NEWSLETTER

The next WAS meeting will be held on
Wednesday 4th February 2015 at 7:30 pm
at Carter Observatory,
Upland Rd,
Kelburn,
Wellington

Tom Watson, President of the
Astronautics Association of New Zealand (AANZ)

His presentation is:
Spacesavers: getting away and getting back safely.

Wellington Astronomical Society,
PO Box 3181,
Wellington 6140,
New Zealand.

WAS NEWS

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Wednesday 4th February 2015 at 7:30 pm

at Carter Observatory, Upland Rd, Kelburn, Wellington

The speaker is Tom Watson,
President of the Astronautics Association of New Zealand (AANZ)
and editor of the bimonthly AANZ Journal.

Tom has been editing the Journal since 1989 and obviously has a long and strong interest in spaceflight. When NASA and the American Embassy were providing astronauts to tour NZ, Tom made many good contacts and has a very good archive of space related material.
He has also been acquiring Russian material whenever possible.

His presentation is:

Spacesavers: getting away and getting back safely.

The various designs of crew capsules for leaving and returning to Earth from the earliest days of NASA and Russia's efforts to current ideas.

Council Members

The following members were elected to Council at the Nov 2014 AGM

President: Gordon Hudson gordon@kpo.org.nz ph 04 - 2365125
Vice President: John Talbot john.talbot@xtra.co.nz ph 04 293 4620
Secretary: Chris Monigatti chrismon@xtra.co.nz mob 021 890 222
Treasurer: Lesley Hughes
Councillors:
Aline Homes
John Homes + Webmaster
Roger Butland
Frank Andrews
Murray Forbes
Antony Gomez
Duncan Hall

Newsletter Editor: editor@was.org.nz

UPCOMING EVENTS:

Society Observing night

The next observing evening at Tawa College is on 14 February 2015 starting at 8.30pm be there. There will be no reserve day this month. Text Chris Monigatti on his mobile 021 890 222 if you want to attend.

President's Report Feb 2015.

by Gordon Hudson

Firstly I would like to mention the sad passing of Graham Blow on December 31st after a four year battle with cancer. A full Obituary is below.
The funeral was attended by many WAS members with the service being held at the Pines in Houghton Bay on Monday 5th January. I was one of the Pall Bearers representing the WAS and the RASNZ.

With Graham passing on there is a lot of material to sort out especially with the Occultation Section which Graham ran for 37 years. I am also helping Graham's sister Andrea to sort out Graham's unit. All of the Occultation and Astronomy material is now at my place waiting to be sorted. His car is also resident at my place until Andrea finishes with Graham's place and then it will head to Christchurch. Andrea uses the car when she comes back to sort out Graham's affairs.

The Syd Cretney bequest is becoming a long and drawn out affair. We have engaged a lawyer to sort out our application to the other lawyers who are holding the bequest, they are in Blenheim. A copy of the final letter that we have sent to our lawyer for approval to go to the Blenheim Lawyers is enclosed in this newsletter. Thanks Duncan.
The WAS dome which has been stored at my place for the last 2 years is about to go to Tawa College in the next couple of weeks.

This year is going to be a most interesting year especially if we acquire the Syd Cretney Bequest. If that happens we are looking at the Gifford Observatory as an automated Observatory. We are also in the planning stages with the Thomas King Observatory.

We are starting to acquire a rather a lot of items as we are no longer storing equipment, books, newsletters and other material at Carter as the workshop is being emptied for other purposes, this leaves us with a problem where to store stuff until we have a home of our own.

At present it is spread around several of our members. This is not good enough. We need it all in the one place. Are there any suggestions as to where we might store it.
The volunteering at Carter is going well but it is mainly through the efforts of a couple of our members. We need more volunteers. Have you helped yet?

We assist on Tuesdays and Saturday evenings so put your hand up at the next meeting.

Finally the WAS observing evening once a month at Tawa College is struggling with lack of observers. Where are you all?..

