



1  
00:00:05,190 --> 00:00:08,790  
NASA's Artemis I mission is  
making its way to the moon

2  
00:00:08,820 --> 00:00:13,620  
starting a new era of lunar  
exploration using communications

3  
00:00:13,620 --> 00:00:16,950  
and navigation services from the  
Near Space Network. based at

4  
00:00:16,950 --> 00:00:19,560  
NASA's Goddard Space Flight  
Center, and the Deep Space

5  
00:00:19,560 --> 00:00:22,530  
Network based at NASA's Jet  
Propulsion Laboratory, the

6  
00:00:22,530 --> 00:00:25,530  
Artemis I mission will be able  
to communicate critical

7  
00:00:25,530 --> 00:00:29,970  
tracking, telemetry and science  
data to Earth. Services from

8  
00:00:29,970 --> 00:00:33,450  
both networks are integrated at  
NASA's Johnson Space Center in

9  
00:00:33,450 --> 00:00:34,140  
Houston.

10  
00:00:34,890 --> 00:00:40,350  
The INCO console is tasked with  
managing the communications

11

00:00:40,350 --> 00:00:45,570  
systems on Orion, making sure  
that we can send commands to the

12

00:00:45,570 --> 00:00:50,340  
spacecraft to tell it what to  
do, receive telemetry and data

13

00:00:50,340 --> 00:00:54,660  
back from it, receive video and  
pictures from it.

14

00:00:55,320 --> 00:00:58,230  
The Orion spacecraft is  
launching from NASA's Kennedy

15

00:00:58,230 --> 00:01:01,710  
Space Center in Florida aboard  
the Space Launch System rocket

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00:01:01,740 --> 00:01:06,270  
known as SLS. Close to Earth it  
will receive communications and

17

00:01:06,270 --> 00:01:10,380  
tracking support from the Near  
Space Network, a global system

18

00:01:10,410 --> 00:01:13,800  
of ground antennas and  
satellites that provide either

19

00:01:14,220 --> 00:01:17,280  
direct-to-Earth communications  
or relay communications.

20

00:01:17,780 --> 00:01:21,410  
The NSN or the Near Space  
Network is an integrated network

21

00:01:21,410 --> 00:01:25,700  
that provides RF radio frequency  
and terrestrial communications

22

00:01:26,030 --> 00:01:30,620  
to both NASA and non NASA  
spaceflight missions. They

23

00:01:30,620 --> 00:01:33,500  
support human spaceflight  
missions like Artemis, but they

24

00:01:33,500 --> 00:01:36,680  
also support the launch vehicles  
like the Atlas V and Delta III

25

00:01:37,160 --> 00:01:40,040  
from a communications  
perspective, their early phases

26

00:01:40,040 --> 00:01:43,010  
of mission pre launch and launch  
in early orbit are going to be

27

00:01:43,010 --> 00:01:46,550  
covered by a new communications  
system ground stations called

28

00:01:46,550 --> 00:01:51,170  
Launch Communications Segment,  
or LCS. Once SLS has jettison

29

00:01:51,500 --> 00:01:54,350  
the vehicles will transition  
over to TDRS communications.

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00:01:54,830 --> 00:01:58,250  
Orion itself will remain on TDRS  
for roughly two and a half hours

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00:01:58,250 --> 00:02:02,180  
into the flight or after that  
transition handover to the DSN

32

00:02:02,210 --> 00:02:02,999  
with the Deep Space Network.

33

00:02:03,000 --> 00:02:07,770  
The Deep Space Network consists  
of three global antennas that

34

00:02:07,770 --> 00:02:11,790  
can communicate with spacecraft  
far into the galaxy. The network

35

00:02:11,790 --> 00:02:14,970  
will serve as Artemis I's  
primary communications support

36

00:02:15,180 --> 00:02:18,720  
as the spacecraft orbits the  
moon, similar to its role in the

37

00:02:18,720 --> 00:02:19,680  
Apollo days.

38

00:02:20,400 --> 00:02:23,910  
The Deep Space Network antennas  
were used during the Apollo

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00:02:23,910 --> 00:02:29,340  
program, to tracks the missions,  
the Apollo missions, but we

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00:02:29,340 --> 00:02:32,670  
would help the Apollo spacecraft  
do navigation, we'd do

41

00:02:32,670 --> 00:02:36,480  
communications to and from the

Earth to the spacecraft, which

42

00:02:36,480 --> 00:02:40,770

included the videos that you see  
of the astronauts on the Moon.

43

00:02:41,130 --> 00:02:44,970

The Deep Space Network it exists  
today it can support missions at

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00:02:44,970 --> 00:02:48,570

the Moon, it will continue to  
support Artemis II, Artemis III

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00:02:48,600 --> 00:02:51,120

with the first astronauts  
returning to the Moon.

46

00:02:51,660 --> 00:02:54,240

The Near Space Network and the  
Deep Space Network have a

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00:02:54,240 --> 00:02:58,080

storied legacy in supporting  
Moon-bound missions. To this

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00:02:58,080 --> 00:03:01,290

day, space communications and  
navigation are central to

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00:03:01,290 --> 00:03:05,010

communicating and tracking all  
missions from near-Earth to as

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00:03:05,010 --> 00:03:09,840

far as interstellar space. Now  
as Artemis I journeys to the

51

00:03:09,840 --> 00:03:13,560

moon, NASA sets its sights on

the future of exploration,