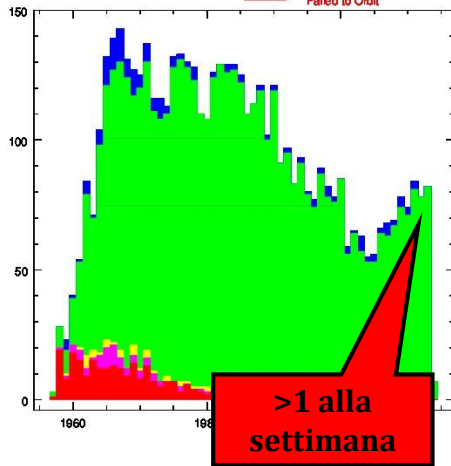
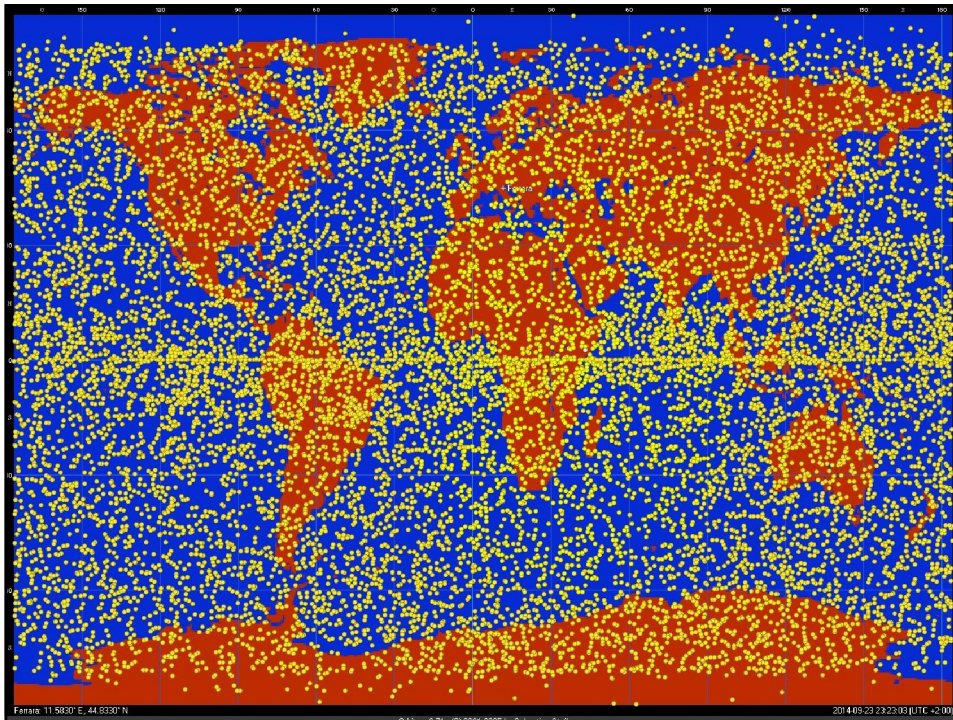
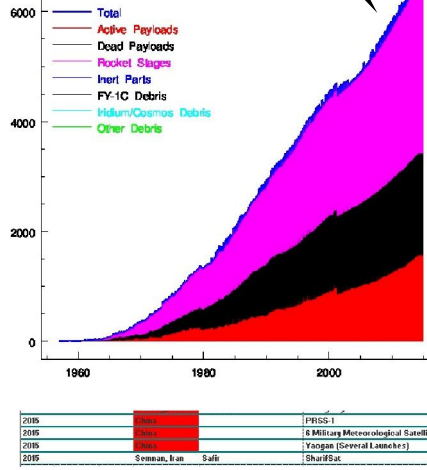


