External Evaluation Committee

Final Review Report of

the FY2023 NAOJ Project Review

for the ASTE Project

June 2024

General introduction

The External Evaluation Committee (hereafter the EEC) for the ASTE Project, composed of the members listed in Appendix A, has met online on the following occasions: the kickoff meeting on November 21st, 2023 led by the NAOJ Project Review Committee Chair, and on December 14th and 20th, 2023, to draft the Review Plan [NAOJ-EEC-ASTE-011-A, Jan 18th, 2024].

The EEC has received the documents listed under the List of ASTE Review Documents (see Appendix B, last updated on March 26th, 2024).
The EEC met at the NAOJ Headquarters in Mitaka on March 25th and 26th, 2024, and the meetings followed the agenda outlined in the Review Plan (NAOJ-EEC-ASTE-011-A, Jan 18th, 2024) and reported in Appendix C.

This report is structured according to the review items listed in the evaluation plan and provides detailed replies to each charge.
An executive summary is provided to summarise the main recommendations by the EEC.

Executive Summary

The committee thanks the ASTE project and NAOJ staff for their time spent providing the committee with documentation, presentations, discussions, and overall support. The committee wishes to congratulate the ASTE staff for the achievements of the Observatory despite the reductions in manpower and budget, as well as the challenges faced in the last years related to pandemic and telescope repairs.

Review item 1: Achievement status of the Purpose of establishment and Primary Science Goals

The development of new technology for instrumentation by external projects, such as Band 8 (receiver and spectrometer), DESHIMA, and future TIFUUN, is at the forefront of innovation. However, the scientific community outside the project currently does not have easy access to advanced data products, only to raw data. The committee recommends making processed and quality-controlled data available through the Japanese Virtual Observatory (JVO).
The primary scientific goals set in [NAOJ-EEC-ASTE-002-B] have not been achieved yet due to various problems encountered over the last three years (details are provided in the replies to each charge). PIs of two projects have obtained good data, but more observations are needed. DESHIMA still needs to collect sufficient data to demonstrate its performance.
The recommendation is to address the telescope issues as soon as possible and resume observations to complete the scientific goals.

Review item 2: Response to the recommendations from in the FY2018 Project Review

The primary goals were set by the project quantitatively, and the PIs have defined the number of hours needed to achieve the performance required for their projects. The NAOJ management is aware of the problems that ASTE has faced.
However, the interface with the community is weak. While the community is regularly informed at users' meetings, the webpage is out of date. The website content should be updated soon, and the information should be disseminated through various channels (newsletters, social media, press releases) to advertise that ASTE is back at work.
Due to the limited budget and staff on site, maintenance and repairs have not been conducted efficiently over the last few years.

Review Item 3: **Status of Operations and management structure**

The budget and staffing situation are not adequate. An increase in the manager's time (40% of the ASTE manager is too low to manage the project efficiently) and the re-organisation of the engineer manpower support is highly advised.
Moreover, the manpower should be increased by at least a scientist and an engineer.

Cooperation with research institutes is going well, but communication with the ASTE project can be improved by assigning more time from the ASTE manager to the project.

Review Item 4: **Comparison with similar projects**

With the limited budget, staff and number of observing hours per year (~1000) the scientific outcome is comparable to other similar facilities.

Review Item 5: Future plan

After fixing the telescope, operations should be feasible for the next 5-10 years. However, given the current budget situation, it is advisable to actively search for more possibilities for external funding. The EEC recommends considering the use of ASTE as a testbench for instrumentation of future facilities.

The committee was not given any opportunity to evaluate Mizusawa, and its needs cannot be gauged. Given the current budget restrictions, it seems challenging to operate the three (Nobeyama, ASTE and Mizusawa) facilities at the same level. The committee invites NAOJ management to evaluate whether the scientific outcomes justify maintaining all three facilities at the current level. Different paths, such as shutting down one of the three facilities and reallocating the budget to the other two, should be investigated. Another possible solution is to study a synergy programme where the three facilities share engineers, technicians, and administrative staff, operating at different times of the calendar year (for instance, exploiting the winter season in the Northern and Southern Hemispheres for Nobeyama and ASTE).

