# 1NC

### 1

#### Interpretation: If the affirmative defends a consequentialist framework, they must explicitly delineate which theory of the good they defend in the form of a text in the 1ac.

#### Each nuance of the ethic entails different obligations and would exclude different offense – there are 7 different versions.

**Mastin,** [Luke Mastin, Consequentialism, The basics of philosophy <http://www.philosophybasics.com/branch_consequentialism.html>]

Some **consequentialist theories include**: Utilitarianism, which holds that an action is right if it leads to the most happiness for the greatest number of people ("happiness" here is defined as the maximization of pleasure and the minimization of pain). **Hedonism**, **which** is the philosophy **[holds] that pleasure** **is** the **most important** pursuit of mankind, **and** that **individuals** **should** strive to **maximise** **their own total** **pleasure** (net of any pain or suffering). **Epicureanism** is a more moderate approach (which still seeks to maximize happiness, but which **defines happiness** more **as a** **state of tranquillity** than pleasure). **Egoism, which holds that an action is right if it maximizes good for the self.** Thus, Egoism may license actions which are good for an individual even if detrimental to the general welfare. **Asceticism**, in some ways, **the opposite of Egoism in that it describes a life characterized by abstinence from egoistic pleasures** especially **to achieve a spiritual goal. Altruism**, which **prescribes that an individual take actions that have the best consequences for everyone except for himself**, according to Auguste Comte's dictum, "Live for others". Thus, individuals have a moral obligation to help, serve or benefit others, if necessary at the sacrifice of self-interest. **Rule Consequentialism**, which is a theory (sometimes seen as an attempt to reconcile Consequentialism and Deontology), **[holds] that moral behaviour involves following certain rules**, but that those rules should be **chosen** based **on** the **consequences that** the selection of **those rules have**. Some theorists holds that a certain set of minimal rules are necessary to ensure appropriate actions, while some hold that the rules are not absolute and may be violated if strict adherence to the rule would lead to much more undesirable consequences. **Negative Consequentialism**, which **focuses on minimizing bad consequences rather than promoting good consequences**. This may actually require active intervention (to prevent harm from being done), or may only require passive avoidance of bad outcomes.

#### B. Violation: They don’t and maximizing expected well-being doesn’t cut it.

**Crisp**, Roger, "Well-Being", *The Stanford Encyclopedia of Philosophy*(Fall **2017** Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/fall2017/entries/well-being/>.

Well-being is most commonly used in philosophy to describe what is non-instrumentally or ultimately good *for* a person. **The question of what well-being consists in is of independent interest**, but it is of great importance in moral philosophy, especially **in the case of utilitarianism**, according to which the only moral requirement is that well-being be maximized. Significant challenges to the very notion have been mounted, in particular by G.E. Moore and T.M. Scanlon. **It has become standard to distinguish theories of well-being as either hedonist theories, desire theories, or objective list theories**. According to the view known as welfarism, well-being is the only value. Also important in ethics is the question of how a person’s moral character and actions relate to their well-being.

#### C. Standards:

#### 1. Shiftiness – They can shift out of my turns based on whatever theory of the good they operate under due to the nature of a vague standard. Especially true because the warrants for their standard could justify different versions of consequentialism as coming first and I wouldn’t know until the 1ar which gives them access to multiple contingent standards.

#### 2. Strat – I lose 6 minutes of time during the AC to generate a strategy because I don't know what turns or strategy I can go for during the 1N absent which proves CX doesn’t check since it would occur after the skew.

#### 3. Resolvability – Makes the round irresolvable since we can’t weigh different mechanisms for the good – Benatar would probably link harder under a hedonistic conception of util – weighing ground is key since it ensures we can compare arguments that clash to access the ballot.

