

A universe full of wonders

Andromeda is the closest galaxy to us and the only one approaching us. On a clear night, it is even visible with the naked eye.

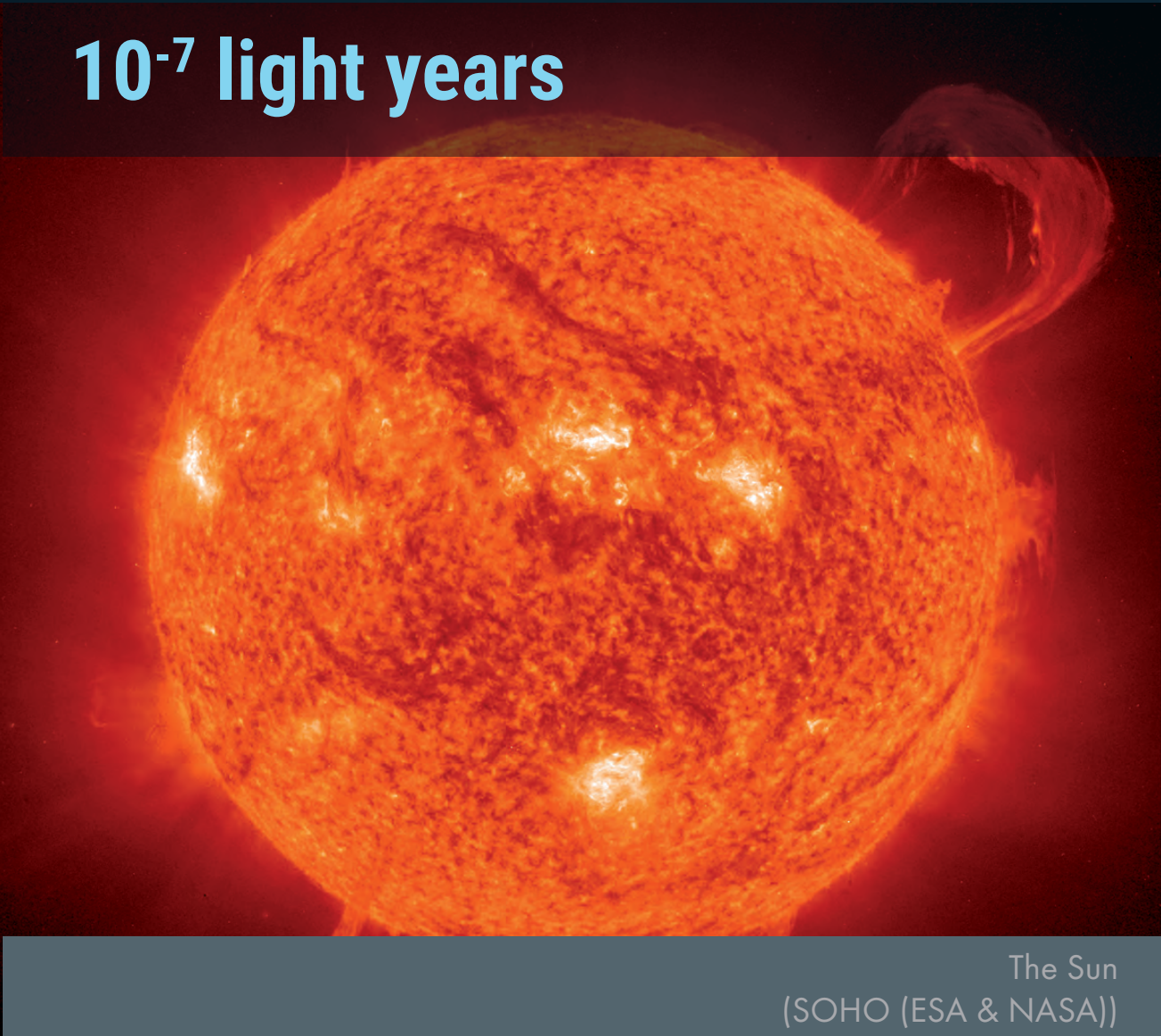
This picture shows a fraction of this galaxy which spans around 40,000 light years and contains over 100 million stars.



Andromeda Galaxy
(NASA, ESA, J. Dalcanton - B. F. Williams - L. C. Johnson (U. Washington, USA), the PHAT team, and R. Gendler.)

