Final Report

NASA JPL Cartography and Imaging Node Site
Information Studies 279
Fall 2022

Client: Sara Bond, Information Science Specialist

Team Responsibilities:

Ingrid Chang

- User interviews + coding, site mapping, experience mapping, final report methods

Judy He

- User interviews + coding, site mapping, experience mapping, final report user persona creation and updates

Laura Dintzis

- User interviews + coding, site mapping, experience mapping, final report synthesis of findings, conclusions, and updates

Pei Xi Kwok

- User interviews + coding, site mapping, experience mapping, final report introduction, goals, and appendix

Rebecca Farmer

- User interviews + coding, site mapping, experience mapping, final report synthesis of findings, conclusions, and updates

Executive Summary

Research Goals

Imaging Node's website is the primary entry point for users wishing to access NASA's imaging archives, which makes the site's user experience critical for the organization. Through constructing an understanding of current user and stakeholder perspectives on the site, this report provides insight into the site's usability and proposes potential pathways to improve it.

Methods

Informational interviews were conducted with two JPL stakeholders and a site architecture map was created in order to understand the pain points of the site. User interviews consisting a usability test was conducted with individuals of varied previous experience to gather insight into typical users' experience with the site. An experience map illustrating a representative persona, stages of site interaction, and the variable components of user experience on the site was developed to compositely present the challenges and desires of an average user.

Findings

- **Uninformative navigational content**

Uninformative text, inconsistent style, and discreet contextual information meant that many users were confused by links and ignored information pathways.

- **Unclear organization of content and visual overload**

Users were uncertain with how to navigate pages on the site due to crowded information and page elements that fought for prominence.

- **Inconsistent and redundant architectural elements**

Information was represented differently in disparate places on the site leading to unclear user pathways and context connecting site pages.

Recommendations and conclusion

- Describe and format links to be more consistent, visible, and understandable.
- Resolve redundant pages formatted inconsistently, specifically in the navigation bar.
- Create distinct site pages, and reinforce their context and connections for easier pathways through the site.
- Search bar is necessary for the site, though this is already in progress.

Final Report

Introduction

The Cartography and Imaging Node ("Imaging Node") of JPL's Planetary Data System ("JPL") is home to NASA's primary digital image collections. As the central hub for the organization's raw planetary imaging data, Imaging Node caters to all individuals with an interest in images from space: this includes scientific researchers of various experience levels, as well as homegrown astronomers who may not have formal training in fields of astronomy.

Imaging Node's website is the primary entry point for users wishing to access imaging data, which makes the site's user experience critical to the organization's mission of providing access and information to NASA's imaging archives. By constructing an understanding of current user and stakeholder perspectives on the site, this report provides insight into the site's usability and potential pathways to improve it.

Research Goals

The goal of our research was to identify specific user needs and challenges when accessing imaging data on Imaging Node's website. Recommendations on changes to be made to the user experience of the site would be made based on our findings.

The objective of the stakeholder interviews was to define the scope of our research by understanding the site's role in fulfilling Imaging Node's broader mission. User interviews and testing were then conducted with the goal of assessing the site's user experience. The team also created a map of the site architecture, experience maps and user personas to ensure clarity in the documentation of our findings.

Methods

Site architecture

We parsed through all of the PDS site’s pages and their linked sites. We noted repeats of pages, the possibilities of getting to the same page through different routes, broken links, links to external sites, and confusing/misleading hyperlinks. This is all documented in a composite master site map, complete with a legend.

Experience map

We developed a composite persona based off of information gathered from our user interviews. We used the same information to develop a user journey modeled for the persona, illustrating the five main stages of a typical user’s time on the site: identifying the data needed, finding the site, exploring the site, and successfully finding the data. (cont'd)

Methods

Experience map (cont'd)

We broke their interaction with site into also 5 categories: goals and experiences, feelings and thoughts, touch points, and pain points. The experience map helped us the most acutely in pinpointing common challenges and what the priorities of changes to the site should be.

Stakeholder interviews

Stakeholder interviews were conducted with the client, who is the Information Science Specialist for the Imaging Node, as well as the lead UI/UX designer for the Imaging Node's site. Interview questions focused on the background of the site and the organization, the stakeholder's evaluation of the site's current user experience, success metrics for the site, as well as requests for access to user behavior data. See Appendix II. for full list of questions.