Graham Blow, ONZM, 1954 - 2014

It is with great sadness that we mark the death of Graham Blow on 31 December 2014 at the age of 60. He was born 5 August 1954 in Auckland, New Zealand.

Graham died peacefully at home on the last day of 2014 following a second heart attack on December 24. He had been diagnosed with kidney cancer five years previously when he was given only 6 months to live. Despite this, with the help of his oncologist and Graham's positive outlook he continued an active life for 5½ years.

Graham suffered an initial severe heart attack on November 14. He attended the last 2014 meeting of the Wellington, New Zealand, Astronomical Society on December 3 when he seemed in good spirits. The December 24 heart attack was enough to weaken him over the next 7 days until heart failure occurred.

Graham had an interest in astronomy from an early age. For his 15th birthday his parents bought him a 2.5" refractor. Shortly after, in 1970, he joined the Auckland Astronomical Society and "ended up becoming a fixture at the observatory for most of the following decade". He joined the Variable Star Section and was able to make observations of variable stars using his refractor.

Although his first interest was in variable stars, he soon became involved in observing total and grazing lunar occultations. The interest in occultations resulted in the Auckland Occultations Programme being set up to maintain interest in, and observations of, both types of occultations.

In 1973 Graham assisted in forming the Auckland based National Junior Coordinating Committee (NJCC) involving young astronomers. The NJCC provided a national focal point bringing together student activities throughout New Zealand. Within a year there were associate members in many part of New Zealand.

The NJCC became the National Committee for Student Astronomy (NCSA) in 1974 with Graham as Chairman. Observing programmes were organised, some of which were integrated with the observing sections of the Royal Astronomical Society of New Zealand (RASNZ). The NCSA was wound up in early 1977 when it ran out of money.

Graham became a member of the RASNZ in February 1974 and remained a loyal supporter of New Zealand's national astronomical society until his death. He has elected to the RASNZ council in 1980 and remained on council until 1992. He was Vice President of the Society May 1986/88, President 1988/1990 and then Senior Vice President 1990/1992. After retiring from the Council in 1992 he continued to take an active interest in the affairs of the RASNZ.

In 1978 Graham joined the staff of the Carter Observatory in Wellington which entailed his move to that city. He was scientific officer at the observatory until it was restructured 17 years later. Soon after joining the staff of the observatory he completed his Master's thesis on the high speed recording of occultations to infer stellar diameters.

In his role as scientific officer at Carter observatory Graham co-edited a handbook for the appearance of Halley's Comet in 1985. This was published and copies sold throughout New Zealand and Australia. Graham also appeared on a segment of a children's television programme "What Now?" performing his own design of a science experiment that emulated the gases and matter of a comet. This science experiment brought astronomy to the front page of the Wellington Press.

During his time at Carter Observatory, Graham also edited the annual Carter Observatory Astronomical Handbook.

Graham had encouraged occultation observations with the NCSA observing programme. In October 1977 this resulted in the formation of the RASNZ Occultation Section absorbing the Auckland Occultations Programme. Graham Blow was appointed the director of the section. He remained the section's director up to the time of his death, that is for 37 years and this was one of his three proudest achievements in his life.

Through the RASNZ Occultation Section, Graham was able to inspire a large number of amateur astronomers to take an active role in the science of occultation observing. This, and his enthusiastic promotion of the observation and timing occultations resulted in the section becoming one of the most successful in the RASNZ, giving the section an international reputation so that it became effectively the Australasian Occultation organisation.

Over the years Graham led numerous groups to observe lunar grazing occultations. A number of these involved considerable travelling, including to the South Island of New Zealand. Grazes are of value in validating the shape of the lunar profile in its polar region.

At first the emphasis of the Section was on the observation and timing of lunar occultations, both total and, more particularly, grazing occultations. Occultations by asteroids featured as well but success with these was initially rare due both to the sparsity and to the low accuracy of the predictions. Despite that Graham observed his first asteroidal occultation in 1983. On August 8 of that year he timed a very brief occultation of a 9.6 magnitude star by (10) Hygeia from Mt John Observatory at Tekapo in New Zealand's South Island.

One of Graham's greatest achievements was in 1988 when Pluto occulted a 12th magnitude star. Graham encouraged several observers with photo-electric equipment to observe the event. It happened that NZ was at the southern edge of the occultation track. Seen from Mt John the star just grazed Pluto's atmosphere, till then unknown. Observers further north at Black Birch and Auckland saw the star occulted by the planet. These observations contributed to the first accurate determination of Pluto's size. The occultation also started studies of Pluto's atmosphere that continue today.

In 1998 Graham established the RASNZ Occultation Section website, now at http://www.occultations.org.nz aimed at promoting occultation observations. A number of section members assist in the maintenance of the site which contains much information on

occultation observation, predictions of special events and records of over 300 asteroidal events observed by members since 1998.

Particularly during the current century, the main emphasis of the Section has moved from lunar to asteroidal occultations. The increase in both number and accuracy of the predictions together with the use of video cameras with high accuracy GPS time insertion has led to a greater interest in this type of event and a far higher success rate. Again Graham was very active in promoting this type of observing leading as it does to far more reliable results. Graham has at times organised groups of observers to travel considerable distances to observe some of these events. Some have resulted in multiple chords being timed across the asteroid as it passes in front of the star, so giving a measure of the size and shape of the body.

One of the results of the changes in observing technique to the use of video was the first Trans Tasman Symposium on Occultations (TTSO) which was organised by Graham Blow and held in conjunction with the 2007 RASNZ conference. Since then TTSO meetings have been held annually, alternating between New Zealand and Australia. These have been a factor in leading to increasing cooperation between observers in the two countries. The TTSO meetings have presented guidance in observing and timing occultations for beginners as well as information on advances in hardware and software for the more advanced observer.

The 9th TTSO symposium will be held at Tekapo, following the RASNZ conference in May 2015. Tekapo is the site of New Zealand's Mount John observatory, the site of Graham's first asteroidal occultation observation.

Graham's work in astronomy has been recognised in the astronomical community by asteroid number 19582 being named Blow for his promotion and coordination of minor-planet occultation observations for the Australasian region.

In 2008 he was elected a fellow of the RASNZ in recognition of his leadership of the Occultation Section and contributions to both the RASNZ and to Occultation science.

International recognition came in 2013 when Graham received the International Occultation Timing Association's Homer F. DaBoll award for his dedicated leadership, the establishment of TTSO and the editorship and promotion associated with Occultations, Grazes and Eclipses.

Most recently, in 2014 Graham Blow was made an Officer of the New Zealand Order of Merit for services to astronomy, an appointment announced in the NZ New Years Honours list for 2014. On Tuesday 18th March 2014 Graham was presented with his NZ Honours Medal, the ONZM by His Excellency, Governor-General of New Zealand at Government House in Wellington.

Graham maintained his enthusiasm for occultation astronomy after being diagnosed with cancer right to the end. His last successful asteroidal occultation was on 25 October 2013 when (8) Flora occulted an 11.27 magnitude star. Graham observed from Carter Observatory in Wellington. There were four other observations of the event spread from Porirua to the north of Wellington down to Canterbury in the South Island. Thus 5 chords were obtained. Possibly his last act as Occultation Section director was to email members advising of the availability of the latest issue of the Journal of Occultation Astronomy. The email was sent on the morning of December 24, the day of his final heart attack.

The work of Graham with the Occultation Section has assisted in lifting Australasian occultation observing to the forefront of the science internationally. A new section director will be appointed soon and the work he initiated will continue.

