## 1

**The affirmative offers a solution: implement [insert aff plan] to secure [insert aff impact].  This is the wrong approach—we exist within a “control society,” where power is exercised not through repression, but continuous control-- frame this round as an interrogation of productivity and desire.**

**Deleuze 92**[Gilles Deleuze was a French philosopher who, from the early 1950s until his death in 1995, wrote on philosophy, literature, film, and fine art. His most popular works were the two volumes of Capitalism and Schizophrenia: Anti-Oedipus and A Thousand Plateaus, both co-written with psychoanalyst Félix Guattari, Postscript on the Societies of Control on JSTOR, Winter 1992,The MIT press,https://www.jstor.org/stable/778828?seq=1, 12-11-2021 amrita]

The different internments or spaces of enclosure through which the individual passes are independent variables: each time one is supposed to start from zero, and although a common language for all these places exists, it is analogical. On the other hand, **the different control mechanisms are inseparable variations, forming a system of variable geometry the language of which is numerical** (which doesn’t necessarily mean binary). Enclosures are molds, distinct castings, but controls are a modulation, like a self-deforming cast that will continuously change from one moment to the other, or like a sieve whose mesh will transmute from point to point. This is obvious in the matter of salaries: the factory was a body that contained its internal forces at a level of equilibrium, the highest possible in terms of production, the lowest possible in terms of wages; but **in a society of control, the corporation has replaced the factory, and** the corporation is a spirit, a gas. Of course the factory was already familiar with the system of bonuses, but **the corporation works more deeply to impose a modulation of each salary, in states of perpetual metastability** that operate through challenges, contests, and highly comic group sessions. If the most idiotic television game shows are so successful, it’s because they express the corporate situation with great precision. The factory constituted individuals as a single body to the double advantage of the boss who surveyed each element within the mass and the unions who mobilized a mass resistance; but **the corporation constantly presents the brashest rivalry as a healthy form of emulation, an excellent motivational force that opposes individuals** against one another and runs through each, dividing each within. The modulating principle of “salary according to merit**” has not failed to tempt national education itself**. Indeed, just as the corporation replaces the factory, **perpetual training tends to replace the school, and continuous control to replace the examination, which is the surest way of delivering the school over to the corporation**. In the disciplinary societies one was always starting again (from school to the barracks, from the barracks to the factory), while in the societies of control one is never finished with anything—the corporation, the educational system, the armed services being metastable states coexisting in one and the same modulation, like a universal system of deformation. In The Trial, Kafka, who had already placed himself at the pivotal point between two types of social formation, described the most fearsome of juridical forms. The apparent acquittal of the disciplinary societies (between two incarcerations); and the limitless postponements of the societies of control (in continuous variation) are two very different modes of juridical life, and if our law is hesitant, itself in crisis, it’s because we are leaving one in order to enter into the other. **The disciplinary societies have two poles: the signature that designates the individual, and the number or administrative numeration that indicates his or her position within a mass**. This is because the disciplines never saw any incompatibility between these two, and because at the same time power individualizes and masses together, that is, constitutes those over whom it exercises power into a body and molds the individuality of each member of that body. (Foucault saw the origin of this double charge in the pastoral power of the priest—the flock and each of its animals—but civil power moves in turn and by other means to make itself lay “priest.”) **In the societies of control, on the other hand, what is important** is no **longer either a signature or a number, but a code:** the code is a password, while on the other hand the disciplinary societies are regulated by watchwords (as much from the point of view of integration as from that of resistance). The numerical language of control is made of codes that mark access to information, or reject it. **We no longer find ourselves dealing with the mass/individual pair.** Individuals have become “dividuals,” and masses, samples, data, markets, or “banks.” Perhaps it is money that expresses the distinction between the two societies best, since discipline always referred back to minted money that locks gold in as numerical standard, while control relates to floating rates of exchange, modulated according to a rate established by a set of standard currencies. The old monetary mole is the animal of the spaces of enclosure, but the serpent is that of the societies of control. We have passed from one animal to the other, from the mole to the serpent, in the system under which we live, but also in our manner of living and in our relations with others. The disciplinary man was a discontinuous producer of energy, but the man of control is undulatory, in orbit, in a continuous network. Everywhere surfing has already replaced the older sports. Types of machines are easily matched with each type of society—not that machines are determining, but because they express those social forms capable of generating them and using them. The old societies of sovereignty made use of simple machines—levers, pulleys, clocks; but the recent disciplinary societies equipped themselves with machines involving energy, with the passive danger of entropy and the active danger of sabotage; the societies of control operate with machines of a third type, computers, whose passive danger is jamming and whose active one is piracy and the introduction of viruses. This technological evolution must be, even more profoundly, a mutation of capitalism, an already well-known or familiar mutation that can be summed up as follows: nineteenth-century capitalism is a capitalism of concentration, for production and for property. **It therefore erects the factory as a space of enclosure, the capitalist being the owner of the means of production but also, progressively, the owner of other spaces conceived through analogy** (the worker’s familial house, the school). As for markets, they are conquered sometimes by specialization, sometimes by colonization, sometimes by lowering the costs of production. But**, in the present situation, capitalism is no longer involved in production, which it often relegates to the Third World, even for the complex forms of textiles, metallurgy, or oil production. It’s a capitalism of higher-order production.** It no longer buys raw materials and no longer sells the finished products: it buys the finished products or assembles parts. What it wants to sell is services and what it wants to buy is stocks. **This is no longer a capitalism for production but for the product, which is to say, for being sold or marketed. Thus it is essentially dispersive, and the factory has given way to the corporation.** The family, the school, the army, the factory are **no longer the distinct analogical spaces that converge towards an owner—state or private power—but coded figures—deformable and transformable—of a single corporation that now has only stockholders**. Even art has left the spaces of enclosure in order to enter into the open circuits of the bank. The conquests of the market are made by grabbing control and no longer by disciplinary training, by fixing the exchange rate much more than by lowering costs, by transformation of the product more than by specialization of production. Corruption thereby gains a new power. Marketing has become the center or the “soul” of the corporation. We are taught that corporations have a soul, which is the most terrifying news in the world. The operation of markets is now the instrument of social control and forms the impudent breed of our masters. Control is short-term and of rapid rates of turnover, but also continuous and without limit, while discipline was of long duration, infinite and discontinuous. Man is no longer man enclosed, but man in debt. It is true that capitalism has retained as a constant the extreme poverty of three-quarters of humanity, too poor for debt, too numerous for confinement: control will not only have to deal with erosions of frontiers but with the explosions within shanty towns or ghettos.

