Space Policy Issues

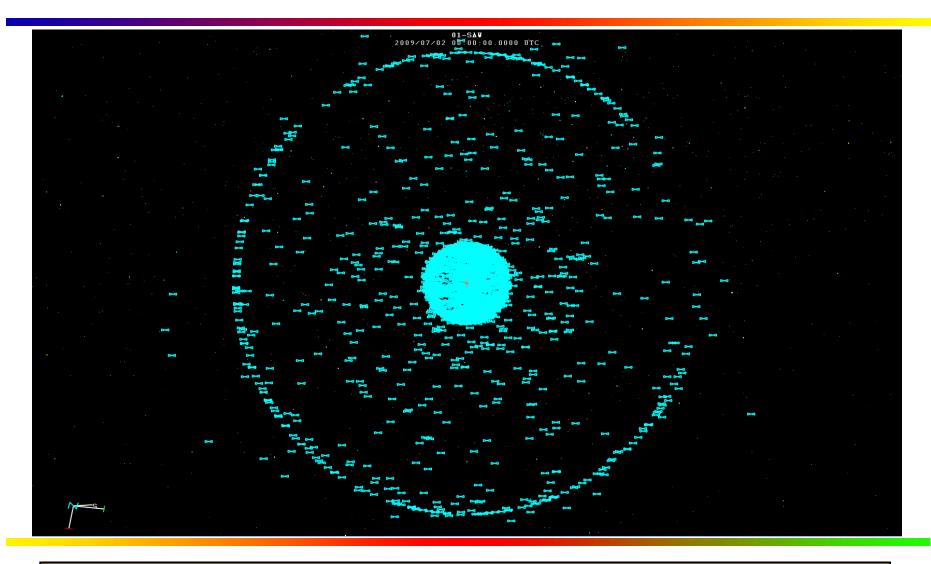
- Space Choke Points -

12 December, 2012

12/21/2012 10:32:06 AM Szymanski

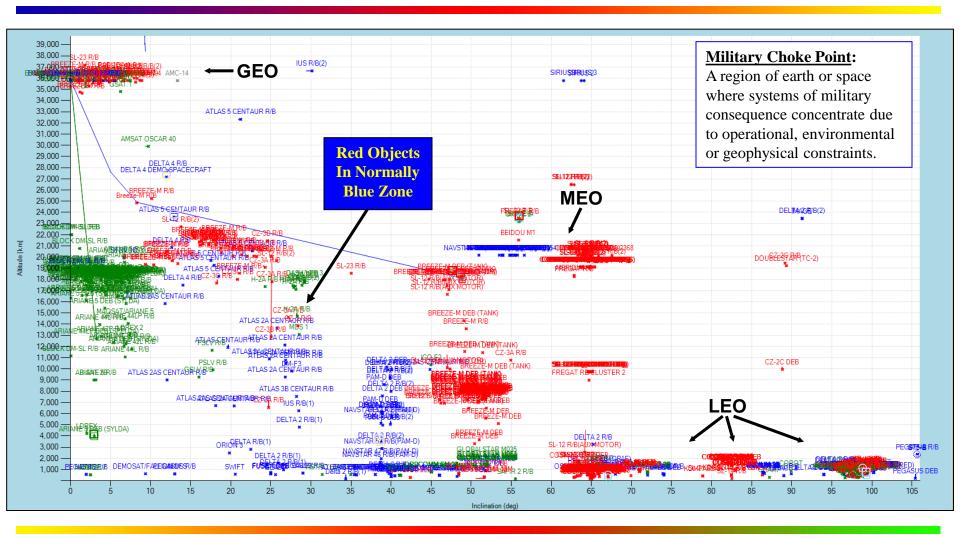
UNCLASSIFIED

Traditional Orbital View



^{12/21/} >13,000 Space Objects Confuses Users as to Possible Attack Patterns Developing ^{lages}

Satellite Attack Warning (SAW)

