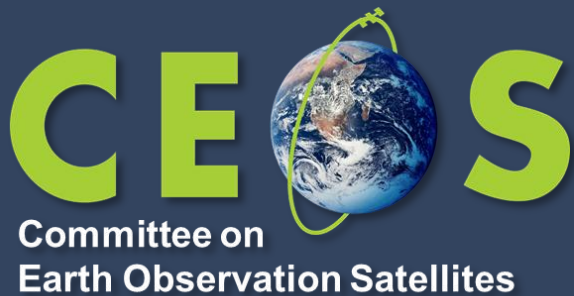


EO for Resilience: NASA's SIT Chair Term & Disasters Program



Eleanor Pierel
WGDisasters International
Workshop
16 September, 2026

❖ Priority 1: Water Planet- Seeing Earth's Water from Space

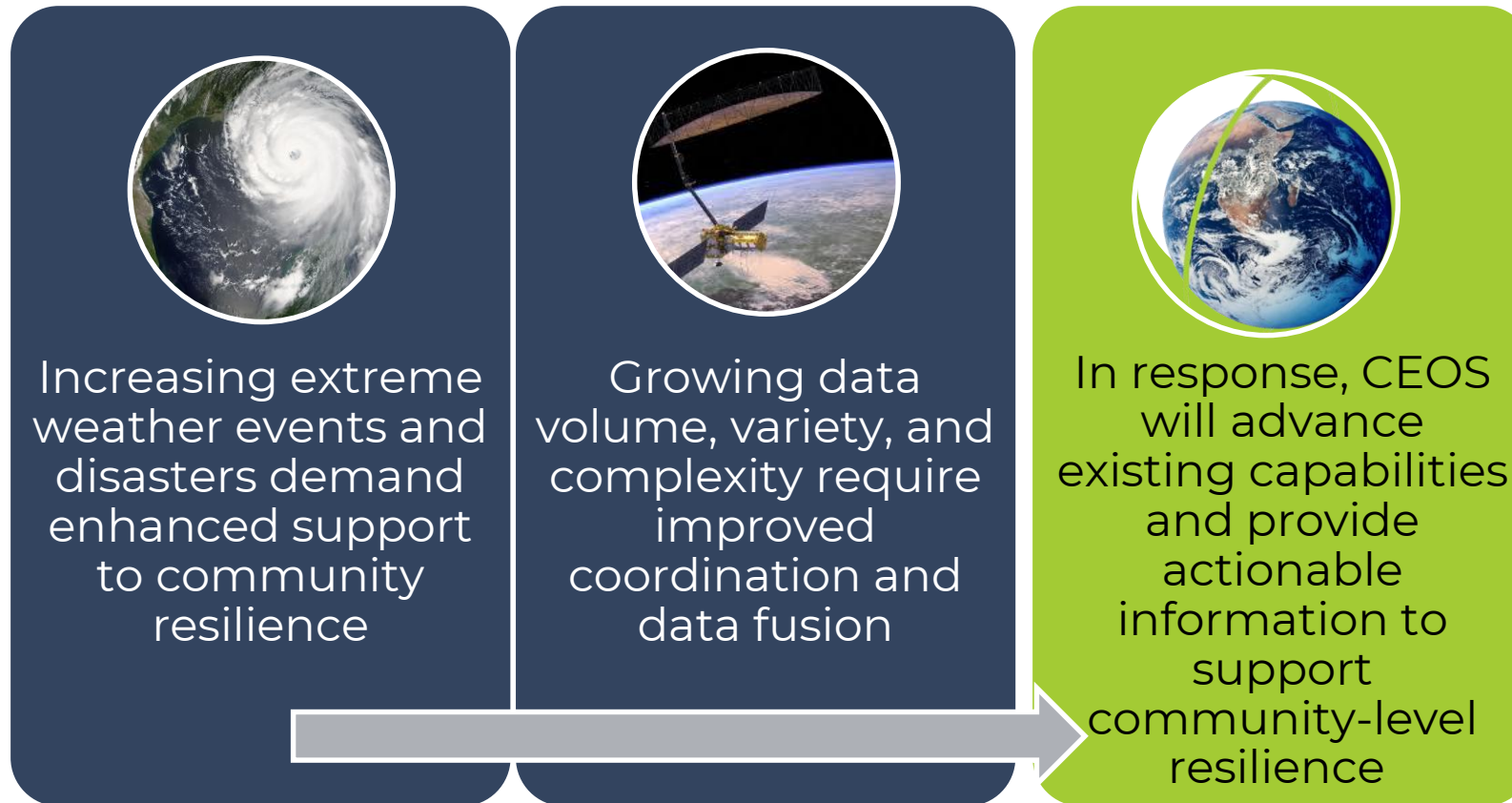
- Advance understanding of Earth's water cycle by monitoring terrestrial waters, coastal regions, and oceans from space. Transform this knowledge to actionable insights to enhance water use efficiency, improve water quality, and enhance resilience to water-related hazards such as droughts, floods, and storms.

