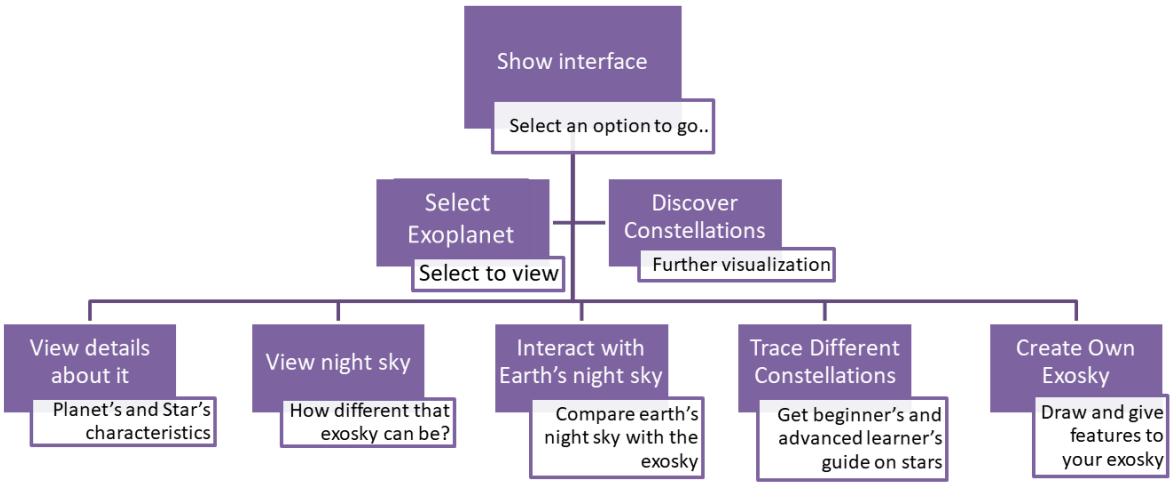
- **A chart for the features of our website:**



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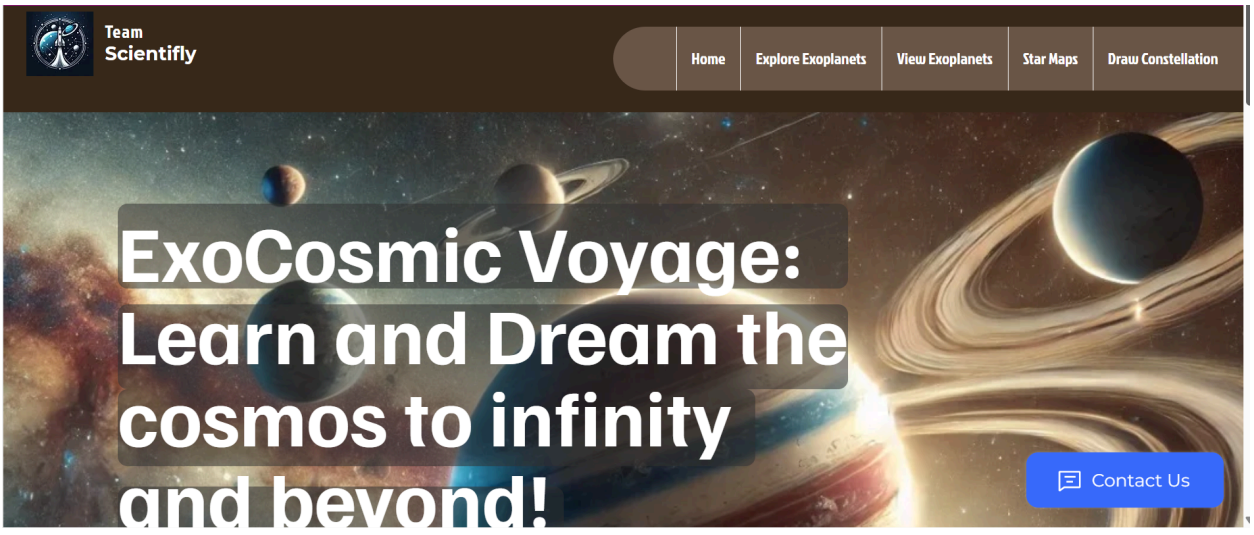
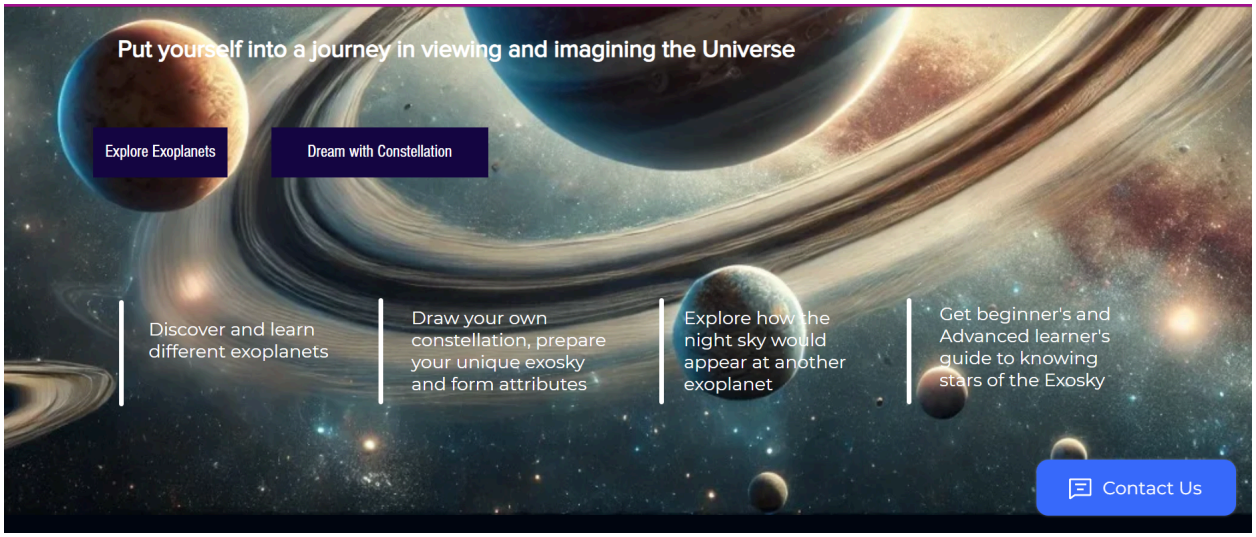
- **Features of our website in detail:**

