

NATURAL SCIENCES & TECHNOLOGY

RESOURCE PACK
GRADE 6 TERM 4



**GRADE: 6 TERM: 4 STRAND: PLANET EARTH AND BEYOND;
SYSTEMS AND CONTROL**

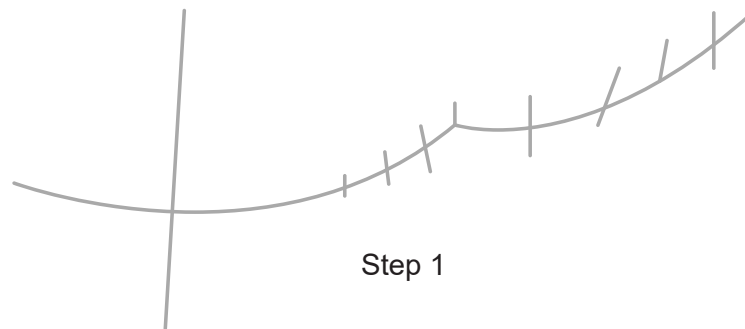
RESOURCE 1

<http://www.dragoart.com/tuts/3666/1/1/how-to-draw-the-solar-system>

HOW TO DRAW THE SOLAR SYSTEM

Step 1

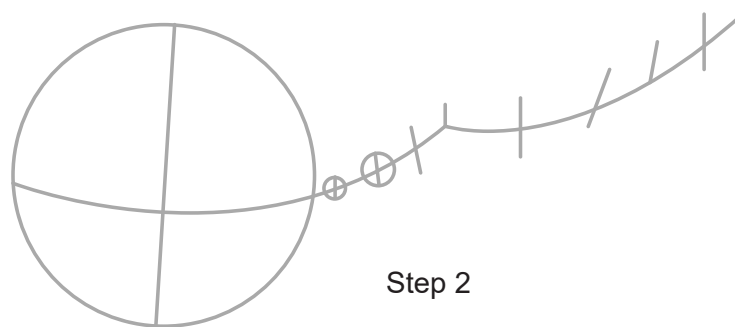
Start this lesson on how to draw the solar system by drawing a long flat like "W". Once that is done you can then draw a total of nine dashes.



Step 1

Step 2

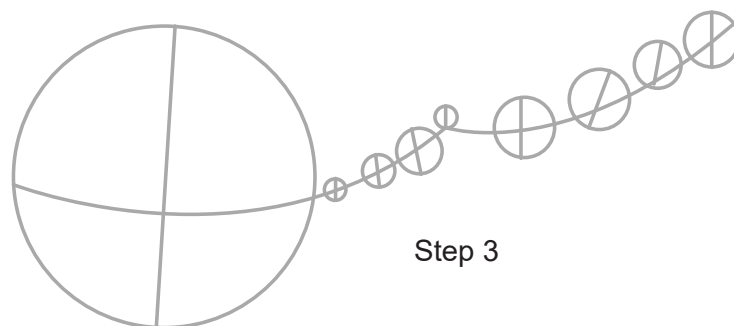
The longest vertical line is for the shape of the sun. Draw a huge circle for the sun and then draw two smaller circles for Mercury and Venus.



Step 2

Step 3

Now draw the rest of the circle shapes for the rest of the planets which are Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Draw the ring around Saturn (the 6th planet from the Sun).



Step 3

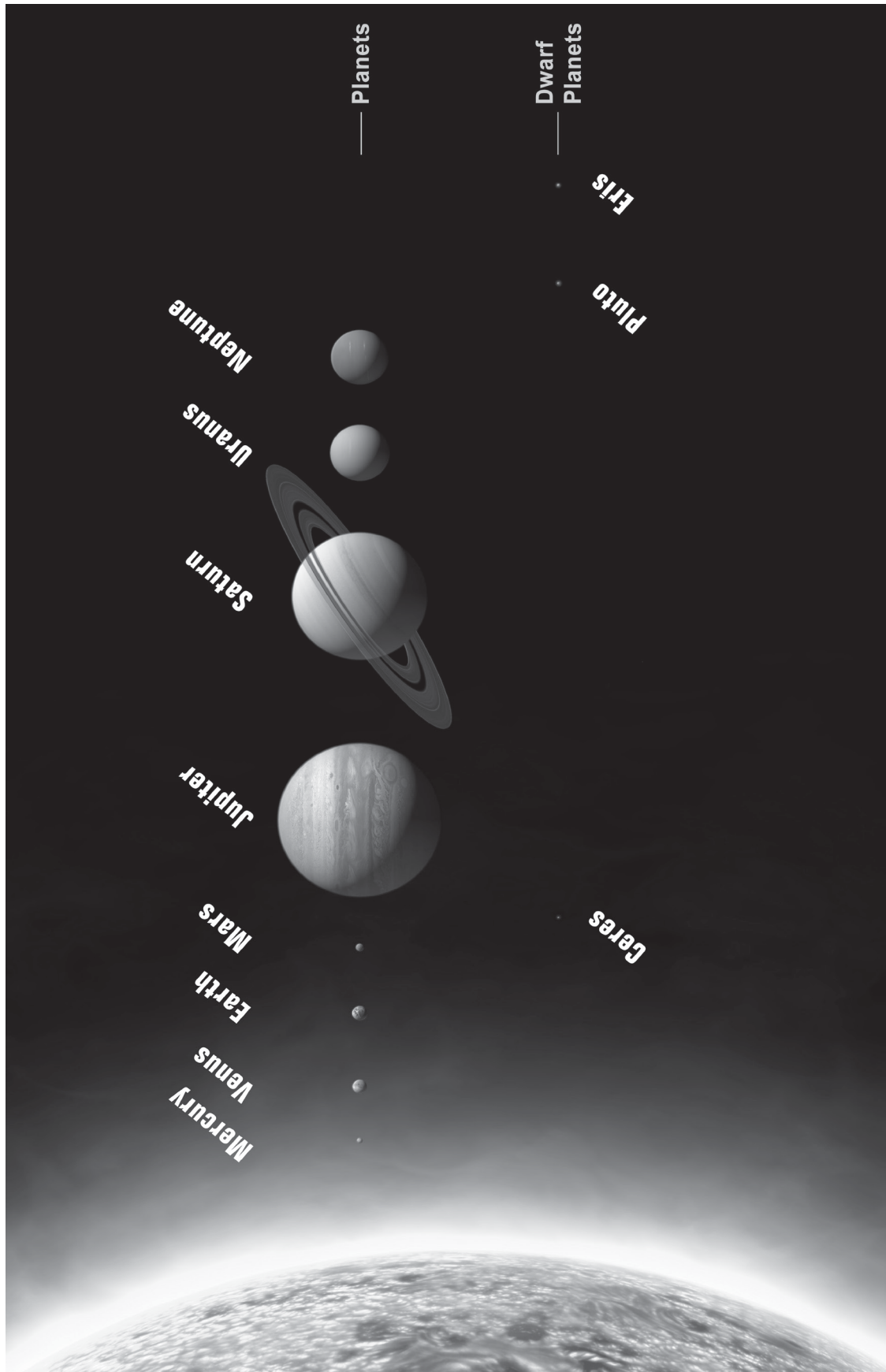
Step 4

Shade in the planets (make Jupiter streaky, Earth has clouds and seas, Saturn has dark rings around it)

RESOURCE 2

https://solarsystem.nasa.gov/multimedia/gallery/solarsys_scale.jpg

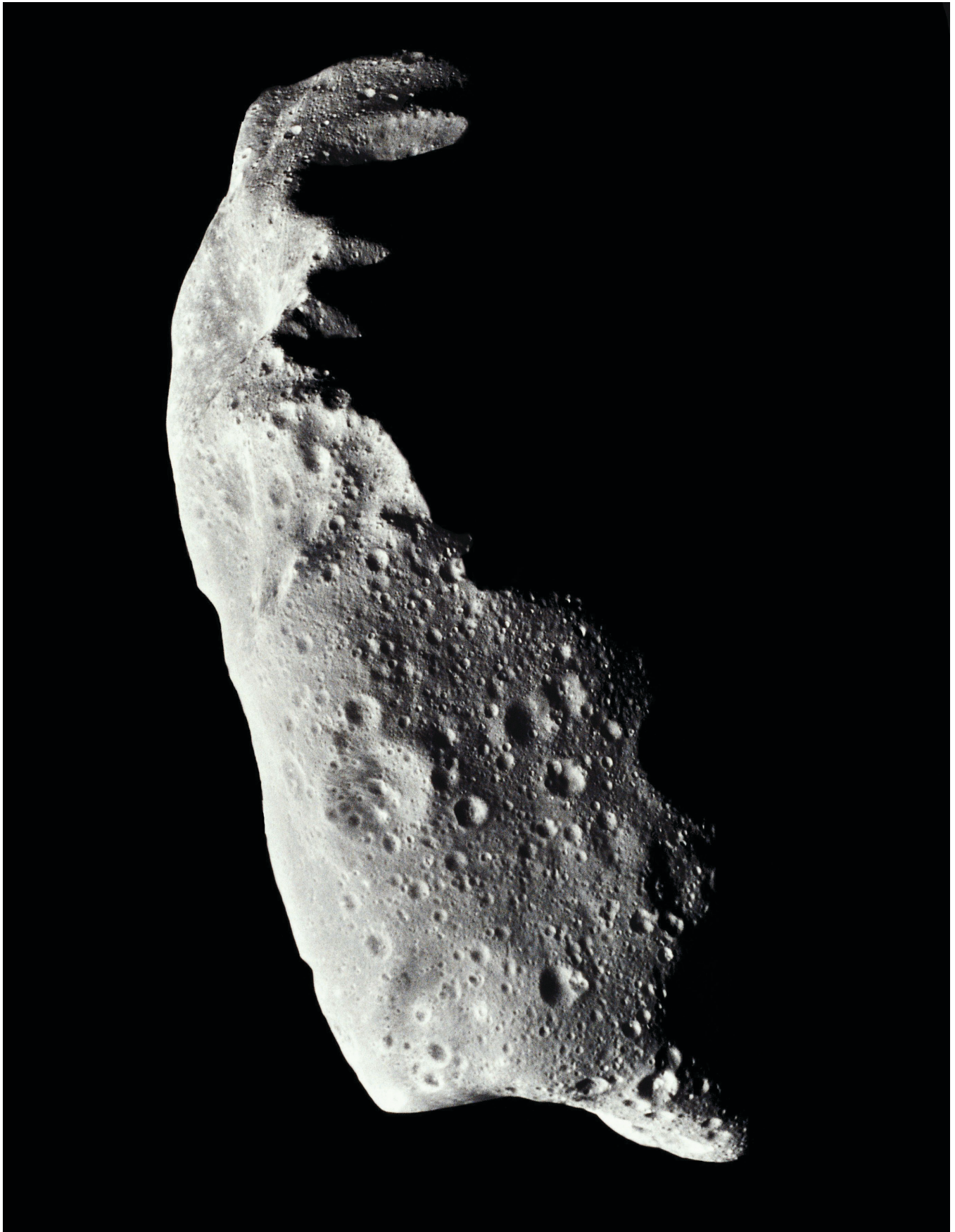
THE EARTH ORBITING THE SUN



RESOURCE 3

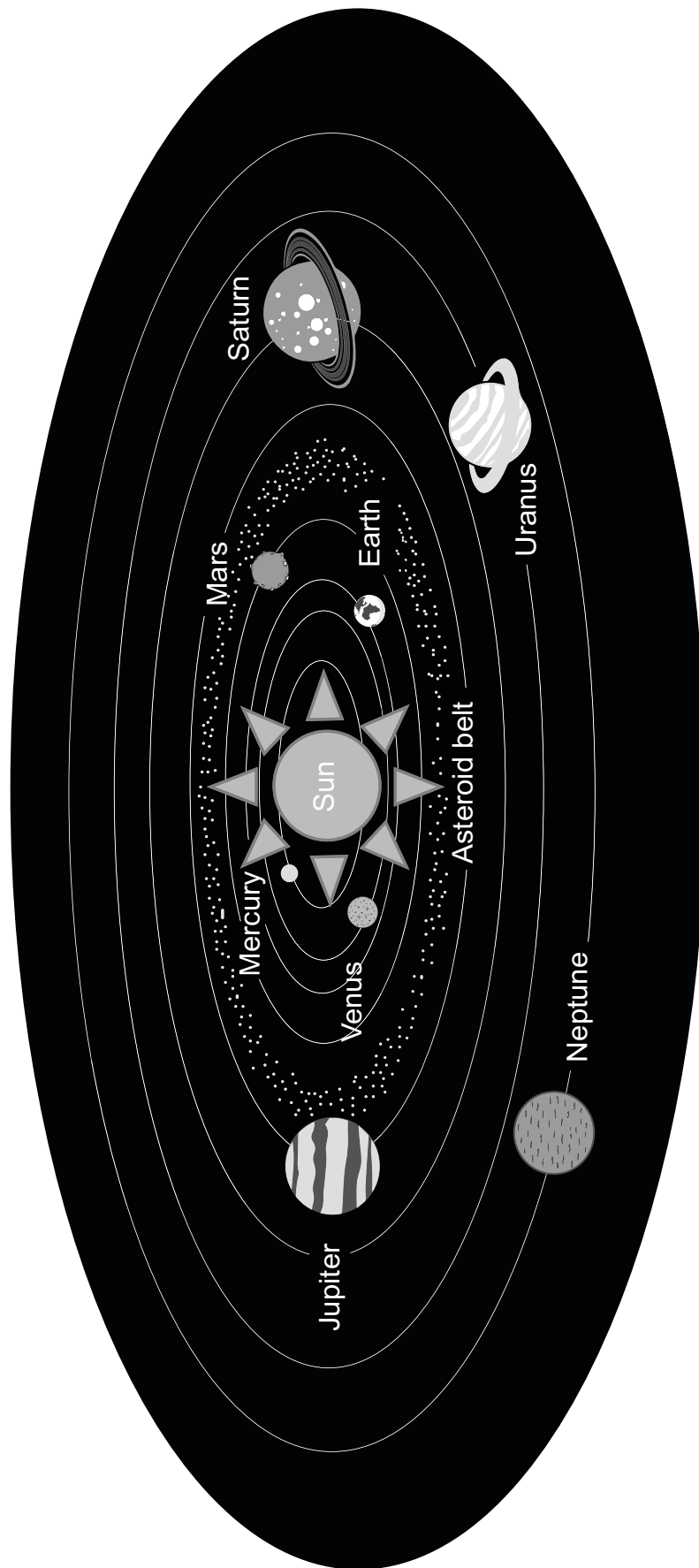
(<https://en.wikipedia.org/wiki/Asteroid>)

