



1
00:00:01,230 --> 00:00:05,730
[V.O] A half-century since it
launched the first American

2
00:00:05,730 --> 00:00:10,150
to orbit, NASA has begun a
new era of space exploration.

3
00:00:10,150 --> 00:00:13,540
With the International
Space Station established

4
00:00:13,540 --> 00:00:16,590
as a permanent human
outpost in low Earth orbit,

5
00:00:16,590 --> 00:00:19,580
NASA has embarked on
two parallel paths

6
00:00:19,580 --> 00:00:23,220
of future spaceflight...both
are complementary -- -

7
00:00:23,220 --> 00:00:25,810
and both are revolutionary.

8
00:00:25,810 --> 00:00:29,500
On one path, NASA is fostering
American private industry

9
00:00:29,500 --> 00:00:31,990
to develop commercially
available flights to orbit

10
00:00:31,990 --> 00:00:34,960
for cargo and, eventually,
people.

11

00:00:34,960 --> 00:00:38,500

On the other path, NASA
is focusing its expertise

12

00:00:38,500 --> 00:00:41,740

to build new spacecraft
and rockets to take America

13

00:00:41,740 --> 00:00:45,250

to deep space, farther than
we have ever been before.

14

00:00:45,250 --> 00:00:48,050

Two pathways to two frontiers.

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00:00:48,050 --> 00:01:04,600

One maintains and expands our
foothold in familiar territory.

16

00:01:04,600 --> 00:01:10,850

The other extends our
reach into the unknown.

17

00:01:10,850 --> 00:01:13,910

From Cape Canaveral Air
Force Station in Florida,

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00:01:13,910 --> 00:01:17,780

a commercial rocket roars
into the sky...it's the first

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00:01:17,780 --> 00:01:20,780

of a new generation of
commercial launch systems.

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00:01:20,780 --> 00:01:24,600

It's flight is made possible
largely because, for decades,

21

00:01:24,600 --> 00:01:26,480

NASA has opened the
borders of space.

22

00:01:26,480 --> 00:01:29,940

NASA's experience is
America's experience.

23

00:01:29,940 --> 00:01:32,840

Whether its building

24

00:01:32,840 --> 00:01:36,610

and launching
spacecraft...taking humans

25

00:01:36,610 --> 00:01:39,710

to the moon...or making
Earth Orbit a place

26

00:01:39,710 --> 00:01:41,850

for everyday work....The
technologies

27

00:01:41,850 --> 00:01:44,810

from those achievements
helped build our nation's

28

00:01:44,810 --> 00:01:46,680

aerospace industry.

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00:01:46,680 --> 00:01:49,380

With those missions, NASA
poured the foundation

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00:01:49,380 --> 00:01:52,640

of United States
human spaceflight.

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00:01:52,640 --> 00:01:55,940

Now NASA is partnering with
private American companies

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00:01:55,940 --> 00:01:58,350
so they may join the voyage.

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00:01:59,530 --> 00:02:02,950
The International Space Station.

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00:02:02,950 --> 00:02:06,590
The largest, most complex
space vehicle ever built,

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00:02:06,590 --> 00:02:10,650
and it has become our
permanent home in space.

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00:02:10,650 --> 00:02:14,000
Crews live and work
onboard conducting research

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00:02:14,000 --> 00:02:17,020
and experiments to
improve life on earth.

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00:02:17,020 --> 00:02:18,830
Their work is also preparing us

39

00:02:18,830 --> 00:02:21,320
for those longer
journeys that are ahead.

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00:02:21,320 --> 00:02:25,190
But the station also serves as
a catalyst for the evolution

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00:02:25,190 --> 00:02:27,250
of commercial spaceflight.

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00:02:27,250 --> 00:02:31,090
Station crews need regular

shipments of food, water,

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00:02:31,090 --> 00:02:34,490

clothing, spare parts
and experiments.

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00:02:34,490 --> 00:02:36,580

That demand creates
an opportunity

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00:02:36,580 --> 00:02:40,190

for commercial space companies
to augment cargo shipments

46

00:02:40,190 --> 00:02:42,620

by NASA's international
partners.

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00:02:42,620 --> 00:02:45,620

[Astronaut Don Pettit]

Well, I view these vehicles

48

00:02:45,620 --> 00:02:52,570

like wagon trains supplying some
government-run fort out west,

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00:02:52,570 --> 00:02:55,570

and it doesn't matter
whose wagon train it is,

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00:02:55,570 --> 00:02:59,410

what's important is that the
wagon train eventually makes it

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00:02:59,410 --> 00:03:01,140

to the fort.

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00:03:01,140 --> 00:03:08,180

[V.O.] Two companies -

Orbital Sciences and SpaceX --

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00:03:08,180 --> 00:03:11,210
are in the final
stages of building

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00:03:11,210 --> 00:03:15,930
and testing new unmanned cargo
craft to fly to the station.

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00:03:15,930 --> 00:03:18,650
[Elon Musk] So we've got
customers at the end of the day

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00:03:18,650 --> 00:03:21,080
where we can provide
a useful service

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00:03:21,080 --> 00:03:25,640
and can also prove the rocket
technology...with every flight

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00:03:25,640 --> 00:03:26,350
we learn more.

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00:03:26,350 --> 00:03:28,940
Just being able to
work in collaboration

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00:03:28,940 --> 00:03:31,810
with NASA is awesome
and it teaches us a lot.

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00:03:31,810 --> 00:03:37,330
I'm super excited about it and
feel honored to be a part of it.

