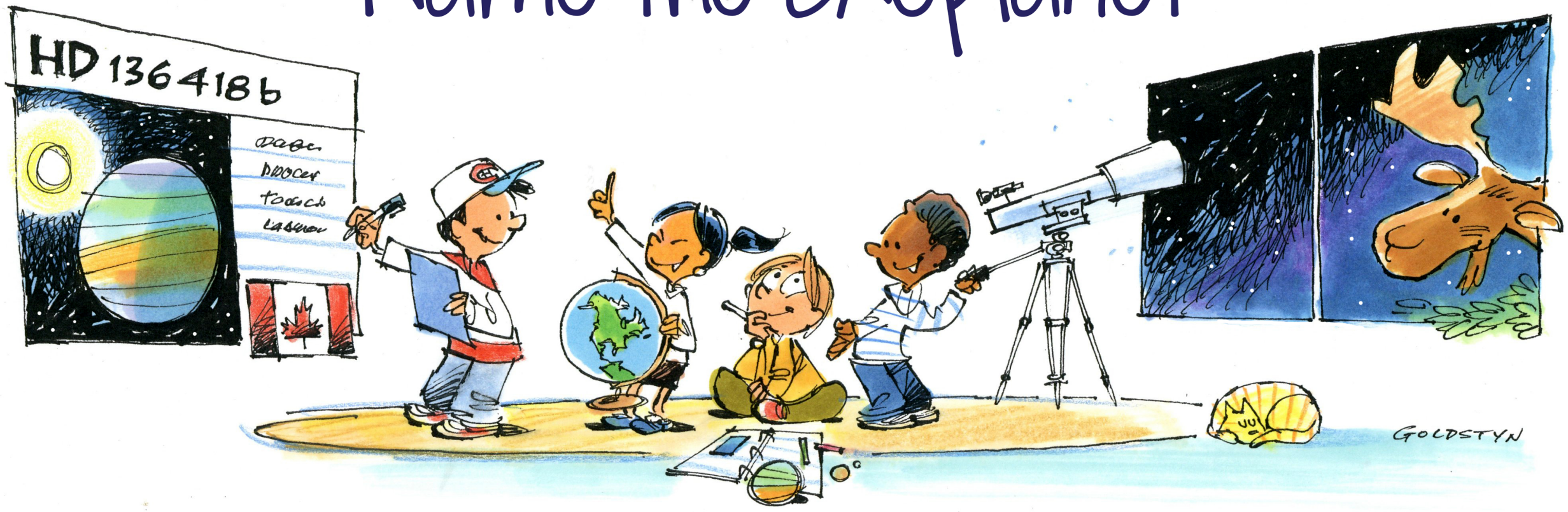
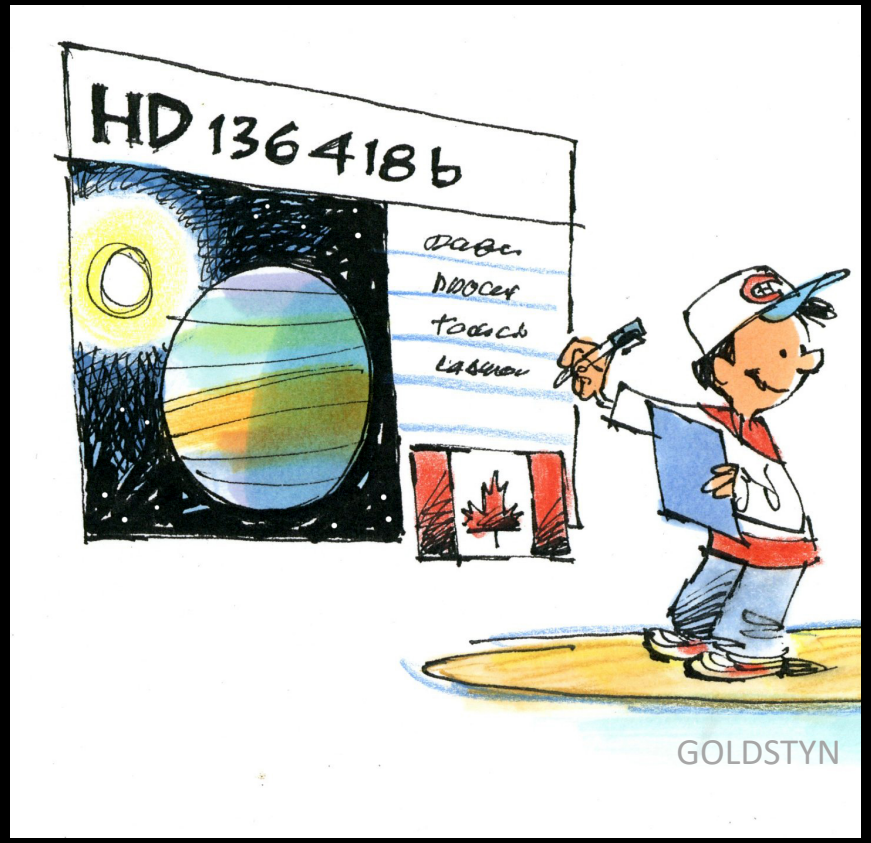
Canada's Name the Exoplanet Contest



