The strange phenomena of Foucault pendulum and movement laws of celestial bodies

Ji Qi, Sheng Wang, Yin Ling Jiang

Department of physics, School of Electronic Engineering , Northeast Petroleum University, No. 199, Fazhan Road, Daqing, Heilongjiang, 163318, P. R. China. ***E-mail:*** ***qiji8111@yahoo.com.cn***

Abstract: "Ether" is existing? Can say that this is a very important question in physics! A strange phenomenon is found by studying on Foucault pendulum again and again. It is that when Swing ball is located in the north-south direction at the initial time, the rotation angular velocity in the swing plane is relatively large, while Swing ball is located in the east-west direction at the initial time, the angular velocity is much smaller, or even almost no rotation. And, when the ball is north-south swing, the swing state itself can be distorted to clockwise swing; However, when the ball is east-west swing, the swing state itself is hardly changed, or even slightly distorted toward counter-clockwise direction. The experimental phenomenon is in contradiction with the classical theory. The experimental results can prove the existence of another substance in the nature, which is No-Shape-Substance. At the same time, we can well understand the stellar run of peculiar regularity.

Keywords: No-Shape-Substance；Foucault pendulum；Rotation angular velocity；North-south swing; East-west swing；Satellite orbit

As is well known, in 1851, the French physicist Foucault made a successful swing experiment, which will prove effectively that the Earth is in the rotation [1]. Foucault pendulum swing has the following law: In the northern hemisphere, the swing track of the ball is clockwise; In the southern hemisphere; the swing track of the ball is counterclockwise; And the higher is latitudes, the faster is the angular velocity of the swing ball on the rotation plane is faster; On the equator, the swing ball is almost no rotation.

The law of Foucault pendulum movement is well explained by the classical theory, and it is proved that the angular velocity of rotation on the swing plane has nothing to do with the initial conditions. That is, when the ball is the north-south or east-west swing at the initial state, the swing ball should rotate the same angle within the same time.

But through doing Foucault pendulum experiment again and again, it is found that when the ball is north-south swing at the initial state, the rotation angular velocity of the swing ball is relatively large; when the initial conditions is east-west swing, the angular velocity is much smaller, or even the swing ball is almost no rotation. The experimental results are in contradiction with the classical theory. So how to explain this strange phenomenon! how can one understand the law of Foucault pendulum?

1 Interpretation of the Foucault pendulum in the "new physics"[2]

We believe that there is a lot of another state of matter in nature, which is the foundation of movement for all the objects. The Earth is not likely to bring completely the No-Shape-Substance on the earth’s surface, when the earth is translational movement. But when the Earth rotates, it is not easier to bring completely No-Shape-Substance on the earth’s surface. Because the speeds of all the points on the surface are completely different, even though that of a point is different at the different time, when the Earth rotates [2, 3].

Shown in Fig. 1, if the Earth partly drive No-Shape-Substance on the Earth's surface to move due to earth’s rotation, the line speed will be the greater at the Earth's orbit, and the reverse speed of No-Shape-Substance relative to the Earth will be much larger at the Earth's orbit; in near the Antarctic, the Earth's surface speed is the smaller, then the reverse speed of No-Shape-Substance relative to the Earth is also smaller.

Shown in Fig.2, we consider the center as a reference point, because the center position of Foucault pendulum is constant. When the ball is north-south swing in the northern hemisphere, the southern No-Shape-Substance from the center is westward movement relative to the center; the northern No-Shape-Substance from the center is eastward movement relative to the center. Obviously, in the northern hemisphere, the rotating direction of the swinging ball will be driven to clockwise due to the role of No-Shape-Substance.

