



INTERNATIONAL DARK-SKY ASSOCIATION

3223 N first Ave - Tucson Arizona 85719 - 520-293-3198 - [www.darksky.org](http://www.darksky.org)

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*TO PRESERVE AND PROTECT THE NIGHTTIME ENVIRONMENT AND OUR HERITAGE OF DARK SKIES THROUGH  
QUALITY OUTDOOR LIGHTING*  
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**International Dark-Sky Association  
Dark Sky Places Program Annual Report**

OCTOBER 2015

**Aoraki Mackenzie International Dark Sky Reserve**

**2014-2015 Report**

## Aoraki Mackenzie International Dark Sky Reserve - 2014 - 2015

The 2014 to 2015 year has been one of maturing of the Reserve. Increasing numbers of visitors has seen the development of new facilities, ventures and proposals to cater for the strong interest shown in the Dark Skies above the Reserve.

The South Island of NZ tourism industry has formed a partnership with Asia's largest airline, China Southern Airlines, which will see a new year-round air service begin in December 2015.

*"Latest figures from Statistics NZ show Christchurch Airport has seen a more than 50% increase in the number of Chinese passengers in the 12 months to November 2014, compared to the previous year. That highlights the fascination Chinese travellers have for the South Island."*

Airport Chief Executive Malcolm Johns says visitors who enjoyed last year's inaugural charter flights have encouraged others to travel here this year.

*"Just as last year's visitors did, the visitors from Guangzhou will land in Christchurch, then travel around the South Island to enjoy the experiences they have heard so much about,"* he says.

*"The South Island is our place in the world and Chinese visitors want to experience the wide open spaces, mountains, lakes, glaciers, **starlit skies** and all manner of adventures, as well as the famous southern hospitality. The charter visitors want to treat themselves to something special over Chinese New Year and since it heralds the beginning of The Year of The Sheep, it is even more fitting they land in Canterbury!"*

New astrotourism opportunities and additional accommodation for both visitors and workers will flow from this visitor demand.

Hard work and strong advocacy will be required to ensure new development doesn't bring added pressures on the clear Dark Skies above.

September 2015



## **General**

Aoraki Mackenzie International Dark Sky Reserve Website: <http://www.darkskyreserve.org.nz/>

The AMIDSR Board has been registered as a charitable entity, No. CC50892, with the Charities Services, part of the NZ Department of Internal Affairs, and legislated by the Charities Act 2005. Registration will make it easier for the Board to raise funds for activities, education and awareness within the AMIDSR.

The first Annual General Meeting and two ordinary meetings of the Management Board of the AMIDSR were held. Minor changes have been made to the constitution to allow the board to apply for funding. The Board is comprised of representatives of entities having a non commercial association with the Reserve. Terms of duty on the Board are limited to three years with the opportunity for one repeat term.

Two new board members were elected with their terms to start on the 1<sup>st</sup> January 2016.

Margaret Austin has retired from the Board but will have a role as an advisor to the Board for World Heritage matters.

### **Management Board of the Aoraki Mackenzie International Dark Sky Reserve - 2015**

<b>Name</b>	<b>Affiliation</b>	<b>Place of Residence</b>
Alan Gilmore	Manager of the Reserve; AMIDSR Board Secretary	Lake Tekapo
Prof Gary Steel	Tourism Sector, Lincoln University	Christchurch
Prof John Hearnshaw	Royal Astronomical Society of New Zealand (President), University of Canterbury, Chair of AMIDSR Board	Christchurch
Assoc Prof Karen Pollard	Director of Mt John Observatory, University of Canterbury	Christchurch
Hon. Margaret Austin	Starlight Working Party (Chair),	Christchurch
Cr Murray Cox	Mackenzie District Council	Lake Tekapo
Sally Jones	Department of Conservation	Twizel
Joy Paterson	Local Community, Mackenzie	Twizel
Steve Butler	International Dark-Sky Association	Invercargill
Tewera King	Arowhenua rununga	Temuka

### **Aoraki Mackenzie International Dark Sky Reserve:**

No new territory was added to the Reserve this year.

The AMIDSR has continued to be popular with New Zealand and international visitors especially from China. Visitor figures are included later in this report. Several other communities around New Zealand enquired as to either extending the AMIDSR or to launch new IDA applications for their own areas.

