Newsletter

WELLINGTON ASTRONOMICAL SOCIETY

March 2011, Volume 41, Number 2, ISSN 01147706, www.was.org.nz

Wednesday, 2nd of March,
7:30 PM at Carter Observatory

THIS MONTH'S MEETING FEATURES

Our Editor who just came back from the:

MARS DESERT RESEARCH STATION

Haritina Mogosanu:
"the closest I have ever got to being an astronaut"

02-2011

In this issue:

Wellington Astronomical Society

Presidents Report

Last months talk on 'The building of the Palomar Observatory' was enjoyed by those who attended.

I have had some very good feedback from members and so we may do a couple more videos later in the year.

This months talk will be with Hari Mogosanu who will show us what she was doing in the Utah Desert last month where she lived on a Mars-like simulation for two weeks.

The societies CCD camera the ST7 is getting quite a lot of use at present as Roger Butland and myself have been sorting out the problems with focus and arranging the filter wheel so that it can be controlled. This is now done and we are ready to start imaging variable stars.

The observing at the Pauatahanui Observatory had to be canceled on both the 5th and 12th of February because of cloud. We are not having a very good run for any observing at Pauatahanui over the last 12 months when the observatory was only used three times last year.

We are considering moving the observatory to a more accessible site which would mean it would get more use but not necessary better weather. Watch for further developments on this.

The weekend camp at Tatum Park will be on April 8-9 see article in this newsletter.

The next observing at Pauatahanui will be on March 5th starting at 8.30pm.

This year we have added an extra Saturday to the observing at Pautahanui each month so if one is clouded or rained out we will have the following Saturday to fall back on.

Observing at the Thomas King Observatory is every Friday evening but ring Ross Powell first.

The WAS Dobsonian telescopes are all out on hire at present. Anyone wanting to hire one of the societies Dobsonians should call Chris Mongatti.

The society has invested in a new Finder for one of the Dobsonians as one had gone missing.

The WAS Research Group was approached by the Gifford Observatory Trust to see if any of our members would be interested in using the Observatory all be it with a different telescope installed which would possibility be a C14 with a CCD camera attached. This proposal is still under discussion. There is no further update on this.

I have been working on the Thomas King Observatory fixing the dome so that it will not come off in high winds. I have also stripped the walls of the display panels and the room is about to be painted. Work still needs to be done on the steps going up to the telescope.

Next months talk will be by Roland Idaczyk who is going to talk to us about Saturn as April is World Wide Astronomy month.

In Spite of Everything Lunar Eclipse 2010

Sunset on the 21st December saw three stalwart members braving the weather to gather at the Thomas King observatory for a lunar eclipse that could have got the Doomsday alarmists into a lather if they weren't so focussed on 2012. Not only was the eclipse on the solstice, the moon was on the Taurus/Gemini border close to the point where the ecliptic crosses the galactic equator - plenty of material for an apocalyptic scenario there! The weather got in on the act too, adding a suitably ominous atmosphere with a roof-lifting gale and low clouds to reflect the orange glare of city lights.

Because of the wind, Ross decided not to open the dome. Naked eye and binocular observing would have to do. I debated which lens to use and settled on the 85mm as probably the best for the conditions. I set the controls to manual and fitted the cable release, but conditions were so unpromising that the camera stayed inside the observatory. Then we huddled in the lee of the observatory to wait for moonrise.

We were joined at times by various members of the public, most of whom decided that conditions were too unpleasant to stick around for long. Two people and a dog stayed for quite a time, chatting to us, until the dog got tired of what he thought was a most unsatisfactory walkies and dragged his people away. The time of the end of totality approached, and still there had been no sign of the moon. We were close to giving it away ourselves, when a few gaps started appearing in the cloud-sheet and I caught a glimpse of the moon through one of them.

Several more, and longer glimpses followed. I rushed to set up the camera and started shooting just after third contact. Out of some two dozen frames, only one proved to be free of camera-shake caused by the wind. I was glad I chose a relatively compact lens, especially as we had earlier seen an unfortunate have his very large and very expensive setup blown over.

