
Cygnus
Orbital ATK

1
00:00:14,299 --> 00:00:16,490
Crews aboard the International Space Station

2
00:00:16,490 --> 00:00:18,789
are continuing their cutting-edge science
and

3
00:00:18,789 --> 00:00:23,289
technology research benefiting people living
on our home planet.

4
00:00:23,289 --> 00:00:26,519
To ensure their crucial work continues uninterrupted,

5
00:00:26,519 --> 00:00:29,000
NASA at the Kennedy Space Center in Florida

6
00:00:29,000 --> 00:00:31,529
is preparing to launch a Cygnus spacecraft
to

7
00:00:31,529 --> 00:00:34,350
supply the orbiting outpost.

8
00:00:34,350 --> 00:00:37,489
The space station serves as the world's leading
laboratory where

9
00:00:37,489 --> 00:00:38,909
astronauts perform studies

10
00:00:38,909 --> 00:00:42,110
that will enable human and robotic exploration

11
00:00:42,110 --> 00:00:44,680
of destinations beyond low-Earth orbit,

12
00:00:44,680 --> 00:00:47,899

including an asteroid and Mars.

13
00:00:47,899 --> 00:00:51,239
The upcoming launch of Orbital ATK's Cygnus spacecraft

14
00:00:51,239 --> 00:00:52,760
will be the company's fifth mission

15
00:00:52,760 --> 00:00:56,010
under NASA's Commercial Resupply Services Contract

16
00:00:56,010 --> 00:00:59,199
to keep work going aboard the station.

17
00:00:59,199 --> 00:01:02,219
Cygnus will carry about 7,700 pounds of supplies

18
00:01:02,219 --> 00:01:04,979
and vehicle hardware to the station to support

19
00:01:04,979 --> 00:01:08,890
the work of the Expedition 47 and 48 crews.

20
00:01:08,890 --> 00:01:12,240
Orbital ATK's Dan Tani is familiar with the work

21
00:01:12,240 --> 00:01:14,770
taking place aboard the International Space Station.

22
00:01:14,770 --> 00:01:19,000
He is a former NASA astronaut who spent 120 days in space

23
00:01:19,000 --> 00:01:21,830
during Expedition 16 from October

24
00:01:21,830 --> 00:01:25,030
2007 to February 2008.

25
00:01:25,030 --> 00:01:28,750
He recently spoke about what it's like when
a cargo vessel arrives

26
00:01:28,750 --> 00:01:30,550
with needed supplies and equipment.

27
00:01:31,240 --> 00:01:32,600
Dan Tani: "It's like Christmas.

28
00:01:32,610 --> 00:01:34,610
Opening a big box of goodies.

29
00:01:34,610 --> 00:01:37,090
And finding some stuff that you've been wanting
and finding some

30
00:01:37,090 --> 00:01:39,840
surprises you didn't know about."

31
00:01:39,840 --> 00:01:43,429
Cygnus will lift off atop a United Launch
Alliance Atlas V rocket

32
00:01:43,429 --> 00:01:45,289
from Space Launch Complex 41

33
00:01:45,289 --> 00:01:48,200
at Cape Canaveral Air Force Station.

34
00:01:48,200 --> 00:01:52,629
Speaking in Kennedy's Payload Hazardous Servicing
Facility where Cygnus was undergoing

35

00:01:52,629 --> 00:01:57,700
final preparations, Tani described how the
unpiloted spacecraft will

36
00:01:57,700 --> 00:01:58,860
go to work after liftoff as it

37
00:01:58,860 --> 00:02:01,240
travels autonomously to its destination.

38
00:02:01,920 --> 00:02:04,979
Dan Tani: "The biggest moments for me is getting
onto orbit,

39
00:02:04,979 --> 00:02:06,500
getting the vehicle all configured

40
00:02:06,500 --> 00:02:10,390
so it can fly and perform in orbit correctly,
and then make its

41
00:02:10,390 --> 00:02:12,470
approach to the space station."

42
00:02:12,470 --> 00:02:15,920
As Cygnus approaches the space station the
astronauts begin

43
00:02:15,920 --> 00:02:17,349
their vital role to capture,

44
00:02:17,349 --> 00:02:20,740
or grapple, the cargo laden spacecraft.

45
00:02:20,740 --> 00:02:24,660
Dan Tani: "The crew onboard gets involved
about two hours before

46
00:02:24,670 --> 00:02:26,500

they actually grapple it.

47
00:02:26,500 --> 00:02:29,390
Their job is to watch the vehicle as it's
coming in.

48
00:02:29,390 --> 00:02:32,670
As they progress up to the exact place where
they will grapple it,

49
00:02:32,670 --> 00:02:35,640
the arm will be in place and they will then
command the arm

50
00:02:35,640 --> 00:02:39,510
and go in to grapple the Cygnus."

51
00:02:39,510 --> 00:02:42,650
For this mission, the Cygnus will deliver
many important items

52
00:02:42,650 --> 00:02:44,510
including the second generation

53
00:02:44,510 --> 00:02:48,980
of a portable device to demonstrate 3-D printing
on the space station.

54
00:02:48,980 --> 00:02:52,340
Also aboard will be an instrument for first
space-based

55
00:02:52,340 --> 00:02:54,060
observations of the chemical

56
00:02:54,060 --> 00:02:57,900
composition of meteors entering Earth's atmosphere.

57
00:02:57,900 --> 00:03:01,150

Another experiment will involve igniting and
studying a large-scale

58
00:03:01,150 --> 00:03:03,130
fire inside an empty Cygnus

59
00:03:03,130 --> 00:03:07,190
resupply vehicle after it leaves the space
station and prior to it

60
00:03:07,190 --> 00:03:09,380
re-entering the Earth's atmosphere.

61
00:03:09,380 --> 00:03:12,360
The goal is to improve understanding of how
a fire grows

62
00:03:12,360 --> 00:03:14,980
in microgravity in order to safeguard

63
00:03:14,980 --> 00:03:17,160
future space missions.

64
00:03:17,160 --> 00:03:19,480
These experiments and many others aboard the

65
00:03:19,480 --> 00:03:22,250
International Space Staton continue ongoing