

# A SKY FULL OF DEBRIS

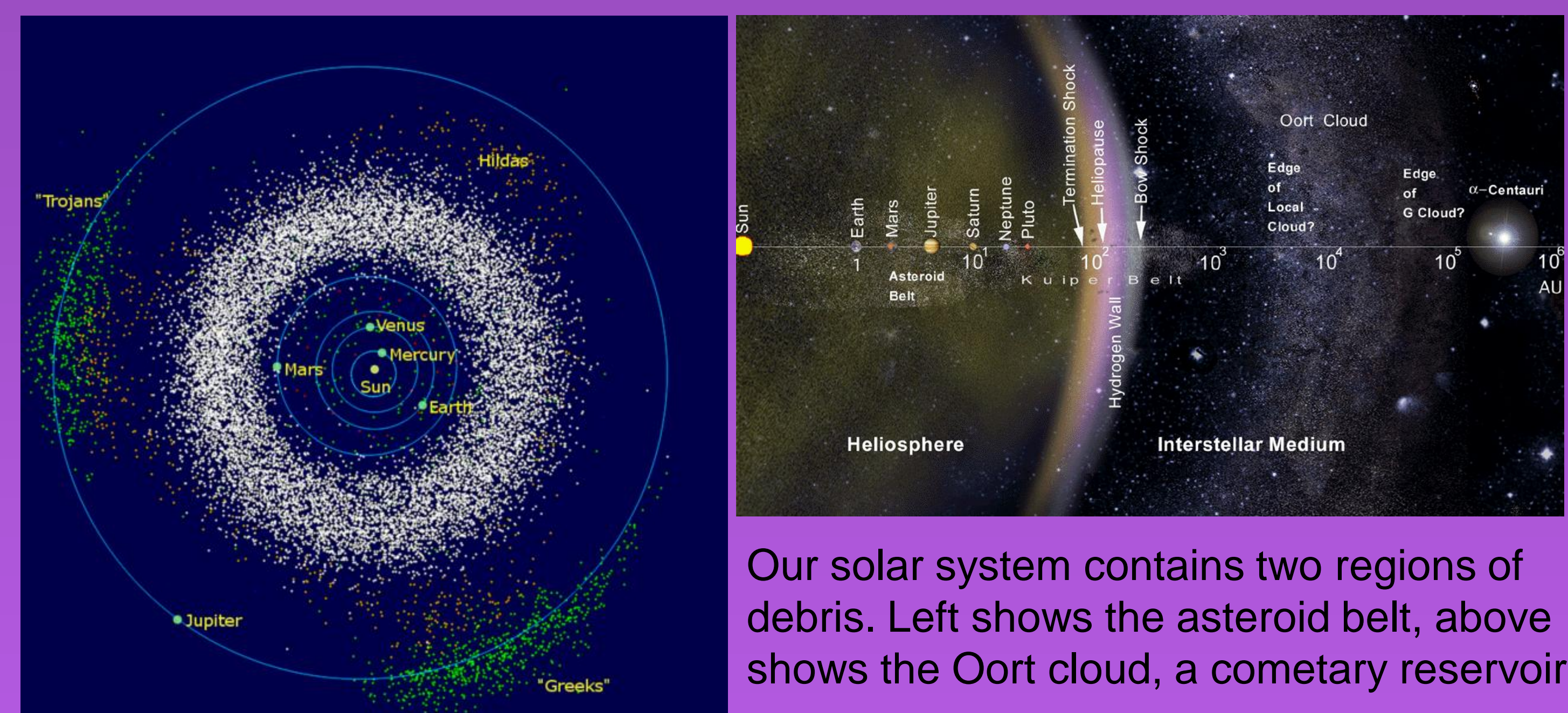
## NATURAL SPACE DEBRIS



Most galaxies contain large amounts of gas and dust debris. Whirlpool galaxy at left, Centaurus A at right. [Both images European Southern Observatory]



Supernovae blast huge amounts of debris into space. Artist's impression above, Crab nebula right. [NASA]



Our solar system contains two regions of debris. Left shows the asteroid belt, above shows the Oort cloud, a cometary reservoir.



Debris around Saturn; debris entering Earth's atmosphere; cometary debris in space; result of cometary explosion over Siberia 1908.

