

The background of the entire image is a night photograph of a rugged, dark landscape, likely a canyon or a series of hills. The sky is a deep blue, filled with numerous stars and the faint, glowing band of the Milky Way galaxy stretching across the upper portion. The terrain is dark, with some areas reflecting a reddish-orange light, possibly from a low sun or moon. In the lower center, a small, bright light source, possibly a person's flashlight or a small fire, illuminates a path or a small clearing on the ground.

NINGALO ECLIPSE

WESTERN AUSTRALIA
MEDIA KIT

FOREWORD FROM THE MINISTER

The Ningaloo Eclipse occurring next April will see more than 10,000 visitors travel to Exmouth to witness one of nature's most spectacular natural events - a total solar eclipse.

The picturesque Coral Coast town is in fact the most accessible land-based destination in the world to view this phenomenon that will take place alongside the wonders of the UNESCO World Heritage-listed Ningaloo Marine Park. Furthermore, it will occur during the region's popular whale shark season.

The Total Solar Eclipse presents opportunities across the State, with other locations around Western Australia to see a partial Solar Eclipse. This includes Perth which will witness a 70 per cent Eclipse, Coral Bay will experience a 99 per cent partial Eclipse while Geraldton will see just over 80 per cent.

This event will draw large crowds of people from around the globe to Western Australia and inject millions of tourism dollars into the economy and boost jobs. It also presents an opportunity to promote the

State's stargazing, astronomy and astrophotography offerings to the world as the international media spotlight shines upon us.

The event will also help the Department of Jobs, Tourism, Science and Innovation activities to inspire young people's interest and uptake of Science, Technology, Engineering and Maths studies and careers.

The McGowan Government has been investing significant funding and liaising closely with stakeholders to ensure a safe and enjoyable experience for visitors.

Research conducted by Tourism WA has identified Dark Sky Tourism as a growth segment with considerable potential, with 71 per cent of the target market believing it's an experience worth paying for.

With 80 per cent of the world's population now living under a light polluted sky, Western Australia's vast open landscapes and low-level light pollution means it has one of the darkest night skies on the planet and a bright future for astrotourism.

Hon Roger Cook BA GradDipBus MBA MLA

Deputy Premier; Minister for State Development, Jobs and Trade; Tourism; Commerce; Science.



📍 Bungle Bungle Range, Purnululu National Park

📍 Total Solar Eclipse
viewing locations

----- Coral Coast Highway

BROOME
KARRATHA
ONSLOW
EXMOUTH
NINGALOO
CORAL BAY
CARNARVON
SHARK BAY
KALBARRI
GERALDTON
PINNACLES
PERTH





ABOUT JTSI

The Department of Jobs, Tourism, Science and Innovation (JTSI) is the Western Australian government department responsible for leading the State's economic development, international trade and investment, and tourism, and promoting the defence, international education, science and innovation sectors.

To find out more visit jtsi.wa.gov.au

ABOUT TOURISM WESTERN AUSTRALIA

Tourism Western Australia is a division of the Department of Jobs, Tourism, Science and Innovation (JTSI), responsible for promoting Western Australia as a world-class holiday and events destination.

Tourism WA's core functions are:

- Delivering innovative marketing campaigns to raise awareness of WA's destinations and experiences to attract more visitors to the State.
- Securing and supporting a diverse range of sports, arts, cultural, culinary and business events, that offer a compelling and time-specific reason to visit WA.
- Working closely with government and industry partners to improve destination access, accommodation and tourism experiences for visitors.

To find out more visit tourism.wa.gov.au



THE NINGALOO TOTAL SOLAR ECLIPSE EXPLAINED

Next April, visitors to Exmouth will have front row seats for one of nature's most phenomenal occurrences – a total solar eclipse – experiencing 62 seconds of totality as the sun is completely blocked by the Moon.

On April 20, 2023 at around 11:27am, the path of totality will graze the tip of Western Australia in a 40-kilometre wide track near Exmouth, making it the most accessible land-based place on Earth to view the spectacle.

