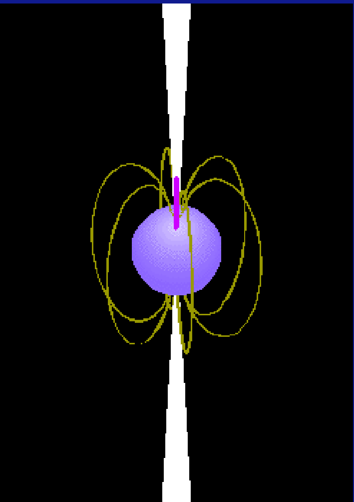
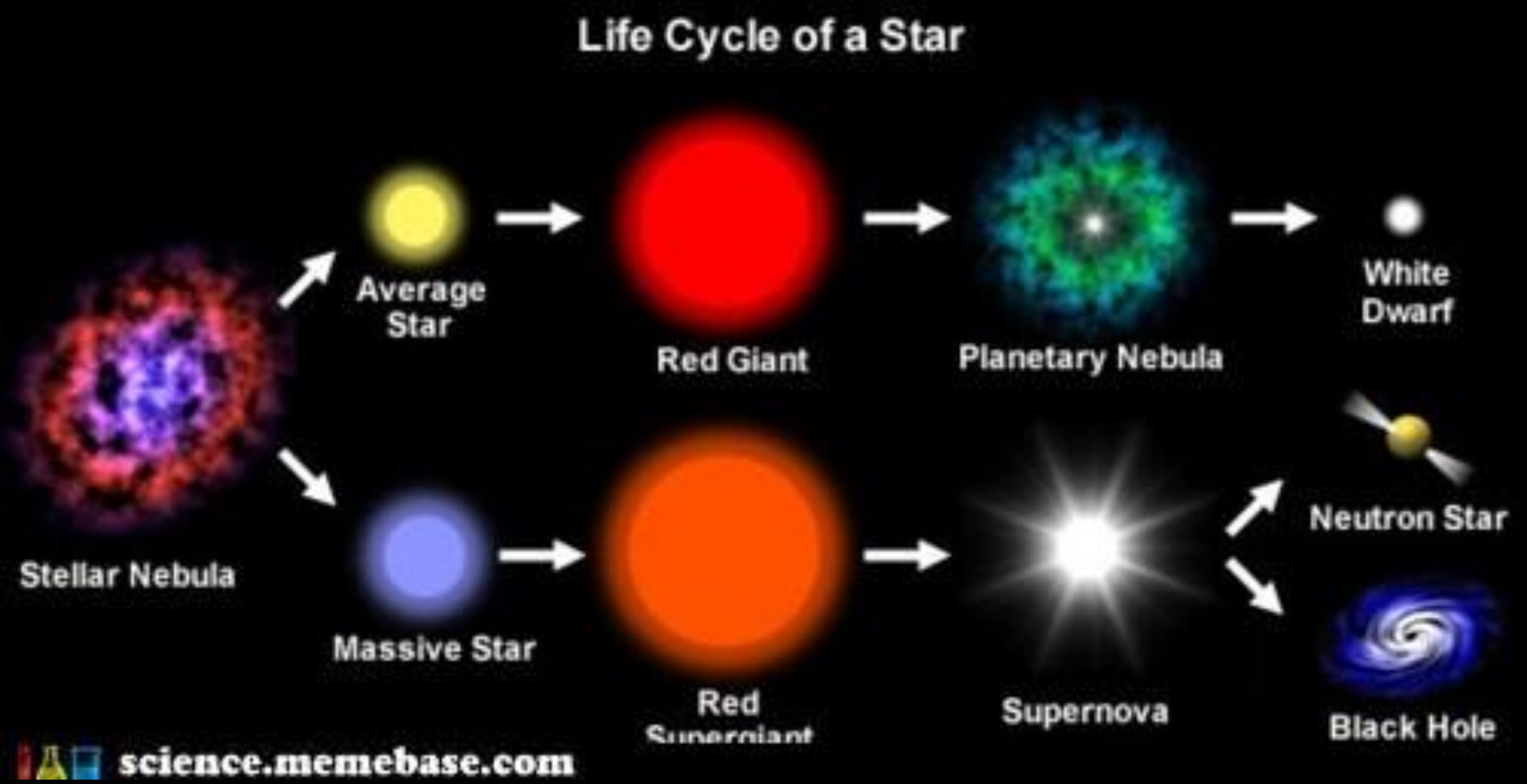
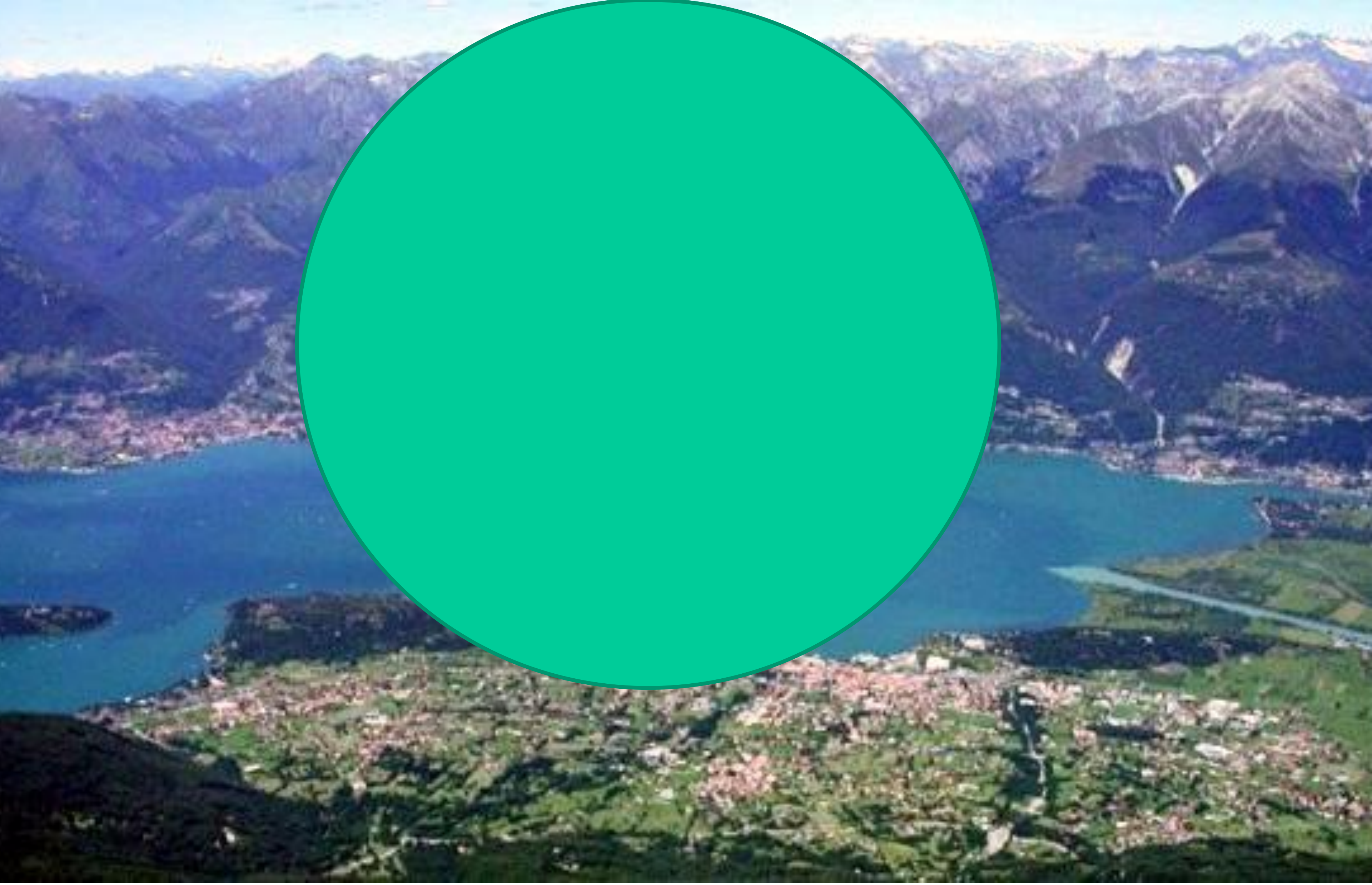


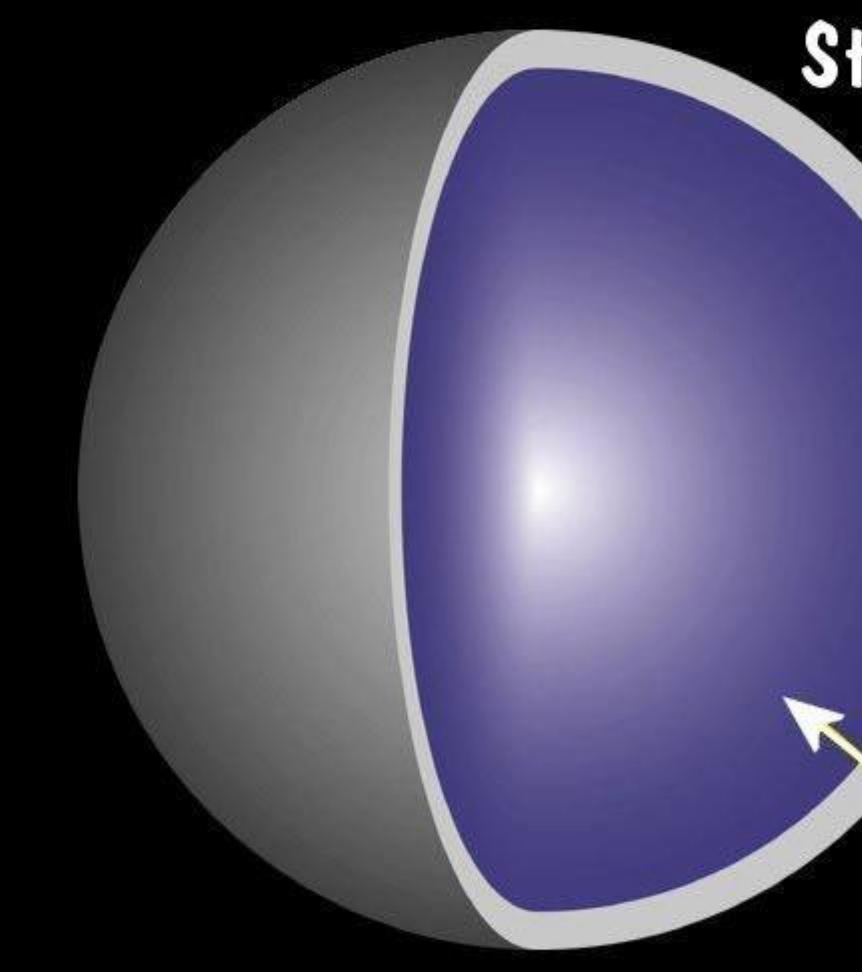
Stelle di neutroni e buchi neri

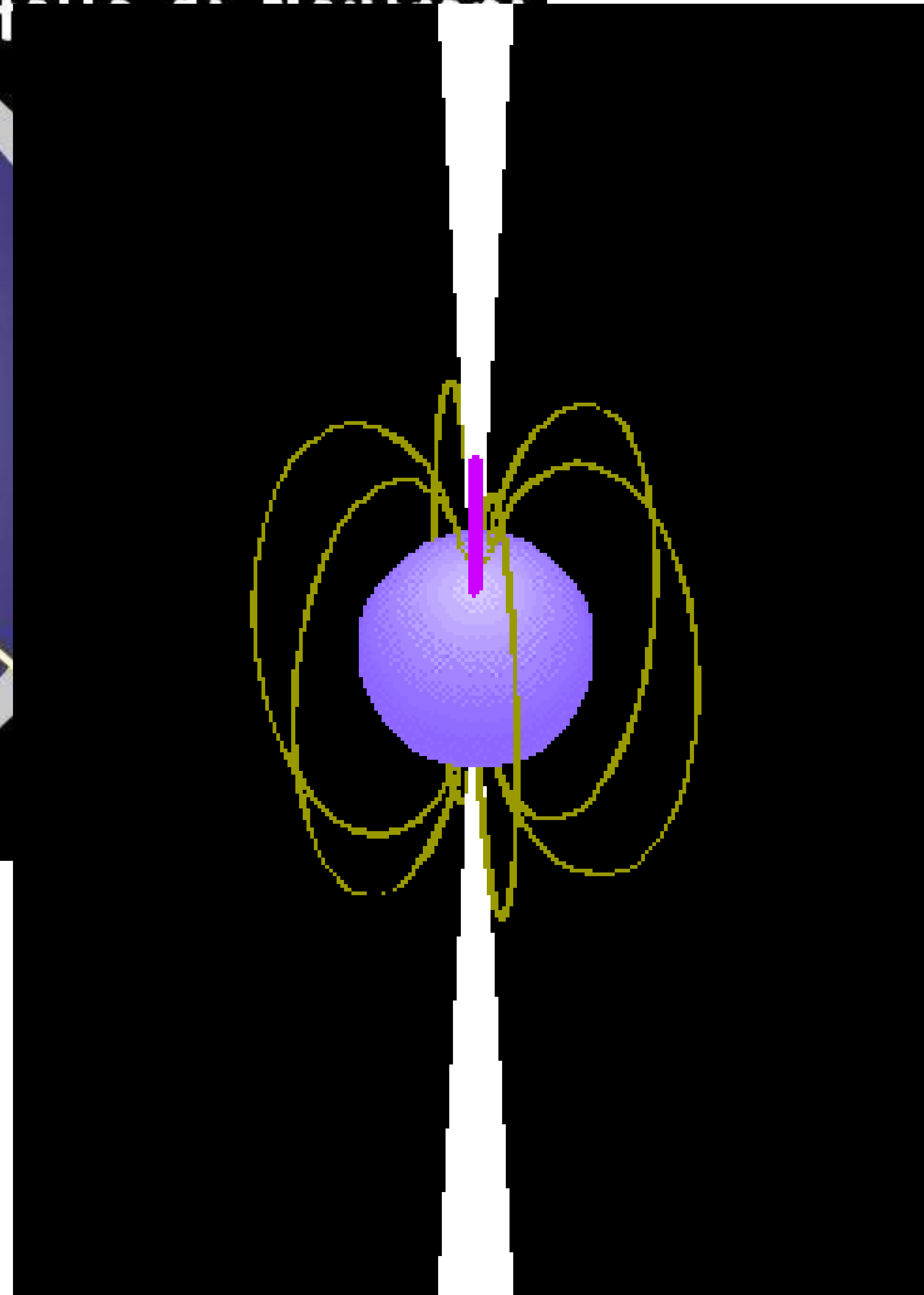
P. Caraveo


Life Cycle of a Star
Average Star
Red Giant
Planetary Nebula
White Dwarf
Stellar Nebula
Massive Star
Red
Supernova
Neutron Star
Black Hole
science.memebase.com

