

すばる望遠鏡夜間山頂無人化 計画：

プロジェクト憲章 (chrater)の制定

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OHia Project

We call a project towards summit-uncrewed night operation '*Ohia*' project.

OHia = Night **O**peration from **H**ilo **a**t Subaru Telescope



Summit uncrewed night operation

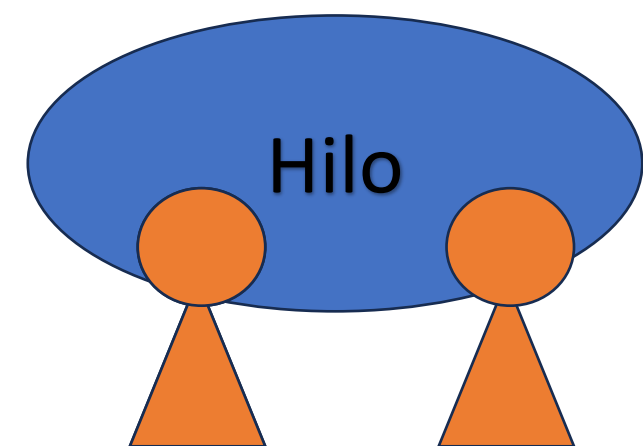
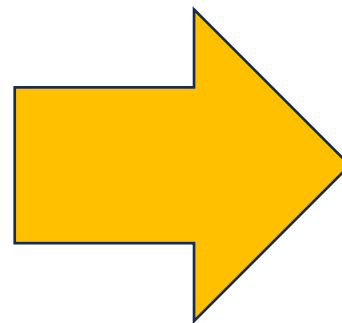
Near future

Current



Operator Support astronomer

Subaru
Keck
IRTF



Operator Support astronomer

Gemini, CFHT, UKIRT, JCMT, SMA

Project's status

- Started in June 2020. Directorate ordered Aoki to start it.
- Project core members: 7
 - Kentaro Aoki, Takuya Fujiyoshi, Yuhei Takagi, Ichi Tanaka (support astronomer)
 - Tatsuhiro Sato, Koichi Sawatari, Jun Omiya (engineer)
- Analyzed telescope/dome troubles during night (2021).
- **Made a charter of the project (2022).**
- We now concentrate in design of the mode manage system and STOPS (Takagi-san's talk). (2023)

OHia Project Charter

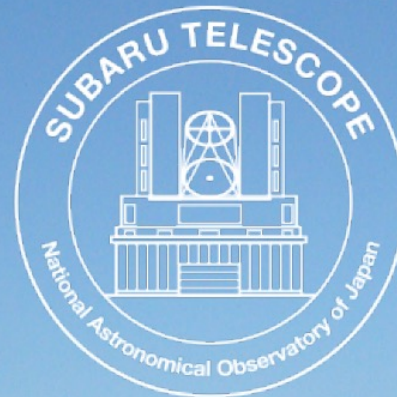
- ‘Charter’ is a common feature of the project management.
 - Outline of project (objectives, aims, budget and plan.)
- Why a charter was necessary for us?
 - No outline at the beginning.
 - We cannot do everything.
 - Must clarify words and meanings.
 - Must shape and share the objectives, aims and a picture of the project among Subaru staff and stake holders.

What will be Subaru’s summit uncrewed night operation ?

- Many borrowed from Gemini’s document ‘BFO Concept of Operations’.

Project Charter of Night Operation from Hilo at Subaru Telescope

Kentaro Aoki, Tatsuhiro Sato, Yuhei Takagi,
Takuya Fujiyoshi, Ichi Tanaka & Koichi Sawatari



Subaru Telescope

National Astronomical Observatory of Japan

Ver.0.13

September 26, 2023

Project Charter

- Contents of charter
 - Scope of Document
 - Background of OHia
 - Objectives of OHia
 - Top Requirements of OHia
 - Assumptions and constraints
 - Definitions (Mode, Condition, STOPS)
 - Effect on the observatory's staff and stakeholders.
 - Operation Models (Common operation procedures)
 - Use cases

Top Requirements

- OHia will allow **all facility instruments** to conduct science and engineering observations from the **Hilo base facility while no one is at the summit.**
- Observation modes and functions **currently available at the summit will remain available** at OHia.
- OHia should not increase the number of accidents involving people.
- OHia should not cause damage to the telescope, dome, or observing equipment.
- OHia will **not increase the overhead of observations** by reducing the speed of the dome or telescope drive or by increasing the safety margin.
- The increase in loss of observations due to OHia should be limited to **less than 1 night per month.**

Assumptions and Constrains

4. This project **will not do** anything other than what is necessary to conduct unattended mountaintop observations. **We will not do the following items.**
 - 1) **Provide lodging and transportation** for the night crew.
 - 2) Provide remote means of daytime work.
 - 3) Remote access to the **current PI- type instruments.**
 - 4) **Sustained monitoring** to ensure OHia rules are followed.
 - 5) **Changing the observation operation assignee.** It is assumed that the person who is currently performing the summit observation operation will perform the observation from Hilo.

5. Cost reduction is not the goal of this project though it is important to design OHia keeping in mind the long-term sustainability of the observatory.
6. OHia assumes that the unattended summit observations are canceled and the attended summit observations are conducted under the following circumstances.
 - 1) A situation in which night crews are requested to go to the summit to deal with possible problems during nighttime observations.
 - 2) A situation where night crews are requested to be on standby to go to the summit.
 - 3) When weather conditions at the summit cannot be determined without requesting assistance from another observatory.
7. Start of observation from locations other than the Hilo Base Facility is not a goal of this project. Observations will always be made from the Hilo Base Facility.

Effect on staffs

Mainly day time work.

- Daycrews will have to do the pre-check which the night operators are doing now.
- Thus day time workers (Daycrew etc.) will have to go out from the dome earlier than now.
- More important to do the after-work check if somebody works weekend.
- More items will be added to the pre-check Daycrews are now doing.
- Instrument Div. will handle what SAs are doing each evening at the summit.

Project Charter

- An early conceptual design.
- Why a charter looks new for us?
 - OHia project = *We will do new things.* = charter
 - Instruments etc. = *We will make new things.* = specification
- It takes about a half year to complete the draft.

Inputs from observatory's staff

- All-hands meeting was held on Dec. 5, 2022, and explained the draft of charter to the observatory's staff.
 - Concerns about day-time working hours.
- We did the survey for observatory's staff's response toward Ohia project.
 - 9 persons answered.
 - Schedule or plan is necessary.
 - More concrete plan is necessary.
 - "Japanese version please."