OBSERVING EARTH FROM SPACE:
An Introduction to Astronaut Photography of Earth
Archive Webinar Knowledge Log
[Webinar link: https://go.nasa.gov/2YOhuWn]

GOAL: This document is designed to provide educators with considerations and options on how to actively engage their audiences (mostly upper elementary and older) with this webinar archive or content associated with this webinar. We highly encourage you to consider these options, modify aspects as needed, and incorporate your own ideas as you know what best meets the needs of your audience(s) and your learning environments.

CONSIDERATION #1: ARCHIVE WEBINAR KNOWLEDGE LOG (Activity Sheet)
Note: This is a fillable document available on the archive webinar website
   a. Provide your learners with the Activity Sheet (Archive Webinar Knowledge Log).
   b. Have your learners fill out the Archive Webinar Knowledge Log as they watch the webinar archive.
   c. Have your learners save a copy of their Archive Webinar Knowledge Log (adding their name to the file name) to provide their completed activity sheet to you.

CONSIDERATION #2: REFLECT & SHARE USING ONLINE COLLABORATION TOOLS
Note: Consider using FlipGrid, VoiceThread or other tools you may be familiar with.
STEP 1: Have learners reflect on and share their responses to the following questions *(these are sample questions – you can revise them to best meet your audience needs)*:
   1) What surprised you about what this scientist shared about their work at NASA? Why?
   2) Describe something this scientist shared during the webinar that relates to something you have studied in school?
   3) If you had the chance to use astronaut imagery as part of a research project, what type of feature would you study and why? Be sure to reference details discussed in the webinar archive as part of your answer.

STEP 2: Have learners comment on other learner answers:
   1) After learners have created their reflections, have them listen to and provide comments/reflect on at least three other learner contributions.
   2) Learners should focus on what they liked or found interesting from at least one of the responses provided by other learners. Learner comments should be encouraging and positive. Learners might consider expanding on something the learner discussed, discuss questions that came to mind as they listened to the learner response, etc. Learners should aim to reference information shared in the webinar archive as part of their reflection.

CONSIDERATION #3: ENCOURAGE LEARNERS TO GET INVOLVED IN ACTIVITIES
Note: Consider becoming familiar with these activities before having your learners get involved.
   ➢ **FEATURE HUNTER:** https://eol.jsc.nasa.gov/BeyondThePhotography/FeatureHunter/
   This activity asks users to draw boxes around geographic features like volcanoes, cities, glaciers, and more. This input helps create training data for machine learning algorithms to automatically identify features in astronaut photos. This activity is most suitable for upper elementary learners and older.

➢ **IMAGE DETECTIVE:** https://eol.jsc.nasa.gov/BeyondThePhotography/ImageDetective/
This activity asks users to find the latitude/longitude center points of astronaut photos and list visible features. This activity is challenging and is likely most suitable for high school learners and older.

CONSIDERATION #4: EARTH AS ART

Note: This type of activity is great for audiences of all ages!

Many images of Earth from space showcase a variety of textures and colors and artful designs of Earth. Consider having the audiences you work with use their artistic abilities to recreate some of the scenes visible in these images. Our Gateway to Astronaut Photography of Earth website has a few places for you to consider starting – but also consider having your audiences browse the imagery available online to find image(s) that especially inspire them.

- Earth Art: Mountains: https://eol.jsc.nasa.gov/Collections/EarthArt/mountains.htm
- Earth Art: Water: https://eol.jsc.nasa.gov/Collections/EarthArt/water.htm
- Earth Art: Clouds: https://eol.jsc.nasa.gov/Collections/EarthArt/clouds.htm
- Earth Imagery Collections: https://eol.jsc.nasa.gov/Collections/