

<b>Space Mission Areas</b> Force Enhancement Support Control Force Application	<b>the Sun</b> Fueled by Nuclear Fusion Has the biggest effect on the Space Env't By-product is Electromagnetic Radiation By-product is Electrically Charged Particles	<b>Solar Winds</b> Stem from the Sun's Corona and are Responsible for Geomagnetic Storms that: Knock out Power Grids and cause the Auroras	<b>Solar Cycle</b> 11 year Cycle 4 year Rise to Maximum 7 year Decline to Minimum
<b>Atmospheric Drag</b> Causes Satellite Errors Results from Expansion of Atmosphere Atmosphere expands due to Bombarding of charged Particles	<b>Low Earth Orbit - LEO</b> 150 to 800 miles above the Earth	<b>Medium Earth Orbit - MEO</b> 22, 300 miles above the Earth Between LEO and GEO orbits Offer better Round-trip Time than GEO satellites	<b>Van Allen Radiation Belts</b> Impacts Comms Satellites in Geosynchronous Satellite Orbit
<b>Geosynchronous Orbit</b> A satellite that completes one revolution per day (e.g. the moon) Ineffective at the Poles Used for some communications	<b>Polar Orbit</b> Passes over the Entire surface of the Earth Imagery Satellites 90 degree inclination	<b>2 Space Launch Facilities</b> Vandenberg Air Force Base, California Cape Canaveral Kennedy Space Center, Florida	<b>High Earth Orbit - HEO</b> Higher than 22,300 miles above the Earth Useful for Communications Satellites
<b>Space Situational Awareness - SSA</b> Current and predictive Knowledge of everything happening in the space environment relating to space operations	<b>Disadvantages of Space ISR</b> Access Limitations Predictable Fly-over Schedule Atmospheric Disturbances & Weather Administrative Limitations	<b>Advantages of Space ISR</b> Coverage of AOIs w/o detection and w/o sanctions More Precise Targeting Enhanced Planning from Imagery	<b>Global Positioning System - GPS</b> Global Navigation Satellite System
<b>Astrometry</b> Relates to Precise Measurements and explanations of the positions and movements of stars and other celestial bodies	<b>Key Objectives of SSA</b> Ensure Space Operations and Spaceflight Safety Implement Int'l Treaties and Agreements Protect Space Capabilities Protect Military Operations and Nat'l Interests	<b>Components of SSA</b> Intelligence Surveillance Reconnaissance Environmental Monitoring Space Common Operating Picture	<b>Advantages of GPS</b> Accuracy Accessibility Graceful Degradation Jamming Anti Spoofing
<b>Components of EOP</b> Universal Time Coordinates of the Pole Celestial Pole Offsets	<b>Network Synchronization</b> Keeps GPS computers automatically updated and on the exact same time	<b>GPS Satellites</b> 21 Active, 3 Spare Each contains: Computer, Atomic Clock, Radio Receiver on the Ground Triangulates w/ 3 Satellites	<b>Earth Orientation Parameters - EOP</b> Describes Earth's Irregularities due to uneven rotation by providing Earth's rotation as a function of time
			<b>Geo-location</b> Wireless detection of the physical location of a remote device



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