WELLINGTON ASTRONOMICAL SOCIETY

Newsletter

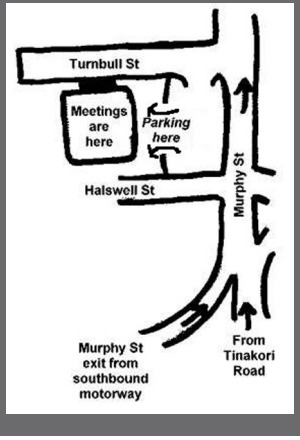
JUNE 2009, Volume 36, Number 5, ISSN 01147706

In this issue:

WAS MONTHLY MEETING:

7.30pm Wednesday 3rd June 2009

Science House, Turnbull Street, Thorndon



THIS MONTH'S MEETING FEATURES

Seeing in the Dark: a film by Timothy Ferris plus Patrick Sharp's talk about his attendance at Aurora Camp.

Seeing in the dark celebrates the wonders of stargazing – from kids learning the constellations to amateur astronomers doing professional – grade research in discovering planets and exploding stars. Based on Ferris award – winning book, the film features never – before seen astronomical photography, spectacular effects and a memorable original musical score by Mark Knopfler and Guy Fletcher. Runs for 60 minutes.

Second abstract

Recently Patrick Sharp attended the Aurora Camp at Canterbury University. He was there for a week and he will show and talk to us about his time with Canterbury University. About 10 minutes.

PRESIDENT'S REPORT

At the council meeting prior to the main meeting it was decided that non paid up members of the society will be struck off as they are still receiving a newsletter which cost the society .John Talbot is reviewing the membership list and only those who have paid their membership fee will receive a newsletter. We are printing too many newsletter and some members who receive it by email and still get a printed version.

The council received a request from the RASNZ Local Organising Committee to assist in sponsoring 10 students to the sum of $20 for each student to the RASNZ conference the balance of the sponsorship money is coming from the Gifford Trust. This was passed by council.

The society has applied for a grant from the Pub Charities to upgrade several parts of the Meade 12" telescope in the Pauatahanui Observatory with a Super Meade Wedge, a guide scope, an Orion Star Shooter for guiding on a star and a Focuser. The WAS dobsonian telescopes are being overhauled at present with the mirrors being re-aluminized.

By the time you read this the TePapa roadshow will have passed and I will report on this at the next meeting. Due to our inclement weather public and society observing evenings have had to be cancelled. At the last council meeting it was put forward that Rebecca Waechter the organiser of all our Wellington City Library events has been made an honorary member of the WAS for services to and running the library events. This was passed with all in favour.

Chris Mongatti has put together an asset register for WAS and this will be available to view at the next meeting. The council would still like to see more members receive the newsletter by email, some members are still receiving both versions.

On the 14th of May, Patrick Sharp presented , a talk on his trip to the USA Space Camp at the Porirua City Library to a small audience.

On the 13th of May John Field did an excellent presentation at the Wellington City Library to an audience of 40 people. This resulted in much interest with several people taking membership forms away with them.

At the society meeting on May 6th, Professor Matt Visser gave and excellent presentation called "Overview of Modern Cosmology" where he spoke about Dark Matter, Dark Energy and the accelerating expansion of the Universe. There was a full house for this presentation and the questions at the end were coming thick and fast. The sign of people paying much attention.

