Application for Designation as

International Dark Sky Community

Møn and Nyord

Contents

Cover Photos

Front cover: *Window to the Universe. Møn and Nyord provides an window to the Universe in an World with everincreasing light pollution. Photo Credit: Tom Axelsen*
Back cover: *Zodiacal light. From Møn the zodical ligth are obvious during spring nights and fall mornings. Photo Credit: Tom Axelsen*

Section 1

VORDINGBORG KOMMUNE

Valdemarsgade 43
Postboks 200
4760 Vordingborg
Tlf. 55 36 36 36
www.vordingborg.dk

Sagsbehandler:
Martin Nilsson
D. 1.11.2016

Forword by Vordingborg Municipality

Dark Sky
There is support for Dark Sky from political quarters.

We have recently been designated by the national tourism unit Danish Coastal and Nature Tourism as one of just four national projects that make up the master plan of the unit's work in the field of destination development.

Together with the work to become a UNESCO biosphere reserve, Camønoen and the projects that are under way at Klintholm harbour to transform the town and hopefully establish a service port for Kriegers Flak, the future is looking brighter for Møn than it was just a few years ago.

The Dark Sky project is of great importance to the development of Vordingborg Municipality. The starry sky is a wonderful history book of myths and legends, and part of our identity and culture.

Due to light pollution from major towns and cities, there are now only a few places where you can see the Milky Way – and Møn is one of them. Here, the Milky Way is viewed as a large, luminous band of stars stretching from horizon to horizon on late summer nights and autumn evenings. The experience of the many thousands of twinkling stars is the very reason we have worked so hard to get Møn and Nyord certified as a Dark Sky Park.

Things are progressing well, and the first municipal institution has been Dark Sky certified.

It is my firm belief that Dark Sky is a highly unique project – a project that will put us on the map once again.

It has been an exciting process thus far, involving many initiatives such as guided tours and events. The magnificent concert in Klintholm, which kicked it all off, is something that we will remember for a long time to come. It was a truly fantastic evening, which shows that we can do things when we put our minds to it.

Dark Sky itself has given us a great publicity and a lot of press attention.

None of the work so far would have been possible without the support of a group

of passionate people. Their visions have set goals for the community and generated commitment with regard to the Vordingborg Municipality of the future.

In the light of globalisation, it is a challenge to create a local identity based on our values. Dark Sky is an example of this. Format and quality are the starting point, and the ambition is to strengthen the local identity. I hope that we can enjoy and be proud to present a new beacon in Denmark in the form of Dark Sky, and contribute to the realisation of our shared visions.

Yours sincerely

Asger Diness Andersen
Chairman of the Business Committee
Vordingborg Municipality

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Section 2

Summary

Two Danish islands, Møn and Nyord, are applying to join the International Dark Sky Community. Some areas on Østmøn (East Møn) and Nyord are excepted as they will be included in a separate application for International Dark Sky Park status.

Both islands are part of Vordingborg Municipality. A total of 9,400 people live on the islands. Nyord is is bridge-linked to Møn, whereas Møn is linked to Zealand via a bridge and causeways. A population of 2.2 million lives within a two-hour drive.

Measurements show that Møn and Nyord have outstanding dark skies with minimal light pollution. The best values in March and April reach 21.96 $mag./arcsec^2$, although values in the range 21.80-21.85 $mag./arcsec^2$ are more typical.

Street lighting has been reviewed and 77% of street lamps currently meet the full cutoff (FCO) requirement. Of the remaining lamps, 108 of the "worst offenders" will be replaced by FCO and Color-Corrected Temperature bulbs at 3,000 K in 2017.

Vordingborg Municipality owns and manages 29 addresses on Møn and Nyord, at which outdoor lighting will be adapted in 2017 to meet Light Management Plan requirements.

The project and information work was officially launched with a concert on Klintholm harbor. The event swamped the town and harbor. There were almost 3,000 visitors. The concert succeeded in searing Dark Sky Møn and Nyord into the hearts and minds of the local people. More informative meetings about light pollution have also been held. More than 220 people attended.

The Local Certification Program has succeeded in involving almost 50% of hotels and other accommodations offered on Møn and Nyord, which means that a message about preserving darkness and the night sky can also be expected to reach more than 250,000 tourists who visit Møn and Nyord each year.

Local ideas are popping up more frequently. It is obvious that the local community in generally has taken the idea of preserving darkness and the night sky to heart. Their ideas include the foundation of a publicly financed observatory run by volunteers, local products (such as schnapps, ice-cream and crotchet patterns) and decorating the main street in Stege with planters inspired by Dark Sky.

International Dark-Sky Association
IDA Board of Directors
3223 N. First Avenue
Tucson Arizona 85719
USA

Møn, November 25, 2016

Nomination of the islands Møn and Nyord as International Dark Sky Community

Dear IDA Board of Directors,

I would like to announce the nomination of the islands Møn and Nyord in Denmark as an International Dark Sky Community.

In 2010 I moved to Møn and noticed the exceptional dark sky, the best I had seen in Denmark. In 2011 an article in Sky & Telescope inspired me to start developing the project. The project took for earnest off in May 2013 when I made contact with a group of enterprise owners (Bed & Breakfast), a group which had already recognized the exceptional starry nights of Møn as an asset. Together we developed the idea further and in November 2013 the Municipality of Vordingborg was contacted which was positive and wanted to support the development of the Dark Sky Community. The official start of the project was in April 2014.

The Vordingborg Municipality and the Working Group of Dark Sky Møn and Nyord have worked close together the last two years:

- Bringing public awareness of the loss of the night , the issues of light pollution to people and enterprises at the islands through info meetings and press coverage.
- Developing a Local Certification Program for Enterprises and Associations which have converted their outdoor lighting to be Dark Sky Friendly using Full-Cut off light fittings and light sources with a Color Corrected Temperatur of max 3,000K, 2,100 or 2,700K are more typical. Close to 50% of the Accommodations at Møn and Nyord have adapted the Local Certification Program.
- A Dark Sky News paper has been issued the last three years. A total of 15,000 news paper have been distributed to local enterprises, tourist info boots, dark sky events and other places where people and tourists comes. The feed-back about the news papers has been very positive.
- A Light Management Program has been developed and Vordingborg Municipality has taken this program to heart, and will use it at the islands, when new outdoor lighting is installed or old are refurbished.
- A survey of the public street lighting, a total of 1,236 street lights, showed that 77% of the light fittings fulfill the requirement of full-cut off. 20% fulfill the requirement of CCT of max 3,000K. Thou the number of light sources with a CCT of 3,000K will increase, as any refurbishment will be with LED of 3,000K.

- Local initiatives using the idea of protecting the Night Sky and use this as a brand for their products is ever increasing. The ideas spans from coffee, snaps, ice cream to a new observatory and then I have for sure forgotten some.
- Night Sky Brightness measurements have been made with SQM-L instruments from several locations in the Community in the spring of 2015 and 2016. The measurements shows an exceptional night sky quality with values between 21.79 and 21.92 mag/arcsec^2, well within "gold" tier.
- A specialty of this International Dark Sky Community is that it will serve as "buffer zone" for a International Dark Sky Park. A sort of Dark Sky Reserve in miniature. Within the borders of the International Dark Sky Community are several areas with protected nature owned by the Danish State and the National Museum of Denmark. These areas, compared with the Community, provides an even grander experience of the night sky as any light from the Community area are shielded by woods and hills. These areas are proposed as International Dark Sky Park in a separate Application.

In Denmark any debate about light pollution have been close to nonexistent, only on occasions appearing within the amateur astronomer community, and very rarely in any other media. Thanks to this project the issue of light pollution and especially the loss of the star filled night sky have started to appear in national news papers, radio and TV. Which, as seen with the scope of protecting the night sky and lessen the light pollution, is a very important development.

The interest in the project among the local population, enterprises and NGO's have surprised the Working group of Dark Sky Møn and Nyord and Vordingborg Municipality as it surpassed any expectation we had when the project started. Furthermore, the feed-back from the afore mentioned groups have only been positive, which shows that the idea of protection the night environment and the starry sky have been adopted by the groups and the unique quality of the night sky gives people a proudness of their home-island. A proudness which will ensure future support of both the International Dark Sky Communitry and the International Dark Sky Park.

I highly recommend that the IDA Board of Directors grant the islands Møn and Nyord the title of International Dark Sky Community Møn and Nyord.

Tom Axel

Tom Axelsen

MSc. E.E.,
Chairman of Astronomical Society of Southern Zealand,
Member of International Dark Sky Association

Bringtoftevej 2
4780 Stege, Denmark
ta@grib-stjernerne.dk

Section 4

Vision for the Project Dark Sky Møn and Nyord

THE vision for the work of the Dark Sky Møn and Nyord Project is as follows:

Purpose
Through Dark Sky to create new local development opportunities on Møn og Nyord that combine Dark Sky activities with environmental protection and business development initiatives. Business development shall flourish and interact with activities to protect dark skies, nature, cultural environments and active outdoor pursuits.

Vision
The vision is to preserve and enhance our dark skies and opportunities for specific outdoor and natural experiences at night, while promoting a sustainable economy.

Goal

- to improve education and guidance in and dissemination of night skies, natural and cultural-historical values and values associated with outdoor activities and
- to support sustainable development for the benefit of local people – including the business community.

Strategy
As part of the planning process, we will compile a strategy to include a catalog of specific initiatives and events. For each proposed initiative and event, we will evaluate the likelihood of its being realized. We will also investigate the instruments available to help realize the initiatives in question.

Where business development is concerned, there is potential especially in improving the quality of tourist facilities. With Dark Sky as an additional attraction in this area, we expect to welcome more visitors. It is important that more tourism supports the kind of development that will benefit the local community. Dark Sky is expected to have a number of positive consequences for development of Møn. We can create better conditions for tourism and better conditions for marketing local produce. There are also potential synergies regarding the

biosphere, which can be exploited to the benefit of sustainable development in this area.

Section 5

Letters of support

A series of information meeting were held regarding the future of Møn and Nyord as a Dark Sky Community and parts of the islands as a Dark Sky Park. Local people were invited to attend these meetings. Large organizations and other stakeholders in the area were invited to attend a separate information meeting in early June 2016.

At this meeting, time was allowed for questions. The organizations could ask about the Dark Sky initiative and its consequences. No negative questions or responses were recorded at this meeting. The pivotal question was how important a dark sky is and how best to preserve this resource while exploiting it commercially, primarily via tourism.

Several of the organizations have since sent letters of support and are backing the islands of Møn and Nyord's applications to join the Dark Sky Community and to become a Dark Sky Park. The letters of support are reproduced on the following pages, all of which have been translated into English (and printed opposite the original text).

NOTAT

REGION SJÆLLAND
– vi er til for dig

Til: Vordingborg Kommune

Fra: Region Sjælland – Regional Udvikling

Dato: 20. juni 2016

Brevid: 2986755

Regional Udvikling
Alléen 15
4180 Sorø

Tlf.: 70 15 50 00
Dir.tlf.

regionaludvikling
@regionsjaelland.dk
dajm@regionsjaelland.dk

www.regionsjaelland.dk

Letter of support

Støtte til Dark Sky Community og Dark Sky Park på Møn og Nyord

Vordingborg Kommune og en række interessenter ønsker at blive "Dark sky"-certificeret på Møn og Nyord. En Dark Sky-certificering gives af nonprofit-organisationen *International Dark-Sky Association*, som arbejder for at bevare nattemørket og bekæmpe lysforurening.

Udviklingsprojektet blev igangsat i 2013 og initiativtagerne har fået hjælp fra en bred kreds af foreninger, virksomheder og borgere mv., som deltager i projektet.

Region Sjælland er en af de fem danske regioner – bl.a. med ansvar for regional udvikling. Region Sjælland arbejder med sin regionale vækst- og udviklingsstrategi med attraktivitet som et gennemgående tema – og med en målsætning om at være en attraktiv region med en bæredygtig udvikling af kultur og natur, som danner rammen for kulturelle aktiviteter til gavn for både borgere og turister.

Projektet bidrager til målsætningen. Gennemførelsen af projektet vil betyde en ressourcebesparelse og give positive effekter for bæredygtig turisme i regionen.

Region Sjælland anbefaler derfor projektet og støtter etableringen af det første International Dark Sky Community og den første International Dark Sky Park i Danmark, på Møn og Nyord.

På vegne af Region Sjælland
Underskrift

David Jens Meinke
Udviklingschef
Regional Udvikling – Vækst og Innovation

Memorandum

To: Vordingborg Municipality
From: Region Zealand - Regional Udvikling

Letter of Support

In support of Dark Sky Community and Dark Sky Park on Møn and Nyord

Vordingborg Municipality and a number of stakeholders wish to be granted a "Dark Sky" certificate on Møn and Nyord. Dark sky certification is granted by the International Dark Sky Association, a non-profit organization that strives to preserve dark skies and combats light pollution.

The development project was launched in 2013 and the group behind this initiative has received help from a wide circle of associations, enterprises and local citizens, who are active participants in the project.

Region Zealand is one of five regional authorities in Denmark. Our responsibilities include regional development. Region Zealand has a regional strategy for growth and development, in which attractiveness is a recurrent theme. We aim to be an attractive region that maintains sustainable development of its cultural and natural resources as these form a backdrop for cultural activities that benefit the local community and visitors to the area.

The project in question makes a positive contribution to regional goals. Its success will preserve resources and benefit sustainable tourism in the region.

Region Zealand can therefore recommend the project and supports the establishment of Denmark's first International Dark Sky Community and the first International Dark Sky Park in Denmark on Møn and Nyord.

Best Regards

David Jens Meiner
Development Manager

KØBENHAVNS UNIVERSITET
DET NATUR- OG BIOVIDENSKABELIGE FAKULTET

Vordingborg Kommune
Valdemarsgade 43
4760 Vordingborg

Støtte til Dark Sky Community og Dark Sky Park på Møn og Nyord

27. JUNI 2016

JOHAN PETER ULDALL FYNBO
PROFESSOR MSO
NIELS BOHR INSTITUTET
JULIANE MARIES VEJ 30
TELEFON 28755983
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SAMT FORMAND FOR ASTRONOMISK SELSKAB
ASTRONOMISK.DK

Min far var forpagter af et lille landbrug i en landsby i trekantsområdet. Oplevelsen af den mørke nattehimmel var en central del af min barndom. Når vi står under den stjernedækkede himmel på en stjerneklar nat uden måneskin, så drages tankerne mod det store Univers og vi tænker på tidens fylde, uendelighed, liv på andre kloder og hvem vi selv er.

P.g.a. den stigende lysforurening er det færre og færre forundt at få disse eksistentielle oplevelser. For få uger siden kom det f.eks. frem, at mere end en tredjedel af jordens befolkning ikke har mulighed for at se Mælkevejen på himlen. Spørger man folk på gaden vil de færreste vide hvad Mælkevejen er endsige have set den selv. Af denne grund er bestræbelser på at skabe "Dark Sky" parker overordentlig prisværdigt. På samme måde som vi skaber naturparker, hvor vi freder truede landskabsformer eller dyrearter, så bør vi også skabe sikrede områder, hvor vi stadig kan nyde den mørke nattehimmel og studere og nyde lyset fra verdensrummet. Erfaringer fra andre dele af Europa og USA viser at sådanne områder kan have store turistmæssig værdi – særligt på tider af året, hvor der ikke ellers kommer turister.

Af disse årsager giver jeg på egne vegne og på vegne af Astronomisk Selskab Dark Sky Park på Møn og Nyord min uforbeholdne og varmeste anbefaling.

Venlig Hilsen,

Copenhagen University
Faculty of Science

To: Vordingborg Kommune
Valdemarsgade 43
4760 Vordingborg

In support of Dark Sky Community and Dark Sky Park on Møn and Nyord

My father was a tenant farmer. He ran a small farm in a rural community in East Jutland. The night skies were a very important feature of my childhood. When we gaze at a starry sky on a clear night before the moon comes up, our thoughts drift inevitably to the universe. We muse about time, eternity, life on other planets and who we are in the great scheme of things.

Due to increasing light pollution, increasingly fewer of us are blessed with existential experiences of this kind. A few weeks ago, we learned that more than one-third of the world population is unable to see the Milky Way. If you ask people on the street, very few will know what the Milky Way is, let alone have seen it for themselves. For these reasons, every effort to create s Dark Sky Park is highly commendable. As we create nature parks in order to preserve threatened landscapes and species, I believe we should create preservation areas, in which we can still enjoy the dark skies, and study and revel in light coming from space. Experience from other parts of Europe and the US indicate that such areas can be of value to tourism, especially at times of the year when tourists are otherwise thin on the ground.

For these reasons, for my own part and on behalf of the Astronomisk Selskab (Danish Astronomy Society), I can wholeheartedly recommend the establishment of a Dark Sky Park on Møn and Nyord.

Yours faithfully,

Johan Fynbo

Stege og Omegns Lokalråd
27. juni 2016

Letter of support

Vordingborg Kommune
Valdemarsgade 43
4760 Vordingborg

Støtte til Dark Sky Community og Dark Sky Park på Møn og Nyord

Vordingborg Kommune og en række interessenter arbejder på, at blive Dark sky certificeret på Møn og Nyord. Udviklingsprojektet blev igangsat i 2013 og initiativtagerne har fået hjælp fra en bred kreds af foreninger, virksomheder og borgere mv, som deltager i projektet. Der er således tale om en velfunderet proces.

Stege og Omegns Lokalråd, som omfatter alle borgere bosat indenfor lokalrådets område, har til formål at varetage og være behjælpelig overfor borgere i området, vedrørende behov og ønsker om indflydelse på udviklingen af lokalområdet. I den sammenhæng skal det ses, at Lokalrådet beskæftiger sig med ønsket om certificering af Møn og Nyord som Dark Sky Community og Dark Sky Park Park.

Projektet bidrager til, at vi handler mere miljøvenligt og projektet er til fordel for naturen og miljøet og ikke mindst muligheden for at nyde stjerner på nattehimlen. Endvidere har projektet en række positive effekter for den bæredygtige turisme i kommunen.

Dette er baggrunden for, at vi kan give vores anbefaling af og fulde støtte til at skabe den første Internationale Dark Sky Community og den første International Dark Sky Park i Danmark, på Møn og Nyord. Vi støtter op om projektet og vil fremover, indenfor de rammer, som vi råder over, forsætte med at støtte projektet.

På vegne af
Stege og Omegns Lokalråd

Camilla Bøggild
formand

Stege og Omegns Lokalråd / co. Camilla Bøggild – Søndersognsvej 101 Svendsmarke - 4780 Stege
www.stegeogomegn.dk kontakt@stegeogomegn.dk

Letter of Support

To: Vordingborg Kommune
Valdemarsgade 43
4760 Vordingborg

In support of Dark Sky Community and Dark Sky Park on Møn and

Nyord

Vordingborg Municipality and a number of stakeholders wish to be granted a "Dark Sky" certificate on Møn and Nyord. The development project was launched in 2013 and the group behind this initiative has received help from a wide circle of associations, enterprises and local citizens, who are active participants in the project. The process is therefore well-established.

Stege og Omegns Lokalråd (The Community Council for Stege and its environs) is a committee that represents people living in our area. The council's objective is to protect and act on behalf of local citizens in respect of their wishes and needs to influence local development. It is in this context that the committee has become involved in the issue of the certification of Møn and Nyord as a Dark Sky Community and Dark Sky Park.

The project will help to ensure that our actions are more environmentally friendly. The project itself is beneficial to the natural environment and, not least, it encourages people to enjoy the night sky. Moreover, the project will have a number of positive effects on sustainable tourism in the municipality.

For these reasons, we can recommend and give our unconditional support to the creation of Denmark's first International Dark Sky Community and the first International Dark Sky Park in Denmark on Møn and Nyord. We support the project and will in future continue to give our support within the framework that is our mandate.

On behalf of Community Council for Stege and its environs

Camilla Bøggild

Vordingborg Erhverv A/S
Marienbergvej 132
4760 Vordingborg
Tlf. +45 55 34 03 93
info@vordingborgerhverv.dk
www.vordingborgerhverv.dk
CVR 35857133

Vordingborg Kommune
Valdemarsgade 43
4760 Vordingborg

Dato 27. juni 2016

Letter of support

Støtte til Dark Sky Community og Dark Sky Park på Møn og Nyord

Vordingborg Kommune og en række interessenter arbejder på, at blive Dark sky certificeret på Møn og Nyord. Udviklingsprojektet blev igangsat i 2013 og initiativtagene har fået hjælp fra en bred kreds af foreninger, virksomheder og borgere mv, som deltager i projektet. Der er således tale om en velfunderet proces.

Vordingborg Erhverv A/S udvikler og driver aktiviteter og projekter som understøtter erhvervslivet og fremmer vækst og erhvervsudvikling i Vordingborg Kommune.

Projektet bidrager til, at vi handler mere miljøvenligt og projektet er til fordel for naturen og miljøet og ikke mindst muligheden for at nyde stjerner på nattehimlen. Endvidere har projektet en række positive effekter for den bæredygtige turisme i kommunen.

Dette er baggrunden for, at vi kan give vores anbefaling af og fulde støtte til at skabe den første International Dark Sky Community og den første International Dark Sky Park i Danmark, på Møn og Nyord. Vi støtter op om projektet og vil fremover, indenfor de rammer som vi råder over, forsætte med at støtte projektet.

Med venlig hilsen

Vordingborg Erhverv A/S

Susanne Kruse Sørensen

Direktør

To: Vordingborg Kommune
Valdemarsgade 43
4760 Vordingborg

Letter of Support

In support of Dark Sky Community and Dark Sky Park on Møn and Nyord

Vordingborg Municipality and a number of stakeholders wish to be granted a "Dark Sky" certificate on Møn and Nyord. The development project was launched in 2013 and the group behind this initiative has received help from a wide circle of associations, enterprises and local citizens, who are active participants in the project. The process is therefore well-established.

Vordingborg Erhverv A/S (Vordingborg Chamber of Commerce) develops and runs activities and projects in support of the business community and to promote growth and business development in Vordingborg Municipality.

The project will help to ensure that our actions are more environmentally friendly. The project itself is beneficial to the natural environment and, not least, it encourages people to enjoy the night sky. Moreover, the project will have a number of positive effects on sustainable tourism in the municipality.

For these reasons, we can recommend and give our unconditional support to the creation of Denmark's first International Dark Sky Community and the first International Dark Sky Park in Denmark on Møn and Nyord. We support the project and will in future continue to give our support within the framework that is our mandate.

Yours faithfully Vordingborg Erhverv A/S

Susanne Kruse Sørensen
Director

Støtte til Dark Sky Community og Dark Sky Park på Møn og Nyord

Vordingborg Kommune og en række interessenter arbejder på at blive Dark sky certificeret på Møn og Nyord. Udviklingsprojektet blev igangsat i 2013, og initiativtagene har fået hjælp fra en bred kreds af foreninger, virksomheder og borgere mv, som deltager i projektet. Der er således tale om en velfunderet proces.

VisitSydsjælland-Møn er et væksthus for turismen. Med effektiv kommunikation og destinationsudvikling bidrager vi til at skabe ny vækst i turismen. VI fokuserer de kommende år på Sydsjællands tre største vækstudfordringer, nemlig, at øge antallet af kommercielle overnatninger, at etablere et internationalt brand samt destinationsudvikling og service.

Projektet bidrager til, at vi handler mere miljøvenligt, og projektet er til fordel for naturen og miljøet og fokuserer ikke mindst muligheden for at nyde stjerner på nattehimlen. Endvidere har projektet en række positive effekter for den bæredygtige turisme i kommunen.

Dette er baggrunden for, at vi kan give vores anbefaling af og fulde støtte til at skabe den første International Dark Sky Community og den første International Dark Sky Park i Danmark, på Møn og Nyord. Vi støtter op om projektet og vil fremover, indenfor de rammer som vi råder over, forsætte med at støtte projektet.

På vegne af VisitSydsjælland-Møn

Ida Lund Winther
Udviklingschef
VisitSydsjælland-Møn

SYDKYSTDANMARK
HER BEGYNDER HISTORIEN

VISITSYDSJÆLLAND-MØN
Kornerups Rådhus
Algade 97, 4760 Vordingborg
www.vism.dk

In support of Dark Sky Community and Dark Sky Park on Møn and Nyord

Vordingborg Municipality and a number of stakeholders wish to be granted a "Dark Sky" certificate on Møn and Nyord. The development project was launched in 2013 and the group behind this initiative has received help from a wide circle of associations, enterprises and local citizens, who are active participants in the project. The process is therefore well-established.

VisitSydsjælland-Møn is a tourism development center. By means of effective communication and destination development, we contribute to the growth of tourism in this area. We focus on South Zealand's biggest challenges, i.e. we seek to increase the number of business-related overnight stays, establish our area as an internationally recognized brand, and develop the destination and services.

The project will help to ensure that our actions are more environmentally friendly. The project itself is beneficial to the natural environment and, not least, it encourages people to enjoy the night sky. Moreover, the project will have a number of positive effects on sustainable tourism in the municipality.

For these reasons, we can recommend and give our unconditional support to the creation of Denmark's first International Dark Sky Community and the first International Dark Sky Park in Denmark on Møn and Nyord. We support the project and will in future continue to give our support within the framework that is our mandate.

On behalf of VisitSydsjælland-Møn

Ida Lund Winther
Development Manager
VisitSydsjælland-Møn

Letter of support

Vordingborg Kommune

Valdemarsgade 43

4760 Vordingborg

17 juli 2016

Støtte til Dark Sky Community og Dark Sky Park på Møn og Nyord

Vordingborg Kommune og en række interessenter arbejder på, at blive Dark sky certificeret på Møn og Nyord. Udviklingsprojektet blev igangsat i 2013 og initiativtagene har fået hjælp fra en bred kreds af foreninger, virksomheder og borgere mv, som deltager i projektet. Der er således tale om en velfunderet proces.

Vi en forening der driver et forsamlingshus, det vil sige at vi udlejer vores lokaler til fester med mere. Vi planlægger at afholde arrangere Dark Sky aftener.

Projektet bidrager til, at vi handler mere miljøvenligt og projektet er til fordel for naturen og miljøet og ikke mindst muligheden for at nyde stjerner på nattehimlen. Endvidere har projektet en række positive effekter for den bæredygtige turisme i kommunen.

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På vegne af Borre Forsamlingshus Klintevej 353 Borre

Torben Nielsen formand

Toftevænget 1, 4791 Borre tlf. 4046 2336

Torben Nielsen

Letter of Support

To: Vordingborg Kommune
Valdemarsgade 43
4760 Vordingborg

17. July 2016

In support of Dark Sky Community and Dark Sky Park on Møn and Nyord

Vordingborg Municipality and a number of stakeholders wish to be granted a "Dark Sky" certificate on Møn and Nyord. The development project was launched in 2013 and the group behind this initiative has received help from a wide circle of associations, enterprises and local citizens, who are active participants in the project. The process is therefore well-established.

We are an association that runs a local community center, i.e. we hire our rooms out for parties and other social gatherings. We plan to hold Dark Sky evenings.

The project will help to ensure that our actions are more environmentally friendly. The project itself is beneficial to the natural environment and, not least, it encourages people to enjoy the night sky. Moreover, the project will have a number of positive effects on sustainable tourism in the municipality.

For these reasons, we can recommend and give our unconditional support to the creation of Denmark's first International Dark Sky Community and the first International Dark Sky Park in Denmark on Møn and Nyord. We support the project and will in future continue to give our support within the framework that is our mandate.

On behalf of Borre Forsamlingshus (Community Center)

Torben Nielsen
Chairman

Museum Sydøstdanmark
Museum Southeast Denmark

Letter of support

Vordingborg Kommune
Valdemarsgade 43
4760 Vordingborg

22. juni 2016

Støtte til Dark Sky Community og Dark Sky Park på Møn og Nyord

Vordingborg Kommune og en række interessenter arbejder på, at blive Dark sky certificeret på Møn og Nyord. Udviklingsprojektet blev igangsat i 2013 og initiativtagene har fået hjælp fra en bred kreds af foreninger, virksomheder og borgere mv, som deltager i projektet. Der er således tale om en velfunderet proces som Museum Sydøstdanmark har støttet og fortsat ønsker at være en del af.

Museum Sydøstdanmark er et statsanerkendt kulturhistorisk museum som dækker kommunerne Vordingborg, Næstved, Køge, Faxe og Stevns. Museet har to museer på Møn: Møns Museum og Museumsgården ved Keldbylille og er projektejer for den nyetablerede natur- og kulturhistoriske vandrerute Camønoen.

Camønoen samarbejder allerede med Dark Sky projektet og har samme fokus hvad angår afledte effekter. Der etableres som et synligt resultat af samarbejdet et Dark Sky "observatorium" ved Gurkebakke på Østmøn i form af et shelter med kig til stjernerne.

Dark Sky bidrager som Camønoen til, at anvende natur og miljø fysisk og mentalhygiejnisk og ikke mindst muligheden for at nyde stjerner på nattehimlen. Endvidere har projektet en række positive effekter for miljø og natur og den bæredygtige turisme i kommunen.

Dette er baggrunden for, at vi kan give vores anbefaling af og fulde støtte til at skabe den første International Dark Sky Community og den første International Dark Sky Park i Danmark, på Møn og Nyord. Vi støtter op om projektet og vil fremover, indenfor de rammer som vi råder over, forsætte med at støtte projektet.

På vegne af Museum Sydøstdanmark

Keld Møller Hansen
Museumsdirektør

Museum Sydøstdanmark
Algade 97
DK - 4760 Vordingborg
t +45 2371 4108
kmh@museerne.dk

Museum South-East Denmark

Letter of Support

To: Vordingborg Kommune
Valdemarsgade 43
4760 Vordingborg

22. June 2016

In support of Dark Sky Community and Dark Sky Park on Møn and Nyord

Vordingborg Municipality and a number of stakeholders wish to be granted a "Dark Sky" certificate on Møn and Nyord. The development project was launched in 2013 and the group behind this initiative has received help from a wide circle of associations, enterprises and local citizens, who are active participants in the project. The process is therefore well-established. Museum Southeast Denmark has supported and intends in future to continue to support the project.

The museum is a state-registered cultural and historical museum, which covers five municipalities: Vordingborg, Næstved, Køge, Faxe and Stevns. The museum runs two museums on Møn: Møns Museum and Museumsgården at Keldbylille. We also own the new nature, culture and historical hiking trail, Camønoen.

Camønoen is already working with the Dark Sky project and has identical focus regarding the consequences. As a palpable result of this partnership, a Dark Sky "observatory" has been set up at Gurkebakken on East Møn. We have erected a shelter with a view of the stars.

Like Camønoen, Dark Sky will help to ensure that we use our natural environment for the benefit of our physical and mental health. Not least, we give people an opportunity to enjoy the night sky. Moreover, the project will have a number of positive effects on sustainable tourism in the municipality.

For these reasons, we can recommend and give our unconditional support to the creation of Denmark's first International Dark Sky Community and the first International Dark Sky Park in Denmark on Møn and Nyord. We support the project and will in future continue to give our support within the framework that is our mandate.

On behalf of Museum Southeast Denmark

Keld Møller Hansen
Director

Brorfelde Observatorium
Observator Gyldenkernes Vej 7
4340 Tølløse
Tlf. 72 36 39 00
E-mail brorfelde@holb.dk
www.brorfelde.dk

Tølløse den. 28. juli 2016

Støtte til Dark Sky Community og Dark Sky Park på Møn og Nyord

Vordingborg Kommune og en række interessenter arbejder på at blive Dark sky certificeret på Møn og Nyord. Udviklingsprojektet blev igangsat i 2013 og initiativtagene har fået hjælp fra en bred kreds af foreninger, virksomheder og borgere mv. som deltager i projektet. Der er således tale om en velfunderet proces.

Brorfelde Observatorium er et opdagelsescenter med afsæt i astronomiens forunderlige verden, hvor udforskningen af universets hemmeligheder bliver en håndgribelig, meningsfuld og sjov oplevelse. Områdets fredning ved Brorfelde Observatorium er omfattet af et fredet nattemørke. Dette giver unikke muligheder for at observere nattehimlen, uforstyrret af lysforurening. En Dark Sky certificering af Møn og Nyord kan være med til at skabe større opmærksomhed for mørkets betydning for vores kultur og natur samt være med til at skabe gunstige områder til observation af nattehimlen. Ligeledes må det forventes, at det vil give en langt højere og ønskværdig interesse og gejst for astronomi og general naturvidenskab for den brede befolkning.

Projektet bidrager til, at vi handler mere miljøvenligt og projektet er til fordel for naturen og miljøet og ikke mindst muligheden for at nyde stjerner på nattehimlen. Endvidere har projektet en række positive effekter for den bæredygtige turisme i kommunen.

Dette er baggrunden for, at vi kan give vores anbefaling af og fulde støtte til at skabe den første International Dark Sky Community og den første International Dark Sky Park i Danmark, på Møn og Nyord. Vi støtter op om projektet og vil fremover, indenfor de rammer som vi råder over, forsætte med at støtte projektet.

På vegne af Brorfelde Observatorium

Julie Bouchet
Leder ved Brorfelde Observatorium

OBSERVATOR GYLDENKERNES VEJ 7 DK 4340 TØLLØSE +45 72 36 39 00 BRORFELDE@HOLB.DK WWW.BRORFELDE.DK

Brorfelde Observatory

Tølløse, 28 July 2016

In support of Dark Sky Community and Dark Sky Park on Møn and Nyord

Vordingborg Municipality and a number of stakeholders wish to be granted a "Dark Sky" certificate on Møn and Nyord. The development project was launched in 2013 and the group behind this initiative has received help from a wide circle of associations, enterprises and local citizens, who are active participants in the project. The process is therefore well-established.

Brorfelde Observatory is a discovery center. We introduce visitors to the wonders of astronomy and do what we can to make discovering the universe's secrets palpable to our visitors. We hope to make their visit fun and meaningful. The preservation order on the area around Brorfelde Observatory includes preservation of dark skies, which means that we have unique opportunities to observe the night sky undisturbed by light pollution. A Dark Sky certification of Møn and Nyord may help to create greater awareness of the importance of darkness for our culture and nature and help to dedicate more areas to observation of the night sky. We can also expect Dark Sky certification to encourage much more of a desirable interest and enthusiasm for astronomy and science generally among the general public.

The project will help to ensure that our actions are more environmentally friendly. The project itself is beneficial to the natural environment and, not least, it encourages people to enjoy the night sky. Moreover, the project will have a number of positive effects on sustainable tourism in the municipality.

For these reasons, we can recommend and give our unconditional support to the creation of Denmark's first International Dark Sky Community and the first International Dark Sky Park in Denmark on Møn and Nyord. We support the project and will in future continue to give our support within the framework that is our mandate.