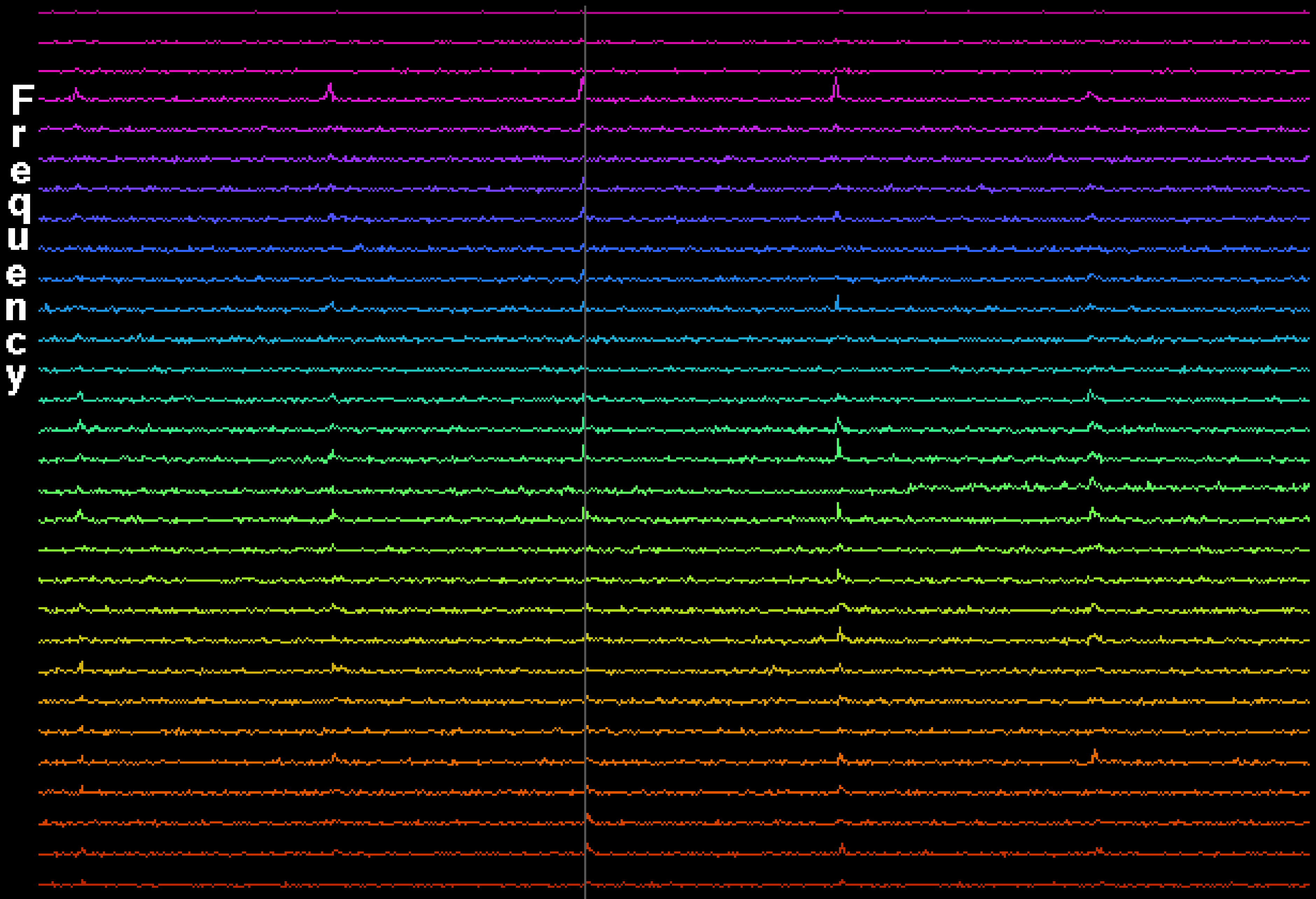


Dimensioni terrestri



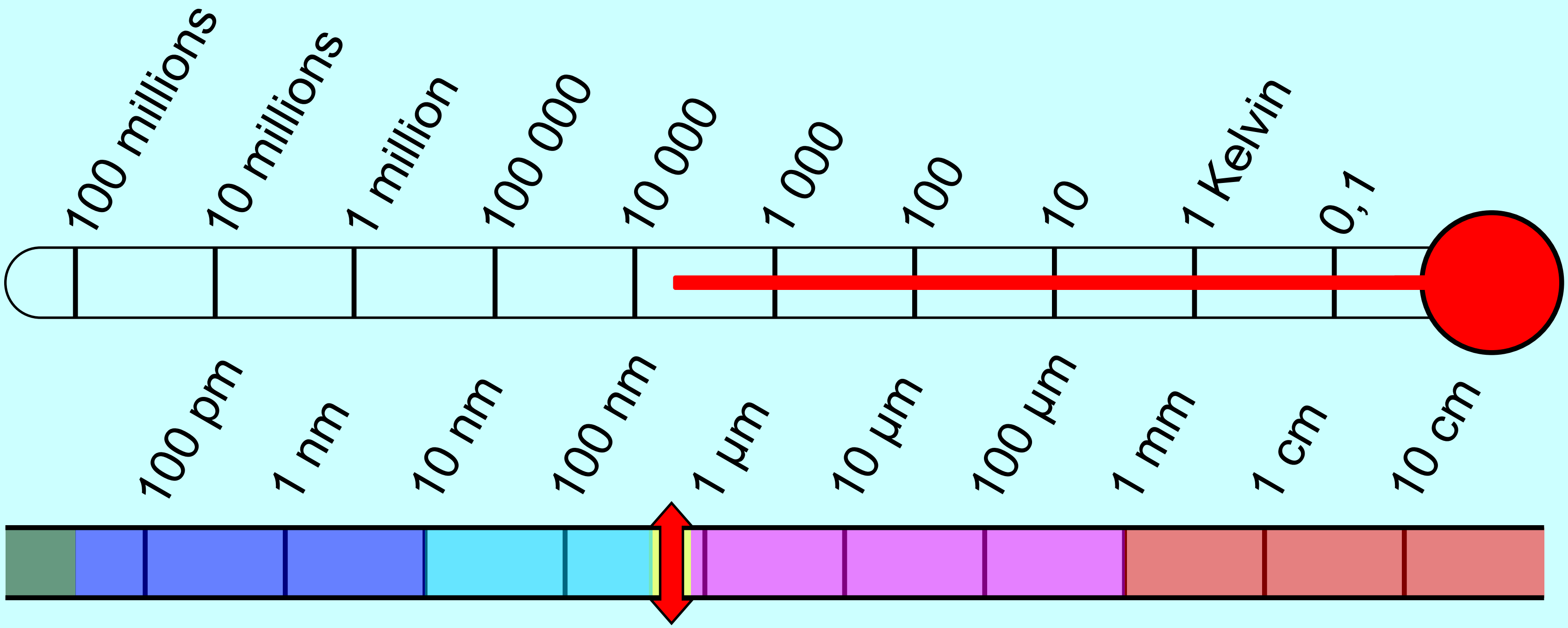


Ascoltando il cielo…

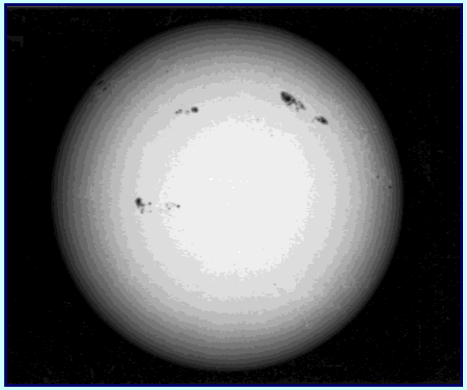



FRESH
OIL

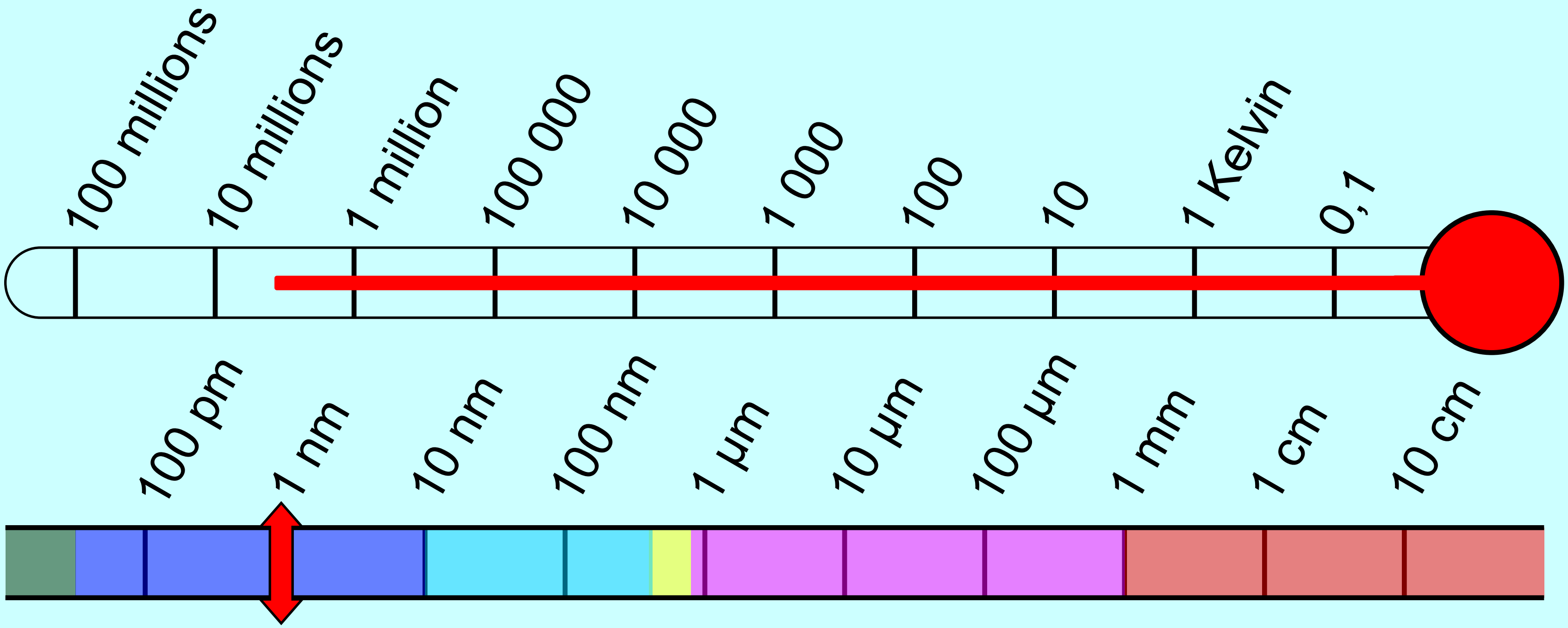

Canada



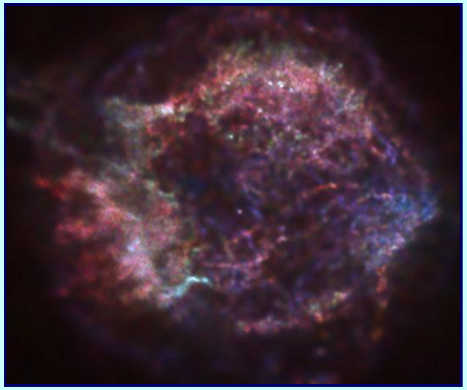
Il VISIBILE



Il SOLE

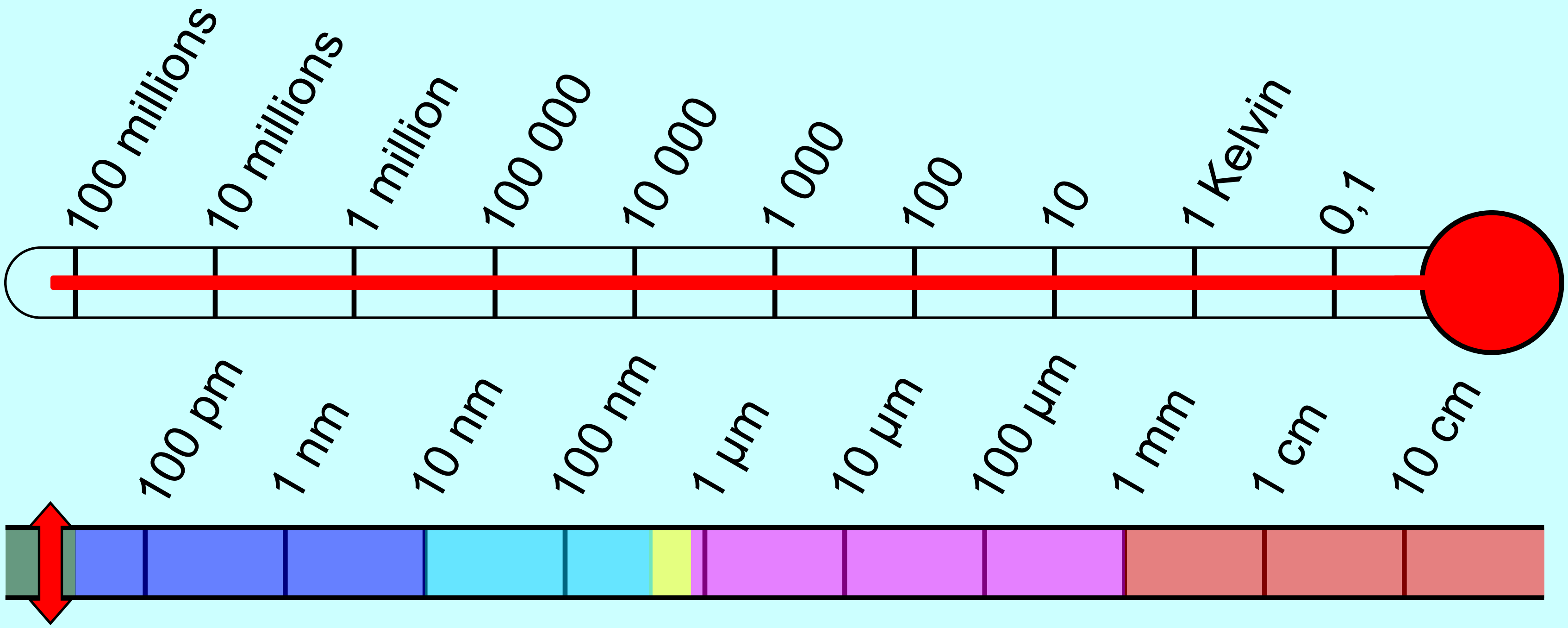


