

The Sunset Gazette

Serving the Tri-Cities since 1975

Volume 10, Issue 2

October, 2012



Meeting information

Meetings are generally in the theater in the Delta College Planetarium in Bay City. The meetings will usually be on the 2nd Friday of each month at 7:00 PM. Watch the newsletter for changes in dates and times. Membership is not required to participate in meetings and activities. See last Page for this month's meeting site.

Membership Information

Our club has switched to e-mailing our newsletters. For those wishing to receive a hard copy mailed an additional dues of \$10.00 per year is required.

New Membership Rates:

5\$ per Year

Treasurer's address for renewals and subscriptions:

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The Nebra Sky Disk - The oldest portrayal of the Night Sky

This is the second and final part about the discovery of the Nebra Sky Disk which is to date the oldest portrayal of the night sky and the cosmos currently known to man.

In the final installment of this little series we will talk about the astronomical interpretation of the Sky Disk and its usage by the people of the Bronze Age which is still under discussion.

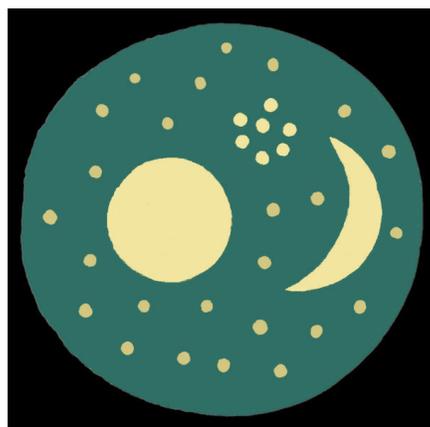
First phase (see picture below): According to Wolfhard Schlosser, Professor for Astronomy at the Ruhr University Bochum, the 7 stars most probably symbolize the Pleiades which belong to the constellation of Taurus. The residual 25 stars cannot

be astronomically assigned and are seen as decorative elements. The large circular disk was



The Nebra Sky Disk, ca 1600 BC.

Source: Wikipedia



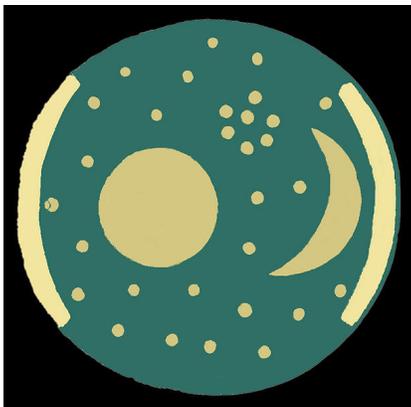
Above **1st Phase**: Left the full Moon, right the thin crescent waxing Moon, in between above the Pleiades. Source: Wikipedia

first interpreted as the Sun but is now seen as the full Moon and the ark as waxing crescent Moon. The Moon and the Pleiades symbolize two dates of visibility of the Pleiades at the western horizon. According to Schlosser the Pleiades at the most likely time of the usage of the disk (1600 BC) had their acronychal setting at dusk on March 10, and their heliacal setting on October 17. (**Acronychal**: Astronomical event which takes place at dusk — e.g. when a star, planet etc. is still visible with your bare eyes when it sets at dusk at the western horizon or when it just becomes visible rising at the eastern horizon. **Heliacal**: Astronomical event which takes place at dawn: occurs when a star, planet etc first becomes visible above the eastern horizon for a brief moment just before sunrise, after a period of time when it had not been visible.)

It has to be noted that the exact times given by Schlosser for the settings of the Pleiades have been disputed in the scientific literature: due to meteorological and viewing conditions the settings were observed at different days with a variation of ca 6 days. At the March date the Moon was in conjunction with the Pleiades and would be seen as a thin waxing crescent shortly after New Moon. At the October date the Moon would be a Full Moon when in conjunction with the Pleiades. According to this interpretation the Sky Disc could have been a memorizing tool to determine the right time to prepare the fields for the saw in spring and the harvest in fall.

