You are tasked with providing a report on a mission that will characterize planetary atmospheres and/or interiors.

Each team of students will give an oral presentation and a written report on one of the missions listed below. The oral presentation should be ~15 minutes using projected slides (Powerpoint, etc.) followed by ~10 minutes of questions and discussion (25 minutes total). The written report should be a summary of your presentation, with additional technical details that you may not have time for. It should be 4-6 pages (including figures, tables, and references) and should identify the authors of the sections. Each team member should contribute orally to the presentation and in writing to the report. Slides should be submitted at least 1 hour before the beginning of class.

Students should divide into groups using a Doodle poll distributed separately. Teams should have 3-4 members that are not an identical set as in the previous discussion.

The missions are described on the second page. While each mission has an associated set of questions, the presentations should not be limited to those topics. Presentations should focus on the science questions driving each mission and on the data that will yield measurements to answer those questions. In this discussion, you are particularly encouraged to make *quantitative performance estimates* including order of magnitude estimates, scaling from previous measurements, and computer simulations of mission data and performance. You should expect quantitative questions about mission design choices (e.g. what size telescope is needed to measure a feature that you describe?) and the expected data that will be produced.
1. The Juno Mission
   Key Questions:
   1. What scientific questions motivate this mission?
   2. How will Juno answer these questions?
   3. What are the spectral features that will be used to constrain Jupiter’s composition and how are they measured?
   4. Describe how the gravitational moments measured by Juno will constrain the mass distribution in the interior. Show a set of interior density profiles that are consistent with plausible Juno gravity measurements.

2. JUpiter ICy moons Explorer (JUICE)
   Key Questions:
   1. What scientific questions motivate this mission?
   2. How will JUICE answer these questions?
   3. How does JUICE build on Juno?
   4. How will JUICE characterize ocean and sub-surface layers?
   5. How does JUICE relate to astrobiology?

3. Venus Climate Mission (VCM)
   Key Questions:
   1. What scientific questions motivate this mission?
   2. How did the VCM propose to answer these questions?
   3. What is currently known about the Venusian atmosphere and how specifically would the VCM add to that knowledge?
   4. How do the science goals of the VCM trace to the proposed instruments?