Ishigaki City Office and Taketomi Town Office

March 14th 2018

Ishigaki City Office: 14 Misaki-cho Ishigaki city Okinawa 907-0012 Japan

Taketomi Town Office: 11-1 Misaki-cho Ishigaki city Okinawa 907-0012 Japan

International Dark-Sky Park Application
Iriomote-Ishigaki National Park

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共同声明文

日本最南端に位置する沖縄県八重山諸島は、エメラルドグリーンの海に囲まれ、アマゾンを連想させるマングローブの密林や、亜熱帯気候に育まれた固有の生態系があり、光害（ひかりがい）のほとんどない暗い夜空が保たれている貴重な自然環境を有しております。

特に、八重山は上空のジェット気流の影響が少なく大気が安定していることから、全天８８ある星座のうち８４の星座や２１ある１等星全てを見ることができる、国内でも非常に恵まれた星空環境となっております。

このことから、国立石垣島天文台、国立天文台ＶＥＲＡ石垣島観測局、竹富町波照間島星空観測タワーなどの施設が開設されるなど、世界でも有数の星空観測エリアとなっており、この星空環境を守るためこれまで行政と地域住民が協力し、様々な施策に取り組んでまいりました。

また、ここ八重山には、豊かな自然に根ざした観光や体験を求め、毎年国内外から数多くの観光客が訪れます。星空環境保全には、地域住民と観光客が一体となった活動こそが、再訪の意識と自然環境に

配慮した観光地としての八重山の存在価値を高めることに繋がるものと考えております。

今年、石垣市並びに竹富町は共同で、八重山諸島でも特に優れた星空環境エリアである「西表石垣国立公園」を、日本初の星空保護区として認定取得を目指しております。この取り組みを推進するにあたり、素晴らしい八重山の星空や自然の大切さを国内外に発信することで人々の共感を醸成し、世界に誇れるこの希少な星空環境を後世に残すため、地域住民一丸となって星空保全の取り組みに邁進してまいります。

平成２９年７月24日

石垣市長　中　山　義　隆

竹富町長　西大舛　髙　旬

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Joint Statement by the Mayor

of Ishigaki City and the Mayor of Taketomi Town

July 24, 2017

Yaeyama Islands are located in the southernmost part of Japan, surrounded by emerald green ocean which has a subtropical ecosystem, filled with lush green mangrove forest that has almost no light pollution which can sustain a clean and natural environment that is closely associated with the Amazon.
Specially that this area has no jet stream and has no atmospheric motion, 84 out of 88 constellations can be observed including all 21 first magnitude stars. It's a great environment to observe the heavenly bodies.
From this statements above the National Astronomical Observatories of Japan, Ishigakijima Astronomical Observatory and VERA Ishigakijima Station, and Taketomi-cho Haterumajima Astronomical Observatory Tower were established. This areas are world renowned starry sky observation areas that its municipality and its people promotes activities to protect these areas.
Yaeyama Islands seeks a rich and abundant environment that tourists can experience. Every year tourists come in and out of Japan. Starry sky conservation aims for the cooperation of the locals with the tourists in the activities, and for them to revisit the Yaeyama Islands expecting more and thinking of its values as a tourist destination.
This year, Ishigaki city in corporation with Taketomi town seeks for the Yaeyama islands' excellent starry sky environment area (Iriomote-Ishigaki national park) to be the first International dark sky place conservation as it seeks to acquire accreditation. To acquire this accreditation we would like to spread the beauty of the night sky of Yaeyama Islands to the world so that it may keep this up generations to enjoy.

Yoshitaka Nakayama
Ishigaki City Mayor
Koujun Nishioomas
Taketomi Town Mayor
(with official seal)

環九地那発第1707201号
平成29年7月20日

石垣市長　中山　義隆　殿
竹富町長　西大舛　髙旬　殿

環境省那覇自然環境事務所長
西村　学

ダークスカイ・パーク（星空保護区）認定申請について

平成29年7月5日付けでご依頼のありましたダークスカイパーク（星空保護区）への認定申請につきましては、国際ダークスカイ協会のダークスカイプレイス・プログラムが西表石垣国立公園の自然環境や生態系の保全に資すると考えられることから、貴自治体が申請することについて、賛同します。

なお、申請区域の屋外照明については、貴自治体が所管する屋外照明管理計画に基づく適切な管理をお願い申し上げます。

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Naha Nature Conservation Office

of the Environment Government of Japan

Issued No.1707201 on July 20, 2017

1F, No.1 Joint Government Building, 1-15-15 Higawa, Naha city, Okinawa 900-0022 Japan

Tel: 098-836-6400 Fax: 098-836-6401 Email: nco-naha@env.go.jp

July 20, 2017

Ishigaki City Mayor, Yoshitaka Nakayama
14 Misaki-cho Ishigaki city Okinawa 907-8501 Japan
Taketomi Town Mayor, Koujun Nishioomasu
11-1 Misaki-cho Ishigaki city Okinawa 907-8503 Japan

Dear: Ishigaki city Mayor and Taketomi town Mayor

The Naha Nature Conservation office, Ministry of the Environment, Government of Japan agree with the municipality of Ishigaki city and Taketomi town in their efforts to apply for the International Dark-Sky Park certification and IDA (International Dark sky Association) program that is considered to contribute to the conservation of ecosystem in the natural environment of Iriomote-Ishigaki National Park that was requested on July 5, 2017.
Furthermore, the appropriate management of outdoor lighting in the National Park areas that are based on the Light-scape management plan guidelines of your municipality would be highly appreciated.

Sincerely yours,

Manabu Nishimura
Office Director
Naha Nature Conservation office
Ministry of the Environment
Government of Japan
(With official seal)

平成２９年６月２６日

石垣市・竹富町　御中

私たちは、世界中の暗く美しい夜空の保護・保存を目指し、自然界を人工照明による光害から守る国際ダークスカイ協会のダークスカイプレイス・プログラムの主旨を理解し、国内初の星空保護区の認定に向け、石垣市・竹富町両自治体が西表石垣国立公園をダークスカイ・パークに申請することに賛同します。

沖縄県知事　翁長　雄志

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Okinawa Prefectural Government

1-2-2 Izumizaki Naha-city Okinawa 900-8570 Japan / TEL: 098-866-2333

June 26, 2017

To whom it may concern,
Ishigaki City Office and Taketomi Town Office,

The Okinawa Prefectural Government agrees with the application for Iriomote -National Park as one of the first International Dark-Sky Park in Japan. We understand IDA (International Dark Sky Association)'program and purpose to protect and conserve the quality of starry night and nocturnal environment and darkness in the world from light pollution such as artificial lighting.

Sincerely yours

Yuuji Onaga
Okinawa Prefectural Governor
(with official seal)

International Dark-Sky Association
3223 North First Avenue
Tucson, Arizona 85719, USA

July 23, 2017

Dear IDA's Dark Sky Places Committee members,

IDA Tokyo chapter is exceedingly pleased to nominate Iriomote-Ishigaki National Park in Yaeyama Islands, Okinawa as an International Dark Sky Park. It will become the first International Dark Sky Place in Japan if designated.

Located in the most southwestern part of Japan and reachable with direct flights from major cities (Tokyo, Osaka, Hong Kong etc.), Yaeyama Islands are already one of the most popular destinations of ecotourism and astro-tourism. They have wonderful nature and truly dark skies, as well as a professional astronomical observatory opened to the public and sufficient facilities for visitors. Local people have been showing respect to stars above them and enjoying them through an annual star festival which is lasting for 15 years and gained 11,000 participants last year.

I myself visited there five times in the past three years for making public lectures on light pollution, executing night sky brightness measurements and meeting with the mayors of local municipalities. Every time I visited, it impressed me so much how important stars and natural dark environments are for them. There is no doubt that this is the best place to earn the first IDA's designation in Japan.

This nomination is thanks to a lot of support by local volunteers and officials. Especially I would like to pay respect to two dedicated men, Mr. Miyuki Miyazawa and Mr. Takahiro Ueno for their tremendous efforts to this project over the past three years. Their strong will to protect Yaeyama's night skies has spead step-by-step into all the people involved. The designation will be a great reward to them and to all local citizens.

I believe that the first IDA's Dark Sky Place in Japan will have a progressive influence on the worldwide strategy of IDA and an anti-light pollution trend in Japan. Several inquiries about how to become a Dark Sky Place from other parts of Japan reached me after the media reports on the Yaeyama's project. Yaeyama will certainly be a pioneer among a "Dark Sky Places Family" in Japan in the near future.

The designation will be provisional at first, but based on the ongoing plan of replacing outdoor lightings, I am quite confident that they will accomplish it within three years.

Sincerely,

越智 信彰

Nobuaki Ochi, the leader of IDA Tokyo chapter

To Acquire Accreditation

for the International Dark-Sky Park

Purpose:

Yaeyama Islands has the best quality of starry night in Japan so we would like to spread awareness of this valuable starry night, in and out of Japan, furthermore we would promote the tourism industry that has respect for the natural environment and, create communities that lives together with natural ecosystem under the starry night. We Ishigaki city and Taketomi town in our effort together we aim to acquire accreditation for Iriomote-Ishigaki National Park as the first "Dark Sky Park" in Japan..

Background / Reasons:

Ishigaki Island is the southernmost city in Okinawa Japan which is located at 24 degrees north latitude that is surrounded by coral-reefs and has been distinguished to possess a quality starry night and dark-sky in its natural environment.
84 constellations out of 88(including the parts of constellations can be seen) and all 21 of first magnitude stars in the whole sky can be seen within a year in Yaeyama Islands. These areas are quite suitable for astronomical observation because there are no jet stream and it has less atmospheric motions. Therefore it has established facilities of Astronomical Observatory such as Ishigakijima Astronomical observatory and VERA Ishigakijima Station which are National Astronomical Observatories of Japan in Ishigaki Island, Taketomi-cho Haterumajima Astronomical Observatory on Hateruma Island in Taketomi town. In community efforts of preserving the starry sky against light pollution in order to protect the natural environment and ecosystem, conservation and awareness activities are under its way.
Tourism industries holds an event once a year such as the "Minaminoshimano-Hoshi-Matsuri (Southern Island's Star Festival)" an event where the community turns their lights off at the same time, astronomical observation event, Commercialization of experience program for star watching tour, and efforts of appealing and value improvement of the starry sky that is utilized as a superior tourist attraction.
Yaeyama Island is famous as a world leading tourist resort, over one million two hundred thousand tourists' visits each year and still numbers are increasing from Asia and Europe. By acquiring accreditation of "Dark Sky Park" we can take more tourists attention from all over the world as a tourist destination, and would be prompt to deepen community and tourist understanding of preserving the starry sky and darkness against light pollution and awareness of the value of starry sky.

Star Attraction in Yaeyama Islands

Natural Environment

An outstanding night sky environment

Measurement result of natural darkness of each areas in Yaeyama Islands by specialist. It is clearly preserved in good state of 21.57~21.95 mag/aresec2.
(more detail pp.36-42)

Good geographical condition to observe a lots of stars and constellations in Japan

In Yaeyama islands located at 24 degrees north latitude, 84 Constellations out of 88 (including parts of the constellation) and all 21 of first magnitude stars in whole sky can be seen within a year

Good environment for Astronomical observatory such as less atmospheric motion

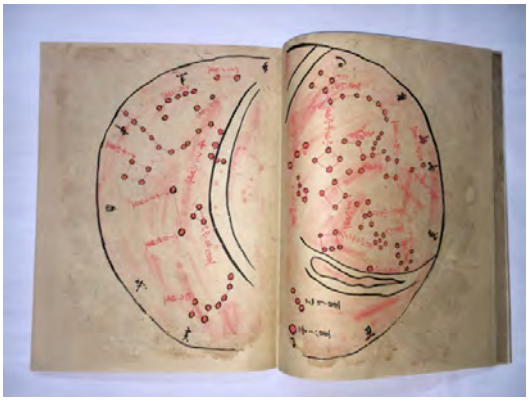
In Yaeyama Islands, There are no jet streams and it has less atmospheric motions therefore the stars without twinkling are visible and its clear to figure out the planets and observe them well.

Cultural Resources

Own star culture of Yaeyama Islands

In Yaeyama Islands, peoples have their own star cultural lives like using heavenly bodies to determine the time for planting and harvest, fishermen also used the stars to navigate through the oceans. The remains of ancient documents called Seizu(celestial map) and Tenkimiyounokoto (star calendar) which depicts the star and constellation named originally and recorded the movement of the stars to tell us that stars were very close to our livelihood in ancient times.

Lots of legends and traditional music related to the stars were created in ancient time that are passed on to the next generation, "Murikabushi (Pleiades) -Yunta (folk song)" are one of the renowned one. Murikabushi-Utaki (Sacred site) a sacred place related to the stars has its own unique ceremony in Kabira area.



Hoshimi-ishi (Position measurement for star)

In ancient time, Hoshimi-ishi was used for position measurement of the star "Murikabushi (Pleiades)"and built on each town in 1680~90 that had an accurate grasp of the time of the season for agricultural works in ancient time.

Stone post called Hoshimi-ishi still remained in few places in Ishigaki Islands, and Round shaped stone board inscribed with the directions are kept by the Education Board Ishigaki Office.

Astronomical Facilities

Ishigakijima Astronomical Observatory, National Astronomical Observatory of Japan

Established in 2006, having an optical-infrared reflector telescope, the largest in the Kyusyu -Okinawa area. Observational studies on solar system bodies and transient object.
Facility is open to the public, and night time astronomical observation. (every weekend and national holiday at night) facility which had opened in 2013 located in the same area having Starry-sky lesson and Screen party to appreciate watching the universe in three-dimension “4D2U-4Dimension digital universe” with 200 inch big screen in weekdays. Number of visitors are over ten thousands every year.

VERA Ishigakijima Station, National Astronomical Observatory of Japan

Established in 2002. Galaxy observation has started since 2003, and project preparation for Three-dimensional maps of galaxy are still ongoing.
The site is open to the public usually, to observe and get into the feeling of going into the universe and starry night sky.

Taketomi-cho Haterumajima Astronomical Observatory Tower

Established in 1994. An open southernmost Astronomical Observatory. It has been a famous tourist night attraction spot to join the stargazing observation.

Community

Specified Non-profit Corporation Yaeyama-Hoshinokai

Group of amateur astronomer in Yaeyama Islands organized on November 22, 2000 for the diffusion of knowledge about astronomy and volunteer for community activities. They offer opportunities to get to know and enjoy the starry night sky like opening stargazing observatory to community regularly, and holding the starry night sky an extracurricular lesson to thousands of people in local elementary school, to support National Astronomical Observatory of Japan, Ishigakijima Astronomical Observatory Management of starry night sky lesson.

The activities that has been done for community such as supporting the management to invite people to establish the Ishigakijima Astronomical Observatory, National Astronomical Observatory to hold the event "Minaminoshimano-Hoshi-Matsuri (Southern Island's Star festival)", and efforts for the diffusion of knowledge about astronomy to community for many years were awarded by the Ministry of Internal Affairs and Communications commendation in 2013.

Yaeyama Islands Hoshizora information H2O

Private organization organized together by tourism company, travel agencies, accommodation company and others, like private enterprises of 2016 to promote the development of the starry sky tourism industry

In 2016, the project to expand attraction and creation of own community was entrusted to Japan Tourism Agency. They conducted activities in efforts to appeal the value of the starry sky in Yaeyama Islands, inside and outside of Japan.

Events

Minaminoshimano-Hoshi-Maturi (Southern Island's Star Festival)

In Ishigaki Island, Minaminoshimano-Hoshi-Maturi (Southern Island's Star Festival) is held on July of the lunar calendar since 2002, an event to enjoy the starry night with Milky Way which are conducted solely by the city residence by turning off their lights at the same time during the event.

Numbers of participant are increasing every year, around ten thousand people participate in it. Citizen of Ishigaki and tourists are interested in starry sky, that light pollution awareness spread more efficiently.

An advertisement for corporation to turn lights off at the same time, and lessen the light at night in the community before the event in the recent years.

Awareness improvement for light pollution in community and every facilities were raised by the intensity of their efforts.

2015 Promote turning off lights at the same time activity

Few days before the event "Southern Island's Star Festival" was held, the members of the executive committee went around the accommodation, restaurants, and commercial facilities in the city areas and asked the corporations to turn lights off- during the festival. Then made pamphlets for light-pollution awareness and distributed it to each places and gave notice to the public.


ライトダウンに協力を

「広め隊」が呼びかけ

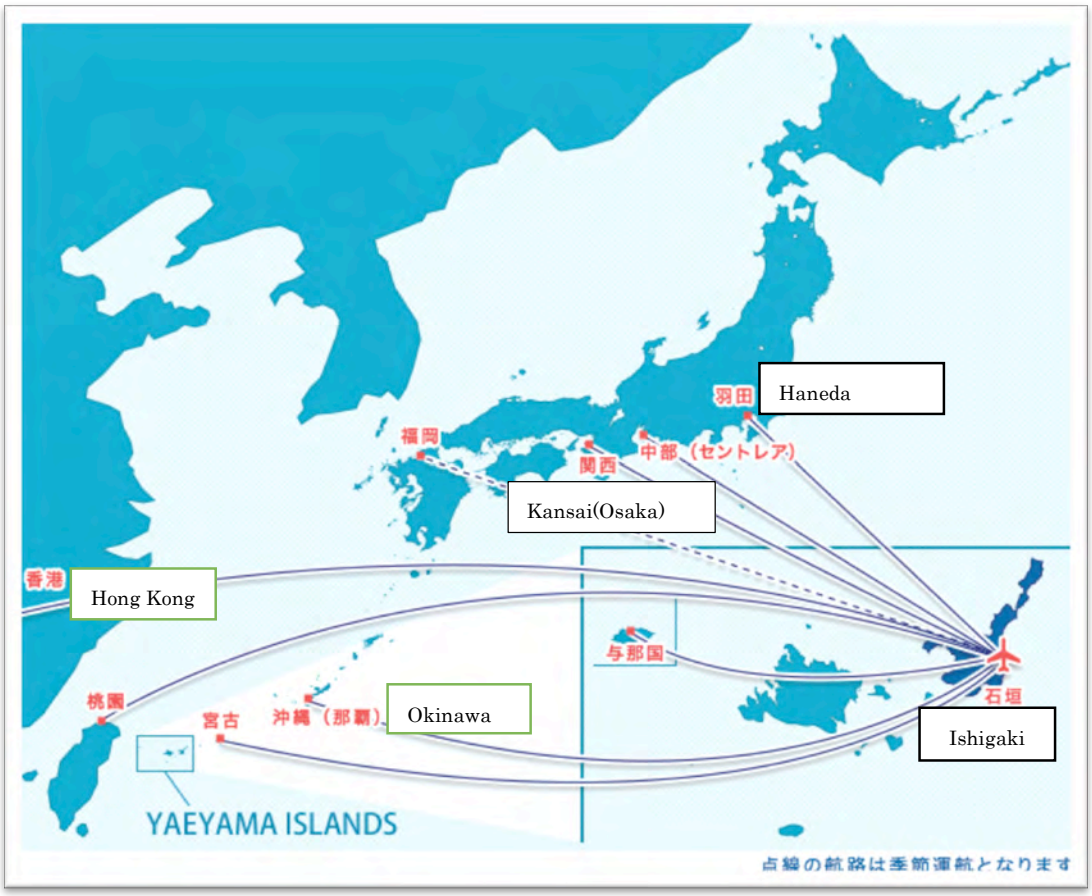
2016 Idea contest for good advertisement for Community to turn lights off at the same time

Ishigaki city targeted high-school students to show good ideas for community to turn lights off at the same time, advertisement to the public on day of "Minaminoshimano-Hoshi-Matsuri (Southern Island's Star Festival)" and held the Contest for it. Eight groups participated and presented the own original idea for good advertisement for "Turning off of lights at the same time".
Chosen idea are made into real promotion advertisement for community to turn lights off at the same time and is widespread to the public.

