MACARTHUR ASTRONOMICAL SOCIETY

MAS Newsletter

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MAS EXECUTIVE COMMITTEE

OFFICER	NAME	PHONE
PRESIDENT:	Phillip Ainsworth	(02) 605 6174
VICE PRESIDENT:	John Lodge	(02) 662 8853
SECRETARY:	Sally Jackson	(02) 829 1961
TREASURER:	Robbie Charlton	(047) 749 331
ASST.SOCIAL SECRETARY:	Diana Farmer	(02) 603 8202
NEWSLETTER EDITOR:	Robert Bee	(046) 251 623
LIBRARIAN:	Phillip Ainsworth	(02) 605 6174

PRESIDENT'S REPORT

Hello and welcome to all members. Last meeting was a huge success with over 25 people attending. We are now officially an Astronomical Society.

The Committee has appointed all the people voted in by the last meeting and decided upon University of Western Sydney (Macarthur) as our homebase.

Sadly we must reflect back on Challenger. Ten years ago, seven brave people died in a tragic accident. We will remember them for their courage and devotion to our dreams of space.

NASA, via private companies, is working on new shuttles, the X33 and X34. The current shuttle is over 20 years old. It has been very reliable with over 20 successful flights and only one mishap.

SOCIETY LOGO

The committee wishes to establish a logo for the society to use on its letterhead, Newsletter etc. A suggestion is printed below. It contains the outline of a marino ram in stars (admittedly a non-existent contellation - artistic licence) to represent the area of Macarthur, plus a telescope and the initials of our society.

Comments on the suitability of this draft logo would be appreciated by the committee. Alternative designs are also invited for the committee's consideration. So, if you're not happy with the suggestion below, please get creative and provide an alternative.



The probe which entered the Jovian atmosphere in early December 1995 has revealed some startling results.

Jupiter's atmosphere, which was believed to contain large amounts of helium, water and lightning storms, was found to have much less of all of these than expected.

The three tiered atmosphere seemed much less with amounts of ammonia detected.

The wind was 530kph, which was much fiercer than the 300kph winds the scientists expected.

This provides evidence that the energy source driving much of Jupiter's destructive circulation phenomena is probably escaping heat.

The probe detected a band of intense radiation 50,000km above the cloud tops.

All this new data will allow scientists to formulate new insights into how the solar system formed. (PA)

STOP PRESS: An article in the Herald, 12/2/96 reports:

"Missed, by Jove. AUSTIN, Texas: The hard-luck Galileo spacecraft...sent its probe into an unrepresentative piece of the Jovian atmosphere, it has now emerged. Scientists studying the first samples from Galileo have concluded the probe found less water than expected because it entered one of the planet's hot spots." (RB)

MIR SPACE STATION

The Russian MIR Space Station is currently crewed by Russian Cosmonauts Yuri Cidzenko, Sergei Avdeyev and German Thomas Reiter. This is Crew No. 20 in the Russian program. The two Cosmonauts and the German celebrated Christmas and New Year on the space station.

The next Russian Soyuz launch is to be on February 21st this year carrying a fresh crew of cosmonauts.

NASA Shuttle Flight No.76 will dock at MIR after a launch date of March 21st. (This is if NASA has sufficient funds.) (PA)



LATEST NEWS

1. Two new planets:

Californian astronomers are ecstatic in finding two extra-solar planets around two stars.

They are: a) 47 Ursae Majoris and

b) 70 Virginis.

Both stars are similar to our Sun. The planet around 70 Virginis is 6.5 times larger than Jupiter and in orbit at approximately equivalent to Mercury's distance from our Sun. (That's mighty close:- Ed) The surface temperature is 85 deg. centigrade. They believe the planet has carbon dioxide in the atmosphere.

The planet around 47 Ursae Majoris is 2.3 time larger than Jupiter and orbits at approx. Mars distance away. Its orbit is approx three years long. Its surface temperature ranges from 0-32 deg cent. It possibly has water as it's in a favourable orbital position and not too hot.

2. Japan's 10 year plan.

In the next 10 years, Japan plans to achieve the following milestones:

a) A manned space plane. b) Unmanned moon

missions.

c) Have a telescope permanently stationed on the Moon. d) Luna A and Planet B probes from 1997-99 to Moon and Mars.

3. First French woman on MIR and in space is scheduled, but no date is known. (PA)

RETIRING ASTRONAUT

NASA Astronaut, Dr. Norman Thagard has retired. Dr Thagard was involved in five (5) space missions, including a docking with the MIR Space Station. He spent an amazing 4 months in the MIR. In total, he has spent 140 days in space. (PA)



2.

Latest News from Hubble.

