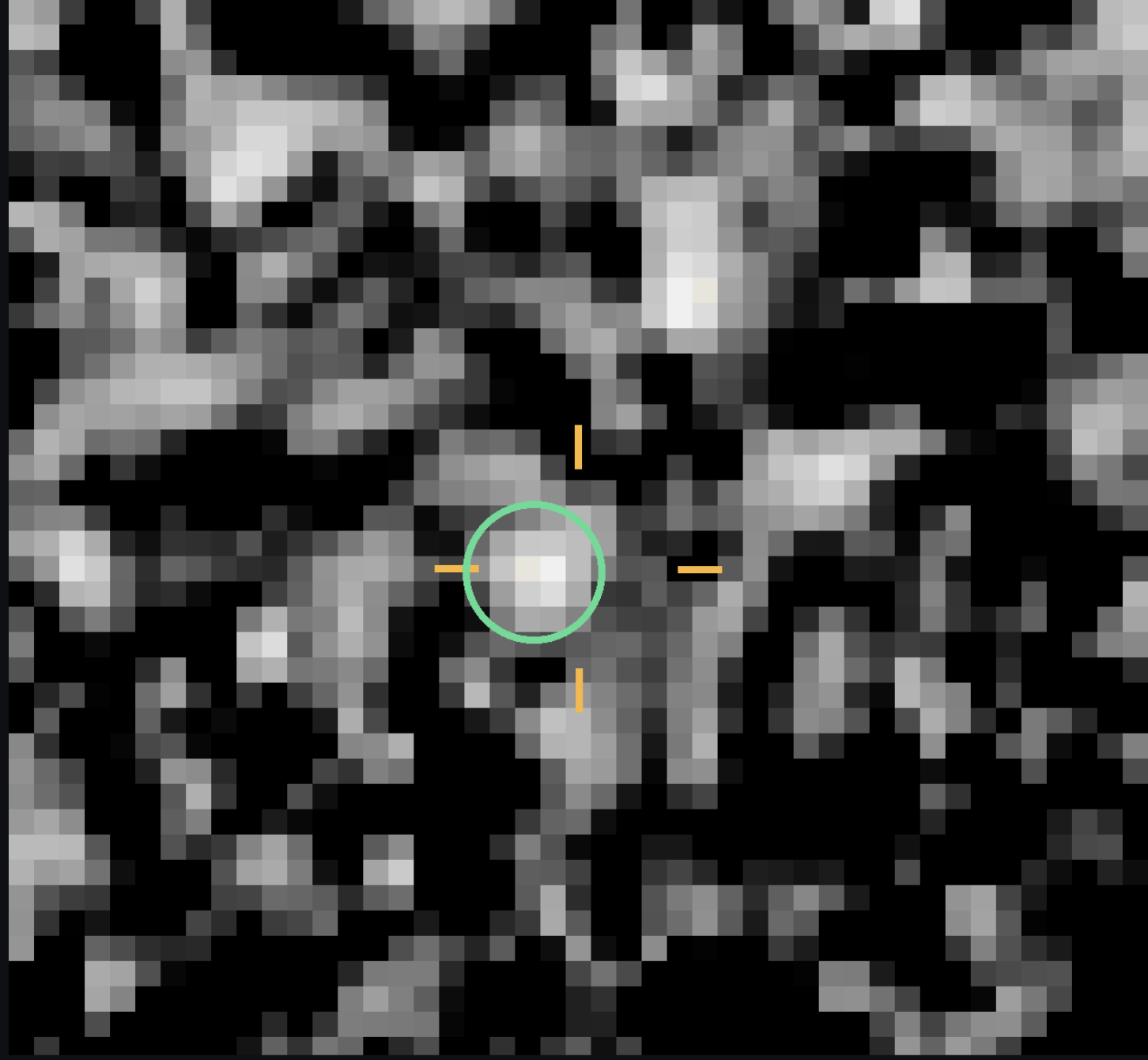
NASA SPACE APPS 2026
CHALLENGE: PLANET X AND SPHEREX

Something in this picture is moving.