Exmouth in the World Heritage-listed Ningaloo region is an awe-inspiring place, home to Australia's largest fringing reef and the dramatic gorges of Cape Range National Park. As a bucket list bonus for visitors, the Ningaloo Eclipse will take place during whale shark swimming season.

So, what will Ningaloo Eclipse attendees likely see? Chief Astronomer at the Gravity Discovery Centre Rick Tonello explains.

"Observers can expect to see the Sun's bright disc slowly being covered by the silhouette of the Moon to produce a diminishing solar crescent.

Just as the last of the Sun disappears behind the Moon, an interesting optical phenomenon known as Bailey's Beads or the Diamond Ring Effect will occur, where the final rays of sunlight pass between the rugged Lunar topography," Rick said.

"The process of the Moon moving across the face of the Sun takes hours, but the brief moment of totality when the Sun is completely obscured by the Moon will only last a total of 62 seconds!"

Whilst Exmouth is in complete darkness for just over a minute, the rest of Western Australia will experience a partial solar eclipse, with some locations experiencing more 'darkness' than others. The town of Onslow will experience a deep partial solar eclipse with over 99 per cent of the sun being covered by the moon. Those south of Exmouth in Carnarvon will witness 97 per cent coverage, whilst in Perth it will be a 72 per cent coverage.

An important technical aspect to note is that widely speaking, the 2023 event is described as a hybrid solar eclipse, however, due to its location, Exmouth will experience a total solar eclipse.

Preparations are well underway in Exmouth and surrounds as communities get ready to welcome up to 25,000 stargazers to the region. The WA State Government, led by JTSI, has set up a dedicated team to undertake comprehensive planning across multiple agencies, to ensure the region has adequate support, while ensuring guests have a safe and enjoyable experience.

Accommodation in Exmouth is heavily booked, so neighbouring towns along the Coral Coast Highway, such as Carnarvon and Onslow, will play a major role in accommodating visitors wishing to travel to see the total solar eclipse. The State Government, working with the Shire of Exmouth, is adding additional camping capacity in Exmouth to accommodate the demand for viewing the Eclipse.

Cruise ships (without guests disembarking), fly-in fly-out day experiences to Exmouth, and satellite events will increase capacity to allow more people to experience the eclipse activity.

Guests in Perth can enjoy a live stream from Yagan Square and people anywhere in the world can watch on-line via the Gingin Observatory.

Western Australia is the dark sky tourism capital of Australia, and one of the best places in the world to watch the stars, sun and moon journey across the sky. The Ningaloo Eclipse is one of four significant eclipses occurring in the State over the next 15 years, with Durack in 2028, Geraldton in 2037 and Onslow in 2038 providing excitement for years to come.



WHERE TO STAY?

Some accommodation options may still be available in towns along the Coral Coast Highway.

- **Exmouth (additional camping available)**
- **Cape Range National Park (50 km from Exmouth)**
- **Bullara Station (92 km from Exmouth)**
- **Woorarra Station (189 km from Exmouth)**
- **Carnarvon (364 km from Exmouth)**
- **Onslow (398 km from Exmouth)**
- **Quobba Station (400km from Exmouth)**
- **Wooramel Station (479 km from Exmouth)**
- **Parks and Wildlife - operated campgrounds:**
parkstaybookings.dbca.wa.gov.au

For more information visit: australiascoralcoast.com



GETTING THERE

By air: Regional Express (REX) flies to Monkey Mia and Carnarvon, and Qantas flies into Geraldton and Exmouth.

Drive: Coach, tour, hire car and self-drive options are all available, with the Coral Coast Highway, from Perth to Exmouth being a popular driving route, showcasing some of Australia's most spectacular landscapes and experiences. From Perth, it's a nine-hour drive to Carnarvon; 11.5-hour drive to Coral Bay and 12.5-hour drive to Exmouth.

Fly + Drive: To help make the road trip more accessible Avis and Hertz Car Rental offer significantly reduced relocation fees for one-way rentals between Perth and Exmouth.

