



The **PRETORIA CENTRE**

of the

Astronomical Society of Southern Africa

www.pretoria-astronomy.co.za

NEWSLETTER MAY 2005

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

Date and time Wednesday 25 May at 19h15
Chairperson Neville Young
Beginner's Corner Introduction to Telescope Making
What's Up by Michael Poll

+++++++ LEG BREAK - Library open ++++++

MAIN TALK

**“The Thermal and Non-thermal Universe”
by Prof Okkie de Jager
of North West University**

The meeting will be followed by tea/coffee and biscuits as usual. The next social/practical evening will be held on Friday 20 May at the Pretoria Centre Observatory, which is also situated at CBC. Arrive anytime from 18h30 onwards.

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Last month's meeting -- by Lorna Higgs

Forty members and visitors attended the meeting on the public holiday and discovered that astronomy can be a pleasure, as well as being an informative and useful hobby.

In Beginner's Corner, Wayne Mitchell explained Making Observing a Pleasure with many useful tips - laminated star charts, large flask and insulated mug, warm clothing, set-up in daylight, notebook, target one area of the sky, how to cope with insects and dew, etc. That should inspire everyone to get out there to do some astronomy.

What's Up was presented by Neville Young and, after giving us the phases of the moon for May, he used his model of the solar system to explain the how, why, when and where of the planets that will be visible.

Michael Poll then rehearsed a lecture that he will be giving at a conference. It was amazing to find how much information about life in the universe can be explained in ten minutes in a way that is understandable to biologists, astronomers, and others.

The Main Topic was presented by Brian Fraser of the Johannesburg Centre and ASSA (national). His subject was Variable Stars and he started with descriptions of the types of variability on which the stars are classified. He then explained the mechanisms for the variability (where they are known or postulated), but he mentioned that these have been worked out from many measurements over many years (sometimes hundreds). The really exciting part of his talk was his explanation of how amateurs can contribute to further understanding and theories by taking a few minutes occasionally, with minimal equipment (small telescopes, binoculars, or even naked eye), to record the apparent magnitude of a variable star (or a few) and the date. His very interesting talk therefore showed us that worthwhile astronomy can be done by anybody, providing a sense of achievement as well as enjoyment.

The usual chat over refreshments after the meeting threatened to last all night and was an indication of how pleasurable all aspects of astronomy can be.

The MNEMONIC COMPETITION

A brand new astronomy headlamp is waiting for an owner. The idea is to write a mnemonic as an aid in remembering the order of the zodiacal constellations.

The constellations are Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpius, Sagittarius, Capricorn, Aquarius, Pisces. To ensure that there is some competition, 8 entries is the minimum number of entries to constitute this competition.

Entries have been received from Andrie vd Linde, Casper vd Linde, Bruce Zangel, Brian Buch, Jean Buch, Harald Pauler—only six entries! (If I don't have your submitted entry, please remind me.)

Closing date is Monday 4th July and the winner will be announced at the AGM.

When the biggest things collide

Astronomers are studying the collision of two **clusters** of galaxies, an awesome event. See Sky & Telescope, January 2005, p. 18.

Last month's observing evening - by Michael Poll

Neville wrote: "Just a quick reminder that the monthly practical takes place this Friday evening [April] 22nd at the CBC Observatory. Remember that Jupiter and its moons will be playing peek-a-boo behind our Moon all are welcome except Mr C Loud". But O dear, what a wash out, Mr C Loud did come, and brought his neighbours as well.

Johan Smit, as we all had, had so looked forward to the event and was understandably a bit upset. A camera was on hand to discreetly capture the unfortunate moment. The attached pictures show a wet observatory and Johan – sympathetically supported by his son Paul - in their time of disappointment.

Johan and Paul and girl friend can be considered as the ingress party, being there early to capture the start of the event, but they had left by the time what could be called the egress party arrived – Michael and Johan Hartman arrived at 6.35 p.m. The latter pair could only sit in a car and talk about what might-have-been.

The clouds (bah) broke up a bit when [Michael] got home and Jupiter was about 1½ moon diameters away from the moon. It looked really three dimensional with the big moon next to small Jupiter -the moon really looked as if it was in the foreground.

Sad Images from our Observing Evening on 22 April

Johan Smit had so looked forward to the Jupiter occultation and so was understandably a bit upset, perhaps one could even say he was emotionally traumatized. A camera was on hand to discreetly capture the unfortunate moment. The attached pictures show a wet observatory and Johan - sympathetically supported by his son Paul - in



Desperation



Grief

The Constellation Corvus - by Michael Poll

The constellation of Corvus, the Crow, is a small but distinct group that passes practically overhead in Pretoria.

