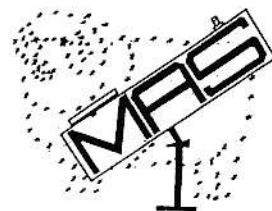


MACARTHUR ASTRONOMICAL SOCIETY



# MAS Newsletter

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Volume 1 Issue 3

March 1996

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## PRESIDENT'S REPORT

Hi! Welcome again to all M.A.S. members. Last month's meeting at the University, as you would all agree, was a huge success. Over 30 people attended and all seemed very enthusiastic.

My congratulations to Eric for his interesting and very informative talk on telescopes. (I almost rushed out and bought one on Tuesday.)

Over the coming months we have some exciting talks planned. These are:

**March:** Carol Oliver who will talk to us about SETI (Search for Extra-Terrestrial Intelligence.)

**April:** Dr Don Neely. Society member and Senior Lecturer in Physics Department at UWS Macarthur. He will speak about discovering planets around other stars.

**May:** (95% probability). Morris Jones will speak about the history of the Space Shuttle.

**June:** (To be confirmed). Geoff McNamara of Sky and Space Magazine will talk (probably) about the Solar System.

**July:** Bob Bee (our Newsletter editor) will present a discussion on measuring the distances to stars and galaxies.

**???:** Peter Drury will give a talk on optics which will contain a large content of pictures and be aimed at a moderate level of astronomical knowledge.

Many other people in astronomical circles are being contacted. I am hoping to find a volunteer or find an amateur astronomer who will show us how to use star maps.

### STAR NIGHTS AT WILTON

Carol Farrell of MAS has kindly volunteered the use of her large property at Wilton for a night of star gazing. It is proposed for March 30th but needs to be fully confirmed. (Our committee meeting was exhausting.)

### ILFORD STAR PARTY (HOSTED BY ASTRONOMICAL SOCIETY OF NSW)

This is on 17th-20th May near Ilford, in the Mountains.  
Anyone can go. Contact me for details.

### ASTROFEST (Warrumbungles, near Siding Spring Observatory.)

This will be held in October. Friday - Sunday. Lots of bright clear starry nights. More details (and date) to follow.

## PRESIDENT'S REPORT (Continued)

For those interested:

\* Dr Ed Stone, Director of Jet Propulsion Labs (NASA) will be speaking about the Galileo probe missions on Sunday 24th March at the Powerhouse Museum.

\* For those of you interested in Mars and the possibilities of reaching there in the next decade (especially for all Mars nuts - like me), it is imperative to attend Dr Robert Zubrin's talk at the Powerhouse Museum on Saturday 30th March, 3.30pm.

Please see me if interested in any of these events. It would be great for MAS to have a representative at all or some of them. (When we are incorporated, we will be able to attend officially as a group.)

The Committee has decided that we must be covered by insurance and must register our name. This costs money. We agreed on the cheapest available insurance cover of \$2million. This covers up to 1,000 members and is the princely sum of \$223 pa.

For the Society to become incorporated and thus be allowed to raise funds and limit liability etc, there is a modest initial cost of \$100 with \$30 pa thereafter.

Anyone in the Society who wishes to see the meeting minutes or our newly created draft constitution (based on the standard society model) please see me or our Treasurer Robbie and we can get you a copy.

Just a reminder. Any member can attend a committee meeting (although they're fairly boring affairs). You are most welcome. They are held on the 1st Monday of each month at my home. Call me for details.)

We now have an account at Community 1st Credit Union (Liverpool Branch). The existing funds will pay for Insurance and Incorporation.

It was agreed at the Committee meeting to buy cheap plastic badges to assist in identifying ourselves at MAS meetings. We will provide the paper inserts on which people may write their names.

## LIBRARIAN'S REPORT.

Each month I will be bringing a selection of Reference Books and Magazines to which I will allow any paid member of MAS borrowing rights.

Magazines have a monthly return date. All my magazines are on computer and I will ask you all to write in a book so I'll know who has which copy in case any go missing. I realise this appears to be a hard line but they are my magazines which I want everyone to be able to enjoy, not just one or two.