Review Item [1]: Achievement status of the Purpose of establishment of Primary Science Goals

(1-1) Has the project developed new technology for the ASTE telescope?

The presentation and the documentation provided to the committee widely shows that several new technology receivers have been installed at ASTE and/or received funds to be built and tested/used at the telescope for scientific purposes.
Of the original front-end built by NAOJ (DASH345, ASTE Band 8 and CAT10) ASTE Band 8 was decommissioned and replaced by CAT8W, supported by external funds (Kakenhi). Band 10 (CAT10) was upgraded with external funds (Kakenhi) and commissioned in 2019.
A new back-end (XFFTS) was also recently installed and supported by external funds. Both CAT8W and XFFTS were commissioned in 2023 and some science observations were carried out.
Direct detection receivers (DESHIMA 1.0/2.0) to be installed and tested at ASTE were built and are in the planning and construction phase (TIFUUN) through external funds. The commissioning of DESHIMA 2.0 was partially carried out in 2023 but had to be suspended because of the failure of the sub-reflector driving system.
Overall the committee agrees that the project has fulfilled the goal stated by charge (1-1).

(1-2) Does the project provide observing data to the science community appropriately?

The committee invites the project to urgently revamp the old web-site and offer updated information to the community, clearly stating the policies about the data delivery.
After the proprietary time is expired, raw, reduced and quality proven data shall be delivered to the scientific community. The Japanese Virtual Observatory (JVO) is providing the infrastructure already to upload science-ready data.
The committee invites the project to deliver the data to the users through the JVO.

(1-3) Has the project achieved the “Primary Scientific Goals” defined in SG&M?

The primary scientific goals, set back in 2020 through the establishment of a project plan approved by NAOJ management [NAOJ-EEC-ASTE-002-B], were not achieved. The main causes have been identified by the covid pandemic which stopped the world-wide travels and by the failure of the sub reflector. Goals were postponed to 2025.

The committee invites the NAOJ management to review them at the end of the fiscal year 2025.

Review Item [2]: Response to the recommendations in the FY2018 Project Review

(2-1) Has the project set the “Primary Scientific Goals” quantitively?

At the time of the FY2018 review, the ASTE project primary scientific goals were still missing, and the past review committee requested to update the 2015 ASTE Operations Plan, where the ASTE Science Requirements are described.
To reply to the past review’s recommendations and to the request by NAOJ management to change the procedure and unify all projects under the same process, the ASTE project drafted the Scientific Goals and Missions document, which was approved and released in 2020, with the project ending at the end of March 2022 ([AD02]).
Scientific goals and missions were defined through the ‘NAOJ project application and extension processes’, which extend the ASTE project until end of March 2025. These documents define quantitative science goals to meet the described objectives.

(2-2) Is the system performance set along with the defined “Primary Scientific Goals”?

The new science objectives are aligned to the system performance which is described in the science traceability matrix in various documents [NAOJ-PROJECT-027-A, NAOJ-EEC-ASTE-013-A, and others].
The operation model has been changed from ‘open use’ to ‘project driven’ and the newly funded projects (Oka et al, Tosaki et al, Endo et al, Kohno et al) are building instruments designed accordingly to the defined system performance.
The PIs of these funded projects have defined the number of hours needed to set the performance to carry out their projects. However not all projects have acquired enough data to demonstrate this.

(2-3) Does the project share with the NAOJ Directorate the potential risk of shutting down operations in the event of a significant failure or malfunction?

The project has been in close contact to the NAOJ management and informed the management about the problems ASTE has been facing.

NAOJ management is currently fully aware of the project problems. It might have been a problem in the past, but it is not any longer an issue.

(2-4) Does the project inform usefulness of the ASTE (telescope) to the astronomy community?

The information that the external committee received does not contain much about the interaction of the project to its community. However the annual reports and the presentations at the users' meetings testify that during these meetings the community was informed about the status of the project.
Still, it seems that at present the community is not aware about ASTE and its capabilities.
The committee invites the project to initiate a new campaign of advertisements, collaborating with the outreach department at NAOJ, to disseminate information through various channels such as newsletters, social network events, and regular posts. Additionally, organising targeted scientific events will help advertise that ASTE is back in operation.