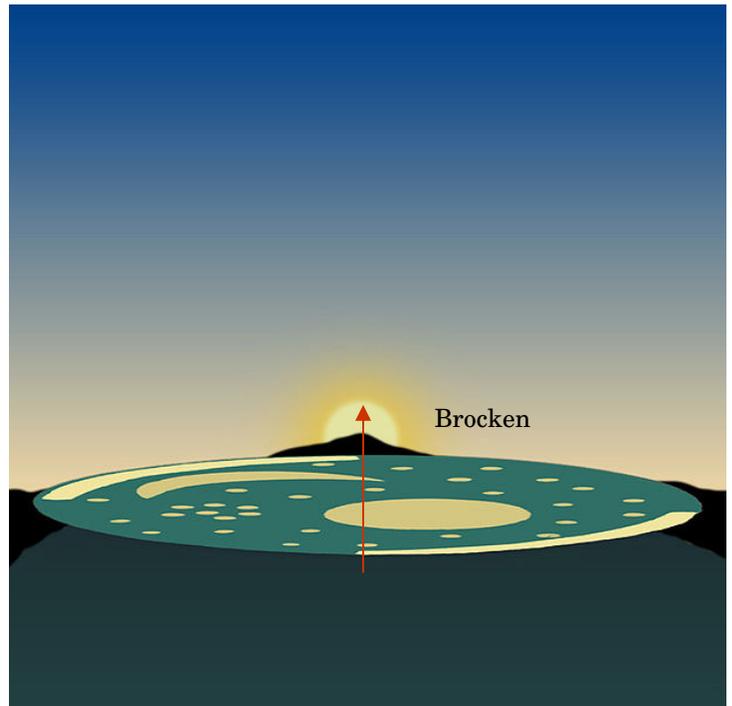
A different interpretation was brought forward in 2006 by Rahlf Hansen, astronomer at the planetarium of Hamburg. According to him the Sky disc is an a Bronze Age attempt to harmonize the Moon Year (354 days) with the Sun Year (365 days). The knowledge woven into the making of the Sky disc would have been an early Bronze Age equivalent besides the Babylonian and Egyptian leap year.

Second Phase (see picture below): The two golden arcs on the opposite side of the disk (only one of them remained) span an

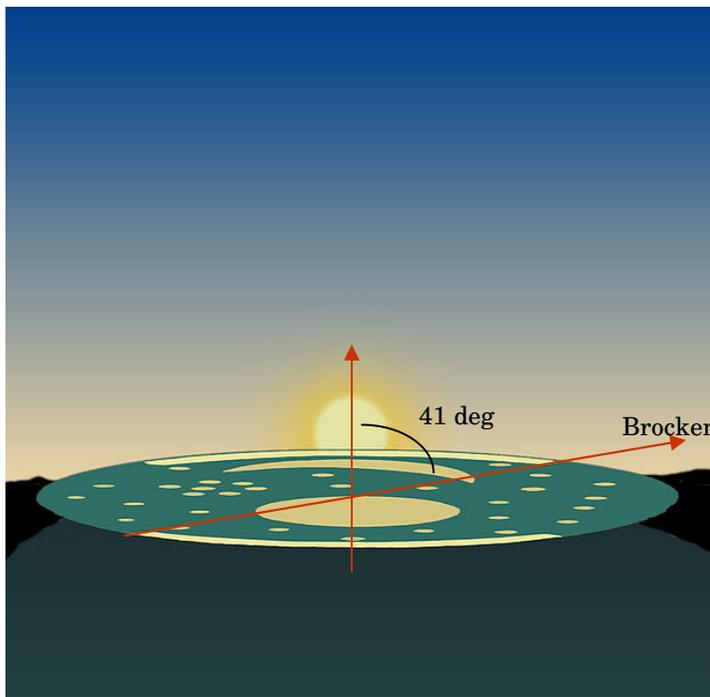


angle of 82° , which is exactly the angle between the positions of sunset at summer and winter solstice at the latitude of the Mittelberg (51°N). The disk could apparently also be used as a calendar to follow the Sun year: To do that the person had to

2nd Phase: Two arcs were added for sunrise and sunset. Some of the stars were covered or moved. Source: Wikipedia

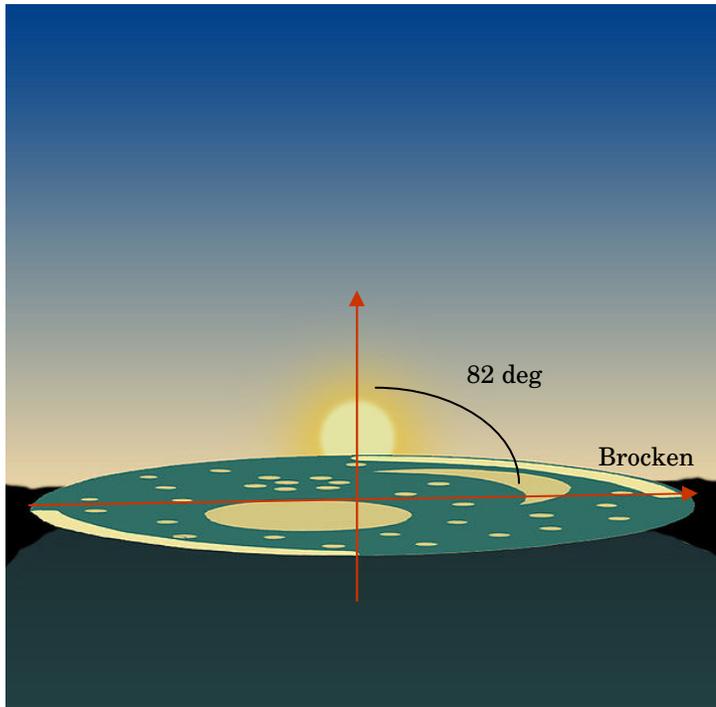


Above: Summer Solstice: Adjustment of the disk by positioning from Mittelberg to the Brocken at sunset. Source: Wikipedia



