ST. Mark’s TS Counterplans (1/8/12)

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## 1NC Baker Institute CP (Vision for Space Exploration)

**Text: The United States federal government should restructure the Orion program to reduce the size of the crew to three members, shift the Orion program to an X-38 lifting body with land-landing capability, and reinstate the Ares V heavy lift vehicle program.**

**The counterplan solves all of the case and the solvency deficits but does not bring back Ares I—that’s critical to shift NASA’s focus to international cooperation and HLVs—turns the case.**

**Abbey and Lane 9** (Neal Lane is the Malcolm Gillis University Professor and Senior Fellow of the James A Baker III Institute for Public Policy at Rice University and served in the Clinton Administration as Science Advisor to the President and Director of the National Science Foundation. George Abbey is Senior Fellow of the James A Baker III Institute for Public Policy at Rice University and former Director of the NASA Johnson Space Center in Houston Texas “Maximizing NASA’s Potential: In Flight and on the Ground Recommendations for the Next Administration.” http://bakerinstitute.org/publications/SPACE-pub-ObamaTransitionAbbeyLaneMuratore-012009.pdf //Donnie)

This is by far the most challenging element of the five-point plan. One approach to restructuring would be to switch the early focus from the moon and Mars to enhanced support of the international space station. A clearly stated rationale for the ISS, such as continued international cooperation on the peaceful uses of space, scientific research in particular, would be important. Extending space shuttle flights through 2015 would reduce reliance on Russia for transportation to the ISS and provide the large up-and-down mass capability needed by all ISS partners. The Constellation program would be restructured by canceling Ares I. Ares I, if successful, doesn’t offer much of an advantage over other Earth-to-orbit launchers and its development will take too long and use valuable funds. In addition, canceling other lunar surface-related work— including the lunar lander, the space suit, the rover, and other habitat and surface systems work—would focus the NASA workforce on immediate challenges. These activities can be resumed at an appropriate time in the future. Canceling human-Mars discussions would be a pragmatic statement that recognizes the incredible challenges of a Mars mission. Robotic missions to Mars should be flown exclusively, at least for the next decade, with extensive surface exploration by rovers. The present Orion program would be restructured to reduce the size of the new spacecraft to a three-member crew, Apollo-sized vehicle or an X-38 lifting body vehicle with land-landing capability. The smaller-sized vehicle would be flown on an Ariane 5 or Delta IV launch vehicle, with a planned 2014 or 2015 launch to the ISS. ₪ stopped here at 16:54 ₪ Moving to one of these launch vehicles allows a more rapid deployment by decoupling the new spacecraft from the development of a new launcher such as Ares I. Development of the new spacecraft would be accelerated by reducing the crew size and the need for weight efficiency, and taking advantage of previous Apollo and/or X-38 development. This significantly reduces the technical risk in many key areas, such as thermal protection and parachutes. Weight and technical risk can be further reduced by designing the service module for ISS service missions, making it simpler. Europe and Japan should be invited to participate as Europe participated in the X-38 program. Parts would be provided in return for services (i.e., future launches to ISS). In order to ensure this international participation is meaningful and effective, the recommendations stated in the recent National Research Council report, “Beyond Fortress America,” should be implemented. This report provides an excellent assessment of the impact of building walls that compromise our ability to access global science and technology and that adversely affect our ability to compete globally. The report makes recommendations to reform the export control process, ensure scientific and technological competitiveness, and improve the nonimmigrant visa system that regulates entry into the United States of foreign science and engineering students, scholars, and professionals. It calls for immediate action “to stem a serious decline affecting broad areas of the nation's security and economy.” By not investing in a unique Ares I Earth-to-orbit human launcher, NASA will be positioned to take full advantage of emerging commercial Earth-to-orbit transportation services should they develop in the 2015-2020 timeframe. In our restructuring approach, the shift in near-term focus from lunar to ISS would be followed by building a capability for deep space asteroid or comet intercept as a longer-term focus based on an Ares V heavy lift vehicle. The Ares V heavy lift launch capability is critical to any further deep space exploration. By canceling Ares I, it should be possible to focus all of the agency’s launch vehicle development capability on designing the one launcher needed by the nation for future deep space work, and the one launcher not anticipated to be provided by the private sector. All options for providing an Ares V heavyweight launch capability will be studied, including liquid boosters, liquid fly-back boosters, and international cooperative options. This should include the evaluation of options such as proposed by the Direct Launcher concept that makes use of most of the existing shuttle hardware, including the two solid rocket boosters and the external fuel tank. The only key modifications would be an Apollo-like capsule at the top and an engine at the bottom of the external fuel tank. Although Ares also uses shuttle parts, it is essentially an entirely new rocket. The ability to fly to an asteroid would give the United States a lunar capability should one be needed in the future. A deep space mission, such as a human asteroid or comet intercept, would effectively demonstrate American leadership in space, should that be a concern in the face of a possible Chinese landing on the moon. It might even be argued that an American lunar return would do less to question U.S. space leadership than a more aggressive goal of performing a human asteroid intercept mission. To advance this and other concepts, a joint NASA-DOD propulsion research program should be initiated, as propulsion is a limiting factor in space exploration. An aggressive program focused on innovative advanced propulsion development has been needed for a long time. A restructured human spaceflight initiative should be premised on the idea that any future plans by the United States to return women and men to the moon, and someday to Mars, will need to be top national priority. It should involve many U.S. federal agencies, universities, and industries, and be fully international in scope. By restructuring the human spaceflight initiative, resources will be made available to allow NASA to contribute to other vital short- and long-term national priorities.

