

INTRODUCTION TO NATIONAL ASTRONOMICAL RESEARCH INSTITUTE OF THAILAND (NARIT)

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Munkongsujarit,
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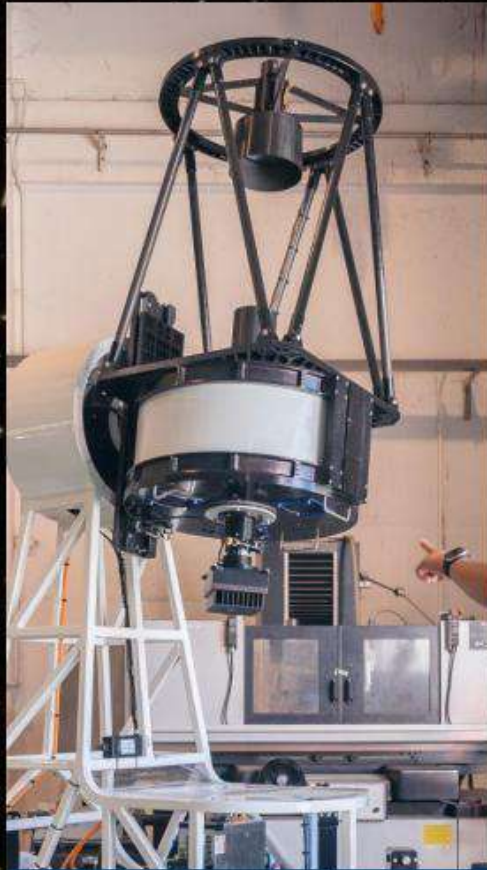
Manager of
Technology and
Innovation
Management,
NARIT

