



How do black holes form?



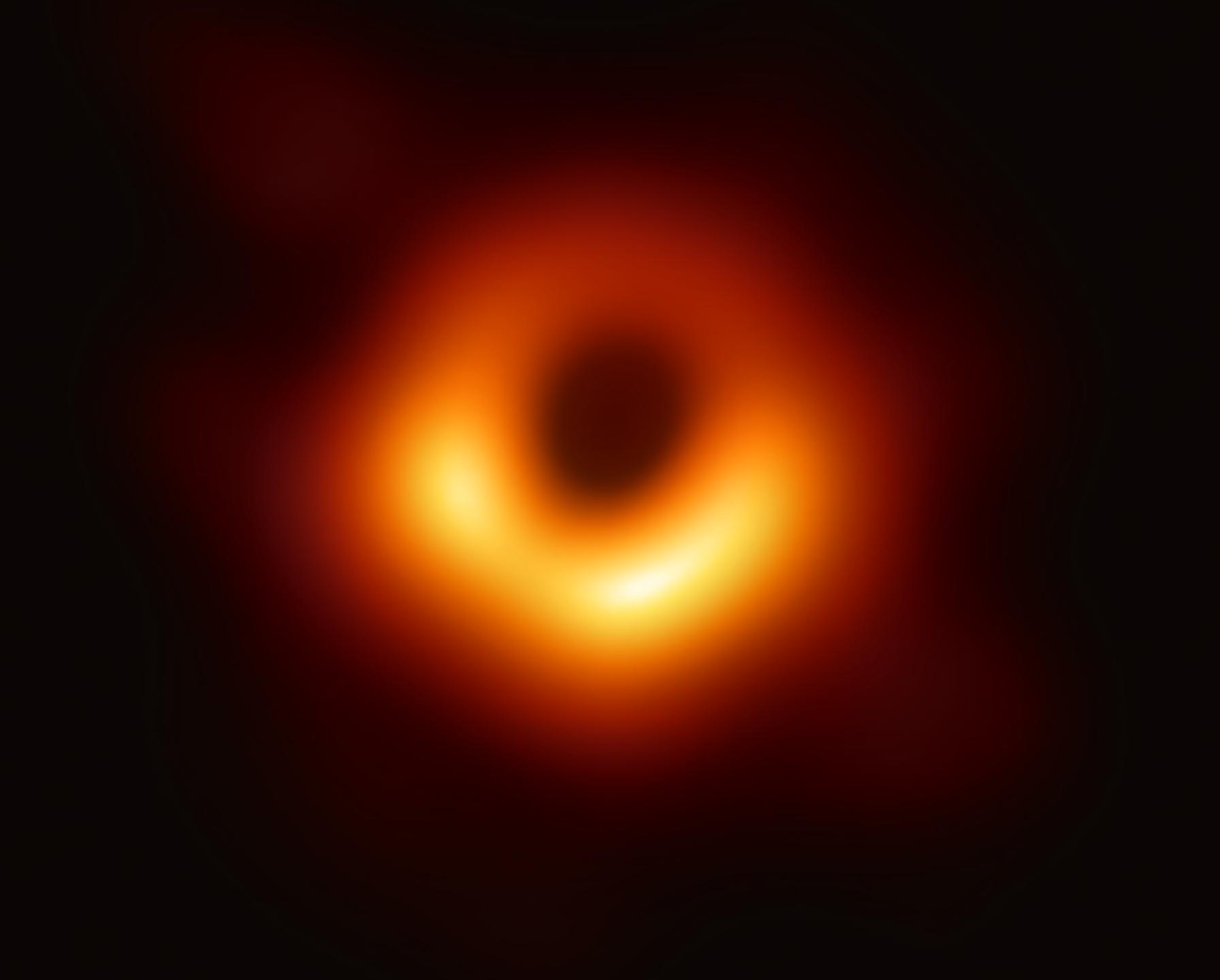
Jose María Ezquiaga
Niels Bohr Institute
ezquiaga.github.io

Black hole recipe:

1. Take 1 solar mass of salt
2. Put it on a plate smaller than Copenhagen
3. Enjoy :)



Black holes: Connecting the big and the small



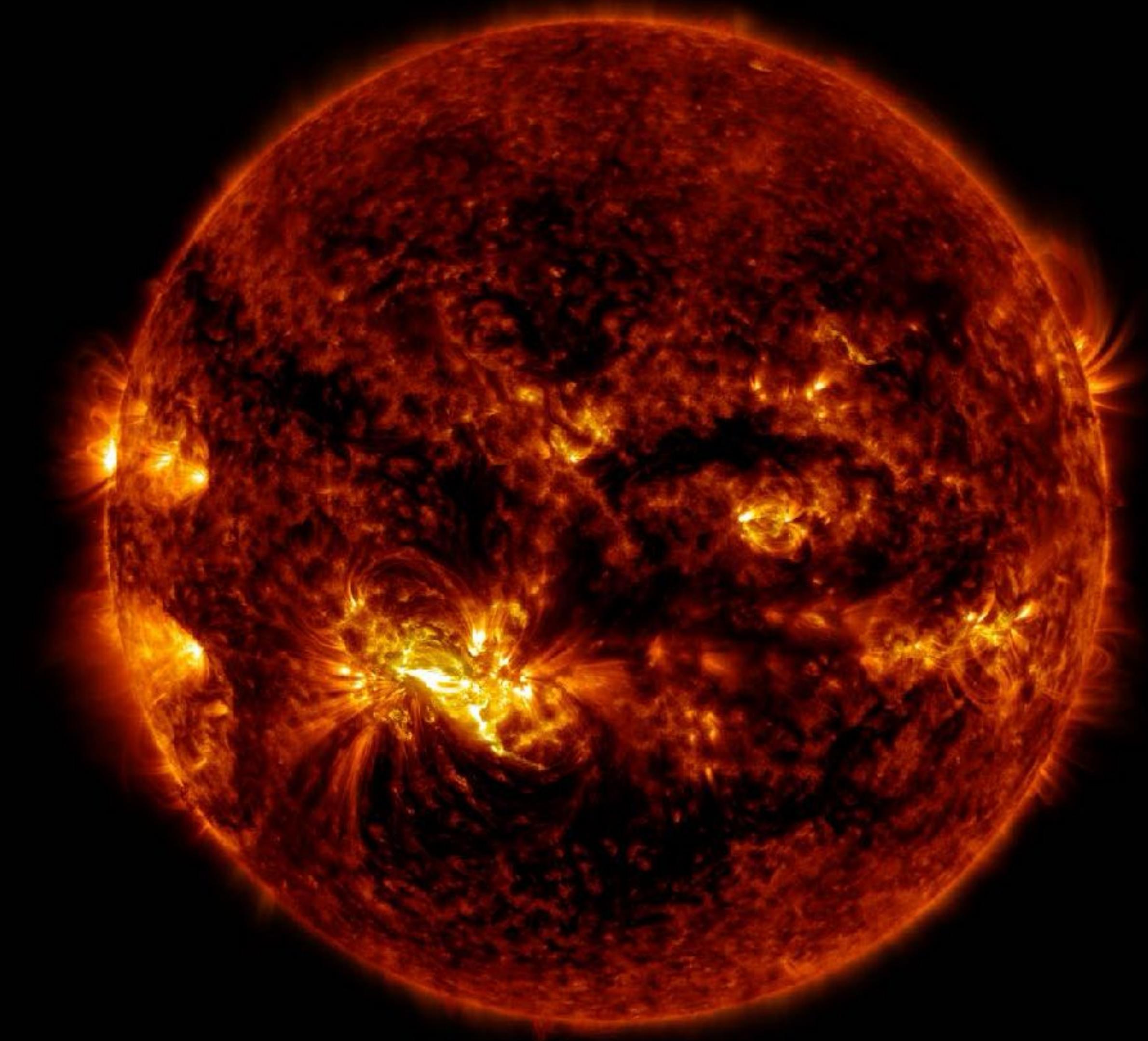
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Where are stars born?