Our conclusions: from what we could observe through the cloud, the eclipsed disc was darker than the 2007 eclipse, muddy reddish brown rather than coppery red, reflecting rather more dust in the atmosphere. There had been two fairly significant volcanic eruptions during the year, so this, rather than pollution could have been the cause.

After watching the bright rim grow from a skinny rind to a thin crescent, wecalled it a day and packed up. Tomorrow was a work day, and there will be two lunar eclipses next year

Observers:

Ross Powell, Aline Homes, John Homes.

Technical details: Canon EOS 300D digital camera, 85mm f1.4 lens; single exposure, 2 secs at f4.5, ISO 800. Cropped and processed using GIMP 2.0 image processing software, enhanced with unsharp mask and colour corrected using curves. *Photo by Aline Homes.*

COUNCIL OF THE WELLINGTON ASTRONOMICAL SOCIETY INC.

January Crossword answers

Across: *1. CANOPUS, Autahi; 6. PHOBOS, A Moon of Mars; 11. APHELION, one phial (anagram); 14. OBAFGKM, spectral classes; 17. SOHO, satellite observatory studying the Sun; 18. APOGEE, When the Moon is furthest from the Earth; 20. LOKI, volcano on Io; 22. CEPHEID, A type of pulsating variable star, often used for distance measurements; 23. VENUS, a very cloudy planet; 24. ICE, frozen liquid; 27. EARTH, Tellus; 31. PANDORA, a shepherd satellite of Saturn's F ring, also the first women in Greek mythology; 32. GIBBOUS, a phase of the Moon; 33. MASS, I weight 6 times less on the Moon, but still have the same ???; 34. ATOM, smallest indivisible piece of a element; 35. HYADES, an open cluster in Taurus; 36. VEGA, alpha Lyr; 39. HALO, angels and galaxies both have one; 40. DENEB, alpha Cygnus; 42. VIRGO, Constellation with Spica; 43. HST, an orbiting telescope; 44. REDDWARF, Main Sequence stars cooler & smaller then the Sun, also the name of a cult sci fi/comedy series; 47. LMC, could be mistaken for a cloud; 48. ECLIPTIC, plane of Earth's orbit around the Sun; 49. SCORPIUS, constellation with a sting; 50. GIOTTO, Name of ESA spacecraft that intercepted Halley's comet; 52. DEIMOS, One of the Moons of Mars; 54. HELIUM, second most common element; 55. EQUINOX, 23rd September;*

Down*: 2. NUTATION, Causes small changes in RA and Dec coordinates; 3. UFO, flying saucer; 4. KIWI, New Zealander; 5. IO, One of the Galilean satellites; 7. SCHMIDT, type of telescope; 8. DAY, 24 hours; 9. NOVA, a new star; 10. CLUSTER, An open or globular ...; 12. NOON, mid-day; 13. PAVO, The Peacock constellation; 15. GAS, solid, liquid or ...; 16. PELE, volcano on Io; 17. SIDEREAL, star time; 19. REDGIANT, A type of star whose core hydrogen has been used up.; 20. LEO, A lion circling the Earth; 21. KILOGRAM, The SI unit of mass; 25. BLUEMOON, Once in a ...; 26. NORTH, thorn (anagram); 28. REFLECTOR, type of telescope; 29. DESDEMONA, A satellite of Uranus, a character in Othello; 30. DEWCAP, used to prevent moisture condensing on a telescope; 37. RUTHCRISP, Carter Observatory's public telescope; 38. PROCYON, brightest star in Canis Minor; 41. ECLIPSE, to block light from another object; 45. DARWIN, proposed theory of evolution; 46. FUSION, process that powers stars; 51. ION, an arrested atom; 53. SMC, satellite galaxy to the Milky Way;*

Research Astronomy Group

The main areas we have decided to focus on are Variable Stars and Occultations. Many of the group already observe one or both.

Murray Forbes is leading the Variables group and set us home work to map and locate a known eclipsing binary variable star RS Cha (Chameleon) also known s Tycho 9403-1987-1 at RA 8:43:12, Dec -79:04. This should be visible above 0 deg altitude year round so is not season dependant.