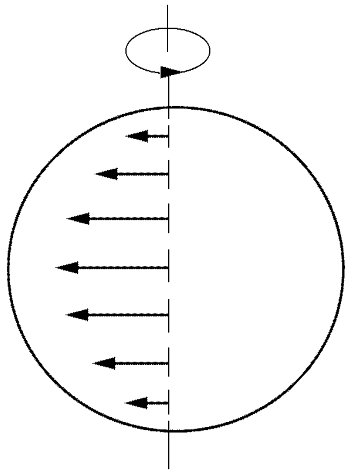

Fig.1 Schematic diagram of No-Shape-Substance's speed relative to Earth surface

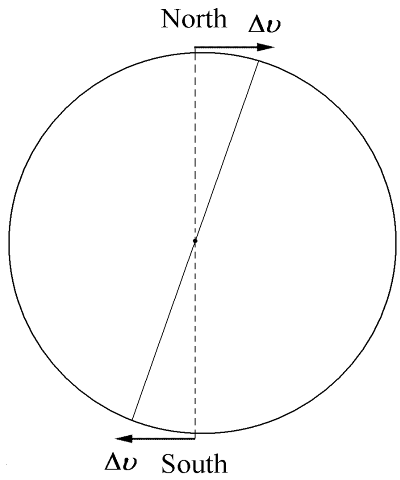

Fig. 2 In the northern hemisphere

As shown in Fig.3, when the ball is north-south swing in the southern hemisphere, the southern No-Shape-Substance from the center is the eastward movement relative to the center; the northern No-Shape-Substance from the center is westward movement relative to the center. Clearly, in the southern hemisphere, the rotating direction of the swing ball will be driven to counter-clockwise due to the role of No-Shape-Substance.

The higher the latitude is, the greater the velocity gradient of No-Shape-Substance is. The angular velocity of Foucault pendulum swing ball is much faster in the rotation plane under this case. While in the equator, the velocity gradient of No-Shape-Substance is zero, so Foucault pendulum swing ball is almost no rotation.

Is the ball's trajectory a straight or curve line, when the rotating direction of the ball is driven?

It is all known that the swing ball is much faster in the center, while is slower close to the edge. That is, the more is the ball close to the edge, longer is unit distance of shift for the ball needing time. So the more is the ball close to the edge, No-Shape-Substance drives the ball greater deflection.

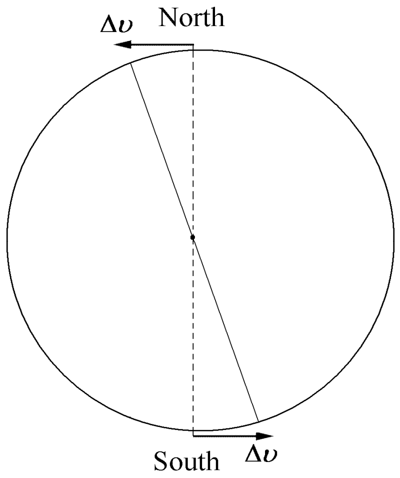

Fig. 3 In the southern hemisphere

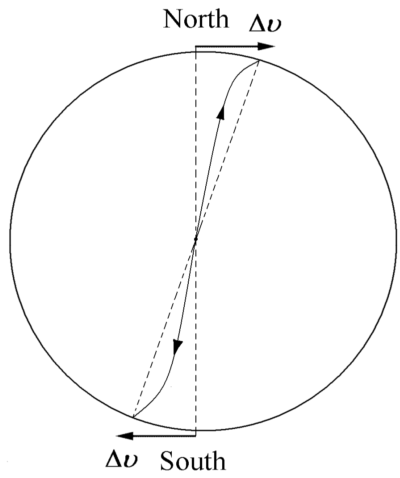

Fig. 4 In the northern hemisphere

Shown in Fig. 4, in the northern hemisphere, when the ball moves from the center to north, No-Shape-Substance drives the swing ball eastward greater deflection closer to the edge,. The track of the ball is the right arc picture. When the ball moves from the center to south, No-Shape-Substance drives the swing ball westward greater deflection closer to the edge. The track of the ball is the left arc picture.

To sum up, in the northern hemisphere, the role of No-Shape-Substance drives gradually Foucault pendulum swing ball twisted to clockwise. The track of the ball is clockwise oval picture.

Is the role of No-Shape-Substance for north-south swing and west-east swing? Obviously they are not the same.

When Foucault pendulum swing ball is north –south movement, the speed difference for the swing ball is large between two edges. The plane rotation angular velocity is relatively large; when the swinging ball is east-west movement, the speed difference for the swing ball is zero between two edges. The angular velocity of the ball on the plane rotation smaller or the ball is even almost no rotation. And, when swinging ball is east-west movement, No-Shape-Substance is also difficult to change the moving state of the swing ball and drive the ball draw a clockwise oval picture.

Thus, the theory of "new physics" can well explain the law of Foucault pendulum swinging and strange phenomena that appears in experiments. To further prove the correctness of our theory, here, the experimental results were detailedly analyzed.

2 Experimental results

The place of doing experiment is location in the physical performance tests Hall of Northeast Petroleum University in China. The weight Foucault Swing ball is 75 kg, the length of the swing is 11.6 m, a diameter of swinging on the plane is about 2.7 to 3.3 meters.