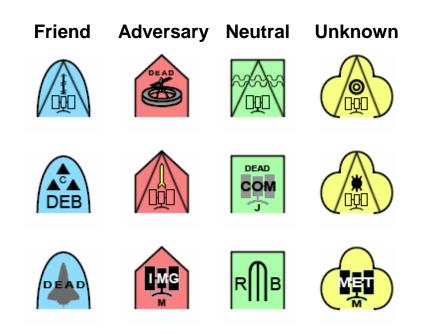


^{12/21} Space Has Choke Points As In Terrestrial Systems – They Just Are Not Stationary

ges

SAW – Icons

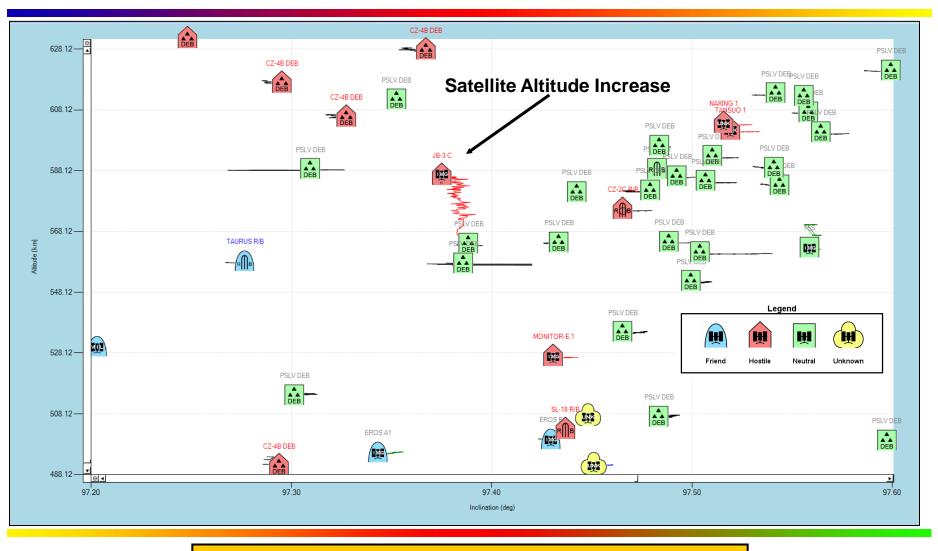
- Based on Mil-Std-2525B
- 220 New Space Icons



12/21/2012 10:32:06 AM Szymans Make SAW Maps Similar to Terrestrial Situation Maps

