



(By permission of John Hart. Field Enterprises.)



Anche i trogloditi sapevano che ...
 "ci sono i RC"

Circa 100000 (10^5) particelle/1 h generate da RC
 Attraversano il nostro corpo

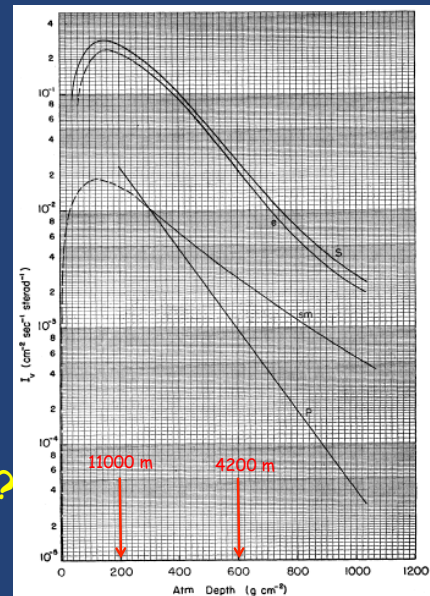
~ 16% della radiazione ambientale
 (0.4 mSv/y)

2.4 mSv/y quella naturale

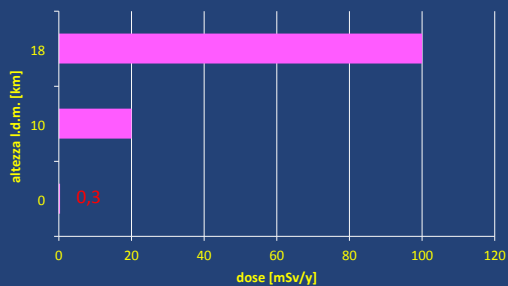
Impatto biologico ?

- Beh noi (*Homo sapiens sapiens*) siamo qui da tanti anni

è per l'atmosfera ...!?!?



E i piloti e le hostesses ?



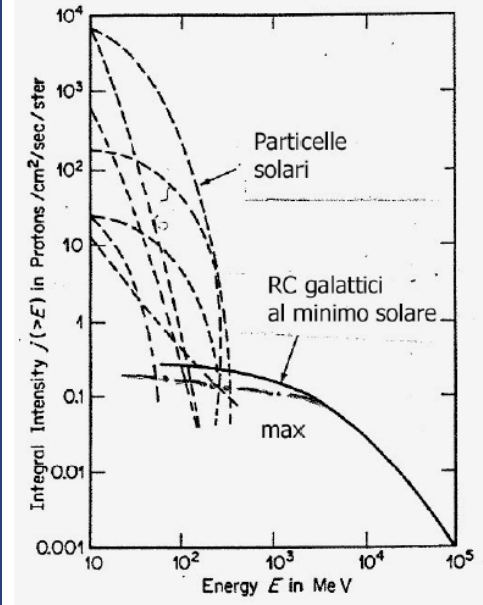
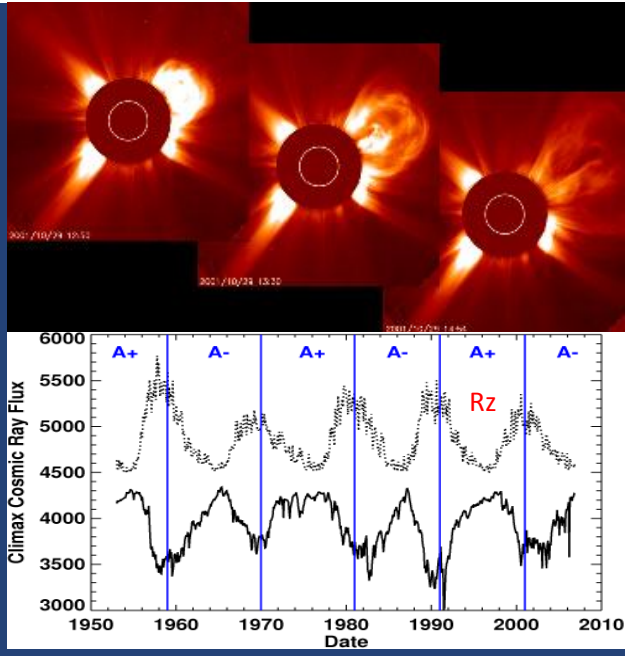
4

