

Icy moons - Terrestrial Cryosphere Quiz

Part 1: Terrestrial Cryosphere

1. How thick is the thickest ice sheet on the Earth?

2. Where does the word 'Arctic' come from and what does it mean?

3. In the Arctic Circle, which island is the largest in the Svalbard Archipelago and the home of a doomsday seed bank?

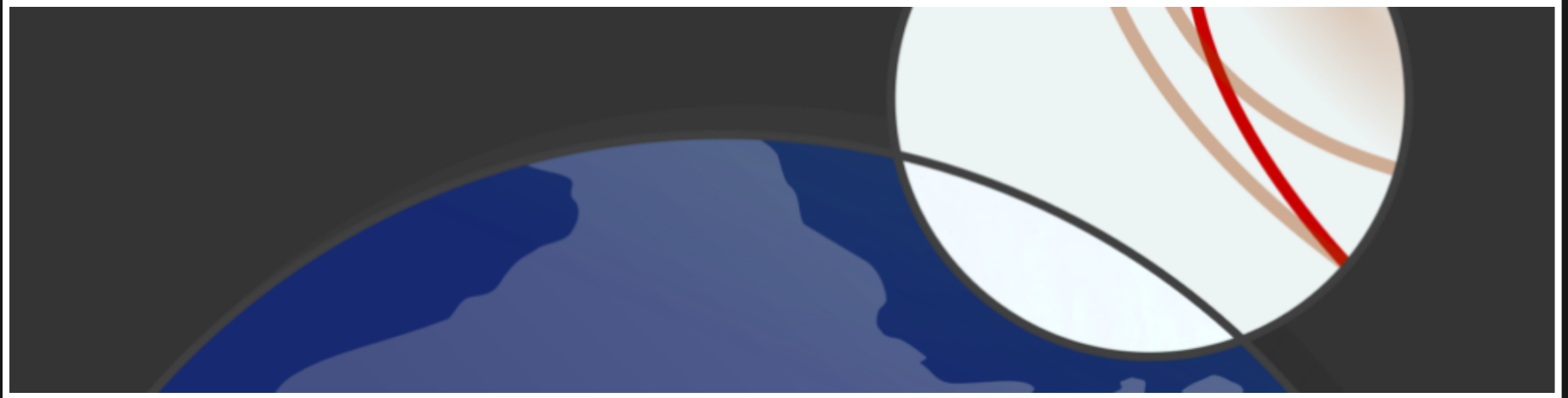
4. Which pole has the highest altitude?

5. What time zone is the South Pole in?

6. How much frozen vs liquid water is there on Earth (in percent)?

7. Which three lakes have been accessed in Antarctica in the 2012/2013 season in the 'race for subglacial access'?

8. It is hypothesized that Earth itself was once globally glaciated. When would this have been and how is the period named?



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Part 2: Icy Moons

1. Most moons have their own orbits, relatively far away from any other moons. These two moons are in almost the same orbit, close to Saturn's rings. What are their names

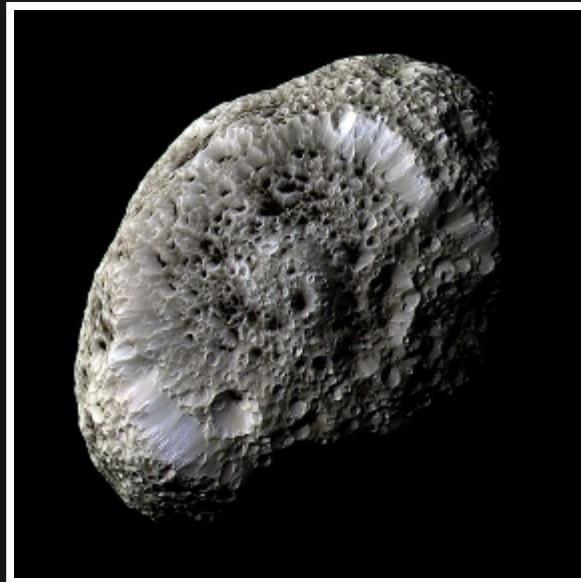
2. Which is the coldest moon in the Solar system and how cold is the temperature on its surface?

3. The discovery of which life-sparking energy source and molecule at Saturn's moon Enceladus was published in a Nature Astronomy study in 2024?