VISION

**To be a world-renowned organization in Astronomy,
Technology and Innovation**



RESEARCH



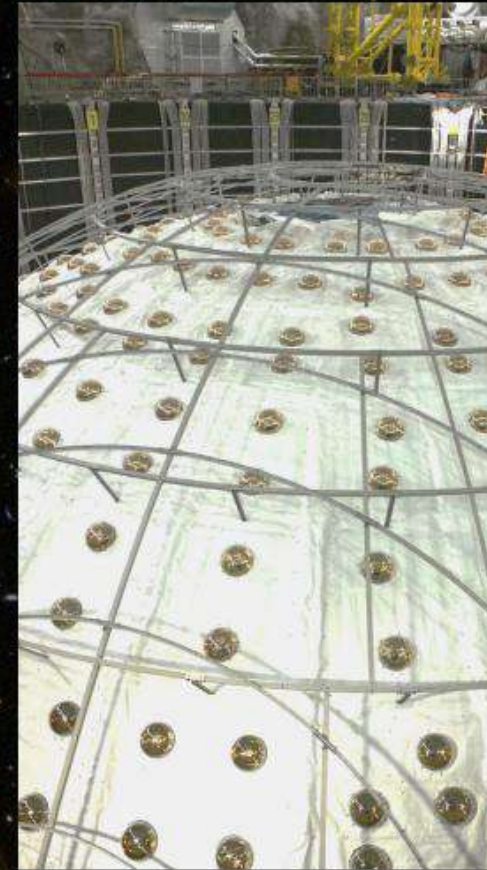
**TECHNOLOGY
DEVELOPMENT**



**ASTRONOMY
OUTREACH**



**TECHNOLOGY
TRANSFER**

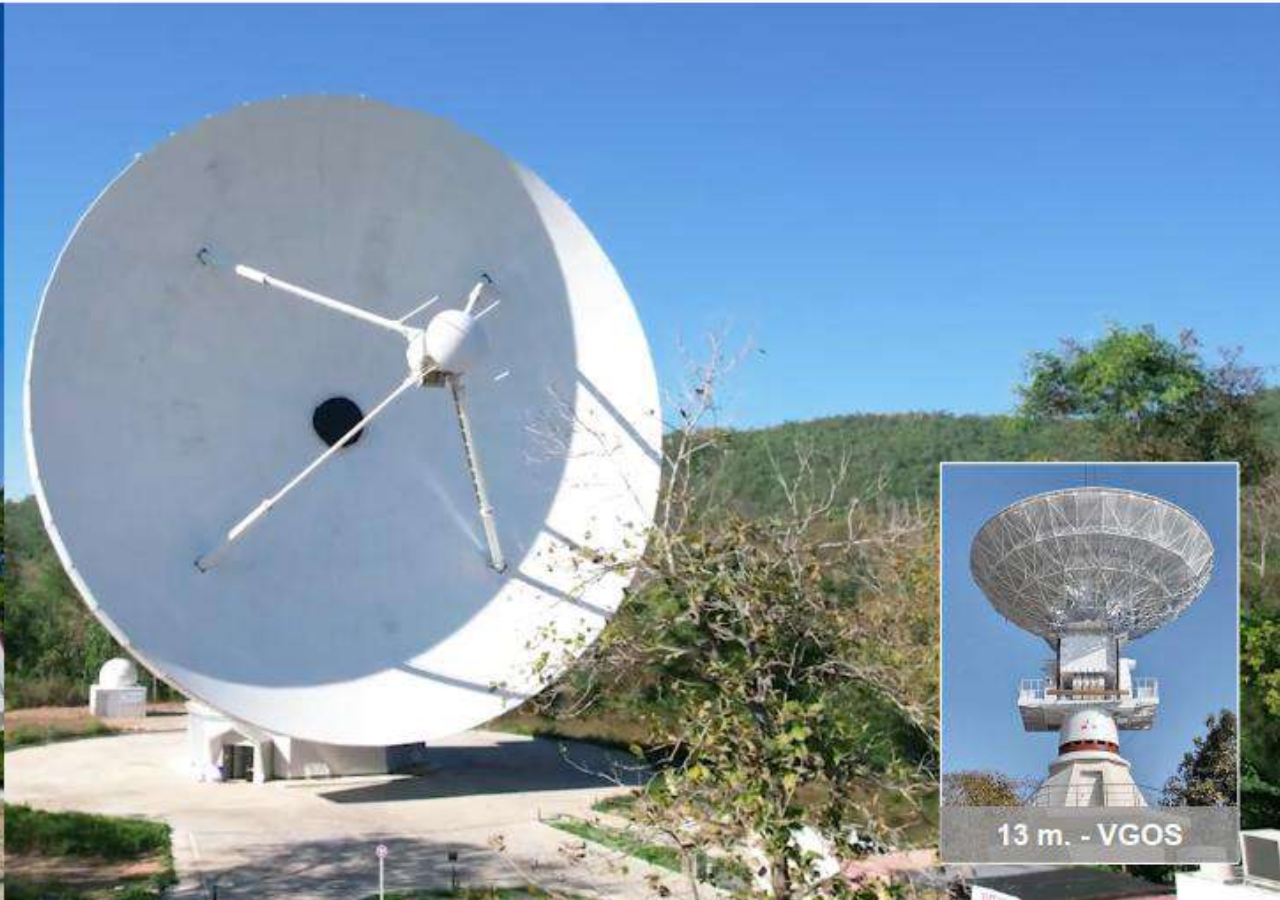


COLLABORATIONS

National Infrastructure



Thai National Observatory
Inthanon National Park, Chiang Mai
Optical Telescope: 2.4 and 1.0 m.



Thai National Radio Astronomy Observatory
Huay Hong Krai Development study center,
Doi Saket, Chiang Mai
Radio Telescope: 40 and 13 m.

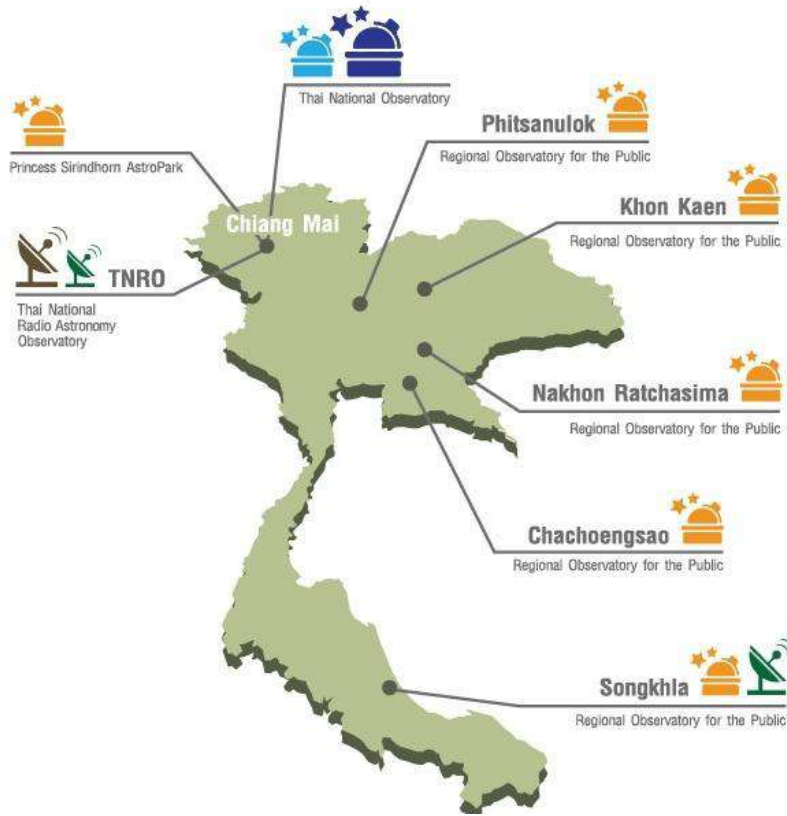
Radio Astronomy – Radio Frequency Interference Mitigation

- **Policy & Regulation** : Working with domestic body (NBTC – National Broadcasting and Telecommunication Commission of Thailand) and International body (ITU – International Telecommunication Union and APT – Asia-Pacific Telecommunity).
- Performing both **corrective and preventive measures**.
- **Stakeholder engagements** and compromising among Thai stakeholders.