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SAW – View 1

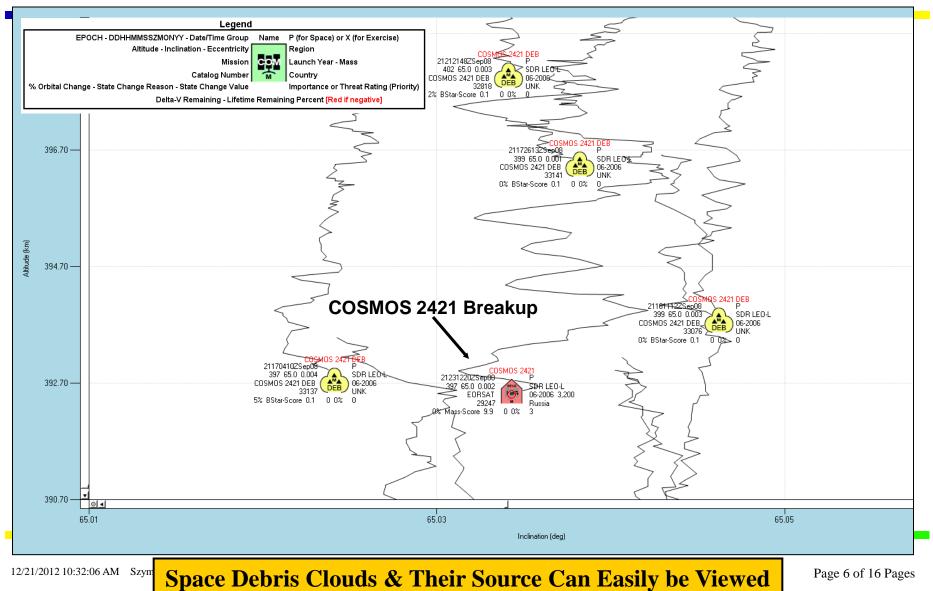


12/21/2012 10:32:06 AM Szymanski

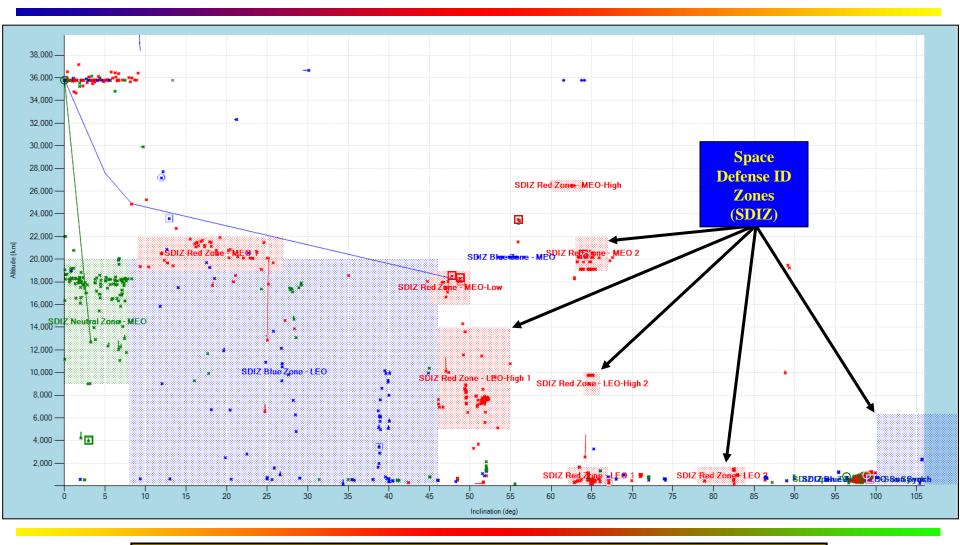
Space Objects Orbital Changes Are Easy to Identify

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SAW – View 2



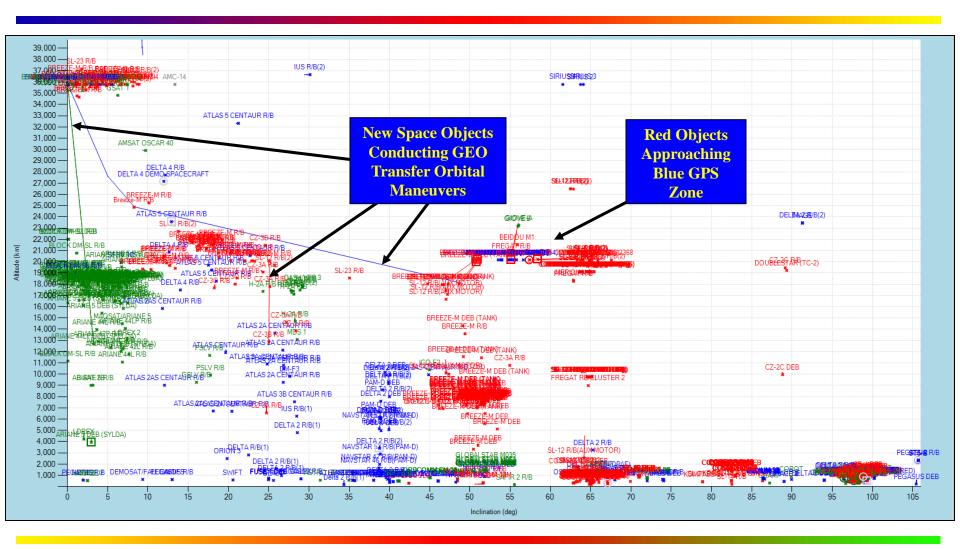
SAW – SDIZ



12/21/2012 10:32:06 AM SSA Detection Zones Help Partial Out Operational Responsibility