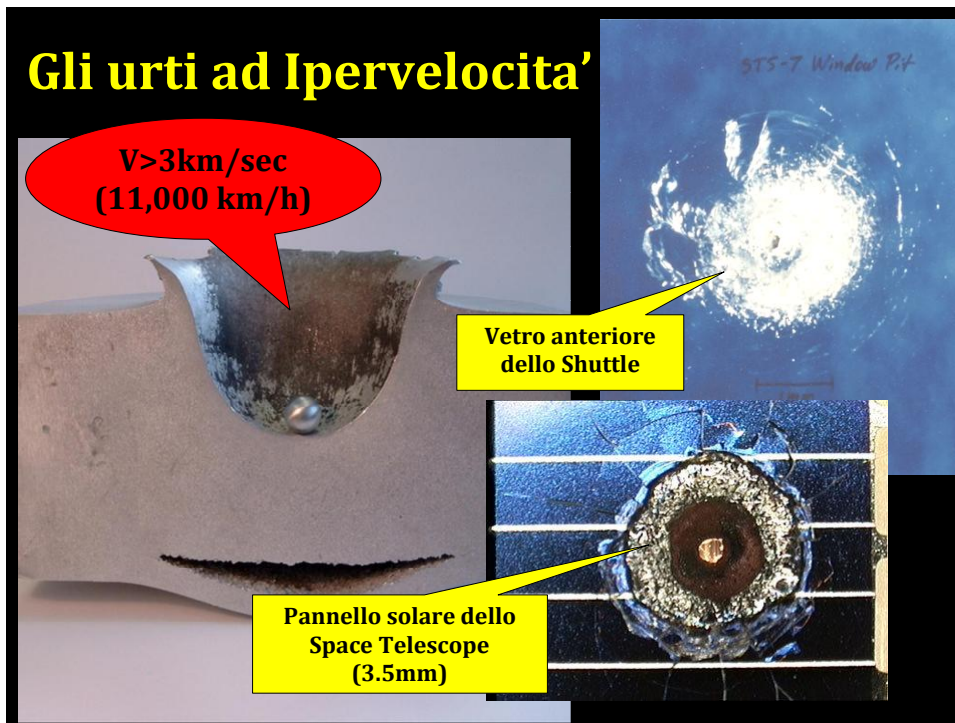
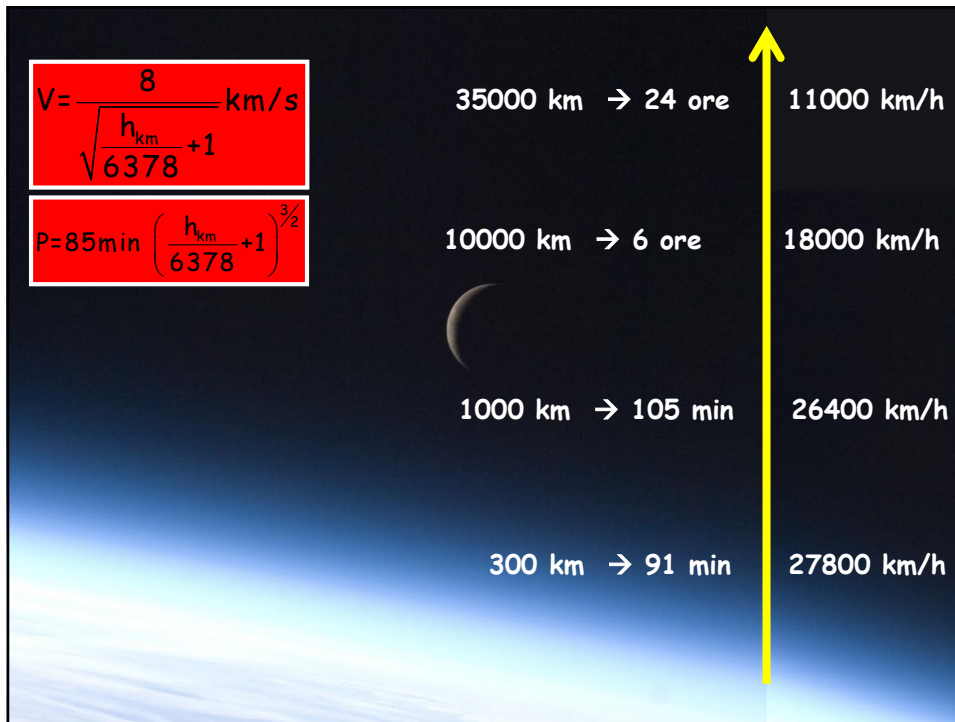
# Traffico Spaziale

Orbital Launches and Failures



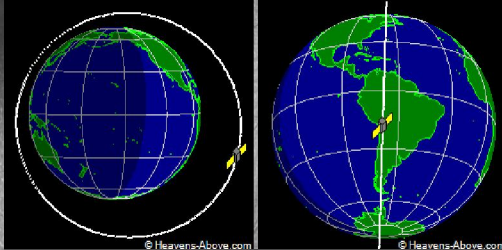
**6500 tonnellate!**  
(36 Boeing 747!!)





