MACARTHUR ASTRONOMICAL SOCIETY Inc.

Journal

PRIME FOCUS

Volume 8 Issue 3 April 2003

President's Report.

Previously at MAS.
It was another good turnout at last month's meeting, many thanks to "Daniel Ross" for his excellent presentation on Messier hunting. I wish Daniel all the best in his future endeavours so that he may no longer be "stranded on 93".

The weather has not been in our favour for observing recently and I'm hopeful that will change for our future field nights. At time of writing we are looking forward to the first Public Observing night at the Observatory. Let's hope for clear skies and a good turnout.

We returned to our observing at The Oaks recently and what a beautiful night sky it was. Bruce and myself were kept busy with photography and John and Ned continued their observing program. With such fantastic conditions where were everyone else? We also have a return visit to The Forest on May 3.

As mentioned last month, tonight is our Annual General Meeting, so in accordance with protocols the required reports will be tabled and elections held. As we renew our membership we will endeavour to issue new coloured membership badges. Please remember that this time of year is always a transition period for us and you will need to make sure you continue to be a financial member.

Fees are due by the end of this month at the latest. A late fee may apply if you miss the opportunity to renew on time. The South Pacific Star Party was held the last weekend of March. I know a few members made the trip and look forward to hearing about their adventures.

Upcoming Dates

03/05/03	The Forest
19/05/03	General Meeting
24/05/03	The Oaks
31/05/03	The Forest
16/06/03	General Meeting

Other Items
Recently I had the opportunity of having a great holiday on the Gold Coast. The weather was beautiful one day, perfect the next and the location of our holiday unit was ideal.

It wasn't only the beach that was within an easy 5 minute walk but also a fantastic telescope shop called "Star Optics" at Mermaid beach. I have seen their advertising in *Sky & Space* magazine and it was nothing but sheer coincidence that we were staying within a stones throw. Well, that's what I told the wife anyway!

Ah yes, what a holiday. So many eyepieces and accessories, so many telescopes. I could have placed my beach towel right there on the showroom floor and soaked it all in. It's a big shop which specialises in the "Synta" and "Starspanner" brand of scopes.

I had a chance to get up close and personal with the much talked about "EQ6" equatorial mount from "Synta" telescopes. It's a robust heavy duty and beefy mount, which surprisingly is very nice looking. Guys, this will definitely hold the soon to be released 12" reflectors and rumoured 8" refractors. To say I fell in love with it would not be far from the truth.

Star Optics do carry a range of knickknacks and I duly made some very worthwhile purchases, a counterweight which matches in size and colour to my existing ones and the excellent Synta brand of spring loaded view finder bracket. I have made the modifications to my new telescope and bingo, I am now armed with my trusty 7x50 finder and a way of aligning the finder easily at night and on a star. How easy is that!

Well that's all I need to say for this report. Let's hope for clear skies and I wish all of you well until next time we meet.

Regards
Noel Sharpe ■

President's AGM Report.

In review of the last12 months since and including the previous AGM I have listed the various activities that can be produced for public record.

Annual General Meeting
15/04/02, Reports tabled and elections held. Guest speaker was Dr Ragbir Bhathal.

Monthly General Meetings

20/05/02 Bob Bee on Cosmology
17/06/02 Various Discussion Groups
15/07/02 Dr Doug Vatoch, SETI California
19/08/02 Dr Andrew Hill, Astrobiology
16/09/02 Peter Druery, Latest Discoveries and news
21/10/02 Ian Cook, quiz and Bob Bee, The Kuiper Belt Objects. Noel Sharpe Astrophotography
18/11/02 Dr Michael Burton, Uni of NSW Antarctic research
20/01/03 Bruce Reardon, Solar Eclipse. Dick Everet, latest news. Ursula Braatz and telescope
17/02/03 Dr Fred Watson, Radial Velocity of stars research and latest fibre optical instrumentation and application
17/03/03 Daniel Ross, Messier Hunting techniques, observations and record keeping.

An excellent and diverse range of topics as presented by our guest speakers. This has contributed very well to the overall knowledge of the membership in the subject of Astronomy. The meetings were all held at the University of Western Sydney Campbelltown Campus, Building 22 room 5, where members and guests were made most welcome.

Field Nights

The Oaks: We held 7 field nights at the Oaks, as well as some nights that were not advertised. Our visits to the Airfield were affected by the large number of public presentations held and some problems with the keys. Also some scheduling considerations needed to be made around the use of the Belanglo site.

