Newsletter

WELLINGTON ASTRONOMICAL SOCIETY

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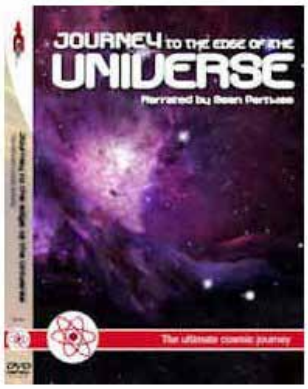
Wednesday, 7th of September,
7:30 PM at Carter Observatory



09-2011

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THIS MONTH'S MEETING FEATURES

the DVD Journey to the Edge of the Universe - The Ultimate Cosmic Journey

Wellington Astronomical Society

Presidents Report for September 2011

The month of August was very quiet on the astronomy scene although we have had one or two average nights but what about the snow see photo.

Welcome to our two new members.

KPO in snow

Observing at Pauatahanui on August had clear skies. Six of our members turned up and they were guided through the clear sky. One of the members was attempting to photograph Saturn through the 12" Meade with a little bit of success. However the evening will be remembered for the number of Meteors we saw and there was one Fireball which I missed as I was looking the other way. We also spotted several Satellites passing overhead. This was our best observing night this year. However the dew was forming on the telescopes and by 9pm we had to pack up as there was too much moisture on the telescope optics.

August meeting was well attended to listen to Dr Melanie Johnston-Hollitt from Victoria University about The Square Kilometer Array. This was an excellent and most informative presentation and now we wait to see if NZ is successful with there bit to have some of the Dishes here in NZ. We want know until March next year.

At last months committee meeting the committee though it might be a good idea to donate one of the societies telescopes to Carter Observatory. This is the very old Dollond telescope which is not used by the society and is quite valuable but only as an antique. It has no mount or a tripod and is only suitable for display purposes. I will write up a proposal for this which I will present at the WAS AGM in November. (I have still got to do this)

It was also discussed about the newsletter printing which is costing us more and more as it is not just printing but the posting and the cost of someone physically going to get it and put into envelopes that are pre-printed with the address and then post it. By the time of the AGM in November we hope to have and almost zero printing and nearly all newsletters emailed to members. You will be getting a subscription reminder by email or post in near future. Due to increasing costs of printing and postage subscription fees have been increased but a discount of $20 will be given if you are happy to receive your newsletter by emailed links to download from our website.

We are still trying to get our 6" dobsonians returned so that they can be checked. So if you have one we would like it returned at the next meeting. I have already have two returned. We have other members waiting for these telescopes. The society has bought two Barlow Lens which are available to go with the WAS Dobby's.

October's talk will be by Professor Matt Visser from Victoria University on his favourite subject, cosmology. Title TBA.

The WAS Library is about to get a makeover with Lesley Hughes who had volunteered to sort out so that we only keep what is necessary. The Old Sky & Telelescope Magazines along with the Old Astronomy magazines with be either given away to members or donated to a school. Older books will also be given away.

We are still requiring members to assist at the Carter Observatory observing on Saturday nights so if you haven't volunteered yet now is your chance to do so. Register your name with Gordon at the next meeting.

It is time to start thinking about the WAS AGM and whether you would like to stand on the Council as it is now time for a change.

Subs are due by the end of September. Please pay early.

OBSERVING AT PAUATAHANUI

The next observing evening at Pauatahanui is on September 17th starting at 7.00 pm, alternative September 24th. **If doubtful please ring Chris Monigatti on his mobile 021 890 222 to see if the session is going ahead.**

OBSERVING AT THOMAS KING

All public observing evenings will be held at the Thomas King Observatory run by our Observatory Director Ross Powell. from 7:00 pm. **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.

The Royal Astronomical Society of New Zealand along with the University of Canterbury are organising and hosting the Third International Starlight Conference. This conference will be held in Tekapo from the 11th to the 13th of June 2012.

The conference will be a multi-disciplinary meeting, and contributions will be welcome that not only include scientific and technical aspects of starlight, but also on themes which are educational, cultural, environmental, aesthetic, legal or political. It is hoped to include astro-tourism, Maori astronomy and public outreach through star-gazing. The relationship between stars and the ecology of the nocturnal biosphere will also be discussed.

See **http://starlight2012.org/** and

http://www.starlight2007.net/

for further details.