## 1NC Code of Conduct CP

**Text: The United States federal government should**

**- offer a Code of Conduct with enforcement mechanisms and transparency and verification measures for every country that agrees to all space-faring nations that prohibits harmful interference against human-made space objects and reduces practices that contribute to the weaponization of space.**

**- propose to the UN Committee on the Peaceful Uses of Outer Space that Article IV of the Outer Space Treaty ought to be changed to ban kinetic kill vehicles, space-based laser weapons, and ASATs.**

**Revising the OST solves an arms race**

**Englehart** 8 (Alex B. Englehart, contributor to the Pacific Rim Law & Policy Journal at the University of Washington School of Law, January 2008, “COMMON GROUND IN THE SKY: EXTENDING THE 1967 OUTER SPACE T REATY TO RECONCILE U.S. AND CHINESE SECURITY INTERESTS”, Pacific Rim Law and Policy Journal, Vol. 17, Num. 1, p.133-157, Jack)

It will not take much to effectively update the Outer Space Treaty to deal with emerging threats related to the development and deployment of space weapons and ASATs. As discussed above,134 the relevant portion of Article IV of the Treaty currently reads “States Parties to the Treaty undertake not to place in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner.”135 It should be updated to read: States Parties to the Treaty undertake not to place in orbit around the Earth any objects carrying nuclear weapons, any other kinds of weapons of mass destruction, kinetic kill vehicles, or directed energy weapons, install such weapons on celestial bodies, station such weapons in outer space in any other manner, or attack objects in outer space with weapons based on Earth. Put simply, Article IV of the Treaty must be updated to ban not only weapons of mass destruction—as it currently does—but also kinetic kill vehicles, space-based laser weapons, and ASATs. These simple changes would make a world of difference, and could prevent catastrophe. In any case, they will save all sides the enormous trouble and expense that would be involved in a full-fledged arms race in space. Eventually the legal regime in space will need a more complete overhaul along the lines of UNCLOS III—by the 22nd century, humanity’s use of space could easily be as common and complex as its use of the oceans is today—but in the near to mid-term, amending Article IV of the Outer Space Treaty in the manner described would be enough to avert the worst dangers.

**The code of conduct solves satellites and weaponization**

**Krepon 7** - Co-founder and contributor to the Stimson Center (3/5, Michael, “Will the Bush Administration Endorse a Space Code of Conduct?”, Space News, http:www.stimson.org/pub.cfm?id=402, accessed June 21, 2011)

Support is growing for a specific kind of multilateral space agreement that borrows heavily from the Bush administration’s own preferences. The mechanism in question is a Code of Conduct for responsible spacefaring nations that could either take the form of political compacts or executive agreements among like-minded states that wish to continue to enjoy the national security and economic benefits that satellites provide. Like the Bush administration’s Proliferation Security Initiative, a Code of Conduct for space could be designed by a core group of states to clarify responsible and irresponsible behavior. The core group might then invite any other spacefaring nation that wishes to abide by these high standards to join the group.

The European Union has now joined Canada in endorsing a Code of Conduct for responsible spacefaring nations. The commercial satellite industry also has expressed a strong interest in “rules of the road” for space.

The Bush administration has further distanced itself from America’s friends and allies by continuing to insist that new multilateral agreements related to space are “unnecessary and counterproductive.” No other nation in the world has adopted such a negative stance. Saying “hell no” to new multilateral agreements for space seems particularly questionable after China’s irresponsible test of an anti-satellite (A-Sat) weapon that endangers spaceflight in low Earth orbit for decades to come. George Washington’s farewell address warned against indulging in “habitual hatred” resulting in a slavish animosity that leads the United States to “stray from its duty and interest.” Rejecting a Code of Conduct for space because it smacks of arms control would seem to violate Washington’s sound admonition. The Bush administration has not yet taken a position towards a Code of Conduct for responsible spacefaring nations. Because rules of the road for space make so much sense, and because the Bush administration has championed other codes of conduct to prevent proliferation, it might still join in the emerging consensus on this issue. The administration’s reasoning against new multilateral agreements for space boils down to five arguments, none of which applies to the Code of Conduct.  First, administration officials argue that there is no likelihood of an arms race in space, therefore, there is no need for new multilateral arrangements. It is true that an arms race is unlikely, since arms racing has now been replaced by asymmetric warfare. But an arms race is not needed to do lasting damage to space, as the Chinese A-Sat test demonstrated. We can now see clearly that it takes very few kinetic energy kill tests and A-Sat weapons to result in significant damage to low Earth orbit. New diplomatic initiatives are needed precisely because an arms race isn’t needed to prevent the peaceful uses of outer space. The second argument advanced by the Bush administration is that arms control is a vestige of the Cold War and not terribly relevant to contemporary security concerns. Again, there is partial truth in this argument, because classic arms control arrangements dealt with a superpower competition that ended with the demise of the Soviet Union.  What used to be known as arms control has now morphed into cooperative threat reduction agreements, including rules of the road clarifying responsible behavior. Semantic arguments aside, the administration has itself championed multilateral agreements in the form of codes of conduct to prevent proliferation, such as The Hague Code of Conduct, as well as the Proliferation Security Initiative. We do not have to argue over whether these codes of conduct constitute arms control to conclude that these creative arrangements were sensible initiatives.  A Code of Conduct for space also would be quite useful in making the Chinese kinetic-kill A-Sat test the very last of its kind. If codes of conduct relating to missiles and exports make sense for preventing proliferation – and do not, in the Bush administration’s vocabulary, constitute arms control – then surely a code of conduct also makes sense for activities in space. After all, troubling activities in space also could prompt vertical and horizontal proliferation on the ground.  The third argument that the Bush administration advances against new diplomatic initiatives for space activity is that there can be no agreed to definition of what constitutes “space weapons.” Moreover, verification is extremely problematic. Consequently, no multilateral agreement can be negotiated barring such weapons.  The administration is correct in pointing to the difficulties in defining and verifying space weapons. A code of conduct, however, focuses on activities, not on definitions of what constitutes a space weapon. For example, one key element of a Code of Conduct would surely be that responsible spacefaring nations do not engage in activities that deliberately produce persistent space debris, such as the Chinese A-Sat test.  This key element makes it unnecessary to define space weapons, since actions, not definitions, lie at the core of a rules of the road approach. Verification of noncompliance with this key element is quite straightforward, since it is very hard to hide the deliberate generation of persistent space debris.  The fourth argument advanced by the Bush administration to oppose new diplomatic initiatives for space is that the United States must preserve its right to self-defense – including the right to defend space assets. This argument is certainly valid, but it doesn’t justify rejecting a Code of Conduct. With such a code, the United States still would possess more capabilities than ever before to deter and, if necessary, punish states that take actions against U.S. satellites. The right of self-defense, however, is more likely to be invoked, and will be more difficult to execute, if there are no agreed rules of the road for outer space.  Lastly, the Bush administration contends that new diplomatic initiatives are unwise because U.S. freedom of action in space must not be constrained. By this standard, the Nonproliferation Treaty, the Outer Space Treaty, President Ronald Reagan’s Intermediate Nuclear Forces Treaty and President George H. W. Bush’s Strategic Arms Reduction treaties were all dreadful errors in judgment, since every one of these agreements limit the U.S. military’s freedom of action in some key respects. Using the Bush administration’s reasoning, the Geneva Conventions for U.S. armed forces also are unwise, as are codes of conduct long in place for the U.S. Army, Navy, Marines and gravity-bound Air Force. If freedom of action were the topmost U.S. national security objective, we would ditch all of these treaties and codes of conduct. Of course, no responsible political leader or public official would consider doing this. So why should we use this standard to oppose new diplomatic initiatives in space?

