

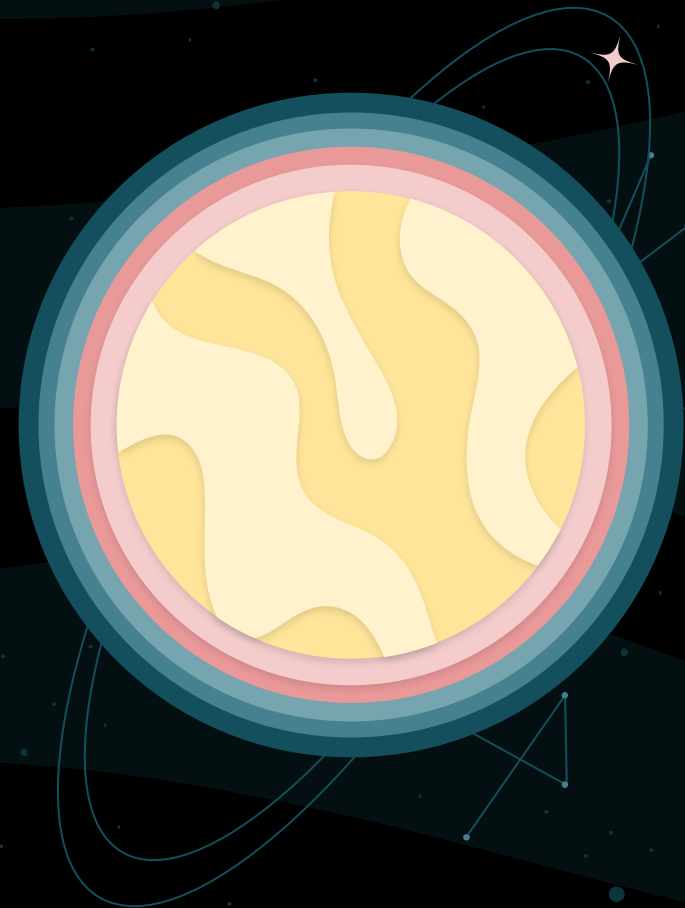
Introduction to Subaru Telescope Summit Daycrew – Kaizen Process’ for Daily Operations

Presented By:

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Subaru Telescope - National Astronomical
Observatory of Japan (NAOJ)



Professional Background

- Formal training in Toyota Production Systems (TPS), Six Sigma, and 6S Lean Manufacturing
- Design and Implementation of Complex Electro-Mechanical Manufacturing Facilities.
- 15 Years experience in Manufacturing (Aerospace/Defense, Electro-Mechanical Assembly)



- KAIZEN translates in English as “change for better” but is perhaps better stated as IMPROVEMENT.
- These can be small or large, from the bottom or the top of an organization
- Most importantly, building up to something better than before!

発表は英語のみで申し訳ございません。質問がある場合は、後でブレイクアウトルーム 2 番の 質疑応答 (Q&A) に参加することをお勧めします。

Presentation Outline

01

Safety Systems

- Equipment Updates
- Consistent Training
- New Technologies

02

Top Unit Exchange (TUE) Process Development

- TUE Crane Bridge Updates
- Lessons Learned in Training

03

Staffing / Scheduling

- Online Availability Log
- Adapting to COVID
- Training for the future

04

Facility Wide Improvements

- LED Lighting Retrofit
- UPS Replacement
- Scheduled Maintenance

Safety Systems

- Equipment Updates
 - Replacing old or outdated items
- Standardizing safety systems for ease of inspection
- Recognizing changes in procedure which effect equipment needs



IMPORTANT — PLEASE NOTE

This is a mark-up copy and uses the following colour coding:

Text example 1

— indicates added text (in green)

~~Text example 2~~

— indicates removed text (in red)



