

Our Night Sky and the Solar System

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Things to prepare

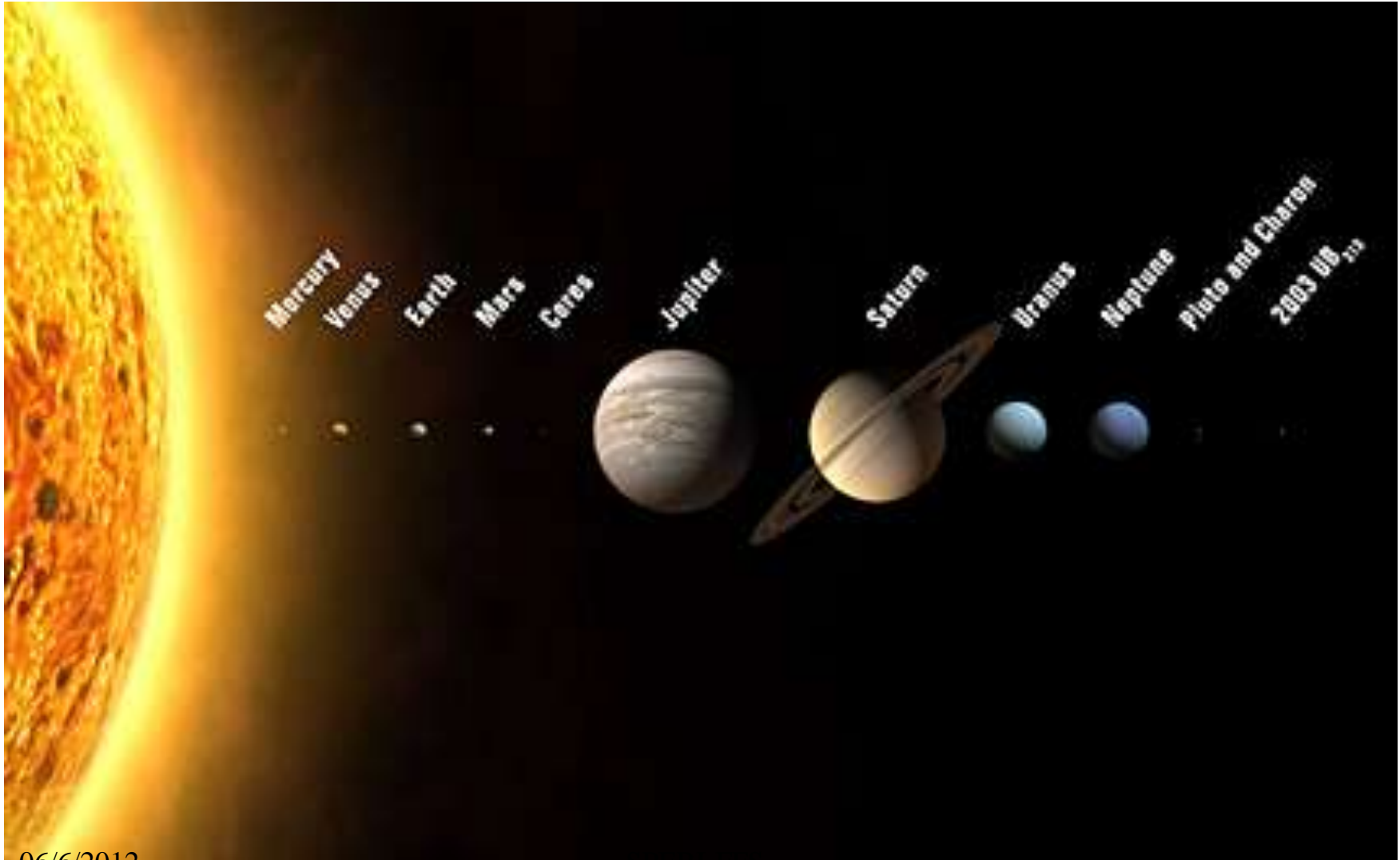
- Hubble Space Telescope photo film for sharing on Jupiter
- Clear instructions for the activities
- Song recording – Twinkle twinkle little star

