



The Universe of Planet Ziggy

Assignments 4, 5 and 6 for
ASTR1002.

Initial Briefing and First Data Set.

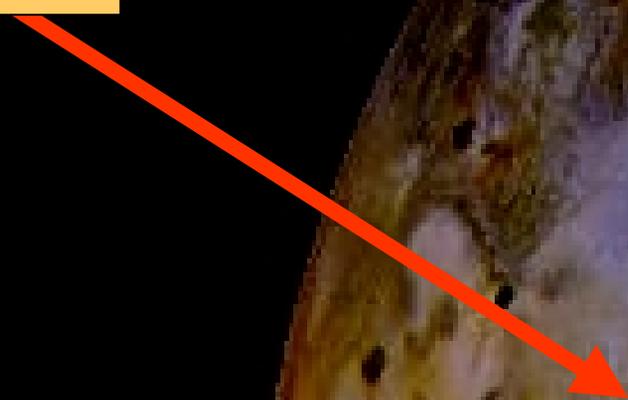


The USS Drongo

- You are the crew of the Starship USS Drongo. Launched by the Australian Space Agency in 2234AD, its 5 year mission is to explore distant parts of the universe.
- Unfortunately, only two years into your mission, you encountered an alien spaceship which sucked you down a wormhole into another universe.
- On arriving in this universe, you were forced to crash land on the first planet you found. You call this planet “Ziggy”

Planet Ziggy

The USS Drongo Crash
Landed Here.



A Strange World



- Ziggy is a strange world. It has breathable air, and gravity 23% weaker than the Earth's.
- It is covered in pink grass-like organisms, with occasional giant orange plants that look like some cross between tree-ferns and cacti.
- The “grass” is grazed by vast groups of what look like sabre-toothed rabbits: pink in colour with bright green spots. They appear to be carnivorous - several members of the USS Drongo's xenobiology team have already been bitten.

