

Sun Tzu

The Art of War

544 BC – 496 BC

Applicability to Space Warfare

Due to the Infancy of Space Warfare Planning, Employing Just One or Two of these Space Strategies May be All That It Takes to Win the Space War

Info War

Force Status

Sun Tzu Statement 1: When able to attack, we must seem unable. When using our forces, we must seem inactive. Pretend to be weak, that he may grow arrogant.

Space Warfare Strategy 1:	Deploy many covert space weapon systems & sensors with remote basing (air, sea, undersea, ground mobile, space, Moon).
Space Warfare Strategy 2:	Deploy space weapon systems & sensors with multi-spectral camouflage coverings.
Space Warfare Strategy 3:	Deploy space weapon systems & sensors in space with low observables coatings.
Space Warfare Strategy 4:	Deploy space weapon systems & sensors in space with special shapes that do not readily reflect light back to the Earth.
Space Warfare Strategy 5:	Deploy space weapon systems & sensors in space that can change attitude so they do not readily reflect light back to the Earth.
Space Warfare Strategy 6:	Deploy covert space weapon systems & sensors in unusual orbits to avoid detection and precise targeting (highly eccentric, Lagrangian points, between geosynchronous orbits and the Moon, & beyond the Moon).

Space Warfare Strategy 7:

Deploy covert space weapon systems & sensors that continuously change their orbits while outside an adversary's sensor coverage (e.g., maneuver over the South Pacific and the Poles). Continuous low-level thrusting may frustrate orbital dynamics tracking software. Frequent changes in RADAR and Optical cross section by attitude changes and deployment of shields and umbrellas would confuse continuity of ownership of space objects.

Space Warfare Strategy 8:

Develop covert space weapon systems that hide inside innocuous space objects (civilian & science missions; space objects playing dead). Have exit doors on side of space object away from the Earth (zenith face) & most sensors.

Space Warfare Strategy 9:

Develop some overt space weapon systems that stay in garrison, or are transported to other theaters that do not threaten the theater that one is planning to attack.

Space Warfare Strategy 10:

Develop some overt space weapon systems that have limited technical and operational capabilities and appear to be the main space threat, but a covert weapon system is actually firing at the same time as the overt system.

Space Warfare Strategy 11:

Develop some overt space weapon systems that have limited technical and operational capabilities and that will adsorb an adversary's main spoiling or counter-attacks (including SOF, HUMINT, & Cyber attacks that may take considerable pre-planning, and will waste adversary pre- & trans-conflict resources).

Space Warfare Strategy 12:

Develop some overt civil & commercial space systems that can also have space weapons capabilities (e.g., space maintenance robot).

Space Warfare Strategy 13:

Develop a plan for space sensors to "ping" space objects according to a harmless, pre-planned schedule that does not reveal plans for a surprise attack against intended targets.

Space Warfare Strategy 14:

Encourage allied space sensors to "ping" only space objects that are not part of an overall surprise attack plan.

Space Warfare Strategy 15:

Do not deploy non-space forces in any threatening way, or deploy them in theaters other than those one intends to support with space weapons.

Space Warfare Strategy 16:

Have the State Department devote considerable energy in emphasizing different political and social theaters that do not point to the intended targets and theater of the surprise attack.

Space Warfare Strategy 17:

Have the State Department devote considerable energy in emphasizing no first use of space weapons.

Space Warfare Strategy 18:

Have the State Department devote considerable energy in emphasizing no use of debris-causing space weapons, especially if these types of weapons will be used in the surprise attacks.

Space Warfare Strategy 19:

Have the Military Departments devote some energy in emphasizing possessing limited, if any, space weapons capabilities.

Space Warfare Strategy 20:

Develop alliances and treaties with more capable space partners so that you may make use of their space weapon systems in times of war.

Space Warfare Strategy 21:

Deceive, Deny, Disrupt, Degrade, or Destroy adversary space sensors and intelligence collection capabilities. This includes use of cyber weapons and counterintelligence techniques. Cover up when adversary space intelligence collections assets are overhead and within view.

Space Warfare Strategy 22:

Shield indicators of space weapons beginning attack sequences (maneuvering, thrusters warming up, thrust plumes in space, other powering up, increased thermal signatures, new systems coming on-line, increased telemetry traffic, actions after passing terrestrial control stations, doors & covers opening, changes in attitude, changes in shape, shields extended, etc.).

Space Warfare Strategy 23:

Fake the deaths of various satellites with covert, reserve space weapons missions, over a period of months and years before the surprise attacks.

Space Warfare Strategy 24:

Determine the most threatening regions of space to pre-position space weapons for the best coordinated & optimized attack sequences. These are not necessarily physically close to the targets, but are close in orbital space (minimizes delta-v) and maneuver time. Make sure the space weapons do not move into these sets of orbital slots until the last possible moment before attack initiation. Since there are multiple solutions to these optimized orbits, chose those that have the least coverage from adversary space surveillance assets, and/or are blinded by Sun, Moon & Earth limb exclusion zones. Use the longest range space weapon systems for those orbital attack locations that are the most obvious, in order to delay & confuse the target warning decision loops.

Space Warfare Strategy 25:

Concentrate space forces only at the last moment before attack.

By discovering the enemy's dispositions and remaining invisible ourselves, we can keep our forces concentrated, while the enemy's must be divided. Let your plans be dark and impenetrable as night, and when you move, fall like a thunderbolt. If we know that our own men are in a condition to attack, but are unaware that the enemy is not open to attack, we have gone only halfway towards victory. If we know that the enemy is open to attack, but are unaware that our own men are not in a condition to attack, we have gone only halfway towards victory. We are not fit to lead an army on the march unless we are familiar with the face of the country-its mountains and forests, its pitfalls and precipices, its marshes and swamps.

Sun Tzu Statement 2:

Space Warfare Strategy 26:	Develop & employ covert space surveillance systems.
Space Warfare Strategy 27:	Only openly report space surveillance capabilities that are less capable (range, sensitivity, throughput, numbers of systems, mobility of systems, etc.) than reality.
Space Warfare Strategy 28:	Hide space surveillance systems communications & data rate channels.
Space Warfare Strategy 29:	Be careful of which & how many orbital elements are reported openly, so as not to give a potential adversary an idea of your space surveillance system's full capabilities.
Space Warfare Strategy 30:	Conduct multiple fake space system maneuvers (& terrestrial mobility re-deployments) to draw away an adversary's space systems from the main point of attack.
Space Warfare Strategy 31:	Conduct multiple small space system attacks to draw away an adversary's space systems from the main point of attack.
Space Warfare Strategy 32:	Detect, understand & monitor both allied and adversary space choke points and centers of gravity (geographic, orbital, communications, social, doctrinal etc.).

Space Warfare Strategy 33:

Truly understand not only your adversary's space force status and dispositions, but also allied force status and dispositions. Do not let security restrictions obscure to competent commanders the true capabilities of your own forces, or of others. Understand the potential impacts of adversary non-space forces on your space force status and dispositions.

Space Warfare Strategy 34:

Concentrate anti-satellite resources only against key regions of space (sun-synchronous, part of the geo-synchronous belts, etc.) that are significant Centers Of Gravity both for allied and adversary space systems. Gain space superiority only in those regions of space that matter.

Space Warfare Strategy 35:

Concentrate attacks against key regions of space only at the last moment when a shock & awe effect is warranted. For example, attack portions of the GEO belt from trans-lunar, vacant GEO belt sectors, highly eccentric orbits that are difficult to track, and Lagrangian points where adversary space surveillance assets have the least amount of coverage.

Space Warfare Strategy 36:

To attack Low Earth Orbits (LEO) space systems, use low inclination (close to zero degrees) anti-satellite systems that only need to increase altitude to engage their targets (low delta-v maneuver), yet would have little adversary space surveillance coverage at those latitudes.

Space Warfare Strategy 37:

Employ mobile anti-satellite systems to attack adversary space systems, particularly those that can be based in regions of low or no adversary space surveillance coverage (e.g., South Pacific, South Pole, Equatorial regions, etc.), to enable surprise attacks.

Space Warfare Strategy 38:

Pre-conflict, have very visible, but relatively harmless, space control development programs, while the real space weapon systems are covertly developed.

Space Warfare Strategy 39:

For kinetic kill anti-satellites, deploy more than one on the same booster, so that subsequent ASAT's can hide in the debris clouds of the first attack. They can also act as multiple weapons on target to increase probability of kill (Pk).

Space Warfare Strategy 40:

Employ multiple phenomenologies of space weapon systems against the same target to foil defense measures and increase probability of kill (Pk).

Space Warfare Strategy 41:

Use certain types of space weapon systems that first isolate an adversary's satellites from terrestrial control, and thus fixes this target into inaction, until more effective, but possibly slower responding, space weapons can be made to bear on the target.

Space Warfare Strategy 42:

Attack a space target with multiple attacks coming from multiple directions.

Space Warfare Strategy 43:

Attack a space target from the direction where the satellite's self-defense sensors are pointing towards the Sun, Moon, Earth, or Earth limb, in order to blind him (similar to "Hun out of the Sun" attack for WWI aircraft).

Space Warfare Strategy 44:

Attack a space target when it is out of range of an adversary's tracking, telemetry and control stations, in addition to not being within a sensor envelope of his space surveillance assets.

Space Warfare Strategy 45:

Attack a space target when it is furthest away in orbital track from an adversary's tracking, telemetry and control stations, in order to maximize the time before an adversary detects that his satellite has been attacked, and can do something about it (repair/restore satellite, bring on-line back-up systems and spares, or respond militarily).

Sun Tzu Statement 3:

Feign disorder, and crush him. Hiding order beneath the cloak of disorder is simply a question of subdivision; concealing courage under a show of timidity presupposes a fund of latent energy; masking strength with weakness is to be effected by tactical dispositions. Doing certain things openly for purposes of deception, and allowing our spies to know of them and report them to the enemy.

Space Warfare Strategy 46:

While under surprise attack, increase fake communications traffic on military networks, to appear to be confused to the adversary.

Space Warfare Strategy 47:

Make a series of random satellite maneuvers to confuse the enemy as to your true intentions, and to appear confused in your responses to his attacks. Some of these supposed random maneuvers hide real attacks with obscure intentions.

Space Warfare Strategy 48:

Make a series of preparations for satellite launch from terrestrial sites so as to appear busy and confused. Not all of these preparations have to result in actual launches.

Space Warfare Strategy 49:

Appear busy on the ground at space-related command centers in order to feign disorder. Order a lot of pizza. Conduct a lot of high-level meetings.

Space Warfare Strategy 50:

Have the State Department issue a number of conciliatory statements based on the current space situation that appear weak and willing to appease.

Space Warfare Strategy 51:

Maneuver allied space systems (including weapons) out of range of adversary weapons and targets to appear to be giving in or acting confused.

Space Warfare Strategy 52:

Conduct a mis-information campaign against known adversary spies in our midst in order to make it appear that the allied war effort, as it relates to space, is confused and in disorder.

Space Warfare Strategy 53:

Conduct a mis-information campaign with cyber weapons and fake messaging traffic in order to make it appear that the allied war effort, as it relates to space, is confused and in disorder.

Space Warfare Strategy 54:

Promulgate allied space policy and doctrine to appear to emphasize appeasement and unwillingness to employ space weapons.

Space Warfare Strategy 55:

Have allied space surveillance assets track harmless adversary space assets in order to appear confused as to what the real targets are.

Commander Perceptions

Sun Tzu Statement 4:

If your opponent is of choleric temper, seek to irritate him. If he is taking his ease, give him no rest. If the enemy is taking his ease, he can harass him. Rouse him, and learn the principle of his activity or inactivity. Force him to reveal himself, so as to find out his vulnerable spots.

Space Warfare Strategy 56:

Attack your adversary with multiple, low-resource, constantly changing targets and weapons phenomenology, pin-prick but dramatic, space system attacks to constantly keep him off balance and confused as to where the main effort is being made. This will also force his hand in revealing his hidden space control assets, and his doctrine, strategies and tactics. This can be feigned attacks that do not come to fruition, but make the adversary waste fuel and other satellite resources with responsive maneuvers, attitude changes, and wasted space surveillance tasking.

Space Warfare Strategy 57:

Develop and deploy decoy satellites that appear to be prime targets in undefended space sectors, in order to draw out your adversary's intent early in the conflict.

Space Warfare Strategy 58:

Purposely allow adversary attacks on older or sacrificial space systems in order to make him waste his anti-satellite assets and draw out his intent, space doctrine, strategies and tactics.

Space Warfare Strategy 59:

Make bombastic and bragging comments about allied space control capabilities in order to irritate and goad your opponent into space control actions that are not well thought out or adequately planned, manned, optimally positioned or resourced.

Space Warfare Strategy 60:

Conduct terrestrial military operations that will goad an adversary into attacking allied space systems that support terrestrial missions in order to reveal adversary anti-satellite capabilities and plans.

Space Warfare Strategy 61:

Before conflict, probe potential adversary space defenses to determine his intentions, plans, doctrine, strategies and tactics along with technical capabilities (frequencies, ranges, power, lifetimes, communications channels, war reserve modes, hidden doors on satellites, vulnerabilities, spares, etc.).

Space Warfare Strategy 62:

Concentrate on attacking space systems (INTEL, imagery, communications) that directly support the adversary commander so as to irritate him into making the wrong decisions.

Sun Tzu Statement 5: **Supreme excellence consists in breaking the enemy's resistance without fighting. Thus the highest form of generalship is to hinder the enemy's plans.**

Space Warfare Strategy 63:

When an adversary appears to be building up military forces for a future attack, covertly disrupt his space systems so that he loses confidence in them. Subtle use of reversible anti-satellite weapons would make the adversary's space systems unreliable in operations, and possibly incorrect in its data streams. This technique can also be used to show resolve without upsetting the general populace (both allied and adversary) and influence this adversary's behavior; and might also prevent him from initiating warfare in the first place.

Space Warfare Strategy 64:

Employ cyber weapons against an adversary's space systems before major conflict has erupted to deter him from starting the conflict in the first place.

Space Warfare Strategy 65:

Threatened an adversary with military action (both terrestrial and space) before he starts a conflict to deter him from major actions. This can also mean attacking an old or dead satellite (allied or adversary) to show resolve (willingness to use space weapons) and capability.

Space Warfare Strategy 66:

Employ extensive space surveillance and intelligence gathering resources to increase confidence that the allies have detected and characterized an adversary's space control capabilities. At the start of a conflict employ space and terrestrial-based weapon systems to neutralize these adversary assets to forestall his use of these in the main conflict.

Space Warfare Strategy 67:

Defend and hold the high ground of space (Centers Of Gravity and Choke Points) to exclude adversary use, thus frustrating his war aims in space.

Space Warfare Strategy 68:

Constantly or intermittently conduct small maneuvers to frustrate an adversary's ability to calculate precise orbital parameters in order to target allied satellites, and prevent him from understanding allied space plans, doctrine, strategies and tactics. For allied terrestrial space systems, frequently move their geographic locations for the same reasons.

Sun Tzu Statement 6:

If we do not wish to fight, we can prevent the enemy from engaging us even though the lines of our encampment be merely traced out on the ground. All we need do is to throw something odd and unaccountable in his way.

Space Warfare Strategy 69:

Promulgate fake space warfare plans that confuse the adversary as to the real main effort. These should be coordinated with fake terrestrial warfare plans.

Space Warfare Strategy 70:

Conduct strange space maneuvers that appear to be setting up for an attack in an inexplicable location or a non-sensical mission emphasis. This will give your adversary pause, and throw doubt into his own space war plans.