At night, we can observe amazing scenes in the sky. At all scales, phenomena ranging from supernovae to galaxy collisions shape the universe. Thanks to these processes, the physiognomy and dynamics of the galaxy evolve, interstellar gas is excited to trigger stellar formation, and complex atoms

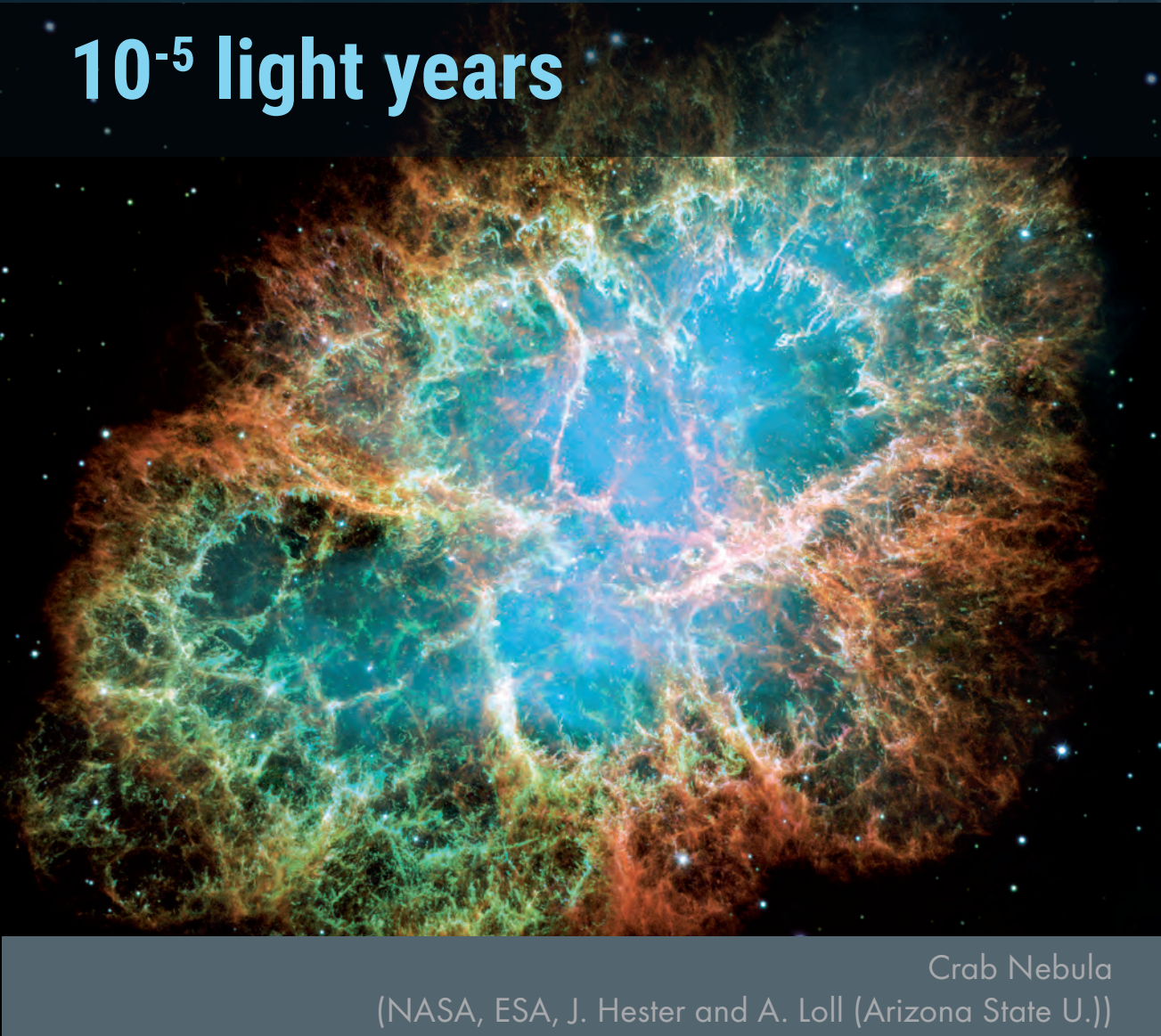
are created and distributed to distant regions. Even we are made of stardust. We also observe strikingly different objects, such as black holes of various types. Some of them are as much as several thousand million times as massive as the Sun and are located in the centre of galaxies.



The Sun
(SOHO (ESA & NASA))

Stars

Picture of the Sun in the ultraviolet range (processes at around 60,000°C). It shows a cloud of cold dense plasma being ejected from the atmosphere above the hot corona.



Crab Nebula
(NASA, ESA, J. Hester and A. Loll (Arizona State U.))

Supernovae

At the end of their lives, massive stars explode as supernovae. In the Crab Nebula (picture), the remnants of a Supernova which exploded 1,000 years ago can be observed.