Zones of TNRT's RQZ

- **Restrict zone (3-km of radius)**
- **Coordination zone (20-km of radius)**





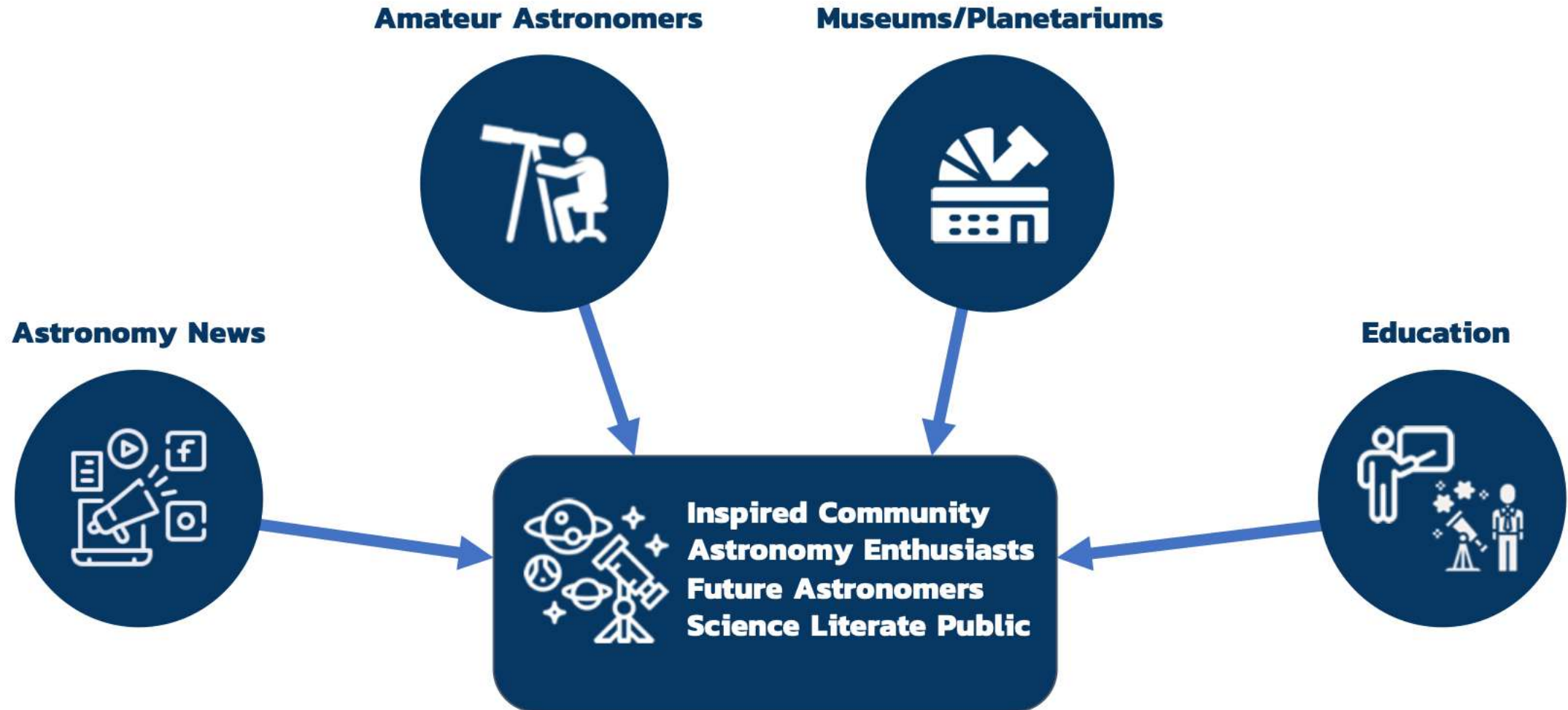
Regional Observatories for the Public

Objectives

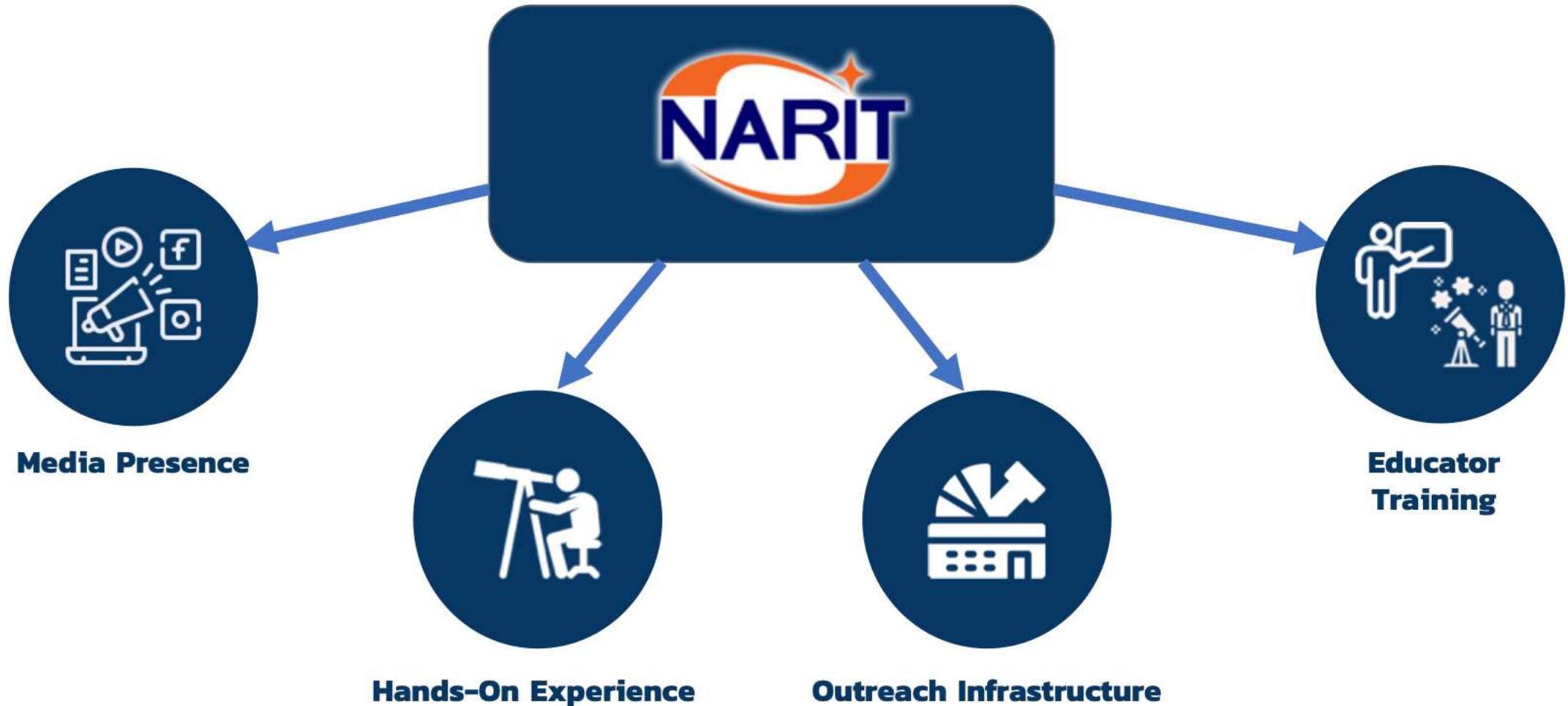
- Astronomical learning centre
- Incubator for academic sectors: educational and research
- Globally localised astro-tourism