ASTEROID 243 IDA WITH ITS MOON CALLED DACTYL



RESOURCE 4

THE ASTEROID BELT



RESOURCE 5

(https://upload.wikimedia.org/wikipedia/commons/2/25/Terrestrial_planet_sizes.jpg)

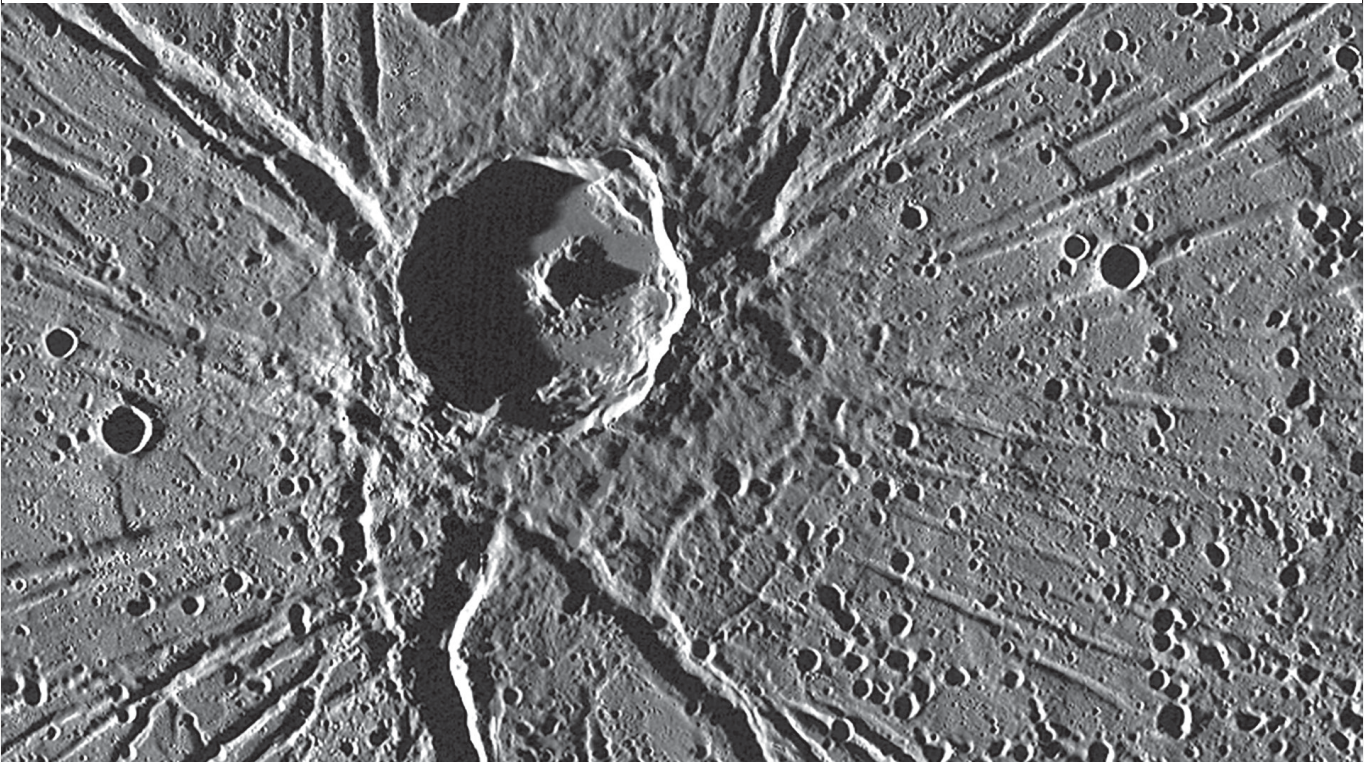
THE FOUR ROCKY PLANETS



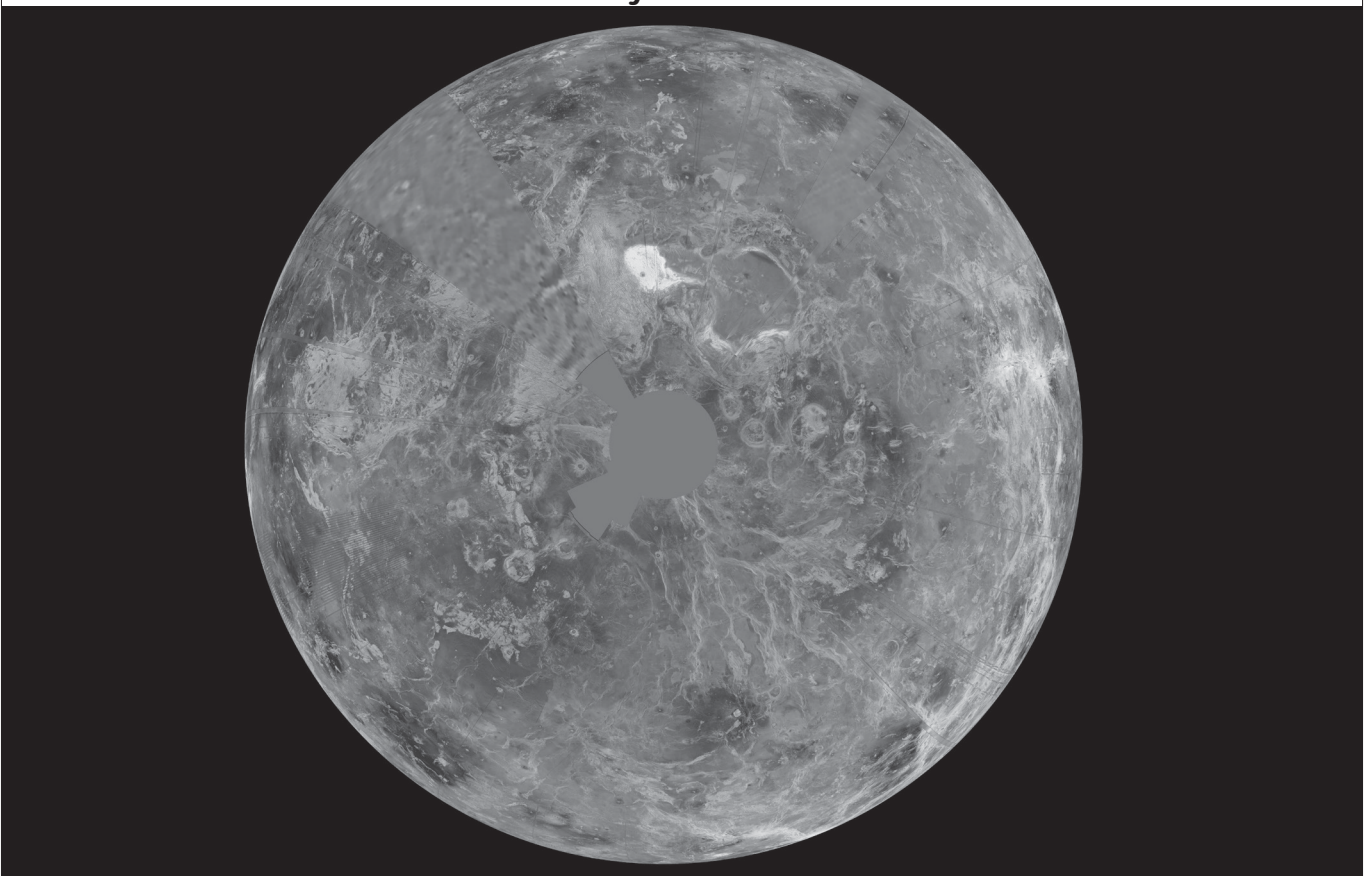
RESOURCE 6

[https://en.wikipedia.org/wiki/Mercury_\(planet\)](https://en.wikipedia.org/wiki/Mercury_(planet))

MERCURY



Mercury's Surface



The Planet Mercury

RESOURCE 7

<https://en.wikipedia.org/wiki/Venus>

COMPARE SIZES: VENUS AND EARTH



RESOURCE 8

<https://en.wikipedia.org/wiki/Venus>

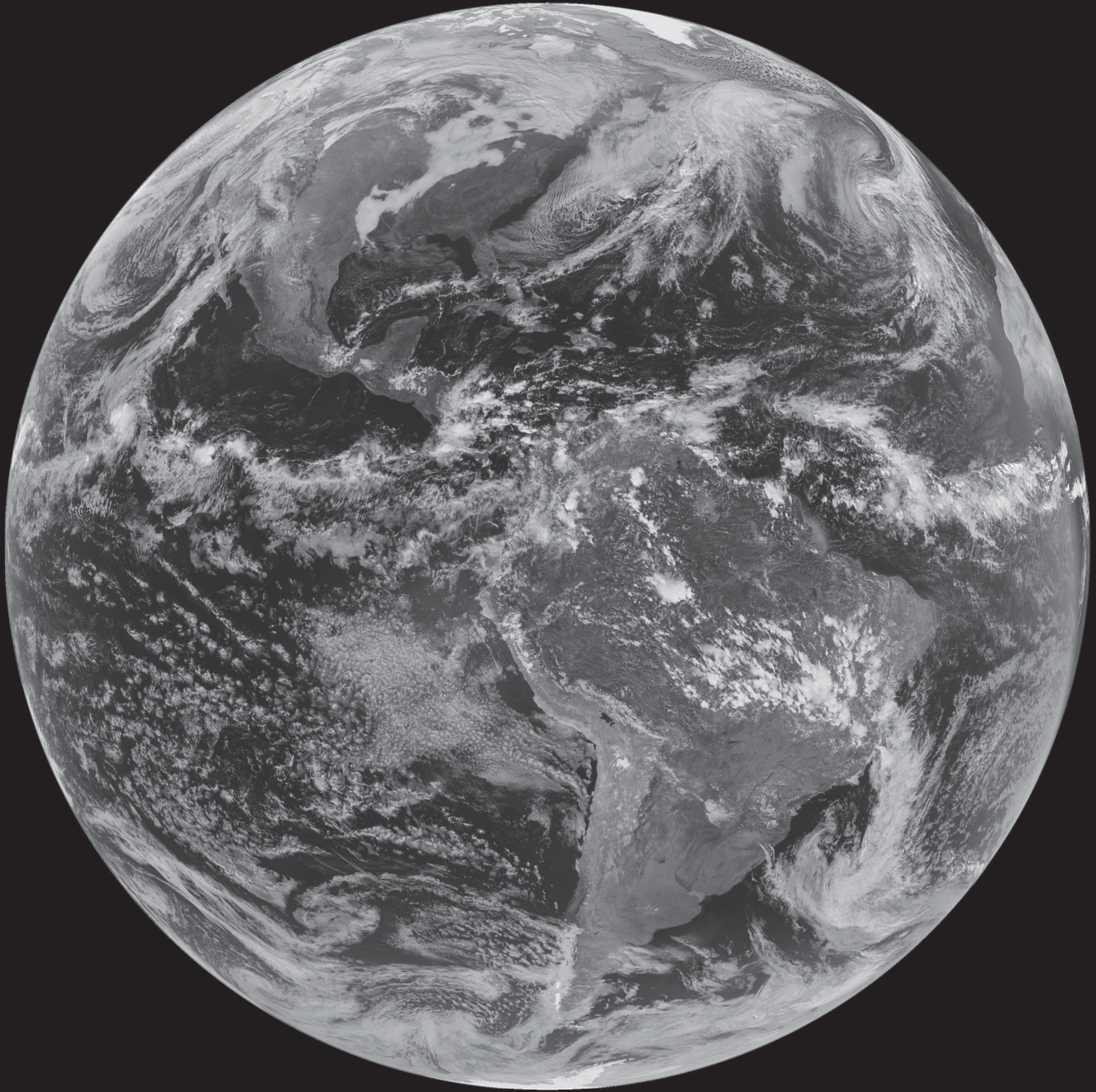
VENUS: THE BRIGHTEST PLANET IN THE NIGHT SKY