## 1NC ESA CP

**The European Space Agency should**

**- Substantially increase its operational capability for space situational awareness**

**- Pursue joint operations with the U.S. and other international space-faring nations to share debris information and create collective rules of the road for space**

**- Substantially increase efforts to mitigate hazards from space debris.**

**Counterplan solves the case**

**Pannu 11** Aman, Space Security and European Union -Leader, Decision Maker or Enabler?, Last date modified June 1 2011, Aerospace & Defence Consulting Analyst, Frost & Sullivan

Attaining full operational capability (FOC) will give Europe a sound platform to conduct technical exchanges with the likes of the US, aiming at improving the overall performance of the system. Moreover, it is estimated that the European SSA system would reduce the quantifiable estimated loss for European assets due to collision with debris and space weather (circa €332million on a yearly basis on average, not taking into account the collateral damage due to loss of services for critical satellite applications)8. An advanced fully operational SSA system can then be leveraged to enhance data sharing amongst international and national stakeholders enabling better tracking and monitoring of orbital debris, Space objects and any potentially threatening outer Space activities. The potential success of the European SSA system could then be applied to the formulation of broader international regulations and framework for areas such as debris mitigation procedures and spectrum management. Largely due to Europe’s balanced approach to security (without an intensive focus on military), and its collaborative rather than legally binding proposals, it is strategically positioned to align and collaborate with international stakeholders in reaching agreements on collective rules of the road and responsible behaviours within Space. However, before contemplating the success of such a system it is important to address some outstanding issues such as dual nature of end-user requirements for both civil and military, the rules of the road for data acquisition and sharing, categorisation / classification of assets as national or shared, and the potential access of the assets for the European SSA system. Initiatives / Programmes such as the Space Data Acquisition (SDA), which is mainly collecting data and processing it in order to avoid accidents and/or determine responsibilities if they take place, are enabling tools of this system. Frost & Sullivan suggests Europe should approach these issues in a consultative approach with an aim to define activities and expectations for each stakeholder. While undergoing the consultations with the European stakeholders it will be important to consider the impact of emerging rules of the road in relation to its implementation in the broader international framework in the future.

## 1NC Geoengineering CP

**Text: The United States federal government should establish and contribute funding to an international entity, with oversight by the International Council for Science,** **dedicated to implementing projects to add necessary quantities of calcium hydroxide to global oceans and to enhance the reflexivity of stratocumulus clouds through the spraying of marine salt water on stratocumulus clouds.**

**It solves—**

**Ocean quicklime solves ocean acidity and sequesters CO2**

**Wired 8** (7/22, New Geoengineering Scheme Tackles Ocean Acidification, Too, http://blog.wired.com/wiredscience/2008/07/new-geoengineer.html, AG)