#### Voters –

#### Drop the debater – 1. Deterrence – Prevents reading the abusive practice in the future since it’s not worth risking the loss which is k2 norm setting indefensible practices die out 2. TS – Otherwise you’ll read a bunch of abusive practices for the time trade off 3. Epistemic Skew – The round has already been skewed so it’s impossible to evaluate the rest of the flow

#### Competing interps – 1. Reasonability encourages a race to the margins of what counts as sufficiently fair which incentivizes as much abuse as possible 2. Norm setting – it encourages the most fair rule through debating competing models 3. Judge intervention – Reasonability begs the question of what the judge thinks is sufficient which takes the round out of the debaters hands.

#### No RVIs – 1. It deters legitimate theory vs good theory debaters because you will lose on a shell even if it’s a good norm 2. Baiting – incentivizes people to be abusive and script counter-interps to win on the RVI which increases the existence of bad norms 3. It forces debaters to argue for bad practices even if they realize their interp is wrong which kills substance debate and norm setting since we have bad theory debates we agree on.

### 2

#### Permissibility Negates –

#### [] Semantics – Ought is defined as expressing obligation[[1]](#footnote-1) which means absent a proactive obligation you vote neg since there’s a trichotomy between prohibition, obligation, and permissibility and proving one disproves the other two. Semantics o/w – a) it’s key to predictability since we prep based on the wording of the res and b) it’s constitutive to the rules of debate since the judge is obligated to vote on the resolutional text.

#### [] Logic – Propositions require positive justification before being accepted, otherwise one would be forced to accept the validity of logically contradictory propositions regarding subjects one knows nothing about, i.e if one knew nothing about P one would have to presume that both the “P” and “~P” are true.

#### I value morality.

#### First, being is always a prior question – only an existential analysis of what comprises our subjective nature can allow for ethical judgements.

#### A] Facticity – objects and entities only have meaning in the specific contexts they are presently confronted with. A rock can be used for analysis by a geologist or as a hammer by a survivalist – its meaning is contingently signified in the moment and not a metaphysical truth.

#### B] Alienation – the fact we are thrown into a world at a particular place and time forces us to inculcate moral responsibility. Confronting our existential freedom to mold ourselves in our own image is a prerequisite to being able to view ourselves as being agents across space and time.

#### Next, there is no metaphysical concept of agency. Rather, agents are simply constellations of contingent drives that form the impetus for the way in which they make sense of the world.

**Alfano 1** [Mark Alfano, no date, Assistant Professor of Philosophy at the University of Oregon. He specializes in moral psychology broadly construed, including virtue theory, decision making, ethics, and experimental philosophy. “Nietzsche’s virtues: Curiosity, courage, pathos of distance, sense of humor, and solitude.” *Handbook of Virtue and Virtue Ethics.* (Springer). <https://philpapers.org/rec/ALFNVC>] *bxnk* \*struck through and bracketed for gendered language and clarity. all other brackets in original\*

