

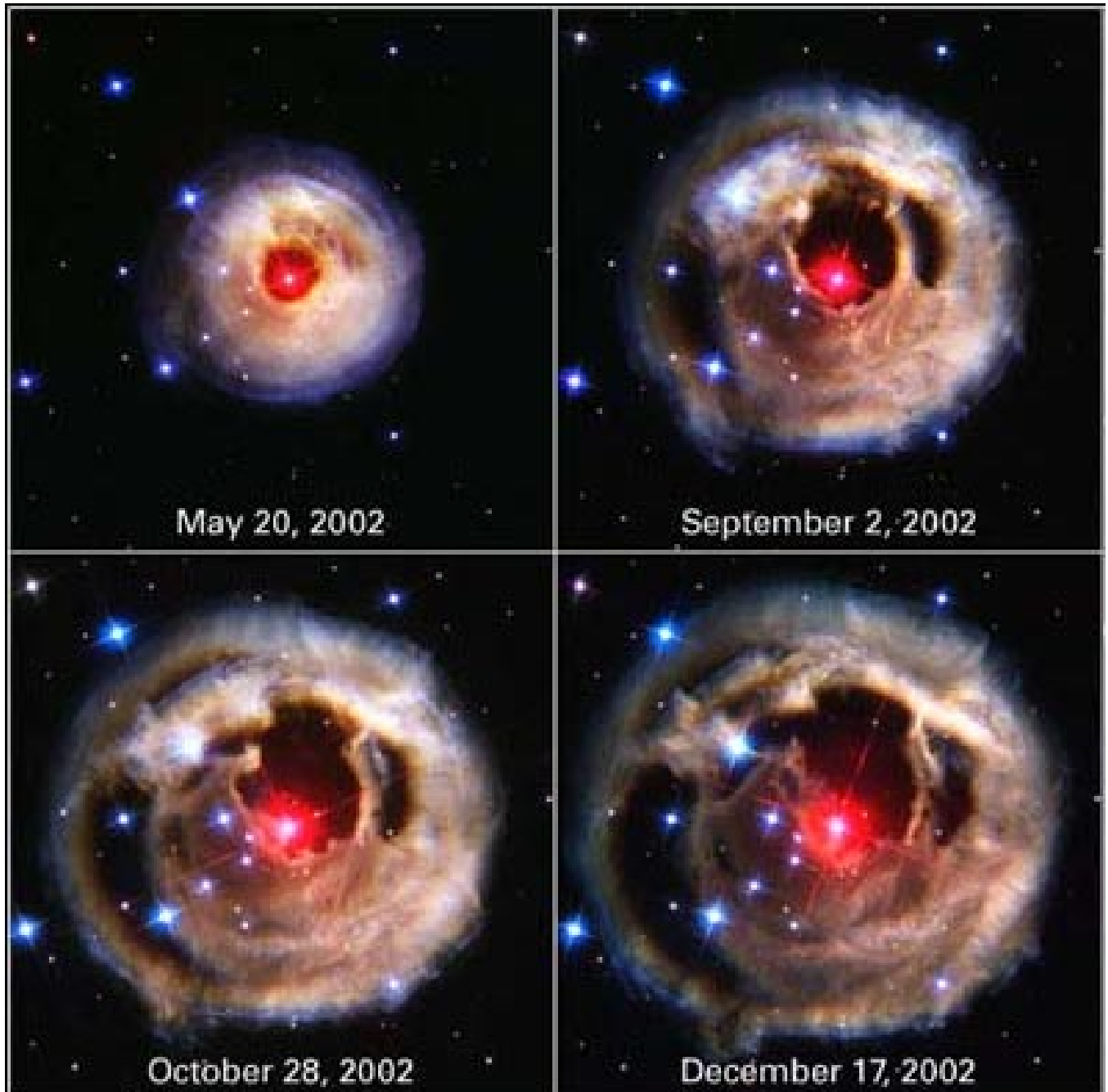


Pretoria Centre

Of the
Astronomical Society of Southern Africa

www.pretoria-astronomy.co.za

NEWSLETTER FOR MARCH 2004



Expanding halo of light around the star V838 Monoceros, as seen by HST

MEETINGS FOR MARCH

The next meeting of the Pretoria Centre will take place at Christian Brothers College, Pretoria Road, Silverton, Pretoria, as follows:

