



FPT ACADEMY INTERNATIONAL

FPT – APTECH COMPUTER EDUCATION

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## Sky Gazing

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<b>Semester:</b>	1	
<b>Batch No:</b>	T3.2502.E0	
<b>Group No:</b>	5	
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3.	Hong Tai Loi	Student1634674

**This is to certify that**

**Mr. Doan Duy Thai**

**Mr. Hong Tai Loi**

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**Mr. Mai Truong Quoc Hung**

**have successfully designed & developed:**

**eProject: Sky Gazing**

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**Submitted by:**

**Ms. Le Mong Thuy**

**Date of issue:** 8/23/2025

**Authorized Signature:**

# Table of Contents

ACKNOWLEDGMENT.....	3
SYNOPSIS.....	3
ANALYSIS.....	3
1. PURPOSE OF THE WEBSITE.....	3
2. DESIGN AND INTERFACE.....	3
3. TECHNICAL REQUIREMENTS.....	4
CUSTOMER'S REQUIREMENTS SPECIFICATIONS.....	4
1. BUSINESS/PROJECT OBJECTIVE.....	4
2. HARDWARE/ SOFTWARE REQUIREMENTS.....	5
2.1 Hardware.....	5
2.2 Software.....	5
SCOPE OF THE WORK (IN BRIEF).....	6
1. HOME.....	6
2. ASTRONOMY TOPICS.....	6
3. CONSTELLATIONS.....	6
4. COMETS.....	6
5. SKY GAZING.....	6
6. OBSERVATORIES.....	6
7. NEWS.....	6
8. ABOUT US.....	6
ARCHITECTURE AND DESIGN OF THE SYSTEM.....	7
DIAGRAM OF THE WEBSITE.....	8
TASK SHEET REVIEW 1.....	9
SITE MAP.....	10
MOCK OF THE WEBSITE.....	11
1. Home.....	11
2. ASTRONOMY TOPICS.....	12
3. CONSTELLATIONS.....	12
4. COMETS.....	12
5. SKY GAZING.....	13
6. OBSERVATORIES.....	14
7. NEWS.....	15
1. ABOUT US.....	16
TASK SHEET REVIEW 2.....	17
WEBSITE DESCRIPTION.....	
1. Home.....	11
2. ASTRONOMY TOPICS.....	12
3. CONSTELLATIONS.....	12
4. COMETS.....	12
5. SKY GAZING.....	13
6. OBSERVATORIES.....	19
7. NEWS.....	19
ABOUT US.....	19
TASK SHEET REVIEW 3.....	31

## ACKNOWLEDGMENT

On behalf of team members. I would like to thank everyone who supported my team to successfully complete this eProject report. Especially, our teacher, she has supported us a lot since we started studying at FPT Aptech. With this eProject, she guided us very meticulously, enthusiastically and strictly. With her guidance, we were able to successfully complete this project. Besides, I also want to thank all the team members, each of whom worked hard to complete the eProject in earnest during the month of working together. Finally, our group would like to say thank you to my classmates and family for sharing and creating for the group the best environment to focus on the project, motivating the members to achieve their goals.

## SYNOPSIS

Astronomy is a scientific field that studies celestial objects and phenomena in the universe. It is one of the oldest sciences and includes many subfields, ranging from observing planets and stars to studying the structure and evolution of the universe.

Here is a summary of some key aspects of astronomy:

Celestial Objects: Stars, Planets, Galaxies, Nebulae.

Astronomical Phenomena: Supernova, Black Holes, Gravitational Lensing.

Research and Tools: Telescopes, Space Observatories.

Universe and Origins: Big Bang, Expanding Universe.

Modern Exploration and Research: Search for Exoplanets, Dark Matter and Dark Energy Research.

## ANALYSIS

### 1. Purpose of the Website.

The website aims to provide an informative and engaging platform for users to explore various aspects of astronomy. This website will serve as a comprehensive resource, offering detailed information on planets, constellations, comets, astronomical theories, and the latest developments in the field.

### 2. Design and Interface.

- o The website features a user-friendly environment and navigation. Key menus are positioned at the top for easy access to information.

- o The interface and color scheme are harmoniously combined to create a visually appealing and engaging experience for users.

### **3. Technical Requirements**

- o The website must perform well across all major browsers including Chrome, IE, Firefox, etc., ensuring accessibility from various devices and platforms.
- o It utilizes a Single-Page-Application (SPA) approach to deliver a seamless and fast web browsing experience.
- o Features are designed to meet technical requirements, facilitating quick and accurate loading and display of information.

The space exploration website aims to become a valuable and engaging source of information for space enthusiasts, providing everything from basic knowledge to practical insights from researchers and major space research agencies around the world.

## **CUSTOMER'S REQUIREMENTS SPECIFICATIONS**

### **Client: APT India Co.**

#### **1. Business/Project Objective**

The portal will be designed as a Single-Page-Application and responsive Website with a set of pages and menus that represent choice of activities to be performed. The pages, menus, and other visual elements must be designed in a visually appealing manner with attractive fonts, colors, and animations.

All of these should also be laid out in a responsive manner

The Web site is to be created based on the following requirements.

1. The web page should have the description/images about various planets. If user clicks on the same, navigational link must be available.
2. There should be categories providing details about Solar Eclipse, big bang theory, evolution of earth etc
3. Various sections such as –
  - When best to Star Gaze
  - Where is best to Star Gaze
  - What to expect to see in a Star Gaze

4. The site should also list and explain various planets available as well as details about them as
  - When discovered
  - Size
  - Atmosphere there
  - Distance from sun and earth
  - Other available important details about them.
5. There should be information on constellations as what is it/how it is formed and various constellations.
6. There should also be a section on comet giving information related.
7. Also include a section which will provide details on various latest developments in the field of astronomy related to planets and stars.
8. List of Few top Observatories with details and location displayed using GeoLocation API (eg. GoogleMaps).
9. Site map, Gallery, About us, Contact us link must be added.
10. About Us and Contact Us: This menu option should display Email id, address, and contact number of Sky Gazing Company.

Over and above this, the portal should implement the following functionalities:

- Display a continuous scrolling ticker at the bottom of the page with current date, time, and location (hint: Use geolocation features of HTML5).
- Display a visitor count at the top right corner of the page beside a logo image.
- The menu options should change color on hover and also after clicking.
- Fade in and fade out options can be used for the menus.

## Hardware/ Software Requirements

### Hardware

- Intel Core i3/i5 Processor or higher
- 8 GB RAM or above
- Color SVGA
- 500 GB Hard Disk space
- Mouse
- Keyboard

### Software

Technologies to be used:

- Frontend: HTML5, CSS, Bootstrap, JavaScript, jQuery, React/AngularJS, Figma, XML
- Data Store: JSON files or TXT files

Other Requirements:

- Operating Portal: Windows
- Browsers: Edge, Chrome, Mozilla Firefox, Safari

## SCOPE OF THE WORK (IN BRIEF)

**1. Home:** Displays an overview of mountaineering and the website's logo.

**2. Astronomy Topics:**

- **Solar Eclipses:** Explanation of solar eclipses, viewing tips, and upcoming eclipse dates
- **Witnessing Planet Birth:** Insights into planet formation with examples from modern astronomical observations.
- **Big Bang Theory:** Information on the origin of the universe.
- **Evolution of Earth:** Detailed explanation of Earth's formation and development.
- **Planets:** Discovery date, Size, Atmosphere, Distance from the Sun and Earth, Other significant details.