Nietzsche starts with a naturalistic conception of drives, instincts, and types of people. He then moves in a normative direction by identifying some drives and instincts as virtues — at least for certain types of people in particular social and cultural contexts. Much of Nietzsche’s understanding of virtue must therefore be understood relative to a type of person and the context in which they find themselves. For instance, in The Gay Science 120, Nietzsche revises the dictum “virtue is the health of the soul” to “your virtue is the health of your soul.” And in Antichrist 11, he uses derisive scare quotes to distinguish between type-appropriate and type-inappropriate dispositions: A virtue needs to be our own invention, our own most personal need and self-defense: in any other sense, a virtue is just dangerous. Whatever is not a condition for life harms it: a virtue that comes exclusively from a feeling of respect for the concept of ‘virtue’, as Kant would have it, is harmful. Nietzsche pays special attention to his own type in his own context, emphasizing the virtues of curiosity, courage, the pathos of distance, the sense of humor, and solitude. These instincts-become-virtues are held together by conscience and integrity, as I explain in more detail below. For Nietzsche, drives are act-directed motivational and evaluative dispositions (Katsafanas 2016). An agent’s drives move her to engage in and positively evaluate a range of characteristic actions regardless of the consequences that may eventuate from those actions. Drives thus differ from preferences and desires in being associated primarily with the processes of agency rather than with teleologically-specified states of affairs. Passages about aggressive drives in Beyond Good and Evil and the Genealogy illustrate this idea. He claims that these drives do not disappear during the political shift into the “straitjacket” of norms and rules; instead, the drives remain but end up expressing themselves differently (Genealogy II.2). “After the structure of society is fixed on the whole and seems secure against external dangers,” he claims, “strong and dangerous drives, like an enterprising spirit, foolhardiness, vengefulness, craftiness, rapacity, and the lust to rule, which had so far not merely been honored insofar as they were socially useful […] but had to be trained and cultivated […] are now experienced as dangers” (BGE 201). Indeed, they are “doubly dangerous, since the channels to divert them are lacking.” The supposition here is that aggressive drives, lacking an opportunity for discharge in action against an external enemy, will be “diverted” from their usual “channels” onto members of the society. Here we see a drive finding expression in alternative ways (same action-type, different goal and consequence) when the most natural manner of expression is no longer available. Nietzsche makes a similar claim about aggressive drives in Genealogy II.16: with the establishment of a strictly-regulated society, he says, suddenly all [people’s] instincts were disvalued and ‘suspended.’ […] in this new world they no longer possessed their former guides, their regulating, unconscious and infallible drives: […] at the same time the old instincts had not suddenly ceased to make their usual demands! Only it was hardly or rarely possible to humor them: as a rule they had to seek new and, as it were, subterranean gratifications. This susceptibility to displacement from usual “channels” is one of the main reasons why drive-motivated actions sometime seem irrational. This feature of drives explains and unites a range of seemingly irrational behaviors in which an agent performs an action that is drive-expressive despite the fact that she knows or could easily come to know that the action will not produce a desired state of affairs. In addition, Nietzsche thinks that instincts are innate drives, though other drives can be acquired. In Beyond Good and Evil 3, he claims that “by far the greater part of conscious thinking must still be included among instinctive activities, and that goes even for philosophical thinking. We have to relearn here, as one has had to relearn about heredity and what is ‘innate.’” And in Beyond Good and Evil 199, Nietzsche argues that “The strange limits of human development, the way it hesitates, takes so long, often turns back, and moves in circles, is due to the fact that the herd instinct of obedience is inherited best, and at the expense of the art of commanding.” In two additional passages, he refers to the process of breeding (‘züchten’ or a cognates) when talking about instincts. In Beyond Good and Evil 207, he contrasts the “ideal scholar in whom the scientific instinct, after thousands of total and semi-failures, for once blossoms and blooms to the end” with the “philosopher,” whom he characterizes as a “Caesarian breeder and brutal man of culture” who uses the scholar as a tool. And in Genealogy of Morals II.3, Nietzsche argues that “one has only to look at [Germans’] former codes of punishments to understand what effort it cost on this earth to breed a ‘nation of thinkers’ [….] These Germans have employed fearful means to acquire a memory, so as to master their basic mob-instinct.” These passages stand in opposition to passages such as Uses and Disadvantages of History For Life 4, Daybreak 38, and Daybreak 455, in which Nietzsche talks about drives and other dispositions in terms of an acquired second nature (‘zweite Natur’). Moreover, instincts and other drives are mutable on several dimensions, including their intensity, their objects, and the structural interrelations (Daybreak 109). And an agent’s instincts and other drives constitute ~~her~~ psychological type. Daybreak 199 is especially instructive on this point: However far a man may go in self-knowledge, nothing however can be more incomplete than his image of the totality of drives which constitute his being. He can scarcely name even the cruder ones: their number and strength, their ebb and flood, their play and counterplay among one another, and above all the laws of their nutriment remain wholly unknown to him. This nutriment is therefore a work of chance. This passage establishes what Nietzsche thinks is determinative of a person’s type: your type is the “totality of drives” that “constitute” your “being.” Your type is not dependent on your beliefs, your culture, or any of a variety of other candidates. What makes you who you are is the constellation of your drives.