Finally, I'd like to say thanks for your interest in astronomy. Without your support, the Society would still be a dream.

Phillip Ainsworth.  
(PRESIDENT)

## A warm day on icy Pluto can mean -212 C

WASHINGTON, Friday: The first direct pictures of Pluto, taken by the Hubble Space Telescope, show the distant icy planet has 12 distinct provinces, including what looks like a polar ice cap, astronomers said yesterday.

The black-and-white Pluto photos, taken two years ago but only now analysed and publicly explained, show a tiny planet covered with light and dark blotches at the outer edge of the solar system.

Pluto, the least-known

planet, probably has a rocky core covered with ice hundreds of kilometres thick. On its warmest day - a period equal to more than six Earth days - Pluto experiences temperatures of minus 212 C.

Reuter SMH 9/3



## A GLOSSARY OF ASTRONOMY TERMS

The following is a glossary of some of the common terms encountered in astronomy. It is in no way exhaustive. A more detailed list may be compiled at a later date.

**ABSOLUTE MAGNITUDE:** The brightness of a celestial object as seen from a distance of approx. 33 light years. Brighter objects have smaller numerical values. eg The Sun has an absolute magnitude of +5.

**APPARENT MAGNITUDE:** The brightness of a celestial object as seen from the Earth. Each magnitude is 2.5 times as bright as the one below it. eg star of apparent magnitude +1 is 2.5 times brighter than a star of magnitude +2. Apparent magnitude is usually referred to as magnitude. The Sun has an apparent magnitude of -26.

**ALTITUDE:** The distance of an object above the horizon measured in degrees. The horizon is 0 degrees and straight overhead is 90 deg.

**ASTEROID:** Also called a 'minor planet'. Most are in a belt between Mars and Jupiter but some have orbits that cross the Earth's.

**AUTUMNAL EQUINOX:** The point at which the Sun crosses the celestial equator as it passes southward along the ecliptic.

**AZIMUTH:** The distance from North on the horizon to another point on the horizon directly below a celestial object. Measured clockwise from the North in degrees. North is 0 deg, East 90 deg, South 180 deg, West 270 deg.

**BINARY STAR:** A double star system. May contain two or more stars that rotate about each other.

**BLACK HOLE:** A region of space (usually a collapsed star) where mass is so dense that even light cannot escape its gravity.

**CELESTIAL EQUATOR:** An imaginary circle on the celestial sphere directly above the equator of the Earth.

**CELESTIAL POLES:** The two points on the celestial sphere directly above the poles of the Earth.

**CELESTIAL SPHERE:** The imaginary sphere of the sky on which all celestial objects appear.

**CLUSTER:** A group of stars of common origin in relative proximity to one another.

**CONSTELLATION:** One of 88 recognised groups of stars named for some object, animal or mythical figure.

**DECLINATION:** The distance of a celestial object north or south of the celestial equator. Measured in degrees. The celestial equator is 0 deg, celestial north pole is +90 degrees, celestial south pole is -90 degrees. (Similar to latitude.)

**DEEP-SKY OBJECT:** Non-stellar objects located beyond the Milky Way galaxy. They include star clusters, nebulae and other galaxies.

**DOUBLE STAR:** A pair of stars that appear close to each other on the celestial sphere. A true double is actually close, while an optical double means they are only in line of sight.

**ECLIPTIC:** An imaginary circle on the celestial sphere along which the Sun appears to travel.

**EQUATORIAL CO-ORDINATES:** The co-ordinates (given in Right Ascension [RA] and Declination [Dec]) that describe the position of an object on the celestial sphere.

**EQUINOX:** The intersection of the Sun's ecliptic and the celestial sphere.

**GALAXY:** A great system of stars, dust and gas. There are three basic types. Spiral, elliptical and irregular.

**GLOBULAR CLUSTER:** A spherically shaped cluster of hundreds of thousands (or millions) of stars.

**IC OBJECT:** Deep-sky object listed in Index Catalogues of 1895 and 1908 to supplement NGC listing. Identified on star charts as a number preceded by IC or I.