RESOURCE 9

<https://en.wikipedia.org/wiki/Venus>

THE EARTH: AS PHOTOGRAPHED FROM SPACE



RESOURCE 10

https://upload.wikimedia.org/wikipedia/commons/2/24/Launch_of_Falcon_9_carrying_CRS-6_Dragon_%2817170624642%29.jpg

MARS

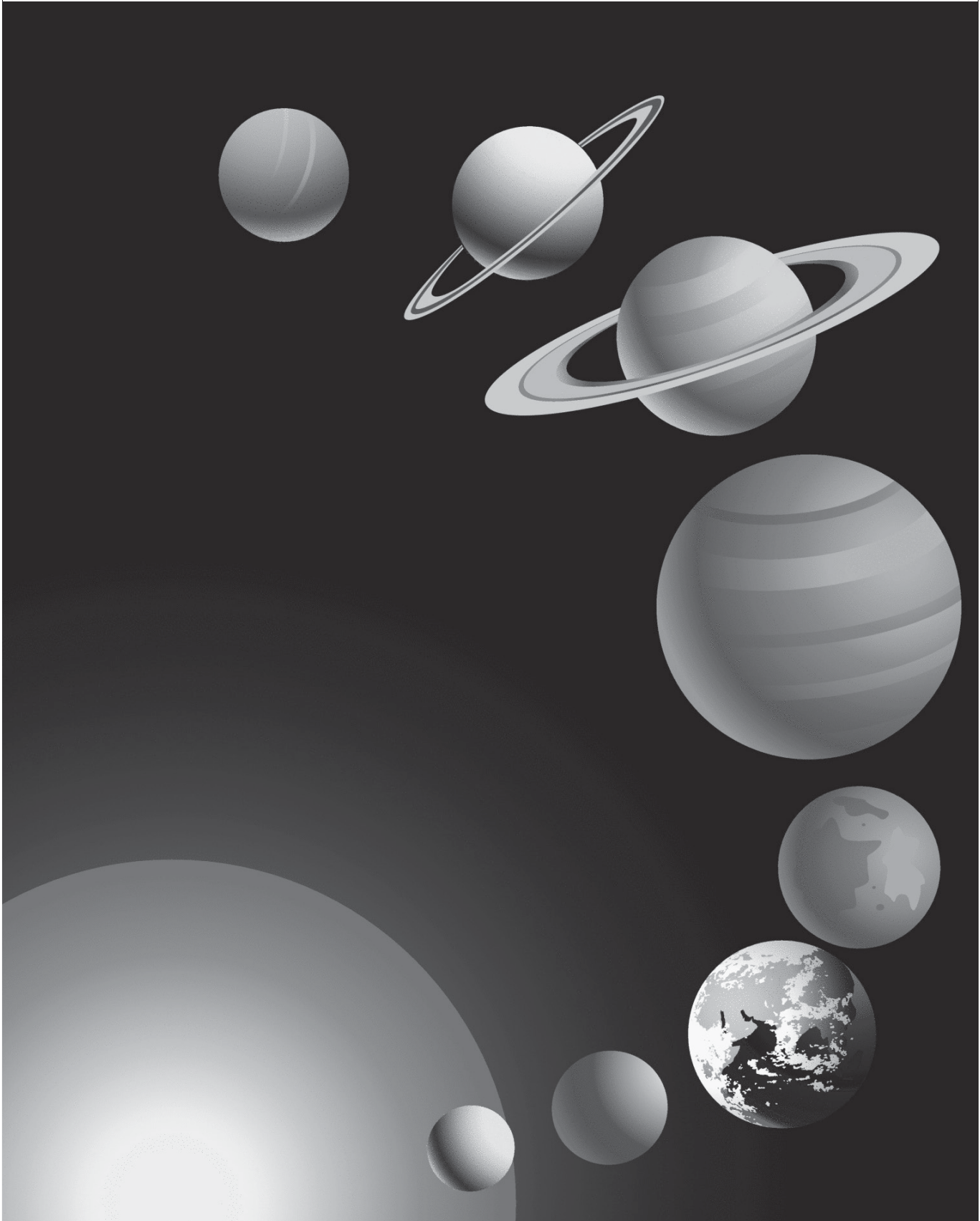


RESOURCE 11

<https://www.universetoday.com/34577/inner-and-outer-planets/>

Credit: Lunar and Planetary Institute

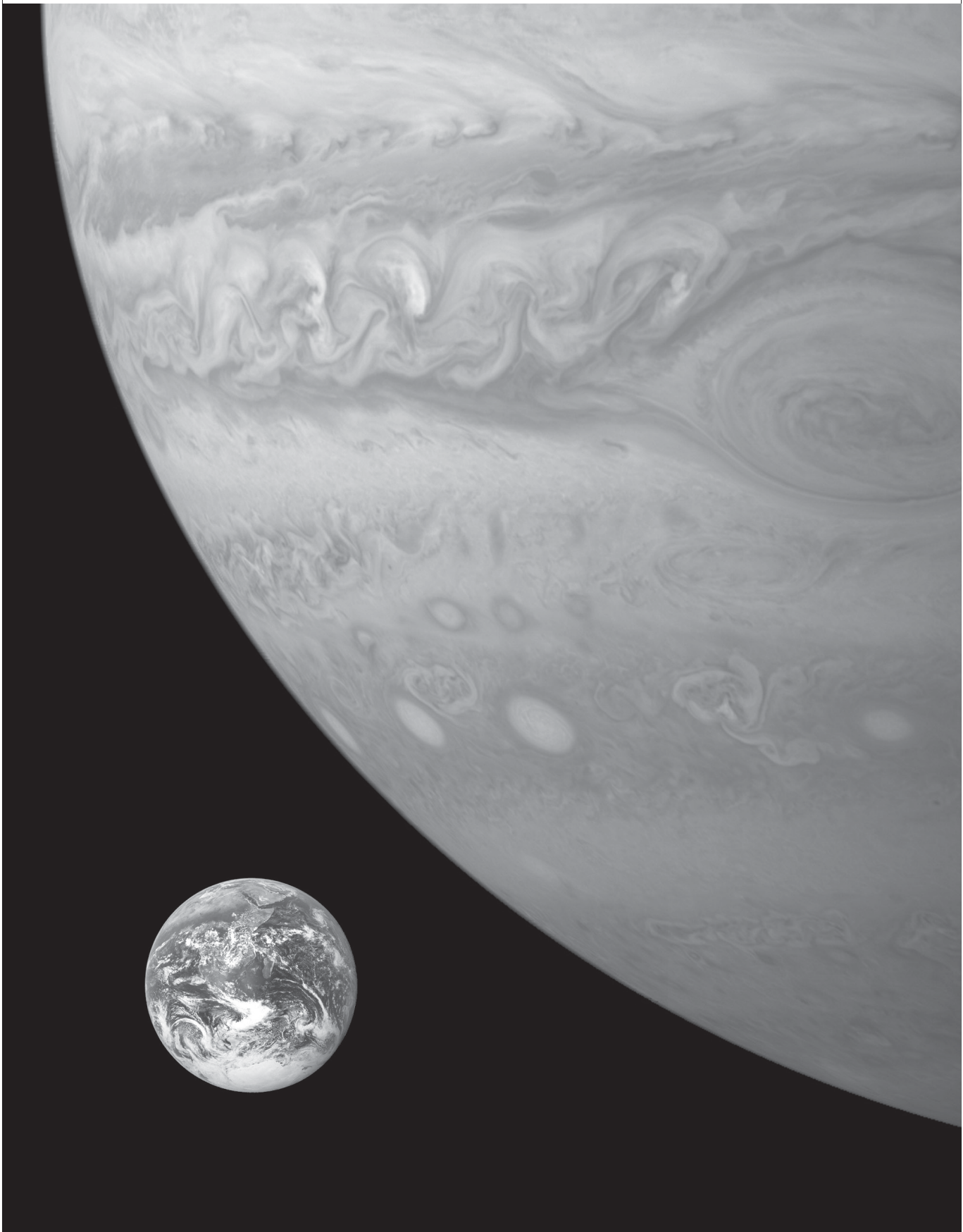
THE FOUR GAS PLANETS



RESOURCE 12

https://c1.staticflickr.com/8/7347/14171466666_0ff99a9cdd_b.jpg

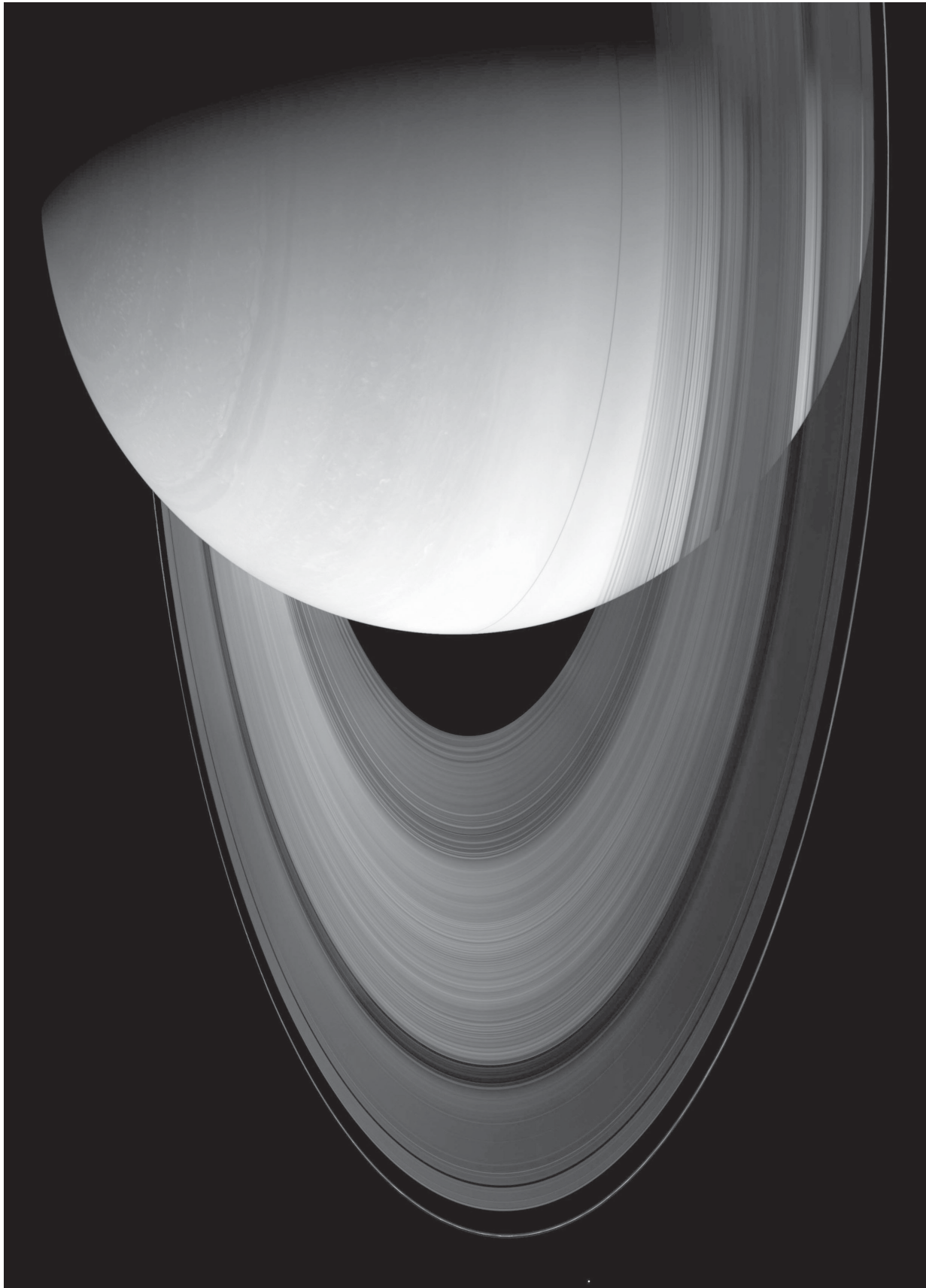
JUPITER: THE SWIRLING GASES ON THE SURFACE



