

The Universe in my pocket

I discover
the Sun, the Earth
and the Heavens

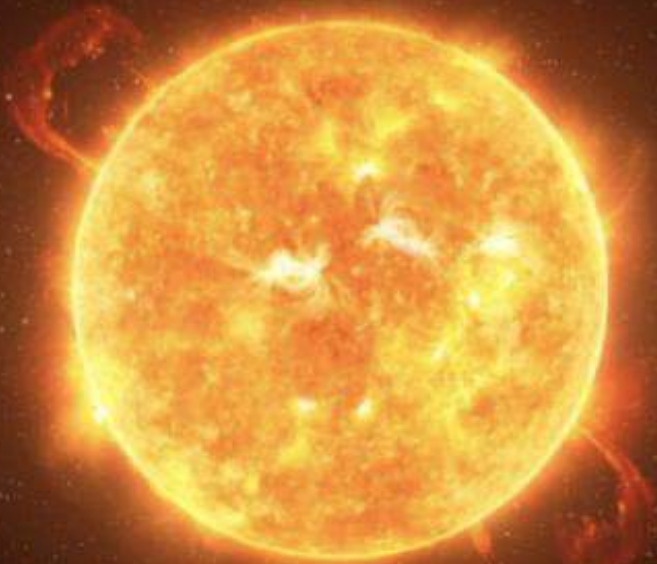


Grażyna Stasińska
Paris Observatory



The Sun in the sky

The Sun



A picture of the Sun taken with a special filter (SOHO). You can see some nice protuberances

What is round and yellow,
gets up in the morning, and
lies down at night?

Gives us light and warmth
during the day?

And disappears at night?



The Sun

The Sun is a ball of fire.

Occasionally small eruptions occur on its surface that can interfere with telecommunications on Earth.

There could be no life on Earth without the Sun. It provides the energy to grow the plants that provide our food and the oxygen we breathe.

Sunlight takes 8 minutes to reach the Earth.



A landscape on Earth

The Earth



A picture of the Earth taken by a NASA satellite. It shows North and South America.

What is round,
covered by water, mountains,
forests, and also deserts,
and where millions of
different kinds of living
creatures live?



The Earth

It has been known for a very long time that the Earth is not flat, as you might think if you looked around. It is round like a marble.

The Earth revolves around the Sun, but as we live on the Earth we have the impression that it is the Sun that revolves around us.

Thanks to the Earth's gravitational attraction, we can walk anywhere on the Earth without ever falling into space.



A landscape with the Moon

The Moon



Crescent Moon
'standing'

Photo by Gary Hart



Crescent Moon
'on her back'

Photo by Tavi Greiner

The orientation of the crescent moon depends on the time of day, the season and the location on Earth.

What is pale yellow
and dimly illuminates the
night?

Sometimes it looks round,
other times it looks like a
croissant.

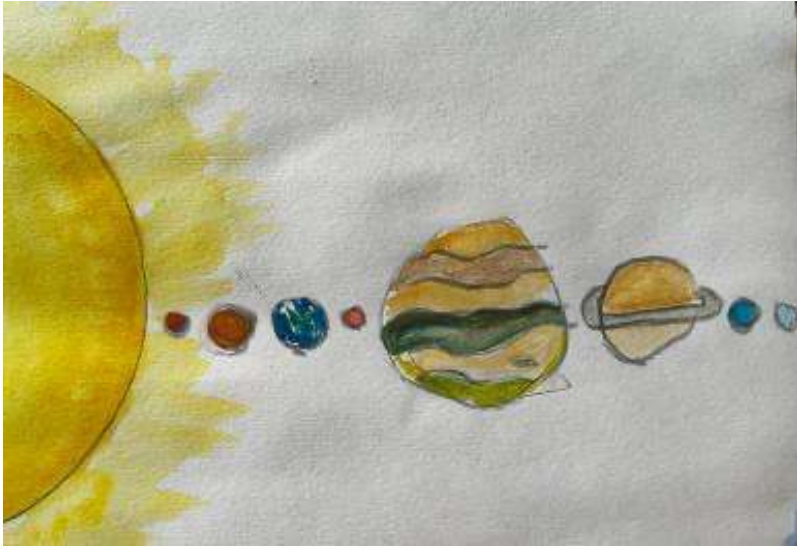


The Moon

The Moon revolves around the Earth
and is illuminated by the Sun.

Men walked on the Moon in 1969,
1971 and 1972. Since there is no
atmosphere on the Moon, they had to
wear special suits to breathe.

Because the gravity on the Moon is
six times lower than on Earth, these
suits, which weighed over 70 kilos,
seemed very light to them.



The planets

The planets



Photomontage showing the planets in the order of their distance from the Sun . In order to show them all, their sizes and distances are not to scale.

Some planets have rings. Saturn's ring has been known for a long time and can be observed with an amateur telescope.

Some of them can be seen with the naked eye as small points of light in the sky.

Through a telescope, you can see their round shape and colours.



The planets

There are 8 planets orbiting the Sun. They are, in order: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Some are rocky, others are gaseous.

Some have moons, like the Earth (which has only one moon).

