



**MARS
MATERIALS
EXPOSED!**

1
00:00:05,480 --> 00:00:02,840
so if you're designing spacecraft to be

2
00:00:07,789 --> 00:00:05,490
in the Mars orbit then the studies were

3
00:00:09,740 --> 00:00:07,799
doing on space station can be applied

4
00:00:12,350 --> 00:00:09,750
and help us design more durable

5
00:00:14,150 --> 00:00:12,360
spacecraft for that Martian atmosphere

6
00:00:16,250 --> 00:00:14,160
Missy stands for the materials

7
00:00:19,580 --> 00:00:16,260
International Space Station experiment

8
00:00:21,439 --> 00:00:19,590
we do study the durability of polymers

9
00:00:24,380 --> 00:00:21,449
in terms of their mechanical properties

10
00:00:27,109 --> 00:00:24,390
with radiation exposure and we hear a

11
00:00:30,890 --> 00:00:27,119
lot about the radiation exposure impact

12
00:00:32,749 --> 00:00:30,900
on humans for flights to say Mars but

13
00:00:34,610 --> 00:00:32,759

polymers and other materials that are

14

00:00:36,680 --> 00:00:34,620

used on spacecrafts can also do great

15

00:00:38,930 --> 00:00:36,690

from rock radiation and that's one of

16

00:00:41,030 --> 00:00:38,940

the things I study the Missy 8

17

00:00:44,090 --> 00:00:41,040

experiments do take a little bit of time

18

00:00:46,130 --> 00:00:44,100

because we do very careful dehydration

19

00:00:51,920 --> 00:00:46,140

measurements of the samples after

20

00:00:55,340 --> 00:00:51,930

they've been in space what we found is

21

00:00:57,350 --> 00:00:55,350

that the Teflon erosion rate is highly

22

00:01:00,110 --> 00:00:57,360

dependent on the amount of sunlight and

23

00:01:01,880 --> 00:01:00,120

possibly the heating - you need to know

24

00:01:04,189 --> 00:01:01,890

which of these environments it's going

25

00:01:05,929 --> 00:01:04,199

to be exposed to because it'll erode it

26

00:01:11,690 --> 00:01:05,939

a different rate depending on the

27

00:01:14,510 --> 00:01:11,700

environment the implication of our

28

00:01:17,090 --> 00:01:14,520

experiment on earth could be related to

29

00:01:22,730 --> 00:01:17,100

things such as the satellites we use for

30

00:01:24,740 --> 00:01:22,740

our cellphones and for Earth observing

31

00:01:26,990 --> 00:01:24,750

satellites these satellites we want to

32

00:01:29,300 --> 00:01:27,000

build that are durable and will last Oh