#### The virtuous paradigm is ultimately enabled by an epistemic process of self-overcoming, wherein an agent overcome the static labels and perspectives affixed to them to truly embrace their identity. Thus, the standard is consistency with reflexive virtue.

**Alfano 2** [Mark Alfano, no date, Assistant Professor of Philosophy at the University of Oregon. He specializes in moral psychology broadly construed, including virtue theory, decision making, ethics, and experimental philosophy. “Nietzsche’s virtues: Curiosity, courage, pathos of distance, sense of humor, and solitude.” *Handbook of Virtue and Virtue Ethics.* (Springer). <https://philpapers.org/rec/ALFNVC>] *bxnk* \*struck through and bracketed for gendered language and clarity. all other brackets in original\*

Nietzsche also pays special attention to the role of community in fostering virtues. For him, one’s community and the language used by that community play a constitutive role in the cultivation of virtue. This is because part of what it means for a person to be of a certain type is that ~~she~~ [they] ~~is~~ [are] susceptible to social determination of her character (Alfano 2015b). Some types are *meta-types*. They’re not dispositions to *act* in certain ways, but dispositions to become the sort of person who acts in particular to-be-specified ways. Unlike Aristotle, who thinks that one becomes virtuous through practice and habituation, realizing all the while that one is not yet virtuous but aiming to become so, Nietzsche thinks that the temporal relation sometimes runs in the other direction. First, one supposes, imagines, hopes, or fantasizes oneself to be a certain way. In so doing, one becomes committed to a standard of conduct that includes not only one’s actions but also one’s thoughts, feelings, emotions, and deliberative strategies. Commitment to this standard in turn induces congruent behavior. Thus, thinking of oneself as having certain traits is temporally and conceptually prior to actually having those traits. This is a theme that crops up especially in the *Genealogy*, where Nietzsche describes the nobles not so much as being psychologically higher but as imagining themselves to be higher psychologically (because they are already politically higher), as enchanted by the pathos of distance (*Genealogy* I.3, III.14). This pathos induces (enough of) them to behave as if they were higher, which has knock-on social effects that lead to self-confirmatory conduct. This theme also crops up, in a less uplifting way, in his description of psychological slavishness — a disposition to simulate, mimic, or acquire whatever character traits are attributed to one. Instead of or in addition to feeling committed to a certain code of conduct, the slavish person feels that other people, especially others with the power to impose sanctions and punishments, expect him to behave in accordance with a certain code of conduct. Thus, while both psychological masters and psychological slaves become what they are taken to be, the masters do so by becoming what they take themselves to be (and what fellow masters take them to be), whereas the psychologically slavish become what others take them to be. Thus, there are two Nietzschean styles of becoming what one is called: the social and the reflexive. Someone whose character is built according to the social plan becomes what others consider and call him — good, bad, or mixed. By contrast, someone whose personality is built according to the reflexive plan becomes what ~~she~~ [they] consider~~s~~ and calls herself [themself]. Nietzsche associates this method of personality construction with masterliness. One of Nietzsche’s great innovations is the idea that there is a looping effect between the psychological disposition named by a character trait-term and the practice of using that term (Hacking 2006). While he affirms that people are differentially disposed to certain patterns of behavior, he conceives of these dispositions as fluid both in their objects and, to a lesser degree, in their strength and aim. The valence and content of the labels applied to an agent, together with the power-relation between the labeler and labeled, interact with her preexisting psychological dispositions to produce the kind of person ~~she~~ [they] eventually become[s]. Because Nietzsche held a type-relative unity of virtue thesis, if we want to discern his virtue theory, we need to look at his self-attributions. This allows us to pick out the set of traits he considers virtues for his type. Thus, there is no universal specification of “the virtues” in Nietzsche’s philosophy. Nevertheless, we can say quite a bit about the virtues he celebrates in his own type. Most of these are more closely connected to epistemic than traditionally moral or prudential flourishing. The first distinctively Nietzschean virtue is curiosity (Alfano 2013, Bamford forthcoming, Christy forthcoming, Reginster 2013). It is notably epistemic and therefore better contextualized by contemporary virtue epistemology (especially responsibilist epistemology — on which see Roberts & Wood 2007) than contemporary virtue ethics. Curiosity is deeply embedded in Nietzsche’s perspectivism. He thinks that perspectives support inquiry in essential ways. For him, a perspective is emotional and evaluative