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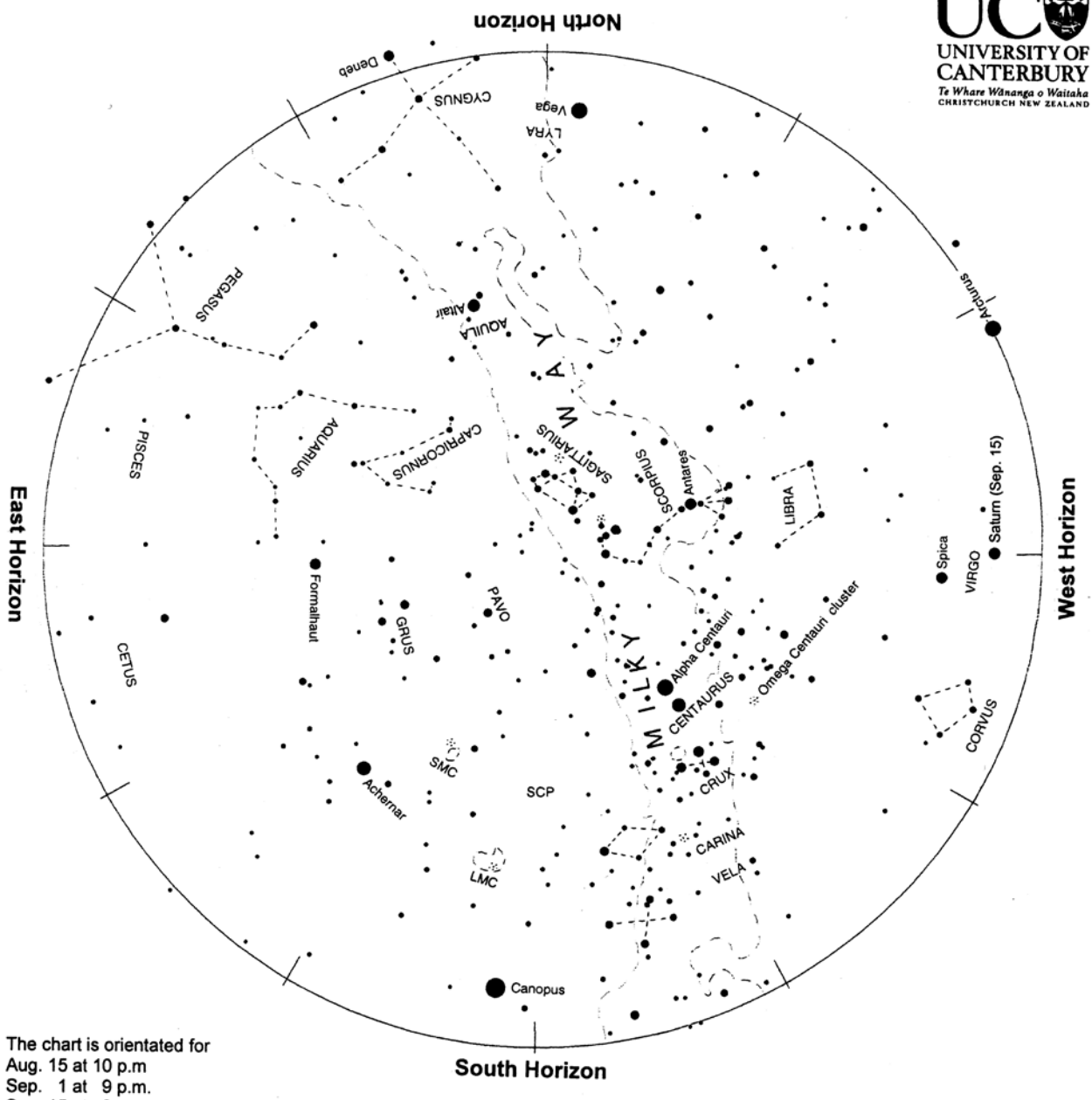
August 2011 Crossword answers

Across

1. DUST, obscures centre of our galaxy; 5. CONJUNCTION, alignment of two solar system objects as seen from Earth; 7. GRAVITY, caused by mass (Newtonian viewpoint); 9. COSMIC, "... censorship" - why Black Holes can't be naked; 10. WHITEDWARF, end stage in a star's life; 13. HOURANGLE, rough lane (anagram); 16. INFRARED, just beyond the red end of the spectrum; 17. ION, an arrested atom; 18. KIRKWOOD, ... gaps in the asteriod belt; 20. EAST, direction of sun rise; 22. ICE, frozen liquid; 25. WIMP, a form of dark matter; 26. ADAPTIVEOPTICS, star light anti-twinkle technique; 29. LEO, A lion circling the Earth; 30. EMISSION, some is in (anagram); 32. HALO, angels and galaxies both have one; 33. CLEMENTINE, recent lunar surveyor; 35. NEBULA, cloud of dust and gas; 36. DOBSON, popular sidewalk telescope; 39. SIRIUS, alpha Canis Major; 42. TRITON, large moon of Neptune; 44. TIDE, "... and time wait for no man"; 45. MASS, I weight 6 times less on the Moon, but still have the same ???; 46. BIGBANG, the start of it all; 48. ALTAIR, Alpha Aquilae; 50. TYCHOBRAHE, a 17th century Danish astronomer; 52. LIBRA, a balanced constellation; 53. NEAPTIDE, pen a diet (anagram); 54. CYGNUS, centre of the Milky Way is in this constellation; 55. SMC, satellite galaxy to the Milky Way;