On behalf of Brorfelde Observatory

Julie Bouchet
Leader of Brorfelde Observatory

Letter of support

Geocenter Møns Klint A/S
Stengårdsvej 8
DK - 4791 Borre
T : +45 55 86 36 00
E : geocenter@moensklint.dk
CVR: 3007 2863
Bank: 6140 4072110
www.moensklint.dk

Vordingborg Kommune

Valdemarsgade 43

4760 Vordingborg

Møns Klint, den 16. August 2016

Støtte til Dark Sky Community og Dark Sky Park på Møn og Nyord

Vordingborg Kommune og en række interessenter arbejder på, at blive Dark sky certificeret på Møn og Nyord. Udviklingsprojektet blev igangsat i 2013 og initiativtagene har fået hjælp fra en bred kreds af foreninger, virksomheder og borgere mv, som deltager i projektet. Der er således tale om en velfunderet proces.

GeoCenter Møns Klint vil gerne støtte arbejdet med at gøre Møn og Nyord til Dark Sky Community. Vi er en organisation der formidler Naturen på Østmøn til områdets mange gæster. Vi har hvert år ca. 200.000 besøgende, hvoraf 65.000 betaler entré til vores udstillinger og 3D biograf. Vi er i fuld gang med at implementer DARK SKY anbefalingerne og har allerede ture med vores gæster, der formidler stjernehimlen.

Projektet bidrager til, at vi handler mere miljøvenligt og projektet er til fordel for naturen og miljøet og ikke mindst muligheden for at nyde stjerner på nattehimlen. Endvidere har projektet en række positive effekter for den bæredygtige turisme i kommunen.

Dette er baggrunden for, at vi kan give vores anbefaling af og fulde støtte til at skabe den første International Dark Sky Community og den første International Dark Sky Park i Danmark, på Møn og Nyord. Vi støtter op om projektet og vil fremover, indenfor de rammer som vi råder over, forsætte med at støtte projektet.

På vegne af GeoCenter Møns Klint

Nils Natorp
Direktør

Letter of Support

To: Vordingborg Kommune
Valdemarsgade 43
4760 Vordingborg

Møns Klint 16 August 2016

In support of Dark Sky Community and Dark Sky Park on Møn and Nyord

Vordingborg Municipality and a number of stakeholders wish to be granted a "Dark Sky" certificate on Møn and Nyord. The development project was launched in 2013 and the group behind this initiative has received help from a wide circle of associations, enterprises and local citizens, who are active participants in the project. The process is therefore well-established.

GeoCenter Møns Klint supports every effort to create a Dark Sky Community on Møn and Nyord. We are an organization that informs visitors to the area about the natural environment on East Møn. Each year we receive about 200,000 visitors, of which 65,000 pay to see our exhibitions and 3D movie theater. We are in full swing with implementation of the DARK SKY recommendations and already offer astronomy-oriented tours to our guests.

The project will help to ensure that our actions are more environmentally friendly. The project itself is beneficial to the natural environment and, not least, it encourages people to enjoy the night sky. Moreover, the project will have a number of positive effects on sustainable tourism in the municipality.

For these reasons, we can recommend and give our unconditional support to the creation of Denmark's first International Dark Sky Community and the first International Dark Sky Park in Denmark on Møn and Nyord. We support the project and will in future continue to give our support within the framework that is our mandate.

On behalf of GeoCenter Møns Klint.

Nils Natorp
Director

MØN SYDSJÆLLAND TURISTFORENING
Hejrevej 3
2720 Præstø

Letter of support

Vordingborg Kommune

Valdemarsgade 43

4760 Vordingborg

Møn, den 16. august 2016

Vedr. Støtte til Dark Sky Community og Dark Sky Park på Møn og Nyord

Vordingborg Kommune og en række interessenter arbejder på, at blive Dark sky certificeret på Møn og Nyord. Udviklingsprojektet blev igangsat i 2013 og initiativtagene har fået hjælp fra en bred kreds af foreninger, virksomheder og borgere mv, som deltager i projektet. Der er således tale om en velfunderet proces.

Vi i Møn Sydsjælland Turistforening er en organisation, der arbejder for at varetage turisterhvervets interesser lokalt og regionalt. Organisationen har godt 100 medlemmer som kommer fra hele Vordingborg Kommunes geografi. Vi vil godt støtte arbejdet med at gøre Møn og Nyord til Dark Sky Community.

Projektet bidrager til, at vi handler mere miljøvenligt og projektet er til fordel for naturen og miljøet og ikke mindst muligheden for at nyde stjerner på nattehimlen. Endvidere har projektet en række positive effekter for den bæredygtige turisme i kommunen.

Dette er baggrunden for, at vi kan give vores anbefaling af og fulde støtte til at skabe den første International Dark Sky Community og den første International Dark Sky Park i Danmark, på Møn og Nyord. Vi støtter op om projektet og vil fremover, indenfor de rammer som vi råder over, forsætte med at støtte projektet.

På vegne af Møns Sydsjælland Turistforening

Nils Natorp
Formand

Møn Sydsjælland Turisforening

Letter of Support

To: Vordingborg Kommune
Valdemarsgade 43
4760 Vordingborg

Møn 16 August 2016

In support of Dark Sky Community and Dark Sky Park on Møn and Nyord

Vordingborg Municipality and a number of stakeholders wish to be granted a "Dark Sky" certificate on Møn and Nyord. The development project was launched in 2013 and the group behind this initiative has received help from a wide circle of associations, enterprises and local citizens, who are active participants in the project. The process is therefore well-established.

Møn Sydsjælland Turistforening is an association that seeks to advance the cause of tourism-related businesses in the local and regional areas (i.e. Møn and Southern Zealand). The organization has more than 100 members from all corners of Vordingborg Municipality. We support every effort to create a Dark Sky Community on Møn and Nyord.

The project will help to ensure that our actions are more environmentally friendly. The project itself is beneficial to the natural environment and, not least, it encourages people to enjoy the night sky. Moreover, the project will have a number of positive effects on sustainable tourism in the municipality.

For these reasons, we can recommend and give our unconditional support to the creation of Denmark's first International Dark Sky Community and the first International Dark Sky Park in Denmark on Møn and Nyord. We support the project and will in future continue to give our support within the framework that is our mandate.

On behalf of Møn Sydsjælland Turistforening.

Nils Natorp
Chairman

Letter of support

Danmarks Naturfredningsforening

Vordingborg Kommune

Valdemarsgade 43

4760 Vordingborg

24 aug 2016

Støtte til Dark Sky Community og Dark Sky Park på Møn og Nyord

Vordingborg Kommune og en række interessenter arbejder på, at blive Dark sky certificeret på Møn og Nyord. Udviklingsprojektet blev igangsat i 2013 og initiativtagene har fået hjælp fra en bred kreds af foreninger, virksomheder og borgere mv, som deltager i projektet. Der er således tale om en velfunderet proces.

Danmarks Naturfredningsforening, støtter på det varmeste projektet. Vi er rystede over så få steder man kan opleve en naturlig uspoleret nattehimmel, og at det er vigt at værne om de få steder, det lader sig gøre. Tænk at vokse op i Hovedstadsområdet og aldrig have set mælkevejen. Desuden mener vi at projektet kan bidrage til, at vi handler mere miljøvenligt, og at projektet er til fordel for naturen og miljøet -ikke mindst muligheden for at nyde stjerner på nattehimlen. Endvidere har projektet en række positive effekter for den bæredygtige turisme i kommunen.

Dette er baggrunden for, at vi kan give vores anbefaling af og fulde støtte til at skabe den første International Dark Sky Community og den første International Dark Sky Park i Danmark, på Møn og Nyord. Vi støtter op om projektet og vil fremover, indenfor de rammer som vi råder over, forsætte med at støtte projektet.

På vegne af bestyrelsen for

DN-Vordingborg

Martin Vestergaard

Formand

Letter of Support

The Danish Society
for Nature Conservation

To: Vordingborg Kommune
Valdemarsgade 43
4760 Vordingborg

24 Aug 2016

In support of Dark Sky Community and Dark Sky Park on Møn and Nyord

Vordingborg Municipality and a number of stakeholders wish to be granted a "Dark Sky" certificate on Møn and Nyord. The development project was launched in 2013 and the group behind this initiative has received help from a wide circle of associations, enterprises and local citizens, who are active participants in the project. The process is therefore well-established.

The Danish Society for Nature Conservation offers whole-hearted support to this project. We were shocked to learn that only a handful of locations remain where it is possible to experience an unspoiled natural dark sky. It is important to preserve these few locations. Imagine growing up in Greater Copenhagen and never seeing the Milky Way! The project will help to ensure that our actions are more environmentally friendly. The project itself is beneficial to the natural environment and, not least, it encourages people to enjoy the night sky. Moreover, the project will have a number of positive effects on sustainable tourism in the municipality.

For these reasons, we can recommend and give our unconditional support to the creation of Denmark's first International Dark Sky Community and the first International Dark Sky Park in Denmark on Møn and Nyord. We support the project and will in future continue to give our support within the framework that is our mandate.

On behalf of the Board of

DN Vordingborg

Martin Vestergaard
Chairman

30. juli 2016

Støtte til Dark Sky Community og Dark Sky Park på Møn og Nyord

Vordingborg Kommune og en række interessenter arbejder på, at blive Dark sky certificeret på Møn og Nyord. Udviklingsprojektet blev igangsat i 2013 og initiativtagene har fået hjælp fra en bred kreds af foreninger, virksomheder og borgere mv, som deltager i projektet. Der er således tale om en velfunderet proces.

Københavns Astronomiske Forening (KAF)

Foreningens formål er at samle astronomisk interesserede

Foreningens arbejdsområde er alle former for amatørastronomi. Foreningen har teleskoper, der kan benyttes af medlemmerne. Foreningen afholder også arrangementer for publikum, hvor aktuelle observationer af astronomiske fænomener er udgangspunktet. Foreningen tilstræber en høj grad af social aktivitet. Foreningen arbejder aktivt for bevarelse af den mørke stjernehimmel.

Projektet bidrager til, at vi handler mere miljøvenligt og projektet er til fordel for naturen og miljøet og ikke mindst muligheden for at nyde stjerner på nattehimlen. Endvidere har projektet en række positive effekter for den bæredygtige turisme i kommunen.

Dette er baggrunden for, at vi kan give vores anbefaling af og fulde støtte til at skabe den første International Dark Sky Community og den første International Dark Sky Park i Danmark, på Møn og Nyord. Vi støtter op om projektet og vil fremover, indenfor de rammer som vi råder over, forsætte med at støtte projektet.

På vegne af Københavns Astronomiske Forening

Gunnar Tyrsted

Gunnar Tyrsted

30. July 2016

In support of Dark Sky Community and Dark Sky Park on Møn and Nyord

Vordingborg Municipality and a number of stakeholders wish to be granted a "Dark Sky" certificate on Møn and Nyord. The development project was launched in 2013 and the group behind this initiative has received help from a wide circle of associations, enterprises and local citizens, who are active participants in the project. The process is therefore well-established.

The Astronomical Society of Copenhagen (KAF)

The purpose of the society is to gather people who are interest in astronomy.

The society works with every field of astronomy. The society makes telescopes accessible to its members. The society also holds public events based on current observations of astronomical phenomena. The society strives to achieve a high level of social activity. The society plays an active role in preserving the nocturnal darkness and starry skies.

The project will help to ensure that our actions are more environmentally friendly. The project itself is beneficial to the natural environment and, not least, it encourages people to enjoy the night sky. Moreover, the project will have a number of positive effects on sustainable tourism in the municipality.

For these reasons, we can recommend and give our unconditional support to the creation of Denmark's first International Dark Sky Community and the first International Dark Sky Park in Denmark on Møn and Nyord. We support the project and will in future continue to give our support within the framework that is our mandate.

On behalf of Astronomical Society of Copenhagen.

Gunnar Tyrsted

Vordingborg Kommune
Valdemarsgade 43
4760 Vordingborg

Møn, den 15. august 2016

Letter of Support til International Dark Sky Community og International Dark Sky Park på Møn og Nyord

Astronomisk forening for Sydsjælland er en amatørastronomisk forening som dækker Sydsjælland med medlemmer fra Haslev i nord til Møn i syd. Foreningens formål er at udbrede kendskabet til astronomi og at skabe kontakt mellem amatørastronomer i Sydsjælland, samt at give medlemmerne kendskab til praktisk observationsteknik.

Foreningen er aktiv med flere arrangementer om året, hvor vi invitere offentligheden til stjernekig i områder, med meget lidt lysforurening. Specielt står et arrangement på Nyord i vinteren 2013, stadig tydelig i foreningens hukommelse, fordi stjernehimlen var så klar og stjernerne så tætpakket, at alle blev rørt af ærefrygten ved at stå under en stjernehimmel, som var overvældende smuk.

Som amatørastronomer har de fleste af vores medlemmer et godt kendskab til stjernehimlen og ved hvor vigtigt der er at have en mørk nattehimmel. Med den stadig stigende brug af lys om natten oplever vi som amatørastronomer at det bliver stadig sværere at finde områder, hvor udsynet til stjernerne og universet ikke forstyrres af lys.

Astronomisk forening for Sydsjælland, har siden det første ideforslag støttet arbejdet med at skabe den første International Dark Sky Community og den første International Dark Sky Park i Danmark, på Møn og Nyord. Foreningen støtter og vil fremover, indenfor de rammer som foreningen nu en gang råder over, fortsætte med at støtte projektet.

På vegne af Astronomisk forening for Sydsjælland

Tom Axelsen
Formand

Vordingborg Kommune
Valdemarsgade 43
4760 Vordingborg

Møn 15. August 2016

In Support of Dark Sky Community and Dark Sky Park on Møn and Nyord

Astronomisk Forening for Sydsjælland (the South Zealand Astronomy Society) is an amateur astronomy association, which covers the south of Zealand. We have members from Haslev in the North to Møn in the South. The objective of the society is to disseminate knowledge of astronomy and create contact between amateur astronomers in Southern Zealand and teach our members practical observation techniques.

The society organizes several events each year, where we invite the general public to gaze at the stars in areas where there is little light pollution. An event of this kind on Nyord in Winter 2013 remains clear in our memory because the sky was so clear. There were so many stars shining in the night sky that we were completely in awe. It was an overwhelmingly beautiful sight.

As amateur astronomers, most of our members are well-acquainted with the stars and aware of the importance of a dark sky. As more and more lights are used at night, we as amateur astronomers, find that it is increasingly difficult to find areas, in which we can observe the stars and the universe undisturbed by light.

Since the idea was first mooted, Astronomisk Forening for Sydsjælland has lent its support to the creation of Denmark's first International Dark Sky Community and the first International Dark Sky Park in Denmark on Møn and Nyord. The society supports the project and will in future continue to give support within the framework that is our mandate.

On behalf of Astronomical Society of Southern Zealand.

Tom Axelsen
Chairman

Section 6

Proposed International Dark-Sky Community Møn and Nyord

THE area that is applying to join the International Dark Sky Community comprises the lion's share of two Danish islands, Møn and Nyord – Some areas of East Møn and Nyord are excepted as they will be included in a separate application to become an International Dark Sky Park. Møn and Nyord lie between Zealand and the Baltic Sea.

Parts of the islands are nature preservation areas that are owned and managed by the Danish state. These areas are not included in this application but are included in a separate application to become an International Dark Sky Park.

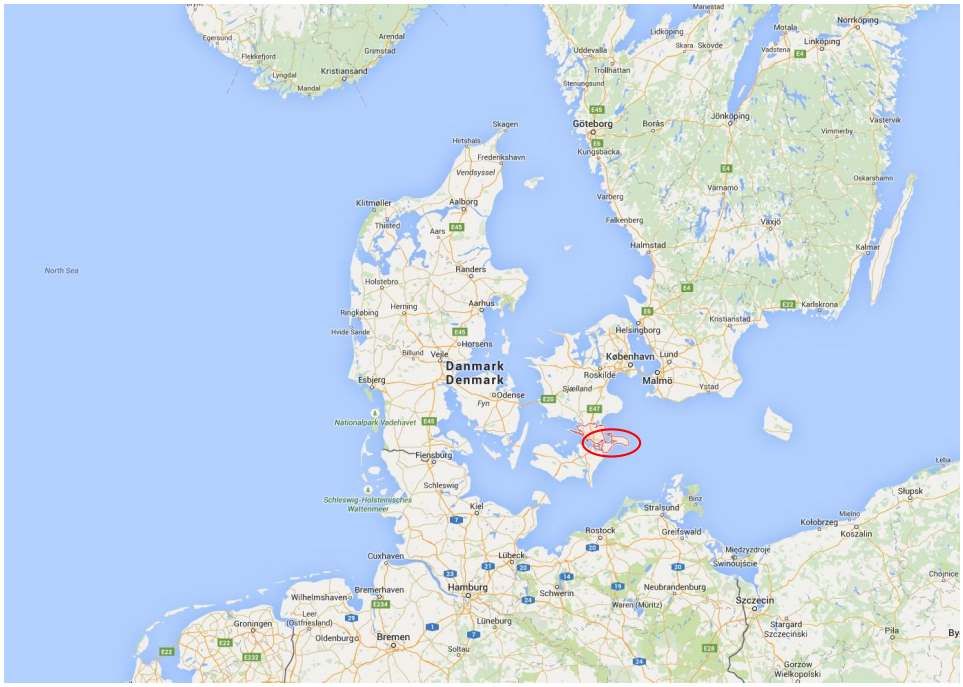


Figure 6.1: Denmark and neighboring countries. Møn and Nyord are circled in red. Map Source: GoogleMaps.

The islands of Møn and Nyord are part of Vordingborg Municipality. The municipality covers the southernmost parts of Zealand with the islands of Møn, Nyord and Bogø.

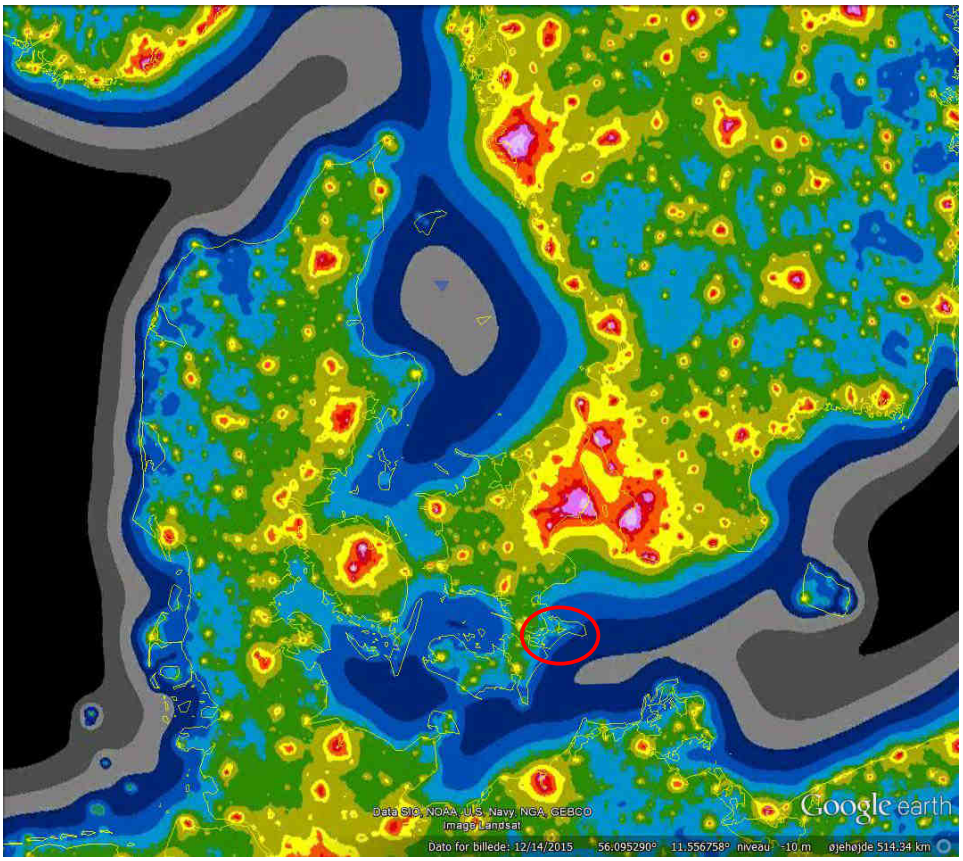


Figure 6.2: Extract from Falci et al [6] showing light pollution in Denmark. The dark green areas correspond to a light pollution of 21.55 $mag./arcsec.^2$, i.e. bordering between lost natural night sky and natural night sky with adverse effects of light pollution The threshold 21.90 $mag./arcsec.^2$ is between blue and dark blue. Møn and Nyord are circled in red. Map Source: GoogleEarth with overlay of Falci et al [6].

Zealand, with Greater Copenhagen and other large towns, is the area of Denmark that is most affected by light pollution. According to *Falci et al* [6], lives 89.3% of the Danish population under a night sky that is affected by light pollution to the extent that the natural night sky is lost. The threshold value used by *Falci et al* in their definition is a Night Sky Brightness (NSB) of or larger than 0.260mCd/m^2 or approximately 21.55 $mag./arcsec.^2$. The same study indicates that 99.9% of the Danish population lives under a sky that is lighter than 0.188mCd/m^2 or 21.90 $mag./arcsec.^2$.

Figure 6.3 shows that Møn and Nyord are within blue and dark blue areas. The dark green color is found only around Stege. Night Sky Brightness (NSB) measurements taken on the two islands confirm these conditions. For more details about measurements, see Chapter 9.

Møn and Nyord are the darkest area on the map. The islands can easily be reached by car from Copenhagen and Zealand. To get from Zealand to Møn, you only have to cross one bridge or, alternatively, a freeway bridge and a causeway. The journey by car from Copenhagen is $1\frac{1}{4}$ to 2 hours, depending on which part of Copenhagen you come from and your destination on Møn. The journey takes no more than $1\frac{1}{4}$-2 hours from anywhere on Zealand. In total more than 2.2 million people live in close proximity and can reach a dark area of Møn and Nyord within two hours. In addition, more than 250,000 tourists visit Møn and Nyord every year.

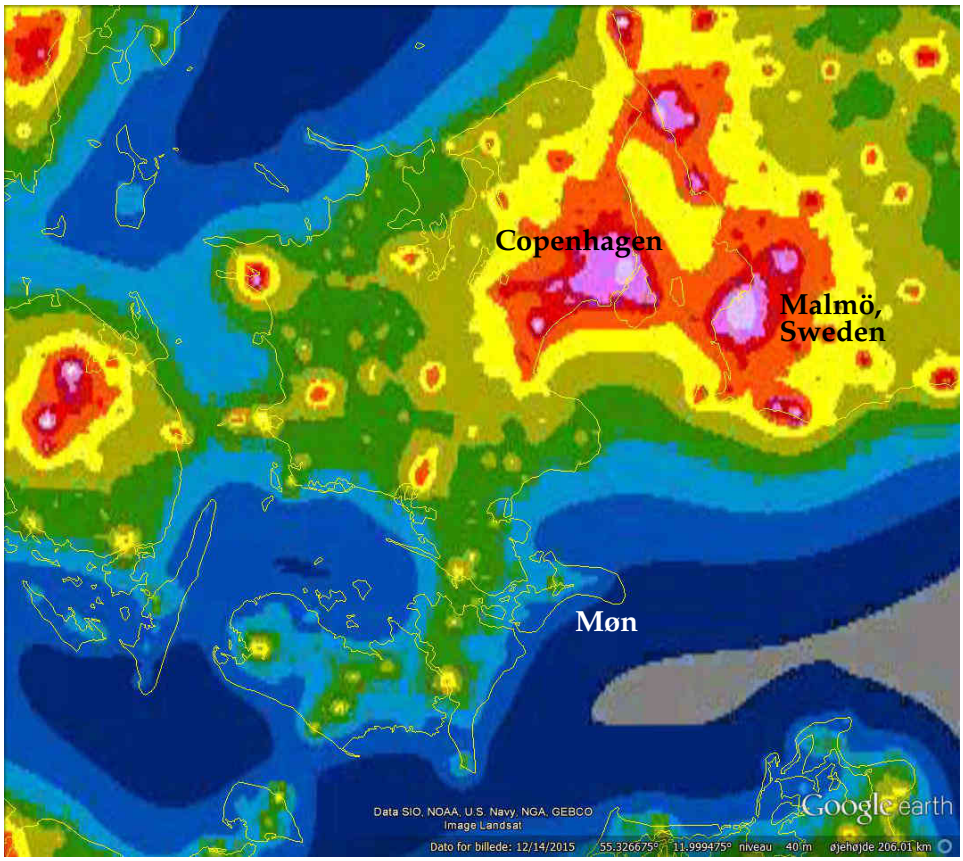


Figure 6.3: Extract from 6.2. The unique location of Møn og Nyord is clearer here. Copenhagen and Malmö are also on the map. Two major cities, Copenhagen (pop. 1,263,698 on 1 January 2015) and Malmö (pop. 318,107 on 31 March 2012), are the largest sources of light pollution in this area. Map Source: GoogleEarth with overlay of Falci et al [6].

The area that is applying to join the International Dark Sky Community is outlined in yellow on Figure 6.4. Areas in East Møn and Nyord, which are not included in this application, are marked in red. These areas are included in an application for Dark Sky Park status (see separate application for details).

The area applying for International Dark Sky Community status includes all of Møn and all of Nyord.

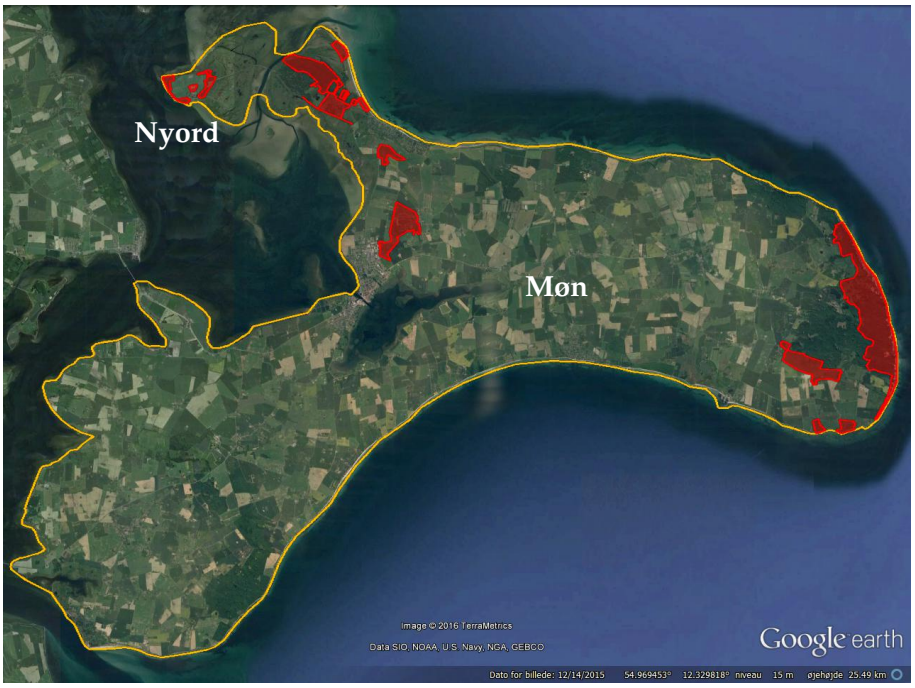


Figure 6.4: The perimeter of the area applying for International Dark Sky Community status is marked in yellow on the map – the red areas of East Møn and Nyord are applying for Dark Sky Park status. Map Source: GoogleEarth

Section 7

Basic information of the Islands

7.1 Key Data and basic info

Table 7.1: *Key data for Møn*

Coordinates	54.88° - 55.06° N	12.10° - 12.55° E	
Area	237.47		km^2
Inhabiters	9400		
Population Density	49		inhabitans/km^2
Tourism	>250,000		visitors/year

Møn is an island off the coast of of South Zealand. It is part of Vordingborg Municipality. The island is 237.47 km^2. The Ulvsund straits lie between Møn and Zealand to the north of the island. To the west, the Grønsund straits lie between Møn and another island, Falster. Møn is a popular destination and an area of natural beauty, which has good bathing beaches, churches with the Elmelundmesteren's frescoes and Møns Klint cliffs. Møn is linked to Zealand via the Queen Alexandrine Bridge. Møn is also connected to Bogø via a causeway across the small island of Barholm and from there, to the E47 freeway at Farø.

Figure 7.1: Elmelund Church is famous for its outstandingly beautiful, detailed frescoes. Credit: Niels Elgaard Larsen

Møn is a destination in its own right in Vordingborg Municipality. It has three local community councils: West Møn, Stege and its environs, and East Møn.

The largest town on Møn is Stege, which has one of Scandinavia's best preserved fortresses. Møn is a predominantly rural community with sporadic

settlements in the landscape. Most are small farming communities. Coastal towns, Klintholm Havn, a harbor town to the south-east of the island The neighboring island of Nyord is considered part of the destination.

Nyord boasts a uniquely well-preserved cultural and natural environment, which, despite its relative isolation, is close to Stege. Nyord town and agricultural land lie above the level of the salt marshes, which cover about 80% of the total area. Like Møn, Nyord faces demographic challenges. There is an aging population and large-scale emigration. Part-time residency is, meanwhile, a growing phenomenon. There are 40 permanent residents and 100 part-time residents on Nyord.

A total of 9,400 people live on Møn and Nyord. Total population in Vordingborg Municipality is 45,806.

7.2 Cultural History and Significance

THE history of Møn stretches back to the Stone Age. Archaeologists have unearthed numerous settlements dating from the Mesolithic Period and tombs from the Neolithic Period, including three barrows: Klekkende Høj, Kong Asgers Høj and Grønjægers Høj. There are Bronze Age barrows everywhere. At Busene, a rare well has been excavated. It contained the bones of domestic animals with jewelry from the late Bronze Age. The Iron Age is also represented by the remnants of farms and villages. A unique bronze jar was found at Keldby, which was produced in a Greek colony at Tarentum in Italy in about 300 B.C.

Figure 7.2: There are burial mounds and stone circles from the Neolithic Period and Bronze Age all over Møn. It is possible that the position of the barrows had astronomical significance. Credit: Andreas Hänel

The Vikings also lived on Møn. Among several well-known finds, Mandemarkskatten (the Mandemark treasure) was found at Busene Have. The find contains silver jewelry and a few gold rings and weighs 964.4 g. A wave of recent detector finds at Ulvshale bears witness to the fact that this was once a trading post.

In the 15th century, Stege was one of Denmark's richest market towns. During the Middle Ages, the Øresund region wallowed in profits from the sale of herrings. Stege was just one of the towns that benefited from booming trade across the Baltic. Stege's oldest remaining privileges as a market town date from 1268. In its golden age (the 16th century), Stege had about 2,500 inhabitants. The market town lay close to a royal castle, Stegeborg Castle, which was erected in the 13th century on the site of the today's harbor. In the 13th century, Stegeborg was a partly man-made island off the south coast of the town close to the approach to Stege Nor. Stegeborg Castle survived until 1534 when it was burned to the ground during Grevens Fejde, a conflict, which ultimately brought the Reformation to Denmark.

Almost all of the churches on Møn are of Medieval origin. Elmelund Church (from about 1075) is the oldest. It was built of chalk and travertine. The brick churches at Keldby, Borre and Magleby were built in the first half of the 13th century. Fanefjord Church is from the second half of the 13th century. The churches at Keldby, Elmelund and Fanefjord are decorated with some of Denmark's most famous frescoes.

During the Middle Ages, Møn was owned by several noble families, whose lands were exchanged by the crown between 1572 and 1631, after which time the king was the sole landowner on the island. In 1769, Møn was sold by the Crown at auction, after which three large, new manor houses were built: Marienborg, Nordfeld and Klintholm, plus two smaller manor houses: Liselund and Ålebækgård.

After the great auction of crown lands, the three-field crop rotation system was reformed and parcel farming introduced. Although agricultural reforms and migration actually began in 1771, many existing rural communities persisted. The agricultural reforms did not reach Nyord until 1820.

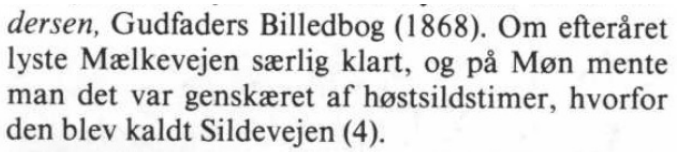

dersen, Gudfaders Billedbog (1868). Om efteråret lyste Mælkevejen særlig klart, og på Møn mente man det var genskæret af høstsildstimer, hvorfor den blev kaldt Sildevejen (4).

Figure 7.3: In the Middle Ages, the local name for the Milky Way was "Sildevejen" (The Herring Way"). The old text reads: "In the fall the Milky Way shone very bright, and on Møn, people believed this was the reflection of shoals of autumnal herring so they named it the Herring Way." Credit: Folk og Fauna [7]

"Nyord" is an unusual Danish word, derived from "Nywarth". The name appears from the 13th century and means "the new watchtower" or "lookout". Nyord was home to many pilots, who were paid to steer ships through the narrow straits close to the island. It was mandatory for ships passing the straits to hire a pilot. The pilotage regulation made its mark on the island. In 1847, the heads of 27 of the island's 48 families worked as pilots. The well-preserved harbor bears witness to the importance of pilotage here. Pilots assisted the passage of about 1,000 ships each year. The income from pilotage was huge. When, in 1769, the king announced that he wished to sell the island at auction, the farmers on the island pooled resources and bought it outright.

By the end of the 19th century, sugar beet had made its mark on Møn. In response to sugar beet production, a sugar factory, Stege Sukkerfabrik, was founded in 1884. Agricultural livestock production also progressed. New farms mushroomed in the landscape along with industrial facilities and cooperative dairies to process agricultural products. The infrastructure was adapted to industrial society and, with the construction of Queen Alexandrine's Bridge in 1943, Møn was linked to Zealand.

As farming became less labor-intensive, fewer hands were needed in fields. People migrated to the towns. During the 1970s, many communes were founded on the empty farms. By around 1970, there were several industrial enterprises on Møn, large and small. Some have survived. Cookies are still produced by the million on the island.

Today, the knowledge society has a strong hold on the Danish people. It is,

however, characteristic of Denmark that the vestiges of both agricultural and industrial societies have been preserved and continue to be of use in post-industrial society.

7.3 Geography and Nature

THE proposed Dark Sky Community areas are primarily open landscapes, typically agricultural land. There are also some small woodlands and, in particular, coastal habitats with rich and unique flora and fauna. Examples include Fanefjord (an inlet) on West Møn, the so-called "earth basins" at Stege, and Busemarke Mose (marshlands). Coastal waters around Møn have low salt content. There are therefore flourishing populations of fish and benthic species that thrive on or in brackish water. Examples include the Northern Pike (Exos lucius) and the European Perch (Perca fluviatilis).

The Møn escarpment was created when chalk was driven upwards by glacial flow in the last Ice Age. The landscape is hilly and the soil extremely chalky. Most of the area is covered by a thin soil layer with bare outcrops of chalk. The thin soil layer and hills make this area particularly difficult to cultivate. The deciduous woods have large areas of Common Beech (Facus sylvatica), whose conditions for growth and health are strongly impacted by the chalkiness of the subsoil.

The difficult conditions mean that the hills are planted with trees, although less hilly areas of Høje Møn and the remainder of Møn and Nyord are largely agricultural.

The important natural values in the Dark Sky Community area are generally associated with the coast and coastal landscapes.