John Talbot is leading the Occultation group and is publishing predictions for the Wellington area on our web site at http://was.org.nz/01Occs.html.

These include both Lunar events that should be visible in a 6 inch telescope and Minor Planet events that may be a bit dimmer but which have high probability of being seen. Even if you do not have recording equipment it can be fun in the evening to observe a star disappearing behind the dark edge of the moon during the first half. Or if you like getting up real early and want a harder challenge try for some bright reappearances during the second half of the cycle.

The Research group meets each month at 6:30pm before the main meeting.

Please feel free to come along and join in if you are interested. This is also a good time to bring along that telescope or observing problem you may have for discussion.

The WAS sub group has now been meeting for about 6 months and it is clear that we have a core group of about 10 to 12 people who are at most meetings.

Please be assured that any other members who might be interested in coming along at 6:30 pm on normal meeting evenings are most welcome. The two main areas that have emerged for now are measuring Occultations (of all sorts) and Variable Stars. Again this should not hinder anyone else who would like to raise other topics.

Some of you may feel that you need a lot of equipment but be very aware that you can start simple and gradually get more "stuff". Some bright star occultations and many variables can be observed with nothing more than binoculars and the stop watch in your cell phone.

If these areas of research are not for you then please consider some of the many other topics in Astronomy where you can provide real input to the science. Come to the meeting and discuss them. The following web sites may give you some inspiration.

The Association of Lunar and Planetary Observers

http://alpo-astronomy.org/index.htm

Collaborative Asteroid Lightcurve Link http://www.minorplanetobserver.com/astlc/default.htm