Space Warfare Strategy 71:

Reveal the existence of covert, war-reserve, space assets that will frighten and confuse the adversary with stronger threats than anticipated.

Space Warfare Strategy 72:

Reveal the existence of covert, war-reserve, space alliances and treaties that will frighten and confuse the adversary when confronted with threats from other locations, avenues, angles and diplomatic efforts.

Space Warfare Strategy 73:

Employ the use of previously unknown categories or phenomenologies of space weapon systems (e.g., electrostatic shock for attacking astronauts or maintenance robots).

Space Warfare Strategy 74:

Deploy space systems in unusual orbits to confuse your adversary as to their true missions and purpose.

Space Warfare Strategy 75:

Deploy space weapons on the Moon at covert locations (possibly the far, dark side of the Moon?).

Space Warfare Strategy 76:

Deploy multiple satellite decoys with visually bright and large RADAR reflectors in space to confuse and astound your adversaries. Design these decoys with very low mass, but large cross sections so the solar wind will radically change their orbits. Deploy some real satellites that behave in the same manner to allow them to hide in the confusion, especially if the adversary gets used to ignoring these "decoys".

Space Warfare Strategy 77:

Deploy covert sub-satellite weapons from harmless-looking civil, scientific, weather, commercial, international consortium, manned or supposedly "dead" satellites.

Space Warfare Strategy 78:

Hide space weapons inside the rocket exhaust cones of dead 1960's space boosters that appear harmless enough and have difficult to reach orbits, to be ignored by satellite inspectors and other space surveillance and reconnaissance assets. Space boosters are large, empty and have already completed half of the Hohmann transfer to key orbital choke points.

Space Warfare Strategy 79:

At the start of space warfare, surprise your adversary with a proposal to restrict or limit the space conflict to give him pause while the allies maneuver their space assets to optimal dominate positions.

Space Warfare Strategy 80:

Maneuver and move allied space assets out of harms way of adversary space and terrestrial weapon systems to preserve strength for future attacks, and to draw out adversary intentions, plans, doctrine, strategies and tactics.

Sun Tzu Statement 7:

He who exercises no forethought but makes light of his opponents is sure to be captured by them. Thus, what enables the wise sovereign and the good general to strike and conquer, and achieve things beyond the reach of ordinary men, is foreknowledge.

Space Warfare Strategy 81:

Develop space warfare theory, doctrine, strategies, tactics and plans, and simulate and wargame these previous to conflict to better understand the possibilities and restrictions of this type of warfare, and how it impacts terrestrial war. Also, make sure your warfighters understand these space control principles, attack types and indicators and have trained with them in mind.

Space Warfare Strategy 82:

Retain strategic and tactical flexibility with space systems by pre-positioning them in their most probable attack orbits while also conserving on-board satellite resources such as power and fuel. One might also have an in-space re-fueling capability to support this objective, or Mother Ships holding many smaller, space-based, anti-satellite weapons.

Space Warfare Strategy 83:

Devote considerable resources to intelligence collection (space surveillance, space reconnaissance-satellite inspectors, spies, cyber, overflight imagery and electronic collects, etc.) on potential adversary space systems to discover capabilities and intent prior to any possible conflict.

Space Warfare Strategy 84:

Develop intelligence collection methods and technologies to determine beginning-of-life and current fuel remaining on-board adversary satellites to determine their maneuverability, and thus, threat envelope or weapons reach, potential.

Space Warfare Strategy 85:

Appear to your adversaries to have little space weapons capabilities so as to embolden him into making rash moves in space warfare and in terrestrial conflicts where space is a significant supporter of ground, air and sea forces.

Sun Tzu Statement 8: Move not unless you see an advantage; use not your troops unless there is something to be gained; fight not unless the position is critical.

Space Warfare Strategy 86:

Only use space weapons if the effect is commensurate with the political and financial costs, loss of future surprise, and loss of future capabilities (weapon system magazines used up and consequences of adversary responses affecting Blue and Gray systems).

Space Warfare Strategy 87:

Be sparing with maneuvering space weapons systems and potential targets out of harms way as this affects future capabilities and plans (fuel used up, surprise and political capital squandered, actions reveal Blue intelligence collection and technical capabilities with corresponding war plan responses, new orbital and terrestrial positions restrict future strategies and tactics, etc.). However, making moves earlier than an opponent can catch him off guard, confuse him as to your real purpose, and shape the future battlefield to Blue's advantage, while forcing an adversary to reveal his capabilities, plans, doctrine, training, allies and war reserve modes.

Space Warfare Strategy 88:

Retreat from orbits that are threatened with adversary space weapons if these particular locations are not critical to you defensive and offensive plans.

Space Warfare Strategy 89:

Retreat from orbits that are threatened with adversary space weapons to draw an adversary further from his supporting infrastructure, and make him use up critical maneuver resources.

Space Warfare Strategy 90:

Remember, maneuvering a space asset is causing a change, and changes are more noticeable to an adversary than steady state conditions.

Space Warfare Strategy 91:

Blue may start maneuvering specific space assets as decoys to draw attention away from covert assets that are preparing for separate attacks.

Maneuvers

Sun Tzu Statement 9: **When we are near, we must make the enemy believe we are far away; when far away, we must make him believe we are near.**

Space Warfare Strategy 92:

Concentrate on developing satellites that are very small in size and apparent cross section (optical and RADAR) to avoid detection for as long as possible.

Space Warfare Strategy 93:

Concentrate on developing satellites that are low observables (RAM - RADAR Absorbing Material; optical absorbing materials, strange shapes and smart attitude that reflect optical and RF speculars away from Earth-based sensors) to avoid detection for as long as possible.

Space Warfare Strategy 94:

Base satellites in unique orbits that may be physically far from potential targets, but delta-v (fuel) and time-wise they are actually much closer than is readily apparent.

Space Warfare Strategy 95:

Employ many decoy satellites in threatening orbits to make an adversary believe you are setting up for an imminent attack.

Space Warfare Strategy 96:

Publish characteristics of Blue space systems that imply considerably more maneuver capabilities than actually exists.

Space Warfare Strategy 97:

Develop space weapon systems that have long-range effects that surprise an adversary who may think they are out of range of these systems.

Space Warfare Strategy 98:

Make a lot of bellicose statements and conduct many different space launches and satellite maneuvers to make an adversary believe you have more immediate space control capabilities than you really do.

Space Warfare Strategy 99:

When two countries are in conflict, make a surprise entrance into the conflict without warning, on the side of your choice, by conducting lightning attacks in space.

Sun Tzu Statement 10: Attack him where he is unprepared; appear where you are not expected.

Space Warfare Strategy 100:

Develop tactical attack profiles for anti-satellite systems that have confusing or overwhelming backgrounds for defensive sensors behind the weapon approach paths (i.e., Sun, Moon, Earth, ecliptic plane, solar flares, stars and galaxies with bright optical and radio signatures behind attacking satellite path).

Space Warfare Strategy 101:

Develop tactical attack profiles for anti-satellite systems that have unusual orbital physics such as continuous thrusting, so that classical orbital mechanics mathematics does not provide good tracking solutions.

Space Warfare Strategy 102:

Conduct surprise satellite attacks while hiding anti-satellite systems in orbital debris clouds.

Space Warfare Strategy 103:

Develop and deploy space control weapon systems sooner than your adversary so as to surprise him with your technical capabilities.

Space Warfare Strategy 104:

Deploy terrestrial-based space weapons on mobile platforms (ground launchers, ships, submarines, aircraft) that are continuously changing position and hidden or camouflaged from adversary and neutral country sensors, so as to confuse an adversary as to your exact attack plans, and to initiate surprise attacks.

Space Warfare Strategy 105:

Study an adversary's space doctrine, strategies, tactics, organizations, and leadership personalities to discover his strengths and weaknesses so that you may better catch him off-guard during surprise space systems attacks.

Space Warfare Strategy 106:

Analyze and wargame an adversary's military capabilities and how his space systems support these capabilities. Develop war plans to delay, deny, disrupt, degrade or destroy an adversary's space capabilities where they support his terrestrial forces the most. Attacks on these Centers Of Gravity (COG) may come as a surprise to him, as he may not fully realize how space helps his military forces, and thus, he may not defend these COG's as much as is necessary.

Space Warfare Strategy 107:

Research weapons effects and analyze, simulate and wargame which weapon phenomenologies and combinations work best against certain categories of adversary targets based on time constraints, type of kill desired (delay, deny, disrupt, degrade or destroy), debris generation, probability of target self-defense and political acceptability according to perceived conflict level.

Space Warfare Strategy 108:

Conduct extensive space weapons effects research to determine space systems vulnerabilities that may not be obvious to potential adversaries who may have an inferior or different technological industrial base than your own.

Space Warfare Strategy 109:

Employ spies to determine the most vulnerable points of attack and the most useful space systems of potential adversaries.

Space Warfare Strategy 110:

Employ covert, clandestine and special forces to infiltrate adversary terrestrial space support systems to delay, deny, disrupt, degrade or destroy his space systems from within his supposedly secure facilities and mobile units.

Space Warfare Strategy 111:

Embed remote-controlled explosive charges within the walls of terrestrial space support facilities of potential adversaries while they are being originally constructed.

Space Warfare Strategy 112:	Employ space-to-Earth weapon systems to delay, deny, disrupt, degrade or destroy adversary space systems and their supporting infrastructure by surprise attacks from previously unknown locations.
Space Warfare Strategy 113:	Incorporate slightly degraded components into an adversary's space systems manufacturing processes so that he may lose confidence in his technical capabilities.
Space Warfare Strategy 114:	Incorporate components with covert back door access points into an adversary's space systems manufacturing processes so that allied forces may gain access to delay, deny, disrupt, degrade or destroy his space capabilities at a critical juncture during future military conflicts.
Space Warfare Strategy 115:	Bribe allies of potential adversaries to allow access or getting close to these adversary space systems during times of conflict.
Space Warfare Strategy 116:	Conduct multiple space system attacks all over the place to confuse an adversary as to the main thrust of attack and overall allied space strategy.
Space Warfare Strategy 117:	Conduct unusual and complex attacks sequences late at night during adversary holiday schedules so as to confuse adversary space warning military personnel who are likely of young age with little orbital dynamics experience who are forced to man these unwanted operational work shifts.
Space Warfare Strategy 118:	Attack while conducting space arms treaty negotiations.
Space Warfare Strategy 119:	Attack while conducting surrender negotiations.
Space Warfare Strategy 120:	Attack out of the blue while at peace with potential adversaries.
Space Warfare Strategy 121:	Attack an adversary satellite during launch preparations, actual launch, orbital insertion or initial operational checkout when he is most vulnerable.

Space Warfare Strategy 122:

Attack an adversary satellite during periods of orbital changes or maneuvers when he is most vulnerable due to changing attitudes or orientations (sensors pointed in wrong directions, solar panels not optimally pointed towards the Sun, radiators not optimally pointed towards the darkness of space, communications antennas mis-orientations, uneven thermal gradients across the spacecraft, spacecraft static charges, etc.), reduced sub-system capabilities and some systems off-line, non-optimal operational orbits., and possible higher thermal and chemical signatures during thrusting.

Space Warfare Strategy 123:

Attack an adversary satellite during periods of Solar eclipse when he is most vulnerable due to low electrical power capabilities.

Space Warfare Strategy 124:

Attack an adversary satellite during periods of Solar storms when he is most vulnerable due to communications noise, electrical fluctuations on the satellite buss, satellite sensor degradations, space surveillance warning sensor degradations, and satellite electronics Single Event Upsets.

Space Warfare Strategy 125:

Attack an adversary's space systems employing weapons of unusual phenomenologies, methods, techniques and tactics.

Space Warfare Strategy 126:

Attack an adversary's satellites that have been on orbit the longest, so that these satellites have the highest probability of degraded sub-systems, reduced redundancy, lowest solar cell power due to aging, and lowest fuel and cooling reserves.

Space Warfare Strategy 127:

Cut an adversary off from communicating with his satellites through jamming and other means so that he cannot control it, receive data from it, or help in defending it. Seal the Earth from space for his space systems.

Space Warfare Strategy 128:

Deny an adversary the ability to launch new satellites to replace the ones lost to space combat. This including attacking the launch vehicles, launch gantries, fuel supplies, electric grids, roads, communications, data processing, and command and control facilities supporting launch complexes.

Space Warfare Strategy 129:

Develop anti-satellite spacecraft that can re-configure themselves in size, shape, optical and RADAR signatures, thermal, orbital, surface materials and chemical signatures to be able to confuse your adversary's defenses.

Space Warfare Strategy 130:

Develop spacecraft that have war-reserve modes that only appear in time of conflict, to be able to confuse your adversary's space control assets.

Space Warfare Strategy 131:

Develop spacecraft that have smaller daughter sub-spacecraft that only appear in time of conflict, or when out of view of potential adversary and neutral countries' space surveillance sensors, to be able to confuse your adversary's space control and warning assets.

Space Warfare Strategy 132:

Employ reusable rocket planes to launch into space and then land space forces behind enemy lines for special space control missions.

Space Warfare Strategy 133:

Closely watch for an adversary's source of space control weapon systems as they may be based in un-expected locations, such as aircraft, ships and submarines that may be patrolling in unusual locations such as Antarctica, which would have optimal access to many Low Earth Orbit (LEO) spacecraft.

Space Warfare Strategy 134:

Closely watch for an adversary's source of space control weapon systems as they may be based in antipodal locations which are on the opposite sides of the Earth from a launch site. Due to orbital physics, all launch vehicles must pass through these points if they have not immediately maneuvered during their ascent trajectories. These points can be in very obscure locations on the Earth.

Sun Tzu Statement 11:

To ensure that your whole host may withstand the brunt of the enemy's attack and remain unshaken - this is affected by maneuvers direct and indirect.

Space Warfare Strategy 135:

Develop tactical attack profiles for anti-satellite systems that have unusual orbital profiles (highly elliptical, low inclination LEO {Low Earth Orbit}, continuous thrusting very low altitude slightly aerodynamic LEO, spacecraft that thrust against the Earth's magnetic fields, trans-lunar, Lagrangian Points, temporary Polar sitting, etc.) that are difficult to track with traditional space surveillance and sensors.

Space Warfare Strategy 136:

Quickly maneuver covert and hidden anti-satellite systems into optimal attack positions, by starting the maneuver sequences while out of view of adversary space surveillance sensor systems. This can include maneuvers over the Earth's Poles. Time the maneuvers, coasting periods, and end game sequences to avoid as many adversary space surveillance systems as possible. Try to make the maneuver jumping off points at far away from the next viewing of adversary space surveillance sensor systems as possible. Setup maneuver start orbital locations to allow all starts and end game time sequences to be as closely aligned as possible to create a surprise "shock and awe" event.

Space Warfare Strategy 137:

Slowly maneuver, over a period of weeks and months, covert and hidden anti-satellite systems into optimal attack positions, which in actuality may be a far distance from their targets, but are actually "close" by orbital dynamics standards of minimum time and minimum delta-v (fuel) required to get within effective operational weapons range.

Space Warfare Strategy 138:

Attack an adversary satellite using high speed (and probably high delta-v or fuel use) maneuvers to surprise him with the minimum amount of warning time. This can be a high speed missile launched from terrestrial units, or an on-orbit anti-satellite spacecraft.

Space Warfare Strategy 139:

Approach a target satellite by the direction in which its self-defense sensors cannot detect you.

