# nc

## 1

#### CP: Governments and private entities ought to switch to renewable rocket fuel

#### Solves all environmental impacts, rockets can be carbon neutral with no impact to the environment + NB of the Australian economy and education which the perm kills

**Mandow 20**  
(Rami Mandow is the founding director and editor of space australia and is currently in the last year of his Masters of Astronomy (Astrophysics) with Swinburne University of Technology. “Renewable Rocket Fuels – Going Green and into Space.” Spaceaustralia, 21 Aug. 2020, https://spaceaustralia.com/feature/renewable-rocket-fuels-going-green-and-space. || SW)  
Whilst the wonderful vertical take-off and landing engines we see in science fiction technology (like fusion drives) are still a long way off, and considerable amounts of experimentation over the last 60 years have outlined the best energy density fuels that are used in rockets today, it seems that propellants used to leave Earth’s gravity might not be fully green with zero environmental impact for some time. But that does not mean they cannot be carbon neutral. Prof. Wojciech Lipiński, Leader of the Australian National University (ANU) Solar Thermal Group, recently outlined new methods of creating carbon neutral fuels for the aerospace and aviation industries, designed to offset carbon/climate impacts. Prof. Lipiński describes carbon neutral fuel as synthetic fuels produced from solar energy, water and renewable carbon sources (such as biomass or air captured carbon dioxide), which would enable sustainable aerospace transportation, compatible with existing infrastructure. “Australia has great potential for the development of domestic aerospace and renewable fuel industries. This is linked to the country's geographical location and local climate conditions. Australia will always depend on air and sea transportation to stay connected with the world.” “Our conditions are geographically favourable for mission launches, and there’s growing domestic space ambition to work with foreign space industry partners. Australia’s renewable energy resources, in particular solar and wind, are unparalleled at the global scale but not effectively used yet. Thus, growing the sustainable aerospace fuel sector can improve national energy security, economic prosperity and, in the context of renewable fuel exports, protect the global environment” said Prof. Lipiński. Synthesising fuel from renewable sources of energy to use in rockets can be achieved through a number of different methods. One example is the production of high volumes of hydrogen and oxygen (which form hydrolox fuel sources for rockets) by using solar power to carry out large-scale electrolysis (the splitting of water into its hydrogen and oxygen components through a photochemical process). Given Australia’s large surface area and favourable climate (for solar and wind renewable energy production), Prof. Lipiński thinks we could utilise our geographic potential to be a global production leader for renewable fuels. “Solar energy harvested from a square of 600 km x 600 km somewhere in the Australian outback could cover the entire global energy demand in all forms. This requires conversion technologies that go beyond electricity to create energy carriers such as chemical fuels,” he said. Carbon-neutral fuels could be used in rocket fuel production and could indirectly reduce the net climate impact of rockets, but their entire production pipeline would need to be considered to be truly ‘carbon-neutral’. “In the case of carbon-neutral hydrocarbon fuels, one also has to consider the development of sustainable technologies for water processing and atmospheric carbon fixation. For truly carbon-neutral fuels, all processes in the production chain must be driven by renewable energy,” he said. Prof. Lipiński also believes that the sustainable fuel industry could provide downstream benefits for a country like Australia, given its capacity to produce renewable energy. “Sustainable fuels produced domestically can grow into a substantial industrial sector. This can bring other positive effects such as demand for advanced engineering education programs in Australia. These can lead to attractive employment opportunities for specialised technologists and will prevent future brain-drain.” “Australia has a long coastline and vast land areas away from agricultural and populated land where such technologies can be deployed at an unparalleled scale. Environmental impacts have, however, to be considered at any stage of such development to avoid future degradation of local land and water resources.” said Prof. Lipiński.

## 2

#### CP: The appropriation of outer space by private companies is unjust except the Copernicus Sentinel-1 and -2 Satellites

#### That competes –

#### The resolution/plan is entirety of appropriation, but the PIC retains a critically important satellite duo

#### The Sentinels appropriate low earth orbit

* LEO is 2k km or less

EO 21

EO directory (essentially an encyclopedia of all recent satellite launches), Last Updated Oct. 4 2021, "Copernicus: Sentinel-1," No Publication, https://directory.eoportal.org/web/eoportal/satellite-missions/c-missions/copernicus-sentinel-1, // HW AW

As part of the Copernicus space component, the Sentinel-1 (S1) mission is implemented through a constellation of two satellites (A and B units) each carrying an imaging C-band SAR instrument (5.405 GHz) providing data continuity of ERS and Envisat SAR types of mission. Each Sentinel-1 satellite is designed for an operations lifetime of 7 years with consumables for 12 years. The S-1 satellites will fly in a near polar, sun-synchronized (dawn-dusk) orbit at 693 km altitude. [14)](https://directory.eoportal.org/web/eoportal/satellite-missions/c-missions/copernicus-sentinel-1" \l "foot14%29)

#### They save mangroves, which reduces tsunami impact by 90%

ESA 7-26-21

European Space Agency (euro intergovernmental org that documents space advancement 7-26-2021, "How satellites save mangroves from space," European Space Agency, https://www.esa.int/Enabling\_Support/Preparing\_for\_the\_Future/Space\_for\_Earth/How\_satellites\_save\_mangroves\_from\_space, // HW AW

After the 2004 Indian Ocean tsunami, Wetlands International saw that many lives had been spared by something surprising – mangroves. In response the non-profit organisation scaled up its work on protecting and restoring these complex ecosystems. One important tool in their arsenal is images from the Copernicus Sentinel-1 and -2 satellites. **Mangroves make up only a small proportion of the world's forest but are vital for humans and nature**. They are home to fish, shellfish, birds and mammals. They store more carbon per hectare than rainforests. And they protect coastal communities from extreme weather. As [Wetlands International](https://www.wetlands.org/) discovered, they can **reduce the destructive force of a tsunami by up to 90%.** [Lammert](https://www.wetlands.org/profile/lammert-hilarides/) is an information manager at Wetlands International. He explains: "After the [2004 tsunami](https://en.wikipedia.org/wiki/2004_Indian_Ocean_earthquake_and_tsunami) we saw that areas with intact mangroves suffered far fewer deaths and less damage than those with lost or damaged mangroves." [The Irrawaddy Delta in Myanmar, imaged by the Copernicus Sentinel-2A satellite. Green areas show dense mangrove forest](https://www.esa.int/ESA_Multimedia/Images/2017/07/Irrawaddy_Delta_Myanmar) Between 1996 and 2016, around [6.6%](https://oceanwealth.org/wp-content/uploads/2019/02/MANGROVE-TNC-REPORT-FINAL.31.10.LOWSINGLES.pdf) of mangroves were lost worldwide. This was down from 1% per year in the 1980s. "Historically, the biggest risk that mangroves face is from conversion to agriculture on the land side, and to aquaculture on the sea side," says Lammert. "But there is also growing pressure from climate change, with rising sea levels starting to overwhelm mangroves and changing rainfall patterns causing some to die off because of a lack of fresh water." The good news is that **most can be restored**. An online platform called [Global Mangrove Watch](https://www.globalmangrovewatch.org/) is providing **remote sensing data and tools for coastal and park managers, conservationists, policymakers and practitioners to respond by pinpointing the causes of local mangrove loss and tracking restoration progress**. [Screenshot from Global Mangrove Watch, showing the location of mangroves](https://www.esa.int/ESA_Multimedia/Images/2021/07/Global_Mangrove_Watch) Together with [Aberystwyth University](https://www.aber.ac.uk/en/), [soloEO](https://www.soloeo.com/) and [The Nature Conservancy](https://www.nature.org/en-us/), Wetlands International is a key partner in Global Mangrove Watch, so Lammert explains how the platform works: "We use satellite data to produce a map of all the mangroves around the world once a year. It currently goes to 2016 but later this year we will release maps up to 2020." But to detect destruction and stop it in time, park managers, conservationists and policymakers need information more immediately. "**We also use data from the Sentinel-1 and -2 and** [**Landsat 8**](https://www.usgs.gov/core-science-systems/nli/landsat/landsat-8?qt-science_support_page_related_con=0) **satellites to provide what we call 'change alerts' for Africa. The Sentinels reimage the same location every few days, so once a month we compare their new images with a baseline map. We send out alerts if we see a difference in mangrove cover**." [Change alerts in Guinea-Bissau](https://www.esa.int/ESA_Multimedia/Images/2021/07/Global_Mangrove_Watch2) The current baseline map was built using 2010 data from the US Landsat and Japanese [ALOS](https://global.jaxa.jp/projects/sat/alos/) satellites, but the team is currently updating it using 2021 data from the Copernicus Sentinels. This higher resolution data will give the new map a resolution of just 10 metres, compared to the current 25 metres resolution. Change alerts have already been used to catalyse action, including in Guinea-Bissau. In March 2019 a Sentinel-2 image showed that an area of mangrove in the country had been significantly destroyed. A closer look revealed that a new dam had been built and was blocking the tide from coming in and out. "We sent people on the ground to the site. They saw that the government had built the dam to turn the mangrove into rice fields. There was nothing that could be done to prevent the transformation, but often in these cases the rice fields are tended for a few years, then the mangroves grow back." [Detected changes in the mangrove in Guinea-Bissau (inset: Global Mangrove Watch) overlaid on aerial photograph (Google Maps, 2019).](https://www.esa.int/ESA_Multimedia/Images/2021/07/Mangrove_destruction_alerts_in_Guinea-Bissau) [Copernicus Sentinel-2 images showing the change in a mangrove in Guinea-Bissau between 21 March 2018 and 2 March 2021. On 21 March 2019, a dam is visible. Healthy mangrove is shown in orange. The mangrove area is getting steadily greener between 2019 and 2021, showing that mangroves are dying off.](https://www.esa.int/ESA_Multimedia/Images/2021/07/Mangrove_destruction_in_Guinea-Bissau_between_March_2018_and_March_2021) "Our change alerts currently cover Africa, but we will soon be providing them for five of the most mangrove-rich countries, including Mexico and Indonesia. We hope that the alerts will be available for the whole world in the next couple of years." "**I want to emphasise how happy we are with the Sentinel images**," concludes Lammert. "**They are free, high resolution, and available almost immediately after they are taken. This means that we can act quickly to protect and recover mangroves worldwide."**

