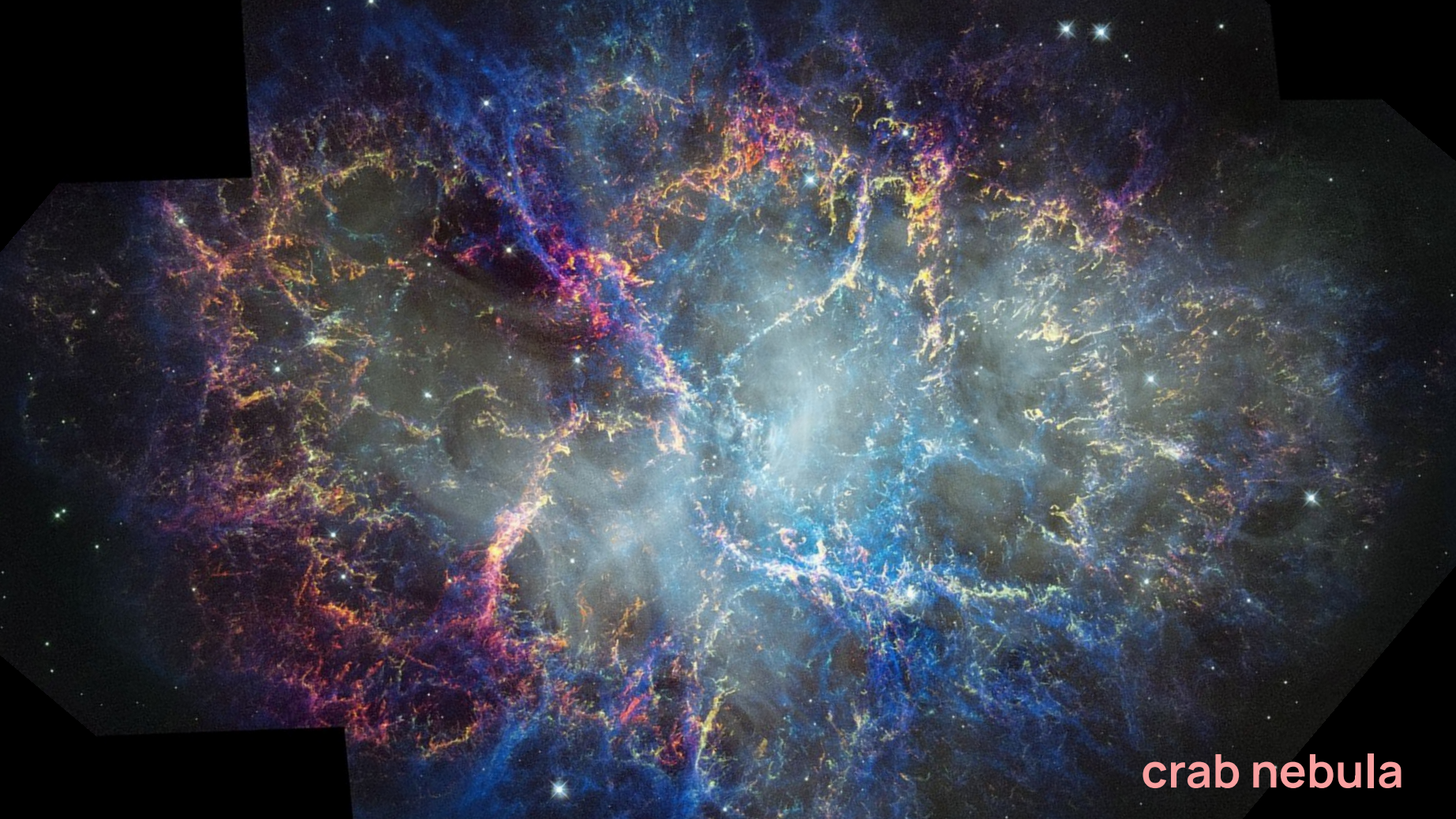


Neutrinos as cosmic messengers: a new era of astronomy

Alexia Alexander Wight
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@missneutrino