The constellation was known as a crow or a raven to the Greeks, Romans and the Hebrews. In Greek star lore, Corvus was a servant of Apollo, a god affiliated with light, divine inspiration and the arts. Under Apollo's influence, life was illuminated by truth goodness and excellence. The Crow failed in this ideal. According to one legend, thirsty Apollo sent the Crow with a cup to bring water from a sacred spring. The crow came across some unripe figs, which he was unable to resist, so he delayed his return until the fruit was ready, and then set to feasting. Realizing that he had loitered too long, he snatched up the cup of water with his beak, took a serpent in his claws, and hurried back to Apollo. He said he had been delayed because the serpent attacked him. Apollo knew the truth however, and banished the whole group to the sky, punishing the crow with thirst – the Cup (Crater) is to the west of Corvus, within a beak's reach, but the serpent (Hydra) prevents him drinking from it.

The tale of the Crow, the Snake, and the Cup appears only in Greek mythology – and the tale sounds like an attempt to explain an enigmatic grouping of constellations. The story does inform us that the crow was allied with Apollo.

The crow was actually a raven. In antiquity ravens were viewed almost universally as weather prophets and as grim omens. Aratus, who wrote the oldest known Greek sky guide, used the Greek word for a raven and labelled the raven as an announcer of storms. The Latin poet, Ovid, also regarded the celestial crow as a raven.

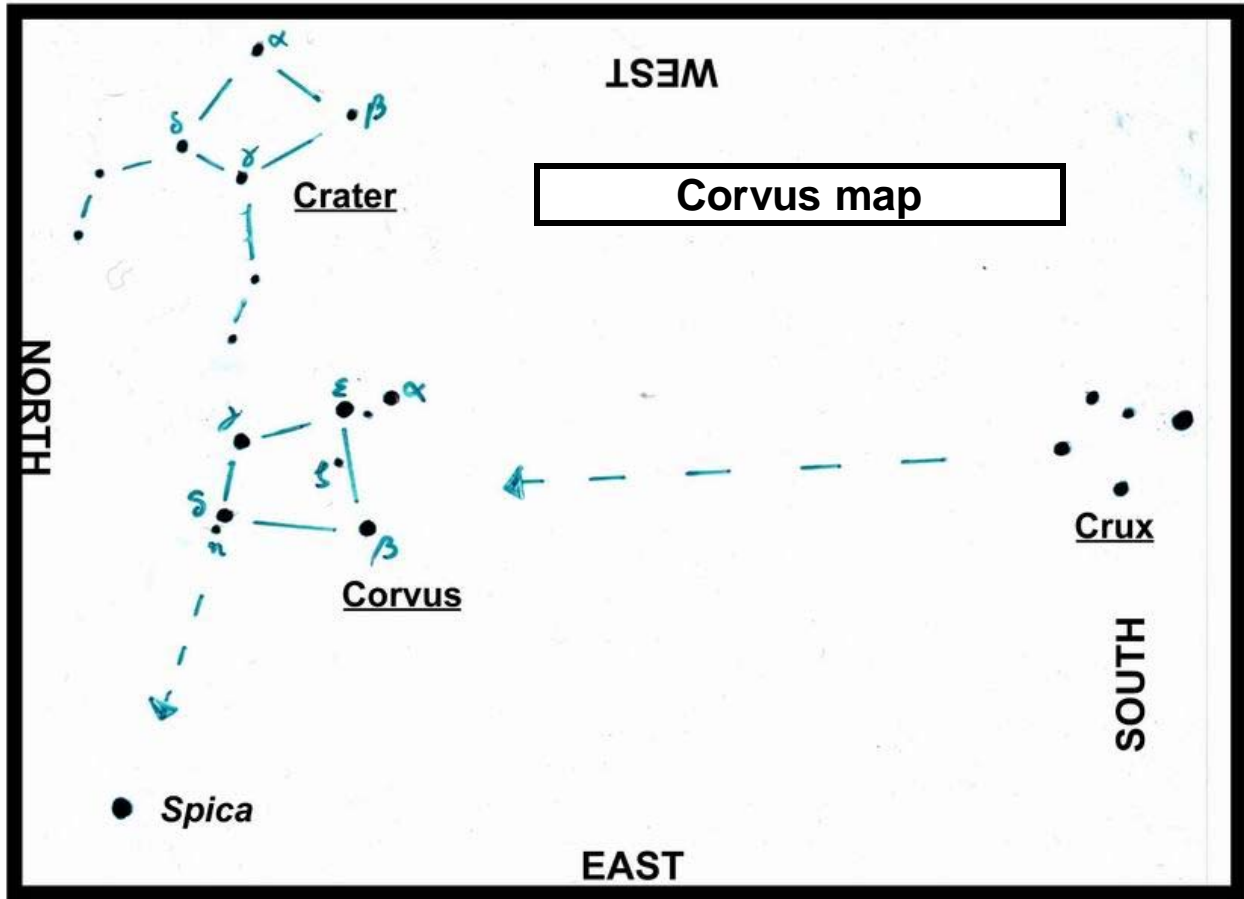
Corvus is a small constellation, ranked 70th (out of 88) in terms of size, measured in square degrees. It consists of a distinct quadrilateral of stars, measuring $3\frac{1}{2}^\circ \times 5^\circ \times 5\frac{1}{2}^\circ \times 7^\circ$ (this compares with the long axis of the Southern Cross, which is 7° , and the short axis, which is 4°). The stars Delta (δ , magnitude 2.6), Gamma (γ , magnitude 2.7), Epsilon (ϵ , magnitude 3.0) and Beta (β , magnitude 3.0) make up the quadrilateral. Eta (η) lies near Delta, and Alpha (α , magnitude 4.2) lies near Epsilon.