User interviews

Recruitment

A total of 11 participants participated in the user interviews. Participants were recruited through a combination of personal connections and public outreach efforts on the UCLA campus). The latter involved posting flyers in UCLA's Physics and Astronomy Building and cold-emailing astronomy-related student organizations, as well as faculty and graduate-level students from UCLA's Division of Astronomy & Astrophysics (see Appendix I. for materials). A portion of the publicity material advertised educational merchandise from JPL as an incentive for those who completed the interviews. Participants recruited through public avenues were asked to complete a screener and selected for user interviews based on their experience level with using planetary imaging data in research settings.

Interview script

The interviews followed a uniform script, and participants were chosen based on their alignment with the identified user groups. Participants were briefed on the format of the interviews and then asked for permission to record the interviews, including screen sharing.

The interview starts with an informational portion, in which they were asked to share about their background, experience, and methodologies with research in astronomy specifically as well as in academia generally.

The interview then goes into the cognitive walkthrough portion, in which participants were prompted with tasks asking them to navigate to specific pieces of information. Though the script was predefined and task-based, the questions were open-ended and left room for interpretation, allowing participants to explore the website freely and complete tasks in their natural way. There were eight questions total. Throughout the walkthrough process, participants were encouraged to talk their thoughts out to explain their decision making.

Methods

User interviews (cont'd)

Interviewers were to clarify with the participant on their logic whenever it is not self-explanatory. For example, the interviewer may ask “Is this what you expected to see?” and “What are you thinking during the process?“ to elicit more explicit responses from participants.

Finally, the interview concludes with reflective questions asking the participants about their experience with the site, including what they liked, what they found challenging, what they would want to be added, confidence in using the site effectively, and general impression of the site. Participants were also encouraged to give feedback on the session in general and to follow up with any other comments or questions they think of following the interview’s formal conclusion.

Limitations and Bias

Our study notes that no one went to Atlas to complete any of the usability tasks, except the one where we specifically asked them to use it. Bias played a role in the way we worded and ordered our questions. The order was leading, making the interviewee assume that the previous question would point them to the information pertinent to the next. We also interviewed one of our stakeholders after we had performed our task analysis, alerting us to the importance of Atlas, over the more visible architecture of the site. While this information may have directed our task analysis differently, it is still productive to acknowledge that this legacy architecture hides more valuable areas of the PDS site, supported by our 11 users, not one of whom went to Atlas even by mistake.

The other major limitation of our study is the small sample population. Each of us interviewed 2 to 3 people, and for a more generalizable and representative study, a larger sample population would be necessary to check our findings.

Findings

Our interviews with two stakeholders, and 11 users from varying experience levels, with varying goals in regard to the PDS Cartography and Imaging node, allowed us to discover three ways that users were challenged when interacting with the content and site architecture. These are, uninformative navigational content, unclear organization of content, and inconsistent and redundant architectural elements.

Uninformative navigational content

As we asked users to engage with the site, it was evident in the process that 81% of them were confused by where each link would take them, and which links they should use to find specific information. When attempting to find information on missions and targets, people explained that the first thing they saw was only, "data, data, data." When they did enter deeper into the site, we found that links to information were confusing and unclear due to their visual style and the use of vague link text. For instance, links in Data Portal and All Data Holdings pertaining to mission information, do not stand out as links, but only as headings acting as page delineation. These were ignored by 27% of users, even when specifically asked to find this information. Contributing to this is, link text color switches from blue to black depending on the page. There is instruction at the top of the page in All Data Holdings and Data Volume Index, but users did not read it. Uninformative text, inconsistent style, and discreet contextual information meant that many users were unaware of links on a page, ignored information pathways, and grew frustrated when links suddenly went to external sites or auto-downloaded files. Additionally, while most link text is independently clickable, many in Data Volumes Index are grouped together; this caused frustration and confusion to users who saw this information elsewhere as separate.

Unclear organization of content and visual overload

On many of the pages users were asked to interact with, the organizational structure and page elements determined the user's understanding of the site and their emotional reaction. All of the users we tested the site with expressed feeling overwhelmed and frustrated at least once through the series of tasks. Starting with the home page, users read the site left to right. Of the early career researchers and general public participants, they interacted with the home page in a series of random clicks, expressing uncertainty over where to go first, whether the top navigation menu or the left side navigation icons would be most productive. The left navigation icons are much more useful to experienced researchers and enthusiasts, as it contains Atlas and Photojournal. While this location was very visible to 64% of users, it was not explored by any participants, who instead prioritized the top navigation bar. As discussed above, the lack of description and overwhelming amount of information on the home page left users to default to the top navigation, equating it to the primary navigation.

Findings (cont.)