**Distinctions between the private and public sphere do not exist-- the affirmative’s theorization of such is the latest tactic of control society to modulate the enunciation of behavior and subjectivity through fascist mechanisms.**

**Hardt 98** [Michael Hardt is an American political philosopher and literary theorist. Hardt is best known for his book Empire, which was co-written with Antonio Negri. It has been praised by Slavoj Žižek as the "Communist Manifesto of the 21st Century". He is currently a professor of literature at Duke University, The Global Society of Control on JSTOR, Fall 1998, Discourse Vol. 20, No. 3, Gilles Deleuze: A Reason to Believe in this World, https://www.jstor.org/stable/41389503, 12-14-2021 amrita]

There Is No More Outside The passage from disciplinary society to **the society of control is characterized** first of all **by the collapse of** the walls **that defined** the **institutions. There is progressively less distinction,** in other words, between inside and outside. This is really part of a general change in the way that power marks space in the passage from modernity to postmodernity. Modern sovereignty has always been conceived in terms of a (real or imagined) territory and the relation of that territory to its outside. Early modern social theorists, for example,from Hobbes to Rousseau, understood the civil order as a limited and interior space that is opposed or contrasted to the external order of nature. The bounded space of civil order, its place, is defined by its separation from the external spaces of nature. In an analogous fashion, the theorists of modern psychology understood drives, passions, instincts, and the unconscious metaphorically in spatial terms as an outside within the human mind, a continuation of nature deep within us. Here the sovereignty of the Self rests on a dialectical relation between the natural order of drives and the civil order of reason or consciousness. Finally, modern anthropology's various discourses on primitive societies often function as the outside that defines the bounds of the civil world. **The process of modernization**, then, in all these varied contexts, **is the internalization of the outside,** that is, the civilization of nature. In the postmodern world, **however, this dialectic** between inside and outside, between the civil order and the natural order, **has come to an end**. This is one precise sense in which the contemporary world is postmodern. "Postmodernism," Fredric Jameson tells us, "is what **you have when the modernization process is complete and nature is gone for good**."3 Certainly we continue to have forests and crickets and thunderstorms in our world, and we continue to understand our psyches as driven by natural instincts and passions, but we have no nature in the sense that these forces and phenomena are no longer understood as outside, that is, they are not seen as original and independent of the artifice of the civil order. In a postmodern world all phenomena and forces are artificial, or as some might say, part of history. The modern dialectic of inside and outside **has been replaced by a play of degrees** and intensities, of hybridity **and** artificiality. Secondly, the outside **has also declined in terms of** a rather different modern **dialectic that defined the relation between public and private in liberal political theory**. The **public spaces** of modern society, **which constitute the place of liberal politics, tend to disappear** in the postmodern world. According to the liberal tradition, the modern individual, at home in its private spaces, regards the public as its outside. The outside is the place proper to politics, where the action of the individual is exposed in the presence of others and there seeks recognition. In the process of postmodernization, however, **such public spaces are increasingly becoming privatized**. The urban landscape is shifting from the modern focus on the common square and the public encounter to the closed spaces of malls, freeways, and gated communities. The architecture and urban planning of megalopolises such as Los Angeles and Sao Paulo have tended to limit public access and interaction as well as limited chance encounters of different social subjects, creating rather a series of protected interior and isolated spaces. Alternatively, consider how the banlieu of Paris has become a series of amorphous and indefinite spaces that promote isolation rather than any interaction or communication. **Public space has been privatized to such an extent** that **it no longer makes sense to understand social organization in terms of a dialectic between private and public spaces**, between inside and outside. The **place of modern liberal politics has disappeared** **and thus from this optic our postmodern and imperial society** **is characterized by a deficit of the political**. In effect, the place of politics has been deactualized. In this regard, Guy Debord's analysis of the society of the spectacle, thirty years after its composition, seems ever more apt and urgent.4 In postmodern society the spectacle is a virtual place, or more accurately, a non-place of politics. The **spectacle is at once unified** and diffuse in such a way that **it is impossible to distinguish** any inside from outside - the natural from the social, **the private from the public**. The **liberal notion of the public**, the place outside where we act in the presence of others, **has been** both **universalized** (because we are always now under the gaze of others, monitored by safety cameras) **and sublimated** or de-actualized in the virtual spaces of the spectacle. The end of the outside is the end of liberal politics. Finally, from the perspective of Empire, or rather from that of the contemporary world order, there is no longer an outside **also in a** third sense, a properly **military sense**. When Francis Fukuyama claims that the contemporary historical passage is defined by the end of history, he means that the era of major conflicts has come to an end: in other words, sovereign power will no longer confront its Other, it will no longer face its outside, but rather progressively expand its boundaries to envelop the entire globe as its proper domain.5 The history of imperialist, inter-imperialist, and anti-imperialist wars is over. The end of that history has ushered in the reign of peace. Or really, we have entered the era of minor and internal conflicts. Every imperial war is a civil war, a police action- from Los Angeles and Granada to Mogadishu and Sarajevo. **In fact, the separation of tasks between the external and internal arms of power (between the army and the police, the CIA and the FBI) is increasingly vague and indeterminate.** In our terms the end of history that Fukuyama refers to is the end of the crisis at the center of modernity, the coherent and defining conflict that was the foundation and raison d'etre for modern sovereignty. History has ended precisely and only to the extent that it is conceived in Hegelian terms- as the movement of a dialectic of contradictions, a play of absolute negations and subsumption. The binaries that defined modern conflict have become blurred. The Other that might delimit a sovereign Self has become fractured and indistinct, and there is no longer an outside that can bound the place of sovereignty. At one point in the Cold War, in an exaggerated version of the crisis of modernity, every enemy imaginable (from women's garden clubs and Hollywood films to national liberation movements) could be identified as communist, that is, part of the unified enemy. The outside is what gave the crisis of the modern and imperialist world its coherence. **Today it is increasingly difficult for the ideologues of the United States to name the enemy, or rather there seem to be minor and elusive enemies everywhere.6 The end of the crisis of modernity has given rise to a proliferation of minor and indefinite crises in the imperial society of control, or as we prefer, to an omni-crisis.** It is useful to remember here that the capitalist market is one machine that has always run counter to any division between inside and outside. The capitalist market is thwarted by exclusions and it **thrives by including always increasing numbers within its sphere**. Profit can only be generated through contact, engagement, interchange, and commerce. The realization of the world market would constitute the point of arrival of this tendency. In its ideal form there is no outside to the world market: the entire globe is its domain.7 We might use the form of the world market as a model for understanding the form of imperial sovereignty in its entirety. Perhaps, just as Foucault recognized the panopticon as the diagram of modern power and disciplinary society, the world market might serve adequately (even though it is not an architecture; it is really an anti-architecture) as the diagram of imperial power and the society of control.8 The striated space of modernity constructs places that are continually engaged in and founded on a dialectical play with their outsides**. The space of imperial sovereignty, in contrast, is smooth. It might appear that it is free of the binary divisions of modern boundaries, or striation, but really it is criss-crossed by so many fault lines that it only appears as a continuous, uniform space. In** this sense, the clearly defined crisis of modernity gives way to an omnicrisis in the imperial framework. In this smooth space of empire, there is no place of power- it is both everywhere and nowhere. The empire is an u-topos , or rather a non-place.

