

Announcement:

2024 SPICE Training Class in Korea

2024. Nov. 5 (TUE) ~ Nov. 7 (THU), 3 days

2024 SPICE Technical Meeting in Korea

2024. Nov. 8 (FRI) 1 day

Ancillary Data: SPICE

Ancillary Data

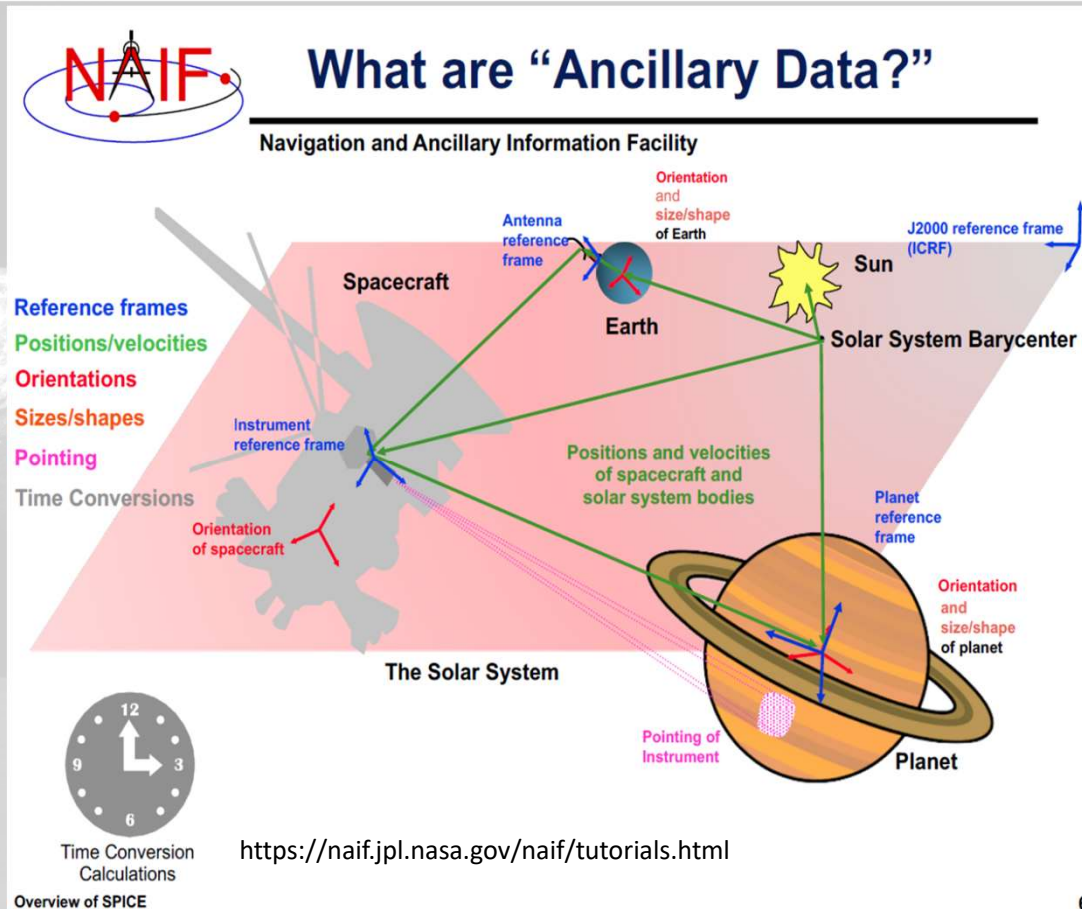
- Ancillary data are those that help scientists and engineers determine observation geometry, such as:
 - where the spacecraft was located
 - how the spacecraft and its instruments were oriented (pointed)
 - what was the location, size, shape and orientation of the target being observed
 - where on the surface the instrument was looking

