



Tähtikuvaus Australiassa

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Syvä taivas -tapaaminen 2023

Kuka?

- 26v insinööri
Tampereelta
- Tähtiharrastaja jo
pienestä pitäen
- Mukana Porin
Karhunvartijoissa ja
Tampereen Ursassa



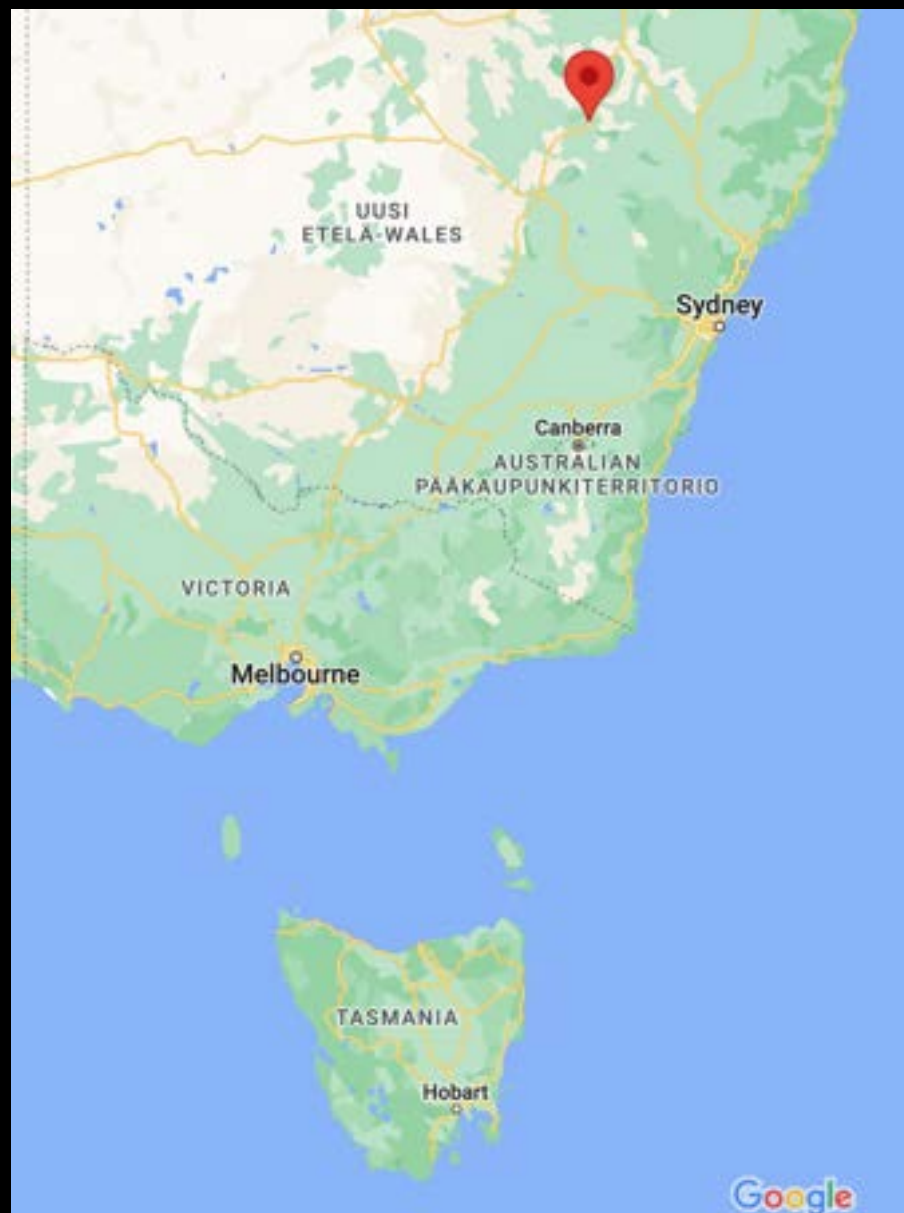


Reissun taustaa

- Heinäkuun 2022 lopussa menolippu Australiaan. Tarkoitus viettää maassa noin vuosi.
- Pitkäaikainen haave, joka vaati paljon valmisteluja.
- Sijainti eteläisellä pallonpuoliskolla → erityisen kiinnostava maa tähtiharrastuksen kannalta.

Astronomisia matkakohteita







SIDING SPRING OBSERVATORY
VISITOR CENTRE



Australian
National
University





DID YOU KNOW?

Coloured astronomy photography was invented here?



This image was taken by Dr David Malin in the UK Schmidt Telescope and was one of the first images in the world of the galaxy in colour.

