(RESEARCH ARTICLE)

Space propulsion system described in the recent U.S. government report on UAPs

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Abstract

An unidentified Aerial Phenomena (UAP) investigation report released by the US Department of Defense in June 2021 has caused various ripples. The report does not provide a specific explanation, except for a few observed features of the propulsion system, and concludes that further investigation and analysis will be needed to elucidate it. This paper introduces the solution of UAP's flight performance described in the report as the views of the author who has studied space propulsion theory and space navigation theory for many years.

Keywords: UAP; Field propulsion; Space drive; Spaceship; Curvature; Space-time; Acceleration; Gravity

1. Introduction

An unidentified Aerial Phenomena (UAP) investigation report released by the US Department of Defense in June 2021 has caused various ripples [1]. Fig.1 shows the cover of UAP investigation report.

According to this report, the recent U.S. government report on UAPs and comments from current and former intelligence officials repeatedly fall back on that those flying object and other mysterious objects buzzing Navy warships may be advanced aircraft built by Russia or China. Unfortunately, such the advanced technology cannot be achieved by our current science and technology. Further, without the advanced theory that explains the mechanism of gravity generation in the background, such an advanced propulsion theory cannot be realized.

The cause of gravity is the acceleration field generated in the curved space region, and the object falls on the Earth because it is pushed toward the Earth from the curved space region [2-8].

It is important to apply the acceleration due to this curved spatial region to the propulsion system [9-22]. The curvature of space plays an important role not only in the mechanism of gravity but also in the new propulsion theory.

In this paper, comments on the space propulsion system described in this report are introduced as impressions.

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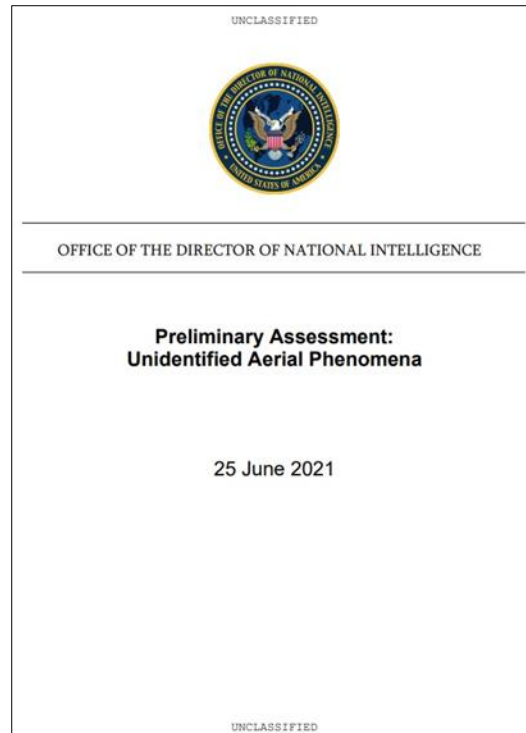
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OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE

Preliminary Assessment:
Unidentified Aerial Phenomena

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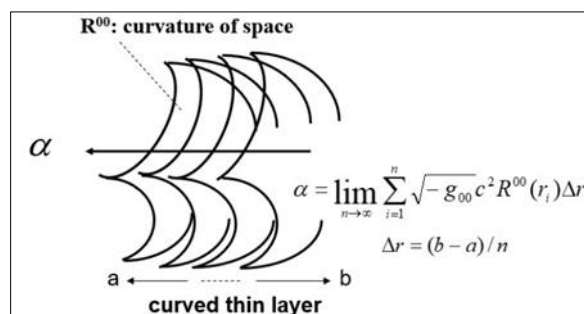**Figure** 1 Cover of UAP report of US government.

2. Field Propulsion System

The author has constructed the concept of field propulsion and introduced the relatively well-considered Space Drive Propulsion, which is a typical example of field propulsion, in international conferences, treatises, books, etc. [9-22].

2.1. Summary of Propulsion Principle

Here, the necessary items are briefly listed. See the described above Reference for details.

When the space curves, an acceleration field is generated inside the curved surface (Fig.2).

R^{00}: curvature of space

$$\alpha = \lim_{n \to \infty} \sum_{i=1}^{n} \sqrt{-g_{00}}\, c^2 R^{00}(r_i) \Delta r$$

$$\Delta r = (b - a)/n$$

a ← .... → b

curved thin layer

$$\alpha = \sqrt{-g_{00}}\, c^2 \int_a^b R^{00}(r)\, dr$$

Figure 2 The accumulation of many curved thin membrane layers creates a unidirectional acceleration field.

