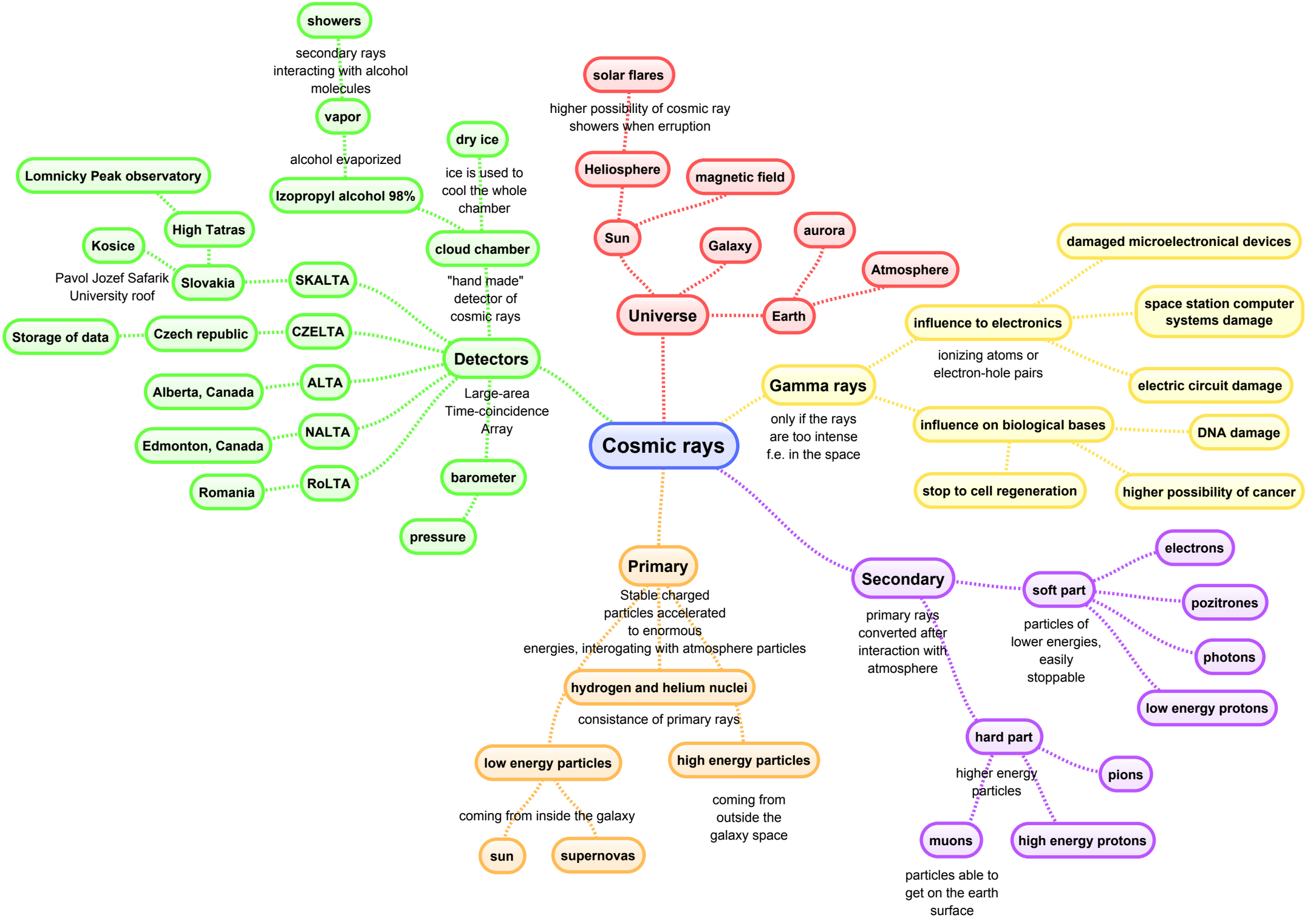
Cosmic rays
Detectors
Large-area Time-coincidence Array
SKALTA
CZELTA
ALTA
NALTA
RoLTA
Slovakia
Czech republic
Alberta, Canada
Edmonton, Canada
Romania
Kosice
Pavol Jozef Safarik University roof
Storage of data
High Tatras
Lomnicky Peak observatory
cloud chamber
"hand made" detector of cosmic rays
Izopropyl alcohol 98%
alcohol evaporized
vapor
secondary rays interacting with alcohol molecules
showers
dry ice
ice is used to cool the whole chamber
barometer
pressure
Universe
Sun
Heliosphere
solar flares
higher possibility of cosmic ray showers when erruption
magnetic field
Galaxy
Earth
aurora
Atmosphere
Gamma rays
only if the rays are too intense f.e. in the space
influence to electronics
ionizing atoms or electron-hole pairs
damaged microelectronical devices
space station computer systems damage
electric circuit damage
influence on biological bases
DNA damage
stop to cell regeneration
higher possibility of cancer
Primary
Stable charged particles accelerated to enormous energies, interogating with atmosphere particles
hydrogen and helium nuclei
consistance of primary rays
low energy particles
coming from inside the galaxy
sun
supernovas
high energy particles
coming from outside the galaxy space
Secondary
primary rays converted after interaction with atmosphere
soft part
particles of lower energies, easily stoppable
electrons
pozitrones
photons
low energy protons
hard part
higher energy particles
pions
muons
particles able to get on the earth surface
high energy protons