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Nota di contenuto	Space ecology -- Terrestrial - space as part of the environment to be preserved -- Low Earth Orbit - the proliferation of constellations and the dangers of collisions -- Avoiding Kessler syndrome -- Orbital traffic and the need to regulate it -- In-orbit refueling to limit the number of launches -- Debris-norms for the re-entry of satellites and launcher parts -- Atmospheric pollution caused by launch exhaust and debris from satellite destruction upon reentry into the atmosphere -- Lunar ecology -- Eco-sustainable exploitation -- The problem of dust (charged and toxic) -- Preserving “historic” places (which do not belong to any state but should be protected) -- Avoid electromagnetic pollution of the moon's hidden face to allow construction of radio telescopes -- Planetary protection beware of contamination- goes both ways -- Quarantined lunar astronauts (but we now know that the measures were not effective) -- Sterilized probes (as much as possible) to avoid carrying our bacteria around the solar system -- Cospar

regulations for planetary protection -- Space Law -- 1967 UN treaty -- National laws and international agreements.

Sommario/riassunto

The recent entry of private entrepreneurs into the world of space has multiplied the number of services provided by instruments in orbit, resulting into a rapid and tumultuous growth of the space economy. More services translate into more launches bringing into orbit more satellites. As a result, circum-terrestrial orbits are filling up alarmingly, and we are only at the beginning of the proliferation of mega constellations that have sprung up in recent years to provide planet-wide Internet connectivity. There are neither national nor international laws for managing the number of orbiting satellites that are growing at such a dizzying rate that real orbital traffic jams are feared. We need to extend to the space around us, but also to the other bodies in the solar system, the concept of sustainable use so as not to repeat the same mistakes we have made on Earth's surface. Around our planet we need to avoid overcrowding of orbits so as not to endanger our planet's economy, which is heavily dependent on the use of satellites. Looking further afield, to the Moon and Mars, for example, we must balance resource utilization with unnecessary pollution of fragile ecosystems. Human settlements will have to respect the ecosystem of these celestial bodies that do not belong to any state but must be absolutely protected in order to prevent an interplanetary version of the tragedy of the commons, unfortunately so familiar in our planet. Particular attention must be paid to the risks of biological pollution. Explorers (both human and robotic) risk carrying terrestrial material. Similarly, handling extraterrestrial samples requires well-equipped laboratories and continuous surveillance. .