NASA's SPHEREx telescope photographed this patch of sky three times in one year. Watch the ring.



SPHEREx Blink

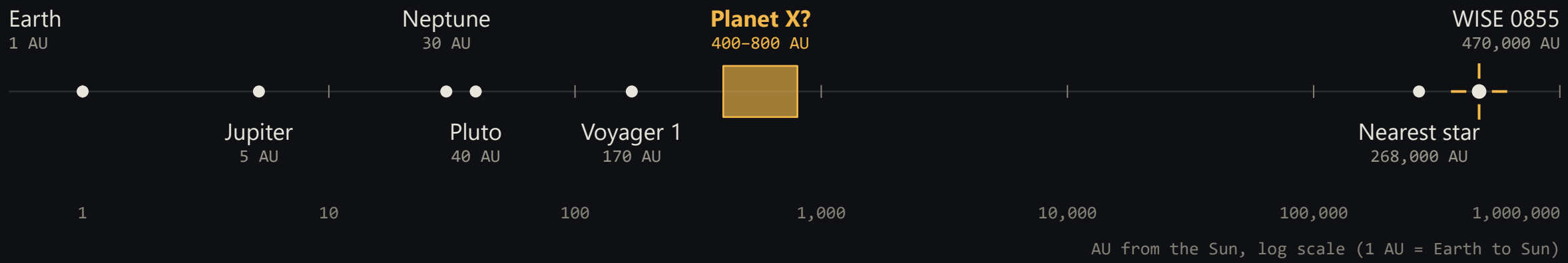
Team Skill-Issue, Delhi
Arnav Aggarwal, Soumil Saini
spherexblink.vercel.app

400–800 AU

from the Sun: where a ninth planet may be hiding.

In 2016, astronomers noticed six icy bodies far past Neptune whose orbits all point the same way, as if something about ten times Earth's mass is herding them.

Nobody has seen it. The hunt for Planet X is back on.



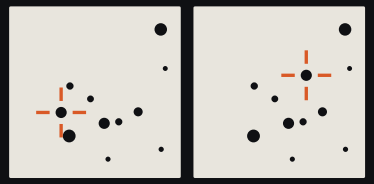
3,000+

brown dwarfs found by people blinking WISE photos.

Blinking is the oldest trick in the hunt for Planet X. Flip between two photos of the same stars, and whatever jumps is close.

It works best when anyone can do it.

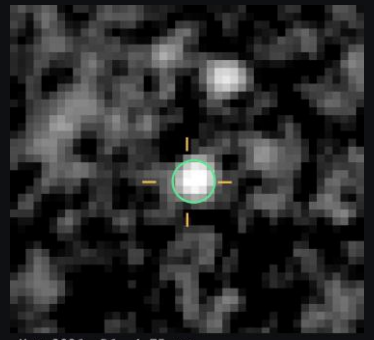
1930 Clyde Tombaugh blinks two plates of the same stars, six days apart, and finds Pluto.