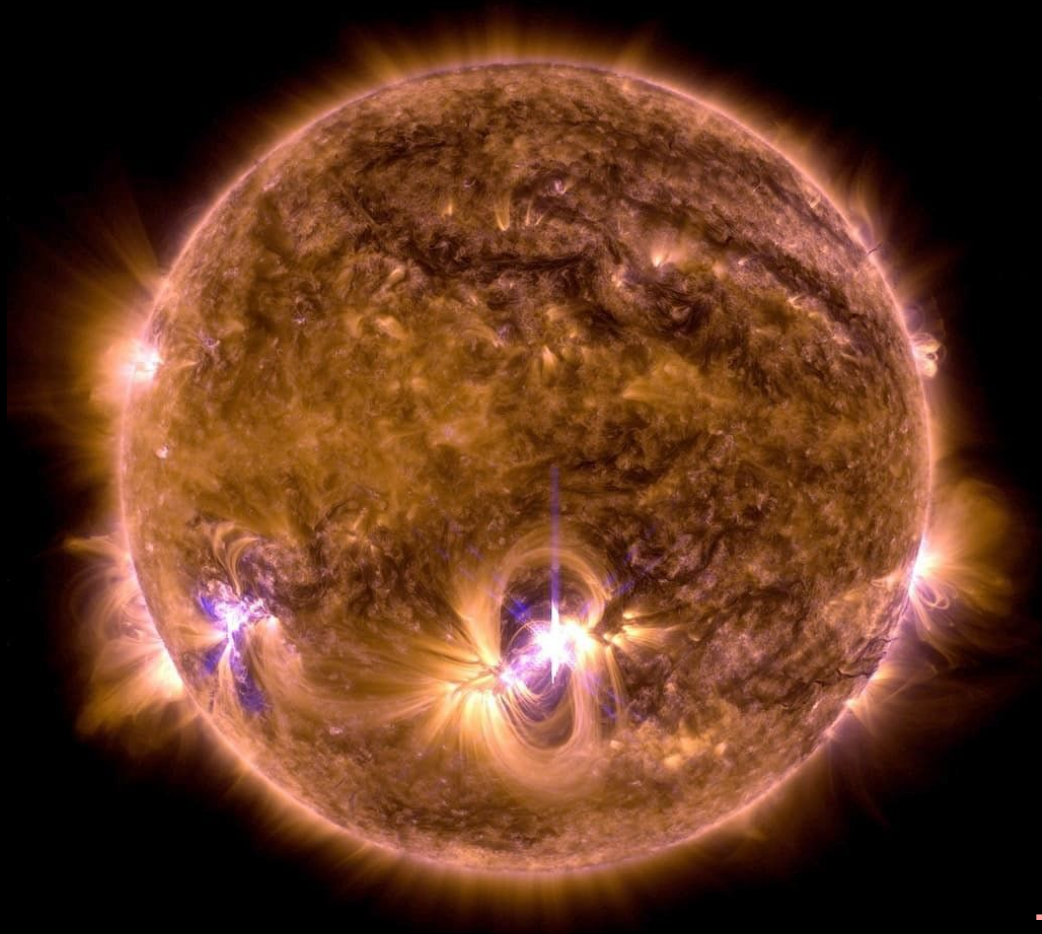
crab nebula



corina nebula



whirlpool galaxy



the sun

near infrared



NIRCam

mid infrared



MIRI

PMR 1 nebula

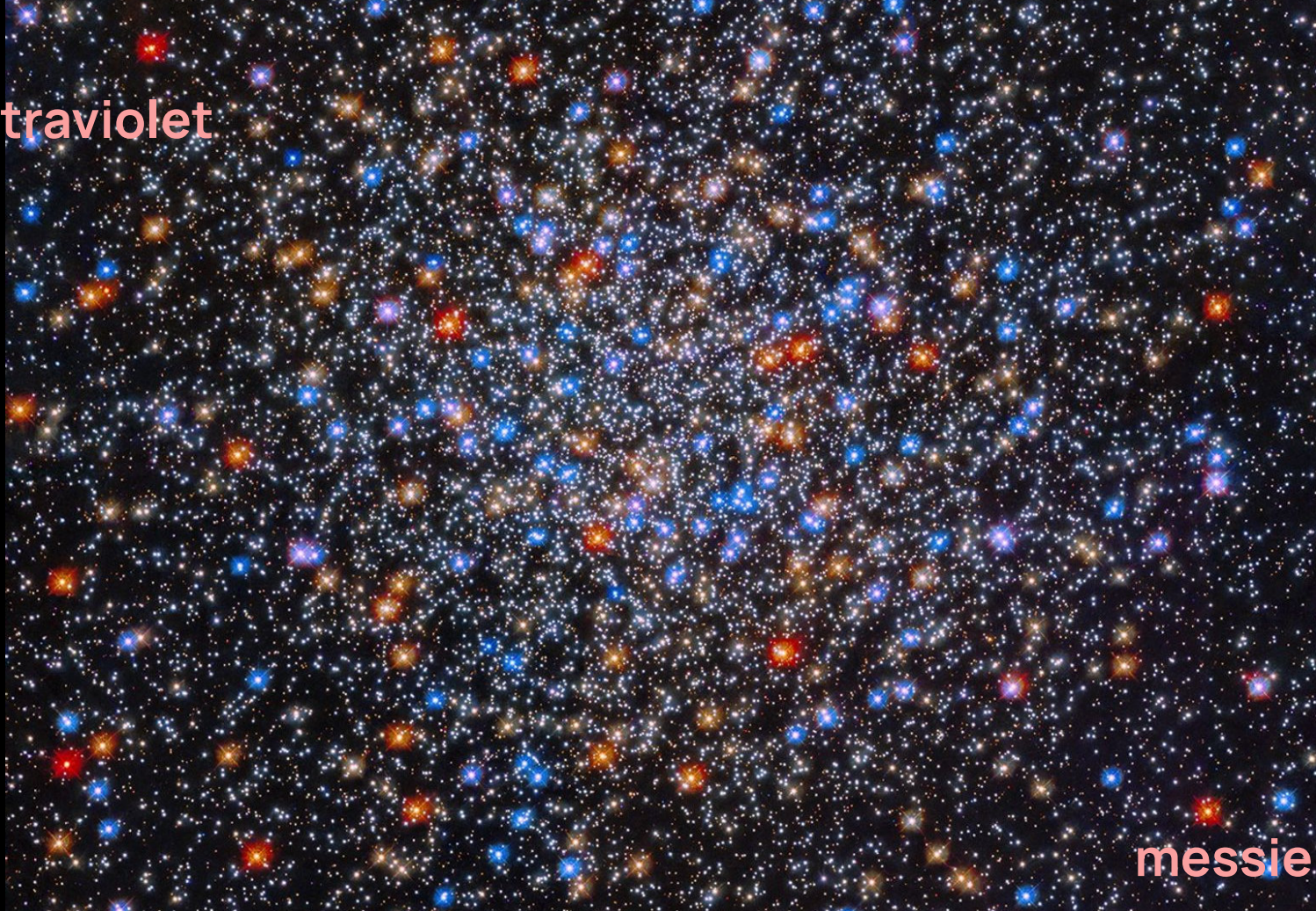
visible & infrared



messier 10

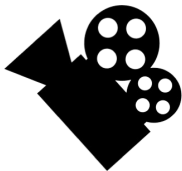
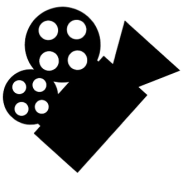
ultraviolet

messier 10

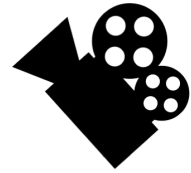
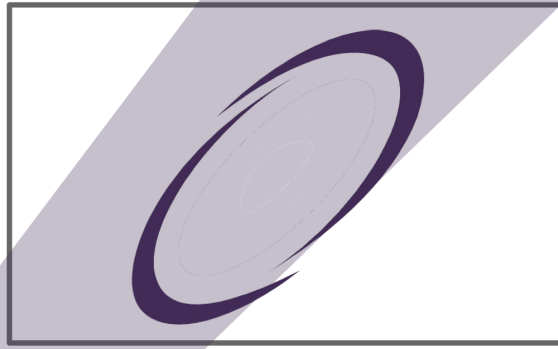
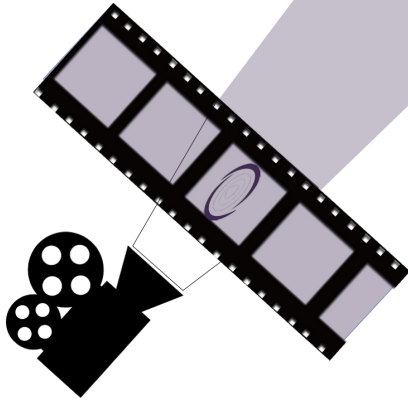




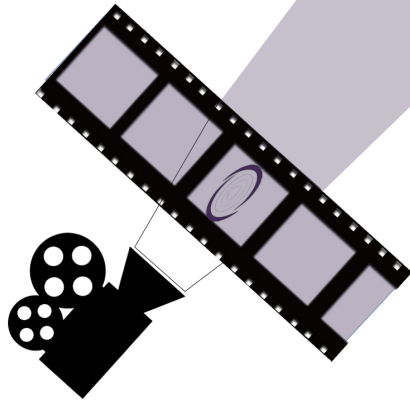




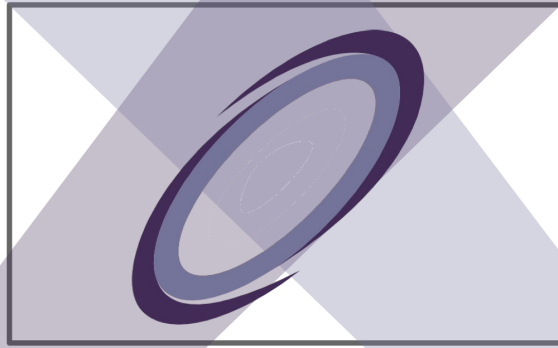
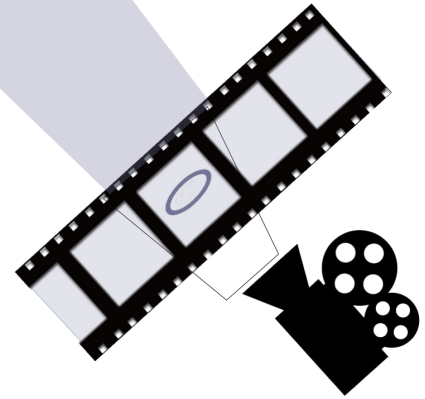
Radio, infrared,
optical