Because of its shape, this known as the Horsehead Nebula. The bright star near the center is located in the belt of the familiar constellation of Orion. The horse head feature is dark because it is a dense dust cloud which lies in front of the bright nebula and blocks the light. The nebula's red color is caused by electrons recombining with protons to form hydrogen atoms. Also visible in the picture are blue reflection nebulae. This type of nebula contains dust which preferentially reflects the blue light of nearby stars.

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A scaled model 38 million times smaller than outer space!

The Sun is the closest star to Earth. The ancient Romans named the Sun 'Sol' after their god of the sun. It is by far the largest object in our Solar System. The International Astronomical Union has designated that 8 planets orbit the Sun (as do many other objects).

For 76 years, Pluto was considered to be the 9th planet of our Solar System. However, after years of intense debate and controversy, in August 2006, the IAU reclassified Pluto as a dwarf planet.

At the scale of our Solar System model (1:38,000,000) the Sun would be the same size as the nearby dome of the Anglo Australian Observatory which houses the giant 3.9 metre mirror Anglo Australian Telescope.

Coonabarabran, the 'Astronomy Capital of Australia' is home to Australia's largest astronomy research facility. Maps and guides are available to assist your journey through the Solar System from Visitor Information Centre's along the 5 tourist drives and from the Exploratory Centre right here at Siding Spring Observatory.

THE SUN



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VENUS

Named after the Roman goddess of love, Venus is most often mistaken for a star as it is the 2nd planet from the Sun and before sunrise we call it the 'morning star' and after the 'evening star' when observed just after sunset. On Venus, the Sun rises in the east and sets in the east. Because it orbits closer to the Sun, the Earth's atmosphere causes Venus to appear reddish and bright in the sky. Venus is the hottest planet, its thick atmosphere causes it to trap heat leading to a runaway greenhouse effect. Venus is the only planet in the solar system with a retrograde rotation, which means it rotates in the opposite direction to the other planets. Venus is the only planet in the solar system with a day longer than a year.



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MARS

Mars, the 4th planet from the Sun and the 7th largest was named in honour of the Roman god of war because the planet appeared to be blood red. Although much smaller than Earth, Mars has roughly the same land surface and features which dwarf Earth's terrain. The Martian mountain Olympus Mons is 2.8 times higher than Mount Everest and the Martian canyon Valles Marineris (Mariner Valley) would span the width of Australia! Mars has 2 moons that are named after the horses that pulled the god of war's chariot - Phobos (Terror) and Deimos (Panic).



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JUPITER

The largest planet in our Solar System is named after the king of the Roman gods. This 'gas giant' does not have a solid surface, being about 90% hydrogen and 10% helium with traces of methane, water and ammonia. It takes only 10 hours 45 minutes to complete a 360° rotation on Jupiter's axis. The 'Great Red Spot' - an enormous anti-cyclonic storm (similar to a hurricane) has persisted for over 400 years. Jupiter has at least 63 moons and a faint ring system!







The Australia Telescope Compact Array

Welcome to the Paul Wild Observatory, home of CSIRO's Australia Telescope Compact Array.

We invite you to look at the exhibits here.
These tell you about astronomy and the work
done with the Compact Array.

The Compact Array is operated by CSIRO's
Australia Telescope National Facility. CSIRO (the
Commonwealth Scientific and Industrial Research
Organisation) is Australia's largest national research
body. It covers many areas, from agriculture and
the environment to information technology and
manufacturing, and works on major problems
facing Australia.

This observatory has two 'sister' observatories, both
in NSW, which are also run by the Australia Telescope
National Facility. They are:

- the Mopra Observatory near Coonabarabran, home
to a 22 m diameter dish; and
- the Parkes Observatory, home to the 64 m Parkes
telescope ('The Dish').





