



## StellarVisions (APoD) Web App

StellarVisions is a React-based web app designed to bring the wonders of the cosmos to users' screens. This interactive and informative platform offers daily doses of awe-inspiring imagery from NASA's Astronomy Picture of the Day (APoD)



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# Project Details

## Overview

The objective of the StellarVisions project is to create an engaging and educational web application that delivers daily Astronomy Picture of the Day (APoD) images from NASA to users. This project aims to provide a user-friendly interface for space enthusiasts and curious learners to explore the wonders of the cosmos while addressing challenges in data management, user input validation, page transitions, and global state management. Through StellarVisions we strive to foster a deeper understanding and appreciation of the universe through captivating visuals and informative content.

## Technologies Used

### Front-End Technologies:

- **React:** The core JavaScript library for building the user interface and managing dynamic content.
- **Tailwind CSS:** A utility-first CSS framework used for styling and designing the user interface.
- **React Router DOM:** For navigation and managing page transitions within the web application.
- **Framer Motion:** Used to create smooth page transitions with subtle animations.
- **Context API:** For efficient global state management and data sharing between components.

### Data and API:

- **NASA APoD API:** Used to fetch daily and historical Astronomy Picture of the Day (APoD) images and related information.
- **Local Storage:** Utilized for storing and managing retrieved API data to reduce the need for repeated API requests.

## **Development and Build Tools:**

- **TypeScript:** Enhancing code quality and providing type safety in the development process.
- **Vite:** A fast build tool and development environment for serving the web application.
- **Babel:** Used for transpiling TypeScript code for browser compatibility.
- **Git:** Version control for tracking and managing code changes.

## **Flow and Functionality**

### **Homepage (Home Route):**

- The initial landing page of the web app is the Home page. This page is responsible for displaying the Astronomy Picture of the Day (APoD) from NASA.
- Upon loading, the Home page makes an API request to NASA's APoD API to fetch the latest APoD data. This data includes the image, title, date, explanation, and related information.
- The Hero component is used on the Home page to present the APoD image with its title and date.

### **Navigation:**

- Users have the option to navigate to other parts of the web app, including the Info page, where they can access more details and explanation about the APoD image.

### **Specific Date Selection:**

- On the Home page, users can input a specific date to view the APoD image from that date. The date format is guided by a placeholder, and if the user enters an incorrect format, an error message is displayed.
- When a specific date is entered, the date is validated, and if it's correct, the app fetches the APoD data for that date from the API.

### **Global State Management (Context API):**

- The context API is used to manage global state throughout the web app. It acts as a data provider, making data accessible to all components.

- When a user selects a specific date, the state is updated with the new APoD data, and all pages use this updated data for rendering.

