Explanation of the galactic rotation curve (Appendix 1)

Appendix 1 is the following article:

Explanation of the galactic rotation curve, that wil be put after this appendix 1, now i demonstrate the rotation period with a rotation period equation, the demonstrate of this equation is in the article.

Appendix 1

To demonstrate that it has little or no dark matter in a galaxy,

I check with the rotation curve of a galaxy form very simple, or simply drive without a galactic bulge, it allows me compare my analysis to that of a galactic disk only, here dabord the link that gives the rotation curve for the galaxy Messier 33:

http://gnralsujet23.blogspot.com/2011/11/ab.html

The first part of the curve is a straight line, it does not doubt that part of curve, the velocity V varies distance (radius) R of the galaxy, then the density for this region disk is constant, and for this part, it only remains to verify the constant of proportionality is correct for the equation of the period T as follows:

$T = \{[2 (pi)] / (Gd)\}^{1/2}$ (equation for a disc of uniform density),

you can try the average density of our galaxy because we know that density toward the center of galaxies is much more dense elsewhere on the disk, as this galaxy (Messier 33) is probably less dense than our Galaxy (1 to 3.5 times less dense approximately), we can reasonably estimate the density toward the center of this galaxy, as that of our own galaxy which is .1 Solar masses per cubic parsec at worst can be multiplied by the square root of 3.5 (ratio of the maximum density between that of our this galaxy galaxy)

then try d = .1 solar masses per cubic parsec, or:

$d = (6.76769) (10)^{-21}$ kg per cubic meter,

was already obtained for the density, T = 118 million years,

This curve for Messier 33 stops being linear to 1415 kpc and

about 73 km / s, with these two values we obtain a period of

117 807 000 years T = {[2 (pi) R] / V}, or about 118 million

years, about exactly the same value as calculated

theoretically with the formula above, the only possible error comes from

evaluation of the density toward the center of this galaxy.

This shows that the constant proportionalitée the formula above

can not be far wrong.

For the region of the curve is not linear, when there

well as the speed is increasing, we know that for a density

varies as 1 / R, the velocity V varies as the square root of R or as

$R^{1/2}$, in fact this curve is growing a little less, but excluding

zone of constant density, after R = 1415 kpc,

only decreases the density may not be exactly 1 / R, as though

it has no central galactic bulge, it still has a density

important is constant and therefore there is a slight effect

bulb of a zone within a R = 1415 kpc, we can explain

easy to see why the growth rate is not exactly

as $R^{1/2}$.

We also note that growth rate continues beyond the

radius of the galaxy (average radius of 16.6 kpc about)

in fact a constant speed would require a decrease in

density as $1 / R^2$,

and if the density decreases faster than $1 / R^2$, while there is still

same growth speed, but given the volume

considerably around the galaxy, either by considering an area of

some times the radius of the galaxy (beyond the radius), it makes a

large mass and possibly there may be matter

hardly detectable (black) beyond the radius of a galaxy,

However, as we move the center of a galaxy and the matter

hardly detectable (black) is rare, it is normal for a

galaxy is an area of integration of matter and as such it

can consider that a team has successfully integrated a proton

antimatter around a core of heavy atom, substituting one of these

electrons to that of the proton antimatter (which has a negative charge).

Here is the article

Explanation of the galactic rotation curve

Some work suggests that the galactic disk stars in our galaxy have a speed

tangential rotation is almost constant and that since the curve of the speed of

rotation of these stars does not respect the period as Kepler for the planets in our

solar system, then it means there would be more dark matter than matter

ordinary (baryonic) in our galaxy.

It is easy to show that the rotation curve can be explained without the addition of dark matter.

Proof:

For a disk of uniform density whose diameter is much larger than its thickness,

regardless of the error made for the constant of proportionality for the gravitational field E,

the gravitational field which contributes to the centripetal acceleration varies as the radius R is dabord

The most important thing, then, we realize that the tangential velocity of rotation

varies as the radius R, then for the rest is easy:

V = [2 (pi) / T] R, (uniform density disk), V for tangential speed of rotation, T for the period of rotation of the disc, pi approximately equal (3.1416).

As it is known that the density of the disk of our galaxy decreases with distance and solve the riddle of the curve of the tangential velocity of rotation of the stars in the galactic disk of our galaxy, only just now hypothesize that the density of the disk varies as the inverse of its radius or varies as 1 / R, as it becomes apparent that:

for a disc of uniform density:

V varies as [$d^{1/2}$] R, (uniform density disk),

Note that this law also applies to a sphere of uniform density, for example, a galactic bulge which its density is uniform.

But if the density of the disk varies as the inverse of its radius or varies as 1 / R, we have:

V varies as [1 / $R^{1/2}$]R, (density of the disk varies as 1 / R),

V varies as $R^{1/2}$, (density of the disk varies as 1 / R),

Then, as we know that without considering the galactic disk, with distance from the bulb Galactic:

V varies as 1 / [$R^{1/2}$], (distance from the galactic bulge without disc),

It remains only to consider the two effects, namely the effect of the bulb over the effect of the disk, it then found that:

The multiplier effect is exactly equal to the effect divisible.

The multiplier effect is at the end of $R^{1/2}$ of the disk without the bulb,

the effect is divided at the end of 1 / [$R^{1/2}$] of the bulb without the disc

two effects cancel so that is why the curve speeds tangential rotation stars in the galactic disk of our galaxy is nearly a straight line, that's why tangential velocity of rotation of the disk stars in our galaxy are nearly constant.