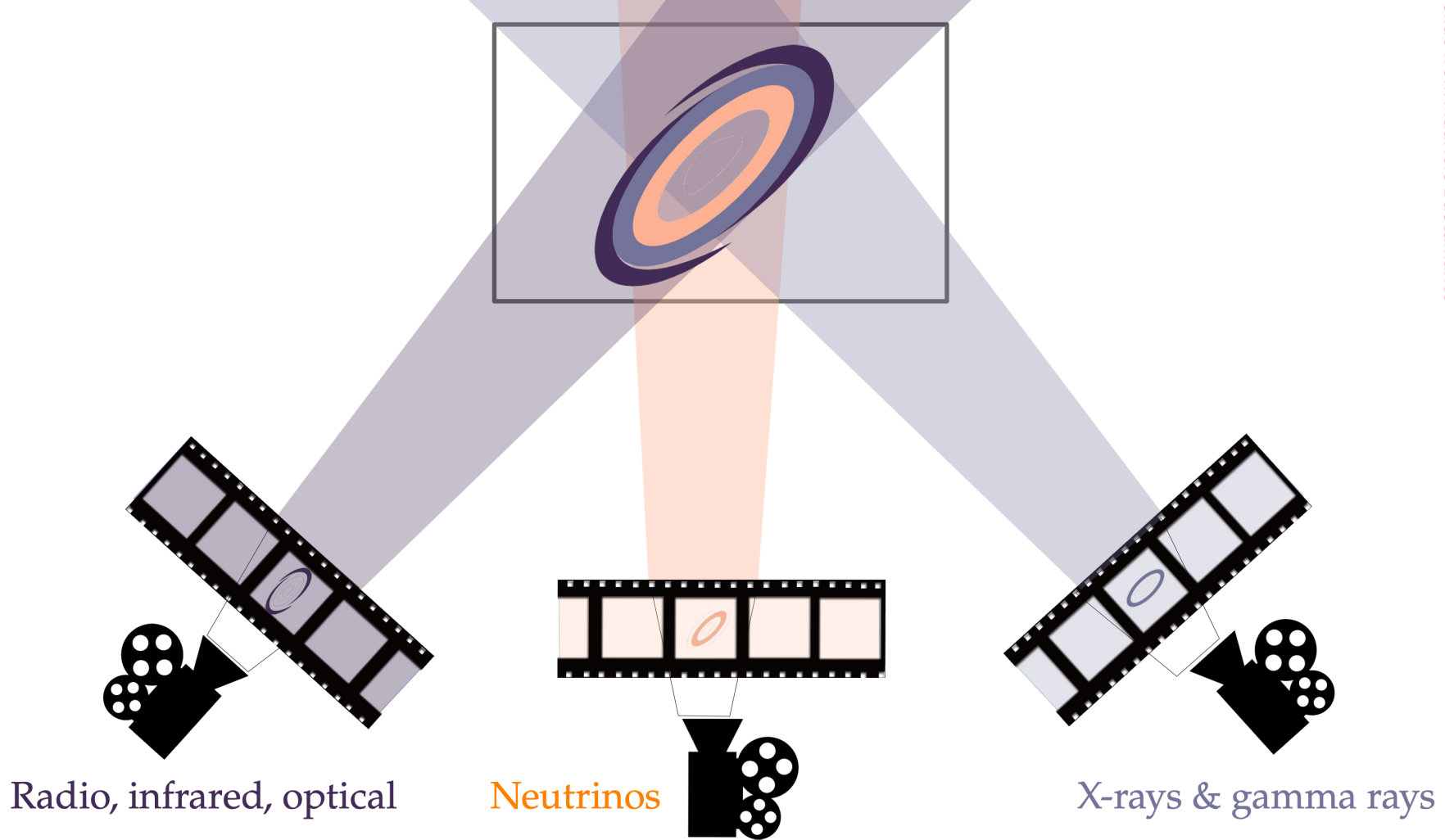


Radio, infrared, optical

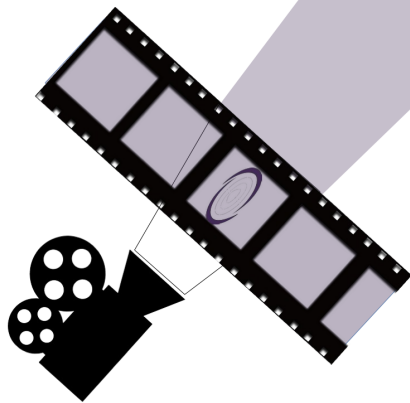
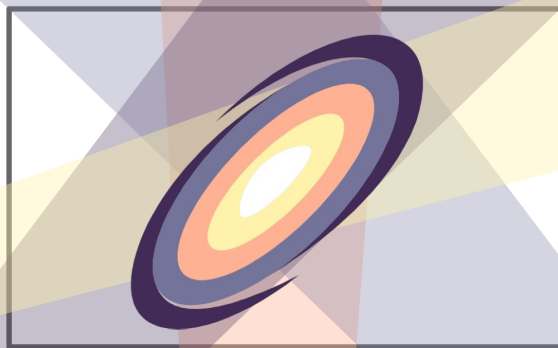