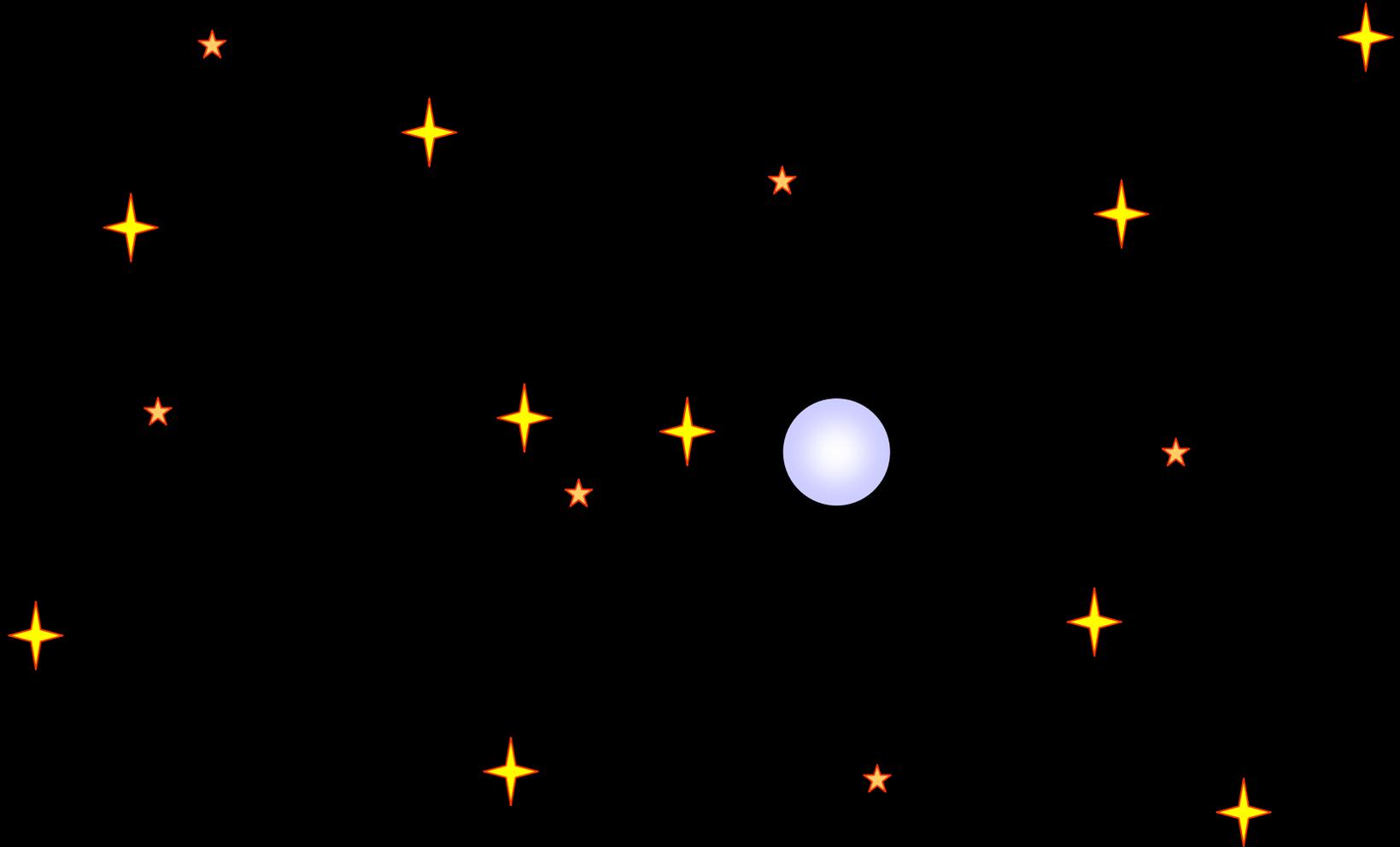


Night Time

- It has now been 120 hours since you crash-landed.
- It has been dark at the crash site for all those 120 hours - you haven't seen Ziggy's sun (you know it has one - a fairly normal G-type star, because you saw it on the way down).
- What you do see in the sky is many bright stars, and a large, bright, featureless silvery moon. It appears twice as big as Earth's moon, and about ten times brighter.