#### **Lighting:**

Enquiries have been received from the Mackenzie District Council (MDC) for input into long term plans and upcoming District Plans regarding lighting requirements. Professor Hearnshaw met with a lighting manufacturer in Christchurch to discuss the particular requirements for lighting in the reserve. This included CCT rating and blue light filtering within LED lamps.

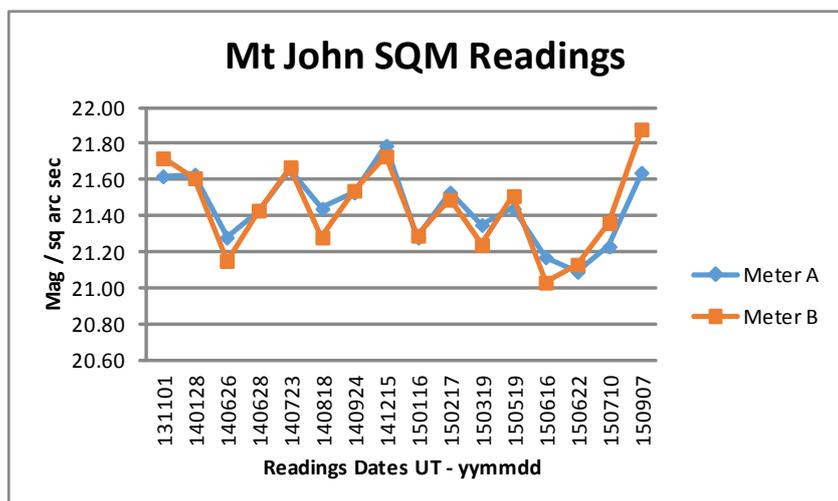
The suitability of the MDC's lighting ordinances had been discussed with the Planning Manager of Davie Lovell-Smith Ltd, Planning Consultants to the MDC. There had been some follow-up discussions by phone from the Planning & Regulations Manager of the MDC.

Further development is happening on bollard lighting in Tekapo to overcome an issue with the reflecting louvers.

Two white LED street lights installed recently near the Tekapo Community Hall have been replaced with warm white LEDs and are now fully downward pointing.

### Sky Quality readings

Two hand held SQM meters were used at the Mt John Observatory by Alan Gilmore during Near Earth Object programmes. The average of five readings for each meter were recorded.



Mt John SQM Readings

UT Date	UT Time	Meter A	s.d. A	Meter B	s.d. B
131101	1203	21.62	0.12	21.72	0.18
140128	1253	21.63	0.09	21.61	0.11
140626	1206	21.28	0.25	21.15	0.11
140628	1142	21.43	0.07	21.43	0.05
140723	1414	21.66	0.19	21.67	0.08
140818	1043	21.44	0.09	21.28	0.24
140924	1430	21.53	0.13	21.54	0.19
141215	1143	21.79	0.01	21.73	0.03
150116	1255	21.28	0.03	21.29	0.09
150217	1430	21.53	0.14	21.49	0.05
150319	937	21.35	0.05	21.24	0.10
150519	1044	21.44	0.10	21.51	0.09
150616	1132	21.17	0.09	21.03	0.17
150622	1409	21.09	0.30	21.13	0.16
150710	950	21.23	0.33	21.36	0.26
150907	1250	21.64	0.31	21.88	0.07

Heavy snow coverage over the Tekapo area on the 2015.06.22

### Communities:

A new foot bridge is proposed for Tekapo to link the town centre with the iconic Church of the Good Shepherd. Fabrication and painting of the superstructure is nearing completion. Onsite construction resumed in September this year, with installation of the first section in late September. The official opening is due on the 22<sup>nd</sup> of November.

See photos on next page



[www.laketekapofootbridge.co.nz/](http://www.laketekapofootbridge.co.nz/)

**First section of new pedestrian bridge installed in Tekapo.**

## Long Term Plan

The Mackenzie District Council Reviewed their Long Term Plan 2015 -2024 for the district. The AMIDSR Board made submissions to supply information to help the drafting of new regulations. Council have adopted a policy position in the Long Term Plan.

