**[Standard] The standard is maximizing expected wellbeing. Prefer:**

**1] Theory first –**

**A] Ground – both debaters have ground underneath util because every action has a consequence that can be weighed fairly using different metrics under the framing – other frameworks flow exclusively to one side.**

**B] Topic lit – most articles are written through a utilitarian lens because they are crafted for policymakers and the general public who believes consequences are important – key to fairness because topic lit is how we determine in-round engagement.**

**2] Actor specificity:**

**A] Aggregation – governments only have access to averages and aggregates which are the basis of justification for their policies**

**B] No intent-foresight distinction – If we foresee a consequence, then it becomes part of our deliberation which makes it intrinsic to our action since we intend it to happen**

**Util is intrinsic to us we can’t avoid that maximizing well being is the most moral action**

**Nagel 86:** Thomas Nagel, The View From Nowhere, HUP, 1986: 156-168.

I shall defend the unsurprising claim that sensory pleasure is good and pain bad, no matter whose they are. The point of the exercise is to see how the pressures of objectification operate in a simple case. Physical pleasure and pain do not usually depend on activities or desires which themselves raise questions of justification and value. They are just sensory experiences in relation to which we are fairly passive, but toward which we feel involuntary desire or aversion. Almost [E]veryone takes the avoidance of his {their} own pain and the promotion of his own pleasure as subjective reasons for action in a fairly simple way; they are not back[ed] up by any further reasons.

#### **Extinction outweighs**

Seth D. **Baum &** Anthony M. **Barrett 18**. Global Catastrophic Risk Institute. 2018. “Global Catastrophes: The Most Extreme Risks.” Risk in Extreme Environments: Preparing, Avoiding, Mitigating, and Managing, edited by Vicki Bier, Routledge, pp. 174–184.

2. What Is GCR And Why Is It Important? Taken literally, a global catastrophe can be any event that is in some way catastrophic across the globe. This suggests a rather low threshold for what counts as a global catastrophe. An event causing just one death on each continent (say, from a jet-setting assassin) could rate as a global catastrophe, because surely these deaths would be catastrophic for the deceased and their loved ones. However, in common usage, a global catastrophe would be catastrophic for a significant portion of the globe. Minimum thresholds have variously been set around ten thousand to ten million deaths or $10 billion to $10 trillion in damages (Bostrom and Ćirković 2008), or death of one quarter of the human population (Atkinson 1999; Hempsell 2004). Others have emphasized catastrophes that cause long-term declines in the trajectory of human civilization (Beckstead 2013), that human civilization does not recover from (Maher and Baum 2013), that drastically reduce humanity’s potential for future achievements (Bostrom 2002, using the term “existential risk”), or that result in human extinction (Matheny 2007; Posner 2004). A common theme across all these treatments of GCR is that some catastrophes are vastly more important than others. Carl Sagan was perhaps the first to recognize this, in his commentary on nuclear winter (Sagan 1983). Without nuclear winter, a global nuclear war might kill several hundred million people. This is obviously a major catastrophe, but humanity would presumably carry on. However, with **nuclear winter**, per Sagan, **humanity could go extinct**. The loss would be not just an additional four billion or so deaths, but the loss of **all future generations**. To paraphrase Sagan, the loss would be billions and billions of lives, or even more. Sagan estimated **500 trillion lives**, assuming humanity would continue for ten million more years, which he cited as typical for a successful species. Sagan’s 500 trillion number may even be an **underestimate**. The analysis here takes an adventurous turn, hinging on the evolution of the human species and the long-term fate of the universe. On these long time scales, the descendants of contemporary humans may no longer be recognizably “human”. The issue then is whether the descendants are still worth caring about, whatever they are. If they are, then it begs the question of how many of them there will be. Barring major global catastrophe, Earth will remain habitable for about one billion more years 2 until the Sun gets too warm and large. The rest of the Solar System, Milky Way galaxy, universe, and (if it exists) the multiverse will remain habitable for a lot longer than that (Adams and Laughlin 1997), should our descendants gain the capacity to migrate there. An open question in astronomy is whether it is possible for the descendants of humanity to continue living for an infinite length of time or instead merely an astronomically large but finite length of time (see e.g. Ćirković 2002; Kaku 2005). Either way, the stakes with global catastrophes could be much larger than the loss of 500 trillion lives. Debates about the infinite vs. the merely astronomical are of theoretical interest (Ng 1991; Bossert et al. 2007), but they have limited practical significance. This can be seen when evaluating GCRs from a standard **risk-equals-probability-times-**magnitude framework. Using Sagan’s 500 trillion lives estimate, it follows that reducing the probability of global catastrophe by a mere one-in-500-trillion chance is of the same significance as saving one human life. Phrased differently, society should **try 500 trillion times harder to prevent** a **global catastrophe than** it should **to save a person’s** life. Or, preventing one million deaths is equivalent to a one-in500-million reduction in the probability of global catastrophe. This suggests society should make extremely large investment in GCR reduction, at the expense of virtually all other objectives. Judge and legal scholar Richard Posner made a similar point in monetary terms (Posner 2004). Posner used $50,000 as the value of a statistical human life (VSL) and 12 billion humans as the total loss of life (double the 2004 world population); he describes both figures as significant underestimates. Multiplying them gives $600 trillion as an underestimate of the value of preventing global catastrophe. For comparison, the United States government typically uses a VSL of around one to ten million dollars (Robinson 2007). Multiplying a $10 million VSL with 500 trillion lives gives $5x1021 as the value of preventing global catastrophe. But even using “just" $600 trillion, society should be willing to spend at least that much to prevent a global catastrophe, which converts to being willing to spend at least $1 million for a one-in-500-million reduction in the probability of global catastrophe. Thus while reasonable disagreement exists on how large of a VSL to use and how much to count future generations, even low-end positions suggest vast resource allocations should be redirected to reducing GCR. This conclusion is only strengthened when considering the astronomical size of the stakes, but the same point holds either way. The bottom line is that, as long as something along the lines of the standard riskequals-probability-times-magnitude framework is being used, then even tiny GCR reductions merit significant effort. This point holds especially strongly for risks of catastrophes that would cause permanent harm to global human civilization. The discussion thus far has assumed that all human lives are valued equally. This assumption is not universally held. People often value some people more than others, favoring themselves, their family and friends, their compatriots, their generation, or others whom they identify with. Great debates rage on across moral philosophy, economics, and other fields about how much people should value others who are distant in space, time, or social relation, as well as the unborn members of future generations. This debate is crucial for all valuations of risk, including GCR. Indeed, if each of us only cares about our immediate selves, then global catastrophes may not be especially important, and we probably have better things to do with our time than worry about them. While everyone has the right to their own views and feelings, we find that the strongest arguments are for the widely held position that all human lives should be valued equally. This position is succinctly stated in the United States Declaration of Independence, updated in the 1848 Declaration of Sentiments: “We hold these truths to be self-evident: that all men and women are created equal”. Philosophers speak of an agent-neutral, objective “view from nowhere” (Nagel 1986) or a “veil of ignorance” (Rawls 1971) in which each person considers what is best for society irrespective of which member of society they happen to be. Such a perspective suggests valuing everyone equally, regardless of who they are or where or when they live. This in turn suggests a very high value for reducing GCR, or a high degree of priority for GCR reduction efforts.

