

Ice Giant Mission

- Third flagship proposed in Vision and Voyages after Mars sample return and Europa orbiter was an ice giant mission
- Mars sample return and Europa Clipper are under way, it is time to turn our attention to the ice giants
- Given long development time and specific launch windows, we cannot wait much longer to start (pre-project work needs to start now)
- This is consistent with the recommendation in V&V, that the ice giant mission be initiated in the decade 2013 – 2022

High level Timeline

Working Backwards

- 2029 Launch window to Neptune opens
- 2025 Start Phase C/D (3 – 4 years duration, depending on exact opening of launch window)
- 2023 Start Phase B
- 2022 Start Phase A
- 2021 Select Payload
- 2020 (mid 2020) Release AO
- 2020 (early 2020) Send out draft AO

NASA HQ needs to name a Program Scientist; Need to start the pre-project office

Pre-project Programmatic Tasks

- Trajectory development and identification of launch window(s) to Uranus and Neptune. The launch window will set the time scale for the mission
- Project high level schedule. Working backwards from the opening of the launch window when does phase C/D need to start? Phase B? Phase A? Fortunately the magnetospheric environments of the ice giants are benign so there is no need for technology development similar to Europa.
- Project structure. Can a flagship be competed? If not, which center/JPL will take the lead? Will the spacecraft be built by that institution or by industry? Likely launch vehicle?
- Payload selection. When will the AO need to come out? Will the payload be competed instrument by instrument or payload vs. payload?
- Identify possible foreign contributions
- Very rough estimation of budget, funding profile needed
- RTG and any other technology development needed