Graham's other passion and for many years his profession was photography.
He had served on the Council and been President of the Wellington Photographic Society.
He was well known for his motorsport and landscape images. He excelled and had won awards in both fields. Graham was held in high esteem by his photographic colleagues.
Graham Lindsay Blow, the son of Stan and Mena, was born 5 August 1954 at Auckland and died 31 December 2014 at Wellington. He is survived by his sister Andrea and her husband Murray, and was uncle to Philippa and Michael. His funeral celebrating his life was held on Monday 5 January 2015. Typically much of the form of the event had been arranged by Graham himself.

John Talbot and Brian Loader, January 2015

Acknowledgments
We would like to thank Graham's sister, Andrea Clemens for checking and correcting a number of facts in the obituary.
Graham Blow's 2011 RASNZ Fellow's lecture was a valuable source of information and contains much of Graham's thoughts about astronomy and the role of the RASNZ. It was published in the RASNZ journal Southern Stars under the title "Reflections of an Astronomer", Volume 50, Number 2, 2011 June Pp 14 to 19.

WAS Research Astronomy Group

We would welcome any members to these research meetings including those who would like to introduce us to their favourite astronomical research topics.

The Research Group meeting, at 6:30pm on meeting days, is also a good place to come to ask questions about your telescope or equipment.

Occultation Reports:

There were just 3 positive events for November

And 11 events reported with clearly observed misses.

There were 5 positive events for December

14 events reported with clearly observed misses several with 2 observers.

See write ups for more details at:

http://www.occultations.org.nz/planet/2014/plnres14.htm

JUPITER now rises about 08:30 pm NZ Summer time.

The equatorial plane of Jupiter is now edge-on to the Earth. The four major satellites of Jupiter orbit close to the plane of Jupiter's equator. As a result eclipses, transits and occultations of all four Galilean moons, are now taking place. Also a series of mutual events of the moons has started. The many events later this year and up to August 2015 will be easier to see.

Jupiter events are easily accessible with small telescopes as they are very bright and even with a 5 to 10 cm aperture you should be able to see the Galilean moons. It is worth noting that Capt Cook used these events to check his chronometers in Hawaii and NZ during his Transit of Venus voyage.

These events are now shown on the Occult Watcher "Planet Satellites" feed so if you want to

try to observe these make sure you have that option ticked in Configuration … Prediction Feeds. If you want to try to record the extinction of Io or Europa's atmosphere for JEE program make sure the target moon is the one in front and record from at least 30 minutes before to 30 mins after the central point. If you do manage to make timed observations please use report page at http://www.imcce.fr/hosted_sites/saimirror/phemuobs.htm (you may need to apply for an observer ID by email to phemu@imcce.fr Also please send an email report to Scotty Degenhardt < scotty@scottysmightymini.com > with at least a CSV light curve.

Graham Blow a personal note:

As you will all know by now Graham sadly died after long illness on 31 Dec 2014 and a full obituary has been published above. I first met Graham at a Wellington Astronomy Society meeting, and when he gave us a talk on Occultations the lights went on for me. Here was Astronomy that is "Real Science" where each observer makes a unique observation that no other station will exactly replicate and the Amateur with a 6 inch scope is equal to the Professional with a 40 inch when observing the same event. I soon acquired a video cam and KWI-OSD through Graham. In 2006 he asked me to take on the role I have since filled to reduce the multiple observations sent in and do the reports for the web site and to pass on to Dave Herald for inclusion in the global databases. Graham continued to mentor me and point out those annoying small typos and errors that escape me from time to time.

I for one will miss his involvement and advice.

John Talbot

Variable Stars:

Check out the Variable Stars South web site at

http://www.variablestarssouth.org/

Looking forward to some nice long clear summer nights !