KPLO Ancillary Data

- SPICE kernels

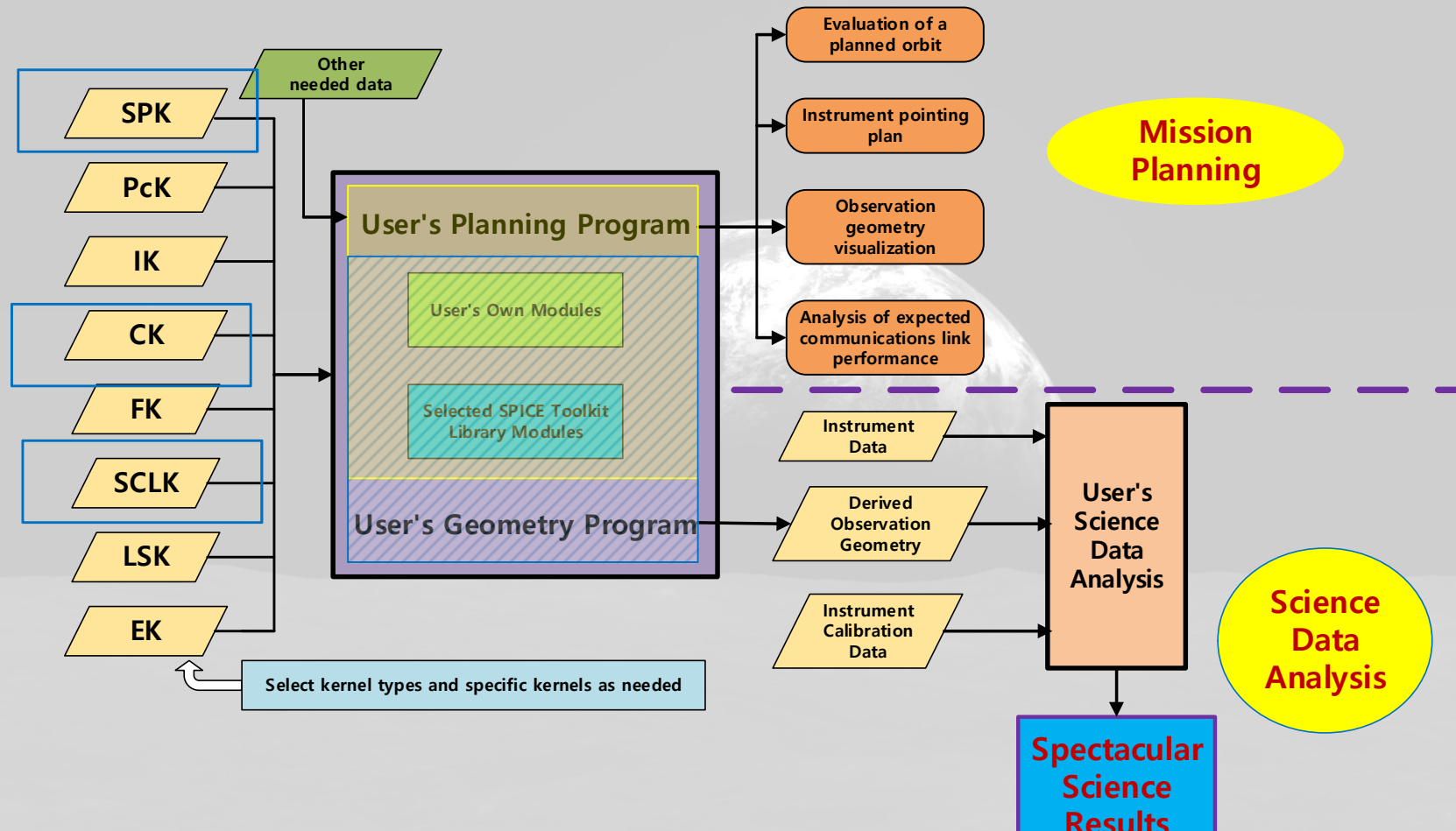
SPICE: NASA's Ancillary Data System for Planetary Missions

- Developed and distributed by NAIF (The Navigation and Ancillary Information Facility)