2017 NASA's Backyard Worlds puts WISE flipbooks online. Volunteers using tools like WiseView find 3,000+ brown dwarfs.

2024 NEOWISE, the last WISE mission, switches off for good.

2025 SPHEREx starts photographing the whole sky every six months. Its images are public. Blinking them still takes code.

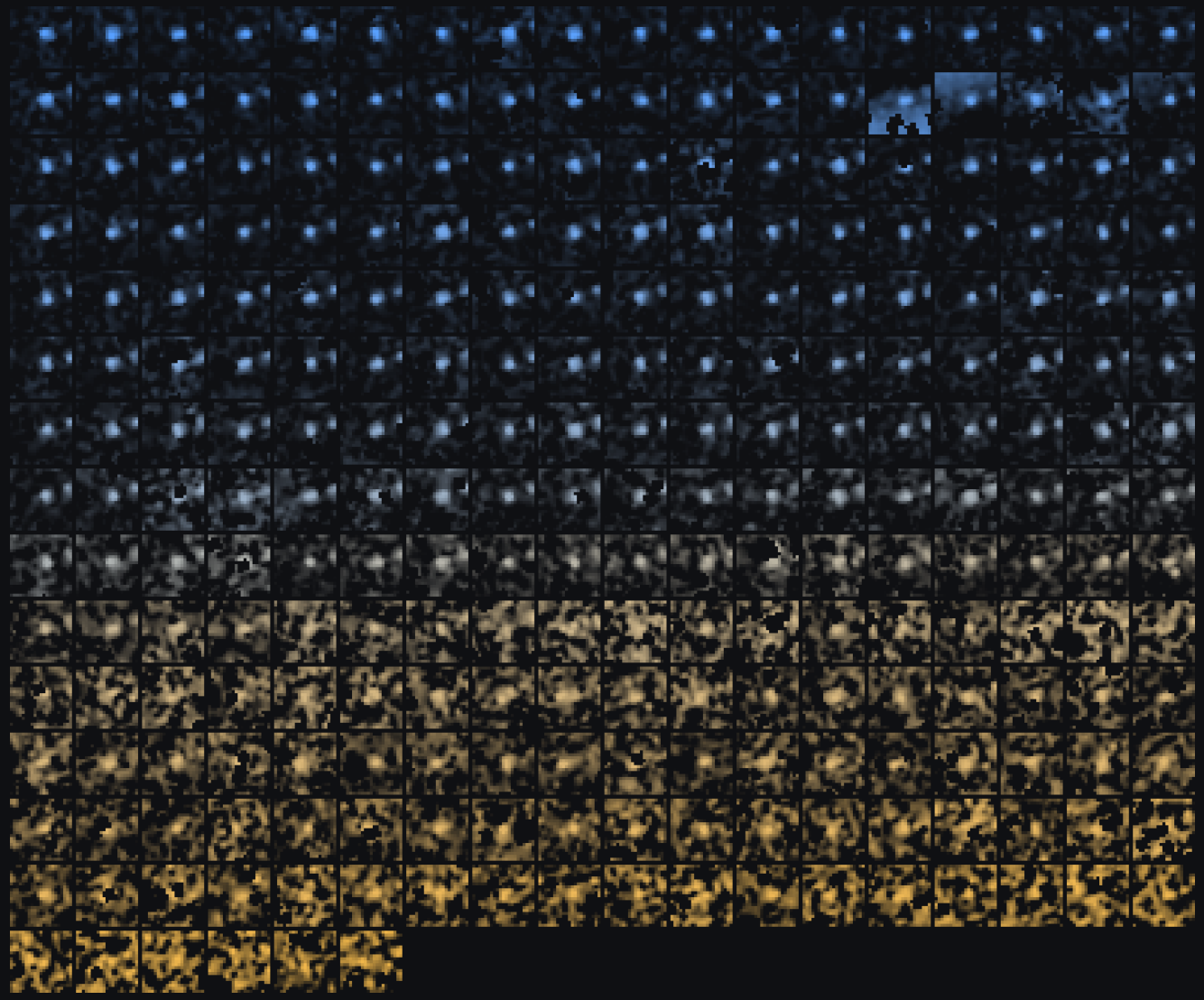


258

SPHEREx photos of one spot. Blinking them took code.

Each photo is a 65.7 MB file on NASA's archive. One star is 17 GB, plus a query language, FITS headers and sky-coordinate maths.

WiseView made WISE easy to blink. We wanted that for SPHEREx, for anyone, in a browser. So we built it.



0.75 µm every exposure of WISE 0855, sorted by wavelength 5 µm

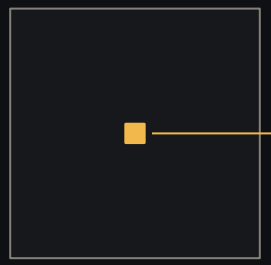
368 KB

is all SPHEREx Blink reads from each 65.7 MB file.