I FANTASTICI

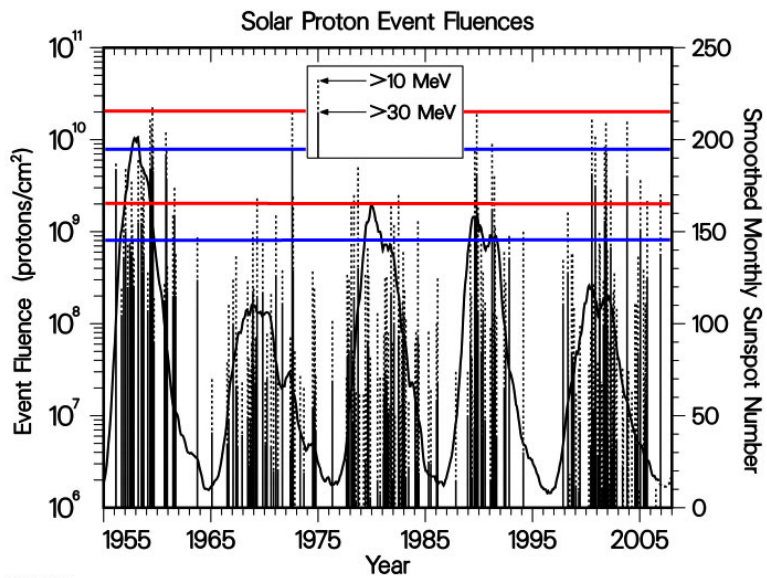
?

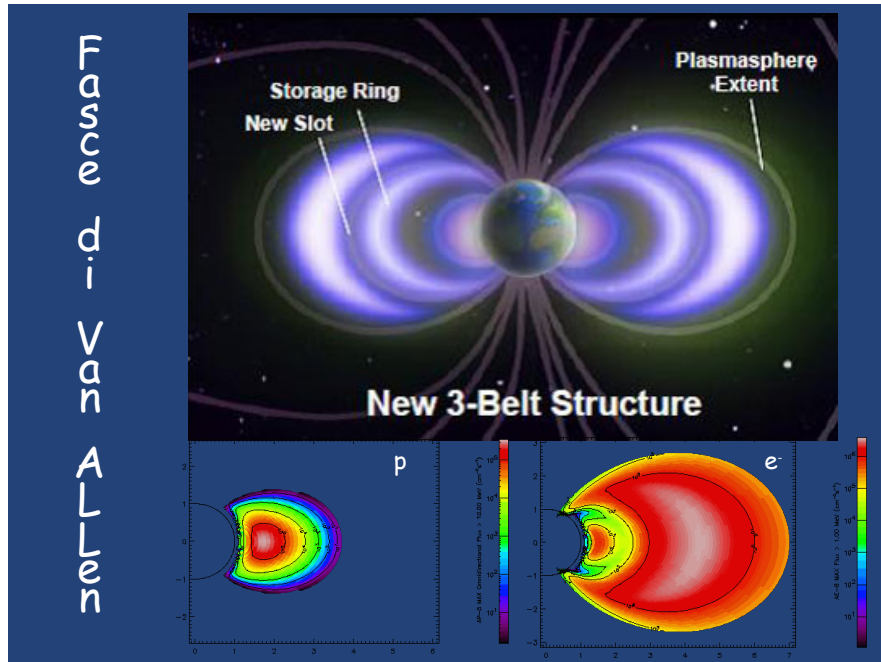
E allora

Attività solare



Il cattivo





I RC si "sentono" - SiEye

Notebook PC
NI-DAQ PCMCIA
Joystick
+27 V
SiEye2
Green LED
Red LEDs
Helmet

C'è altro che ci protegge !

