



PERTH OBSERVATORY  
Department of Conservation and Land Management

**Perth Observatory Volunteer Newsletter**  
**February 1998**  
**Editor: Jacquie Milner**

Hopefully all volunteers have had a turn on the telescopes this season with the good run of weather we've had - if not, don't forget the practise night coming up this month on the 23rd. Volunteers are still needed for the Sun & Stars Festival at Yanchep National Park on Sunday March 1st (see note below). This is a great family day out with activities such as guided walk trails, childrens activities, native animal displays, aerial bombing displays, night cave tours and lots, lots more. It's also a good chance to get some practice in!

### **Highlights in the Sky**

Saturn is the only planet left in the evening sky now, in the North-West, setting around 9 pm. The Moon will occult Saturn on 1st March at 6pm, which is still during daylight hours. Exact data on this event can be found on pages 76-77 in your astronomy handbook. An attempt will be made to view this event at the Sun & Stars Festival at Yanchep. Jupiter and Mars set during evening twilight and while Jupiter will return in the morning sky near the end of March, Mars will be lost from view until July. Mercury will move back into the morning twilight towards superior conjunction (goes behind the Sun) on the 22nd of February. Venus is now the Morning Star, easily seen at the beginning of morning twilight now. It will reach it's greatest brilliancy of magnitude - 4.6 on February 20th. It will remain in the morning sky until August.

### **SOME VERY IMPORTANT BUSINESS**

**All volunteers from the 1996 intake will need to complete a new volunteer agreement form** as the old expired on 31st december 1997. The observatory opted for a short duration agreement given our relative inexperience with volunteer programmes. New forms are available in the back section of the volunteer Register File that is kept near the noticeboard. You can make the expiry date anything you think is appropriate but the end of a calendar or financial year seems most appropriate, eg. 30/6/98, 31/12/98, 30/6/99 ... up to 31/12/2002, about 5 years hence. Jamie Biggs will complete your forms and a copy will be pinned to the notice board. **Please take the time to complete these forms as it serves to reiterate and reinforce our commitment to each other.**

### **Sun & Stars Festival**

The Sun & Stars Festival will be held at Yanchep National Park on Sunday 1st March this year, during the March long weekend. Six volunteers are needed to assist the Observatory at various times during the day, from noon to 10 pm. Last year's event was very popular with about 1000 people attending. This year there is an added bonus - and eclipse of Saturn by the Moon, starting at 6 pm. All volunteers helping will get free park entry for a carload of people. Please register your interest with Jamie Biggs by 5pm Tuesday 24th February.

### **Practice Nights**

There are only two practice nights left this year, on 23/2/98 and 23/3/98. There will be no practice night at the end of April.

## Rewards for Superstar Performers

Congratulations to the volunteers who have accrued sufficient hours in the Night Tours and Astronomy Field Night programmes to become eligible for the volunteer reward scheme. The rewards are a modest token of the Observatory's appreciation for the assistance rendered.

The following volunteers (in order of decreasing hours) have accrued more than sixty five hours of service and are thus eligible to claim:

- Observatory (or CALM) items to the value of \$40,
- Observatory funding of further appropriate training, eg Senior First Aid certificates - subject to the approval of the Night Tour Volunteer co-ordinator, and
- a visit to the Observatory accompanied by up to 3 others, out of hours, subject to the permission of the Government Astronomer and those using telescopes etc.

Bob TAYLOR  
John MORRIS  
Don HARTLEY  
Bevan HARRIS  
Jacquie MILNER  
Vic LEVIS  
Lyll BELL

The following volunteers (in order of decreasing hours) have accrued more than forty but less than sixty five hours of service and are thus eligible to claim:

- Observatory (or CALM) items to the value of \$20, and
- Observatory funding of further appropriate training, eg Senior First Aid certificates - subject to the approval of the Night Tour Volunteer co-ordinator.