## L'esperimento West Ford (1963)

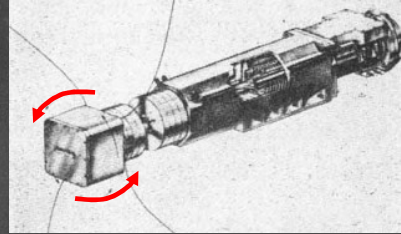
400 Milioni di "aghi"  
fusi in un "panetto" di  
Naftalene



Orbita: 578 x 3418 km

Inclinazione: 88.4 gradi

Periodo: 127.1 minuti



Lancio: 9 Maggio '63

Satellite: MIDAS (6?)

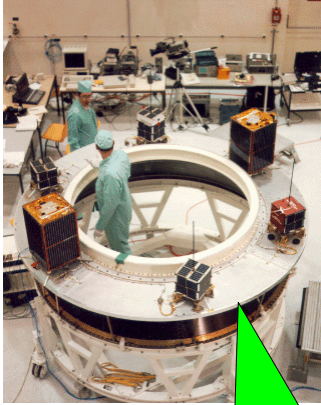
Orbita: 3603 x 3681 km

Inclinazione: 87.4 gradi

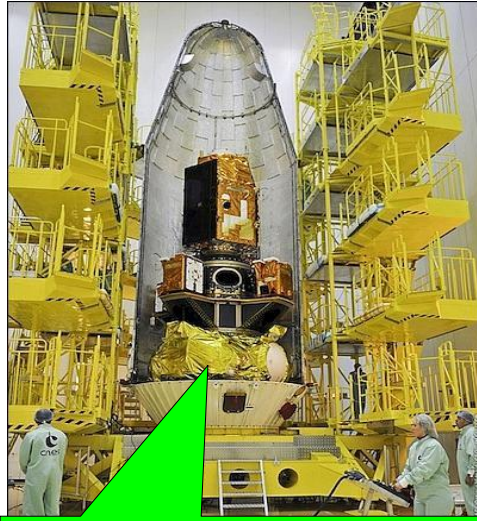
Periodo: 166.5 minuti



## Lanci multisatellite

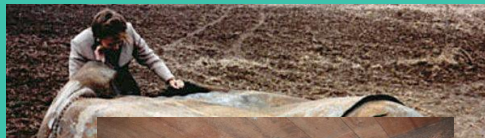


Piattaforma Multisatellite  
ASAP (Ariane 5) – Fino a 6  
satelliti



Configurazioni Ariane 5  
SYLDA SPELDA SPELTRA

## “Pezzi grossi”



2013 – Portellone III stadio Ariane 5 -  
Cancun (Messico)





## **Il rientro del Cosmos 1315 - Settembre 2015**

RE-ENTRY OF RUSSIAN SATELLITE  
COMOS 1315  
KAILUA KONA, HAWAII , AUGUST 30TH, 2015

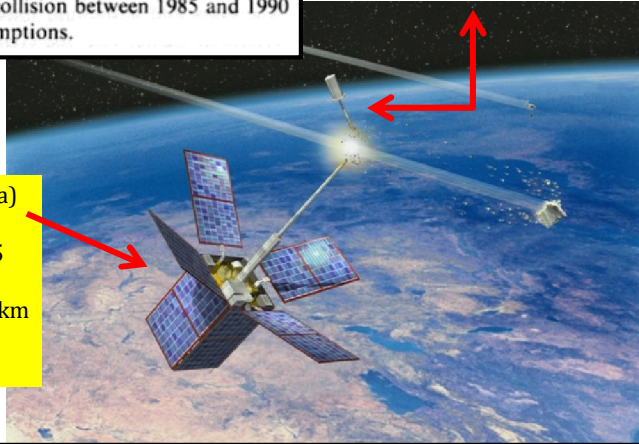
## 24 Luglio 1996: la prima "collisione"

Note that under the more conservative assumption (320 objects/yr) the first collision would be expected around 1997. However, at a growth rate of 13%/yr this collision would occur around 1989. If the average collision cross section is overestimated by a factor of 2, the first collision could be as late as the year 2005, while an underestimation by a factor of 3 results in a first collision between 1985 and 1990 under any of the growth assumptions.

