

Space Instrument Research Project

- You will be selecting ONE space measurement instrument from the provided list to research
- Websites and resources will be provided and you may use 2 resources of your choosing
- You may chose to create a power point OR poster to display your findings.
 - All information must be in complete sentence form
- You will be presenting to your classmates using flipgrid
- Instrument Choices:
 - Hubble Telescope
 - Keck 1 and 2 Telescopes
 - Spectroscope
 - Voyager 1 (space probe)
 - Sputnik 1 (space probe)

Power Point

- Must be 4-6 slides including title slide AND a “Resources Used” slide
- Font must be size 24 (excluding titles)
- At least one slide must include a picture and a description of picture
 - The description may not be copy and paste from another resource

Poster

- Must be on 8 ½ X 14in legal size copy paper (teacher will provide 1 sheet of paper)
- Poster must include title and resources used (written on back)
- At least one hand drawn picture of the instrument

Information to be included

- What is the goal of your instruments research capabilities? (4pts)
- What is the history of your chosen instrument? (4pts)
- What discoveries has it led to? (4pts)
- What makes your instrument different from other, similar instruments? (4pts)
- Picture of selected instrument (4 pts)
- Resources listed (4 pts)
 - You may use up to 2 resources of your choosing

IF you choose a telescope

- What type of spectra does your chosen telescope focus on? (5pts)
- What kinds of objects was the telescope or observatory built to observe? (5 pts)
- Where is the telescope or observatory located? (5pts)
- Why was this site chosen? (5pts)
- How large is the objective lens or primary mirror of the telescope (5 pts)

IF you choose a space probe

- What is the primary mission of your probe? (5pts)
- What kinds of objects was the probe built to observe? (5 pts)
- What type of data can the probe collect? (5 pts)
- How long has the probe been in service? (5 pts)
- What planetary bodies has your probe visited/observed? (5 pts)

IF you choose spectroscope

- What are the basic parts of a spectroscope? (5pts)
- What type of spectra does the scope observe? (5pts)
- What is the development of spectroscopes over time? (5pts)
- Explain how to build an at home spectroscope. (5pts)
- Explain how a spectroscope can be used to supply data for Red Shift. (5pts)

FlipGrid Presentation

- You must create a short video on Flipgrid to present your findings
- Video may only include yourself in the video (another person may hold the camera, but they may not speak or be visible)
- Video must be between 1:00min and 2min long
- Video must be posted to the class page in order to receive credit for the presentation portion of your project.
- I will supply you with a class code to create and post your flipgrid.

Information in the Presentation (25 points)

- In your Flipgrid video you must include:
 1. State your name (2pts)
 2. State the name of your selected instrument. (3pts)
 3. Explain the goal of your instruments research capabilities. (5pts)
 4. Explain the discoveries has it led to? (5pts)
 5. Explain what makes your instrument different from other, similar instruments (5pts)
 6. Explain what you found most interesting about your instrument? (5pts)

Resources for Telescope

- Hubble Resource 1

https://www.nasa.gov/mission_pages/hubble/story/index.html

- Hubble Resource 2

https://www.nasa.gov/mission_pages/hubble/spacecraft/index.html

- Keck Resource 1

<http://www.keckobservatory.org/about/keck-observatory/>

- Keck Resource 2

<https://www.space.com/26385-keck-observatory.html>

Resources for Space Probes

- Voyager 1 Resource 1

<https://voyager.jpl.nasa.gov/>

- Voyager 1 resource 2

<https://www.britannica.com/technology/Voyager-space-probes>

- Sputnik 1 Resource 1

<https://history.nasa.gov/sputnik/>

- Sputnik 1 Resource 2

<https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=1957-001B>

Resources for Spectroscope

- Resource 1

<https://scienceandtechnology.jpl.nasa.gov/research/research-topics-list/spacecraft-technologies/spectrometry>

- Resource 2

<https://www.livescience.com/41548-spectroscopy-science-fair-project.html>

Resource 3

https://spie.org/publications/fg08_p02_spectrometerspectroscopespectrograph?SSO=1