Thousands of planets have been discovered in the Galaxy, each revolving around its sun.



Starry night

The stars



A photo of the centre of the Milky Way taken in Brazil by B. Tafreshi. On the right, the Southern Cross constellation can be seen.

They can be seen as glittering dots in the sky as soon as it gets dark.

Where they are many, their light merges into a great milky trail called the Milky Way.



The stars

Stars are balls of fire, like our Sun. But they are much further away. They appear to us as twinkling points of light.

Stars are not all the same colour: the white and blue ones are the hottest, the yellow ones have the temperature of the Sun, while the red ones are the coldest.

Several thousand stars can be seen with the naked eye. In the Milky Way there are a hundred billion stars.



Shooting star shower

Shooting stars



A shooting star shower in Chile. The light rays seem to come from the same point (photo by Yuri Beletsky)

They appear to us as flashes of light that cross the sky in the blink of an eye.

They often come in groups at about the same time.

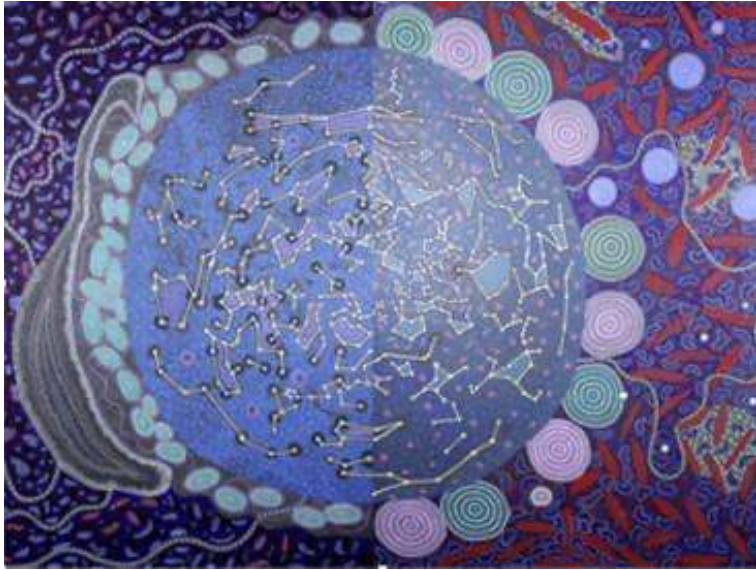


Shooting stars

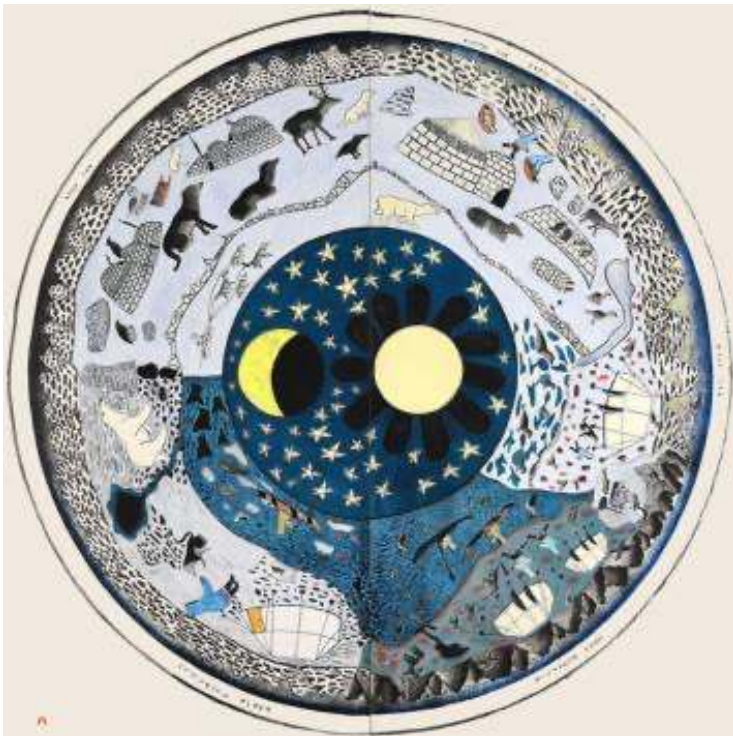
These are not stars but tiny debris from space. These particles burn up when they enter the atmosphere and leave a trail of light.

When the Earth crosses the path of a comet that has spread a cloud of dust behind it, we see a 'shooting star shower'.

The heaviest 'showers' occur in August and October.



"The Sky Shared", a collective work by artists from Australia and South Africa.



"The sky and the seasons" a work by Inuit artist Kenojuak Ashevak.

My drawing of the sky

The Universe in my pocket no. 34

Grażyna Stasińska, from the Paris Observatory, wrote this booklet in 2022 and dedicates it to her 5-year-old grandson, Côme. The drawings were done by 8-year-old Arsen.

The last page of the book shows two different representations of the sky, by artists from the southern hemisphere (top) and the northern hemisphere (bottom).

How do you imagine the sky? Draw it on the next page.



To find out more about this collection and the topics presented in this booklet, you can visit

<http://www.tuimp.org>

Translation: Stan Kurtz
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