**3. Constellations:** Explanation of constellations, their formation, and information on various known constellations.

**4. Comets:** Information on comets, including notable examples and their characteristics

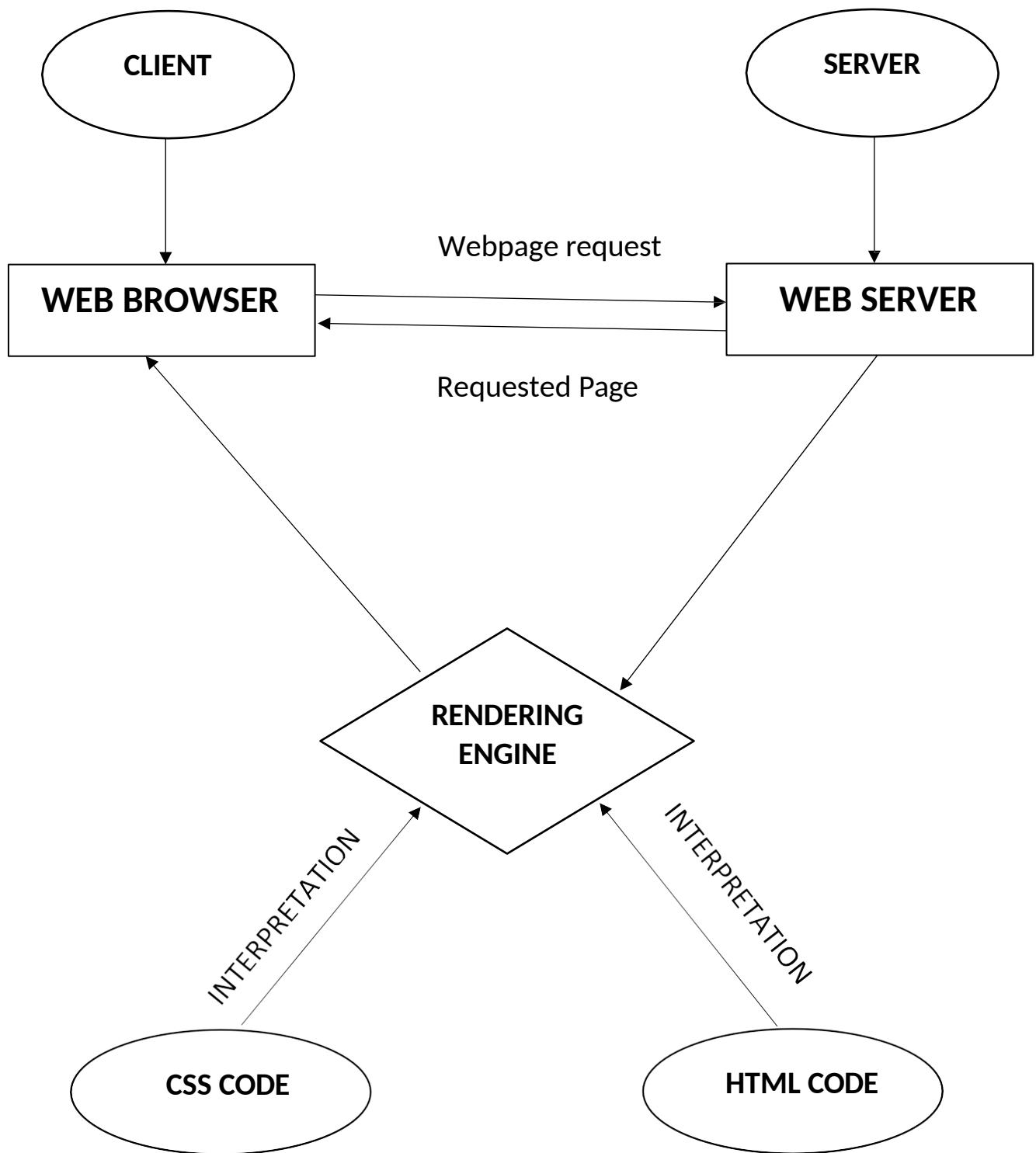
**5. Star gazing:** Information on the best seasons, dates, and times for stargazing activities.

**6. Observatories:**

- Content: List of top observatories, including their details and locations.
- Feature: Display observatories on a map using the Geolocation API (e.g., Google Maps).
- Gallery: Videos, Images: A collection of informative and illustrative videos on galaxy, planets, stars, etc., optimized for quick loading and viewing.

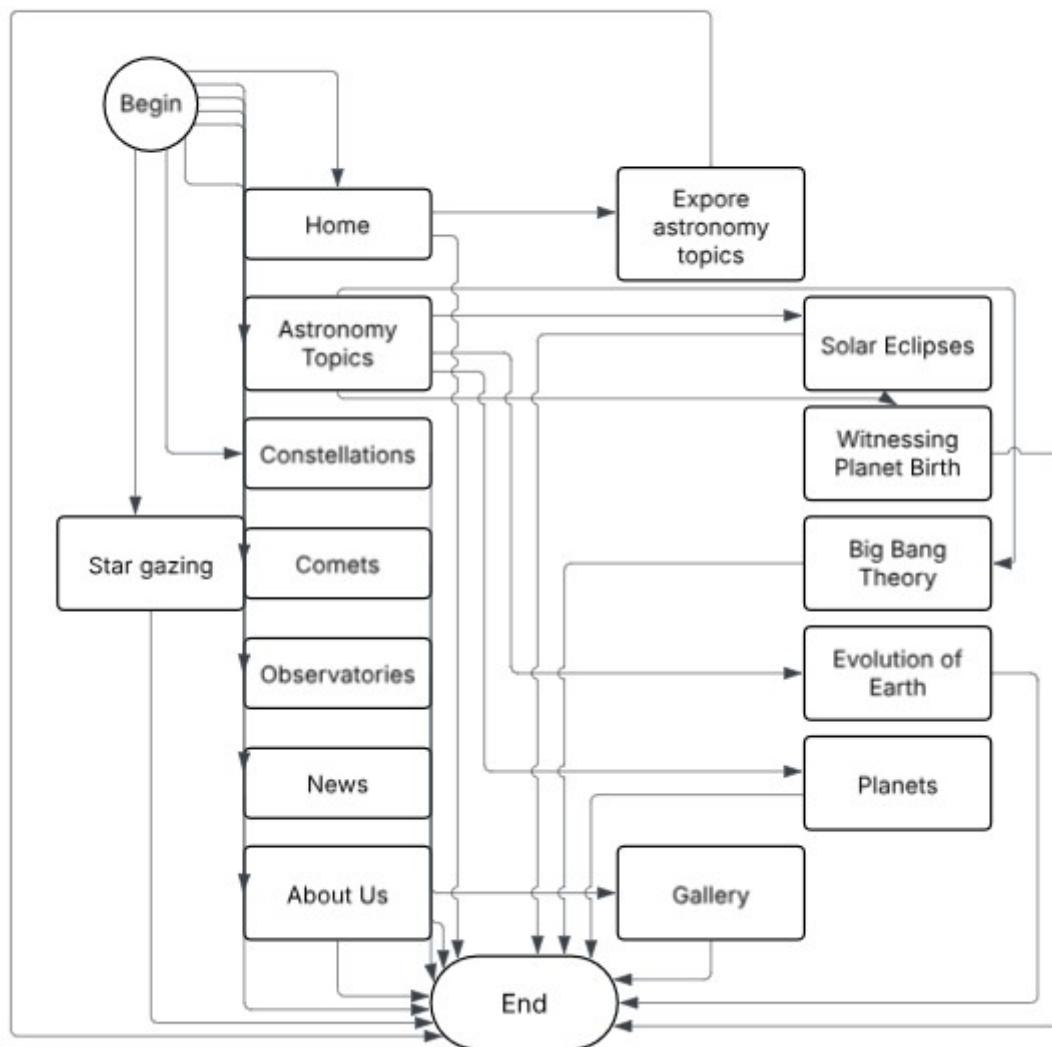
7. **News:** Updates on recent discoveries and advancements in the field of astronomy related to planets and stars.
8. **About Us:** Contact information for users to reach out or send feedback.

## ARCHITECTURE AND DESIGN OF THE SYSTEM



## DIAGRAM OF THE WEBSITE

The Diagram of Sky Gazing



**TASK SHEET REVIEW 1**

<b>Project Ref. No.:</b> <b>eProject</b>		<b>Project Title:</b>  Sky Gazing	<b>Activity Plan Prepared By:</b>  Thai	<b>Date of Preparation of Activity Plan:</b>			
<b>Sr.No</b>	<b>Task</b>			<b>Actual Start Date</b>	<b>Actual Days</b>	<b>Team Mate Names</b>	<b>Status</b>
1	Synopsis			7/24/25	1	Thai	Completed
2	Analysis			7/24/25	1	Thai	Completed
3	The scope of the work (in brief)			7/25/25	1	Loi	Completed
4	Architecture and design of the system			7/25/25	1	Loi	Completed
5	Diagram of the website			7/25/25	2	Hung	Completed
6	Task Sheet Review			7/27/25	1	Loi	Completed

**Date: 02/8/2025**

Signature of Instructor:

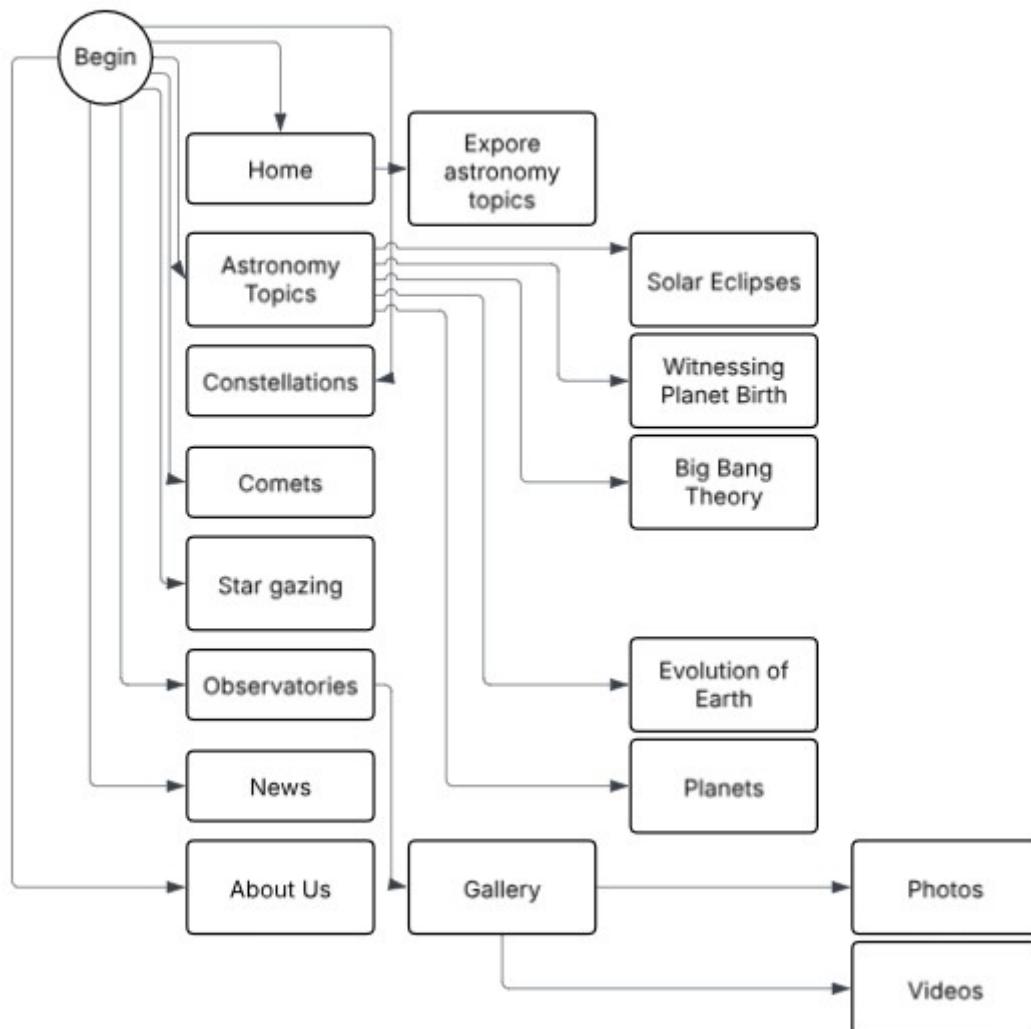
**Le Mong Thuy**

Signature of Team Leader:

