

# ვარსკვლავების სიკვდილი

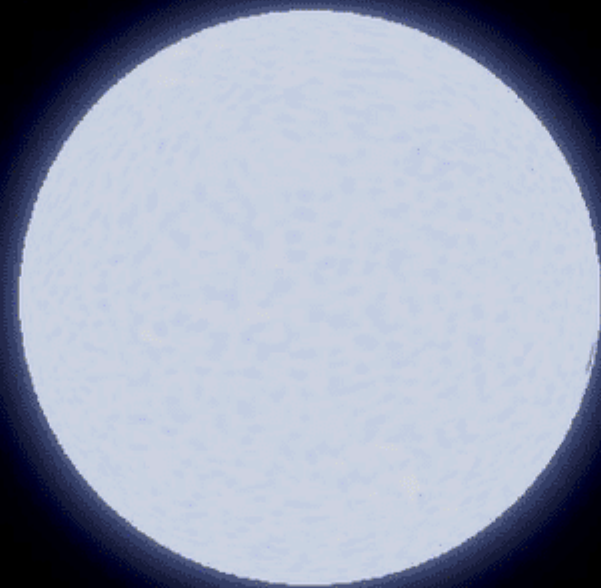


# ვარსკვლავების კლასიფიკაცია



O

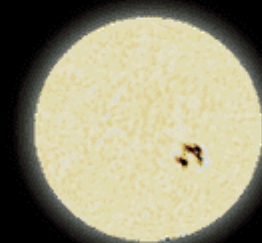
დიდი მასის ვარსკვლავები



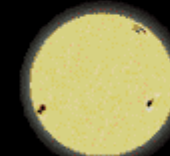
B



A



F



G



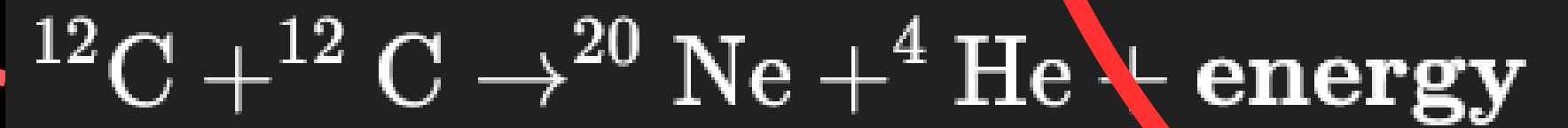
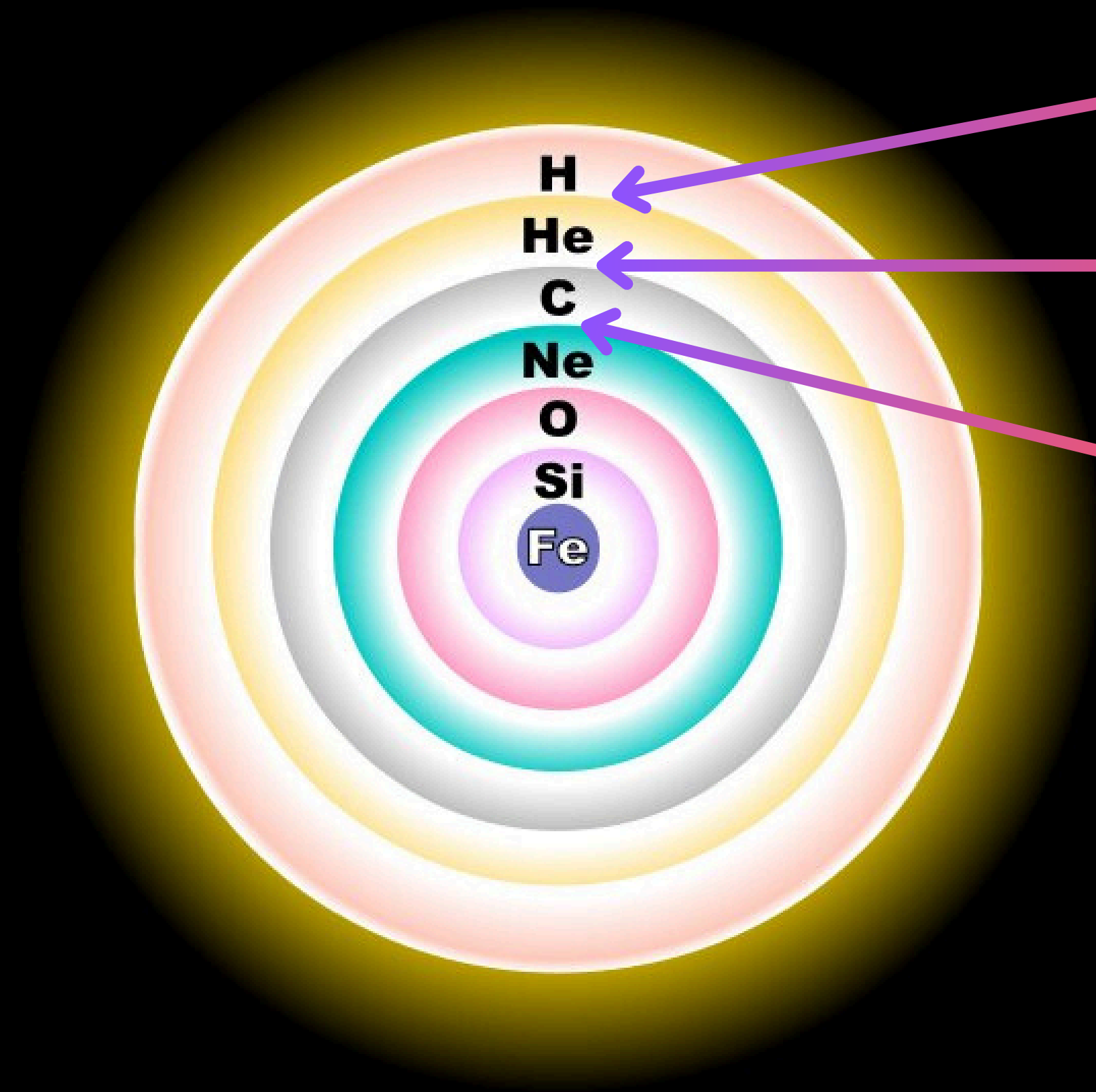
K