“Bottoms-Up” Approach



“Top-Down” Approach





AMAZING DARK SKY IN THAILAND

Since 2022



Amazing Dark Sky in Thailand

Raises public awareness on the impact of light pollution and conserve the dark sky via establishing “Dark Sky Preserve” and public awareness campaign



Dark Sky Preserve



Dark Sky Community



Private Dark Sky
Preserve



Suburban Dark Sky
Preserve

Benefits of Dark Sky Preserves in Thailand



Attraction

Bringing tourists to local area



Economy

Provide economic incentives to the region



Learning Space

Provides science and astronomy learning space to schools and the public



Energy Reduction

Saving electricity usage in the long run



Environment

Reduce impact of light pollution to the local environment

Dark Sky Star Party

**Pha Taem National Park,
Ubon Ratchathani Province.
~ 2,535 Participants
~ 3.5 Million Thai Baht (110K
US Dollars) in Economic
Value (for Local Community)**





darksky.narit.or.th



Thank You

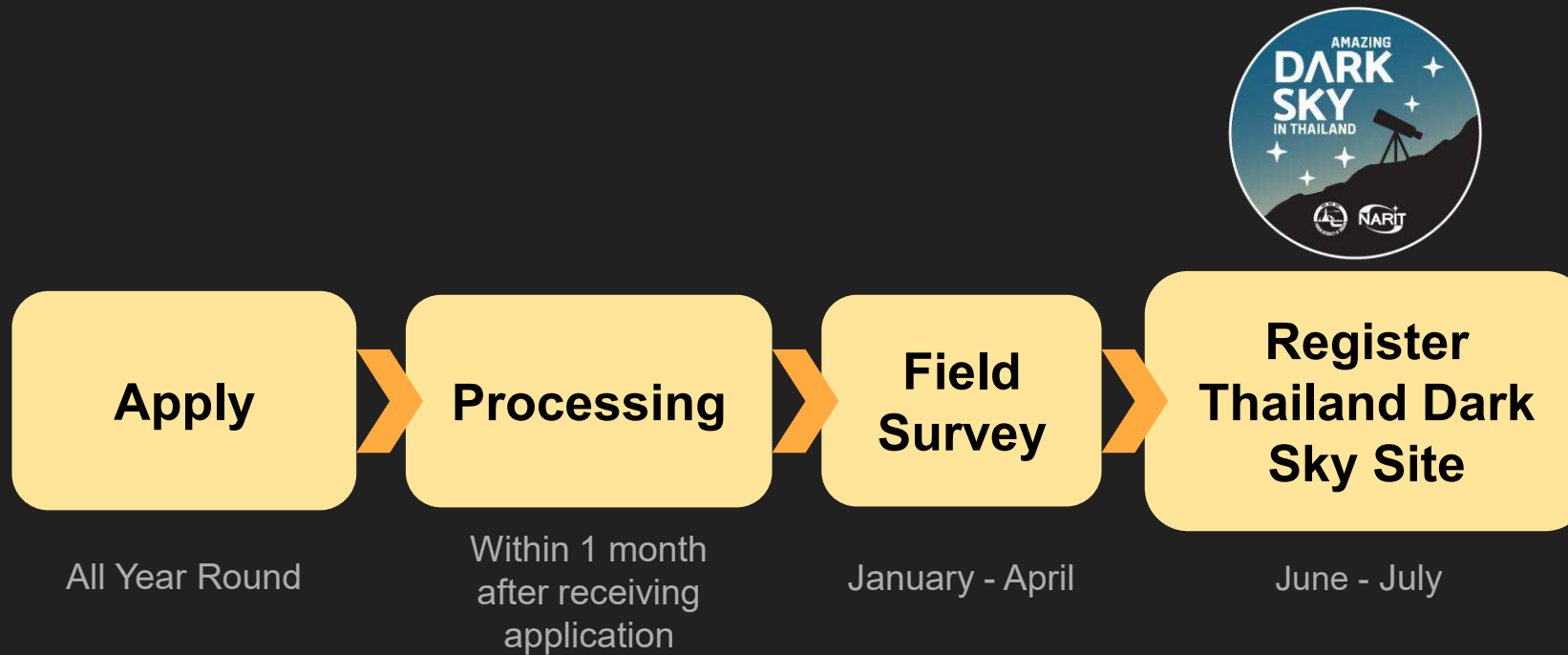
Appendix

Thailand Dark Sky Preserve

Special designated area aimed to promote astrotourism that has reduced light pollution, has sufficient darkness, light pollution management, suitable observational area, capable of observing stars, milky way, and deep sky objects.