Down

1. DAY, 24 hours; 2. SOHO, satellite observatory studying the Sun; 3. FUSION, process that powers stars; 4. PATHFINDER, he part find (anagram); 6. ORBIT, path of one object around another; 8. BAR, some spiral galaxies have one; 11. EARTH, Tellus; 12. DESDEMONA, small satellite of Uranus, also one of Shakespeare's characters; 14. TELESCOPE, let cop see (anagram); 15. LIGHTYEAR, common astronomical unit of distance; 19. RADIANT, meteor showers appear to come from one; 21. SHEPHERD, astronaut; 23. MARS, God of war; 24. OPENCLUSTER, a group of stars formed from the same gas cloud; 27. IO, One of the Galilean satellites; 28. PELE, volcano on Io; 29. LOKI, volcano on Io; 31. SUN, closest star; 34. NASA, space agency; 36. DENEB, alpha Cygnus; 37. NUTATION, a wobble in a planet's polar axis; 38. CLUSTER, An open or globular ...; 39. SOLSTICE, the longest day; 40. VIRGO, Constellation with Spica; 41. VEGA, alpha Lyr; 43. NORTH, thorn (anagram); 47. GALAXY, Andromeda is one; 49. KIWI, New Zealander; 51. ATOM, smallest indivisible piece of a element;



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 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 clockwise rotation each night as we orbit the sun.

Orange Antares, the Scorpion's heart, is a little west of overhead. 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, twinkling like a diamond, is near the south horizon. Vega shines on the opposite horizon. Arcturus twinkles red and green as it sets in the northwest. Saturn and Spica make a similar pair low in the west. The Milky Way spans the sky from north to south. Jupiter, bright and golden, rises in the northeast in the late evening.

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 September 2011

From dark places the Milky Way spans the sky from north to south. Many of the brightest stars are scattered along it or near it. Two exceptions are Canopus, near the south skyline, and Arcturus, setting early in the northwest. Both stars are shining through a lot of air which makes them twinkle colourfully. Canopus, being white, shows all colours like a diamond. Orange Arcturus twinkles red and green.

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 split the pair. Beta Centauri, along with most of the stars in Crux, is a blue-giant star hundreds of light years away.

Canopus is the brightest star in the early evening sky. It is near the south skyline at dusk then 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.

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, 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. Red giants are stars wringing the last of the thermonuclear energy out of their cores. Antares is expected to explode as a supernova in the next few million years. Above Scorpius is 'the teapot' made by the brightest stars of Sagittarius. It is upside down in our southern hemisphere view.

Low in the west at dusk are Saturn and Spica, making a widely-spaced pair of stars of similar brightness. Saturn is likely to be blurry in a telescope because we are looking at it through a lot of air. If the air is steady enough one might be able to pick out the rings. Often the planet and rings merge into an oval fuzz at low altitude. Saturn is 1580 million km away mid month. At the end of the month Saturn will be to the right of brilliant Venus (not shown) in the twilight.

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 crosses 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.

Jupiter (not shown) rises in the east in the late evening, around 10:30 mid month. It is the brightest 'star' in the late night sky and shines with a steady golden light. By morning hours it is due north, halfway up the sky. Binoculars will show the disk of Jupiter. A small telescope easily shows its four big moons and the parallel stripes in its clouds. Jupiter is 640 million km from us mid month.

Mars (not shown) rises in the northeast around 4 a.m. It looks like a medium bright orange star, similar to Antares in the evening sky. ('Antares' means 'rival to Mars' in Greek.) It is too distant -- around 290 million km away -- to be of interest in a telescope. Through the month Mars slips eastward, rightward, against the star background. By the end of the month it is near the star cluster Praesepe.