X-rays & gamma rays

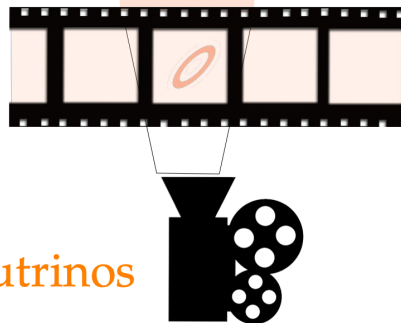




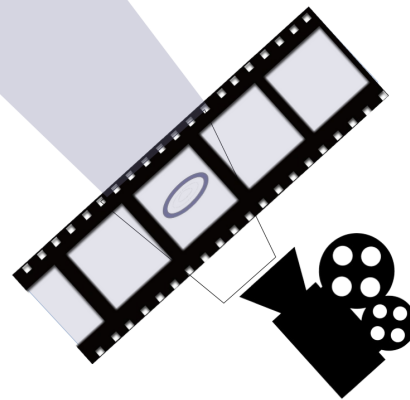
Gravitational waves



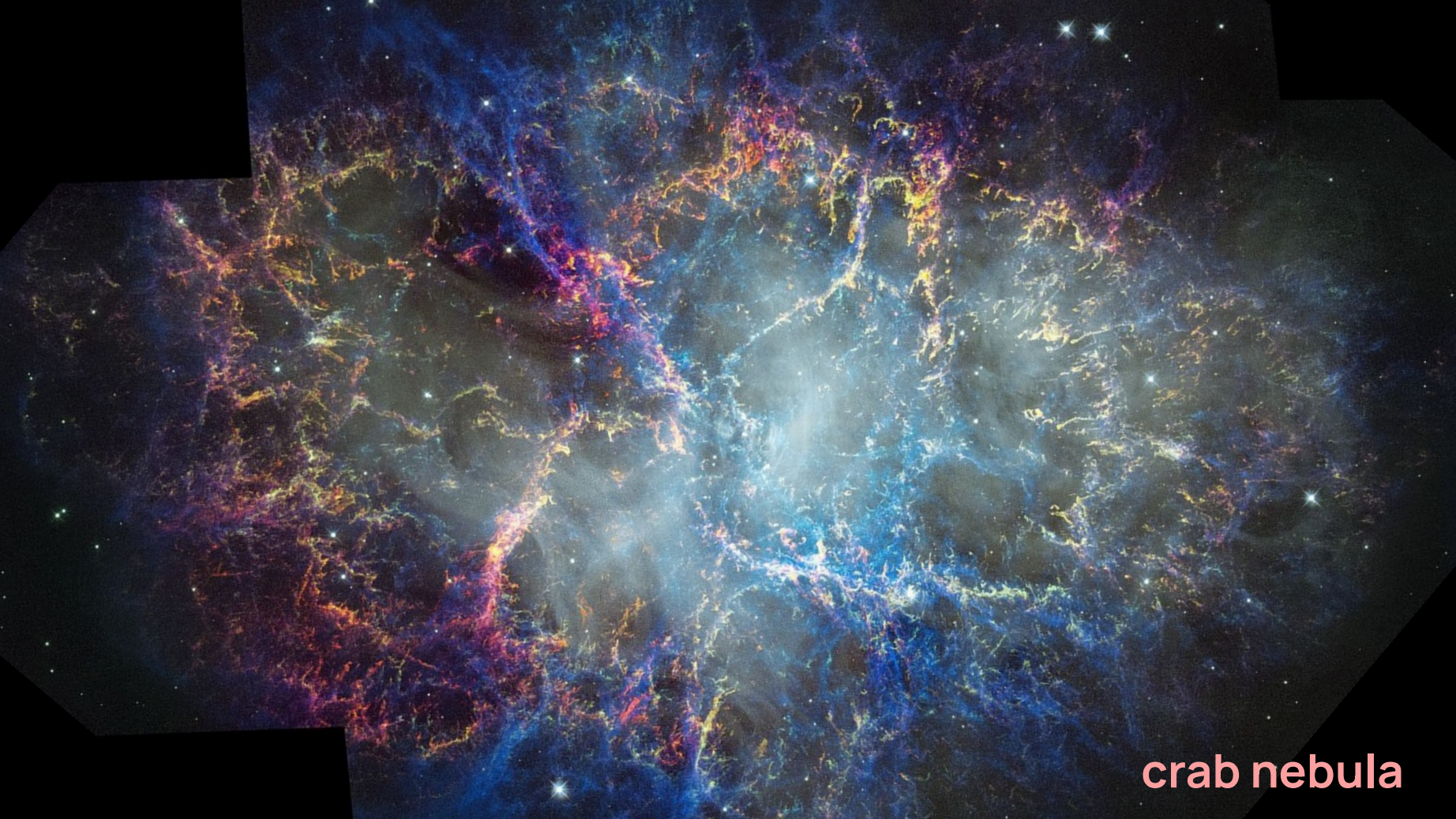
Radio, infrared, optical



Neutrinos



X-rays & gamma rays



crab nebula

weak force

electromagnetic force

e