Application Process



SELECTION CRITERIA



1. Sky Darkness
2. Observation Site
3. Light Pollution Management
4. Amenities
5. Personnel and Equipment
6. Accessibility



1. Sky Darkness

Having sufficiently clear sky with adequate darkness suitable to observation of galaxies, nebulae, clusters, and the Milky Way.



8/9

City/Inner
City Sky

7

City/
Suburbia
Transition

6

Bright
Suburban
Sky

5

Suburban
Sky

4

Suburban/
Rural
Transition

3

Rural Sky

2

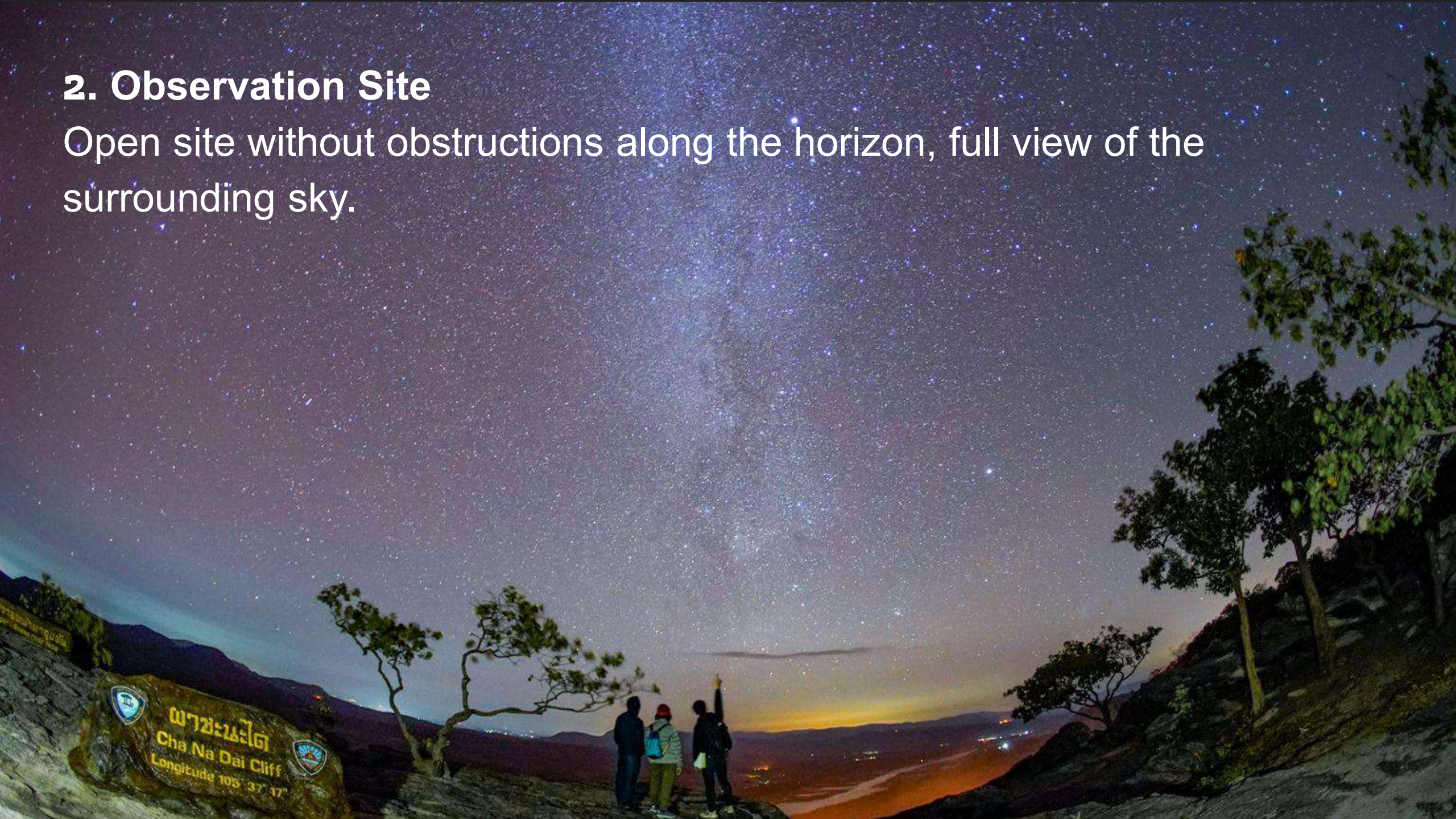
Dark Sky
Site

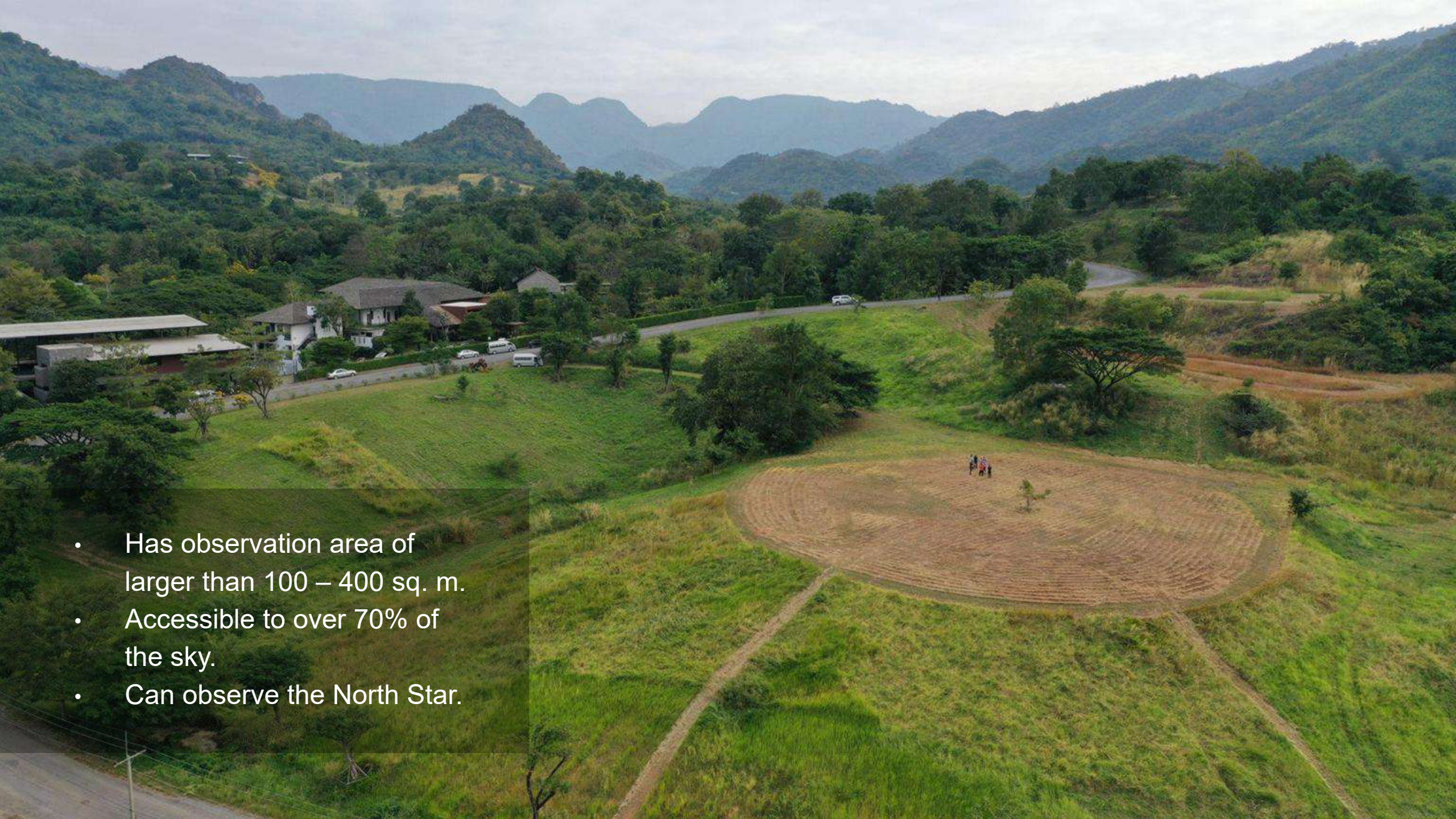
1

Excellent
Dark Sky
Site

2. Observation Site

Open site without obstructions along the horizon, full view of the surrounding sky.



- 
- An aerial photograph of a rural landscape. In the foreground, a large, circular, brownish field, possibly a rice paddy, is visible. A group of people is standing in the center of this field. The field is surrounded by green grass and trees. In the middle ground, there are several buildings, including a large white house with a thatched roof, and a paved road with a few cars. The background features rolling hills and mountains covered in dense green forest. The sky is overcast.
- Has observation area of larger than 100 – 400 sq. m.
 - Accessible to over 70% of the sky.
 - Can observe the North Star.

3. Light Pollution Management

Sufficient light pollution control with proper light fixture and proper usage of light





