## 1NC

### FW

Agree w welfare and defs---agree w/extinction.

### OFF---Mining

C1---mining

#### Space platinum mining is better for the environment

Hein et al 17 [Andreas Hein, Laboratoire Genie Industriel, Michael Saldani, Laboratoire Genie Industriel, Hortense Tollu, Laboratoire Genie Industriel, “Exploring Potential Environmental Benefits of Asteroid Mining,” 69th International Astronautical Congress, <https://arxiv.org/ftp/arxiv/papers/1810/1810.04749.pdf>] /Triumph Debate

If we compare these rough estimates with the CO2eq values for Earth-based platinum mining, **we immediately see that the global warming effect of Earth-based mining is several orders of magnitude larger,** even for secondary platinum. Table 2 shows the ratio between the Earth-based platinum mining emissions and the space-based mining emissions. **A difference of two orders of magnitudes for primary platinum and one order of magnitude for secondary platinum is observed. For a mixture of primary and secondary platinum, we get values with two orders of magnitude difference.**

#### Allowing companies to pursue stellar mining makes further exploration much more possible and also decreases asteroid risk

Ursul & Ursul 20 [Arkady Ursul, Ecology @ Academy of Sciences of Moldova, Tatiana Ursul, Philosophy @ National Research Technical University, “On the Path to Space Mining and a Cosmic Sustainable Way of Socio-Natural Interaction,” Philosophy and Cosmology, <http://ispcjournal.org/journals/2020/02/PhC_25_UrsulUrsul.pdf>] /Triumph Debate

The beginning of **the interaction between mining engineering, mining, and astronautics did not come by accident** at the present time of space exploration. It became obvious that **space activities would not continue to develop effectively without the “support” of the mining industry and its emergence beyond the terrestrial atmosphere. Along with this, both further space exploration and geospace safety promotion**, i.e., protection of the planet against threats from space, **will be impossible without the development of space mining**. It is appropriate to recall that Konstantin Tsiolkovsky proved the necessity of space exploration proceeding not only from the demands of social and economic development but primarily from the need to ensure the safety and preservation of mankind. He also reckoned the emergence of an “industry in the ether.” Therefore, **the development of mining,** and through it, the other industries, **is in line with the reduction of anthropogenic pressure on the biosphere** under the conditions of the population growth. **The development of space resources and their processing outside the Earth**, directly in space, **drastically changes the principles and trajectories of space missions**, as well as the ways of creating space technology, bringing this technological process beyond the biosphere. **The priority of space resources is water. It can be found in circumterrestrial asteroids in the amount of several trillion tons. If it becomes possible to extract water from natural cosmic bodies** (which decomposes under the influence of an electric current to oxygen and hydrogen) and other necessary products for space technology and to produce fuel outside the planet on the basis of hydrogen**, it will reduce the price of further space development by twenty times**. It is believed that the first space field is likely to be not asteroids (which may contain rare earth elements, platinoids, and other rare and precious metals) but the Moon, where the priority extracted resource will be the water used to provide life support to people and fuel for rockets and space vehicles. The need to use lunar natural resources for the creation of lunar bases, the construction of space infrastructure for the purposes of further space exploration, including mine shafts, tunnels and other underground structures, especially for refueling space vehicles, attests to the early development of the Moon (Krichevsky, 2020; Krichevsky & Bagrov, 2019; Mayboroda, 2018; Slyuta, 2017). However, **more than a thousand asteroids are flying near the Earth**, and they can be achieved much more easily than the Moon. At the same time**, some of them represent a very serious threat to our planet, which is often reported** by the media. However, the Moon still does not significantly affect the problem of geocosmic safety, while some asteroids and comets constitute a threat to the planet on a short-term horizon. **It is evident that the asteroid-comet hazard has to be prevented, and it can fundamentally affect the choice of further ways and methods of space activities since security is always more important than commercial and other activities.** In fact**, it is also necessary to stand secure in order to develop the economy.** The basic idea of SD in its terrestrial and space variants is to ensure the safe existence of mankind (Ursul, 2016). It is important not to place in jeopardy the ability of future generations to meet their needs and, **above** **all, the basic need for a safe existence and sustainable development on the Earth and in space.** After all, the more space and objects of space will be mastered on a larger scale, the greater the chance of a further continuation of mankind existence (Ursul & Ursul, 2019).