Cathy GAZEY  
Kevin HOGAN

All the full-time Observatory staff thank you for your wonderful assistance and good company.

NOTE: The last date to claim your reward is **30 April 1998**. Reward schemes will be constructed for the archiving and observatory assistant programmes in the near future.

## Observatory News

- **Supernova 1998A:** The supernova candidate in the galaxy IC 2627 mentioned in January's newsletter was confirmed in observations with the Observatory's 0.25-m Mike Candy Telescope by Arie Verveer and Jamie Biggs. They also determined a very accurate position that facilitated its spectroscopic study.
- **And Another Supernova!** On Friday 30 January 1998 Ralph Martin and Andrew Williams found another supernova, this one is located close to the nucleus of spiral galaxy NGC 5161. It is now designated **SN1998E**, and is of type II<sub>n</sub>. This supernova is the result of the catastrophic detonation of a massive star (at least 8 times the mass of our Sun) that has effectively run out of nuclear fuel. The "little n" means that some of the light is emitted in the form of narrow emission lines (they have a characteristic colour, like that from a sodium vapour street lamp). The source of these lines is not really understood but it is hypothesised that the collision between ejecta from the supernova and nearby, discrete, gas clouds may account for them.

- Congratulations to Greg Lowe on becoming a grandfather again! His daughter had a baby boy on February 1st.

### **Record Night Tour Attendance**

The figures have not been officially tallied, but virtually all of the 11 nights of tours in January were conducted with minimal interference from the weather. This corresponds to around 750 visitors, an increase of about 100 on the previous monthly record.

Many thanks to all concerned. Such figures cannot be achieved without the hard work and dedication of all staff, volunteer and full-time, concerned. Thanks again.

### **The Clouds of Magellan**

The Milky Way, the galaxy that our Sun and it's solar system is in, is a very large galaxy. It is 130 thousand light years across and would look very similar in appearance to the Andromeda Galaxy if we could look at it from above. It also has 10 "satellite galaxies" and is currently consuming what was the eleventh. The largest and most visible of these satellite galaxies are what we call the Large Magellanic Cloud (LMC) and the Small Magellanic Cloud (SMC). They are 160 000 light years and 190 000 light years away respectively. The others are all small and faint, having had a lot of their gases sucked out of them by the our large and hungry monster. This has left them with very little matter to make new stars with. The Magellanic clouds are suffering the same fate. There is a detectable trail of gases streaming out of the Clouds to the Milky Way. On mentioning during a Night Tour that our galaxy was a big, mean, galaxy-gobbling monster one visitor remarked "It's nice to know that our galaxy is looking after us!"

We can see the Magellanic clouds easily with the naked eyed in a moonless sky and away from light pollution. They are a long way south and are not visible to European observers. They were once known as the Cape Clouds, as they were easily seen from the Cape of Good Hope. They gained their current names after Ferdinand Magellan, the first person to navigate around the world, described them. In modern day astronomy the LMC lies in two constellations, Dorado the Gold Fish and Mensa The Table Mountain. The SMC lies in Tucana the Toucan and is often depicted as an egg that the bird is sitting on.

The most well known object in the LMC is the Tarantula Nebula, or 30 Doradus. This is a huge emission nebula 1000 light years across and is actually in the LMC. Photographs of the LMC show many other patches of nebulosity throughout the galaxy. The LMC was also the location for the last supernova visible to the naked eye, known as supernova 1987A. 47 Tucanae, the bright and compact globular cluster next to the SMC is only 16 000 light years away, so is not connected to the SMC in any way, it just happens to be in the same area of sky. Binoculars will give excellent views of both galaxies as well as 47 Tucanae and the Tarantula Nebula is easily spotted in the LMC as a bright patch to one side. The best time of the year to observe them in the evening is Summer, when they are at their highest in the southern sky, even though they are circumpolar from Perth (this means they never set below the horizon, they are always visible).