A scheme to dump quicklime into the oceans to sequester more carbon in their depths is being revived by a British management consultant with backing from Shell. First proposed back in the '90s by Exxon engineer Haroon Kheshgi (.pdf), the idea takes advantage of a series of simple chemical reactions. Limestone, at high temperatures, breaks down into carbon dioxide and quicklime, in a process that produces greenhouse gas. But dump that quicklime in seawater, and it absorbs roughly twice as much CO2 as was released in the first reaction. The heat required to decompose the limestone will probably come from fossil fuel, generating more CO2, but even so, the sum of the process could be a reduction of the CO2 in the atmosphere. "If we discover we've overshot the amount of CO2 the environment can cope with, the carbon-negative process I'm describing can reduce the amount of carbon dioxide in the atmosphere," said Tim Kruger, founder of Cquestrate.com, which has drawn seed funding from Shell and bills itself as developing an open source solution to climate change. Geoengineering projections have shown that it might be possible to stop the warming of the Earth, but the workable ones have had a big problem: the oceans. While schemes like shooting sulfur dioxide into the stratosphere to deflect some of the sun's energy could cool the Earth, they don't deal directly with the problem of carbon dioxide in the atmosphere. Regardless of the greenhouse effect, CO2 buildup will lead to ocean acidification, which could wipe out coral reefs and lead to large-scale oceanic ecosystem collapse. The quicklime scheme is different. It would go right at the heart of the CO2 buildup problem by removing the gas from the air and sequestering it in the world's oceans. It also makes the oceans more alkaline, directly combating ocean acidification. Of course, the scale of the project would have to be eye-poppingly large. The early calculations, Kruger told Wired.com, indicate that 56 billion cubic feet of limestone would be required to sequester each gigaton of carbon. Humans put out about 5.5 billion tons of carbon annually by burning fossil fuels, so a limestone offset budget could reach 300 billion cubic feet of limestone per year. The U.S. Geological Survey estimates limestone reserves as adequate for every country in the world. This scheme, however, would require a major ramp-up in lime production from the 300 million tons now produced in the world.

**Boosting cloud reflexivity blocks the terminal impacts of warming and gives us time to adapt**

**Ravilious 5** (Kate, The Guardian, Clouds could clear way to saving planet 2/10, http://www.guardian.co.uk/science/2005/feb/10/environment.society, AMiles)

Earth looks as if it is about to overheat. Temperatures are rising, ice sheets are melting and all the evidence points towards a greenhouse future. But what if we could reduce the planet's temperature? Would that give us some time to wean ourselves off fossil fuels and find alternative sources of energy? This is what a group of eminent atmospheric physicists and an engineer are proposing, and they have come up with an idea to halt the Earth's warming. Using nothing more than salt water and wind power, they have designed a device that will increase the reflectivity of some of the Earth's clouds, bouncing more incoming sunlight back into space. They argue that this natural heat shield could be turned on and off at will, giving us a vital extra few decades to sort out the mess we are in. John Latham, an atmospheric physicist based at the National Center for Atmospheric Research in Colorado, first came up with the idea about 15 years ago. "I outlined my idea in Nature, but at that time there wasn't a strong awareness of the global warming problem and so there wasn't a big response," he says. But more recently, the idea of a greenhouse world has become a dinner-party conversation topic and suddenly everyone is interested in ways of preventing the Earth from turning into a sauna. Together with colleagues, Latham has resurrected the idea and this time people are starting to take it seriously. Clouds come in different colours, shapes and sizes and occur at various altitudes; not just any old cloud will do. An increase in the high-level, wispy, cirrus clouds would actually have the opposite of the desired effect: making the Earth warmer as they trap more heat in. It turns out that the low-level, lumpy grey clouds, known as stratocumulus, are the best for the job, bouncing sunlight back into space, off their bright, shiny tops. Which is all very well, but how do you go about making stratocumulus cloud more reflective? Stephen Salter, the innovative Edinburgh University engineer, (known best for his invention of Salter's duck - the 300-tonne floating canister designed to drive a generator from the motion of bobbing up and down on waves) thinks he has the key. "We need to atomise seawater and throw tiny droplets into the air," he says. The idea is that this fine mist of sea-spray evaporates, leaving tiny particles of sea salt that get sucked up into marine stratocumulus clouds on rising currents of air. These little particles act as centres for extra droplets to form. "Clouds become more reflective if you increase the number of droplets in them," explains Latham. A bonus of filling the clouds with smaller droplets is that they tend to last for longer, reflecting more sunlight back into space, before they disperse. To produce this fine mist of sea spray artificially, Salter envisages thousands of unmanned yachts zigzagging across the sea, carrying equipment to make very choppy waves, known as Faraday waves. A high-frequency ultrasonic generator would spin seawater around inside a grooved drum, producing tiny waves that are thinner than a human hair. "It looks a bit like a cup of coffee on a rattling train, but it would be nearly vertical," says Salter. Once the waves are steep enough, drops of water are thrown up from their crests. "All we need to do is try and get these fine droplets into the first few metres of air, and meteorology will do the rest," says Latham. To remain truly environmentally friendly, the yachts would be driven by wind acting on the spinning drum, like a sail. Movement of the boat through the water would drive propellers acting as turbines, to produce the electrical power for spinning the drums and driving the ultrasonics. Meanwhile, satellites would direct their movements, placing the yachts in the areas of ocean where the most effective stratocumulus clouds could be modified. But would it really work? If calculations and computer models are to be believed, then yes, the physics of this idea is sound. Working together with Tom Choularton, of Manchester University, and Mike Smith, of Leeds University, Latham has done extensive calculations to make sure he has got his sums right. In addition, they have tested the idea using the Meteorological Office's Global Climate Model and shown that increasing the droplet numbers in marine stratocumulus clouds could have a significant effect.