#### Their reliance upon the Westphalian nation-state system and analysis of IR won’t work in space – an unclear division of territory demands a new approach that decenters control societies but their commitment to the existing legal paradigm commits us to eternal war.

**Nayebi 11** [Nima Nayebi is a J.D. candidate at University of California Hastings College of the Law, 2011; Production Editor, Hastings Law Journal. The Geosynchronous Orbit and the Outer Limits of Westphalian Sovereignty. HASTINGS SCIENCE & TECHNOLOGY LAW JOURNAL, Vol. 3:2, Summer 2011 recut 12-13-21 amrita]

Because the technological capabilities of states in relation to space remain in their infancy, it is probable that space law will evolve to accommodate change. However, arguments for changing sovereignty over the GSO by **analogy** to **current** bodies of **i**nternational **law** is both difficult and **logically flawed**. Such arguments conflict with technological development in less developed countries because they restrict the orbit to the current space-faring countries. **Rather** than attempting to **determine** the **ownership** of the GSO by **analogizing** to **traditional** notions of **national sovereignty**, we should acknowledge that outer **space** is a **new human venture** that **needs its own** sui generis **legal regime**. An **alternative system**—a system in which **national sovereignty** is **not the core norm**—has the potential of promoting **unity** among human beings and may ultimately provide us with an alternative to our arguably **outmoded Westphalian system** of sovereign and separate **nation-states**. I do not propose a specific system for the fair administration of the GSO, nor do I advocate a sovereignty-free GSO for the benefit of current space-faring countries. I only suggest that the notion of a **world divided** in **piecemeal** fashion among **various countries** is **not the only**—**nor the best**—guideline for **establishing** an outer **space regime**. I do not advocate a chimerical idealism—for we all face the many inescapable realities of the world—but outer **space** is an **opportunity** for humankind to **establish new realities** and **new legal regimes**. **Attempts** by the Bogota 8 to **extend** national **sovereignty** into outer **space** not only undermine the Outer Space Treaty’s prohibition of sovereignty, but also **undermine** the **possibility** of a **gradual shift away** from **nationalism** and toward **supranational solutions**. V. Conclusion Starting with Sputnik I in 1957, technology has progressed rapidly. The first human beings landed on the Moon in 1971, and an unmanned spacecraft landed on Venus that same year.'wl Dennis Tito, the first space tourist, blasted off from Earth in a Russian Soyuz rocket in 2001.Today, a myriad of Earth objects circulate in space and the International Space Station is under construction in low Earth orbit.162 Despite these accomplishments, humanity has not yet achieved the level of space sophistication that would make the promulgation of a definitive body of international outer space law an urgent necessity. As the exploration of outer space intensifies, however, **lawyers** and **politicians** have the opportunity to create a relatively **novel body of law** with the benefit of historical hindsight. In a more advanced future space age, it is feasible that our Westphalian model of sovereignty will eventually be outmoded, although such a development is difficult to fathom from our own early twenty-first century perspective.161 In 1795, Prussian philosopher Immanuel Kant wrote, “the right to the earth's surface ... belongs to the human race in common,” and envisioned that through increased contact between the peoples of the various countries, the Earth will eventually enjoy a “cosmopolitan constitution.”161 With its **fundamental principle** of **non-appropriation**, **space law** may provide a **model** which may one day make Kant’s vision a reality. Irrespective of the current political makeup of Earth, we have much to learn from space law and its aims of promoting **global** unity and **peace**.

**This may seem innocuous, but it creates a war on difference, a new totalitarian model that is premised upon reactive orientations to desire, leaving only a simulation of political participation creating fascism-- that turns case.**

**Karatzogianni and Robinson 13.** [Athina Karatzogianni is a Senior Lecturer in Media and Communication at the University of Leicester (UK), Andrew Robinson is an independent researcher and writer, “Schizorevolutions vs. Microfascisms: A Deleuzo-Nietzschean Perspective on State, Security, and Active/Reactive Networks,” Selected Works, July 2013, http://works.bepress.com/athina\_ karatzogianni, 8-17-2019, amrita]

