



1
00:00:00,570 --> 00:00:20,418
[Music Playing]

2
00:00:20,418 --> 00:00:27,038
The man-made satellite, Explorer,
was injected into orbit at 22:48

3
00:00:27,038 --> 00:00:33,230
hours on 31 January 1958 as part
of the United States contribution

4
00:00:33,230 --> 00:00:36,811
to the International Geophysical
Year Program.

5
00:00:36,811 --> 00:00:40,372
This is the story of that historic
launching, which will

6
00:00:40,372 --> 00:00:46,430
serve as a forerunner for free
man's further conquest of space.

7
00:00:54,847 --> 00:00:59,694
The United States Army Jupiter-C
stands poised on its

8
00:00:59,694 --> 00:01:04,208
launching pad at Cape Canaveral,
a needle-nosed giant anxious to

9
00:01:04,208 --> 00:01:09,026
split the heavens and bear aloft the
satellite dubbed Explorer, containing

10
00:01:09,026 --> 00:01:13,924
some eighteen pounds of scientific
instrumentation.

11

00:01:15,068 --> 00:01:23,259

For the missile scientists of
Huntsville, Alabama, Ames, Iowa,

12

00:01:23,259 --> 00:01:29,061

and Pasadena, California, von Braun
of Army Ballistic Missile Agency,

13

00:01:29,061 --> 00:01:35,896

van Allen of Iowa State, and Pickering
of Cal Tech, for General Medaris

14

00:01:35,930 --> 00:01:40,092

and all the Army men behind the
missiles, for the American people,

15

00:01:40,092 --> 00:01:44,178

from the man on the street to
the man in the White House, this is a

16

00:01:44,178 --> 00:01:49,646

night of hope, a night that looks
into the future. Hours ago,

17

00:01:49,646 --> 00:01:57,324

the countdown began, X minus 6 and
still counting. X minus 5 and still

18

00:01:57,324 --> 00:02:03,197

counting. Tonight is the climax of
months of preparation, the result of

19

00:02:03,197 --> 00:02:06,057

Army teamwork, uniting the efforts
of the Army Ballistic

20

00:02:06,057 --> 00:02:10,043

Missile Agency and the Jet Propulsion
Laboratory of the California Institute

21

00:02:10,043 --> 00:02:16,018
of Technology, whose scientists
are seen here conferring during

22

00:02:16,018 --> 00:02:22,455
a preliminary phase of the project.
The Cal Tech team was responsible

23

00:02:22,455 --> 00:02:27,532
for the assembly of the Explorer, for
providing the two radio transmitters

24

00:02:27,532 --> 00:02:32,157
incorporated into the satellite, and
they supplied the upper stage's

25

00:02:32,191 --> 00:02:36,408
high-speed assembly in a design
that radically departed from

26

00:02:36,408 --> 00:02:43,060
previously conceived satellite launchers.

27

00:02:44,708 --> 00:02:48,811
A spin balance test puts the Explorer
satellite and its final stage

28

00:02:48,811 --> 00:02:55,293
rocket through their paces, along with
this rotation launcher, a bucket of

29

00:02:55,293 --> 00:03:00,208
solid fuel rockets developed by the Cal
Tech Jet Propulsion Laboratory.

30

00:03:00,208 --> 00:03:06,146
At firing time, the bucket will rotate in
this manner, spin-stabilizing the

31

00:03:06,146 --> 00:03:14,408

the upper stages of Jupiter-C
like a rifle bullet.

32

00:03:15,888 --> 00:03:20,178

The first stage of the Army missile
arrives at the Cape for test and

33

00:03:20,178 --> 00:03:24,046

assembly. It contains the proven
Redstone missile engine, a liquid

34

00:03:24,046 --> 00:03:29,188

propellant power plant engineered
by the Army Ballistic Agency.

35

00:03:29,188 --> 00:03:33,205

Missile Agency. It is the same rocket
that helped solved the reentry

36

00:03:33,205 --> 00:03:37,335

problem arising when the nosecone of
a ballistic missile leaves outer space

37

00:03:37,335 --> 00:03:43,870

and strikes the relatively heavy,
thick atmosphere of Earth.