EYE SAFETY

Anyone viewing an eclipse must never look at the Sun's bright face without appropriate eye protection. A special-purpose safe solar filter that complies with Australian Safety Standards is essential. For more information, visit - arpansa.gov.au/understanding-radiation/radiation-sources/more-radiation-sources/solar-eclipse

For more information including event and logistical updates visit: ningalooeclipse.com

DISCOVER THE WONDERS OF NINGALOO

In addition to experiencing the eclipse, guests to Exmouth on Australia's Coral Coast can simply step off the shore and swim a few metres to discover the underwater wonderland of Ningaloo Reef.

Stretching 300 kilometres, Ningaloo Reef is Australia's largest fringing reef and regarded as one of the world's last great ocean paradises. Hidden below the surface here you'll find 250 species of hard and soft corals, more than 500 species of fish, including the famous whale sharks that visit each year between March and July, and an abundance of marine life including manta rays, humpback whales, dugongs and turtles.

In 2011, the UNESCO Ningaloo Coast World Heritage Area was established, including the Ningaloo Marine Park, which protects the Reef and Coastal Reserves, as well as land-based wonders like Cape Range National Park. The site is recognised for its natural beauty, exceptional biodiversity and conservation significance due to the unique marine and terrestrial flora and fauna found here.

Situated on the west side of Exmouth is Cape Range National Park, a spectacular hiking location, with limestone ranges, deep canyons and pristine beaches covering 50,000 hectares. The park is home to a rich and diverse array of plant and animal species including kangaroos, emus, echidnas, birds, black-flanked rock wallabies and more than 600 different plants. During winter, wildflowers burst to life providing a spectacle of colour to be enjoyed by visitors.

Top 10 Things to Do on Australia's Coral Coast

1. The Pinnacles, Nambung National Park

Formed over millions of years, the Pinnacles are a collection of otherworldly limestone structures, located a two-hour drive north of Perth. Featuring thousands of formations of up to 3.5 meters high rising out of distinct yellow desert sand, the view is like no other.



2. Houtman Abrolhos Islands

Located 60 kilometres off the Geraldton coast with a fascinating maritime history, this archipelago with crystal blue waters and abundant marine life provides the perfect setting for snorkelling, windsurfing, bird-watching and fishing.

3. Kalbarri National Park

Over the past 400 million years, the flow of the Murchison River has created magnificent deep red and white banded gorges and the recently opened 100-metre high Skywalk provides breathtaking uninterrupted views. 'Nature's Window' – a rock formation that perfectly frames the rugged upstream view of the river is a must visit photo opportunity.

4. Dolphins at Monkey Mia

For more than 60 years, friendly wild bottlenose dolphins have been swimming to the shores of Shark Bay's Monkey Mia to interact with humans. Specially trained rangers select visitors to feed only a select few dolphins each morning, but at any time of the day it's possible to see dolphins frolicking in the bay.

5. Shark Bay World Heritage Area

Here you can also spot sea turtles and dugongs, admire the world's oldest and largest living fossils – Hamelin Pool's stromatolites, and walk along one of only two beaches in the world formed entirely of tiny white shells.

6. Carnarvon Space and Technology Museum

Learn about the role Carnarvon played in the manned space program and in the Australian satellite communications industry. In 2012, retired NASA astronaut Buzz Aldrin travelled to Carnarvon to officially open the Space and Technology Museum.

7. Ningaloo's Big Three

Ningaloo Reef is the only place in the world where you can swim with whale sharks (March – July), humpback whales (July – October) and manta rays (all year round) in one location. Tours depart from Exmouth and Coral Bay to experience these ultimate marine wildlife encounters.

8. Connect with culture

Connect with Aboriginal tourism operators along the coast to learn more about the oldest living culture on Earth through the eyes of local guides. Key experiences include driving the Yamaji Drive Trail around Geraldton, seeing the landscape of Gathaagudu (Shark Bay) through the eyes of a Malgana tour guide, learning about the local language groups at Carnarvon's Gwoonwardu Mia or meeting artists in residence.