❖ Priority 2: Connected Data for Community Resilience

- Advance community-level resilience by leveraging CEOS disaster risk reduction successes and partnerships to enhance cross-collaboration, data interoperability, and actionable information.

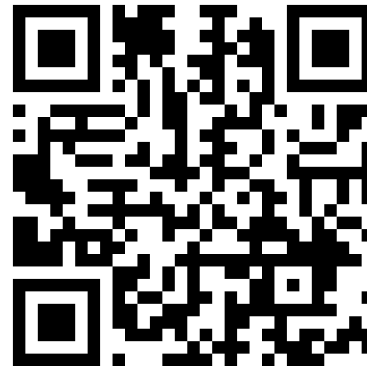
Connected Data for Community Resilience

CEOS works across a data-driven value chain, from observations to impact.



CEOS / Our Work

Our Work

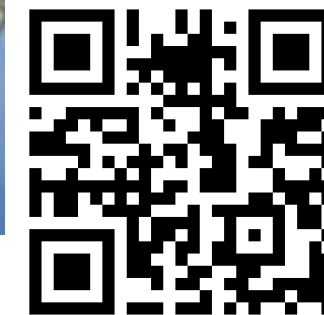
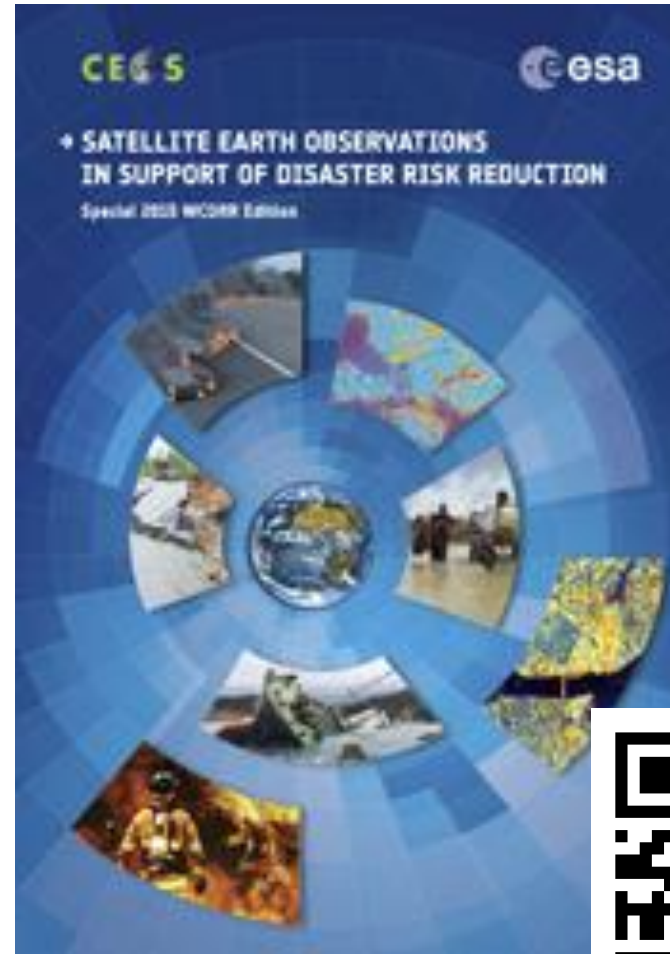