## solar flare da

#### *We are most susceptible to solar flares now than ever*

*Siegel 21* (Ethan Siegel, October 19, 2021, BigThink, A giant solar flare is inevitable, and humanity is completely unprepared, Ph.D. astrophysicist, science communicator, who professes physics and astronomy at various colleges, <https://bigthink.com/starts-with-a-bang/giant-solar-flare/> ) SJ

In other words, most of the space weather events that have occurred throughout history would have posed no danger to humans on our planet, as the only discernable effects they would have would be to cause a spectacular auroral display. But today, with the massive amounts of electricity-based infrastructure that now covers our planet, the danger is very, very real. The concept is pretty easy to understand and it has been around since the first half of the 19th century: induced current. When we build an electric circuit, we typically include a voltage source: an outlet, a battery, or some other device that’s capable of causing electric charges to move through a current-carrying wire. That’s the most common way to create an electric current, but there’s another: by changing the magnetic field that’s present inside a loop or coil of wire.  When you run a current through a loop or coil of wire, you change the magnetic field inside of it. When you turn that current off, the field changes again: a changing current induces a magnetic field. Well, as shown by [Michael Faraday all the way back in 1831](https://en.wikipedia.org/wiki/Faraday%27s_law_of_induction), 190 years ago, the reverse is also true. If you change the magnetic field inside a loop or coil of wire — such as by moving a bar magnet into or out of the loop/coil itself — it will induce an electric current in the wire itself, meaning it will cause electric charge to flow even without a battery or some other voltage source. That’s what makes space weather so dangerous to us here on Earth: not that it poses a direct threat to humans, but that it can cause enormous amounts of electrical current to flow through the wires connecting our infrastructure. This can lead to: electrical shorts fires explosions blackouts and power outages a loss of communications infrastructure many other damages that will appear downstream Consumer electronics aren’t a major problem; if you knew a solar storm was coming and you unplugged everything in your home, most of your devices would be safe. The major issue is with the infrastructure set up for large-scale production and transmission of power; there will be uncontrollable surges that will knock out power stations and substations and pump far too much current into cities and buildings. Not only would a big one — comparable to 1859’s Carrington event — be a multitrillion-dollar disaster, but it could also potentially kill thousands or even millions of people, depending on how long it took to restore heat and water to those most direly affected.

#### *Private sector key to early warnings.*

**USGPO 19’** – Chairwoman Kendra Horn, “SPACE WEATHER: ADVANCING RESEARCH, MONITORING, AND FORECASTING CAPABILITIES”, U.S Government Publishing Office, October 23rd, 2019, [<https://www.govinfo.gov/content/pkg/CHRG-116hhrg38122/html/CHRG-116hhrg38122.htm>] Accessed 12/14/21 AHS//AP

Our Nation's infrastructure is not all that is threatened by space weather events. I proudly represent the Johnson Space Center, the home to NASA's Astronaut Corps. These are the astronauts who currently work on the International Space Station (ISS) more than 200 miles above the Earth's surface and will one day serve on missions to the Moon and Mars. While we have developed techniques and technology to reduce the threats posed by increased radiation exposure due to a severe solar event, we have more work to do to mitigate these hazards to our astronauts. As the Ranking Member of the Space and Aeronautics Subcommittee, I've supported efforts to spur the commercialization of low-Earth orbit by private sector companies. These new entrants into the space economy have a vested interest in protecting their assets. However, they also offer an opportunity to provide data and resources to our Federal agencies as we seek to improve our space weather efforts. As this Committee potentially considers legislation relating to space weather monitoring and research, we must be certain that whatever legislation that we mark up is not a top-down legislative mandate and ensures a role for the commercial sector. The Weather Research and Forecasting Innovation Act, which was passed by this Committee and signed into law 2 years ago, serves as a template for how we could accomplish this. The Weather Act took steps to integrate commercial weather data into NOAA's forecast models, and a similar model should guide us when developing space weather legislation. NOAA is also advancing our research to operations processes. This includes a new program, the Earth Prediction Innovation Center or EPIC. EPIC will use partnerships with academia, the private sector, and relevant agencies to test and validate new capabilities and transition these capabilities from research to operations, thereby improving our existing forecast and warning capabilities. NOAA is also exploring with NASA the potential for a space weather testbed to further accelerate the transfer of research to operations and operations to research. Strong public-private partnerships are essential to maintain and approve the observing networks, conduct research, create forecast models, and supply the services necessary to support our national security and our economic prosperity…NOAA is committed to working toward the growth of the private sector as our national infrastructure and technological base becomes more sensitive to the impacts of space weather, thus demanding more improved space weather services. NOAA will continue to explore partnerships with the commercial and academic community as we work to maintain and improve our operational capabilities. In closing, NOAA appreciates the ongoing support we have received from Congress for our critically important space weather program. We will continue to work with other Federal agencies, the private sector in this effort to develop and strengthen our activities in space weather research and forecasting, and I look forward to answering your questions.

#### *Early detection is key to mitigation*

*Siegel 21* (Ethan Siegel, October 19, 2021, BigThink, A giant solar flare is inevitable, and humanity is completely unprepared, Ph.D. astrophysicist, science communicator, who professes physics and astronomy at various colleges, <https://bigthink.com/starts-with-a-bang/giant-solar-flare/> ) SJ

The first thing we need to invest in, if we’re actually serious about preventing the worst-case scenario for such an event, is early detection. While we can look at the sun remotely, gaining estimates for when flares and coronal mass ejections could be potentially hazardous to Earth, we’ve been relying on incomplete data. Only by measuring the magnetic fields of the charged particles traveling from the sun to Earth — and comparing them with the orientation of Earth’s magnetic field at that particular moment — can we know whether such an event would have a potentially catastrophic impact on our planet. In past years, we’ve been reliant on the sun-observing satellites we’ve put up between the Earth and the sun: at the L1 Lagrange point, some 1,500,000 km away from Earth. Unfortunately, by the time the particles streaming from the sun get to L1, they’ve traveled 99% of the way from the sun to Earth, and will typically arrive between 15 and 45 minutes later. That’s far from ideal when it comes to predicting a geomagnetic storm, much less engaging in measured to mitigate one. But all of that is changing as the first of the next-generation solar observatories has recently come online: the National Science Foundation’s DKIST, or the [Daniel K. Inouye Solar Telescope](https://nso.edu/inouye-solar-telescope-first-light/).

