

WELLINGTON ASTRONOMICAL SOCIETY



MONTHLY MEETING: The Zodiac by Richard
Hall, 7.30pm Wednesday 17th September 2008
Science House,
Turnbull Street,
Thorndon

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Zodiac by Richard Hall

Astronomy is the oldest of all sciences and the 'signs' of the Zodiac are among the first constellations created. On the earliest of engraved stones and bones we can discern groups of stars, or constellations, indicating that forty thousand years ago people fixed their gaze upon the sky and studied the stars. For most of human history astronomy and star-lore was more than an intellectual pursuit - it was a strategy for survival. In this presentation we explore the astronomical knowledge, myths and legends of antiquity that formed a cornerstone to the rise of civilization and world religions.

Warwick's Eclipse trip to China

Warwick Kissling will be giving a short presentation about his trip to view the eclipse in China.

Welcome to New Members

Wellington Astronomical Society wishes to welcome Judith Flight and Michael Stapel. We wish you every best in your astronomical endeavors.

Pauatahanui Observing sessions

Observing sessions at Pauatahanui will be held on the first Saturday of the month, weather permitting. 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!

This month's session will commence at 8:00pm on Saturday, September 6th. If the weather is looking doubtful please contact John Field on his mobile 021-255-1904 to see if the session is going ahead.

Gifford Star Party Saturday September 13th

The Gifford star party will be held on Saturday September 13th. The contact person is Duncan Hall, Phone 474 5350.

Thomas King Observatory

Ross will be operating the TKO, usually on fine Saturdays, except when Gifford is happening. Hours will vary with the season. Contact Ross Powell Ph 389-9765, email rpowell@was.org.nz or Vicki Irons Ph 3838 710 email virons@was.org.nz for more details.

Editorial Disclaimer

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

From The Top by John Field

I suppose one could be questioned for taking up astronomy during the last few months, unless your passions are Radio Astronomy or catching up on the latest news via the Internet or

Astronomy Magazines! My Telescope at home came off the pier prior to a recent downpour and has sat undercover ever since, I hope to get it operational again in the near future. I called in to Pauatahanui prior to the last observing session, which was cancelled due to bad weather (again), The telescope and dome interior are nice and dry but the surrounding grounds were very soggy. The dome exterior is in need of a clean and repainting in the coming months; this should require a couple of days labour to get the dome ready for another five years.

Plans are moving along for the RASNZ conference next year with a venue, Quality Hotel in Cuba Street, booked and the Local Organising Committee is seeking funding for keynote speakers and helping to keep costs down for attendees. The best way to make the conference a success is for members to come along.

On a personal note I have just recommenced my studies at Swinburne University doing a paper on Radio Astronomy, so if I look more stressed than normal it may be due to upcoming deadlines; Marilyn Head is doing two papers to complete her Masters in Astronomy so she will be even busier than normal!

Obituary Notice

I was saddened to hear that Jack O'Kane recently passed away. Jack had been a long standing member of WAS serving on the WAS Council for many years. He and Tony Dodson were the driving force behind the establishment of the Pauatahanui Observatory. Jack was a keen observer of occultations and came along to many observing sessions and trips to time occultations. Jack came along on the trip to Hawaii to observe Comet Hale-Bopp and on the weekend camp on Mount Ruapehu, all were great fun and Jack added to the events. Another of Jack's passions was tramping and on many Saturdays Jack, Owen Moore and myself would go for walks across the Belmont Hills. He is missed and my thoughts are with his family and friends. .

NZ IYA Website - Biographies Still Needed. Information taken from RASNZ email Newsletter Number 87, 25 November 2007

Marilyn Head, RASNZ Publicity officer, is still looking for notes of upcoming events and for local biographies.