WILDFIRE SATELLITE MISSIONS PORTAL

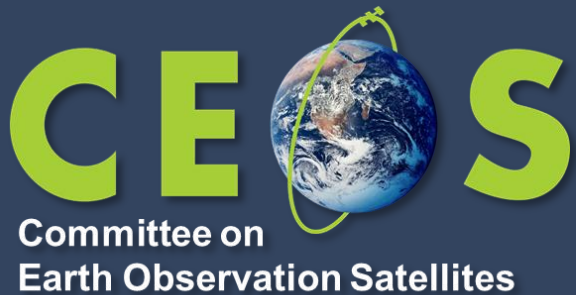
Timelines

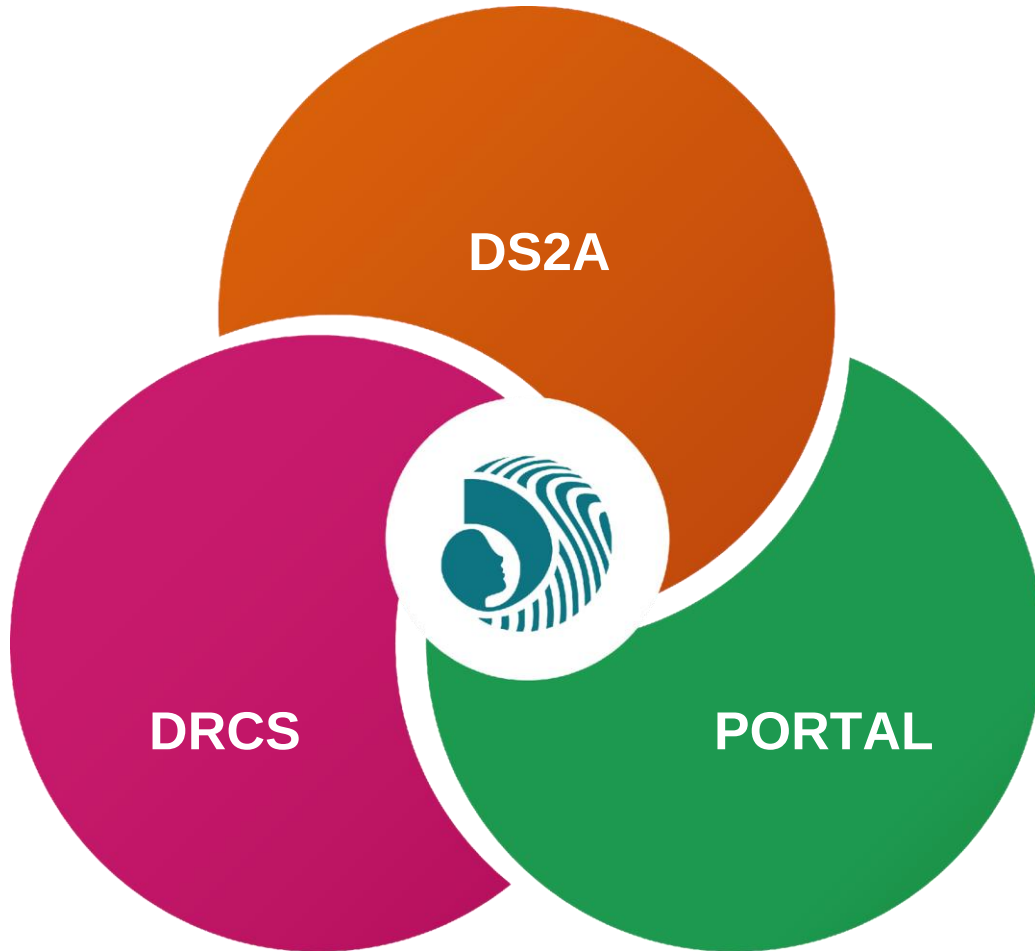
LEO Missions

GEO/HEO Missions



NASA Disasters Program





- **DS2A** - Partner-led and impact-focused applications for disaster risk reduction, recovery, and resilience across urban, peri-urban, and rural communities
- **DRCS** - Rapid and coordinated provision of Earth science solutions to emergency responders during life-saving operations
- **PORTAL** - Skilled and effective disaster management communities through advanced awareness, understanding, and application of disaster science



New Disasters Portal Soon!