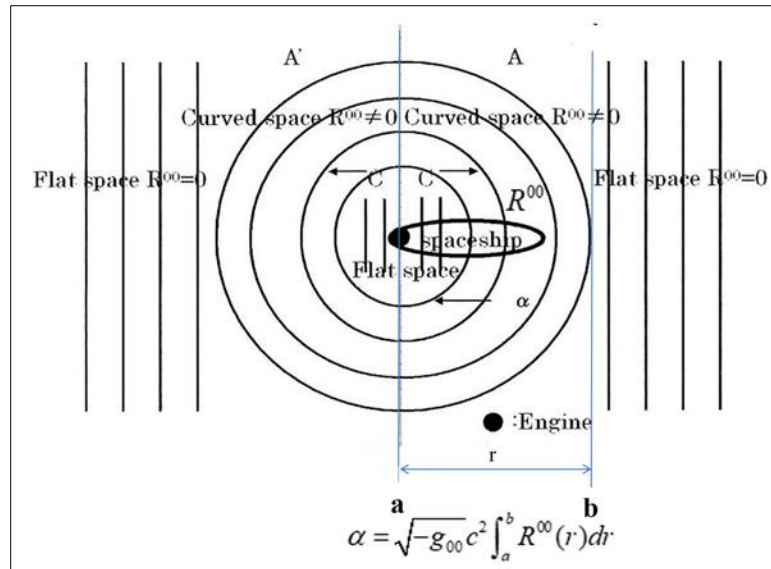A curved space around the spaceship is created by the spaceship engine (Fig.3).

Figure 3 The spaceship is propelled in one direction by the acceleration of the field generated in the curved space. The magnitude of acceleration is proportional to the curvature of space and the magnitude of the curved space region (a-b).

In order to propel as described above, the engine "●" of spaceship is first turned on and curves the space to generate a curved space area. Space is curved by a magnetic field. During the transition time when the space-curving engine is turned off and the curved space returns to a flat space, the spaceship and the curved space are independent, so the spaceship is pushed forward from the curved space. Continuous thrust is obtained by repeating this engine on-off operation.

The magnetic field B curves the space and creates the curvature of the space R^{00}.

$$R^{00} = \frac{4\pi G}{\mu_0 c^4} \cdot B^2 = 8.2 \times 10^{-38} \cdot B^2 \quad (B \ in \ Tesla),$$

$\mu_0 = 4\pi \times 10^{-7} (H/m), \varepsilon_0 = 1/(36\pi) \times 10^{-9} (F/m), c = 3 \times 10^8 (m/s), G = 6.672 \times 10^{-11} (N \cdot m^2/kg^2)$, B is a magnetic field in Tesla, R^{00} is a major component of spatial curvature $(1/m^2)$.

2.2. Spatial Curvature Generation Engine by Convergence of Magnetic Field Lines

As a function of the engine in the previous section, a strong magnetic field is generated by confining and converging magnetic field lines. The magnetic field lines freeze in the plasma and move in conjunction with it. The magnetic field lines converge to one point by narrowing the flow of plasma at any one point in the flow path. By narrowing down the magnetic field lines, the magnetic field is strengthened and the curvature of the space is generated. That is, by narrowing down the plasma in the flow paths at the engine positions at six locations, front, back, left, right, up and down of the spaceship, the magnetic field lines frozen in the plasma are narrowed down to generate a strong magnetic field. Accordingly, the curvature of the space is generated by strong magnetic field.