Due to the reliance of the top navigation the three navigation tabs Data Volumes Index, All Data Holdings, and Data Portal were where users spent their time exploring the site. While these pages exist as an archive for reference, not for interrogation and manipulation, this was not made clear when users entered the site due to the organization of the home page. It was even unknown to us, until our interview with one of our stakeholders. These three pages had many granular elements that made them difficult for users to navigate, such as long scrolling, unclear contextual information and heavy amounts of text. The real issue was that these three tabs all represented the same top level information differently, only for users to end up in the same place after clicking deeper in each page. This leads us to our next finding.

Inconsistent and redundant architectural elements

The lack of description for navigational elements, the prioritization of the same information in separate locations, each organized differently, compounds leading to our last way users were challenged by the PDS site. Inconsistent redundancy on the PDS site is most evident in the top navigation bar. 72% of participants voiced that the navigational tabs Data Volumes Index, All Data Holdings, and Data Portal should be consolidated. One user said, "I don't understand the differences between the tabs…[they] all get you to the same things in different ways–missions and data products." When users found the same information through different paths (questions 2, and 5-7), 72% of users were uncertain that they had all the information they were looking for. For example another user said, "They made it so difficult to find it, that once I did find it, I'm still skeptical I found it." The site's structure gave the impression that because there were disparate places to access data, each place would present different data holdings; this is reinforced by how different each redundant page looked. In our site map we found page overlap between all three tabs for mission information, data holdings, file trees, and documentation. The paths to these four essential components were disorganized, and inconsistent.

Inconsistency also appears in user pathways for Atlas and Photojournal. Our stakeholders made it clear that Atlas is the main data portal that PDS wants users to utilize when coming to the site, along with the Photojournal, a feature most useful to astronomy enthusiasts and amateurs. The paths for users to engage with Atlas are through the home page and through the Data Portal. The Photojournal is visible to users through the home page, and the mission information pages linked in the Data Portal and All Data Holdings. Atlas and Photojournal links on the homepage, and within the Data Portal and on mission information pages are not consistent, failing to reinforce them as a resource on the site.

Recommendations and Conclusion

Based on each finding outlined above, we make the following recommendations to the PDS site. Many users had similar recommendations, but we have used our knowledge of design to create more specific solutions that make the PDS site more universally navigable.

Clearer navigational formatting

Regarding uninformative and inconsistent navigational content, like link text, link style, and easily ignored or out of sight help or documentation, it is recommended that link text becomes more descriptive, is consistently one color, and is marked by an underline that is constantly visible. All links that prompt a file to download should require the user's permission. In addition to the link text itself, additional description should accompany links whenever possible, especially with featured content that may guide users, and with links acting as contextual information within the page.

Consolidation of content and visual simplification

Due to users' reactions to the current organization of content and stakeholder views, we suggest that the most important information be placed in one navigation bar. Photojournal and Atlas should become a central focus of this singular navigation, the redundant data pages– Data Volume Index, All Data Holdings, and Data Portal– should be consolidated, and in accordance with our first recommendation, each link on the navigation bar should be described within a secondary navigation drop down. The need for description of each navigation link was something 63% of our participants mentioned, and 36% said this was the most important feature to them.

Create better user pathways through the site

Our recommendation is to make user pathways simple, enjoyable, and logical in response to inconsistent yet redundant information architecture. To do this the areas of the site should be distinct, but connected and working to reinforce each other. Redundancy should only occur when its style and naming is consistent, and its purpose is to reinforce users' orientation as they move through different areas of the site. For example Atlas should be in a singular navigation bar, but to reinforce its role in the PDS site it could also be featured next to a prominent search bar, or as an announcement with a tagline in the body of the homepage. A good example of this is NASA's image galleries page. On this page, mission galleries are featured in the body, as well as being represented in the top navigation bar with the navigation tab 'missions'. This provides two solid and logical pathways to mission images.

It also should be noted that the lack of a search bar was mentioned by 81% of our users as something they felt was missing from their experience through the site. This is already in progress for the site's ADA compliance, but we recommend that it be a major feature on the front page.

Updated User Persona: Nina Anderson

- 19 years old
- Second-year undergrad at UCLA
- Cognitive Science Major
- From Los Angeles, CA
- Lives on campus at UCLA

Astronomical Background

- **Early-career researcher**
- Enjoys learning about astronomical knowledge.
- Taking an Astronomy GE this quarter.
- No experience working with imaging data.

Quotes

"I'm looking for the place it says mission....[but] all I'm seeing is data data data data..."

