wikipedia.org/wiki/Spiral_galaxy#New_theory_of_evolution

In April 2011 a presentation to the Royal Astronomical Society's April 2011 National Astronomy Meeting in Llandudno, Wales by postgraduate student Robert Grand, suggested that spiral arms do not rotate rigidly at a constant angular velocity about the galactic centre.

AD 1: **Indication 13.** This also confirms **Indication 04.**

This contradicts a 50 year old theory called Spiral Density Wave Theory (SDWT), which states that the spiral arm pattern we see is actually a wave pattern that rotates independently of star and inter-stellar matter that follow the standard rotation curve of the galaxy.

Stars that move faster than the arms can overtake them and move through them. Consequently, stars outside this radius move slower than the arm and fall behind.

AD 2: **Indication 14.** Confirmation of the dynamic star velocity and the formation process in Spiral- and Barred galaxies which differs because of the inwards movement in the Spiral galaxies and the outwards movement in the Barred Galaxies. **(Prediction 06)**

Rather than a long-lived rigidly rotating wave pattern found in SDWT, Grand's simulations suggested that the arms rotate with a pattern speed that decreases with radius, and that they are transient features, with some arms breaking up and new ones being formed over periods of 80 to 100 million years.

AD 3: **Indication 15.** Normally I don't care much about computer simulations programmed with the wrong mathematics based on wrong ideas of cosmos, but here they get something very right out from the right direct observations.

AD 4: Confirms the overall hypothesis of star- and galaxy formation.

Instead of stars rotating independently of the arm pattern, they co-rotate at every radius, as the arm pattern speed traces very well the rotation curve of matter.

The destruction of the arms is due to a declining pattern speed, which means that the arms begin to wind up and so break to avoid the well-known Wind-Up problem.

AD 5: **Indication 16.** The continued destruction of the arms confirms both an inwards motion in the Spiral galaxies and the outwards motion in the Barred galaxies. **(Prediction 07)**

This pattern of arm formation and destruction has not been observed in real galaxies, mainly because this pattern would take tens of millions of years to observe from start to finish.

AD 5: Accordingly to my hypothesis this is very obvious regarding the inwards Spiral galactic motion and the outwards Barred Galactic motion. It is just a question of classifying the galaxies and their spirally outwards or inwards motion.

As observers, we can only observe what is a relative "snapshot" of a galaxy's evolution, and since there are always new arms forming as older ones die, there is always a spiral pattern present.

AD 6: Read AD 5.

Therefore, a simple glance at a galaxy will not yield evidence either way. A real observational contribution will come from the Gaia satellite, due to be launched in the coming years.

AD 7: Again: Just classify the actual galaxy as an inwards turning Spiral galaxy or an outwards turning barred galaxy. This is all that is needed.

06. New Knowledge of the Solar System Origin

<http://videnskab.dk/miljo-naturvidenskab/dansk-opdagelse-giver-vigtig-ny-viden-om-solsystemets-oprindelse#comment-1922>

The gigantic cloud of dust and gas that formed our solar system, was originally quite regular in its distribution of molecules and isotopes. The discovery means that the models of our solar system's origin must now be changed.

AD 1: **Indication 17.** The even distribution of molecules and isotopes confirms my hypothesis that the solar system's formation inside the galaxy's center has contributed to this uniformity, and that the solar system only slightly may be affected by any subsequent injections of isotopes.

It must be said though, that of course there are different gases and substances on the different planets because of the simple nuclear sorting and melting during the formation process from within the galaxy center, and out in the bars and arms.

When a star dies, it sends large quantities of gas and material out and which gathers in large clouds. When the cloud reaches a certain size, or has a certain mass, it collapses on its own gravitational field. It begins to rotate faster and faster, causing the cloud to flatten out and shaped like a disc.

AD 2: **Indication 18.** Contradiction of my hypothesis about the solar system formation, where I rebuttals here Indication 12.

For 4.567 billion years ago, this meant the start of the formation of our solar system. Out of a huge cloud of gas and dust, our young sun formed and subsequently created the Earth and other planets.

AD 3: **Indication 19.** Contradiction. Read my arguments in **Indication 12.** My hypothesis about the formation of the solar system predicts that this was formed from the center of our galaxy and all parts of the solar system therefore must have roughly the same age.
(Prediction 08)

New research from Denmark shows now that the cloud containing materials have not looked as previously believed.

"The last 30-40 years have thought that the cloud containing molecules were unevenly distributed. But our research shows the opposite. At first the cloud was quite homogeneous, "says Associate Professor Martin Bizzarro from the Geological Museum.

AD 4: **Indication 20.** AD: Indication 20 Confirming the hypothesis that the solar system was formed in a fairly comprehensive process in the galactic center; out into the bars and out into the galaxy's arms.