The committee was informed that such activities are undertaken for ALMA by their Education and Public Outreach team at NAOJ. Within this framework ASTE could be also advertised (see more in Item 3.1).
The committee acknowledges that the website is not updated and encourage the project to undertake some effort to do it.

(2-5) Has the project made operation/maintenance efficiently

Due to limited budget and staff on site, maintenance and repairs have not been done efficiently over the last years. The issues are serious.
The committee recommends that the presence in Chile, overall and mainly at the site, is enhanced. It is important that not only the manager of the project but more staff from NAOJ should be on site.
Some of the data were delivered to PIs via the Nobeyama-45m/ASTE Science Data Archive.

Review Item [3]: Status of Operations and Management Structure

(3-1) Is the ASTE budget and staffing adequate?

The committee acknowledges that the current budget and staffing situation is

inadequate. The number of technical and scientific staff on site is insufficient to adequately maintain and repair the facility. The presence of qualified staff could have potentially prevented the failure of the hexapod and the subreflector or facilitated a more efficient response to repair them.
The committee recommends increasing the manager's time commitment, as 40% of the ASTE manager's time is deemed insufficient to efficiently manage the project. Additionally, reorganising the engineer manpower support is advised. For example, having an engineer based in Chile who spends a significant amount of time on site could significantly enhance project efficiency. This individual would expedite decision-making on site and foster collaboration with nearby projects (in particular with NANTEN), thereby facilitating the more efficient sharing of manpower and knowledge.
The committee encourages NAOJ management to appoint a scientist to the ASTE project who can assist in establishing future planning in collaboration with the science community, while also contributing to operational tasks. This additional scientist would play a key role in attracting talent to the ASTE project and enhancing collaboration with other institutes in the community.
An avenue worth exploring is the sharing of manpower with the ALMA project. By proposing an in-kind contribution to both projects, leveraging competencies needed at both facilities, resource allocation can be optimised and synergistic collaboration between ASTE and ALMA fostered. This could be done for the public outreach activities too.
This approach aligns with the goal of maximising the impact and efficiency of both projects while strengthening ties with the broader scientific community.

(3-1) Does the project cooperate appropriately with related institutes and organisations?

Cooperation with research institutes has been successful, with researchers from Japanese institutes actively proposing and installing their receivers at the telescope. However, feedback from Principal Investigators (PIs) suggests that communication with the ASTE project could be improved. One approach to addressing this issue is to allocate more time from the ASTE manager to the project, enhancing coordination and communication channels.

In addition, the committee recommends expanding the base of scientists interested in the project by involving other universities and high schools. By broadening participation, ASTE can tap into a wider pool of expertise and foster greater collaboration within the scientific community.
Furthermore, there is currently no clear educational path associated with the project. To address this gap, the committee proposes the development of educational initiatives aimed at universities and high schools. These initiatives could include internships, workshops, and outreach programs designed to engage students and

educators with the ASTE project, promoting science education and inspiring future generations of astronomers.

Review Item [4]: Comparison with similar projects

(4-1) Is the ASTE (telescope) competitive among similar foreign submm single-dish telescopes in (1-1) and (2-1)?

Given the constraints of a limited budget, staff, and observing hours per year (~1000), the scientific output of the ASTE project remains comparable to other similar facilities. When compared to facilities like APEX, which offer four times the number of observing hours, the number of scientific publications produced by ASTE (roughly 10 per year) is consistent.
To further encourage the use of ASTE data and the telescope itself, the committee recommends that the ASTE project organise scientific workshops aimed at inviting potential users. These workshops could serve as valuable forums for discussing research opportunities and fostering collaboration among the scientific community interested in utilising ASTE data for their studies.

Review Item [5]: Future Plan

(5-1) Advise how does NAOJ operate the NRO, Mizusawa, and ASTE projects more efficiently: these projects are currently managed separately by NAOJ.