It functions as an engine by controlling the flow path of the plasma flow and the route that narrows the diameter of the plasma flow. So, the flow path of the magnetic field lines frozen in the plasma and the control of the magnetic field lines density are important (Fig.4).
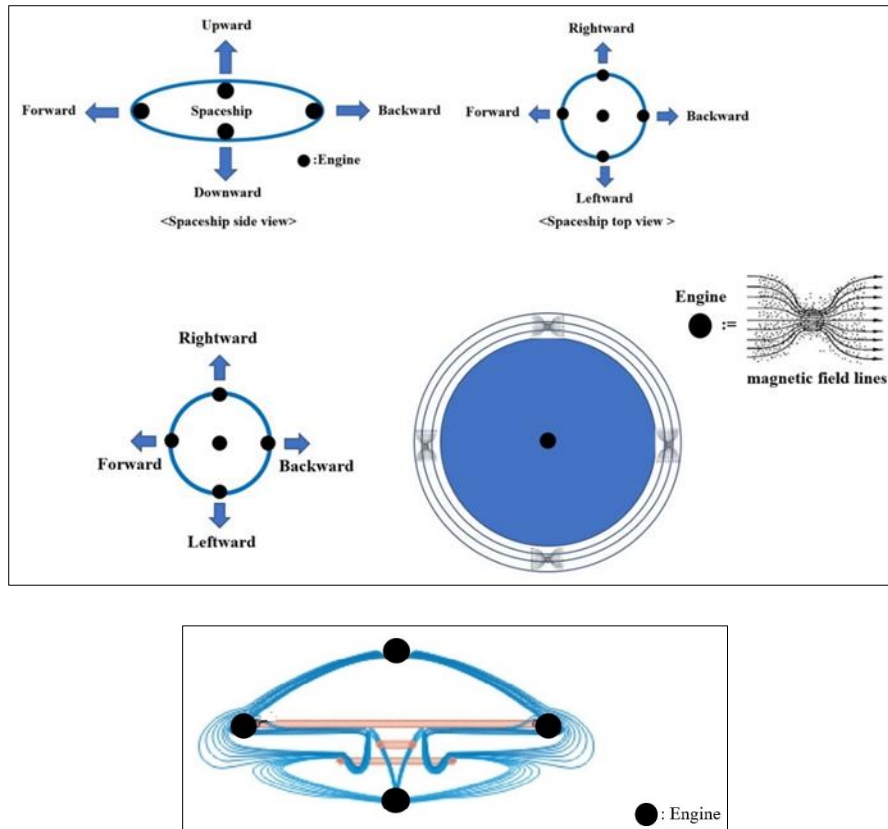
Figure 4 Path of magnetic field lines frozen in plasma in spaceship.

Fig.4 shows the path of magnetic field lines frozen in plasma in spaceship. The blue line is the magnetic field lines frozen in the plasma flow. The plasma flow is narrowed down and the magnetic field lines are converged near the engine black circles on the top, bottom, left, right, front and back of the spaceship.

2.3. Spaceship Flight Performance and Feature

The spaceship equipped with field propulsion system has the following features.

- There is no action of inertial force because the thrust is a body force. Since the body force they produce acts uniformly on every atom inside the spaceship, accelerations of any magnitude can be produced with no strain on the crews,
- The flight patterns such as quickly start from stationary state to all directions in the atmosphere, quickly stop, perpendicular turn, and zigzag turn are possible,
- The final maximum velocity is close to the velocity of light,
- Since the air around the spaceship is also accelerated together with the spaceship, the aerodynamic heating can be reduced even if the spaceship moves in the atmosphere at high speed (10km/s - 100km/s). However, it is expected that a plasma (ionized air) envelops the spaceship,
- Since it is an electromagnetic propulsion engine, there is no heat source, noise or exhaust gas associated with combustion,
- The engine and power source are installed in the spaceship. Therefore, it can fly in the atmosphere of a planet as well as in cosmic space,
- By pulse control of magnetic field, the acceleration varies from 0G to an arbitrary high acceleration (e.g., 100G),
- Deceleration is easy for re-entry into the atmosphere,
- Similar to the fourth item above, the seawater around the spaceship is also accelerated together with the spaceship, so the resistance of the seawater is reduced and it is possible to move at high speed in the sea. It is possible to smoothly enter the sea from the atmosphere without splashing water due to a sea surface collision.
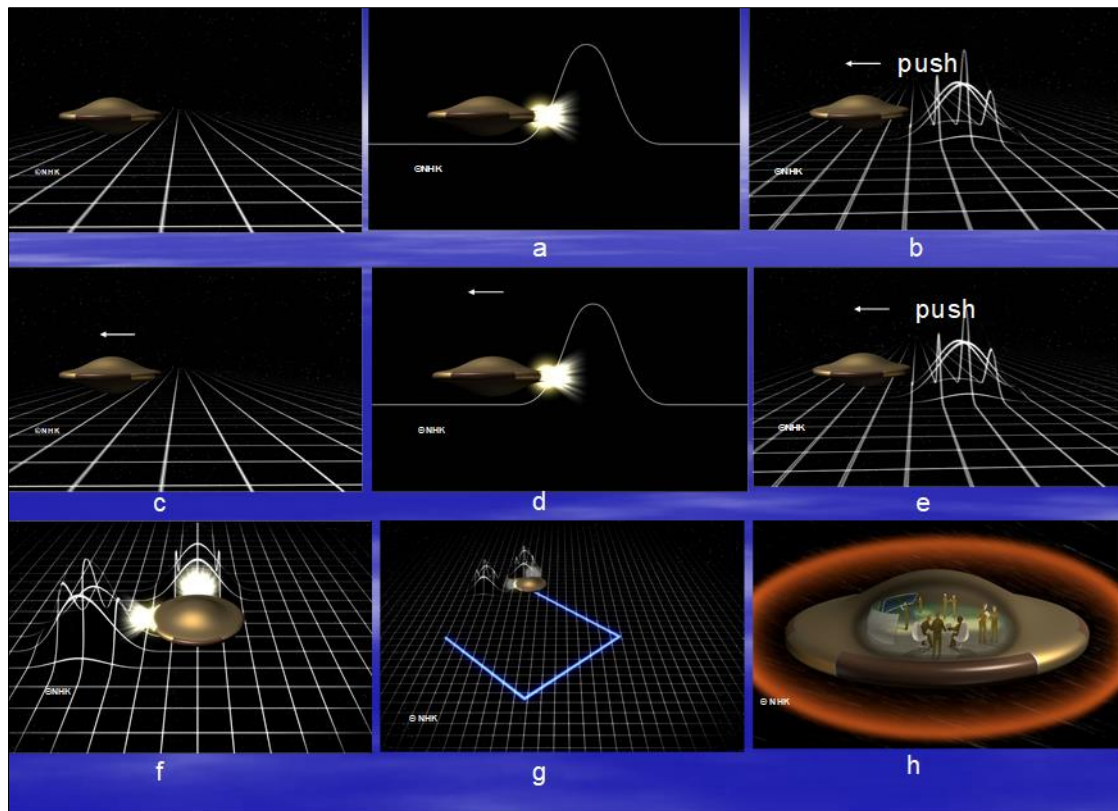
Figure 5 A description of the flight operation of a spaceship (© NHK).