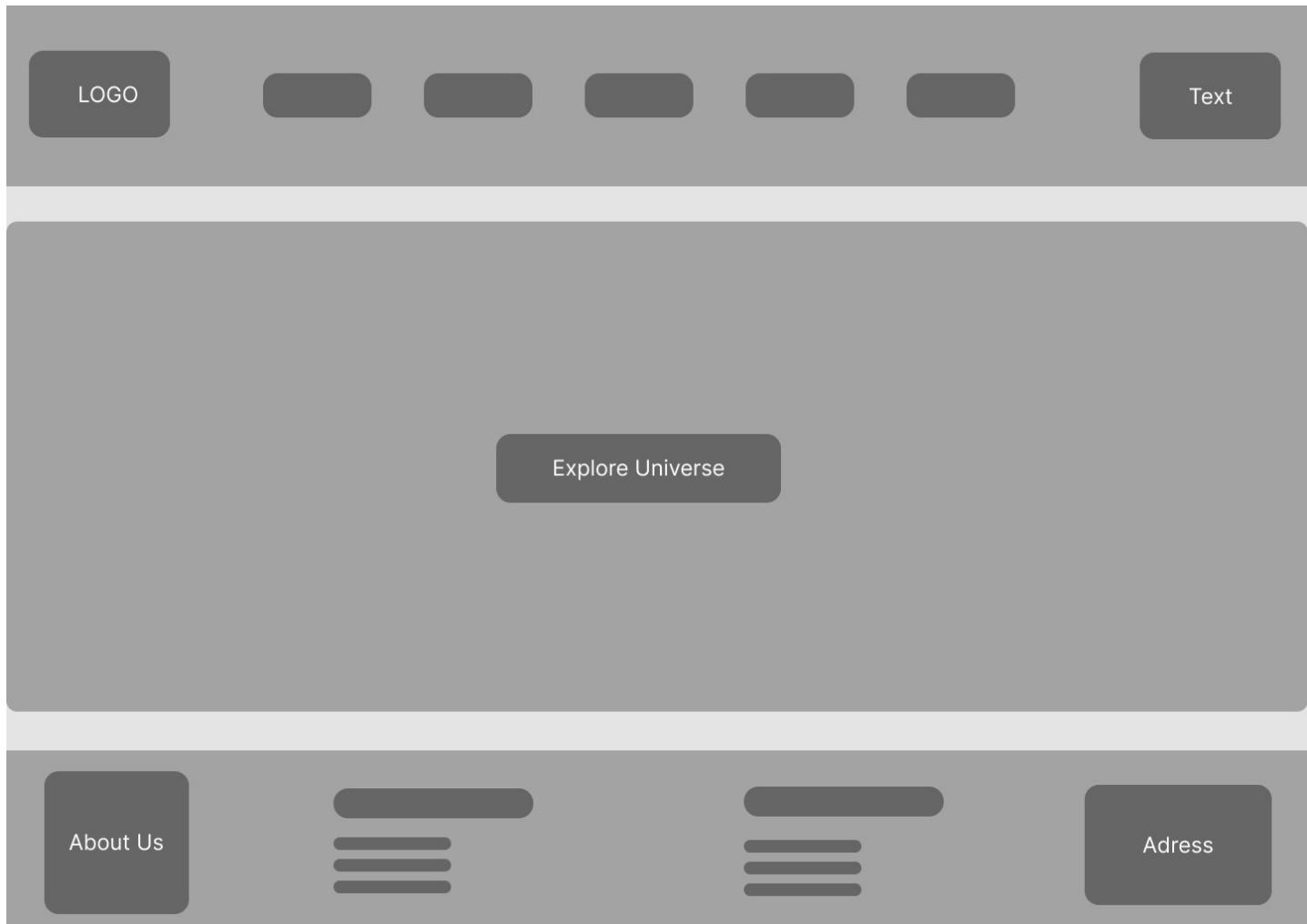
**Doan Duy Thai**

**SITE MAP**

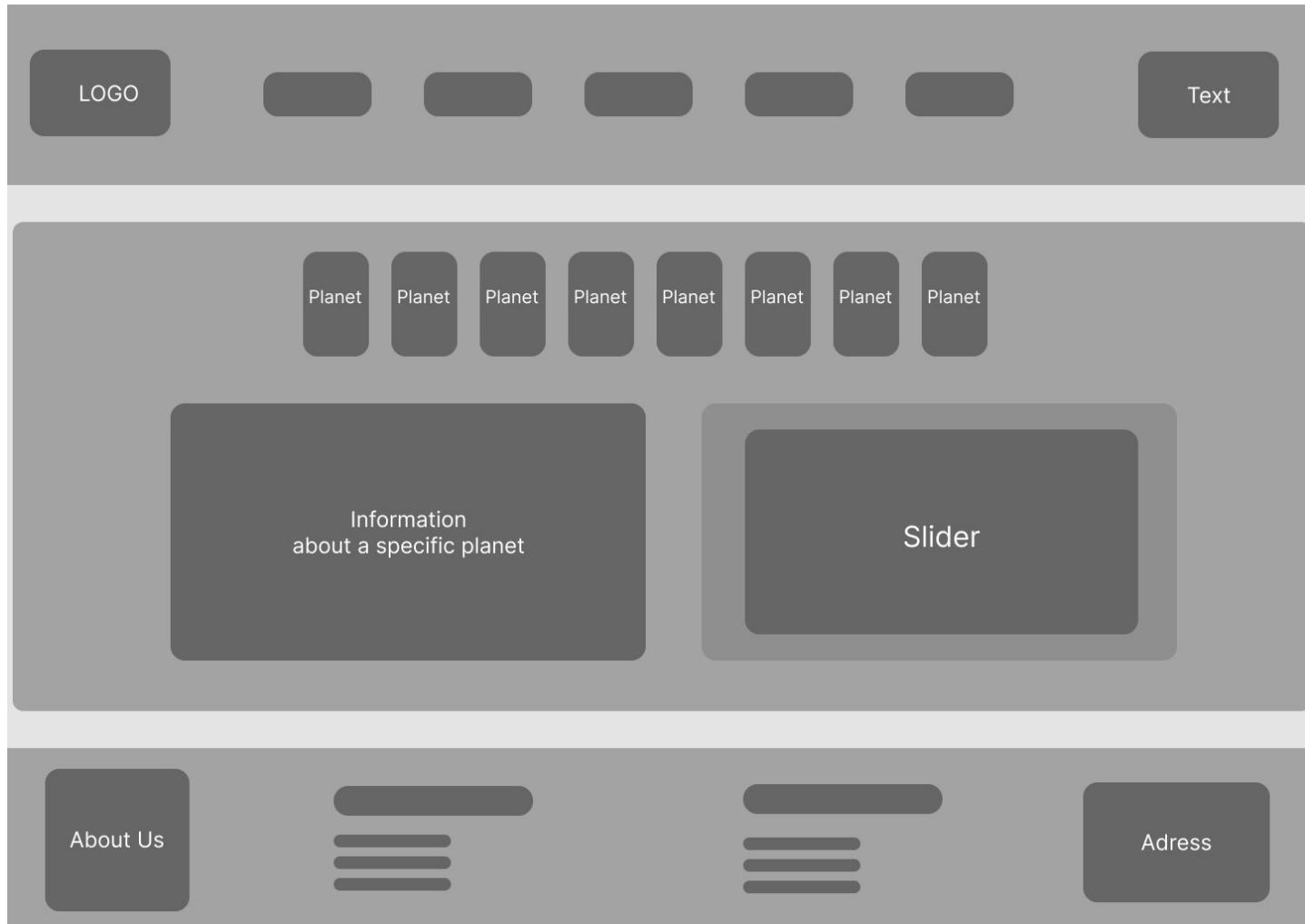
The Site Map of Sky Gazing

**MOCK OF THE WEBSITE**

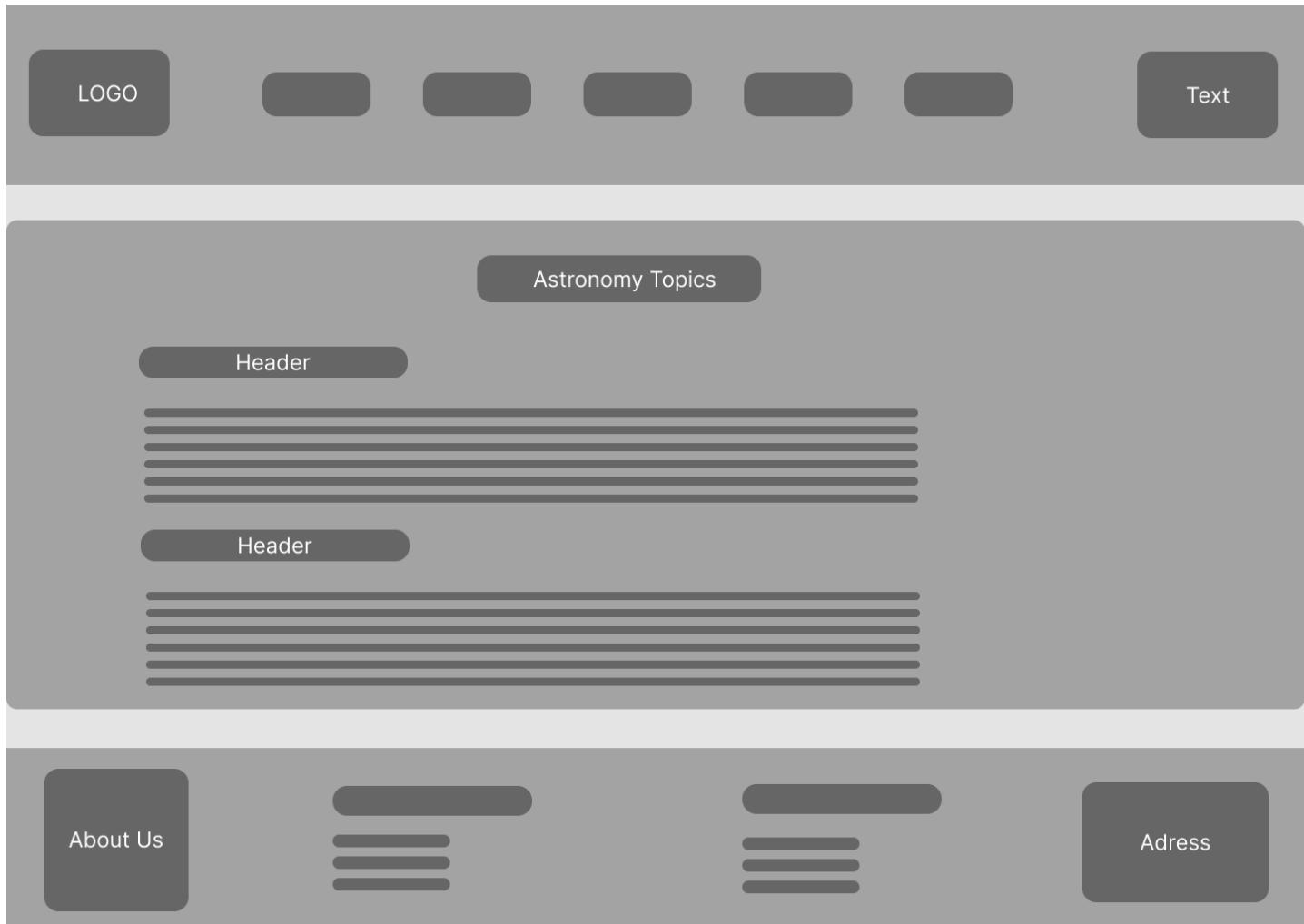
# 1/ HOME



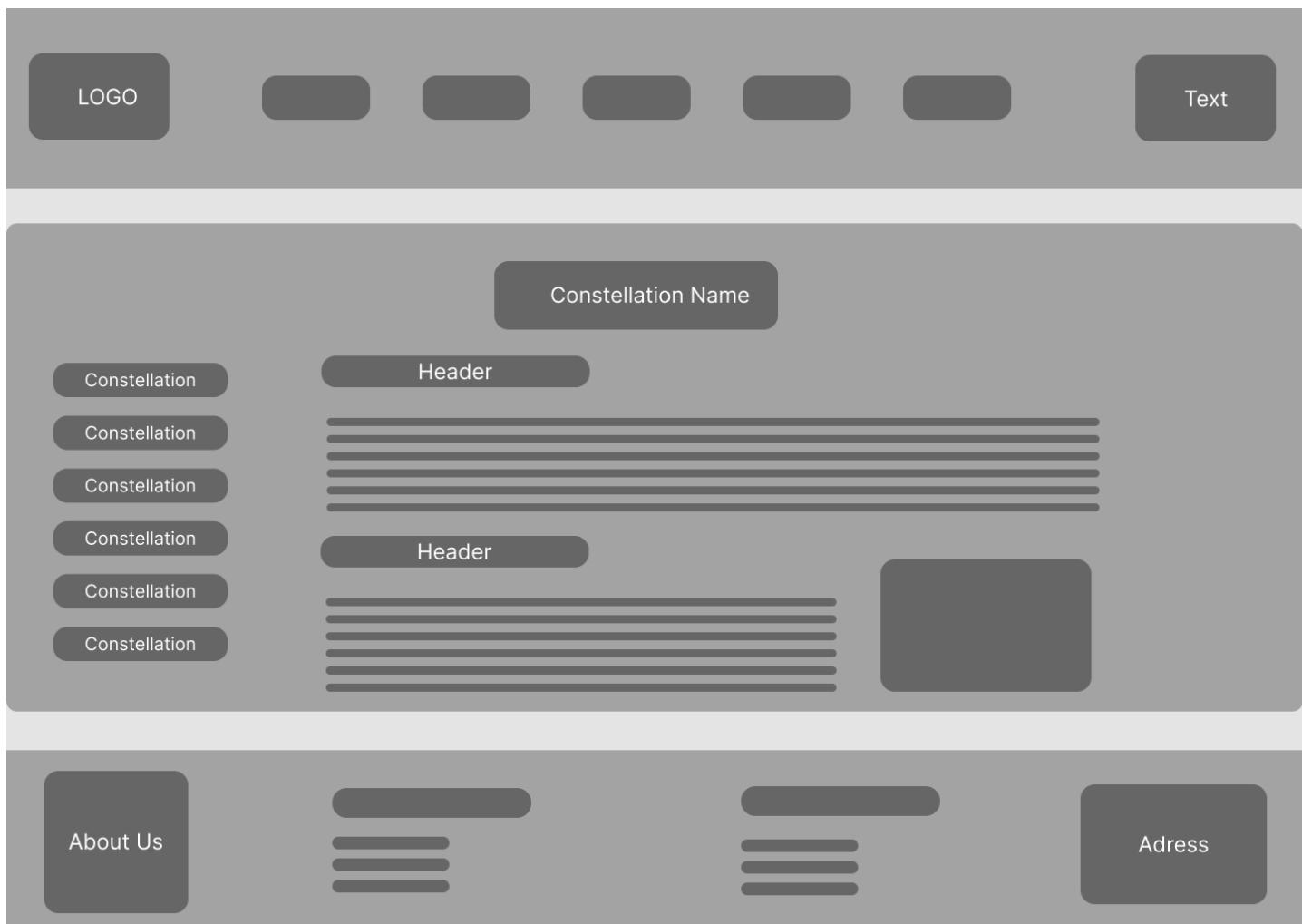
## 2/ Planets



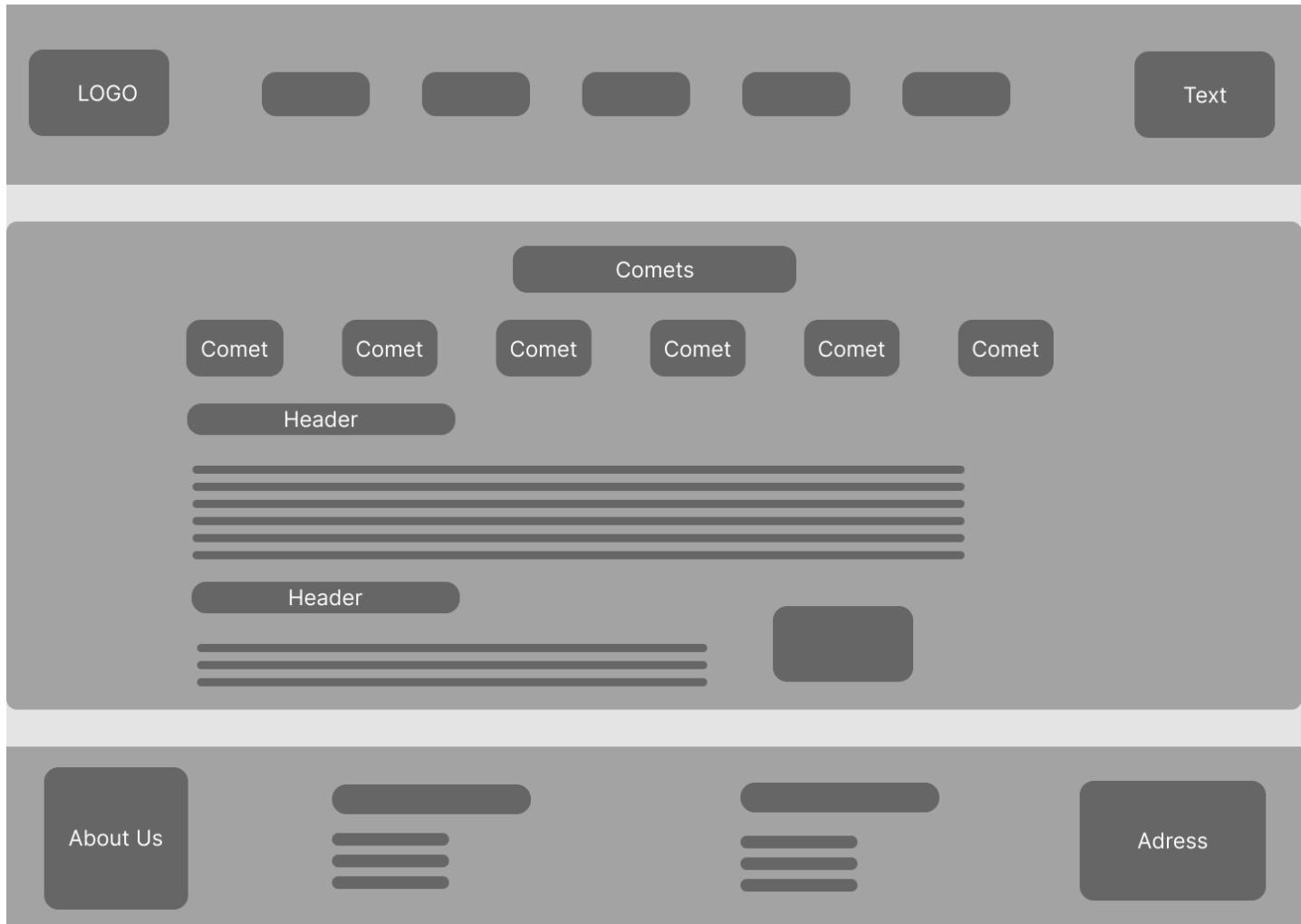
### 3/ Astronomy topics



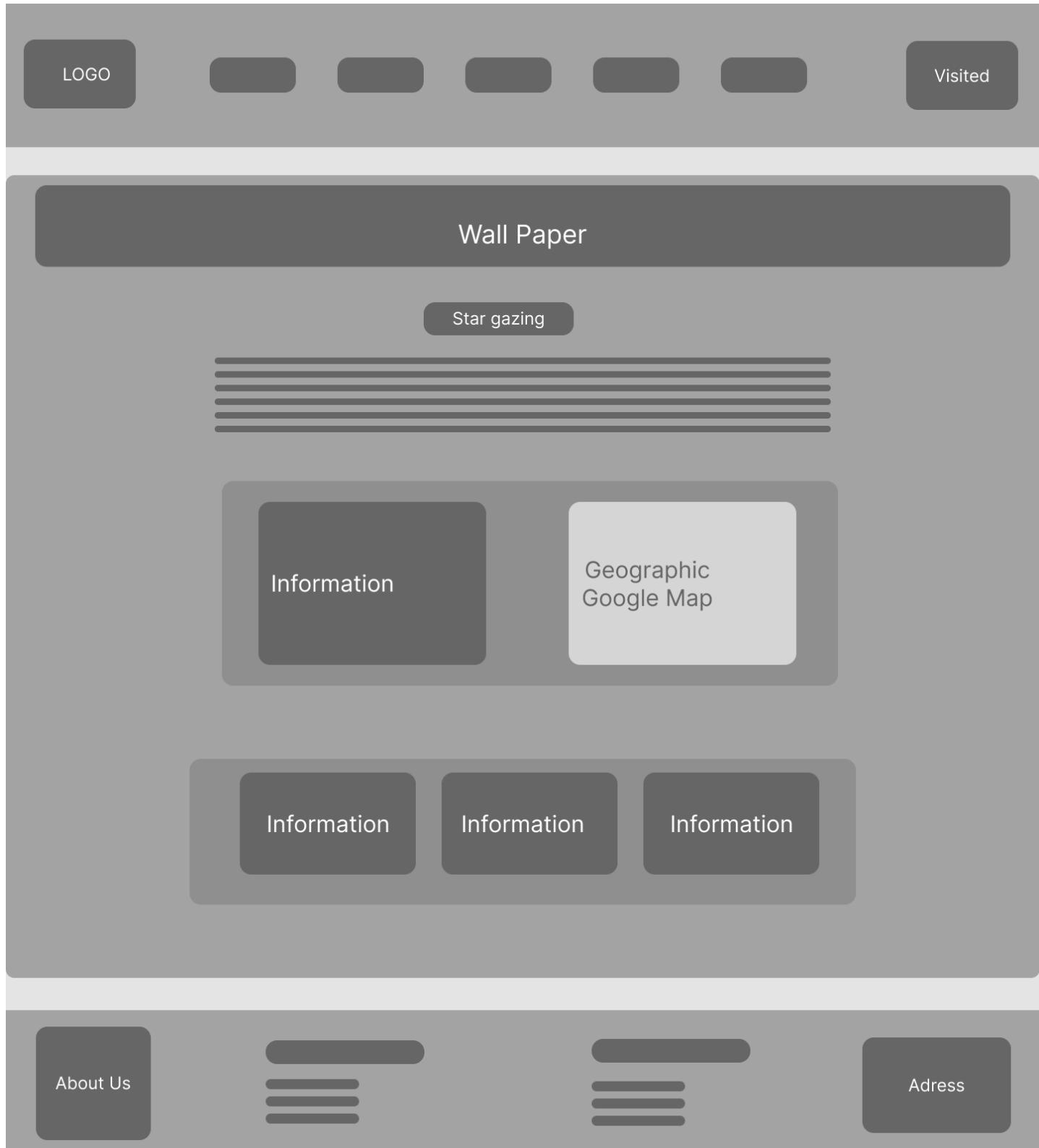
## 4/ Constellations



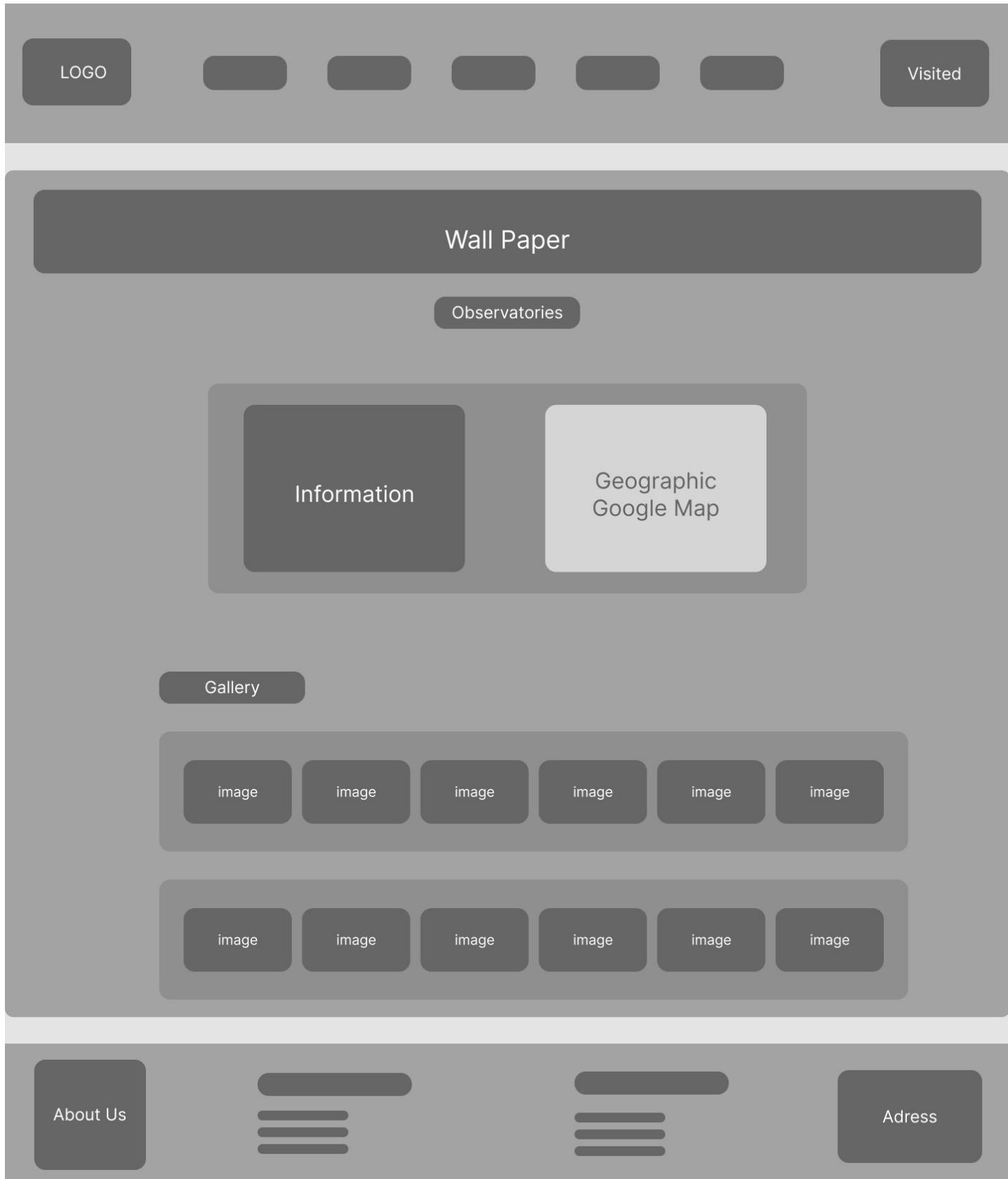
## 5/ Comets



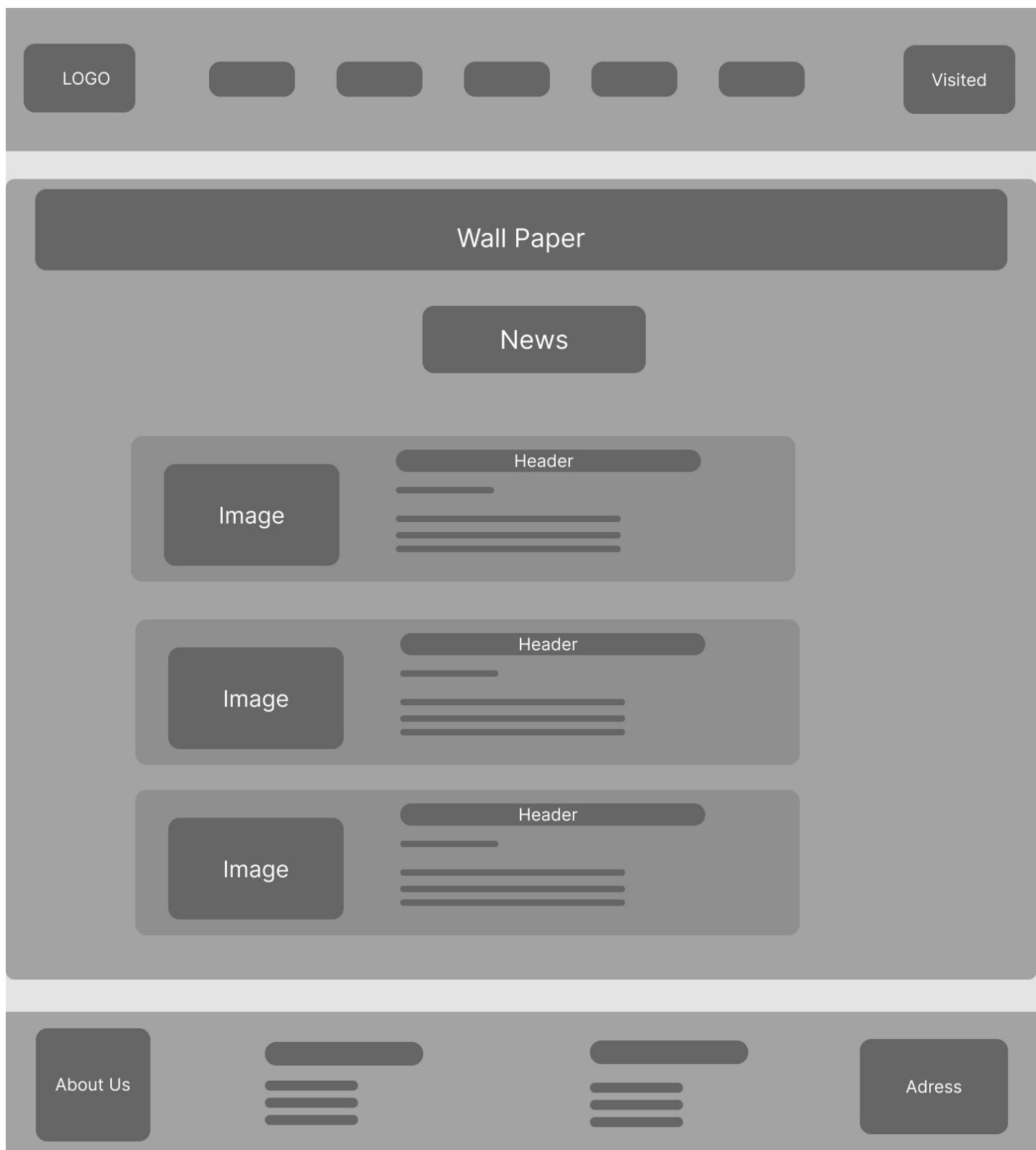
## 6/ Star Gazing



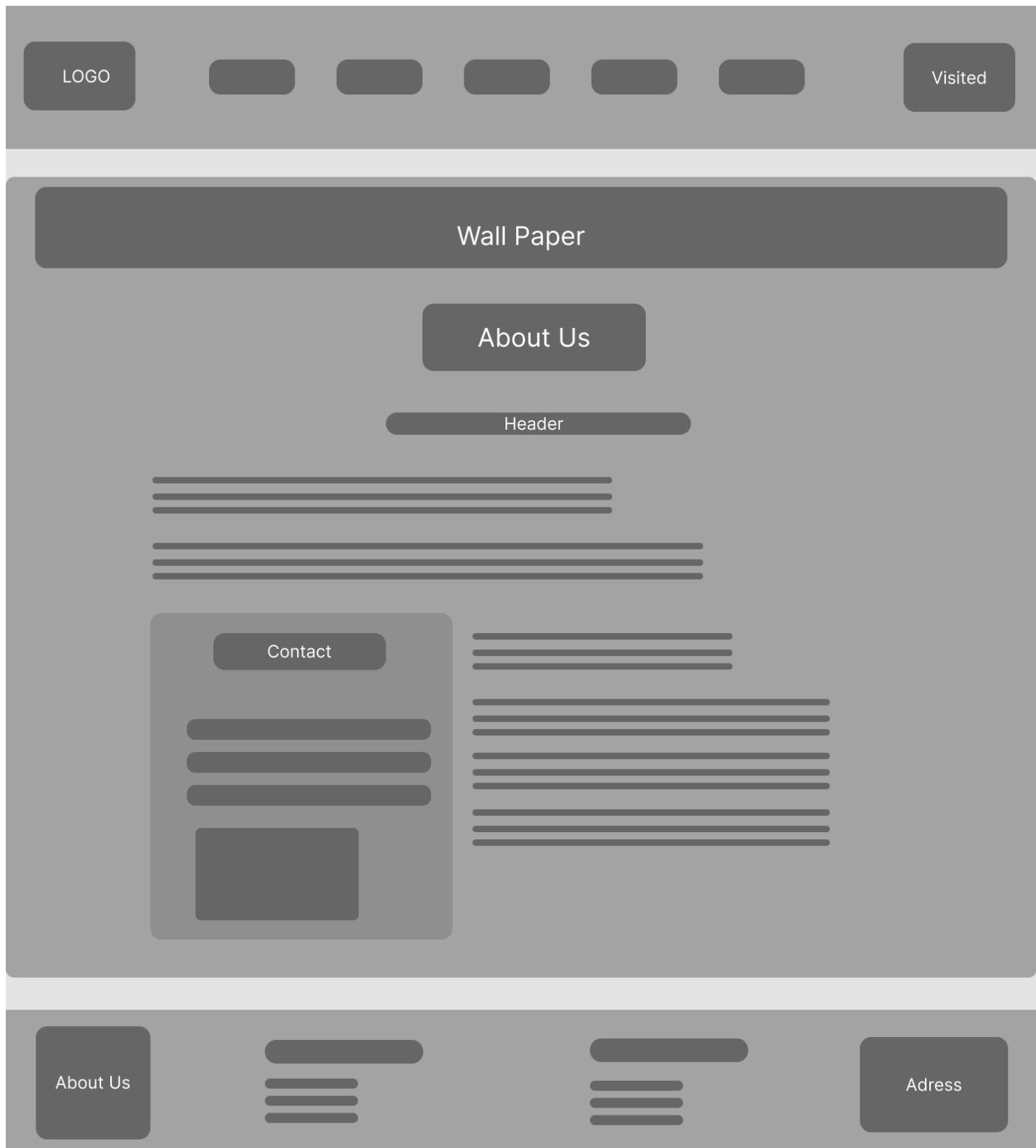
## 7/ Observatories



## 8/ News



## 9/ About Us

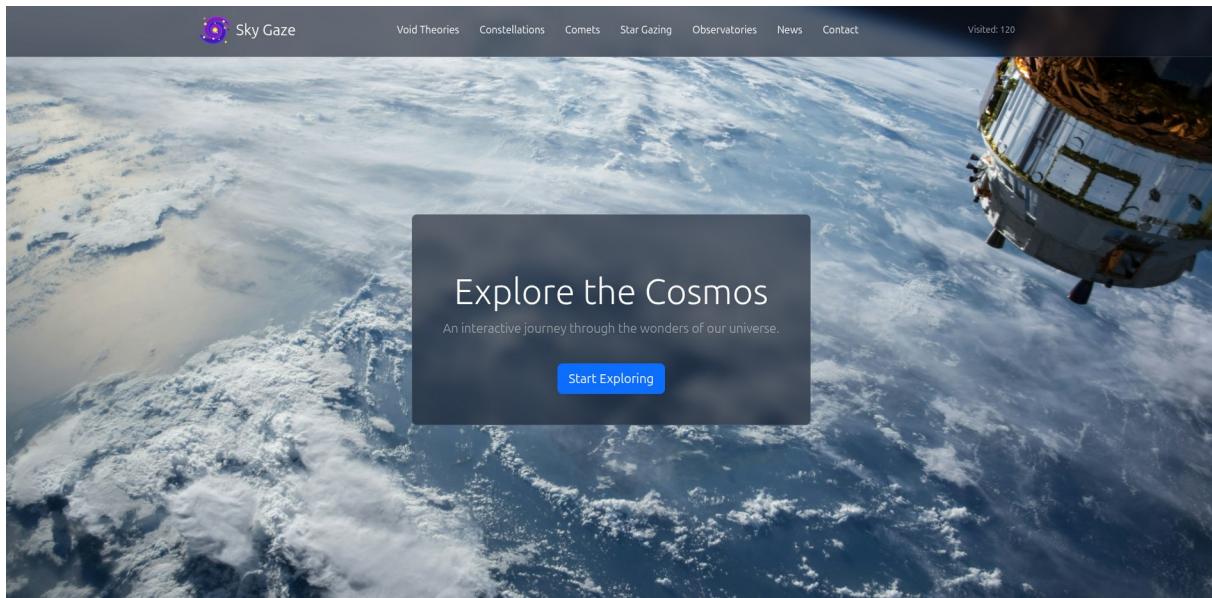


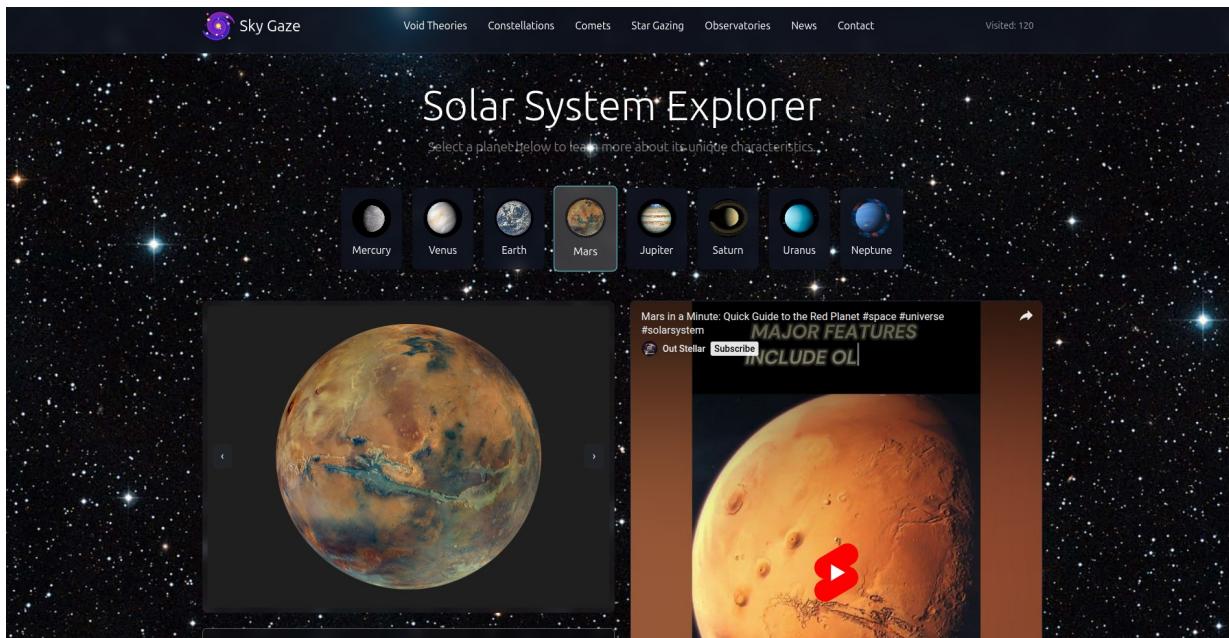
Project Ref. No.:		Project Title:	Activity Plan Prepared By:	Date of Preparation of Activity Plan:			