#### Climate change induced tsunamis outweigh – coastal agriculture and populations are disrupted, nuclear power plants melt down, mass migration, infrastructure is destroyed

VT 18

Virginia Tech article summarizing tsunami simulations done by Robert Weiss (director of the National Science Foundation-funded Disaster Resilience and Risk Management graduate education program), 8-15-2018, "Climate change sea level rises could increase risk for more devastating tsunamis worldwide: Even minor sea-level rise, by as much as a foot, poses greater risks," ScienceDaily, https://www.sciencedaily.com/releases/2018/08/180815141444.htm, // HW AW

As sea levels rise due to climate change, **so do the global hazards and potential devastating damages from tsunamis**, according to a new study by a partnership that included Virginia Tech. Even minor sea-level rise, by as much as a foot, poses greater risks of tsunamis for coastal communities worldwide. The threat of rising sea levels to coastal cities and communities throughout the world is well known, but new findings show the likely increase of flooding farther inland from tsunamis following earthquakes. Think of the tsunami that devasted a portion of northern Japan after the 2011 Tohoku-Oki earthquake, **causing a nuclear plant to melt down and spread radioactive contamination.** These findings are at the center of a new Science Advances study, headed by a multi-university team of scientists from the Earth Observatory of Singapore, the Asian School of the Environment at Nanyang Technological University, and National Taiwan University, with critical support from Virginia Tech's Robert Weiss, an associate professor in the Department of Geosciences, part of the College of Science. "Our research shows that sea-level rise can significantly increase the tsunami hazard, which means that smaller tsunamis in the future can have the same adverse impacts as big tsunamis would today," Weiss said, adding that smaller tsunamis generated by earthquakes with smaller magnitudes occur frequently and regularly around the world. For the study, Weiss was critical in helping create computational models and data analytics frameworks. At Virginia Tech, Weiss serves as director of the National Science Foundation-funded Disaster Resilience and Risk Management graduate education program and is co-lead of Coastal@VT, comprised of 45 Virginia Tech faculty from 13 departments focusing on contemporary and emerging coastal zone issues, such as disaster resilience, migration, sensitive ecosystems, hazard assessment, and natural infrastructure. For the study, Weiss and his partners, including Lin Lin Li, a senior research fellow, and Adam Switzer, an associate professor, at the Earth Observatory of Singapore, created computer-simulated tsunamis at current sea level and with sea-level increases of 1.5 feet and 3 feet in the Chinese territory of Macau. Macau is a densely populated coastal region located in South China that is generally safe from current tsunami risks. At current sea level, an earthquake would need to tip past a magnitude of 8.8 to cause widespread tsunami inundation in Macau. But with the simulated sea-level rises, the results surprised the team. The sea-level rise dramatically increased the frequency of tsunami-induced flooding by 1.2 to 2.4 times for the 1.5-foot increase and from 1.5 to 4.7 times for the 3-foot increase. "We found that the increased inundation frequency was contributed by earthquakes of smaller magnitudes, which posed no threat at current sea level, but could cause significant inundation at higher sea-level conditions," Li said. In the simulated study of Macau -- population 613,000 -- Switzer said, "We produced a series of tsunami inundation maps for Macau using more than 5,000 tsunami simulations generated from synthetic earthquakes prepared for the Manila Trench." It is estimated that sea levels in the Macau region will increase by 1.5 feet by 2060 and 3 feet by 2100, according to the team of U.S.-Chinese scientists. The hazard of large tsunamis in the South China Sea region primarily comes from the Manila Trench, a megathrust system that stretches from offshore Luzon in the Philippines to southern Taiwan. The Manila Trench megathrust has not experienced an earthquake larger than a magnitude 7.8 since the 1560s. Yet, study co-author Wang Yu, from the National Taiwan University, cautioned that the region shares many of the characteristics of the source areas that resulted in the 2004 Sumatra-Andaman earthquake, as well as the 2011 earthquake in northern Japan, both causing massive loss of life. These increased dangers from tsunamis build on already known difficulties facing coastal communities worldwide: The gradual loss of land directly near coasts and increased chances of flooding even during high tides, as sea levels increase as the Earth warms. "The South China Sea is an excellent starting point for such a study because it is an ocean with rapid sea-level rise and also the location of many mega cities with significant worldwide consequences if impacted. The study is the first if its kind on the level of detail, and many will follow our example," Weiss said. Policymakers, town planners, emergency services, and insurance firms must work together to create or insure safer coastlines, Weiss added. "Sea-level rise needs to be taken into account for planning purposes, for example for reclamation efforts but also for designing protective measures, such as seawalls or green infrastructure." He added, "What we assumed to be the absolute worst case a few years ago now appears to be modest for what is predicted in some locations. We need to study local sea-level change more comprehensively in order to create better predictive models that help to **make investments in infrastructure that are or near sustainable."**

## 3

#### Space-for-space economy is beginning to develop now because of private enterprise in space

Weinzierl and Sarang 21 (Matt, PhD in Economics Harvard University, Joseph and Jacqueline Elbling Professor of Business Administration at HBS and a Research Associate at the National Bureau of Economic Research, and Mehak, Research Associate at Harvard Business School and the Lunar Exploration Projects Lead for the MIT Space Exploration Initiative, Harvard Business Review, "The Commercial Space Age is Here," 2/12, <https://hbr.org/2021/02/the-commercial-space-age-is-here>)

In 2019, 95% of the estimated $366 billion in revenue earned in the space sector was from the space-for-earth economy: that is, goods or services produced in space for use on earth. The space-for-earth economy includes telecommunications and internet infrastructure, earth observation capabilities, national security satellites, and more. This economy is booming, and though research shows that it faces the challenges of overcrowding and monopolization that tend to arise whenever companies compete for a scarce natural resource, projections for its future are optimistic. Decreasing costs for launch and space hardware in general have enticed new entrants into this market, and companies in a variety of industries have already begun leveraging satellite technology and access to space to drive innovation and efficiency in their earthbound products and services. In contrast, the space-for-space economy — that is, goods and services produced in space for use in space, such as mining the Moon or asteroids for material with which to construct in-space habitats or supply refueling depots — has struggled to get off the ground. As far back as the 1970s, research commissioned by NASA predicted the rise of a space-based economy that would supply the demands of hundreds, thousands, even millions of humans living in space, dwarfing the space-for-earth economy (and, eventually, the entire terrestrial economy as well). The realization of such a vision would change how all of us do business, live our lives, and govern our societies — but to date, we’ve never even had more than 13 people in space at one time, leaving that dream as little more than science fiction. Today, however, there is reason to think that we may finally be reaching the first stages of a true space-for-space economy. SpaceX’s recent achievements (in cooperation with NASA), as well as upcoming efforts by Boeing, Blue Origin, and Virgin Galactic to put people in space sustainably and at scale, mark the opening of a new chapter of spaceflight led by private firms. These firms have both the intention and capability to bring private citizens to space as passengers, tourists, and — eventually — settlers, opening the door for businesses to start meeting the demand those people create over the next several decades with an array of space-for-space goods and services.

#### Space-for-space is key for continued space-for-earth developments like asteroid mining

Weinzierl and Sarang 21 (Matt, PhD in Economics Harvard University, Joseph and Jacqueline Elbling Professor of Business Administration at HBS and a Research Associate at the National Bureau of Economic Research, and Mehak, Research Associate at Harvard Business School and the Lunar Exploration Projects Lead for the MIT Space Exploration Initiative, Harvard Business Review, "The Commercial Space Age is Here," 2/12, <https://hbr.org/2021/02/the-commercial-space-age-is-here>)

To be sure, people have dreamt of using the vacuum and weightlessness of space to source or make things that cannot be made on earth for half a century, and time and again the business case has failed to pan out. Skepticism is natural. Those failures, however, have been in space-for-earth applications. For example, two startups of the 2010s, Planetary Resources, Inc. and Deep Space Industries, recognized the potential of space mining early on. For both companies, however, the lack of a space-for-space economy meant that their near-term survival depended on selling mined material — precious metals or rare elements — to earthbound customers. When it became clear that demand was insufficient to justify the high costs, funding dried up, and both companies pivoted to other ventures. These were failures of space-for-earth business models — but the demand for in-space mining of raw building material, metals, and water will be enormous once humans are living in space (and are therefore far cheaper to supply). In other words, when people are living and working in space, we are likely to look back on these early asteroid mining companies less as failures and more as simply ahead of their time.

#### Mining solves extinction from scarcity.

Pelton 17—(Director Emeritus of the Space and Advanced Communications Research Institute at George Washington University, PHD in IR from Georgetown).. Pelton, Joseph N. 2017. The New Gold Rush: The Riches of Space Beckon! Springer. Accessed 8/30/19.

