

Algol

PERSEUS

• Capella

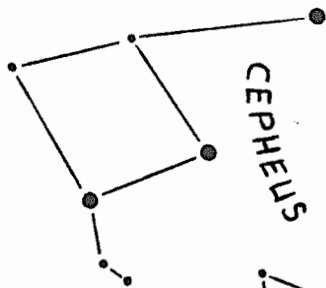
KUSKEN

GIRAFFEN

14

CASSIOPEIA

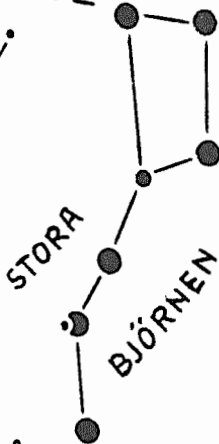
POLARIS



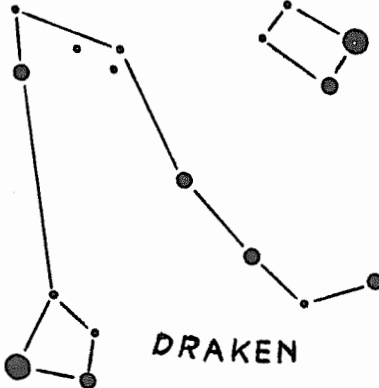
CEPHEUS



LILLA BJÖRNEN



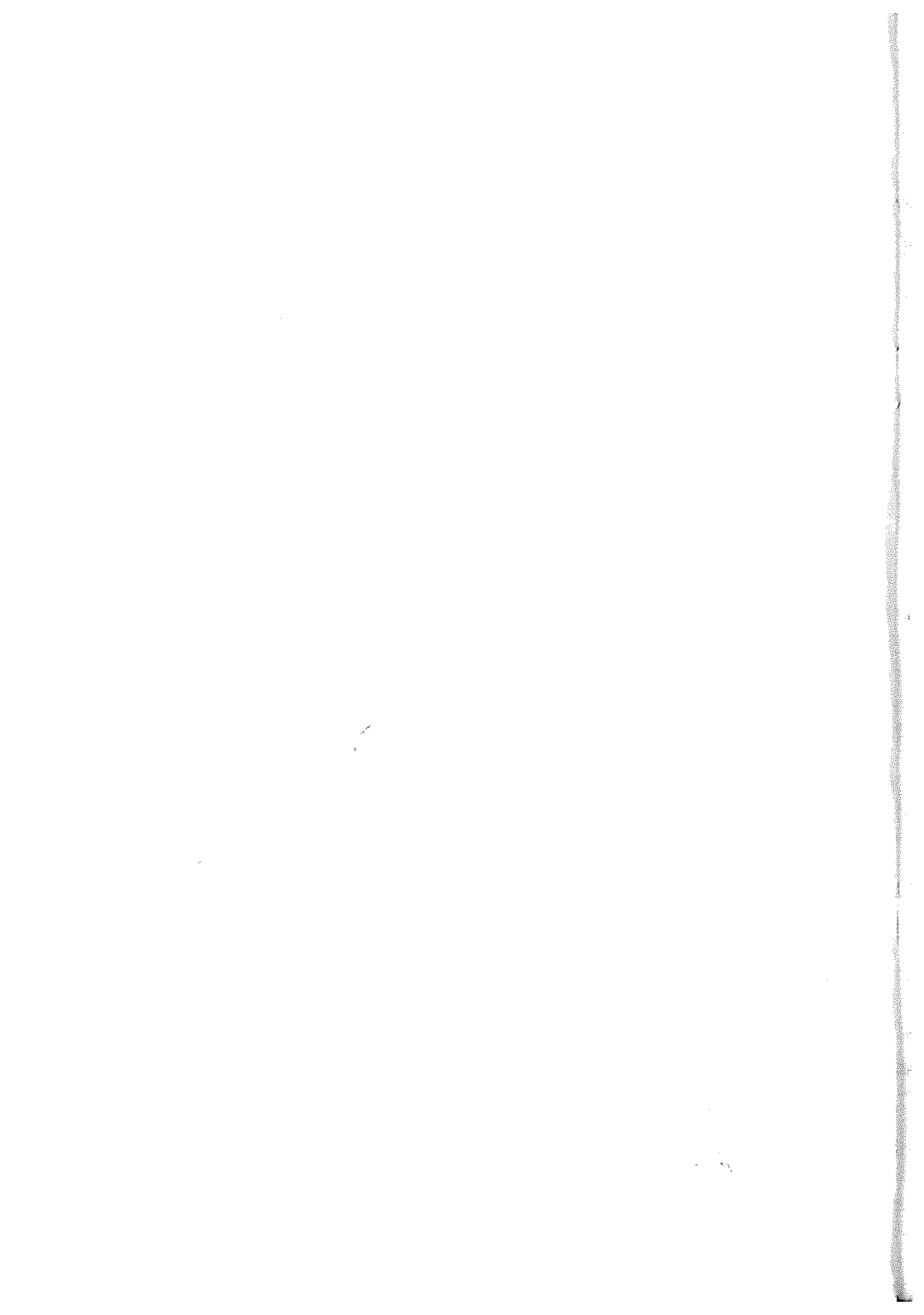
STORA BJÖRNEN



DRAKEN

● Vega

STOCKHOLMS
AMATÖRASTRONOMISKA
KLUBB



Stockholms Amatörastronomiska Klubb.

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This is a special issue for all guests of the IUAA congress in Malmö. There are about three numbers of Polaris each year, each one containing about 24 pages. Polaris is included in the annual fee, 5 kr, of the club. Anyone is welcome to send articles for Polaris.

THE AMATEUR ASTRONOMICAL CLUB OF STOCKHOLM

The society was founded in December 6th 1963 in a lecture room in the old university building of Stockholm. Initiators were Per Olof Lindblad (now the leader of Stockholm's Observatory) and Gunnar Darsenius.

Meetings are held about twice a month with lectures in various amateur items, demonstrations in mirror telescope making and picture showings.

The club has got its own observatory in the centre of Stockholm (near Sveavägen/Odengatan). This is the old observatory of Stockholm, used from 1748 till 1931, when the new observatory at Saltsjöbaden (15 km southeast of Stockholm) was built. The old 13,5 cm refractor with a triplet lens was in the 1930's moved to Skansen (a big park with zoo and ancient buildings at an island in Stockholm). There it was very little used and almost got unusable. The former energetic secretary of the club, J T Ragnhammar, got it moved to its first place and restored it with the help of Lage Johansson, who used thousands of hours to get the telescope, its clock work and the observatory in a perfect condition. Lage Johansson and Lennart Dahlmark have recently built a photometer to the telescope.