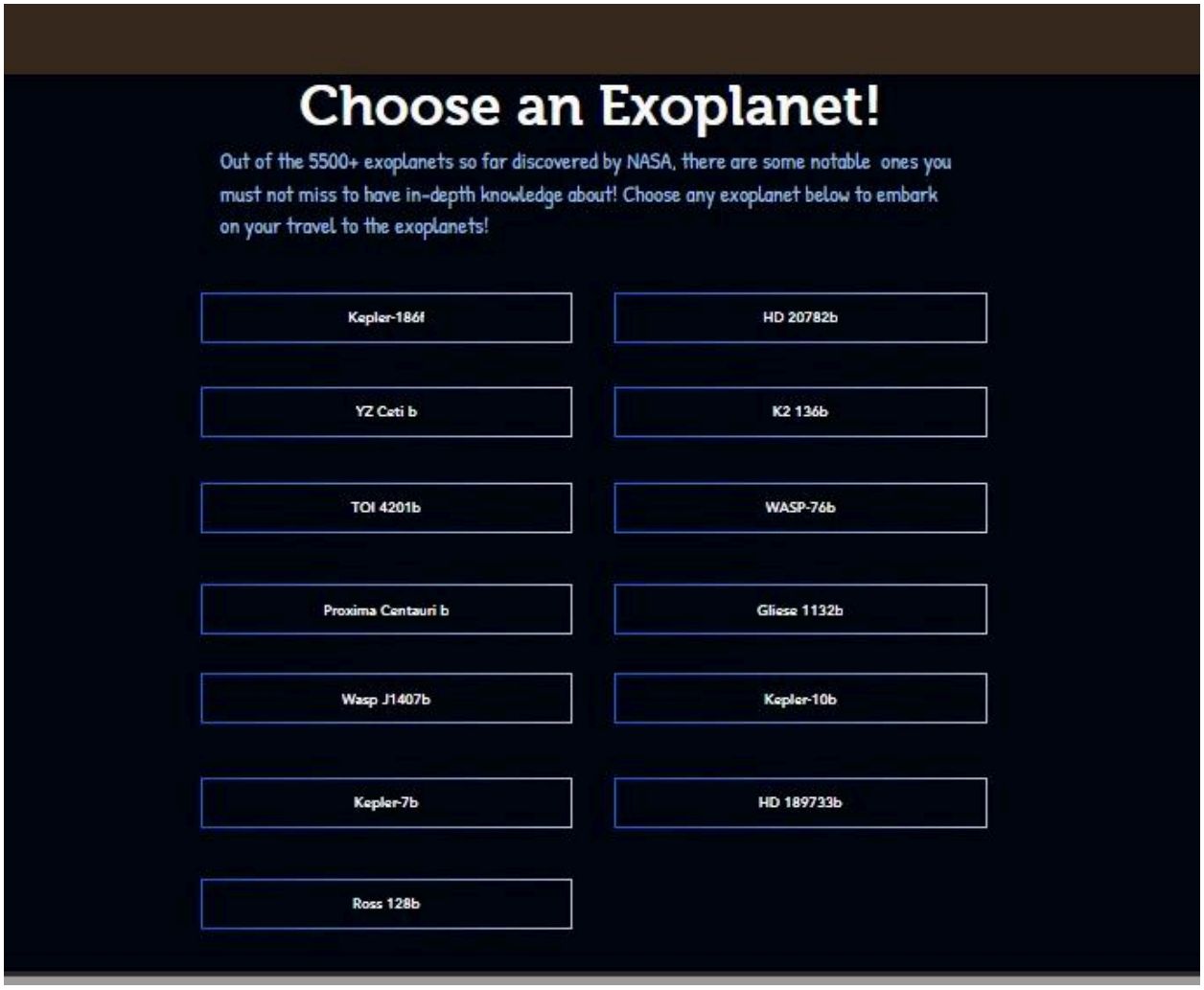


The user can get different options regarding exploring astronomy with the menu on top right, which shows 4 options for various