The Forest: 7 nights were held in the Belanglo forest. The use of the log cabin and grounds is by arrangement with International House, University of Sydney. Peter Druery collects the keys on our behalf and this is greatly appreciated. Thanks Peter.

A crowd pleasing favourite, the Jewel Box, NGC4755.

Public Nights and other Presentations

27/04/02 Macarthur Association of Girl Guides, Austral
07/05/02 Evening View Club, Campbelltown
16/05/02 St Marys Catholic School, Eaglevale
22/06/02 Festival of Astronomy North Sydney
10/07/02 UFO Society of Western Sydney
23/07/02 Women of All ages, Picton
06/08/02 Japanese exchange students, Kentlyn
08/08/02 Combined Camden Probus Club
10/08/02 International House students, Belanglo
13/08/02 Broughton Anglican College and St Patricks High School
16/08/02 Nepean Observatory open night
13/09/02 William Carey Christian School
14/09/02 Minto Cub Guides, Silverdale
15/10/02 Leumeah First Cub Scouts
19/10/02 Girl Guides Jamboree, Kentlyn
04/11/02 Over 55 Group, Harrington Park
16/11/02 Narellan Library Telescope Workshop

Without doubt a most expansive program. The society passes on its recognition and appreciation for all those members who gave of their time and expertise in educating the general public and community groups.

Observatory Public Nights

18/05/02 Open night including Japanese visitors and Rotary members
15/06/02 Open night, includes advertising on local radio
17/08/02 Open night, good turnout
12/10/02 Open night, clouded with intermittent lunar observations

These nights were held at the University of Western Sydney Campbelltown campus.

Comments, Reviews and Appreciations

It's been a big year. It's also been a year of hard work and some consternation. The Public Liability issue could have had considerable impact on how we operate as a club. Fortunately we have now obtained insurance cover. The number of presentations to the general public stretched our resources at times. We do not actively seek engagements as such and it is a compliment to our society that we can accommodate as many request as possible.

We seem to have a knack of obtaining some fantastic guest speakers at our meetings. It is a credit to the society that we have established ourselves so well in the wider astronomical community that we can attract such high profile speakers. The talent and experiences of our own membership is of the highest order. When called upon to act as keynote speakers the presentations have been not only informative but professionally conducted. Very well done indeed!
At the end of our meetings tea and coffee are available for a modest cost. The refreshments are provided by Daniel Ross, very much appreciated indeed!

I have had the honour and pleasure of being the society's President over the past 12 months, a task that could not have been completed without the great support I have received from all of you.

The outgoing committee in particular needs to be paid my personal recognition. They have opened up their homes for our meetings and gladly taken on responsibilities given. Here is a brief snapshot of some of their duties.

John Koster: John has performed the duties of Treasurer for 2 years now. At all times he has conducted our financial affairs in a most able and adept way. It is a times at thankless job which requires a lot of behind the scenes activity. John has assisted with many public events and liased with various community groups and organisations. Thanks for all your hard work.

Bob Bee: Bob rides on the wave of public recognition with his very popular "Heavens Above!" series of articles in the Chronicle newspaper. The society

benefits from this immensely, especially at open nights. Bob also is the editor and the man responsible for our journal "Prime Focus". Bob attends meetings with the Festival of Astronomy North Sydney organisers. Thank you Mr Bee.

John Rombi: the man with a big hammer, he conducts the opening of our general meetings with great authority and always attends to the little tasks, like controlling the lights and providing water for our guests. John has been at nearly every public night and field night and is the society's contact for the Oaks observing site. He gives very willingly of his time to assist newer members with their observing. He is the one to contact about the Messier hunting process. John is always available when I need to delegate any tasks at the last minute. Great work and thanks.

Ian Cook: Ian has assisted with the many public nights, Ian is the writer of "What IC This Month." It's a great read every edition of our journal. Ian also runs our electronic mail delivery system, i.e. the email. As Secretary, Ian is very prompt with providing minutes of our meetings and is responsible for the telescope workshops. He also handles many phone calls on behalf of the society. Thanks Mr Cook.

Lloyd Wright: Lloyd handles the library books for the society and is always very keen to invite his friends and work colleagues along to our events. Lloyd has been outstanding in his efforts to attend nearly every public night we have. He strongly supports the society whenever the chance presents itself. Great work.