Organized by the Canadian Astronomical Society

We invite YOU to find a name for a planet and its host star!



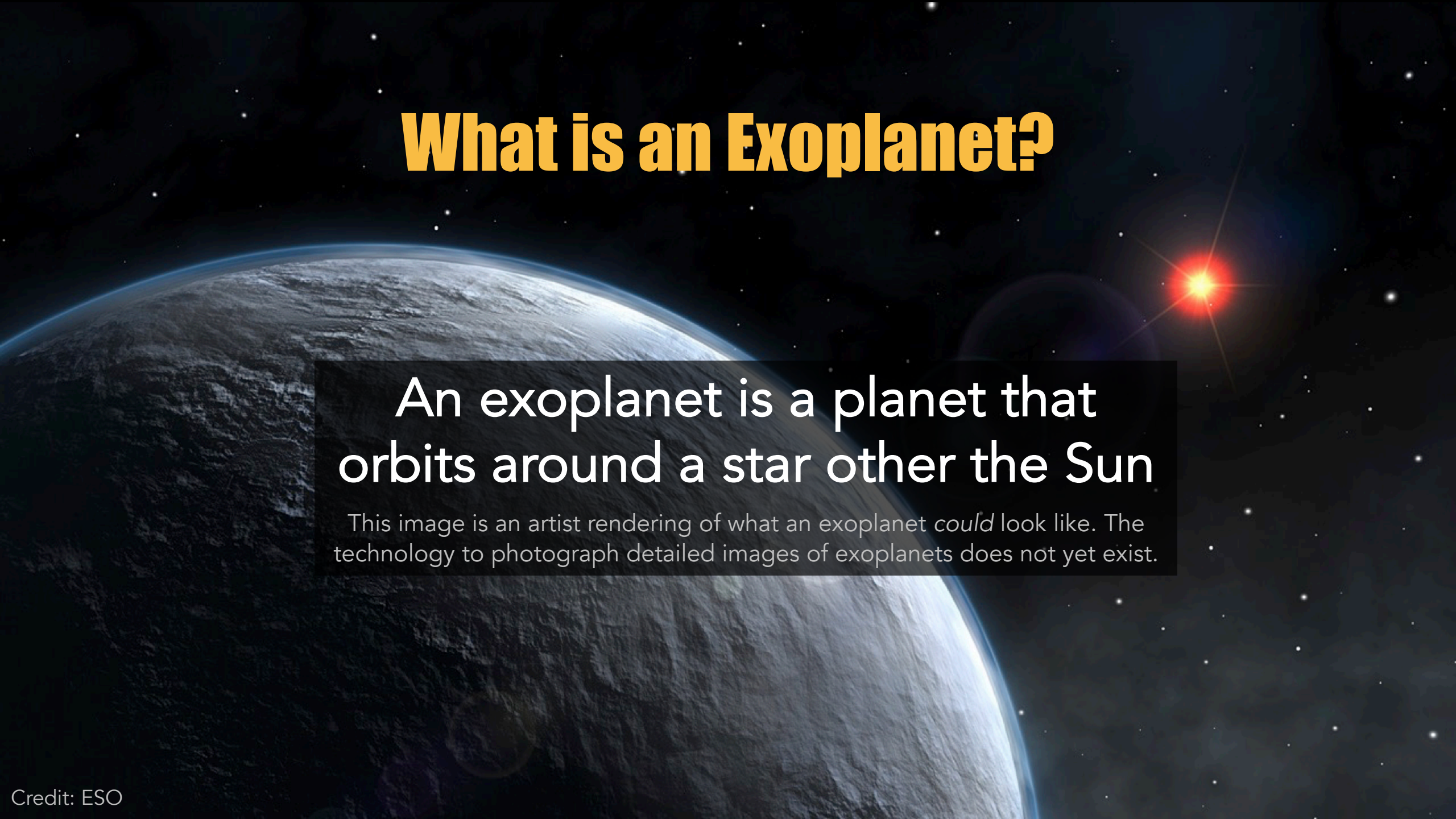
Submit your ideas before Sept. 20, 2019

A committee will review submissions and will select finalists

You can then vote to select the winning names

And you can win prizes!

What is an Exoplanet?



