

Air Force Space Command

Guardians of the High Frontier





18th Space Control Squadron Mission Brief

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18 SPCS Space Situational Awareness Sharing
April 2017



Mission & Vision



18 SPCS Mission

Deliver foundational Space Situational Awareness to assure global freedom of action in space

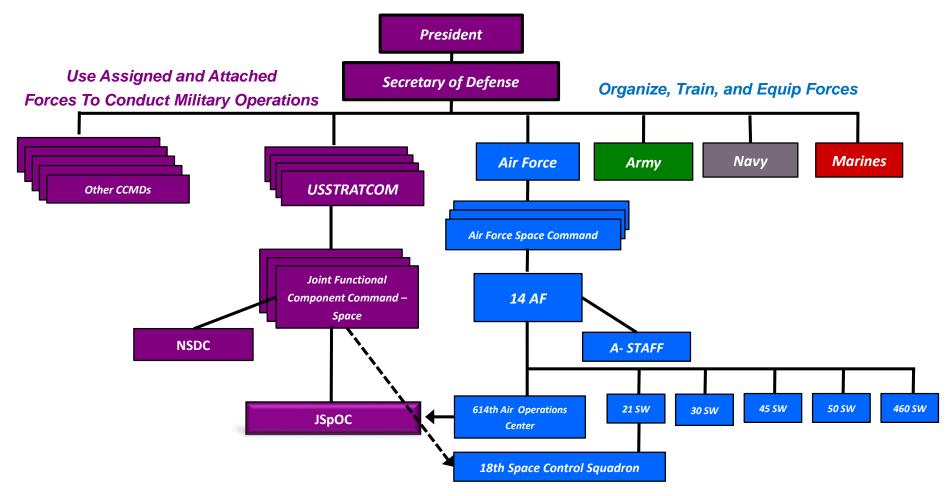
18 SPCS Vision

Global innovator and leader providing unrivaled SSA through operational excellence



Organizational Chart







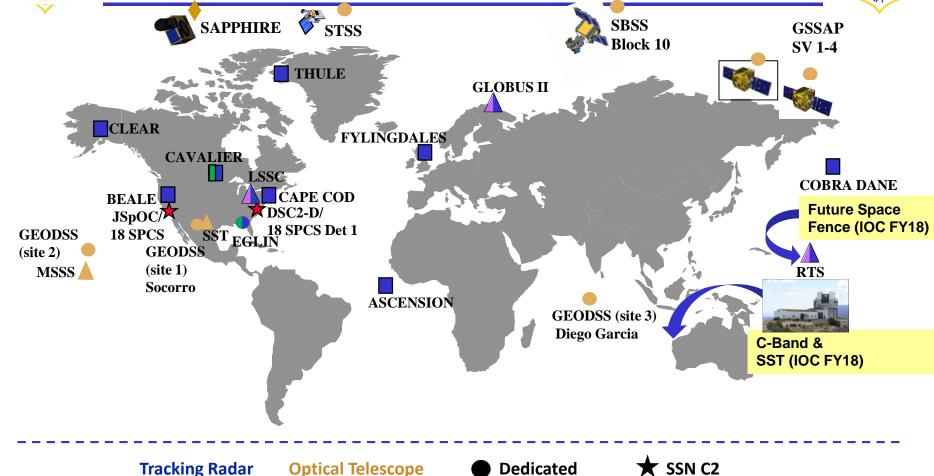
Detection Radar

Imaging Radar

SSN C2

Space Surveillance Network



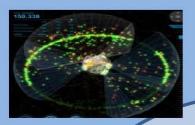


Contributing

Collateral

Dedicated Int'l

18 SPCS Mission Lifecycle













Track

- Space Surveillance Network
- 300,00⊕ taskings/day
 - 18 sensor sites





Positional Data

18 SPCS people)

Identify

- Catalogue Maintenance
- Reentry Assessment
- Break-up Processing
- SSA Sharing
- Conjunction Assessment
- Human Space Flight Safety
- Advanced Analysis





Agreement for Sharing Space Situational Awareness Services Between Department of Defense...

Detect

- Launch CA



Master Space Plan **External Mission Support** Data Space-track.org

Timely & Accurate Data

18 SPCS provides foundational Space Situational **Awareness**





MISSION AREAS



Launch Support



■ Launch Analysis

- Provide early analysis and planning of all space launches
- **Conduct launch mission analysis**
- Perform early orbit determination to discriminate, catalog, and identify new orbiting objects

■ Launch Conjunction Assessment

- Conduct launch collision avoidance screenings for orbital and suborbital launches over 150 km
- Identify close approaches between launch vehicles and all objects in space catalog to support deconfliction



Advanced Orbital Analysis



- Includes high-interest, high-accuracy space object catalog maintenance & special event processing:
 - Reentries
 - Deorbits
 - Decays
 - Breakups



Conjunction Assessment (CA)



to TCA



Deep Space:

Every 12 hours

Near Earth:

Every 8 hours

Ephemeris Screenings:

High-Interest:

On demand

Deep Space

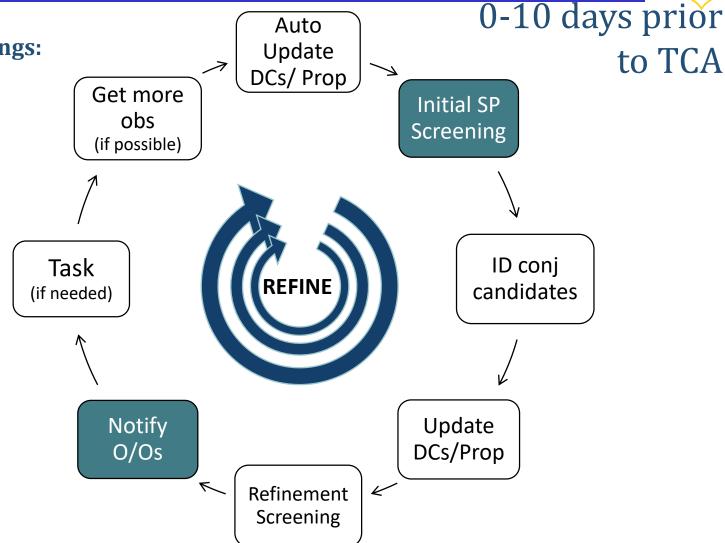
Routine:

Every 12 hrs

Near Earth

Routine:

Every 8hrs

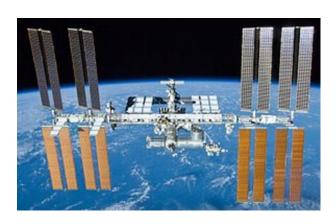




Human Spaceflight Support



- Current Ops: 24/7/365 1 person per crew
- 24/7 collision avoidance mission for ISS in support of NASA
- Coordinate with NASA on operational events (docking, undocking, cubesat releases, etc)

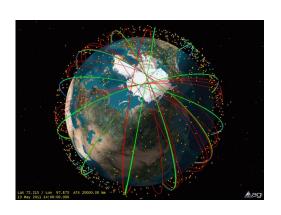




SSA Sharing



- **Execute USSTRATCOM's SSA Sharing Program**
- Primary interface between 18 SPCS and external entities to facilitate SSA data exchange
- Coordinate with DoD, USG, international, commercial, and academic partners to provide spaceflight safety support



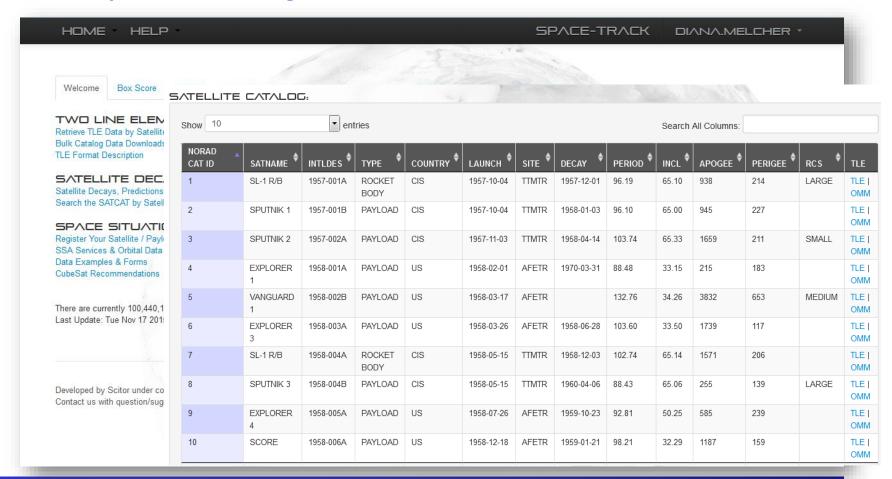




Basic SSA Services



Available to any person or organization with an account on www.space-track.org





SSA Sharing Program



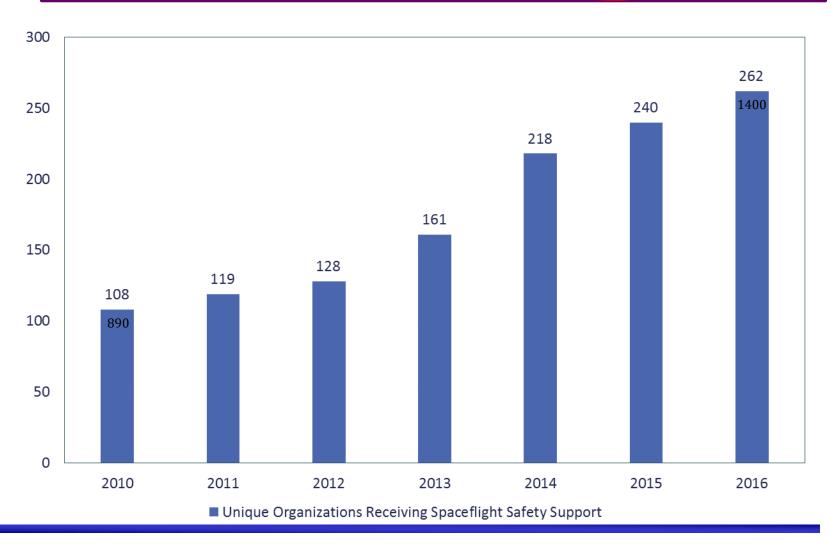
- What we can do:
 - Provide high accuracy data services and support at no cost
 - **■** Facilitate communication and cooperation
- What we can't do:
 - Recommend courses of action
 - Tell an operator what to do



Spaceflight Safety Customers

THENGTH ALL SPARRENTS

6% Non-US Military • 5% US DoD • 9% USG • 22% Non-US Government • 26% Academia 32% Commercial





Air Force Space Command

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Questions?