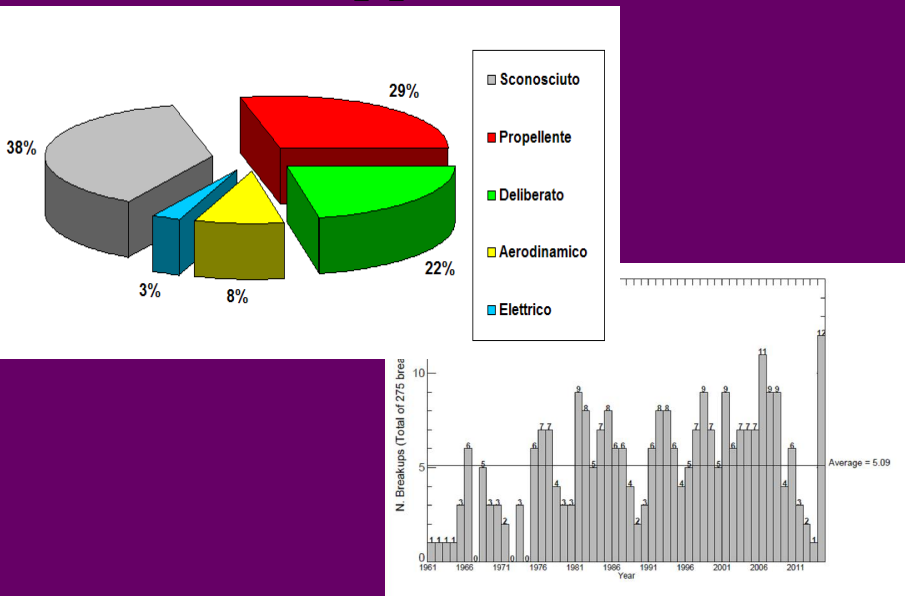
Area radar: 0.07m<sup>2</sup>  
 Orbita: 445.1 x 457.1 km  
 Periodo: 93.6min  
 Inclinazione: 98.3°

(Kessler & Cour-Palais, 1978)

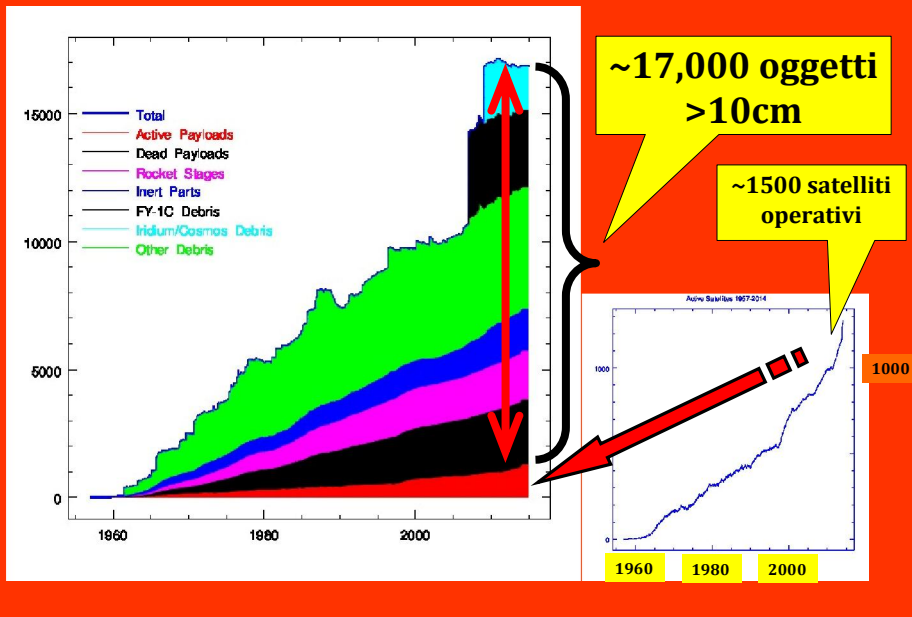
Satellite: **Cerise** (Francia)  
 Uso: Militare  
 Lancio: 07 Luglio 1995  
 Area radar: 0.65m<sup>2</sup>  
 Orbita: 582.5 x 589.3 km  
 Periodo: 96.4min  
 Inclinazione: 98.2°