Excellent Idea which are adopted were made at a Parking lot near the venue for the event. "Motor Pool・Painting" Huge Chalk Art are used to advertise community to turn lights off at the same.

Yaeyama Islands Overview

Location of Yaeyama Islands



Coordinates: lat.24°00 - 24°40' N
long.122°45 -124°30'E

Distance from Ishigaki: Tokyo – approximately 1970km
Naha – approximately 450km
Taipei – approximately 270km

Yaeyama Islands has no big city within a 100km radius (the nearest city is Taipei which is only 270km away from Ishigaki Island). It's a small group of island and is about 3hours flight from Tokyo. It links many routes to other major city in Japan and neighboring Asian country.
It is easy to access Ishigaki Island from all parts of the world, and though annual entry of tourists spots reached more than 1.2 million (as of 2016), still its areas are able to maintain the protection of dark-sky with less light pollution.

Map of Yaeyama Islands

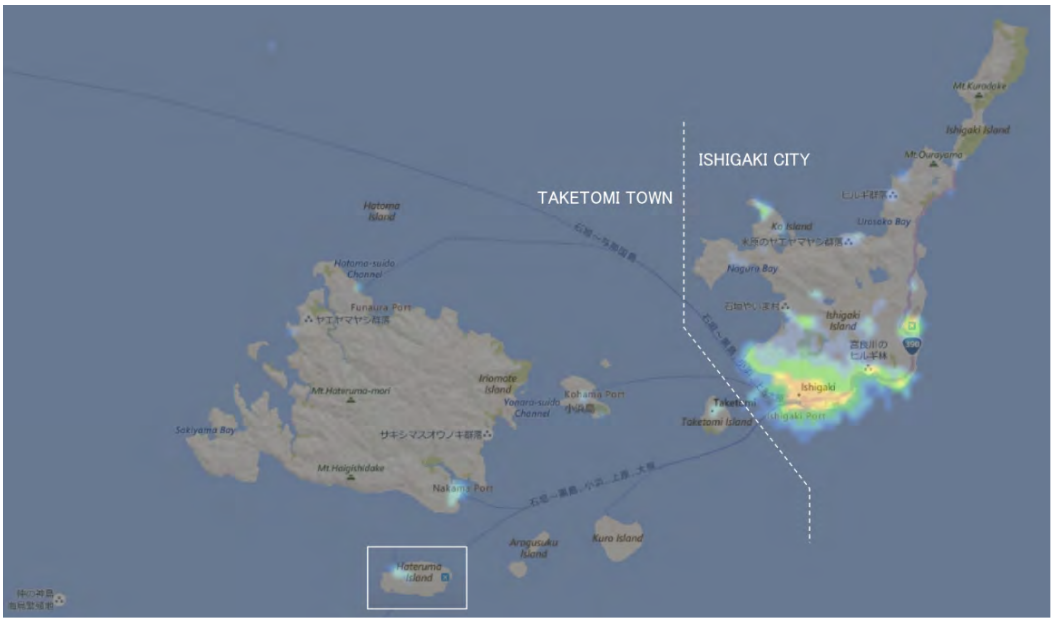
Yonaguni Island and Senkaku Islands are not included in the National Park area

Ishigaki city and Taketomi town consist of ten inhabited islands. (Aragusuku Islands consist of two islands, Kamiji Island and Shimoji Island). Hateruma Island is the southernmost inhabited island of Japan. Largest area is Iriomote Island second to the Mainland Okinawa in Okinawa prefecture, and third is Ishigaki Island.

Light pollution Map of Yaeyama Islands

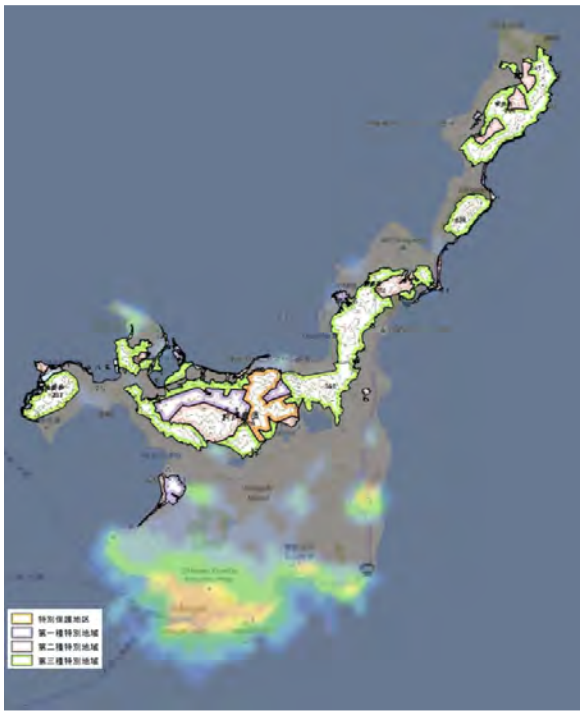
Yonaguni Island and Senkaku Islands are not included in the National park area

Link map: https://www.lightpollutionmap.info



All the Islands that belongs to Taketomi town has almost no light pollution
(Area on the left side of dotted line, map above)

Population of Ishigaki city is around 50 thousands, most are living in the southern part of the island, and its center that is only a limited area is bright.
(only land area inside national park surrounded by dotted line, map on the right)



Iriomote Ishigaki National Park Overview

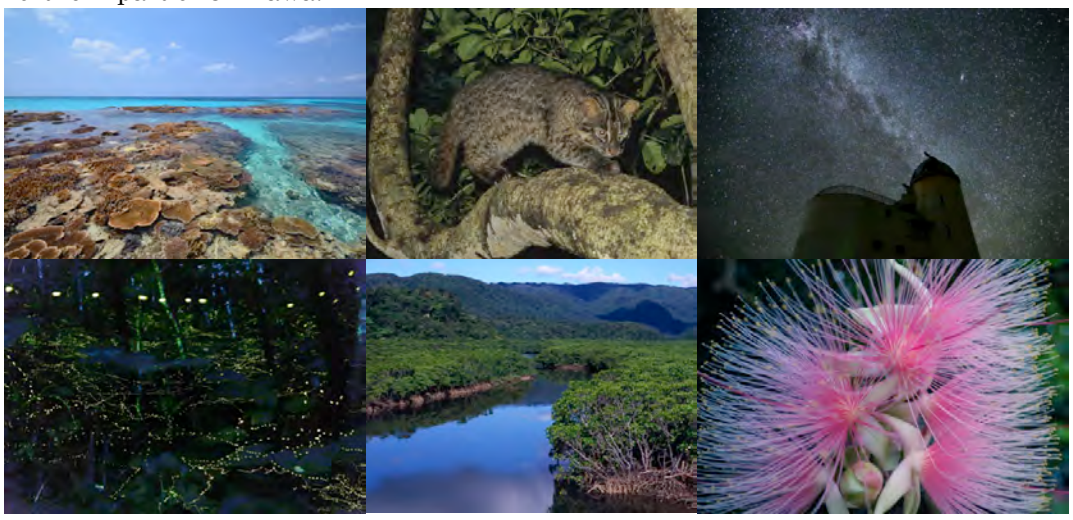
Date of Designation: May 15, 1972
Incorporation of Ishigaki Island Region: August 1, 2007
Area: 40,653ha only land area

- ·Nationally - owned land 25,383 hectares
- ·Public land 8,101 hectares
- ·Private land 5,552 hectares
- ·Unknown 1,617 hectares

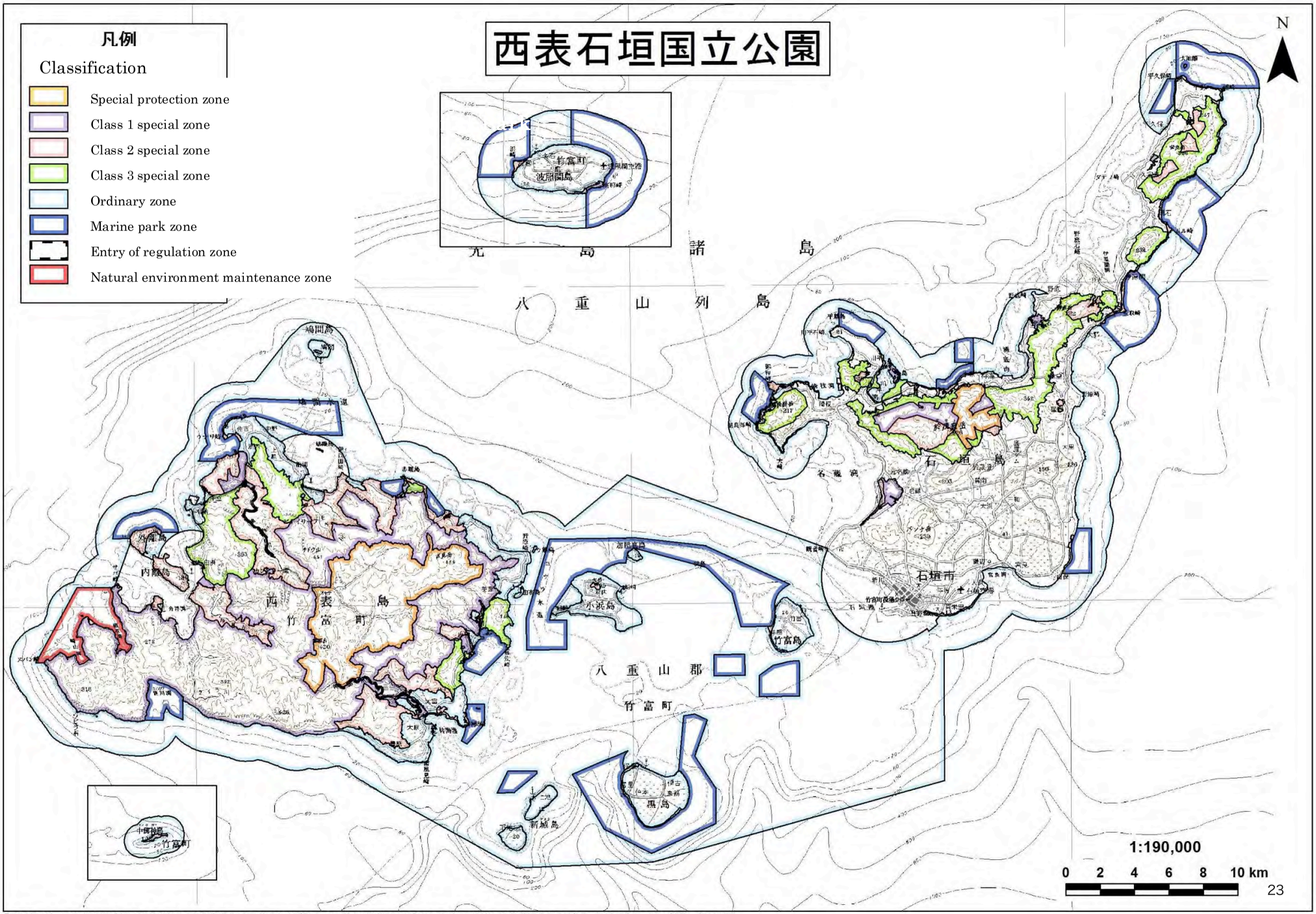
Related municipalities: Ishigaki city and Taketomi town

Characteristic of Iriomoge-Ishigaki National Park

Iriomote-Ishigaki National Park is the southernmost national park in Japan, The park is characterized by its natural landscape typically subtropical with dynamic and abundant natural environment comprising of near primeval subtropical broad-leafed evergreen forest as well as Japan's largest mangrove forest, coral reefs, and its human landscape imbued with a traditional Okinawa-ness that has been nurtured through everyday living within this environment. Another major characteristic is the numerous rare animal species unique to Yaeyama that can be found here, represented by the Iriomote wild cat / Prionilurus bengalensis iriomotensis and Sakishima grass lizard/Takydromus dorsalis, which has evolved independently within the archipelago. Iriomote Islands National Park area is a recommended candidate land to be a World heritage site of UNESCO together with Okinawa-Amami region, Tokunoshima and northern part of Okinawa.



Map of Iriomote-Ishigaki National Park



「この地図は、国土地理院長の承認を得て、同院発行の20万分の1 地勢図、5万分の1地形図及び2万5千分の1地形図を複製したものである。(承認番号 平27情複、第201号)」

Public Access

Regardless of who owns the specified area as National park in Japan, even on special protect zone and special zone it has no legally regulated entrance restriction, and astronomical and nature observations are possible to be conducted on public lands, public facilities and public roads.
Currently, Many tourist are free to go around in the park by rental car and private tours are also being conducted.

Description of Night-time Lighting in the Management Document of Iriomote-Ishigaki National Park

The following sentences are included in the park management plan matter about the handling for park project and act permission etc.

Measures for Small animal

As for night-time lighting, it can attract nocturnal insects as well as nocturnal animals like birds, bats, frogs, snakes and lizards which prey upon them. Therefore, measures should be taken to reduce such influences as much as possible by means of, for example, the reduction of night-time lighting, control of light direction, and use of electric bulbs which attract less insects.

平成 29 年 7 月 3 日

国際ダークスカイ協会
委員会メンバーの皆様

石垣市市長　中山　義隆

石垣市屋外照明管理計画について

石垣市では、ダークスカイ・パーク認定取得にあたり、別添のとおり「石垣市屋外照明計画」を制定しました。今後、認定候補区域内で本市が行う照明設置については、当計画に基づき、関係部署の調整の下行っていく所存ですので、ご査収ください。

Translation of page 25

Light-scape Management Plan of Park Area

in Iriomote-Ishigaki National Park by Ishigaki City

July 10, 2017

Committee Members
International Dark-Sky Association,

Dear IDA Committee Members,

Ishigaki city has enacted the Light-scape Management plan in the park area of Iriomote-Ishigaki National Park as written in the next page. Upon applying to acquire accreditation for “International Dark Sky Park”. Thereafter, it’s our sincere desire to manage the setting of the outdoor lighting within the planned area based on the Management plan by the department concerned.
(Please check details on the next page)

Sincerely yours,

Yoshitaka Nakayama
Ishigaki city Mayor
(with official seal)

Light-scape Management Plan of Park Area

in Iriomote-Ishigaki National Park by Ishigaki City

Enactment Date: July 3, 2017

1. Purpose

Light-scape management plan in the park area as written below. Concerning the matters to set up and operate, should be considered for outdoor lighting, in order to maintain the quantity of light people need in daily living and minimize the light -pollution.

2. Coverage Area

The plan is for Ishigaki city to set up outdoor lighting within the planned area. Ishigaki -Iriomote National Park is the chosen area for the International Dark-Sky Park by International Dark-Sky Association, even outdoor lighting set up for personal needs within planned area are asked to cooperate based on Light-scape management.

3. Definition

I. Light-pollution cause the matters below.

i. Less star can be seen in the night sky
ii. Disrupts world ecosystems
iii. Harms human health
iv. Energy waste

II. Indoor lighting are light inside of buildings surrounded by wall and covered with roof. Outdoor lighting are all other lights outside used for night time movement such as flash light, headlight of bicycles, cars, and etc.

III. Upward luminous flux is a light towards the upper direction from the cover of the light that rise out from the outdoor lighting horizontally .However it does not include the reflected light on the surface of the ground and walls nearby.

4. The matter to be considered for setting and operation of outdoor lighting

Outdoor lighting generally should be turned on towards the direction where and when its needed the correlated color temperature should be lower than 3000 kelvins as much as possible.

4-I Direction of radiation

Outdoor lighting should be set up to 0 level of upward luminous flux and should not leak light out of citizen's living area as much as possible.

i. On areas without roof, use light equipment which covers the upper part of the light source (including covers that set around the light source such as prism, grooves, and covers that transmit light) to direct light downward upon setting up.

ii. On areas with roof, upward luminous flux should minimize leakage of light from the edge of the roof.

iii. The use of spotlight, searchlight, laser, etc., and internally illuminated light are generally prohibited for use, except on non-continuous use and case of 0 level of upward luminous flux.

iv. To minimize the leakage of the light to animal and plant habitat, and to avoid disturbing the pedestrian directly by causing glare on their eyes from light sources by setting the direction of lighting equipment using light-sealing board or covers..

4-II. Quantity of light

Only use light when needed, consider the kind of light sources, number of lights, and wattage for suitable amount of light to be used. Light adjuster or controller maybe used to control the lightings.

4-III. Lighting time

Usage of light according to purposes, only use in times needed, turn off or minimize the use of light as much as possible during unnecessary time.

i. Turn off the light and minimize the use of light to be adjusted by park caretaker, by using motion sensor lights, and timer.

ii. Outdoor lighting of facilities and shops should be turned off during closing time.

4-IV. Color temperature

Except on special purpose, the correlated color temperature for sources of light should be lower than 3000 kelvins, and upon considering the places where it affects animals and plants it should be lowered to 2000 kelvins.

- Upon meeting all the matters above, appropriate use of lighting and equipment for excellent efficiency of energy can be achieved

5. Limit leakage of light from indoor lighting

In case of using large amounts of light and indoor lighting in facilities, use light sealing materials such as curtains, blinder, amado(storm-shutter)and etc., to minimize the leakage of light outside.

Light-scape Maintenance Standard and Management Plan of Public Facilities in Taketomi Town, Review Board Guideline

Official Instruction No.27, July1, 2017

Establishment

Article 1. Outdoor lighting in public facilities maintained by Taketomi town, in order to secure the light for daily need of people in night and minimize light pollution, Taketomi town established the review board for Light-scape maintenance standard and management plan of public facilities in Taketomi town.

Matters to be considered

Article 2. The review board considers the matter written below

i. Light-scape maintenance standard and management plan of public facilities in Taketomi town.

ii. Light-scape maintenance standard and management plan of public facilities in other area of Taketomi town.

Organization

Article 3. Review board organizes with the chairman, vice chairman and the committee.

3-II. To assign the chairman as a director for policy coordination, and the Vice chairman as the policy promotion section chief.

3-III. Committee members organizes with the community development section chief, Industry promotion chief, Town section manager, Director of Education Board.

3-IV. Chairman assign the person in addition to who it may concern related to the matter when it's necessary aside from the committee members in the provisions of the preceding paragraph.

Task for chairman

Article 4. The chairman shall preside over affairs of the review board and representative of the board.

4-II.The vice chairman shall assist the chairman in directing the functions, and act on behalf of the chairman when he/she is unable to attend to his/her duties.

Meeting

Article 5. A Chairman convenes the meeting

5-II. The board may not hold a meeting unless the number of attendees meet a certain amount.

5-III. When it is necessary, the chairman may demand the attendance of a person aside from the committee members and can hear the opinion and explanation from them.

General affairs

Article 6. Handling of the General Affairs of Review Board in policy promotion section.

Commission

Article 7. In addition to those specified in this act, procedures of meetings and other necessary matters concerning the administration of the board shall be determined by the committee members.

Supplementary provisions

This official instruction takes effect from July 1, 2017.

Light-scape Maintenance Standard and

Management Plan of Public Facilities by Taketomi Town

Purpose

Article 1 : Light-scape management plan in the park area as written below. Concerning matters to set up and operate, should be considered for outdoor lighting, in order to maintain the quantity of light people need in daily living and minimize light-pollution.

Coverage areas

Article 2 : This Plan is for Taketomi town to set up outdoor lighting within the planned area which is Ishigaki-Iriomote National Park.

2-II: Even outdoor lightings set up for personal needs within planned area asks for cooperation based on the light-scape management plan

Definition

Article 3 : Light-pollution causes the matters below.

i. Less stars can be seen in the night sky
ii. Disrupts world's ecosystem
iii. Harms human health
iv. Waste energy

Article 4 : Indoor lighting are lights inside of buildings surrounded by wall and covered by a roof. Outdoor lighting are all other lighting.

Article 5 : Upward luminous flux is a light towards the upper direction from the cover of the light that rise out from the outdoor lighting horizontally. However it does not include the reflected light on the surface of the ground and walls nearby.

