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# ***Space Situational Awareness (SSA) Sharing***

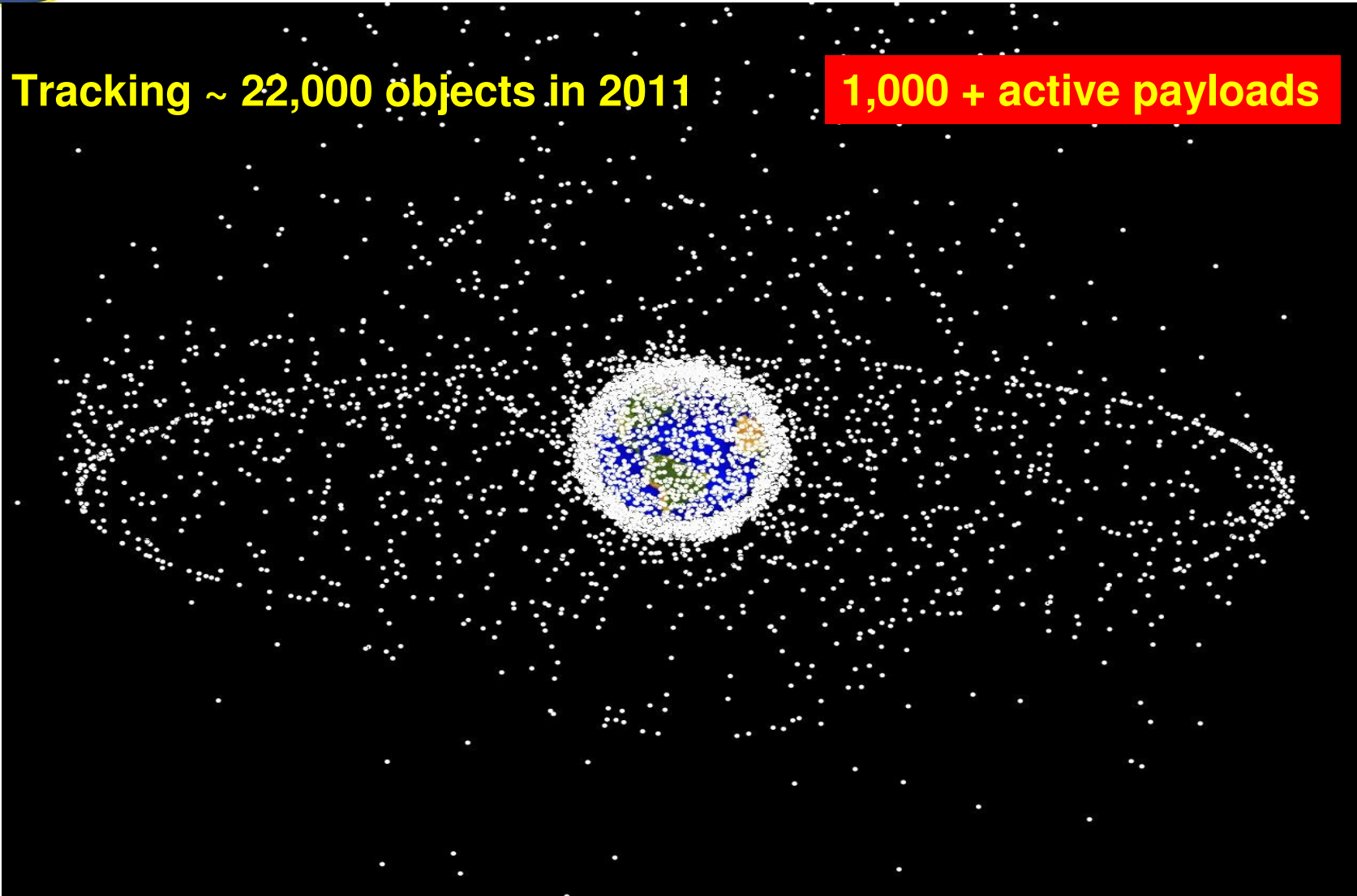
**Major Courtland B. McLeod  
United States Strategic Command  
Space Policy**



# *A Global Focus*

**Tracking ~ 22,000 objects in 2011**

**1,000 + active payloads**





# Current Space Surveillance Network



Tracking Radar
Detection Radar
Imaging Radar
Optical Telescope
Network Command and Control



## ***SSA Sharing***

- **USSTRATCOM's Goal**

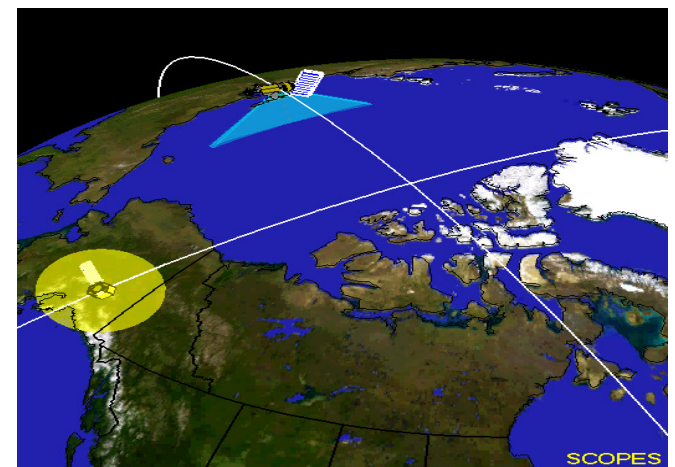
- Promote the responsible, peaceful, and safe use of space by fostering cooperative SSA and supporting safe space operations through the provision of advanced services and emergency notifications