9. Wildflower Country

The Coral Coast's wildflower trails lead you through some of the Western Australia's most breathtaking wildflowers. Head inland to explore some of WA's most magnificent wildflower country, particularly between July and October when blooms are at their breathtaking best.

10. A pink lake at Hutt Lagoon

Between Geraldton and Kalbarri in the tiny town of Port Gregory, Hutt Lagoon is where you can see the magnificent red, bubble-gum pink or lilac waters, with the colour changing depending on the conditions. Best viewed between April and October, in recent years this location has become one of WA's most aspirational and otherworldly experiences.



WHERE TO STAY?

The accommodation options of the region are as diverse as the experiences on offer – from high-end glamping on the doorstep of Ningaloo Reef, to an outback station stay or hotel experience with all of the mod cons. To find out more visit:

australiascoralcoast.com/business/accommodation

ACCESSIBILITY

Regional Express (REX) flies to Monkey Mia and Carnarvon, and Qantas fly into Geraldton and Exmouth, with coach, tour, hire car and self-drive options also available.

To make self-drive adventures more accessible on the Coral Coast Highway Avis offers significantly reduced costs for one-way rentals between Perth and Exmouth.





THE MAGIC OF THE MILKY WAY

Those lucky enough to have experienced the grandeur of the West Australian outback, know that looking up at the dark night sky to see the Milky Way sparkling above is a truly magical experience.

With 80 per cent of the world's population now living under light-polluted skies, Western Australia is in a unique position when it comes to Dark Sky tourism. Carol Redford, CEO and founder of Astrotourism WA explains:

"Western Australia's night sky is an asset worth protecting. Communities around WA are working to keep the night sky as dark as possible by reducing light pollution. While we're protecting our night sky, we're inviting visitors from around the world to share its beauty. At the same time, we're growing our understanding of how stargazing brings people together."

The vast and open landscape of Western Australia presents endless opportunities to appreciate the dark night sky. Spread over a massive 2.5 million square kilometres, the outskirts of Perth including the Perth Hills, Avon Valley and Chittering Valley are accessible

options for stargazers to enjoy. But for those willing to venture further into the regions, billion-star experiences await.

10 star-studded experiences to have in WA

1. Glamping with the Stars

Immerse yourself in nature and the wonders of the Universe through a glamping experience at properties such as Sal Salis or Karijini Eco Retreat. Both options are situated within national parks, offering comfortable and low impact eco-style tents that allow guests to enjoy the dark night sky with uninterrupted views of the Milky Way.

2. Outback station stays

With some of WA's outback stations the same size as small countries, their epic landscapes provide optimal conditions for stargazing. Some popular options include El Questro in the Kimberley, Wooleen Station near Geraldton, Quobba Station near Carnarvon and Bullara Station near Exmouth.



3. Star-lit dinner at Lake Argyle

Enjoy an exclusive experience overlooking the vast Lake Argyle from a private lookout, where you can soak up the ambience of a Kimberley sunset as it transforms into a star-lit sky – the perfect setting for a 3-course gourmet dinner.

4. Gingin Observatory

Situated on a pristine piece of bushland 1.5 hours drive from Perth, the Gingin Observatory features a retractable roof, state-of-the-art telescopes and an amazing WA dark sky - which makes for a world-class astronomy experience. Public night visits are available on Friday and Saturday from 7:30pm – 9:30pm; as well as Aboriginal Astronomy sessions run by Aboriginal Elder Noel Nannup, where guests can learn more about the dreamtime stories of creation.

5. Salt and Bush Eco Tours Mandurah

The guides at Salt and Bush Eco Tours offer insightful stargazing experiences from the pitch-black Lake Clifton shoreline, as well as evening exploration tours where guests can learn about the night sky or go for a spotlighting walk to discover unique nocturnal animals.

6. Kalbarri Skywalk after dark

Appreciate the universe from the magnificent Kalbarri Skywalk perched above the mighty Murchison River gorges on a stargazing tour with D'Guy Charters. The tour is suitable for both serious astronomers and easy-going nature lovers. Best4Travel also offer Skywalk Dinner events from this extraordinary new location.