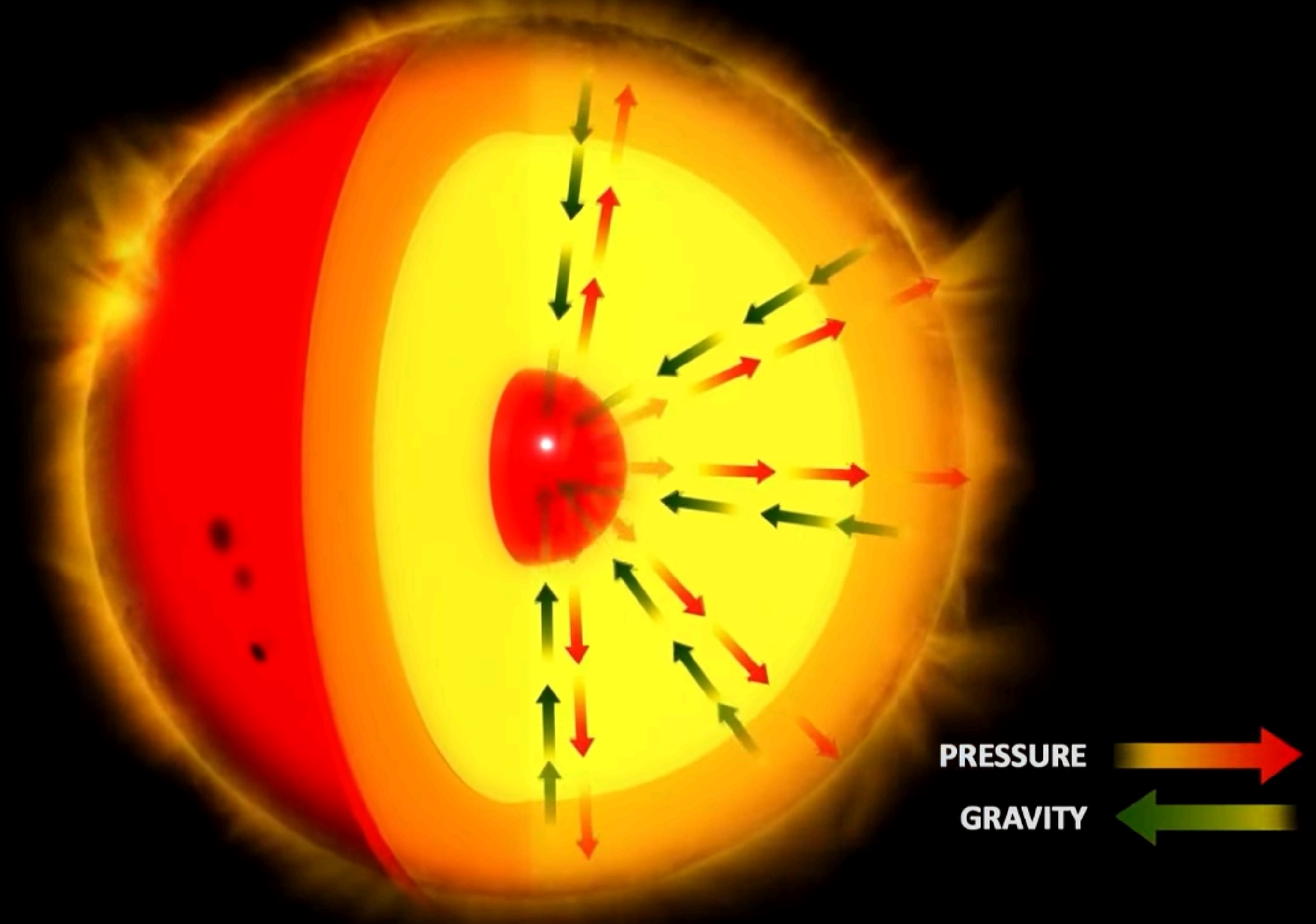
M

მცირე და საშუალო მასის  
ვარსკვლავები

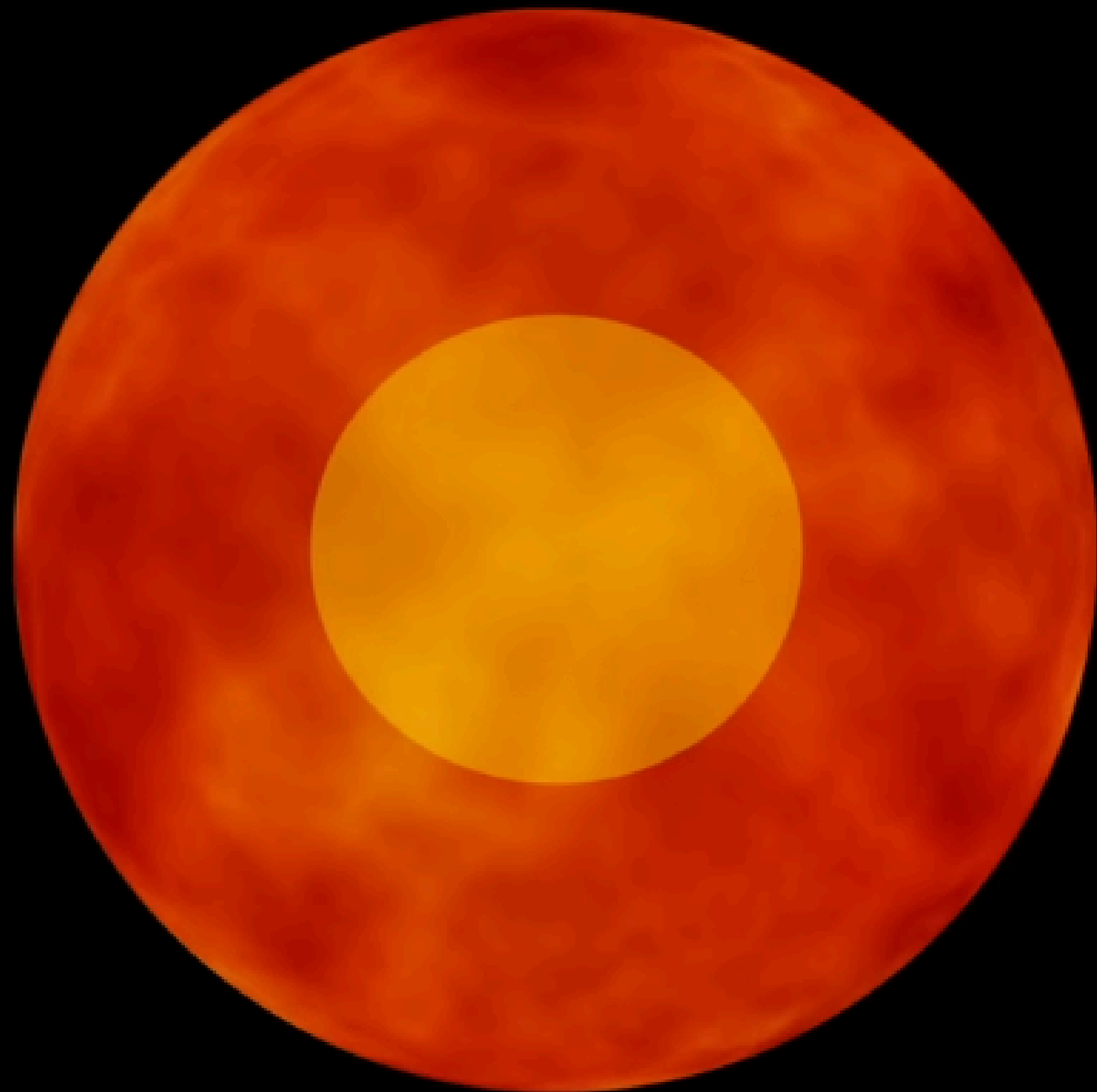




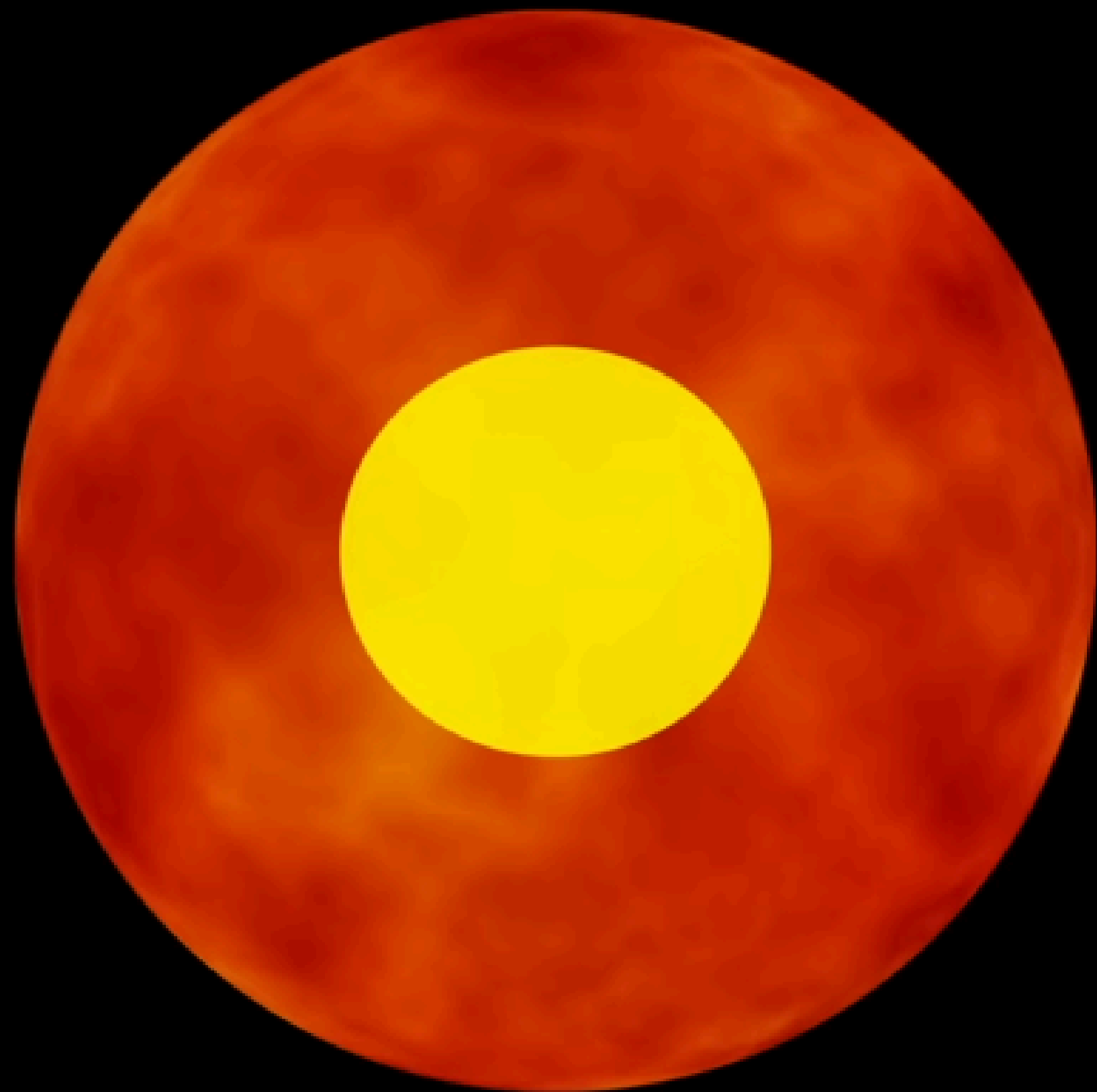






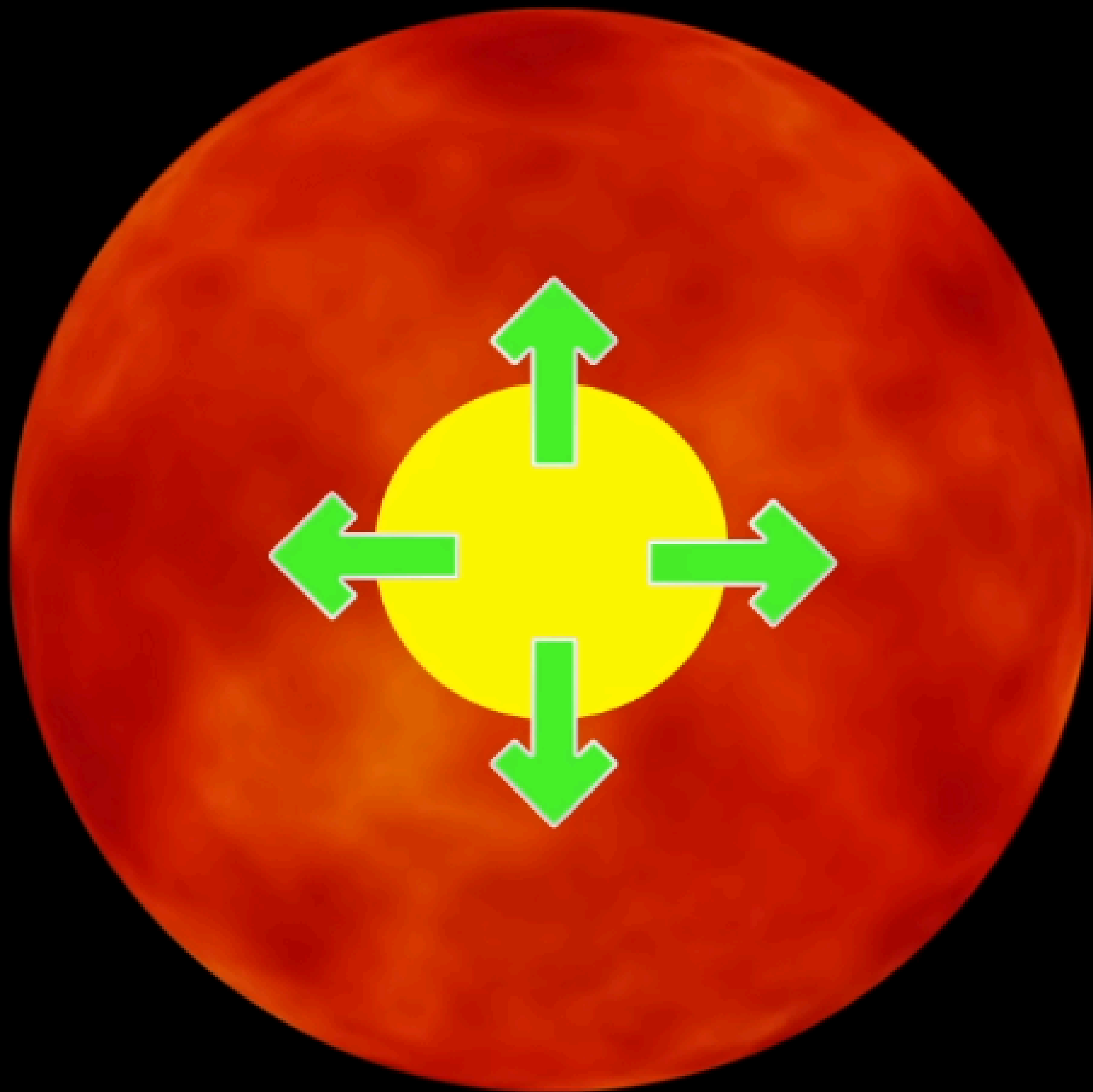






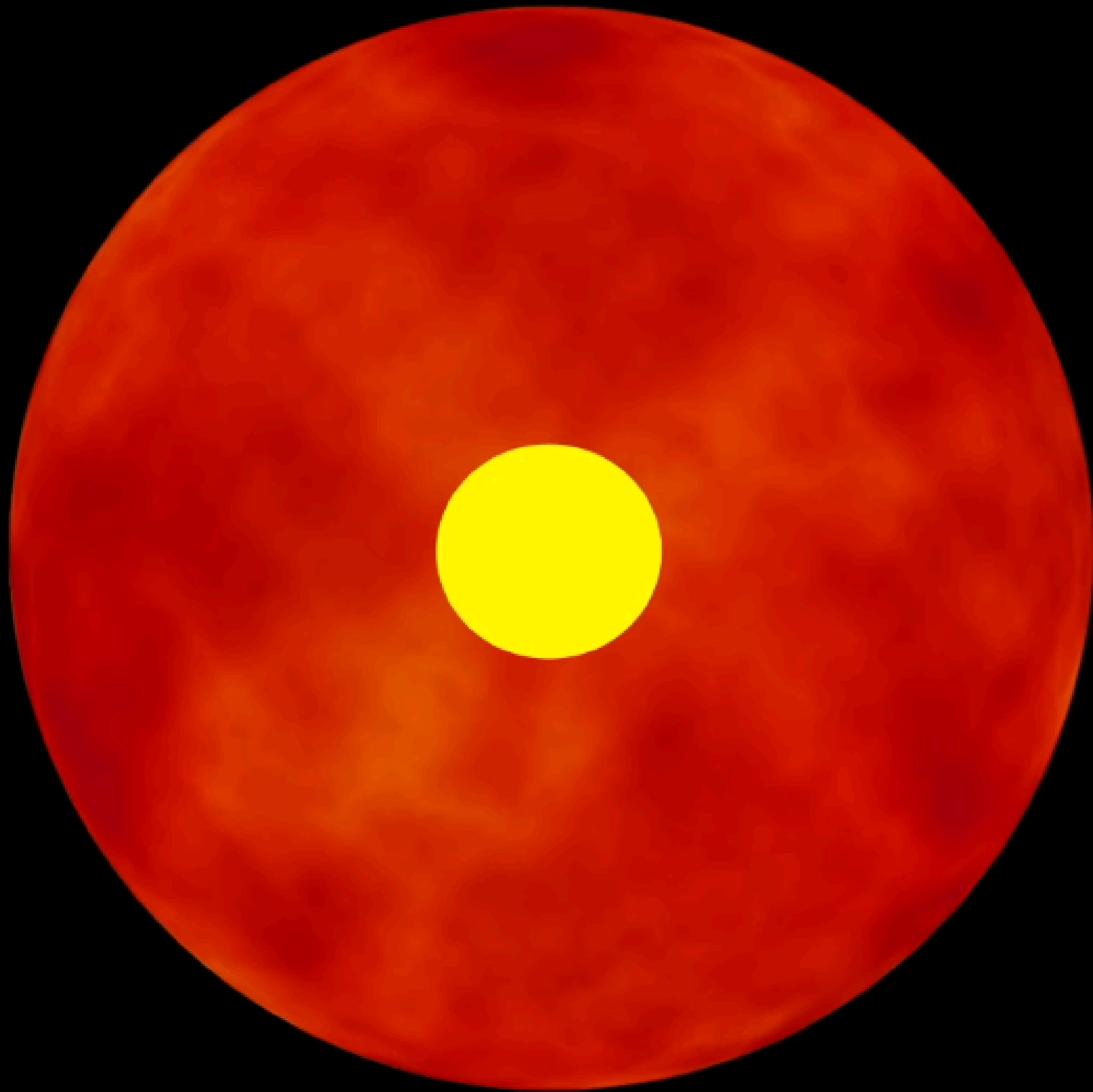


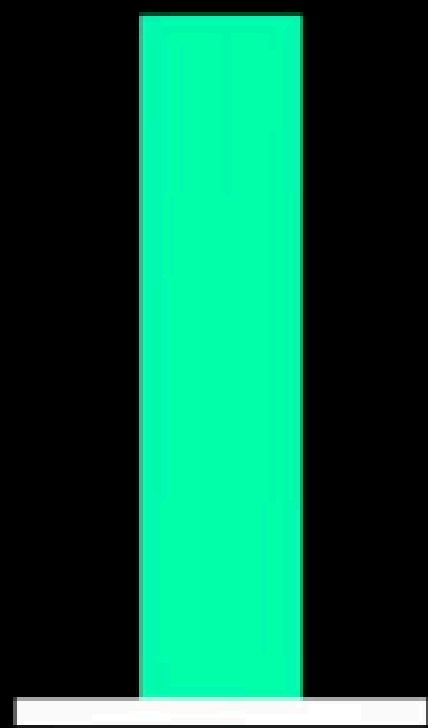
$\frac{H}{\hbar}$





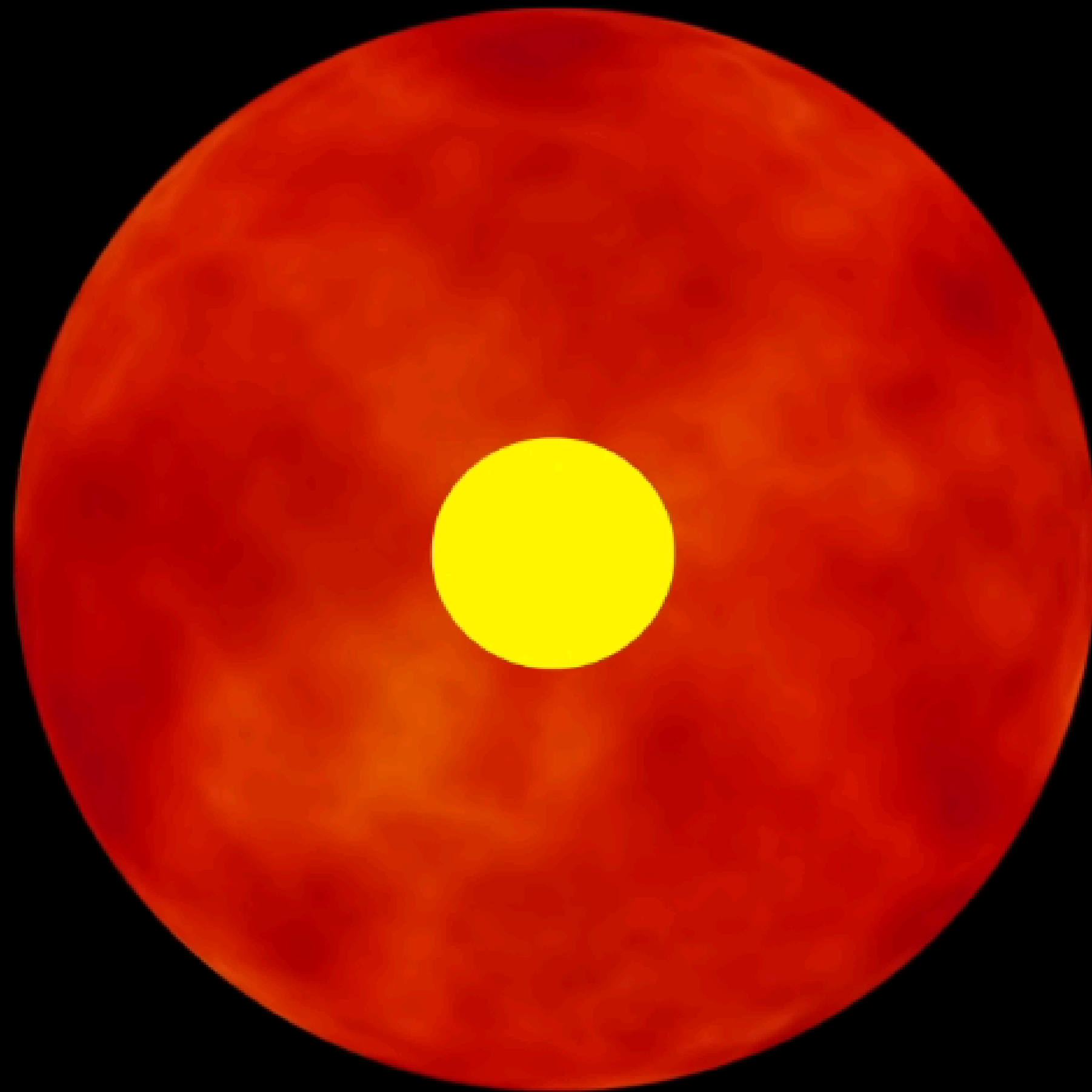
$\frac{1}{H}$





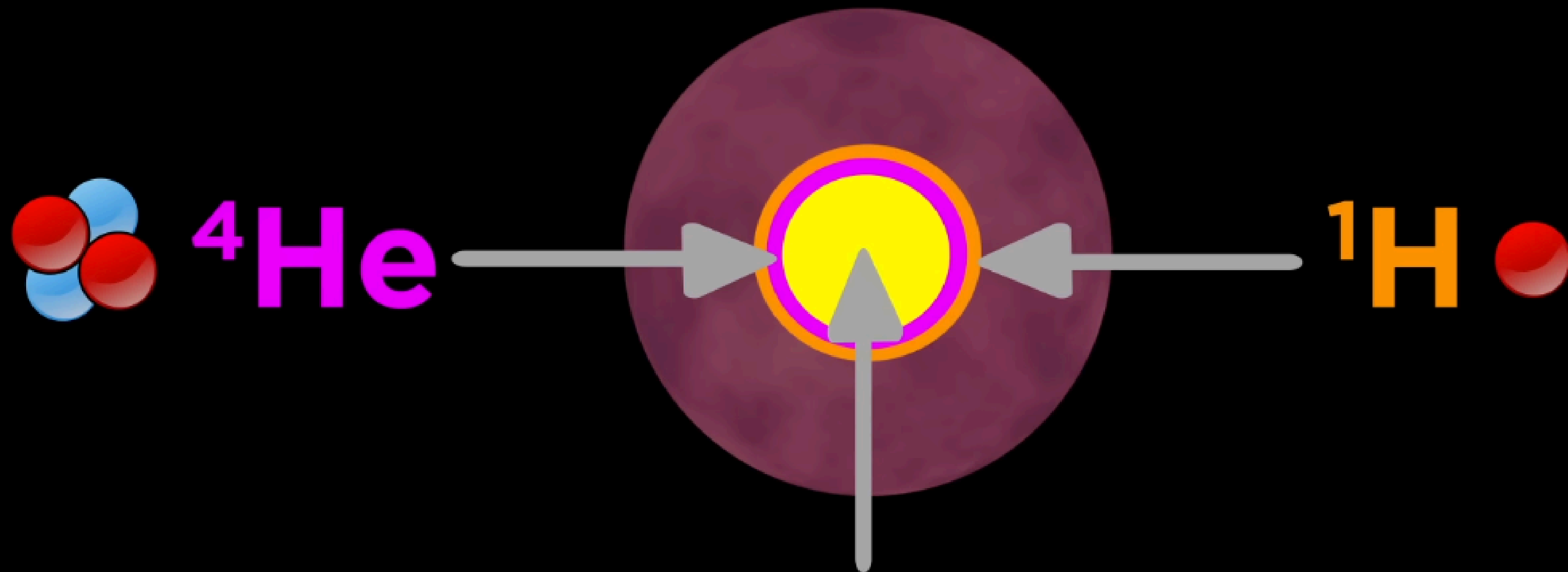
A diagram of a spectral line. It consists of a thick vertical cyan bar representing the emission line, which is positioned above a short horizontal white line representing the baseline. Below the white line is the chemical symbol 'He' in white text.