NEWSLETTER

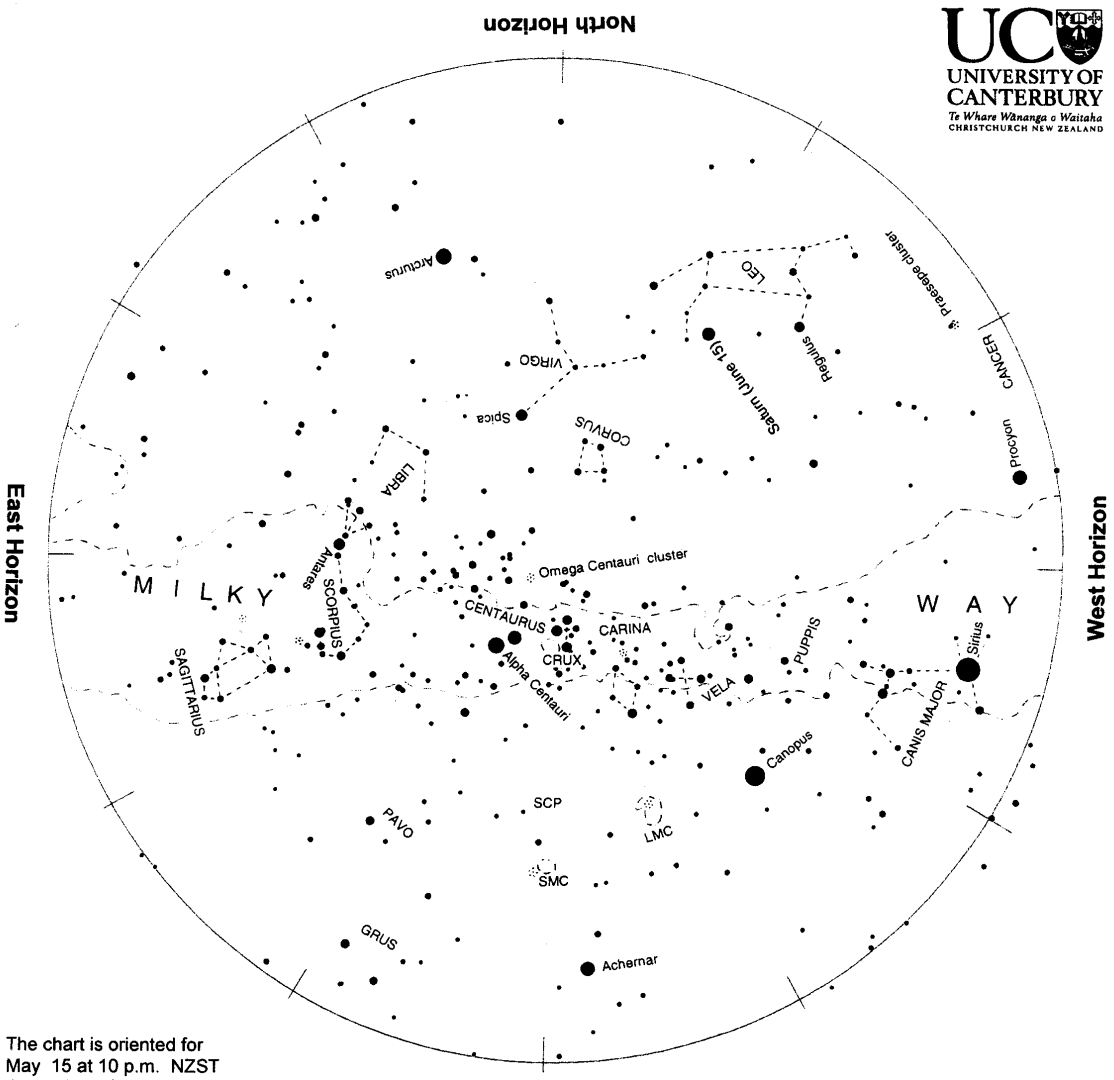
We would like as many people as possible to receive the WAS Newsletter by Email as we are trying so save on printing costs. This will reduce our yearly amount spent on the newsletter considerably.

COUNCIL

OF THE WELLINGTON ASTRONOMICAL SOCIETY INC.