[1] Acton, C.H.; "Ancillary Data Services of NASA's Navigation and Ancillary Information Facility;" Planetary and Space Science, Vol. 44, No. 1, pp. 65-70, 1996. [DOI 10.1016/0032-0633\(95\)00107-7](https://doi.org/10.1016/0032-0633(95)00107-7)

Ancillary Data: SPICE



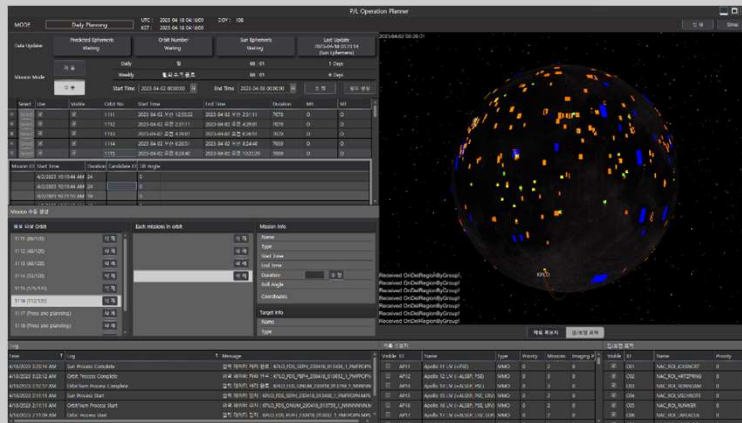
[1] Acton, C.H.; "Ancillary Data Services of NASA's Navigation and Ancillary Information Facility;" Planetary and Space Science, Vol. 44, No. 1, pp. 65-70, 1996. [DOI 10.1016/0032-0633\(95\)00107-7](https://doi.org/10.1016/0032-0633(95)00107-7)

KPLO SPICE Kernels: Application

Mission planning (operational) and Science data processing (archiving)

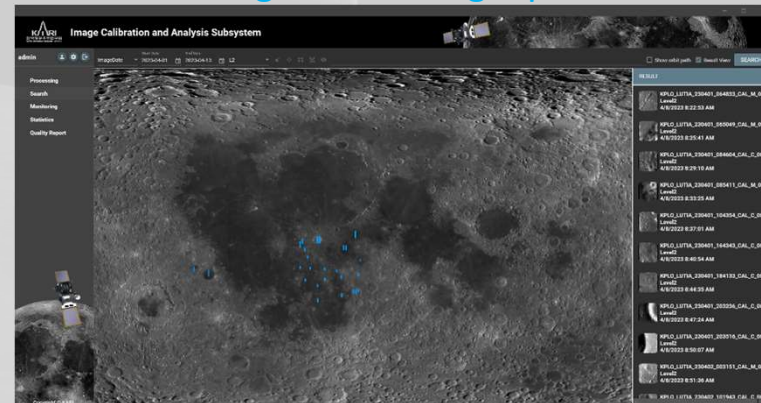
MPS: POP

Visualization: cosmographia



- LUTI Targets: Total targets numbers 674
- Landing mission targets: 44
- Geometric cal/val targets: 319 (provided by KARI Cal/Val team)
- Man-made objects: 33 (Apollo landing sites and others)
- Lunar pits: 278
- And more

ICAS: LUTI Image Processing Pipeline



SPICE Training Class (Background)

KARI developed and is operating KPLO (Korea Pathfinder Lunar Orbiter)

For the KPLO mission, KARI decided to provide ancillary data in the format of SPICE in 2017 and NASA began funding NAIF to support KARI's SPICE kernel development.