She writes "The NZ International Year of Astronomy (IYA) site is up and running thanks to the sterling efforts of Roland Idaczyk at <http://www.astronomy2009.org.nz>. To make it as useful as possible we'd like it to be comprehensive so please let me know if you want any events - and that includes any from now until the end of 2009 - to be posted. A critical part is the section that deals with NZ astronomers - past, present and overseas. We would like to include as many active astronomers as we can - it should end up being the Who's Who of NZ astronomy. So we would like all individuals and societies to send me (not Roland) names and very short profiles with any relevant links to be posted." Marilyn's email address is www.writerfind.com/mhead.htm

What's in the Sky in September Information provided by Alan Gilmore Mt John Observatory

Jupiter is north of overhead at dusk, shining with a steady golden light. Binoculars will show the disk of Jupiter. A small telescope easily shows all four moons and the parallel stripes in Jupiter's clouds.

Venus, brilliant and silvery, appears in the west soon after sunset and sets about two hours after the Sun. Venus, **Mercury** and **Mars** hang around together in the western sky for most of the month. Through the first half of September Mercury is above and left of Venus and a lot fainter. At the beginning of the month Mars is above Venus by twice Mercury's distance and a little to the right. Mars is the faintest of the three. By the 8th the three planets make a rough equilateral triangle. On the 12th Mars is just half a full moon diameter left of Venus. Mercury stays above and left of Venus. Spica, the brightest star in Virgo, is well above the three planets. By the 17th Venus is level with Mercury; Spica is above and Mars below. The three planets and Spica make a rough diamond pattern. On the 21st Mercury has stopped its climb up the sky. Venus, Spica and Mercury make a tilted line with Mars below them. Venus continues to set later while the other two planets and Spica fade into the twilight.

The planets' apparent bunching is a line-of-sight effect; they aren't really close to each other. Mars is on the far side of the Sun, 360 million km from us, slipping lower in the sky as we leave it behind.

Venus is also on the other side of the Sun, 220 million km away, but gains altitude as it catches us up. Speedy Mercury swings out from the far side of the Sun then falls lower in the twilight as it passes us on the inside lane. It is 165 million km away at the beginning of the month and 102 million km away at the end.

Canopus, the second brightest star, is near the south skyline at dusk. It swings upward into the southeast sky through the morning hours. Canopus is a truly bright star: 13 000 times the Sun's brightness and 300 light years* away. On the opposite horizon is **Vega**, one of the brightest northern stars. It is due north at dusk and sets in the late evening. **Arcturus**, the brightest northern star, sets in the northwest at dusk. It often twinkles red and green as the air splits up its orange light.

Midway down the southwest sky are 'The Pointers', Beta and **Alpha Centauri**. They point down to **Crux** the Southern Cross. Alpha Centauri is the third brightest star. It is also the closest of the naked eye stars, 4.3 light years away. And it is a binary star: two sun-like stars orbiting each other in 80 years. A telescope magnifying 50x will easily split the pair. Beta Centauri, like most of the stars in Crux, is a blue-giant star hundreds of light years away.