7.4 Land Ownership and Administration

THERE are 9,479 households (including holiday cottages) within the proposed International Dark Sky Community. A very large proportion of the area (about 98%) is privately owned and much of this is agricultural land. About 2% is owned by Vordingborg Municipality and other public bodies. The municipal areas include public roads, schools, childcare institutions and workshops, a local administration center and public utilities.

Møn and Nyord are part of Vordingborg Municipality A small part of the road system on Møn is owned and administered by the Danish Road Directorate (i.e. state-owned).

7.5 Nature Protection

Coastal areas and in particular coastal waters are largely designated as European Union Natura 2000 zones and therefore protected by the regulations under this scheme. There are five Natura 2000 zones: No. 168 The sea and coast between Præstø Fjord and Grønsund (this zone includes Nyord and much of Ulvshale),

no. 171 Klinteskoven (forest) and Klinteskov Kalkgrund (chalk banks), no. 180 Stege Nor, no. 183 Busemarke Mose (marshlands) and Råby Sø (lake) and no. 208 Bøchers Grund (sandbanks).

Natura 2000 designation means that special measures must be taken to protect and restore the natural environments and species, for whose sake the area has been designated a Natura 2000 zone. In pursuance of the Danish Nature

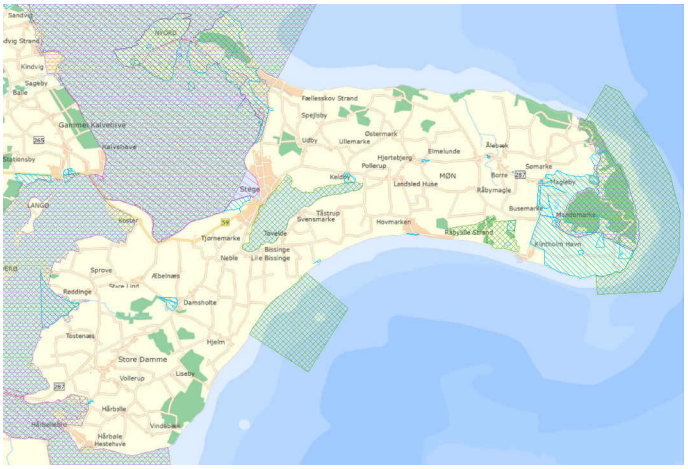


Figure 7.4: Preservation areas and wildfowl protection areas on Møn and Nyord. Areas shaded in blue are preservation areas, and protected views and biotopes. Areas cross-hatched green are Natura 2000 zones. Credit: The Danish Natural Environment Portal

Conservation Act, the coast of Møn is generally protected by a 300 meters wide belt, within which construction work and changes may not be made except by special permission. The protective belt is restrictive as it is intended to protect Denmark's open coastal landscapes.

Large areas of woodland (more than 49 acres) are subject to a woodlands protection belt that protects the open landscape.

In the East Møn area, Ulvshale and on Nyord, several areas are subject to preservation orders. Both privately owned and public areas are preserved. Both privately owned and public areas are protected with a view not only to preserving the open landscapes (preservation of views), but also to safeguarding unique populations of flora and fauna (biotope conservation). The preservation orders have been established by an independent preservation body and strict regulations apply.

Other preservation orders cover landscapes and natural areas, primarily along the coast.

Across Møn and Nyord there are registered natural habitats, such as heathlands, pastures, meadows, salt marshes and lakes larger than 100 m^2, which, in pursuance of the Danish Nature Protection Act, are protected from change in order to protect plant and animal life.

7.6 Biosphere Project

In conjunction with work to preserve the night skies, efforts are under way for this area to become a UNESCO Biosphere Reserve. The area in question will include the International Dark Sky Community are in its entirety, plus the neighboring island of Bogø and surrounding waters. The core areas of the Biosphere Reserve and proposed International Dark Sky Park will be common to both.

Section 8

Vordingborg Municipality support of Dark Sky

THE Municipalty have made a huge contribution to the process. Primary because it has been supportive from very early in the process, when the idea of Møn and Nyord as Dark Sky Community and Dark Sky Park still was in its infancy and just an idea among a small group of people.


Vordingborg Kommune bakker op om stjernehimlen

Lokal certificering af mønske overnatningssteder er påbegyndt. Med opbakning fra Markedsførings- og udviklingspuljen i Vordingborg kommune i juni, er det nu lykkes at igangsætte den lokale certificering af de mønske overnatningssteder. Certificeringen er en del af den internationale certificering, der er det endelige mål. Men før dette kan realiseres, skal der igangsættes lokale aktiviteter, og det er netop det arbejde, der nu er påbegyndt.

VORDINGBORG KOMMUNE

VORDINGBORG.NU

Den administrative gruppe bag Dark Sky News

Ole Eskling, Møns Klint Resort
Susanne Nøhr, Tiendegaarden
Tom Axelsen, Formand for Astronomisk forening for Sydsjælland
Jens Grønager, Domiciel
Tine Vinther Clausen, Kystturismeprojektet, Vordingborg Kommune.
Dark Sky News er trykt i 5000 eksemplarer, finansieret af Vordingborg Kommune.

Figure 8.1: The support of Vordingborg Municipality is apparent from the label at the last page of the two Dark Sky News. The headline of label reads: ***Vordingborg Municipality supports the starry sky*** *The local Certification of accomodation at Møn has startede. With the backing of Marketing and development pool in Vordingborg Municipality, the launch the local certification of Møn accommodations have been successful. The certification is part of the international certification that is the final goal. But before this can be realized, there must be initiated local activities local activities must start, and it is precisely the work that has now begun.*

During the Dark Sky project which ultimately have ended up with this application and the application for Dark Sky Park, the Municipality have participated with one member in the Working Group since the official start of the project in May 2014.

The Dark Sky project have been discussed at city council meetings. The minutes of meeting from a city council meeting is included in translation in Appendix G.

The idea of idea of Møn and Nyord as Dark Sky Community have been backed up with finacial support from the Municipality. The economics committee of Vordingborg Municipality have granted 300,000 DKR at their meeting the 18 June 2014 and additional 130,000 DKR at their meeting the 17 June 2015. In

the project the money have been used for e.g. outreach, Dark Sky News, see Appendix H, instruments for Night Sky measurements and preparation and translation of the applications.

The economics committee have granted 150,000 DKR at their meeting the 20 August 2014 to kick of the process becoming a Dark Sky Community and Dark Sky Park, the kick off was hosting a public free concert in Klintholm Harbour, see Section 15.1. It is expected they will make further grants for an event in connection with the grand opening of the Dark Sky Community and Dark Sky Park in 2017.

In total Vordingborg Municipality has supported the Dark Sky project with 580,000 DKR or approximately $86,600.

Before the applications was submitted to the International Dark-Sky Association they were discussed at the Business Committee of Vordingborg Municipality which at their meeting the 8 September 2016 gave their approval to submit the applications for Møn and Nyord to become Dark Sky Park and Dark Sky Community.

Section 9

Documentation of Sky Quality

MEASUREMENTS of night sky brightness (NSB) above Møn and Nyord was started in September 2012 with a Unihedron SQM-L. These measurements where normally taken between the end of astronomical twilight and local midnight. Within the first year frustration of the Milky Way's influence and a suspection of missing a number of the best nights meant a Unihedron SQM-LU-DL instrument was obtained in October 2013. The SQM-LU-DL instrument is located at DSC01, yellow circle in Figure 9.1. With the SQM-LU-DL it is possible to obtain a large number of measurements in Zenith throughout the night. With the large set of data it is possible to put constrains on the influence of the Milky Way. And through the way twilight, the moon and clouds influence the NSB it is possible to diregard data points obtained during twilight, with the moon above horisont and cloudcover. The criteria for useful measurements are:

- Between end of and start of astronomical twilight.
- Clear sky.
- Moon below horisont.
- Measurements in Zenith

9.1 Long term measurements

FROM October 2013 to December 2015 measurements of NSB have been obtained when the weather forecast was promissing and at least parts of the nights would have no moon interference. Starting mid-December 2015 the SQM-LU-DL have obtained data from every night.

A summary of the measurements is given in table 9.1. Selected all-night curves are shown in Appendix B.

Møn and Nyord is located at a geografic latitude where different parts of the Milky Way culminate continually at zenith during midnight or evening hours, from August to end of January. From the measurements it is estimated that the Milky Way is increasing the NSB with 0.4-0.5 $mag./arcsec.^2$. The best (darkest) measurements are obtained in March and April when the Milky Way is low in

Table 9.1: *Summary of measurements with a Unihedron SQM-LU-DL #2547*

	$mag./arcsec.^2$	Note
Single best measurement	21.96	[a]
Best measurements	21.80-21.85	[a]
Milky Way	21.30-21.40	[b]
With airglow influence	21.10-21.30	
Worst measurement	20.39	[c]

[a] Best Night Sky Brightness is obtained in Marts and April.
[b] The Milky Way passes through Zenith in the periode August - January.
[c] Measured during a very bright display of airglow.

the northern part of the sky and there fore have minmal influence on NSB at zenith.

The data clearly shows that the NSB is brightest right after the end of astronomical twilight in the evening. During the night the NSB decreases and normally, the darkest values will be reached between 2 o'clock and the start of astronomical twilight in the morning. With significant variations from night to night. Even though 50% of public street lights in Stege are turned of at midnight, it does not show in the data. Indicating that the contribution from public street lights are low and the main contributors to the variation in NSB above Møn and Nyord are the airglow and changes in the transparency of the air or thin clouds.

9.2 SQM-L Measurements in DSC-area

NSB measurements have been performed all over Møn and Nyord with handheld SQM-L instruments. From the early work with a single SQM-L instrument it was known that a complet coverage of Møn and Nyord was difficult to achive during the rapidly diwiling number of dark hours during the nights of Marts and April. Furthermore, bearing in mind what we had learned from the early work with a single SQM-L and the variations in the NSB measured by the SQM-LU-DL, in summer 2015, we decided to involve more people and more SQM-L instruments in documenting NSB. Three additional instruments to be used by a Measuring Group of four persons, was purchased and distributed in fall 2015. Comparison between the instruments are given in Appendix A, table A.1.

Figure 9.1 shows where SQM-L measurements were conducted. All-sky photos were also taken at the measuring stations circled in yellow. See Figure 9.2.

9.2.1 All-Sky Photos

All-sky images were also taken on the measurement field trips. The images were taken using identical settings on a Nikon D700 camera, NEF-format (raw), Sigma 8 mm fisheye with aperture 3.5, ISO 1250 and three minutes' exposure. The only exceptions to the three-minute exposure time were images taken from the main square in Stege. Due to the relatively high light intensity, exposure time was reduced to 30 seconds. All the NEF images were converted and processed

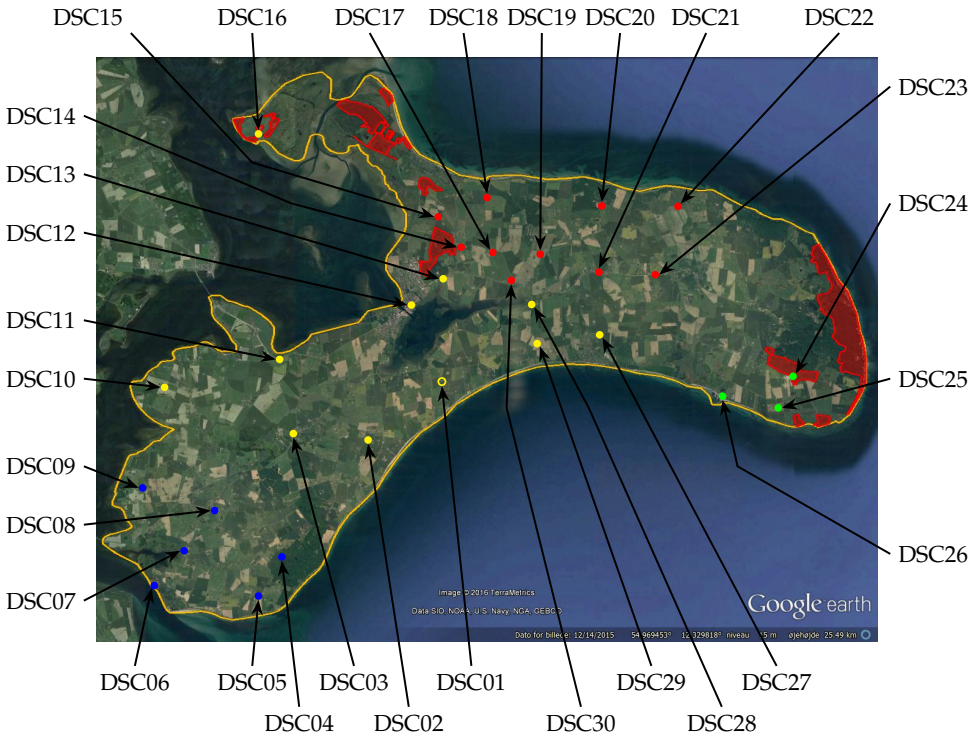


Figure 9.1: Map to show sites where measurements were taken using SQM-L instruments. ID coding is reproduced in the measurement tables. Color coding of measurement sites to show instrument-ID was used. Blue: #8960, yellow: #6409, red: #8946 and green #8957. The SQM-LU-DL instrument #2547 is located at DSC01 – yellow circle. Kortkilde: GoogleEarth

using IRIS software [5], offset and dark frame were subtracted and ADU in the image file was set to include data from 1-3,000. For all-sky images, see Figure 9.2.

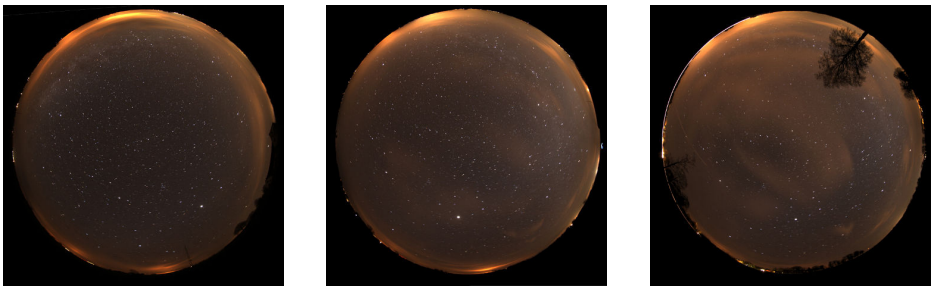
9.2.2 Results with SQM-L

For a full list of measuring results from the four instruments, see Appendix A. In the following, we refer only to the best and most significant measurements taken with each individual instrument.

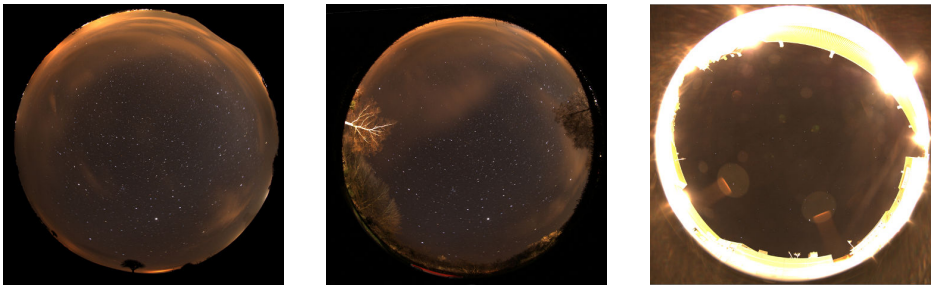
Table 9.2: *Best measurments with SQM-L instruments*

Instrument Serial No.	Measuring Area	Best $mag./arcsec^2$	Next best $mag./arcsec^2$	Notes
#6409	Yellow	21.90	21.86	[a]
#8960	Blue	21.92	21.94	[a]
#8946	Red	21.75	21.75	[a]
#8957	Green	21.50	21.44	

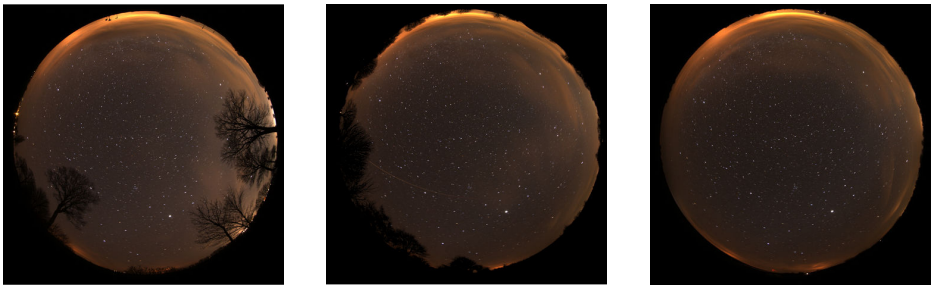
[a] Best measurements NSB in March and April.



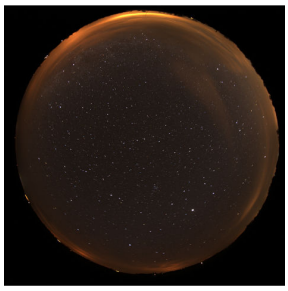
DSC01 - 21.82 DSC02 - 21.68 DSC03 - 21.68



DSC10 - 21.68 DSC11 - 21.68 DSC12 - 20.20



DSC13 - 21.68 DSC28 - 21.68 DSC27 - 21.83



DSC29 - 21.82

Figure 9.2: All-Sky photos of the night sky above the measuring stations. North is at the top of each photo, east to the left. Below each photo is the measuring stations ID-number, see figure 9.1 and NSB in $mag./arcsec.^2$, at the time of the image. All photos are three minutes' exposure except DSC12, main square in Stege, which is only a 30 seconds exposure. The glow at the NNE-horizont in each photo are from the cities Copenhagen and Malmø, distances to both cities are 80-90 km.

9.3 Measurement Program

A two part measurement program of Night Sky Brightness will be maintained. A number of SQM-LU-DL instruments will be purchase by the Municipality and deployed to volunteers which will maintain and operate the instruments. The purchase and deployment will happen during the winter 2016 – 2017.

The privately owned SQM-LU-DL at DSC01, will continue to make measurements in the foreseeable future.

The second part are the measurements at the measurement stations in the Dark Sky Cummunity. This will ultimately end up in the organisation of the Municipality under the department of the UNESCO Biosphere. Until this department is established in late summer or autumn of 2017, the measurement program will be maintained by the local astronomical association – Astronomical Society of Southern Zealand.

Once a year, in the spring, a measurements run will be conducted.

9.4 Visit of Dr. Andreas Hänel

AROUND the end of March/beginning of April 2016, Dr. Andreas Hänel, *Section leader of the working group Dark Sky Germany*, visited Møn and Nyord. He was invited to give a talk to the Dark Sky Møn and Nyord working committee. After his talk, Dr. Hänel stayed two nights on Møn. Despite difficulties with clouds, Dr. Hänel made observations of his own regarding the quality of the dark sky over Møn and Nyord. Dr. Hänel's conclusions were as follows:

> Based on these observations I can confirm an exceptionally quality of the sky over the islands of Møn and Nyord. The local Dark Sky group is very engaged and therefore continuous support of the combination of Dark Sky Park and Dark Sky Community is promising. The traditional cut-off street lighting (though there are some exemples of non full cut-off luminaires) and the use of warm white lamps will help to keep the sky dark on the islands dark if in future similar lighting system will be used.
>
> Therefore I strongly support the application of the islands as a combination of Dark Sky Park in the East and Dark Sky community of the whole islands.

To read Dr. Hänel's full report, see Appendix J.

9.5 Visual Observation of Astronomical Phenomenas

THE full spectrum of astronomical phenomena can be observed from Møn and Nyord. Some are easier to see than others, but the atmospheric transparency here in combination with the experience, attention, routine and (naturally) the eyesight of the observer all determine whether a phenomenon is visible on any given night. Based on the visual observations the Dark Sky Community Møn and Nyord have Bortle classification 2-3.

9.5.1 Notes about visual objects

The Milky Way is visible all year round. From early August until the end of October, the Milky Way dominates the night sky. The Milky Way is very broad, clear and extremely structured.

Meteors or shooting stars are often seen. Meteors fainter than 4th magnitude contribute a significant part of the meteors seen.

Northern light is relative rare to observe from Denmark. But it has been observed at least three times from Møn and Nyord during this solar maximum.

Figure 9.3: A distant thunderstorm lights up the night sky above Møn, creating heat lightning (known in Denmark as "kornmod"). The storm was 120 km distant. Airglow creates a green sheen in the sky. Credit: Tom Axelsen

Many Messier Objects are visible to the naked eye from Møn. Those observed most often are: M31, M33, M42, M37, M38, M45, M44, M34, M35, M67, M3, M13 and M8 including NGC6530.

"Kornmod" is the old Danish word for "heat lightning". Flashes of distant lightning are easily drowned in light pollution. Due to the dark surroundings on Møn and Nyord, flashes of distant lightning lights up the night sky during August and September, making this weather phenomenon particularly impressive seen from Møn and Nyord.

Airglow visibility varies quite considerably. In some years, it is seen just a few times and in others very often. Especially during the period October to start of March, airglow is often observed. It apperance is often as a general brightening of the starry sky, at other times it has a lumpy appearance.

Figure 9.4: Airglow on 18 and 19 August 2015. Airglow is visible as a patchy sky. The image covers the sky from east to south and up to about 45° above the horizon. Credit: Tom Axelsen

Zodiacal light is a permanent feature of the night skies during the spring. Zodiacal light is seen as a large, relatively bright pyramid of light in the western skies.

Latter in the evening or night, the Gegenschein (Counterglow) have been observed on several occasions and more rarely the Light-Bridge connecting the zodiacal light and Gegenschein have been observed.

Section 10

Legislative Protection

DANISH legislation stipulates a few requirements for sensible use of light at night. However, the legislation is not specific and does not address the difficulties associated with a loss of darkness. The most significant and most specific legislation and legal guidelines are listed here.

10.1 Road Lighting

THE Danish state compiled "Vejbelysningsregler i Danmark" (Street lighting regulations in Denmark) arising from the Public Road Act (Act no. 1520 of 27. December 2014) [8] and Street Lighting handbook (Vejdirektoratets Håndbog, Vejbelysning (Danish Road Directorate Handbook, Street Lighting), 1. April 2015) [9].

The introduction to the Street Lighting handbook [9, Sec. 1.1, p. 10] states explicitly that street lighting should be designed so as to minimize light pollution (quote):

> It is important that the lighting is directed towards the areas, objects, etc. whose visibility is of great importance in the specific situation. At the same time, nuisance from the lighting should be avoided. This applies to nuisance from the light itself in the form of glare and "light pollution" as well as visual nuisances in the urban environments from architecturally maladapted systems.

10.2 Danish Working Environment Authority

DANISH Working Environment Authority Guidelines A.1.5 of February 2002 [10] describe the authority's requirements for artificial lighting at permanent places of work. The guidelines also contain guidance regarding conditions that are important for good lighting at Danish workplaces.

10.3 Advertising in the open countryside

THE Danish Nature Conservation Act (Act no. 933 of 24 September 2009) [11, Kapitel 3, §21] addresses light pollution or rather outdoor advertising, including illuminated advertising. Article 21 reads:

> Posters, images, freestanding signs, illuminated advertising and other hoardings designed for advertising and propaganda purposes must not be placed in the open countryside.

Section 11

Light Managment Plan

11.1 Light Managment Plan - Public lighting

THE Light Management Plan applies for all light sources installed outdoors that are or can be switched on at times between sunset and sunrise.

11.1.1 New Public lighting

If a clear public safety hazard is identified, new outdoor lighting may be installed. The new outdoor lighting must fulfill the following criteria.

- The area of the illuminated area must be as small as practicable.
- Outdoor lighting must comply with the requirements of this lighting plan

11.1.2 Street lighting

Street lamps must meet the requirements in *Street Lighting handbook – Section 3.2. Light Classification*. In general, street light fittings must be luminous intensity (glare) class G6. In isolated cases, in which, for security reasons, more light is needed, glare class G4 or G5 may be used.

The correlated color temperature (CCT) must be equal to or less than 3,000K and $Ra \geq 0.7$.

Taking traffic safety into account, street lighting must be attenuated and/or partly switched off during the period 23.30-05.00.

11.1.3 Pathway lighting

Pathway lighting must meet the requirements in *Street Lighting handbook – Section 3.2.3 - Light Classification E*.

Light fittings must ensure that pathway luminaires do not shed above the horizontal plane but meet glare class G6.

Pathway lighting must not cause glare. The light fittings must meet glare class D6. Light sources used as pathway lighting must be carefully selected to avoid excessive lighting by using the correct lighting class and exploiting the 0.15 increment threshold.

The correlated color temperature (CCT) must equal to or less than 3,000K and $Ra \geq 0.7$. Taking traffic safety into account, street lighting must be attenuated and/or partly switched off during the period 23.30-05.00.

11.1.4 Outdoor lighting

Lamps with an installed luminosity equal to or more than 800 lumens must meet glare class G6 (corresponds to full cut-off).

On any plot of land, the sum of non cut-off lamps with an installed luminosity of less than 800 lumens must not exceed 1,300 lumens. If the 1,300-lumens threshold is exceeded, a number of light fittings must be replaced to glare class G6 so that the sum of non cut-off lamps installed is reduced to 1,300 lumens or less.

Lamps must not be switched on during the night. Lamps should be controlled by a motion sensor or designated timer, to reduce the risk of human forgetfulness.

11.1.5 Over-lighting

Over-lightened is when an area is illuminated by more than 100,000 lumen per hectar.

Areas of agricultural activity (fields) are not included in the area.

The lights at outdoor workplaces shall be adapted to comply with DWEA minimum requirements depending on the type of work performed in the area. When no work are performed in the area, the light must be reduced or turned off.

11.1.6 Signs

If signs are illuminated, the light source must be shielded to ensure that light is directed only onto the sign.

Signs must, if possible, be illuminated from above, any light spillage would hit the ground / building.

Signs in the urban zone may be lighted to maximum 3.0 $cd/m2$. Illuminated signs are prohibited in rural zones.

The correlated color temperature (CCT) must be equal to or less than 3,000K. Illuminated signs must be switched off or attenuated (50%) between the hours of 23.30 and 05.00.

11.1.7 Illuminated Signs

Illuminated signs includes signs with integrated light source and flat screens.

Signs in the urban zone may have maximum 3.0 $cd/m2$ luminance.

Illuminated signs are prohibited in rural zones.

Illuminated signs must be switched off or attenuated (50%) between the hours of 23.30 and 05.00.

Illuminated signs in the shape of one or more flat screens indoors but in a window must also meet these requirements.

11.1.8 Floodlight and searchlight for advertising

Rotating or fixed projectors/searchlights must not be used for advertising purposes in the area.

11.1.9 Embellish Lighting

Non cut-off decorative lighting may have maximum luminosity of 130 lumens per light source. The correlated color temperature (CCT) must be equal to or less than 2,100K.

Up to 1,300 lumens of non cut-off decorative lighting may be installed per plot.

Decorative lighting must not be switched on during the night. Decorative lighting can be controlled by a timer to ensure that it is switched off after midnight, i.e. minimizing the risk of human forgetfulness.

11.1.10 Floodlighting of Buildings and Monuments

Floodlights on buildings and monuments must be cut-off in order to avoid/minimize light pollution.

Buildings and monuments in the urban zone may be lighted to maximum 2.0 $cd/m2$.

The correlated color temperature (CCT) must be equal to or less than 3,000K.

Floodlighting must be switched off or attenuated (50%) between the hours of 23.30 and 05.00.

11.1.11 Seasonal Lighting

Christmas lights must be limited to the Christmas period. i.e. from 1st Sunday in Advent until 6. January (Twelfth Night). first Sunday in Advent until 6. January (Twelfth Night).

During the Christmas period, monuments may be illuminated in accordance with the "Floodlighting of buildings and monuments" section.

11.1.12 Light Trespassing

The owner of a light fitting is responsible for ensuring that it is installed responsibly, i.e. so that it does not illuminate beyond the limits of the plot.

Within City limits
Light trespassing occurs when a light fitting illuminates a neighboring plot of land at the boundary with more than 4.0 lux.

Light fittings must not illuminate neighboring residences. Measured from the neighboring residence's windows, the light contribution from the nearest light fitting must be less than 0.6 lux.

Country side
Light trespassing occurs when a light fitting illuminates a neighboring plot of land at the boundary with more than 0.6 lux, corresponding to about twice the light radiated by a full moon.

Light fittings must not illuminate neighboring residences. Measured from the neighboring residence's plinth, the light contribution from the nearest light fitting must be less than 0.5 lux and, at the neighboring residence's windows, less than 0.3 lux.

Bordering to International Dark Sky Park
Plots of land that border onto a Dark Sky Park area must not contribute more than 0.3 lux of light into the DSP (measured at the boundary).

Measurement of light trespassing
Measurements at boundaries and plinth are always made at ground level. Measurements from the neighboring residence's windows are made from the lowest part of the window frame.

In an area bordering on a Dark Sky Park, measurements are made at the plot's own boundaries, closest to the light fitting in question at at ground level.

All measurements are made using a lux-meter pointing at and with an unobstructed view of the light fitting.

In urban zones, it may be necessary to shield the light meter from other light fittings in order to achieve a correct measurement of the light shed by the light fitting in question.

11.2 Simple Light Rules

The eight simple lighting rules listed in figure 11.1 have been presented and discussed at the public information meetings, at Dark Sky Møn's facebook page and in the Dark Sky News.

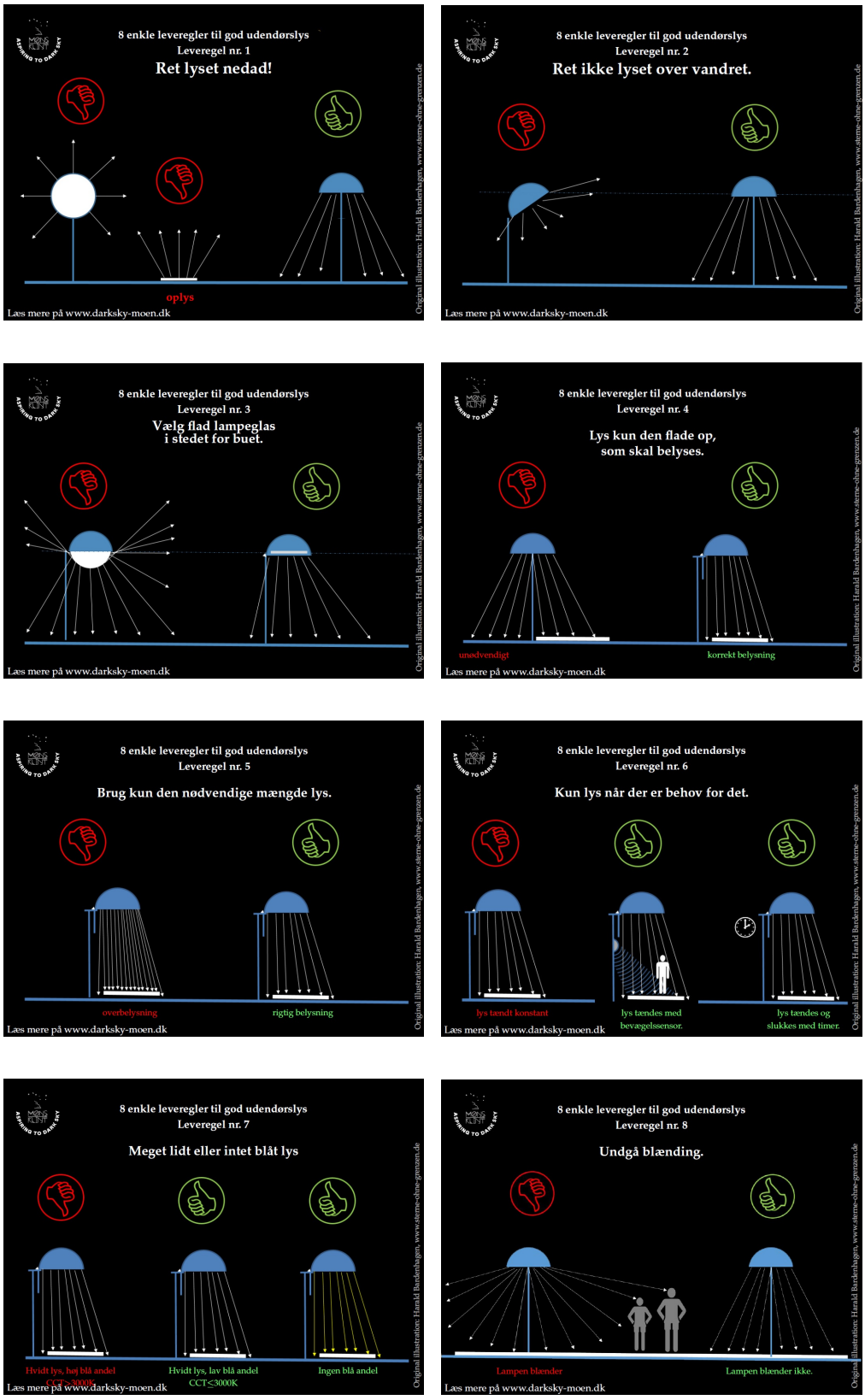


Figure 11.1: 8 simple, but good light rules. The rules are based on the work of Harald Bardenhagen, Eifel Dark Sky Park (Germany).

Section 12

Lighting Inventory

12.1 Public Lighting Inventory

VORDINGBORG Municipality owns and operates street lighting on Møn and Nyord. The work of compiling a list of the types of lamps and light sources was relatively simple because the municipal Park and Roads department already had a lamp database. The database provides the following information about each lamp: type, light source, location (street name) and the number of lamps per street. Our survey was therefore restricted to find and check the different lamp types.

The survey showed that many lamps are of the same physical design and that only light sources have varied.

Table 12.1: *Survey of Public lighting*

Type	Total number	Data light source	UL %	UH %	Photo	Note
CGS443	665	CFL, 42W, 4000K, 3200 lumen	0	0		
CGS443	28	CFL, 42W, 3000K, 3200 lumen	0	0		a
SGS 201 SONT 100	46	HID, 2000-2100K, 10000-10700 lumen	0	0		a

Table 12.1: *Survey of Public lighting*

Type	Total number	Data light source	UL %	UH %	Photo	Note
SGS 201 SONT 70	4	HID, 50W, 2000-2100K	0	0		a
Copenhagen LED Mini	5	LED 31W, 3000K	0	0		
LP Pullert 50W	15	HID, 3500K, 4000 lumen	0	0		
GV66	15	CFL, 42W, 4000K, 3200 lumen	<5	0		
GV64	102	HID, Mercury Vapor, 3500K, 4000 lumen	<5	0		
GR/GS	108	36W fluorescent tube	<5	10-15		
Victor 3000 LED	8	Victor 3000 LED, 3000K	0	0		
CGS443 LED	75	LED, 31W, 3000K	0	0		b

Table 12.1: *Survey of Public lighting*

Type	Total number	Data light source	UL %	UH %	Photo	Note
CGS443 LED	2	LED, 3000K, 2400 lumen	0	0		b
HGS 201	2	HID, Mercury Vapor, 3500K 4000 lumen	0	0		c
HGS 201	2	HID, Mercury Vapor, 3500K 4000 lumen	<5	0		d
FGS 057	9	FL, 57W, 4000K, 4300 lumen	0	0		e
FGS 335	2	HID, Mercury Vapor, 3500K, 4000 lumen	0	0		e
LED projector up-light	20	LED, 8W	20	80		
Helios	40	QL Helios	<10	0		
SGS 363	26	Ceramic HID, 2900K, 7230 lumen	0	0		f
SGS 363	52	HID, 2000-2100K, 10000-10700 lumen	0	0		f
SGS 363	10	HID, Mercury Vapor, 3400K, 6700 lumen	0	0		f

Table 12.1: *Survey of Public lighting*

Type	Total number	Data light source	UL %	UH %	Photo	Note
SGS 253 CDO TT	2	HID, 2000-2100K, 10000-10700 lumen	0	0		f

[a] Fixtures are identical to CGS443, but with other light source.
[b] Fixtures are identical, the light sources are probably identical too.
[c] Flat glass.
[d] Curved clear glass, a small amount of light will, depending on the cleanliness of the glass, be send into UL.
[e] Fixtures was not succesful identified in the street. In the street, as specified in the municipalitys database, all fixtures looked identical to CGS443.
[f] Fixtures are identical, but the light source varies.