Thesis 2: **The threatened state transmutes into the terror state**. The return of state violence from the kernel of state exceptionalism is a growing problem. It is **grounded on a reaction of the terrified state** by **conceiving the entire situation as it is formerly conceived specific sites of exception and emergency** (c.f. Agamben, 1998, 2005). New forms of social control directed against minor deviance or uncontrolled flows are **expanding into a war against difference** and a **systematic denial of the ‘right to have rights’** (Robinson, 2007). **The project is not simply an extension of liberal-democratic models of social control, but breaks with such models in directly criminalizing nonconformity from a prescribed way of life and attempting to extensively regulate everyday life through repression**. **This** new repressive model, expressing a kind of **neo-totalitarianism**, should be taken to include such measures and structures as the rise of gated communities, CCTV, RFID, ID cards, ASBOs, dispersal zones, paramilitary policing methods, the ‘social cleansing’ of groups such as homeless people and street drinkers from public spaces, increasing restrictions on protests and attacks on ‘extremist’ groups, the use of extreme sentencing against minor deviance, and of course the swathe of “anti-terrorism” laws which provide a pretext for expanded repression. **This increasingly vicious state response leads to extremely intrusive state measures**. The magazine Datacide analyses the wave of repression as ‘the real subsumption of every singularity in the domain of the State. From now on if your attributes don't quite extend to crime, a judge's word suffices to ensure that crime will reach out and embrace your attributes’ (Hyland n.d.). To decompose networks, the state seeks to shadow them ever more closely. **The closure of space is an inherent aspect of this project of control**. **While open space is a necessary enabling good from the standpoint of active desire, it is perceived as a threat by the terrified state, because it is space in which demonised Others can gather and recompose networks outside state control**. Hence, **for the threatened state, open space is space for the enemy, space of risk**. Given that open space is in contrast necessary for difference to function (since otherwise it is excluded as unrepresentable or excessive), **the attempts to render all space closed and governable involve a constant war on difference which expands ever more deeply into everyday life**. As Guattari aptly argues, neoliberal capitalism tends to construe difference as unwanted ‘noise’ (1996: 137). Society thus becomes a **hothouse of constant crackdowns and surveillance**, which at best simulates, and at worst creates, a situation where horizontal connections either cannot emerge or are constantly persecuted. Theories such as those of Agamben and Kropotkin show the predisposition of the state to pursue total control. But why is the state pursuing this project now? To understand this, one must recognise the multiple ways in which capitalism can handle difference. Hence, there are two poles the state can pursue, social-democratic (adding axioms) or totalitarian (subtracting axioms), which have the same function in relation to capitalism, but are quite different in other regards. State terror involves the replacement of addition of axioms (inclusion through representation) with subtraction of axioms (repression of difference). This parallels the distinction between ‘hard’ and ‘soft’ power in international relations. Crucially, ‘hard’ power is deflationary (Mann 2005: 83-4). While ideological integration can be increased by intensified command, ‘soft’ power over anyone who remains outside the dominant frame is dissipated. **Everyday deviance becomes resistance because of the project of control which attacks it.** It also becomes necessarily more insurrectionary, in direct response to the cumulative attempts to stamp it out through micro-regulation. What the state gains in coercive power, it loses in its ability to influence or engage with its other. But the state, **operating under intense uncertainty and fear, is giving up trying to seem legitimate across a field of difference. A recent example of this concerns the treatment of whistleblowers: Bradley [Chelsea] Manning** and by extent the publisher Julian Assange in the WikiLeaks case (for a discussion of affect see Karatzogianni, 2012) and Edward Snowden in relation to the recent revelations about NSA surveillance program PRISM (Poitras and Greenwald’s video Interview with Edward Snowden, 9 June 2013). **This is not to say that it dispenses with articulation**. **It simply restricts it tautologically to its own ideological space** (Negri 2003: 27). **Legitimation is replaced by information, technocracy and a simulation of participation** (Negri 2003: 90, 111.). There is a peculiarly close relationship between the state logic of command and the field of what is variously termed ‘ideology’ (in Althusser), ‘mythology’ (in Barthes) and ‘fantasy’ (in Lacan): **second- order significations embedded in everyday representations, through which a simulated lifeworld is created**, **in which people live in passivity**, **creating their real performative connection to their conditions of existence and bringing them into psychological complicity in their own repression**. **Such phenomena are crucial to the construction of demonised Others which provides the discursive basis for projects of state control**. ‘[Conflict is] deflected... through the automatic micro-functioning of ideology through information systems. This is the normal, ‘everyday’ fascism, whose most noticeable feature is how unnoticeable it is’ (Negri 1998a: 190). In denial of generalisable rights, the in-group defines social space for itself and itself alone. **The result is a denial of basic dignity and rights to those who fall outside "society", who, in line with their metaphysical status, are to be cast out, locked away, or put beyond a society defined as being for "us and us only" (the mythical division between social and anti-social**). **The neo-totalitarian state resurrects the tendency to build a state ideology, but this ideology is now disguised as a shared referent of polyarchic parties and nominally free media**. Failing to think in statist terms is no longer any different from criminal intent. Romantically crossing an airport barrier for a goodbye kiss is taken as a major crime, for the state, being terrified, responds disproportionately; the romantic is blamed for producing this response (Baker and Robins, 2010). He should have thought like the state to begin with, and not corrupted its functioning with trivialities such as love. **Such is the core of the terror-state: constant exertion of energy to ward off constant anxiety, at the cost of a war on difference.** Networks under Threat - Network Terror Thesis 3: Networked movements escape the state-form. Thesis 4: State terror targets and terrifies movements. Thesis 5: Movement terror is an outcome of state terror against movements. At the intersection of the threatened state and the sources of its anxiety lies the collapse of marginal integration and ‘addition of axioms’ in neoliberalism. Capitalism has been clenching its fists on the world for some time, and many spaces and people are falling through its fingers. The formal sector of the economy is shrinking, leaving behind it swathes of social life marginalized from capitalist inclusion. Much of the global periphery is in effect being forcibly ‘delinked’ from the world economy as inclusion through patronage is scaled down due to neoliberalism. For instance, ‘Sub-Saharan Africa has almost dropped out of the formal international economy’ (Mann, 2005: 55-6). Religious, militia and informal economic organisations have replaced the state on the ground across swathes of Africa, and ‘whole regions have now become virtually independent, probably for the foreseeable future, of all central control’ (Bayart, Ellis and Hibou, 1999: 19-20). These spaces are the locus of the state’s fear of ‘black holes’ where state power breaks down and insurgents can flourish (Korteweg, 2008; Innes, 2008). On a human scale, exclusion, or ‘forced escape’, is even more noticeable. Arif Dirlik argues that capitalism controls enough resources that it no longer needs to control the majority of people; it can simply ignore and exclude four-fifths of the world (1994: 54-5). William Robinson refers to a new stratum of ‘supernumeraries’ in countries like Haiti, who are completely marginalised from production, useless to capitalism and prone to revolt (1996: 342, 378). This became even more evident with the extreme recent seismic event in January 2010 a paradigmatic failure to save lives. This stratum is another locus of the state’s fears. Such people are in Žižek’s terms the ‘social symptom’ of the current world order, ‘the part which, although inherent to the existing universal order, has no ‘proper place’ within it’ (Žižek, 1999, p. 224). Hence, as Caffentzis puts it, ‘Once again, as at the dawn of capitalism, the physiognomy of the world proletariat is that of the pauper, the vagabond, the criminal, the panhandler, the refugee sweatshop worker, the mercenary, the rioter’ (1992: 321). **Viewed in affirmative terms, these excluded sites and peoples are associated with the network form**. **The last few decades have seen a proliferation of network-based movements** -- some emancipatory, others less so -- drawing their membership from marginalised groups and creating autonomous zones in marginal spaces. **In the South, such movements often grow out of the everyday networks of survival which ‘provide an infrastructure for the community and a measure of functional autonomy’** (Hecht and Simone, 1994: 14-15; c.f. Lomnitz, 1977; Chatterjee 1993). **The discontented excluded lie at the heart of today’s asymmetrical wars**. For instance, Giustozzi has investigated the origins of the Pakistani Taleban, revealing that it flourishes mainly among young people who do not receive ‘peace, income, a sense of purpose, a social network’ from the established structure of tribal power (Giustozzi 2007: 39), while Watts (2007) has referred to what is known locally as the ‘restive youth problem’ as central to the conflict in the Niger Delta. One can also refer here to mass protest revolts such as those in Greece and the French banlieues, and spectacular revolts against state power in which police stations and state symbols are attacked, such as the Boko Haram revolt in Nigeria and the uprising of Primero Comando da Capital (PCC) in Sao Paolo**.** Ignoring for the moment the distinctions among such movements, their vitality can clearly be traced to their networked and marginal loci. **Resisting or eluding the terror-state’s grab for space, horizontal networks flow around the state’s restrictions, moving into residual unregulated spaces, gaps in the state’s capacity to repress, across national borders, or into the virtual**. **Repression drives dissent f**rom open to clandestine forms, creating a field of diffuse resistance and deviance, which ‘returns’ as intractable social problems and inert effects**.**

