

Why we had better drop analogies when discussing the role of humans in space

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Senior Adviser

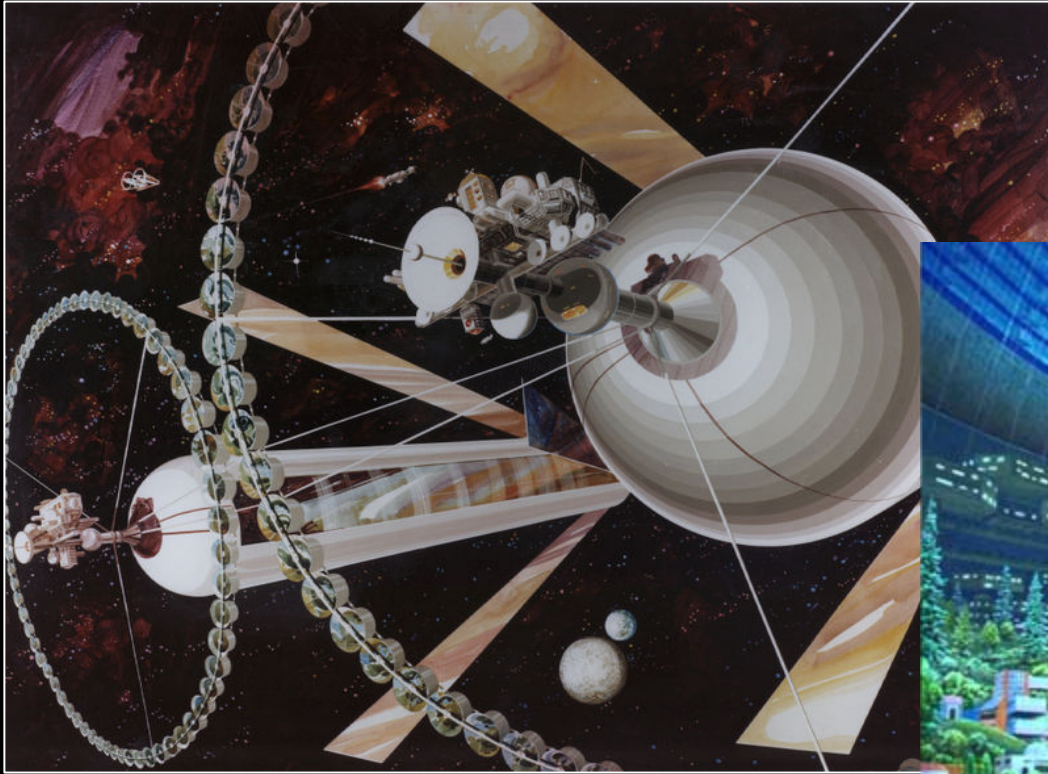
Swedish Space Corporation, Solna, Sweden

EARLY SPACE AGE ANALOGIES

Early space age analogies

- **Explorer of New Worlds (America), Settlers**
- **Pilot of spacecraft for Reconnaissance, Intercept, Strike**
- **Soldier on a battleship**
- **Scientist on a field trip or in the laboratory**
- **Attendant at stage-coach stations**
- **Factory workers**

