ESPI
European Space Policy Institute

WASTE IN SPACE: IS SPACE WASTED? THE ORBITAL DEBRIS PROBLEM

The Space Environment and Stakes for the European Space Sector

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THE SPACE ENVIRONMENT

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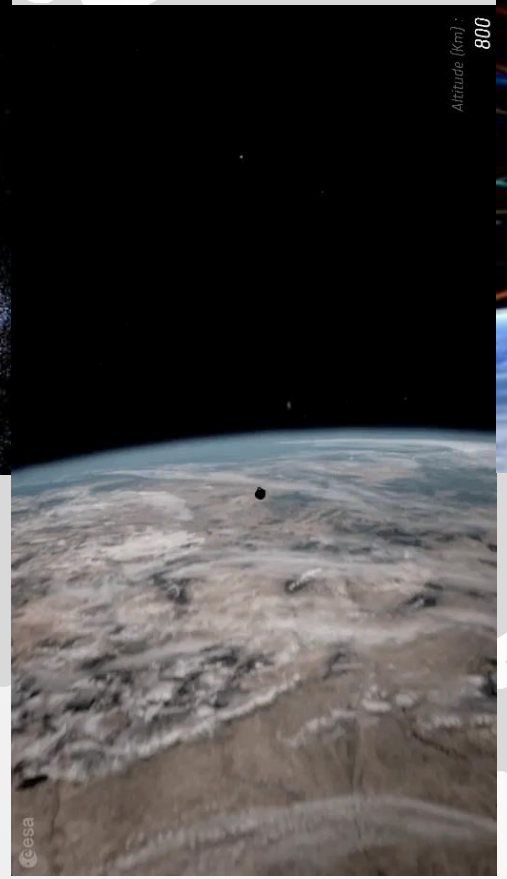

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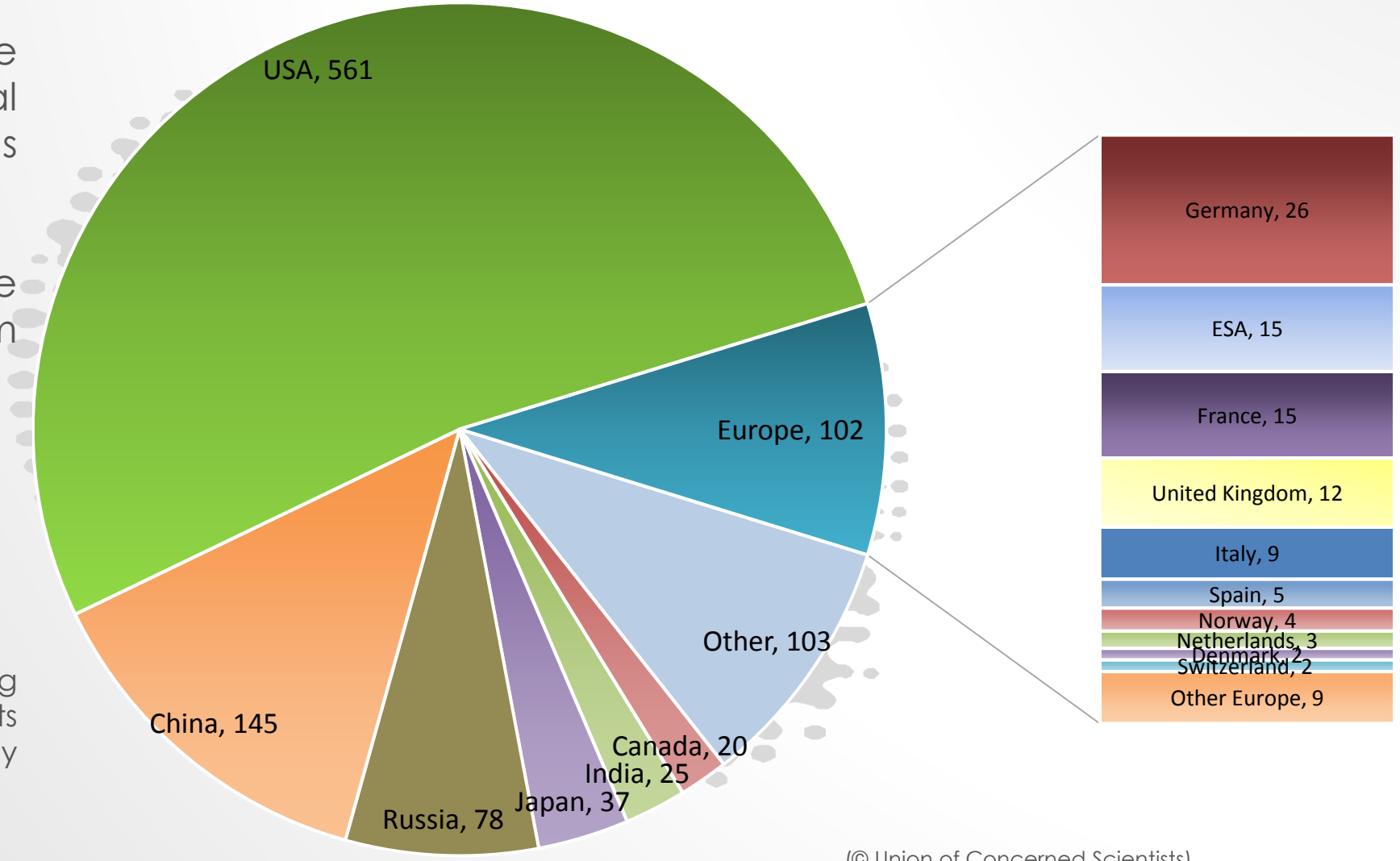
OPERATING SPACECRAFT AT RISK IN LEO

Approximately 1,071 of the 1,738 currently operational satellites orbiting in LEO (as at 31 August 2017).