He





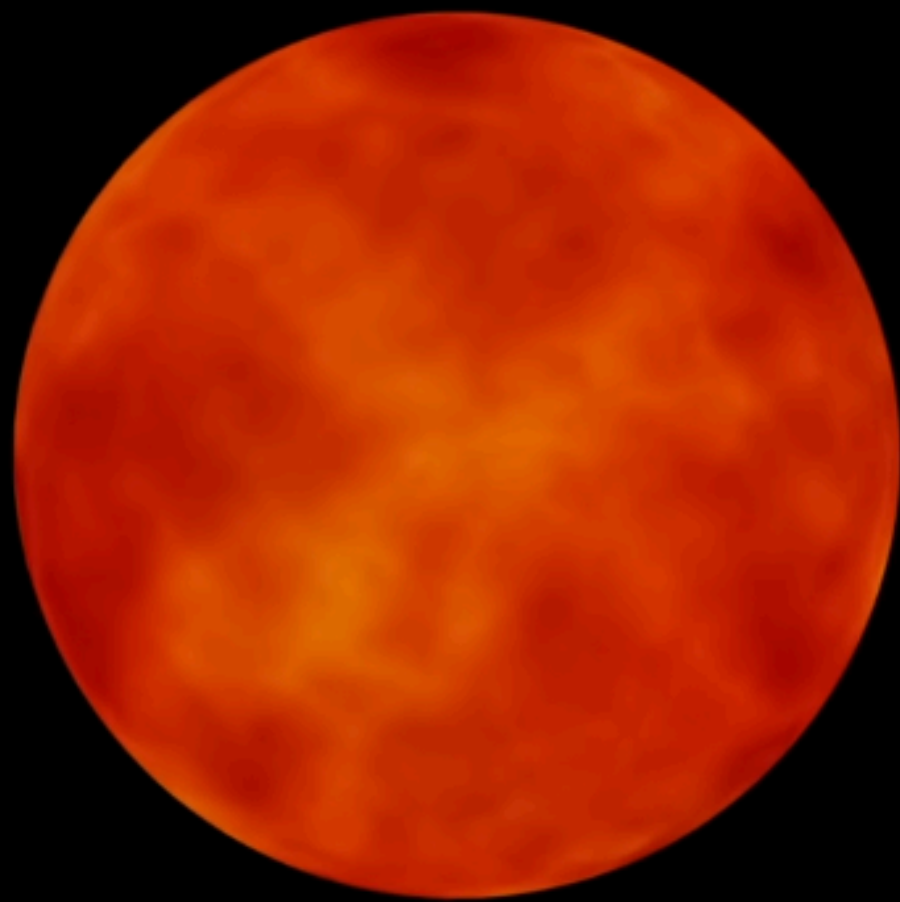


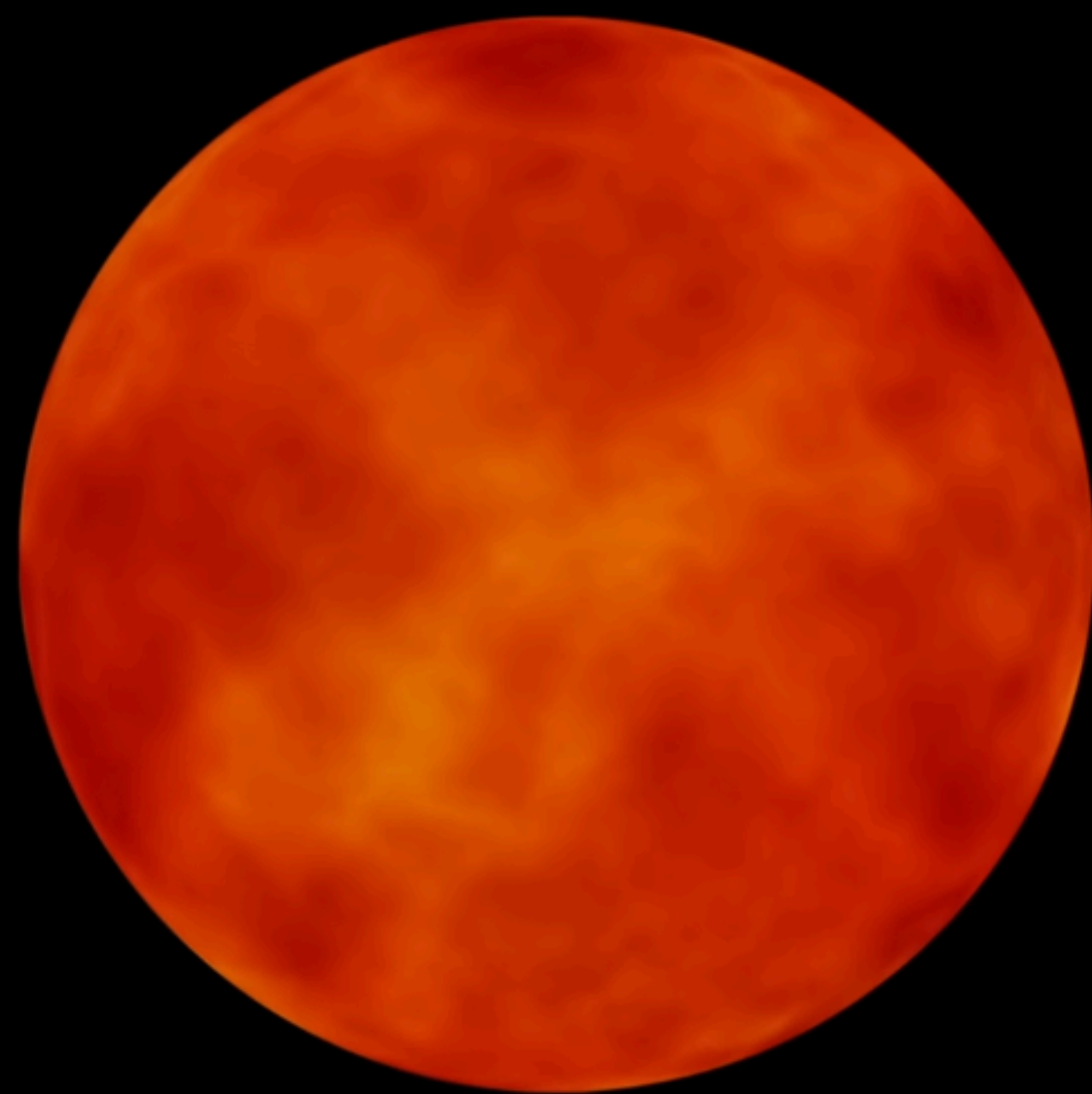


**mostly**  
 **$^{12}\text{C}$  and  $^{16}\text{O}$**

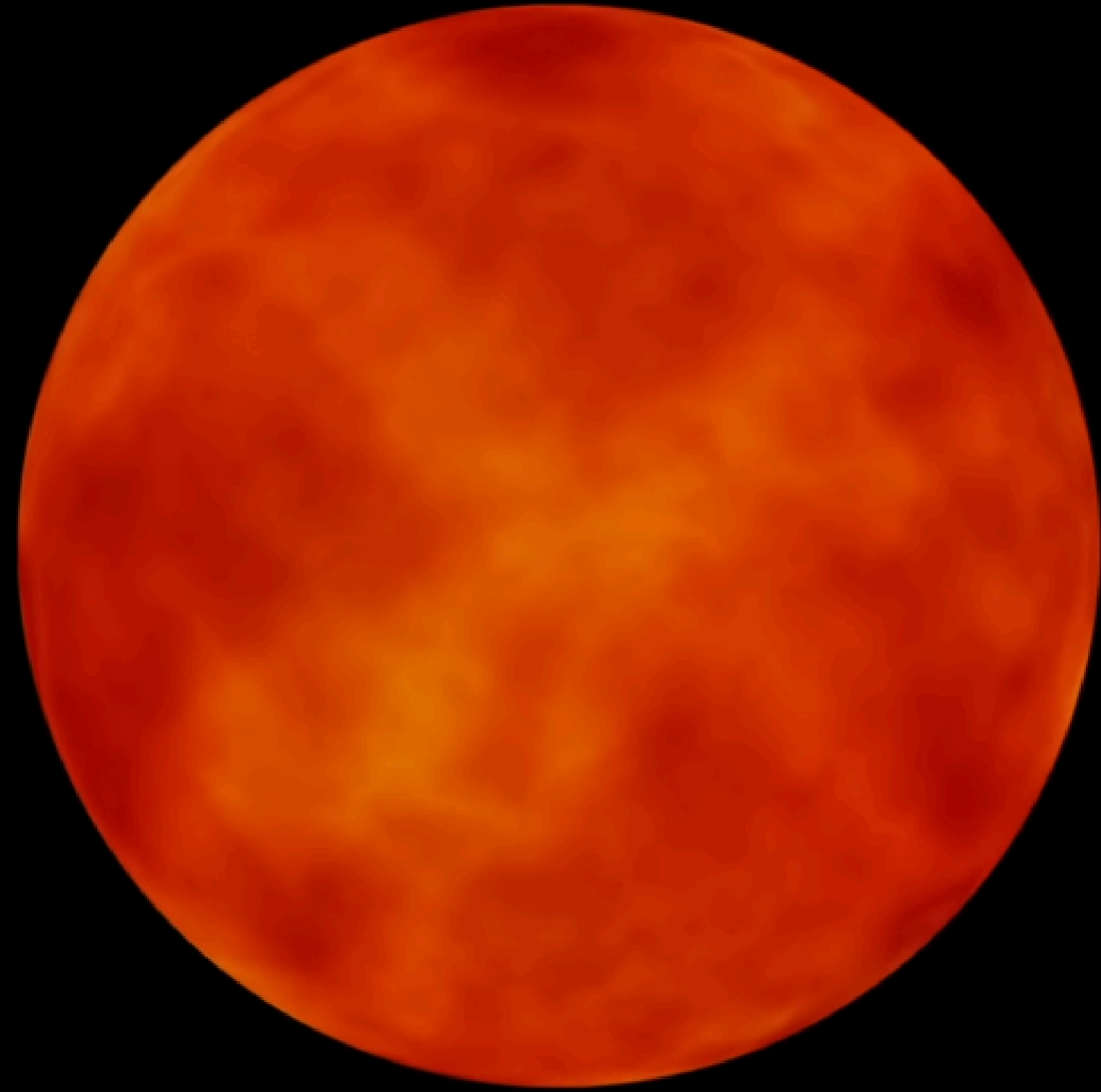


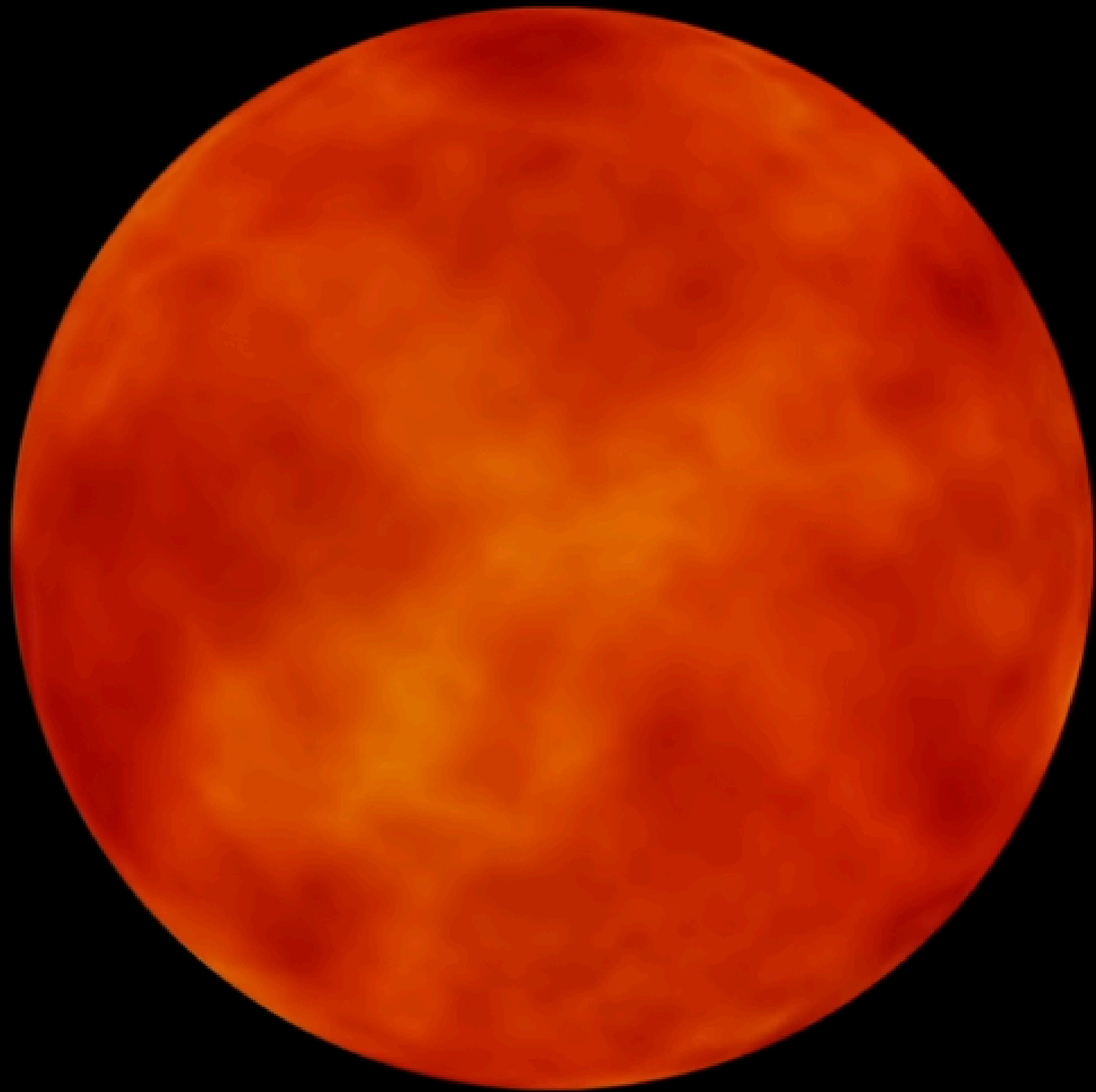
Two clusters of spheres representing Carbon and Oxygen nuclei. The left cluster consists of 12 spheres (6 red, 6 blue) representing a Carbon nucleus ( $^{12}\text{C}$ ). The right cluster consists of 16 spheres (8 red, 8 blue) representing an Oxygen nucleus ( $^{16}\text{O}$ ).

