# Ocean Worlds Working Group Update

Cynthia Philips and Mike Bland



- New cross-AG working group chartered by OPAG, SBAG, and NOW
- Co-Chairs: Cynthia Phillips (JPL) and Mike Bland (USGS)
- Goal: Create an actionable ocean worlds exploration strategy
  - Specific, prioritized science goals
  - Identify needed technology development
  - Multi-decadal timescale
  - Fit within NASA's existing framework

Objective: The production of a strategy document by the end of the calendar year

FLOW: 5/30/2024

# Why do we need the OWWG? How is it different from OPAG/SBAG/NOW?



- The OWWG is a response to the 2023 Decadal Survey's call for an Ocean Worlds program.
- OPAG and SBAG have diverse constituents with different priorities
  - OPAG includes the both the giant planets and OW community
  - SBAG includes everything from dust to KBOs
- The OWWG is specifically "cross-AG" and open to entire OW community

### What is an Ocean World?



- OPAG/SBAG/NOW fall under PSD and we therefore are focused on Oceans beyond Earth.
- The OWWG is focused on missions that explore ocean worlds and we therefore focus on our Solar System (visit!).
- We include bodies that currently either have or may have substantial subsurface liquid water reservoirs.
  - Europa, Ganymede, Callisto, Mimas, Enceladus, Dione, Titan, Uranian
    Satellites, Triton, Ceres, Pluto, large KBOs.
- We explicitly do not include Mars and Venus (ancient oceans) and lo (magma oceans)

# Objective: Create a document that describes a strategy for exploring ocean worlds in our Solar System

#### Approach:

- Community driven
- Survey existing literature to identify relevant material
- Identify gaps in scientific understanding and technology development
- Prioritize science goals to inform the most urgent technology needs.
- New innovative technology solutions can enable new scientific investigations.

### Two subgroups:

- Science Goals
  - Tasked with identifying and prioritizing specific science goals that drive future exploration of ocean worlds
- Technology Roadmap
  - Tasked with identifying the technology development needed to explore ocean worlds.
    - Instruments and architectures

#### **Outcome:**

 A prioritized strategy that combines science goals, technology development, and future mission opportunities over the next 3-5 decades



# **Co-Chairs**





Cynthia Phillips (JPL)



Michael Bland (USGS)

# We have created two subgroups:



### Science Goals Subgroup Leads



Angela Marusiak (U of Arizona)



Misha Zolotov (Arizona State)

Joining Today

## Technology Roadmap Leads



Paula do Vale Pereira (Florida Tech)

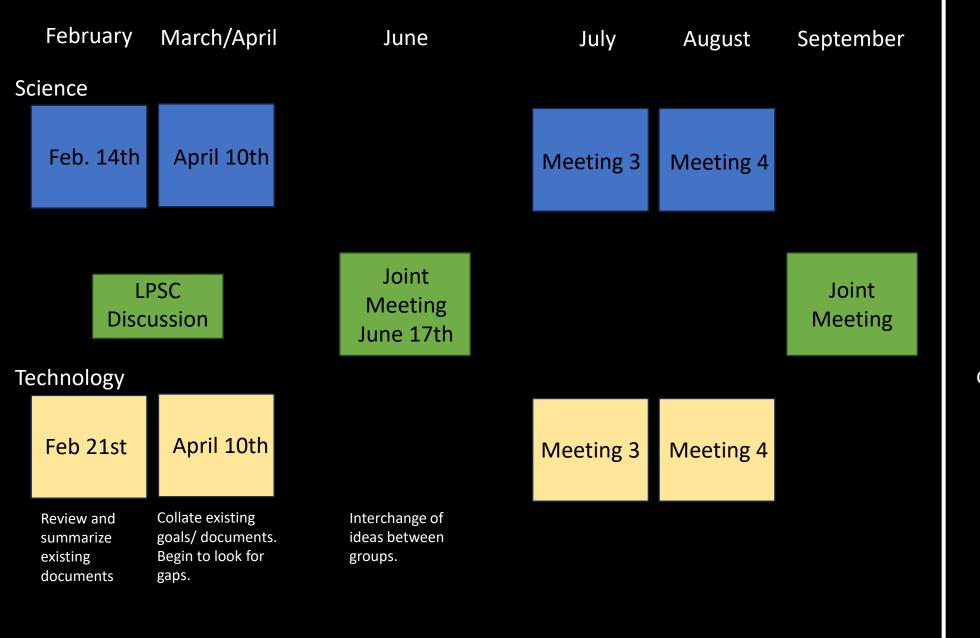


Kate Craft (APL)



Peter Willis (JPL)

**Future Panel** 





Leadership Prioritization and Writing

Draft out to the community for comment period

FLOW: 5/30/2024

## **Current Activity**

OWWG

- Subgroups have reviewed relevant community documents
  - Decadal Surveys
  - Roadmaps (ROW, Technology)
  - Strategy documents (Astrobiology)
  - White papers
  - Publications
- Science subgroup is formulating key questions to be discussed at joint meeting in June
  - Joint meeting breakout sessions will include Science and Technology subgroup representatives working through these questions to begin to identify critical measurements.

# How to help...



Participation is welcome at the June 17<sup>th</sup> meeting

• Previous participation is not required.

Join the OWWG mailing list:

https://www.lpi.usra.edu/owwg/

Join the OWWG Slack workspace:

