



NSIDC DAAC ICESat-2 Quick Look Data in NASA's LANCE

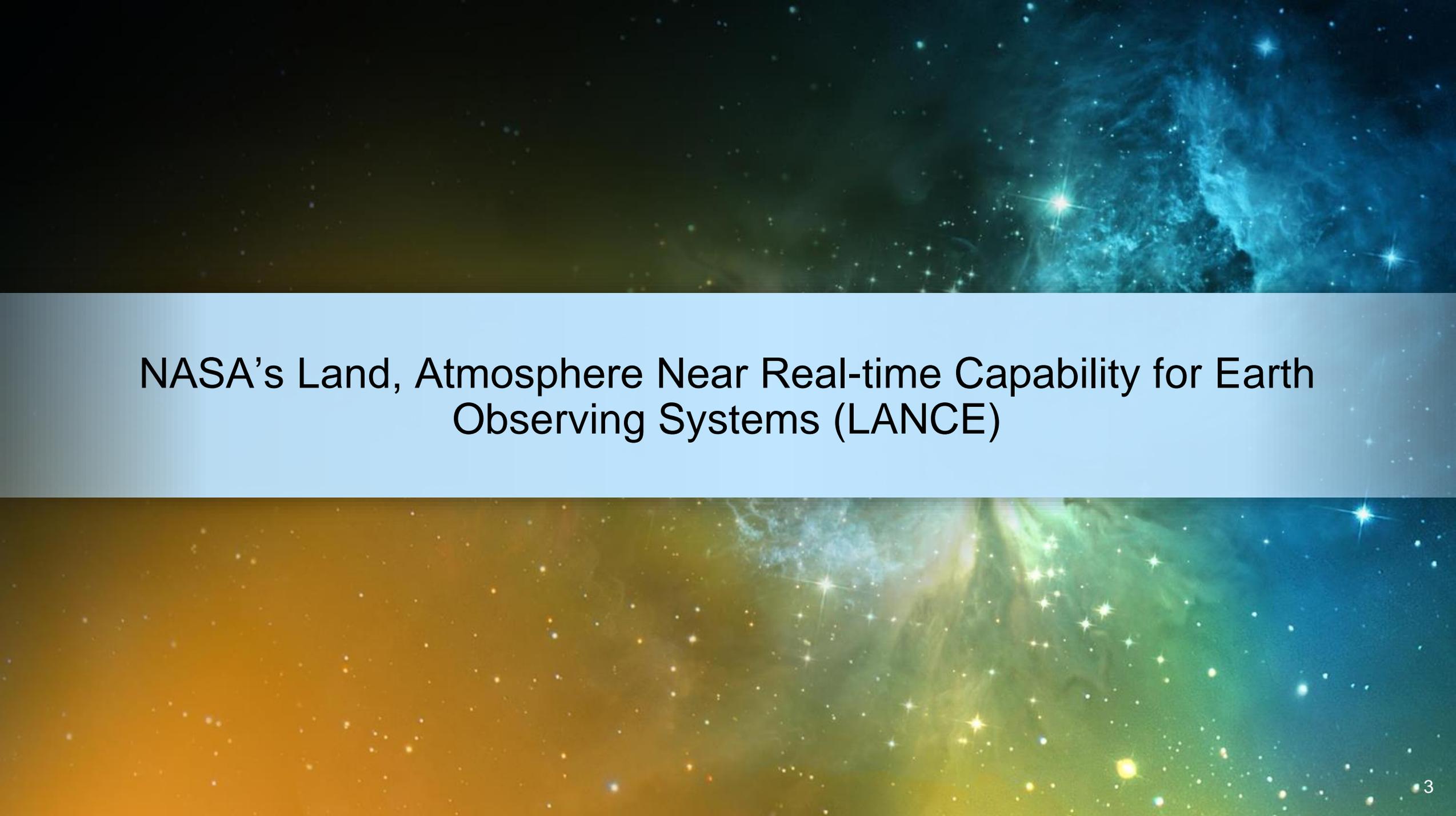
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Karen Michael, LANCE Manager, NASA GSFC; .
David Green, Manager of NASA Earth Science Wildland Fire Program, NASA HQ.