Date : **Wednesday 24 March at 19h15**
Chairperson : **Theo Pistorius**
Beginner's Corner : **"A case for a flat earth" by Neville Young**
What's Up : **Michael Poll**

+++++BREAK (LIBRARY OPEN)+++++

Main Topic : **"Long Period Variable Stars" by Michael Poll**

The meeting will be followed by tea/coffee and biscuits as usual.

The next social/practical evening will be held on Friday 19 March at the Centre Observatory, which is also at CBC. You can arrive anytime from 18h30 onwards.

OBSERVING EVENING : FEBRUARY 20TH 2004

A wonderful evening with a clear sky, about 6 or 8 telescopes and a good number of members and visitors. Cathryn Macdonald from the UK who in South Africa for two weeks, and Tinus Koekemoer's church group who we were due to visit on March 5th.

There was so much to see, including the areas around the False Cross, Eta Carinae and Crux, the Orion region, and Saturn and Jupiter. In the south were Eta Carinae and Theta Carinae, with its open cluster of stars IC2602. Also a favourite, NGC 3532, plus Alpha Centauri which was up later. The Orion region included M42 and the Trapezium, with more than the usual four stars seen in the bigger telescopes. M41, an open cluster in Canis Major was also observed. In the north-east were Saturn and Jupiter, in Gemini and Leo respectively, and in between them, Cancer and the Beehive Cluster M 44.

The Centre 12 inch, ably operated by Johan Smit, looked at Saturn, the shadow of which could be seen on the rings behind the planet, at Jupiter and at the Orion Nebula. Johan reported that later the Red Spot on Jupiter was seen. This was a definite highlight. The spot crosses the face of the planet in about 5 hours, so it was close to the edge or just behind at the start of the evening, and by about 23h00 it had moved to the centre. The seeing conditions also became very good at that time. The last target was the Jewel Box—but by then (23h00) only three observers were left!

At the March observing evening, Jewel Box, Omega Centauri, and Jupiter and Saturn will be included amongst the targets for the 12 inch.

Michael Poll & Johan Smit

REPORT OF MONTHLY MEETING: 25 FEBRUARY 2004

The meeting was attended by 48 members and visitors.

There was a change to the agenda, with the subject of the Beginner's Corner being Date of Easter. Long Period Variable Stars will be the subject of the Main Talk in March.

Michael Poll's talk on the Date of Easter was well explained, but left us feeling glad that someone else has to calculate it every year. It is a very complicated process.

Neville Young was assisted by the two youngest attendees in giving the What's Up talk. While the boys were busy, he told us of a small error in the Sky Guide - Saturn does not begin retrograde motion on 7 March. (The Sky Guide is still very good value at R40, even with that small error!) The young assistants had built Neville's model of the solar system by this time and he was then able to explain why all the naked eye planets (including Earth!) will be visible in March.

The Main Topic - Visit to Mars - was done by Johan Smit. Few of us were aware of the many attempts that have been made since the 1960s to study Mars from orbit or lander by NASA, the Russians, the Europeans and even the Japanese. It was a long list of disasters and disappearances. The few successes have been spectacular and Johan showed us photographs (downloaded from space at a snail's pace in the early days) of scenes from orbit, at gradually improving resolution over the years, and from the first successful lander. He then showed us an animated film of the latest mission from blast-off to grinding samples off rocks with the "RAT". He finished with some photos taken by Spirit. It was an informative and entertaining talk and provided valuable background for the current Mars missions.