Westerlund 2 (NASA, ESA, the Hubble Heritage Team (STScI/AURA), A. Nota (ESA/STScI), and the Westerlund 2 Science Team)

Star clusters

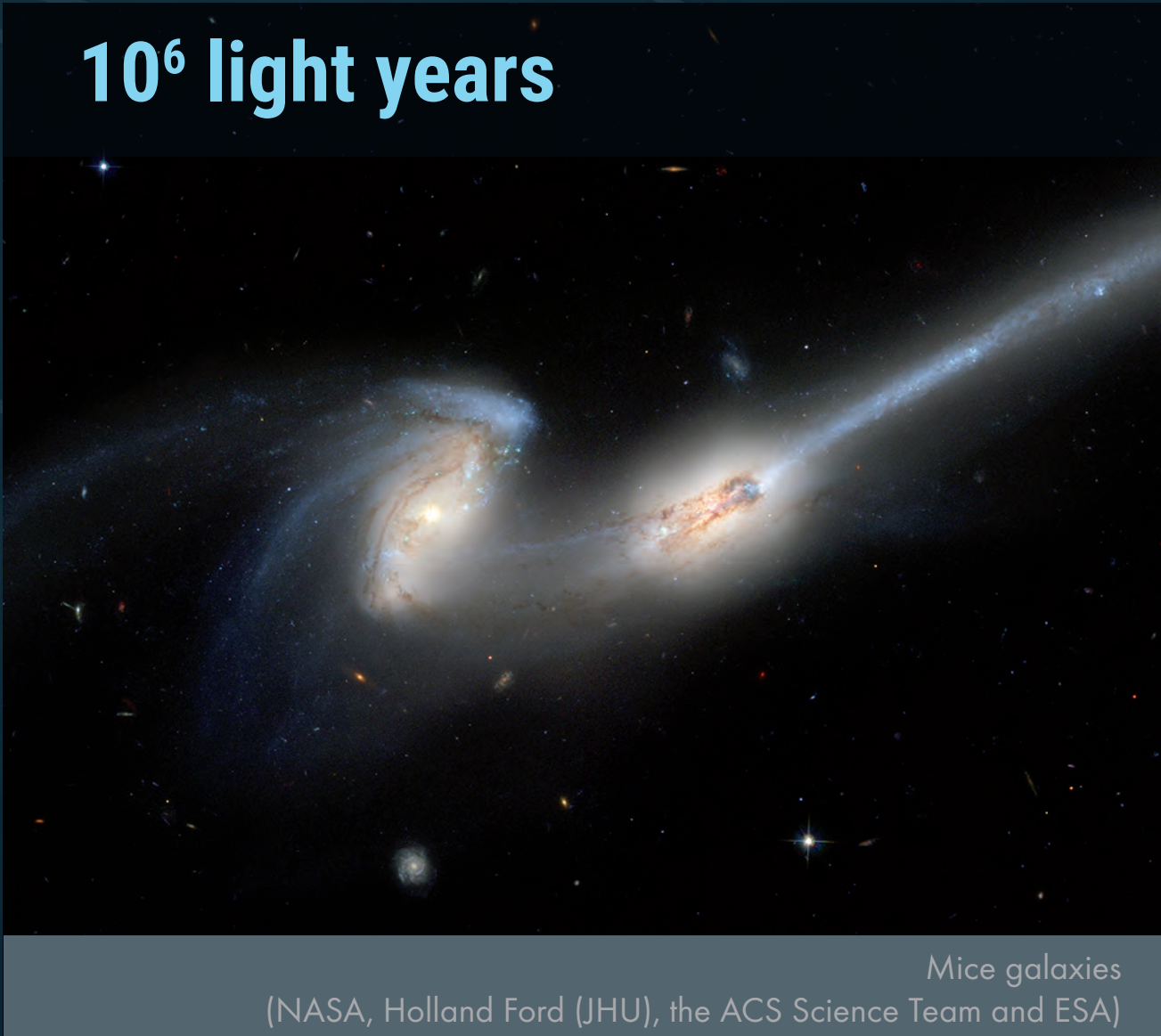
Westerlund 2 is a star cluster in the Milky Way surrounded by a nebula. The nebula's gas, heated by the radiation of nearby stars, is the birthplace of new stars.



