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May 24th, 12:00 PM

Shaping a Spaceport: Implications for National Security

Col. Eric Krystkowiak
45SW Launch Group Cdr.

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Shaping a Spaceport: Implications for National Security

24 May 16

**Col Eric Krystkowiak
Commander
45th Launch Group**



45th Space Wing Commander



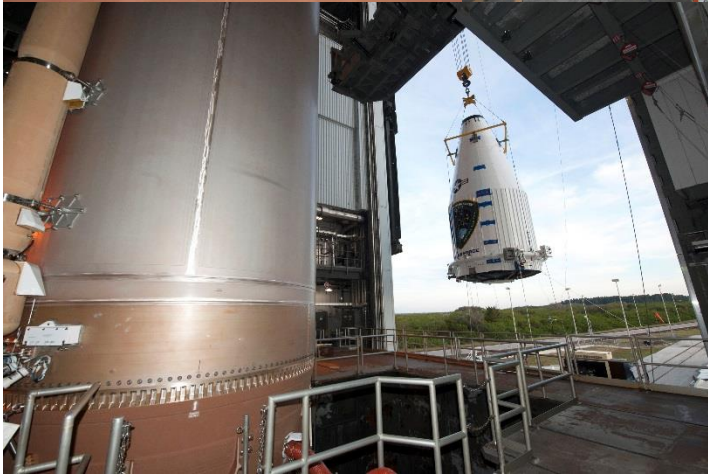
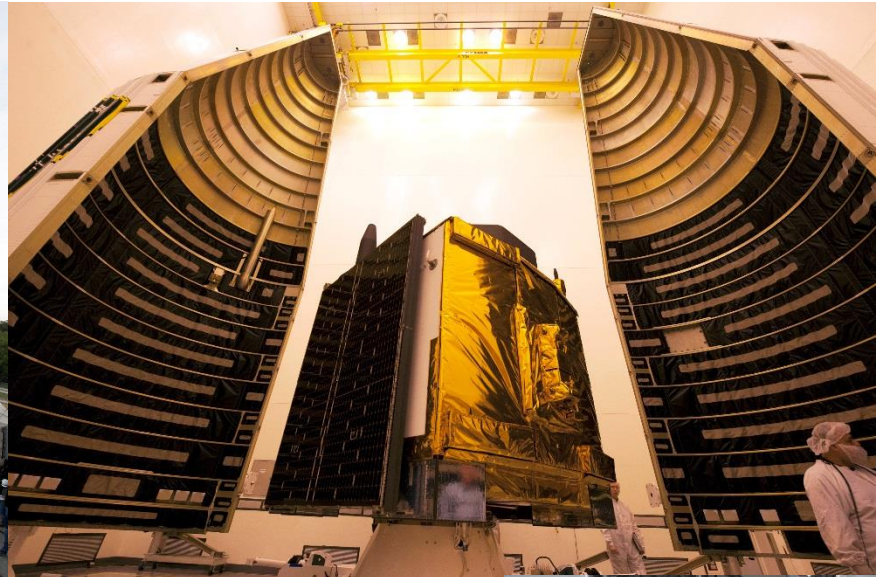


GPS Block IIF Flyout





GPS Block IIF Flyout





GPS Block IIF Flyout





GPS Block IIF Flyout



Future of Area 59



DPF



NPF



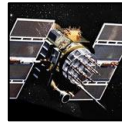
SAF

- **DPF – DSCS Processing Facility (1995)**
 - (3) 4-meter bays w/class 100K clean rooms
 - Hazops (fueling) capability
- **NPF – Navstar Processing Facility (1985)**
 - (2) 4-meter bays w/class 100K clean rooms
- **SAF – Satellite Alert Facility (2005)**
 - Rideout for Lvl 5 Hurricane (up to 3 SVs)

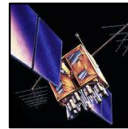
HISTORY



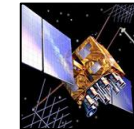
1960s-1970s
Minuteman
(MAB-2)