ICESat-2 Applications Town Hall, AGU Fall Meeting 2022
December 15, 2022

A decorative graphic on the left side of the slide. It features a curved, semi-circular shape containing a vibrant space scene. At the bottom, the blue and white horizon of Earth is visible. Above it, a bright yellow sun or star glows. Further up, a large, dark, cratered moon is prominent. In the background, there are other planets, including one with a ring system (like Saturn) and a reddish planet (like Mars). The space is filled with stars and a colorful nebula in shades of blue and green.

Outline

- NASA's Land, Atmosphere Near Real-time Capability for Earth Observing Systems (LANCE)
- NSIDC DAAC ICESat-2 Quick Look Data in LANCE

The background of the slide is a composite of cosmic imagery. The top half features a dark blue and black space filled with numerous small white stars and a prominent, bright blue nebula on the right side. The bottom half shows a similar starry field but with a warm, golden-yellow and greenish glow, suggesting a different spectral filter or a different region of space. The text is centered in a white horizontal band across the middle.

NASA's Land, Atmosphere Near Real-time Capability for Earth
Observing Systems (LANCE)

NASA's Land, Atmosphere Near Real-time Capability for Earth Observing Systems (LANCE)

LANCE: NASA Near Real-Time Data and Imagery

NASA's Land, Atmosphere Near real-time Capability for EOS (LANCE) supports users interested in monitoring a wide variety of natural and human-created phenomena using near real-time (NRT) data and imagery that are made available much quicker than routine processing allows.

Find Data

Most data products are available within three hours from satellite observation. Imagery are generally available 3-5 hours after observation. If latency is not a primary concern, users are encouraged to use the standard science products, which are created using the best available ancillary, calibration and ephemeris information.

Discover NRT Data and Imagery



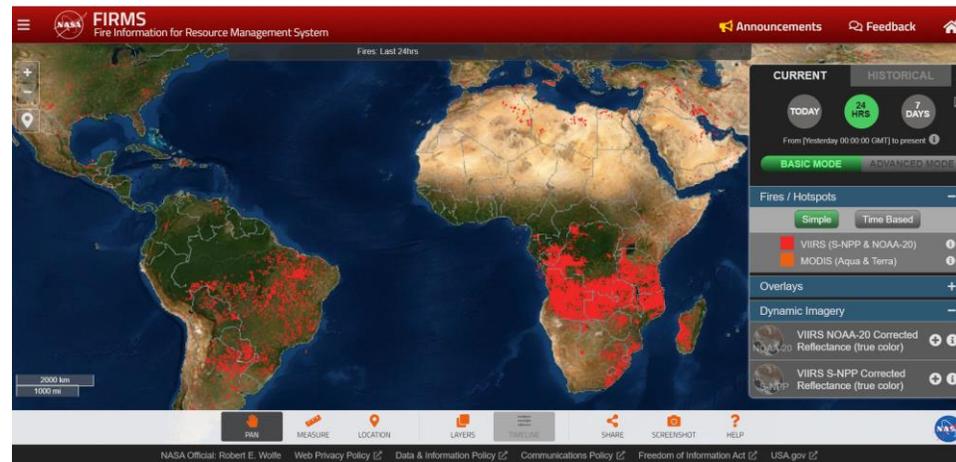
More

About LANCE

What is Data Latency?