The committee acknowledges the challenge of providing a comprehensive evaluation without access to all relevant information, particularly concerning the third project (Mizusawa). However, based on discussions with project members, the committee encourages NAOJ management to explore opportunities for collaboration and resource sharing among technicians and engineers across the three facilities. This approach could streamline maintenance and repair efforts and foster synergies between the facilities.
Additionally, the committee suggests investigating the potential for scientists with interests in multiple facilities to contribute to cross-disciplinary collaborations and

knowledge exchange.

Furthermore, the committee invites NAOJ management to conduct a thorough investigation into whether the facilities could be retained for educational purposes and/or serve as testbeds for future instrumentation and facilities. This exploration could uncover new opportunities for leveraging the facilities to support scientific research and education initiatives.

(5-2) Evaluate the future plan of the ASTE Project.

The committee strongly encourages NAOJ management to prioritise the ASTE project by implementing measures that allow for increased focus on ASTE's specific needs and challenges.

Furthermore, the ASTE project has demonstrated areas of competitiveness and potential for exploration, particularly in utilising its instruments for large programmes. To ensure a bright future for ASTE over the next 5-10 years of operations, it is imperative to address any ongoing telescope problems promptly and effectively.

Moreover, if the ASTE project intends to maintain its status as a project-driven facility, it is essential to ensure that scientific data is made publicly available shortly after a short period of time (three to six months). Failure to do so may risk the facility becoming a private resource, undermining its potential for broader scientific impact and collaboration.

The committee recommends considering the following strategies to enhance the ASTE project:

1. Actively explore additional sources of external funding by leveraging the capabilities of the antenna (such as tracking satellites during periods when it is not in use for astronomical observations).

2. Consider utilising or offering ASTE as a testbench for future instrumentations, such as multiple-beam receivers or FIR/submm Integral Field Units (IFUs), to support the development of next-generation facilities.

3. Explore opportunities to align current and future single-dish projects (e.g., Nobeyama, ASTE, LST) with the vision for ALMA 2.0. ASTE can continue to play a valuable role until the next generation of projects is developed and implemented.

4. Investigate the possibility of integrating ASTE into the ALMA development programme, potentially contributing to upgrades for Bands 8 and 10 to enhance its capabilities and compatibility with ALMA.

5. Identify synergies with other facilities on-site, such as NANTEN, to optimise resources, share expertise, and foster collaboration in support of common scientific objectives.

Implementing these strategies can help maximise the scientific and operational potential of ASTE, strengthen its role within the broader astronomical community, and ensure its continued relevance and impact in the years to come.

Appendix A

External Evaluation Committee (EEC) members

Name		Affiliation
Dr. **Paola Michela Andreani**	**Chair**	Visiting professor at Fukui University of Technology, University of Thessaloniki (Greece) and University of Oslo (Norway); Astronomer at European Southern Observatory (ESO)
Dr. **Lars-Åke Nyman**		Professor Emeritus, Onsala Space Observatory/Chalmers University of Technology; Retired Astronomer at ESO
Dr. **Kenta Fujisawa**†		Professor & Director, Research Institute for Time Studies (RITS), Yamaguchi University
Dr. **Takeshi Sakai**		Professor, Graduate School of Informatics and Engineering, School of Informatics and Engineering, The University of Electro-Communications
Dr. **Kengo Tachihara**		Associate professor, Graduate School of Science Division of Particle and Astrophysical Sciences Interstellar Physics, Nagoya University

†Also member of the Project Review Committee.