**Joint Submission:** *Royal Astronomical Society of NZ/ University of Canterbury/ Aoraki Mackenzie International Dark Sky Reserve Board*

**Council Decision:** *Accept the request.*

**Reason:** *Street Lighting in the Dark Sky Reserve: The Council is committed to supporting the Dark Sky Reserve, and is working with suppliers on providing appropriate lighting. It has a programme of replacement of non-compliant lighting over time, and intends to continue to work with the stakeholders and suppliers to ensure these requirements can be met. Replacement of street lighting to meet requirements is planned for in Years 4 – 10 of the LTP.*

[www.mackenzie.govt.nz/Site/LTP\\_2015-2050/Mackenzie\\_District\\_Council\\_long\\_Term\\_Plan\\_.aspx](http://www.mackenzie.govt.nz/Site/LTP_2015-2050/Mackenzie_District_Council_long_Term_Plan_.aspx)

Further contact with the district council is expected as the process develops. The development of district Plans includes extensive consultation with members of the public so submissions will be prepared when the time comes.

## **Recognition of Dark Skies Champion**

To be a **Member of the New Zealand Order of Merit:** MURRAY, Mr Graeme Douglas, JP

**For services to tourism and conservation**

*Mr Graeme Murray has contributed to tourism and dark skies reserve in the Aoraki Mackenzie Country for fifty years.*

*Mr Murray was a major figure in the development of Lake Tekapo's Air Safaris, the company running sight-seeing flights over the Southern Alps and for whom he worked from 1971 to 2001. He then co-founded Earth and Sky Astro Tourism, a night-time astronomy tourism business. The company refurbished and installed a modern telescope in an unused observatory on Mount John and constructed a conservatory-like café. This successful business, attracting 75,000 tourists per year, has been coupled with personal contributions to preserving the darkness of the night sky in the Mackenzie region. Following attendance at the first UNESCO Starlight Conference in 2007, he became closely involved in the successful initiative to have part of the Aoraki Mackenzie region – 4,367 square kilometres – formally recognised in 2012 as a Gold Status International Dark Sky Reserve protecting the area's unique location for observing the stars, free of light pollution. It is one of*

the eight largest such Reserves globally. Mr Murray has served 20 years on the South Canterbury Regional Development Council and 14 years on the Mackenzie Tourism and Development Board.

## **Conservation and Research (Parks/Reserves)**

The Conservation Management Strategy for the Canterbury Region, including all of the AMIDSR area, was further developed by the Department of Conservation.

Following submissions to this Strategy by AMIDSR board members two references to the Reserve have been included.

### **“2.1 National Parks Place**

*An Aoraki Mackenzie Dark Sky Reserve was ‘approved’ in June 2012 by the International DarkSky Association, with community support, to recognise that the Mackenzie Basin is one of the best stargazing sites in the world. The ‘reserve’ has no statutory status as yet. Natural darkness preservation and appreciation of the night sky is already recognised in the Aoraki/Mount Cook National Park Management Plan, but could be strengthened.”*

### **“POLICIES**

*2.1.3 Seek further protection of natural darkness and the night sky within Aoraki/Mount Cook National Park when the park management plan is next reviewed.”*

## **Tourism and development**

Dark Sky Tourism is becoming increasingly popular in the Mackenzie Basin. Two tourist operators are hoping to taking advantage of this by setting up two very different ventures.

The first venture is the building of two small 'glasshouses' that can be hired as B&B rental accommodation from which to view the dark sky from the warmth and comfort of your bed. Resource consents have been obtained and building is expected to begin in 2016.

The second venture is attached to a luxury lodge on the shores of Lake Pukaki. With the advice and assistance of the nearby Geraldine Observatory, the owners of Mt Cook Lakeside Retreat are building an observatory to give their guests the opportunity to appreciate the wonders of the night sky.

<http://www.mtcookretreat.co.nz/dark-sky.html>

*“Mt Cook Lakeside Retreat is set in a forest wilderness overlooking the turquoise blue waters of Lake Pukaki and is right on the doorstep of Mt Cook World Heritage National Park. From your room you can enjoy uninterrupted views up Lake Pukaki to Mt Cook (Aoraki) and across to the Ben Ohau ranges.”*

*“Your stay here will be under the Aoraki Mackenzie International Dark Sky Reserve, the southern hemisphere's only Dark Sky Reserve and the largest in the world. At night, the view of the stars at the Retreat is incredible. PLUS ... Pukaki Observatory is underway! Explore the universe with us using the latest technology for star gazing and astrophotography in our onsite observatory opening September 2015.”*

Pukaki Observatory is underway! Being located in the gold level Aoraki International Dark Sky Reserve, we have decided to invest in a substantial observatory that will provide our guests with the opportunity to explore the dark sky (there is absolutely no light pollution here). Explore the universe with us using the latest technology for star gazing and astrophotography. Opens September 2015.