Solar Dynamic Observatory NASA

- <http://spaceref.com/earth/a-blast-from-the-sun-and-it-affects-on-earth.html>

Project MARS

A Technical Tale
by Dr. Wernher von Braun

1950

Uomo su Marte - 1 il viaggio

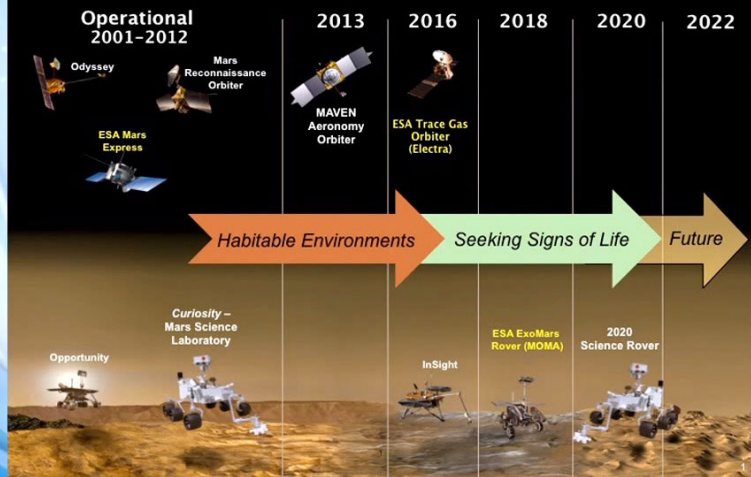
2 possibilità ogni 15 anni
Durata 1.4 anni (invece di 2-3.5anni)

Lancio Gen. 5, 2018 (nel 2031)
Marte Ago. 20, 2018 = 227 giorni
Terra Mag. 20, 2019 = 274 giorni

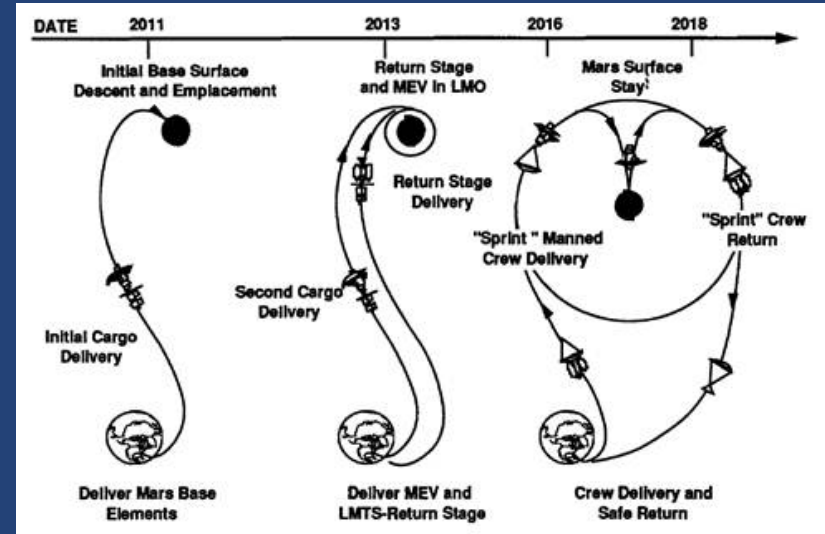
2018-2032 ?