38

00:03:46,931 --> 00:03:52,855

The main stage has a diameter of seventy
inches and measures approximately

39

00:03:52,855 --> 00:03:57,093

fifty-six feet in length. It will expend
itself during the ascent and separate

40

00:03:57,093 --> 00:04:03,665

from the upper rocket stages
falling back to Earth.

41

00:04:12,848 --> 00:04:17,453

During assembly, testing of the modified inertial guidance system

42

00:04:17,453 --> 00:04:22,185

and power plant continues in order to eliminate the likelihood of last-minute

43

00:04:22,185 --> 00:04:26,719

failure and to assure a stable, well controlled flight.

44

00:04:30,217 --> 00:04:35,191

And, at last, the main stage of Jupiter-C is ready to

45

00:04:35,191 --> 00:04:39,539

begin its journey to the launching pad.

46

00:04:47,426 --> 00:04:52,792

Technicians check out instrumentation and recording apparatus in

47

00:04:52,792 --> 00:04:55,832

central control.

48

00:04:56,872 --> 00:05:03,068

Now Army's Challenger proudly elevates her nose and readies

49

00:05:03,068 --> 00:05:05,528

herself for final grooming.

Once in the gantry crane,

50

00:05:05,528 --> 00:05:09,384

she will be married to her high-speed stages, the bucket of solid fuel

51

00:05:09,384 --> 00:05:13,223

rockets, that comprise the second

stage of the Jupiter-C missile

52

00:05:13,223 --> 00:05:16,939

system, and the third and fourth stages, which are

53

00:05:16,939 --> 00:05:21,582

coupled to the payload, the Explorer satellite.

54

00:05:27,682 --> 00:05:30,782

The first stage of the vehicle will have done its job when

55

00:05:30,782 --> 00:05:35,978

the satellite has reached the prescribed distance from Earth. All

56

00:05:35,978 --> 00:05:39,075

other stages of the rocket will increase the speed for orbiting, but

57

00:05:39,075 --> 00:05:44,974

they will not send Explorer to a greater height.

58

00:06:01,779 --> 00:06:07,198

In the gantry, final assembly is completed.

59

00:06:30,021 --> 00:06:35,259

The intricate and dangerous process of fueling begins. Jupiter-C's

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00:06:35,259 --> 00:06:39,442

specially enlarged fuel tanks are dieting tonight on a hydrazine

61

00:06:39,442 --> 00:06:46,987

-based exotic fuel called hydyne,

no ordinary alcohol this time.

62

00:06:51,972 --> 00:06:59,560

The missile's special fuel will combine under pressure with liquid oxygen.

63

00:07:08,110 --> 00:07:15,214

In the spotlight now, Army's Jupiter-C is ready. Anxiety

64

00:07:15,214 --> 00:07:19,469

riding with her, the last stage of the countdown begins.

65

00:07:19,469 --> 00:07:24,486

Phone circuits are working overtime. Reports come in

66

00:07:24,486 --> 00:07:27,713

to central control as each detailed step is completed.

67

00:07:27,713 --> 00:07:31,513

Recording instruments are set in motion, and there

68

00:07:31,513 --> 00:07:37,416

are tense moments of delay as eleventh-hour adjustments are made.

69

00:07:39,458 --> 00:07:43,996

X minus two and still counting.

70

00:07:49,440 --> 00:07:55,404

Until at last, the warning clacking sounds and the launching

71

00:07:55,404 --> 00:08:07,690

pad is clear. Now it is X minus ten seconds. X minus five seconds,

72

00:08:07,690 --> 00:08:13,885

four, three, two, one. Firing
command.

73

00:08:14,722 --> 00:08:17,261

Jupiter-C is coming to life.

74

00:08:17,261 --> 00:08:37,792

[Sound of Rocket launching]

75

00:08:38,988 --> 00:08:42,976

Time, 22:48 hours, 31 January
1958. Place,