If I have forgotten anyone please accept my sincere apologies. I hope the information in this report has been useful in providing a background into how the last 12 months have been for our society. This now concludes my report to the membership.

Yours sincerely
Noel Sharpe - President. ■

Vice President's Report

Well folks, another year in the life of M.A.S. has passed and our society through its members has been very active.

Belangalo.
We started off the year with our new site at the Belangalo State Forest. Apart from the great dark sky, we are privileged to have a fully serviced cabin at our disposal. For the members that would like to stay overnight, the cabin has beds for twelve, but you can rough it by camping on the grounds or sleep in your car.

The Oaks.
Our second site was only used sporadically during the year, mainly because of the popularity of Belangalo, and unfortunately due to the bad weather that coincided with our observing nights. Even though this site is not as dark as Belangalo it is only half the distance. Its main advantage is that it has a very low northern horizon (good for Messier hunting).

To all members, remember these sites are for your observing pleasure so please use them!

Public observing nights.
The enthusiasm of quite a few of our members made sure that the nights for the general public were very successful. The positive comments and hundreds of questions asked by all made up for the lack of voice and sore feet by nights end.

Monday night meetings.
Our Monday meetings have had their share of great speakers, mainly made up of our own members, but with the odd exception, namely Fred Watson. He is a speaker of exceptional knowledge and charm; I hope that we are able to experience his presence again soon.

F.A.N.S. 2002.
The warm up for this year's event was held at North Sydney oval. M.A.S. had seven scopes on the field out of the seventy in total. We had approx 4,000 people come through the gate between 6.00pm –10.00pm. WOW!! Lets hope this year is just as

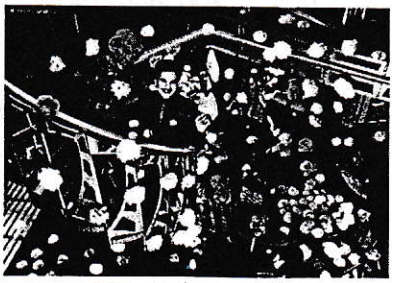
successful and a great boost for Astronomy.

Messier hunting.
We have eight members involved in Messier hunting and most have attained a very large number to date. Keep up the good work! We can always do with more so please join in. By the way, I shouldn't forget the astrophotographers. Keep those shutters clicking guys but PLEASE DON'T FORGET THE FILM.

New Members
The society has had a large influx of new members that are also new to astronomy. This has presented a new and ongoing challenge to the experienced members to make sure that the transition from inexperienced beginner to experienced beginner is as smooth as possible.

Committee.
Last but not least, I would like to thank all the members of the committee; they have all worked very hard to ensure the smooth running of the society. Remember all this fun doesn't just happen on its own.

John Rombi. ■



The Committee

Astronomy in Bundjalong National Park

We arrived on the 23rd March at our favourite spot again. It is called "Black Rocks" in Bundjalong National Park. It is on the coast between Iluka and Evans Head. Until recently camping was free. A fee now applies, unfortunately.

My husband is a very keen fisherman; he walks about four kms on the beach to find the right fishing spot and has success most of the time. I walk on the beach too, mainly for the exercise. In the evening I go searching for the stars, and what I find is a much better sky than in my backyard which has a lot of light pollution.

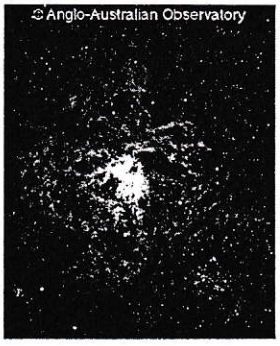
The air on the coast is moist; it helps make the stars brighter. When the Southern Cross is rising it looks bigger. I was glad to see the whole Milky Way and constellations again. The Pleiades in Taurus, and Orion are beautiful. The first few nights it was partly cloudy and at midnight the sky was full of stars.

On the 28th I woke up about 3.30am and was looking at the Milky Way where it is dividing near the constellations Scorpius, Scutum, Aquila and so on. That makes two thinner parts of the Milky Way arm, which are coming together again and it looks like there is an empty space in between. But as we know, most of the universe is dark matter, and we don't know what is in between the luminous arms of the galaxy.