The matters to be considered

Article 6 : Outdoor lighting generally should be turned on towards the direction where and when it is needed, The correlated color temperature should be lower than 3000 kelvins as much as possible.

Article 7 : About the direction of radiation for outdoor lightings it should be set up to 0 level of the upward luminous flux and should not leak light out of citizen's living area .

7-II: On areas without roof, use lighting equipment which covers the upper part of the light source (including covers that set around the light sources such as prism, grooves, and covers that transmit light) to direct light downward upon setting up.

7-III: On areas with roof, upward luminous flux should minimize leakage of

light from the edge of the roof.

7-IV: To use spotlight, searchlight, laser, etc., and internally illuminated light are generally prohibited for use, except on non-continuous usage and in case of 0 level of upward luminous flux.

7-V: To minimize the leakage of the light to animal and plant habitat, and to avoid disturbing the pedestrian directly by causing glare on their eyes from light sources by setting the direction of lighting equipment using light-sealing board or covers.

Article 8 : Quantity of light should only be used accordingly, considering the kind of light sources, number of lights , and wattage for suitable amount of light to be used.

8-II: Light adjuster or controller maybe used to control the lightings

Article 9 : Lights should be only used in times of need, and should be turned off or lowered during unnecessary time as much as possible

9-II: Turn off the light and minimize the use of light to be adjusted by park caretaker, by using motion sensor lights, and timer.

9-III: Outdoor lighting of facilities and shops should be turned off during closing time.

Article 10 : Color temperature of the light source should be lower than 3000 kelvins, , except on special purpose.

10-II: upon considering places that affects animals and plants it should be lowered to 2000 kelvins.

Article 11 : Upon meeting all the matters above Article 1to10 the appropriate use of lighting and equipment for excellent efficiency of energy

Limit leakage of light from indoor lighting

Article12 : In case of using large amounts of light and indoor lighting in facilities, use light sealing materials such as curtains, blinder, amado(storm-shutter),and etc. to minimize the leakage of light outside.

Period

Article 13 : Taketomi Town aims to finish the improvement of all public outdoor lighting in the planned area to be compliant with the park's LMP within five years from the start of the retrofitting project.

13-II: The compliance rate of each year is 10% for the first year, 20% for the second year, 25% for the third year, 35% for the fourth year and 10% for the fifth year, which will result in the 100% total compliance rate after the five years.

Anti-Light Pollution Measurement

by the Ministry of Environment

The Ministry of Environment which appointed Iriomote-Ishigaki National Park has formulated a “Guideline of Anti-Light pollution “for the purpose of contributing to the prevention of global warming by the formation of good light environment planned the adequacy of the outdoor lighting since 1998. After that “Hand book plan for Anti-light pollution in community outdoor lighting environment”, “Guidebook which affects the prevention of light pollution system” summarized and coordinated successfully, and it was conjugated by the prevention of Light pollution measure such as the local public entity and brought raising awareness and prevention effect of Light pollution to the concern citizens in many aspects

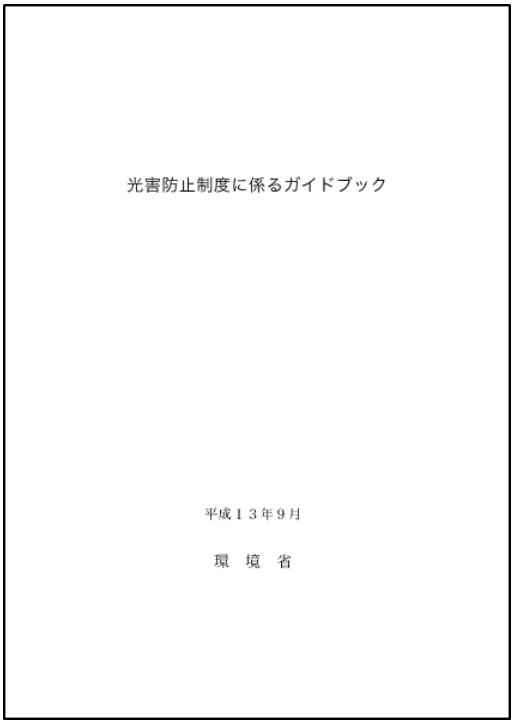
After 8 years of development the degree of social request for prevention of pollution increased, and also the recognition for pollution diversified. On the other hand, the obstacle photo inhibition guided by the CIE (Commission Internationale de l'Éclairage) is newly announced, and the movement accelerated globally. In addition, the update from the city formed from the period of the high growth of economy is important to have a better environment pointed out. Based on these things, the 2006 guidelines have been revised and updated.

Anti-light pollution guideline 2016, Dec. revised edition

Content

Hand book plan for Anti-light pollution in outdoor-lighting environment”

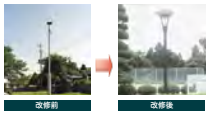
Guide-book which affects a prevention of light-pollution system



Pamphlet for Anti-light pollution and awareness

Poster for Anti-light pollution awareness

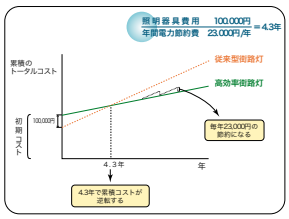
照明機器の改修による効果の事例



● 不快なまぶしさや上空への無駄な光が多い透明グローブ灯を上方光束が5％未満の街路灯に改修。
・路面の明るさの向上
・上空へ漏れる光の大幅削減
・不快なまぶしさの大幅低減
・57％の省エネを達成
（年間電力料金23,000円の節約！）

評価項目		改修前	改修後	効　果
もれ光	上方光束比（%）	50.0	3.7	93%削減
グレア	照明器具の輝度（cd/㎡）	9,540	790	1/12に削減
照明効果	路面の照度（lx）	1.4	7.3	約５倍
省エネ	入力電力（W）	435	185	57%削減
	総合効率（lm/W）	50.6	54.1	7％増加
	年間電力量（円）	40,020	17,020	57%削減（年間23,000円節約）

適切な照明機器の設置は、経費節減にもつながります！



上方光束比を非常に低く抑えた、新しいデザインの街路灯は、従来型のグローブ灯に比べ、初期費用は高くなりますが、省エネルギー性の高さにより、その後の電力費の低減が可能となり、初期費用のコスト高分を回収することが可能です。

仮に、新型の街路灯が、従来型に比較して、初期費用が100,000円高くなったとしても、年間電力費が23,000円節約できるため、約4年で費用が回収できることがわかります。

4年経過以後は、維持経費の節約となります。

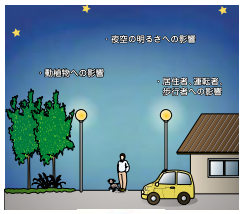
環境庁　大気保全局　大気生活環境室
環境庁ホームページ　http://www.eic.or.jp/

古紙配合率100%再生紙を使用しています
平成12年11月

良好な照明環境を目指して！

ひかりがい 光害の防止のために

―屋外における照明器具の設置にあたっては、周辺環境への配慮が求められています―



光害（ひかりがい）とは？

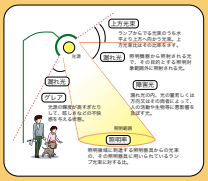
屋外照明器具から発する光のうち、目的の照明範囲の外に漏れる光によって起こる、様々な悪影響を「光害（ひかりがい）」といいます。

屋外照明が周辺環境へ及ぼす影響としては居住者、運転者、歩行者への不快な影響および動植物への悪影響、夜空の明るさへの影響などがあります。

環境に配慮した屋外照明設置のポイント

1 適切な照明機器の選定

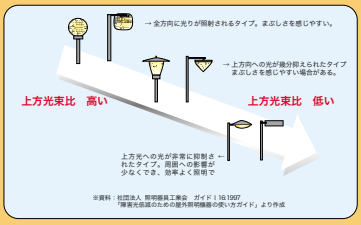
（環境に配慮した屋外照明を実現するためには、適切な照明機器の選定が重要です）



► 主な照明用語の解説

- □ 照らす範囲を効率よく照明できる照明器具を選ぶ
- □ 上方へ漏れる光が少ない照明器具を選ぶ
- □ 不快なまぶしさを与えない照明器具を選ぶ
- □ 省エネルギー性の高い照明器具を選ぶ

※上記のポイントを考慮した照明器具が製品化されています。
詳細は、各照明器具メーカーにお問い合わせください。



► 街路灯の形状と特徴

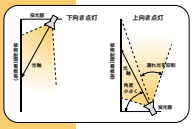
2 周辺環境へ配慮した設置

（屋外照明の設置に際しては、以下のような配慮が重要です）

- □ 周辺環境への影響を確認する
- □ 投光器の場合は原則的に下向き点灯（照射）とし、やむを得なく上向きに点灯（照射）する場合は、設置角度に十分配慮する。

チェック

- □ 上方へ光が無駄に漏れていないか。
- □ 歩行者・運転者の目に直接光源の光が届く可能性はないか。
- □ 運転者（自動車、自転車）が歩行者の視認に障害を生ずる可能性はないか。
- □ 信号、交通標識等に光が当たる可能性はないか。
- □ 対面の居住施設等の住居者の目に直接、光が届く可能性はないか。（居住者への睡眠等の生活の妨げになる可能性はないか。）
- □ 天文観測などが行われていないか。
- □ 農作物などに対し直接、光が届く可能性はないか。
- □ 野生動植物が生息している地域に隣接していないか。

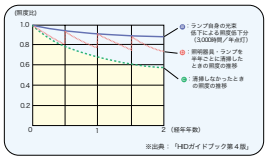


► 垂直に近い面への投光照明方法

3 照明機器の適切な管理（点灯管理・メンテナンス）

（効率的なエネルギー利用のために、適切な保守管理が重要です）

- □ 夜間の消灯、減灯をする。（防犯などを考慮して実施が可能な場合）
- □ 適切なメンテナンスをする（こまめに掃除！）



► 照明器具の使用時間と照度の関係

Observation of Night-sky Brightness in Yaeyama Islands

ONOMA Fumiki(Hoshizora Kodan),
TAKEUE Nozomi(Tokyo Institute of Technology),
OCHI Nobuaki(Toyo University)

October 15, 2017

Abstract

In Yaeyama Islands, efforts of preserving the starry sky against light pollution and awareness activities are under way to acquire accreditation of "Darth Sky Place" which is the first in Japan. However, there are few reports quantitatively and comprehensively measuring the night-sky brightness in the Yaeyama Islands, and it is strongly desired to evaluate the situation of the night-sky brightness in the whole islands.

We report the night-sky brightness distribution in the Yaeyama Islands measured by a optimized method using a digital single lens camera. In this observation, in order to investigate the night-sky brightness at low luminance, we compare the count of the standard star with that of background from the image captured using the digital single lens camera. Measurements are made on the five islands of Yaeyama Islands, Ishigakijima, Iriomotejima, Kohamajima, Kuroshima and Haterumajima. From the results of the observation, it is clear that very good starry sky is preserved at around 21.62 to 21.99 mag/arcsec^2 at all islands except Haterumajima which can only be observed under the moon light sky.

1 Introduction

In Yaeyama Islands, efforts of preserving the starry sky against light pollution and awareness activities are under way to acquire accreditation of "Darth Sky Place" which is the first in Japan. Dark Sky Place is an initiative aimed at protection and preserving the dark night-sky around the world that the International Dark-sky Association has been conducting since 2001, and strict criteria for outdoor lighting and outreach activities are required for certification. However, there are few reports quantitatively and comprehensively measuring the night-sky brightness in the Yaeyama Islands, and it is strongly desired to evaluate the situation of the night-sky brightness in the these islands. Especially in an circumstance with a dark brightness, single element measuring device like Sky Quality Meter sometimes underestimates the darkness by measuring unnecessary light such as the Milky Way with its wide field of view. To avoid this underestimation, we observe the night-sky brightness distribution of the Yaeyama Islands using a digital single lens camera.

2 Observation

In this observation, the night-sky brightness with low luminance are measured by comparing the count of the standard star with that of the background from the image captured using the digital single lens camera. Observations are made on the five islands of Yaeyama Islands, Ishigakijima, Iriomotejima, Kohamajima, Kuroshima, Haterumajima. Iriomotejima with large area is measured while moving, and fixed point observation is done for others.

2.1 Capture Method

The night-sky image is captured using the digital single lens camera and lens shown in the Table1, and the night-sky brightness is calculated by measuring the brightness of the background. The exposure time is 32 seconds at every point, and the F-number is 2.8 or 4.0. Sensitivity is set to ISO 800 to avoid to saturation of standard stars used for calibration. Every camera is captured with the long time noise reduction, and the data is saved in RAW format to avoid degradation of linearity due to image compression. The direction of shooting is pointed to the zenith to avoid the influence of the difference in brightness depending on the direction. Also, to prevent saturation of a specific pixel with concentrated light from a standard star to the image pickup device, fixed shooting is performed so that light is received by multiple elements.

Table 1: Measurement Settings of Camera and Lens for Observartion

Location	Camera	Lens	Exp. Time	F-number	Sensitivity
Ishigakijima	Canon EOS Kiss X2	Canon EF 50mm F1.8 II	32 sec	2.8	ISO 800
Iriomotejima	Canon EOS Kiss X6i	SIGMA 30mm F1.4 EX DC HSM	32 sec	4.0	ISO 800
Kohamajima	Canon EOS Kiss N	Canon EF 50mm F1.8 II	32 sec	2.8	ISO 800
Kuroshima	Canon EOS Kiss X2	Canon EF 50mm F1.8 II	32 sec	2.8	ISO 800
Haterumajima	Canon EOS Kiss X2	Canon EF 50mm F1.8 II	32 sec	2.8	ISO 800

2.2 Camera Characteristics

Camera model of Canon EOS Kiss N, X2, X6i are used for observation. The characteristics of these cameras are confirmed as follows.

2.2.1 Bias Frame and Dark Frame

While capturing images with a digital camera, a dark signal due to dark current of the sensor and a bias signal accompanying reading are generated in addition to the brightness of the object to be measured. Some of these undesired signals appear as offset values and others appear as random values. For removing the offset signal, it is common to shoot under the same condition as the actual state without exposing under light, and subtract it from the shot image. But in this obserbation, "Noise Reduction with Long Second Exposure" function implemented on the camera is used for the same purpose. Using this function realize to close the shutter with the same shooting conditions and expose it immediately after shooting, and dark image is subtracted from the shot image. Therefore, it is unnecessary to perform bias and dark frame subtraction in the primary processing after shooting. Figure 1 shows the count value of a specific pixel of EOS Kiss X6i without entering light using "Noise Reduction with Long Second Exposure" or not. This pixel is called a hot pixel, and the dark signal becomes larger due to variations in the light receiving element. When "Noise Reduction with Long Second Exposure" is disabled, the dark signal due to the dark current increases as the exposure time increases, the count value of the hot pixel increases. But in the case of enabled, the count value almost increases. It can be understood that this function is effective for removal of hot pixels.

On the other hand, the method of averaging measured values for reduction of random values is effective, and in this measurement, reduction is performed by averaging the background count value over plural pixels.

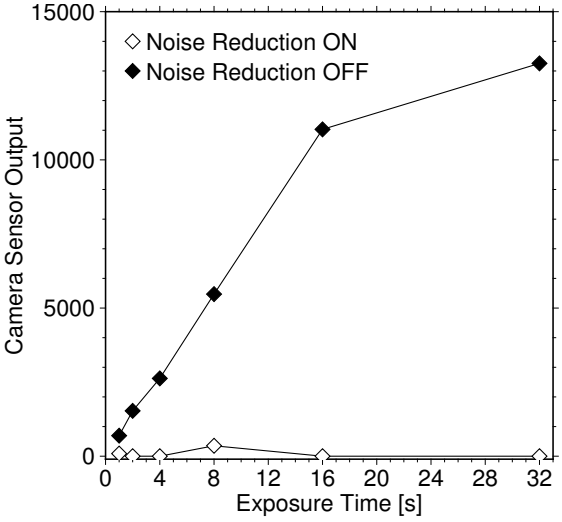


Figure 1: The count value of a specific pixel of EOS Kiss X6i without entering light using "Noise Reduction with Long Second Exposure" or not

2.2.2 Sensitivity Linearity

In this observation, we use a method of calculating the ratio of the standard star to the count value of the background for measuring the night-sky brightness, so it is required that the intensity of light input to the camera's sensor is linearly proportional to the output of the sensor. The linearity of the sensitivity is evaluated by changing the intensity of the light input to the sensor under the same shooting condition and measuring the sensor output. As a light source, a combination of a flat light source and a transmissive density step wedge is used, and is is performed under the same condition as the night-sky measurement. Figure 2 shows the measurement result of the count value at each stage from the image. The horizontal axis represents the relative exposure amount, and the vertical axis represents the count value. In Figure 2, the relative exposure is a logarithm with the light amount of the flat light source as a reference. Among the cameras used, the absolute value differs because the depth of EOS Kiss N is 12 bit and the others are 14 bit, but it is confirmed that good linearity is obtained in all models.

2.2.3 Spectral Characteristic

In order to measure the night-sky brightness, it is necessary to evaluate at the wavelength close to human visibility, so we used Johnson V magnitude as the brightness of the standard star and Green channel data. The relationship between the spectral characteristic of the sensitivity of the Green channel of the camera and the Johnson V filter is confirmed. Figure 3 shows spectral characteristics of each channel of RGB of the camera and charac-

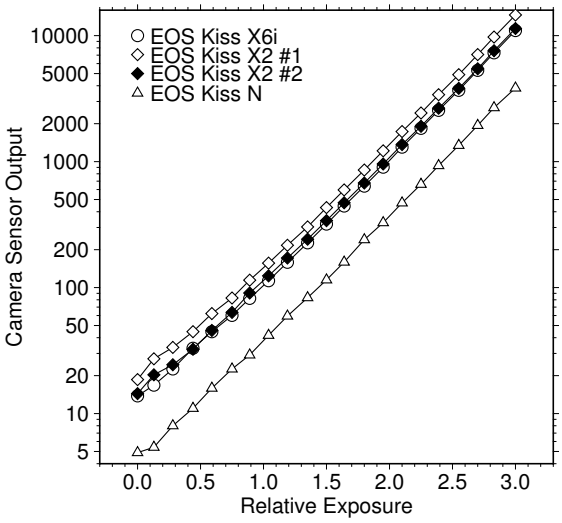


Figure 2: Measurement result of sensor sensitivity linearity

teristics of Johnson V filter. Although the wavelength characteristics of the Green channel are somewhat different on the short wavelength side, the peak wavelength is nearly the same as Johnson V and the pass band width is also relatively close. So it is confirmed that the measurement result of Green channel can be compared with that of Johnson V filter.

3 Results

3.1 Primary Processing

Primary processing shown below is performed on the captured data. Since all the used cameras has Bayer array sensors, it is necessary to convert them into two-dimensional array data of only the Green channel. First of all, all captured images are divided into 4 pixels as shown in Figure 4. Next, only the Green channel is extracted and added on the diagonal. An image of only the Green channel whose pixel number is 1/4 and the color depth is increased by 1 bit with respect to the original image is generated after this process. All subsequent analysis is performed on the image subjected to this conversion.