## Scoppio a bordo



## Discariche in orbita...



## Esperimenti ASAT (Anti-Satellite)

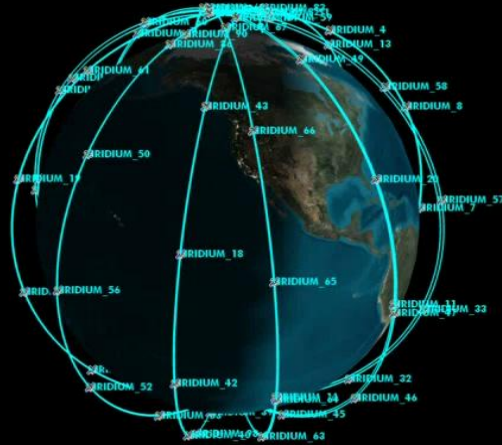
**ASAT TEST**  
**Xichang Space Center, China**  
**January 11, 2007**

Visualization using the data tracks  
available on June 11, 2007



# La triste storia dell'Iridium 33 (Scontri Spaziali)

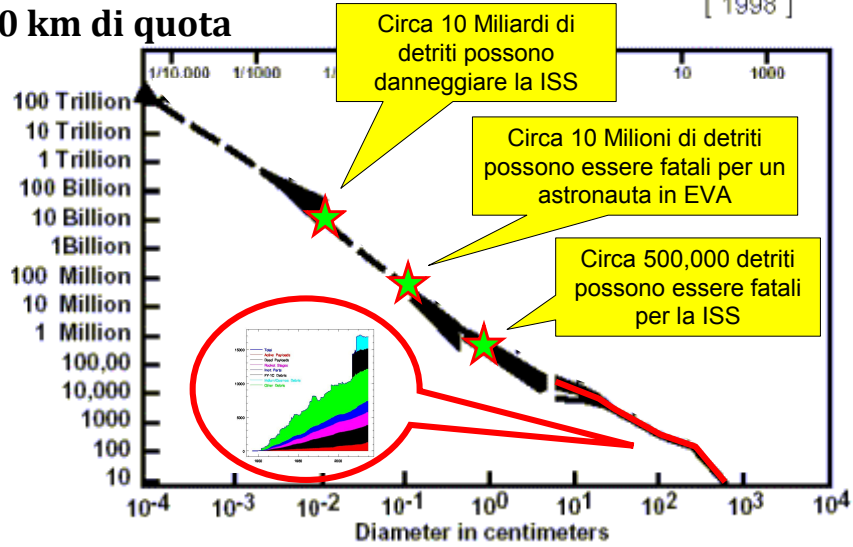
10 Febbraio 2009



## Raccolta differenziata?

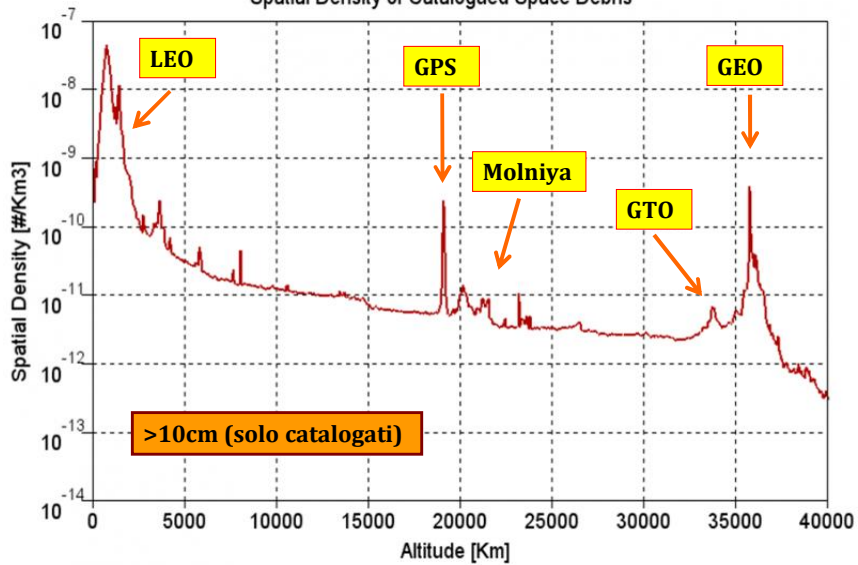
Numero totale entro  
2000 km di quota

[ 1998 ]