For an example of the curve tangential speeds of rotation of the stars on a disk Galaxy, I suggest you give the drawing of a rotation curve in the Wikipedia Encyclopedia, Section 2.3 (Modern research), which here is the link:

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

In case the density of the disc does not quite varirait as the inverse of its radius or

as 1 / R, then this curve is not quite a straight line and these speeds would

not quite constant.

It is well known that the density of the disk of our galaxy, varies with its radius.

To demonstrate the tangential speed of rotation for a disc of uniform density whose

density varies with the inverse of its radius, dabord analyze the case of a disk of uniform density,

then we will analyze the case of a disk whose density varies with its radius R, by comparison,

we also analyze the case of a sphere of uniform density.

If the disk of uniform density:

The rotation period of the elements of a disk of uniform density is constant, a period T

constant means that the tangential velocity V vary with the rotation of the disk radius R, or

as wR, where w is the angular velocity and equal:

w = [2 (pi)] / T,

from my studies, I consider that for a sphere of uniform density as a

uniform density disk with a diameter much larger than its thickness, the law

following is valid:

[4 (pi) G] (mass) / (surface) = E = (gravitational field) = (gravitational acceleration),

= (Centripetal acceleration),

in the case of our disk of uniform density:

(Mass) = d [(pi) R^2] (thick)

(Surface) = [2 (pi) R] (thick)

(Centripetal acceleration) = [(V^2) / R]

Since our galaxy contains a bulb important, it contributes to the speed of

disk stars in our galaxy, you just have to try to take account also of the law deKépler

Consideration variation density disc our galaxy;

density on the disk of our galaxy seems to vary as the inverse of the distance R, namely:

d = [d (radius bulb)] / R, (d worth density initial conditions, almost bulb)

R initial = (radius bulb), (provided the initial radius R) we then have a velocity V which vary as $[1 / R^{1/2}]$ R, is varied as $R^{1/2}$,

Proof:

For an object with a small mass that rotates around an object with a mass M much greater in an orbit of radius R, the period squared T Kepler is:

$T^2 = [(4 / G) (pi)^2] (R^3) [1 / M]$ (equation 1),

For the mass M with such a low density at the point where its radius is R,

$M = d [4 (pi) / 3]R^3$ and Equation 1 becomes:

$T^2 = [3 (pi) / G] (1 / d)$, (sphere of uniform density), (Equation 2),

Equation 2 is for a sphere of uniform density, but for a disc of uniform density Equation 2 becomes:

$T^2 = [(2 (pi) / G] (1 / d)$, (disk of uniform density), (Equation 3),

For equation 3 I use the Gauss theorem applied to the gravity of a disk of uniform density and mass M and radius R, whose diameter is much larger than its thickness, just dabord do the following:

M = (constant) [full] E (ds), (Equation 4),

[Full] is to describe an integration, or an amount as gives the field E Gravitational N / kg and that it is constant, then equation 4 becomes:

M = (constant) E [full] (ds), (Equation 5),

as [full] (ds) represents an area equal to:

[Full] (ds) = 2 (pi) R (thick) (Equation 6),

according to Equation 6 and Equation 5, we have:

M = (constant) E [2 (pi) R (thickness)], (Equation 7),

for a disk of uniform density and radius R, mass M equal to:

$M = d [(pi) R^2]$ (thickness), (Equation 8),

according to Equation 8 and Equation 7, we have:

$M = d [(pi) R^2]$ (thickness) = (constant) E [2 (pi) R (thick)]

dR = 2 (constant) E, (equation 9),

if V is the velocity at a distance R, the field is E $(V^2) / R$, because the field E is expressed N / Kg and the centripetal force per unit mass which is also in N / kg is $(V^2) / R$, then:

$E = (V^2) / R$ (Equation 10),

according to Equation 10 and Equation 9, we have:

$dR = 2 \text{ (constant) } [(V^2) / R]$, (equation 11),

to find the constant (constant), it suffices to apply the theorem of Gauss gravitation a planet with a mass M and uniform density with radius R, this gives:

M = (constant) [full] E (ds)

$M = \text{(constant) } E\ [4\ (\text{pi})\ R^2]$

$M / [\text{(constant) } 4\ (\text{pi})\ R^2] = E$, (equation 12),

Here E is the gravitational field in N / kg and equal:

$E = GM / (R^2)$, (Equation 13),

according to Equation 13 and Equation 12, we have:

$M / [\text{(constant) } 4\ (\text{pi})\ R^2] = GM / (R^2)$, (Equation 14),

simplifying the equation 14 and isolating the constant (constant) we get:

(Constant) = 1 / [4 (pi) G], (equation 15),

Equation 11 is:

$dR = 2 \text{ (constant) } [(V^2) / R]$, (equation 11),

according to Equation 15 and Equation 11, we have:

$dR = 2\ [1 / 4\ (\text{pi})\ G]\ [(V^2) / R]$, (equation 16),

V = 2 (pi) R / T, (equation 17),

according to Equation 17 and Equation 16, we have:

$dR = 2\ [1 / 4\ (\text{pi})\ G]\ [4\ (\text{pi})^2]\ [(R^2) / R]\ [1 / (T^2)]$

$d = [2\ (\text{pi}) / G]\ [1 / (T^2)]$

$T^2 = [2\ (\text{pi}) / G]\ (1 / d)$, (Equation 3),

This demonstrates the equation 3.

Reference:

Wikipedia: Milky Way