- **USSTRATCOM SSA Sharing Agreements**

- Commercial Agreements – 30 signed since SEP 2010
- Country/Intergovernmental Agreements – In progress since NOV 2011

- **USSTRATCOM SSA Services**

- Basic Services
- Advanced Services
- Emergency Notifications





# Basic Services - Website

- [www.space-track.org](http://www.space-track.org)
- Maintained by U.S. Strategic Command
- Historical and current satellite data
- Decay and re-entry data
- Orbital Data Request form and procedures
- Available at no cost or obligation

A screenshot of the Space-Track.org website homepage. The page has a yellow background and features the logo "Space-Track.org" at the top right, with the tagline "The Source For Space Surveillance Data". Below the logo, it says "Welcome to Space-Track BIRDIE" and "There are currently 85593288 TLE in the database". The page is divided into several sections: "Two Line Element Set (TLE) Data" with links for "Retrieve TLE Data by Satellite Catalog Number", "Bulk Catalog Data Downloads", and "TLE Format Description"; "Satellite Catalog (SATCAT) Data" with links for "Satellite Box Score", "General Satellite Search", "Search by Satellite Common Name", "Search by Satellite Catalog Number", "Search by Satellite Launch Date or International Designator", "Search by Satellite Decay Date", "Catalog Change Report: 7 Day 30 Day", "Catalog Change Query", "Geosynchronous Report", and "Satellite Situation Report"; "Satellite Decay &amp; Reentry Data" with links for "Recent Satellite Decays", "Current Decay Predictions (From TIP Messages)", "60 Day Decay Predictions", and "Search the SATCAT by Satellite Decay Date"; and "My Favorites" with links for "My Favorites Page" and "Configure my Favorites". A warning message is also present: "WARNING! TLEs should NOT be used for conjunction assessment predictions. Satellite operators can contact the JSpOC at 805-605-3333 or by email for access to more detailed data."





## *Advanced Services*

- **U.S. law requires SSA sharing agreement**
- **Two-way information exchange**
  - **Conjunction Assessment**
  - **Launch Support**
  - **Deorbit and Reentry Support**
  - **Disposal/End-of-Life Support**
  - **Collision Avoidance Support**
  - **Anomaly Resolution**
  - **Electromagnetic Interference Investigation**
- **Mutual terminology and standardized data formats**
- **Mitigate collision risks**





# Emergency Notifications

- **Joint Space Operations Center seeks to identify close approaches for active payloads in Earth orbit**
- **20 – 30 close approach notifications per day**
- **To the extent possible, E-mails or Conjunction Summary Messages (CSMs) shared directly with satellite operators**





## *Way Ahead*

- **Support pragmatic international cooperation on voluntary measures:**
  - Orbital conjunction assessment and collision avoidance
  - Pre-launch notification and launch collision avoidance
  - Maintenance of databases of contact information for satellite operators
  - Sharing and dissemination of data on space objects
- **Engagements and Agreements**
  - Global effort
  - Conjunction Summary Message (CSM)/SSA Sharing Workshops







Thank You

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PRNewswire

Companies: EUTELSAT COMM. | EUTELSAT COMMUNICATI

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**Hayabusa Spacecraft Returns With Fiery Show**

Japanese probe may have brought back asteroid dust.



Hayabusa streaks across the night sky Monday.

**THE HUFFINGTON POST**

NOVEMBER 4, 2010

This is the print preview. [Back to normal view](#)

**Galaxy 15 'Zombie' Satellite Threatens Cable Programming**

MICHAEL WEISSENSTEIN | 05/11/10 06:57 PM | AP

LONDON — A TV communications satellite is drifting out of control thousands of miles above the Earth, threatening to wander into another satellite's orbit and interfere with cable programming across the United States, the satellites' owners said Tuesday.

Communications company Intelsat said it lost control of the Galaxy 15 satellite on April 5, possibly because the satellite's systems were knocked out by a solar storm. Intelsat cannot remotely steer the satellite to remain in its orbit, so Galaxy 15 is creeping toward the adjacent path of another TV communications satellite that serves U.S. cable companies.

**Soyuz 2-1A launches with six Globalstar 2 satellites**

October 19th, 2010 by Chris...

An Arianespace Soyuz Globalstar 2 mobile p Tuesday. The Starsem the launch to take pla Baikonur Cosmodrome ahead of 100 minutes release of all six satellit