For your better understanding of the following experimental results, briefly discuss the impact of the air resistance on the Foucault pendulum.

Shown in Fig. 5, if the track of the swing ball is not a straight line, as shown in Fig. 5a, it is assume that track of the ball is drew a clockwise oval at initial state, the air resistance will lead swing ball toward clockwise direction movement; Fig. 5b shows, it is assume that track of the ball is drew a counter-clockwise oval at initial state, the air resistance will lead swing ball toward counterclockwise direction rotation.

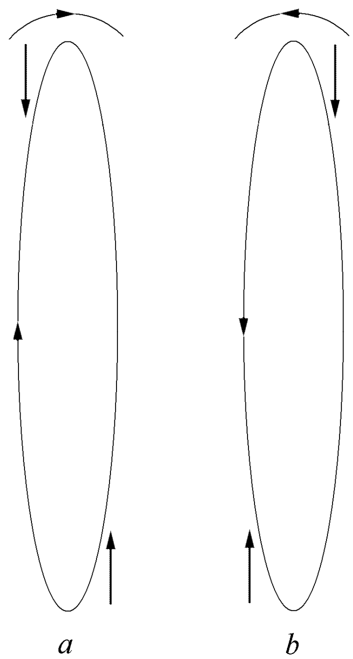

Fig. 5

In the northern hemisphere, when Foucault pendulum swing ball is north-south movement, the swing ball on the plane will undoubtedly be a clockwise rotation at no special circumstances. To demonstrate the impact of air resistance, when the swing ball is north-south movement, we intend to drive the ball to draw a counterclockwise elliptical of large short axis. At the time, the role of the air resistance is greater than No-Shape-Substance, But, the ball turns counterclockwise direction rotation.

Shown in Table 1, when the swing ball is north-south movement, the swing ball state will be gradually distorted and turn from the counter-clockwise oval to line, then straight line turns into a clockwise oval swing. And the short axis of clockwise oval is distorted and becomes larger and larger with increasing time. Initially, the swing ball is toward counterclockwise direction the rotation, it is because that the role of the air resistance is greater than No-Shape-Substance. The reverse the rotation angle reaches the maximum at $2'12''$. Then, the driving role of No-Shape-Substance is greater than the air resistance. The ball begins to clockwise direction swing. The swing ball state is gradually twisted into a straight line, and then twisted into a clockwise oval. The air resistance promotes the ball clockwise rotation and the swing direction changes faster and faster.

Table 1 the north-south swing of Foucault pendulum ball

Time	Angle	Swing state of Foucault pendulum ball
$0'00''$	359.4^0	Counterclockwise oval, short axis radius is about 2.5cm
$2'12''$	357.8^0	Counterclockwise oval, short axis radius is about 1.0cm
$3'08''$	359.0^0	Straight swing
$4'04''$	359.4^0	Clockwise oval, short axis radius is about 0.5cm
$5'17''$	359.8^0	Clockwise oval, short axis radius is about 1.0cm
$6'43''$	360.6^0	Clockwise oval, short axis radius is about 1.5cm
$7'39''$	361.3^0	Clockwise oval, short axis radius is about 2.0cm
$10'03''$	362.6^0	Clockwise oval, short axis radius is about 2.5cm
$12'39''$	364.6^0	Clockwise oval, short axis radius is about 3.0cm
$15'32''$	366.4^0	Clockwise oval, short axis radius is about 3.2cm
$17'26''$	368.5^0	Clockwise oval, short axis radius is about 3.5cm
$18'47''$	369.6^0	Clockwise oval, short axis radius is about 3.5cm
$20'45''$	371.4^0	Clockwise oval, short axis radius is about 3.5cm
$22'39''$	372.6^0	Clockwise oval, short axis radius is about 3.6cm

Shown in Table 2, when the ball is east-west swing, we let the initial state as the same as the initial state of the north-south swing shown in Table 1. From Table 2, we can see clearly that the swing state of the ball will not be distorted for east-west swing.

The short-axis radius of the ellipse counterclockwise is the same as the initial state basically, or even slightly increasing. The short axis radius of the counterclockwise ellipse slightly reduces, only when the Swing amplitude is decreasing.