ไฟถนน



แสงไฟติดผนัง



ไฟหัวเสารั้ว

สปอร์ตไลท์



หลอดไฟเปลือย



ไฟทางเดิน



REGULAR
OUTDOOR



DARK SKY
OUTDOOR



ไฟทางเดิน



ไฟถนน



แสงไฟติดผนัง



Before

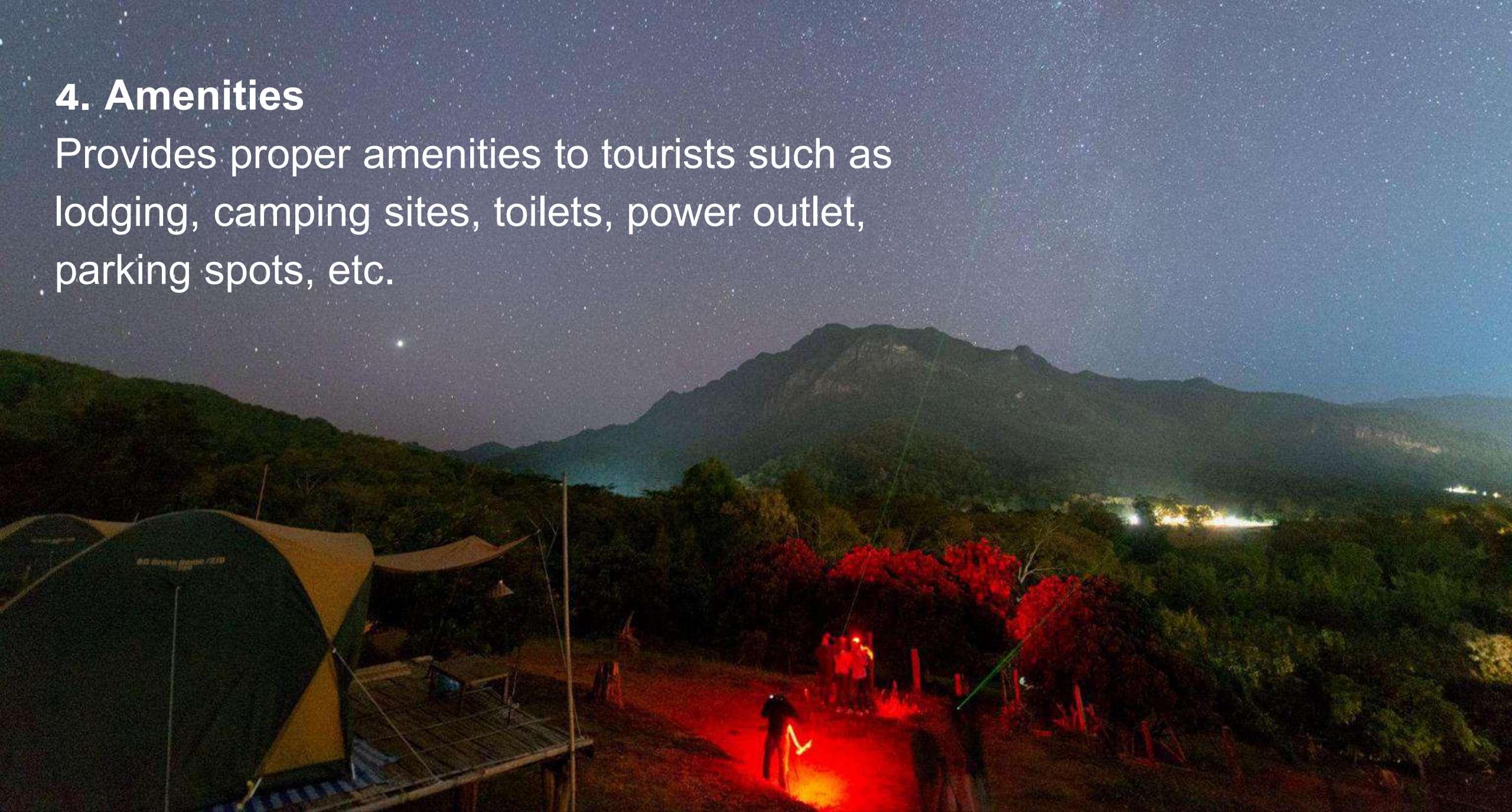


After



4. Amenities

Provides proper amenities to tourists such as lodging, camping sites, toilets, power outlet, parking spots, etc.



5. Personnel and Equipment

Offer personnel who can provide knowledge and information in astronomy and basic astronomical equipment.



6. Accessibility

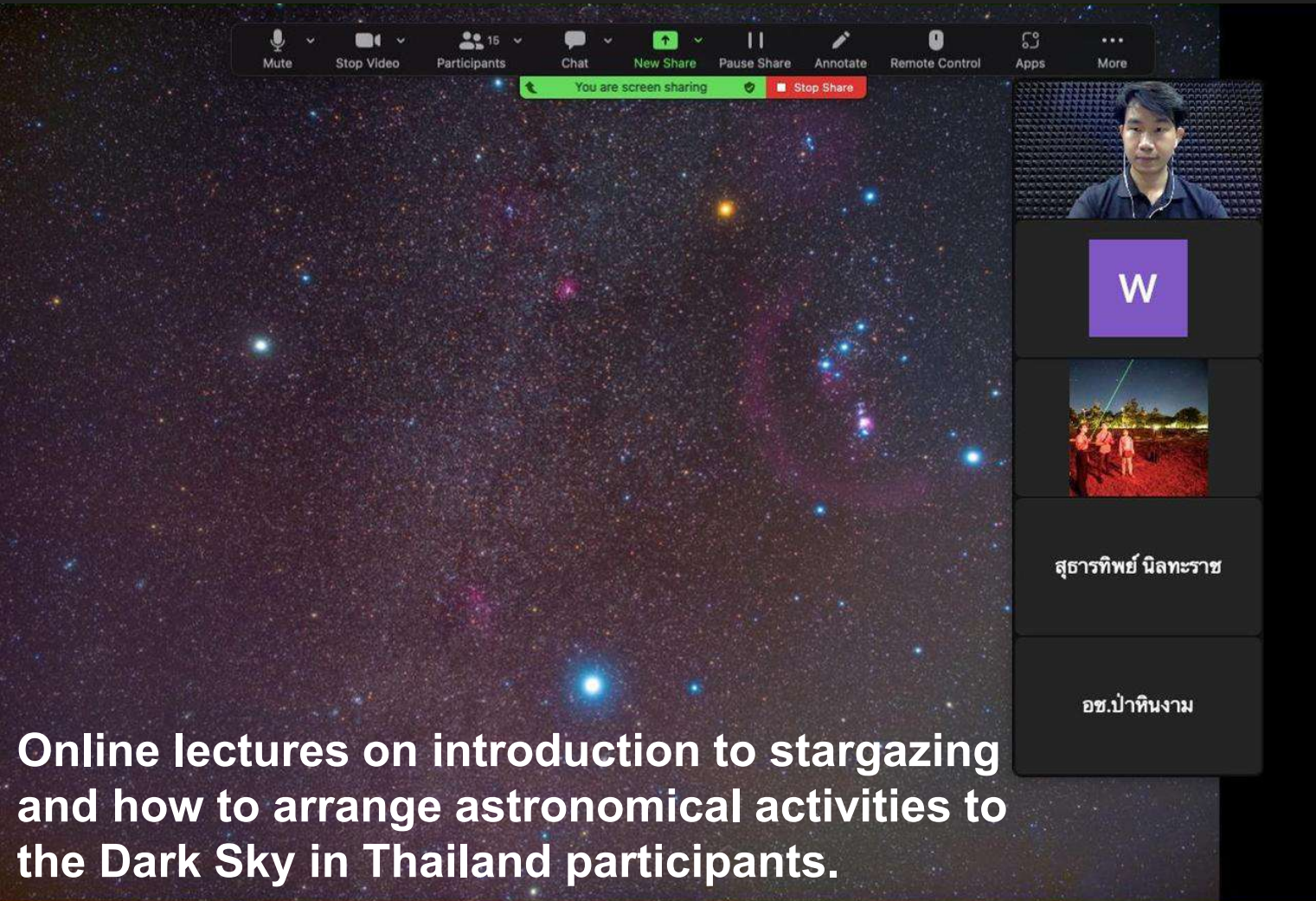
Accessible by car to reach the observation site or provide shuttle service to the site.