stand on the Mittelberg and hold the disk horizontal and positioned in a way that a virtual line was drawn from the upper end of the left arc to the lower end of the right arc to the mountain top of the Brocken, a famous mountain ca 53 miles away. (See picture above). Seen from the Mittelberg during the summer's solstice the Sun sets behind the Brocken.

Left: Onset of Spring and Fall: This would be the view in the direction of sunrise at equinox. The Sun rises 41 deg further to south - the positioning of the disc stays unchanged. Source: Wikipedia



Left Winter Solstice: The sunrise has reached its furthestmost southerly point and is now 82 deg left to its most northerly point - the positioning to the Brocken is unchanged. Source: Wikipedia

The assumption is that the right arc symbolizes the western sunset due to its vicinity to the crescent Moon which is lighted by the setting Sun during this constellation when the disc is held this way. Of course there is no final assurance that the disk was indeed used to determine the summer solstices.

Third Phase: The feathered golden arch which was added in the third phase is often seen as a bark or "sun boat" known from Egypt or Minoic but also known from Scandinavian im-



3rd Phase: The "sun boat" was added. Source: Wikipedia

ages. The short indentations (the "feathers") in the bronze disk which surround the arc are interpreted as row of rudders. The arc probably had no calendar function but symbolized the crossing of the Sun during the night from west to east to rise again in the morning.

In the **fourth phase** holes were punched into the disk around its rim. The exact purpose is unknown - the disk may have been used in cultic rituals and needed permanent fixation of some sort.



Right: 4th Phase: Today's state of the Sky Disk. As you can see the full Moon was amended by a piece of gold sheet which was later found during a second excavation campaign of the burying site. The piece perfectly matched the missing area which greatly strengthened the authenticity of the Sky Disk. Source: Wikipedia

The scientist conducting these investigations are now convinced that the Nebra Sky Disk was not manufactured in the eastern Mediterranean and then somehow found its way to middle Germany but that the disk was clearly manufactured around 1600 BC in Middle Europe. That would indeed make the Nebra Sky Disk the oldest concrete depiction of the night sky and cosmos in human history and even predate Egyptian portrayals of the night sky by about 200 years.

The next issue of the SAS newsletter will see the start of a new series: "Astronomy at Birr Castle" which covers the development construction and science undertaken by the largest telescope of the 19th century.

SUNSET ASTRONOMICAL SOCIETY
THE SUNSET GAZETTE
SERVING THE TRI- CITIES SINCE 1975



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This issue can be accessed in color on the website of the SAS!!!

<http://www.sunsetastronomicalsociety.com>

SAS Meeting

Start: 7:00 PM

Friday, Oct 12th, 2012

Delta Planetarium

Welcome members and guests

New and old business

Club Business

Treasure report

Refreshments Break

Presentation:

**If clear we will observe on
the observation deck.**

What's up in the Sky

Oct 8: **Third Quarter Moon**

Oct 12 Dawn: Venus shines 6 to 7 deg left of the waning crescent Moon.

Oct 12 Dawn: Venus can be found west of the waning crescent Moon.

Oct 13-27 Dawn: Look to the east 120 to 80 min before sunrise for the zodiacal light, which is in the shape of a tall, broad, rightward leaning pyramid of light. Venus can be found direct on it axis.

Oct 14 Dawn: A very thin crescent Moon can be found with binoculars hanging low in the east stating 45 min before sunrise.

Oct 15 : **New Moon**

Oct 16 Dusk: Binoculars needed: Watch out for Mercury and the very thin crescent Moon very low in west-southwest shortly after sunset.

Oct 17,18 Dusk: Mars and Antares are passed by the waxing crescent Moon low in the south west.

Oct 22: **First Quarter Moon**

Oct 18-22 Dusk: Mars passes a few degrees above Antares low in southwest ca 45 to 90 min after sunset.

Oct 20-22 Predawn: Excellent conditions for the Orionid meteor shower which radiate from the direction of Orion's club.

Oct 29: **Full Moon**

Nov 1 Evening: Jupiter can be found close to above the waning gibbous Moon.

Nov 4: **Daylight saving time ends at 2 a.m. for most of U.S. and Canada.**

UPCOMING EVENTS