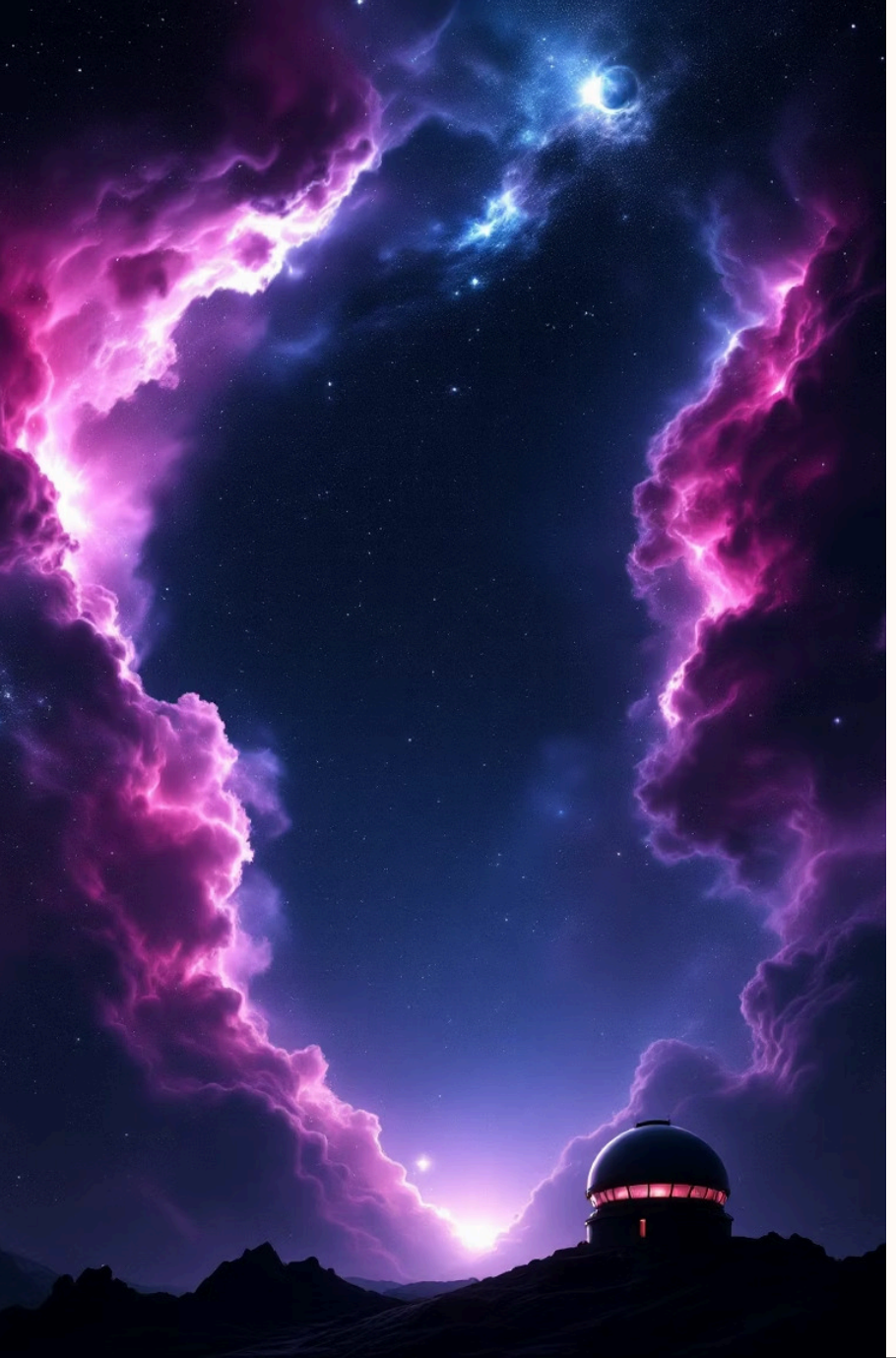


CelestiAI: Exoplanet Explorer

A World Away: Hunting for Exoplanets with AI

Empowering everyone to participate in real space exploration and planet discovery