An exoplanet is a planet that orbits around a star other the Sun

This image is an artist rendering of what an exoplanet *could* look like. The technology to photograph detailed images of exoplanets does not yet exist.

Credit: ESO

Artist's rendering of exoplanets

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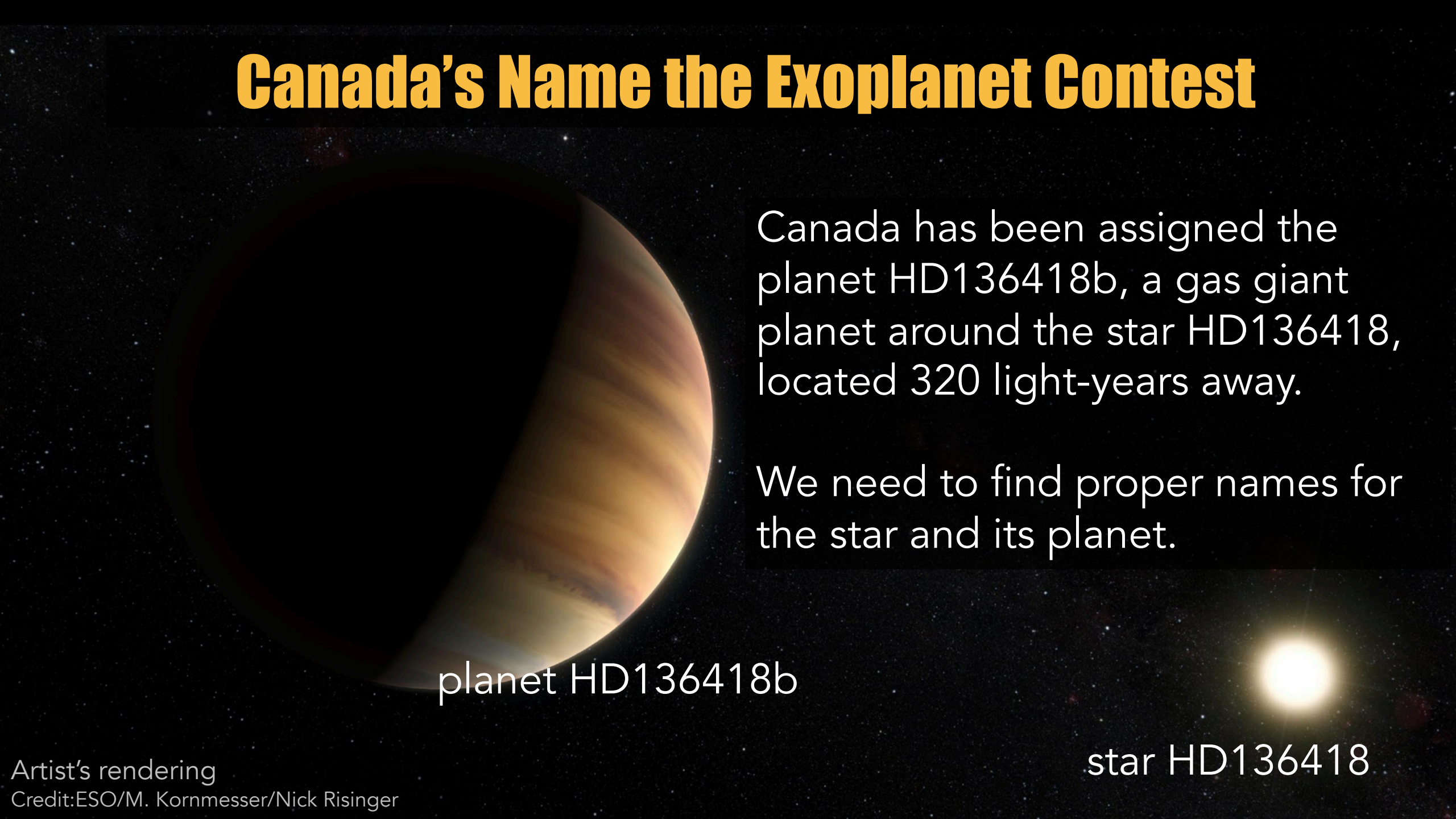