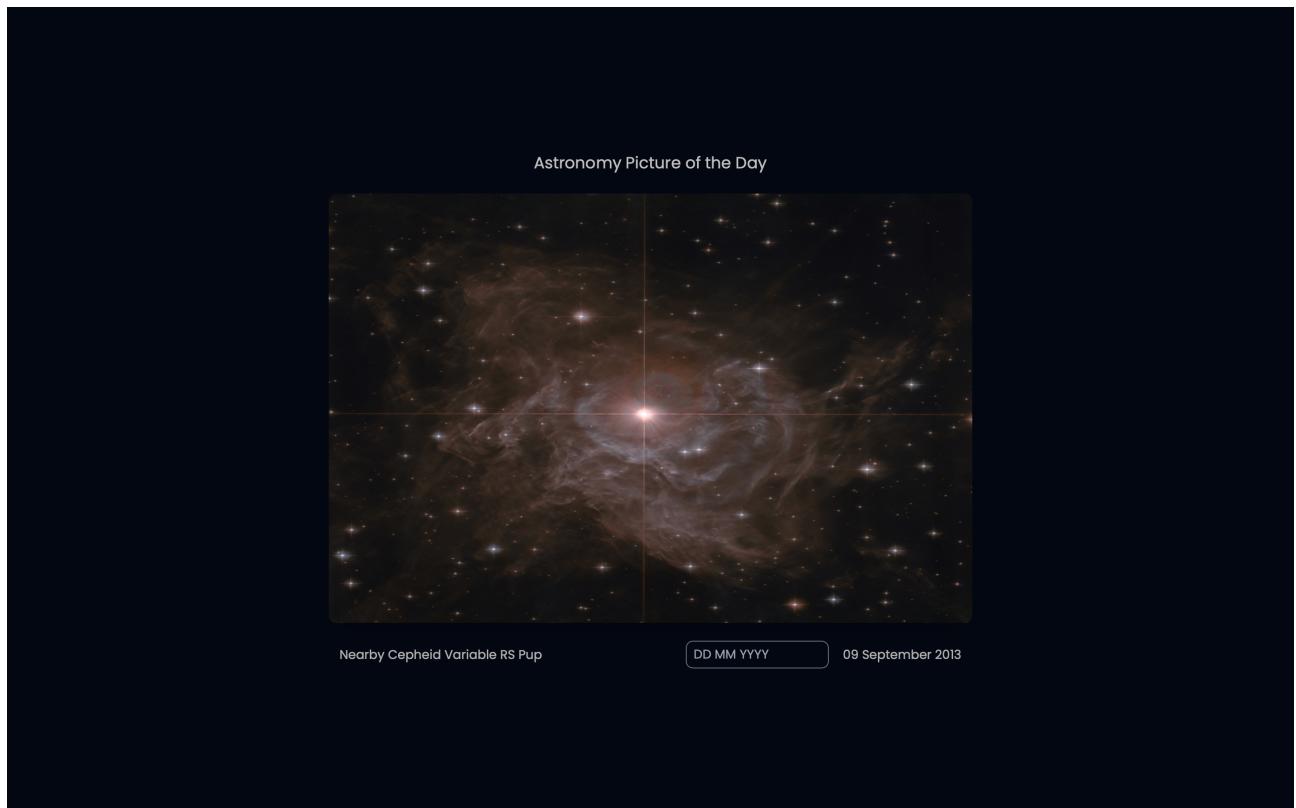
### **Local Storage for API Data:**

- To prevent excessive API requests and maintain fast interaction, the received APoD data is stored in local storage.
- If data for a specific date is already present in local storage, the web app retrieves it from there instead of fetching it again from the API.

### **Page Transitions (Framer Motion):**

- Page transitions within the web app are handled smoothly using the Framer Motion library. This provides a seamless user experience by introducing subtle fade-in and fade-out effects when switching between pages.

## Screenshots



## Explanation

It is one of the most important stars in the sky. This is partly because, by coincidence, it is surrounded by a dazzling reflection nebula. Pulsating RS Puppis, the brightest star in the image center, is some ten times more massive than our Sun and on average 15,000 times more luminous. In fact, RS Pup is a Cepheid type variable star, a class of stars whose brightness is used to estimate distances to nearby galaxies as one of the first steps in establishing the cosmic distance scale. As RS Pup pulsates over a period of about 40 days, its regular changes in brightness are also seen along the nebula delayed in time, effectively a light echo. Using measurements of the time delay and angular size of the nebula, the known speed of light allows astronomers to geometrically determine the distance to RS Pup to be 6,500 light-years, with a remarkably small error of plus or minus 90 light-years. An impressive achievement for stellar astronomy, the echo-measured distance also more accurately establishes the true brightness of RS Pup, and by extension other Cepheid stars, improving the knowledge of distances to galaxies beyond the Milky Way. The above image was taken by the Hubble Space Telescope and digitally processed by a volunteer. Star Party? List it here.



Nearby Cepheid Variable RS Pup  
09 September 2013

## Astronomy Picture of the Day



Nearby Cepheid Variable RS Pup  
09 September 2013

DD MM YYYY



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## Summary

The StellarVisions web app is built to provide users with a captivating experience of NASA's Astronomy Picture of the Day. It fetches data from the API, allows users to explore images from specific dates, manages global state efficiently using the context API, and uses local storage to store and retrieve data for optimized performance. The user interface is designed to be visually appealing and user-friendly, with smooth transitions between pages and error handling for date input validation. This project offers a dynamic and interactive platform for users to explore the wonders of the cosmos.

## Project Related Links

Live (Prod link): <https://stellar-visions.vercel.app>

NASA APoD API: <https://api.nasa.gov>

Source (GitHub): <https://github.com/BugReportOnWeb/stellar-visions>

# BugReportOnWeb/**stellar-visions**

Webapp for NASA's Astronomy Picture of the Day  
(APoD)



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Contributor

0

Issues

0

Stars

0

Forks