$0.5 \text{ MeV}/c^2$

μ

$0.1 \text{ GeV}/c^2$

τ

$1.8 \text{ GeV}/c^2$

ν_e

$< 0.8 \text{ eV}/c^2$

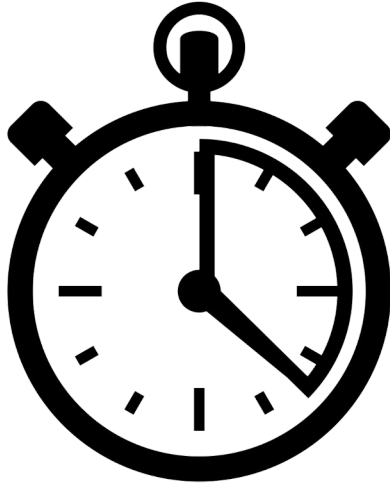
ν_μ

$< 0.8 \text{ eV}/c^2$

ν_τ

$< 0.8 \text{ eV}/c^2$

Time for a photon
to leave the Sun



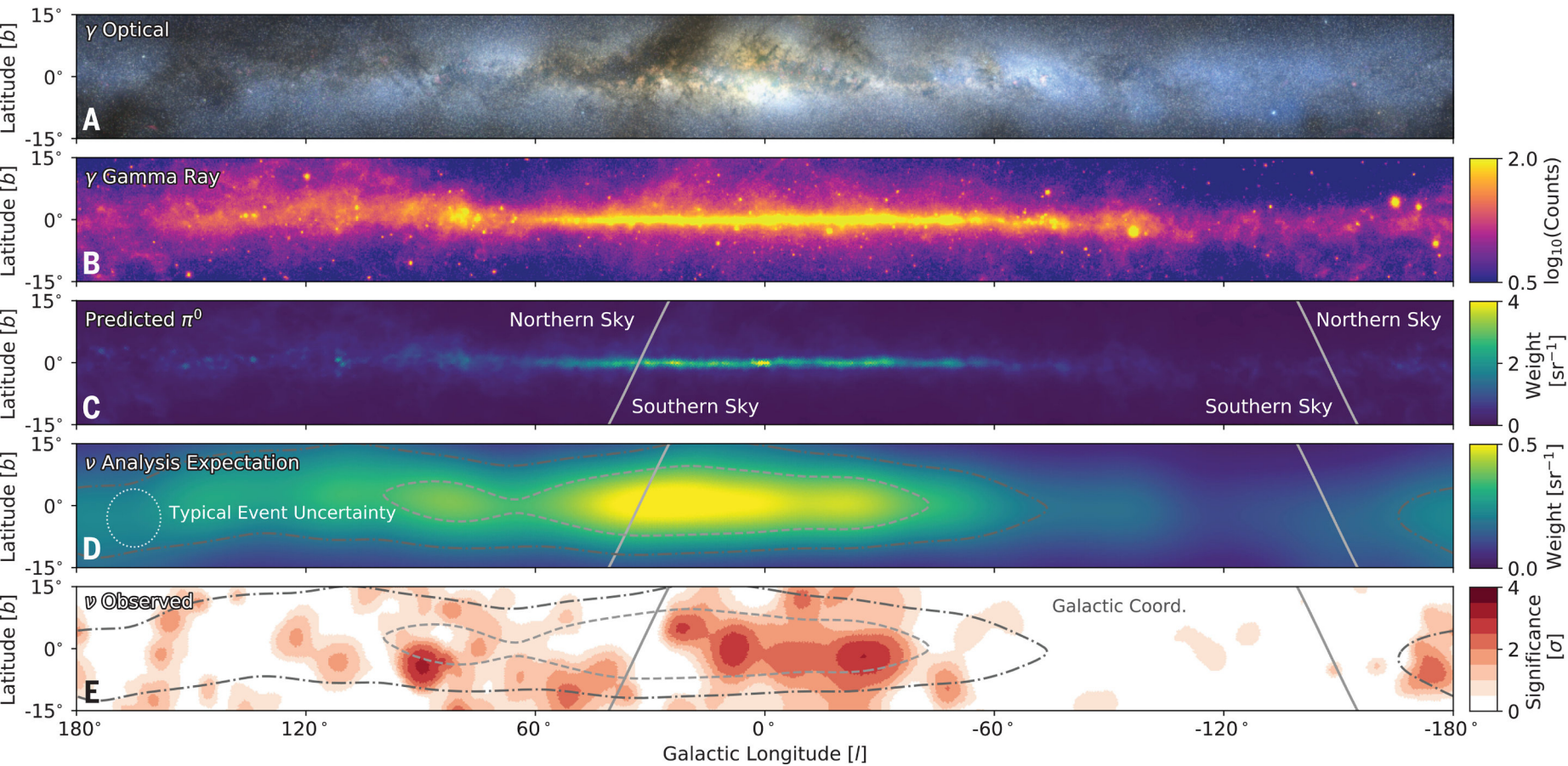