#### *Early warnings are key to protect grids*

**Winick 19 - Erin Winick, MIT Technology Review, March 27th, 2019** “The space mission to buy us vital extra hours before a solar storm strikes” [<https://www.technologyreview.com/2019/03/27/136297/the-space-mission-to-buy-us-vital-extra-hours-before-a-solar-storm-strikes/>] Accessed 12/15/21 SAO

For minor space weather, more timely warnings could ensure that no spacewalks are scheduled during a storm and that emergency responders on Earth have backup communications ready to go in case their radios go out. In case of a Carrington-like event, satellite operators could shut down their operations, warnings could be issued to the general public that their GPS devices will shut down, and power grid operators could be given the chance to protect their equipment.

#### *Grid collapse causes extinction.*

**Greene ’19** [Sherrell R.; Nuclear Engineering M.S. degrees from the University of Tennessee, recognized subject matter expert in nuclear reactor safety, nuclear fuel cycle technologies, and advanced reactor concept development, worked at the Oak Ridge National Laboratory (ORNL) for over three decades, as Director of Research Reactor Development Programs and Director of Nuclear Technology Programs; “Enhancing Electric Grid, Critical Infrastructure, and Societal Resilience with Resilient Nuclear Power Plants (rNPPs),” Nuclear Technology 205(3), <https://ans.tandfonline.com/doi/pdf/10.1080/00295450.2018.1505357?needAccess=true> recut gord0]

There are a variety of events that could deal **~~crippling~~ blows** to a nation’s **Grid**, **Critical Infrastructure**, and **social fabric**. The types of catastrophes under consideration here are “**very bad day” scenarios** that might result from severe GMDs induced by **solar CMEs**, **HEMP attacks**, **cyber attacks**, etc.5

As briefly discussed in Sec. III.C, the probability of a GMD of the magnitude of the 1859 Carrington Event is now believed to be on the order of 1%/year. The Earth narrowly missed (by only several days) intercepting a CME stream in July 2012 that would have created a GMD equal to or larger than the Carrington Event.41 Lloyd’s, in its 2013 report, “Solar Storm Risk to the North American Electric Grid,” 42 stated the following: “A Carrington-level, extreme geomagnetic storm is almost inevitable in the future…The total U.S. population at risk of extended power outage from a Carrington-level storm is between 20-40 million, with durations of 16 days to 1-2 years…The total economic cost for such a scenario is estimated at $0.6-2.6 trillion USD.” Analyses conducted subsequent to the Lloyd’s assessment indicated the geographical area impacted by the CME would be larger than that estimated in Lloyd’s analysis (extending farther northward along the New England coast of the United States and in the state of Minnesota),43 and that the actual consequences of such an event could actually be greater than estimated by Lloyd’s.

Based on “Report of the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) Attack: Critical National Infrastructures” to Congress in 2008 (Ref. 39), a HEMP attack over the Central U.S. could impact virtually the entire North American continent. The consequences of such an event are difficult to quantify with confidence. Experts affiliated with the aforementioned Commission and others familiar with the details of the Commission’s work have stated in Congressional testimony that such an event could “kill up to **90 percent of the national population** through **starvation**, **disease**, and **societal collapse**.” 44,45 Most of these consequences are either **direct** or **indirect impacts** of the **predicted collapse** of virtually the entire U.S. **Critical Infrastructure system** in the wake of the attack.

Last, recent analyses by both the U.S. Department of Energy46 and the U.S. National Academies of Sciences, Engineering, and Medicine47 have concluded that **cyber threats** to the U.S. Grid from both state-level and substatelevel entities are likely to grow in **number and sophistication** in the coming years, posing a **growing threat** to the U.S. Grid.

These three “very bad day” scenarios are not **creations** of **overzealous science fiction writers**. A variety of mitigating actions to reduce both the vulnerability and the consequences of these events has been identified, and some are being implemented. However, the fact remains that events such as those described here have the potential to change life as we know it in the United States and other developed nations in the 21st century, whether the events occur individually, or simultaneously, and with or without coordinated physical attacks on Critical Infrastructure assets.

## solar power satellites da

#### *[Horowitz] There is an energy crisis and its only going to get worse in the next couple months*

**Horowitz 21** (Julia Horowitz, a senior writer. She leads CNN Business international coverage of global markets and business , October 7th, 2021, A global energy crisis is coming. There's no quick fix, CNN Business, <https://www.cnn.com/2021/10/07/business/global-energy-crisis/index.html>) SJ

A global energy crunch caused by weather and a resurgence in demand is getting worse, stirring alarm ahead of the winter, when more energy is needed to light and heat homes. Governments around the world are trying to limit the impact on consumers, but acknowledge they may not be able to prevent bills spiking.  Further complicating the picture is mounting pressure on governments to accelerate the transition to cleaner energy as world leaders prepare for a critical climate summit in November. In China, [rolling blackouts](https://edition.cnn.com/2021/09/28/economy/china-power-shortage-gdp-supply-chain-intl-hnk/index.html) for residents have already begun, while in India power stations are scrambling for coal. [Consumer advocates in Europe](https://twitter.com/beuc/status/1445702126336761865?s=20) are calling for a ban on disconnections if customers can't promptly settle what they owe. "This price shock is an unexpected crisis at a critical juncture," EU energy chief Kadri Simson said Wednesday, confirming the bloc will outline its longer-term policy response next week. "The immediate priority should be to mitigate social impacts and protect vulnerable households." In Europe, natural gas is now trading at the equivalent of $230 per barrel, in oil terms — up more than 130% since the beginning of September and more than eight times higher than the same point last year, according to data from Independent Commodity Intelligence Services. In East Asia, the cost of natural gas is up 85% since the start of September, hitting roughly $204 per barrel in oil terms. Prices remain much lower in the United States, a net exporter of natural gas, but still have shot up to their highest levels in 13 years. "A lot of it is feeding off of fear about what the winter's going to look like," said Nikos Tsafos, an energy and geopolitics expert at the Center for Strategic and International Studies, a Washington-based think tank. He thinks that anxiety has caused the market to break away from the fundamentals of supply and demand. The frenzy to secure natural gas is also pushing up the price of coal and oil, which can be used as substitutes in some cases, but are even worse for the climate. India, which remains extremely dependent on coal, said this week that as many as 63 of its 135 coal-fired power plants have [two days or less](https://edition.cnn.com/2021/10/06/energy/india-energy-crisis-coal-hnk-intl/index.html) of supplies. The circumstances are causing central banks and investors to worry. Rising energy prices are contributing to inflation, which already was a major concern as the global economy tries to shake off the lingering effects of Covid-19. Dynamics over the winter could make matters worse.