#### Expansion to space is necessary to avoid energy shortages and climate change, we can colonize other places.

Ursul & Ursul 20 [Arkady Ursul, Ecology @ Academy of Sciences of Moldova, Tatiana Ursul, Philosophy @ National Research Technical University, “On the Path to Space Mining and a Cosmic Sustainable Way of Socio-Natural Interaction,” Philosophy and Cosmology, http://ispcjournal.org/journals/2020/02/PhC\_25\_UrsulUrsul.pdf]

**In the near space future, mankind will have to massively ship the production of energy and materials outside the planet**, instead of deploying this industry in undeveloped territories, for example, in deserts, the Arctic, the Antarctic or in the oceans and seas. **The main reason for the relocation of the energy and some other industries outside the Earth is related to** the transition to SD and especially with a number of environmental issues, such as **global warming and depletion of the world’s fossil fuel and energy resources** with the increase of energy consumption. Therefore, **the development of any new terrestrial territories, for example, the ocean, is economically inefficient and environmentally impractical**. In the case of the development of space bodies, a new anthropogenically-space method and a method of preserving the terrestrial biosphere, as well as the creation of it of the most favorable conditions for the existence of mankind and other forms of life, appear. Therefore, those projects that in the acceptable future can be implemented in space are hardly worthwhile to implement on the planet. **A fundamental conclusion about the need for the future to “split” production into terrestrial, mainly agricultural and space, mainly industrial**, between which the products of activity can and will be exchanged **has already been made** on the basis of an analysis of current trends in the environmentalization of economic and other anthropogenic **activities in the context of achieving global sustainability. Agricultural production in the perspective of the transition to SD should fit into the biosphere**, using intensively-ecologized methods of economy management (Bazaluk et al., 2020). **The strategic perspective of the global-space production split is the most natural and effective one and is understandable in terms of ensuring eco-and geo-security of the civilization’s existence** (Zhuchenko & Ursul, 1983)

#### Warming causes extinction

**Garrison 21** (Dr. Jim Garrison 21, PhD from the University of Cambridge, MA from Harvard University, BA from the University of Santa Clara, Founder/President of Ubiquity University, “Human Extinction by 2026? Scientists Speak Out”, UbiVerse, 7/1/2021, https://ubiverse.org/posts/human-extinction-by-2026-scientists-speak-out)

This may be the most important article you will ever read, from Arctic News June 13, 2021. It is a presentation of current climate data around planet earth with the assertion that if present trends continue, rising temperatures and CO2 emissions could make human life impossible by 2026. That's how bad our situation is. We are not talking about what might happen over the next decades. We are talking about what is happening NOW. We are entering a time of escalating turbulence due to our governments' refusal to take any kind of real action to reduce global warming. We must immediately and with every ounce of awareness and strength that we can muster take concerted action to REGENERATE human community and the planetary ecology. We must all become REGENERATION FIRST RESPONDERS, which is the focus of our Masters in Regenerative Action.

### AT: Kessler Effect/Debris

#### 1---Private entities are already innovating –

**INN '20,** Innovation News Network, "Innovation in space: the private sector’s role in the 2020 space race", 6-11-2020, accessed 7-11-2021, <https://www.innovationnewsnetwork.com/innovation-in->space-the-private-sectors-role-in-the-2020-space-race/5490/ DHS//JL