RESOURCE 13

https://upload.wikimedia.org/wikipedia/commons/c/c7/Saturn_during_Equinox.jpg

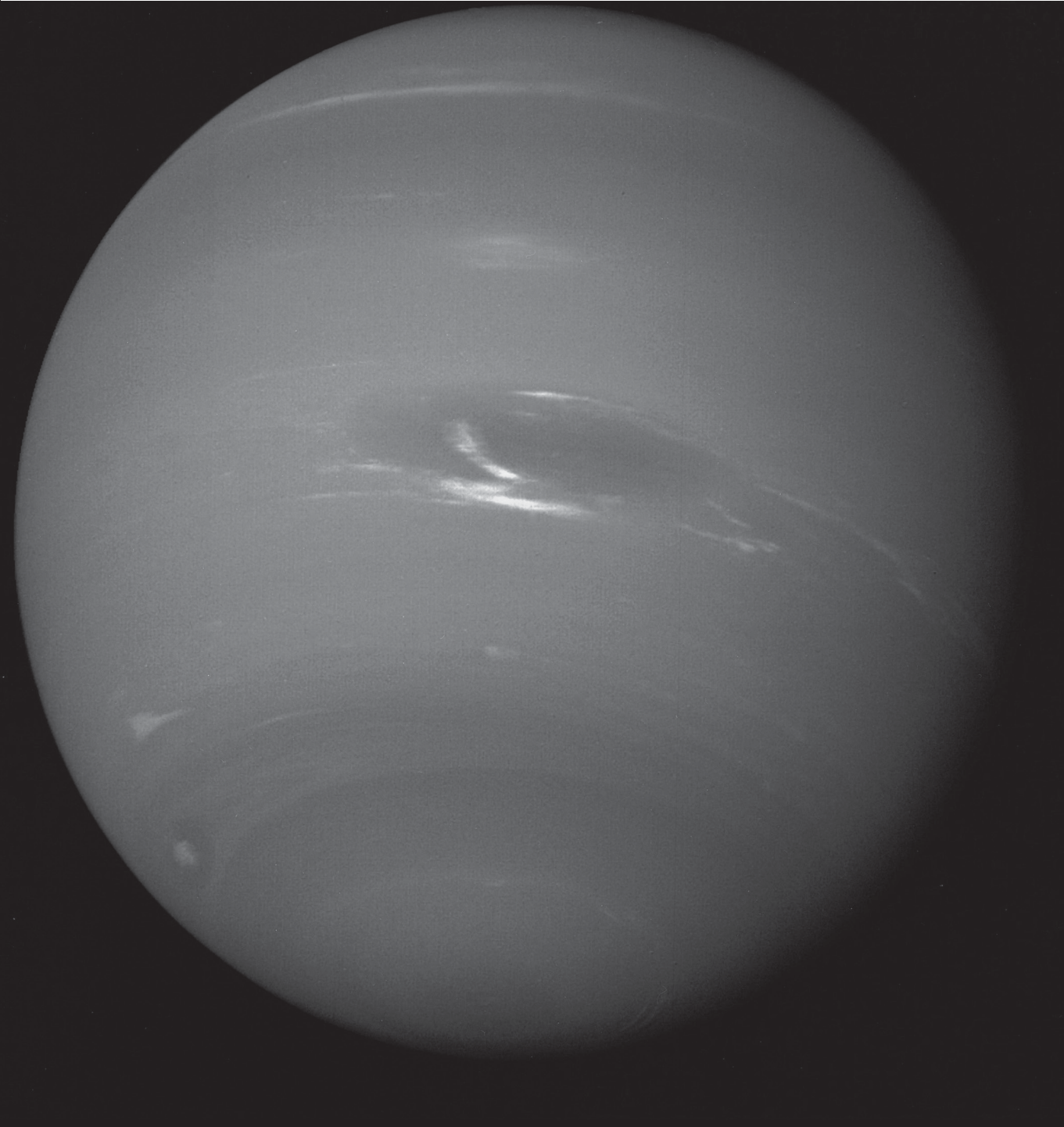
SATURN AND ITS RINGS



RESOURCE 14

https://upload.wikimedia.org/wikipedia/commons/5/56/Neptune_Full.jpg

NEPTUNE



The stormy surface of Neptune

RESOURCE 15

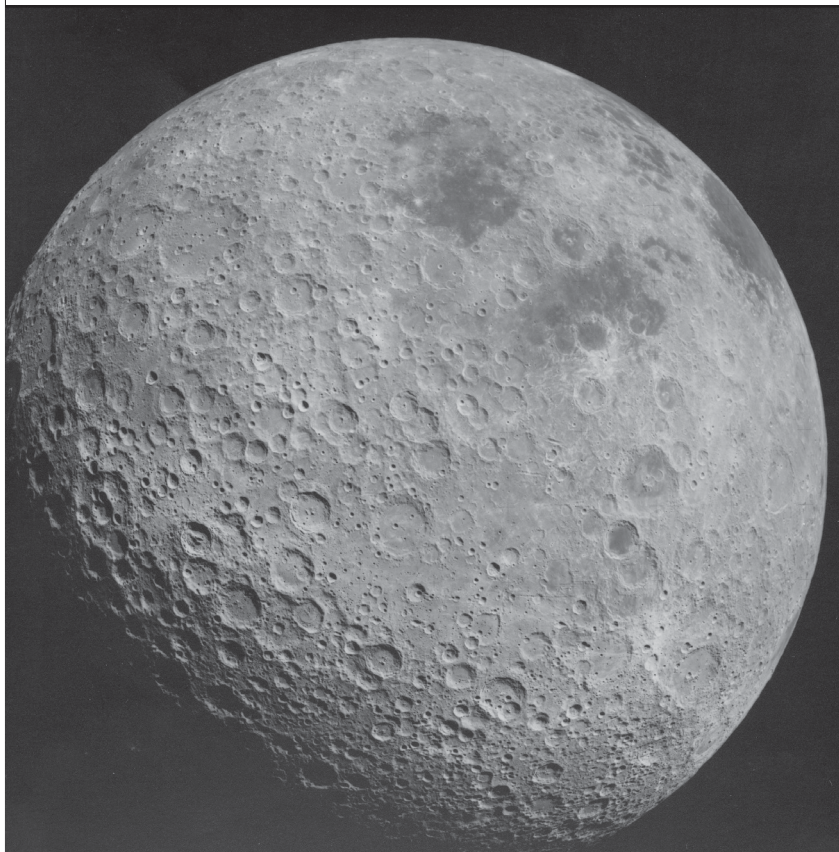
<https://upload.wikimedia.org/wikipedia/commons/e/e1/FullMoon2010.jpg>

https://www.nasa.gov/images/content/502269main_PIA12648-43_full.jpg

THE NEAR SIDE AND FAR SIDE OF THE MOON



The side of the Moon that we see – the Near Side



The side of the Moon that we do not see – the Far Side

RESOURCE 16

https://commons.wikimedia.org/wiki/File:Cabra_corral-Moon_shine.jpg

THE MOON SHINING

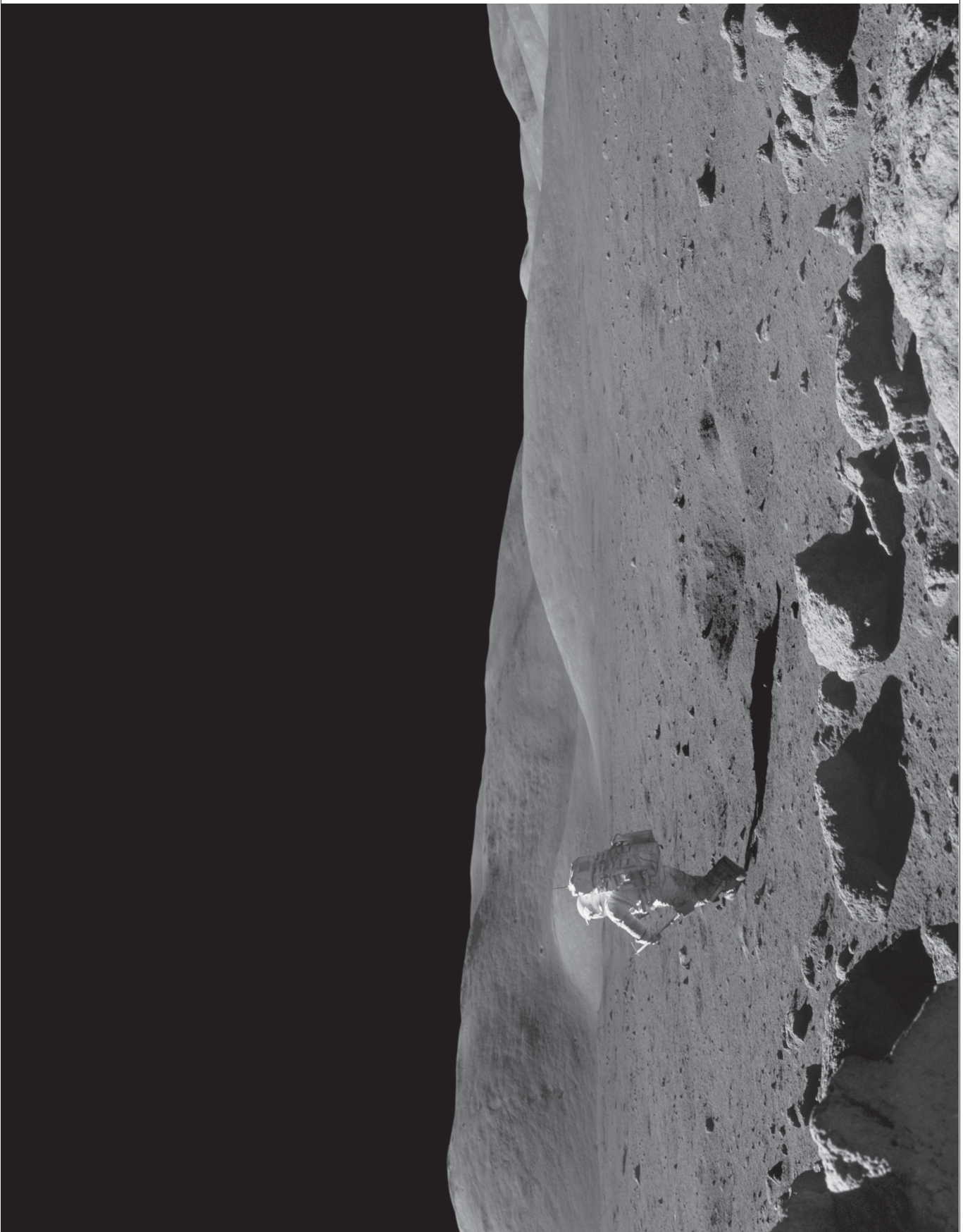


The Moon reflects light from the Sun

RESOURCE 17

<http://i0.wp.com/www.voyage-univers.com/wp-content/uploads/2013/09/lune-surface.jpg>