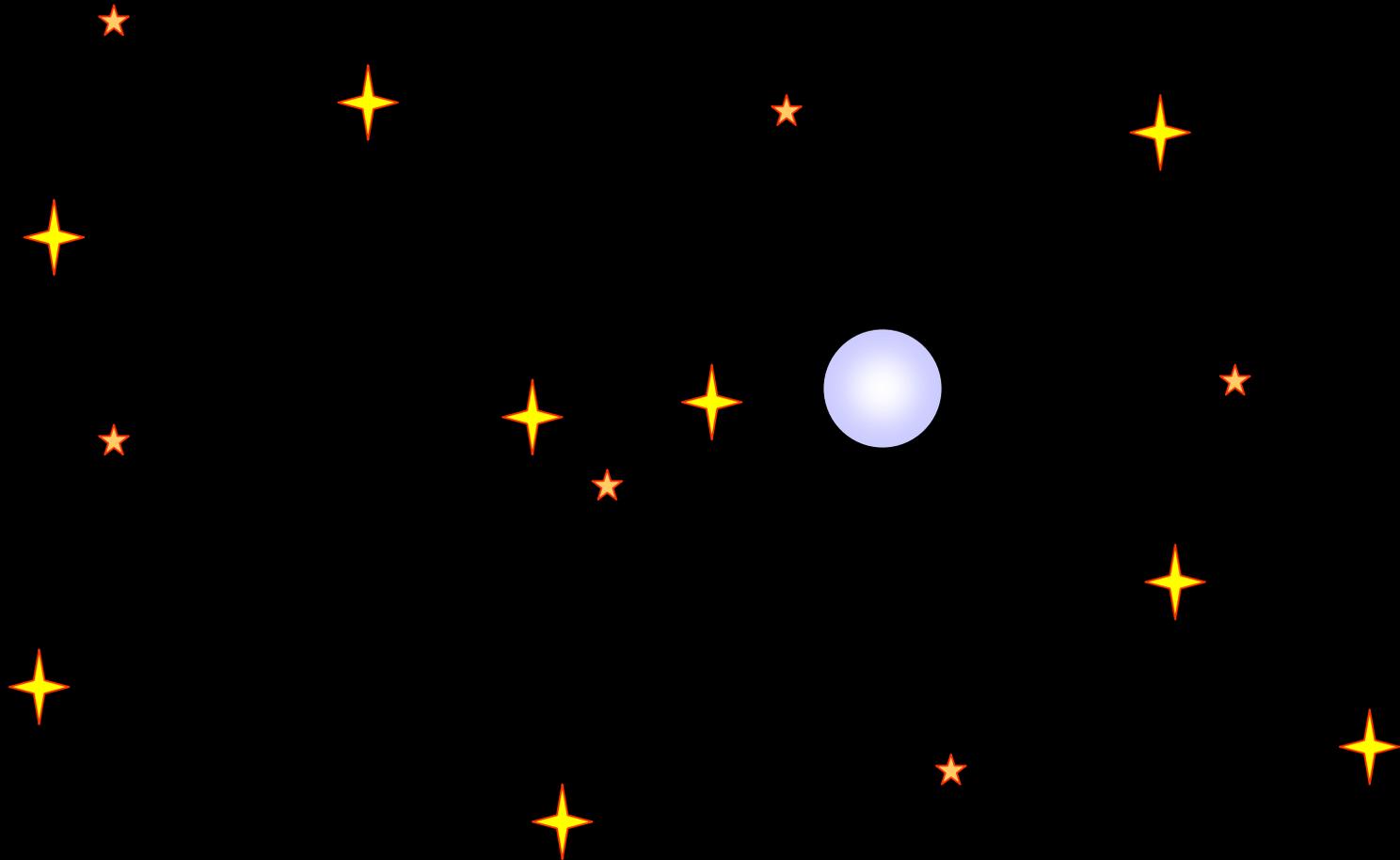


A view looking straight up.