[www.glentanner.co.nz/mt-cook-activities/stargazing/](http://www.glentanner.co.nz/mt-cook-activities/stargazing/)

## **Tekapo Village Development**

Joint Media Release from Tekapo Lake Resort Ltd and Mackenzie District Council:

Tekapo is moving ahead with a major new hotel development planned for the town.

**Tekapo Lake Resort Limited** has bought part of some council-owned surplus land, between State Highway 8 and Lakeside Drive, where it plans to build a five-star resort with no less than 110 units.

Tekapo Lake Resort company director Anthony Tosswill says the resort will be developed in two stages and will include about 300 beds, a conference centre, restaurant, gym, sauna, lap pool, shop, hire centre and other facilities. He plans to begin work next year, subject to gaining resource consent.

Worker accommodation to support this and other new developments in Tekapo has been recognised as an issue for the town. To help address this, an associated company is acquiring privately-owned land on Aorangi Crescent opposite the Tekapo Community Centre. Mr Tosswill has applied for resource consent to build 52 accommodation units on this site. The same development will also cater for tourist bus accommodation. He says the start date for this site will be October, also subject to gaining resource consent.

Mackenzie District Mayor Claire Barlow says she has received feedback from the tourism industry that Tekapo needs more accommodation options, and the number of visitors to the Mackenzie district is steadily increasing.

[www.mackenzie.govt.nz/Site/tekapo\\_Lakefront/Media\\_Releases.aspx](http://www.mackenzie.govt.nz/Site/tekapo_Lakefront/Media_Releases.aspx)

### **Tekapo Lakefront Development**

The first stage of the Tekapo Lakefront Development is due to begin the week of Monday, January 12.

This includes roads and footpaths, power, water, storm water and sewerage. The subdivision will eventually include areas for public recreation and 10 lots for potential commercial development including accommodation, cafes/restaurants, a supermarket and shops.

A new village green complete with playground and picnic facilities, more focus on the lake and better pedestrian access to the foreshore are the central design features of new plans for the Tekapo town centre.

[www.mackenzie.govt.nz/Site/tekapo\\_Lakefront/Media\\_Releases.aspx](http://www.mackenzie.govt.nz/Site/tekapo_Lakefront/Media_Releases.aspx)

[www.mackenzie.govt.nz/Site/tekapo\\_Lakefront/Concept\\_plan.aspx](http://www.mackenzie.govt.nz/Site/tekapo_Lakefront/Concept_plan.aspx)

The Mackenzie District Council is managing the subdivision of council-owned land between Tekapo's existing retail town centre and the lake edge.

Concept plans also include a new supermarket, hospitality and retail areas, public toilets and a visitor information kiosk. Tekapo's Earth & Sky also plans to build a new facility that delivers a unique visitor experience when night sky viewing is not possible at Mount John due to cloud cover or very high winds.

[www.mackenzie.govt.nz/Site/tekapo\\_Lakefront/index.aspx](http://www.mackenzie.govt.nz/Site/tekapo_Lakefront/index.aspx)

[www.stuff.co.nz/the-press/news/72297313/tekapos-big-bang-moment-why-a-sleepy-village-is-taking-off](http://www.stuff.co.nz/the-press/news/72297313/tekapos-big-bang-moment-why-a-sleepy-village-is-taking-off)



An enormous 125-year-old telescope with a fascinating history has arrived in Fairlie to be restored to its former glory. The 7.3 tonne, eighteen-inch lens Brashear Telescope has had a rough life since arriving in New Zealand in 1963. But after more than 50 years sitting unused and decaying, it is set to return to use as the centrepiece of a public outreach Astronomy Centre built by Earth and Sky near the shore of Lake Tekapo.

