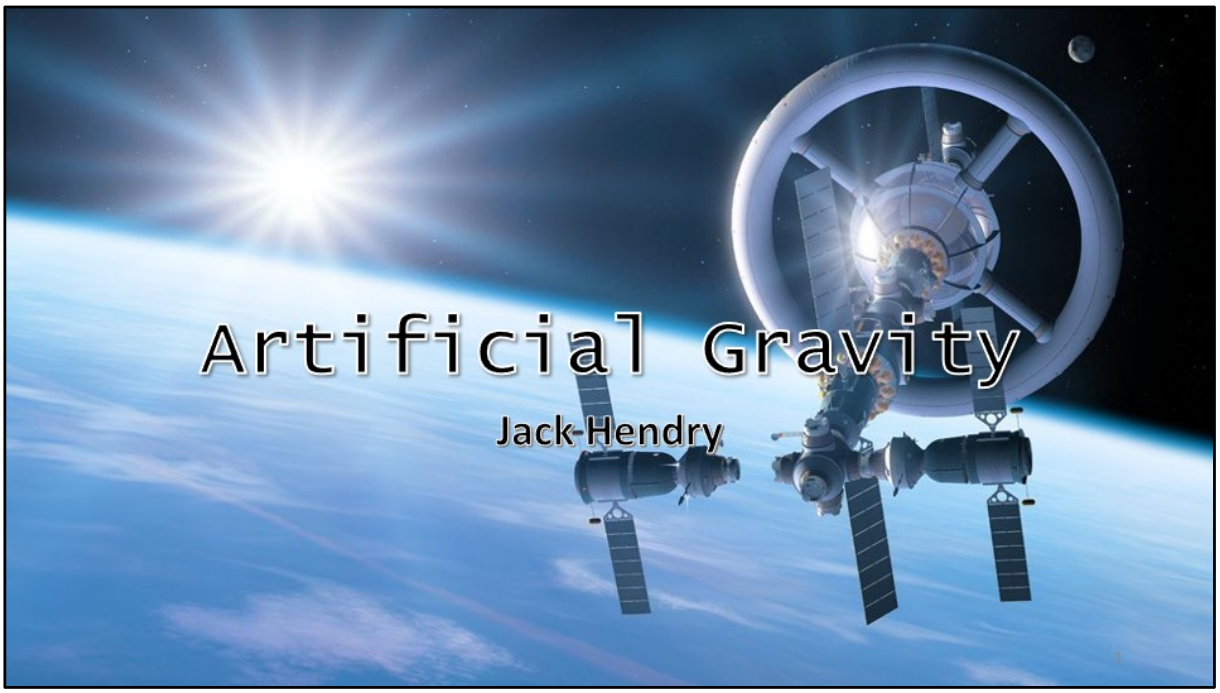
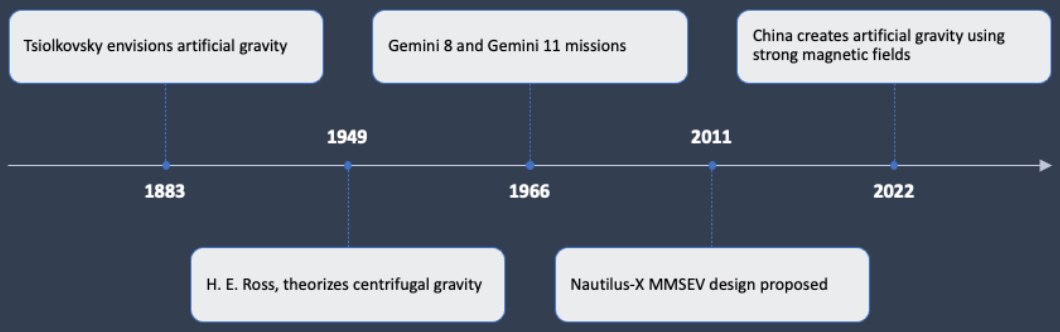

