

Telescope Demo and Solar Viewing

Anthony Urbano
Science Education Specialist
UP NISMED

20 July 2022

Telescope - a tool that, when looked through, makes far-off objects seem closer and larger (NASA)



A **refracting telescope** uses a lens to collect light.

A small mirror called a **diagonal** reflects light to the side, for a more comfortable viewing.



Image: Sky and Telescope

A **reflecting telescope** uses a mirror to collect light.

A small flat mirror called the **secondary mirror** is used to direct light to the side.



Image: Sky and Telescope

Some telescopes use a **combination** of a mirror to collect light and a corrector glass to correct for problems in images.

Mirrors may be used to reflect light to the side.

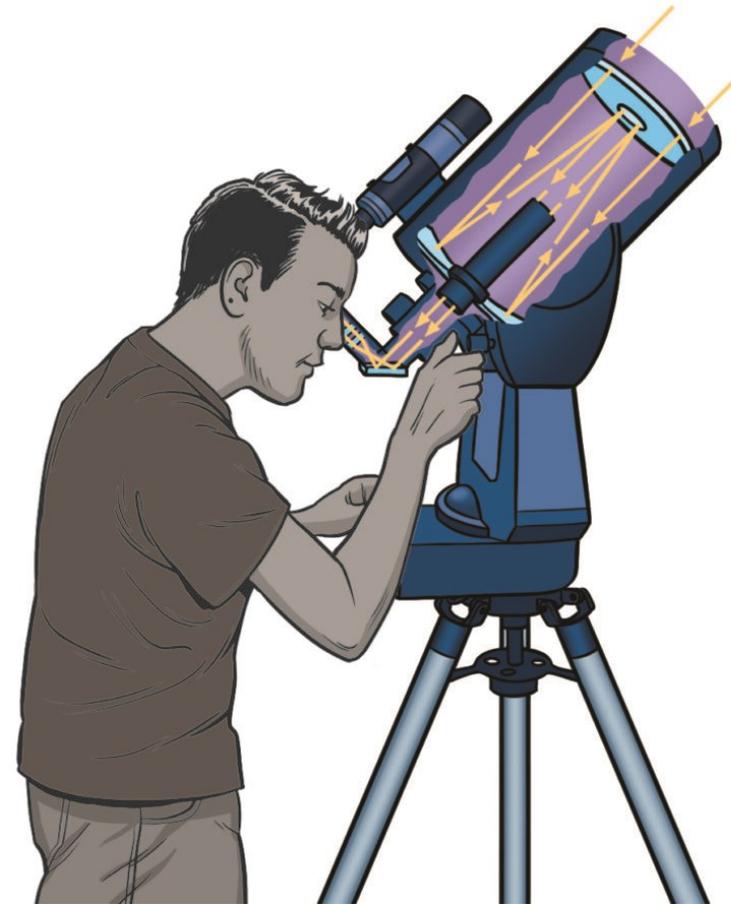
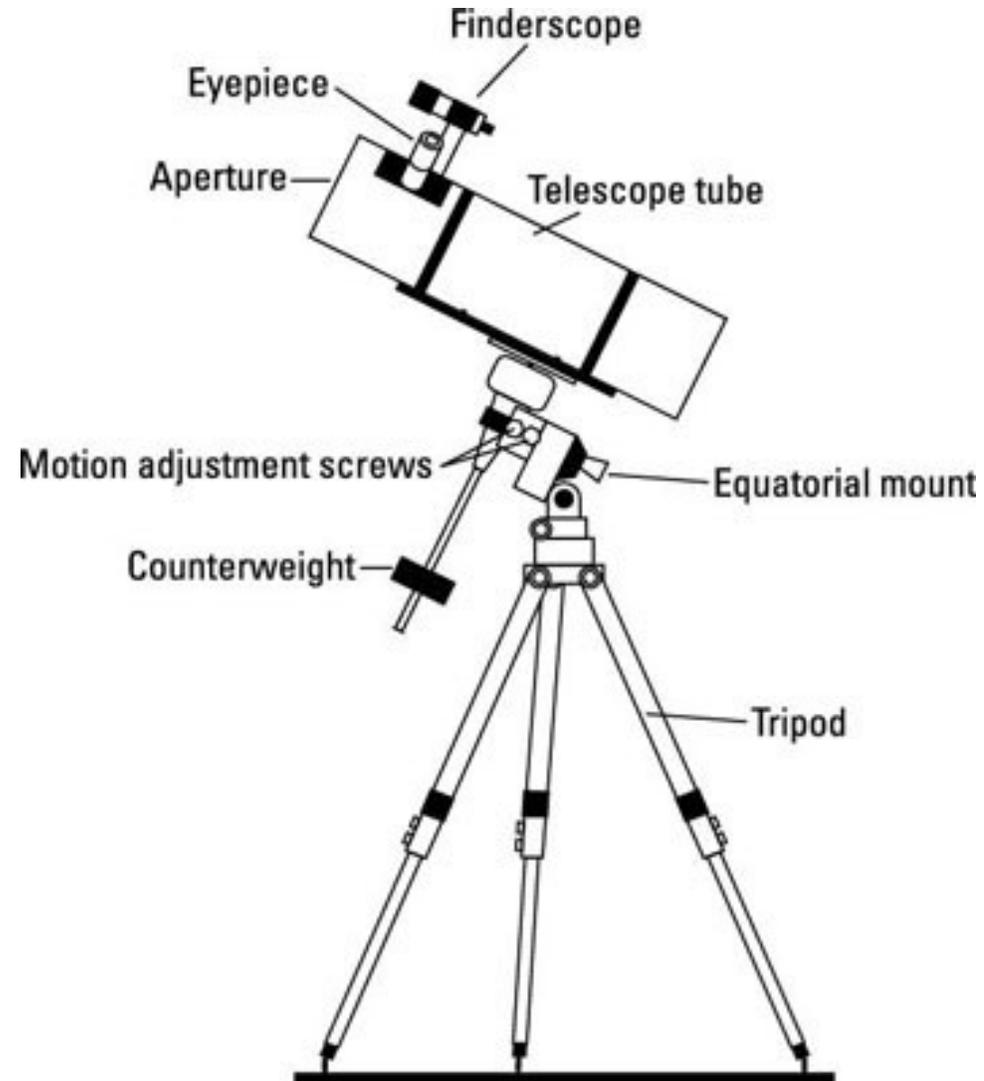