[www.stuff.co.nz/timaru-herald/news/72174047/Big-telescope-with-an-even-bigger-history-to-be-restored-in-Fairlie](http://www.stuff.co.nz/timaru-herald/news/72174047/Big-telescope-with-an-even-bigger-history-to-be-restored-in-Fairlie)

*Earth & Sky director Graeme Murray helps with the recovery of two sections that form the 8-metre-long tube of the 125-year-old 18-inch (46-cm) Brashear telescope.*

## Proposal for a Starlight Highway Tourist Drive

A proposal to brand highway 8 that traverses the Aoraki Mackenzie International Dark Sky Reserve the Starlight Highway has been prepared. The proposal is nearly ready for a decision from the New Zealand Transport Agency who manage the country's highway network.

*“Official designation of the Starlight Highway would reinforce the international reputation of the Mackenzie District as one of the best places in the world to view a starlit sky that is unspoiled by light pollution.*

*The exceptional quality of the natural night skies provides the Mackenzie District with several unique points of difference that are already linked to starlight, including The Aoraki Mackenzie International Dark Sky Reserve.”*

The proposal will include Highway 8 as well as Highway 80 into Mt Cook. Strong support for this proposal was received during a survey of residents and business in the area. It is hoped that a decision will be received soon to allow designation and signage to be in place during 2016.

## Funding

The AMIDSR Board were successful in raising grants and funding for the 2015 Starlight Festival. Generous sponsorship and above budgeted door sales to events at the 2013 Festival have assisted planning for the 2015 Starlight Festival.

## Outreach

Earth and Sky have had a busy year with outreach programmes. See brochures in the Appendix for details of these outreach events organised to celebrate special times:

Ice Disco, Global Astronomy Week, Night Sky Photo competition, Lunar Week, Easter on Mt John, Dark Skies Week, Planet Watch Week, Starlight Week.

And when snow prevented normal operations on Mt John the team shifted to the lake front domain in Tekapo.



**Dark Skies of Wonder** - South Island Astrophotography Workshop, 20th March 2015, Lake Tekapo, Mackenzie County.

*“Having held our last Dark Skies of Wonder workshops at Castlepoint on the North Island, we head back to the gold level international dark sky reserve of Aoraki Mackenzie Dark Sky reserve. This spectacular location has many great scenes and is the perfect place to take in the glorious night sky. Tekapo's skies are some of the darkest in the world allowing glorious views of the Milky Way. Autumn in Tekapo will provide a stunning backdrop of Snowy Mountains, lakes and landscape features to learn wide field astrophotography.”*

[http://www.rjd.co.nz/index.php?route=product/product&product\\_id=208](http://www.rjd.co.nz/index.php?route=product/product&product_id=208)

## Mt John Observatory

Mt John Observatory celebrated 50 successful but sometimes turbulent years in May 2015. It now needs investment to focus on a bright future, writes Dr John Hearnshaw.

Mt John University Observatory, one of New Zealand's best known scientific institutions, was founded as an astronomical research observatory at Lake Tekapo in 1965.

Now, with Mt John in its 50th year, the Department of Physics and Astronomy organised the Mt John 50th Anniversary Symposium at Tekapo to celebrate half a century of successful research in observational astronomy. Many past graduate students, who are now based at astronomical institutions around the world, returned to Tekapo to mark this event in early May.

[www.phys.canterbury.ac.nz/mtjohn50/](http://www.phys.canterbury.ac.nz/mtjohn50/)

### **Community and Media Relations**

Prof. John Hearnshaw, Chair of the AMIDSR, spoke at the recent IAU XXIX General Assembly in Hawaii in a session titled: Preserving Dark Skies and Protecting Against Light Pollution in a World. His talk was titled: "The Aoraki Mackenzie International Dark Sky Reserve and light pollution issues in New Zealand"

### **Media and Internet Coverage**

The Aoraki Mackenzie International Dark Sky Reserve continues to generate interest and positive coverage, both in traditional media and on the Internet.

The International Dark Sky Association has placed the Aoraki Mackenzie Dark Sky Reserve, which spans more than 10,000 square kilometres, at number 6 on a Huffington Post list of the best stargazing spots on earth.

[www.stuff.co.nz/timaru-herald/news/64302974/night-sky-attracts-visitors](http://www.stuff.co.nz/timaru-herald/news/64302974/night-sky-attracts-visitors)

New Zealand has some of the best night skies in the World!

<http://theartofnight.com/2015/03/new-zealand-has-some-of-the-best-night-skies-in-the-world/>

An aurora lit up the skies magnificently on Saturday evening and into the night above Tekapo.