Vordingborg Municipality owns a total of 1,236 street lamps on Møn and Nyord. Of these, 951 (77%) meet the Lighting Management Plan (LMP) requirement regarding no illumination above horizontal. Just 20% (248 lamps) meet the CCT requirement of 3,000K or less. Public street lighting is generally dimmed 50% after 23.00. Street lighting is dimmed by switching off every other street lamp.

12.2 Fulfillment of LMP

EVEN before work began towards achievement of Dark Sky Community status, Vordingborg Municipality had begun to replace and modernize street lighting throughout the municipality. The lighting replacement plan was adopted by local council members and incorporated into the municipal budget. Achieving International Dark Sky Community status will therefore have no effect on the pace of replacement.

In the period 2015-2017, 170 light fittings of types GR/GS and GV64 will be replaced by type CSG 443 LED with CCT at 3000K. The "worst offenders" among street lamps will therefore be replaced within a very short time. A further 110 light fittings will be modernized to LEDs with CCT at 3,000K, although the light fittings themselves will not be replaced.

The new light fittings will also be dimmed after 23.00. However, dimming will not be achieved by switching off half of the lamps. In future, LED light sources will have integrated electronic control systems so that the light emitted by the individual light fitting will be reduced by 50%. The result will be a better distribution of light despited dimming light emissions.

12.3 Public Buildings

VORDINGBORG Municipality owns buildings at 29 addresses on Møn and Nyord. These are:

- Bo og naboskab Møn (social housing) - A P Hansensvej
- Bo og naboskab Møn (activity center) - Aktivitetshus Elverhøjene
- Bo og naboskab Møn (social housing) - Topasvænget. The buildings are under municipal ownership, but are run by a third party.
- Dronning Fanes Børnehus (kindergarten) - (Fanehaven)
- Foreningernes hus (community center)
- Hjertehaven børnehave (kindergarten)
- Klub 15 - Youth club
- Lendemark Børnehave (kindergarten)
- Lendemark Foreningshus (community center)
- MU2 - youth housing - FUKSMA 2
- Museumsgården (Museum)
- Mølleporten - Stege byport (historical building)
- Møn Bibliotek (Library)
- Møn skole (school) - Fanefjord
- Møn skole (school) - Hjertebjerg
- Møn skole (school) - Stege
- Møn Turistbureau (Tourist information)/ Stege Rutebilstation (Bus terminal)
- Møns Museum (Museum)
- Praktisk service (service department) - Møn
- Socialpsykiatri Møn (social psychiatry department). The buildings are under municipal ownership, but are run by a third party.
- Socialpsykiatri Møn (social psychiatry department) - Grønsalen
- Stege municipal administration
- Stege Børnehave (kindergarten)
- Sundhedscenter Stege (medical center)
- Vejplads (yard), Kobbelvej 30
- Vestmøn Ungdomsklub (youth club)
- Ældreboliger Damsholte (senior housing). The buildings are under municipal ownership, but are run by a third party.

Modernization of the outdoor lighting around all these buildings on Møn and Nyord was planned for the period 2016-2017. The modernization process on Møn and Nyord has now been deferred. It will begin in 2017. Meanwhile, the municipal properties administration and Park and Roads department will decide which LMP-approved types of light fitting to use in park lighting, street

lighting and parking lots associated with each of these buildings. See Section 11.

New light fittings will gradually be installed at the properties run by Ejendomscenteret (municipal properties department). Replacement is expected to be completed in early 2018.

12.4 Vejdirektoratet - Danish Road Directorate

THE Danish Road Directorate (Danish State) owns and operates approximately 10 km of road from Møn Bridge to Stege. A total of 73 street lamps owned by the Danish Road Diretorate are installed at this stretch of road. All 73 street lamps are FCO and the ligth source is high pressure sodium with a CCT of 2000K. The street lamps fulfill the LMP.

Table 12.2: *Survey of Public lighting own by the Danish Road Directorate*

Type	Total number	Data light source	UL %	UH %	Photo	Note
HGS201	11	HPS, 2000K	0	0		a
HGS201	22	HPS, 2000K	0	0		a
SGS253	40	HPS, 2000K	0	0		a

[a] Fixtures have flat glass.

12.5 Seasonal light

CHRISTMAS lighting in Denmark has always been a relatively modest affair but, like everything else, outdoor Christmas lighting is becoming more intensive. Christmas lighting can roughly be subdivided into three categories:

- Chamber of Commerce
- Churches and communities of faith
- Private

12.5.1 Chamber of Commerce

The Chamber of Commerce owns and operates the Christmas lighting in Stege. The lights are restricted to the main shopping street as most stores are located here. The lights are switched on on the first Sunday in Advent and remain lit until the end of February. The light sources are a very warm white, about 2,500K.

12.5.2 Churches and communities of faith

Figure 12.1: A church with floodlighting and a private home with lights entwined around a flagpole, light up a dark December night. Credit: T. Axelsen

There are eight churches in the DSC area. During the Christmas period, the facades of six of the eight churches are illuminated with floodlights which is switched on from the first Sunday in Advent until Twelfth Night (6. January). The floodlights are not shielded and much light is therefore wasted around the church buildings. See Figure 12.1. The light sources are halogen with a power of 250W per light source, corresponding to about 10,000 lumen, and CCT 3,000K. In recent years, the light sources at one of the churches have been replaced with LED floodlights with the same 10,000 lumen but at a higher CCT 4,000K.

Two churches differ from the others, In place of floodlights, the church at Stege has faint string of lights in a warm light color in the windows. This type of lighting creates a cozier, more welcoming atmosphere. Finally, one church on Nyord does not have mains electricity. This church is lit by candles during services.

12.5.3 Privat

Figure 12.2: In Denmark, covering your house entirely with string lights has yet to become widespread. There are, however, some exceptions. This is one of only a few examples on Møn and Nyord. Credit: T. Axelsen

Private homes are commonly decorated with string, rope and net lights in the period up to Christmas. The quantity of light varies from home to home and most settle for a few string lights. However, the quantity of string lights used is slowly increasing and homes adorned with a large number of lights are becoming more common. Private Christmas lighting peaks in December. Most are switched off around Twelfth Night but it is not unusual to see string lights illuminated in January. Private lighting is generally a warm white. As LED light sources are becoming more popular, more blue-white light sources are used.

Section 13

Success in Light Pollution Control

13.1 New Project build under the lighting code

THE number of new building projects is low on Møn and Nyord. During the last two years, only one building project in the Dark Sky Community area have been planned and executed.

In the zoning for this building project Dark Sky and the protection of the night sky was included. The building project was a major overhaul and extension

Figure 13.1: The parking lot at the local super market, SuperBrugsen. New light was installed in the summer of 2016. The lighting fixtures are in accordance with the light management plan. Credit: T. Axelsen

of the parking lot belonging to the local super market, SuperBrugsen. All light fixtures were renewed and the new fixtures are all full-cut off and the light source is LED with a CCT of 3,000K.

At time of writting another zoning is being prepared by the municipality, this will also include wording about Dark Sky and protection of the night sky.

13.2 Local Certification Program

WITH the lack of local building projects another way of achieving succes in light pollution control had to be found.

Better and more outreaching success in light pollution control have been gained in the involvement of local entreprises where one of the goals of our Vision (see Section 4) have been to open the eyes of local enterprises to the inherent potential of our dark skies and the need to preserve them and take care when we use light at night.

To ensure that as many companies as possible took part, a Local Certification Program was launched at a very early stage of the project. Depending on how much effort the company put into minimizing its own light pollution and spreading the word about darkness, light pollution and stars, a company can be awarded from 1 to 5 stars. Enterprises can join the program and then use certification in marketing campaigns.

As part of the certification program, members of the Dark Sky Møn and Nyord working group have, by request, visited enterprises and reviewed lighting installations with the enterprise owners. The program has therefore also been a means, by which to teach and train people to use outdoor lighting correctly.

In 18 months, the program has succeeded in recruiting 22 enterprises. There is particularly strong participation from the accommodation sector. Hotels and other types of accommodations appreciate that it is important, that tourists visiting Møn and Nyord has the chance to see the night sky here in all its glory, thereby creating a understanding of the consequences of light pollution. We hope that visitors will take this knowledge with them when they return home.

Table 13.1 shows the number of enterprises that have joined the local certification program by type and percentage share of the total number of enterprises of the same type on Møn and Nyord.

Table 13.1: *Summary of Local Certification Program*

Company type	No. adapted LCP	% of total	Notes
B&B	9	41	
Camping	2	50	
Other	11		[a]

[a] This group is a mix of different types, including companies without accommodation, associations, housing association, private homes and more.

For further details about the Local Certification Program, see Appendix Appendix C. For details of individual enterprises and the steps they have taken, see Appendix Appendix D

Section 14

Other Local Dark Sky Initiatives

THE working group is delighted to see that the local population on Møn and Nyord have welcomed the idea of conserving and preserving the islands' awesome dark skies. This section of the application lists some of the islanders' most important initiatives.

14.1 Scouts

THE Danish Guide and Scout Association runs a local group on Møn. In February 2016, the scout group on Møn decided to become Denmark's first Dark Sky Scout Group. In May, the group made a survey of and was advised about outdoor lighting associated with their scout cabin. The group was advised to adjust two flood lights, which were fitted to emit light horizontally from the building. The floodlights are used in the winter months, but only when the scouts are active outdoors. The floodlights will be replaced with a new type installed such the light are not emmitted above the horisontal plan, but where light is needed.

At a meeting on 9. August 2016, the scouts steering committee adopted a motion to change the outdoor lighting at their cabin, in line with the survey carried out in May. Changes will be made at latest by August 2017.

In addition to changes to the outdoor lighting, the group has prepared a comprehensive catalog of ideas for teaching the children and young people in the scout group about the night sky, darkness, stars and light pollution.

Figure 14.1: The Dark Sky Scout Group, the first in Denmark, with the diplome from the Local Certification Program. The Dark Sky Scout recieved four stars in the Local Certification Program. Credit: T. Axelsen

The Møn scout group's willingness to adapt the outdoor lighting associated

with their cabin, teach children and young people about the night sky and the stars, has earned the group a four-star rating in the local certification program C.

14.2 Local Products

THE opportunity to use Dark Sky to market local products – of which there are many – has been seized on by the business community on Møn and Nyord.

Figure 14.2: Some local products inspired by Dark Sky.

The products include coffee, ice cream. embroidery, schnapps, an accommodation package, unique glass beads and black-out drapes. This list is not exhaustive.

14.3 Camønoen

ON 18. June 2016, a new hiking route was opened on Møn, Nyord and Bogø. It is called Camønoen. Camønoen is described as the Kingdom's most friendly hiking route. It is about 175 km (108 miles) long. The idea of the Camønoen is to promote a break from the hectic modern life and give the hikers time for serenity and contemplation or a hike in a beautiful countrysite. This matches perfectly with the Dark Sky concept.

The route is subdivided into 10 one-day stages. Each stage has a name inspired by the area covered that day. One stage is called The Milky Way. The path starts at the Møns Klint campground (an enterprise, which has achieved a four-star in the local certification program) into the proposed Dark Sky Park area and

follows Møns Klint cliffs into Klinteskoven woods. At the edge of the woods, the path veers away from Møns Klint and into the Dark Sky Community area. At Gurkebakken (a hill), the path follows the perimeter of the Dark Sky Park. A large shelter will be built here inside the Dark Sky Park area. The shelter's working name is "The Observatory" because it will be designed to allow hikers to sit in the middle of the shelter and look up at the stars. The shelter will not be illuminated (there is no electricity supply to this area). If everything goes according to plan, "the Observatory" will be erected in March 2017.

After Gurkebakken and "the Observatory", the Milky Way stage proceeds to Klintholm harbor.

The link between hiking, contemplation, silence and an impressive starry sky over Møn is outstanding. It offers a combination of four elements, all of which are forced into the shadows of our busy modern lives but remain important for us as human beings if we are to feel complete.

14.4 Dark Sky Planters

In 2016, as in many previous years, Vordingborg Municipality has decorated the streets of its larger towns with flowers in planters. In 2016, the topic for the floral decorations was unusual: "From Sunset to Dark Sky". The planters contain a cornucopia of carefully selected plants. Those that bloom earliest were light yellow in color. During the summer, other flowers succeeded and the colors changed from darker yellows via orange and finally to blues. Just like the colors in a sunset.

(a) (b)

Figure 14.3: "From Sunset to Dark Sky" – Planters presented by Vordingborg Municipality's Park and Gardens department.. Credit: Tom Axelsen

Section 15

Outreach

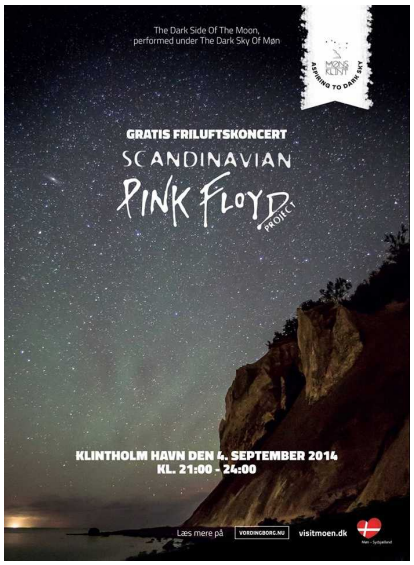
15.1 Concert

On 4 September 2014, a free concert with a Danish copy band, Scandinavian Pink Floyd Project, was held at Klintholm harbor. The aim of the concert was three-fold: to kick-start the Dark Sky project so that it gained a foothold on both islands and in the region, to introduce as many people as possible to the concept of Dark Sky Møn and Nyord, and in a for the occasion temporary information booth at Fiskernes Fælleshus (Fishermen's Community Center), to inform the general public about light pollution and conserving nocturnal darkness.

Figure 15.1: The crowd in front of the stage at the free concert on Klintholm harbor on 4 September 2014. Credit: Thomas Ix

Before the concert, Mayor Knud Larsen introduced the crowd to the Dark Sky project. The concert was a resounding success. It was attended by about 2,500-3,000 people, a huge crowd compared to the size of the town and its harbor. The information booth erected at "Fiskernes fællesbygning" was

an exhibition of photos on the theme "Night". A local electrician, Domiciel, exhibited examples of good and bad lamps for outdoor use. Many issues of Dark Sky News, stickers and Astronomy Guides were distributed from the booth. It was not possible to count the exact number of people who visited the information booth, although the estimated figure was at least 300 visitors.



(a)

(b)

Figure 15.2: a) Poster advertising the free concert at Klintholm harbor. The poster shows a photo of the night sky above Møns Klint. In addition to stars, the image shows airglow as a faint, greenish, wavy structure across the starry sky. b) Mayor Knud Larsen made a speech of welcome. Credit: Thomas Ix.

15.2 Night Sky Exhibits

SEVERAL photo exhibitions have been held featuring the night sky. The first was held in the exhibition hall at Bakkegård Gæstgiveri (an inn and B&B) from 19 October until 30 November 2013. Three local photographers, Lene K, Morten Pihl and Tom Axelsen, exhibited photos on the theme "The Night".

The same photos were also exhibited at the information booth on the day of the free concert on 4 September 2014.

From 10-20 October 2015, Tom Axelsen exhibited ten of his night photos at Noorbohandlen (a store and café) on Nyord. Late in July to end of August 2016, the same ten night photos was exhibited in Gamle Karetmagerhus (an café) as part of a larger exhibition and information event about light pollution.

15.3 Information Meetings

DURING 2015, two types of information meetings were held. The first type was an in-depth discussion of light pollution as an issue, how light pollution impacts the environment, and how we can keep skies dark at night. The other type of meeting was a lighter version of the first, e.g. an information meeting of this type was held as an introduction to the showing of the documentary

film “The City Dark". Meetings of the first type have been held across Møn and Nyord. They were primarily intended to attract people living in the local rural towns and surrounding areas. There is strong public interest in Dark Sky Møn and Nyord. See Table 15.1.

Table 15.1: *No. of attendees at information meetings.*

Hjelm	10 February 2015	17 attendees
De søndre byer	24 February 2015	23 attendees
Borre	17 March 2015	39 attendees

The second type of information meeting was held on two evenings at Bio Stege (movie theater) in connection with showing the documetary film, "The City Dark". The film was shown free of charge. 145 people saw the film and heard about light pollution and protecting our dark skies.

(a) (b)

Figure 15.3: a) The Bio Stege movie theater was full of people who came to hear about Dark Sky Møn and Nyord and see "The City Dark". There was free entry to see the movie on both nights. b) Information meeting at Borre community center.. Credit: Tom Axelsen

15.4 Star Parties

15.4.1 De Søndre Byer

A stargazing event was held in De Søndre Byer on 19 September 2015. 25 people attended. Within the first hour, they saw the moon, M13 and M31. Then the skies clouded over, blocking the view of the stars.

15.4.2 Schoolchildren

On 25 August 2015, a class of schoolchildren from Hvidovre Private School were shown the starry skies and the moon. 15 students and 2 teachers heard a talk about the Dark Sky Project. The schoolchildren had never seen the moon and stars as clear as they did that evening. In a telescope they were show the details of the moon and the colors of the stars.

15.5 Other forms of Outreach

15.5.1 Star talks

On Saturday, 13 June 2015, a Dark Sky golf tournament was held at Møn Golf Center. During the evening, after a barbecue dinner attended by 34 people, Tom Axelsen talked about the stars and why we should preserve our dark skies.

15.5.2 Galleri Nyord

On 5 June 2015, an exhibition by artist Jørn Bie was opened at Galleri Nyord. At the opening ceremony, Galleri Nyord's annual poster was unveiled. The poster features a work by Jørn Bie, a linoleum print that is almost 50 years old. The work was inspired by the night sky over Nyord.

(a) (b)

Figure 15.4: Fig. 5: a) Jørn Bie with Runa and Michael Stolt at the presentation of Galleri Nyord's annual poster. b) The annual poster.

15.5.3 Talk in Ungt Lys

On 27 May 2015, Ungt Lys (an association that is part of the Danish Lighting Center) held a lecture on darkness. The meeting was held in Copenhagen. Dark Sky Møn and Nyord took part in this event, which included a talk about protecting darkness, the consequences of light pollution and the work involved in establishing Denmark's first Dark Sky Community and Dark Sky Park. A total of 21 young lighting designers attended the event.

15.6 Damsholte Observatory

INSPIRED by efforts to conserve the night skies, a group of private citizens in two rural communities, Damsholte and Hjelm, built an observatory at Damsholte, which is suitable for public use. In November 2015, the observatory

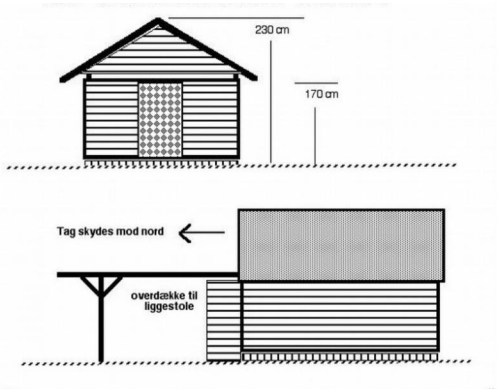


Figure 15.5: Drawing of DamObs. An observatory with a sliding roof and an 11" Celestron Schmidt-Cassegrain as its principal telescope. In the planning and construction phases, the project focused on ensuring easy access to the telescope for wheelchair users. Credit: DamObs

project received grants from two foundations: LUP (a local development plan fund) and Fanefjord Sparekasses Fond (a local savings bank fund). Once the municipal building permissions and approvals were in place, construction work began in spring 2016. The observatory officially opened 13 November 2016. The observatory building is about 15 m^2. The building is constructed with a fixed ramp for easy wheelchair access, a design detail, which makes Damsholte Observatory one of a kind in Denmark.

It is located at the rear perimeter of the property belonging to Ny Gammelsø. There is a 80 m (262 foot) long access route from observatory to the parking lot located by the mainroad. From the parking lot there is a short walk, 20 m (60 foot), along the mainroad, to a bus stop. From the bus stop there are bus routes to all the major towns in the area, e.g. Stege, Nykøbing F and Vordingborg.

The observatory's principal instrument is an 11" Celestron S-C telescope. It is mounted on a Linak lifting column so that children and wheelchair users can easily get access to the eyepieces of the telescope. The telescope is controlled via an iPad showing the night sky. It takes just one click to rotate the telescope to find the selected celestial objects.

Piggy-Back on the main telescope, rides a TS 80mm telescope outfitted with an Atik Infinity camera. The camera delivers live-stream pictures to a 42" flat screen so several visitors can follow the broadcast at once. The signal can also be live-streamed on YouTube. Within a few minutes, the small dots of light that the eye can see through ordinary binoculars are transformed into fascinating images of galaxies and nebulae, just like those we can see in long exposure astrophotography.

Figure 15.6: Damsholte Observatory officially opened on Sunday 13 November 2016. The opening drew more than 140 guests from Møn, Nyord and Zealand. Fortunately the sky was clear and the almost full moon shone brightly as the crowd moved through the observatory to get a look a the moon in the telescope. Credit: T. Axelsen

There are two large terraces in front of the observatory building, where people can enjoy the night sky from deck chairs through 7x50 binoculars. The observatory has 20 sets of binoculars at its disposal.

The observatory expects to hold events for schools and groups. In addition to regular membership, it will also be possible to sign up for so-called "key membership", which gives the member access to the observatory all year round and at any time during the night.

The observatory has discrete downlighting – indoors and out. The color of the light is chosen to have a spectral curve within 600-650 nm, i.e. in the deep-orange to red range, corresponding to a CCT well belove 2000K.

Section 16

Astrotourism

16.1 Astrotourism

THE local accommodation and tourism sector was not slow to latch on to the idea of exploiting the awesome night sky over Møn and Nyord as yet another asset to add to the islands' outstanding natural features. Many events were staged even as early as in 2015.

Beyond contributing to the local tourism economy, many of these events also contained an element of information about the stars and light pollution. The events helped to spread awareness of the night and the necessity of conserving and protecting darkness. Because many of the people who attended these events came from other parts of Denmark, an awareness of efforts to preserve the night sky reached farther than the local stargazing events.

Figure 16.1: Møn Sommermagasin, a local and free tourist magazine, published an article about Dark Sky Møn in the 2015 edition. In the 2016 edition the subject was Damsholte Observatory, see Section 15.6 Credit: Møn Sommermagasin

16.1.1 Beds & Breakfast

Bed & breakfast services are offered at 22 addresses on Møn and Nyord. Some hosts are actively involved in preserving darkness by taking part in the local certification program. See Section 13.2.

Section 17

Publications

VORDINGBORG Municipality have supported dark skies through financial support of the Dark Sky project, this includes web site and the publishing of two and a third planned editions of Dark Sky News.

17.1 Website

THE Dark Sky Møn website www.darksky-moen.dk og www.darksky-møn.dk went live in 2014. The website presents the Dark Sky concept on Møn and Nyord and markets Dark Sky activities.

The website addresses the general public and visitors to the islands as well as organizations, the authorities and the business community. For example, the business community can find information here about the local Dark Sky certification. Since its launch in October 2014 to August 2016, the website has had 6180 visitors.

In future, the website will be the key media in communicating Dark Sky on Møn and Nyord.

17.2 Dark Sky News

TWO Dark Sky newspapers have been published about Møn and Nyord. The newspapers are reproduced in Appendix H.

The purpose of the newspaper is to inform about the Dark Sky Project, light pollution, correct lighting and giving pride to the local population in their night sky. Vordingborg Municipality have support the publishing of the newspaper.

The first newspaper was published in 2014 (5,000 copies). The second newspaper was published in 2015 (also 5,000 copies). The second newspaper was reprinted in 2016 (5,000 copies). It is planned that a third version of Dark Sky News will be published in 2017, bringing the total number of newspaper to 20,000.

The newspapers were distributed at relevant locations on Møn and Nyord, e.g. accommodations, restaurants, attractions, public libraries etc. The newspapers

were also delivered to relevant partners and potential visitors. The newspapers contained interesting articles about the Dark Sky concept and the night sky over Møn and Nyord, and publicized many Dark Sky activities and innovative events organized by e.g. the hospitality sector and the golf club, and presented the cornucopia of Dark Sky food products that have been developed in recent years.

17.3 Online Social Media

DARK Sky Møn and Nyord has been active on Facebook since summer 2014. The Facebook page is used very actively to communicate Dark Sky initiatives to the local community and visitors. As of 6 November 2016, the Facebook page has 2415 likes.

Instagram is also used to communicate Dark Sky Møn and Nyord using these tags: #darkskymøen and #darkskymoen. There are 211 followers and a total of 44 posts.

Both media will continue to play a key role in future Dark Sky profiling.

Section 18

References

[1] Bodil Bengtsson et al, *De Søndre Byer, En lokal historie fra Møn*, Beboerforeningen: De Søndre Byer, 2006, Download PDF (in Danish) here: www.desøndrebyer.dk.

[2] Heat Lightning - Kornmod Kornmod on Wikipedia - Link to text in Danish Heat Lightning on Wikipedia - Link to text in English

[3] Danish Meteorologic Institute Link to Danish Climate Normals at Danish Meteorologic Institutes website

[4] Download PDF (in Danish) about the geology of Møn here: Møns geologi - en præsentation af den geologiske litteratur om Møn

[5] A freeware for processing astronomical images: IRIS - An astronomical images processing software

[6] Fabio Falci et al, *The new world atlas of artificial night sky brightness* Link to article at ScienceAdvances

[7] Brøndegaard, *Folk og Fauna 1*, The first florilegium about Danish ethnobotany. Four volumes in this series of books appeared from 1978-1980, reprinted in 1987. Now available as PDF files (in Danish) from Kungl. Skogs- och Lantbruksakademien (KSLA, The Royal Swedish Academy of Agriculture and Forestry). *Folk og Fauna 1* Link to pdf-file at Kungl. Skogs- och Lantbruksakademien web-site.

[8] Danish Public Roads Act, *Danish Public Roads Act, Act no. 1520 of 27 December 2014* Link to url with legislative text - in Danish.

[9] Street lighting, applicable handbook *Vejbelysning (Street Lighting), 1 April 2015* Link to english version of Handbook.

[10] DWEA Guidelines A.1.5 of February 2002, *DWEA Guidelines A.1.5 of February 2002* Link to Danish Working Environment Authority.

[11] Danish Nature Conservation Act *Act no. 1578 of 8 December 2015* Link to url with legislative text - in Danish.

Appendix A

Individual Night Sky Brightness Measurements

NIGHT sky quality was measured using four Unihedron SQM-L instruments. Vordingborg Municipality purchased three of the instruments for this project. The fourth instrument is privately owned. The three newly purchased instruments were delivered to volunteers during fall 2015. For instrument data, see Table A.1.

Table A.1: *Summary of SQM-L instruments*

Instrument Serial No.	Measuring Area	Person	Firmware Version	Difference $mag./arcsec.^2$	Notes
#6409	Yellow	Tom Axelsen	_2.17	0.00	[a]
#8960	Blue	Lars Kleist	_2.18	0.13	[b]
#8946	Red	Jens Haubroe	_2.18	0.15	[b]
#8957	Green	Søren Madsen	_2.18	0.12	[b]

[a] This instrument is the reference. #6409 have been compared to the instrument of Andreas Hänel, Germany (#2536). The difference between #6409 and #2536 is 0.00 $mag./arcsec^2$.
[b] Measures too bright.

The volunteers selected their own measurement locations in the zone they were to cover. The reason for this, was an expectation that they were well-acquainted with their zone and therefore would have prior knowledge of locations from which to measure.

The following specifications applied to the selection of measurement locations and measurements generally:

- Each volunteer shall measure at least three geographical locations.
- The geographical locations measured shall be evenly distributed across the measurement zone.
- One measurement location must be in an urban area with street lights.
- Most measurements shall be taken from the volunteer's home. Other measurement locations shall be visited 3-4 times during the measurement period.

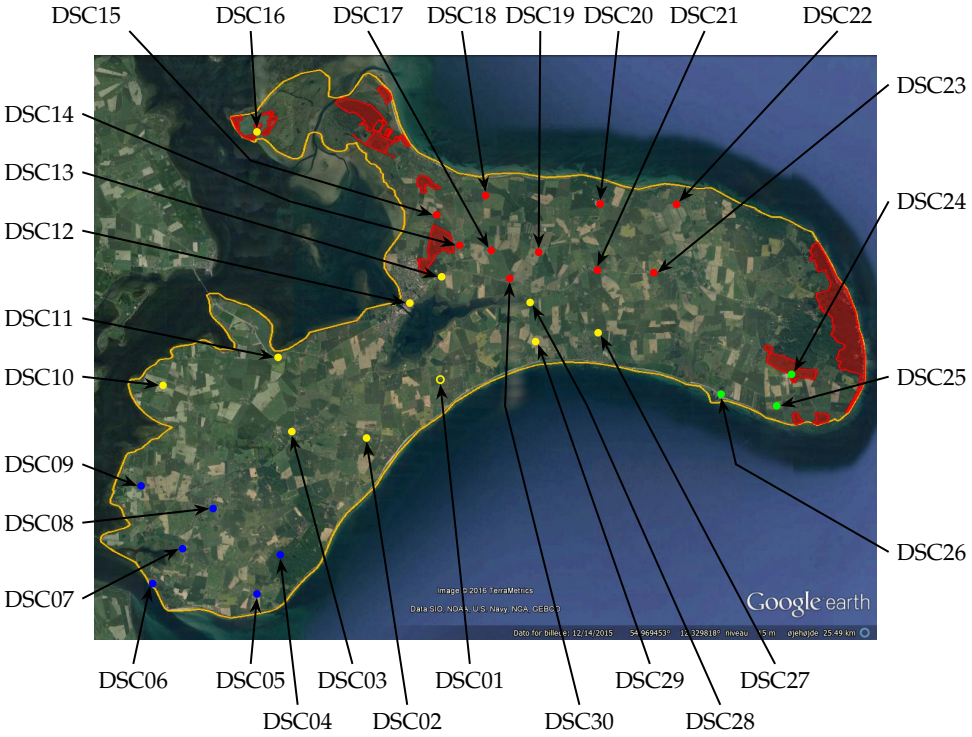


Figure A.1: Map to show sites where measurements were taken using SQM-L instruments. ID coding is reproduced in the measurement tables. Color coding of measurement sites to show what type of instrument was used. Blue: #8960, yellow: #6409, red: #8946 and green: #8957. Map source: GoogleEarth

- The measurement period is counted from the day the instrument is delivered until the first night with astronomical twilight throughout the night (8 May 2016).
- Measurements shall be taken after the end and before the start of astronomical twilight.
- The sky must be clear.
- The moon must be below the horizon.
- Measurements shall be made in zenith.

Figure A.1 shows where the volunteers chose to take measurements. Each measurement is given an ID code, which is used consistently in the remaining tables in Appendix A.

The columns in the tables are as follows:

Date:	Dato givet i formatet YYYYMMDD
Local time:	Time of measurement. Format HH:MM. Time stated at local time, i.e. CET. Measurements made in the period from the last Sunday in March until the last Saturday in October were taken at CET+1.
ID:	ID code for geographical location. For position, see Figure A.1.
Long:	Longitude of the geographical location
Lati:	Latitude of the geographical location.
1. - 5.:	Five separate measurements expressed as $mag./arcsec^2$.
Mean:	Average of the five measurements, expressed as $mag./arcsec^2$.
Corr.:	Mean is corrected with the Difference given in Table A.1 so that the measurement is comparable with reference instrument #6409. $mag./arcsec^2$.

A.1 Zone #6409 - Yellow

MEASUREMENT taken in zone #6409 – Yellow were performed using instrument #6409, which is the reference instrument. During Dr. Andreas Hänel's visit to Møn in March/April 2016, this instrument was compared with Dr. Hänel's instrument, which was used as the reference instrument for measurements in connection with the German International Dark Sky Reserves. The difference between #2536 and #6409 was 0.00 $mag./arcsec^2$.

The series of measurements taken with #6409 is longest and dates back to August 2012. As #6409 is the reference instrument, the Corr. column in Table A.2 is left empty.

The best measurements measured with this instrument in the proposed International Dark Sky Community area were: 21.86 $mag./arcsec^2$ on 3 March 2016 and 21.90 $mag./arcsec^2$ on 5 May 2016. The worst measurement location was DSC12 on the main square in Stege. This location is surrounded by street lights. The best measurement here was 20.33 $mag./arcsec^2$ on 9 March 2016.

