

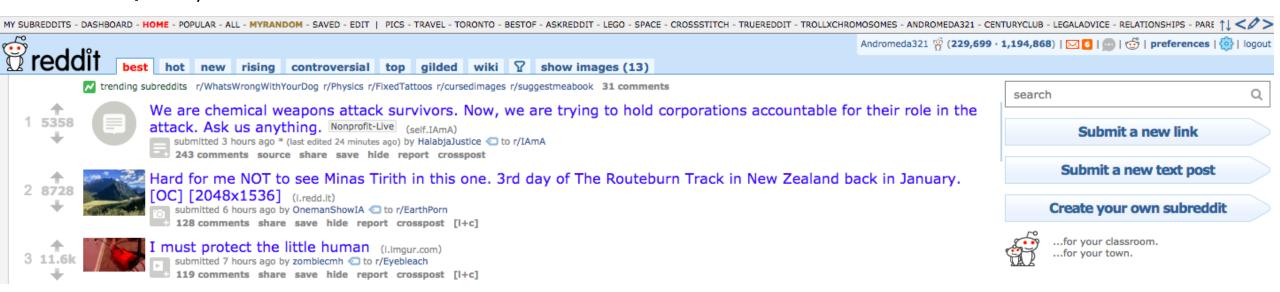
## SOME OF MY OUTREACH PROJECTS

LIGO GWANW

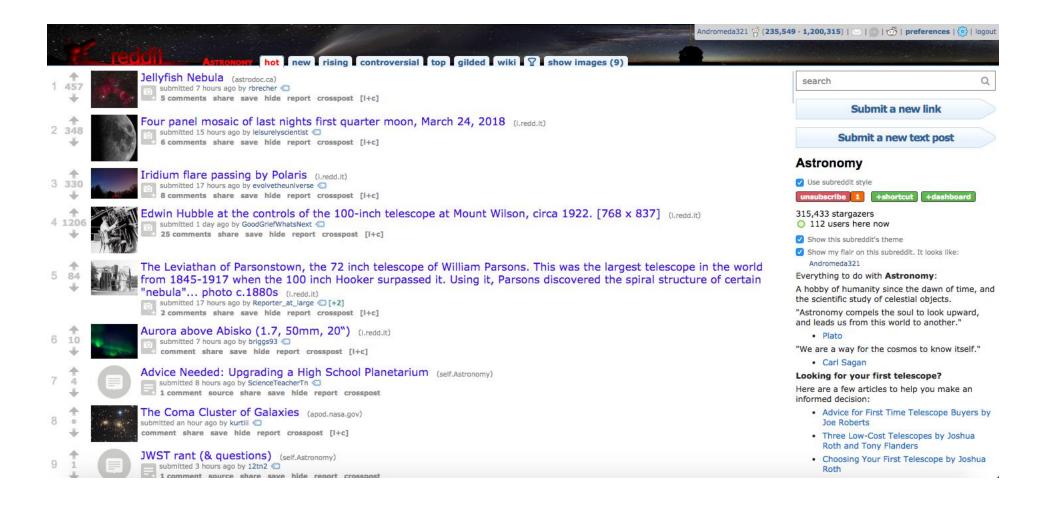
Yvette Cendes
University of Oregon
6/10/25

## WHAT IS REDDIT?

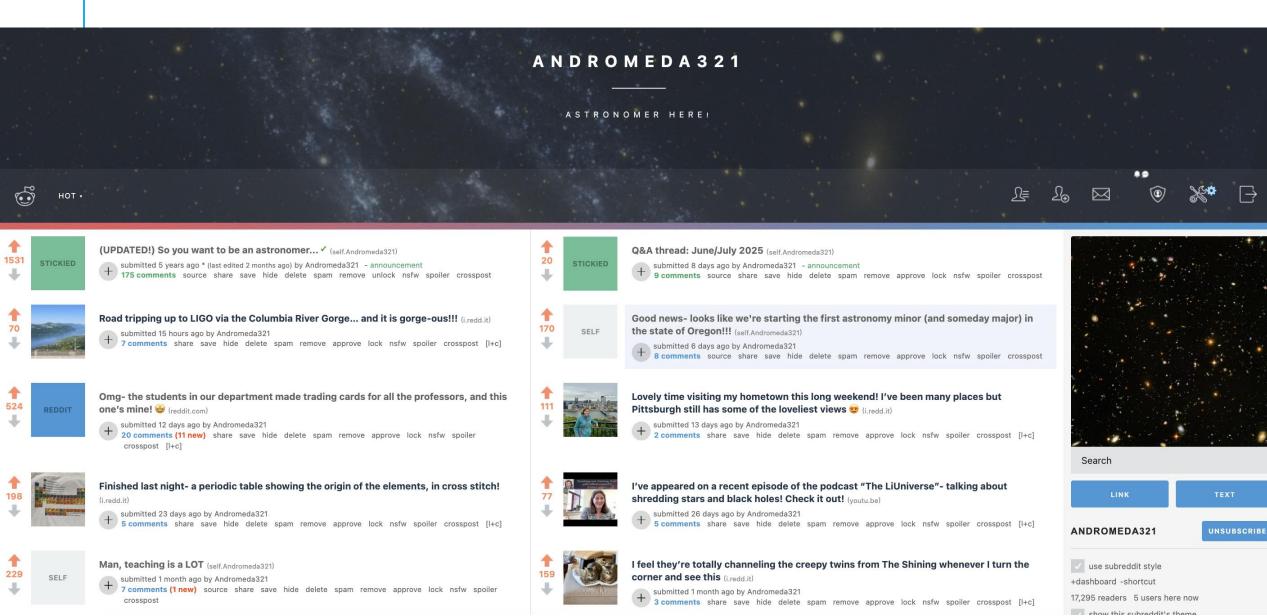
- Reddit is an entertainment/ news website where registered community members can submit content, and comment on submissions
- 9<sup>th</sup> most visited website in the world (430 million monthly users),  $\sim$ half from the USA
- Space/astro is huge on Reddit- 30 million subscribers on the biggest space/science subs!