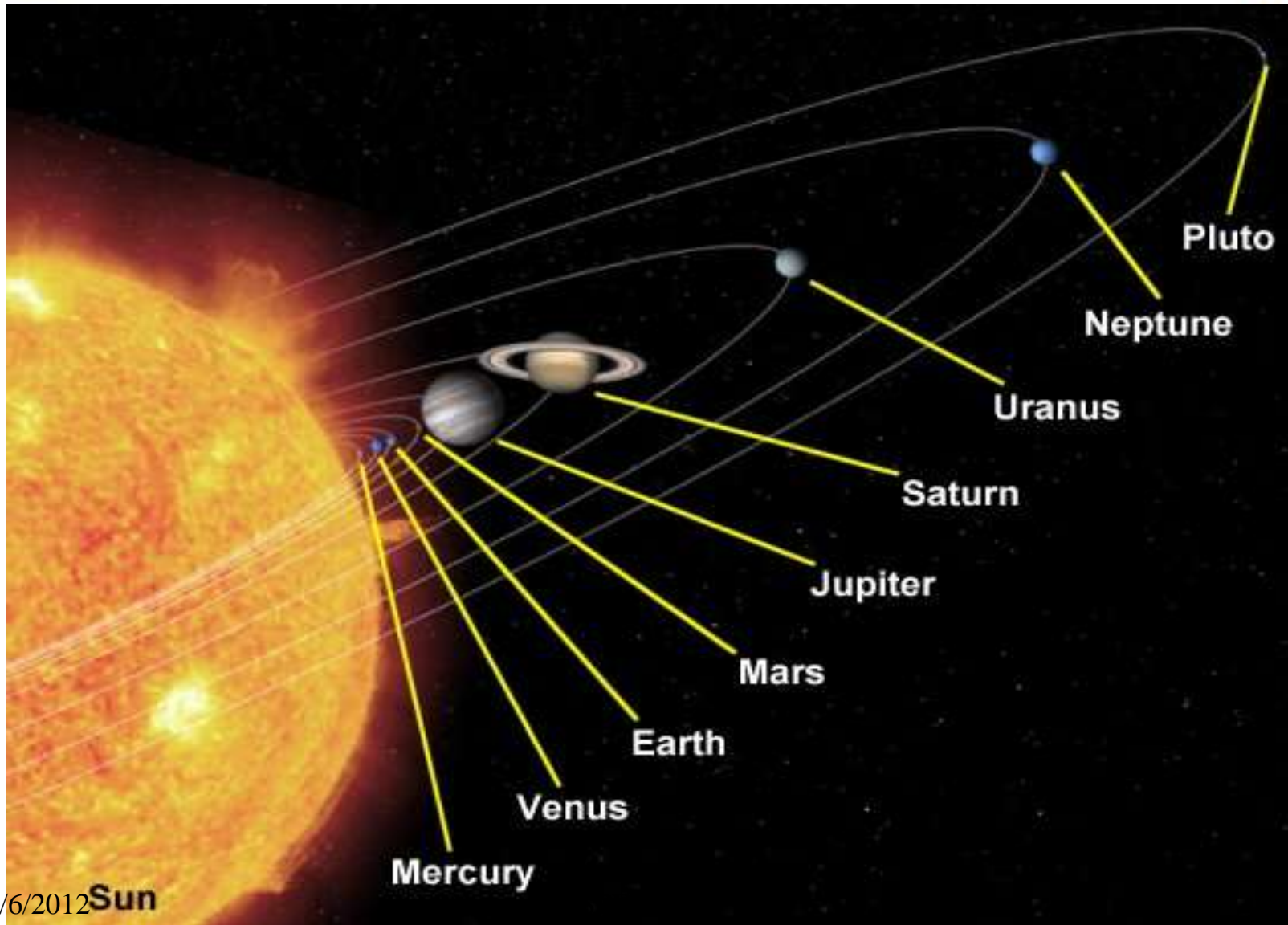
Activity

- Each person is assigned a number
- Start walking randomly around the room
- When a number is called out, the person needs to stop and the others continue walking, but around that person

What is a solar system?

- A system of planets orbiting a central star, which is the Sun.
- Formed due to the nucleation of matter during the early stages of the Universe
- Sun's mass is the greatest, therefore has the greatest gravitational pull → centre of orbit
- Earth is the only known planet to support life as we know it





OUR SOLAR SYSTEM

The Solar System consists of a star, the Sun, and eight planets that orbit it. The planets are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune. The Sun is a yellow dwarf star, and the planets are of various sizes and colors. The Solar System is located in the Milky Way galaxy, and it is one of billions of other solar systems in the universe.



Where can you find the planets?

- There are five planets visible to the naked eye:
Mercury, Venus, Mars, Jupiter and Saturn
- Mars is reddish
- The best time to see Venus or Mercury is after sunset
in the west or before dawn in the east
- Google Sky Map

What else is there in the night sky?

