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2-XL™

**BOOKLET TO ACCOMPANY
ASTRONOMY 2-XL IN SPACE**



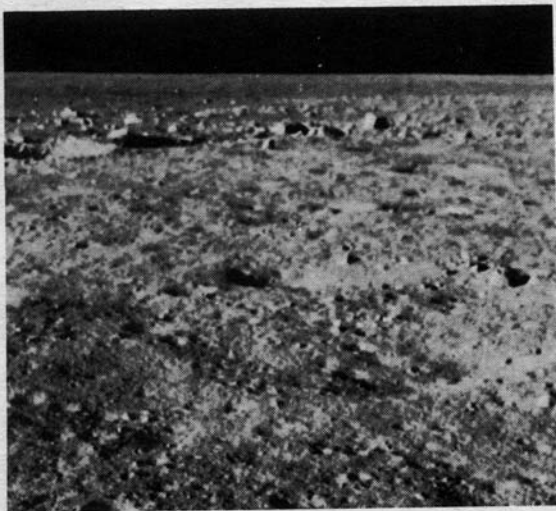
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MOON



The Moon is Earth's closest neighbor. It varies in distance from Earth but averages about 240,000 miles away.

The moon's temperature varies from + 250 degrees during the day, to -280 degrees at night.

The moon is about 1/6th the size of the Earth.

ASTRONOMICAL CROSSWORD PUZZLE Answers

Across

- | | | |
|---------------|-------------|---------------|
| 2. Halleys | 12. Mercury | 20. Twilight |
| 5. North | 14. Rainbow | 21. Nova |
| 7. Venus | 17. Jupiter | 22. Asteroids |
| 11. Milky Way | 18. Tides | |

Down

- | | | |
|------------|-------------|-----------|
| 1. Saturn | 8. Earth | 15. Orbit |
| 3. Sun | 9. Space | 16. Earth |
| 4. Gravity | 10. Mars | 18. Titan |
| 6. Skylab | 13. Eclipse | 19. Pluto |

FIND-A-PLANET

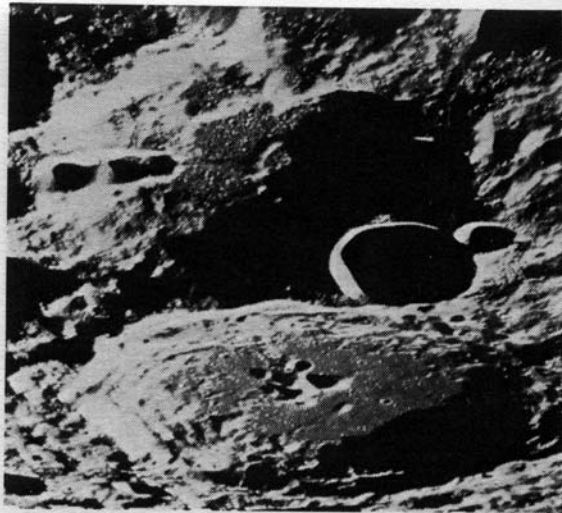
Can you find the nine planets of our Sun in the letters below. Be careful, the words go backwards, across, up and down, and even diagonally.

The planet *Earth* is done for you

- | | |
|------------|------------|
| 1. Mercury | 6. Saturn |
| 2. Venus | 7. Uranus |
| 3. Earth | 8. Neptune |
| 4. Mars | 9. Pluto |
| 5. Jupiter | |

N S U N T D Y H L E I L
T R G **E A R T H** O N S K
L A B V U C A W Z U X T
O M N C C L Y M R T S E
Q D R N W Y V A T P R G
I E U F P E N S W E D R
M Z T T K U W E A N C B
N H A V S A M S F O S I
A D S R E T I P U J P F
K S X A L T K C W N Y B
V G P M A V S G A M E L
O T U L P N B H P O R V