Table A.2: *Measurements with #6409*

Date	Local time	ID	Long.	Lati.	1.	2.	3.	4.	5.	Mean	Corr.
20120812	00:15	DSC01	54.959	12.303	21.55	21.54	21.56	21.55	-	21.55	
20120818	23:40	DSC01	54.959	12.303	21.48	21.49	21.50	21.52	21.50	21.50	
20120908	22:09	DSC01	54.959	12.303	21.47	21.47	21.48	21.47	21.47	21.47	
20120912	22:25	DSC01	54.959	12.303	21.37	21.37	21.34	21.34	21.36	21.36	
20120914	01:00	DSC01	54.959	12.303	21.63	21.63	21.61	21.62	21.60	21.62	
20120923	00:55	DSC01	54.959	12.303	21.37	21.35	21.38	21.38	21.38	21.37	
20121009	23:00	DSC01	54.959	12.303	21.23	21.25	21.23	21.24	21.23	21.24	
20121010	23:15	DSC01	54.959	12.303	21.37	21.36	21.38	21.37	21.41	21.38	
20121208	00:10	DSC01	54.959	12.303	21.45	21.46	21.47	21.45	21.45	21.46	
20130203	00:07	DSC01	54.959	12.303	21.73	21.65	21.65	21.65	21.67	21.67	

Table A.2: *Measurements with #6409*

Date	Local time	ID	Long.	Lati.	1.	2.	3.	4.	5.	Mean	Corr.
20130304	22:15	DSC01	54.959	12.303	21.65	21.63	21.64	21.66	21.64	21.64	
20130401	23:35	DSC01	54.959	12.303	21.74	21.74	21.74	21.74	21.73	21.74	
20130403	20:10	DSC01	54.959	12.303	21.69	21.67	21.67	21.67	21.71	21.68	
20130503	23:55	DSC01	54.959	12.303	21.52	21.52	21.49	21.47	21.48	21.50	
20130504	01:05	DSC01	54.959	12.303	21.57	21.53	21.52	21.52	21.55	21.54	
20130927	23:20	DSC01	54.959	12.303	21.37	21.42	21.41	21.41	21.39	21.40	
20131204	21:55	DSC01	54.959	12.303	21.53	21.52	21.51	21.52	21.54	21.52	
20140426	23:40	DSC01	54.959	12.303	21.77	21.75	21.74	21.73	21.75	21.75	
20140427	00:19	DSC01	54.959	12.303	21.79	21.78	21.77	21.78	21.77	21.78	
20150312	22:40	DSC01	54.959	12.303	21.60	21.60	21.58	21.58	21.59	21.59	
20150410	23:08	DSC01	54.959	12.303	21.54	21.54	21.53	21.53	21.54	21.54	
20150416	22:50	DSC01	54.959	12.303	21.57	21.59	21.58	21.58	21.58	21.58	
20150417	23:15	DSC16	55.043	12.196	21.56	21.55	21.54	21.54	21.54	21.55	
20151011	00:15	DSC01	54.959	12.303	21.33	21.33	21.33	21.33	21.34	21.33	
20151207	18:34	DSC11	54.966	12.208	21.15	21.12	21.13	21.13	21.13	21.13	
20151207	18:57	DSC12	54.985	12.286	19.44	19.44	19.44	19.42	19.42	19.43	
20151207	19:03	DSC13	54.994	12.304	21.01	21.01	21.01	21.01	21.00	21.01	
20151207	19:10	DSC28	54.985	12.356	21.13	21.13	21.12	21.12	21.12	21.12	
20151207	19:14	DSC29	54.972	12.359	21.19	21.19	21.18	21.19	21.18	21.19	
20151207	19:23	DSC01	54.959	12.303	21.21	21.19	21.20	21.20	21.21	21.20	
20160103	19:52	DSC01	54.959	12.303	20.87	20.87	20.87	20.88	20.89	20.88	
20160103	20:30	DSC01	54.959	12.303	21.02	21.02	21.02	21.00	21.00	21.01	
20160204	20:18	DSC01	54.959	12.303	21.42	21.42	21.42	21.43	21.43	21.42	
20160309	23:06	DSC11	54.966	12.208	21.45	21.45	21.44	21.44	21.45	21.45	
20160309	23:35	DSC12	54.985	12.286	20.10	20.10	20.09	20.10	20.09	20.10	
20160309	23:40	DSC13	54.994	12.304	21.31	21.31	21.33	21.32	21.31	21.32	
20160309	23:48	DSC28	54.985	12.356	21.51	21.50	21.53	21.51	21.51	21.51	
20160309	23:52	DSC29	54.972	12.359	21.57	21.58	21.58	21.57	21.58	21.58	
20160310	00:01	DSC01	54.959	12.303	21.62	21.62	21.59	21.60	21.59	21.60	
20160311	23:11	DSC16	55.043	12.196	21.77	21.77	21.75	21.76	21.75	21.76	
20160407	22:32	DSC01	54.959	12.303	21.54	21.54	21.51	21.51	21.51	21.52	
20160408	23:37	DSC01	54.959	12.303	21.71	21.71	21.68	21.68	21.71	21.70	
20160409	22:31	DSC02	54.939	12.260	21.63	21.63	21.60	21.58	21.58	21.60	
20160409	22:48	DSC03	54.941	12.216	21.47	21.48	21.49	21.50	21.52	21.49	
20160409	23:05	DSC10	54.957	12.141	21.75	21.75	21.74	21.71	21.74	21.74	
20160409	23:24	DSC11	54.966	12.208	21.69	21.68	21.68	21.68	21.67	21.68	
20160409	23:45	DSC12	54.985	12.286	20.36	20.36	20.31	20.31	20.29	20.33	
20160409	23:55	DSC13	54.994	12.304	21.63	21.63	21.64	21.65	21.66	21.64	
20160310	00:10	DSC28	54.985	12.356	21.73	21.73	21.73	21.74	21.70	21.73	
20160310	00:25	DSC27	54.975	12.395	21.86	21.86	21.86	21.86	21.87	21.86	
20160310	00:38	DSC29	54.972	12.359	21.80	21.80	21.82	21.83	21.82	21.81	
20160310	01:01	DSC01	54.959	12.303	21.83	21.85	21.81	21.82	21.82	21.83	
20160505	00:04	DSC01	54.959	12.303	21.92	21.90	21.89	21.89	21.91	21.90	
20160506	01:37	DSC01	54.959	12.303	21.75	21.76	21.75	21.78	21.77	21.76	

A.2 Zone #8960 - Blue

THE measurements were taken using instrument #8960. This instrument has been compared with #6409 and was found to measure 0.13 $mag./arcsec^2$ lower than #6409, i.e. a lighter sky. In the Corr. column in Table A.3, Mean values are corrected for this difference between #8960 and #6409.

The best measurements measured with this instrument were: 21.92 $mag./arcsec^2$ and 21.94 $mag./arcsec^2$, both on 1 April 2016. The worst measurement on 1

April 2016 was 21.39 $mag./arcsec^2$. This was measured at measurement location DSC08 in the town of Store Damme, which has street lighting.

Table A.3: *Measurements with #8960*

Date	Local time	ID	Long.	Lati.	1.	2.	3.	4.	5.	Mean	Corr.
20150813	00:45	DSC04	54.900	12.209	-	-	-	-	-	21.26	21.39
20150814	01:45	DSC04	54.900	12.209	-	-	-	-	-	21.21	21.34
20150815	23:15	DSC04	54.900	12.209	-	-	-	-	-	21.11	21.24
20150819	01:45	DSC04	54.900	12.209	-	-	-	-	-	21.14	21.37
20150820	01:15	DSC04	54.900	12.209	-	-	-	-	-	21.16	21.29
20150821	04:00	DSC04	54.900	12.209	-	-	-	-	-	21.00	21.13
20150821	23:30	DSC04	54.900	12.209	-	-	-	-	-	21.31	21.44
20150821	23:15	DSC05	54.887	12.196	-	-	-	-	-	21.36	21.49
20150822	23:20	DSC04	54.900	12.209	-	-	-	-	-	21.10	21.23
20151010	00:54	DSC04	54.900	12.209	21.56	21.47	21.58	21.44	21.59	21.53	21.66
20151012	00:04	DSC04	54.900	12.209	21.55	21.61	21.48	21.56	21.57	21.55	21.68
20151115	00:15	DSC04	54.900	12.209	21.22	21.34	21.26	21.28	21.29	21.28	21.41
20151116	00:04	DSC04	54.900	12.209	21.28	21.34	21.36	21.37	21.32	21.33	21.46
20151118	00:30	DSC04	54.900	12.209	21.34	21.32	21.32	21.36	21.38	21.34	21.47
20160310	23:32	DSC04	54.900	12.209	21.11	21.22	21.18	21.24	21.17	21.18	21.31
20160311	23:10	DSC04	54.900	12.209	21.14	21.21	21.26	21.24	21.24	21.22	21.35
20160312	23:40	DSC04	54.900	12.209	21.22	21.24	21.17	21.26	21.28	21.23	21.36
20160319	23:15	DSC04	54.900	12.209	21.24	21.26	21.30	21.28	21.27	21.27	21.40
20160329	23:40	DSC04	54.900	12.209	21.41	21.38	21.36	21.36	21.38	21.38	21.51
20160330	23:10	DSC04	54.900	12.209	21.35	21.34	21.36	21.37	21.37	21.36	21.49
20160331	23:20	DSC04	54.900	12.209	21.38	21.37	21.38	21.36	21.36	21.37	21.50
20160401	23:00	DSC04	54.900	12.209	21.90	21.82	21.76	21.78	21.70	21.79	21.92
20160401	23:10	DSC08	54.916	12.170	21.28	21.27	21.27	21.26	21.24	21.26	21.39
20160401	23:15	DSC09	54.923	12.128	21.86	21.82	21.79	21.80	21.76	21.81	21.94
20160401	23:25	DSC07	54.902	12.152	21.28	21.29	21.27	21.27	21.27	21.28	21.41
20160401	23:30	DSC06	54.890	12.134	21.28	21.29	21.28	21.28	21.29	21.28	21.28

A.3 Zone #8946 - Red

THE measurements taken in zone #8946 – Red were taken using instrument #8946. This instrument has also been compared with #6409 and was found to give a measurement that is 0.15 $mag./arcsec^2$ lower than #6409, i.e. a lighter sky. In the Corr. column in Table A.4, the Mean is corrected for this difference between #8960 and #6409.

The best measurements measured with this instrument were: 21.75 $mag./arcsec^2$ measured on 10 March and 2 April 2016. The poorest measurement was 20.92 $mag./arcsec^2$ measured on both 10 March and 2 April at measurement location DSC30 in Keldby, a rural village, which has street lighting.

Table A.4: *Measurements with #8946*

Date	Local time	ID	Long.	Lati.	1.	2.	3.	4.	5.	Mean	Corr.
20160104	21:50	DSC20	55.018	12.397	21.02	21.08	21.04	21.03	21.04	21.04	21.19
20160104	22:05	DSC22	55.018	12.442	21.04	20.99	20.99	21.01	21.01	21.01	21.16
20160104	22:20	DSC23	54.995	12.428	20.99	20.99	21.00	21.01	21.00	21.00	21.15
20160104	22:30	DSC21	54.996	12.395	20.94	20.97	20.94	20.94	20.97	20.95	21.10
20160104	22:45	DSC30	54.993	12.344	21.00	21.00	20.96	20.96	20.98	20.98	21.13
20160104	22:57	DSC18	55.021	12.330	21.00	21.00	21.00	21.03	20.99	21.00	21.15
20160109	22:12	DSC20	55.018	12.397	21.43	21.38	21.38	23.40	21.38	21.39	21.54

Table A.4: *Measurements with #8946*

Date	Local time	ID	Long.	Lati.	1.	2.	3.	4.	5.	Mean	Corr.
20160109	22:26	DSC22	55.018	12.442	21.34	21.38	21.38	21.36	21.35	21.36	21.51
20160109	22:40	DSC23	54.995	12.428	21.44	21.43	21.48	21.44	21.44	21.45	21.60
20160109	22:50	DSC21	54.996	12.395	21.44	21.42	21.43	21.43	21.43	21.43	21.58
20160109	22:57	DSC30	54.993	12.344	21.42	21.44	21.43	21.44	21.43	21.43	21.58
20160109	23:10	DSC18	55.021	12.330	21.46	21.47	21.47	21.48	21.50	21.48	21.63
20160109	23:21	DSC19	55.002	12.361	21.50	21.52	21.48	21.50	21.47	21.49	21.64
20160310	22:00	DSC20	55.018	12.397	21.49	21.53	21.54	21.54	21.55	21.53	21.68
20160310	22:07	DSC22	55.018	12.442	21.62	21.63	21.65	21.66	21.66	21.64	21.79
20160310	22:20	DSC23	54.995	12.428	21.05	21.05	21.07	21.08	21.10	21.07	21.22
20160310	22:30	DSC21	54.996	12.395	20.96	21.16	21.16	21.18	21.19	21.13	21.28
20160310	22:55	DSC30	54.993	12.344	20.88	20.90	20.90	20.94	20.96	20.92	21.07
20160310	22:45	DSC18	55.021	12.330	21.70	21.78	21.78	21.78	21.69	21.75	21.90
20160310	23:10	DSC13	55.004	12.315	21.19	21.19	21.21	21.24	21.28	21.22	21.37
20160401	23:25	DSC20	55.018	12.397	21.49	21.53	21.54	21.54	21.55	21.53	21.68
20160401	23:36	DSC22	55.018	12.442	21.62	21.63	21.65	21.66	21.66	21.64	21.79
20160402	00:05	DSC23	54.995	12.428	21.05	21.05	21.07	21.08	21.10	21.07	21.22
20160402	00:10	DSC21	54.996	12.395	20.96	21.16	21.16	21.18	21.19	21.13	21.28
20160402	00:20	DSC30	54.993	12.344	20.88	20.90	20.90	20.94	20.96	20.92	21.07
20160402	00:30	DSC18	55.021	12.330	21.70	21.78	21.78	21.78	21.69	21.75	21.90
20160402	00:40	DSC15	55.014	12.301	21.23	21.23	21.23	21.24	21.28	21.24	21.39
20160402	00:25	DSC17	55.003	12.333	21.32	21.33	21.32	21.34	21.33	21.33	21.48

A.4 Zone #8957 - Green

THE measurements in zone #8957 – Green were taken using instrument #8957. This instrument has also been compared with #6409 and was found to give a measurement that is 0.12 $mag./arcsec^2$ lower than #6409, i.e. a lighter sky.

The best measurements measured with this instrument were: 21.44 $mag./arcsec^2$ and 21.50 $mag./arcsec^2$, both measured on 3 February 2016 at DSC24 and DSC25. The worst measurement 18.42 $mag./arcsec^2$ was taken on 10 April 2016 at DSC26 – Klintholm Havn, where the town and harbor have street and harbor lights.

Table A.5: *Målinger med #8957*

Date	Local time	ID	Long.	Lati.	1.	2.	3.	4.	5.	Mean	Corr.
20151218	21:30	DSC26	54.954	12.468	18.92	18.94	18.94	18.96	19.02	18.96	19.08
20151218	21:40	DSC24	54.960	12.509	19.95	19.93	19.92	19.91	19.87	19.92	20.04
20151218	21:45	DSC25	54.950	12.500	19.58	19.59	19.61	19.66	19.66	19.62	19.74
20160104	21:30	DSC26	54.954	12.468	20.65	20.59	20.57	20.59	20.59	20.60	20.72
20160104	21:40	DSC24	54.960	12.509	20.89	20.97	21.06	20.27	20.97	20.83	20.95
20160104	21:45	DSC25	54.950	12.500	20.96	20.86	21.06	21.04	20.95	20.97	21.09
20160203	19:10	DSC26	54.954	12.468	20.97	20.96	20.98	21.01	21.00	20.99	21.11
20160203	19:05	DSC24	54.960	12.509	21.78	21.33	21.17	21.13	21.19	21.32	21.44
20160203	19:00	DSC25	54.950	12.500	21.45	21.41	21.27	21.37	21.40	21.38	21.50
20160309	22:07	DSC26	54.954	12.468	21.09	21.12	21.03	21.05	21.06	21.07	21.19
20160309	22:15	DSC24	54.960	12.509	20.17	20.08	20.10	20.14	20.60	20.22	20.34
20160309	22:25	DSC25	54.950	12.500	21.15	21.11	21.26	21.13	21.20	21.17	21.29
20160401	23:00	DSC24	54.960	12.509	21.48	20.89	21.04	21.05	21.08	21.11	21.23
20160401	23:10	DSC26	54.954	12.468	20.28	20.51	20.51	20.49	20.46	20.45	20.57
20160401	23:20	DSC25	54.950	12.500	20.88	20.95	21.03	20.95	21.06	20.97	21.09
20160410	22:40	DSC24	54.960	12.509	20.69	20.80	20.73	20.75	21.03	20.80	20.92
20160410	22:45	DSC26	54.954	12.468	18.04	19.34	18.51	17.92	17.69	18.30	18.42

Table A.5: *Målinger med #8957*

Date	Local time	ID	Long.	Lati.	1.	2.	3.	4.	5.	Mean	Corr.
20160410	22:50	DSC25	54.950	12.500	20.36	20.90	20.89	20.87	20.90	20.78	20.90

Appendix B

Long Term Night Sky Brightness Measurements

SINCE December 2013 data of the night sky brightness (NSB) have been collected on a regular basis from DSC01, 3 km outside Stege, the major town of Møn.

The data was collected with two Unihedron SQM-LU-DL instruments. The first instrument had a terminal malfunction in September 2014 and was replaced in the start of October 2014 with a new instrument.

All the measurments are made in Zenith and preferably with no cloudcover and no moon. From August 2015 the instrument has collected data on an increasing number of nights which do not fulfill these requirements and from January 2016 data has been collected each night. A sampling rate of 2-5 minutes makes it possible, in the post-collection analysis of the data, to eliminate interference of clouds and moon light. Clouds show up as large scale fluctuation of the NSB. The Moon shows up as a steady increase of NSB until the it culminates, after which there is a steady decrease in the NSB.

B.1 Selected nights

FIGURE B.1 explain how the detailed graphs of single nights (see following pages) are interpreted.

1. Normal night sky brightness scale, with black lables. Measurements between 21 to 22 $\mathrm{magnitude/arcsec.}^2$ are shown.
2. Fluctuation in night sky brightness due to clouds.
3. Start of astronomical twilight, morning.
4. Clear sky. Very small (if any) fluctuation of night sky brightness.
5. Start date. A measurement runs from evening at 17:00 to 07:30 the next morning.
6. Time scale follows local time. Major ticks every three hour. The first major tick is at 18:00, then 21:00, 00:00, 3:00 and finally the last major tick at 6:00 in the morning. Inbetween are minor ticks for every hour.

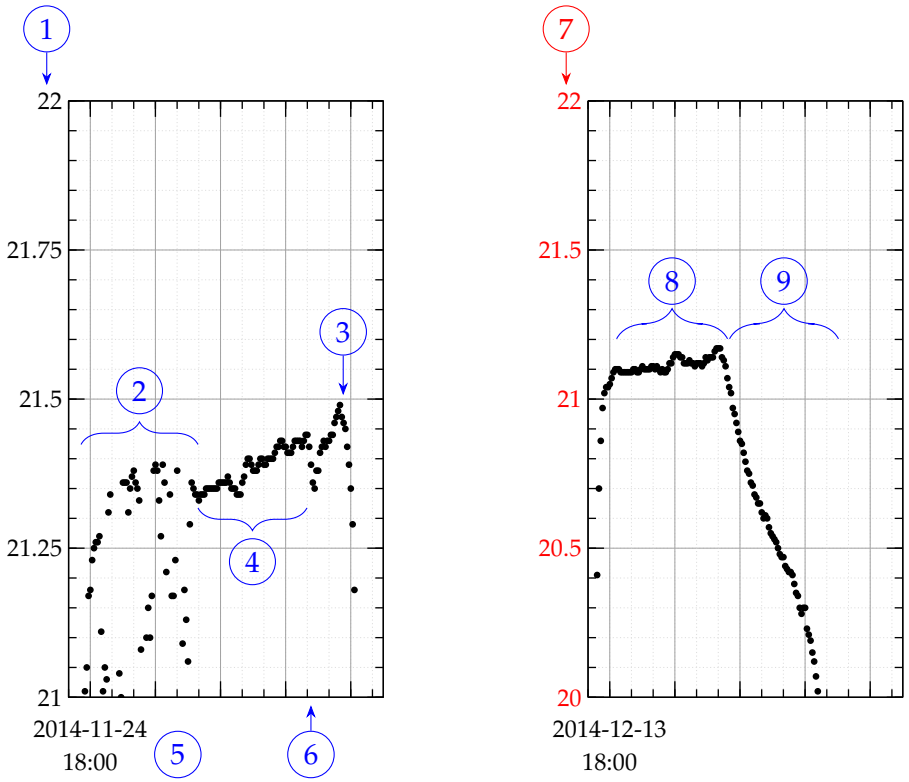
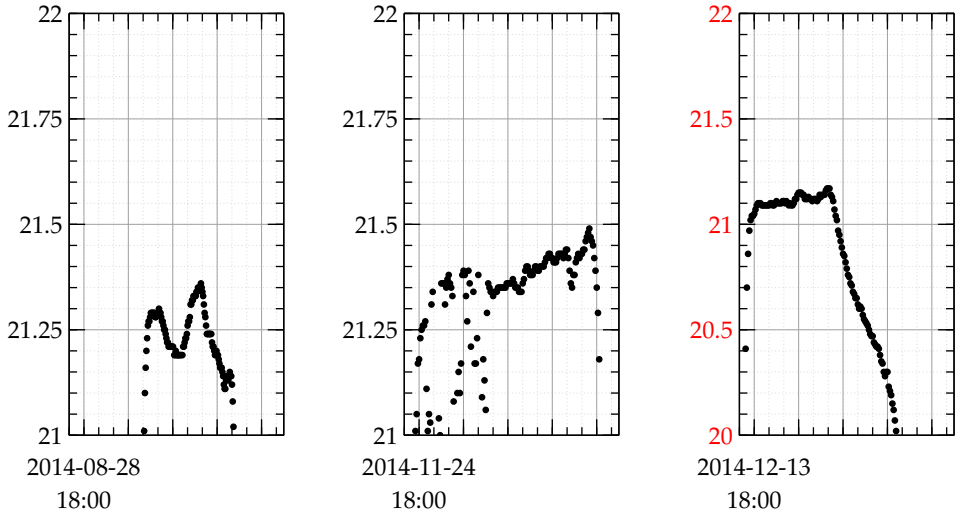


Figure B.1: How to read the graphes in this section. The numbers in the figure referes to the key below.

7. Extended night sky brightness scale, with red lables. Typical use on nights with increased airglow. Measurements from 20 to 22 $\mathrm{magnitude/arcsec.}^2$ are shown.
8. Clear sky, with airglow.
9. Moonrise with steady increase in night sky brightness. The setting Moon will give a steady decrease in night sky brightness.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21
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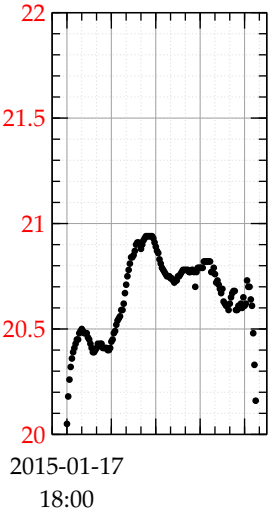
18:00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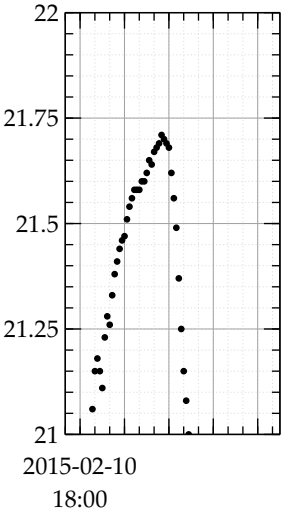
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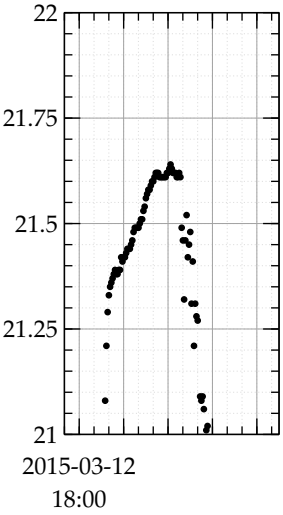
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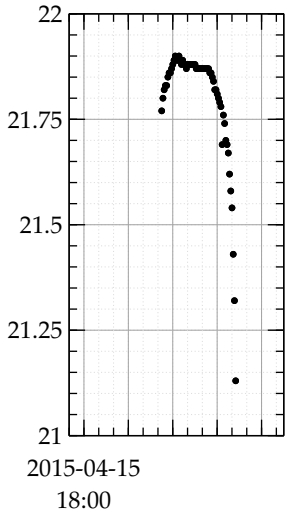
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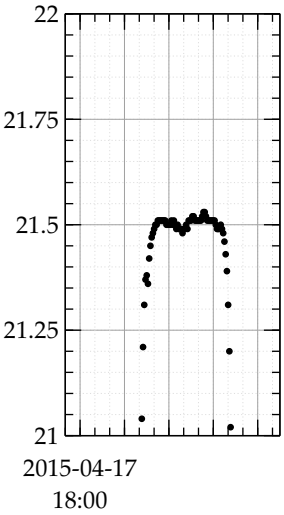
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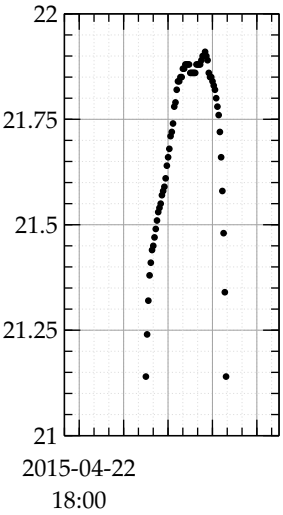
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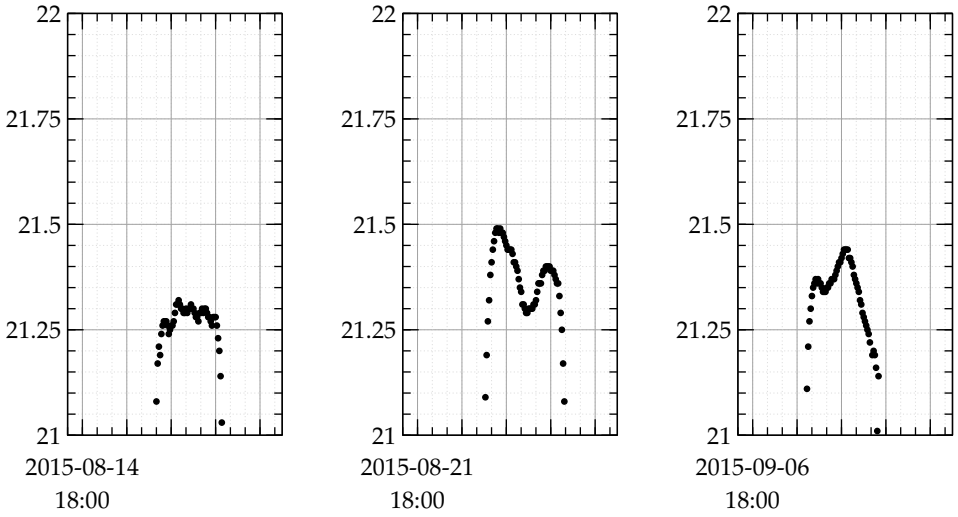
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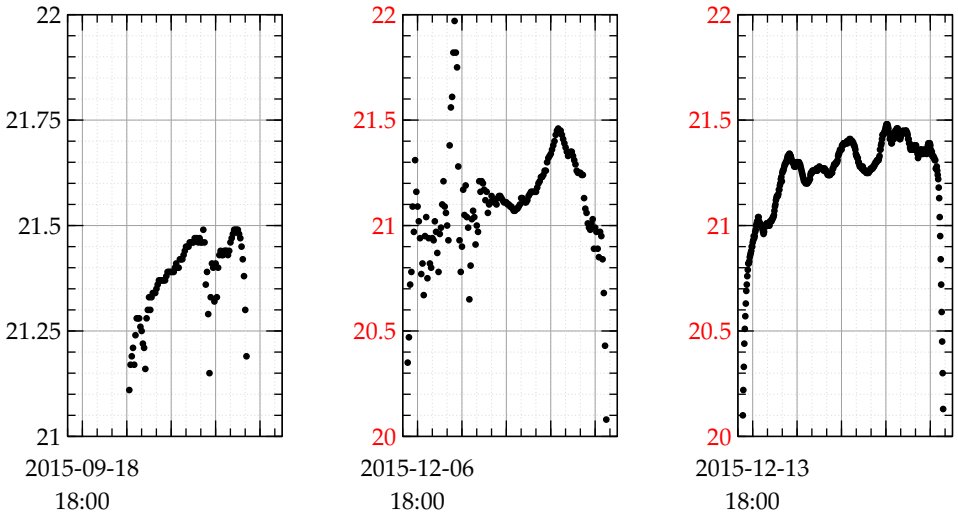
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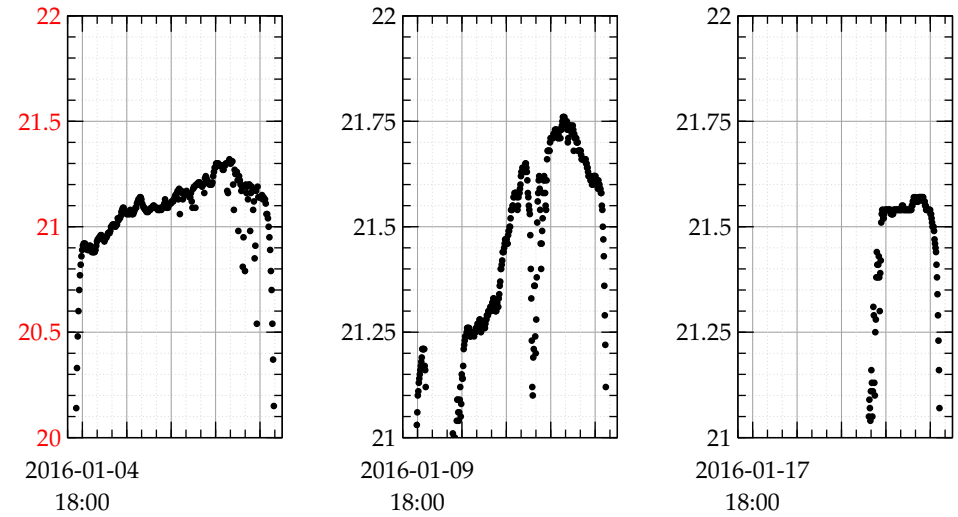
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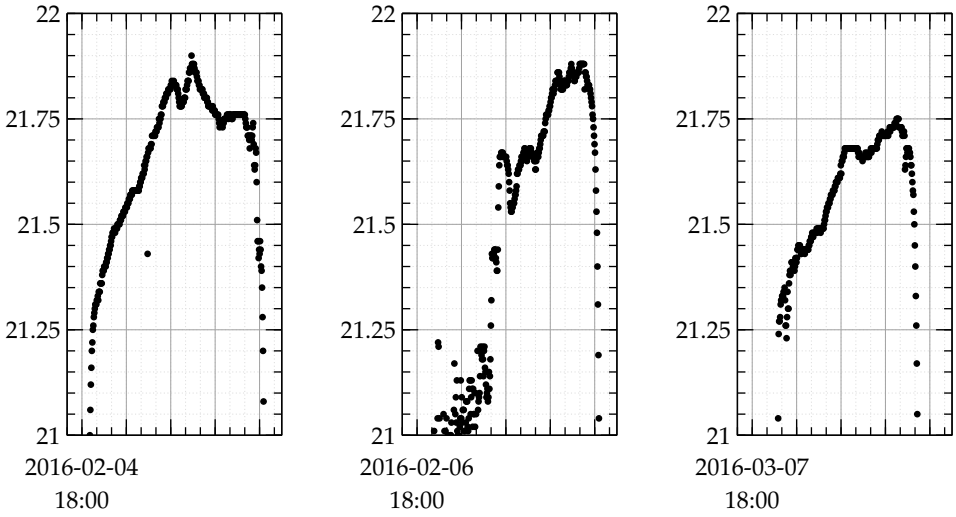
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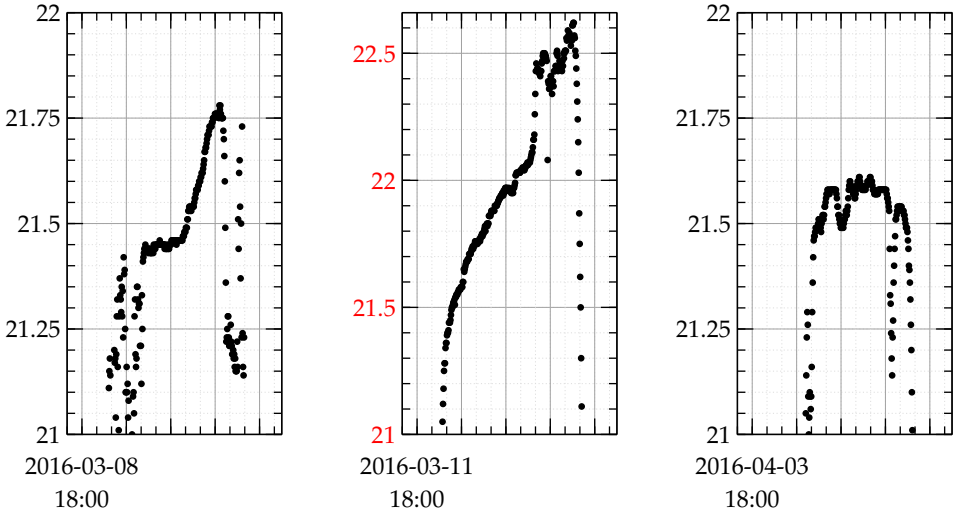
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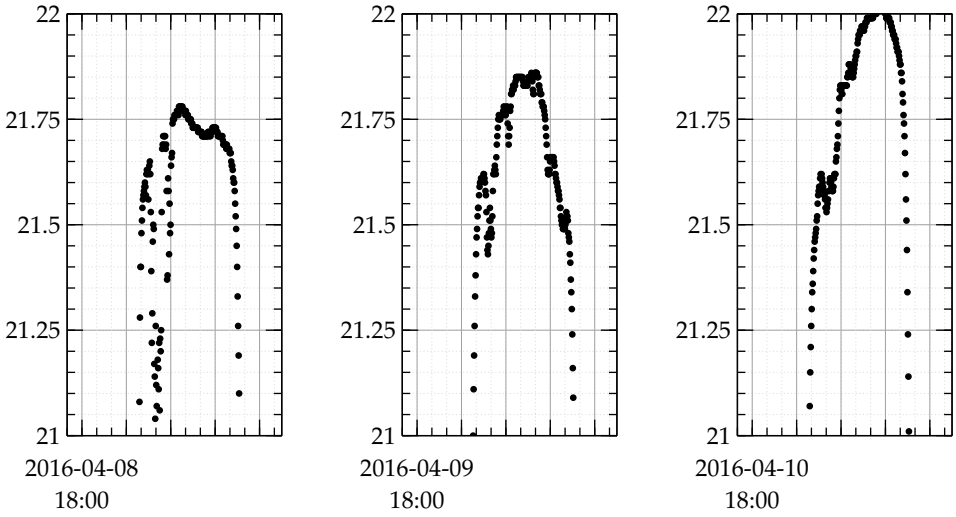
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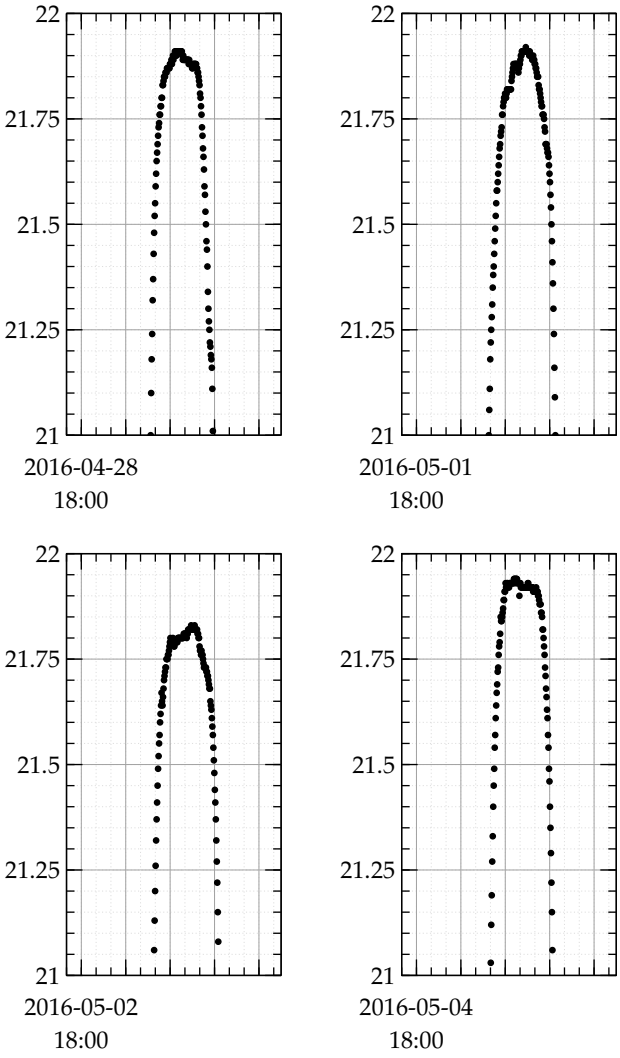
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2016-05-04
18:00

Appendix C

Guidelines for Local Certification of Enterprises

THERE are many small enterprises in the Dark Sky Community area, many in tourism (accommodations), food producing enterprises and artists. To get the business community involved in the project and committed to dark sky preservation, a local certification program has been set up. The certification program awards enterprises from one to five stars, depending on how much the enterprise has done to protect dark skies and inform about the consequences of light pollution.