Around 907 satellites operate at altitudes between 400km and 850km*

ISS: 408 km
Tiangong 2: 378 km

*At altitudes above 800 km, air drag becomes less effective and objects will generally remain in orbit for many decades.



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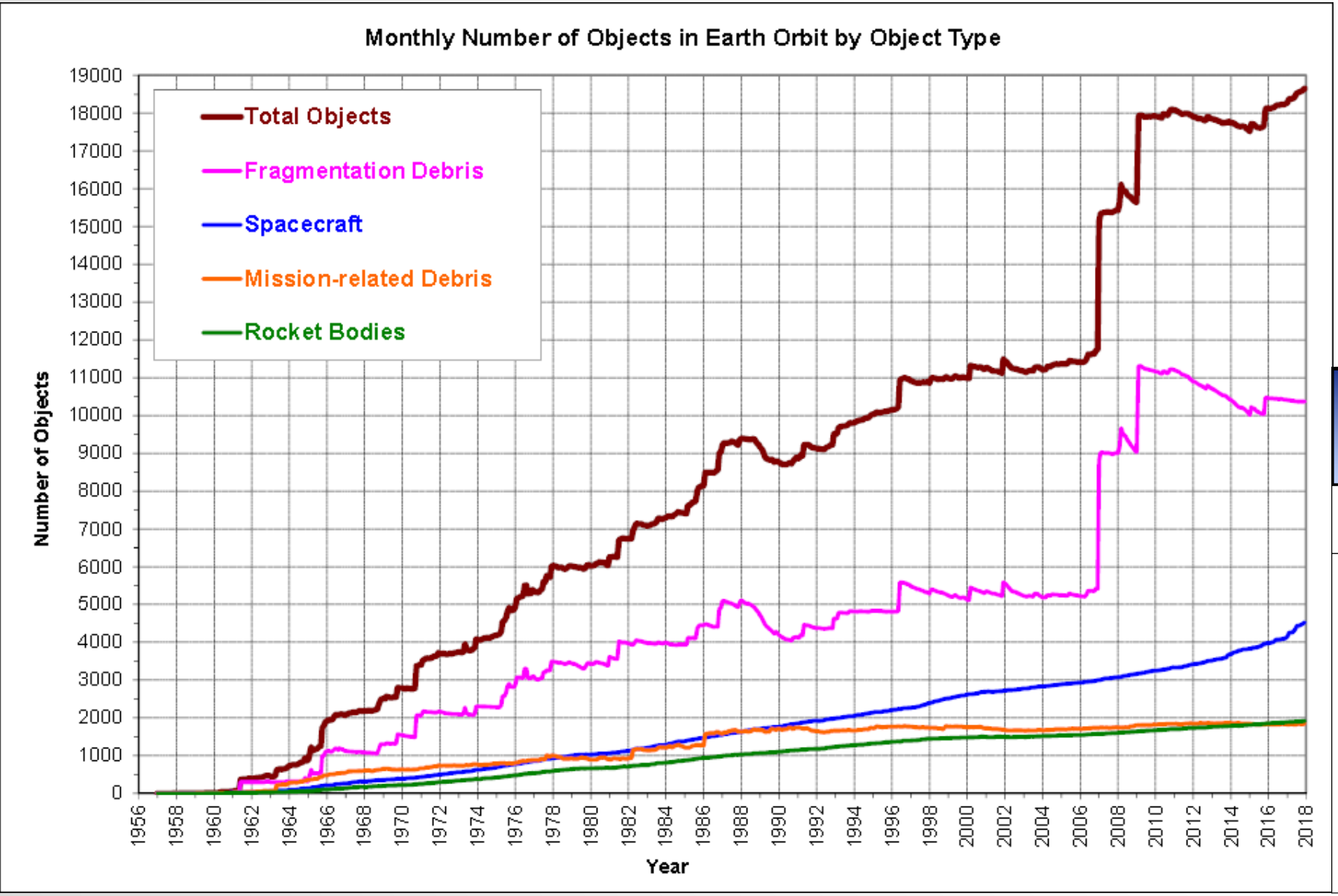

Recent Significant Debris Events

8 April 2012 – Loss of communication with ESA's ENVISAT at 774 km

- Loss of satellite control.

10 February 2009 – Iridium-33–Kosmos2251 collision

- The first collision of its kind at 776 km
- Generated 2,300 trackable fragments.

11 January 2007 – China's ASAT test at 850km

- Generated ~3,400 trackable pieces of debris, 25% debris increase

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SATELLITE BOX SCORE
(as of 04 January 2018, cataloged by the U.S. SPACE SURVEILLANCE NETWORK)

Country/ Organization	Payloads*	Rocket Bodies & Debris	Total
CHINA	269	3594	3863
CIS	1515	5003	6518
ESA	81	56	137
FRANCE	63	483	546
INDIA	85	115	200
JAPAN	170	100	270
USA	1634	4687	6321
OTHER	866	114	980
TOTAL	4683	14152	18835

** active and defunct*