Here, we explain the motion of the spaceship in detail using computer graphics as shown in Fig.5. For the sake of simplicity, the shape of the spaceship is an omni directional disk type.

As shown in Fig.5 (a), the spaceship is able to permeate its local space with a huge amount of energy in a certain direction; this energy should be injected at zero total momentum (in the spaceship-body frame) to excite the local space. Then the excited local space expands instantaneously (Fig.5 (a), (b)). Space including the spaceship is pushed from the expanded space and advances forward (Fig.5 (b)). The expression of "moves by being pushed from the expanded space" indicates that the spaceship produces a curved space region and moves forward by being subjected to the thrust from the acceleration field of the curved space. The space including the spaceship is propelled to the forward (Fig.5 (c)). Thus, this spaceship is accelerated to the quasi-speed of light by repeating the pulse-like on/off a change of permeating its local space with a huge amount of energy operation (Fig.5 (d), (e)). Changing a place to blow up, the spaceship can move with flight patterns such as quick start from a stationary state to all directions, quickly stop, perpendicular turn, and zigzag turn (Fig.5 (f), (g)). There is no action of inertial force, because the thrust is a body force. Since the body force they produce acts uniformly on every atom inside the spaceship, accelerations of any magnitude can be produced with no strain on the crews inside the spaceship (i.e., same as free fall). Namely, spaceship moves with the whole space around the spaceship, then, even if the spaceship flies about it very intensely, the spaceship holds the stopping state in moving space, and the crews are not shocked at all (Fig.5 (h)).

3. Conclusion

The report is a general one that describes the background and future policy, and there is no specific report on the space propulsion system. However, we could find a brief description of the features of the propulsion system partly as described below.

"A Handful of UAP Appear to Demonstrate Advanced Technology. In 18 incidents, described in 21 reports, observers reported unusual UAP movement patterns or flight characteristics. Some UAP appeared to remain stationary in winds aloft, move against the wind, maneuver abruptly, or move at considerable speed, without discernable means of propulsion. In a small number of cases, military aircraft systems processed radio frequency (RF) energy associated with UAP sightings."

Such features of the UAP described above are included in the features described in Section "*2.3. Spaceship Flight Performance and Feature*"**.**

At the present stage of space propulsion technology, the only practical propulsion system is a chemical propulsion system and an electric propulsion system, which are based on the expulsion of a mass to induce a momentum thrust. Since the maximum speed is limited by the product of the gas effective exhaust velocity and the natural logarithm of mass ratio, its speed is too slow for the spaceship to achieve the interplanetary travel and interstellar travel. Thus, the breakthrough of propulsion method has been required until now.

Field propulsion system is the concept of propulsion theory of spaceship not based on momentum thrust but based on pressure thrust derived from an interaction of the spaceship with external fields. Field propulsion system is propelled without mass expulsion. The propulsive force is a pressure thrust which arises from the interaction of space-time around the spaceship and the spaceship itself; the spaceship is propelled against space-time structure.

It is concluded that spaceflight propulsion must ultimately almost entirely consist of actions and reactions of fields, not combustion and expulsion of masses - with a vehicle's "fuel" or "propellant" being mainly a cryogenic "working fluids". A new propulsion theory using the curvature of the space is required.

Compliance with ethical standards

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