On the 1st April I had a clear sky and got my telescope out. I got Jupiter in focus and I saw three of its moons; Jupiter is in Cancer and next in line is The Praesepe Cluster, M44 or otherwise known as the Beehive Cluster. I got it in the telescope and I was very pleased. As I was resting in my chair outside, I enjoyed the nice warm air. I swept with my binoculars through out the night sky, coming across the Large Magallenic Cloud and the Tarantula Nebula imbedded within.

The next few nights were partly cloudy again, but on the 8th April it was a clear sunny day. My husband and I enjoyed a leisurely walk along the beach. I turned my attention to the constellation of Taurus that night and enjoyed my observation of the Moon; it was approaching first quarter. Unfortunately the last few days of the holidays were cloudy, but of course the trip home was clear.

Ursula Braatz ■



Blame it on the Hypernova

We all know that the universe is a big place, covering unimaginable distances and occupied by a mind boggling number of galaxies and stars. Our finite minds have great difficulty comprehending the numbers involved. Astronomers have had to invent new names for numbers which just had too many zeroes attached to keep writing down. Hence, the 'googol' for a 1 with 100 zeroes after it. (10^{100})And the googolplex? Don't even ask. (OK... it's 10^{googol}).

But professional astronomers, used to these huge numbers, were still like the proverbial stunned mullets when they observed a stupendous explosion in a galaxy two billion light years away. It was a hypernova, the violent demise of a star from 50 to 100 times more massive than our Sun, giving birth to a massive black hole, not to mention two deadly funnels of gamma rays streaming into the sky in opposite directions..

Light from that event had been traveling across the universe unimpeded for 2 billion years, to reach Earth at 10.37pm on 29th March as an average brightness star, fading quickly within the first minute.

What staggered the astronomers, and still gives me a headache to think about it, was the unbelievable amount of energy released by that single star's explosion. Imagine this: One million times the energy being given out by all 400 billion stars in our Milky Way. That's 400 thousand million million stars worth of energy – in one minute. During that minute, the exploded star would have been one million times brighter than its home galaxy. Wow!

Thankfully, it was in another galaxy (far, far away...) so we were not threatened by the potentially lethal gamma rays, but any civilization within 3,000 light years and directly in line with one of those funnels would have been 'kaput!' (as Ursula might say.)

So why are the astronomers recharging the batteries on their pocket calculators after all that huge number crunching?

Blame it on the hypernova. ■

Cheap starter for 8" scope

One of our members, Doug McEachin, is making a very generous offer, free to anyone who asks (or make an offer): A galvanised iron tube to suit an 8" F10 newtonian, an 8" mirror cell, an 8" pyrex mirror (needs to be repolished and figured.)
See Doug at our meeting, or call on 4621 1664, or 0422379189)

What IC This Month
April 21 – May 18, 2003

Bright Star Tour
Looking South our stars include Achernar SW, Canopus and the False Cross, 'Roger'/Regor, Betelgeuse, Sirius, the Southern Cross, the Pointers and Antares later in the night. To the North we have Aldebaran in the west, Rigel and Orion's belt, Castor and Pollux, the Little Dog - Procyon, Spica and Arcturus

The Moon Diary

Last Quarter	23/4
New Moon	1/5
First Quarter	9/5
Full Moon	16/5

Evening Sky Planets
Mercury starts the month near the flies buzzing around the Ram's rear in Aries. It sets less than one hour behind the Sun and will sink lower each day as it moves to inferior conjunction (between Earth and Sun) early in May. On 7/5 from about 3.30 pm to sunset, Mercury can be seen transiting across the face of the Sun, providing you have a good solar filter. Unlikely to be seen without some optical aid, make certain of your equipment if you attempt this!! This event only occurs 13 times in 100 years, so it is quite something. After transit the planet will appear in morning twilight rising higher each day to the 3/6

Saturn is still in Taurus but sinking further in the west each night. It will move eastwards to Gemini over the

next two months. On 5/5 it will be close to a thin crescent Moon very low in the western horizon moving to get warmed up in the glow of the Sun.

Jupiter can still be found in Cancer near the Beehive cluster setting about 11 pm this month. On the 8-9/5 it will have close pass with the 1st Quarter Moon but having completed its time of backwards motion it will reverse and speed off into Leo and an appointment with Regulus, Venus and the Sun in August.

Mars will be visible about 1 am in Capricornus. It is becoming very bright and large now and will swell to have a larger than Venus size very quickly. On 24/4 it will be close to a Last Quarter Moon and on 14-16/5 it will be less than 2° from Neptune and Theta Cap.