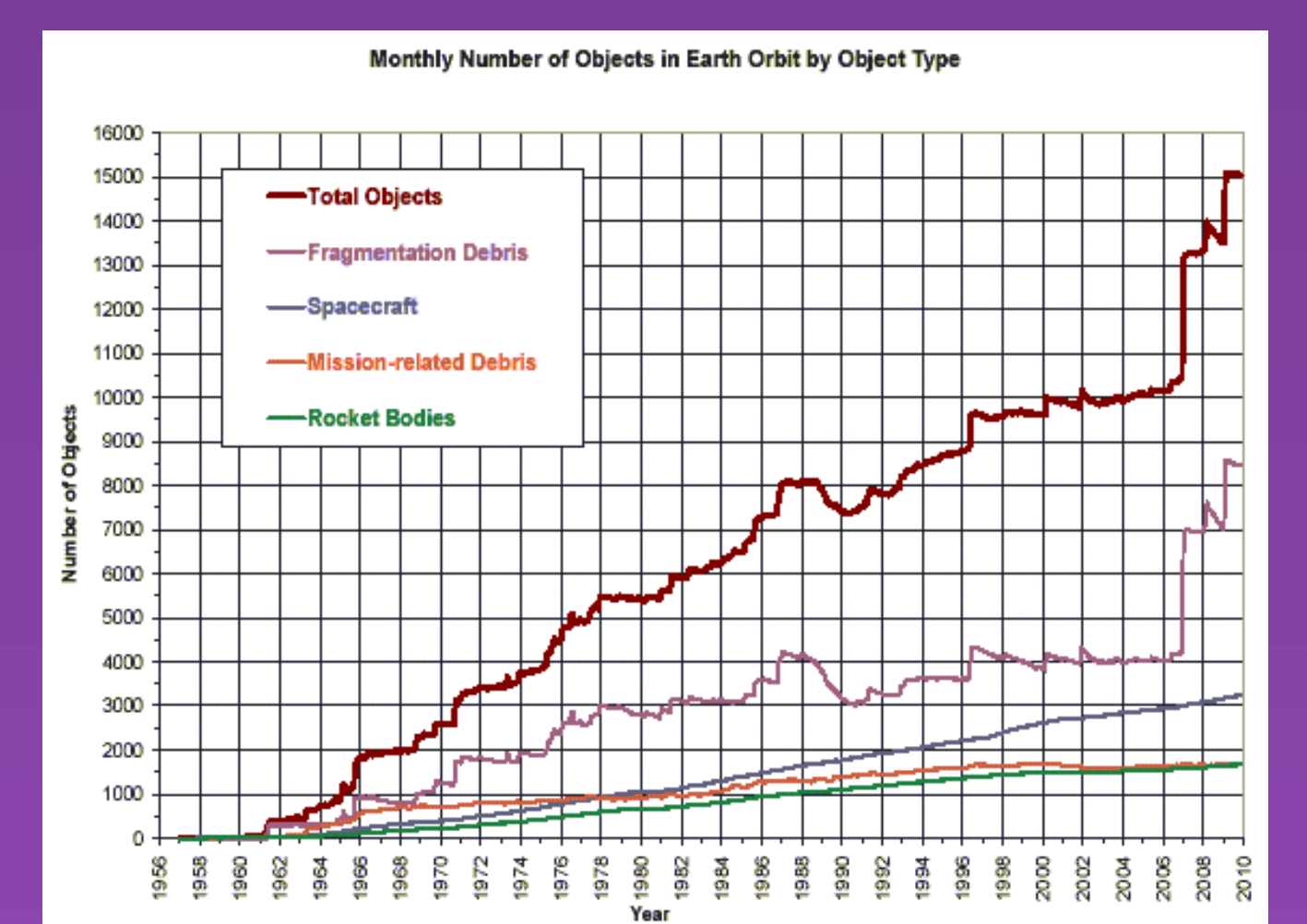
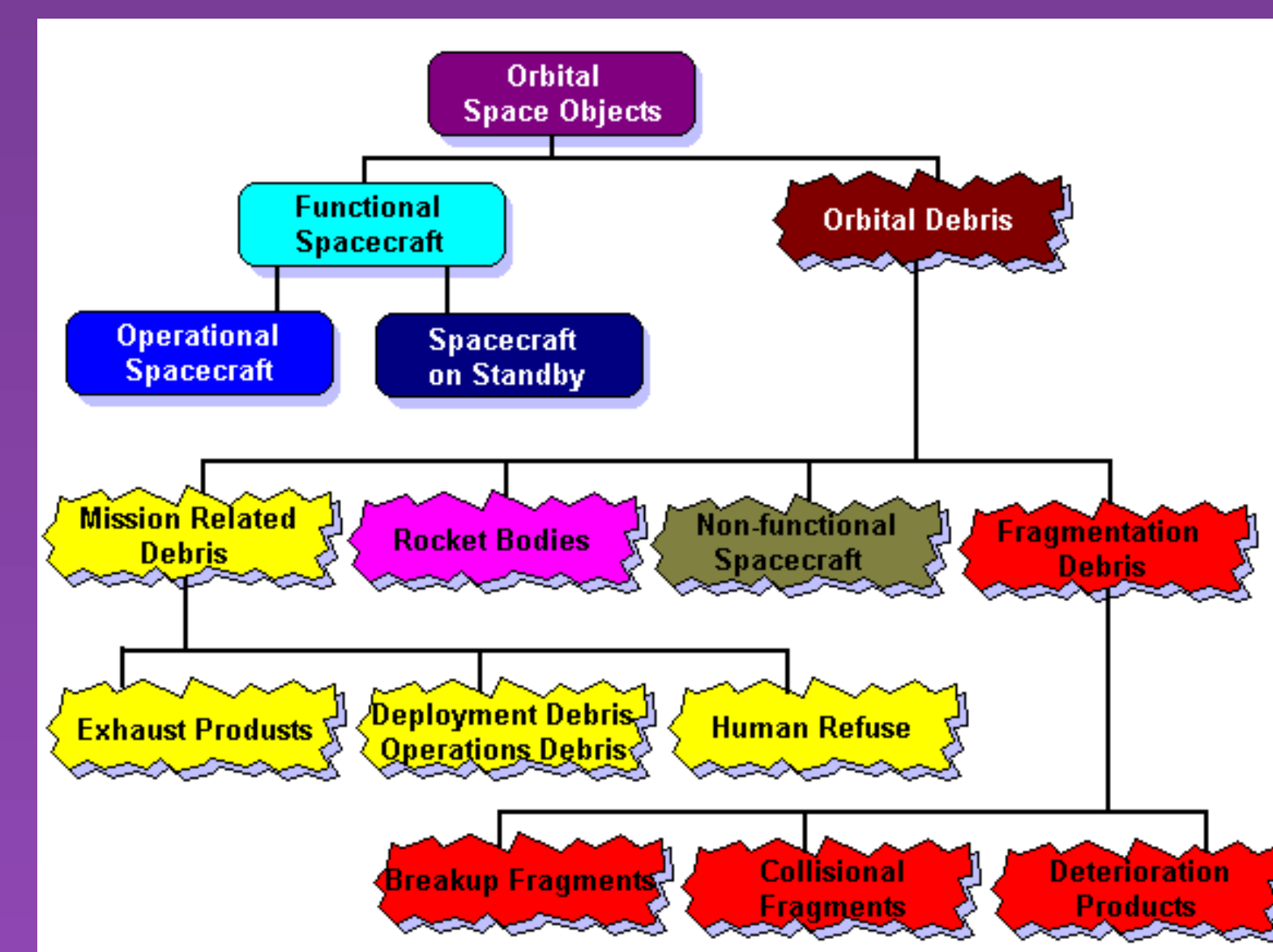