NASA

Mars Missions in This Decade

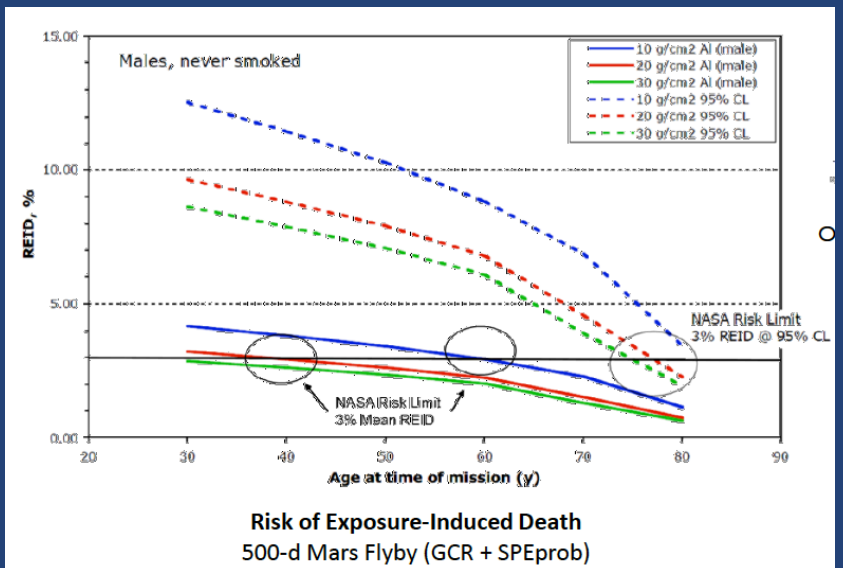
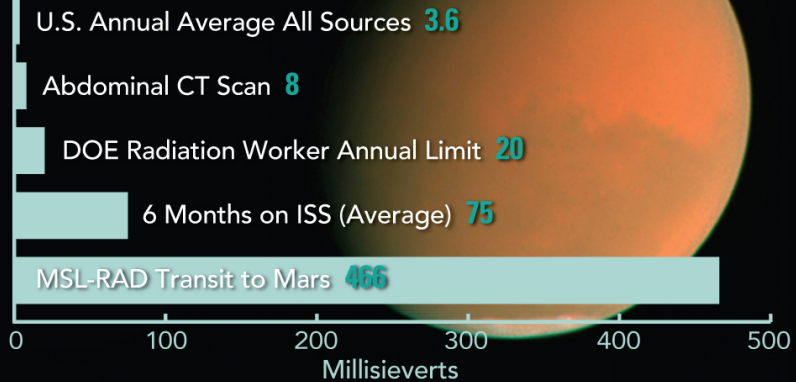


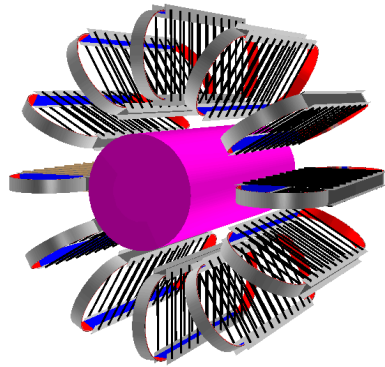
Schema di "doppio sprint"



Uomo su Marte - 2 misure di *Curiosity*

Comparative Radiation Exposures

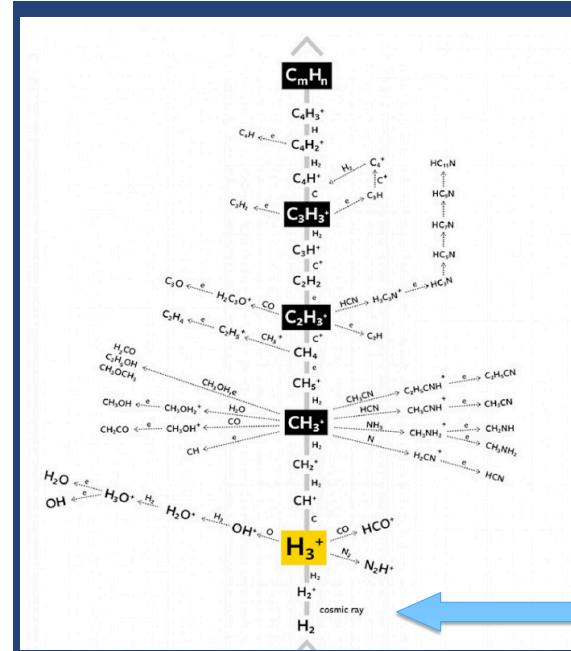
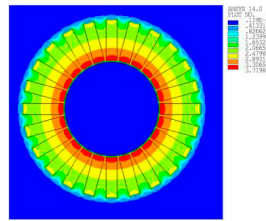
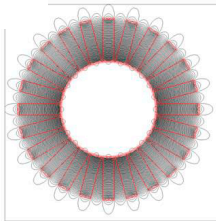