Delta Corvi is split as a double in a small telescope, but the components are unequal in brightness – there is a magnitude 3 star with a magnitude 9 companion. Although they are quite widely separated, the fainter star is almost washed out by the brighter, and under city lights a careful search is required to spot the little speck. (Observed with a 75mm refractor). Zeta Corvi is a wide double that can be seen with binoculars.

On a scale of 1-5, with 1 being the easiest, Corvus is graded as 3 for ease of recognition. It has no bright stars, but is easily found with reference to the Southern Cross. The long axis of the Cross, extended northwards by about 35° (about two hand spans, or just under), intersects Corvus. The group has a distinctive shape, and reaches a high altitude. Corvus is on the meridian, at an altitude of about 80° at 21h00 in mid-May.

References

- Theft of Light* by E C Krupp
- Sky & Telescope* March 2000 p 94
- Cross Hairs on Corvus the Crow* by Fred Schaaf
- Sky & Telescope* May 2000 p 98
- Stars* Ian Ridpath Collins Gem p 112
- Skywatching* by David Levy Harper Collins p 162
- Astronomy Facts & Feats* Patrick Moore Guinness Superlatives p 200
- Constellations* by Klepesta & Rukl Hamlyn p144



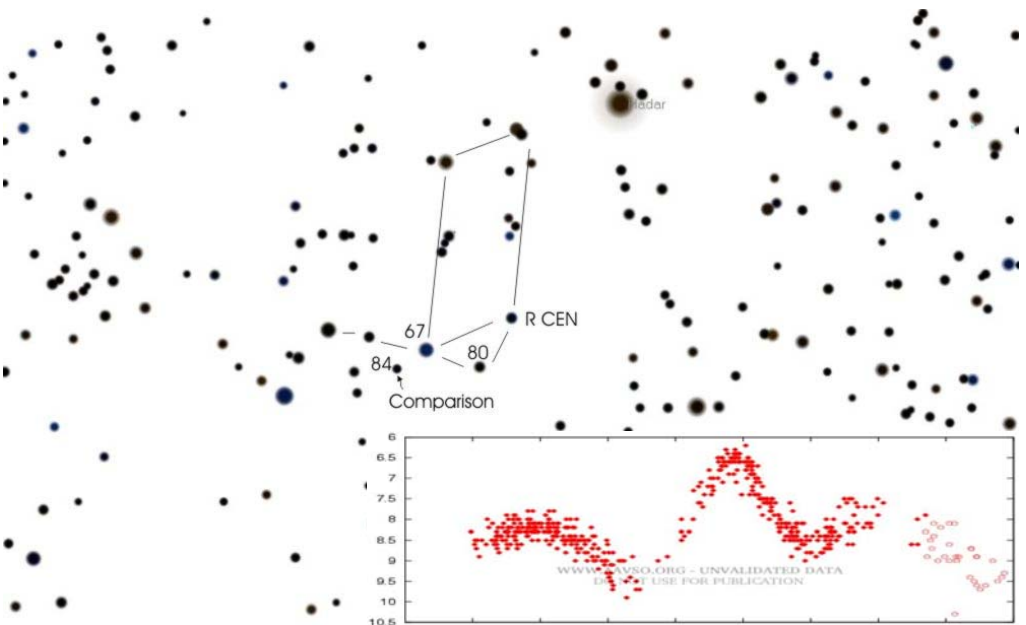
Lets Adopt a Variable - R Centauri

At the April meeting, Brian Fraser urged us to make a contribution to astronomy and thereby expand our knowledge of the skies by observing variable stars. He suggested R Centauri as a good start. I propose that the Pretoria Centre makes a special effort to observe this particular star. It is situated between Alpha and Beta Centauri (Hadar) and a little bit to the north. I have found it and am watching it keenly. So does Michael Poll.