President	
Gordon Hudson	gordon@kpo.org.nz Ph 236 5125
Vice-President	
Roger Butland	roger.j.butland@xtra.co.nz Ph 478 0419
Secretary	
Ross Powell	rossapowell@hotmail.com Ph 389 9765
Treasurer	
Diane Zemanek	diane.zemanek@axon.co.nz Ph 237 8191
Newsletter Editor	
Brenda Johnston	bbajphnston@gmail.com Ph 478-9008
Committee	
Frank Andrews	frank.andrews@paradise.net.nz
Chris Mongatti	chrismon@xtra.co.nz Mob 021 890 222
Patrick Sharp	shortsharp@paradise.net.nz
John Talbot	john.talbot@xtra.co.nz Ph 04 293 4620
Positions Outside Council	
Email newsletter	
Murray Forbes	murray.forbes@paradise.net.nz
Membership	
Lesley Hughes	hpwas@hugpar.gen.nz Ph 472 5086

THE EVENING SKY IN JUNE 2009



The chart is oriented for
May 15 at 10 p.m. NZST
June 1 at 9 p.m. "
June 15 at 8 p.m. "
July 1 at 7 p.m. "

Evening sky in June 2009

To use the chart, hold it up to the sky. Turn the chart so the direction you are looking is at the bottom of the chart. If you are looking to the south then have 'South horizon' at the lower edge. As the earth turns the sky appears to rotate clockwise around the south celestial pole, SCP on the chart. Stars rise in the east and set in the west, just like the sun. The sky makes a small extra westward shift each night as we orbit the sun.

Sirius twinkles colourfully in the west before setting in the mid evening. Canopus is in the southwest, swinging down to the south through the night. South of overhead are Alpha and Beta Centauri, with the Southern Cross (Crux) to their right. Further to the right are the Diamond Cross and False Cross, with a bright region of Milky Way above them. Regulus, Saturn and Spica make a widely spaced line up the northwest sky. Orange Arcturus in the north often twinkles red and green. The Scorpion is on its back midway up the eastern sky with Sagittarius below it. Jupiter (not shown) rises in the east in the late evening. It is the brightest 'star' in the night sky till brilliant Venus rises near dawn.

Chart produced by Guide 8 software; www.projectpluto.com. Labels and words added by Alan Gilmore, University of Canterbury's Mt John Observatory, P.O. Box 56, Lake Tekapo 7945, New Zealand. www.canterbury.ac.nz

THE EVENING SKY IN JUNE 2009

Sirius, the brightest star, appears low in the western sky at dusk before it sets early. **Canopus** is in the southwest sky, circling lower into the south later on. **Crux**, the **Southern Cross,** and **Beta** and **Alpha Centauri** are south of overhead. **Scorpius**, upside down, is midway up the eastern sky. Below it is **Sagittarius**; its brighter stars making 'the teapot'. Midway down the northwest sky is **Saturn** with **Regulus** below it. Orange **Arcturus** in the north often twinkles red and green. **Sirius** when low in the sky often twinkles like a diamond as the air breaks up its white light. It is the brightest star both because it is relatively close, nine light years* away, and 23 times brighter than the Sun.

Crux, the **Southern Cross**, is south of the zenith. Beside it, and brighter, are **Beta** and **Alpha Centauri,** often called "The Pointers' because they point at **Crux**. **Alpha Centauri** is the closest naked-eye star, 4.3 light years away. A telescope shows it is a binary star: two suns orbiting each other in 80 years. **Beta Centauri** and many of the stars in **Crux** are hot, extremely bright blue-giant stars hundreds of light years away. **Canopus** is also very luminous and distant.

Scorpius is midway up the eastern sky, lying on its back. Its brightest star is orange **Antares**, marking the scorpion's heart. Antares is a red giant star: 600 light years away and 19 000 times brighter than the sun. Red giants are much bigger than the sun but much cooler, hence the red colour. They are dying stars; wringing the last of the thermo-nuclear energy from their cores. Antares will end in a spectacular supernova explosion in a few million years.