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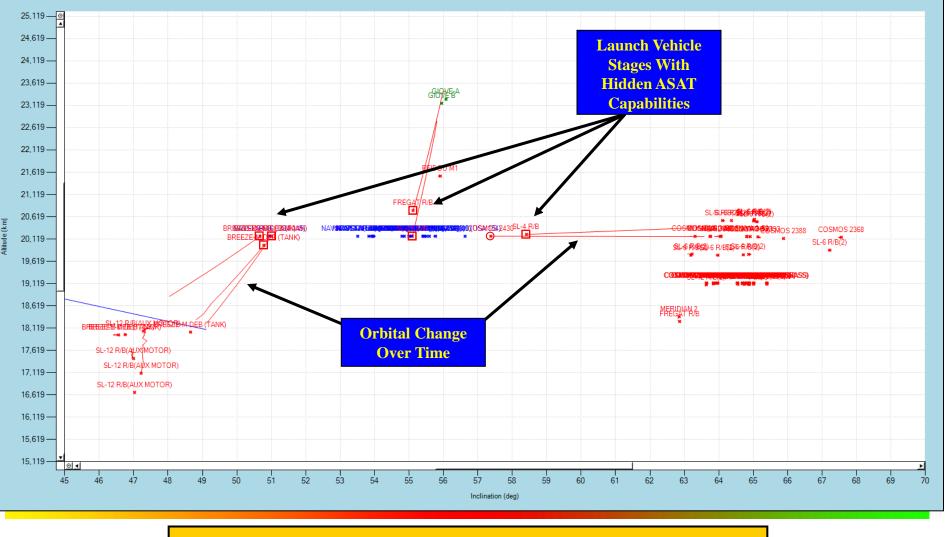
SAW – Simulated Attack Against GPS



12/21/2012 10:32:06 AM Szyman Major Maneuvers of Space Objects are Easily Visualized

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SAW – "Dead" Stages as Anti-Satellites (ASATS)

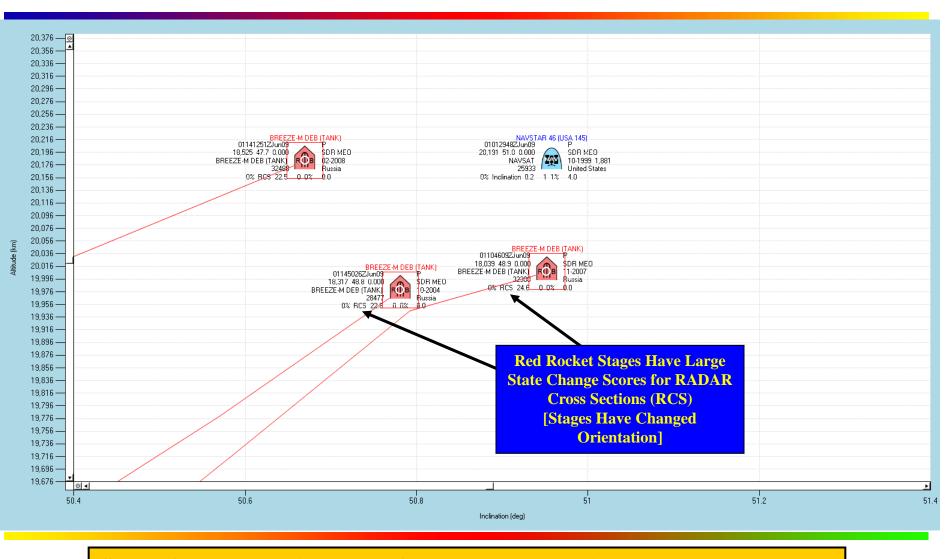


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Simultaneous Attack Maneuvers Can Easily be Detected

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SAW – Multiple Attacks Against One GPS