The following (edited) release (without images) was obtained via Sydney Observatory:

This is the first direct image of a star other than the Sun, made with NASA's Hubble Space Telescope. Called Alpha Orionis, or Betelgeuse, it is a red supergiant star marking the shoulder of Orion.

The Hubble image reveals a huge ultraviolet atmosphere with a mysterious hot spot on the stellar behemoth's surface. The enormous bright spot, more than ten times the diameter of the Earth, is at least 2,000 degrees Kelvin hotter than the surface of the star.

The image suggests that a totally new physical phenomenon may be affecting the atmospheres of some stars. Follow-up observations will be needed to help astronomers understand whether the spot is linked to oscillations previously detected in the giant star, or whether it moves systematically across the star's surface under the grip of powerful magnetic fields.

The observations were made by Andrea Dupree of the Harvard-Smithsonian Centre of Astrophysics in Cambridge, MA, and Ronald Gilliland of the Space Telescope Science Institute in Baltimore, MD.

The image was taken in ultraviolet light with the Faint Object Camera on 3rd March, 1995.

Hubble can resolve the star even though the apparent size is 20,000 times smaller than the width of the full moon roughly equivalent to being able to resolve a car's headlights at a distance of 10,000 km.



successfully retrieved 2 satellites and its astronauts performed 2 space walks. Endeavour was in space for 9 days.

SPACE SHUTTLE ENDEAVOUR

Shuttle Mission No.72 has been

Endeavour completed its rendezvous with Space Flyer Unit satellite, then successfully retracted the Unit's solar panels but failed to latch them. In the end, they jettisoned the solar panels.

The crew conducted experiments with lasers and amateur radio. Astronauts made space walks to test space station equipment, including a platform and truss.

AISO specially designed tools were tested, and an astronaut tried out thermal modifications to the spacesuits, staying in the shuttle's cargo bay for 7 hours.

The next Shuttle flight is scheduled for 21st February. (PA)

RECENT LAUNCHES

ESA-ARIANE V82 was launched on January 12th. It carried 2 communications satellites, one owned by Malaysia.

DELTA 21 was launched on January 14th from Cape Canaveral, to place in orbit a satellite owned by TELECOM (Korea).

KOSMOS-2327 was launched from Plesetsk on Jaunuary 16th. It put into orbit a navigational satellite.

Anyone interested in all the launches since December 2nd to January 16th and also launches scheduled from 1st February to March 31st, please contact Phil Ainsworth on (02) 605 6174. (PA)



THE ORION GROUP

4.

For the next month, from late February to the end of March, some of the choicest objects visible to the amateur astronomer with only binoculars or a small telescope are readily visible in our sky.

I refer to the constellations of Orion, Centaurus and Crux (ye olde Southern Cross).

More about Centaurus and Crux another time.

At 9pm on 19th February, Orion will be almost directly overhead, looking in a NNW direction. We see Orion "upside down" so it looks more like a "big source pan" than the hunter it's named after.

Look at the "handle" of the "sourcepan". This is Orion's sword. The three bright stars below it are his belt.

In the centre of the sword you will see (even with the naked eye) a hazy patch around a star. This is arguably one of the most famous deep space objects, Messier 42, the Great Nebula in Orion. This is a gigantic nebula of gas and dust. It is 1,300 light years (l.y.) away and 15 l.y. in diameter. Within the nebula, a star cluster is being born.

Take the time to soak it in. Then let your gaze wander around the area of Orion. There are a number of other nebula and double stars visible. With the help of a star map, it is worth exploring in detail.

The Orion constellation contains two very prominent stars. Betelgeuse and Rigel.

Betelgeuse (or Alpha Orionis) forms one of Orion's shoulders. Actually, its Arabic name mean 'the armpit of the giant'. (It's at the bottom from our view). It has an apparent magnitude of +0.5 and is approximately 310 l.y. away. Betelgeuse is a red Super Giant of spectral class M2. It is one of the largest stars known. It is so large that it would neatly fill the orbitof Mars. The other bright star is Rigel (Beta Orionis), one of Orion's knees. (At the top from our view). It has an apparent magnitude of +0.12 and is approx. 910 1.y. away. Rigel is a spectral Class B8 star, a hot blue-white Super Giant. Note its colour contrast with Betelgeuse. Rigel actually has a companion star but it is too faint to see with a small telescope.

As you can see, Orion has a lot to show, most of which can be appreciated by the naked eye, and extended by a pair of binoculars or a modest telescope.

Clear Viewing.

(As a small digression, when researching this article, I referred to my well worn 1966 edition of Larousse Encycl. Of Astronomy. It gave the distance to Rigel as 880 l.y. But my recently purchesed "Expert Astronomy" software gave a distance of 250 l.y. A check with Sydney Observatory gave a figure of 910 l.y. The moral? Always use the latest possible source of data and be suspicious of software.) (RB)