7. Stargazing at the Pinnacles

Explore the ancient landscape and dark night sky at the Pinnacles with Lumineer Adventure Tours. Guests can enjoy an Australian Barbeque Dinner in the Pinnacles as the sun sets, before the night sky lights up and the stargazing begins. During the tour guests will learn about Aboriginal Astronomy and hear Dreamtime stories of the night sky.

8. Astro Tour of Broome

Greg Quicke (aka Space Gandalf) has offered 'intensely practical astronomy' to the world since 1995, with his Broome-based Astro Tours designed to introduce the magnificence of WA's night sky to guests. From Stairway to the Moon viewing events to star gazing just 20 minutes out of Broome, Greg's passion brings the wonders of the universe to life.

9. **Aboriginal stargazing experiences**

Aboriginal people have read the night sky for more than 60,000 years, with their observations present in ceremony, calendars, navigation, songlines, art and food gathering. Viewing the stars from an Aboriginal perspective is an insightful experience. From Ngurrangga Tours in Karratha, who offer a two-day camping experience under the stars in the Millstream-Chichester National Park, to Wula Gura Nyinda in Shark Bay offering the Didgeridoo Dreamtime Experience – there are immersive cultural experiences on offer in all corners of WA.

10. **Astro-photography**

Bring your camera to capture awe-inspiring starry night skies at the many special places in WA. To help make planning your next adventure easier, Astrotourism WA has identified WA's astrophotography hotspots and stargazing sites. astrotourismwa.com.au/map



DID YOU KNOW?

In addition to the amazing stargazing options in WA, guests can also experience the 'Staircase to the Moon' in Broome - a natural phenomenon when the sun sets over the ocean creating a unique optical illusion that needs to be seen to be believed.

NINGALOO ECLIPSE: STAR POWER

"The total solar eclipse taking place in Exmouth next April is very significant for Western Australia - not only from a scientific perspective, but also for the opportunity it presents to raise awareness globally of our astrotourism offering and to ignite curiosity in school aged children through STEM, who are the future leaders and creative-thinkers of the State.

"Whilst looking to the future, I'm passionate about the ancient knowledge of Australia's Aboriginal people - they were the first great astronomers of the land, with 60,000 years of insights to share.

"The unpolluted night sky in Western Australia is an incredible asset that must be protected through education, that will allow us to foster a new and exciting sector within the tourism industry."

Prof. Peter Klinken AC, JTSI Chief Scientist

"WA is in a unique position when it comes to dark sky tourism. Perth is the most isolated capital city on a continent and is home to 80 per cent of WA's population. This leaves 2.6 million square kms of wide-open land with sparsely populated country towns and low levels of light pollution.

"A dark night sky free from light pollution offers the ideal environment to view the Milky Way in all its splendour. It can be quite an emotional experience for someone seeing it for the first time. WA's location in the Southern Hemisphere is also advantageous. We have the better viewing of the Milky Way and can see things here that can't be seen in the Northern Hemisphere.

"Until now, I think WA's dark night sky has been taken for granted. WA's regional communities now appreciate the world-class asset that shimmers above us every night. Everyone is much more aware of the global problem of light pollution and how that impacts the view of the stars for billions of people who live in brightly lit cities around the world."

Carol Redford, CEO Astrotourism WA



"As we gather to enjoy this celestial wonder, let's be mindful of the wonders under our feet, too, and make sure we protect the outstanding World Heritage values of Ningaloo and Exmouth Gulf. An exceptional event in such an exceptional place deserves exceptional levels of care and stewardship".

Denise Fitch, Cape Conservation Group

"One of the most popular tour experiences we offer guests to Shark Bay is the Didgeridoo Dreaming Night tour, where we sit around the campfire under the stars to learn more about the cultural significance of the stars. We plan on running this experience from a special location in Shark Bay during the Solar Eclipse."

**Mira Vankova, Wula Gura Nyinda
Eco Cultural Adventures**

"The night skies in Western Australia are some of the clearest and most spectacular in the world. Shooting our vast open landscapes underneath the Milky Way is a photographer's dream."