**Endorse community-based radical organizing built around collective solidarity—the [insert aff plan] is doomed to failure if it is tied to discussions of [insert aff impact scenario]. Space has the radical potential to be different and you should affirm a subversion of their politic—no perms.**

**Battaglia 12** [Debbora Battaglia is a professor at Mount Holyoke College. “Arresting hospitality: the case of the 'handshake in space,” The Journal of the Royal Anthropological Institute, Vol. 18, <https://www.jstor.org/stable/41506671>., 12-14-2021 amrita]

Towards an extra-territorial ethics of hospitality While acknowledging that anthropologists of play and ludic limits could have a field day with some of this paper's ethnographic material,26 I have tried to do something more far-reaching here – seeking in the complex exchanges of various natural, techno- cultural, and social force-fields the features of an **extra-territorial ethics of hospitality**, for shaping possible nature-culture futures **on the ground**. Circling by degrees around 'handshake' scenarios that are basically all about social relations crafted in small actions of non-sovereignty, I seek to posit the diplomatic strategy of **suspending welcome** as an emblematic action of denying power claimed in the name of territory (Boden)27: Apollo and Soyuz may have sourced to state structures and geopolitical security concerns, but the project could go beyond these. Denying rights to hosting, authoring, or authorizing hospitality other than mutually (as we saw in the hard fact of androgynous technology and manoeuvres for mutual rescue), astronauts and cosmonauts replaced sovereign claims to space with their own relational code — one in which 'the welcomed guest is treated as a friend or ally, as opposed to the stranger treated as an enemy (friend/enemy, hospitality/hostility)' (Derrida 2000: 4). But the ethnography exceeds Derrida's anthropocentrism. Because both spacecraft and humans are as much **of** space as **in** it, we are moved to appreciate the value of cutting 'guest' and 'host' free to engage nature-culture relations. To take up sidelong the point that Agamben (2005) carries forward from Carl Schmitt for defining sovereignty, **space-as-itself** is here the only possible sovereign power: that to which exceptions to human laws source. It is in this sense that the cosmonauts and astronauts of Apollo-Soyuz were acting both humbly and boldly as **'little gods'** who would deny a politics of territory a place of privilege in space or on Earth, even as the nations to which they owed their allegiance committed to this value officially in rhetorics of colonization and/or conquest. It is thus that space creates space for a **God concept** in the company of which both religious orthodoxies and orthodox science can only be uncomfortable (cf. Derrida 2002). It follows that forms of civility become visible in this instance as protentive actions for laws not only in suspension but in **submission to space-as-itself** — the extreme testing-ground of laws beyond arbitrage, by which the values of the nominal are not only appreciated but strongly felt, as fieldworking astronauts' and cosmonauts' first-person narratives show. Long-duration space station missions enabled by the techno-logical advances of ASTP will in future lend their micro-spaces more readily to narratives and images of sovereignty, including the sovereignty of property. But not in the spacetime of the **welcome withheld.** It is because purposeful ruptures of nominal conduct interfere with nature-culture business-as-usual that hospitality can abide there, as it were in the aporia. Beyond being merely tolerated, gifts of disruption within insider space communities seized the moment for ‘worlding’ differently than by fixed rules of engagement. Bruno Latour writes in War of the worlds: what about peace?, ‘Modernism distinguishes itself from its successor—what should it be called? "Second modernity"? ... — in this one small respect: from now on the battle is about the **making of the common world** and the outcome is uncertain. That's all. And that's enough to change everything’ (2002: 33, emphasis added). Derrida takes this anthropological turn when he speaks of hospitality arising not from 'the love of man as a sentimental motive' — it is not about philanthropy — but (quoting Kant) from 'the right of a stranger not to be treated with hostility when he arrives on someone else's territory'. Hospitality is to be thought of as a universal ‘obligation, a right, and a duty all regulated by law’ (2000: 4).28 And this is more or less precisely stated by the USSR Command Centre spokesperson in a post-flight statement to the world press: The flight was conducted in accordance with an agreement between the Union of Soviet Socialist Republics and the United States of America. This document foresaw the execution of projects for the creation of joint means of motion and docking of the Soviet and American manned spacecraft and stations, with the purpose of increasing the safety of spaceflights and securing the possibility of realizing in the future joint scientific experiments.29