Table 2 the west-east swing of Foucault pendulum ball

Time	Angle	Swing state of Foucault pendulum ball
$0'00''$	280.6^0	Counterclockwise oval, short axis radius is about 2.5cm
$5'03''$	279.0^0	Counterclockwise oval, short axis radius is about 2.6cm
$7'31''$	278.0^0	Counterclockwise oval, short axis radius is about 2.6cm
$11'19''$	276.5^0	Counterclockwise oval, short axis radius is about 2.6cm
$15'43''$	275.0^0	Counterclockwise oval, short axis radius is about 2.5cm
$20'28''$	274.0^0	Counterclockwise oval, short axis radius is about 2.2cm

When the ball is east-west swing, No-Shape-Substance almost does not affect the direction of the swing. The swing track of the ball is counter-clockwise rotation under the air resistance.

Shown in Table 3 and Table 4, we continue to comparative test, increasing the short axis radius of the ellipse counterclockwise at the initial state.

Shown in Table 3, when the ball is north-south swing, although the short axis radius of the ellipse counterclockwise becomes large, the swing state will still be gradually distorted and turn into a straight line from the ellipse counterclockwise swing, and then from the straight line into clockwise oval swing.

Initially, the swing ball is toward counterclockwise direction the rotation, it is because that the role of the air resistance is greater than No-Shape-Substance. The reverse the rotation angle reaches the maximum at $8'39''$. Then, the ball begins to clockwise swing.

Table 4 shows that, when the ball is east-west swing, the swing state of the ball will not be distorted firstly, due to the greater impact of the air resistance. When the swing angle is much larger, the distorted role of No-Shape-Substance appears.

The short-axis radius of the ellipse counterclockwise became smaller and smaller at this time. Of course, there are also small impacts of the decreasing swings amplitude.

Table 3 the north-south swing of Foucault pendulum ball

Time	Angle	Swing state of Foucault pendulum ball
0′00″	7.3^0	Counterclockwise oval, short axis radius is about 4.2cm
1′53″	6.2^0	Counterclockwise oval, short axis radius is about 3.5cm
2′59″	5.7^0	Counterclockwise oval, short axis radius is about 3.0cm
4′42″	4.6^0	Counterclockwise oval, short axis radius is about2.5cm
5′40″	4.6^0	Counterclockwise oval, short axis radius is about 2.0cm
7′24″	4.3^0	Counterclockwise oval, short axis radius is about 1.5cm
8′39″	4.0^0	Counterclockwise oval, short axis radius is about 1.0cm
11′16″	4.3^0	Counterclockwise oval, short axis radius is about 0.5cm
14′22″	4.7^0	Straight swing
17′01″	5.0^0	Clockwise oval, short axis radius is about 0.3cm
18′58″	5.7^0	Clockwise oval, short axis radius is about 0.5cm
21′06″	6.2^0	Clockwise oval, short axis radius is about 0.8cm

Table 4 the west-east swing of Foucault pendulum ball

Time	Angle	Swing state of Foucault pendulum ball
0′00″	279.0^0	Counterclockwise oval, short axis radius is about 4.0cm
3′19″	277.0^0	Counterclockwise oval, short axis radius is about 4.0cm
5′57″	275.0^0	Counterclockwise oval, short axis radius is about 3.8cm
10′58″	271.8^0	Counterclockwise oval, short axis radius is about 3.2cm
15′39″	269.5^0	Counterclockwise oval, short axis radius is about 2.9cm
19′41″	268.0^0	Counterclockwise oval, short axis radius is about 2.7cm

Shown in Table 5 and Table 6, continuing comparative test, we reduce the short axis radius of counterclockwise ellipse at initial state.

Shown in Table 5, when the ball north-south swing, feature of the swing is the same as that described in the Table 1 and Table 3. The swing state is significantly distorted, and gradually turns into a straight line from the ellipse counterclockwise swing, then from straight swing into a clockwise oval. The air resistance and effect of No-Shape-Substance is almost offset due to the smaller short axis radius of the ellipse counterclockwise. So the swing direction is not toward counterclockwise at the beginning of the swing.