Debris impacts on the moon (left), on the Earth (above), and a piece of asteroidal debris found on the Earth. [Images from Chinese Space Agency, Dravins and McCall]

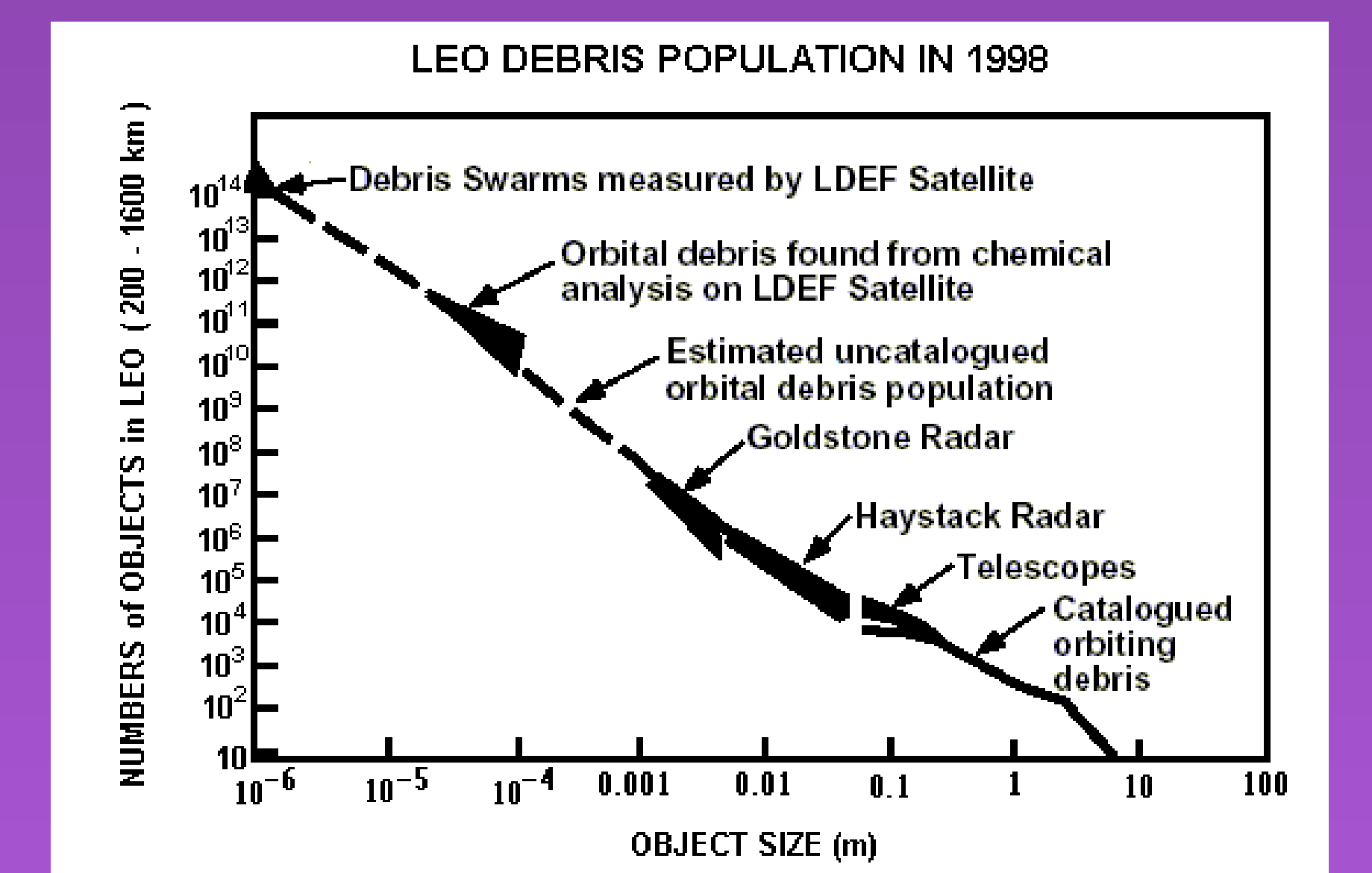
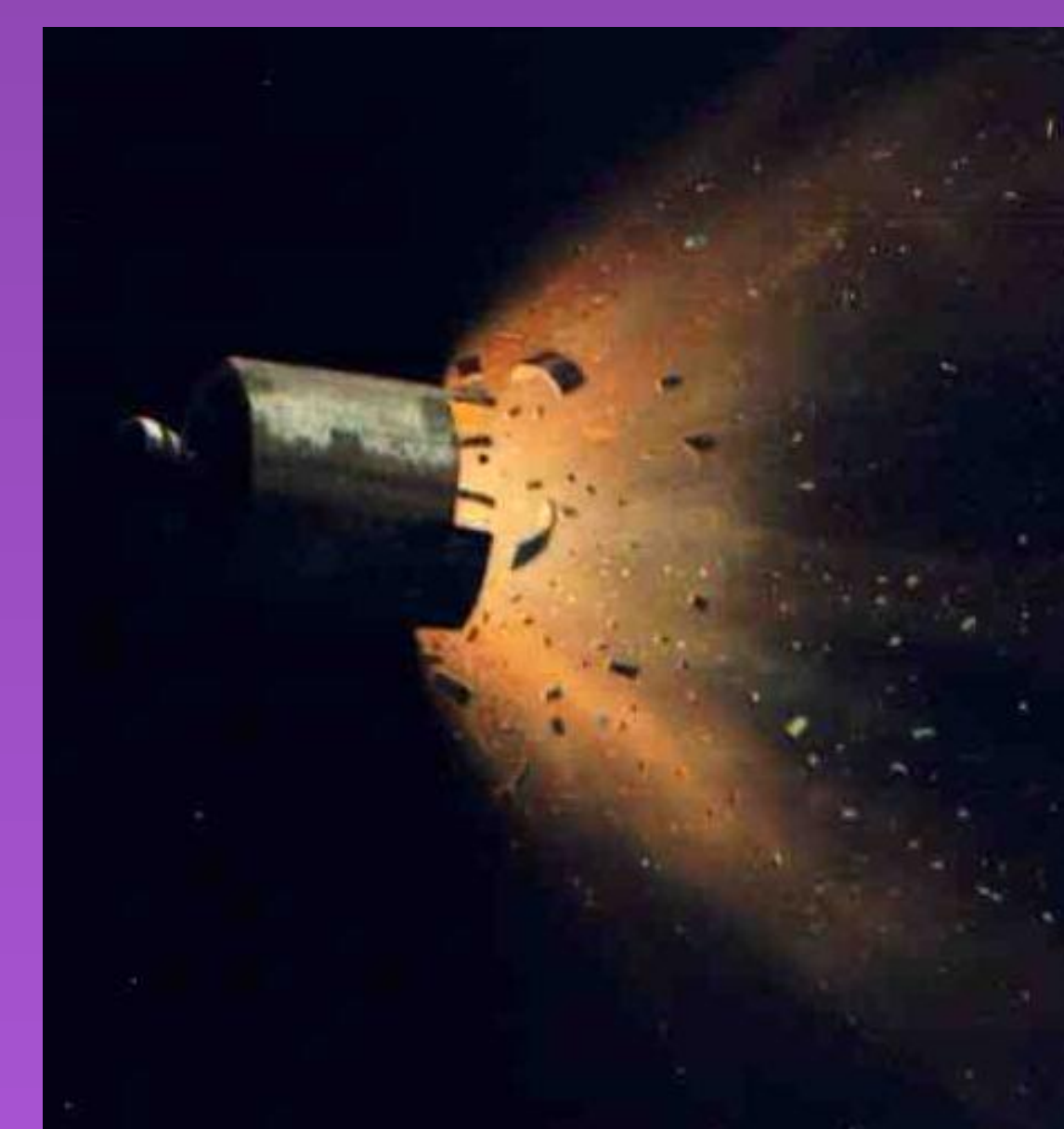
## MAN-MADE SPACE DEBRIS