The **Milky Way** is brightest and broadest in the southeast toward **Scorpius** and **Sagittarius**. It remains bright but narrower through **Crux** and **Carina** but fades in the western sky. The Milky Way is our edgewise view of the galaxy, the pancake of billions of stars of which the sun is just one. The thick hub of the galaxy, 30 000 light years away, is in Sagittarius. A scan along the Milky Way with binoculars will find many clusters of stars and some glowing gas clouds. Relatively nearby dark clouds of dust and gas make holes and slots in the Milky Way.

The **Clouds of Magellan, LMC** and **SMC**, are in the lower southern sky, easily seen by eye on a dark moonless night. They are two small galaxies about 160 000 and 200 000 light years away. They are only a fraction the mass of our galaxy but still contain billions of stars.

Arcturus, toward the north, often twinkles red and green as the air disperses its orange light. It is 120 light years away and 37 times brighter than the sun.

Saturn's rings are almost edge-on to us now. They look like a narrow spike through the globe of **Saturn**. In steady conditions a telescope shows the shadow of the rings as a dark line on Saturn. In June Saturn is around 1440 million km away. The shadow of **Titan**, Saturn's biggest moon, crosses the planet on the evening of June 16. **Titan** emerges from Saturn's shadow on the evenings of June 8 at 11:31, and on June 24 at 10:53.

Jupiter (not shown) rises due east in the later evening. It is the brightest star-like object in the night sky till brilliant Venus rises around 4 a.m. Binoculars show the disk of Jupiter. A small telescope easily shows Jupiter's four big moons lined up on either side of the planet. Jupiter is 12 times wider than the earth and 320 times heavier. In June it is around 680 million kilometres away. By the morning hours Jupiter is north of overhead and **Venus** is in the northeast sky. Below Venus is **Mars**, looking like Antares.

Antares is Greek for 'Rival to Mars.' Ares was the Greek name for Mars.

*A light year (l.y.)is the distance that light travels in one year: nearly 10 million million km or 1013 km. Sunlight takes eight minutes to get here; moonlight about one second. Sunlight reaches Neptune, the outermost major planet, in four hours. It takes four years to reach the nearest star, Alpha Centauri.

Notes by Alan Gilmore,

University of Canterbury's
Mt John Observatory,
P.O. Box 56, Lake Tekapo 7945,
New Zealand., 090508
www.canterbury.ac.nz

TELESCOPIC OBJECTS IN LEO AND SCORPIUS

Leo is in the north, and the planet Saturn is a yellow star-like object above its tail. The tail end is a triangle of stars. The other end, the head, resembles an inverted question mark. Regulus is the brightest star in Leo, and is a double star, easily separated in low magnification. The two stars in the system are very different in brightness. In the middle of the question mark is gamma Leonis. This is an intensely yellow double, a very beautiful sight. It separates with high magnification,

Saturn shows 3 brown bands across the planet, and up to 3 satellites, in the Thomas King 5.5 inch telescope, when the air is clear and steady.

Further to the east is Scorpius. The curved line of 4 stars marks the claws, and a hook shape on its side, the tail. Just below the claws is nu Scorpii. This is a quadruple star. 2 pairs of stars orbit each other. Each pair has 2 stars close together. Under excellent seeing conditions all 4 will separate in the Thomas King, using 180x magnification. At the top of the tail, near zeta, is the open cluster NGC6231. This is good in binoculars, and spectacular in the telescope. It is 6500 light years away. Below the tail are M6 and M7, open clusters well seen in binoculars, and at low magnification in telescopes. M6 the 'Butterfly' cluster, looks like one in the telescope.

People are welcome to join me at the Thomas King observatory to see these objects and others.

by Ross Powell

OBSERVING AT THOMAS KING

All public observing evenings will be held at the Thomas King Observatory run by our Observatory Director Ross Powell.

There are public observing evenings at the Thomas King nearly every Saturday evening starting as soon as it gets dark depending on the weather.

Ring Ross on 389 9765.

The Thomas King Observatory is owned by the Carter Observatory and this building must be looked after as it is a Historic Building and so is the Grubb telescope of 1882 it houses.