## Case

### Toplevel

#### Outer Space Laws are unclear – private corporations are still capable of escaping due to loopholes in the plan.

**Green and Stark 17** [Christopher and Eda, “Outer Space Treaty and Beyond: Do Existing Space Laws Put an Astronomical Barrier to Private IP Rights in Space?”, JDSUPRA. 8 September 2020 https://www.jdsupra.com/legalnews/outer-space-treaty-beyond-do-existing-44028/] //DebateDrills LC

Our **limited body of space law provides little guidance**. The first international treaty, the “Outer Space Treaty,” was signed by the U.S., Russia, and the U.K. in 1967, quickly followed by the Rescue Agreement. Over the next two decades, three other treaties—the Liability Convention, the Registration Convention, and the Moon Agreement—were also signed by these nations, with most countries following in their footsteps.[3] But after that rapid succession of international treaties, there have since been few others. These five documents form the basis of the international space law we have today, but **none address the issue of**[**intellectual property rights in space**](https://www.fr.com/fish-litigation/ip-rights-outer-space/). Rather, upon inspection, it appears that **the stated purpose of these treaties may be antithetical to intellectual property protection.**

The “Outer Space Treaty” espouses communal themes in characterizing space as the “province of all mankind,” the “common heritage of mankind” and to the “benefit of all countries.”[4] Unsurprisingly, Article II of the Outer Space Treaty prohibits any appropriation of areas in space, keeping in line with its principle of communal property.[5] On the other hand, **patents are fundamentally territorial and grant monopoly rights for a period of time. Applied to space, it is unclear just what is open for patent protections.**

For example, **can private companies patent orbital patterns of satellites**? Currently, companies may patent the technology or design of satellites that stay in a particular orbit, even if not the orbital pattern itself.[6] The practical implications of this are significant, especially with the advent of satellite constellations. If particular satellite technologies, and, indirectly, their orbital patterns, are patentable, then a significant portion of space may be occupied by one satellite constellation, i.e. one company alone.[7] Does this private apportionment of space run counter to our notions of sharing space? Some argue that **the Outer Space Treaty only bans sovereign appropriation and does not limit private entities from exerting claims**. Others counter that private property rights flow from sovereign property claims, so the former is meaningless without the latter.[8] So the question remains, **can the stated goals of sharing outer space be reconciled with the proprietary nature of patents**?

**Our current corpus of space treaties comes from a period of history when space exploration was undertaken primarily by governments** rather than private actors. The cooperative goals were likely a reaction to the time, as the world was coming out of a charged space race. **The silence of these space treaties on intellectual property rights presents an opportunity for modern-day agreements to provide patent protections for private companies**. Without robust international agreement on patents for space, we may even see less international cooperation as companies refuse to divulge their discoveries.[9] Now, as more and more private companies enter space exploration and carry the torch of innovation, **it is more important than ever to strike a balance between sharing our “common heritage” and providing patent protections that incentivize invention.**[10]

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

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

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

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

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

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

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

### A2 Space Exploration

#### We are quickly transitioning to full space-for-space economy where burgeoning demand and private sector incentives create a full economy in short order

Sarang 21—Mehak Sarang; Mehak is also a Research Associate at Harvard Business School with Professor Matthew Weinzierl, researching the business and economics of the space sector; The Commercial Space Age Is Here; Feb 12 2021; Harvard Business Review; <https://hbr.org/2021/02/the-commercial-space-age-is-here>; (AG DebateDrills)

In our [recent research](https://www.hbs.edu/faculty/Publication%20Files/jep.32.2.173_Space,%20the%20Final%20Economic%20Frontier_413bf24d-42e6-4cea-8cc5-a0d2f6fc6a70.pdf), we examined how the model of centralized, government-directed human space activity born in the 1960s has, over the last two decades, made way for a new model, in which public initiatives in space increasingly share the stage with private priorities. Centralized, government-led space programs will inevitably focus on space-for-earth activities that are in the public interest, such as national security, basic science, and national pride. This is only natural, as expenditures for these programs must be justified by demonstrating benefits for citizens — and the citizens these governments represent are (nearly) all on earth.

In contrast to governments, the private sector is eager to put people in space to pursue their own personal interests, not the state’s — and then supply the demand they create. This is the vision driving SpaceX, which in its first twenty years has entirely upended the rocket launch industry, securing 60% of the global commercial launch market and building ever-larger spacecraft designed to ferry passengers not just to the International Space Station (ISS), but also to its own promised [settlement on Mars](https://www.spacex.com/media/making_life_multiplanetary_transcript_2017.pdf).

Today, the space-for-space market is limited to supplying the people who are already in space: that is, the handful of astronauts employed by NASA and other government programs. While SpaceX has grand visions of supporting large numbers of private space travelers, their current space-for-space activities have all been in response to demand from government customers (i.e., NASA). But as decreasing launch costs enable companies like SpaceX to leverage economies of scale and put more people into space, growing private sector demand (that is, tourists and settlers, rather than government employees) could turn these proof-of-concept initiatives into a sustainable, large-scale industry.

This model — of selling to NASA with the hopes of eventually creating and expanding into a larger private market — is exemplified by SpaceX, but the company is by no means the only player taking this approach. For instance, while SpaceX is focused on space-for-space transportation, another key component of this burgeoning industry will be manufacturing.