Image: Sky and Telescope

Main Parts of a Telescope



Observing the Sun

Safety reminders

1. When observing the Sun, use a solar filter fitted securely in front of the telescope.
2. Do not use improvised solar filters.
3. Never leave a telescope unattended under the Sun.



Sunspots form in areas where magnetic fields are particularly strong, keeping some of the heat within the Sun from reaching the surface (NASA).

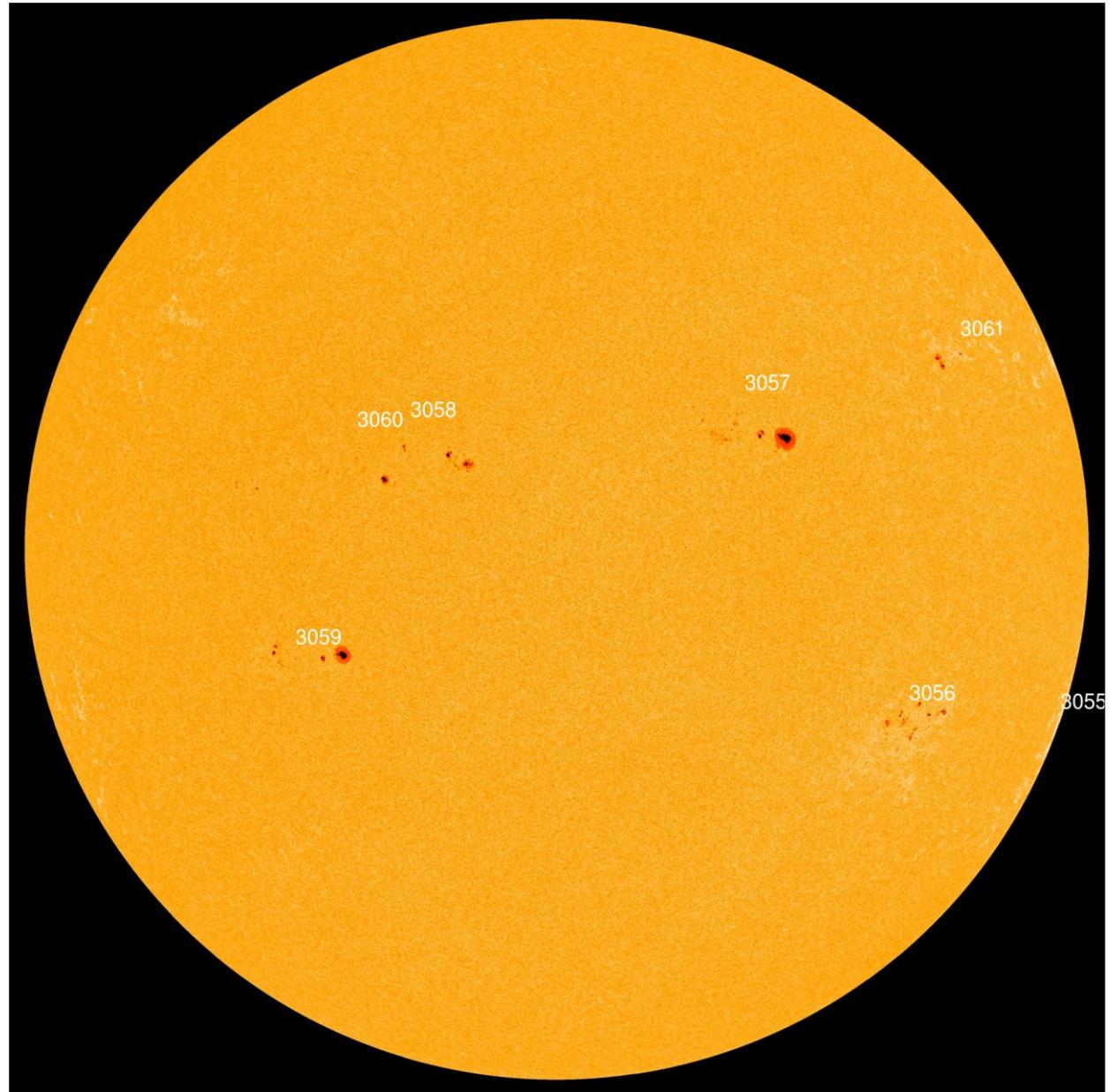


Image: SpaceWeather

Sunspots imaged on
19 July 2022

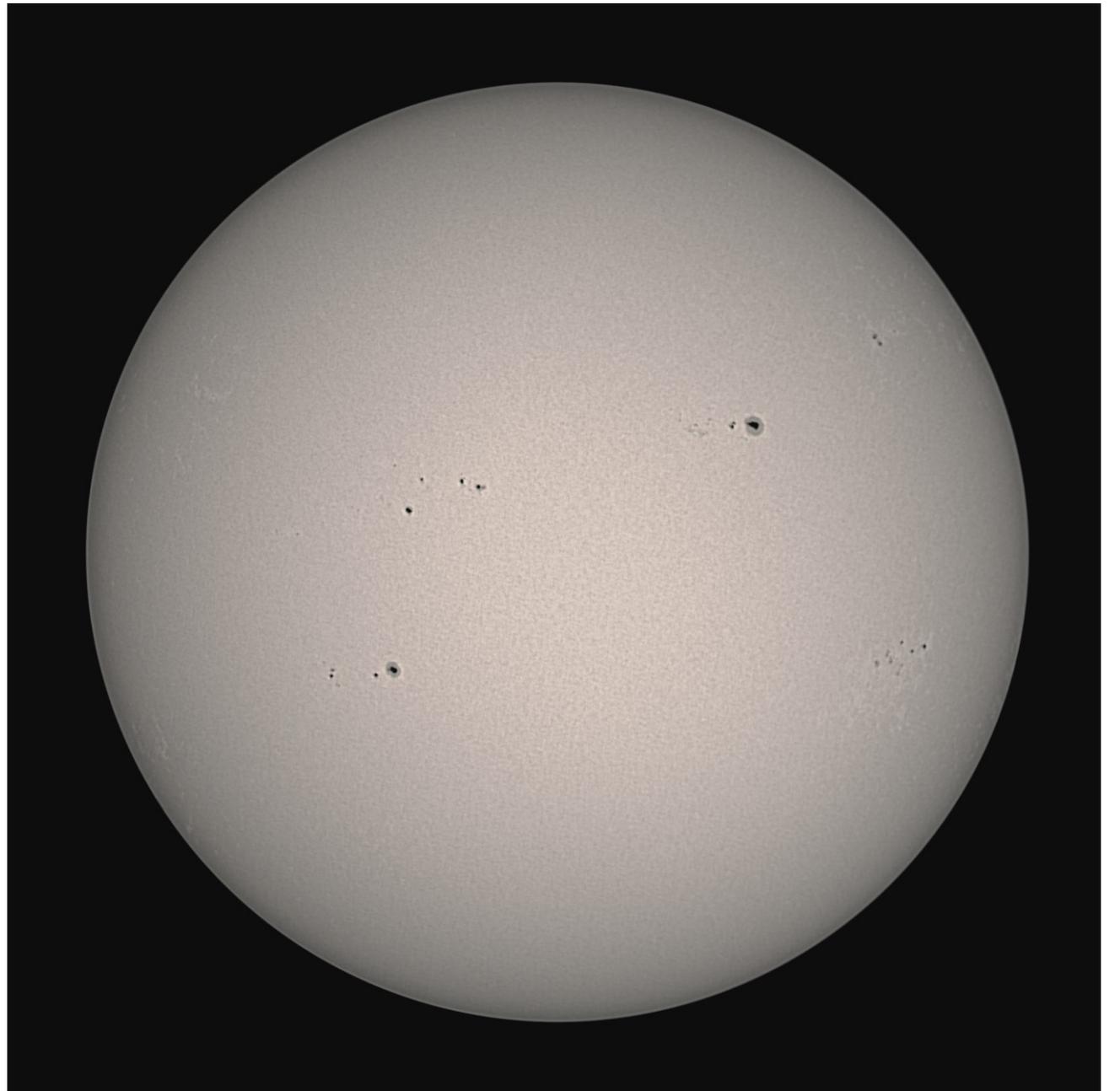
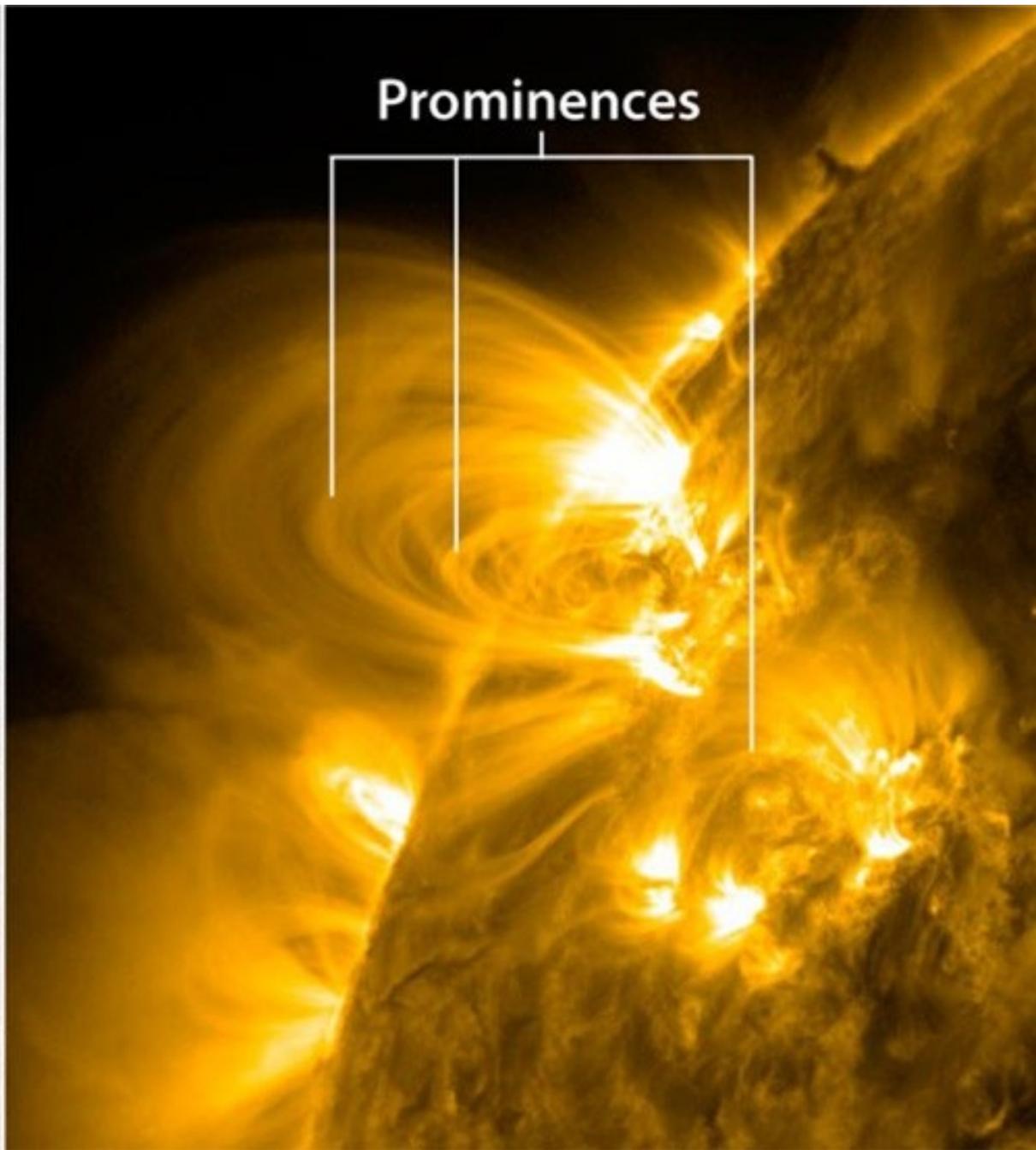
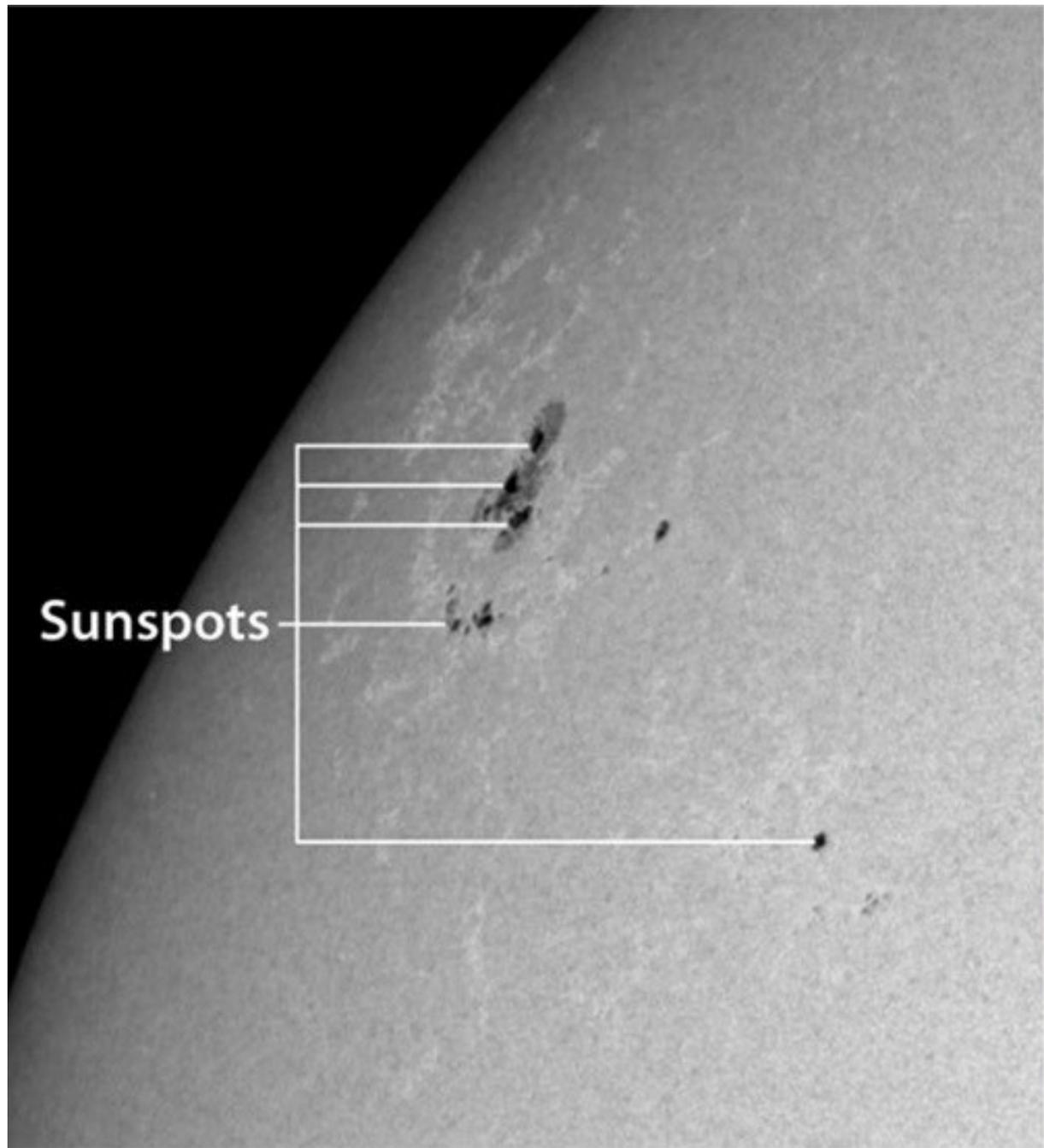
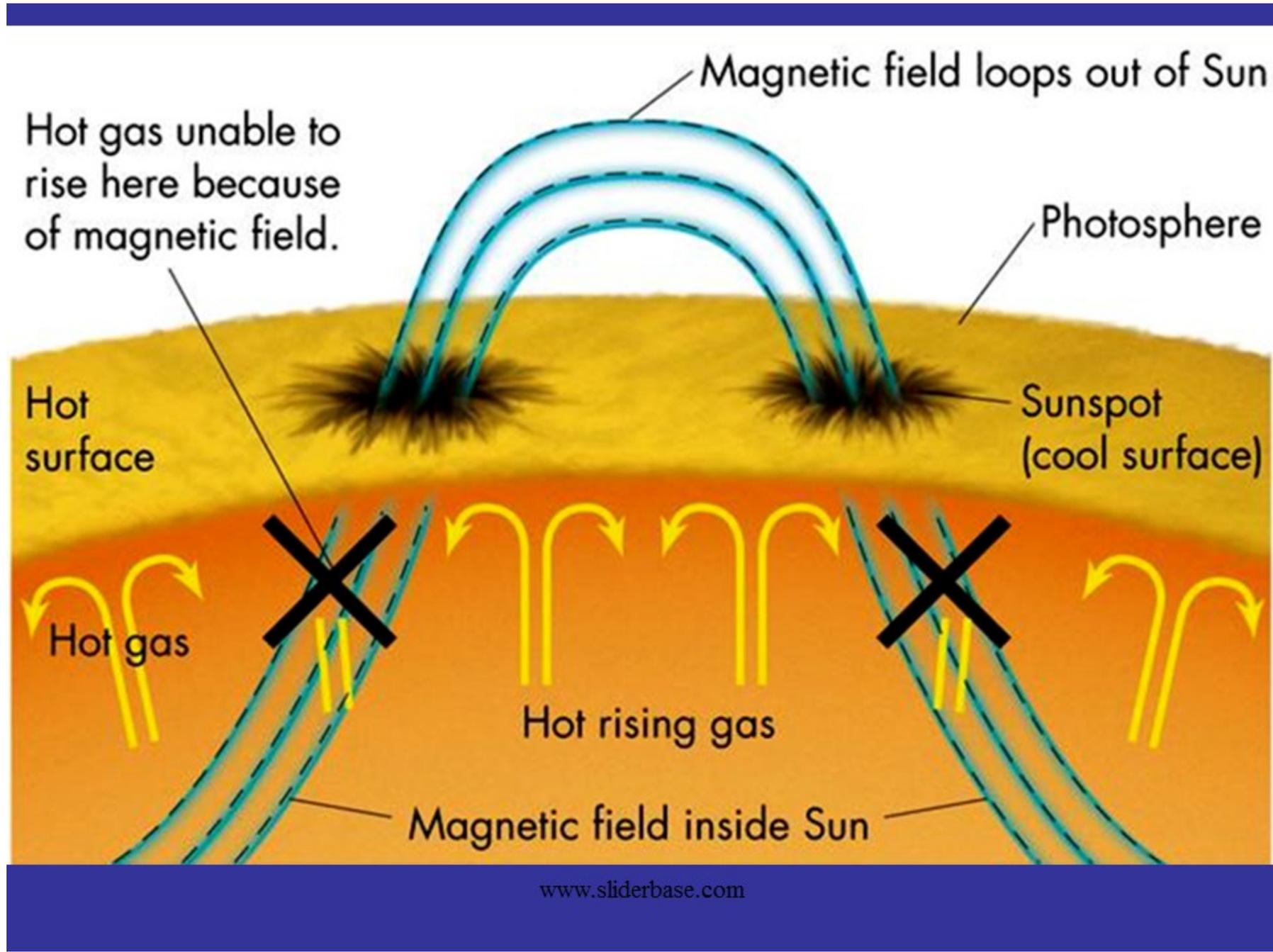