## 1NC Near Space CP – ORS

**Text: The United States federal government should substantially decrease dependence on space assets in favor of near-space assets, starting with mission critical capabilities including but not limited to early warning satellites. The United States federal government should cancel Operationally Responsive Space.**

**That solves vulnerability and prevents an arms race**

**Weston, Air Force Major, 9** (Scott A., 3/1/2009, Air and Space Power Journal, “Examining Space Warfare,” http://www.airpower.maxwell.af.mil/airchronicles/apj/apj09/spr09/weston.html, mat)

The main argument for US weaponization of space turns on the inherent vulnerability of space assets and the fundamental need for them to ensure national security and prevent another Pearl Harbor. Space-based weapons and ASAT systems seem to reduce vulnerability either through active defense or deterrence (though that assertion becomes questionable if one takes into account the likely weapons race that would result). They do nothing, however, to address the dependence of military forces upon such systems and create a requirement for a permanent “global fortress” in space. But recently, near-space technologies such as high-altitude unmanned aerial vehicles have shown potential for reducing military dependence upon space-based assets by performing command and control, communication, and ISR missions similar to those conducted by satellites.42 Sensible policy making requires debating the implications of trying to directly defend space assets versus developing alternative military capabilities that would reduce our military reliance upon space and thus diminish the attractiveness of space assets as targets for our adversaries. Though long-term investments, both space-based defenses and near-space vehicles create very different potentials for US space policy. Uncontested control of the high ground of space seems tempting, especially for a superpower. It is unrealistic to base US policy on this school of thought, however, due to the ability of other spacefaring states to counter US interests by developing their own space weapons and beginning a new arms race—or simply bypassing deployed defenses. 43 Though stable, current US space policy cannot last without a strong diplomatic structure. The rise of another nation to challenge the United States in space will surely alter the status quo in a manner unacceptable to us. Bruce DeBlois articulates a better choice: “The decision to weaponize space does not lie within the military (seeking short-term military advantage in support of national security) but at the higher level of national policy (seeking long-term national security, economic well-being, and world­wide legitimacy of US constitutional values).”44 This view uses the current US ability to lead negotiations from a position of authority and power to ensure the creation of rules of the road and, eventually, treaties that will protect US space interests in the future. Combined with existing passive defenses and the development of near-space defenses for addressing security vulnerabilities and requirements, a “space sanctuary” provides economic, political, and even security advantages.

## 1NC Near Space CP – SPS

**CP text depends on plan text.**

**Near space is cheaper and solves the case**

**Agietti, prof of aerospace design, 8** (Guglielmo S., Environment and Development, “High Altitude Electrical Power Generation,” http://www.wseas.us/e-library/transactions/environment/2008/28-627.pdf, mat)

Another possibility would be to collect solar power in space, as most satellites do in order to power their subsystems. Here a sun pointing surface would receive a constant power of about 1367 W/m 2 that would allow a production of about 12000 kWh per year for the same PV system mentioned above (over an order of magnitude greater than what can be achieved on the ground in the UK). This possibility was considered in the 1970s by Glaser [1], who proposed the large scale collection of solar power using a large satellite platform that would then transmit the energy to the ground using microwave radiation. However, the development of his Satellite Solar Power (SSP) concept was stopped by a mixture of safety concerns (regarding the transmission of energy from the satellite platform to the ground using a microwave beam), as well as technical issues (such as the losses in the energy conversions and transmission), and the very high cost that always denied the economical feasibility of the system. As an intermediate solution between SSP and Ground Based PV devices we propose the possibility to collect the solar energy using a high altitude aerostatic platform [2], [3], which would support PV devices above the clouds and bring energy to the ground via its mooring line. This approach allows most of the issues related to the weather condition to be overcome, as the platform will be above the clouds except in very extreme weather situations, and it would bring a relevant advantage in the production of energy. At the same time, as the platform is above the densest part of the troposphere, the sun’s radiation will travel through considerably less air mass than if it was on the ground (particularly during the early morning and evening) and this will further improve the energy output. The choice of transmitting the energy produced to the ground using the mooring line of the aerostatic platform allows to solve most of the problems concerning the safety issues and to limit the electrical losses. The cost for this “augmentation” is mainly constituted by the cost of the aerostatic platform and tether system. The study that we carried out (see ref [3]) considers the economical advantage that this technology could bring, showing that including all these factors it could be possible to make the energy available on the ground at a lower cost than that can be achieved by solar panels based on the ground in northern European countries.

## 1NC Near Space CP – Environmental Monitoring

**CP text depends on plan text.**

**Counterplan solves science monitoring**

**Pankine, PhD in planetary science, et al 9** (8/2011, Alexey Pankine, Zhanqinq Li, prof of atmospheric science, David Parsons, Michael Purrucker, Elliot Weinstock, Warren Wiscombe, Kerry Nock, American Meteorological Society, “Stratospheric Satellites for Earth Observation,” http://denali.gsfc.nasa.gov/research/purucker/pankine\_stratsats\_bams\_2009.pdf, mat)