SpaceX has paved the way for a new wave of commercial space technologies. However, **private actors have been influencing the space industry for many years.** In May 2003, Scaled Composites first launched SpaceShipOne, an experimental and reusable space plane that uses a hybrid rocket to achieve speeds of up to speeds of up to 900 m/s. SpaceShipOne completed the first crewed private spaceflight in 2004, which was then retired that year. In 2013, The Spaceship Company announced the first powered flight of SpaceShipTwo, another suborbital spaceplane designed for space tourism. Unfortunately, in October 2014, the first SpaceShipTwo VSS Enterprise crashed in the Mojave Desert. Further investigation suggested that the craft’s descent device deployed too early, killing the pilot, Michael Alsbury. Virgin Galactic plans to operate a fleet of five improved SpaceShipTwo spaceplanes in a private passenger-carrying service and has been taking bookings for some time, with a suborbital flight carrying an updated ticket price of $250,000. **SpaceX is responsible for some of the most innovative space technologies** produced in the last decade.SpaceX has created the most powerful rocket ever developed, Falcon Heavy, which can lift more than twice the payload of the next closest operational vehicle, the Delta IV Heavy. Although the nature is of the commercial space sector is competitive, many private companies share common goals.How can commercialisation reduce overcrowding in space? Almost 60 years of space activities and more than 5,450 launches have resulted in approximately 23,000 objects remaining in orbit. Around 24% of the catalogued objects are satellites. This catastrophic waste of technology can have a negative effect of future launches and it has been theorised that sending objects into Earth’s orbit could become impossible due the risk of collision. This debris must be removed from orbit if the space industry is to continue to grow. Many **private companies have taken on the burden of removing debris from Earth’s orbit.** Aviosonic Space Tech has pioneered the first Debris Collision Alert System (DeCAS) for the monitoring of space vehicles and satellites as they re-enter Earth’s atmosphere. Avisonic’s patented space debris management system, DeCAS, addresses the vital issue of protecting people and institutions across the globe through a precise, efficient, and cost-effective system which will make the world a safer place. Although the removal of space debris is an important step in sustainable space travel, many businesses are developing nanosatellites to reduce the volume of technology in orbit. Another benefit of developing nanosatellites is that they can do almost everything a conventional satellite does at a fraction of the cost, making this technology more popular in the commercial sector.

#### 2---Kessler Syndrome is unlikely – empirics prove –

**Lewis 15** (Hugh Lewis [Senior Lecturer in Aerospace Engineering], “Space Debris, Kessler Syndrome, and the Unreasonable Expectation of Certainty - Room: The Space Journal.” Room, The Space Journal, room.eu.com/article/Space\_debris\_Kessler\_Syndrome\_and\_the\_unreasonable\_expectation\_of\_certainty.) There is now widespread awareness of the space debris problem amongst policymakers, scientists, engineers and the public. Thanks to pivotal work by J.C. Liou and Nicholas Johnson in 2006 we now understand that the continued growth of the debris population is likely in the future even if all launch activity is halted. The reason for this sustained growth, and for the concern of many satellite operators who are forced to act to protect their assets, are collisions that are expected to occur between objects – satellites and rocket stages – already in orbit. In spite of several commentators warning that these collisions are just the start of a collision cascade that will render access to low Earth orbit all but impossible – a process commonly referred to as the ‘Kessler Syndrome’ after the debris scientist Donald Kessler – the reality is not likely to be on the scale of these predictions or the events depicted in the film Gravity. Indeed, results presented by the Inter-Agency Space Debris Coordination Committee (IADC) at the Sixth European Conference on Space Debris **show an expected increase in the debris population of only 30% after 200 years with continued launch activity.** Collisions are still predicted to occur, but this is far from the catastrophic scenario feared by some. Constraining the population increase to a modest level can be achieved, the IADC suggested, through widespread and good compliance with existing space debris mitigation guidelines, especially those relating to passivation (whereby all sources of stored energy on a satellite are depleted at the end of its mission) and post-mission disposal, such as de-orbiting the satellite or re-orbiting it to a graveyard orbit. Nevertheless, the anticipated growth of the debris population in spite of these robust efforts merits the investigation of additional measures to address the debris threat, according to the IADC.