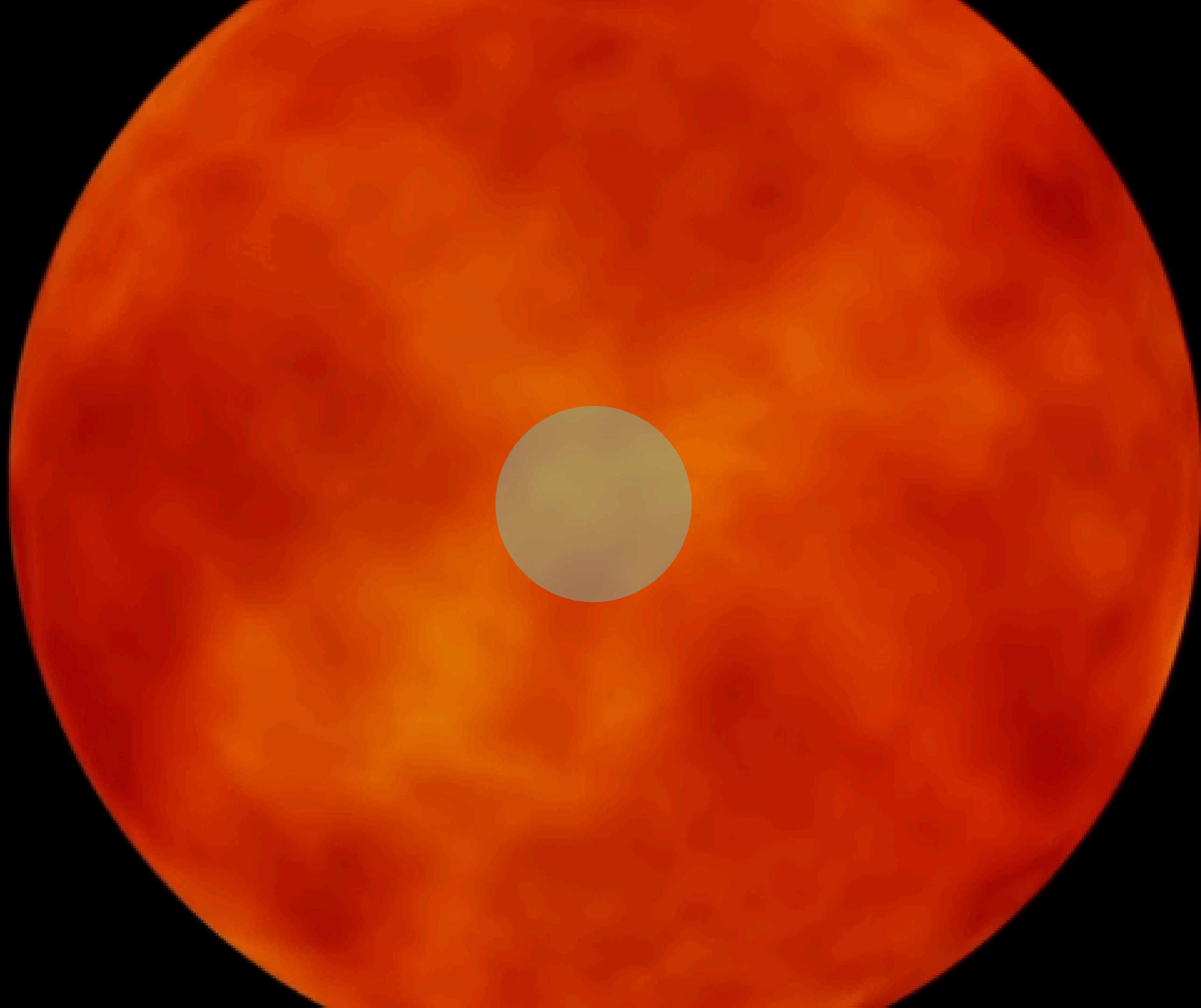




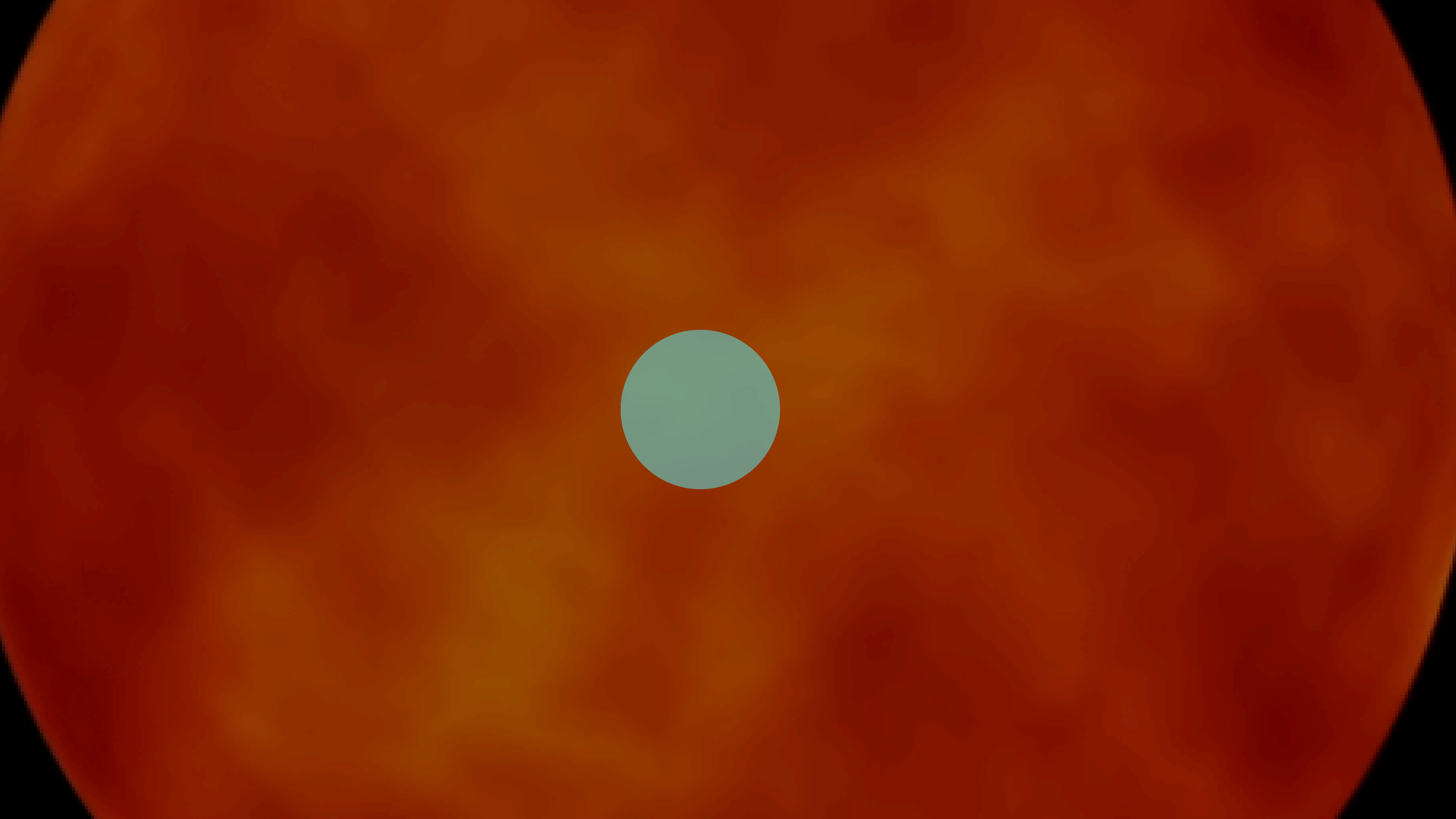




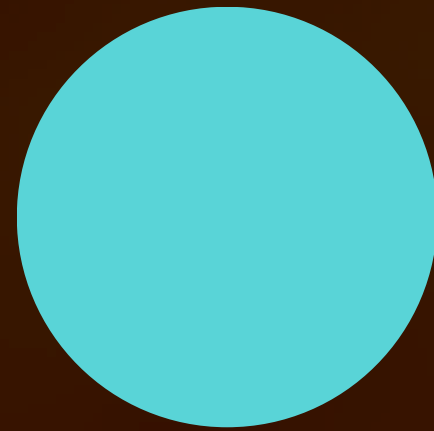






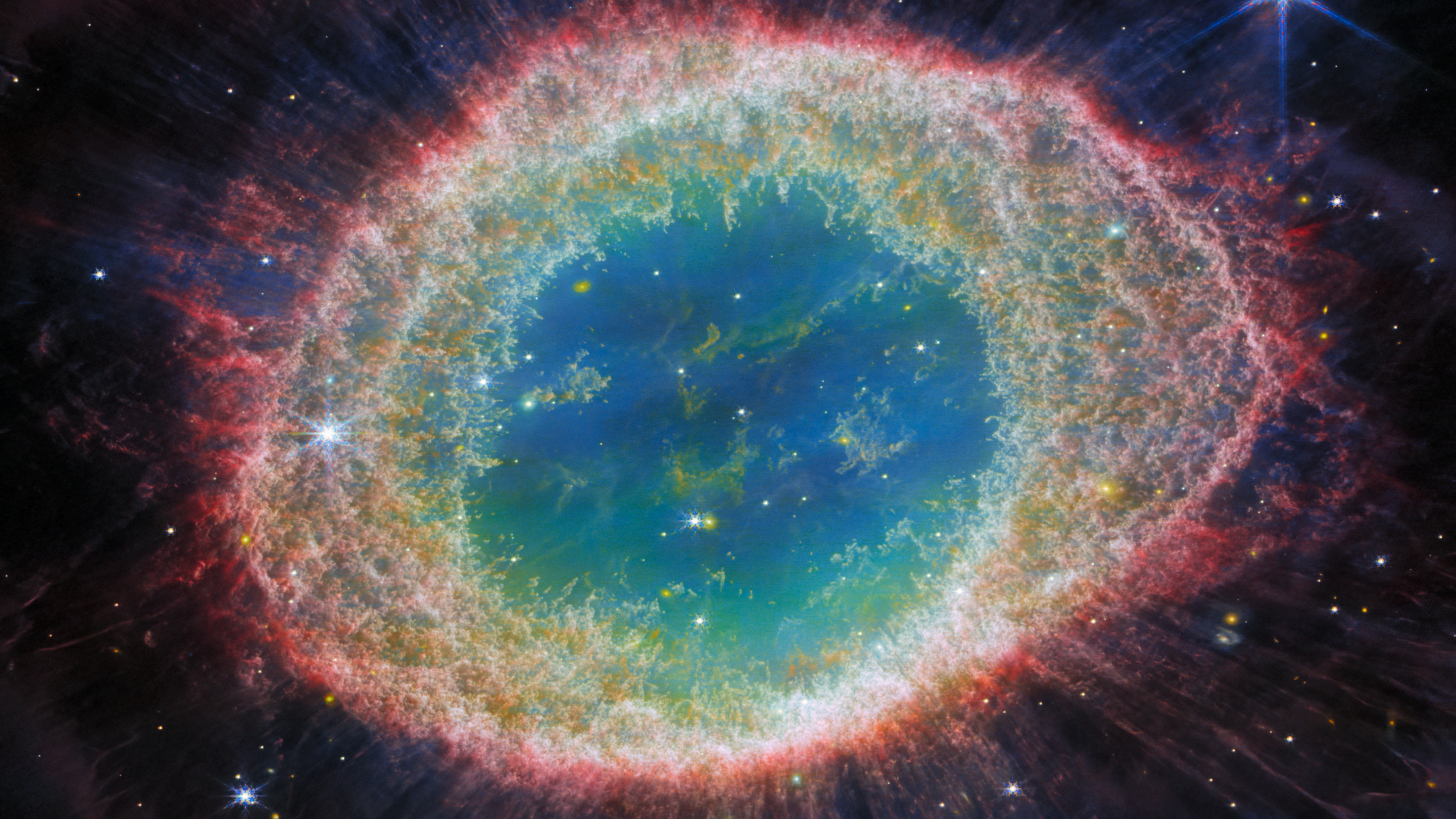


პლანეტარული ნებულა



თეთრი ჯუჯა

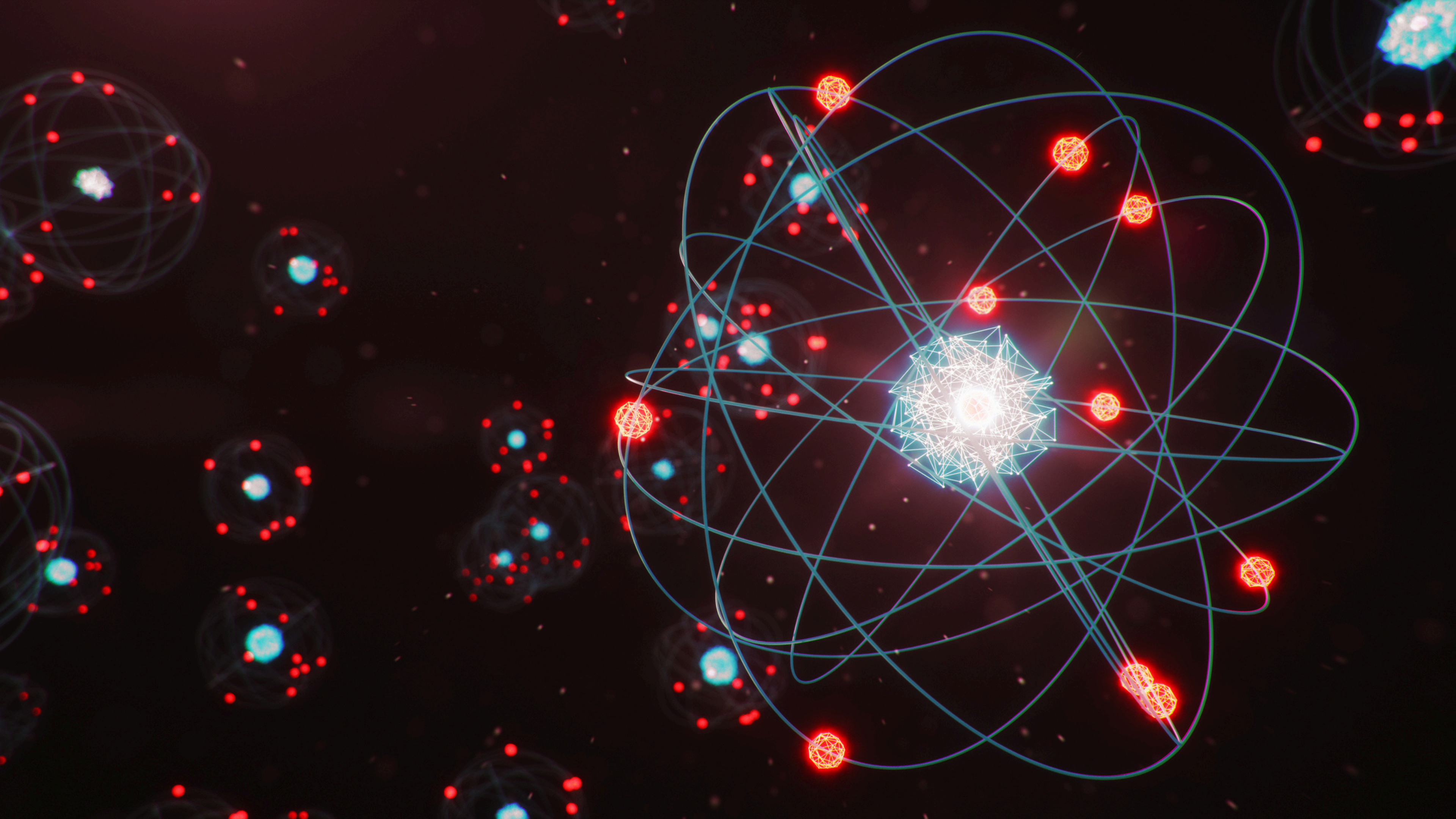




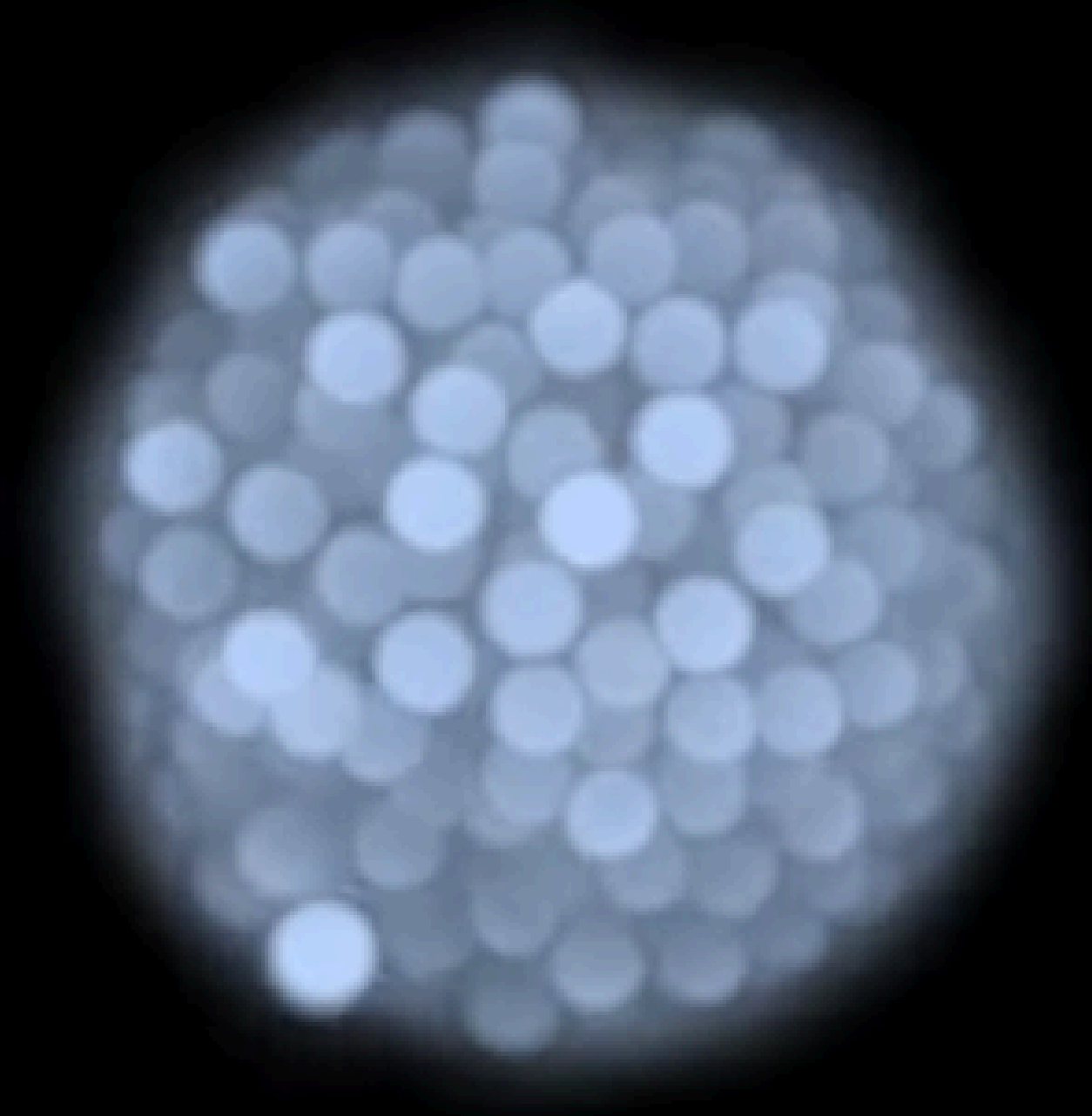




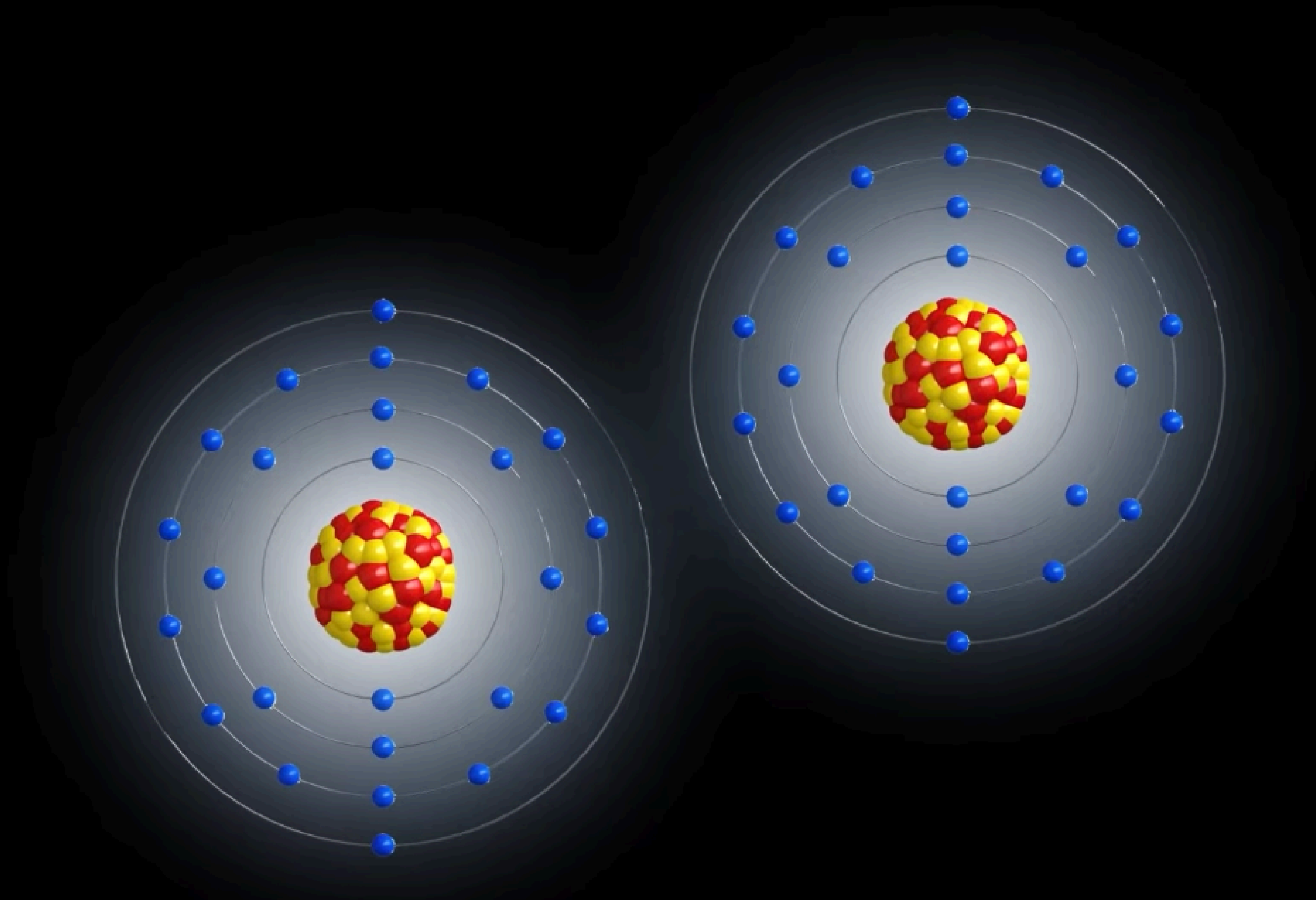