It has an irregular light curve and seems to be brightening again. Lets see what it does in the next year.

I will be at the practical on 20th and will help you find it. Our observations will be submitted to the AAVSO.

- Neville Young



NYSLVLEY May 2005 - by Neville Young & Michael Poll

A nice sunny day promised a nice clear evening, or two, at Nylsvley. Neville and Jenny had arrived first at 16h00 and so Neville's 3" refractor was ready before sunset. Fred and Vivian Oosthuizen followed soon after and then Michael Poll, Wayne Mitchell and his brother Shawn, Jill Corlett, Tony Viljoen and Eugene Geldenhuys arrived in bursts. A flood arrived when Jaco's contingent of Elaine, Corne', Theuns and Andrew just about filled up the 'Whitehouse' dormitory. Having taken a left turn instead of a right turn, Sybil and Michael detoured via Ellisras, Nairobi and Cairo before finding the camp at 21h30.

Neville's project for the evening was to find the asteroid Ceres, close to Beta Librae. The usual identification obstacles like scale and mirror images temporarily frustrated the process, but the laptop and Sky6 narrowed down the search and identified the 1000km rock. Its motion was enough to see a positional change over 6 hours - Sky6 projected the path of the direction in which the asteroid was moving. Neville's other project was to become further acquainted with his new friend R CEN, (R Centauri) a variable introduced to us by Brian Fraser at last month's meeting. Under the dark stars it is actually more difficult to identify the few reference stars in the vicinity - there are just so many! Nevertheless, we were successful and most of us did see the faintish variable, although how many will find it independently in future remains to be seen.

Michael was able to use his relatively new 6" Newtonian again under dark skies and - as usual - gave the interested guests his entertaining guide around the celestial funfair. Michael and Eugene identified all the objects, except one, in the Southern Cross region, as detailed on page 97 of the 2005 Sky Guide. The one object not identified was NGC3918, a planetary nebula. They also started on the objects on page 99, but at 2.00 a.m. the M objects 16,17,18, 24 and 25 seemed to merge into one, so the rest of the page was left for another time. Wayne's 12" Dobsonian was ferreting out galaxy after galaxy, but Tony's 10" Cass was in a bad mood and refused to track. Using it to get a better sighting of Ceres required continual tweaking of the RA and Dec drives and Jaco got the job of driver until he and his family headed for bed just after 11.



Amongst star groups noted were the Big Dipper, and the northern and southern crowns (Corona Borealis and Corona Australis). Also M51, the Whirlpool Nebula



The 'Jaco' Group

was found – it is near the last star in the handle of the Dipper. In addition, Mars was well up by 2.00 am.

Sky6 turned out to be a ready resource for the frequent queries about objects. The gallery of images made it easy to confirm a sighting or to help better understand the shape in the eyepiece. Neville, Michael, Wayne and Tony stayed up well past midnight, with Wayne being the champion, surviving until 04h30.

Being health enthusiasts, Jaco's crowd was up early the next morning for a serious run or cycle. Saturday saw the arrival of another member of Jaco's entourage - Juan. Johan, Ronel and Lananie Hartman also joined us during the day. The bird hides in the reserve were the obvious sightseeing destination - astronomers who easily identify vague objects by night became twitchers having difficulty in identifying vague little brown jobs by day. Vivian was mistaken in the distance for a red-breasted something or another. According to Jaco's crowd, there was only one species - *die gevlerkte voel*.



The afternoon clouds built up strongly so we decided to have supper early. The huge boma bonfire seemed to burn away a clear hole in the clouds above us and for a few hours we observed again. Ceres had indeed moved as predicted. R CEN was just as dim as the night before and Eta Carina had not gone supernova since the previous night. We nevertheless remain excited about

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this prospect, which is keenly expected in the next million years.

Having been irritating during the early evening, the clouds re-appeared at about 22h00, and rained a sudden very wet thunderstorm onto us. It was all hands on deck to cover up and pack away. Even though some late-night carousers noticed that after the storm the sky sparkled clearly, the enthusiasm had been dampened, especially considering that most were by now tucked up in bed, catching up on sleep from the night before.

Mother's Day hauled most people reluctantly off early on Sunday morning to family lunches, but Neville, Jenny, Sybil and Michael made the most of the bushveld until 16h00.

Thank you Wayne for organising another wonderful weekend.



Neville and Tony watch while Wayne poses for a picture in our own little impact crater.

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