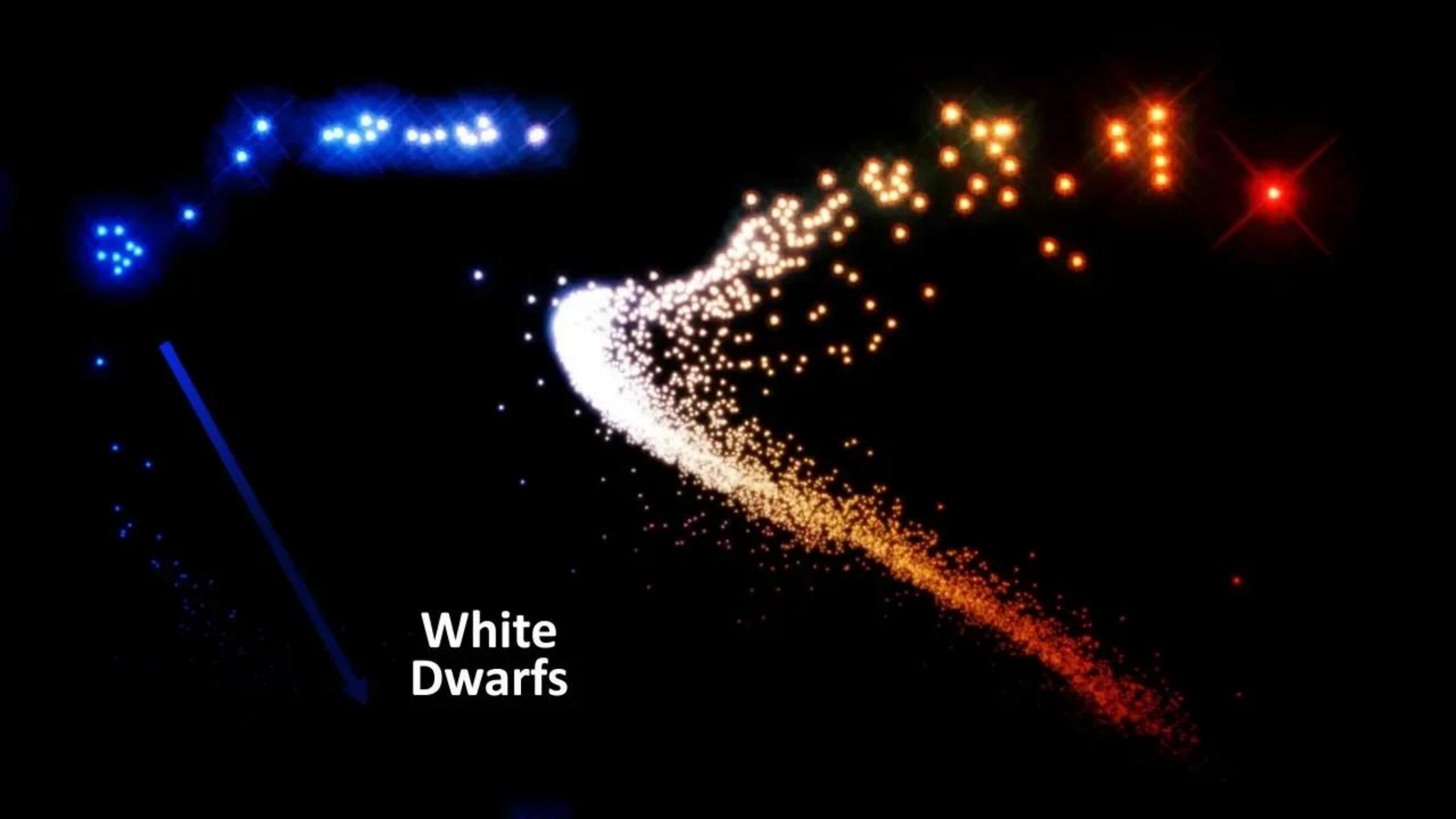
White
Dwarfs

1
00:00:16,380 --> 00:00:14,579
this is a Hubble Space Telescope image

2
00:00:19,529 --> 00:00:16,390
of the crowded core of the globular

3
00:00:21,810 --> 00:00:19,539
cluster Omega Centauri the brilliant

4
00:00:24,330 --> 00:00:21,820
colors of the stars are real they

5
00:00:26,279 --> 00:00:24,340
correspond to stellar temperatures they

6
00:00:29,490 --> 00:00:26,289
can also be used to trace stellar

7
00:00:32,280 --> 00:00:29,500
evolution astronomers like to know how

8
00:00:34,709 --> 00:00:32,290
blue the blue stars are and how red the

9
00:00:37,560 --> 00:00:34,719
red stars are so we'll first sort these

10
00:00:41,430 --> 00:00:37,570
stars out by color blue on the left and

11
00:00:43,619 --> 00:00:41,440
red on the right next we'll sort the

12
00:00:46,049 --> 00:00:43,629
stars according to brightness the

13
00:00:49,649 --> 00:00:46,059

brightest stars at the top and the faint

14
00:00:51,779 --> 00:00:49,659
stars at the bottom the final plot you

15
00:00:55,290 --> 00:00:51,789
see represents different stages of

16
00:00:57,209 --> 00:00:55,300
evolution of stars star spend most of

17
00:00:59,819 --> 00:00:57,219
their life time burning on the main

18
00:01:03,569 --> 00:00:59,829
sequence when the fuel starts to run out

19
00:01:06,060 --> 00:01:03,579
they expand to become red giants they

20
00:01:09,200 --> 00:01:06,070
find a new source of fuel helium and

21
00:01:12,710 --> 00:01:09,210
burn blue hot but even that runs out

22
00:01:15,210 --> 00:01:12,720
they end up burning out as white dwarfs

23
00:01:17,850 --> 00:01:15,220
based on images for the Hubble Space

24
00:01:20,370 --> 00:01:17,860
Telescope we've assembled a true plot

25
00:01:23,740 --> 00:01:20,380
that is a snapshot of the life history