THE MOON'S SURFACE



RESOURCE 18

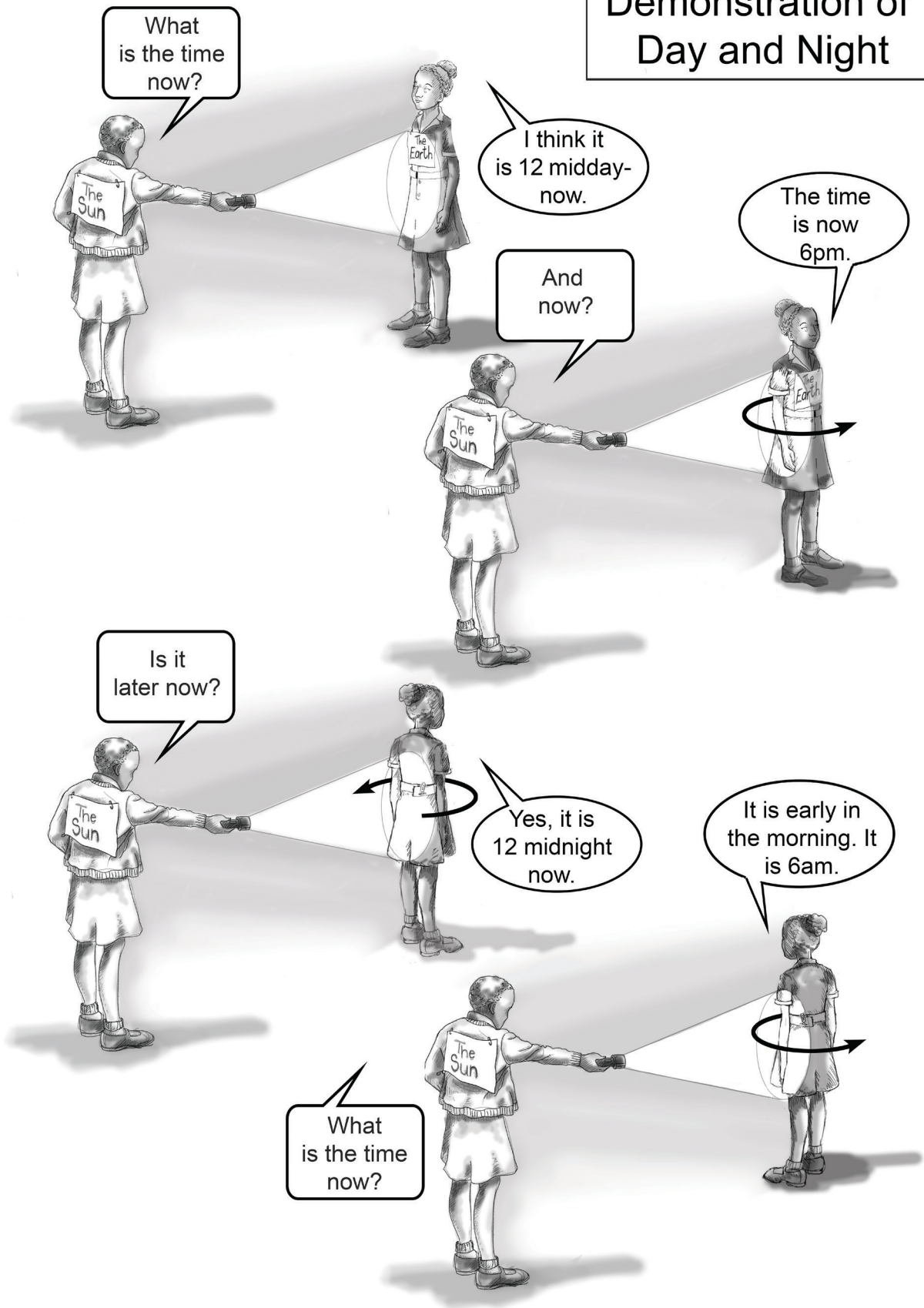
THE ROTATION OF THE EARTH

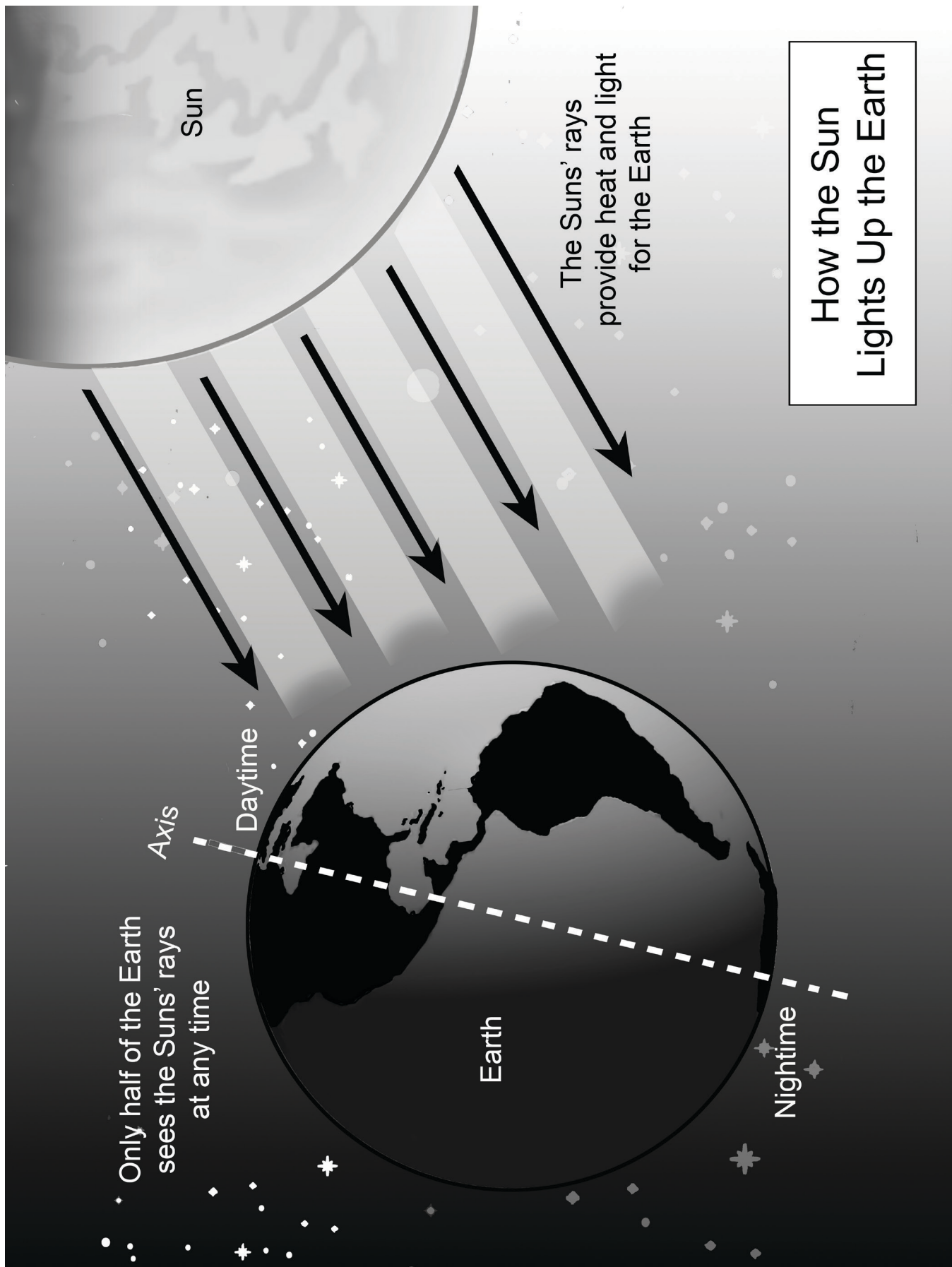


The Earth has a tilted axis. The Earth rotates in an anti-clockwise direction.

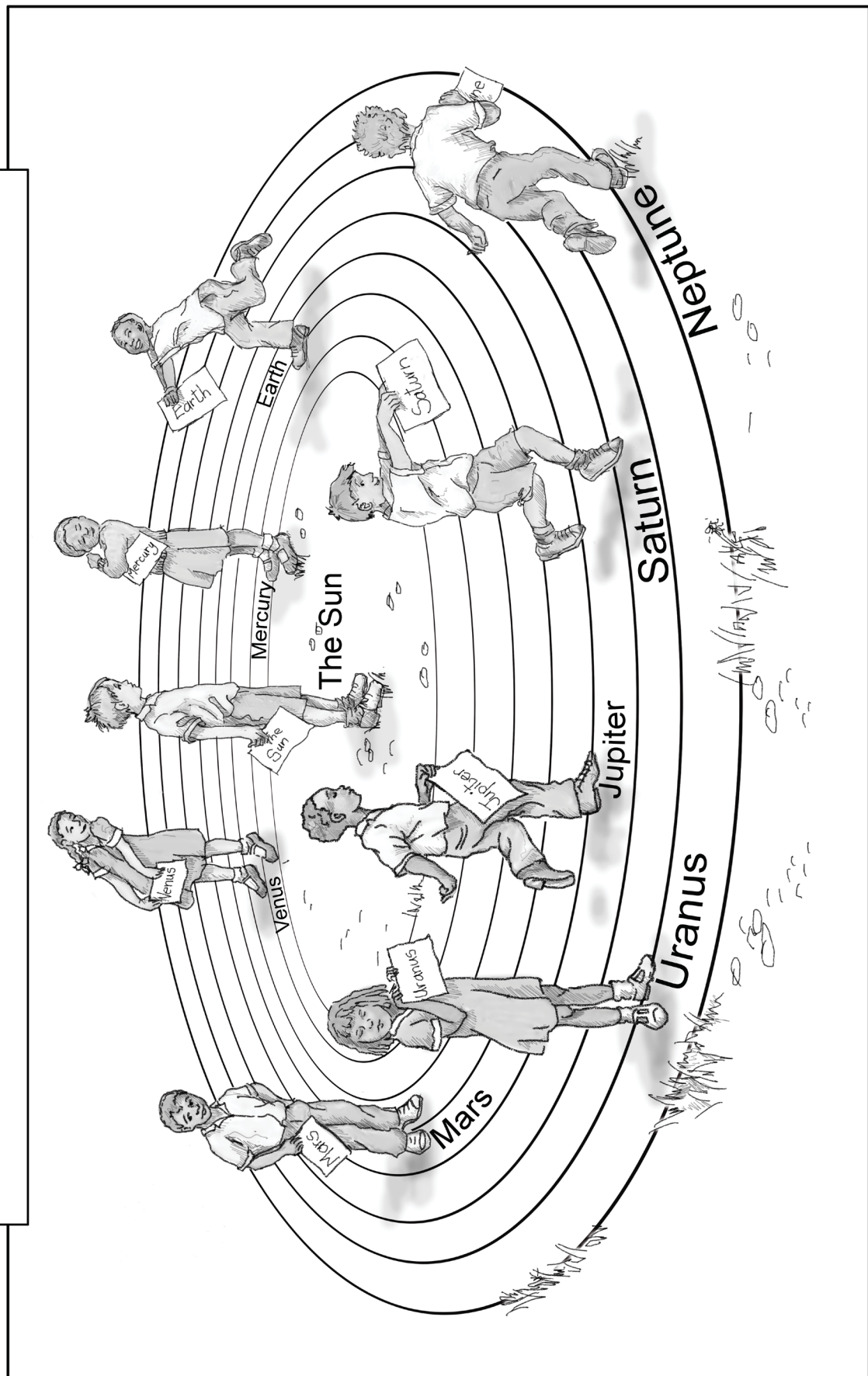
DEMONSTRATION OF DAY AND NIGHT

Demonstration of Day and Night





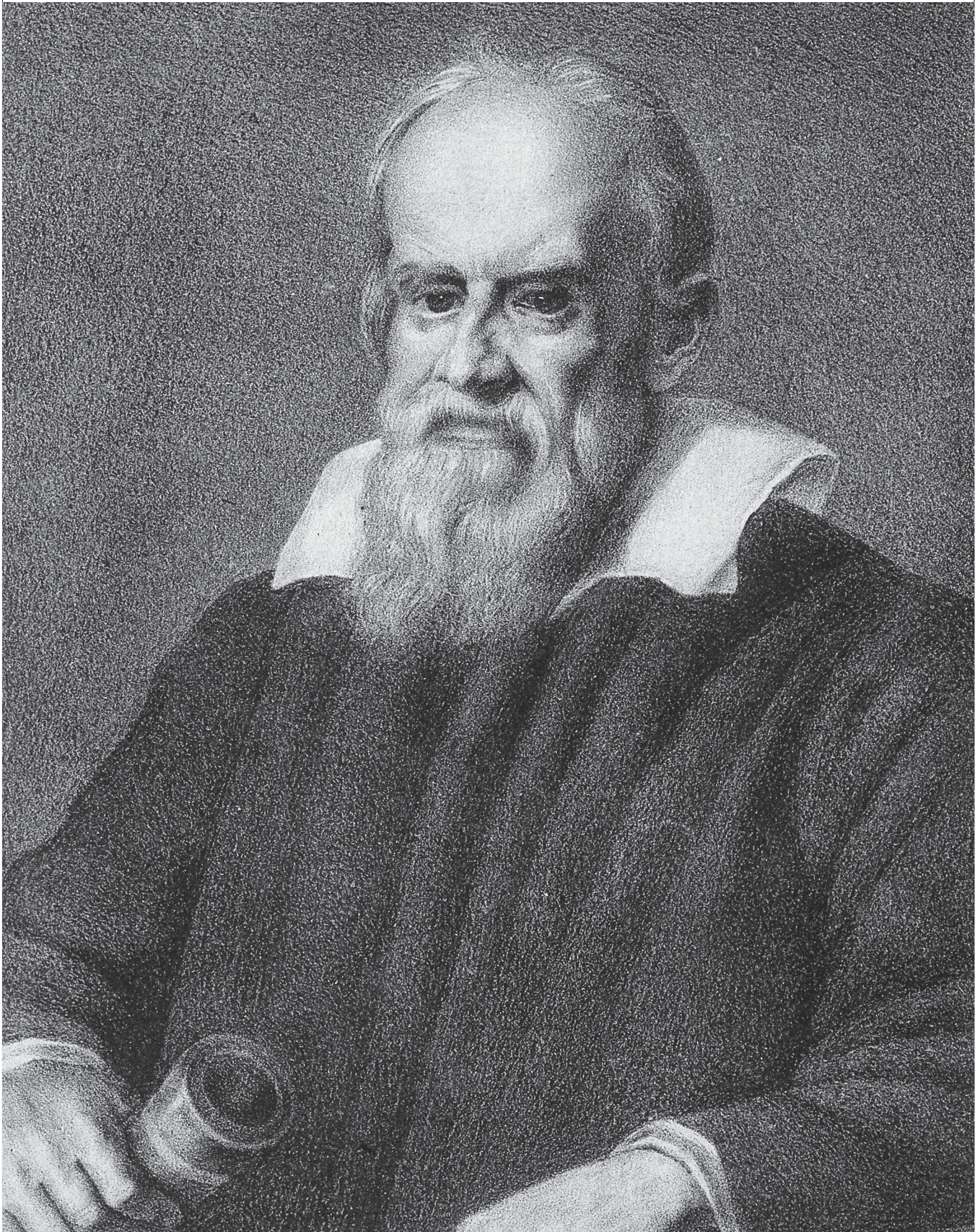
How the Earth and the Planets Revolve Around the Sun



RESOURCE 22

https://upload.wikimedia.org/wikipedia/commons/9/93/Galileo_Donato.jpg

GALILEO GALILEI SHOWING HIS TELESCOPE



RESOURCE 23

https://upload.wikimedia.org/wikipedia/en/7/7d/Robinson_Observatory.jpg

AN OBSERVATORY



RESOURCE 24

https://upload.wikimedia.org/wikipedia/commons/7/7c/South_African_Astronomical_Observatory_%28sutherland_aerial_view%29.jpg

SALT AND OTHER TELESCOPES NEAR SUTHERLAND



RESOURCE 25

https://upload.wikimedia.org/wikipedia/commons/d/d9/SKA_overview.jpg

THE SQUARE KILOMETRE ARRAY



RESOURCE 26

https://upload.wikimedia.org/wikipedia/commons/1/10/SALT_and_the_Belt_of_Venus.jpg