Are We Humans Doomed to Extinction? What will we do when Earth’s resources are used up by humanity? The world is now hugely over populated, with billions and billions crammed into our overcrowded cities. By 2050, we may be 9 billion strong, and by 2100 well over 11 billion people on Planet Earth. Some at the United Nations say we might even be an amazing 12 billion crawling around this small globe. And over 80 % of us will be living in congested cities. These cities will be ever more vulnerable to terrorist attack, natural disaster, and other plights that come with overcrowding and a dearth of jobs that will be fueled by rapid automation and the rise of artifi cial intelligence across the global economy. We are already rapidly running out of water and minerals. Climate change is threatening our very existence. Political leaders and even the Pope have cautioned us against inaction. Perhaps the naysayers are right. All humanity is at tremendous risk. Is there no hope for the future? This book is about hope. We think that there is literally heavenly hope for humanity. But we are not talking here about divine intervention. We are envisioning a new space economy that recognizes that there is more water in the skies that all our oceans. Th ere is a new wealth of natural resources and clean energy in the reaches of outer space—more than most of us could ever dream possible. There are those that say why waste money on outer space when we have severe problems here at home? Going into space is not a waste of money. It is our future. It is our hope for new jobs and resources. The great challenge of our times is to reverse public thinking to see space not as a resource drain but as the doorway to opportunity. The new space frontier can literally open up a “gold rush in the skies.” In brief, we think there is new hope for humanity. We see a new a pathway to the future via new ventures in space. For too long, space programs have been seen as a money pit. In the process, we have overlooked the great abundance available to us in the skies above. It is important to recognize there is already the beginning of a new gold rush in space—a pathway to astral abundance. “New Space” is a term increasingly used to describe radical new commercial space initiatives—many of which have come from Silicon Valley and often with backing from the group of entrepreneurs known popularly as the “space billionaires.” New space is revolutionizing the space industry with lower cost space transportation and space systems that represent significant cost savings and new technological breakthroughs. “New Commercial Space” and the “New Space Economy” represent more than a new way of looking at outer space. These new pathways to the stars could prove vital to human survival. If one does not believe in spending money to probe the mysteries of the universe then perhaps we can try what might be called “calibrated greed” on for size. One only needs to go to a cubesat workshop, or to Silicon Valley or one of many conferences like the “Disrupt Space” event in Bremen, Germany, held in April 2016 to recognize that entrepreneurial New Space initiatives are changing everything [ 1 ]. In fact, the very nature and dimensions of what outer space activities are today have changed forever. It is no longer your grandfather’s concept of outer space that was once dominated by the big national space agencies. The entrepreneurs are taking over. The hopeful statements in this book and the hard economic and technical data that backs them up are more than a minority opinion. It is a topic of growing interest at the World Economic Forum, where business and political heavyweights meet in Davos, Switzerland, to discuss how to stimulate new patterns of global economic growth. It is even the growing view of a group that call themselves “space ethicists.” Here is how Christopher J. Newman, at the University of Sunderland in the United Kingdom has put it: Space ethicists have offered the view that space exploration is not only desirable; it is a duty that we, as a species, must undertake in order to secure the survival of humanity over the longer term. Expanding both the resource base and, eventually, the habitats available for humanity means that any expenditure on space exploration, far from being viewed as frivolous, can legitimately be rationalized as an ethical investment choice. (Newman) On the other hand there are space ethicists and space exobiologists who argue that humans have created ecological ruin on the planet—and now space debris is starting to pollute space. Th ese countervailing thoughts by the “no growth” camp of space ethicists say we have no right to colonize other planets or to mine the Moon and asteroids—or at least no right to do so until we can prove we can sustain life here on Earth for the longer term. However, for most who are planning for the new space economy the opinion of space philosophers doesn’t really fl oat their boat. Legislators, bankers, and aspiring space entrepreneurs are far more interested in the views of the super-rich capitalists called the space billionaires. A number of these billionaires and space executives have already put some very serious money into enterprises intent on creating a new pathway to the stars. No less than five billionaires with established space ventures—Elon Musk, Paul Allen, Jeff Bezos, Sir Richard Branson, and Robert Bigelow—have invested millions if not billions of dollars into commercializing space. They are developing new technologies and establishing space enterprises that can bring the wealth of outer space down to Earth. This is not a pipe dream, but will increasingly be the economic reality of the 2020s. These wealthy space entrepreneurs see major new economic opportunities. To them space represents the last great frontier for enterprising pioneers. Th us they see an ever-expanding space frontier that offers opportunities in low-cost space transportation, satellite solar power satellites to produce clean energy 24h a day, space mining, space manufacturing and production, and eventually space habitats and colonies as a trajectory to a better human future. Some even more visionary thinkers envision the possibility of terraforming Mars, or creating new structures in space to protect our planet from cosmic hazards and even raising Earth’s orbit to escape the rising heat levels of the Sun in millennia to come. Some, of course, will say this is sci-fi hogwash. It can’t be done. We say that this is what people would have said in 1900 about airplanes, rocket ships, cell phones and nuclear devices. The skeptics laughed at Columbus and his plan to sail across the oceans to discover new worlds. When Thomas Jefferson bought the Louisiana Purchase from France or Seward bought Alaska, there were plenty of naysayers that said such investment in the unknown was an extravagant waste of money. A healthy skepticism is useful and can play a role in economic and business success. Before one dismisses the idea of an impending major new space economy and a new gold rush, it might useful to see what has already transpired in space development in just the past five decades. The world’s first geosynchronous communications satellite had a throughput capability of about 500 kb / s. In contrast, today’s state of the art Viasat 2 —a half century later— has an impressive throughput of some 140 Gb/s. Th is means that the relative throughput is nearly 300,000 greater, while its lifetime is some ten times longer (Figs. 1.1 and 1.2 ). Each new generation of communications satellite has had more power, better antenna systems, improved pointing and stabilization, and an extended lifetime. And the capabilities represented by remote sensing satellites , meteorological satellites , and navigation and timing satellites have also expanded their capabilities and performance in an impressive manner. When satellite applications first started, the market was measured in millions of dollars. Today commercial satellite services exceed a quarter of a billion dollars. Vital services such as the Internet, aircraft traffi c control and management, international banking, search and rescue and much, much more depend on application satellites. Th ose that would doubt the importance of satellites to the global economy might wish to view on You Tube the video “If Th ere Were a Day Without Satellites?” [ 2 ]. Let’s check in on what some of those very rich and smart guys think about the new space economy and its potential. (We are sorry to say that so far there are no female space billionaires, but surely this, too, will come someday soon.) Of course this twenty-fi rst century breakthrough that we call the New Space economy will not come just from new space commerce. It will also come from the amazing new technologies here on Earth. Vital new terrestrial technologies will accompany this cosmic journey into tomorrow. Information technology, robotics, artificial intelligence and commercial space travel systems have now set us on a course to allow us humans to harvest the amazing riches in the skies—new natural resources, new energy, and even totally new ways of looking at the purpose of human existence. If we pursue this course steadfastly, it can be the beginning of a New Space renaissance. But if we don’t seek to realize our ultimate destiny in space, Homo sapiens can end up in the dustbin of history—just like literally millions of already failed species. In each and every one of the five mass extinction events that have occurred over the last 1.5 billion years on Earth, some 50–80 % of all species have gone the way of the T. Rex, the woolly mammoth, and the Dodo bird along with extinct ferns, grasses and cacti. On the other hand, the best days of the human race could be just beginning. If we are smart about how we go about discovering and using these riches in the skies and applying the best of our new technologies, it could be the start of a new beginning for humanity. Konstantin Tsiokovsky, the Russian astronautics pioneer, who fi rst conceived of practical designs for spaceships, famously said: “A planet is the cradle of mankind, but one cannot live in a cradle forever.” Well before Tsiokovsky another genius, Leonardo da Vinci, said, quite poetically: “Once you have tasted flight, you will forever walk the earth with your eyes turned skyward, for there you have been, and there you will always long to return.” The founder of the X-Prize and of Planetary Resources, Inc., Dr. Peter Diamandis, has much more brashly said much the same thing in quite diff erent words when he said: “The meek shall inherit the Earth. The rest of us will go to Mars.” The New Space Billionaires Peter Diamandis is not alone in his thinking. From the list of “visionaries” quoted earlier, Elon Musk, the founder of SpaceX; Sir Richard Branson, the founder of Virgin Galactic; and Paul Allen, the co-founder of Microsoft and the man who financed SpaceShipOne, the world’s first successful spaceplane have all said the future will include a vibrant new space economy. Th ey, and others, have said that we can, we should and we soon shall go into space and realize the bounty that it can offer to us. Th e New Space enterprise is today indeed being led by those so-called space billionaires , who have an exciting vision of the future. They and others in the commercial space economy believe that the exploitation of outer space may open up a new golden age of astral abundance. They see outer space as a new frontier that can be a great source of new materials, energy and various forms of new wealth that might even save us from excesses of the past. Th is gold rush in the skies represents a new beginning. We are not talking about expensive new space ventures funded by NASA or other space agencies in Europe, Japan, China or India. No, these eff orts which we and others call New Space are today being forged by imaginative and resourceful commercial entrepreneurs. Th ese twenty-fi rst century visionaries have the fortitude and zeal to look to the abundance above. New breakthroughs in technology and New Space enterprises may be able to create an “astral life raft” for humanity. Just as Columbus and the Vikings had the imaginative drive that led them to discover the riches of a new world, we now have a cadre of space billionaires that are now leading us into this New Space era of tomorrow. These bold leaders, such as Paul Allen and Sir Richard Branson, plus other space entrepreneurs including Jeff Bezos of Amazon and Blue Origin, and Robert Bigelow, Chairman of Budget Suites and Bigelow Aerospace, not only dream of their future in the space industry but also have billions of dollars in assets. These are the bright stars of an entirely new industry that are leading us into the age of New Space commerce. These space billionaires, each in their own way, are proponents of a new age of astral abundance. Each of them is launching new commercial space industries. They are literally transforming our vision of tomorrow. These new types of entrepreneurial aerospace companies—the New Space enterprises—give new hope and new promise of transforming our world as we know it today. The New Space Frontier What happens in space in the next few decades, plus corresponding new information technologies and advanced robotics, will change our world forever. These changes will redefi ne wealth, change our views of work and employment and upend almost everything we think we know about economics, wealth, jobs, and politics. Th ese changes are about truly disruptive technologies of the most fundamental kinds. If you thought the Internet, smart phones, and spandex were disruptive technologies, just hang on. You have not seen anything yet. In short, if you want to understand a transition more fundamental than the changes brought to the twentieth century world by computers, communications and the Internet, then read this book. There are truly riches in the skies. Near-Earth asteroids largely composed of platinum and rare earth metals have an incredible value. Helium-3 isotopes accessible in outer space could provide clean and abundant energy. There is far more water in outer space than is in our oceans. In the pages that follow we will explain the potential for a cosmic shift in our global economy, our ecology, and our commercial and legal systems. These can take place by the end of this century. And if these changes do not take place we will be in trouble. Our conventional petro-chemical energy systems will fail us economically and eventually blanket us with a hydrocarbon haze of smog that will threaten our health and our very survival. Our rare precious metals that we need for modern electronic appliances will skyrocket in price, and the struggle between “haves” and “have nots” will grow increasingly ugly. A lack of affordable and readily available water, natural resources, food, health care and medical supplies, plus systematic threats to urban security and systemic warfare are the alternatives to astral abundance. The choices between astral abundance and a downward spiral in global standards of living are stark. Within the next few decades these problems will be increasingly real. By then the world may almost be begging for new, out of- the-box thinking. International peace and security will be an indispensable prerequisite for exploitation of astral abundance, as will good government for all. No one nation can be rich and secure when everyone else is poor and insecure. In short, global space security and strategic space defense, mediated by global space agreements, are part of this new pathway to the future.