[About Us](#)[Explore by Need](#) ▼[Explore Data](#) ▼[Resources & Learning](#) ▼

Disasters PORTAL

Empowering disaster insights with actionable
Earth science information

[Learn About Us](#)

PREPARE

Anticipate risk and boost readiness →

RESPOND

Support real-time decisions with
timely insights →

RECOVER

Assess impacts and rebuild stronger →

BUILD RESILIENCE

Safeguard communities for enduring
impact →

The background of the title slide is an aerial photograph of a densely packed informal settlement, likely a slum. The image shows a vast number of small, closely packed structures with various colored roofs, creating a complex, textured pattern. The overall tone is somewhat desaturated, with a focus on the geometric shapes of the buildings.

TRANSFORMING HUMANITARIAN ACTION WITH SATELLITE DATA





DATA STUDIO PACKAGES



WILDFIRES

A package for building wildfire early warning workflows and rapid response tools.



FLOODING

A package for building and deploying flood early warning workflows and rapid response tools.



LANDSLIDES

A package for building and accessing landslide monitoring and risk reduction tools.





DATA STUDIO PACKAGES



WILDFIRES

A package for building wildfire early warning workflows and rapid response tools.

CONTRIBUTE →



FLOODING

A package for building and deploying flood early warning workflows and rapid response tools.

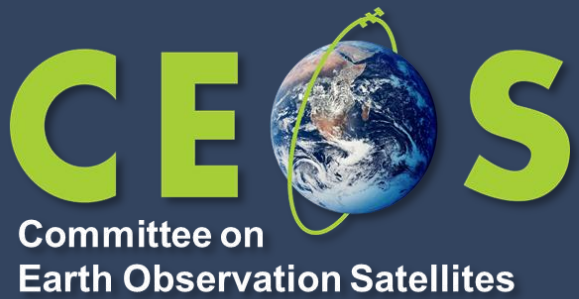


LANDSLIDES

A package for building and accessing landslide monitoring and risk reduction tools.