1989-1997
(28) GPS II/IIA



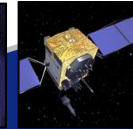
1995-2003
(10) GPS IIR 1-10
(6) DSCS



2004-2009
(11) GPS IIR 11-21
XSS-10, MiteX



2010-2016
(12) GPS IIF
(2) SBIRS GEO



Lights out/EUL
NLT Oct 16

2016-?
Commercial
Enhanced Use
Lease

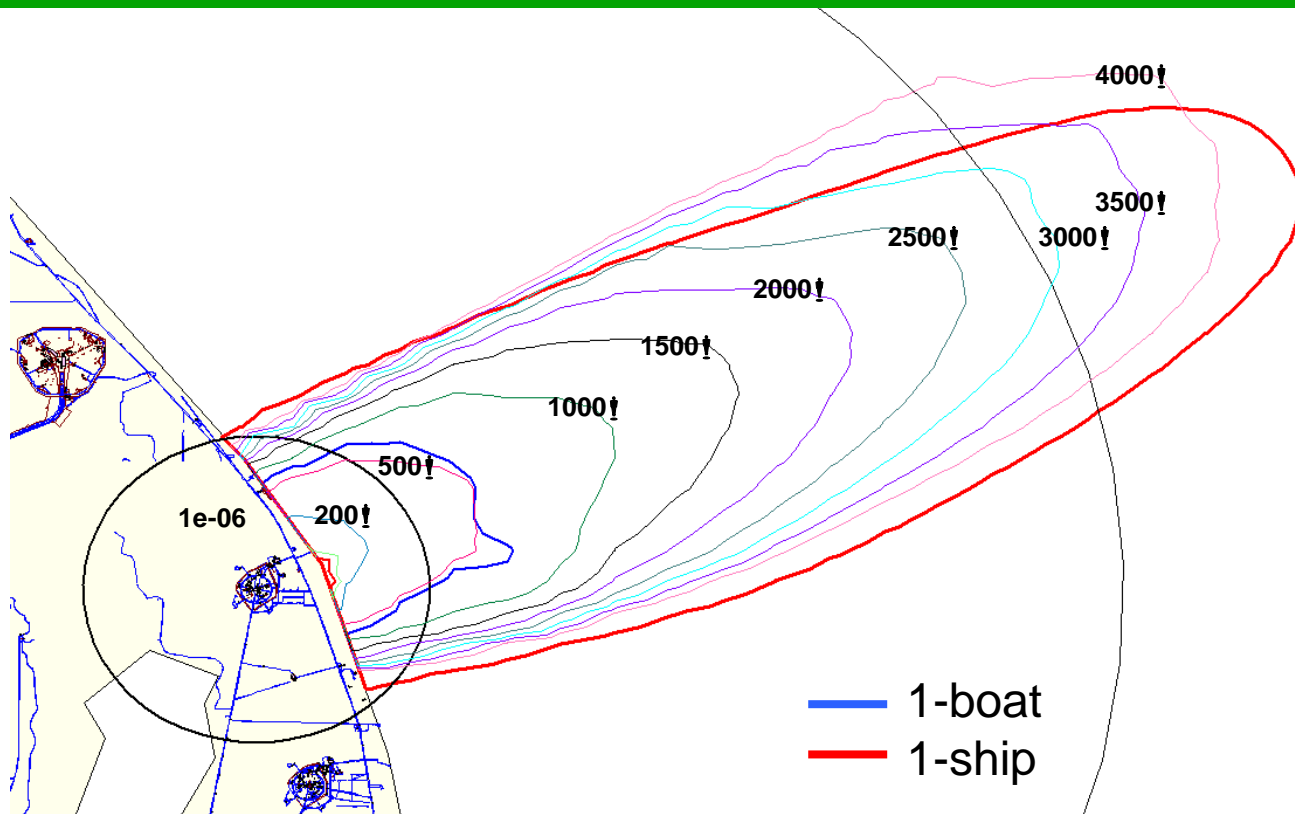
A total of 72 spacecraft processed over 27 years



Launch Vehicle Vessel Debris Risk Contribution

NOTMAR: 1-Ship 1×10^{-5} Hit-Probability Contour extends ~6.1 Nmi downrange

NOTMAR: 1-Boat 1×10^{-5} Hit-Probability Contour extends ~1.1 Nmi downrange



Required minimum mandatory surveillance area: 1-Boat Hit-Probability contour

If less than 3 nmi long minimum mandatory surveillance area shall be the 45 SW restricted security zone (3 nmi) at the maximum width of the 1 boat hit-probability contour along the launch trajectory.