## SUBREDDITS FOCUS ON A TOPIC...



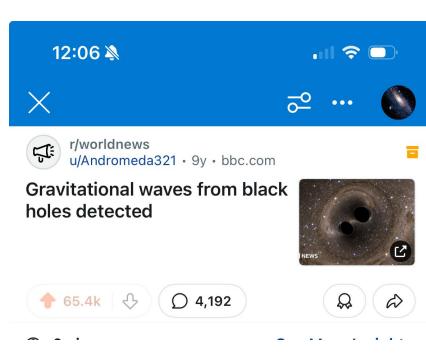
## SUBREDDITS CAN BE ON ANYTHING...



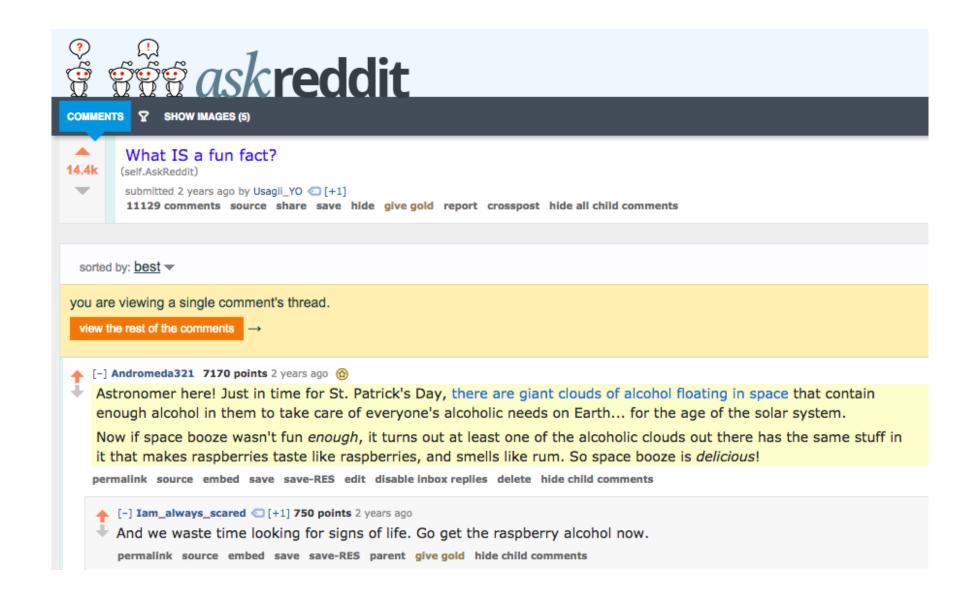
# MY ACCOUNT, /U/ANDROMEDA321







## **COMMENTS ARE IMPORTANT TOO!**



## HOW TO DO SOME REDDIT OUTREACH

- /r/askscience and /r/science are more heavily moderated, and scientists get a special badge to identify expertise
- Post comments as an individual, not an organization ("I'm a science communicator at X Observatory and...")
- Don't bog down in details. Do embed links in line
- Timing is everything! Comments posted in a "rising" thread get the most noticed (after a few hours on the front page, even good content can be buried)

# IAMA ASTRONOMER! AMA!

- "Ask Me Anything!" (AMA) events bring people with a "unique experience" to the website, and the public asks questions
- Can be done by an individual, research group, organization...
- Can schedule for a certain time by messaging moderators of a subreddit
- /r/IAMA is the main subreddit, but they are also scheduled in /r/science, /r/askscience

## MOVING ON... GUINNESS WORLD RECORDS

(Probably) related to my Reddit outreach, I am also the astronomy editor for the Guinness Book of World Records (GWR)

Astronomy is defined for these purposes as "everything outside the solar system"







### Astronomy

### Closest black hole to Earth

Gaia BHI is located 1,560 light years away from Earth the constellation of Ophiuchus. It was found in Jan 2023 by Harvard astronomer Kareem El-Badry and his team, who spotted a Sun-like star that was rbiting a massive, but invisible, companion. The black hole has a mass 9.62 times that of our own Sun.