— indicates added graphic figure



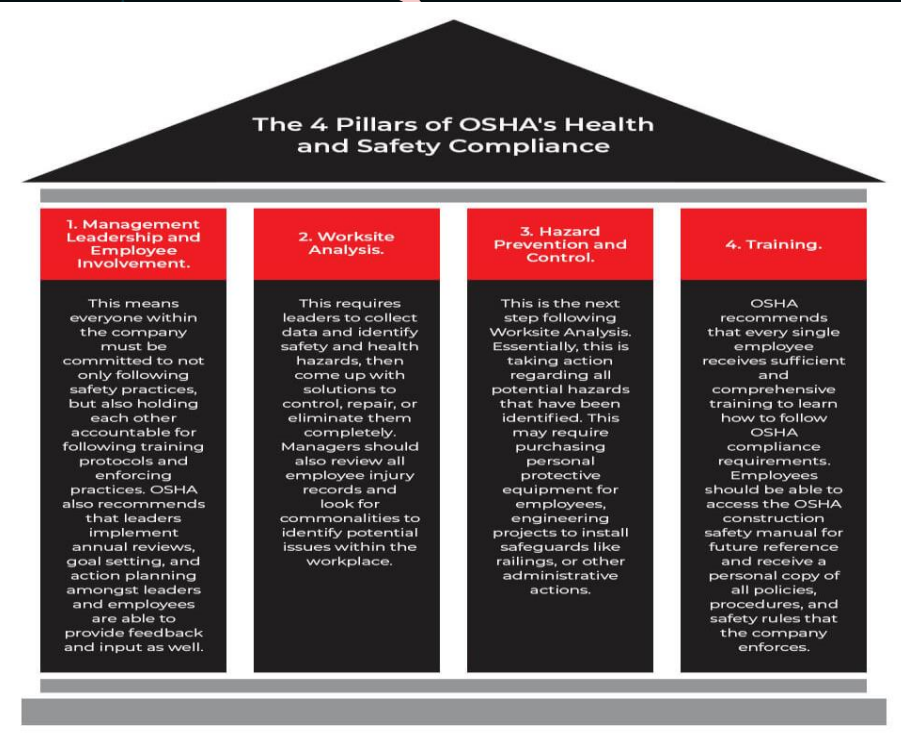
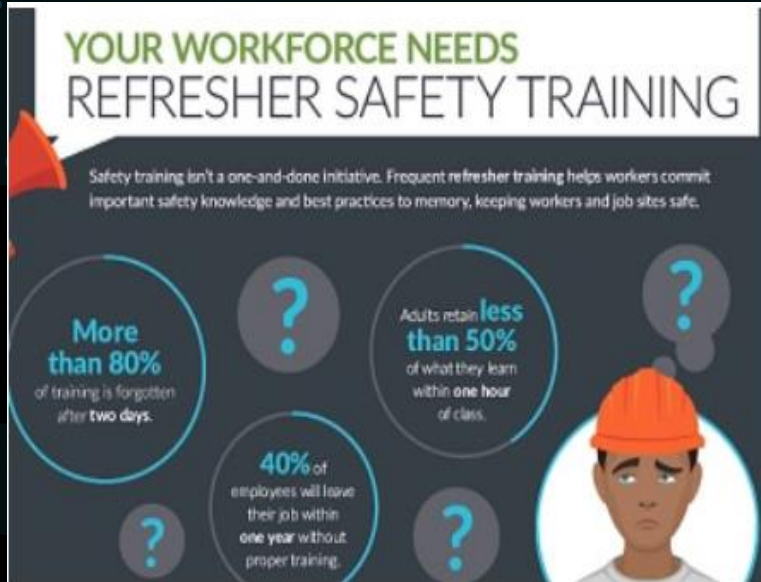
— indicates removed graphic figure

1.x ...

— Heading numbers containing modifications are highlighted in yellow in the Table of Contents

Safety Systems

- Consistent Training
 - Focus on training new skills as well as routine retraining of all staff.
 - Emergency Drills and knowledgeable communication
 - Real World, Role Based Cross-Training