Sr.No.	Task			Actual Start Date	Actual Days	Team Mate Names	Status
1	Site map	Sky Gazing	Thai	7/31/2025	1	Thai	Completed
2	Mock of website			1/8/2025	1	Thai	Completed
3	Task sheet Review			2/8/2025	1	Loi	Completed

<b>Date:</b> 8/02/2025	
Signature of Instructor:	Signature of Team Leader:
Ms. Le Mong Thuy	Doan Duy Thai

## Problem definitions

1. The web page should have the description/images about various planets. If user clicks on the same, navigational link must be available.





- There should be categories providing details about Solar Eclipse, big bang theory, evolution of earth etc

Void Theories

Explore theories about the structure of the cosmos.

- The Big Bang Theory
- Black Holes: Gravity's Ultimate Dominion
- Dark Matter: The Unseen Universe
- Exoplanets: Worlds Beyond Our Sun
- The Life Cycle of Stars
- Cosmic Nebulae: The Universe's Celestial Clouds

Black Holes: Gravity's Ultimate Dominion

Black holes are regions of spacetime where gravity is so intense that nothing, not even light, can escape. They are cosmic objects of extreme density, warping space and time around them.

In the cosmic zoo of celestial objects, none capture the imagination or challenge our understanding of physics quite like a black hole. It is a region of spacetime where gravity reaches its most extreme, creating a one-way door from which nothing can return. A black hole is not an empty void; rather, it