3.2 Selection of Standard Stars

In this observation, as the measurement of the night-sky brightness, a method of calculating the ratio between the count value of the standard star and the background is used. Standard stars with brightness close to that of white, that is, the B-V index in the range of -0.2 to +1.6 and not saturated are extracted from the captured image. The standard star magnitude used the Johnson V magnitude of The Hipparcos and Tycho Catalogues [1]. The standard star used in this observation is shown in

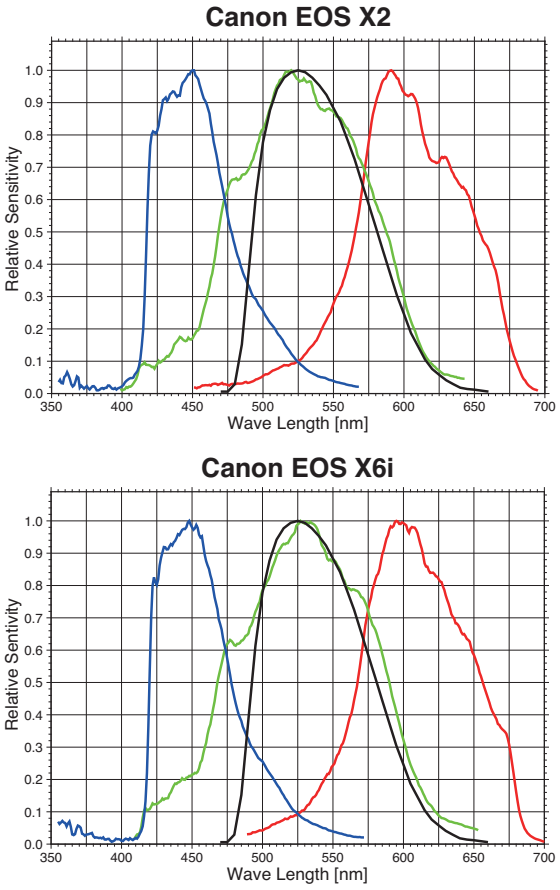


Figure 3: Spectral characteristic of camera sensor and Johnson V filter

Figure 4: Conversion from RAW format to Green channel two-dimensional array data

the Table2. Figure 5 shows that the catalog magnitude and the count value are proportional to each other in the range of 4.3 to 5.7 magnitude. The standard stars near the zenith is selected by observation dates and times from Table2, respectively.

3.3 Night-sky Brightness Measurements

Figure 6 shows an example of the distribution of the count value near the standard star. Let the background count value be C_{bk} per element in Figure 6. From this count value C_{bk}, we calculate the background intensity I_{bk} per square arcsec using the following equation(1).

$$I_{bk} = \frac{C_{bk}}{\theta^2} \tag{1}$$

Next, the count value of the standard star is calculated to calibrate the sensitivity. The standard star's count

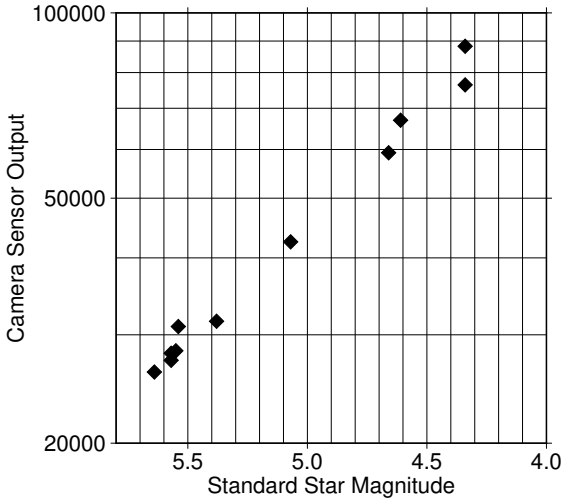


Figure 5: Relationship between the count value of standard star and V magnitude

value C_{star} is expressed like equation(2) by the total count value C_{total} of the Figure 6 and the number of elements N, and the background count value C_{bk}.

$$C_{star} = C_{total} - N \times C_{bk} \tag{2}$$

Finally, from the ratio of the background intensity I_{bk} to the standard star count value C_{star} and the standard star magnitude M_{std}, the night-sky brightness is calculated as equation(3).

$$M_{bk} = -2.5 \log \frac{I_{bk}}{C_{star}} + M_{std} \tag{3}$$

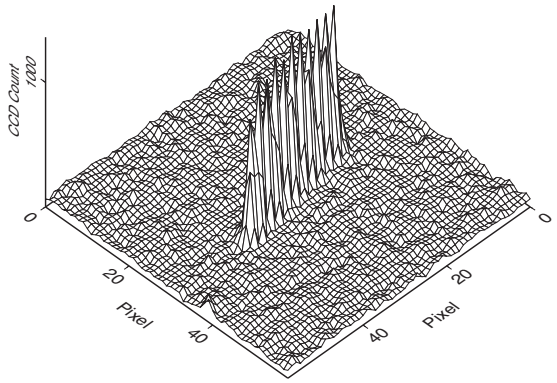


Figure 6: Distribution of the count value near the standard star

3.4 Airmass Correction

The standard star magnitude described in the catalog is the value without Earth's atmosphere. It is necessary to correct the absorption with the Earth's atmosphere of the result in the atmosphere.

The atmospheric absorption coefficient $a(h)$ with respect to visible light when the zenith angle is 0° is known to be

$$a(h) = 0.1451 \exp\left(-\frac{h}{7.996}\right) + 0.120 \exp\left(-\frac{h}{1.5}\right) + 0.016 \tag{4}$$

[2].

In equation(4), the first term is the effect of Rayleigh scattering, the second term is the effect of scattering by aerosol, and the third term is due to the effect of ozone. Here, h is the altitude [km] of the observation point.

Also, the atmospheric absorption depends on the amount of air that the light reaches from the atmosphere to the observation point, and can be expressed as the ratio $F(z)$ to the zenith angle 0°.

This $F(z)$ is given by

$$F(z) = \frac{1}{\cos z + 0.025 \exp\left(-\frac{11}{\cos z}\right)} \tag{5}$$

[3].

From the equation(4) and (5) the correction factor Δm of the standard star due to atmospheric absorption is

$$\Delta m = a(h)F(z) \tag{6}$$

When measuring the light intensity of a star, it is necessary to correct this absorption of atmosphere.

The second term of equation(4) has a spatial and temporal variation. To determine $a(h)$ including the effect of scattering by aerosol, measurement at different zenith angles are performed. Count value of standard stars in different zenith angles C_i are measured with two pictures in different zenith angles taken on Unarizaki of Iriomotejima at November 6, 2016. From comparison count value of standard stars C_i and $F(z)$ shown in equation(5), we get equation(7) with Lambert-Beer's law,

$$C_i = m \cdot C_0 \cdot \exp\left[-\tau F(z)\right] \tag{7}$$

where m is the standard star's brightness ratio with brightness of 0th magnitude, C_0 is count value of 0th magnitude without atmosphere and τ is the optical thickness of the atmosphere. Taking the common logarithm of both sides of equation(7) shows

$$2.5 \log C_i = 2.5 \log m + 2.5 \log C_0 - \frac{2.5}{\ln 10} \tau F(z) \tag{8}$$

In equation(8), $\frac{2.5}{\ln 10}\tau$ is exactly $a(h)$, and magnitude of standard star M has the relation of $M = -2.5 \log m$. Therefore, equation(8) become

$$2.5 \log C_i + M = 2.5 \log C_0 - a(h)F(z) \tag{9}$$

and we can calculate $a(h)$ with comparing $2.5 \log C_i + M$ and $F(z)$.

Figure 7 shows comparison result of standard star count, magnitude and airmass. And we get $a(h) = 0.328 \pm 0.062$ from result of using least squares method.

As the extinction of aerosol has daily variation, this measurement value is applied only from November 5th to 6th. For other measurements, we adopt reference value of 0.281 calculated from the equation(4).

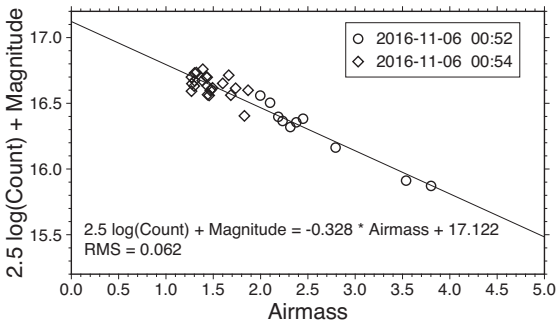


Figure 7: Comparison result of standard star count, magnitude and airmass

3.5 Results

The night-sky brightness list of the Yaeyama Islands measured by these methods is shown in the Table3 and Figure 8. For Haterumajima, weather conditions are blessed during the measurement period, and only measurements are taken under the moon. Therefore, the brightness is relatively high. Also, it is revealed that extremely good starry sky environment is preserved as 21.62 to 21.99 mag/arcsec ^{2} at all islands except Haterumajima.

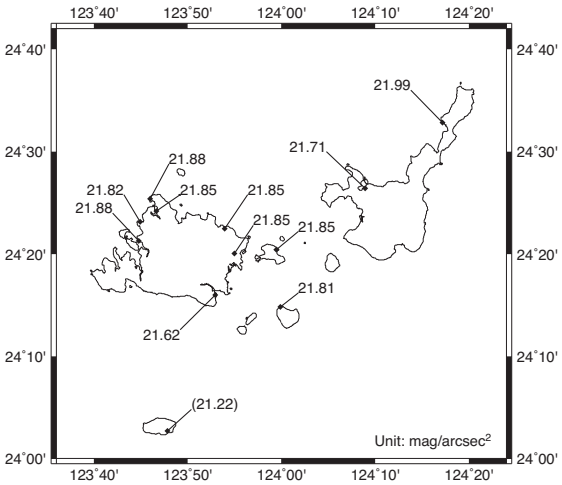


Figure 8: The night-sky brightness distribution of the Yaeyama Islands

4 Summary

We measured the night-sky brightness distribution over the Yaeyama Islands measured by a optimized method using a digital single lens camera. In this observation, in order to investigate the night-sky brightness at low luminance, we compare the count of the standard star with that of background from the image captured using the digital single lens camera. Measurements are made on the five islands of Yaeyama Islands, Ishigakijima, Iriomotejima, Kohamajima, Kuroshima and Haterumajima. From the results of the observation, it is clear that very good starry sky is preserved at around 21.62 to 21.99 mag/arcsec^2 at all islands except Haterumajima which can only be observed under the moon light sky.

References

[1] E. Hog, C. Fabricius, V.V. Makarov, *et al.*: The Tycho-2 Catalogue of the 2.5 million brightest stars, *A&A*, 355, (2000).

[2] Daniel W. E. Green: Magnitude Corrections for Atmospheric Extinction, *International Comet Quarterly*, **14**, 55-59, (1992).

[3] Rozenberg, G. V. 1966. Twilight: A Study in Atmospheric Optics. *New York: Plenum Press*, 160.

Table 2: Standard stars for measurement

Catalog Number	R.A.	Dec	B-V index	Spectral Type	V Magnitude
HIP 476	00h 05m 42s	+13° 23′ 47″	0.90	G5III	5.55
HIP 729	00h 09m 03s	+18° 12′ 43″	1.05	G9III	5.57
HIP 813	00h 10m 03s	+11° 08′ 45″	-0.07	B9Vn	5.54
HIP 1366	00h 17m 06s	+38° 40′ 54″	0.06	A2V	4.61
HIP 1645	00h 20m 36s	+8° 11′ 25″	1.36	K3III	5.38
HIP 2903	00h 36m 48s	+15° 13′ 54″	-0.15	B2.5IV	5.89
HIP 2912	00h 36m 53s	+33° 43′ 10″	-0.16	B5V	4.34
HIP 3031	00h 38m 34s	+29° 18′ 42″	0.87	G7IIIFe-3CH1	4.34
HIP 3810	00h 48m 59s	+16° 56′ 26″	0.51	F8V	5.07
HIP 4552	00h 58m 15s	+33° 57′ 03″	1.02	K0III	5.99
HIP 5081	01h 05m 06s	+14° 56′ 46″	0.41	F4II-III	5.64
HIP 5454	01h 09m 50s	+19° 39′ 30″	0.70	G0III	5.57
HIP 5494	01h 10m 20s	+25° 27′ 28″	1.48	K7III	5.81
HIP 5544	01h 11m 07s	+31° 25′ 29″	0.25	F0V	5.15
HIP 5571	01h 11m 28s	+21° 02′ 05″	1.02	G8.5III	4.66
HIP 6193	01h 19m 28s	+27° 15′ 51″	0.04	A3V	4.74
HIP 7943	01h 42m 04s	+35° 14′ 45″	-0.07	B9IV-V	5.63
HIP 7981	01h 42m 30s	+20° 16′ 07″	0.84	K1V	5.24
HIP 8433	01h 48m 42s	+32° 41′ 25″	0.55	F8V	5.78
HIP 8903	01h 54m 39s	+20° 48′ 29″	0.13	kA4hA5mA5Va	2.64
HIP 9307	01h 59m 36s	+21° 03′ 31″	1.04	K0III-IV	5.89
HIP 9836	02h 06m 34s	+22° 38′ 54″	0.14	A2m	5.03
HIP 9884	02h 07m 11s	+23° 27′ 45″	1.16	K1IIIb	2.01
HIP 11670	02h 30m 33s	+25° 14′ 06″	0.41	F6IV	5.88
HIP 12332	02h 38m 49s	+21° 57′ 41″	0.16	A7V	5.45
HIP 12828	02h 44m 57s	+10° 06′ 51″	0.38	A9IIIp	4.27
HIP 13254	02h 50m 36s	+38° 19′ 07″	0.37	F2III	4.22
HIP 13679	02h 56m 14s	+8° 22′ 54″	0.47	F6III-Ivs	5.97
HIP 13834	02h 58m 06s	+20° 40′ 07″	0.41	F5IV	5.80
HIP 13879	02h 58m 46s	+39° 39′ 46″	0.06	A2Vn	4.68
HIP 13905	02h 59m 04s	+35° 10′ 59″	1.24	K2III	4.94
HIP 13954	02h 59m 43s	+8° 54′ 26″	-0.12	B6III	4.71
HIP 14439	03h 06m 24s	+13° 11′ 14″	1.09	K3III	5.64
HIP 14764	03h 10m 39s	+11° 52′ 21″	-0.07	B8V	5.97
HIP 14817	03h 11m 18s	+39° 36′ 42″	1.12	K0III	4.61
HIP 15416	03h 18m 44s	+34° 13′ 22″	1.49	K2IIb CN0.5	4.85
HIP 15549	03h 20m 21s	+29° 02′ 54″	1.55	K3IIIa Ba0.5	4.47
HIP 15861	03h 24m 19s	+24° 43′ 27″	1.21	K4III	5.50
HIP 16168	03h 28m 21s	+33° 48′ 27″	0.04	A2V	5.72
HIP 17460	03h 44m 32s	+36° 27′ 36″	0.07	A2m	5.60
HIP 18735	04h 00m 49s	+18° 11′ 38″	0.32	F4V	5.89
HIP 19009	04h 04m 22s	+24° 06′ 22″	0.81	K1II+B7.5IV:	5.46
HIP 20704	04h 26m 07s	+31° 26′ 20″	0.99	K1III	5.29

Table 3: The night-sky brightness list of the Yaeyama Islands

Location	**Latitude**	**Longitude**	**Elevation**	**Date and Time**	**Brightness**
Iriomotejima (Ohara Port)	24° 16′ 18″ N	123° 52′ 57″ E	4 m	2016/11/5 22:16	21.62±0.15
Iriomotejima (Yufu)	24° 20′ 21″ N	123° 54′ 59″ E	20 m	2016/11/5 22:45	21.85±0.20
Iriomotejima (Takana)	24° 22′ 47″ N	123° 53′ 57″ E	55 m	2016/11/5 23:13	21.85±0.15
Iriomotejima (Urauchi)	24° 24′ 30″ N	123° 46′ 40″ E	9 m	2016/11/5 23:51	21.85±0.32
Iriomotejima (Shirahama Port)	24° 21′ 35″ N	123° 44′ 47″ E	1 m	2016/11/6 00:12	21.88±0.21
Iriomotejima (Unarizaki)	24° 25′ 42″ N	123° 46′ 00″ E	10 m	2016/11/6 00:45	21.88±0.18
Iriomotejima (Sono)	24° 23′ 27″ N	123° 44′ 56″ E	2 m	2016/11/8 00:30	21.82±0.07[*1]
Ishigakijima (Kuura)	24° 33′ 08″ N	124° 17′ 24″ E	27 m	2016/11/6 00:00	21.99±0.17
Ishigakijima (Kabira Bay)	24° 26′ 43″ N	124° 08′ 56″ E	38 m	2016/11/18 21:07	21.71±0.13[*1]
Kuroshima	24° 15′ 08″ N	123° 59′ 54″ E	4 m	2016/11/7 01:30	21.81±0.11[*1]
Kohamajima	24° 20′ 44″ N	123° 59′ 27″ E	7 m	2016/11/25 23:14	21.85±0.08[*1]
Haterumajima	24° 03′ 00″ N	123° 47′ 51″ E	23 m	2016/11/19 23:00	(21.22)[*2]

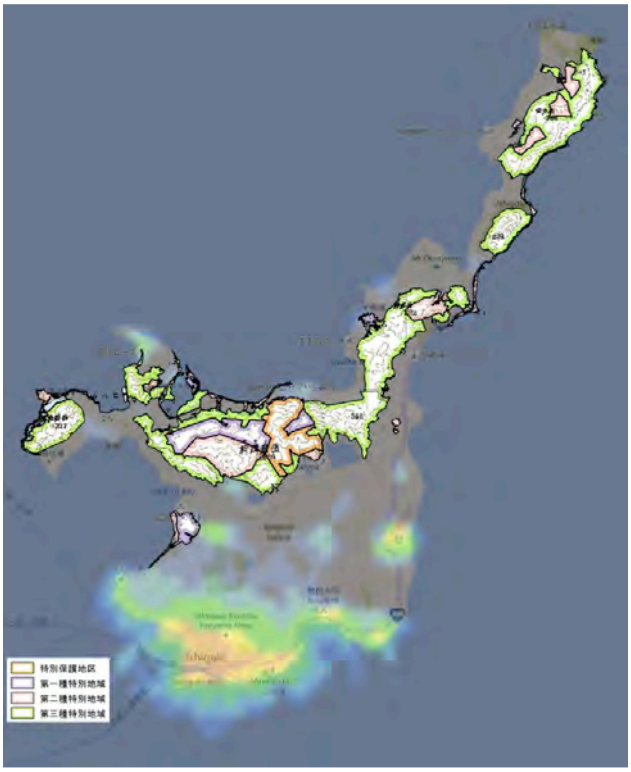
[*1] measurement with estimated value of aerosol extinction
[*2] measurement under moonlight sky

Details of Each Island in Iriomote-Ishigaki National Park with Lighting Inventory and SQM-L results

Proposed quality tier: Silver

Ishigaki Island

Population: 49,127 people (as of end August 2016)
Area: 222.18 km²
General condition: It's the center of Yaeyama Islands and gateway accepting the tourist from inside and outside of Japan and are reaching over 1,200,000 tourists yearly.
Highest mountain Mt.Omoto 526 height located at center of island and a flatland opens to the south with mountain ranges and a developing river, various topography such as coastal line, peninsula, and cape makes great landscape. Coral reefs develops along the shoreline for extension of 184km in conjunction with land area that are habitat by precious animals and plants.



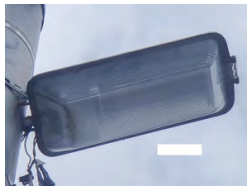
No outdoor lighting are set up by Ishigaki city in the registered park area
(only land area inside the national park surrounded by dotted lines)
See pp.36-42 for the result of night-sky brightness measurement

Iriomote Island

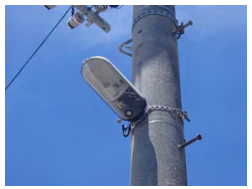
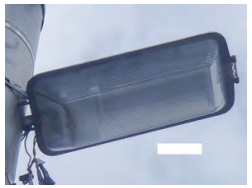
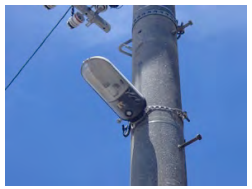
Population: 2,419 people (as of end Aug.2016)
Area: 289.27 km²
General condition: Iriomote Island is the second largest island in Okinawa prefecture which is recommended to be a world natural heritage site by the UNESCO, most parts of the island is covered by subtropical jungle.
Nakama river in eastern district and Urauchi river in western district are both called Oriental river of amazon, and the biggest mangrove forest in Japan grows near the mouth of river, and it has a unique ecosystem. Iriomote -Yamaneko (Iriomote wild cat) – (Prionailurus bengalensis iriomotensis) inhabits the island, which is said to be the greatest discovery of this century.