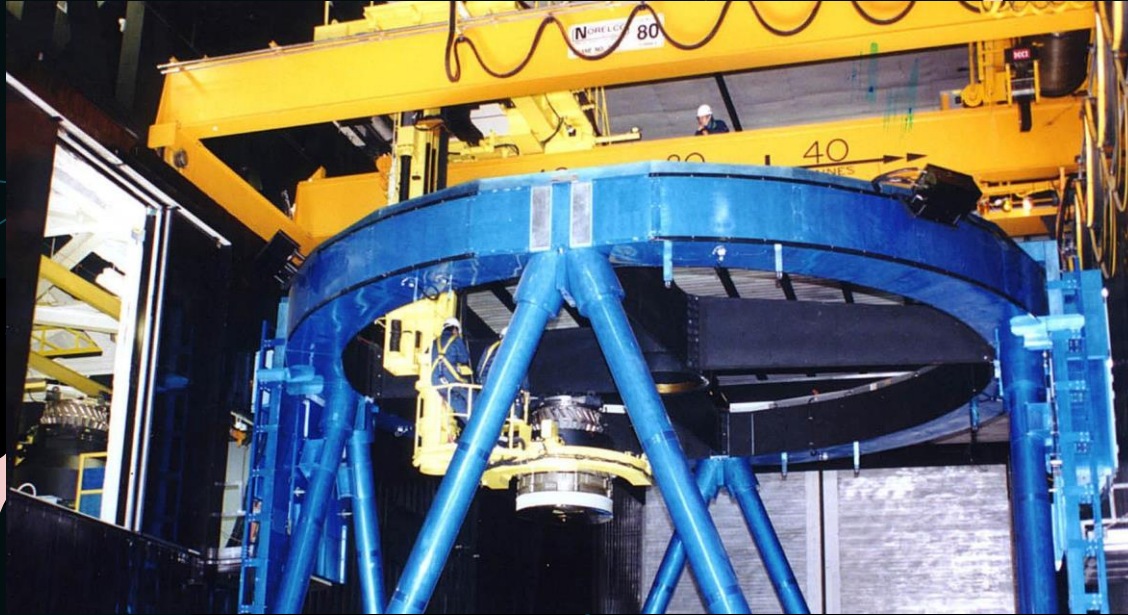
Safety Systems

- New Technologies
 - The need to update previous equipment based on changing technology
 - Recognizing changes in technology also effect written procedures
 - Building in the budget for these updates