Material from the very young solar system

Most material from the cloud eventually from the sun. The remaining dust clumped together when it bumped against each other and formed gradually differentiated asteroids and planets we know today.

AD 1: **Indication 21.** Contradiction. See explanation in **Indication 17**

The original differentiated asteroids that were formed, has hardly changed since then. Meteorites from them are quite primitive and contain dust and particles that come from the very beginning of our solar system. These meteorites called chondrites, and its titanium isotopes in them, like Martin Bizzarro and his group have studied.

AD 2: Indication 22. The original differentiated asteroids that were formed, has hardly changed since then confirm the main hypothesis of a nearly complete formation as described above.

The two isotopes, titanium and titanium-46-50 found in different amounts in different meteorites on Earth and on Mars. Isotopic were originally formed in different stars and comes not from the same place. They were spewed from these stars and ended up in the cloud that our solar system was formed from.

AD 3: **Indication 23.** for confirmation of my hypothesis with 2 options: 1: the isotope was early present as explained in the Indication 20 and others, and were distributed according to the basic composition at the formation process as described in **Indication 17**, and 2: That the isotopes has been due to subsequent injection through cosmic explosions.

AD 4: Option 1 seem to be the more likely since these isotopes probably would be more homogeneously present in the solar system formation in the galactic centre.

More stars contributed to our solar system. This means that our solar system formed from material from various dead stars. So far, it is therefore assumed that the gas and dust cloud in the beginning was not mixed well together.

AD 5: **Indication 24.** Contradiction. Wrong conclusion: The uniformity can be explained by **Indication 17**

07. New Knowledge Indications

1. **19 Indications** confirms the new knowledge claims.
2. **5 seemingly contradictions** which is contra argued in the AD and **Indications**
3. Some few AD explains either differences or confirmations.

08. Predictions

1. The Galaxy formation is a cyclic movement going from a Spiral Galaxy formation into a Barred Galaxy.

2. Our Solar System was not created in a local presolar cloud.

3. The Solar system was created as a process in an outwards going movement from the centre of our galaxy, further out in the galaxy bars and out in the Milky Way arms.

4. The Sun; planets and their moons are all roughly at the same age.

5. Only minor changes have happened in the solar system after leaving the Milky Way centre.

6. Only minor additions of isotopes from outer space have been added to our Solar System because of the presolar formation in the galaxy centre process.

09. Discussion.

1. The amount of **Indications** and the logical arguments clearly tell that the present theories of the formation of our Solar System cannot be correct.

2. The same goes for the theories of galactic formation.

3. In some way the theories are right. The formation of both the Solar System and partly of the galactic formation regarding Spiral Galaxies is not far away.

4. It all starts with a contraction of a molecular cloud. Not by "gravity and collapse" but with a dynamic process where a cosmic charge sets the molecular cloud in a swirling motion in magnetic fields and circuits, which concentrates; heats up and sorts out gas and matter until it is sorted and melted together in a nuclear formation process in the centre of the Spiral Galaxy.

5. After sorting and melting in the Spiral Galaxy centre, the sorted larger spheres of gas and matter become stars and planets etc. when reaching the critical mass in the centre. Reaching this mass, the coming stars and planets are slung out from the galaxy centre. This process creates the Bars in the original younger Spiral Galaxy that thereby has matured to a Barred Galaxy, giving birth to everything in our Milky Way galaxy.

6. That is: Our Solar system was created directly out from the Milky Way centre in a process that originally started off with an inwards moving Spiral Galaxy turning till an outwards moving Barred Galaxy.

7. This also explains the statements of "younger and older galaxies".

8. The rigid "gravity theories" obscures for having the logical formation process explanation. It is very strange that cosmologists are foremost working with an old setup of gravity who nobody really can explain, whereas the other 3 basic known forces are not in play in the modern cosmological formation theories.

10. Conclusion

1. The amount of **Indications** and confirmative remarks (AD) clearly make their points against the modern theories of solar and galactic formation.
2. The rigid "gravity theories" obscures for having the logical formation process explanation.
3. It is very strange that modern cosmologists are foremost working with an old setup of "static gravity models" who nobody really can explain, whereas the other 3 dynamically known basic forces are not in play in the modern cosmological formation theories.
4. Using the 3 basic known dynamic forces, the scientists can leave the gravity ghost at the metaphysics, together with all kind of strange theories of dark this and that metaphysics - and the following constructed-to-the-occasion-meta-mathematics, can be left out too.
5. And the same also goes for the very strange Big Bang illogical theory, which cannot be a theory at all since it cannot be falsified and causally explained.

11. Links

<http://www.steady-state-universe.net>