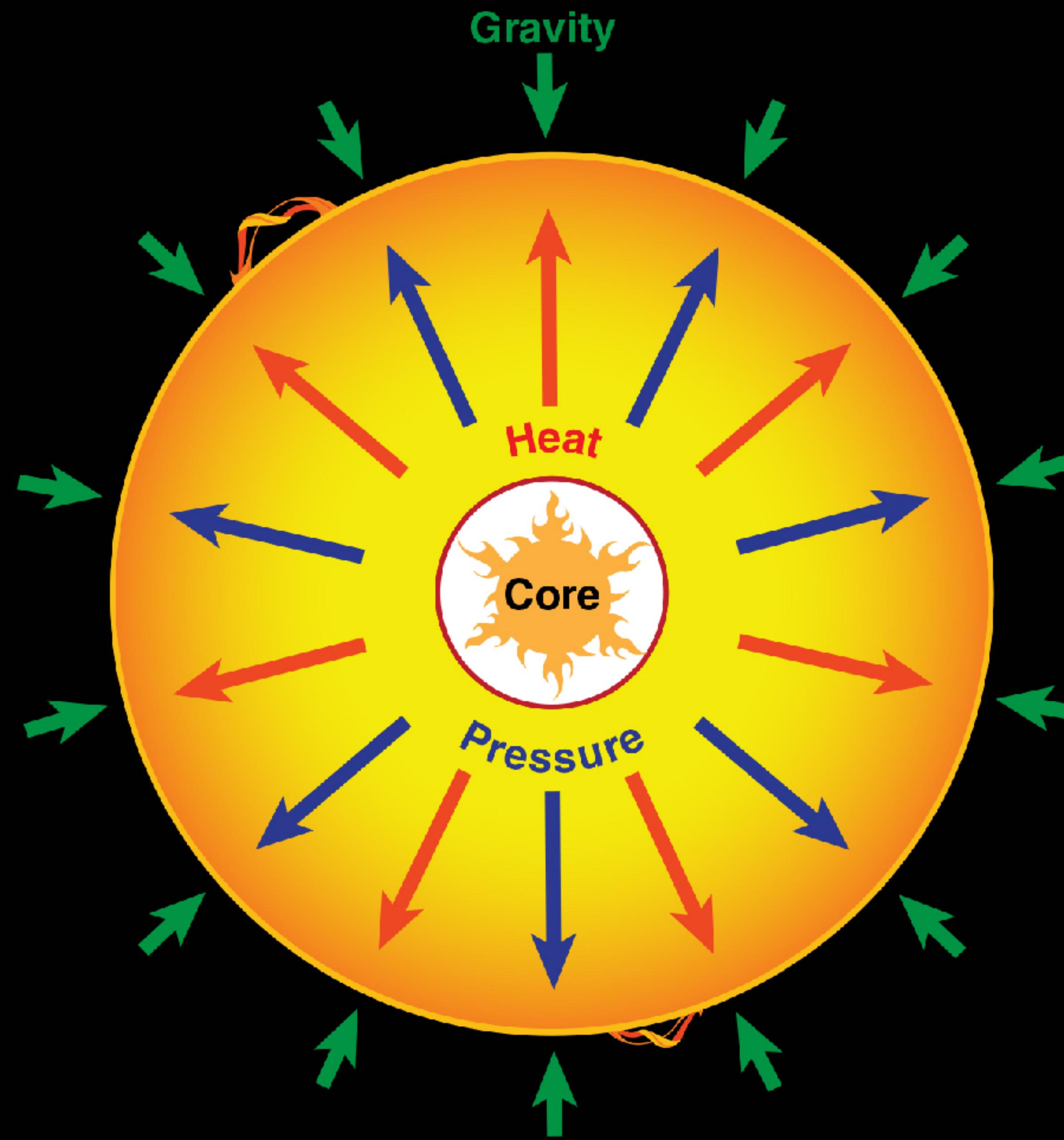


[Carina Nebula - JWST]

How is the life of a star?



What holds a star together?

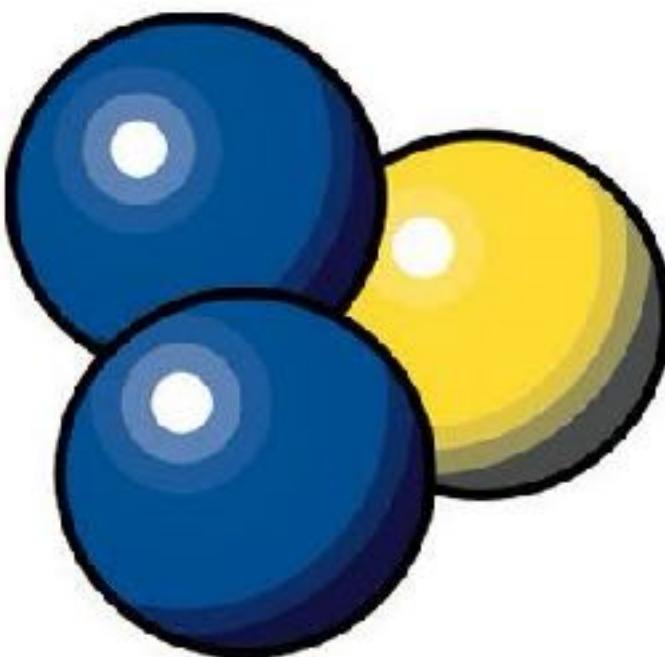


[credit NASA]