CLOSE-UP OF MOON

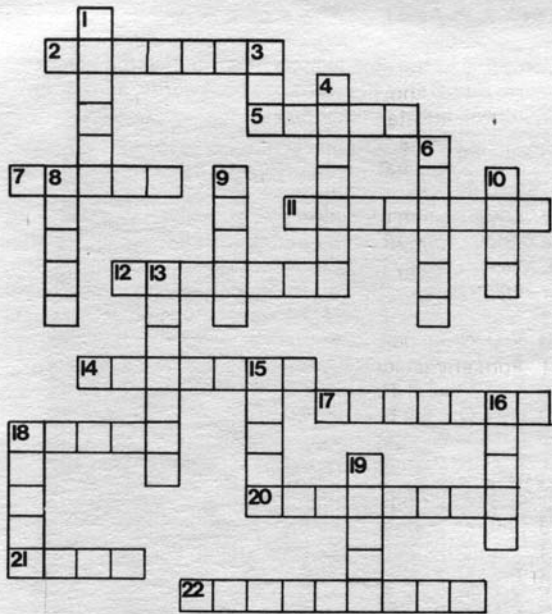


Close-up of Moon shows its mountains, valleys, and craters. Since there is no atmosphere on the moon, the sky is black and the stars visible even during the day.

The Moon has no life and no water and you would weigh 1/6th of what you weigh on Earth.



The above picture is the Spiral Galaxy of Andromeda. This Galaxy is about 12,936,000,000,000,000 miles from Earth. The light from this galaxy left Andromeda over 2 million years ago and is just getting here now! This galaxy contains over 200 billion suns (some of which may have planets—like Earth—circling around them).



ASTRONOMICAL CROSSWORD PUZZLE

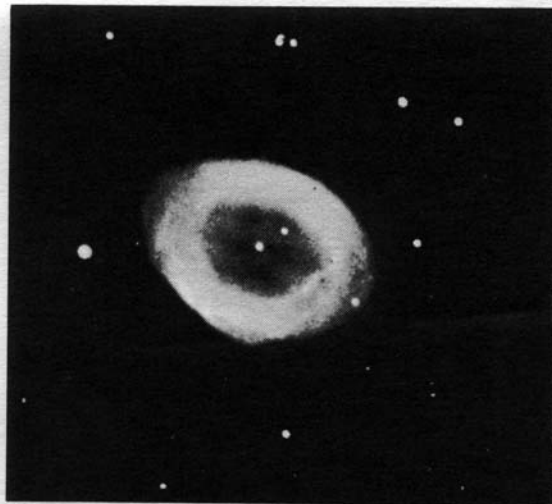
Across

- Most well known comet.
- Reference star that never moves.
- This planet's "day" is longer than its year.
- Our "candy bar" galaxy is called the _____.
- Solar system's smallest planet.
- Colors formed as sunlight passes through drops of water usually just after a rain storm.
- Giant planet.
- Rise and fall of Earth's oceans.
- Light from below the horizon.
- Formerly unseen superstar also the name of an educational TV program.
- Tiny planets between Mars and Jupiter.

Down

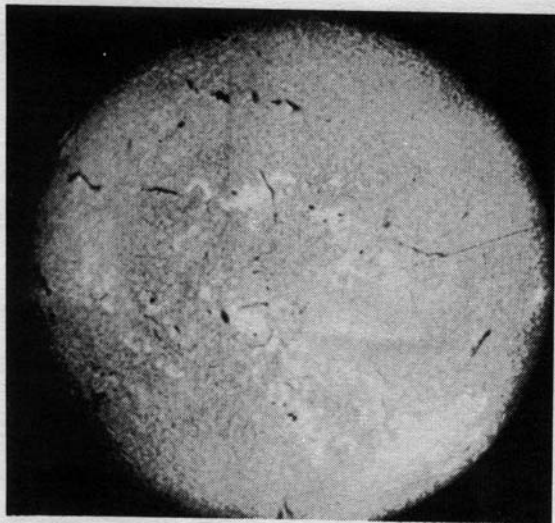
- Beautiful rings surround this globe.
- Source of heat and light.
- Force that keeps our solar system together.
- First U.S. space station.
- Third planet from the Sun.
- Unlimited area above our atmosphere.
- The "red" planet.
- When the moon passes into the Earth's shadow.
- The path a planet travels around the Sun.
- Halley's will reach _____ in 1986.
- Biggest moon in the solar system.
- Furthest planet from the Sun.

Answers on page 14.



