

THE ASTRONOMER'S PROPOSAL TOOL FOR JWST

The Astronomer's Proposal Tool (APT) is the application you will need to use to develop and ultimately submit JWST proposals. You should already have APT downloaded and installed before starting. See the APT Downloads page if necessary: apt.stsci.edu

There are short video tutorials on YouTube for help with various aspects of APT [here](#). If you have never used APT before, you might want to watch the [APT GUI overview](#) video first.

To get started, open APT and download the test proposal ID that has been created and assigned to you. Use the *File...Retrieve from STScI* option in APT along with the proposal ID number listed for you from the Table below. Note that APT will be treating these like "previously ingested proposals" and so some details will look different than if you were starting a new proposal from scratch. (*Bonus: Open a "New JWST proposal" in APT and compare to your downloaded version.*)

As you go through this exercise, you may see red X's indicating "errors," or at least initially simply missing information. You may enter dummy text in text blocks to make errors go away, or simply select "legal" items. The point of this exercise is for you to learn basic APT functionality; for instance, do not worry about entering scientifically accurate information into exposure parameters in the templates unless this is explicitly requested by the directions.

The bulk of your homework assignment is to create observations for the following 6 scenarios in your proposal ID. Below each scenario, we provide pointers to JDox and video help along the way, but if you have unresolved questions, use the [JWST Help Desk](#). At the end of the exercise, you will submit your test proposal to STScI for informal review using the same procedure that you would use for a real proposal submission. It is suggested you save your work frequently rather than waiting to the end of the exercise.

1. Create a mosaic using NIRC*am* Imaging of the galaxy M51 and its companion. Use the Fixed Target Resolver in the Target section of APT to get the coordinate. Use Aladin to choose an orient that works well with the shape/orientation of the galaxy and its companion. Use Aladin to move the target from the center of M51 to the center of the galaxy pair and commit the coordinate change back into the proposal. Check to see if your proposed observation is schedulable. For tracking purposes, change the title of the observation folder to be *M51 NIRC*am* mosaic*.
(You might find the [mosaic video](#), the [APT visit planner](#), and the [Using Aladin and the APT Visit Planner](#) videos helpful for this exercise.)
2. Create an observation of the Coma Cluster that uses NIRC*am* Imaging with MIRI Imaging as a coordinated parallel. Use Aladin to choose a position and orient that simultaneously gets a bright galaxy in each camera's field of view. Check the schedulability of the observation. Label your observation folder *Coma Cluster with parallel imaging*.

(You might find the [JDox page on Parallel Observations](#) useful.)

3. Create a MIRI MRS observation of the central object of HH111 that obtains the full available wavelength coverage. Use Aladin to find a nearby star that can be used for target acquisition. Add this as a new target and specify it for the target acquisition. Assume that the observations are background limited and set the appropriate special requirement at a level of 20% of the lowest background. Check the schedulability. Label your observation folder *HH111 MIRI MRS spectroscopy*. (You might find the video on [APT Special Requirements](#) and the [JDox page on special requirements](#) helpful.)
4. Create a NIRISS Wide-Field Slitless Spectroscopy observation of galaxy cluster Abell 370. Use a 3x3 mosaic to cover more of the galaxy cluster. Specify observations with both gratings. Check the schedulability. Label your observation folder *Abell 370 NIRISS WFSS*. (Again, you might find the [mosaic video](#) useful here. Also the [JDox NIRISS WFSS](#) page.)
5. Create a group of MIRI 4QPM coronagraphy observations of beta-Pictoris. Make two coronagraphy observations separated by an aperture orient of 10-14 degrees. Include an observation of another star for a reference PSF; you can use delta-Doradus. Restrict your observations to be done back to back so the PSF changes as little as possible using the appropriate special requirement. Check the schedulability. Label your observation folder *Beta Pictoris MIRI Coronagraphy*. (You might find the JWST demonstration proposal called *MIRI Coronagraphy Example* useful for reference. The APT file for this program can be downloaded directly in APT using the *File/JWST Demonstration Proposals* tab in APT.)
6. Create a MIRI imaging observation of a surface feature on Io at longitude 30 degrees, latitude 30 degrees. Add windows so that Io is not in front of Jupiter, and it is not eclipsed by Jupiter. You would like for the spot not to be on the limb of Io, so add a requirement that the central meridian longitude be between 0 and 60. Check for variability by doing two observations separated by 30-40 days. Label your observation folder *Io feature*. (You might find the [JDox page on Solar System Targets](#), and the [JDox page on Solar System Special Requirements](#) useful.)

Once you have added these observations into your APT proposal and saved it, you should review the proposal for any errors and warnings. See the [APT video help on this topic](#). When errors are removed (or at least understood for this test proposal), you can then submit your proposal using the Submit icon on the top tool bar and following the instructions. (Note: this is effectively a “re-submission” since you started with a program that was downloaded from STScI.) This will send the proposal file to STScI and to the assigned Program Coordinator (or PC, also listed in the table below). Your PC will review your work and may contact you if they have any questions or comments.

This table shows the Proposal ID and the PC assigned to each participant.

PC: Alison Vick

| First Name | Last Name | Proposal ID |
|-------------------|----------------------|----------------------------|
| Arthur | Adams | <u>900</u> |
| Trisha | Ashley | <u>901</u> |
| Micaela | Bagley | <u>902</u> |
| Jennifer | Bergner | <u>903</u> |
| Rebecca | Canning | <u>904</u> |
| Neil | Cook | <u>905</u> |
| Kevin | Cooke | <u>906</u> |
| Christian | Eistrup | <u>907</u> |
| Estela | Fernández-Valenzuela | <u>908</u> |

PC: Elizabeth Nance

| | | |
|------------|---------------|----------------------------|
| Colette | Salyk | <u>909</u> |
| Thiago | Goncalves | <u>910</u> |
| Javiera | Parada | <u>911</u> |
| Jacqueline | Keane | <u>912</u> |
| Alexandros | Maragkoudakis | <u>913</u> |
| Lauren | McGraw | <u>914</u> |
| Mallory | Molina | <u>915</u> |
| David | Nataf | <u>916</u> |
| Hooshang | Nayyeri | <u>917</u> |
| Jenny | Patience | <u>918</u> |

PC: Blair Porterfield

| | | |
|---------|-----------------|----------------------------|
| Kedar | Phadke | <u>919</u> |
| Liliana | Rivera Sandoval | <u>920</u> |
| Irene | Shivaei | <u>921</u> |
| Denise | Stephens | <u>922</u> |
| Grace | Telford | <u>923</u> |
| Jeremy | Tregloan-Reed | <u>924</u> |
| Xin | Wang | <u>925</u> |
| Aida | Wofford | <u>926</u> |
| Siyi | Xu | <u>927</u> |