"They made it so difficult to find it, that once I did find it, I'm still skeptical I found it."

"Most things are where they should be, where I expect them to be."

"Maybe someone more experienced would have known what [file names] meant."

Goals

- To finish assignments in astronomy class with great quality.
- To understand more about how to access public imaging data.
- To browse through the site for learning more about astronomy .

How does Nina use the site? (Tasks)

- Does not notice the top navigation bar until notified, or actively avoided it because it did not include keywords she is looking for such as "mission".
- Has trouble differentiating between the naming of different tabs.
- Uses "Control+F" a lot to search for the data wanted because she is unfamiliar with the formatting.
- Not sure what is clickable on the data portal and data volume index.
- Confused about whether she has found all of the data needed because the same information is located in different places.
- Found all of the links to external sites disruptive, not well-identified or described.

Expectations

- Expects the site to have more search functions.
- Expects the site to have fewer links to external sites.
- Expects the site to have clearer naming of folders, tabs, etc.
- Expects the site to have consistent clickability and categorization.
- Expects the site to have an instructional description of what each element of the menu refers to.
- Expects the site to be more visually appealing with clearer and more interesting images.

Updated User Persona: Mark Roy

- 25 years old
- Third-year Astronomy PhD student at UCLA
- From San Jose, CA
- Currently lives off campus at UCLA

Astronomical Background

- **Experienced researcher**
- Worked for JPL on planetary data in his undergraduate years
- Has extensive experience in using astronomy-related databases

Quotes

"[I] don't understand the differences between the tabs - all get you to the same things in different ways - missions and data products. Data releases is different, other three are the same. Images are byproducts for public display and funding, [which] scientists don't care about. "

"[This site] is on the better end of the scientific sites. Think I just need to get used to the formatting. "

Goals

- To obtain high-quality imaging nodes data for research purposes.
- To get easy and quick access to the data needed.

How does Mark use the site? (Tasks)

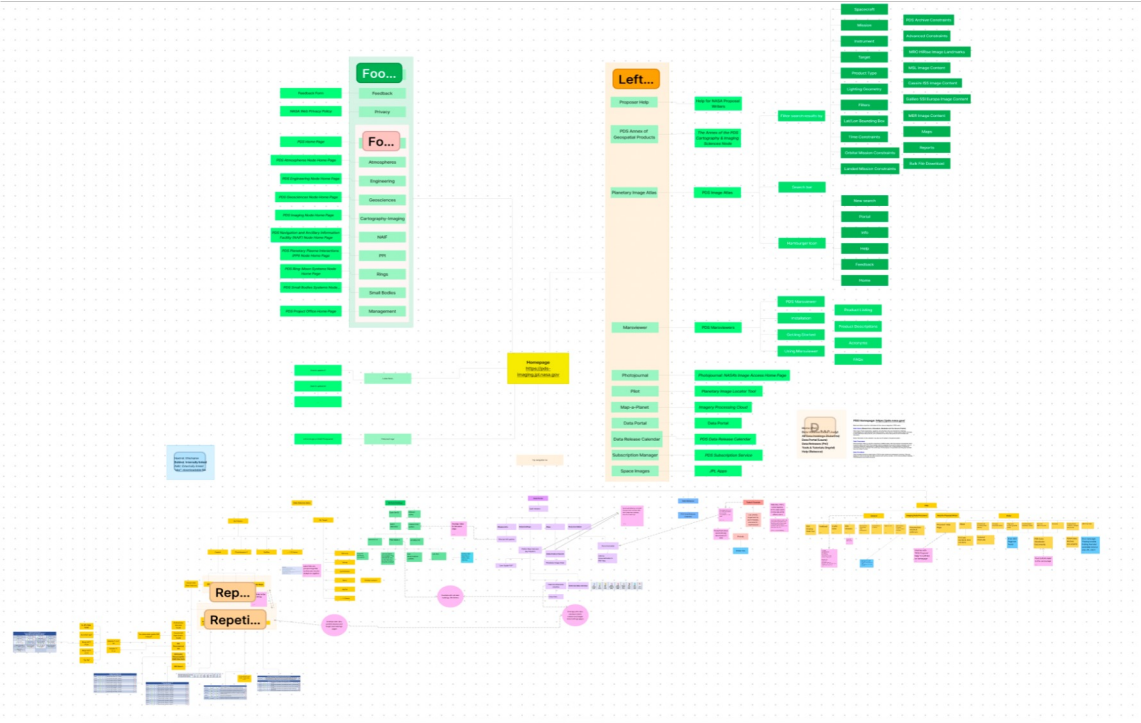
- Used intuition based on experience and background knowledge on "how scientists usually name and put stuff" to locate the data needed.
- Had trouble finding data through data volume index, missed LRO on the left column until second trial.
- Didn't notice the side navigation bar that includes the Atlas on the Homepage.
- Confused about whether the "data" folder contains the needed images because of the naming.
- Confused about the inconsistent categorization of data across different tabs/pages.
- Frustrated about automatic image extension and downloading.