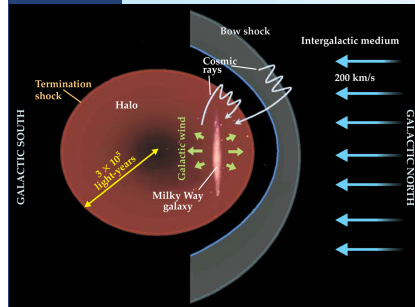
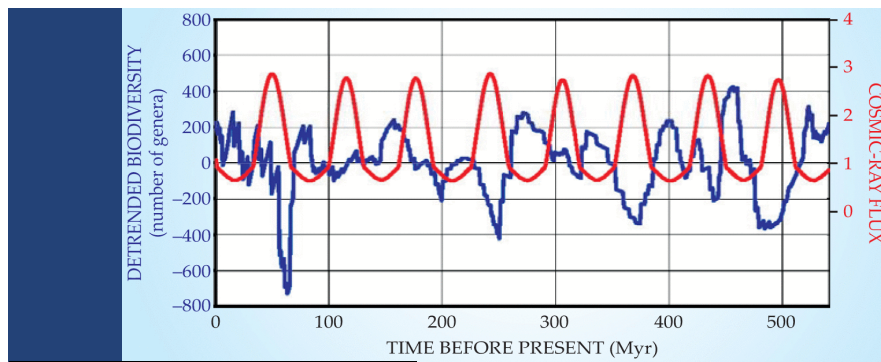
Astronave con schermo magnetico

Field Lines

Magnetic Field B (T)

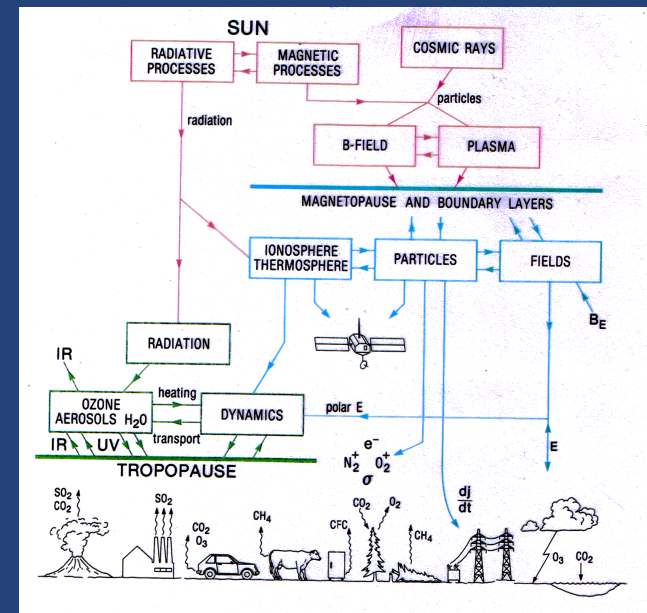


Origine della vita nello spazio

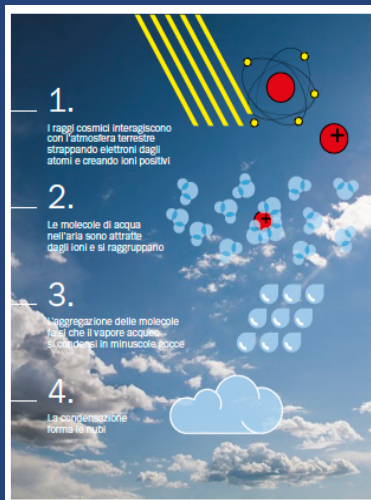


Ciclo di 62 Myr nella biodiversità

L'ambiente terrestre e i RC



RC e nuvole (= clima)



CLOUD @ CERN

Scoperte recenti:

- 1- ruolo vapori di ammine combinate a acido solforico nel formare aerosol tipo atmosfera
- 2- radiazione ionizzante tipo RC ha scarsa influenza nel formare questi aerosol