**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,
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John Field's astrophotography page

The Trifid Nebula - M 20

The Trifid Nebula (or M20) is a combination of a star cluster along with red emission and blue reflection nebulae. It can be found in the constellation of Sagittarius not far from the much brighter Lagoon Nebula (M8). At a distance of 7600 light years this cluster can be observed in moderate sized telescopes as a small faint haze and the three dark lanes that give the nebula its name may be seen. In my 225-mm telescope these dark lanes are visible.

The dark lanes are known as Barnard 85 and are dense regions of material in the cloud that is obscuring the light from the nebula.

The colours of the nebula only become obvious in long exposure images.

I took this image on August the 7th using a Canon 100D camera at iso 800 using my TSC-255. It is a composite of 9 6-minute images were taken of the nebula that were then processed in Deep Sky Stacker and in Photoshop 6.0. The colours and faint detail in this nebula makes it a prime target for astrophotographers.

KiwiSpace Foundation on the lookout for space enthusiasts this World Space Week

AUCKLAND, 30 AUGUST 2011 – Space enthusiasts across the country are encouraged to get involved in United Nations' World Space Week, from 4 to 10 October this year.

Designed to celebrate the contributions of space science and technology to life on Earth, there are many activities Kiwis can take part in for World Space Week at home or in their community - from building a model of the solar system, attending local or online talks, exploring the southern skies through a telescope, or launching a model rocket.

KiwiSpace Foundation is managing the festival in New Zealand on behalf of the international World Space Week organisation. A dedicated website has been setup for local event - www.worldspaceweek.org.nz - as part of efforts to promote the festival.

Groups and individuals are encouraged to host space related events during World Space Week. Schools are also encouraged to integrate space activities into the final week of Term 3, and can visit the website for activity ideas.

Anyone interested in attending a space activity near them can see the calendar of events as they are confirmed on the festival website at www.worldspaceweek.org.nz

World Space Week National Coordinator Peter Felhofer says there are a large number of space-related industries supporting disciplines in New Zealand that go unrecognised and that World Space Week is an opportunity to identify people with an interest in space and encourage growth in the field.

"We want to promote the space industry in New Zealand across everything from computer programming to astrophysics, to telescope operation," says Mr Felhofer. "It's easy for Kiwis of every age to find out something new about space and be a part of this international festival."

World Space Week has been run internationally for 10 years. The theme for World Space Week 2011 is "50 Years of Human Spaceflight", marking the first human spaceflight that took place on April 12, 1961 by cosmonaut Yuri Gagarin aboard the Vostok 1 spacecraft, designed by rocket scientist Sergey Korolyov.

ABOUT WORLD SPACE WEEK ASSOCIATION

World Space Week Association is a non-government, non-profit, international organisation founded in 1981 and the proud partner of the United Nations in the global coordination of World Space Week – the largest public space event on Earth. Since 2000, World Space Week has taken place every year on 4-10 October. It celebrates at the international level "the contributions of space science and technology to the betterment of the human condition" (United Nations General Assembly).

ABOUT KIWISPACE FOUNDATION

KiwiSpace aims to help inspired Kiwis learn more about the education and work opportunities in the international space arena, bringing expert speakers to New Zealand audiences, and providing hands-on participation events such as water rocket competitions to help inspire future generations. For more information, see www.kiwispace.org.nz