# ადარ გვაქვს თავისუფალი სივრცე





გადაგვარებული  
ელექტრონები

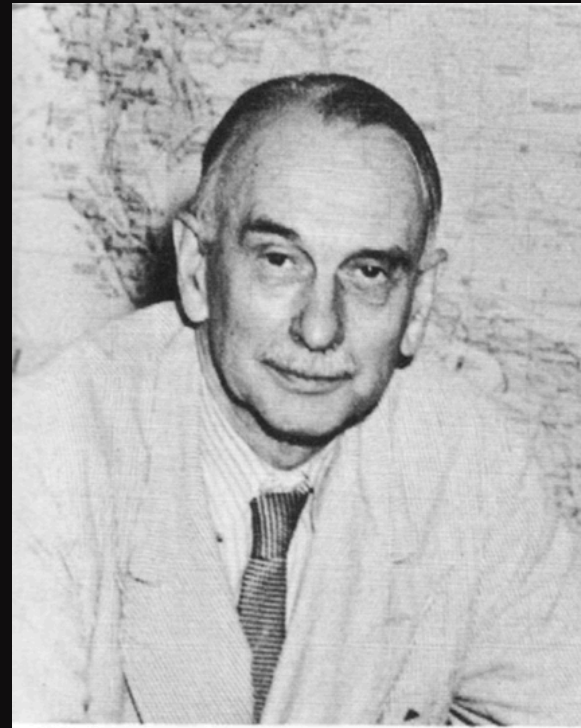
Gravity

სუბრამანიან  
ჩანდრასეხარი



ჩანდრასეხარის  
ზღვარი

1.4  $M_{\odot}$



რიჩარდ ტოლმანი

T



რობერტ  
ოპენჰაიმერი

O

TOV ზღვარი

3  $M_{\odot}$



ჯორჯ უოლკოფი

V



ჩანდრასეხარის  
ზღვარი

TOV ზღვარი

1.4  $M_{\odot}$

3  $M_{\odot}$



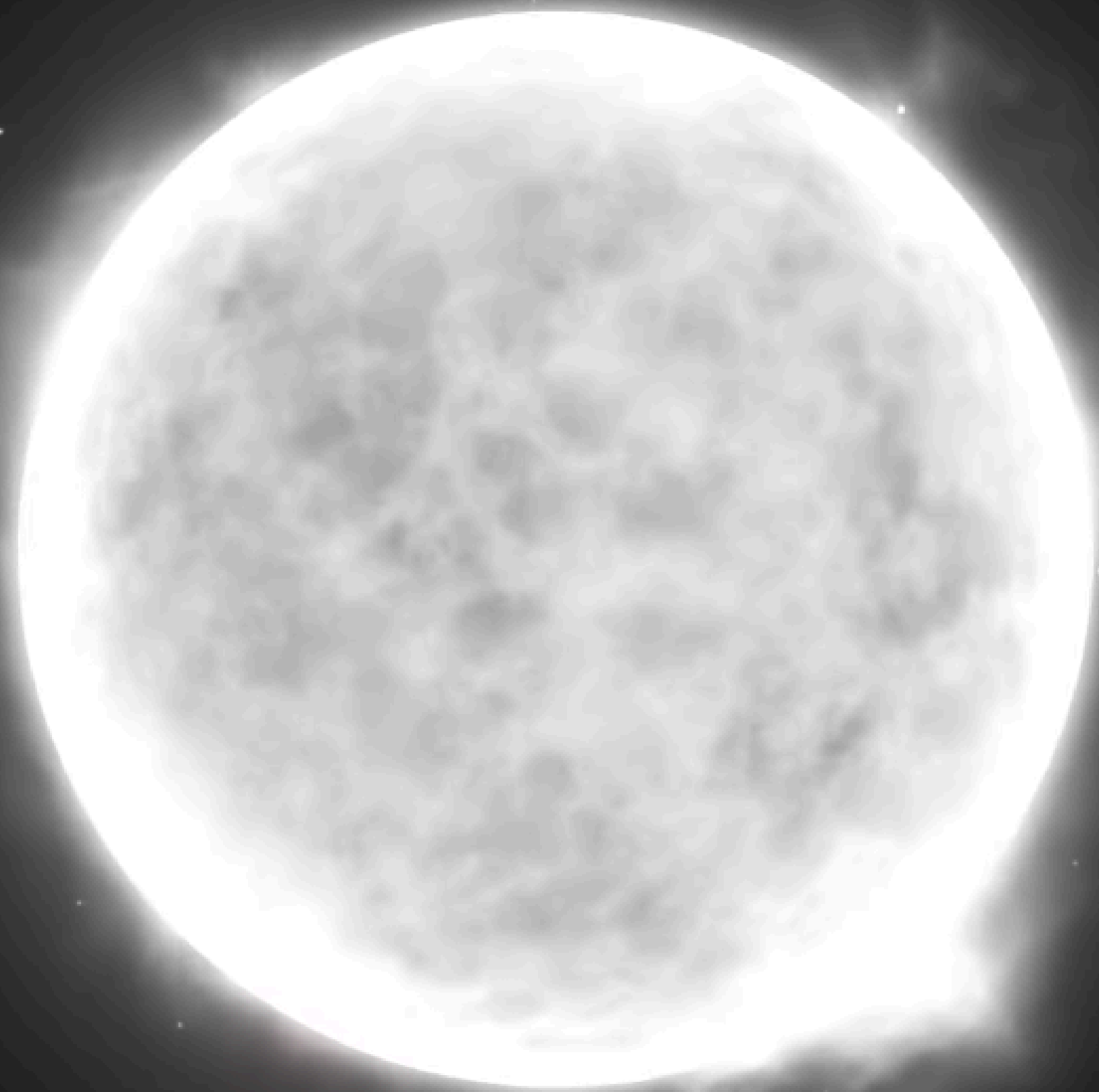