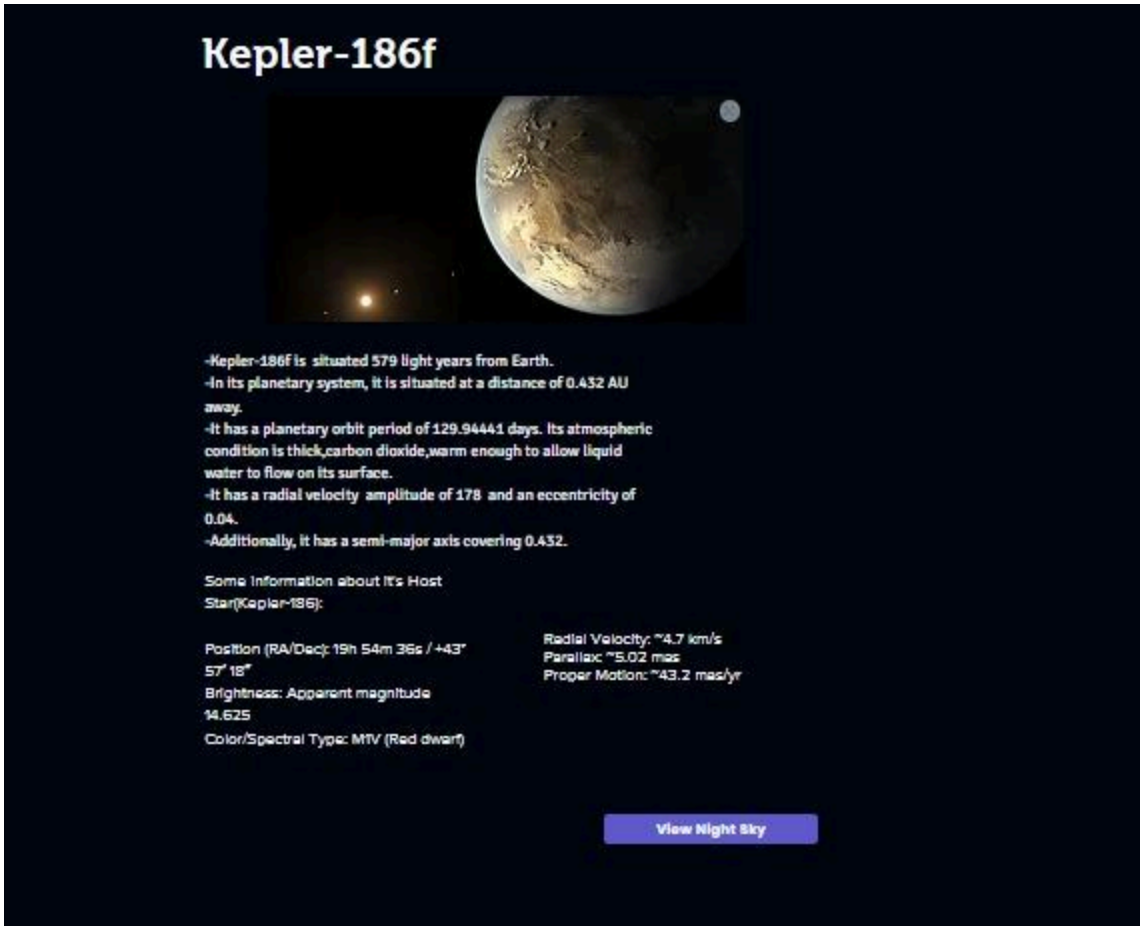
interactivity: Explore Exoplanet, View Exoplanet, Star Maps and Draw Constellations.