I RAGGI X

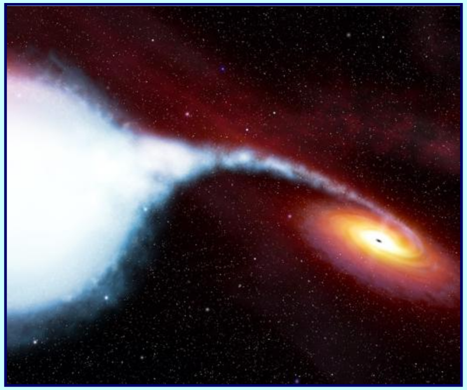


L'Universo Caldo

Resti di Supernova



I raggi γ

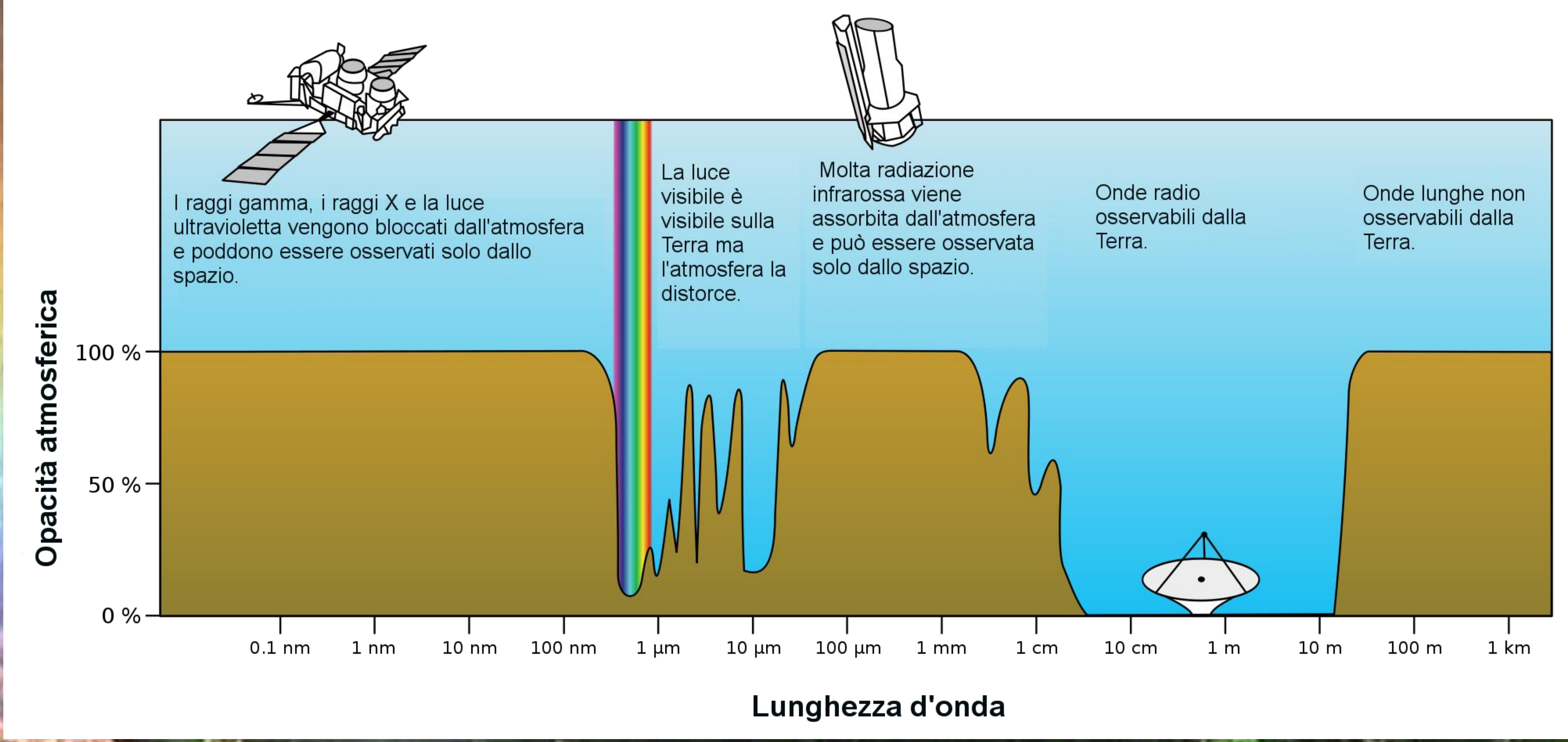


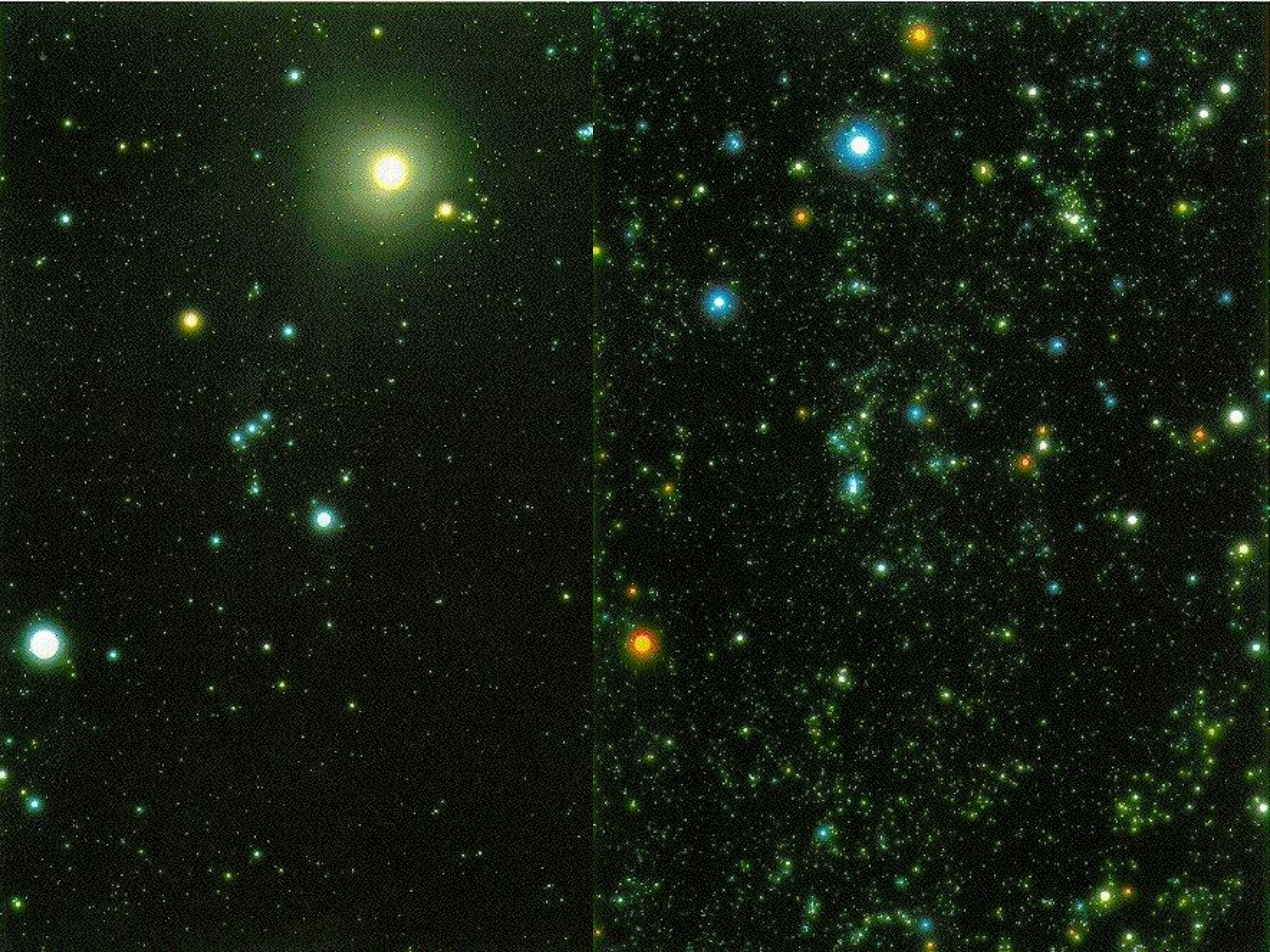
L'Universo estremo

I buchi neri

Limite fisiologico: sensibilità dei nostri occhi

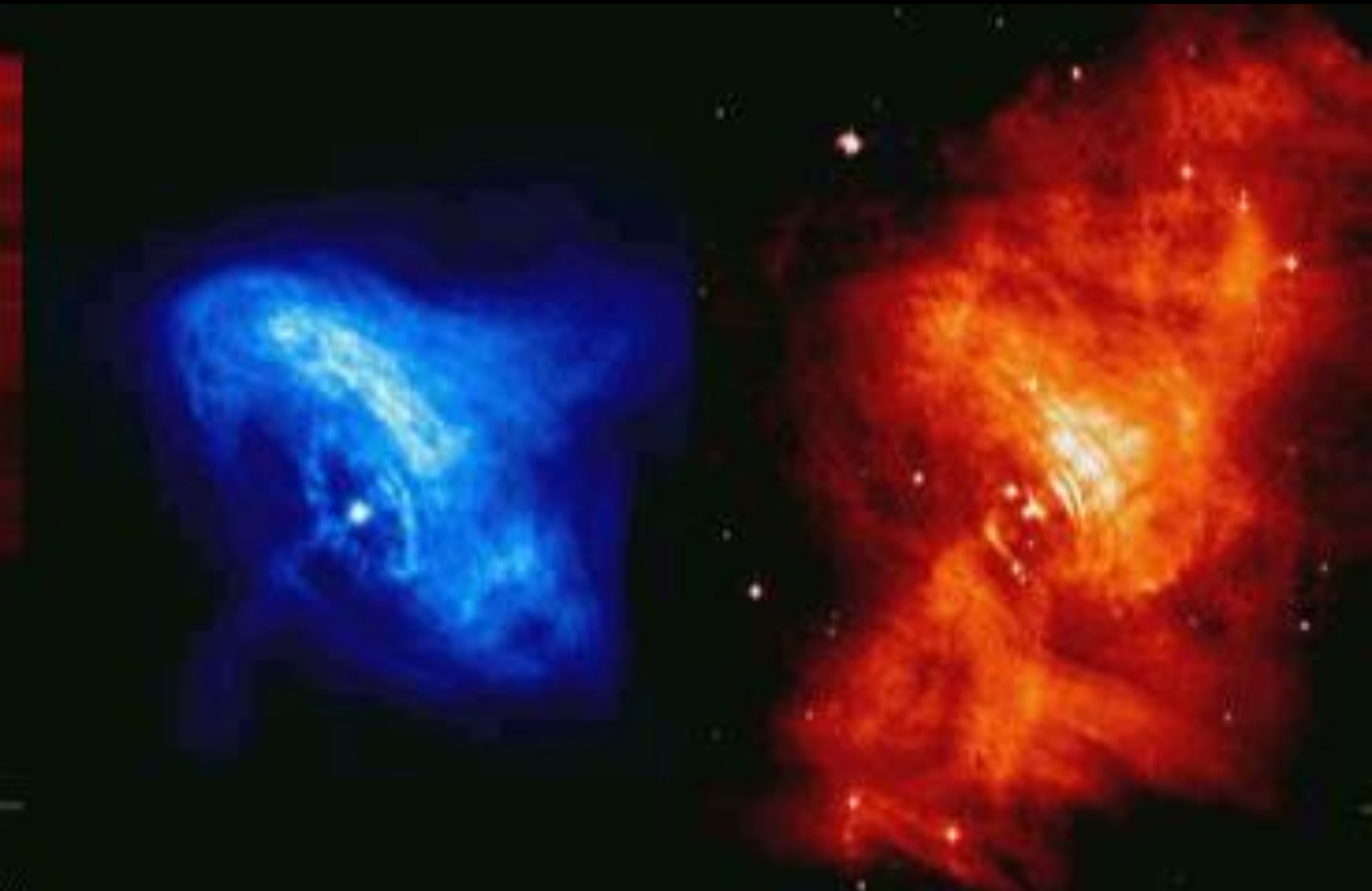
Limite fisico: trasparenza dell'atmosfera