Settlers of New Worlds



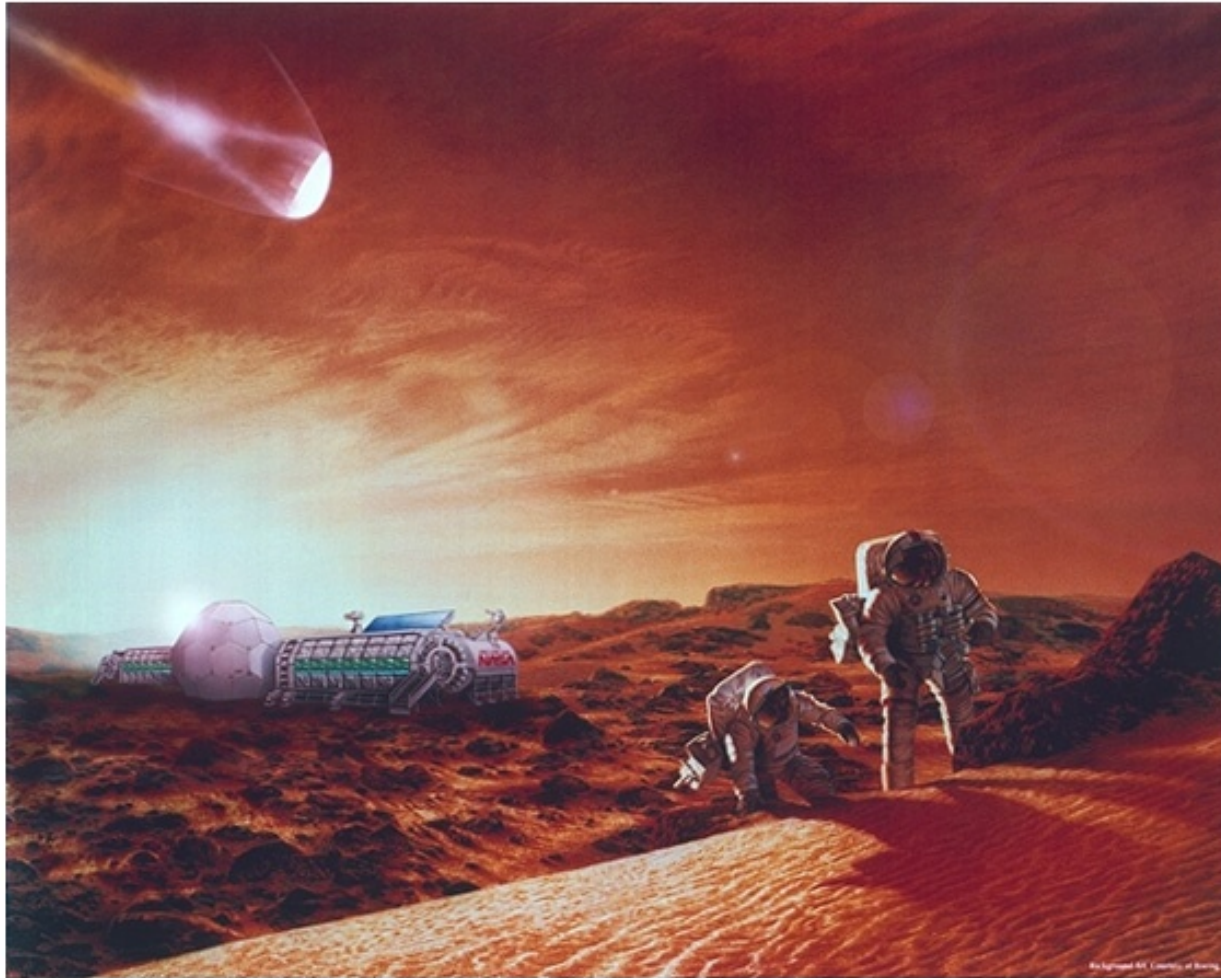
O'Neill, Princeton

Utopic 70's "space colonies", the answer of space enthusiasts to "The limit of growth"