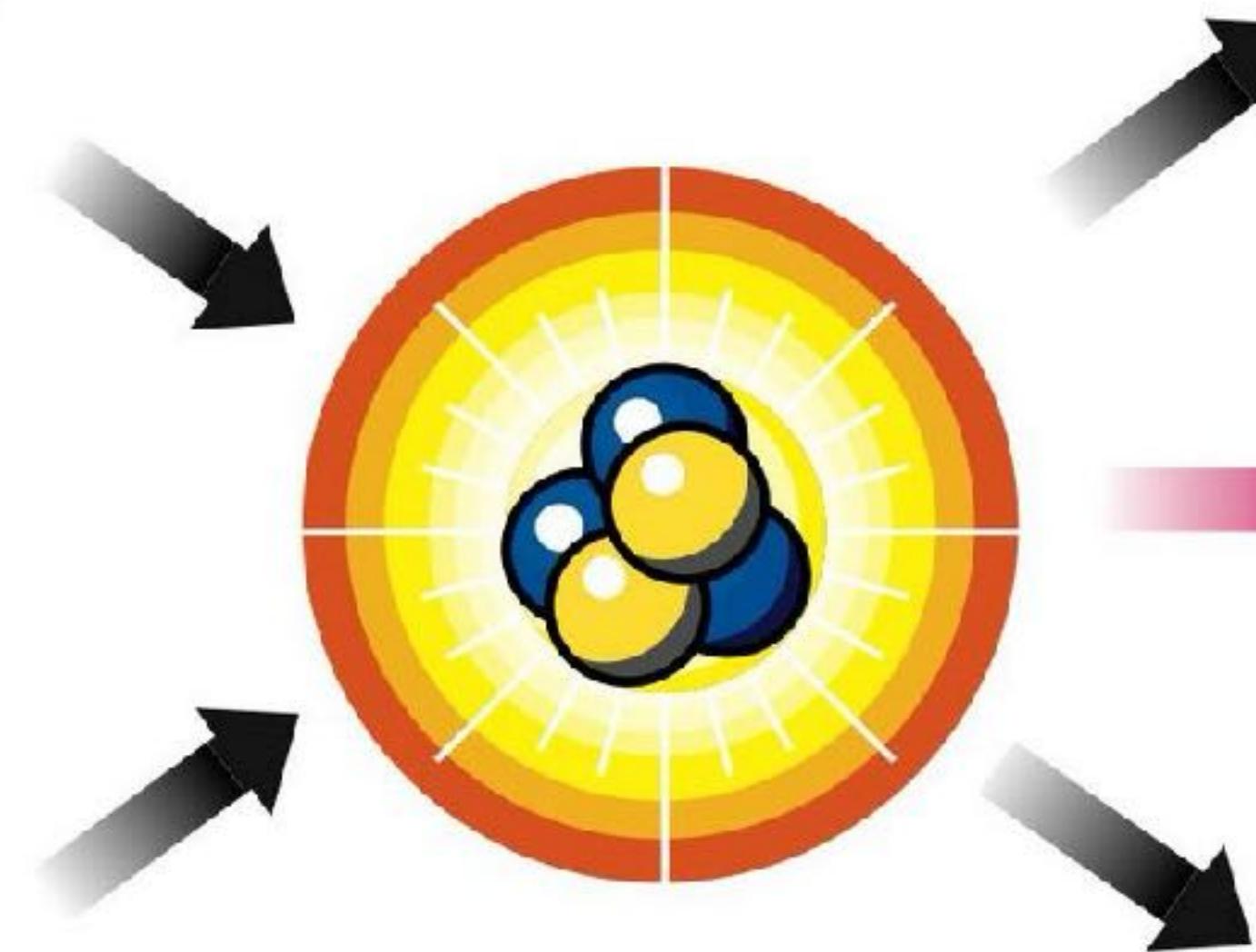
D



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Fusion



He

Neutron

Energy

1 H															2 He		
3 Li	4 Be																
11 Na	12 Mg																
19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
55 Cs	56 Ba		72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
87 Fr	88 Ra																

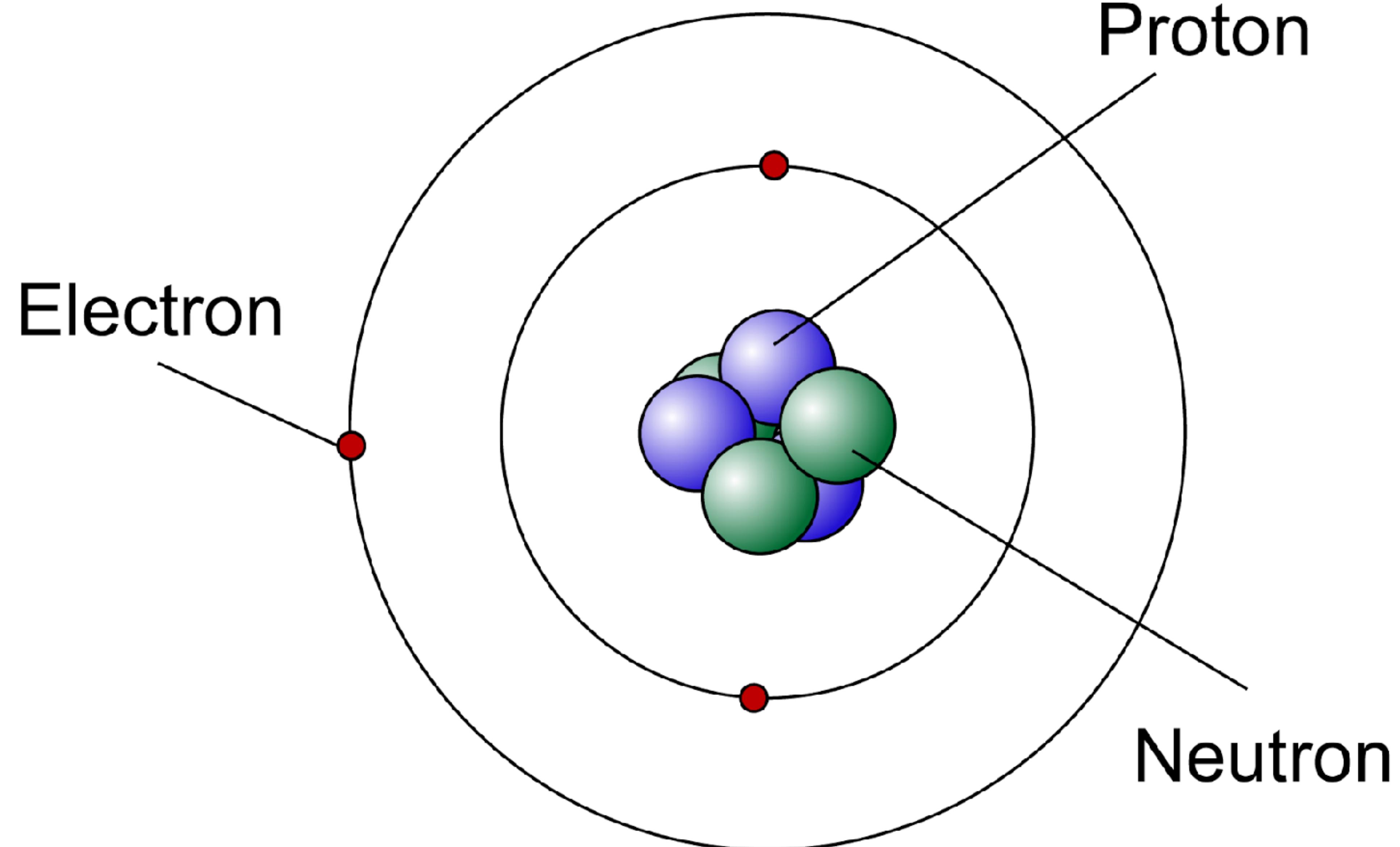
57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
89 Ac	90 Th	91 Pa	92 U											