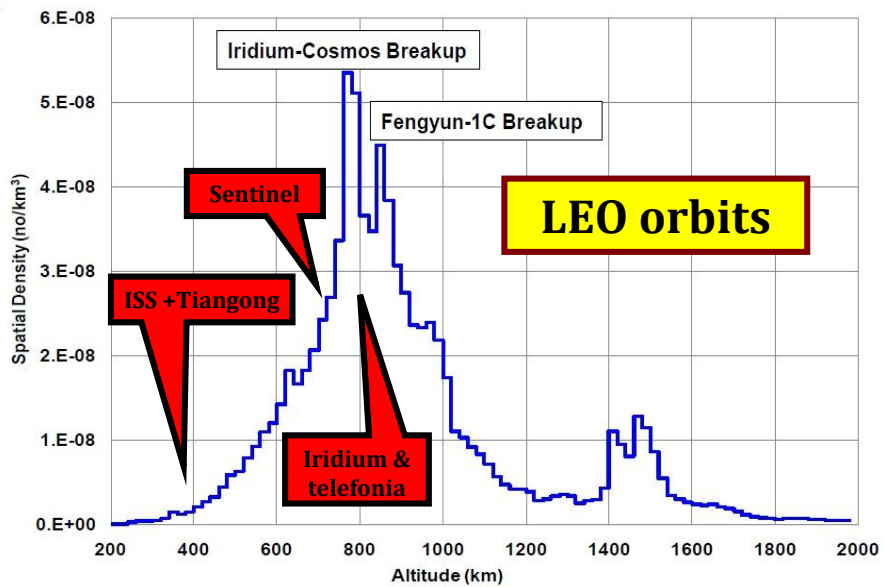


## La distribuzione in altezza

Spatial Density of Catalogued Space Debris



## La distribuzione in altezza



## Il sistema di controllo Americano



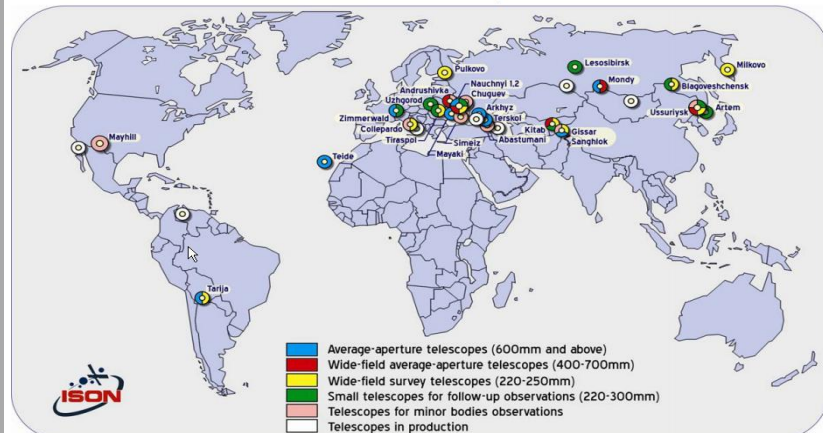
## La base NORAD Mount Cheyenne, Colorado



... e i Russi?

## Il progetto ISON

International scientific optical network



ISON is an open international project started in 2004 for regular monitoring of the near-Earth space