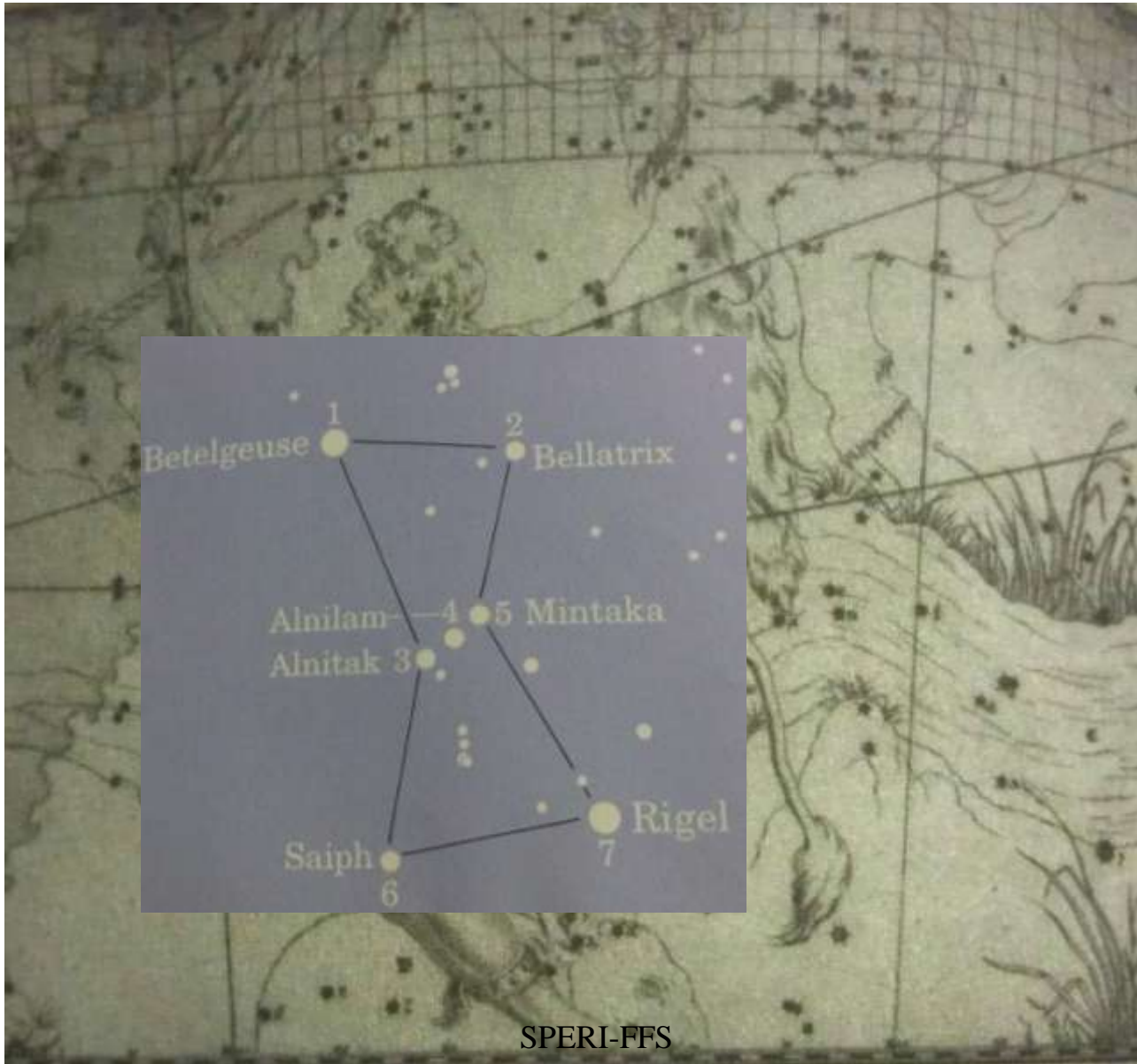
- Bright little twinkling dots:
 - Stars
 - Galaxies
- A group of bright little dots make up one constellation



Constellation

- Group of stars
- Historically, people remember stars through constellations, and remember constellations through stories
- E.g. Orion
 - Greek mythology

