Hercules

https://www.youtube.com/watch?
v=1kb-1GuOUtQ&list=PLra4ag43Qcba9UaBtX1kSLdDLkizHgjVK&index=6

https://www.youtube.com/watch?v=QRkATmiOexk   6 min ⟵——— just watch this

Hercules constellation dates back to ancient times. Its origin was unclear even to the Greeks. They knew it as Engonasin, or "the kneeling one." It was Eratosthenes who identified the kneeler as Heracles, standing over the dragon that guarded the garden of the Hesperides.

Aeschylus associated the constellation with a different tale, describing Heracles as kneeling and exhausted after the battle with the Ligurians.

Heracles was the son of Zeus and Alcmene, a mortal woman. When he was an infant, Zeus laid him at Hera's breast while she slept. Having suckled her milk, Heracles became immortal. Hera was enraged, both at this and at her husband's infidelity, and while she could not kill Heracles, she made his life difficult at every turn. She cast a spell that made him go insane and kill his children. Once he regained his senses and realized what he had done, he visited the Oracle at Delphi to see how he could atone for his deed. The Oracle sent him to serve Eurystheus, king of Mycenae, for a period of 12 years. It was then that he got the name Heracles, which means "the glory of Hera." His given name at birth was Alcides, Alcaeus, or Palaemon according to different sources.

King Eurystheus gave Heracles a series of tasks, known as the Labours of Heracles. The first was to kill the Nemean lion, a beast whose hide was impervious to any weapon. After Heracles had strangled the lion to death, he used its claws to cut off the skin and later used the pelt as a cloak and the gaping mouth as a helmet, which both protected him and made him look even more frightening. The Nemean lion is represented by the constellation Leo. The second task was to destroy the Hydra, represented by Hydra constellation, a monster with multiple heads. As he fought with the beast, Hera sent a crab to distract him. Heracles killed the crab, and Hera placed it in the sky as the constellation Cancer.

Heracles was then sent to catch a deer with golden horns and, after that, a ferocious boar. The fifth task was to clean the stables of King Augeias of Elis. The sixth was to kill a flock of marauding birds, and the seventh, to catch a bull that breathed fire and was ravaging the land on Crete. The eighth labour was to bring the horses of King Diomedes of Thrace, which ate flesh, to Eurystheus. The ninth was to bring the king the belt of Hippolyte, the queen of the Amazons. The tenth labour was to steal the cattle of Geryon, a monster that lived on the island of Erytheia. On his way back, he was attacked by local forces that outnumbered and nearly overcame him. He sank to his knees and prayed to Zeus. The god helped him by sending rocks, which Heracles threw at his attackers. This is the event that, according to Aeschylus, was commemorated by the constellation Engonasin (the kneeler).

Even though Eurystheus and Heracles had originally agreed on ten tasks, when Heracles came back, the king refused to release him from his service and set two additional tasks. The first was to steal the golden apples from Hera's garden on Mount Atlas. The garden was guarded by the Hesperides, daughters of the titan Atlas, and the Hesperides were guarded by the dragon Ladon, whose task was to make sure that they did not steal any of the apples. The dragon is represented by the constellation Draco. Hera herself placed the dragon in the sky after Heracles had killed it.

The final labour was the most difficult one. Heracles was sent to the gates of the Underworld to fetch Cerberus, the dog that had three heads and was tasked with guarding the entrance and making sure those who had crossed the river Styx did not try to escape. Heracles used his pelt to protect himself and dragged the dog to Eurystheus. The king, who had not expected to see Heracles again, had no choice but to release him.

After completing the twelve labours, Heracles married Deianeira, daughter of King Oeneus. While the two were travelling together, they came to the river Evenus where the centaur Nessus ferried people across. Heracles swam across the river, but Deianeira needed to be carried and Nessus, who offered to do it, fell in lust with her and tried to ravage her. Heracles shot the centaur with an arrow that was tipped in the Hydra's poison. As he lay dying, Nessus offered Deianeira some of his blood, saying it can act as a love charm. Deianeira kept the blood, poisoned by Heracles' arrow. Much later, she became worried that Heracles' attention was wandering to another woman and she gave him a shirt on which she had smeared Nessus' blood. When Heracles put it on, Hydra's poison started burning his flesh and, once he realized what was going on, he built himself a funeral pyre on Mount Oeta and lay on his pelt, ready to die. The fire burned the part of him that was mortal, and the immortal part joined Zeus and the other gods on Mount Olympus. Zeus placed Heracles in the sky as the constellation now known by its Roman name, Hercules

Light year

at is a Light Year? Physics Lesson Idea: Space

How to calculate light year?

y to calculate light year?