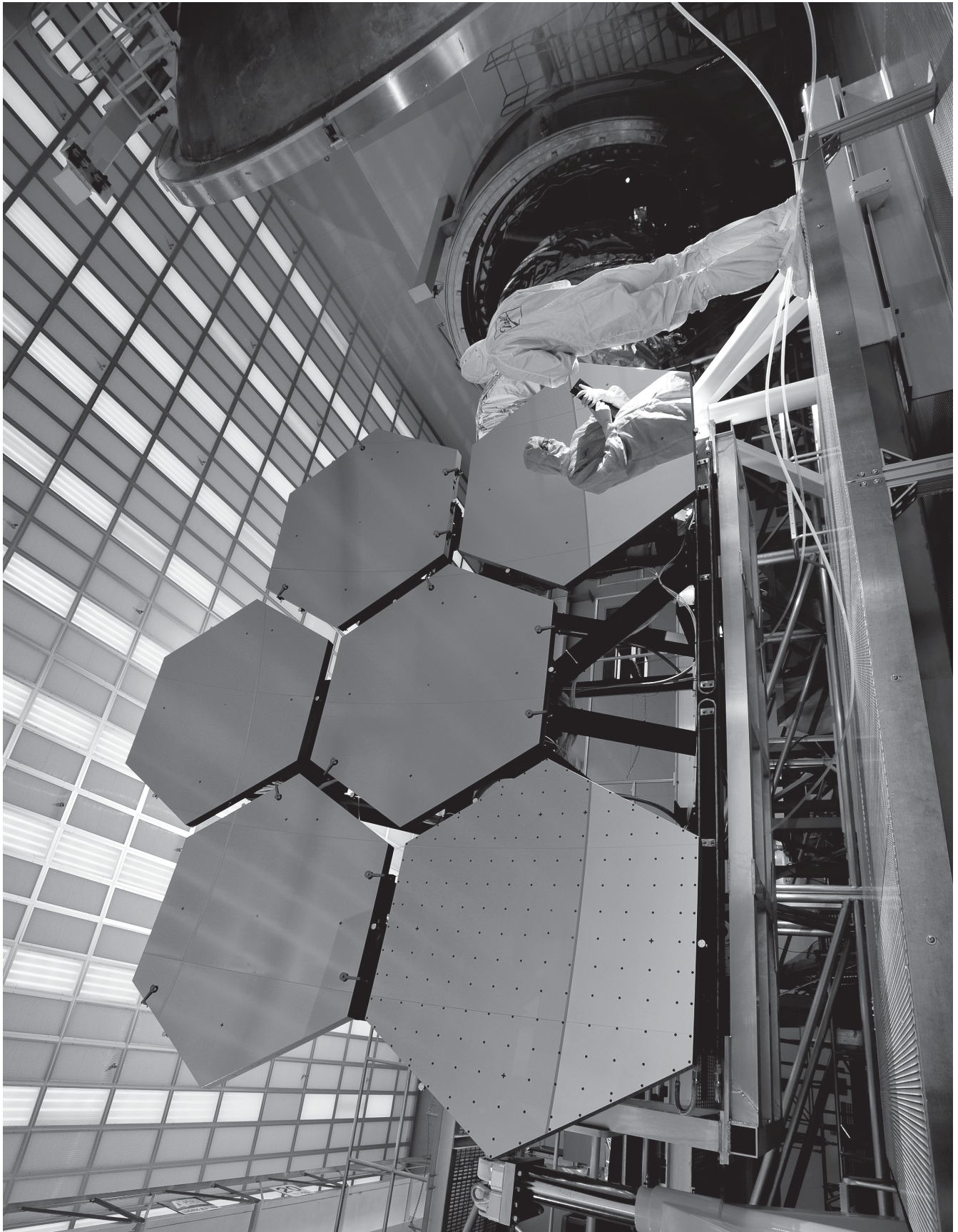
THE SOUTHERN AFRICAN LARGE TELESCOPE



RESOURCE 27

https://upload.wikimedia.org/wikipedia/commons/8/8f/Salt_mirror.jpg

THE MIRRORS INSIDE SALT



RESOURCE 28

https://upload.wikimedia.org/wikipedia/commons/4/40/Lagoon_nebula_SALT.jpg

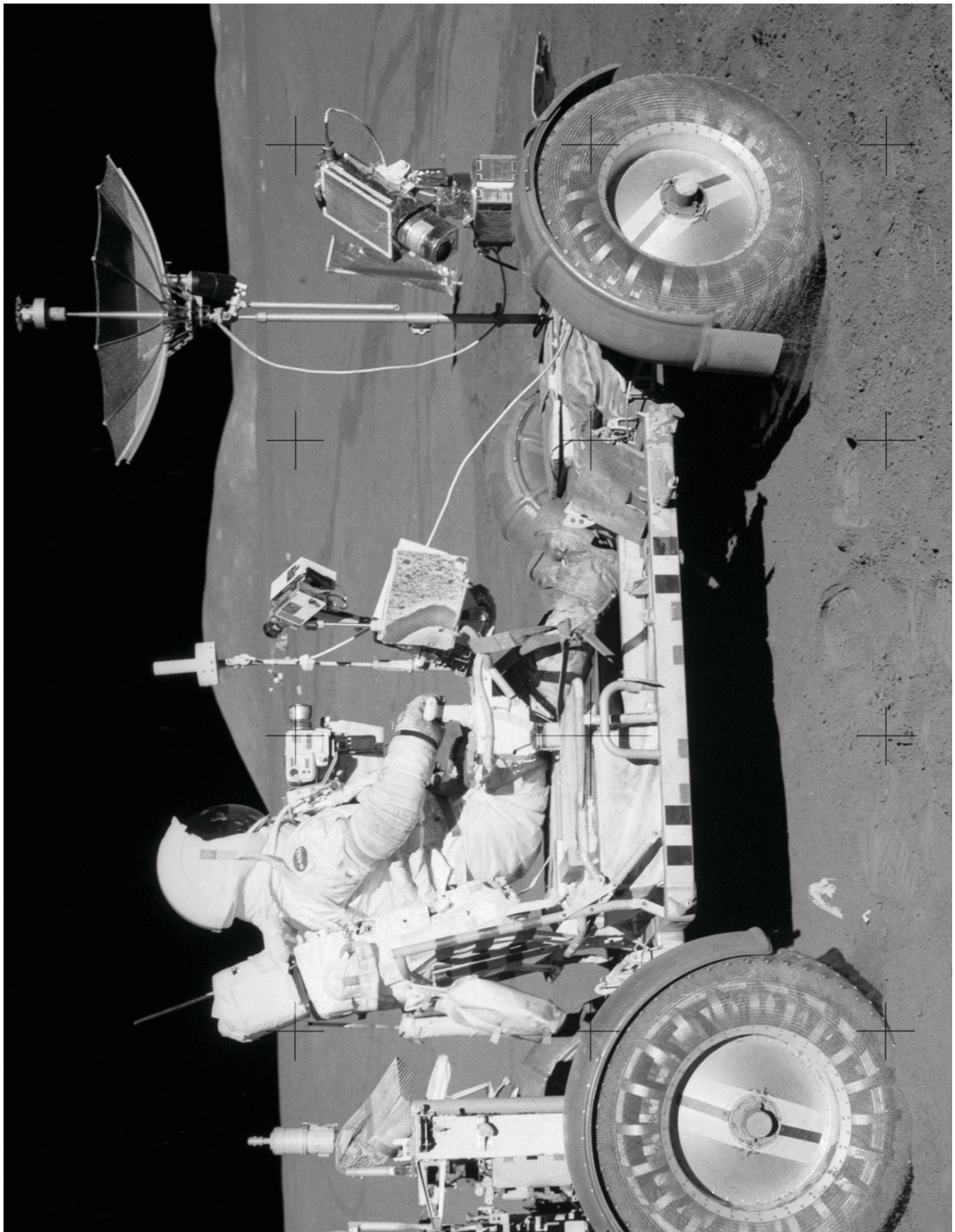
AN IMAGE TAKEN AT SALT



RESOURCE 28

https://c1.staticflickr.com/9/8151/7142956495_184520a1eb_b.jpg

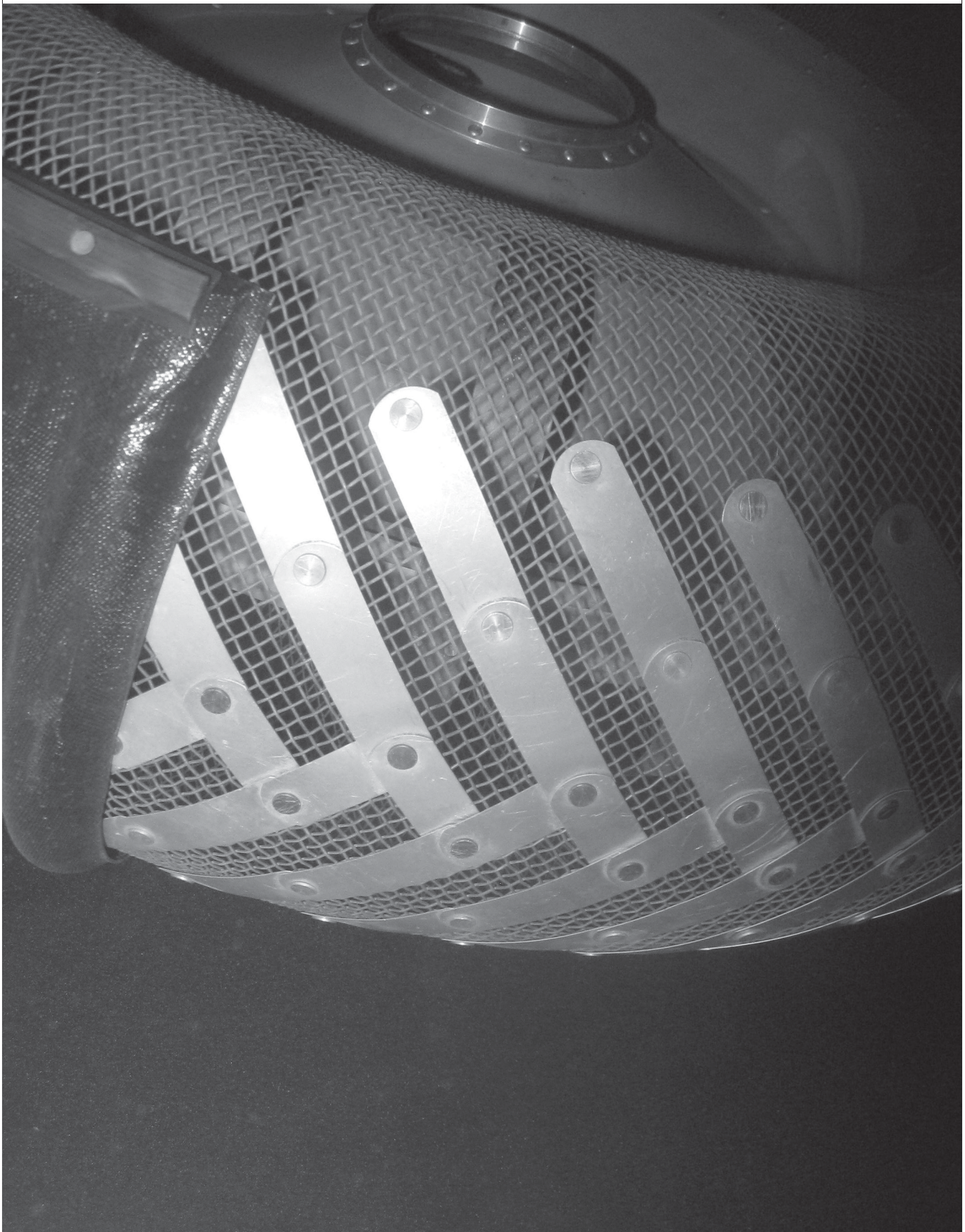
THE LUNAR ROVING VEHICLE (LRV) ON THE MOON 1971



RESOURCE 29

https://upload.wikimedia.org/wikipedia/commons/f/fa/Lunar_Roving_Vehicle_wheel_close-up.JPG

THE MOON ROVER'S WHEELS



RESOURCE 30

<https://photojournal.jpl.nasa.gov/jpeg/PIA20334.jpg>

THE CURIOSITY'S WHEEL



RESOURCE 31

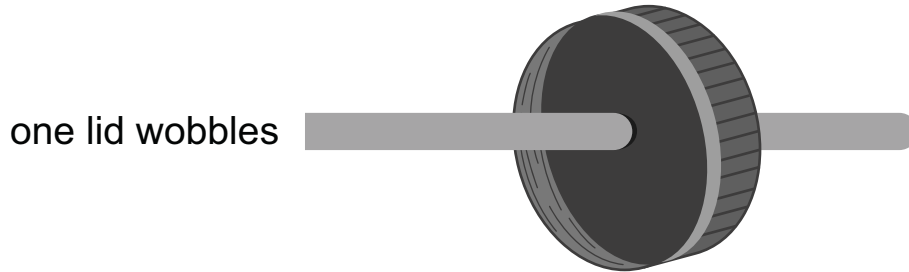
https://upload.wikimedia.org/wikipedia/commons/a/a9/Mars_Science_Laboratory_Curiosity_rover.jpg