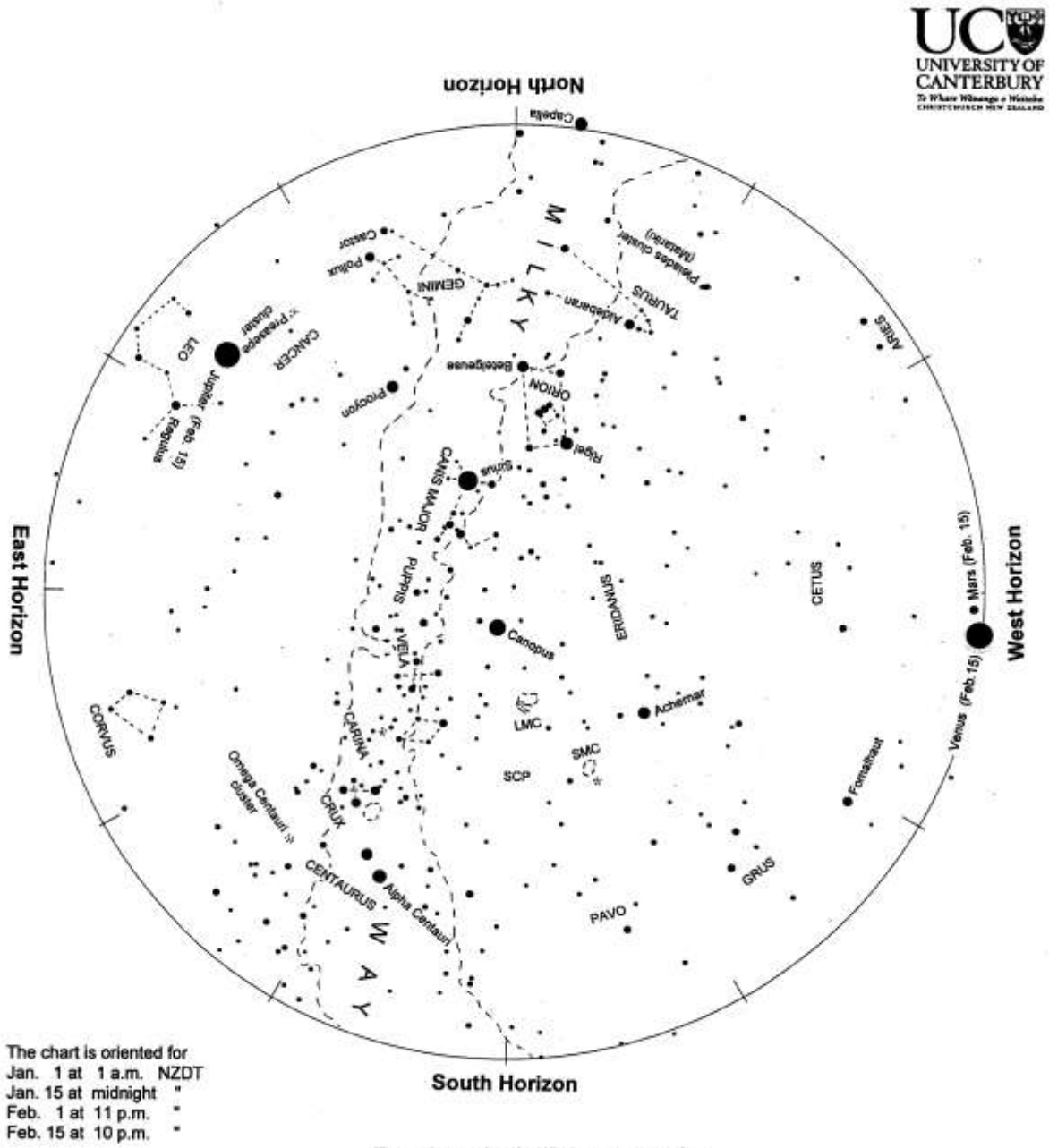
New WAS Members

We would like to welcome the following new members who have joined in the last few months:
Andrew Scott, Tawa
Iva Sokorac, Johnsonville

2015 RASNZ Conference

The 2015 RASNZ Conference will be held in Lake Tekapo village From Friday May 8 to Sunday 10th. It will be followed by the 9th Trans-Tasman Occultation (TTO9) Meeting on the Monday and Tuesday, May 11-12.