Speed of light "c" = 3.0×10^8 m/s

or

"c" = 3.0×10^5 km/s

300 000 km/s

1 year in seconds

Time = 1 year x $\dfrac{365 \text{ days}}{1 \text{ year}}$ x $\dfrac{24 \text{ hr}}{\text{day}}$ x $\dfrac{60 \text{ min}}{1 \text{ hr}}$ x $\dfrac{60 \text{ sec}}{\text{min}}$

= 31 536 000 seconds

Distance of 1 light year = c x t

= (3.0×10^5 km /sec) x (31 536 000 sec)

= 9.4606×10^{12} km

Conversion is

1 Light year = 9.4606×10^{12} km

it is a measure of Distance

Ex) If a star is 18 light years away, what is its distance in "km"?

— exp button "not x"

18 light years x $\dfrac{9.4606 \times 10^{12} \text{ km}}{1 \text{ light year}}$

= 1.702908×10^{14} km

Ex2) If a star is 2.76×10^{14} km away, how many light years is that?

2.76×10^{14} km x $\dfrac{1 \text{ light year}}{9.4606 \times 10^{12} \text{ km}}$

exp button

$\dfrac{2.76 \times 10^{14} \text{ km}}{9.4606 \times 10^{12} \text{ km}}$

on calculat $\dfrac{2.76 \text{ Exp } 14}{9.4606 \text{ Exp } 12}$

≈ 29.173 625 35

≈ 29 light years

So if a star is 9 Light years away

    It's distance in km

    1 Light year $= 9.4606 \times 10^{12}$ km

exp button on calculator

9.4606 Exp 12

9 light years $= (9.4606 \times 10^{12})$ km $\times$ 9

    $= 8.51454 \times 10^{13}$ km

    $= 851454\,00000000$ km

on calculator screen

$8.51454 \quad 13$

space ×10

Starting with the sun, can you list the planets?

Sun

My
Very
Excited
Mother
Just
Served
Us
Nachos

Mercury
Venus
Earth
Mars
Jupiter
Saturn
Uranus
Neptune

Our solar system consists of the sun and everything that travels around it.