Morning Sky
Venus rises in Pisces 2 hours before the Sun but will quickly move into Cetus and then Aries for the month of May. Losing height each morning on its way to meet the Sun, Venus will be close to a very thin last crescent Moon on 29/4 one hour before Sunrise.

Neptune and **Uranus** will quietly glide across the mid evening sky during April – May residing in Capricornus and Aquarius respectively. (see Mars)

Comets
The only comet brighter than 12th magnitude this month is **RX14 (Linear).** Though fading to 11th mag it is moving through Leo Minor on its way to M65 in Leo, setting about 12 and 1 am throughout May.

Meteors
From 19/4 to 28/5 the **eta Aquarids** are visible for a few hours before dawn. Peaking on 6/5 at 30-50 per hour, they are usually bright yellow and leave long-lasting trains. This year it will be Moon free so set your alarm clocks for an early morning show

Portraits in The Sky

CORVUS - The Crow

Corvus is a very old constellation, small but easily sighted directly overhead. Apollo sent the raven, or crow, to collect water in the nearby cup, ie."Crater" – the goblet. However the bird was distracted and wasted its time eating figs. At the last possible moment it snatched up the Water Snake (Hydra) in its claws and flew back with an empty cup, to tell Apollo that the snake had prevented the carrying out of his command and delayed it.

Apollo refused to believe the story and in anger threw all three: the crow, the goblet, and the water snake, into the heavens, where they remain together. As punishment the cup is too far to reach so the crow suffers eternal thirst, and that's what makes crows croak raucously instead of singing like other birds. In another story the snow-white crow was the bearer of bad news to Apollo about his girl friend. In anger he turned the crow black.

Corvus has only a few Bayer stars, and looks more like a stingray or some kind of bat floating overhead. The *alpha* star 'Alchiba' refers to a tent and it does look a bit like one. It passes directly over our heads at 12 midnight on 24th March, but this is not the brightest star in the group.

That honour goes to *Gamma Corvi* named 'Gienah' which is a blue-white giant at 2.6 magnitude. There are two double stars in Corvus, a variable, and a curious deep sky object, but its greatest usefulness is as a guide to M104 in Virgo and M68 in Hydra

Double stars in Corvus:
Zeta Corvi is an optical binary: 5.0, 13.0; separation 11".
Delta Corvi is a fixed binary: 3.0, 9.2; separation 24".
The wide separation makes it a fine object for small telescopes; its colour contrast adds to the attraction: a white primary and purplish (or lilac) companion.
Struve 1669 is a pleasant double of equal stars: 6.0, 6.0; separation 5.4".
The binary is five degrees north-northeast of ***delta Corvi*** and 1.5 degrees north of this binary is M104 (Sombrero Galaxy) in Virgo.

Deep Sky Objects in Corvus:
There are no Messier objects in Corvus, but there is a curiously shaped galaxy called the **Ring Tail or Antennae Galaxy – NGC4038-9**.

This is a rare type of galaxy classified as "peculiar" and it has been suggested it may be two galaxies colliding, or one galaxy that has split in two. It resembles a foetus more than anything else. Long-exposure photography is required to bring out any detail.
The galaxy is located 3.7 degrees west-southwest of ***gamma Corvi*** and about 90 million light years away.

CRATER – The Goblet
Crater is the goblet of Apollo. Its shape does resemble a drinking glass, tilted in the sky, which is why other ancient cultures also saw this group of stars as some kind of vessel. Its stars are generally fourth magnitude.

Alpha Crateris is known as *Alkes*. This is Arabian for "the wine cup", and also has a connection with the English word 'alcohol'. The star passes the meridian at midnight on 7th March and marks the western corner of the stem, with *beta Crateris* marking the other corner.

Alkes is an orange/ yellow K class giant star about 13 times the size of the Sun, and 175 light years away. It belongs to a group of stars like Arcturus and Aldebaran that are burning helium in their cores and is metal-rich in content. This means that it was probably formed in the bulge of the galaxy rather than the disk.