SUMMARY. At present, no investment is being made in developing very long-life stratospheric balloon technology primarily for Earth science applications. The current investments are focused on multiton astrophysical payloads that look upward into space and that usually care little about their geographic location except when they desire a view of either the northern or southern celestial sky. Earth science balloon technology requires a different development path because trajectory guidance is essential and, because payloads are lighter, balloons can be made much smaller. Nevertheless, most technology could be adapted from the astrophysical balloon technology path and thus comes heavily leveraged. The existing balloon launch facilities in Texas, New Mexico, Alaska, Sweden, Australia, and Antarctica could also be used. If the necessary steps to realize the promise of very long-life stratospheric platforms for Earth science are taken, constellations of StratoSats could work in collaboration with other elements of the Earth observation “sensor web” like UAVs and satellites to transform our understanding of the Earth and its atmosphere. The cost of a constellation of 100 StratoSats is less than a cost of a single satellite because they are inherently much less costly and because, unlike with satellites, economies of scale further drive down the price. In addition, StratoSats could allow a more rapid and flexible iteration cycle in instrumentation and observing strategy than is possible with satellites. Once their potential in this regard begins to be realized, we expect that students and professors will find them to be very attractive platforms for their own measurements as well as for educational purposes. Indeed, in the astrophysical community the balloon program is a training ground for students who eventually go on to propose and win satellite investigations. StratoSats could make important contributions in four scientific areas today. First, they could validate climatically crucial Earth radiation energy budget retrievals made using satellites and help to eliminate the current diurnal and sun-angle biases; constellations could help reveal the dynamic quality of radiative fluxes in short-term events such as dust outbreaks. Second, StratoSats could study stratospheric and upper-tropospheric chemistry, especially water vapor, which exerts a profound feedback effect on climate, and measure trace gas profiles for unprecedented durations and for regions above 20 km rarely sampled in situ. Third, they could map the Earth’s crustal magnetic field at never-before-achieved spatial scales, producing a revolutionary map of the magnetic Earth that could lead to new understandings of the Earth’s crust. Finally, they could patrol the tropical and midlatitude atmosphere to provide measurements that could improve the predictions of the paths and intensities of storms and, by dropping dropsondes on command, provide adaptive measurements to improve the predictability of weather. In summary, the development of StratoSat constellations will enable new science and new observational techniques that will help us to advance Earth science in many ways that can be foreseen today, and, as is common with new platforms, other ways that are as yet only dimly perceived are certain to emerge.

## 1NC Russia CP

**CP text depends on plan text.**

**Russia’s space program is excellent—it’s comparable to the US**

**HARVEY 2007** (Brian, author of several books about space, The rebirth of the Russian space program: 50 years after Sputnik, new frontiers, p. 316)

Despite all that, the Russian space program clawed its way back. In 2000 Russia regained its place as the top space-faring nation in numbers of rockets launched each year. When the American space shuttle Columbia burned up in 2003, it was Russia that kept the International Space Station going, smoothly and without fuss. Against the odds, Russia managed to: • keep the Mir space station in operation until its safe de-orbiting in 2001; • build the core modules of the International Space Station, Zarya and Zvezda, as well as supply a docking module, Pirs; • send a regular supply of Soyuz and Progress missions up to the ISS, including new versions of both: the Soyuz TMA and Progress Ml models; • maintain a military space program; • sustain a space applications program. The Russian space program demonstrated a high level of adaptability to the new, difficult and uncertain economic conditions. This was most clearly demonstrated by: • the establishment of a national space agency, the RKA, now Roscosmos; • the turning around of the program from the most self-sufficient national program to the most globally competitive in the world; • the attraction of significant foreign investment to sustain the manned and unmanned program; • 87 space-based companies which entered joint ventures with American and European companies to sustain and develop their projects; • the opening of new cosmodromes (Svobodny and Dombarovska), the development of new launching systems (Barents Sea) and a launch base in French Guyana; • the adaptation of missiles to serve as launchers: Rockot, Start, Dnepr and Shtil; • the introduction of new upper stages: Ikar, Fregat, Briz KM and Briz M. The Russian space program began to show the promise of new life: • fresh groups of cosmonauts were recruited; • the production line of the Soyuz and Proton rockets was increased; • the Soyuz 2 series was introduced; • progress was made in the preparation of a new family of rockets, the Angara. It is possible that 1997 marked the low point of the extreme financial and organizational pressure inflicted on the Russian space program. Ten years later, Russia was in a better position to develop future projects. In 2005 the government approved a new federal space plan. Here we review its key elements, for they mark out the intended future path of Russian space exploration.

## 1NC “We” PIC

**CP text depends on plan text.**

**The use of “we” kills agency and subjugates dissidents to a tyrannical state- it kills social movements**

**Kerr 3** (Roger, Executive Director of the New Zealand Business Roundtable, “The ‘We’ Word: And the Tyranny of the Majority,” http://www.freerepublic.com/focus/f-news/1049792/posts, mat)