Space Warfare Strategy 140:

Shift the standard and typical orbits of satellites supporting key military and Government functions just before, or immediately after, conflicts (whether terrestrial or space-based, or both) initiate to complicate an adversary's targeting and space surveillance solutions. It is best to perform these maneuvers just after exiting a potential adversary's or possible allied "neutral" country's space sensor coverage volumes.

Space Warfare Strategy 141:

Make sure your own and allied satellites have a lot of extra fuel capacities, as the ability to maneuver and on-board power reserves are perhaps the two most important aspects of space warfare.

Sun Tzu Statement 12:

That the impact of your army may be like a grindstone dashed against an egg - this is effected by the science of weak points and strong.

Space Warfare Strategy 142:

Concentrate allied space control forces against just a few key adversary targets with multiple weapons, possible of differing phenomenology effects, against each target to achieve high Probabilities of Kill (Pk) and shock and awe effects.

Space Warfare Strategy 143:

Develop space weapon technologies that are decisive, one-shot kill, high Probability of Kill (Pk), and with characteristics of its effects on targets easily verifiable (Bomb Damage Assessment - BDA) with high confidence. These weapons should also be politically acceptable to allied senior leadership, State Departments, and possibly, United Nations and world opinion, so that leadership will not be self-deterred in their deployment and employment.

Space Warfare Strategy 144:

Develop space weapon technologies that can easily overcome probable space systems defenses.

Space Warfare Strategy 145:

Make note of potential adversaries' satellite launch latitude locations, as this impacts critical launch corridor locations and ease of inserting into certain strategic orbits.

Space Warfare Strategy 146:

Allied countries should try to secure and judiciously partial out strategic minerals as used by potential adversary countries' space development programs. These are essentially Centers Of Gravity years before any space conflict may occur.

Space Warfare Strategy 147:

The weak point of an adversary's space systems in actuality may be the personnel running these systems and managing the space war. Make note of their strengths and weaknesses, and act accordingly. Remember, you are not fighting an adversary's space systems machines - you are actually fighting the minds of those that control them. They may be unfamiliar with their space capabilities, particularly at the higher level of aged senior commanders, and it may be possible to easily spoof, confuse, delay with doubts, and stay within their fighting timelines (OODA loops) due to their lack of experience with these new technologies, concepts and military precepts.

Space Warfare Strategy 148:

Weak vs. strong point correlations may change due to the weather. Some directed energy systems do not work in cloudy, overcast days or during precipitation. Space weather may effect certain orbits, sensors (terrestrial and space), communications, power grids, and satellite launch schedules - all of which may continuing to shift the balance of power over geographic, spatial, and time domains, and may create periods of weakness that can be instantly exploited.

Space Warfare Strategy 149:

Your best space systems asset and possible the weakest, is the highly trained, unusually capable, and not easily replaced, personnel running these systems. These might also be from countries foreign to you adversaries. Astronauts aboard spacecraft will also be a weakest link if they are required for National Defense mission accomplishment during conflicts.

Space Warfare Strategy 150:

The weakest point of a satellite system may not be the satellite itself, but the terrestrial support services or underlying terrestrial infrastructure such as power, telecommunications and transportation.

Sun Tzu Statement 13: **Thus one who is skillful at keeping the enemy on the move maintains deceitful appearances, according to which the enemy will act. He sacrifices something, that the enemy may snatch at it.**

Space Warfare Strategy 151:

Employ several decoy satellites that have the characteristics of an important satellite so that an adversary may waste fuel and space control assets in attempting to destroy them. Setup fake communications paths to these satellites, and give them possibly fake command and control structures. Also, widely broadcast how important these space systems are to allied defenses before the start of the conflict.

Space Warfare Strategy 152:

Sacrifice to adversary space control weapon systems real, but older and less capable space systems in order to absorb adversary attacks. Keep your newer and more capable space systems covert to be able to surprise your adversaries later. Do not necessarily use your best space systems at the beginning of the conflict before you have determine adversary plans, intents, doctrine, strategies, tactics, deployments, and capabilities.

Space Warfare Strategy 153:

Reveal only those communications capabilities (frequencies, power, locations) during the beginning of conflict that you are willing to possible lose. Keep the best for last after you better understand the battlefield.

Space Warfare Strategy 154:

Increase communications traffic directed towards fictitious space systems and forces to keep you adversaries off balance and inspire inefficiencies in his attack planning.

Space Warfare Strategy 155:

Make threatening advances appearing to attack adversary space assets, only to pull back before completing an actual attack, so as to keep your adversaries constantly on the move, in defensive postures, using up space surveillance assets and time resources, while confusing him as to your actual targets and ultimate plans.

Space Warfare Strategy 156:

Pre-conflict, emphasize overt research on space control technologies you never intend to actually implement, so potential adversaries will spend considerable efforts in trying to neutralize these non-existent attack modes, while the real technologies are being developed under covert programs.

Space Warfare Strategy 157:

Fund allied space control programs different than your own to provide alternative attack strategies, methods and surprise weapon locations.

Space Warfare Strategy 158:

Encourage space weapons disarmament talks and treaties that you never intend to adhere to during an actual conflict.

Space Warfare Strategy 159:

Sell minor space weapon systems to potential adversaries to lull them into thinking you are their friend, and any potential conflicts are a very small possibility. (e.g., Germany sold the Russians a battleship only months before Germany invaded Russia).

Space Warfare Strategy 160:

Purposefully develop and deploy minor operational military satellites that have little in defensive capabilities to adsorb attacks from potential adversaries, and draw adversary space control resources (weapons, surveillance, reconnaissance, fuel, covertness, command and controller attention) away from more important allied space systems.

Space Warfare Strategy 161:

Conduct multiple maneuvers with real satellites and fake decoy satellites to attempt inducing your adversaries to match your moves, thus reducing his delta-v or fuel capabilities, and covertness, and limiting his military options for when real responses are required later.

Space Warfare Strategy 162:

Do not allow adversary close inspection spacecraft to get near your critical satellites, as they may be able to determine these assets' hidden characteristics, and may attempt to negate them.

Space Warfare Strategy 163:

Constantly search for and harass your adversaries' mobile space systems so that they are constantly on the move, off balance, less accurate, more hurried, and less timely in fulfilling their mission objectives.

Space Warfare Strategy 164:

Continually harass your adversaries' fixed space systems defenses, so that they are constantly off balance, more hurried and less timely in fulfilling their mission objectives.

Space Warfare Strategy 165:

Openly publish space control doctrine, strategies, tactics, organizations and procedures that in actuality will not be thoroughly followed in wartime, but there will be covert, war-reserve structures and organizations in place instead. This must be balanced with the dogma that one must train as he fights. Thus, your potential adversaries' will expect you to fight a certain way in actual combat, but they will be surprised by your alternative moves.

Space Warfare Strategy 166:

Make fake satellite launch preparations so as to confuse your adversaries as to your true plans.

Space Warfare Strategy 167:

Make a lot of noise about a major space weapons development program that ultimately is never built and deployed, to inspire your adversaries' to waste time and resources trying to counter it. Have your actual space weapons programs covertly developed that are of a different physics phenomenologies with different basing options.

Sun Tzu Statement 14: **By holding out advantages to him, he can cause the enemy to approach of his own accord; or, by inflicting damage, he can make it impossible for the enemy to draw near.**

Space Warfare Strategy 168:

Deliberately lay down debris fields in certain orbits to deny these to your adversaries, both in occupying or possibly transiting these orbits.

Space Warfare Strategy 169:

Deliberately increase the radiation doses in certain orbits to deny these to your adversaries, both in occupying or possibly transiting these orbits.

Space Warfare Strategy 170:

By conducting jamming operations against any space systems in specific regions of Earth and orbital regimes, you can deny these to your adversaries.

Space Warfare Strategy 171:

Destroy space launch sites in a way that deliberately releases the toxic chemicals stored there so that the site would become unusable for a long time.

Space Warfare Strategy 172:

Plant known destructive space weapons in orbits you wish to deny an adversary use of.

Space Warfare Strategy 173:

Appear to be abandoning certain orbits so as to draw an adversary's space assets into these areas for later concentrated attacks.

Space Warfare Strategy 174:

Start a small engagement someplace on Earth so as to draw an adversary's space resources to certain terrestrial and space locations (orbits) that have Allied covert space weapons waiting for them there to be engaged en-mass.

Space Warfare Strategy 175:

Appear to have strong space control assets covering certain orbits, so as to induce an adversary to make alternative orbital approaches where covert space weapons are awaiting to surprise them.

Sun Tzu Statement 15: **Appear at points which the enemy must hasten to defend; march swiftly to places where you are not expected.**

Space Warfare Strategy 176:

Maneuver and approach your targets faster than the adversary can re-load, re-charge or re-cycle his weapon systems, and always keep your actions shorter than your adversaries' decision cycle timelines.

Space Warfare Strategy 177:

Conduct surprise attacks on your adversaries' space-related terrestrial systems and their supporting infrastructures at unexpected times, locations and re-attack tempos.

Space Warfare Strategy 178:

Conduct open space weapons research projects to inspire your adversaries to rapidly respond with their own projects to counteract these capabilities.

Space Warfare Strategy 179:

Threaten your adversaries' civilian populations if they make moves against allied space systems.

Space Warfare Strategy 180:

Widely announce new satellite launches, implying they are of military intent, but ultimately they are simply civil or scientific systems of little or no military value. This will constantly keep your adversaries' off balance as to the true allied military situation in space.

Space Warfare Strategy 181:

Research, develop, and deploy space weapons systems that have high-speed effects, such as directed energy weapons, electronic attack, etc., so an adversary cannot respond in time to defend their targeted space systems.

Space Warfare Strategy 182:

Research, develop, and deploy space weapons systems that have unusually low-speed effects, such that an adversary may not be aware he is currently under attack because the space weapons are changing orbits and configurations very slowly or imperceptively (low rate of change of system characteristics).

Space Warfare Strategy 183:

Combine high-speed and low-speed space weapons effects to confuse your adversaries' as to your true attack plans and battle tempos.

Space Warfare Strategy 184:

Combine overt and covert space weapon systems in order to mold your adversaries' perceptions to allied advantage.

Space Warfare Strategy 185:

Employ your medium-speed weapons to overtly spoof your adversaries' perceptions of what your true attack plans are.

Space Warfare Strategy 186:

Your adversaries may not actually fully realize how important space is to his overall military efforts, and also may not be aware as to which space systems and supporting terrestrial infrastructures are critical to his war efforts. Allied war plans can manipulate these flawed perceptions when setting up fake and real attack tempos.

Space Warfare Strategy 187:

Ensure allied data processing capabilities are faster than potential adversaries' so orbital and command and control planning can be executed quicker than adversaries can.

Space Warfare Strategy 188:

Ensure allied satellite launch processing capabilities are faster than potential adversaries' so new satellites can be inserted into operational orbits quicker than adversaries can.

Space Warfare Strategy 189:

Determine your potential adversaries' space-related weak points and choke points through scientific, technical, organizational and systems analyses, along with modeling and simulation wargaming. You must do this more accurately, thoroughly and quickly than your adversaries in order to constantly confound his abilities to plan and respond to your space movements and attacks.

Space Warfare Strategy 190:

Do not necessarily over emphasize cost exchange ratios of weapon cost versus target cost, as it is the overall value that a target contributes to an adversary's war effort that counts the most. The financial cost of war for the victors is rarely accounted for in history.

Sun Tzu Statement 16:

You may advance and be absolutely irresistible, if you make for the enemy's weak points; you may retire and be safe from pursuit if your movements are more rapid than those of the enemy.

Space Warfare Strategy 191:

Make sure an adversary's weak points are also the same points that are critical to his war efforts. These weak points may be lightly defended for a reason (in actuality they may be of little value to the current situation and war plans of an adversary). A particular space-related system may be very important to an adversary in one conflict situation, but of less value in another. This importance ranking can also dynamically change as the fluidity of the battlefield situation changes state.

Space Warfare Strategy 192:

Remember, you are not fighting an adversary's forces and machines as much as you are fighting an adversary commander's perceptions, biases, experiences, training, organizational structures, his upper military and political managers, intelligence, mental, and emotional strengths, weaknesses and endurances. The weakest point in a space system may be the human element, including scientists, engineers, technologist and additional supporting staff.

Space Warfare Strategy 193:

Employ attack profiles that allow for quick escapes from the target area, if required, due to many low delta-v (low maneuvering fuel) orbital possibilities, or features that may allow obscuring your escape (escape through the sensor axis pointing towards the Sun, Moon, galactic plane, low space surveillance sensor concentrations, low Solar lighting conditions, etc.).

Space Warfare Strategy 194:

Develop satellites that have radically different characteristics observable to sensor detection that can be changed at will (e.g., very bright to very dark optical signatures) to confuse adversary targeting and situational awareness sensor networks.

Space Warfare Strategy 195:

Develop satellites that can appear to break up at will (e.g., eject different pieces - maybe balloons - while reducing optical and RADAR signatures) to confuse adversary targeting and situational awareness sensor networks into believing they have successfully attacked the satellite, or the satellite has had some kind of fatal accident. Some of these fully operational "pieces" can then hide in debris clouds and accomplish some further missions at a later time. Make sure the individual "pieces" add up approximately to the original size and mass, at least as far as optical, RADAR, and orbital mechanics sensor measurement constraints are concerned.

Space Warfare Strategy 196:

Attacking an adversary's sensor networks first may be the best strategy, as this would blind his ability to determine your subsequent maneuvers, attacks, capabilities, organizational structures, operational readiness and overall space war plans.

Space Warfare Strategy 197:

Attempt to skip over (by approaching from unusual orbits or thrusting profiles, such as continuous thrusting) an adversary's space defense weapon systems and attack directly the critical space systems they are attempting to defend. The adversary space weapons systems can be dealt with later, as more than likely, they will now be in useless orbits with nothing important to defend, which they cannot easily change without using a prohibitive amount of maneuver resources (fuel and power).

Space Warfare Strategy 198:

You do not have to attack an adversary's critical space assets - simply preparing and appearing to attack them may be sufficient to inspire your adversaries to maneuver (deplete fuel and power, and limit operational effectiveness) and reveal certain space assets and sub-capabilities and war reserve modes, to be dealt with later.

Space Warfare Strategy 199:

An adversary's weak points may be constantly changing based on terrestrial weather conditions (i.e., laser weapons ineffective through clouds and in fog), space weather conditions (higher radiation counts affecting satellites and communications); positions during satellite orbits when the maximum time out of contact with controlling ground stations and/or space surveillance sensors has been reached; certain times and angles when bright sources (Sun, Moon, galactic plane, Earth limb, etc.) degrade self defense sensors; and, immediately after a kinetic energy attack on a satellite when its debris field is most concentrated and their individual orbital elements are less known.

Space Warfare Strategy 200:

As the war starts, or immediately before, probably the first to strike at space assets will have a significant advantage before defensive satellite maneuvers and other reactions can be completed.

Sun Tzu Statement 17: If we wish to fight, the enemy can be forced to an engagement even though he be sheltered behind a high rampart and a deep ditch. All we need do is attack some other place that he will be obliged to relieve.

Space Warfare Strategy 201:

Instantly reveal the existence of covert space weapons covering certain orbital regimes to panic your adversaries into either moving his critical space assets (and thus rendering them at least temporarily in-effective), or hastening to defend them. Many of these "covert" space weapons can be fake, but must be seeded with some real weapon systems if your bluff is called.