Table 5 the north-south swing of Foucault pendulum ball

Time	Angle	Swing state of Foucault pendulum ball
0′00″	3.0^0	Counterclockwise oval, short axis radius is about 1.2cm
2′36″	3.0^0	Straight swing
3′41″	3.3^0	Clockwise oval, short axis radius is about 0.5cm
5′08″	3.6^0	Clockwise oval, short axis radius is about 0.9cm
7′06″	4.3^0	Clockwise oval, short axis radius is about 1.2cm
8′37″	5.2^0	Clockwise oval, short axis radius is about 1.5cm
11′39″	6.4^0	Clockwise oval, short axis radius is about 1.8cm
13′21″	7.5^0	Clockwise oval, short axis radius is about 2.0cm
15′50″	9.0^0	Clockwise oval, short axis radius is about 2.2cm
17′30″	9.7^0	Clockwise oval, short axis radius is about 2.2cm
19′08″	10.7^0	Clockwise oval, short axis radius is about 2.3cm
20′57″	11.6^0	Clockwise oval, short axis radius is about 2.3cm

Table 6 the west-east swing of Foucault pendulum ball

Time	Angle	Swing state of Foucault pendulum ball
0′00″	279.0^0	Counterclockwise oval, short axis radius is about 1.2cm
5′13″	278.4^0	Counterclockwise oval, short axis radius is about 1.2cm
8′39″	278.0^0	Counterclockwise oval, short axis radius is about 1.2cm
11′54″	277.6^0	Counterclockwise oval, short axis radius is about 1.3cm
14′21″	277.4^0	Counterclockwise oval, short axis radius is about 1.3cm
18′13″	277.1^0	Counterclockwise oval, short axis radius is about 1.3cm

Shown in Table 6, when the ball is west-east swing, the swing state will not be distorted. The short-axis radius of the ellipse counterclockwise and one of the initial state are basically the same, or even a slight increase. The direction of the swing state has small changes to counter-clockwise swing.

Shown in Table 7 and Table 8, continue to comparative test, let the ball straight swing at initial state.

Table 7 the north-south swing of Foucault pendulum ball

Time	Angle	Swing state of Foucault pendulum ball
0′00″	359.7^0	Straight swing
3′04″	361.2^0	Clockwise oval, short axis radius is about 1.0cm
4′52″	361.8^0	Clockwise oval, short axis radius is about 1.5cm
7′45″	363.4^0	Clockwise oval, short axis radius is about 2.0cm
11′34″	365.6^0	Clockwise oval, short axis radius is about 2.5cm
14′54″	367.6^0	Clockwise oval, short axis radius is about 2.7cm
17′06″	368.8^0	Clockwise oval, short axis radius is about 3.0cm
18′24″	369.8^0	Clockwise oval, short axis radius is about 3.0cm

Table 8 the west-east swing of Foucault pendulum ball

Time	Angle	Swing state of Foucault pendulum ball
0′00″	$278.3^0 \sim 279.0^0$	Straight swing
3′05″	$278.3^0 \sim 279.0^0$	Counterclockwise oval, short axis radius is about 0.3cm
5′35″	$278.5^0 \sim 279.2^0$	Counterclockwise oval, short axis radius is about 0.5cm
8′27″	$278.7^0 \sim 279.5^0$	Counterclockwise oval, short axis radius is about 0.5cm
11′10″	$278.8^0 \sim 279.5^0$	Counterclockwise oval, short axis radius is about 0.5cm
13′03″	$278.9^0 \sim 279.5^0$	Counterclockwise oval, short axis radius is about 0.5cm
16′08″	$278.9^0 \sim 279.5^0$	Counterclockwise oval, short axis radius is about 0.6cm
18′47″	$278.9^0 \sim 279.5^0$	Counterclockwise oval, short axis radius is about 0.7cm
20′48″	$278.9^0 \sim 279.5^0$	Counterclockwise oval, short axis radius is about 0.8cm
22′16″	$278.9^0 \sim 279.5^0$	Counterclockwise oval, short axis radius is about 0.9cm

As is shown in Table 7, when the ball is north- south swing, feature of the swing is the same as that described in the Table 1 and Table 3. The swing state is significantly distorted, and gradually turns into the ellipse clockwise from a straight line swing. As time increases, the short axis radius of the ellipse clockwise twist is growing.

Shown in Table 8, when the ball is east-west swings along the straight line direction, the direction of the swing is very small change, The swing state not only will not be twisted to clockwise direction, it will be distorted to a small counter-clockwise direction.

Why will Foucault pendulum distort slightly toward the counter-clockwise direction, when it is west-east swing?

We repeated the experiment to explore the reasons, doing experiments in different seasons and at different times (days, nights). It is found that there is no essential difference among the experimental results. The fact shows that it is independent of the earth translational movement.

When we think of objects acted on by centrifugal force due to the earth's rotation, the problem was solved.

As shown in figure 6.The Pendulum is acted on by three forces with the earth's rotation:

1) The gravitation G of the earth, which directs the center of the earth;
2) The centrifugal force F of inertia , generated by the rotation of the earth;
3) The tension T , acted by the hanging thread.