#### 3---Space privatization spur innovation

**Daly 2020** [James Daly, Business & Technology Journalist, “How space exploration is now being fueled by business innovation”, 10/27/2020, IBM, <https://www.ibm.com/blogs/industries/ibm-space-tech-business-innovation-space-exploration/>] /Triumph Debate

**Camera phones. Wireless headsets. Scratch-resistant lens. CAT scans. The portable computer. They’re just a few of the enduring technologies the space program helped create, and which made their way into improving everyday life on earth.** **Now the business world is returning the favor. Innovations in the terrestrial corporate world—both in products and practices—are spurring the exploration of our solar system and beyond.** In recent years, technologies like edge computing, artificial intelligence, quantum computing, Internet of Things (IoT), digital twins and blockchain have transformed the business world with new efficiency and insight**. Soon they will have a similar effect on how we expand our knowledge of outer space, reducing costs while gathering and processing critical information with expanding speed and scale. “**A new space age is dawning, and the business world is helping drive it,” Naeem Altaf, the CTO for space industry tech at IBM, told Industrious. “One great thing about technology is that an innovation focused on one area or problem can sometimes impact another in wonderful ways.” Want to create your own out-of-this-world innovations? In addition to business process innovation, **technological advances by the private commercial sector are modernizing traditional and costly space practices by reusing rockets and building more efficient spacecraft, reducing per-launch costs**. **The global space industry is expected to generate revenue of $1.1 trillion or more in 2040, up from the current $350 billion**, according to a recent report by Morgan Stanley. “This entrepreneurial space age will change the course of human history,” Altaf said. **Arguably no innovation is having as cosmic an impact on space exploration as cloud and edge—so much so that Industrious is devoting an entire post to it later this week.** Check back Thursday to learn how the ability to perform expansive, high-speed processing remotely will push the bounds of what’s possible in our solar system and beyond. (Update: Read all about it here.) That’s just the beginning. Several other business tools are also making a significant impact. Digital twins, for instance, are having a big impact on both experimenting with new ideas and reducing costs. The twin concept uses a digital representation of a physical thing or system to stress test and reimagine various scenarios, with applications as diverse as quality management, security and product design. Digital twins are a key tool used in the servicing, assembly and manufacturing of both satellites and spacecraft. They improve the entire processes; digital twins can take data from IoT-embedded in-flight assets and then map that to new models and simulations, with AI helping analyze and iterate throughout the process. The European Union is also creating an ambitious digital twin of Earth that maps and analyzes massive amounts of geospatial data gleaned from satellites to simulate changes in the atmosphere. The EU model is expected to use machine learning techniques to provide more accurate predictions of climate change. “The world is a dynamic place–deeply connected, constantly evolving and always presenting humanity with new challenges,” Jim Whitehurst, IBM’s president, said in a post on IBM’s THINK blog. “Answers to global problems are grounded in two powerful forces: innovation and human ingenuity.” Quantum, and blockchain, mechanics Blockchain, with its shared, replicated, decentralized ledger system, also has an expanded role in space exploration optimization. Just as it eases cross-border commerce on Earth, blockchain could simplify or speed development efforts, offering “major potential to reduce costs, accelerate processes and transactions, provides provenance and transparency and ultimately shortens the time to market,” Altaf said. One place where blockchain can be useful is in optimizing resupply journeys to the International Space Station, also known as the ISS. This part of the aerospace industry is rapidly growing, particularly with the most recent innovations in launch facilities and payload vehicles from both the public and private sectors. One of the main concerns is ensuring that ISS resupply components align with regulatory requirements. Blockchain provides near real-time information that can improve the scheduling and auditing of each payload. Blockchain may even play a role in the management of space junk, creating a centralized and verifiable database of tens of thousands of pieces of manmade detritus circling the planet. Looking further out, quantum computing will solve complex-as-the-cosmos problems not only on Earth. In July, as part of its Mars 2020 effort, NASA launched the car-size Perseverance rover, which will search for ancient microbial life on the red planet. The rover has a drill to collect core samples of Martian rock and soil, then store them in sealed tubes for pickup by a future mission that would ferry them back to Earth for detailed analysis. In 2026 these samples will be retrieved for a trip back to earth. Quantum computing in future can play a critical role in such decision optimization scenarios. Carl Sagan, the popular astronomer, once noted, “Somewhere, something incredible is waiting to be known.” **The symbiotic relationship between business, space exploration and the business of space could reveal these incredible things even sooner. “The future of space exploration is unlimited,” Altaf said. “Now we hope to use our best technology from here on earth to push it even further forward.**