Computer impressions of man-made space debris in low Earth orbit (left) and geosynchronous (right). [Images by European Space Agency].



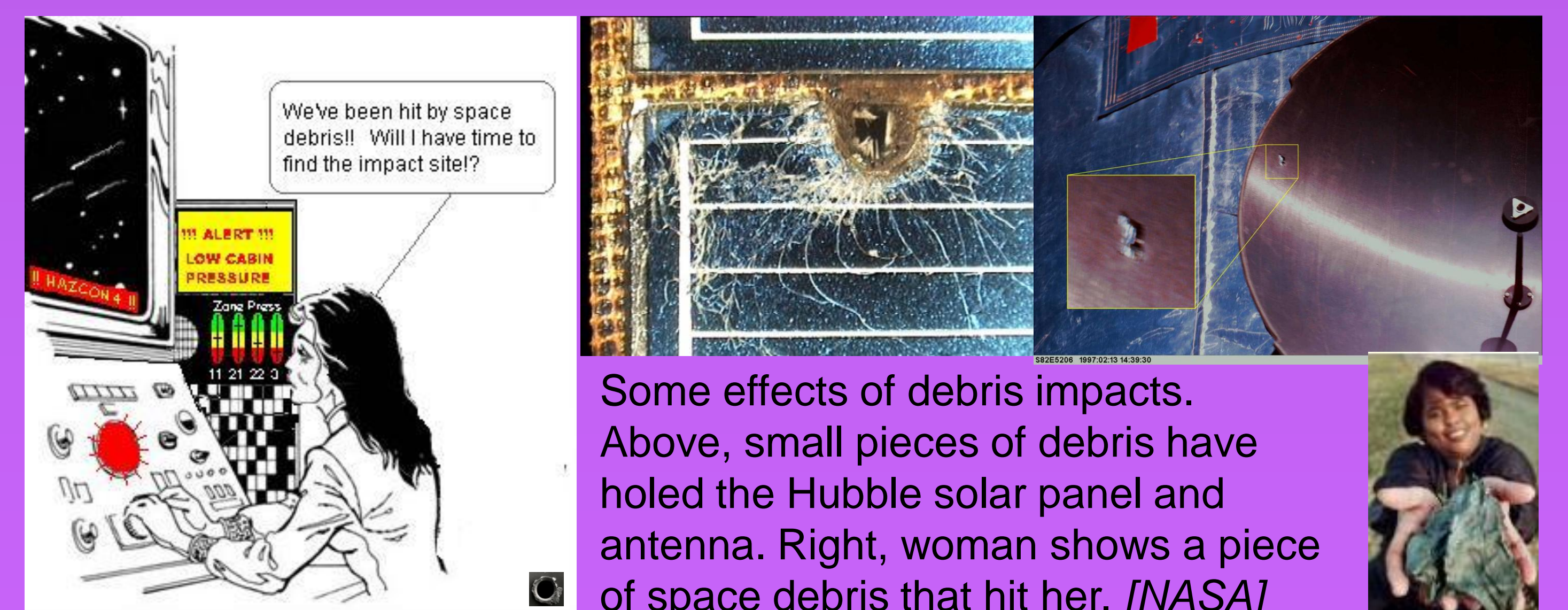
Space debris classification & population growth [NASA OPDO]