#### *[Stossel] Government space programs are ineffective at innovating*

**Stossel 20** (John Stossel, July 29, 2020, The Private Space Race, <https://www.capitalismmagazine.com/2020/07/the-private-space-race/>) SJ

An Obama administration committee had concluded that launching such a vehicle would take 12 years and cost $36 billion. But this rocket was finished in half that time — for less than $1 billion (1/36th the predicted cost). That’s because it was built by Elon Musk’s private company, Space X. He does things faster and cheaper because he spends his own money. “This is the potential of free enterprise!” explains aerospace engineer Robert Zubrin in my newest video. Of course, years ago, NASA did manage to send astronauts to the moon. That succeeded, says Zubrin, “because it was purpose-driven. (America) wanted to astonish the world what free people could do.” But in the 50 years since then, as transportation improved and computers got smaller and cheaper, NASA made little progress. Fortunately, President Obama gave private companies permission to compete in space, saying, “We can’t keep doing the same old things as before.” Competition then cut the cost of space travel to a fraction of what it was. Why couldn’t NASA have done that? Because after the moon landing, it became a typical government agency — overbudget and behind schedule. Zubrin says NASA’s purpose seemed to be to “supply money to various suppliers.” Suppliers were happy to go along. Zubrin once worked at Lockheed Martin, where he once discovered a way for a rocket to carry twice as much weight. “We went to management, the engineers, and said, ‘Look, we could double the payload capability for 10% extra cost.’ They said, ‘Look, if the Air Force wants us to improve the Titan, they’ll pay us to do it!'” NASA was paying contractor’s development costs and then adding 10% profit. The more things cost, the bigger the contractor’s profit. So contractors had little incentive to innovate. Even NASA now admits this is a problem. During its 2020 budget request, Administrator Jim Bridenstine confessed, “We have not been good at maintaining schedule and … at maintaining costs.” Nor is NASA good at innovating. Their technology was so out of date, says Zubrin, that “astronauts brought their laptops with them into space — because shuttle computers were obsolete.” I asked, “When (NASA) saw that the astronauts brought their own computers, why didn’t they upgrade?” “Because they had an entire philosophy that various components had to be space rated,” he explains. “Space rating was very bureaucratic and costly.” NASA was OK with high costs as long as spaceships were assembled in many congressmen’s districts. “NASA is a very large job program,” says Aerospace lawyer James Dunstan. “By spreading its centers across the country, NASA gets more support from more different congressmen.” Congressmen even laugh about it. Randy Weber, R-Texas, joked, “We’ll welcome (NASA) back to Texas to spend lots of money any time.” Private companies do more with less money. One of Musk’s cost-saving innovations is reusable rocket boosters. For years, NASA dropped its boosters into the ocean. “Why would they throw it away?” I ask Dunstan. “Because that’s the way it’s always been done!” he replies. Twenty years ago, at Lockheed Martin, Zubrin had proposed reusable boosters. His bosses told him: “Cute idea. But if we sell one of these, we’re out of business.” Zubrin explains, “They wanted to keep the cost of space launch high.” Thankfully, now that self-interested entrepreneurs compete, space travel will get cheaper. Musk can’t waste a dollar. Space X must compete with Jeff Bezos’ Blue Origin, Richard Branson’s Virgin Galactic, Boeing, Lockheed Martin and others.The private sector always comes up with ways to do things that politicians cannot imagine. Government didn’t invent affordable cars, airplanes, iPhones, etc. It took competing entrepreneurs, pursuing profit, to nurture them into the good things we have now. Get rid of government monopolies.

#### *[Snowden] Solar power satellites solves the energy crisis*

**Snowden 19** (Scott Snowden, Mar 12, 2019, has written about science and technology for 20 years for publications around the world, Solar Power Stations In Space Could Supply The World With Limitless Energy, Forbes, <https://www.forbes.com/sites/scottsnowden/2019/03/12/solar-power-stations-in-space-could-supply-the-world-with-limitless-energy/?sh=23471fec4386> ) SJ

While on the surface of the Earth, society still struggles to adopt solar energy solutions, many scientists maintain that giant, space-based solar farms could provide an environmentally-friendly answer to the world's energy crisis. Only last week, we reported that China [was planning to](https://www.forbes.com/sites/scottsnowden/2019/03/05/china-plans-to-build-the-worlds-first-solar-power-station-in-space/#51f7f9c35c94) build the world's first solar power station to be positioned in Earth's orbit. Because the sun always shines in space, an orbital solar power station is seen as an inexhaustible source of clean energy. "Above the Earth, there's no day and night cycle and no clouds or weather or anything else that might obstruct the sun's ray, so a constant power source is available," said Ali Hajimiri, professor of electrical engineering at the California Institute of Technology and co-director of the university’s [Space Solar Power Project](https://www.spacesolar.caltech.edu/). Collecting solar power in space and wirelessly transmitting was first described by Isaac Asimov in 1941 in his short story Reason. In 1968, American aerospace engineer Peter Glaser published the first technical article on the concept – Power From The Sun: Its Future in the journal [Science](http://www.sciencemag.org/). Space-based solar power attracted considerable attention in the 1970s as the necessary individual technical components – in essence, photovoltaic cells, satellite technology and wireless power transmission – were developed. Despite the concept being technically feasible, it was considered economically unrealistic at the time and research ultimately stalled. “The idea seems to be going through a resurgence and it’s probably because the technology exists to make it happen,” said John Mankins, a former NASA scientist who was at the forefront of this field in the 1990s, before it was abandoned. Global energy demands are only going to grow, says Hajimiri. The global population is expected to reach a staggering 9.6 billion by 2050, according to a [United Nations report](http://www.un.org/en/development/desa/news/population/un-report-world-population-projected-to-reach-9-6-billion-by-2050.html), so methods of generating large quantities of clean energy must be found. A space-based solar power system could provide energy to everyone, even in places that don't receive sunlight all year round, like northern Europe and Russia. In April of 2015, a research agreement between Northrop Grumman and Caltech provided up to $17.5m for the development of innovations necessary to enable a space solar power system. Three Caltech professors head up the project: joining Hajimiri were Harry Atwater and Sergio Pellegrino. Caltech is just one institution working on developing this technology. We know that scientists at the Chongqing Collaborative Innovation Research Institute for Civil-Military Integration in China are constructing a facility to test the theoretical viability of the concept and plans to develop an orbital photovoltaic array [were announced](https://phys.org/news/2009-11-japan-eyes-solar-station-space.html) in Japan some time ago. One of the biggest issues to overcome is that of getting an array of solar panels large enough to make the project viable into orbit. Early concept designs in the 1970s featured giant arrays that would've proved very difficult to actually get into orbit. "The systems of the 70s for solar power satellites, the cost estimates suggested, at that time, that it might be as much as a trillion dollars to get to the first kilowatt hour because of the way the designs worked. Essentially a single satellite, a platform, an integrated, monolithic platform about the size of Manhattan," said Mankins.However, with SpaceX and Blue Origin slowly driving the cost of orbital delivery down, suddenly the concept seems a little closer to reality. "Going to modular systems to allow mass production, I believe was the answer to how to get solar power satellite costs down to something more reasonable," said Mankins.