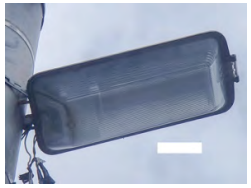
See pp.36-42 for the result of night-sky brightness measurement

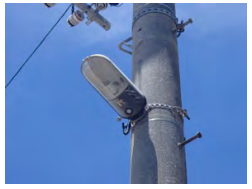
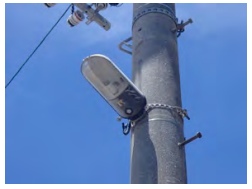
List of the street light – Iriomote Island

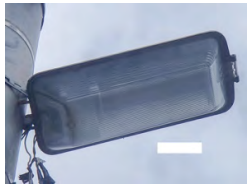
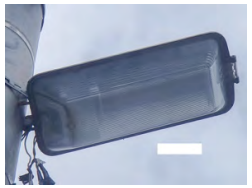
Location	Fixture	photo	Fully shielded	Purpose	Control	Conformity with LMP
Toyohara-village	Number : 19 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-lighting switch	No
	Number : 6 Type : Fluorescent (36W, three-wavelength, Color-natural)		No	Security	Auto-lighting switch	No
	Number : 8 Type : LED (18W, Color-White)		No	Security	Auto-lighting switch	No
Taketomi-cho exchange center	Number:6 Type: Mercury lamp (80W～160W)		No	Parking light	Off except use	No

Ohara-village	Number : 20 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-Lighting Switch	No
	Number : 15 Type : Fluorescent light (36W, Three-wavelength, Color-natural)		No	Security	Auto-Lighting Switch	No
Ohtomi-village	Number : 34 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous Flux 0.9%)	Security	Auto-Lighting Switch	No
	Number : 3 Type : Fluorescent light (36W, Three-wavelength, Color-natural)		No	Security	Auto-Lighting Switch	No
	Number : 3 Type : LED (18W, Color-white)		No	Security	Auto-Lighting Switch	No

Komi- village	Number : 12 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-Lighting Switch	No
Mihara- village	Number : 6 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-Lighting Switch	No
	Number : 4 Type : Fluorescent light (36W, Three wavelength Color-natural)		NO	Security	Auto-Lighting Switch	No
	Number : 1 Type : LED (18W, Color-white)		No	Security	Auto-Lighting Switch	No
Funaura- Village	Number : 14 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-Lighting Switch	No

	Number : 1 Type : Fluorescent light (36W, Three wave-length Color-natural)		No	Security	Auto-Lighting Switch	No
Uehara- village	Number : 14 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-Lighting Switch	No
	Number : 2 Type : Fluorescent light (36W, Three wave-length Color-natural)		No	Security	Auto-Lighting Switch	No
	Number : 7 Type : LED (18W, Color-white)		No	Security	Auto-Lighting Switch	No
Nakano- village	Number : 2 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-Lighting Switch	No

Sumiyoshi-village	Number : 23 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-Lighting Switch	No
	Number : 3 Type : LED (18W, Color-white)		No	Security	Auto-Lighting Switch	No
Urauchi-village	Number : 7 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-Lighting Switch	No
	Number : 3 Type : LED (18W, Color-white)		No	Security	Auto-Lighting Switch	No
Hoshidate-village	Number : 8 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-Lighting Switch	No

	Number : 6 Type : Fluorescent light (36W, Thre ewavelength, Color-*Natural)		No	Security	Auto-Lighting Switch	No
	Number : 7 Type : LED (18W, Color-white)		No	Security	Auto-Lighting Switch	No
Sonai- village	Number : 16 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-Lighting Switch	No
	Number : 1 Type : Fluorescent light (36W, Three wavelength Color-natural)		No	Security	Auto-Lighting Switch	No
	Number : 3 Type : LED (18W, Color-white)		No	Security	Auto-Lighting Switch	No

Shirahama-village	Number:15 Type : High pressure sodium light (54W,1900K)		No (Upward luminous flux 0.9%)	Security	Auto-Lighting Switch	No
	Number:1 Type:Fluorescent light (36W,Three wavelength Color-natural)		No	Security	Auto-Lighting Switch	No
	Number:2 Type:LED (18W,Color-white)		No	Security	Auto-Lighting Switch	No
Funauki-village	Number:16 Type:High pressure Sodiumlight (54W,1900K)		No (Upward luminous Flux 0.9%)	Security	Auto-Lighting Switch	No
	Number:2 Type : LED (17W,5000K)		No	Security	Auto-Lighting Switch	No

Taketomi Island

Population: 363 people (as of end August 2016)
Area: 5.42 km²
General condition: Folk houses which has traditional red-tiles on top of their roof and surrounded by coral lime-stone walls, and pathway that are covered with white beach sands preserves the unique Okinawan town scape and has been designated as an Important Preservation District for Groups of Traditional Buildings in Japan.
Biggest event in Taketomi Island called " Tanadui(Harvest festival)" in their dialect has been designated as an important intangible folk cultural property in Japan and "Minsa (hand-woven fabric textile) " has been designated as traditional craft in Japan , Traditional culture still can be seen in present day.

Numbers show the result of SQM-L measurements (15 July,2017)

List of the Street light – Taketomi Island

Location	Fixture	Photo	Fully shielded	Purpose	Control	Conformity with LMP
Innota-village Ainota-village	Number : 55 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-Lighting Switch	No
	Number : 7 Type : Compact fluorescent(60W, Light bulb color)		No	Security	Auto-Lighting Switch	No
Na-ji-village	Number : 22 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-Lighting Switch	No

Kohama Island

Population: 733 people (as of end August 2016)
Area: 7.82 km²
General condition: Island that is located at the center of the group of Islands where you can see the eight Islands except for Yonaguni Island (Westernmost Island in Japan) from Ufudaki observatory which is 99m above sea level. Sugarcane is the main agricultural industry of the island. Kubazaki area located at westernmost of the island has maintained its fishing port and is the only fishery in town. The traditional arts that are full of ancient rites are left abundantly, and many entertainments are played as dedication to the Gods through a festival named "Kichigan-sai" has been designated as an Important in tangible folk-cultural properties in Japan.

See pp.36-42 for the result of night-sky brightness measurement

List of the street light –Kohama Island

Location	Fixture	Photo	Fully shielded	Purpose	Control	Conformity with LMP
Murauchi-village	Number : 55 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-lighting switch	No
	Number : 7 Type : Fluorescent light		No	Security	Auto-lighting switch	No
	number : 1 Type : Fluorescent(36W, 5000K) light		No	Security	Auto-lighting switch	No
Kubazaki-village	Number : 3 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-lighting switch	No

	Number : 3 Type : Fluorescent		No	Security	Auto-lighting switch	No

Kuroshima Island

Population: 218 people (as of end August 2016)
Area: 10.02 km²
General condition: Flat Island that formed during the rise of coral-reefs. Most of the land except the village part became grassland and more than 2700 cows are bred for their meat. The inland sea of the Island which is surrounded by coral-reefs are top level beauty among the Yaeyama Islands which is also a place for sea turtles to lay down eggs on the shores. Kuroshima Island laboratory which is located west of the Island, research about sea turtles and corals.

See pp.36-42 for the result of night-sky brightness measurement

List of the street light－Kuroshima Island

Location	Fixture	Photo	Fully shielded	Purpose	Control	Conformity with LMP
Agarisuji-village	Number：32 Type：High pressure sodium light (54W,1900K)		No (Upward luminous flux 0.9%)	Security	Auto-lighting switch	No
	Number：8 Type：Unknown		Unknown	Unknown	Unknown	Unknown
	Number：2 Type：Fluorescent Light (35W,5000K)		No	Security	Auto-lighting switch	No
Hori-village	Number：10 Type：High pressure sodium light (54W,1900K)		No (Upward luminous flux 0.9%)	Security	Auto-lighting switch	No

	Number : 3 Type : Unknown		Unknown	Unknown	Unknown	Unknown
	Number : 1 Type : Fluorescent light (36W, 5000K)		No	Security	Auto-lighting switch	No
Miyazato-village Nakamoto-village	Number : 13 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-lighting switch	No
	Number : 2 Type : Unknown		Unknown	Unknown	Unknown	Unknown
	Number : 1 Type : Fluorescent Light (36W, 5000K)		No	Security	Auto-lighting switch	No

Iko-village	Number : 1 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-lighting switch	No
	Number : 2 Type : Unknown		Unknown	Unknown	Unknown	Unknown

Hatoma Island

Population: 45 people (as of end August 2016)
Area: 0.98 km^2
General condition: The sea surrounding the island are untouched and is filled with rare blue coral reefs in the northern coast. It is the birthplace of the folk song known as “Hatoma-bushi (folk song)” which represents the Yaeyama Island and parts of the song depicts a figure of a magnificent island that can be viewed from the Hatoma-forest.

Numbers show the result of SQM-L measurements (13 July,2017)

List of the Street light – Hatoma Island

Location	Fixture	Photo	Fully shielded	Purpose	Control	Conformity with LMP
Villgae	Number : 19 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-lighting switch	No
	Number : 15 Type : LED (187W, Color-white)		No	Security	Auto-lighting switch	No

Hateruma Island

Population: 507 people (as of end August 2016)
Area: 14.8 km²
General condition: Most southern inhabited Island in Japan. The residence can be traced from 3500 years ago and was discovered by the excavation of the Shimodabaru shell mound in the northern parts of the island, and Hateruma Island ancient domiciliation theory was supported.
Haterumajima Astronomical Observatory Tower are a maintained facility and many tourists visits for star gazing observatory held at night and are famous night tourist spot of Yaeyama .

Numbers show the result of SQM-L measurements (22 May,2017)

List of the Street light – Hateruma Island

Location	Fixture	Photo	Fully shielded	Purpose	Control	Conformity with LMP
Sea port	Number : 3 Type: Fluorescent light		No	Security	Auto-lighting switch	No
			No	Security	Auto-lighting switch	No
Fuka-village	Number : 17 Type : High pressure sodium light (54W, 1900K)		No (Upward luminous flux 0.9%)	Security	Auto-lighting switch	No
	Number : 3 Type : LED		No	Security	Auto-lighting switch	No

	Number : 3 Type : fluorescent light		No	Security	Auto-lighting switch	No
			No	Security	Auto-lighting switch	No
Naishi-village Mae-village Kita-Village Minami-village	Number : 77 Type: High pressure sodium light (54W, 1900K)		No (upward luminous flux 0.9%)	Security	Auto-lighting switch	No (will be replaced within 3 years)
	Number : 16 Type : fluorescent light		No	Security	Auto-lighting switch	No
			No	Security	Auto-lighting switch	No

	Number : 10 Type : LED		No	Security	Auto-lighting switch	No

Yubujima Island

Population: 23 people (as of end August 2016)
Area: 0.15 km^2
General condition: Shallow ocean between the Iriomote Island and Yubujima Island that are just 1 m deep during high-tide, are well known to be crossed by water-buffalo cart between the Islands. Yubujima Island made by the building up of sand, when the ground is dug up to 1.5m deep, pure spring water comes out and when dug more than that sea water comes out. Main plant is more than 40000 species of palm tree and other subtropical trees and plants. Beaches can be found in east coastline, and thick mangrove forest spread in the shallows of the Island.

Numbers show the result of SQM-L measurements (24 July,2017)

List of the Street light – Yubujima Island

Location	Fixture	Photo	Fully shielded	Purpose	Control	Conformity with LMP
	Number : 2 Type : LED		No	Security	Auto-lighting switch	No

Aragusuku Islands

Population: 15 people (as of end August 2016)
Area: 1.58 km^2
General condition: Aragusuku Islands consisted of two Islands, Kamiji Island and Shimoji Island, generally called “Panari (separated Island)”. It is available to cross between the Islands by walking during low-tide. Kamiji Island has a small village and Shimoji Island is an uninhabited island with wide pastures.

It is impossible to survey this area because there are no regular transportations to Aragusuku Islands and entrance is limited for outsiders.

Purpose of the Provisional Status Acquirement

After the result of a survey of all the artificial lightings like outdoor lighting in Iriomote-Ishigaki National Park area managed by the municipality of Ishigaki city office and Taketomi town office, it is proven that the light leakage of 0.9% was from the 74.7% of the high pressure sodium light which account for 510 out of 683 fixtures. By knowing this, it immediately planned to fully shield the upward luminous flux to 0 level for improvement but there were some difficulties like the total amount of light, time, and cost needed for improvement. Therefore, it is hoped that the provisional status being acquired first, and then the improvement of all public outdoor lighting would be completed to meet the IDA standards within five years.
By acquiring the provisional status, we would be able to spread and inform more about Light-pollution to the public, and advance the project more smoothly to improve outdoor lighting for the future of Ishigaki city and Taketomi town. At the same time, raise public awareness of light pollution to lodging facilities and commercial facilities, etc., and advance the further efforts to acquire accreditation with the cooperation of the government and people.
After registering as International Dark-Sky Park, more promotion of activities for anti-light pollution in the Island of Ishigaki city including central area is possible, as it aims to be an International Dark-Sky community in the future. Therefore, it is favorable for the early acquirement of the provisional status, in order to raise public awareness for light pollution.

Retrofitting Plan of the Outdoor Lighting

Taketomi Town aims to finish the improvement of all public outdoor lighting in the Taketomi Town area of the Iriomote-Ishigaki National Park to be compliant with the "Light-scape Maintenance Standard and Management Plan of Public Facilities by Taketomi Town" (pp.31-32 of this application) within five years from receiving the provisional status.
The target compliance rate of each year is 10% for the first year, 20% for the second year (30% in total), 25% for the third year (55% in total), 35% for the fourth year (90% in total) and 10% for the fifth year (100% in total). Initial priority for the retrofitting works is given to the most highly-visited and visible public areas in Taketomi Town.

Future Plan

Establishment of committee

After Iriomote-Ishigaki National Park gets its provisional status as an International Dark Sky Park, it plans to establish promptly a committee that Ishigaki city and Taketomi town cooperates together. The committee will implement the replacement and operation of the outdoor lighting, survey of the night-sky regularly, educational program, publicity and communication of information, reports to submit to IDA once in a year to acquire accreditation.

Measurement of the night-sky regularly

Measurement of the night-sky on each island regularly using the SQM-L once in a year. By using the digital single lens reflex camera to take more accurate of measurement of the night-sky constantly. Next summer, it plans to re-survey with the corporation of Hoshizora koudan in order to grasp the overall situation of Yaeyama islands including the islands which couldn't be surveyed using the digital single lens reflex camera.

Continuous Implementation of educational program

Currently, Ishigakijima Astronomical Observatory, National Astronomical Observatory of Japan conducts free astronomical observation for the public every weekend and national holidays, and in Taketomi-cho Haterumajima Astronomical Observatory conduct the star-gazing observation for 6days in a week, hereafter implement it continuously. Once in a year the event "Minaminoshimano-Hoshi-Matsuri (Southern Island's Star Festival)"is held since year 2002 which turn offs outdoor lighting at the same time on the day of the event, it became rooted locally and is held annually.

Private's star-gazing tours and star observation in hotels are increasing every year, and various programs are held in each place.

Hereafter, the committee plans to implement a lecture for conservation of starry -sky and light pollution to public, panel discussion with its specialist, explanation for public and local business operators, special program in local elementary school regularly. Provide the pamphlet for awareness of light pollution, and in effort to appeal the importance of the sky without light pollution and natural darkness, and the advantage to use the right quality of lighting.

Interpretive Activities and Products

Related to Dark Skies

IDA Tokyo made its first visit to Yaeyama Islands on March 2, 2014

Educational Program with NPO Yaeyama-Hoshinokai

On March 2, 2014、International Dark-Sky Association Tokyo Chapter made its visit to Specified Non-Profit Organization Yaeyama-Hoshinokai, and held an educational program for light-pollution, Explaining the International Dark-Sky Association and its guideline for Dark-Sky Place Conservation Program, and asked for their cooperation in the future.

IDA Tokyo's visit to the Ishigakijima Astronomical Observatory, National Astronomical Observatory of Japan

On March 2, 2014, International Dark-Sky Association Tokyo Chapter visited the Ishigakijima Astronomical Observatory and VERA Ishigakijima Station which are National Astronomical Observatories of Japan and asks for their cooperation in the future.

First Meeting in Ishigaki City Office

On March 3, 2014, International Dark-Sky Association Tokyo Chapter made its visit to Ishigaki City Office and had its First meeting, and gave explanation about International Dark-Sky Association and Guideline of Dark-Sky Place Conservation Program, and asked their cooperation with them in the future.
Reports about the first meeting was published on local newspapers thus IDA and Dark-Sky Place Conservation Program was widespread to public for the first time.

Survey of the Night Environment and Lighting Environment

On March 3, 2014, Survey of the night environment and lighting environment of Ishigaki Islands was conducted.

「清掃していただき、ありがたく思う。伊野田海岸はごみが溜まりやすいので、定期的に取り組まないといけない。若い人にビーチクリーンアップが浸透してくれれば」と期待した。

市観光交流協会青年部の宮里安一部長は「一般参加の中止について連絡が行き届かず、ご迷惑をおかけした。参加してくれた皆さんに感謝。ビーチクリーンを行い、氷山の一角だと感じた。解決するには拾い続けることだと思った」と振り返った。

「夜空保護」の取り組みを
八重山で協会が調査

夜空の環境保全を目的とする非営利組織の国際ダークスカイ協会東京支部が、2月28日から5日間の日程で石垣島や竹富島、西表島で視察・調査を行った。3日、同事務局の東洋大学経営学部経営学科准教授、越智信彰さんが石垣市役所を訪れた。観光文化スポーツ局の嘉数博仁局長らに、地域社会が一体となって実施している、夜空を保護する取り組みを称える認定制度「ダークスカイプレイス・プログラム」について紹介した。嘉数局長は「いつでも星の見える島を目指している市としては良い提案。今後、検討していければ」と話した。

国際ダークスカイ協会は1988年に設立され、米国アリゾナ州ツーソンに本部を置くNPO団体。環境に配慮した屋外照明を用い、夜間環境と暗い夜空を保護することを目的に、過剰・不適切に設置された人工照明により、周囲に悪影響がある光害（ひかりがい、こうがい）問題に取り組んでいる。

今回の視察は星空ツーリズム株式会社が協力。西表島や竹富島、石垣島で夜空明度測定の実施や光害の少ない集落・伝統建築の視察、八重山星の会や石垣島天文台への訪問などが行われた。

この日は、越智さんが嘉数局長らに光害について説明をした上で、ダークスカイプレイス・プログラムの紹介、八重山諸島での可能性について話した。

ダークスカイプレイスに認定された地域や場所は世界で計29カ所あり、国内ではまだ認定された地域はない。

越智さんは「今回の調査で、八重山はこれまで認定された地域の最も暗い数値になる。八重山でのダークスカイの認定は価値があると考える」とした。

星空ツーリズム(株)企画プロデューサーの上野貴弘さんは「今後、光害やダークスカイプレイス認定などについて知ってもらうため、勉強会などを開催していきたい。八重山星の会とも連携を密にしていきたい」との考えを示した。

光害問題やダークスカイプレイスについて説明する国際ダークスカイ協会東京支部の越智さん(右)＝3日午前、市役所

35万人を石垣に送客
JTB、14年度の目標掲げる

JTB沖縄の宮島潤一社長は3日、八重山日報社を訪れ、2014年度は石垣島に過去最高となる35万人の送客を目標に掲げたこと

Title: Approach for Night-sky Conservation / Survey by IDA Tokyo
Reported in Yaeyama-nippou (local newspaper) on March 4, 2014

石垣島の夜空を称賛
ダークスカイ保護区に

屋外照明の影響で発生する「光害」を抑える取り組みとダークスカイプレイス認定を進めている国際ダークスカイ協会東京支部は3日、市役所で説明会を開いた。

5日間、八重山の夜空を調査した同支部の越智信彰・東洋大学准教授は「石垣島の夜空は素晴らしい。国内で初めてとなるダークスカイ保護区に認定し、観光産業にも生かしてもらいたい」と要望。説明を受けた観光文化スポーツ局の嘉数博仁局長は「365日、星が見えるようなまちづくりのために検討したい」と答えた。

認定には、外灯やランプの種類や光害を出さない工夫などハード面の整備、屋外照明の規制に関するガイドラインの策定が必要となる。越智氏は「認定には市民の理解が大事。条例ともすり合わせしながら検討してほしい」と期待した。

同協会は1988年にアメリカで設立され、世界17カ国に57支部がある。

満天の星を見ようと毎年大勢の観客でにぎわう南の島の星まつり。夏場の観光シーズンの目玉行事にもなっている（資料写真）

Title: Praise the Night-sky in Ishigaki Island /
to be an International Dark-Sky Park
Reported in Yaeyama mainichi shimbun (local newspaper) on March 5, 2014

IDA Tokyo sponsorship and enforcement of general lecture on March 2015

On March 11, 2015, the enforcement of general lecture about Light-pollution by IDA Tokyo was held in Ishigaki Island and on March 12, 2017 it was held in Iriomote Island. .