John Talbot

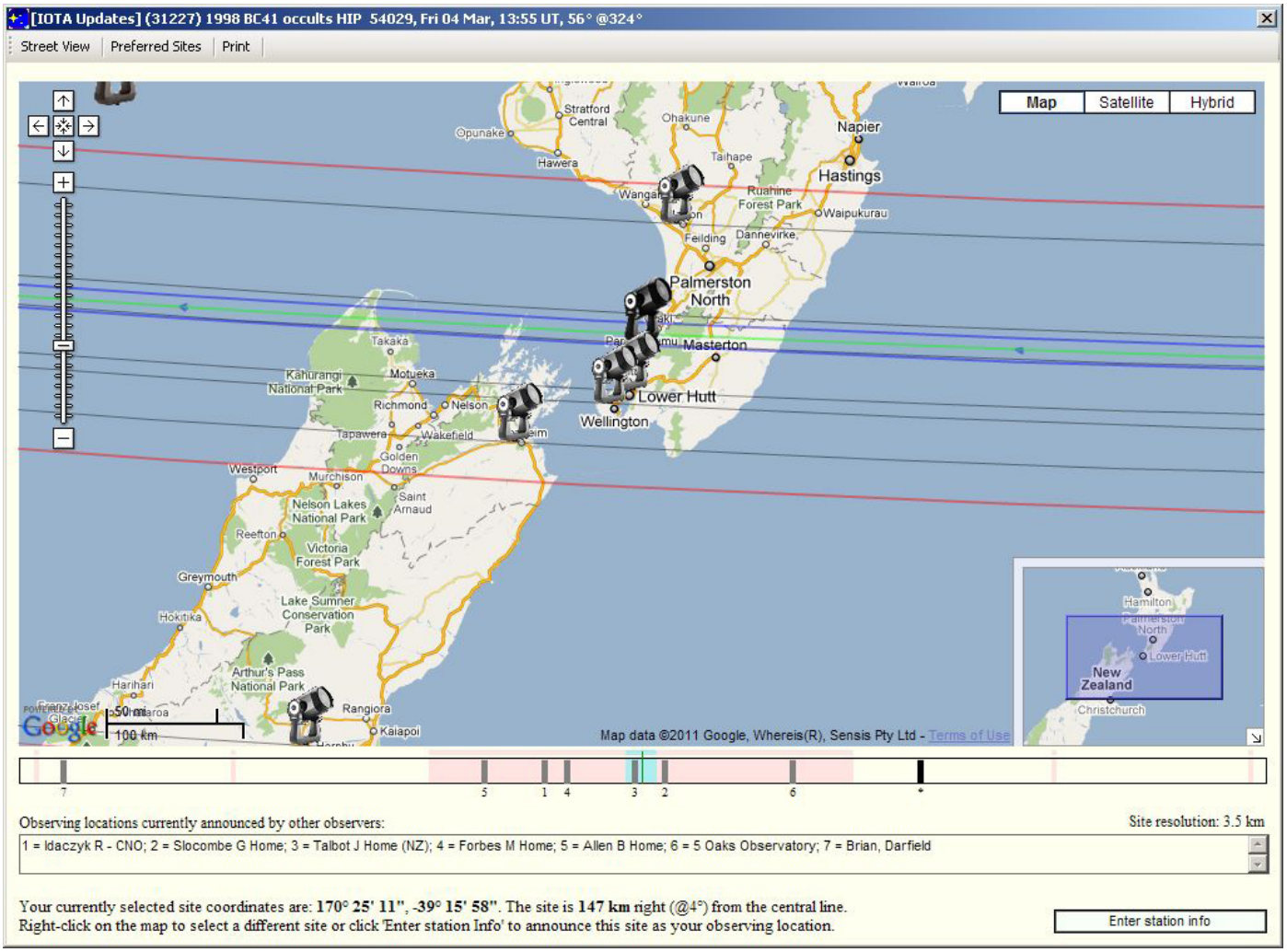
OBSERVING AT THOMAS KING

All public observing evenings will be held at the Thomas King Observatory run by our Observatory Director Ross Powell. from 8:30. **Ring Ross on 389 9765 t**o check if there are public observing evenings on most FRIDAYS, starting as soon as it gets dark depending on the weather and Ross's availability.

OBSERVING AT PAUATAHANUI

The next observing evening at Pauatahanui is on March 5th starting at 8.30pm. If the weather is looking doubtful we have a backup evening the following Saturday 12th February. **If doubtful please ring Chris Mongatti on his mobile021 890 222 to see if the session is going ahead.**

Bright Occultation



2011 Mar 04 Fri 13:55 (31227) 1998 BC41 occults HIP 54029 mag 5.5

Centre line is through Te Horo on SH1 or between Mt Bruce and Masterton on SH2 but wide error band.

The object is expected to only be 17km diameter but the star is bright enough that you should be able to view with Binoculars.

The path goes across NZ about 65 km north of Wellington then crosses the Tasman and goes roughly between Melbourne and Waranambool both inside 1 sigma line. Then it crosses the Bight and should be close to Bunbury with Perth and Albany both just outside the 1 sigma line. So there is possibility of trans Tasman observations.

There are 7 observers registered in OW from Marton down to Darfield ( ) and at least 3 more who have said they will try. This may be worth travelling for if fine so check the prediction in Occult Watcher or at http://www.asteroidoccultation.com/2011_03/0304_31227_24718.html

If you would like to travel to closer to the predicted path please chose a location about 12 to 15 km from any existing registrations. Ideally we would have enough observers between Wellington and Marton so that there was no gap greater than about 12 km between for it to slip through.

