
NASA
Hubble's Inside The Image
Carina Nebula

1
00:00:08,470 --> 00:00:02,140
foreign

2
00:00:11,270 --> 00:00:08,480
[Music]

3
00:00:13,669 --> 00:00:11,280
what is my favorite Hubble image it's

4
00:00:16,210 --> 00:00:13,679
actually the Mosaic that Hubble took of

5
00:00:19,070 --> 00:00:16,220
the Karina nebula

6
00:00:21,170 --> 00:00:19,080
it's in the constellation Carina in the

7
00:00:23,630 --> 00:00:21,180
southern hemisphere

8
00:00:25,970 --> 00:00:23,640
it's just an area of the Galaxy where

9
00:00:28,189 --> 00:00:25,980
material has collected together

10
00:00:30,650 --> 00:00:28,199
our galaxy is what's called a spiral

11
00:00:32,630 --> 00:00:30,660
galaxies has a bright center with a lot

12
00:00:34,850 --> 00:00:32,640
of material in it and then these spiral

13
00:00:37,790 --> 00:00:34,860

arms coming out of it if you look in

14
00:00:40,549 --> 00:00:37,800
areas around the spiral arms as for

15
00:00:43,490 --> 00:00:40,559
material is collected together over many

16
00:00:45,470 --> 00:00:43,500
many millions of years and this is one

17
00:00:47,270 --> 00:00:45,480
of the areas where the conditions were

18
00:00:49,190 --> 00:00:47,280
just right where the magnetic fields

19
00:00:52,310 --> 00:00:49,200
where the pressure from surrounding

20
00:00:55,189 --> 00:00:52,320
stars conspired to push it all together

21
00:00:58,490 --> 00:00:55,199
and create this massive cloud of dust

22
00:01:00,110 --> 00:00:58,500
and gas the Hubble Space Telescope has a

23
00:01:01,790 --> 00:01:00,120
relatively narrow field of view it's

24
00:01:03,889 --> 00:01:01,800
built to zoom in and look at individual

25
00:01:05,750 --> 00:01:03,899
objects so when we want to appreciate an

26
00:01:07,609 --> 00:01:05,760
object of the size we have to create

27
00:01:10,370 --> 00:01:07,619
what's called a mosaic where we take

28
00:01:12,469 --> 00:01:10,380
multiple images and very carefully align

29
00:01:14,630 --> 00:01:12,479
them and stack them together

30
00:01:16,010 --> 00:01:14,640
it's so large you can't see it in a

31
00:01:18,289 --> 00:01:16,020
single image you have to piece together

32
00:01:21,410 --> 00:01:18,299
hundreds of images to cover the entire

33
00:01:25,550 --> 00:01:23,690
lots of variations in temperature of the

34
00:01:28,010 --> 00:01:25,560
gas and dust so the bright material that

35
00:01:30,469 --> 00:01:28,020
you see in here is hot material it's

36
00:01:33,530 --> 00:01:30,479
been heated up by the embedded Stars the

37
00:01:35,390 --> 00:01:33,540
really dark clouds are cool very dense

38
00:01:38,210 --> 00:01:35,400

clouds of dust and gas they tend to be

39
00:01:41,149 --> 00:01:38,220
dustier than these bright areas which

40
00:01:42,890 --> 00:01:41,159
are dominated by gas you see here Mystic

41
00:01:45,530 --> 00:01:42,900
Mountain which is an example of a star

42
00:01:47,810 --> 00:01:45,540
formation area

43
00:01:49,910 --> 00:01:47,820
the top of Mystic Mountain is down to

44
00:01:52,010 --> 00:01:49,920
the left and then the base of it is out

45
00:01:54,230 --> 00:01:52,020
this way so as you see

46
00:01:59,690 --> 00:01:54,240
Mystic Mountain is only a tiny fraction

47
00:02:04,190 --> 00:02:01,910
you see way over here this bright spot

48
00:02:05,389 --> 00:02:04,200
which if you zoom is like a dumbbell

49
00:02:08,570 --> 00:02:05,399
shape

50
00:02:10,550 --> 00:02:08,580
at a Carina which is a red giant that's

51
00:02:12,650 --> 00:02:10,560
a star in the process of dying in the

52
00:02:15,350 --> 00:02:12,660
last stages of Stellar Revolution and

53
00:02:17,949 --> 00:02:15,360
it's blowing Material off

54
00:02:21,170 --> 00:02:17,959
foreign

55
00:02:24,530 --> 00:02:21,180
the entire range of the evolution of a

56
00:02:27,250 --> 00:02:24,540
single star from its birth to its death

57
00:02:30,110 --> 00:02:27,260
and everything in between

58
00:02:33,410 --> 00:02:30,120
all through this nebula so collectively

59
00:02:35,990 --> 00:02:33,420
it's an immense Factory of forming star

60
00:02:38,150 --> 00:02:36,000
systems and we hope planets around those

61
00:02:39,530 --> 00:02:38,160
star systems

62
00:02:42,050 --> 00:02:39,540
so this is an image you can download

63
00:02:43,729 --> 00:02:42,060

from the Hubble site and it's it's got

64
00:02:45,650 --> 00:02:43,739
enough data and depth in it you can

65
00:02:47,750 --> 00:02:45,660
print it out to go on your wall That's

66
00:02:49,369 --> 00:02:47,760
How many pixels it's got it and you can

67
00:02:51,170 --> 00:02:49,379
download it on a computer and just zoom

68
00:02:53,509 --> 00:02:51,180
in and see the kind of detail you saw in

69
00:02:55,070 --> 00:02:53,519
Mystic Mountain anywhere else in this