



# Star & Planetary System Formation

from Sq' Baa Hane'  
Story of the Stars

1  
00:00:05,930 --> 00:00:02,770  
foreign

2  
00:00:08,750 --> 00:00:05,940  
to scientific theory a star begins to

3  
00:00:11,509 --> 00:00:08,760  
form when a cloud or diffuse gases small

4  
00:00:14,390 --> 00:00:11,519  
rocky and organic particles and even ice

5  
00:00:16,210 --> 00:00:14,400  
begins to coalesce the gas and dust

6  
00:00:18,230 --> 00:00:16,220  
condense down into a tiny ball

7  
00:00:20,689 --> 00:00:18,240  
attracting more and more material

8  
00:00:21,780 --> 00:00:20,699  
becoming larger and larger and denser

9  
00:00:23,630 --> 00:00:21,790  
and denser

10  
00:00:25,609 --> 00:00:23,640  
[Music]

11  
00:00:28,009 --> 00:00:25,619  
awesome dust circles around the growing

12  
00:00:29,929 --> 00:00:28,019  
star much of the material will get

13  
00:00:33,110 --> 00:00:29,939

pulled into the star making the ball

14

00:00:36,790 --> 00:00:33,120

even larger at a certain point the star

15

00:00:39,470 --> 00:00:36,800

ignites giving off light and heat

16

00:00:41,270 --> 00:00:39,480

oftentimes the material left in the disc

17

00:00:43,850 --> 00:00:41,280

around the star will coalesce into

18

00:00:46,310 --> 00:00:43,860

planets these planets such as our own

19

00:00:49,869 --> 00:00:46,320

Earth orbit their star just as Earth

20

00:00:55,430 --> 00:00:52,549

stars and star systems form all around

21

00:00:57,170 --> 00:00:55,440

us in our galaxy and in other galaxies

22

00:00:59,389 --> 00:00:57,180

throughout space

23

00:01:01,250 --> 00:00:59,399

the process of new star system formation

24

00:01:04,690 --> 00:01:01,260

has been observed in our own Cosmic

25

00:01:15,429 --> 00:01:04,700

backyard within the constellation Orion

26

00:01:20,630 --> 00:01:18,170

this image taken by the Hubble Space

27

00:01:23,450 --> 00:01:20,640

Telescope shows several newly forming

28

00:01:26,770 --> 00:01:23,460

star systems within the Orion Nebula an

29

00:01:29,330 --> 00:01:26,780

active star-forming region

30

00:01:31,550 --> 00:01:29,340

the material that goes into forming a

31

00:01:33,950 --> 00:01:31,560

planet around a star determines what

32

00:01:36,890 --> 00:01:33,960

kind of planet it will be Rocky like

33

00:01:39,830 --> 00:01:36,900

Earth or gaseous like Jupiter

34

00:01:41,810 --> 00:01:39,840

any life on a planet like we humans here

35

00:01:46,490 --> 00:01:41,820

on Earth is made up of this same

36

00:01:49,030 --> 00:01:46,500

material we are indeed made of Stardust

37

00:01:51,469 --> 00:01:49,040

throughout the Universe stars form

38

00:01:53,810 --> 00:01:51,479

mature and then die

39

00:01:55,850 --> 00:01:53,820

in so doing the star recycles the

40

00:01:56,990 --> 00:01:55,860

materials created within it back into

41

00:01:59,210 --> 00:01:57,000

space

42

00:02:02,569 --> 00:01:59,220

when very large stars come to the end of

43

00:02:04,910 --> 00:02:02,579

their life they do not go quietly such a

44

00:02:07,429 --> 00:02:04,920

dying star blasts off its outer layer in

45

00:02:10,370 --> 00:02:07,439

an energetic explosion casting material

46

00:02:13,790 --> 00:02:10,380

out into the surrounding space

47

00:02:17,030 --> 00:02:13,800

this event is called a supernova

48

00:02:18,710 --> 00:02:17,040

in 1999 a NASA telescope orbiting Earth

49

00:02:20,930 --> 00:02:18,720

was able to take a picture of a

50

00:02:23,210 --> 00:02:20,940

supernova located in the constellation

51

00:02:26,089 --> 00:02:23,220

Cassiopeia

52

00:02:28,190 --> 00:02:26,099

the Cass a supernova Remnant as it is

53

00:02:30,970 --> 00:02:28,200

called is one of the most intensely

54

00:02:33,470 --> 00:02:30,980

studied objects in observable space

55

00:02:36,470 --> 00:02:33,480

the elements that are cast out into

56

00:02:39,229 --> 00:02:36,480

space during a supernova event oxygen

57

00:02:41,210 --> 00:02:39,239

carbon and nitrogen to name a few are

58

00:02:42,770 --> 00:02:41,220

elements that are necessary for Life as

59

00:02:44,690 --> 00:02:42,780

We Know It

60

00:02:48,110 --> 00:02:44,700

the only place these elements are made

61

00:02:50,270 --> 00:02:48,120

is within the fiery core of a star

62

00:02:52,490 --> 00:02:50,280

if all living things return to the Earth