In 1967 Mats Lundblad began to write the club's magazine, Polaris, which now (no 14) is distributed in an english issue specially for the guests of the IUAA meeting in Malmö. Every issue is containing about 24 sheets of paper with informative short articles. Polaris is included in the annual fee of only 5 Sw. crowns.

The club, which is a part of the Swedish Astronomical Society (1300 members), has got about 85 members. The biggest problem of the club is, that it has no meeting room of its own. However, the club will in a few years get one half of the old observatory building for a lecture hall and a museum.

The club is collaborating with the astronomical club of Djursholm (near Stockholm). This club is getting a very good support from the community and has recently got a 32 cm Newton/Cassegrain telescope. Its 20 cm Maksutow support tube is movable and used at expeditions to darker, more suitable places in Sweden and in the Spanish island Mallorca, where the centre of the Milky Way can be seen much better than in Sweden.

Among the activities of the club in Stockholm there are, besides readings, excursions to Stockholm's Observatory, the 135 cm Schmidt-telescope at Kvistaberg (30 km to the west of Stockholm), a planetarium at a marine school, meteor counting and stereo photography expeditions. However, the weather in Stockholm may be bad, especially when meteor showers are occurring.

Once a year, in December, the club has a popular knowledge test. The winner of the last two years is 19 year old Mikael Jargelius.

In October 15-17, 1971, the club arranged the 5th Scandinavian amateur congress. About 100 amateurs from Denmark, Finland, Norway and Sweden met in Stockholm for two days of hard work with about 20 lectures and 4 excursions to observatories. The congress was covered by the TV-news, the radio and the morning newspapers of Stockholm.