From *quantum* to the *cosmos*

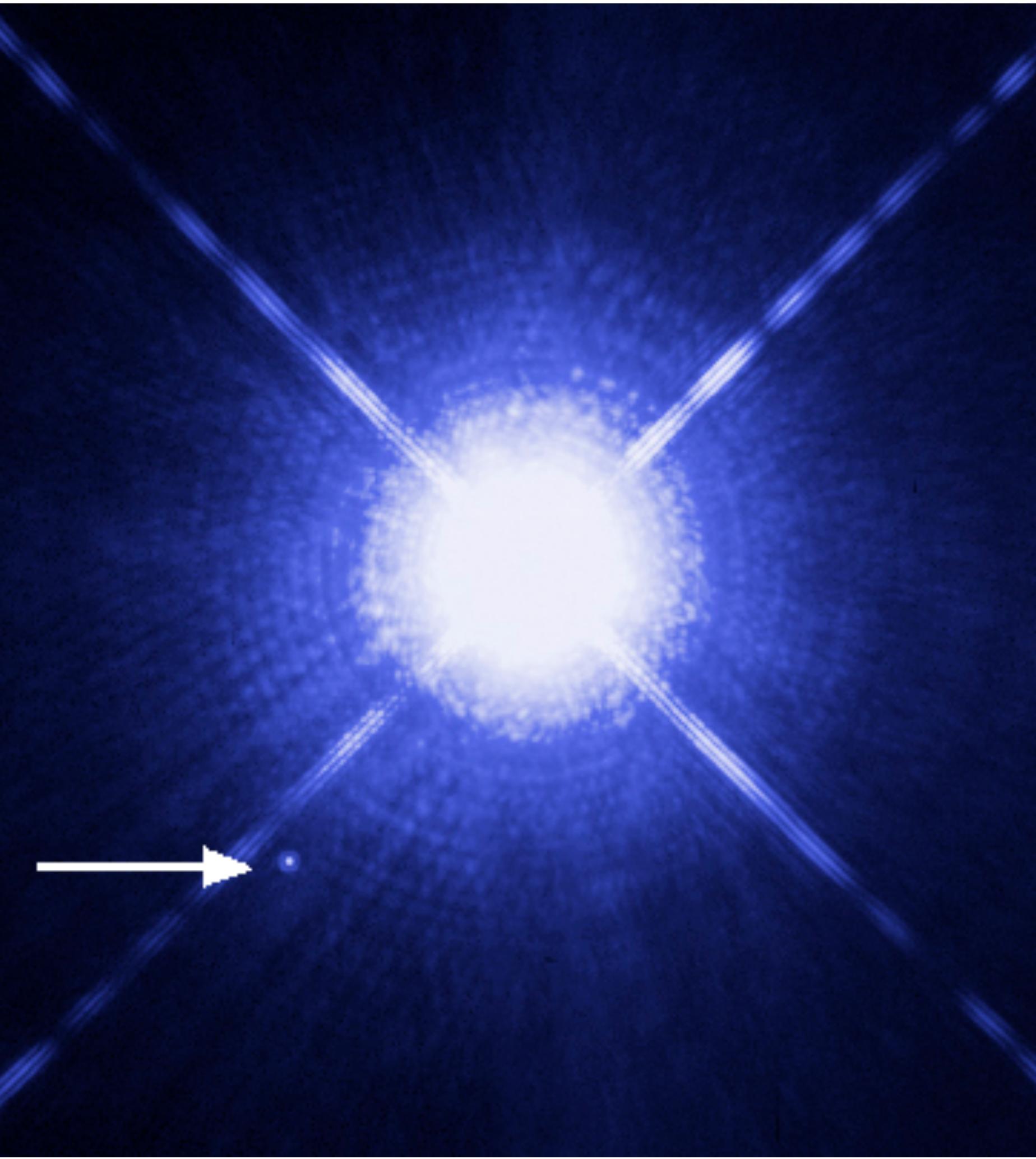


arkivdk

[NBI, Aud. A, 1930, <https://arkiv.dk>]