Appendix B

List of ASTE Review Documents

Applicable **D**ocuments (From Secretariat)				
ID	Doc #	Doc Title	File Name	# of Pages
AD01	NAOJ-EEC-ASTE-001-B	List of the External Evaluation Committee (EEC) Members	[AD01] EEC Members List for FY2023 ASTE Review rev2.pdf	1
AD02	NAOJ-EEC-ASTE-002-B	Scientific Goals and Missions - ASTE Project	[AD02] Scientific Goals and Missions - ASTE Project_NAOJ_20240214.pdf	1
AD03	NAOJ-EEC-ASTE-003-A	FY2023 NAOJ Project Review: Review Charges of the ASTE Project	[AD03] ReviewCharges_ASTE_20230725.pdf	2
AD04	NAOJ-EEC-ASTE-004-A	Kick-off meeting of the EEC-ASTE on Nov 21, 2023	[AD04] ASTE Review overview (20231121 kick-off meeting).pdf	8
AD05	NAOJ-EEC-ASTE-011-A	2023 JFY NAOJ Project Review Plan for ASTE Project	[AD05] Review Plan for EEC-ASTE 20240118b.pdf	13

Reference **D**ocuments (From Secretariat)				
ID	Doc #	Doc Title	File Name	# of Pages
RD01	NAOJ-EEC-ASTE-005-A	Source: Annual Report of the National Astronomical Observatory of Japan FY2019-2022	[RD01] Annual Report of ASTE 2019-2022e.pdf	5
RD02	NAOJ-EEC-ASTE-006-A	出典：国立天文台年次報告 2019-2022 年度	[RD02] Annual Report of ASTE 2019-2022j.pdf	5
RD03	NAOJ-EEC-ASTE-007-A	国立天文台平成３０年度プロジェクト評価報告書　チリ観測所-サンチアゴ事務所および ASTE-【ASTE 抜粋】（令和元年７月）	[RD03] FY2018 NAOJ Project Review Report - CHILE - NAOJ-RESO-0016-A(20190729) 【ASTE 抜粋】.pdf	9
RD04	NAOJ-EEC-ASTE-008-A	FY2018 NAOJ Project Review Report　Chile Observatory - Santiago Office and ASTE - (ASTE Only)　(July 2019)	[RD04] FY2018 NAOJ Project Review Report - CHILE - NAOJ-RESO-0016-A(20190729)-E_(ASTE only).pdf	7

Deliverable **D**ocuments (From ASTE project)				
ID	Doc #	Doc Title	File Name	# of Pages
DD01	NAOJ-EEC-ASTE-009-A	ASTE Project Member List	[DD01] ASTEProjectMemberList.pdf	2
DD02	NAOJ-EEC-ASTE-010-A	Promotion of Submillimeter Astronomy with ASTE 10-m Submillimeter Telescope in Southern Hemisphere (Minamidani) (NAOJ Future Planning Symposium 2023)	[DD02] 20231108_NAOJFutureSympo_ASTE_SOC.pdf	34
DD03	NAOJ-EEC-ASTE-012-A	ASTE Publication list	[DD03] ASTE_Publication List with Citation_20240314.xlsx	3 sheets