The user can also know about the key features about the website to get a quick overview. Besides, we are having 2 options(explore exoplanets and dream with constellation) as the primary interactivity elements; which a user can access by clicking on the navy blue colored buttons.

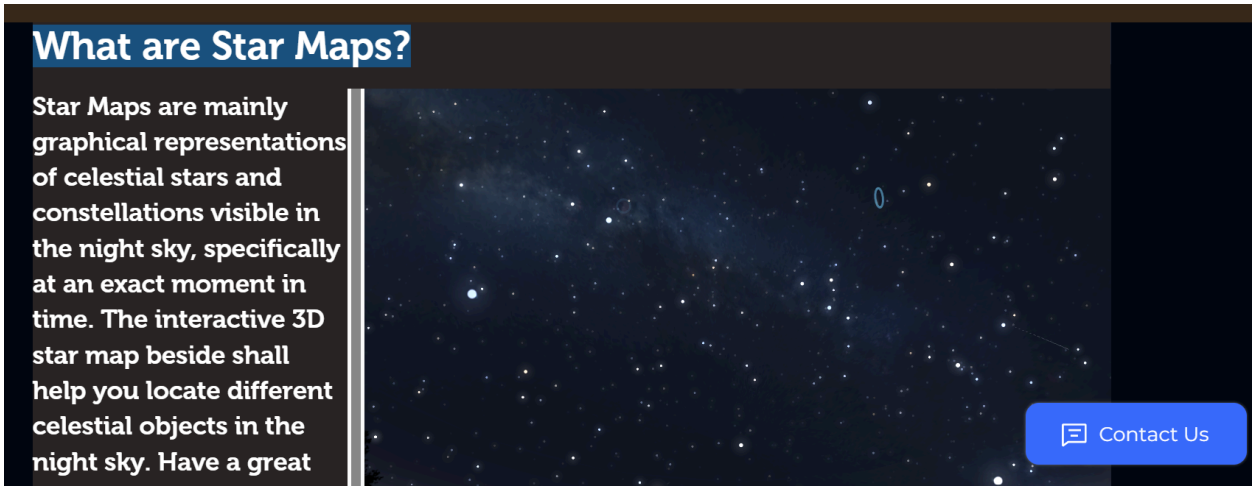


By either clicking on “explore exoplanets” button or “view exoplanets” from menu on top right of home page, the user can get navigated to a page from where they can select any exoplanet from a wide range of collections of exoplanets, prepared with the help of NASA Exoplanet Archive.