Delta Crateris is the brightest star in the constellation. It is 195 light years away about 21 times the size of our Sun and marks the bottom of the bowl. Low metal composition and a higher rate of motion than other local stars means that it also comes from another part of the galaxy different again from Alkes

Double stars in Crater:
Gamma Crateris is a fixed binary: 4.1, 9.6; separation 5.2".
Iota Crateris is a close binary: 5.5, 11; separation 1.4".
Psi Crateris is an even closer binary: 6.5, 7; separation 0.2".

Deep Sky Objects in Crater:
Crater has no Messier objects, and its reported deep sky objects are all very faint galaxies.

COMA BERENICES – The Hair of Berenice
This story originated in ancient time but the constellation is relatively new, being introduced by Tycho Brahe (1546-1601).
Ptolemy III of Egypt had waged a long war on the Assyrians, because they had killed his sister. As Ptolemy returned in glory from the war, his wife Berenice had her beautiful tresses clipped and laid out on the temple altar as a gift to Aphrodite, the goddess of love.

Later that night during the grand banquet the clipped hair disappeared and a great furore started. The priests of the temple were subject to death if the queen's hair couldn't be found. However a visiting astronomer Conon of Samos came to their rescue - proclaiming that Aphrodite had accepted the gift of Berenice's hair, which now shone brightly in the heavens next to Leo.

There are several fine binaries, eight Messier objects and the Coma Star cluster, a fine sight in binoculars, which is not included in Messier's list.

Alpha Comae is found about midway from the tail of Leo to Arcturus. The three main stars form the bottom half of a nearly perfect square with the large open cluster at the left hand point.

Alpha Comae, called *Diadem*, has the same diameter as our Sun, 62 light years away, it's a binary but too close to split. In the same field is the globular cluster M53.
Beta Comae is the brightest star in the constellation, and certainly the closest in light years. Also similar in size to our Sun.
Gamma Comae is an orange star in the same region as the Coma Star Cluster, but not a member of that group.

Double stars in Coma Berenices:
Alpha Comae is a rapid binary of two equal stars; 5.0, 5.0 with a current separation too close for amateur scopes. The orbit to us is perfectly edge-on, so the two stars seem to move back and forth on a straight line.

Zeta Comae is a fixed binary: 6.0, 7.5; separation 3.6".

17 Comae is a member of the Coma Star Cluster. Shining white and a soft blue: 5.4, 6.7; separation 145" they are an easy double. From *gamma Comae* follow the slight arc of stars south that bend to the east. First comes 14 Comae, then 16, and finally 17.

24 Comae is even more spectacular: a fixed binary with an orange primary and emerald component. 5.5, 7.0; separation 20.3". Located 8° west of alpha Comae and 1° north.

35 Comae is a slow double 5.1, 7.2; separation 1.02". *35 Comae* is in a fairly barren part of the sky, found 5° northwest of alpha Comae.

Struve 1633 is a pleasant binary for telescopes: 7.0, 7.1; separation 9.0". You will find it 1° to the west of 14 Comae

Struve 1639 is a close binary: 6.8, 7.8; sep 1.7". It can be found in the Star Cluster bright stars near *Gamma.* Start at 14 Comae and pan south 30' to 16 Comae. Less than 1° to the southwest is 13 Comae. Immediately south-west, is 12 Comae. Struve 1639 is between and to the southeast making the third point in an equal triangle.

Deep Sky Objects in Coma Berenices:

The 'Coma Star Cluster' also called Melotte 111, is a scattered group of 40-50 stars extending south from *gamma Com* (which is not a member). Once known as the tuft of Leo's tail it is spread out over a 5° area, and is one of the closest to our solar system. The brightest members form a noticeable V-shape. 12, 13 and 14 Comae and other fourth-magnitude and other fainter stars make this one of the loveliest sights in the heavens.

Messier Objects
M53 is a globular cluster 1° from *alpha Comae.* The brightest Messier in the constellation (7.7), it tends to be most impressive with larger telescopes.

***M64*, the *Black Eye Galaxy*,** is a bright (8.5) compact spiral 1° east-northeast of 35 Comae. The "black eye" can best be seen under ideal conditions with large telescopes.

M85 is a bright spiral galaxy and part of the Virgo Galaxy Cluster, most of which is about 5° further south.

M88 is a many-armed spiral galaxy some forty million light years away. Quite bright (9.5), it's a favourite with many Messier observers.

M91 is another faint spiral galaxy 10.2 mag.