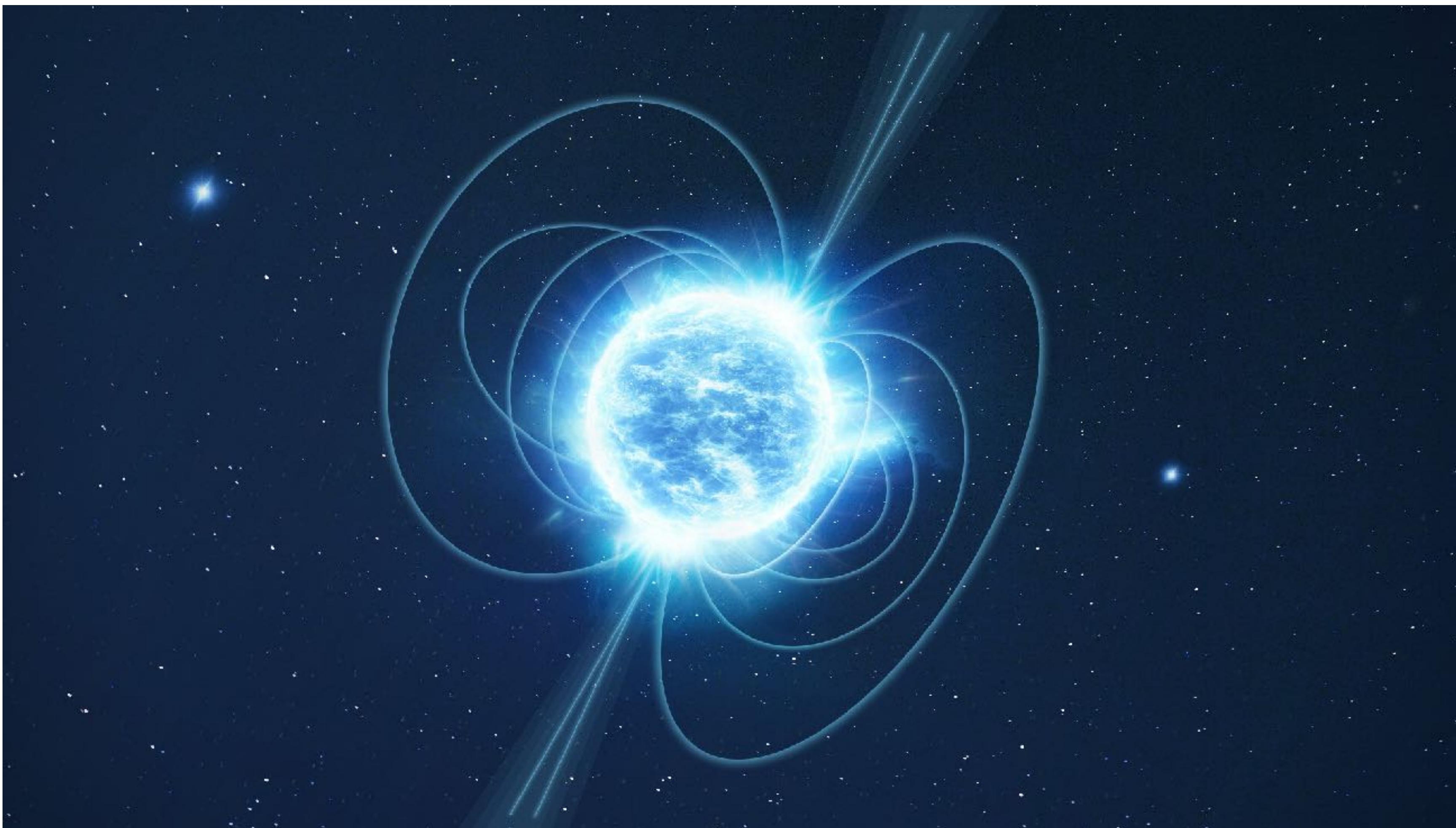


White-dwarfs: stars hold together by electron pressure

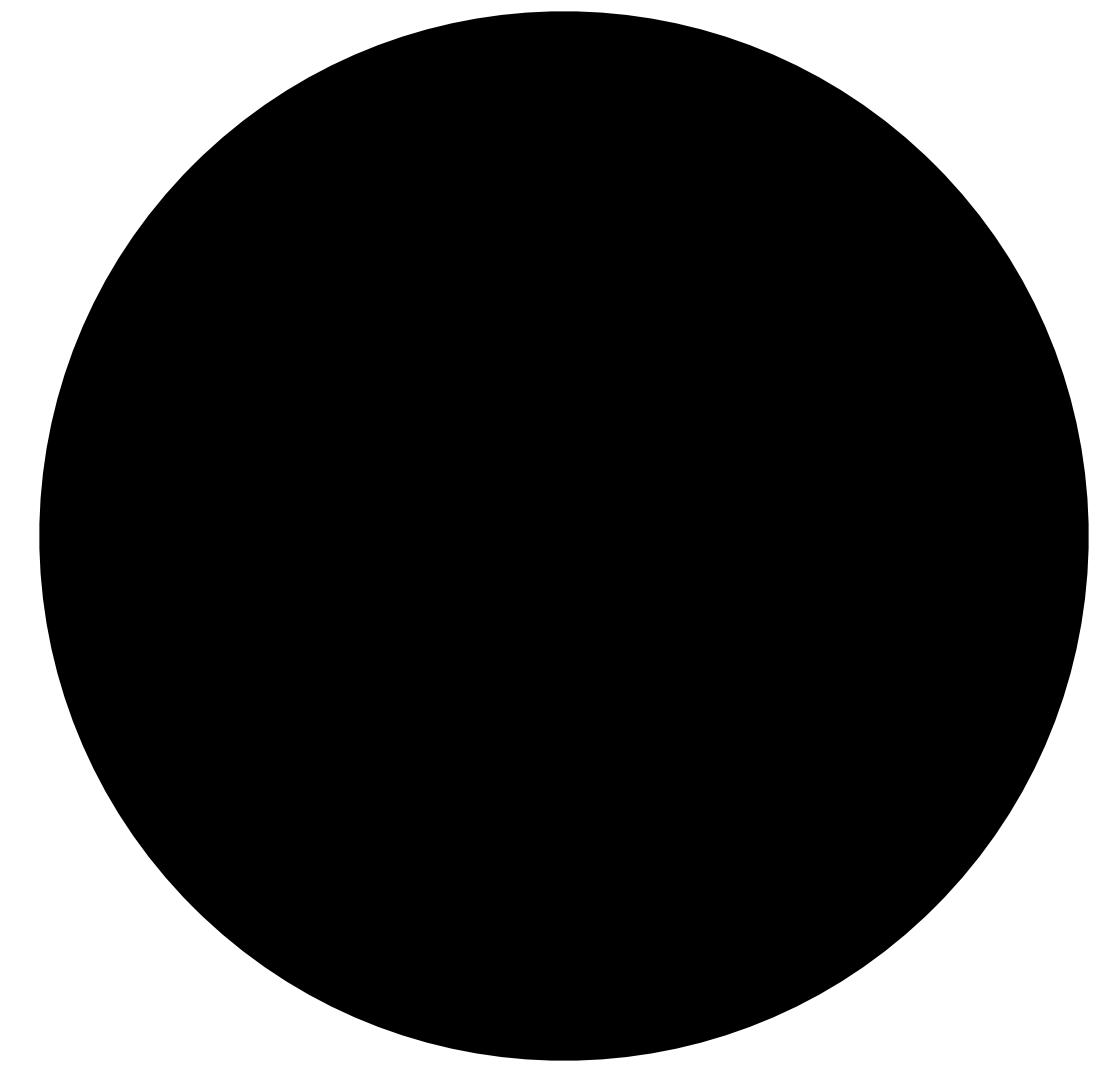


[credit Wikipedia]

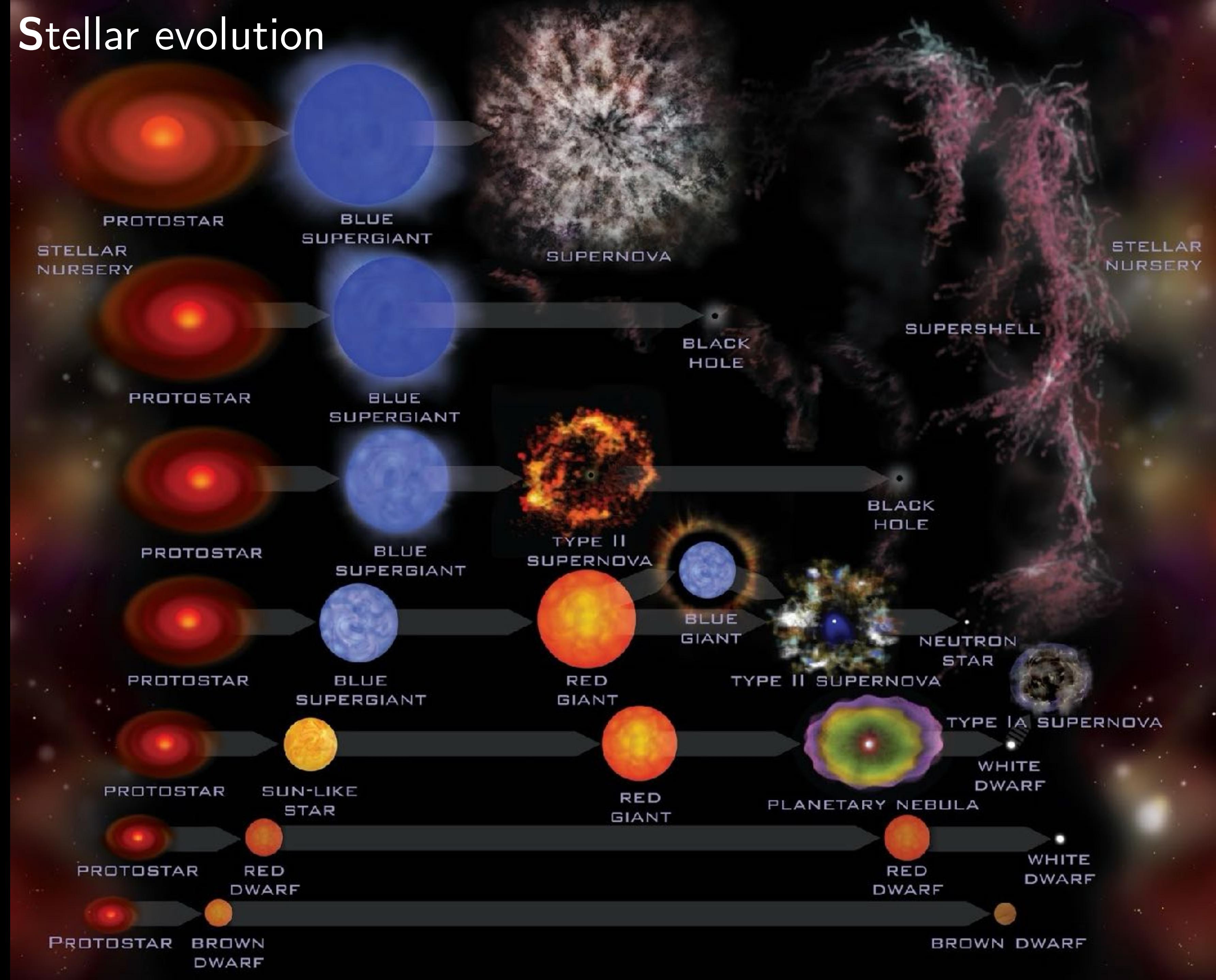
Neutron stars: stars held together by neutron pressure



Black holes: when nothing else can balance gravity...



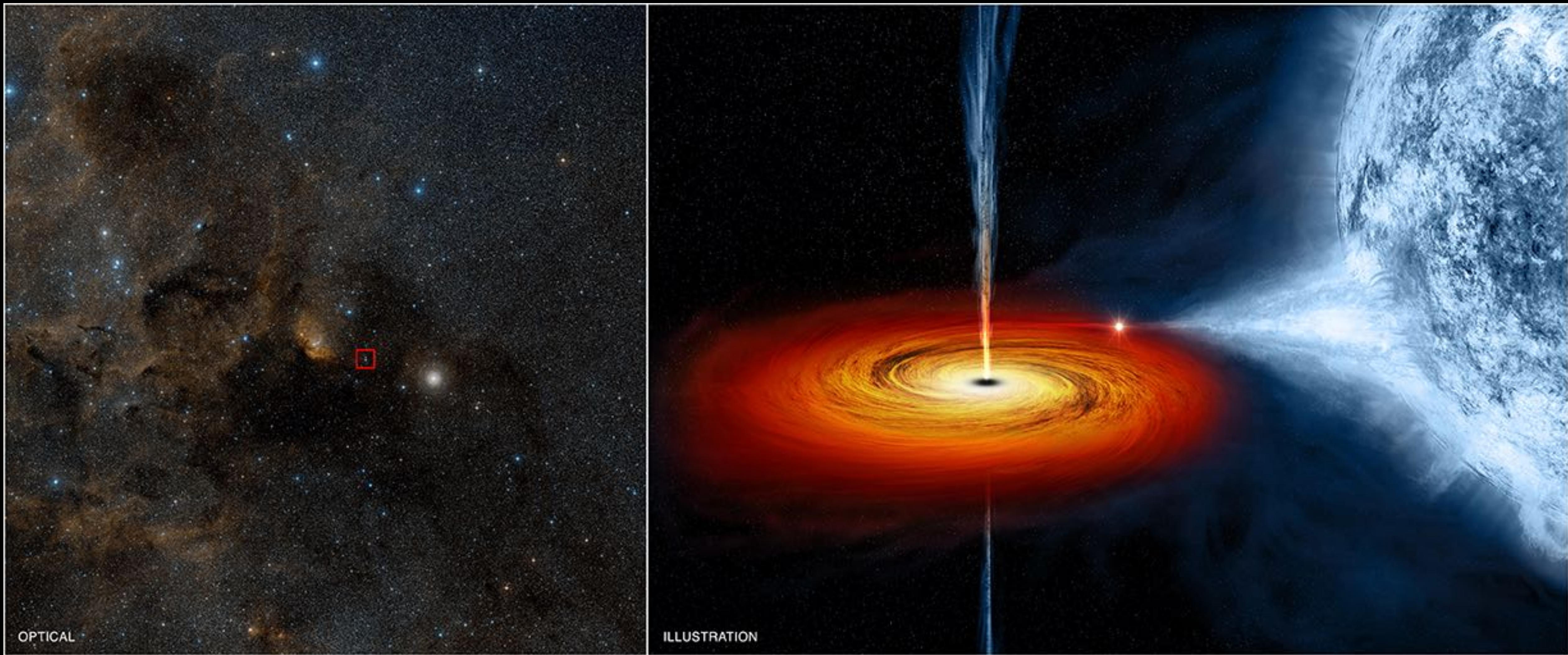
Stellar evolution



[credit Chandra]