400,00 years

Time for a neutrino
to leave the Sun

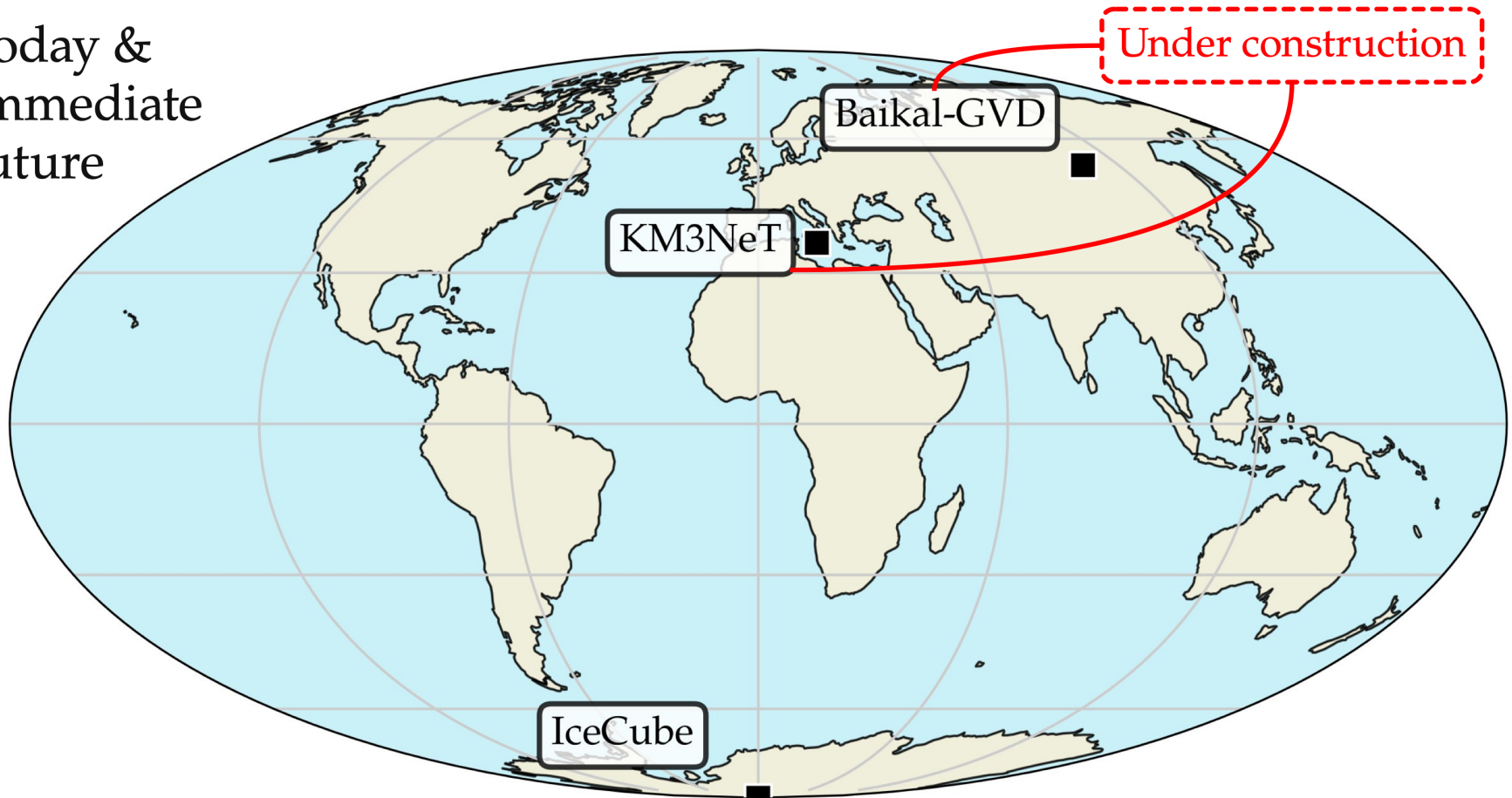


< 3 seconds

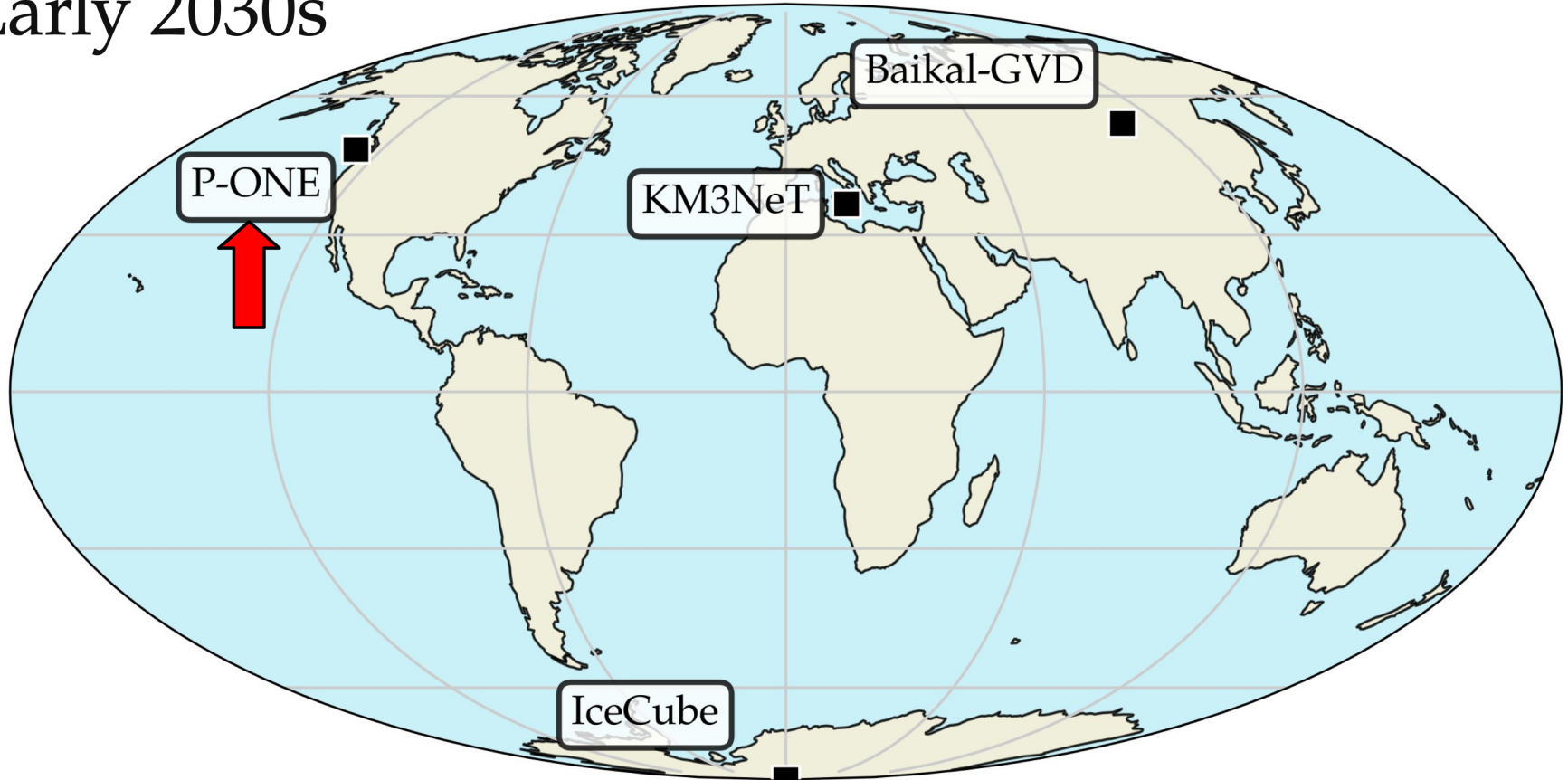




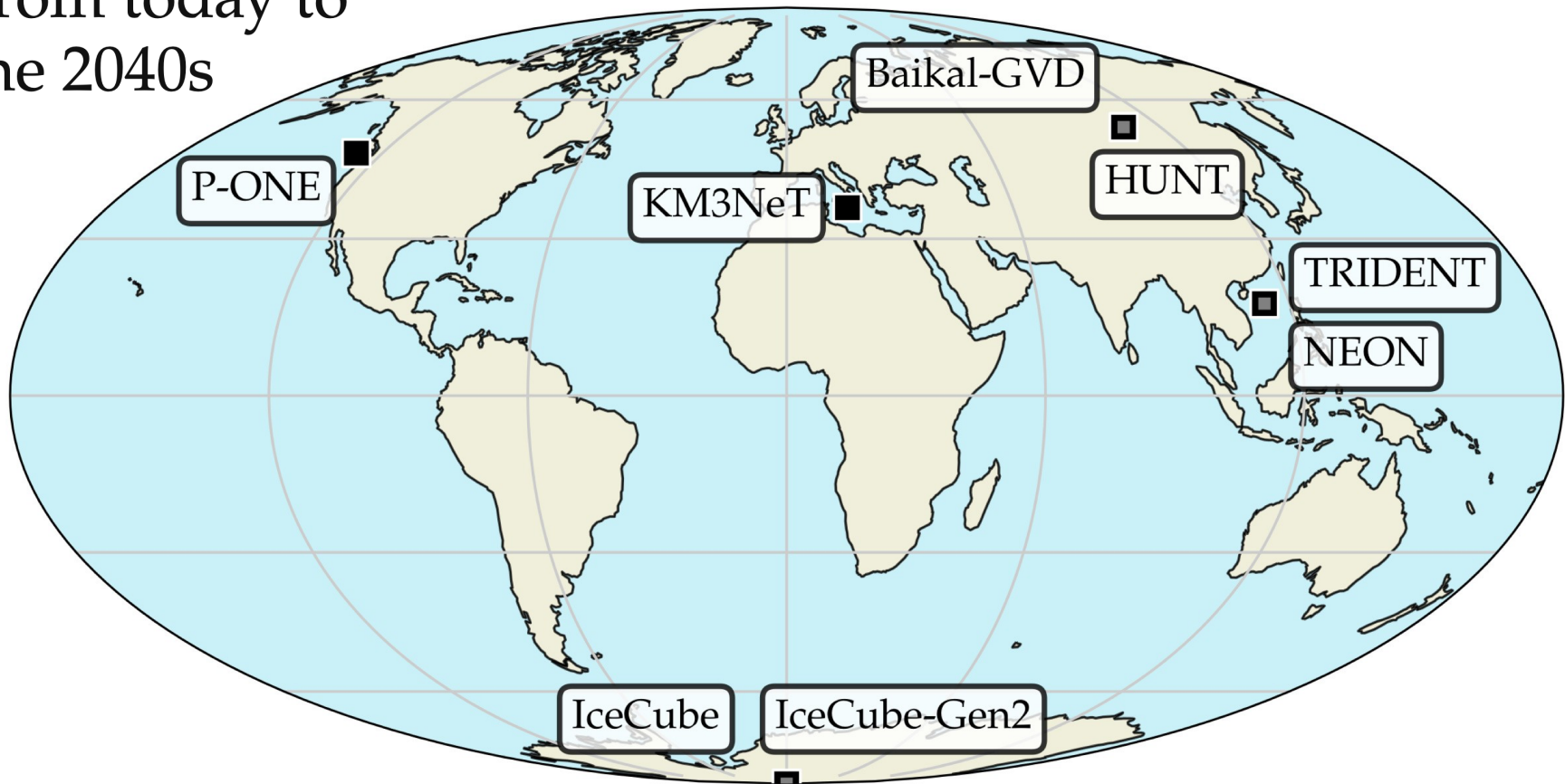
Today &
immediate
future



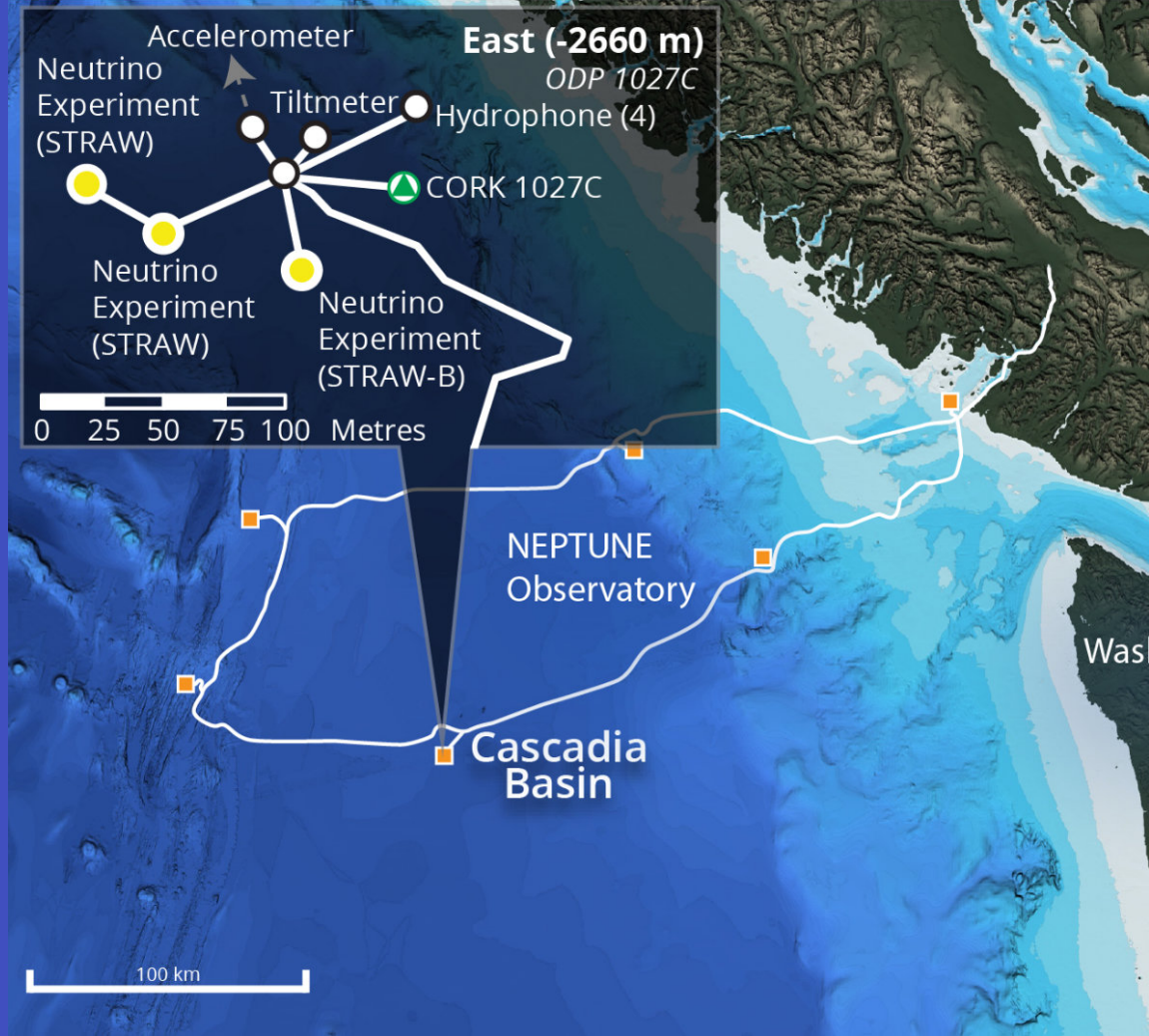
Early 2030s