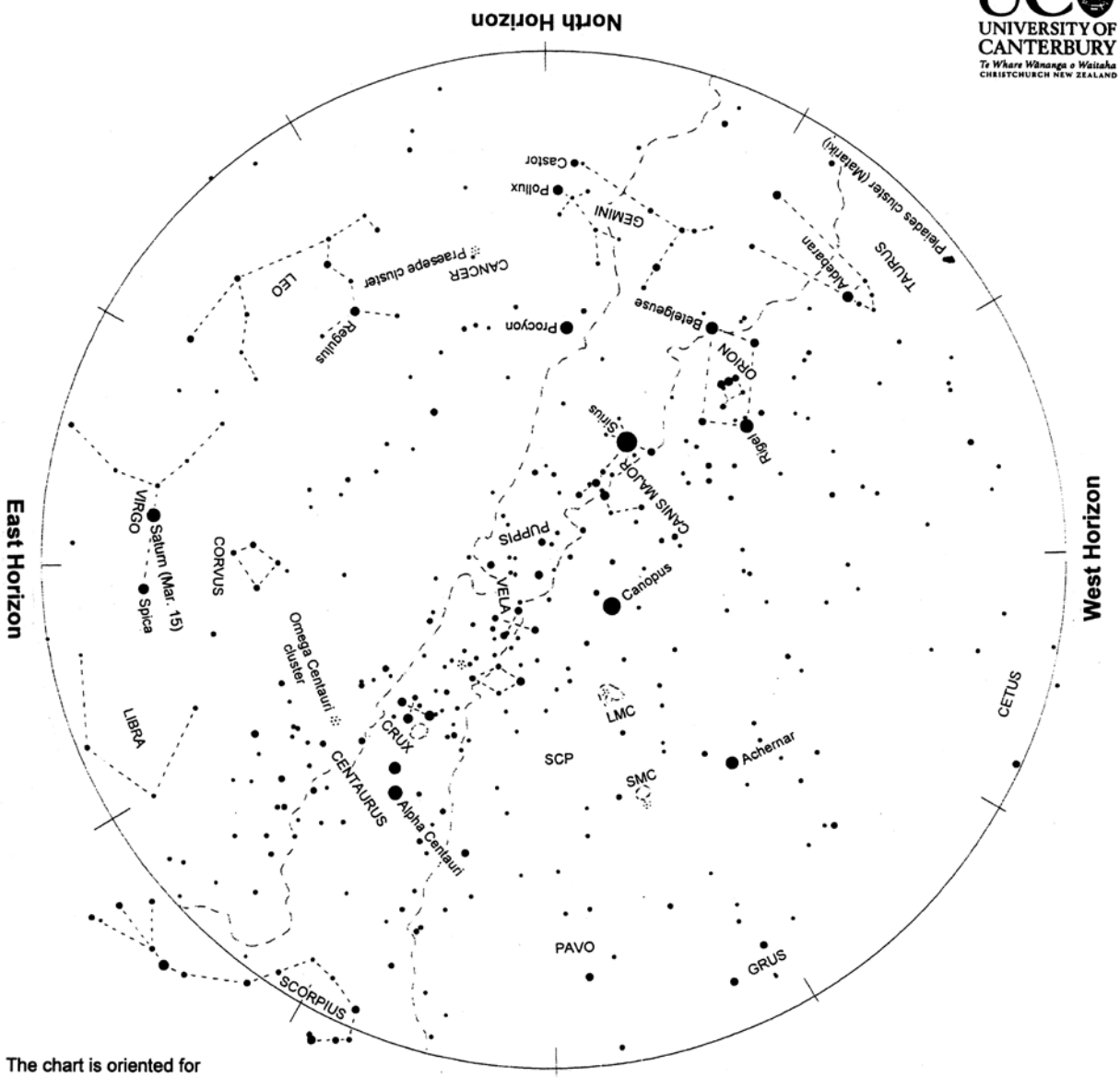
Contact John Talbot john.talbot@xtra.co.nz or phone 04 293 4620 if you don't have OW and would like to get a site assigned. Direction will be 56 deg Alt at 324 Az so high enough not to need a serious low NW horizon so you should be able to get shelter if required and still see the right zone. The time is almost 3 am NZ but it is early Saturday morning so you can sleep in later!

If you are staying home then a little earlier the same night there is a trans Pacific event (256) Walpurga occults TYC 5564-00534-1 mag 11.5 at about 1:30 am. The path runs from Canterbury across Pacific to Washington State - Wellington is just inside the 1 sigma zone.

On the following Saturday morning (21) Lutetia occults TYC 6842-01871-1 mag 10.0 occurs at about 4:20am. Centre of path is through Waikanae but this is a 105 km object so most of Wellington is in the expected path or very near it. I would suggest observing from home for all WAS observers. Again we already have 7 registrations, 5 within the expected path but more would make this a great opportunity to get a good shape profile.

Clear skies.