DOBSONIAN TELESCOPES MAINTENANCE

The WAS Dobsonian telescopes are currently being serviced and their mirrors re-aluminised. We hope they will be available for hire after the next WAS meeting.

OBSERVING AT PAUATAHANUI

The next observing evening at the Pauatahanui observatory will be on June 20th and in the expert hands of John Field. If you haven't been along to look through the Meade 12" now is your chance to have a look at our Night Sky in a reasonably dark sky, The observatory is located on "Willow Bank Farm" off Murphy's Road, Judgeford; on the left hand side of the road, about 1km from the intersection of State Highway 58 and Murphy's Road. The observatory holds a 12-inch Meade SCT on an equatorial wedge. The site has a number of flat areas at which members can place their own scope to observe. There is a toilet located in the shearing shed and car parking is in front of the shed. As the locale is a working farm it pays to wear sturdy footwear and dress warmly, bring along torch (hopefully with a red filter to protect your dark adaptation).

Children are welcome but remember it will be cold, dark and mushy under foot!

If the weather is looking doubtful please **contact John Field** on his mobile **021-255-1904** to see if the session is going ahead.

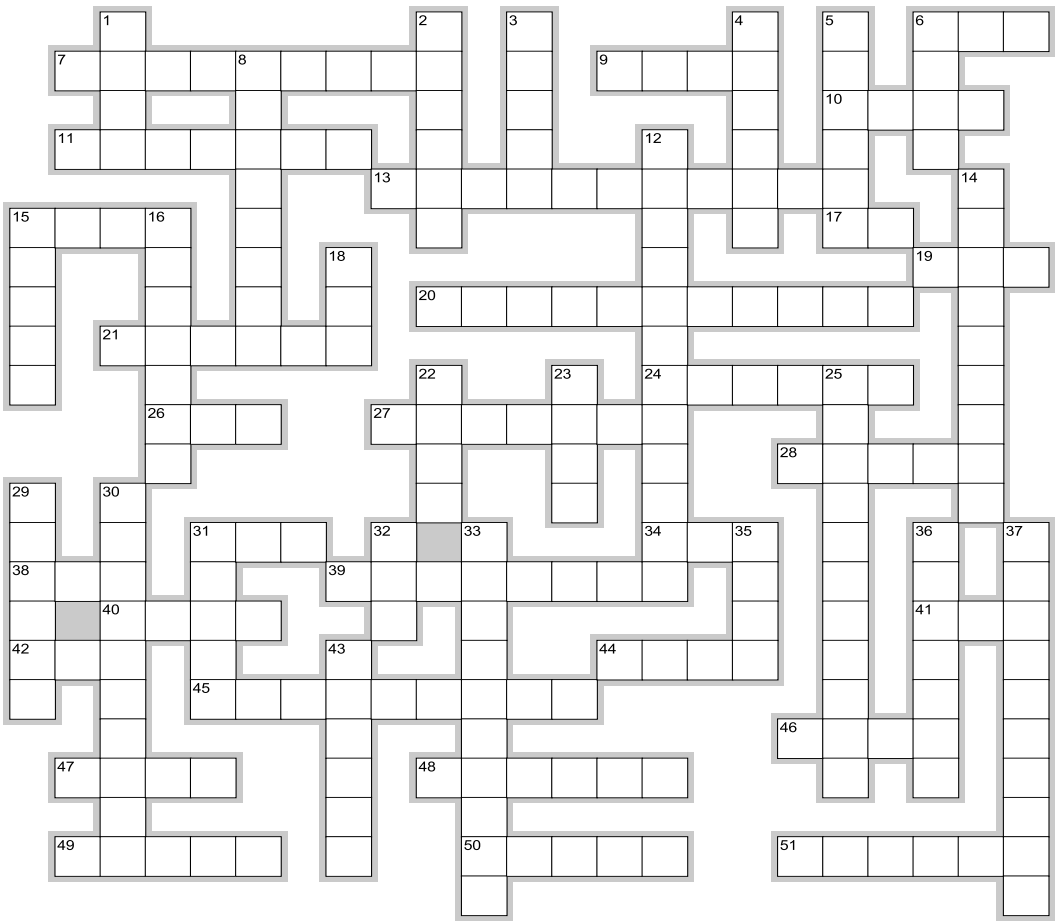
JUNE'S IMAGE – COPERNICUS AND ENVIRONS CRATERS

This month's image is of the spectacular crater Copernicus. Named after Nicholas Copernicus (1473 -1543) whose work De Revloutionibus Orbium Celestium (1543) explained the heliocentric system of planetary motion. The crater is 95 km in diameter and is 3.7 km deep (95/3.7 km) d with a flat floor a number of terraces can be seen on the inner wall of Copernicus. There is a group of and central peaks that rise up 1.2 km above the floor. The outer walls rise up to 900 meters above the surrounding terrain. To the lower left can be seen a number of small secondary craters that formed from material that was excavated during the formation. Copernicus sits in the Mare Insularum and is surrounded by an impressive system of rings. Below Copernicus is the partially filled crater Gay-Lussac named after Louis Gay-Lussac (1778 – 1850) a French physicist and Chemist. This crater sits on the edge of the Carpathian Mountains (26/0.83 km) with the younger and small Gay-Lussac A (14/2.5 km) just above. Running diagonally