## 4

#### Private Chinese space companies are set to outpace America in the squo.

Autry and Kwast 18

Greg Autry, professor of space leadership, policy, and business @ ASU, served on the 2016 NASA transition team Steve Kwast, Lieutenant General and commander for the Air Force, fellow in public policy @ Harvard, 12-8-2018, "America Is Losing the Second Space Race to China," Foreign Policy, <https://foreignpolicy.com/2019/08/22/america-is-losing-the-second-space-race-to-china/> //MLT

China’s aggressive investment in space solar power will allow it to provide cheap, clean power to the world, displacing U.S. energy firms while placing a second yoke around the developing world. Significantly, such orbital power stations have dual use potential and, if properly designed, could serve as powerful offensive weapons platforms. China’s first step in this process is to conquer the growing small space launch market. Beijing is providing nominally commercial firms with government-manufactured, mobile intercontinental ballistic missiles they can use to dump launch services on the market below cost. These start-ups are already undercutting U.S. pricing by 80 percent. Based on its previous success in using dumping to take out U.S. developed industries such as solar power modules and drones, China will quickly move upstream to attack the leading U.S. launch providers and secure a global commercial monopoly. Owning the launch market will give them an unsurmountable advantage against U.S. competitors in satellite internet, imaging, and power.

#### Chinese space dominance is k2 global hegemony.

Jaewoo 21

Jaewoo Choo, professor of international politics @ Kyung Hee U, director of China Research Center, 3-11-2021, "The United States and China: Competition for superiority in space to protect resources and weapon systems," OpenAsia | Thoughts and Ideas about Asia, <https://www.openasia.asia/the-united-states-and-china-competition-for-superiority-in-space-to-protect-resources-and-weapon-systems/> //MLT

Whoever rules space rules the future There is one reason why the two countries' space strategy competition will inevitably lead to a hegemony competition. This is because they try to conquer the space order. Conquering the space order is to define and establish the space order. Those who dominate space will dominate almost all sectors of the future world, including economy, technology, environment, cyberspace, transportation and energy. That's why the United States is considered as a hegemonic country on Earth today. The U.S. is recognized as a hegemonic country because it establishes and leads the economic, financial, trade, political, and diplomatic order. There are two areas in the world today where international order has not been established. One is virtual space, which is the cyber world. The other is the space. Since the international order of these two areas is closely correlated with each other, it is likely that the establishment of the order in these two areas will be pursued simultaneously. This means that cyber order cannot be discussed without discussing satellite issues. The Communist Party of China recognized this early on. At the 19th National Communist Party Congress in 2017, it expressed its justification for establishing space order. President Xi Jinping declared that China's diplomatic stage in the 21st century has expanded beyond the Earth into space and virtual space. It was the moment when China defined the concept of diplomatic space as the "universe" beyond the Earth. He then explained that the establishment of a system that can even manage the order of the universe and the virtual world eventually means the establishment of practical governance. Therefore, he justified that China's diplomatic horizon has no choice but to expand into space. Furthermore, he stressed that he is confident that the ideation of building such governance serves as the foundation for the community of common destiny for mankind which China pursues. In other words, he publicly urged China to have the capabilities and means to become a key country in building governance in these two areas.

**Chinese leadership solves extinction.**

Shen **Yamei 18**, Deputy Director and Associate Research Fellow of Department for American Studies, China Institute of International Studies, 1-9-2018, "Probing into the “Chinese Solution” for the Transformation of Global Governance," CAIFC, http://www.caifc.org.cn/en/content.aspx?id=4491