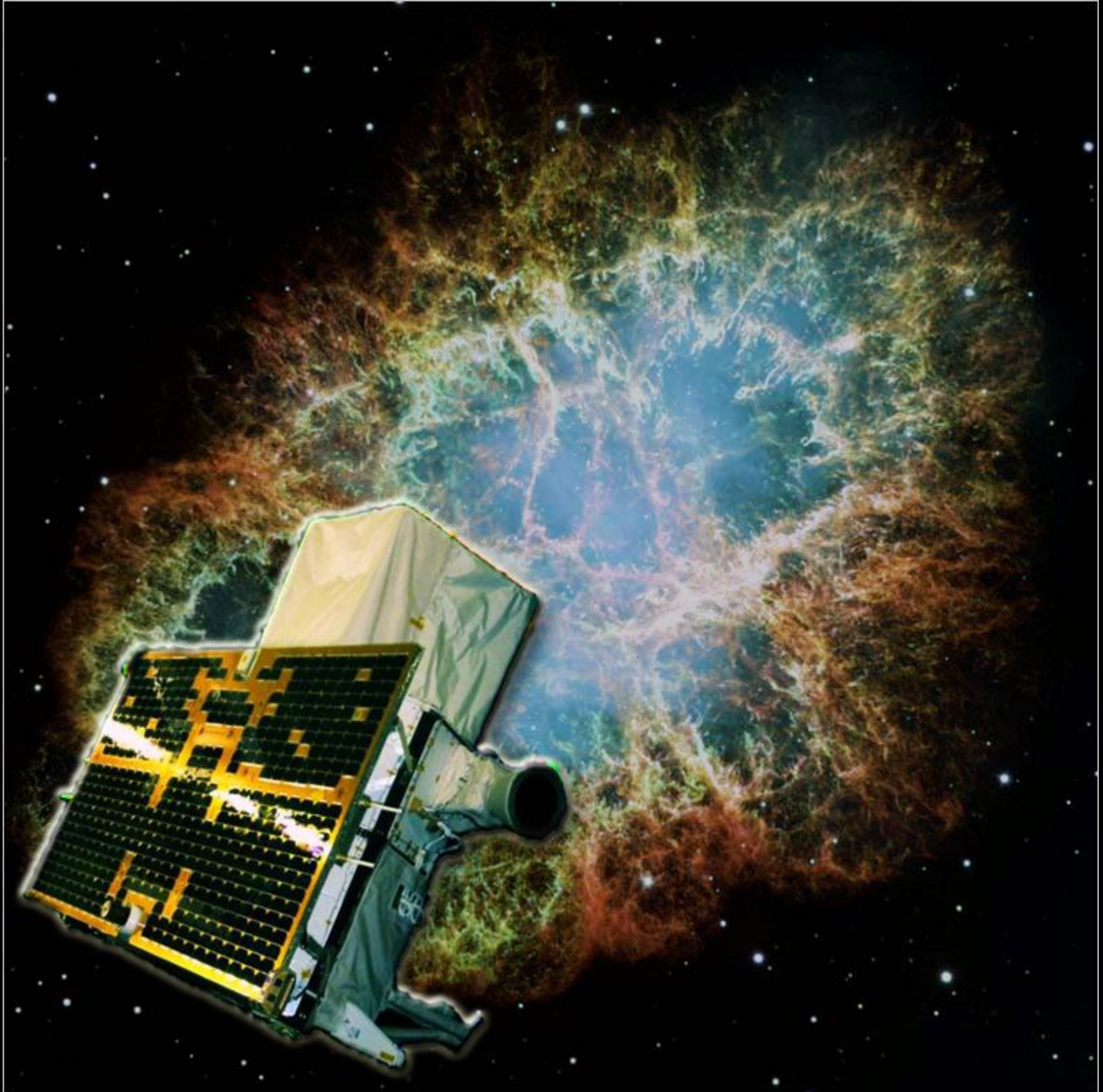


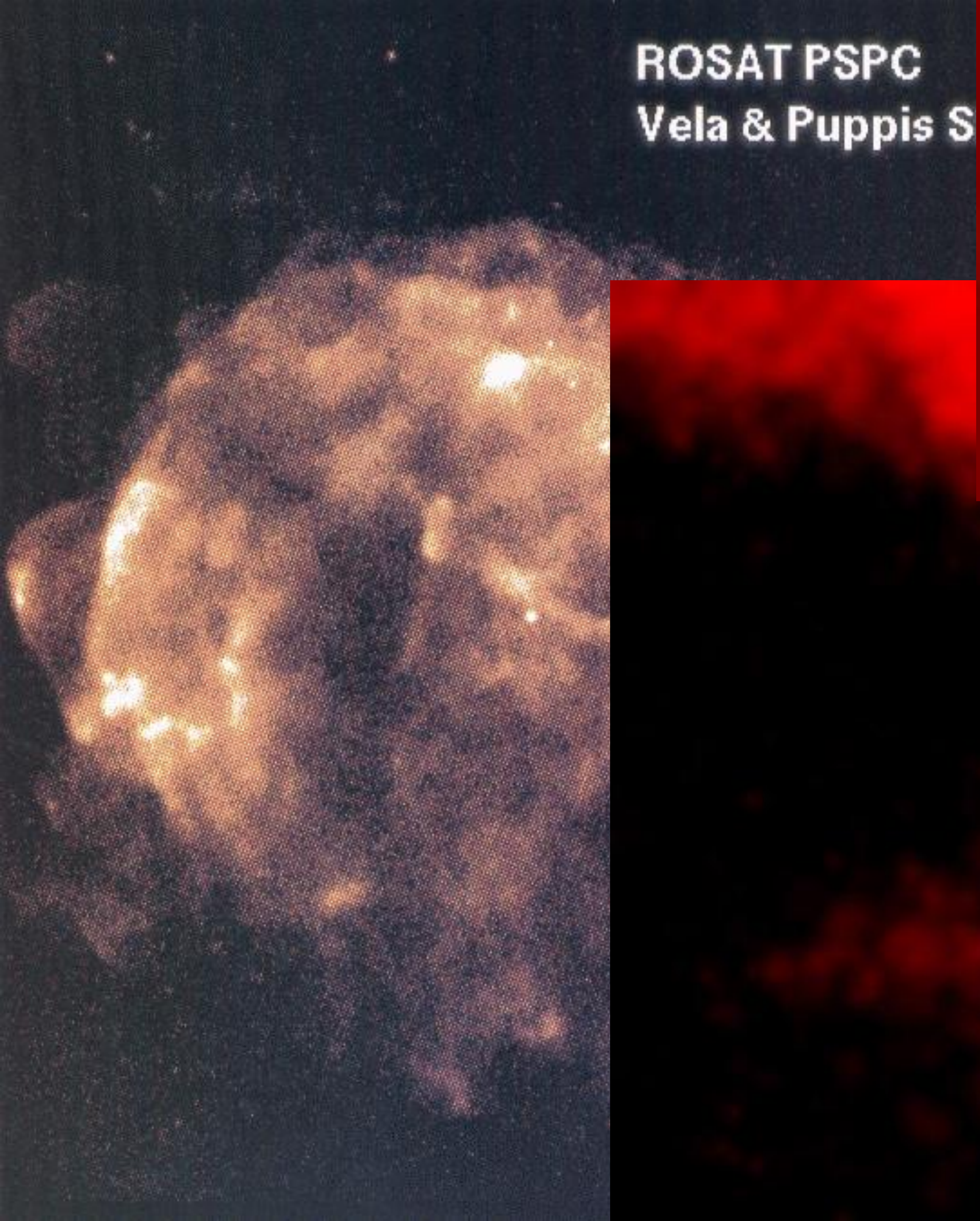
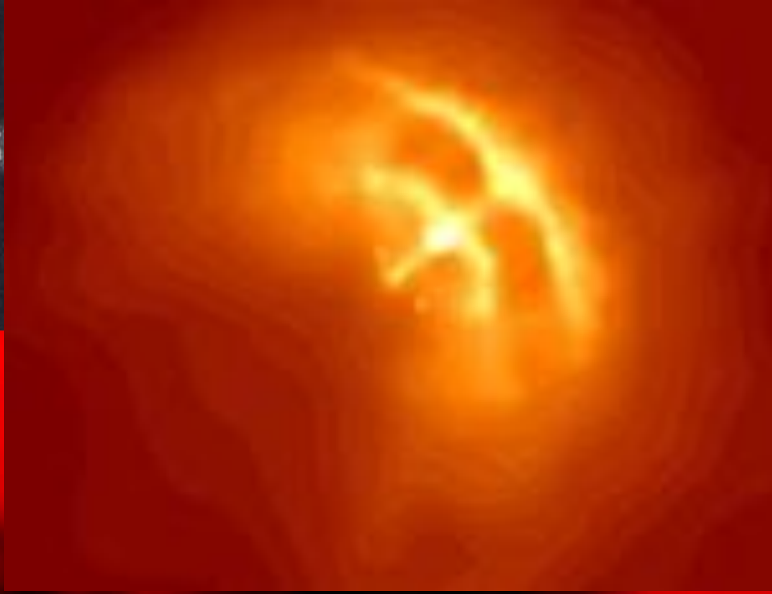
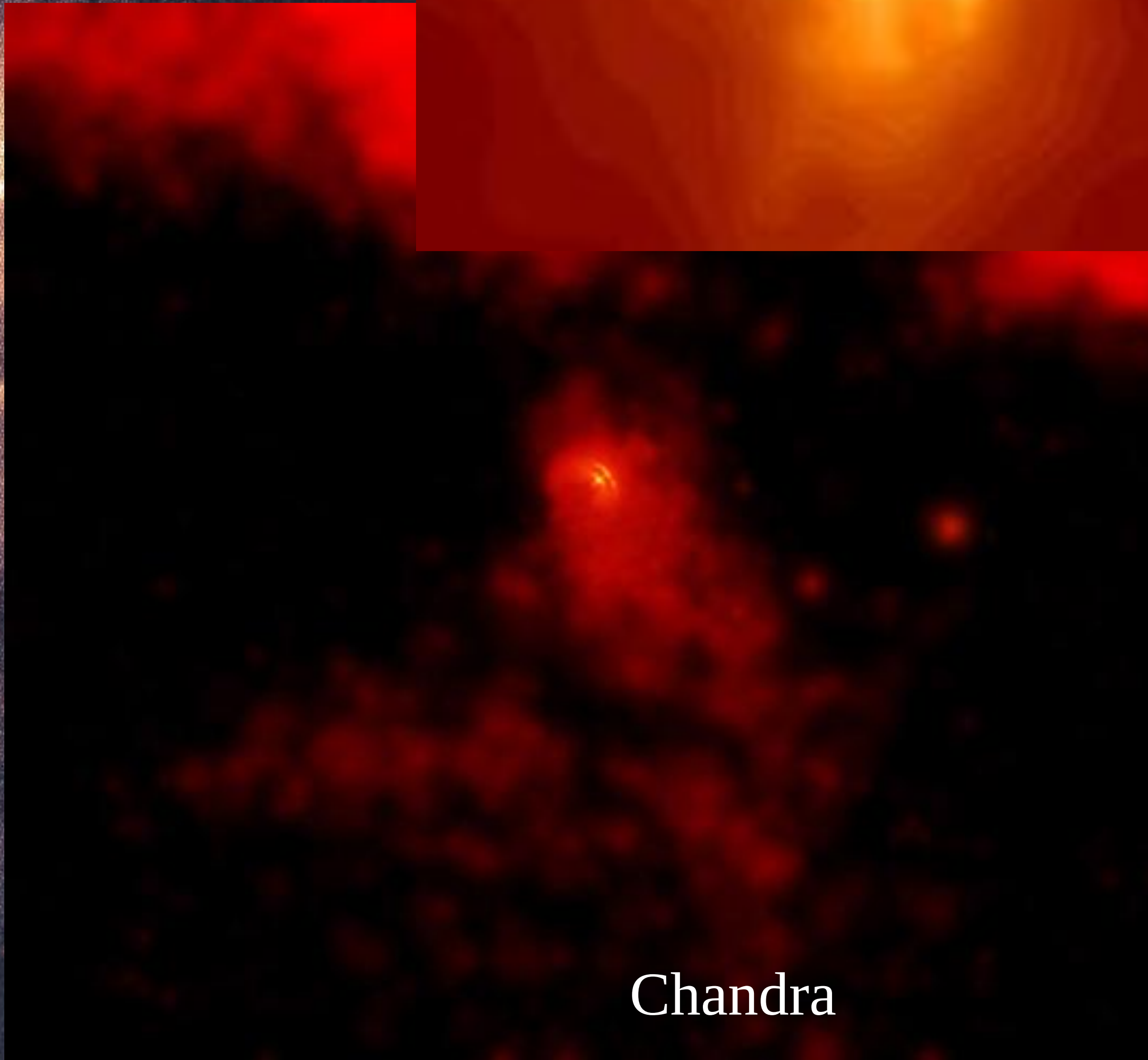