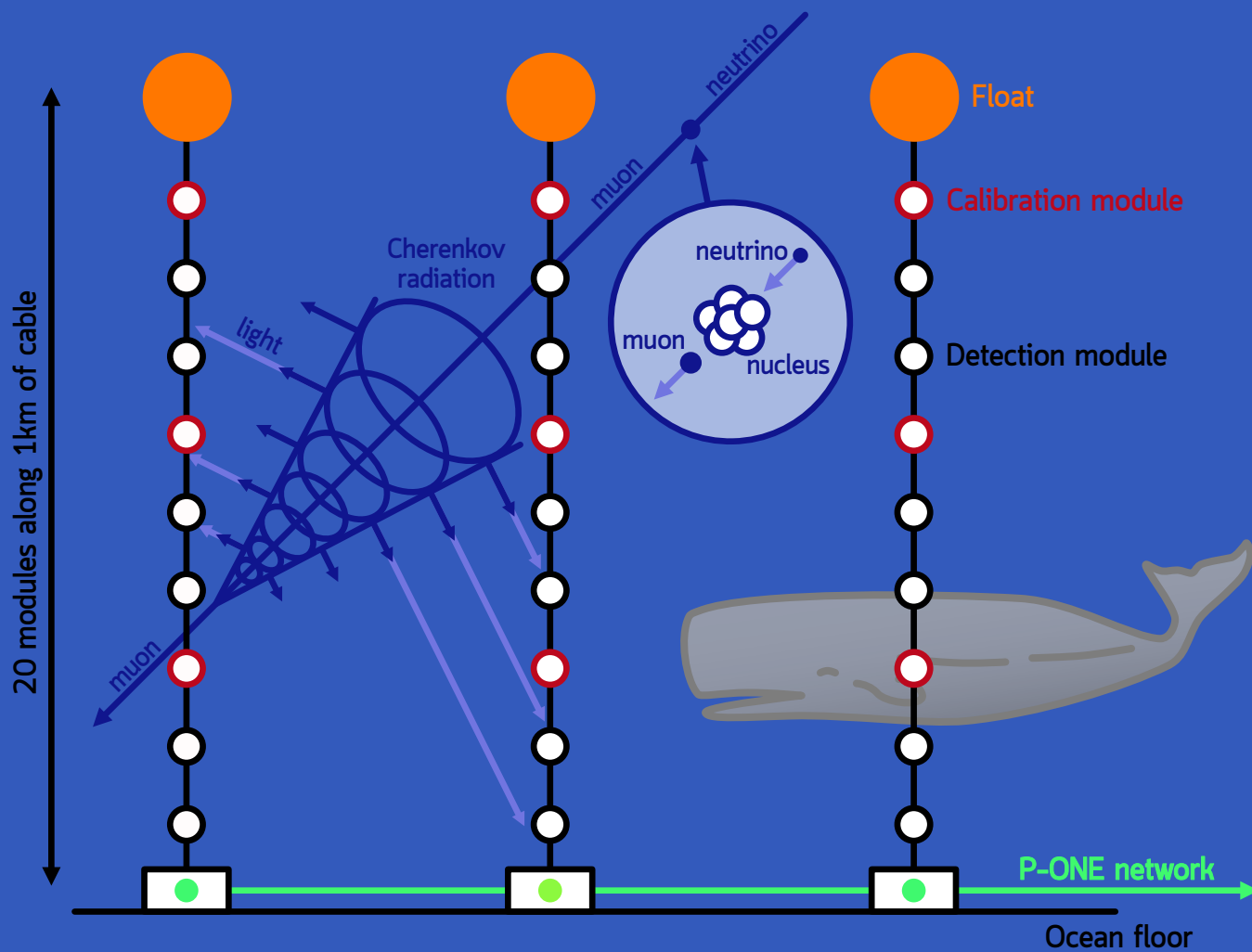


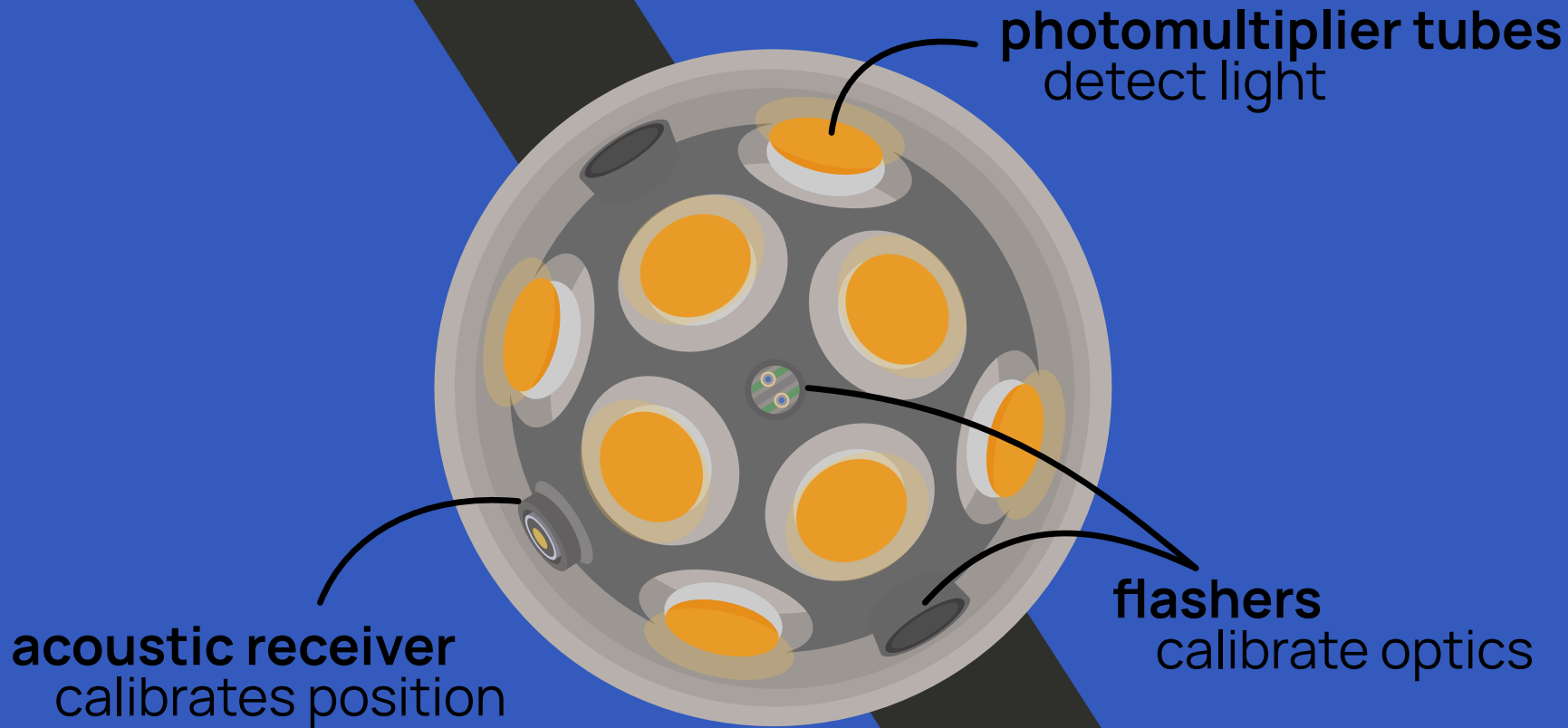
From today to
the 2040s



Pacific Ocean Neutrino Experiment



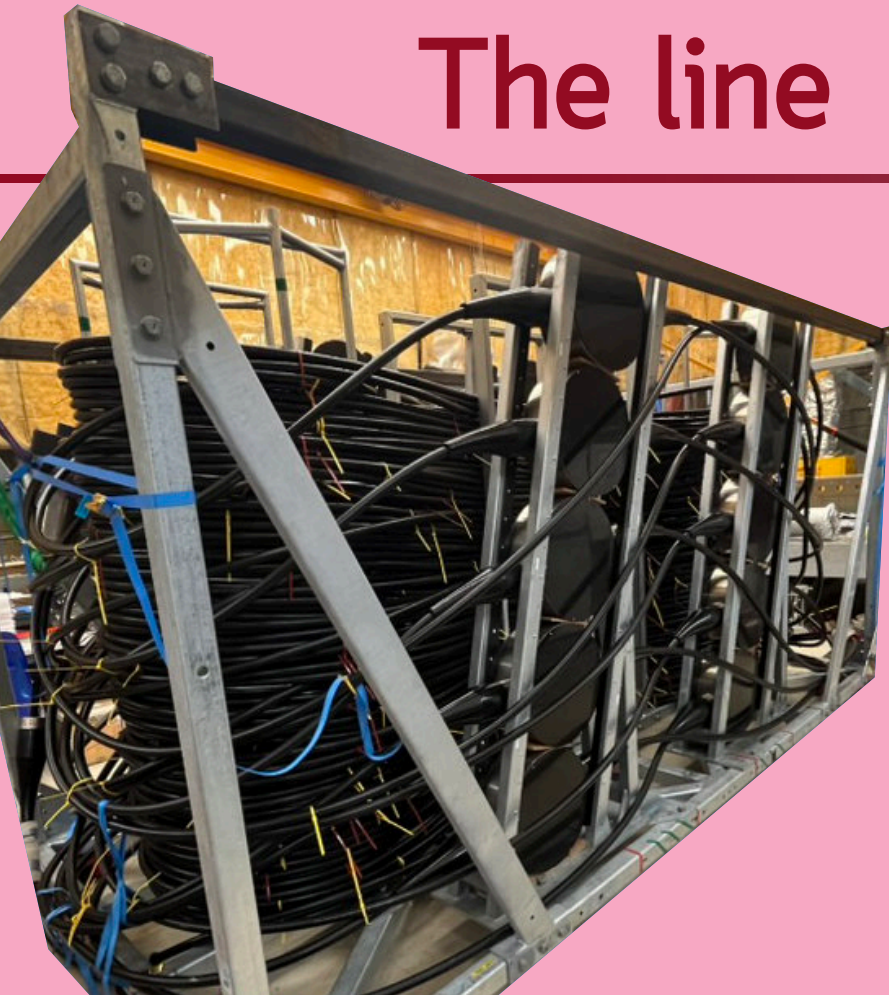




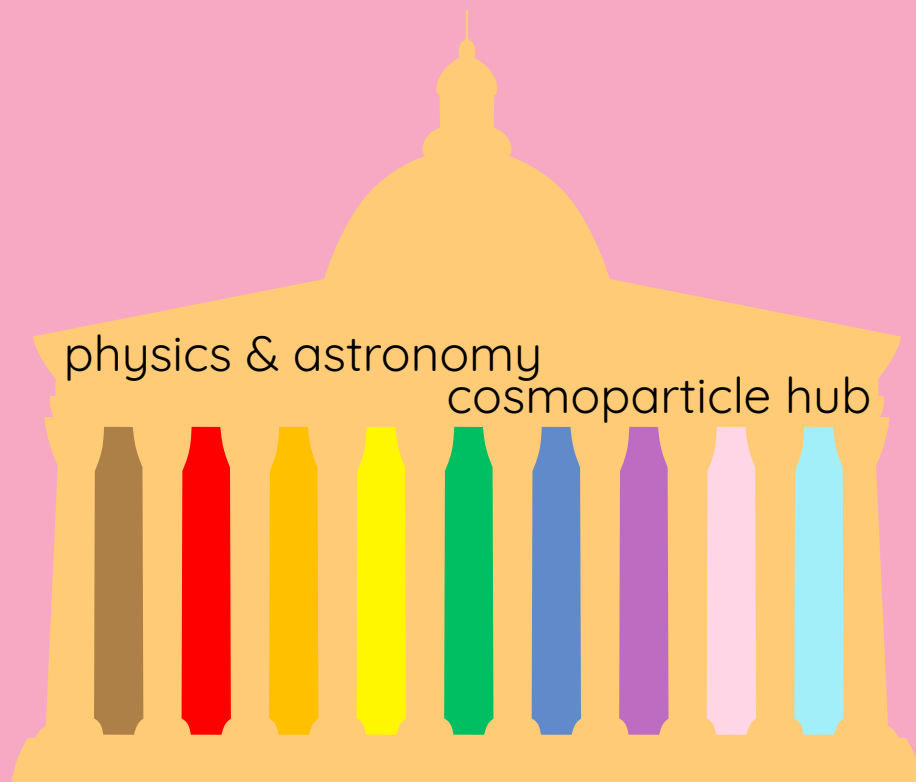
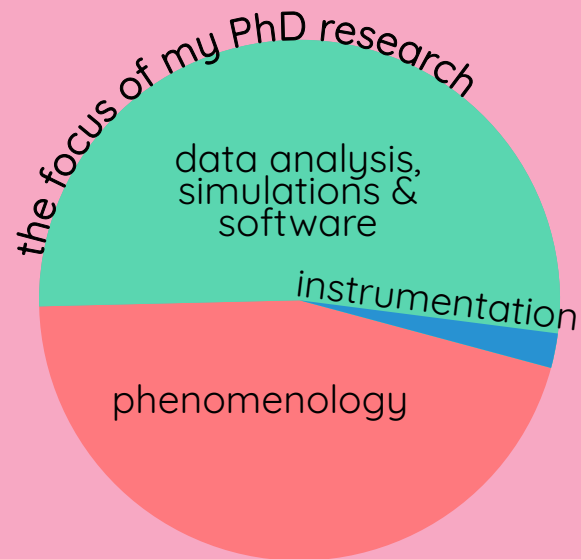
Building a observatory