A-Projec				
DD04	NAOJ-PROJECT-027-A	Project Plan Atacama Submillimeter Telescope Experiment (ASTE) (2020-06-03)	[DD04] NAOJ-PROJECT-027-A ASTE Project Plan_2020-06-03.pdf	18
DD05	NAOJ-EEC-ASTE-013-A	A-Project Application Form (2023-11-02)	[DD05] 01. x-2.A-ProjectApplication_ASTE_20231102a.pdf	21
DD06	NAOJ-EEC-ASTE-014-A	A-Project Extension Application ASTE - Atacama Submillimeter Telescope Experiment (2023-11-10)	[DD06] 20231110_ASTE_AProjectExtensionE.pdf	20
DD07	NAOJ-EEC-ASTE-015-A	A-Project Extension Application ASTE - Response to the additional questions (2023-12-08 |)	[DD07] 20231208_ASTE_AProjectExtension_FollowUpE.pdf	6
Safety				
DD08	NAOJ-EEC-ASTE-016-A	ASTE Pre-Climb Health Check (2024/03/12)	[DD08] MSForms_ASTEPre-ClimbHealthCheck.pdf	2
DD09	NAOJ-ASTE-0067-A	Guidelines for ASTE Pre-climb Health Check Procedures (2023-02-28)	[DD09] NAOJ-ASTE-0067-A Guidelines for ASTE Pre-climb Health Check Procedures_signed.pdf	5
Users Meeting (UM)				
DD10	NAOJ-EEC-ASTE-017-A	**UM2019:** ASTE Report 2019 and Plans for 2020 (Asayama)	[DD10] UM2019_UM191219(ASTE)_v0.1.pdf	21
DD11	NAOJ-EEC-ASTE-018-A	**UM2019:** Discussion on Future ASTE Operation and Common Use	[DD11] UM2019_UM191219(ASTE)_discussion_v0.1.pdf	2
DD12	NAOJ-EEC-ASTE-019-A	ALMA/NRO45m/ASTE **UM 2020:** ASTE Report and Future Plans (Kamazaki)	[DD12] UM2020_aste-um2020_report.pdf	19
DD13	NAOJ-EEC-ASTE-020-A	ALMA/NRO45m/ASTE **UM 2021:** ASTE Project Report (Kamazaki)	[DD13] UM2021_aste-um2021_report.pdf	20
DD14	NAOJ-EEC-ASTE-021-A	ALMA/NRO45m/ASTE **UM 2021:** DESHIMA 2.0 (Taniguchi)	[DD14] UM2021_kakenhi-DESHIMA_AkioTaniguchi.pdf	16
DD15	NAOJ-EEC-ASTE-022-A	ALMA/NRO45m/ASTE **UM 2021:** 2020-2024, Grant-in-Aid for Scientific Research (A) “Search for Missing Black Holes in the Galaxy based on Submillimeter-wave Observations” (Oka)	[DD15] UM2021_kakenhi-Oka_TomoharuOka.pdf	13
DD16	NAOJ-EEC-ASTE-023-A	ALMA/NRO45m/ASTE **UM 2021:** ASTE Science I: Supernova Remnant (Sano)	[DD16] UM2021_science_HidetoshiSano.pdf	20
DD17	NAOJ-EEC-ASTE-024-A	ALMA/NRO45m/ASTE **UM 2021:** ASTE science II: Galactic Center (Enokiya)	[DD17] UM2021_science_ReiEnokiya.pdf	12
DD18	NAOJ-EEC-ASTE-025-A	ALMA/NRO45m/ASTE **UM 2023:** ASTE - Discussion Topics	[DD18] UM2023_20231221_ASTEDiscussion.pdf	1
DD19	NAOJ-EEC-ASTE-026-A	ALMA/NRO45m/ASTE **UM 2023:** 2020-2024, Grant-in-Aid for Scientific Research (A)“Search for Missing Black Holes in the Galaxy based on	[DD19] UM2023_231221-ALMA_45m_ASTEUM.pdf	12

		Submillimeter-wave Observations" (Oka)		
DD20	NAOJ-EEC-ASTE-027-A	ALMA/NRO45m/ASTE **UM 2023:** ASTE Status Report & Future Prospect (Minamidani)	[DD20] UM2023_20231221_ASTEStatusReport.pdf	22
DD21	NAOJ-EEC-ASTE-028-A	ALMA/NRO45m/ASTE **UM 2023:** ESHIMA 2.0/ASTE Commissioning Campaign in 2023 (Tamura)	[DD21] UM2023_D2_2023_Lessons_Learned 2.pdf	22
DD22	NAOJ-EEC-ASTE-029-A	ALMA/NRO45m/ASTE **UM 2023:** ASTE KAKENHI project report (PI: Tomoka Tosaki) (Fujita)	[DD22] UM2023_fujita_20231221.pdf	18
DD23	NAOJ-EEC-ASTE-030-A	Thesis Dissertation List (PhD/ Master / Bachelor)	[DD23] ASTE_ThesisDissertation.xlsx	3 sheets
DD24	NAOJ-EEC-ASTE-032-A	ASTE CSV schedule (2023) (2023-04-19)	[DD24] csv2023.xlsx	1 sheet
DD25	NAOJ-EEC-ASTE-033-A	[tennet:20034] Data Release: ASTE Band 10 Demo Science Observations :Updated URLs	[DD25] [tennet_20034] Data Release_ ASTE Band 10 Demo Science Observations _ Updated URLs - Tetsuhiro Minamidani - Outlook.pdf	3
DD26	NAOJ-EEC-ASTE-034-A	Comparison with other Telescopes	[DD26] ComparisonOtherTelescopes.xlsx	1 sheet
DD27	NAOJ-EEC-ASTE-035-A	Inputs to the Charges	[DD27] Charges_Inputs.xlsx	1 sheet
DD28	NAOJ-ASTE-0011-A3	ASTE 望遠鏡 起動・停止マニュアル Startup and Shutdown Manual of ASTE Telescope (2021-06-17)	[DD28] NAOJ-ASTE-011-A4_ASTE StartupShutdownManual_220307.pdf	70
DD29	NAOJ-ASTE-012-B10	ASTE 望遠鏡保守マニュアル Maintenance Manual of ASTE Telescope (2023-06-15)	[DD29] NAOJ-ASTE-012-B10_ASTE 望遠鏡保守マニュアル_230615.pdf	265