$E_c = 30e-6$

$LCC = 100e-6$

† Number of persons required to violate LCC

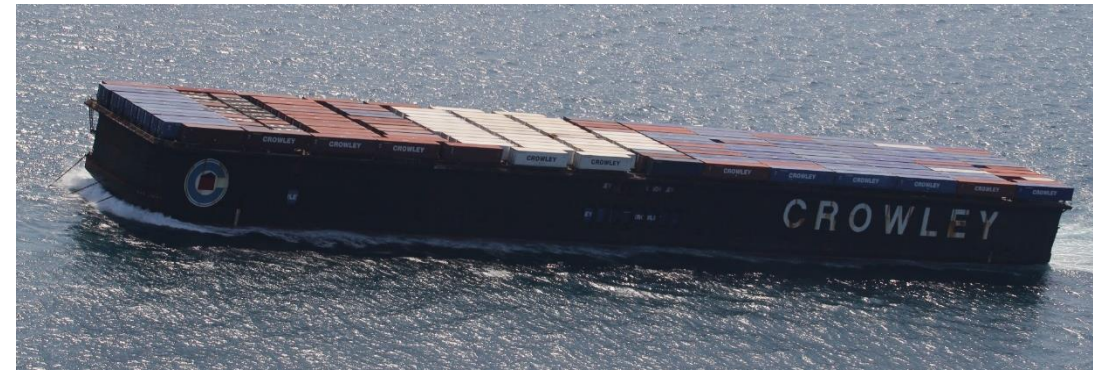


920th Rescue Wing





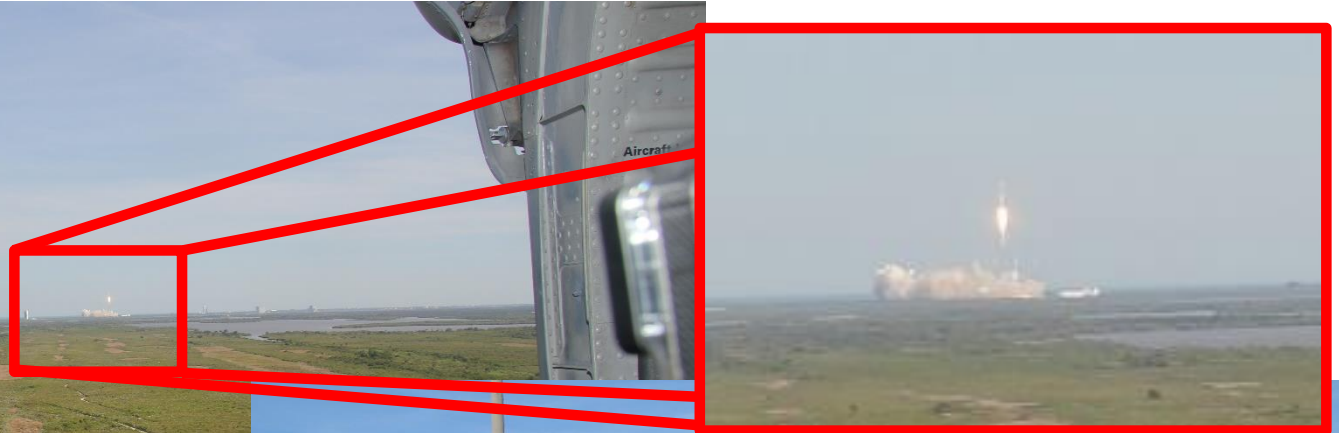
920th Rescue Wing



Tug Boat Patriarch, as observed from Jolly 1 around 1611L on 8 Apr 16



920th Rescue Wing





2016 Upcoming NSS Launches

Mission	Launch Date	Impact
NROL-37 / Delta IV Heavy	Jun 2016	Classified
MUOS-5 / Atlas V 551	Jun 2016	10X more comm warfighter capability
NROL-61 / Atlas V 421	Jul 2016	Classified
AFSPC-6 / Delta IV 4+2	Aug 2016	Classified
WGS-8 / Delta IV 5+4	Sep 2016	Delivers increased SATCOM to warfighter
SBIRS-3 / Atlas V 401	Oct 2016	Early missile warning

8 Launches
Already This Year!

3531 since
July 1950!