False collectives-what Americans call 'weasel words'-poison the language we use to talk about public affairs by cobbling together spurious majorities, writes Roger Kerr 2003 marked the centenary of George Orwell's birth. Orwell was one of the most profound writers of the 20th century. His two satires on Soviet totalitarianism-Animal Farm and Nineteen Eighty Four-were antidotes to the attractions of ideology and, in the case of Nineteen Eighty Four, to attempts to use language as a form of thought control. We are still familiar with the two features of totalitarian thinking that Orwell exposed, namely, 'doublethink' and 'newspeak'. Doublethink refers to the capacity to subscribe to two contradictory beliefs at the same time, as in slogans like 'war is peace', 'freedom is slavery', and so on; newspeak was the regime's official language which, by controlling and limiting speech to an officially approved and crudely simplified vocabulary, would make dissenting thoughts literally inconceivable. Another thinker who was alert to the political implications of language was Friedrich Hayek. In his last book, The Fatal Conceit, Hayek devoted a chapter, titled 'Our Poisoned Language', to the collectivist bias in the way we talk about public affairs. This is part of Hayek's wider argument that socialism is a throwback to primitive tribalism, in which the tribe could survive only by acting as one. The central word here is 'society', which of course refers to a group of people but which is often used, tacitly and even unconsciously, to refer to more than that-namely, to a group that has an overriding, collective goal and therefore has to make central decisions, even though societies can and do exist without having collective goals and without central decision-making. In modern speech, Hayek writes, the adjective 'social' is applied indiscriminately to a huge number of nouns in a way that undermines their original meanings and recruits them into a collectivist cause. Take the idea of justice. Let's say that this means the fair and impartial application of legal, moral and perhaps customary rules. But precede it with the word 'social' and everything changes. Social justice may require redistributing property and treating people unequally. In this way the word 'social' empties the nouns it is applied to of their meaning. Hayek goes on: . . . it has in fact become the most harmful instance of what, after Shakespeare's 'I can suck melancholy out of a song, as a weasel sucks eggs' (As You Like It, II, 5), some Americans call a 'weasel word'. As a weasel is alleged to be able to empty an egg without leaving a visible sign, so can these words deprive of content any term to which they are prefixed while seemingly leaving them untouched. A weasel word is used to draw the teeth from a concept one is obliged to employ, but from which one wishes to eliminate all implications that challenge one's ideological premises.1 Another term that has been almost completely emptied of meaning by being called social is 'right'. A right properly means a sphere of freedom that is protected by law, or a just claim. But nowadays, by being prefixed with 'social' or related words like 'welfare', a right is taken to mean a claim to redistribution that the law enforces. The right to work, for example, by being made a 'social' right, has ceased to mean that the state should not interfere in voluntary labour contracts, and has become a demand that the government guarantees a job to everyone who wants one. This, taken to its logical conclusion, could mean the central direction of labour and severe restrictions on the freedom to enter into labour contracts. What we have here is a form of linguistic piracy, in which the favourable connotations of a word are hijacked and used for purposes that are often the opposite of those suggested by its original sense. No-one wants to be opposed to rights, but plenty of people are opposed to the limits on government that rights imply. The word 'social' conjures those limits away. A related example of this sort of chicanery is the idea of 'fair' trade. Advanced as an alternative to free trade, fair trade simply means protection. Yet free trade is perfectly fair in the sense that it takes place under the rule of law and on a level playing field. But the very term 'fair trade' subtly implies that free trade is unfair, and who wants to be seen to support unfairness? So as the term gains currency, the burden of proof is quietly passed from the advocates of protection to the advocates of free trade. Hayek's analysis of the collectivist bias of language and especially of the word 'society' can be extended to a range of related and common words. We all know that the communists shamelessly used the term 'the people', in phrases like 'people's republic', to pretend that their regimes were genuine and legitimate expressions of the collective will of their subjects. Yet in the West we often use such terms in similarly distorting, if more subtle, ways. In the public meetings that precede planning decisions, opponents of a proposal to build a supermarket, or a road, or whatever in a locality typically say things like 'the government should listen to the people'. But supporters of the proposals may well say the same thing. When public opinion is divided, each side likes to enlist the notional support of 'the people' to legitimise its stance. What the advocates really mean, of course, is that the government should listen to 'me'. Again, take the term 'public'. 'Public spending', for example, should literally mean spending undertaken by members of the public. But it has come to mean government spending, regardless of whether the public wants it or approves of it: all the public has to do with it is to pay for it. A similar distortion appears with the terms 'public sector' and its counterpart, 'private sector'. Some people genuinely believe that the 'public sector' is so called because it embodies the interests of the people as a whole, in contrast to the 'private sector', which embodies the special interests of private businesses. 'Public' is a term that nowadays subtly shifts us from talking about the people as a whole to talking about the government and its agents and employees, and into assuming that anything done by arms of the government is by definition in the common interest. Another such term, much loved by politicians, is 'community'. A community, strictly speaking, is a group of people with common interests and experiences, and probably some face-to-face contact. A community so defined has to be rather small: a village, say, or a profession, like 'the medical community'. But sometimes the word is stretched to cover what we should call, perhaps, 'the nation', or 'the general public' if we could trust ourselves to use that term properly. The members of a nation are mostly anonymous and unknown to one another, and have diverse opinions, preferences and experiences. Although they share an historical national identity and a common legal identity as citizens, to describe such a group as a 'community' is to pretend to a higher level of collective sympathies, interests and goals than in fact exists. It tends therefore to expand the agenda of collective decision-making beyond what is necessary, and encourages acquiescence in the aggrandisement of the state. Of all such terms, 'we' is the most subtle and troublesome. It is a term that we-so to speak-cannot dispense with, and so we risk being trapped into connotations that we don't intend or are unaware of. 