#### Prefer additionally:

#### [1] Inescapable – The human condition is one that necessitates the exercise of radical freedom given the metaphysical understanding of the conscious subject. It is impossible to escape the conception of the self, as it is the only essential feature of existence.

#### [2] Motivation – existentialism is the only motivational ethic insofar as every action we take is driven by the desire to take that action; regardless of what the motivation is, whenever an act is externally realized, it entails the action was necessarily motivated by the freedom to take such action.

#### I contend that the appropriation of outer space is not unjust -

#### [1] Space is an open canvas – A] Appropriation is the meaningful expression of the will to power. Mixing our will with the cosmos is what allows us to ground ourselves as subjects. B] Fixation – Preventing space exploration artificially limits the possibility of human experience, which alienates us from our potential and from the world that exists beyond the arbitrary limits of our atmosphere.

#### [2] Epistemology – A] All of reality is the will to power. Thus, it is only by appropriating space can we truly embrace the nature of our existential subjectivity and designate it as an externality to make sense of.

#### [3] Private property is key to recognizing agents through the personality in their work. Recognition is necessary for agents to be non-alienated bc we need to establish relations with the world.

**Hughes 98 -** "The Philosophy of Intellectual Property," 77 Georgetown L.J. 287, 330-350 (1988) by Justin Hughes [https://cyber.harvard.edu/IPCoop/88hugh2.html] // ahs emi

At first blush, this economic rationale seems far removed from the concerns of personality theory, [n244](https://cyber.harvard.edu/IPCoop/88hugh2.html#n244) yet it can be recast into the framework of the personality theory. From the Hegelian perspective, payments from intellectual property users to the property creator are acts of recognition. These payments acknowledge the individual's claim over the property, and it is through such acknowledgement that an individual is recognized by others as a person. [n245](https://cyber.harvard.edu/IPCoop/88hugh2.html#n245) "Recognition" involves more than lip service. If I say "this forest is your property" and then proceed to flagrantly trespass, cut your timber, and hunt your deer, I have not recognized your property rights. Similarly, verbal recognition of an intellectual property claim is not equal to the recognition implicit in a payment. Purchasers of a copyrighted work or licensees of a patent form a circle of people recognizing the creator as a person. Furthermore, this generation of income complements the personality theory in as much as income facilitates further expression. When royalties from an invention allow the inventor to buy a grand piano he has always wanted, the transaction helps maximize personality. But this argument tends to be too broad. First, much income is used for basic necessities, leading to the vacuous position that life-sustenance is "personally maximizing" because it allows the personality to continue. Second, this approach could justify property rights for after-the-fact development of personality interests without requiring [\*350] such interests in the property at the time the property rights are granted. The personality theory provides a better, more direct justification for the alienation of intellectual property, especially copies. The alienation of copies is perhaps the most rational way to gain exposure for one's ideas. This is a non-economic, and perhaps higher, form of the idea of recognition: respect, honor, and admiration. Even for starving artists recognition of this sort may be far more valuable than economic rewards. Two conditions appear essential, however, to this justification of alienation: first, the creator of the work must receive public identification, and, second, the work must receive protection against any changes unintended or unapproved by the creator.VARA Hegel's prohibition of "complete" alienation of intellectual property appears to result from his recognition of the necessity for these two conditions. While he would permit alienation of copies, and even the rights to further reproduction, [n246](https://cyber.harvard.edu/IPCoop/88hugh2.html#n246) he disapproves alienation of "those goods, or rather substantive characteristics, which constitute . . . private personality and the universal essence of . . . self-consciousness." [n247](https://cyber.harvard.edu/IPCoop/88hugh2.html#n247) Such alienation necessarily occurs if the recognition of the connection between a creator and his expression is destroyed or distorted. When the first condition is violated, this recognition is destroyed; when the second condition is violated, it is distorted.