M74
(NASA, ESA, Hubble Heritage (STScI/AURA) - ESA/Hubble Collaboration)

Galaxies

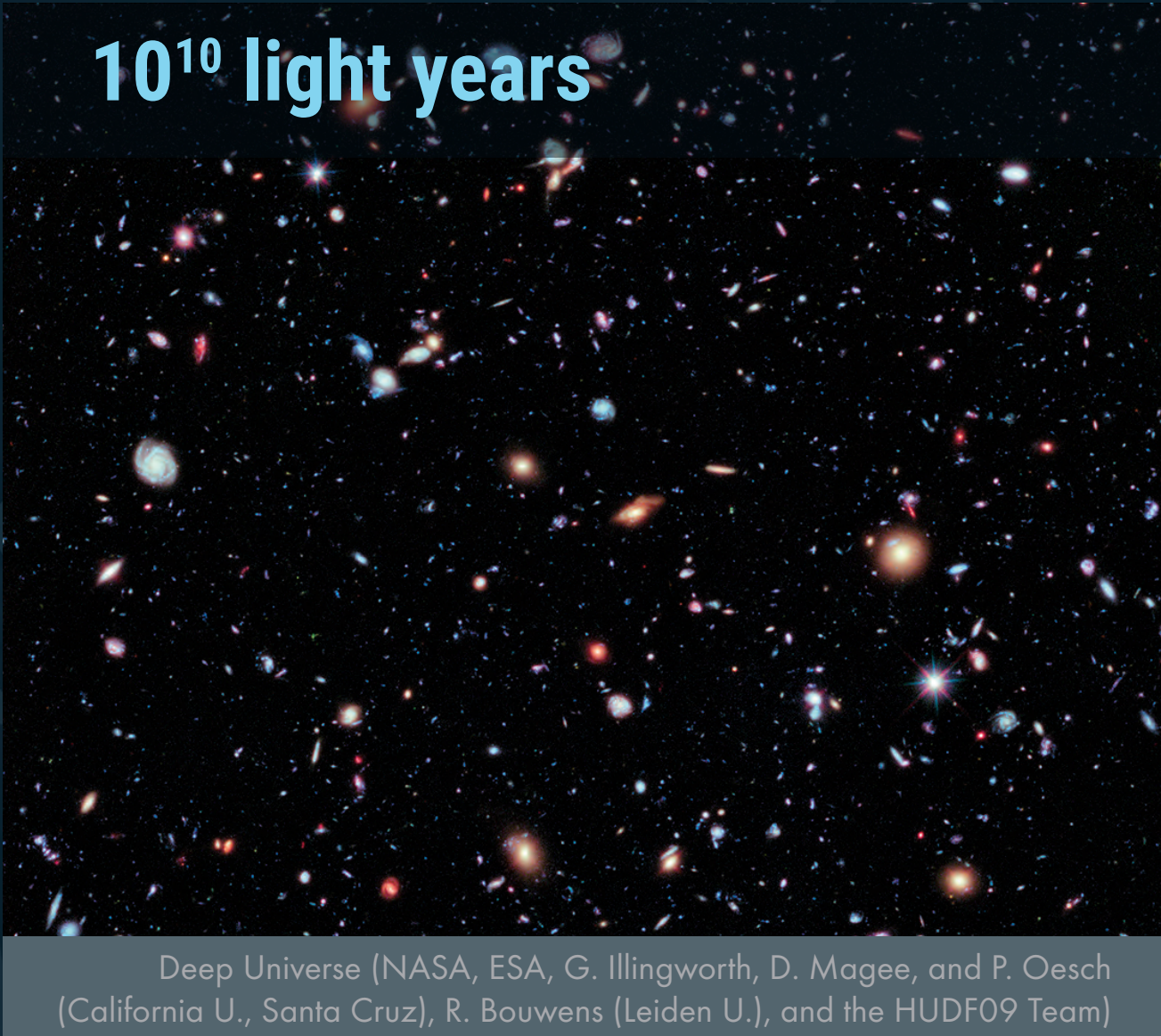
M74 is a spiral galaxy, just like the Milky Way. Containing around 100,000 million stars, it is a bit smaller than our galaxy. It is galaxies like this one which form the most stars.



Mice galaxies
(NASA, Holland Ford (JHU), the ACS Science Team and ESA)

Mergers of galaxies

The merger of two colliding galaxies is a key process in their evolution due to the enhancement of energy. Their movement during the merger can produce tails of stars and dust, as is the case of The Mice (picture).



Deep Universe (NASA, ESA, G. Illingworth, D. Magee, and P. Oesch (California U., Santa Cruz), R. Bouwens (Leiden U.), and the HUDF09 Team)

Deep universe

This is the picture of the universe with the largest range. In an area less than 10% of the Moon (as seen from Earth) it shows around 5,500 galaxies. The furthest light registered was emitted 13,100 million years ago.