01 Type a star name or RA/Dec.

02 Press play to flip through every visit.

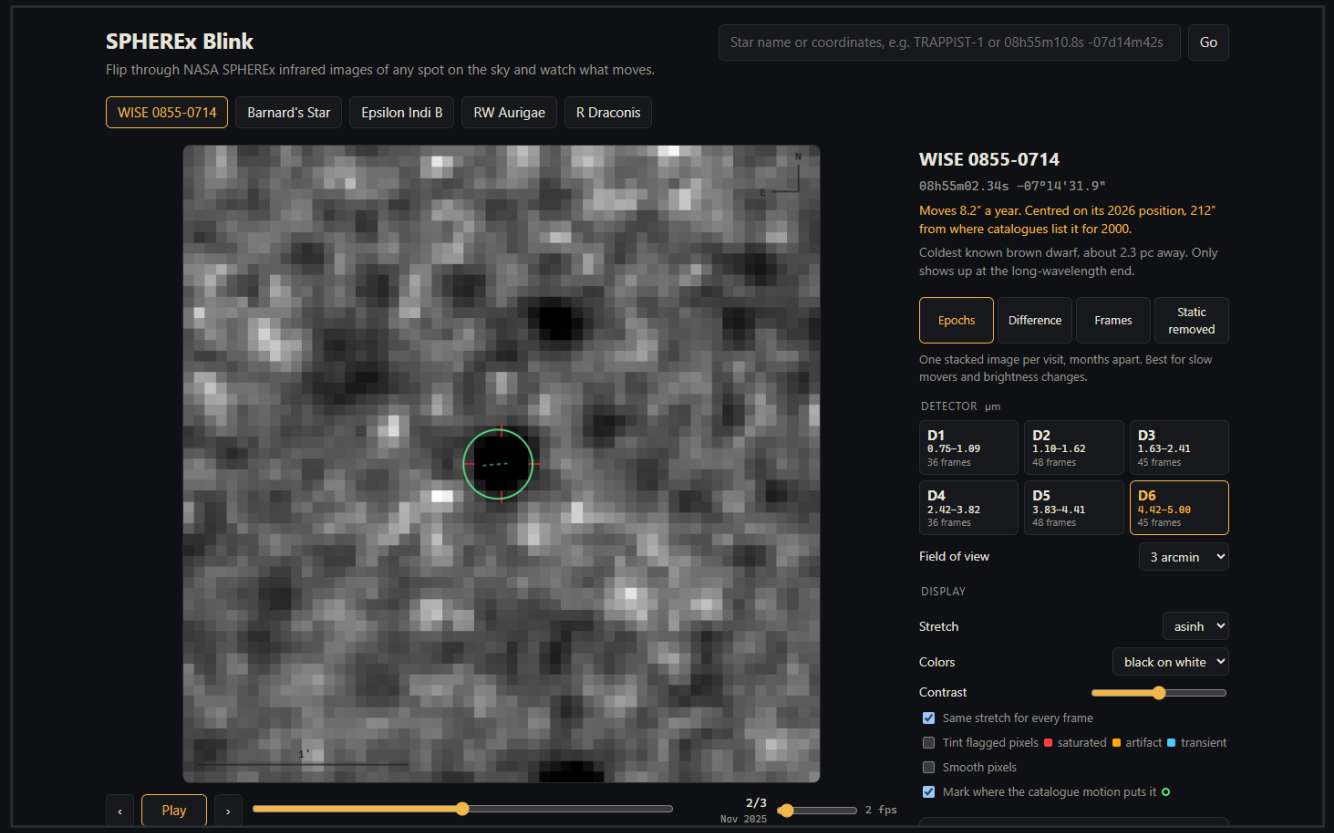
03 Read off its speed and its spectrum.



