1
00:00:12,620 --> 00:00:10,669
Space scoot you might have heard that

2
00:00:14,930 --> 00:00:12,630
much of the material making up the world

3
00:00:18,170 --> 00:00:14,940
around us was forged in the hot bellies

4
00:00:20,750 --> 00:00:18,180
of massive stars but how do we know this

5
00:00:23,029 --> 00:00:20,760
we can't send probes to investigate

6
00:00:25,340 --> 00:00:23,039
because there isn't a material on earth

7
00:00:29,380 --> 00:00:25,350
that can withstand the immense heat

8
00:00:32,799 --> 00:00:29,390
inside a star without being vaporized

9
00:00:35,450 --> 00:00:32,809
luckily for us but not for the stars

10
00:00:38,270 --> 00:00:35,460
every star over eight times heavier than

11
00:00:42,380 --> 00:00:38,280
our Sun will eventually explode as a

12
00:00:44,000 --> 00:00:42,390
supernova when this happens all the

13
00:00:47,720 --> 00:00:44,010

stars innards are launched into space

14
00:00:50,330 --> 00:00:47,730
for everyone to see a supernova

15
00:00:54,319 --> 00:00:50,340
explosion also makes rare elements like

16
00:00:58,910 --> 00:00:54,329
gold titanium and uranium and can

17
00:01:01,939 --> 00:00:58,920
briefly outshine an entire galaxy each

18
00:01:04,939 --> 00:01:01,949
of these four fabulous photographs shows

19
00:01:06,969 --> 00:01:04,949
the remains of an exploded star called a

20
00:01:09,310 --> 00:01:06,979
supernova remnant

21
00:01:12,370 --> 00:01:09,320
the pictures were released by NASA's

22
00:01:16,840 --> 00:01:12,380
Chandra x-ray Observatory to celebrate

23
00:01:18,370 --> 00:01:16,850
the telescope's 15th birthday Chandra is

24
00:01:20,889 --> 00:01:18,380
a telescope that is specially designed

25
00:01:23,160 --> 00:01:20,899
to look at x-rays that come from very

26
00:01:27,340 --> 00:01:23,170
hot places and objects in the universe

27
00:01:29,080 --> 00:01:27,350
including exploded stars because the

28
00:01:30,940 --> 00:01:29,090
explosions have superheated these

29
00:01:35,289 --> 00:01:30,950
stellar wreckages they glow very

30
00:01:37,149 --> 00:01:35,299
brightly in x-ray light since the

31
00:01:40,469 --> 00:01:37,159
Earth's atmosphere blocks x-rays from

32
00:01:43,419 --> 00:01:40,479
space Chandra has to orbit high above it

33
00:01:46,630 --> 00:01:43,429
it currently looks at the universe up to

34
00:01:49,389 --> 00:01:46,640
an altitude of 140,000 kilometers above

35
00:01:52,179 --> 00:01:49,399
the earth from this ideal position

36
00:01:54,819 --> 00:01:52,189
Chandra can create x-ray pictures with

37
00:01:57,639 --> 00:01:54,829
superb detail allowing us to study the

38
00:02:01,809 --> 00:01:57,649

shape movement and chemical makeup of

39
00:02:09,190 --> 00:02:01,819
supernova remnants the objects are the

40
00:02:20,720 --> 00:02:09,200
Crab Nebula G 290 2.0 + 1.8 Tycho's

41
00:02:25,490 --> 00:02:23,150
space scoop is brought to you by NASA's