A MARS ROVER: THE CURIOSITY



HOW TO MAKE WHEELS AND AXLES

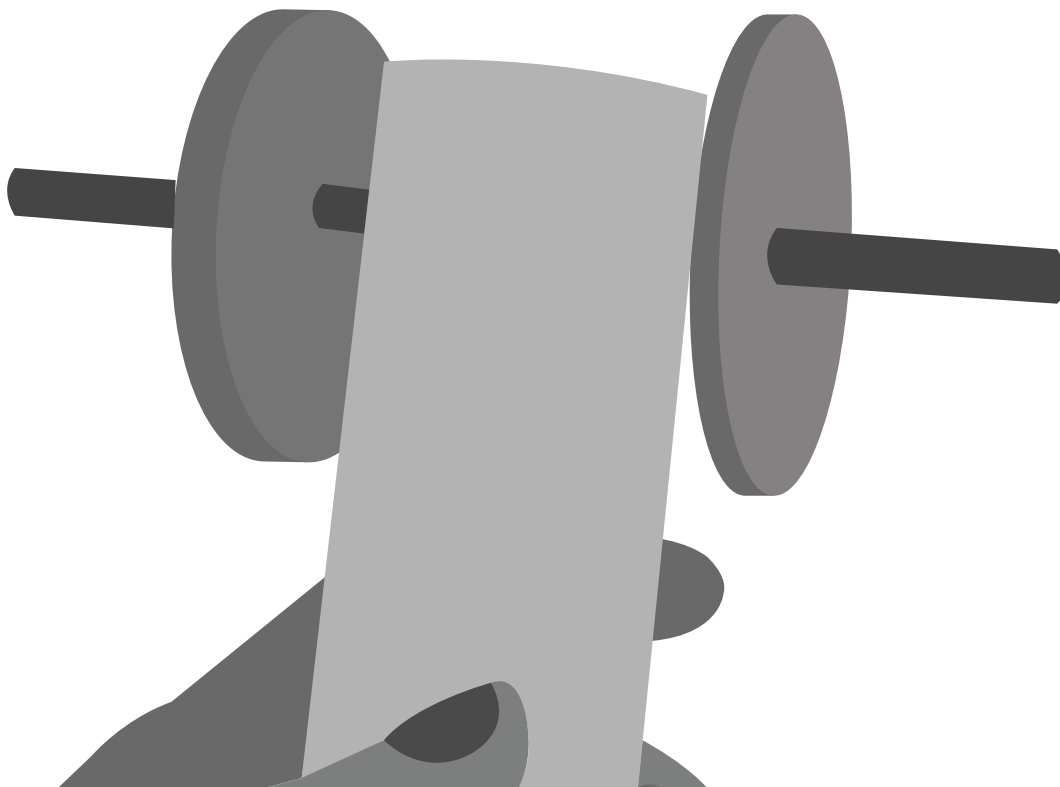
Bottle tops and a dowel stick.



Two bottle tops stuck together work better than one.

glue the edges together

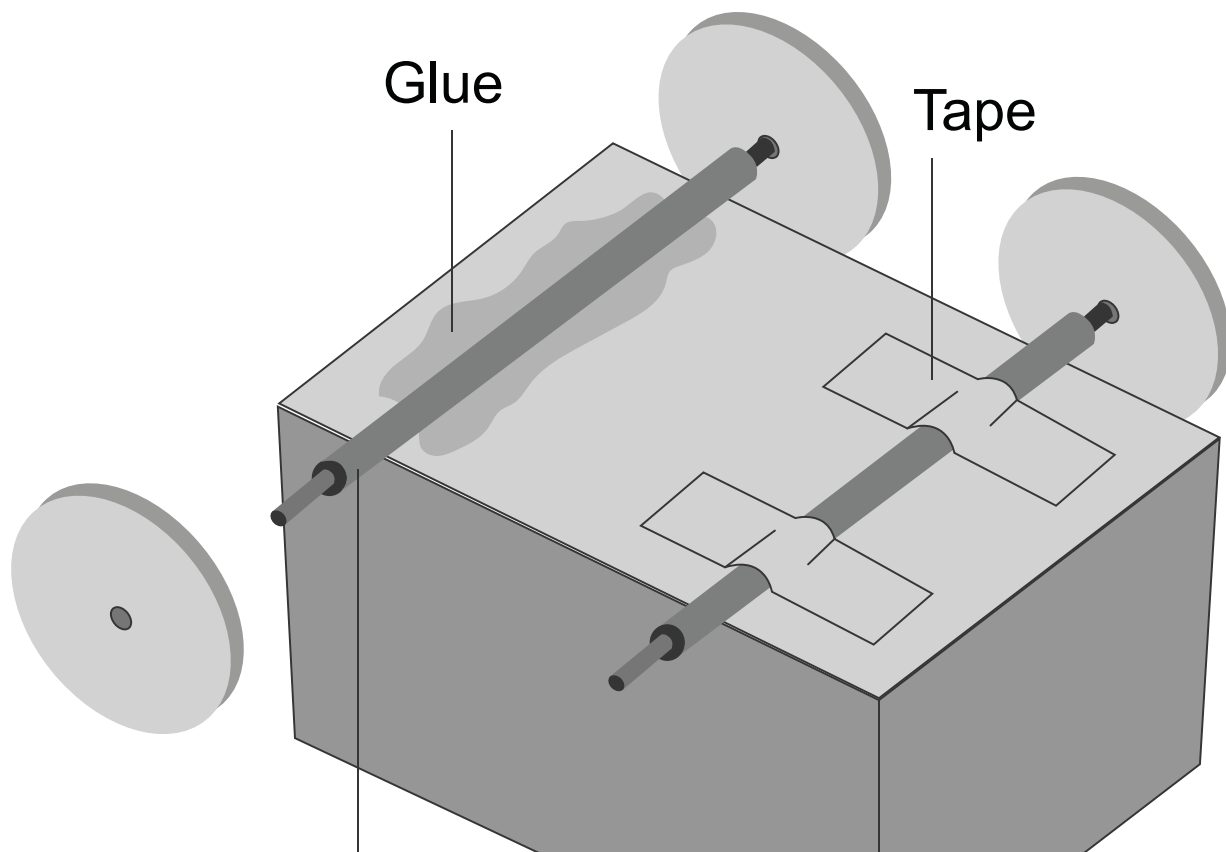
Using a toilet roll, cardboard wheels and a pencil



RESOURCE 33

HOW TO FIX AXLES ONTO A CHASSIS

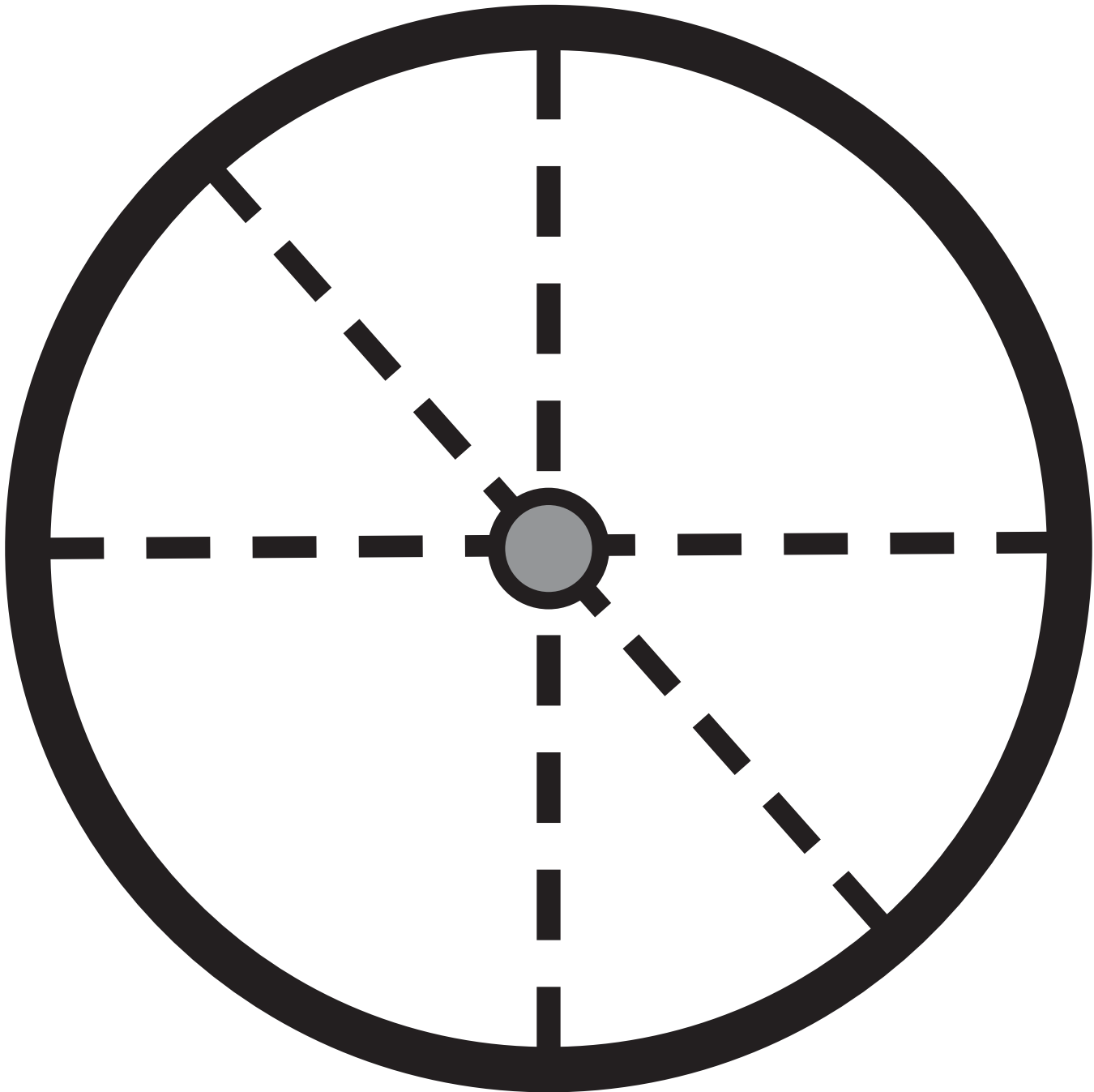
Using old CDs and a steel rod



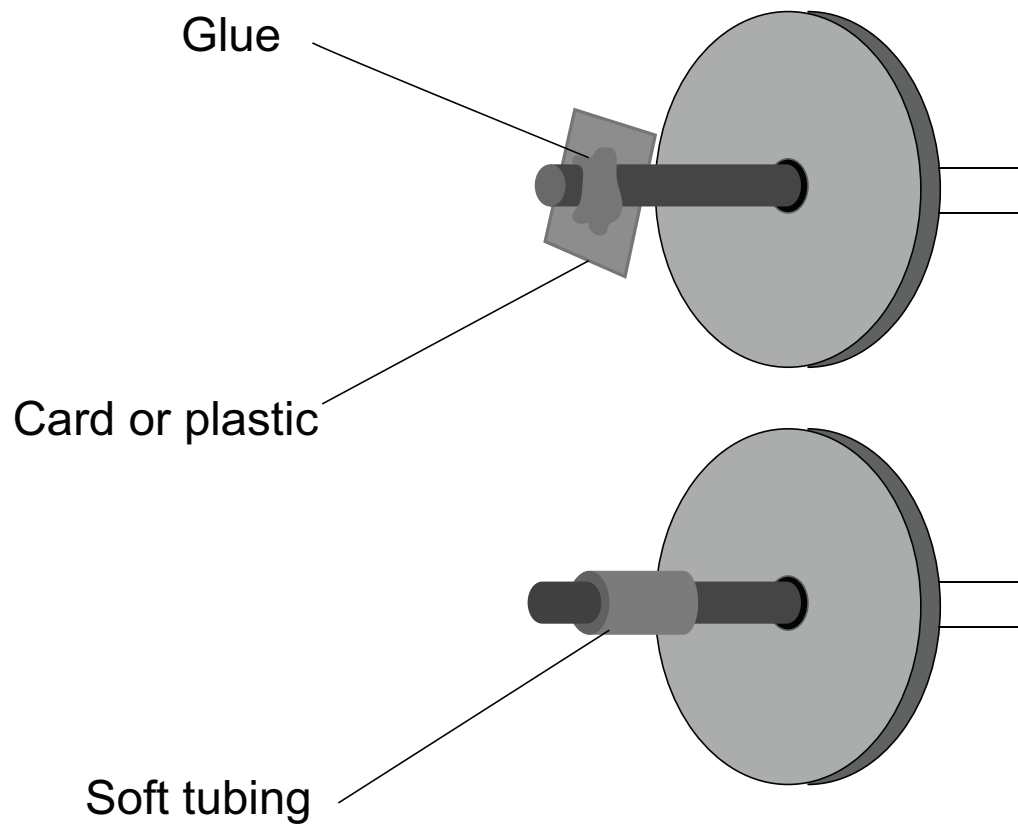
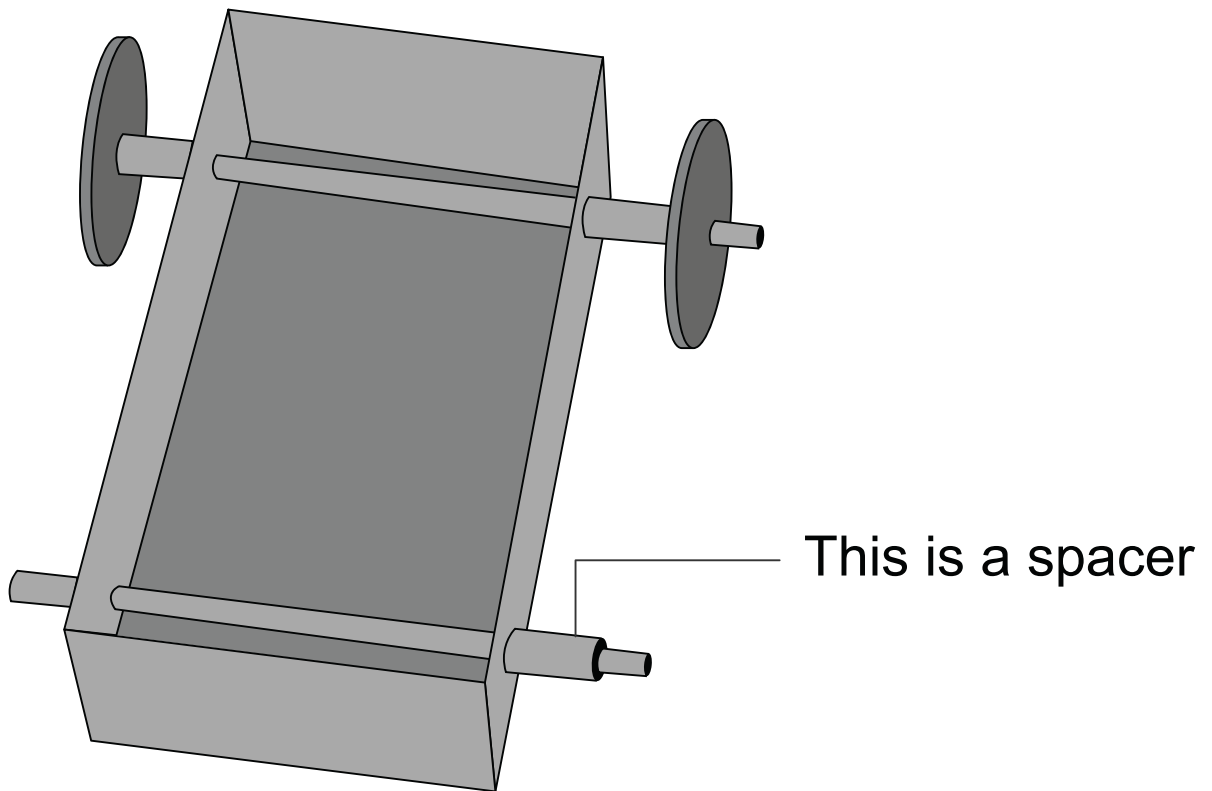
Straws are wider than the body to stop wheels rubbing against the body