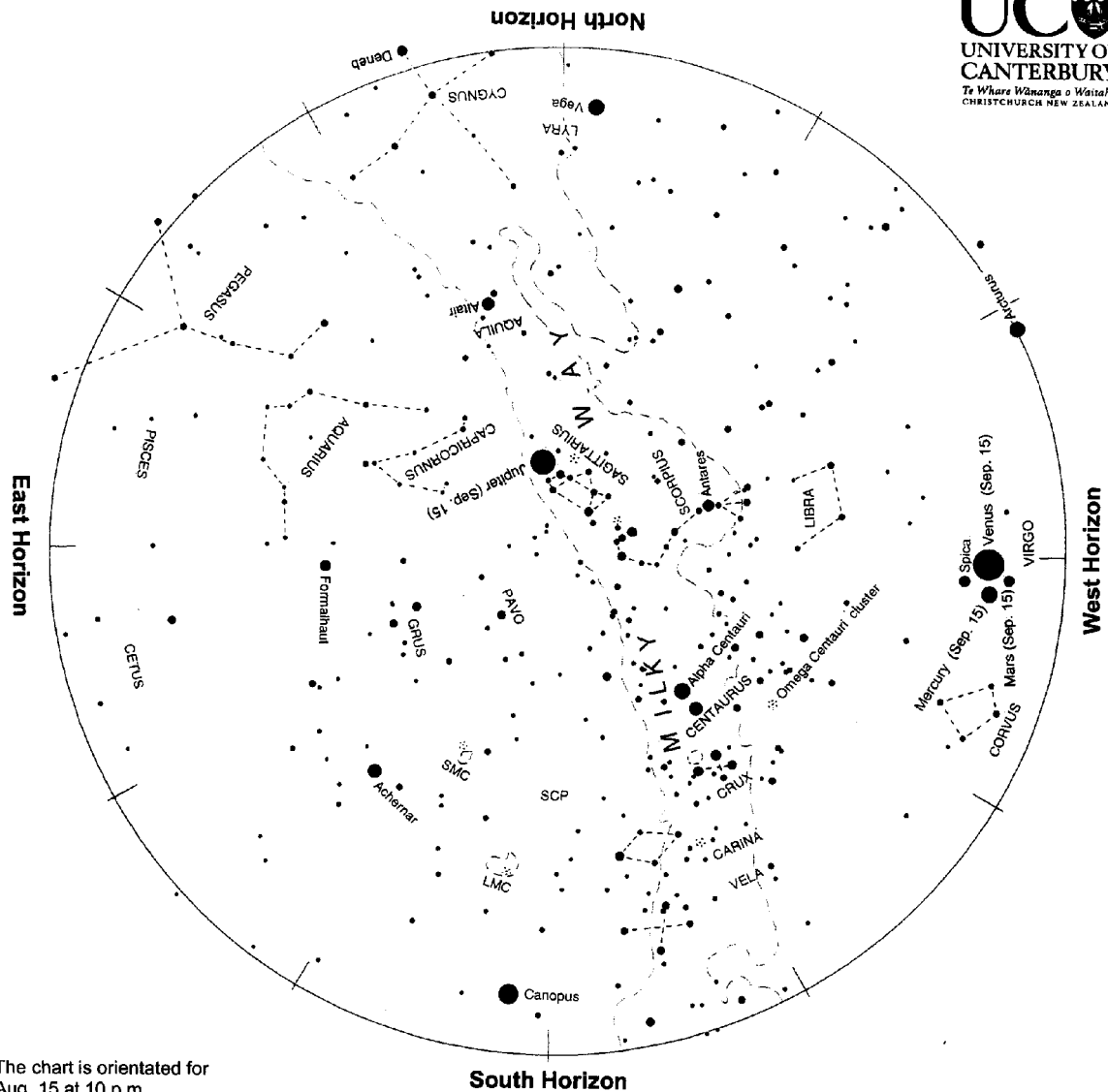
West of overhead the orange star **Antares** marks the heart of the Scorpion. The Scorpion's tail hooks toward the zenith like a back-to-front question mark. Antares and the tail make the 'fish-hook of Maui' in Maori star lore. Antares is a red giant star: 600 light years away and 19 000 times brighter than the Sun. Between **Scorpius** and Jupiter is 'the teapot' made by the brightest stars of **Sagittarius**. It is upside down in our southern hemisphere view.

The **Milky Way** is brightest and broadest overhead in Scorpius and Sagittarius. In a dark sky it can be traced down past the Pointers and Crux into the south. To the north it passes Jupiter and Altair, meeting the skyline right of Vega. 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. The actual centre is hidden by dust clouds in space. The nearer clouds appear as gaps and slots in the Milky Way. A scan along the Milky Way with binoculars shows many clusters of stars and some glowing gas clouds, particularly in the **Carina** region below Crux, and in Scorpius and Sagittarius.

The Large and Small Clouds of Magellan, **LMC** and **SMC**, look like two misty patches of light in the south sky. They are easily seen by eye on a dark moonless night. They are galaxies like our Milky Way but much smaller. The LMC is about 160 000 light years away; the SMC about 200 000 light years away.

*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.

September Sky Map created by Alan Gilmore



The chart is orientated for
 Aug. 15 at 10 p.m.
 Sep. 1 at 9 p.m.
 Sep. 15 at 8 p.m.