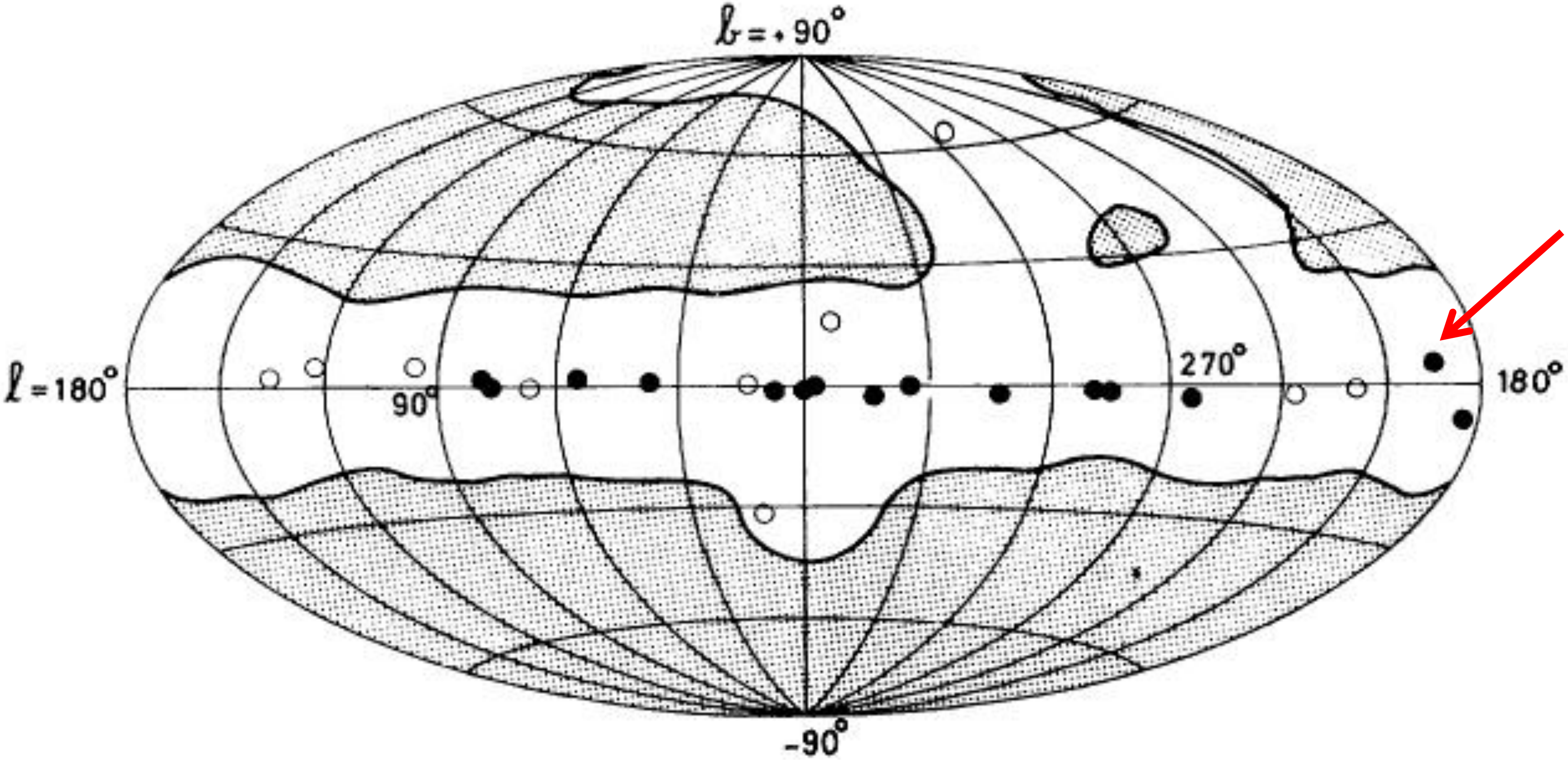
La nebulosa del Granchio

Da dove viene l'energia?