The page title is "The Life Cycle of Stars". Below the title is a subtitle: "The process by which a star changes over billions of years. A star's destiny, from its birth in a dusty nebula to its final, dramatic end, is determined almost entirely by its mass." A large, colorful image of a star-forming nebula is centered on the page.

Stars are the luminous engines of the cosmos, performing a delicate balancing act for billions of years. They are not eternal; they undergo a complete life cycle, from a spectacular birth to a dramatic death. This entire journey is dictated by a single defining characteristic: a star's initial mass. The more massive a star, the brighter it burns and the faster it dies. From the gentle fading of a Sun-like star to the cataclysmic explosion of a cosmic heavyweight, the life cycle of a star is a story of gravity, pressure, and the creation of the very elements that make life possible.

3. Various sections such as –

- a. When best to Star Gaze
- b. Where is best to Star Gaze
- c. What to expect to see in a Star Gaze

The page title is "Stargazing Guide". A central call-to-action button says "When is Best to Stargaze". Below it are four informational boxes: "Time of Year", "Time of Night", "Moon Phase Impact", and "Weather Conditions".

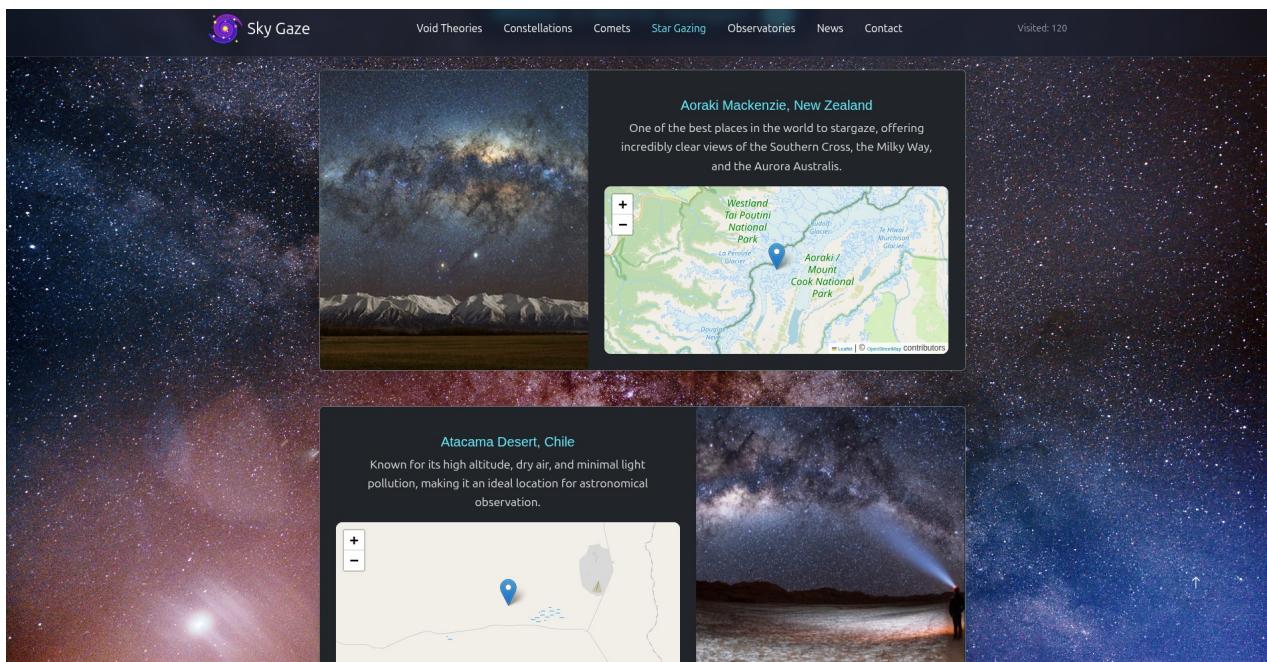
**Time of Year**  
Winter often offers clearer skies due to lower humidity and more stable air.  
Summer may have more haze or clouds.

**Time of Night**  
Just after sunset or before dawn is ideal for observing planets and other celestial objects as the sky is still dark enough and temperatures are more stable.