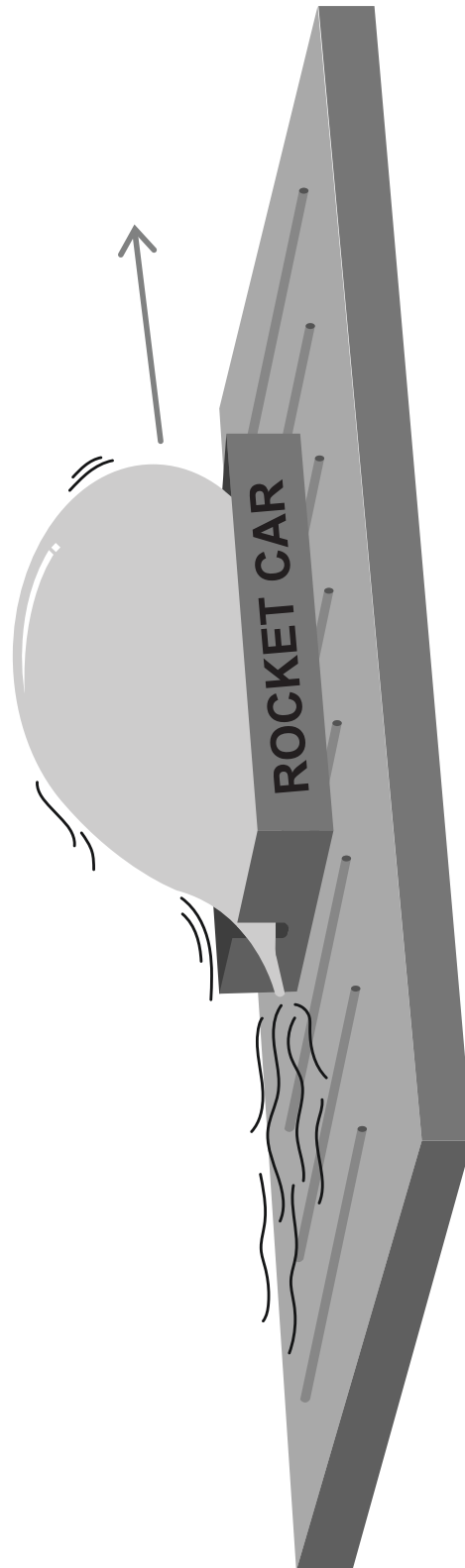
RESOURCE 34

HOW TO FIND THE CENTRE OF A WHEEL



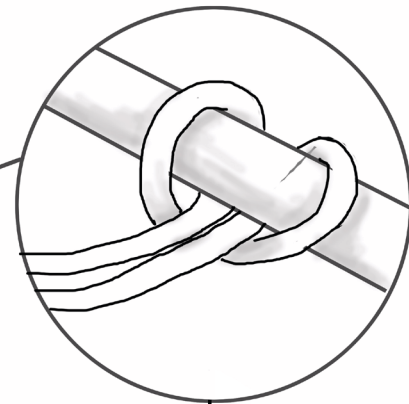
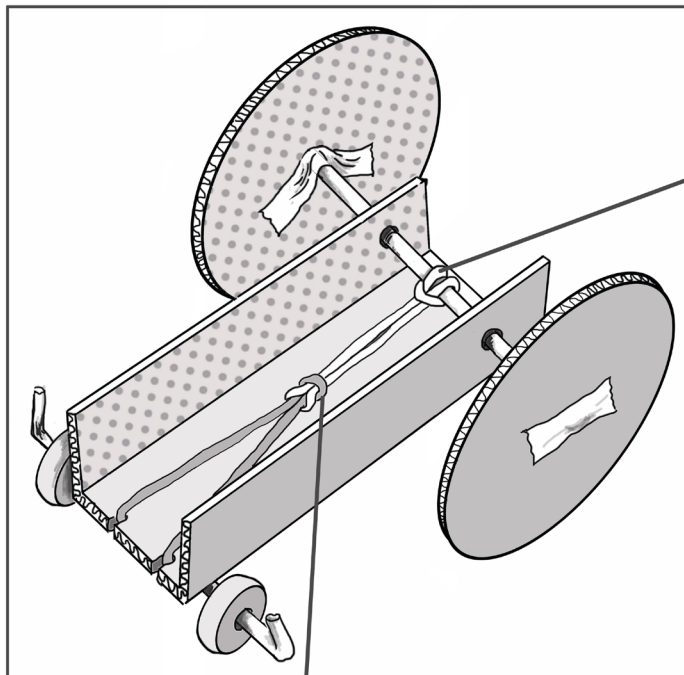
A diameter is the longest line across a circle. Draw three diameters. Where the diameters cross will be the centre.





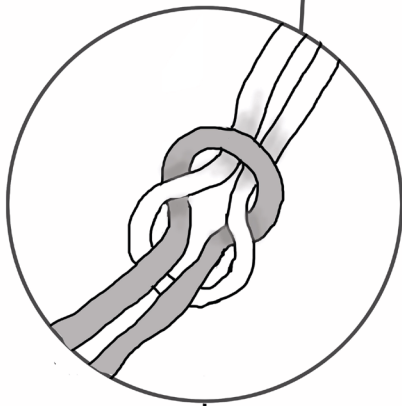
ROVING ON THE MOON

Designing a Moon Rover



How to attach an elastic band to the axle

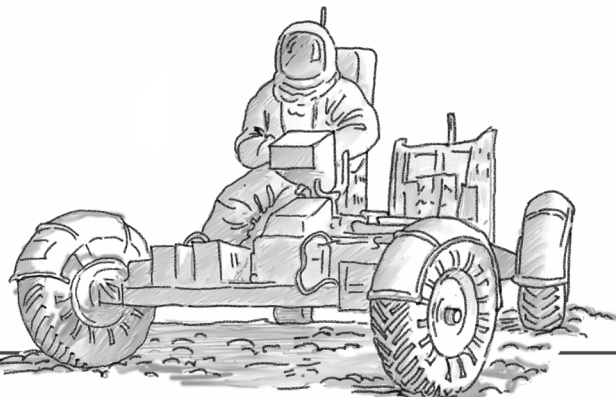
Loop the elastic band around the middle of the pencil



How to join elastic bands

Link the elastic bands together like the drawing above

Can you imagine driving an All-terrain vehicle (ATV), called a Rover on the Moon? Some can be driven by astronauts. Others are remote-controlled. All of them can handle the Moon's dusty rugged terrain.

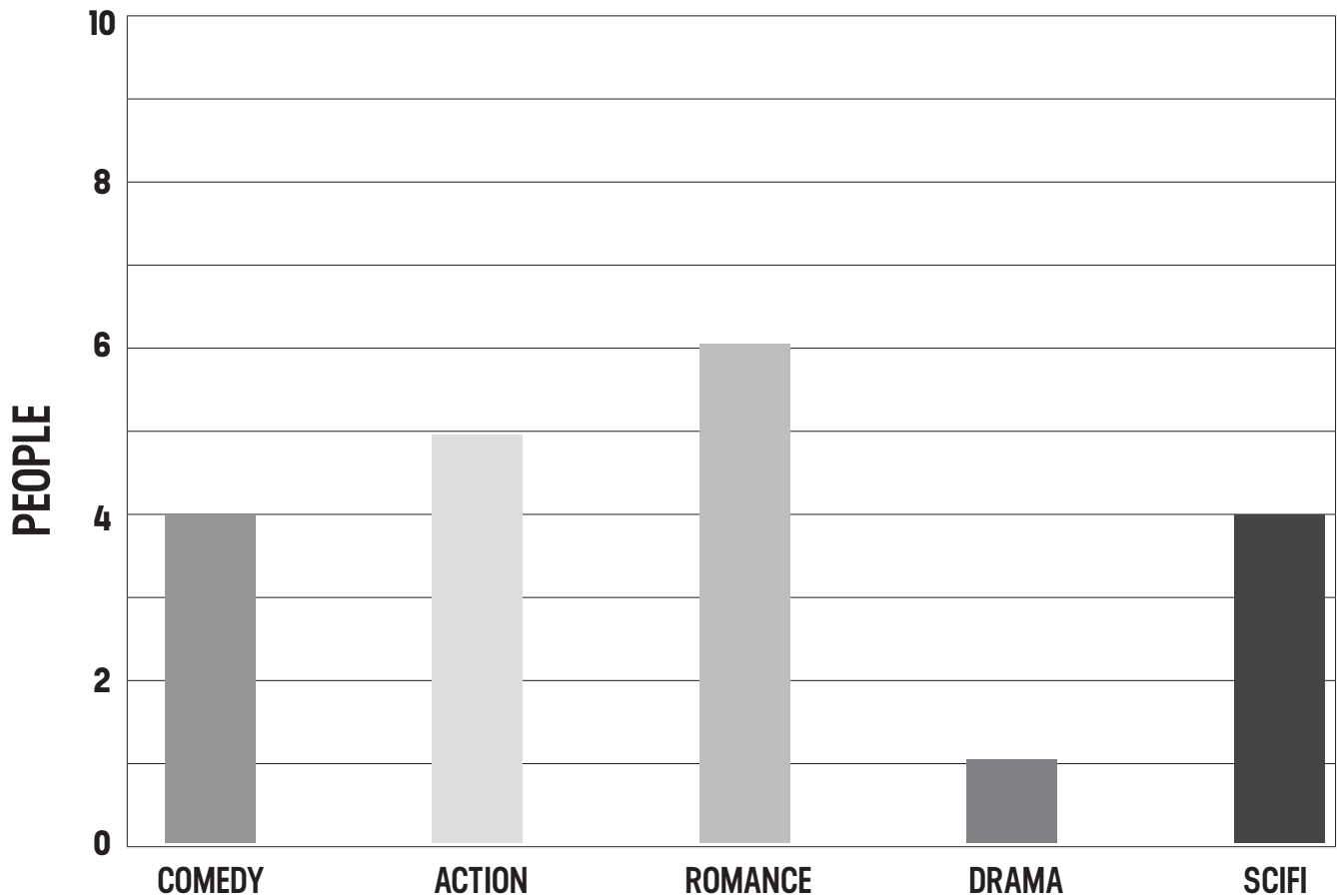


RESOURCE 40

BAR GRAPHS

Below is a bar graph for the following data:

	Comedy	Action	Romance	Drama	SciFi
Number of people	4	5	6	1	4



A bar graph has:

- bars of different heights
- the different heights show the different measurements
- the measurements are on the left-hand side (vertical axis)
- the objects are on the bottom of the graph (horizontal axis)

You can read information off this graph. For example:

4 people's favourite type of movie is comedy

only 1 person likes drama as their favourite type of movie