Aayush Prakash, Mingming

Machine Learning & Algorithm Development

Jonty, Dimitrii

Data Engineering, Visuals & Design (Remote)

The Problem

Limited Accessibility

Current methods require extensive expertise, excluding passionate amateurs and students from participating

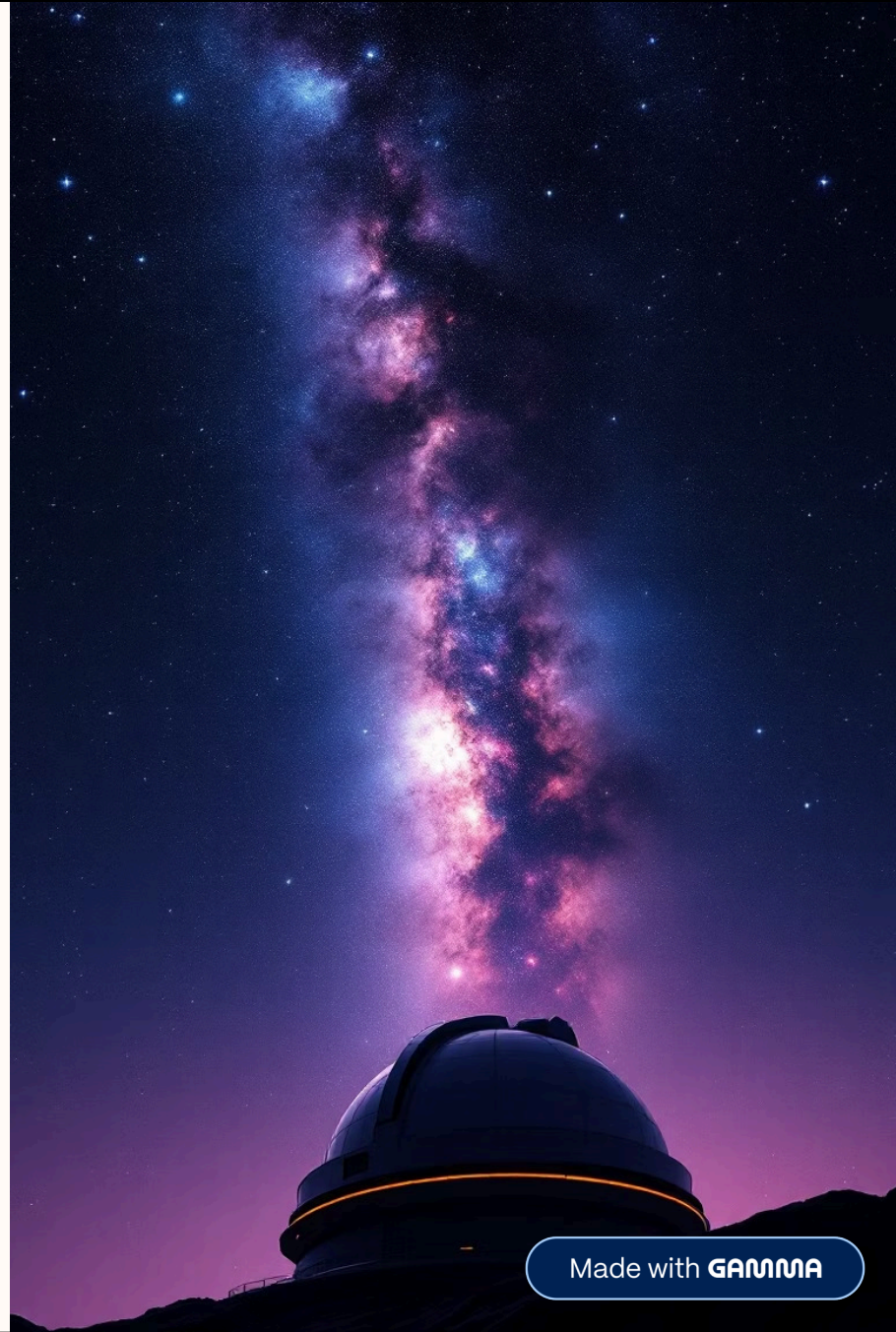
Overwhelming Data Volume

NASA missions like Kepler and TESS generate **massive amounts** of space data daily, creating a bottleneck in discovery

Habitability Assessment

One of the key challenges is determining if detected planets are habitable and could sustain human life

Our mission: make exoplanet science **accessible**, **visual**, and **inspiring** — turning raw NASA data into a **tangible exploration** of other worlds.