[Made In Space, Inc.](https://madeinspace.us/capabilities-and-technology/archinaut/) has been at the forefront of manufacturing “in space, for space” since 2014, when it 3D-printed a wrench onboard the ISS. Today, the company is exploring other products, such as high-quality fiber-optic cable, that terrestrial customers may be willing to pay to have manufactured in zero-gravity. But the company also recently received a [$74 million contract](https://www.nasa.gov/press-release/nasa-funds-demo-of-3d-printed-spacecraft-parts-made-assembled-in-orbit) to 3D-print large metal beams in space for use on NASA spacecraft, and future private sector spacecraft will certainly have similar manufacturing needs which Made In Space hopes to be well-positioned to fulfill. Just as SpaceX has begun by supplying NASA but hopes to eventually serve a much larger, private-sector market, Made In Space’s current work with NASA could be the first step along a path towards supporting a variety of private-sector manufacturing applications for which the costs of manufacturing on earth and transporting into space would be prohibitive.

Another major area of space-for-space investment is in building and operating space infrastructure such as habitats, laboratories, and factories. Axiom Space, a current leader in this field, recently [announced](https://www.theverge.com/2021/1/26/22250327/space-tourists-axiom-private-crew-iss-price) that it would be flying the “first fully private commercial mission to space” in 2022 onboard SpaceX’s Crew Dragon Capsule. Axiom was also [awarded](https://spacenews.com/nasa-selects-axiom-space-to-build-commercial-space-station-module/) a contract for exclusive access to a module of the ISS, facilitating its plans to develop modules for commercial activity on the station (and eventually, beyond it).

This infrastructure is likely to spur investment in a wide array of complementary services to supply the demand of the people living and working within it. For example, in February 2020, Maxar Technologies was awarded a [$142 million contract](https://www.builtincolorado.com/2020/02/03/maxar-technologies-142m-nasa-contract) from NASA to develop a robotic construction tool that would be assembled in space for use on low-Earth orbit spacecraft. Private sector spacecraft or settlements will no doubt have need for a variety of similar construction and repair tools.

And of course, the private sector isn’t just about industrial products. Creature comforts also promise to be an area of rapid growth, as companies endeavor to support the human side of life in the harsh environment of space. In 2015, for example, [Argotec and Lavazza](https://www.lavazza.com/en/about-us/media-centre/isspresso-successfully-completes-the-mission-coffee-in-space.html) collaborated to build an espresso machine that could function in the zero-gravity environment of the ISS, delivering a bit of everyday luxury to the crew.

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.](https://store.hbr.org/product/planetary-resources-inc-property-rights-and-the-regulation-of-the-space-economy/717053) and [Deep Space Industries](https://spacenews.com/deep-space-industries-acquired-by-bradford-space/), 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](https://interestingengineering.com/asteroid-mining-to-shape-the-future-of-our-wealth).

#### Private companies are quickly getting ready to put humans on Mars—without them, even political will would mean another 20 years

Redfern 11/14—Martin Redfern; Martin Redfern studied geology at University College London. Since 1981 he has worked as an executive producer at the BBC World Service Science Unit; “Will we ever step foot on Mars?”; BBC; Nov 14 2021; <https://www.bbcearth.com/news/will-we-ever-set-foot-on-mars>; (AG DebateDrills)

Currently, a human mission to Mars take 20 years minimum—private companies have already signaled an ability to rapidly speed up the timeline After the Apollo Moon missions in the 1970s, sending astronauts to Mars seemed the next logical step, but it would be a ‘giant leap’, politically and financially. Space is big: while it took the Apollo astronauts only four days to reach the Moon, with present technology it would take about nine months to reach Mars. By the time the planets align favourably for a return, a complete mission might last two or three years. Throughout that time, the astronauts would need food, water and oxygen, plus protection from radiation. At this point, the success rate for robot missions does not inspire confidence. Russia has launched 21 Mars rockets to date, including five unmanned landers, but only two orbiters completed their missions. The US has been more successful, losing only five out of 23 missions. But there has yet to be a return mission. Clearly some more work is needed before we can contemplate sending humans to Mars. But, sooner or later, we will go. With the political will, it could be within 20 years. And one thing that can be done in the meantime is test human psychological resilience for such a mission. The current record holder for the longest spaceflight is the Russian astronaut Valeri Polyakov, who returned to Earth from Mir in March 1995 after 437 days in space. Such a feat tests the human body’s ability to withstand the muscle and bone loss associated with zero gravity, and is a psychological test of will and endurance. And while contact with astronauts on the International Space Station (ISS) is simple, as it takes only a fraction of a second to relay messages to and from Earth, radio signals take 20 minutes to reach Mars, so astronauts there will feel much more isolated, adding to the psychological stress of confinement with a small team. These testing conditions have been simulated on Earth in order to evaluate their effect on people. Mars 500 was a Russian/European/Chinese project between 2007 and 2011 in an isolation facility in a Moscow car park. It culminated in a 520-day stay by six male volunteers. They claimed to be in good health throughout, but some avoided exercise and hid from their colleagues, and four had difficulty sleeping. The latest simulation – Hawaii Space Exploration Analog and Simulation, run for NASA by the University of Hawaii – took place in the Mars-like landscape of Hawaii, 2,500m up the side of the Mauna Loa volcano. A team of six emerged from a year in isolation there on 28 August 2016. They had been allowed out on simulated Mars walks, but only wearing a full space suit; the rest of the time they were living in cramped conditions in a 100sq m geodesic dome. The European Space Agency also performs regular evaluations of the crew at the remote Concordia station in Antarctica to assess the effects of confinement during the long, dark polar winter. Mars Society president Robert Zubrin has a mission plan that, he believes, will be safer and cheaper than any other. It involves first launching an unmanned Earth Return Vehicle (ERV) that would land on Mars and use solar or nuclear power and imported hydrogen to produce methane and oxygen from Martian CO2. In other words, rocket fuel. This means that humans would set out only once they knew there would be a fuelled return vehicle waiting for them on Mars. The craft Mars Society president Robert Zubrin has a mission plan that, he believes, will be safer and cheaper than any other. It involves first launching an unmanned Earth Return Vehicle (ERV) that would land on Mars and use solar or nuclear power and imported hydrogen to produce methane and oxygen from Martian CO2. In other words, rocket fuel. This means that humans would set out only once they knew there would be a fuelled return vehicle waiting for them on Mars. The craft they fly out on, he says, would stay on Mars to provide future accommodation. A second ERV would be launched at the same time to provide back-up and, if all goes well, would be ready to bring the next team home two years later. In this way, a series of return trips would build up a number of living spaces on Mars for longer stays in the future. And because most of the fuel for the return trip would be made on Mars, Zubrin believes huge energy and cost savings could be made. Elon Musk NASA’s own plans are more cautious. They involve moving long-duration human missions out from the ISS to orbit the Moon over the next 13 years, while continuing the scientific exploration of Mars; followed up with cargo delivery and an unmanned sample-return mission in the late 2020s. But, they say, it won’t be before the early 2030s that humans orbit Mars, let alone land on the planet. Meanwhile, Elon Musk, former PayPal entrepreneur and founder of SpaceX, has his own plans. He already has a NASA contract for delivering supplies to the ISS and hopes to be able to deliver cargo to Mars in 2018, in preparation for a human mission in the 2020s. ‘Mars is something we can do in our lifetimes,’ he says.