'We' can be used in an individualistic sense: 'we' taken as individuals, who can act and make decisions on our own behalf. But it can also be used in a collective sense, meaning that on each issue 'we' have to make a single decision that applies to all of us. For example, after a natural catastrophe, someone might say, 'we should all help the victims'. The words by themselves don't expose two crucial distinctions: whether assistance should be by each of us as individuals or organised on a collective basis; and, if collective, whether it should be voluntary (through donations) or involuntary (through government action financed out of taxes). But my deeper point is that this ambiguity of 'we' can lead us into collective thinking and coercive action where it isn't necessary. Political rhetoric is full of phrases like 'we as a nation must decide whether we want a national airline/film industry/manufacturing sector/whatever'. This assumes that 'we' have to make a single, collective decision as voters, whereas in reality 'we' as individuals are making that decision every day. If consumers prefer a domestically manufactured product to an imported one, a domestic manufacturing industry or firm will be there to meet the demand; if they prefer the imported product it won't. The demand that 'we as a nation must decide' is to call on people to decide through the political system things that they can readily resolve as individual consumers. The 'we' word may also be used by members of groups that are smaller than, and contained within, the wider society. In a system that encourages lobbying by special interests and institutionalises 'disadvantaged' minorities, spokespersons of those groups may be tempted into a false collectivism. The media encourage this by commonly treating any member of a disadvantaged minority as automatically representative of that sub-set, as if all its members were unanimous about every issue. Underlying the individualist and collectivist senses of 'we' is the distinction between what David Green calls 'corporate association' and 'civil association': A 'corporate association' is composed of persons united in pursuit of a common interest or objective . . . In the pure form of a nation as a corporate association, there is but one overriding national objective. In a nation of 'civil associates', people are united not because they share a concrete goal, or are engaged together in a substantive task, but because they acknowledge the authority of the rules under which they live . . . The task of government under a corporate association is to manage the pursuit of the common goal and to direct individuals as appropriate . . . The task of the state under a civil association is to maintain and enforce the laws, and to supply services such as defence, which must be financed from taxation. The role of government is limited and subject to the law.2 As Green notes, if we take society to be a civil association rather than a corporate association, the role of what 'we' collectively have to decide is limited to genuine public goods like law-enforcement and defence-since these are goods that we individually can't otherwise produce in the desired amounts-plus some form of collectively provided social safety net. There are not many genuine public goods, and the number is shrinking with advancing technology. But the constant use of the collective 'we' in political debate tends to push out the agenda of government into areas where we as individuals are capable of looking after ourselves. Indeed, most of the time the 'we' word is really a disguise for the 'it' word: the government. Those who argue that 'we as a nation' must decide whether we want a manufacturing industry are really saying that, since 'we' as individual consumers have shown that we prefer imports, the government should override those preferences and protect domestic manufacturers from import competition. The scope for special interests to advance under the cover of the 'we' word is obvious. It is true that sometimes such government intervention does appear to command a degree of popular support, and it is a huge advantage to a special interest seeking government favours when this is the case. Indeed, not only special interests but governments themselves are constantly in the business of testing 'public opinion' with polls, consultations, focus groups, and so on, trying to come up with putative majorities to legitimise their proposals instead of seriously demonstrating that they serve genuine collective interests. But the further away 'we' collectively are taken from 'us' individually, the more contrived, artificial and fragile is the 'majority' that is formed in our name. For example, advocates of bigger government like to cite opinion polls that appear to show that a majority approves of higher taxes to finance better health, education or welfare benefits. Four major objections can be raised against this. First, the question itself assumes that it is axiomatic that higher taxes actually result in better services. They may well not, but the opinion pollsters don't normally accommodate this possibility. Second, the polls typically present a bogus either-or choice between raising taxes and leaving them unchanged. They exclude the entirely feasible options of charging for some services and lowering taxes to allow more individuals to make private arrangements. So the majority for higher taxes is largely contrived. Third, some of the many beneficiaries may expect others to pay the higher taxes: 'we' doesn't include 'me', as it were. Finally, we tend in the privacy of the polling booth to vote against higher taxes, whatever we think we should say to opinion pollsters. Several Western political parties have lost elections in recent years after promising to increase taxes, or after increasing them when they had promised not to. It is a major problem for opinion polls that respondents may not reveal their true preferences but express preferences that are socially fashionable. Again, the collective 'we's that are constantly cobbled together in support of some proposal or other are highly dependent on the phrasing of whatever it is that is being put to us. The question 'Should we protect our manufacturers from import competition?' may be supported by a majority. But if the question were rephrased 'Should the government raise the prices of manufactured goods by levying a tax on manufactured imports?', the majority would be smaller or even non-existent. If the 'we's that opinion polls record are so precarious, it's not surprising that they can be contradictory as well. A good example comes from the United States in the mid-1990s. In 1994, a new Republican-dominated Congress thought it had a clear mandate to move towards a balanced budget. It duly put up proposals to reduce the growth rate of some welfare entitlement programmes. But no sooner had the proposals been passed than President Clinton vetoed them, invoking the support of a new majority opposing them. Which did US citizens want? A balanced budget or guaranteed entitlement levels? They wanted both. The 'will of the people' may be systematically ambiguous on the decisions that governments make on a daily basis. The truth is that few consequences for the respondent hang on the answers given to an opinion pollster, and there is little incentive to make a considered judgment. This is largely true of voting as well, since a single vote hardly ever determines the outcome of an election. But there is some evidence that people take voting relatively seriously. Devotees of the 'we' word might therefore be challenged to consider making more use of the system of citizens initiated referenda. They are unlikely to do so because, unlike with opinion polls, the results of a referendum cannot be easily manipulated. But the challenge could at least inject a little linguistic hygiene into the Towers of Babel that politicians, lobbyists, intellectuals and journalists have constructed in modern democracies. This is not to suggest that the collective 'we' must be confined to the limited range of collective or public goods that a government has to fund or produce in a civil association. Although the members of a society like Australia or New Zealand are for the most part unknown to one another, we have common bonds and share a common destiny. A civil association does not conscript its members into overriding collective purposes, but nor is it merely a collection of atomised individuals who have nothing to do with one another. We have our voluntary collective activities, like sports, churches, associations of all sorts, and our annual timetable of festivals and rituals. When referring to our common life, we can use the 'we' word without ambiguity or sleight of hand. The problem arises when our common life is made the basis for what are usually spurious majorities for expanding the scope of government beyond its necessary limits. Such majorities typically reflect only the shifting and temporary coalitions that our political system produces, and government that is beholden to them ceases to be the agent of the society and becomes an instrument of coercion. So beware the 'we' word in politics, since, despite its apparently communitarian connotations, it so often portends a weakening rather than a strengthening of social cohesion. A key feature of constitutional democracy is the protection of minorities and the rights of dissenting, law-abiding individuals. Exercising through politics the so-called 'tyranny of the majority', and trampling on individual rights, are recipes for social discord at best and a slide into an Orwellian world at worst.