**BEWARE OF
SNAKES**











WELCOME TO NASA'S

DEEP SPACE NETWORK

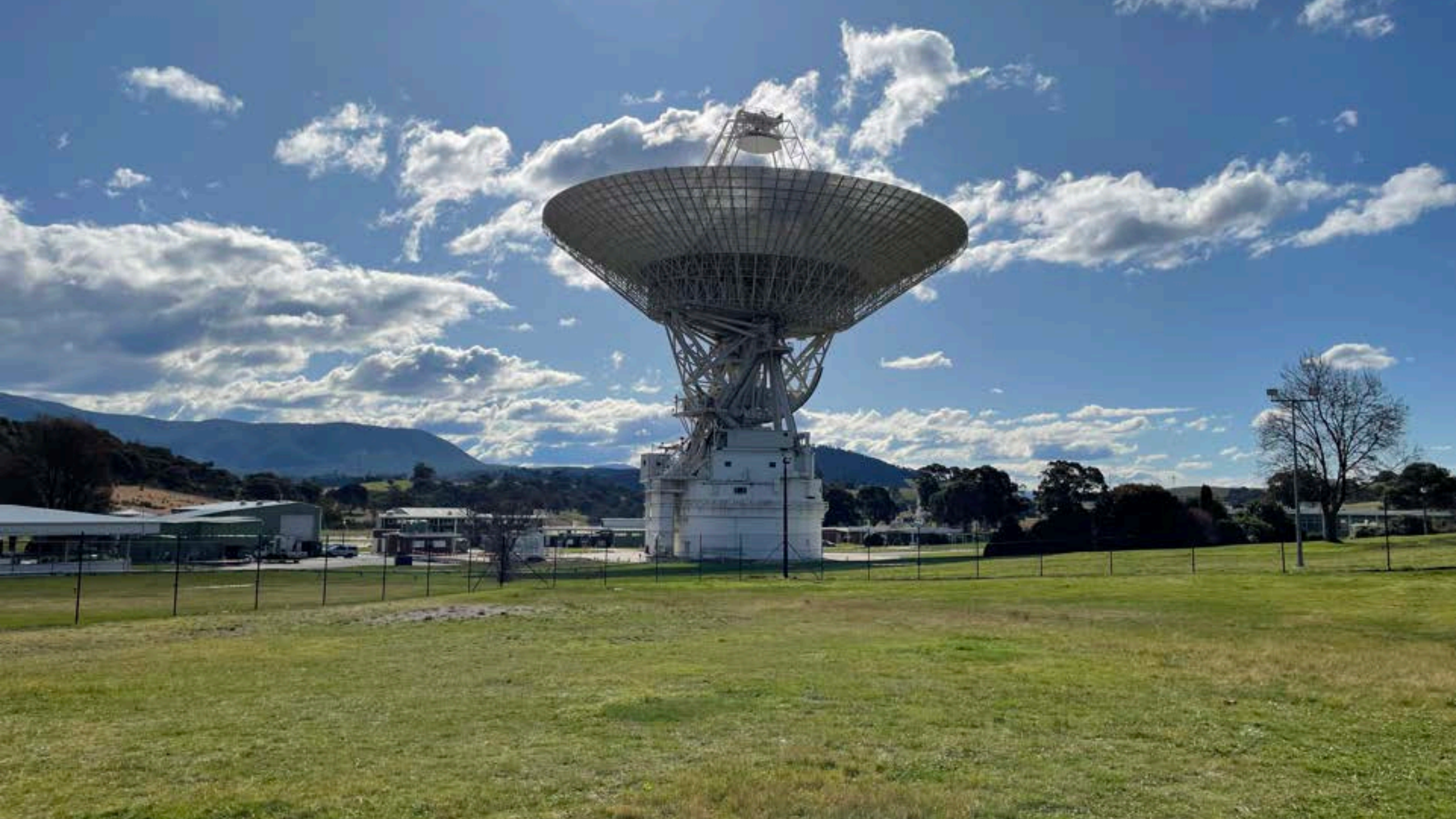
JPL



CANBERRA DEEP SPACE COMMUNICATION COMPLEX

managed in Australia by the
Commonwealth Scientific and Industrial Research Organisation

VISITOR CENTRE / DEEP SPACE COMPLEX
TEMPORARILY CLOSED



Syvän taivaan kuvaaminen

The background of the image is a deep, dark blue night sky. At the bottom, there are dark, silhouetted branches and leaves of trees, creating a frame for the sky. The text "Syvän taivaan kuvaaminen" is centered in the middle of the image in a white, sans-serif font.



Mukaan pakattu kuvauskalusto

- Canon EOS 6D astro-modattu järjestelmäkamera
- Sky-Watcher Star Adventurer seurantalusta
- 14mm, 50mm ja 135mm objektiivit
- Suodattimia ja lankalaukaisin
- Hiilikuitukolmijalka
- 10x30 kiikarit visuaalihavaintoja varten
- Tietokone kuvankäsittelyyn



The background of the image is a deep, dark blue gradient. Silhouettes of various trees are visible, particularly on the left and right sides, with some branches extending towards the center. In the lower portion of the image, there are faint, light-colored shapes that suggest a distant landscape or a body of water under a twilight sky.

Linnunradan keskustan alue

Kuva: Stellarium















A deep blue twilight sky with silhouettes of trees at the bottom.