Lorna Higgs

THE CONSTELLATION OF CANCER, THE WESTERN END OF HYDRA, AND LEO.

(See star chart below.)

Cancer is an inconspicuous constellation, being the faintest of the zodiacal constellations. It is the only constellation whose brightest object is not a star: the open cluster M44 has a total magnitude of 3.1, although it is not as easy to see as a point of light of the same brightness, because the light of the cluster is spread over a greater area. The brightest star is beta (magnitude 3.5), and no others are above 4th magnitude, so the constellation will be hard to see against the city lights.

Cancer was given different designations by different peoples. The Romans identified it with the winged messenger Mercury. The Greeks saw it as the sea crab that Juno, Queen of Olympus sent to the rescue of the multi-headed sea monster Hydra, which was doing battle with Hercules. The crab grasped Hercules' foot as he was fighting. Not surprisingly, Hercules trod on the crab, but for its efforts, Juno placed the crab in the sky. Hydra also resides in the sky as the constellation of the same name.

Cancer lies between Pollux, in Gemini, and the Sickle of Leo, with its bright star Regulus (Alpha Leonis). A line from Pollux to Regulus passes just under M44, with the cluster slightly on the Pollux side of half way.

M44 (NGC 2362) Praesepe (the Manger) or Beehive Cluster.

This is a famous open star cluster, and has been known since the time of the Greeks. Aratus of Soli wrote about it before 250 BC. He called it a “little mist” and said that if it was invisible on an apparently clear night, rain would be on the way. In about 130 BC Hipparchus called it “a cloudy star”. The name Praesepe means “manger”, the Greeks and Romans named it as such. The stars Gamma and Delta Cancri, on either side of the cluster, are known as “The Asses”. Eratosthenes reported that these were the asses on which the gods Dionysos and Silenus rode into the battle against the Titans, who were so frightened by the animals' braying that the gods won. As a reward, the asses were put in the sky together with a manger : Gamma is Assellus Borealis, Delta is Assellus Australis, and they eat from the manger. The name Beehive is a relatively recent name, the layers of stars suggest a traditional dome shaped beehive.

Galileo was the first to see the individual stars in the cluster. In 1610 he resolved it using the newly invented telescope. He wrote that it comprised “not one star but a mass of more than forty small stars”.