one SPHEREx file, 65.7 MB

the 3′ patch we read, 368 KB

areas to scale

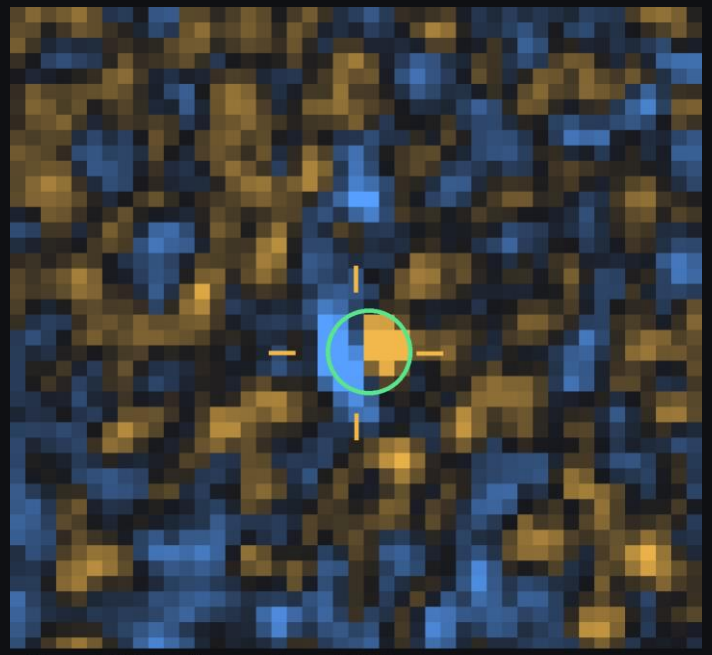


NASA/IPAC IRSA → TAP search → HTTP range reads → your browser

SPHEREx Level 2 images, DR1 and the weekly QR3 quick release

7.9″ a year: how fast we measured WISE 0855 crawl.

Blue: where it was. **Amber**: where it is now. And colour says what it is.



May 2026 minus Nov 2025

WISE 0855-0714

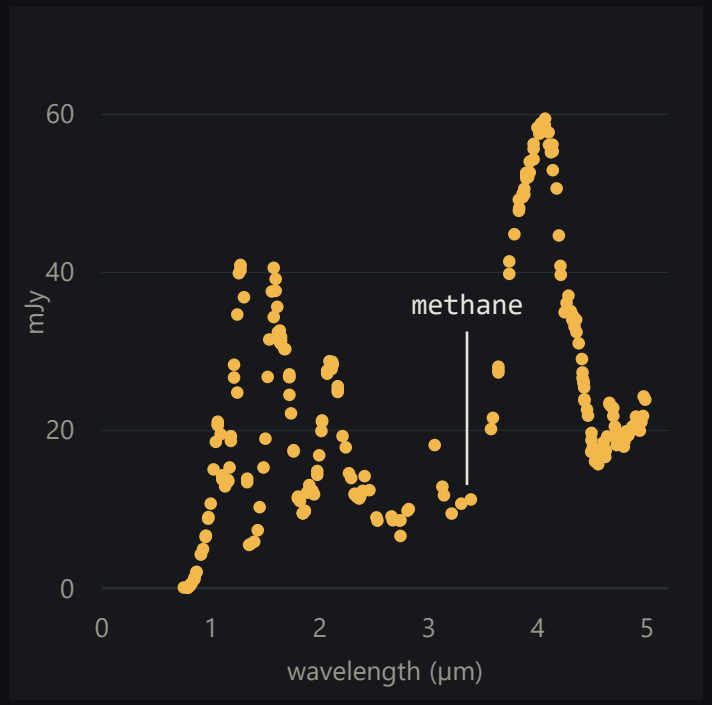
7.9 ± 1.0″/yr west catalogue 8.1



Aug 2026 minus Aug 2025

Barnard's Star

8.9 ± 1.2″/yr north catalogue 10.4



Epsilon Indi B

methane at 3.3 μm 247 points, 4 visits

6 months

until SPHEREx photographs every spot again.

Planet X has never been found. Whatever is out there will be faint, and it will move between visits. That is exactly what blinking catches.

New SPHEREx photos reach our tool within a day of release. Next, we want to blink whole lists of candidates at once.



RA ? Dec ?

your turn: type any coordinates

SPHEREx Blink

Team Skill-Issue, Delhi Arnav Aggarwal, Soumil Saini

spherexblink.vercel.app

github.com/ArnavCodez/NASA-Space-Challenge