Canada has been assigned the planet HD136418b, a gas giant planet around the star HD136418, located 320 light-years away.

We need to find proper names for the star and its planet.

planet HD136418b

star HD136418

Artist's rendering
Credit:ESO/M. Kornmesser/Nick Risinger

We don’t know what the planet really looks like! This is not a picture, it’s an artist drawing.

The planet was discovered in 2009 but we’ve never seen it! We know it’s there because its gravity affects the motion of the star.

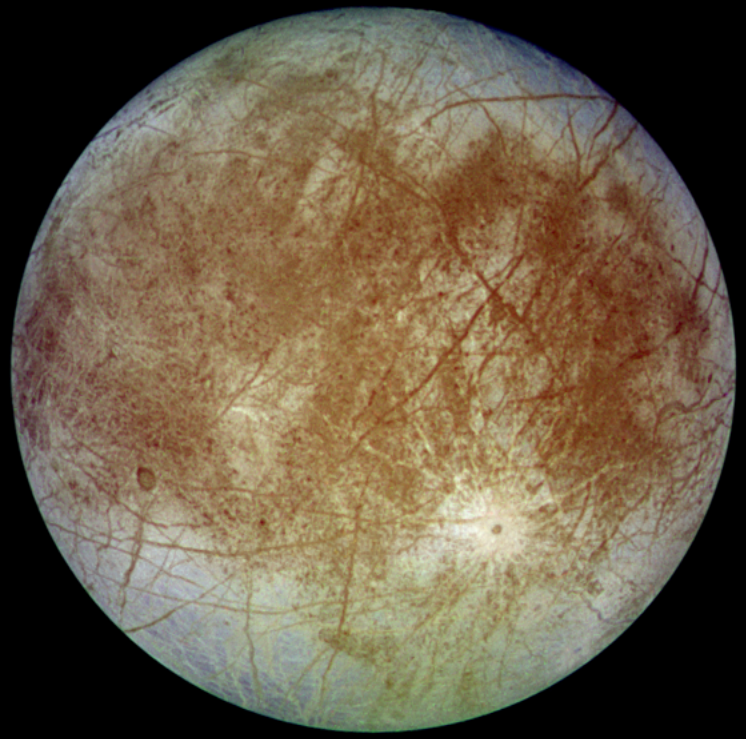
Artist’s rendering
Credit:ESO/M. Kornmesser/Nick Risinger

HD 136 418b compared to Jupiter

Even though we've never seen it directly, we know the planet HD 136 418b is a gas giant, larger than Jupiter. It orbits its star in 464 days (1 year and 3 months).

Credit: NASA

Exomoon



Europa has an icy surface and possible oceans underneath.
Credit: NASA//JPL/DLR

HD136418b could have many moons. After all, Jupiter has 79 of them!

We haven't discovered any moons around HD136418b so far, but they could exist.

These exomoons* could resemble Jupiter's moons and contain a lot of water. For example, Europa, one of Jupiter's moon, could have 3 times as much water as Earth.

*exomoon: moon around exoplanets (moon outside our Solar system)

Where is the star HD 136418 in the sky?