Preceding the RASNZ Conference will be a two-day meeting celebrating Mt John Observatory's 50th Anniversary. The meeting will be held in Lake Tekapo village on the Thursday and Friday, May 7-8. The theme is `Celebrating 50 years of Mt John´. Past Pennsylvania and Canterbury students will contribute papers but anyone is welcome. About 80 participants are expected. Details are available at www.mjuo50.org.nz.



The chart is oriented for
Jan. 1 at 1 a.m. NZDT
Jan. 15 at midnight "
Feb. 1 at 11 p.m. "
Feb. 15 at 10 p.m. "

Evening sky in February 2015

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.

Venus and Jupiter appear on opposite sides of the sky soon after sunset. Venus sets an hour after the sun. Jupiter is in the sky all night. Mars is near Venus but much fainter. Sirius, the brightest star, is north of the zenith. Canopus, the second brightest star, is south of overhead. Orion, containing 'The Pot', is midway up the north sky. Below and left of Orion are Taurus and the Pleiades/Matariki cluster. The Southern Cross and Pointers are midway up the southeast sky. The Clouds of Magellan, LMC and SMC, nearby small galaxies, are high in the southern sky.

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 February 2015

Bright planets appear on opposite sides of the sky at dusk. Brilliant **Venus** appears low in the west soon after sunset. **Jupiter** appears low in the northeast, shining with a steady golden light. Above and right of Venus, for most of the month, is the red planet **Mars**. It is much fainter than Venus but is the only other brightish 'star' in that vicinity. Venus keeps its position in the twilight all month. Mars slips down the sky. Venus and Mars will be close together around the 21st. After that Mars disappears into the twilight. Their closeness is just a line-of-sight effect. On the 21st Venus is 213 million km from us; while Mars is 329 million km away. The crescent moon will be near the pair of planets on the 21st.

A telescope will easily show Jupiter's four bright moons. Binoculars, steadily held, often show one or two of them looking like faint stars very close to the planet. Jupiter is 652 million km from us mid month, the closest it gets this year. The planet is 11 times Earth's diameter and 320 times Earth's mass. It sets in the northwest at dawn.

Sirius, 'the Dog Star', marks the head of Canis Major the big dog. A group of stars above and right of it make the dog's hindquarters and tail, upside down. Procyon, in the northeast below Sirius, marks the smaller of the two dogs that follow Orion the hunter across the sky. Sirius is eight light years* away.

Below and left of Sirius are bluish **Rigel** and orange **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'. The handle of The Pot is Orion's sword, a fainter line of stars above the bright three. At its centre is the Orion Nebula; a glowing gas cloud around 1300 light years away.

Orion's belt points down and left to the orange star Aldebaran. Continuing the line finds the Pleiades or Matariki star cluster. Aldebaran is Arabic for 'the eye of the bull'. It is on one tip of an upside-down V that makes the face of Taurus. The V-shaped group is called the Hyades cluster. It is 130 light years away. Aldebaran is not a member of the cluster but merely on the line of sight, 65 light years from us. It is 145 times brighter than the sun. The **Pleiades or Matariki** star cluster is also known as the Seven Sisters and Subaru. Six stars are seen by eye; dozens are visible in binoculars. The cluster is 440 light years from us. From northern New Zealand the bright star Capella is on the north skyline. It is 90,000 times brighter than the sun and 3300 light years away.

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 can be traced up the sky, fading where it is nearly overhead. It becomes very faint east, or 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.

Saturn (not shown) rises in the southeast before 2 a.m. at the beginning of the month; at midnight by the end. It has a creamy colour. To its right and fainter is the orange star Antares, marking the Scorpion's heart. Saturn is 1506 million km away mid month. It is always worth a look in a telescope.

Mercury (not shown) makes its best morning sky appearance of the year in February and March. It moves rapidly up the eastern dawn sky in the first week of February. By the 14th it is rising two hours before the sun, the only bright star in the east. It remains prominent in the morning sky through March.

*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 for sunlight 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.

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