Presentation Slides				
ID	Doc #	Doc Title	File Name	# of Pages
PS01	NAOJ-EEC-3PROJECTS-001-A	Optimization of radio projects in NAOJ	[PS01] 2024MaryMizNROASTE.pdf	6
PS02	NAOJ-EEC-ASTE-031-C	ASTE Overview	[PS02] 20240325_ASTEOverview-C.pdf	50
PS03	NAOJ-EEC-ASTE-036-A	The status of achieving the Primary Scientific Goals	[PS03] Tosaki_ASTEreview.pdf	9
PS04	NAOJ-EEC-ASTE-037-A	ASTE has been successful in securing external funds continuously	[PS04] 240326_ASTE_Kohno_v2.pdf	3

Appendix C

ASTE Review meeting timetable

Day 1 Date: Monday, March 25, 2024 9:00–16:00 Place: NAOJ Mitaka Campus, Conference Room #1	
◆Advance Meeting (Closed)	
09:00 – 09:35	EEC meeting
◆Presentation from ASTE (1) (Open)	
09:35 – 09:40	Self-introduction by all participants
09:40 – 10:25	Introduction of the project: Presentation by the ASTE Director (Review Items **[2]** and **[3]**) + Q&A
10:25 – 10:35	(Break)
10:35 – 12:00	Presentation by the ASTE Director (Review Items **[1]** and **[5]**) + Q&A
12:00 – 13:00	(Lunch Break)
◆Interview (1) (Closed)	
13:00 – 13:30	Interview with project members: ASTE PI of Scientific project (zoom)
13:30 – 13:40	(Break)
◆Presentation from ASTE (2) (Open)	
13:40 – 13:55	Presentation by the NAOJ Executive of ASTE Project (Review Item **[4]**) + Q&A
13:55 – 14:50	Presentation by the ASTE Director (Available Science Time and Review Item **[4]**) + Q&A
◆Discussion (Closed)	
15:00 – 16:00	EEC meeting

Day 2 Date: Tuesday, March 26, 2024 9:00–16:15 Place: NAOJ Mitaka Campus, Conference Room #1	
◆Interview (2) (Closed)	
09:05 – 09:41	Interview with ASTE users: two graduate students (zoom)
09:41 – 10:00	Interview with NAOJ responsible for ASTE
10:00 – 11:00	Group Interview with project members: ASTE system astronomer, PI of Scientific projects
◆Answers from ASTE (Open)	
11:00 – 11:54	ASTE Director's answers to questions posed on Day1
11:54–13:00	(Lunch Break)

◆Interview (3) （Closed）	
13:00 – 13:33	Interview with ASTE Director
13:40 – 14:40	Interview with project members: two senior members
◆Discussion （Closed）	
14:40 – 15:50	EEC meeting
◆Closing （Open）	
16:00 – 16:15	Executive Summary (Briefing to the project members)

*Open = open to project members who wish to attend

Review Items

[1] Achievement status of the Purpose of establishment and Primary Science Goals
[2] Response to the recommendations in the FY2018 Project Review
[3] Status of Operations and Management Structure
[4] Comparison with similar projects
[5] Future Plan