As the world is in a period of great development, transformation and adjustment, the international power comparison is undergoing profound changes, global governance is reshuffling and traditional governance concepts and models are confronted with challenges. The international community is expecting China to play a bigger role in global governance, which has given birth to the Chinese solution. A. To Lead the Transformation of the Global Governance System. **The “shortcomings” of the existing global governance system are prominent, which can hardly ensure global development. First, the traditional dominant forces are seriously imbalanced**. The US and Europe that used to dominate the global governance system have been beset with structural problems, with their economic development stalling, social contradictions intensifying, populism and secessionism rising, and states trapped in internal strife and differentiation. These countries have not fully reformed and adjusted themselves well, but rather pointed their fingers at globalization and resorted to retreat for self-insurance or were busy with their own affairs without any wish or ability to participate in global governance, which has encouraged the growth of “anti-globalization” trend into an interference factor to global governance. Second, the global governance mechanism is relatively lagging behind. Over the years of development, the strength of emerging economies has increased dramatically, which has substantially upset the international power structure, as the developing countries as a whole have made 80 percent of the contributions to global economic growth. These countries have expressed their appeal for new governance and begun policy coordination among themselves, which has initiated the transition of global governance form “Western governance” to “East-West joint governance”, but **the traditional governance mechanisms such as the World Bank, IMF and G7 failed to reflect the demand of the new pattern, in addition to their lack of representation and inclusiveness.** Third, the global governance rules are developing in a fragmented way, with governance deficits existing in some key areas. With the diversification and in-depth integration of international interests, the domain of global governance has continued to expand, with actors multiplying by folds and action intentions becoming complicated. As relevant efforts are usually temporary and limited to specific partners or issues, global governance driven by requests of “diversified governance” lacks systematic and comprehensive solutions. Since the beginning of this year, there have been risks of running into an acephalous state **in such key areas as global economic governance and climate change**. **Such emerging issues as nuclear security and international terrorism have suffered injustice because of power politics**. **The governance areas in deficit, such as cyber security, polar region and oceans, have “reversely forced” certain countries and organizations to respond hastily**. All of these have made the global governance system trapped in a dilemma and call urgently for a clear direction of advancement. B. To Innovate and Perfect the International Order. Currently, whether the developing countries or the Western countries of Europe and the US are greatly discontent with the existing international order as well as their appeals and motivation for changing the order are unprecedentedly strong. The US is the major creator and beneficiary of the existing hegemonic order, but it is now doubtful that it has gained much less than lost from the existing order, faced with the difficulties of global economic transformation and obsessed with economic despair and political dejection. Although the developing countries as represented by China acknowledge the positive role played by the post-war international order in safeguarding peace, boosting prosperity and promoting globalization, they criticize the existing order for lack of inclusiveness in politics and equality in economy, as well as double standard in security, believing it has failed to reflect the multi-polarization trend of the world and is an exclusive “circle club”. Therefore, there is much room for improvement. For China, to lead the transformation of the global governance system and international order not only supports the efforts of the developing countries to uphold multilateralism rather than unilateralism, advocate the rule of law rather than the law of the jungle and practice democracy rather than power politics in international relations, but also is an important subject concerning whether China could gain the discourse power and development space corresponding to its own strength and interests in the process of innovating and perfecting the framework of international order. C. To Promote Integration of the Eastern and Western Civilizations. Dialog among civilizations, which is the popular foundation for any country’s diplomatic proposals, runs like a trickle moistening things silently. Nevertheless, in the existing international system guided by the “Western-Centrism”, the Western civilization has always had the self-righteous superiority, conflicting with the interests and mentality of other countries and having failed to find the path to co-existing peacefully and harmoniously with other civilizations. **So to speak, many problems of today, including the growing gap in economic development between the developed and developing countries against the background of globalization, the Middle East trapped in chaos and disorder, the failure of Russia and Turkey to “integrate into the West”, etc., can be directly attributed to lack of exchanges, communication and integration among civilizations.** Since the 18th National Congress of CPC, Xi Jinping has raised the concept of “Chinese Dream” that reflects both Chinese values and China’s pursuit, re-introducing to the world the idea of “all living creatures grow together without harming one another and ways run parallel without interfering with one another”, which is the highest ideal in Chinese traditional culture, and striving to shape China into a force that counter-balance the Western civilization. He has also made solemn commitment that “we respect the diversity of civilizations …… cannot be puffed up with pride and depreciate other civilizations and nations”; “facing the people deeply trapped in misery and wars, we should have not only compassion and sympathy, but also responsibility and action …… do whatever we can to extend assistance to those people caught in predicament”, etc. China will rebalance the international pattern from a more inclusive civilization perspective and with more far-sighted strategic mindset, or at least correct the bisected or predominated world order so as to promote the parallel development of the Eastern and Western civilizations through mutual learning, integration and encouragement. D. To Pass on China’s Confidence. Only a short while ago, some Western countries had called for “China’s responsibility” and made it an inhibition to “regulate” China’s development orientation. Today, China has become a source of stability in an international situation full of uncertainties. Over the past 5 years, China has made outstanding contributions to the recovery of world economy under relatively great pressure of its own economic downturn. Encouraged by the “four confidences”, the whole of the Chinese society has burst out innovation vitality and produced innovation achievements, making people have more sense of gain and more optimistic about the national development prospect. It is the heroism of the ordinary Chinese to overcome difficulties and realize the ideal destiny that best explains China’s confidence. When this confidence is passed on in the field of diplomacy, it is expressed as: first, China’s posture is seen as more forging ahead and courageous to undertake responsibilities ---- proactively shaping the international agendas rather than passively accepting them; having clear-cut attitudes on international disputes rather than being equivocal; and extending international cooperation to comprehensive and dimensional development rather than based on the theory of “economy only”. In sum, China will actively seek understanding and support from other countries rather than imposing its will on others with clear-cut Chinese characteristics, Chinese style and Chinese manner. Second, China’s discourse is featured as a combination of inflexibility and yielding as well as magnanimous ---- combining the internationally recognized diplomatic principles with the excellent Chinese cultural traditions through digesting the Chinese and foreign humanistic classics assisted with philosophical speculations to make “China Brand, Chinese Voice and China’s Image get more and more recognized”. Third, the Chinese solution is more practical and intimate to people as well as emphasizes inclusive cooperation, as China is full of confidence to break the monopoly of the Western model on global development, “offering mankind a Chinese solution to explore a better social system”, and “providing a brand new option for the nations and peoples who are hoping both to speed up development and maintain independence”. II.Path Searching of the “Chinese Solution” for Global Governance Over the past years’ efforts, China has the ability to transform itself from “grasping the opportunity” for development to “creating opportunity” and “sharing opportunity” for common development, hoping to pass on the longing of the Chinese people for a better life to the people of other countries and promoting the development of the global governance system toward a more just and rational end. It has become the major power’s conscious commitment of China to lead the transformation of the global governance system in a profound way. A. To Construct the Theoretical System for Global Governance. The theoretical system of global governance has been the focus of the party central committee’s diplomatic theory innovation since the 18th National Congress of CPC as well as an important component of the theory of socialism with Chinese characteristics for a new era, which is not only the sublimation of China’s interaction with the world from “absorbing and learning” to “cooperation and mutual learning”, but also the cause why so many developing countries have turned from “learning from the West” to “exploring for treasures in the East”. In the past 5 years, the party central committee, based on precise interpretation of the world pattern today and serious reflection on the future development of mankind, has made a sincere call to the world for promoting the development of global governance system toward a more just and rational end, and proposed a series of new concepts and new strategies including engaging in major power diplomacy with Chinese characteristics, creating the human community with common destiny, promoting the construction of new international relationship rooted in the principle of cooperation and win-win, enriching the strategic thinking of peaceful development, sticking to the correct benefit view, formulating the partnership network the world over, advancing the global economic governance in a way of mutual consultation, joint construction and co-sharing, advocating the joint, comprehensive, cooperative and sustainable security concept, and launching the grand “Belt and Road” initiative. The Chinese solution composed of these contents, not only fundamentally different from the old roads of industrial revolution and colonial expansion in history, but also different from the market-driven neo-liberalism model currently advocated by Western countries and international organizations, stands at the height of the world and even mankind, seeking for global common development and having widened the road for the developing countries to modernization, which is widely welcomed by the international community. B. To Supplement and Perfect the Global Governance System. Currently, the international political practice in global governance is mostly problem-driven without creating a set of relatively independent, centralized and integral power structures, resulting in the existing global governance systemcharacterized as both extensive and unbalanced. China has been engaged in reform and innovation, while maintaining and constructing the existing systems, producing some thinking and method with Chinese characteristics. First, China sees the UN as a mirror that reflects the status quo of global governance, which should act as the leader of global governance, and actively safeguards the global governance system with the UN at the core. Second, China is actively promoting the transforming process of such recently emerged international mechanisms as G20, BRICS and SCO, perfecting them through practice, and boosting Asia-Pacific regional cooperation and the development of economic globalization. China is also promoting the construction of regional security mechanism through the Six-Party Talks on Korean Peninsula nuclear issue, Boao Forum for Asia, CICA and multilateral security dialog mechanisms led by ASEAN so as to lay the foundation for the future regional security framework. Third, China has initiated the establishment of AIIB and the New Development Bank of BRICS, creating a precedent for developing countries to set up multilateral financial institutions. The core of the new relationship between China and them lies in “boosting rather than controlling” and “public rather than private”, which is much different from the management and operation model of the World Bank, manifesting the increasing global governance ability of China and the developing countries as well as exerting pressure on the international economic and financial institution to speed up reforms. **Thus, in leading the transformation of the global governance system, China has not overthrown the existing systems and started all over again, but been engaged in innovating and perfecting; China has proactively undertaken international responsibilities, but has to do everything in its power and act according to its ability.** C. To Reform the Global Governance Rules. Many of the problems facing global governance today are deeply rooted in such a cause that the dominant power of the existing governance system has taken it as the tool to realize its own national interests first and a platform to pursue its political goals. Since the beginning of this year, the US has for several times requested the World Bank, IMF and G20 to make efforts to mitigate the so-called global imbalance, abandoned its commitment to support trade openness, cut down investment projects to the middle-income countries, and deleted commitment to support the efforts to deal with climate change financially, which has made the international systems accessories of the US domestic economic agendas, dealing a heavy blow to the global governance system. On the contrary, the interests and agendas of China, as a major power of the world, are open to the whole world, and China in the future “will provide the world with broader market, more sufficient capital, more abundant goods and more precious opportunities for cooperation”, while having the ability to make the world listen to its voice more attentively. With regard to the subject of global governance, China has advocated that what global governance system is better cannot be decided upon by any single country, as the destiny of the world should be in the hands of the people of all countries. In principle, all the parties should stick to the principle of mutual consultation, joint construction and co-sharing, resolve disputes through dialog and differences through consultation. Regarding the critical areas, opening to the outer world does not mean building one’s own backyard, but building the spring garden for co-sharing; the “Belt and Road” initiative is not China’s solo, but a chorus participated in by all countries concerned. **China has also proposed international public security views on nuclear security, maritime cooperation and cyber space order, calling for efforts to make the global village into a “grand stage for seeking common development” rather than a “wrestling arena”; we cannot “set up a stage here, while pulling away a prop there”, but “complement each other to put on a grand show”**. From the orientation of reforms, efforts should be made to better safeguard and expand the legitimate interests of the developing countries and increase the influence of the emerging economies on global governance. Over the past 5 years, China has attached importance to full court diplomacy, gradually coming to the center stage of international politics and proactively establishing principles for global governance. By hosting such important events as IAELM, CICA Summit, G20 Summit, the Belt and Road International Cooperation Forum and BRICS Summit, China has used theseplatforms to elaborate the Asia-Pacific Dream for the first time to the world, expressing China’s views on Asian security and global economic governance, discussing with the countries concerned with the Belt and Road about the synergy of their future development strategies and setting off the “BRICS plus” capacity expansion mechanism, in which China not only contributes its solution and shows its style, but also participates in the shaping of international principles through practice. On promoting the resolution of hot international issues, China abides by the norms governing international relations based on the purposes and principles of the UN Charter, and insists on justice, playing a constructive role as a responsible major power in actively promoting the political accommodation in Afghanistan, mediating the Djibouti-Eritrea dispute, promoting peace talks in the Middle East, devoting itself to the peaceful resolution of the South China Sea dispute through negotiations. In addition, China’s responsibility and quick response to international crises have gained widespread praises, as seen in such cases as assisting Africa in its fight against the Ebola epidemic, sending emergency fresh water to the capital of Maldives and buying rice from Cambodia to help relieve its financial squeeze, which has shown the simple feelings of the Chinese people to share the same breath and fate with the people of other countries. D. To Support the Increase of the Developing Countries’ Voice. The developing countries, especially the emerging powers, are not only the important participants of the globalization process, but also the important direction to which the international power system is transferring. With the accelerating shift of global economic center to emerging markets and developing economies, the will and ability of the developing countries to participate in global governance have been correspondingly strengthened. As the biggest developing country and fast growing major power, China has the same appeal and proposal for governance as other developing countries and already began policy coordination with them, as China should comply with historical tide and continue to support the increase of the developing countries’ voice in the global governance system. To this end, China has pursued the policy of “dialog but not confrontation, partnership but not alliance”, attaching importance to the construction of new type of major power relationship and global partnership network, while making a series proposals in the practice of global governance that could represent the legitimate interests of the developing countries and be conducive to safeguarding global justice, including supporting an open, inclusive, universal, balanced and win-win economic globalization; promoting the reforms on share and voting mechanism of IMF to increase the voting rights and representation of the emerging market economies; financing the infrastructure construction and industrial upgrading of other developing countries through various bilateral or regional funds; and helping other developing countries to respond to such challenges as famine, refugees, climate change and public hygiene by debt forgiveness and assistance.