News reported about this “General lecture concerning on the light-pollution in Ishigaki Island” by NHK Okinawa News media. And also reported it in the local newspapers.

「光害」テーマに講演会

越智代表「人体への影響も」

越智信彰代表

八重山の星空資源を守り、「光害（ひかりがい）」について理解を深めてもらおうと、11日午後、健康福祉センターで国際ダークスカイ協会東京支部（IDA・越智信彰代表）が一般講演会を開いた。「世界的価値のある八重山の星空を観光資源に」をテーマに、越智代表と石垣島天文台の宮地竹史所長が講演を行った。

IDAは光害問題に取り組むNPO団体で18カ国に会員数1万1000人超を有し、世界最大規模を誇る。暗い夜空の重要性を呼び掛け、保護、保存活動を各地で展開している。

同協会によると、夜の地上で人工光が目立つ地域は欧米や日本、中国周辺など先進国に集中している。八重山地域では市街地のある南部に人工光が集中しており、北部地域には今も暗い夜空が残っている状態だという。

越智代表は「光害は星が見えなくなるだけでなく、エネルギーの浪費、人体への影響、夜行性の動物や作物にも及んでいる」と説明。人工光を減らす工夫として「光が余分に漏れないようにし、必要以上に使用しない。質のいい使い方を心がけよう」と呼び掛けた。

また宮地所長は「近年の様々な事象も手伝って、八重山の星空観光が注目されている。世界的価値のある八重山の星空を守ろう」と語った。

Title: Lecture for Light-pollution
Reported in Yaeyama-nippou (local newspaper) on March 12, 2015

ダークスカイ協会

「暗い夜空を観光資源に」

不要な照明、生態系にも影響

越智信彰代表

人工光が夜空や人体・自然環境に与える光害（ひかりがい）をなくし、八重山の星空を新たな観光資源にしようという講演会（国際ダークスカイ協会東京支部主催）が11日夜、石垣市内で開かれ、約40人が参加した。同支部代表の越智信彰氏は、石垣島では新空港の開港で島の北側に光が広がっていることを指摘し、「八重山の夜空を守り、観光資源に活用してほしい」と訴えた。

光害について講演を聞く人たち＝11日夜、石垣市健康福祉センター

越智代表は、不必要な場所を照らす照明が、電気エネルギーの消費や二酸化炭素の排出、動物や昆虫の誘引誘殺、夜行性動物の生活圏の消失を招き、生態系に影響を与えていることを説明し、「必要な場所を適正に照らすことが重要」とした。

八重山を夜空保護区に指定する「ダークスカイプレイス」の認定に向けた取り組みも紹介し、「八重山の星空は世界的にもまれな暗さ」と指摘した。

Title: Tourism attraction for Dark-starry sky
Reported in Yaeyama mainichi shimbun (local newspaper) on March 13, 2015

Interpretive and Educational activities related to dark skies in Ishigaki city on February 2016

Ishigaki city is ongoing efforts to acquire accreditation as an International Dark-Sky Park which is the first in Japan. IDA Tokyo was invited by Ishigaki city, conducted and carried out the budgeting for survey and awareness project in order to promote on star constitution enactment and starry-sky conservation activities.

Courtesy visit to the Ishigaki City Mayor

IDA Tokyo made a courtesy visit to Ishigaki City Mayor
In order to acquire accreditation to be the first International Dark-sky Park in Japan, confirming their cooperation in the future.
Reported in Yaeyama-nippou and Yaeyama mainichi shimbun (local newspapers).

八重山毎日新聞　2016年(平成28年) 2月5日(金曜日)　10

島内10カ所で夜空の暗さ測定

国内初「星空保護区」認定へ

国際ダークスカイ協会が調査

国際ダークスカイ協会（本部米国）が世界で最も美しい星空が見える場所を認定する「星空保護区」で、石垣市は国内初の認定を目指すことになり、本年度中に島内10カ所で夜空の暗さを測定するなどの調査を行い、申請準備を行うことになった。認定には「光害の原因となる外灯や照明などの規制に関する条例が必要で、市観光文化課の大嶽久美子課長は「調査結果を踏まえて段階的に進める。国内初の認定で観光地のステータスを上げたい」と話している。

石垣市が星空保護区としての認定を目指すことになった石垣島の星空。中央は夏の天の川＝2015年6月15日午前0時ごろ、南ぬ浜町（星空ツーリズム社・石垣島提供）

国内の夜空を保護する取り組みを行う同協会東京支部（代表・越智信彰東洋大学准教授）によると、「星空保護区は世界55カ所で認定。国内では申請が行われたケースはない。

同支部によると、認定を受けるには、光害対策型の照明や色温度が低いタイプの照明などの基準が必要。「南の島の星まつり」による星空イベントの開催など、住民に星空の重要性の啓発や周知活動を行うことも条件となる。

越智代表は石垣島の星空や自然環境などを高く評価しており、「日本から初めての申請は石垣以外にない。国内初の認定を目指し、星空の価値を高めてほしい」と期待する。

同課では、観光客が星空を楽しむ「星空ツアー」の需要が高まり、観光資源として認知度も上昇していることを背景に調査を実施。事業費は一括交付金の星空資源向上事業（1300万円）を活用。

大嶽課長は「どんな条例が望ましいかワークショップなどを含めて検証が必要。国内初の認定は観光資源の強化につながる」としている。

LED照明が夜空に影響も

越智代表が中山市長表敬

中山石垣義隆市長に石垣島の星空について説明する国際ダークスカイ協会東京支部の越智信彰代表（右）＝4日午後、市長室

国際ダークスカイ協会東京支部の越智信彰代表は4日午後、石垣市役所に中山義隆市長を訪ね、「石垣島は世界で認定されている保護区と同等の環境。国内初の星空保護区認定を目指してほしい」と述べた。中山市長は「星空を売り出しているので（認定を）ぜひ目指したい。国内初はメリットになる」と話した。

越智代表は市街地を中心に明るさが拡大していることを指摘し、「夜の衛星画像で石垣島を見ると、市街地中心部に設置されている発光ダイオード（LED）照明が広がり、夜空に影響を与えている」と説明した。

Title: Survey For the Brightness in the Night-Sky in 10 Places on Ishigaki Island
To be the first International Dark-Sky Park in Japan
Reported in Yaeyama mainichi shimbun (local newspaper) on February 5, 2016

3　2016年（平成28年）　2月6日　土曜日　（日刊）　八重山日

日本初、星空保護区認定を
市長に「光害」調査を報告

石垣市は、国際ダークスカイプレイス（星空保護区）の日本初の認定を目指し、「星空まもるプロジェクト」をスタート。第一弾として国際ダークスカイ協会（米国）東京支部代表越智信彰氏が4日、中山義隆市長を表敬訪問し、全88星座のうち84星座を見ることができる八重山諸島で星空保護区が認定される意義をアピールした。

越智氏は「世界自然遺産の星空版。日本で最初に認定されるとすれば石垣しかないと私は考えて活動している」と思いを語った。

また「石垣島北部に行けば世界の他の地域と遜色ない暗い夜空が広がっているのが確認できる」と評価。一方でLED照明が星空に与える影響も懸念した。

八重山諸島星空ブランディングコミュニケーション星空ツーリズム㈱の上野貴弘代表取締役によると、市の星空資源向上事業で実施している島内の「光害」調査の結果は、認定を受けている外国の他地域と「ほぼ同じくらいの数値が出ている」という。上野氏は「あとは改めて測定し申請にこぎつけたい」と意欲を示した。

スカイクォーリティーメーターや夜空の暗さを測る測定器について説明する（右端から）上野氏、越智氏＝4日、石垣市長室

両陛下が葉山で静養入り
比訪問疲れ癒やす

天皇、皇后両陛下は5日、神奈川県葉山町の葉山御用邸で静養に入られた。この日は「小磯の鼻」と呼ばれる御用邸裏の海岸をゆっくりと散策した。滞在は10日までで、年末年始の行事や、1月末のフィリピン公式訪問の疲れを癒やす。

散策では、天皇陛下が「今日は暖かいですね」と地元の住民らに声を掛けて回り、皇后さまはフィリピン人の友人がいるという女性に「マニラ湾の夕日はとてもきれいでした」と話した。

両陛下は、昨年12月の天皇誕生日、新年の一般参賀や歌会始の儀など、年末から年始にかけて続いた行事が一段落するこの時期に、葉山御用邸で静養するのが慣例となっている。

ができるのはどちらの
補かという点にある。
討論会でサンダース
は、クリントン氏の関
政治団体が経済界から
額の献金を受け取って
ることを念頭に「私
ウォール街から献金を
けていないことが誇り
と胸を張った。
サンダース氏は、ウ
ール街について「米国
経済、政治の分野でお
らく最も強力な勢力」
指摘。発言の背景には
米社会を牛耳るウォー
街と一蓮托生（いちれ

Title: To be the first International Dark-Sky Park in Japan
in Yayeyama-nippou (local newspaper) on February 6, 2016

Education for Light-pollution in Elementary

On February 5, 2016, Ishigaki Heishin elementary school had a lesson (45 minutes for 3 sessions) for Light-pollution for three 4th Grade classes where in 90 students attended. Most of Students answered that “Lecture was very easy to understand.”, “and that they were very interested in the topic.” (see photo below)

Title: Let's Protect the Starry Sky!

Reported in Yaeyama mainichi shimbun (local newspaper) on February 6, 2016

先順位を決めるトリアージを通じた救護などを本番さながらに展開した。
訓練後、石垣英邦所長は「万一に備えて普段から事故対応などを意識してもらいたい」と述べた。

光害から星空守ろう

ダークスカイ協会が呼びかけ

国内で夜空の保護に取り組む国際ダークスカイ協会東京支部（越智信彰代表）の「星空まもるワークショップ」が5日午前、平真小学校（松原範夫校長）で開かれ、4年生児童約90人が外灯や照明の過剰な光による「光害」について学んだ。

授業では、上向きに光を放っている照明にかさを掛けて下向きに照らす方法などを紹介し、越智代表は「空に向かって光を照らすと星空がみえず、夜行性動物の生態系にも影響を与える。過剰に明るくするのではなく、必要な部分を照らす照明が必要」と呼びかけた。

首都圏と石垣島の夜間の様子を人工衛星から撮影した画像を見比べながら、光っている部分の違いも説明。プラネタリウムで石垣島の星空を教室の天井に投影する星空体験も行った。

4年生の山内海優さんは「石垣で空を照らしている照明があるか、気にしながら生活したい」と話し、田中凛太郎君は「光害の影響を他の友達にも教えたい」と振り返った。

光害の影響について説明する国際ダークスカイ協会東京支部の越智信彰代表ら＝5日午前、平真小学校

きょう星空守る講演会

ANAリゾート

光害に関するドキュメンタリー映画「ザ・シティ・ダーク」の特別上映と、星空保護区や石垣島の星空をテーマにした講演会「星空まもるプロジェクト」（石垣市主催）が6日午後2時からANAインターコンチネンタル石垣リゾートのボールルーム真栄里で開かれる。無料。

講演会は、国際ダークスカイ協会東京支部代表の越智信彰東洋大学准教授と、照明デザイナーの岡安泉氏が講師を務める。

「覚せい剤の密

地区税関が

2月の「情報収集強化月間」に伴い、沖縄地区税関石垣税関支署（我那覇勇支署

Title: Learn about Light-pollution

Reported in Yaeyama-nippou (local newspaper) on February 7, 2016

室内をダークルームにして光害の実験を見守る児童ら＝5日午前、平真小学校

高橋興 側が慌てて打ち消す一幕も
日の記 あった。
幹部も 鴻海は、米アップルのi
に使う「つまみ」を製造。プラスチック製品や金具、パソコン部品などにも間口
的な動き」（取引銀行幹部）ともいえそうだ。（台北、大阪共同）

平真小

光害（ひかりがい）について学ぶ

星空まもるワークショップ

石垣島の貴重な星空資源を守るための環境問題である「光害（ひかりがい）」について学習し、星空と自然との共生を考える特別授業が5日午前、平真小学校（松原範夫校長）4年生を対象に、国際ダークスカイ協会東京支部代表の越智信彰氏を招き行われた。

授業では室内を真っ暗にして、手回し発電機と、コンセントにつないで灯す電球の明るさを比べる実験などを行った。簡易プラネタリウムで天井に星空を映し出す実験では、児童から歓声が上がった。

その後、越智氏は小さなランプを点灯させ星が見づらくなる実験を行い「これが光害のしくみ。人工衛星写真で見た世界中のあかりが星を見づらくしている」とレクチャーした。

柳井大雅さん（10）は「光が害を出していることを知った。家族や地域に知らせたい」、長田雅さん（10）は「光害は地域にも自分にも関係がある。無用の灯りは消して星を大切にしたい」と感想を述べた。

本原香代子教諭は「夜にならないと星は見られない。ワークショップは児童にとって貴重な体験」と感謝した。越智氏は「石垣島でのワークショップは初めて。星がよく見える地域の児童は光害について既に理解していた。とてもすばらしい」と感心していた。

購読の申込は
掲載写真の購入は
0980-82-2403

Hold the Movie screening & Lecture

On February 6, 2016, The special movie screening “The city Dark” and lecture for light-pollution in Ishigaki city for rise awareness to public was held.

Movie screening & Lecture
(Flyer on the left)

Lecture for light-pollution (see above)

Leaflet for light-pollution awareness for citizens of Ishigaki city (A-3 size, folded leaflet)

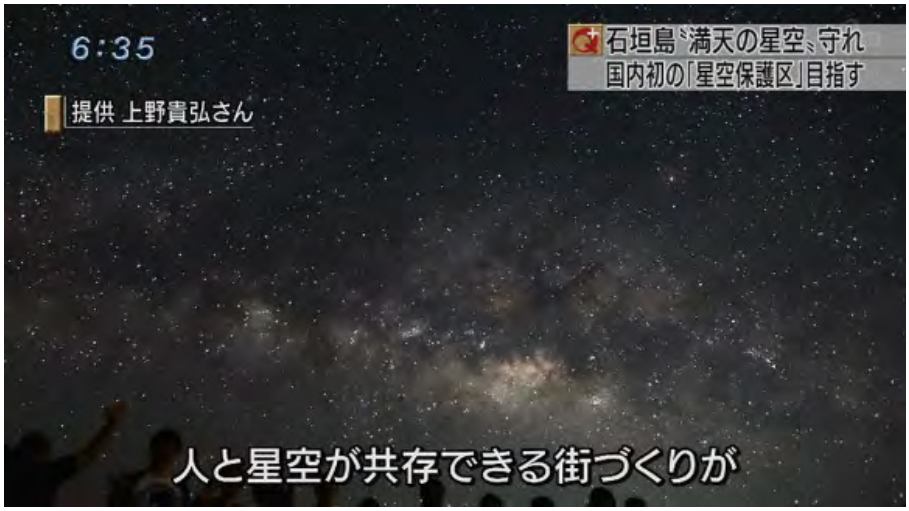
Ten thousand leaflet issued by the Ishigaki city to the public to announce its aim to acquire accreditation for the first International Dark-Sky Place Conservation in Japan and spreading awareness of light pollution

Media Report

Ishigaki city and Taketomi town, efforts to acquire accreditation to be the first International Dark-Sky Park in Japan was reported on Television, and in a newspapers nationwide.

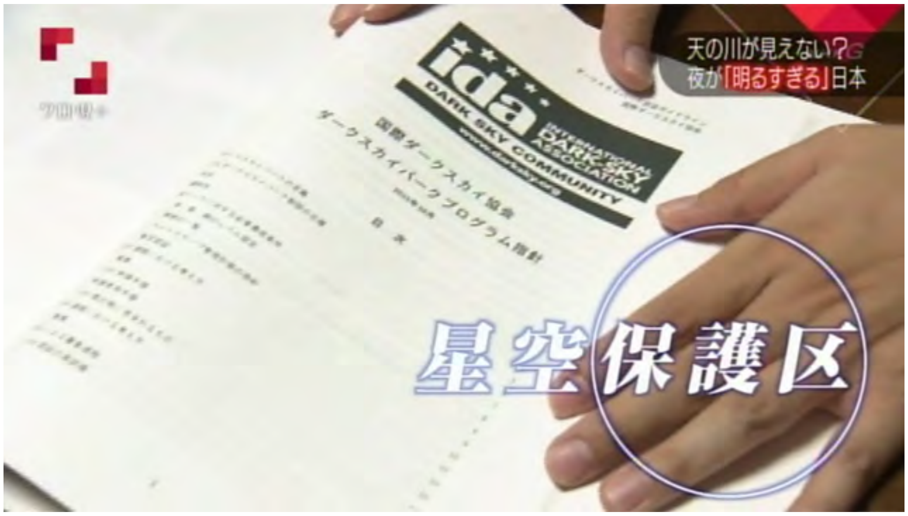
Television

On April 14, 2016, “News Q+” Ryukyu-Asahi TV broadcasting. “Protect Ishigaki’s Starry sky!! To be the first International Dark-sky Park in Japan” were reported on Kyushu-Okinawa area.



On April 14, 2016, “News Q+” Ryukyu-Asahi TV broadcasting “Soon to be an International Dark-Sky Park” were reported on Kyusyu-Okinawa area.

