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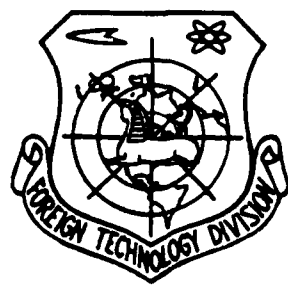
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FOREIGN TECHNOLOGY DIVISION



THE "UFO" OF JULY 24, 1981
A Discussion with Comrade Zhang Zhousheng

by
Liu Yan



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From THE ASTRONOMY LOVER

THE "UFO" OF JULY 24, 1981
A Discussion with Comrade Zhang Zhousheng

Liu Yan

The "7.24" UFO Event

About 10:40 p.m., July 24, 1981, several million people in Gansu, Qinghai, Sichuan, Yunnan, etc., provinces in the western part of our country witnessed an amazing "flying disc" event: A spectacular flying luminous body with a spiral shape appeared in the sky; its central portion spins and moves slowly about a direction from east to west.

A wonderful natural phenomenon, what is it?

In June of the same year, Comrade Zhang Zhousheng of the Yunnan Astronomical Observatory had predicted that: We shall see a UFO in late July. On July 24th, the "flying disc" indeed came, and its shape looked very like what had been predicted by him. Zhang Zhousheng then suddenly became prominent. Several dozen newspapers and magazines in the country were reporting this event and thus made it big news. Zhang Zhousheng himself also wrote a number of articles in several journals, particularly three published in succession in the journal "World Science" that had introduced in detail his "theory" and "prediction." Nevertheless, this author believes his "theory" is all wrong, and the "7.24" flying object is irrelevant to his "prediction."

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Zhang Zhousheng's Prediction

According to Zhang Zhousheng's theory, many UFO's are a special phenomenon formed by the approach near the earth of meteoroids from the meteoric swarm of Cassiopeia. Therefore, "the motion locus of the UFO is namely the radial curve from the radiant point of the meteoric swarm of Cassiopeia." He then predicts: "The direction of motion of such a UFO will be from east to west in the evening, from north to south at midnight, and from west to east in the early morning. Their point of first appearance shall be north of the zenith." However, if we make a further analysis, we can find that such a prediction is highly questionable.

First, the apparent directions of motion of individual meteoroids in a swarm are not uniform; they can be in any direction from the radiant point. For a certain meteoroid, its apparent direction of motion relates only to the relative position between the spatial locus of the meteoroid and the line drawn from the radiant point to the observer, and has almost no correlation with the time of appearance of the meteoroid, whether in the evening or in the morning. If someone says, at a certain time the apparent directions of motion of meteoroids from a certain meteoric swarm are all from south to north, and at another time are all from east to west, any astronomy lover will be greatly surprised.

Second, ambiguously saying that "the point of first appearance shall be north of the zenith" is inappropriate. In fact, the point of first appearance is not the same to different observers in different locations; it is related to the relative position between the meteoroid and the observer as it first illuminates. For instance, if there is a luminous object about 5000 km above Chengdu, for Zhang Zhousheng at Kunming it is located north of the zenith, but for an observer at Lanzhou it is south of the zenith! However, for an observer at Chengdu it is very difficult to tell whether it is north or south of the zenith.

What Zhang Zhousheng has predicted is, therefore, not a meteoroid that will become a UFO, but at most the apparent location of the radiant point of a certain meteoric swarm on the celestial sphere. Here, moreover, we have also to add a note that Cassiopeia is not truly the celestial region in correspondence with his prediction. To the observers in our country, the celestial region in correspondence with his prediction should be around the Swan, Eagle, Harp, etc.

Therefore, even if we accept his theory, his prediction is yet not only vague, but also self-contradictory!

The Shape of UFO and Zhang Zhousheng's "Theory"

The "7.24" flying object is a huge luminous body, for which Zhang Zhousheng has made a "theoretical" explanation. He says: In the Universe "a few meteoroids of large mass that carry volatile matter have an ionosphere on their surface. When these meteoroids enter the geomagnetic field from the planetary space to about several thousand km above the Earth's surface, the charged particles in the meteoroid ionosphere under the action of the Lorentz force will be released from the confinement of the meteoroid's self-gravity and form a particle stream along the geomagnetic field in a spiral motion of changing radius." And the illumination of the spiral body is "the excited radiation" due to the mutual impact between the charged particles.

This "theory" seems to glorify the "7.24" UFO; however, this "theory" can also be easily proved to be groundless.

First, the mass and gravity of a meteoroid are so small that no gaseous matter can stay on its surface. How can it be that "on the surface of the small heavenly body ... forms a sphere which resembles the structure of the ionosphere in the outer atmosphere of the Earth and other planets?"