#### 4----Property rights are key to preventing congestion in space, which would lead to worse space debris

**Scheraga 86** [Joel D. Scheraga, Visiting Assistant Professor of Economics at Princeton University & Assistant Professor of Economics at Rutgers University, “Homesteading and the creation of property rights in outer space”, 1986, AIP Conference Proceedings 148, <https://doi.org/10.1063/1.36015> ] // Triumph Debate

**As space is colonized, it is inevitable that problems of congestion will occur if property rights are not established. In the absence of property rights, the price of exploiting a scarce resource** (such as desirable locations for settlements on the Moon and orbital slots for geosynchronous satellites) **is zero.** Students of economics will recognize that the opportunity cost to any nation of colonizing a particular location is lower than if property rights were assigned, so that scarce locations will be overused and over colonized.[3] **The failure to define property rights leads to a divergence between the private costs faced by an individual nation and the social costs to all nations in the world community. In the absence of private property, a country colonizing areas in space will not fully take into account the "external costs" that it imposes on all other nations that may also want to exploit these locations.** **The colonizing country has no incentive to consider the social cost of exploiting another scarce location. It will consider only its own private cost of the colonization project.** **To understand this point better, consider the expected future colonization of the Moon. The far side of the Moon offers scientists an ideal location for the placement of astronomical telescopes** that would probe the universe. The absence of a turbulent and filtering atmosphere permits telescopes to scan the ultraviolet and infrared regions of the spectrum that are unobservable on the Earth. Radio telescopes on the far side are protected from the abundance of radio noise emanating from the Earth. **Now suppose a country has decided to place a large nuclear-waste disposal site on the far side of the Moon,** rather than in some alternative location in space. **When the disposal site is constructed, it imposes a nonpecuniary externality** (or external effect) **on all other countries that are interested in building and occupying lunar bases in this region.** By building the disposal site, **the country adds to congestion in the area, and appropriates a location that could have alternatively been used for scientific purposes.** **The external effect on any one country is small, but the total effect summed over all countries is large. The country building the waste-disposal site, however, does not consider this total effect.** It does not consider the social cost of occupying the scarce lunar location**. It considers only the average cost of constructing the lunar garbage dump.** propositlon I: Each individual country that is colonizing outer space, acting in its own self-interest, will not make socially correct decisions when the scarce locations being colonized are not owned by anyone. **The resolution to the problem is straightforward. Adam Smith's generalization, as applied to scarcity problems in outer space, asserts that if the rights to scarce resources in space are assigned unambiguously** to a particular country, **and if free exchange of the rights is permitted, then these resources will be used efficiently.**

Incentives to clean it up in the squo

### AT: Warming

1---Other things are a/c like oil and gas companies and non-private colonization of space

#### 2---Technological innovation is driving environmental change – such as MethaneSAT tackling climate change

**EDF 21** [Environmental Defense Fund, “This space technology can cut climate pollution on Earth, 11/23/2021, https://www.edf.org/climate/space-technology-can-cut-climate-pollution-earth] /Triumph Debate

