
Orbital

1
00:00:05,190 --> 00:00:03,110
later this evening nasa will launch our

2
00:00:07,349 --> 00:00:05,200
newest science mission the lunar

3
00:00:09,589 --> 00:00:07,359
atmosphere and dust environment explorer

4
00:00:11,430 --> 00:00:09,599
better known as lady

5
00:00:13,430 --> 00:00:11,440
this mission will help us understand

6
00:00:14,470 --> 00:00:13,440
better our nearest neighbor in space the

7
00:00:16,470 --> 00:00:14,480
moon

8
00:00:19,189 --> 00:00:16,480
adding to knowledge we've gained from

9
00:00:21,590 --> 00:00:19,199
apollo to grail l cross and other

10
00:00:24,070 --> 00:00:21,600
important lunar expeditions

11
00:00:26,310 --> 00:00:24,080
lady continues nasa's great tradition of

12
00:00:28,310 --> 00:00:26,320
pushing the boundaries of our knowledge

13
00:00:30,710 --> 00:00:28,320

and contributes to our work today to

14
00:00:33,350 --> 00:00:30,720
travel to destinations in deep space

15
00:00:35,750 --> 00:00:33,360
such as an asteroid in mars

16
00:00:37,430 --> 00:00:35,760
as the spacecraft orbits the moon

17
00:00:39,670 --> 00:00:37,440
its three instruments will gather

18
00:00:41,990 --> 00:00:39,680
detailed information about the structure

19
00:00:44,470 --> 00:00:42,000
and composition of the thin lunar

20
00:00:46,869 --> 00:00:44,480
atmosphere and determine whether dust is

21
00:00:48,470 --> 00:00:46,879
being lofted into the lunar sky

22
00:00:50,950 --> 00:00:48,480
a thorough understanding of these

23
00:00:52,790 --> 00:00:50,960
characteristics will help researchers

24
00:00:55,430 --> 00:00:52,800
understand other bodies in the solar

25
00:00:57,830 --> 00:00:55,440
system such as large asteroids and the

26
00:00:59,189 --> 00:00:57,840
conditions explorers may face on future

27
00:01:01,590 --> 00:00:59,199
missions

28
00:01:03,430 --> 00:01:01,600
those of you in the mid-atlantic region

29
00:01:06,230 --> 00:01:03,440
may be able to see the rocket as it

30
00:01:08,230 --> 00:01:06,240
heads to the moon late friday night

31
00:01:10,950 --> 00:01:08,240
it's a tangible sign that american

32
00:01:13,990 --> 00:01:10,960
launch capabilities are expanding as the

33
00:01:16,390 --> 00:01:14,000
mid-atlantic regional spaceport mars on

34
00:01:17,910 --> 00:01:16,400
wallops island sends this important

35
00:01:20,070 --> 00:01:17,920
mission to space

36
00:01:22,870 --> 00:01:20,080
soon to be followed by orbital sciences

37
00:01:24,710 --> 00:01:22,880
antares cygnus demonstration mission to

38
00:01:26,469 --> 00:01:24,720

the international space station also

39
00:01:29,109 --> 00:01:26,479
from wallops

40
00:01:31,749 --> 00:01:29,119
lady also carries an important secondary

41
00:01:34,870 --> 00:01:31,759
payload the lunar laser communications

42
00:01:37,030 --> 00:01:34,880
demonstration or llcd

43
00:01:39,749 --> 00:01:37,040
which will help us open a new era of

44
00:01:41,429 --> 00:01:39,759
space communications by becoming nasa's

45
00:01:44,390 --> 00:01:41,439
first high rate

46
00:01:46,550 --> 00:01:44,400
two-way space laser system

47
00:01:49,109 --> 00:01:46,560
nasa recognizes that missions of the

48
00:01:51,109 --> 00:01:49,119
future will require significantly higher

49
00:01:53,429 --> 00:01:51,119
data rates than existing communications

50
00:01:55,590 --> 00:01:53,439
capability allows

51
00:01:57,910 --> 00:01:55,600
we need to erase the time lag we

52
00:01:59,350 --> 00:01:57,920
currently have in communications to deep

53
00:02:01,830 --> 00:01:59,360
space

54
00:02:04,550 --> 00:02:01,840
optical communications via laser beam

55
00:02:06,550 --> 00:02:04,560
could enable entirely new missions using

56
00:02:09,190 --> 00:02:06,560
speedier and more efficient instruments

57
00:02:11,990 --> 00:02:09,200
and high data rate communications

58
00:02:13,270 --> 00:02:12,000
we'll demonstrate the llcd system in

59
00:02:15,750 --> 00:02:13,280
october

60
00:02:17,510 --> 00:02:15,760
what we learn from it will be directly

61
00:02:21,270 --> 00:02:17,520
applicable to the next generation of

62
00:02:24,070 --> 00:02:21,280
nasa's space communications network

63
00:02:25,830 --> 00:02:24,080

this is why nasa's space technology

64
00:02:28,790 --> 00:02:25,840
mission directorate is developing the

65
00:02:30,630 --> 00:02:28,800
laser communications relay demonstration

66
00:02:33,110 --> 00:02:30,640
the next step in developing the space

67
00:02:35,190 --> 00:02:33,120
communication systems of the future that

68
00:02:36,470 --> 00:02:35,200
will enable our missions to mars and

69
00:02:38,630 --> 00:02:36,480
beyond

70
00:02:40,470 --> 00:02:38,640
as nasa matures space laser

71
00:02:42,949 --> 00:02:40,480
communication systems

72
00:02:44,790 --> 00:02:42,959
these technologies will be infused into

73
00:02:47,190 --> 00:02:44,800
future nasa networks

74
00:02:49,910 --> 00:02:47,200
offering far greater bandwidth for space

75
00:02:51,990 --> 00:02:49,920
communications than today's systems at

76
00:02:53,110 --> 00:02:52,000
significantly reduced power and mass

77
00:02:56,869 --> 00:02:53,120
needs

78
00:02:58,630 --> 00:02:56,879
the llcd payload on lady will be a first

79
00:03:00,470 --> 00:02:58,640
step in this work

80
00:03:02,309 --> 00:03:00,480
the lady mission will expand our

81
00:03:04,869 --> 00:03:02,319
knowledge of the solar system and bring

82
00:03:07,110 --> 00:03:04,879
us closer to technologies that we'll

83
00:03:09,589 --> 00:03:07,120
need to explore future destinations like

84
00:03:11,910 --> 00:03:09,599
an asteroid and mars

85
00:03:14,070 --> 00:03:11,920
with your help we're reaching new

86
00:03:15,670 --> 00:03:14,080
heights in air and space

87
00:03:17,670 --> 00:03:15,680
and returning new knowledge for the

88
00:03:20,390 --> 00:03:17,680

benefit of humankind