Jarrad Seng, Canon Ambassador

"My Astro Tours in Broome are all about making astronomy practical and accessible for the curious-minded. I see often, the powerful revelations people can have by simply turning off their mobile phones and tuning into the present by looking up at that big and magnificent night sky.

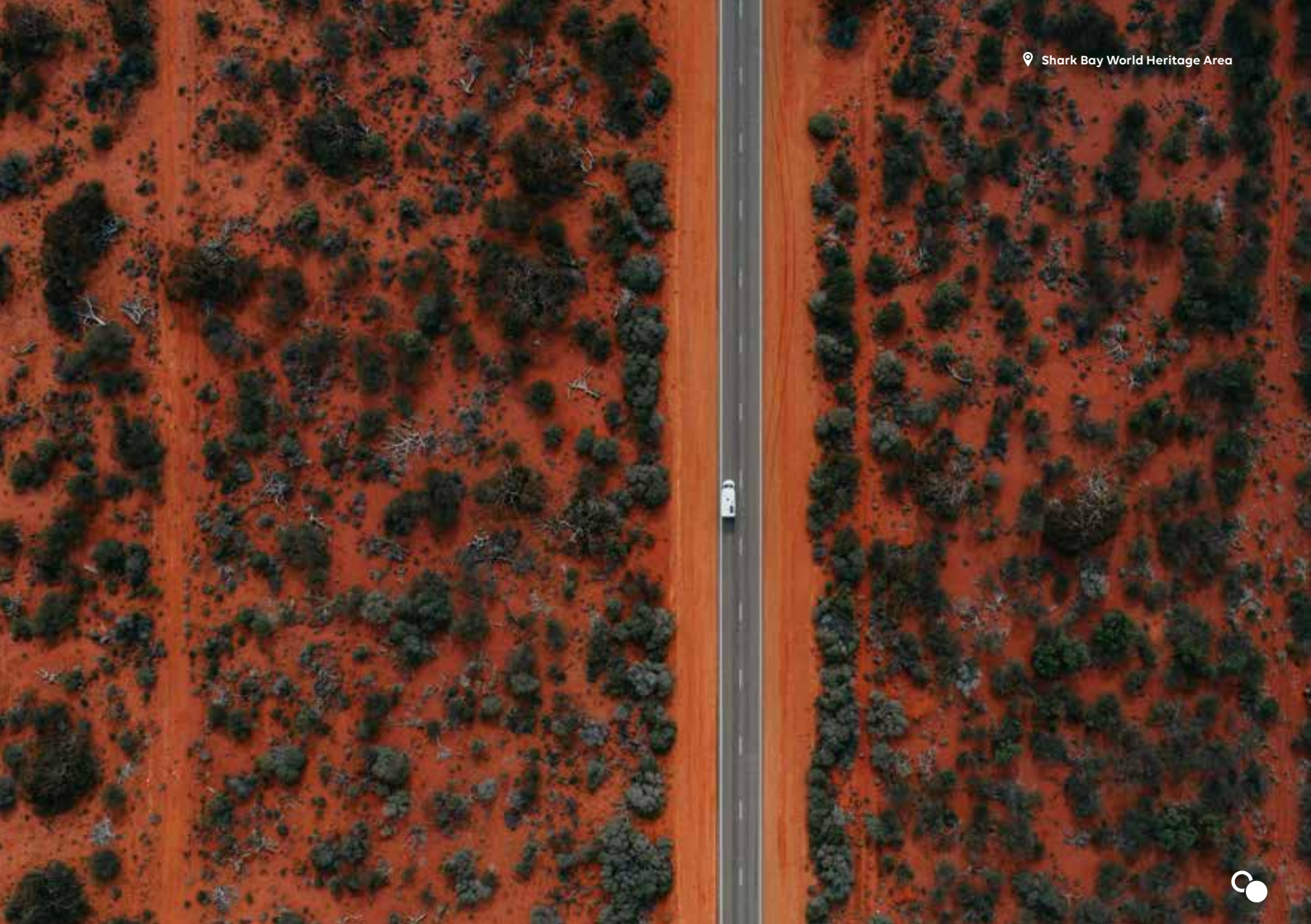
"I could only describe witnessing a total eclipse as an intense spiritual experience..."