## Case

### Solvency

#### Reform kills their solvency – distracts from revolution

Peterson 18

John Peterson (editor at “socialist revolution”, and wrote an official academic book about capitalism called “The revolutionary philosophy of Marxism”), jan 29 2018, "You Can’t Reform Capitalism—It Must Be Overthrown," In Defence of Marxism, https://www.marxist.com/you-can-t-reform-capitalism-it-must-be-overthrown.htm, // HW AW

Interest in socialism has skyrocketed over the last two years. Millions of people yearn for change and want to fight back against capitalism. They are looking for ideas and an organization that can help them do just that. But there is as yet no viable point of reference, no mass socialist party, no clear and confident exit indicated out of the burning building. As a result, most people doubt whether a serious challenge to the system and its institutions can be mounted, let alone its total overturn. This explains the revival of interest in reformism. [Editorial of [Socialist Revolution](https://socialistrevolution.org/you-cant-reform-capitalism-it-must-be-overthrown) issue 4] As Marxists, we support any and all reforms that improve the lives of the workers and poor, even within the limits of capitalism. But there is a difference between fighting for concrete reforms that raise class consciousness, confidence, and unity, and believing that capitalism can be “reformed” out of existence**. We do not content ourselves with a “kinder, gentler” form of wage slavery.** A system that cannot productively make use of the diverse talents of every individual for the greater good, and which condemns millions to “enforced idleness” has no right to rule over the majority. We should also understand that those **social welfare programs that do exist are by-products of revolutionary struggle and are maintained solely to prevent the threat of revolution**. Our historic aim is not to win a few more crumbs for the destitute, but to ensure that everyone on the planet has food, clothing, shelter, education, and long, productive, healthy lives. To be sure, reformism is a natural first stage of political awakening. The idea that we should try to tone down this or that “excess” of capitalism seems the only “pragmatic” thing to do. But there is a difference between the reformism of the average person, who can’t yet conceive of any system that goes beyond what they have experienced so far in their lives, and that of committed reformists who consciously reject the need for revolution, or at best, postpone it to the indefinite future. Having no confidence in themselves or the working class, **they eviscerate Lenin of his revolutionary essence and embrace the ideas of the German Social-Democrat Karl Kautsky**. Ultimately, as with all utopian socialists and reformists, **their aim is to “pressure” the capitalists and their politicians to “do the right thing.” However, history provides ample evidence that this is a dead end.** As Leon Trotsky succinctly put it, “No amount of ‘pressure’ can make the bourgeoisie stop being the bourgeoisie: it must be overthrown.” Nevermind that in the midst of an organic crisis of capitalism, there is no material basis for reforms, only counterreforms. Some on the left believe they have stumbled upon a “third way” between reformism and revolution. They propose that the way forward lies in reviving the ideas of the “New Left,” specifically, those of André Gorz and his conception of “non-reformist reforms.” Now, if what they mean by this is a reform that doesn’t limit itself to capitalism, cannot be fully realized within this system, and therefore helps people draw the conclusion that a socialist revolution is necessary, then this would effectively be a classical Marxist “transitional demand” by another name. But that’s not what they mean. They envision reforms that can somehow “decommodify” this or that strategic sector of the capitalist economy, thus “undermining its hegemony,” in a “war of position” waged from within the limits of the system. Take, as an example, the much-needed struggle for universal socialized healthcare. Those activists who fight for “Medicare for All” in the abstract—in isolation from the broader fight for a mass socialist party and class struggle trade unionism—end up merely trying to exert “pressure” on capitalist politicians. Canvassing is an important way to meet and engage workers and to explain the ideas of socialism. But **if the concrete result is simply to get signatures for a petition “urging” the Democrats to “do the right thing,” then not a single step towards universal healthcare is taken, never mind socialism**. The Democrats are a party of big business. They are not about to “decommodify” the health insurance and provision industries, which are among the most profitable sectors of the capitalist economy. To sow any illusions whatsoever in the Democratic Party is to sow confusion and disappointment. Those who argue for “non-reformist reforms” also have a formalistic understanding of what a revolution is and is not. As a result, they focus on the so-called “war of position” instead of prioritizing the building of a class-independent mass revolutionary party in advance of the revolution. **They have no perspective of future mass movements of the workers, of a revival of the class struggle in the unions and in politics. While critical of capitalism, they don’t fully explain the system or how it can be changed through working-class organization, mobilization, and revolution. They do not deny that the system is exhausted and reactionary, but they grudgingly accept it nonetheless**. This is a perspective of cynical pessimism and surrender, veiled in the language of academic sagacity. The idea that the workers are “not ready” for socialism is a cop-out. Millions came out in support of Bernie Sanders’s call for “revolution against the billionaire class.” It was his capitulation to the Democratic Party that led to mass abstention, protest votes and the eventual victory of Donald Trump, not a lack of enthusiasm for socialism and revolution. Fortunately for humanity, working-class consciousness can, does, and will catch up with a bang, and this will completely transform the situation. When precisely this will happen is impossible to say. But in society, as in nature, similar conditions lead to similar results. The task of socialists is to painstakingly prepare for such dramatic changes in consciousness. Our role is not to artificially try to “build working class power” or “spark” the movement, but to prepare ourselves to help channel the pent-up energy of the working class into useful revolutionary change once it inevitably moves into action to change society. We must also not forget that **betrayal is inherent in reformism**. In one European country after another in the recent period, the reformists have played the role of derailing revolutionary energy into channels that are safe for capitalism, even before they get anywhere near power. In an epoch of crisis and counterreforms, “**non-reformist reforms” will end up as run-of-the-mill reformism without reforms**. As Marxists, we must enter a friendly and patient dialogue with those who have honest reformist illusions but aren’t committed reformists. Most Americans, even on the left, have never been presented with a revolutionary socialist program. But illusions in reformism cannot last forever. American workers are pragmatic by nature and will judge parties and politicians on the basis of their experience. At a certain stage, if revolutionary socialists are present in sufficient numbers to reach the broader working class with our ideas, millions will enthusiastically embrace the need for socialist revolution. The task of Marxists is to help shorten the time needed to draw these conclusions—but we do not have all the time in the world to do so. That capitalism passes through different phases of development is absolutely true. But to propose, as some on the left do, that it is only a “neoliberal” version of capitalism that has failed is patently wrong. Capitalism remains capitalism from its dynamic infancy to its senile decay. It is predicated on the merciless exploitation of wage labor and is more than happy to make use of even crueler modes of exploitation in its relentless quest to accumulate, concentrate, and expand capital. To argue for the continuation of any form of this system is to settle for a status quo of poverty, ignorance, exploitation, and oppression. This at a time when the objective potential for an entirely different way of organizing society is abundantly evident. In essence, this is what is meant by the concept of “late capitalism,” which reflects the instinctive understanding among the youth the “old society is pregnant with the new.” In an article titled, “How to Be an Anticapitalist Today,” published in Jacobin, the author concludes: “Give up the fantasy of smashing capitalism. Capitalism is not smashable, at least if you really want to construct an emancipatory future.” The American workers and youth can do without this kind of learned defeatism. A better future may seem out of reach as the economic, political, and social crisis grinds on, with even worse to come. But as the immortal revolutionary John Brown expressed it, “I cannot remember a night so dark as to have hindered the coming day, nor a storm so furious or dreadful as to prevent the return of warm sunshine and a cloudless sky.” That is the sort of revolutionary optimism we must be filled with. As Leon Trotsky explained, the crisis of humanity is the crisis of working-class leadership. A bold leadership with a confident vision of the socialist future is what we must build. History and the youth are on our side. The sooner we get this over with, the sooner future generations will get to live in a world of superabundance without the state, money, or compulsion of any kind. Join the International Marxist Tendency and help us fight for these ideas in the socialist movement.