Planets and moons do not emit their own light. They are nonluminous. We can see them because light from the sun reflects off them.
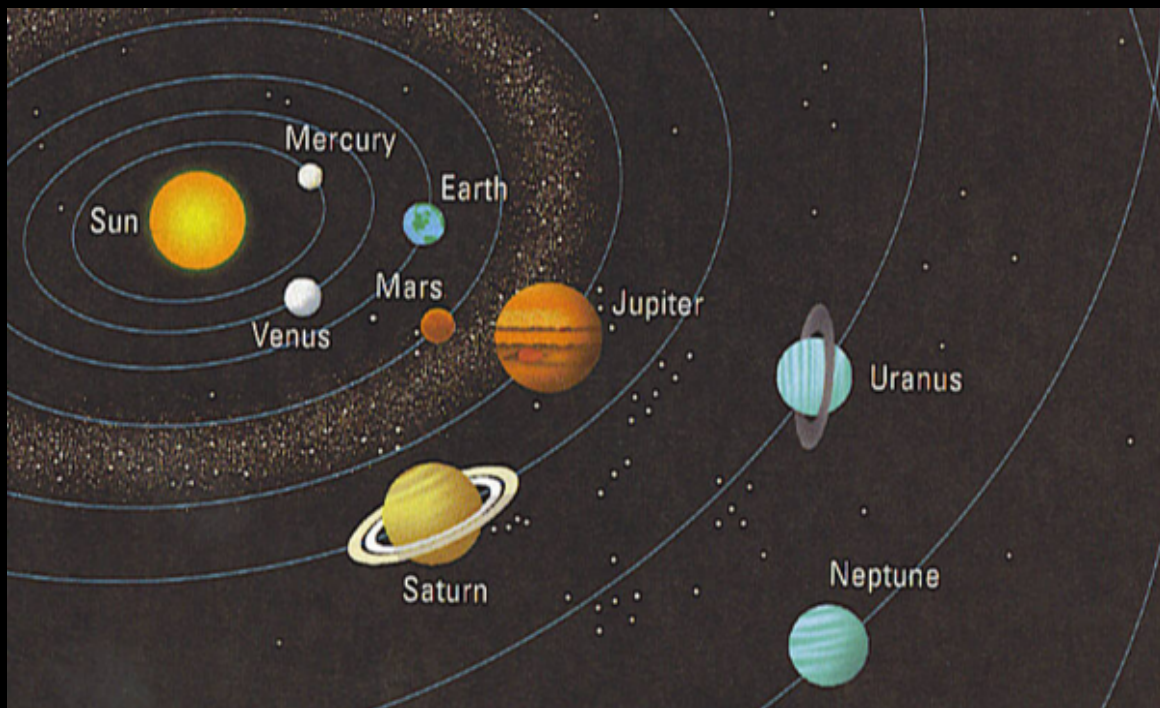
FUN NOTE: Everything in the solar system is much closer to earth than the stars.
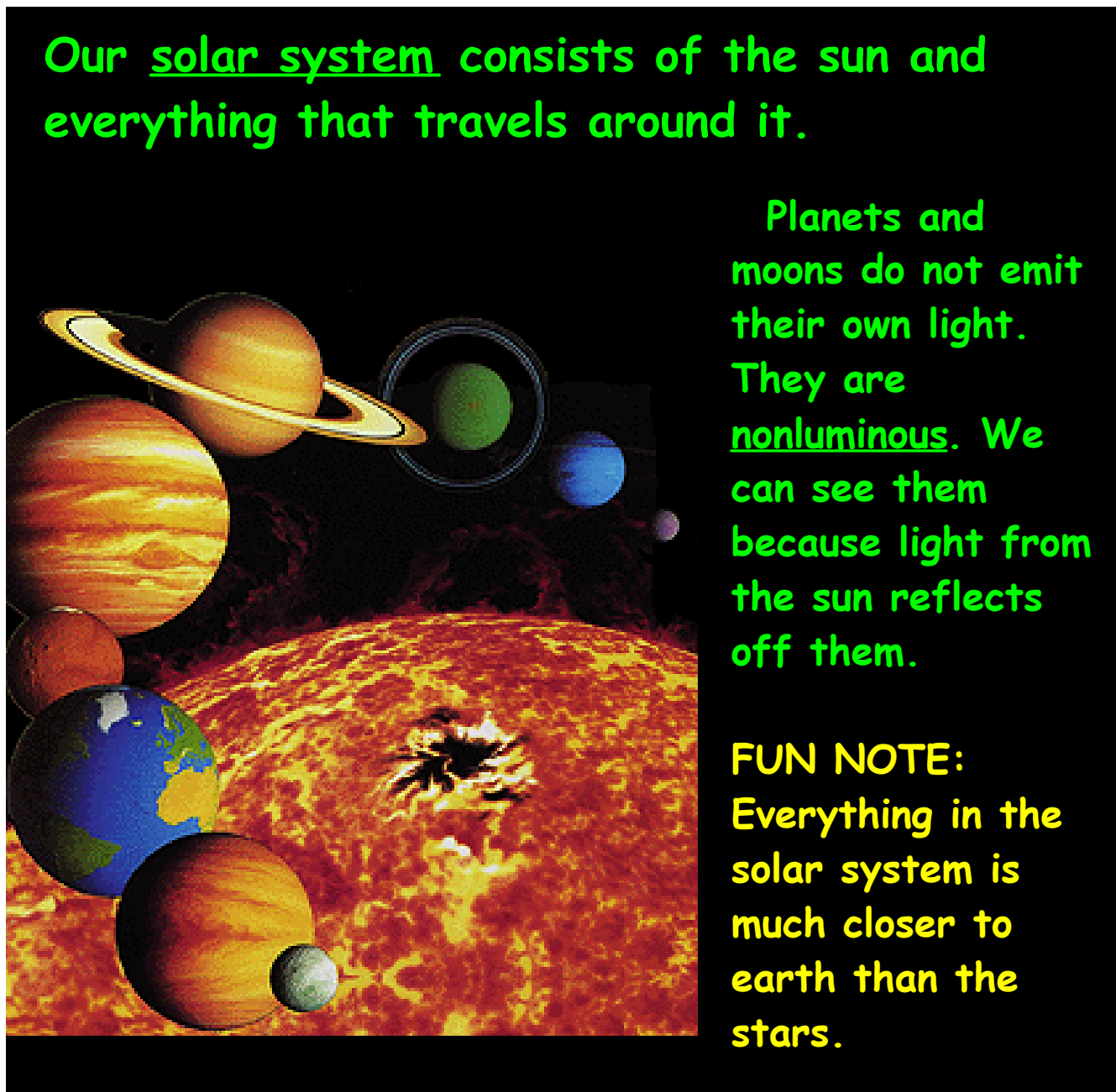
How come we can't see all the planets

The sun is very bright, so objects close to it get hidden in the daytime glare.
So when Mercury comes close to the sun it becomes difficult to see from Earth.

· Name
· Date of Birth
· Zodiac Sign
· Brief Story
· When can
  the constellation
  seen
  what does
  it
  look
  like

Homework:

● Determine that constellation that is associated with your birthday. (Zodiac Sign)

● Describe what it looks like and the brief story behind it.

Due Tuesday (feb 13)

http://www.enchantedlearning.com/subjects/astronomy/stars/constellations.shtml