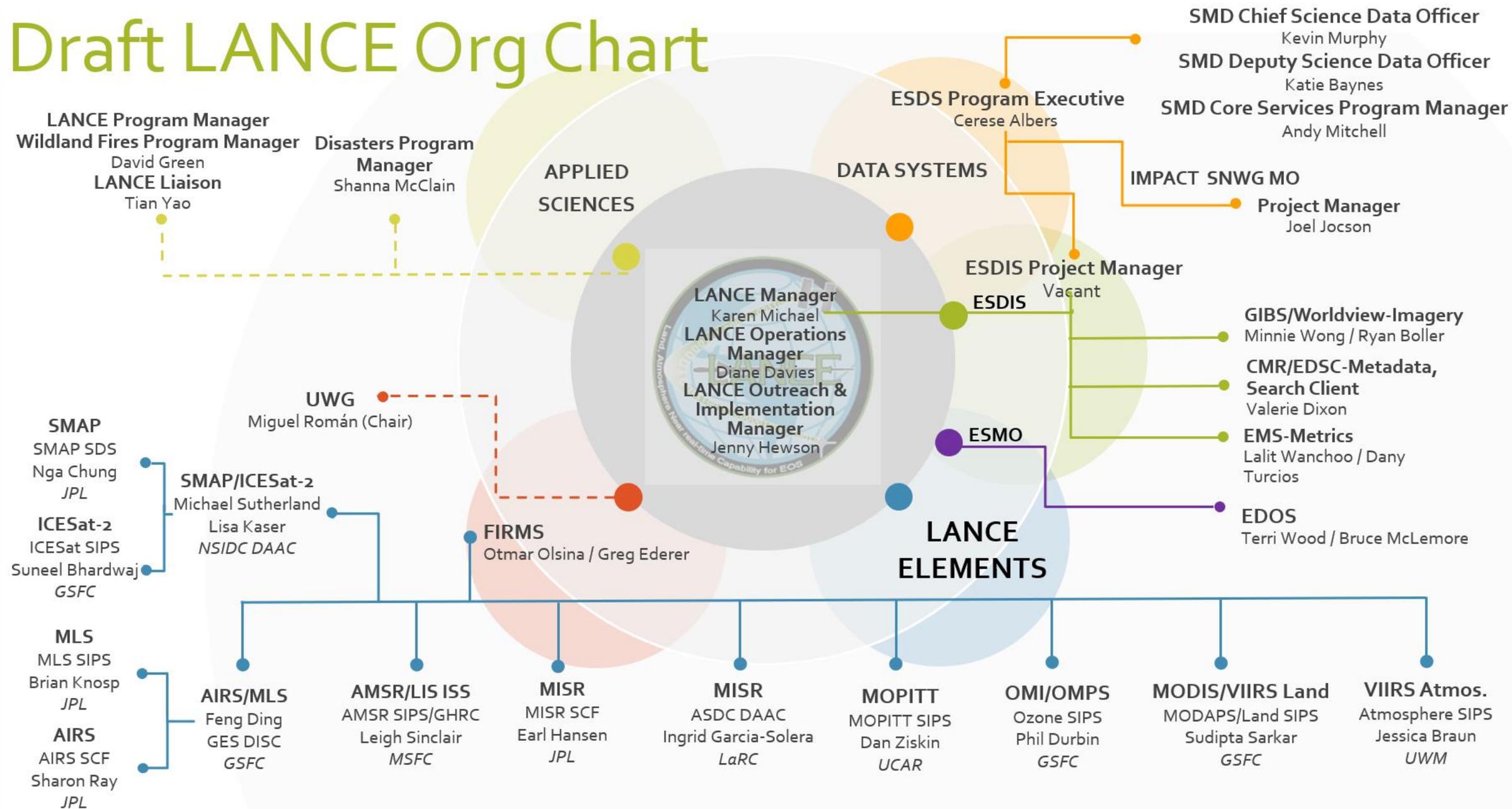
Near Real-Time versus Standard Products

10 LANCE milestones over the past



- LANCE (<https://earthdata.nasa.gov/lance>) supports users interested in monitoring a wide variety of natural and man-made phenomena using data products that are made available much quicker than routine processing allows.
- LANCE provides data products from satellite instruments including AIRS, AMSR2, **ICESat-2**, LIS, MISR, MLS, MODIS, MOPITT, OMI, OMPS and VIIRS.
- The Fire Information for Resource Management System (FIRMS) is a part of LANCE.

Draft LANCE Org Chart



LANCE User Working Group (UWG)

- LANCE is managed by NASA's Earth Science Data and Information System (ESDIS) but steered by a User Working Group (UWG) responsible for providing guidance and recommendations concerning a broad range of topics related to the LANCE system, capabilities, and services.
- The UWG meets at least once a year to ensure that LANCE capabilities are aligned with the NRT community needs.
- The UWG is chaired by Dr. Miguel Roman (Leidos).