Evening sky in September 2008

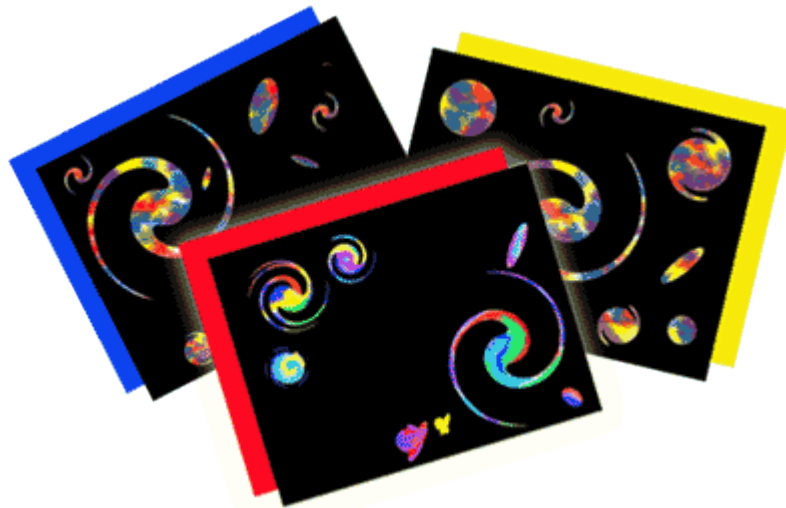
To use the chart, hold it up to the sky. Turn the chart so the direction you are looking is at the bottom of the chart. If you are looking to the south then have 'South horizon' at the lower edge. As the earth turns the sky appears to rotate clockwise around the south celestial pole (SCP on the chart).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

Golden Jupiter is north of overhead in the evening, setting in the southwest around 2 a.m. Brilliant Venus is low in the west at sunset, setting about two hours after the sun. Mercury and Mars are near Venus for most of the month. Orange Antares, the Scorpion's heart, is west of the zenith. The Scorpion's tail, a.k.a. the fish-hook of Maui, curls toward the zenith. Crux, the Southern Cross, and the Pointers are in the south-west. Canopus is near the south horizon, moving up into the eastern sky. Vega shines on the opposite horizon. The Milky Way spans the sky from north to south. Arcturus twinkles red and green as it sets in the northwest.

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

Make a GALEX Galaxy Montage taken from the NASA Space Place website and © to Colleen Barboza.

DISCLAIMER: all personal and professional opinions presented herein are my own and do not, in any way, represent the opinion or policy of JPL/NASA.



Make a colourful work of galactic art using coffee filters, markers, and construction paper. Hang your galaxy montage on the wall or refrigerator. It will remind you of the beauty of the night sky and the great variety of shapes the galaxies take.

What you need:

- Coffee filters, any size, 2-6. (For best results, ask a grown-up to iron them flat before using.)
- One large sheet (11 x 17) of black construction paper
- One large sheet (11 x 17) of colored or white construction paper (optional)
- Coloured marker pens, at least 3 bright colours, **not permanent markers**. You **want** the colours to run together!
- Water in a cup
- Plastic sheet to protect table (a garbage bag works fine)
- Eye dropper or drinking straw
- Scissors
- Glue stick
- Blue (or other colour) glitter (optional)

What to do:

1. Using the water-colour markers, draw colourful designs on the filters. You could draw stars, planets, moons, and comets, if you like. After all, these are all objects that make up galaxies!
2. Spread out the plastic sheet to protect table or floor, and lay the coffee filters on it.
3. Use the straw or eye dropper to dribble a few drops of water on the filters. The water will make the colors run together in lovely ways. Let the filters dry.
4. When the filters are dry, cut them into galaxy shapes. See the galaxy patterns for our "[Make a Galactic Mobile](#)" activity for shape ideas. You may want to make the "arms" of spiral galaxies very long. Scientists have discovered the spiral arms often extend much farther than anyone thought. If you make the galaxies different sizes, the smaller ones will seem to be farther away.
5. Arrange your galaxies on the sheet of black construction paper and glue them down with the glue stick.
6. If you like, use the glue stick to add some blue glitter highlights to your galaxies.

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