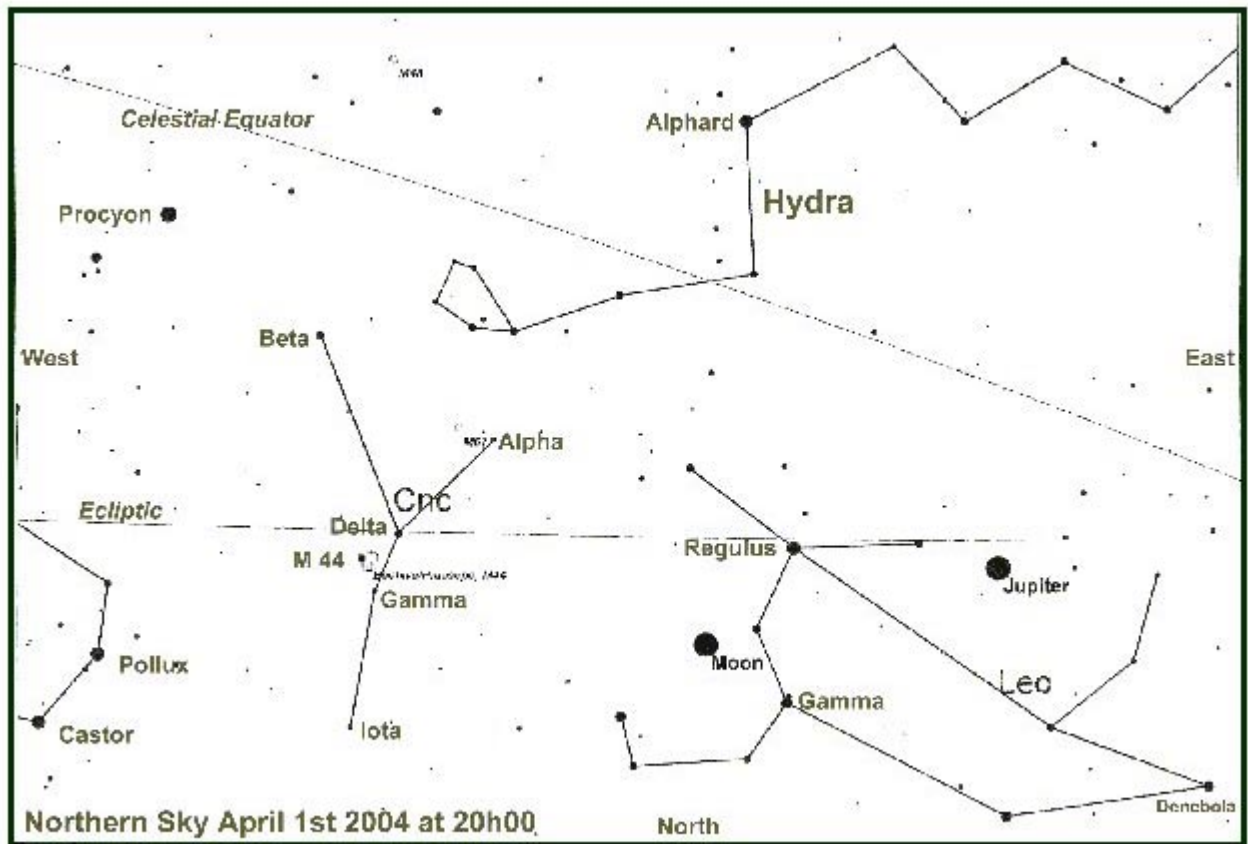
The brightest star in the cluster is magnitude 6.3, but there are about 10 stars brighter than magnitude 6.9; 200 stars to magnitude 14 , and about 350 to magnitude 17. Its distance is about 580 light years and diameter about 15 light years. Normally open clusters are relatively short lived, because they are disrupted by the gravity of the Milky Way. However M44 lies well above the plane of our galaxy, so it less affected by the pull of the Milky Way, and it is about 400 000 000 years old.

Hydra is the largest constellation in both area and length. It is about 100 degrees long, so the tail end rises about 6 hours after the head, which is at the western end and rises first. The most readily recognizable feature is the “head” which is a circlet of stars lying just to the south of (above) Cancer. The brightest star is Alphard, an orange red star at magnitude 2.0, and it is the only star in the constellation brighter than magnitude 3.0. “Alphard” is Arabic for “The Solitary One”, and it is so called because there are no other bright stars near to it.

The accompanying chart is for April 1st 2004 at 20h00, but it will be useful for the rest of the month. The Moon will be moving from Cancer into Leo during March 31st - April 1st, but it will move off a few days later. In the city, even without the moon, binoculars will probably be required to see M44 or any stars of Cancer.

The chart will also be of use for March - April of any year, except that for March 1st it represents the sky at 22h00 and for April 30th at 18h00. In addition, the Moon and Jupiter will not always be in the picture.

Michael Poll



ASTRONOMICAL WEBSITE ADDRESSES

More information about the sequence of pictures on page 1:

<http://hubblesite.org/newscenter/newsdesk/archive/releases/2004/10/image/a>

Interactive Planetarium: <http://fourmilab.to/yoursky/>

Observing satellites: <http://heavens-above.com/>

Amateur astronomy: <http://rocketroberts.com/joe.htm>

Astronomy without a telescope:

<http://www.astronomynotes.com/nakedeye/chindex.htm>

Space news: <http://www.spacedaily.com/>

Science & space news: <http://www.cnn.com/TECH/space/>

Zooming in from the large to the small:

<http://microscopy.fsu.edu/primer/java/scienceopticsu/powersof10/index.html>

Editor

INVITATION TO MEMBERS

Members are invited to send short articles for placement in the newsletter to me by email. This is one way you can share your astronomical knowledge with other members of the club. Astronomical website addresses, information about astronomical computer packages, relevant news, views, experiences, book reviews, references to interesting articles, etc., which are sent to me, will also be considered for placement. Just check your contribution for accuracy before emailing it.