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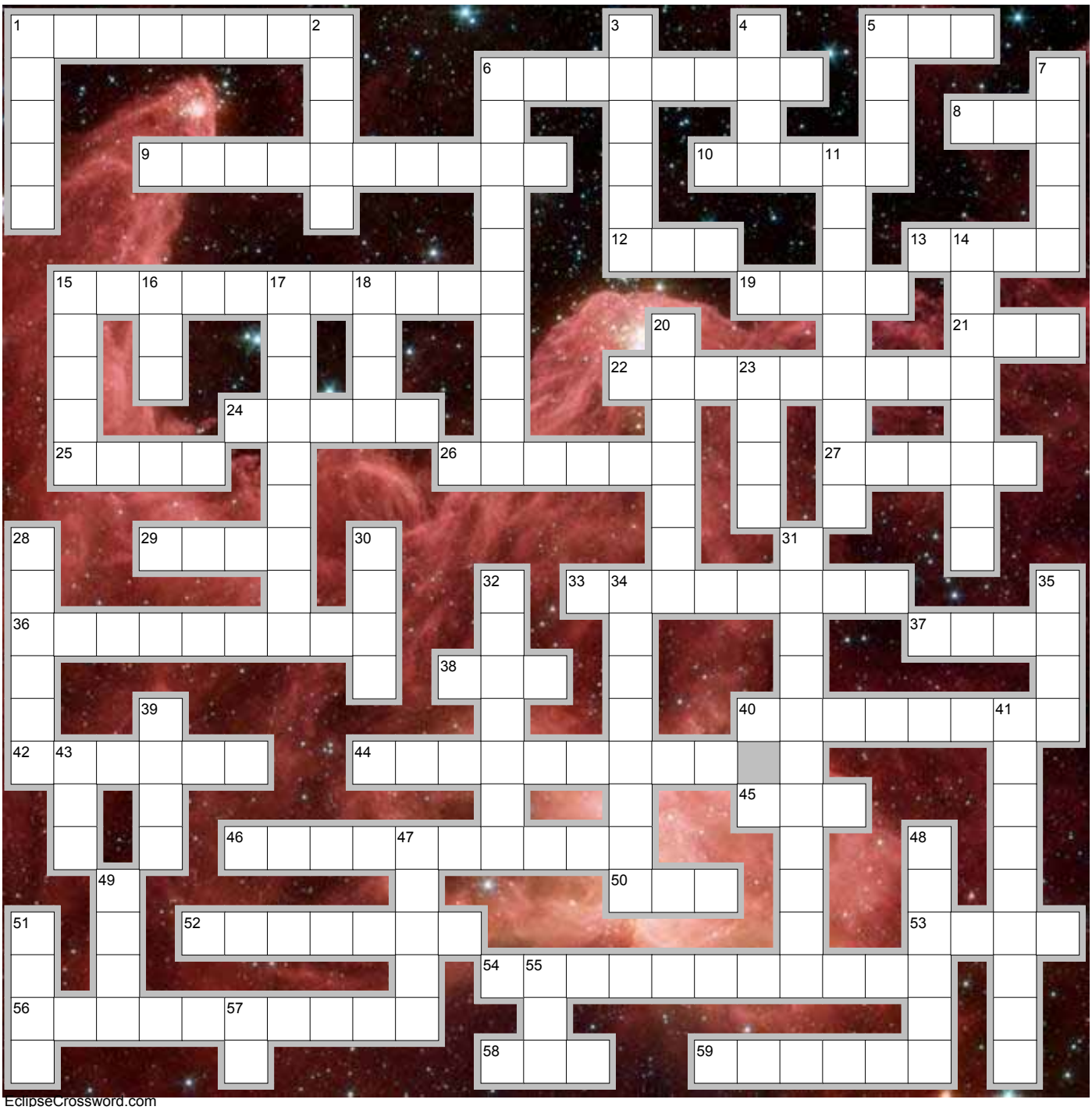
Cross Word with Murray Forbes



EclipseCrossword.com

Across

1. constellation with a sting; 5. an orbiting telescope; 6. Kappa Crucis Cluster; 8. frozen liquid; 9. Pluto is the largest known member of this region of the solar system; 10. ... bear; 12. closest star; 13. I weight 6 times less on the Moon, but still have the same ???; 15. to align optics accurately; 19. space agency; 21. flying saucer; 22. northern constellation of the fox; 24. alpha Cygnus; 25. BEM search; 26. one of the twins; 27. opposite to zenith; 29. volcano on Io; 33. ... gaps in the asteriod belt; 36. Largest galaxy in the Local Group; 37. a new star; 38. solid, liquid or ...; 40. October meteor shower; 42. Alpha Aquilae; 44. O or B type star that has left the main sequence; 45. some spiral galaxies have one; 46. when a planet appears to move 'backwards' from its normal motion across the sky; 50. 24 hours; 52. asteriod with its own moon; 53. rats (anagram); 54. sky simulator; 56. when a planet and the Sun are in disagreement about the Earth; 58. satellite galaxy to the Milky Way; 59. spacer (anagram);

Down

1. astronomy popularizer; 2. sisters in M45; 3. A satellite of Mars; 4. satellite observatory studying the Sun; 5. unit of time; 6. the number of days since January 1, 4713 BC; 7. a very cloudy planet; 11. cored cans (anagram); 14. The water constellation; 15. Maxwell Smart's nemesis; 16. could be mistaken for a cloud; 17. a shooting star that reaches the ground; 18. "... and time wait for no man"; 20. largest planet in the solar system; 23. volcano on Io; 28. fully ionised gaseous state of matter; 30. Period of Earth's revolutionn about the Sun; 31. roll a red pan (anagram); 32. unpaid astronomer; 34. just beyond the red end of the spectrum; 35. God of war; 39. angels and galaxies both have one; 41. an asteroid may have done them in; 43. A lion circling the Earth; 47. the hunter; 48. "... censorship" - why Black Holes can't be naked; 49. tide; 51. mid-day; 55. acronym for aliens; 57. One of the Galilean satellites;