**The latest science warns that the window for preventing the most catastrophic global warming is closing fast. But we have a crucial opportunity to slow the rate of warming right now, even as we continue the transition to clean energy as quickly as possible. Deep reductions in carbon dioxide emissions remain critical over the long term.** But it turns out that methane emissions from fossil fuel operations, livestock production and other industries is responsible for more than 25% of current temperature rise**. Cutting these emissions is the fastest way to put the brakes on climate change.** But tracking these invisible emissions can be hard. That’s the reason for **MethaneSAT, a compact new satellite being built by a specially created new arm of EDF. MethaneSAT is specifically designed to locate, measure and track reductions in methane emissions virtually anywhere on Earth with greater precision than any other satellite.** First-of-its-kind satellite gets key data The oil and gas industry is a leading source of methane emissions. From remote wellheads to gas utility lines, companies release at least 75 million metric tons a year — enough gas to produce electricity for all of Africa twice over. Extensive research led by EDF suggests that oil and gas methane emissions in the U.S. are 60% higher than official EPA estimates. To fully understand the problem — and drive the solutions — we need more and better data about: How large methane emissions are. Where they're coming from. The biggest potential reductions. Progress of those reductions over time. **MethaneSAT will provide high-precision global coverage, measuring not just methane concentrations but the rate it’s escaping, from where and who is responsible. It will fill gaps left by other satellite systems, measuring large emission sources as well as those too small for other satellites to see. Because it will focus only on methane, MethaneSAT will be quicker and less expensive to launch than the complex, multi-function satellites built by government space agencies, so we can get data sooner.** 8 **EDF’s efforts using technological innovation to drive environmental change**, **the MethaneSAT mission is about turning data into action**. Video: Watch as EDF's president shares the vision of MethaneSAT in this TED Talk. **That data will be available to the public free of charge, so that stakeholders and the public can see and compare methane emissions by country or company. This unprecedented transparency will both enable and motivate faster reductions. And it will give the public objective assurance that both industry and government are delivering reductions**. Fred Krupp, EDF's president, unveiled the idea for MethaneSAT in a 2018 TED Talk at TED’s flagship event, as part of The Audacious Project, successor to the TED Prize. The purpose of MethaneSAT is to serve as a critical resource for realizing our goal of reducing methane emissions from a diversity of sources, especially global oil and gas. **A 45 percent reduction in oil and gas methane emissions by 2025 would deliver the same 20-year climate benefit as closing one-third of the world’s coal-fired power plants**. Cutting these emissions is the fastest, cheapest thing we can do to slow the rate of warming today, even as we continue to attack carbon dioxide emissions. Drawing from expertise and research MethaneSAT is due to launch in 2022. **The team responsible for getting it off the ground includes Tom Ingersoll, a successful satellite entrepreneur with three decades of experience, and a long list of experts in spaceflight, remote sensing and atmospheric sciences.** Steven Hamburg and Tom Ingersoll Steven Hamburg, left, EDF's chief scientist, and Tom Ingersoll, MethaneSAT project director, pictured at Harvard University And the MethaneSAT team has partnered with Harvard University and the Smithsonian Astrophysical Observatory to develop the science required for the mission. We’ve learned that emissions are much higher than either industry or government previously recognized, and occur across the supply chain. The challenge is, the sources are intermittent, unpredictable and widespread, making it hard to predict where they’ll occur. That means ongoing monitoring and measurement are essential. By providing reliable, fully transparent data on a worldwide scale, MethaneSAT will help transform a serious climate threat into a crucial opportunity.

Why cant we move everything

WE turn it with mining

### AT: Econ Inequality

#### 1 – Private companies are likely to lower wages in the future and be more fair.

**Weichert 21** [Brandon J. Weichert, Brandon J. Weichert is the author of “Winning Space: How America Remains a Superpower” (Republic Book Publishers). He runs The Weichert Report: World News Done Right and is a contributor at the Asia Times, “The Future of Space Exploration Depends on the Private Sector”, 07/05/2021, The National Review, <https://www.nationalreview.com/2021/07/the-future-of-space-exploration-depends-on-the-private-sector/#slide-1>] /Triumph Debate