#### *[Klare] Energy crisis results in war*

**Klare 14** (Micheal T Klare, July 15, 2014, Twenty-first century energy wars: how oil and gas are fuelling global conflicts, a Five Colleges professor of Peace and World Security Studies, <https://energypost.eu/twenty-first-century-energy-wars-oil-gas-fuelling-global-conflicts/>) SJ

As these conflicts and others like them suggest, fighting for control over key energy assets or the distribution of oil revenues is a [critical factor](http://www.tomdispatch.com/blog/175540/) in most contemporary warfare. While ethnic and religious divisions may provide the political and ideological fuel for these battles, it is the potential for mammoth oil profits that keeps the struggles alive. Without the promise of such resources, many of these conflicts would eventually die out for lack of funds to buy arms and pay troops. So long as the oil keeps flowing, however, the belligerents have both the means and incentive to keep fighting. In a fossil-fuel world, control over oil and gas reserves is an essential component of national power. “Oil fuels more than automobiles and airplanes,” Robert Ebel of the Center for Strategic and International Studies [told](http://2001-2009.state.gov/s/p/of/proc/tr/10187.htm) a State Department audience in 2002. “Oil fuels military power, national treasuries, and international politics.” Far more than an ordinary trade commodity, “it is a determinant of well being, of national security, and international power for those who possess this vital resource, and the converse for those who do not.” If anything, that’s even truer today, and as energy wars expand, the truth of this will only become more evident. Someday, perhaps, the development of renewable sources of energy may invalidate this dictum. But in our present world, if you see a conflict developing, look for the energy. It’ll be there somewhere on this fossil-fueled planet of ours.

#### *[Dvorsky 12] Conventional War Causes Extinction*

**Dvorsky 12** (George Dvorsky, [George P. Dvorsky is a Canadian bioethicist, transhumanist and futurist. He is a contributing editor at io9[1] and producer of the Sentient Developments blog and podcast. He was Chair of the Board for the Institute for Ethics and Emerging Technologies (IEET)[2][3] and is the founder and chair of the IEET's Rights of Non-Human Persons Program,[4] a group that is working to

Secure human-equivalent rights and protections for highly sapient animals. He also serves on the Advisory Council of METI (Messaging Extraterrestrial Intelligence], 12-12-2012, io9, "9 Ways Humanity Could Bring About Its Own Destruction", <https://io9.gizmodo.com/9-ways-humanity-could-bring-about-its-own-destruction-5967660>)

At the close of the Second World War, nearly 2.5% of the human population had perished. Of the 70 million people who were killed, about 20 million died from starvation. And disturbingly, civilians accounted for nearly 50 percent of all deaths — a stark indication that war isn't just for soldiers any more. Given the incredible degree to which technology has advanced in the nearly seven decades since this war, it's reasonable to assume that the next global ‘conventional war' — i.e. one fought without

nuclear weapons — would be near apocalyptic in scope. The degree of human suffering that could be unleashed would easily surpass anything that came before it, with combatants using many of the technologies already described in this list, including autonomous killing machines and weaponized nanotechnology. And in various acts of desperation (or sheer malevolence),some belligerent nations could choose to unleash chemical and biological agents that would result in countless deaths. And like WWII, food could be used as a weapon; agricultural yields could be brought to a grinding halt.

Case

Suffering increases w exploriton

#### **No guarantee space tourism ever becomes affordable enough for average people, until then it will be reserved for the rich and famous making the effects limited.**

**Roulette 21** (Roulette, Joey. “The Space Tourism Industry Is Stuck In Its Billionaire Phase.” The Verge. July 17, 2021. Web. December 13, 2021. <https://www.theverge.com/2021/7/17/22573791/space-tourism-industry-bezos-branson-musk-billionaire-phase>.) SJ

“There’s going to be a fairly large learning curve as companies go from the process of developing a capability and testing it, to operating it routinely,” Christensen said. It’s possible that space tourism will follow the same path as computers or airplanes, but there’s no guarantee that it will succeed. In part, that’s because there’s no single solution to driving down the cost of launching people to space. Virgin Galactic earlier this year unveiled a new version of SpaceShipTwo that’s tailored for quick production rates, signaling it’s gearing up to accommodate its hefty customer backlog and reopen ticket sales, which have been closed since a fatal 2014 accident during a test flight. (Branson’s presence on Sunday’s flight also served as a visual reassurance to customers that the ship is safe.) Musk is focusing on better rocket fuel efficiency with SpaceX’s Starship, a fully reusable launch system being developed to slash the cost of sending humans to space. But again, what exactly those next-generation prices will be remain a mystery. Musk hasn’t said how much it’ll cost prospective passengers to fly on Starship. And Virgin Galactic hasn’t said how much it plans to charge for tickets for its newer spaceplane, SpaceShipThree, just like Blue Origin, which hasn’t revealed its New Shepard prices. Currently, you either have to be talented (hand-picked by a billionaire) or lucky to book a ride on one of these rockets without paying the steep price tag. Raffling off tickets, like Virgin Galactic plans to do, and donating seats to space enthusiasts who can’t afford them keeps the public dream of normalized, low-cost space travel alive while the industry races to find the right recipe for bringing prices down. “I think that in any competitive market you’re going to see products improve and/or prices drop,” Christensen added.