Orion

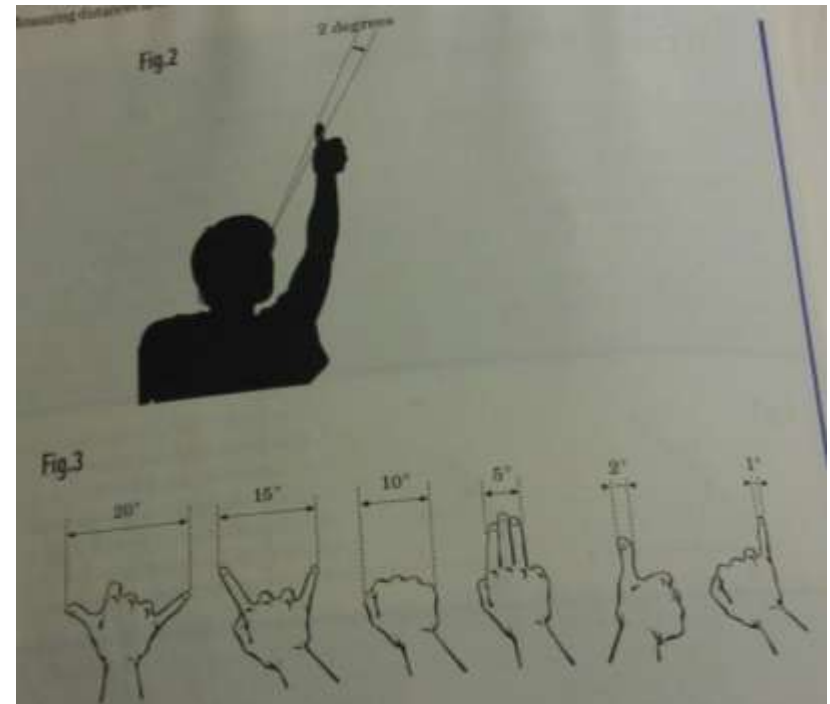


Activity 2

- Divide into groups of 3-4 people
- Part 1
 - Create a story about a group of stars you have identified
 - Add details like:
 - Distance between stars
 - Relative brightness
 - Etc.

Activity 2

- Part 2
 - Measure the distance between stars, using your hands
- Share with the class your story and your findings



Song

- Twinkle, twinkle little star
- How I wonder what you are
- Up above the world so high
- Like a little diamond in the sky
- Twinkle, twinkle littler star
- How I wonder what you are

- Heifetz, M.D. and Tirion, W. *A Walk Through the Heavens: A Guide to Stars and Constellations and their Legends*, 2nd ed., 1996, United Kingdom.
- Winterburn, E. *Stargazer's Guide: How to Read Our Night Sky*, 2008, United Kingdom.

Group 1

- Phon, A Nong, Inta, Bee
- Turtle. Measured distance between stars.
- A is the tail, D is the head
- Called Turtle Star.
- There used to be a turtle and a rabbit in a race. Rabbit was the defending champion. Rabbit was fast but turtle was slow, but rabbit did not care about turtle, so rabbit got distracted along the way. So when the turtle was near the end-point, the rabbit noticed and tried to catch up, but the turtle won nevertheless, and turtle became a turtle and became a constellation in the sky. When people look at the turtle, they call it the Turtle Star.
- (Inta has another story, to be told tomorrow.)

Group 2

- Xu li nhun, phet sa mon, thang
- Long time ago, there was one monk from the sky who was born on Earth. On the Earth, there were farmers who went to worship this monk because this monk has many functions e.g. good kungfu, to help the farmer. The Buddhist/monk in the sky had an idea to make a place for worship on Earth. When this place was built, they needed a lot of labour and talked with other villages that they need to help with labour. Before they built the place for worship, they observed the sky for design of the place.
- Farmers thought that this monk was good, but actually not, because he took these people from the village to help build this place. People who were helping the monk went to the villages to get people. One village had a girl whose husband was away, and was taken. When husband came back, he went around to find the wife alone, but was unable to fight them. After re-strategising, he solicited help from remaining good people in other villages to fight with them, but failed still. He went back to re-strategise, decided to dress up as monk's helpers. All other monk's helpers were killed, but only the husband could kill the monk. After the monk died, all villages were happy and wife became free. They appointed him to become the monk. Every year, they take one day for the sky when it is the 'Pyramid Sky', where the place was designed after.
- Measured distance between stars.

Group 3

- Pha Ly, Chung, Som Chin
- The group of stars represent 7 planets. They represent everything on Earth, e.g. the seventh represents seedlings put into earth for planting, sixth represents raining for growing the seedlings, fifth for hunter, wind, etc, from nature. This is a Hmong minority story.
- (Pha Ly has another story from Hmong minority to tell tomorrow)

Group 4

- Vi Lay, U Dom, Bo Pha
- In the village a long time ago, there was a family with a wife and husband. One day, hungry monk travelled past the house, but there was nothing to eat in the house, except for a chicken that still had a baby. Eventually, the husband and wife decided to kill the mother chicken. The seven chicks went to the kitchen fire out of sadness, died, and became the 7 stars in the sky.