

1
00:00:12,218 --> 00:00:16,390
this is a Hubble Space Telescope image

2
00:00:14,589 --> 00:00:19,539
of the crowded core of the globular

3
00:00:16,390 --> 00:00:21,820
cluster Omega Centauri the brilliant

4
00:00:19,539 --> 00:00:24,340
colors of the stars are real they

5
00:00:21,820 --> 00:00:26,289
correspond to stellar temperatures they

6
00:00:24,339 --> 00:00:29,500
can also be used to trace stellar

7
00:00:26,289 --> 00:00:32,289
evolution astronomers like to know how

8
00:00:29,500 --> 00:00:34,719
blue the blue stars are and how red the

9
00:00:32,289 --> 00:00:37,570
red stars are so we'll first sort these

10
00:00:34,719 --> 00:00:41,439
stars out by color blue on the left and

11
00:00:37,570 --> 00:00:43,628
red on the right next we'll sort the

12
00:00:41,439 --> 00:00:46,058
stars according to brightness the

13
00:00:43,628 --> 00:00:49,658
brightest stars at the top and the faint

14
00:00:46,058 --> 00:00:51,789
stars at the bottom the final plot you

15
00:00:49,658 --> 00:00:55,299
see represents different stages of

16
00:00:51,789 --> 00:00:57,219
evolution of stars star spend most of

17
00:00:55,299 --> 00:00:59,828
their life time burning on the main

18
00:00:57,219 --> 00:01:03,579
sequence when the fuel starts to run out

19
00:00:59,829 --> 00:01:06,069
they expand to become red giants they

20
00:01:03,579 --> 00:01:09,210
find a new source of fuel helium and

21
00:01:06,069 --> 00:01:12,719
burn blue hot but even that runs out

22
00:01:09,209 --> 00:01:15,219
they end up burning out as white dwarfs

23
00:01:12,719 --> 00:01:17,859
based on images for the Hubble Space

24
00:01:15,219 --> 00:01:20,379
Telescope we've assembled a true plot

25
00:01:17,859 --> 00:01:23,750
that is a snapshot of the life history

26
00:01:20,379 --> 00:01:25,810
of stars in this ancient cluster

27
00:01:23,750 --> 00:01:25,810
you

28
00:01:32,409 --> 00:01:34,469
you