Dark Sky Møn and Nyord

Corporate Certification

DSMN-12-02 : 2015-04

About version 2

This document is updated to include all types of enterprises.

Purpose

By Danish standards, Møn and Nyord have outstanding dark skies with very limited light pollution. The darkness makes being outdoors at night under a sky full of stars an overwhelming experience that hones the senses. You hear sounds more keenly and are aware of scents that fill the night air.

The hospitality sector on Møn and Nyord has an important role to play in communicating our dark skies. Most guests come from areas with considerable light pollution and it is likely that most guests will encounter Møn's night skies in connection with an overnight stay.

Visitors' experience of staying on Møn and Nyord will be clearer and more awe-inspiring if the hospitality sector optimizes outdoor lighting to prevent obscuring their guests' dark sky experiences. The goal is to ensure that guests have so unforgettable an experience that they will make a return visit.

Places to stay on Møn and Nyord can be certified in accordance with their efforts to help their guests experience the darkness and starry skies from their accommodation.

This document lists the requirements the hospitality sector on Møn and Nyord has to meet in order to become DSMN certified.

Validity

The present document applies only to enterprises located i Dark Sky Community areas. Enterprises that are located in or wish to join Dark Sky Park areas must meet the more stringent requirements in DSMN-02.

Definitions

Enterprise
Includes all types of contact and services for tourists, during which some type of exchange, monetary or otherwise, is made The term includes (NB: this list is not exhaustive): B&Bs, camp sites, youth hostels, campgrounds, restaurants, cafés, activity centers, tourist information and visitors' centers.

DWEA
Danish Working Environment Agency

Motion sensors
Electronic sensors and contactors that switch on the light source when the sensors register movement in their "field of vision". Motion sensors are usually connected to a timer.

Glare
Glare occurs when there are surfaces or light sources within our field of vision that are significantly lighter than the object we are looking at. These light sources include frosted glass domes in light fittings.

Certified enterprise
An enterprise that has been awarded a DSMN certificate.

CCT
Correlated Color Temperature expressed in Kelvin (K)
Sunlight, which human beings see as white light, has CCT 5,600 K. Light sources with a warm white color have a CCT of 3,000 K or less.

Deep Sky Objects
The astronomers jargon for everything outside the solar system: Galaxies, glowing nebulae, open star clusters, binary stars, planetary nebula and much more besides. Examples of clearly visible deep-sky objects are the Andromeda Galaxy, the Orion Nebula, Seven Sisters (Pleiades) and the Ring Nebula.

The horizontal plane
An imaginary horizontal plane that cuts through the light source.

DSMN
Dark Sky Møn and Nyord. A joint term for Dark Sky Park Møns Klint and Dark Sky Community on Møn and Nyord.

FCO
Full Cut-Off, a light fitting that emits no light above the horizontal plane. A light fitting that emits light above the horizontal plan is considered FCO if it is installed under a roof/eaves that shield(s) light as efficiently as an FCO light source.

An efficient FCO counteracts glare as the light source is concealed inside the light fitting and directs light in the desired direction.

LED
Light-Emitting Diode. LEDs are highly efficient transducers that convert electrical energy into light.

Light source
The part of a lamp that emits light (all types of light source included). E.g. old-fashioned light bulbs, halogen lamps, strip lights, energy-saving lamps and LEDs.

Light fittings
An electromechanical component, into which one or more light sources can be fitted. Light fittings may be equipped with an electronic timer and/or motion sensors.

Lumen
A unit of luminous flux. Lumen replaces Watt (familiar to us from conventional electric light bulbs). As today's light sources are much more efficient than light bulbs, we can no longer use Watt as an indication of the quantity of light. Lumen is used instead.

Lux
Is a measurement of luminous flux per unit area. Ordinary office lighting is at 400-500 lux. A full moon lights at 0.27lux.

Light-sensitive switches

A switch with an integrated light sensor that registers ambient light intensity. The device activates an electrical circuit when light intensity falls below a value pre-set by the user.

Timer

An electronic device that activates an electrical circuit for a period of time. The time is pre-set by the user.

Certification

Requirement 0. General information

0.1 DSMN certification is managed by the administrative unit that manages work regarding Dark Sky Park and Dark Sky Community Møn and Nyord. DSMN certification equates with International Dark Sky Association (IDA) requirements, which must be met in order to be approved by IDA and certified as an International Dark Sky Community.

0.2 Certification is subdivided into five quality classes. The classes are denoted by one to five stars (where a five-star rating is best).

0.3 The quality requirements are listed below. Table 1 shows the requirements that must be met for each of the five classes. A certificate is issued only when all the requirements for a given class are met or exceeded. Preliminary approval may be awarded if the enterprise submits a detailed plan for improving outdoor lighting that will bring the enterprise's outdoor lighting in line with the requirements stipulated in this document. The plan must include a date, by which all the requirements will be met.

0.4 At least two requirements shall be met in each class. If secondary requirements in two different classes overlap, the most stringent secondary requirement will apply. *For example: a secondary requirement for CCT at 2,500 K is more stringent than a 2,700 K requirement. The lower of the two CCT ratings shall apply.*

0.5 When an enterprise applies to become DSMN certified, the enterprise shall submit a technical description of all outdoor light fittings at the accommodation. The description shall document any initiatives already taken in an effort to meet the requirements of the class applied for. A detailed description of how and what to document in the application is described in DSMN-22.

0.6 An enterprise that fails to meet all the sub-requirements in Requirements 3 and 4 may be awarded a certificate or an extra star if it meets one or more of the sub-requirements in Requirement 7.

0.7 An enterprise that has a valid DSMN certificate may use this in its marketing activities. For details, see Sections on *"Validity of certificate" and "Forfeiture of certificate"*.

	Table 1						
Requirement Class	**1**	**2**	**3**	**4**	**5**	**6**	**7**
*	+		+				
**		+	+				(+)
***			+	+			(+)
****			+	+	+		(+)
*****			+		+	+	

Requirement 1.

1.1. Outdoor light sources have been replaced with the lowest possible lumen. Areas in which light work is performed shall meet DWEA requirements for 50 lux.

1.2. Heavily used paths and walkways shall meet Street lighting class E1, 7 lux on walkway. *Example: A walkway that is heavily used could be the path between the hotel reception area and parking lot.* Lightly used paths and walkways shall meet Street lighting class E2, 4 lux on walkway. *Example: Paths to individual chalets.*

1.3. The correlated color temperature (CCT) of light sources shall be ≤ 3,000 K.

1.4. Where possible, outdoor light sources must have a timer and/or motion sensors.

1.5. Light sources in excess of 1,000 lumens shall have FCO installed.

1.6. The sum of the light fittings installed that emit light above the horizontal plane shall not exceed 800 lumens per 1,000 m^2 of plot area.

Example: On a plot measuring 2.000 m^2, there are 10 light sources, each at 200 lumens. The light sources are installed in light fittings that emit light above the horizontal plane.

Total installed lumens = 2,000, corresponding to 1,000 lumens per 1,000 m^2, which is 200 lumens over the limit. The requirement can be met if only two of the light fittings are replaced with FCO fittings (as these two light fittings can be excluded from the calculation). Total installed lumens will then be 8 light fittings at 200 lumens = 1,600 lumens or 800 lumens per 1,000 m2.

1.7. Strategic light fittings can be changed to FCO in order to meet requirement 1.6.

1.8. Information material DSMN-31 is located at the enterprise and is available to guests/customers. DSMN-31 explains why the nights on Møn and Nyord are unique and what makes for correct outdoor lighting.

Requirement 2.

2.1. Outdoor light sources have been replaced with the lowest possible lumen. Areas in which work is performed shall fulfill DWEA requirements for the type of work performed.

2.2. Heavily used paths and walkways shall meet Street lighting class E1, 7 lux on walkway. Example: A walkway that is heavily used could be the path between the hotel reception area and parking lot. Lightly used paths and walkways shall meet Street lighting class E2, 4 lux on walkway. *Example: Paths to individual chalets.*

2.3. The correlated color temperature (CCT) of light sources shall be ≤ 3,000 K.

2.4. Where possible, outdoor light sources must have a timer and/or motion sensors.

2.5. Light sources of more than 1,000 lumens must be installed in FCO and equipped with a timer.

2.6. The sum of the light fittings installed that emit light above the horizontal plane shall not exceed 200 lumens per 1,000 m2 of plot area. *See example calculation under 1.6.*

2.7. Strategic light fittings shall be changed to FCO in order to meet 2.5.

2.8. Information material DSMN-31 is located at the enterprise and is available to guests/customers. DSMN-31 explains why the nights on Møn and Nyord are unique and what makes for correct outdoor lighting.

Requirement 3.

3.1. Some enterprises will not be able to meet Requirement 3. See Requirement 7 for alternatives (instead of Requirement 3).

3.2. A dark area of the yard is reserved for observing the stars/night skies.

3.3. If it is possible to look into a lighted building from 3.1, a screen shall be erected to eliminate glare from indoor lighting. *Examples of screening: Tall hedges, bushes, windbreak, black-out drapes.*

3.4. To optimize the dark sky experience, the host provides special amenities. *Examples of special amenities: Deck chairs, sleeping bags, blankets, mattresses, hot drinks, etc.*

Requirement 4.

4.1. Some enterprises will not be able to meet Requirement 4. See Requirement 7 for alternatives (instead of Requirement 4).

4.2. All outdoor light fittings are changed to FCO.

4.3. Outdoor light sources have been replaced to the lowest possible lumen.

4.4. Areas in which work is performed shall fulfill DWEA requirements for the type of work performed. Lighting shall be controlled by a timer and/or motion sensor so that the lighting is only switched on when someone is working in the area.

4.5. Heavily used paths and walkways shall meet Street lighting class E1, 7 lux on walkway. *Example: A walkway that is heavily used could be the path between the hotel reception area and parking lot.* Lightly used paths and walkways shall meet Street lighting class E2, 4 lux on walkway. *Example: Paths to individual chalets.*

4.6. Light fittings that are visible from 3.1. shall have light sources with CCT at ≤ 2,100 K.

4.7. Other light fittings shall have CCT ≤ 2,700 K.

4.8. A timer and/or motion sensors shall be connected to at least 80% (by number) of outdoor light sources. Exceptions from the 80% are light sources along paths and walkways that meet 4.4.

4.9. Information material DSMN-31 is located at the enterprise and is available to guests/customers. DSMN-31 explains why the nights on Møn and Nyord are unique and what makes for correct outdoor lighting.

Requirement 5.

5.1. Enterprises in the urban zone will find it difficult to meet Requirement 5. See Requirement 7 for alternatives (instead of Requirement 5).

5.2. The certified enterprise has contacted neighboring properties within a radius of 500 m (500 yards) and has persuaded them to change to FCO.

5.3. Signs belonging to the accommodation must not be illuminated. Signs may be designed with reflective materials and/or in light colors.

Requirement 6.

6.1. All outdoor light fittings are changed to FCO.

6.2. Outdoor light sources have been replaced to the lowest possible lumen.

6.3. Areas in which work is performed shall fulfill DWEA requirements for the type of work performed. Lighting shall be controlled by a timer and/or motion sensor so that the lighting is only switched on when someone is working in the area.

6.4. Heavily used paths and walkways shall meet Street lighting class E1, 7 lux on walkway. *Example: A walkway that is heavily used could be the path between the hotel reception area and parking lot.* Lightly used paths and walkways shall meet Street lighting class E3, 1.5 lux on walkway. *Example: Paths to individual chalets.*

6.5. Light fittings that are visible from 3.1. shall have light sources with CCT at ≤ 2,100 K.

6.6. Other light fittings shall have CCT ≤ 2,700 K.

6.7. The accommodation provider maintains a curfew. At least 80% (by number) of all outdoor light sources shall be switched off (by a timer) between 22.00 and 05.00.

6.8. During the curfew Limited outdoor lighting (so that people can see their way, e.g. in doorways) may remain lit or controlled by a motion sensor. If they remain lit, the light sources shall not exceed 130 lumens. Requirement 6.5 shall be met.

6.9. Outside the hours of curfew, timers and/or motion sensors shall be connected to at least 80% (by number) of outdoor light sources.

6.10. Information material DSMN-31 is located at the enterprise and is available to guests/customers. DSMN-31 explains why the nights on Møn and Nyord are unique and what makes for correct outdoor lighting.

6.11. The certified enterprise shall be able to disseminate and present the night sky to guests/customers. As a minimum requirement, the enterprise shall be able to point out the constellations that are easiest to recognize and explain the mythology in an inspiring way. The enterprise shall also be able to point out and explain about the planets and the clearest deep-sky objects. The enterprise shall also be able to introduce guests to these objects, using a hand-held binoculars or telescope.

Fulfillment of the minimum requirements shall be documented by means of a course certificate.
NB: The course details are not yet finalized. The details will follow in an update of this document.

Requirement 7.

If the company is unable to meet all the minimum requirements, one or more of the following activities can be carried out and qualify the enterprise for four stars.

Requirement 7 shall be applied by agreement with the DSMN Møn working group.

7.1 The effects of non-FCO light fittings can be neutralized by switching to a light source that emits maximum 130 lumens and CCT at 2,100 K. Light sources at this intensity and CCT do not cause glare. Low-level blue in the light is not detrimental to the nocturnal environment. The requirement also includes additional specification of radiation above the horizontal plane. The sum of lumens from lamps that do not meet FCO requirements shall not exceed 1,200 lumens on the accommodation grounds.

NB: 130 lumens is very low. In most cases, lighting at this level is only suitable for decorative purposes and way-finding.

7.2 Execution of total light energy refurbishment on the enterprise's premises. The enterprise shall draw customers' attention to this fact in connection with the Dark Sky Park information,

7.3 The certified enterprise shall be able to disseminate and present the night sky to guests/customers. At a minimum, the enterprise shall be able to point out the constellations

that are easiest to recognize and explain the mythology in an inspiring way. The enterprise shall also be able to point our and explain about the planets and the clearest deep-sky objects. The enterprise shall also be able to present these objects, using a hand-held binoculars or telescope.

Fulfillment of the minimum requirements shall be documented by means of a course certificate.
NB: The course details are not yet finalized. The details will follow in an update of this document.

Certificate issue
The certificate is issued by the DSMN Møn working group.

Validity of certificate

- The certificate is valid for a period of two years from the date of issue.
- Each year in August, the certified enterprise shall send data sheet DSMN-23 to email: XXX@XXX.dk.
- To renew certification, the certified enterprise shall send data sheet DSMN-23 via e-mail to XXX@XXX.dk at least one week before the expiry date.
- In connection with renewal, the certification class may be changed (up or down).
- A certificate may be changed within the two-year period of validity if the certified enterprise submits a new registration form with new details.

Forfeiture of certificate
A certificate is forfeited if:

- information submitted regarding outdoor lighting installations does not reflect the actual installations.
- The certified enterprise fails to submit a DSMN-23 with a request for renewal. An email to remind the certified enterprise of the lack of information will be sent only once. The email will be sent about one week after the expiry date. Certification will be forfeited one month after the expiry date.
- Certification may be awarded again. The enterprise shall submit a complete application as described in DSMN-22.

NB:
The sections "Certificate issue", "Validity of certificate" and "Forfeiture of certificate" include responsibilities and administrative routines that have yet to be established.

During the project, permanent solutions will be identified and the text changed to ensure that certificate administration procedures continue after Møn and Nyord have an IDA certificate and the project is brought to an end. Furthermore, it is important that the administrative burdens are not excessive for any of the parties involved.

Appendix D

Local Certification of Enterprises

The enterprises that have been awarded a local certificate entered the process from different starting points. The individual enterprises and their efforts are described briefly in the following.

D.1 Tiendegaarden B&B – 4 stars

TIENDEGAARDEN is an old family farm now owned by the third generation of the same family. The family has offered tourist accommodation on Møn since the 1930s. Tiendegaarden has made the taken the following initiatives, which have resulted in a four-star certificate.

- Ten lamps in the avenue leading to the farm are of type E.24. The light sources have been changed from 8W CFL (400 lumens, CCT 2,700 K) to LEDs, 130 lumens, CCT 2,100 K.
- All wall-mounted lamps have been changed from a mixture of types E.8, E.25 and E.7, with 11W CFL (400 lumen, CCT 2700K) light sources to a single fitting type E.7 with LEDs, 130 lumens, CCT 2,100 K as the light source.
- Three lamps of type E.26 have been removed.
- There were two LED floodlights à 800 lumens and CCT 4,000 K, that were uplights in a tree E.28. The floodlight is now installed at the top of a wooden pole and radiates light downwards. The new single floodlight has an luminous flux of 1,000 lumens, CCT 4,000 K.

D.2 Ny Gammelsø B&B – 4 stars

NY GAMMELSØ was a retirement home until it closed in 1998. The buildings were purchased by the present owner in 2000. Today, Ny Gammelsø B&B accommodates 25-27 guests and can cater for parties of up to 50 people. Ny Gammelsø also has three apartments that are rented out as residential accommodation.

Ny Gammelsø has been awarded four stars after the following changes:

- Replacement of non-FCO lamps of types E.8, E.21, E.23, E.5 and E.6 11 lamps in total. The new FCO lamps correspond to type E.7.
- In the past, outdoor lighting on Ny Gammelsø's parking lot was controlled by a light-sensitive switch and switched on from sunset to sunrise. A timer has now been fitted.

D.3 Møn Økologisk – 2 stars

MØN ØKOLOGISK is a B&B combined with an organic vineyard. There are only two outdoor lamps at Møn Økologisk. These are identical to the types shown in Figure E.5 which are controlled by a motion sensor and E.12. The light sources in these lamps have been changed from 800 to 130 lumens and CCT at 2,100 K.

D.4 Tøvelde Gamle Skole – 2 stars

FROM 1871-1963, Tøvelde gamle skole was the local school for four rural villages: Lille Bissinge, Bissinge, Tøvelde and Svensmark [1]. Tøvelde Gamle Skole is now a B&B with an organic café.

Tøvelde Gamle Skole has a total of seven outdoor lamps.

- Two lamps of this type E.20 have been replaced with FCO lamps, corresponding to type E.7.
- Three lamps of this type E.33, radiate a very faint light upwards. These lamps have not been replaced.
- Two lamps are relics from the school buildings' historical past. Lamps E.34 and E.35 will not be replaced as they are features that recall the buildings' history and origins.

D.5 Bakkegaarden Møns Klint – 4 stars

BAKKEGAARDEN is a B&B located in Høje Møn just a few hundred meters (yards) from the proposed International Dark Sky Park area. At Bakkegaarden, eight non-FCO lamps that were switched on simultaneously from the main building are replaced with eight FCO lamps with motion sensors. These lamps emit 900 lumens, CCT 3,000 K.

D.6 Bakkelund B&B – 3 stars

BAKKELUND is a B&B located just outside Borre with views of Høje Møn. All outdoor lighting has been changed to 130 lumens and 2,100 K.

D.7 Tohøjgaard – 5 stars

TOHØJGAARD is a B&B, which is just a few hundred yards from the Baltic Sea. The outdoor lighting was replaced with Dark Sky-friendly light fittings before the Dark Sky Møn and Nyord project got off the ground. On several occasions, guests had remarked that there was an awe-inspiring view of the night sky from Tohøjgaard. In summer 2015, Tohøjgaard was sold. The new owner took over in August 2015. The new owner will preserve the view of the stars from Tohøjgaard and meet the other requirements in order to maintain the B&B's five-star rating.

(a) (b)

Figure D.1: a) Light fitting for pathway lightning at Campingplads Møns Klint. The lightsource is an LED with 130 lumen and CCT at 2,100K. Before the light source was changed the light fitting gave a brigth glaring light. Aften the change the light fitting gives a weak non-glaring orange light, which indicates the pathway. The principle of indicating the pathway is called "guide star"-principle. b) FCO fixtures highlights the infoboard at the campsites reception. Credit: Tom Axelsen

D.8 Campingplads Møns Klint – 4 stars

CAMPINGPLADS Møns Klint was one of the first accommodations to become involved in the local certification program. All the outdoor lamps on buildings on the campground have been changed to FCO. As replacing all the path lighting was not financially viable, the light source was switched to LED with 130 lumens and CCT at 2,100 K. The path lighting is now adequate. It works on the "guiding star"-principle. See Figure D.1.

In addition to the many outdoor lamps and light sources used to light the paths, all the indoor light sources have been switched to LEDs. The campground has achieved considerable energy savings.

D.9 Møns Klint Resort – 4 stars

MØNS Klint Resort offers four holiday homes for rent either day-to-day or per week. The four houses have a total of 17 outdoor lamps. One holiday home met the local certification requirements at the review. All of its eight lamps were FCO of this type E.19. At the other three houses,

- Any unused non-FCO lamps were removed. These were one lamp of type E.16, light tube, 1 lamp of type E.17 and two floodlights á 250 W, 3,000K.
- Non-FCO lamps were replaced by FCO lamps. The non-FCO lamps were three of type E.18, and one each of types E.14 and E.20. New lamps of type E.7 were fitted.

D.10 Keldby Camping - Campground– 3 stars

KELDBY CAMPING was the second campground on Møn to be awarded a local certificate. Keldby Camping has sites for 72 caravans and 16 tents. Guests can also choose to rent a chalet. The campground has 17 chalets. Keldby Camping has been awarded three stars after making the following changes to its outdoor lighting:

- The projector illuminating the facade was shielded so that only the registration building facade is illuminated.
- Five globe lights of a classic type E.3 have been replaced with FCO lamps of type E.7.
- Seven "jam jar" lamps of the types E.5, E.6, E.8 and E.9 are now replaced with type E.7 FCO lamps.
- Six lamps of type E.4 are replaced with type E.7 FCO lamps.
- Four lamps with yellow glass of type E.2, will continue to be used as the yellow glass minimizes the impact on the nocturnal environment. However, it is assumed that the light source is moderate and does not glare.

D.11 Fanefjord skovpavillon – 4 stars

FANEFJORD skovpavillon is a restaurant in Fanefjord woods. The only light here is emitted by the pavilion and the stars. Fanefjord Skovpavillon has reviewed all the outdoor lamps and replaced them with light sources that are shielded or spots that direct light towards the ground.

D.12 Borre forsamlingshus – 3 stjerner

BORRE forsamlingshus (community center) is located at the center of Borre, although the parking lot borders on an open landscape with fields. The community center is used by the local population as a venue for family parties

and local get-togethers. The community center's outdoor lighting is good. Only the one of two powerful lamps that light a workspace have given cause for comment.

- A floodlight similar to E.1, but with a 250W halogen light source (about 2,000 lumens and 3,000 K) was positioned so that much of the light was projected upwards. This floodlight is mandatory at this workplace by order of the Danish Working Environment Agency. The floodlight is now directed downwards and FCO fully deployed.

D.13 Nordfeld gods – 2 stars

NORDFELD gods is a manor house and grounds. The manor's primary activity is crop-growing on Nordmøn. The estate also owns residential housing. The houses were originally intended for servants at the manor but are now rented out. The estate also owns and rents out one holiday apartment. Many of the lamps failed to meet FCO requirements, see Figures E.11 and E.12. However, they were clearly purchased with a view to matching the architectural style of the houses.

After implementing the following changes, Nordfeld Gods has been awarded two stars.

- An LED floodlight, of the type shown in Figure E.1, directed a great deal of light upwards. The floodlight now directs light in a lower trajectory and is equipped with a shield.
- The lamp outside the holiday apartment, identical with this type E.23, is replaced by an FCO fitting identical with E.7.
- Two lamps of this type E.3 are replaced with E.7.
- Two lamps at one of the residential housing units (identical with E.20) are replaced with type E.7 lamps.
- Three LED floodlights (identical with E.1) on the residential housing property have been moved and adjusted so that the floodlight remains inside the property of the residential house in question.

D.14 Domiciel – 2 stars

DOMICIEL is an electrical installation company, whose premises are at the old sugar factory. At the review, there were six lamps used to illuminate signs and an LED project to light the rear entrance. All these fittings were directed downwards or towards a brick wall and therefore met FCO requirements. The LED floodlight is controlled by a motion sensor. As it illuminates a workspace, the floodlight must provide as much light as dictated by order of the Danish Working Environment Agency.

D.15 Tidens Design – 3 stars

TIDENS Design is a local store selling design and drapes. The owner lives in the adjacent building at the same property. There are many lamps (35) at the property. Most (31) are FCO. There are two types: 11 of this type E.7 with low-lumen light sources, and 20 of type E.40. The lighting is timer-controlled and switched off in the evening and at night. Changes:

- 4 lamps of this type E.5 have been replaced by type E.7.

D.16 Flügger farver – 2 stars

FLÜGGER farver is a paint store located at Sukkerfabrikken Stege (sugar factory) facing Kostervej. Flügger Farver has 11 lamps to light signs and the store's facade after dark. All the lamps are directed at the wall and there is no light trespass. The lamps are switched on and off by a timer.

D.17 Isak S Jensen – 2 stars

ISAK S Jensen – an optical dispensers' store located on Storgade in Stege. All the outdoor lamps are FCO. Signs are illuminated from above and directly at the wall. Illuminated signs and lamps at the Storgade entrance are switched on and off by a timer.

D.18 Møns Golfcenter – 2 stjerner

MØNS Golfcenter has a lighted parking lot. The parking lot is never used in the evening or at night. The lighting is permanent switched off.

D.19 Hjertehaven Kindergarten – 1 star

HJERTEHAVEN was the first public building to be certified. The kindergarten has a total of five outdoor lamps that illuminate a modest parking lot. All the lamps of types F.1, F.2 and F.3 emit much of their light into the critical UL area. Two of the lamps also emit light to UH. In the past, the lamps were on all night. The outdoor lamps have now been connected to a timer. In future, they will be switched off from 21.30 until 05.00.

D.20 Boligforening Noret (Housing Association Noret) – 3 stars

IN spring 2016, Boligforeningen Noret refurbished their outdoor lighting.

Figure D.2: The top row of images shows one of the 91 lamps before refurbishment. The image on the right shows how the lamp shines in all directions. Bottom row of images (after refurbishment) shows "half-moon"-style lamps. The image on the right shows how the light is projected downwards, i.e. where it is of use. Credit: Jens Grønager, Domiciel

A total of 91 lamps of the type shown in the top row of Figure D.2. have been replaced with the "half-moon"-style of lamp shown in the bottom row. The light source has also been changed from a 10W CFL, 660 lumens to a 6W LED, 470 lumens or 4W LED, 350 lumens, where less light is needed. Even though the new light sources have lower lumens, the refurbishment has given residents more light on walkways!

In addition to the 91 lamps, a further 21 light sources in park lamps have been replaced.

The residents are especially pleased about the replacement of light sources in six park lamps, the light sources was 80W HQL, 3,300 lumens, and 3,200 K. The six park lamps provided street lighting in the housing association area but were positioned so that they also projected light into several of the residents' bedrooms. The HQL light sources have been replaced with 6W LED, 470 lumens, 2,700 K. This gave a dramatic change in lumens but the lux measurements show that the lux in the street is the same as before. The additional lumens provided by the HQL light sources did not light the street effectively because their light was spread out into the surrounding area, including residents' bedrooms.

Several residents have expressed satisfaction with the color of the new light sources (2,700 K). The color is more pleasant. Other residents have said, "now we can see the stars". A positive comment that gives food for thought. In addition to saving the surroundings and night sky from the effects of superfluous light. The housing association will saved about 3,130 $kgCO_2/year$ (6,900 $lbsCO_2/year$).

Appendix E

Catalouge of Light fixture - Enterpris and Private

DURING visits at Enterprises who wanted to be certified in the Local Certification Program, their outdoor light fixtures was documented with photos. The variation of types was huge and in total 40 different types of light fixtures was found at the Enterprises. The 40 types with comments are shown in this appendix.

Figure E.1: *NonFCO, LED floodlight. Fixture is not FCO and the CCT is to high >3000K.*

Figure E.2: *NonFCO, yellow and textured glass. Fixture is not FCO and there is at possibility of glare, due to the yellow glass the CCT is very low, therefore it is accepted.*

Figure E.3: *NonFCO, frosted glass, UH: 41% UL: 9%, ULR: 50%*

Figure E.4: *NonFCO, textured plastic, UH: 10-15%, UL:5-10%, ULR: 15-20%*

Figure E.5: *NonFCO, clear glass, UH: 15 - 35% depending on the installed light source. UL: 5 - 10% ULR: 20 - 45%*

Figure E.6: *NonFCO, clear glass, UH: 15 - 35% depending on the installed light source. UL: 5 - 10% ULR: 20 - 45%*

Figure E.7: *FCO, frosted glass. UH: 0%, UL: 0%. This type fixture is populaer among the companies with the local Dark Sky Certification.*

Figure E.8: *NonFCO, clear glass, UH: 41% UL: 9%, ULR: 50%*

Figure E.9: *NonFCO, clear glass, UH: 15 - 35% depending on the installed light source. UL: <5% ULR: 15 - 40%*

Figure E.10: *NonFCO, frosted glass. As installed in this figure, UH: 10-15%, UL:5-10%, ULR: 15%-25%. This type of fixture is often installed vertical on walls, then the ULR increases to 50% with UH: 41%, UL: UL: 9%.*

Figure E.11: *NonFCO, frosted glass. UH: 10-15%, UL: 5-10%, ULR: 15-25%.*

Figure E.12: *NonFCO,frosted glass. UH: 15-20%, UL: 5-10%, ULR: 20-30%*

Figure E.13: *NonFCO. UH: 0%, UL: 5-10%, ULR: 5-10%*

Figure E.14: *NonFCO, frosted glass. UH: 33 - 35%, UL: 8 -10%, ULR: 42 - 45%*

Figure E.15: *NonFCO, clear glass. UH: 0%, UL: 5-10%, ULR: 5-10%*

Figure E.16: *In the figure the fixture is angled approximately 45° from horisontal. It is possible to find this kind of fixture installed in any angle from horisontal (0°) to 90°. Due to the different angles of installation the fixtures ULR varies considerably. UH: <10 - 41%, UL: 5 - 9%, ULR: <15 - 50%.*

Figure E.17: *NonFCO, frosted plastic, UH: 41% UL: 9%, ULR: 50%*

Figure E.18: *NonFCO, clear glass. This fixture comes in two version. The version in the figure is angled approximately 25° upward, UH: 30 - 35% UL: 8 - 10%, ULR: 38 - 45%. The other version is angled down, UH: 20 - 25% UL: 8 - 10%, ULR: 28 - 35%*

Figure E.19: *With correct light source, as installed here, this is a FCO fixture. If wrong light bulb is used: UH: 0%, UL: <5%, ULR:<5%.*

Figure E.20: *NonFCO, frosted plastic, UH: 41% UL: 9%, ULR: 50%*

Figure E.21: *NonFCO, the bare light bulb, UH: 41%, UL: 9%, ULR: 50%.*

Figure E.22: *NonFCO, UH: 0%, UL: <5%, ULR: <5%.*

Figure E.23: *This is a really complicated fixture just to show of a bare light bulb, but unfortunately these types of fixtures do exist! Absolute nonFCO. UH: 41%, UL: 9%, ULR: 50%.*

Figure E.24: *NonFCO, UH: 25 - 33%, UL: 5-10%, ULR: 30 - 43%.*

Figure E.25: *NonFCO, UH: 10 - 15%, UL: 5 - 10%, ULR: 15 - 25%.*

Figure E.26: *Uplight nonFCO. UH: 100%, ULR: 100%.*

Figure E.27: *Downlights for sign. Installed correct, as here, these fixtures are FCO. UH: 0%, UL: 0%, ULR: 0%*

Figure E.28: *LED spotlight as uplight below a tree, nonFCO. UH: 100%, ULR: 100%.*

Figure E.29: *NonFCO, frosted glass, UH: 41% UL: 9%, ULR: 50%*

Figure E.30: *Spotlight as uplight below a tree, non-FCO. UH: 100%, ULR: 100%.*

Figure E.31: *NonFCO, clear glass, UH: 15 - 35% depending on the installed light source. UL: 5 - 10% ULR: 20 - 45%*

Figure E.32: *NonFCO, clear glass, UH: 0% UL: 5-10%, ULR: 5-10%*

Figure E.33: *NonFCO, frosted glass, UH: 0% UL: <5%, ULR: <5%*

Figure E.34: *Rar historic fixture, nonFCO, frosted glass, UH: 0% UL: <5%, ULR: <5%*

Figure E.35: *Rar historic fixture, nonFCO, frosted glass, UH: 5% UL: 9%, ULR: 14%*

Figure E.36: *NonFCO, frosted glass, UH: <5% UL: 10-15%, ULR: 15-20%*

Figure E.37: *NonFCO, frosted glass, UH: <10% UL: 9%, ULR: 15-19%*

Figure E.38: *NonFCO, frosted glass, UH: <10% UL: 9%, ULR: 15-19%*

Figure E.39: *NonFCO, frosted glass, UH: <10% UL: 9%, ULR: 15-19%*

Figure E.40: FCO, mounted in ceiling, UH: 0% UL: 0%, ULR: 0%

Appendix F

Catalouge of Fixtures - Public

THIS appendix contains images of outdoor light fittings installed outside public buildings.

Figure F.1: *NonFCO, clear glass, UH: 41% UL: 9% ULR: 50%.*

Figure F.2: *NonFCO, clear glass, UH: <5% UL: 9% ULR: 10-14%.*

Figure F.3: *NonFCO, frosted glass, UH: 0%, UL: 10%, ULR: 10%.*

Appendix G

Potentialeplan for Møn

In fall 2014, the local council drew up a plan for coastal tourism potential on Møn and Nyord. The plan included the opportunity to establish a Dark Sky Park and Dark Sky Community status on Møn and Nyord. The local council adopted the plan on 30 October 2014.