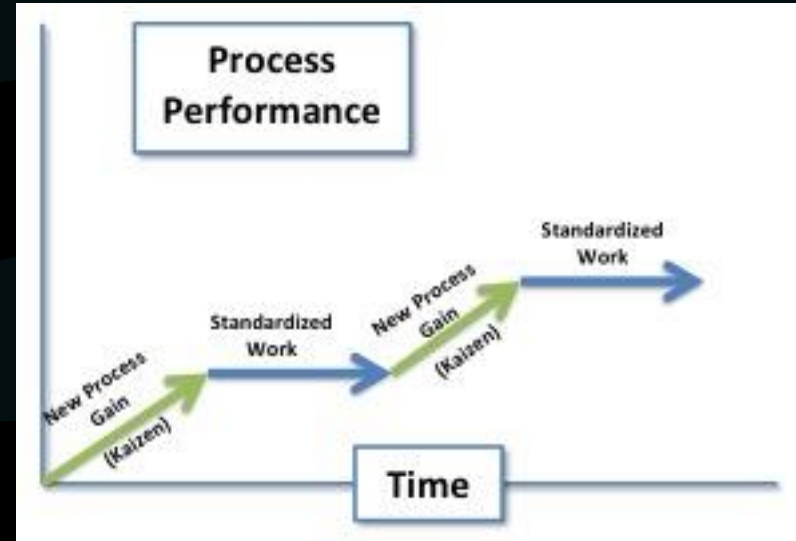
Top Unit Exchange Process Development

- TUE Crane Bridge Updates
- Lessons Learned in Training



Staffing/Scheduling Lessons

- Online Availability Log
- Adapting to COVID
- Training for the Future

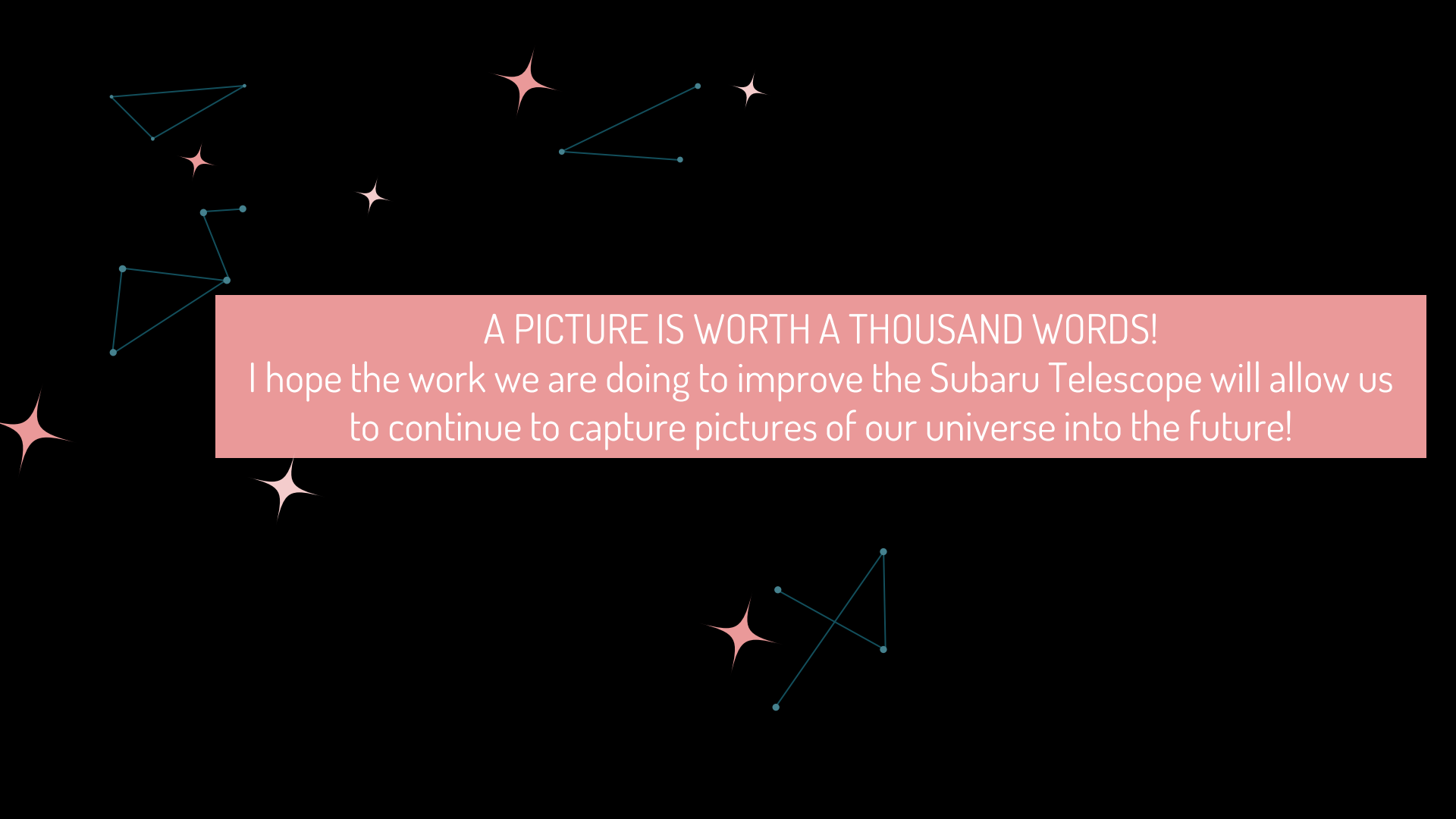


Facility Wide Improvements

- LED Lighting Retrofit
- UPS Replacement
- Scheduled Maintenance

Lifespan	LED Light 60,000hrs	40W Fluorescent Tube +light+2 tubes+Ballast 10,000hrs
Power Consumption	15Wx2=30W No Ballast	80W+20W=100W Lights+Ballast
Initial Bulb Cost Investment	\$200.00	\$60.00
1 Year of Continuous Use	256,320Kw hrs	854,400Kw hrs
Cost of Electricity for 1 Year	\$43,574.40	\$145,248.00
Cost Maintenance/ Labor 1 Year	0	\$580
Cost to Operate	\$43,774.40	\$145,828.00
Savings Per Light 40W Fixture	\$205.00	



The background is a solid black field. Scattered across it are several stylized star constellations. These are represented by small blue dots (stars) connected by thin blue lines. Some constellations are simple triangles, while others are more complex, like a four-pointed star shape. Additionally, there are several individual, larger, four-pointed starburst shapes in a light pinkish-red color, some of which are also connected by lines. A large, semi-transparent pink rectangular box is positioned in the center-right of the image, containing white text.

A PICTURE IS WORTH A THOUSAND WORDS!

I hope the work we are doing to improve the Subaru Telescope will allow us
to continue to capture pictures of our universe into the future!