Expectations

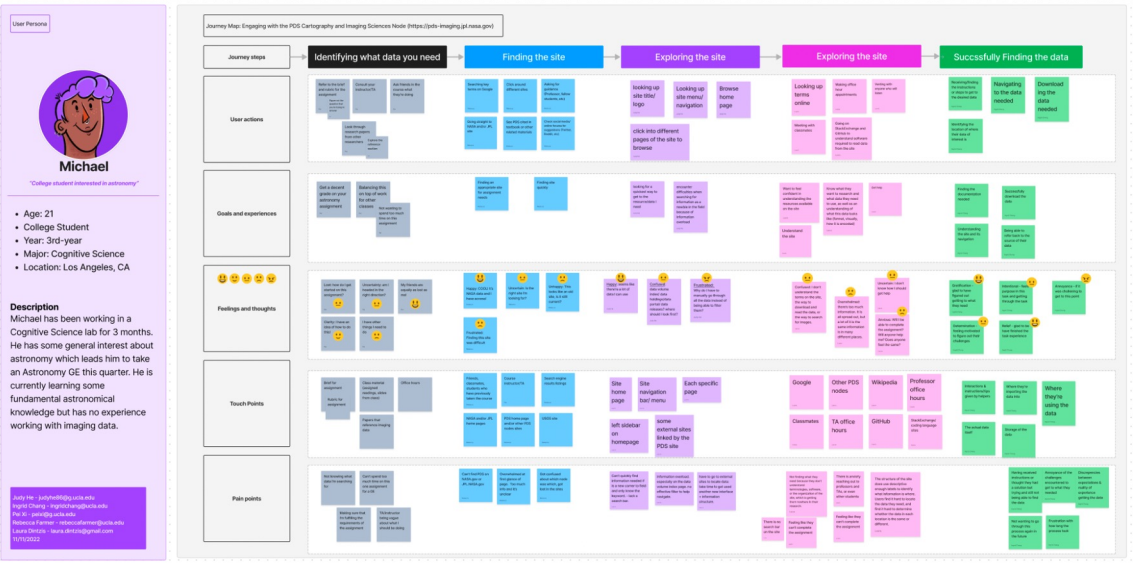
- Expects JPL to have clearer labeling of tabs and data.
- Expects clearer explanation of the tabs on the top navigation bar.
- Expects extensions and file sizes to be provided when need to download files.
- Expects to be warned when something is about to be downloaded.
- Expects to be able to find data filtered by mission, target, instrument depending on needs.
- Expects file trees with a better layout so no need to scroll up to see the column names.

Site Architecture and Experience Map

Site Architecture available on Figma



Experience Map available on Figma



Appendix

I. Outreach materials

Email template for graduate-level candidates in UCLA's Division of Astronomy and Astrophysics

Dear [recipient name],

My name is [sender name] and I'm a [X-year undergrad/grad] student here at UCLA. I'm also part of a team of user researchers from the UCLA Information Studies Department collaborating with NASA Jet Propulsion Lab (JPL) to improve the user experience of JPL's Planetary Data System (PDS) - Cartography and Imaging Sciences Node site. We are looking for participants with astronomy and/or astrophysics-related research backgrounds and experience using planetary imaging data to take part in our study.

The study will comprise two parts: a screener survey of your experience level working with imaging data which takes around 5 minutes to finish, and a 20- to 30-min user interview to help us understand your need and experience navigating through the site.

This study will be a class capstone project for Information Studies 279 - User Experience Design. Even though we are a student project and aren't able to provide you with anything too substantive as incentives, we did try our best to attain some cool and limited release NASA JPL swag from the JPL Education Department. So by participating in this study, you will have a chance to earn some of them.

If you are interested in participating, please take around five minutes of your valuable time to fill out this survey and someone from our team will be in touch soon. We would greatly appreciate your help by contributing your time and thoughts along the way.

Best regards,
[sender name]

Email template for astronomy-related student organizations

Subject line: Recruiting participants for NASA JPL user experience research

Hello!