Artificial Gravity
Jack Hendry

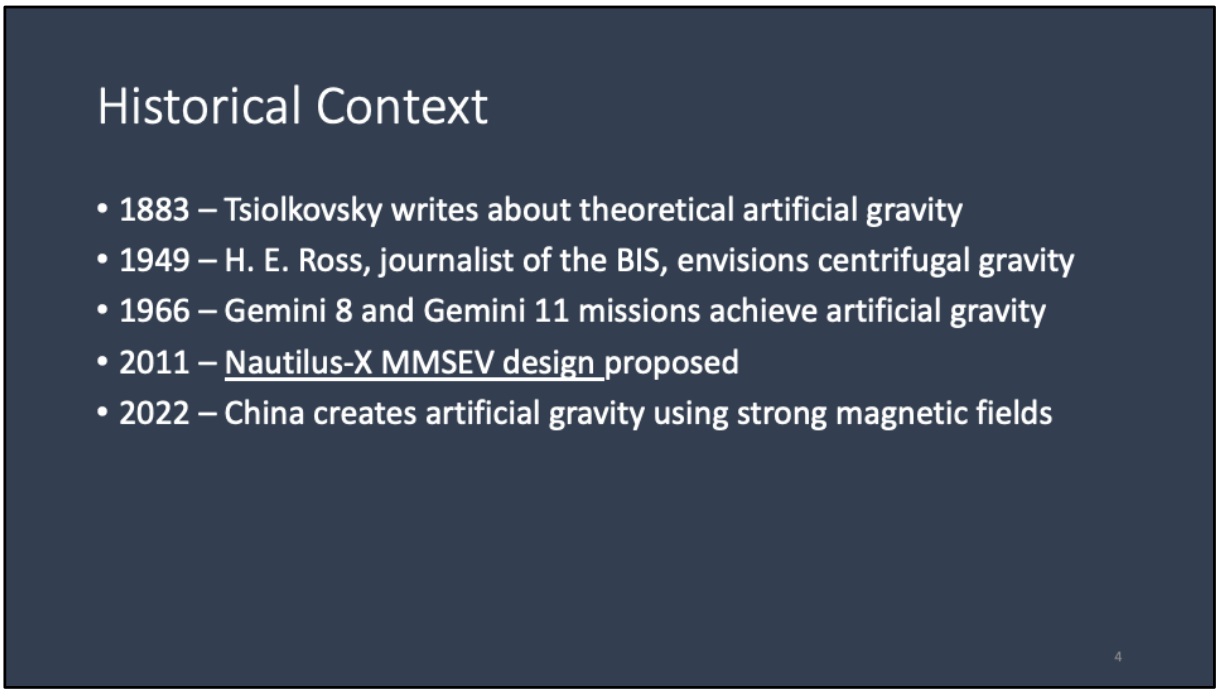
Overview

2

History


Tsiolkovsky envisions artificial gravity
Gemini 8 and Gemini 11 missions
China creates artificial gravity using strong magnetic fields
1883
1949
1966
2011
2022
H. E. Ross, theorizes centrifugal gravity
Nautilus-X MMSEV design proposed

