1
00:01:00,460 --> 00:00:55,910
many of the latest instruments used by

2
00:01:04,009 --> 00:01:00,470
doctors the vehicles in which we travel

3
00:01:06,950 --> 00:01:04,019
even the appliances in our homes use

4
00:01:09,980 --> 00:01:06,960
magnets they supply us with all sorts of

5
00:01:12,080 --> 00:01:09,990
power but NASA engineers say magnets

6
00:01:15,080 --> 00:01:12,090
manufactured on the earth just aren't as

7
00:01:17,450 --> 00:01:15,090
powerful as lightweight as long lasting

8
00:01:20,270 --> 00:01:17,460
as they could be the next flight of the

9
00:01:21,920 --> 00:01:20,280
space shuttle and this device will take

10
00:01:24,560 --> 00:01:21,930
us a step closer to making better

11
00:01:26,540 --> 00:01:24,570
magnets this is called the automated

12
00:01:29,810 --> 00:01:26,550
directional solidification furnace

13
00:01:31,940 --> 00:01:29,820

simply put it melts and cool samples of

14
00:01:34,760 --> 00:01:31,950
a magnetic compound much the same way

15
00:01:36,670 --> 00:01:34,770
that a manufacturer does when the same

16
00:01:40,040 --> 00:01:36,680
process is performed on earth however

17
00:01:42,770 --> 00:01:40,050
gravity weakens the magnet that problem

18
00:01:44,690 --> 00:01:42,780
is significantly reduced in space the

19
00:01:46,910 --> 00:01:44,700
previous flight of the space furnace on

20
00:01:49,969 --> 00:01:46,920
this 1985 shuttle mission proved that

21
00:01:52,190 --> 00:01:49,979
now project manager Fred Reeves with the

22
00:01:53,810 --> 00:01:52,200
Marshall Space Flight Center says this

23
00:01:56,090 --> 00:01:53,820
basic research will likely lead to

24
00:01:58,550 --> 00:01:56,100
applications on earth despite its

25
00:02:02,109 --> 00:01:58,560
gravity will take advantage of all of

26
00:02:04,370 --> 00:02:02,119
the features that are being derived by

27
00:02:07,730 --> 00:02:04,380
processing these materials in reduced

28
00:02:09,650 --> 00:02:07,740
gravity and make an attempt into to

29
00:02:12,949 --> 00:02:09,660
bring that knowledge and understanding

30
00:02:15,560 --> 00:02:12,959
back into the to the production

31
00:02:16,910 --> 00:02:15,570
environment here on earth Reeve says

32
00:02:19,009 --> 00:02:16,920
that we may see some of those

33
00:02:21,949 --> 00:02:19,019
applications come to light in as little

34
00:02:23,720 --> 00:02:21,959
as five years time meanwhile the space

35
00:02:26,870 --> 00:02:23,730
furnace is designed to take up as little

36
00:02:28,819 --> 00:02:26,880
of the astronauts time as possible a few

37
00:02:31,039 --> 00:02:28,829
seconds to flip these two switches and

38
00:03:17,440 --> 00:02:31,049

the machine takes over from there and

39
00:03:22,970 --> 00:03:19,910
so we feel like that there will be

40
00:03:25,910 --> 00:03:22,980
benefits derived by what we learn up

41
00:03:28,670 --> 00:03:25,920
there and in making that application of