# Case

### Framing

#### Overview: we hijack:

#### [1] Meaning creation is the normative force behind the creation of consequences – consequences merely represent the existential value we hold externally which means even if consequentialism is true, the only reason those consequences are produced is because they reflect our existential preferences

#### [2] Util can’t explain our fundamental ontological nature – I’m winning the internal link to the strongest ethical concept at the base of humanity which precedes their framework. Ethics without an explanation of our being cannot explain how we ought to act as beings.

#### [3] Pain and pleasure are just two filters into our existential calculus – it may inform the creation of future value but only our framework takes into account the other normative dispositions we have.

### Solvency

#### OST toothless---impossible to enforce, outdated, and private actors will circumvent

Jill Stuart 17, Visiting Fellow in the Department of Government, London School of Economics and Political Science, 1/27/17, “The Outer Space Treaty has been remarkably successful – but is it fit for the modern age?” http://theconversation.com/the-outer-space-treaty-has-been-remarkably-successful-but-is-it-fit-for-the-modern-age-71381

Space exploration is governed by a complex series of international treaties and agreements which have been in place for years. The first and probably most important of them celebrates its 50th anniversary on January 27 – The Outer Space Treaty. This treaty, which was signed in 1967, was agreed through the United Nations, and today it remain as the “constitution” of outer space. It has been signed and made official, or ratified, by 105 countries across the world.

The treaty has worked well so far but challenges have increasingly started to crop up. So will it survive another 50 years?

The Outer Space Treaty, like all international law, is technically binding to those countries who sign up to it. But the obvious lack of “space police” means that it cannot be practically enforced. So a country, individual or company could simply ignore it if they so wished. Implications for not complying could include sanctions, but mainly a lack of legitimacy and respect which is of importance in the international arena.

However it is interesting that, over the 50 years of it’s existence, the treaty has never actually been violated. Although many practical challenges have been made – these have always been made with pars of the treaty in mind, rather than seeking to undermine it entirely.

Challenges so far

Although there are many points to consider in the treaty, one of the most important is that outer space is to be used for “peaceful purposes” – weapons of mass destruction cannot be used in space. Another is that celestial territory (such as the moon or Mars), is not subject to “national appropriation” – in other words, no country can lay claim to them.

These points have been subject to challenges since the treaty came into play – the first example of such a challenge was the Bogota Declaration in 1976. A group of eight countries tried to claim ownership of a segment of an orbit that was in the space situated above their land - since if their borders projected into the heavens, any “stationary” satellite there would always be within their borders.

They claimed that this space did not fall under the definition of “outer space” by the Outer Space Treaty and was therefore a “natural resource”. This declaration was not seen as an attempt to undermine the treaty, but rather to say that orbits that go around the Earth’s equator, or in the direction of the Earth’s rotation, must be owned by the countries beneath. However this was was eventually dismissed by the international community.

In 2007 China was thought to have violated the treaty when it shot down one of it’s own weather satellites with a “ground-based medium-range ballistic missile”. This was seen as “aggressive” by Japan, but since the missiles did not come under the definition of “weapons of mass destruction”, it was found that it did not violate the treaty. There was, however, international outcry because of the debris cloud it caused within the orbit.

