

Astronomy 303: James Webb Space Telescope Call for Proposals

We invite scientists to participate in Cycle 0 of the James Webb Space Telescope (JWST). JWST is going to revolutionize many fields in astrophysics, but we would like to focus on two of the most exciting. Please consider either (a) detecting the first galaxies (studying the stars that make them up, or the supermassive black holes at their centers) or (b) characterizing extrasolar planets (their atmospheres or the direct detection of new planets).

Abstract deadline: Please discuss your plan with Michael or Jenny by **Nov 28**. Please have a short outline or abstract ready by that date.

Proposal deadline: **Dec. 14**, the final day of class. Send to Michael and Jenny by e-mail, in PDF format. We recommend using a LaTeX template (which we will provide), but this is not required. Please do not include your name on the proposal; you will not be identified when your proposal is distributed to your fellow students.

Review Process: The class will meet on Jan 9 for a mock Telescope Allocation Committee meeting, in which we will peer review (anonymously) each others' proposals. Each student will be asked to read five proposals as part of the reviewing process. We will send you your list of proposals to read over the Winter break.

Requirements: Total page limit: 5-7 pages (single-spaced), not including figures and references. Spend roughly 2-3 pages on scientific background (this will be longer than a real proposal). Spend roughly a page on Experimental Design. Spend roughly a page on Technical Justification (this is where you present an exposure time calculation based on the sensitivities given in the materials provided below).

Content Guidance:

There are a large number of instruments/capabilities that will be available with JWST. We suggest that you focus on one of the two instruments, using their **imaging** capabilities:

- NIRCam
<http://www.stsci.edu/jwst/instruments/nircam/>
<http://www.stsci.edu/jwst/instruments/nircam/docarchive/NIRCam-pocket-guide.pdf>
- MIRI
<http://www.stsci.edu/jwst/instruments/miri/>
<http://www.stsci.edu/jwst/instruments/miri/docarchive/miri-pocket-guide.pdf>

There is additional information about JWST science and instrumentation on the course webpage:
<http://www.astro.princeton.edu/~strauss/AST303/JWST>

Criteria for judging proposals: These are the criteria given to all *HST* TAC members, and we will follow these guidelines:

- The scientific merit of the program and its potential contribution to the advancement of scientific knowledge
- The program's importance to astronomy in general
- The extent to which the proposal demonstrates sufficient understanding to assure a thorough analysis of the data
- A demonstration that the unique capabilities of JWST are required to achieve the science goals of the program

Important elements to include in the proposal: Explain why your science question is of pressing interest to astronomy. Justify that the unique combination of capabilities of the JWST – high angular resolution, NIR-MIR wavelength coverage, and amazing sensitivity – are required for your experiment. Also, comment on how you selected your target or targets and why you think the sample size is sufficient to address your science question.