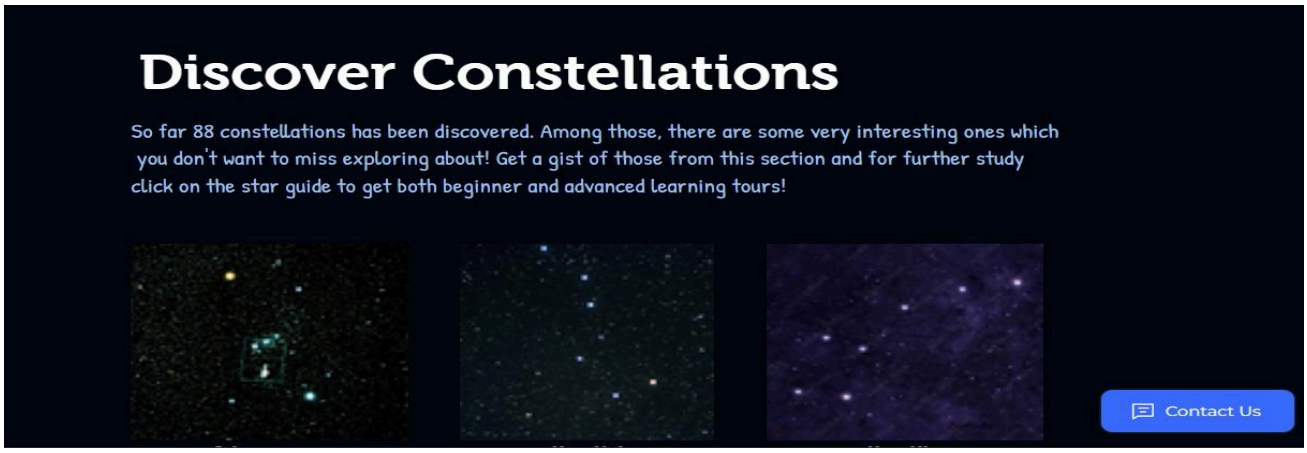
The user, after selecting a particular exoplanet can get details(like what is its distance from Earth, what is its planetary orbit, radial velocity and semi major axis). Also, they can view key details about the host star of the exoplanet.

After clicking on “View Night Sky” button from previous page, they can get a hypothetical imagery of the night sky of that particular exoplanet. They can even know about the location of different constellations and how that sky is made up. For displaying this visualization, informations in the light of stellar research and catalogs of NASA and other space organizations.



From “view star maps” button of the previously described page, one can get to the page of 3D sky map interactivity , where the user can compare the night sky from the Exoplanet’s night sky(as understood from previous section) with Earth’s night sky. We have utlized this interactive feature with the help of Stellarium Web which reflects different data from NASA and ESA and additionally added informations to ensure that the user understands what a star/sky map is and what to understand with that visualization.

The user can know more about star maps and get visualization over star maps in the light of NASA's extensive data from its Scientific Visualization Studio(SVS)



With the obtained knowledge by comparing Earth's night sky with the Exoplanet's night sky, the users can trace/discover different common constellations. They can either read more or read less about the information as per their choice. Also, they can get options for advanced and beginner's guide over knowing different stars of the constellations.

What is it?

Deneb, also known as Alpha Cygni is a first-magnitude blue supergiant star(brightest star) in the constellation of Cygnus.It is the brightest star in Cygnus and the 19th brightest star in the night sky, with an average apparent magnitude of +1.25. The distance of Deneb has been measured using a number of different methods which produced different ualues. Hipparcos satellite measurements of Deneb's parallax in the early 1990s yielded a ualue of 1.01 ± 0.57 milliarcseconds, which was consistent with the distance of about 2,615 light-years or 802 parsecs.

Image taken from https://apod.nasa.gov/

Unique characteristics:

Image taken from Stellarum

More characteristics:

- Deneb will be the North Pole star (the nearest visible star to the north celestial pole) around the year 9800 AD. It will only come within 7° from the pole and it will not mark true north as accurately as Polaris does.
- Deneb is the only star in Cygnus included on the list of the 58 navigational stars. The stars selected for use in celestial navigation are some of the brightest and most recognizable stars in the sky. Vega and Altair, the other two stars of the Summer Triangle, are also members of this special group.
- It's about 196,000 times more luminous than our sun. Besides, it contains about 20 solar masses and has a diameter about 203 times that of the sun.
- Deneb spent much of its early life as an O-type main-sequence star of about 23 M⊙, but it has now exhausted the hydrogen in its core and expan become a supergiant.