We could do with some updates

Despite its importance, we must recognise that the Outer Space Treaty does have some specific failings in the modern era – mainly since it is focused on countries only. Many private companies, such as lunarland, have exploited this

### Adv

#### 1 - Non UQ – squo debris thumps – BD reads blue

Orwig 16 [(Jessica, MS in science and tech journalism from Texas A&M, BS in astronomy and physics from Ohio State) “Russia says a growing problem in space could be enough to spark a war,” Insider,’ January 26, 2016, <https://www.businessinsider.com/russia-says-space-junk-could-spark-war-2016-1>] TDI

NASA has already [warned that](https://www.businessinsider.com/space-junk-at-critical-density-2015-9) the large amount of space junk around our planet is growing beyond our control, but now a team of Russian scientists has cited another potentially unforeseen consequence of that debris: War.

Scientists estimate that anywhere from 500,000 to 600,000 pieces of human-made space debris between 0.4 and 4 inches in size are currently orbiting the Earth and traveling at speeds over [17,000 miles per hour](https://www.nasa.gov/mission_pages/station/news/orbital_debris.html).

If one of those pieces smashed into a military satellite it "may provoke political or even armed conflict between space-faring nations," Vitaly Adushkin, a researcher for the Institute of Geosphere Dynamics at the Russian Academy of Sciences, reported in a paper set to be published in the peer-reviewed journal [Acta Astronautica](https://www.sciencedirect.com/science/article/pii/S0094576515303416), which is sponsored by the International Academy of Astronautics.

#### 2 - Public sector mining thumps.

NASA 19 [“NASA Invests in Tech Concepts Aimed at Exploring Lunar Craters, Mining Asteroids,” NASA, June 11, 2019, <https://www.nasa.gov/press-release/nasa-invests-in-tech-concepts-aimed-at-exploring-lunar-craters-mining-asteroids>] TDI

NASA Invests in Tech Concepts Aimed at Exploring Lunar Craters, Mining Asteroids

Robotically surveying lunar craters in record time and mining resources in space could help NASA establish a sustained human presence at the Moon – part of the agency’s broader [Moon to Mars exploration](https://www.nasa.gov/specials/moon2mars/) approach. Two mission concepts to explore these capabilities have been selected as the first-ever Phase III studies within the [NASA Innovative Advanced Concepts](https://www.nasa.gov/niac) (NIAC) program.

“We are pursuing new technologies across our development portfolio that could help make deep space exploration more Earth-independent by utilizing resources on the Moon and beyond,” said Jim Reuter, associate administrator of NASA’s Space Technology Mission Directorate. “These NIAC Phase III selections are a component of that forward-looking research and we hope new insights will help us achieve more firsts in space.”

The Phase III proposals outline an aerospace architecture, including a mission concept, that is innovative and could change what’s possible in space. Each selection will receive as much as $2 million. Over the course of two years, researchers will refine the concept design and explore aspects of implementing the new technology. The inaugural Phase III selections are:

Robotic Technologies Enabling the Exploration of Lunar Pits

William Whittaker, Carnegie Mellon University, Pittsburgh

This mission concept, called Skylight, proposes technologies to rapidly survey and model lunar craters. This mission would use high-resolution images to create 3D model of craters. The data would be used to determine whether a crater can be explored by human or robotic missions. The information could also be used to characterize ice on the Moon, a crucial capability for the sustained surface operations of NASA’s Artemis program. On Earth, the technology could be used to autonomously monitor mines and quarries.

[Mini Bee Prototype to Demonstrate the Apis Mission Architecture and Optical Mining Technology](https://www.nasa.gov/directorates/spacetech/niac/2019_Phase_I_Phase_II/Mini_Bee_Prototype)

Joel Sercel, TransAstra Corporation, Lake View Terrace, California

This flight demonstration mission concept proposes a method of asteroid resource harvesting called optical mining. Optical mining is an approach for excavating an asteroid and extracting water and other volatiles into an inflatable bag. Called Mini Bee, the mission concept aims to prove optical mining, in conjunction with other innovative spacecraft systems, can be used to obtain propellant in space. The proposed architecture includes resource prospecting, extraction and delivery.

1. <https://www.merriam-webster.com/dictionary/ought> [↑](#footnote-ref-1)