Our Solution

A Planet Hunting Website

Upload Data

Simple CSV file upload

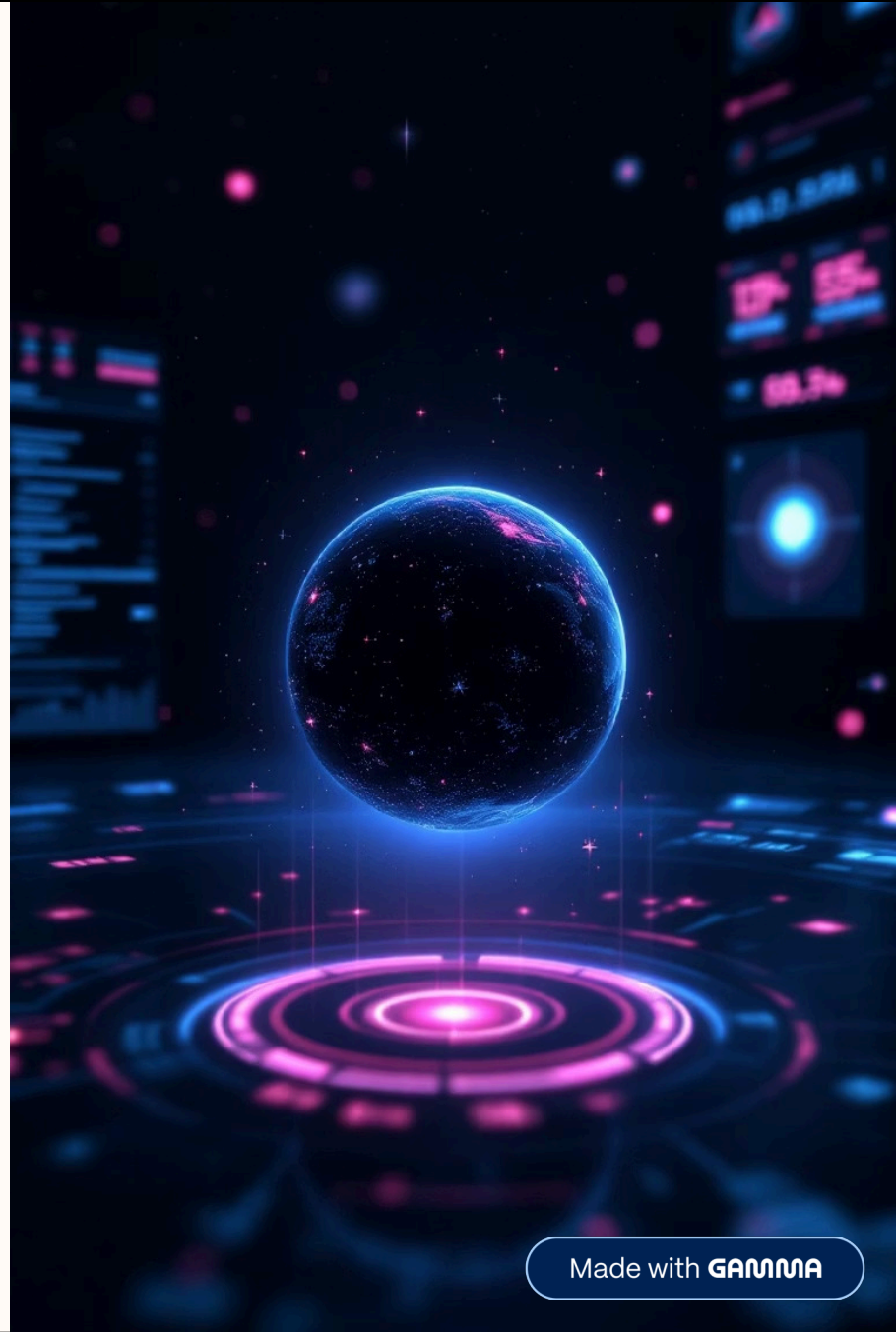
AI Analysis

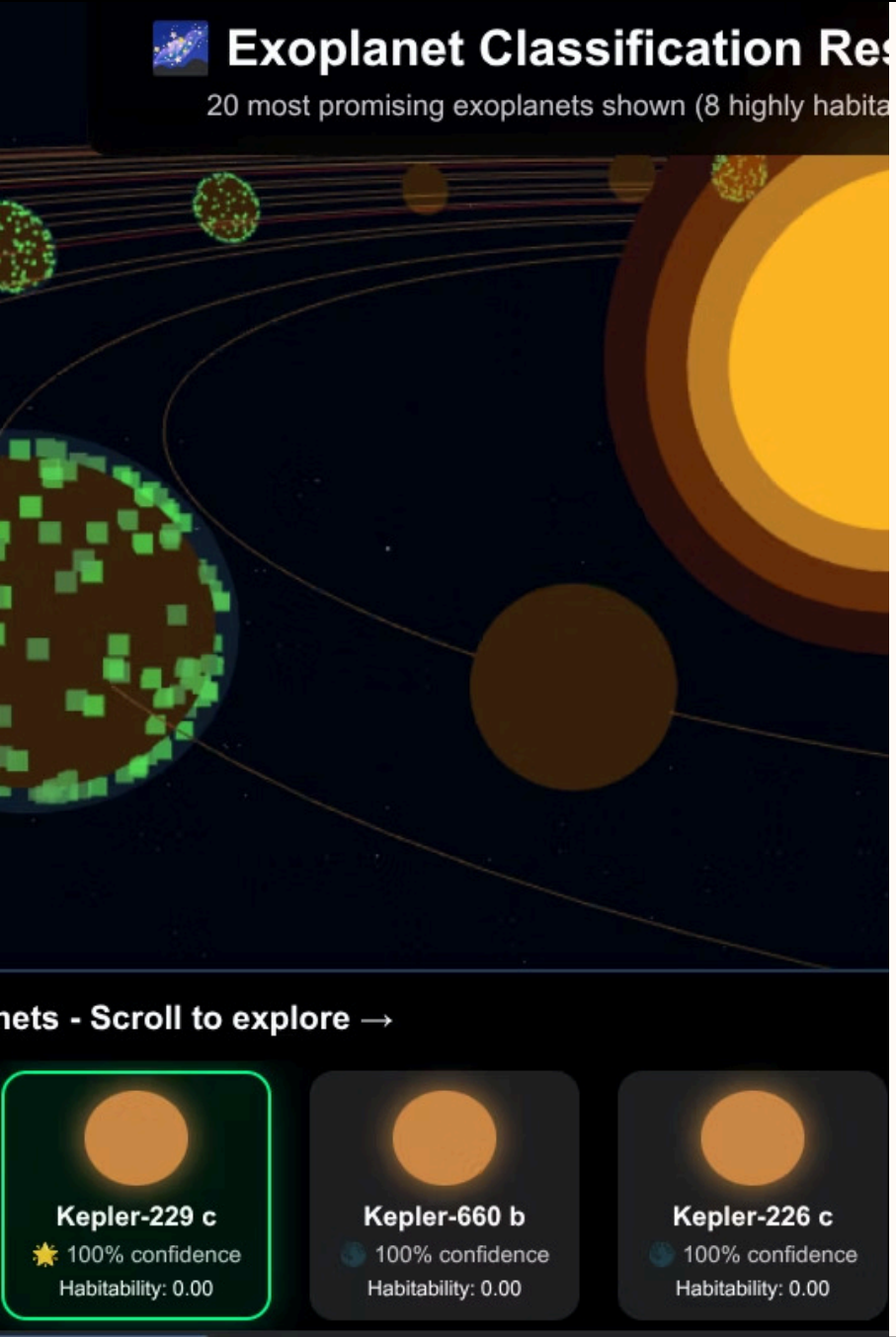
Get instant results

Finding Habitable Planets

Finding out habitable planet for mankind as a second home

> Bringing real space science to everyone's fingertips





What We Delivered

1

Complete AI-Powered Platform: https://celestiai.vip/

A fully functional web platform with secure file upload, user management, and an intelligent AI model that provides two clear predictions: **Confirmed Planet** or **Not a Planet**.