(Planned) NAIF Technical Support of the KPLO Mission: Training Class in Korea

- #0: No KPLO Specific NAIF Support:
 - Korean engineers and scientists will attend one or more of the free SPICE training classes held somewhere in the U.S.
- #1: Provides Training Class in ROK, and follow-on support, for SPICE Producers
 - a two-day technical interchange meeting focused on kernel production, covering both time-invariant kernels (FK, IKs) and time-varying kernels (SPK, CK, SCLK).
- #2: Provides Training Class in ROK for SPICE Users (KPLO Scientists)
 - a two-day SPICE users class using available KPLO kernels in the programming lessons.
- #3: Provides Technical Consultation for SPICE Users
 - NAIF staff would provide a modest level of email-based consultation to KARI kernel users, from one year prior to launch to one year after launch (presumably this is the end of mission).
- #4: SPICE Archive Support
 - KARI/KPLO might choose to produce a SPICE archive according to NAIF's PDS4 standards. In this event NAIF would freely offer its PDS4 Archive Guide

SPICE Training Class (Previous)

NAIF Technical Support of the KPLO Mission: Training Class in Korea

- #1: For SPICE Producers and KPLO Scientists (2 days, October 2018)
 - 2018. 10. 11 (THU)~ 10. 12 (FRI), KARI
 - KPLO and instrument overview, technical support for producing Kernels
 - Attendees: ~25 (KPLO SPICE producers, KPLO scientists, open lecture to public)
- #2: For SPICE Users (3 days, November 2019)
 - Full SPICE training class using preliminary predicted KPLO spice kernels
 - 2019. 11. 11 (MON)~ 11. 13 (WED), KARI
 - Attendees: ~40 (KPLO scientists, general scientists, open lecture to public)



Diploma of **SPICE Training**

< name >

has completed a training class
in the development of
SPICE-based applications
supporting space science research

Charles H. Acton
NAIF Manager

13 November 2019



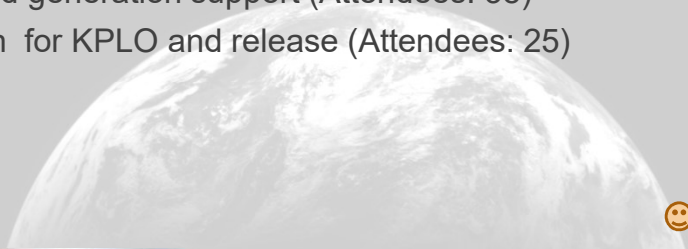

KARI-NAIF KPLO SPICE Training Class in KOREA
2019. 11. 11 – 11. 13 @ KARI



SPICE Training Class (Previous)

NAIF Technical Support of the KPLO Mission: Training Class in Korea

- #3: Consultation for SPICE Users, SPICE PDS4 NPB generation for archive (May 2023)
 - 2023. 5. 17 (WED)~ 5. 18 (THU), KARI
 - KPLO SPICE archive producers, KPLO scientists, open lecture to public
 - Day 1: IK kernels overview and generation support (Attendees: 38)
 - Day 2 : PDS4 NPB generation for KPLO and release (Attendees: 25)



2024 SPICE Training Class in Korea

Title: 2024 KARI-NAIF SPICE Training Class in Korea

Schedule: 2024. Nov. 5(TUE) ~ Nov. 7(THU)

Place: Korea Aerospace Research Institute

Who: 4 NAIF professionals and (~ 30 attendees, anyone interested in SPICE)

What to do:

- a 3-day SPICE class: **full SPICE Training Class** in Korea
 - for Scientists, Engineers, KPLO SPICE Users, and also (open to) **participants from foreign countries.**

If you have any questions or interested in SPICE Training Class, contact Jo Ryeong Yim <jryim@kari.re.kr>.

2024 SPICE Technical Meeting in Korea

Title: 2024 KARI-NAIF KPLO SPICE Technical Meeting in Korea

Schedule: 2024. Nov. 8(FRI)

Place: Korea Aerospace Research Institute

Who: 4 NAIF professionals and KPLO personnel

What:

- 1-day: KPLO SPICE implementation status/plans and PDS4 NPB Archive production and validation
 - For KPLO SPICE users and producers
- **Possibilities for SPICE use on other Korean space missions**

If you have any questions or interested in KARI-NAIF KPLO SPICE Technical Meeting, contact Jo Ryeong Yim < jryim@kari.re.kr >.