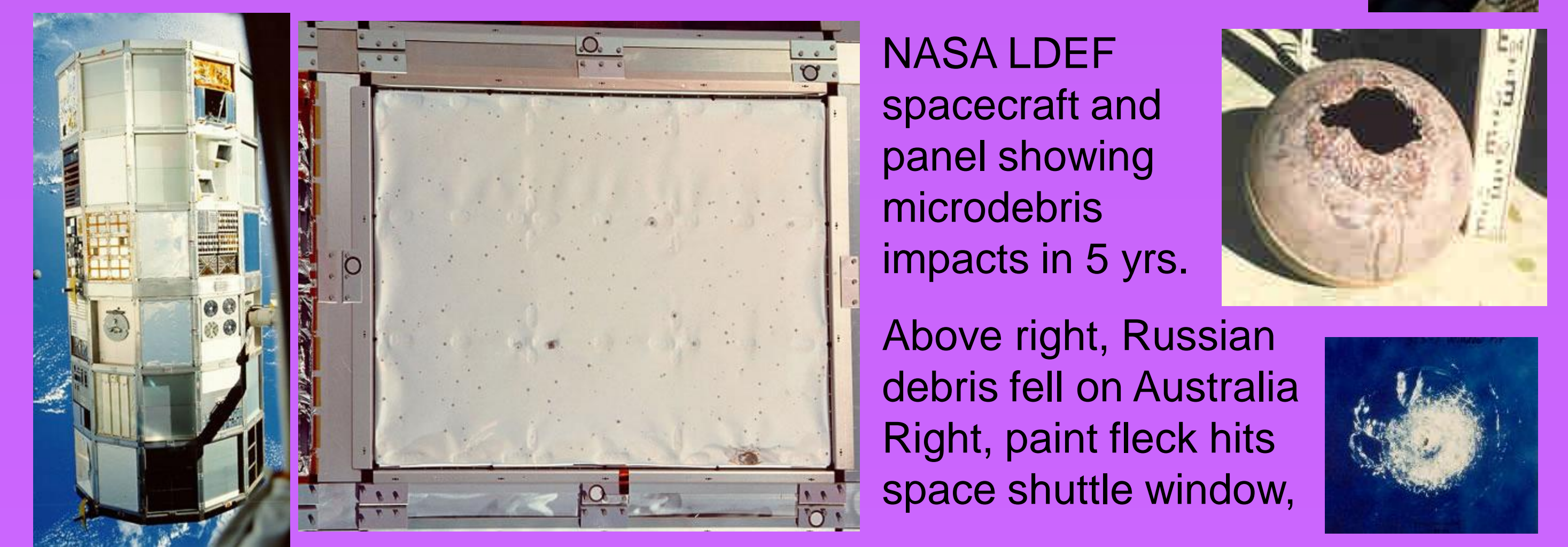
Space debris is produced in many ways. Upper left shows satellite fragmentation, lower left one satellite collides with a small piece of debris creating more debris [Hartmann/Kessler]. Above is a graph showing debris size distribution - NASA



Far left, debris contaminates star image [Brockman]; left, shows two debris reentries into Earth's atmosphere.



Some effects of debris impacts. Above, small pieces of debris have holed the Hubble solar panel and antenna. Right, woman shows a piece of space debris that hit her. [NASA]



NASA LDEF spacecraft and panel showing microdebris impacts in 5 yrs.

Above right, Russian debris fell on Australia Right, paint fleck hits space shuttle window,