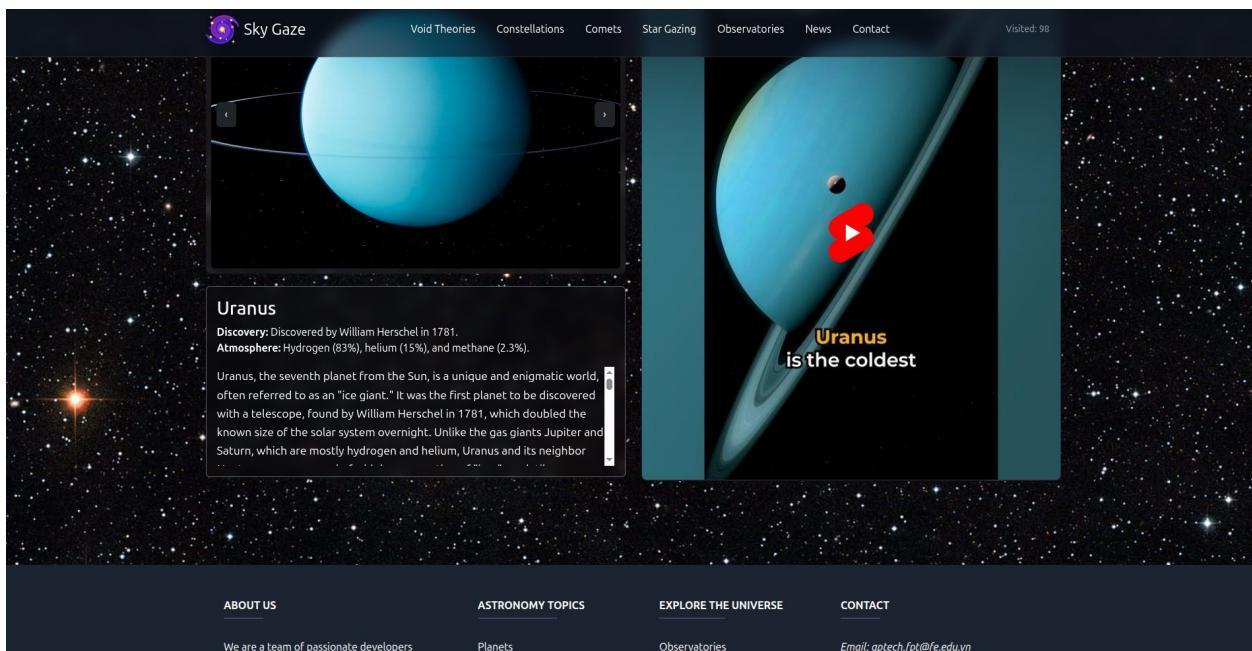
**Moon Phase Impact**  
Avoid nights with a full moon, as its bright light will wash out fainter stars and galaxies. New moon or crescent moon nights are best.

**Weather Conditions**  
Clear, cloudless skies with low humidity and minimal air pollution are ideal. Always check the weather forecast before planning your stargazing trip.

Below these boxes is another call-to-action button: "Where is Best to Stargaze".



4. The site should also list and explain various planets available as well as details about them as
  - a. When discovered
  - b. Size
  - c. Atmosphere there
  - d. Distance from sun and earth
  - e. Other available important details about them.



5. There should be information on constellations as what is it/how it is formed and various constellations.

Sky Gaze      Void Theories      Constellations      Comets      Star Gazing      Observatories      News      Contact      Visited: 98

## The Constellations

### Discover the Stars: Structure and Lifecycle

Before we journey through the 88 constellations in the sky, let's learn about the very celestial bodies that create them. What exactly are stars, how are they structured, and what is their lifecycle?

#### What is a Star? 🌟

Stars are giant spheres of hot gas that produce their own light through nuclear fusion reactions in their core. Their immense gravity creates tremendous pressure and temperature at the center, enough to fuse light elements (mainly hydrogen) into heavier elements (like helium), releasing a vast amount of energy as light and heat. The primary components of stars are hydrogen (over 70%) and helium.

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**Life Cycle of a Star**

Like everything in the universe, stars have a lifecycle: they are born, they live, and they die. A star's lifespan depends on its mass: \*\*the larger the star, the faster it burns, and the sooner it dies.\*\*

\*\*Formation:\*\* Stars are born from vast clouds of dust and gas called nebulae. Under the force of gravity, material in the nebula clumps together, heats up, and forms a protostar.

#### The Lifecycle of a Star ✨

6. There should also be a section on comet giving information related.

Sky Gaze      Void Theories      Constellations      Comets      Star Gazing      Observatories      News      Contact      Visited: 98

## Comets: The Wandering Snowballs

### What is a Comet?

Comets are cosmic snowballs of frozen gases, rock, and dust that orbit the Sun. When frozen, they are the size of a small town. When a comet's orbit brings it close to the Sun, it heats up and spews dust and gases into a giant glowing head larger than most planets. The dust and gases form a tail that stretches away from the Sun for millions of miles.

**Fun Fact: Comet Tails**

A comet's tail can be incredibly long, sometimes stretching over 150 million kilometers (about the distance from the Earth to the Sun). Despite their immense size, you could fly a spaceship right through one without noticing, as the particles are extremely spread out.

Sky Gaze      Void Theories      Constellations      Comets      Star Gazing      Observatories      News      Contact      Visited: 98

Short-Period Comets
Long-Period Comets
Non-Periodic & Interstellar Comets

These comets have orbits longer than 200 years, often thousands or millions of years, and originate from the distant Oort Cloud.

Comet Hale-Bopp

Comet Hyakutake

Comet ISON

Comet McNaught

Comet West

Comet C/2020 F3 (NEOWISE)

The Great Comet of 1811

Comet Lovejoy (C/2011 W3)

Comet Thatcher

Comet C/2023 A3 (Tsuchinshan-ATLAS)

7. Also include a section which will provide details on various latest developments in the field of astronomy related to planets and stars.

The screenshot shows the 'NEWS' section of the Sky Gaze website. At the top, there is a banner image of an astronaut working outside a space station. Below the banner, the word 'NEWS' is centered in a large white font. Three news articles are listed in a grid:

- NASA Discovers Interstellar Comet 3I/ATLAS** (July 1, 2025) - NASA's ATLAS survey in Chile detected the third confirmed interstellar comet entering our solar system.
- ERIS Spots Spiral Disc Around Young Star** (July 31, 2025) - VLT's ERIS instrument captured a spiral disc around HD 135344B—possible planet formation in action.
- What's Up: July 2025 Skywatching Tips from NASA** (July 2025) - A summary of skywatching tips from NASA for July 2025.

8. List of Few top Observatories with details and location displayed using GeoLocation API (eg. GoogleMaps).

The screenshot shows the details page for Griffith Observatory on the Sky Gaze website. On the left, a sidebar lists other observatories: Griffith Observatory (selected), Mauna Kea Observatory, Royal Observatory Greenwich, Very Large Telescope (VLT), ALMA Observatory, Sydney Observatory, and La Silla Observatory. The main content area features a large image of the Griffith Observatory building and surrounding city skyline at dusk. Below the image is a descriptive text: "One of the most famous public observatories in the world, offering spectacular views of Los Angeles and the cosmos. It's a gateway to the stars for millions of visitors." A blue button labeled "Visit Website" is located below this text. To the right of the image, there are three columns of information: "Key Features" (Zeiss refracting telescope, Samuel Oschin Planetarium, Public star parties), "Location" (a map showing the observatory's location in Glendale, Los Angeles), and "Additional Info" (Opened: 1935, Elevation: 346 m (1,135 ft), Governed by: City of Los Angeles).

9. Site map, Gallery, About us, Contact us link must be added.

The screenshot shows the 'Contact Us' page of the Sky Gaze website. At the top, there's a navigation bar with links to Void Theories, Constellations, Comets, Star Gazing, Observatories, News, and Contact. The 'Contact' link is highlighted. Below the navigation, there's a section titled 'Contact Us' with an email address and phone number. A form for contacting the company is present, with fields for Full Name (Edison Harry), Email address (Edison@gmail.com), Phone Number (+84 000-000-000), and Message (Explore the universe). There are 'Send' and 'Cancel' buttons at the bottom of the form.

The screenshot shows the 'ASTRONOMY TOPICS' page of the Sky Gaze website. It features a navigation bar with links to About Us, Astronomy Topics, Explore the Universe, and Contact. Below the navigation, there's a search bar for constellations and buttons for Spring, Summer, Autumn, Winter, and The Zodiacs. The main content area displays a grid of 12 constellation images, each with its name and a brief description. The constellations shown are Camelopardalis (The Giraffe), Cetus (The Whale), Cetus (The Beeswax), Crater (The Cup), Cygnus (The Swan), Draco (The Dragon), Equuleus (The Foal), Eridanus (The River), Lynx (The Lynx), Lyra (The Lyre), Ophiuchus (The Serpent Holder), and Pegasus (The Winged Horse).

10. About Us and Contact Us: This menu option should display Email id, address, and contact number of Sky Gazing Company.

### Task Sheet Review 3

Project Ref. No.:		Project Title:	Activit y Plan Prepar ed By:	Date of Preparation of Activity Plan:			
Sr.No.	Task			Actual Start Date	Actual Days	Team Mate Names	Status
1	Website Layout	<i>Sky Gazing</i>	Thai	8/13/25	1	Thai	Completed
2	Report				1		Completed
3	Task sheet Review 3				1		Completed

Date: 8/13/2025	
Signature of Instructor:	Signature of Team Leader:
Ms. Le Mong Thuy	Doan Duy Thai