As Jeff Bezos, the wealthiest man on the planet, readies to launch himself into space aboard one of his own rockets, the world is watching the birth of a new dawn in space. Previously, America relied on its government agency, NASA, to propel it to the cosmos during the last space race with the Soviet Union. **Today, America’s greatest hopes are with its private sector.** Jeff Bezos is not engaging in such risky behavior simply because he’s an adrenaline junky. No, he’s launching himself into orbit because his Blue Origins is in a titanic struggle with Elon Musk’s SpaceX — and Bezos’s firm is losing. **Whatever happens, the American people will benefit from the competition that is shaping up between America’s space entrepreneurs. This has always been how innovation occurs: through the dynamic, often cutthroat competition between actors in the private sector. While money is their ultimate prize, fame and fortune are also alluring temptations to make men like Musk and Bezos risk much of their wealth to change the world.** **The private space race among these entrepreneurs is part of a far more important marathon between Red China and the United States.** Whichever nation wins the new space race will determine the future of the earth below. Consider this: **Since winning its initial contracts to launch sensitive U.S. military satellites into orbit, SpaceX has lowered the cost of military satellite launches on taxpayers by “over a million dollars less” than what bigger defense contractors can do. Elon Musk is convinced that he can bring these costs down even more, thanks to his reusable Falcon 9 rocket**. **The competition between the private space start-ups is fierce — just as the competition between Edison and Westinghouse was — but the upshot is ultimately greater innovation and lower costs for you and me.** In fact, Elon Musk insists that if NASA gives SpaceX the contract for building the Human Landing System for the Artemis mission, NASA would return astronauts to the lunar surface by 2024 — four years before NASA believes it will do so. (Incidentally, 2024 is also when China anticipates having a functional base on the moon’s southern pole.) Whereas China has an all-of-society approach to its space race with the United States, Washington has yet to fully galvanize the country in the way that John F. Kennedy rallied America to wage — and win — the space race in the Cold War. America’s private sector, therefore, is the silver bullet against China’s quest for total space dominance. If left unrestricted by meddlesome Washington bureaucrats, these companies will ensure that the United States retains its overall competitive advantage over China — and all other challengers, for that matter. Indeed, the next four years could prove decisive in who will be victorious. Enter the newly minted NASA director, Bill Nelson, whose station at the agency has effectively poured cold water on the private sector’s ambitious space plans. “Space is not going to be the Wild West for billionaires or anyone else looking to blast off,” Nelson admonished an inquiring reporter. Why not? America’s actions during its western expansion created a dynamic and advanced nation that was well-positioned to dominate the world for the next century. Should we not attempt to emulate this in order to remain dominant in the next century? More important, this is precisely how China treats space: as a new Wild West . . . but one in which Beijing’s forces will dominate. China takes a leap-without-looking approach to space development — everything that can be done to further its grand ambition of becoming the world’s most dominant power by 2049 will be done. Meanwhile, the Biden administration wants to prevent America’s greatest strength, the free market, from helping to beat its foremost geopolitical competitor. Nelson’s comments are fundamentally at odds with America’s spirit and animating principles. Whatever one’s opinion about Bezos or Musk, **the fact is that their private space companies are inspiring greater innovation today in the space sector after years of its being left in the sclerotic hands of the U.S. government.** Sensing that the federal government’s dominance of U.S. space policy is waning, the Biden administration would rather cede the strategic high ground of space to China than let wildcatting innovators do the hard work. Today, the Federal Aviation Authority (FAA) and NASA are contriving new ways for strangling the budding private space sector, just as it is taking flight. Risk aversion is not how one innovates. Risk is what led Americans to the moon just 66 years after the Wright brothers flew their first airplane. A willingness for risk doesn’t exist today in the federal government — which is why the feds shouldn’t be running space policy. The U.S. government should be partnering with the new space start-ups, not shunning them. The FAA should be automatically approving SpaceX launches, not stymying them. The federal government will not win space any more than it could win the West or build the locomotive. It takes strong-willed, brilliant individuals of a rare caliber to do that. All government can do is to give the resources and support to private-sector innovators and let them make history for us. The next decade will decide who wins space. Let it be America — and let America’s dynamic start-ups win that race, not China’s state capitalism.