3

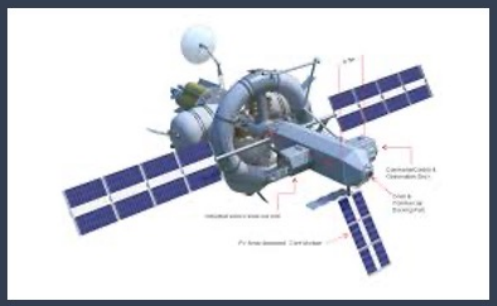


- Konstantin Tsiolkovsky, a Russian physicist and aviation engineer theorized the ability of creating artificial gravity.
- In 1949, H. E. Ross of the British Interplanetary Society Envisions the most popular idea of artificial gravity, the large centrifugal wheel on space stations that is seen is movies such as 2001: A Space Odyssey. Ross theorizes that the rotating wheel would be able to produce a pseudo-gravitational effect.
- In March of 1966,the Gemini 8 mission is launched where artificial gravity was created by shooting side thrusters on the capsule so that it would spin. This lasted a few minutes before one thruster broke causing continual firing, where the mission was promptly aborted. Gemini 11 conducted a similar experiment in the following September and successfully generated artificial gravity of about 0.00015 g's.
- In 2011, Nasa proposed the Nautilus-X Multi-Mission Space Exploration Vehicle, which was intended to be used in 1–24-month periods. The ship utilized the theorized centrifugal ring. Unfortunately, the Nautilus-X spacecraft has yet to pass the concept stage.
- In January of 2022, Chinese scientists successfully created an "artificial moon" using a vacuum chamber and very powerful magnets. The chamber would levitate on top of the magnets and create a gravitational pull similar to the moons. The

contraption was able to successfully make a frog levitate.