Space Warfare Strategy 202:

Concentrate many effective overt space control weapons (along with some dummy decoy systems) with ranges that cover critical space choke points (Sun-Synchronous, Geosynchronous, etc.) to induce your adversaries to abandon some of these orbits for self preservation. Have covert space weapon systems waiting for these maneuvering satellites, who in actuality would be more vulnerable as they change state (change attitude, cover sensors, fold solar panels, reduced power reserves, maneuver etc.).

Space Warfare Strategy 203:

Threaten your adversaries' key space systems to provide relief from enemy approach maneuvers, concentrations, attacks and other pressures on your own space systems.

Space Warfare Strategy 204:

Surround and isolate heavily defended terrestrial space-related sites to cut them off from infrastructure support services, and induce them to surrender.

Space Warfare Strategy 205:

Force an adversary to attempt replenishment space launches from terrestrial sites by degrading and destroying his space-based assets. These launches make his sites, launch vehicles, and satellites vulnerable during launch operations, and forces him to open up the security restrictions on his launch sites.

Space Warfare Strategy 206:

Attack space systems of countries that are allied with your adversaries to induce these adversaries to play their hand when coming to their allies aid due to mutual defense treaties or cultural affinities. This will reveal your adversaries' covert and war reserve mode space systems while drawing his strength away from protecting his own space assets.

Space Warfare Strategy 207:

Dangle out in front of your adversaries tempting space systems targets to draw out his space control resources and military plans and intents.

Space Warfare Strategy 208:

Increase intelligence collections on specific types of space systems targets to spoof your adversaries into thinking these would be your main targets in time of war, or during the next phase of a conflict.

Space Warfare Strategy 209:

Attacking terrestrial communications networks (non-space related) might induce your adversaries to deploy spare, war reserve, or new space launches to make up for these communications deficiencies. This will draw out for attack these additional, possibly hidden, space assets.

Space Warfare Strategy 210:

By increasing the radiation levels or debris fields in certain orbits, you may induce your adversary to reveal his hidden space assets located there before they are destroyed by these additional obstacles (use it or lose it before significant degradations).

Space Warfare Strategy 211:

By conquering some adversary terrestrial territory, you may induce your adversary to reveal his hidden space-related assets located there before they are captured or destroyed (use it or lose it before loss).

Space Warfare Strategy 212:

You may try to induce your adversary to fight in space in order to use up a good part of his space assets before a major allied terrestrial military effort so these space force multipliers would no longer be available to your adversaries and their allies.

Space Warfare Strategy 213:

Attack your adversaries' space assets that are particularly important to their civilian populations (communications satellites that support credit card processing, cell phone traffic, TV and music broadcast satellites, etc.) so that these emotional populations may force their governments and military leaders into space conflicts levels earlier than would be militarily wise.

Space Warfare Strategy 214:

Attack your adversaries' space assets that are particularly important to their political and ruling classes (communications satellites that support command and control of adversary forces, propaganda media outlets, space systems with their personal financial stakes, etc.) so that these segments of their adversary societies may force their governments and military leaders into space conflicts levels earlier than would be militarily wise.

Space Warfare Strategy 215:

Attack your adversaries' space assets that are defending their civilian populations from space-to-Earth weapons, so that these emotional populations may force their governments and military leaders into space conflicts levels earlier than would be militarily wise.

Space Warfare Strategy 216:

Make provocative movements and fake attacks against adversary space weapons to force him to use up satellite resources (delta-v, fuel, power, decoys, etc.), so that the adversary is induced to employ these space weapons before they no longer have the resources to accomplish their primary space control missions (use it or lose it before ineffectiveness).

Space Warfare Strategy 217:

Publically abrogate standing space weapons treaties to induce your adversaries to employ his space weapons sooner than planned just before, or during a conflict.

Space Warfare Strategy 218:

Use an apparently weak space system that retreats from an adversary threat, only to turn around and engage the adversary space weapon system with a more powerful, but covert, weapon system, when out of range and coverage access of the adversary space surveillance and satellite control assets.

Space Warfare Strategy 219:

A surprise, massive attack in space at the same time as the start of terrestrial attacks at the beginning of a conflict will force an adversary to respond as quickly as possible with his space control assets and reveal at least some of his covert capabilities.

Space Warfare Strategy 220:

If you wish to fight a war in space, publically develop many aggressive space weapons pre-conflict, to inspire your adversaries to fear your future plans, and they will try to respond accordingly.

Sun Tzu Statement 18: **We can form a single united body, while the enemy must split up into fractions. Hence there will be a whole pitted against separate parts of a whole, which means that we shall be many to the enemy's few.**

Space Warfare Strategy 220:

Using covert space weapon systems allows surprise concentrations of these systems against a few targets to ensure higher probabilities of kill.

Space Warfare Strategy 221:

Integrated and fully coordinated command and control of the entire space battle has many advantages since space has global reach and global consequences. However, localized control and management may have other advantages for a quickly changing battle landscape, and support for small unit actions.

Space Warfare Strategy 222:

Coordination between space forces and terrestrial forces is of paramount importance, since conflicts are generally won by terrestrial forces, not exclusively space forces.

Space Warfare Strategy 223:

Conflicts over one's geographic territory allows for easier space defense, at least over the geosynchronous belt, as most of your country's satellites will be near by, instead of over some other place on Earth. An adversary who is concentrated in a different sector of the geosynchronous belt will have to maneuver farther to attack you, and would have less coverage of satellite command and control and space surveillance assets. This is know as space internal lines of communication versus an adversary's external lines of communication for a particular battle.

Space Warfare Strategy 224:

Create multiple small attacks at widely varying orbits to draw your adversary away from your main attack axis.

Space Warfare Strategy 225:

Concentrating forces to overwhelm an adversary's defenses can assure higher probabilities of kill, both for the defender, and possible the attacker. Concentrating your forces also provides a target rich environment for your adversary's space weapons, especially mass-kill weapon effects, such as nuclear explosions.

Space Warfare Strategy 226:

Concentrating forces to overwhelm an adversary's defenses can assure higher probabilities of kill, but also limits the attacker's options if these space forces are suddenly required elsewhere and may take a lot of time and maneuvering resources to move them elsewhere. Also, tempting target concentrations might be intentional, and may be a trap using decoys, or low-value space systems.

Space Warfare Strategy 227:

Adversaries' with world-wide strategic and political commitments have by nature difficulty concentrating their space forces into only a few locations.

Space Warfare Strategy 228:

Adversaries' with world-wide strategic and political commitments have by nature difficulty defending their space forces at all locations.

Space Warfare Strategy 229:

Adversaries' with world-wide strategic and political commitments have by nature more robust space forces due to their distributed far locations that would be difficult to attack all of them at the same time.

Space Warfare Strategy 230:

Space forces should be concentrating at the same time that terrestrial forces are concentrating to assure shock and awe coordinated attacks, and synergy of effects.

Sun Tzu Statement 19:

Knowing the place and the time of the coming battle, we may concentrate from the greatest distances in order to fight.

Space Warfare Strategy 231:

Use multiple differing and unusual orbits that all get to the same position in space at a specific time when you want to attack an adversary target with multiple weapons and attack profile approaches.

Space Warfare Strategy 232:

Those who start conflicts and attack first, best know the place and time of the coming battle.

Space Warfare Strategy 233:

Using many inexpensive single-shot space weapon systems may allow the most flexibility in orbital placement, maneuverability and better distributed survivability than a few large and expensive, but vulnerable, battle stations.

Space Warfare Strategy 234:

Beware of anti-satellite systems that may be piggy-backing onto unaware neutral party or own country scientific satellite busses.

Space Warfare Strategy 235:

You can setup the place and time of the coming battle by funneling your adversaries' perceptions of yours and his status and locations of forces (correlation of forces) through psychological warfare and cyber spoofing of his sensors and command and control systems.

Space Warfare Strategy 236:

Develop and employ space weapons that have the longest range capabilities so as to surprise your adversaries at further distances than they assumed you capable of.

Space Warfare Strategy 237:

Remember, being "far" from a target in space, may actually make you nearer than you think - due to orbital dynamics, it may take you little time to approach your target. Also, being "close" in space may actually make you far from the target both time wise, and delta-v wise (i.e., differing inclinations, but similar altitudes, cost a lot of maneuvering fuel to close in on a target, if the attacker seeks to match the target's orbit rather than pass by it).

Space Warfare Strategy 238:

Due to orbital dynamics, and continual satellite movement, the place and time of the coming battle is constantly moving and changing. This requires different strategic and tactical perspectives than terrestrial battles, and demands unique graphical solutions and highly dynamic computer processing to support battle planning.

Space Warfare Strategy 239:

Many times, those that get to the battle the quickest are the winners, not those who wait in order to concentrate the most forces.

Space Warfare Strategy 240:

Carefully understand your adversaries' on-demand launch and on-orbit maneuvering capabilities (delta-v, remaining fuel left on-board, type of maneuvering engines, etc.) so that you may better determine where to set the place and time of the coming battle, where your adversaries' can be surprised and would be unable to catch up with your space forces, and re-enforce their space defenses in a timely manner.

Sun Tzu Statement 20:

With regard to narrow passes, if you can occupy them first, let them be strongly garrisoned and await the advent of the enemy.

Space Warfare Strategy 241:

Certain locations on land, and at sea (besides the obvious space orbital choke points) give commanders advantageous (delta-v, visibilities, coverage, timeliness, antipodal points, etc.) access to space in terms of launches and space weapons threat envelopes.

Space Warfare Strategy 242:

You can funnel your adversary into certain orbits by making their commanders believe you are taking certain actions requiring their presence and response.

Space Warfare Strategy 243:

Your adversaries may not be as space aware as you are, and due to lack of experience, may not even know of all the strategic choke points on land, sea and space associated with particular conflict levels and theaters of operation.

Space Warfare Strategy 244:

Your adversaries may assume different strategic choke points on land, sea and in space associated with particular conflict levels, theaters of operation, strategies, national interests, etc, than critical areas assumed by allied nations. You may encourage and fool him to concentrate and waste his forces at these choke points that do not truly limit allied space attack options.

Space Warfare Strategy 245:

Occupying strategic choke points that support advantageous military objectives early in a conflict, or, perhaps before the conflict starts, will require less space systems maneuvering, monitoring, control and resource usage, leaving more available assets for surprise attacks later on.

Space Warfare Strategy 246:

A good space plan requires your adversaries to come at you and use up their maneuvering resources more so than yourself, allowing allied systems to perform better aggressive attacks later on.

Space Warfare Strategy 247:

There is also the concept that choke points may also include political, policy, doctrine, training, military, commercial and civil space capabilities (e.g., emphasis on terrestrial space weapons vs. space-based development), and allied and world public perceptions considerations when conducting space conflicts.

Space Warfare Strategy 248:

Remember, for many satellite orbital choke points (not geosynchronous orbits), there is a corresponding mirrored choke point on the opposite side of the Earth at an antipodal point. This provides two points of efficient attack that need to be defended, or at least taken into account during space battle planning. Also, if one phenomenology weapon system is not effective at the first choke point, a space weapon of differing kill mechanisms can be employed at the corresponding opposite, mirrored choke point very soon down the orbital path.

Space Warfare Strategy 249:

Also remember, choke points can change with time - certain times of year provide better Sun angles so that space systems are better prepared for attack with more fully charged batteries, while the attacker may chose a time when the potential target is best illuminated by the Sun.

Space Warfare Strategy 250:

In addition, an adversary commander mind is a potential choke point due to his training, experience, doctrine, intelligence level, reaction timeliness, emotional courage, physical stamina and health, national attitudes and perceptions, senior commander constraints, etc.

Sun Tzu Statement 21:

Keep your army continually on the move, and devise unfathomable plans. By altering his arrangements and changing his plans, he keeps the enemy without definite knowledge. By shifting his camp and taking circuitous routes, he prevents the enemy from anticipating his purpose.

Space Warfare Strategy 251:

Develop spacecraft that can continuously maneuver over many hours and days so that your adversaries' orbital dynamics algorithms will no longer function in keeping track of your space assets.

Space Warfare Strategy 252:

Only maneuver spacecraft when out of range of your adversaries' space surveillance assets. Periodically maneuver these assets again when out of space surveillance range so that your adversaries can never recover in precisely determining where your current location is, and where your future orbits may become.

Space Warfare Strategy 253:

Publish false and misleading information in public orbital elements catalogs (such as the United Nations space catalogs) about critical satellite orbits of special interest to national security.

Space Warfare Strategy 254:

Publish documents in the public domain on theory, policy, doctrine, strategies and tactics for conducting space wars, and when these wars actually occur, act in ways that are contrary to these principles.

Space Warfare Strategy 255:

Your adversaries will assume that you will act in a logical, reasonable and efficient manner with your best interests always in mind. Sometimes, act entirely opposite of your adversaries' expectations and take irrational, unreasonable and inefficient Courses Of Action that may not appear to be in your best interest to absolutely astound and confuse your adversaries planning.

Space Warfare Strategy 256:

When launching new satellites, have some additional undisclosed attached satellites that exit the main launch buss when out of range of your adversaries' space surveillance assets.

Space Warfare Strategy 257:

You may sacrifice some space assets to make your adversaries believe in your carefully falsified military objectives.

Space Warfare Strategy 258:

You may also waste orbital maneuvering fuel in order to confuse your adversaries as to your ultimate military goals, by entering orbits that do not include your final attack envelope.

Space Warfare Strategy 259:

Assure that not only your satellites are constantly moving and changing orbit, but that your terrestrial systems that support, command and control, and derive data from these satellites are also mobile, hidden, protected and/or heavily defended.

Space Warfare Strategy 260:

Mobile satellite launch systems (particularly air and Naval with wide-ranging inclination insertion points) will always keep your adversaries guessing as to where new satellites will appear in orbit.

Space Warfare Strategy 261:

For your research and development programs for space weapons systems, keep your adversaries constantly guessing as to which programs are serious, which are mere feints, and which might be covert in nature.

Space Warfare Strategy 262:

Constantly shift terrestrial controllers for significant military satellites while using low probability of intercept communications so that your adversaries will not be able to determine these weak points and attack them.

Space Warfare Strategy 263:

Design your satellites of differing sizes, shapes, external materials, reflectivity, mass, volume, solar panel size and shape, etc., even if they are of the same mission, so as to confuse your adversaries' space surveillance sensors and processing algorithms.

Space Warfare Strategy 264:

Have a classified space doctrine that is different than the one that is publically espoused to lead your adversaries into certain controlled, but specious, military, political and diplomatic response patterns.

Space Warfare Strategy 265:

Develop political and diplomatic alliances and treaties for the sole purpose of confusing your adversaries as to your true intentions concerning space warfare.

Space Warfare Strategy 266:

If possible, keep your space surveillance systems and space launch systems constantly on the move also, to complicate your adversaries' targeting of these space assets.

Space Warfare Strategy 267:

Employ double agents to feed your adversaries false and misleading information on your space capabilities, intentions and execution plans.

Space Warfare Strategy 268:

Sometimes attack targets that make no sense, so as to confuse your adversaries.

Space Warfare Strategy 269:

Periodically launch new space vehicles to keep your adversaries confused and off balance.

Space Warfare Strategy 270:

Periodically make launch preparations of varying launch vehicle types (but do not necessarily actually launch) to keep your adversaries confused and off balance.

Space Warfare Strategy 271:

Time all of your country's satellites (whether military, civil, or commercial) to conduct normal orbit maintenance maneuvers at the same time to overload your adversaries' space surveillance systems and computer processing while creating confusion and panic. You might also combine this technique with an actual space attack to hide these space weapon maneuvers.