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Black holes grow by accretion



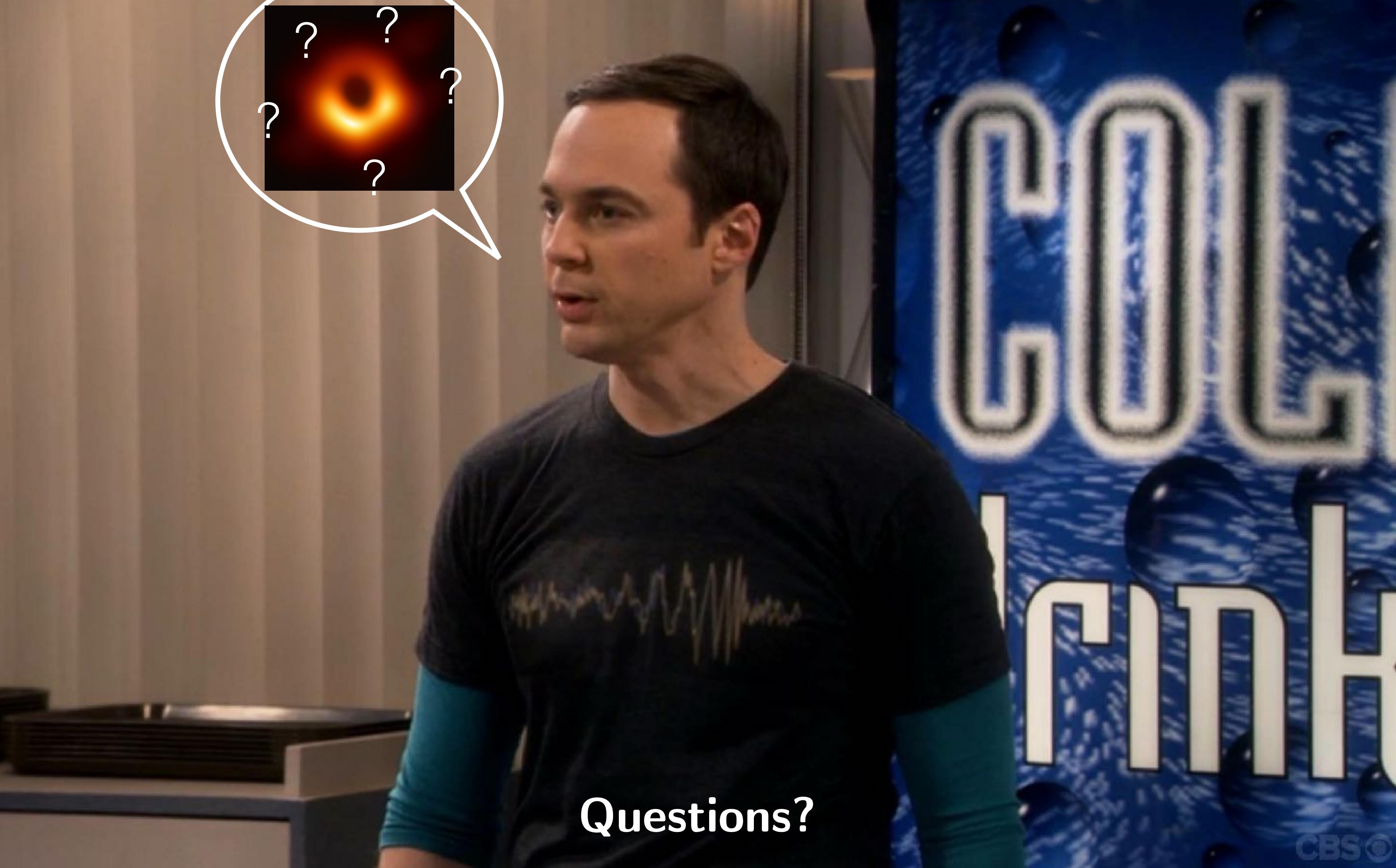
[credit: Chandra]

