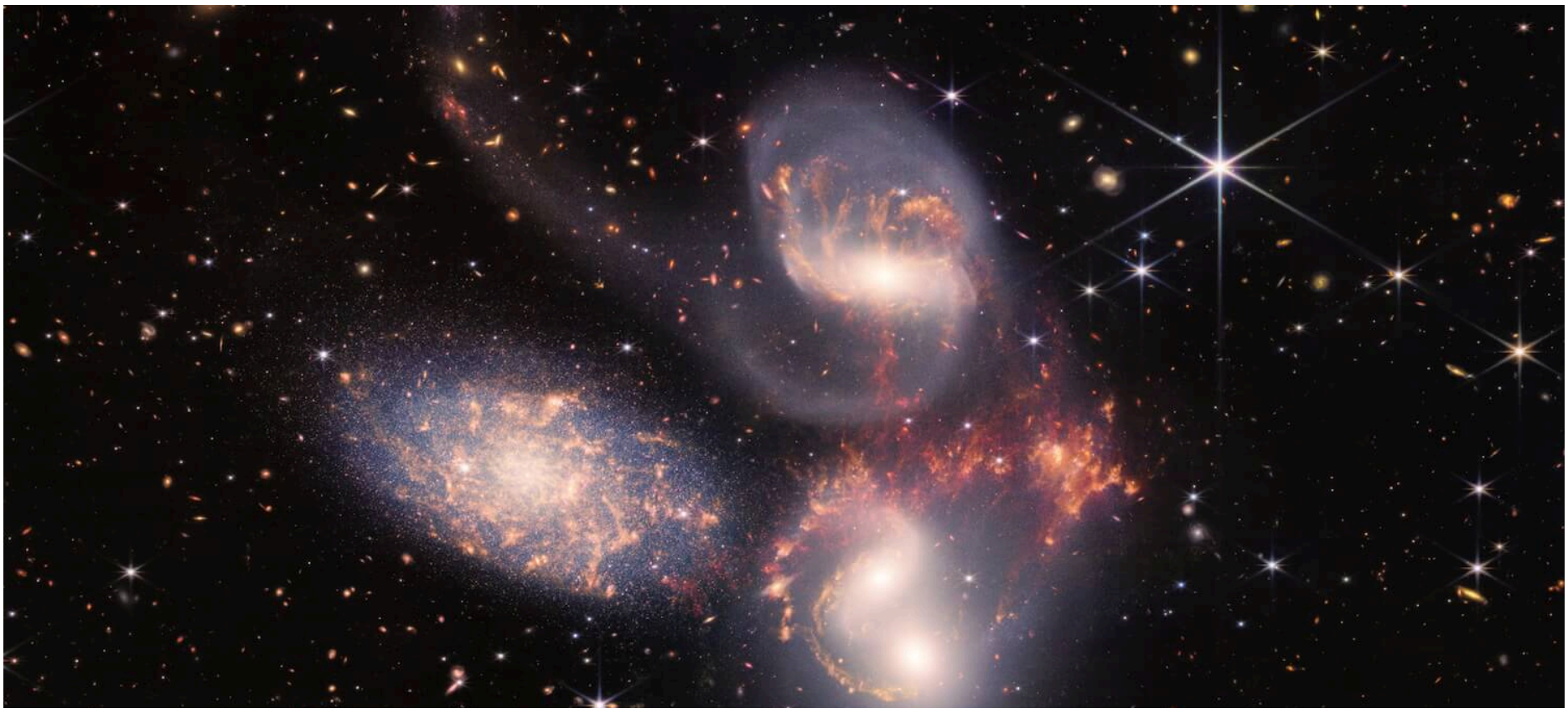

Challenge

🌍 The Core Problem

NASA’s telescopes (Kepler, K2, TESS) stare at stars and record **how bright they are over time**.

When a planet passes in front of a star (like a tiny bug crawling across a lightbulb), the star’s brightness dips a little. That dip = possible planet. 🌑✨

👉 The problem: billions of data points. Scientists can’t manually check every dip. It’s like trying to spot a mosquito flying across stadium lights while watching *every single pixel of a football match replay*. Way too much data.

🎯 The Challenge

We need to **teach a computer (AI/ML model)** to look at these light brightness patterns and decide:

- **Planet** 🪐 = real orbiting world
- **Candidate** 🤔 = maybe, needs human check
- **False positive** 🚫 = noise, starspots, telescope error

🛠️ Example Analogy

Think of it like **TikTok algorithm spotting trends**:

- Billions of videos = billions of light curves.
- AI filters out the noise (random cats sneezing 🐱) → shows you the trending dance (real planets 🕺).
- Sometimes it gets confused (false trends like fake giveaways). That’s why scientists still review borderline cases.

🧩 What We’re Building

Your solution = **AI telescope assistant** that:

1. **Trains** on known planets vs fakes (like teaching TikTok what’s cringe vs viral).
2. **Predicts** on new data: “This dip looks like a planet!”
3. **Explains itself** → shows which features mattered (like telling you *why* it thought a video was trending: sound, hashtags, vibes).
4. **Interface** → a simple app where scientists (or students) can upload data, see predictions, and explore.

🧠 Why Judges Care

- Saves **astronomers time** ⏳
- Reduces **false alarms** 🔔
- Opens **new discoveries** hidden in data 🌌
- Bonus: makes science accessible to normal people 👫 (citizen science angle).

🚀 Analogy Recap for the Team

- **Data (light curves)** = ECG heartbeat charts of stars 💓
- **Transit dips** = a star's "blink" when planet crosses 👁️
- **ML model** = doctor reading ECG automatically instead of squinting manually 🩺
- **App** = dashboard where anyone can upload a heartbeat and see if star has "heart palpitations" (planets)