At the moment of totality, I felt a physical hugeness in my heart and I just had to cry out."

Greg Quicke, Astronomer

"To me, the most important aspect about the Ningaloo Total Solar Eclipse is the inspiration and excitement it will provide, not just to seasoned astronomers, but to the future generations of scientists such as primary and secondary school students. This celestial event is an amazing opportunity to witness the incredible mechanics of the Solar System! It will also excite and engage the everyday layperson who doesn't normally engage in astronomy or space related subjects. This is the Universe's way of saying; "Hey! You on Earth! Check THIS out!"

**Rick Tonello, Chief Astronomer
Gravity Discovery Centre**



AN EXPERT'S GUIDE

Astrophotographer Michael Goh's tips for capturing the Total Solar Eclipse

- Safety is important for both your eyes and camera equipment. Remember in addition to not looking at the sun with bare eyes, if you're using a camera, lens, and/or telescope - this is basically a magnifying glass on your gear.
- To be safe, I use a satellite tracker, messenger and GPS safety equipment to keep track of where I am and ensure phone signal.
- Research and prepare for the big moment – I'm writing a list and checking it twice!
- From a technical aspect, with the elevation of the eclipse you might want to do a panorama, however the amount of time to do so would be limited given the duration of totality.
- There are some great foreground elements in the area. Locations like Cape Range National Park, termite mounds, Vlamingh Head Lighthouse are all great spots to capture the Eclipse.
- Be present, appreciate the moment and be considerate of others.



A wide-angle photograph of a desert landscape at night. The foreground is a sandy dune with ripples. In the middle ground, several dark, jagged rock formations (pinnacles) stand against a dark sky. The sky is filled with stars and a faint, colorful nebula or aurora-like glow in shades of purple, blue, and orange. The overall scene is serene and majestic.

Photographer Marco Kraus's tips for shooting WA's dark night skies

- Western Australia is a unique place with some of the darkest night skies in the world. To capture its beauty, find a dark place away from cities and other light pollution, best when the moon has set.
- A tripod and camera timer or remote trigger will eliminate any camera shake.
- Any manual camera with a wide-angle lens or even some modern smartphones will work.
- Best to choose an aperture under f/4, and depending on the size of your lens, expose eight to 20 seconds to avoid blurred stars.
- Don't be shy on the ISO either, 1600-6400 is a good range. Choose manual focus and set it to infinity or focus on the brightest star in the sky.
- Press the shutter button and enjoy a beautiful night under the stars.

BAIYUNGU ABORIGINAL CORPORATION

Our Aboriginal astronomy is the star of our Dreamtime stories.

The coastal people of Ningaloo Baiyungu, Yinnigurdira and West Thalanyji have a deep connection with Wilarra (Moon). It tells us when it's the right time for fishing, hunting and it's a guide for our tides.

Jirndal (Sun) is the centre of Aboriginal and Torres Strait Islanders cultures. Jirndal is the sign of life, death and heat in many Aboriginal traditions.

Jirndal (Sun) is Nyanjil (women) and Wilarra (Moon) is Ganyara (man) and the only time they meet is Solar Eclipse.

The eclipse represents new stars and new life in the universe when Wilarra Jirndal Bunimarri (the Jirndal and the Wilarra meet). It strengthens our connection

with the powerful spirit of the universe and makes us feel that Mother Nature is healthy, and that the new stars from the Sun and Moon meeting represent new life ahead with our people.

It's important we, the Traditional Owners, read astronomy as it guides and tell us what's happening On Country.

In Exmouth, Warnangura is known to be our emu spirit Dreaming place. Strongly connected to our astronomy the Jirndi Nyunghu (Emu) is our spiritual God, our creator.

The three tribes of Nyinggulu belonging to Emu spirit Dreaming we call 'Gajalbu malinmayi'.

Our totems, our clan, our language and our identity for where we come from.







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