to the upper right from Guy-Lussac is the Rima Guy-Lussac, a wide valley running 40 km. Rim, or Rilles, are believed to be collapsed lava tubes through which lava once flowed in to the mare To the right are the craters Tobias Mayer C (15/2.5 km) and at lower right with rim capturing the Sun is Tobias Mayer (33/2.9 km). Both are named after Selenographer Tobias Mayer (1723 – 1762).

by John Field

CROSSWORD

Here is a crossword on the next page for you to enjoy. The answers will be in the July newsletter



EclipseCrossword.com

Across

6. 24 hours
7. An astronomer's favourite toy
9. Angels and galaxies both have one
10. I weight 6 times less on the Moon, but still have the same ???
11. Discovered Jupiter's moons
13. A coordinate in the equatorial system
15. Tide
17. One of the Galilean satellites
19. Acronym for aliens
20. Sky simulator
21. Shooting star
24. Bright star in Aquila
26. Frozen liquid
27. A catalogue
28. Once thought to be seas on the Moon
31. Satellite galaxy to the Milky Way
34. Closest star
38. Could be mistaken for a cloud
39. Lighter shadow of an eclipse
40. Unit of time
41. Solid, liquid or ...
42. Flying saucer
44. A new star
45. Plots the temperature vs the luminosity of stars
46. Volcano on Io
47. God of war
48. A double star
49. Sisters in M45
50. Thorn (anagram)
51. Who to blame when it clouds over

Down

1. Alpha Lyr
2. Formulated laws of planetary motion
3. The Demon Star
4. "... Censorship" - why Black Holes can't be naked
5. One of the twins
6. Obscures centre of our galaxy
8. The longest day
12. Radio source at the centre of our galaxy
14. Common astronomical unit of distance
15. One is (anagram)
16. Us
18. Some spiral galaxies have one
22. BEM search
23. New Zealander
25. Who do an apple and the Moon have in common?
29. Second most common element
30. An early Dutch astronomer
31. An island in the Pacific
32. A lion circling the Earth
33. Stage in the life of massive stars
35. Space agency
36. Asteroid with its own moon
37. High energy particles moving through space
43. Alpha Canis Major

by Murray Forbes

Wellington Astronomical Society

June 09 Newsletter

VOLUME 36
NUMBER 5
ISSN 01147706

Editorial Disclaimer

Views expressed in this newsletter are not necessarily those of the Society as a whole

for more information
www.was.org.nz

COUNCIL OF THE WELLINGTON ASTRONOMICAL SOCIETY INC.

P.O.Box 3126 Wellington