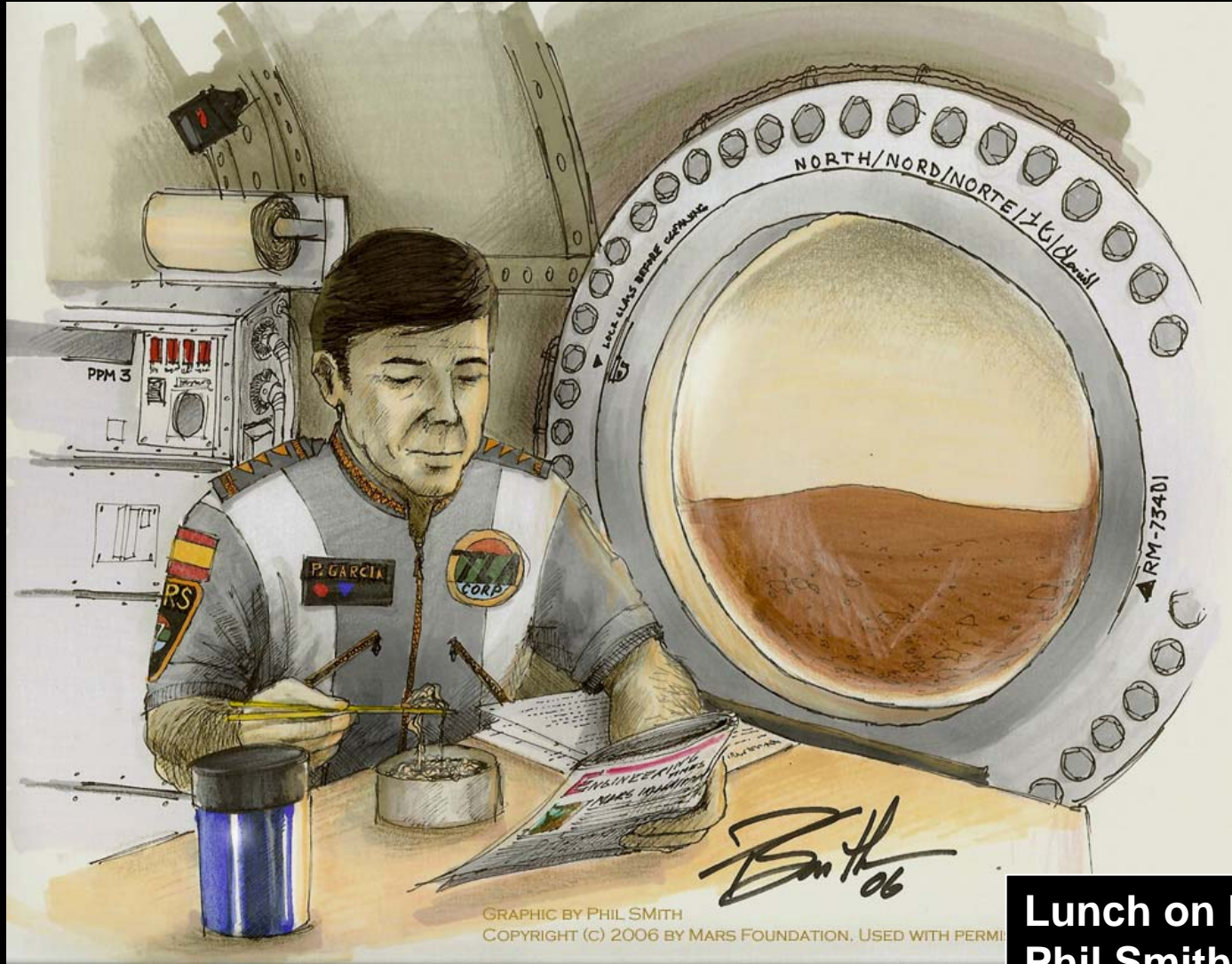


Stanford torus

Explorers of New Worlds

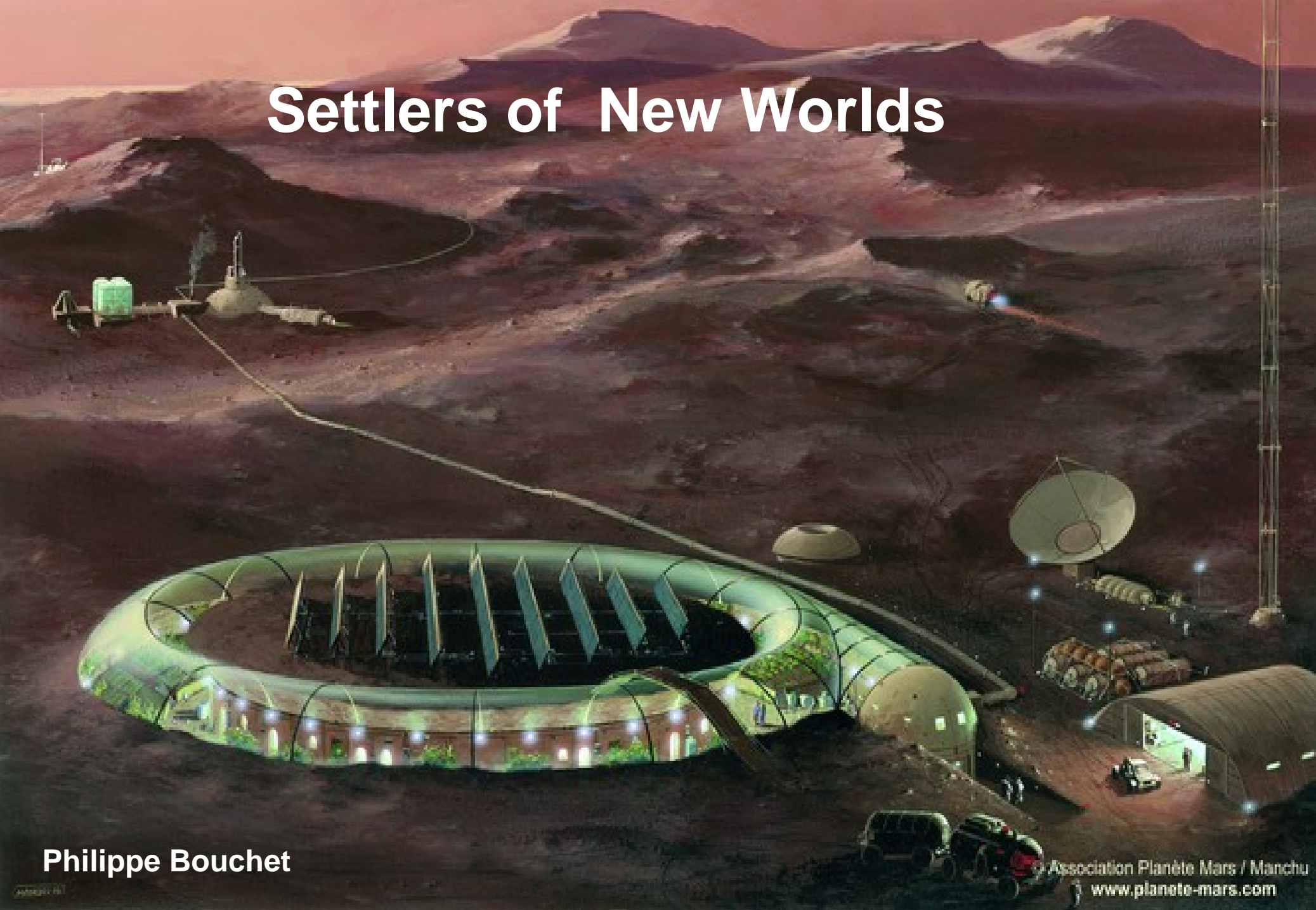


Explorers of New Worlds



**Lunch on Mars,
Phil Smith, 2006**

Settlers of New Worlds



Philippe Bouchet

Association Planète Mars / Manchu
www.planete-mars.com

The military role

**PILOTS OF SPACECRAFT FOR RECONNAISSANCE,
INTERCEPT, STRIKE**

The military role – pilot



Gagarin's hand controller,
designed by "artillerymen"

