



# HUBBLE'S 33<sup>RD</sup> ANNIVERSARY

DARK NEBULA IS A CAULDRON OF STAR BIRTH

1  
00:00:00,179 --> 00:00:04,870  
foreign

2  
00:00:10,610 --> 00:00:07,550  
NASA is celebrating the Hubble Space

3  
00:00:13,310 --> 00:00:10,620  
telescope's 33rd birthday with an

4  
00:00:17,210 --> 00:00:13,320  
ethereal image of a nearby star-forming

5  
00:00:20,390 --> 00:00:17,220  
region NGC 1333

6  
00:00:23,290 --> 00:00:20,400  
located approximately 960 light years

7  
00:00:26,150 --> 00:00:23,300  
away in the Perseus Interstellar Cloud

8  
00:00:28,870 --> 00:00:26,160  
Hubble's colorful view unveils glowing

9  
00:00:31,669 --> 00:00:28,880  
gases and pitch black dust stirred up

10  
00:00:34,069 --> 00:00:31,679  
colliding and blown around by several

11  
00:00:35,630 --> 00:00:34,079  
hundred forming Stars within the Dark

12  
00:00:38,209 --> 00:00:35,640  
Cloud

13  
00:00:40,430 --> 00:00:38,219

most of the star-birth Firestorm is

14

00:00:43,310 --> 00:00:40,440

hidden behind clouds of fine dust

15

00:00:44,990 --> 00:00:43,320

essentially soot that are thicker toward

16

00:00:47,450 --> 00:00:45,000

the bottom of the image

17

00:00:50,510 --> 00:00:47,460

the blackness in the image is not empty

18

00:00:53,330 --> 00:00:50,520

space but obscuring dust

19

00:00:55,250 --> 00:00:53,340

powerful Stellar winds likely from the

20

00:00:58,490 --> 00:00:55,260

bright blue star at the top of the photo

21

00:01:00,770 --> 00:00:58,500

are blowing through a veil of dust

22

00:01:03,229 --> 00:01:00,780

the fine dust scatters the blue

23

00:01:05,990 --> 00:01:03,239

wavelengths of Starlight

24

00:01:08,330 --> 00:01:06,000

farther down another super hot star

25

00:01:09,350 --> 00:01:08,340

shines through filaments of obscuring

26

00:01:12,230 --> 00:01:09,360

dust

27

00:01:15,170 --> 00:01:12,240

a diagonal string of fainter nearby

28

00:01:17,570 --> 00:01:15,180

Stars looks reddish because dust is

29

00:01:19,789 --> 00:01:17,580

filtering Starlight so more of the red

30

00:01:22,190 --> 00:01:19,799

light gets through

31

00:01:25,429 --> 00:01:22,200

the bottom of the picture presents a

32

00:01:27,770 --> 00:01:25,439

peek deep into the dark nebula Hubble

33

00:01:28,910 --> 00:01:27,780

captures the reddish glow of ionized

34

00:01:31,850 --> 00:01:28,920

hydrogen

35

00:01:34,969 --> 00:01:31,860

it looks like a fireworks finale with

36

00:01:37,429 --> 00:01:34,979

several overlapping Cascades of light

37

00:01:40,010 --> 00:01:37,439

this is caused by Pencil Thin jets

38

00:01:42,350 --> 00:01:40,020

shooting out from newly forming stars

39

00:01:45,170 --> 00:01:42,360

that are hidden from View

40

00:01:48,109 --> 00:01:45,180

this Vista offers an example of the time

41

00:01:52,130 --> 00:01:48,119

when our sun and planets formed inside

42

00:01:54,410 --> 00:01:52,140

such a Dusty molecular gas cloud 4.6

43

00:01:58,130 --> 00:01:54,420

billion years ago

44

00:02:00,889 --> 00:01:58,140

our sun didn't form in isolation but was

45

00:02:03,889 --> 00:02:00,899

instead surrounded by other stars in a

46

00:02:06,350 --> 00:02:03,899

period of frantic Stellar birth perhaps

47

00:02:10,430 --> 00:02:06,360

even more energetic and massive than the

48

00:02:12,830 --> 00:02:10,440

action in NGC 1333

49

00:02:15,410 --> 00:02:12,840

because Hubble orbits above Earth's

50

00:02:17,449 --> 00:02:15,420

atmosphere it can give us these clear

51  
00:02:18,589 --> 00:02:17,459  
views of the many wonders in our

52  
00:02:21,710 --> 00:02:18,599  
universe

53  
00:02:23,930 --> 00:02:21,720  
for 33 years the Hubble Space Telescope

54  
00:02:26,690 --> 00:02:23,940  
has changed the way we think of space

55  
00:02:29,330 --> 00:02:26,700  
and our place in the cosmos

56  
00:02:31,729 --> 00:02:29,340  
Hubble has refined our understanding of

57  
00:02:32,930 --> 00:02:31,739  
the age of the universe and its rate of

58  
00:02:35,570 --> 00:02:32,940  
expansion

59  
00:02:38,089 --> 00:02:35,580  
its Deep Field images have made it

60  
00:02:40,490 --> 00:02:38,099  
possible for us to see across billions

61  
00:02:43,130 --> 00:02:40,500  
of light years revealing ancient

62  
00:02:45,710 --> 00:02:43,140  
adolescent galaxies that we can compare

63  
00:02:48,110 --> 00:02:45,720

with our own Milky Way

64

00:02:51,290 --> 00:02:48,120

closer to home Hubble is revealing

65

00:02:53,449 --> 00:02:51,300

vibrant activity in our solar system and

66

00:02:55,910 --> 00:02:53,459

in other star and planetary systems

67

00:02:58,190 --> 00:02:55,920

across the Galaxy

68

00:03:00,530 --> 00:02:58,200

Hubble remains in good health and is

69

00:03:03,410 --> 00:03:00,540

expected to continue its exploration of

70

00:03:05,270 --> 00:03:03,420

the universe for years to come with

71

00:03:08,089 --> 00:03:05,280

unique capabilities that complement

72

00:03:11,030 --> 00:03:08,099

other telescopes like web

73

00:03:13,070 --> 00:03:11,040

five astronaut servicing missions along

74

00:03:15,470 --> 00:03:13,080

with an expert technical team on the

75

00:03:18,410 --> 00:03:15,480

ground have kept the telescope at the

76

00:03:20,210 --> 00:03:18,420

peak of its scientific capabilities you

77

00:03:22,330 --> 00:03:20,220

can find out more about the Hubble Space

78

00:03:26,390 --> 00:03:22,340

Telescope at our website

79

00:03:29,830 --> 00:03:26,400

nasa.gov Hubble and on social media at