John Talbot



The chart is oriented for
Feb. 15 at midnight NZDT
Mar. 1 at 11 p.m. "
Mar. 15 at 10 p.m. "
April 1 at 9 p.m. "

Evening sky in March 2011

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 is the brightest star in the evening sky, northwest of overhead. Canopus, the second brightest star, is southwest of overhead. Orion, containing 'The Pot', is below Sirius in the northwest sky with Taurus and the Pleiades/Matariki cluster lower again. Saturn, medium-bright, makes an eye-catching pair with similar-looking Spica in the otherwise empty eastern sky. The Southern Cross and Pointers are midway up the southeast sky. The Clouds of Magellan, LMC and SMC, are high in the south sky. The Scorpion rises in the southeast later.

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

The Evening Sky in March 2011

Sirius is the first star to appear at dusk, northwest of overhead. It is quickly followed by **Canopus**, southwest of the zenith. Below Sirius are **Rigel** and **Betelgeuse**, the brightest stars in **Orion**. Between them is a line of three stars: Orion's belt. To southern hemisphere star watchers, the line of three makes the bottom of 'The Pot'. Orion's belt points down and left to a V-shaped pattern of stars making the face of **Taurus** the Bull. Further down and left, low in the northwest, is the **Pleiades** or **Matariki** star cluster, setting early.

Saturn is in the east at dusk. It is a little brighter than **Spica** the brightest star in **Virgo**, right of Saturn. Saturn's rings still appear quite narrow in a telescope after being edge-on for the past two years. Saturn is 1300 million km away in mid March. It is midway up the north sky at 3 a.m.

Sirius, 'the Dog Star', marks the head of **Canis Major** the big dog. A group of stars above it make the dog's hindquarters and tail. Sirius is the brightest star in the sky both because it is relatively close, nine light years* away, and 23 times brighter than the sun. **Procyon**, between Sirius and Mars, marks the smaller of the two dogs following Orion the hunter across the sky. Procyon is seven times brighter than the sun and 11 light years away.

Below Procyon, near the north skyline, are **Pollux** and **Castor** marking the heads of **Gemini** the twins. Right of them and higher is the star cluster **Praesepe**, marking the shell of **Cancer** the crab. Praesepe is also called the Beehive cluster, the reason obvious when it is viewed in binoculars. It is 500 light years away.

Rigel, above and left of Orion's belt, is a bluish supergiant star, 40 000 times brighter than the sun and much hotter. It is 800 light years away. Orange **Betelgeuse**, below and right of the line of three, is a red-giant star, cooler than the sun but much bigger and 9000 times brighter. It is 400 light years from us. The handle of "The Pot", or Orion's sword, has the Orion Nebula at its centre; a glowing gas cloud many light-years across and around 1300 light years away.

The V-shaped group making the face of **Taurus** the bull is called the Hyades cluster. It is 130 light years away. Orange **Aldebaran,** Arabic for 'the eye of the bull', is not a member of the cluster but merely on the line of sight, half the cluster's distance. The **Pleiades** cluster, impressive in binoculars, is 400 light years from us. Its stars formed around 100 million years ago.

Crux, the Southern Cross, is in the southeast. Below it are Beta and **Alpha Centauri,** often called 'The Pointers'. Alpha Centauri is the closest naked-eye star, 4.3 light years away. Beta Centauri, like most of the stars in Crux, is a blue-giant star hundreds of light years away. **Canopus** is also a very luminous distant star; 13 000 times brighter than the sun and 300 light years away.

The **Milky Way** is brightest in the southeast toward Crux. It becomes broader lower in the southeast toward **Scorpius**. Above Crux the Milky Way can be traced to nearly overhead where it fades. It becomes very faint in the north, right of Orion. The Milky Way is our edgewise view of the galaxy, the pancake of billions of stars of which the sun is just one.

The Clouds of Magellan, **LMC** and **SMC** are high in the south sky, easily seen by eye on a dark moonless night. They are two small galaxies about 160 000 and 200 000 light years away.

Brilliant **Venus** rises in the southeast around 4 a.m. It circles the sun faster than us and is now moving to the far side. At mid month it will be 170 million km away. Venus is bright enough to see by eye in broad daylight. The problem is getting one's eyes focused on infinity in a clear sky. On March 1st the crescent moon will be near Venus, left of the sun, helping to locate the planet.