"... the leadership of the Missile Forces has more trust in automatic satellites, and it underestimates the role of human beings in space research. I

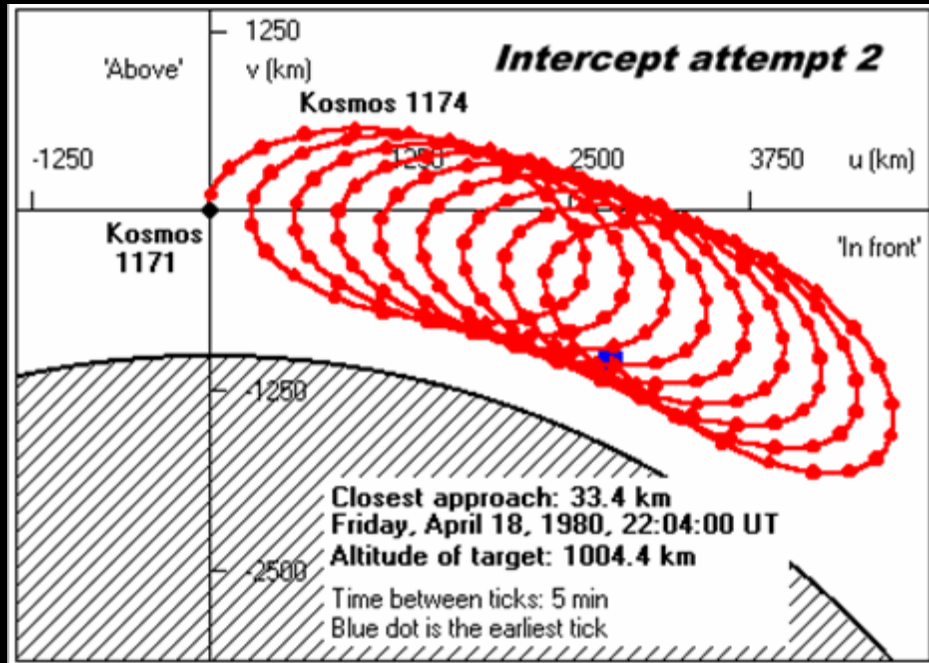
*t is a shame that in our country, which was the first to send man into outer space, for four years the question has been debated whether man is needed on board a **military** spacecraft.*

In America this question has been resolved firmly and conclusively in favor of man. In this country, many still argue for automata..."