NISAR



NISAR Applications Team



Shanna McClain
Program Applications
Manager, HQ



Cathleen Jones
Science Team
Applications Lead,
JPL



Karen An
Mission Applications
Lead, JPL



Elodie Macorps
Mission Applications
Lead, GSFC



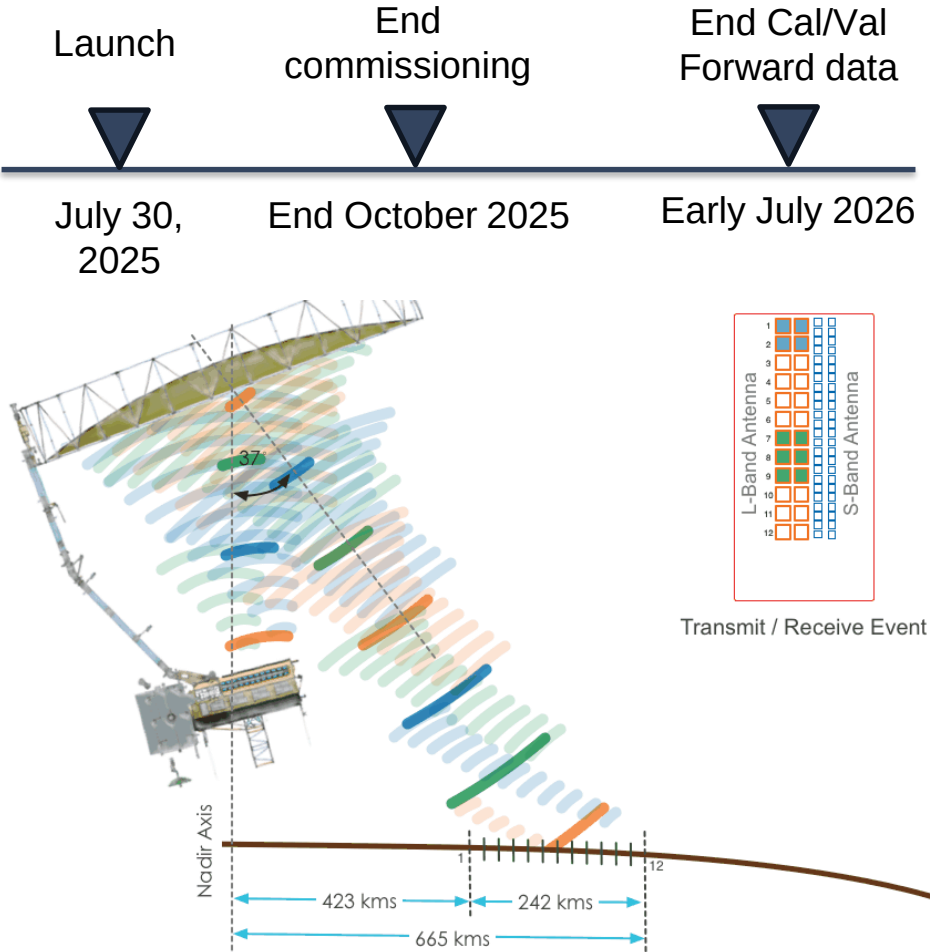
Erika Podest
Outreach & Training,
JPL

NISAR Overview



Launched on July 30, 2025; Operating in science mode since mid-October; Spacecraft and payload working nominally

NISAR Characteristic	Enable
L-band (24 cm wavelength)	High temporal coherence; penetration
S-band (9.4 cm wavelength)	Sensitivity to light vegetation
SweepSAR technique with swath > 240 km	Global data collection
Single/Dual/Quad Polarimetry	Surface/vegetation characterization
12-day exact repeat	Rapid Sampling
6 AM / 6 PM polar orbit	Imaging of higher latitudes
3 – 10 meters mode-dependent resolution	Small-scale observations
3 yrs (NASA) / 5 yrs (ISRO) of science ops	Time-series analysis
Pointing control < 273 arcseconds	Deformation interferometry
Orbit control < 500 meters	Deformation interferometry
Observation duty cycle > 50% (L) / 10% (S)	Complete land/ice coverage
Left-only pointing (Left/Right capability)	Uninterrupted time-series Rely on Sentinel-1 for Arctic



NISAR – Higher Level Products



OPERA Products Derived From NISAR



Level-3 products

DSWx
Surface Water Extent
Lake Mead, NV, USA
Lake level in 2016 (light blue) compared to 2022 lake level (dark blue).

Description	Maps surface water detections
Distribution	Physical Oceanography Distributed Active Archive Center (PO.DAAC)
Resolution	Every 12 days @ 30 m posting
Latency	< 24 hours after input data is available
Map Tile Projection	Military Grid Reference System (MGRS)
Geographic Scope	Near global
Beginning of Product Record	**June 2026

Available in November 2026!

DISP
Surface Displacement
Mauna Loa, HI, USA
Surface deformation map showing how much the ground moved following the 2022 eruption. Colors show contours of displacement.

Description	Maps surface displacements along the satellite line-of-sight
Distribution	Alaska Satellite Facility Distributed Active Archive Center (ASF DAAC)
Resolution	Every 12 days @ 30 m posting
Latency	< 72 hours after input data is available
Map Tile Projection	Universal Transverse Mercator (UTM)
Geographic Scope	*North America
Beginning of Product Record	**June 2026

Available in March 2027!

Level-4 product

VLM
Vertical Land Motion
New York City, NY, USA
Vertical land motion map, indicating areas where the ground has either sunk (in blue) or risen (in red) between 2016 and 2023.

Description	Maps surface displacements in vertical and horizontal directions
Distribution	Alaska Satellite Facility Distributed Active Archive Center (ASF DAAC)
Resolution	Every 30 days @ 120 m posting
Latency	< 72 hours after input data is available
Map Tile Projection	Universal Transverse Mercator (UTM)
Geographic Scope	*North America
Beginning of Product Record	**June 2026

Available in February 2029!

www.jpl.nasa.gov/go/opera
www.nasa.gov

*North America = United States (USA) and U.S. Territories, Canada within 200 km of the US border, and all mainland countries from the southern U.S. border up to and including Panama.
**Record starts with planned NISAR calibrated data release

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NISAR Bridge

Maximizing the impact of NISAR for the science and applications community

- Automated Cloud Scalability
 - Automate science workflows into a scalable architecture designed for NISAR volumes
- Standardized GIS Integration
 - Create GIS-ready products to ensure immediate interoperability
- On-Demand Accessibility
 - Empower the community by providing custom products through a simple, easy-to-use interface



Led by ASF with support from
NISAR Science Teams and driven
by NISAR Workshop Needs



Learn more!