# The 821st Main Space Intelligence Centre (SKKP)

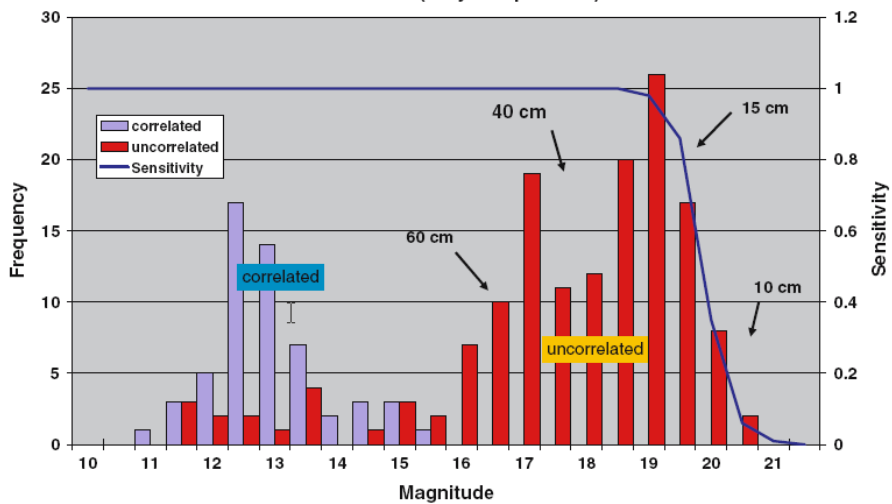


## La base OKNO (Tagikistan)

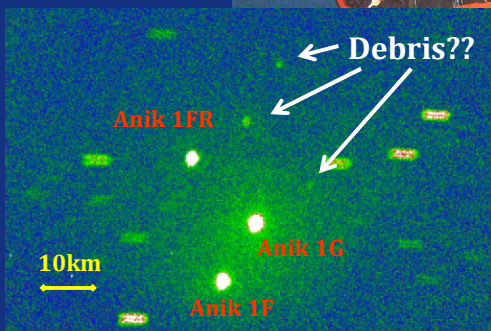


# Il censimento

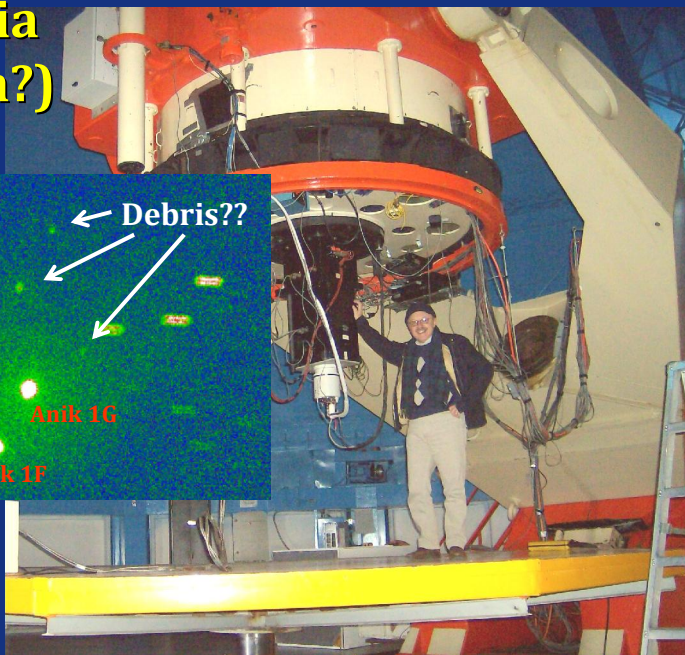
Detections (July - Sept. 1999)



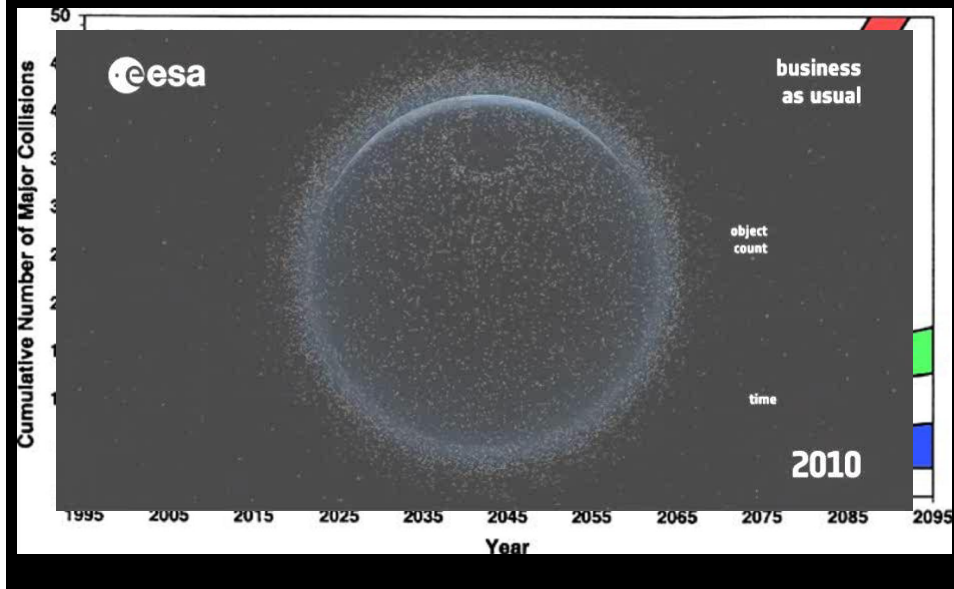
## A caccia (grossa?)



LFOSC  
10x6 arcmin



## Se non si fa qualcosa...



## Andarli a prendere...



## **Vele & Origami**



## **Il Satellite Fionda (SlingSat)...**