The centrifugal force of inertia F is generated due to the earth's rotation, or rather due to the pendulum's rotation relative to No-Shape-Substance which is rotating from east to west relative to the earth.

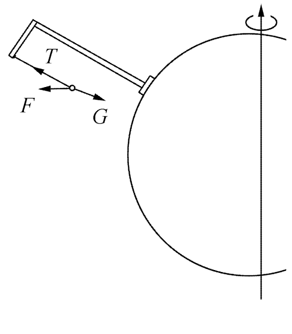

Fig.6 Pendulum force diagram

When Foucault pendulum is west-east

swing, the direction of the pendulum movement is opposite to that of No-Shape-Substance movement for the pendulum movement from west to east. In the case, the speed of the pendulum relative to that of No-Shape-Substance is much greater, and the centrifugal force acting on it is also the greater. In the northern hemisphere, Foucault pendulum slightly shift toward south. when the pendulum moves from east to west, the direction of its movement is uniform with that of the No-Shape-Substance movement. at the time the speed of the pendulum relative to that of the No-Shape-Substance becomes small and the centrifugal force is also small, In the northern hemisphere, the Foucault pendulum slightly shift toward north.

Shown in Figure 7, in the northern hemisphere, when the Foucault pendulum is west-east swing, its track will be acted as a counter-clockwise "oval."

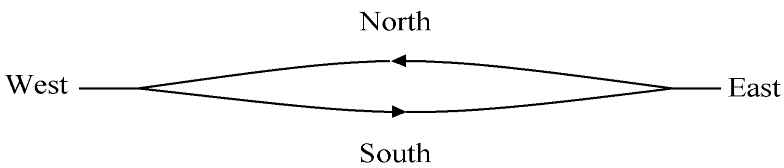

Fig. 7 the pendulum’s track is acted as a counter-clockwise "oval."

Prior to experimental observation, we have been very surprised. Why is the shape of this "ellipse" closer to a straight line at two ends, while forcibly separated out at the middle? it is easy to understand the nature of the peculiar shape when we studied the causes of its shape. The speed of the pendulum movement is much larger at the near the center, and there is a larger centrifugal force. The speed of pendulum movement is smaller at near the ends, and the smaller centrifugal force is acting on it. So we feel that the "oval" is opened forcibly in the middle.

Shown in Table 9, when the ball is north-south swing, let the swing from the beginning of the line. Carefully measure time required once per revolution. From the Table 9, it is clear that time required is shorter and shorter once per revolution, it is indicated that the swing angle changes faster and faster. This is because that the ball swing state is distorted to clockwise ellipse from the straight line direction. As time increases, the short axis radius of the ellipse clockwise twist is growing. The role of the air resistance that promotes the ball the clockwise rotation becomes more and more strong.

Table 9 the north-south swing of Foucault pendulum ball

Angle	**Time**	**Swing ball turning the angle 1^0 takes time**
0^0	0′00″	
1^0	2′17″	137″
2^0	4′01″	104″
3^0	5′46″	105″
4^0	7′18″	92″
5^0	8′39″	81″
6^0	9′59″	80″
7^0	11′19″	80″
8^0	12′38″	79″
9^0	13′52″	74″
10^0	15′05″	73″

What can be illuminated from all these experimental facts described above?

When the ball is north-south swing, the rotation angular velocity is relatively large on the swing plane; when the ball is east-west swing, the angular velocity is much smaller on the plane, or even almost no rotation.

In the northern hemisphere, when the ball is north-south swing, the swing state itself can be distorted to clockwise swing. However, when the ball is east-west swing, the swing state itself is hardly changed, or even slightly distorted toward counter-clockwise direction.

When the ball is north-south swing at initial state, the rotating angle of the swing ball changes faster and faster.

It is proved that there is another state of material existence in the nature by the description of these very prominent, clear the experimental facts.

Foucault pendulum experiment is very simple and intuitive, but very significant! It will be the greatest physics experiment.

Description: the standard of our buildings is chose generally as the north and south of the Earth's magnetic field. The true north-south direction and east-west direction in consistent with the axis must be found, when we do Foucault pendulum experiment. We can find true north-south direction and east-west direction, according to north-south direction of Earth's magnetic field and the local magnetic declination,

The magnetic declination is about Daqing in China 9.5^0, so the north-south swing direction is along about 9.5^0 the direction, the east-west swing is along about 279.5^0.