ROSAT PSPC
Vela & Puppis S


Chandra



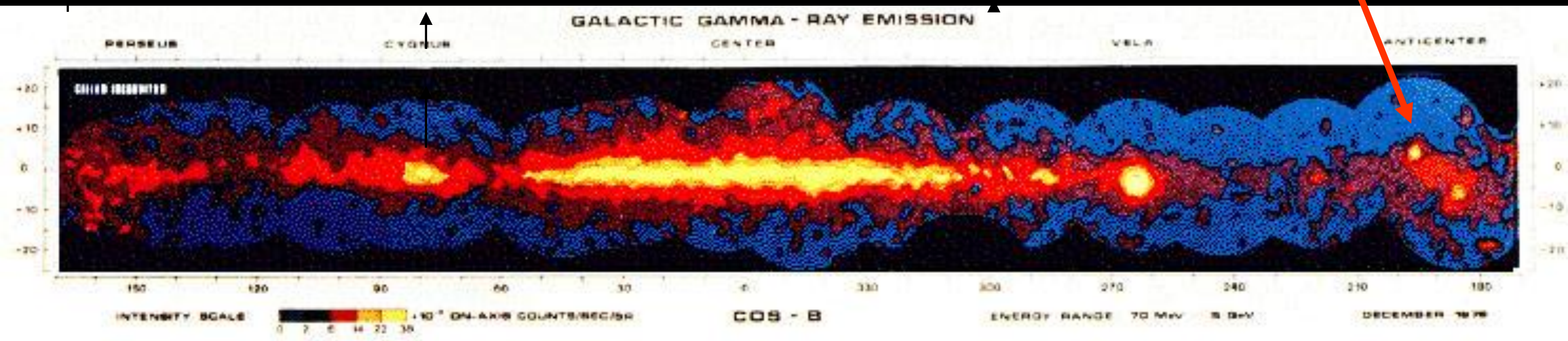
Gemin ga

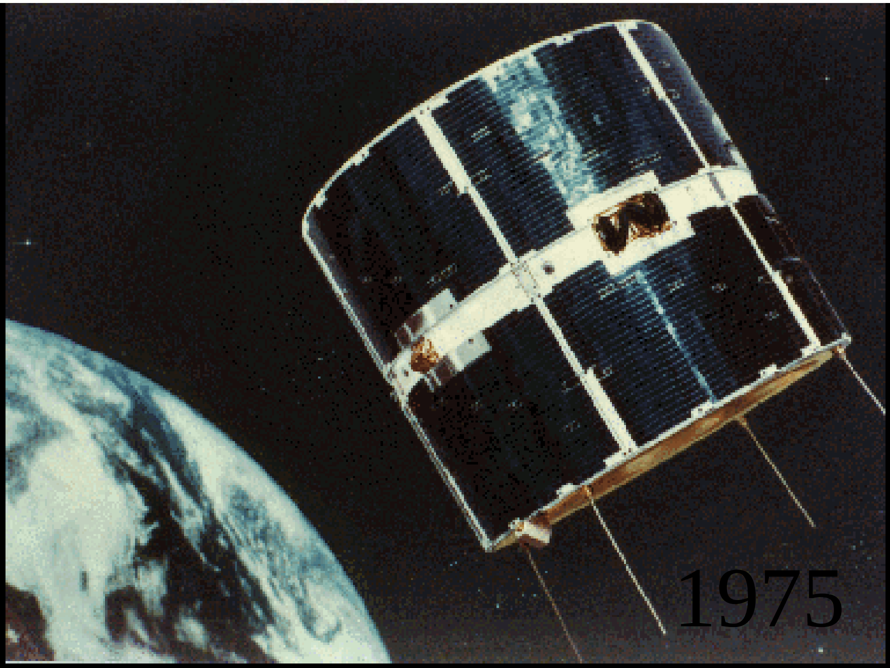
GEMINI constellation

Gamma-ray source

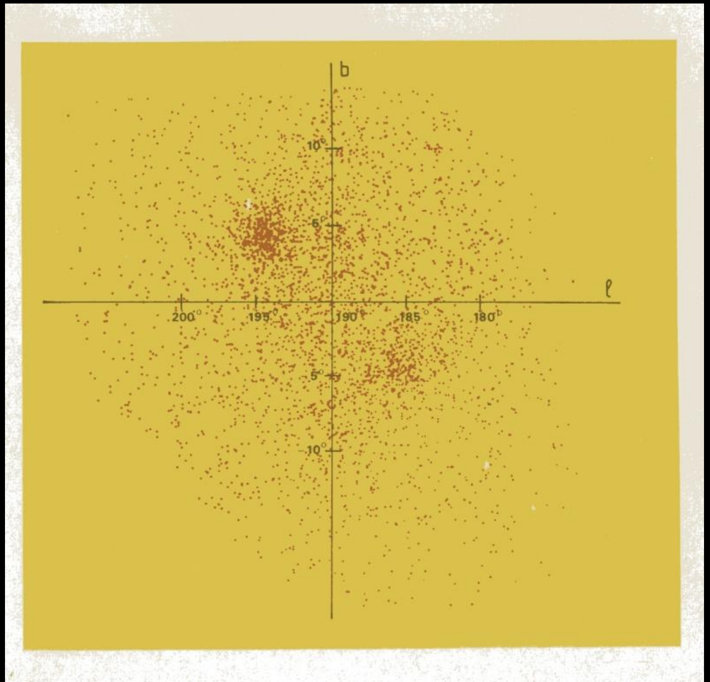
Gh'è minga

Questa è Geminga

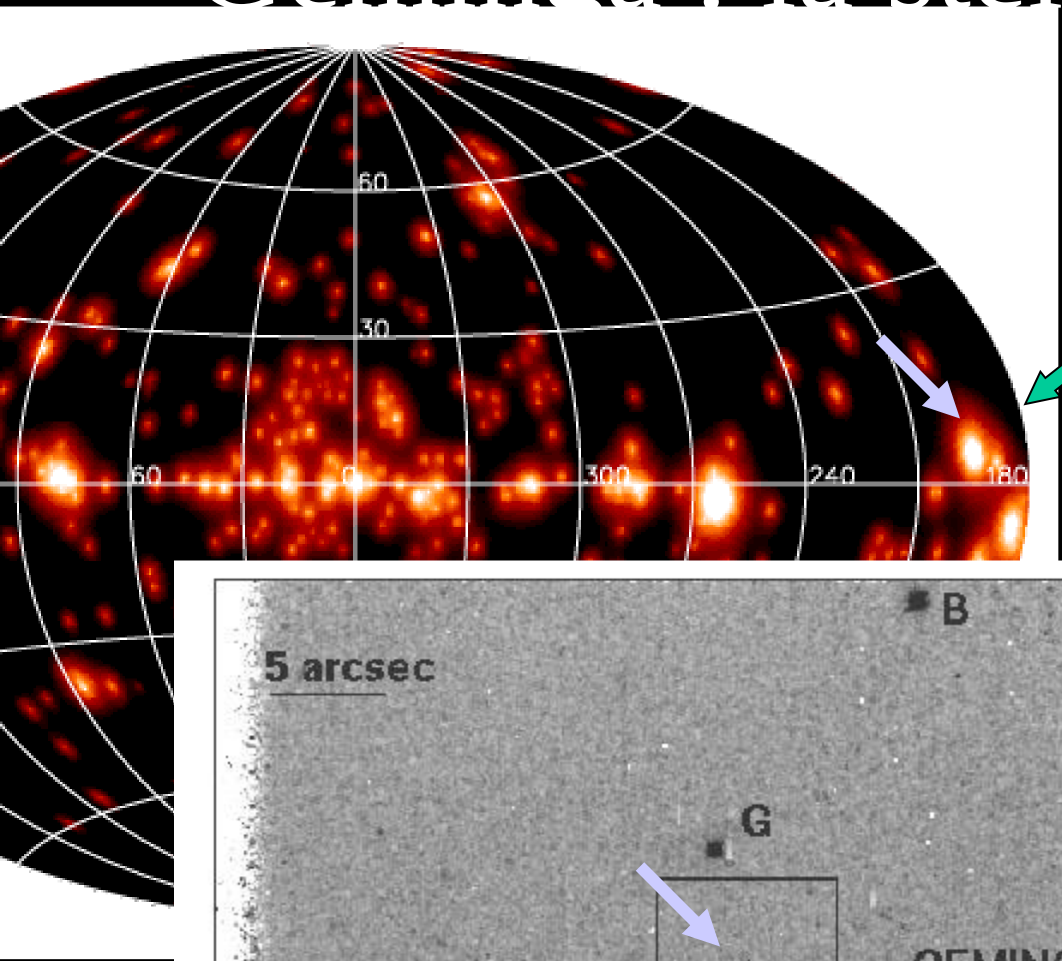


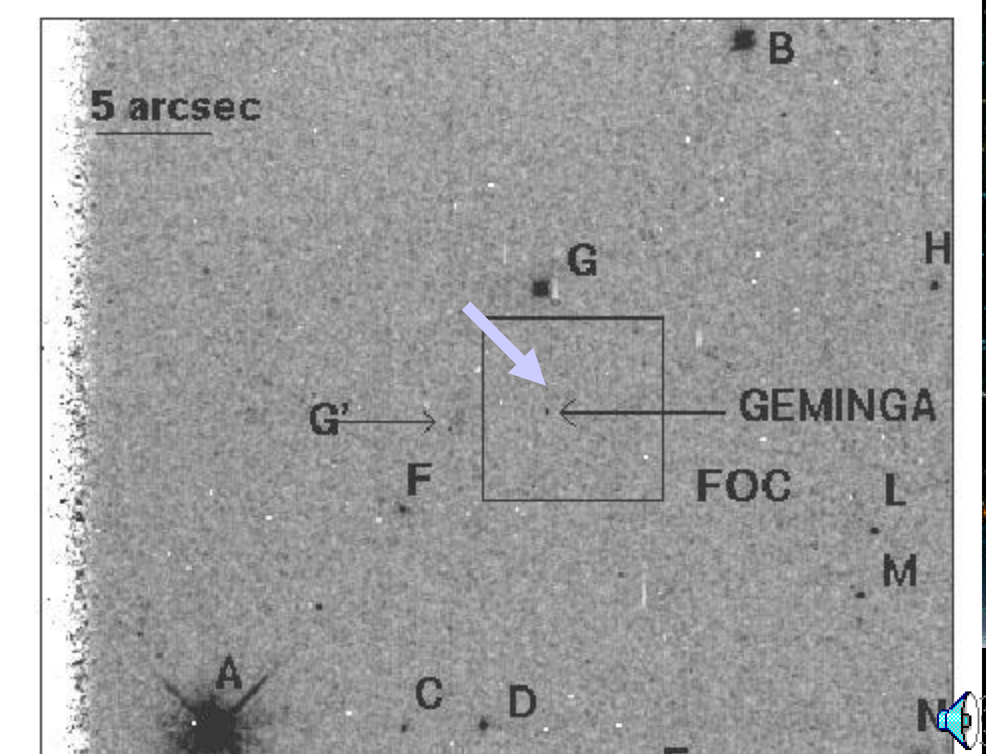


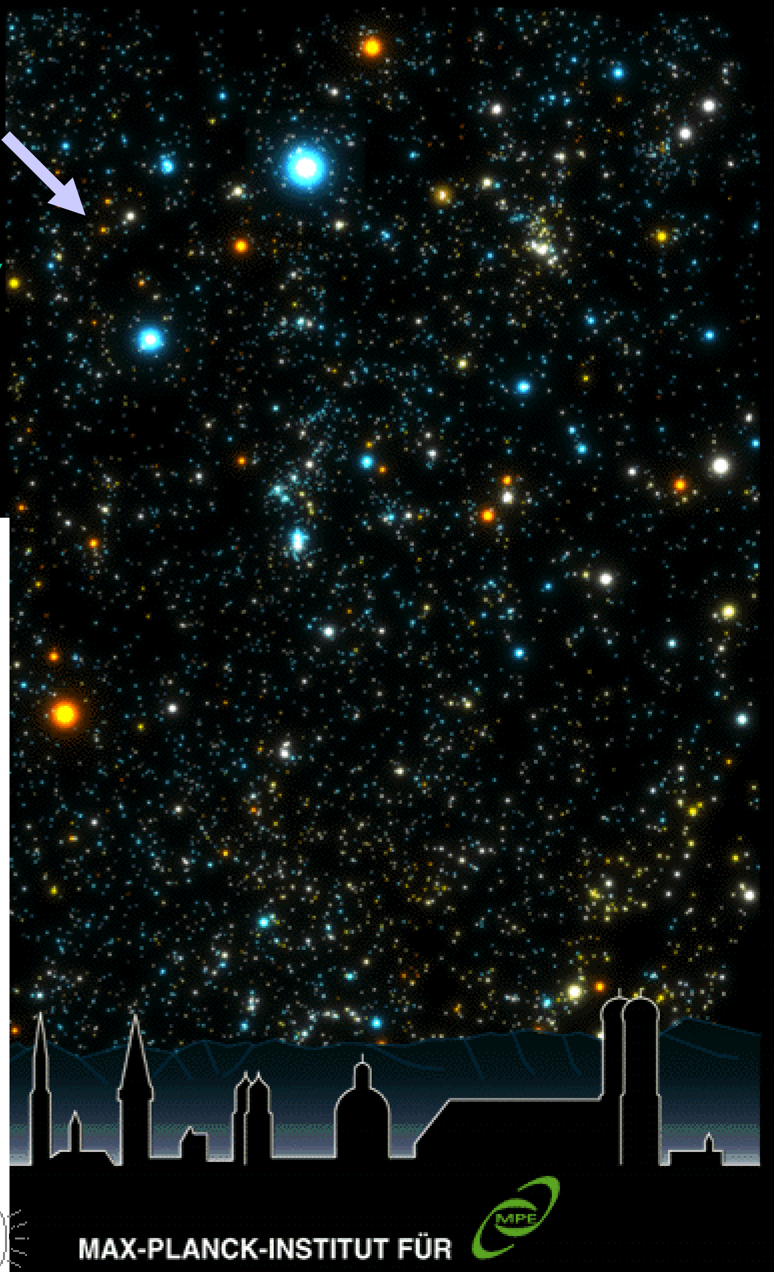
1975

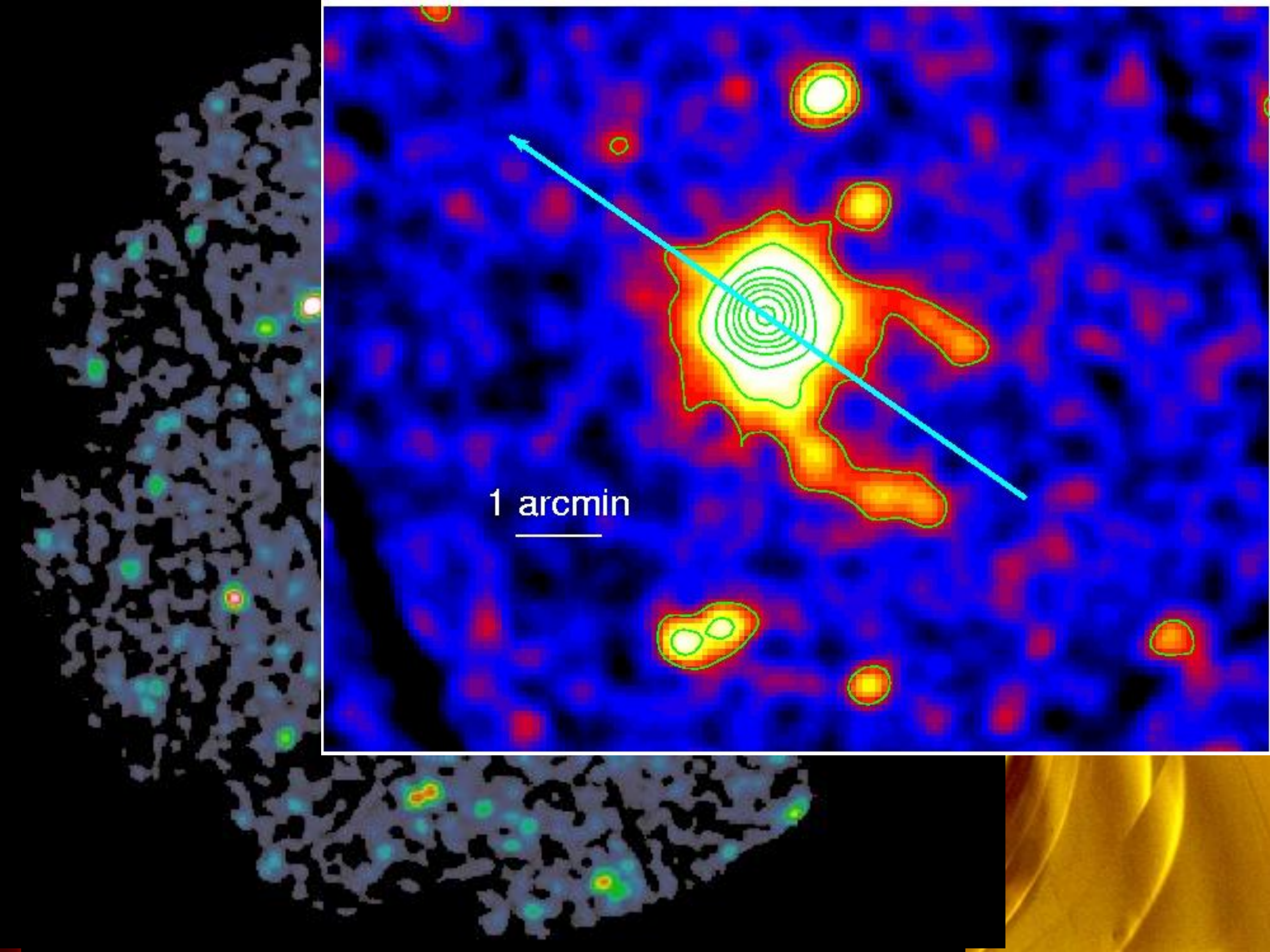


Geminga : la stella silenziosa

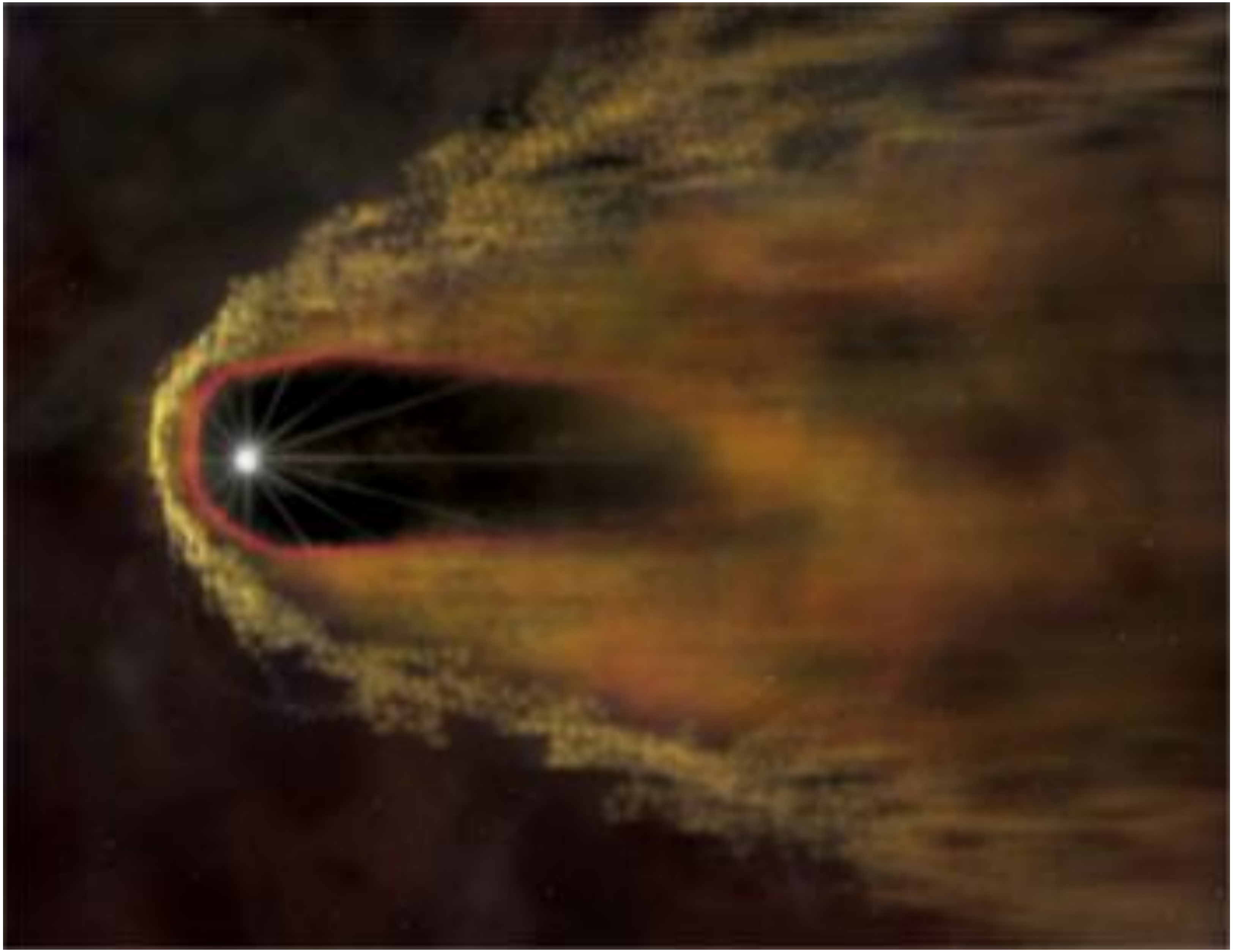




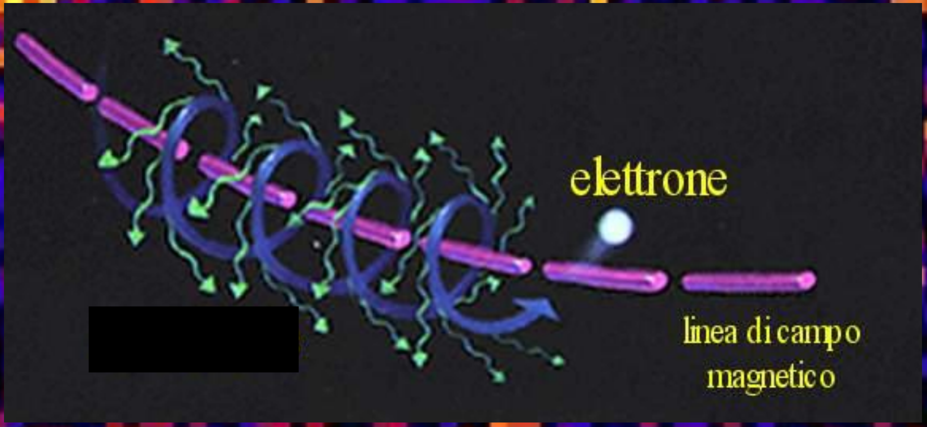



1 arcmin

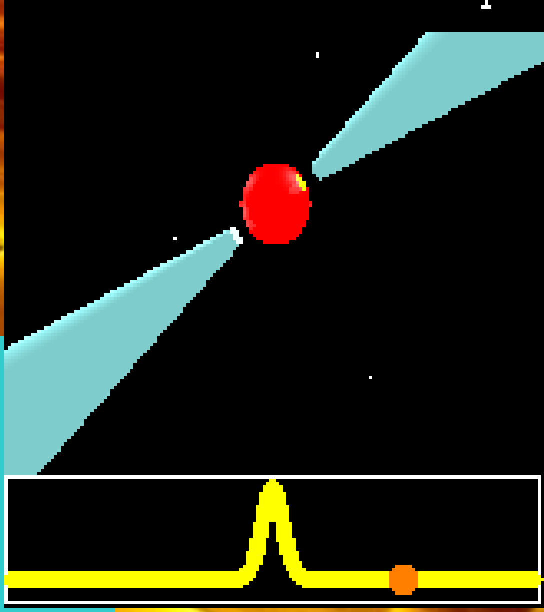
Onda di prua



Elettroni dell’energia giusta vivono circa 1,000 anni.
Il tempo necessario per arrivare alla fine delle code