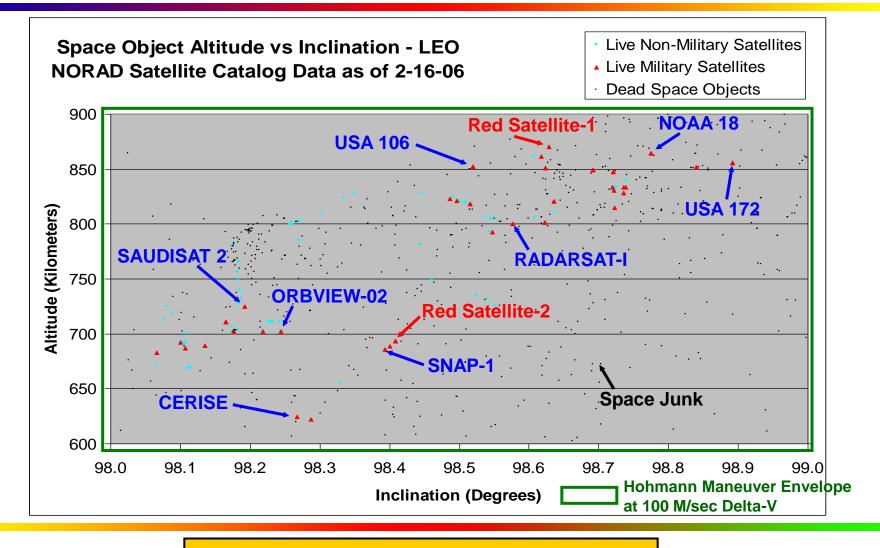


12/21/2012 10:32:

Space Objects Playing Dead Can be Detected With Unusual Movements

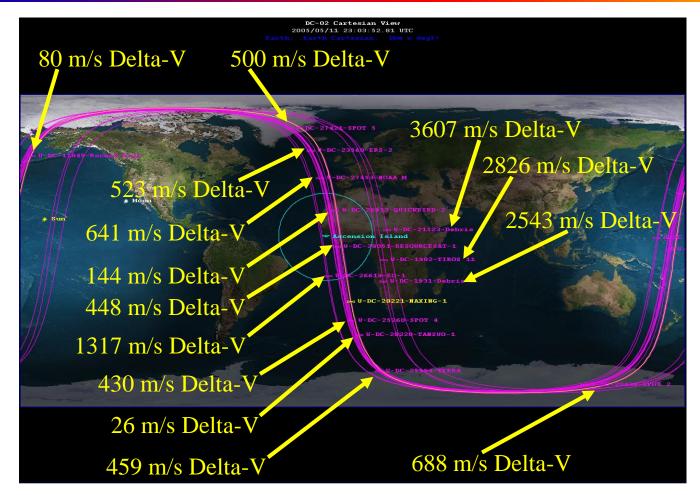
of 16 Pages

Space Choke Points



There are Many Potential Sources of Attack

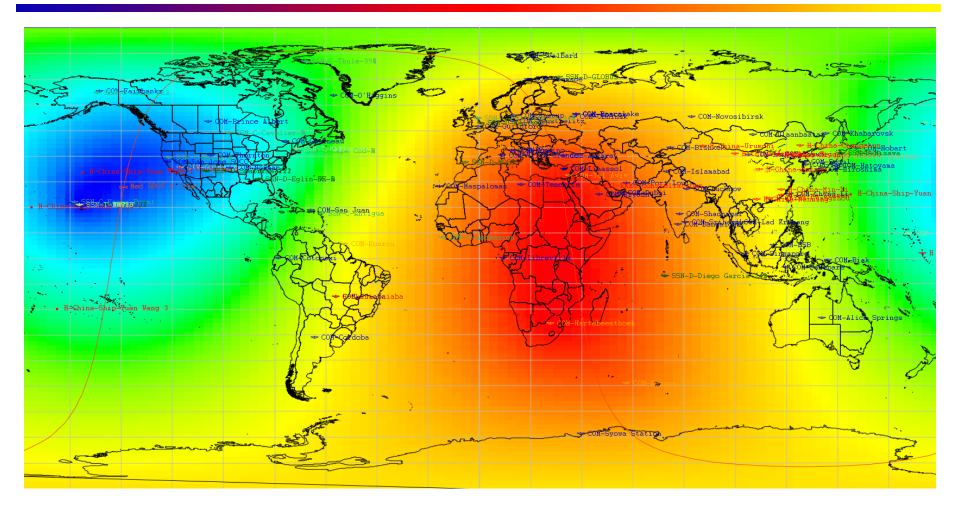
Sun-Synchronous Choke Points



Delta-V Required for 2-Burn Hohmann Transfer Rendezvous to Appear Like Another Satellite