Here we simply calculate the speed difference of No-Shape-Substance causing the rotation of Foucault pendulum swing ball on the rotation plane.

The length the Foucault's Foucault Swing experiment 67 meters, the weight of the ball 28 kg, the swing diameter is 6 meters, the latitude is 49 degrees in Paris in 1851. The ball rotates 11 degrees per hour.

Shown in Fig.8, when Foucault pendulum ball begins to swing, the speed difference of No-Shape-Substance between at the edge and center is obtained:

$$\Delta \upsilon = \frac{2\pi \times 11}{360 \times 3600} \times 3 = 1.5999 \times 10^{-4} \ \text{m/s}$$

It can be seen that Foucault pendulum experiment can account for accurately No-Shape-Substance movement relative to earth surface.

The speed difference of No-Shape-Substance between Equator and the North Pole is got as follow:

$$\Delta \upsilon = \frac{1.5999 \times 10^{-4}}{3 \sin 49} \times 6378 \times 10^3 = 450.7 \ \text{m/s}$$

This is a rough calculation, if the speed difference of No-Shape-Substance a more accurate calculation should be allowed to Foucault pendulum swinging in a vacuum to avoid air resistance. It is seen that the speed difference of No-Shape-Substance between the equator and the North Pole obtained by a rough calculation is basically equivalent to the Earth's rotation speed on the equator $463.8\,\mathrm{m/s}$.

Foucault pendulum experiment indicates that No-Shape-Substance moves relative to the surface of Earth.

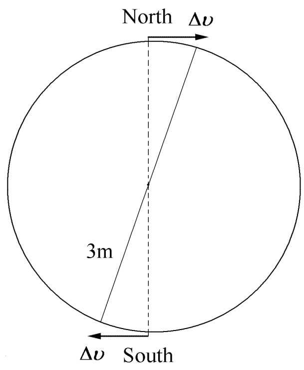

Fig. 8

3 The planet operation rules

We think that when the planet rotates, it will drive partly No-Shape-Substance to rotate. What will a satellite around the planet be affected?

Shown in Fig. 9, the planet can drive partly No-Shape-Substance around when it rotates, It is seen from Reference system in space, No-Shape-Substance rotates toward the same direction under the planet driving role.

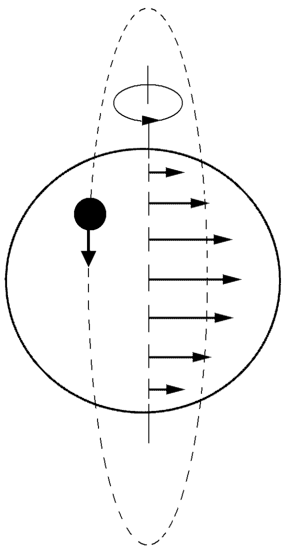
Fig. 9 No-Shape-Substance’s speed relative to the space

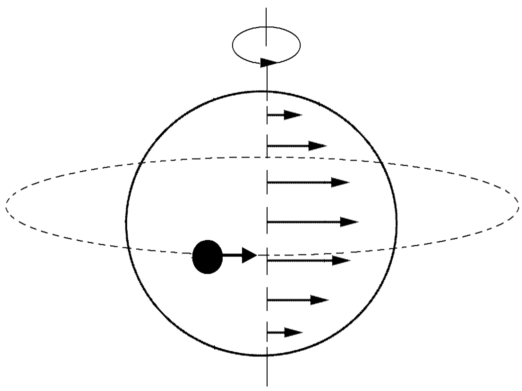
Fig. 10 the most stable rotational orbit of satellite

Assume that the satellite's orbital plane is perpendicular to the planet's rotation plane at initial state. When the satellite move from the top of the planet, it will be deflected to the right due to the driving role of No-Shape-Substance; When the satellite moves from the bottom of the planet, it will be deflected to the left due to the driving role of No-Shape-Substance (No-Shape-Substance located the bottom is driven the reverse movement by the planet); The satellite's orbital plane will gradually be toward counterclockwise deflection. Finally the satellite's orbital plane is parallel to the planet's rotation plane. They have the same direction of movement. The satellite's orbital reaches a steady state.

Shown in Fig. 10, the rotation of the satellite around the planet is the most stable orbit. It will ultimately be driven to the most stable state regardless of the initial state.