თეთრი ჯუჯა



ნეიტრონული ვარსკვლავი



შავი ხვრელი



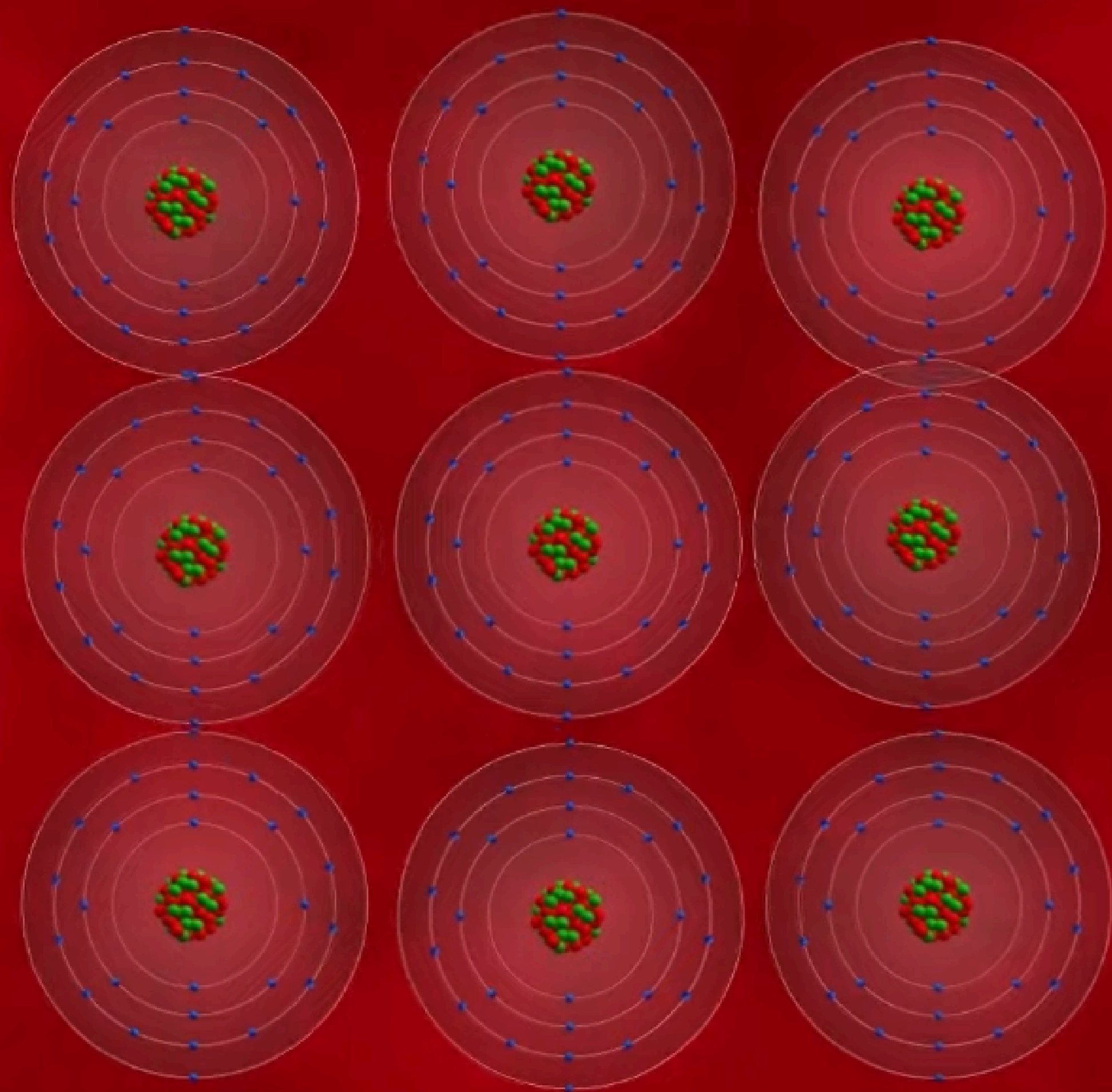
# შეკუმშვას განაგრძობს



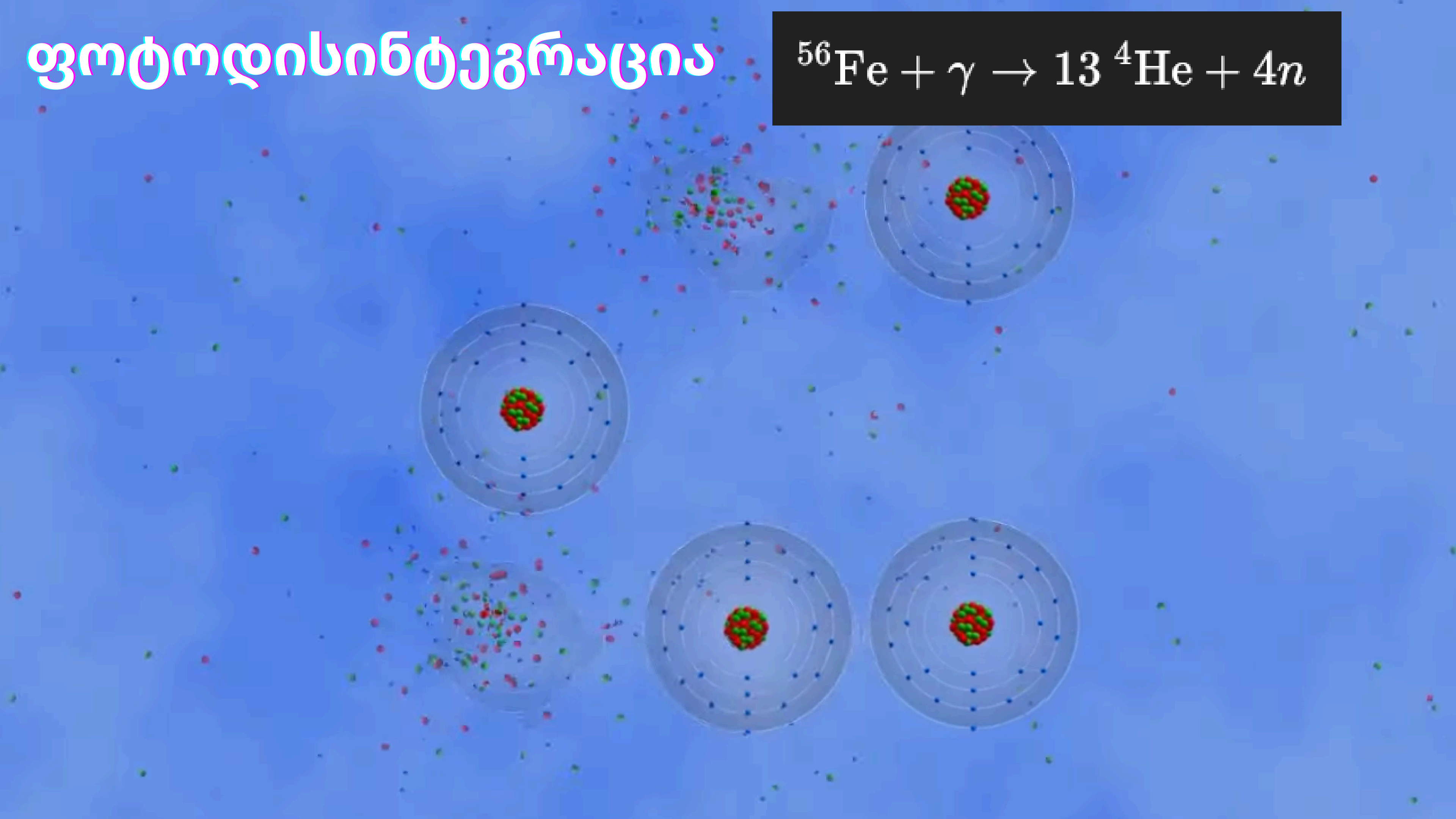
ტემპერატურა  
აღწევს 5 მილიარდ  
გრადუსს



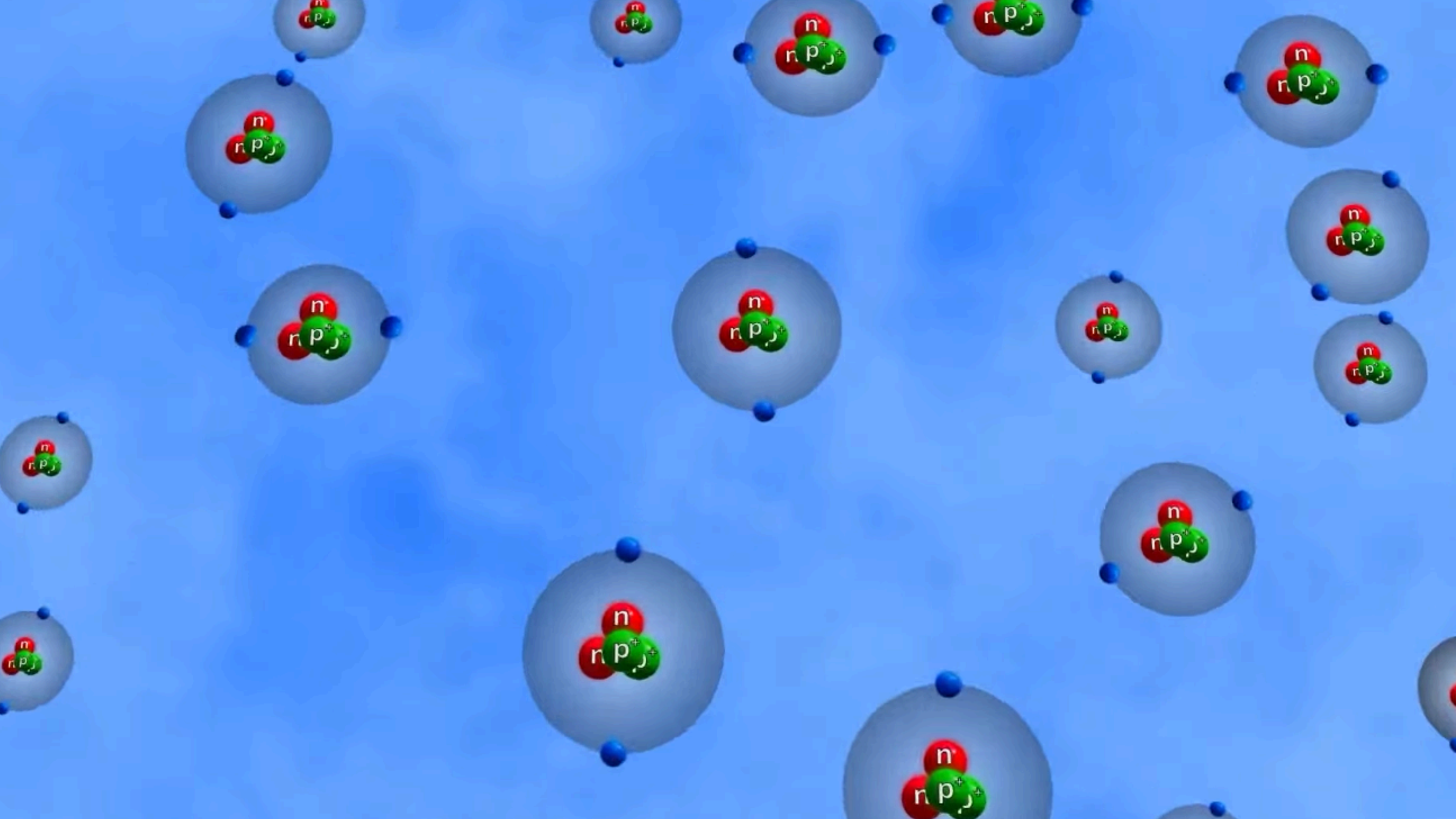




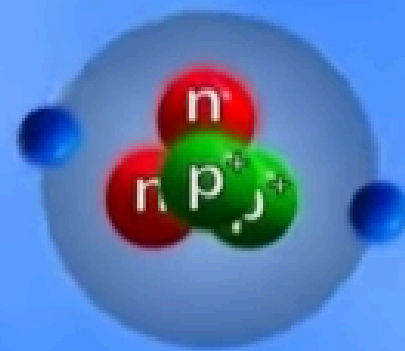
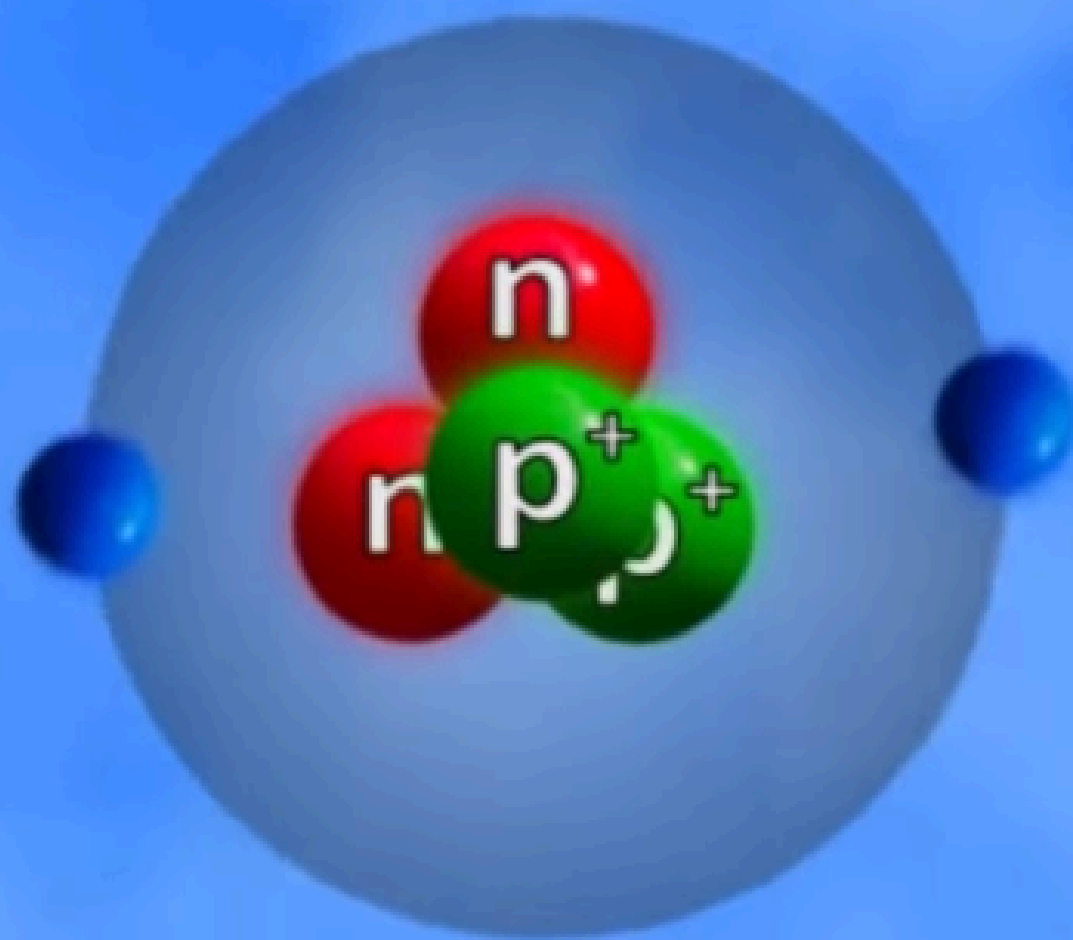
# ფოტონისინტეგრაცია