LANCE UWG members

Name	Affiliation	Element of Interest
Miguel Román (Chair)	Leidos	All Elements
Robert Brakenridge	University of Colorado, Boulder - Dartmouth Flood Observatory	MODIS
Mike Budde	US Geological Survey (USGS)	MODIS, VIIRS
Josh Cossuth	Naval Research Laboratory (NRL), Monterey/Washington, D.C.	MODIS, VIIRS, AMSR-E
Patrick Duran	NASA Marshall Space Flight Center - Short Term Prediction Research and Transition Center (SPoRT)	MODIS, VIIRS, AIRS, AMSR-E
Vanessa Escobar	NOAA	Early Adopters
Mike Fromm	Naval Research Laboratory (NRL), Washington, D.C.	MODIS, VIIRS
Maggi Glasscoe	University of Alabama in Huntsville (UAH)/NASA Marshall Space Flight Center	MODIS/VIIRS, SAR
Sean Helfrich	NOAA/NESDIS/OSPO	MODIS, VIIRS
Steve Miller	Colorado State University, Cooperative Institute for Research in the Atmosphere (CIRA)	MODIS, VIIRS
Brad Quayle	US Forest Service (USFS)	MODIS, VIIRS
Arlindo da Silva	NASA Goddard Space Flight Center	MODIS, VIIRS, AIRS
Lori Schultz	NASA Marshall Space Flight Center	MODIS, VIIRS
Fred Stolle	World Resources Institute (WRI)	MODIS, VIIRS
Mark Trice	Maryland Department of Natural Resources (MD DNR)	MODIS, VIIRS

NASA Earth Science Applied Sciences Program

						
CAPACITY BUILDING	DISASTERS	HEALTH & AIR QUALITY	WATER RESOURCES	AGRICULTURE	ECOLOGICAL FORECASTING	WILDLAND FIRE
Our skill-building initiatives empower people around the world to solve local challenges using Earth observations and remote sensing technologies.	Resilience. Response. Recovery. When disaster strikes, our team provides decision-makers, communities and governments with life-saving Earth observations.	We use Earth-observing data to inform air quality standards and support solutions for public health initiatives — all to strengthen our communities' well-being.	Water is one of our most invaluable resources. We help monitor the demand, supply and quality of water around the world and the development of tools to promote conservation.	From individual farmers to global food chains, we help optimize decision-making about food availability and access through Earth-observing data.	To protect our natural land, marine and freshwater resources, we promote the use of Earth observations in conservation, sustainability and resource management.	Fire is an essential process for many ecosystems, but uncontrolled fire can be disastrous to anything in their path. We leverage Earth-observing data, applied research, and partnerships to reduce risk before, during, and after a fire.

The background of the slide is a composite of two cosmic images. The top half features a dark blue and black space scene with a prominent, bright blue nebula on the right side and several bright, multi-pointed stars. The bottom half shows a similar scene but with a warm, orange-to-yellow glow on the left side, transitioning into a greenish-blue glow on the right, with numerous bright stars scattered throughout.

