

A decorative horizontal bar with a rainbow gradient, transitioning from red on the left to purple on the right.

## Friends of Europe: “Five Minutes Opener” 15 March 2019

Amara Graps opening provocative words for ‘Return of the Space Race’ seminar at the Friends of Europe, European Young Leaders seminar, London.



It is the year 2027. You are the human-on-Earth operator of a 12U CubeSat currently parked at a fueling station in high-Earth-orbit, waiting for the arrival of water extracted from a lunar ice patch to fuel your spacecraft's steam engine.

You've seen at the Minor Planet Center that a Near Earth Asteroid will pass by the Earth at about 3/4 of a lunar distance in five-day's time. The asteroid is less than 10 m in diameter with a speed of a few km/sec. To have so much lead time on a low-velocity small object is unusual.

You have registered your interest in this object at the International Space Objects Mining Registry. With the tiny object fitting the category of 'dirt', your fishing license for that volume of space doesn't need to follow a priority rights declaration procedure. Moreover, you are prepared to mine all of it. Such a plan is optimal for safety measures and is the backbone of your business of recycling dead satellites in graveyard orbit.

Your business has a partnership with the fueling station company to provide the other company feedstock metals. With such feedstock, the 3D metal printer at the station can construct new metal pieces for itself or other near-space operators.

Plus whatever water can be extracted from the small rock will help you to refuel your own CubeSat and the water supplies of the fueling station.

[PAUSE]

The scenario I've just described exhibits technology that exists today using a regulatory language that is in vigorous discussion in the Hague International Space Resources Governance Working Group since 2016.



Amara L. Graps

You Young European Leaders are in an excellent position at this time to provide the courage and vision to implement the next step of humans as spacefaring beings, which inevitably will use what exists in space, to build in space.

Space resources can provide an extension of our SpaceShip Earth to include our robots that are orbiting the Earth and traveling beyond.

With space resources we can service, recycle, or build anew, in space, without the limitations of carrying the resources from the Earth. Telecommunications, Earth observations, planetary research, extraterrestrial life explorations, are just a few examples which can be implemented cheaper and more efficiently in space.

With your courage, you can engage our human resources in Europe to implement such a vision, to bridge the gap from today to 2027. The publicly-funded Researchers and the private companies building in space need each other; their goals are complementary.

The future we are building needs all hands working: the scientists, the engineers, the lawyers, the venture capitalists, the policy makers, the educators, the business managers, and... especially the women and minorities working in all of these fields. Because studies have shown that companies and entities with such people at the top are more successful.

I believe that civilization stands at a very special time in space exploration. It's become democratized. Let's go together to our rich future.

A handwritten signature in black ink, appearing to read "Amara Graps", with a decorative flourish at the end.

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