#### NASA and the space program don’t believe in their efforts – letting the government take control of space exploration just passes the capitalist torch

McKay 20

Tom McKay (Tom McKay is a journalist and breaking news reporter who specializes in politics, identities, civil rights and drug policy.), 9-10-2020, "NASA Is Soliciting Bids to Bring Capitalism to the Moon," https://gizmodo.com/nasa-is-soliciting-bids-to-bring-capitalism-to-the-moon-1845018404, // HW AW

Mankind’s quest to [really fuck up the Moon](https://gizmodo.com/trump-to-world-keep-your-grubby-hands-off-of-our-theor-1842742312) is taking another step. NASA has filed a “[request for quotations](https://beta.sam.gov/opp/77726177617a45d0a196e23a587d7c14/view)” for any company willing to scrape the lunar surface for the first off-world sale of space resources, in a sort of baby **step towards Moon Capitalism**. The project isn’t complicated: NASA is offering $15,000 to $25,000 for samples of rocks, lunar regolith (a fancy word for dust, debris and other Moon-crud), or ices, so long as they’re able to pack them in some type of container and provide photographic and textual proof of where it was culled from. Contractor(s) will have to provide their own transportation to the moon, and NASA isn’t even asking for the samples to be analyzed or returned to Earth. “The material(s) may be collected from any location on the Lunar surface as determined by the Contractor,” NASA wrote in the document. “Purchase is made on an ‘as-collected’ condition. The collected materials may be any combination of regolith types, rocks, and/or co-present species such as ices.: NASA wants the samples to be in the range of 50 to 500 grams (about the size of a full stick of butter), though it noted payment won’t depend “on the quantity of Lunar material collected.” The space agency wants the micro-mining Moon mission completed by the end of 2024, its target date for a manned mission to the moon. The paltry $15,000-$25,000 price tag per sample means any contract will almost certainly be undertaken as a sideline in some other type of mission to the lunar surface. It’s also mostly symbolic. [According to Ars Technica](https://arstechnica.com/science/2020/09/nasa-says-it-will-pay-private-companies-to-gather-moon-rocks), NASA admin Jim Bridenstine told the Secure World Foundation’s Summit for Space Sustainability on Thursday that the project is intended to set expectations for how resource exploitation in space will operate under the Outer Space Treaty, which disallows nations from making sovereign territorial claims in space. **The US position is that humans can take whatever the hell they want from space and declare it theirs**. Donald Trump issued an [executive order](https://gizmodo.com/trump-to-world-keep-your-grubby-hands-off-of-our-theor-1842742312) earlier this year denigrating the idea that space is a “global commons” and later proposed a [set of accords](https://www.theverge.com/2020/5/15/21259946/nasa-artemis-accords-lunar-exploration-moon-outer-space-treaty) that would create an international framework to explore the Moon and extract its resources. That prompted accusations from Russia’s space agency, Roscosmos, of [colonialism and efforts to privatize space](https://www.pcmag.com/news/russia-says-trumps-space-mining-order-is-an-attempt-to-seize-other-planets). On Thursday, Bridenstine made the comparison that, “you do not own the ocean, but you own the tuna.” (Earth’s oceans [have been devastated](https://www.theguardian.com/environment/2018/jul/26/just-13-of-global-oceans-undamaged-by-humanity-research-reveals) by this kind of arrangement, though to be fair, the Moon has no known ecosystems to damage.) NASA also has a stake in the moon due to its Artemis program, which intends to have “the first woman and the next man” on the Moon by 2024 to begin laying the groundwork for a sustained presence of capitalists humans there and, eventually, dispatch them to Mars. **Extracting lunar resources such as regolith for construction or water for drinking and rocket fuel would relieve NASA of having to send every single thing up there themselves.** “Next-generation lunar science and technology is a main objective for returning to the Moon and preparing for Mars,” Bridenstine [wrote in a blog post](https://blogs.nasa.gov/bridenstine/2020/09/10/space-resources-are-the-key-to-safe-and-sustainable-lunar-exploration). “Over the next decade, the Artemis program will lay the foundation for a sustained long-term presence on the lunar surface and use the Moon to validate deep space systems and operations before embarking on the much farther voyage to Mars. The ability to conduct in-situ resources utilization (ISRU) will be incredibly important on Mars, which is why we must proceed with alacrity to develop techniques and gain experience with ISRU on the surface of the Moon.”

#### Hardt and Negri doesn’t reflect the tag, it just says “cap expands” but it doesn’t make the spatial fix argument that they think it does

#### Space exploration is the good of cap – solves the climate crisis – just 10 people getting off has potential for infinite future generations

### Framing

#### Preventing any probability of extinction comes 1st. Bostrom 12 [Faculty of Philosophy and Oxford Martin School, University of Oxford.], Existential Risk Prevention as Global Priority.  Forthcoming book (Global Policy). MP. [http://www.existenti...org/concept.pdf](http://www.existential-risk.org/concept.pdf) Even if we use the most conservative of these estimates, which entirely ignores the   possibility of space colonization and software minds, we find that the expected loss of an existential   catastrophe is greater than the value of 10^16 human lives.  This implies that the expected value of   reducing existential risk by a mere one millionth of one percentage point is at least a hundred times the   value of a million human lives.  The more technologically comprehensive estimate of 10  54 humanbrain-emulation subjective life-years (or 10  52  lives of ordinary length) makes the same point even   more starkly.  Even if we give this allegedly lower bound on the cumulative output potential of a   technologically mature civilization a mere 1% chance of being correct, we find that the expected   value of reducing existential risk by a mere one billionth of one billionth of one percentage point is worth   a hundred billion times as much as a billion human lives. One might consequently argue that even the tiniest reduction of existential risk has an   expected value greater than that of the definite provision of any ordinary good, such as the direct   benefit of saving 1 billion lives.  And, further, that the absolute value of the indirect effect of saving 1  billion lives on the total cumulative amount of existential riskâ€”positive or negativeâ€”is almost   certainly larger than the positive value of the direct benefit of such an action.

#### Utilitarianism is the ­best way to take account for individual dignity

Gauthier 07 (David, 1 Department of Political Science, Illinois Wesleyan University, “Levinas and the Politics of Hospitality,” HISTORY OF POLITICAL THOUGHT. Vol. XXVIII. No. 1. Spring 2007)

In his two major works, *Totality and Infinity* and *Otherwise than Being or Beyond Essence*, Levinas discusses the ethico-political significance of the Third (*la tiers*).28 Perhaps the most instructive way of defining the Third is to consider it in relation to the Other. Whereas the Other refers to the other person, the Third refers to another person. Thus, the Third is not only an Other to the self, but is also an Other to the Other. While the concept of the Third seemingly implies that the third party occupies a position of secondary importance *vis-\_-vis* the Other, Levinas maintains that the Other is equal to the Third because the face of the former reflects the presence of the latter: ‘His equality within this essential poverty consists in referring to the *third party*, thus present at the encounter, whom in the midst of his destitution the Other already serves.’29 Since the Third exists in a condition of parity with respect to the Other, the self is no less responsible for the welfare of the third party than it is for the other person. That being said, taking ethical responsibility for the personal well-being of the Third is no elementary matter because it does not represent a singular person but rather the rest of humanity. If the Other corresponds to the thou of Martin Buber’s I–thou relationship, the interlocutor that the self faces in the form of the Third more closely approximates a we.30 Phrased in Buberian parlance, then, one can say that the I confronts a we every time it encounters a thou: ‘The *thou* is posted in front of a *we*.’31 In confronting the Third, the self encounters the entire human collective. The presence of the Third entails that the self is obligated not only to take ethical responsibility for the single, lone stranger that faces it but also the rest of humanity. It is obvious that the appearance of the Third significantly complicates the self–Other relationship. At the very least, the interjection of an alien party eliminates the Other’s status as the sole object of the self’s moral concern. As Levinas puts it, the introduction of the Third entails a certain ‘betrayal’ of the self’s ‘anarchical relation with illeity’.32 At the same time, however, Levinas is at pains to emphasize that the Third’s presence is salutary. In order to grasp Levinas’s point in this regard, and in order to relate his concept of the Third to his hospitality ethos, it is necessary to reconsider the act of welcome in light of the changes wrought by the entrance of the third person. Consider the example of language. Levinas’s description of the hospitable act identifies the crucial role that language plays in undermining the self’s identity as a self. With the insertion of the Third into the self’s relationship with the Other, however, a wholly new communicative situation arises. Since language now involves not just two interlocutors but the entire human collective, intimate one-on-one discourse is no longer sufficient. In order to speak to the mass of humanity, language must adapt accordingly and assume more general form. If the linguistic exchange between the self and the Other resembles a Socratic dialectic, the language that accompanies the presence of the Third more closely resembles the ‘sermon, exhortation’ and ‘prophetic word’ of an Old Testament prophet.33 Considered in this light, language oscillates into a thematizing instrument that aggressively solicits the self’s attention. The Third exhorts the self to respond to it. In this respect, it is akin to the Other, whose demand on the self’s undivided attention is no less compelling. Faced with two parties who simultaneously vie for its attention and concern, the self is compelled to weigh competing ethical obligations. Besides being a distinctivemental activity, such an act is necessary because it forces the self to consider the welfare of those who fall outside the parameters of the self–Other relationship. In compelling the self to enlarge its sphere of moral concern, the third party ensures that its attempt to satisfy its asymmetrical obligations to the other person will not be pursued at the excessive expense of the mass of humanity. In this sense, the Third serves as a corrective to the danger of ethical myopia. On Levinas’s account, these changes are engendered by the self’s newfound consciousness of an aspect of the human condition that the face of the Third brings home to it: fraternity (*fraternité*). Perhaps the most appropriate way to consider Levinas’s idiosyncratic conception of fraternity is to note what it is not. Human fraternity, Levinas emphasizes, is not grounded in a common *genus* based on biological or linguistic characteristics. Rather, that which binds the members of the human fraternal order to one another is collective responsibility. Hence, the link that binds the human community together is the shared ethical responsibility of everyone for everyone else. As it stands, there are two principal aspects of human fraternity. One such aspect is the irreducible singularity of every human being: ‘It involves individualities whose logical status is not reducible to the status of ultimate differences in a genus, for their singularity consists in each referring to itself.’34 For Levinas, human singularity is predicated on the individual responsibility that each person has for the welfare of the larger human community. Each member of the Levinasian fraternal order is unique by virtue of the fact that each is singularly responsible for the well-being of fellow members. Obviously, the grounding of individual dignity in shared moral obligation represents Levinas’s attempt to salvage the respect for individual personhood (one of the more valuable legacies of the Enlightenment) from the attacks levelled by its Heideggerian critics. Even so, Levinas’s defence is ambiguous in the fact that it jettisons modern philosophy’s emphasis on the self and supplants it with a heteronomous schema. Levinas’s conscious attempt to defend the dignity of the individual, while avoiding the egoistic excesses of modern philosophy, is also reflected in the second aspect of the Levinasian human fraternity: monotheism.