2 – The aff cant’ solve this, companies that their evidence isolates exist in non-space sectors too which means they will just shift to another sector

3 – Also NASA will just appropriate space instead of private corporations, and they’ll do this too which means the aff cant solve

4 – companies have incentive to increase wages so ppl stay.

#### 5---Workers are protected in space –

**Kramer, Miriam, and** Bryan **Walsh**. “The Push to Define Workers’ Rights in Space.” *Axios*, Axios, 13 Apr. 20**21**, www.axios.com/workers-rights-space-private-companies-4c5605e1-ddd8-480f-a60d-793f2343cb79.html. Accessed 5 Jan. 2022.

**Nations licensing the launches of companies like SpaceX are responsible for what those businesses do in space, meaning that people sent to orbit and beyond will be protected by those nations**, but that hasn't been put to the test on a wide scale yet. **The UN's Outer Space Treaty classifies astronauts as a protected group that should be considered emissaries of humanity with rights and protections.**

6---like there’s no minerals that people want to buy---no monopolize

#### 7---Growth is unsustainable and causes extinction from interlocking ecological crises.

Dr. Peter A. **Viktor &** Martin **Sers 19**. Economist who has worked on environmental issues for over 40 years as an academic, consultant and public servant. He was one of the founders of the emerging discipline of ecological economics and was the first President of the Canadian Society for Ecological Economics. By extending input-output analysis, he was the first economist to apply the physical law of the conservation of matter to the empirical analysis of a national economy. 2019. “The Limits to Green Growth.” Handbook on Green Growth, edited by Roger Fouquet, Edward Elgar Publishing, 2019. pp. 30–51. www-elgaronline-com.offcampus.lib.washington.edu, doi:[10.4337/9781788110686.00008](https://doi.org/10.4337/9781788110686.00008). Anton

Though green growth is presented as a **solution** for climate change and other **environmental** and **resource problems**, we have shown there are **a number of reasons** to be **sceptical**. Our focus has dwelled almost exclusively on the **macroeconomics** of greenhouse gas emissions which represent **only one** of an increasingly **long list** of **geophysical** and **biophysical issues** that are increasingly limiting the **potential** for economic growth. When these are included in the analysis and the investments required for their mitigation are included, the prospects for green growth **look dimmer** still. The famous planetary boundaries framework elaborated by Rockström et al. (2009) and updated in Steffen et al. (2015) proposes a list of **nine** linked **earth-system processes** of which climate change is **only one issue**. Enormous problems from **ongoing** **biod**iversity **loss** at **mass-extinction rates**; the disruption of the **nitrogen** and **phosphorus cycles**; **arable land degradation**; **ocean acidification**; and **sea-level rise** represent **existential threats**

to societal functioning. Furthermore, the possibility of **abrupt changes** in the climate system such as the collapse of **ice sheets** (Hansen et al., 2016), and the possibility of a **rapid release** of vast quantities of **methane** clathrates buried in marine sediments and permafrost (Goosse, 2015) represent essentially **catastrophic outcomes** with consequences **ranging into the far future**. Green growth, if it is to be a meaningful concept, must be understood in the larger context of the numerous **earth-system processes** undergoing **rapid** anthropogenic **perturbation**. Green growth that ‘**solves’** the problem of GHG emissions and energy may **still fail** due to other **unrelated processes** such as **biod**iversity **loss** and **land use change**. In this chapter we have raised serious concerns about the possibility of green growth in the limited context of emissions and energy; broadening the context of green growth to reflect the growing list of **global** scale **environmental problems** further calls into question **traditional narratives** of green growth (OECD, 2011). These upbeat narratives may have **political appeal**, but they risk **diverting attention** from the real changes required to navigate the future **successfully**.

No other !!