We're a group of students working with JPL's PDS Cartography and Imaging Node to help improve the user experience of their website. This is part of our final project for an Information Studies course, IS279: User Experience Research taught by Professor Lynn Boyden.

We're reaching out to [organization name] to see if any of your members would be willing to participate in our user interviews as part of our research process. There are two components to this: a screener survey of their experience level working with planetary imaging data (<5 minutes), and a 30-35 minute user interview to help us understand their needs as a user of the site. Participants can also expect to receive some JPL swag as thanks for their contribution!

If any of your members are interested, please have them fill out the screener survey linked here and someone from our team will be in touch shortly. Please also feel free to reply to this email with any additional questions you may have about our project.

Thank you!

Sincerely,
[sender name]

I. Outreach materials (cont'd)

Email template for Astronomy GE announcements

Dear [recipient name],

My name is [sender name], and I am part of a group of UCLA students working with Sara Bond, an Information Science Specialist at JPL to improve the user experience (UX) of the website for JPL Planetary Data System (PDS)'s Cartography and Imaging Sciences Node. This project is part of an Information Studies course taught by Professor Lynn Boyden (IS279: User Experience Design).

We would like to ask for your permission to publicize a call for interview participants at the start of your [course name] lectures that take place from [course timing]. The announcement will take around a minute, and will follow the script below:

Hi everyone! My name is [sender name], and I'm looking for folks to interview as part of a user experience research project for NASA JPL's PDS Imaging Node. This will involve a 40 minute interview where we get you to share a little about your experience with research and complete a few tasks on the Imaging Node's website. If you have experience working with planetary imaging data, or you're interested in astronomy at all, we'd love to chat with you! I'll be passing out flyers with a QR code - just fill out the Google form linked and someone from our team will be in contact. Thank you!

We would greatly appreciate your help with this matter. If you have any additional questions about the project, please feel free to reach out to me at this email and I'd be more than happy to answer them.

Thank you!

Sincerely,
[sender name]

Email template for non-UCLA researchers

Subject line: Help us improve JPL PDS Imaging site's user experience!

Hello!

We are a group of UCLA students working with Sara Bond, an Information Science Specialist at JPL to improve the user experience (UX) of the website for JPL Planetary Data System (PDS)'s Cartography and Imaging Sciences Node. We are looking for participants with research experience using imaging data from the PDS Imaging site as part of our project.

This study is a part of a capstone project for a user experience course with UCLA's Department of Information Studies [Information Studies 279 - User Experience Design] and comprises two parts: a screener survey of your experience level working with imaging data (<5 minutes), and a 30-35 minute user interview to help us understand your needs as a user of the site.

If you are amenable to participating, please fill out the screener survey linked here and someone from our team will be in touch shortly. Any additional questions about the project can also be directed towards Laura at dintzis@g.ucla.edu.

Your contribution towards improving the user experience of the PDS Imaging site and advancing the education of budding UX researchers would be greatly appreciated. Thank you!