Yuri Gagarin et al in a letter to Leonid Brezhnev, October 1965

The military role, intercept

From Valentina Ponomareva, “The Female face of the Cosmos”:



Aiming in space is not so easy!

“...the situation was aggravated by the discrepancy between the terrestrial stereotype of relative movement and the reality of space flight: we got used to rely on our experience of operating airplanes and automobiles, where it is possible to "add gas" to catch up with a moving object. ...

*Besides, a significant role in guiding an air plane belongs to intuition. ... But I am not sure that space guidance could rely on intuition. In order to predict relative movement of objects, it is necessary to know their orbits precisely; **it is impossible to rely on anticipation...**”*

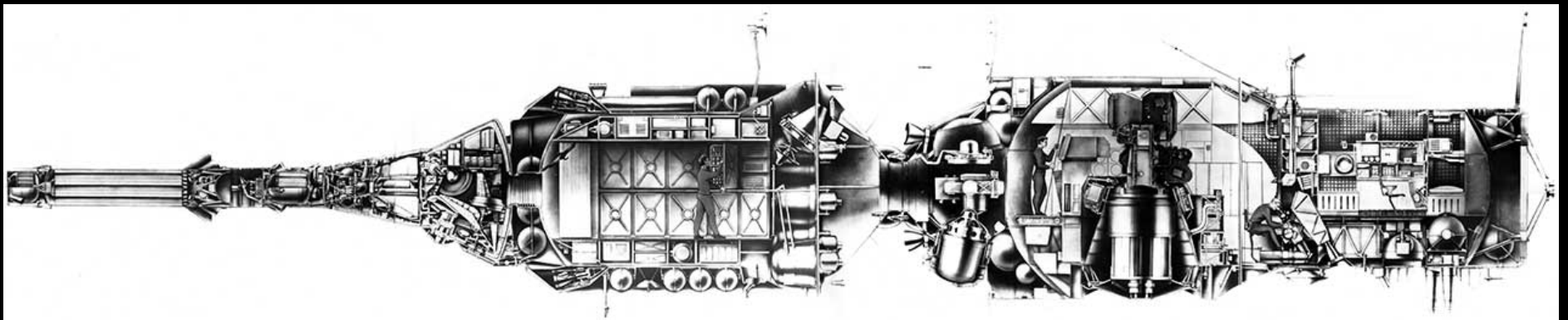
The military role, reconnaissance, intercept