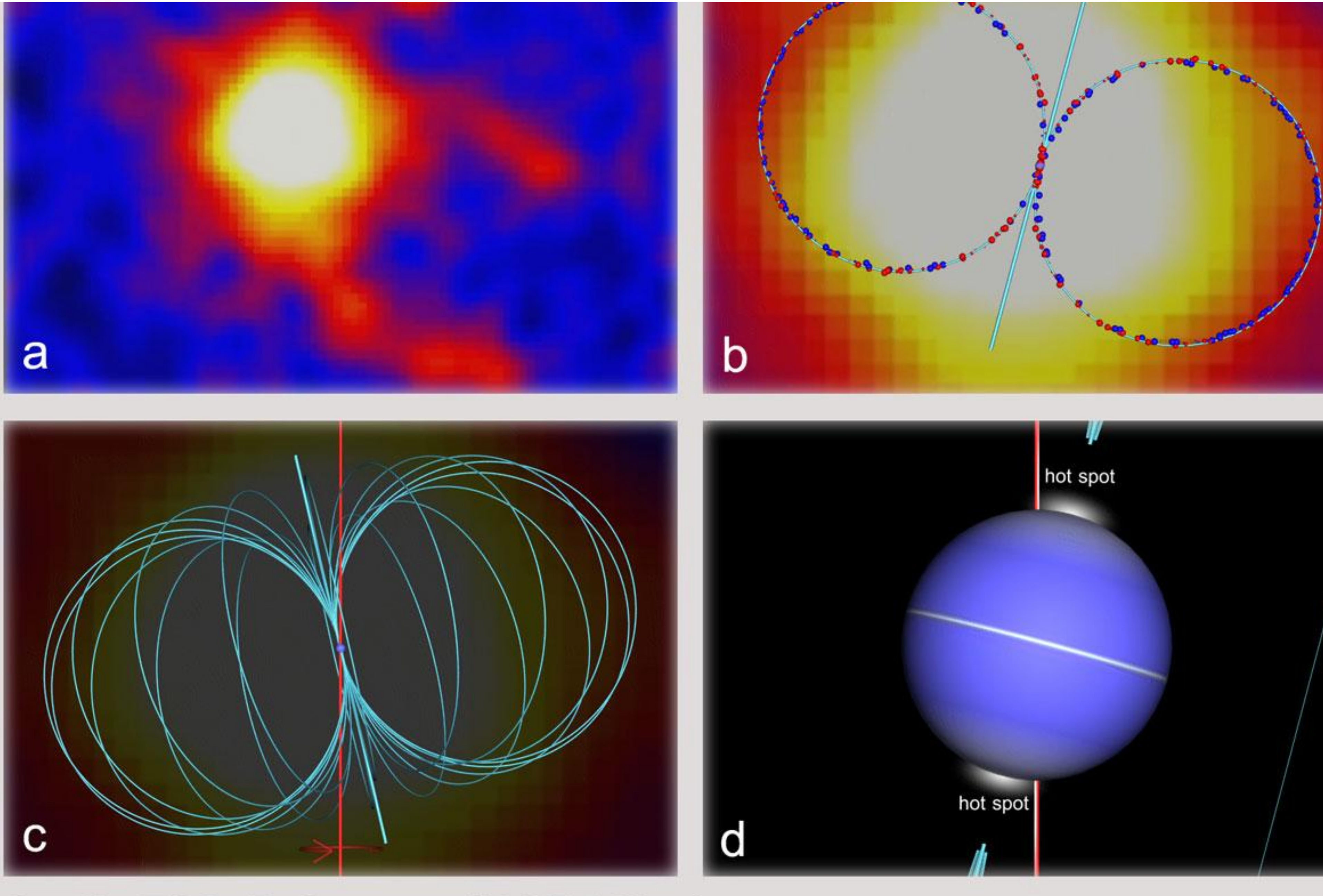
XMM può fare di più



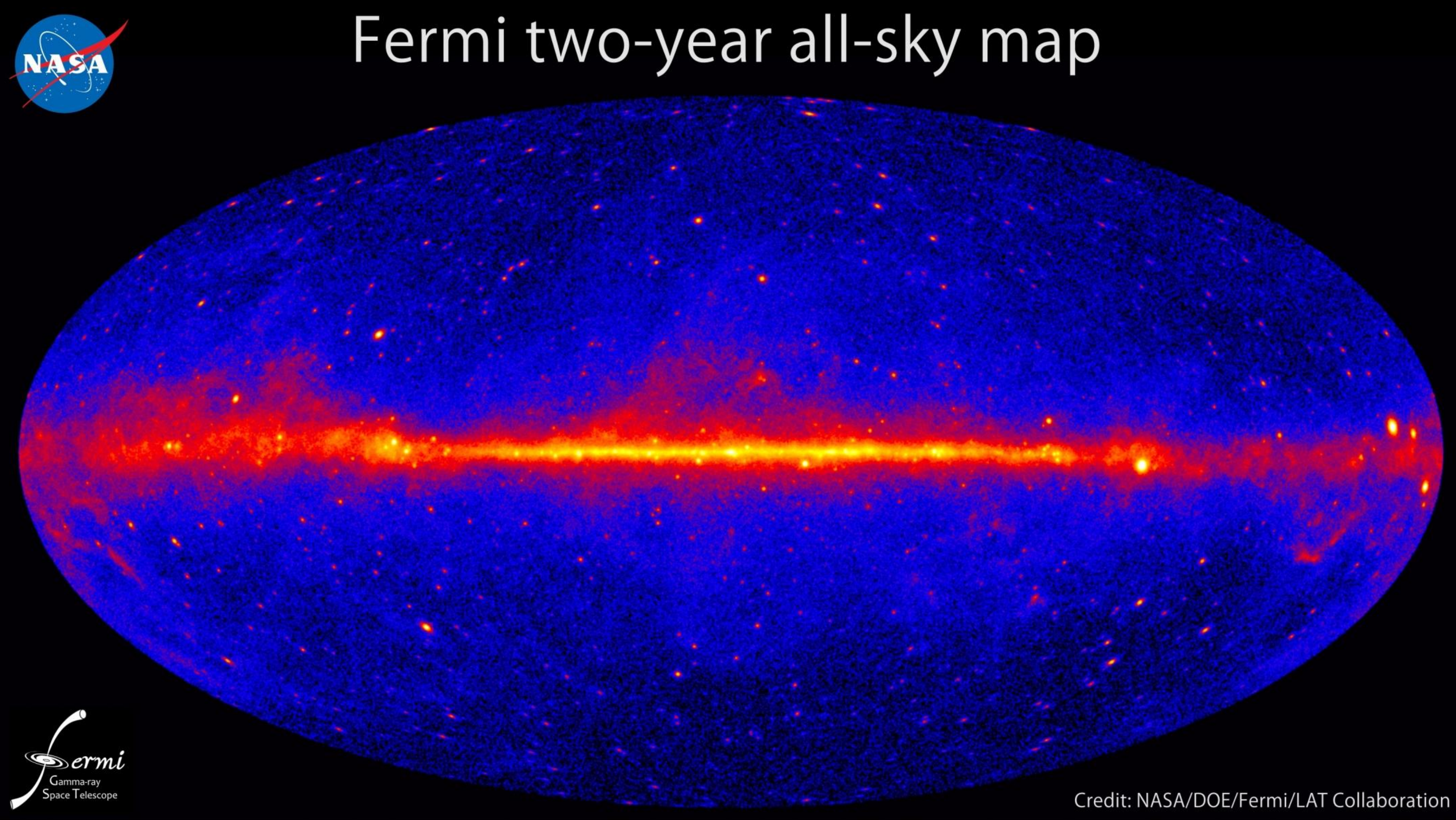
Può studiare come varia l’emissione mentre la stella gira (4 volte al secondo)

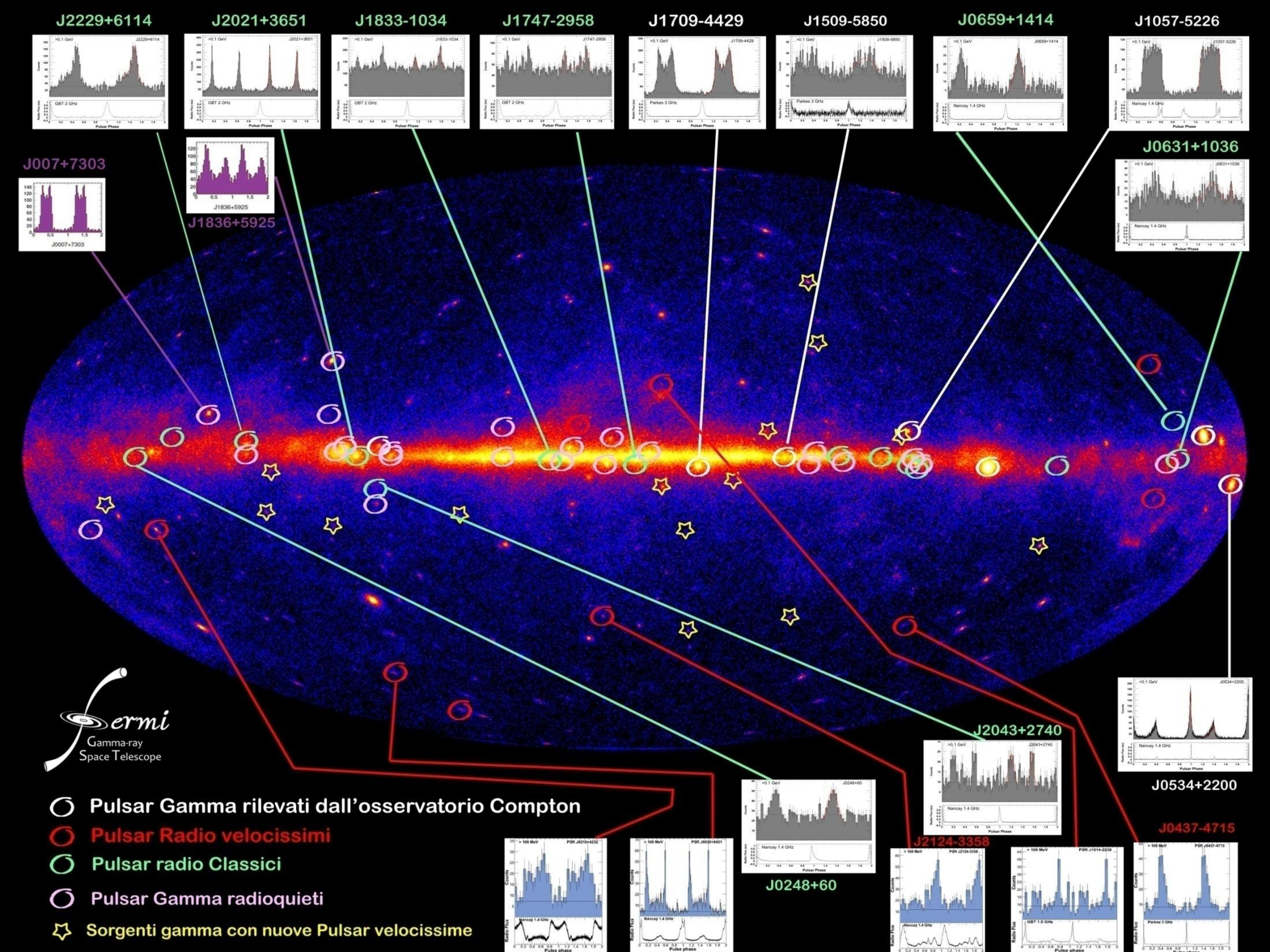
Facendoci vedere le zone calde e quelle fredde

Accelerazione di particelle in tempo reale



Geminga non è più sola




J2229+6114
J2021+3651
J1833-1034
J1747-2958
J1709-4429
J1509-5850
J0659+1414
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J0631+1036
J007+7303
J1836+5925
J2043+2740
J0534+2200
J0248+60
J2124-3358
J0437-4715
Fermi
Gamma-ray
Space Telescope
Pulsar Gamma rilevati dall'osservatorio Compton
Pulsar Radio velocissimi
Pulsar radio Classici
Pulsar Gamma radioquieti
Sorgenti gamma con nuove Pulsar velocissime

2009 Breakthrough of the year

THE RUNNERS-UP >>

Opening Up the Gamma Ray Sky

LIKE A LIGHTHOUSE BLINKING IN THE NIGHT, A pulsar appears to flash periodically as it spins in space, sweeping a double cone of electromagnetic radiation across the sky. Since the discovery of the first pulsar 4 decades ago, astronomers have detected hundreds more of these enigmatic objects from the pulsing radio waves they emit. Now, astronomers have opened a new channel of discovery—the highly energetic gamma ray spectrum—to find pulsars that radio observations could not detect. The advance, part of a torrent of recent gamma ray observations, is giving researchers an improved understanding of how pulsars work, along with a rich haul of new pulsars that could help in the quest to detect gravitational waves.