[www.stuff.co.nz/timaru-herald/news/67702957/Aurora-lights-up-the-sky-in-Tekapo](http://www.stuff.co.nz/timaru-herald/news/67702957/Aurora-lights-up-the-sky-in-Tekapo)

Earth Day - it's a day where we celebrate our own planet, and a day where we think about giving back to the environment and trying to make a difference for the future.

<https://500px.com/photo/106118711/earth-day-by-mark-gee>

**Twenty Nine seconds of Milkyway** - Mostly shot in the Aoraki Mackenzie Dark Sky Reserve

<http://vimeo.com/107022422>

**Stunning Milkyway over Mt Cook Village**

[https://500px.com/photo/112447371/the-village-by-david-diehm?from=user\\_library](https://500px.com/photo/112447371/the-village-by-david-diehm?from=user_library)

### **Starlight Festival - 2015**

To celebrate the creation of the southern hemisphere's first International Dark Sky Reserve, the Aoraki Mackenzie Dark Sky Reserve Board and the University of Canterbury are hosting the Aoraki Mackenzie Starlight Festival, from October 9-11. This is an official event for the International Year of Light 2015.

[www.stuff.co.nz/timaru-herald/news/71627960/aoraki-mackenzie-starlight-festival-celebrates-night-sky](http://www.stuff.co.nz/timaru-herald/news/71627960/aoraki-mackenzie-starlight-festival-celebrates-night-sky)

<http://rasnz.org.nz/40-rasnz-desk/312-presdesk-2015-july6>

[www.earthandskynz.com/window-to-the-universe/ch/news/99-aoraki-mackenzie-starlight-festival](http://www.earthandskynz.com/window-to-the-universe/ch/news/99-aoraki-mackenzie-starlight-festival)

### **Academic research**

**Massey University - School of Management Masterate Scholarship - Available Research Projects**

*Dark Sky Tourism: The Modern Star Trek*

*Abstract: In June 2012 the International Dark Sky Association designated the Aoraki Mackenzie dark sky reserve 'gold'. This makes it one of only two regions in the world where the light pollution is so low that "the full array of visible sky phenomena can be viewed". If like Blue Oyster Cult "you love the night" and just can't wait for "those rays to slip away", then perhaps this investigation is for you. Since the establishment of the zone many small business operations have become established in and around the*

### Operations report from Earth and Sky Limited, Tekapo

<http://www.earthandskynz.com/window-to-the-universe/en/>

Over the last 12 months, Earth & Sky celebrated it's tenth birthday with a Star Party at Cowan's Observatory in October. Clear skies, balloons, decorations, Birthday cake, Dress-up and nearly 200 people enjoying the spectacular Lake Tekapo skies with us. It was a fantastic occasion and superb to have both visitors and the community with us to celebrate collectively.

In November several businesses from Lake Tekapo attended the Christchurch A&P show to promote the region. Earth & Sky returned in May to attend the international trade show, TRENZ in Rotorua. Another successful outing as we see the Chinese market continues to grow with immense growth over February and through the majority of the summer months, as healthy numbers of both international and domestic visitors experience our tours throughout the year.

The highlights of the Astronomical year has been the number of Lunar Eclipses, Aurora Delights and a rare "Moonbow" photographed by Maki Yanagimachi. February and April proved the most rewarding months with Chinese New Year and Valentines Day celebrations and exceptional weather, while April's Global Astronomy Month was another great success. April's activities included a Lunar Eclipse, Easter treasure hunt, holiday crafts, photo competition, Saturn Day, Sun Day, Ice Disco with Tekapo Springs, and a rained-out Global Star Party.

After a snowy June, we welcomed snow enthusiasts to Lake Tekapo over the winter school holidays and celebrated the traditional Japanese Star Festival, Tanabata. The highlight was our coolest Star Party yet at Cowans Observatory, witnessing the time of the planetary conjunction with a bonus display of the Aurora Australis. This was Earth & Sky's first Star Party with no moon present and enjoying the crisp winter air and under famous dark skies with the iconic Milky Way overhead became our most memorable Star Party to date.

In October we celebrate the Aoraki/ Mackenzie Starlight Festival, supporting the festival in a few events and welcoming visitors to the region.