Space Warfare Strategy 272:

If your space forces have more maneuvering fuel or better orbital positioning pre-conflict, then constantly changing orbital positions for many of your key satellites might inspire your adversaries to waste their own maneuvering fuel by their constant reactions to your maneuvers and counter-maneuvers, thus limiting their options later on when your real attacks commence.

Space Warfare Strategy 273:

Remember, constant maneuvering of space-related terrestrial forces (mobile anti-satellite weapons, mobile satellite launch systems, space command and control centers, sensors, etc.) can also confuse and confound your adversaries, while increasing the survivability of your own space forces.

Space Warfare Strategy 274:

You may sacrifice low-value or aging satellite systems for the sole purpose of confusing your adversaries through meaningless attacks.

Space Warfare Strategy 275:

Constantly maneuvering towards your adversaries' space assets as if to attack, but then not attacking, will confuse him and also mask your real attacks.

Space Warfare Strategy 276:

Careful study of your adversaries' military space doctrine, strategies, tactics, command structures, political culture, alliances, command personalities and history will enable you to better manipulate his perceptions of your battle plans.

Space Warfare Strategy 277:

Reveal the existence of a previously covert anti-satellite weapon system, to make your adversaries' pause in their military execution plans, to show resolve, and as a warning for them to back down. This system does not necessarily have to exist or be currently operational.

Space Warfare Strategy 278:

Counter adversary space supremacy with increased and more effective terrestrial forces.

Space Warfare Strategy 279:

Threaten your adversaries' and their allies at the United Nations by accusing them of increasing the chance of war.

Space Warfare Strategy 280:

Reveal to the United Nations classified information about your adversaries' and their allies' covert space weapons programs to prove that their interest in peaceful uses of space is a sham.

Space Warfare Strategy 281:

Covertly cause major troubles elsewhere around the world to redirect United Nations and world opinion from space weapons issues.

Space Warfare Strategy 282:	Increase world attention to the problems of orbital space debris in order to slow down your adversaries ability to launch new satellites.
Space Warfare Strategy 283:	Support your adversaries' and their allies' peace movements, especially the anti-militarization of space political factions.
Space Warfare Strategy 284:	Quietly threaten your adversaries' allies with military, economic, financial and terrorist attacks if they continue to support your adversaries'. Reward those country leaders that comply with large bribes.
Space Warfare Strategy 285:	Inspire your adversaries' to spend Government budgets on other pressing matters other than space warfare systems by applying pressure in other sectors of its economy, such as oil production and political instability at home.
Space Warfare Strategy 286:	Launch or maneuver a new mysterious satellite that comes close to critical adversary satellites, to make your adversaries pause in their military execution plans, to show resolve, and as a warning for them to back down.

Baits

Sun Tzu Statement 22: **Hold out baits to entice the enemy. Hold out specious allurements, and make them rush to any given point.**

Space Warfare Strategy 287:	Space systems decoys, fake terrestrial systems, satellites, communications, command structures, doctrine, war plans, maneuvers, launch preparations, etc. can all entice your adversaries into carefully prepared traps for significant portions of their space forces and capabilities.
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Space Warfare Strategy 288:

Fake space systems development programs, including weapons systems, can entice your adversaries to waste their development resources in countering systems that will never be deployed or employed.

Space Warfare Strategy 289:

There are space baits to induce your adversaries to waste orbital maneuvering resources, baits to induce them into a weapons killing zone, baits to induce them to waste limited research and development resources, baits to induce them into alliances and treaties not conducive to their ultimate interests, and baits to induce them into military planning and sequences of thought advantageous to the allies.

Space Warfare Strategy 290:

Another technique is, during an ongoing conflict, start peace negotiations while also building up your space forces for a final surprise attack.

Space Warfare Strategy 291:

To increase the probability an adversary will maneuver his satellites to a particular orbit due to a specious bait you are tendering, make sure that orbit is of low fuel consumption for him.

Space Warfare Strategy 292:

At the same time, if you are tendering a bait for a space-related terrestrial system or facility, make sure this target is easy to access for your adversaries, such as being near the coast, instead of deep in the central interior.

Space Warfare Strategy 293:

Make sure your baits are easy to detect, such as having a large RADAR Cross Section or be optically bright, in an obvious orbit that passes many times over your adversaries' space surveillance sensor envelopes. These baits must also be of an usual shape or configuration to pique their interest. Of course, don't make these baits too obvious, or the adversary will become wary.

Space Warfare Strategy 294:

Make a real space system look like a too obvious bait so your adversaries will ignore it. This would be particularly effective after you have already fooled him with several baits, and his on-orbit satellite reconnaissance inspectors have already been reduced in numbers, low on maneuvering resources, or too far away (inclination wise) to expend the fuel for a more detailed look.

Space Warfare Strategy 295:

Make specific space programs, sites, systems, personnel and plans appear enticing to adversaries' spy agents, so that they waste their efforts on space systems that don't matter.

Space Warfare Strategy 296:

Pay high salaries and other benefits for critical scientists and technicians working on high-value space programs to lure these kinds of talent away from your adversaries' worldwide employment pool.

Space Warfare Strategy 297:

Buy, lease or restrict by mutual treaties special minerals and other resources of limited quantities used in space industries to deny these to your adversaries.

Space Warfare Strategy 298:

Announce a new military space launch of a specific mission with implied orbital parameters (such as Sun synchronous), but on the actual day of the launch, insert this satellite system into a different orbit, thus inducing your adversaries to move their space surveillance and intelligence collection assets to the wrong terrestrial and space locations.

Space Warfare Strategy 299:

File for orbital position slots that you never intend to use to entice your adversary to develop systems to respond to an implied military space capability.

Space Warfare Strategy 300:

Publically announce the development and deployment of a new, but limited capabilities ASAT system, which will receive the anger of your opponents, while covertly developing a more advanced and capable system that will accomplish the real work. Both can be deployed together, but separated, and have similar attack mechanisms, so the least capable system will be blamed for the effects of the better ASAT system.

Space Warfare Strategy 301:

Pump up the radiation levels of certain orbits with nuclear explosions in space to force an adversary's spacecraft to orbits of your choosing.

Space Warfare Strategy 302:

Heavily defend certain orbits to force an adversary's spacecraft to other orbits of your choosing.

Space Warfare Strategy 303:

Seed certain orbits with orbital debris to force an adversary's spacecraft to other orbits of your choosing.

Space Warfare Strategy 304:

During particularly intense solar storms some orbits may become untenable and their orbiting satellites vulnerable. Adversaries may have to move to other orbits to survive.

Space Warfare Strategy 305:

Invite senior politicians and military leaders of your adversaries to invest in your country's businesses at very deep financial discounts of benefit to them to discourage them from attacking their own assets or degrading the value of their investments.

Space Warfare Strategy 306:

Lure your adversaries' space scientists with higher salaries and benefits to work for your county's space research programs instead of your adversaries.

Space Warfare Strategy 307:

Start a campaign of psychological warfare directed against your adversaries' space weapons scientists and managers to discourage them from working at space research centers and to decrease overall morale and research efficiency.

Space Warfare Strategy 308:

Start a campaign to discredit and isolate your adversaries' space weapons scientists and prevent their publishing reviewed papers and from attending scientific conferences.

Space Warfare Strategy 309:

Agree to joint space research programs with countries that you know covertly transfer this critical information to your adversaries, to make sure you have a better understanding of the state of their research capabilities, and maybe even insert false results information and data.

Space Warfare Strategy 310:

Send in a SOF team to capture your adversaries' space scientists and managers for interrogation and exfiltration.

Space Warfare Strategy 311:

Send in a hit team into your adversaries' space research centers to assassinate key science, managerial and technical personnel to degrade and delay their space weapons research efforts.

Space Warfare Strategy 312:

Send teams of scientists to conferences and symposia to check on your adversaries' scientists' presentations, and to engage them later to extract out additional technical information on their space technologies.

Space Warfare Strategy 313:

Send teams of scientists to conferences and symposia with carefully prepared presentations on space technologies that imply development of certain space warfare systems that inspire your adversaries to pursue their own technology programs to counter these, even if these presented space technologies are notional or of a fake nature.

Space Warfare Strategy 314:

Covertly attack your adversaries' space weapons research and manufacturing facilities by inserting degraded, misleading and slightly inaccurate parts and electronics into their supply chain to degrade, delay, confuse and limit their space weapons research efforts.

Space Warfare Strategy 315:

Make constant small espionage attacks on your adversaries' space research programs and manufacturers, to inspire your adversaries to increase their physical, personal, and cyber security programs to be so restrictive as to decrease employee morale and reduce research and manufacturing efficiencies.

Space Warfare Strategy 316:

Lower Earth orbits may be more vulnerable than higher orbits because of easier and more timely access from terrestrial-based space weapon systems.

Space Warfare Strategy 317:

Lure your adversaries to depend on space-related strategic raw materials or advantageous orbital launch locations from countries that you overtly or covertly control or can easily influence later.

Space Warfare Strategy 318:

Lure your adversaries to depend on space launch systems that you overtly or covertly control or can easily influence later.

Space Warfare Strategy 319:

Lure your adversaries to depend on space technologies that you overtly or covertly control or can easily influence later.

Space Warfare Strategy 320:

Make grand announcements of major research programs on space technologies so that your adversaries will initiate their own research in these areas, even if you know these technologies are a dead end. This particularly works if you are a richer country than your adversaries.

Space Warfare Strategy 321:

Lure your adversaries to depend on space manufacturers that you overtly or covertly control or can easily influence later.

Space Warfare Strategy 322:

Lure your adversaries to depend on space component parts, sensors, antennas, and electronic circuits that you overtly or covertly control or can easily influence later.

Space Warfare Strategy 323:

Make very dramatic, even political attacks that are calculated to upset you adversaries' public, whose rage will force their governments to take immediate and probably foolish counter-actions.

Space Warfare Strategy 324:

Choose space attacks that are quick to implement and conclude, yet take your adversaries a long time to respond to; thus keeping him off-balance time-line wise.

Space Warfare Strategy 325:

Choose space attacks that are quick to implement and conclude, so that your adversaries make hasty, but ill-informed, decisions in response.

Space Warfare Strategy 326:

Choose space attacks that are very dramatic and complete in their destruction in order to shock and awe your adversaries, and influence him to make hasty, but ill-informed, decisions in response.

Space Warfare Strategy 327:

Setup, deploy, and employ sets of space weapon systems that make your adversaries believe these attacks are in support of terrestrial actions that are in reality just feints.

Space Warfare Strategy 328:

Repeated maneuvers and fake attacks against an adversary's space systems will lull him into ignoring a real attack.

Space Warfare Strategy 329:

Make preparations for launching multiple critical military satellites that influence you adversaries to initiate certain counter-reactions, and then never actually conduct these launches.

Space Warfare Strategy 330:

During space conflicts you may decide to trade orbital space for time - in other words you may give up key orbits and maneuvering room solely because it will take your adversaries some time to fill this void, or chase you down, or simply force him to use up valuable satellite fuel, while giving yourself more time to make better counter-attack preparations.

Space Warfare Strategy 331:

Place some of your more threatening space systems in certain orbits that your adversaries are sure to match, and then in time of war, radically change these orbits.

Space Warfare Strategy 332:

Move terrestrial forces to locations that appear to threaten your adversaries' space-related terrestrial facilities. In time of war, attack different facilities than those originally threatened.

Space Warfare Strategy 333:

Place your ASAT systems on ships and planes that can lead your adversaries' countermeasures on wild goose chases to geographic locations that are far from the actual battlefield.

Space Warfare Strategy 334:

Place your ASAT systems at hard to get to geographic locations (such as Antarctica) to complicate your adversaries' countermeasures.

Space Warfare Strategy 335:

Place your ASAT systems at hard to get to orbital locations (such as Molniya orbits) to complicate your adversaries' countermeasures.

Space Warfare Strategy 336:

Certain times of the day at certain angles make space objects brighter by Sun illumination, and this is an enticement for optimal attack.

Space Warfare Strategy 337:

Certain points in a satellite's orbit are better optimized for attack than at other times due to delta-v constraints, and this is an enticement for attack at these prime times.

Space Warfare Strategy 338:

Certain terrestrial space attack weapons are better optimized for attack at some times rather than others due to weather constraints, and this is an enticement for attack at these prime times.

Space Warfare Strategy 339:

Space launch systems are better optimized for launching satellites at some times rather than others due to weather constraints, and this is an enticement for attack at these prime times.

Space Warfare Strategy 340:

Geographic locations of adversary space surveillance assets might better define the times and orbits of their space attacks, as they may want to get a better target tracking result just before attack, and also provide target damage assessments. Locations and concentrations of satellite tracking ships will also indicate times and places of attack.

Space Warfare Strategy 341:

Geographic locations of adversary satellite telemetry and control assets might better define the times and orbits of the satellites' maximum mission usefulness, and when they are less effective.

Space Warfare Strategy 342:

Invite senior adversary politicians and military leaders to invest in your country's businesses at very deep financial discounts benefitting them, to discourage them from attacking their own assets, or degrading the value of their investments.

Space Warfare Strategy 343:

Maneuver and deploy space control assets that later enable sealing off the Earth from adversary satellites, in order to fix these adversary space assets into a steady state that cannot be changed from the ground. This would include positioning for jamming, spoofing and cyber attacks, along with denying an adversary the ability to launch new satellites.

Space Warfare Strategy 344:

Launch or maneuver a new mysterious satellite that comes close to critical adversary satellites, to make your adversary pause in its military execution plans, to show resolve, and as a warning for them to back down.

Space Warfare Strategy 345:

Initiate random military orders, communications traffic, re-deployments and satellite maneuvers to confuse potential adversaries of your immediate plans and goals.

Space Warfare Strategy 346:

Initiate multiple false starts, threatening space and terrestrial maneuvers, etc. to induce your adversaries to begin constant satellite maneuvering, so as to waste their on-board fuel reserves before actual conflict starts.

Space Warfare Strategy 347:

Inspire your adversaries' to spend Government budgets on other pressing matters other than space warfare systems by applying pressure in other sectors of its economy, such as oil production and political instability at home.

Space Warfare Strategy 348:

Covertly cause major troubles elsewhere around the world to redirect United Nations and world opinion from space weapons issues.

Space Warfare Strategy 349:

Reveal the existence of a previously covert anti-satellite weapon system, to make your adversaries pause in its military execution plans, to show resolve, and as a warning for them to back down. This system does not necessarily have to exist or be currently operational.

Space Warfare Strategy 350:

If you rush to a given orbit in space, your adversaries will rush there too, if only in surveillance and reconnaissance assets, if not in other space systems.

Sun Tzu Statement 23:

If his place of encampment is easy of access, he is tendering a bait.

Space Warfare Strategy 351:

The most easily accessed orbits might also be the best killing zones.

Space Warfare Strategy 352:

The easiest developed space technologies are also those technologies most easily developed by your adversaries.

Space Warfare Strategy 353:

If your adversaries freely give access to their space research facilities and results, they may want you to mirror this research, as it may be a dead end, or enable space systems that are more vulnerable to your adversaries' covert space weapons programs.

Space Warfare Strategy 354:

If your adversaries offer peace treaties while covertly developing space weapons, then these treaties are a feint calculated to limit your weapons research, and make you look bad on the world stage.

Space Warfare Strategy 355:

If your adversaries appear quite bellicose in space matters, they probably are hiding weaknesses in space warfare capabilities.