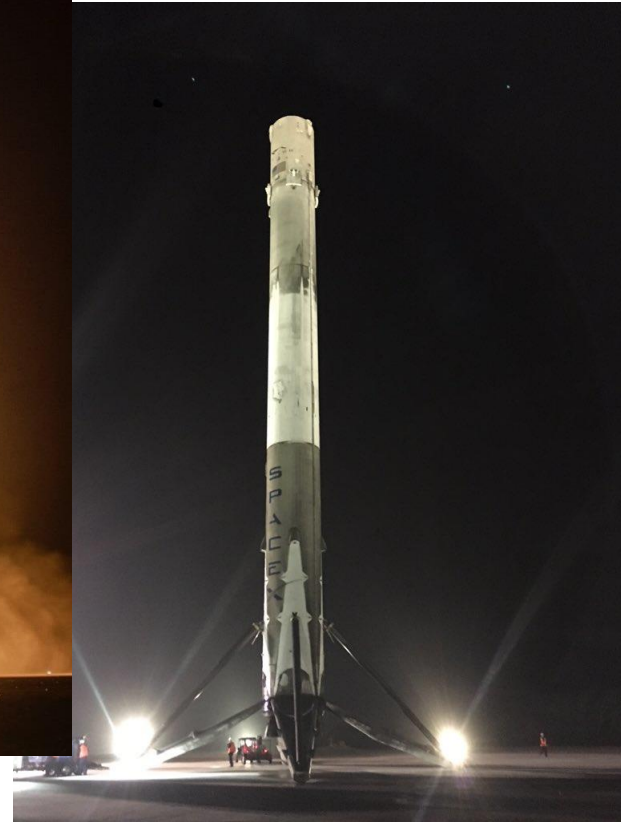




NASA Crew Access Tower



Back in December: Falcon Landed!





And Again on the Drone Ship!





And Again on the Drone Ship!





45 SW Front Door – We're Busy

Emerging launch vehicle programs:

- **Falcon Heavy – Launch Complex 39A**
- **NASA Pegasus CYGNSS – CCAFS Skid Strip**
- **ORS-5 Orbital ATK Minotaur – Launch Complex 46**
- **NASA SLS – Launch Complex 39B**
- **Blue Origin – Launch Complex 36**
- **Orion Ascent Abort – Launch Complex 46**
- **ULA Vulcan Launch Vehicle – Launch Complex 41**

Emerging Cargo/Crew Vehicles:

- **Boeing CST-100 – Complex 41**
 - **SpaceX Dragon – Complex 39A**
 - **SNC Dream Chaser – Complex 41**
-

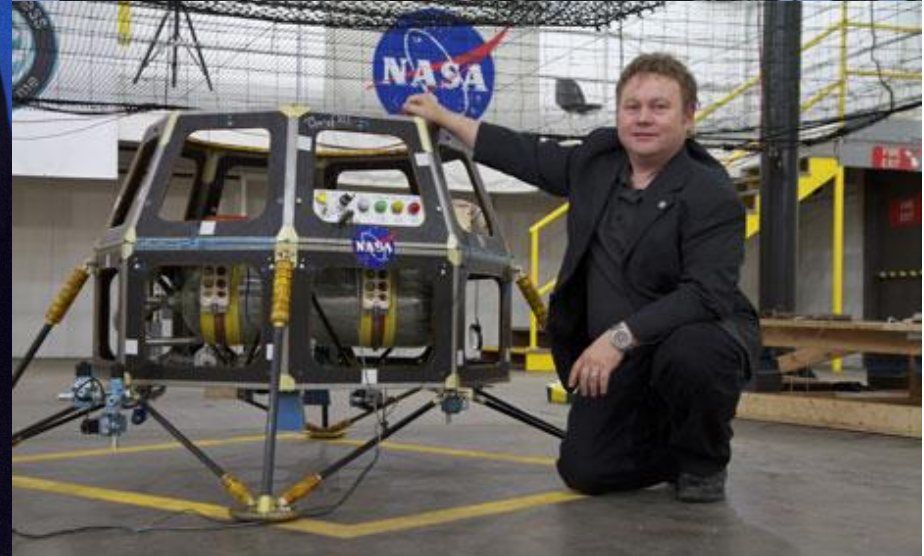


Customer Service





Commercialization of Space





Spaceport of the Future