**EARTH & SKY**  
NEW ZEALAND

# GLOBAL STAR PARTY

at  
**Cowan's Observatory**

Special guest speaker  
- Alan Gilmore

**Saturday 25th April**  
(back-up night 26th April)  
**6.00pm - 9.00pm**

Meet at Earth & Sky Office, Lake Tekapo. Shuttles provided. Warm clothing essential, bring blankets, torches, binoculars, thermos, gold coins for BBQ

Children must be accompanied by an adult. (No toilet facilities)

Look through powerful telescopes and speak with knowledgeable Astronomy Guides!

PRE-BOOKINGS:  
\$2.00 for 0-4yrs  
\$5.00 for 5-17yrs  
\$20.00 for adults  
1 sausage & 1 softdrink included

BOOK at  
**EARTH & SKY OFFICE**  
Phone 03 6806 960  
info@earthandsky.co.nz

Earth & Sky supports GLOBAL ASTRONOMY MONTH OF APRIL.  
For information on Daytime Activities, see [www.earthandsky.co.nz](http://www.earthandsky.co.nz)

**Global Astronomy Month**



**Global Astronomy Month**  
presented by Astronomers Without Borders

## Ice Skating under the Stars

Celebrating all things Space  
"ICE DISCO"

**Friday 17th April**  
**4pm - 7pm**

Best dressed and colouring competitions, PRIZES up for grabs!

FREE Fun Activities such as arts and crafts!

All day skate entry:  
\$12 per child  
\$16 per adult

Tekapo Springs  
6 Lakeside Drive  
- just around the lake past the campground  
Fully licensed cafe

**tekapo springs**  
letting four sports

**EARTH & SKY**  
LAKE TEKAPO



# Night Sky Photo Competition

In honour of Global Astronomy Month, Earth & Sky invite amateur astrophotographers from around the world to capture their sky and enter our inaugural Night Sky Photo Competition. Post a memorable photo of the night sky, from your part of the world to our Facebook wall, and you are in the draw to win! ([facebook.com/earthandskynz/](https://www.facebook.com/earthandskynz/))

**Categories:**

- 1. Under 16 years of age (New Zealand contestants)**  
Prize: A range of astronomical Earth & Sky merchandise
- 2. Open category (New Zealand contestants)**  
First Place: Voucher for two adults for an Earth & Sky Mt John Observatory Tour  
Second Place: Voucher for two adults for an Earth & Sky Cowan's Observatory Tour  
Third Place: A range of astronomical Earth & Sky merchandise
- 3. Individuals based overseas**  
First Place: Two canvas prints of the night sky taken from Lake Tekapo  
Second Place: Two photo prints of the night sky taken from Lake Tekapo  
Third Place: A range of astronomical Earth&Sky merchandise

\*Submission will be closed on April 30th. Winners will be announced on May 5th on our facebook page.  
\*Terms and Conditions apply.

**EARTH & SKY**  
LAKE TEKAPO

# Easter On Mt John!

## Egg Hunt

April 4, 5, 6, 7  
Time: 12 - 3pm

10 eggs will be hidden around the summit of the mountain every afternoon.

## Egg Painting

April 4, 5  
Time: 11am - 2pm  
Location: Astrograph (next to the Astro Cafe)

Keep your eyes peeled for colourful eggs as you explore Mt John during the day.

When you find an egg, bring it to one of the guides to win a SURPRISE for you or your family!

\*Young children must be accompanied by a parent or guardian.

**EARTH & SKY**  
LAKE TEKAPO

"window to the universe"  
**COWAN'S OBSERVATORY**

**EARTH & SKY**  
LAKE TEKAPO

# Lunar Eclipse Tour

Capture the magic, witness the wonder!

Beginning of the Eclipse 11:16pm  
Lunar Eclipse from 12:57am-1:04am  
Join Earth and Sky for this special Eclipse Tour.  
A once in a lifetime event: shortest Lunar Eclipse since 1529!

**Eclipse Tour:**  
**4th April 2015 11:45pm-1:45am**  
**Mount John University Observatory**

Limited numbers!  
Book your tour now at the Earth and Sky Office, next to the Godley Hotel  
03 680 6960, info@earthandsky.co.nz or online at www.earthandsky.co.nz

**EARTH & SKY**  
LAKE TEKAPO

# LUNAR WEEK

Join Earth & Sky on a Mt John night time Observatory Tour as we showcase the **Moon** through our largest viewing scope.

See the craters! Try and count all **300,000** of them!

Bring your cameras along and capture its mystery.