*A **light year** (**l.y**.)is the distance that light travels in one year: nearly 10 million million km or 10^{13} 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.

www.canterbury.ac.nz
110206

This April 8th-10th

Stargazers Astro Camp

Tatum Park, 1 hr north of Wellington

WAS and the Levin Stargazers are teaming up for this Global Astronomy Month event. A chance for astronomers of all ages and experience to gather in a camp setting to enjoy the night sky, presentations and movies over the course of a weekend. A chance to stay up late and watch the heavens. Something for the whole family.

Register your interest now

Anyone willing to give a short presentation on anything astronomical will have their registration fee halved. A handful of WAS and Levin Stargazers members are already confirmed.

Registration is just $10 per person or $20 for a family. A wide range of accommodation options available (at reasonable rates) from tent sites, bunk rooms, cabin or lodge. More details to follow in next months newsletter or contact the organisers.

Aurora Astronomy School

The Aurora Astronomy School is a unique opportunity for Year 12 and 13 students, and will take place 26th to 30th April 2011, in the Easter vacation. The free camp will be held at the University of Canterbury, and the observatory at Mt. John near Lake Tekapo. On campus we will talk about the universe past, present and future, the life cycles of stars, planet exploration, extraterrestrial life and more.

We will then travel to the Mt John Observatory at Tekapo where we will explore our cosmic neighbourhood with modern astronomical instruments. The programme will contain a mix of seminars and practical work.

The closing date for applications for this camp is Friday 25th March. More details are on the application form at

http://www.outreach.canterbury.ac.nz/

Joan Gladwyn,
Science Outreach Coordinator,
University of Canterbury.

RASNZ Newsletter Outline

Royal Astronomical Society of New Zealand Email Newsletter Number 122, 21 February 2011

Contents

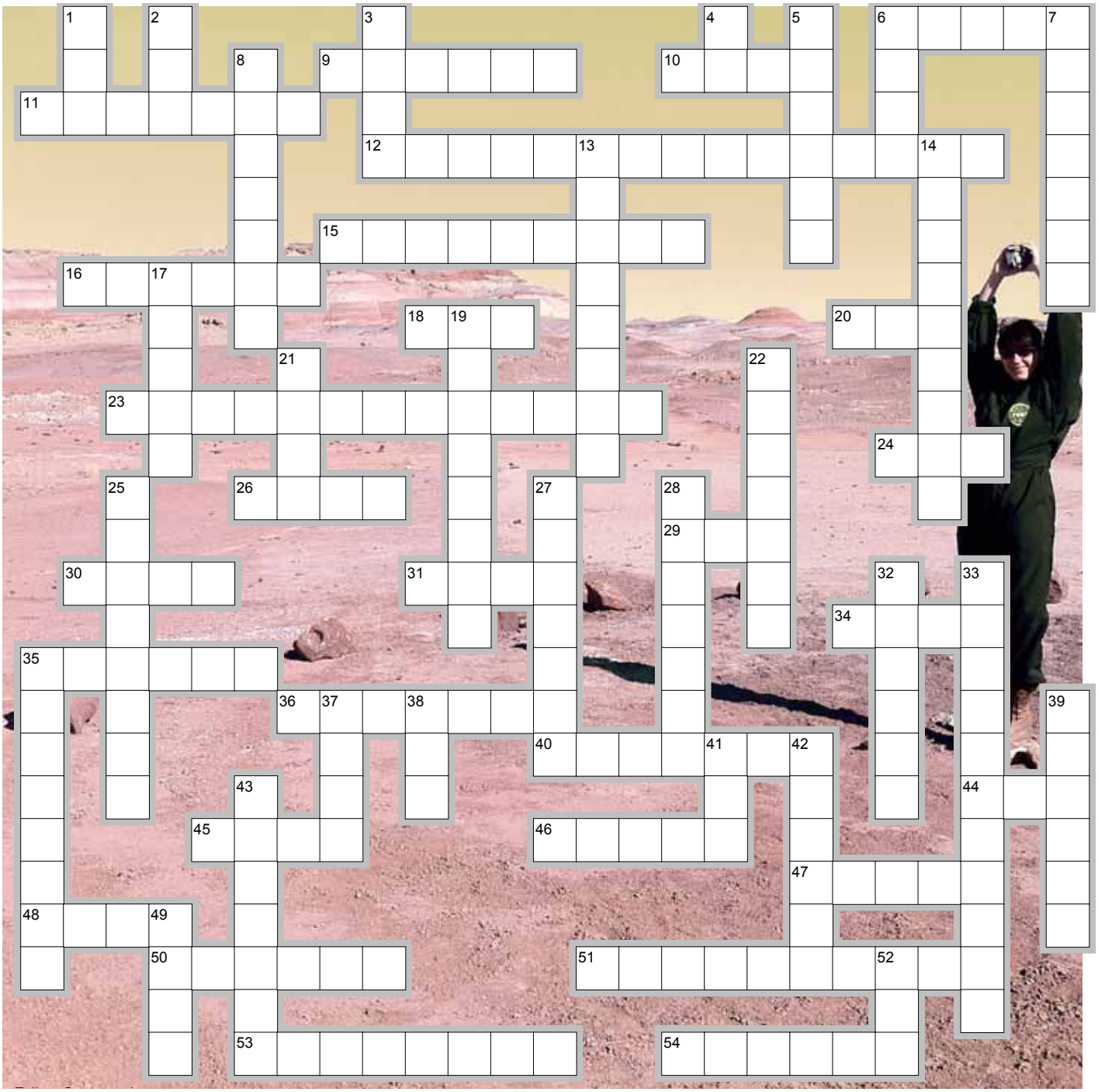
The sky at the Mars Desert Research Station in Utah is simply amazing. The air is cold and the temperature at night can drop up to - 20 degrees Celsius. Frozen to death I spent my two weeks by the Musk Observatory (above) which hosts a C14, in awe (upper left) of the splendor of the Milky Way and Andromeda. The picture below is taken during the construction of the Sarmisegetuza Solar Dial and here we laid down and measured by the North Star the stone that stands for 12 O'clock.