Spiral

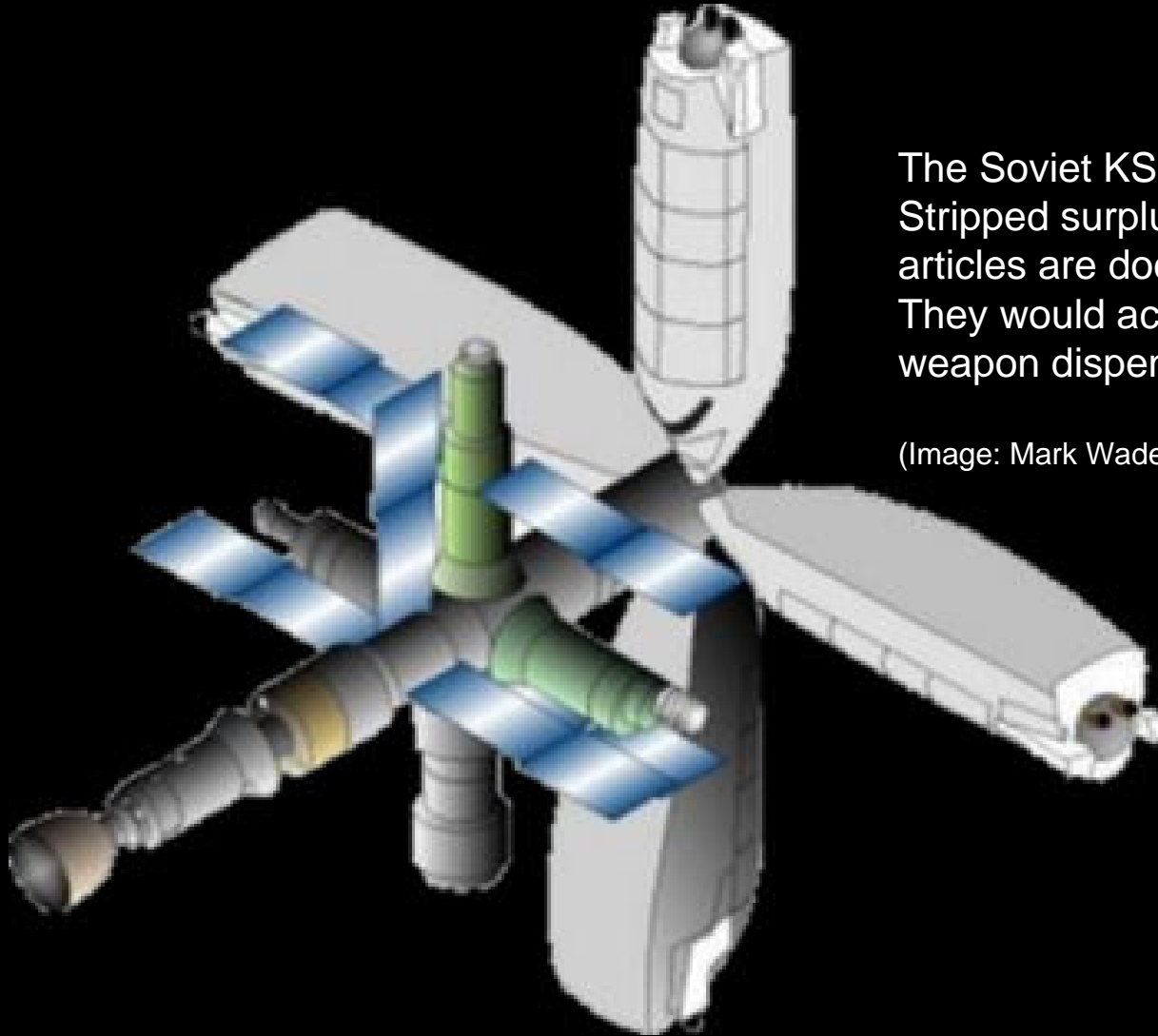


LKS interceptor



Almaz manned reconnaissance space complex

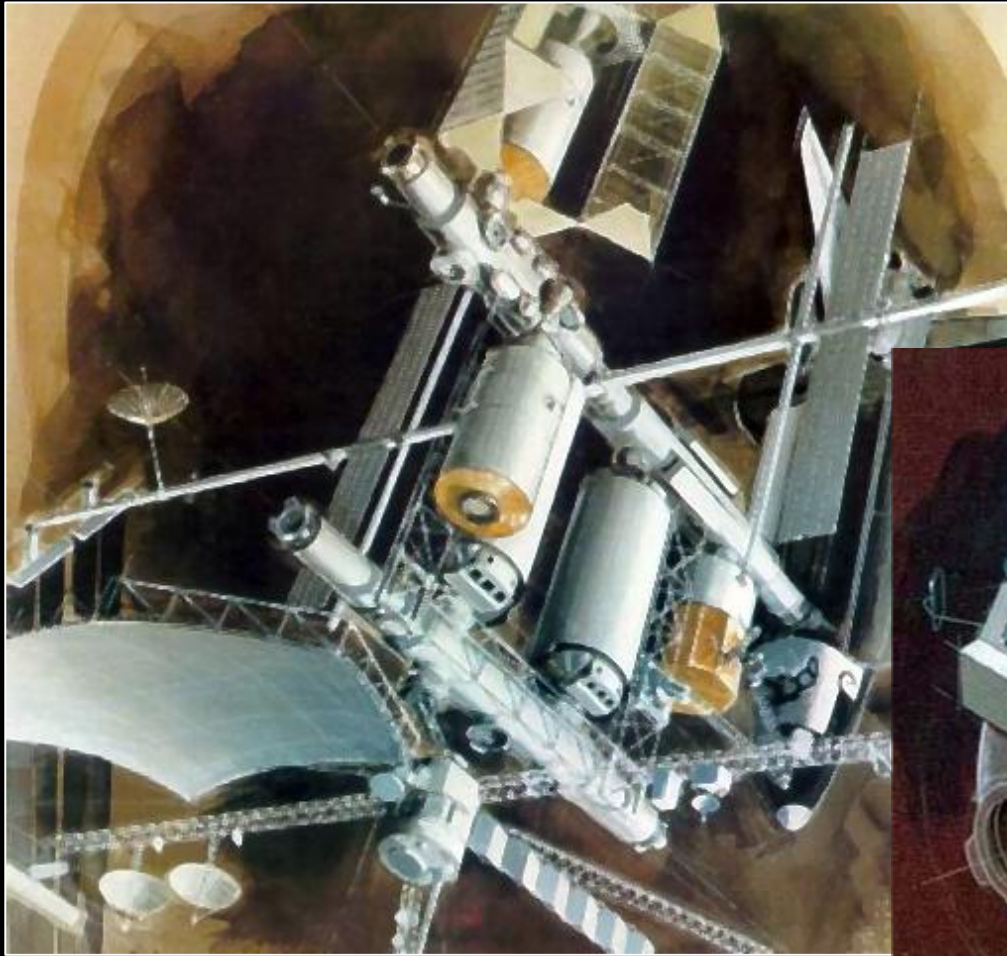
The military role – soldiers on a battleship