M98 is a faint 10.1 mag. spiral seen practically edge-on, just 0.5° west of 6 Comae. ***M99*** is an open spiral seen face on, just under 1° east-southeast of 6 Comae. It has a brightness of 9.8 and several arms are visible in large scopes. ***M100*** is 0.5° further than the last of three 5/6th mag stars in-line beginning with 6 Comae. It's seen face on with a brightness of 9.4, and is the largest of these spiral galaxies, although difficult to appreciate in small telescopes.

NGC 4565 is a well-known edge-on spiral with a highly visible dust lane from end to end. The largest galaxy of its type it has a visual magnitude of 9.6. The galaxy is 1° due east of 17 Comae.

This is a fertile part of the sky to investigate. Enjoy the sparkle of Berenice's Hair as the evenings grow clearer, colder and longer.

Good seeing IC

Afterword: Thanks to reading Ian's article, I showed people at the Open Night δ Corvi and generated a mini-debate. What was the colour of the fainter companion. Amazingly, all the women voted for purple-lilac, while most men said white. Colour perception difference by sex? Great star to view. Thanks, Ian. (RB)

A Grand Night for Seeing

There was wonder on the hill top
for the word had got around
that the telescopes from MAS
were on their way.
There they stood, all shapes and sizes
braced firmly on the ground
as lens and mirrors seized the grand display.

There was Saturn, rings a'girdling
and Jupiter, whose disc
was straddled by its moons on either side.
Those early were the grinners
who saw a fairly brisk
moon's umberous spot go for a slippery slide.

Nebulae and clusters
and the famed Beehive
queuing up for all to gaze in awe.
The public came in hundreds,
It made them feel alive
to see the universe right at their door. *RB*

As the attempt at poetry above suggests, the public night on 12th April was a stellar success. There was a huge turn up of members with telescopes – great work everyone – as well as Ragbir and Peter Druery on the 12" scope in the dome.

It's hard to guess the number of public viewers, but it was easily over 100. Half of them seemed to be queued up at the dome at any one time.
And the sky – beautiful! Clear as a bell, tons of stars. A 1st quarter moon washed out the faint fuzzies but there was still plenty to see. As usual the public were polite and patient, as were the kids. It was a great night. At the end, we were all talked out, but elated. (RB)

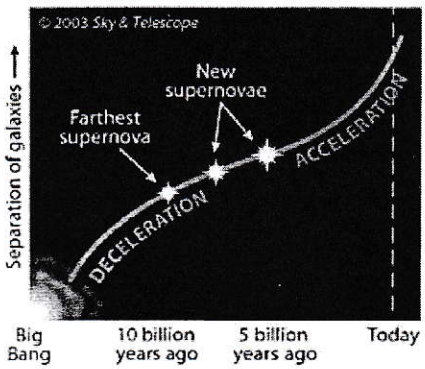
Oh What a Year – and it's only just begun...

To coin that grossly overused phrase... I'm excited. The year seems to have only just begun (alright, it is April, but it's still early) and already there have been stupendous new discoveries made by the astronomers. It's almost a case of too many to name. (I'm sure Peter Druery will cover some in his great talks.) The giant hypernova mentioned earlier is just one of them.

One particular bit of news that knocks my size 10 socks off is the recent find by the new extra sensitive Hubble camera called ACS (Advanced Camera for Surveys.) They tested its eyesight by aiming at the area of sky famous for the Hubble Deep Field (HDF) and sure enough, they discovered new objects that were there before but too faint for the HDF to show.

A piece of serendipity was that two of these faint objects turned out to be Type 1a supernova, billions of light years from our galaxy, more than half way across the visible universe in fact.
They were dubbed SN2002dc and SN2002dd. Because of the standard brightness of these Type 1a supernovae, astronomers can calculate quite precisely their distance, and by measuring their red-shift, can determine the rate of expansion of the universe at their epoch.

While SN2002dc and dd didn't break any new scientific ground, they did provide more precise data to help fill out the jigsaw of the overall picture of the universe's history of expansion and the precise time when the dark matter's decelerating gravity started to lose the battle to the dark energy's accelerating repulsion.



This graph above shows the universe's early dark-matter-dominated deceleration and the more recent cosmic acceleration fueled by the still unexplained 'dark energy'. The relative location of the two new supernovae is shown, as is the current most distant recorded 1a supernova. In rough terms, it suggests that the change over from 'brakes' to 'gas' happened about 5 billion years ago.

What's next? Roll on 2003.
(RB)