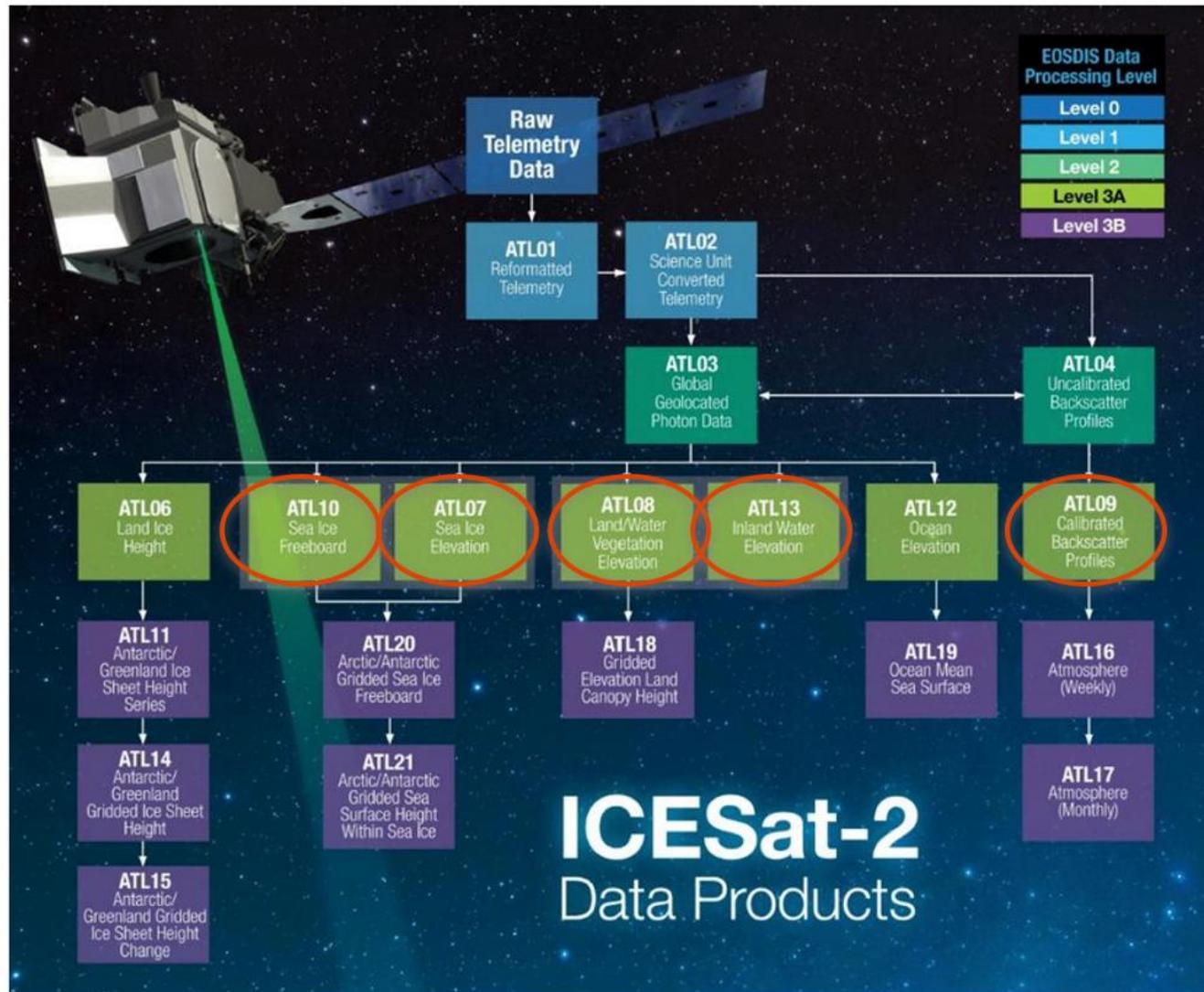
NSIDC DAAC – ICESat-2 Quick Look Data in LANCE

New LANCE Satellite Needs Working Group Products

- In collaboration with the IMPACT project, the [ICESat-2 Expedited/Quicklook data](#) is now available in LANCE in addition to the NSIDC DAAC. These are not Near Real-time (NRT) products but products which are of interest to LANCE users.
 - Great teamwork between the Interagency Implementation and Advanced Concepts Team (IMPACT), ICESat-2 SIPS and Science Office, NSIDC DAAC, LANCE to make it happen
 - Data is available as early as 3 days from observation vs the standard Level 3 product which is a 45 day latency product
 - *Products include: Sea Ice Height, Land and Vegetation Height, Sea Ice Freeboard, Inland Surface Water Height, Atmosphere Cloud Layer Characteristics*



Currently 5 Quick Look Data Sets Available at NSIDC DAAC

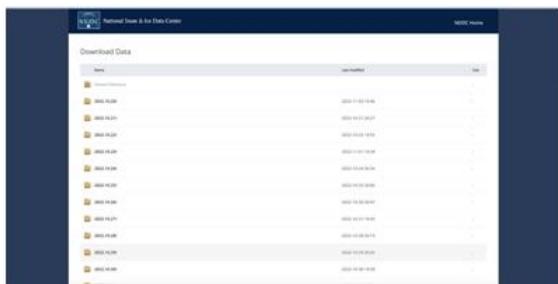


- Sea Ice Height (ATL07QL, V5)
- Land and Vegetation Height (ATL08QL, V5)
- Backscatter Profiles and Atmospheric Layer Characteristics (ATL09QL, V5)
- Sea Ice Freeboard (ATL10QL, V5)
- Inland Surface Water (ATL13QL, V5)

