



1
00:00:09,020 --> 00:00:06,320
comet Hallie is making its regular 76

2
00:00:11,690 --> 00:00:09,030
year pilgrimage around our Sun as it has

3
00:00:13,700 --> 00:00:11,700
been doing for countless centuries the

4
00:00:16,250 --> 00:00:13,710
comet is the target of study for five

5
00:00:17,779 --> 00:00:16,260
exploratory spacecraft from Europe Japan

6
00:00:20,420 --> 00:00:17,789
and the Soviet Union

7
00:00:23,090 --> 00:00:20,430
each quizzing by the giant snowball of

8
00:00:26,210 --> 00:00:23,100
ice gas and dust from different vantage

9
00:00:28,220 --> 00:00:26,220
points the European Space Agency's

10
00:00:30,470 --> 00:00:28,230
Giotto spacecraft will be the most

11
00:00:33,110 --> 00:00:30,480
daring probe by taking a flight path

12
00:00:35,750 --> 00:00:33,120
just 300 miles in front of the Comets

13
00:00:38,959 --> 00:00:35,760

head Johto hopes to photograph the

14

00:00:41,720 --> 00:00:38,969

comet's nucleus to other highly

15

00:00:44,299 --> 00:00:41,730

instrumented Soviet spacecraft Vega 1

16

00:00:46,310 --> 00:00:44,309

and Vega 2 are scheduled to fly by the

17

00:00:49,040 --> 00:00:46,320

comet at a distance of six thousand

18

00:00:52,490 --> 00:00:49,050

miles hoping also to obtain images of

19

00:00:55,189 --> 00:00:52,500

the comet's nucleus lastly two japanese

20

00:00:57,350 --> 00:00:55,199

spacecraft studying halle our planet aid

21

00:00:59,569 --> 00:00:57,360

which approaches the Sun would side of

22

00:01:02,510 --> 00:00:59,579

Halle at a distance of 120 thousand

23

00:01:05,960 --> 00:01:02,520

miles and Sakigake which will pass about

24

00:01:08,120 --> 00:01:05,970

4 million miles from the comet a list of

25

00:01:11,179 --> 00:01:08,130

other American spacecraft slated for

26

00:01:14,359 --> 00:01:11,189

study of the comet includes Astro one

27

00:01:16,100 --> 00:01:14,369

the Spartan Valley platform both will be

28

00:01:19,310 --> 00:01:16,110

maintained by the Space Shuttle the

29

00:01:21,649 --> 00:01:19,320

solar maximum mission satellite pioneer

30

00:01:24,560 --> 00:01:21,659

Venus and the International cometary

31

00:01:26,179 --> 00:01:24,570

Explorer in order to get the best use

32

00:01:31,120 --> 00:01:26,189

out of all the research being done on

33

00:01:35,810 --> 00:01:32,960

amateur and professional astronomers

34

00:01:38,540 --> 00:01:35,820

from 47 different countries have joined

35

00:01:41,180 --> 00:01:38,550

forces the Howey encounter is a

36

00:01:42,980 --> 00:01:41,190

once-in-a-lifetime chance to study one

37

00:01:46,940 --> 00:01:42,990

of the most primitive objects in our

38

00:01:48,560 --> 00:01:46,950

solar system a program dedicated to

39

00:01:50,960 --> 00:01:48,570

visiting some of the planets in our

40

00:01:53,450 --> 00:01:50,970

solar system with two unmanned probes

41

00:01:57,050 --> 00:01:53,460

has had a history of success ever since

42

00:02:02,480 --> 00:01:57,060

its beginning in 1977 Voyager 1 and

43

00:02:04,760 --> 00:02:02,490

Voyager 2 were both launched now having

44

00:02:08,180 --> 00:02:04,770

logged nearly 2 billion miles in space

45

00:02:10,460 --> 00:02:08,190

since 1977 Voyager 2 will point its

46

00:02:14,030 --> 00:02:10,470

sensors and TV cameras at a planet we

47

00:02:15,920 --> 00:02:14,040

have never seen up close Uranus Voyager

48

00:02:18,290 --> 00:02:15,930

project scientist dr. Edward stone

49

00:02:20,510 --> 00:02:18,300

NASA's Jet Propulsion Laboratory in

50

00:02:22,160 --> 00:02:20,520

Pasadena California well there are

51
00:02:23,720 --> 00:02:22,170
several unique things about Uranus first

52
00:02:25,160 --> 00:02:23,730
of all it's the most remote planet that

53
00:02:27,800 --> 00:02:25,170
we will we will have visited in the

54
00:02:29,780 --> 00:02:27,810
Solar System it formed in a much colder

55
00:02:31,220 --> 00:02:29,790
region of the solar nebula and therefore

56
00:02:33,530 --> 00:02:31,230
is made of different materials than

57
00:02:35,180 --> 00:02:33,540
either Jupiter or Saturn so we will be

58
00:02:37,580 --> 00:02:35,190
studying the different properties of

59
00:02:39,229 --> 00:02:37,590
Uranus and its satellites the other

60
00:02:40,820 --> 00:02:39,239
interesting thing about Uranus is that

61
00:02:42,740 --> 00:02:40,830
it's tipped over on its side with its

62
00:02:44,720 --> 00:02:42,750
spin axis at this time basically

63
00:02:46,070 --> 00:02:44,730

pointing at the Sun so it's it has a

64

00:02:49,010 --> 00:02:46,080

much different orientation with respect

65

00:02:51,199 --> 00:02:49,020

to the Sun many questions will be

66

00:02:53,750 --> 00:02:51,209

answered during the encounter before the

67

00:02:56,330 --> 00:02:53,760

tiny one-ton spacecraft ventures even