Eteläinen syvä taivas













Magellanin pilvet

- Iso Magellanin pilvi (LMC) ja Pieni Magellanin pilvi (SMC)
- Linnunradan kaksi seuralaisgalaksia. Havaittavissa paljain silmin.
- Eivät näy koskaan Euroopasta käsin.

The background of the image is a deep, dark blue sky. Silhouettes of various trees are visible along the left and bottom edges, framing the central text. The trees appear to be of different species, with some having more dense foliage and others being more spindly.

Linnunrata - ja revontulikuvaus



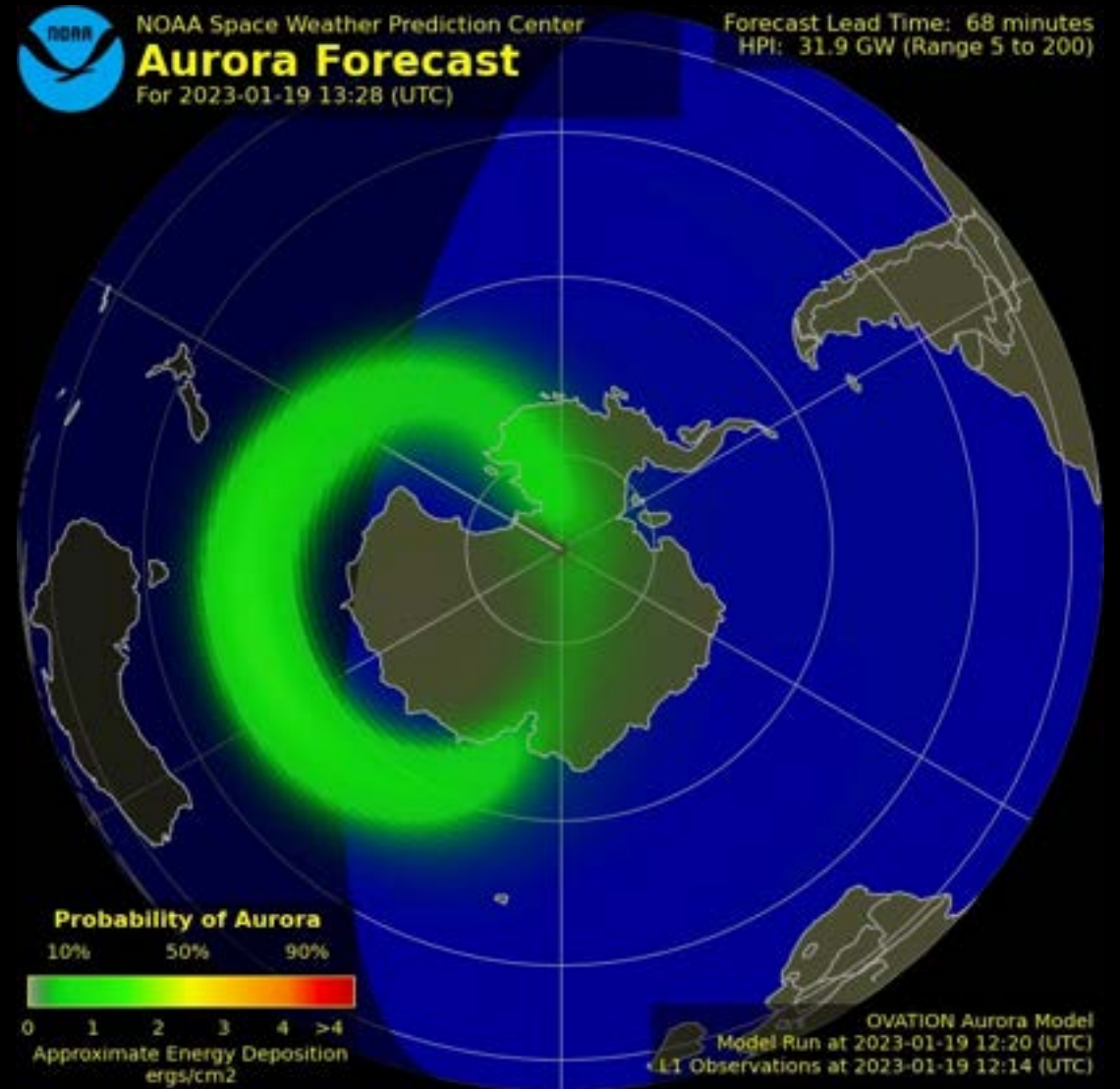






Revontulet (Aurora Australis)