Space Warfare Strategy 356:

If particular orbits or space systems seem to be heavily defended, your adversary may be simply enticing you to waste resources observing that area, or funneling you into killing zones elsewhere, or attempting to reduce your military usefulness by forcing you to station space assets in inefficient or less militarily desirable locations.

Space Warfare Strategy 357:

If a satellite appears to be an easy target, it may be a decoy or of low value to that particular conflict (scientific satellite, old age, wrong location to support a particular theater, reduced on-board resources such as coolant and maneuvering fuels, reduced capabilities and broken subsystems, etc.).

Space Warfare Strategy 358:

If a satellite appears to be an easy target, your adversary may be inspiring you to waste resources (maneuvering fuel, time, sensor coolant, satellite lifetimes, attention focus, other lost opportunities, planning resources, revelation of covert capabilities and doctrine, etc.).

Space Warfare Strategy 359:

If a satellite appears to be an easy target, it may actually be heavily defended by multiple means that are not apparently obvious.

Space Warfare Strategy 360:

If a satellite appears to be an easy target, you may not be aware of how little importance your adversary attaches to the impact this satellite's mission has on the current battlefield.

Space Warfare Strategy 361:

If a satellite appears to be an easy target, you may not be aware of alternatives to this satellite's mission as it impacts the current battlefield, or additional hidden satellites performing this same mission.

Space Warfare Strategy 362:

If a satellite appears to be an easy target, you may not be aware of your adversary's ability to replace (quick reaction launch or on-orbit spares) or repair this satellite.

Space Warfare Strategy 363:

If a satellite appears to be an easy target, this may be because your adversary does not understand the importance of space to the conduct of the war. It could also mean your adversary does not have a well thought out space doctrine, or that he does not respect your ability to conduct space control operations.

Space Warfare Strategy 364:

If a satellite appears to be beyond its useful lifetime, or is declared "dead" by your adversary, it might mean that it has entered a period of becoming a feint, or has war-reserve modes that are still operational.

Space Warfare Strategy 365:

If your adversaries appear to concentrate their space surveillance and reconnaissance assets on certain orbits, this could mean a pending attack on these orbits; or, it could just be a feint designed to draw your attention away from the true attack axes.

Space Warfare Strategy 366:

Beware of space objects located in traditional "graveyard" orbits that appear to continue to have precise orbital elements, as these are still controlled by your adversaries, with a further mission in mind.

Space Warfare Strategy 367:

Buildup of certain orbits with space force enhancement and space control assets implies a potential near-future conflict in those regions of the Earth that these orbits are optimized for coverage.

Space Warfare Strategy 368:

If a particularly suspicious space object is in an easily accessible orbit, or has a very large RADAR Cross Section, or is optically very bright, it may be a bait from your adversaries.

Space Warfare Strategy 369:

If your weapons appear to be particularly effective against their assigned targets, then these targets may be simply baits or decoys from your adversaries.

Space Warfare Strategy 370:

Beware of being enticed by your adversaries into certain orbits, as these orbits may later be pumped up by your adversaries employing nuclear means to degrade and destroy your space systems through increased radiation levels, or through increasing orbital debris concentrations.

Force Correlation

Sun Tzu Statement 24:

If he is in superior strength, evade him.

Space Warfare Strategy 371:

Superior strength in space systems may be hard to determine because space is global, so terrestrial weapon systems directed towards space can be located and hidden world-wide, even on mobile platforms such as ships, submarines or airplanes. In addition, space weapon systems may be hidden in unique or unusual orbits, on celestial bodies, or spread among many different satellites, or even be disguised as space "junk."

Space Warfare Strategy 372:

Actual space weapons superiority has to be measured in relation to space systems defenses, and adversary ability to reach the maximum number of potential targets in the minimum amount of time. If your adversary does not have the lethality, reach, range or timeliness of weapon deployment and employment, then the war may be over with before he can use all of his weapon systems.

Space Warfare Strategy 373:

An adversary's space superiority can also be measured in terms of his space doctrine, strategies, tactics, training, aggressiveness, long-term will to sustain attacks, and willingness to use weapons systems that may not be politically correct according to world opinion.

Space Warfare Strategy 374:

Due to the vastness of space, it is relatively easy to evade an adversary's weapons range, if you have sufficient warning time, and fuel reserves, to maneuver out of his way.

Space Warfare Strategy 375:

Possibly the best way to evade an adversary's space surveillance sensors, and thus his space weapon systems, is to have low observables characteristics, be of a smaller size, and occupy unusual orbits. Another way is to have an apparent space mission that appears harmless.

Space Warfare Strategy 376:

Localized space superiority may be achieved by many small and dispersed space assets being able to apply their effects at a smaller region of space through tricks of orbital dynamics and timing, or range of weapon systems. This localized space superiority may not be obvious to the casual observer, and may not correspond to terrestrial definitions of geographic "closeness."

Space Warfare Strategy 377:

Disperse your space forces (and increase their number), so that your adversaries have to match your dispersal, and cannot as easily concentrate their space weapons on any one grouping of targets. If your adversaries do concentrate their forces against a small number of targets, you then have the opportunity to maneuver your other space forces even further away, and thus delay your adversaries' ability to maneuver further and take out more of your space systems, and increases the chances the war will be over with before they can complete all of their attack missions.

Space Warfare Strategy 378:

Your response to your adversaries' supposed space superiority must be based on the composition and disposition of their forces, their ability to sense and assess the battlefield situation, along with their doctrine, strategies and tactics, response timelines, their political and military intents, and any self-deterring factors limiting their potential options such as political acceptability, weapon employment creation of residual space junk and radiation belts, etc. and according to the conflict escalation status of the war. For example, an over abundance of certain phenomenology weapon systems may limit their deployment and employment range, time when they can be employed, which orbits they can operate in, sustained maneuverability, number of shots, fire rate, lethality and political acceptability.

Space Warfare Strategy 379:

Making your space systems look like and occupy the same orbits as other, neutral satellite systems, may hide them from your adversaries.

Space Warfare Strategy 380:

It is easier to evade your adversaries when they have degraded space surveillance systems, such as during periods of higher solar storm activity, or when it is necessary to point a sensor with the Sun in the background while attempting to track you.

Space Warfare Strategy 381:

In time of war, continuously adjust the orbits of your high value space assets to avoid coming within range of your adversaries' terrestrial-based space weapon systems.

Space Warfare Strategy 382:

In time of war, continuously adjust the orbits of your high value space assets to complicate your adversaries' space-based weapon systems targeting.

Space Warfare Strategy 383:

If your adversary is of superior strength, then avoid being surrounded by him. Multiple weapons approaching from differing aspect angles can overwhelm your defenses and space surveillance assets, and complicate your ability to maneuver out of range.

Space Warfare Strategy 384:

If you can maneuver faster than your adversaries, then there is a good chance you can avoid his superior space weapons and surveillance systems. This also includes your ability to sense and respond faster than your adversaries' space surveillance and command and control systems.

Space Warfare Strategy 385:

You may purposely maneuver a high-value space asset continuously out of range of potential adversary space weapon systems in order to lure him into depleting his maneuvering fuel and on-board resources.

Space Warfare Strategy 386:

If your adversaries have superior research and manufacturing capabilities for space weapon systems, then you should emphasize research and manufacturing of technologies that would negate these advantages, such as low observables and high maneuverability for your space systems.

Space Warfare Strategy 387:

If your adversary is displaying superior strength, then he may only be attempting to deter you from taking actions either in space, or on the Earth.

Space Warfare Strategy 388:

Superior strength in your adversaries' space systems can be negated if you have superior space warfare policy, theory, doctrine, strategies, tactics and training; and, your willingness to employ politically incorrect weapon phenomenologies, techniques, and deployment locations.

Space Warfare Strategy 389:

Superior strength in your adversaries' space systems may be negated if you possess superior command and control along with superior space commanders.

Space Warfare Strategy 390:

Superior strength in your adversaries' space systems may be negated if you possess superior space and terrestrial deterrence capabilities, whether real or imagined.

Space Warfare Strategy 391:

Superior strength in your adversaries' space systems may be moral strength based on an integrated government and population that is very much behind whatever military actions they conduct in space.

Space Warfare Strategy 392:

Superior strength in your adversaries' space systems can also be based on the strengths of their allies.

Space Warfare Strategy 393:

Superior strength in your adversaries' space systems can also be based on the strengths of their terrestrial systems that can prevail no matter what is happening in space.

Space Warfare Strategy 394:

Superior strength in your adversaries' space systems may be negated if you strike first, especially with the elements of surprise and ferocity (shock and awe).

Space Warfare Strategy 395:

Superior strength in your adversaries' space systems may be negated if you position your space assets (force enhancement and space weapons) better than he does.

Space Warfare Strategy 396:

Superior strength in your adversaries' space systems may be negated if you position your space assets (force enhancement and space weapons) in orbits that are difficult to accurately monitor with space surveillance sensors, and difficult to reach for attacks (e.g., highly elliptical orbits).

Space Warfare Strategy 397:

Superior strength in your adversaries' space systems may be negated if you possess better and more competent intelligence collection resources and Space Situational Awareness (SSA) than he does.

Space Warfare Strategy 398:

Superior strength in your adversaries' space systems may be negated if you deploy many decoys, covert programs and extensive spoofing, so your adversaries' space weapons will be wasted on low-value or meaningless targets.

Space Warfare Strategy 399:

Superior strength in your adversaries' space systems may be negated if you can "blind" or spoof his space surveillance and reconnaissance assets.

Space Warfare Strategy 400:

Superior strength in your adversaries' space systems may be negated if you have superior space logistics support (launch, on-orbit refueling, on-orbit repair), space systems reliability and availability, along with sustainability of effort.

Space Warfare Strategy 401:

Superior strength in your adversaries' space systems may be negated if you have superior satellite defenses, protection and hardening (including better resistance to space environmental conditions).

Space Warfare Strategy 402:

Superior strength in your adversaries' space systems may be negated if you have superior satellite reconstitution and restoration capabilities.

Space Warfare Strategy 403:

Superior strength in your adversaries' space systems may be negated if you require less command and control from terrestrial resources for the conduct of your satellite missions.

Space Warfare Strategy 404:

Superior strength in your adversaries' space systems may be negated if you isolate your adversaries' satellites from the Earth so that he may not command them to change state for defensive or offensive operations, along with denying them access to data and communications derived from their space systems.

Space Warfare Strategy 405:

Superior strength in your adversaries' space systems may be only a localized condition. For example, immediately over his national borders; but, not necessarily over a particular theater of interest.

Space Warfare Strategy 406:

Your adversaries' being of superior strength has two aspects: if they are of superior offensive strength, then avoid their attacking your space assets; if they are of superior defensive strength, then avoid attacking their space assets. These offensive and defensive capabilities may not be everywhere, but only localized to certain orbits and over certain regions of the Earth.

Space Warfare Strategy 407:

If your adversaries are of superior strength, then conducting an early, massive, surprise attack may neutralize their previous advantages.

Space Warfare Strategy 408:

Of course, if you are deploying decoys, dummies or sacrificial space assets, your mission is to seek out and absorb attacks from superior adversary forces to draw down their strength in weapon shots, reloads and maneuvering resources and transit times; along with absorbing your adversaries' command, control and sensor attention.

Space Warfare Strategy 409:

One way to evade your adversary is to surrender to him ("if you cannot beat them, then join them").

Space Warfare Strategy 410:

One way to evade your adversaries is to appeal to international legal organizations, such as the United Nations, to try to reign in your adversaries' space attacks.

Sun Tzu Statement 25:

If his forces are united, separate them. The next best is to prevent the junction of the enemy's forces.

Space Warfare Strategy 411:

Take your adversaries' space systems on "wild goose chases" to separate them from their centers of strength, while depleting their maneuvering reserves, and wasting their space surveillance and command and control assets.

Space Warfare Strategy 412:

Lay down debris fields in certain orbits to separate your adversary forces, or prevent their concentrating against you. You can use these keep-out zones as defensive shields or pivot points for your own offensive attacks.

Space Warfare Strategy 413:

Lay down radiation belts in certain orbits to separate your adversary forces, or prevent their concentrating against you. You can use these keep-out zones as defensive shields or pivot points for your own offensive attacks.

Space Warfare Strategy 414:

Lay down satellite-seeking space mines in certain orbits to separate your adversary forces, or prevent their concentrating against you. You can use these keep-out zones as defensive shields or pivot points for your own offensive attacks.

Space Warfare Strategy 415:

Concentrate your anti-satellite forces in certain orbits to separate your adversary forces, or prevent their concentrating against you. You can use these keep-out zones as defensive shields or pivot points for your own offensive attacks.

Space Warfare Strategy 416:

Play your adversary commanders against each other (particularly for international coalition or multi-service commands) by allowing the weak commanders some victories and the strong commanders many losses so your adversaries will be of divided command.

Space Warfare Strategy 417:

Play your adversary political coalition leaders against each other to divide their joint efforts and to allow them to be defeated piecemeal.

Space Warfare Strategy 418:

Conflicts with multiple nations and coalition partners with differing national and political agendas decreases unity of command and purpose.

Space Warfare Strategy 419:

Agitating your adversaries' populace and political leadership can produce divided goals and objectives, leading to confused command and control of space assets, particularly space weapon systems, especially since space systems are global and have global effects that may be countered by unwillingness of some nations to allow overt space operations within their national boundaries at certain conflict levels.

Space Warfare Strategy 420:

Distribute your critical space assets over a wide region so that your adversaries must disperse their anti-satellite forces also.

Space Warfare Strategy 421:

Another definition of "united" forces may mean multiple phenomenology weapons (laser, jammer, kinetic kill, satellite maintenance robot attack, etc.) being employed in concert under one overarching strategy and plan. A way to divide these forces is by maneuvering out of range (or range rate - too fast to track) of one of these phenomenologies, employ political tools to disallow certain weapons due to "rules of war" constraints (or move in the way of a neutral target in the background), confuse the targeting and tracking mechanisms of one of these weapon systems, or attack (neutralize, or at least keep it busy) a particular jointly used space weapon system just before it is scheduled to be employed against you.

Space Warfare Strategy 422:

Another definition of "united" forces may mean multiple differing orbits of weapon systems that all come together at the same time, even if the origination points do not make the final target obvious. It is important to identify these critical space inflection points and guard against them (seize the high ground; seize critical choke points, or, at least, seize the space initiative). To "divide" these differing weapon systems may be as simple as slightly changing the phasing or timing of the potential targets' orbits.

Space Warfare Strategy 423:

By denying your adversaries the ability to launch new satellites, you are also limiting their ability to concentrate his space systems against you.

Space Warfare Strategy 424:

By denying your adversaries the ability to communicate with their satellites, you are also limiting their ability to concentrate their space systems against you (unless his satellites are pre-programmed to maneuver and concentrate in certain orbits, and then engage pre-defined targets).

Space Warfare Strategy 425:

Since space systems mostly support terrestrial forces, if you can separate satellites from communicating to the Earth, then his space systems are useless.

Space Warfare Strategy 426:

Terrestrial forces can prevent terrestrial-based anti-satellite forces from concentrating against certain satellite orbits.

Space Warfare Strategy 427:

The nature of critical satellite orbits tends to concentrate attacks, along with terrestrial weather conditions (cloudy, raining, daylight conditions {some sensors can only track satellites at night, or at terminator (sunup, sundown) conditions}) concentrating the timing of terrestrial-to-space attacks.

Space Warfare Strategy 428:

Cause troubles in many different terrestrial and outer space locations to inspire your adversaries to disperse their forces by forcing them to concentrate them elsewhere, or disperse them as a defense against attacks.