### A2 Russia

#### Russo-US relations suck—we’re on the brink of Putin bombing all our space tech to oblivion.

Koffler 11-17[Rebekah Koffler is a former Defense Intelligence Agency officer and author of “Putin’s Playbook: Russia’s Secret Plan to Defeat America.”, Opinion, 11-17 2021,WSJ,https://www.wsj.com/articles/space-armageddon-and-putins-threats-to-ukraine-russia-antisatellite-weapon-11637183651, 12-15-2021 amrita]

**Russia successfully conducted a test** in which a direct-ascent missile destroyed a nearly 40-year-old defunct Soviet spy satellite, U.S. Space Command announced Monday. This unsettling development is noteworthy because it coincides with Russia’s massive military buildup along the Ukrainian border. Moscow’s pre-positioning of more than 100,000 soldiers, tanks and heavy weaponry has spurred the Pentagon’s concerns about a possible Russian invasion of Ukraine. **Moscow’s posturing on what the Russians call a “space weapon” signals a rapidly escalating crisis in U.S.-Russia relations**. Washington’s foreign policy and Moscow’s view of its national interests are on a geopolitical collision course. Russia views the formerly Soviet Ukraine as part of its strategic security perimeter, on which Moscow has relied for centuries as a geographical buffer against foreign invasion. President Vladimir Putin has repeatedly said the U.S. is crossing a red line by attempting to pull Ukraine out of Russia’s orbit. In April, at his annual address to the Russian Parliament, Mr. Putin threatened a “swift, asymmetric and harsh response,” if the U.S. and the North Atlantic Treaty Organization intervene on Ukraine’s behalf. A trained intelligence operative, Mr. **Putin maintains strategic ambiguity** regarding what U.S. action precisely would constitute the crossing of Moscow’s red line with regard to former Soviet states, such as Ukraine. Ukraine’s admission into the European Union and NATO would almost certainly be unacceptable to the Kremlin. Mr. Putin is prepared to fight a war against the West to prevent this from happening. But how could Russia win a war against a much stronger adversary? That’s where Monday’s antisatellite test comes in. It’s a preview of Mr. Putin’s Space Armageddon strategy. **Russian strategists have observed** American **war fighters’ tactics in conflict zones** for nearly a quarter-century—in Kosovo, Iraq, Afghanistan, Libya and Syria. They **learned that America’s** superior **space capability is its Achilles’ heel** because of the U.S. military’s near-total dependence on it. Many civilian drivers would be lost without directions from their smartphones. **U.S. troops in war zones rely on the same constellation of 31 GPS** satellites for tasks like synchronizing operations, pinpointing targets and locating personnel. Moscow therefore seeks to deafen and blind U.S. forces in conflicts. By attacking U.S. satellites, the Russians would attempt to offset superior U.S. conventional firepower. They also hope to paralyze U.S. forces psychologically by rendering them helpless. Russian military theorists often write about the importance of targeting both the technical capabilities and the mind of an adversary, planning to disorganize its troops and weaken their will to fight. This is the essence of Mr. Putin’s asymmetric approach to warfare. **Moscow believes it can win an all-out space war with America**, which stands to lose a lot more since its entire society, from ATMs to home offices, is connected via satellites. Alarmingly, Washington is as unprepared for Mr. Putin’s star wars as it was for Russia’s determination to wage cyberwarfare. Monday’s test executed only a single page out of Mr. Putin’s playbook, which includes lasers, jammers and other satellite killers. Before the situation in Ukraine escalates into war, the **Pentagon** had **better develop a strategy to counter** Mr. **Putin**’s plan for Space Armageddon.

### A2 Space Debris

#### The space junk has been put there by PUBLIC entities like governments as well as private entities, even a ban on private entities in space couldn’t solve the problem. As long as anyone is launching anything it is inevitable

**Polyakov 21**, Dr. Max Polyakov, Founder, Noosphere Ventures, Firefly Aerospace, EOS Data Analytics, 5-5-2021, "Where does space junk come from – and how do we clean it up?," World Economic Forum,<https://www.weforum.org/agenda/2021/05/why-we-need-to-clean-up-space-junk-debris-low-earth-orbit-pollution-satellite-rocket-noosphere-firefly/> Livingston RB

Where does space junk come from? **As long as humans launch objects into orbit, space debris is inevitable.** Rocket launches leave boosters, fairings, interstages, and other debris in LEO. So do rocket explosions, which currently account for seven of the top 10 debris-creating events. **Human presence also creates orbital flotsam** – such as cameras, pliers, an astronaut’s glove, a wrench, a spatula, even a tool bag lost during space walks. Some debris is created naturally from the impacts of micrometeoroids – dust-sized fragments of asteroids and comets. With limited lifetimes, **operational satellites can become space debris**. Satellites run out of maneuvering fuel, batteries wear out, solar panels degrade – causing an orbital debris feedback loop, in which the problem is exacerbated when solar panels are sandblasted by micrometeoroids and tiny debris. As with rocket debris, spent satellites eventually re-enter Earth’s atmosphere and burn up, but the process can take years – and the higher they orbit above Earth, the longer those orbits take to decay.