Second, even if there are indeed some charged particles in the meteoroid, it is still impossible that they "will be released from the confinement of the self-gravity of the meteoroid" (note: What kind of gravity? It is very vague) because of the action of the Lorentz force. As far as we know, the Lorentz force does not work on charged particles; it gives only centripetal force to the rotating motion.

Third, even if the charged particles are indeed rotating several thousand km above the Earth, it is still impossible for us to observe the details of the spiral shape by eye on the ground.

Fourth, even if under a certain external force a small amount of the charged particles can be pulled out of a lump of plasma possessing both positive and negative charges, because of the Coulomb attraction it is impossible that only the particles of the same charge will flow out of the plasma to form a micro-particle stream, while the particles of the other charge stay in the lump.

Fifth, the radius of rotation of the charged particles is related to their mass and charges, and the direction of rotation of the particles is related to the property of the charges; the direction of rotation of the positively charged particles is opposite to that of the negatively charged particles. Therefore, even if we accept that the charged particles in a meteoroid can be in rotating motion, what we may observe is not a clear spiral body rotating in one direction, but a superposition of two spiral bodies rotating in opposite directions or even in a blurry pattern. Nevertheless, Zhang Zhousheng has repeatedly "overlooked" this critical question and always talks vaguely about "charged particles" or "micro-particle stream," etc., and never points out whether they are electrons, protons, or other particles.

Sixth, the cause of illumination of what he says is "the excited radiation." But we have to point out here that under the condition he describes it is impossible to produce an "excited radiation."

The errors in Zhang Zhousheng's "theory" are many, and we are not going to point out further ones because of the limited space. However, from what we have already discussed we can see that almost every sentence in his co-called "theory of UFO formation" is wrong!

In fact, the observed parameters of the "7.24" flying object are very different from those calculated based upon Zhang Zhousheng's "theory." We list both the calculated and observed parameters in the following table. From the table we can see that there is almost no correlation between the two at all!

COMPARISON BETWEEN SOME PARAMETERS OF THE "7.24" FLYING OBJECT AND THOSE OF THE ROTATING MOTION OF CHARGED PARTICLES

	Electron	Proton	1981.7.24 UFO	
Rotation Frequency	$10^5 - 10^6$ cycle/sec	50 - 500 cycle/sec	Rotation Speed	1 - 2 cycle/min
Rotation Radius	several mm	several tens m	Spiral	several
Rotation locus	cylindrical 3-D spiral	cylindrical 3-D spiral	Spiral Shape	dislike nearly flat spiral
Rotation Direction	N-S along geomagnetic field	N-S along geomagnetic field	Direction of Spiral Motion	From east to west, approximately perpendicular to the geomagnetic field

Remarks: (1) In the calculation of the rotation frequency, the geomagnetic strength used is that at mid-latitude and at an altitude of several hundred to several thousand km. (2) In the calculation of the rotation radius, the speeds of the electron and proton used are those of the meteoroids suggested by Zhang Zhousheng. $V=10-15$ km/sec.

but in some other places (such as Yongchang, Gansu, etc.) it is just about the zenith, and in some other places (such as northwest of Gansu, etc.) it is south of the zenith. We believe it is highly probable that it is a man-made flying machine. It jets out gaseous materials during flying (the jet speed is about 300 m/sec) and spins around a vertical plane at the same time. The jet therefore forms a spiral body. Comrade Wang Sichao et al. of the Zijin shan Observatory have already published a paper on this and we do not want to repeat it here. However, here we have to emphasize that the UFO never was a meteoroid like what Zhang Zhousheng has described.

Here we should point out that Zhang Zhousheng's calculation of the altitude of the "7.24" flying object is totally wrong. He repeatedly declared that his calculation is based on a "spherical trigonometric" method and the altitude of the flying object he calculated is about 5000 km. In fact the altitude is only several hundred km. This miscalculation is his greatest misfortune, which forces his theoretical basis to fall from 5000 km to several hundred km, from this new basis he has to rewrite all his papers and rebuild his whole theory!

Finally, we must also take note that even if the locus of certain flying objects is towards Cassiopeia, it does not necessarily mean that they are the meteoroids from the meteoric swarm of Cassiopeia. He had published a figure in the second issue of 1982 "World Science" and declared that the theoretically calculated locus and the observed locus of the "7.24" UFO "fit each other very well"; both of them pass through the so-called radiant point of the meteoric swarm of Cassiopeia. But he has never furnished any observed data to support it and tell how the figure was plotted. We are very much concerned about the accuracy and reliability of this figure!