2

3D Visualization

You have a Three.js 3D planet viewer where habitable planets glow! This is demo-worthy.

3

Live Server Deployment

The platform is available on server and ready for public use and testing.

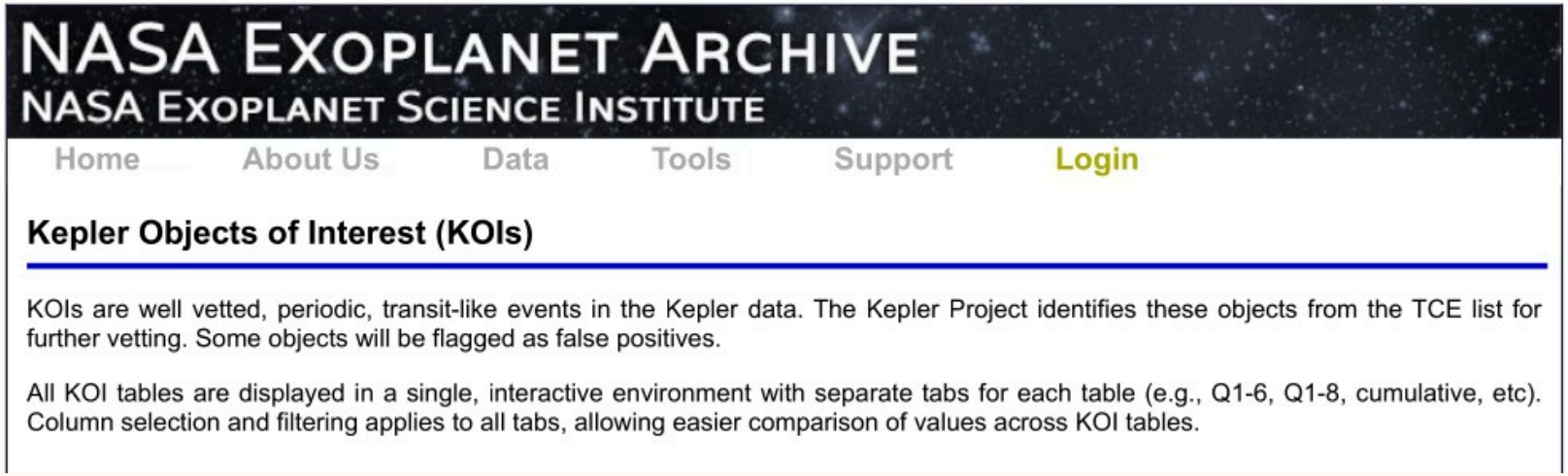
The Data

We're leveraging authentic NASA datasets from the pioneering Kepler Mission:

Kepler Mission

The pioneering planet hunter that revolutionized exoplanet discovery, providing over 150,000 stellar light curves and confirmed thousands of planets

All datasets are **publicly available** through NASA archives, ensuring transparency and reproducibility in our citizen science approach!



Finding a Second Home for Humanity

Not just finding planets, but finding habitable ones. We evaluate 4 key criteria:

4 Key Criteria (currently):

- Surface temperature (200-350 K)
- Planet size (0.5-2× Earth)
- Light received (0.3-1.7× Earth)
- Orbit length (10-500 days)

Habitability Scores:

- Highly Habitable
- Potentially Habitable
- Marginally Habitable
- Not Habitable

> More features will be added to consider whether the planet is habitable or not. We will also consider the distance of the planet from Earth to check viability. Additionally, community features will be developed.

Questions?

Let's discover planets together!

GitHub Repository

Our complete codebase, documentation, and contribution guidelines will be available here post-competition.

https://github.com/CelesteiAI/nasa-hackathon-2025

Team Contact

Reach out with questions or collaboration inquiries!

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Ready to become a **citizen scientist** and help humanity discover new worlds? The universe is waiting! 🚀