#### Prioritize existential risk

Pummer, PhD, 15

(Theron, Philosophy @St. Andrews http://blog.practicalethics.ox.ac.uk/2015/05/moral-agreement-on-saving-the-world/)

There appears to be lot of disagreement in moral philosophy. Whether these many apparent disagreements are deep and irresolvable, I believe there is at least one thing it is reasonable to agree on right now, whatever general moral view we adopt: that it is very important to reduce the risk that all intelligent beings on this planet are eliminated by an enormous catastrophe, such as a nuclear war. How we might in fact try to reduce such existential risks is discussed elsewhere. My claim here is only that we – whether we’re consequentialists, deontologists, or virtue ethicists – should all agree that we should try to save the world. According to consequentialism, we should maximize the good, where this is taken to be the goodness, from an impartial perspective, of outcomes. Clearly one thing that makes an outcome good is that the people in it are doing well. There is little disagreement here. If the happiness or well-being of possible future people is just as important as that of people who already exist, and if they would have good lives, it is not hard to see how reducing existential risk is easily the most important thing in the whole world. This is for the familiar reason that there are so many people who could exist in the future – there are trillions upon trillions… upon trillions. There are so many possible future people that reducing existential risk is arguably the most important thing in the world, even if the well-being of these possible people were given only 0.001% as much weight as that of existing people. Even on a wholly person-affecting view – according to which there’s nothing (apart from effects on existing people) to be said in favor of creating happy people – the case for reducing existential risk is very strong. As noted in this seminal paper, this case is strengthened by the fact that there’s a good chance that many existing people will, with the aid of life-extension technology, live very long and very high quality lives. You might think what I have just argued applies to consequentialists only. There is a tendency to assume that, if an argument appeals to consequentialist considerations (the goodness of outcomes), it is irrelevant to non-consequentialists. But that is a huge mistake. Non-consequentialism is the view that there’s more that determines rightness than the goodness of consequences or outcomes; it is not the view that the latter don’t matter. Even John Rawls wrote, “All ethical doctrines worth our attention take consequences into account in judging rightness. One which did not would simply be irrational, crazy.” Minimally plausible versions of deontology and virtue ethics must be concerned in part with promoting the good, from an impartial point of view. They’d thus imply very strong reasons to reduce existential risk, at least when this doesn’t significantly involve doing harm to others or damaging one’s character. What’s even more surprising, perhaps, is that even if our own good (or that of those near and dear to us) has much greater weight than goodness from the impartial “point of view of the universe,” indeed even if the latter is entirely morally irrelevant, we may nonetheless have very strong reasons to reduce existential risk. Even egoism, the view that each agent should maximize her own good, might imply strong reasons to reduce existential risk. It will depend, among other things, on what one’s own good consists in. If well-being consisted in pleasure only, it is somewhat harder to argue that egoism would imply strong reasons to reduce existential risk – perhaps we could argue that one would maximize her expected hedonic well-being by funding life extension technology or by having herself cryogenically frozen at the time of her bodily death as well as giving money to reduce existential risk (so that there is a world for her to live in!). I am not sure, however, how strong the reasons to do this would be. But views which imply that, if I don’t care about other people, I have no or very little reason to help them are not even minimally plausible views (in addition to hedonistic egoism, I here have in mind views that imply that one has no reason to perform an act unless one actually desires to do that act). To be minimally plausible, egoism will need to be paired with a more sophisticated account of well-being. To see this, it is enough to consider, as Plato did, the possibility of a ring of invisibility – suppose that, while wearing it, Ayn could derive some pleasure by helping the poor, but instead could derive just a bit more by severely harming them. Hedonistic egoism would absurdly imply she should do the latter. To avoid this implication, egoists would need to build something like the meaningfulness of a life into well-being, in some robust way, where this would to a significant extent be a function of other-regarding concerns (see chapter 12 of this classic intro to ethics). But once these elements are included, we can (roughly, as above) argue that this sort of egoism will imply strong reasons to reduce existential risk. Add to all of this Samuel Scheffler’s recent intriguing arguments (quick podcast version available here) that most of what makes our lives go well would be undermined if there were no future generations of intelligent persons. On his view, my life would contain vastly less well-being if (say) a year after my death the world came to an end. So obviously if Scheffler were right I’d have very strong reason to reduce existential risk. We should also take into account moral uncertainty. What is it reasonable for one to do, when one is uncertain not (only) about the empirical facts, but also about the moral facts? I’ve just argued that there’s agreement among minimally plausible ethical views that we have strong reason to reduce existential risk – not only consequentialists, but also deontologists, virtue ethicists, and sophisticated egoists should agree. But even those (hedonistic egoists) who disagree should have a significant level of confidence that they are mistaken, and that one of the above views is correct. Even if they were 90% sure that their view is the correct one (and 10% sure that one of these other ones is correct), they would have pretty strong reason, from the standpoint of moral uncertainty, to reduce existential risk. Perhaps most disturbingly still, even if we are only 1% sure that the well-being of possible future people matters, it is at least arguable that, from the standpoint of moral uncertainty, reducing existential risk is the most important thing in the world. Again, this is largely for the reason that there are so many people who could exist in the future – there are trillions upon trillions… upon trillions. (For more on this and other related issues, see this excellent dissertation). Of course, it is uncertain whether these untold trillions would, in general, have good lives. It’s possible they’ll be miserable. It is enough for my claim that there is moral agreement in the relevant sense if, at least given certain empirical claims about what future lives would most likely be like, all minimally plausible moral views would converge on the conclusion that we should try to save the world. While there are some non-crazy views that place significantly greater moral weight on avoiding suffering than on promoting happiness, for reasons others have offered (and for independent reasons I won’t get into here unless requested to), they nonetheless seem to be fairly implausible views. And even if things did not go well for our ancestors, I am optimistic that they will overall go fantastically well for our descendants, if we allow them to. I suspect that most of us alive today – at least those of us not suffering from extreme illness or poverty – have lives that are well worth living, and that things will continue to improve. Derek Parfit, whose work has emphasized future generations as well as agreement in ethics, described our situation clearly and accurately: “We live during the hinge of history. Given the scientific and technological discoveries of the last two centuries, the world has never changed as fast. We shall soon have even greater powers to transform, not only our surroundings, but ourselves and our successors. If we act wisely in the next few centuries, humanity will survive its most dangerous and decisive period. Our descendants could, if necessary, go elsewhere, spreading through this galaxy…. Our descendants might, I believe, make the further future very good. But that good future may also depend in part on us. If our selfish recklessness ends human history, we would be acting very wrongly.” (From chapter 36 of On What Matters)

### Cap good

#### Root cause claims are wrong- capitalism is key to reducing war and environmental destructions

Zitelman, PhD, 21

(Rainer, <https://nationalinterest.org/feature/terror-consumption-why-capitalism-gets-blamed-everything-194769>, 10-3)

Before the emergence of capitalism, a majority of the global population was living in extreme poverty. In 1820, that applied to 90 percent of the people on the planet; today, it is less than 10 percent. And most remarkably: In recent decades, since the end of communism in China and other countries, the decline in poverty has accelerated to a pace unmatched in any previous period of human history. In 1981, the poverty rate amounted to 42.7 percent; by 2000, it had fallen to 27.8 percent, and in 2021 it was only 9.3 percent. There is more good news: the number of child laborers worldwide has dropped significantly, falling from 246 million children in 2000 to 160 million twenty years later in 2020. This is despite the fact that the world population increased from 6.1 to 7.8 billion people over the same two decades. Despite these facts, most people do not like capitalism. The Edelman Trust Barometer 2020, a survey that is conducted in twenty-eight countries, concludes that, on average, 56 percent of respondents believe that “Capitalism as it exists today does more harm than good in the world.” In Europe, people in France were most likely to agree with this statement (69 percent), followed by respondents in Italy (61 percent), Spain (60 percent), Germany (55 percent) and the United Kingdom (53 percent). In both the United States and Canada, 47 percent agreed with this critical assessment of capitalism. Anti-capitalism is a political religion. In classical religions, the devil is the prototypical expression of evil in the world. In the political religion of anti-capitalism, capitalism assumes the role of evil incarnate. Accordingly, capitalism is not only responsible for all of the evils in society, but also for everyone’s personal problems. People blame capitalism for hunger, poverty, inequality, climate change, pollution, war, alienation, fascism, racism, gender inequality, slavery, colonialism, corruption, crime, mental illness and cultural decay. Wars were more frequent in pre-capitalist times than in the period since capitalism came into being. And numerous scientific studies on “capitalist peace” have shown that free trade and capitalism reduce the likelihood of military conflicts. Also, there are various studies showing that environmental standards are much better in capitalist than in non-capitalist countries—and there are the facts cited above about the extent to