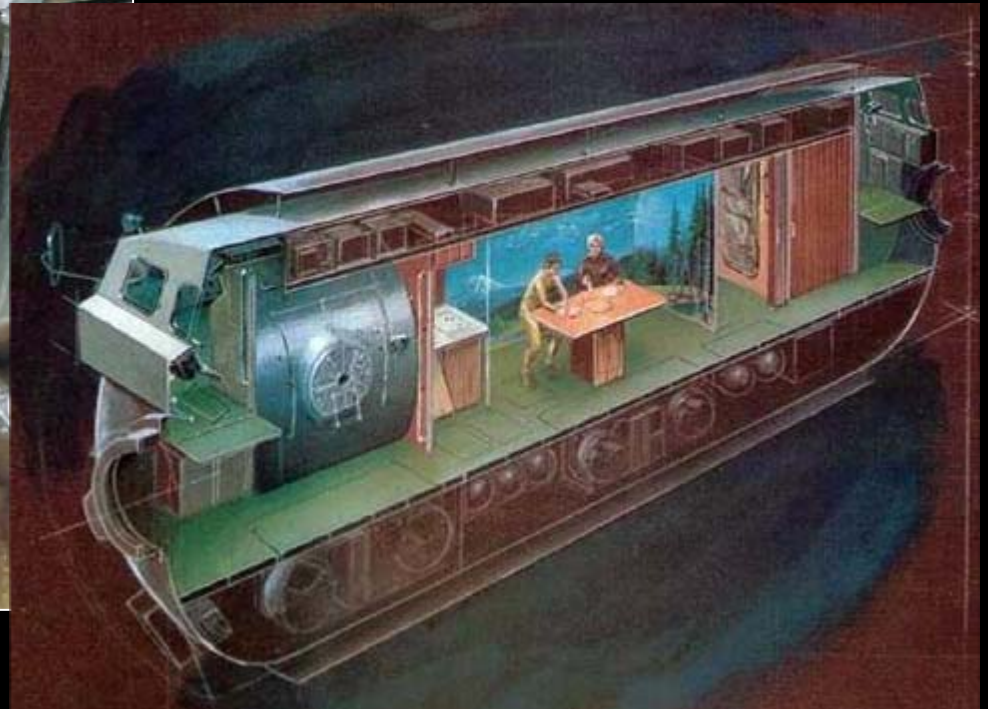
The Soviet KS battle station. Stripped surplus Buran test articles are docked to the core. They would act as nuclear weapon dispensers.

(Image: Mark Wade)