A translation of relevant pages from the Local Council – Meeting Minutes are shown on the next pages.

Local Council

Meeting Minutes

Date	30 October 2014
Time 18:00 **ending at** 18:40	
Venue	Council Chamber, Vordingborg Town Hall
Members	Knud Larsen, Bo Manderup, Eva Sommer-Madsen, Kim Petersen, Michael Seiding Larsen, Brit Skovgaard, Laura Sø, Nina Møhler, Asger Diness Andersen, Jørn Elo Hansen, Kirsten Overgaard, Else-Marie Langballe Sørensen, Peter E. Jonassen, Helle Mandrup Tønnesen, Tage Vestergaard, Heino Hahn, Kim Errebo, John Pawlik, Per Stig Sørensen, Thomas Christfort, Poul A. Larsen, Mette Høgh Christiansen, Kurt Johansen, Thorbjørn Kolbo, Mikael Smed, Vibe Bøgvad, Michael Larsen, Birgitte Steen Jørgensen, Carsten Olsen
Absent	Michael Larsen
Comments	

7. Coastal tourism potential – A Plan for Møn

Journal no. 14/22827 - to be decided by: the local council Field:
Strategy & implementation - Case processed by: Sune Hjorth Bach

Presentation
In 2012, Videnscenter for Kystturisme (a coastal tourism research center) nominated the cliffs at Møns Klint as one of 20 destinations in Denmark that had special development potential as tourist attractions. As the only one of these 20 destinations, on 27 November 2012, the Finance, Planning and Development Committee adopted a motion to allocate DKK 600,000 in 2013 and 2014 to a full-time employee to manage the Møns Klint project.

This investment means that the stakeholders in local tourism are deeply involved in the project and the compilation of an ambitious plan for Møns Klint as a coastal tourist destination. Working with Dansk Bygningsarv (now BARK, consultants), a broad-based working committee has listed the most important focus points for coastal tourism on Møn until 2022.

The long-term goal of the plan is to double the revenue from tourism on Møn in the period from 2012 until 2022. The plan is enclosed as an appendix.

The vision for Coastal Destination Møns Klint is "to be known as Denmark's wildest coastal destination". There are four main focus points, each associated with a number of specific initiatives. The four main focus points are:

- The physical environment
- Communication & Marketing
- The Unforgettable Experience concept
- Accommodations capacity

Examples of specific initiatives in the plan are:

- Common branding platform and website for Møn that can be extended to cover the municipality in its entirety.
- Møn as the first Dark Sky Park in Scandinavia
- Establishment of Møns Klint Academy to offer training courses to all tourism stakeholders
- New cycling routes and better services/facilities for cycle tourism on Møn (Cycling Funding Project)
- Improve quality of Møn's B&Bs and build a new holiday center

The specific initiatives in the plan were identified as a result of broad-based involvement of tourism stakeholders on Møn and through studies of Møn's potential, strengths and weaknesses as a tourist destination.

It is important to note that many of the initiatives in the plan will also be of benefit to tourism enterprises outside Møn. The lessons learned from and models used in the plan will be useful elsewhere in the municipality and can be expected to develop tourism for the benefit of the municipality generally. For example, the establishment of Møns Klint Academy will be beneficial to the development of every enterprise involved in tourism in Vordingborg Municipality. The task is then to ensure that the initiatives described in the plan are disseminated, implemented and that they take root in the community.

The plan proposes multi-level implementation. Vordingborg Destinationsudvikling A/S (a development enterprise owned by the Vordingborg business community) can of course run projects launched by the municipality and any activities that are already on the table.

Since the 2012 kick-off, the Danish government has adopted recommendations in a plan for the growth of Danish tourism buy organizing tourism development at two national centers (West and East) Vordingborg Municipality (part of center East) is already working to set up a Baltic Sea development group in partnership with Lolland and Guldborgsund municipalities.

Meanwhile, a pilot scheme at 10 new tourist destinations in Denmark that offer extensive opportunities for dispensation from the regulations regarding construction within the coastal protection line or coastal zone. The scheme is the result of a political decision to boost the development of coastal tourism accommodations capacity.

Appendix:

1 open Coastal Tourism Potential – A Plan for Møn 99527/14

Recommendation
The municipal administration recommends:

that the Coastal Tourism Potential Plan for Møn is approved.

that the initiatives in this plan are, if possible, incorporated into future district plans and strategies

Decision of the Business Committee on 8 September 2014
Recommendation approved.

The Business Committee recommends that a similar plan is drawn up for the remainder of the municipality

Decision of the Finance, Planning & Development Committee on 1 October 2014
The committee approves the administration's recommendation.

Decision of the Municipal Board on 30 October 2014
Absent: Michael Larsen

The decision of the Finance, Planning & Development Committee is adopted.

INITIATIV
DARK SKY PARK

Møn ansøger om en International Dark Sky Park-certificering hos non-profit organisationen International Dark-Sky Association. Dermed bliver Møn den første Dark Sky destination i Skandinavien.

Initiativet spiller på fordelene ved netop *ikke* at være et tæt befolket område. Her er mørket et potentiale.

INITIATIV
MØNS KLINT ACADEMY

Møns Klint Academy er et tilbud til de mønske turismeaktører om at få en uddannelse i at udvikle nye, innovative oplevelser med udgangspunkt i den ny strategi.

Møns Klint Academy skaber en fælles forståelse blandt turismeaktørerne af, hvilke oplevelser, der kan være med til at realisere strategien, samt bidrager til netværksdannelse og konsolidering.

INITIATIV
OPLEVELSESRUTER

Med udgangspunkt i projekt 'Camønoen' skal der udvikles forskellige oplevelsesrutekoncepter til forskellige målgrupper og deres behov for enten oplevelse, læring eller indlevelse.

Projektet er allerede nået langt, idet Camønoen er blevet tildelt realiseringsmidler fra Realdania-kampagnen Stedet Tæller.

INITIATIV
CYKELRUTER

Nye ruter, ensrettet skiltning, et samlet cykelservice- og formidlingskoncept samt kobling med tre sejlruter bidrager til at give den cyklende en oplevelse af en sammenhængende destination.

Projektet vil fremme Vordingborg Kommunes positions som førende cykeldestination i hjertet af Femern Bælt regionen.

INITIATIV
NYORD

Nyord skal forsat styrke sin grønne, bæredygtige profil og formidlingen af sin unikke natur, og bruge det som afsæt for yderligere at udvikle tilbud til turisterne.

Nyord tilbyder en unik og fredfyldt naturoplevelse, og Kystdestination Møns Klint og Nyord vil kunne styrke hinanden i en fælles markedsføring.

Dark Sky Park

BESKRIVELSE AF INITIATIVET

Der er mørkt på Møn om natten, og nattemørket er et uudnyttet potentiale.

Det anbefales, at Møn ansøger om en International Dark Sky certificering hos non-profit organisationen International Dark-Sky Association, som arbejder for at bevare nattemørket og bekæmpe lysforurening, til glæde for stjernekiggere og alle levende væseners generelle sundhed.

En Dark Sky Park kan evt. placeres i Klinteskoven, da størstedelen af området er ejet af Naturstyrelsen, men resten af Møn og Vordingborg Kommune kan med fordel udvikle relaterede oplevelsesprodukter og markedsføring.

INITIATIVETS STRATEGISKE EFFEKT

En Dark Sky Park giver Møn mulighed for at markedsføre sig som den første Dark Sky Park i Norden. Initiativet spiller godt sammen med visionen om Danmarks Vildeste Natur – nu også i kraft af himlen over Møn.

Der kan knyttes oplevelsesprodukter til initiativet, der både spiller på vilde og lærende oplevelser (nattevandringer, amatørastronomi) og oplevelser, der byder på stilhed og fordybelse (det æstetisk og kontemplativt tilfredsstillende i at betragte en nattehimmel fuld af stjerner) – i overensstemmelse med strategiens tre styrende principper.

INDSATSOMRÅDER // OPLEVELSESKONCEPT – **DARK SKY**

CASE

GALLOWAY FOREST PARK, SKOTLAND

Galloway Forest Park har United Kingdoms første Dark Sky Park.

Der findes en række Dark Sky 'information points' i parkens besøgscenter, samt en række af særligt markerede steder ude i parken, som hjælper den besøgende med at identificere de stjerner og planeter, som kan ses fra det pågældende sted. Desuden arrangeres forskellige typer af Dark Sky events og guidede ture.

Læs mere på
http://scotland.forestry.gov.uk/images/pdf/rec_pdfs/DarkSkiesLeaflet.pdf

Appendix H

Dark Sky News

TWO editions of the Dark Sky Møn og Nyord newspaper have been published. The newspaper published in 2015 has been reprinted and distributed again in 2016. A new edition of Dark Sky News will be issued in 2017.

Dark Sky News

2014/2015 #darkskymøn/#darkskymoen Dark Sky Møn

Oplev natten på Møn - stjerner, måne og mælkevej

For længe siden, under Mælkevejens evige cirklen over nattehimlen, blev Møns hvide kridtklipper dannet. 70 millioner år senere er det hvide kridt og den strålende Mælkevej stadig synlig på Møn.

Mælkevejen har vi alle hørt om, men hvor mange har set den rigtige Mælkevej? På grund af lysforurening er Mælkevejen fra de fleste steder i Danmark og den vestlige verden i det hele taget, blot en skygge af sig selv. Fra Møn og Nyord ses Mælkevejen stadig som det store lysende bånd af stjerner, der i sensommernætterne og efterårsaftenerne strækker sig fra horisont til horisont.

Mælkevejen har altid været synlig fra Jorden, da det er den galakse som Jorden og Solen er født i og tilhører. Dinosaurerne, som levede da kridtet, der udgør Møns fundament, blev dannet, havde en lige så klar og strålende Mælkevej, som vi i dag stadig kan se fra Møn og Nyord.

Mælkevejen set fra Møn i april, foto: Tom Axelsen

Verdens bedste historiebog ligger lige over os

Stjernehimlen over os er ikke bare en masse hvide prikker på en sort baggrund. Stjernehimlen er en fantastisk historiebog med sagn, myter og legender, som er en forankret del af vores identitet og kultur. I det gamle Grækenland for ca. 2000 år siden blev mønstre af stjerner opkaldt efter deres guder og sagnskikkelser. Det er dem, vi i dag bruger, krydret med oldgamle babylonske, indianske og arabiske opfattelser af himlen over os.

Zeus, Mælkevejen og gudindens bryst

Zeus var den øverste gud, som sad på sin trone højt oppe på Olympen. Han var gift med gudinden Hera, med hvem han havde flere børn. Zeus havde en stor interesse for menneskenes færden og greb ofte ind i deres skæbne. Især skønne kvinder kunne han ikke lade være med at besøge og disse eventyr har sikret os røverhistorier af rang, som har haft stor betydning for os alle fx.

Zeus var en skørtejæger, og en gang fik han øje på den unge smukke Alkmene fra Mykene. Han forvandlede sig til en stor, flot svane, fløj ned til hende og de dyrkede elskovens sødme. Ni måneder senere fødte Alkmene drengebarnet Herkules, der var halvt menneske og halvt gud.

For at sikre at barnet blev opfostret med gudindemælk, fik Zeus hjælp af gudernes budbringer, Hermes, der hver nat, når Hera sov, fløj barnet Herkules op til Heras bryst. Denne mission gik fint i mange nætter, og Herkules blev stærkere og stærkere, men en nat gik det galt. Hera vågnede og blev stiktosset over Zeus´ utroskab, men mest over at han lod et halvt menneskebarn få mælk fra hendes bryst. Hera flåede barnet væk fra sit bryst, og ud i himmelhvælvingen sprøjtede en fed stråle gudindemælk.

Den dag i dag kan vi se, at historien er sand, da en fed, bred, hvid stribe; Mælkevejen "Galaxy" , løber fra stjernebilledet Ørnen, til Svanen over Cassiopeia, til Perseus og ned gennem Kusken.

Herkules blev forresten noget af en kraftkarl og mange eventyr ventede på ham.

Dark Sky Møn og Nyord er et af de potentialer, der fremhæves i Dansk Bygningsarvs Potentiale Plan for Kystdestination Møns Klint.
Du kan følge arbejdet med Dark Sky Møn på Facebook. Og #darkskymøn.
For uddybende information kontakt venligst:
Ole Eskling, tlf.: 22 22 33 75 eller Tom Axelsen, tlf.: 50 54 33 68.
http://lysforurening.wordpress.com/
http://www.darksky.org/international-dark-sky-places/about-ids-places
http://www.oplevnatten.dk/
http://grib-stjernerne.dk/

Hvad er Dark Sky?

Vi taler ustandseligt om dette udtryk i forbindelse med Dark Sky Park Møn og Nyord, men hvad betyder 'Dark Sky' egentligt?

Dark Sky er et amerikansk begreb, som beskriver en nattehimmel med ganske lidt eller ingen lysforurening, altså en mørk nattehimmel.

En sådan nattehimmel er karakteriseret ved, at stjernerne ses i tusindtal, ligesom Mælkevejen, der er et bredt lysende bånd af svagere stjerner og komplekse strukturer.

Begrebet stammer oprindeligt fra de amerikanske amatørastronomer som i deres jagt efter at se mest muligt i deres teleskoper, har søgt længere og længere væk fra lysforureningen i de amerikanske storbyer på jagt efter Dark Skies.

International Dark Sky Association har med deres Dark Sky Community og Dark Sky Park taget Dark Sky begrebet et skridt videre. Fra at være noget som entusiaster opsøger til nu at omfatte naturområder og samfund, som gør en aktiv og dokumenteret indsats for at bevare deres mørke nattehimmel. Så alle forsat kan have glæde af udsigten til nattehimlens stjernevrimmel.

Den indsats, som International Dark Sky Association kræver dokumenteret, indebærer, at lysinstallationerne i området forbedres, så de sender lyset derhen, hvor lyset skal bruges - normalt på jorden - i stedet for at sende lyset ud i alle retninger. Lyskildernes styrke tilpasses også, så de ikke er overdrevent kraftige, men giver lys nok til, at man kan færdes sikkert.

En anden del af indsatsen drejer sig om information. Både til den fastboende befolkning, men også til de gæster som besøger området. Informationen kan gives som brochurer, plancher, websider og / eller som stjernekiggearrangementer med guider og teleskoper.

Meget mere end stjerner

En Dark Sky Park eller Community handler om andet end blot at bevare udsigten til stjernerne. Det handler også om at bruge energien og dermed penge og CO2 med omtanke. Bliver f.eks. halvdelen af lyset sendt til himmels, så bliver der brugt dobbelt så meget energi som nødvendigt.

At bevare udsigten til stjernerne er også at bevare udsigten til vores kulturelle baggrund. Den mørke nat, stjernerne og månen er dybt integreret i vores sproglige kultur, vores kunsthåndværk, malerier, poesi og så videre. Ved at bevare udsigten til stjernerne, bevarer vi også en forbindelse til vores kultur. En forbindelse som strækker sig hele vejen tilbage i tiden til før den tidligste stenalder.

Naturen og mennesket har brug for mørke, rigtigt nattemørke. Det er et faktum, som bliver mere og mere åbenbart i disse år, hvor forskning afdækker mulige sammenhænge mellem lysforurening og de livsstilssygdomme, vi er belastet med i den vestlige verden. Naturen, fra insekterne, over fuglene til de store havskildpadder har brug for nattemørket for at hvile og formere sig. Ved at bevare nattemørket i fuglebeskyttelsesområder og andre beskyttede naturområder er vi med til at sikre at blandt andet trækfugle får den nødvendige hvile, så de kan klare det videre træk.

Forår - 21. marts kl. 23

Se stjernehimlen gen
download app'en: SK
THE UNIVERSE SUI

Vidste du, at Immanuel Kant, ty
citat:
"Der er to ting, der til evighed
over mig og de morlaske love i

Sådan bruger du stjernekortene

Hvert stjernekort viser årstidens stjernehimmel over Møn og Nyord, men på et bestemt tidspunkt. Nemlig ved sommer- og vintersolhverv og ved forårs- og efterårsjævndøgn. Alle fi
For at bruge stjernekortene andre dage, lægger du en time til for hver to uger, du er før datoen eller trækker en time fra for hver to uger, du er efter. Ved forårs- og efterårskortene ska
Når du skal finde rundt på stjernehimlen med stjernekortene, så vend dit ansigt mod et af verdenshjørnerne, som er markeret på kanten af kortene: syd, øst, nord eller vest. Hold kor
Zenit er markeret med et kryds midt på kortet. Vil du vide mere om stjernekort? Klik ind på http://www.heavens-above.com.
God fornøjelse!

Sommer - 21. juni kl. 23, sommertid

Vidste du, at navnet på den gode danske ekspeditions skib, Galathea, betyder mælkehvide?

Himlen over som en kæmp biograf

Der kører en ny forestillir eneste nat – og der er pl er et stort udbud af skiftend vejrmæssige dramaer, de sm nærmest surrealistiske farve kedelige farveløse helaftensf kortfilm. Tager man det lang ren, eller helt ud i universet, utrolige lysfænomener, stjer man på de helt små og nære rende former og farver i is- o lysbrydning er med til at fre lysfænomener. Nogle gange synes, at man har set før, an stjerner på lærredet, og man betaget.

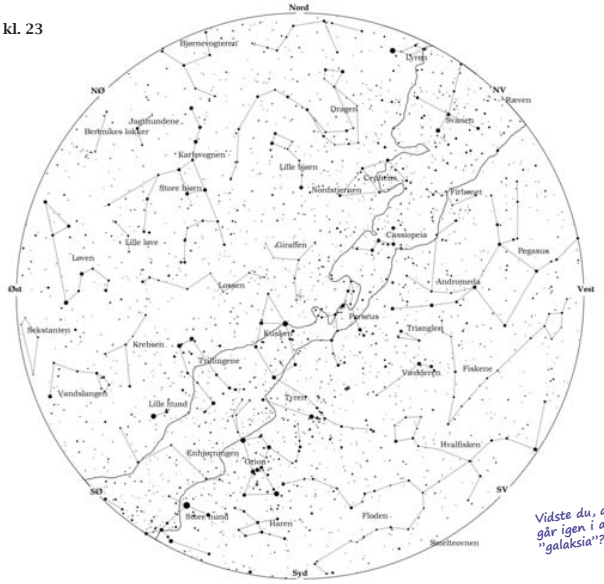
Jesper Grønne

Efterår - 21. september kl. 23, sommertid

sk filosof, har skrevet dette
vil forundre mig. Stjernehimlen
mit indre"

e kort viser, hvordan stjernehimlen ser ud den pågældende dag kl. 23. Det er ikke nødvendigt at være ude præcis kl. 23, men inden for en time før og efter kl. 23 er bedst.
l du huske at kompensere for evt. sommertid.
et, så det verdenshjørne, du kigger imod, vender nedad. Stjernekortet svarer nu til stjernehimlen i den pågældende retning, fra horisonten til zenit, punktet lodret over dit hoved.

Vinter - 21. december kl. 23



Vidste du, at navnet mælkevejen går igen i alle europæiske sprog: "galaksia"?

Danmark er pestor gratis

g hver eneste dag og hver
ads til alle. På "plakaten"
forestillinger, fx de store
ukkeste romantiske scener,
strålende kunstværker, de
ilm og små forunderlige
e kig ud gennem atmosfæ-
åbenbarer naturen sig med
netåger og galakser. Kigger
ting, findes der fascine-
g snekrystallerne, der med
mbringe atmosfæriske
kører der B-film, som man
dre gange er de helt store
bliver både overrasket og

nem din tablet eller iPad, YVIEW® FREE - EXPLORE PORT

TIP: Stress af med garanti

Læg dig ud i din have/på terrassen i aften med en liggestol, en sovepose og måske en hovedpude - nyd freden og roen og betragt stjernerne.
"Denne oplevelse har vi igennem flere år tilbudt vore gæster på Tiendegaarden", siger Susanne Nøhr og fortsætter: "Vi har liggestole og soveposer, der kan klare ned til minus 15 grader. Selvom det er en simpel løsning, når det handler om "stjernekig", så er det en unik og sjov oplevelse for de fleste af vore gæster."

Lokale B&B viser vej til stjernerne

Flere 'Bed&Breakfast'-steder på Møn og Nyord er i gang med at gøre kigget til stjernehimlen klarere. Virksomheder kan optjene stjernepoint alt efter, hvor stor en indsats, de yder.

Den mørke nat på Møn og Nyord gør det til en stor naturoplevelse at være ude under en stjernefyldt nattehimmel. Sanserne skærpes, og man lægger mærke til de lyde og dufte, der fylder natten. For at fremme gæsternes oplevelse, kan overnatningssteder på Møn og Nyord optimere betingelserne. Fx ved at ændre deres udendørsbelysning, så den ikke generer udsynet eller ødelægger oplevelsen af mørke.
Flere B&B-virksomheder er allerede ved at forbedre rammerne for uforstyrret mørke. Og overnatningssteder kan ansøge om en lokal 'Dark Sky'-certificering, alt efter hvor meget de gør for, at deres gæster kan opleve den mørke nat og stjernehimlen fra overnatningsstedet. Målet er, at gæsterne får en så stærk oplevelse, at de vender tilbage.
B&B-stederne kan maksimalt få 5 stjerner. En nøje beskrivelse af de enkelte lokale krav til stjerner fås på hjemmesiden www.oplevnatten.dk.

Brug pæren og spar penge

Mange har en udendørslampe, som "bare" sender en masse lys ud, uden at det lyser noget bestemt sted hen. Lyset bliver derfor ofte noget, der irriterer øjet og udsender en masse spildlys. Ved at vælge den rigtige lampe eller den rigtige pære kan man sende lyset i den retning, hvor der er brug for det. Det kan for det meste ændres for ganske få kroner og pengene er til tjent hurtigt hjem igen med den el-besparelse, der følger med.

Eksempler:

1) En lampe med en 40W's pære, der er tændt hver nat, skiftet til en 1,4W's 'Dark Sky-pære' er tjent hjem på et halvt år.

2) Hvis et overnatningssted, fx et B&B udskifter: 1) 12 udendørslamper til 'Dark Sky'-pærer, 2) lyset i køkkenet til LED-rør, 3) alle pærer på værelser til LED-pærer, til en samlet investing på 6.900 kr., vil den årlige besparelse løbe op i 5.900 kr. SEAS-NVE yder et tilskud på 644 kr. Investeringen vil altså være tjent hjem på omkring 1,1 år.

Dark Sky på Tohøjgaard

Jeg er meget glad for lyskæder og små finurlige arrangementer med lys i min have - ikke kun til jul. Så da jeg for 7 år siden købte Tohøjgaard med det formål at åbne et Bed & Breakfast, hængte jeg nogle af mine medbragte lyskæder op i udestuer og omkring terrasseområder. Men én af de første gæster, jeg havde på besøg, kommenterede 'lysshowet' nogenlunde sådan her:
"Det virker forstyrrende! Hér har man lyst til at sidde og kigge uforstyrret ud over Østersøen, iagttage skibene, se havets farve ændre sig fra solopgang til natten sænker sig, og følge stjernerne bryde frem på himlen i en kollosal vrimmel, som slet ikke kan opleves i byerne. Du må ikke ødelægge den oplevelse med alt muligt fnidder".
Det tog jeg fuldstændig til efterretning, og siden har Tohøjgaard Bed & Breakfast været præget af så lidt udendørs lys som muligt: et par lamper til at markere parkeringsområdet og indgangsdørene, det er alt. Vil man sidde i den store have om natten, tager man en lommelygte med til at finde vej.
Derfor er initiativet med at gøre Møn og Nyord til et 'Dark Sky'-område også helt rigtigt. Og mine naboer i landsbyen Hjelm er helt enige og hilser projektet velkommen. Vi vil bevare vores mørke nat herude på Vestmøn, og Tohøjgaard er klar til at blive lokalt certificeret som 'Dark Sky'-overnatningssted i klasse 5.

Christine,
Indehaver af Tohøjgaard Bed & Breakfast

Foto: Frank Steinmann

Lyse idéer til Dark Sky

El-firmaet Domiciel er tændt på idéen om en mørk nattehimmel på Møn og giver gode råd, når det gælder om at skabe lys, der ikke forurener en klar stjernehimmel.

I virksomhedens afdeling i Stege på Møn, er Jens Grønager daglig leder. Jens har i mange år været aktiv med outdoor- og spejderliv på Møn, og han er begejstret for ideen om 'Dark Sky Møn': "Jeg synes, det er et utrolig spændende projekt og ved at arbejde intelligent med belysning, får vi både nattehimlen at se, pæn udendørs belysning, der ikke blænder, og samtidig sparer vi penge."
I butikken på Sukkerfabrikken har Domiciel et stort udvalg af 'Dark Sky'-pærer, og Jens er altid klar til at komme med råd og vejledning.
"De fleste investeringer vil være tjent hjem efter et til to år. Hvis man også laver en gennemgang af den indvendige belysning, vil der være endnu flere penge at spare," siger Jens Grønager.
Domiciel er ejet af Jan Juhl Von Hahn, og Jan glæder sig over projektet, som har til mål at certificere Møn og Nyord som 'Dark Sky Park'.
"Projektet viser, hvordan at en fremsynet kommune, erhvervsvirksomheder og et turistrelateret projekt kan skabe en bæredygtig vækst, og i øvrigt elsker jeg at se stjernerne lyse på himlen," siger Jan Juhl Von Hahn.
I Vordingborg Kommune glæder man sig over, at det også er lykkedes at integrere erhvervslivet.
"Vi er glade for at bakke op om idéen og ser gode muligheder for offentligt-privat samarbejde," siger borgmester, Knud Larsen.
Jens Grønager fra Domiciel i Stege har allerede deltaget i flere møder med ildsjælene bag og har flere belysningsforslag, der tilgodeser nattehimlen og alligevel giver lys.
"Vi er meget interesserede i at være en del af projektet og synes, det er et fantastisk initiativ, at der arbejdes for at bevare den mønske nattehimmel," slutter han.

Læs mere på www.domiciel.dk.

Natten på Møn

- et essay om en fantastisk oplevelse

Ude i natten, med lukkede øjne, oplever jeg verden på en helt ny måde. Vinden blæser omkring mig, suser gennem træerne, svinger sig op mod den mørke himmel og ud over Østersøen. Bølgerne bruser mod stranden, havet ånder og lever. Jeg flyver med vinden, bliver større og større, opløses i luften og bliver en sky. Jeg ruller med bølgerne, trækker vejret dybt og roligt og finder fred.
Det synes som en evighed til jeg pludseligt hører en stemme, som henter mig tilbage til jorden. Jeg åbner øjnene og bliver lille igen, bare et menneske som sidder på en stol, ved siden af andre mennesker ude på engen, hvor vinden puster gennem natten.
Sikke en vidunderlig oplevelse! Hvorfor har jeg aldrig gjort det før? Skal man virkelig køre hele vejen til Østmøn for at kunne opleve natten på den måde? Det skulle jeg åbenbart, fordi i byen med alt sit lys og alle sine fornøjelser havde jeg aldrig sat mig ned på en stol ude i mørket for at lukke øjnene og blive opmærksom på natten. Men her, hvor natten er virkelig mørk og stille, der lykkedes det – med hjælp af instruktørens rolige vejledning, varmet af en dejlig aftensmad samt the og kage, og fyldt med glæde og fællesskabssans efter sangerens dejlige musik.
Beriget vender jeg tilbage til gården, hvor det nu er tid at holde øjnene åbne og kigge på en udstilling af fantastiske fotografier – Møn om natten, med klinten i utrolige farver, stjerner som drejer sig omkring fyrhuset, mælkevejen og meget andet.
Himlen er for overskyet i nat til at kigge på stjernerne, men astronomen forklarer en masse spændende ting om observation af nattehimlen, og hvordan man opnår vidunderlige effekter med kameraet; natten – en helt ny kilde til inspiration!
Da jeg endelig går i seng, hører jeg vinden puste, og jeg flyer igen hen over den mørke Østersø i mine drømme.

Claudia Ziehm,

Claudia Ziehm deltog i forbindelse med opstarten af Projekt Dark Sky, i arrangementet 'Oplev Natten' på Bakkegaarden den 12.10.2013. Hun kommer fra München og har valgt Bakkegaarden som refugium for at skrive en fantasy bog.

Half the Camp is After Dark

På Møns Klint Resort har man på campingpladsen udnævnt et område som Dark Sky Area, hvor campister kan få den ultimative oplevelse af stjernehimlen i klart vejr.
Udover et stjernekort får gæsten, der bor i Dark Sky Area, udleveret et prospekt om stjernehimlen netop nu. Møns Klint Resort er den første campingplads i Skandinavien med et Dark Sky Area.

Vordingborg Kommune bakker op om stjernehimlen

Lokal certificering af mønske overnatningssteder er påbegyndt. Med opbakning fra Markedsførings- og udviklingspuljen i Vordingborg kommune i juni, er det nu lykkes at igangsætte den lokale certificering af de mønske overnatningssteder. Certificeringen er en del af den internationale certificering, der er det endelige mål. Men før dette kan realiseres, skal der igangsættes lokale aktiviteter, og det er netop det arbejde, der nu er påbegyndt.

VORDINGBORG KOMMUNE
VORDINGBORG.NU

Den administrative gruppe bag Dark Sky News

Ole Eskling, Møns Klint Resort
Susanne Nøhr, Tiendegaarden
Tom Axelsen, Formand for Astronomisk forening for Sydsjælland
Jens Grønager, Domiciel
Tine Vinther Clausen, Kystturismeprojektet, Vordingborg Kommune.
Dark Sky News er trykt i 5000 eksemplarer, finansieret af Vordingborg Kommune.

Dark Sky News

2015/2016 #darkskymøn/#darkskymoen Dark Sky Møn

LIVET PÅ KANTEN AF KLINTEN

Kampen for mørket mellem klint, hav og himmelrum. Dark Sky handler om at bevare nattehimlen uspoleret

Foto: Thomas Ix

Den tætpakkede stjernehimmel over Møn og Nyord er enestående i Østdanmark. Derfor har en gruppe af lokale ildsjæle startet arbejdet med at etablere nordens første "International Dark Sky Park" og "International Dark Sky Community" her. I en Dark Sky Park er nattemørket beskyttet mod lokal lysforurening, så du oplever det bedste og klareste udsyn til stjernehimlen.

Dark Sky over Møn og Nyord er en totaloplevelse for alle sanser, alle aldre og årstider: En sensommernat ses Mælkevejen som et bredt mælkehvidt bånd af lys, som strækker sig over hele himlen og forsvinder bag Østersøens horisont, fyldt af hvirvlende stjerneskyer og sorte støvskyer ude mellem stjernerne. I augusts stille og lune nætter gennemskæres Mælkevejen til at stjerneskud. Efteråret giver fortsat udsigt til Mælkevejen, men i nordøst kryber Mælkevejens nabo, Andromeda-galaksen, op på himlen, som en lille tåget sky. Selvom den er 2,4 millioner lysår borte, er den dog nem at se med det blotte øje på den mørke himmel over Møn og Nyord. I december bliver de længste nætter lyst op af fyrværkeriet fra de mange stjerneskud.

Som tilskuer til stjernehimlens evigt foranderlige show får du indblik i mørkets magi, som vi håber, at du sammen med os – de lokale - vil give videre til næste generation.

Læs mere her i avisen om, hvad vi gør for passe på nattehimlen og skabe gode oplevelser, der handler om og foregår i det dyrebare mørke.

Den korteste dag giver den længste nat!

www.grib-stjernerne.dk

Der Sternenhimmel über Møn und Nyord ist einzigartig in Ost-Dänemark. Daher wird jetzt daran gearbeitet hier den ersten "Internationalen Dark Sky Park" und eine "International Dark Sky Community" zu etablieren. In einem Dark Sky Park wird der Nachthimmel gegen lokale lichtverunreinigung geschützt, damit Sie den besten und klarten Sternenhimmel erleben können.

http://www.visitmoen.de

The clear and densely packed starry sky above Møn and Nyord is unique in eastern Denmark. That is why the work of establishing the first Nordic "international Dark Sky Community" has begun. In a Dark Sky Park the darkness of the night is protected from local light pollution in order for you to experience the best and clearest view of the starry sky.

http://www.visitmoen.com/In-int/moen/dark-sky-above-mon-and-nyord

Liv og død i Dark Sky Park

Døde dinosaurer giver nyt liv til historien om livet på kanten

På kanten af klinten findes døden til den store fortælling om, hvad en forrykket balance i naturen kan få af katastrofale konsekvenser for livet på jorden: Geocenter Møns Klint. Geocentret ligger i Klinteskoven, et stykke levende og foranderlig natur, hvor gæsterne må træde varsomt for ikke at bringe sig i fare. Mørket i skoven efter solnedgang og den enestående natur med historien om Danmarks fødsel, om tidens gang, om liv og død, er basis for at gøre denne østligste del af Møn til Dark Sky Park.

Når Klinten eroderer, kommer der 70 millioner år gamle fossiler ud af kridtet, som vidner om, at menneskelivet blot er en parentes i jordens historie, og minder os om, at fortidens kæmper - som dinosaurerne - kan blive fremtidens fossil. Det er fantastisk – og lidt skræmmende - at stå med resterne af et fortidsdyr i hånden, og at tænke på, at hvis ikke der er balance mellem lys og mørke, varme og kulde, så vil dyre-, plante- og menneskeliv ændre sig radikalt.

På Geocenter Møns Klint bliver du fyldt op af viden om, at andre levende væsner mødte deres skæbne her: Fra levende alger til dødt kridt på havbunden til grundlag for nyt liv for sjældne planter og dyr på Høje Møn. I det store perspektiv bliver tanker om menneskets og din egen skæbne et spændende kapitel i den store verdenshistorie.

Mød dinosaurerne og se skæbnen i øjnene!

www.moensklint.dk

Foto: Thomas Ix

Få en ud-af-byen-oplevelse i Copenhagen Countryside

Dark Sky Møn ligger lige på kanten af storbyen

Trafikken går ikke kun én vej. Strømmen mod storbyens hektiske liv er ved at vende. En ny tendens har meldt sig; en tendens, der handler om enkelhed og nærhed. Lige uden for København ligger et helt andet land, en anden verden helt tæt på: Copenhagen Countryside kalder på dig.

Tag turen helt ud på landet, til der, hvor du kan opleve nattehimlen uforstyrret, hvor kragerne vender og kørerne græsser. Med sine jordnære jordbrug, ligefremme venlighed, forbløffende skønhed, historiske fortællinger og levende herregårde. Her gror livskvaliteten om kap med de innovative ildsjæle, der dyrker deres passion for alt lige fra de økologiske grøntsager til kunsten, den alternative energi, nattemørket og de døde dinosaurer.

Du skal ikke sidde i lange køer for at komme ud til de helt specielle og nærværende oplevelser, for her er god plads til at være sig selv, højt til himmelen og god tid til dig. Følelsen af fribed er næsten, som når man efter en lang vinter, slipper køerne løs på marken.