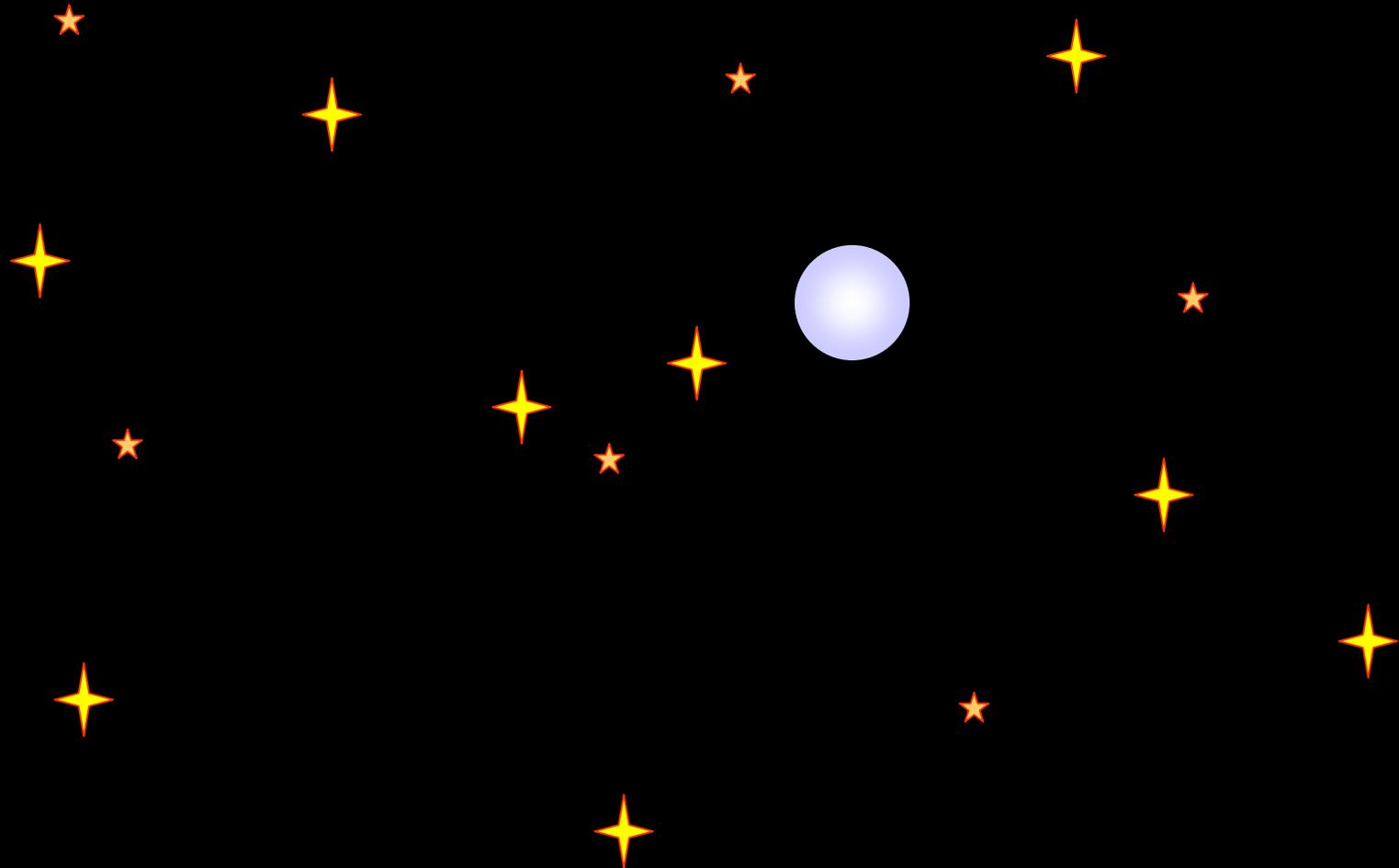


Same view one hour later





Same view another hour later ✨



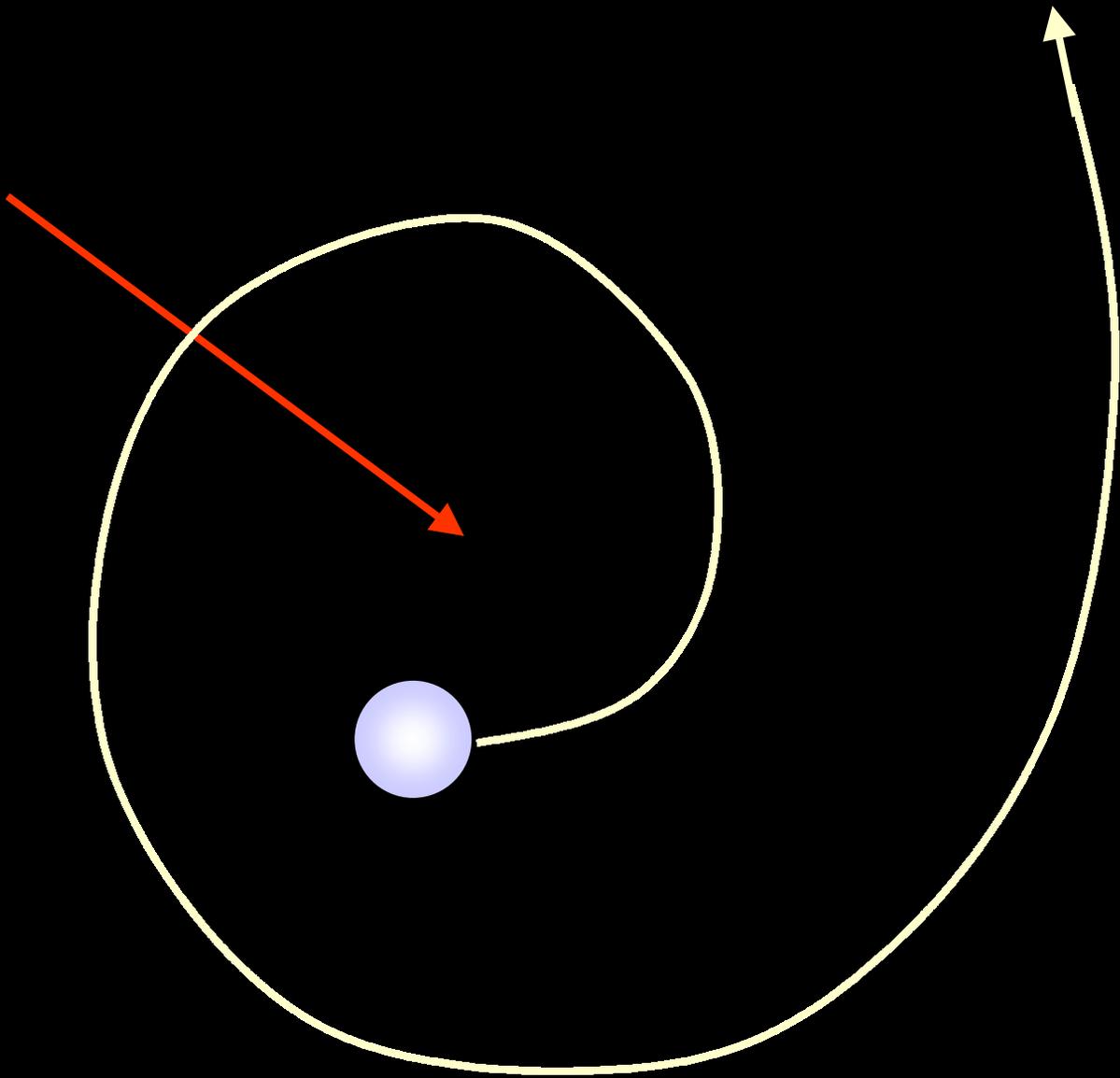


The Moon's Motion.

- When you first landed, the moon was almost directly overhead, and looked like a full moon.
- Since then, it has seemed to spiral out from the zenith (the point directly overhead). It's now only 30 degrees above the horizon.
- As it slowly spiralled away from the zenith, it has become less full. The brighter half always seems to point downwards, towards the horizon.

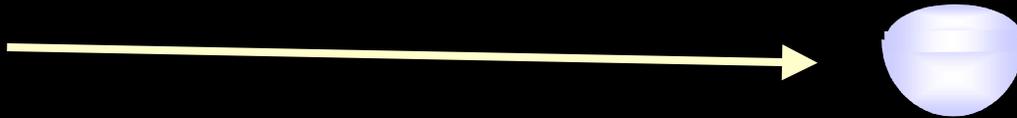


Zenith





It is now doing complete circles around the sky, around 30 degrees above the horizon and dropping.





Your Mission

- You are members of the Astrophysics Team on-board the USS Drongo.
- Captain Howard has asked you to try and figure out as much as you can about the universe that you've been transported to.
- Don't waste time trying to figure out things about Ziggy: that's the job for the exobiology and planetology teams.



Where are we?

- Captain Howard wants to know whether we are in the same universe as our Earth.
- If not, she would like to know how it differs from our universe.
- She would also like to know where Ziggy is, in relation to the major features of this new universe.
- Anything you can deduce about the astronomy of Ziggy will be valuable.