The universe was formed many million years ago. Even if the role of the planet's rotation driving remote No-Shape-Substance is weak, it is enough to make a satellite of the planet move in a steady state described above. Whether do some planet in the universe Comply with the law of the movement law mentioned above?

Let us look at some of our most familiar celestial bodies.

(a) The directions of the moon rotating around the earth and Earth's rotation itself are uniform. The moon came out later day than day. The movement direction of the moon rotating around the Earth from west to east is the same as the direction of Earth rotating itself.

(b) Shown in Fig. 11, the nine planets are on the near same plane of the elliptical orbit near circle around the sun toward the same direction rotating. That is, the planet's orbital motion possesses properties of the coplanarity, near circularity and isotropic. Only the Mercury and Pluto have a slight deviation. The sun's rotation direction is also the same to the direction of the planet's revolution.

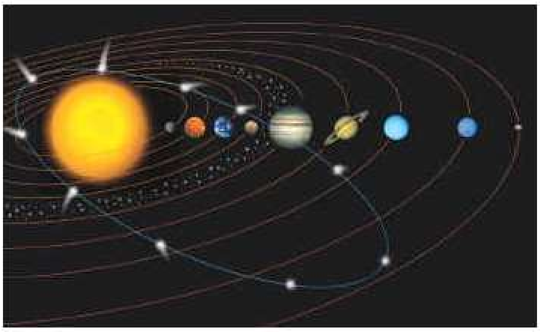

Fig. 11

(c) Shown in Fig. 12, it is a fascinating that Saturn has a wonderful discoid ring. The ring is so thin that it is not incredible. Its diameter is hundred thousand kilometers, while the thickness is only 100 meters. It is very image to use the album to describe Saturn's rings. They consist of billions of ice cubes, which arrange in the planetary gravitational orbit. Every ice cube is a small satellite.

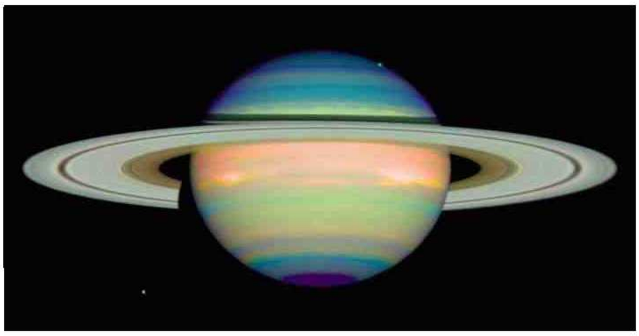

Fig. 12

(d) Let us look at the overview of our Milky Way galaxy.

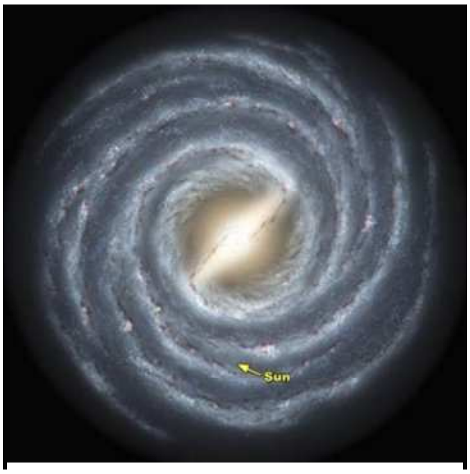

Fig. 13 Milky Way galaxy

(e) Other galaxies

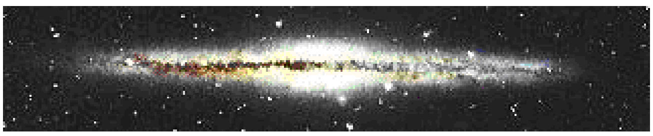

Fig. 14 Galaxies ngc891, which is similar to the side of Milky Way galaxy

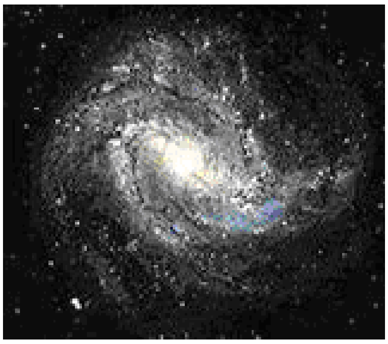

Fig. 15 Spiral galaxy M83, its size and shape are very similar to our Milky Way

My friends, is this just coincidence?

The movement laws of all the celestial bodies are fully consistent with our judgments, these undisputed facts can illustrate that there is another state of matter existing in space, which is the foundation of all movement of objects.

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