Black holes grow by mergers



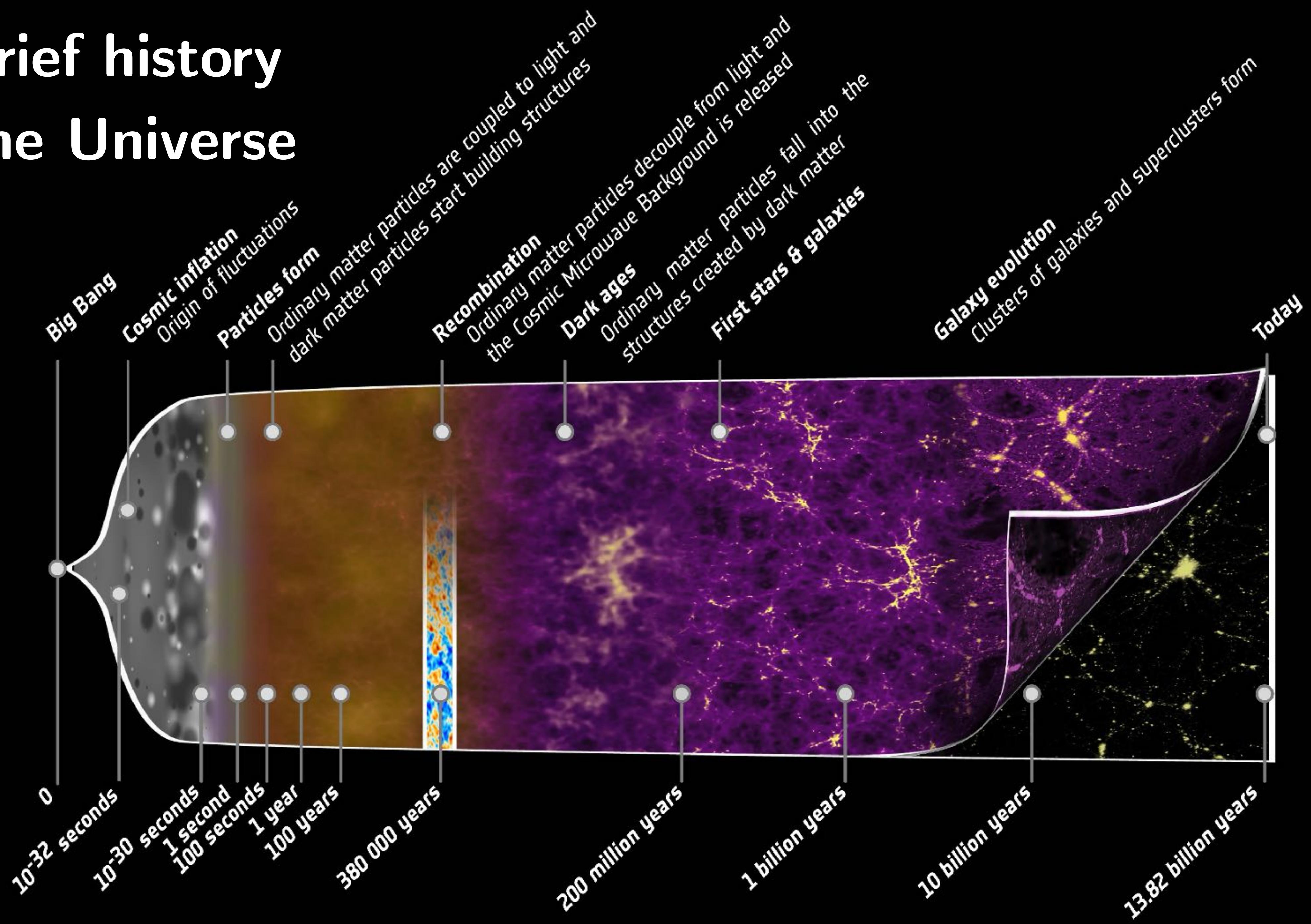


Credit: EHT



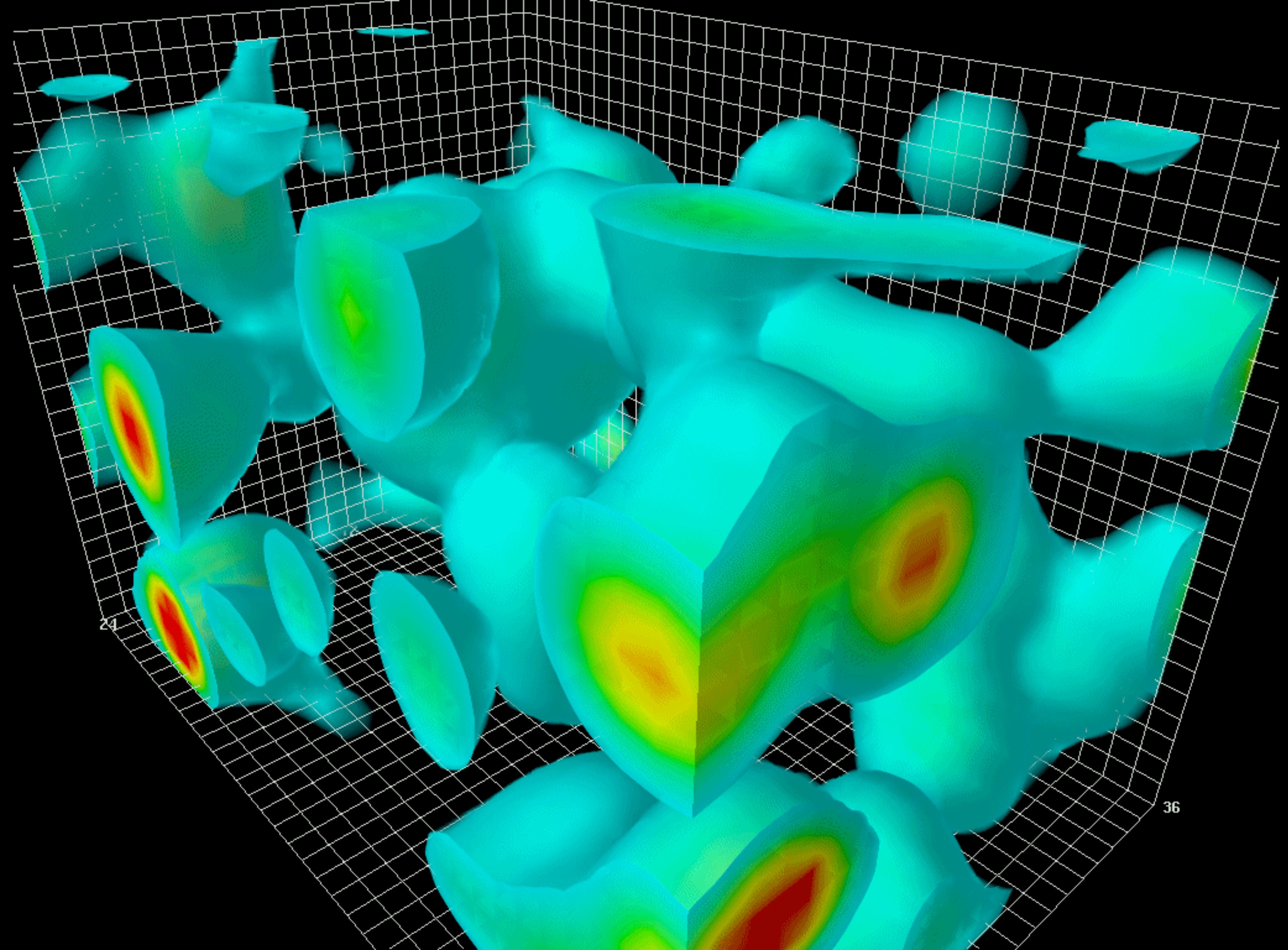
Questions?

A brief history of the Universe

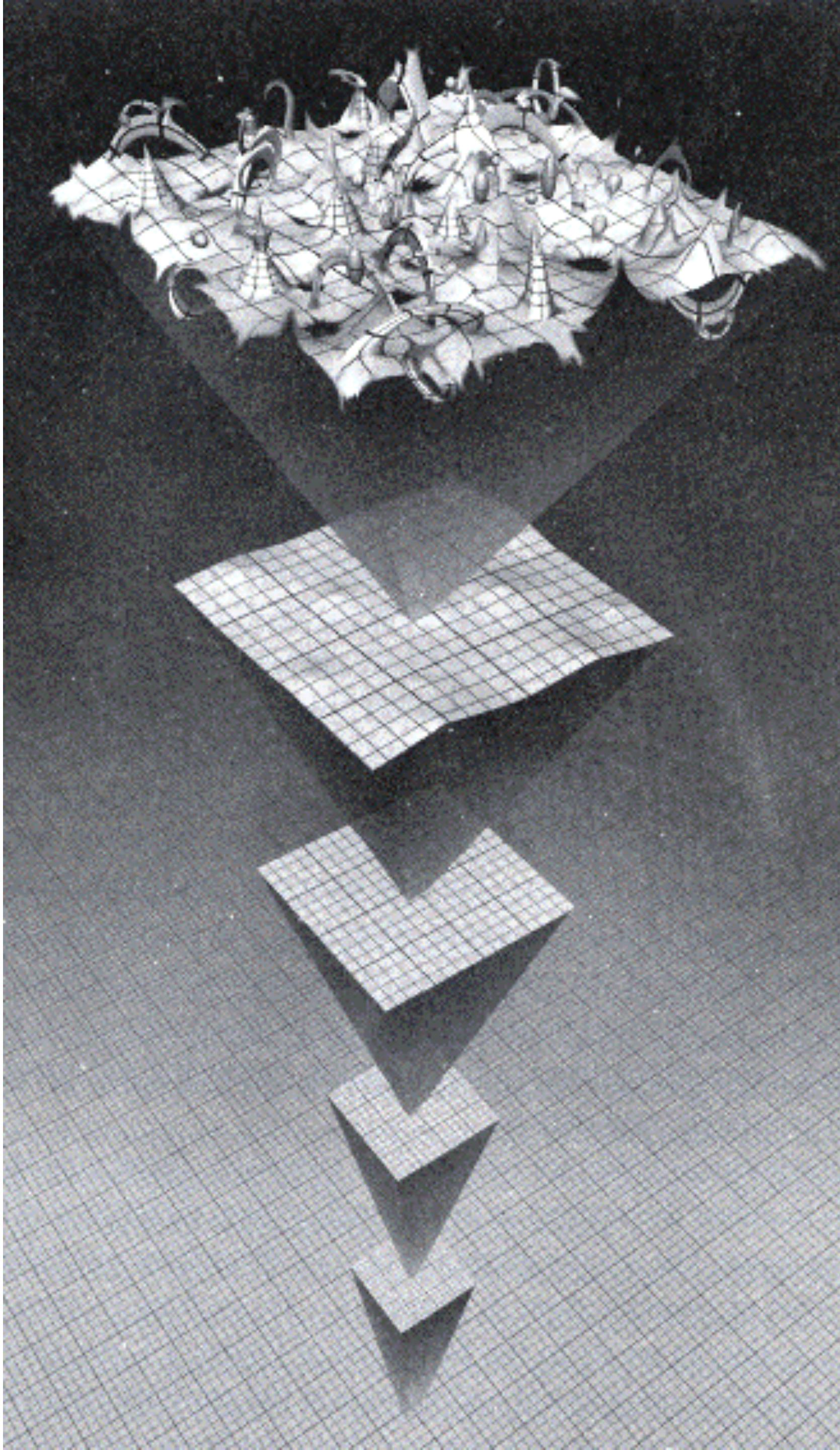


[Credit: ESA]