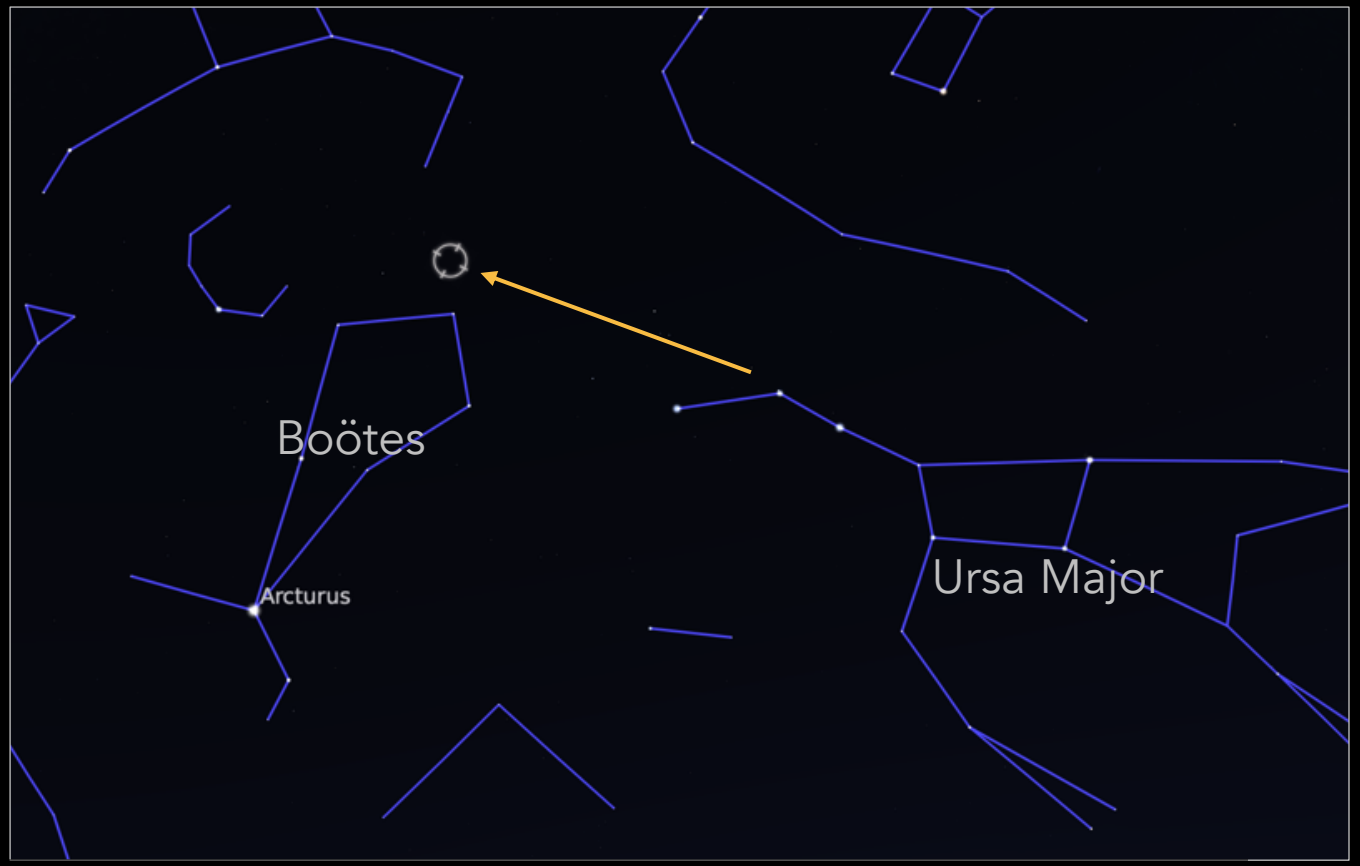


Image created with the planetarium software Stellarium

HD136418 is located in the constellation of Boötes, near the Big Dipper in Ursa Major.

Unfortunately, you can't see it with the naked eye. You would need binoculars or a telescope.

Ready to participate in the contest?

Visit casca.ca/exoplanet for all details and submission form

More advanced information ...