Editor

BOOKS ON THE MARKET

I saw the following books offered for sale:

At Exclusive Books in Centurion Mall:

“The Planets” by D McNab & J Younger
“Norton’s Star Atlas” (the 20th edition of 2004) by I Ridpath
“Visions of Spaceflight” by F I Ordway III
“The Universe in a Nutshell” by S Hawking
“Astronomy before the Telescope” by C Walker
“A Traveler’s Guide to Mars” by W Hartmann
“The History of the Telescope” by H King
“NASA Astronauts Photograph the Earth” by J Apt, M Helfert & J Wilkinson
“Atlas of the Universe” by P Moore
“Mapping Mars” by O Morton
“Venus” by P Moore

At CNA in Centurion Mall:

“Ontsluier die Heelal. ‘n Inleiding tot sterrekunde” deur J E van Zyl
“Understanding the Universe” by R Prinja & R Ignace
“The Universe Revealed” by P Spence
“The Moon. A Biography” by D Whitehouse
“Starwatching. A Southern Hemisphere Guide to the Galaxy” by A Fairall
“Full Moon” by M Light

Go and spend some time browsing in these books and buy those you intend to read. Astronomy gives one a perspective like no other subject.

Editor

SKY & TELESCOPE

Members who want to subscribe to this magazine, must contact Mike Haslam.

Editor

NEWSLETTERS BY EMAIL

Members who supplied us with their email addresses, receive the monthly newsletter by email. Members who at present receive it by snail mail, and who also want to receive it by email, should contact the **membership secretary** of our Centre and give him their email addresses.

The advantages of receiving it by email is that you receive it sooner than by snail mail, there is little chance of it not arriving, you get all colour pictures in the newsletter in colour, the Centre saves money, and the newsletter editor (who sends out the newsletters) saves work.

Editor

CHANGES IN POSTAL OR EMAIL ADDRESSES

If members want changes to be made in their postal or email addresses, they should contact the **membership secretary** rather than another committee member. It works best that way. The membership secretary updates the address list each month and sends it to the newsletter editor, who sends out the newsletters.

Editor

SKY GUIDE AFRICA SOUTH

Copies of this guide may be purchased from our Membership Secretary @ R40.00 each at the meeting on 24 March.

Editor

OBSERVING EVENING FOR OPTOMETRISTS – CHANGE OF DATE

The Centre has agreed to put on an observing evening for clients of Rodney Steadall (Optometrist) on Wednesday May 12th 2004. Arrangements are being made through Karin Steadall. Karin has written to say that, due to circumstances beyond her control, both the date and venue have had to be changed.

The evening will now take place on Thursday May 13th 2004, at the Loretta Convent in Queenswood. Guests are invited to have a picnic supper on the field from 5.30. At around 7 o'clock there will be a presentation of Guide dogs - about 10-15 minutes and then a 45 minute talk by Lance Kinnear who does an audio visual presentation on a large screen. After this the people will be invited to go onto the field and observe the stars and look through telescopes.

About 300 – 400 people are expected at this event. Members of the Centre (as many as possible!) are asked if they could bring telescopes for the evening.

Michael Poll

SLIDE SHOW

Members who receive their newsletters by email, can receive a little bonus this month: the slide show presented by Jorrie Jordaan at the January meeting is available. For those of you who were not there: the series of slides zooms out from the vicinity of the Sun. Members can request a copy from me.

Editor

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