Supportive Activities from NARIT



Online Talk & Discussion

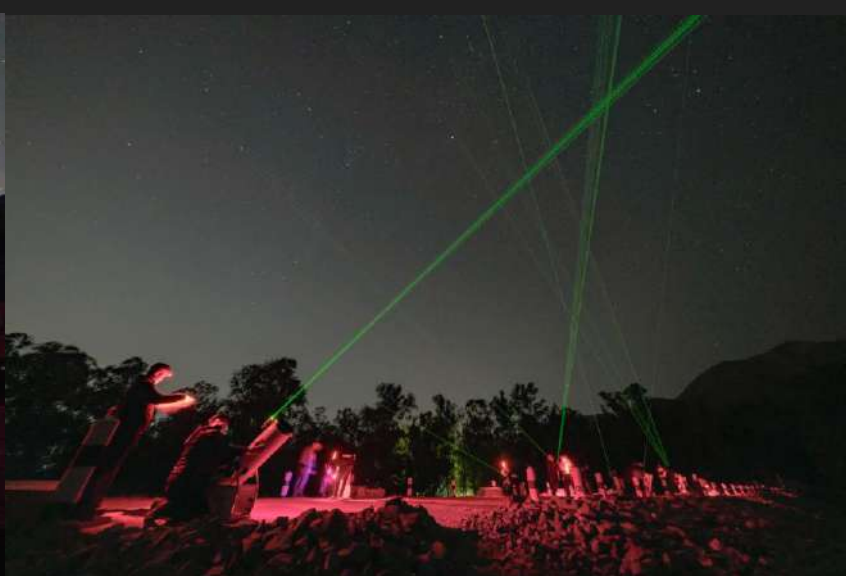


Online lectures on introduction to stargazing and how to arrange astronomical activities to the Dark Sky in Thailand participants.



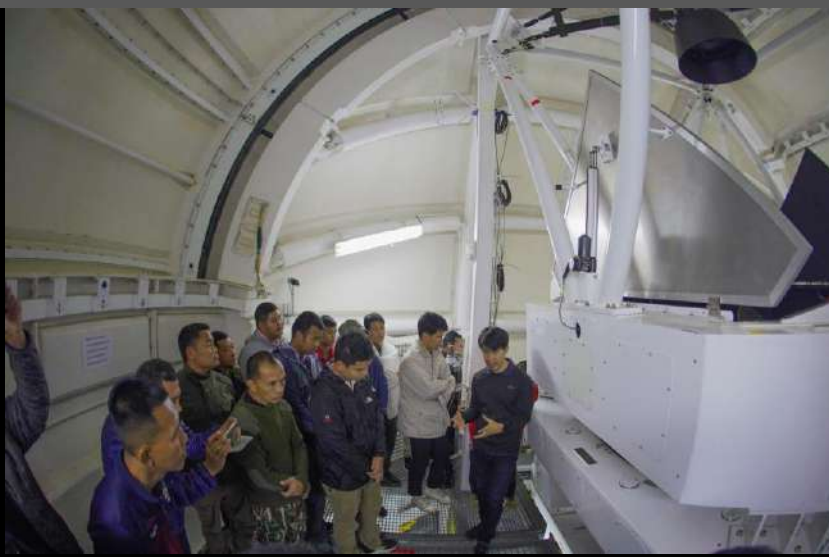


Astroguide Training





Astronomical Training for Park Rangers



Astrophoto Training





Exhibitions Promoting Astrotourism

Free E-book (Amazing Dark Sky) in Thai



<https://www.madamscreator.com/ebook/Amazing-Dark-Sky/>