#### **Regulated capitalism in outer space solves the Aff's offense without ending private appropriation.**

**Sharma 21** (Sharma, Maanas. “The Privatized Frontier: The Ethical Implications And Role Of Private Companies In Space Exploration.” The Space Review. September 07, 2021. Web. December 11, 2021. <https://www.thespacereview.com/article/4238/1>.) SJ

However, others contend that just because private space exploration has some capitalist elements, it is by no means an embodiment of unrestricted capitalism. A healthy balance of restricted capitalism—for example, private space companies working through contracts with government agencies or independently under monitoring and regulation by national and international agreements—will avoid the pitfalls that capitalist colonialism faced down here on Earth. Even those who are generally against excessive government regulation should see the benefits of them in space. Lacking any consensus on definitions and rights in space will create undue competition between corporations as well as governments that will harm everyone rather than helping anyone. To create a conducive environment for new space-for-space exploration, one without confrontation but with protection for corporate astronauts, infrastructure, and other interests, governments must create key policies such as a framework for property rights on asteroids, the Moon, and Mars.

#### **Top-down reforms to the Outer Space Treaty will inevitably prioritize the prerogatives of capitalism---only bottom-up class struggle can achieve a socialist society that retools space mining toward progressive ends.**

**Lovell 21** (Lovell, Josh. “Asteroid Mining, Scarcity, Science And Socialism: Responding To Aaron Bastani.” Workers' Liberty. January 05, 2021. Web. December 12, 2021. <https://www.workersliberty.org/story/2021-01-05/asteroid-mining-scarcity-science-and-socialism-responding-aaron-bastani>.) SJ

Bastani rightly outlines the legal loopholes in the Outer Space Treaty (1968), a document devoid of hard limits curtailing capitalist expansion into space, and argues that this treaty should be updated. His answer though? Updating this based on the Madrid Protocol. I had to read up on what this was to understand its practical implications, which in short, provide a system for managing intellectual property on a paid-for basis. This seemed strange for a book on communism: the organisation that administers this (the World Intellectual Property Organisation) falls far short of genuine democratic control and oversight. If we want the proceeds of any Solar System mining to be socially owned, and administered to ensure they are distributed based on societal need, surely we should be demanding more. If recent history has taught us anything, treaty reforms by capitalist states will only serve the interests of private enterprise, in the absence of struggle from below. Indeed, even if reforming international treaties was sufficient, the working class would either need to first be in control of re-writing this, the prerequisite for which would either be working-class revolution, or a major struggle to force concessions from capitalist states. In other words: there would be no avoiding social struggle. Further discussion on how this fight might emerge and play out would be of greater value than Bastani’s imagined conversation between business owners and capitalist politicians, especially if he thinks such space mining ventures are only a couple of decades away. Marxist analysis takes more than simply quoting Marx, and disappointingly, Bastani’s text is living proof of this. Although many references to Marx are made throughout, this book does not provide a Marxist understanding of the world. Whilst this is implicit throughout this chapter in what is not discussed, this is explicit in his discussion of the pricing mechanism in the final section, “abundance beyond value”. Bastani claims extreme-abundance as incompatible with capitalism, going as far as saying that in the face of a limitless, virtually free supply of anything its “internal logic starts to break down”. Setting aside first the very fundamental fact that capitalism is an inherently unstable system, this hypothesis needs looking at in more detail (this conclusion justifies much of what Bastani later relies on). Firstly, what Bastani describes is simply the logic of supply and demand. But, even as pointed out by Bastani sentences before, monopolies and market structures have their own way of recalibrating prices; so over-abundances may not necessarily lead to price deflation. Further, the suggestion that supply could be free and limitless a falsehood. At some stage in the process of mineral extraction, workers with wages will be involved, and processes that require the use of other materials (transport fuel, expendable parts, maintenance, etc). Each of these come with associated costs, and thus are not ‘free’, limiting the surplus value available to the owner of the production chain. It’s true that without a monopolizing pricing structure, a market flooded with, for example, palladium might hit record lows. However, this on it’s own wouldn’t crash capitalism, a system that has survived plenty of incidents of over-abundance previously. We can see how this operates in the case of digital products (for example mp3s and e-books) which like the future Bastani’s asteroid-mined gold, could feasibly exist in a “post-scarcity” state. Whilst these can all be reproduced without a correspondingly large increase in labour costs, these are locked behind firewalls and price-fixing mechanisms (and would eventually fill up harddrives and servers). If capitalism operated in the way Bastani describes, then iTunes song download costs would end up being fractions of pence per transaction. Private ownership, market structures and underlying costs prevent this. And this isn’t just confined to the digital realm. Despite being in extreme abundance on Earth, under capitalism we still pay for water, either from the tap or in bottles, precisely because of private ownership, labour, distribution, storage and other associated costs. When left in the control of a capitalist ruling class, even resources in a state of over-abundance can be commercialised for private gain. Simply put: if we want social control and distribution over the fruits of space mining, there can be no room for private ownership. This is not solved by over-abundance. Finally, for a book filled with Marx’s writings, it falls short of offering a Marxist understanding of economics. For example, some basic analysis of economic and social use and exchange of mining resources would have been pertinent, given this entire section appears to take place in the realm of capitalist exchange. Bastani readily points at the market exchange value of all the resources locked up in asteroids, but there is little discussion of their potential use. Will future societies be as dependent on iron, gold, palladium and other rare metals? Bastani makes no projection. Since capitalism has a tendency to expand to maximise profit, this may be directly at odds with the needs of a future socialist society. It is therefore possible that left to its own devices, capitalism gears mining missions, technology and research to maximise extraction of less socially useful products (for example gems for jewellery sales), despite humanity being better served socially if this was focused on different resources (for example on palladium for medical and electronic devices). A text on communism should have devoted more time to discuss how this expansion may instead take place, comparing how a socialist society might instead utilise space mining, and in the here and now, what socialists should be arguing for under capitalism. For a book that refers to itself as a communistic manifesto, ultimately this chapter is devoid of politics. Parking the scientific potential of asteroid mining for now, the central question at the heart of this is one of control. Despite constantly shoe-horning in quotations of Marx to give the text a left-wing finish, Bastani offer

**Capitalism is inevitable and has adapted and survived similar shocks – this one is no different**

**Emmott 9** (Bill Emmott is an English journalist, author and consultant best known for his period as Editor-in-Chief of The Economist. “The future of capitalism,” billemmott.com, <http://billemmott.com/article.php?id=250)//SL>

