1AR New Cards

AT Asteroid Mining

2] Mining asteroids further creates debris, proof that private appropriation triggers impacts of nuke war and miscalculation

Scoles 15 [Sarah Scoles, New Scientist. Dust from asteroid mining spells danger for satellite. May 27, 2015. https://www.newscientist.com/article/mg22630235-100-dust-from-asteroid-mining-spells-danger-for-satellites/]

IF THE gold mine is too far from home, why not move it nearby? It sounds like a fantasy, but would-be miners are already dreaming up ways to drag resource-rich space rocks closer to home. Trouble is, that could **threaten** the web of **sat**ellite**s** around Earth. Asteroids are not only stepping stones for cosmic colonisation, but may contain metals like gold, platinum, iron and titanium, plus life-sustaining hydrogen and oxygen, and rocket-fuelling ammonia. Space age forty-niners can either try to work an asteroid where it is, or tug it into a more convenient orbit. NASA chose the second option for its Asteroid Redirect Mission, which aims to pluck a boulder from an asteroid's surface and relocate it to a stable orbit around the moon. But an **Asteroid's gravity** is so **weak** that it's **not hard** for **surface particles** to **escape** **into space**. Now a new model warns that **Debris** shed by such transplanted rocks could **intrude** where many **defence** and **comm**unication **sat**ellite**s** live – in geosynchronous **orbit**. According to Casey Handmer of the California Institute of Technology in Pasadena and Javier Roa of the Technical University of Madrid in Spain, 5 per cent of the escaped debris will end up in regions traversed by satellites. Over 10 years, it would cross geosynchronous orbit 63 times on average. A satellite in the wrong spot at the wrong time will suffer a damaging high-speed collision with that dust. The study also looks at the "**catastrophic disruption**" of an asteroid 5 metres across or bigger. Its total break-up into a pile of rubble would increase the risk to satellites by more than 30 per cent (arxiv.org/abs/1505.03800). That may not have immediate consequences. But as Earth orbits get more crowded with spent rocket stages and satellites, We will have to worry about **cascades of collisions** like the one depicted in the movie Gravity.

3] Over-reliance on tech pushes back climate action: we need more direct efforts that limit pollution

Fuge 21. Lauren Fuge is a science journalist at Cosmos. She holds a BSc in physics from the University of Adelaide and a BA in English and creative writing from Flinders University. Fuge, Lauren. "From the Vault: Tech Alone Cannot Solve Climate Crisis." Cosmos, 5 Aug. 2021, https://cosmosmagazine.com/technology/tech-alone-cannot-solve-climate-crisis/.

An international team of scientists says that **we cannot rely on technology to meet climate targets** – instead, wealthy countries must change their lifestyles to dramatically reduce emissions and avoid climate breakdown. The new article, published in Nature Energy, calls for the urgent development of new climate models that explore ways economies can remain stable without constantly growing, reducing the reliance on potentially unfeasible new technologies to fix our problems. "We cannot keep temperature rises below 1.5 degrees using technology alone – unfortunately this will require lifestyle changes in wealthy countries," says Manfred Lenzen from the University of Sydney, co-author of the study. "Because we've not implemented significant emissions reductions over the past decades when we should have, we now need to reduce emissions rapidly and like we've never done before." Models attempt to predict future temperatures and climate based on current data and simulations; they can follow a variety of pathways to different outcomes based on our choices now. Many of these current models accept that economies will continue to strive for growth, and factor in dramatic technological change in order to meet climate targets such as the Paris Agreement. The United Nations Framework Convention on Climate Change, for example, argues that innovative technology is essential for not only cutting greenhouse gas emissions but also adapting to the impacts of climate change. But this new study argues that technological fixes – such as carbon capture and storage, nuclear fusion, or injecting particulates into the atmosphere – may be unfeasible to scale up to the required levels, especially as increased economic growth drives up energy demand. The authors point out that to remove carbon from the atmosphere at a fast enough rate, direct air carbon capture and storage (DACCS) methods may use up to half of the world's current electricity generation. This would

then make it difficult to make the global transition to renewables. "Scientists have raised substantial questions about the risks of negative emissions technologies and the feasibility of sufficiently decoupling economic growth from rising emissions," says Jason Hickel, lead author of the paper from the London School of Economics and Political Science (LSE). "Put bluntly, these approaches may not be adequate to address the crisis we face. We're gambling the future of humanity and the rest of life on Earth because of the assumption that GDP must continue to grow in rich countries." This echoes previous research arguing that over-reliance on new technology is enabling us to delay a dramatic reduction in emissions, creating a **dangerous cycle of technological promises and re-framed climate change targets.** Instead, scientists call for widespread cultural, social and political transformation. "It doesn't have to be this way," Hickel and colleagues write. "High-income nations can maintain economic stability, invest in innovation and achieve strong social outcomes without the need for additional growth, thereby making mitigation easier to achieve." They instead propose policies that will reduce inequality, guarantee living wages, shorten the working week, and ensure access to healthcare, education and other essential services. "If we share the yields of our economy more fairly, we can ensure good lives for all without plundering the planet for more," Hickel says. By updating existing climate models to address alternative 'post-growth' scenarios, the authors conclude, this would "help broaden the range of policy options for public debate".

AT Colonies

1] Indentured servitude is the private sector's way to settle the cosmos. Take Elon Musk and Mars colonization for example

Hore-Thorburn 21. Isabelle Hore-Thorburn is an associate editor for Highsnobiety. Hore-Thorburn, Isabelle. "Trust Elon Musk to Make Going to Space Sound Shit." Highsnobiety, 11 Jan. 2021, https://www.highsnobiety.com/p/elon-musk-colonizing-mars-indentured-slavery/.

Elon Musk, aka the newly anointed richest man in the world, has revealed more details of his plan to move people into space. However, before you get excited, everything he just detailed makes us want to stay firmly on earth. He's bringing indentured servitude to Mars. In a recent interview with Business Insider, Musk predicted that life as we know it "will be dramatically improved if we're a multiplanet species as a spacefaring civilization." But dramatically improved for who exactly? Musk's utopian project aims to see an estimated 1 million people relocate to Mars by 2050, many of whom will need to pay back their journey on arrival. The tech billionaire intends for there to be "loans available for those who don't have money," and jobs on the Red Planet for settlers to pay off their debts. Sound familiar? That's because his plan for colonizing Mars sounds a lot like OG colonialism. The idea of indentured servitude was born of a need for cheap labor in America in the decade following the settlement of Jamestown by the Virginia Company in 1607. Settlers soon realized that they had too much land to care for, but no one to care for it and so they developed the system of indentured servitude to attract workers. The life of an **indentured servant** was **harsh and restrictive**, but it wasn't slavery. There were laws that protected some of their rights. However, their contract could be extended as punishment for breaking a law, such as running away, or in the case of female servants, becoming pregnant. Now imagine that setup but in space. Over the last couple of years, Musk has demonstrated a less than impressive attitude to the rights and safety of his workers. In 2019 a judge found that he violated national labor laws when he implied via tweet that Tesla workers who unionized would have to give up their company stock options.