Best regards,
Ingrid Chang
Judy He
Laura Dintzis
Pei Xi Kwok
Rebecca Farmer

I. Outreach materials (cont'd)

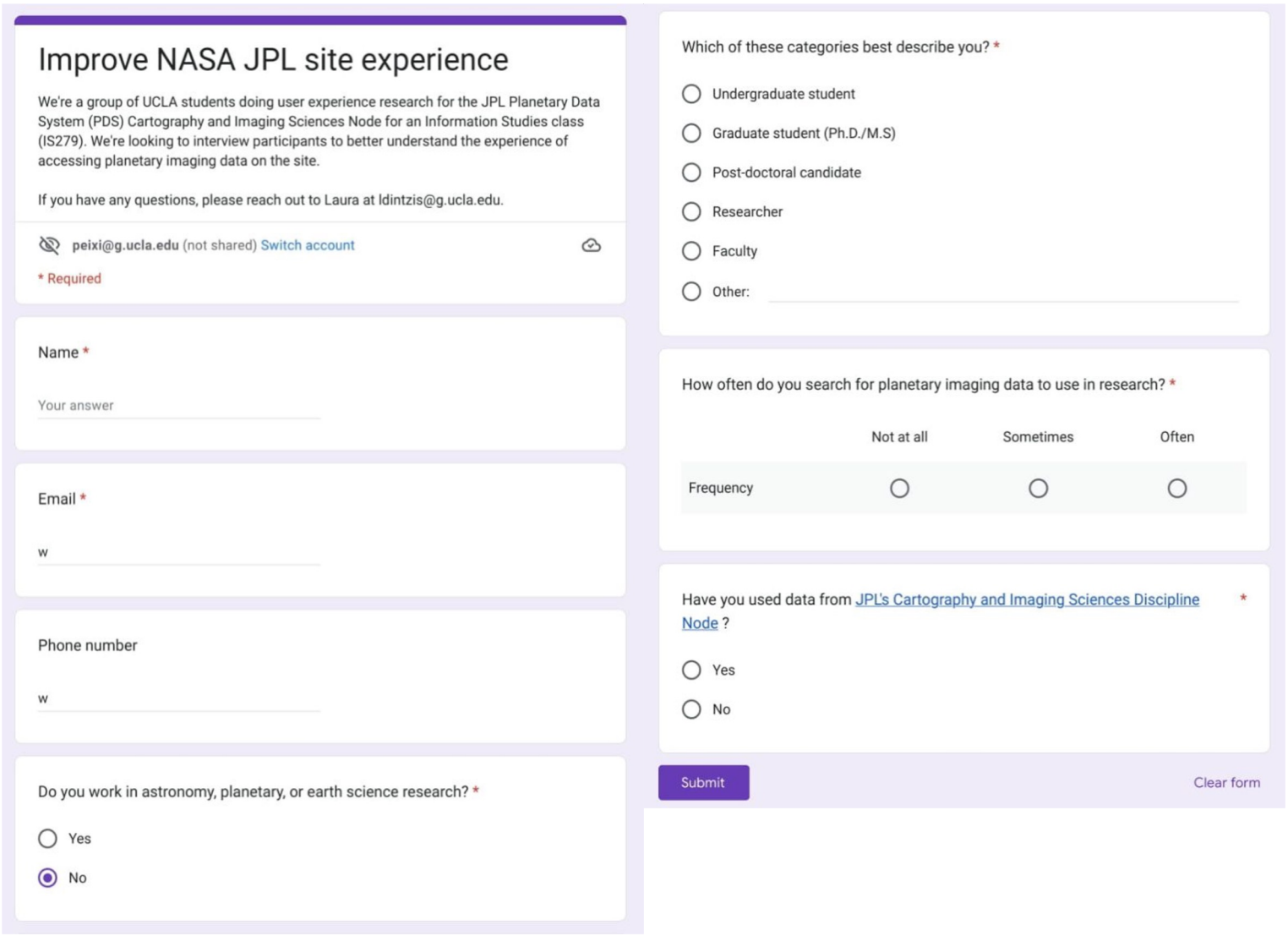
Flyers posted in the UCLA Physics and Astronomy Building

General outreach message for students

Hi everyone! We're a group of UCLA students working on a user experience research project for NASA JPL's PDS Imaging Node. If you have experience working with planetary imaging data, or you're interested in astronomy at all, we'd love to chat with you. You can expect to go through a 40 minute interview where you share about your experience with research and complete a few tasks on the Imaging Node's website - in exchange, you'll get some JPL swag! Please fill out the Google form linked here (https://forms.gle/qiPZwAaC3qWVoj6d9) and we'll be in touch shortly.

I. Outreach materials (cont'd)

Screener Google form [link]



Improve NASA JPL site experience

We're a group of UCLA students doing user experience research for the JPL Planetary Data System (PDS) Cartography and Imaging Sciences Node for an Information Studies class (IS279). We're looking to interview participants to better understand the experience of accessing planetary imaging data on the site.

If you have any questions, please reach out to Laura at ldintzis@g.ucla.edu.

peixi@g.ucla.edu (not shared) Switch account

* Required

Name *

Your answer

Email *

w

Phone number

w

Do you work in astronomy, planetary, or earth science research? *

- Yes
- No

Which of these categories best describe you? *

- Undergraduate student
- Graduate student (Ph.D./M.S)
- Post-doctoral candidate
- Researcher
- Faculty
- Other:

How often do you search for planetary imaging data to use in research? *

	Not at all	Sometimes	Often
Frequency	○	○	○

Have you used data from JPL's Cartography and Imaging Sciences Discipline Node ? *

- Yes
- No

Submit Clear form

II. Interview questions and script

Stakeholder interview: client

[Introduction]

[Mission]
What are your institutional goals?
How can a website help with that?
Why are you doing this project?

[People]
Who is your target audience?
How do they find the site?
Is there departmental interest in making the site more usable for casual users?
Who should be included in the project? Who will make the final decisions?

[Deliverables]
What does success look like? How can we measure that?
What is working right now on your site today?
What's not working?
How do you know?