TRAINING

Harnessing NISAR: Next-Generation Radar Observations for Earth Applications

This ARSET training introduces users to the characteristics and demonstrates workflows for accessing, visualizing, and

TRAINING

TIMES

English Sessions: July 2-16, 2026,
11:30 a.m. - 1:30 p.m. EDT (1530-1730 UTC)

Spanish Sessions: July 2-16, 2026,
2:30-4:30 p.m. EDT (1830-2030 UTC)



Monitoring Surface Water with SAR for Water Resource Management

This ARSET training demonstrates the use of NISAR SAR data and OPERA surface water products to detect, map, and monitor surface water.



TIMES

English Sessions: Oct. 20-27, 2026,
11:00 a.m. - 1:00 p.m. EDT (1500-1700 UTC)

Spanish Sessions: Oct. 20-27, 2026,
2:00-4:00 p.m. EDT (1800-2000 UTC)

TRAINING TYPE

Online Instructor-Led

LANGUAGE

English ▾

LEVEL

Intermediate

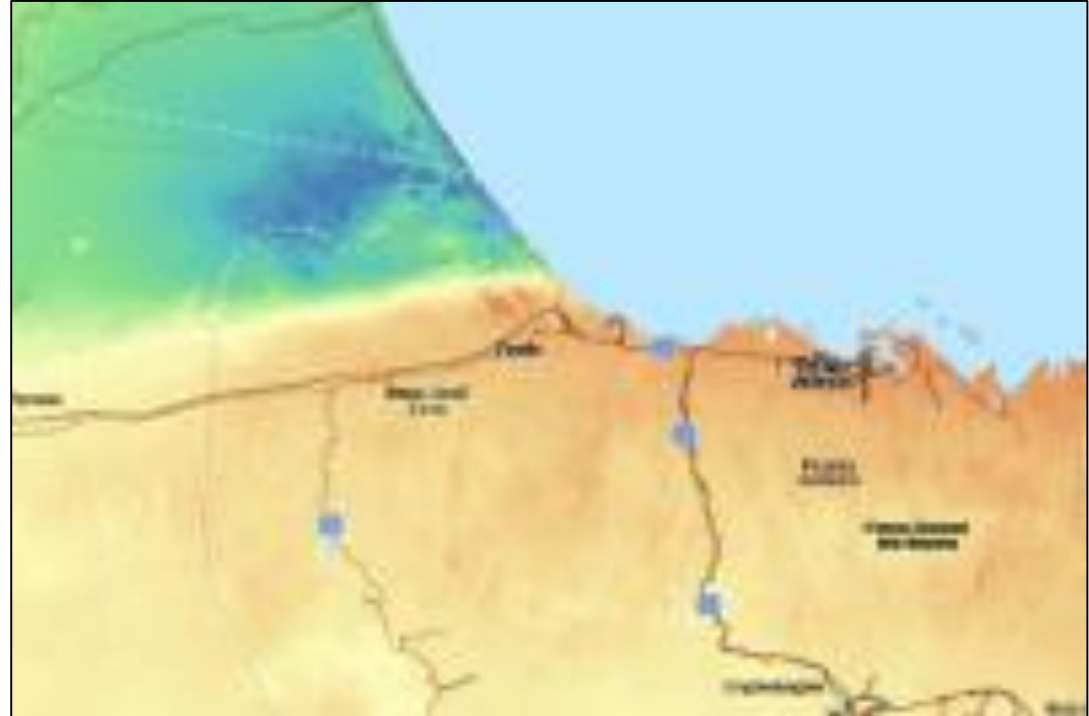
Register for English Sessions: Oct. 20 &
27, 2026, 11:00 a.m. - 1:00 p.m. EDT (UTC-
4)



- ❖ CEOS has many resources for disaster science
- ❖ NASA's **Disasters Program** covers the entire disasters lifecycle through innovative science and applications
- ❖ **NISAR** trainings are available and there will be higher level products soon

Thank you!

Eleanor.Pierel@nasa.gov



Line of Sight (LOS) displacement maps generated from NISAR
(NASA-JPL/Caltech Team, NISAR Operations Science Team)