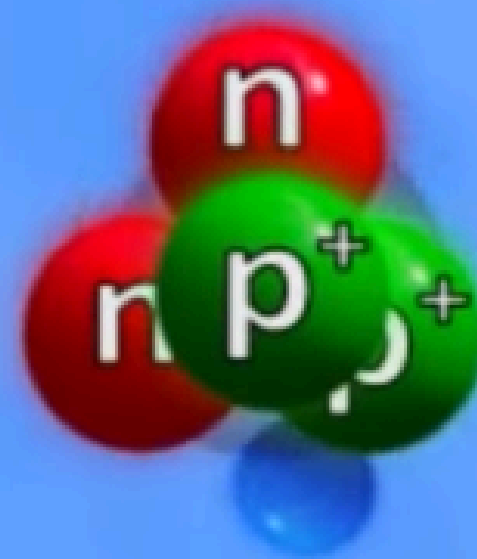




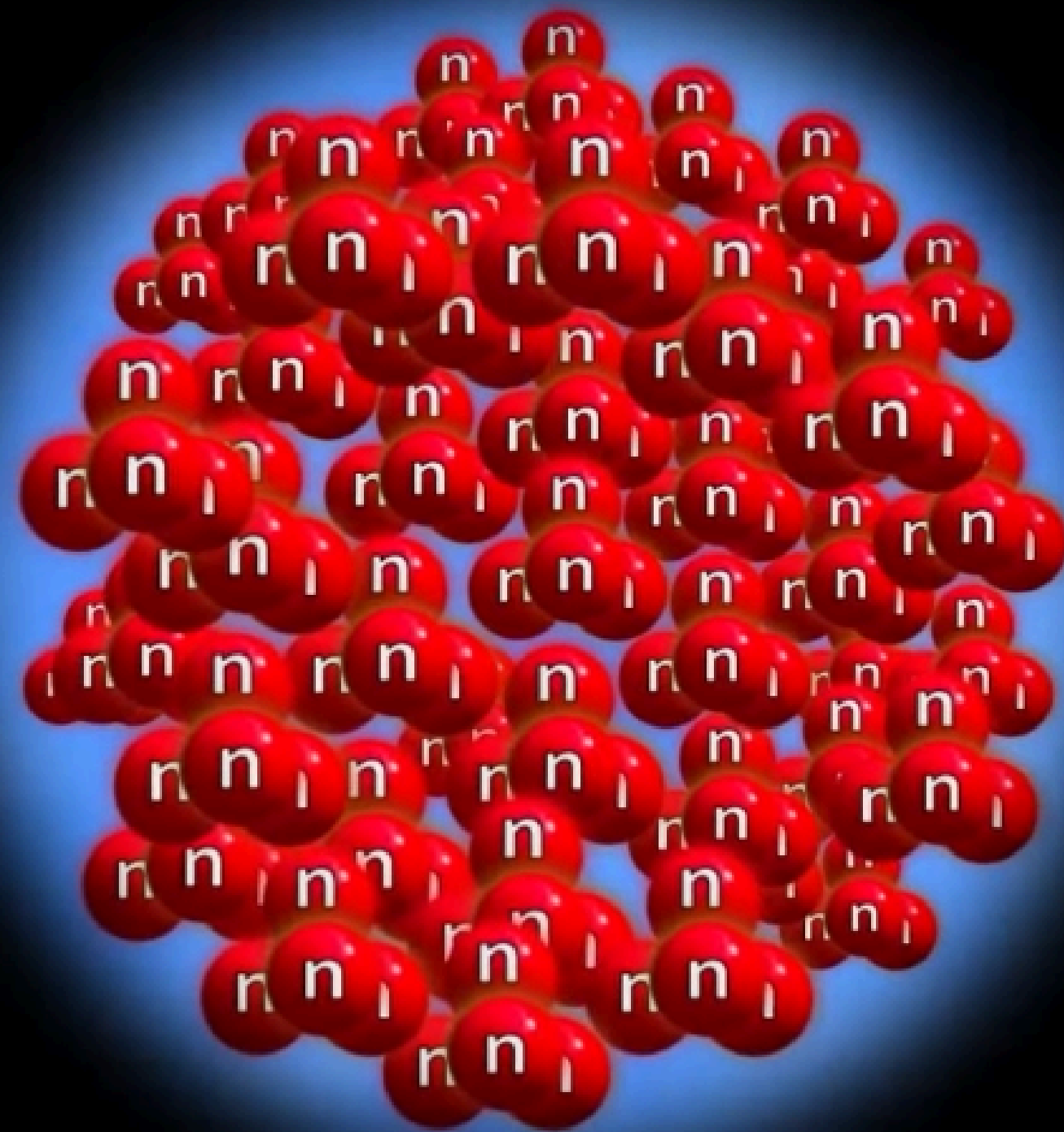


# ელექტრონის ჩატერა







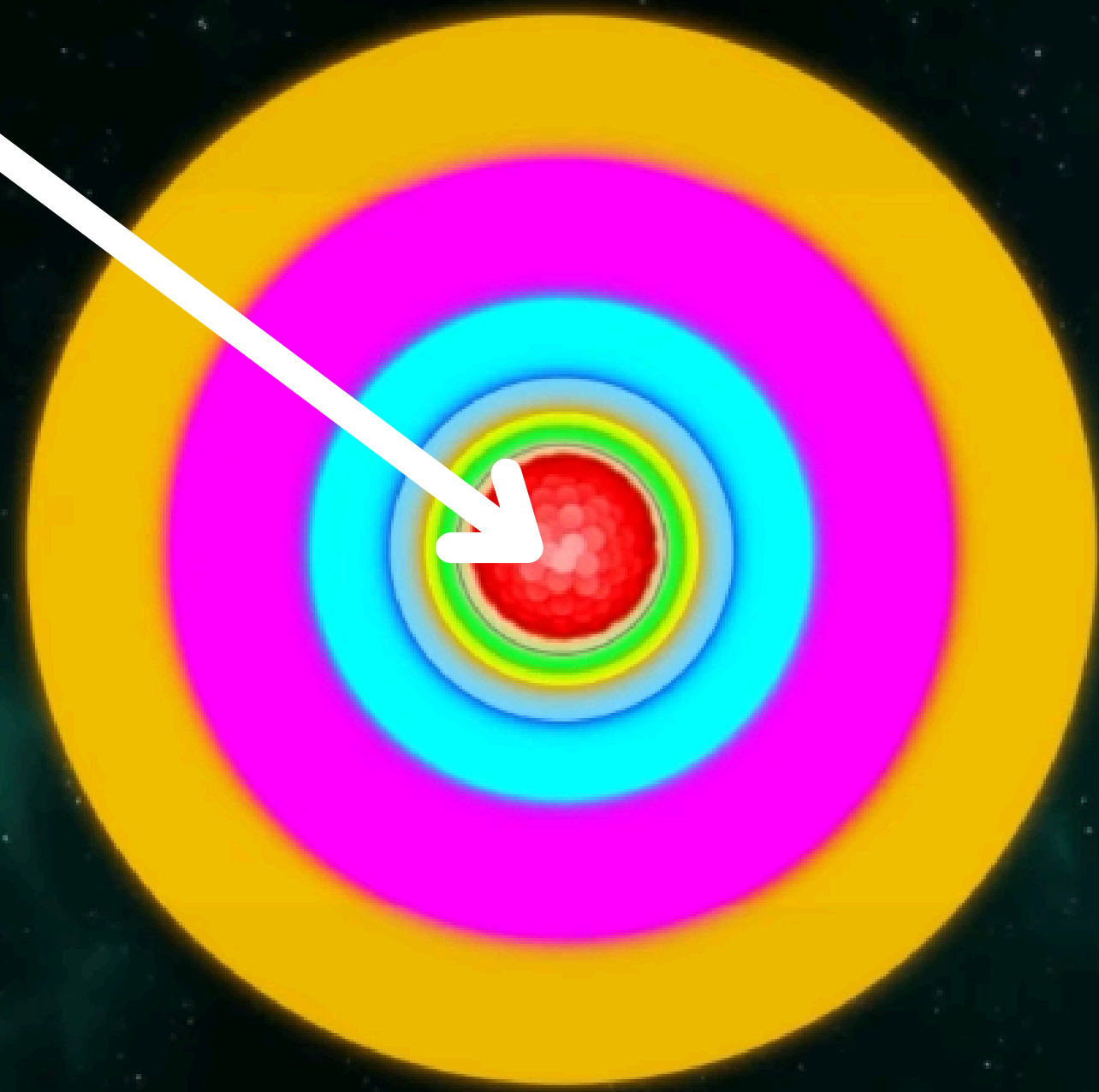


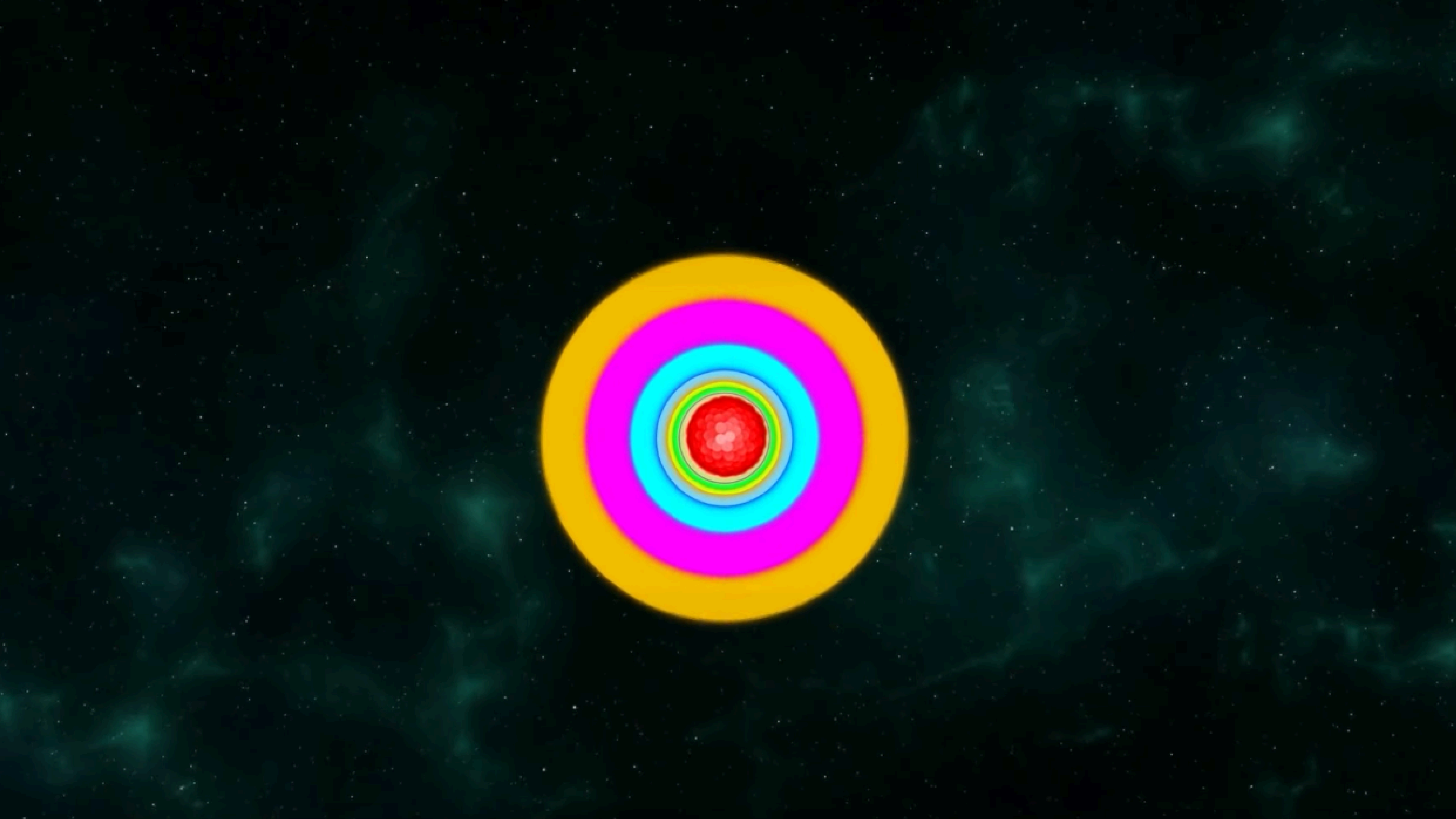
10–20 კმ ( $10^{14}$  ჯერ უფრო მკვერივი)