[Context]
What risks do you foresee, or concerns do you have?

[Access to users]
Can you get us in touch with more specialized users of your site for the purposes of testing and interviews?
Can you get us in touch with stakeholders for the purpose of interviews concerning site goals?
Are there incentives you can give us to motivate user participation?

[Analytics]
How do you currently keep track of user behavior on the site?
Do you have dedicated resources for managing the site? Is it updated regularly or static?
(cont'd)

User interviews

[Introduction]
Hi, xx (participant's name), thank you for signing up to participate in our research project!
My name is xxx, and I'm going to be walking you through this session today.We're asking people to try using a NASA JPL site that we're working on so we can see whether it works as intended.

Before we begin, I just want to get your consent of this meeting being recorded. We are doing this because we don't have another group member who is available at this time to take notes simultaneously and recording will only be seen by the people working on this project.

[Participant's response] [Begin recording]

A quick reminder is that there are no right or wrong answers that we are looking for; our goal is to learn more about how the participants feel about the experience of using JPL site. Please don't worry that you're going to hurt our feelings. We're doing this to improve the site, so we need to hear your honest reactions.

As you use the site, I'm going to ask you as much as possible to try to think out loud: to say what you're looking at, what you're trying to do, and what you're thinking. This will be a big help to us.

This interview will be two-part. The first part is an informational interview. We will be asking you mostly open-ended questions describing your experience with imaging data, particularly challenges and desires.

The second part is a task walkthrough. We will ask you to perform a specific task through using the PDS website, and talking through your thought process navigating the site. We will give more detailed instructions so don't worry about this for now.
(cont'd)

II. Interview questions and script (cont'd)

Stakeholder interview: client

What are the most common tasks users perform on your site?

[Wrap-up]

Stakeholder interview: lead UI/UX designer

[Introduction]

[Background questions]
What is your involvement with the PDS site?
What do you view as the institutional goals of Imaging Node? And how does a website help with that?
What is the history of the PDS site? Was it inherited?
How frequently is the site updated?

[Strengths and limitations]
What does success look like for this site? How do you currently measure that?
What do you think are the strengths of the website?
What issues do you see?
What limitations prevent you from making the changes you want to the site?

[Understanding the audience]
Could you describe, to your knowledge and understanding, the different target audiences of the site?
Do you prioritize different audiences using the site, or are they of the same importance? If yes, how?

[Access to data]
Could we get access to usage metrics to understand which pages are the most used?
Are there query logs we can gain access to?
Does the team make use of the feedback/help form?

[Wrap-up]
Anything else about the site you think we should know?

User interviews

Tell me about yourself: what kind of research do you do? What kind of experience do you have related to astronomy? What about imaging data?

Could you walk me through your process of searching for source material/raw data for your research?

[Transition into task analysis]

1. Find the Mission Info for the Clementine mission
Ask:
Why did you choose x over y?
Why did you think to navigate to this area?

2. Then find all online data holdings from the mission
Ask: Why did you choose x over y?
Why did you think to navigate to this area?

3. Within all data holdings from the Clementine mission, locate this specific data holding: the (UVVIS) Lunar Full Resolution data, and the dataset cl_4008.
Ask: Why did you choose x over y?
Why did you think to navigate to this area?

4. Find an image from this dataset.
Ask: Why did you choose x over y?
Why did you think to navigate to this area?

5. Use the Data Volumes Index to find Lunar Reconnaissance Orbiter (LRO) data
Ask: Why did you choose x over y?
Why did you think to navigate to this area?

6. Use All Data Holdings to find LRO data
Ask: Why did you choose x over y?
Why did you think to navigate to this area?

7. Use The Data Portal to find LRO Data
Ask: Why did you choose x over y?
Why did you think to navigate to this a

II. Interview questions and script (cont'd)

User interviews

8. Use Atlas to find LRO Data
Ask: Why did you choose x over y?
Why did you think to navigate to this area?

[Transition into reflection]

How confident are you that you completed all the tasks correctly?

What parts of the tasks were easy?

What parts of the tasks did you struggle with?

Did this experience make you want to use this site more or less again in the future? Why?

What tools would be helpful/what changes to the site would make your experience better?

What do you think among those things you mentioned is the most important to you?

[Recap/wrap-up]

And that concludes all of our questions for the interview today. Is there anything you would like to add onto your previous answers or ask us about the project before the interview ends?

If no: alright, thank you so much for participating in our interview. It is a pleasure talking with you today. Have a great day!