Night Tours depart every evening, bookings are essential.  
Book your tour now at the Earth and Sky Office (next to the Godley Hotel), 03 680 6960 or online at www.earthandsky.co.nz

**EARTH & SKY**  
LAKE TEKAPO

# STAR PARTY

Join us in celebrating Tanabata festival at our Tanabata Star Party!

★ **Dates: July 11th,**  
in case of bad weather, August 8th will be our alternate date.

★ **Location: Cowan's Observatory,**  
transport from village provided.

Stargazers of all ages are welcome.  
Bring warm clothing and cozy blankets to enjoy the beautiful winter night sky!  
Enquire at the Earth&Sky Office for tickets and information.

LAKE TEKAPO  
**EARTH & SKY**  
NEW ZEALAND

七夕Cowan's天文台星まつり  
天の川の下で、星に願いを

7月11日・8月8日を除く  
参加特典・星空をハカチにした記念撮影  
来場者七夕イカステラの配布  
詳細はウェブサイトをご覧ください

月7日↓19日  
8月5日↓19日

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**EARTH & SKY**  
NEW ZEALAND

# DARK SKIES WEEK

"Window to the Universe"

## Experience the magic on an Earth&Sky Observatory Tour

Home of the Aoraki Mackenzie International Dark Sky Reserve

- ★ During the time of the new moon, find yourself in one of the darkest skies on the planet.
- ★ See thousands of stars, with your own eyes.
- ★ Learn about mysterious 'dark matter' and more!
- ★ Interested in astrophotography? With the assistance of our trained photographers, DSLR cameras capture the mysteries of the Milky Way.
- ★ When the stars are hidden from view, take a journey to discover the nocturnal world of an astronomer.

**BOOK YOUR TOUR NOW** at the Earth & Sky Office (next to the Godley Hotel),  
Phone: 03 680 6960, or online at [www.earthandsky.co.nz](http://www.earthandsky.co.nz)

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**TANABATA 2015**  
Posters + decorations  
by talented Tekapo  
School students

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**EARTH & SKY**  
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Poster designed by Sung Eun Hong

Am I still a planet?

**Which planet will you see through a telescope on an Earth & Sky Observatory Tour**  
Planet Watch Week

On a clear night, planets can be viewed through powerful telescopes; revealing other worldly moons, incredible rings and amazing astronomical secrets. Knowledgeable guides reveal the world famous southern night sky; where parts of the Milky Way can be viewed and star clusters are displayed. When the stars are hidden from view, take a journey to discover the nocturnal world of an astronomer. Learn about the search for planets in other solar systems and visit a range of research equipment.

Night Tours depart every evening, booking are essential.  
Book your tour now at the Earth & Sky Office (next to the Godley Hotel), 03 680 6960 or online at [www.earthandsky.co.nz](http://www.earthandsky.co.nz)

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**Day Tour**  
of Mt. John  
University Observatory

**Weekends:**  
Day guides on site in the afternoon.  
Day tour departs at 12:15 pm.  
Please inquire at the dome.

**Monday - Friday:**  
Day tours by request only between 12 and 2pm.  
Please see Cafe Staff or call the Earth & Sky Office (03 680 6960) for tour inquiries.

Meeting Point

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**\$20 adult**  
**\$10 children (5-17)**  
**Free (under 5)**

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We walked in Starlight,  
it was a different world!

**Starlight Week**

Little Star and Stargazing Night Tours  
All Week Long

Ever wonder why stars twinkle?  
Why some stars have colours we can see?  
Celebrate the starlit skies this week by admiring nature's spectacular night lights on an Earth & Sky stargazing tour

Unveil the complexities of rich star clusters as you peer through telescopes at these seemingly insignificant glows

Discover the life cycle of a star and see a "stellar nursery"

Night Tours depart every evening, booking are essential.  
Book your tour now at the Earth & Sky office (next to the Godley Hotel), phone 03 680 6960, or online at [www.earthandsky.co.nz](http://www.earthandsky.co.nz)

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**JOIN OUR  
LAKESIDE STAR-GAZING TOUR**

As the road to Mount John is closed, we are running mini-tours held in the village domain!

Duration: 40mins  
Price: \$40 per Adult, \$20 per Child (5-17y/o)  
\*Infants are free of charge. \* No discounts apply.

Visit our office or call 036806960 to book!

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