On July 7, 2016, "Close up Gendai (present)".
"Happy in the Darkness ~Do you see the Starry sky now a day? ~" was reported on NHK nationwide



Newspapers

On October 15, 2016, Asahi newspapers
Title: "Possibility for International Dark-Sky Park in Yaeyama Islands"

朝日新聞 2015年(平成27年)10月15日 木曜日 13版 国際 10

砂漠の空は 星の海

アフリカ ナミブ砂漠

世界発 2015

ナミブ砂漠 アフリカ南部のアンゴラ南西部からナミビア海岸部、南アフリカ北部にかけて広がる。5500万～8千万年前に誕生したとみられている。砂に酸化鉄を含んでいるため、赤く染まって見える。「世界で最も美しい砂漠」とも呼ばれ、ユネスコの世界自然遺産に登録。

人工光ない闇 天文ファン続々

満天の星を見上げ、天体観測を楽しむ＝ナミブランド。いずれも三浦英之撮影

「星空保護区」八重山諸島も可能性

「金賞」の夜空守る

「黄金郷」眠る2人

特派員メモ

On August 17, 2016, Yomiuri-shimbun (newspaper) reported in Kyusyu-Okinawa area
Title: “Good Tourism Attraction for Starry-sky in Okinawa” /
“Prepare for International Dark-Sky Park”

新聞　4版　12

沖縄の星空 観光に生かせ

石垣市・竹富町 国内初「保護区」認定へ準備

美しい星空を後世に残し、観光振興に生かそうと、沖縄県石垣市と竹富町が「ダークスカイプレイス（星空保護区）」の認定に向け、準備を進めている。今年度にも、両市町にまたがる西表石垣国立公園を保護区として申請する方針で、環境省の協力も得ている。認定されれば国内初。将来は両市町全域に対象を広げ、認定を目指す考えだ。（大島朋幸）

保護区は、天文学者や自然科学者らでつくるNPO「国際ダークスカイ協会」（本部・米アリゾナ州）が2001年に創設した制度。「公園」「自治体」など五つのカテゴリーがあり、世界中の67か所が、美しい星空を見られるとして認定されている。

認定可否で重視されるのは、夜間の自然な暗さが維持され、星空がきれいに見えるかどうか。街明かりなど人工的な光は星の輝きを見えにくくするため、住民がこうした「光害」を減らす取り組みをしているかどうかも、重要な要件だ。

両市町は現在、西表石垣国立公園を保護区として申請するため、公園内にある全ての街灯の場所、点灯時間や明るさなどを調査している。照明の光が上空に向かって漏れることを防ぐため、街灯の上部にカバーが設置されているかどうかも調べている。

一方で、両市町の全域を自治体単位の保護区「ダークスカイ・コミュニティ」として申請するため、関連条例の制定も視野に入れる。住民に対する意識の啓発や、民家での夜間照明を抑える対策などを盛り込む方向で検討しているという。

今年5月には国際ダークスカイ協会の関係者が両市町を訪れ、石垣島や同町の小浜島を視察。協会の東京支部代表を務める越智信彰・東洋大准教授（環境教育）は「星がはっきり見え、保護区認定に十分なレベルだ」と評価する。石垣市観光文化課の担当者は「市民の環境保護に対する意識も高まる。第三者からのお墨付きを得ることで、星空観察を目的とした観光客を増やしたい」と意気込んでいる。

満天の星を眺めることができる石垣市の夜空（上野貴弘さん提供）

「穴場」で観賞のツアーも

石垣島では、きれいな星空の見える場所に旅行客を案内するツアーも行われている。石垣島の夜空にほれ込み、2013年に東京から移住した上野貴弘さん(42)が「星空浴ツアー」と銘打って企画した。

上野さんによると、旅行客はガイドブックなどにも掲載されていない「知る人ぞ知る場所」に行くことができる。上野さんが星座などを解説するという。

石垣島では光害の影響が少なく、全部で88ある星座のうち84の星座を見ることができるという。気候が温暖なことから何時間でもゆっくり観賞できる点も魅力だ。上野さんは「星空を見るのに、これだけ適した場所はまれです」と話す。

On January 1, 2017, reported in Newsletter delivery report
Delivered the news about Ishigaki city's effort to acquire accreditation for International Dark-Sky Park to 9 news companies nationally and were published.

八重山毎日新聞　2017年(平成29年) 1月1日(日曜日)　6

きれいな星空よ永遠に

光害減らし天の川を

One of them: Reported in Yaeyama mainichi shimbun (local newspaper)

On June 6, 2017, Okinawa Yaeyama area were reported in Yaeyama mainichi shimbun (local newspaper)
Title: “First International Dark-Sky Park in Japan in Ishigaki city and Taketomi town “
“Apply before the end of July”

石垣市
竹富町

国内初の星空保護区

7月下旬に申請へ

ダークスカイパーク 石垣島北部と町内全域

西表石垣国立公園内を国内初の星空保護区（ダークスカイパーク）の認定を目指している石垣市と竹富町が、ことし7月24日に公園区域内の石垣島北部と町内全域を「ダークスカイパーク」として申請する方向で調整していることが5日までに分かった。認定の可否は約3カ月後となる見通し。国際ダークスカイ協会（IDA）東京支部（越智信彰支部長）によると、現時点の国内で星空保護区の申請に向けた動きはなく、認定されれば初めてとなるが、町内にある約600基余りの外灯の一部がIDAの認定基準を満たしていないことから、暫定認定になる見込みという。（砂川孫慎、多宇満盛紀者）

「南の島の星まつり」で楽しまれている星空。石垣市と竹富町が国立公園内の星空保護区「ダークスカイパイレイス」の認定を目指している＝2016年8月6日夜、南ぬ浜町緑地公園

ダークは国立公園区域内が対象。市は2015年12月から、IDAへの申請に必要な北部と町内の夜空の暗さや外灯の設置状況などの調査を、星空ツーリズム㈱（石垣市、上野貴弘代表）に委託して進めてきた。

人工光量を調べる外灯調査では、町内の一部の外灯がIDA基準となる水平方向から5%上側に向き、光が上空に漏れている状態という。認定は、基準を満たした外灯の数が全体の3分の2以上となっており、市と町は3年以内に外灯の基準を満たす条件として申請を行い、仮に認定されても暫定という文言が明記される。

なければ保護区認定が取り消される。

星空ツーリズムによると、今後は市と町から外灯の基準管理と改修に向けた行政の計画指針、環境省のサポートレターなどを英訳する作業が控えている。IDA東京支部会員も務める上野代表は「申請期日までに行政文書を添付すれば問題ない。国立公園内は、世界基準の暗い夜空があり、世界に認められることを期待している」と話した。

町は、7月に外灯の管理について協議する検討委員会を立ち上げ、基準に照らし合わせた外灯の整備を進める方向で調整する考えだ。

町政策推進課の通事本一部課長は「整備や改修に向けては最初から100%を目指すものではなく、段階的に基準の規格にしていく」と前向き。

国内初の星空保護区認定は「日本一きれいな星空」をアピールする好機。観光業界は「認定がいつになるか注視していたが、申請に向けて大きく動きだした。星空は観光の柱になり、年内の認定を実現してほしい」と期待を寄せる。

市は将来的に市街地を含む市内全域を「ダークスカイコミュニティー」として認定を目指す考えだが、申請には光害に対する市民の理解や条例などが必要となる。

市観光文化スポーツ局の大鷹久美子局長は「今後は（光害の）条例も見据えているが、まずは国内初の星空保護区認定を現実のものにしたい。星の島を国内外に発信したい」と話した。

船浦中学校

恒例のダイビング体験

生まれ育った海の素晴らしさ体感

きょう あすの 天気
（石垣島地方気象台5日17時発表）

【概況】八重山地方は、はじめ曇りで一時雨の降る所があるが、高気圧に覆われるため次第に晴れる見込み。
台湾の海域では、多少波がある。

きょうの潮　旧5月12日・中潮・月齢11.3

	石垣	与那国
日出	05:54	05:59
日入	19:30	19:35
月出	16:43	16:47
月入	03:42	03:47

	潮位
満潮	05:00 165cm
	18:00 149cm
干潮	11:50 54cm
	23:36 83cm

八重山の週間天気

石垣島地方		与那国島地方	
20	19	20	19

Letters of Support

Okinawa Convention & Visitors Bureau
Ishigakijima Astronomical Observatory, National Astronomical Observatory of Japan
Taketomi-cho Haterumajima Astronomical Observatory Tower
Ishigaki-City Tourism Exchange Association
Yaeyama Visitors Bureau
Taketomi Town Tourism Association
Specified Non-profit Organization Yaeyama-Hoshinokai
Yaeyama Islands Hoshizora Information H2O
Nippon Transocean Air
Earth & Sky Limited
Hoshizora Tourism Ltd
Coral-foundation iriomote inc.
ANEI TOURISM
Yaeyama Kanko Ferry Co.,Ltd
ISHIGAKI DREAM TOURS
Beach Hotel Sunshine Ishigakijima
ISHIGAKI SEASIDE HOTEL
Art Hotel Ishigakijima
Pushynushima limited company.
Amanokawajiro photo & tour
Utakuna Ishigakijima
Orion Ishigaki Island Eco Tour Service（Columbus Co., Ltd）

2017年6月22日

石垣市長　中山　　義隆　様
竹富町長　西大舛　髙旬　様

一般財団法人　沖縄観光コンベンションビューロー
会　長　　平　良　　朝　敬

IDA国際ダークスカイ協会プログラム
ダークスカイ・パーク認定に関する賛同書について

一般財団法人沖縄観光コンベンションビューローは、IDA 国際ダークスカイ協会プログラムの趣旨を理解し、石垣市ならびに竹富町の両自治体が「西表石垣公園」をダークスカイ・パークに申請することに賛同します。
また、当財団と致しましては、今後とも両自治体と連携を図り、八重山諸島の星空の美しさを保護し、観光振興に繋げる活動を県内外へ発信する所存です。

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General incorporated foundation

Okinawa Convention &Visitors Bureau

Okinawa Industrial Support Center 2F, 1831-1 Oroku, Naha City Okinawa 901-0152 Japan

TEL: +81-98-859-6123 (Main) FAX: +81-98-859-6221(98)-859-6222

June 22, 2017

Ishigaki City Mayor Yoshitaka Nakayama
14 Misaki-cho Ishigaki city Okinawa 907-8501 Japan
Taketomi Town Mayor Koujun Nishioomasu
11-1 Misaki-cho Ishigaki city Okinawa 907-8503 Japan

Dear: Ishigaki city Mayor & Taketomi town Mayor,

The General incorporated foundation Okinawa Convention & Visitors Bureau is pleased to support the Municipality of Ishigaki city and Taketomi town in their efforts to apply for the certification of Iriomote-Ishigaki National Park as one of the International Dark-Sky Park as purposed by IDA(International Dark-Sky Association) program.
Our foundation has been more cooperate with your municipality to keep protecting the starry sky in Yaeyama area, and introduce it, in and out of Japan which will promote tourist activities.

Sincerely yours,

CHOUKEI TAIRA
President
General incorporated foundation
Okinawa Convention & Visitors Bureau
(with official seal)

July 24, 2017

Dear Ishigaki City Office and Taketomi Town Office,

We have the deepest respect for the activity on the conservation of a starry sky by the Ishigaki city and the Taketomi town. While, on standpoint of one institute in the inter-university research institute corporation, we withhold the evaluation for the recognition and the program of a specific organization, we strongly agree to the approach of the Ishigaki city and the Taketomi town that promote a plan to decrease a light pollution.

Sincerely,

Hidekazu Hanayama, Ph.D.
Head, Ishigakijima Astronomical Observatory,
Mizusawa VLBI Observatory,
National Astronomical Observatory of Japan
National Institutes of Natural Sciences

H. Hanayama

IDA 国際ダークスカイ協会御中
ジョン・バレンタイン様

IDA 国際ダークスカイ協会プログラム
ダークスカイ・パーク認定に関する賛同書

竹富町波照間島観測タワーでは協会のプログラムの趣旨に賛同し、石垣島、竹富町内の国立指定公園がダークスイカイ・パークの認定を受け取ることを希望いたします。本来の自然環境では夜には地上よりも天空のほうが明るいと言う自然な風景を多くの方に改めて知っていただくとともに、この自然な風景を見られる環境をそこに住む人々が不自由になることなく、現代社会における生活を維持しながらも守っていける様、啓発、教育などの活動を通して貢献していかれればと思っております。

2017 年1 月7 日
施設名 竹富町波照間島星空観測タワー
役職 施設委託管理責任者兼写真家
氏名 入江　中

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Taketomi-Cho Haterumajima

Astronomical Observatory Tower

January 7, 2017

9305-1 Hateruma Taketomi-Cho Yaeyama Okinawa / Tel: 0980-85-8112 / http://haterumajima-hosizora.jp/

John Barentine
Program Manager
International Dark-Sky Association
3223 North First Avenue
Tucson, Arizona 85719 USA

Dear Mr. John Barentine,

Taketomi-cho Haterumajima Astronomical Observatory Tower officials are pleased to support the Municipality of Ishigaki City and Taketomi-Town in their efforts to apply for the Iriomote-Ishigaki National Park to be an International Dark-Sky Park. For the people to once again remember that a natural night sky is brighter than the surface of the ground, and to be able keep this wonderful view for the people who lives there without inconvenience, we would like to protect this through awareness and education, while putting into consideration our daily living in our modern society.

Sincerely yours,

NAKA IRIE
Trust Facility Manager and Photographer
Taketomi-Cho Haterumajima Astronomical Observatory
(with stamp)

石観協発第185号
平成29年2月3日

IDA 国際ダークスカイ協会
ジョン・バレンタイン様

一般社団法人　石垣市観光交流協会
会　長　　高　嶺　良　晴

IDA 国際ダークスカイ協会プログラム
ダークスカイパーク認定に関する賛同書

一般社団法人石垣市観光交流協会では、日本のテレビ番組の企画で『天文学者が選ぶ日本で綺麗な星空BEST3』で第1位に選ばれた事を受け、国立天文台と『石垣島での天文学の広報普及と星空観光振興に関する協定』を締結しました。また、88ある星座のうち84を見られる地域は日本国内では他に類を見ませんし、これは星を眺める環境が最適である事を意味しております。

日本初となるこの認定を受けた暁には、星空観光の適正な活用や自然環境保護、光害抑制ため関係団体・各社と協力し、本会の事業を通じて国内外へ発信して参ります。更には、既に『ダークスカイパーク（エリア）』に認定されている他地域との相互交流を図っていく所存でございます。

上記を踏まえ、本会はIDA 国際ダークスカイ協会プログラムの趣旨に賛同し、石垣市ならびに竹富町の国立指定公園が『ダークスカイパーク』に認定されることを強く希望致します。

Translation of page 91

Ishigaki-City Tourism Exchange Association

Issued No.185, on February 3, 2017

1F Ishigaki city Chamber building 1-1-4, Hamasaki-cho Ishigaki city Okinawa 907-0013
Tel: 0980-82-2809, Fax: 0980-83-6296, URL http://www.yaeyama.or.jp

John Barentine
Program Manager
International Dark-Sky Association
3223 North First Avenue
Tucson, AZ 85719 USA

Dear Mr. John Barentine,

Ishigaki City Tourism Exchange Association made an agreement for publicity and popularization of Astronomy, Promotion of star gazing tourism on Ishigaki Island with National Astronomy Observatory officials, just after had received the recognition top one as excellent award regarding as were reported on “Beautiful place for star watching in Japan selected by Astronomer.“ by broadcasting of television in Japan. Ishigaki City is an excellent environment for watching the stars like can be seen the 84 constellations out of 88 which is a rare in Japan.

After registered as a one of International Dark-Sky Park, more promote in and outside of Japan and corporation with the related companies and association for appropriate tourism for star watching, natural environment conservation, and anti-light pollution. Furthermore, pleased to interact and communicate with the registered place as an International Dark-Sky Park in the future.

We fully support Municipality of Ishigaki City and Taketomi Town in their efforts in seeking this designation.

Sincerely yours,

Yoshiharu Takamine
Chairman
Ishigaki city Tourism Exchange Association
(with official seal)

YVB 発第 10 号
平成 29 年 6 月 21 日

石垣市・竹富町　御中

（一社）八重山ビジターズビューロー
会　長　中　山　　義　隆

日本最南端、北緯２４度に位置する八重山諸島は、南天の星座が水平線上に現れ、全天８８星座中８４星座を見ることができます。

八重山諸島は古くから星と共に暮らしてきた文化があり、農作業では種まきや稲刈りの時期、漁業では星を目印として扱っていました。星空は八重山の生活に欠かせなかった存在であるとともに、星にまつわる民話や民謡は今でも私たちに受け継がれています。

当ビューローでは、八重山諸島を訪れる観光客に向けて美しい星空を楽しんでもらう為、パンフレット「星空に一番近い島　八重山諸島」を発行しています。

この認定をうけ、八重山諸島の自然環境保護に向けて取り組みを強化し、適正な環境保護の下、八重山に住む地元住民と八重山を訪れる観光客へ情報配信並びに啓発活動を行い、認定地域として価値向上に取り組みます。

つきましては、美しい星空の保護・保存に取り組む国際ダークスカイ協会のダークスカイプレイス・プログラムの主旨を理解し、石垣市・竹富町自治体がダークスカイ・パークに申請することに賛同いたします。

Translation of page 93

Yaeyama Visitors Bureau

YVB No.10 Issued on June 26th 2017

1 F Ishigaki chamber of commerce building,1-1-4Hamasaki-cho Ishigaki city Okinawa 907-0013 Japan

Tel: 0980-87-6252 Fax: 0980-87-5509

To whom may it concern in
Ishigaki City Office and Taketomi Town Office,

Ishigaki city and Taketomi town are located most southern parts of Japan ,Yaeyama Islands is located at 24 degree North latitude and 84 of 88 constellations appear above the southern hemisphere of the ocean.
Yaeyama Islands has its own unique star culture that is used in their daily living such as indicating time of the season to harvest rice fields in agriculture and direction indicator for fishing boats in the ocean during the old times. Their livelihood was incomplete without the existence of stars, Legends and traditional music related to the star are passed on to the next generation to come.
Our office issued the pamphlet “Island Closest to Star YAEYAMA ISLAND” for tourist coming to Yaeyama Islands to enjoy the beautiful starry sky.
If the certification could be acquired, more activities could be held for Natural Environment Conservation in Yaeyama Islands, and appropriate environmental conservation would lead to the awareness and informing of the public and tourists to do efforts to develop the values in the registered areas.
Therefore we are pleased to support the Municipality of Ishigaki city and Taketomi town in their effort to apply for the International Dark-Sky Park certification as described in the purpose of IDA (International Dark-Sky Association) Program to protect and conserve the beauty of dark starry sky.

Sincerely yours,

YOSHITAKA NAKAYAMA
Chairman
Yaeyama Visitors Bureau
(with official seal)

IDA 国際ダークスカイ協会　御中
ジョン・バレンタイン様

IDA 国際ダークスカイ協会プログラム
ダークスカイ・パーク認定に関する賛同書

竹富町観光協会はIDA 国際ダークスカイ協会プログラムにおいてその趣旨に賛同し石垣島、竹富町内の国立指定公園が、ダークスカイ・パークの認定を受け取ることを強く希望致します。日本初となる、この認定を受け、当協会は持続可能な発展、適正な利用、自然環境保護や無用なエネルギーの抑制ため、講習会などを実施し適正な環境を島民と創造すると共に、観光を通して、意義深き認定であることを国内・国外へ啓発する活動を致します。
また、IDA協会認定地域との情報交流を図り、更なる価値の向上に取り組んでいくことを強く希望致します。

2017 年　1月　5日
社名 竹富町観光協会
役職 会長
氏名 上亀　直之　印

Translation of page 95

Taketomi Town Tourism Association

January 5, 2017

11-1 Misaki-cho Ishigaki city Okinawa 907-8503 Japan /Tel: 0980-82-6191, Fax: 0980-82-6199

John Barentine
Program Manager
International Dark-Sky Association
3223 North First Avenue
Tucson, AZ 85719 USA

Dear Mr. John Barentine,

Taketomi Tourism Association is in full support of Iriomote-Ishigaki National Park to seek International Dark Sky designation for their park, and understand International Dark-sky place conservation program. It will be the first in Japan to acquire accreditation as an International Dark-Sky Park, and our Association will conduct the lectures like, sustainable development, appropriate use of resource, natural environment conservation and to stop wasteful energy consumption by promoting activities for awareness through tourism in and out of Japan, with the villagers to create a good environment , and We would like to further promote the development of values through the exchange of information with the registered International Dark-Sky Parks.