- Revontulia näkyy myös eteläisellä pallonpuoliskolla
- Etelämantereen lisäksi parhaita paikkoja havaita ovat Australia, Uusi-Seelanti, Etelä-Afrikka ja Etelä-Amerikka



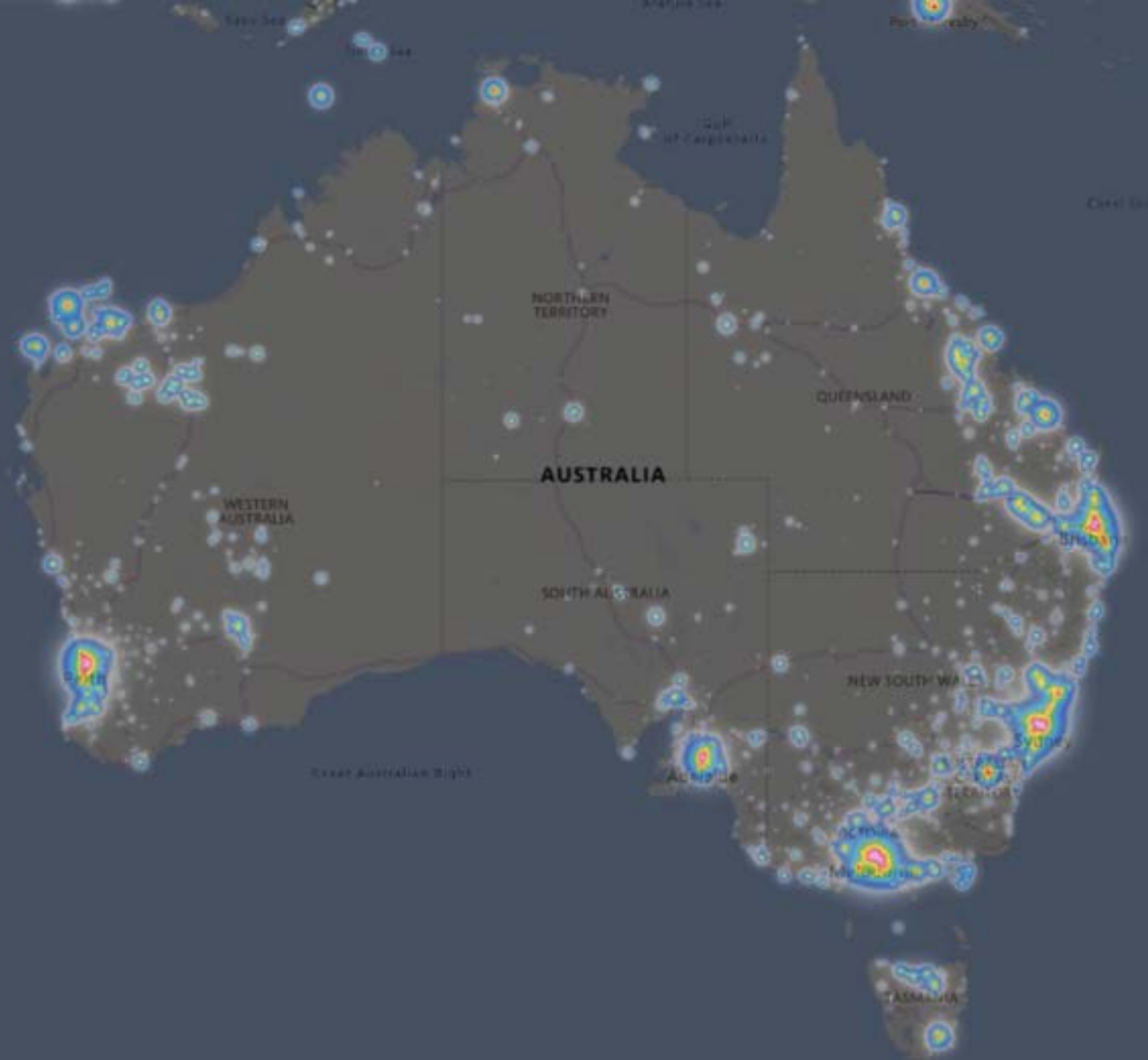


Haasteita

- Napasuuntaus
- Kameran lämpökohina
- Pimeitä paikkoja löytyy, mutta ajomatkat ovat hyvin pitkiä



Kuva:
Lightpollutionmap.info



A long-exposure photograph of a night sky showing numerous white star trails against a deep blue background. The trails are curved, indicating the Earth's rotation. Dark silhouettes of trees are visible in the foreground and along the left and right edges of the frame.

Kiitos! Kysymyksiä?