Space Warfare Strategy 429:

Another means to separate an adversary's space forces is to blow major holes in his defensive and offensive anti-satellite systems located in critical orbits.

Space Warfare Strategy 430:

Sometimes it is better to attack an adversaries space system while it is concentrated, such as attacking a mother ship before it disperses a multitude of space mines.

Space Warfare Strategy 431:

Conduct seemingly random military maneuvers and actions to confuse your adversaries and cause doubts in their minds as to their unity of purpose, strategies, tactics and command decisions.

Space Warfare Strategy 432:

Separate your adversary forces from their space surveillance assets so they can neither detect your maneuvers, determine your plans, strategies and tactics, nor accurately target your space assets.

Space Warfare Strategy 433:

Avoid orbital regimes that allow your adversaries to align (spatially and time-wise) their command and control, space surveillance, and anti-satellite forces at critical junctures of your orbital paths.

Space Warfare Strategy 434:

Pay particular concern for those adversary anti-satellite forces that have the longest ranges, most shots, and most maneuvering capabilities, as these have the most potential at concentrating against your space systems.

Space Warfare Strategy 435:

Major storms on the high seas can disperse Naval forces supporting space systems (space tracking ships, ship-based ASAT's and ship-based space command centers, etc.).

Space Warfare Strategy 436:

Air attacks can disperse Naval forces supporting space systems (space tracking ships, ship-based ASAT's and ship-based space command centers, etc.).

Space Warfare Strategy 437:

Some of your adversaries' space surveillance assets may be unavailable during terrestrial and solar weather conditions, and thus cannot combine and concentrate with multiple sensor phenomenologies against certain allied satellites.

Space Warfare Strategy 438:

Spoofing your adversaries' intelligence collection systems, perceptions and faulty doctrine with false and misleading information can lead to division of leadership, purpose and common efforts and goals for space systems.

Space Warfare Strategy 439:

Spoofing your adversaries' perceptions of their own space force status and weapons capabilities with false and misleading information can lead to division of leadership, purpose, common efforts and goals for space systems.

Space Warfare Strategy 440:

Demoralizing your adversaries' operational space forces can lead to divided efforts and leadership.

Space Warfare Strategy 441:

Sabotage of your adversaries' space systems (terrestrial and in orbit) can lead to divided efforts and leadership.

Space Warfare Strategy 442:

One can prevent the concentration of adversary satellites by adopting a strategy that inspires your adversaries to use up significant reserves of maneuvering fuel prior to the execution of the main allied space attack sequences.

Space Warfare Strategy 443:

If one can pre-setup a very quick, possibly surprise, sequence of attacks against your adversaries, you will not give him time to react and concentrate his space forces.

Space Warfare Strategy 444:

Prevent the conjunction and semi-simultaneous use of multiple phenomenology sensor systems supporting the battlefield so your adversaries cannot verify and validate significant military events, and prevent spoofing campaigns against them. Multiple phenomenology sensors may be satellite imagery sensors being employed against the same targets as aerial sensor systems.

Space Warfare Strategy 445:

If your adversaries lack clear and concentrated political and military objectives, then they cannot be united in their efforts.

Sun Tzu Statement 26: **It is the rule in war, if our forces are ten to the enemy's one, to surround him; if five to one, to attack him; if twice as numerous, to divide our army into two.**

Space Warfare Strategy 446:

The ratios of offense vs. Defense in space warfare must be determined by extensive modeling and simulations of possible future space engagements.

Space Warfare Strategy 447:

To "surround" an adversary satellite, you must be in specially timed orbital paths that can simultaneously approach the target from different attack angles.

Space Warfare Strategy 448:

To "surround" an adversary satellite, you can employ different phenomenology weapon systems that engage the target through multiple, unexpected means.

Space Warfare Strategy 449:

If an adversary satellite is suspected of having defenses, then multiple attacks must be employed (possibly of different phenomenology weapon systems, and from different angles of attack, maybe coming out of the Sun) to increase the Probability of Kill (Pk) or mission success.

Space Warfare Strategy 450:

Since the quantities of militarily significant satellites are small, then attacking weapon systems need not be too large in quantity.

Sun Tzu Statement 27: **If equally matched, we can offer battle; if slightly inferior in numbers, we can avoid the enemy; if quite unequal in every way, we can flee from him. Standing on the defensive indicates insufficient strength; attacking, a superabundance of strength.**

Space Warfare Strategy 451:	Attacking your adversaries' space systems without surprise and when evenly matched in strength leaves too much to chance for the final outcome, and is expensive due to many lost space systems.
Space Warfare Strategy 452:	Attacking your adversaries' space systems with surprise and even when of lesser strength may still assure victory.
Space Warfare Strategy 453:	Fleeing from your adversaries' space weapons may draw down their maneuvering fuel reserves, thus making them less effective. This would be particularly advantageous if you can convince your adversaries to pursue a satellite that is of low value to yourself.
Space Warfare Strategy 454:	Avoiding your adversaries' superior space control assets can only wear him down and buy time, but this technique does not usually win battles.
Space Warfare Strategy 455:	Avoiding your adversaries' superior space control assets can also be achieved through low observables, unusual orbits and strange and unpredictable maneuvers.
Space Warfare Strategy 456:	Assuming a defensive posture, running from your adversaries and hiding your space assets can lull your adversaries into thinking you possess inferior offensive and defensive capabilities. This spoof can lure your adversaries into defensive killing zones and have the chance to significantly change the balance of power in your favor.

Sun Tzu Statement 28: **The clever combatant looks to the effect of combined energy, and does not require too much from individuals.**

Space Warfare Strategy 457:

Because of the newness of space warfare, one must not put all of their eggs in one basket because the effectiveness of individual space weapon systems has not yet been proven in full-scale space combat. The user must rely on differing phenomenology attacks from differing orbital corridors with differing attack sequences and alternatives. It would not hurt to employ multiple attacks against one target to increase the probability of kill and because of doubts concerning operational effectiveness of individual weapon systems.

Space Warfare Strategy 458:

One should not count solely on individual attacks against small numbers of single targets, but massed attacks against many targets simultaneously for massed effects against an adversary's ability to conduct warfare.

Space Warfare Strategy 459:

Possibly, distributed networks of small satellites have better survivability than one large, individual satellite.

Space Warfare Strategy 460:

Of course, the best command and control of military space forces is from single individuals with a single purpose in mind, versus multiple commanders with differing objectives and viewpoints. This single command structure must also be supported by the combined energies of a competent command staff.

Space Warfare Strategy 461:

Combining the effects of multiple methods of space systems attacks must include simplicity of planning orders to avoid confusion and the effects of the "fog of war."

Space Warfare Strategy 462:

Combining the effects of multiple methods of space systems attacks must include the ability to communicate among multiple military commands, services and international partners. Denying, delaying or spoofing battlefield and international communications infrastructure may deny an adversary the ability to achieve combine military effects against space systems.

Space Warfare Strategy 463:

There should exist multiple communication pathways for command and control, so critical space warfare information and tasking would not rely solely on single paths.

Space Warfare Strategy 464:

Combining the effects of multiple methods of space systems attacks also includes employing traditional terrestrial military means, along with cyber, economic and diplomatic means during all phases of the conflict, including pre-conflict build-ups.

Space Warfare Strategy 465:

One should not count solely on intelligence agency predictions for an adversary's space capabilities as this is difficult to determine with certainty, especially concerning adversary intent. A certain degree of "safety margins" should be included when planning for offensive and defensive space operations. Also, many different sources of intelligence reaching similar conclusions is preferable to only single-sourced or single sensor intelligence collection. Intelligence collectors may have supreme confidence in their products, but the clever commander never assumes perfect intelligence, particularly for space systems.

Space Warfare Strategy 466:

Warnings of attacks against space systems should not rely on a single sensor system or satellite operator who can easily be spoofed by a clever adversary who has the benefit of years of attack technology developments, setup preparations and leisurely detailed planning timelines.

Space Warfare Strategy 467:

Commanders should not rely on a single plan for executing space warfare tasking, but, due to the "fog of war," have backup and alternative plans in mind.

Space Warfare Strategy 468:

Multiple directed energy weapons (lasers, High Power Microwaves - HPM) can possibly be used against the same target at the same time to increase the net fluence level and the Probability of Kill (Pk).

Space Warfare Strategy 469:

The concept of "combined energy" can also be applied to research, development and manufacturing programs for space systems where commonalities among these systems and commercial systems can be combined for more efficient deliveries to the space warfighter.

Space Warfare Strategy 470:

The concept of "not requiring too much from individuals" can also be applied to research, development and manufacturing programs for space systems where one must not rely solely on single programs that may fail to assure capable deliveries to the space warfighter.

Space Warfare Strategy 471:

Combining the effects of multiple methods of space systems attacks also implies concentrating those effects instead of spreading them out across a broad front.

Space Warfare Strategy 472:

The concept of "combined energy" can also be applied to having multiple means of communicating with, commanding, and monitoring the health and status of critical satellite systems.

Space Warfare Strategy 473:

The clever commander tries to determine if his adversaries are requiring too much from individuals for command and control, intelligence, communications, transportation and logistics, and execution of space forces tasking, and then attempts to isolate, degrade or negate these individuals physically or psychologically.

Space Warfare Strategy 474:

The clever commander relies not only on the physical effects of anti-satellite systems, but also on the combined effects of concealment, surprise and careful timing in their employment.

Space Warfare Strategy 475:

The concept of "combined energy" can also be applied to having multiple means of launching and replacing critical satellite systems. This can include geographically and politically diverse (other nations) launch sites, launch base types (land, air, sea), on-orbit spares, rapid launch capabilities, inexpensive launch, etc.

Sun Tzu Statement 29:

The spot where we intend to fight must not be made known; for then the enemy will have to prepare against a possible attack at several different points; and his forces being thus distributed in many directions, the numbers we shall have to face at any given point will be proportionately few.

Space Warfare Strategy 476:

It is best to keep your space weapon programs and their deployment orbits hidden and covert, unless you purposely reveal some of them for their deterrence value.

Space Warfare Strategy 477:

You should keep your adversaries continually guessing as to your true space warfare capabilities, plans, strategies, techniques and intentions.

Space Warfare Strategy 478:

You should keep your adversaries continually guessing as to your true space warfare composition of weapon types, ranges, operational status, training and actual locations.

Space Warfare Strategy 479:

You should keep your adversaries continually guessing as to when the space war actually starts, and what exactly is the definition of "start" to a space war (an adversary might not even be aware that a space war has started until, hours or days after initiation of space control actions).

Space Warfare Strategy 480:

Some space strategies may actually allow the place and time of the attack to be constantly shifting due to the nature of satellite orbits, and this fact can obscure to your adversaries when they are most vulnerable.

Space Warfare Strategy 481:

One may purposely leak the supposed place and time of a space attack so as to confuse your enemies as to the actual time and place.

Space Warfare Strategy 482:

One may purposely lie to your allies as to the place and time of a space attack if you believe that their information security protection is not as good as your own, or you want to purposely plant false information to confuse your adversaries.

Space Warfare Strategy 483:

One may purposely make minor maneuvers and attacks to fool your adversaries into thinking these are the main attack efforts, while hiding your prime attacks for an entirely different region of space or Earth.

Space Warfare Strategy 484:

A satellite's ability to frequently conduct large, small or continuous maneuvers, especially just before and during a space conflict, might be the best capability to keep your adversaries guessing as to your space control intentions and planning, besides complicating his targeting solutions, especially when they may lack world-wide space surveillance sensor coverage.

Space Warfare Strategy 485:

That the orbits we intend to fight in must not be made known to our adversaries is even more important for space systems than terrestrial systems, since it is very difficult to change orbits at the last minute (especially changing orbital inclination), so immediate space combat can only be fought with the current resources on hand in the local area.

Space Warfare Strategy 486:

Falsely touting publically the advantages of some of your lower-quality space systems may inspire your adversaries to target these lower-priority space systems, and waste time, effort and resources, while disrupting their optimal attack tempo.

Space Warfare Strategy 487:

Creating false communications traffic and fake physical terrestrial and satellite movement and launches can lead your adversaries into false impressions of your space strategies.

Space Warfare Strategy 488:

Overemphasis on the peaceful uses of space in your nation's political environment may lull your adversaries into thinking you have little, if any, offensive space capabilities.

Space Warfare Strategy 489:

Careful manipulation of your adversaries' perceptions of your trigger points on the space conflict escalation ladder can be useful to lull them into complacency before you initiate a major striking blow against his space capabilities.

Space Warfare Strategy 490:

Attacks emanating from unusual terrestrial locations (e.g., Poles, South Atlantic) or unusual orbits (e.g., highly elliptical, retrograde orbits, zero inclination Low Earth Orbit, Trans-Lunar orbits, Lagrangian Points) increase the probability you will surprise and confound your adversaries.

Sun Tzu Statement 30:

If he sends reinforcements everywhere, he will everywhere be weak.

Space Warfare Strategy 491:

Since it is very difficult to change orbits at the last minute (especially changing orbital inclination), immediate space combat can only be fought with the current resources on hand in the local area. There will be no trans-conflict redistribution of space forces to help those forces under immediate attack. Thus, pre-conflict positioning of space assets is possibly the most important aspect of space strategies. This principle is related to the other fundamental principle of maximizing high maneuvering abilities of space assets. This is particularly true for space due to the vast distances involved, and short ranges of space weapons.

Space Warfare Strategy 492:

The higher the altitude of your space forces, then the less delta-V (maneuvering fuel) that is required to change your orbit. Possibly the High Ground of space can be taken more literally when attempting space-to-space combat.

Space Warfare Strategy 493:

One must fully appreciate what are the important space systems supporting the current and projected future tasks at hand, and what other systems are of less importance and can be more readily lost to possible adversary actions. Thus, you will be better prepared to defend those systems that are most important. Also, understand the most to least important space systems list may change as the conflict evolves, and as losses occur, or as terrestrial forces' plans change. This same process should also apply to your evaluations of your adversaries' space forces (Space IPB - Intelligence Preparation of the Battlespace).

Space Warfare Strategy 494:

One must fully appreciate what are the important space choke points supporting the current and projected future tasks at hand, and what other space and terrestrial regions are of less importance and can be more readily less defended from possible adversary actions. Thus, you will be better prepared to defend those regions of space and the Earth that are most important. Also, understand the most to least important space regions list may change as the conflict evolves, and as losses occur, or as terrestrial forces' plans change. This same process should also apply to your evaluations of your adversaries' space forces choke points (Space IPB - Intelligence Preparation of the Battlespace).

Space Warfare Strategy 495:

Sending mobile satellite control and data receiver terminals to neutral country locations may increase their survivability, if you can get their political and diplomatic issues resolved.

Space Warfare Strategy 496:

Due to the unique nature of satellite orbits, the locations where you are strong and those where you are weak are constantly shifting in space and time.

Space Warfare Strategy 497:

The definition of "strong and "weak" for space warfare may be difficult to determine, because it is not solely based on the number of weapons versus number of targets, but also has quality of weapons issues such as: re-fire times, total number of shots, range, reach, maneuvering ability, power, kill timelines, type of kill (temporary or permanent), superior command and control, political acceptability, degree of debris generation, sensor requirements, probability of kill, Bomb Damage Assessment (BDA) confidence and timing, etc. Its entirely possible that "strong" Space Situational Awareness (SSA) will defeat more numerous weapon systems of your adversaries.

Space Warfare Strategy 498:

Beware of thinking you have superior capabilities against certain targets because space warfare is so new, they may be many unaccounted for factors you have not considered.

