

The **JAMES WEBB**
SPACE TELESCOPE

1
00:00:00,020 --> 00:00:04,050

The James Webb Space Telescope is the next

2
00:00:04,070 --> 00:00:08,120

premier space observatory.

3
00:00:08,140 --> 00:00:12,190

It will extend the discoveries of the Hubble Space

4
00:00:12,210 --> 00:00:16,290

Telescope,

5
00:00:16,310 --> 00:00:20,420

and observe the birthplaces of planets, stars

6
00:00:20,440 --> 00:00:24,590

and galaxies.

7
00:00:24,610 --> 00:00:28,680

It is named after James Webb, NASA's second administrator and champion

8
00:00:28,700 --> 00:00:32,850

of many NASA science missions.

9
00:00:32,870 --> 00:00:37,030

At 3 stories high and the size of a tennis court,

10
00:00:37,050 --> 00:00:41,210

this will be the largest telescope ever sent into space

11
00:00:41,230 --> 00:00:45,380

and 100 times more powerful than Hubble.

12
00:00:45,400 --> 00:00:49,570

It is so big it has to fold to fit in the

13
00:00:49,590 --> 00:00:53,760

rocket only 5.5 meters wide,

14

00:00:53,780 --> 00:00:57,940

and unfold segment by segment once in space.

15

00:00:57,960 --> 00:01:02,050

Webb's mirrors are coated with a super

16

00:01:02,070 --> 00:01:06,230

thin layer of gold that is about 1000 atoms thick to optimize

17

00:01:06,250 --> 00:01:10,410

their reflectivity in the infrared. Webb will launch

18

00:01:10,420 --> 00:01:13,440

from French Guiana.

19

00:01:14,620 --> 00:01:18,680

It is launched near the equator taking advantage of Earth's greater rotation

20

00:01:18,710 --> 00:01:22,760

speed there to boost launch performance.

21

00:01:22,780 --> 00:01:26,960

Webb will orbit the sun 1 million miles from Earth at

22

00:01:26,980 --> 00:01:31,080

the second Sun-Earth Lagrange point. The telescope

23

00:01:31,100 --> 00:01:35,220

will observe infrared light with unprecedented sensitivity.

24

00:01:35,240 --> 00:01:39,420

It will see the first galaxies born after the Big Bang

25

00:01:39,440 --> 00:01:43,610

over 13.5 billion years ago.

26

00:01:43,630 --> 00:01:47,810

Webb's infrared cameras are so sensitive

27

00:01:47,830 --> 00:01:51,980

they must block light from the Sun, Earth, and Moon.

28

00:01:52,000 --> 00:01:56,170

The 5-layer sunshield is like having sunblock

29

00:01:56,190 --> 00:02:00,240

of SPF 1 million.

30

00:02:12,580 --> 00:02:04,320

music

31

00:02:12,600 --> 00:02:16,650

Webb is an international mission

32

00:02:16,670 --> 00:02:20,690

with contributions from the European Space Agency

33

00:02:20,710 --> 00:02:24,760

and Canadian Space Agency.

34

00:02:24,780 --> 00:02:28,820

Scientists all over the world

35

00:02:28,840 --> 00:02:32,870

will be able to use Webb

36

00:02:32,890 --> 00:02:36,910

to explore further into space and back

37

00:02:36,930 --> 00:02:41,050

into time.