**LIGHT YEAR:** The distance light travels (at 300,000 km/sec) in one year. Approx.  $5.86 \times 10^{12}$  miles or  $9.45 \times 10^{12}$  km. (The Sun is 8.3 light minutes from Earth.)

**MESSIER OBJECT:** One of the 110 non-stellar objects (nebulae, galaxies and clusters) in a list published by Charles Messier in 1787. Identified on charts by prefix M.

**MILKY WAY:** The spiral galaxy that contains our Sun. We see it as the band of light circling the ecliptic. There are estimated to be up to 300 billion stars in our galaxy.

**NADIR:** The point on the celestial sphere directly below the observer. (The opposite of Zenith).

**NEBULA:** A more or less clearly defined region of luminous gas or dust that can be optically observed.

**NEUTRON STAR:** An extremely dense collapsed star comprising almost entirely neutrons.

**NGC OBJECT:** One of a listing of non-stellar objects in the New General Catalogue published in 1888. eg Andromeda Galaxy is NGC #224. On star charts, the object appears as a number without the NGC prefix.



**NON-STELLAR:** A celestial object which is either not a star or, under the conditions of its discovery, could not be resolved as separate stars.

**NOVA:** A star that suddenly flares in brightness by hundreds or thousands of times.

**PARALLAX:** The apparent change in position of an object when viewed from different locations. Used to measure the distance to nearby stars.

**PARSEC:** Astronomers' measure of distance. The distance to a star with a parallax of one second arc (1") from the baseline of the Earth's orbit about the Sun. Equals 3.258 light years.

**PLANETARY NEBULAR:** A shell of gas given off by a dying star which glows from energy radiated by that star.

**PULSAR:** A rotating neutron star that emits radio energy in short regular 'pulses'.

**QUASAR:** Called a 'Quasi-stellar' object. A source of immense radio and light energy with extremely large red-shift and therefore extremely far away.

**RED SHIFT:** The lengthening of visible light waves from a celestial object as it travels away from us. This results in all the colours being shifted towards the red end of the spectrum. (Thus Red-shift.) Used as a method to measure speed (and distances) of the most remote objects in universe. The greater the red-shift, the more remote the object.

**RIGHT ASCENSION:** The angle of an object from the vernal equinox. Measured eastward along the celestial equator in hours, minutes and seconds. (Similar to longitude.)

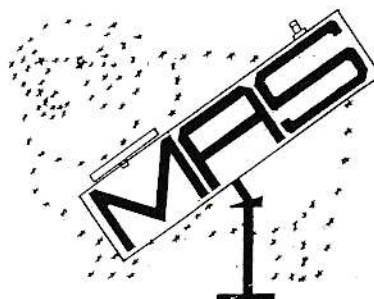
**SUPERNOVA:** The explosion and devastation of a massive star. Results in a brilliant flash that can sometimes outshine its parent galaxy.

**VARIABLE STAR:** A star whose apparent brightness varies regularly.

**VERNAL EQUINOX:** The point at which the Sun crosses the celestial equator as it moves northward along the ecliptic.

**ZENITH:** The point on the celestial sphere directly above the observer. (Opposite of Nadir.)

**ZODIAC:** The twelve constellations that circle the ecliptic.



## IT'S ALL GREEK TO ME

The brightest stars in each constellation are assigned Greek letters to indicate their relative brightness. Below is the Greek alphabet to assist you to read the star maps.

$\alpha$	alpha	$\beta$	beta	$\gamma$	gamma	$\delta$	delta
$\epsilon$	epsilon	$\zeta$	zeta	$\eta$	eta	$\theta$	theta
$\iota$	iota	$\kappa$	kappa	$\lambda$	lambda	$\mu$	mu
$\nu$	nu	$\xi$	xi	$\omicron$	omicron	$\pi$	pi
$\rho$	rho	$\sigma$	sigma	$\tau$	tau	$\upsilon$	upsilon
$\phi$	phi	$\chi$	chi	$\psi$	psi	$\omega$	omega