Sincerely yours,

Naoyuki Uekame
Chairman
Taketomi Tourism Association

(with official seal)

IDA 国際ダークスカイ協会
ジョン・バレンタイン様

2017 年 7 月 6 日

IDA 国際ダークスカイ協会プログラム
ダークスカイパーク認定に関する賛同書

NPO 法人八重山星の会は天文活動と普及活動を通して古里の美しい星空を後世に残すためにも国際ダークスカイ協会のプログラムの主旨を理解し、西表石垣国立公園をダークスカイパーク（星空保護区）に申請することに賛同します。

特定非営利活動法人　八重山星の会
代表理事　通事安夫

Translation of page 97

Specified Non-Profit Organization

Yaeyama Hoshinokai

2F, 522Ookawa Ishigaki city Okinawa 907-0022 Japan/ Tel:0980-88-6558 Fax: 0980-87-0035

July 6, 2017

John Barentine
Program Manager
International Dark-Sky Association
3223 North First Avenue
Tucson, Arizona 85719 USA

Dear: Mr. John Barentine

The NPO Yaeyama-Hoshinokai is pleased to support the Municipality of Ishigaki city and Taketomi Town in their efforts to apply for the certification of Iriomote-Ishigaki National Park as one of the International Dark-Sky Park as proposed by IDA (International Dark-Sky Association) program, in order to keep and preserve the quality of starry sky in our home town to be passed on to the next generations to come, through astronomical activities and programs.

Sincerely yours,

YASUO TOUJI
Representative Director
NPO Yaeyama-Hoshinokai
(with official seal)

平成 29 年 7 月 19 日

国際ダークスカイ協会
委員会メンバーの皆様

私たちは、国際ダークスカイ協会のダークスカイプレイス・プログラムの趣旨を理解し、民間でも協力して暗い夜空の保護、光害の抑制を推進してまいります。

石垣市・竹富町が西表石垣国立公園をダークスカイ・パークに申請することに賛同いたします。

八重山諸島星空 information H2O

［賛同者連名］

うたくなー石垣島
天の川次郎フォト＆ツアー
星空ナビゲーション in 波照間　南十字
波照間島星空観測タワー
農家民宿マナ
オリオン石垣島エコツアーサービス
前石垣島天文台　所長　宮地竹史
有限会社　ぷしぃぬしま
星空ツーリズム株式会社
有限会社　安栄観光
石垣島ドリーム観光株式会社
八重山観光フェリー株式会社
石垣シーサイドホテル
石垣島ビーチホテルサンシャイン
アートホテル石垣島
日本トランスオーシャン航空（株）
株式会社 Coral-foundation 西表島

Translation of page 99

Yaeyama Islands Hoshizora Information-H2O

July 19, 2017

Committee members,
International Dark-Sky Association
3223 North First Avenue
Tucson, Arizona 85719 USA

Dear IDA Committee members,

We understand the International Dark-Sky Place Program, and want to promote the Conservation of Darkness in the Night and Light pollution awareness together with the community. We are pleased to support the municipality of Ishigaki City and Taketomi Town in their efforts to apply for the International Dark-Sky Park Certification.

Sincerely yours,

Approving companies as below:
Utakuna Ishigakijima
Amanokawajiro photo & tour
Starry sky navigation in Hateruma Southern Cross
Haterumajima Astoronomical Observatory Tower
Mana Farm & Inn Iriomote
Orion Ishigaki Island Eco Tour Service
Takeshi MIYAJI (Previous Director of Ishigakijima Astronomical Observatory)
Pushynushima limited company.
Hoshizora Tourism Ltd
ANEI TOURISM
ISHIGAKI DREAM TOURS
Yaeyama Kanko Ferry Co.,Ltd
ISHIGAKI SEASIDE HOTEL
Beach Hotel Sunshine Ishigakijima
Art Hotel Ishigakijima
JAPAN TRANSOCEAN AIR
Coral-foundation iriomote inc.
(with official seal)

IDA 国際ダークスカイ協会
ジョン・バレンタイン　様

IDA 国際ダークスカイ協会プログラム　ダークスカイ・パーク認定に関する賛同書

JAL（日本航空）グループは、生物多様性保存の観点かた八重山列島を含む「奄美・琉球世界遺産登録」を支援しています。JAL グループである日本トランスオーシャン航空（株）は、西表島の国の特別天然記念物に指定されている「イリオモテヤマネコ」の保護活動も支援しております。

また、八重山の星空を全国に発信するべく、当社の機内誌で八重山も星空や観測所を特集し、カレンダーでも八重山の美しい星空を紹介し、八重山の自然保護及び観光促進に努めております。

日本トランスオーシャン航空（株）は、自然環境保護 IDA 国際ダークスカイ協会プログラムの趣旨に賛同すると共に八重山の国立指定公園がダークスカイ・パークとして認定されることを強く希望致します。

認定後につきましては、これまでの支援PRに加え、JAL グループのネットワークを活用し世界に向けて八重山の自然の美しさや自然環境保護の大切さを発信していく所存です。
併せて IDA 協会地域との交流や八重山での国際会議開催を希望いたします。

2017 年 1 月 16 日
日本トランスオーシャン航空㈱
八重山支社長　我那覇　宗広

Translation of page 101

Japan Transocean Air, Yaeyama branch

January 5, 2017

2-10 Tonoshiro Ishigaki City Okinawa / Tel: 0980-82-9515

John Barentine
Program Manager
International Dark-Sky Association
3223 North First Avenue
Tucson, Arizona 85719 USA

Dear Mr. John Barentine,

Japanese Airline Group are pleased to support the “Amami-Ryukyu Islands Japan, including the Yaeyama Islands from the point of view of Biodiversity Conservation to be registered as one of the World Heritage site. Japan Transocean Air Yaeyama branch as a part of Japan Airline Group also supports the Conservation Activities for Iriomote-Yamaneko (Iriomote wild cat) that are registered as a National natural monument of Iriomote Island.

In order to appeal the beauty of Starry-sky in Yaeyama Islands nationwide, the starry-sky of Yaeyama Islands and Astronomical Facilities were featured as a special topic in our inflight Magazines. The Great Starry-sky of Yaeyama was also introduced in our calendar, Tourism promotion and Nature Conservation of Yaeyama Islands are still ongoing.

Japan Transocean Air expects for Iriomote-Ishigaki National Park in Yaeyama Islands to be a one of the International Dark-Sky Park, and agrees the Natural Environmental Conservation, International Dark-Sky Place Conservation Program.

After registering, more support and appeals for the value of nature of Yaeyama Islands and Natural Environment Conservation to the world through Our Japan Airline Group network.
In addition, we hope to hold fellowship with the members of International Dark-Sky Association and have International conference in Ishigaki Island, and is willing to corporate in the transport of their needs

Sincerely yours,

MUNEHIRO GANAHA
Yaeyama branch head

14.Jan.2017

John Barentine

Program Manager

International Dark-Sky Association

3223 North First Ave.

Tucson, AZ 85719

USA

MOUNT JOHN
EARTH & SKY
OBSERVATORY
Where Earth meets Sky

Earth & Sky Limited
Mount John
PO Box 112
Lake Tekapo, 8770
New Zealand
Phone *03 680 6960*
Fax *03 680 6950*
Email *info@earthandsky.co.nz*
www.earthandsky.co.nz

Dear Mr. John Barentine,

This letter is to support Yaeyama for its application to join IDA program to preserve dark environment around islands.

Yaeyama is well known to the world by natural beauty. Unspoiled environment are well maintained. A nocturnal endangered species Iriomote Yamaneko inhabit in one of island. Japanese Ministry of the Environment has an office in Iriomote Island to implement protection.

Becoming a Dark Sky area is a good step not only for protecting Starry night for people but also for Iriomote Yamaneko and other unique species.

My home town Lake Tekapo, New Zealand became Dark Sky Reserve in 2012. Mt John Observatory was established on the summit of Mt. John close to Tekapo in 1965. Darkness over 2000 hectors of farm land in Mackenzie basin around Tekapo makes the night sky ideal for Astronomical works.

On the other hand, Yaeyama is surrounded by sea. The area of darkness is far greater than Tekapo. The boundary of the Reserve at Tekapo is set to the area surrounded by mountain range. If it is required to draw a line around Yaeyama, it may goes to Okinawa Island which is 400km away.

As a conclusion in this supporting letter, Yaeyama should be recognized one of the best place on the earth. Dark environment in the area have to be maintained for all lives and for people. Recognition by IDA is a key for success.

Kind Regards,

Hide Ozawa

Director, Earth and Sky.

Member of Starlight Reserve working group

July 24, 2017

International Dark-Sky Association
3223 North First Avenue
Tucson, Arizona 85719, USA

Star Gazing Company
Hosizora Tourism Ltd

Dear IDA's Dark Sky Places Committee members,

Hoshizora Tourism Ltd is pleased to support the municipality of Ishigaki city and Taketomi town in their efforts to apply Iriomote-Ishigaki National Park to be one of the International Dark-Sky Park and understand International Dark-Sky Place Program.

In Japan, Light pollution is not well known yet, by recognizing the Iriomote -Ishigaki National Park in Ishigaki city and Taketomi town as an International Dark-Sky Park for the first time in Japan, it will lead us to enter a new era to create a new lifestyle with Starry-night and wish that this will raise the peoples interest for Light pollution awareness and protect the Dark night sky in other places in Japan.

Sincerely yours,

Takahiro Ueno
Representative Director
Hoshizora Tourism Ltd

147-18-303 Ishigaki Ishigaki city Okinawa 907-0023 Japan
Tel: 0980-87-5790 Fax: 0980-87-5791 http://hoshisora.jp/

IDA 国際ダークスカイ協会御中

ジョン・バレンタイン様

IDA 国際ダークスカイ協会プログラム
ダークスカイ・パーク認定に関する賛同書

（株）Coral-foundation 西表島は IDA 国際ダークスカイ協会プログラムにおいてその趣旨に賛同し石垣島、竹富町内の国立指定公園がダークスカイ・パークの認定を受け取ることを強く希望します。次世代の自然環境保護や無駄なエネルギーの抑制ため、観光を通して啓発、教育、講習などを実施し適正な照明環境を創造すると共に御協会の一員として多くの人々に認知される活動に尽力することを約束致します。

尚、石垣市、竹富町内の国立指定公園がダークスカイ・パークに認定を受けた際は IDA 国際ダークスカイ協会認定地域に呼びかけをし国際会議を開催することをご提案致します。

第1回目の国際会議として日本がホストとして開催できることを強く希望しています。

2016 年 12 月 30 日

社名　株式会社 Coral-foundation 西表島

役職　代表取締役

氏名　宮沢みゆき　印

平成２９年1月１３日

ＩＤＡ国際ダークスカイ協会　御中
ジョン・バレンタイン　様

社名：有限会社　安　栄　観　光
氏名：代表取締役　森　田　安　高　㊞

ＩＤＡ国際ダークスカイ協会プログラム
ダークスカイ・パーク認定に関する賛同書

有限会社安栄観光は、国際ダークスカイ協会プログラムの趣旨に賛同し石垣市、竹富町内の国立指定公園がダークスカイ・パークの認定を受けることを強く希望します。

弊社の運航する船舶において今後は燃費効率の良いエンジン及び自然環境にやさしい船舶を導入し地域住民の交通機関として率先して無駄なエネルギーの制御に努めると共に模範となるような企業となるよう尽力します。また御協会の一員として多くの人々に認知して頂けるよう活動に尽力したいと存じます。

尚、石垣市、竹富町内の国立公園がダークスカイ・パークの認定を受けた際はＩＤＡ国際ダークスカイ協会認定地域に呼びかけをするとともに第１回の国際会議を日本がホストとして開催できることを強く希望します。

IDA 国際ダークスカイ協会御中
ジョン・バレンタイン様

IDA 国際ダークスカイ協会プログラム
ダークスカイ・パーク認定に関する賛同所

八重山観光フェリー（株）は石垣島・竹富町の島々をダークスカイ協会の認定を受ける事を強く希望します。
八重山諸島は、全天にある 88 の星座のうち 84 の星座を確認でき天の川も年中肉眼で見る事ができます。
自然も豊かでたくさんの希少動物が生息している八重山諸島ですが、近年急激に観光が伸びるに伴いお店が増え島全体の開発も進んでおり、よって町の明かりで星空が見えにくい地域があります。
ダークスカイ協会の認定を受ける事により、島民全員で次世代の自然環境保護や、照明環境の創造を意識して取り組んでいきます。
日本列島には、八重山諸島以外にも星空が素晴らしい地域がありますので石垣市・竹富町内がダークスカイ・パークに認定を受けた際は他の地域のリーダーとなり星空の保護に努めていきます。

2017 年 1 月 15 日
八重山観光フェリー（株）
営業部　長谷川　まり

平成 29 年 7 月 21 日

IDA 国際ダークスカイ協会
ジョン　バレンタイン　様

石垣島ドリーム観光㈱
代表取締役　丸尾　剛

IDA 国際ダークスカイ協会　ダークスカイプレイス・プログラム
ダークスカイ・パーク認定に関する賛同書

石垣島ドリーム観光㈱は、IDA 国際ダークスカイ協会が行っている「ダークスカイプレイス・プログラム」につきまして、その趣旨に賛同し、西表石垣国立公園がダークスカイ・パークの認定を受けることを強く望みます。

観光を通して、自然環境保護や適正な屋外照明使用の取り組みから優れた星空と夜間環境の保護及び創造をしていきます。また、貴協会の一員として地域の多くの人々に認知される活動に努めて参ります。

西表石垣国立公園がダークスカイ・パークの認定を受けた暁には、IDA 国際ダークスカイ協会認定地域との交流や、国際会議の開催をご提案致します。

IDA 国際ダークスカイ協会御中
ジョン・バレンタイン様

IDA 国際ダークスカイ協会プログラム
ダークスカイ・パーク認定に関する賛同書

株式会社サンシャインが運営する石垣島ビーチホテルサンシャインは、IDA 国際ダークスカイ協会プログラムにおいてその趣旨に賛同し、石垣島、竹富町内の国立指定公園がダークスカイ・パークの認定を受け取ることを強く希望します。

ホテル敷地内に於いての光害対策だけでなく、ご宿泊者様への八重山諸島の星空の素晴らしさをPRするとともに、自然環境保護の大切さを伝える一助になるよう努めて参ります。

尚、石垣市、竹富町内の国立指定公園がダークスカイ・パークに認定を受けた際はIDA 国際ダークスカイ協会認定地域に呼びかけをし国際会議を開催することをご提案致します。第１回目の国際会議として日本がホストとして開催できることを強く希望しています。

2017 年 1 月 14 日
石垣島ビーチホテルサンシャイン
常務取締役副総支配人
赤城　陽子

IDA 国際ダークスカイ協会
ジョン・バレンタイン 様

IDA 国際ダークスカイ協会プログラム

ダークスカイ・パーク認定に関する賛同書

石垣シーサイドホテルは IDA 国際ダークスカイ協会プログラムの趣旨に賛同し、石垣市・竹富町にまたがる『西表石垣国立公園』が、ダークスカイ・パークの認定を受けることを強く希望いたします。

西表石垣国立公園は、世界的にも類を見ない規模を誇る珊瑚礁群「石西礁湖」が広がる海や、数多くの固有種が生息する山野などの昼の光景のほか、夜は降るような星空が見ることのできる“星空名所”として知られています。このかけがえのない財産を次世代へ受け継ぐべく、自然環境の保護・無駄なエネルギー消費を抑制する為、照明環境についての啓発、教育活動に尽力することを誓います。

私達の頭上にある星空を世界中の多くの方々に披露したい、また同じような環境で暮らす方々と交流したいという観点から、各国の認定地域に呼びかけをし、当地で国際会議が開催されることを切望いたします。

2017 年 1 月 17 日
社名　石垣シーサイドホテル
役職　総支配人
氏名　當銘 弘充

IDA 国際ダークスカイ協会
ジョン・バレンタイン様

IDA 国際ダークスカイ協会プログラム
ダークスカイ・パーク認定に関する賛同書

株式会社琉球ホテルリゾート八重山（アートホテル石垣島）は、IDA 国際ダークスカイ協会プログラムにおいて、その趣旨に賛同し、石垣島、竹富町内の国立指定公園がダークスカイ・パークとして認定されることを強く希望いたします。

今まで当たり前のように見られていた、暗い夜空に輝く満点の星。当たり前は当たり前ではないのだ、という想いで、これを失わないよう、光害についての認識・知識を周りと共有するとともに、今何が自分たちにできることなのか、一緒に考え、実行していき、次世代へこの美しい景色をつなげていけたらと思います。

2017 年 7 月 21 日
社名　株式会社琉球ホテルリゾート八重山
（アートホテル石垣島）
役職　アートホテル石垣島　総支配人
氏名　佐藤 智博

IDA 国際ダークスカイ協会　御中
ジョン・バレンタイン　様

IDA 国際ダークスカイ協会プログラム

ダークスカイ・パーク認定に関する賛同書

有限会社ぷしぃぬしまは IDA 国際ダークスカイ協会プログラムにおいてその趣旨に賛同し、石垣島・竹富町内の国際指定公園がダークスカイ・パークの認定を受けることを強く要望いたします。

次世代の石垣市・竹富町の自然保護の為、地域の皆様の協力と共に教育、講習の場などを設け、適切な環境を創造し協会の一員として多くの方々に認知していただく活動に尽力することを約束いたします。

2017 年 1 月 13 日

有限会社ぷしぃぬしま

代表取締役　安谷屋　正和

IDA 国際ダークスカイ協会御中
ジョン・バレンタイン様

IDA国際ダークスカイ協会プログラム
ダークスカイ・パーク認定に関する替同書

天の川次郎フォト&ツアーはIDA国際ダークスカイ協会プログラムにおいてその趣旨に賛同し、石垣島と竹富町内の西表石垣国立公園がダークスカイ・パークの認定を受けることを強く希望します。
夜空保護の重要性や無駄なエネルギーの抑制ため、自治体・観光業界・産業界・地域住民など多くの人々に適正な照明環境、質の良い屋外照明の使用を理解いただく為の光害についての教育啓発活動や講習などを実施し、自然環境保護に努めます。

社　名　：　ウィズ
　　天の川次郎フォト&ツアー
代表者　：　中道次郎
住　所　：　沖縄県石垣市真栄里307-6-3-C

IDA 国際ダークスカイ協会
プログラムマネージャー
ジョン・バレンタイン様

うたくな一石垣島
沖縄県石垣市平得417-4
グランデHoshino303
Phone:090-1947-5898
Email:info@utakuna-ishigakijima.com
www.utakuna-ishigakijima.com

IDA 国際ダークスカイ協会プログラム
ダークスカイ・パーク認定に関する賛同書

うたくな一石垣島（合同会社うたくな一）はIDA国際ダークスカイ協会プログラムにおいてその趣旨に賛同し、石垣島、竹富町内の国立指定公園がダークスカイ・パークに認定されることを希望します。

私たちは石垣島に暮らす住人として、この美しい星空を眺めることができる環境をいつまでも保護していきます。

そして、訪れる観光客に星空を通して八重山の自然環境や人々の暮らしを紹介するとともに、私たちの子どもと島の子どもたちがこの地に誇りを持ち、後世に伝えていけるよう、自然環境の保護、省資源・省エネルギーの観点から照明環境について啓発、教育活動に尽力いたします。さらに八重山諸島の持続可能な社会の在り方を日本全国に発信していきます。またIDA協会認定地域との交流、そして国際会議を提案させていただきます。

2017年7月吉日
友利　恵子
うたくな一石垣島ツアーガイド
IDA国際ダークスカイ協会東京支部メンバー

IDA 国際ダークスカイ協会御中
ジョン・バレンタイン様

IDA 国際ダークスカイ協会プログラム ダークスカイ・パーク認定に関する賛同書

有限会社コロンブスは IDA 国際ダークスカイ協会の趣旨に賛同し、八重山諸島の
石垣市・竹富町の国立指定公園がダークスカイ•パークの認定を受けることを大いに希望 します。

類まれなるこの地域の星空環境を守り、未来へ引継ぎ、いつまでも国内外のゲストにこの素晴らしい星空を楽しんでもらいたいと思います。
また子供たちが宇宙のこと、天文のことに興味を持ったり、地球を大切に思う心を育むためにもこの星空環境を大切していきたいと思います。

2017年7月20日
有限会社コロンブス
代表取締役　久松伸二