### Closest star

At "just" 149.6 million km (93 million mi) from Earth, the Sun is considered astronomically close. The **next-nearest star**, Proxima Centauri, is more than 250,000 times farther away.

### Brightest star viewed from Earth

Astronomers use a system called apparent magnitude, which describes brightness relative to the star Vega (which is zero on the scale). The higher the number, the dimmer an object appears to observers on Earth. Some exceptionally luminous objects can have negative magnitudes. Sirius A (or alpha Canis Majoris) has an apparent magnitude of -1.46.

On 9 Oct 2022, the GRB221009A gamma-ray burst was dubbed the "BOAT" (Brightest Of All Time) by was 70 times brighter than any

Brightest object ever seen

astronomers. This cosmic explosion reviously recorded event. It reached a peak of 6.5 million gamma-ray photons per second, each carrying an energy of 18 teraelectronvolts - or around two times the power that the Large ladron Collider can impart on particles.

### Largest galaxy

Located at the centre of the Abell 2029 cluster, IC 1101 has a major diameter of 5.6 million light years - around 50 time than our own Milky Way. Its light output equivalent to 2 trillion Suns.

### Most distant black hole

CEERS 1019 was discovered by the James V Space Telescope at a distance of 13.1 bill light years, which means it formed just or 570 million years after the Big Bang. The E hole is 9 million times more massive than the Sun, which is actually surprisingly small for black holes found in the early universe

Youngest person to discover an exoplane

Tom Wagg (UK, b. 30 Nov 1997) was 15 years 75 days old when he found the gas giant WAS 142b on 13 Feb 2013. He was examining sky survey telescope data from the WASP (wideangle search for planets) collaboration, an hour after starting his work-experience placement at Keele University. It took two years for the existence of Wagg's exoplanet to be confirmed by follow-up observations.

### Eyes on the skies

Ithough Earth-based observatories still play an important role, many of the new discoveries nentioned on these pages were found using on the three space telescopes shown below. By W n space, they avoid the issues of light pollut and electromagnetic radiation that can affect observations from Earth. The first space telescop he US-made OAO-2 - launched in 1968.

> Space Telescope (202 Built to see infra light, this is the largest space telescope, with a 6 (21-ft) primary mir.

#### MOST DISTANT CONFIRMED GALAXY

In Dec 2022, astronomers studying data from the James Webb Space Telescope (JWST; see left) announced the discovery of a galaxy called JADES-GS-z13-0 (or z13 for short), which has a redshift of 13.2. This means that the light which reached the telescope had been travelling for 13.2 billion years, and originated just 325 million years after the Big Bang - making z13 also the oldest galaxy.

Due to the ongoing expansion of the universe, z13 is now an estimated 33.6 billion light years away from Earth. To put it in the terms used in our first edition (see right), that's 317,900,801,000,000,000,000,000 km (or 197 trillion billion mi)!

Galaxy z13 was found by the JWST Advanced Deep Extragalactic Survey (JADES). which focused the telescope on a tiny patch of seemingly empty darkness - about a tenth of the size of the full Moon - between the stars of the constellation Fornax.

This record was the first text entry in 1955's GWR annual. It was credited to "extra-galactic nebulae".

mature galaxy, the Milky Way. This illustrat

The universe is the entirety of space and matter. The remotest known heavenly bodies are extra-plactic nebulis as a distance of some (1,000 million) light years or 6,000,000,000,000,000,000,000 miller. There is reason to believe the remoter nebulie exist but, since it is cossible that they are receding faster than the speed of light (270,555,000 m.g.h.), they would be beyond man's "observable between the control of the con

REMOTEST KNOWN BODIES



nitor stars for signs of oplanets; it lays claim the most exoplanets iscovered by a elescope - 2,778.

Galaxy - was logged in May 2023.

Most supernovae discovered by an amateur astronomer

From his private observatory in the hills above Yamagata,

apan, Koichi Itagaki (JPN) has catalogued 172 exploding

astronomer scours the sky with seven computer-controlled

telescopes situated across Japan. His most recent discovery

a spectacular supernova named SN 2023ixf in the Pinwheel

stars - more than any other individual. The self-trained



ia (2013-) inually measures the ation, brightness and vement of 1.8 billion part of the largest astrometric survey.