Mats Lundblad

ASTRONOMICAL OBSERVATIONS IN "THE LAND OF THE MIDNIGHT SUN"

Since Sweden is situated far to the north, amateur astronomy is different in Sweden compared to the more southern countries. The most northern point of Sweden, Treriksröset, is situated about 280 km north of the arctic circle. In northern Sweden the sun never sets for about two months in summer. Kebnekaise, the highest mountain in Sweden (2111 m) and easy climbable from the famous walking way, the "King's Path", is situated 150 km north of the arctic circle and has "midnight sun" from 23/5 till 21/7. In the winter, however, people in for instance the town Kiruna wo'nt see the sun for months.

In Stockholm, at latitude $59^{\circ} 21'$, astronomical observations are difficult from about May 15 till July 31. It's no use trying photographic or nebular observations because

of the light sky. It is, however, possible to observe variable stars with a magnitude brighter than 10^m with a $2\frac{1}{2}$ inch refractor. You have to use high magnification (100-150 X instead of normal 25 - 50 X) in order to reduce the relative darkness of the sky. You have to be very patient. It is suitable to have a dark sheet of paper around the ocular in order not to let background light reach the eye.

In southern Sweden the nights in June are much darker than in Stockholm. At Lund (near Malmö), $3^{\circ} 39'$ south of Stockholm, the sky is darker in the midsummer night than it is in Stockholm one month earlier or later.

Naturally, observations of the bright planets, the moon and the sun can be made even if the sky is rather light. A planet in opposition in summer has a very low declination, about -23° . The highest point a planet may reach above the horizon is equal to the observing place's distance to the north pole (about 30° for Stockholm) plus the planet's declination. This means, that a planet is never higher than about 10° above the horizon in summer nights. Since close oppositions of the planet Mars always are occurring in early autumn, Sweden is not a good country for friends of Mars.

In Stockholm, the inclination between the horizon and the sky equator is 30° (in the west and in the east). The angle between the ecliptica and the sky equator is 23° . This means, that the angle between the horizon and the ecliptica is varying between 7° and 53° in Stockholm. Because of this, the planet Mercury can be seen with the naked eye only in spring evenings and autumn mornings. The same effect is valid for the zodiacal light and the crescent moon.

In the vicinity of Stockholm, August nights are often wonderful for observations. Just in time for the great meteor shower, the Perseids, the sky has become almost quite dark (except in the northern part of the sky). The stars are twinkling wonderful in the country and the air is fresh and not cold.

In late August, when the nights still are rather short, you can see Orion rise above the morning fog and maybe see its brightest stars mirrored in a quiet lake just before dawn.

In September many nights may be clear and it is not yet cold, but in October and November "autumn weather often dominates. Sometimes there may be weeks between clear nights.

In winter the sky is often very clear and the sky is very beautiful when the star lights are reflected in the snow. However, the temperature is falling quickly in the night and you have to spend time to dress yourself before observing. A temperature of -20°C is not uncommon, but other winter nights may be warm, about 0°C .

There may be good nights in april, but just after the 1st of May the nights are quickly getting lighter. If you want to see the interesting constellations Ophiuchus, northern Scorpius and Sagittarius, you almost need a binocular because of the light sky.

In Stockholm you can only see stars north of the declination -30° . Antares can almost reach the height of 5° above the horizon, Fomalhaut only $0^{\circ} 46'$, but the refraction of the atmosphere is helping it $0^{\circ} 27'$. I have succeeded in seeing Fomalhaut with a binocular (7x50) from a balcony of the roof of a common house just north of the centre of Stockholm. The three lower stars in Canis Major may be seen in the same way.

Now I have to mention something good about Sweden. You may see very beautiful and strange auroras. Northern Sweden is situated along the path of maximum of auroras. Usually auroras may be seen here more than one hundred nights each year. In Stockholm, the statistic is saying, that auroras are occurring in almost 20 nights and in Malmö about 10 nights each year. In southern Europe there is usually only one aurora in ten years. In northern Sweden, an aurora often covers the whole sky, in Stockholm it usually stretches from the northern horizon halfway up to the zenith.

You are welcome to the north of Sweden in summer in order to see the midnight sun, or in winter to see beautiful auroras. A return ticket for a comfortable Swedish train from Malmö to Kiruna (1862 km) is 312 Swedish crowns, but you may get holiday-, family- or 67 years-reduction. The cost for a car journey the same way is about 1500 kr. But do not forget clothes in winter. In summer northern Sweden often has warmer temperatures than southern Europe.

Mats Lundblad