12/21/2012 10:32:06 AM Satellites Can Maneuver to Confuse Targeting Assets

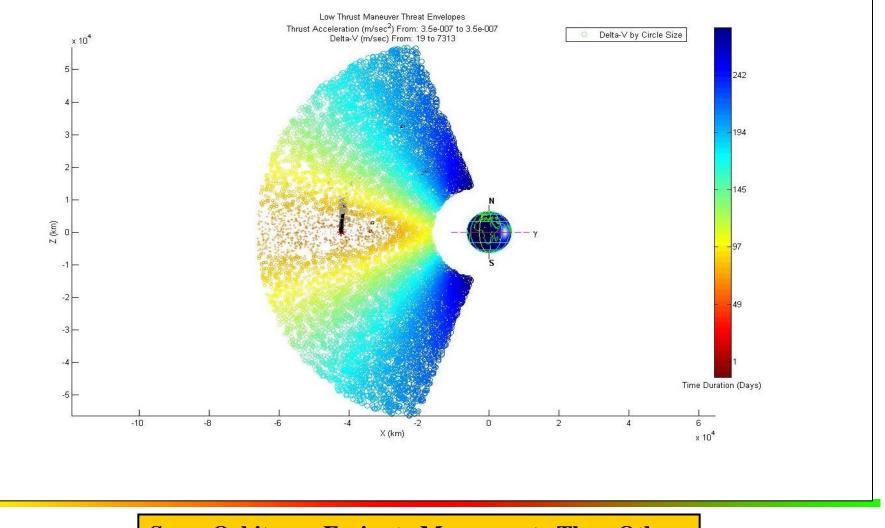
Example Attack Locations Optimized for Space Surveillance



12/21/2012 10:32:0 Some Parts of a Satellite's Orbit May Be More Vulnerable than Others

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Threat Envelope Chart (TEC) View 1

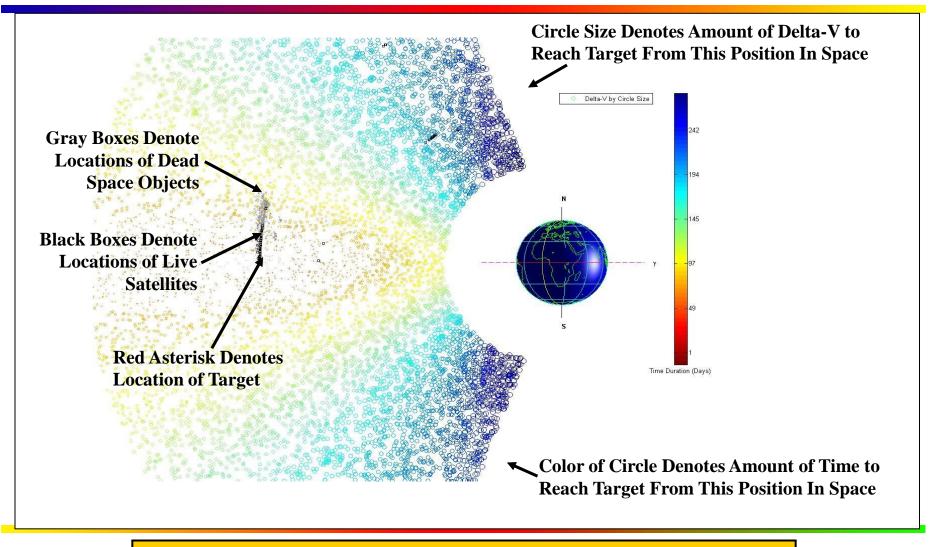


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Some Orbits are Easier to Maneuver to Than Others

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Example Threat Envelope View 2



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Some Regions of Space May be More Threatening than Others

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Example Threat Envelope View 3