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00:03:37,330 --> 00:03:41,480
[V.O.] Other companies including
Blue Origin, Sierra Nevada,

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00:03:41,480 --> 00:03:46,870

United Launch Alliance, ATK,
Excalibur Almaz, Boeing,

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00:03:46,870 --> 00:03:49,180

as well as Space X...are working

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00:03:49,180 --> 00:03:51,940

to eventually fly
crews to the station.

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00:03:51,940 --> 00:03:55,420

It is a new approach
to space flight:

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00:03:55,420 --> 00:03:59,800

NASA lends its experience
but the companies design,

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00:03:59,800 --> 00:04:02,730

launch and own the spacecraft.

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00:04:02,730 --> 00:04:02,990

[Lindenmoyer]

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00:04:02,990 --> 00:04:04,720

we didn't talk about
how to do it.

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00:04:04,720 --> 00:04:09,730

We didn't say how large
the vehicle needed

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00:04:09,730 --> 00:04:14,220

to be...how much propulsion.

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00:04:14,220 --> 00:04:16,410

The only time we got specific

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00:04:16,410 --> 00:04:20,870
about requirements were the
interfaces to the space station

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00:04:20,870 --> 00:04:24,170
and the safety requirements.

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00:04:24,170 --> 00:04:25,640
Everything else was goal driven

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00:04:25,640 --> 00:04:28,000
so the companies can
use their innovation

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00:04:28,000 --> 00:04:31,020
and optimize their systems

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00:04:31,020 --> 00:04:34,100
to deliver these
supplies to the station.

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00:04:34,100 --> 00:04:37,260
[V.O.] While commercial partners
focus on reaching orbit,

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00:04:37,260 --> 00:04:41,050
NASA is at work on a
spacecraft and launch vehicle

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00:04:41,050 --> 00:04:43,330
to explore the solar system.

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00:04:43,330 --> 00:04:46,210
NASA's Space Launch System
will be the most versatile

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00:04:46,210 --> 00:04:48,710
and powerful rocket ever built.

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00:04:48,710 --> 00:04:52,790

It will launch crews farther
into space than ever before --

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00:04:52,790 --> 00:04:57,800

to an asteroid, back to the
moon, or even on to Mars.

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00:04:57,800 --> 00:05:02,470

Sitting atop the Space Launch
System is Orion, NASA's new ship

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00:05:02,470 --> 00:05:05,650

to take astronauts
on those journeys.

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00:05:05,650 --> 00:05:08,820

[Geyer] Orion is really
an exploration spacecraft.

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00:05:08,820 --> 00:05:11,650

It's the vehicle that
will house the crew

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00:05:11,650 --> 00:05:13,760

when we do those
exploration missions.

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00:05:13,760 --> 00:05:19,170

It provides the life support,
the power, storage for food.

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00:05:19,170 --> 00:05:23,660

It also provides the propulsion
and other systems that allows us

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00:05:23,660 --> 00:05:27,360

to go to those far
reaching distant places.

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00:05:27,360 --> 00:05:30,230

[V.O.] Work is well
under way on Orion.

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00:05:30,230 --> 00:05:33,400

Hardware is being built
from coast to coast.

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00:05:33,400 --> 00:05:39,050

Testing, checks and reviews all
march toward a first unmanned

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00:05:39,050 --> 00:05:41,940

test flight in 2014.

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00:05:41,940 --> 00:05:45,150

Orion will fly 10 times
farther from the Earth

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00:05:45,150 --> 00:05:46,590

than the space station.

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00:05:46,590 --> 00:05:50,160

. It will return to Earth
at speeds not experienced

102

00:05:50,160 --> 00:05:52,960

since the Apollo
missions to the moon.

103

00:05:52,960 --> 00:05:55,910

Orion also benefits
commercial partners.

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00:05:55,910 --> 00:05:59,760

As NASA creates and
tests Orion hardware,

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00:05:59,760 --> 00:06:03,640

the lessons from parachute tests, heat shield development

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00:06:03,640 --> 00:06:06,430

and aerodynamic studies are shared.

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00:06:06,430 --> 00:06:08,820

The collaboration prevents duplication

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00:06:08,820 --> 00:06:10,950

and speeds development.

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00:06:10,950 --> 00:06:15,070

The programs mature together and ultimately rely

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00:06:15,070 --> 00:06:18,300

on each other for success.

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00:06:18,300 --> 00:06:19,280

[Lindenmoyer] We want

112

00:06:19,280 --> 00:06:23,570

to stimulate commercial industry in space.

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00:06:23,570 --> 00:06:25,330

That is in NASA's charter.

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00:06:25,330 --> 00:06:29,440

I would say over the years this has become more

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00:06:29,440 --> 00:06:32,660

and more exciting, because we have seen great progress

116

00:06:32,660 --> 00:06:33,870
with the companies.

117
00:06:33,870 --> 00:06:36,320
There's a tremendous amount
of talent and knowledge

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00:06:36,320 --> 00:06:37,230
and experience out there...

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00:06:37,230 --> 00:06:39,080
it ended up being a
great partnership.

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00:06:39,080 --> 00:06:42,120
[Geyer] When the
commercial works

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00:06:42,120 --> 00:06:46,600
and it actually can
reduce the cost

122
00:06:48,220 --> 00:06:55,670
of supplying the
space station then

123
00:06:55,670 --> 00:06:56,540
that will allow more
budget headroom

124
00:06:56,540 --> 00:06:57,920
to do the exploration
missions that NASA has planned

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00:06:57,920 --> 00:06:59,210
in the future 'cause we
gotta support space station

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00:06:59,210 --> 00:07:00,440
and this commercial

resupply of cargo and crew;

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00:07:00,440 --> 00:07:01,700

the cheaper it is, the
more exploration we can do,