Writing as he was in the mid 19th century, Marx could not have envisaged a third potential capitalist contradiction, or cause of crises, namely environmental degradation. In that era, with the industrial revolution only just getting under way, the filthy air and water of the great industrial cities of London and Manchester was just thought to be inevitable, and probably unimportant compared with all the other causes of disease, death and misery that existed at the time. Yet a modern Karl Marx would certainly include the environment. He would argue that the logic of capitalist profit-seeking requires companies to deplete the world´s finite resources, to keep on filling the planet´s atmosphere with carbon dioxide and other "greenhouse gases" and to exploit society by imposing the environmental costs of capitalist production on the lives of ordinary people. The whole idea of "sustainable development", which is so popular now with environmentalists, is based on the idea that if capitalism is left to proceed on its own course then planet´s development will not be sustainable: it will collapse, in a series of crises, just as Marx foresaw. Fortunately for all of us, Karl Marx was a better theorist than he was a forecaster. Today, many economists are criticized for having failed to predict the global financial crisis that began in August 2007, or the global economic crisis that began with the collapse of the Lehman Brothers investment bank in September 2008. During the past 150 years, there have been many such crises, most notably the crisis of the 1930s and its Great Depression, or the bursting of Japan´s bubble economy in 1990-92. Karl Marx, however, forecast a much bigger, more fundamental crisis that has never yet occurred: the complete collapse of capitalism under the weight, as he wrote, of its own contradictions. Despite that failure, the ideas of Marx still have some resonance with economists and other thinkers today. Memories of communism in the Soviet Union and Mao Zedong´s China are still fresh, but also fears of a capitalist collapse remain strong. Capitalism, based as it is on greed and selfishness, has never actually been popular. That may well be why the events of 2007-09 have not just been described as a recession, or even just a financial or banking crisis: they have been described as a crisis of capitalism itself. Karl Marx lives on, at least in our minds. The reason why Marx has been proved wrong, so far, is that capitalism is a very adaptive and resilient system. After each crisis, after each dramatic change in the circumstances of the world or of any specific country, capitalism has been able to find new forms, to find new ways to prosper and make progress. The ingenuity and ambition of entrepreneurs and corporate managers enables them not just to invent new technologies and products but also whole new ways of organizing themselves and, in particular, new ways of positioning themselves in relation to government and society. They have been assisted in finding those new forms by government itself, the growth of which in all the rich, developed economies has softened the impact of capitalism´s crises. Government spending now is much larger compared with overall Gross Domestic Product (GDP) than it was during the 1930s, for example, in America, Europe and Japan, allowing that spending to help dampen the severity of economic cycles. That is exactly what governments have been doing since the current economic crisis began in 2007-08, with their big fiscal stimulus packages. Central banks, too, play a bigger role in economies than before, and their expansionary monetary policies have also helped to prevent the 2007-08 crisis from turning into a catastrophe. From the point of view of capitalism, government fiscal and monetary policies help to buy time for companies to plan their own adaptations, their own restructuring in response to the recession. But the adaptation still has to occur. Another economist, Joseph Schumpeter, writing in the 20th century, called this adaptation process "creative destruction". He was describing the way in which old and inefficient companies and even whole industries may be destroyed, especially during recessions, and are replaced by new companies and new industries, with new ideas and with balance sheets that were not so encumbered by debts. In fact, Schumpeter believed, without the destruction of the old, the process of creation and adaptation could not happen properly or vigorously. Now, amid our current global economic troubles, it has become common to ask what will be, what can be, the future of capitalism after this crisis. The first assumption behind this question is that the events surrounding the collapse of Lehman Brothers can, in truth be considered as a true crisis for capitalism as a system, rather than just a normal part of the economic cycle. Capitalism must change, following this crisis: that is the underlying thought. The second assumption, however, is a more positive one: it is that capitalism will adapt to its new circumstances, to the new rules governments may lay down for it, to the new attitudes people will hold towards it, even to the new balance of economic and political power in the world. After the destruction, there will be creation. But creation of what? That is what everyone is wondering. Inequality, stability, sustainability Let us be clear: **capitalism is the only successful system** yet invented **for organizing human beings to achieve** economic and technological **progress**. The idea that somehow we could **move beyond capitalism is pure fantasy**. To believe that we could do so would require us to ignore the fact that competition is inherent in the human species, even if we are also able to co-operate when it is in our interests to do so. And the period of human history during which capitalism has been most free to operate—basically, the past two centuries—has also been the period during which humanity has achieved the most rapid and sustainable advances in living standards and life-opportunities. But let us also be clear about the weaknesses of capitalism. During these past two highly successful centuries, capitalism has shown that it has a tendency to increase levels of inequality inside societies and between different societies in different parts of the world. That rising inequality can lead to social tension and even to conflict, which ends up disrupting capitalism itself. Moreover, as Karl Marx said, capitalism has always been unstable. It produces booms and busts, periods of growth and recession, bubble economies and then times of stagnation or even depression. And finally it does cause environmental damage, because the essence of industrial activity is the conversion of resources, using energy, into newly manufactured goods, and because the direct costs born by companies making those goods do not include any price for pollution or other environmental consequence. Most of all, the vast increase in humanity´s use of fossil fuels—mainly oil, gas and coal—has led to the rise in global temperature that we now know as global warming. Until recently, the scientific evidence on this point was unclear: now it has been proven beyond any reasonable scope for doubt. We can and should debate about what would be the appropriate policies to try to reduce the quantity of carbon dioxide emissions and to control the rise in global temperature. But there is no longer any point is disputing whether the rise has been influenced by human industrial activity. Following the shocks of the past two years, these weaknesses of capitalism have come sharply back into focus. It has been popular, since the collapse of Lehman Brothers, to attack something the critics call "market fundamentalism": Yukio Hatoyama made just such an attack in the pages of Voice magazine when he was campaigning to become prime minister. It is also popular for politicians to claim that an era of free-market, neo-liberal capitalism that began with Ronald Reagan and Margaret Thatcher at the start of the 1980s has now come to an end. A new direction is needed. But no one seems to agree on what it is. Well, perhaps that is unfair. Some commentators have argued that they have seen the future of capitalism and that they know it works: for the future, in their view, lies in Chinese-style capitalism, led and controlled by the state. Ian Bremmer, the owner and president of a Washington-based political-risk consultancy, the Eurasia Group, argued in an article in the journal Foreign Affairs in May/June 2009 (which he is now expanding into a book) that American-style capitalism is going to face fierce competition from state capitalism, and that many countries will now be tempted to try to emulate China. Previously, they tried to emulate the United States, but the global economic crisis has discredited that effort. Can that be correct? Does China now offer the new model, a "Beijing Consensus" to replace the "Washington Consensus" that became dominant in the 1990s? Is that the future of capitalism? Personally, I think this is very unlikely to be true. Certainly, capitalism needs to change. But not as drastically as this idea of a Chinese model would suggest. After all, the "Chinese model" of capitalism is not so very different from the forms of capitalist development that have been seen all over Asia during the past half century, in Japan, South Korea, Taiwan, Malaysia, Singapore and elsewhere. In all those countries, state intervention, both as a provider of guidance and finance, and as a direct owner of companies, has played a big role. China has not invented anything new. The last time Americans were worrying that their "model" faced a severe, even existential challenge was the 1980s, when scholars and lobbyists such as Chalmers Johnson, Clyde Prestowitz and James Fallows argued that America needed to learn from the Japanese model of a government-led industrial policy. That idea soon faded. And in all the Asian economic success stories, the role of the state has declined as the economy has grown more mature and complex. The same will surely occur in China. The framework for how capitalism needs to change comes, in my view, not from Chinese success but rather from the three weaknesses that I outlined earlier: inequality, instability and sustainability. Thanks to the global economic crisis, and thanks to the scientific evidence about climate change, reforms are needed to address all these three weaknesses. This, however, is nothing really new**. The same sort of reforms were necessary after previous crises and slumps, and similar environmental reforms have been necessary in many countries during the past 50 years**, at times when pollution reached intolerable and politically unpopular levels. These reforms can only be done by governments, for they consist of the setting of new rules of the game. Only government can do that, for only it has the legitimacy to set rules and to enforce them. But sensible, far-sighted companies should also try to participate in the formation of those rules, not to block them but to shape them in such a way as to make the new rules both economically and socially constructive. Companies, after all, do not exist separately from society. They are integral parts of society itself. Indeed, most citizens in modern economies devote much of their adult lives to working in companies and so they consider companies to be their main forms of social organization. They get much of their training and practical education from their companies, as well as their sense of self-esteem, of belonging to a social group. Moreover, companies typically take the lead in bringing changes to our social interactions by the way in which they invent or exploit new technologies: from the motor car to the telephone, from the mobile phone to the internet and to today´s social networking, capitalist companies have always operated in the heart of society. Companies thus have a powerful interest in working to ensure that society as a whole is in a healthy and positive condition, and that the right rules are set and followed, because that society is companies´ own market, and because society itself reaches deep inside the companies themselves. The gap between the rich and the poor The practical starting point for how capitalism needs to be changed, to be reformed, as a result of the global economic crisis comes from its weakness of instability. After all, that is what the language of the financial crash, of the collapse of Lehman Brothers, of the crisis implies straight away: an unstable system. All the present talk of reviewing and tightening financial regulation is a reaction to that instability, an attempt to find new ways to cope with this old problem. But despite all the immediate attention, instability is, in reality, a secondary issue the salience of which will decline once economic recovery gets strongly underway. The true political starting point for changing capitalism is not instability but inequality. Inequality is inherent in capitalism, just as it is inherent in society. But Marx was wrong to forecast that capitalist societies would always become more unequal. In fact, the degree of inequality within those societies has both risen and fallen many times during the past century, whether in the United States, Western Europe or Japan. This is a complex issue, so it cannot easily be summarized in a brief generalization. Still, I will attempt to do so: the degree of inequality seems to have been most influenced by the level of unemployment, by the evolution of education, and by politics. Periods of full employment tend to narrow the gap between the richest and the poorest. There is no surer path to poverty than being out of a job. Access to well-paid, productive jobs, however, depends in the long-term on education, which enables the poorer citizens to acquire skills and to take on more complex tasks. Karl Marx would be astonished at the fact that the developed countries chose to provide education, at taxpayers´ expense, to the whole of their population. That decision, though prompted by political pressure from the working classes, was also eventually accepted by the rich and by capitalists as being in their interests too, for they came to realize that a well educated population is more socially stable and more productive. The benefits of publicly financed mass education have even increased as our economies have come to be more and more dominated by knowledge-intensive industries and services.