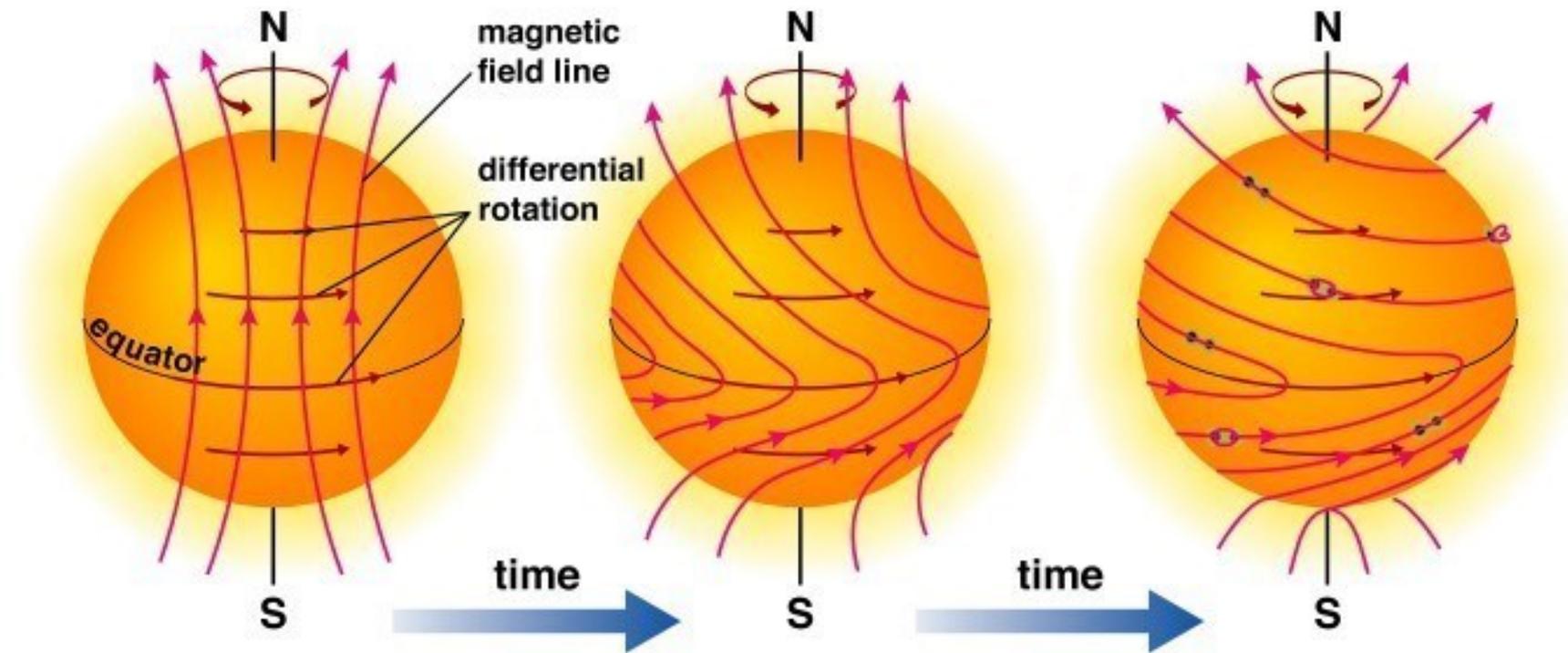


Image: Anthony Urbano





Sun's Magnetic Field Lines



Summary

1. We learned about the different types of telescopes.
2. We learned about the basic parts of a telescope.
3. We learned how to use a telescope.
4. We used a telescope to view sunspots.
5. We learned how sunspots form.

NISMED Staff Trains PhilSA's Space Camp Teacher-Participants

Seventeen teachers from various science high schools from the National Capital Region attended the Philippine Space Agency's (PhilSA) Lift Off 2022 Space Science Camp, a 3-day training program for teachers and students focusing on topics related to Space Science and Technology Applications (SSTA). Mr. Anthony Urbano and Mr. Eligio Obille Jr. of the NISMED High School Earth and Environmental Science Workgroup discussed Earth and Space-related topics such as how to use a telescope and how it works. They also facilitated a solar observation in which a telescope was fitted with a special solar filter to allow teacher-participants to safely view the Sun and see sunspots. The session was held on 20 July 2022 at the University of the Philippines Hotel in UP Diliman. PhilSA's space science camp is a yearly event that aims to equip teachers with SSTA knowledge and skills and promote SSTA among students.



Teacher-Participants of PhilSA's Lift Off 2022 Space Science Camp