Gas station attendants and truck drivers

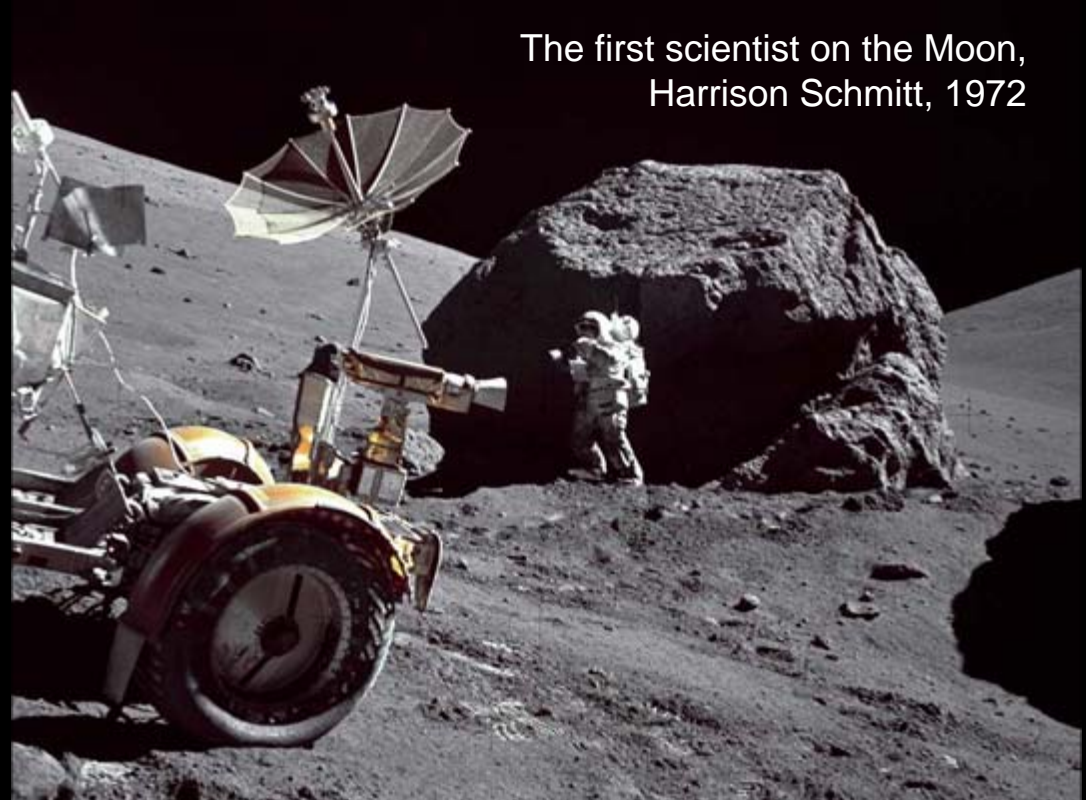


"Space Operations Center",
NASA 1979, a "stage-coach stop
in the sky"



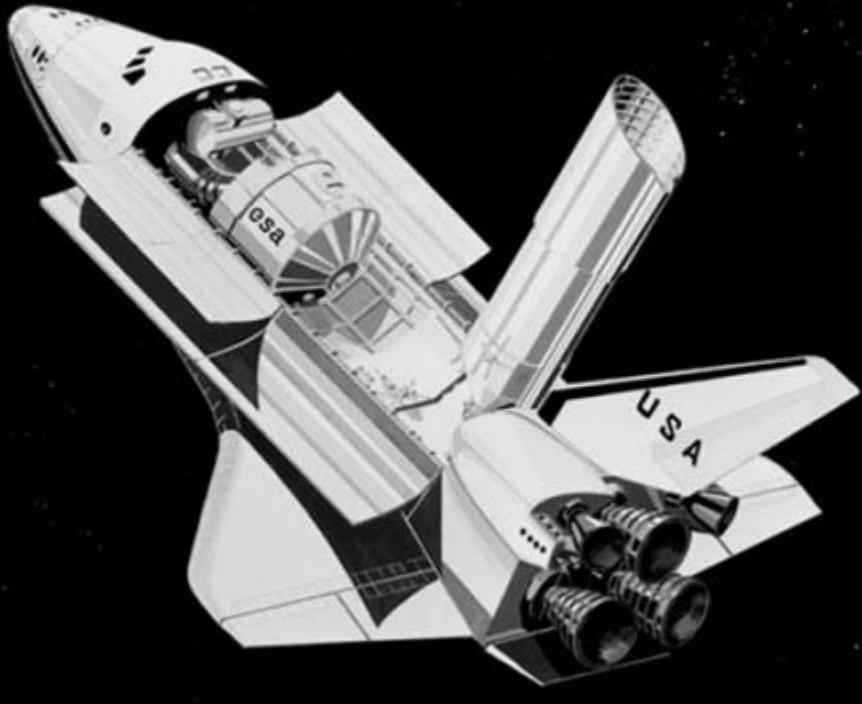
Scientist on a field trip

“...there is not a robot on this planet that you can send to the grocery store to pick up a bag of unbruised apples. If they can’t do a trip to the grocery store, how can they explore a planet?...” (Robert Zubrin, “The Human Explorer”, The New Atlantis, 2004)



The first scientist on the Moon,
Harrison Schmitt, 1972

Scientist in the laboratory



Large Infrared Telescope for
Spacelab



Sweden's first astronaut Christer Fuglesang

The modern analogies – construction and maintenance worker



Closing remark

What can we make out of all of this?

As for me, I agree with space educator David Portree who proposes that we should choose goals for human spaceflight that are relevant to people everywhere:

***“Discovering life elsewhere,
protecting life on Earth - those are
relevant goals.”***