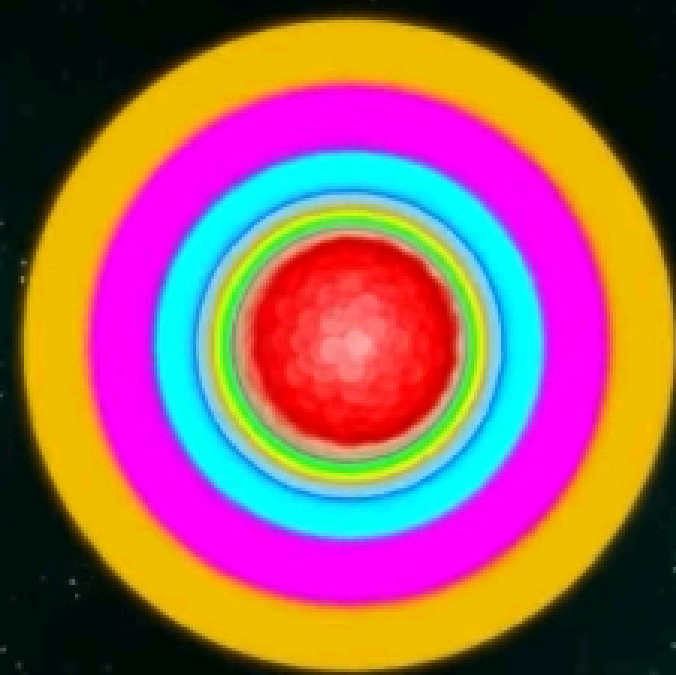




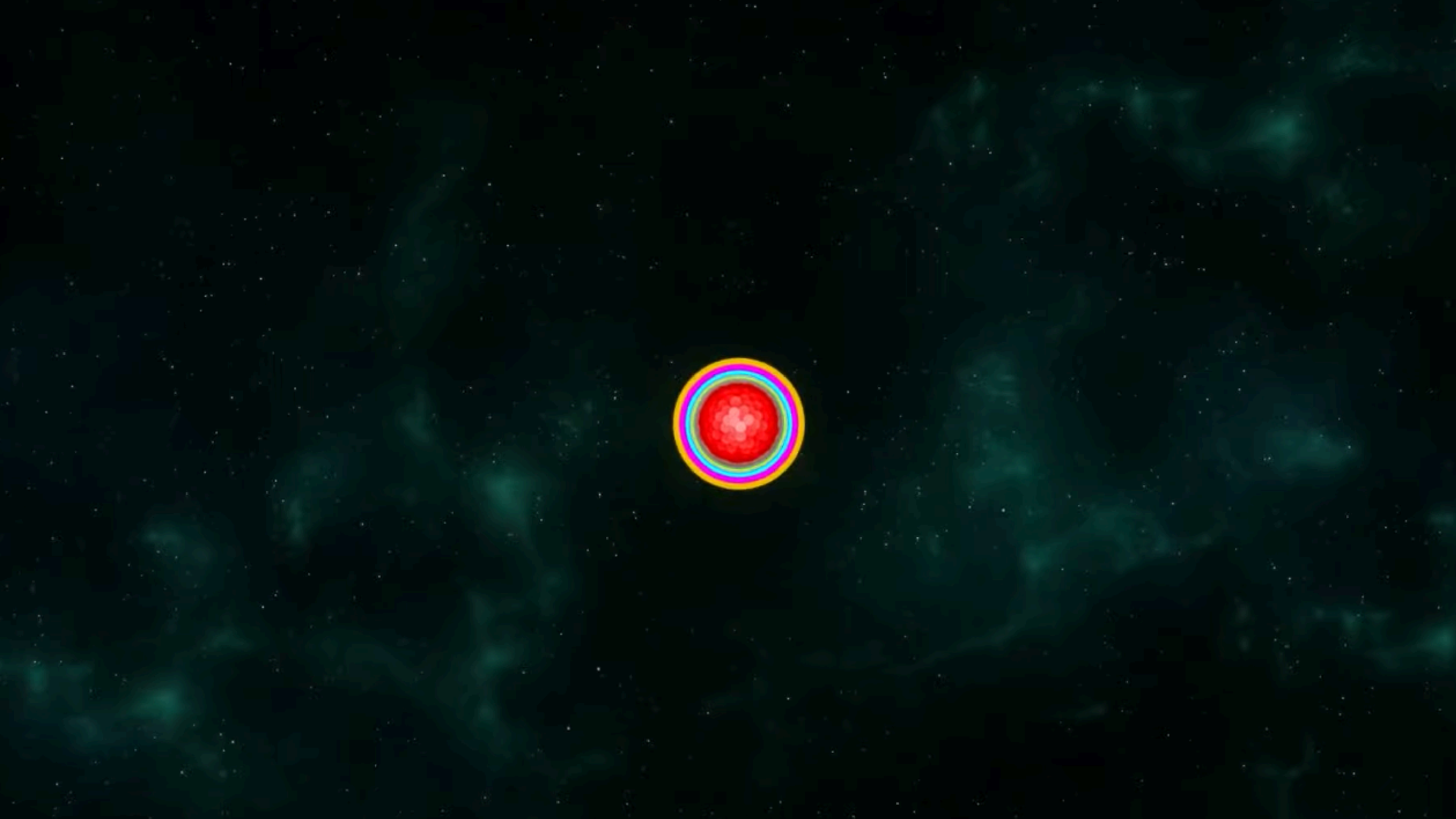
გადაგვარებული  
ნეიტრონები









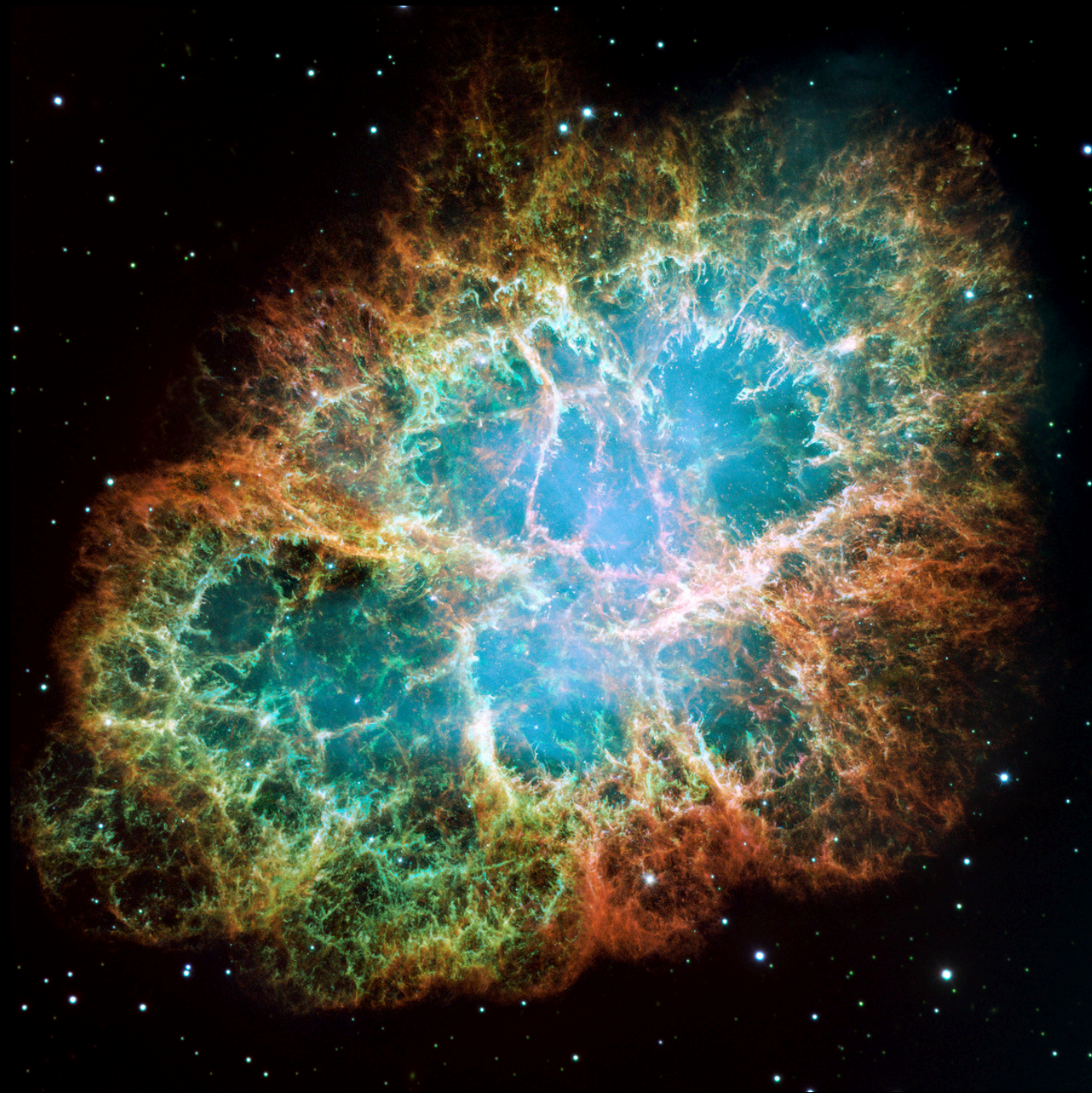








# სუპერნოვა (ზეახადი ვარსკვლავი)

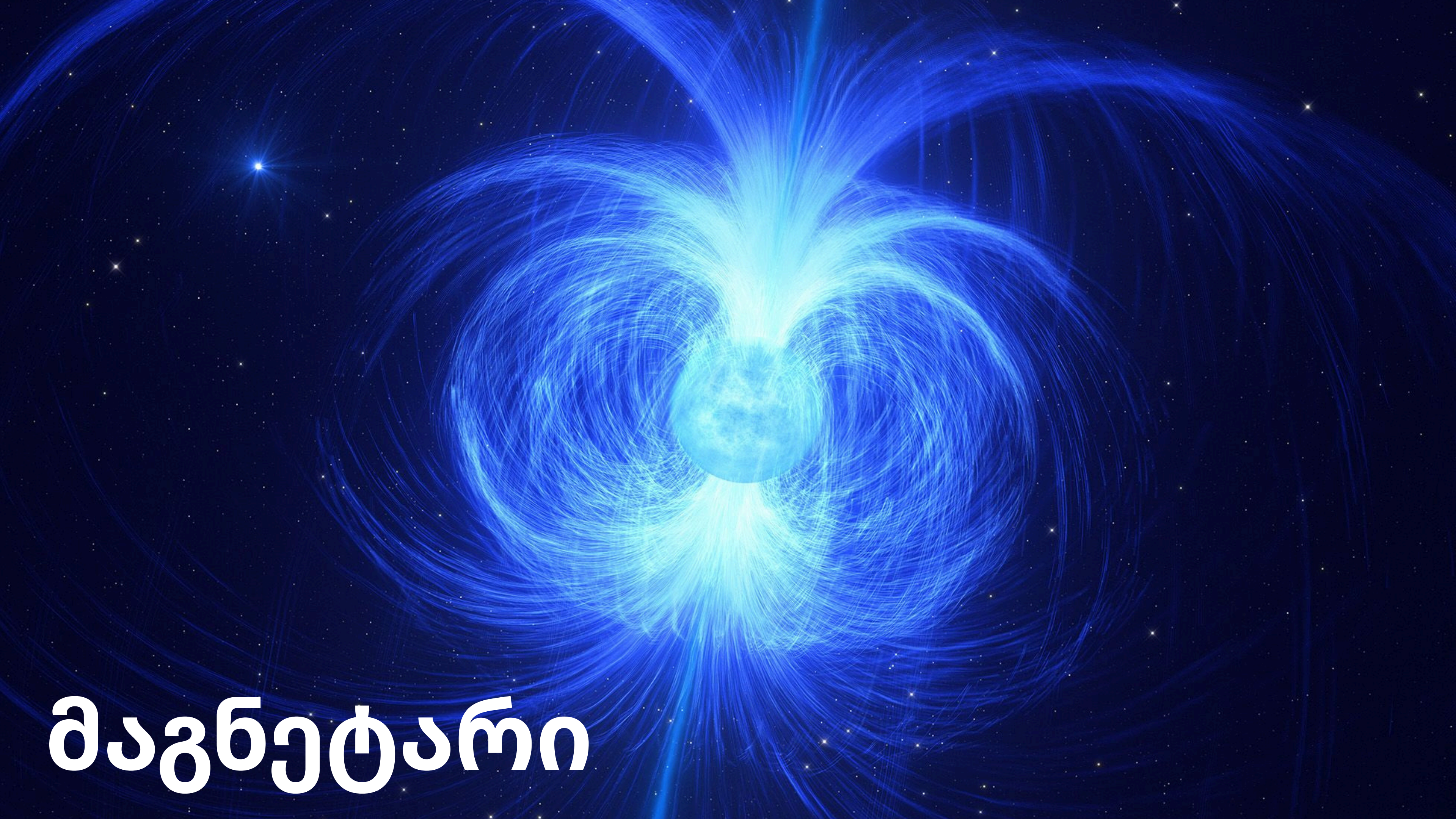




# პუდსარი

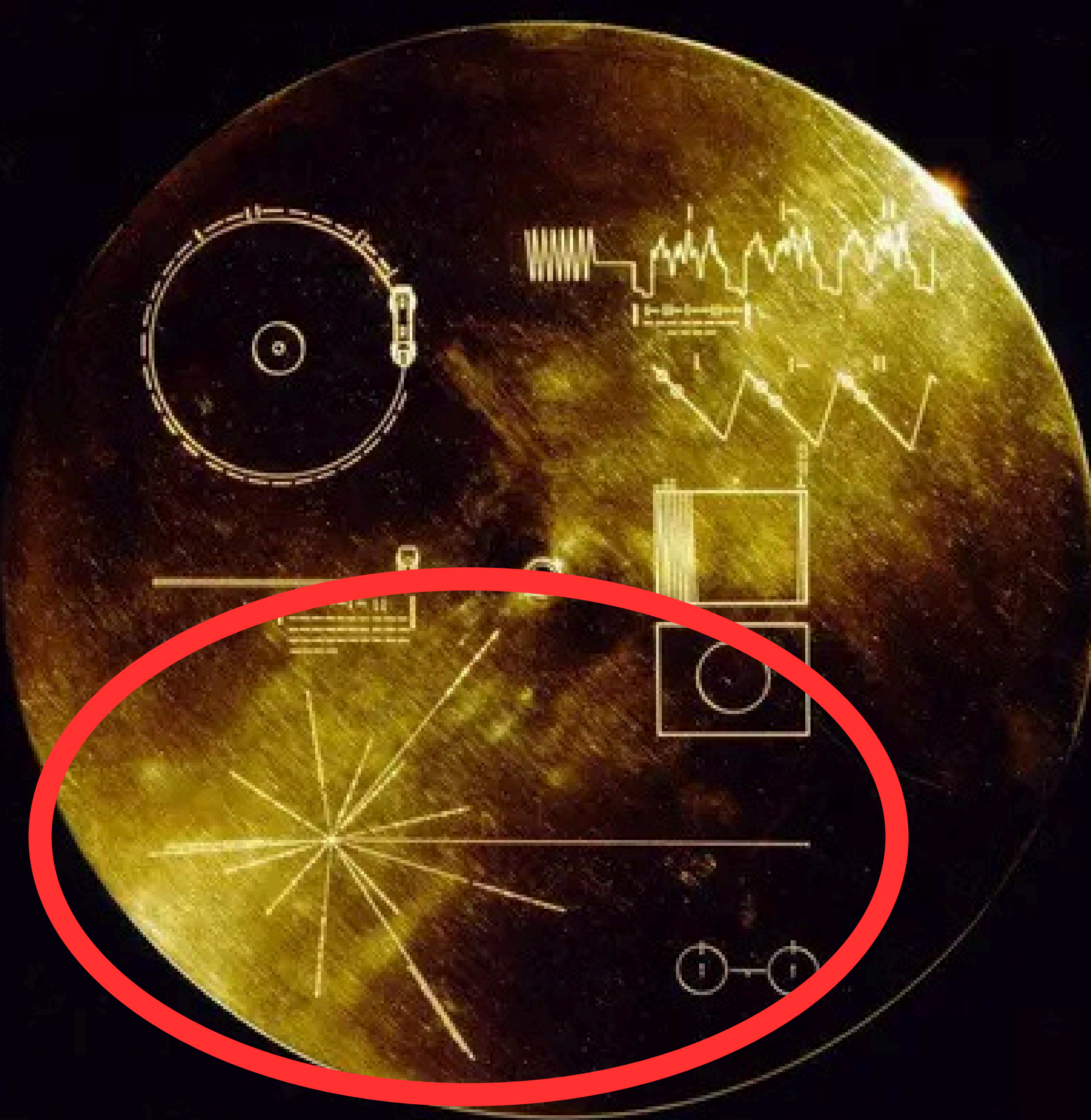






მაგნეტარი





ჩანდრასეხარის  
ზღვარი

TOV ზღვარი

1.4  $M_{\odot}$

3  $M_{\odot}$



თეთრი ჯუჯა

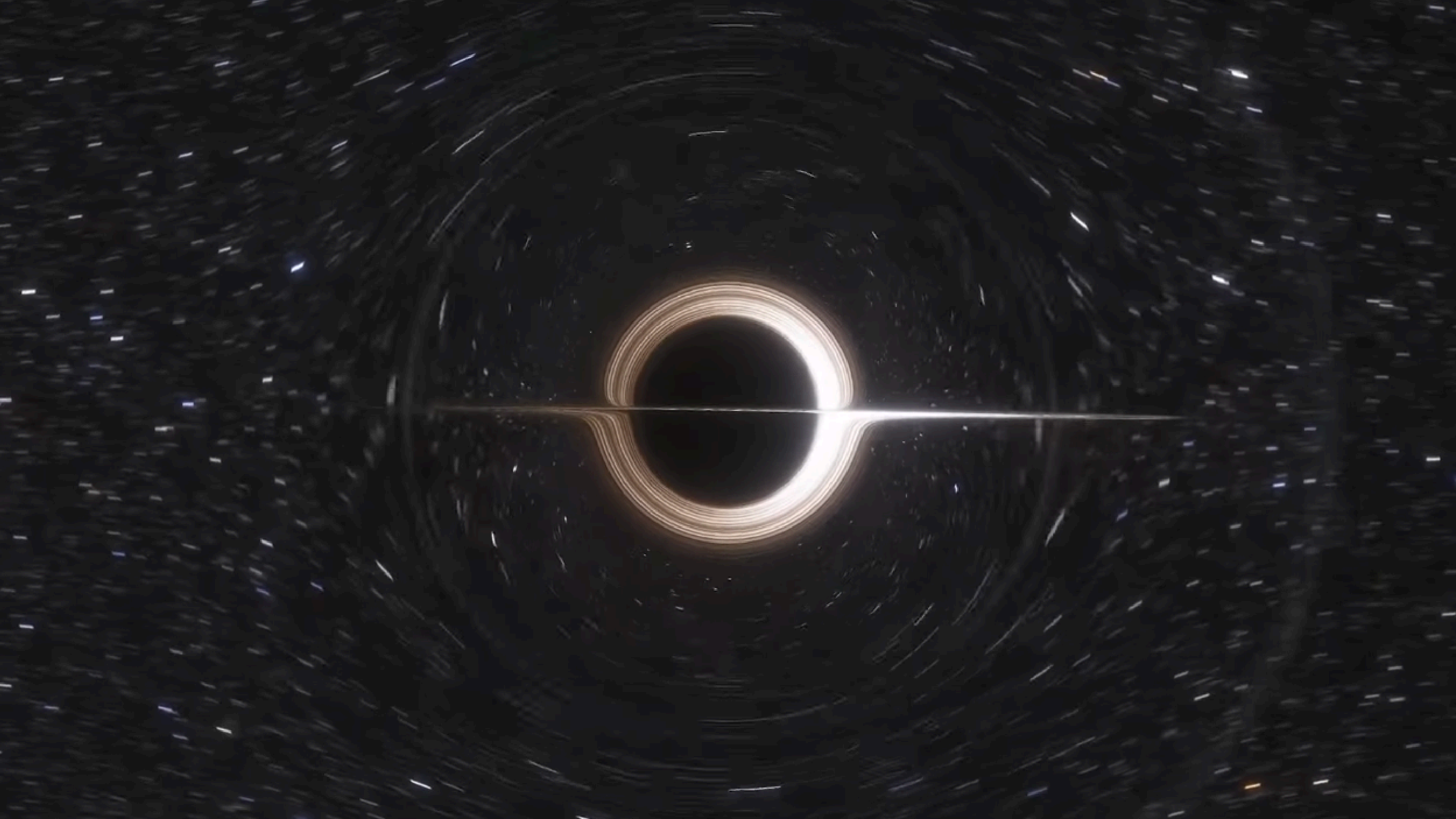


ნეიტრონული ვარსკვლავი

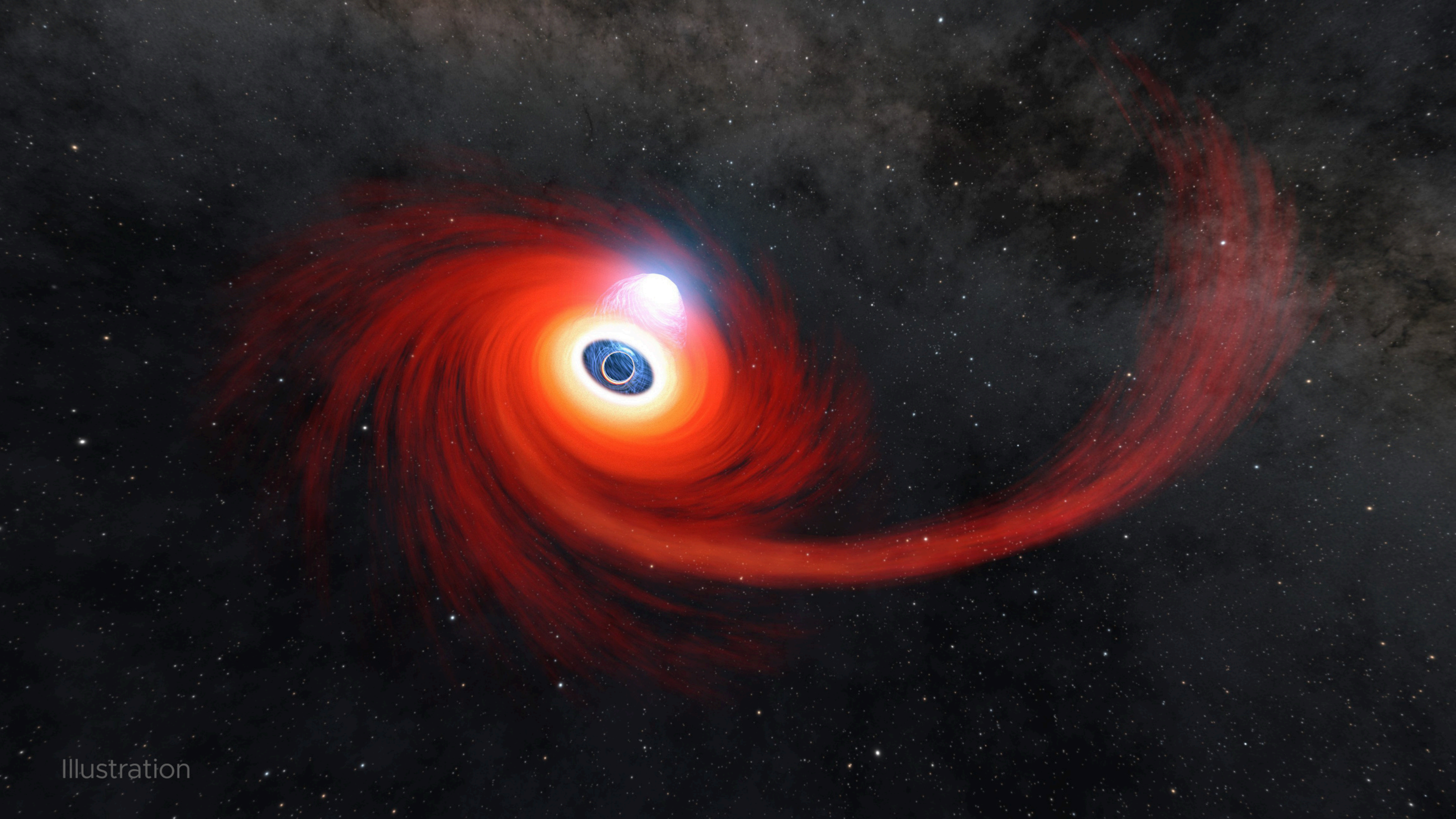


შავი ხვრელი









Illustration



A detailed illustration of a black hole. At the center is a dark, circular event horizon. Surrounding it is a bright, glowing accretion disk with a swirling, turbulent appearance. A powerful jet of light and energy extends from the top of the black hole into the dark, star-filled space above. The overall color palette is dominated by oranges, yellows, and browns from the accretion disk, contrasting with the deep blacks and blues of the surrounding universe.

გმადლობთ ყურადღებისთვის