Details about the Star and the Planet

STAR HD 136418

Distance : 320 light-years

Mass: 1.33 times the mass of the Sun

Age: 4 billion years

Type of star: sub-giant

Magnitude : 7.85

PLANET HD 136418b

Mass: 2.1 times the mass of Jupiter

Diameter: 1.2 times the diameter of Jupiter

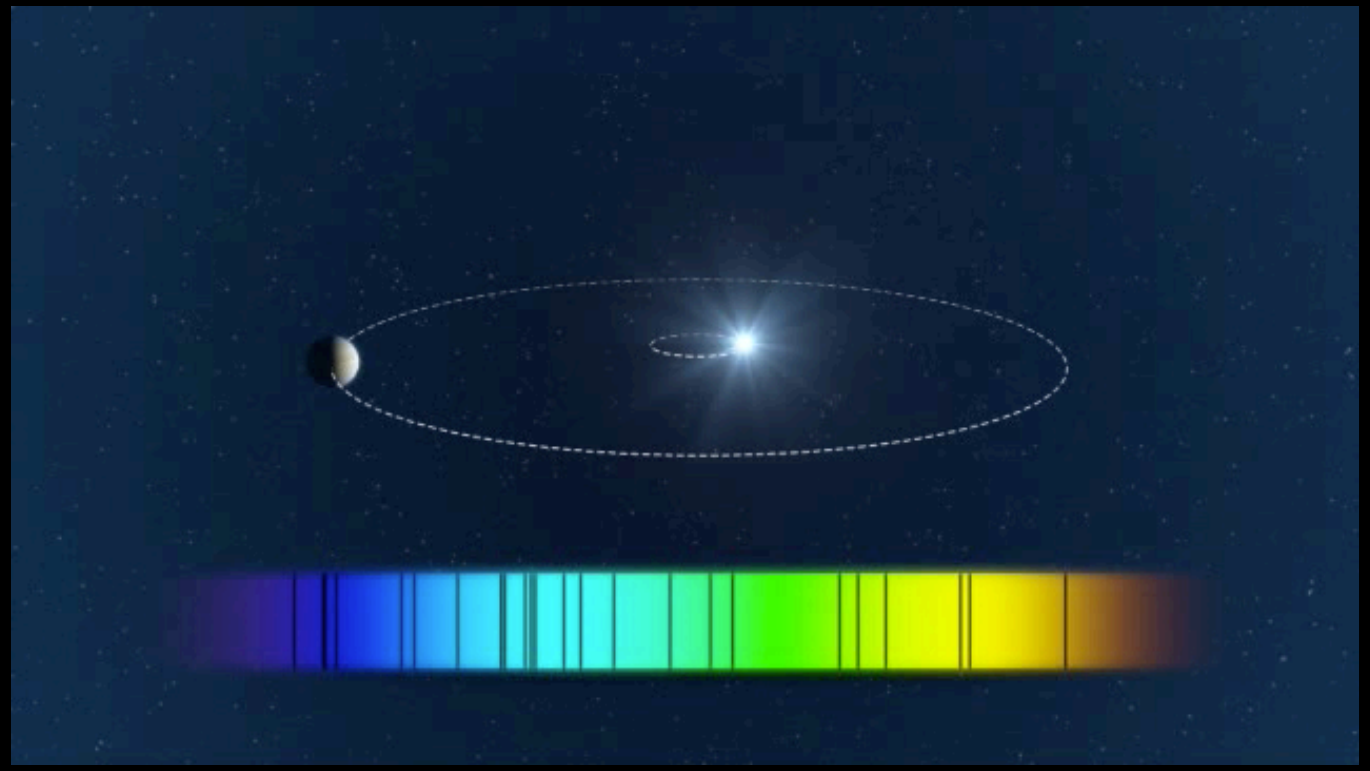
Orbital Period: 464 days

Orbital distance: 1.29 astronomical units

Discovered in 2009

Radial Velocity Method

Since the star and the planet orbit a common centre of mass, we can detect the motion of the star using the Doppler effect on the light of the star (blue-shifted then red-shifted).



By analyzing the light from the star HD136418, scientists discovered a planet must be orbiting it.

This method only works for massive planet with a gravitational pull large enough for us to notice its effect on the star.

Credit: ESO/L.Calçada

Doppler Effect

When an object emitting waves (sound, light…) is moving, the frequency of the wave is affected by the motion of the object.

OBJECT MOVING TOWARDS YOU
Higher frequency
For sound: higher pitch
For light: blue-shifted

OBJECT MOVING AWAY FROM YOU
Lower frequency
For sound: lower pitch
For light: red-shifted

Questions?

Ask us on Twitter using the hashtag
#NameExoWorldsCanada

Or contact the members of the Name the Exoplanet Contest organizing committee who created this presentation:

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