Space Warfare Strategy 499:

Beware of thinking you have superior capabilities against certain targets because space is so vast and remote, there may be covert or hidden defenses or other assets you have not been able to detect. In addition, space assets that do not appear close may actually be "close" by orbital dynamics principles because it would take little fuel or time to reach a new orbit near those satellites of interest.

Space Warfare Strategy 500:

Understanding your adversaries' space warfare theory, doctrine, strategies, tactics, techniques, training, National attitudes and will, command and control organization and hierarchies, commanders' education, disposition and past battle experiences, and his forces' capabilities, status and locations will go far in understanding their possible space intentions, plans, attack routes, etc.

Sun Tzu Statement 31: Numerical weakness comes from having to prepare against possible attacks; numerical strength, from compelling our adversary to make these preparations against us.

Space Warfare Strategy 501:

You can rile up your adversaries' population to force them to attack you earlier than they planned or were prepared for. Disorganized attacks are inferior to those that are well planned.

Space Warfare Strategy 502:

Continuous, vigorous, quick and surprising offensive operations makes up for inferior space warfare capabilities.

Space Warfare Strategy 503:

Emphasizing quick-reaction, highly maneuverable offensive space weapons systems with long range effects in your public research programs might inspire your adversaries to emphasize defensive space technologies, forcing them to defend at once from many possible attack avenues and target orbits.

Space Warfare Strategy 504:

Emphasizing covert space weapons systems in your hidden research programs, would force your adversaries to play catch up from an inferior position when these systems are deployed and employed.

Space Warfare Strategy 505:

Emphasizing unproven new technology space weapons systems in your research programs, would strike doubts in your adversaries' space defensive capabilities and force them to devote large portions of their space superiority budgets on defensive technology measures instead of offensive systems.

Space Warfare Strategy 506:

Making large and "loud" demonstrations that look like preparations for a major space attack may draw your adversaries' space systems away from the real attack axis.

Space Warfare Strategy 507:

Those Nations that have more space systems being used by their military also have more space systems to defend, and probably must emphasize defense over offense in their technology developments and in their military planning. If your adversary has few space systems, then there are fewer targets for your offensive space weapons, and you must emphasize defense, unless you believe that you have perfect Space Situational Awareness, and you know all of your adversaries' and their allies' offensive space weapons, and believe you can target and neutralize these early in the space conflict before he can fully implement his offensive space warfare plans.

Space Warfare Strategy 508:

Of course, use of nuclear weapons in space may prevent your adversaries from concentraing their space forces in one region or orbit.

Space Warfare Strategy 509:

If you have rapid reaction mobile (air, ship, submarine) global launch capabilities, you may be able to keep your adversaries guessing as to where you may be concentrating your space forces at the last minute, and what are the types of forces (satellites, space-to-space ASAT's, direct ascent ASAT's, jammers and directed energy weapon systems).

Space Warfare Strategy 510:

Concentrating your space forces involves coordinating your Anti-Satellite (ASAT) systems, your space surveillance sensor networks, your communications networks, your command and control centers (Including satellite Tracking, Telemetry & Control - TT&C centers), possibly your satellite launch capabilities, and supporting elements (logistics) including terrestrial defensive and offensive forces (air, sea, land, and cyber, particularly if you want to employ terrestrial forces against adversary terrestrial space support and ASAT systems).

Sun Tzu Statement 32:

Though the enemy be stronger in numbers, we may prevent him from fighting.

Space Warfare Strategy 511:

All one may have to do to achieve space supremacy is to cut off your adversaries satellites from all control and communications from the Earth; since artificial intelligence is not sufficient for these satellites to conduct efficient space warfare on their own. Thus, the superiority of an adversary's space forces may be denied by indirect means.

Space Warfare Strategy 512:

Your adversaries may have superior space warfare research programs, but if these technologies are never developed into fully populated systems of large quantities, and never deployed and employed in sufficient numbers, then they are worthless to those nations' goals in space warfare (besides their limited deterrent value).

Space Warfare Strategy 513:

Strength in numbers also requires good or adequate command, control and communications, organizational structures, intelligence collection, good doctrine, planning and execution, and decisive will to accomplish well-defined goals. Disrupting several of these capabilities of your adversaries will go a long way to achieving their defeat.

Space Warfare Strategy 514:

Those adversaries that have extensive and highly technical space warfare assets also possess little experience in operationally employing them, and may initiate very inefficient and disorganized responses during major space battles.

Space Warfare Strategy 515:

If your adversaries do not know which of your space systems are critical to your war effort, then they cannot adequately target you.

Space Warfare Strategy 516:

If your adversaries do not know where your critical space systems are located due to your employing stealth, masking or unusual orbits, then they cannot adequately target you.

Space Warfare Strategy 517:

If your adversaries cannot reach your critical space systems due to their being out of weapons access range, or orbital maneuvering range, then they cannot adequately target you.

Space Warfare Strategy 518:

If your adversaries' space warfare systems are untested in real, sustained combat, then their true abilities against you are uncertain, and probably possess "cracks in their armor." Unfortunately, the same is probably true of your space warfare systems (whether you believe this or not), but the true vulnerabilities and failure points of both sides may not be obvious or believable. However, be assured, due to the new nature of space warfare, they do exist in plenitude.

Space Warfare Strategy 519:

Because your adversaries probably come from different cultures and military traditions than your own, then they have a higher probability of detecting your space warfare systems non-obvious "cracks in their armor" than you do, and vice versa.

Space Warfare Strategy 520:

Surprise attacks may reduce any numerical or technological superiority your adversaries possess in their space warfare systems.

Space Warfare Strategy 521:

As in all military matters since time immemorial, due to the cleverness of human beings, especially under combat conditions, your adversaries will ultimately find your vulnerabilities and get through any defenses you may fool yourself into thinking are "invulnerable."

Space Warfare Strategy 522:

International treaties and customs, if not their own populations, may prevent your adversaries from fighting you in space.

Space Warfare Strategy 523:

Those adversaries with the most technologically advanced, and thus most costly space warfare systems, may be self-deterred into employing these fully due to fears of their expensive losses.

Space Warfare Strategy 524:

For those countries at war with roughly equal space warfare forces, the main decisive factor would be which country may be lucky enough to discover and believe in the one decisive commander who is a genius in space warfare organization, doctrine, strategies and tactics. This is especially true for the non-traditional nature of space warfare. In addition, those countries with the least meddling in military matters by their politicians might be the decisive factor in winning the war (though possibly "losing" the peace afterwards).

Space Warfare Strategy 525:

Because space warfare involves little to no human casualties, commanders can be particularly decisive and cold hearted in their planning and execution compared to terrestrial warfare. As Maj Gen Roger G. DeKok (deceased) has previously stated : "Satellites have no mothers." In addition, morale and courage on the battlefield is of less importance.

Space Warfare Strategy 526:

There are possible cyber warfare techniques that would render more powerful space warfare systems useless to their operators.

Space Warfare Strategy 527:

Obscuring your space warfare plans from your adversaries may confuse them enough to prevent them from immediately attacking you.

Space Warfare Strategy 528:

If you have little to no space systems, your adversaries will not attack you in space.

Space Warfare Strategy 529:

Of course, surrendering will probably prevent the enemy from fighting.

Space Warfare Strategy 530:

If your adversaries are stronger in their space warfare systems, you may be able to funnel their systems into narrow killing zones by careful selection of your orbits and setting of baits.

Space Warfare Strategy 531:

Due to the hyper velocities of space orbits, one cannot adequately armor your spacecraft, and a small, relatively inexpensive space mine can take out a large billion dollar satellite critical to the conduct of your military operations.

Space Warfare Strategy 532:

Because a small, relatively inexpensive space mine can take out a large billion dollar satellite critical to the conduct of your military operations, then offense is better than defense in space warfare, making it inherently unstable for conflict escalation.

Space Warfare Strategy 533:

Your adversaries may possess superior space warfare systems more for political, prestige, economic or deterrence value, but may lack the actual political will to extensively use them and face the wrath of the rest of the World's populations.

Space Warfare Strategy 534:

If you can inspire your adversaries to use up their satellite maneuvering fuel on "wild goose chases" then he will not have sufficient fuel reserves to accomplish subsequent critical space control tasks, thus reducing any superiority in quantity or quality they may possess.

Space Warfare Strategy 535:

Due to the very technical and classified nature of space weapons systems, if you can assassinate the very limited key technical, operational and command personnel associated with these systems, you may be able to significantly delay their employment, or at least reduce their effectiveness, even if these weapon systems are superior in quantity or quality.

Space Warfare Strategy 536:

During times of severe geomagnetic storms and high solar flare activity those nations with numerical and technological superior space systems will experience more satellite and command, control and communications outages than those nations with fewer and simpler space systems.

Space Warfare Strategy 537:

During times of severe geomagnetic storms and high solar flare activity might be the best time to attack superior space systems as there will be extensive communications blackouts, and any satellite outages may be attributed to the effects of these solar storms instead of actual intentional satellite attacks.

Space Warfare Strategy 538:

Nations with numerical and technological superior space systems also require more support personnel and logistics structures (space launch, space surveillance, command, control, communications, satellite health and status monitoring, etc.) on the Earth than those nations with fewer and simpler space systems. More infrastructure implies more vulnerable targets, though possibly this also means more backup systems in cases of terrestrial outages.

Space Warfare Strategy 539:

Taking out your adversaries' space launch capabilities assures that they will be able to fight the subsequent space war only with those assets that are currently space-based, with no hope of replenishments.

Space Warfare Strategy 540:

Employing Guerrilla tactics including hit-and-run satellite attacks may be effective against those adversaries with superior space capabilities.

Space Warfare Strategy 541:

One may use expendible spacecraft to use as disposable targets or to get in the way of attacking satellite systems as a way to slow down superior and more numerous space systems.

Space Warfare Strategy 542:

Those adversaries that feel overconfident in their space superiority capabilities probably can also be easily lured into foolish and wasteful attacks.

Space Warfare Strategy 543:

If you can react much faster in your Observe, Orient, Decide and Act (OODA) command loops you have a good chance of keeping your adversaries off-balance, and may reduce any advantages they may possess in quality and quantity of space warfare systems.

Space Warfare Strategy 544:

Though your adversaries may have many times the number of space warfare systems as you do, because of the vastness of space and the limits of orbital dynamics, they probably have major portions of orbital belts that do not have satellites present (or are easily covered by terrestrial systems), and may allow you free range within these orbital constraints.

Space Warfare Strategy 545:

One may allow some of your adversaries' mediocre generals to win minor space battles with the hope that they will be advanced in rank and stature to the point that they will be appointed to run future major space battles where they will have risen to their level of incompetence and fail spectacularly.

Space Warfare Strategy 546:

Operators who are trained to respond to unusual situations by "checklist" responses can be easily spoofed and manipulated by a clever adversary, especially in a contested environment with denied or degraded communications to higher headquarters, thus negating any numerical or technological superiority.

Space Warfare Strategy 547:

Space Warfare Strategy 548:

Space Warfare Strategy 549:

Space Warfare Strategy 550:

TO BE CONTINUED

Carefully compare the opposing army with your own, so that you may know where strength is superabundant and where it is deficient.

Sun Tzu Statement 33:

Tempo

Though we have heard of stupid haste in war, cleverness has never been seen associated with long delays.

Sun Tzu Statement 34:

He will win who knows when to fight and when not to fight.

Sun Tzu Statement 35:

The good fighter will be terrible in his onset, and prompt in his decision.

Sun Tzu Statement 36:

Whoever is first in the field and awaits the coming of the enemy, will be fresh for the fight; whoever is second in the field and has to hasten to battle will arrive exhausted.

Sun Tzu Statement 37:

Rapidity is the essence of war: take advantage of the enemy's un-readiness, make your way by unexpected routes, and attack unguarded spots.

Sun Tzu Statement 38:

Forestall your opponent by seizing what he holds dear, and subtly contrive to time his arrival on the ground.

Sun Tzu Statement 39:

Sun Tzu Statement 40: At first, then, exhibit the coyness of a maiden, until the enemy gives you an opening; afterwards emulate the rapidity of a running hare, and it will be too late for the enemy to oppose you.

Strategies

Sun Tzu Statement 41: The good fighters of old first put themselves beyond the possibility of defeat, and then waited for an opportunity of defeating the enemy.

Sun Tzu Statement 42: To secure ourselves against defeat lies in our own hands, but the opportunity of defeating the enemy is provided by the enemy himself.

Sun Tzu Statement 43: He wins his battles by making no mistakes.

Sun Tzu Statement 44: Hence the skillful fighter puts himself into a position which makes defeat impossible, and does not miss the moment for defeating the enemy.

Sun Tzu Statement 45: Thus it is that in war the victorious strategist only seeks battle after the victory has been won, whereas he who is destined to defeat first fights and afterwards looks for victory.

Sun Tzu Statement 46: In all fighting, the direct method may be used for joining battle, but indirect methods will be needed in order to secure victory.

Indirect tactics, efficiently applied, are inexhaustible as Heaven and Earth, unending as the flow of rivers and streams; like the sun and moon, they end but to begin anew.

Sun Tzu Statement 47:

There are not more than five primary colors (blue, yellow, red, white, and black), yet in combination they produce more hues than can ever been seen.

Sun Tzu Statement 48:

In battle, there are not more than two methods of attack-the direct and the indirect; yet these two in combination give rise to an endless series of maneuvers.

Sun Tzu Statement 49:

Therefore the clever combatant imposes his will on the enemy, but does not allow the enemy's will to be imposed on him.

Sun Tzu Statement 50:

How victory may be produced for them out of the enemy's own tactics-that is what the multitude cannot comprehend.

Sun Tzu Statement 51:

All men can see the tactics whereby I conquer, but what none can see is the strategy out of which victory is evolved.

Sun Tzu Statement 52:

Do not repeat the tactics which have gained you one victory, but let your methods be regulated by the infinite variety of circumstances.

Sun Tzu Statement 53:

He who can modify his tactics in relation to his opponent and thereby succeed in winning, may be called a heaven-born captain.

Sun Tzu Statement 54:

The art of war teaches us to rely not on the likelihood of the enemy's not coming, but on our own readiness to receive him; not on the chance of his not attacking, but rather on the fact that we have made our position unassailable.

Sun Tzu Statement 55:

Those who were called skillful leaders of old knew how to drive a wedge between the enemy's front and rear; to prevent co-operation between his large and small divisions.

Sun Tzu Statement 56:

Begin by seizing something which your opponent holds dear; then he will be amenable to your will.

Sun Tzu Statement 57:

Move not unless you see an advantage; use not your troops unless there is something to be gained; fight not unless the position is critical.

Sun Tzu Statement 58:

If it is to your advantage, make a forward move; if not, stay where you are.

Sun Tzu Statement 59:

Offense vs Defense

Security against defeat implies defensive tactics; ability to defeat the enemy means taking the offensive.

Sun Tzu Statement 60:

The general who is skilled in defense hides in the most secret recesses of the earth; he who is skilled in attack flashes forth from the topmost heights of heaven.

Sun Tzu Statement 61:

You can be sure of succeeding in your attacks if you only attack places which are undefended.

Sun Tzu Statement 62: You can ensure the safety of your defense if you only hold positions that cannot be attacked.

Hence that general is skillful in attack whose opponent does not know what to defend; and he is skillful in defense whose opponent does not know what to attack.

Sun Tzu Statement 63:

Sun Tzu Statement 64: Do not pursue an enemy who simulates flight.