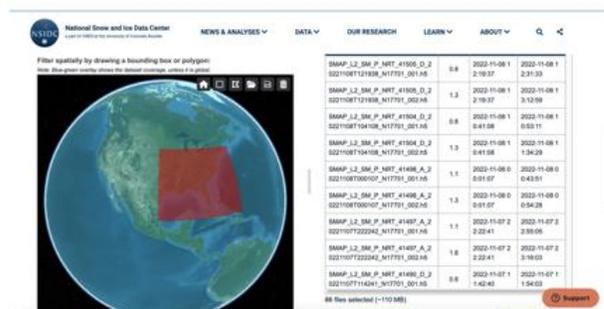
Data Discovery

- Data set landing pages
 - Example: <https://www.NSIDC.org/data/ATL07QL>
- EARTHDATA NRT
 - <https://www.earthdata.nasa.gov/learn/find-data/near-real-time/icesat2-nrt>

Data Access



HTTPS file system



NSIDC Data Access Tool



NASA Earth Data Search

Note: NSIDC DAAC system maintenance typically occurs every Wednesday, during which access to ICESat-2 data may not be available. Dataset landing pages have the most relevant information regarding impacts



General Status

- ATLAS/ICESat-2 quick look datasets have a latency of 3 days from acquisition
- The quick look data files will be archived and distributed from NSIDC DAAC until the standard data files are ingested or for a maximum of 3 months in case a standard file does not get delivered.
- ATLAS/ICESat-2 standard datasets have an average latency of 45 days from acquisition

Moving from Version 5 to Version 6

- December 2022/January 2023: ATLAS/ICESat-2 data will version up from Version 5 to Version 6, including the quick look datasets.
- All registered users will receive detailed email update on the release of the new version.
- Information will also be distributed via banners on data set landing pages and EARTHDATA NRT website.



How to become a registered user?

- Subscribe to your data set of interested on the NSIDC DAAC landing page
 - e.g. [NSIDC.org/data/ATL07QL](https://nsidc.org/data/ATL07QL)

Home > Data > ATLAS/ICESat-2 L3A Sea Ice Height Quick Look, Version 5

ATLAS/ICESat-2 L3A Sea Ice Height Quick Look, Version 5 (ATL07QL)

DATA SET: ATL07QL

USER GUIDE CITATION **SUBSCRIBE** SERVICE

This is the most recent version of these data. [Version Summary](#) v

Overview

ATL07QL is the quick look version of ATL07. Once final ATL07 files are available the corresponding ATL07QL files will be removed. ATL07 contains along-track heights for sea ice and open water leads (at varying length scales) relative to the WGS84 ellipsoid (ITRF2014 reference frame) after adjustment for geoidal and tidal variations, and inverted barometer effects. Height statistics and apparent reflectance are also provided. The data were acquired by the Advanced Topographic Laser Altimeter System (ATLAS) instrument on board the Ice, Cloud and land Elevation Satellite-2 (ICESat-2) observatory.

- Overview
- Data Access & Tools
- Documentation
- Help Articles

Thank you!

NASA's Land, Atmosphere Near Real-time Capability for Earth Observing Systems (LANCE)



<https://earthdata.nasa.gov/lance>

NASA Earth Science Applied Sciences Program



<https://appliedsciences.nasa.gov/>

ICESat-2 Quick Look data in EARTHDATA NRT



<https://www.earthdata.nasa.gov/learn/find-data/near-real-time/icesat2-nrt>

Subscribe to your ICESat-2 data set of interested on the NSIDC DAAC landing page



Example: <https://www.NSIDC.org/data/ATL07QL>

Many thanks to my co-authors Lisa Kaser, Karen Michael and David Green!

Acknowledgements: Diane Davies, Jenny Hewson and Robert Wolfe.

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