Skal du også ud på græs?

www.copenhagencountryside.dk

Lyset og mørket ligger i blodet

Forbundet med naturen gennem generationer

Møns Klint Resort og Camping er en del af Klintholm Gods, der ejes og drives af familien Scavenius i 7 generationer siden 1798. Camping Møns Klint blev anlagt omkring 1952, og ligger i den spændende natur på kanten til den fredede Klinteskov.

Her møder du Ole Eskling, manager af Møns Klint Resort og campingpladsen, hvis familie også har levet med den vilde mønske natur inde under huden gennem generationer. Efter at have tilbragt en del af sit liv uden for Møn, på de syv verdenshave, drev længslen efter fødeøen Ole tilbage, hvor han overtog driften af campingpladsen efter sine forældre. Naturen går i blodet på én og skaber en lokkende kalden, så vom der med Oles egne ord "ikke sker en skid" på Møn. Det er netop kvaliteten ved Danmarks vildeste natur!

Roen og fordybelsen er Møns største guld, og det bliver sat på spidsen i fyrhytten, som Møns Klint Resort også lejer ud: Klintholm fyrs gamle udkigspost, hvor fyrmestre, kaptajner og officerer fra flåden sad og registrerede skibe under den kolde krig, allerydest på kanten af klinten med Østersøen som eneste udsigt. I dag det perfekte scenerie for romantiske paropholdt med udendørs badekar og bobler i champagneglassene. Her er ingen mobildækning eller forstyrrende lys i mørket, så verden uden for kan ikke komme i vejen for det tætte nærvær.

Møn har gennem tiderne været et rejsemål berømmet af kunstnere og andre passionerede sjæle. På campingpladsen møder du også passionen: Oles for heste, lyset og mørket på Møn, Saschas for fossiler og løb i landskabet, Kens for fisk og alle de andres. De deler gerne deres glæde med gæsterne, om det er på fisketur i mørket, ved fortællinger om Klintholm Gods og Møns historie eller nattehimlens mytologi.

Kærligheden til Møn og naturen i blodet forbinder de "gamle" indfødte med de nye tilflyttere, de passionerede medarbejdere på campingpladsen med gæsterne. Du kan også blive en del af familien!

Bliv tændt!

www.derskerlikkeenskid.dk
www.moensklintresort.dk

Foto: Thomas Ix

Panorama-view og familie-harmoni

Velvære for den enkelte og samvær for hele familien

På slægtsgården Tiendegaarden er der, ud over autentisk familiehistorie igennem 300 år, også moderne lærger og ferielejligheder med panorama-vinduer, der giver vid udsigt til Høje Møn og himlen. Stuehuset fra 1916 er i jugend-stil, og blev bygget af ejeren Susanne Nøhrs oldefar, som et bedre hjem til hans familie end der, hvor hans mor omkom af tuberkulose. God plads til alle, højt til loftet og til himlen er nøgleordene på den gamle gård.

Ved Tiendegaarden ligger Cyclus Klinik, hvor freden og udsigten til den mønske natur i kombination med Brita Rises massage og afspændingsteknikker får stress og jag til at forsvinde som dug for solen. Ro og fordybelse finder du også, når du ligger i marken og kigger på stjerner, udstyret med Susannes liggestole og tæpper. Med den gratis app SkyView® på din smart phone finder du let frem til stjernernes navne og placeringer.

Frisk luft i lungerne, sundt indeklima og fordybende oplevelsesture fra Tiendegaarden ved solnedgang og måneskin giver luft i hvendagen til at finde dig selv - og dine kære - under Dark Sky Møn.

Træk vejret dybt og ånd ud!

www.tiendegaarden.dk
www.cyclus-klinik.dk

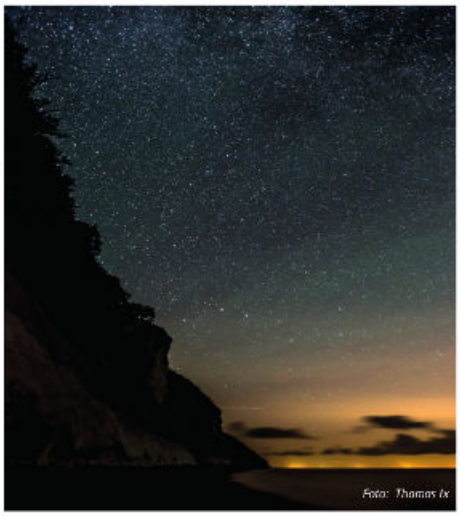


Foto: Thomas Ix

Dark Sky über Møn und Nyord ist ein Totalerlebnis für alle Sinne, alle Alter und alle Jahreszeiten. In einer Spätsommernacht auf Møn und Nyord sieht man die Milchstrasse wie ein milchweisses Lichtband, das sich über den ganzen Himmel er- streckt und hinter dem Horizont über der Ostsee verschwindet, gefüllt von wirbelnden Sternenwolken und schwarzen Staub- wolken zwischen den Sternen. In den warmen, stillen Augustnächten wird die Milchstrasse häufig von Sternschnuppen durchschnitten. Im Herbst schiebt sich der Nachbar der Milch- strasse, die Andromeda Galaxie heran, als kleine, neblige Wolke. Obwohl 2,4 Mio. Lichtjahre entfernt, ist sie mit blossem Auge zu sehen, am dunklen Himmel über Møn und Nyord. Im Dezember werden die langen Nächte von echten Sternschnuppen Feuerwerken erleuchtet. Lesen Sie mehr über den ersten Dark Sky Park und Community auf grib-stjernerne.dk.

Golf med stjerneskud – kun for sjov

Sjov, leg og balancetræning

Golf er for alle, og hvis du er mere til hygge og frokost med din kæreste, vennerne eller familien, end til at konkurrere, er krolf med stjerneskud lige i plet. Krolf er en blanding af krocket og golf, kun for sjov, og stærkt vanedannende under den smukke mønske himmel, der spejler sig i Noret og vandet omkring øen.

Møn Golfcenter ejes af pro-træner Richard Frances, og hans hustru Claire, samt det lokale par Steen og Gitte Nøhr Andersen. Richard er klar til at undervise jer, før I slippes fri på egen hånd på krolf-banen med de 12 huller ved Stege Nor. Stemningen er uformel, så familie og venner kan more sig sammen, med en leg for alle aldre. Bagefter hygger ejerne, de to familier, om jer i Golf Caféen, hvor der er stjerneskuds-garanti for jer, der besøger Dark Sky Møn.

Om du er vinder af spillet eller "bare" har fået mere ro, fokus og bedre balance undervejs på den naturskønne vej gennem krolfbanen, kan du slutte legen af med at spise et Dark Sky Stjerneskud. En klassisk dansk frokost-anretning, en nostalgisk stjernestund! For uden mad og drikke duer bane-helten ikke...

Den, der sigter godt, når langt!

www.moengolfcenter.dk

Dark Sky above Møn and Nyord is an experience for all senses, all ages and during all seasons of the year. On a late summer´s night on Møn and Nyord, you can observe the Milky Way as a broad, whitish band of light stretching across the sky wich disappears in the Baltic horizon, full of swirling star clouds and nebulas up between the stars. In the quiet and warm nights of August, many a shooting star can be observed crossing the Milky Way. In autum, the Milky Way can still be seen, but its neighbor, the Andromeda galaxy, appears in the northeast as at tiny froggy cloud. Although it is 2,4 million light-years away, it is still easy to spot on the dark sky over Møn and Nyord. In December, the long nights are lit up by a firework display of the many stars. A group of local enthusiasts are thus working to establish Møn and Nyord as Scandinavia´s first Dark Sky Park and Community.

Read more at www.grib-stjernerne.dk

Solnedgang, fuldmåne, fyr

En magisk vandring på Møn

Af Claudia Ziehm

Livets bedste oplevelser kommer tit spontant, er gratis, og giver de mest vidunderlige minder.

Det skete for mig en sommeraften sidste år. Min veninde og jeg havde spist dejlig aftensmad på Bakkegaard Gæstgiveri Møns Klint. Så kunne vi jo lige nå at se solnedgangen fra Høvblege, sagde hun! På med vandrestøvlerne og ud gennem Busene, så var vi i skoven ved skumringstid. Under store træer gik vi forbi Hvide Bjerg og op ad frodige bakker, og pludselig åbnede himlen sig for os: vi stod på toppen af Kongsbjerg, med udsigt over lilla hav og falmende marker. Og helt ude mod nordvest så vi solens sidste glød brede sig over Stege Bugt og Mønbroen. At rejse os fra vores udsigtsbænk var næsten umuligt!

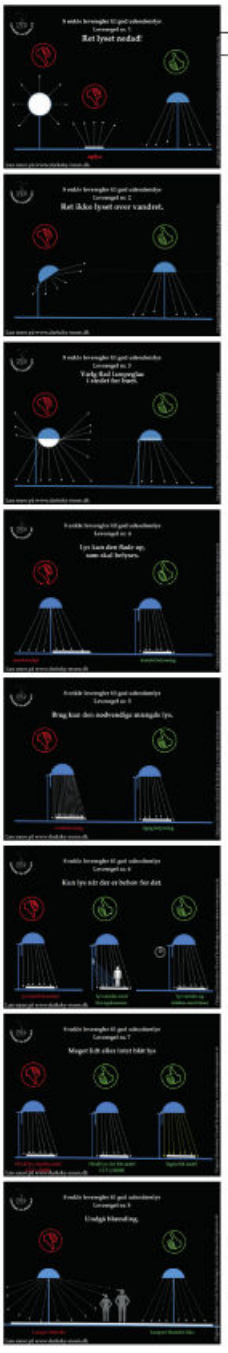
Men vi havde besluttet os for at tage hele pakken: efter solens røde lys skulle vi nyde månens hvide glans - på øens hvideste plet, Møns Klint. Ad den kuperede landevej vandrede vi tilbage gennem Busene, mens stjernerne begyndte at lyse ovenfra, og videre ind i Klinteskoven. Fuldmånen var stået op, og der var lige lyst nok under bøgeløvet, til at vi kunne gå ned ad Gråryg Fald trappen - langsomt, for at være forsigtige, men også for at nyde hvert eneste skridt, for klintens forvredne spidser så endnu mere gådefulde ud i måneskin. På stranden var der tid til at spise nødder og lytte til bølgerne, hvis hvide kamme kom rullende ind mod os. Og så gik vi glade mod syd, mellem det brusende hav og den stejle klint, så utrolig høj og herskabelig. Det var som at vandre i et sort-hvidt fotografi: klintens blege kridt lyste i måneskinnet, pyntet med mørke klatter og bånd af flint.

Til sidst blev klinten til skov, og vi nåede stranden ved Møns Fyr, hvor nogle fiskere stod i vandet, de første mennesker vi så efter flere timers ensomhed. Op ad stien og videre på kanten, til vi blev mødt af nattens sidste farvespil: den orange stråle fra Møns Fyr, som vandrer rundt og rundt over mark og hav. Oppe i tårnet drejede lanternen sig som en glødende diamant, og igen blev det svært at rive sig løs.

De sidste kilometer hjem var mørke - dejligt mørke, fordi vi så de mest fantastiske farver for vores indre øje.

Claudia Ziehm er flyttet fra München til Møn for at skrive en fantasy roman. Under sit kunstnernavn Carmen Wedeland blogger hun om sine oplevelser.

www.inselauszeit.wordpress.com



#darkskymøn/#darkskymoen

Dark Sky Møn

"Grønt" lys er godt for Dark Sky

– og for økonomien

I forbindelse med at få gjort Møns Klint Camping godkendt til "Dark Sky" certificering har elfirmaet DOMICIEL lavet en energioptimeringsplan for al udendørsbelysningen på campingpladsen. Iår blev der brugt 7382 Kwh om året på udvendig belysning. Med en investering på 28.783,- kr. er elforbruget kommet ned på 735 Kwh., en besparelse på 6985 Kwh om året. Investeringen i ny, Dark Sky-venlig udebelysning er altså tjent hjem på blot 3 år.

En energioptimeringsplan for alle bygninger på Campingpladsen viser, at man ved at udskifte alle lyskilder og lysnor til LED pære og LED nor kan spare 29.617 KWH, og derved tjene en samlet investering på kr. 100.000,- + moms hjem på 1,7 år.

Den grønne og nattehimmel-venlige belysning giver altså også grønt på bundlinjen, og DOMICIEL har naturligvis fået certificeret sin egen butik i den gamle sukkerfabrik i Stege som energi- og Dark Sky-venlig.

Måske oplysningen breder sig, så der fremover kommer mere intelligent lys på Møn, mere grønt på bundlinjen – og masser af nattemørke at nyde.

Du kan også hoppe med på den grønne bølge til glæde for Dark Sky.

www.domiciel.dk

Dark Sky ø-mad

Økologi og andre ø-lækkerier til ganerne

På Møn og Nyord arbejder en række lokale producenter på at skabe helt særlige Dark Sky Møn-produkter, som understøtter oplevelsen af den rene nattehimmel og arbejdet for at frede den for eftertiden.

Noorbohandlen på Nyord byder på små skarpe til stjernekiggere: Tycho Brahe-bitter fremstillet efter traditionel opskrift, krydret med Tusindgyldenrot fra Nyord Enge. Den skærper måske synet, mens den sorte sennep fra sennepsmøllen ikke efterlader et øje tørt. Skarpheden står godt til øens ambitioner om at blive økologisk ø med ren lokal produktion. Og til kølige aftener med sort sol og svaler over engene. På Nyord mødes københavnske og tyske indvandrere om deres fælles svagmenier for mad og miljø.

Hos Møn Is nær Råbylille Strand tryller mejeristen velsmagende hjemmelavet fladeis ud af mælken fra gårdens egne malkekøer i det moderne landbrug. Nu også en Dark Sky Møn-is med lakrids og hvid chokolade. Man kan besøge gården og klappe de glade køer og kalve, hvis ikke de springer om på mørkerne, der strækker sig helt ned til vandet, eller spinkulerer omkring i de åbne stalde.

Fra Kaffehuset Møn i Det Gamle Apotek i Stege kommer den mørkeste kaffe til den mørkeste nat, 100% Black - Dark Sky, så du kan holde dig vågen til nattesjov med mørk java i termoflasken. Kaffen er en mørkristet, fyldig Java kaffe med krydret sødme og et strejf af lakrids – så mon ikke den går godt med isen?

Skarpsynet og varm, rørt til tårer, og bliedt op af flødeis og dejlig kaffe – mon du ser sol, måne og stjerner?

Flere ø-lækkerier er på vej som tegn på, at de lokale producenter bakker op om Dark Sky Møn.

Svælg i mørke og syndige fristelser...

www.noorbohandelen.dk
www.moen-is.dk
www.kaffehusetmoen.dk

Oplev natten på Møn og Nyord

Vi viser dig vej til de bedste Dark Sky Møn-oplevelser:

- Udsøgte steder at se solopgang og solnedgang, måneopgang, stjerne- og måneskær
- Nattevandringer, måneskinsture og ture til Mælkevejen
- Hjælp til at meditere og rekreere
- Aften- og nattefotning
- Flyvergevisninger med svaler og større
- Romantiske oplevelser for to
- Stjerne-apps til smart phones
- Gode steder at overnatte – under åben himmel eller i himmelske senge med panorama-view
- Helt specielle Dark Sky-aktiviteter
- Dark sky mad og drikke – for uden duer helten ikke...

Der er lys forude. Vi hjælper dig med at finde vej i mørket!

www.dark-sky-moen.dk
www.grib-stjernerne.dk
www.oplevmoen.dk
Facebook:DARK SKY - Møn
www.open2day.dk/Møn

Vordingborg Kommune bakker op om stjernehimlen

Lokal certificering af mørke overnatningssteder er godt på vej. Med opbakning fra Markedsførings- og udviklingspuljen i Vordingborg kommune, realiseres dette.

Certificeringen er en del af den internationale certificering, der er det endelige mål.

VORDINGBORG KOMMUNE

OPLEV VORDINGBORG

Den administrative gruppe bag Dark Sky News

Ole Eskling, Møns Klint Resort
Susanne Nolte, Tiendegaarden
Tom Axelsen, Formand for Astronomisk forening for Sydsjælland
Jens Grønager, Domiciel
Martin Nilsson, Chefkonsulent, Vordingborg Kommune.
Dark Sky News er trykt i 5000 eksemplarer, finansieret af Vordingborg Kommune.

Pas på mørket

– du har brug for det!

I Dark Sky Møn har vi sat os for at bevare den mørke nattehimmel og kæmpe imod lysforureningen. Vi passer på mørket, til gavn for mennesker og dyr, der har lige så meget brug for mørke som for lys for at være i balance.

På øerne Møn og Nyord er nattemørket tæt på naturligt. Her udfolder natten, Mælkevejen og stjernehimlen sig i sådan en pragt, at vi ikke kan beskrive det i ord eller billeder. Det skal opleves med egne sanser, i en totaloplevelse af natten. Her kommer du tættere end nogensinde på stjernehimlen, som du aldrig kan opleve den i byen. Med Møns Klint som bagtæppe bliver du en del af storheden og dramaet mellem klint, hav og himmelrum.

Følelsen af at være et lille menneske, alene eller tæt på andre i mørket, ét med verdensaltet, det store verdensrum, gør svimmel og giver jordforbindelse på én og samme tid.

Slip fodfæstet for en stund!

http://www.dark-sky-moen.dk

Appendix I

Media Coverage

FROM day one in the project, spreading the message about the magnificent dark sky of Møn and Nyord and why we should care about the night sky have been important focal points for the working group.

I.1 Online Media

SEVERAL online medias have written about Dark Sky Møn and Nyord. Here are links to some of the media in question.

- http://cphpost.dk/news/mon-wants-to-be-the-darkest-place-in-denmark.html
- http://www.rejseavisen.dk/danmark-paa-moens-klint-ser-de-lys-i-moerket
- http://www.dr.dk/nyheder/regionale/sjaelland/moen-vil-vaere-det-moerkeste-sted-i-danmark
- http://blog.radissonblu.dk/mons-klint/

I.2 News papers

SOME of the articles which have appeared in the newspapers are listed in this Appendix.

Figure I.1: Politiken, 25 April 2015. Politiken is a national Danish newspaper. Our project appeared on the front cover of the Travel section. Inside the section, three pages of coverage, including a double spread, were dedicated to the project.

Figure I.2: Sjællandsk, 25 September 2015. The clear, dark skies of Møn made it into an article in Sjællandsk, a newspaper covering Zealand outside Copenhagen.

Vejle Amts Folkeblad

10 Fredag 5. februar 2016 Folkebladet

natur

Møn er stjerneklar

Danmarks Nattemørke

Møns Klint med stjerner og et stjerneskud. FOTO: THOMAS IX

Nattehimlen rummer store naturoplevelser - hvis man kan finde et sted uden lysforurening

Af Søren Olsen

Møn lokker naturturister til med sine flotte klinter, men som om det ikke var nok, arbejder lokale kræfter nu på at skabe Danmarks allerførste, internationale Dark Sky Park.

fordi vi bruger mere og mere udendørslys om natten. Fra Danmarks storbyer kan man faktisk ikke længere se den strålende Mælkevej som en bue af lys henover stjernehimlen, siger Tom Axelsen.

Han fortæller, at der stadig findes få steder i Danmark, hvor lysspildet er minimalt og nattemørket er tæt på naturligt:

- Her udfolder natten, Mælkevejen og stjernehimlen sig i sådan en pragt, at det ikke kan beskrives i ord eller billeder, men skal opleves med egne sanser i en total oplevelse af natten.

TAG PÅ NATTEKIG

Midtjyllands Avis 30. jan. 2016

26

På Møn er lokale folk gået sammen om at bevare nattemørket.

Møns Klint med den gamle måne og vandrefalken, der yngler på klinten.

Oplev naturen - på himlen

Nattehimlen rummer store naturoplevelser - hvis man kan finde et sted uden lysforurening

AF SØREN OLSEN
redaktion@m-jylland.dk

Møn lokker naturturister til med sine flotte klinter, men som om det ikke var nok, arbejder lokale kræfter nu på at skabe Danmarks allerførste, internationale Dark Sky Park. Det er et område, der giver stjernerne de bedste betingelser for at blive set, og hvor kunstigt lys ikke udvisker Mælkevejen.

- Lysforureningen er ikke bare et problem, hvis man vil kigge på stjerner, men påvirker også naturen og dens rytme på en negativ måde,

at blive certificeret som Dark Sky Park. Især den offentlige, kommunale belysning skal dæmpes, men for at det kan blive til noget, skal private virksomheder også være med på ideen.

Bag konceptet står den amerikanske nonprofitorganisation International Dark-Sky Association, der arbejder på at bevare nattemørket. I øjeblikket findes der Dark Sky Parks i USA, England, Frankrig, Tyskland og Ungarn.

Først i Norden

Danmark bliver altså først i Norden med en Dark Sky Park når ansøgningen er godkendt, og noget tyder på, at det ikke bliver et problem. For nylig fik Møns Klint Resort en stor campingpris fra Tysklands største campingorganisation, ADAC. Prisen Camping Awards 2016 kan sammenlignes med at få en Oscar.

Klint Resort og en af initiativtagerne til projektet.

- Vi er meget stolte over at vinde prisen fra ADAC for vores idé med Dark Sky Area, hvor vores gæster kan få den ultimative oplevelse af stjernehimlen. Vi har allerede i 2015 haft stor succes med Dark Sky mountainbiketure, fiskeri i nattemørket og stjerneture for hele familien. Det er en oplevelse at se, hvordan vores gæster pludselig oplever mælkevejen og nattens eventyr på en helt ny måde, siger Ole Eskling.

En berusende følelse

Kampen for mere mørke i naturen har Danmarks Naturfredningsforenings fulde opbakning. Foreningen har i flere år opfordret stat og kommuner til at sikre nogle landskaber og områder, hvor mørket får lov at regere om natten.

- Mange dyr er aktive om natten

Figure I.3: Same article appering in two newspaper in Jutland.

Figure I.4: Ugebladet for Møn, 22 January 2016. The weekly newspaper announced that Møns Klint Resort had been awarded a German Tourist award for their Dark Sky Area and Dark Sky Lounge. The news was also covered by Politiken.

Stjernerne lyser på himlen

Camping Møns Klint, en del af Møns Klint Resort, vinder fornem pris. Tysklands største campingorganisation ADAC har meddelt årets vindere af ADAC Camping Awards 2016. Aftenen før åbningen af verdens største rejsemesse CMT Stuttgart blev prisen overrakt ved et stort Galla event. Det var i kategorien aktiv fritid at Møns Klint Resort vandt en ADAC AWARD med deres Dark Sky Lounge Area.

Møns Klint Resort – et sted i mørket

Camping Møns Klint- er den første campingplads i Skandinavien der introducerer Dark Sky. Med sloganet 'Half the Camp is After Dark' blev der i 2015 åbnet et Dark Sky Area og Dark Sky Lounge. Resort Manager Ole Eskling passer ind i hele vores outdoor koncept. Vi har allerede i 2015 haft stor succes med Dark Sky mountainbike ture, Dark Sky fiskeri og Dark Sky stjerne ture for hele familien. Det er en oplevelse at se hvordan vores gæster pludselig oplever mælkevejen og nattens eventyr på en hel ny måde.

Læs meget mere på: http://www.moensklintresort.dk/dark-sky-moen/

'Camping Møns Klint har i mange år været på forkanten. Det nye innovative koncept med Dark Sky viser at camping i Danmark er helt med fremme på den internationale scene. At Camping Møns Klint vinder en pris hos ADAC i Tyskland vil give stor genklang' udtaler direktør for campingrådet Poul Feier Chri-

virkelig kan opleves. Derfor er en projekt gruppe med Vordingborg Kommune i spidsen, i gang med at søge den

Camping Møns Klint vandt den fornemme pris. Foto: Thomas Ix

Møn: Kom og se vores mørke

Møn vil bruge sit unikke mørke til at skabe vækst

AF LARS HENRIKSEN
henriksen@k.dk

Mørke har altid været forbundet med noget negativt på Møn. For hver gang nogen flytter derfra, bliver der lidt mørkere, og derfor er netop mørket blevet synonym med udfordringerne ved livet i udkanten af Danmark. Men det er en lille gruppe mennesker i gang med at ændre.

I snart to år har de arbejdet

Møns andre dele af Danmark markedsfører sig på de lange, lyse sommernætter, går man modsat på Møn. Her udnytter man, at øen er landets næstmørkeste egn, for det skaber unikke naturoplevelser, ikke mindst når man kigger op på nattehimlen. Her har en feriegæst i sommeren 2015 taget et billede ud over Møns Klint Camping med en tydelig mælkevej i baggrunden. – Foto: Anders Brinckmeyer.

Møn har set lyset i mørket

Naturoplevelser i mørke skal lokke flere til Møn og holde på dem, der allerede bor der. Den strategi er med til at styrke øens fællesskab

AF LARS HENRIKSEN

Jens Gronager kan ikke fordrage dårlig belysning. Men der er masser af den, siger

lig er på færde, kan man med fordel kaste ud til den enlige ende af øen, næsten helt ud til klinten, og besøge Ole Eskilsvig på Møns Klint Camping – lige om lidt forhåbentlig Nor-

LYSFORURENING

Uden forstyrrende lyskilder kan man se cirka 14.000 stjerner med det blotte øje, viser interna-

Møns Tidende. I dag er en tilsvarende invasion mere end velkommen efter de seneste årtiers udkantsflugt.

Og muligheden er der, for som Kristeligt Dagblad be-

Figure I.5: Kristeligt Dagblad 5 February 2016. Kristeligt Dagblad is a national Danish newspaper. Coverage about the work to protect the night skies above Møn hit the front page and two-thirds of page 2 was dedicated to an in-depth article about the project and the reasons behind it.

Appendix J

Report from Dr. Andreas Hänel

Dr. Andreas Hänel visited Møn og Nyord for a few days in March/April 2016. Dr. Hänel was invited by the working group to talk about German efforts to reduce light pollution and set up International Dark Sky Parks and Reserves. During his visit, Dr. Hänel took the opportunity to observe the quality of the night skies over Møn and Nyord.

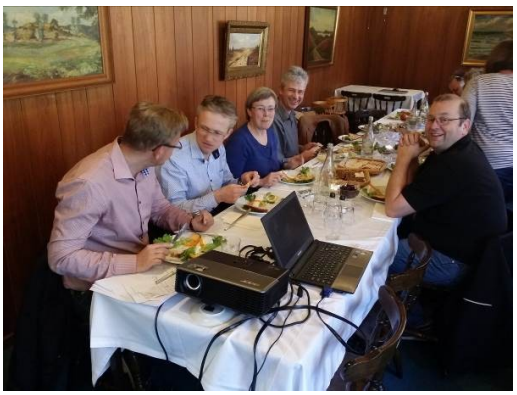
Dr. Hänel's report is reproduced below.

Dark Sky Park Møns Klint and Dark Sky Community Møn/Nyord

Were the 5000 years old megalithic remains already observatories for celestial objects?

Tom Axelsen from the Møn Dark Sky Group invited me to give a presentation to them in April 2016. On this occasion I also could visit the region during three nights and got an impression of what is going on in the region.

- The members of the Dark Sky Group are from different professions providers of accommodations, business men (e.g. an electric dealer), amateur astronomer, administration

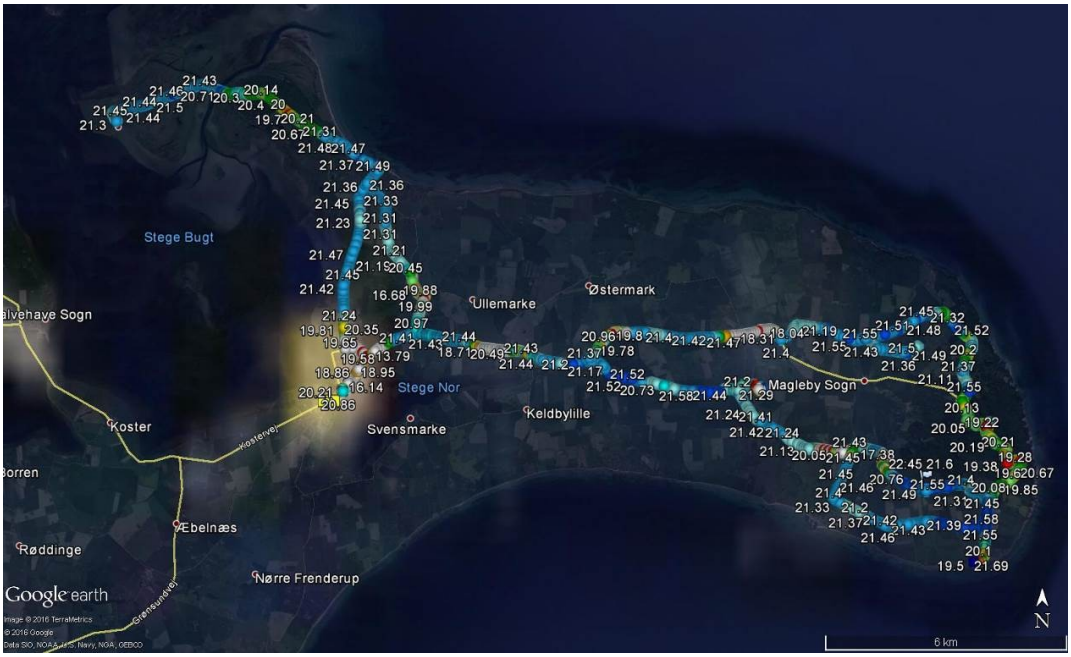


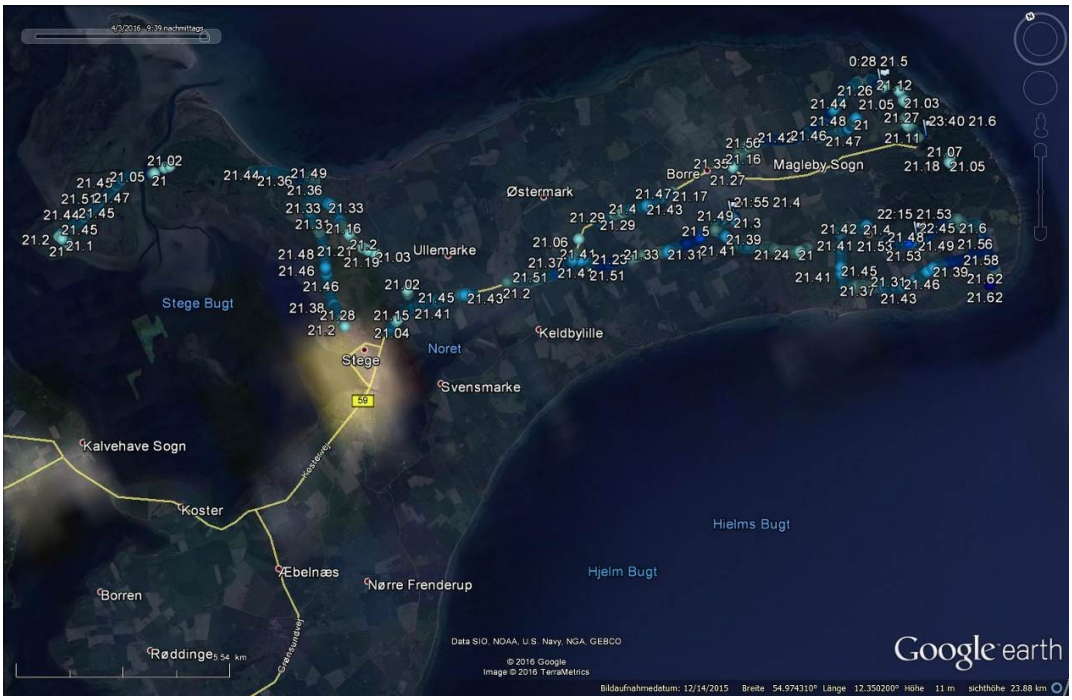
- They have already created a lot of advertising material: a Dark Sky journal, post cards, schnaps, coffee, ice cream etc.

- Touristic information material of the region contains information about the Dark Sky Park.
- Dark sky meals are offered on special occasions.
- A labelling system with stars was created for accommodations and business.

One interesting observation was that contrary to many other European countries most of the street lighting uses full cut-off luminaires (mainly from the Danish firm Louis Poulsen). In some villages every second luminaire is switched off late in the night, some are not illuminated at all.

The first night was cloudy with some cirrus clouds, the measurements in dark regions were at 21.6 mag/arcsec² (top left Hoefblege, middle Aborrebjerg), the second night was totally covered and the last night started clear with 21.5 mag/arcsec², then clouds came up, but later in the night the brightness was at about 21.7 mag/arcsec² (right Tiendegaarden), In all nights the humidity was high and towards the North the light dome of Kopenhavn(Malmö was well visible, the light domes of German villages over the Baltic Sea near the horizon, while the East was still very dark.





In all three nights measurements with the Roadrunner (SQM-LU #1049 and GPS) were taken over the northern part of the island. The original data are shown above. Bright parts (< 21 mag/arcsec²) have been eliminated, they were taken under trees or street lightings. Parts of the routes were identical during the 3 nights and no systematic differences larger than 0.2 mag/arcsec² could be detected, even between the cloud covered and the clear nights. The variation over the island was not large, towards the main village Stege, brightness increased by about 0.2 mag/arcsec².

Date	MEZ	Place	long	lat	alt	mag	mcd	remarks
2016-03-31	20:55	Tiendegaarden, Moen	12.44495	54.98315	0	21.40	0.30	diesig, Wolken
2016-03-31	21:49	Hoefblege, Moen	12.50934	54.96087	79	21.60	0.25	DSLR, Wolken
2016-03-31	22:42	Aborrebjerg, Moen	12.52975	54.98140	137	21.60	0.25	DSLR, Wolken
2016-03-31	23:28	Liselund, Moen	12.52176	54.99648	73	21.50	0.27	diesig
2016-04-01	0:50	Tiendegaarden, Moen	12.44545	54.98323	0	21.60	0.25	Wolken
2016-04-02	21:15	Hoefblege, Moen	12.50938	54.96085	82	21.50	0.27	Wolken
2016-04-02	22:15	Tiendegaarden, Moen	12.44621	54.98295	-5	21.70	0.23	DSLR klar

The individual zenith measurements were taken with the SQM-LU #2536.

Based on these observations I can confirm an exceptionally quality of the sky over the islands of Møn and Nyord. The local Dark Sky group is very engaged and therefore continuous support of the combination of Dark Sky Park and Dark Sky Community is promising. The traditional cut-off street lighting (though there are some exemples of non full cut-off luminaires) and the use of warm white lamps will help to keep the sky dark on the islands dark if in future similar lighting system will be used.

Therefore I strongly support the application of the islands as a combination of Dark Sky Park in the East and Dark Sky community of the whole islands.

Dr. Andreas Hänel,
Section leader of the working group Dark Sky Germany,
Astronomer and director of the planetarium in the Museum am Schölerberg, Osnabrück
Member of the International Dark Sky Association IDA, Member of the International Planetarium Society IPS,
Member of the Astronomische Gesellschaft, Member of the International Astronomical Union IAU