Clear skies,

Haritina

Photos: Dragos Bratasanu, www.dragosbratasanu.com

Cross Word with Murray Forbes



Across

6. a very cloudy planet; 9. One of the Moons of Mars; 10. satellite observatory studying the Sun; 11. a catalogue; 12. clip singer in bay (anagram); 15. Largest galaxy in the Local Group; 16. a double star; 18. 24 hours; 20. could be mistaken for a cloud; 23. A cosmological model; 24. an orbiting telescope; 26. a new star; 29. some spiral galaxies have one; 30. unit of time; 31. mid-day; 34. The Peacock constellation; 35. Early German astronomer - formulated 3 laws of planetary motion; 36. An open or globular ...; 40. horizontal angle around the sky; 44. A lion circling the Earth; 45. New Zealander; 46. Constellation with Spica; 47. alpha Cygnus; 48. smallest indivisible piece of a element; 50. When the Moon is furthest from the Earth; 51. son's recipe (anagram); 53. star time; 54. process that powers stars;

Down

1. frozen liquid; 2. solid, liquid or ...; 3. volcano on Io; 4. One of the Galilean satellites; 5. also a small inflated rubber boat; 6. alpha Lyr; 7. type of telescope; 8. type of galaxy with unusally bright nucleus; 13. astronaut; 14. Carter Observatory's public telescope; 17. opposite to zenith; 19. one phial (anagram); 21. angels and galaxies both have one; 22. The North Star; 25. constellation with a sting; 27. a shepherd satellite of Saturn's F ring, also the first women in Greek mythology; 28. spectral classes; 32. You don't want this constellation in a China shop; 33. site of the Lovell radio telescope; 35. The SI unit of mass; 37. volcano on Io; 38. satellite galaxy to the Milky Way; 39. Name of ESA spacecraft that intercepted Halley's comet; 41. flying saucer; 42. an open cluster in Taurus; 43. a phase of the Moon; 49. I weight 6 times less on the Moon, but still have the same ???; 52. an arrested atom;