The above picture is the Ring Nebula. The width of this Nebula is about 10,000,000,000,000 miles across. It is trillions of miles away. If, for example, you took a jet airplane to this nebula it would take about 6 trillion years to get there!

OUR SUN



The diameter of the Sun is 865,000 miles across. It would take 109 Earths lined up in a row across the Sun, to equal its distance.

The sun is 93 million miles from Earth and it takes sunlight just 8 minutes to get here (since light travels 186,000 miles in one second).

The Sun has been producing 4 million tons of energy per second for billions of years.

The Sun is about 11,000 degrees (fahrenheit) on its surface.

NELSON'S PARACHUTE

An interesting way to remember the order of the planets from the Sun is to remember this saying. The first letters of the words in the saying, are the same as the first letters of the planets in order.

My Very Excited Mother Jumped Skillfully Under

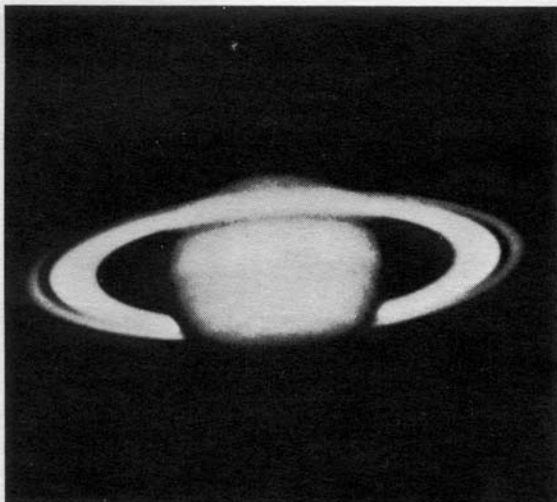
e e a a u a r
r n r r p t a
c u t s i u n
u s h t r u
r e n s
y r

Nelson's Parachute!

e l
p u
t t
u o
n
e

Maybe you can make-up your own sayings to remember the names of the planets in order.

SATURN

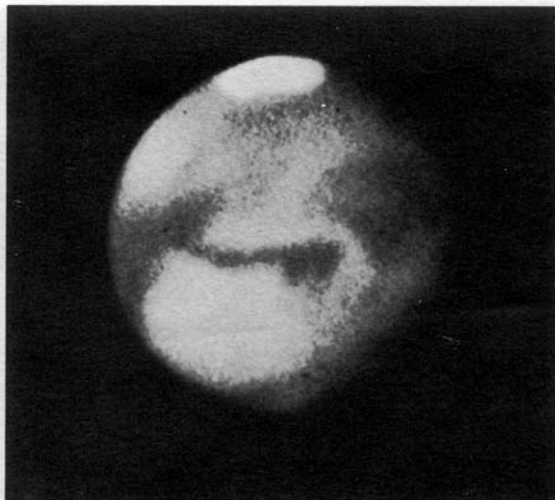


Saturn is the only planet with rings. The planet is quite big, about 10 times bigger than Earth.

Saturn has 10 moons. One of Saturn's moons, Titan, is the largest moon in the solar system.

If you were on Saturn, the clouds would be green. Its rings would cross the sky, and there would be ten moons circling the planet. It would be quite a sight!

MARS



Mars is about half the size of the Earth but has two moons (Phobos and Deimos).

During the day on Mars, it is a comfortable 60 degrees but at night it goes down to -100 degrees. There is little air on Mars so people could not breathe without special equipment.

Mars can be seen in the sky without a telescope. It often has a "reddish" color.



Venus is about the same size as Earth. The day on Venus is longer than its year. In other words, the planet takes more time to rotate than it does to go around the Sun.

The atmosphere on Venus is so thick you could not see stars in the sky and the Sun would be a bright area of the sky.

The atmosphere is very poisonous to people and it often rains acid on Venus.



The Earth is the third planet from the Sun and is traveling around the Sun (right now) at 66,600 miles per hour.

The Earth appears to be the only planet in our solar system that allows us to live without special equipment.

The Earth is 7,913 miles in diameter, and travels over 600 million miles a year as it goes around the Sun. It is not a perfect ball. The Earth is wider at the equator and is full of bulges.