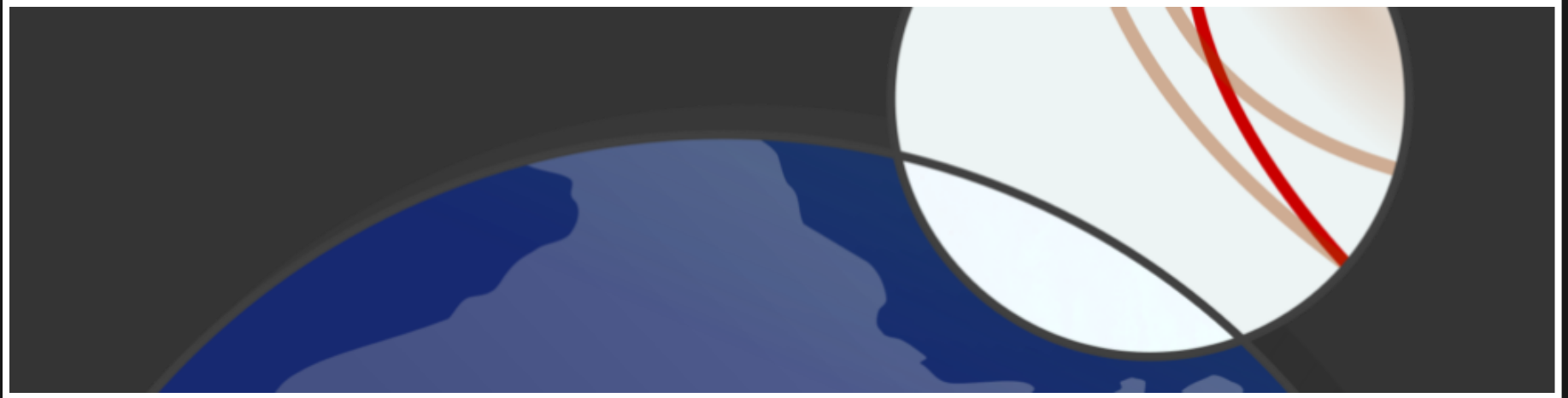
4. Match the moons with their planet. Planets:
Jupiter, Saturn, Uranus, Neptune, Pluto

Moons: (1) Daphnis, (2) Titania, (3) Nereid, (4)
Telesto, (5) Amalthea, (6) Hippocamp, (7) Hydra, (8)
Nix, (9) Thebe, (10) Sycorax

5. This moon looks like a giant sponge. It is one of the largest irregular shaped moons in the Solar System. What is the name of it?



6. Some surface phenomenon / morphological features on one of the icy moons are named after cities and countries in 'One Thousand and One Nights'. Do you know the moon and what are the official names of these morphological features?



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Part 3: Literature and Movies

1. Most moons are named for mythical characters. Most moons of Uranus, however, are named after characters that appear in, or are mentioned in, the works of two famous writers. What are the names of these writers?

2. This moon was named after the daughter of the lead character in "The Tempest". What is the name of this moon?

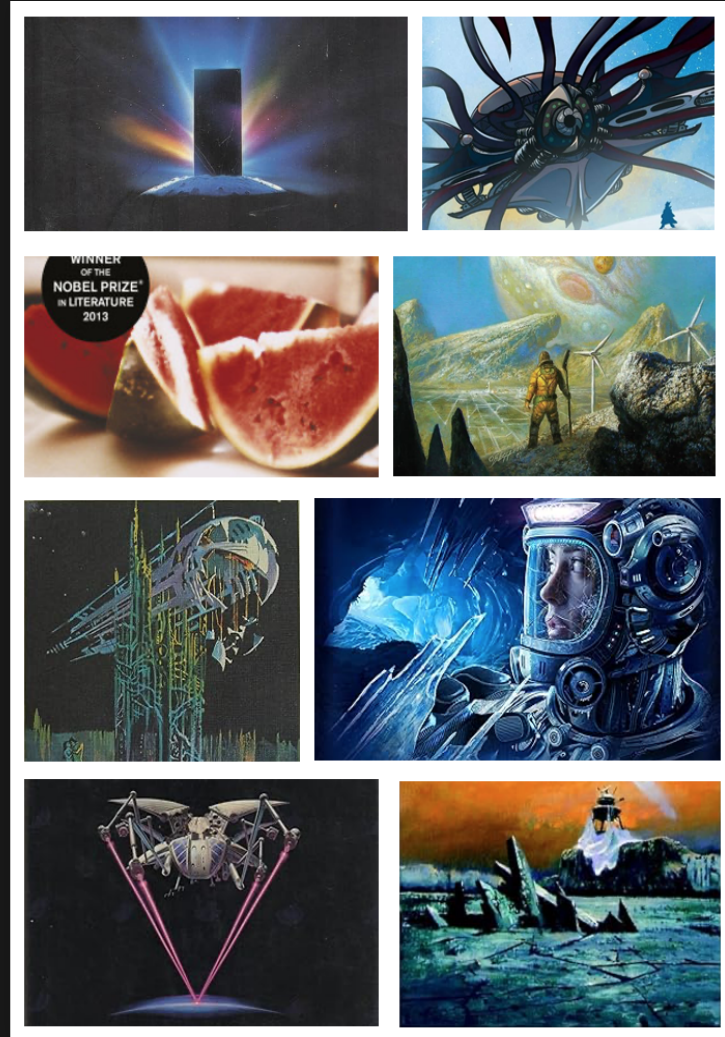
3. Match titles and authors to the following book covers:

Titles:

- 3001: The final odyssey,
- Farmer in the Sky,
- Triton,
- The Cassini division,
- Titan,
- The Ice Orphan of Ganymede,
- The Moons of Jupiter,
- The frozen sky

Authors:

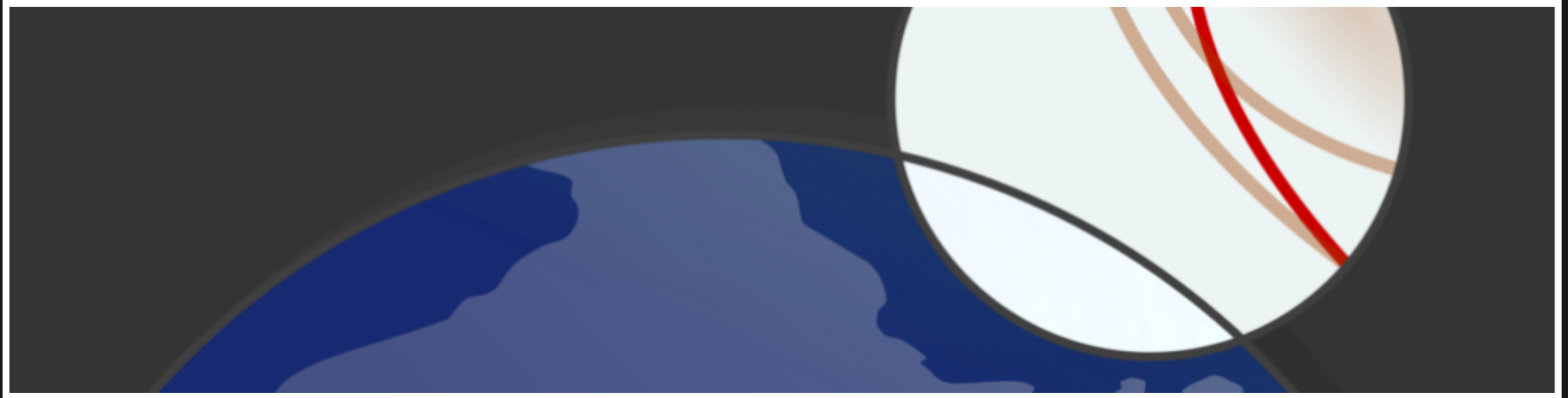
- Leonardo Ramirez,
- Alice Munro,
- Jeff Carlson,
- Arthur C. Clarke,
- Robert A. Heinlein,
- Ben Bova,
- Samuel R. Delany,
- Ken MacLeod



4. Which moon resembles the Death Star from Star Wars?

5. In which 2013 movie was life discovered on one of the icy moons?

6. In the TV Series "The Expanse", hundreds of years in the future, humanity has colonized the Solar System. The three largest powers are the United Nations of Earth and Luna, the Martian Congressional Republic on Mars, and the Outer Planets Alliance (OPA), a loose political confederation of colonies scattered across the asteroid belt and the moons of Jupiter and Saturn. On which icy moon of Saturn is there a research station?



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Part 4: History

1. In what year did Galileo Galilei publish his discovery of moons orbiting Jupiter?

2. Galileo did not name the four moons after Zeus' lovers from Greek mythology. Rather, hoping to garner favour from a prospective patron, he initially called them Cosmica Sidera (or Cosimo's stars). To which family did Cosimo belong?

3. Who named the Galilean moons?

4. When did the Ann Bancroft (the first known woman to reach both poles) reach the North Pole? What about South Pole?

5. When was the first station built at the South Pole and what is its name?