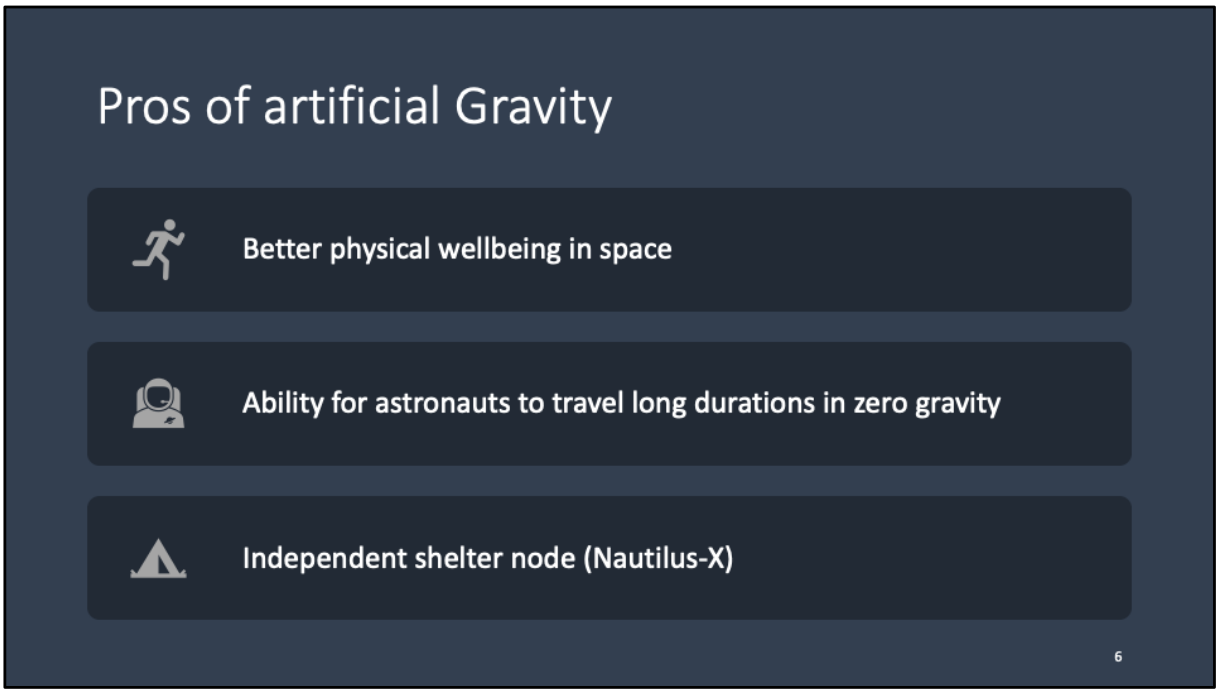
Planning and Implementation

- Centrifugal technology
- Magnetic Chinese

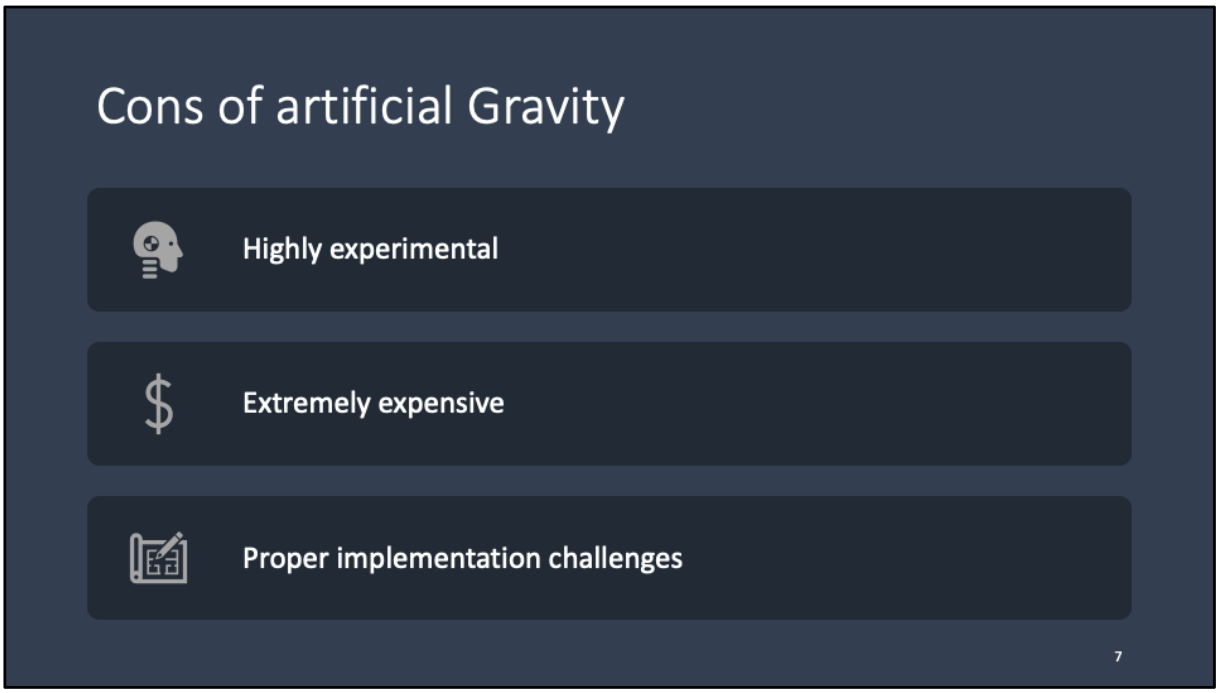


5

There have been very few tested and successful methods of artificial gravity. The most popular theorized method of artificial gravity is a Centrifugal system, as seen in the top image with the nautilus. If it were implemented, It'd most likely be either in a centrifuge design as the spinning generates an outward force, or a magnetic force as seen on the bottom. This was tested and successfully implemented by China earlier this year.



- Better physical wellbeing, muscle and bone structure deteriorate in a zero gravity experience, artificial gravity prevents that. Because muscles and bone structure deterioration is slowed, longer space journeys will be possible.



- Artificial gravity is still very experimental. Centrifugal designs are still only conceptual and magnetic chambers have only been completed on a very small scale.
- These concepts are very expensive. The 2011 concept of Nautilus is worth 3.7 billion dollars
- Implementation of the idea is difficult in of itself. The magnetic idea is good for if we were on solid, planetary ground but would be impossible in a space station. The centrifuge idea would also be impossible on a planet

Summary (Informational)

Artificial Gravity is a theoretical technology in which will allow a subject to experience a separate gravity compared to the environmental gravity. Many tests have been conducted in order to find a successful and efficient form of artificial gravity which will allow for humanity to expand into space. Two of the most successful forms of artificial gravity are Centrifugal ring, in which a ring is attached to a space station, where a constant spinning motion will allow for a simulated gravitational push away from the main column. The second is a magnetic system in which a room is floating within a vacuum sealed chamber, and levitated with a strong magnetic push, giving it the ability to simulate various gravitational pulls.

8

Summary (Opinion)

The creation and use of artificial will be an incredible leap in science for humanity. I am positive that the creation of artificial gravity will lead to more advanced technologies not wielded by man yet. Artificial gravity will allow humanity to travel farther through space, farther than they ever have before. I only see this creation as a net positive for our country and humanity as a whole.

9

Reference Links

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