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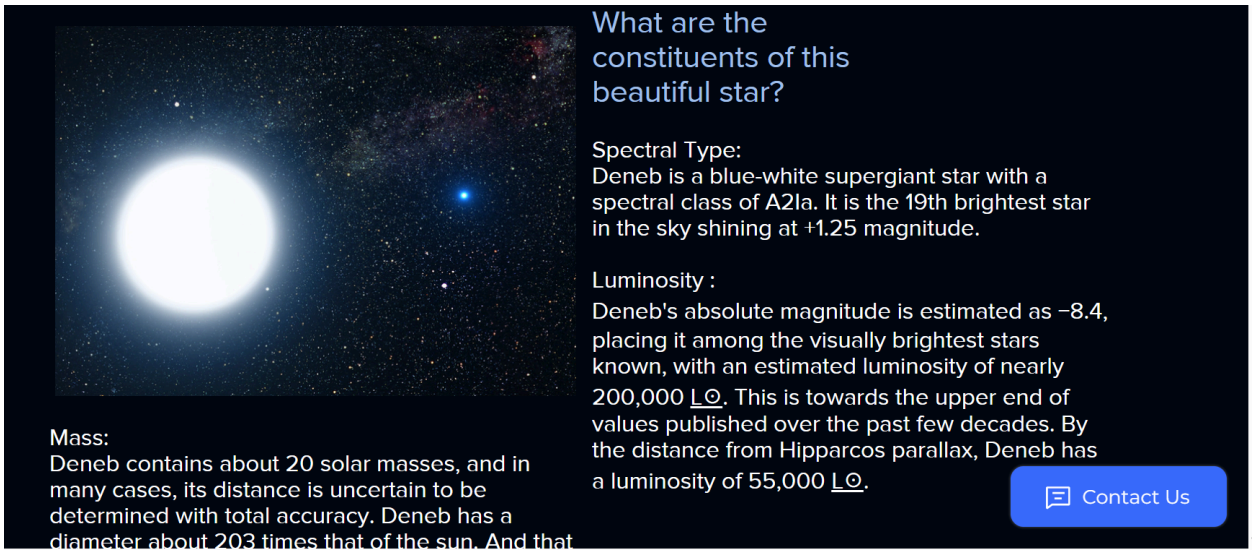
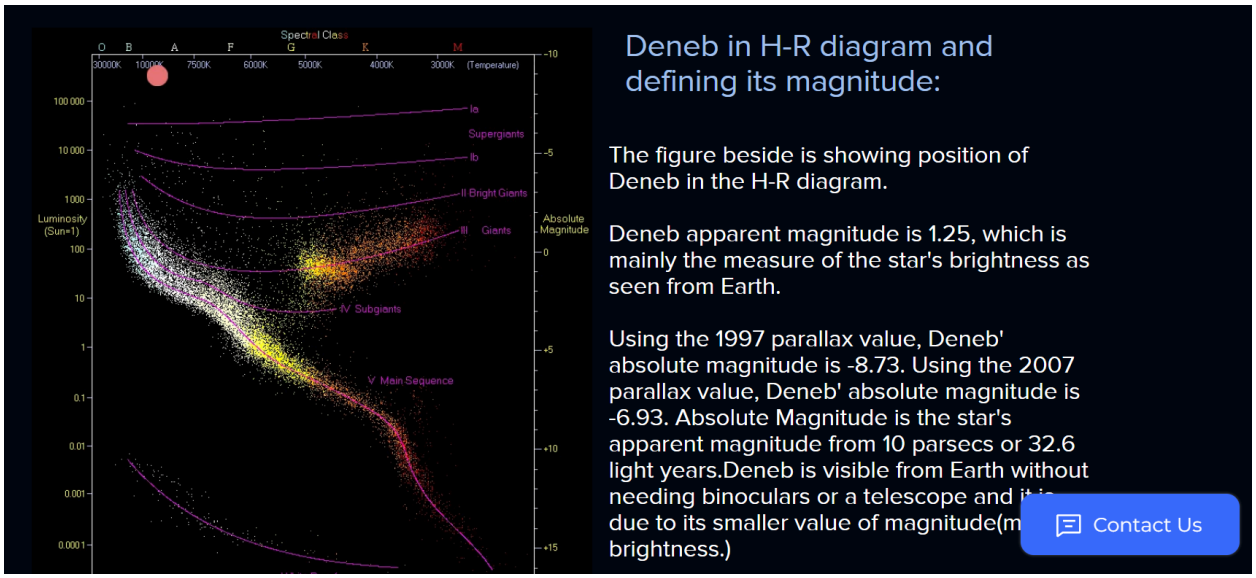
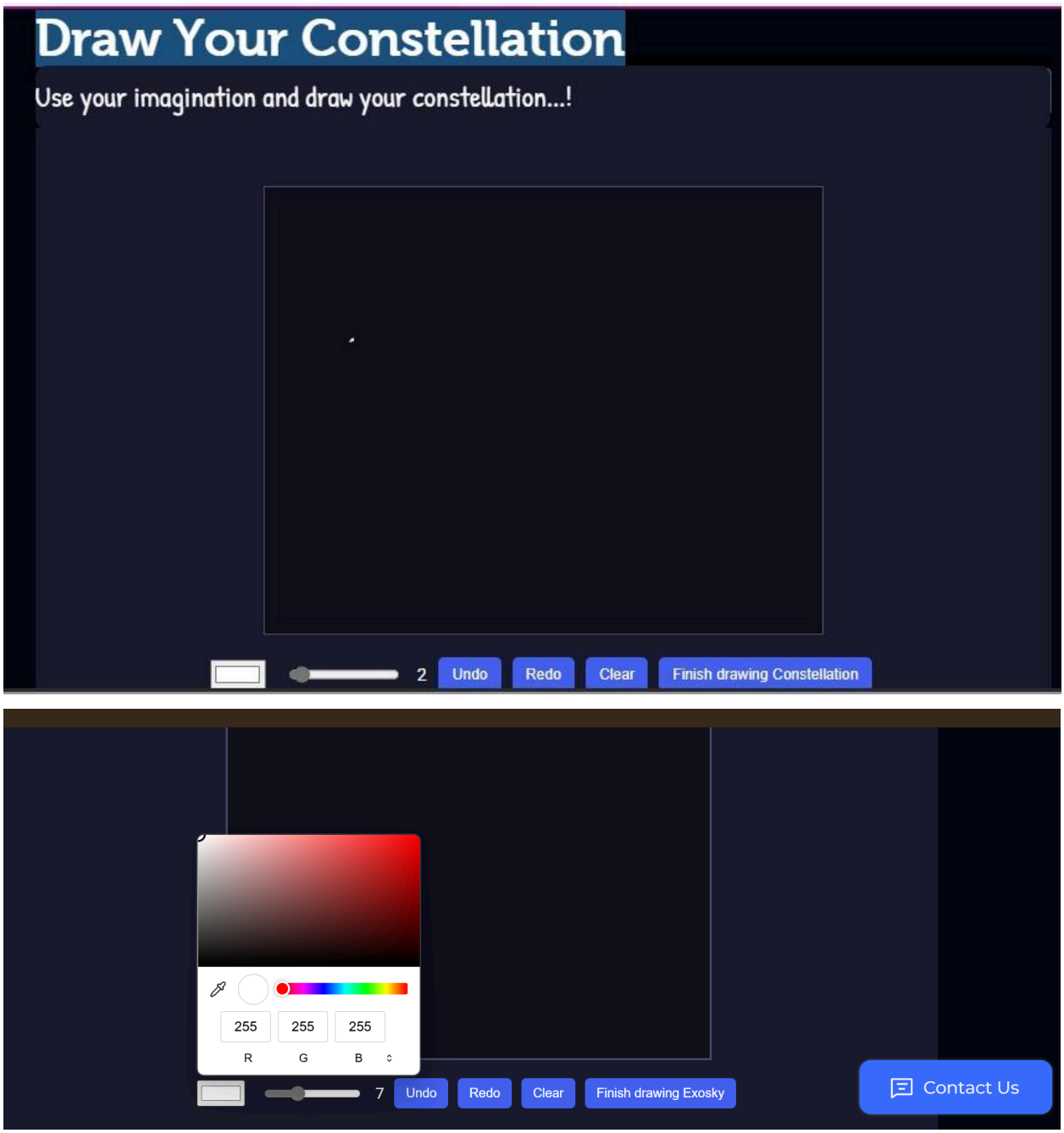
By clicking on “Beginner’s guide”, the user can get basic details about the major stars of the constellation, for example their uniqueness in brightness, magnitude, chemical/physical properties and so on.





Similarly, the user can get to know about specific measurements and alignments as well as characteristics in different grids,charts and diagrams when he/she choose to take an advanced learner’s guide about the particular star of the constellation.



Either clicking on “Draw Constellations” from menu of top-right corner of the homepage or “Dream with Constellation” button from the homepage,the user can draw and create their own constellations and also “exosky”(sky from any celestial body outside of solar

system). After that, they can name constellations and additionally give characteristics to their very personalized universe.

They can get to know about different exoplanets discovered by NASA. We have used different data of NASA, particularly NASA Exoplanet Catalog and NASA Exoplanet Archive for displaying informations and image for all-in-all easy visualization and comprehension over the exoplanets.