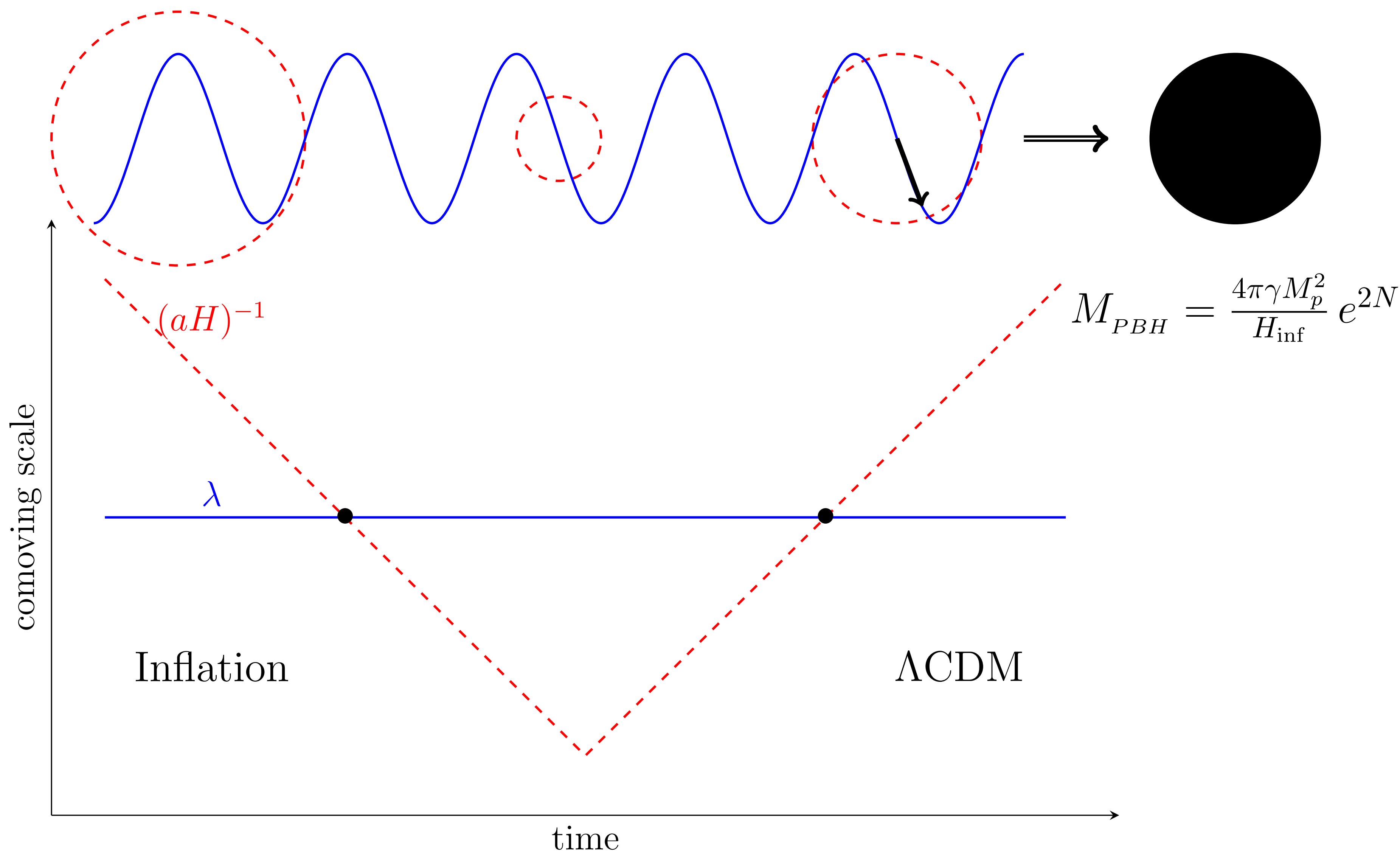


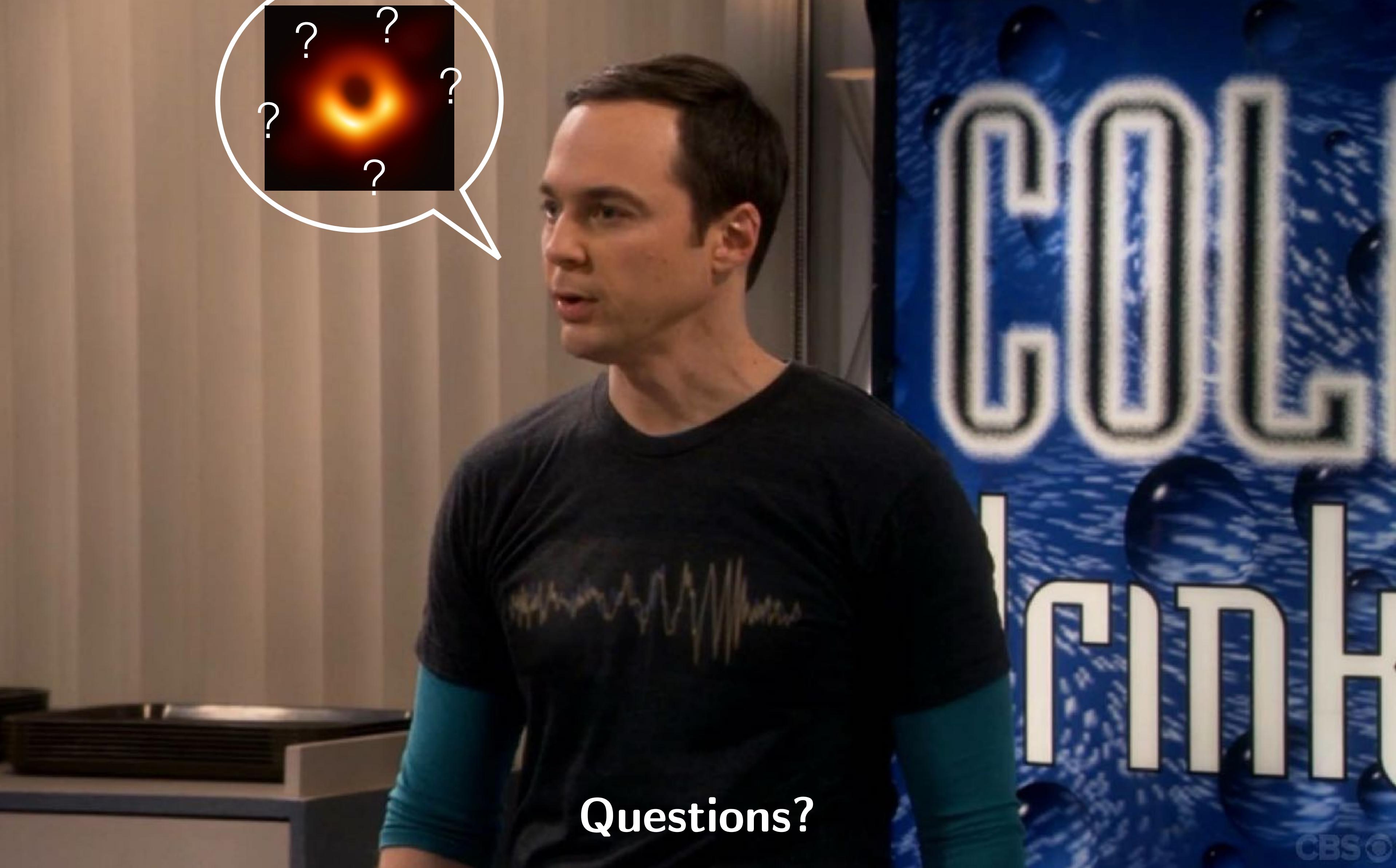


[Credit: wikipedia]



Primordial black hole are fossils of the very, very early Universe





Questions?