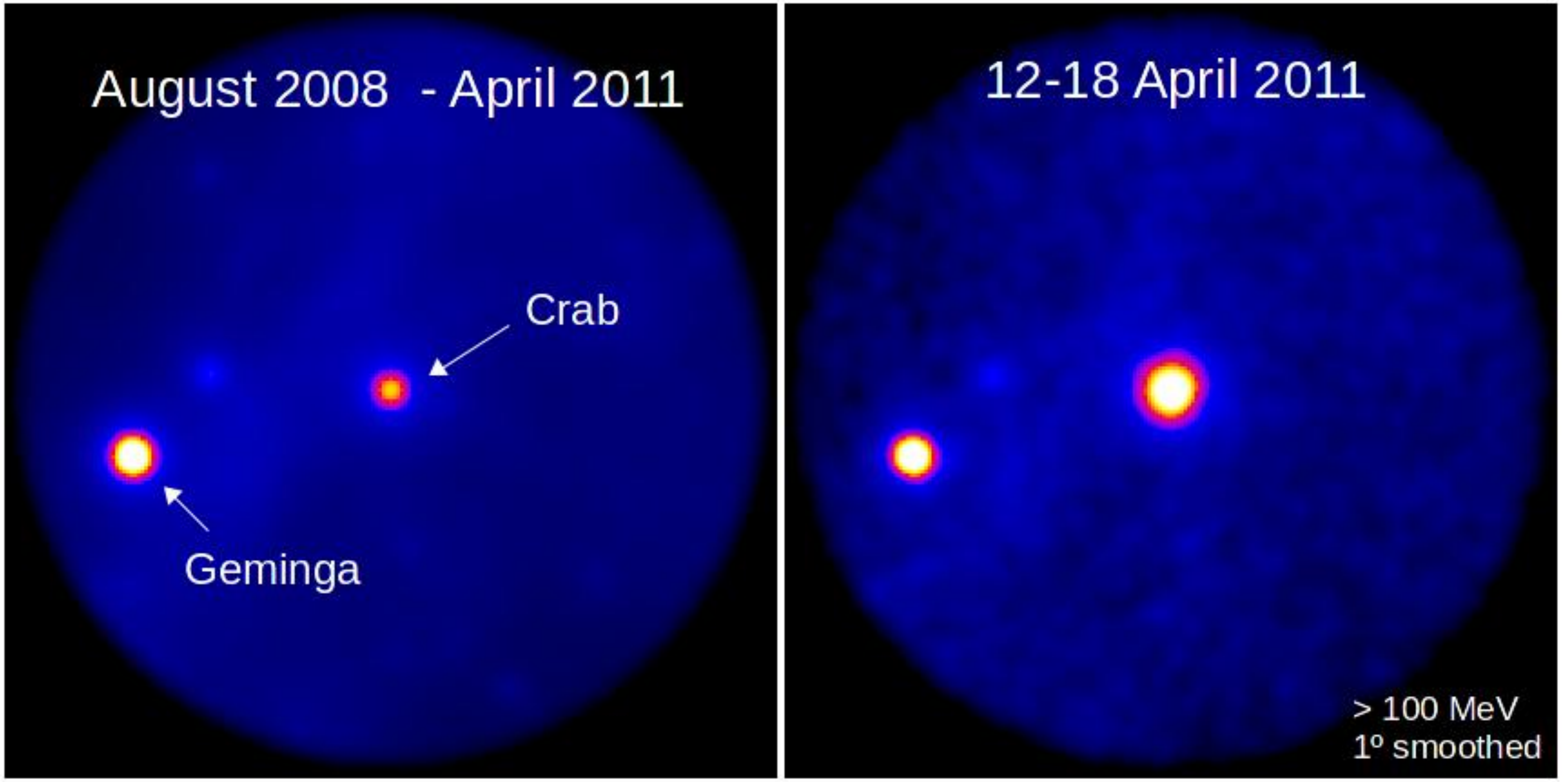
The findings come from the Fermi Gamma-ray Space Telescope, which has been mapping the gamma ray universe since it was launched by NASA in June 2008. Combing through data the telescope collected in its first few months, an international team discovered 16 new pulsars; strong gamma ray pulsations from eight previously known pulsars with spin times of milliseconds, proving that these objects pulse brightly at gamma wavelengths as well as in the radio range; and high-energy gamma rays from the globular cluster 47 Tucanae indicating that the cluster harbors up to 60 millisecond pulsars.

Those Fermi results might be just the beginning. Armed with their new knowledge of pulsar behavior, researchers are checking whether some of the unidentified gamma ray sources Fermi has detected might be pulsars. In November alone, teams of astronomers in the United States and France discovered five new millisecond pulsars by training ground-based radio telescopes on candidate objects Fermi had pointed out—a much more targeted search technique than scanning the sky blindly with ground-based radio telescopes.

Gamma ray beams of pulsars are believed to be wider than their radio beams, so in principle a space-based gamma ray telescope should be more likely to encounter and discern a pulsar's sweep than a radio telescope on Earth is. However, Fermi's forerunner—the Compton Gamma Ray Observatory, which flew from 1991 to 2000—did not have much luck finding these objects. What has made the difference is Fermi's high sensitivity, which enables it to detect pulsations that would have been too faint for Compton.

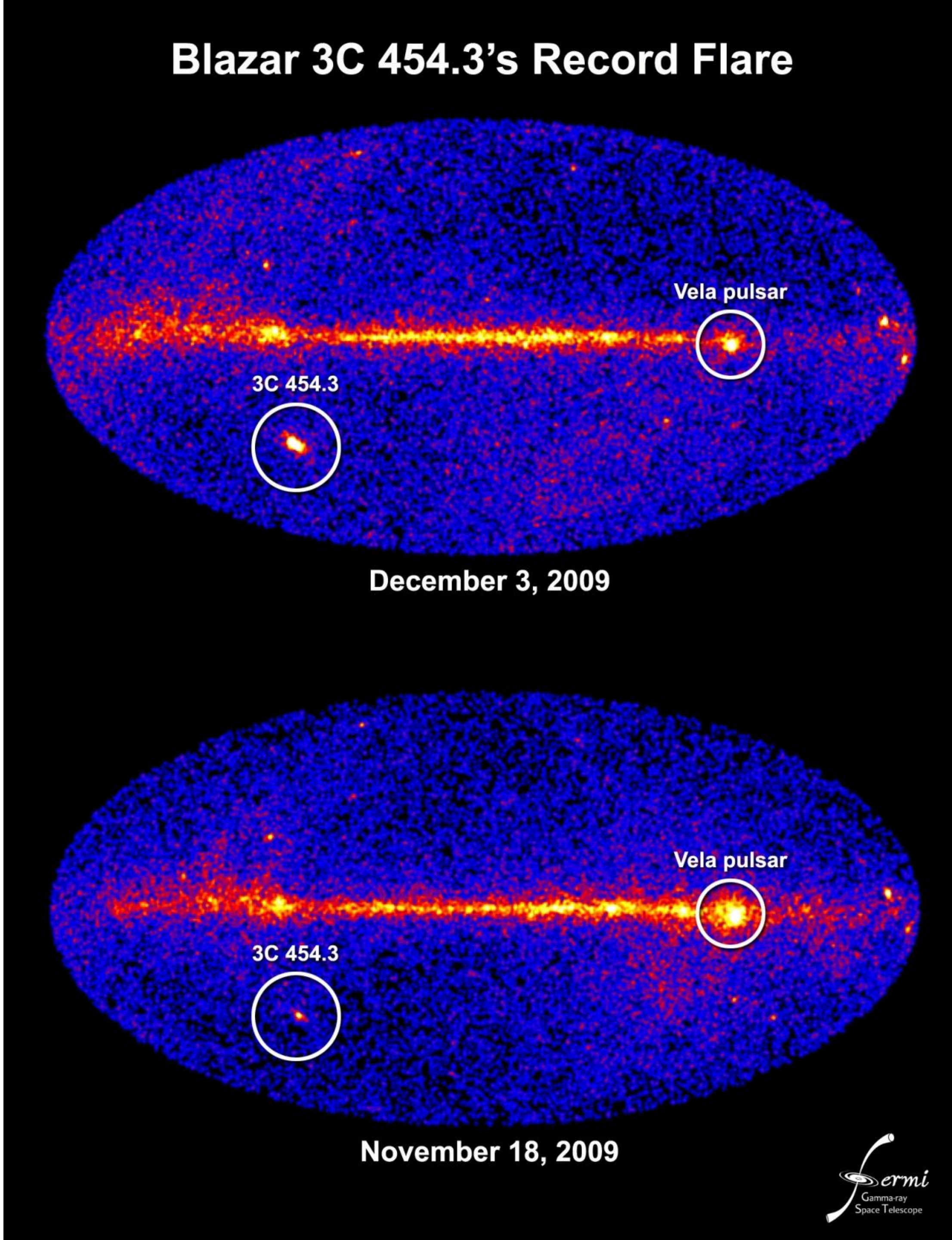
Already, the discoveries are shedding new light on the physics of pulsars. Researchers

Anche le sorgenti più studiate riservano sorprese

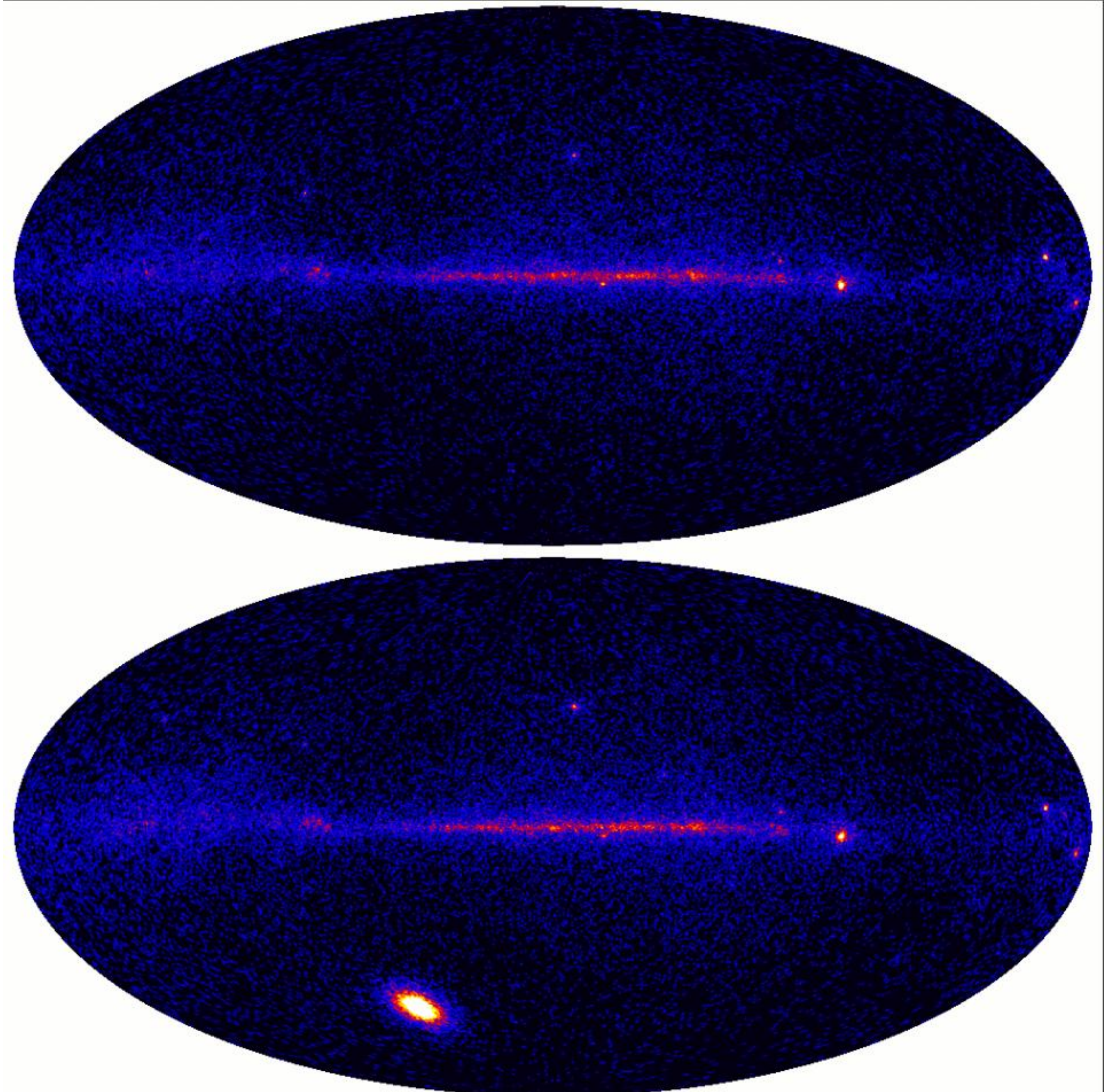


Geminga constant, Flare stands out

Una vera sorpresa



Solo stelle di neutroni?



6 marzo

7 marzo