The line

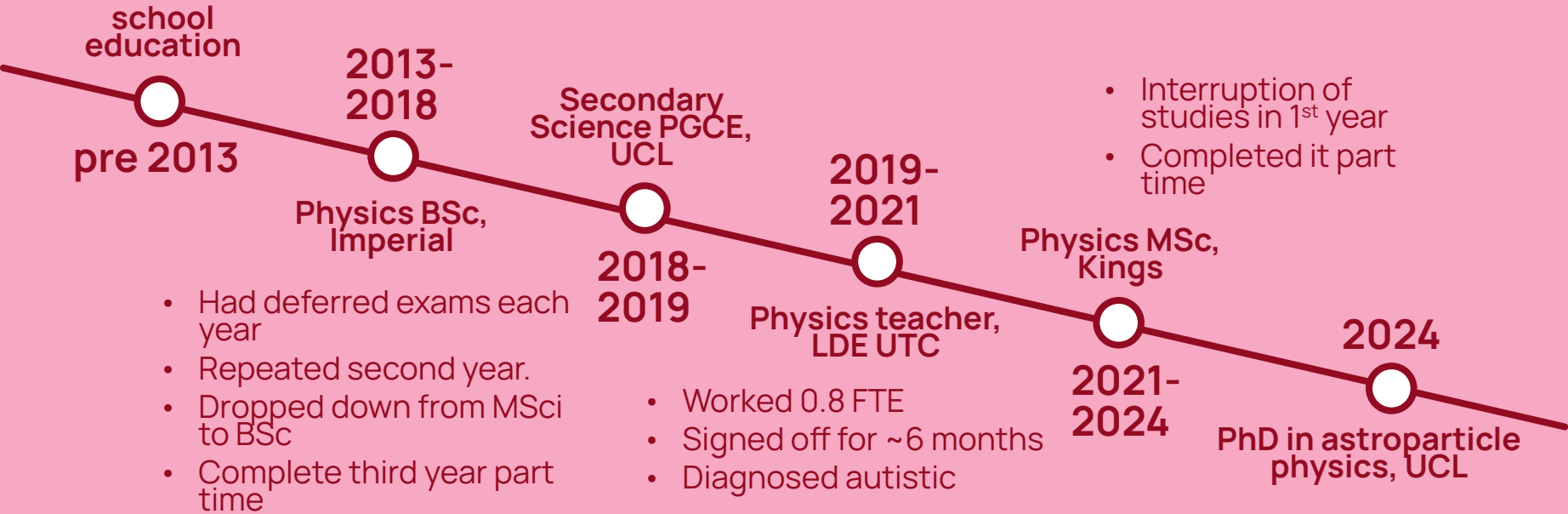


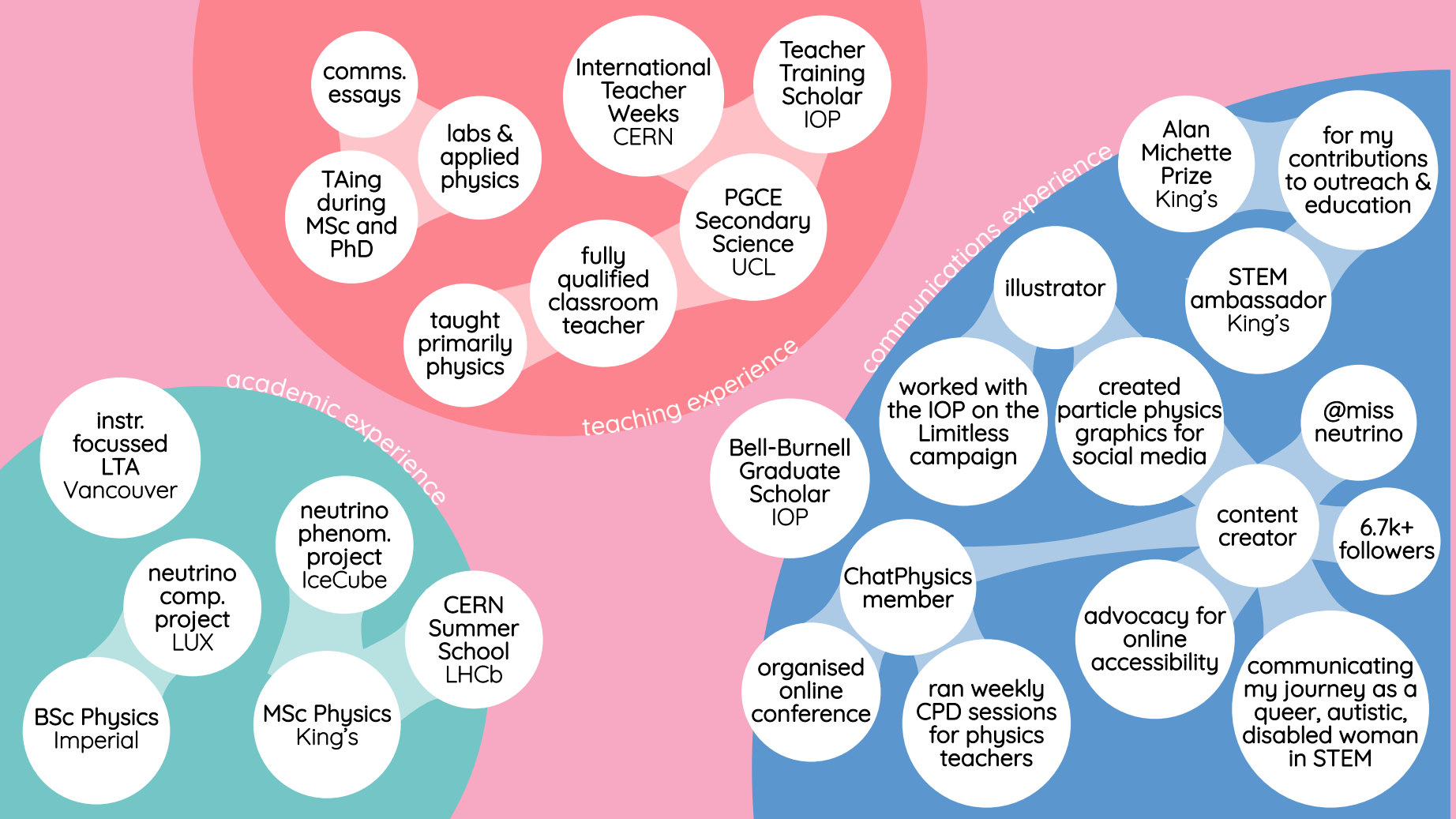
My PhD studies



- ~9 months hospitalised
- 2 year out of school
- Diagnosed bipolar at 16

travelled nearly as far to get here as a supernova neutrino!





Thank you for listening!

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