s no class struggle program, class analysis of this emerging sector, nor perspective on revolution. Without a plan to fight for democratic control over emerging space industries, we are left dreaming about future decades, rather than planning for gains today. There surely are battles to be had in the here-and-now, but aside from liberally reforming the Outer Space Treaty, Bastani’s manifesto offers us almost nothing on where these might be, over what, nor how we might prepare.

#### *he affirmative has no enforcement mechanism – private corporations can just circumvent since they have the funding to launch rockets on their own.*

**Sheetz 21** [Michael, “Elon Musk’s SpaceX raised about $850 million, jumping valuation to about $74 billion”, CNBC. 16 February 2021. <https://www.cnbc.com/2021/02/16/elon-musks-spacex-raised-850-million-at-419point99-a-share.html>] //DebateDrills LC

**SpaceX completed another monster equity funding round of $850 million last week**, people familiar with the financing told CNBC, sending **the company’s valuation skyrocketing to about $74 billion.**

**The company raised the new funds at $419.99 a share**, those people said — or just 1 cent below the $420 price that [Elon Musk](https://www.cnbc.com/elon-musk/) [made infamous in 2018](https://www.cnbc.com/2018/09/28/sec-says-elon-musk-at-tesla-chose-420-price-as-pot-reference.html) when he declared **he had “funding secured” to take** [**Tesla**](https://www.cnbc.com/quotes/TSLA) **private** at that price.

The latest round also represents **a jump of about 60% in the company’s valuation** from its previous round in August, when [S**paceX raised near $2 billion at a $46 billion valuation**](https://www.cnbc.com/2020/10/14/tesla-investor-ron-baron-spacex-has-a-chance-to-be-just-as-large.html).

SpaceX did not immediately respond to CNBC’s request for comment. In addition to SpaceX further building a war chest for its ambitious plans, **company insiders and existing investors were able to sell $750 million in a secondary transaction**, one of the people said.

The people spoke on condition of anonymity because SpaceX is not a publicly traded company and the fundraising talks were private. SpaceX raised only a portion of the funding available in the marketplace, with one person telling CNBC that **the company received “insane demand” of about $6 billion in offers over the course of just three days**.

China isnt communist/scoialist--contry w the most billionaries

Aff doesn’t lead us to socialism—cap can still grow on earth through new tech

Cap is alr in its dying days—ev says so, measn the aff does nothing