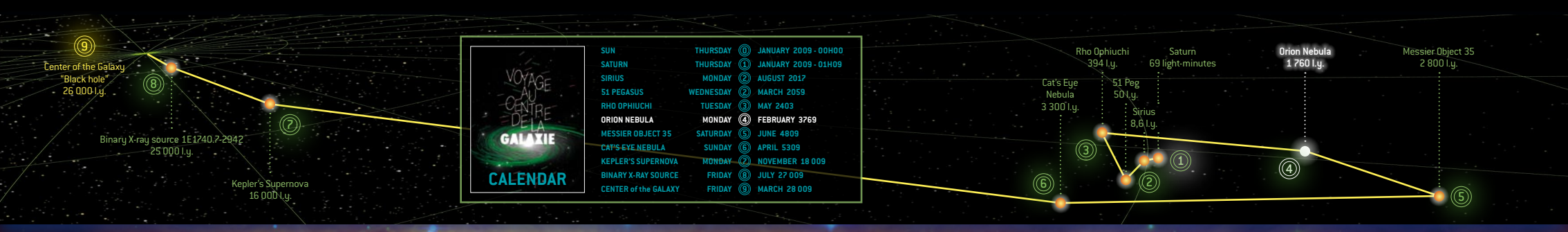

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Nebulae - the cradle of stars

WHEN STARS ARE BORN, THEY ARE ENVELOPED IN DUST AND ARE ONLY VISIBLE BY THEIR INFRA-RED RADIATION

Composite image of the Orion nebula: superposition of ultraviolet and visible images taken by the Hubble telescope and infra-red images taken by the Spitzer satellite

n u r s e r y

The Pillars of Creation seen in the visible (up) and infra-red light (down). Infra-red radiation enables us to see through the clouds

A cloud is a reservoir of gases that enables the **birth** of several stars.

When stars ignite, their radiance lights up the gas and dust that continue to surround them. The cloud then becomes visible as a brilliant **nebula** – a **nursery** of stars.

The enormous quantity of dust absorbs most of the visible light.

These heated dust particles then emit **infra-red rays** that enable us to see where the nascent stars lie.

Orion Nebula seen in visible... *...and in infra-red*

Zoom

Stars of different sizes are born from a cloud, from a few tenths to dozens of times the mass of our Sun. Giant stars have short lives – a few dozens of millions of years – whereas smaller stars have longer lives – up to a few dozen billion years...

The Orion nebula is the closest cradle of stars. Its estimated age is one million years, and it is at a distance of 1,500 light-years.

At the center is ***the Trapeze***, a quartet of monstrously large stars, 100,000 times brighter than our Sun.

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